

Mobile-C

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Contents

1	MobileC	1
1.1	Introduction	1
2	Data Structure Index	3
2.1	Data Structures	3
3	File Index	5
3.1	File List	5
4	Data Structure Documentation	9
4.1	_hr_time Struct Reference	9
4.1.1	Detailed Description	9
4.1.2	Field Documentation	9
4.1.2.1	start	9
4.2	_ssl_context Struct Reference	10
4.2.1	Detailed Description	11
4.2.2	Field Documentation	11
4.2.2.1	authmode	11
4.2.2.2	ca_chain	11
4.2.2.3	ciphers	11
4.2.2.4	client_auth	12
4.2.2.5	ctx_dec	12
4.2.2.6	ctx_enc	12
4.2.2.7	dhm_ctx	12
4.2.2.8	do_crypt	12
4.2.2.9	endpoint	12
4.2.2.10	f_dbg	12
4.2.2.11	f_recv	13
4.2.2.12	f_rng	13

4.2.2.13	f_send	13
4.2.2.14	fin_md5	13
4.2.2.15	fin_sha1	13
4.2.2.16	hostname	13
4.2.2.17	hostname_len	13
4.2.2.18	in_ctr	14
4.2.2.19	in_hdr	14
4.2.2.20	in_hslen	14
4.2.2.21	in_left	14
4.2.2.22	in_msg	14
4.2.2.23	in_msglen	14
4.2.2.24	in_msgtype	15
4.2.2.25	in_offt	15
4.2.2.26	iv_dec	15
4.2.2.27	iv_enc	15
4.2.2.28	ivlen	15
4.2.2.29	keylen	15
4.2.2.30	mac_dec	15
4.2.2.31	mac_enc	16
4.2.2.32	maclen	16
4.2.2.33	major_ver	16
4.2.2.34	max_major_ver	16
4.2.2.35	max_minor_ver	16
4.2.2.36	minlen	16
4.2.2.37	minor_ver	17
4.2.2.38	nb_zero	17
4.2.2.39	out_ctr	17
4.2.2.40	out_hdr	17
4.2.2.41	out_left	17
4.2.2.42	out_msg	17
4.2.2.43	out_msglen	18
4.2.2.44	out_msgtype	18
4.2.2.45	own_cert	18
4.2.2.46	p_dbg	18
4.2.2.47	p_rcv	18
4.2.2.48	p_rng	18

4.2.2.49	p_send	19
4.2.2.50	peer_cert	19
4.2.2.51	peer_cn	19
4.2.2.52	pmslen	19
4.2.2.53	premaster	19
4.2.2.54	randbytes	19
4.2.2.55	resume	19
4.2.2.56	rsa_key	20
4.2.2.57	s_get	20
4.2.2.58	s_set	20
4.2.2.59	session	20
4.2.2.60	state	20
4.2.2.61	timeout	21
4.2.2.62	verify_result	21
4.3	_ssl_session Struct Reference	22
4.3.1	Detailed Description	22
4.3.2	Field Documentation	22
4.3.2.1	cipher	22
4.3.2.2	id	22
4.3.2.3	length	22
4.3.2.4	master	22
4.3.2.5	next	23
4.3.2.6	start	23
4.4	_x509_buf Struct Reference	24
4.4.1	Detailed Description	24
4.4.2	Field Documentation	24
4.4.2.1	len	24
4.4.2.2	p	24
4.4.2.3	tag	24
4.5	_x509_cert Struct Reference	25
4.5.1	Detailed Description	25
4.5.2	Field Documentation	25
4.5.2.1	ca_istrue	25
4.5.2.2	issuer	25
4.5.2.3	issuer_id	25
4.5.2.4	issuer_raw	26

4.5.2.5	max_pathlen	26
4.5.2.6	next	26
4.5.2.7	pk_oid	26
4.5.2.8	raw	26
4.5.2.9	rsa	26
4.5.2.10	serial	26
4.5.2.11	sig	26
4.5.2.12	sig_oid1	27
4.5.2.13	sig_oid2	27
4.5.2.14	subject	27
4.5.2.15	subject_id	27
4.5.2.16	subject_raw	27
4.5.2.17	tbs	27
4.5.2.18	v3_ext	27
4.5.2.19	valid_from	27
4.5.2.20	valid_to	27
4.5.2.21	version	28
4.6	_x509_name Struct Reference	29
4.6.1	Detailed Description	29
4.6.2	Field Documentation	29
4.6.2.1	next	29
4.6.2.2	oid	29
4.6.2.3	val	29
4.7	_x509_node Struct Reference	30
4.7.1	Detailed Description	30
4.7.2	Field Documentation	30
4.7.2.1	data	30
4.7.2.2	end	30
4.7.2.3	len	30
4.7.2.4	p	30
4.8	_x509_raw Struct Reference	31
4.8.1	Detailed Description	31
4.8.2	Field Documentation	31
4.8.2.1	issuer	31
4.8.2.2	raw	31
4.8.2.3	serial	31

4.8.2.4	sign	31
4.8.2.5	signalg	31
4.8.2.6	subject	31
4.8.2.7	subpubkey	32
4.8.2.8	tbs	32
4.8.2.9	tbs_signalg	32
4.8.2.10	validity	32
4.8.2.11	version	32
4.9	_x509_time Struct Reference	33
4.9.1	Detailed Description	33
4.9.2	Field Documentation	33
4.9.2.1	day	33
4.9.2.2	hour	33
4.9.2.3	min	33
4.9.2.4	mon	33
4.9.2.5	sec	33
4.9.2.6	year	34
4.10	aes_context Struct Reference	35
4.10.1	Detailed Description	35
4.10.2	Field Documentation	35
4.10.2.1	buf	35
4.10.2.2	nr	35
4.10.2.3	rk	35
4.11	agency_s Struct Reference	36
4.11.1	Detailed Description	36
4.11.2	Field Documentation	36
4.11.2.1	bluetooth	36
4.11.2.2	client	36
4.11.2.3	default_agentstatus	36
4.11.2.4	enable_security	37
4.11.2.5	filename	37
4.11.2.6	hostName	37
4.11.2.7	initInterps	37
4.11.2.8	known_host_filename	37
4.11.2.9	last_error	37
4.11.2.10	mc_platform	37

4.11.2.11	portno	38
4.11.2.12	portnoc	38
4.11.2.13	priv_key_filename	38
4.11.2.14	server	38
4.11.2.15	stack_size	38
4.11.2.16	threads	38
4.12	agent_datastate_s Struct Reference	39
4.12.1	Detailed Description	39
4.12.2	Field Documentation	39
4.12.2.1	agent_code	39
4.12.2.2	agent_code_ids	39
4.12.2.3	agent_codes	39
4.12.2.4	init_agent_status	40
4.12.2.5	number_of_tasks	40
4.12.2.6	persistent	40
4.12.2.7	progress_modifier	40
4.12.2.8	return_data	40
4.12.2.9	task_progress	40
4.12.2.10	tasks	40
4.12.2.11	xml_agent_root	41
4.12.2.12	xml_root	41
4.13	agent_mailbox_s Struct Reference	42
4.13.1	Detailed Description	42
4.13.2	Field Documentation	42
4.13.2.1	mail_queue	42
4.14	agent_s Struct Reference	43
4.14.1	Detailed Description	43
4.14.2	Field Documentation	43
4.14.2.1	agent_address	43
4.14.2.2	agent_interp	44
4.14.2.3	agent_persistent	44
4.14.2.4	agent_pipe_active	44
4.14.2.5	agent_pipe_ready_to_read	44
4.14.2.6	agent_ready_to_send	44
4.14.2.7	agent_script_ready	44
4.14.2.8	agent_status	44

4.14.2.9	agent_thread	45
4.14.2.10	agent_thread_id	45
4.14.2.11	agent_type	45
4.14.2.12	arrival_time	45
4.14.2.13	binary	45
4.14.2.14	connect_id	45
4.14.2.15	datastate	45
4.14.2.16	home	46
4.14.2.17	home_port	46
4.14.2.18	id	46
4.14.2.19	lock	46
4.14.2.20	mailbox	46
4.14.2.21	mc_platform	46
4.14.2.22	name	46
4.14.2.23	orphan	47
4.14.2.24	owner	47
4.14.2.25	return_data	47
4.14.2.26	run_lock	47
4.14.2.27	sender	47
4.14.2.28	wg_code	47
4.15	agent_task_s Struct Reference	48
4.15.1	Detailed Description	48
4.15.2	Field Documentation	48
4.15.2.1	agent_return_data	48
4.15.2.2	agent_variable_list	48
4.15.2.3	code_id	48
4.15.2.4	init_agent_status	49
4.15.2.5	num_saved_variables	49
4.15.2.6	number_of_elements	49
4.15.2.7	persistent	49
4.15.2.8	saved_variables	49
4.15.2.9	server_name	49
4.15.2.10	size_of_element_array	49
4.15.2.11	var_name	49
4.16	AP_GENERIC_s Struct Reference	51
4.16.1	Detailed Description	51

4.16.2	Field Documentation	51
4.16.2.1	none	51
4.17	arc4_context Struct Reference	52
4.17.1	Detailed Description	52
4.17.2	Field Documentation	52
4.17.2.1	m	52
4.17.2.2	x	52
4.17.2.3	y	52
4.18	barrier_node_s Struct Reference	53
4.18.1	Detailed Description	53
4.18.2	Field Documentation	53
4.18.2.1	cond	53
4.18.2.2	id	53
4.18.2.3	lock	53
4.18.2.4	num_registered	53
4.18.2.5	num_waiting	53
4.19	barrier_queue_s Struct Reference	54
4.19.1	Detailed Description	54
4.19.2	Field Documentation	54
4.19.2.1	list	54
4.19.2.2	lock	54
4.19.2.3	size	54
4.20	cmd_prompt_s Struct Reference	55
4.20.1	Detailed Description	55
4.20.2	Field Documentation	55
4.20.2.1	thread	55
4.21	command_s Struct Reference	56
4.21.1	Detailed Description	56
4.21.2	Field Documentation	56
4.21.2.1	args	56
4.21.2.2	index	56
4.21.2.3	num_args	56
4.22	connection_s Struct Reference	57
4.22.1	Detailed Description	57
4.22.2	Field Documentation	57
4.22.2.1	addr	57

4.22.2.2	AES_key	57
4.22.2.3	clientfd	57
4.22.2.4	connect_id	57
4.22.2.5	nonce	57
4.22.2.6	remote_hostname	58
4.22.2.7	serverfd	58
4.23	fipa_expression_s::content_u Union Reference	59
4.23.1	Detailed Description	59
4.23.2	Field Documentation	59
4.23.2.1	datetime	59
4.23.2.2	expression	59
4.23.2.3	number	59
4.23.2.4	string	59
4.23.2.5	word	59
4.24	des3_context Struct Reference	61
4.24.1	Detailed Description	61
4.24.2	Field Documentation	61
4.24.2.1	mode	61
4.24.2.2	sk	61
4.25	des_context Struct Reference	62
4.25.1	Detailed Description	62
4.25.2	Field Documentation	62
4.25.2.1	mode	62
4.25.2.2	sk	62
4.26	dhm_context Struct Reference	63
4.26.1	Detailed Description	63
4.26.2	Field Documentation	63
4.26.2.1	G	63
4.26.2.2	GX	63
4.26.2.3	GY	63
4.26.2.4	K	64
4.26.2.5	len	64
4.26.2.6	P	64
4.26.2.7	RP	64
4.26.2.8	X	64
4.27	dynstring_s Struct Reference	65

4.27.1 Detailed Description	65
4.27.2 Field Documentation	65
4.27.2.1 len	65
4.27.2.2 message	65
4.27.2.3 size	65
4.28 fipa_acl_envelope_Received_s Struct Reference	66
4.28.1 Detailed Description	66
4.28.2 Field Documentation	66
4.28.2.1 received_by	66
4.28.2.2 received_date	66
4.28.2.3 received_from	66
4.28.2.4 received_id	66
4.28.2.5 received_via	66
4.29 fipa_acl_envelope_s Struct Reference	68
4.29.1 Detailed Description	68
4.29.2 Field Documentation	68
4.29.2.1 num_params	68
4.29.2.2 params	68
4.30 fipa_acl_message_s Struct Reference	69
4.30.1 Detailed Description	69
4.30.2 Field Documentation	69
4.30.2.1 content	69
4.30.2.2 conversation_id	69
4.30.2.3 encoding	69
4.30.2.4 in_reply_to	70
4.30.2.5 language	70
4.30.2.6 ontology	70
4.30.2.7 performative	70
4.30.2.8 protocol	70
4.30.2.9 receiver	70
4.30.2.10 receiver_num	70
4.30.2.11 reply_by	71
4.30.2.12 reply_to	71
4.30.2.13 reply_with	71
4.30.2.14 sender	71
4.31 fipa_acl_Param_s Struct Reference	72

4.31.1 Detailed Description	72
4.31.2 Field Documentation	72
4.31.2.1 acl_representation	72
4.31.2.2 comments	72
4.31.2.3 date	72
4.31.2.4 from	72
4.31.2.5 intended_receiver	73
4.31.2.6 payload_encoding	73
4.31.2.7 payload_length	73
4.31.2.8 received	73
4.31.2.9 to	73
4.32 fipa_agent_identifier_s Struct Reference	74
4.32.1 Detailed Description	74
4.32.2 Field Documentation	74
4.32.2.1 addresses	74
4.32.2.2 name	74
4.32.2.3 resolvers	74
4.33 fipa_agent_identifier_set_s Struct Reference	75
4.33.1 Detailed Description	75
4.33.2 Field Documentation	75
4.33.2.1 fipa_agent_identifiers	75
4.33.2.2 num	75
4.33.2.3 retain_order	75
4.34 fipa_comm_action_t Struct Reference	76
4.34.1 Detailed Description	76
4.34.2 Field Documentation	76
4.34.2.1 callback	76
4.34.2.2 check_list	76
4.34.2.3 next	76
4.34.2.4 reply	76
4.34.2.5 type	76
4.35 fipa_comm_message_check_t Struct Reference	77
4.35.1 Detailed Description	77
4.35.2 Field Documentation	77
4.35.2.1 macro	77
4.35.2.2 next	77

4.35.2.3	type	77
4.36	fipa_comm_performative_t Struct Reference	78
4.36.1	Detailed Description	78
4.36.2	Field Documentation	78
4.36.2.1	action_list	78
4.36.2.2	default_reply	78
4.37	fipa_comm_protocol_cn_t Struct Reference	79
4.37.1	Detailed Description	79
4.37.2	Field Documentation	79
4.37.2.1	cfp_request	79
4.37.2.2	contract_func	79
4.37.2.3	proposal_func	79
4.37.2.4	queue	79
4.37.2.5	replies	79
4.37.2.6	require_inform	79
4.37.2.7	time_out	80
4.38	fipa_comm_protocol_t Struct Reference	81
4.38.1	Detailed Description	81
4.38.2	Field Documentation	81
4.38.2.1	conversation_id	81
4.38.2.2	error	81
4.38.2.3	info	81
4.38.2.4	network	81
4.38.2.5	next	81
4.38.2.6	state	81
4.38.2.7	type	82
4.39	fipa_comm_reply_t Struct Reference	83
4.39.1	Detailed Description	83
4.39.2	Field Documentation	83
4.39.2.1	content	83
4.39.2.2	type	83
4.40	fipa_comm_t Struct Reference	84
4.40.1	Detailed Description	84
4.40.2	Field Documentation	84
4.40.2.1	agent	84
4.40.2.2	agent_address	84

4.40.2.3	agent_name	84
4.40.2.4	debug	84
4.40.2.5	default_reply	84
4.40.2.6	error	84
4.40.2.7	pCallbacks	85
4.40.2.8	performative	85
4.40.2.9	protocol	85
4.41	fipa_DateTime_s Struct Reference	86
4.41.1	Detailed Description	86
4.41.2	Field Documentation	86
4.41.2.1	day	86
4.41.2.2	hour	86
4.41.2.3	is_utc	86
4.41.2.4	millisecond	86
4.41.2.5	minute	86
4.41.2.6	month	87
4.41.2.7	second	87
4.41.2.8	sign	87
4.41.2.9	year	87
4.42	fipa_expression_s Struct Reference	88
4.42.1	Detailed Description	88
4.42.2	Field Documentation	88
4.42.2.1	content	88
4.42.2.2	type	88
4.43	fipa_list_t Struct Reference	89
4.43.1	Detailed Description	89
4.43.2	Field Documentation	89
4.43.2.1	data	89
4.43.2.2	next	89
4.44	fipa_message_string_s Struct Reference	90
4.44.1	Detailed Description	90
4.44.2	Field Documentation	90
4.44.2.1	message	90
4.44.2.2	parse	90
4.45	fipa_number_s Struct Reference	91
4.45.1	Detailed Description	91

4.45.2	Field Documentation	91
4.45.2.1	str	91
4.46	fipa_string_s Struct Reference	92
4.46.1	Detailed Description	92
4.46.2	Field Documentation	92
4.46.2.1	content	92
4.47	fipa_url_s Struct Reference	93
4.47.1	Detailed Description	93
4.47.2	Field Documentation	93
4.47.2.1	str	93
4.48	fipa_url_sequence_s Struct Reference	94
4.48.1	Detailed Description	94
4.48.2	Field Documentation	94
4.48.2.1	num	94
4.48.2.2	urls	94
4.49	fipa_word_s Struct Reference	95
4.49.1	Detailed Description	95
4.49.2	Field Documentation	95
4.49.2.1	content	95
4.50	foo_c Class Reference	96
4.50.1	Detailed Description	96
4.50.2	Constructor & Destructor Documentation	96
4.50.2.1	foo_c	96
4.50.2.2	~foo_c	96
4.50.3	Member Function Documentation	96
4.50.3.1	get_bar	96
4.50.3.2	get_barfoo	97
4.50.3.3	get_foo	97
4.50.3.4	get_global	97
4.50.3.5	set_bar	97
4.50.3.6	set_foo	97
4.50.3.7	setfoobar	97
4.50.4	Field Documentation	97
4.50.4.1	bar	97
4.50.4.2	barfoo	97
4.50.4.3	foo	98

4.50.4.4	global	98
4.51	foo_s Struct Reference	99
4.51.1	Detailed Description	99
4.51.2	Constructor & Destructor Documentation	99
4.51.2.1	foo_s	99
4.51.2.2	~foo_s	99
4.51.3	Member Function Documentation	99
4.51.3.1	get_bar	99
4.51.3.2	get_foo	99
4.51.3.3	set_bar	100
4.51.3.4	set_foo	100
4.51.4	Field Documentation	100
4.51.4.1	bar	100
4.51.4.2	foo	100
4.52	havege_state Struct Reference	101
4.52.1	Detailed Description	101
4.52.2	Field Documentation	101
4.52.2.1	offset	101
4.52.2.2	pool	101
4.52.2.3	PT1	101
4.52.2.4	PT2	101
4.52.2.5	WALK	101
4.53	host_id_s Struct Reference	103
4.53.1	Detailed Description	103
4.53.2	Field Documentation	103
4.53.2.1	hostname	103
4.53.2.2	port	103
4.54	hr_time Struct Reference	104
4.54.1	Detailed Description	104
4.54.2	Field Documentation	104
4.54.2.1	opaque	104
4.55	interpreter_variable_data_s Struct Reference	105
4.55.1	Detailed Description	105
4.55.2	Field Documentation	105
4.55.2.1	array_dim	105
4.55.2.2	array_extent	105

4.55.2.3	data	105
4.55.2.4	data_type	106
4.55.2.5	name	106
4.55.2.6	size	106
4.56	list_s Struct Reference	107
4.56.1	Detailed Description	107
4.56.2	Field Documentation	107
4.56.2.1	listhead	107
4.56.2.2	size	107
4.57	listNode_s Struct Reference	108
4.57.1	Detailed Description	108
4.57.2	Field Documentation	108
4.57.2.1	next	108
4.57.2.2	node_data	108
4.58	mc_platform_s Struct Reference	109
4.58.1	Detailed Description	109
4.58.2	Field Documentation	110
4.58.2.1	acc	110
4.58.2.2	agency	110
4.58.2.3	agent_queue	110
4.58.2.4	ams	110
4.58.2.5	asm_message_queue	110
4.58.2.6	barrier_queue	110
4.58.2.7	bluetooth	110
4.58.2.8	client_thread_arg	111
4.58.2.9	cmd_prompt	111
4.58.2.10	connection_queue	111
4.58.2.11	default_agentstatus	111
4.58.2.12	df	111
4.58.2.13	err	111
4.58.2.14	giant	111
4.58.2.15	giant_cond	111
4.58.2.16	giant_lock	112
4.58.2.17	hostname	112
4.58.2.18	initInterps	112
4.58.2.19	interp_options	112

4.58.2.20	interpreter_queue	112
4.58.2.21	listen_thread_arg	112
4.58.2.22	MC_signal	112
4.58.2.23	MC_signal_cond	112
4.58.2.24	MC_signal_lock	113
4.58.2.25	MC_steer_command	113
4.58.2.26	MC_steer_cond	113
4.58.2.27	MC_steer_lock	113
4.58.2.28	MC_sync_cond	113
4.58.2.29	MC_sync_lock	113
4.58.2.30	message_queue	113
4.58.2.31	port	113
4.58.2.32	private_key	114
4.58.2.33	quit	114
4.58.2.34	quit_cond	114
4.58.2.35	quit_lock	114
4.58.2.36	sockfd	114
4.58.2.37	stack_size	114
4.58.2.38	syncList	114
4.59	mc_rwlock_s Struct Reference	116
4.59.1	Detailed Description	116
4.59.2	Field Documentation	116
4.59.2.1	cond	116
4.59.2.2	lock	116
4.59.2.3	num_readers	116
4.59.2.4	write_flag	116
4.59.2.5	write_request	116
4.60	MCAgencyOptions_s Struct Reference	118
4.60.1	Detailed Description	118
4.60.2	Field Documentation	118
4.60.2.1	bluetooth	118
4.60.2.2	ch_options	118
4.60.2.3	default_agent_status	118
4.60.2.4	enable_security	118
4.60.2.5	initInterps	119
4.60.2.6	known_host_filename	119

4.60.2.7	modified	119
4.60.2.8	passphrase	119
4.60.2.9	priv_key_filename	119
4.60.2.10	stack_size	119
4.60.2.11	threads	119
4.61	md2_context Struct Reference	120
4.61.1	Detailed Description	120
4.61.2	Field Documentation	120
4.61.2.1	buffer	120
4.61.2.2	cksum	120
4.61.2.3	ipad	120
4.61.2.4	left	120
4.61.2.5	opad	120
4.61.2.6	state	121
4.62	md4_context Struct Reference	122
4.62.1	Detailed Description	122
4.62.2	Field Documentation	122
4.62.2.1	buffer	122
4.62.2.2	ipad	122
4.62.2.3	opad	122
4.62.2.4	state	122
4.62.2.5	total	122
4.63	md5_context Struct Reference	124
4.63.1	Detailed Description	124
4.63.2	Field Documentation	124
4.63.2.1	buffer	124
4.63.2.2	ipad	124
4.63.2.3	opad	124
4.63.2.4	state	124
4.63.2.5	total	125
4.64	message_s Struct Reference	126
4.64.1	Detailed Description	126
4.64.2	Field Documentation	126
4.64.2.1	addr	126
4.64.2.2	agent_xml_flag	126
4.64.2.3	connect_id	126

4.64.2.4	from_address	127
4.64.2.5	http_type	127
4.64.2.6	isHTTP	127
4.64.2.7	message_body	127
4.64.2.8	message_id	127
4.64.2.9	message_type	127
4.64.2.10	sending_agent_name	127
4.64.2.11	target	127
4.64.2.12	to_address	128
4.64.2.13	update_name	128
4.64.2.14	update_num	128
4.64.2.15	xml_payload	128
4.64.2.16	xml_root	128
4.65	message_send_arg_s Struct Reference	129
4.65.1	Detailed Description	129
4.65.2	Field Documentation	129
4.65.2.1	mc_platform	129
4.65.2.2	message	129
4.65.2.3	privatekey	129
4.66	mpi Struct Reference	130
4.66.1	Detailed Description	130
4.66.2	Field Documentation	130
4.66.2.1	n	130
4.66.2.2	p	130
4.66.2.3	s	130
4.67	mtp_http_content_s Struct Reference	132
4.67.1	Detailed Description	132
4.67.2	Field Documentation	132
4.67.2.1	content_type	132
4.67.2.2	data	132
4.68	mtp_http_s Struct Reference	133
4.68.1	Detailed Description	133
4.68.2	Field Documentation	133
4.68.2.1	accept_ranges	133
4.68.2.2	boundary	133
4.68.2.3	cache_control	133

4.68.2.4	connection	134
4.68.2.5	content	134
4.68.2.6	content_length	134
4.68.2.7	content_type	134
4.68.2.8	date	134
4.68.2.9	header_length	134
4.68.2.10	host	134
4.68.2.11	http_performative	134
4.68.2.12	http_status_code	135
4.68.2.13	http_version	135
4.68.2.14	message_parts	135
4.68.2.15	mime_version	135
4.68.2.16	response_code	135
4.68.2.17	response_string	135
4.68.2.18	return_code	135
4.68.2.19	server	135
4.68.2.20	target	135
4.68.2.21	user_agent	136
4.69	mxml_attr_s Struct Reference	137
4.69.1	Detailed Description	137
4.69.2	Field Documentation	137
4.69.2.1	name	137
4.69.2.2	value	137
4.70	mxml_custom_s Struct Reference	138
4.70.1	Detailed Description	138
4.70.2	Field Documentation	138
4.70.2.1	data	138
4.70.2.2	destroy	138
4.71	mxml_fdbuf_s Struct Reference	139
4.71.1	Detailed Description	139
4.71.2	Field Documentation	139
4.71.2.1	buffer	139
4.71.2.2	current	139
4.71.2.3	end	139
4.71.2.4	fd	139
4.72	mxml_index_s Struct Reference	140

4.72.1 Detailed Description	140
4.72.2 Field Documentation	140
4.72.2.1 alloc_nodes	140
4.72.2.2 attr	140
4.72.2.3 cur_node	140
4.72.2.4 nodes	140
4.72.2.5 num_nodes	140
4.73 mxml_node_s Struct Reference	142
4.73.1 Detailed Description	142
4.73.2 Field Documentation	142
4.73.2.1 child	142
4.73.2.2 last_child	142
4.73.2.3 next	142
4.73.2.4 parent	142
4.73.2.5 prev	143
4.73.2.6 type	143
4.73.2.7 value	143
4.74 mxml_text_s Struct Reference	144
4.74.1 Detailed Description	144
4.74.2 Field Documentation	144
4.74.2.1 string	144
4.74.2.2 whitespace	144
4.75 mxml_value_s Struct Reference	145
4.75.1 Detailed Description	145
4.75.2 Field Documentation	145
4.75.2.1 attrs	145
4.75.2.2 name	145
4.75.2.3 num_attrs	145
4.76 mxml_value_u Union Reference	146
4.76.1 Detailed Description	146
4.76.2 Field Documentation	146
4.76.2.1 custom	146
4.76.2.2 element	146
4.76.2.3 integer	146
4.76.2.4 opaque	146
4.76.2.5 real	146

4.76.2.6	text	147
4.77	options Struct Reference	148
4.77.1	Detailed Description	148
4.77.2	Field Documentation	148
4.77.2.1	buffer_size	148
4.77.2.2	command	148
4.77.2.3	conn_timeout	148
4.77.2.4	debug_level	148
4.77.2.5	force_cipher	149
4.77.2.6	iomode	149
4.77.2.7	max_bytes	149
4.77.2.8	max_connections	149
4.77.2.9	opmode	149
4.77.2.10	server_name	149
4.77.2.11	server_port	149
4.77.2.12	session_lifetime	149
4.77.2.13	session_reuse	149
4.78	rsa_context Struct Reference	151
4.78.1	Detailed Description	151
4.78.2	Field Documentation	151
4.78.2.1	D	151
4.78.2.2	DP	151
4.78.2.3	DQ	152
4.78.2.4	E	152
4.78.2.5	f_rng	152
4.78.2.6	hash_id	152
4.78.2.7	len	152
4.78.2.8	N	152
4.78.2.9	P	153
4.78.2.10	p_rng	153
4.78.2.11	padding	153
4.78.2.12	Q	153
4.78.2.13	QP	153
4.78.2.14	RN	153
4.78.2.15	RP	154
4.78.2.16	RQ	154

4.78.2.17 ver	154
4.79 sha1_context Struct Reference	155
4.79.1 Detailed Description	155
4.79.2 Field Documentation	155
4.79.2.1 buffer	155
4.79.2.2 ipad	155
4.79.2.3 opad	155
4.79.2.4 state	155
4.79.2.5 total	156
4.80 sha2_context Struct Reference	157
4.80.1 Detailed Description	157
4.80.2 Field Documentation	157
4.80.2.1 buffer	157
4.80.2.2 ipad	157
4.80.2.3 is224	157
4.80.2.4 opad	157
4.80.2.5 state	158
4.80.2.6 total	158
4.81 sha4_context Struct Reference	159
4.81.1 Detailed Description	159
4.81.2 Field Documentation	159
4.81.2.1 buffer	159
4.81.2.2 ipad	159
4.81.2.3 is384	159
4.81.2.4 opad	159
4.81.2.5 state	160
4.81.2.6 total	160
4.82 stationary_agent_info_s Struct Reference	161
4.82.1 Detailed Description	161
4.82.2 Field Documentation	161
4.82.2.1 agency	161
4.82.2.2 agent	161
4.82.2.3 args	161
4.82.2.4 attr	161
4.82.2.5 thread	161
4.83 syncList_s Struct Reference	162

4.83.1 Detailed Description	162
4.83.2 Field Documentation	162
4.83.2.1 giant_lock	162
4.83.2.2 list	162
4.83.2.3 lock	162
4.83.2.4 size	162
4.84 syncListNode_s Struct Reference	163
4.84.1 Detailed Description	163
4.84.2 Field Documentation	163
4.84.2.1 cond	163
4.84.2.2 id	163
4.84.2.3 lock	163
4.84.2.4 sem	163
4.84.2.5 signalled	163
5 File Documentation	165
5.1 /home/dko/Projects/mobilec/src/acc.c File Reference	165
5.1.1 Define Documentation	167
5.1.1.1 BACKLOG	167
5.1.1.2 BUFLN	167
5.1.1.3 CONN_THREADS	167
5.1.1.4 CONNECT_THREAD_EXIT	167
5.1.1.5 UDPPORT	167
5.1.2 Function Documentation	167
5.1.2.1 acc_connection_Thread	167
5.1.2.2 acc_Destroy	168
5.1.2.3 acc_Initialize	168
5.1.2.4 acc_MessageHandlerThread	168
5.1.2.5 acc_Start	168
5.1.2.6 acc_Thread	169
5.1.2.7 auth_conn_rece_key	169
5.1.2.8 listen_Thread	169
5.1.2.9 udplisten_Thread	169
5.2 /home/dko/Projects/mobilec/src/agent.c File Reference	170
5.2.1 Function Documentation	170
5.2.1.1 agent_AddPersistentVariable	170
5.2.1.2 agent_ChScriptInitVar	170

5.2.1.3	agent_Copy	171
5.2.1.4	agent_Destroy	171
5.2.1.5	agent_Initialize	171
5.2.1.6	agent_New	172
5.2.1.7	agent_NewBinary	172
5.2.1.8	agent_RunChScript	172
5.2.1.9	agent_RunChScriptThread	172
5.3	/home/dko/Projects/mobilec/src/agent_datastate.c File Reference	173
5.3.1	Function Documentation	173
5.3.1.1	agent_datastate_Copy	173
5.3.1.2	agent_datastate_Destroy	173
5.3.1.3	agent_datastate_New	173
5.4	/home/dko/Projects/mobilec/src/agent_mailbox.c File Reference	174
5.4.1	Function Documentation	174
5.4.1.1	agent_mailbox_Copy	174
5.4.1.2	agent_mailbox_Destroy	174
5.4.1.3	agent_mailbox_New	174
5.4.1.4	agent_mailbox_Post	174
5.4.1.5	agent_mailbox_Retrieve	174
5.4.1.6	agent_mailbox_WaitRetrieve	175
5.5	/home/dko/Projects/mobilec/src/agent_return_data.c File Reference	176
5.5.1	Function Documentation	176
5.5.1.1	interpreter_variable_data_Copy	176
5.5.1.2	interpreter_variable_data_Destroy	176
5.5.1.3	interpreter_variable_data_Initialize	176
5.5.1.4	interpreter_variable_data_InitializeFromAgent	177
5.5.1.5	interpreter_variable_data_New	177
5.6	/home/dko/Projects/mobilec/src/agent_task.c File Reference	178
5.6.1	Function Documentation	178
5.6.1.1	agent_task_Copy	178
5.6.1.2	agent_task_Destroy	178
5.6.1.3	agent_task_New	178
5.7	/home/dko/Projects/mobilec/src/ams.c File Reference	179
5.7.1	Function Documentation	179
5.7.1.1	ams_Destroy	179
5.7.1.2	ams_Initialize	179

5.7.1.3	ams_ManageAgentList	179
5.7.1.4	ams_Print	180
5.7.1.5	ams_Start	180
5.7.1.6	ams_Thread	180
5.8	/home/dko/Projects/mobilec/src/barrier.c File Reference	181
5.8.1	Function Documentation	181
5.8.1.1	barrier_node_Destroy	181
5.8.1.2	barrier_node_Initialize	181
5.8.1.3	barrier_queue_Add	181
5.8.1.4	barrier_queue_Delete	182
5.8.1.5	barrier_queue_Destroy	182
5.8.1.6	barrier_queue_Get	182
5.8.1.7	barrier_queue_New	182
5.8.1.8	barrier_queue_Pop	182
5.9	/home/dko/Projects/mobilec/src/cmd_prompt.c File Reference	183
5.9.1	Function Documentation	183
5.9.1.1	cmd_prompt_Destroy	183
5.9.1.2	cmd_prompt_Initialize	183
5.9.1.3	cmd_prompt_Start	184
5.9.1.4	cmd_prompt_Thread	184
5.9.1.5	dealloc_command	184
5.9.1.6	exec_command	184
5.9.1.7	handler_COMPOSE_SEND	184
5.9.1.8	handler_FLUSH_AGENTS	184
5.9.1.9	handler_HELP	184
5.9.1.10	handler_PRINT_CONNECTLIST	185
5.9.1.11	handler_PRINTLIST_AGENTS	185
5.9.1.12	handler_PRINTLIST_MESSAGE	185
5.9.1.13	handler_QUIT	185
5.9.1.14	handler_SEND	185
5.9.1.15	process_command	185
5.9.1.16	split_string	185
5.10	/home/dko/Projects/mobilec/src/connection.c File Reference	186
5.10.1	Function Documentation	186
5.10.1.1	connection_Copy	186
5.10.1.2	connection_Destroy	186

5.10.1.3	connection_New	186
5.11	/home/dko/Projects/mobilec/src/data_structures.c File Reference	187
5.11.1	Function Documentation	187
5.11.1.1	agent_queue_Flush	187
5.11.1.2	AP_GENERIC_Copy	187
5.11.1.3	AP_GENERIC_Destroy	187
5.11.1.4	AP_QUEUE_SEARCH_TEMPLATE	188
5.11.1.5	AP_QUEUE_SEARCH_TEMPLATE	188
5.11.1.6	AP_QUEUE_STD_DEFN_TEMPLATE	188
5.11.1.7	AP_QUEUE_STD_DEFN_TEMPLATE	188
5.11.1.8	AP_QUEUE_STD_DEFN_TEMPLATE	188
5.12	/home/dko/Projects/mobilec/src/df.c File Reference	189
5.12.1	Define Documentation	189
5.12.1.1	REQUEST	189
5.12.2	Function Documentation	190
5.12.2.1	df_Add	190
5.12.2.2	df_AddRequest	190
5.12.2.3	df_Destroy	190
5.12.2.4	df_Initialize	190
5.12.2.5	df_node_Destroy	190
5.12.2.6	df_ProcessRequest	191
5.12.2.7	df_request_list_Destroy	191
5.12.2.8	df_request_list_New	191
5.12.2.9	df_request_list_node_Destroy	191
5.12.2.10	df_request_list_node_New	191
5.12.2.11	df_request_list_Pop	191
5.12.2.12	df_request_search_Destroy	191
5.12.2.13	df_request_search_New	192
5.12.2.14	df_SearchForService	192
5.12.2.15	df_Start	192
5.12.2.16	df_Thread	192
5.12.2.17	request_handler_DEREGISTER	192
5.12.2.18	request_handler_REGISTER	192
5.12.2.19	request_handler_SEARCH	192
5.12.2.20	request_handler_SUBSCRIBE	193
5.13	/home/dko/Projects/mobilec/src/dynstring.c File Reference	194

5.13.1	Function Documentation	194
5.13.1.1	dynstring_Append	194
5.13.1.2	dynstring_Destroy	194
5.13.1.3	dynstring_New	194
5.14	/home/dko/Projects/mobilec/src/fipa_acl.c File Reference	195
5.14.1	Define Documentation	196
5.14.1.1	FREEMEM	196
5.14.2	Function Documentation	197
5.14.2.1	fipa_acl_Compose	197
5.14.2.2	fipa_acl_message_Copy	197
5.14.2.3	fipa_acl_message_Destroy	197
5.14.2.4	fipa_acl_message_New	197
5.14.2.5	fipa_acl_Parse	197
5.14.2.6	fipa_agent_identifer_Compose	198
5.14.2.7	fipa_agent_identifer_Copy	198
5.14.2.8	fipa_agent_identifer_Destroy	198
5.14.2.9	fipa_agent_identifer_New	198
5.14.2.10	fipa_agent_identifer_Parse	198
5.14.2.11	fipa_agent_identifer_set_Compose	199
5.14.2.12	fipa_agent_identifer_set_Copy	199
5.14.2.13	fipa_agent_identifer_set_Destroy	199
5.14.2.14	fipa_agent_identifer_set_New	199
5.14.2.15	fipa_agent_identifer_set_Parse	199
5.14.2.16	fipa_CheckNextToken	199
5.14.2.17	fipa_DateTime_Compose	200
5.14.2.18	fipa_DateTime_Copy	200
5.14.2.19	fipa_DateTime_Destroy	200
5.14.2.20	fipa_DateTime_New	200
5.14.2.21	fipa_datetime_Parse	200
5.14.2.22	fipa_expression_Compose	200
5.14.2.23	fipa_expression_Copy	201
5.14.2.24	fipa_expression_Destroy	201
5.14.2.25	fipa_expression_New	201
5.14.2.26	fipa_expression_Parse	201
5.14.2.27	fipa_GetAtom	201
5.14.2.28	fipa_GetNextWord	201

5.14.2.29	fipa_GetWholeToken	202
5.14.2.30	fipa_message_parameter_Parse	202
5.14.2.31	fipa_message_string_Copy	202
5.14.2.32	fipa_message_string_Destroy	202
5.14.2.33	fipa_message_string_New	202
5.14.2.34	fipa_message_type_Parse	202
5.14.2.35	fipa_number_Compose	203
5.14.2.36	fipa_number_Copy	203
5.14.2.37	fipa_number_Destroy	203
5.14.2.38	fipa_number_New	203
5.14.2.39	fipa_performative_Compose	203
5.14.2.40	fipa_protocol_Compose	203
5.14.2.41	fipa_protocol_type_Parse	204
5.14.2.42	fipa_Reply	204
5.14.2.43	fipa_string_Compose	204
5.14.2.44	fipa_string_Copy	204
5.14.2.45	fipa_string_Destroy	204
5.14.2.46	fipa_string_New	205
5.14.2.47	fipa_string_Parse	205
5.14.2.48	fipa_url_Compose	205
5.14.2.49	fipa_url_Copy	205
5.14.2.50	fipa_url_Destroy	205
5.14.2.51	fipa_url_New	205
5.14.2.52	fipa_url_Parse	205
5.14.2.53	fipa_url_sequence_Compose	206
5.14.2.54	fipa_url_sequence_Copy	206
5.14.2.55	fipa_url_sequence_Destroy	206
5.14.2.56	fipa_url_sequence_New	206
5.14.2.57	fipa_url_sequence_Parse	206
5.14.2.58	fipa_word_Compose	206
5.14.2.59	fipa_word_Copy	206
5.14.2.60	fipa_word_Destroy	207
5.14.2.61	fipa_word_New	207
5.14.2.62	fipa_word_Parse	207
5.15	/home/dko/Projects/mobilec/src/fipa_envelope.c File Reference	208
5.15.1	Function Documentation	209

5.15.1.1	fipa_acl_envelope_Copy	209
5.15.1.2	fipa_acl_envelope_Destroy	209
5.15.1.3	fipa_acl_envelope_New	209
5.15.1.4	fipa_acl_envelope_Received_Copy	209
5.15.1.5	fipa_acl_envelope_Received_Destroy	209
5.15.1.6	fipa_acl_envelope_Received_New	210
5.15.1.7	fipa_acl_Param_Copy	210
5.15.1.8	fipa_acl_Param_Destroy	210
5.15.1.9	fipa_acl_Param_New	210
5.15.1.10	fipa_envelope_Compose	210
5.15.1.11	fipa_envelope_Compose__acl_representation	211
5.15.1.12	fipa_envelope_Compose__date	211
5.15.1.13	fipa_envelope_Compose__envelope	211
5.15.1.14	fipa_envelope_Compose__from	211
5.15.1.15	fipa_envelope_Compose__intended_receiver	211
5.15.1.16	fipa_envelope_Compose__params	211
5.15.1.17	fipa_envelope_Compose__payload_encoding	212
5.15.1.18	fipa_envelope_Compose__to	212
5.15.1.19	fipa_envelope_HandleAclRepresentation	212
5.15.1.20	fipa_envelope_HandleComments	212
5.15.1.21	fipa_envelope_HandleDate	212
5.15.1.22	fipa_envelope_HandleEnvelope	213
5.15.1.23	fipa_envelope_HandleFrom	213
5.15.1.24	fipa_envelope_HandleIntendedReceiver	213
5.15.1.25	fipa_envelope_HandleParams	213
5.15.1.26	fipa_envelope_HandlePayloadEncoding	213
5.15.1.27	fipa_envelope_HandlePayloadLength	214
5.15.1.28	fipa_envelope_HandleReceived	214
5.15.1.29	fipa_envelope_HandleTo	214
5.15.1.30	fipa_envelope_Parse	214
5.15.1.31	fipa_envelope_ParseAddresses	214
5.15.1.32	fipa_envelope_ParseAgentIdentifier	215
5.15.1.33	fipa_envelope_ParseResolvers	215
5.16	/home/dko/Projects/mobilec/src/include/acc.h File Reference	216
5.16.1	Function Documentation	216
5.16.1.1	acc_connection_Thread	216

5.16.1.2	acc_Destroy	217
5.16.1.3	acc_MessageHandlerThread	217
5.16.1.4	acc_Start	217
5.16.1.5	acc_Thread	217
5.16.1.6	listen_Thread	217
5.16.1.7	STRUCT	218
5.16.1.8	STRUCT	218
5.16.1.9	udplisten_Thread	218
5.16.2	Variable Documentation	218
5.16.2.1	addr	218
5.16.2.2	client_fd	218
5.16.2.3	port	218
5.16.2.4	server_fd	218
5.17	/home/dko/Projects/mobilec/src/include/agent.h File Reference	219
5.17.1	Define Documentation	219
5.17.1.1	AGENT_T	219
5.17.2	Typedef Documentation	220
5.17.2.1	agent_p	220
5.17.2.2	agent_t	220
5.17.2.3	MCAgent_t	220
5.17.3	Function Documentation	220
5.17.3.1	agent_AddPersistentVariable	220
5.17.3.2	agent_ChScriptInitVar	220
5.17.3.3	agent_Copy	221
5.17.3.4	agent_Destroy	221
5.17.3.5	agent_Initialize	221
5.17.3.6	agent_New	221
5.17.3.7	agent_NewBinary	222
5.17.3.8	agent_RunChScript	222
5.17.3.9	agent_RunChScriptThread	222
5.18	/home/dko/Projects/mobilec/src/include/agent_datastate.h File Reference	223
5.18.1	Typedef Documentation	223
5.18.1.1	agent_datastate_p	223
5.18.1.2	agent_datastate_t	223
5.18.2	Function Documentation	223
5.18.2.1	agent_datastate_Copy	223

5.18.2.2	agent_datastate_Destroy	223
5.18.2.3	agent_datastate_New	224
5.19	/home/dko/Projects/mobilec/src/include/agent_lib.h File Reference	225
5.19.1	Function Documentation	226
5.19.1.1	MC_AclAddReceiver_chdl	226
5.19.1.2	MC_AclAddReplyTo_chdl	226
5.19.1.3	MC_AclDestroy_chdl	226
5.19.1.4	MC_AclGetContent_chdl	227
5.19.1.5	MC_AclGetConversationID_chdl	227
5.19.1.6	MC_AclGetPerformative_chdl	227
5.19.1.7	MC_AclGetProtocol_chdl	227
5.19.1.8	MC_AclGetSender_chdl	227
5.19.1.9	MC_AclNew_chdl	227
5.19.1.10	MC_AclPost_chdl	227
5.19.1.11	MC_AclReply_chdl	228
5.19.1.12	MC_AclRetrieve_chdl	228
5.19.1.13	MC_AclSend_chdl	228
5.19.1.14	MC_AclSetContent_chdl	228
5.19.1.15	MC_AclSetConversationID_chdl	228
5.19.1.16	MC_AclSetPerformative_chdl	228
5.19.1.17	MC_AclSetProtocol_chdl	228
5.19.1.18	MC_AclSetSender_chdl	229
5.19.1.19	MC_AclWaitRetrieve_chdl	229
5.19.1.20	MC_AddAgent_chdl	229
5.19.1.21	MC_AgentAddTask_chdl	229
5.19.1.22	MC_AgentVariableRetrieve_chdl	229
5.19.1.23	MC_AgentVariableSave_chdl	229
5.19.1.24	MC_Barrier_chdl	229
5.19.1.25	MC_BarrierDelete_chdl	230
5.19.1.26	MC_BarrierInit_chdl	230
5.19.1.27	MC_CallAgentFunc_chdl	230
5.19.1.28	MC_ComposeAgent_chdl	230
5.19.1.29	MC_ComposeAgentFromFile_chdl	230
5.19.1.30	MC_ComposeAgentFromFileWithWorkgroup_chdl	230
5.19.1.31	MC_ComposeAgentWithWorkgroup_chdl	230
5.19.1.32	MC_CondBroadcast_chdl	231

5.19.1.33 MC_CondReset_chdl	231
5.19.1.34 MC_CondSignal_chdl	231
5.19.1.35 MC_CondWait_chdl	231
5.19.1.36 MC_DeleteAgent_chdl	231
5.19.1.37 MC_DeleteAgentWG_chdl	231
5.19.1.38 MC_DeregisterService_chdl	231
5.19.1.39 MC_DestroyServiceSearchResult_chdl	232
5.19.1.40 MC_End_chdl	232
5.19.1.41 MC_FindAgentByID_chdl	232
5.19.1.42 MC_FindAgentByName_chdl	232
5.19.1.43 MC_GetAgentID_chdl	232
5.19.1.44 MC_GetAgentName_chdl	232
5.19.1.45 MC_GetAgentNumTasks_chdl	232
5.19.1.46 MC_GetAgentStatus_chdl	233
5.19.1.47 MC_GetAgentXMLString_chdl	233
5.19.1.48 MC_GetTimeOfDay_chdl	233
5.19.1.49 MC_HaltAgency_chdl	233
5.19.1.50 MC_MigrateAgent_chdl	233
5.19.1.51 MC_MutexLock_chdl	233
5.19.1.52 MC_MutexUnlock_chdl	233
5.19.1.53 MC_PrintAgentCode_chdl	234
5.19.1.54 MC_RegisterService_chdl	234
5.19.1.55 MC_ResumeAgency_chdl	234
5.19.1.56 MC_RetrieveAgent_chdl	234
5.19.1.57 MC_RetrieveAgentCode_chdl	234
5.19.1.58 MC_SaveData_chdl	234
5.19.1.59 MC_SearchForService_chdl	234
5.19.1.60 MC_SemaphorePost_chdl	235
5.19.1.61 MC_SemaphoreWait_chdl	235
5.19.1.62 MC_SendAgentMigrationMessage_chdl	235
5.19.1.63 MC_SendAgentMigrationMessageFile_chdl	235
5.19.1.64 MC_SendSteerCommand_chdl	235
5.19.1.65 MC_SetAgentStatus_chdl	235
5.19.1.66 MC_SetDefaultAgentStatus_chdl	235
5.19.1.67 MC_SyncDelete_chdl	236
5.19.1.68 MC_SyncInit_chdl	236

5.19.1.69	MC_TerminateAgent_chdl	236
5.19.1.70	MC_TerminateAgentWG_chdl	236
5.20	/home/dko/Projects/mobilec/src/include/agent_mailbox.h File Reference	237
5.20.1	Typedef Documentation	237
5.20.1.1	agent_mailbox_p	237
5.20.1.2	agent_mailbox_t	237
5.20.2	Function Documentation	237
5.20.2.1	agent_mailbox_Copy	237
5.20.2.2	agent_mailbox_Destroy	237
5.20.2.3	agent_mailbox_New	237
5.20.2.4	agent_mailbox_Post	238
5.20.2.5	agent_mailbox_Retrieve	238
5.20.2.6	agent_mailbox_WaitRetrieve	238
5.21	/home/dko/Projects/mobilec/src/include/agent_task.h File Reference	239
5.21.1	Typedef Documentation	239
5.21.1.1	agent_task_p	239
5.21.1.2	agent_task_t	239
5.21.2	Function Documentation	239
5.21.2.1	agent_task_Copy	239
5.21.2.2	agent_task_Destroy	239
5.21.2.3	agent_task_New	240
5.22	/home/dko/Projects/mobilec/src/include/ams.h File Reference	241
5.22.1	Function Documentation	241
5.22.1.1	ams_Destroy	241
5.22.1.2	ams_ManageAgentList	241
5.22.1.3	ams_Print	241
5.22.1.4	ams_RemoveFinishedAgents	241
5.22.1.5	ams_Start	241
5.22.1.6	ams_Thread	241
5.22.1.7	STRUCT	242
5.23	/home/dko/Projects/mobilec/src/include/ap_queue_template.h File Reference	243
5.23.1	Define Documentation	243
5.23.1.1	AP_QUEUE_DECL_TEMPLATE	243
5.23.1.2	AP_QUEUE_GENERIC_DECL_TEMPLATE	244
5.23.1.3	AP_QUEUE_REMOVE_TEMPLATE	244
5.23.1.4	AP_QUEUE_SEARCH_TEMPLATE	244

5.23.1.5	AP_QUEUE_STD_DEFN_TEMPLATE	245
5.23.2	Typedef Documentation	245
5.23.2.1	AP_GENERIC_p	245
5.23.2.2	AP_GENERIC_t	245
5.23.3	Function Documentation	245
5.23.3.1	interpreter_queue_CreateRetrieve	245
5.24	/home/dko/Projects/mobilec/src/include/barrier.h File Reference	246
5.24.1	Typedef Documentation	246
5.24.1.1	barrier_node_p	246
5.24.1.2	barrier_node_t	246
5.24.1.3	barrier_queue_p	246
5.24.1.4	barrier_queue_t	247
5.24.2	Function Documentation	247
5.24.2.1	barrier_node_Destroy	247
5.24.2.2	barrier_node_Initialize	247
5.24.2.3	barrier_queue_Add	247
5.24.2.4	barrier_queue_Delete	247
5.24.2.5	barrier_queue_Destroy	247
5.24.2.6	barrier_queue_Get	247
5.24.2.7	barrier_queue_New	248
5.24.2.8	barrier_queue_Pop	248
5.25	/home/dko/Projects/mobilec/src/include/cmd_prompt.h File Reference	249
5.25.1	Define Documentation	249
5.25.1.1	CMDLINE_SIZE	249
5.25.2	Typedef Documentation	249
5.25.2.1	cmd_prompt_p	249
5.25.2.2	cmd_prompt_t	250
5.25.2.3	command_p	250
5.25.2.4	command_t	250
5.25.3	Function Documentation	250
5.25.3.1	cmd_prompt_Destroy	250
5.25.3.2	cmd_prompt_Initialize	250
5.25.3.3	cmd_prompt_Start	250
5.25.3.4	cmd_prompt_Thread	250
5.25.3.5	dealloc_command	250
5.25.3.6	exec_command	250

5.25.3.7	<code>process_command</code>	250
5.25.3.8	<code>split_string</code>	250
5.26	<code>/home/dko/Projects/mobilec/src/include/commands.h</code> File Reference	252
5.26.1	Define Documentation	252
5.26.1.1	<code>COMMAND</code>	252
5.26.1.2	<code>COMMAND</code>	253
5.26.1.3	<code>COMMAND</code>	253
5.26.1.4	<code>COMMAND</code>	253
5.26.1.5	<code>COMMAND</code>	253
5.26.2	Typedef Documentation	253
5.26.2.1	<code>cmd_handler_t</code>	253
5.26.3	Enumeration Type Documentation	253
5.26.3.1	<code>command_indices_e</code>	253
5.26.4	Function Documentation	253
5.26.4.1	<code>COMMAND</code>	253
5.26.4.2	<code>COMMAND</code>	253
5.26.4.3	<code>COMMAND</code>	254
5.26.5	Variable Documentation	254
5.26.5.1	<code>cmd_handlers</code>	254
5.26.5.2	<code>command_cmds</code>	254
5.26.5.3	<code>command_descriptions</code>	254
5.27	<code>/home/dko/Projects/mobilec/src/include/commands.x.h</code> File Reference	255
5.27.1	Function Documentation	255
5.27.1.1	<code>COMMAND</code>	255
5.27.1.2	<code>COMMAND</code>	255
5.27.1.3	<code>COMMAND</code>	256
5.27.2	Variable Documentation	256
5.27.2.1	<code>compose_send</code>	256
5.27.2.2	<code>help</code>	256
5.27.2.3	<code>is</code>	256
5.27.2.4	<code>print_connectlist</code>	256
5.27.2.5	<code>printlist_agents</code>	256
5.27.2.6	<code>send</code>	256
5.28	<code>/home/dko/Projects/mobilec/src/include/connection.h</code> File Reference	257
5.28.1	Typedef Documentation	257
5.28.1.1	<code>connection_p</code>	257

5.28.1.2	connection_t	257
5.28.2	Function Documentation	257
5.28.2.1	connection_Close	257
5.28.2.2	connection_Copy	257
5.28.2.3	connection_CreateMessage	258
5.28.2.4	connection_Destroy	258
5.28.2.5	connection_New	258
5.28.2.6	connection_RecvFromConnection	258
5.28.2.7	connection_SendtoConnection	258
5.28.2.8	connection_SetHosts	258
5.29	/home/dko/Projects/mobilec/src/include/data_structures.h File Reference	259
5.29.1	Function Documentation	260
5.29.1.1	agent_queue_Flush	260
5.29.1.2	AP_GENERIC_Destroy	260
5.29.1.3	AP_QUEUE_DECL_TEMPLATE	260
5.29.1.4	AP_QUEUE_DECL_TEMPLATE	260
5.29.1.5	AP_QUEUE_DECL_TEMPLATE	260
5.29.1.6	AP_QUEUE_DECL_TEMPLATE	260
5.29.1.7	AP_QUEUE_DECL_TEMPLATE	260
5.29.1.8	AP_QUEUE_DECL_TEMPLATE	260
5.29.1.9	AP_QUEUE_GENERIC_DECL_TEMPLATE	260
5.29.1.10	AP_QUEUE_GENERIC_DECL_TEMPLATE	261
5.29.1.11	AP_QUEUE_GENERIC_DECL_TEMPLATE	261
5.29.1.12	AP_QUEUE_GENERIC_DECL_TEMPLATE	261
5.29.1.13	AP_QUEUE_GENERIC_DECL_TEMPLATE	261
5.29.1.14	AP_QUEUE_GENERIC_DECL_TEMPLATE	261
5.29.2	Variable Documentation	261
5.29.2.1	agent_mailbox_p	261
5.29.2.2	int	261
5.29.2.3	Remove	261
5.29.2.4	RemoveID	262
5.29.2.5	RemoveName	262
5.29.2.6	Search	262
5.29.2.7	SearchName	262
5.30	/home/dko/Projects/mobilec/src/include/df.h File Reference	263
5.30.1	Define Documentation	264

5.30.1.1	REQUEST	264
5.30.1.2	REQUEST	264
5.30.2	Enumeration Type Documentation	264
5.30.2.1	df_request_list_index_e	264
5.30.2.2	service_types_e	264
5.30.3	Function Documentation	265
5.30.3.1	df_AddRequest	265
5.30.3.2	df_Destroy	265
5.30.3.3	df_Initialize	265
5.30.3.4	df_node_Destroy	265
5.30.3.5	df_ProcessRequest	265
5.30.3.6	df_request_list_Destroy	265
5.30.3.7	df_request_list_New	265
5.30.3.8	df_request_list_node_Destroy	265
5.30.3.9	df_request_list_node_New	266
5.30.3.10	df_request_list_Pop	266
5.30.3.11	df_request_search_Destroy	266
5.30.3.12	df_request_search_New	266
5.30.3.13	df_SearchForService	266
5.30.3.14	df_Start	266
5.30.3.15	df_Thread	266
5.30.3.16	REQUEST	267
5.30.3.17	REQUEST	267
5.30.3.18	STRUCT	267
5.30.3.19	STRUCT	267
5.30.3.20	STRUCT	267
5.30.3.21	STRUCT	267
5.30.4	Variable Documentation	267
5.30.4.1	cond	267
5.30.4.2	lock	267
5.30.4.3	mc_platform	267
5.30.4.4	node	267
5.30.4.5	num_entries	268
5.30.4.6	request_list	268
5.30.4.7	search_results	268
5.30.4.8	search_string	268

5.30.4.9	service_list	268
5.30.4.10	size	268
5.30.4.11	thread	268
5.30.4.12	waiting	268
5.30.4.13	waiting_cond	269
5.30.4.14	waiting_lock	269
5.31	/home/dko/Projects/mobilec/src/include/df_request.x.h File Reference	270
5.31.1	Function Documentation	270
5.31.1.1	REQUEST	270
5.31.1.2	REQUEST	270
5.31.2	Variable Documentation	270
5.31.2.1	register	270
5.31.2.2	search	270
5.32	/home/dko/Projects/mobilec/src/include/dynstring.h File Reference	271
5.32.1	Define Documentation	271
5.32.1.1	COMPOSE_BLOCKSIZE	271
5.32.2	Typedef Documentation	271
5.32.2.1	dynstring_p	271
5.32.2.2	dynstring_t	271
5.32.3	Function Documentation	271
5.32.3.1	dynstring_Append	271
5.32.3.2	dynstring_Destroy	272
5.32.3.3	dynstring_New	272
5.33	/home/dko/Projects/mobilec/src/include/fipa_acl.h File Reference	273
5.33.1	Typedef Documentation	276
5.33.1.1	fipa_acl_message_p	276
5.33.1.2	fipa_acl_message_t	276
5.33.1.3	fipa_agent_identifier_p	276
5.33.1.4	fipa_agent_identifier_set_p	276
5.33.1.5	fipa_agent_identifier_set_t	276
5.33.1.6	fipa_agent_identifier_t	276
5.33.1.7	fipa_DateTime_p	276
5.33.1.8	fipa_DateTime_t	276
5.33.1.9	fipa_expression_p	276
5.33.1.10	fipa_expression_t	276
5.33.1.11	fipa_expression_type_t	276

5.33.1.12	fipa_message_string_p	276
5.33.1.13	fipa_message_string_t	276
5.33.1.14	fipa_number_p	276
5.33.1.15	fipa_number_t	276
5.33.1.16	fipa_string_p	276
5.33.1.17	fipa_string_t	277
5.33.1.18	fipa_url_p	277
5.33.1.19	fipa_url_sequence_p	277
5.33.1.20	fipa_url_sequence_t	277
5.33.1.21	fipa_url_t	277
5.33.1.22	fipa_word_p	277
5.33.1.23	fipa_word_t	277
5.33.2	Enumeration Type Documentation	277
5.33.2.1	fipa_expression_type_e	277
5.33.2.2	fipa_performative_e	277
5.33.2.3	fipa_protocol_e	279
5.33.3	Function Documentation	279
5.33.3.1	fipa_acl_Compose	279
5.33.3.2	fipa_acl_message_Copy	279
5.33.3.3	fipa_acl_message_Destroy	280
5.33.3.4	fipa_acl_message_New	280
5.33.3.5	fipa_acl_Parse	280
5.33.3.6	fipa_agent_identifier_Compose	280
5.33.3.7	fipa_agent_identifier_Copy	280
5.33.3.8	fipa_agent_identifier_Destroy	280
5.33.3.9	fipa_agent_identifier_New	280
5.33.3.10	fipa_agent_identifier_Parse	281
5.33.3.11	fipa_agent_identifier_set_Compose	281
5.33.3.12	fipa_agent_identifier_set_Copy	281
5.33.3.13	fipa_agent_identifier_set_Destroy	281
5.33.3.14	fipa_agent_identifier_set_New	281
5.33.3.15	fipa_agent_identifier_set_Parse	282
5.33.3.16	fipa_CheckNextToken	282
5.33.3.17	fipa_DateTime_Compose	282
5.33.3.18	fipa_DateTime_Copy	282
5.33.3.19	fipa_DateTime_Destroy	282

5.33.3.20 fipa_DateTime_New	282
5.33.3.21 fipa_datetime_Parse	282
5.33.3.22 fipa_expression_Compose	283
5.33.3.23 fipa_expression_Copy	283
5.33.3.24 fipa_expression_Destroy	283
5.33.3.25 fipa_expression_New	283
5.33.3.26 fipa_expression_Parse	284
5.33.3.27 fipa_GetAtom	284
5.33.3.28 fipa_GetNextWord	284
5.33.3.29 fipa_GetWholeToken	284
5.33.3.30 fipa_message_parameter_Parse	284
5.33.3.31 fipa_message_string_Copy	284
5.33.3.32 fipa_message_string_Destroy	284
5.33.3.33 fipa_message_string_New	284
5.33.3.34 fipa_message_type_Parse	285
5.33.3.35 fipa_number_Compose	285
5.33.3.36 fipa_number_Copy	285
5.33.3.37 fipa_number_Destroy	285
5.33.3.38 fipa_number_New	285
5.33.3.39 fipa_performative_Compose	285
5.33.3.40 fipa_protocol_Compose	286
5.33.3.41 fipa_protocol_type_Parse	286
5.33.3.42 fipa_Reply	286
5.33.3.43 fipa_string_Compose	286
5.33.3.44 fipa_string_Copy	287
5.33.3.45 fipa_string_Destroy	287
5.33.3.46 fipa_string_New	287
5.33.3.47 fipa_string_Parse	287
5.33.3.48 fipa_url_Compose	287
5.33.3.49 fipa_url_Copy	287
5.33.3.50 fipa_url_Destroy	287
5.33.3.51 fipa_url_New	288
5.33.3.52 fipa_url_Parse	288
5.33.3.53 fipa_url_sequence_Compose	288
5.33.3.54 fipa_url_sequence_Copy	288
5.33.3.55 fipa_url_sequence_Destroy	288

5.33.3.56	fipa_url_sequence_New	288
5.33.3.57	fipa_url_sequence_Parse	288
5.33.3.58	fipa_word_Compose	289
5.33.3.59	fipa_word_Copy	289
5.33.3.60	fipa_word_Destroy	289
5.33.3.61	fipa_word_New	289
5.33.3.62	fipa_word_Parse	289
5.34	/home/dko/Projects/mobilec/src/include/fipa_acl_envelope.h File Reference	290
5.34.1	Typedef Documentation	291
5.34.1.1	fipa_acl_envelope_p	291
5.34.1.2	fipa_acl_envelope_Received_t	291
5.34.1.3	fipa_acl_envelope_t	291
5.34.1.4	fipa_acl_Param_t	291
5.34.2	Function Documentation	291
5.34.2.1	fipa_acl_envelope_Copy	291
5.34.2.2	fipa_acl_envelope_Destroy	291
5.34.2.3	fipa_acl_envelope_New	292
5.34.2.4	fipa_acl_envelope_Received_Copy	292
5.34.2.5	fipa_acl_envelope_Received_Destroy	292
5.34.2.6	fipa_acl_envelope_Received_New	292
5.34.2.7	fipa_acl_Param_Copy	292
5.34.2.8	fipa_acl_Param_Destroy	292
5.34.2.9	fipa_acl_Param_New	293
5.34.2.10	fipa_envelope_Compose	293
5.34.2.11	fipa_envelope_Compose__acl_representation	293
5.34.2.12	fipa_envelope_Compose__date	293
5.34.2.13	fipa_envelope_Compose__envelope	293
5.34.2.14	fipa_envelope_Compose__from	293
5.34.2.15	fipa_envelope_Compose__intended_receiver	294
5.34.2.16	fipa_envelope_Compose__params	294
5.34.2.17	fipa_envelope_Compose__payload_encoding	294
5.34.2.18	fipa_envelope_Compose__to	294
5.34.2.19	fipa_envelope_HandleAclRepresentation	294
5.34.2.20	fipa_envelope_HandleComments	295
5.34.2.21	fipa_envelope_HandleDate	295
5.34.2.22	fipa_envelope_HandleEnvelope	295

5.34.2.23	fipa_envelope_HandleFrom	295
5.34.2.24	fipa_envelope_HandleIntendedReceiver	295
5.34.2.25	fipa_envelope_HandleParams	296
5.34.2.26	fipa_envelope_HandlePayloadEncoding	296
5.34.2.27	fipa_envelope_HandlePayloadLength	296
5.34.2.28	fipa_envelope_HandleReceived	296
5.34.2.29	fipa_envelope_HandleTo	296
5.34.2.30	fipa_envelope_Parse	297
5.34.2.31	fipa_envelope_ParseAddresses	297
5.34.2.32	fipa_envelope_ParseAgentIdentifier	297
5.34.2.33	fipa_envelope_ParseResolvers	297
5.35	/home/dko/Projects/mobilec/src/include/fipa_comm.h File Reference	298
5.35.1	Define Documentation	300
5.35.1.1	false	300
5.35.1.2	MC_NUM_PERFORMATIVES	300
5.35.2	Typedef Documentation	300
5.35.2.1	fipa_comm_action_p	300
5.35.2.2	fipa_comm_action_s	300
5.35.2.3	fipa_comm_callback	300
5.35.2.4	fipa_comm_message_check_p	300
5.35.2.5	fipa_comm_message_check_s	300
5.35.2.6	fipa_comm_p	300
5.35.2.7	fipa_comm_performative_p	300
5.35.2.8	fipa_comm_performative_s	301
5.35.2.9	fipa_comm_protocol_cn_p	301
5.35.2.10	fipa_comm_protocol_cn_s	301
5.35.2.11	fipa_comm_protocol_p	301
5.35.2.12	fipa_comm_protocol_s	301
5.35.2.13	fipa_comm_reply_p	301
5.35.2.14	fipa_comm_reply_s	301
5.35.2.15	fipa_comm_s	301
5.35.2.16	fipa_list_p	301
5.35.2.17	fipa_list_s	301
5.35.2.18	MCFIPAComm_p	301
5.35.2.19	MCFIPAComm_s	302
5.35.2.20	protocol_contract_net_callback	302

5.35.3	Enumeration Type Documentation	302
5.35.3.1	fipa_comm_action_type_e	302
5.35.3.2	fipa_comm_check_type_e	302
5.35.3.3	fipa_comm_logic_type_e	302
5.35.3.4	fipa_comm_protocol_cn_state_e	303
5.35.3.5	fipa_comm_type_e	303
5.35.4	Function Documentation	305
5.35.4.1	fipa_comm_protocol_info_COPY	305
5.35.4.2	fipa_list_Add	305
5.35.4.3	mc_FIPAComm_AddNewProtocol	305
5.35.4.4	mc_FIPAComm_DeregisterPerformative	305
5.35.4.5	mc_FIPAComm_Destroy	305
5.35.4.6	mc_FIPAComm_FSM_CN	305
5.35.4.7	mc_FIPAComm_HandleMessage	305
5.35.4.8	mc_FIPAComm_HandleMessageOnce	305
5.35.4.9	mc_FIPAComm_HandleMessageWait	305
5.35.4.10	mc_FIPAComm_HandleProtocol	305
5.35.4.11	mc_FIPAComm_New	305
5.35.4.12	mc_FIPAComm_NewProtocol	305
5.35.4.13	mc_FIPAComm_RegisterAction	305
5.35.4.14	mc_FIPAComm_RegisterActionS	305
5.35.4.15	mc_FIPAComm_RegisterPerformative	305
5.35.4.16	mc_FIPAComm_RegisterProtocol	305
5.35.4.17	mc_FIPAComm_RegisterProtocolCallback	305
5.35.4.18	mc_FIPAComm_SetAgent	305
5.35.4.19	mc_FIPAComm_SetDefaultReply	305
5.35.4.20	mc_FIPAComm_SetPerformativeDefaultReply	305
5.35.4.21	mc_FIPAComm_SetProtocolState	305
5.35.4.22	mc_FIPAComm_StartProtocol	305
5.35.4.23	mc_FIPAProtocol_New	305
5.36	/home/dko/Projects/mobilec/src/include/host_id.h File Reference	306
5.36.1	Typedef Documentation	306
5.36.1.1	host_id_p	306
5.36.1.2	host_id_t	306
5.36.2	Function Documentation	306
5.36.2.1	host_id_Compare	306

5.36.2.2	host_id_Destroy	306
5.36.2.3	host_id_Initialize	306
5.37	/home/dko/Projects/mobilec/src/include/interpreter_variable_data.h File Reference	307
5.37.1	Typedef Documentation	307
5.37.1.1	interpreter_variable_data_p	307
5.37.1.2	interpreter_variable_data_t	307
5.37.2	Function Documentation	307
5.37.2.1	interpreter_variable_data_Copy	307
5.37.2.2	interpreter_variable_data_Destroy	308
5.37.2.3	interpreter_variable_data_Initialize	308
5.37.2.4	interpreter_variable_data_InitializeFromAgent	308
5.37.2.5	interpreter_variable_data_New	308
5.38	/home/dko/Projects/mobilec/src/include/libmc.h File Reference	309
5.38.1	Detailed Description	317
5.38.2	Define Documentation	317
5.38.2.1	EXPORTMC	317
5.38.2.2	MC_Wait	317
5.38.3	Typedef Documentation	317
5.38.3.1	agency_p	317
5.38.3.2	agency_t	317
5.38.3.3	agent_p	317
5.38.3.4	agent_t	317
5.38.3.5	error_code_t	318
5.38.3.6	MC_SteerCommand_t	318
5.38.3.7	MCAgency_t	318
5.38.3.8	MCAgencyOptions_t	318
5.38.3.9	MCAgent_t	318
5.38.3.10	stationary_agent_info_t	318
5.38.4	Enumeration Type Documentation	318
5.38.4.1	error_code_e	318
5.38.4.2	fipa_performative_e	319
5.38.4.3	MC_AgentStatus_e	320
5.38.4.4	MC_AgentType_e	320
5.38.4.5	MC_Signal_e	321
5.38.4.6	MC_SteerCommand_e	321
5.38.4.7	MC_ThreadIndex_e	321

5.38.5	Function Documentation	322
5.38.5.1	MC_AclAddReceiver	322
5.38.5.2	MC_AclAddReplyTo	322
5.38.5.3	MC_AclDestroy	322
5.38.5.4	MC_AclGetContent	322
5.38.5.5	MC_AclGetConversationID	322
5.38.5.6	MC_AclGetPerformative	323
5.38.5.7	MC_AclGetProtocol	323
5.38.5.8	MC_AclGetSender	323
5.38.5.9	MC_AclNew	323
5.38.5.10	MC_AclPost	323
5.38.5.11	MC_AclReply	324
5.38.5.12	MC_AclRetrieve	324
5.38.5.13	MC_AclSend	324
5.38.5.14	MC_AclSetContent	325
5.38.5.15	MC_AclSetConversationID	325
5.38.5.16	MC_AclSetPerformative	325
5.38.5.17	MC_AclSetProtocol	325
5.38.5.18	MC_AclSetSender	326
5.38.5.19	MC_AclWaitRetrieve	326
5.38.5.20	MC_AddAgent	326
5.38.5.21	MC_AddStationaryAgent	327
5.38.5.22	MC_AgentAddTask	327
5.38.5.23	MC_AgentAddTaskFromFile	327
5.38.5.24	MC_AgentInfo_GetAgency	328
5.38.5.25	MC_AgentInfo_GetAgent	328
5.38.6	Examples	328
5.38.6.1	MC_AgentInfo_GetAgentArgs	328
5.38.6.2	MC_AgentReturnArrayDim	329
5.38.6.3	MC_AgentReturnArrayExtent	329
5.38.6.4	MC_AgentReturnArrayNum	329
5.38.6.5	MC_AgentReturnDataGetSymbolAddr	330
5.38.6.6	MC_AgentReturnDataSize	330
5.38.6.7	MC_AgentReturnDataType	330
5.38.6.8	MC_AgentReturnIsArray	331
5.38.6.9	MC_AgentVariableRetrieve	331

5.38.7 Examples	331
5.38.7.1 MC_AgentVariableRetrieveInfo	331
5.38.7.2 MC_AgentVariableSave	332
5.38.8 Examples	332
5.38.9 Examples	332
5.38.9.1 MC_Barrier	333
5.38.9.2 MC_BarrierDelete	333
5.38.9.3 MC_BarrierInit	333
5.38.10 Examples	333
5.38.10.1 MC_CallAgentFunc	334
5.38.11 Example	334
5.38.11.1 MC_CallAgentFuncArg	334
5.38.12 Example	335
5.38.12.1 MC_CallAgentFuncV	335
5.38.12.2 MC_CallAgentFuncVar	335
5.38.12.3 MC_ComposeAgent	335
5.38.12.4 MC_ComposeAgentFromFile	336
5.38.12.5 MC_ComposeAgentFromFileS	336
5.38.12.6 MC_ComposeAgentFromFileWithWorkgroup	337
5.38.12.7 MC_ComposeAgentS	338
5.38.12.8 MC_ComposeAgentWithWorkgroup	338
5.38.12.9 MC_CondBroadcast	339
5.38.12.10 MC_CondReset	339
5.38.12.11 MC_CondSignal	340
5.38.13 Example	340
5.38.13.1 MC_CondWait	340
5.38.14 Example	341
5.38.14.1 MC_CopyAgent	341
5.38.14.2 MC_DeleteAgent	341
5.38.14.3 MC_DeleteAgentWG	342
5.38.14.4 MC_DestroyServiceSearchResult	342
5.38.14.5 MC_End	342
5.38.15 Example	343
5.38.15.1 MC_FindAgentByID	343
5.38.15.2 MC_FindAgentByName	343
5.38.16 Example	343

5.38.16.1 MC_GetAgentExecEngine	344
5.38.16.2 MC_GetAgentID	344
5.38.16.3 MC_GetAgentName	344
5.38.16.4 MC_GetAgentNumTasks	344
5.38.17 Example	344
5.38.17.1 MC_GetAgentReturnData	345
5.38.18 Example	345
5.38.18.1 MC_GetAgentStatus	345
5.38.18.2 MC_GetAgentType	345
5.38.18.3 MC_GetAgentXMLString	346
5.38.18.4 MC_HaltAgency	346
5.38.18.5 MC_Initialize	346
5.38.19 Example	346
5.38.19.1 MC_InitializeAgencyOptions	347
5.38.20 Example	347
5.38.20.1 MC_LoadAgentFromFile	347
5.38.20.2 MC_MainLoop	348
5.38.20.3 MC_MigrateAgent	348
5.38.20.4 MC_MutexLock	348
5.38.21 Example	348
5.38.21.1 MC_MutexUnlock	349
5.38.21.2 MC_PrintAgentCode	349
5.38.21.3 MC_RegisterService	349
5.38.22 Example	350
5.38.22.1 MC_ResetSignal	350
5.38.22.2 MC_ResumeAgency	350
5.38.22.3 MC_RetrieveAgent	350
5.38.22.4 MC_RetrieveAgentCode	351
5.38.22.5 MC_SearchForService	351
5.38.23 Example	351
5.38.23.1 MC_SemaphorePost	352
5.38.24 Example	352
5.38.24.1 MC_SemaphoreWait	352
5.38.25 Example	352
5.38.25.1 MC_SendAgent	353
5.38.25.2 MC_SendAgentFile	353

5.38.25.3 MC_SendAgentMigrationMessage	353
5.38.25.4 MC_SendAgentMigrationMessageFile	354
5.38.25.5 MC_SetAgentStatus	354
5.38.25.6 MC_SetDefaultAgentStatus	354
5.38.25.7 MC_SetThreadOff	355
5.38.25.8 MC_SetThreadOn	355
5.38.25.9 MC_SetThreadsAllOff	356
5.38.25.10 MC_SetThreadsAllOn	356
5.38.25.11 MC_Steer	356
5.38.26 Example	356
5.38.26.1 MC_SteerControl	357
5.38.26.2 MC_SyncDelete	357
5.38.26.3 MC_SyncInit	357
5.38.26.4 MC_TerminateAgent	358
5.38.26.5 MC_TerminateAgentWG	358
5.38.26.6 MC_WaitAgent	358
5.38.26.7 MC_WaitRetrieveAgent	359
5.38.26.8 MC_WaitSignal	359
5.38.27 Example	359
5.39 /home/dko/Projects/mobilec/src/include/macros.h File Reference	360
5.39.1 Define Documentation	361
5.39.1.1 CH_DATATYPE_SIZE	361
5.39.1.2 CH_DATATYPE_STR_TO_VAL	361
5.39.1.3 CH_DATATYPE_STRING	362
5.39.1.4 CH_DATATYPE_VALUE_STRING	363
5.39.1.5 CH_STRING_DATATYPE	363
5.39.1.6 CHECK_NULL	364
5.39.1.7 COND_BROADCAST	364
5.39.1.8 COND_DESTROY	364
5.39.1.9 COND_INIT	364
5.39.1.10 COND_RESET	365
5.39.1.11 COND_SIGNAL	365
5.39.1.12 COND_SLEEP	365
5.39.1.13 COND_SLEEP_ACTION	365
5.39.1.14 COND_T	365
5.39.1.15 COND_WAIT	365

5.39.1.16 GET_THREAD_MODE	366
5.39.1.17 MUTEX_DESTROY	366
5.39.1.18 MUTEX_INIT	366
5.39.1.19 MUTEX_LOCK	366
5.39.1.20 MUTEX_NEW	366
5.39.1.21 MUTEX_T	367
5.39.1.22 MUTEX_UNLOCK	367
5.39.1.23 PTHREAD_STACK_SIZE	367
5.39.1.24 RWLOCK_DESTROY	367
5.39.1.25 RWLOCK_INIT	367
5.39.1.26 RWLOCK_RDLOCK	367
5.39.1.27 RWLOCK_RDUNLOCK	368
5.39.1.28 RWLOCK_T	368
5.39.1.29 RWLOCK_WRLOCK	368
5.39.1.30 RWLOCK_WRUNLOCK	368
5.39.1.31 SEMAPHORE_DESTROY	368
5.39.1.32 SEMAPHORE_INIT	368
5.39.1.33 SEMAPHORE_POST	368
5.39.1.34 SEMAPHORE_T	368
5.39.1.35 SEMAPHORE_WAIT	369
5.39.1.36 SET_THREAD_OFF	369
5.39.1.37 SET_THREAD_ON	369
5.39.1.38 SIGNAL	369
5.39.1.39 SLEEP_QUEUE	369
5.39.1.40 SLEEP_RESET	369
5.39.1.41 SOCKET_ERROR	369
5.39.1.42 STRUCT	370
5.39.1.43 THREAD_CANCEL	370
5.39.1.44 THREAD_CREATE	370
5.39.1.45 THREAD_DETACH	370
5.39.1.46 THREAD_EXIT	370
5.39.1.47 THREAD_JOIN	371
5.39.1.48 WAKE_QUEUE	371
5.39.1.49 WARN	371
5.40 /home/dko/Projects/mobilec/src/include/mc_error.h File Reference	372
5.40.1 Typedef Documentation	372

5.40.1.1	error_code_t	372
5.40.2	Enumeration Type Documentation	372
5.40.2.1	error_code_e	372
5.41	/home/dko/Projects/mobilec/src/include/mc_platform.h File Reference	374
5.41.1	Typedef Documentation	374
5.41.1.1	mc_platform_p	374
5.41.1.2	mc_platform_t	375
5.41.2	Function Documentation	375
5.41.2.1	mc_platform_Destroy	375
5.41.2.2	mc_platform_Initialize	375
5.42	/home/dko/Projects/mobilec/src/include/mc_rwlock.h File Reference	376
5.42.1	Typedef Documentation	376
5.42.1.1	mc_rwlock_p	376
5.42.1.2	mc_rwlock_t	376
5.42.2	Function Documentation	376
5.42.2.1	mc_rwlock_destroy	376
5.42.2.2	mc_rwlock_init	376
5.42.2.3	mc_rwlock_rdlock	377
5.42.2.4	mc_rwlock_rdunlock	377
5.42.2.5	mc_rwlock_wrlock	377
5.42.2.6	mc_rwlock_wrunlock	377
5.43	/home/dko/Projects/mobilec/src/include/message.h File Reference	378
5.43.1	Typedef Documentation	379
5.43.1.1	message_p	379
5.43.1.2	message_send_arg_t	379
5.43.1.3	message_t	379
5.43.1.4	message_type_t	379
5.43.2	Enumeration Type Documentation	379
5.43.2.1	message_type_e	379
5.43.3	Function Documentation	379
5.43.3.1	auth_rece_send_msg	379
5.43.3.2	http_to_hostport	380
5.43.3.3	message_Copy	380
5.43.3.4	message_Destroy	380
5.43.3.5	message_InitializeFromAgent	380
5.43.3.6	message_InitializeFromConnection	380

5.43.3.7	message_InitializeFromString	380
5.43.3.8	message_New	380
5.43.3.9	message_Send	381
5.43.3.10	message_send_Thread	381
5.44	/home/dko/Projects/mobilec/src/include/mobilec.h File Reference	382
5.45	/home/dko/Projects/mobilec/src/include/mtp_http.h File Reference	383
5.45.1	Define Documentation	384
5.45.1.1	SOCKET_INPUT_SIZE	384
5.45.2	Typedef Documentation	384
5.45.2.1	mtp_http_content_t	384
5.45.2.2	mtp_http_p	384
5.45.2.3	mtp_http_t	384
5.45.3	Enumeration Type Documentation	384
5.45.3.1	http_performative_e	384
5.45.3.2	http_status_code_e	385
5.45.4	Function Documentation	386
5.45.4.1	http_GetExpression	386
5.45.4.2	http_GetToken	386
5.45.4.3	http_ParseExpression	386
5.45.4.4	http_ParseRequest	387
5.45.4.5	mtp_http_ComposeMessage	387
5.45.4.6	mtp_http_CreateMessage	387
5.45.4.7	mtp_http_Destroy	387
5.45.4.8	mtp_http_InitializeFromConnection	387
5.45.4.9	mtp_http_New	388
5.45.4.10	mtp_http_Parse	388
5.45.4.11	mtp_http_ParseHeader	388
5.46	/home/dko/Projects/mobilec/src/include/xml_compose.h File Reference	389
5.46.1	Function Documentation	389
5.46.1.1	agent_xml_compose	389
5.46.1.2	agent_xml_compose__agent_code	389
5.46.1.3	agent_xml_compose__agent_data	389
5.46.1.4	agent_xml_compose__create_row_nodes	390
5.46.1.5	agent_xml_compose__data	390
5.46.1.6	agent_xml_compose__gaf_message	390
5.46.1.7	agent_xml_compose__home	390

5.46.1.8	agent_xml_compose__message	390
5.46.1.9	agent_xml_compose__mobile_agent	390
5.46.1.10	agent_xml_compose__name	391
5.46.1.11	agent_xml_compose__owner	391
5.46.1.12	agent_xml_compose__row	391
5.46.1.13	agent_xml_compose__task	391
5.46.1.14	agent_xml_compose__tasks	391
5.46.1.15	agent_xml_compose__wg_code	392
5.47	/home/dko/Projects/mobilec/src/include/xml_helper.h File Reference	393
5.47.1	Function Documentation	393
5.47.1.1	whitespace_cb	393
5.47.1.2	xml_find_sibling	393
5.47.1.3	xml_get_cdata	393
5.47.1.4	xml_get_child	393
5.47.1.5	xml_get_deep_child	394
5.47.1.6	xml_get_element_name	394
5.47.1.7	xml_get_next_element	394
5.47.1.8	xml_get_text	394
5.47.1.9	xml_new_cdata	394
5.48	/home/dko/Projects/mobilec/src/include/xml_parser.h File Reference	395
5.48.1	Function Documentation	395
5.48.1.1	agent_xml_parse	395
5.48.1.2	agent_xml_parse__agent_code	395
5.48.1.3	agent_xml_parse__agent_data	396
5.48.1.4	agent_xml_parse__data	396
5.48.1.5	agent_xml_parse__fill_row_data	396
5.48.1.6	agent_xml_parse__home	396
5.48.1.7	agent_xml_parse__mobile_agent	396
5.48.1.8	agent_xml_parse__name	396
5.48.1.9	agent_xml_parse__owner	397
5.48.1.10	agent_xml_parse__row	397
5.48.1.11	agent_xml_parse__sender	397
5.48.1.12	agent_xml_parse__task	397
5.48.1.13	agent_xml_parse__tasks	397
5.48.1.14	agent_xml_parse__wg_code	398
5.48.1.15	message_xml_parse	398

5.48.1.16	message_xml_parse__message	398
5.48.1.17	STRUCT	398
5.49	/home/dko/Projects/mobilec/src/libmc.c File Reference	399
5.49.1	Function Documentation	407
5.49.1.1	MC_AclAddReceiver	407
5.49.1.2	MC_AclAddReceiver_chdl	407
5.49.1.3	MC_AclAddReplyTo	408
5.49.1.4	MC_AclAddReplyTo_chdl	408
5.49.1.5	MC_AclDestroy	408
5.49.1.6	MC_AclDestroy_chdl	408
5.49.1.7	MC_AclGetContent	408
5.49.1.8	MC_AclGetContent_chdl	409
5.49.1.9	MC_AclGetConversationID	409
5.49.1.10	MC_AclGetConversationID_chdl	409
5.49.1.11	MC_AclGetPerformative	409
5.49.1.12	MC_AclGetPerformative_chdl	409
5.49.1.13	MC_AclGetProtocol	409
5.49.1.14	MC_AclGetProtocol_chdl	409
5.49.1.15	MC_AclGetSender	410
5.49.1.16	MC_AclGetSender_chdl	410
5.49.1.17	MC_AclNew	410
5.49.1.18	MC_AclNew_chdl	410
5.49.1.19	MC_AclPost	410
5.49.1.20	MC_AclPost_chdl	411
5.49.1.21	MC_AclReply	411
5.49.1.22	MC_AclReply_chdl	411
5.49.1.23	MC_AclRetrieve	411
5.49.1.24	MC_AclRetrieve_chdl	412
5.49.1.25	MC_AclSend	412
5.49.1.26	MC_AclSend_chdl	412
5.49.1.27	MC_AclSetContent	412
5.49.1.28	MC_AclSetContent_chdl	413
5.49.1.29	MC_AclSetConversationID	413
5.49.1.30	MC_AclSetConversationID_chdl	413
5.49.1.31	MC_AclSetPerformative	413
5.49.1.32	MC_AclSetPerformative_chdl	413

5.49.1.33	MC_AclSetProtocol	413
5.49.1.34	MC_AclSetProtocol_chdl	413
5.49.1.35	MC_AclSetSender	414
5.49.1.36	MC_AclSetSender_chdl	414
5.49.1.37	MC_AclWaitRetrieve	414
5.49.1.38	MC_AclWaitRetrieve_chdl	414
5.49.1.39	MC_AddAgent	414
5.49.1.40	MC_AddAgent_chdl	415
5.49.1.41	MC_AddStationaryAgent	415
5.49.1.42	MC_AgentAddTask	415
5.49.1.43	MC_AgentAddTask_chdl	416
5.49.1.44	MC_AgentAddTaskFromFile	416
5.49.1.45	MC_AgentInfo_GetAgency	416
5.49.1.46	MC_AgentInfo_GetAgent	416
5.49.2	Examples	417
5.49.2.1	MC_AgentInfo_GetAgentArgs	417
5.49.2.2	MC_AgentReturnArrayDim	417
5.49.2.3	MC_AgentReturnArrayExtent	417
5.49.2.4	MC_AgentReturnArrayNum	418
5.49.2.5	MC_AgentReturnDataGetSymbolAddr	418
5.49.2.6	MC_AgentReturnDataSize	419
5.49.2.7	MC_AgentReturnDataType	419
5.49.2.8	MC_AgentReturnIsArray	419
5.49.2.9	MC_AgentVariableRetrieve	420
5.49.3	Examples	420
5.49.3.1	MC_AgentVariableRetrieve_chdl	420
5.49.3.2	MC_AgentVariableRetrieveInfo	420
5.49.3.3	MC_AgentVariableSave	421
5.49.4	Examples	421
5.49.5	Examples	421
5.49.5.1	MC_AgentVariableSave_chdl	421
5.49.5.2	MC_Barrier	421
5.49.5.3	MC_Barrier_chdl	422
5.49.5.4	MC_BarrierDelete	422
5.49.5.5	MC_BarrierDelete_chdl	422
5.49.5.6	MC_BarrierInit	422

5.49.6	Examples	423
5.49.6.1	MC_BarrierInit_chdl	423
5.49.6.2	MC_CallAgentFunc	423
5.49.7	Example	423
5.49.7.1	MC_CallAgentFunc_chdl	424
5.49.7.2	MC_CallAgentFuncArg	424
5.49.8	Example	424
5.49.8.1	MC_CallAgentFuncV	424
5.49.8.2	MC_CallAgentFuncVar	425
5.49.8.3	MC_ComposeAgent	425
5.49.8.4	MC_ComposeAgent_chdl	425
5.49.8.5	MC_ComposeAgentFromFile	425
5.49.8.6	MC_ComposeAgentFromFile_chdl	426
5.49.8.7	MC_ComposeAgentFromFileS	426
5.49.8.8	MC_ComposeAgentFromFileWithWorkgroup	427
5.49.8.9	MC_ComposeAgentFromFileWithWorkgroup_chdl	427
5.49.8.10	MC_ComposeAgentS	428
5.49.8.11	MC_ComposeAgentWithWorkgroup	428
5.49.8.12	MC_ComposeAgentWithWorkgroup_chdl	429
5.49.8.13	MC_CondBroadcast	429
5.49.8.14	MC_CondBroadcast_chdl	430
5.49.8.15	MC_CondReset	430
5.49.8.16	MC_CondReset_chdl	430
5.49.8.17	MC_CondSignal	430
5.49.9	Example	431
5.49.9.1	MC_CondSignal_chdl	431
5.49.9.2	MC_CondWait	431
5.49.10	Example	431
5.49.10.1	MC_CondWait_chdl	432
5.49.10.2	MC_CopyAgent	432
5.49.10.3	MC_DeleteAgent	432
5.49.10.4	MC_DeleteAgent_chdl	432
5.49.10.5	MC_DeleteAgentWG	432
5.49.10.6	MC_DeleteAgentWG_chdl	433
5.49.10.7	MC_DeregisterService	433
5.49.10.8	MC_DeregisterService_chdl	433

5.49.10.9 MC_DestroyServiceSearchResult	433
5.49.10.10 MC_DestroyServiceSearchResult_chdl	434
5.49.10.11 MC_End	434
5.49.11 Example	434
5.49.11.1 MC_End_chdl	434
5.49.11.2 MC_FindAgentByID	435
5.49.11.3 MC_FindAgentByID_chdl	435
5.49.11.4 MC_FindAgentByName	435
5.49.12 Example	435
5.49.12.1 MC_FindAgentByName_chdl	436
5.49.12.2 MC_GetAgentArrivalTime	436
5.49.12.3 MC_GetAgentArrivalTime_chdl	436
5.49.12.4 MC_GetAgentExecEngine	436
5.49.12.5 MC_GetAgentID	436
5.49.12.6 MC_GetAgentID_chdl	436
5.49.12.7 MC_GetAgentName	437
5.49.12.8 MC_GetAgentName_chdl	437
5.49.12.9 MC_GetAgentNumTasks	437
5.49.13 Example	437
5.49.13.1 MC_GetAgentNumTasks_chdl	437
5.49.13.2 MC_GetAgentReturnData	437
5.49.14 Example	438
5.49.14.1 MC_GetAgentStatus	438
5.49.14.2 MC_GetAgentStatus_chdl	438
5.49.14.3 MC_GetAgentType	438
5.49.14.4 MC_GetAgentXMLString	438
5.49.14.5 MC_GetAgentXMLString_chdl	439
5.49.14.6 MC_GetAllAgents	439
5.49.14.7 MC_GetTimeOfDay_chdl	439
5.49.14.8 MC_HaltAgency	439
5.49.14.9 MC_HaltAgency_chdl	439
5.49.14.10 MC_Initialize	440
5.49.15 Example	440
5.49.15.1 MC_InitializeAgencyOptions	440
5.49.16 Example	440
5.49.16.1 MC_LoadAgentFromFile	441

5.49.16.2 MC_MainLoop	441
5.49.16.3 MC_MigrateAgent	441
5.49.16.4 MC_MigrateAgent_chdl	442
5.49.16.5 MC_MutexLock	442
5.49.17 Example	442
5.49.17.1 MC_MutexLock_chdl	442
5.49.17.2 MC_MutexUnlock	443
5.49.17.3 MC_MutexUnlock_chdl	443
5.49.17.4 MC_PrintAgentCode	443
5.49.17.5 MC_PrintAgentCode_chdl	443
5.49.17.6 MC_RegisterService	443
5.49.18 Example	444
5.49.18.1 MC_RegisterService_chdl	444
5.49.18.2 MC_ResetSignal	444
5.49.18.3 MC_ResumeAgency	444
5.49.18.4 MC_ResumeAgency_chdl	445
5.49.18.5 MC_RetrieveAgent	445
5.49.18.6 MC_RetrieveAgent_chdl	445
5.49.18.7 MC_RetrieveAgentCode	445
5.49.18.8 MC_RetrieveAgentCode_chdl	446
5.49.18.9 MC_SaveData_chdl	446
5.49.18.10 MC_SearchForService	446
5.49.19 Example	446
5.49.19.1 MC_SearchForService_chdl	446
5.49.19.2 MC_SemaphorePost	447
5.49.20 Example	447
5.49.20.1 MC_SemaphorePost_chdl	447
5.49.20.2 MC_SemaphoreWait	447
5.49.21 Example	447
5.49.21.1 MC_SemaphoreWait_chdl	448
5.49.21.2 MC_SendAgent	448
5.49.21.3 MC_SendAgentFile	448
5.49.21.4 MC_SendAgentMigrationMessage	448
5.49.21.5 MC_SendAgentMigrationMessage_chdl	449
5.49.21.6 MC_SendAgentMigrationMessageFile	449
5.49.21.7 MC_SendAgentMigrationMessageFile_chdl	449

5.49.21.8 MC_SendCh	449
5.49.21.9 MC_SendSteerCommand	450
5.49.21.10 MC_SendSteerCommand_chdl	450
5.49.21.11 MC_SetAgentStatus	450
5.49.21.12 MC_SetAgentStatus_chdl	450
5.49.21.13 MC_SetDefaultAgentStatus	450
5.49.21.14 MC_SetDefaultAgentStatus_chdl	451
5.49.21.15 MC_SetThreadOff	451
5.49.21.16 MC_SetThreadOn	451
5.49.21.17 MC_SetThreadsAllOff	452
5.49.21.18 MC_SetThreadsAllOn	452
5.49.21.19 MC_Steer	452
5.49.22 Example	453
5.49.22.1 MC_SteerControl	453
5.49.22.2 MC_SyncDelete	453
5.49.22.3 MC_SyncDelete_chdl	454
5.49.22.4 MC_SyncInit	454
5.49.22.5 MC_SyncInit_chdl	454
5.49.22.6 MC_TerminateAgent	454
5.49.22.7 MC_TerminateAgent_chdl	455
5.49.22.8 MC_TerminateAgentWG	455
5.49.22.9 MC_TerminateAgentWG_chdl	455
5.49.22.10 MC_WaitAgent	455
5.49.22.11 MC_WaitRetrieveAgent	455
5.49.22.12 MC_WaitSignal	456
5.49.23 Example	456
5.49.24 Variable Documentation	456
5.49.24.1 g_mc_platform	456
5.50 /home/dko/Projects/mobilec/src/mc_list/list.c File Reference	457
5.50.1 Function Documentation	457
5.50.1.1 list_pGetSize	457
5.50.1.2 ListAdd	457
5.50.1.3 ListDelete	457
5.50.1.4 ListGetHead	457
5.50.1.5 ListInitialize	458
5.50.1.6 ListInsert	458

5.50.1.7	ListPop	458
5.50.1.8	ListSearch	458
5.50.1.9	ListTerminate	458
5.51	/home/dko/Projects/mobilec/src/mc_list/list.h File Reference	459
5.51.1	Define Documentation	459
5.51.1.1	DATA	459
5.51.1.2	QUEUE_TEMPLATE	459
5.51.2	Typedef Documentation	460
5.51.2.1	list_p	460
5.51.2.2	list_t	460
5.51.2.3	listNode_p	460
5.51.2.4	listNode_t	460
5.51.3	Function Documentation	460
5.51.3.1	ListAdd	460
5.51.3.2	ListDelete	460
5.51.3.3	ListGetHead	460
5.51.3.4	ListGetSize	460
5.51.3.5	ListInitialize	460
5.51.3.6	ListInsert	460
5.51.3.7	ListPop	461
5.51.3.8	ListSearch	461
5.51.3.9	ListTerminate	461
5.52	/home/dko/Projects/mobilec/src/mc_platform.c File Reference	462
5.52.1	Define Documentation	462
5.52.1.1	DEFAULT_HOSTNAME_LENGTH	462
5.52.2	Function Documentation	462
5.52.2.1	mc_platform_Destroy	462
5.52.2.2	mc_platform_Initialize	463
5.53	/home/dko/Projects/mobilec/src/mc_rwlock.c File Reference	464
5.53.1	Function Documentation	464
5.53.1.1	mc_rwlock_destroy	464
5.53.1.2	mc_rwlock_init	464
5.53.1.3	mc_rwlock_rdlock	464
5.53.1.4	mc_rwlock_rdunlock	464
5.53.1.5	mc_rwlock_wrlock	465
5.53.1.6	mc_rwlock_wrunlock	465

5.54	/home/dko/Projects/mobilec/src/mc_sync/sync_list.c File Reference	466
5.54.1	Function Documentation	466
5.54.1.1	syncListAddNode	466
5.54.1.2	syncListDelete	466
5.54.1.3	syncListFind	466
5.54.1.4	syncListInit	467
5.54.1.5	syncListNew	467
5.54.1.6	syncListNodeDestroy	467
5.54.1.7	syncListNodeInit	467
5.54.1.8	syncListNodeNew	467
5.54.1.9	syncListRemove	467
5.55	/home/dko/Projects/mobilec/src/mc_sync/sync_list.h File Reference	468
5.55.1	Typedef Documentation	468
5.55.1.1	syncList_p	468
5.55.1.2	syncList_t	468
5.55.1.3	syncListNode_p	468
5.55.1.4	syncListNode_t	469
5.55.2	Function Documentation	469
5.55.2.1	syncListAddNode	469
5.55.2.2	syncListDelete	469
5.55.2.3	syncListFind	469
5.55.2.4	syncListGet	469
5.55.2.5	syncListInit	469
5.55.2.6	syncListNew	469
5.55.2.7	syncListNodeDestroy	469
5.55.2.8	syncListNodeInit	470
5.55.2.9	syncListNodeNew	470
5.55.2.10	syncListRemove	470
5.56	/home/dko/Projects/mobilec/src/message.c File Reference	471
5.56.1	Define Documentation	472
5.56.1.1	MSG_THREAD_EXIT	472
5.56.1.2	MSG_THREADS	472
5.56.1.3	SOCKET_INPUT_SIZE	472
5.56.2	Function Documentation	472
5.56.2.1	auth_rece_send_msg	472
5.56.2.2	http_to_hostport	472

5.56.2.3	message_Copy	473
5.56.2.4	message_Destroy	473
5.56.2.5	message_InitializeFromAgent	473
5.56.2.6	message_InitializeFromConnection	473
5.56.2.7	message_InitializeFromString	473
5.56.2.8	message_New	474
5.56.2.9	message_Send	474
5.56.2.10	message_send_Thread	474
5.57	/home/dko/Projects/mobilec/src/message_queue.c File Reference	475
5.57.1	Function Documentation	475
5.57.1.1	message_queue_SendOutgoing	475
5.58	/home/dko/Projects/mobilec/src/mtp_http.c File Reference	476
5.58.1	Define Documentation	477
5.58.1.1	HTTP_PARSE_EXPR	477
5.58.1.2	SAFE_FREE	477
5.58.1.3	SAFE_FREE	477
5.58.2	Function Documentation	477
5.58.2.1	http_GetExpression	477
5.58.2.2	http_GetToken	478
5.58.2.3	http_ParseExpression	478
5.58.2.4	http_ParseRequest	478
5.58.2.5	mtp_http_ComposeMessage	478
5.58.2.6	mtp_http_CreateMessage	478
5.58.2.7	mtp_http_Destroy	479
5.58.2.8	mtp_http_InitializeFromConnection	479
5.58.2.9	mtp_http_New	479
5.58.2.10	mtp_http_Parse	479
5.58.2.11	mtp_http_ParseHeader	479
5.58.2.12	mtp_http_ParseResponse	480
5.58.2.13	rece_de_msg	480
5.59	/home/dko/Projects/mobilec/src/mxml-2.2.2/config.h File Reference	481
5.59.1	Define Documentation	481
5.59.1.1	HAVE_STRDUP	481
5.59.1.2	HAVE_VSNPRINTF	481
5.59.1.3	MXML_VERSION	481
5.59.2	Function Documentation	481

5.59.2.1	mxml_strdupf	481
5.60	/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/config.h File Reference	482
5.60.1	Define Documentation	482
5.60.1.1	XYSSL_AES_C	482
5.60.1.2	XYSSL_ARC4_C	482
5.60.1.3	XYSSL_BASE64_C	482
5.60.1.4	XYSSL_BIGNUM_C	482
5.60.1.5	XYSSL_CERTS_C	483
5.60.1.6	XYSSL_DEBUG_C	483
5.60.1.7	XYSSL_DEBUG_MSG	483
5.60.1.8	XYSSL_DES_C	483
5.60.1.9	XYSSL_DHM_C	483
5.60.1.10	XYSSL_GENPRIME	483
5.60.1.11	XYSSL_HAVE_ASM	483
5.60.1.12	XYSSL_HAVEGE_C	483
5.60.1.13	XYSSL_MD5_C	483
5.60.1.14	XYSSL_NET_C	483
5.60.1.15	XYSSL_PADLOCK_C	483
5.60.1.16	XYSSL_RSA_C	484
5.60.1.17	XYSSL_SELF_TEST	484
5.60.1.18	XYSSL_SHA1_C	484
5.60.1.19	XYSSL_SHA2_C	484
5.60.1.20	XYSSL_SHA4_C	484
5.60.1.21	XYSSL_SSL_CLI_C	484
5.60.1.22	XYSSL_SSL_SRV_C	484
5.60.1.23	XYSSL_SSL_TLS_C	484
5.60.1.24	XYSSL_TIMING_C	484
5.60.1.25	XYSSL_X509_PARSE_C	484
5.60.1.26	XYSSL_X509_WRITE_C	484
5.61	/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-attr.c File Reference	485
5.61.1	Function Documentation	485
5.61.1.1	mxmlElementGetAttr	485
5.61.1.2	mxmlElementSetAttr	485
5.62	/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-entity.c File Reference	486
5.62.1	Function Documentation	486
5.62.1.1	default_callback	486

5.62.1.2	mxmlEntityAddCallback	486
5.62.1.3	mxmlEntityGetName	486
5.62.1.4	mxmlEntityGetValue	486
5.62.1.5	mxmlEntityRemoveCallback	487
5.62.2	Variable Documentation	487
5.62.2.1	callbacks	487
5.62.2.2	num_callbacks	487
5.63	/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-file.c File Reference	488
5.63.1	Define Documentation	489
5.63.1.1	ENCODE_UTF16BE	489
5.63.1.2	ENCODE_UTF16LE	489
5.63.1.3	ENCODE_UTF8	489
5.63.1.4	mxml_bad_char	489
5.63.2	Typedef Documentation	489
5.63.2.1	mxml_fdbuf_t	489
5.63.3	Function Documentation	489
5.63.3.1	mxml_add_char	489
5.63.3.2	mxml_fd_getc	490
5.63.3.3	mxml_fd_putc	490
5.63.3.4	mxml_fd_read	490
5.63.3.5	mxml_fd_write	490
5.63.3.6	mxml_file_getc	490
5.63.3.7	mxml_file_putc	490
5.63.3.8	mxml_get_entity	491
5.63.3.9	mxml_load_data	491
5.63.3.10	mxml_parse_element	491
5.63.3.11	mxml_string_getc	491
5.63.3.12	mxml_string_putc	491
5.63.3.13	mxml_write_name	491
5.63.3.14	mxml_write_node	492
5.63.3.15	mxml_write_string	492
5.63.3.16	mxml_write_ws	492
5.63.3.17	mxmlLoadFd	492
5.63.3.18	mxmlLoadFile	492
5.63.3.19	mxmlLoadString	493
5.63.3.20	mxmlSaveAllocString	493

5.63.3.21	mxmlSaveFd	493
5.63.3.22	mxmlSaveFile	493
5.63.3.23	mxmlSaveString	493
5.63.3.24	mxmlSetCustomHandlers	493
5.63.3.25	mxmlSetErrorCallback	494
5.63.4	Variable Documentation	494
5.63.4.1	mxml_custom_load_cb	494
5.63.4.2	mxml_custom_save_cb	494
5.63.4.3	mxml_error_cb	494
5.64	/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-index.c File Reference	495
5.64.1	Function Documentation	495
5.64.1.1	index_compare	495
5.64.1.2	index_find	495
5.64.1.3	index_sort	495
5.64.1.4	mxmlIndexDelete	495
5.64.1.5	mxmlIndexEnum	496
5.64.1.6	mxmlIndexFind	496
5.64.1.7	mxmlIndexNew	496
5.64.1.8	mxmlIndexReset	496
5.65	/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-node.c File Reference	497
5.65.1	Function Documentation	497
5.65.1.1	mxml_new	497
5.65.1.2	mxmlAdd	497
5.65.1.3	mxmlDelete	497
5.65.1.4	mxmlNewCustom	498
5.65.1.5	mxmlNewElement	498
5.65.1.6	mxmlNewInteger	498
5.65.1.7	mxmlNewOpaque	498
5.65.1.8	mxmlNewReal	499
5.65.1.9	mxmlNewText	499
5.65.1.10	mxmlNewTextf	499
5.65.1.11	mxmlRemove	499
5.66	/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-private.c File Reference	500
5.66.1	Function Documentation	500
5.66.1.1	mxml_error	500
5.66.1.2	mxml_integer_cb	500

5.66.1.3	mxml_opaque_cb	500
5.66.1.4	mxml_real_cb	500
5.66.2	Variable Documentation	501
5.66.2.1	mxml_error_cb	501
5.67	/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-search.c File Reference	502
5.67.1	Function Documentation	502
5.67.1.1	mxmlFindElement	502
5.67.1.2	mxmlWalkNext	502
5.67.1.3	mxmlWalkPrev	502
5.68	/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-set.c File Reference	503
5.68.1	Function Documentation	503
5.68.1.1	mxmlSetCustom	503
5.68.1.2	mxmlSetElement	503
5.68.1.3	mxmlSetInteger	503
5.68.1.4	mxmlSetOpaque	503
5.68.1.5	mxmlSetReal	503
5.68.1.6	mxmlSetText	504
5.68.1.7	mxmlSetTextf	504
5.69	/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-string.c File Reference	505
5.69.1	Function Documentation	505
5.69.1.1	mxml_strdup	505
5.69.1.2	mxml_strdupf	505
5.69.1.3	mxml_vsnprintf	505
5.70	/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml.h File Reference	506
5.70.1	Define Documentation	508
5.70.1.1	MXML_ADD_AFTER	508
5.70.1.2	MXML_ADD_BEFORE	508
5.70.1.3	MXML_ADD_TO_PARENT	508
5.70.1.4	MXML_DESCEND	508
5.70.1.5	MXML_DESCEND_FIRST	508
5.70.1.6	MXML_INTEGER_CALLBACK	509
5.70.1.7	MXML_NO_CALLBACK	509
5.70.1.8	MXML_NO_DESCEND	509
5.70.1.9	MXML_NO_PARENT	509
5.70.1.10	MXML_OPAQUE_CALLBACK	509
5.70.1.11	MXML_REAL_CALLBACK	509

5.70.1.12	MXML_TAB	510
5.70.1.13	MXML_TEXT_CALLBACK	510
5.70.1.14	MXML_WRAP	510
5.70.1.15	MXML_WS_AFTER_CLOSE	510
5.70.1.16	MXML_WS_AFTER_OPEN	510
5.70.1.17	MXML_WS_BEFORE_CLOSE	510
5.70.1.18	MXML_WS_BEFORE_OPEN	510
5.70.2	Typedef Documentation	510
5.70.2.1	mxml_attr_t	510
5.70.2.2	mxml_custom_load_cb_t	510
5.70.2.3	mxml_custom_save_cb_t	510
5.70.2.4	mxml_custom_t	511
5.70.2.5	mxml_element_t	511
5.70.2.6	mxml_index_t	511
5.70.2.7	mxml_node_t	511
5.70.2.8	mxml_text_t	511
5.70.2.9	mxml_type_t	511
5.70.2.10	mxml_value_t	511
5.70.3	Enumeration Type Documentation	511
5.70.3.1	mxml_type_e	511
5.70.4	Function Documentation	511
5.70.4.1	mxml_error	511
5.70.4.2	mxml_integer_cb	511
5.70.4.3	mxml_opaque_cb	511
5.70.4.4	mxml_real_cb	512
5.70.4.5	mxmlAdd	512
5.70.4.6	mxmlDelete	512
5.70.4.7	mxmlElementGetAttr	512
5.70.4.8	mxmlElementSetAttr	512
5.70.4.9	mxmlEntityAddCallback	513
5.70.4.10	mxmlEntityGetName	513
5.70.4.11	mxmlEntityGetValue	513
5.70.4.12	mxmlEntityRemoveCallback	513
5.70.4.13	mxmlFindElement	513
5.70.4.14	mxmlIndexDelete	513
5.70.4.15	mxmlIndexEnum	514

5.70.4.16 mxmIndexFind	514
5.70.4.17 mxmIndexNew	514
5.70.4.18 mxmIndexReset	514
5.70.4.19 mxmLoadFd	514
5.70.4.20 mxmLoadFile	514
5.70.4.21 mxmLoadString	514
5.70.4.22 mxmNewCustom	514
5.70.4.23 mxmNewElement	515
5.70.4.24 mxmNewInteger	515
5.70.4.25 mxmNewOpaque	515
5.70.4.26 mxmNewReal	515
5.70.4.27 mxmNewText	515
5.70.4.28 mxmNewTextf	516
5.70.4.29 mxmRemove	516
5.70.4.30 mxmSaveAllocString	516
5.70.4.31 mxmSaveFd	516
5.70.4.32 mxmSaveFile	516
5.70.4.33 mxmSaveString	516
5.70.4.34 mxmSetCustom	516
5.70.4.35 mxmSetCustomHandlers	516
5.70.4.36 mxmSetElement	516
5.70.4.37 mxmSetErrorCallback	516
5.70.4.38 mxmSetInteger	517
5.70.4.39 mxmSetOpaque	517
5.70.4.40 mxmSetReal	517
5.70.4.41 mxmSetText	517
5.70.4.42 mxmSetTextf	517
5.70.4.43 mxmWalkNext	517
5.70.4.44 mxmWalkPrev	517
5.71 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxmldoc.c File Reference	518
5.71.1 Define Documentation	518
5.71.1.1 STATE_C_COMMENT	518
5.71.1.2 STATE_CHARACTER	518
5.71.1.3 STATE_CXX_COMMENT	518
5.71.1.4 STATE_IDENTIFIER	519
5.71.1.5 STATE_NONE	519

5.71.1.6	STATE_PREPROCESSOR	519
5.71.1.7	STATE_STRING	519
5.71.2	Function Documentation	519
5.71.2.1	add_variable	519
5.71.2.2	main	519
5.71.2.3	safe_strcpy	519
5.71.2.4	scan_file	520
5.71.2.5	sort_node	520
5.71.2.6	update_comment	520
5.71.2.7	write_documentation	520
5.71.2.8	write_element	520
5.71.2.9	write_string	521
5.71.2.10	ws_cb	521
5.72	/home/dko/Projects/mobilec/src/mxml-2.2.2/test/class.cxx File Reference	522
5.72.1	Variable Documentation	522
5.72.1.1	bar	522
5.72.1.2	f	522
5.72.1.3	foo	522
5.73	/home/dko/Projects/mobilec/src/mxml-2.2.2/test/enum.cxx File Reference	523
5.73.1	Typedef Documentation	523
5.73.1.1	foo_enum_t	523
5.73.2	Enumeration Type Documentation	523
5.73.2.1	foo_enum_e	523
5.74	/home/dko/Projects/mobilec/src/mxml-2.2.2/test/function.cxx File Reference	524
5.74.1	Function Documentation	524
5.74.1.1	foo_default_int	524
5.74.1.2	foo_default_string	524
5.74.1.3	foo_float_function	524
5.74.1.4	foo_void_function	524
5.75	/home/dko/Projects/mobilec/src/mxml-2.2.2/test/struct.cxx File Reference	525
5.75.1	Typedef Documentation	525
5.75.1.1	foo_t	525
5.76	/home/dko/Projects/mobilec/src/mxml-2.2.2/testmxml.c File Reference	526
5.76.1	Function Documentation	526
5.76.1.1	main	526
5.76.1.2	type_cb	526

5.76.1.3	whitespace_cb	526
5.77	/home/dko/Projects/mobilec/src/mxml-2.2.2/winconfig.h File Reference	527
5.77.1	Define Documentation	527
5.77.1.1	HAVE_STRDUP	527
5.77.1.2	HAVE_VSNPRINTF	527
5.77.1.3	MXML_VERSION	527
5.77.1.4	strdup	527
5.77.1.5	vsnprintf	528
5.77.2	Function Documentation	528
5.77.2.1	mxml_strdup	528
5.77.2.2	mxml_strdupf	528
5.77.2.3	mxml_vsnprintf	528
5.78	/home/dko/Projects/mobilec/src/winconfig.h File Reference	529
5.78.1	Define Documentation	529
5.78.1.1	PACKAGE_STRING	529
5.78.1.2	PACKAGE_VERSION	529
5.78.1.3	strdup	529
5.78.1.4	strtok_r	529
5.79	/home/dko/Projects/mobilec/src/security/asm.c File Reference	530
5.80	/home/dko/Projects/mobilec/src/security/asm.h File Reference	531
5.81	/home/dko/Projects/mobilec/src/security/asm_message_composer.c File Reference	532
5.82	/home/dko/Projects/mobilec/src/security/asm_message_composer.h File Reference	533
5.83	/home/dko/Projects/mobilec/src/security/asm_message_parser.c File Reference	534
5.84	/home/dko/Projects/mobilec/src/security/asm_message_parser.h File Reference	535
5.85	/home/dko/Projects/mobilec/src/security/asm_node.c File Reference	536
5.86	/home/dko/Projects/mobilec/src/security/asm_node.h File Reference	537
5.87	/home/dko/Projects/mobilec/src/security/interface.c File Reference	538
5.87.1	Function Documentation	538
5.87.1.1	aes_en_de	538
5.87.1.2	append_nonce_to_MA	538
5.87.1.3	extract_nonce_from_MA	539
5.87.1.4	generate_AES_key	539
5.87.1.5	generate_RSA_keys_ciphertext	539
5.87.1.6	generate_RSA_keys_plaintext	539
5.87.1.7	initiate_migration_process	539
5.87.1.8	read_encrypted_file	539

5.87.1.9	read_known_host_file	540
5.87.1.10	receive_AES_en_MA	540
5.87.1.11	remove_nonce_from_MA	540
5.87.1.12	reply_migration_process	540
5.87.1.13	rsa_decryption	540
5.87.1.14	rsa_encryption	540
5.87.1.15	send_AES_en_MA	540
5.87.1.16	separate_key_parts	541
5.88	/home/dko/Projects/mobilec/src/security/interface.h File Reference	542
5.88.1	Define Documentation	543
5.88.1.1	EXPONENT	543
5.88.1.2	KEY_SIZE	543
5.88.1.3	MAXDATASIZE	543
5.88.1.4	MODE_DECRYPT	543
5.88.1.5	MODE_ENCRYPT	543
5.88.1.6	PATH	543
5.88.1.7	RSA_DE	543
5.88.1.8	RSA_EN	543
5.88.2	Function Documentation	544
5.88.2.1	aes_en_de	544
5.88.2.2	generate_AES_key	544
5.88.2.3	generate_encrypt_send_AES_key	544
5.88.2.4	generate_RSA_keys_ciphertext	544
5.88.2.5	generate_RSA_keys_plaintext	544
5.88.2.6	initiate_migration_process	544
5.88.2.7	read_encrypted_file	545
5.88.2.8	read_known_host_file	545
5.88.2.9	receive_AES_en_MA	545
5.88.2.10	receive_decrypt_AES_key	545
5.88.2.11	receiving_decrypting_MA_RSA	545
5.88.2.12	receiving_verifying_MA_RSA	545
5.88.2.13	reply_migration_process	545
5.88.2.14	rsa_decryption	545
5.88.2.15	rsa_encryption	545
5.88.2.16	send_AES_en_MA	546
5.89	/home/dko/Projects/mobilec/src/security/mc_dh.c File Reference	547

5.90	/home/dko/Projects/mobilec/src/security/mc_dh.h File Reference	548
5.91	/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/aes.h File Reference . . .	549
5.91.1	Detailed Description	549
5.91.2	Define Documentation	549
5.91.2.1	AES_DECRYPT	549
5.91.2.2	AES_ENCRYPT	550
5.91.3	Function Documentation	550
5.91.3.1	aes_crypt_cbc	550
5.91.3.2	aes_crypt_cfb	550
5.91.3.3	aes_crypt_ecb	551
5.91.3.4	aes_self_test	551
5.91.3.5	aes_setkey_dec	551
5.91.3.6	aes_setkey_enc	552
5.92	/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/arc4.h File Reference . .	553
5.92.1	Detailed Description	553
5.92.2	Function Documentation	553
5.92.2.1	arc4_crypt	553
5.92.2.2	arc4_self_test	553
5.92.2.3	arc4_setup	554
5.93	/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/base64.h File Reference .	555
5.93.1	Detailed Description	555
5.93.2	Define Documentation	555
5.93.2.1	XYSSL_ERR_BASE64_BUFFER_TOO_SMALL	555
5.93.2.2	XYSSL_ERR_BASE64_INVALID_CHARACTER	555
5.93.3	Function Documentation	555
5.93.3.1	base64_decode	555
5.93.3.2	base64_encode	556
5.93.3.3	base64_self_test	556
5.94	/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/bignum.h File Reference .	557
5.94.1	Detailed Description	559
5.94.2	Define Documentation	560
5.94.2.1	MPI_CHK	560
5.94.2.2	XYSSL_ERR_MPI_BAD_INPUT_DATA	560
5.94.2.3	XYSSL_ERR_MPI_BUFFER_TOO_SMALL	560
5.94.2.4	XYSSL_ERR_MPI_DIVISION_BY_ZERO	560
5.94.2.5	XYSSL_ERR_MPI_FILE_IO_ERROR	560

5.94.2.6	XYSSL_ERR_MPI_INVALID_CHARACTER	560
5.94.2.7	XYSSL_ERR_MPI_NEGATIVE_VALUE	560
5.94.2.8	XYSSL_ERR_MPI_NOT_ACCEPTABLE	560
5.94.3	Typedef Documentation	561
5.94.3.1	t_dbl	561
5.94.3.2	t_int	561
5.94.4	Function Documentation	561
5.94.4.1	mpi_add_abs	561
5.94.4.2	mpi_add_int	561
5.94.4.3	mpi_add_mpi	561
5.94.4.4	mpi_cmp_abs	562
5.94.4.5	mpi_cmp_int	562
5.94.4.6	mpi_cmp_mpi	562
5.94.4.7	mpi_copy	562
5.94.4.8	mpi_div_int	563
5.94.4.9	mpi_div_mpi	563
5.94.4.10	mpi_exp_mod	563
5.94.4.11	mpi_free	564
5.94.4.12	mpi_gcd	564
5.94.4.13	mpi_gen_prime	564
5.94.4.14	mpi_grow	564
5.94.4.15	mpi_init	565
5.94.4.16	mpi_inv_mod	565
5.94.4.17	mpi_is_prime	565
5.94.4.18	mpi_lsb	566
5.94.4.19	mpi_lset	566
5.94.4.20	mpi_mod_int	566
5.94.4.21	mpi_mod_mpi	566
5.94.4.22	mpi_msb	567
5.94.4.23	mpi_mul_int	567
5.94.4.24	mpi_mul_mpi	567
5.94.4.25	mpi_read_binary	567
5.94.4.26	mpi_read_file	568
5.94.4.27	mpi_read_mystring	568
5.94.4.28	mpi_read_string	568
5.94.4.29	mpi_self_test	569

5.94.4.30	mpi_shift_l	569
5.94.4.31	mpi_shift_r	569
5.94.4.32	mpi_size	569
5.94.4.33	mpi_sub_abs	570
5.94.4.34	mpi_sub_int	570
5.94.4.35	mpi_sub_mpi	570
5.94.4.36	mpi_swap	570
5.94.4.37	mpi_write_binary	570
5.94.4.38	mpi_write_file	571
5.94.4.39	mpi_write_string	571
5.95	/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/bn_mul.h File Reference	573
5.95.1	Detailed Description	573
5.95.2	Define Documentation	573
5.95.2.1	MULADDC_CORE	573
5.95.2.2	MULADDC_INIT	573
5.95.2.3	MULADDC_STOP	574
5.96	/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/certs.h File Reference	575
5.96.1	Detailed Description	575
5.96.2	Variable Documentation	575
5.96.2.1	test_ca_cert	575
5.96.2.2	test_ca_key	575
5.96.2.3	test_ca_pwd	575
5.96.2.4	test_cli_cert	575
5.96.2.5	test_cli_key	575
5.96.2.6	test_srv_cert	576
5.96.2.7	test_srv_key	576
5.96.2.8	xyssl_ca_cert	576
5.97	/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/debug.h File Reference	577
5.97.1	Detailed Description	577
5.97.2	Define Documentation	577
5.97.2.1	SSL_DEBUG_BUF	577
5.97.2.2	SSL_DEBUG_CERT	578
5.97.2.3	SSL_DEBUG_MPI	578
5.97.2.4	SSL_DEBUG_MSG	578
5.97.2.5	SSL_DEBUG_RET	578
5.97.3	Function Documentation	578

5.97.3.1	debug_fmt	578
5.97.3.2	debug_print_buf	579
5.97.3.3	debug_print_crt	579
5.97.3.4	debug_print_mpi	579
5.97.3.5	debug_print_msg	579
5.97.3.6	debug_print_ret	579
5.98	/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/des.h File Reference	580
5.98.1	Detailed Description	581
5.98.2	Define Documentation	581
5.98.2.1	DES_DECRYPT	581
5.98.2.2	DES_ENCRYPT	581
5.98.3	Function Documentation	581
5.98.3.1	des3_crypt_cbc	581
5.98.3.2	des3_crypt_ecb	581
5.98.3.3	des3_set2key_dec	582
5.98.3.4	des3_set2key_enc	582
5.98.3.5	des3_set3key_dec	582
5.98.3.6	des3_set3key_enc	583
5.98.3.7	des_crypt_cbc	583
5.98.3.8	des_crypt_ecb	583
5.98.3.9	des_self_test	584
5.98.3.10	des_setkey_dec	584
5.98.3.11	des_setkey_enc	584
5.99	/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/dhm.h File Reference	585
5.99.1	Detailed Description	585
5.99.2	Define Documentation	586
5.99.2.1	XYSSL_ERR_DHM_BAD_INPUT_DATA	586
5.99.2.2	XYSSL_ERR_DHM_CALC_SECRET_FAILED	586
5.99.2.3	XYSSL_ERR_DHM_MAKE_PARAMS_FAILED	586
5.99.2.4	XYSSL_ERR_DHM_MAKE_PUBLIC_FAILED	586
5.99.2.5	XYSSL_ERR_DHM_READ_PARAMS_FAILED	586
5.99.2.6	XYSSL_ERR_DHM_READ_PUBLIC_FAILED	586
5.99.3	Function Documentation	586
5.99.3.1	dhm_calc_secret	586
5.99.3.2	dhm_free	587
5.99.3.3	dhm_make_params	587

5.99.3.4	dhm_make_public	587
5.99.3.5	dhm_read_params	588
5.99.3.6	dhm_read_public	588
5.99.3.7	dhm_self_test	589
5.100	/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/havege.h File Reference	590
5.100.1	Detailed Description	590
5.100.2	Define Documentation	590
5.100.2.1	COLLECT_SIZE	590
5.100.3	Function Documentation	590
5.100.3.1	havege_init	590
5.100.3.2	havege_rand	591
5.101	/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/md2.h File Reference	592
5.101.1	Detailed Description	592
5.101.2	Function Documentation	593
5.101.2.1	md2	593
5.101.2.2	md2_file	593
5.101.2.3	md2_finish	593
5.101.2.4	md2_hmac	593
5.101.2.5	md2_hmac_finish	594
5.101.2.6	md2_hmac_starts	594
5.101.2.7	md2_hmac_update	594
5.101.2.8	md2_self_test	594
5.101.2.9	md2_starts	594
5.101.2.10	md2_update	595
5.102	/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/md4.h File Reference	596
5.102.1	Detailed Description	596
5.102.2	Function Documentation	597
5.102.2.1	md4	597
5.102.2.2	md4_file	597
5.102.2.3	md4_finish	597
5.102.2.4	md4_hmac	597
5.102.2.5	md4_hmac_finish	598
5.102.2.6	md4_hmac_starts	598
5.102.2.7	md4_hmac_update	598
5.102.2.8	md4_self_test	598
5.102.2.9	md4_starts	598

5.102.2.10md4_update	599
5.103/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/md5.h File Reference . .	600
5.103.1 Detailed Description	600
5.103.2 Function Documentation	601
5.103.2.1 md5	601
5.103.2.2 md5_file	601
5.103.2.3 md5_finish	601
5.103.2.4 md5_hmac	602
5.103.2.5 md5_hmac_finish	602
5.103.2.6 md5_hmac_starts	602
5.103.2.7 md5_hmac_update	603
5.103.2.8 md5_self_test	603
5.103.2.9 md5_starts	603
5.103.2.10md5_update	603
5.104/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/net.h File Reference . .	605
5.104.1 Detailed Description	605
5.104.2 Define Documentation	606
5.104.2.1 XYSSL_ERR_NET_ACCEPT_FAILED	606
5.104.2.2 XYSSL_ERR_NET_BIND_FAILED	606
5.104.2.3 XYSSL_ERR_NET_CONN_RESET	606
5.104.2.4 XYSSL_ERR_NET_CONNECT_FAILED	606
5.104.2.5 XYSSL_ERR_NET_LISTEN_FAILED	606
5.104.2.6 XYSSL_ERR_NET_RECV_FAILED	606
5.104.2.7 XYSSL_ERR_NET_SEND_FAILED	606
5.104.2.8 XYSSL_ERR_NET_SOCKET_FAILED	606
5.104.2.9 XYSSL_ERR_NET_TRY_AGAIN	607
5.104.2.10XYSSL_ERR_NET_UNKNOWN_HOST	607
5.104.3 Function Documentation	607
5.104.3.1 net_accept	607
5.104.3.2 net_bind	607
5.104.3.3 net_close	607
5.104.3.4 net_connect	608
5.104.3.5 net_recv	608
5.104.3.6 net_send	608
5.104.3.7 net_set_block	608
5.104.3.8 net_set_nonblock	609

5.104.3.9 net_usleep	609
5.105/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/openssl.h File Reference .	610
5.105.1 Detailed Description	611
5.105.2 Define Documentation	611
5.105.2.1 AES_BLOCK_SIZE	611
5.105.2.2 AES_cbc_encrypt	611
5.105.2.3 AES_KEY	611
5.105.2.4 AES_set_decrypt_key	611
5.105.2.5 AES_set_encrypt_key	611
5.105.2.6 AES_SIZE	611
5.105.2.7 d2i_RSAPrivateKey	611
5.105.2.8 ERR_get_error	611
5.105.2.9 MD5_CTX	611
5.105.2.10 MD5_Final	612
5.105.2.11 MD5_Init	612
5.105.2.12 MD5_Update	612
5.105.2.13 RSA	612
5.105.2.14 RSA_blinding_off	612
5.105.2.15 RSA_free	612
5.105.2.16 RSA_PKCS1_PADDING	612
5.105.2.17 RSA_size	612
5.105.2.18 SHA1_Final	612
5.105.2.19 SHA1_Init	612
5.105.2.20 SHA1_Update	612
5.105.2.21 SHA_CTX	613
5.105.3 Function Documentation	613
5.105.3.1 __RSA_Passthrough	613
5.105.3.2 d2i_RSA_PUBKEY	613
5.105.3.3 RSA_private_decrypt	613
5.105.3.4 RSA_private_encrypt	613
5.105.3.5 RSA_public_decrypt	613
5.105.3.6 RSA_public_encrypt	613
5.106/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/padlock.h File Reference .	614
5.106.1 Detailed Description	614
5.107/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/rsa.h File Reference . . .	615
5.107.1 Detailed Description	616

5.107.2 Define Documentation	616
5.107.2.1 ASN1_HASH_MDX	616
5.107.2.2 ASN1_HASH_SHA1	617
5.107.2.3 RSA_CRYPT	617
5.107.2.4 RSA_MD2	617
5.107.2.5 RSA_MD4	617
5.107.2.6 RSA_MD5	617
5.107.2.7 RSA_PKCS_V15	617
5.107.2.8 RSA_PKCS_V21	617
5.107.2.9 RSA_PRIVATE	617
5.107.2.10 RSA_PUBLIC	618
5.107.2.11 RSA_RAW	618
5.107.2.12 RSA_SHA1	618
5.107.2.13 RSA_SHA256	618
5.107.2.14 RSA_SIGN	618
5.107.2.15 XYSSL_ERR_RSA_BAD_INPUT_DATA	618
5.107.2.16 XYSSL_ERR_RSA_INVALID_PADDING	618
5.107.2.17 XYSSL_ERR_RSA_KEY_CHECK_FAILED	618
5.107.2.18 XYSSL_ERR_RSA_KEY_GEN_FAILED	619
5.107.2.19 XYSSL_ERR_RSA_PRIVATE_FAILED	619
5.107.2.20 XYSSL_ERR_RSA_PUBLIC_FAILED	619
5.107.2.21 XYSSL_ERR_RSA_VERIFY_FAILED	619
5.107.3 Function Documentation	619
5.107.3.1 rsa_check_privkey	619
5.107.3.2 rsa_check_pubkey	619
5.107.3.3 rsa_free	620
5.107.3.4 rsa_gen_key	620
5.107.3.5 rsa_init	620
5.107.3.6 rsa_pkcs1_decrypt	621
5.107.3.7 rsa_pkcs1_encrypt	621
5.107.3.8 rsa_pkcs1_sign	622
5.107.3.9 rsa_pkcs1_verify	623
5.107.3.10 rsa_private	623
5.107.3.11 rsa_public	624
5.107.3.12 rsa_self_test	624
5.108/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/sha1.h File Reference . .	625

5.108.1 Detailed Description	625
5.108.2 Function Documentation	626
5.108.2.1 sha1	626
5.108.2.2 sha1_file	626
5.108.2.3 sha1_finish	626
5.108.2.4 sha1_hmac	627
5.108.2.5 sha1_hmac_finish	627
5.108.2.6 sha1_hmac_starts	627
5.108.2.7 sha1_hmac_update	628
5.108.2.8 sha1_self_test	628
5.108.2.9 sha1_starts	628
5.108.2.10 sha1_update	628
5.109/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/sha2.h File Reference . .	630
5.109.1 Detailed Description	630
5.109.2 Function Documentation	631
5.109.2.1 sha2	631
5.109.2.2 sha2_file	631
5.109.2.3 sha2_finish	631
5.109.2.4 sha2_hmac	632
5.109.2.5 sha2_hmac_finish	632
5.109.2.6 sha2_hmac_starts	632
5.109.2.7 sha2_hmac_update	633
5.109.2.8 sha2_self_test	633
5.109.2.9 sha2_starts	633
5.109.2.10 sha2_update	633
5.110/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/sha4.h File Reference . .	635
5.110.1 Detailed Description	636
5.110.2 Define Documentation	636
5.110.2.1 int64	636
5.110.2.2 UL64	636
5.110.3 Function Documentation	636
5.110.3.1 sha4	636
5.110.3.2 sha4_file	636
5.110.3.3 sha4_finish	637
5.110.3.4 sha4_hmac	637
5.110.3.5 sha4_hmac_finish	637

5.110.3.6 sha4_hmac_starts	638
5.110.3.7 sha4_hmac_update	638
5.110.3.8 sha4_self_test	638
5.110.3.9 sha4_starts	638
5.110.3.10 sha4_update	639
5.111/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/ssl.h File Reference . . .	640
5.111.1 Detailed Description	644
5.111.2 Define Documentation	644
5.111.2.1 SSL_ALERT_CLOSE_NOTIFY	644
5.111.2.2 SSL_ALERT_FATAL	644
5.111.2.3 SSL_ALERT_NO_CERTIFICATE	644
5.111.2.4 SSL_ALERT_WARNING	644
5.111.2.5 SSL_BUFFER_LEN	644
5.111.2.6 SSL_COMPRESS_NULL	644
5.111.2.7 SSL_EDH_RSA_AES_256_SHA	644
5.111.2.8 SSL_EDH_RSA_DES_168_SHA	645
5.111.2.9 SSL_HS_CERTIFICATE	645
5.111.2.10 SSL_HS_CERTIFICATE_REQUEST	645
5.111.2.11 SSL_HS_CERTIFICATE_VERIFY	645
5.111.2.12 SSL_HS_CLIENT_HELLO	645
5.111.2.13 SSL_HS_CLIENT_KEY_EXCHANGE	645
5.111.2.14 SSL_HS_FINISHED	645
5.111.2.15 SSL_HS_HELLO_REQUEST	645
5.111.2.16 SSL_HS_SERVER_HELLO	645
5.111.2.17 SSL_HS_SERVER_HELLO_DONE	646
5.111.2.18 SSL_HS_SERVER_KEY_EXCHANGE	646
5.111.2.19 SSL_IS_CLIENT	646
5.111.2.20 SSL_IS_SERVER	646
5.111.2.21 SSL_MAJOR_VERSION_3	646
5.111.2.22 SSL_MAX_CONTENT_LEN	646
5.111.2.23 SSL_MINOR_VERSION_0	646
5.111.2.24 SSL_MINOR_VERSION_1	646
5.111.2.25 SSL_MINOR_VERSION_2	647
5.111.2.26 SSL_MSG_ALERT	647
5.111.2.27 SSL_MSG_APPLICATION_DATA	647
5.111.2.28 SSL_MSG_CHANGE_CIPHER_SPEC	647

5.111.2.29SSL_MSG_HANDSHAKE	647
5.111.2.30SSL_RSA_AES_128_SHA	647
5.111.2.31SSL_RSA_AES_256_SHA	647
5.111.2.32SSL_RSA_DES_168_SHA	648
5.111.2.33SSL_RSA_RC4_128_MD5	648
5.111.2.34SSL_RSA_RC4_128_SHA	648
5.111.2.35SSL_VERIFY_NONE	648
5.111.2.36SSL_VERIFY_OPTIONAL	648
5.111.2.37SSL_VERIFY_REQUIRED	648
5.111.2.38TLS_EXT_SERVERNAME	648
5.111.2.39TLS_EXT_SERVERNAME_HOSTNAME	648
5.111.2.40XYSSL_ERR_SSL_BAD_HS_CERTIFICATE	648
5.111.2.41XYSSL_ERR_SSL_BAD_HS_CERTIFICATE_REQUEST	649
5.111.2.42XYSSL_ERR_SSL_BAD_HS_CERTIFICATE_VERIFY	649
5.111.2.43XYSSL_ERR_SSL_BAD_HS_CHANGE_CIPHER_SPEC	649
5.111.2.44XYSSL_ERR_SSL_BAD_HS_CLIENT_HELLO	649
5.111.2.45XYSSL_ERR_SSL_BAD_HS_CLIENT_KEY_EXCHANGE	649
5.111.2.46XYSSL_ERR_SSL_BAD_HS_FINISHED	649
5.111.2.47XYSSL_ERR_SSL_BAD_HS_SERVER_HELLO	649
5.111.2.48XYSSL_ERR_SSL_BAD_HS_SERVER_HELLO_DONE	649
5.111.2.49XYSSL_ERR_SSL_BAD_HS_SERVER_KEY_EXCHANGE	649
5.111.2.50XYSSL_ERR_SSL_BAD_INPUT_DATA	650
5.111.2.51XYSSL_ERR_SSL_CA_CHAIN_REQUIRED	650
5.111.2.52XYSSL_ERR_SSL_CERTIFICATE_REQUIRED	650
5.111.2.53XYSSL_ERR_SSL_CERTIFICATE_TOO_LARGE	650
5.111.2.54XYSSL_ERR_SSL_FATAL_ALERT_MESSAGE	650
5.111.2.55XYSSL_ERR_SSL_FEATURE_UNAVAILABLE	650
5.111.2.56XYSSL_ERR_SSL_INVALID_MAC	650
5.111.2.57XYSSL_ERR_SSL_INVALID_MODULUS_SIZE	650
5.111.2.58XYSSL_ERR_SSL_INVALID_RECORD	650
5.111.2.59XYSSL_ERR_SSL_NO_CIPHER_CHOSEN	651
5.111.2.60XYSSL_ERR_SSL_NO_CLIENT_CERTIFICATE	651
5.111.2.61XYSSL_ERR_SSL_NO_SESSION_FOUND	651
5.111.2.62XYSSL_ERR_SSL_PEER_CLOSE_NOTIFY	651
5.111.2.63XYSSL_ERR_SSL_PEER_VERIFY_FAILED	651
5.111.2.64XYSSL_ERR_SSL_PRIVATE_KEY_REQUIRED	651

5.111.2.65	XYSSL_ERR_SSL_UNEXPECTED_MESSAGE	651
5.111.2.66	XYSSL_ERR_SSL_UNKNOWN_CIPHER	651
5.111.3	Typedef Documentation	652
5.111.3.1	ssl_context	652
5.111.3.2	ssl_session	652
5.111.4	Enumeration Type Documentation	652
5.111.4.1	ssl_states	652
5.111.5	Function Documentation	652
5.111.5.1	ssl_calc_verify	652
5.111.5.2	ssl_close_notify	653
5.111.5.3	ssl_derive_keys	653
5.111.5.4	ssl_fetch_input	653
5.111.5.5	ssl_flush_output	653
5.111.5.6	ssl_free	653
5.111.5.7	ssl_get_bytes_avail	654
5.111.5.8	ssl_get_cipher	654
5.111.5.9	ssl_get_verify_result	654
5.111.5.10	ssl_handshake	655
5.111.5.11	ssl_handshake_client	655
5.111.5.12	ssl_handshake_server	655
5.111.5.13	ssl_init	655
5.111.5.14	ssl_parse_certificate	656
5.111.5.15	ssl_parse_change_cipher_spec	656
5.111.5.16	ssl_parse_finished	656
5.111.5.17	ssl_read	657
5.111.5.18	ssl_read_record	657
5.111.5.19	ssl_set_authmode	657
5.111.5.20	ssl_set_bio	658
5.111.5.21	ssl_set_ca_chain	658
5.111.5.22	ssl_set_ciphers	658
5.111.5.23	ssl_set_dbg	659
5.111.5.24	ssl_set_dh_param	659
5.111.5.25	ssl_set_endpoint	659
5.111.5.26	ssl_set_hostname	660
5.111.5.27	ssl_set_own_cert	660
5.111.5.28	ssl_set_rng	660

5.111.5.29	ssl_set_scb	661
5.111.5.30	ssl_set_session	661
5.111.5.31	ssl_write	661
5.111.5.32	ssl_write_certificate	662
5.111.5.33	ssl_write_change_cipher_spec	662
5.111.5.34	ssl_write_finished	662
5.111.5.35	ssl_write_record	662
5.111.6	Variable Documentation	663
5.111.6.1	ssl_default_ciphers	663
5.112	/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/timing.h File Reference	664
5.112.1	Detailed Description	664
5.112.2	Function Documentation	664
5.112.2.1	get_timer	664
5.112.2.2	hardclock	665
5.112.2.3	m_sleep	665
5.112.2.4	set_alarm	665
5.112.3	Variable Documentation	665
5.112.3.1	alarmed	665
5.113	/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/x509.h File Reference	666
5.113.1	Detailed Description	668
5.113.2	Define Documentation	668
5.113.2.1	ASN1_BIT_STRING	668
5.113.2.2	ASN1_BMP_STRING	668
5.113.2.3	ASN1_BOOLEAN	669
5.113.2.4	ASN1_CONSTRUCTED	669
5.113.2.5	ASN1_CONTEXT_SPECIFIC	669
5.113.2.6	ASN1_IA5_STRING	669
5.113.2.7	ASN1_INTEGER	669
5.113.2.8	ASN1_NULL	669
5.113.2.9	ASN1_OCTET_STRING	669
5.113.2.10	ASN1_OID	669
5.113.2.11	ASN1_PRIMITIVE	669
5.113.2.12	ASN1_PRINTABLE_STRING	670
5.113.2.13	ASN1_SEQUENCE	670
5.113.2.14	ASN1_SET	670
5.113.2.15	ASN1_T61_STRING	670

5.113.2.16ASN1_UNIVERSAL_STRING	670
5.113.2.17ASN1_UTC_TIME	670
5.113.2.18ASN1_UTF8_STRING	670
5.113.2.19BADCERT_CN_MISMATCH	670
5.113.2.20BADCERT_EXPIRED	671
5.113.2.21BADCERT_NOT_TRUSTED	671
5.113.2.22BADCERT_REVOKED	671
5.113.2.23OID_CN	671
5.113.2.24OID_PKCS1	671
5.113.2.25OID_PKCS1_RSA	671
5.113.2.26OID_PKCS1_RSA_SHA	671
5.113.2.27OID_PKCS9	671
5.113.2.28OID_PKCS9_EMAIL	671
5.113.2.29OID_X520	672
5.113.2.30PEM_LINE_LENGTH	672
5.113.2.31PKCS9_EMAIL	672
5.113.2.32X509_ISSUER	672
5.113.2.33X509_OUTPUT_DER	672
5.113.2.34X509_OUTPUT_PEM	672
5.113.2.35X509_SUBJECT	672
5.113.2.36X520_COMMON_NAME	672
5.113.2.37X520_COUNTRY	672
5.113.2.38X520_LOCALITY	672
5.113.2.39X520_ORG_UNIT	673
5.113.2.40X520_ORGANIZATION	673
5.113.2.41X520_STATE	673
5.113.2.42XYSSL_ERR_ASN1_INVALID_DATA	673
5.113.2.43XYSSL_ERR_ASN1_INVALID_LENGTH	673
5.113.2.44XYSSL_ERR_ASN1_LENGTH_MISMATCH	673
5.113.2.45XYSSL_ERR_ASN1_OUT_OF_DATA	673
5.113.2.46XYSSL_ERR_ASN1_UNEXPECTED_TAG	673
5.113.2.47XYSSL_ERR_X509_CERT_INVALID_ALG	674
5.113.2.48XYSSL_ERR_X509_CERT_INVALID_DATE	674
5.113.2.49XYSSL_ERR_X509_CERT_INVALID_EXTENSIONS	674
5.113.2.50XYSSL_ERR_X509_CERT_INVALID_FORMAT	674
5.113.2.51XYSSL_ERR_X509_CERT_INVALID_NAME	674

5.113.2.52XYSSL_ERR_X509_CERT_INVALID_PEM	674
5.113.2.53XYSSL_ERR_X509_CERT_INVALID_PUBKEY	674
5.113.2.54XYSSL_ERR_X509_CERT_INVALID_SERIAL	674
5.113.2.55XYSSL_ERR_X509_CERT_INVALID_SIGNATURE	674
5.113.2.56XYSSL_ERR_X509_CERT_INVALID_VERSION	675
5.113.2.57XYSSL_ERR_X509_CERT_SIG_MISMATCH	675
5.113.2.58XYSSL_ERR_X509_CERT_UNKNOWN_PK_ALG	675
5.113.2.59XYSSL_ERR_X509_CERT_UNKNOWN_SIG_ALG	675
5.113.2.60XYSSL_ERR_X509_CERT_UNKNOWN_VERSION	675
5.113.2.61XYSSL_ERR_X509_CERT_VERIFY_FAILED	675
5.113.2.62XYSSL_ERR_X509_FEATURE_UNAVAILABLE	675
5.113.2.63XYSSL_ERR_X509_KEY_INVALID_ENC_IV	675
5.113.2.64XYSSL_ERR_X509_KEY_INVALID_FORMAT	675
5.113.2.65XYSSL_ERR_X509_KEY_INVALID_PEM	676
5.113.2.66XYSSL_ERR_X509_KEY_INVALID_VERSION	676
5.113.2.67XYSSL_ERR_X509_KEY_PASSWORD_MISMATCH	676
5.113.2.68XYSSL_ERR_X509_KEY_PASSWORD_REQUIRED	676
5.113.2.69XYSSL_ERR_X509_KEY_UNKNOWN_ENC_ALG	676
5.113.2.70XYSSL_ERR_X509_POINT_ERROR	676
5.113.2.71XYSSL_ERR_X509_VALUE_TO_LENGTH	676
5.113.3 Typedef Documentation	677
5.113.3.1 x509_buf	677
5.113.3.2 x509_cert	677
5.113.3.3 x509_name	677
5.113.3.4 x509_node	677
5.113.3.5 x509_raw	677
5.113.3.6 x509_time	677
5.113.4 Function Documentation	677
5.113.4.1 x509_free	677
5.113.4.2 x509_self_test	677
5.113.4.3 x509parse_cert_info	677
5.113.4.4 x509parse_cert	678
5.113.4.5 x509parse_certfile	678
5.113.4.6 x509parse_dn_gets	678
5.113.4.7 x509parse_expired	679
5.113.4.8 x509parse_key	679

5.113.4.9 x509parse_keyfile	679
5.113.4.10x509parse_verify	680
5.114/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/aes.c File Reference	681
5.114.1 Define Documentation	682
5.114.1.1 AES_FROUND	682
5.114.1.2 AES_RROUND	683
5.114.1.3 GET_ULONG_LE	683
5.114.1.4 MUL	683
5.114.1.5 PUT_ULONG_LE	683
5.114.1.6 ROTL8	684
5.114.1.7 XTIME	684
5.114.2 Function Documentation	684
5.114.2.1 aes_crypt_cbc	684
5.114.2.2 aes_crypt_cfb	684
5.114.2.3 aes_crypt_ecb	685
5.114.2.4 aes_gen_tables	685
5.114.2.5 aes_self_test	685
5.114.2.6 aes_setkey_dec	685
5.114.2.7 aes_setkey_enc	686
5.114.3 Variable Documentation	686
5.114.3.1 aes_init_done	686
5.114.3.2 aes_test_cbc_dec	686
5.114.3.3 aes_test_cbc_enc	687
5.114.3.4 aes_test_cfb_dec	687
5.114.3.5 aes_test_cfb_enc	687
5.114.3.6 aes_test_ecb_dec	687
5.114.3.7 aes_test_ecb_enc	688
5.114.3.8 FSb	688
5.114.3.9 FT0	688
5.114.3.10FT1	688
5.114.3.11FT2	688
5.114.3.12FT3	689
5.114.3.13RCON	689
5.114.3.14RSb	689
5.114.3.15RT0	689
5.114.3.16RT1	689

5.114.3.17RT2	689
5.114.3.18RT3	689
5.115/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/arc4.c File Reference	690
5.115.1 Function Documentation	690
5.115.1.1 arc4_crypt	690
5.115.1.2 arc4_self_test	690
5.115.1.3 arc4_setup	691
5.115.2 Variable Documentation	691
5.115.2.1 arc4_test_ct	691
5.115.2.2 arc4_test_key	691
5.115.2.3 arc4_test_pt	691
5.116/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/base64.c File Reference	693
5.116.1 Function Documentation	693
5.116.1.1 base64_decode	693
5.116.1.2 base64_encode	694
5.116.1.3 base64_self_test	694
5.116.2 Variable Documentation	694
5.116.2.1 base64_dec_map	694
5.116.2.2 base64_enc_map	695
5.116.2.3 base64_test_dec	695
5.116.2.4 base64_test_enc	695
5.117/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/bignum.c File Reference	697
5.117.1 Define Documentation	700
5.117.1.1 biH	700
5.117.1.2 biL	700
5.117.1.3 BITS_TO_LIMBS	700
5.117.1.4 CHARS_TO_LIMBS	700
5.117.1.5 ciL	700
5.117.2 Function Documentation	700
5.117.2.1 mpi_add_abs	700
5.117.2.2 mpi_add_int	700
5.117.2.3 mpi_add_mpi	701
5.117.2.4 mpi_cmp_abs	701
5.117.2.5 mpi_cmp_int	701
5.117.2.6 mpi_cmp_mpi	701
5.117.2.7 mpi_copy	702

5.117.2.8	mpi_div_int	702
5.117.2.9	mpi_div_mpi	702
5.117.2.10	mpi_exp_mod	703
5.117.2.11	mpi_free	703
5.117.2.12	mpi_gcd	703
5.117.2.13	mpi_gen_prime	704
5.117.2.14	mpi_get_digit	704
5.117.2.15	mpi_grow	704
5.117.2.16	mpi_init	704
5.117.2.17	mpi_inv_mod	705
5.117.2.18	mpi_is_prime	705
5.117.2.19	mpi_lsb	705
5.117.2.20	mpi_lset	705
5.117.2.21	mpi_mod_int	706
5.117.2.22	mpi_mod_mpi	706
5.117.2.23	mpi_montg_init	706
5.117.2.24	mpi_montmul	706
5.117.2.25	mpi_montred	707
5.117.2.26	mpi_msb	707
5.117.2.27	mpi_mul_hlp	707
5.117.2.28	mpi_mul_int	707
5.117.2.29	mpi_mul_mpi	707
5.117.2.30	mpi_read_binary	708
5.117.2.31	mpi_read_file	708
5.117.2.32	mpi_read_mystring	708
5.117.2.33	mpi_read_string	708
5.117.2.34	mpi_self_test	709
5.117.2.35	mpi_shift_l	709
5.117.2.36	mpi_shift_r	709
5.117.2.37	mpi_size	710
5.117.2.38	mpi_sub_abs	710
5.117.2.39	mpi_sub_hlp	710
5.117.2.40	mpi_sub_int	710
5.117.2.41	mpi_sub_mpi	710
5.117.2.42	mpi_swap	711
5.117.2.43	mpi_write_binary	711

5.117.2.44	mpi_write_file	711
5.117.2.45	mpi_write_hlp	712
5.117.2.46	mpi_write_string	712
5.117.3	Variable Documentation	712
5.117.3.1	small_prime	712
5.118	/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/certs.c File Reference	714
5.118.1	Variable Documentation	714
5.118.1.1	test_ca_cert	714
5.118.1.2	test_ca_key	714
5.118.1.3	test_ca_pwd	715
5.118.1.4	test_cli_cert	715
5.118.1.5	test_cli_key	715
5.118.1.6	test_srv_cert	716
5.118.1.7	test_srv_key	716
5.118.1.8	xyssl_ca_cert	717
5.119	/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/debug.c File Reference	718
5.119.1	Function Documentation	718
5.119.1.1	debug_fmt	718
5.119.1.2	debug_print_buf	718
5.119.1.3	debug_print_cert	718
5.119.1.4	debug_print_mpi	718
5.119.1.5	debug_print_msg	719
5.119.1.6	debug_print_ret	719
5.120	/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/des.c File Reference	720
5.120.1	Define Documentation	721
5.120.1.1	DES_FP	721
5.120.1.2	DES_IP	722
5.120.1.3	DES_ROUND	722
5.120.1.4	GET_ULONG_BE	722
5.120.1.5	PUT_ULONG_BE	722
5.120.1.6	SWAP	723
5.120.2	Function Documentation	723
5.120.2.1	des3_crypt_cbc	723
5.120.2.2	des3_crypt_ecb	723
5.120.2.3	des3_set2key	724
5.120.2.4	des3_set2key_dec	724

5.120.2.5	des3_set2key_enc	724
5.120.2.6	des3_set3key	724
5.120.2.7	des3_set3key_dec	724
5.120.2.8	des3_set3key_enc	725
5.120.2.9	des_crypt_cbc	725
5.120.2.10	des_crypt_ecb	725
5.120.2.11	des_self_test	726
5.120.2.12	des_setkey	726
5.120.2.13	des_setkey_dec	726
5.120.2.14	des_setkey_enc	726
5.120.3	Variable Documentation	727
5.120.3.1	des3_test_buf	727
5.120.3.2	des3_test_cbc_dec	727
5.120.3.3	des3_test_cbc_enc	727
5.120.3.4	des3_test_ecb_dec	727
5.120.3.5	des3_test_ecb_enc	728
5.120.3.6	des3_test_iv	728
5.120.3.7	des3_test_keys	728
5.120.3.8	LHs	728
5.120.3.9	RHs	729
5.120.3.10	SB1	729
5.120.3.11	SB2	729
5.120.3.12	SB3	730
5.120.3.13	SB4	730
5.120.3.14	SB5	730
5.120.3.15	SB6	731
5.120.3.16	SB7	731
5.120.3.17	SB8	732
5.121	/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/dhm.c File Reference	733
5.121.1	Define Documentation	733
5.121.1.1	DHM_MPI_EXPORT	733
5.121.2	Function Documentation	734
5.121.2.1	dhm_calc_secret	734
5.121.2.2	dhm_free	734
5.121.2.3	dhm_make_params	734
5.121.2.4	dhm_make_public	735

5.121.2.5 dhm_read_bignum	735
5.121.2.6 dhm_read_params	735
5.121.2.7 dhm_read_public	736
5.121.2.8 dhm_self_test	736
5.122/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/havege.c File Reference	737
5.122.1 Define Documentation	737
5.122.1.1 ONE_ITERATION	737
5.122.1.2 SWAP	737
5.122.1.3 TST1_ENTER	737
5.122.1.4 TST1_LEAVE	737
5.122.1.5 TST2_ENTER	738
5.122.1.6 TST2_LEAVE	738
5.122.2 Function Documentation	738
5.122.2.1 havege_fill	738
5.122.2.2 havege_init	738
5.122.2.3 havege_rand	738
5.123/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/md2.c File Reference	739
5.124/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/md4.c File Reference	740
5.125/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/md5.c File Reference	741
5.125.1 Define Documentation	742
5.125.1.1 F	742
5.125.1.2 F	742
5.125.1.3 F	742
5.125.1.4 F	742
5.125.1.5 GET_ULONG_LE	742
5.125.1.6 P	742
5.125.1.7 PUT_ULONG_LE	743
5.125.1.8 S	743
5.125.2 Function Documentation	743
5.125.2.1 md5	743
5.125.2.2 md5_file	743
5.125.2.3 md5_finish	744
5.125.2.4 md5_hmac	744
5.125.2.5 md5_hmac_finish	744
5.125.2.6 md5_hmac_starts	745
5.125.2.7 md5_hmac_update	745

5.125.2.8 md5_process	745
5.125.2.9 md5_self_test	745
5.125.2.10md5_starts	746
5.125.2.11md5_update	746
5.125.3 Variable Documentation	746
5.125.3.1 md5_hmac_test_buf	746
5.125.3.2 md5_hmac_test_buflen	747
5.125.3.3 md5_hmac_test_key	747
5.125.3.4 md5_hmac_test_keylen	747
5.125.3.5 md5_hmac_test_sum	747
5.125.3.6 md5_padding	748
5.125.3.7 md5_test_buf	748
5.125.3.8 md5_test_buflen	748
5.125.3.9 md5_test_sum	749
5.126/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/net.c File Reference	750
5.126.1 Function Documentation	751
5.126.1.1 net_accept	751
5.126.1.2 net_bind	751
5.126.1.3 net_close	751
5.126.1.4 net_connect	751
5.126.1.5 net_htons	752
5.126.1.6 net_is_blocking	752
5.126.1.7 net_recv	752
5.126.1.8 net_send	752
5.126.1.9 net_set_block	753
5.126.1.10net_set_nonblock	753
5.126.1.11net_usleep	753
5.127/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/padlock.c File Reference	754
5.128/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/rsa.c File Reference	755
5.128.1 Define Documentation	756
5.128.1.1 KEY_LEN	756
5.128.1.2 PT_LEN	756
5.128.1.3 RSA_D	756
5.128.1.4 RSA_DP	757
5.128.1.5 RSA_DQ	757
5.128.1.6 RSA_E	757

5.128.1.7 RSA_N	757
5.128.1.8 RSA_P	757
5.128.1.9 RSA_PT	758
5.128.1.10 RSA_Q	758
5.128.1.11 RSA_QP	758
5.128.2 Function Documentation	758
5.128.2.1 rsa_check_privkey	758
5.128.2.2 rsa_check_pubkey	759
5.128.2.3 rsa_free	759
5.128.2.4 rsa_gen_key	759
5.128.2.5 rsa_init	760
5.128.2.6 rsa_pkcs1_decrypt	760
5.128.2.7 rsa_pkcs1_encrypt	761
5.128.2.8 rsa_pkcs1_sign	761
5.128.2.9 rsa_pkcs1_verify	762
5.128.2.10 rsa_private	762
5.128.2.11 rsa_public	763
5.128.2.12 rsa_self_test	763
5.129/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/sha1.c File Reference	765
5.129.1 Define Documentation	766
5.129.1.1 F	766
5.129.1.2 F	766
5.129.1.3 F	766
5.129.1.4 F	766
5.129.1.5 GET_ULONG_BE	766
5.129.1.6 K	767
5.129.1.7 K	767
5.129.1.8 K	767
5.129.1.9 K	767
5.129.1.10 P	767
5.129.1.11 PUT_ULONG_BE	767
5.129.1.12 R	767
5.129.1.13 S	767
5.129.2 Function Documentation	767
5.129.2.1 sha1	767
5.129.2.2 sha1_file	768

5.129.2.3 sha1_finish	768
5.129.2.4 sha1_hmac	768
5.129.2.5 sha1_hmac_finish	769
5.129.2.6 sha1_hmac_starts	769
5.129.2.7 sha1_hmac_update	769
5.129.2.8 sha1_process	770
5.129.2.9 sha1_self_test	770
5.129.2.10 sha1_starts	770
5.129.2.11 sha1_update	770
5.129.3 Variable Documentation	771
5.129.3.1 sha1_hmac_test_buf	771
5.129.3.2 sha1_hmac_test_buflen	771
5.129.3.3 sha1_hmac_test_key	771
5.129.3.4 sha1_hmac_test_keylen	772
5.129.3.5 sha1_hmac_test_sum	772
5.129.3.6 sha1_padding	772
5.129.3.7 sha1_test_buf	773
5.129.3.8 sha1_test_buflen	773
5.129.3.9 sha1_test_sum	773
5.130/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/sha2.c File Reference	774
5.130.1 Define Documentation	775
5.130.1.1 F0	775
5.130.1.2 F1	775
5.130.1.3 GET_ULONG_BE	775
5.130.1.4 P	775
5.130.1.5 PUT_ULONG_BE	776
5.130.1.6 R	776
5.130.1.7 ROTR	776
5.130.1.8 S0	776
5.130.1.9 S1	776
5.130.1.10 S2	776
5.130.1.11 S3	776
5.130.1.12 SHR	776
5.130.2 Function Documentation	776
5.130.2.1 sha2	776
5.130.2.2 sha2_file	777

5.130.2.3 sha2_finish	777
5.130.2.4 sha2_hmac	777
5.130.2.5 sha2_hmac_finish	778
5.130.2.6 sha2_hmac_starts	778
5.130.2.7 sha2_hmac_update	778
5.130.2.8 sha2_process	779
5.130.2.9 sha2_self_test	779
5.130.2.10 sha2_starts	779
5.130.2.11 sha2_update	779
5.130.3 Variable Documentation	780
5.130.3.1 sha2_hmac_test_buf	780
5.130.3.2 sha2_hmac_test_buflen	780
5.130.3.3 sha2_hmac_test_key	780
5.130.3.4 sha2_hmac_test_keylen	781
5.130.3.5 sha2_hmac_test_sum	781
5.130.3.6 sha2_padding	781
5.130.3.7 sha2_test_buf	781
5.130.3.8 sha2_test_buflen	781
5.130.3.9 sha2_test_sum	782
5.131/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/sha4.c File Reference	783
5.131.1 Define Documentation	784
5.131.1.1 F0	784
5.131.1.2 F1	784
5.131.1.3 GET_UINT64_BE	784
5.131.1.4 P	784
5.131.1.5 PUT_UINT64_BE	785
5.131.1.6 ROTR	785
5.131.1.7 S0	785
5.131.1.8 S1	785
5.131.1.9 S2	785
5.131.1.10 S3	785
5.131.1.11 ISHR	785
5.131.2 Function Documentation	785
5.131.2.1 sha4	785
5.131.2.2 sha4_file	786
5.131.2.3 sha4_finish	786

5.131.2.4 sha4_hmac	786
5.131.2.5 sha4_hmac_finish	787
5.131.2.6 sha4_hmac_starts	787
5.131.2.7 sha4_hmac_update	787
5.131.2.8 sha4_process	787
5.131.2.9 sha4_self_test	788
5.131.2.10 sha4_starts	788
5.131.2.11 sha4_update	788
5.131.3 Variable Documentation	788
5.131.3.1 K	788
5.131.3.2 sha4_hmac_test_buf	789
5.131.3.3 sha4_hmac_test_buflen	789
5.131.3.4 sha4_hmac_test_key	789
5.131.3.5 sha4_hmac_test_keylen	790
5.131.3.6 sha4_hmac_test_sum	790
5.131.3.7 sha4_padding	790
5.131.3.8 sha4_test_buf	790
5.131.3.9 sha4_test_buflen	791
5.131.3.10 sha4_test_sum	791
5.132/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/ssl_cli.c File Reference	792
5.132.1 Function Documentation	792
5.132.1.1 ssl_handshake_client	792
5.132.1.2 ssl_parse_certificate_request	792
5.132.1.3 ssl_parse_server_hello	793
5.132.1.4 ssl_parse_server_hello_done	793
5.132.1.5 ssl_parse_server_key_exchange	793
5.132.1.6 ssl_write_certificate_verify	793
5.132.1.7 ssl_write_client_hello	794
5.132.1.8 ssl_write_client_key_exchange	794
5.133/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/ssl_srv.c File Reference	795
5.133.1 Function Documentation	795
5.133.1.1 ssl_handshake_server	795
5.133.1.2 ssl_parse_certificate_verify	795
5.133.1.3 ssl_parse_client_hello	796
5.133.1.4 ssl_parse_client_key_exchange	796
5.133.1.5 ssl_write_certificate_request	796

5.133.1.6	ssl_write_server_hello	796
5.133.1.7	ssl_write_server_hello_done	797
5.133.1.8	ssl_write_server_key_exchange	797
5.134/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/ssl_tls.c	File Reference	798
5.134.1	Function Documentation	800
5.134.1.1	ssl_calc_finished	800
5.134.1.2	ssl_calc_verify	800
5.134.1.3	ssl_close_notify	800
5.134.1.4	ssl_decrypt_buf	800
5.134.1.5	ssl_derive_keys	801
5.134.1.6	ssl_encrypt_buf	801
5.134.1.7	ssl_fetch_input	801
5.134.1.8	ssl_flush_output	801
5.134.1.9	ssl_free	802
5.134.1.10	ssl_get_bytes_avail	802
5.134.1.11	ssl_get_cipher	802
5.134.1.12	ssl_get_verify_result	802
5.134.1.13	ssl_handshake	803
5.134.1.14	ssl_init	803
5.134.1.15	ssl_mac_md5	803
5.134.1.16	ssl_mac_sha1	804
5.134.1.17	ssl_parse_certificate	804
5.134.1.18	ssl_parse_change_cipher_spec	804
5.134.1.19	ssl_parse_finished	804
5.134.1.20	ssl_read	804
5.134.1.21	ssl_read_record	805
5.134.1.22	ssl_set_authmode	805
5.134.1.23	ssl_set_bio	806
5.134.1.24	ssl_set_ca_chain	806
5.134.1.25	ssl_set_ciphers	806
5.134.1.26	ssl_set_dbg	807
5.134.1.27	ssl_set_dh_param	807
5.134.1.28	ssl_set_endpoint	807
5.134.1.29	ssl_set_hostname	808
5.134.1.30	ssl_set_own_cert	808
5.134.1.31	ssl_set_rng	808

5.134.1.32	ssl_set_scb	809
5.134.1.33	ssl_set_session	809
5.134.1.34	ssl_write	809
5.134.1.35	ssl_write_certificate	810
5.134.1.36	ssl_write_change_cipher_spec	810
5.134.1.37	ssl_write_finished	810
5.134.1.38	ssl_write_record	810
5.134.1.39	ssl_prf	811
5.134.2	Variable Documentation	811
5.134.2.1	ssl_default_ciphers	811
5.135/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/timing.c	File Reference	812
5.135.1	Function Documentation	812
5.135.1.1	get_timer	812
5.135.1.2	hardclock	813
5.135.1.3	m_sleep	813
5.135.1.4	set_alarm	813
5.135.1.5	sighandler	813
5.135.2	Variable Documentation	813
5.135.2.1	alarmed	813
5.135.2.2	hardclock_init	813
5.135.2.3	tv_init	814
5.136/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/x509parse.c	File Reference	815
5.136.1	Function Documentation	816
5.136.1.1	asn1_get_bool	816
5.136.1.2	asn1_get_int	816
5.136.1.3	asn1_get_len	816
5.136.1.4	asn1_get_mpi	817
5.136.1.5	asn1_get_tag	817
5.136.1.6	x509_des3_decrypt	817
5.136.1.7	x509_free	817
5.136.1.8	x509_get_alg	817
5.136.1.9	x509_get_dates	817
5.136.1.10	x509_get_ext	818
5.136.1.11	x509_get_iv	818
5.136.1.12	x509_get_name	818
5.136.1.13	x509_get_pubkey	818

5.136.1.14x509_get_serial	819
5.136.1.15x509_get_sig	819
5.136.1.16x509_get_uid	819
5.136.1.17x509_get_version	819
5.136.1.18x509_hash	819
5.136.1.19x509_self_test	819
5.136.1.20x509parse_cert_info	820
5.136.1.21x509parse_cert	820
5.136.1.22x509parse_certfile	821
5.136.1.23x509parse_dn_gets	821
5.136.1.24x509parse_expired	821
5.136.1.25x509parse_key	821
5.136.1.26x509parse_keyfile	822
5.136.1.27x509parse_verify	822
5.137/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/aes/aescript2.c File Reference	824
5.137.1 Define Documentation	824
5.137.1.1 MODE_DECRYPT	824
5.137.1.2 MODE_ENCRYPT	824
5.137.1.3 USAGE	824
5.137.2 Function Documentation	825
5.137.2.1 main	825
5.138/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/hello.c File Reference	826
5.138.1 Function Documentation	826
5.138.1.1 main	826
5.139/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/md5sum.c File Reference	827
5.139.1 Function Documentation	827
5.139.1.1 main	827
5.139.1.2 md5_check	827
5.139.1.3 md5_print	827
5.139.1.4 md5_wrapper	827
5.140/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/sha1sum.c File Reference	828
5.140.1 Function Documentation	828
5.140.1.1 main	828
5.140.1.2 sha1_check	828
5.140.1.3 sha1_print	828
5.140.1.4 sha1_wrapper	828

5.141/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/sha2sum.c File Reference	829
5.141.1 Function Documentation	829
5.141.1.1 main	829
5.141.1.2 sha2_check	829
5.141.1.3 sha2_print	829
5.141.1.4 sha2_wrapper	829
5.142/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/dh_client.c File Reference	830
5.142.1 Define Documentation	830
5.142.1.1 SERVER_NAME	830
5.142.1.2 SERVER_PORT	830
5.142.2 Function Documentation	830
5.142.2.1 main	830
5.143/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/dh_genprime.c File Reference	831
5.143.1 Define Documentation	831
5.143.1.1 DH_P_SIZE	831
5.143.1.2 GENERATOR	831
5.143.2 Function Documentation	831
5.143.2.1 main	831
5.144/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/dh_server.c File Reference	832
5.144.1 Define Documentation	832
5.144.1.1 PLAINTEXT	832
5.144.1.2 SERVER_PORT	832
5.144.2 Function Documentation	832
5.144.2.1 main	832
5.145/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/mpi_demo.c File Reference	833
5.145.1 Function Documentation	833
5.145.1.1 main	833
5.146/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/rsa_genkey.c File Reference	834
5.146.1 Define Documentation	834
5.146.1.1 EXPONENT	834
5.146.1.2 KEY_SIZE	834
5.146.2 Function Documentation	834
5.146.2.1 main	834
5.147/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/rsa_sign.c File Reference	835

5.147.1 Function Documentation	835
5.147.1.1 main	835
5.148/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/rsa_verify.c File Reference	836
5.148.1 Function Documentation	836
5.148.1.1 main	836
5.149/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/ssl/ssl_client1.c File Reference	837
5.149.1 Define Documentation	837
5.149.1.1 DEBUG_LEVEL	837
5.149.1.2 GET_REQUEST	837
5.149.1.3 SERVER_NAME	837
5.149.1.4 SERVER_PORT	837
5.149.2 Function Documentation	838
5.149.2.1 main	838
5.149.2.2 my_debug	838
5.150/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/ssl/ssl_client2.c File Reference	839
5.150.1 Define Documentation	839
5.150.1.1 DEBUG_LEVEL	839
5.150.1.2 GET_REQUEST	839
5.150.1.3 SERVER_NAME	839
5.150.1.4 SERVER_PORT	839
5.150.2 Function Documentation	840
5.150.2.1 main	840
5.150.2.2 my_debug	840
5.151/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/ssl/ssl_server.c File Reference	841
5.151.1 Define Documentation	841
5.151.1.1 DEBUG_LEVEL	841
5.151.1.2 HTTP_RESPONSE	841
5.151.2 Function Documentation	842
5.151.2.1 main	842
5.151.2.2 my_debug	842
5.151.2.3 my_get_session	842
5.151.2.4 my_set_session	842
5.151.3 Variable Documentation	842
5.151.3.1 cur	842
5.151.3.2 my_ciphers	842
5.151.3.3 my_dhm_G	843

5.151.3.4 my_dhm_P	843
5.151.3.5 prv	843
5.151.3.6 s_list_1st	843
5.152/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/test/benchmark.c File Reference	844
5.152.1 Define Documentation	844
5.152.1.1 BUFSIZE	844
5.152.2 Function Documentation	844
5.152.2.1 main	844
5.152.2.2 myrand	845
5.152.3 Variable Documentation	845
5.152.3.1 buf	845
5.153/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/test/selftest.c File Reference	846
5.153.1 Function Documentation	846
5.153.1.1 main	846
5.154/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/test/ssl_test.c File Reference	847
5.154.1 Define Documentation	848
5.154.1.1 COMMAND_BOTH	848
5.154.1.2 COMMAND_READ	848
5.154.1.3 COMMAND_WRITE	848
5.154.1.4 DFL_BUFFER_SIZE	848
5.154.1.5 DFL_COMMAND	848
5.154.1.6 DFL_CONN_TIMEOUT	848
5.154.1.7 DFL_DEBUG_LEVEL	848
5.154.1.8 DFL_FORCE_CIPHER	849
5.154.1.9 DFL_IOMODE	849
5.154.1.10 DFL_MAX_BYTES	849
5.154.1.11 DFL_MAX_CONNECTIONS	849
5.154.1.12 DFL_OPMODE	849
5.154.1.13 DFL_SERVER_NAME	849
5.154.1.14 DFL_SERVER_PORT	849
5.154.1.15 DFL_SESSION_LIFETIME	849
5.154.1.16 DFL_SESSION_REUSE	849
5.154.1.17 IOMODE_BLOCK	850
5.154.1.18 IOMODE_NONBLOCK	850
5.154.1.19 OPMODE_CLIENT	850
5.154.1.20 OPMODE_NONE	850

5.154.1.2 IOPMODE_SERVER	850
5.154.1.2 USAGE	850
5.154.2 Function Documentation	851
5.154.2.1 lcppm5	851
5.154.2.2 main	851
5.154.2.3 my_debug	851
5.154.2.4 ssl_test	851
5.154.3 Variable Documentation	851
5.154.3.1 dhm_G	851
5.154.3.2 dhm_P	852
5.154.3.3 server_fd	852
5.155/home/dko/Projects/mobilec/src/util/mc_genkey.c File Reference	853
5.155.1 Function Documentation	853
5.155.1.1 main	853
5.155.1.2 print_usage	853
5.156/home/dko/Projects/mobilec/src/xml_compose.c File Reference	854
5.156.1 Function Documentation	854
5.156.1.1 agent_xml_compose	854
5.156.1.2 agent_xml_compose__agent_code	854
5.156.1.3 agent_xml_compose__agent_data	855
5.156.1.4 agent_xml_compose__create_row_nodes	855
5.156.1.5 agent_xml_compose__data	855
5.156.1.6 agent_xml_compose__gaf_message	855
5.156.1.7 agent_xml_compose__home	855
5.156.1.8 agent_xml_compose__message	855
5.156.1.9 agent_xml_compose__mobile_agent	856
5.156.1.10 agent_xml_compose__name	856
5.156.1.11 agent_xml_compose__owner	856
5.156.1.12 agent_xml_compose__row	856
5.156.1.13 agent_xml_compose__task	856
5.156.1.14 agent_xml_compose__tasks	857
5.156.1.15 agent_xml_compose__wg_code	857
5.157/home/dko/Projects/mobilec/src/xml_helper.c File Reference	858
5.157.1 Function Documentation	858
5.157.1.1 whitespace_cb	858
5.157.1.2 xml_find_sibling	858

5.157.1.3 xml_get_cdata	858
5.157.1.4 xml_get_child	859
5.157.1.5 xml_get_deep_child	859
5.157.1.6 xml_get_element_name	859
5.157.1.7 xml_get_next_element	859
5.157.1.8 xml_get_text	859
5.157.1.9 xml_new_cdata	859
5.158/home/dko/Projects/mobilec/src/xml_parser.c File Reference	860
5.158.1 Define Documentation	860
5.158.1.1 _XOPEN_SOURCE	860
5.158.2 Function Documentation	861
5.158.2.1 agent_return_xml_parse	861
5.158.2.2 agent_xml_parse	861
5.158.2.3 agent_xml_parse__agent_code	861
5.158.2.4 agent_xml_parse__agent_data	861
5.158.2.5 agent_xml_parse__data	861
5.158.2.6 agent_xml_parse__fill_row_data	862
5.158.2.7 agent_xml_parse__home	862
5.158.2.8 agent_xml_parse__mobile_agent	862
5.158.2.9 agent_xml_parse__name	862
5.158.2.10 agent_xml_parse__owner	862
5.158.2.11 agent_xml_parse__row	862
5.158.2.12 agent_xml_parse__sender	863
5.158.2.13 agent_xml_parse__task	863
5.158.2.14 agent_xml_parse__tasks	863
5.158.2.15 agent_xml_parse__wg_code	863
5.158.2.16 message_xml_parse	863
5.158.2.17 message_xml_parse__message	863

Chapter 1

MobileC

1.1 Introduction

Welcome to the MobileC documentation. For a quick user-api reference, please refer to the file [libmc.h](#).

This documentation is provided supplementary to the main Mobile-C User Guide. The official user guide may be obtained at <http://www.mobilec.org> , and should also be included with your Mobile-C Distribution package in the file docs/mobilec.pdf .

Chapter 2

Data Structure Index

2.1 Data Structures

Here are the data structures with brief descriptions:

_hr_time	9
_ssl_context	10
_ssl_session	22
_x509_buf	24
_x509_cert	25
_x509_name	29
_x509_node	30
_x509_raw	31
_x509_time	33
aes_context (AES context structure)	35
agency_s (The agency handle)	36
agent_datastate_s	39
agent_mailbox_s	42
agent_s	43
agent_task_s	48
AP_GENERIC_s	51
arc4_context (ARC4 context structure)	52
barrier_node_s	53
barrier_queue_s	54
cmd_prompt_s	55
command_s	56
connection_s	57
fipa_expression_s::content_u	59
des3_context (Triple-DES context structure)	61
des_context (DES context structure)	62
dhm_context	63
dynstring_s	65
fipa_acl_envelope_Received_s	66
fipa_acl_envelope_s	68
fipa_acl_message_s	69
fipa_acl_Param_s	72
fipa_agent_identifier_s	74
fipa_agent_identifier_set_s	75

fipa_comm_action_t	76
fipa_comm_message_check_t	77
fipa_comm_performative_t	78
fipa_comm_protocol_cn_t	79
fipa_comm_protocol_t	81
fipa_comm_reply_t	83
fipa_comm_t	84
fipa_DateTime_s	86
fipa_expression_s	88
fipa_list_t	89
fipa_message_string_s	90
fipa_number_s	91
fipa_string_s	92
fipa_url_s	93
fipa_url_sequence_s	94
fipa_word_s	95
foo_c	96
foo_s	99
havege_state (HAVEGE state structure)	101
host_id_s	103
hr_time (Timer structure)	104
interpreter_variable_data_s	105
list_s	107
listNode_s	108
mc_platform_s	109
mc_rwlock_s	116
MCAgencyOptions_s (User modifiable agency options)	118
md2_context (MD2 context structure)	120
md4_context (MD4 context structure)	122
md5_context (MD5 context structure)	124
message_s	126
message_send_arg_s	129
mpi (MPI structure)	130
mtp_http_content_s	132
mtp_http_s	133
mxml_attr_s	137
mxml_custom_s	138
mxml_fdbuf_s	139
mxml_index_s	140
mxml_node_s	142
mxml_text_s	144
mxml_value_s	145
mxml_value_u	146
options	148
rsa_context (RSA context structure)	151
sha1_context (SHA-1 context structure)	155
sha2_context (SHA-256 context structure)	157
sha4_context (SHA-512 context structure)	159
stationary_agent_info_s	161
syncList_s	162
syncListNode_s	163

Chapter 3

File Index

3.1 File List

Here is a list of all files with brief descriptions:

/home/dko/Projects/mobilec/src/acc.c	165
/home/dko/Projects/mobilec/src/agent.c	170
/home/dko/Projects/mobilec/src/agent_datastate.c	173
/home/dko/Projects/mobilec/src/agent_mailbox.c	174
/home/dko/Projects/mobilec/src/agent_return_data.c	176
/home/dko/Projects/mobilec/src/agent_task.c	178
/home/dko/Projects/mobilec/src/ams.c	179
/home/dko/Projects/mobilec/src/barrier.c	181
/home/dko/Projects/mobilec/src/cmd_prompt.c	183
/home/dko/Projects/mobilec/src/connection.c	186
/home/dko/Projects/mobilec/src/data_structures.c	187
/home/dko/Projects/mobilec/src/df.c	189
/home/dko/Projects/mobilec/src/dynstring.c	194
/home/dko/Projects/mobilec/src/fipa_acl.c	195
/home/dko/Projects/mobilec/src/fipa_envelope.c	208
/home/dko/Projects/mobilec/src/libmc.c	399
/home/dko/Projects/mobilec/src/mc_platform.c	462
/home/dko/Projects/mobilec/src/mc_rwlock.c	464
/home/dko/Projects/mobilec/src/message.c	471
/home/dko/Projects/mobilec/src/message_queue.c	475
/home/dko/Projects/mobilec/src/mtp_http.c	476
/home/dko/Projects/mobilec/src/winconfig.h	529
/home/dko/Projects/mobilec/src/xml_compose.c	854
/home/dko/Projects/mobilec/src/xml_helper.c	858
/home/dko/Projects/mobilec/src/xml_parser.c	860
/home/dko/Projects/mobilec/src/include/acc.h	216
/home/dko/Projects/mobilec/src/include/agent.h	219
/home/dko/Projects/mobilec/src/include/agent_datastate.h	223
/home/dko/Projects/mobilec/src/include/agent_lib.h	225
/home/dko/Projects/mobilec/src/include/agent_mailbox.h	237
/home/dko/Projects/mobilec/src/include/agent_task.h	239
/home/dko/Projects/mobilec/src/include/ams.h	241
/home/dko/Projects/mobilec/src/include/ap_queue_template.h	243

/home/dko/Projects/mobilec/src/include/barrier.h	246
/home/dko/Projects/mobilec/src/include/cmd_prompt.h	249
/home/dko/Projects/mobilec/src/include/commands.h	252
/home/dko/Projects/mobilec/src/include/commands.x.h	255
/home/dko/Projects/mobilec/src/include/connection.h	257
/home/dko/Projects/mobilec/src/include/data_structures.h	259
/home/dko/Projects/mobilec/src/include/df.h	263
/home/dko/Projects/mobilec/src/include/df_request.x.h	270
/home/dko/Projects/mobilec/src/include/dynstring.h	271
/home/dko/Projects/mobilec/src/include/fipa_acl.h	273
/home/dko/Projects/mobilec/src/include/fipa_acl_envelope.h	290
/home/dko/Projects/mobilec/src/include/fipa_comm.h	298
/home/dko/Projects/mobilec/src/include/host_id.h	306
/home/dko/Projects/mobilec/src/include/interpreter_variable_data.h	307
/home/dko/Projects/mobilec/src/include/libmc.h (MobileC api header file)	309
/home/dko/Projects/mobilec/src/include/macros.h	360
/home/dko/Projects/mobilec/src/include/mc_error.h	372
/home/dko/Projects/mobilec/src/include/mc_platform.h	374
/home/dko/Projects/mobilec/src/include/mc_rwlock.h	376
/home/dko/Projects/mobilec/src/include/message.h	378
/home/dko/Projects/mobilec/src/include/mobilec.h	382
/home/dko/Projects/mobilec/src/include/mtp_http.h	383
/home/dko/Projects/mobilec/src/include/xml_compose.h	389
/home/dko/Projects/mobilec/src/include/xml_helper.h	393
/home/dko/Projects/mobilec/src/include/xml_parser.h	395
/home/dko/Projects/mobilec/src/mc_list/list.c	457
/home/dko/Projects/mobilec/src/mc_list/list.h	459
/home/dko/Projects/mobilec/src/mc_sync/sync_list.c	466
/home/dko/Projects/mobilec/src/mc_sync/sync_list.h	468
/home/dko/Projects/mobilec/src/mxml-2.2.2/config.h	481
/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-attr.c	485
/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-entity.c	486
/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-file.c	488
/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-index.c	495
/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-node.c	497
/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-private.c	500
/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-search.c	502
/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-set.c	503
/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-string.c	505
/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml.h	506
/home/dko/Projects/mobilec/src/mxml-2.2.2/mxmldoc.c	518
/home/dko/Projects/mobilec/src/mxml-2.2.2/testmxml.c	526
/home/dko/Projects/mobilec/src/mxml-2.2.2/winconfig.h	527
/home/dko/Projects/mobilec/src/mxml-2.2.2/test/class.cxx	522
/home/dko/Projects/mobilec/src/mxml-2.2.2/test/enum.cxx	523
/home/dko/Projects/mobilec/src/mxml-2.2.2/test/function.cxx	524
/home/dko/Projects/mobilec/src/mxml-2.2.2/test/struct.cxx	525
/home/dko/Projects/mobilec/src/security/asm.c	530
/home/dko/Projects/mobilec/src/security/asm.h	531
/home/dko/Projects/mobilec/src/security/asm_message_composer.c	532
/home/dko/Projects/mobilec/src/security/asm_message_composer.h	533
/home/dko/Projects/mobilec/src/security/asm_message_parser.c	534
/home/dko/Projects/mobilec/src/security/asm_message_parser.h	535
/home/dko/Projects/mobilec/src/security/asm_node.c	536

/home/dko/Projects/mobilec/src/security/asm_node.h	537
/home/dko/Projects/mobilec/src/security/interface.c	538
/home/dko/Projects/mobilec/src/security/interface.h	542
/home/dko/Projects/mobilec/src/security/mc_dh.c	547
/home/dko/Projects/mobilec/src/security/mc_dh.h	548
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/aes.h	549
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/arc4.h	553
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/base64.h	555
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/bignum.h	557
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/bn_mul.h	573
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/certs.h	575
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/config.h	482
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/debug.h	577
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/des.h	580
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/dhm.h	585
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/havege.h	590
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/md2.h	592
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/md4.h	596
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/md5.h	600
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/net.h	605
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/openssl.h	610
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/padlock.h	614
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/rsa.h	615
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/sha1.h	625
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/sha2.h	630
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/sha4.h	635
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/ssl.h	640
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/timing.h	664
/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/x509.h	666
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/aes.c	681
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/arc4.c	690
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/base64.c	693
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/bignum.c	697
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/certs.c	714
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/debug.c	718
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/des.c	720
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/dhm.c	733
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/havege.c	737
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/md2.c	739
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/md4.c	740
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/md5.c	741
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/net.c	750
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/padlock.c	754
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/rsa.c	755
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/sha1.c	765
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/sha2.c	774
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/sha4.c	783
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/ssl_cli.c	792
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/ssl_srv.c	795
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/ssl_tls.c	798
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/timing.c	812
/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/x509parse.c	815
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/aes/aesencrypt2.c	824
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/hello.c	826

/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/md5sum.c	827
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/sha1sum.c	828
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/sha2sum.c	829
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/dh_client.c	830
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/dh_genprime.c	831
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/dh_server.c	832
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/mpi_demo.c	833
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/rsa_genkey.c	834
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/rsa_sign.c	835
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/rsa_verify.c	836
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/ssl/ssl_client1.c	837
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/ssl/ssl_client2.c	839
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/ssl/ssl_server.c	841
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/test/benchmark.c	844
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/test/selftest.c	846
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/test/ssl_test.c	847
/home/dko/Projects/mobilec/src/util/mc_genkey.c	853

Chapter 4

Data Structure Documentation

4.1 `_hr_time` Struct Reference

Data Fields

- struct timeval [start](#)

4.1.1 Detailed Description

Definition at line 45 of file `timing.c`.

4.1.2 Field Documentation

4.1.2.1 struct timeval `_hr_time::start`

Definition at line 47 of file `timing.c`.

Referenced by `get_timer()`.

The documentation for this struct was generated from the following file:

- `/home/dko/Projects/mobilec/src/security/xyssl-0.9/library/timing.c`

4.2 _ssl_context Struct Reference

```
#include <ssl.h>
```

Data Fields

- `int state`
- `int major_ver`
- `int minor_ver`
- `int max_major_ver`
- `int max_minor_ver`
- `int(* f_rng)(void *)`
- `void(* f_dbg)(void *, int, char *)`
- `int(* f_recv)(void *, unsigned char *, int)`
- `int(* f_send)(void *, unsigned char *, int)`
- `void * p_rng`
- `void * p_dbg`
- `void * p_recv`
- `void * p_send`
- `int resume`
- `int timeout`
- `ssl_session * session`
- `int(* s_get)(ssl_context *)`
- `int(* s_set)(ssl_context *)`
- `unsigned char * in_ctr`
- `unsigned char * in_hdr`
- `unsigned char * in_msg`
- `unsigned char * in_offt`
- `int in_msgtype`
- `int in_msglen`
- `int in_left`
- `int in_hrlen`
- `int nb_zero`
- `unsigned char * out_ctr`
- `unsigned char * out_hdr`
- `unsigned char * out_msg`
- `int out_msgtype`
- `int out_msglen`
- `int out_left`
- `rsa_context * rsa_key`
- `x509_cert * own_cert`
- `x509_cert * ca_chain`
- `x509_cert * peer_cert`
- `char * peer_cn`
- `int endpoint`
- `int authmode`
- `int client_auth`
- `int verify_result`
- `dhm_context dhm_ctx`

- [md5_context](#) [fin_md5](#)
- [sha1_context](#) [fin_sha1](#)
- [int](#) [do_crypt](#)
- [int](#) * [ciphers](#)
- [int](#) [pmslen](#)
- [int](#) [keylen](#)
- [int](#) [minlen](#)
- [int](#) [ivlen](#)
- [int](#) [maclen](#)
- [unsigned char](#) [randbytes](#) [64]
- [unsigned char](#) [premaster](#) [256]
- [unsigned char](#) [iv_enc](#) [16]
- [unsigned char](#) [iv_dec](#) [16]
- [unsigned char](#) [mac_enc](#) [32]
- [unsigned char](#) [mac_dec](#) [32]
- [unsigned long](#) [ctx_enc](#) [128]
- [unsigned long](#) [ctx_dec](#) [128]
- [unsigned char](#) * [hostname](#)
- [unsigned long](#) [hostname_len](#)

4.2.1 Detailed Description

Definition at line 149 of file `ssl.h`.

4.2.2 Field Documentation

4.2.2.1 `int _ssl_context::authmode`

verification mode

Definition at line 220 of file `ssl.h`.

Referenced by `ssl_parse_certificate()`, `ssl_set_authmode()`, and `ssl_write_certificate_request()`.

4.2.2.2 `x509_cert* _ssl_context::ca_chain`

own trusted CA chain

Definition at line 215 of file `ssl.h`.

Referenced by `ssl_parse_certificate()`, `ssl_set_ca_chain()`, and `ssl_write_certificate_request()`.

4.2.2.3 `int* _ssl_context::ciphers`

allowed ciphersuites

Definition at line 232 of file `ssl.h`.

Referenced by `ssl_parse_client_hello()`, `ssl_parse_server_hello()`, `ssl_set_ciphers()`, and `ssl_write_client_hello()`.

4.2.2.4 `int _ssl_context::client_auth`

flag for client auth.

Definition at line 221 of file `ssl.h`.

Referenced by `ssl_parse_certificate_request()`, `ssl_parse_server_hello_done()`, `ssl_write_certificate()`, and `ssl_write_certificate_verify()`.

4.2.2.5 `unsigned long _ssl_context::ctx_dec[128]`

decryption context

Definition at line 249 of file `ssl.h`.

Referenced by `ssl_decrypt_buf()`, and `ssl_derive_keys()`.

4.2.2.6 `unsigned long _ssl_context::ctx_enc[128]`

encryption context

Definition at line 248 of file `ssl.h`.

Referenced by `ssl_derive_keys()`, and `ssl_encrypt_buf()`.

4.2.2.7 `dhm_context _ssl_context::dhm_ctx`

DHM key exchange

Definition at line 227 of file `ssl.h`.

Referenced by `ssl_free()`, `ssl_parse_client_key_exchange()`, `ssl_parse_server_key_exchange()`, `ssl_set_dh_param()`, `ssl_write_client_key_exchange()`, and `ssl_write_server_key_exchange()`.

4.2.2.8 `int _ssl_context::do_crypt`

en(de)cryption flag

Definition at line 231 of file `ssl.h`.

Referenced by `ssl_parse_change_cipher_spec()`, `ssl_parse_finished()`, `ssl_read_record()`, `ssl_write_change_cipher_spec()`, `ssl_write_finished()`, and `ssl_write_record()`.

4.2.2.9 `int _ssl_context::endpoint`

0: client, 1: server

Definition at line 219 of file `ssl.h`.

Referenced by `ssl_derive_keys()`, `ssl_handshake()`, `ssl_parse_certificate()`, `ssl_parse_finished()`, `ssl_set_endpoint()`, `ssl_write_certificate()`, and `ssl_write_finished()`.

4.2.2.10 `void(* _ssl_context::f_dbg)(void *, int, char *)`

Definition at line 166 of file `ssl.h`.

Referenced by debug_print_buf(), debug_print_crt(), debug_print_mpi(), debug_print_msg(), debug_print_ret(), and ssl_set_dbg().

4.2.2.11 int(* _ssl_context::f_recv)(void *, unsigned char *, int)

Definition at line 167 of file ssl.h.

Referenced by ssl_fetch_input(), and ssl_set_bio().

4.2.2.12 int(* _ssl_context::f_rng)(void *)

Definition at line 165 of file ssl.h.

Referenced by ssl_parse_client_key_exchange(), ssl_set_rng(), ssl_write_client_hello(), ssl_write_client_key_exchange(), ssl_write_server_hello(), and ssl_write_server_key_exchange().

4.2.2.13 int(* _ssl_context::f_send)(void *, unsigned char *, int)

Definition at line 168 of file ssl.h.

Referenced by ssl_flush_output(), and ssl_set_bio().

4.2.2.14 md5_context _ssl_context::fin_md5

Finished MD5 checksum

Definition at line 228 of file ssl.h.

Referenced by ssl_calc_verify(), ssl_init(), ssl_parse_client_hello(), ssl_parse_finished(), ssl_read_record(), ssl_write_finished(), and ssl_write_record().

4.2.2.15 sha1_context _ssl_context::fin_sha1

Finished SHA-1 checksum

Definition at line 229 of file ssl.h.

Referenced by ssl_calc_verify(), ssl_init(), ssl_parse_client_hello(), ssl_parse_finished(), ssl_read_record(), ssl_write_finished(), and ssl_write_record().

4.2.2.16 unsigned char* _ssl_context::hostname

Definition at line 254 of file ssl.h.

Referenced by ssl_free(), ssl_init(), ssl_set_hostname(), and ssl_write_client_hello().

4.2.2.17 unsigned long _ssl_context::hostname_len

Definition at line 255 of file ssl.h.

Referenced by ssl_free(), ssl_init(), ssl_set_hostname(), and ssl_write_client_hello().

4.2.2.18 unsigned char* _ssl_context::in_ctr

64-bit incoming message counter

Definition at line 187 of file ssl.h.

Referenced by ssl_decrypt_buf(), ssl_free(), and ssl_init().

4.2.2.19 unsigned char* _ssl_context::in_hdr

5-byte record header (in_ctr+8)

Definition at line 188 of file ssl.h.

Referenced by ssl_decrypt_buf(), ssl_fetch_input(), ssl_init(), ssl_parse_client_hello(), and ssl_read_record().

4.2.2.20 int _ssl_context::in_hhlen

current handshake message length

Definition at line 196 of file ssl.h.

Referenced by ssl_parse_certificate(), ssl_parse_certificate_verify(), ssl_parse_client_key_exchange(), ssl_parse_finished(), ssl_parse_server_hello(), ssl_parse_server_hello_done(), ssl_parse_server_key_exchange(), and ssl_read_record().

4.2.2.21 int _ssl_context::in_left

amount of data read so far

Definition at line 194 of file ssl.h.

Referenced by ssl_fetch_input(), ssl_parse_client_hello(), and ssl_read_record().

4.2.2.22 unsigned char* _ssl_context::in_msg

the message contents (in_hdr+5)

Definition at line 189 of file ssl.h.

Referenced by ssl_decrypt_buf(), ssl_init(), ssl_parse_certificate(), ssl_parse_certificate_request(), ssl_parse_certificate_verify(), ssl_parse_change_cipher_spec(), ssl_parse_client_hello(), ssl_parse_client_key_exchange(), ssl_parse_finished(), ssl_parse_server_hello(), ssl_parse_server_hello_done(), ssl_parse_server_key_exchange(), ssl_read(), and ssl_read_record().

4.2.2.23 int _ssl_context::in_msglen

record header: message length

Definition at line 193 of file ssl.h.

Referenced by ssl_decrypt_buf(), ssl_get_bytes_avail(), ssl_parse_certificate(), ssl_parse_change_cipher_spec(), ssl_read(), and ssl_read_record().

4.2.2.24 `int _ssl_context::in_msgtype`

record header: message type

Definition at line 192 of file `ssl.h`.

Referenced by `ssl_decrypt_buf()`, `ssl_parse_certificate()`, `ssl_parse_certificate_request()`, `ssl_parse_certificate_verify()`, `ssl_parse_change_cipher_spec()`, `ssl_parse_client_key_exchange()`, `ssl_parse_finished()`, `ssl_parse_server_hello()`, `ssl_parse_server_hello_done()`, `ssl_parse_server_key_exchange()`, `ssl_read()`, and `ssl_read_record()`.

4.2.2.25 `unsigned char* _ssl_context::in_offt`

read offset in application data

Definition at line 190 of file `ssl.h`.

Referenced by `ssl_get_bytes_avail()`, and `ssl_read()`.

4.2.2.26 `unsigned char _ssl_context::iv_dec[16]`

IV (decryption)

Definition at line 243 of file `ssl.h`.

Referenced by `ssl_decrypt_buf()`, and `ssl_derive_keys()`.

4.2.2.27 `unsigned char _ssl_context::iv_enc[16]`

IV (encryption)

Definition at line 242 of file `ssl.h`.

Referenced by `ssl_derive_keys()`, and `ssl_encrypt_buf()`.

4.2.2.28 `int _ssl_context::ivlen`

IV length

Definition at line 236 of file `ssl.h`.

Referenced by `ssl_decrypt_buf()`, `ssl_derive_keys()`, and `ssl_encrypt_buf()`.

4.2.2.29 `int _ssl_context::keylen`

symmetric key length

Definition at line 234 of file `ssl.h`.

Referenced by `ssl_derive_keys()`.

4.2.2.30 `unsigned char _ssl_context::mac_dec[32]`

MAC (decryption)

Definition at line 246 of file `ssl.h`.

Referenced by `ssl_decrypt_buf()`, and `ssl_derive_keys()`.

4.2.2.31 unsigned char _ssl_context::mac_enc[32]

MAC (encryption)

Definition at line 245 of file `ssl.h`.

Referenced by `ssl_derive_keys()`, and `ssl_encrypt_buf()`.

4.2.2.32 int _ssl_context::maclen

MAC length

Definition at line 237 of file `ssl.h`.

Referenced by `ssl_decrypt_buf()`, `ssl_derive_keys()`, and `ssl_encrypt_buf()`.

4.2.2.33 int _ssl_context::major_ver

equal to `SSL_MAJOR_VERSION_3`

Definition at line 156 of file `ssl.h`.

Referenced by `ssl_parse_client_hello()`, `ssl_read_record()`, `ssl_write_client_hello()`, `ssl_write_record()`, and `ssl_write_server_hello()`.

4.2.2.34 int _ssl_context::max_major_ver

max. major version from client

Definition at line 159 of file `ssl.h`.

Referenced by `ssl_parse_client_hello()`, `ssl_parse_client_key_exchange()`, `ssl_write_client_hello()`, and `ssl_write_client_key_exchange()`.

4.2.2.35 int _ssl_context::max_minor_ver

max. minor version from client

Definition at line 160 of file `ssl.h`.

Referenced by `ssl_parse_client_hello()`, `ssl_parse_client_key_exchange()`, `ssl_write_client_hello()`, and `ssl_write_client_key_exchange()`.

4.2.2.36 int _ssl_context::minlen

min. ciphertext length

Definition at line 235 of file `ssl.h`.

Referenced by `ssl_decrypt_buf()`, `ssl_derive_keys()`, and `ssl_read_record()`.

4.2.2.37 `int _ssl_context::minor_ver`

either 0 (SSL3) or 1 (TLS1.0)

Definition at line 157 of file `ssl.h`.

Referenced by `ssl_calc_finished()`, `ssl_calc_verify()`, `ssl_decrypt_buf()`, `ssl_derive_keys()`, `ssl_encrypt_buf()`, `ssl_parse_certificate()`, `ssl_parse_client_hello()`, `ssl_parse_client_key_exchange()`, `ssl_parse_finished()`, `ssl_parse_server_hello()`, `ssl_read_record()`, `ssl_write_certificate()`, `ssl_write_client_hello()`, `ssl_write_client_key_exchange()`, `ssl_write_finished()`, `ssl_write_record()`, and `ssl_write_server_hello()`.

4.2.2.38 `int _ssl_context::nb_zero`

of 0-length encrypted messages

Definition at line 197 of file `ssl.h`.

Referenced by `ssl_decrypt_buf()`.

4.2.2.39 `unsigned char* _ssl_context::out_ctr`

64-bit outgoing message counter

Definition at line 202 of file `ssl.h`.

Referenced by `ssl_encrypt_buf()`, `ssl_free()`, and `ssl_init()`.

4.2.2.40 `unsigned char* _ssl_context::out_hdr`

5-byte record header (`out_ctr+8`)

Definition at line 203 of file `ssl.h`.

Referenced by `ssl_flush_output()`, `ssl_init()`, and `ssl_write_record()`.

4.2.2.41 `int _ssl_context::out_left`

amount of data not yet written

Definition at line 208 of file `ssl.h`.

Referenced by `ssl_flush_output()`, `ssl_write()`, and `ssl_write_record()`.

4.2.2.42 `unsigned char* _ssl_context::out_msg`

the message contents (`out_hdr+5`)

Definition at line 204 of file `ssl.h`.

Referenced by `ssl_close_notify()`, `ssl_encrypt_buf()`, `ssl_init()`, `ssl_write()`, `ssl_write_certificate()`, `ssl_write_certificate_request()`, `ssl_write_certificate_verify()`, `ssl_write_change_cipher_spec()`, `ssl_write_client_hello()`, `ssl_write_client_key_exchange()`, `ssl_write_finished()`, `ssl_write_record()`, `ssl_write_server_hello()`, `ssl_write_server_hello_done()`, and `ssl_write_server_key_exchange()`.

4.2.2.43 `int _ssl_context::out_msglen`

record header: message length

Definition at line 207 of file `ssl.h`.

Referenced by `ssl_close_notify()`, `ssl_encrypt_buf()`, `ssl_flush_output()`, `ssl_write()`, `ssl_write_certificate()`, `ssl_write_certificate_request()`, `ssl_write_certificate_verify()`, `ssl_write_change_cipher_spec()`, `ssl_write_client_hello()`, `ssl_write_client_key_exchange()`, `ssl_write_finished()`, `ssl_write_record()`, `ssl_write_server_hello()`, `ssl_write_server_hello_done()`, and `ssl_write_server_key_exchange()`.

4.2.2.44 `int _ssl_context::out_msgtype`

record header: message type

Definition at line 206 of file `ssl.h`.

Referenced by `ssl_close_notify()`, `ssl_encrypt_buf()`, `ssl_write()`, `ssl_write_certificate()`, `ssl_write_certificate_request()`, `ssl_write_certificate_verify()`, `ssl_write_change_cipher_spec()`, `ssl_write_client_hello()`, `ssl_write_client_key_exchange()`, `ssl_write_finished()`, `ssl_write_record()`, `ssl_write_server_hello()`, `ssl_write_server_hello_done()`, and `ssl_write_server_key_exchange()`.

4.2.2.45 `x509_cert* _ssl_context::own_cert`

own X.509 certificate

Definition at line 214 of file `ssl.h`.

Referenced by `ssl_set_own_cert()`, and `ssl_write_certificate()`.

4.2.2.46 `void* _ssl_context::p_dbg`

context for the debug function

Definition at line 171 of file `ssl.h`.

Referenced by `debug_print_buf()`, `debug_print_crt()`, `debug_print_mpi()`, `debug_print_msg()`, `debug_print_ret()`, and `ssl_set_dbg()`.

4.2.2.47 `void* _ssl_context::p_recv`

context for reading operations

Definition at line 172 of file `ssl.h`.

Referenced by `ssl_fetch_input()`, and `ssl_set_bio()`.

4.2.2.48 `void* _ssl_context::p_rng`

context for the RNG function

Definition at line 170 of file `ssl.h`.

Referenced by `ssl_parse_client_key_exchange()`, `ssl_set_rng()`, `ssl_write_client_hello()`, `ssl_write_client_key_exchange()`, `ssl_write_server_hello()`, and `ssl_write_server_key_exchange()`.

4.2.2.49 void* `_ssl_context::p_send`

context for writing operations

Definition at line 173 of file `ssl.h`.

Referenced by `ssl_flush_output()`, and `ssl_set_bio()`.

4.2.2.50 x509_cert* `_ssl_context::peer_cert`

peer X.509 cert chain

Definition at line 216 of file `ssl.h`.

Referenced by `main()`, `ssl_free()`, `ssl_parse_certificate()`, `ssl_parse_certificate_verify()`, `ssl_parse_server_key_exchange()`, and `ssl_write_client_key_exchange()`.

4.2.2.51 char* `_ssl_context::peer_cn`

expected peer CN

Definition at line 217 of file `ssl.h`.

Referenced by `ssl_parse_certificate()`, and `ssl_set_ca_chain()`.

4.2.2.52 int `_ssl_context::pmslen`

premaster length

Definition at line 233 of file `ssl.h`.

Referenced by `ssl_derive_keys()`, `ssl_parse_client_key_exchange()`, and `ssl_write_client_key_exchange()`.

4.2.2.53 unsigned char `_ssl_context::premaster[256]`

premaster secret

Definition at line 240 of file `ssl.h`.

Referenced by `ssl_derive_keys()`, `ssl_parse_client_key_exchange()`, and `ssl_write_client_key_exchange()`.

4.2.2.54 unsigned char `_ssl_context::randbytes[64]`

random bytes

Definition at line 239 of file `ssl.h`.

Referenced by `ssl_derive_keys()`, `ssl_parse_client_hello()`, `ssl_parse_server_hello()`, `ssl_parse_server_key_exchange()`, `ssl_write_client_hello()`, `ssl_write_server_hello()`, and `ssl_write_server_key_exchange()`.

4.2.2.55 int `_ssl_context::resume`

session resuming flag

Definition at line 178 of file `ssl.h`.

Referenced by `my_get_session()`, `ssl_derive_keys()`, `ssl_parse_finished()`, `ssl_parse_server_hello()`, `ssl_set_session()`, `ssl_write_client_hello()`, `ssl_write_finished()`, and `ssl_write_server_hello()`.

4.2.2.56 `rsa_context* _ssl_context::rsa_key`

own RSA private key

Definition at line 213 of file `ssl.h`.

Referenced by `ssl_parse_client_key_exchange()`, `ssl_set_own_cert()`, `ssl_write_certificate_verify()`, and `ssl_write_server_key_exchange()`.

4.2.2.57 `int(* _ssl_context::s_get)(ssl_context *)`

(server) get callback

Definition at line 181 of file `ssl.h`.

Referenced by `ssl_set_scb()`, and `ssl_write_server_hello()`.

4.2.2.58 `int(* _ssl_context::s_set)(ssl_context *)`

(server) set callback

Definition at line 182 of file `ssl.h`.

Referenced by `ssl_parse_client_key_exchange()`, and `ssl_set_scb()`.

4.2.2.59 `ssl_session* _ssl_context::session`

current session data

Definition at line 180 of file `ssl.h`.

Referenced by `my_get_session()`, `my_set_session()`, `ssl_calc_finished()`, `ssl_calc_verify()`, `ssl_derive_keys()`, `ssl_get_cipher()`, `ssl_parse_client_hello()`, `ssl_parse_client_key_exchange()`, `ssl_parse_server_hello()`, `ssl_parse_server_key_exchange()`, `ssl_set_session()`, `ssl_write_client_hello()`, `ssl_write_client_key_exchange()`, `ssl_write_server_hello()`, and `ssl_write_server_key_exchange()`.

4.2.2.60 `int _ssl_context::state`

SSL handshake: current state

Definition at line 154 of file `ssl.h`.

Referenced by `ssl_close_notify()`, `ssl_handshake_client()`, `ssl_handshake_server()`, `ssl_parse_certificate()`, `ssl_parse_certificate_request()`, `ssl_parse_certificate_verify()`, `ssl_parse_change_cipher_spec()`, `ssl_parse_client_hello()`, `ssl_parse_client_key_exchange()`, `ssl_parse_finished()`, `ssl_parse_server_hello()`, `ssl_parse_server_hello_done()`, `ssl_parse_server_key_exchange()`, `ssl_read()`, `ssl_write()`, `ssl_write_certificate()`, `ssl_write_certificate_request()`, `ssl_write_certificate_verify()`, `ssl_write_change_cipher_spec()`, `ssl_write_client_hello()`, `ssl_write_client_key_exchange()`, `ssl_write_finished()`, `ssl_write_server_hello()`, `ssl_write_server_hello_done()`, and `ssl_write_server_key_exchange()`.

4.2.2.61 `int _ssl_context::timeout`

sess. expiration time

Definition at line 179 of file `ssl.h`.

Referenced by `my_get_session()`, `my_set_session()`, `ssl_set_session()`, and `ssl_write_client_hello()`.

4.2.2.62 `int _ssl_context::verify_result`

verification result

Definition at line 222 of file `ssl.h`.

Referenced by `ssl_get_verify_result()`, and `ssl_parse_certificate()`.

The documentation for this struct was generated from the following file:

- `/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/ssl.h`

4.3 `_ssl_session` Struct Reference

```
#include <ssl.h>
```

Data Fields

- `time_t start`
- `int cipher`
- `int length`
- unsigned char `id` [32]
- unsigned char `master` [48]
- `ssl_session * next`

4.3.1 Detailed Description

Definition at line 139 of file `ssl.h`.

4.3.2 Field Documentation

4.3.2.1 `int _ssl_session::cipher`

chosen cipher

Definition at line 142 of file `ssl.h`.

Referenced by `my_get_session()`, `ssl_derive_keys()`, `ssl_get_cipher()`, `ssl_parse_client_hello()`, `ssl_parse_client_key_exchange()`, `ssl_parse_server_hello()`, `ssl_parse_server_key_exchange()`, `ssl_write_client_key_exchange()`, `ssl_write_server_hello()`, and `ssl_write_server_key_exchange()`.

4.3.2.2 `unsigned char _ssl_session::id[32]`

session identifier

Definition at line 144 of file `ssl.h`.

Referenced by `my_get_session()`, `my_set_session()`, `ssl_parse_client_hello()`, `ssl_parse_server_hello()`, `ssl_write_client_hello()`, and `ssl_write_server_hello()`.

4.3.2.3 `int _ssl_session::length`

session id length

Definition at line 143 of file `ssl.h`.

Referenced by `my_get_session()`, `my_set_session()`, `ssl_parse_client_hello()`, `ssl_parse_server_hello()`, `ssl_write_client_hello()`, and `ssl_write_server_hello()`.

4.3.2.4 `unsigned char _ssl_session::master[48]`

the master secret

Definition at line 145 of file `ssl.h`.

Referenced by `my_get_session()`, `ssl_calc_finished()`, `ssl_calc_verify()`, and `ssl_derive_keys()`.

4.3.2.5 `ssl_session* _ssl_session::next`

next session entry

Definition at line 146 of file `ssl.h`.

Referenced by `main()`, `my_get_session()`, and `my_set_session()`.

4.3.2.6 `time_t _ssl_session::start`

starting time

Definition at line 141 of file `ssl.h`.

Referenced by `my_get_session()`, `my_set_session()`, `ssl_parse_server_hello()`, and `ssl_write_client_hello()`.

The documentation for this struct was generated from the following file:

- `/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/ssl.h`

4.4 `_x509_buf` Struct Reference

```
#include <x509.h>
```

Data Fields

- `int tag`
- `int len`
- `unsigned char * p`

4.4.1 Detailed Description

Definition at line 96 of file `x509.h`.

4.4.2 Field Documentation

4.4.2.1 `int _x509_buf::len`

Definition at line 99 of file `x509.h`.

Referenced by `ssl_write_certificate()`, `ssl_write_certificate_request()`, `x509_free()`, `x509_get_alg()`, `x509_get_ext()`, `x509_get_name()`, `x509_get_pubkey()`, `x509_get_serial()`, `x509_get_sig()`, `x509_get_uid()`, `x509parse_cert_info()`, `x509parse_crt()`, `x509parse_dn_gets()`, and `x509parse_verify()`.

4.4.2.2 `unsigned char* _x509_buf::p`

Definition at line 100 of file `x509.h`.

Referenced by `ssl_write_certificate()`, `ssl_write_certificate_request()`, `x509_free()`, `x509_get_alg()`, `x509_get_ext()`, `x509_get_name()`, `x509_get_pubkey()`, `x509_get_serial()`, `x509_get_sig()`, `x509_get_uid()`, `x509parse_cert_info()`, `x509parse_crt()`, `x509parse_dn_gets()`, and `x509parse_verify()`.

4.4.2.3 `int _x509_buf::tag`

Definition at line 98 of file `x509.h`.

Referenced by `x509_get_alg()`, `x509_get_ext()`, `x509_get_name()`, `x509_get_serial()`, `x509_get_sig()`, and `x509_get_uid()`.

The documentation for this struct was generated from the following file:

- `/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/x509.h`

4.5 `_x509_cert` Struct Reference

```
#include <x509.h>
```

Data Fields

- `x509_buf raw`
- `x509_buf tbs`
- `int version`
- `x509_buf serial`
- `x509_buf sig_oid1`
- `x509_buf issuer_raw`
- `x509_buf subject_raw`
- `x509_name issuer`
- `x509_name subject`
- `x509_time valid_from`
- `x509_time valid_to`
- `x509_buf pk_oid`
- `rsa_context rsa`
- `x509_buf issuer_id`
- `x509_buf subject_id`
- `x509_buf v3_ext`
- `int ca_istrue`
- `int max_pathlen`
- `x509_buf sig_oid2`
- `x509_buf sig`
- `struct _x509_cert * next`

4.5.1 Detailed Description

Definition at line 119 of file `x509.h`.

4.5.2 Field Documentation

4.5.2.1 `int _x509_cert::ca_istrue`

Definition at line 144 of file `x509.h`.

Referenced by `x509parse_cert()`, and `x509parse_verify()`.

4.5.2.2 `x509_name _x509_cert::issuer`

Definition at line 131 of file `x509.h`.

Referenced by `x509_free()`, `x509parse_cert_info()`, and `x509parse_cert()`.

4.5.2.3 `x509_buf _x509_cert::issuer_id`

Definition at line 140 of file `x509.h`.

Referenced by `x509parse_cert()`.

4.5.2.4 x509_buf_x509_cert::issuer_raw

Definition at line 128 of file x509.h.

Referenced by x509parse_cert(), and x509parse_verify().

4.5.2.5 int_x509_cert::max_pathlen

Definition at line 145 of file x509.h.

Referenced by x509parse_cert(), and x509parse_verify().

4.5.2.6 struct_x509_cert*_x509_cert::next

Definition at line 150 of file x509.h.

Referenced by debug_print_cert(), main(), ssl_test(), ssl_write_certificate(), ssl_write_certificate_request(), x509_free(), x509parse_cert(), and x509parse_verify().

4.5.2.7 x509_buf_x509_cert::pk_oid

Definition at line 137 of file x509.h.

Referenced by x509parse_cert().

4.5.2.8 x509_buf_x509_cert::raw

Definition at line 121 of file x509.h.

Referenced by ssl_write_certificate(), x509_free(), and x509parse_cert().

4.5.2.9 rsa_context_x509_cert::rsa

Definition at line 138 of file x509.h.

Referenced by debug_print_cert(), ssl_parse_certificate_verify(), ssl_parse_server_key_exchange(), ssl_write_client_key_exchange(), x509_free(), x509parse_cert_info(), x509parse_cert(), and x509parse_verify().

4.5.2.10 x509_buf_x509_cert::serial

Definition at line 125 of file x509.h.

Referenced by x509parse_cert_info(), and x509parse_cert().

4.5.2.11 x509_buf_x509_cert::sig

Definition at line 148 of file x509.h.

Referenced by x509parse_cert(), and x509parse_verify().

4.5.2.12 x509_buf_x509_cert::sig_oid1

Definition at line 126 of file x509.h.

Referenced by x509parse_cert_info(), x509parse_cert(), and x509parse_verify().

4.5.2.13 x509_buf_x509_cert::sig_oid2

Definition at line 147 of file x509.h.

Referenced by x509parse_cert().

4.5.2.14 x509_name_x509_cert::subject

Definition at line 132 of file x509.h.

Referenced by x509_free(), x509parse_cert_info(), x509parse_cert(), and x509parse_verify().

4.5.2.15 x509_buf_x509_cert::subject_id

Definition at line 141 of file x509.h.

Referenced by x509parse_cert().

4.5.2.16 x509_buf_x509_cert::subject_raw

Definition at line 129 of file x509.h.

Referenced by ssl_write_certificate_request(), x509parse_cert(), and x509parse_verify().

4.5.2.17 x509_buf_x509_cert::tbs

Definition at line 122 of file x509.h.

Referenced by x509parse_cert(), and x509parse_verify().

4.5.2.18 x509_buf_x509_cert::v3_ext

Definition at line 142 of file x509.h.

Referenced by x509parse_cert().

4.5.2.19 x509_time_x509_cert::valid_from

Definition at line 134 of file x509.h.

Referenced by x509parse_cert_info(), and x509parse_cert().

4.5.2.20 x509_time_x509_cert::valid_to

Definition at line 135 of file x509.h.

Referenced by x509parse_cert_info(), x509parse_cert(), and x509parse_expired().

4.5.2.21 int _x509_cert::version

Definition at line 124 of file x509.h.

Referenced by x509parse_cert_info(), x509parse_crt(), and x509parse_verify().

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/x509.h](#)

4.6 `_x509_name` Struct Reference

```
#include <x509.h>
```

Data Fields

- [x509_buf oid](#)
- [x509_buf val](#)
- [struct `_x509_name` * next](#)

4.6.1 Detailed Description

Definition at line 104 of file `x509.h`.

4.6.2 Field Documentation

4.6.2.1 `struct _x509_name* _x509_name::next`

Definition at line 108 of file `x509.h`.

Referenced by `x509_free()`, `x509_get_name()`, `x509parse_dn_gets()`, and `x509parse_verify()`.

4.6.2.2 `x509_buf _x509_name::oid`

Definition at line 106 of file `x509.h`.

Referenced by `x509_get_name()`, `x509parse_dn_gets()`, and `x509parse_verify()`.

4.6.2.3 `x509_buf _x509_name::val`

Definition at line 107 of file `x509.h`.

Referenced by `x509_get_name()`, `x509parse_dn_gets()`, and `x509parse_verify()`.

The documentation for this struct was generated from the following file:

- `/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/x509.h`

4.7 `_x509_node` Struct Reference

```
#include <x509.h>
```

Data Fields

- unsigned char * [data](#)
- unsigned char * [p](#)
- unsigned char * [end](#)
- size_t [len](#)

4.7.1 Detailed Description

Definition at line 157 of file x509.h.

4.7.2 Field Documentation

4.7.2.1 unsigned char* `_x509_node::data`

Definition at line 159 of file x509.h.

4.7.2.2 unsigned char* `_x509_node::end`

Definition at line 161 of file x509.h.

4.7.2.3 size_t `_x509_node::len`

Definition at line 163 of file x509.h.

4.7.2.4 unsigned char* `_x509_node::p`

Definition at line 160 of file x509.h.

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/x509.h](#)

4.8 `_x509_raw` Struct Reference

```
#include <x509.h>
```

Data Fields

- [x509_node raw](#)
- [x509_node tbs](#)
- [x509_node version](#)
- [x509_node serial](#)
- [x509_node tbs_signalg](#)
- [x509_node issuer](#)
- [x509_node validity](#)
- [x509_node subject](#)
- [x509_node subpubkey](#)
- [x509_node signalg](#)
- [x509_node sign](#)

4.8.1 Detailed Description

Definition at line 167 of file `x509.h`.

4.8.2 Field Documentation

4.8.2.1 `x509_node _x509_raw::issuer`

Definition at line 175 of file `x509.h`.

4.8.2.2 `x509_node _x509_raw::raw`

Definition at line 169 of file `x509.h`.

4.8.2.3 `x509_node _x509_raw::serial`

Definition at line 173 of file `x509.h`.

4.8.2.4 `x509_node _x509_raw::sign`

Definition at line 181 of file `x509.h`.

4.8.2.5 `x509_node _x509_raw::signalg`

Definition at line 180 of file `x509.h`.

4.8.2.6 `x509_node _x509_raw::subject`

Definition at line 177 of file `x509.h`.

4.8.2.7 x509_node_x509_raw::subpubkey

Definition at line 178 of file x509.h.

4.8.2.8 x509_node_x509_raw::tbs

Definition at line 170 of file x509.h.

4.8.2.9 x509_node_x509_raw::tbs_signalg

Definition at line 174 of file x509.h.

4.8.2.10 x509_node_x509_raw::validity

Definition at line 176 of file x509.h.

4.8.2.11 x509_node_x509_raw::version

Definition at line 172 of file x509.h.

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/x509.h](#)

4.9 `_x509_time` Struct Reference

```
#include <x509.h>
```

Data Fields

- `int year`
- `int mon`
- `int day`
- `int hour`
- `int min`
- `int sec`

4.9.1 Detailed Description

Definition at line 112 of file `x509.h`.

4.9.2 Field Documentation

4.9.2.1 `int _x509_time::day`

Definition at line 114 of file `x509.h`.

Referenced by `x509_get_dates()`, `x509parse_cert_info()`, and `x509parse_expired()`.

4.9.2.2 `int _x509_time::hour`

Definition at line 115 of file `x509.h`.

Referenced by `x509_get_dates()`, and `x509parse_cert_info()`.

4.9.2.3 `int _x509_time::min`

Definition at line 115 of file `x509.h`.

Referenced by `x509_get_dates()`, and `x509parse_cert_info()`.

4.9.2.4 `int _x509_time::mon`

Definition at line 114 of file `x509.h`.

Referenced by `x509_get_dates()`, `x509parse_cert_info()`, and `x509parse_expired()`.

4.9.2.5 `int _x509_time::sec`

Definition at line 115 of file `x509.h`.

Referenced by `x509_get_dates()`, and `x509parse_cert_info()`.

4.9.2.6 `int _x509_time::year`

Definition at line 114 of file x509.h.

Referenced by `x509_get_dates()`, `x509parse_cert_info()`, and `x509parse_expired()`.

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/x509.h](#)

4.10 aes_context Struct Reference

AES context structure.

```
#include <aes.h>
```

Data Fields

- `int nr`
- `unsigned long * rk`
- `unsigned long buf[68]`

4.10.1 Detailed Description

AES context structure.

Definition at line 13 of file `aes.h`.

4.10.2 Field Documentation

4.10.2.1 `unsigned long aes_context::buf[68]`

unaligned data

Definition at line 17 of file `aes.h`.

Referenced by `aes_setkey_dec()`, and `aes_setkey_enc()`.

4.10.2.2 `int aes_context::nr`

number of rounds

Definition at line 15 of file `aes.h`.

Referenced by `aes_crypt_ecb()`, `aes_setkey_dec()`, and `aes_setkey_enc()`.

4.10.2.3 `unsigned long* aes_context::rk`

AES round keys

Definition at line 16 of file `aes.h`.

Referenced by `aes_crypt_ecb()`, `aes_setkey_dec()`, and `aes_setkey_enc()`.

The documentation for this struct was generated from the following file:

- `/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/aes.h`

4.11 agency_s Struct Reference

The agency handle.

```
#include <libmc.h>
```

Data Fields

- `int client`
- `int server`
- `char * hostName`
- `char * filename`
- `int portno`
- `int portnoc`
- `int initInterps`
- `struct mc_platform_s * mc_platform`
- `int default_agentstatus`
- `int threads`
- `int enable_security`
- `int stack_size [MC_THREAD_ALL]`
- `int bluetooth`
- `char * priv_key_filename`
- `char * known_host_filename`
- `error_code_t last_error`

4.11.1 Detailed Description

The agency handle.

Definition at line 217 of file libmc.h.

4.11.2 Field Documentation

4.11.2.1 `int agency_s::bluetooth`

Definition at line 230 of file libmc.h.

Referenced by `MC_Initialize()`, and `mc_platform_Initialize()`.

4.11.2.2 `int agency_s::client`

Definition at line 218 of file libmc.h.

Referenced by `MC_Initialize()`.

4.11.2.3 `int agency_s::default_agentstatus`

Agency default agent status

Definition at line 226 of file libmc.h.

Referenced by `MC_Initialize()`, and `mc_platform_Initialize()`.

4.11.2.4 int agency_s::enable_security

Security flag

Definition at line 228 of file libmc.h.

4.11.2.5 char* agency_s::filename

Definition at line 221 of file libmc.h.

4.11.2.6 char* agency_s::hostName

Local Hostname

Definition at line 220 of file libmc.h.

Referenced by MC_End(), and MC_Initialize().

4.11.2.7 int agency_s::initInterps

Definition at line 224 of file libmc.h.

Referenced by MC_Initialize(), and mc_platform_Initialize().

4.11.2.8 char* agency_s::known_host_filename

Definition at line 233 of file libmc.h.

Referenced by listen_Thread(), MC_Initialize(), and message_send_Thread().

4.11.2.9 error_code_t agency_s::last_error

Definition at line 234 of file libmc.h.

Referenced by mc_platform_Initialize().

4.11.2.10 struct mc_platform_s* agency_s::mc_platform

Local MobileC Platform

Definition at line 225 of file libmc.h.

Referenced by MC_AclSend(), MC_AclSend_chdl(), MC_AddAgent(), MC_AddAgent_chdl(), MC_-AddStationaryAgent(), MC_Barrier(), MC_Barrier_chdl(), MC_BarrierDelete(), MC_BarrierDelete_chdl(), MC_BarrierInit(), MC_BarrierInit_chdl(), MC_CondBroadcast(), MC_CondBroadcast_chdl(), MC_CondReset(), MC_CondReset_chdl(), MC_CondSignal(), MC_CondSignal_chdl(), MC_CondWait(), MC_CondWait_chdl(), MC_DeregisterService(), MC_DeregisterService_chdl(), MC_End(), MC_-End_chdl(), MC_FindAgentByID(), MC_FindAgentByID_chdl(), MC_FindAgentByName(), MC_-FindAgentByName_chdl(), MC_GetAllAgents(), MC_HaltAgency(), MC_HaltAgency_chdl(), MC_-Initialize(), MC_LoadAgentFromFile(), MC_MainLoop(), MC_MutexLock(), MC_MutexLock_chdl(), MC_MutexUnlock(), MC_MutexUnlock_chdl(), MC_RegisterService(), MC_RegisterService_chdl(), MC_ResetSignal(), MC_ResumeAgency(), MC_ResumeAgency_chdl(), MC_RetrieveAgent(), MC_-RetrieveAgent_chdl(), MC_SearchForService(), MC_SearchForService_chdl(), MC_SemaphorePost(),

MC_SemaphorePost_chdl(), MC_SemaphoreWait(), MC_SemaphoreWait_chdl(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessage(), MC_SendAgentMigrationMessage_chdl(), MC_SendAgentMigrationMessageFile(), MC_SendSteerCommand(), MC_SendSteerCommand_chdl(), MC_SetDefaultAgentStatus(), MC_SetDefaultAgentStatus_chdl(), MC_Steer(), MC_SyncDelete(), MC_SyncDelete_chdl(), MC_SyncInit(), MC_SyncInit_chdl(), MC_WaitAgent(), MC_WaitRetrieveAgent(), and MC_WaitSignal().

4.11.2.11 int agency_s::portno

Local port number

Definition at line 222 of file libmc.h.

Referenced by listen_Thread(), MC_Initialize(), and mc_platform_Initialize().

4.11.2.12 int agency_s::portnoc

Definition at line 223 of file libmc.h.

4.11.2.13 char* agency_s::priv_key_filename

Definition at line 232 of file libmc.h.

Referenced by MC_Initialize().

4.11.2.14 int agency_s::server

Definition at line 219 of file libmc.h.

Referenced by MC_Initialize().

4.11.2.15 int agency_s::stack_size[MC_THREAD_ALL]

Definition at line 229 of file libmc.h.

Referenced by MC_Initialize(), and mc_platform_Initialize().

4.11.2.16 int agency_s::threads

flag which determines which threads to start

Definition at line 227 of file libmc.h.

Referenced by MC_End(), MC_Initialize(), and mc_platform_Initialize().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[libmc.h](#)

4.12 agent_datastate_s Struct Reference

```
#include <agent_datastate.h>
```

Data Fields

- char ** agent_code_ids
- char ** agent_codes
- char * agent_code
- agent_task_p * tasks
- mxml_node_t * xml_agent_root
- mxml_node_t * xml_root
- int task_progress
- int return_data
- int number_of_tasks
- int persistent
- int init_agent_status
- int progress_modifier

4.12.1 Detailed Description

Definition at line 41 of file agent_datastate.h.

4.12.2 Field Documentation

4.12.2.1 char* agent_datastate_s::agent_code

Definition at line 45 of file agent_datastate.h.

Referenced by agent_datastate_Copy(), agent_datastate_New(), agent_xml_parse__agent_code(), agent_xml_parse__tasks(), MC_ComposeAgentWithWorkgroup(), MC_PrintAgentCode(), and MC_RetrieveAgentCode().

4.12.2.2 char** agent_datastate_s::agent_code_ids

Definition at line 43 of file agent_datastate.h.

Referenced by agent_datastate_Copy(), agent_datastate_Destroy(), agent_xml_compose__agent_code(), agent_xml_parse__agent_code(), agent_xml_parse__tasks(), MC_AgentAddTask(), and MC_ComposeAgentWithWorkgroup().

4.12.2.3 char** agent_datastate_s::agent_codes

Definition at line 44 of file agent_datastate.h.

Referenced by agent_datastate_Copy(), agent_datastate_Destroy(), agent_xml_compose__agent_code(), agent_xml_parse__agent_code(), agent_xml_parse__tasks(), MC_AgentAddTask(), and MC_ComposeAgentWithWorkgroup().

4.12.2.4 int agent_datastate_s::init_agent_status

Definition at line 63 of file agent_datastate.h.

Referenced by agent_datastate_Copy(), and agent_datastate_New().

4.12.2.5 int agent_datastate_s::number_of_tasks

Definition at line 59 of file agent_datastate.h.

Referenced by agent_datastate_Copy(), agent_datastate_Destroy(), agent_datastate_New(), agent_xml_compose__tasks(), agent_xml_parse__agent_code(), agent_xml_parse__tasks(), MC_AgentAddTask(), MC_AgentReturnArrayDim(), MC_AgentReturnArrayExtent(), MC_AgentReturnArrayNum(), MC_AgentReturnDataGetSymbolAddr(), MC_AgentReturnDataSize(), MC_AgentReturnDataType(), MC_AgentReturnIsArray(), MC_ComposeAgentWithWorkgroup(), MC_GetAgentNumTasks(), MC_GetAgentReturnData(), MC_PrintAgentCode(), and message_InitializeFromAgent().

4.12.2.6 int agent_datastate_s::persistent

Definition at line 62 of file agent_datastate.h.

Referenced by acc_MessageHandlerThread(), agent_datastate_Copy(), agent_datastate_New(), and agent_xml_compose__task().

4.12.2.7 int agent_datastate_s::progress_modifier

Definition at line 71 of file agent_datastate.h.

Referenced by agent_datastate_New(), and MC_MigrateAgent().

4.12.2.8 int agent_datastate_s::return_data

Definition at line 56 of file agent_datastate.h.

Referenced by agent_datastate_Copy(), and agent_datastate_New().

4.12.2.9 int agent_datastate_s::task_progress

Definition at line 55 of file agent_datastate.h.

Referenced by agent_AddPersistentVariable(), agent_datastate_Copy(), agent_datastate_New(), agent_RunChScriptThread(), agent_xml_compose__tasks(), agent_xml_parse__agent_code(), agent_xml_parse__tasks(), interpreter_variable_data_InitializeFromAgent(), MC_AgentVariableRetrieve(), MC_AgentVariableRetrieveInfo(), MC_AgentVariableSave(), MC_MigrateAgent(), MC_PrintAgentCode(), MC_RetrieveAgentCode(), MC_SaveData_chdl(), and message_InitializeFromAgent().

4.12.2.10 agent_task_p* agent_datastate_s::tasks

Definition at line 48 of file agent_datastate.h.

Referenced by agent_AddPersistentVariable(), agent_datastate_Copy(), agent_datastate_Destroy(), agent_datastate_New(), agent_xml_compose__task(), agent_xml_parse__agent_code(),

agent_xml_parse__data(), agent_xml_parse__task(), agent_xml_parse__tasks(), interpreter_variable_data_InitializeFromAgent(), MC_AgentAddTask(), MC_AgentReturnArrayDim(), MC_AgentReturnArrayExtent(), MC_AgentReturnArrayNum(), MC_AgentReturnDataGetSymbolAddr(), MC_AgentReturnDataSize(), MC_AgentReturnDataType(), MC_AgentReturnIsArray(), MC_AgentVariableRetrieve(), MC_AgentVariableRetrieveInfo(), MC_AgentVariableSave(), MC_ComposeAgentWithWorkgroup(), MC_GetAgentReturnData(), MC_MigrateAgent(), MC_SaveData_chdl(), and message_InitializeFromAgent().

4.12.2.11 mxml_node_t* agent_datastate_s::xml_agent_root

Definition at line 51 of file agent_datastate.h.

Referenced by agent_datastate_New(), agent_Initialize(), agent_xml_parse(), and MC_GetAgentXMLString().

4.12.2.12 mxml_node_t* agent_datastate_s::xml_root

Definition at line 52 of file agent_datastate.h.

Referenced by agent_datastate_Destroy(), agent_datastate_New(), agent_Initialize(), and agent_return_xml_parse().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[agent_datastate.h](#)

4.13 agent_mailbox_s Struct Reference

```
#include <agent_mailbox.h>
```

Data Fields

- struct mail_queue_s * [mail_queue](#)

4.13.1 Detailed Description

Definition at line 8 of file agent_mailbox.h.

4.13.2 Field Documentation

4.13.2.1 struct mail_queue_s* agent_mailbox_s::mail_queue

Definition at line 10 of file agent_mailbox.h.

Referenced by agent_mailbox_Copy(), agent_mailbox_Destroy(), agent_mailbox_New(), agent_mailbox_Post(), agent_mailbox_Retrieve(), and agent_mailbox_WaitRetrieve().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[agent_mailbox.h](#)

4.14 agent_s Struct Reference

```
#include <agent.h>
```

Data Fields

- u_long [id](#)
- char * [name](#)
- u_long [connect_id](#)
- time_t [arrival_time](#)
- char * [owner](#)
- char * [home](#)
- char * [sender](#)
- int [home_port](#)
- char * [wg_code](#)
- char * [agent_address](#)
- int [orphan](#)
- agent_datastate_p [datastate](#)
- enum [MC_AgentType_e](#) [agent_type](#)
- enum [MC_AgentStatus_e](#) [agent_status](#)
- int [return_data](#)
- ChInterp_t * [agent_interp](#)
- MUTEX_T * [run_lock](#)
- int [agent_thread_id](#)
- THREAD_T [agent_thread](#)
- agent_mailbox_p [mailbox](#)
- int [agent_pipe_active](#)
- int [agent_ready_to_send](#)
- int [agent_pipe_ready_to_read](#)
- int [agent_script_ready](#)
- int [agent_persistent](#)
- struct [mc_platform_s](#) * [mc_platform](#)
- MUTEX_T * [lock](#)
- int [binary](#)

4.14.1 Detailed Description

Definition at line 48 of file [agent.h](#).

4.14.2 Field Documentation

4.14.2.1 char* agent_s::agent_address

Definition at line 66 of file [agent.h](#).

Referenced by [agent_Initialize\(\)](#), and [agent_NewBinary\(\)](#).

4.14.2.2 ChInterp_t* agent_s::agent_interp

Definition at line 79 of file agent.h.

Referenced by agent_AddPersistentVariable(), agent_Copy(), agent_Destroy(), agent_RunChScriptThread(), interpreter_variable_data_Initialize(), interpreter_variable_data_InitializeFromAgent(), MC_CallAgentFunc(), MC_CallAgentFuncArg(), MC_CallAgentFuncV(), MC_CallAgentFuncVar(), MC_GetAgentExecEngine(), MC_TerminateAgent(), and MC_TerminateAgentWG().

4.14.2.3 int agent_s::agent_persistent

Definition at line 99 of file agent.h.

Referenced by agent_Copy().

4.14.2.4 int agent_s::agent_pipe_active

Definition at line 95 of file agent.h.

Referenced by agent_Initialize(), and agent_NewBinary().

4.14.2.5 int agent_s::agent_pipe_ready_to_read

Definition at line 97 of file agent.h.

Referenced by agent_Initialize(), and agent_NewBinary().

4.14.2.6 int agent_s::agent_ready_to_send

Definition at line 96 of file agent.h.

Referenced by agent_Initialize(), and agent_NewBinary().

4.14.2.7 int agent_s::agent_script_ready

Definition at line 98 of file agent.h.

Referenced by agent_Initialize(), and agent_NewBinary().

4.14.2.8 enum MC_AgentStatus_e agent_s::agent_status

Definition at line 74 of file agent.h.

Referenced by acc_MessageHandlerThread(), agent_Copy(), agent_Destroy(), agent_Initialize(), agent_NewBinary(), agent_queue_Flush(), agent_RunChScript(), ams_ManageAgentList(), ams_Print(), AP_QUEUE_STD_DEFN_TEMPLATE(), MC_ComposeAgentWithWorkgroup(), MC_GetAgentStatus(), MC_RetrieveAgent(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessageFile(), and MC_SetAgentStatus().

4.14.2.9 `THREAD_T agent_s::agent_thread`

Definition at line 89 of file agent.h.

Referenced by agent_RunChScript().

4.14.2.10 `int agent_s::agent_thread_id`

Definition at line 85 of file agent.h.

Referenced by agent_Initialize(), and agent_NewBinary().

4.14.2.11 `enum MC_AgentType_e agent_s::agent_type`

Definition at line 73 of file agent.h.

Referenced by agent_Copy(), agent_Initialize(), agent_xml_compose__message(), MC_ComposeAgentWithWorkgroup(), and MC_GetAgentType().

4.14.2.12 `time_t agent_s::arrival_time`

Definition at line 55 of file agent.h.

Referenced by agent_Copy(), agent_Initialize(), agent_NewBinary(), and MC_GetAgentArrivalTime().

4.14.2.13 `int agent_s::binary`

Definition at line 105 of file agent.h.

Referenced by agent_NewBinary(), and ams_ManageAgentList().

4.14.2.14 `u_long agent_s::connect_id`

Definition at line 53 of file agent.h.

Referenced by ams_Print().

4.14.2.15 `agent_datastate_p agent_s::datastate`

Definition at line 72 of file agent.h.

Referenced by acc_MessageHandlerThread(), agent_AddPersistentVariable(), agent_Copy(), agent_Destroy(), agent_Initialize(), agent_return_xml_parse(), agent_RunChScriptThread(), agent_xml_compose__agent_code(), agent_xml_compose__task(), agent_xml_compose__tasks(), agent_xml_parse(), agent_xml_parse__agent_code(), agent_xml_parse__data(), agent_xml_parse__task(), agent_xml_parse__tasks(), interpreter_variable_data_InitializeFromAgent(), MC_AgentAddTask(), MC_AgentReturnArrayDim(), MC_AgentReturnArrayExtent(), MC_AgentReturnArrayNum(), MC_AgentReturnDataGetSymbolAddr(), MC_AgentReturnDataSize(), MC_AgentReturnDataType(), MC_AgentReturnIsArray(), MC_AgentVariableRetrieve(), MC_AgentVariableRetrieveInfo(), MC_AgentVariableSave(), MC_ComposeAgentWithWorkgroup(), MC_GetAgentNumTasks(), MC_GetAgentReturnData(), MC_GetAgentXMLString(), MC_MigrateAgent(), MC_PrintAgentCode(), MC_RetrieveAgentCode(), MC_SaveData_chdl(), and message_InitializeFromAgent().

4.14.2.16 char* agent_s::home

Definition at line 61 of file agent.h.

Referenced by agent_Copy(), agent_Destroy(), agent_Initialize(), agent_NewBinary(), agent_xml_compose__home(), agent_xml_parse__home(), MC_ComposeAgentWithWorkgroup(), and message_InitializeFromAgent().

4.14.2.17 int agent_s::home_port

Definition at line 63 of file agent.h.

Referenced by agent_Copy().

4.14.2.18 u_long agent_s::id

Definition at line 51 of file agent.h.

Referenced by agent_Copy(), agent_Initialize(), agent_NewBinary(), agent_queue_Flush(), agent_RunChScriptThread(), ams_Print(), AP_QUEUE_STD_DEFN_TEMPLATE(), MC_GetAgentID(), and MC_RegisterService().

4.14.2.19 MUTEX_T* agent_s::lock

Definition at line 103 of file agent.h.

Referenced by acc_MessageHandlerThread(), agent_Copy(), agent_Destroy(), agent_Initialize(), agent_New(), agent_NewBinary(), ams_ManageAgentList(), MC_GetAgentName(), MC_GetAgentStatus(), MC_PrintAgentCode(), MC_RetrieveAgentCode(), and MC_SetAgentStatus().

4.14.2.20 agent_mailbox_p agent_s::mailbox

Definition at line 92 of file agent.h.

Referenced by acc_connection_Thread(), agent_Copy(), agent_Destroy(), agent_Initialize(), agent_NewBinary(), MC_AclPost(), MC_AclRetrieve(), and MC_AclWaitRetrieve().

4.14.2.21 struct mc_platform_s* agent_s::mc_platform

Definition at line 101 of file agent.h.

Referenced by acc_connection_Thread(), agent_Destroy(), agent_Initialize(), agent_NewBinary(), agent_RunChScript(), agent_RunChScriptThread(), MC_AddAgent(), and MC_SetAgentStatus().

4.14.2.22 char* agent_s::name

Definition at line 52 of file agent.h.

Referenced by acc_MessageHandlerThread(), agent_AddPersistentVariable(), agent_Copy(), agent_Destroy(), agent_queue_Flush(), agent_RunChScriptThread(), agent_xml_compose__name(), agent_xml_parse__name(), ams_ManageAgentList(), AP_QUEUE_STD_DEFN_TEMPLATE(), MC_AddStationaryAgent(), MC_ComposeAgentWithWorkgroup(), MC_GetAgentName(), MC_RegisterService(), and message_InitializeFromAgent().

4.14.2.23 int agent_s::orphan

Definition at line 68 of file agent.h.

Referenced by agent_Copy(), agent_Initialize(), agent_NewBinary(), ams_ManageAgentList(), MC_ComposeAgentWithWorkgroup(), and MC_SetAgentStatus().

4.14.2.24 char* agent_s::owner

Definition at line 60 of file agent.h.

Referenced by agent_Copy(), agent_Destroy(), agent_xml_compose__owner(), agent_xml_parse__owner(), and MC_ComposeAgentWithWorkgroup().

4.14.2.25 int agent_s::return_data

Definition at line 76 of file agent.h.

Referenced by agent_Copy().

4.14.2.26 MUTEX_T* agent_s::run_lock

Definition at line 82 of file agent.h.

Referenced by agent_Copy(), agent_Destroy(), agent_Initialize(), agent_New(), agent_NewBinary(), ams_ManageAgentList(), interpreter_variable_data_Initialize(), MC_CallAgentFunc(), MC_CallAgentFuncArg(), MC_CallAgentFuncV(), and MC_CallAgentFuncVar().

4.14.2.27 char* agent_s::sender

Definition at line 62 of file agent.h.

Referenced by agent_Destroy(), agent_Initialize(), agent_NewBinary(), and agent_xml_parse__sender().

4.14.2.28 char* agent_s::wg_code

Definition at line 64 of file agent.h.

Referenced by agent_Destroy(), agent_xml_compose__wg_code(), agent_xml_parse__wg_code(), MC_ComposeAgentWithWorkgroup(), MC_DeleteAgent(), MC_DeleteAgentWG(), and MC_TerminateAgentWG().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[agent.h](#)

4.15 agent_task_s Struct Reference

```
#include <agent_task.h>
```

Data Fields

- [int number_of_elements](#)
- [int size_of_element_array](#)
- [int persistent](#)
- [int init_agent_status](#)
- [char * var_name](#)
- [char * server_name](#)
- [char * code_id](#)
- [interpreter_variable_data_t * agent_return_data](#)
- [struct agent_variable_list_s * agent_variable_list](#)
- [char ** saved_variables](#)
- [int num_saved_variables](#)

4.15.1 Detailed Description

Definition at line 40 of file `agent_task.h`.

4.15.2 Field Documentation

4.15.2.1 `interpreter_variable_data_t* agent_task_s::agent_return_data`

Definition at line 52 of file `agent_task.h`.

Referenced by `agent_task_Copy()`, `agent_task_Destroy()`, `agent_xml_compose__task()`, `agent_xml_parse__data()`, `MC_AgentReturnArrayDim()`, `MC_AgentReturnArrayExtent()`, `MC_AgentReturnArrayNum()`, `MC_AgentReturnDataGetSymbolAddr()`, `MC_AgentReturnDataSize()`, `MC_AgentReturnDataType()`, `MC_AgentReturnIsArray()`, and `MC_GetAgentReturnData()`.

4.15.2.2 `struct agent_variable_list_s* agent_task_s::agent_variable_list`

Definition at line 53 of file `agent_task.h`.

Referenced by `agent_AddPersistentVariable()`, `agent_task_Copy()`, `agent_task_Destroy()`, `agent_task_New()`, `agent_xml_compose__task()`, `agent_xml_parse__data()`, `MC_AgentVariableRetrieve()`, `MC_AgentVariableRetrieveInfo()`, and `MC_SaveData_chdl()`.

4.15.2.3 `char* agent_task_s::code_id`

Definition at line 49 of file `agent_task.h`.

Referenced by `agent_task_Copy()`, `agent_task_Destroy()`, `agent_xml_compose__task()`, `agent_xml_parse__agent_code()`, `agent_xml_parse__task()`, and `MC_AgentAddTask()`.

4.15.2.4 int agent_task_s::init_agent_status

Definition at line 45 of file agent_task.h.

Referenced by agent_task_Copy().

4.15.2.5 int agent_task_s::num_saved_variables

Definition at line 55 of file agent_task.h.

Referenced by agent_task_Copy(), agent_task_New(), and MC_AgentVariableSave().

4.15.2.6 int agent_task_s::number_of_elements

Definition at line 42 of file agent_task.h.

Referenced by agent_task_Copy().

4.15.2.7 int agent_task_s::persistent

Definition at line 44 of file agent_task.h.

Referenced by agent_task_Copy(), agent_xml_compose__task(), agent_xml_parse__data(), agent_xml_parse__task(), MC_AgentAddTask(), and MC_ComposeAgentWithWorkgroup().

4.15.2.8 char agent_task_s::saved_variables**

Definition at line 54 of file agent_task.h.

Referenced by agent_task_Copy(), agent_task_Destroy(), agent_task_New(), and MC_AgentVariableSave().

4.15.2.9 char* agent_task_s::server_name

Definition at line 48 of file agent_task.h.

Referenced by agent_task_Copy(), agent_task_Destroy(), agent_xml_compose__task(), agent_xml_parse__task(), MC_AgentAddTask(), MC_ComposeAgentWithWorkgroup(), MC_MigrateAgent(), and message_InitializeFromAgent().

4.15.2.10 int agent_task_s::size_of_element_array

Definition at line 43 of file agent_task.h.

Referenced by agent_task_Copy().

4.15.2.11 char* agent_task_s::var_name

Definition at line 47 of file agent_task.h.

Referenced by agent_task_Copy(), agent_task_Destroy(), agent_xml_compose__task(), agent_xml_parse__task(), interpreter_variable_data_InitializeFromAgent(), MC_AgentAddTask(), and MC_ComposeAgentWithWorkgroup().

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/include/agent_task.h](#)

4.16 AP_GENERIC_s Struct Reference

```
#include <ap_queue_template.h>
```

Data Fields

- void * [none](#)

4.16.1 Detailed Description

Definition at line 41 of file `ap_queue_template.h`.

4.16.2 Field Documentation

4.16.2.1 void* AP_GENERIC_s::none

Definition at line 41 of file `ap_queue_template.h`.

The documentation for this struct was generated from the following file:

- `/home/dko/Projects/mobilec/src/include/ap_queue_template.h`

4.17 arc4_context Struct Reference

ARC4 context structure.

```
#include <arc4.h>
```

Data Fields

- [int x](#)
- [int y](#)
- unsigned char [m](#) [256]

4.17.1 Detailed Description

ARC4 context structure.

Definition at line 10 of file arc4.h.

4.17.2 Field Documentation

4.17.2.1 unsigned char arc4_context::m[256]

permutation table

Definition at line 14 of file arc4.h.

Referenced by arc4_crypt(), and arc4_setup().

4.17.2.2 int arc4_context::x

permutation index

Definition at line 12 of file arc4.h.

Referenced by arc4_crypt(), and arc4_setup().

4.17.2.3 int arc4_context::y

permutation index

Definition at line 13 of file arc4.h.

Referenced by arc4_crypt(), and arc4_setup().

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/arc4.h](#)

4.18 barrier_node_s Struct Reference

```
#include <barrier.h>
```

Data Fields

- `MUTEX_T * lock`
- `COND_T * cond`
- `int id`
- `int num_registered`
- `int num_waiting`

4.18.1 Detailed Description

Definition at line 42 of file barrier.h.

4.18.2 Field Documentation

4.18.2.1 `COND_T* barrier_node_s::cond`

Definition at line 43 of file barrier.h.

Referenced by `barrier_node_Destroy()`, `barrier_node_Initialize()`, and `MC_Barrier()`.

4.18.2.2 `int barrier_node_s::id`

Definition at line 44 of file barrier.h.

Referenced by `barrier_node_Initialize()`, `barrier_queue_Add()`, and `barrier_queue_Delete()`.

4.18.2.3 `MUTEX_T* barrier_node_s::lock`

Definition at line 42 of file barrier.h.

Referenced by `barrier_node_Destroy()`, `barrier_node_Initialize()`, and `MC_Barrier()`.

4.18.2.4 `int barrier_node_s::num_registered`

Definition at line 45 of file barrier.h.

Referenced by `barrier_node_Initialize()`, and `MC_Barrier()`.

4.18.2.5 `int barrier_node_s::num_waiting`

Definition at line 46 of file barrier.h.

Referenced by `barrier_node_Initialize()`, and `MC_Barrier()`.

The documentation for this struct was generated from the following file:

- `/home/dko/Projects/mobilec/src/include/barrier.h`

4.19 barrier_queue_s Struct Reference

```
#include <barrier.h>
```

Data Fields

- `RWLOCK_T * lock`
- `list_p list`
- `int size`

4.19.1 Detailed Description

Definition at line 51 of file barrier.h.

4.19.2 Field Documentation

4.19.2.1 list_p barrier_queue_s::list

Definition at line 54 of file barrier.h.

Referenced by `barrier_queue_Add()`, `barrier_queue_Delete()`, `barrier_queue_Destroy()`, `barrier_queue_Get()`, `barrier_queue_New()`, and `barrier_queue_Pop()`.

4.19.2.2 RWLOCK_T* barrier_queue_s::lock

Definition at line 52 of file barrier.h.

Referenced by `barrier_queue_Add()`, `barrier_queue_Delete()`, `barrier_queue_Destroy()`, `barrier_queue_Get()`, and `barrier_queue_New()`.

4.19.2.3 int barrier_queue_s::size

Definition at line 55 of file barrier.h.

Referenced by `barrier_queue_Add()`, and `barrier_queue_Delete()`.

The documentation for this struct was generated from the following file:

- `/home/dko/Projects/mobilec/src/include/barrier.h`

4.20 cmd_prompt_s Struct Reference

```
#include <cmd_prompt.h>
```

Data Fields

- `THREAD_T` [thread](#)

4.20.1 Detailed Description

Definition at line 41 of file `cmd_prompt.h`.

4.20.2 Field Documentation

4.20.2.1 `THREAD_T cmd_prompt_s::thread`

Definition at line 42 of file `cmd_prompt.h`.

Referenced by `cmd_prompt_Start()`, and `MC_End()`.

The documentation for this struct was generated from the following file:

- `/home/dko/Projects/mobilec/src/include/cmd_prompt.h`

4.21 `command_s` Struct Reference

```
#include <cmd_prompt.h>
```

Data Fields

- [int index](#)
- [int num_args](#)
- [char ** args](#)

4.21.1 Detailed Description

Definition at line 46 of file `cmd_prompt.h`.

4.21.2 Field Documentation

4.21.2.1 `char** command_s::args`

Definition at line 49 of file `cmd_prompt.h`.

Referenced by `cmd_prompt_Thread()`, `dealloc_command()`, `exec_command()`, `handler_COMPOSE_SEND()`, `handler_HELP()`, `handler_SEND()`, and `process_command()`.

4.21.2.2 `int command_s::index`

Definition at line 47 of file `cmd_prompt.h`.

Referenced by `cmd_prompt_Thread()`, `exec_command()`, and `process_command()`.

4.21.2.3 `int command_s::num_args`

Definition at line 48 of file `cmd_prompt.h`.

Referenced by `cmd_prompt_Thread()`, `dealloc_command()`, `exec_command()`, `handler_COMPOSE_SEND()`, `handler_HELP()`, `handler_SEND()`, and `process_command()`.

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/include/cmd_prompt.h](#)

4.22 connection_s Struct Reference

```
#include <connection.h>
```

Data Fields

- `int connect_id`
- `int nonce`
- `char * remote_hostname`
- `struct sockaddr_in addr`
- `u_long clientfd`
- `u_long serverfd`
- `unsigned char * AES_key`

4.22.1 Detailed Description

Definition at line 46 of file connection.h.

4.22.2 Field Documentation

4.22.2.1 struct sockaddr_in connection_s::addr

Definition at line 56 of file connection.h.

Referenced by connection_Copy(), listen_Thread(), and message_InitializeFromConnection().

4.22.2.2 unsigned char* connection_s::AES_key

Definition at line 63 of file connection.h.

Referenced by listen_Thread(), and rece_de_msg().

4.22.2.3 u_long connection_s::clientfd

Definition at line 59 of file connection.h.

Referenced by connection_Copy(), connection_Destroy(), listen_Thread(), message_InitializeFromConnection(), mtp_http_InitializeFromConnection(), and rece_de_msg().

4.22.2.4 int connection_s::connect_id

Definition at line 49 of file connection.h.

Referenced by AP_QUEUE_SEARCH_TEMPLATE(), connection_Copy(), listen_Thread(), and message_InitializeFromConnection().

4.22.2.5 int connection_s::nonce

Definition at line 51 of file connection.h.

Referenced by listen_Thread(), and rece_de_msg().

4.22.2.6 `char* connection_s::remote_hostname`

Definition at line 54 of file `connection.h`.

Referenced by `AP_QUEUE_SEARCH_TEMPLATE()`, `connection_Copy()`, `connection_Destroy()`, and `listen_Thread()`.

4.22.2.7 `u_long connection_s::serverfd`

Definition at line 60 of file `connection.h`.

Referenced by `connection_Copy()`, and `listen_Thread()`.

The documentation for this struct was generated from the following file:

- `/home/dko/Projects/mobilec/src/include/connection.h`

4.23 fipa_expression_s::content_u Union Reference

```
#include <fipa_acl.h>
```

Data Fields

- struct [fipa_word_s](#) * word
- struct [fipa_string_s](#) * string
- struct [fipa_number_s](#) * number
- struct [fipa_DateTime_s](#) * datetime
- struct [fipa_expression_s](#) ** expression

4.23.1 Detailed Description

Definition at line 196 of file `fipa_acl.h`.

4.23.2 Field Documentation

4.23.2.1 struct fipa_DateTime_s* fipa_expression_s::content_u::datetime

Definition at line 201 of file `fipa_acl.h`.

Referenced by `fipa_expression_Compose()`, `fipa_expression_Copy()`, and `fipa_expression_Destroy()`.

4.23.2.2 struct fipa_expression_s** fipa_expression_s::content_u::expression

Definition at line 202 of file `fipa_acl.h`.

Referenced by `fipa_expression_Compose()`, `fipa_expression_Copy()`, and `fipa_expression_Destroy()`.

4.23.2.3 struct fipa_number_s* fipa_expression_s::content_u::number

Definition at line 200 of file `fipa_acl.h`.

Referenced by `fipa_expression_Compose()`, `fipa_expression_Copy()`, and `fipa_expression_Destroy()`.

4.23.2.4 struct fipa_string_s* fipa_expression_s::content_u::string

Definition at line 199 of file `fipa_acl.h`.

Referenced by `fipa_expression_Compose()`, `fipa_expression_Copy()`, `fipa_expression_Destroy()`, `MC_AclGetConversationID()`, and `MC_AclSetConversationID()`.

4.23.2.5 struct fipa_word_s* fipa_expression_s::content_u::word

Definition at line 198 of file `fipa_acl.h`.

Referenced by `fipa_expression_Compose()`, `fipa_expression_Copy()`, and `fipa_expression_Destroy()`.

The documentation for this union was generated from the following file:

- [/home/dko/Projects/mobilec/src/include/fipa_acl.h](#)

4.24 des3_context Struct Reference

Triple-DES context structure.

```
#include <des.h>
```

Data Fields

- [int mode](#)
- unsigned long [sk](#) [96]

4.24.1 Detailed Description

Triple-DES context structure.

Definition at line 23 of file des.h.

4.24.2 Field Documentation

4.24.2.1 int des3_context::mode

encrypt/decrypt

Definition at line 25 of file des.h.

4.24.2.2 unsigned long des3_context::sk[96]

3DES subkeys

Definition at line 26 of file des.h.

Referenced by `des3_crypt_ecb()`, `des3_set2key_dec()`, `des3_set2key_enc()`, `des3_set3key_dec()`, and `des3_set3key_enc()`.

The documentation for this struct was generated from the following file:

- `/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/des.h`

4.25 des_context Struct Reference

DES context structure.

```
#include <des.h>
```

Data Fields

- [int mode](#)
- unsigned long [sk](#) [32]

4.25.1 Detailed Description

DES context structure.

Definition at line 13 of file des.h.

4.25.2 Field Documentation

4.25.2.1 int des_context::mode

encrypt/decrypt

Definition at line 15 of file des.h.

4.25.2.2 unsigned long des_context::sk[32]

DES subkeys

Definition at line 16 of file des.h.

Referenced by `des_crypt_ecb()`, `des_setkey_dec()`, and `des_setkey_enc()`.

The documentation for this struct was generated from the following file:

- `/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/des.h`

4.26 dhm_context Struct Reference

```
#include <dhm.h>
```

Data Fields

- [int len](#)
- [mpi P](#)
- [mpi G](#)
- [mpi X](#)
- [mpi GX](#)
- [mpi GY](#)
- [mpi K](#)
- [mpi RP](#)

4.26.1 Detailed Description

Definition at line 16 of file dhm.h.

4.26.2 Field Documentation

4.26.2.1 mpi dhm_context::G

generator

Definition at line 20 of file dhm.h.

Referenced by dhm_free(), dhm_make_params(), dhm_make_public(), dhm_read_params(), main(), ssl_parse_server_key_exchange(), ssl_set_dh_param(), and ssl_write_server_key_exchange().

4.26.2.2 mpi dhm_context::GX

$\text{self} = G^X \bmod P$

Definition at line 22 of file dhm.h.

Referenced by dhm_free(), dhm_make_params(), dhm_make_public(), ssl_write_client_key_exchange(), and ssl_write_server_key_exchange().

4.26.2.3 mpi dhm_context::GY

$\text{peer} = G^Y \bmod P$

Definition at line 23 of file dhm.h.

Referenced by dhm_calc_secret(), dhm_free(), dhm_read_params(), dhm_read_public(), ssl_parse_client_key_exchange(), and ssl_parse_server_key_exchange().

4.26.2.4 `mpi dhm_context::K`

$\text{key} = \text{GY}^X \bmod P$

Definition at line 24 of file dhm.h.

Referenced by `dhm_calc_secret()`, `dhm_free()`, `ssl_parse_client_key_exchange()`, and `ssl_write_client_key_exchange()`.

4.26.2.5 `int dhm_context::len`

`size(P)` in chars

Definition at line 18 of file dhm.h.

Referenced by `dhm_make_params()`, `dhm_make_public()`, `dhm_read_params()`, `dhm_read_public()`, `main()`, `ssl_parse_client_key_exchange()`, `ssl_parse_server_key_exchange()`, and `ssl_write_client_key_exchange()`.

4.26.2.6 `mpi dhm_context::P`

prime modulus

Definition at line 19 of file dhm.h.

Referenced by `dhm_calc_secret()`, `dhm_free()`, `dhm_make_params()`, `dhm_make_public()`, `dhm_read_params()`, `main()`, `ssl_parse_server_key_exchange()`, `ssl_set_dh_param()`, and `ssl_write_server_key_exchange()`.

4.26.2.7 `mpi dhm_context::RP`

cached $R^2 \bmod P$

Definition at line 25 of file dhm.h.

Referenced by `dhm_calc_secret()`, `dhm_free()`, `dhm_make_params()`, and `dhm_make_public()`.

4.26.2.8 `mpi dhm_context::X`

secret value

Definition at line 21 of file dhm.h.

Referenced by `dhm_calc_secret()`, `dhm_free()`, `dhm_make_params()`, `dhm_make_public()`, `ssl_write_client_key_exchange()`, and `ssl_write_server_key_exchange()`.

The documentation for this struct was generated from the following file:

- `/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/dhm.h`

4.27 dynstring_s Struct Reference

```
#include <dynstring.h>
```

Data Fields

- [int len](#)
- [int size](#)
- [char * message](#)

4.27.1 Detailed Description

Definition at line 9 of file dynstring.h.

4.27.2 Field Documentation

4.27.2.1 int dynstring_s::len

Definition at line 10 of file dynstring.h.

Referenced by [dynstring_Append\(\)](#), [dynstring_New\(\)](#), and [mtp_http_CreateMessage\(\)](#).

4.27.2.2 char* dynstring_s::message

Definition at line 12 of file dynstring.h.

Referenced by [dynstring_Append\(\)](#), [dynstring_Destroy\(\)](#), [dynstring_New\(\)](#), [fipa_envelope_Compose___from\(\)](#), [MC_AclSend\(\)](#), [message_send_Thread\(\)](#), and [mtp_http_CreateMessage\(\)](#).

4.27.2.3 int dynstring_s::size

Definition at line 11 of file dynstring.h.

Referenced by [dynstring_Append\(\)](#), and [dynstring_New\(\)](#).

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/include/dynstring.h](#)

4.28 fipa_acl_envelope_Received_s Struct Reference

```
#include <fipa_acl_envelope.h>
```

Data Fields

- struct [fipa_url_s](#) * [received_by](#)
- struct [fipa_url_s](#) * [received_from](#)
- struct [fipa_DateTime_s](#) * [received_date](#)
- char * [received_id](#)
- struct [fipa_url_s](#) * [received_via](#)

4.28.1 Detailed Description

Definition at line 7 of file `fipa_acl_envelope.h`.

4.28.2 Field Documentation

4.28.2.1 struct `fipa_url_s` * `fipa_acl_envelope_Received_s::received_by`

Definition at line 9 of file `fipa_acl_envelope.h`.

Referenced by `fipa_acl_envelope_Received_Copy()`, `fipa_acl_envelope_Received_Destroy()`, and `fipa_envelope_HandleReceived()`.

4.28.2.2 struct `fipa_DateTime_s` * `fipa_acl_envelope_Received_s::received_date`

Definition at line 11 of file `fipa_acl_envelope.h`.

Referenced by `fipa_acl_envelope_Received_Copy()`, `fipa_acl_envelope_Received_Destroy()`, and `fipa_envelope_HandleReceived()`.

4.28.2.3 struct `fipa_url_s` * `fipa_acl_envelope_Received_s::received_from`

Definition at line 10 of file `fipa_acl_envelope.h`.

Referenced by `fipa_acl_envelope_Received_Copy()`, `fipa_acl_envelope_Received_Destroy()`, and `fipa_envelope_HandleReceived()`.

4.28.2.4 char * `fipa_acl_envelope_Received_s::received_id`

Definition at line 12 of file `fipa_acl_envelope.h`.

Referenced by `fipa_acl_envelope_Received_Copy()`, `fipa_acl_envelope_Received_Destroy()`, and `fipa_envelope_HandleReceived()`.

4.28.2.5 struct `fipa_url_s` * `fipa_acl_envelope_Received_s::received_via`

Definition at line 13 of file `fipa_acl_envelope.h`.

Referenced by `fipa_acl_envelope_Received_Copy()`, `fipa_acl_envelope_Received_Destroy()`, and `fipa_envelope_HandleReceived()`.

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/include/fipa_acl_envelope.h](#)

4.29 fipa_acl_envelope_s Struct Reference

```
#include <fipa_acl_envelope.h>
```

Data Fields

- [int num_params](#)
- [struct fipa_acl_Param_s ** params](#)

4.29.1 Detailed Description

Definition at line 40 of file [fipa_acl_envelope.h](#).

4.29.2 Field Documentation

4.29.2.1 [int fipa_acl_envelope_s::num_params](#)

Definition at line 42 of file [fipa_acl_envelope.h](#).

Referenced by [acc_connection_Thread\(\)](#), [fipa_acl_envelope_Copy\(\)](#), [fipa_acl_envelope_Destroy\(\)](#), and [fipa_envelope_HandleParams\(\)](#).

4.29.2.2 [struct fipa_acl_Param_s** fipa_acl_envelope_s::params](#)

Definition at line 43 of file [fipa_acl_envelope.h](#).

Referenced by [acc_connection_Thread\(\)](#), [fipa_acl_envelope_Copy\(\)](#), [fipa_acl_envelope_Destroy\(\)](#), [fipa_envelope_HandleAclRepresentation\(\)](#), [fipa_envelope_HandleComments\(\)](#), [fipa_envelope_HandleDate\(\)](#), [fipa_envelope_HandleFrom\(\)](#), [fipa_envelope_HandleIntendedReceiver\(\)](#), [fipa_envelope_HandleParams\(\)](#), [fipa_envelope_HandlePayloadEncoding\(\)](#), [fipa_envelope_HandlePayloadLength\(\)](#), [fipa_envelope_HandleReceived\(\)](#), and [fipa_envelope_HandleTo\(\)](#).

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/include/fipa_acl_envelope.h](#)

4.30 fipa_acl_message_s Struct Reference

```
#include <fipa_acl.h>
```

Data Fields

- enum [fipa_performative_e](#) performative
- struct [fipa_agent_identifier_s](#) * sender
- struct [fipa_agent_identifier_set_s](#) * receiver
- int receiver_num
- struct [fipa_agent_identifier_set_s](#) * reply_to
- struct [fipa_string_s](#) * content
- struct [fipa_expression_s](#) * language
- struct [fipa_expression_s](#) * encoding
- struct [fipa_expression_s](#) * ontology
- enum [fipa_protocol_e](#) protocol
- struct [fipa_expression_s](#) * conversation_id
- struct [fipa_expression_s](#) * reply_with
- struct [fipa_expression_s](#) * in_reply_to
- struct [fipa_DateTime_s](#) * reply_by

4.30.1 Detailed Description

Definition at line 105 of file [fipa_acl.h](#).

4.30.2 Field Documentation

4.30.2.1 struct [fipa_string_s](#)* [fipa_acl_message_s::content](#)

Definition at line 117 of file [fipa_acl.h](#).

Referenced by [fipa_acl_Compose\(\)](#), [fipa_acl_message_Copy\(\)](#), [fipa_acl_message_Destroy\(\)](#), [fipa_message_parameter_Parse\(\)](#), [MC_AclGetContent\(\)](#), [MC_AclSetContent\(\)](#), and [MC_AclSetContent_chdl\(\)](#).

4.30.2.2 struct [fipa_expression_s](#)* [fipa_acl_message_s::conversation_id](#)

Definition at line 128 of file [fipa_acl.h](#).

Referenced by [fipa_acl_Compose\(\)](#), [fipa_acl_message_Copy\(\)](#), [fipa_acl_message_Destroy\(\)](#), [fipa_message_parameter_Parse\(\)](#), [fipa_Reply\(\)](#), [MC_AclGetConversationID\(\)](#), and [MC_AclSetConversationID\(\)](#).

4.30.2.3 struct [fipa_expression_s](#)* [fipa_acl_message_s::encoding](#)

Definition at line 121 of file [fipa_acl.h](#).

Referenced by [fipa_acl_Compose\(\)](#), [fipa_acl_message_Copy\(\)](#), [fipa_acl_message_Destroy\(\)](#), and [fipa_message_parameter_Parse\(\)](#).

4.30.2.4 struct fipa_expression_s* fipa_acl_message_s::in_reply_to

Definition at line 132 of file fipa_acl.h.

Referenced by fipa_acl_Compose(), fipa_acl_message_Copy(), fipa_acl_message_Destroy(), and fipa_message_parameter_Parse().

4.30.2.5 struct fipa_expression_s* fipa_acl_message_s::language

Definition at line 119 of file fipa_acl.h.

Referenced by fipa_acl_Compose(), fipa_acl_message_Copy(), fipa_acl_message_Destroy(), and fipa_message_parameter_Parse().

4.30.2.6 struct fipa_expression_s* fipa_acl_message_s::ontology

Definition at line 123 of file fipa_acl.h.

Referenced by fipa_acl_Compose(), fipa_acl_message_Copy(), fipa_acl_message_Destroy(), and fipa_message_parameter_Parse().

4.30.2.7 enum fipa_performative_e fipa_acl_message_s::performative

Definition at line 107 of file fipa_acl.h.

Referenced by fipa_acl_Compose(), fipa_acl_message_Copy(), fipa_acl_Parse(), MC_AclGetPerformative(), MC_AclGetProtocol(), MC_AclSetPerformative(), and MC_AclSetPerformative_chdl().

4.30.2.8 enum fipa_protocol_e fipa_acl_message_s::protocol

Definition at line 126 of file fipa_acl.h.

Referenced by fipa_acl_Compose(), fipa_acl_message_Copy(), fipa_message_parameter_Parse(), fipa_Reply(), MC_AclSetProtocol(), and MC_AclSetProtocol_chdl().

4.30.2.9 struct fipa_agent_identifier_set_s* fipa_acl_message_s::receiver

Definition at line 111 of file fipa_acl.h.

Referenced by AP_QUEUE_STD_DEFN_TEMPLATE(), fipa_acl_Compose(), fipa_acl_message_Copy(), fipa_acl_message_Destroy(), fipa_envelope_Compose__intended_receiver(), fipa_envelope_Compose__to(), fipa_message_parameter_Parse(), fipa_Reply(), MC_AclAddReceiver(), and MC_AclSend().

4.30.2.10 int fipa_acl_message_s::receiver_num

Definition at line 112 of file fipa_acl.h.

Referenced by MC_AclAddReceiver().

4.30.2.11 struct fipa_DateTime_s* fipa_acl_message_s::reply_by

Definition at line 134 of file fipa_acl.h.

Referenced by fipa_acl_Compose(), fipa_acl_message_Copy(), fipa_acl_message_Destroy(), and fipa_message_parameter_Parse().

4.30.2.12 struct fipa_agent_identifier_set_s* fipa_acl_message_s::reply_to

Definition at line 114 of file fipa_acl.h.

Referenced by fipa_acl_Compose(), fipa_acl_message_Copy(), fipa_acl_message_Destroy(), fipa_message_parameter_Parse(), fipa_Reply(), and MC_AclAddReplyTo().

4.30.2.13 struct fipa_expression_s* fipa_acl_message_s::reply_with

Definition at line 130 of file fipa_acl.h.

Referenced by fipa_acl_Compose(), fipa_acl_message_Copy(), fipa_acl_message_Destroy(), and fipa_message_parameter_Parse().

4.30.2.14 struct fipa_agent_identifier_s* fipa_acl_message_s::sender

Definition at line 109 of file fipa_acl.h.

Referenced by fipa_acl_Compose(), fipa_acl_message_Copy(), fipa_acl_message_Destroy(), fipa_envelope_Compose__from(), fipa_message_parameter_Parse(), fipa_Reply(), MC_AclGetSender(), and MC_AclSetSender().

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/include/fipa_acl.h](#)

4.31 fipa_acl_Param_s Struct Reference

```
#include <fipa_acl_envelope.h>
```

Data Fields

- struct [fipa_agent_identifier_set_s](#) * to
- struct [fipa_agent_identifier_s](#) * from
- char * [comments](#)
- char * [acl_representation](#)
- char * [payload_length](#)
- char * [payload_encoding](#)
- struct [fipa_DateTime_s](#) * date
- struct [fipa_agent_identifier_set_s](#) * intended_receiver
- struct [fipa_acl_envelope_Received_s](#) * received

4.31.1 Detailed Description

Definition at line 22 of file [fipa_acl_envelope.h](#).

4.31.2 Field Documentation

4.31.2.1 char* fipa_acl_Param_s::acl_representation

Definition at line 27 of file [fipa_acl_envelope.h](#).

Referenced by [fipa_acl_Param_Copy\(\)](#), [fipa_acl_Param_Destroy\(\)](#), and [fipa_envelope_HandleAclRepresentation\(\)](#).

4.31.2.2 char* fipa_acl_Param_s::comments

Definition at line 26 of file [fipa_acl_envelope.h](#).

Referenced by [fipa_acl_Param_Copy\(\)](#), [fipa_acl_Param_Destroy\(\)](#), and [fipa_envelope_HandleComments\(\)](#).

4.31.2.3 struct fipa_DateTime_s* fipa_acl_Param_s::date

Definition at line 30 of file [fipa_acl_envelope.h](#).

Referenced by [fipa_acl_Param_Copy\(\)](#), [fipa_acl_Param_Destroy\(\)](#), and [fipa_envelope_HandleDate\(\)](#).

4.31.2.4 struct fipa_agent_identifier_s* fipa_acl_Param_s::from

Definition at line 25 of file [fipa_acl_envelope.h](#).

Referenced by [fipa_acl_Param_Copy\(\)](#), [fipa_acl_Param_Destroy\(\)](#), and [fipa_envelope_HandleFrom\(\)](#).

4.31.2.5 struct fipa_agent_identifier_set_s* fipa_acl_Param_s::intended_receiver

Definition at line 31 of file fipa_acl_envelope.h.

Referenced by fipa_acl_Param_Copy(), fipa_acl_Param_Destroy(), and fipa_envelope_HandleIntendedReceiver().

4.31.2.6 char* fipa_acl_Param_s::payload_encoding

Definition at line 29 of file fipa_acl_envelope.h.

Referenced by fipa_acl_Param_Copy(), fipa_acl_Param_Destroy(), and fipa_envelope_HandlePayloadEncoding().

4.31.2.7 char* fipa_acl_Param_s::payload_length

Definition at line 28 of file fipa_acl_envelope.h.

Referenced by fipa_acl_Param_Copy(), fipa_acl_Param_Destroy(), and fipa_envelope_HandlePayloadLength().

4.31.2.8 struct fipa_acl_envelope_Received_s* fipa_acl_Param_s::received

Definition at line 32 of file fipa_acl_envelope.h.

Referenced by fipa_acl_Param_Copy(), fipa_acl_Param_Destroy(), and fipa_envelope_HandleReceived().

4.31.2.9 struct fipa_agent_identifier_set_s* fipa_acl_Param_s::to

Definition at line 24 of file fipa_acl_envelope.h.

Referenced by acc_connection_Thread(), fipa_acl_Param_Copy(), fipa_acl_Param_Destroy(), and fipa_envelope_HandleTo().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/fipa_acl_envelope.h

4.32 fipa_agent_identifier_s Struct Reference

```
#include <fipa_acl.h>
```

Data Fields

- char * [name](#)
- struct [fipa_url_sequence_s](#) * [addresses](#)
- struct [fipa_agent_identifier_set_s](#) * [resolvers](#)

4.32.1 Detailed Description

Definition at line 180 of file [fipa_acl.h](#).

4.32.2 Field Documentation

4.32.2.1 struct fipa_url_sequence_s* fipa_agent_identifier_s::addresses

Definition at line 183 of file [fipa_acl.h](#).

Referenced by [acc_connection_Thread\(\)](#), [fipa_agent_identifier_Compose\(\)](#), [fipa_agent_identifier_Copy\(\)](#), [fipa_agent_identifier_Destroy\(\)](#), [fipa_envelope_Compose__from\(\)](#), [fipa_envelope_Compose__intended_receiver\(\)](#), [fipa_envelope_Compose__to\(\)](#), [fipa_envelope_ParseAddresses\(\)](#), [MC_AclAddReceiver\(\)](#), [MC_AclAddReplyTo\(\)](#), [MC_AclGetSender\(\)](#), [MC_AclSend\(\)](#), and [MC_AclSetSender\(\)](#).

4.32.2.2 char* fipa_agent_identifier_s::name

Definition at line 182 of file [fipa_acl.h](#).

Referenced by [acc_connection_Thread\(\)](#), [AP_QUEUE_STD_DEFN_TEMPLATE\(\)](#), [fipa_agent_identifier_Compose\(\)](#), [fipa_agent_identifier_Copy\(\)](#), [fipa_agent_identifier_Destroy\(\)](#), [fipa_envelope_Compose__from\(\)](#), [fipa_envelope_Compose__intended_receiver\(\)](#), [fipa_envelope_Compose__to\(\)](#), [MC_AclAddReceiver\(\)](#), [MC_AclAddReplyTo\(\)](#), [MC_AclGetSender\(\)](#), [MC_AclSend\(\)](#), and [MC_AclSetSender\(\)](#).

4.32.2.3 struct fipa_agent_identifier_set_s* fipa_agent_identifier_s::resolvers

Definition at line 184 of file [fipa_acl.h](#).

Referenced by [fipa_agent_identifier_Compose\(\)](#), [fipa_agent_identifier_Copy\(\)](#), [fipa_agent_identifier_Destroy\(\)](#), and [fipa_envelope_ParseResolvers\(\)](#).

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/include/fipa_acl.h](#)

4.33 fipa_agent_identifier_set_s Struct Reference

```
#include <fipa_acl.h>
```

Data Fields

- [int num](#)
- [int retain_order](#)
- struct [fipa_agent_identifier_s](#) ** [fipa_agent_identifiers](#)

4.33.1 Detailed Description

Definition at line 166 of file [fipa_acl.h](#).

4.33.2 Field Documentation

4.33.2.1 struct fipa_agent_identifier_s** fipa_agent_identifier_set_s::fipa_agent_identifiers

Definition at line 170 of file [fipa_acl.h](#).

Referenced by [acc_connection_Thread\(\)](#), [AP_QUEUE_STD_DEFN_TEMPLATE\(\)](#), [fipa_agent_identifier_set_Compose\(\)](#), [fipa_agent_identifier_set_Copy\(\)](#), [fipa_agent_identifier_set_Destroy\(\)](#), [fipa_envelope_Compose__intended_receiver\(\)](#), [fipa_envelope_Compose__to\(\)](#), [fipa_envelope_HandleIntendedReceiver\(\)](#), [fipa_envelope_HandleTo\(\)](#), [fipa_envelope_ParseResolvers\(\)](#), [fipa_Reply\(\)](#), [MC_AclAddReceiver\(\)](#), [MC_AclAddReplyTo\(\)](#), and [MC_AclSend\(\)](#).

4.33.2.2 int fipa_agent_identifier_set_s::num

Definition at line 168 of file [fipa_acl.h](#).

Referenced by [acc_connection_Thread\(\)](#), [fipa_agent_identifier_Compose\(\)](#), [fipa_agent_identifier_set_Compose\(\)](#), [fipa_agent_identifier_set_Copy\(\)](#), [fipa_agent_identifier_set_Destroy\(\)](#), [fipa_envelope_Compose__to\(\)](#), [fipa_envelope_HandleIntendedReceiver\(\)](#), [fipa_envelope_HandleTo\(\)](#), [fipa_envelope_ParseResolvers\(\)](#), [fipa_Reply\(\)](#), [MC_AclAddReceiver\(\)](#), [MC_AclAddReplyTo\(\)](#), and [MC_AclSend\(\)](#).

4.33.2.3 int fipa_agent_identifier_set_s::retain_order

Definition at line 169 of file [fipa_acl.h](#).

Referenced by [fipa_agent_identifier_set_Copy\(\)](#), [fipa_agent_identifier_set_Parse\(\)](#), [fipa_envelope_HandleIntendedReceiver\(\)](#), [fipa_envelope_HandleTo\(\)](#), [fipa_envelope_ParseResolvers\(\)](#), and [fipa_Reply\(\)](#).

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/include/fipa_acl.h](#)

4.34 fipa_comm_action_t Struct Reference

```
#include <fipa_comm.h>
```

Data Fields

- enum [fipa_comm_action_type_e](#) type
- [fipa_comm_callback](#) callback
- [fipa_comm_message_check_p](#) check_list
- [fipa_comm_reply_p](#) reply
- struct [fipa_comm_action_t](#) * next

4.34.1 Detailed Description

Definition at line 99 of file [fipa_comm.h](#).

4.34.2 Field Documentation

4.34.2.1 [fipa_comm_callback](#) [fipa_comm_action_t::callback](#)

Definition at line 102 of file [fipa_comm.h](#).

4.34.2.2 [fipa_comm_message_check_p](#) [fipa_comm_action_t::check_list](#)

Definition at line 103 of file [fipa_comm.h](#).

4.34.2.3 [struct fipa_comm_action_t*](#) [fipa_comm_action_t::next](#)

Definition at line 105 of file [fipa_comm.h](#).

4.34.2.4 [fipa_comm_reply_p](#) [fipa_comm_action_t::reply](#)

Definition at line 104 of file [fipa_comm.h](#).

4.34.2.5 [enum fipa_comm_action_type_e](#) [fipa_comm_action_t::type](#)

Definition at line 101 of file [fipa_comm.h](#).

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/include/fipa_comm.h](#)

4.35 fipa_comm_message_check_t Struct Reference

```
#include <fipa_comm.h>
```

Data Fields

- char * [macro](#)
- enum [fipa_comm_check_type_e](#) type
- struct [fipa_comm_message_check_t](#) * next

4.35.1 Detailed Description

Definition at line 72 of file fipa_comm.h.

4.35.2 Field Documentation

4.35.2.1 char* fipa_comm_message_check_t::macro

Definition at line 74 of file fipa_comm.h.

4.35.2.2 struct fipa_comm_message_check_t* fipa_comm_message_check_t::next

Definition at line 76 of file fipa_comm.h.

4.35.2.3 enum fipa_comm_check_type_e fipa_comm_message_check_t::type

Definition at line 75 of file fipa_comm.h.

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/include/fipa_comm.h](#)

4.36 fipa_comm_performative_t Struct Reference

```
#include <fipa_comm.h>
```

Data Fields

- [fipa_comm_action_p action_list](#)
- [fipa_comm_reply_p default_reply](#)

4.36.1 Detailed Description

Definition at line 115 of file fipa_comm.h.

4.36.2 Field Documentation

4.36.2.1 fipa_comm_action_p fipa_comm_performative_t::action_list

Definition at line 117 of file fipa_comm.h.

4.36.2.2 fipa_comm_reply_p fipa_comm_performative_t::default_reply

Definition at line 118 of file fipa_comm.h.

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/include/fipa_comm.h](#)

4.37 fipa_comm_protocol_cn_t Struct Reference

```
#include <fipa_comm.h>
```

Data Fields

- [protocol_contract_net_callback contract_func](#)
- [fipa_comm_callback proposal_func](#)
- char [require_inform](#)
- int [time_out](#)
- char * [cfp_request](#)
- [fipa_list_p](#) [replies](#)
- [fipa_list_p](#) [queue](#)

4.37.1 Detailed Description

Definition at line 143 of file fipa_comm.h.

4.37.2 Field Documentation

4.37.2.1 char* fipa_comm_protocol_cn_t::cfp_request

Definition at line 149 of file fipa_comm.h.

4.37.2.2 protocol_contract_net_callback fipa_comm_protocol_cn_t::contract_func

Definition at line 145 of file fipa_comm.h.

4.37.2.3 fipa_comm_callback fipa_comm_protocol_cn_t::proposal_func

Definition at line 146 of file fipa_comm.h.

4.37.2.4 fipa_list_p fipa_comm_protocol_cn_t::queue

Definition at line 153 of file fipa_comm.h.

4.37.2.5 fipa_list_p fipa_comm_protocol_cn_t::replies

Definition at line 152 of file fipa_comm.h.

4.37.2.6 char fipa_comm_protocol_cn_t::require_inform

Definition at line 147 of file fipa_comm.h.

4.37.2.7 int fipa_comm_protocol_cn_t::time_out

Definition at line 148 of file fipa_comm.h.

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/include/fipa_comm.h](#)

4.38 fipa_comm_protocol_t Struct Reference

```
#include <fipa_comm.h>
```

Data Fields

- char [error](#)
- char [state](#)
- char * [conversation_id](#)
- char * [network](#)
- enum [fipa_protocol_e](#) type
- void * [info](#)
- struct [fipa_comm_protocol_t](#) * [next](#)

4.38.1 Detailed Description

Definition at line 163 of file fipa_comm.h.

4.38.2 Field Documentation

4.38.2.1 char* fipa_comm_protocol_t::conversation_id

Definition at line 166 of file fipa_comm.h.

4.38.2.2 char fipa_comm_protocol_t::error

Definition at line 164 of file fipa_comm.h.

4.38.2.3 void* fipa_comm_protocol_t::info

Definition at line 169 of file fipa_comm.h.

4.38.2.4 char* fipa_comm_protocol_t::network

Definition at line 167 of file fipa_comm.h.

4.38.2.5 struct fipa_comm_protocol_t* fipa_comm_protocol_t::next

Definition at line 170 of file fipa_comm.h.

4.38.2.6 char fipa_comm_protocol_t::state

Definition at line 165 of file fipa_comm.h.

4.38.2.7 enum fipa_protocol_e fipa_comm_protocol_t::type

Definition at line 168 of file fipa_comm.h.

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/include/fipa_comm.h](#)

4.39 fipa_comm_reply_t Struct Reference

```
#include <fipa_comm.h>
```

Data Fields

- enum [fipa_performative_e](#) type
- char * [content](#)

4.39.1 Detailed Description

Definition at line 86 of file fipa_comm.h.

4.39.2 Field Documentation

4.39.2.1 char* fipa_comm_reply_t::content

Definition at line 89 of file fipa_comm.h.

4.39.2.2 enum fipa_performative_e fipa_comm_reply_t::type

Definition at line 88 of file fipa_comm.h.

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/include/fipa_comm.h](#)

4.40 fipa_comm_t Struct Reference

```
#include <fipa_comm.h>
```

Data Fields

- [int error](#)
- [char * agent_name](#)
- [char * agent_address](#)
- [void * agent](#)
- [char debug](#)
- [fipa_comm_performative_p performative](#) [MC_NUM_PERFORMATIVES]
- [fipa_comm_reply_p default_reply](#)
- [fipa_comm_protocol_p protocol](#) [FIPA_PROTOCOL_END]
- [fipa_comm_callback pCallbacks](#) [FIPA_PROTOCOL_END]

4.40.1 Detailed Description

Definition at line 179 of file fipa_comm.h.

4.40.2 Field Documentation

4.40.2.1 void* fipa_comm_t::agent

Definition at line 184 of file fipa_comm.h.

4.40.2.2 char* fipa_comm_t::agent_address

Definition at line 183 of file fipa_comm.h.

4.40.2.3 char* fipa_comm_t::agent_name

Definition at line 182 of file fipa_comm.h.

4.40.2.4 char fipa_comm_t::debug

Definition at line 185 of file fipa_comm.h.

4.40.2.5 fipa_comm_reply_p fipa_comm_t::default_reply

Definition at line 187 of file fipa_comm.h.

4.40.2.6 int fipa_comm_t::error

Definition at line 181 of file fipa_comm.h.

4.40.2.7 fipa_comm_callback fipa_comm_t::pCallbacks[FIPA_PROTOCOL_END]

Definition at line 189 of file fipa_comm.h.

4.40.2.8 fipa_comm_performative_p fipa_comm_t::performative[MC_NUM_PERFORMATIVES]

Definition at line 186 of file fipa_comm.h.

4.40.2.9 fipa_comm_protocol_p fipa_comm_t::protocol[FIPA_PROTOCOL_END]

Definition at line 188 of file fipa_comm.h.

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/include/fipa_comm.h](#)

4.41 fipa_DateTime_s Struct Reference

```
#include <fipa_acl.h>
```

Data Fields

- [int year](#)
- [int month](#)
- [int day](#)
- [int hour](#)
- [int minute](#)
- [int second](#)
- [int millisecond](#)
- [char sign](#)
- [int is_utc](#)

4.41.1 Detailed Description

Definition at line 234 of file `fipa_acl.h`.

4.41.2 Field Documentation

4.41.2.1 `int fipa_DateTime_s::day`

Definition at line 238 of file `fipa_acl.h`.

Referenced by `fipa_DateTime_Compose()`.

4.41.2.2 `int fipa_DateTime_s::hour`

Definition at line 239 of file `fipa_acl.h`.

Referenced by `fipa_DateTime_Compose()`.

4.41.2.3 `int fipa_DateTime_s::is_utc`

Definition at line 244 of file `fipa_acl.h`.

4.41.2.4 `int fipa_DateTime_s::millisecond`

Definition at line 242 of file `fipa_acl.h`.

Referenced by `fipa_DateTime_Compose()`.

4.41.2.5 `int fipa_DateTime_s::minute`

Definition at line 240 of file `fipa_acl.h`.

Referenced by `fipa_DateTime_Compose()`.

4.41.2.6 int fipa_DateTime_s::month

Definition at line 237 of file fipa_acl.h.

Referenced by fipa_DateTime_Compose().

4.41.2.7 int fipa_DateTime_s::second

Definition at line 241 of file fipa_acl.h.

Referenced by fipa_DateTime_Compose().

4.41.2.8 char fipa_DateTime_s::sign

Definition at line 243 of file fipa_acl.h.

Referenced by fipa_DateTime_Compose(), and fipa_datetime_Parse().

4.41.2.9 int fipa_DateTime_s::year

Definition at line 236 of file fipa_acl.h.

Referenced by fipa_DateTime_Compose().

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/include/fipa_acl.h](#)

4.42 fipa_expression_s Struct Reference

```
#include <fipa_acl.h>
```

Data Structures

- union [content_u](#)

Data Fields

- enum [fipa_expression_type_e](#) type
- union [fipa_expression_s::content_u](#) content

4.42.1 Detailed Description

Definition at line 193 of file [fipa_acl.h](#).

4.42.2 Field Documentation

4.42.2.1 union [fipa_expression_s::content_u](#) [fipa_expression_s::content](#)

Referenced by [fipa_expression_Compose\(\)](#), [fipa_expression_Copy\(\)](#), [fipa_expression_Destroy\(\)](#), [MC_AclGetConversationID\(\)](#), and [MC_AclSetConversationID\(\)](#).

4.42.2.2 enum [fipa_expression_type_e](#) [fipa_expression_s::type](#)

Definition at line 195 of file [fipa_acl.h](#).

Referenced by [fipa_expression_Compose\(\)](#), [fipa_expression_Copy\(\)](#), [fipa_expression_Destroy\(\)](#), [fipa_expression_Parse\(\)](#), and [MC_AclSetConversationID\(\)](#).

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/include/fipa_acl.h](#)

4.43 fipa_list_t Struct Reference

```
#include <fipa_comm.h>
```

Data Fields

- void * [data](#)
- struct [fipa_list_t](#) * [next](#)

4.43.1 Detailed Description

Definition at line 136 of file [fipa_comm.h](#).

4.43.2 Field Documentation

4.43.2.1 void* fipa_list_t::data

Definition at line 137 of file [fipa_comm.h](#).

4.43.2.2 struct fipa_list_t* fipa_list_t::next

Definition at line 138 of file [fipa_comm.h](#).

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/include/fipa_comm.h](#)

4.44 fipa_message_string_s Struct Reference

```
#include <fipa_acl.h>
```

Data Fields

- char * [message](#)
- char * [parse](#)

4.44.1 Detailed Description

Definition at line 143 of file [fipa_acl.h](#).

4.44.2 Field Documentation

4.44.2.1 char* fipa_message_string_s::message

Definition at line 145 of file [fipa_acl.h](#).

Referenced by [acc_connection_Thread\(\)](#), [fipa_envelope_HandleDate\(\)](#), [fipa_envelope_HandleReceived\(\)](#), [fipa_message_string_Copy\(\)](#), and [fipa_message_string_Destroy\(\)](#).

4.44.2.2 char* fipa_message_string_s::parse

Definition at line 146 of file [fipa_acl.h](#).

Referenced by [acc_connection_Thread\(\)](#), [fipa_agent_identifier_Parse\(\)](#), [fipa_CheckNextToken\(\)](#), [fipa_datetime_Parse\(\)](#), [fipa_envelope_HandleDate\(\)](#), [fipa_envelope_HandleReceived\(\)](#), [fipa_GetAtom\(\)](#), [fipa_GetNextWord\(\)](#), [fipa_GetWholeToken\(\)](#), [fipa_message_string_Copy\(\)](#), [fipa_string_Parse\(\)](#), and [fipa_word_Parse\(\)](#).

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/include/fipa_acl.h](#)

4.45 fipa_number_s Struct Reference

```
#include <fipa_acl.h>
```

Data Fields

- char * [str](#)

4.45.1 Detailed Description

Definition at line 264 of file fipa_acl.h.

4.45.2 Field Documentation

4.45.2.1 char* fipa_number_s::str

Definition at line 266 of file fipa_acl.h.

Referenced by fipa_number_Compose(), fipa_number_Copy(), and fipa_number_Destroy().

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/include/fipa_acl.h](#)

4.46 fipa_string_s Struct Reference

```
#include <fipa_acl.h>
```

Data Fields

- char * [content](#)

4.46.1 Detailed Description

Definition at line 223 of file fipa_acl.h.

4.46.2 Field Documentation

4.46.2.1 char* fipa_string_s::content

Definition at line 225 of file fipa_acl.h.

Referenced by `fipa_string_Compose()`, `fipa_string_Copy()`, `fipa_string_Destroy()`, `fipa_string_Parse()`, `MC_AclGetContent()`, `MC_AclGetConversationID()`, `MC_AclSetContent()`, and `MC_AclSetConversationID()`.

The documentation for this struct was generated from the following file:

- `/home/dko/Projects/mobilec/src/include/fipa_acl.h`

4.47 fipa_url_s Struct Reference

```
#include <fipa_acl.h>
```

Data Fields

- char * [str](#)

4.47.1 Detailed Description

Definition at line 253 of file fipa_acl.h.

4.47.2 Field Documentation

4.47.2.1 char* fipa_url_s::str

Definition at line 255 of file fipa_acl.h.

Referenced by `acc_connection_Thread()`, `fipa_envelope_Compose__from()`, `fipa_envelope_Compose__intended_receiver()`, `fipa_envelope_Compose__to()`, `fipa_envelope_HandleReceived()`, `fipa_envelope_ParseAddresses()`, `fipa_url_Compose()`, `fipa_url_Copy()`, `fipa_url_Destroy()`, `MC_AclAddReceiver()`, `MC_AclAddReplyTo()`, `MC_AclGetSender()`, `MC_AclSend()`, and `MC_AclSetSender()`.

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/include/fipa_acl.h](#)

4.48 fipa_url_sequence_s Struct Reference

```
#include <fipa_acl.h>
```

Data Fields

- [int num](#)
- [struct fipa_url_s ** urls](#)

4.48.1 Detailed Description

Definition at line 154 of file [fipa_acl.h](#).

4.48.2 Field Documentation

4.48.2.1 int fipa_url_sequence_s::num

Definition at line 156 of file [fipa_acl.h](#).

Referenced by [fipa_agent_identifier_Compose\(\)](#), [fipa_envelope_Compose__from\(\)](#), [fipa_envelope_Compose__intended_receiver\(\)](#), [fipa_envelope_Compose__to\(\)](#), [fipa_envelope_ParseAddresses\(\)](#), [fipa_url_sequence_Compose\(\)](#), [fipa_url_sequence_Copy\(\)](#), [fipa_url_sequence_Destroy\(\)](#), [MC_AclAddReceiver\(\)](#), [MC_AclAddReplyTo\(\)](#), [MC_AclSend\(\)](#), and [MC_AclSetSender\(\)](#).

4.48.2.2 struct fipa_url_s** fipa_url_sequence_s::urls

Definition at line 157 of file [fipa_acl.h](#).

Referenced by [acc_connection_Thread\(\)](#), [fipa_envelope_Compose__from\(\)](#), [fipa_envelope_Compose__intended_receiver\(\)](#), [fipa_envelope_Compose__to\(\)](#), [fipa_envelope_ParseAddresses\(\)](#), [fipa_url_sequence_Compose\(\)](#), [fipa_url_sequence_Copy\(\)](#), [fipa_url_sequence_Destroy\(\)](#), [MC_AclAddReceiver\(\)](#), [MC_AclAddReplyTo\(\)](#), [MC_AclGetSender\(\)](#), [MC_AclSend\(\)](#), and [MC_AclSetSender\(\)](#).

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/include/fipa_acl.h](#)

4.49 fipa_word_s Struct Reference

```
#include <fipa_acl.h>
```

Data Fields

- char * [content](#)

4.49.1 Detailed Description

Definition at line 212 of file fipa_acl.h.

4.49.2 Field Documentation

4.49.2.1 char* fipa_word_s::content

Definition at line 214 of file fipa_acl.h.

Referenced by fipa_agent_identifier_Parse(), fipa_agent_identifier_set_Parse(), fipa_message_parameter_Parse(), fipa_message_type_Parse(), fipa_protocol_type_Parse(), fipa_url_Parse(), fipa_url_sequence_Parse(), fipa_word_Compose(), fipa_word_Copy(), and fipa_word_Destroy().

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/include/fipa_acl.h](#)

4.50 foo_c Class Reference

Public Member Functions

- [foo_c](#) (float *f*, int *b*)
- [~foo_c](#) ()
- [int get_bar](#) ()
- [float get_foo](#) ()
- [void set_bar](#) (int *b*)
- [void set_foo](#) (float *f*)
- [void set_foobar](#) (float *f*, int *b*=0)
- [int get_barfoo](#) ()

Protected Member Functions

- [int get_global](#) ()

Static Protected Attributes

- static [int global](#)

Private Attributes

- [float foo](#)
- [int bar](#)
- [int barfoo](#)

4.50.1 Detailed Description

Definition at line 1 of file class.cxx.

4.50.2 Constructor & Destructor Documentation

4.50.2.1 foo_c::foo_c (float *f*, int *b*)

4.50.2.2 foo_c::~~foo_c ()

Definition at line 81 of file class.cxx.

4.50.3 Member Function Documentation

4.50.3.1 int foo_c::get_bar () [inline]

Definition at line 13 of file class.cxx.

References [bar](#).

4.50.3.2 int foo_c::get_barfoo () [inline]

Definition at line 67 of file class.cxx.

References barfoo.

4.50.3.3 float foo_c::get_foo () [inline]

Definition at line 20 of file class.cxx.

References foo.

4.50.3.4 int foo_c::get_global () [inline, protected]

Definition at line 54 of file class.cxx.

References global.

4.50.3.5 void foo_c::set_bar (int *b*) [inline]

Definition at line 27 of file class.cxx.

References bar.

4.50.3.6 void foo_c::set_foo (float *f*) [inline]

Definition at line 34 of file class.cxx.

References foo.

4.50.3.7 void foo_c::set_foobar (float *f*, int *b* = 0) [inline]

Definition at line 41 of file class.cxx.

References bar, and foo.

4.50.4 Field Documentation

4.50.4.1 int foo_c::bar [private]

Definition at line 4 of file class.cxx.

Referenced by get_bar(), set_bar(), and set_foobar().

4.50.4.2 int foo_c::barfoo [private]

Definition at line 61 of file class.cxx.

Referenced by get_barfoo().

4.50.4.3 float foo_c::foo [private]

Definition at line 3 of file class.cxx.

Referenced by get_foo(), set_foo(), and set_foobar().

4.50.4.4 int foo_c::global [static, protected]

Definition at line 50 of file class.cxx.

Referenced by get_global().

The documentation for this class was generated from the following file:

- /home/dko/Projects/mobilec/src/mxml-2.2.2/test/[class.cxx](#)

4.51 foo_s Struct Reference

Public Member Functions

- [foo_s](#) (float [f](#), int [b](#))
- [~foo_s](#) ()
- [int get_bar](#) ()
- [float get_foo](#) ()
- [void set_bar](#) (int [b](#))
- [void set_foo](#) (float [f](#))

Data Fields

- [float foo](#)
- [int bar](#)

4.51.1 Detailed Description

Definition at line 1 of file struct.cxx.

4.51.2 Constructor & Destructor Documentation

4.51.2.1 [foo_s::foo_s](#) (float *f*, int *b*)

Definition at line 39 of file struct.cxx.

References [bar](#), and [foo](#).

4.51.2.2 [foo_s::~~foo_s](#) ()

Definition at line 46 of file struct.cxx.

4.51.3 Member Function Documentation

4.51.3.1 [int foo_s::get_bar](#) () [[inline](#)]

Definition at line 11 of file struct.cxx.

References [bar](#).

4.51.3.2 [float foo_s::get_foo](#) () [[inline](#)]

Definition at line 18 of file struct.cxx.

References [foo](#).

4.51.3.3 void foo_s::set_bar (int *b*) [inline]

Definition at line 25 of file struct.cxx.

References bar.

4.51.3.4 void foo_s::set_foo (float *f*) [inline]

Definition at line 32 of file struct.cxx.

References foo.

4.51.4 Field Documentation**4.51.4.1 int foo_s::bar**

Definition at line 4 of file struct.cxx.

Referenced by foo_s(), get_bar(), and set_bar().

4.51.4.2 float foo_s::foo

Definition at line 3 of file struct.cxx.

Referenced by foo_s(), get_foo(), and set_foo().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/mxml-2.2.2/test/[struct.cxx](#)

4.52 havege_state Struct Reference

HAVEGE state structure.

```
#include <havege.h>
```

Data Fields

- [int PT1](#)
- [int PT2](#)
- [int offset](#) [2]
- [int pool](#) [COLLECT_SIZE]
- [int WALK](#) [8192]

4.52.1 Detailed Description

HAVEGE state structure.

Definition at line 12 of file havege.h.

4.52.2 Field Documentation

4.52.2.1 int havege_state::offset[2]

Definition at line 14 of file havege.h.

Referenced by `havege_fill()`, and `havege_rand()`.

4.52.2.2 int havege_state::pool[COLLECT_SIZE]

Definition at line 15 of file havege.h.

Referenced by `havege_rand()`.

4.52.2.3 int havege_state::PT1

Definition at line 14 of file havege.h.

Referenced by `havege_fill()`.

4.52.2.4 int havege_state::PT2

Definition at line 14 of file havege.h.

Referenced by `havege_fill()`.

4.52.2.5 int havege_state::WALK[8192]

Definition at line 16 of file havege.h.

Referenced by `havege_fill()`.

The documentation for this struct was generated from the following file:

- </home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/havege.h>

4.53 host_id_s Struct Reference

```
#include <host_id.h>
```

Data Fields

- char * [hostname](#)
- [int](#) port

4.53.1 Detailed Description

Definition at line 38 of file `host_id.h`.

4.53.2 Field Documentation

4.53.2.1 char* host_id_s::hostname

Definition at line 40 of file `host_id.h`.

4.53.2.2 int host_id_s::port

Definition at line 41 of file `host_id.h`.

The documentation for this struct was generated from the following file:

- `/home/dko/Projects/mobilec/src/include/host_id.h`

4.54 hr_time Struct Reference

timer structure

```
#include <timing.h>
```

Data Fields

- unsigned char [opaque](#) [32]

4.54.1 Detailed Description

timer structure

Definition at line 10 of file timing.h.

4.54.2 Field Documentation

4.54.2.1 unsigned char hr_time::opaque[32]

Definition at line 12 of file timing.h.

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/timing.h](#)

4.55 interpreter_variable_data_s Struct Reference

```
#include <interpreter_variable_data.h>
```

Data Fields

- char * [name](#)
- int [size](#)
- ChType_t [data_type](#)
- int [array_dim](#)
- int * [array_extent](#)
- void * [data](#)

4.55.1 Detailed Description

Definition at line 41 of file `interpreter_variable_data.h`.

4.55.2 Field Documentation

4.55.2.1 int interpreter_variable_data_s::array_dim

Definition at line 45 of file `interpreter_variable_data.h`.

Referenced by `agent_AddPersistentVariable()`, `agent_xml_compose__data()`, `agent_xml_compose__row()`, `agent_xml_parse__data()`, `agent_xml_parse__row()`, `interpreter_variable_data_Copy()`, `interpreter_variable_data_Initialize()`, `interpreter_variable_data_InitializeFromAgent()`, `interpreter_variable_data_New()`, `MC_AgentReturnArrayDim()`, `MC_AgentReturnArrayExtent()`, `MC_AgentReturnArrayNum()`, `MC_AgentReturnIsArray()`, `MC_AgentVariableRetrieveInfo()`, and `MC_GetAgentReturnData()`.

4.55.2.2 int* interpreter_variable_data_s::array_extent

Definition at line 46 of file `interpreter_variable_data.h`.

Referenced by `agent_AddPersistentVariable()`, `agent_xml_compose__row()`, `agent_xml_parse__row()`, `interpreter_variable_data_Copy()`, `interpreter_variable_data_Destroy()`, `interpreter_variable_data_Initialize()`, `interpreter_variable_data_InitializeFromAgent()`, `interpreter_variable_data_New()`, `MC_AgentReturnArrayExtent()`, `MC_AgentVariableRetrieveInfo()`, and `MC_GetAgentReturnData()`.

4.55.2.3 void* interpreter_variable_data_s::data

Definition at line 47 of file `interpreter_variable_data.h`.

Referenced by `agent_AddPersistentVariable()`, `agent_xml_compose__data()`, `agent_xml_compose__row()`, `agent_xml_parse__data()`, `agent_xml_parse__row()`, `interpreter_variable_data_Copy()`, `interpreter_variable_data_Destroy()`, `interpreter_variable_data_Initialize()`, `interpreter_variable_data_InitializeFromAgent()`, `interpreter_variable_data_New()`, `MC_AgentReturnDataGetSymbolAddr()`, `MC_AgentVariableRetrieve()`, `MC_AgentVariableRetrieveInfo()`, and `MC_SaveData_chdl()`.

4.55.2.4 ChType_t interpreter_variable_data_s::data_type

Definition at line 44 of file interpreter_variable_data.h.

Referenced by agent_AddPersistentVariable(), agent_xml_compose__data(), agent_xml_compose__row(), agent_xml_parse__data(), agent_xml_parse__row(), interpreter_variable_data_Copy(), interpreter_variable_data_Initialize(), interpreter_variable_data_InitializeFromAgent(), interpreter_variable_data_New(), MC_AgentReturnDataSize(), MC_AgentReturnDataType(), MC_GetAgentReturnData(), and MC_SaveData_chdl().

4.55.2.5 char* interpreter_variable_data_s::name

Definition at line 42 of file interpreter_variable_data.h.

Referenced by agent_AddPersistentVariable(), agent_xml_compose__data(), agent_xml_parse__data(), interpreter_variable_data_Copy(), interpreter_variable_data_Destroy(), interpreter_variable_data_Initialize(), interpreter_variable_data_InitializeFromAgent(), interpreter_variable_data_New(), and MC_SaveData_chdl().

4.55.2.6 int interpreter_variable_data_s::size

Definition at line 43 of file interpreter_variable_data.h.

Referenced by agent_AddPersistentVariable(), interpreter_variable_data_Copy(), interpreter_variable_data_Initialize(), interpreter_variable_data_InitializeFromAgent(), interpreter_variable_data_New(), and MC_SaveData_chdl().

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/include/interpreter_variable_data.h](#)

4.56 list_s Struct Reference

```
#include <list.h>
```

Data Fields

- [listNode_p listhead](#)
- [int size](#)

4.56.1 Detailed Description

Definition at line 41 of file list.h.

4.56.2 Field Documentation

4.56.2.1 listNode_p list_s::listhead

Definition at line 43 of file list.h.

Referenced by `barrier_queue_Add()`, `barrier_queue_Get()`, `ListAdd()`, `ListDelete()`, `ListGetHead()`, `ListInitialize()`, `ListPop()`, `ListSearch()`, `ListTerminate()`, `syncListAddNode()`, and `syncListFind()`.

4.56.2.2 int list_s::size

Definition at line 44 of file list.h.

Referenced by `barrier_queue_Delete()`, `list_pGetSize()`, `ListAdd()`, `ListDelete()`, `ListInitialize()`, `ListPop()`, `ListSearch()`, `ListTerminate()`, `syncListDelete()`, and `syncListRemove()`.

The documentation for this struct was generated from the following file:

- `/home/dko/Projects/mobilec/src/mc_list/list.h`

4.57 listNode_s Struct Reference

```
#include <list.h>
```

Data Fields

- DATA [node_data](#)
- struct [listNode_s](#) * [next](#)

4.57.1 Detailed Description

Definition at line 32 of file list.h.

4.57.2 Field Documentation

4.57.2.1 struct listNode_s* listNode_s::next

Definition at line 35 of file list.h.

Referenced by `AP_QUEUE_STD_DEFN_TEMPLATE()`, `barrier_queue_Add()`, `barrier_queue_Get()`, `df_SearchForService()`, `ListAdd()`, `ListDelete()`, `ListPop()`, `ListSearch()`, `request_handler_DEREGISTER()`, `syncListAddNode()`, and `syncListFind()`.

4.57.2.2 DATA listNode_s::node_data

Definition at line 34 of file list.h.

Referenced by `AP_QUEUE_STD_DEFN_TEMPLATE()`, `barrier_queue_Add()`, `barrier_queue_Get()`, `df_SearchForService()`, `ListAdd()`, `ListDelete()`, `ListGetHead()`, `ListPop()`, `ListSearch()`, `request_handler_DEREGISTER()`, `syncListAddNode()`, and `syncListFind()`.

The documentation for this struct was generated from the following file:

- `/home/dko/Projects/mobilec/src/mc_list/list.h`

4.58 mc_platform_s Struct Reference

```
#include <mc_platform.h>
```

Data Fields

- [int](#) `err`
- `char *` [hostname](#)
- unsigned short [port](#)
- [int](#) `initInterps`
- `message_queue_p` [asm_message_queue](#)
- `message_queue_p` [message_queue](#)
- `agent_queue_p` [agent_queue](#)
- `connection_queue_p` [connection_queue](#)
- `df_p` [df](#)
- `ams_p` [ams](#)
- `acc_p` [acc](#)
- `cmd_prompt_p` [cmd_prompt](#)
- `syncList_p` [syncList](#)
- `barrier_queue_p` [barrier_queue](#)
- `listen_thread_arg_p` [listen_thread_arg](#)
- `listen_thread_arg_p` [client_thread_arg](#)
- [int](#) `default_agentstatus`
- [int](#) `stack_size` [MC_THREAD_ALL]
- `ChOptions_t *` [interp_options](#)
- `COND_T *` [MC_signal_cond](#)
- `COND_T *` [MC_sync_cond](#)
- `MUTEX_T *` [MC_signal_lock](#)
- `MUTEX_T *` [MC_sync_lock](#)
- `enum` [MC_Signal_e](#) [MC_signal](#)
- `enum` [MC_SteerCommand_e](#) [MC_steer_command](#)
- `MUTEX_T *` [MC_steer_lock](#)
- `COND_T *` [MC_steer_cond](#)
- [int](#) `giant`
- `MUTEX_T *` [giant_lock](#)
- `COND_T *` [giant_cond](#)
- [int](#) `quit`
- `MUTEX_T *` [quit_lock](#)
- `COND_T *` [quit_cond](#)
- [int](#) `sockfd`
- `char` [private_key](#) [1210]
- [MCAgency_t](#) [agency](#)
- `interpreter_queue_p` [interpreter_queue](#)
- [int](#) `bluetooth`

4.58.1 Detailed Description

Definition at line 49 of file `mc_platform.h`.

4.58.2 Field Documentation

4.58.2.1 `acc_p mc_platform_s::acc`

Definition at line 72 of file `mc_platform.h`.

Referenced by `acc_connection_Thread()`, `acc_MessageHandlerThread()`, `acc_Start()`, `acc_Thread()`, `listen_Thread()`, `MC_End()`, `mc_platform_Destroy()`, `mc_platform_Initialize()`, and `message_Send()`.

4.58.2.2 `MCAgency_t mc_platform_s::agency`

Definition at line 114 of file `mc_platform.h`.

Referenced by `handler_COMPOSE_SEND()`, `listen_Thread()`, `mc_platform_Initialize()`, and `message_send_Thread()`.

4.58.2.3 `agent_queue_p mc_platform_s::agent_queue`

Definition at line 67 of file `mc_platform.h`.

Referenced by `acc_connection_Thread()`, `acc_MessageHandlerThread()`, `handler_FLUSH_AGENTS()`, `handler_PRINTLIST_AGENTS()`, `MC_AddAgent()`, `MC_AddStationaryAgent()`, `MC_FindAgentByID()`, `MC_FindAgentByName()`, `MC_GetAllAgents()`, `mc_platform_Destroy()`, `mc_platform_Initialize()`, `MC_RetrieveAgent()`, `MC_SendAgent()`, `MC_SendAgentFile()`, `MC_SendAgentMigrationMessageFile()`, `MC_WaitAgent()`, and `MC_WaitRetrieveAgent()`.

4.58.2.4 `ams_p mc_platform_s::ams`

Definition at line 71 of file `mc_platform.h`.

Referenced by `acc_MessageHandlerThread()`, `agent_RunChScriptThread()`, `ams_Start()`, `ams_Thread()`, `MC_AddAgent()`, `MC_End()`, `mc_platform_Destroy()`, `mc_platform_Initialize()`, `MC_SendAgent()`, `MC_SendAgentFile()`, `MC_SendAgentMigrationMessageFile()`, and `MC_SetAgentStatus()`.

4.58.2.5 `message_queue_p mc_platform_s::asm_message_queue`

Definition at line 62 of file `mc_platform.h`.

4.58.2.6 `barrier_queue_p mc_platform_s::barrier_queue`

Definition at line 79 of file `mc_platform.h`.

Referenced by `MC_Barrier()`, `MC_BarrierDelete()`, `MC_BarrierInit()`, `mc_platform_Destroy()`, and `mc_platform_Initialize()`.

4.58.2.7 `int mc_platform_s::bluetooth`

Definition at line 120 of file `mc_platform.h`.

Referenced by `listen_Thread()`, `mc_platform_Initialize()`, `message_InitializeFromAgent()`, and `message_send_Thread()`.

4.58.2.8 listen_thread_arg_p mc_platform_s::client_thread_arg

Definition at line 82 of file mc_platform.h.

4.58.2.9 cmd_prompt_p mc_platform_s::cmd_prompt

Definition at line 73 of file mc_platform.h.

Referenced by cmd_prompt_Start(), MC_End(), mc_platform_Destroy(), and mc_platform_Initialize().

4.58.2.10 connection_queue_p mc_platform_s::connection_queue

Definition at line 68 of file mc_platform.h.

Referenced by acc_Thread(), handler_PRINT_CONNECTLIST(), listen_Thread(), MC_End(), mc_platform_Destroy(), and mc_platform_Initialize().

4.58.2.11 int mc_platform_s::default_agentstatus

Definition at line 84 of file mc_platform.h.

Referenced by agent_Initialize(), mc_platform_Initialize(), and MC_SetDefaultAgentStatus().

4.58.2.12 df_p mc_platform_s::df

Definition at line 70 of file mc_platform.h.

Referenced by df_ProcessRequest(), df_Start(), df_Thread(), MC_DeregisterService(), MC_End(), mc_platform_Destroy(), mc_platform_Initialize(), MC_RegisterService(), MC_SearchForService(), request_handler_DEREGISTER(), request_handler_REGISTER(), and request_handler_SEARCH().

4.58.2.13 int mc_platform_s::err

Definition at line 52 of file mc_platform.h.

Referenced by agent_Initialize(), mc_platform_Initialize(), message_InitializeFromAgent(), and message_InitializeFromString().

4.58.2.14 int mc_platform_s::giant

Definition at line 104 of file mc_platform.h.

Referenced by acc_MessageHandlerThread(), acc_Thread(), MC_GetAllAgents(), MC_HaltAgency(), mc_platform_Initialize(), MC_ResetSignal(), MC_ResumeAgency(), and MC_WaitSignal().

4.58.2.15 COND_T* mc_platform_s::giant_cond

Definition at line 106 of file mc_platform.h.

Referenced by acc_MessageHandlerThread(), acc_Thread(), mc_platform_Destroy(), mc_platform_Initialize(), and MC_ResetSignal().

4.58.2.16 MUTEX_T* mc_platform_s::giant_lock

Definition at line 105 of file mc_platform.h.

Referenced by acc_MessageHandlerThread(), acc_Thread(), MC_GetAllAgents(), MC_HaltAgency(), mc_platform_Destroy(), mc_platform_Initialize(), MC_ResetSignal(), MC_ResumeAgency(), and MC_WaitSignal().

4.58.2.17 char* mc_platform_s::hostname

Definition at line 57 of file mc_platform.h.

Referenced by agent_Initialize(), agent_NewBinary(), fipa_envelope_Compose__from(), handler_COMPOSE_SEND(), mc_platform_Initialize(), message_InitializeFromAgent(), message_InitializeFromString(), message_queue_SendOutgoing(), and udplisten_Thread().

4.58.2.18 int mc_platform_s::initInterps

Definition at line 59 of file mc_platform.h.

Referenced by mc_platform_Initialize().

4.58.2.19 ChOptions_t* mc_platform_s::interp_options

Definition at line 88 of file mc_platform.h.

Referenced by agent_RunChScriptThread(), mc_platform_Destroy(), and mc_platform_Initialize().

4.58.2.20 interpreter_queue_p mc_platform_s::interpreter_queue

Definition at line 117 of file mc_platform.h.

Referenced by agent_Destroy(), agent_RunChScriptThread(), mc_platform_Destroy(), and mc_platform_Initialize().

4.58.2.21 listen_thread_arg_p mc_platform_s::listen_thread_arg

Definition at line 81 of file mc_platform.h.

4.58.2.22 enum MC_Signal_e mc_platform_s::MC_signal

Definition at line 95 of file mc_platform.h.

Referenced by acc_MessageHandlerThread(), acc_Thread(), agent_RunChScriptThread(), mc_platform_Initialize(), MC_ResetSignal(), and MC_WaitSignal().

4.58.2.23 COND_T* mc_platform_s::MC_signal_cond

Definition at line 91 of file mc_platform.h.

Referenced by acc_MessageHandlerThread(), acc_Thread(), agent_RunChScriptThread(), mc_platform_Destroy(), mc_platform_Initialize(), and MC_WaitSignal().

4.58.2.24 MUTEX_T* mc_platform_s::MC_signal_lock

Definition at line 93 of file mc_platform.h.

Referenced by acc_MessageHandlerThread(), acc_Thread(), agent_RunChScriptThread(), mc_platform_Destroy(), mc_platform_Initialize(), and MC_WaitSignal().

4.58.2.25 enum MC_SteerCommand_e mc_platform_s::MC_steer_command

Definition at line 98 of file mc_platform.h.

Referenced by MC_SendSteerCommand(), MC_Steer(), and MC_SteerControl().

4.58.2.26 COND_T* mc_platform_s::MC_steer_cond

Definition at line 100 of file mc_platform.h.

Referenced by mc_platform_Destroy(), mc_platform_Initialize(), MC_SendSteerCommand(), and MC_SteerControl().

4.58.2.27 MUTEX_T* mc_platform_s::MC_steer_lock

Definition at line 99 of file mc_platform.h.

Referenced by mc_platform_Destroy(), mc_platform_Initialize(), MC_SendSteerCommand(), MC_Steer(), and MC_SteerControl().

4.58.2.28 COND_T* mc_platform_s::MC_sync_cond

Definition at line 92 of file mc_platform.h.

Referenced by mc_platform_Destroy(), and mc_platform_Initialize().

4.58.2.29 MUTEX_T* mc_platform_s::MC_sync_lock

Definition at line 94 of file mc_platform.h.

Referenced by mc_platform_Destroy(), and mc_platform_Initialize().

4.58.2.30 message_queue_p mc_platform_s::message_queue

Definition at line 66 of file mc_platform.h.

Referenced by acc_connection_Thread(), acc_MessageHandlerThread(), handler_PRINTLIST_MESSAGE(), MC_End(), MC_LoadAgentFromFile(), mc_platform_Destroy(), mc_platform_Initialize(), and MC_SendAgentMigrationMessage().

4.58.2.31 unsigned short mc_platform_s::port

Definition at line 58 of file mc_platform.h.

Referenced by `acc_connection_Thread()`, `agent_Initialize()`, `agent_NewBinary()`, `fipa_envelope_Compose__from()`, `listen_Thread()`, `mc_platform_Initialize()`, `message_InitializeFromAgent()`, `message_InitializeFromString()`, `message_queue_SendOutgoing()`, and `udplisten_Thread()`.

4.58.2.32 `char mc_platform_s::private_key[1210]`

Definition at line 112 of file `mc_platform.h`.

Referenced by `acc_connection_Thread()`, `listen_Thread()`, and `MC_AclSend()`.

4.58.2.33 `int mc_platform_s::quit`

Definition at line 108 of file `mc_platform.h`.

Referenced by `acc_MessageHandlerThread()`, `acc_Thread()`, `ams_ManageAgentList()`, `ams_Thread()`, `df_Thread()`, `handler_QUIT()`, `MC_End()`, `MC_MainLoop()`, and `mc_platform_Initialize()`.

4.58.2.34 `COND_T* mc_platform_s::quit_cond`

Definition at line 110 of file `mc_platform.h`.

Referenced by `handler_QUIT()`, `MC_End()`, `MC_MainLoop()`, and `mc_platform_Initialize()`.

4.58.2.35 `MUTEX_T* mc_platform_s::quit_lock`

Definition at line 109 of file `mc_platform.h`.

Referenced by `acc_MessageHandlerThread()`, `acc_Thread()`, `ams_ManageAgentList()`, `ams_Thread()`, `df_Thread()`, `handler_QUIT()`, `MC_End()`, `MC_MainLoop()`, `mc_platform_Destroy()`, and `mc_platform_Initialize()`.

4.58.2.36 `int mc_platform_s::sockfd`

Definition at line 111 of file `mc_platform.h`.

Referenced by `listen_Thread()`, and `mc_platform_Destroy()`.

4.58.2.37 `int mc_platform_s::stack_size[MC_THREAD_ALL]`

Definition at line 86 of file `mc_platform.h`.

Referenced by `acc_Start()`, `agent_RunChScript()`, `ams_Start()`, `cmd_prompt_Start()`, `df_Start()`, and `mc_platform_Initialize()`.

4.58.2.38 `syncList_p mc_platform_s::syncList`

Definition at line 78 of file `mc_platform.h`.

Referenced by `MC_CondBroadcast()`, `MC_CondReset()`, `MC_CondSignal()`, `MC_CondWait()`, `MC_MutexLock()`, `MC_MutexUnlock()`, `mc_platform_Initialize()`, `MC_SemaphorePost()`, `MC_SemaphoreWait()`, `MC_SyncDelete()`, and `MC_SyncInit()`.

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/include/mc_platform.h](#)

4.59 mc_rwlock_s Struct Reference

```
#include <mc_rwlock.h>
```

Data Fields

- [int num_readers](#)
- [int write_flag](#)
- [int write_request](#)
- [MUTEX_T * lock](#)
- [COND_T * cond](#)

4.59.1 Detailed Description

Definition at line 39 of file mc_rwlock.h.

4.59.2 Field Documentation

4.59.2.1 COND_T* mc_rwlock_s::cond

Definition at line 44 of file mc_rwlock.h.

Referenced by [mc_rwlock_destroy\(\)](#), [mc_rwlock_init\(\)](#), [mc_rwlock_rdlock\(\)](#), [mc_rwlock_rdunlock\(\)](#), [mc_rwlock_wrlock\(\)](#), and [mc_rwlock_wrunlock\(\)](#).

4.59.2.2 MUTEX_T* mc_rwlock_s::lock

Definition at line 43 of file mc_rwlock.h.

Referenced by [mc_rwlock_destroy\(\)](#), [mc_rwlock_init\(\)](#), [mc_rwlock_rdlock\(\)](#), [mc_rwlock_rdunlock\(\)](#), [mc_rwlock_wrlock\(\)](#), and [mc_rwlock_wrunlock\(\)](#).

4.59.2.3 int mc_rwlock_s::num_readers

Definition at line 40 of file mc_rwlock.h.

Referenced by [mc_rwlock_init\(\)](#), [mc_rwlock_rdlock\(\)](#), [mc_rwlock_rdunlock\(\)](#), and [mc_rwlock_wrlock\(\)](#).

4.59.2.4 int mc_rwlock_s::write_flag

Definition at line 41 of file mc_rwlock.h.

Referenced by [mc_rwlock_init\(\)](#), [mc_rwlock_rdlock\(\)](#), [mc_rwlock_wrlock\(\)](#), and [mc_rwlock_wrunlock\(\)](#).

4.59.2.5 int mc_rwlock_s::write_request

Definition at line 42 of file mc_rwlock.h.

Referenced by [mc_rwlock_init\(\)](#), [mc_rwlock_rdlock\(\)](#), and [mc_rwlock_wrlock\(\)](#).

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/include/mc_rwlock.h](#)

4.60 MCAgencyOptions_s Struct Reference

User modifiable agency options.

```
#include <libmc.h>
```

Data Fields

- [int threads](#)
- [int default_agent_status](#)
- [int modified](#)
- [int enable_security](#)
- unsigned char [passphrase](#) [32]
- [int stack_size](#) [MC_THREAD_ALL]
- char * [known_host_filename](#)
- char * [priv_key_filename](#)
- [int initInterps](#)
- [int bluetooth](#)
- ChOptions_t * [ch_options](#)

4.60.1 Detailed Description

User modifiable agency options.

Definition at line 242 of file libmc.h.

4.60.2 Field Documentation

4.60.2.1 int MCAgencyOptions_s::bluetooth

Definition at line 255 of file libmc.h.

Referenced by MC_Initialize(), and MC_InitializeAgencyOptions().

4.60.2.2 ChOptions_t* MCAgencyOptions_s::ch_options

Definition at line 256 of file libmc.h.

Referenced by MC_Initialize().

4.60.2.3 int MCAgencyOptions_s::default_agent_status

Default agent status

Definition at line 244 of file libmc.h.

Referenced by MC_Initialize(), and MC_InitializeAgencyOptions().

4.60.2.4 int MCAgencyOptions_s::enable_security

security enable flag

Definition at line 246 of file libmc.h.

4.60.2.5 int MCAgencyOptions_s::initInterps

Definition at line 254 of file libmc.h.

Referenced by MC_Initialize(), and MC_InitializeAgencyOptions().

4.60.2.6 char* MCAgencyOptions_s::known_host_filename

Definition at line 252 of file libmc.h.

Referenced by MC_Initialize(), and MC_InitializeAgencyOptions().

4.60.2.7 int MCAgencyOptions_s::modified

unused

Definition at line 245 of file libmc.h.

Referenced by MC_InitializeAgencyOptions().

4.60.2.8 unsigned char MCAgencyOptions_s::passphrase[32]

security enable flag

Definition at line 247 of file libmc.h.

Referenced by MC_Initialize(), and MC_InitializeAgencyOptions().

4.60.2.9 char* MCAgencyOptions_s::priv_key_filename

Definition at line 253 of file libmc.h.

Referenced by MC_Initialize(), and MC_InitializeAgencyOptions().

4.60.2.10 int MCAgencyOptions_s::stack_size[MC_THREAD_ALL]

If the stack size is -1, use system def.

Definition at line 250 of file libmc.h.

Referenced by MC_Initialize(), and MC_InitializeAgencyOptions().

4.60.2.11 int MCAgencyOptions_s::threads

Threads to start

Definition at line 243 of file libmc.h.

Referenced by MC_Initialize(), MC_InitializeAgencyOptions(), MC_SetThreadOff(), MC_SetThreadOn(), MC_SetThreadsAllOff(), and MC_SetThreadsAllOn().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/libmc.h

4.61 md2_context Struct Reference

MD2 context structure.

```
#include <md2.h>
```

Data Fields

- unsigned char [cksum](#) [16]
- unsigned char [state](#) [48]
- unsigned char [buffer](#) [16]
- unsigned char [ipad](#) [64]
- unsigned char [opad](#) [64]
- [int](#) [left](#)

4.61.1 Detailed Description

MD2 context structure.

Definition at line 10 of file md2.h.

4.61.2 Field Documentation

4.61.2.1 unsigned char md2_context::buffer[16]

data block being processed

Definition at line 14 of file md2.h.

4.61.2.2 unsigned char md2_context::cksum[16]

checksum of the data block

Definition at line 12 of file md2.h.

4.61.2.3 unsigned char md2_context::ipad[64]

HMAC: inner padding

Definition at line 16 of file md2.h.

4.61.2.4 int md2_context::left

amount of data in buffer

Definition at line 18 of file md2.h.

4.61.2.5 unsigned char md2_context::opad[64]

HMAC: outer padding

Definition at line 17 of file md2.h.

4.61.2.6 unsigned char md2_context::state[48]

intermediate digest state

Definition at line 13 of file md2.h.

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/md2.h](#)

4.62 md4_context Struct Reference

MD4 context structure.

```
#include <md4.h>
```

Data Fields

- unsigned long [total](#) [2]
- unsigned long [state](#) [4]
- unsigned char [buffer](#) [64]
- unsigned char [ipad](#) [64]
- unsigned char [opad](#) [64]

4.62.1 Detailed Description

MD4 context structure.

Definition at line 10 of file md4.h.

4.62.2 Field Documentation

4.62.2.1 unsigned char md4_context::buffer[64]

data block being processed

Definition at line 14 of file md4.h.

4.62.2.2 unsigned char md4_context::ipad[64]

HMAC: inner padding

Definition at line 16 of file md4.h.

4.62.2.3 unsigned char md4_context::opad[64]

HMAC: outer padding

Definition at line 17 of file md4.h.

4.62.2.4 unsigned long md4_context::state[4]

intermediate digest state

Definition at line 13 of file md4.h.

4.62.2.5 unsigned long md4_context::total[2]

number of bytes processed

Definition at line 12 of file md4.h.

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/md4.h](#)

4.63 md5_context Struct Reference

MD5 context structure.

```
#include <md5.h>
```

Data Fields

- unsigned long [total](#) [2]
- unsigned long [state](#) [4]
- unsigned char [buffer](#) [64]
- unsigned char [ipad](#) [64]
- unsigned char [opad](#) [64]

4.63.1 Detailed Description

MD5 context structure.

Definition at line 10 of file md5.h.

4.63.2 Field Documentation

4.63.2.1 unsigned char md5_context::buffer[64]

data block being processed

Definition at line 14 of file md5.h.

Referenced by md5_update().

4.63.2.2 unsigned char md5_context::ipad[64]

HMAC: inner padding

Definition at line 16 of file md5.h.

Referenced by md5_hmac_starts().

4.63.2.3 unsigned char md5_context::opad[64]

HMAC: outer padding

Definition at line 17 of file md5.h.

Referenced by md5_hmac_finish(), and md5_hmac_starts().

4.63.2.4 unsigned long md5_context::state[4]

intermediate digest state

Definition at line 13 of file md5.h.

Referenced by md5_finish(), md5_process(), md5_starts(), and ssl_calc_finished().

4.63.2.5 unsigned long md5_context::total[2]

number of bytes processed

Definition at line 12 of file md5.h.

Referenced by md5_finish(), md5_starts(), and md5_update().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/[md5.h](#)

4.64 message_s Struct Reference

```
#include <message.h>
```

Data Fields

- struct sockaddr_in * [addr](#)
- [int connect_id](#)
- [int message_id](#)
- [int isHTTP](#)
- enum [message_type_e](#) [message_type](#)
- enum [http_performative_e](#) [http_type](#)
- [mxml_node_t](#) * [xml_root](#)
- [mxml_node_t](#) * [xml_payload](#)
- char * [message_body](#)
- char * [update_name](#)
- [int update_num](#)
- char * [from_address](#)
- char * [to_address](#)
- char * [target](#)
- [int agent_xml_flag](#)
- char * [sending_agent_name](#)

4.64.1 Detailed Description

Definition at line 78 of file `message.h`.

4.64.2 Field Documentation

4.64.2.1 struct sockaddr_in* message_s::addr

Definition at line 80 of file `message.h`.

Referenced by `message_Destroy()`, `message_InitializeFromAgent()`, `message_InitializeFromConnection()`, `message_InitializeFromString()`, `message_New()`, and `message_xml_parse__message()`.

4.64.2.2 int message_s::agent_xml_flag

Definition at line 112 of file `message.h`.

Referenced by `agent_Initialize()`, `message_Destroy()`, `message_InitializeFromAgent()`, and `message_New()`.

4.64.2.3 int message_s::connect_id

Definition at line 83 of file `message.h`.

Referenced by `message_InitializeFromConnection()`, `message_InitializeFromString()`, and `message_New()`.

4.64.2.4 char* message_s::from_address

Definition at line 102 of file message.h.

Referenced by AP_QUEUE_SEARCH_TEMPLATE(), message_Destroy(), message_InitializeFromAgent(), message_InitializeFromConnection(), message_InitializeFromString(), message_New(), and message_xml_parse__message().

4.64.2.5 enum http_performative_e message_s::http_type

Definition at line 91 of file message.h.

Referenced by message_New().

4.64.2.6 int message_s::isHTTP

Definition at line 87 of file message.h.

Referenced by message_New(), mtp_http_ComposeMessage(), and mtp_http_CreateMessage().

4.64.2.7 char* message_s::message_body

Definition at line 97 of file message.h.

Referenced by acc_connection_Thread(), message_Destroy(), message_InitializeFromAgent(), message_InitializeFromConnection(), message_InitializeFromString(), message_New(), message_send_Thread(), mtp_http_ComposeMessage(), and mtp_http_CreateMessage().

4.64.2.8 int message_s::message_id

Definition at line 84 of file message.h.

Referenced by AP_QUEUE_SEARCH_TEMPLATE(), message_InitializeFromAgent(), message_InitializeFromConnection(), message_InitializeFromString(), and message_New().

4.64.2.9 enum message_type_e message_s::message_type

Definition at line 90 of file message.h.

Referenced by acc_connection_Thread(), acc_MessageHandlerThread(), agent_Initialize(), MC_AclSend(), message_InitializeFromAgent(), message_InitializeFromString(), message_New(), and message_xml_parse__message().

4.64.2.10 char* message_s::sending_agent_name

Definition at line 113 of file message.h.

Referenced by message_InitializeFromAgent().

4.64.2.11 char* message_s::target

Definition at line 105 of file message.h.

Referenced by `MC_AclSend()`, `message_Destroy()`, `message_InitializeFromAgent()`, `message_InitializeFromConnection()`, `message_InitializeFromString()`, `message_New()`, and `mtp_http_ComposeMessage()`.

4.64.2.12 `char* message_s::to_address`

Definition at line 103 of file `message.h`.

Referenced by `acc_MessageHandlerThread()`, `AP_QUEUE_SEARCH_TEMPLATE()`, `MC_LoadAgentFromFile()`, `message_Destroy()`, `message_InitializeFromAgent()`, `message_InitializeFromConnection()`, `message_InitializeFromString()`, `message_New()`, `message_queue_SendOutgoing()`, `message_send_Thread()`, `mtp_http_ComposeMessage()`, and `mtp_http_CreateMessage()`.

4.64.2.13 `char* message_s::update_name`

Definition at line 99 of file `message.h`.

Referenced by `message_Destroy()`, `message_InitializeFromAgent()`, `message_InitializeFromString()`, and `message_New()`.

4.64.2.14 `int message_s::update_num`

Definition at line 100 of file `message.h`.

Referenced by `message_New()`.

4.64.2.15 `mxmml_node_t* message_s::xml_payload`

Definition at line 94 of file `message.h`.

Referenced by `agent_Initialize()`, `MC_LoadAgentFromFile()`, `message_New()`, and `message_xml_parse_message()`.

4.64.2.16 `mxmml_node_t* message_s::xml_root`

Definition at line 93 of file `message.h`.

Referenced by `acc_connection_Thread()`, `agent_Initialize()`, `MC_LoadAgentFromFile()`, `message_Destroy()`, `message_InitializeFromAgent()`, `message_InitializeFromConnection()`, `message_InitializeFromString()`, `message_New()`, and `message_xml_parse()`.

The documentation for this struct was generated from the following file:

- `/home/dko/Projects/mobilec/src/include/message.h`

4.65 message_send_arg_s Struct Reference

```
#include <message.h>
```

Data Fields

- struct [mc_platform_s](#) * [mc_platform](#)
- [message_p](#) [message](#)
- char * [privatekey](#)

4.65.1 Detailed Description

Definition at line 117 of file [message.h](#).

4.65.2 Field Documentation

4.65.2.1 struct [mc_platform_s](#)* [message_send_arg_s::mc_platform](#)

Definition at line 119 of file [message.h](#).

Referenced by [message_Send\(\)](#).

4.65.2.2 [message_p](#) [message_send_arg_s::message](#)

Definition at line 120 of file [message.h](#).

Referenced by [message_Send\(\)](#).

4.65.2.3 char* [message_send_arg_s::privatekey](#)

Definition at line 121 of file [message.h](#).

Referenced by [message_Send\(\)](#).

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/include/message.h](#)

4.66 mpi Struct Reference

MPI structure.

```
#include <bignum.h>
```

Data Fields

- `int s`
- `int n`
- `t_int * p`

4.66.1 Detailed Description

MPI structure.

Definition at line 48 of file `bignum.h`.

4.66.2 Field Documentation

4.66.2.1 `int mpi::n`

total # of limbs

Definition at line 51 of file `bignum.h`.

Referenced by `debug_print_mpi()`, `mpi_add_abs()`, `mpi_add_int()`, `mpi_cmp_abs()`, `mpi_cmp_int()`, `mpi_cmp_mpi()`, `mpi_copy()`, `mpi_div_int()`, `mpi_div_mpi()`, `mpi_exp_mod()`, `mpi_free()`, `mpi_grow()`, `mpi_init()`, `mpi_is_prime()`, `mpi_lsb()`, `mpi_lset()`, `mpi_mod_int()`, `mpi_montmul()`, `mpi_montred()`, `mpi_msb()`, `mpi_mul_int()`, `mpi_mul_mpi()`, `mpi_shift_l()`, `mpi_shift_r()`, `mpi_sub_abs()`, `mpi_sub_int()`, `mpi_write_string()`, and `x509parse_cert_info()`.

4.66.2.2 `t_int* mpi::p`

pointer to limbs

Definition at line 52 of file `bignum.h`.

Referenced by `debug_print_mpi()`, `dhm_make_params()`, `dhm_make_public()`, `mpi_add_abs()`, `mpi_add_int()`, `mpi_cmp_abs()`, `mpi_cmp_int()`, `mpi_cmp_mpi()`, `mpi_copy()`, `mpi_div_int()`, `mpi_div_mpi()`, `mpi_exp_mod()`, `mpi_free()`, `mpi_gcd()`, `mpi_gen_prime()`, `mpi_grow()`, `mpi_init()`, `mpi_inv_mod()`, `mpi_is_prime()`, `mpi_lsb()`, `mpi_lset()`, `mpi_mod_int()`, `mpi_montg_init()`, `mpi_montmul()`, `mpi_montred()`, `mpi_msb()`, `mpi_mul_int()`, `mpi_mul_mpi()`, `mpi_read_binary()`, `mpi_read_string()`, `mpi_shift_l()`, `mpi_shift_r()`, `mpi_sub_abs()`, `mpi_sub_int()`, `mpi_write_binary()`, `mpi_write_string()`, and `rsa_check_pubkey()`.

4.66.2.3 `int mpi::s`

integer sign

Definition at line 50 of file `bignum.h`.

Referenced by `mpi_add_int()`, `mpi_add_mpi()`, `mpi_cmp_int()`, `mpi_cmp_mpi()`, `mpi_copy()`, `mpi_div_int()`, `mpi_div_mpi()`, `mpi_free()`, `mpi_gcd()`, `mpi_init()`, `mpi_is_prime()`, `mpi_lset()`, `mpi_montred()`,

`mpi_mul_int()`, `mpi_mul_mpi()`, `mpi_read_string()`, `mpi_sub_int()`, `mpi_sub_mpi()`, and `mpi_write_string()`.

The documentation for this struct was generated from the following file:

- `/home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/bignum.h`

4.67 mtp_http_content_s Struct Reference

```
#include <mtp_http.h>
```

Data Fields

- char * [content_type](#)
- void * [data](#)

4.67.1 Detailed Description

Definition at line 106 of file mtp_http.h.

4.67.2 Field Documentation

4.67.2.1 char* mtp_http_content_s::content_type

Definition at line 108 of file mtp_http.h.

Referenced by MC_AclSend(), mtp_http_CreateMessage(), mtp_http_Destroy(), and mtp_http_Parse().

4.67.2.2 void* mtp_http_content_s::data

Definition at line 109 of file mtp_http.h.

Referenced by acc_connection_Thread(), MC_AclSend(), mtp_http_CreateMessage(), mtp_http_Destroy(), and mtp_http_Parse().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/include/[mtp_http.h](#)

4.68 mtp_http_s Struct Reference

```
#include <mtp_http.h>
```

Data Fields

- enum [http_status_code_e](#) [http_status_code](#)
- enum [http_performative_e](#) [http_performative](#)
- char * [http_version](#)
- char * [host](#)
- char * [return_code](#)
- char * [target](#)
- char * [date](#)
- char * [server](#)
- char * [accept_ranges](#)
- char * [content_length](#)
- char * [connection](#)
- char * [content_type](#)
- char * [user_agent](#)
- char * [cache_control](#)
- char * [mime_version](#)
- [int](#) [response_code](#)
- char * [response_string](#)
- [int](#) [message_parts](#)
- char * [boundary](#)
- struct [mtp_http_content_s](#) * [content](#)
- [int](#) [header_length](#)

4.68.1 Detailed Description

Definition at line 112 of file `mtp_http.h`.

4.68.2 Field Documentation

4.68.2.1 char* mtp_http_s::accept_ranges

Definition at line 123 of file `mtp_http.h`.

Referenced by `mtp_http_Destroy()`.

4.68.2.2 char* mtp_http_s::boundary

Definition at line 139 of file `mtp_http.h`.

Referenced by `mtp_http_Destroy()`, and `mtp_http_Parse()`.

4.68.2.3 char* mtp_http_s::cache_control

Definition at line 129 of file `mtp_http.h`.

Referenced by `mtp_http_Destroy()`.

4.68.2.4 char* mtp_http_s::connection

Definition at line 125 of file mtp_http.h.

Referenced by mtp_http_Destroy().

4.68.2.5 struct mtp_http_content_s* mtp_http_s::content

Definition at line 140 of file mtp_http.h.

Referenced by acc_connection_Thread(), MC_AclSend(), mtp_http_CreateMessage(), mtp_http_Destroy(), mtp_http_New(), and mtp_http_Parse().

4.68.2.6 char* mtp_http_s::content_length

Definition at line 124 of file mtp_http.h.

Referenced by mtp_http_Destroy(), mtp_http_InitializeFromConnection(), and mtp_http_Parse().

4.68.2.7 char* mtp_http_s::content_type

Definition at line 126 of file mtp_http.h.

Referenced by mtp_http_Destroy(), and mtp_http_Parse().

4.68.2.8 char* mtp_http_s::date

Definition at line 121 of file mtp_http.h.

Referenced by mtp_http_Destroy().

4.68.2.9 int mtp_http_s::header_length

Definition at line 143 of file mtp_http.h.

Referenced by mtp_http_InitializeFromConnection(), and mtp_http_ParseHeader().

4.68.2.10 char* mtp_http_s::host

Definition at line 117 of file mtp_http.h.

Referenced by MC_AclSend(), mtp_http_CreateMessage(), and mtp_http_Destroy().

4.68.2.11 enum http_performative_e mtp_http_s::http_performative

Definition at line 115 of file mtp_http.h.

Referenced by acc_connection_Thread(), http_ParseRequest(), mtp_http_InitializeFromConnection(), and mtp_http_Parse().

4.68.2.12 enum http_status_code_e mtp_http_s::http_status_code

Definition at line 114 of file mtp_http.h.

4.68.2.13 char* mtp_http_s::http_version

Definition at line 116 of file mtp_http.h.

Referenced by mtp_http_Destroy().

4.68.2.14 int mtp_http_s::message_parts

Definition at line 138 of file mtp_http.h.

Referenced by acc_connection_Thread(), MC_AclSend(), mtp_http_CreateMessage(), mtp_http_Destroy(), and mtp_http_Parse().

4.68.2.15 char* mtp_http_s::mime_version

Definition at line 130 of file mtp_http.h.

Referenced by mtp_http_Destroy().

4.68.2.16 int mtp_http_s::response_code

Definition at line 133 of file mtp_http.h.

Referenced by http_ParseRequest().

4.68.2.17 char* mtp_http_s::response_string

Definition at line 134 of file mtp_http.h.

Referenced by http_ParseRequest(), and mtp_http_Destroy().

4.68.2.18 char* mtp_http_s::return_code

Definition at line 118 of file mtp_http.h.

Referenced by mtp_http_Destroy().

4.68.2.19 char* mtp_http_s::server

Definition at line 122 of file mtp_http.h.

Referenced by mtp_http_Destroy().

4.68.2.20 char* mtp_http_s::target

Definition at line 119 of file mtp_http.h.

Referenced by `acc_connection_Thread()`, `http_ParseRequest()`, `MC_AclSend()`, `mtp_http_CreateMessage()`, and `mtp_http_Destroy()`.

4.68.2.21 char* mtp_http_s::user_agent

Definition at line 127 of file `mtp_http.h`.

Referenced by `mtp_http_Destroy()`.

The documentation for this struct was generated from the following file:

- `/home/dko/Projects/mobilec/src/include/mtp_http.h`

4.69 mxml_attr_s Struct Reference

```
#include <mxml.h>
```

Data Fields

- char * [name](#)
- char * [value](#)

4.69.1 Detailed Description

Definition at line 86 of file mxml.h.

4.69.2 Field Documentation

4.69.2.1 char* mxml_attr_s::name

Definition at line 88 of file mxml.h.

Referenced by [mxml_write_node\(\)](#), [mxmlDelete\(\)](#), [mxmlElementGetAttr\(\)](#), and [mxmlElementSetAttr\(\)](#).

4.69.2.2 char* mxml_attr_s::value

Definition at line 89 of file mxml.h.

Referenced by [mxml_write_node\(\)](#), [mxmlDelete\(\)](#), [mxmlElementGetAttr\(\)](#), and [mxmlElementSetAttr\(\)](#).

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml.h](#)

4.70 mxml_custom_s Struct Reference

```
#include <mxml.h>
```

Data Fields

- void * [data](#)
- void(* [destroy](#))(void *)

4.70.1 Detailed Description

Definition at line 105 of file mxml.h.

4.70.2 Field Documentation

4.70.2.1 void* mxml_custom_s::data

Definition at line 107 of file mxml.h.

Referenced by mxmlDelete(), mxmlNewCustom(), and mxmlSetCustom().

4.70.2.2 void(* mxml_custom_s::destroy)(void *)

Definition at line 108 of file mxml.h.

Referenced by mxmlDelete(), mxmlNewCustom(), and mxmlSetCustom().

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml.h](#)

4.71 mxml_fdbuf_s Struct Reference

Data Fields

- `int fd`
- `unsigned char * current`
- `unsigned char * end`
- `unsigned char buffer [8192]`

4.71.1 Detailed Description

Definition at line 84 of file mxml-file.c.

4.71.2 Field Documentation

4.71.2.1 `unsigned char mxml_fdbuf_s::buffer[8192]`

Definition at line 87 of file mxml-file.c.

Referenced by `mxml_fd_read()`, `mxml_fd_write()`, `mxmlLoadFd()`, and `mxmlSaveFd()`.

4.71.2.2 `unsigned char* mxml_fdbuf_s::current`

Definition at line 87 of file mxml-file.c.

Referenced by `mxml_fd_getc()`, `mxml_fd_putc()`, `mxml_fd_read()`, `mxml_fd_write()`, `mxmlLoadFd()`, and `mxmlSaveFd()`.

4.71.2.3 `unsigned char * mxml_fdbuf_s::end`

Definition at line 87 of file mxml-file.c.

Referenced by `mxml_fd_getc()`, `mxml_fd_putc()`, `mxml_fd_read()`, `mxmlLoadFd()`, and `mxmlSaveFd()`.

4.71.2.4 `int mxml_fdbuf_s::fd`

Definition at line 86 of file mxml-file.c.

Referenced by `mxml_fd_read()`, `mxml_fd_write()`, `mxmlLoadFd()`, and `mxmlSaveFd()`.

The documentation for this struct was generated from the following file:

- `/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-file.c`

4.72 mxml_index_s Struct Reference

```
#include <mxml.h>
```

Data Fields

- char * [attr](#)
- int [num_nodes](#)
- int [alloc_nodes](#)
- int [cur_node](#)
- [mxml_node_t](#) ** [nodes](#)

4.72.1 Detailed Description

Definition at line 133 of file `mxml.h`.

4.72.2 Field Documentation

4.72.2.1 int mxml_index_s::alloc_nodes

Definition at line 137 of file `mxml.h`.

Referenced by `mxmlIndexDelete()`, and `mxmlIndexNew()`.

4.72.2.2 char* mxml_index_s::attr

Definition at line 135 of file `mxml.h`.

Referenced by `index_compare()`, `index_find()`, `mxmlIndexDelete()`, `mxmlIndexFind()`, and `mxmlIndexNew()`.

4.72.2.3 int mxml_index_s::cur_node

Definition at line 138 of file `mxml.h`.

Referenced by `mxmlIndexEnum()`, `mxmlIndexFind()`, and `mxmlIndexReset()`.

4.72.2.4 mxml_node_t** mxml_index_s::nodes

Definition at line 139 of file `mxml.h`.

Referenced by `index_sort()`, `mxmlIndexDelete()`, `mxmlIndexEnum()`, `mxmlIndexFind()`, `mxmlIndexNew()`, and `mxmlIndexReset()`.

4.72.2.5 int mxml_index_s::num_nodes

Definition at line 136 of file `mxml.h`.

Referenced by `main()`, `mxmlIndexEnum()`, `mxmlIndexFind()`, `mxmlIndexNew()`, and `mxmlIndexReset()`.

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml.h](#)

4.73 mxml_node_s Struct Reference

```
#include <mxml.h>
```

Data Fields

- [mxml_type_t](#) type
- struct [mxml_node_s](#) * next
- struct [mxml_node_s](#) * prev
- struct [mxml_node_s](#) * parent
- struct [mxml_node_s](#) * child
- struct [mxml_node_s](#) * last_child
- [mxml_value_t](#) value

4.73.1 Detailed Description

Definition at line 122 of file mxml.h.

4.73.2 Field Documentation

4.73.2.1 struct mxml_node_s* mxml_node_s::child

Definition at line 128 of file mxml.h.

Referenced by `add_variable()`, `agent_xml_parse__fill_row_data()`, `fipa_envelope_HandleAclRepresentation()`, `fipa_envelope_HandleComments()`, `fipa_envelope_HandleDate()`, `fipa_envelope_HandlePayloadEncoding()`, `fipa_envelope_HandlePayloadLength()`, `fipa_envelope_ParseAddresses()`, `fipa_envelope_ParseAgentIdentifier()`, `main()`, `mxml_write_node()`, `mxmlAdd()`, `mxmlDelete()`, `mxmlRemove()`, `mxmlWalkNext()`, `scan_file()`, `sort_node()`, `whitespace_cb()`, `write_documentation()`, `write_element()`, and `xml_get_text()`.

4.73.2.2 struct mxml_node_s* mxml_node_s::last_child

Definition at line 129 of file mxml.h.

Referenced by `add_variable()`, `main()`, `mxmlAdd()`, `mxmlRemove()`, `mxmlWalkPrev()`, and `scan_file()`.

4.73.2.3 struct mxml_node_s* mxml_node_s::next

Definition at line 125 of file mxml.h.

Referenced by `add_variable()`, `main()`, `mxml_write_node()`, `mxmlAdd()`, `mxmlFindElement()`, `mxmlRemove()`, `mxmlWalkNext()`, `scan_file()`, `sort_node()`, `xml_get_next_element()`, and `xml_get_text()`.

4.73.2.4 struct mxml_node_s* mxml_node_s::parent

Definition at line 127 of file mxml.h.

Referenced by `agent_xml_parse__data()`, `mxml_load_data()`, `mxmlAdd()`, `mxmlRemove()`, `mxmlWalkNext()`, `mxmlWalkPrev()`, `sort_node()`, `whitespace_cb()`, `ws_cb()`, and `xml_find_sibling()`.

4.73.2.5 struct mxml_node_s* mxml_node_s::prev

Definition at line 126 of file mxml.h.

Referenced by mxml_write_node(), mxmlAdd(), mxmlRemove(), and mxmlWalkPrev().

4.73.2.6 mxml_type_t mxml_node_s::type

Definition at line 124 of file mxml.h.

Referenced by agent_xml_parse__fill_row_data(), fipa_envelope_HandleAclRepresentation(), fipa_envelope_HandleComments(), fipa_envelope_HandleDate(), fipa_envelope_HandlePayloadEncoding(), fipa_envelope_HandlePayloadLength(), fipa_envelope_ParseAddresses(), fipa_envelope_ParseAgentIdentifier(), main(), mxml_new(), mxml_write_node(), mxmlDelete(), mxmlElementGetAttr(), mxmlElementSetAttr(), mxmlFindElement(), mxmlSetCustom(), mxmlSetElement(), mxmlSetInteger(), mxmlSetOpaque(), mxmlSetReal(), mxmlSetText(), mxmlSetTextf(), write_element(), xml_get_cdata(), xml_get_element_name(), xml_get_next_element(), and xml_get_text().

4.73.2.7 mxml_value_t mxml_node_s::value

Definition at line 130 of file mxml.h.

Referenced by add_variable(), agent_xml_parse__fill_row_data(), fipa_envelope_HandleAclRepresentation(), fipa_envelope_HandleComments(), fipa_envelope_HandleDate(), fipa_envelope_HandlePayloadEncoding(), fipa_envelope_HandlePayloadLength(), fipa_envelope_ParseAddresses(), fipa_envelope_ParseAgentIdentifier(), index_compare(), index_find(), main(), mxml_get_entity(), mxml_load_data(), mxml_parse_element(), mxml_write_node(), mxmlDelete(), mxmlElementGetAttr(), mxmlElementSetAttr(), mxmlFindElement(), mxmlIndexNew(), mxmlNewCustom(), mxmlNewElement(), mxmlNewInteger(), mxmlNewOpaque(), mxmlNewReal(), mxmlNewText(), mxmlNewTextf(), mxmlSetCustom(), mxmlSetElement(), mxmlSetInteger(), mxmlSetOpaque(), mxmlSetReal(), mxmlSetText(), mxmlSetTextf(), scan_file(), sort_node(), type_cb(), update_comment(), whitespace_cb(), write_element(), ws_cb(), xml_get_element_name(), and xml_get_text().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/mxml-2.2.2/[mxml.h](#)

4.74 mxml_text_s Struct Reference

```
#include <mxml.h>
```

Data Fields

- [int whitespace](#)
- [char * string](#)

4.74.1 Detailed Description

Definition at line 99 of file mxml.h.

4.74.2 Field Documentation

4.74.2.1 char* mxml_text_s::string

Definition at line 102 of file mxml.h.

Referenced by `add_variable()`, `agent_xml_parse__fill_row_data()`, `fipa_envelope_HandleAclRepresentation()`, `fipa_envelope_HandleComments()`, `fipa_envelope_HandleDate()`, `fipa_envelope_HandlePayloadEncoding()`, `fipa_envelope_HandlePayloadLength()`, `fipa_envelope_ParseAddresses()`, `fipa_envelope_ParseAgentIdentifier()`, `main()`, `mxml_write_node()`, `mxmlDelete()`, `mxmlNewText()`, `mxmlNewTextf()`, `mxmlSetText()`, `mxmlSetTextf()`, `scan_file()`, `update_comment()`, `write_element()`, and `xml_get_text()`.

4.74.2.2 int mxml_text_s::whitespace

Definition at line 101 of file mxml.h.

Referenced by `add_variable()`, `main()`, `mxml_write_node()`, `mxmlNewText()`, `mxmlNewTextf()`, `mxmlSetText()`, `mxmlSetTextf()`, `scan_file()`, and `write_element()`.

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml.h](#)

4.75 mxml_value_s Struct Reference

```
#include <mxml.h>
```

Data Fields

- [char * name](#)
- [int num_attrs](#)
- [mxml_attr_t * attrs](#)

4.75.1 Detailed Description

Definition at line 92 of file mxml.h.

4.75.2 Field Documentation

4.75.2.1 mxml_attr_t* mxml_value_s::attrs

Definition at line 96 of file mxml.h.

Referenced by [mxml_write_node\(\)](#), [mxmlDelete\(\)](#), [mxmlElementGetAttr\(\)](#), and [mxmlElementSetAttr\(\)](#).

4.75.2.2 char* mxml_value_s::name

Definition at line 94 of file mxml.h.

Referenced by [index_compare\(\)](#), [index_find\(\)](#), [main\(\)](#), [mxml_get_entity\(\)](#), [mxml_load_data\(\)](#), [mxml_parse_element\(\)](#), [mxml_write_node\(\)](#), [mxmlDelete\(\)](#), [mxmlElementSetAttr\(\)](#), [mxmlFindElement\(\)](#), [mxmIndexNew\(\)](#), [mxmlNewElement\(\)](#), [mxmlSetElement\(\)](#), [scan_file\(\)](#), [sort_node\(\)](#), [type_cb\(\)](#), [update_comment\(\)](#), [whitespace_cb\(\)](#), [ws_cb\(\)](#), [xml_get_element_name\(\)](#), and [xml_get_text\(\)](#).

4.75.2.3 int mxml_value_s::num_attrs

Definition at line 95 of file mxml.h.

Referenced by [mxml_write_node\(\)](#), [mxmlDelete\(\)](#), [mxmlElementGetAttr\(\)](#), and [mxmlElementSetAttr\(\)](#).

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/mxml-2.2.2/mxml.h](#)

4.76 mxml_value_u Union Reference

```
#include <mxml.h>
```

Data Fields

- [mxml_element_t](#) element
- [int](#) integer
- [char *](#) opaque
- [double](#) real
- [mxml_text_t](#) text
- [mxml_custom_t](#) custom

4.76.1 Detailed Description

Definition at line 112 of file mxml.h.

4.76.2 Field Documentation

4.76.2.1 mxml_custom_t mxml_value_u::custom

Definition at line 119 of file mxml.h.

Referenced by [mxmlDelete\(\)](#), [mxmlNewCustom\(\)](#), and [mxmlSetCustom\(\)](#).

4.76.2.2 mxml_element_t mxml_value_u::element

Definition at line 114 of file mxml.h.

Referenced by [index_compare\(\)](#), [index_find\(\)](#), [main\(\)](#), [mxml_get_entity\(\)](#), [mxml_load_data\(\)](#), [mxml_parse_element\(\)](#), [mxml_write_node\(\)](#), [mxmlDelete\(\)](#), [mxmlElementGetAttr\(\)](#), [mxmlElementSetAttr\(\)](#), [mxmlFindElement\(\)](#), [mxmlIndexNew\(\)](#), [mxmlNewElement\(\)](#), [mxmlSetElement\(\)](#), [scan_file\(\)](#), [sort_node\(\)](#), [type_cb\(\)](#), [update_comment\(\)](#), [whitespace_cb\(\)](#), [ws_cb\(\)](#), [xml_get_element_name\(\)](#), and [xml_get_text\(\)](#).

4.76.2.3 int mxml_value_u::integer

Definition at line 115 of file mxml.h.

Referenced by [main\(\)](#), [mxml_write_node\(\)](#), [mxmlNewInteger\(\)](#), and [mxmlSetInteger\(\)](#).

4.76.2.4 char* mxml_value_u::opaque

Definition at line 116 of file mxml.h.

Referenced by [main\(\)](#), [mxml_write_node\(\)](#), [mxmlDelete\(\)](#), [mxmlNewOpaque\(\)](#), and [mxmlSetOpaque\(\)](#).

4.76.2.5 double mxml_value_u::real

Definition at line 117 of file mxml.h.

Referenced by [main\(\)](#), [mxml_write_node\(\)](#), [mxmlNewReal\(\)](#), and [mxmlSetReal\(\)](#).

4.76.2.6 mxml_text_t mxml_value_u::text

Definition at line 118 of file mxml.h.

Referenced by add_variable(), agent_xml_parse__fill_row_data(), fipa_envelope_HandleAclRepresentation(), fipa_envelope_HandleComments(), fipa_envelope_HandleDate(), fipa_envelope_HandlePayloadEncoding(), fipa_envelope_HandlePayloadLength(), fipa_envelope_ParseAddresses(), fipa_envelope_ParseAgentIdentifier(), main(), mxml_write_node(), mxmlDelete(), mxmlNewText(), mxmlNewTextf(), mxmlSetText(), mxmlSetTextf(), scan_file(), update_comment(), write_element(), and xml_get_text().

The documentation for this union was generated from the following file:

- /home/dko/Projects/mobilec/src/mxml-2.2.2/[mxml.h](#)

4.77 options Struct Reference

Data Fields

- [int opmode](#)
- [int iomode](#)
- [char * server_name](#)
- [int server_port](#)
- [int command](#)
- [int buffer_size](#)
- [int max_bytes](#)
- [int debug_level](#)
- [int conn_timeout](#)
- [int max_connections](#)
- [int session_reuse](#)
- [int session_lifetime](#)
- [int force_cipher](#) [2]

4.77.1 Detailed Description

Definition at line 75 of file `ssl_test.c`.

4.77.2 Field Documentation

4.77.2.1 `int options::buffer_size`

Definition at line 82 of file `ssl_test.c`.

Referenced by `main()`, and `ssl_test()`.

4.77.2.2 `int options::command`

Definition at line 81 of file `ssl_test.c`.

Referenced by `main()`, and `ssl_test()`.

4.77.2.3 `int options::conn_timeout`

Definition at line 85 of file `ssl_test.c`.

Referenced by `main()`, and `ssl_test()`.

4.77.2.4 `int options::debug_level`

Definition at line 84 of file `ssl_test.c`.

Referenced by `main()`.

4.77.2.5 int options::force_cipher[2]

Definition at line 89 of file ssl_test.c.

Referenced by main(), and ssl_test().

4.77.2.6 int options::iomode

Definition at line 78 of file ssl_test.c.

Referenced by main(), and ssl_test().

4.77.2.7 int options::max_bytes

Definition at line 83 of file ssl_test.c.

Referenced by main(), and ssl_test().

4.77.2.8 int options::max_connections

Definition at line 86 of file ssl_test.c.

Referenced by main().

4.77.2.9 int options::opmode

Definition at line 77 of file ssl_test.c.

Referenced by main(), and ssl_test().

4.77.2.10 char* options::server_name

Definition at line 79 of file ssl_test.c.

Referenced by main(), and ssl_test().

4.77.2.11 int options::server_port

Definition at line 80 of file ssl_test.c.

Referenced by main(), and ssl_test().

4.77.2.12 int options::session_lifetime

Definition at line 88 of file ssl_test.c.

Referenced by main(), and ssl_test().

4.77.2.13 int options::session_reuse

Definition at line 87 of file ssl_test.c.

Referenced by main(), and ssl_test().

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/test/ssl_test.c](#)

4.78 rsa_context Struct Reference

RSA context structure.

```
#include <rsa.h>
```

Data Fields

- `int ver`
- `int len`
- `mpi N`
- `mpi E`
- `mpi D`
- `mpi P`
- `mpi Q`
- `mpi DP`
- `mpi DQ`
- `mpi QP`
- `mpi RN`
- `mpi RP`
- `mpi RQ`
- `int padding`
- `int hash_id`
- `int(* f_rng)(void *)`
- `void * p_rng`

4.78.1 Detailed Description

RSA context structure.

Definition at line 56 of file `rsa.h`.

4.78.2 Field Documentation

4.78.2.1 `mpi rsa_context::D`

private exponent

Definition at line 64 of file `rsa.h`.

Referenced by `generate_RSA_keys_ciphertext()`, `generate_RSA_keys_plaintext()`, `main()`, `rsa_check_privkey()`, `rsa_decryption()`, `rsa_free()`, `rsa_gen_key()`, `rsa_private()`, `rsa_self_test()`, and `x509parse_key()`.

4.78.2.2 `mpi rsa_context::DP`

$D \% (P - 1)$

Definition at line 67 of file `rsa.h`.

Referenced by `generate_RSA_keys_ciphertext()`, `generate_RSA_keys_plaintext()`, `main()`, `rsa_decryption()`, `rsa_free()`, `rsa_gen_key()`, `rsa_private()`, `rsa_self_test()`, and `x509parse_key()`.

4.78.2.3 `mpi rsa_context::DQ`

$D \% (Q - 1)$

Definition at line 68 of file `rsa.h`.

Referenced by `generate_RSA_keys_ciphertext()`, `generate_RSA_keys_plaintext()`, `main()`, `rsa_decryption()`, `rsa_free()`, `rsa_gen_key()`, `rsa_private()`, `rsa_self_test()`, and `x509parse_key()`.

4.78.2.4 `mpi rsa_context::E`

public exponent

Definition at line 62 of file `rsa.h`.

Referenced by `d2i_RSA_PUBKEY()`, `debug_print_crt()`, `generate_RSA_keys_ciphertext()`, `generate_RSA_keys_plaintext()`, `main()`, `rsa_check_privkey()`, `rsa_check_pubkey()`, `rsa_decryption()`, `rsa_encryption()`, `rsa_free()`, `rsa_gen_key()`, `rsa_public()`, `rsa_self_test()`, `x509parse_crt()`, and `x509parse_key()`.

4.78.2.5 `int(* rsa_context::f_rng)(void *)`

RNG function

Definition at line 77 of file `rsa.h`.

Referenced by `rsa_gen_key()`, and `rsa_init()`.

4.78.2.6 `int rsa_context::hash_id`

hash identifier

Definition at line 76 of file `rsa.h`.

Referenced by `rsa_init()`.

4.78.2.7 `int rsa_context::len`

size(N) in chars

Definition at line 59 of file `rsa.h`.

Referenced by `d2i_RSA_PUBKEY()`, `main()`, `rsa_decryption()`, `rsa_encryption()`, `rsa_gen_key()`, `rsa_pkcs1_decrypt()`, `rsa_pkcs1_encrypt()`, `rsa_pkcs1_sign()`, `rsa_pkcs1_verify()`, `rsa_private()`, `rsa_public()`, `rsa_self_test()`, `ssl_parse_certificate_verify()`, `ssl_parse_client_key_exchange()`, `ssl_parse_server_key_exchange()`, `ssl_write_certificate_verify()`, `ssl_write_client_key_exchange()`, `ssl_write_server_key_exchange()`, `x509parse_crt()`, and `x509parse_key()`.

4.78.2.8 `mpi rsa_context::N`

public modulus

Definition at line 61 of file `rsa.h`.

Referenced by `d2i_RSA_PUBKEY()`, `debug_print_crt()`, `generate_RSA_keys_ciphertext()`, `generate_RSA_keys_plaintext()`, `main()`, `rsa_check_privkey()`, `rsa_check_pubkey()`, `rsa_decryption()`, `rsa_`

encryption(), rsa_free(), rsa_gen_key(), rsa_private(), rsa_public(), rsa_self_test(), x509parse_cert_info(), x509parse_crt(), and x509parse_key().

4.78.2.9 mpi rsa_context::P

1st prime factor

Definition at line 65 of file rsa.h.

Referenced by generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), main(), rsa_check_privkey(), rsa_decryption(), rsa_free(), rsa_gen_key(), rsa_private(), rsa_self_test(), and x509parse_key().

4.78.2.10 void* rsa_context::p_rng

RNG parameter

Definition at line 78 of file rsa.h.

Referenced by rsa_gen_key(), and rsa_init().

4.78.2.11 int rsa_context::padding

1.5 or OAEP/PSS

Definition at line 75 of file rsa.h.

Referenced by rsa_init(), rsa_pkcs1_decrypt(), rsa_pkcs1_encrypt(), rsa_pkcs1_sign(), and rsa_pkcs1_verify().

4.78.2.12 mpi rsa_context::Q

2nd prime factor

Definition at line 66 of file rsa.h.

Referenced by generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), main(), rsa_check_privkey(), rsa_decryption(), rsa_free(), rsa_gen_key(), rsa_private(), rsa_self_test(), and x509parse_key().

4.78.2.13 mpi rsa_context::QP

$1 / (Q \% P)$

Definition at line 69 of file rsa.h.

Referenced by generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), main(), rsa_decryption(), rsa_free(), rsa_gen_key(), rsa_private(), rsa_self_test(), and x509parse_key().

4.78.2.14 mpi rsa_context::RN

cached $R^2 \bmod N$

Definition at line 71 of file rsa.h.

Referenced by rsa_free(), rsa_private(), and rsa_public().

4.78.2.15 mpi rsa_context::RP

cached $R^2 \bmod P$

Definition at line 72 of file rsa.h.

Referenced by rsa_free(), and rsa_private().

4.78.2.16 mpi rsa_context::RQ

cached $R^2 \bmod Q$

Definition at line 73 of file rsa.h.

Referenced by rsa_free(), and rsa_private().

4.78.2.17 int rsa_context::ver

always 0

Definition at line 58 of file rsa.h.

Referenced by x509parse_key().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/[rsa.h](#)

4.79 sha1_context Struct Reference

SHA-1 context structure.

```
#include <sha1.h>
```

Data Fields

- unsigned long [total](#) [2]
- unsigned long [state](#) [5]
- unsigned char [buffer](#) [64]
- unsigned char [ipad](#) [64]
- unsigned char [opad](#) [64]

4.79.1 Detailed Description

SHA-1 context structure.

Definition at line 10 of file sha1.h.

4.79.2 Field Documentation

4.79.2.1 unsigned char sha1_context::buffer[64]

data block being processed

Definition at line 14 of file sha1.h.

Referenced by sha1_update().

4.79.2.2 unsigned char sha1_context::ipad[64]

HMAC: inner padding

Definition at line 16 of file sha1.h.

Referenced by sha1_hmac_starts().

4.79.2.3 unsigned char sha1_context::opad[64]

HMAC: outer padding

Definition at line 17 of file sha1.h.

Referenced by sha1_hmac_finish(), and sha1_hmac_starts().

4.79.2.4 unsigned long sha1_context::state[5]

intermediate digest state

Definition at line 13 of file sha1.h.

Referenced by sha1_finish(), sha1_process(), sha1_starts(), and ssl_calc_finished().

4.79.2.5 unsigned long sha1_context::total[2]

number of bytes processed

Definition at line 12 of file sha1.h.

Referenced by sha1_finish(), sha1_starts(), and sha1_update().

The documentation for this struct was generated from the following file:

- </home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/sha1.h>

4.80 sha2_context Struct Reference

SHA-256 context structure.

```
#include <sha2.h>
```

Data Fields

- unsigned long [total](#) [2]
- unsigned long [state](#) [8]
- unsigned char [buffer](#) [64]
- unsigned char [ipad](#) [64]
- unsigned char [opad](#) [64]
- [int is224](#)

4.80.1 Detailed Description

SHA-256 context structure.

Definition at line 10 of file sha2.h.

4.80.2 Field Documentation

4.80.2.1 unsigned char sha2_context::buffer[64]

data block being processed

Definition at line 14 of file sha2.h.

Referenced by sha2_update().

4.80.2.2 unsigned char sha2_context::ipad[64]

HMAC: inner padding

Definition at line 16 of file sha2.h.

Referenced by sha2_hmac_starts().

4.80.2.3 int sha2_context::is224

0 => SHA-256, else SHA-224

Definition at line 18 of file sha2.h.

Referenced by sha2_finish(), sha2_hmac_finish(), and sha2_starts().

4.80.2.4 unsigned char sha2_context::opad[64]

HMAC: outer padding

Definition at line 17 of file sha2.h.

Referenced by sha2_hmac_finish(), and sha2_hmac_starts().

4.80.2.5 unsigned long sha2_context::state[8]

intermediate digest state

Definition at line 13 of file sha2.h.

Referenced by sha2_finish(), sha2_process(), and sha2_starts().

4.80.2.6 unsigned long sha2_context::total[2]

number of bytes processed

Definition at line 12 of file sha2.h.

Referenced by sha2_finish(), sha2_starts(), and sha2_update().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/[sha2.h](#)

4.81 sha4_context Struct Reference

SHA-512 context structure.

```
#include <sha4.h>
```

Data Fields

- unsigned int64 [total](#) [2]
- unsigned int64 [state](#) [8]
- unsigned char [buffer](#) [128]
- unsigned char [ipad](#) [128]
- unsigned char [opad](#) [128]
- [int is384](#)

4.81.1 Detailed Description

SHA-512 context structure.

Definition at line 18 of file sha4.h.

4.81.2 Field Documentation

4.81.2.1 unsigned char sha4_context::buffer[128]

data block being processed

Definition at line 22 of file sha4.h.

Referenced by sha4_update().

4.81.2.2 unsigned char sha4_context::ipad[128]

HMAC: inner padding

Definition at line 24 of file sha4.h.

Referenced by sha4_hmac_starts().

4.81.2.3 int sha4_context::is384

0 => SHA-512, else SHA-384

Definition at line 26 of file sha4.h.

Referenced by sha4_finish(), sha4_hmac_finish(), and sha4_starts().

4.81.2.4 unsigned char sha4_context::opad[128]

HMAC: outer padding

Definition at line 25 of file sha4.h.

Referenced by sha4_hmac_finish(), and sha4_hmac_starts().

4.81.2.5 unsigned int64 sha4_context::state[8]

intermediate digest state

Definition at line 21 of file sha4.h.

Referenced by sha4_finish(), sha4_process(), and sha4_starts().

4.81.2.6 unsigned int64 sha4_context::total[2]

number of bytes processed

Definition at line 20 of file sha4.h.

Referenced by sha4_finish(), sha4_starts(), and sha4_update().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/[sha4.h](#)

4.82 stationary_agent_info_s Struct Reference

```
#include <libmc.h>
```

Data Fields

- void * [args](#)
- struct [agent_s](#) * [agent](#)
- [MCAgency_t](#) [attr](#)
- [MCAgency_t](#) [agency](#)
- [THREAD_T](#) [thread](#)

4.82.1 Detailed Description

Definition at line 259 of file libmc.h.

4.82.2 Field Documentation

4.82.2.1 [MCAgency_t](#) [stationary_agent_info_s::agency](#)

Definition at line 263 of file libmc.h.

Referenced by [MC_AddStationaryAgent\(\)](#), and [MC_AgentInfo_GetAgency\(\)](#).

4.82.2.2 [struct agent_s*](#) [stationary_agent_info_s::agent](#)

Definition at line 261 of file libmc.h.

Referenced by [MC_AddStationaryAgent\(\)](#), and [MC_AgentInfo_GetAgent\(\)](#).

4.82.2.3 [void*](#) [stationary_agent_info_s::args](#)

Definition at line 260 of file libmc.h.

Referenced by [MC_AddStationaryAgent\(\)](#), and [MC_AgentInfo_GetAgentArgs\(\)](#).

4.82.2.4 [MCAgency_t](#) [stationary_agent_info_s::attr](#)

Definition at line 262 of file libmc.h.

Referenced by [MC_AddStationaryAgent\(\)](#).

4.82.2.5 [THREAD_T](#) [stationary_agent_info_s::thread](#)

Definition at line 264 of file libmc.h.

Referenced by [MC_AddStationaryAgent\(\)](#).

The documentation for this struct was generated from the following file:

- [/home/dko/Projects/mobilec/src/include/libmc.h](#)

4.83 syncList_s Struct Reference

```
#include <sync_list.h>
```

Data Fields

- `RWLOCK_T * lock`
- `MUTEX_T * giant_lock`
- `list_p list`
- `int size`

4.83.1 Detailed Description

Definition at line 26 of file `sync_list.h`.

4.83.2 Field Documentation

4.83.2.1 `MUTEX_T* syncList_s::giant_lock`

Definition at line 28 of file `sync_list.h`.

Referenced by `MC_SyncDelete()`, `MC_SyncInit()`, and `syncListInit()`.

4.83.2.2 `list_p syncList_s::list`

Definition at line 30 of file `sync_list.h`.

Referenced by `syncListAddNode()`, `syncListDelete()`, `syncListFind()`, `syncListInit()`, and `syncListRemove()`.

4.83.2.3 `RWLOCK_T* syncList_s::lock`

Definition at line 27 of file `sync_list.h`.

Referenced by `syncListAddNode()`, `syncListDelete()`, `syncListFind()`, `syncListInit()`, and `syncListRemove()`.

4.83.2.4 `int syncList_s::size`

Definition at line 31 of file `sync_list.h`.

The documentation for this struct was generated from the following file:

- `/home/dko/Projects/mobilec/src/mc_sync/sync_list.h`

4.84 syncListNode_s Struct Reference

```
#include <sync_list.h>
```

Data Fields

- `MUTEX_T * lock`
- `COND_T * cond`
- `SEMAPHORE_T * sem`
- `int id`
- `int signalled`

4.84.1 Detailed Description

Definition at line 16 of file `sync_list.h`.

4.84.2 Field Documentation

4.84.2.1 `COND_T* syncListNode_s::cond`

Definition at line 18 of file `sync_list.h`.

Referenced by `MC_CondBroadcast()`, `MC_CondSignal()`, `MC_CondWait()`, `syncListNodeDestroy()`, `syncListNodeInit()`, and `syncListNodeNew()`.

4.84.2.2 `int syncListNode_s::id`

Definition at line 20 of file `sync_list.h`.

Referenced by `MC_SyncInit()`, `syncListAddNode()`, `syncListDelete()`, and `syncListRemove()`.

4.84.2.3 `MUTEX_T* syncListNode_s::lock`

Definition at line 17 of file `sync_list.h`.

Referenced by `MC_CondBroadcast()`, `MC_CondReset()`, `MC_CondSignal()`, `MC_CondWait()`, `MC_MutexLock()`, `MC_MutexUnlock()`, `MC_SyncDelete()`, `syncListNodeDestroy()`, `syncListNodeInit()`, and `syncListNodeNew()`.

4.84.2.4 `SEMAPHORE_T* syncListNode_s::sem`

Definition at line 19 of file `sync_list.h`.

Referenced by `MC_SemaphorePost()`, `MC_SemaphoreWait()`, `syncListNodeDestroy()`, `syncListNodeInit()`, and `syncListNodeNew()`.

4.84.2.5 `int syncListNode_s::signalled`

Definition at line 21 of file `sync_list.h`.

Referenced by MC_CondBroadcast(), MC_CondReset(), MC_CondSignal(), MC_CondWait(), and syncListNodeNew().

The documentation for this struct was generated from the following file:

- /home/dko/Projects/mobilec/src/mc_sync/sync_list.h

Chapter 5

File Documentation

5.1 /home/dko/Projects/mobilec/src/acc.c File Reference

```
#include <sys/socket.h>
#include <arpa/inet.h>
#include <netinet/in.h>
#include <netdb.h>
#include <sys/un.h>
#include <unistd.h>
#include <sys/time.h>
#include <pthread.h>
#include "config.h"
#include <stdlib.h>
#include "include/acc.h"
#include "macros.h"
#include <sys/types.h>
#include "ap_queue_template.h"
#include "../mc_list/list.h"
#include "connection.h"
#include "fipa_acl.h"
#include "agent_mailbox.h"
#include "message.h"
#include "interpreter_variable_data.h"
#include <semaphore.h>
#include <errno.h>
#include "acc.h"
#include "ams.h"
```

```
#include "barrier.h"
#include "cmd_prompt.h"
#include "data_structures.h"
#include "df.h"
#include "libmc.h"
#include "../mc_sync/sync_list.h"
#include "../security/asm.h"
#include "mtp_http.h"
#include <mxml.h>
#include <stdio.h>
#include <string.h>
#include <sys/stat.h>
#include "xyssl-0.9/include/xyssl/havege.h"
#include "xyssl-0.9/include/xyssl/bignum.h"
#include "xyssl-0.9/include/xyssl/rsa.h"
#include "xyssl-0.9/include/xyssl/sha2.h"
#include "xyssl-0.9/include/xyssl/sha1.h"
#include "xyssl-0.9/include/xyssl/aes.h"
#include "xyssl-0.9/include/xyssl/md5.h"
#include "agent.h"
```

Defines

- #define [BACKLOG](#) 200
- #define [CONN_THREADS](#) 40
- #define [CONNECT_THREAD_EXIT](#)()
- #define [BUFLLEN](#) 512
- #define [UDPPORT](#) 8866

Functions

- [acc_p acc_Initialize](#) (struct [mc_platform_s](#) *[mc_platform](#))
- [int acc_Destroy](#) ([acc_p](#) [acc](#))
- [void * acc_MessageHandlerThread](#) ([void](#) *[arg](#))
- [void * acc_Thread](#) ([void](#) *[arg](#))
- [void * acc_connection_Thread](#) ([void](#) *[arg](#))
- [void acc_Start](#) ([mc_platform_p](#) [mc_platform](#))
- [int auth_conn_rece_key](#) ([int](#) [sockfd](#), [char](#) *[peer_name](#), [int](#) *[nonce](#), [unsigned char](#) *[aes_key](#), [char](#) *[privkey](#), [char](#) *[known_host_filename](#))
- [void * listen_Thread](#) ([void](#) *[arg](#))
- [void * udplisten_Thread](#) ([void](#) *[arg](#))

5.1.1 Define Documentation

5.1.1.1 #define BACKLOG 200

Definition at line 71 of file acc.c.

Referenced by listen_Thread().

5.1.1.2 #define BUFLLEN 512

Definition at line 876 of file acc.c.

Referenced by udplisten_Thread().

5.1.1.3 #define CONN_THREADS 40

Definition at line 290 of file acc.c.

Referenced by acc_Thread().

5.1.1.4 #define CONNECT_THREAD_EXIT()

Value:

```
free(arg); \
    MUTEX_LOCK(&acc->conn_thread_lock); \
    acc->num_conn_threads--; \
    COND_SIGNAL(&acc->conn_thread_cond); \
    MUTEX_UNLOCK(&acc->conn_thread_lock); \
    THREAD_EXIT();
```

Definition at line 382 of file acc.c.

Referenced by acc_connection_Thread().

5.1.1.5 #define UDPPORT 8866

Definition at line 877 of file acc.c.

Referenced by udplisten_Thread().

5.1.2 Function Documentation

5.1.2.1 void* acc_connection_Thread (void *arg)

Definition at line 392 of file acc.c.

References mc_platform_s::acc, fipa_agent_identifier_s::addresses, agent_mailbox_Post(), mc_platform_s::agent_queue, AGENT_UPDATE, CANCEL, CONNECT_THREAD_EXIT, connection_Destroy(), mtp_http_s::content, mtp_http_content_s::data, FIPA_ACL, fipa_acl_envelope_Destroy(), fipa_acl_envelope_New(), fipa_acl_message_Destroy(), fipa_acl_message_New(), fipa_acl_Parse(), fipa_agent_identifier_set_s::fipa_agent_identifiers, fipa_envelope_Parse(), fipa_message_string_Destroy(), fipa_message_string_New(), mtp_http_s::http_performative, HTTP_POST, HTTP_PUT, agent_s::mailbox, agent_s::mc_platform, mc_platform, fipa_message_string_s::message, message_s::message_body,

message_Destroy(), message_New(), mtp_http_s::message_parts, mc_platform_s::message_queue, message_s::message_type, message_xml_parse(), MOBILE_AGENT, mtp_http_Destroy(), mtp_http_InitializeFromConnection(), mtp_http_New(), MXML_NO_CALLBACK, mxxmlLoadString(), N_UNDRSTD, fipa_agent_identifier_s::name, fipa_agent_identifier_set_s::num, fipa_acl_envelope_s::num_params, fipa_acl_envelope_s::params, fipa_message_string_s::parse, mc_platform_s::port, mc_platform_s::private_key, QUER_IF, QUER_REF, RELAY, REQUEST, RETURN_MSG, fipa_url_s::str, strdup, SUBSCRIBE, mtp_http_s::target, fipa_acl_Param_s::to, fipa_url_sequence_s::urls, and message_s::xml_root.

Referenced by acc_Thread().

5.1.2.2 int acc_Destroy (acc_p acc)

Definition at line 99 of file acc.c.

References MC_SUCCESS.

Referenced by mc_platform_Destroy().

5.1.2.3 acc_p acc_Initialize (struct mc_platform_s * mc_platform)

Definition at line 74 of file acc.c.

References COND_INIT, COND_T, MUTEX_INIT, and MUTEX_T.

Referenced by mc_platform_Initialize().

5.1.2.4 void* acc_MessageHandlerThread (void * arg)

Definition at line 111 of file acc.c.

References mc_platform_s::acc, agent_Initialize(), mc_platform_s::agent_queue, agent_s::agent_status, AGENT_UPDATE, mc_platform_s::ams, CANCEL, COND_BROADCAST, COND_WAIT, agent_s::datastate, FIPA_ACL, mc_platform_s::giant, mc_platform_s::giant_cond, mc_platform_s::giant_lock, agent_s::lock, MC_AGENT_NEUTRAL, mc_platform, MC_RECV_AGENT, MC_RECV_MESSAGE, MC_RECV_RETURN, mc_platform_s::MC_signal, mc_platform_s::MC_signal_cond, mc_platform_s::MC_signal_lock, message_Destroy(), mc_platform_s::message_queue, message_Send(), message_s::message_type, MOBILE_AGENT, MUTEX_LOCK, MUTEX_UNLOCK, N_UNDRSTD, agent_s::name, agent_datastate_s::persistent, QUER_IF, QUER_REF, mc_platform_s::quit, mc_platform_s::quit_lock, RELAY, REQUEST, RETURN_MSG, SUBSCRIBE, THREAD_EXIT, and message_s::to_address.

Referenced by acc_Start().

5.1.2.5 void acc_Start (mc_platform_p mc_platform)

Definition at line 568 of file acc.c.

References mc_platform_s::acc, acc_MessageHandlerThread(), acc_Thread(), listen_Thread(), MC_THREAD_ACC, mc_platform_s::stack_size, THREAD_CREATE, and udplisten_Thread().

Referenced by mc_platform_Initialize().

5.1.2.6 void* acc_Thread (void * arg)

Definition at line 293 of file acc.c.

References mc_platform_s::acc, acc_connection_Thread(), COND_BROADCAST, COND_WAIT, CONN_THREADS, mc_platform_s::connection_queue, mc_platform_s::giant, mc_platform_s::giant_cond, mc_platform_s::giant_lock, mc_platform, MC_RECV_CONNECTION, mc_platform_s::MC_signal, mc_platform_s::MC_signal_cond, mc_platform_s::MC_signal_lock, MUTEX_LOCK, MUTEX_UNLOCK, mc_platform_s::quit, mc_platform_s::quit_lock, THREAD_CREATE, THREAD_DETACH, and THREAD_EXIT.

Referenced by acc_Start().

5.1.2.7 int auth_conn_rece_key (int sockfd, char * peer_name, int * nonce, unsigned char * aes_key, char * privkey, char * known_host_filename)

Definition at line 617 of file acc.c.

References read_known_host_file(), and reply_migration_process().

Referenced by listen_Thread().

5.1.2.8 void* listen_Thread (void * arg)

Definition at line 656 of file acc.c.

References mc_platform_s::acc, connection_s::addr, connection_s::AES_key, mc_platform_s::agency, auth_conn_rece_key(), BACKLOG, mc_platform_s::bluetooth, connection_s::clientfd, COND_BROADCAST, connection_s::connect_id, connection_New(), mc_platform_s::connection_queue, agency_s::known_host_filename, mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, connection_s::nonce, mc_platform_s::port, agency_s::portno, mc_platform_s::private_key, connection_s::remote_hostname, connection_s::serverfd, SOCKET_ERROR, mc_platform_s::sockfd, and THREAD_EXIT.

Referenced by acc_Start().

5.1.2.9 void* udplisten_Thread (void * arg)

Definition at line 880 of file acc.c.

References buf, BUFLen, mc_platform_s::hostname, mc_platform, PACKAGE_VERSION, mc_platform_s::port, and UDPPORT.

Referenced by acc_Start().

5.2 /home/dko/Projects/mobilec/src/agent.c File Reference

```
#include <unistd.h>
#include "config.h"
#include <embedch.h>
#include "include/libmc.h"
#include "macros.h"
#include "agent_datastate.h"
#include "agent_task.h"
#include "libmc.h"
#include "message.h"
#include "data_structures.h"
#include "agent_mailbox.h"
#include "include/mc_platform.h"
#include <ch.h>
#include "include/xml_parser.h"
```

Functions

- [int agent_AddPersistentVariable](#) ([agent_p](#) agent, [int](#) task_num, const char *var_name)
- [agent_p agent_Copy](#) (const [agent_p](#) agent)
- [agent_p agent_New](#) (void)
- [agent_p agent_NewBinary](#) (struct [mc_platform_s](#) *mc_platform)
- [agent_p agent_Initialize](#) (struct [mc_platform_s](#) *mc_platform, [message_p](#) message, [int](#) id)
- [int agent_Destroy](#) ([agent_p](#) agent)
- [void agent_RunChScript](#) ([agent_p](#) agent, [mc_platform_p](#) mc_platform)
- [void * agent_ChScriptInitVar](#) ([ChInterp_t](#) *interp)
- [void * agent_RunChScriptThread](#) (void *ChAgent)

5.2.1 Function Documentation

5.2.1.1 [int agent_AddPersistentVariable](#) ([agent_p](#) agent, [int](#) task_num, const char * var_name)

Definition at line 52 of file agent.c.

References [agent_s::agent_interp](#), [agent_task_s::agent_variable_list](#), [interpreter_variable_data_s::array_dim](#), [interpreter_variable_data_s::array_extent](#), [CH_DATATYPE_SIZE](#), [CHECK_NULL](#), [interpreter_variable_data_s::data](#), [interpreter_variable_data_s::data_type](#), [agent_s::datastate](#), [MC_ERR](#), [agent_s::name](#), [interpreter_variable_data_s::name](#), [interpreter_variable_data_s::size](#), [size](#), [strdup](#), [agent_datastate_s::task_progress](#), and [agent_datastate_s::tasks](#).

5.2.1.2 [void* agent_ChScriptInitVar](#) ([ChInterp_t](#) * interp)

Definition at line 491 of file agent.c.

References MC_AclAddReceiver_chdl(), MC_AclAddReplyTo_chdl(), MC_AclDestroy_chdl(), MC_AclGetContent_chdl(), MC_AclGetConversationID_chdl(), MC_AclGetPerformative_chdl(), MC_AclGetProtocol_chdl(), MC_AclGetSender_chdl(), MC_AclNew_chdl(), MC_AclPost_chdl(), MC_AclReply_chdl(), MC_AclRetrieve_chdl(), MC_AclSend_chdl(), MC_AclSetContent_chdl(), MC_AclSetConversationID_chdl(), MC_AclSetPerformative_chdl(), MC_AclSetProtocol_chdl(), MC_AclSetSender_chdl(), MC_AclWaitRetrieve_chdl(), MC_AddAgent_chdl(), MC_AgentAddTask_chdl(), MC_AgentVariableRetrieve_chdl(), MC_AgentVariableSave_chdl(), MC_Barrier_chdl(), MC_BarrierDelete_chdl(), MC_BarrierInit_chdl(), MC_CallAgentFunc_chdl(), MC_ComposeAgent_chdl(), MC_ComposeAgentFromFile_chdl(), MC_ComposeAgentFromFileWithWorkgroup_chdl(), MC_ComposeAgentWithWorkgroup_chdl(), MC_CondBroadcast_chdl(), MC_CondReset_chdl(), MC_CondSignal_chdl(), MC_CondWait_chdl(), MC_DeleteAgent_chdl(), MC_DeleteAgentWG_chdl(), MC_DeregisterService_chdl(), MC_DestroyServiceSearchResult_chdl(), MC_End_chdl(), MC_FindAgentByID_chdl(), MC_FindAgentByName_chdl(), MC_GetAgentID_chdl(), MC_GetAgentName_chdl(), MC_GetAgentStatus_chdl(), MC_GetAgentXMLString_chdl(), MC_GetTimeOfDay_chdl(), MC_HaltAgency_chdl(), MC_MigrateAgent_chdl(), MC_MutexLock_chdl(), MC_MutexUnlock_chdl(), MC_PrintAgentCode_chdl(), MC_RegisterService_chdl(), MC_ResumeAgency_chdl(), MC_RetrieveAgent_chdl(), MC_RetrieveAgentCode_chdl(), MC_SaveData_chdl(), MC_SearchForService_chdl(), MC_SemaphorePost_chdl(), MC_SemaphoreWait_chdl(), MC_SendAgentMigrationMessage_chdl(), MC_SendAgentMigrationMessageFile_chdl(), MC_SendSteerCommand_chdl(), MC_SetAgentStatus_chdl(), MC_SetDefaultAgentStatus_chdl(), MC_SyncDelete_chdl(), MC_SyncInit_chdl(), MC_TerminateAgent_chdl(), and MC_TerminateAgentWG_chdl().

Referenced by AP_QUEUE_STD_DEFN_TEMPLATE(), and mc_platform_Initialize().

5.2.1.3 agent_p agent_Copy (const agent_p agent)

Definition at line 134 of file agent.c.

References agent_datastate_Copy(), agent_s::agent_interp, agent_mailbox_New(), agent_s::agent_persistent, agent_s::agent_status, agent_s::agent_type, agent_s::arrival_time, agent_s::datastate, agent_s::home, agent_s::home_port, agent_s::id, agent_s::lock, agent_s::mailbox, MUTEX_INIT, MUTEX_LOCK, MUTEX_T, agent_s::name, agent_s::orphan, agent_s::owner, agent_s::return_data, and agent_s::run_lock.

Referenced by MC_CopyAgent().

5.2.1.4 int agent_Destroy (agent_p agent)

Definition at line 413 of file agent.c.

References agent_datastate_Destroy(), agent_s::agent_interp, agent_mailbox_Destroy(), agent_s::agent_status, agent_s::datastate, agent_s::home, mc_platform_s::interpreter_queue, agent_s::lock, agent_s::mailbox, MC_AGENT_NEUTRAL, agent_s::mc_platform, MC_SUCCESS, MUTEX_DESTROY, MUTEX_LOCK, agent_s::name, agent_s::owner, agent_s::run_lock, agent_s::sender, and agent_s::wg_code.

Referenced by agent_Initialize().

5.2.1.5 agent_p agent_Initialize (struct mc_platform_s * mc_platform, message_p message, int id)

Definition at line 292 of file agent.c.

References agent_s::agent_address, agent_datastate_New(), agent_Destroy(), agent_mailbox_New(), agent_s::agent_pipe_active, agent_s::agent_pipe_ready_to_read, agent_s::agent_ready_to_send,

agent_s::agent_script_ready, agent_s::agent_status, agent_s::agent_thread_id, agent_s::agent_type, message_s::agent_xml_flag, agent_xml_parse(), agent_s::arrival_time, agent_s::datastate, mc_platform_s::default_agentstatus, mc_platform_s::err, agent_s::home, mc_platform_s::hostname, agent_s::id, agent_s::lock, agent_s::mailbox, MC_ERR_PARSE, agent_s::mc_platform, MC_REMOTE_AGENT, MC_RETURN_AGENT, MC_WAIT_CH, message_s::message_type, MOBILE_AGENT, MUTEX_DESTROY, MUTEX_INIT, MUTEX_T, agent_s::orphan, mc_platform_s::port, RETURN_MSG, agent_s::run_lock, agent_s::sender, agent_datastate_s::xml_agent_root, message_s::xml_payload, message_s::xml_root, and agent_datastate_s::xml_root.

Referenced by acc_MessageHandlerThread(), MC_SendAgent(), MC_SendAgentFile(), and MC_SendAgentMigrationMessageFile().

5.2.1.6 agent_p agent_New (void)

Definition at line 197 of file agent.c.

References agent_s::lock, MUTEX_INIT, MUTEX_NEW, and agent_s::run_lock.

Referenced by MC_ComposeAgentWithWorkgroup().

5.2.1.7 agent_p agent_NewBinary (struct mc_platform_s * mc_platform)

Definition at line 220 of file agent.c.

References agent_s::agent_address, agent_mailbox_New(), agent_s::agent_pipe_active, agent_s::agent_pipe_ready_to_read, agent_s::agent_ready_to_send, agent_s::agent_script_ready, agent_s::agent_status, agent_s::agent_thread_id, agent_s::arrival_time, agent_s::binary, agent_s::home, mc_platform_s::hostname, agent_s::id, agent_s::lock, agent_s::mailbox, MC_AGENT_ACTIVE, agent_s::mc_platform, MUTEX_INIT, MUTEX_T, agent_s::orphan, mc_platform_s::port, agent_s::run_lock, and agent_s::sender.

Referenced by MC_AddStationaryAgent().

5.2.1.8 void agent_RunChScript (agent_p agent, mc_platform_p mc_platform)

Definition at line 453 of file agent.c.

References agent_RunChScriptThread(), agent_s::agent_status, agent_s::agent_thread, MC_AGENT_ACTIVE, agent_s::mc_platform, MC_THREAD_AGENT, mc_platform_s::stack_size, and THREAD_CREATE.

Referenced by ams_ManageAgentList().

5.2.1.9 void* agent_RunChScriptThread (void * ChAgent)

Definition at line 971 of file agent.c.

References agent_s::agent_interp, mc_platform_s::ams, COND_SIGNAL, agent_s::datastate, agent_s::id, mc_platform_s::interp_options, mc_platform_s::interpreter_queue, interpreter_queue_CreateRetrieve(), interpreter_variable_data_Destroy(), interpreter_variable_data_Initialize(), interpreter_variable_data_InitializeFromAgent(), MC_AGENT_NEUTRAL, MC_EXEC_AGENT, agent_s::mc_platform, mc_platform, MC_RETURN_AGENT, mc_platform_s::MC_signal, mc_platform_s::MC_signal_cond, mc_platform_s::MC_signal_lock, MC_WAIT_FINISHED, MC_WAIT_MESSGSEND, MUTEX_LOCK, MUTEX_UNLOCK, agent_s::name, SIGNAL, agent_datastate_s::task_progress, and WARN.

Referenced by agent_RunChScript().

5.3 /home/dko/Projects/mobilec/src/agent_datastate.c File Reference

```
#include "config.h"
#include <mxml.h>
#include "include/agent_datastate.h"
#include "agent_task.h"
#include "include/macros.h"
#include "include/mc_error.h"
```

Functions

- [agent_datastate_p agent_datastate_Copy](#) (const [agent_datastate_p](#) datastate)
- [agent_datastate_p agent_datastate_New](#) (void)
- [int agent_datastate_Destroy](#) ([agent_datastate_p](#) agent_datastate)

5.3.1 Function Documentation

5.3.1.1 [agent_datastate_p agent_datastate_Copy](#) (const [agent_datastate_p](#) datastate)

Definition at line 47 of file `agent_datastate.c`.

References `agent_datastate_s::agent_code`, `agent_datastate_s::agent_code_ids`, `agent_datastate_s::agent_codes`, `agent_datastate_New()`, `agent_task_Copy()`, `agent_datastate_s::init_agent_status`, `agent_datastate_s::number_of_tasks`, `agent_datastate_s::persistent`, `agent_datastate_s::return_data`, `agent_datastate_s::task_progress`, and `agent_datastate_s::tasks`.

Referenced by `agent_Copy()`.

5.3.1.2 [int agent_datastate_Destroy](#) ([agent_datastate_p](#) agent_datastate)

Definition at line 136 of file `agent_datastate.c`.

References `agent_datastate_s::agent_code_ids`, `agent_datastate_s::agent_codes`, `agent_task_Destroy()`, `MC_SUCCESS`, `mxmlDelete()`, `agent_datastate_s::number_of_tasks`, `agent_datastate_s::tasks`, and `agent_datastate_s::xml_root`.

Referenced by `agent_Destroy()`.

5.3.1.3 [agent_datastate_p agent_datastate_New](#) (void)

Definition at line 115 of file `agent_datastate.c`.

References `agent_datastate_s::agent_code`, `CHECK_NULL`, `agent_datastate_s::init_agent_status`, `agent_datastate_s::number_of_tasks`, `agent_datastate_s::persistent`, `agent_datastate_s::progress_modifier`, `agent_datastate_s::return_data`, `agent_datastate_s::task_progress`, `agent_datastate_s::tasks`, `agent_datastate_s::xml_agent_root`, and `agent_datastate_s::xml_root`.

Referenced by `agent_datastate_Copy()`, `agent_Initialize()`, and `MC_ComposeAgentWithWorkgroup()`.

5.4 /home/dko/Projects/mobilec/src/agent_mailbox.c File Reference

```
#include "config.h"
#include "include/data_structures.h"
```

Functions

- [agent_mailbox_p agent_mailbox_New](#) (void)
- [agent_mailbox_p agent_mailbox_Copy](#) (agent_mailbox_p src)
- [int agent_mailbox_Destroy](#) (agent_mailbox_t *mailbox)
- [int agent_mailbox_Post](#) (agent_mailbox_p mailbox, fipa_acl_message_t *message)
- [fipa_acl_message_t * agent_mailbox_Retrieve](#) (agent_mailbox_p mailbox)
- [fipa_acl_message_t * agent_mailbox_WaitRetrieve](#) (agent_mailbox_p mailbox)

5.4.1 Function Documentation

5.4.1.1 agent_mailbox_p agent_mailbox_Copy (agent_mailbox_p src)

Definition at line 21 of file agent_mailbox.c.

References agent_mailbox_New(), and agent_mailbox_s::mail_queue.

5.4.1.2 int agent_mailbox_Destroy (agent_mailbox_t * mailbox)

Definition at line 29 of file agent_mailbox.c.

References agent_mailbox_s::mail_queue.

Referenced by agent_Destroy().

5.4.1.3 agent_mailbox_p agent_mailbox_New (void)

Definition at line 12 of file agent_mailbox.c.

References agent_mailbox_s::mail_queue.

Referenced by agent_Copy(), agent_Initialize(), agent_mailbox_Copy(), and agent_NewBinary().

5.4.1.4 int agent_mailbox_Post (agent_mailbox_p mailbox, fipa_acl_message_t * message)

Definition at line 38 of file agent_mailbox.c.

References agent_mailbox_s::mail_queue.

Referenced by acc_connection_Thread(), and MC_AclPost().

5.4.1.5 fipa_acl_message_t* agent_mailbox_Retrieve (agent_mailbox_p mailbox)

Definition at line 44 of file agent_mailbox.c.

References agent_mailbox_s::mail_queue.

Referenced by agent_mailbox_WaitRetrieve(), and MC_AclRetrieve().

5.4.1.6 fipa_acl_message_t* agent_mailbox_WaitRetrieve (agent_mailbox_p *mailbox*)

Definition at line 49 of file agent_mailbox.c.

References agent_mailbox_Retrieve(), COND_WAIT, agent_mailbox_s::mail_queue, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by MC_AclWaitRetrieve().

5.5 /home/dko/Projects/mobilec/src/agent_return_data.c File Reference

```
#include "config.h"
#include "include/interpreter_variable_data.h"
#include "include/agent.h"
```

Functions

- [interpreter_variable_data_p interpreter_variable_data_New](#) (void)
- [interpreter_variable_data_p interpreter_variable_data_InitializeFromAgent](#) ([agent_p](#) agent)
- [interpreter_variable_data_p interpreter_variable_data_Initialize](#) ([agent_p](#) agent, const char *varname)
- [int interpreter_variable_data_Destroy](#) ([interpreter_variable_data_p](#) agent_variable_data)
- [interpreter_variable_data_p interpreter_variable_data_Copy](#) ([interpreter_variable_data_p](#) src)

5.5.1 Function Documentation

5.5.1.1 [interpreter_variable_data_p interpreter_variable_data_Copy](#) ([interpreter_variable_data_p](#) src)

Definition at line 235 of file `agent_return_data.c`.

References [interpreter_variable_data_s::array_dim](#), [interpreter_variable_data_s::array_extent](#), [interpreter_variable_data_s::data](#), [interpreter_variable_data_s::data_type](#), [interpreter_variable_data_New\(\)](#), [interpreter_variable_data_s::name](#), [interpreter_variable_data_s::size](#), and [strdup](#).

Referenced by [agent_task_Copy\(\)](#).

5.5.1.2 [int interpreter_variable_data_Destroy](#) ([interpreter_variable_data_p](#) agent_variable_data)

Definition at line 216 of file `agent_return_data.c`.

References [interpreter_variable_data_s::array_extent](#), [interpreter_variable_data_s::data](#), [MC_SUCCESS](#), and [interpreter_variable_data_s::name](#).

Referenced by [agent_RunChScriptThread\(\)](#), and [agent_task_Destroy\(\)](#).

5.5.1.3 [interpreter_variable_data_p interpreter_variable_data_Initialize](#) ([agent_p](#) agent, const char * varname)

Definition at line 145 of file `agent_return_data.c`.

References [agent_s::agent_interp](#), [interpreter_variable_data_s::array_dim](#), [interpreter_variable_data_s::array_extent](#), [CH_DATATYPE_SIZE](#), [CHECK_NULL](#), [interpreter_variable_data_s::data](#), [interpreter_variable_data_s::data_type](#), [MUTEX_LOCK](#), [MUTEX_UNLOCK](#), [interpreter_variable_data_s::name](#), [agent_s::run_lock](#), [interpreter_variable_data_s::size](#), [size](#), and [strdup](#).

Referenced by [agent_RunChScriptThread\(\)](#).

5.5.1.4 `interpreter_variable_data_p` `interpreter_variable_data_InitializeFromAgent (agent_p agent)`

Definition at line 61 of file `agent_return_data.c`.

References `agent_s::agent_interp`, `interpreter_variable_data_s::array_dim`, `interpreter_variable_data_s::array_extent`, `CH_DATATYPE_SIZE`, `CHECK_NULL`, `interpreter_variable_data_s::data`, `interpreter_variable_data_s::data_type`, `agent_s::datastate`, `interpreter_variable_data_s::name`, `interpreter_variable_data_s::size`, `size`, `strdup`, `agent_datastate_s::task_progress`, `agent_datastate_s::tasks`, and `agent_task_s::var_name`.

Referenced by `agent_RunChScriptThread()`.

5.5.1.5 `interpreter_variable_data_p` `interpreter_variable_data_New (void)`

Definition at line 46 of file `agent_return_data.c`.

References `interpreter_variable_data_s::array_dim`, `interpreter_variable_data_s::array_extent`, `CHECK_NULL`, `interpreter_variable_data_s::data`, `interpreter_variable_data_s::data_type`, `interpreter_variable_data_s::name`, and `interpreter_variable_data_s::size`.

Referenced by `agent_xml_parse__data()`, `interpreter_variable_data_Copy()`, and `MC_SaveData_chdl()`.

5.6 /home/dko/Projects/mobilec/src/agent_task.c File Reference

```
#include "config.h"
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include "include/agent_task.h"
#include "interpreter_variable_data.h"
#include "data_structures.h"
#include "include/mc_error.h"
```

Functions

- [agent_task_p agent_task_New](#) (void)
- [agent_task_p agent_task_Copy](#) (agent_task_p task)
- [int agent_task_Destroy](#) (agent_task_p agent_task)

5.6.1 Function Documentation

5.6.1.1 agent_task_p agent_task_Copy (agent_task_p task)

Definition at line 66 of file agent_task.c.

References [agent_task_s::agent_return_data](#), [agent_task_s::agent_variable_list](#), [agent_task_s::code_id](#), [agent_task_s::init_agent_status](#), [interpreter_variable_data_Copy\(\)](#), [ListAdd\(\)](#), [ListSearch\(\)](#), [agent_task_s::num_saved_variables](#), [agent_task_s::number_of_elements](#), [agent_task_s::persistent](#), [agent_task_s::saved_variables](#), [agent_task_s::server_name](#), [agent_task_s::size_of_element_array](#), [strdup](#), and [agent_task_s::var_name](#).

Referenced by [agent_datastate_Copy\(\)](#).

5.6.1.2 int agent_task_Destroy (agent_task_p agent_task)

Definition at line 132 of file agent_task.c.

References [agent_task_s::agent_return_data](#), [agent_task_s::agent_variable_list](#), [agent_task_s::code_id](#), [interpreter_variable_data_Destroy\(\)](#), [MC_SUCCESS](#), [agent_task_s::saved_variables](#), [agent_task_s::server_name](#), and [agent_task_s::var_name](#).

Referenced by [agent_datastate_Destroy\(\)](#).

5.6.1.3 agent_task_p agent_task_New (void)

Definition at line 48 of file agent_task.c.

References [agent_task_s::agent_variable_list](#), [agent_task_s::num_saved_variables](#), and [agent_task_s::saved_variables](#).

Referenced by [agent_xml_parse__tasks\(\)](#), [MC_AgentAddTask\(\)](#), and [MC_ComposeAgentWithWorkgroup\(\)](#).

5.7 /home/dko/Projects/mobilec/src/ams.c File Reference

```
#include "config.h"
#include "include/ams.h"
#include "macros.h"
#include "include/agent.h"
#include "include/data_structures.h"
#include "include/mc_platform.h"
```

Functions

- [int ams_Destroy](#) (ams_p ams)
- [ams_p ams_Initialize](#) (mc_platform_p mc_platform)
- [void ams_Print](#) (ams_p ams)
- [int ams_ManageAgentList](#) (ams_p ams)
- [void ams_Start](#) (mc_platform_p mc_platform)
- [void * ams_Thread](#) (void *arg)

5.7.1 Function Documentation

5.7.1.1 int ams_Destroy (ams_p ams)

Definition at line 46 of file ams.c.

References COND_DESTROY, MC_SUCCESS, and MUTEX_DESTROY.

Referenced by mc_platform_Destroy().

5.7.1.2 ams_p ams_Initialize (mc_platform_p mc_platform)

Definition at line 57 of file ams.c.

References CHECK_NULL, COND_INIT, COND_T, MUTEX_INIT, and MUTEX_T.

Referenced by mc_platform_Initialize().

5.7.1.3 int ams_ManageAgentList (ams_p ams)

Definition at line 116 of file ams.c.

References agent_RunChScript(), agent_s::agent_status, agent_s::binary, ListSearch(), agent_s::lock, MC_AGENT_ACTIVE, MC_AGENT_NEUTRAL, MC_TerminateAgent(), MC_WAIT_CH, MC_WAIT_FINISHED, MC_WAIT_MESSGSEND, message_Destroy(), message_InitializeFromAgent(), message_New(), MUTEX_LOCK, MUTEX_UNLOCK, agent_s::name, agent_s::orphan, mc_platform_s::quit, mc_platform_s::quit_lock, and agent_s::run_lock.

Referenced by ams_Thread().

5.7.1.4 void ams_Print (ams_p *ams*)

Definition at line 84 of file ams.c.

References agent_s::agent_status, agent_s::connect_id, agent_s::id, ListSearch(), MUTEX_LOCK, and MUTEX_UNLOCK.

5.7.1.5 void ams_Start (mc_platform_p *mc_platform*)

Definition at line 223 of file ams.c.

References mc_platform_s::ams, ams_Thread(), MC_THREAD_AMS, mc_platform_s::stack_size, and THREAD_CREATE.

Referenced by mc_platform_Initialize().

5.7.1.6 void* ams_Thread (void * *arg*)

Definition at line 254 of file ams.c.

References mc_platform_s::ams, ams_ManageAgentList(), COND_BROADCAST, COND_WAIT, mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, mc_platform_s::quit, mc_platform_s::quit_lock, and THREAD_EXIT.

Referenced by ams_Start().

5.8 /home/dko/Projects/mobilec/src/barrier.c File Reference

```
#include "config.h"
#include "include/barrier.h"
#include "macros.h"
#include "../mc_list/list.h"
#include "mc_rwlock.h"
#include "include/mc_error.h"
```

Functions

- [barrier_node_p barrier_node_Initialize](#) ([int id](#), [int num_registered](#))
- [int barrier_node_Destroy](#) ([barrier_node_p node](#))
- [int barrier_queue_Add](#) ([barrier_queue_p list](#), [barrier_node_p node](#))
- [int barrier_queue_Delete](#) ([int id](#), [barrier_queue_p list](#))
- [int barrier_queue_Destroy](#) ([barrier_queue_p queue](#))
- [barrier_node_p barrier_queue_Get](#) ([barrier_queue_p list](#), [int id](#))
- [barrier_queue_p barrier_queue_New](#) ([void](#))
- [barrier_node_p barrier_queue_Pop](#) ([barrier_queue_p queue](#))

5.8.1 Function Documentation

5.8.1.1 [int barrier_node_Destroy](#) ([barrier_node_p node](#))

Definition at line 70 of file barrier.c.

References [barrier_node_s::cond](#), [COND_DESTROY](#), [barrier_node_s::lock](#), [MC_SUCCESS](#), and [MUTEX_DESTROY](#).

Referenced by [barrier_queue_Delete\(\)](#), and [barrier_queue_Destroy\(\)](#).

5.8.1.2 [barrier_node_p barrier_node_Initialize](#) ([int id](#), [int num_registered](#))

Definition at line 45 of file barrier.c.

References [CHECK_NULL](#), [barrier_node_s::cond](#), [COND_INIT](#), [COND_T](#), [barrier_node_s::id](#), [barrier_node_s::lock](#), [MUTEX_INIT](#), [MUTEX_T](#), [node](#), [barrier_node_s::num_registered](#), and [barrier_node_s::num_waiting](#).

Referenced by [MC_BarrierInit\(\)](#).

5.8.1.3 [int barrier_queue_Add](#) ([barrier_queue_p list](#), [barrier_node_p node](#))

Definition at line 87 of file barrier.c.

References [DATA](#), [barrier_node_s::id](#), [barrier_queue_s::list](#), [ListAdd\(\)](#), [list_s::listhead](#), [barrier_queue_s::lock](#), [MC_SUCCESS](#), [MC_WARN_DUPLICATE](#), [listNode_s::next](#), [listNode_s::node_data](#), [RWLOCK_WRLOCK](#), [RWLOCK_WRUNLOCK](#), and [barrier_queue_s::size](#).

Referenced by [MC_BarrierInit\(\)](#).

5.8.1.4 `int barrier_queue_Delete (int id, barrier_queue_p list)`

Definition at line 111 of file `barrier.c`.

References `barrier_node_Destroy()`, `barrier_node_s::id`, `barrier_queue_s::list`, `ListDelete()`, `ListSearch()`, `barrier_queue_s::lock`, `MC_ERR_NOT_FOUND`, `MC_SUCCESS`, `RWLOCK_WRLOCK`, `RWLOCK_WRUNLOCK`, `barrier_queue_s::size`, and `list_s::size`.

Referenced by `MC_BarrierDelete()`.

5.8.1.5 `int barrier_queue_Destroy (barrier_queue_p queue)`

Definition at line 131 of file `barrier.c`.

References `barrier_node_Destroy()`, `barrier_queue_Pop()`, `barrier_queue_s::list`, `ListTerminate()`, `barrier_queue_s::lock`, `MC_SUCCESS`, `node`, and `RWLOCK_DESTROY`.

Referenced by `mc_platform_Destroy()`.

5.8.1.6 `barrier_node_p barrier_queue_Get (barrier_queue_p list, int id)`

Definition at line 145 of file `barrier.c`.

References `barrier_queue_s::list`, `list_s::listhead`, `barrier_queue_s::lock`, `listNode_s::next`, `listNode_s::node_data`, `RWLOCK_RDLOCK`, and `RWLOCK_RDUNLOCK`.

Referenced by `MC_Barrier()`, and `MC_BarrierInit()`.

5.8.1.7 `barrier_queue_p barrier_queue_New (void)`

Definition at line 162 of file `barrier.c`.

References `CHECK_NULL`, `barrier_queue_s::list`, `ListInitialize()`, `barrier_queue_s::lock`, `RWLOCK_INIT`, and `RWLOCK_T`.

Referenced by `mc_platform_Initialize()`.

5.8.1.8 `barrier_node_p barrier_queue_Pop (barrier_queue_p queue)`

Definition at line 176 of file `barrier.c`.

References `barrier_queue_s::list`, `ListPop()`, and `node`.

Referenced by `barrier_queue_Destroy()`.

5.9 /home/dko/Projects/mobilec/src/cmd_prompt.c File Reference

```
#include <stdio.h>
#include <unistd.h>
#include "config.h"
#include <stdlib.h>
#include <string.h>
#include "include/cmd_prompt.h"
#include "macros.h"
#include "mc_platform.h"
#include "commands.x.h"
```

Functions

- [cmd_prompt_p cmd_prompt_Initialize \(mc_platform_p mc_platform\)](#)
- [int cmd_prompt_Destroy \(cmd_prompt_p cmd_prompt\)](#)
- [void cmd_prompt_Start \(mc_platform_p mc_platform\)](#)
- [void * cmd_prompt_Thread \(void *arg\)](#)
- [int split_string \(char ***args, const char *buf\)](#)
- [int process_command \(command_t *cmd\)](#)
- [int exec_command \(command_t cmd, mc_platform_p global\)](#)
- [int dealloc_command \(command_t *cmd\)](#)
- [int handler_QUIT \(void *arg, mc_platform_p global\)](#)
- [int handler_HELP \(void *arg, mc_platform_p global\)](#)
- [int handler_SEND \(void *arg, mc_platform_p global\)](#)
- [int handler_PRINT_CONNECTLIST \(void *arg, mc_platform_p global\)](#)
- [int handler_PRINTLIST_MESSAGE \(void *arg, mc_platform_p global\)](#)
- [int handler_PRINTLIST_AGENTS \(void *arg, mc_platform_p global\)](#)
- [int handler_FLUSH_AGENTS \(void *arg, mc_platform_p global\)](#)
- [int handler_COMPOSE_SEND \(void *arg, mc_platform_p global\)](#)

5.9.1 Function Documentation

5.9.1.1 [int cmd_prompt_Destroy \(cmd_prompt_p *cmd_prompt*\)](#)

Definition at line 129 of file cmd_prompt.c.

References MC_SUCCESS.

Referenced by mc_platform_Destroy().

5.9.1.2 [cmd_prompt_p cmd_prompt_Initialize \(mc_platform_p *mc_platform*\)](#)

Definition at line 121 of file cmd_prompt.c.

Referenced by mc_platform_Initialize().

5.9.1.3 void cmd_prompt_Start (mc_platform_p mc_platform)

Definition at line 136 of file cmd_prompt.c.

References mc_platform_s::cmd_prompt, cmd_prompt_Thread(), MC_THREAD_CP, mc_platform_s::stack_size, cmd_prompt_s::thread, and THREAD_CREATE.

Referenced by mc_platform_Initialize().

5.9.1.4 void* cmd_prompt_Thread (void * arg)

Definition at line 168 of file cmd_prompt.c.

References command_s::args, buf, dealloc_command(), exec_command(), command_s::index, mc_platform, command_s::num_args, process_command(), and split_string().

Referenced by cmd_prompt_Start().

5.9.1.5 int dealloc_command (command_t * cmd)

Definition at line 311 of file cmd_prompt.c.

References command_s::args, and command_s::num_args.

Referenced by cmd_prompt_Thread().

5.9.1.6 int exec_command (command_t cmd, mc_platform_p global)

Definition at line 295 of file cmd_prompt.c.

References command_s::args, cmd_handlers, command_s::index, and command_s::num_args.

Referenced by cmd_prompt_Thread().

5.9.1.7 int handler_COMPOSE_SEND (void * arg, mc_platform_p global)

Definition at line 408 of file cmd_prompt.c.

References mc_platform_s::agency, command_s::args, command_descriptions, mc_platform_s::hostname, MC_AddAgent(), MC_ComposeAgentFromFile(), and command_s::num_args.

5.9.1.8 int handler_FLUSH_AGENTS (void * arg, mc_platform_p global)

Definition at line 402 of file cmd_prompt.c.

References mc_platform_s::agent_queue, and agent_queue_Flush().

5.9.1.9 int handler_HELP (void * arg, mc_platform_p global)

Definition at line 335 of file cmd_prompt.c.

References command_s::args, command_cmds, command_descriptions, and command_s::num_args.

5.9.1.10 int handler_PRINT_CONNECTLIST (void * *arg*, mc_platform_p *global*)

Definition at line 384 of file cmd_prompt.c.

References mc_platform_s::connection_queue.

5.9.1.11 int handler_PRINTLIST_AGENTS (void * *arg*, mc_platform_p *global*)

Definition at line 396 of file cmd_prompt.c.

References mc_platform_s::agent_queue.

5.9.1.12 int handler_PRINTLIST_MESSAGE (void * *arg*, mc_platform_p *global*)

Definition at line 390 of file cmd_prompt.c.

References mc_platform_s::message_queue.

5.9.1.13 int handler_QUIT (void * *arg*, mc_platform_p *global*)

Definition at line 326 of file cmd_prompt.c.

References COND_BROADCAST, MUTEX_LOCK, MUTEX_UNLOCK, mc_platform_s::quit, mc_platform_s::quit_cond, and mc_platform_s::quit_lock.

5.9.1.14 int handler_SEND (void * *arg*, mc_platform_p *global*)

Definition at line 373 of file cmd_prompt.c.

References command_s::args, command_descriptions, MC_SendAgentFile(), and command_s::num_args.

5.9.1.15 int process_command (command_t * *cmd*)

Definition at line 277 of file cmd_prompt.c.

References command_s::args, command_cmds, command_s::index, and command_s::num_args.

Referenced by cmd_prompt_Thread().

5.9.1.16 int split_string (char * *args*, const char * *buf*)**

Definition at line 229 of file cmd_prompt.c.

References int.

Referenced by cmd_prompt_Thread().

5.10 /home/dko/Projects/mobilec/src/connection.c File Reference

```
#include "config.h"
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include "include/connection.h"
#include "include/mc_error.h"
#include "include/macros.h"
```

Functions

- [int connection_Destroy](#) ([connection_p](#) connection)
- [connection_p connection_New](#) (void)
- [connection_p connection_Copy](#) ([connection_p](#) connection)

5.10.1 Function Documentation

5.10.1.1 [connection_p connection_Copy](#) ([connection_p](#) *connection*)

Definition at line 80 of file connection.c.

References [connection_s::addr](#), [connection_s::clientfd](#), [connection_s::connect_id](#), [connection_New\(\)](#), [connection_s::remote_hostname](#), [connection_s::serverfd](#), and [strdup](#).

5.10.1.2 [int connection_Destroy](#) ([connection_p](#) *connection*)

Definition at line 48 of file connection.c.

References [connection_s::clientfd](#), [MC_SUCCESS](#), and [connection_s::remote_hostname](#).

Referenced by [acc_connection_Thread\(\)](#).

5.10.1.3 [connection_p connection_New](#) (void)

Definition at line 69 of file connection.c.

Referenced by [connection_Copy\(\)](#), and [listen_Thread\(\)](#).

5.11 /home/dko/Projects/mobilec/src/data_structures.c File Reference

```
#include "config.h"
#include "include/ap_queue_template.h"
#include "macros.h"
#include "mc_error.h"
#include <embedch.h>
#include "include/data_structures.h"
#include "include/interpreter_variable_data.h"
#include "include/agent.h"
```

Functions

- [AP_QUEUE_SEARCH_TEMPLATE](#) (AP_QUEUE_REMOVE_TEMPLATE(connection_queue, [Search](#), AP_QUEUE_REMOVE_TEMPLATE(connection, AP_QUEUE_REMOVE_TEMPLATE(int, (node->connect_id==key)))
- [AP_QUEUE_SEARCH_TEMPLATE](#) (AP_QUEUE_REMOVE_TEMPLATE(agent_variable_list, AP_QUEUE_REMOVE_TEMPLATE([Search](#), AP_QUEUE_REMOVE_TEMPLATE(interpreter_variable_data, char *, (!strcmp([node](#)->name, key))))
- [AP_QUEUE_STD_DEFN_TEMPLATE](#) (AP_QUEUE_SEARCH_TEMPLATE(agent_queue, AP_QUEUE_SEARCH_TEMPLATE(agent)
- [int agent_queue_Flush](#) (agent_queue_p queue)
- [AP_QUEUE_STD_DEFN_TEMPLATE](#) (fipa_acl_message_p mail_queue_SearchReceivers(mail_queue_p mail_queue, fipa_acl_message)
- [AP_QUEUE_STD_DEFN_TEMPLATE](#) (mailbox_queue, agent_mailbox)
- [int AP_GENERIC_Destroy](#) (AP_GENERIC_t *blah)
- [AP_GENERIC_p AP_GENERIC_Copy](#) (AP_GENERIC_p AP_GENERIC)

5.11.1 Function Documentation

5.11.1.1 int agent_queue_Flush (agent_queue_p queue)

Definition at line 197 of file data_structures.c.

References agent_s::agent_status, agent_s::id, ListSearch(), MUTEX_LOCK, MUTEX_UNLOCK, agent_s::name, and node.

Referenced by handler_FLUSH_AGENTS().

5.11.1.2 AP_GENERIC_p AP_GENERIC_Copy (AP_GENERIC_p AP_GENERIC)

Definition at line 295 of file data_structures.c.

5.11.1.3 int AP_GENERIC_Destroy (AP_GENERIC_t *blah)

Definition at line 291 of file data_structures.c.

**5.11.1.4 AP_QUEUE_SEARCH_TEMPLATE (AP_QUEUE_REMOVE_TEMPLATE(
agent_variable_list, AP_QUEUE_REMOVE_TEMPLATE(*Search*,
AP_QUEUE_REMOVE_TEMPLATE(*interpreter_variable_data*, char *,
(!strcmp(node->name, key))))**

Definition at line 84 of file data_structures.c.

References message_s::from_address, ListSearch(), message_s::message_id, MUTEX_LOCK, MUTEX_UNLOCK, node, and message_s::to_address.

**5.11.1.5 AP_QUEUE_SEARCH_TEMPLATE (AP_QUEUE_REMOVE_TEMPLATE(
connection_queue, Search, AP_QUEUE_REMOVE_TEMPLATE(*connection*,
AP_QUEUE_REMOVE_TEMPLATE(*int*, (node->connect_id==key))**

Definition at line 45 of file data_structures.c.

References connection_s::connect_id, ListSearch(), MUTEX_LOCK, MUTEX_UNLOCK, node, and connection_s::remote_hostname.

5.11.1.6 AP_QUEUE_STD_DEFN_TEMPLATE (mailbox_queue, agent_mailbox)

Definition at line 253 of file data_structures.c.

References agent_ChScriptInitVar(), COND_SIGNAL, ListPop(), MUTEX_LOCK, and MUTEX_UNLOCK.

**5.11.1.7 AP_QUEUE_STD_DEFN_TEMPLATE (fipa_acl_message_p
mail_queue_SearchReceivers(mail_queue_p mail_queue, fipa_acl_message)**

Definition at line 214 of file data_structures.c.

References fipa_agent_identifier_set_s::fipa_agent_identifiers, MUTEX_LOCK, MUTEX_UNLOCK, fipa_agent_identifier_s::name, listNode_s::next, node, listNode_s::node_data, and fipa_acl_message_s::receiver.

**5.11.1.8 AP_QUEUE_STD_DEFN_TEMPLATE (AP_QUEUE_SEARCH_TEMPLATE(
agent_queue, AP_QUEUE_SEARCH_TEMPLATE(*agent*)**

Definition at line 145 of file data_structures.c.

References agent_s::agent_status, agent_s::id, ListSearch(), MUTEX_LOCK, MUTEX_UNLOCK, agent_s::name, and node.

5.12 /home/dko/Projects/mobilec/src/df.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include "config.h"
#include "include/mc_platform.h"
#include "include/df.h"
#include "../mc_list/list.h"
#include "../include/macros.h"
#include "df_request.x.h"
```

Defines

- #define [REQUEST](#)(name, string, description)

Functions

- [int df_Add](#) (struct df_s *df, struct df_node_s *[node](#))
- [int df_AddRequest](#) (struct df_s *df, struct df_request_list_node_s *[node](#))
- [int df_Destroy](#) (df_p df)
- [df_p df_Initialize](#) ([mc_platform_p mc_platform](#))
- [int df_ProcessRequest](#) (struct [mc_platform_s](#) *global)
- [int df_SearchForService](#) (df_p df, const char *searchstring, char ***agent_names, char ***service_names, [int](#) **agent_ids, [int](#) *num_entries)
- [void df_Start](#) ([mc_platform_p mc_platform](#))
- [int df_request_list_node_Destroy](#) (df_request_list_node_p [node](#))
- [df_request_list_node_p df_request_list_node_New](#) (void)
- [int df_request_list_Destroy](#) (df_request_list_p df_request_list)
- [df_request_list_p df_request_list_New](#) (void)
- [df_request_list_node_p df_request_list_Pop](#) (df_request_list_p requests)
- [df_request_search_p df_request_search_New](#) (void)
- [int df_request_search_Destroy](#) (df_request_search_p [node](#))
- [int df_node_Destroy](#) (df_node_p df_node)
- [void * df_Thread](#) (void *arg)
- [int request_handler_REGISTER](#) (struct [mc_platform_s](#) *global, void *data)
- [int request_handler_SEARCH](#) (struct [mc_platform_s](#) *global, void *data)
- [int request_handler_SUBSCRIBE](#) (struct [mc_platform_s](#) *global, void *data)
- [int request_handler_DEREGISTER](#) (struct [mc_platform_s](#) *global, void *data)

5.12.1 Define Documentation

5.12.1.1 #define [REQUEST](#)(name, string, description)

Value:

```

if ( !strcmp(request->command, string ) ) { \
    return_code = MC_SUCCESS; \
    handler_code = request_handler_##name( \
        global, \
        request->data ); \
    request_code = REQUEST_##name; \
} else

```

Referenced by `acc_connection_Thread()`, and `acc_MessageHandlerThread()`.

5.12.2 Function Documentation

5.12.2.1 `int df_Add (struct df_s * df, struct df_node_s * node)`

Definition at line 50 of file `df.c`.

References `ListAdd()`, `MC_SUCCESS`, and `SIGNAL`.

Referenced by `request_handler_REGISTER()`.

5.12.2.2 `int df_AddRequest (struct df_s * df, struct df_request_list_node_s * node)`

Definition at line 66 of file `df.c`.

References `ListAdd()`, and `SIGNAL`.

Referenced by `MC_DeregisterService()`, `MC_RegisterService()`, and `MC_SearchForService()`.

5.12.2.3 `int df_Destroy (df_p df)`

Definition at line 83 of file `df.c`.

References `COND_DESTROY`, `df_node_Destroy()`, `df_request_list_Destroy()`, `ListPop()`, `ListTerminate()`, `MC_SUCCESS`, `MUTEX_DESTROY`, and `MUTEX_LOCK`.

Referenced by `mc_platform_Destroy()`.

5.12.2.4 `df_p df_Initialize (mc_platform_p mc_platform)`

Definition at line 103 of file `df.c`.

References `COND_INIT`, `COND_T`, `df_request_list_New()`, `ListInitialize()`, `MUTEX_INIT`, and `MUTEX_T`.

Referenced by `mc_platform_Initialize()`.

5.12.2.5 `int df_node_Destroy (df_node_p df_node)`

Definition at line 414 of file `df.c`.

References `MC_SUCCESS`, and `MUTEX_LOCK`.

Referenced by `df_Destroy()`.

5.12.2.6 int df_ProcessRequest (struct mc_platform_s * *global*)

Definition at line 134 of file df.c.

References mc_platform_s::df, df_request_list_Pop(), MC_ERR_EMPTY, and MC_ERR_INVALID.

Referenced by df_Thread().

5.12.2.7 int df_request_list_Destroy (df_request_list_p *df_request_list*)

Definition at line 323 of file df.c.

References df_request_list_node_Destroy(), ListPop(), ListTerminate(), MC_SUCCESS, and node.

Referenced by df_Destroy().

5.12.2.8 df_request_list_p df_request_list_New (void)

Definition at line 345 of file df.c.

References CHECK_NULL, COND_INIT, COND_T, ListInitialize(), MUTEX_INIT, and MUTEX_T.

Referenced by df_Initialize().

5.12.2.9 int df_request_list_node_Destroy (df_request_list_node_p *node*)

Definition at line 294 of file df.c.

References COND_DESTROY, MC_SUCCESS, and MUTEX_DESTROY.

Referenced by df_request_list_Destroy(), and MC_SearchForService().

5.12.2.10 df_request_list_node_p df_request_list_node_New (void)

Definition at line 305 of file df.c.

References CHECK_NULL, COND_INIT, COND_T, MUTEX_INIT, MUTEX_T, and node.

Referenced by MC_DeregisterService(), MC_RegisterService(), and MC_SearchForService().

5.12.2.11 df_request_list_node_p df_request_list_Pop (df_request_list_p *requests*)

Definition at line 370 of file df.c.

References ListPop(), MUTEX_LOCK, MUTEX_UNLOCK, and node.

Referenced by df_ProcessRequest().

5.12.2.12 int df_request_search_Destroy (df_request_search_p *node*)

Definition at line 401 of file df.c.

References COND_DESTROY, MC_SUCCESS, and MUTEX_DESTROY.

Referenced by MC_SearchForService().

5.12.2.13 df_request_search_p df_request_search_New (void)

Definition at line 386 of file df.c.

References CHECK_NULL, COND_INIT, COND_T, MUTEX_INIT, MUTEX_T, and search.

Referenced by MC_SearchForService().

5.12.2.14 int df_SearchForService (df_p df, const char * searchstring, char * agent_names, char *** service_names, int ** agent_ids, int * num_entries)**

Definition at line 178 of file df.c.

References MC_ERR_NOT_FOUND, MC_SUCCESS, MUTEX_LOCK, MUTEX_UNLOCK, listNode_s::next, and listNode_s::node_data.

Referenced by request_handler_SEARCH().

5.12.2.15 void df_Start (mc_platform_p mc_platform)

Definition at line 263 of file df.c.

References mc_platform_s::df, df_Thread(), MC_THREAD_DF, mc_platform_s::stack_size, and THREAD_CREATE.

Referenced by mc_platform_Initialize().

5.12.2.16 void* df_Thread (void * arg)

Definition at line 428 of file df.c.

References COND_BROADCAST, COND_WAIT, mc_platform_s::df, df_ProcessRequest(), MC_SUCCESS, MUTEX_LOCK, MUTEX_UNLOCK, mc_platform_s::quit, mc_platform_s::quit_lock, and THREAD_EXIT.

Referenced by df_Start().

5.12.2.17 int request_handler_DEREGISTER (struct mc_platform_s * global, void * data)

Definition at line 522 of file df.c.

References mc_platform_s::df, MC_SUCCESS, MUTEX_LOCK, MUTEX_UNLOCK, listNode_s::next, node, and listNode_s::node_data.

5.12.2.18 int request_handler_REGISTER (struct mc_platform_s * global, void * data)

Definition at line 492 of file df.c.

References mc_platform_s::df, and df_Add().

5.12.2.19 int request_handler_SEARCH (struct mc_platform_s * global, void * data)

Definition at line 498 of file df.c.

References mc_platform_s::df, df_SearchForService(), MC_SUCCESS, search, and SIGNAL.

5.12.2.20 `int request_handler_SUBSCRIBE (struct mc_platform_s * global, void * data)`

Definition at line 517 of file df.c.

5.13 /home/dko/Projects/mobilec/src/dynstring.c File Reference

```
#include "config.h"
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include "include/dynstring.h"
```

Functions

- [dynstring_t * dynstring_New](#) (void)
- [int dynstring_Append](#) (dynstring_t *msg, char *str)
- [int dynstring_Destroy](#) (dynstring_t *dynstring)

5.13.1 Function Documentation

5.13.1.1 int dynstring_Append (dynstring_t * msg, char * str)

Definition at line 30 of file dynstring.c.

References COMPOSE_BLOCKSIZE, dynstring_s::len, dynstring_s::message, and dynstring_s::size.

Referenced by fipa_acl_Compose(), fipa_agent_identifier_Compose(), fipa_agent_identifier_set_Compose(), fipa_DateTime_Compose(), fipa_envelope_Compose__from(), fipa_number_Compose(), fipa_performative_Compose(), fipa_protocol_Compose(), fipa_string_Compose(), fipa_url_Compose(), fipa_url_sequence_Compose(), fipa_word_Compose(), message_send_Thread(), mtp_http_CreateMessage(), and mtp_http_InitializeFromConnection().

5.13.1.2 int dynstring_Destroy (dynstring_t * dynstring)

Definition at line 56 of file dynstring.c.

References dynstring_s::message.

Referenced by fipa_envelope_Compose__from(), MC_AclSend(), message_send_Thread(), mtp_http_CreateMessage(), and mtp_http_InitializeFromConnection().

5.13.1.3 dynstring_t* dynstring_New (void)

Definition at line 14 of file dynstring.c.

References COMPOSE_BLOCKSIZE, dynstring_s::len, dynstring_s::message, and dynstring_s::size.

Referenced by fipa_acl_Compose(), fipa_envelope_Compose__from(), message_send_Thread(), mtp_http_CreateMessage(), and mtp_http_InitializeFromConnection().

5.14 /home/dko/Projects/mobilec/src/fipa_acl.c File Reference

```
#include "config.h"
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <strings.h>
#include "include/fipa_acl.h"
#include "dynstring.h"
#include "include/mc_error.h"
#include "include/macros.h"
```

Defines

- #define [FREEMEM](#)(x) if (x != NULL) free(x)

Functions

- [fipa_acl_message_t * fipa_acl_message_New](#) (void)
- [int fipa_acl_message_Destroy](#) ([fipa_acl_message_t](#) *message)
- [fipa_acl_message_t * fipa_acl_message_Copy](#) ([fipa_acl_message_t](#) *src)
- [fipa_message_string_t * fipa_message_string_New](#) (void)
- [int fipa_message_string_Destroy](#) ([fipa_message_string_t](#) *message)
- [fipa_message_string_t * fipa_message_string_Copy](#) ([fipa_message_string_t](#) *src)
- [fipa_url_sequence_t * fipa_url_sequence_New](#) (void)
- [int fipa_url_sequence_Destroy](#) ([fipa_url_sequence_t](#) *sequence)
- [fipa_url_sequence_t * fipa_url_sequence_Copy](#) ([fipa_url_sequence_t](#) *src)
- [fipa_agent_identifier_set_t * fipa_agent_identifier_set_New](#) (void)
- [int fipa_agent_identifier_set_Destroy](#) ([fipa_agent_identifier_set_t](#) *idset)
- [fipa_agent_identifier_set_t * fipa_agent_identifier_set_Copy](#) ([fipa_agent_identifier_set_t](#) *src)
- [fipa_agent_identifier_t * fipa_agent_identifier_New](#) (void)
- [int fipa_agent_identifier_Destroy](#) ([fipa_agent_identifier_t](#) *id)
- [fipa_agent_identifier_t * fipa_agent_identifier_Copy](#) ([fipa_agent_identifier_t](#) *src)
- [fipa_expression_t * fipa_expression_New](#) (void)
- [int fipa_expression_Destroy](#) ([fipa_expression_t](#) *expr)
- [fipa_expression_t * fipa_expression_Copy](#) ([fipa_expression_t](#) *src)
- [fipa_word_t * fipa_word_New](#) (void)
- [int fipa_word_Destroy](#) ([fipa_word_t](#) *word)
- [fipa_word_t * fipa_word_Copy](#) ([fipa_word_t](#) *src)
- [fipa_string_t * fipa_string_New](#) (void)
- [int fipa_string_Destroy](#) ([fipa_string_t](#) *str)
- [fipa_string_t * fipa_string_Copy](#) ([fipa_string_t](#) *src)
- [fipa_DateTime_t * fipa_DateTime_New](#) (void)
- [int fipa_DateTime_Destroy](#) ([fipa_DateTime_t](#) *dt)
- [fipa_DateTime_t * fipa_DateTime_Copy](#) ([fipa_DateTime_t](#) *src)
- [fipa_url_t * fipa_url_New](#) (void)

- `int fipa_url_Destroy (fipa_url_t *url)`
- `fipa_url_t * fipa_url_Copy (fipa_url_t *src)`
- `fipa_number_t * fipa_number_New (void)`
- `int fipa_number_Destroy (fipa_number_t *number)`
- `fipa_number_t * fipa_number_Copy (fipa_number_t *src)`
- `int fipa_acl_Parse (fipa_acl_message_p acl, fipa_message_string_p message)`
- `int fipa_message_parameter_Parse (fipa_acl_message_p acl, fipa_message_string_p message)`
- `int fipa_protocol_type_Parse (enum fipa_protocol_e *protocol, fipa_message_string_p message)`
- `int fipa_message_type_Parse (enum fipa_performative_e *performative, fipa_message_string_p message)`
- `int fipa_GetAtom (fipa_message_string_p message, char expected_atom)`
- `int fipa_word_Parse (fipa_word_t **word, fipa_message_string_p message)`
- `int fipa_CheckNextToken (const fipa_message_string_p message, const char *token)`
- `int fipa_expression_Parse (fipa_expression_t **expression, fipa_message_string_p message)`
- `int fipa_GetNextWord (char **word, const fipa_message_string_p message)`
- `int fipa_GetWholeToken (char **word, fipa_message_string_p message)`
- `int fipa_datetime_Parse (fipa_DateTime_p *datetime, fipa_message_string_p message)`
- `int fipa_string_Parse (fipa_string_p *fipa_string, fipa_message_string_p message)`
- `int fipa_agent_identifier_Parse (fipa_agent_identifier_p *aid, fipa_message_string_p message)`
- `int fipa_url_sequence_Parse (fipa_url_sequence_p *urls, fipa_message_string_p message)`
- `int fipa_url_Parse (fipa_url_p *url, fipa_message_string_p message)`
- `int fipa_agent_identifier_set_Parse (fipa_agent_identifier_set_p *agent_ids, fipa_message_string_p message)`
- `int fipa_acl_Compose (dynstring_t **msg, fipa_acl_message_t *acl)`
- `int fipa_protocol_Compose (dynstring_t *msg, enum fipa_protocol_e protocol)`
- `int fipa_performative_Compose (dynstring_t *msg, enum fipa_performative_e performative)`
- `int fipa_url_sequence_Compose (dynstring_t *msg, fipa_url_sequence_t *urls)`
- `int fipa_agent_identifier_set_Compose (dynstring_t *msg, fipa_agent_identifier_set_t *ids)`
- `int fipa_agent_identifier_Compose (dynstring_t *msg, fipa_agent_identifier_t *id)`
- `int fipa_expression_Compose (dynstring_t *msg, fipa_expression_t *expr)`
- `int fipa_word_Compose (dynstring_t *msg, fipa_word_t *word)`
- `int fipa_string_Compose (dynstring_t *msg, fipa_string_t *string)`
- `int fipa_DateTime_Compose (dynstring_t *msg, fipa_DateTime_t *date)`
- `int fipa_url_Compose (dynstring_t *msg, fipa_url_t *url)`
- `int fipa_number_Compose (dynstring_t *msg, fipa_number_t *number)`
- `struct fipa_acl_message_s * fipa_Reply (struct fipa_acl_message_s *acl)`

5.14.1 Define Documentation

5.14.1.1 #define FREEMEM(x) if (x != NULL) free(x)

Definition at line 53 of file `fipa_acl.c`.

Referenced by `fipa_expression_Destroy()`.

5.14.2 Function Documentation

5.14.2.1 `int fipa_acl_Compose (dynstring_t ** msg, fipa_acl_message_t * acl)`

Definition at line 1232 of file fipa_acl.c.

References `fipa_acl_message_s::content`, `fipa_acl_message_s::conversation_id`, `dynstring_Append()`, `dynstring_New()`, `fipa_acl_message_s::encoding`, `fipa_agent_identifier_Compose()`, `fipa_agent_identifier_set_Compose()`, `fipa_DateTime_Compose()`, `fipa_expression_Compose()`, `fipa_performative_Compose()`, `fipa_protocol_Compose()`, `FIPA_PROTOCOL_NONE`, `fipa_string_Compose()`, `fipa_acl_message_s::in_reply_to`, `fipa_acl_message_s::language`, `fipa_acl_message_s::ontology`, `fipa_acl_message_s::performative`, `fipa_acl_message_s::protocol`, `fipa_acl_message_s::receiver`, `fipa_acl_message_s::reply_by`, `fipa_acl_message_s::reply_to`, `fipa_acl_message_s::reply_with`, and `fipa_acl_message_s::sender`.

Referenced by `MC_AclSend()`.

5.14.2.2 `fipa_acl_message_t* fipa_acl_message_Copy (fipa_acl_message_t * src)`

Definition at line 86 of file fipa_acl.c.

References `fipa_acl_message_s::content`, `fipa_acl_message_s::conversation_id`, `fipa_acl_message_s::encoding`, `fipa_acl_message_New()`, `fipa_agent_identifier_Copy()`, `fipa_agent_identifier_set_Copy()`, `fipa_DateTime_Copy()`, `fipa_expression_Copy()`, `fipa_string_Copy()`, `fipa_acl_message_s::in_reply_to`, `fipa_acl_message_s::language`, `fipa_acl_message_s::ontology`, `fipa_acl_message_s::performative`, `fipa_acl_message_s::protocol`, `fipa_acl_message_s::receiver`, `fipa_acl_message_s::reply_by`, `fipa_acl_message_s::reply_to`, `fipa_acl_message_s::reply_with`, and `fipa_acl_message_s::sender`.

Referenced by `MC_AclSend()`.

5.14.2.3 `int fipa_acl_message_Destroy (fipa_acl_message_t * message)`

Definition at line 65 of file fipa_acl.c.

References `fipa_acl_message_s::content`, `fipa_acl_message_s::conversation_id`, `fipa_acl_message_s::encoding`, `fipa_agent_identifier_Destroy()`, `fipa_agent_identifier_set_Destroy()`, `fipa_DateTime_Destroy()`, `fipa_expression_Destroy()`, `fipa_string_Destroy()`, `fipa_acl_message_s::in_reply_to`, `fipa_acl_message_s::language`, `fipa_acl_message_s::ontology`, `fipa_acl_message_s::receiver`, `fipa_acl_message_s::reply_by`, `fipa_acl_message_s::reply_to`, `fipa_acl_message_s::reply_with`, and `fipa_acl_message_s::sender`.

Referenced by `acc_connection_Thread()`, and `MC_AclDestroy()`.

5.14.2.4 `fipa_acl_message_t* fipa_acl_message_New (void)`

Definition at line 57 of file fipa_acl.c.

Referenced by `acc_connection_Thread()`, `fipa_acl_message_Copy()`, `fipa_Reply()`, and `MC_AclNew()`.

5.14.2.5 `int fipa_acl_Parse (fipa_acl_message_p acl, fipa_message_string_p message)`

Definition at line 464 of file fipa_acl.c.

References `fipa_GetAtom()`, `fipa_message_parameter_Parse()`, `fipa_message_type_Parse()`, `MC_ERR_PARSE`, and `fipa_acl_message_s::performative`.

Referenced by `acc_connection_Thread()`.

5.14.2.6 `int fipa_agent_identifier_Compose (dynstring_t * msg, fipa_agent_identifier_t * id)`

Definition at line 1446 of file `fipa_acl.c`.

References `fipa_agent_identifier_s::addresses`, `dynstring_Append()`, `fipa_agent_identifier_set_Compose()`, `fipa_url_sequence_Compose()`, `fipa_agent_identifier_s::name`, `fipa_agent_identifier_set_s::num`, `fipa_url_sequence_s::num`, and `fipa_agent_identifier_s::resolvers`.

Referenced by `fipa_acl_Compose()`, and `fipa_agent_identifier_set_Compose()`.

5.14.2.7 `fipa_agent_identifier_t* fipa_agent_identifier_Copy (fipa_agent_identifier_t * src)`

Definition at line 235 of file `fipa_acl.c`.

References `fipa_agent_identifier_s::addresses`, `fipa_agent_identifier_New()`, `fipa_agent_identifier_set_Copy()`, `fipa_url_sequence_Copy()`, `fipa_agent_identifier_s::name`, `fipa_agent_identifier_s::resolvers`, and `strdup`.

Referenced by `fipa_acl_message_Copy()`, `fipa_acl_Param_Copy()`, `fipa_agent_identifier_set_Copy()`, and `fipa_Reply()`.

5.14.2.8 `int fipa_agent_identifier_Destroy (fipa_agent_identifier_t * id)`

Definition at line 223 of file `fipa_acl.c`.

References `fipa_agent_identifier_s::addresses`, `fipa_agent_identifier_set_Destroy()`, `fipa_url_sequence_Destroy()`, `fipa_agent_identifier_s::name`, and `fipa_agent_identifier_s::resolvers`.

Referenced by `fipa_acl_message_Destroy()`, `fipa_acl_Param_Destroy()`, `fipa_agent_identifier_set_Destroy()`, and `MC_AclSetSender()`.

5.14.2.9 `fipa_agent_identifier_t* fipa_agent_identifier_New (void)`

Definition at line 215 of file `fipa_acl.c`.

Referenced by `fipa_agent_identifier_Copy()`, `fipa_envelope_ParseAgentIdentifier()`, `MC_AclAddReceiver()`, `MC_AclAddReplyTo()`, and `MC_AclSetSender()`.

5.14.2.10 `int fipa_agent_identifier_Parse (fipa_agent_identifier_p * aid, fipa_message_string_p message)`

Definition at line 1032 of file `fipa_acl.c`.

References `CHECK_NULL`, `fipa_word_s::content`, `fipa_agent_identifier_set_Parse()`, `fipa_GetAtom()`, `fipa_url_sequence_Parse()`, `fipa_word_Destroy()`, `fipa_word_Parse()`, `MC_ERR_PARSE`, `MC_SUCCESS`, and `fipa_message_string_s::parse`.

Referenced by `fipa_agent_identifier_set_Parse()`, and `fipa_message_parameter_Parse()`.

5.14.2.11 int fipa_agent_identifier_set_Compose (dynstring_t * *msg*, fipa_agent_identifier_set_t * *ids*)

Definition at line 1433 of file fipa_acl.c.

References dynstring_Append(), fipa_agent_identifier_Compose(), fipa_agent_identifier_set_s::fipa_agent_identifiers, and fipa_agent_identifier_set_s::num.

Referenced by fipa_acl_Compose(), and fipa_agent_identifier_Compose().

5.14.2.12 fipa_agent_identifier_set_t* fipa_agent_identifier_set_Copy (fipa_agent_identifier_set_t * *src*)

Definition at line 194 of file fipa_acl.c.

References fipa_agent_identifier_Copy(), fipa_agent_identifier_set_New(), fipa_agent_identifier_set_s::fipa_agent_identifiers, fipa_agent_identifier_set_s::num, and fipa_agent_identifier_set_s::retain_order.

Referenced by fipa_acl_message_Copy(), fipa_acl_Param_Copy(), fipa_agent_identifier_Copy(), and fipa_Reply().

5.14.2.13 int fipa_agent_identifier_set_Destroy (fipa_agent_identifier_set_t * *idset*)

Definition at line 182 of file fipa_acl.c.

References fipa_agent_identifier_Destroy(), fipa_agent_identifier_set_s::fipa_agent_identifiers, and fipa_agent_identifier_set_s::num.

Referenced by fipa_acl_message_Destroy(), fipa_acl_Param_Destroy(), and fipa_agent_identifier_Destroy().

5.14.2.14 fipa_agent_identifier_set_t* fipa_agent_identifier_set_New (void)

Definition at line 174 of file fipa_acl.c.

Referenced by fipa_agent_identifier_set_Copy(), fipa_envelope_HandleIntendedReceiver(), fipa_envelope_HandleTo(), fipa_Reply(), MC_AclAddReceiver(), and MC_AclAddReplyTo().

5.14.2.15 int fipa_agent_identifier_set_Parse (fipa_agent_identifier_set_p * *agent_ids*, fipa_message_string_p *message*)

Definition at line 1191 of file fipa_acl.c.

References fipa_word_s::content, fipa_agent_identifier_Parse(), fipa_GetAtom(), fipa_word_Parse(), MC_ERR_PARSE, MC_SUCCESS, and fipa_agent_identifier_set_s::retain_order.

Referenced by fipa_agent_identifier_Parse(), and fipa_message_parameter_Parse().

5.14.2.16 int fipa_CheckNextToken (const fipa_message_string_p *message*, const char * *token*)

Definition at line 694 of file fipa_acl.c.

References fipa_message_string_s::parse.

Referenced by fipa_expression_Parse().

5.14.2.17 int fipa_DateTime_Compose (dynstring_t * msg, fipa_DateTime_t * date)

Definition at line 1519 of file fipa_acl.c.

References buf, fipa_DateTime_s::day, dynstring_Append(), fipa_DateTime_s::hour, fipa_DateTime_s::millisecond, fipa_DateTime_s::minute, fipa_DateTime_s::month, fipa_DateTime_s::second, fipa_DateTime_s::sign, and fipa_DateTime_s::year.

Referenced by fipa_acl_Compose(), and fipa_expression_Compose().

5.14.2.18 fipa_DateTime_t* fipa_DateTime_Copy (fipa_DateTime_t * src)

Definition at line 398 of file fipa_acl.c.

References fipa_DateTime_New().

Referenced by fipa_acl_envelope_Received_Copy(), fipa_acl_message_Copy(), fipa_acl_Param_Copy(), and fipa_expression_Copy().

5.14.2.19 int fipa_DateTime_Destroy (fipa_DateTime_t * dt)

Definition at line 391 of file fipa_acl.c.

Referenced by fipa_acl_envelope_Received_Destroy(), fipa_acl_message_Destroy(), fipa_acl_Param_Destroy(), and fipa_expression_Destroy().

5.14.2.20 fipa_DateTime_t* fipa_DateTime_New (void)

Definition at line 383 of file fipa_acl.c.

Referenced by fipa_DateTime_Copy().

5.14.2.21 int fipa_datetime_Parse (fipa_DateTime_p * datetime, fipa_message_string_p message)

Definition at line 849 of file fipa_acl.c.

References buf, fipa_GetWholeToken(), MC_ERR_PARSE, MC_SUCCESS, fipa_message_string_s::parse, and fipa_DateTime_s::sign.

Referenced by fipa_envelope_HandleDate(), fipa_envelope_HandleReceived(), fipa_expression_Parse(), and fipa_message_parameter_Parse().

5.14.2.22 int fipa_expression_Compose (dynstring_t * msg, fipa_expression_t * expr)

Definition at line 1472 of file fipa_acl.c.

References fipa_expression_s::content, fipa_expression_s::content_u::datetime, fipa_expression_s::content_u::expression, fipa_DateTime_Compose(), FIPA_EXPR_DATETIME, FIPA_EXPR_EXPRESSION, FIPA_EXPR_NUMBER, FIPA_EXPR_STRING, FIPA_EXPR_WORD, fipa_expression_Compose(), fipa_number_Compose(), fipa_string_Compose(), fipa_word_Compose(), MC_ERR_PARSE, fipa_expression_s::content_u::number, fipa_expression_s::content_u::string, fipa_expression_s::type, and fipa_expression_s::content_u::word.

Referenced by fipa_acl_Compose(), and fipa_expression_Compose().

5.14.2.23 fipa_expression_t* fipa_expression_Copy (fipa_expression_t * src)

Definition at line 286 of file fipa_acl.c.

References fipa_expression_s::content, fipa_expression_s::content_u::datetime, fipa_expression_s::content_u::expression, fipa_DateTime_Copy(), FIPA_EXPR_DATETIME, FIPA_EXPR_EXPRESSION, FIPA_EXPR_NUMBER, FIPA_EXPR_STRING, FIPA_EXPR_WORD, fipa_expression_Copy(), fipa_expression_Destroy(), fipa_expression_New(), fipa_number_Copy(), fipa_string_Copy(), fipa_word_Copy(), fipa_expression_s::content_u::number, fipa_expression_s::content_u::string, fipa_expression_s::type, and fipa_expression_s::content_u::word.

Referenced by fipa_acl_message_Copy(), fipa_expression_Copy(), and fipa_Reply().

5.14.2.24 int fipa_expression_Destroy (fipa_expression_t * expr)

Definition at line 255 of file fipa_acl.c.

References fipa_expression_s::content, fipa_expression_s::content_u::datetime, fipa_expression_s::content_u::expression, fipa_DateTime_Destroy(), FIPA_EXPR_DATETIME, FIPA_EXPR_EXPRESSION, FIPA_EXPR_NUMBER, FIPA_EXPR_STRING, FIPA_EXPR_WORD, fipa_expression_Destroy(), fipa_number_Destroy(), fipa_string_Destroy(), fipa_word_Destroy(), FREEMEM, fipa_expression_s::content_u::number, fipa_expression_s::content_u::string, fipa_expression_s::type, and fipa_expression_s::content_u::word.

Referenced by fipa_acl_message_Destroy(), fipa_expression_Copy(), and fipa_expression_Destroy().

5.14.2.25 fipa_expression_t* fipa_expression_New (void)

Definition at line 247 of file fipa_acl.c.

Referenced by fipa_expression_Copy(), and MC_AclSetConversationID().

5.14.2.26 int fipa_expression_Parse (fipa_expression_t ** expression, fipa_message_string_p message)

Definition at line 713 of file fipa_acl.c.

References fipa_CheckNextToken(), fipa_datetime_Parse(), FIPA_EXPR_DATETIME, FIPA_EXPR_EXPRESSION, FIPA_EXPR_STRING, FIPA_EXPR_WORD, fipa_expression_Parse(), fipa_GetAtom(), fipa_string_Parse(), fipa_word_Parse(), MC_ERR_PARSE, MC_SUCCESS, and fipa_expression_s::type.

Referenced by fipa_expression_Parse(), and fipa_message_parameter_Parse().

5.14.2.27 int fipa_GetAtom (fipa_message_string_p message, char expected_atom)

Definition at line 629 of file fipa_acl.c.

References MC_ERR_PARSE, MC_SUCCESS, and fipa_message_string_s::parse.

Referenced by fipa_acl_Parse(), fipa_agent_identifier_Parse(), fipa_agent_identifier_set_Parse(), fipa_expression_Parse(), fipa_message_parameter_Parse(), fipa_string_Parse(), and fipa_url_sequence_Parse().

5.14.2.28 int fipa_GetNextWord (char ** word, const fipa_message_string_p message)

Definition at line 764 of file fipa_acl.c.

References ERR, MC_SUCCESS, and fipa_message_string_s::parse.

5.14.2.29 int fipa_GetWholeToken (char ** word, fipa_message_string_p message)

Definition at line 812 of file fipa_acl.c.

References MC_SUCCESS, and fipa_message_string_s::parse.

Referenced by fipa_datetime_Parse().

5.14.2.30 int fipa_message_parameter_Parse (fipa_acl_message_p acl, fipa_message_string_p message)

Definition at line 484 of file fipa_acl.c.

References fipa_acl_message_s::content, fipa_word_s::content, fipa_acl_message_s::conversation_id, fipa_acl_message_s::encoding, fipa_agent_identifier_Parse(), fipa_agent_identifier_set_Parse(), fipa_datetime_Parse(), fipa_expression_Parse(), fipa_GetAtom(), fipa_protocol_type_Parse(), fipa_string_Parse(), fipa_word_Destroy(), fipa_word_Parse(), fipa_acl_message_s::in_reply_to, fipa_acl_message_s::language, MC_ERR_PARSE, fipa_acl_message_s::ontology, fipa_acl_message_s::protocol, fipa_acl_message_s::receiver, fipa_acl_message_s::reply_by, fipa_acl_message_s::reply_to, fipa_acl_message_s::reply_with, and fipa_acl_message_s::sender.

Referenced by fipa_acl_Parse().

5.14.2.31 fipa_message_string_t* fipa_message_string_Copy (fipa_message_string_t * src)

Definition at line 128 of file fipa_acl.c.

References fipa_message_string_s::message, fipa_message_string_s::parse, and strdup.

5.14.2.32 int fipa_message_string_Destroy (fipa_message_string_t * message)

Definition at line 118 of file fipa_acl.c.

References fipa_message_string_s::message.

Referenced by acc_connection_Thread().

5.14.2.33 fipa_message_string_t* fipa_message_string_New (void)

Definition at line 110 of file fipa_acl.c.

Referenced by acc_connection_Thread().

5.14.2.34 int fipa_message_type_Parse (enum fipa_performative_e * performative, fipa_message_string_p message)

Definition at line 567 of file fipa_acl.c.

References fipa_word_s::content, FIPA_ACCEPT_PROPOSAL, FIPA_AGREE, FIPA_CALL_FOR_PROPOSAL, FIPA_CANCEL, FIPA_CONFIRM, FIPA_DISCONFIRM, FIPA_FAILURE,

FIPA_INFORM, FIPA_INFORM_IF, FIPA_INFORM_REF, FIPA_NOT_UNDERSTOOD, FIPA_PROPOGATE, FIPA_PROPOSE, FIPA_PROXY, FIPA_QUERY_IF, FIPA_QUERY_REF, FIPA_REFUSE, FIPA_REJECT_PROPOSAL, FIPA_REQUEST, FIPA_REQUEST_WHEN, FIPA_REQUEST_WHENEVER, FIPA_SUBSCRIBE, fipa_word_Destroy(), fipa_word_Parse(), and MC_ERR_PARSE.

Referenced by fipa_acl_Parse().

5.14.2.35 int fipa_number_Compose (dynstring_t * msg, fipa_number_t * number)

Definition at line 1547 of file fipa_acl.c.

References dynstring_Append(), and fipa_number_s::str.

Referenced by fipa_expression_Compose().

5.14.2.36 fipa_number_t* fipa_number_Copy (fipa_number_t * src)

Definition at line 454 of file fipa_acl.c.

References fipa_number_New(), fipa_number_s::str, and strdup.

Referenced by fipa_expression_Copy().

5.14.2.37 int fipa_number_Destroy (fipa_number_t * number)

Definition at line 444 of file fipa_acl.c.

References fipa_number_s::str.

Referenced by fipa_expression_Destroy().

5.14.2.38 fipa_number_t* fipa_number_New (void)

Definition at line 436 of file fipa_acl.c.

Referenced by fipa_number_Copy().

5.14.2.39 int fipa_performative_Compose (dynstring_t * msg, enum fipa_performative_e performative)

Definition at line 1345 of file fipa_acl.c.

References dynstring_Append(), FIPA_ACCEPT_PROPOSAL, FIPA_AGREE, FIPA_CALL_FOR_PROPOSAL, FIPA_CANCEL, FIPA_CONFIRM, FIPA_DISCONFIRM, FIPA_FAILURE, FIPA_INFORM, FIPA_INFORM_IF, FIPA_INFORM_REF, FIPA_NOT_UNDERSTOOD, FIPA_PROPOGATE, FIPA_PROPOSE, FIPA_PROXY, FIPA_QUERY_IF, FIPA_QUERY_REF, FIPA_REFUSE, FIPA_REJECT_PROPOSAL, FIPA_REQUEST, FIPA_REQUEST_WHEN, FIPA_REQUEST_WHENEVER, FIPA_SUBSCRIBE, and MC_ERR_PARSE.

Referenced by fipa_acl_Compose().

5.14.2.40 int fipa_protocol_Compose (dynstring_t * msg, enum fipa_protocol_e protocol)

Definition at line 1302 of file fipa_acl.c.

References `dynstring_Append()`, `FIPA_PROTOCOL_BROKERING`, `FIPA_PROTOCOL_CONTRACT_NET`, `FIPA_PROTOCOL_DUTCH_AUCTION`, `FIPA_PROTOCOL_ENGLISH_AUCTION`, `FIPA_PROTOCOL_ITERATED_CONTRACT_NET`, `FIPA_PROTOCOL_PROPOSE`, `FIPA_PROTOCOL_QUERY`, `FIPA_PROTOCOL_RECRUITING`, `FIPA_PROTOCOL_REQUEST`, `FIPA_PROTOCOL_REQUEST_WHEN`, `FIPA_PROTOCOL_SUBSCRIBE`, and `MC_ERR_PARSE`.

Referenced by `fipa_acl_Compose()`.

5.14.2.41 `int fipa_protocol_type_Parse` (`enum fipa_protocol_e * protocol`, `fipa_message_string_p message`)

Definition at line 527 of file `fipa_acl.c`.

References `fipa_word_s::content`, `FIPA_PROTOCOL_BROKERING`, `FIPA_PROTOCOL_CONTRACT_NET`, `FIPA_PROTOCOL_DUTCH_AUCTION`, `FIPA_PROTOCOL_ENGLISH_AUCTION`, `FIPA_PROTOCOL_ITERATED_CONTRACT_NET`, `FIPA_PROTOCOL_PROPOSE`, `FIPA_PROTOCOL_QUERY`, `FIPA_PROTOCOL_RECRUITING`, `FIPA_PROTOCOL_REQUEST`, `FIPA_PROTOCOL_REQUEST_WHEN`, `FIPA_PROTOCOL_SUBSCRIBE`, `fipa_word_Destroy()`, `fipa_word_Parse()`, and `MC_ERR_PARSE`.

Referenced by `fipa_message_parameter_Parse()`.

5.14.2.42 `struct fipa_acl_message_s* fipa_Reply` (`struct fipa_acl_message_s * acl`) `[read]`

Definition at line 1555 of file `fipa_acl.c`.

References `fipa_acl_message_s::conversation_id`, `fipa_acl_message_New()`, `fipa_agent_identifier_Copy()`, `fipa_agent_identifier_set_Copy()`, `fipa_agent_identifier_set_New()`, `fipa_agent_identifier_set_s::fipa_agent_identifiers`, `fipa_expression_Copy()`, `fipa_agent_identifier_set_s::num`, `fipa_acl_message_s::protocol`, `fipa_acl_message_s::receiver`, `fipa_acl_message_s::reply_to`, `fipa_agent_identifier_set_s::retain_order`, and `fipa_acl_message_s::sender`.

Referenced by `MC_AclReply()`.

5.14.2.43 `int fipa_string_Compose` (`dynstring_t * msg`, `fipa_string_t * string`)

Definition at line 1510 of file `fipa_acl.c`.

References `fipa_string_s::content`, and `dynstring_Append()`.

Referenced by `fipa_acl_Compose()`, and `fipa_expression_Compose()`.

5.14.2.44 `fipa_string_t* fipa_string_Copy` (`fipa_string_t * src`)

Definition at line 373 of file `fipa_acl.c`.

References `fipa_string_s::content`, `fipa_string_New()`, and `strdup`.

Referenced by `fipa_acl_message_Copy()`, and `fipa_expression_Copy()`.

5.14.2.45 `int fipa_string_Destroy` (`fipa_string_t * str`)

Definition at line 363 of file `fipa_acl.c`.

References `fipa_string_s::content`.

Referenced by fipa_acl_message_Destroy(), fipa_expression_Destroy(), and MC_AclSetContent().

5.14.2.46 fipa_string_t* fipa_string_New (void)

Definition at line 355 of file fipa_acl.c.

Referenced by fipa_string_Copy(), MC_AclSetContent(), and MC_AclSetConversationID().

5.14.2.47 int fipa_string_Parse (fipa_string_p * *fipa_string*, fipa_message_string_p *message*)

Definition at line 987 of file fipa_acl.c.

References fipa_string_s::content, fipa_GetAtom(), MC_ERR_PARSE, MC_SUCCESS, and fipa_message_string_s::parse.

Referenced by fipa_expression_Parse(), and fipa_message_parameter_Parse().

5.14.2.48 int fipa_url_Compose (dynstring_t * *msg*, fipa_url_t * *url*)

Definition at line 1539 of file fipa_acl.c.

References dynstring_Append(), and fipa_url_s::str.

Referenced by fipa_url_sequence_Compose().

5.14.2.49 fipa_url_t* fipa_url_Copy (fipa_url_t * *src*)

Definition at line 426 of file fipa_acl.c.

References fipa_url_New(), fipa_url_s::str, and strdup.

Referenced by fipa_acl_envelope_Received_Copy(), and fipa_url_sequence_Copy().

5.14.2.50 int fipa_url_Destroy (fipa_url_t * *url*)

Definition at line 416 of file fipa_acl.c.

References fipa_url_s::str.

Referenced by fipa_acl_envelope_Received_Destroy(), and fipa_url_sequence_Destroy().

5.14.2.51 fipa_url_t* fipa_url_New (void)

Definition at line 408 of file fipa_acl.c.

Referenced by fipa_envelope_HandleReceived(), fipa_envelope_ParseAddresses(), fipa_url_Copy(), MC_AclAddReceiver(), MC_AclAddReplyTo(), and MC_AclSetSender().

5.14.2.52 int fipa_url_Parse (fipa_url_p * *url*, fipa_message_string_p *message*)

Definition at line 1171 of file fipa_acl.c.

References fipa_word_s::content, fipa_word_Destroy(), fipa_word_Parse(), and strdup.

Referenced by fipa_url_sequence_Parse().

5.14.2.53 int fipa_url_sequence_Compose (dynstring_t * *msg*, fipa_url_sequence_t * *urls*)

Definition at line 1420 of file fipa_acl.c.

References dynstring_Append(), fipa_url_Compose(), fipa_url_sequence_s::num, and fipa_url_sequence_s::urls.

Referenced by fipa_agent_identifier_Compose().

5.14.2.54 fipa_url_sequence_t* fipa_url_sequence_Copy (fipa_url_sequence_t * *src*)

Definition at line 158 of file fipa_acl.c.

References fipa_url_Copy(), fipa_url_sequence_New(), fipa_url_sequence_s::num, and fipa_url_sequence_s::urls.

Referenced by fipa_agent_identifier_Copy().

5.14.2.55 int fipa_url_sequence_Destroy (fipa_url_sequence_t * *sequence*)

Definition at line 146 of file fipa_acl.c.

References fipa_url_Destroy(), fipa_url_sequence_s::num, and fipa_url_sequence_s::urls.

Referenced by fipa_agent_identifier_Destroy().

5.14.2.56 fipa_url_sequence_t* fipa_url_sequence_New (void)

Definition at line 138 of file fipa_acl.c.

Referenced by fipa_url_sequence_Copy(), fipa_url_sequence_Parse(), MC_AclAddReceiver(), MC_AclAddReplyTo(), and MC_AclSetSender().

5.14.2.57 int fipa_url_sequence_Parse (fipa_url_sequence_p * *urls*, fipa_message_string_p *message*)

Definition at line 1139 of file fipa_acl.c.

References fipa_word_s::content, fipa_GetAtom(), fipa_url_Parse(), fipa_url_sequence_New(), fipa_word_Destroy(), fipa_word_Parse(), and MC_ERR_PARSE.

Referenced by fipa_agent_identifier_Parse().

5.14.2.58 int fipa_word_Compose (dynstring_t * *msg*, fipa_word_t * *word*)

Definition at line 1502 of file fipa_acl.c.

References fipa_word_s::content, and dynstring_Append().

Referenced by fipa_expression_Compose().

5.14.2.59 fipa_word_t* fipa_word_Copy (fipa_word_t * *src*)

Definition at line 345 of file fipa_acl.c.

References fipa_word_s::content, fipa_word_New(), and strdup.

Referenced by fipa_expression_Copy().

5.14.2.60 int fipa_word_Destroy (fipa_word_t * word)

Definition at line 335 of file fipa_acl.c.

References fipa_word_s::content.

Referenced by fipa_agent_identifier_Parse(), fipa_expression_Destroy(), fipa_message_parameter_Parse(), fipa_message_type_Parse(), fipa_protocol_type_Parse(), fipa_url_Parse(), and fipa_url_sequence_Parse().

5.14.2.61 fipa_word_t* fipa_word_New (void)

Definition at line 327 of file fipa_acl.c.

Referenced by fipa_word_Copy().

5.14.2.62 int fipa_word_Parse (fipa_word_t ** word, fipa_message_string_p message)

Definition at line 652 of file fipa_acl.c.

References CHECK_NULL, MC_ERR_PARSE, MC_SUCCESS, and fipa_message_string_s::parse.

Referenced by fipa_agent_identifier_Parse(), fipa_agent_identifier_set_Parse(), fipa_expression_Parse(), fipa_message_parameter_Parse(), fipa_message_type_Parse(), fipa_protocol_type_Parse(), fipa_url_Parse(), and fipa_url_sequence_Parse().

5.15 /home/dko/Projects/mobilec/src/fipa_envelope.c File Reference

```
#include "config.h"
#include <stdio.h>
#include <mxml.h>
#include <time.h>
#include "include/fipa_acl_envelope.h"
#include "include/mc_error.h"
#include "include/mc_platform.h"
```

Functions

- [fipa_acl_envelope_Received_t * fipa_acl_envelope_Received_New](#) (void)
- [int fipa_acl_envelope_Received_Destroy](#) (fipa_acl_envelope_Received_t *received)
- [fipa_acl_envelope_Received_t * fipa_acl_envelope_Received_Copy](#) (fipa_acl_envelope_Received_t *received)
- [fipa_acl_Param_t * fipa_acl_Param_New](#) (void)
- [int fipa_acl_Param_Destroy](#) (fipa_acl_Param_t *param)
- [fipa_acl_Param_t * fipa_acl_Param_Copy](#) (fipa_acl_Param_t *param)
- [fipa_acl_envelope_t * fipa_acl_envelope_New](#) (void)
- [int fipa_acl_envelope_Destroy](#) (fipa_acl_envelope_t *envelope)
- [fipa_acl_envelope_t * fipa_acl_envelope_Copy](#) (fipa_acl_envelope_t *envelope)
- [int fipa_envelope_Parse](#) (struct fipa_acl_envelope_s *envelope, const char *message)
- [int fipa_envelope_HandleEnvelope](#) (struct fipa_acl_envelope_s *envelope, mxml_node_t *node)
- [int fipa_envelope_HandleParams](#) (struct fipa_acl_envelope_s *envelope, mxml_node_t *node)
- [int fipa_envelope_HandleTo](#) (struct fipa_acl_envelope_s *envelope, mxml_node_t *param_node, int cur_param)
- [int fipa_envelope_HandleFrom](#) (struct fipa_acl_envelope_s *envelope, mxml_node_t *param_node, int cur_param)
- [int fipa_envelope_HandleComments](#) (struct fipa_acl_envelope_s *envelope, mxml_node_t *param_node, int cur_param)
- [int fipa_envelope_HandleAclRepresentation](#) (struct fipa_acl_envelope_s *envelope, mxml_node_t *param_node, int cur_param)
- [int fipa_envelope_HandlePayloadLength](#) (struct fipa_acl_envelope_s *envelope, mxml_node_t *param_node, int cur_param)
- [int fipa_envelope_HandlePayloadEncoding](#) (struct fipa_acl_envelope_s *envelope, mxml_node_t *param_node, int cur_param)
- [int fipa_envelope_HandleDate](#) (struct fipa_acl_envelope_s *envelope, mxml_node_t *param_node, int cur_param)
- [int fipa_envelope_HandleIntendedReceiver](#) (struct fipa_acl_envelope_s *envelope, mxml_node_t *param_node, int cur_param)
- [int fipa_envelope_HandleReceived](#) (struct fipa_acl_envelope_s *envelope, mxml_node_t *param_node, int cur_param)
- [int fipa_envelope_ParseAgentIdentifier](#) (struct fipa_agent_identifier_s **aid, mxml_node_t *agent_identifier_node)
- [int fipa_envelope_ParseAddresses](#) (struct fipa_agent_identifier_s *aid, mxml_node_t *addresses_node)

- `int fipa_envelope_ParseResolvers` (struct `fipa_agent_identifier_s` *aid, `mxml_node_t` *resolvers_node)
- `char * fipa_envelope_Compose` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t * fipa_envelope_Compose__envelope` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t * fipa_envelope_Compose__params` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t * fipa_envelope_Compose__to` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t * fipa_envelope_Compose__from` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t * fipa_envelope_Compose__acl_representation` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t * fipa_envelope_Compose__payload_encoding` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t * fipa_envelope_Compose__date` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t * fipa_envelope_Compose__intended_receiver` (`fipa_acl_message_t` *fipa_acl)

5.15.1 Function Documentation

5.15.1.1 `fipa_acl_envelope_t* fipa_acl_envelope_Copy (fipa_acl_envelope_t * envelope)`

Definition at line 150 of file `fipa_envelope.c`.

References `fipa_acl_envelope_New()`, `fipa_acl_Param_Copy()`, `fipa_acl_envelope_s::num_params`, and `fipa_acl_envelope_s::params`.

5.15.1.2 `int fipa_acl_envelope_Destroy (fipa_acl_envelope_t * envelope)`

Definition at line 137 of file `fipa_envelope.c`.

References `fipa_acl_Param_Destroy()`, `fipa_acl_envelope_s::num_params`, and `fipa_acl_envelope_s::params`.

Referenced by `acc_connection_Thread()`.

5.15.1.3 `fipa_acl_envelope_t* fipa_acl_envelope_New (void)`

Definition at line 129 of file `fipa_envelope.c`.

Referenced by `acc_connection_Thread()`, and `fipa_acl_envelope_Copy()`.

5.15.1.4 `fipa_acl_envelope_Received_t* fipa_acl_envelope_Received_Copy (fipa_acl_envelope_Received_t * received)`

Definition at line 69 of file `fipa_envelope.c`.

References `fipa_acl_envelope_Received_New()`, `fipa_DateTime_Copy()`, `fipa_url_Copy()`, `fipa_acl_envelope_Received_s::received_by`, `fipa_acl_envelope_Received_s::received_date`, `fipa_acl_envelope_Received_s::received_from`, `fipa_acl_envelope_Received_s::received_id`, `fipa_acl_envelope_Received_s::received_via`, and `strdup`.

Referenced by `fipa_acl_Param_Copy()`.

5.15.1.5 `int fipa_acl_envelope_Received_Destroy (fipa_acl_envelope_Received_t * received)`

Definition at line 57 of file `fipa_envelope.c`.

References `fipa_DateTime_Destroy()`, `fipa_url_Destroy()`, `fipa_acl_envelope_Received_s::received_by`, `fipa_acl_envelope_Received_s::received_date`, `fipa_acl_envelope_Received_s::received_from`, `fipa_acl_envelope_Received_s::received_id`, and `fipa_acl_envelope_Received_s::received_via`.

Referenced by `fipa_acl_Param_Destroy()`.

5.15.1.6 `fipa_acl_envelope_Received_t* fipa_acl_envelope_Received_New (void)`

Definition at line 48 of file `fipa_envelope.c`.

Referenced by `fipa_acl_envelope_Received_Copy()`, and `fipa_envelope_HandleReceived()`.

5.15.1.7 `fipa_acl_Param_t* fipa_acl_Param_Copy (fipa_acl_Param_t * param)`

Definition at line 110 of file `fipa_envelope.c`.

References `fipa_acl_Param_s::acl_representation`, `fipa_acl_Param_s::comments`, `fipa_acl_Param_s::date`, `fipa_acl_envelope_Received_Copy()`, `fipa_acl_Param_New()`, `fipa_agent_identifier_Copy()`, `fipa_agent_identifier_set_Copy()`, `fipa_DateTime_Copy()`, `fipa_acl_Param_s::from`, `fipa_acl_Param_s::intended_receiver`, `fipa_acl_Param_s::payload_encoding`, `fipa_acl_Param_s::payload_length`, `fipa_acl_Param_s::received`, `strdup`, and `fipa_acl_Param_s::to`.

Referenced by `fipa_acl_envelope_Copy()`.

5.15.1.8 `int fipa_acl_Param_Destroy (fipa_acl_Param_t * param)`

Definition at line 93 of file `fipa_envelope.c`.

References `fipa_acl_Param_s::acl_representation`, `fipa_acl_Param_s::comments`, `fipa_acl_Param_s::date`, `fipa_acl_envelope_Received_Destroy()`, `fipa_agent_identifier_Destroy()`, `fipa_agent_identifier_set_Destroy()`, `fipa_DateTime_Destroy()`, `fipa_acl_Param_s::from`, `fipa_acl_Param_s::intended_receiver`, `fipa_acl_Param_s::payload_encoding`, `fipa_acl_Param_s::payload_length`, `fipa_acl_Param_s::received`, and `fipa_acl_Param_s::to`.

Referenced by `fipa_acl_envelope_Destroy()`.

5.15.1.9 `fipa_acl_Param_t* fipa_acl_Param_New (void)`

Definition at line 85 of file `fipa_envelope.c`.

Referenced by `fipa_acl_Param_Copy()`, and `fipa_envelope_HandleTo()`.

5.15.1.10 `char* fipa_envelope_Compose (fipa_acl_message_t * fipa_acl)`

Definition at line 869 of file `fipa_envelope.c`.

References `fipa_envelope_Compose__envelope()`, `MXML_ADD_AFTER`, `MXML_ADD_TO_PARENT`, `MXML_NO_CALLBACK`, `mxmlAdd()`, `mxmlDelete()`, `mxmlLoadString()`, `mxmlSaveAllocString()`, and `node`.

Referenced by `MC_AclSend()`.

5.15.1.11 mxml_node_t* fipa_envelope_Compose__acl_representation (fipa_acl_message_t * *fipa_acl*)

Definition at line 1089 of file fipa_envelope.c.

References mxmlNewElement(), mxmlNewText(), and node.

Referenced by fipa_envelope_Compose__params().

5.15.1.12 mxml_node_t* fipa_envelope_Compose__date (fipa_acl_message_t * *fipa_acl*)

Definition at line 1117 of file fipa_envelope.c.

References buf, mxmlNewElement(), mxmlNewText(), and node.

Referenced by fipa_envelope_Compose__params().

5.15.1.13 mxml_node_t* fipa_envelope_Compose__envelope (fipa_acl_message_t * *fipa_acl*)

Definition at line 894 of file fipa_envelope.c.

References fipa_envelope_Compose__params(), MXML_ADD_AFTER, MXML_ADD_TO_PARENT, mxmlAdd(), mxmlNewElement(), and node.

Referenced by fipa_envelope_Compose().

5.15.1.14 mxml_node_t* fipa_envelope_Compose__from (fipa_acl_message_t * *fipa_acl*)

Definition at line 1021 of file fipa_envelope.c.

References fipa_agent_identifier_s::addresses, buf, dynstring_Append(), dynstring_Destroy(), dynstring_New(), g_mc_platform, mc_platform_s::hostname, dynstring_s::message, mxmlNewElement(), mxmlNewText(), fipa_agent_identifier_s::name, fipa_url_sequence_s::num, mc_platform_s::port, fipa_acl_message_s::sender, fipa_url_s::str, and fipa_url_sequence_s::urls.

Referenced by fipa_envelope_Compose__params().

5.15.1.15 mxml_node_t* fipa_envelope_Compose__intended_receiver (fipa_acl_message_t * *fipa_acl*)

Definition at line 1146 of file fipa_envelope.c.

References fipa_agent_identifier_s::addresses, fipa_agent_identifier_set_s::fipa_agent_identifiers, mxmlNewElement(), mxmlNewText(), fipa_agent_identifier_s::name, node, fipa_url_sequence_s::num, fipa_acl_message_s::receiver, fipa_url_s::str, and fipa_url_sequence_s::urls.

Referenced by fipa_envelope_Compose__params().

5.15.1.16 mxml_node_t* fipa_envelope_Compose__params (fipa_acl_message_t * *fipa_acl*)

Definition at line 914 of file fipa_envelope.c.

References fipa_envelope_Compose__acl_representation(), fipa_envelope_Compose__date(), fipa_envelope_Compose__from(), fipa_envelope_Compose__intended_receiver(), fipa_envelope_Compose__payload_encoding(), fipa_envelope_Compose__to(), MXML_ADD_AFTER, MXML_ADD_TO_PARENT, mxmlAdd(), mxmlElementSetAttr(), mxmlNewElement(), and node.

Referenced by `fipa_envelope_Compose__envelope()`.

5.15.1.17 `mxml_node_t* fipa_envelope_Compose__payload_encoding (fipa_acl_message_t * fipa_acl)`

Definition at line 1103 of file `fipa_envelope.c`.

References `mxmlNewElement()`, `mxmlNewText()`, and `node`.

Referenced by `fipa_envelope_Compose__params()`.

5.15.1.18 `mxml_node_t* fipa_envelope_Compose__to (fipa_acl_message_t * fipa_acl)`

Definition at line 975 of file `fipa_envelope.c`.

References `fipa_agent_identifier_s::addresses`, `fipa_agent_identifier_set_s::fipa_agent_identifiers`, `mxmlNewElement()`, `mxmlNewText()`, `fipa_agent_identifier_s::name`, `node`, `fipa_url_sequence_s::num`, `fipa_agent_identifier_set_s::num`, `fipa_acl_message_s::receiver`, `fipa_url_s::str`, and `fipa_url_sequence_s::urls`.

Referenced by `fipa_envelope_Compose__params()`.

5.15.1.19 `int fipa_envelope_HandleAclRepresentation (struct fipa_acl_envelope_s * envelope, mxml_node_t * param_node, int cur_param)`

Definition at line 381 of file `fipa_envelope.c`.

References `fipa_acl_Param_s::acl_representation`, `mxml_node_s::child`, `MC_ERR_PARSE`, `MXML_DESCEND_FIRST`, `MXML_TEXT`, `mxmlFindElement()`, `fipa_acl_envelope_s::params`, `mxml_text_s::string`, `mxml_value_u::text`, `mxml_node_s::type`, and `mxml_node_s::value`.

Referenced by `fipa_envelope_HandleParams()`.

5.15.1.20 `int fipa_envelope_HandleComments (struct fipa_acl_envelope_s * envelope, mxml_node_t * param_node, int cur_param)`

Definition at line 357 of file `fipa_envelope.c`.

References `mxml_node_s::child`, `fipa_acl_Param_s::comments`, `MC_ERR_PARSE`, `MXML_DESCEND_FIRST`, `MXML_TEXT`, `mxmlFindElement()`, `fipa_acl_envelope_s::params`, `mxml_text_s::string`, `mxml_value_u::text`, `mxml_node_s::type`, and `mxml_node_s::value`.

Referenced by `fipa_envelope_HandleParams()`.

5.15.1.21 `int fipa_envelope_HandleDate (struct fipa_acl_envelope_s * envelope, mxml_node_t * param_node, int cur_param)`

Definition at line 452 of file `fipa_envelope.c`.

References `mxml_node_s::child`, `fipa_acl_Param_s::date`, `fipa_datetime_Parse()`, `MC_ERR_PARSE`, `fipa_message_string_s::message`, `MXML_DESCEND_FIRST`, `MXML_TEXT`, `mxmlFindElement()`, `fipa_acl_envelope_s::params`, `fipa_message_string_s::parse`, `mxml_text_s::string`, `mxml_value_u::text`, `mxml_node_s::type`, and `mxml_node_s::value`.

Referenced by `fipa_envelope_HandleParams()`.

5.15.1.22 `int fipa_envelope_HandleEnvelope (struct fipa_acl_envelope_s * envelope, mxml_node_t * node)`

Definition at line 178 of file fipa_envelope.c.

References `fipa_envelope_HandleParams()`, `MC_ERR_PARSE`, `MXML_DESCEND_FIRST`, and `mxmlFindElement()`.

Referenced by `fipa_envelope_Parse()`.

5.15.1.23 `int fipa_envelope_HandleFrom (struct fipa_acl_envelope_s * envelope, mxml_node_t * param_node, int cur_param)`

Definition at line 328 of file fipa_envelope.c.

References `fipa_envelope_ParseAgentIdentifier()`, `fipa_acl_Param_s::from`, `MC_ERR_PARSE`, `MXML_DESCEND_FIRST`, `mxmlFindElement()`, and `fipa_acl_envelope_s::params`.

Referenced by `fipa_envelope_HandleParams()`.

5.15.1.24 `int fipa_envelope_HandleIntendedReceiver (struct fipa_acl_envelope_s * envelope, mxml_node_t * param_node, int cur_param)`

Definition at line 482 of file fipa_envelope.c.

References `fipa_agent_identifier_set_New()`, `fipa_agent_identifier_set_s::fipa_agent_identifiers`, `fipa_envelope_ParseAgentIdentifier()`, `fipa_acl_Param_s::intended_receiver`, `MC_ERR_PARSE`, `MXML_DESCEND_FIRST`, `MXML_NO_DESCEND`, `mxmlFindElement()`, `fipa_agent_identifier_set_s::num`, `fipa_acl_envelope_s::params`, and `fipa_agent_identifier_set_s::retain_order`.

Referenced by `fipa_envelope_HandleParams()`.

5.15.1.25 `int fipa_envelope_HandleParams (struct fipa_acl_envelope_s * envelope, mxml_node_t * node)`

Definition at line 198 of file fipa_envelope.c.

References `buf`, `fipa_envelope_HandleAclRepresentation()`, `fipa_envelope_HandleComments()`, `fipa_envelope_HandleDate()`, `fipa_envelope_HandleFrom()`, `fipa_envelope_HandleIntendedReceiver()`, `fipa_envelope_HandlePayloadEncoding()`, `fipa_envelope_HandlePayloadLength()`, `fipa_envelope_HandleReceived()`, `fipa_envelope_HandleTo()`, `MC_ERR_PARSE`, `MXML_DESCEND_FIRST`, `mxmlFindElement()`, `fipa_acl_envelope_s::num_params`, and `fipa_acl_envelope_s::params`.

Referenced by `fipa_envelope_HandleEnvelope()`.

5.15.1.26 `int fipa_envelope_HandlePayloadEncoding (struct fipa_acl_envelope_s * envelope, mxml_node_t * param_node, int cur_param)`

Definition at line 428 of file fipa_envelope.c.

References `mxml_node_s::child`, `MC_ERR_PARSE`, `MXML_DESCEND_FIRST`, `MXML_TEXT`, `mxmlFindElement()`, `fipa_acl_envelope_s::params`, `fipa_acl_Param_s::payload_encoding`, `mxml_text_s::string`, `mxml_value_u::text`, `mxml_node_s::type`, and `mxml_node_s::value`.

Referenced by `fipa_envelope_HandleParams()`.

5.15.1.27 **int fipa_envelope_HandlePayloadLength** (struct fipa_acl_envelope_s * *envelope*, mxml_node_t * *param_node*, int *cur_param*)

Definition at line 405 of file fipa_envelope.c.

References mxml_node_s::child, MC_ERR_PARSE, MXML_DESCEND_FIRST, MXML_TEXT, mxmlFindElement(), fipa_acl_envelope_s::params, fipa_acl_Param_s::payload_length, mxml_text_s::string, mxml_value_u::text, mxml_node_s::type, and mxml_node_s::value.

Referenced by fipa_envelope_HandleParams().

5.15.1.28 **int fipa_envelope_HandleReceived** (struct fipa_acl_envelope_s * *envelope*, mxml_node_t * *param_node*, int *cur_param*)

Definition at line 560 of file fipa_envelope.c.

References fipa_acl_envelope_Received_New(), fipa_datetime_Parse(), fipa_url_New(), MC_ERR_PARSE, fipa_message_string_s::message, MXML_DESCEND_FIRST, mxmlElementGetAttr(), mxmlFindElement(), node, fipa_acl_envelope_s::params, fipa_message_string_s::parse, fipa_acl_Param_s::received, fipa_acl_envelope_Received_s::received_by, fipa_acl_envelope_Received_s::received_date, fipa_acl_envelope_Received_s::received_from, fipa_acl_envelope_Received_s::received_id, fipa_acl_envelope_Received_s::received_via, and fipa_url_s::str.

Referenced by fipa_envelope_HandleParams().

5.15.1.29 **int fipa_envelope_HandleTo** (struct fipa_acl_envelope_s * *envelope*, mxml_node_t * *param_node*, int *cur_param*)

Definition at line 250 of file fipa_envelope.c.

References fipa_acl_Param_New(), fipa_agent_identifier_set_New(), fipa_agent_identifier_set_s::fipa_agent_identifiers, fipa_envelope_ParseAgentIdentifier(), MC_ERR_PARSE, MXML_DESCEND_FIRST, MXML_NO_DESCEND, mxmlFindElement(), fipa_agent_identifier_set_s::num, fipa_acl_envelope_s::params, fipa_agent_identifier_set_s::retain_order, and fipa_acl_Param_s::to.

Referenced by fipa_envelope_HandleParams().

5.15.1.30 **int fipa_envelope_Parse** (struct fipa_acl_envelope_s * *envelope*, const char * *message*)

Definition at line 165 of file fipa_envelope.c.

References fipa_envelope_HandleEnvelope(), MXML_NO_CALLBACK, mxmlDelete(), and mxmlLoadString().

Referenced by acc_connection_Thread().

5.15.1.31 **int fipa_envelope_ParseAddresses** (struct fipa_agent_identifier_s * *aid*, mxml_node_t * *addresses_node*)

Definition at line 737 of file fipa_envelope.c.

References fipa_agent_identifier_s::addresses, mxml_node_s::child, fipa_url_New(), MC_ERR_PARSE, MXML_DESCEND_FIRST, MXML_NO_DESCEND, MXML_TEXT, mxmlFindElement(), fipa_url_sequence_s::num, fipa_url_s::str, mxml_text_s::string, mxml_value_u::text, mxml_node_s::type, fipa_url_sequence_s::urls, and mxml_node_s::value.

Referenced by fipa_envelope_ParseAgentIdentifier().

5.15.1.32 `int fipa_envelope_ParseAgentIdentifier (struct fipa_agent_identifier_s ** aid,
mxmml_node_t * agent_identifier_node)`

Definition at line 687 of file fipa_envelope.c.

References mxmml_node_s::child, fipa_agent_identifier_New(), fipa_envelope_ParseAddresses(), fipa_envelope_ParseResolvers(), MC_ERR_PARSE, MXML_DESCEND_FIRST, MXML_TEXT, mxmmlFindElement(), mxmml_text_s::string, mxmml_value_u::text, mxmml_node_s::type, and mxmml_node_s::value.

Referenced by fipa_envelope_HandleFrom(), fipa_envelope_HandleIntendedReceiver(), fipa_envelope_HandleTo(), and fipa_envelope_ParseResolvers().

5.15.1.33 `int fipa_envelope_ParseResolvers (struct fipa_agent_identifier_s * aid, mxmml_node_t *
resolvers_node)`

Definition at line 804 of file fipa_envelope.c.

References fipa_agent_identifier_set_s::fipa_agent_identifiers, fipa_envelope_ParseAgentIdentifier(), MC_ERR_PARSE, MXML_DESCEND_FIRST, MXML_NO_DESCEND, mxmmlFindElement(), fipa_agent_identifier_set_s::num, fipa_agent_identifier_s::resolvers, and fipa_agent_identifier_set_s::retain_order.

Referenced by fipa_envelope_ParseAgentIdentifier().

5.16 /home/dko/Projects/mobilec/src/include/acc.h File Reference

```
#include <sys/socket.h>
#include "macros.h"
```

Functions

- **STRUCT** (acc, struct **mc_platform_s** ***mc_platform**; **THREAD_T** **thread**; **THREAD_T** **message_handler_thread**; **THREAD_T** **listen_thread**; **THREAD_T** **udplisten_thread**; **int** **waiting**; **MUTEX_T** ***waiting_lock**; **COND_T** ***waiting_cond**; **int** **num_conn_threads**; **THREAD_T** **conn_thread**; **MUTEX_T** **conn_thread_lock**; **COND_T** **conn_thread_cond**; struct **connection_thread_arg_s** ***connection_thread_arg**; **int** **num_msg_threads**; **THREAD_T** **msg_thread**; **MUTEX_T** **msg_thread_lock**; **COND_T** **msg_thread_cond**;) **STRUCT**(**listen_thread_arg**
- **STRUCT** (**connection_thread_arg**, struct **mc_platform_s** ***mc_platform**; struct **connection_s** ***connection**;) **acc_p** **acc_Initialize**(struct **mc_platform_s** ***mc_platform**)
- **int** **acc_Destroy** (**acc_p** **acc**)
- void **acc_Start** (struct **mc_platform_s** ***mc_platform**)
- void * **acc_MessageHandlerThread** (void ***arg**)
- void * **acc_Thread** (void ***arg**)
- void * **acc_connection_Thread** (void ***arg**)
- void * **listen_Thread** (void ***arg**)
- void * **udplisten_Thread** (void ***arg**)

Variables

- u_long **port**
- struct **sockaddr_in** * **addr**
- unsigned long **int client_fd**
- unsigned long **int server_fd**

5.16.1 Function Documentation

5.16.1.1 void* acc_connection_Thread (void * arg)

Definition at line 392 of file acc.c.

References **mc_platform_s::acc**, **fipa_agent_identifier_s::addresses**, **agent_mailbox_Post()**, **mc_platform_s::agent_queue**, **AGENT_UPDATE**, **CANCEL**, **CONNECT_THREAD_EXIT**, **connection_Destroy()**, **mtp_http_s::content**, **mtp_http_content_s::data**, **FIPA_ACL**, **fipa_acl_envelope_Destroy()**, **fipa_acl_envelope_New()**, **fipa_acl_message_Destroy()**, **fipa_acl_message_New()**, **fipa_acl_Parse()**, **fipa_agent_identifier_set_s::fipa_agent_identifiers**, **fipa_envelope_Parse()**, **fipa_message_string_Destroy()**, **fipa_message_string_New()**, **mtp_http_s::http_performative**, **HTTP_POST**, **HTTP_PUT**, **agent_s::mailbox**, **agent_s::mc_platform**, **mc_platform**, **fipa_message_string_s::message**, **message_s::message_body**, **message_Destroy()**, **message_New()**, **mtp_http_s::message_parts**, **mc_platform_s::message_queue**, **message_s::message_type**, **message_xml_parse()**, **MOBILE_AGENT**, **mtp_http_Destroy()**, **mtp_http_initializeFromConnection()**, **mtp_http_New()**, **MXML_NO_CALLBACK**, **mxmLoadString()**, **N_UNDRSTD**, **fipa_agent_identifier_s::name**, **fipa_agent_identifier_set_s::num**, **fipa_acl_envelope_s::num_params**, **fipa_acl_envelope_s::params**, **fipa_message_string_s::parse**, **mc_platform_s::port**, **mc_platform_s::private_key**, **QUER_IF**, **QUER_REF**, **RELAY**, **REQUEST**, **RETURN_MSG**, **fipa_url_s::str**, **strdup**, **SUBSCRIBE**, **mtp_http_s::target**, **fipa_acl_Param_s::to**, **fipa_url_sequence_s::urls**, and **message_s::xml_root**.

Referenced by `acc_Thread()`.

5.16.1.2 `int acc_Destroy (acc_p acc)`

Definition at line 99 of file `acc.c`.

References `MC_SUCCESS`.

Referenced by `mc_platform_Destroy()`.

5.16.1.3 `void* acc_MessageHandlerThread (void * arg)`

Definition at line 111 of file `acc.c`.

References `mc_platform_s::acc`, `agent_Initialize()`, `mc_platform_s::agent_queue`, `agent_s::agent_status`, `AGENT_UPDATE`, `mc_platform_s::ams`, `CANCEL`, `COND_BROADCAST`, `COND_WAIT`, `agent_s::datastate`, `FIPA_ACL`, `mc_platform_s::giant`, `mc_platform_s::giant_cond`, `mc_platform_s::giant_lock`, `agent_s::lock`, `MC_AGENT_NEUTRAL`, `mc_platform`, `MC_RECV_AGENT`, `MC_RECV_MESSAGE`, `MC_RECV_RETURN`, `mc_platform_s::MC_signal`, `mc_platform_s::MC_signal_cond`, `mc_platform_s::MC_signal_lock`, `message_Destroy()`, `mc_platform_s::message_queue`, `message_Send()`, `message_s::message_type`, `MOBILE_AGENT`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `N_UNDRSTD`, `agent_s::name`, `agent_datastate_s::persistent`, `QUER_IF`, `QUER_REF`, `mc_platform_s::quit`, `mc_platform_s::quit_lock`, `RELAY`, `REQUEST`, `RETURN_MSG`, `SUBSCRIBE`, `THREAD_EXIT`, and `message_s::to_address`.

Referenced by `acc_Start()`.

5.16.1.4 `void acc_Start (struct mc_platform_s * mc_platform)`

5.16.1.5 `void* acc_Thread (void * arg)`

Definition at line 293 of file `acc.c`.

References `mc_platform_s::acc`, `acc_connection_Thread()`, `COND_BROADCAST`, `COND_WAIT`, `CONN_THREADS`, `mc_platform_s::connection_queue`, `mc_platform_s::giant`, `mc_platform_s::giant_cond`, `mc_platform_s::giant_lock`, `mc_platform`, `MC_RECV_CONNECTION`, `mc_platform_s::MC_signal`, `mc_platform_s::MC_signal_cond`, `mc_platform_s::MC_signal_lock`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `mc_platform_s::quit`, `mc_platform_s::quit_lock`, `THREAD_CREATE`, `THREAD_DETACH`, and `THREAD_EXIT`.

Referenced by `acc_Start()`.

5.16.1.6 `void* listen_Thread (void * arg)`

Definition at line 656 of file `acc.c`.

References `mc_platform_s::acc`, `connection_s::addr`, `connection_s::AES_key`, `mc_platform_s::agency`, `auth_conn_rece_key()`, `BACKLOG`, `mc_platform_s::bluetooth`, `connection_s::clientfd`, `COND_BROADCAST`, `connection_s::connect_id`, `connection_New()`, `mc_platform_s::connection_queue`, `agency_s::known_host_filename`, `mc_platform`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `connection_s::nonce`, `mc_platform_s::port`, `agency_s::portno`, `mc_platform_s::private_key`, `connection_s::remote_hostname`, `connection_s::serverfd`, `SOCKET_ERROR`, `mc_platform_s::sockfd`, and `THREAD_EXIT`.

Referenced by `acc_Start()`.

5.16.1.7 **STRUCT** (`connection_thread_arg`, `struct mc_platform_s *mc_platform`; `struct connection_s *connection`;

5.16.1.8 **STRUCT** (`acc`, `struct mc_platform_s *mc_platform`; `THREAD_T thread`; `THREAD_T message_handler_thread`; `THREAD_T listen_thread`; `THREAD_T udplisten_thread`; `int waiting`; `MUTEX_T *waiting_lock`; `COND_T *waiting_cond`; `int num_conn_threads`; `THREAD_T conn_thread`; `MUTEX_T conn_thread_lock`; `COND_T conn_thread_cond`; `struct connection_thread_arg_s *connection_thread_arg`; `int num_msg_threads`; `THREAD_T msg_thread`; `MUTEX_T msg_thread_lock`; `COND_T msg_thread_cond`;

5.16.1.9 **void*** `udplisten_Thread` (`void *arg`)

Definition at line 880 of file `acc.c`.

References `buf`, `BUFLen`, `mc_platform_s::hostname`, `mc_platform`, `PACKAGE_VERSION`, `mc_platform_s::port`, and `UDPPORT`.

Referenced by `acc_Start()`.

5.16.2 Variable Documentation

5.16.2.1 **struct** `sockaddr_in`* `addr`

Definition at line 78 of file `acc.h`.

5.16.2.2 **unsigned long int** `client_fd`

Definition at line 79 of file `acc.h`.

Referenced by `main()`, and `ssl_test()`.

5.16.2.3 **u_long** `port`

Definition at line 77 of file `acc.h`.

Referenced by `MC_AclSend()`, `MC_MigrateAgent_chdl()`, `MC_SendAgentMigrationMessage_chdl()`, `MC_SendAgentMigrationMessageFile_chdl()`, `message_send_Thread()`, and `message_xml_parse__message()`.

5.16.2.4 **unsigned long int** `server_fd`

Definition at line 80 of file `acc.h`.

Referenced by `main()`, and `ssl_test()`.

5.17 /home/dko/Projects/mobilec/src/include/agent.h File Reference

```
#include "agent_datastate.h"
#include "agent_task.h"
#include "libmc.h"
#include "message.h"
#include "macros.h"
#include "data_structures.h"
#include "agent_mailbox.h"
```

Data Structures

- struct [agent_s](#)

Defines

- #define [AGENT_T](#)

Typedefs

- typedef struct [agent_s](#) [agent_t](#)
- typedef [agent_t](#) * [MCAgent_t](#)
- typedef [agent_t](#) * [agent_p](#)

Functions

- [int agent_AddPersistentVariable](#) ([agent_p](#) agent, [int](#) task_num, const char *var_name)
- [agent_p agent_New](#) (void)
- [agent_p agent_NewBinary](#) (struct [mc_platform_s](#) *mc_platform)
- [agent_p agent_Copy](#) (const [agent_p](#) agent)
- [int agent_Destroy](#) ([agent_p](#) agent)
- [agent_p agent_Initialize](#) (struct [mc_platform_s](#) *mc_platform, [message_p](#) message, [int](#) id)
- void [agent_RunChScript](#) ([MCAgent_t](#) agent, struct [mc_platform_s](#) *global)
- void * [agent_RunChScriptThread](#) (void *agent)
- void * [agent_ChScriptInitVar](#) ([ChInterp_t](#) *interp)

5.17.1 Define Documentation

5.17.1.1 #define AGENT_T

Definition at line 108 of file agent.h.

5.17.2 Typedef Documentation

5.17.2.1 typedef agent_t* agent_p

Definition at line 111 of file agent.h.

5.17.2.2 typedef struct agent_s agent_t

Definition at line 109 of file agent.h.

5.17.2.3 typedef agent_t* MCAgent_t

Definition at line 110 of file agent.h.

5.17.3 Function Documentation

5.17.3.1 int agent_AddPersistentVariable (agent_p agent, int task_num, const char * var_name)

Definition at line 52 of file agent.c.

References agent_s::agent_interp, agent_task_s::agent_variable_list, interpreter_variable_data_s::array_dim, interpreter_variable_data_s::array_extent, CH_DATATYPE_SIZE, CHECK_NULL, interpreter_variable_data_s::data, interpreter_variable_data_s::data_type, agent_s::datastate, MC_ERR, agent_s::name, interpreter_variable_data_s::name, interpreter_variable_data_s::size, size, strdup, agent_datastate_s::task_progress, and agent_datastate_s::tasks.

5.17.3.2 void* agent_ChScriptInitVar (ChInterp_t * interp)

Definition at line 491 of file agent.c.

References MC_AclAddReceiver_chdl(), MC_AclAddReplyTo_chdl(), MC_AclDestroy_chdl(), MC_AclGetContent_chdl(), MC_AclGetConversationID_chdl(), MC_AclGetPerformative_chdl(), MC_AclGetProtocol_chdl(), MC_AclGetSender_chdl(), MC_AclNew_chdl(), MC_AclPost_chdl(), MC_AclReply_chdl(), MC_AclRetrieve_chdl(), MC_AclSend_chdl(), MC_AclSetContent_chdl(), MC_AclSetConversationID_chdl(), MC_AclSetPerformative_chdl(), MC_AclSetProtocol_chdl(), MC_AclSetSender_chdl(), MC_AclWaitRetrieve_chdl(), MC_AddAgent_chdl(), MC_AgentAddTask_chdl(), MC_AgentVariableRetrieve_chdl(), MC_AgentVariableSave_chdl(), MC_Barrier_chdl(), MC_BarrierDelete_chdl(), MC_BarrierInit_chdl(), MC_CallAgentFunc_chdl(), MC_ComposeAgent_chdl(), MC_ComposeAgentFromFile_chdl(), MC_ComposeAgentFromFileWithWorkgroup_chdl(), MC_ComposeAgentWithWorkgroup_chdl(), MC_CondBroadcast_chdl(), MC_CondReset_chdl(), MC_CondSignal_chdl(), MC_CondWait_chdl(), MC_DeleteAgent_chdl(), MC_DeleteAgentWG_chdl(), MC_DeregisterService_chdl(), MC_DestroyServiceSearchResult_chdl(), MC_End_chdl(), MC_FindAgentByID_chdl(), MC_FindAgentByName_chdl(), MC_GetAgentID_chdl(), MC_GetAgentName_chdl(), MC_GetAgentStatus_chdl(), MC_GetAgentXMLString_chdl(), MC_GetTimeOfDay_chdl(), MC_HaltAgency_chdl(), MC_MigrateAgent_chdl(), MC_MutexLock_chdl(), MC_MutexUnlock_chdl(), MC_PrintAgentCode_chdl(), MC_RegisterService_chdl(), MC_ResumeAgency_chdl(), MC_RetrieveAgent_chdl(), MC_RetrieveAgentCode_chdl(), MC_SaveData_chdl(), MC_SearchForService_chdl(), MC_SemaphorePost_chdl(), MC_SemaphoreWait_chdl(), MC_SendAgentMigrationMessage_chdl(), MC_SendAgentMigrationMessageFile_chdl(), MC_SendSteerCommand_chdl(), MC_SetAgentStatus_chdl(), MC_SetDefaultAgentStatus_chdl(), MC_SyncDelete_chdl(), MC_SyncInit_chdl(), MC_TerminateAgent_chdl(), and MC_TerminateAgentWG_chdl().

Referenced by AP_QUEUE_STD_DEFN_TEMPLATE(), and mc_platform_Initialize().

5.17.3.3 agent_p agent_Copy (const agent_p agent)

Definition at line 134 of file agent.c.

References agent_datastate_Copy(), agent_s::agent_interp, agent_mailbox_New(), agent_s::agent_persistent, agent_s::agent_status, agent_s::agent_type, agent_s::arrival_time, agent_s::datastate, agent_s::home, agent_s::home_port, agent_s::id, agent_s::lock, agent_s::mailbox, MUTEX_INIT, MUTEX_LOCK, MUTEX_T, agent_s::name, agent_s::orphan, agent_s::owner, agent_s::return_data, and agent_s::run_lock.

Referenced by MC_CopyAgent().

5.17.3.4 int agent_Destroy (agent_p agent)

Definition at line 413 of file agent.c.

References agent_datastate_Destroy(), agent_s::agent_interp, agent_mailbox_Destroy(), agent_s::agent_status, agent_s::datastate, agent_s::home, mc_platform_s::interpreter_queue, agent_s::lock, agent_s::mailbox, MC_AGENT_NEUTRAL, agent_s::mc_platform, MC_SUCCESS, MUTEX_DESTROY, MUTEX_LOCK, agent_s::name, agent_s::owner, agent_s::run_lock, agent_s::sender, and agent_s::wg_code.

Referenced by agent_Initialize().

5.17.3.5 agent_p agent_Initialize (struct mc_platform_s * mc_platform, message_p message, int id)

Definition at line 292 of file agent.c.

References agent_s::agent_address, agent_datastate_New(), agent_Destroy(), agent_mailbox_New(), agent_s::agent_pipe_active, agent_s::agent_pipe_ready_to_read, agent_s::agent_ready_to_send, agent_s::agent_script_ready, agent_s::agent_status, agent_s::agent_thread_id, agent_s::agent_type, message_s::agent_xml_flag, agent_xml_parse(), agent_s::arrival_time, agent_s::datastate, mc_platform_s::default_agentstatus, mc_platform_s::err, agent_s::home, mc_platform_s::hostname, agent_s::id, agent_s::lock, agent_s::mailbox, MC_ERR_PARSE, agent_s::mc_platform, MC_REMOTE_AGENT, MC_RETURN_AGENT, MC_WAIT_CH, message_s::message_type, MOBILE_AGENT, MUTEX_DESTROY, MUTEX_INIT, MUTEX_T, agent_s::orphan, mc_platform_s::port, RETURN_MSG, agent_s::run_lock, agent_s::sender, agent_datastate_s::xml_agent_root, message_s::xml_payload, message_s::xml_root, and agent_datastate_s::xml_root.

Referenced by acc_MessageHandlerThread(), MC_SendAgent(), MC_SendAgentFile(), and MC_SendAgentMigrationMessageFile().

5.17.3.6 agent_p agent_New (void)

Definition at line 197 of file agent.c.

References agent_s::lock, MUTEX_INIT, MUTEX_NEW, and agent_s::run_lock.

Referenced by MC_ComposeAgentWithWorkgroup().

5.17.3.7 **agent_p agent_NewBinary** (**struct mc_platform_s * mc_platform**)

Definition at line 220 of file agent.c.

References agent_s::agent_address, agent_mailbox_New(), agent_s::agent_pipe_active, agent_s::agent_pipe_ready_to_read, agent_s::agent_ready_to_send, agent_s::agent_script_ready, agent_s::agent_status, agent_s::agent_thread_id, agent_s::arrival_time, agent_s::binary, agent_s::home, mc_platform_s::hostname, agent_s::id, agent_s::lock, agent_s::mailbox, MC_AGENT_ACTIVE, agent_s::mc_platform, MUTEX_INIT, MUTEX_T, agent_s::orphan, mc_platform_s::port, agent_s::run_lock, and agent_s::sender.

Referenced by MC_AddStationaryAgent().

5.17.3.8 **void agent_RunChScript** (**MCAgent_t agent**, **struct mc_platform_s * global**)

5.17.3.9 **void* agent_RunChScriptThread** (**void * agent**)

Definition at line 971 of file agent.c.

References agent_s::agent_interp, mc_platform_s::ams, COND_SIGNAL, agent_s::datastate, agent_s::id, mc_platform_s::interp_options, mc_platform_s::interpreter_queue, interpreter_queue_CreateRetrieve(), interpreter_variable_data_Destroy(), interpreter_variable_data_Initialize(), interpreter_variable_data_InitializeFromAgent(), MC_AGENT_NEUTRAL, MC_EXEC_AGENT, agent_s::mc_platform, mc_platform, MC_RETURN_AGENT, mc_platform_s::MC_signal, mc_platform_s::MC_signal_cond, mc_platform_s::MC_signal_lock, MC_WAIT_FINISHED, MC_WAIT_MESSGSEND, MUTEX_LOCK, MUTEX_UNLOCK, agent_s::name, SIGNAL, agent_datastate_s::task_progress, and WARN.

Referenced by agent_RunChScript().

5.18 /home/dko/Projects/mobilec/src/include/agent_datastate.h File Reference

```
#include <mxml.h>
#include "agent_task.h"
```

Data Structures

- struct [agent_datastate_s](#)

Typedefs

- typedef struct [agent_datastate_s](#) [agent_datastate_t](#)
- typedef [agent_datastate_t](#) * [agent_datastate_p](#)

Functions

- [agent_datastate_p](#) [agent_datastate_Copy](#) (const [agent_datastate_p](#) *datastate*)
- [agent_datastate_p](#) [agent_datastate_New](#) (void)
- int [agent_datastate_Destroy](#) ([agent_datastate_p](#) *agent_datastate*)

5.18.1 Typedef Documentation

5.18.1.1 typedef [agent_datastate_t](#)* [agent_datastate_p](#)

Definition at line 73 of file [agent_datastate.h](#).

5.18.1.2 typedef struct [agent_datastate_s](#) [agent_datastate_t](#)

5.18.2 Function Documentation

5.18.2.1 [agent_datastate_p](#) [agent_datastate_Copy](#) (const [agent_datastate_p](#) *datastate*)

Definition at line 47 of file [agent_datastate.c](#).

References [agent_datastate_s::agent_code](#), [agent_datastate_s::agent_code_ids](#), [agent_datastate_s::agent_codes](#), [agent_datastate_New\(\)](#), [agent_task_Copy\(\)](#), [agent_datastate_s::init_agent_status](#), [agent_datastate_s::number_of_tasks](#), [agent_datastate_s::persistent](#), [agent_datastate_s::return_data](#), [agent_datastate_s::task_progress](#), and [agent_datastate_s::tasks](#).

Referenced by [agent_Copy\(\)](#).

5.18.2.2 int [agent_datastate_Destroy](#) ([agent_datastate_p](#) *agent_datastate*)

Definition at line 136 of file [agent_datastate.c](#).

References [agent_datastate_s::agent_code_ids](#), [agent_datastate_s::agent_codes](#), [agent_task_Destroy\(\)](#), [MC_SUCCESS](#), [mxmlDelete\(\)](#), [agent_datastate_s::number_of_tasks](#), [agent_datastate_s::tasks](#), and [agent_datastate_s::xml_root](#).

Referenced by agent_Destroy().

5.18.2.3 agent_datastate_p agent_datastate_New (void)

Definition at line 115 of file agent_datastate.c.

References agent_datastate_s::agent_code, CHECK_NULL, agent_datastate_s::init_agent_status, agent_datastate_s::number_of_tasks, agent_datastate_s::persistent, agent_datastate_s::progress_modifier, agent_datastate_s::return_data, agent_datastate_s::task_progress, agent_datastate_s::tasks, agent_datastate_s::xml_agent_root, and agent_datastate_s::xml_root.

Referenced by agent_datastate_Copy(), agent_Initialize(), and MC_ComposeAgentWithWorkgroup().

5.19 /home/dko/Projects/mobilec/src/include/agent_lib.h File Reference

Functions

- EXPORTCH [int MC_AclGetProtocol_chdl](#) (void *varg)
- EXPORTCH [char * MC_AclGetConversationID_chdl](#) (void *varg)
- EXPORTCH [int MC_AclGetPerformative_chdl](#) (void *varg)
- EXPORTCH [int MC_AclGetSender_chdl](#) (void *varg)
- EXPORTCH [char * MC_AclGetContent_chdl](#) (void *varg)
- EXPORTCH [int MC_AclDestroy_chdl](#) (void *varg)
- EXPORTCH [void * MC_AclNew_chdl](#) (void *varg)
- EXPORTCH [int MC_AclPost_chdl](#) (void *varg)
- EXPORTCH [void * MC_AclReply_chdl](#) (void *varg)
- EXPORTCH [void * MC_AclRetrieve_chdl](#) (void *varg)
- EXPORTCH [int MC_AclSend_chdl](#) (void *varg)
- EXPORTCH [void * MC_AclWaitRetrieve_chdl](#) (void *varg)
- EXPORTCH [int MC_AclSetProtocol_chdl](#) (void *varg)
- EXPORTCH [int MC_AclSetConversationID_chdl](#) (void *varg)
- EXPORTCH [int MC_AclSetPerformative_chdl](#) (void *varg)
- EXPORTCH [int MC_AclSetSender_chdl](#) (void *varg)
- EXPORTCH [int MC_AclAddReceiver_chdl](#) (void *varg)
- EXPORTCH [int MC_AclAddReplyTo_chdl](#) (void *varg)
- EXPORTCH [int MC_AclSetContent_chdl](#) (void *varg)
- EXPORTCH [int MC_AddAgent_chdl](#) (void *varg)
- EXPORTCH [int MC_AgentAddTask_chdl](#) (void *varg)
- EXPORTCH [const void * MC_AgentVariableRetrieve_chdl](#) (void *varg)
- EXPORTCH [int MC_AgentVariableSave_chdl](#) (void *varg)
- EXPORTCH [int MC_Barrier_chdl](#) (void *varg)
- EXPORTCH [int MC_BarrierDelete_chdl](#) (void *varg)
- EXPORTCH [int MC_BarrierInit_chdl](#) (void *varg)
- EXPORTCH [int MC_CallAgentFunc_chdl](#) (void *varg)
- EXPORTCH [MCAgent_t MC_ComposeAgent_chdl](#) (void *varg)
- EXPORTCH [MCAgent_t MC_ComposeAgentWithWorkgroup_chdl](#) (void *varg)
- EXPORTCH [MCAgent_t MC_ComposeAgentFromFile_chdl](#) (void *varg)
- EXPORTCH [MCAgent_t MC_ComposeAgentFromFileWithWorkgroup_chdl](#) (void *varg)
- EXPORTCH [int MC_CondBroadcast_chdl](#) (void *varg)
- EXPORTCH [int MC_CondWait_chdl](#) (void *varg)
- EXPORTCH [int MC_CondReset_chdl](#) (void *varg)
- EXPORTCH [int MC_CondSignal_chdl](#) (void *varg)
- EXPORTCH [int MC_DeleteAgent_chdl](#) (void *varg)
- EXPORTCH [int MC_DeleteAgentWG_chdl](#) (void *varg)
- EXPORTCH [int MC_DeregisterService_chdl](#) (void *varg)
- EXPORTCH [int MC_DestroyServiceSearchResult_chdl](#) (void *varg)
- EXPORTCH [int MC_End_chdl](#) (void *varg)
- EXPORTCH [MCAgent_t MC_FindAgentByID_chdl](#) (void *varg)
- EXPORTCH [MCAgent_t MC_FindAgentByName_chdl](#) (void *varg)
- EXPORTCH [int MC_GetAgentID_chdl](#) (void *varg)
- EXPORTCH [char * MC_GetAgentName_chdl](#) (void *varg)
- EXPORTCH [int MC_GetAgentNumTasks_chdl](#) (void *varg)

- EXPORTCH char * [MC_GetAgentXMLString_chdl](#) (void *varg)
- EXPORTCH int [MC_GetTimeOfDay_chdl](#) (void *varg)
- EXPORTCH int [MC_HaltAgency_chdl](#) (void *varg)
- EXPORTCH int [MC_PrintAgentCode_chdl](#) (void *varg)
- EXPORTCH int [MC_MigrateAgent_chdl](#) (void *varg)
- EXPORTCH int [MC_MutexLock_chdl](#) (void *varg)
- EXPORTCH int [MC_MutexUnlock_chdl](#) (void *varg)
- EXPORTCH int [MC_RegisterService_chdl](#) (void *varg)
- EXPORTCH int [MC_ResumeAgency_chdl](#) (void *varg)
- EXPORTCH MC_Agent_t [MC_RetrieveAgent_chdl](#) (void *varg)
- EXPORTCH char * [MC_RetrieveAgentCode_chdl](#) (void *varg)
- EXPORTCH int [MC_SearchForService_chdl](#) (void *varg)
- EXPORTCH int [MC_SemaphorePost_chdl](#) (void *varg)
- EXPORTCH int [MC_SemaphoreWait_chdl](#) (void *varg)
- EXPORTCH int [MC_SendSteerCommand_chdl](#) (void *varg)
- EXPORTCH int [MC_TerminateAgent_chdl](#) (void *varg)
- EXPORTCH int [MC_TerminateAgentWG_chdl](#) (void *varg)
- EXPORTCH int [MC_GetAgentStatus_chdl](#) (void *varg)
- EXPORTCH int [MC_SaveData_chdl](#) (void *varg)
- EXPORTCH int [MC_SendAgentMigrationMessage_chdl](#) (void *varg)
- EXPORTCH int [MC_SendAgentMigrationMessageFile_chdl](#) (void *varg)
- EXPORTCH int [MC_SetAgentStatus_chdl](#) (void *varg)
- EXPORTCH int [MC_SetDefaultAgentStatus_chdl](#) (void *varg)
- EXPORTCH int [MC_SyncDelete_chdl](#) (void *varg)
- EXPORTCH int [MC_SyncInit_chdl](#) (void *varg)

5.19.1 Function Documentation

5.19.1.1 EXPORTCH int MC_AclAddReceiver_chdl (void * *varg*)

Definition at line 2819 of file libmc.c.

References [MC_AclAddReceiver\(\)](#).

Referenced by [agent_ChScriptInitVar\(\)](#).

5.19.1.2 EXPORTCH int MC_AclAddReplyTo_chdl (void * *varg*)

Definition at line 2839 of file libmc.c.

References [MC_AclAddReplyTo\(\)](#).

Referenced by [agent_ChScriptInitVar\(\)](#).

5.19.1.3 EXPORTCH int MC_AclDestroy_chdl (void * *varg*)

Definition at line 2551 of file libmc.c.

References [MC_AclDestroy\(\)](#).

Referenced by [agent_ChScriptInitVar\(\)](#).

5.19.1.4 EXPORTCH char* MC_AclGetContent_chdl (void * *varg*)

Definition at line 2730 of file libmc.c.

References MC_AclGetContent().

Referenced by agent_ChScriptInitVar().

5.19.1.5 EXPORTCH char* MC_AclGetConversationID_chdl (void * *varg*)

Definition at line 2681 of file libmc.c.

References MC_AclGetConversationID().

Referenced by agent_ChScriptInitVar().

5.19.1.6 EXPORTCH int MC_AclGetPerformative_chdl (void * *varg*)

Definition at line 2696 of file libmc.c.

References MC_AclGetPerformative().

Referenced by agent_ChScriptInitVar().

5.19.1.7 EXPORTCH int MC_AclGetProtocol_chdl (void * *varg*)

Definition at line 2666 of file libmc.c.

References MC_AclGetProtocol().

Referenced by agent_ChScriptInitVar().

5.19.1.8 EXPORTCH int MC_AclGetSender_chdl (void * *varg*)

Definition at line 2711 of file libmc.c.

References MC_AclGetSender().

Referenced by agent_ChScriptInitVar().

5.19.1.9 EXPORTCH void* MC_AclNew_chdl (void * *varg*)

Definition at line 2566 of file libmc.c.

References MC_AclNew().

Referenced by agent_ChScriptInitVar().

5.19.1.10 EXPORTCH int MC_AclPost_chdl (void * *varg*)

Definition at line 2574 of file libmc.c.

References MC_AclPost().

Referenced by agent_ChScriptInitVar().

5.19.1.11 EXPORTCH void* MC_AclReply_chdl (void * *varg*)

Definition at line 2592 of file libmc.c.

References MC_AclReply().

Referenced by agent_ChScriptInitVar().

5.19.1.12 EXPORTCH void* MC_AclRetrieve_chdl (void * *varg*)

Definition at line 2608 of file libmc.c.

References MC_AclRetrieve().

Referenced by agent_ChScriptInitVar().

5.19.1.13 EXPORTCH int MC_AclSend_chdl (void * *varg*)

Definition at line 2624 of file libmc.c.

References CHECK_NULL, MC_AclSend(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

5.19.1.14 EXPORTCH int MC_AclSetContent_chdl (void * *varg*)

Definition at line 2859 of file libmc.c.

References fipa_acl_message_s::content, and MC_AclSetContent().

Referenced by agent_ChScriptInitVar().

5.19.1.15 EXPORTCH int MC_AclSetConversationID_chdl (void * *varg*)

Definition at line 2763 of file libmc.c.

References MC_AclSetConversationID().

Referenced by agent_ChScriptInitVar().

5.19.1.16 EXPORTCH int MC_AclSetPerformative_chdl (void * *varg*)

Definition at line 2781 of file libmc.c.

References MC_AclSetPerformative(), and fipa_acl_message_s::performative.

Referenced by agent_ChScriptInitVar().

5.19.1.17 EXPORTCH int MC_AclSetProtocol_chdl (void * *varg*)

Definition at line 2745 of file libmc.c.

References MC_AclSetProtocol(), and fipa_acl_message_s::protocol.

Referenced by agent_ChScriptInitVar().

5.19.1.18 EXPORTCH int MC_AclSetSender_chdl (void * *varg*)

Definition at line 2799 of file libmc.c.

References MC_AclSetSender().

Referenced by agent_ChScriptInitVar().

5.19.1.19 EXPORTCH void* MC_AclWaitRetrieve_chdl (void * *varg*)

Definition at line 2648 of file libmc.c.

References MC_AclWaitRetrieve().

Referenced by agent_ChScriptInitVar().

5.19.1.20 EXPORTCH int MC_AddAgent_chdl (void * *varg*)

Definition at line 2879 of file libmc.c.

References CHECK_NULL, MC_AddAgent(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

5.19.1.21 EXPORTCH int MC_AgentAddTask_chdl (void * *varg*)

Definition at line 2903 of file libmc.c.

References MC_AgentAddTask().

Referenced by agent_ChScriptInitVar().

5.19.1.22 EXPORTCH const void* MC_AgentVariableRetrieve_chdl (void * *varg*)

Definition at line 2937 of file libmc.c.

References MC_AgentVariableRetrieve().

Referenced by agent_ChScriptInitVar().

5.19.1.23 EXPORTCH int MC_AgentVariableSave_chdl (void * *varg*)

Definition at line 2961 of file libmc.c.

References MC_AgentVariableSave().

Referenced by agent_ChScriptInitVar().

5.19.1.24 EXPORTCH int MC_Barrier_chdl (void * *varg*)

Definition at line 3013 of file libmc.c.

References CHECK_NULL, MC_Barrier(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

5.19.1.25 EXPORTCH int MC_BarrierDelete_chdl (void * *varg*)

Definition at line 3036 of file libmc.c.

References CHECK_NULL, MC_BarrierDelete(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

5.19.1.26 EXPORTCH int MC_BarrierInit_chdl (void * *varg*)

Definition at line 3059 of file libmc.c.

References CHECK_NULL, MC_BarrierInit(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

5.19.1.27 EXPORTCH int MC_CallAgentFunc_chdl (void * *varg*)

Definition at line 2983 of file libmc.c.

References MC_CallAgentFuncVar().

Referenced by agent_ChScriptInitVar().

5.19.1.28 EXPORTCH MCAgent_t MC_ComposeAgent_chdl (void * *varg*)

Definition at line 3107 of file libmc.c.

References MC_ComposeAgentWithWorkgroup().

Referenced by agent_ChScriptInitVar().

5.19.1.29 EXPORTCH MCAgent_t MC_ComposeAgentFromFile_chdl (void * *varg*)

Definition at line 3191 of file libmc.c.

References MC_ComposeAgentFromFileWithWorkgroup().

Referenced by agent_ChScriptInitVar().

5.19.1.30 EXPORTCH MCAgent_t MC_ComposeAgentFromFileWithWorkgroup_chdl (void * *varg*)

Definition at line 3232 of file libmc.c.

References MC_ComposeAgentFromFileWithWorkgroup().

Referenced by agent_ChScriptInitVar().

5.19.1.31 EXPORTCH MCAgent_t MC_ComposeAgentWithWorkgroup_chdl (void * *varg*)

Definition at line 3148 of file libmc.c.

References MC_ComposeAgentS().

Referenced by agent_ChScriptInitVar().

5.19.1.32 EXPORTCH int MC_CondBroadcast_chdl (void * *varg*)

Definition at line 3084 of file libmc.c.

References CHECK_NULL, MC_CondBroadcast(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

5.19.1.33 EXPORTCH int MC_CondReset_chdl (void * *varg*)

Definition at line 3298 of file libmc.c.

References CHECK_NULL, MC_CondReset(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

5.19.1.34 EXPORTCH int MC_CondSignal_chdl (void * *varg*)

Definition at line 3275 of file libmc.c.

References CHECK_NULL, MC_CondSignal(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

5.19.1.35 EXPORTCH int MC_CondWait_chdl (void * *varg*)

Definition at line 3321 of file libmc.c.

References CHECK_NULL, MC_CondWait(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

5.19.1.36 EXPORTCH int MC_DeleteAgent_chdl (void * *varg*)

Definition at line 3343 of file libmc.c.

References MC_DeleteAgent(), MC_ERR_NOT_FOUND, and MC_FindAgentByName().

Referenced by agent_ChScriptInitVar().

5.19.1.37 EXPORTCH int MC_DeleteAgentWG_chdl (void * *varg*)

Definition at line 3363 of file libmc.c.

References MC_DeleteAgentWG(), MC_ERR_NOT_FOUND, and MC_FindAgentByName().

Referenced by agent_ChScriptInitVar().

5.19.1.38 EXPORTCH int MC_DeregisterService_chdl (void * *varg*)

Definition at line 3412 of file libmc.c.

References CHECK_NULL, MC_DeregisterService(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

5.19.1.39 EXPORTCH int MC_DestroyServiceSearchResult_chdl (void * *varg*)

Definition at line 3385 of file libmc.c.

References MC_DestroyServiceSearchResult().

Referenced by agent_ChScriptInitVar().

5.19.1.40 EXPORTCH int MC_End_chdl (void * *varg*)

Definition at line 3439 of file libmc.c.

References CHECK_NULL, MC_End(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

5.19.1.41 EXPORTCH MCAgent_t MC_FindAgentByID_chdl (void * *varg*)

Definition at line 3456 of file libmc.c.

References CHECK_NULL, MC_FindAgentByID(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

5.19.1.42 EXPORTCH MCAgent_t MC_FindAgentByName_chdl (void * *varg*)

Definition at line 3479 of file libmc.c.

References CHECK_NULL, MC_FindAgentByName(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

5.19.1.43 EXPORTCH int MC_GetAgentID_chdl (void * *varg*)

Definition at line 3526 of file libmc.c.

References MC_GetAgentID().

Referenced by agent_ChScriptInitVar().

5.19.1.44 EXPORTCH char* MC_GetAgentName_chdl (void * *varg*)

Definition at line 3542 of file libmc.c.

References MC_GetAgentName().

Referenced by agent_ChScriptInitVar().

5.19.1.45 EXPORTCH int MC_GetAgentNumTasks_chdl (void * *varg*)

Definition at line 3558 of file libmc.c.

References MC_GetAgentNumTasks().

5.19.1.46 EXPORTCH int MC_GetAgentStatus_chdl (void * *varg*)

Definition at line 3574 of file libmc.c.

References MC_GetAgentStatus().

Referenced by agent_ChScriptInitVar().

5.19.1.47 EXPORTCH char* MC_GetAgentXMLString_chdl (void * *varg*)

Definition at line 3590 of file libmc.c.

References MC_GetAgentXMLString().

Referenced by agent_ChScriptInitVar().

5.19.1.48 EXPORTCH int MC_GetTimeOfDay_chdl (void * *varg*)

Definition at line 3606 of file libmc.c.

Referenced by agent_ChScriptInitVar().

5.19.1.49 EXPORTCH int MC_HaltAgency_chdl (void * *varg*)

Definition at line 3621 of file libmc.c.

References CHECK_NULL, MC_HaltAgency(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

5.19.1.50 EXPORTCH int MC_MigrateAgent_chdl (void * *varg*)

Definition at line 3638 of file libmc.c.

References MC_MigrateAgent(), and port.

Referenced by agent_ChScriptInitVar().

5.19.1.51 EXPORTCH int MC_MutexLock_chdl (void * *varg*)

Definition at line 3657 of file libmc.c.

References CHECK_NULL, MC_MutexLock(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

5.19.1.52 EXPORTCH int MC_MutexUnlock_chdl (void * *varg*)

Definition at line 3681 of file libmc.c.

References CHECK_NULL, MC_MutexUnlock(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

5.19.1.53 EXPORTCH int MC_PrintAgentCode_chdl (void * *varg*)

Definition at line 3705 of file libmc.c.

References MC_PrintAgentCode().

Referenced by agent_ChScriptInitVar().

5.19.1.54 EXPORTCH int MC_RegisterService_chdl (void * *varg*)

Definition at line 3721 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_RegisterService().

Referenced by agent_ChScriptInitVar().

5.19.1.55 EXPORTCH int MC_ResumeAgency_chdl (void * *varg*)

Definition at line 3758 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_ResumeAgency().

Referenced by agent_ChScriptInitVar().

5.19.1.56 EXPORTCH MCAgent_t MC_RetrieveAgent_chdl (void * *varg*)

Definition at line 3776 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_RetrieveAgent().

Referenced by agent_ChScriptInitVar().

5.19.1.57 EXPORTCH char* MC_RetrieveAgentCode_chdl (void * *varg*)

Definition at line 3793 of file libmc.c.

References MC_RetrieveAgentCode().

Referenced by agent_ChScriptInitVar().

5.19.1.58 EXPORTCH int MC_SaveData_chdl (void * *varg*)

Definition at line 3809 of file libmc.c.

References agent_task_s::agent_variable_list, interpreter_variable_data_s::data, interpreter_variable_data_s::data_type, agent_s::datastate, interpreter_variable_data_New(), interpreter_variable_data_s::name, interpreter_variable_data_s::size, size, strdup, agent_datastate_s::task_progress, and agent_datastate_s::tasks.

Referenced by agent_ChScriptInitVar().

5.19.1.59 EXPORTCH int MC_SearchForService_chdl (void * *varg*)

Definition at line 3844 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SearchForService().

Referenced by agent_ChScriptInitVar().

5.19.1.60 EXPORTCH int MC_SemaphorePost_chdl (void * *varg*)

Definition at line 3885 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SemaphorePost().

Referenced by agent_ChScriptInitVar().

5.19.1.61 EXPORTCH int MC_SemaphoreWait_chdl (void * *varg*)

Definition at line 3909 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SemaphoreWait().

Referenced by agent_ChScriptInitVar().

5.19.1.62 EXPORTCH int MC_SendAgentMigrationMessage_chdl (void * *varg*)

Definition at line 3933 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, MC_SendAgentMigrationMessage(), and port.

Referenced by agent_ChScriptInitVar().

5.19.1.63 EXPORTCH int MC_SendAgentMigrationMessageFile_chdl (void * *varg*)

Definition at line 3958 of file libmc.c.

References MC_SendAgentMigrationMessageFile(), and port.

Referenced by agent_ChScriptInitVar().

5.19.1.64 EXPORTCH int MC_SendSteerCommand_chdl (void * *varg*)

Definition at line 3978 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SendSteerCommand().

Referenced by agent_ChScriptInitVar().

5.19.1.65 EXPORTCH int MC_SetAgentStatus_chdl (void * *varg*)

Definition at line 4001 of file libmc.c.

References MC_SetAgentStatus().

Referenced by agent_ChScriptInitVar().

5.19.1.66 EXPORTCH int MC_SetDefaultAgentStatus_chdl (void * *varg*)

Definition at line 4019 of file libmc.c.

References CHECK_NULL, int, agency_s::mc_platform, and MC_SetDefaultAgentStatus().

Referenced by agent_ChScriptInitVar().

5.19.1.67 EXPORTCH int MC_SyncDelete_chdl (void * *varg*)

Definition at line 4042 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SyncDelete().

Referenced by agent_ChScriptInitVar().

5.19.1.68 EXPORTCH int MC_SyncInit_chdl (void * *varg*)

Definition at line 4065 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SyncInit().

Referenced by agent_ChScriptInitVar().

5.19.1.69 EXPORTCH int MC_TerminateAgent_chdl (void * *varg*)

Definition at line 4089 of file libmc.c.

References MC_ERR_NOT_FOUND, MC_FindAgentByName(), and MC_TerminateAgent().

Referenced by agent_ChScriptInitVar().

5.19.1.70 EXPORTCH int MC_TerminateAgentWG_chdl (void * *varg*)

Definition at line 4110 of file libmc.c.

References MC_ERR_NOT_FOUND, MC_FindAgentByName(), and MC_TerminateAgentWG().

Referenced by agent_ChScriptInitVar().

5.20 /home/dko/Projects/mobilec/src/include/agent_mailbox.h File Reference

Data Structures

- struct [agent_mailbox_s](#)

Typedefs

- typedef struct [agent_mailbox_s](#) [agent_mailbox_t](#)
- typedef [agent_mailbox_t](#) * [agent_mailbox_p](#)

Functions

- [agent_mailbox_p](#) [agent_mailbox_New](#) (void)
- [agent_mailbox_p](#) [agent_mailbox_Copy](#) ([agent_mailbox_p](#) src)
- int [agent_mailbox_Destroy](#) ([agent_mailbox_t](#) *mailbox)
- int [agent_mailbox_Post](#) ([agent_mailbox_p](#) mailbox, [fipa_acl_message_t](#) *message)
- [fipa_acl_message_t](#) * [agent_mailbox_Retrieve](#) ([agent_mailbox_p](#) mailbox)
- [fipa_acl_message_t](#) * [agent_mailbox_WaitRetrieve](#) ([agent_mailbox_p](#) mailbox)

5.20.1 Typedef Documentation

5.20.1.1 typedef [agent_mailbox_t](#)* [agent_mailbox_p](#)

Definition at line 12 of file [agent_mailbox.h](#).

5.20.1.2 typedef struct [agent_mailbox_s](#) [agent_mailbox_t](#)

5.20.2 Function Documentation

5.20.2.1 [agent_mailbox_p](#) [agent_mailbox_Copy](#) ([agent_mailbox_p](#) src)

Definition at line 21 of file [agent_mailbox.c](#).

References [agent_mailbox_New\(\)](#), and [agent_mailbox_s::mail_queue](#).

5.20.2.2 int [agent_mailbox_Destroy](#) ([agent_mailbox_t](#) * mailbox)

Definition at line 29 of file [agent_mailbox.c](#).

References [agent_mailbox_s::mail_queue](#).

Referenced by [agent_Destroy\(\)](#).

5.20.2.3 [agent_mailbox_p](#) [agent_mailbox_New](#) (void)

Definition at line 12 of file [agent_mailbox.c](#).

References [agent_mailbox_s::mail_queue](#).

Referenced by agent_Copy(), agent_Initialize(), agent_mailbox_Copy(), and agent_NewBinary().

5.20.2.4 int agent_mailbox_Post (agent_mailbox_p *mailbox*, fipa_acl_message_t * *message*)

Definition at line 38 of file agent_mailbox.c.

References agent_mailbox_s::mail_queue.

Referenced by acc_connection_Thread(), and MC_AclPost().

5.20.2.5 fipa_acl_message_t* agent_mailbox_Retrieve (agent_mailbox_p *mailbox*)

Definition at line 44 of file agent_mailbox.c.

References agent_mailbox_s::mail_queue.

Referenced by agent_mailbox_WaitRetrieve(), and MC_AclRetrieve().

5.20.2.6 fipa_acl_message_t* agent_mailbox_WaitRetrieve (agent_mailbox_p *mailbox*)

Definition at line 49 of file agent_mailbox.c.

References agent_mailbox_Retrieve(), COND_WAIT, agent_mailbox_s::mail_queue, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by MC_AclWaitRetrieve().

5.21 /home/dko/Projects/mobilec/src/include/agent_task.h File Reference

```
#include "interpreter_variable_data.h"
#include "data_structures.h"
```

Data Structures

- struct [agent_task_s](#)

Typedefs

- typedef struct [agent_task_s](#) [agent_task_t](#)
- typedef [agent_task_t](#) * [agent_task_p](#)

Functions

- [agent_task_p](#) [agent_task_New](#) (void)
- [agent_task_p](#) [agent_task_Copy](#) ([agent_task_p](#) task)
- int [agent_task_Destroy](#) ([agent_task_p](#) agent_task)

5.21.1 Typedef Documentation

5.21.1.1 typedef [agent_task_t](#)* [agent_task_p](#)

Definition at line 59 of file [agent_task.h](#).

5.21.1.2 typedef struct [agent_task_s](#) [agent_task_t](#)

5.21.2 Function Documentation

5.21.2.1 [agent_task_p](#) [agent_task_Copy](#) ([agent_task_p](#) task)

Definition at line 66 of file [agent_task.c](#).

References [agent_task_s::agent_return_data](#), [agent_task_s::agent_variable_list](#), [agent_task_s::code_id](#), [agent_task_s::init_agent_status](#), [interpreter_variable_data_Copy\(\)](#), [ListAdd\(\)](#), [ListSearch\(\)](#), [agent_task_s::num_saved_variables](#), [agent_task_s::number_of_elements](#), [agent_task_s::persistent](#), [agent_task_s::saved_variables](#), [agent_task_s::server_name](#), [agent_task_s::size_of_element_array](#), [strdup](#), and [agent_task_s::var_name](#).

Referenced by [agent_datastate_Copy\(\)](#).

5.21.2.2 int [agent_task_Destroy](#) ([agent_task_p](#) agent_task)

Definition at line 132 of file [agent_task.c](#).

References `agent_task_s::agent_return_data`, `agent_task_s::agent_variable_list`, `agent_task_s::code_id`, `interpreter_variable_data_Destroy()`, `MC_SUCCESS`, `agent_task_s::saved_variables`, `agent_task_s::server_name`, and `agent_task_s::var_name`.

Referenced by `agent_datastate_Destroy()`.

5.21.2.3 `agent_task_p agent_task_New (void)`

Definition at line 48 of file `agent_task.c`.

References `agent_task_s::agent_variable_list`, `agent_task_s::num_saved_variables`, and `agent_task_s::saved_variables`.

Referenced by `agent_xml_parse__tasks()`, `MC_AgentAddTask()`, and `MC_ComposeAgentWithWorkgroup()`.

5.22 /home/dko/Projects/mobilec/src/include/ams.h File Reference

```
#include "macros.h"
```

Functions

- **STRUCT** (ams, struct **mc_platform_s** ***mc_platform**;MUTEX_T ***runflag_lock**;COND_T ***runflag_cond**;int **run**;int **waiting**;MUTEX_T ***waiting_lock**;COND_T ***waiting_cond**;THREAD_T **thread**;) **ams_p** **ams_Initialize**(struct **mc_platform_s** *_**mc_platform**)
- int **ams_Destroy** (ams_p **ams**)
- int **ams_RemoveFinishedAgents** (ams_p **ams**)
- int **ams_ManageAgentList** (ams_p **ams**)
- void **ams_Print** (ams_p **ams**)
- void **ams_Start** (struct **mc_platform_s** ***mc_platform**)
- void * **ams_Thread** (void ***arg**)

5.22.1 Function Documentation

5.22.1.1 int **ams_Destroy** (ams_p *ams*)

Definition at line 46 of file **ams.c**.

References **COND_DESTROY**, **MC_SUCCESS**, and **MUTEX_DESTROY**.

Referenced by **mc_platform_Destroy()**.

5.22.1.2 int **ams_ManageAgentList** (ams_p *ams*)

Definition at line 116 of file **ams.c**.

References **agent_RunChScript()**, **agent_s::agent_status**, **agent_s::binary**, **ListSearch()**, **agent_s::lock**, **MC_AGENT_ACTIVE**, **MC_AGENT_NEUTRAL**, **MC_TerminateAgent()**, **MC_WAIT_CH**, **MC_WAIT_FINISHED**, **MC_WAIT_MESSGSEND**, **message_Destroy()**, **message_InitializeFromAgent()**, **message_New()**, **MUTEX_LOCK**, **MUTEX_UNLOCK**, **agent_s::name**, **agent_s::orphan**, **mc_platform_s::name**, **agent_s::quit**, **mc_platform_s::quit_lock**, and **agent_s::run_lock**.

Referenced by **ams_Thread()**.

5.22.1.3 void **ams_Print** (ams_p *ams*)

Definition at line 84 of file **ams.c**.

References **agent_s::agent_status**, **agent_s::connect_id**, **agent_s::id**, **ListSearch()**, **MUTEX_LOCK**, and **MUTEX_UNLOCK**.

5.22.1.4 int **ams_RemoveFinishedAgents** (ams_p *ams*)

5.22.1.5 void **ams_Start** (struct **mc_platform_s** * *mc_platform*)

5.22.1.6 void* **ams_Thread** (void * *arg*)

Definition at line 254 of file **ams.c**.

References mc_platform_s::ams, ams_ManageAgentList(), COND_BROADCAST, COND_WAIT, mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, mc_platform_s::quit, mc_platform_s::quit_lock, and THREAD_EXIT.

Referenced by ams_Start().

5.22.1.7 **STRUCT** (ams, struct mc_platform_s *mc_platform;MUTEX_T *runflag_lock;COND_T *runflag_cond;int run;int waiting;MUTEX_T *waiting_lock;COND_T *waiting_cond;THREAD_T thread;)

5.23 /home/dko/Projects/mobilec/src/include/ap_queue_template.h File Reference

```
#include "macros.h"
#include "mc_error.h"
#include <embedch.h>
```

Data Structures

- struct [AP_GENERIC_s](#)

Defines

- #define [AP_QUEUE_DECL_TEMPLATE](#)(name, node_type)
- #define [AP_QUEUE_GENERIC_DECL_TEMPLATE](#)(name, func_name, return_type, search_type) return_type name##_##_func_name(name##_p name, const search_type key);
- #define [AP_QUEUE_STD_DEFN_TEMPLATE](#)(name, node_type)
- #define [AP_QUEUE_SEARCH_TEMPLATE](#)(name, func_name, node_type, search_type, search_expression)
- #define [AP_QUEUE_REMOVE_TEMPLATE](#)(name, func_name, node_type, search_type, search_expression)

Typedefs

- typedef struct [AP_GENERIC_s](#) [AP_GENERIC_t](#)
- typedef [AP_GENERIC_t](#) * [AP_GENERIC_p](#)

Functions

- [AP_GENERIC_p](#) [interpreter_queue_CreateRetrieve](#) (struct [interpreter_queue_s](#) *queue, [ChOptions_t](#) *interp_options)

5.23.1 Define Documentation

5.23.1.1 #define AP_QUEUE_DECL_TEMPLATE(name, node_type)

Value:

```
typedef struct name##_s \
{ \
    int size; \
    list_p list; \
    MUTEX_T* lock; \
    COND_T* cond; \
} name##_t; \
\
typedef name##_t* name##_p; \
\
name##_p name##_New( void ); \
int name##_Destroy( name##_p name ); \
```

```

int name##_Add( name##_p name, struct node_type##_s* node ); \
name##_p name##_Copy( name##_p name ); \
struct node_type##_s* name##_Pop( name##_p name ); \
struct node_type##_s* name##_WaitPop( name##_p name ); \
struct node_type##_s* name##_SearchIndex( name##_p name, int index ); \
int name##_RemoveIndex( name##_p name, int index );

```

Definition at line 46 of file ap_queue_template.h.

5.23.1.2 **#define AP_QUEUE_GENERIC_DECL_TEMPLATE(name, func_name, return_type, search_type) return_type name##_##_func_name(name##_p name, const search_type key);**

Definition at line 66 of file ap_queue_template.h.

5.23.1.3 **#define AP_QUEUE_REMOVE_TEMPLATE(name, func_name, node_type, search_type, search_expression)**

Value:

```

int name##_##_func_name( name##_p name, const search_type key ) \
{ \
    int err_code = MC_ERR_NOT_FOUND; \
    struct listNode_s* parsenode; \
    struct node_type##_s* node; \
    node = NULL; \
    \
    MUTEX_LOCK( name->lock ); \
    if ( name->list->listhead == NULL ) { \
        MUTEX_UNLOCK( name->lock ); \
        return MC_ERR_NOT_FOUND; \
    } \
    for( \
        parsenode = (listNode_t*)name->list->listhead; \
        parsenode->next != NULL; \
        parsenode = (listNode_t*)parsenode->next \
    ) \
    { \
        node = (node_type##_t*)parsenode->node_data; \
        if ( search_expression ) { \
            break; \
            err_code = MC_SUCCESS; \
        } \
    } \
    MUTEX_UNLOCK( name->lock ); \
    return err_code; \
}

```

Definition at line 224 of file ap_queue_template.h.

5.23.1.4 **#define AP_QUEUE_SEARCH_TEMPLATE(name, func_name, node_type, search_type, search_expression)**

Value:

```

struct node_type##_s* name##_##_func_name( name##_p name, const search_type key ) \
{ \
    listNode_t* parsenode; \
    struct node_type##_s* node; \

```



```

    struct node_type##_s* ret = NULL; \
    node = NULL; \
    \
    MUTEX_LOCK(name->lock); \
    if (name->list->listhead == NULL) { \
        MUTEX_UNLOCK(name->lock); \
        return NULL; \
    } \
    for( \
        parsenode = (listNode_t*)name->list->listhead; \
        parsenode != NULL; \
        parsenode = (listNode_t*)parsenode->next \
    ) \
    { \
        node = (node_type##_t*)parsenode->node_data; \
        if (search_expression){ \
            ret = node; \
            break; \
        } \
    } \
    \
    MUTEX_UNLOCK(name->lock); \
    return ret; \
}

```

Definition at line 194 of file ap_queue_template.h.

5.23.1.5 #define AP_QUEUE_STD_DEFN_TEMPLATE(name, node_type)

Definition at line 69 of file ap_queue_template.h.

5.23.2 Typedef Documentation

5.23.2.1 typedef AP_GENERIC_t* AP_GENERIC_p

Definition at line 43 of file ap_queue_template.h.

5.23.2.2 typedef struct AP_GENERIC_s AP_GENERIC_t

Definition at line 42 of file ap_queue_template.h.

5.23.3 Function Documentation

5.23.3.1 AP_GENERIC_p interpreter_queue_CreateRetrieve (struct interpreter_queue_s * queue, ChOptions_t * interp_options)

Referenced by agent_RunChScriptThread().

5.24 /home/dko/Projects/mobilec/src/include/barrier.h File Reference

```
#include "macros.h"
#include "../mc_list/list.h"
#include <stdio.h>
#include <stdlib.h>
```

Data Structures

- struct [barrier_node_s](#)
- struct [barrier_queue_s](#)

Typedefs

- typedef struct [barrier_node_s](#) [barrier_node_t](#)
- typedef [barrier_node_t](#) * [barrier_node_p](#)
- typedef struct [barrier_queue_s](#) [barrier_queue_t](#)
- typedef [barrier_queue_t](#) * [barrier_queue_p](#)

Functions

- [barrier_node_p](#) [barrier_node_Initialize](#) ([int](#) id, [int](#) num_registered)
- [int](#) [barrier_node_Destroy](#) ([barrier_node_p](#) node)
- [int](#) [barrier_queue_Add](#) ([barrier_queue_p](#) list, [barrier_node_p](#) node)
- [int](#) [barrier_queue_Delete](#) ([int](#) id, [barrier_queue_p](#) list)
- [int](#) [barrier_queue_Destroy](#) ([barrier_queue_p](#) queue)
- [barrier_node_p](#) [barrier_queue_Get](#) ([barrier_queue_p](#) list, [int](#) id)
- [barrier_queue_p](#) [barrier_queue_New](#) (void)
- [barrier_node_p](#) [barrier_queue_Pop](#) ([barrier_queue_p](#) queue)

5.24.1 Typedef Documentation

5.24.1.1 typedef [barrier_node_t](#)* [barrier_node_p](#)

Definition at line 49 of file barrier.h.

5.24.1.2 typedef struct [barrier_node_s](#) [barrier_node_t](#)

5.24.1.3 typedef [barrier_queue_t](#)* [barrier_queue_p](#)

Definition at line 57 of file barrier.h.

5.24.1.4 typedef struct barrier_queue_s barrier_queue_t

5.24.2 Function Documentation

5.24.2.1 int barrier_node_Destroy (barrier_node_p node)

Definition at line 70 of file barrier.c.

References barrier_node_s::cond, COND_DESTROY, barrier_node_s::lock, MC_SUCCESS, and MUTEX_DESTROY.

Referenced by barrier_queue_Delete(), and barrier_queue_Destroy().

5.24.2.2 barrier_node_p barrier_node_Initialize (int id, int num_registered)

Definition at line 45 of file barrier.c.

References CHECK_NULL, barrier_node_s::cond, COND_INIT, COND_T, barrier_node_s::id, barrier_node_s::lock, MUTEX_INIT, MUTEX_T, node, barrier_node_s::num_registered, and barrier_node_s::num_waiting.

Referenced by MC_BarrierInit().

5.24.2.3 int barrier_queue_Add (barrier_queue_p list, barrier_node_p node)

Definition at line 87 of file barrier.c.

References DATA, barrier_node_s::id, barrier_queue_s::list, ListAdd(), list_s::listhead, barrier_queue_s::lock, MC_SUCCESS, MC_WARN_DUPLICATE, listNode_s::next, listNode_s::node_data, RWLOCK_WRLOCK, RWLOCK_WRUNLOCK, and barrier_queue_s::size.

Referenced by MC_BarrierInit().

5.24.2.4 int barrier_queue_Delete (int id, barrier_queue_p list)

Definition at line 111 of file barrier.c.

References barrier_node_Destroy(), barrier_node_s::id, barrier_queue_s::list, ListDelete(), ListSearch(), barrier_queue_s::lock, MC_ERR_NOT_FOUND, MC_SUCCESS, RWLOCK_WRLOCK, RWLOCK_WRUNLOCK, barrier_queue_s::size, and list_s::size.

Referenced by MC_BarrierDelete().

5.24.2.5 int barrier_queue_Destroy (barrier_queue_p queue)

Definition at line 131 of file barrier.c.

References barrier_node_Destroy(), barrier_queue_Pop(), barrier_queue_s::list, ListTerminate(), barrier_queue_s::lock, MC_SUCCESS, node, and RWLOCK_DESTROY.

Referenced by mc_platform_Destroy().

5.24.2.6 barrier_node_p barrier_queue_Get (barrier_queue_p list, int id)

Definition at line 145 of file barrier.c.

References `barrier_queue_s::list`, `list_s::listhead`, `barrier_queue_s::lock`, `listNode_s::next`, `listNode_s::node_data`, `RWLOCK_RDLOCK`, and `RWLOCK_RDUNLOCK`.

Referenced by `MC_Barrier()`, and `MC_BarrierInit()`.

5.24.2.7 `barrier_queue_p barrier_queue_New (void)`

Definition at line 162 of file `barrier.c`.

References `CHECK_NULL`, `barrier_queue_s::list`, `ListInitialize()`, `barrier_queue_s::lock`, `RWLOCK_INIT`, and `RWLOCK_T`.

Referenced by `mc_platform_Initialize()`.

5.24.2.8 `barrier_node_p barrier_queue_Pop (barrier_queue_p queue)`

Definition at line 176 of file `barrier.c`.

References `barrier_queue_s::list`, `ListPop()`, and `node`.

Referenced by `barrier_queue_Destroy()`.

5.25 /home/dko/Projects/mobilec/src/include/cmd_prompt.h File Reference

```
#include "macros.h"
```

Data Structures

- struct [cmd_prompt_s](#)
- struct [command_s](#)

Defines

- `#define` [CMDLINE_SIZE](#) 80

Typedefs

- typedef struct [cmd_prompt_s](#) [cmd_prompt_t](#)
- typedef [cmd_prompt_t](#) * [cmd_prompt_p](#)
- typedef struct [command_s](#) [command_t](#)
- typedef [command_t](#) * [command_p](#)

Functions

- [int](#) [cmd_prompt_Destroy](#) ([cmd_prompt_p](#) cmd_prompt)
- [cmd_prompt_p](#) [cmd_prompt_Initialize](#) (struct [mc_platform_s](#) *[mc_platform](#))
- void [cmd_prompt_Start](#) (struct [mc_platform_s](#) *[mc_platform](#))
- [int](#) [split_string](#) (char ***args, const char *buf)
- [int](#) [process_command](#) ([command_t](#) *cmd)
- void * [cmd_prompt_Thread](#) (void *arg)
- [int](#) [exec_command](#) ([command_t](#) cmd, struct [mc_platform_s](#) *global)
- [int](#) [dealloc_command](#) ([command_t](#) *cmd)

5.25.1 Define Documentation

5.25.1.1 `#define` [CMDLINE_SIZE](#) 80

Definition at line 37 of file [cmd_prompt.h](#).

5.25.2 Typedef Documentation

5.25.2.1 typedef [cmd_prompt_t](#)* [cmd_prompt_p](#)

Definition at line 44 of file [cmd_prompt.h](#).

5.25.2.2 `typedef struct cmd_prompt_s cmd_prompt_t`

5.25.2.3 `typedef command_t* command_p`

Definition at line 51 of file cmd_prompt.h.

5.25.2.4 `typedef struct command_s command_t`

5.25.3 Function Documentation

5.25.3.1 `int cmd_prompt_Destroy (cmd_prompt_p cmd_prompt)`

Definition at line 129 of file cmd_prompt.c.

References MC_SUCCESS.

Referenced by mc_platform_Destroy().

5.25.3.2 `cmd_prompt_p cmd_prompt_Initialize (struct mc_platform_s * mc_platform)`

5.25.3.3 `void cmd_prompt_Start (struct mc_platform_s * mc_platform)`

5.25.3.4 `void* cmd_prompt_Thread (void * arg)`

Definition at line 168 of file cmd_prompt.c.

References command_s::args, buf, dealloc_command(), exec_command(), command_s::index, mc_platform, command_s::num_args, process_command(), and split_string().

Referenced by cmd_prompt_Start().

5.25.3.5 `int dealloc_command (command_t * cmd)`

Definition at line 311 of file cmd_prompt.c.

References command_s::args, and command_s::num_args.

Referenced by cmd_prompt_Thread().

5.25.3.6 `int exec_command (command_t cmd, struct mc_platform_s * global)`

5.25.3.7 `int process_command (command_t * cmd)`

Definition at line 277 of file cmd_prompt.c.

References command_s::args, command_cmds, command_s::index, and command_s::num_args.

Referenced by cmd_prompt_Thread().

5.25.3.8 `int split_string (char *** args, const char * buf)`

Definition at line 229 of file cmd_prompt.c.

References int.

Referenced by cmd_prompt_Thread().

5.26 /home/dko/Projects/mobilec/src/include/commands.h File Reference

```
#include "macros.h"
#include "mc_platform.h"
#include "commands.x.h"
```

Defines

- #define [COMMAND](#)(name, cmd, desc) [int](#) handler_##name (void *arg, [mc_platform_p](#) global);
- #define [COMMAND](#)(name, cmd, description) [COMMAND_##name](#) ,
- #define [COMMAND](#)(name, cmd, description) &handler_##name ,
- #define [COMMAND](#)(name, cmd, description) description ,
- #define [COMMAND](#)(name, cmd, description) cmd ,

Typedefs

- typedef [int](#)(* [cmd_handler_t](#))(void *, [mc_platform_p](#) global)

Enumerations

- enum [command_indices_e](#)

Functions

- [COMMAND](#) (QUIT,"quit","This command ends the MobileC application.") [COMMAND](#)(HELP
- This command displays [help](#) for any command Usage This command sends an agent XML file to a host Usage This command prints the list entries in the connectList [COMMAND](#) (PRINTLIST_MESSAGE,"printlist_message","This command prints all the list entries on the linked list:\n \ message_queue") [COMMAND](#)(PRINTLIST_AGENTS
- This command displays [help](#) for any command Usage This command sends an agent XML file to a host Usage This command prints the list entries in the connectList This command prints all the agents on the system which are still n on the agent list n [COMMAND](#) (FLUSH_AGENTS,"flush_agents","This command flushes all of the agents on the system which are still\n\ on the agent list.\n") [COMMAND](#)(COMPOSE_SEND

Variables

- [cmd_handler_t](#) [cmd_handlers](#) []
- char * [command_descriptions](#) []
- char * [command_cmds](#) []

5.26.1 Define Documentation

5.26.1.1 #define [COMMAND](#)(name, cmd, description) cmd ,

Definition at line 48 of file commands.h.

5.26.1.2 #define COMMAND(name, cmd, description) description ,

Definition at line 48 of file commands.h.

5.26.1.3 #define COMMAND(name, cmd, description) &handler_##name ,

Definition at line 48 of file commands.h.

5.26.1.4 #define COMMAND(name, cmd, description) COMMAND_##name ,

Definition at line 48 of file commands.h.

5.26.1.5 #define COMMAND(name, cmd, desc) int handler_##name (void *arg, mc_platform_p global);

Definition at line 48 of file commands.h.

5.26.2 Typedef Documentation**5.26.2.1 typedef int(* cmd_handler_t)(void *, mc_platform_p global)**

Definition at line 45 of file commands.h.

5.26.3 Enumeration Type Documentation**5.26.3.1 enum command_indices_e**

Definition at line 47 of file commands.h.

5.26.4 Function Documentation**5.26.4.1 This command displays help for any command Usage This command sends an agent XML file to a host Usage This command prints the list entries in the connectList This command prints all the agents on the system which are still n on the agent list n command_indices_e::COMMAND (FLUSH_AGENTS, "flush_agents", "This command flushes all of the agents on the system which are still\n\n on the agent list.\n")****Type Constraints****5.26.4.2 This command displays help for any command Usage This command sends an agent XML file to a host Usage This command prints the list entries in the connectList command_indices_e::COMMAND (PRINTLIST_MESSAGE, "printlist_message", "This command prints all the list entries on the linked list:\n\n message_queue")****Type Constraints**

5.26.4.3 `command_indices_e::COMMAND (QUIT, "quit", "This command ends the MobileC application.")`

5.26.5 Variable Documentation

5.26.5.1 `cmd_handler_t cmd_handlers[]`

Definition at line 54 of file `commands.h`.

Referenced by `exec_command()`.

5.26.5.2 `char* command_cmds[]`

Definition at line 68 of file `commands.h`.

Referenced by `handler_HELP()`, and `process_command()`.

5.26.5.3 `char* command_descriptions[]`

Definition at line 61 of file `commands.h`.

Referenced by `handler_COMPOSE_SEND()`, `handler_HELP()`, and `handler_SEND()`.

5.27 /home/dko/Projects/mobilec/src/include/commands.x.h File Reference

Functions

- **COMMAND** (QUIT,"quit","This command ends the MobileC application.") **COMMAND**(HELP
- This command displays [help](#) for any command Usage This command sends an agent XML file to a host Usage This command prints the list entries in the connectList **COMMAND** (PRINTLIST_MESSAGE,"printlist_message","This command prints all the list entries on the linked list:\n \ message_queue") **COMMAND**(PRINTLIST_AGENTS
- This command displays [help](#) for any command Usage This command sends an agent XML file to a host Usage This command prints the list entries in the connectList This command prints all the agents on the system which are still n on the agent list n **COMMAND** (FLUSH_AGENTS,"flush_agents","This command flushes all of the agents on the system which are still\n\ on the agent list.\n") **COMMAND**(COMPOSE_SEND

Variables

- [help](#)
- This command displays [help](#) for any command Usage [is](#)
- This command displays [help](#) for any command Usage [send](#)
- This command displays [help](#) for any command Usage This command sends an agent XML file to a host Usage [print_connectlist](#)
- This command displays [help](#) for any command Usage This command sends an agent XML file to a host Usage This command prints the list entries in the connectList [printlist_agents](#)
- This command displays [help](#) for any command Usage This command sends an agent XML file to a host Usage This command prints the list entries in the connectList This command prints all the agents on the system which are still n on the agent list n [compose_send](#)

5.27.1 Function Documentation

- 5.27.1.1 This command displays help for any command Usage This command sends an agent XML file to a host Usage This command prints the list entries in the connectList This command prints all the agents on the system which are still n on the agent list n COMMAND (FLUSH_AGENTS, "flush_agents", "This command flushes all of the agents on the system which are still\n\ on the agent list.\n")**

Type Constraints

- 5.27.1.2 This command displays help for any command Usage This command sends an agent XML file to a host Usage This command prints the list entries in the connectList COMMAND (PRINTLIST_MESSAGE, "printlist_message", "This command prints all the list entries on the linked list:\n \ message_queue")**

Type Constraints

5.27.1.3 COMMAND (QUIT, "quit", "This command ends the MobileC application.")

5.27.2 Variable Documentation

5.27.2.1 This command displays help for any command Usage This command sends an agent XML file to a host Usage This command prints the list entries in the connectList This command prints all the agents on the system which are still n on the agent list n compose_send

Definition at line 62 of file commands.x.h.

5.27.2.2 help

Definition at line 40 of file commands.x.h.

5.27.2.3 This command displays help for any command Usage This command sends an agent XML file to a host Usage is

Definition at line 40 of file commands.x.h.

5.27.2.4 This command displays help for any command Usage This command sends an agent XML file to a host Usage print_connectlist

Definition at line 40 of file commands.x.h.

5.27.2.5 This command displays help for any command Usage This command sends an agent XML file to a host Usage This command prints the list entries in the connectList printlist_agents

Definition at line 55 of file commands.x.h.

5.27.2.6 This command displays help for any command Usage send

Definition at line 40 of file commands.x.h.

Referenced by `extract_nonce_from_MA()`, `initiate_migration_process()`, `message_send_Thread()`, `mtp_http_InitializeFromConnection()`, `reply_migration_process()`, and `send_AES_en_MA()`.

5.28 /home/dko/Projects/mobilec/src/include/connection.h File Reference

```
#include <sys/types.h>
#include <netinet/in.h>
```

Data Structures

- struct [connection_s](#)

Typedefs

- typedef struct [connection_s](#) [connection_t](#)
- typedef [connection_t](#) * [connection_p](#)

Functions

- [connection_p](#) [connection_New](#) (void)
- int [connection_Destroy](#) ([connection_p](#) connection)
- [connection_p](#) [connection_Copy](#) ([connection_p](#) connection)
- void [connection_Close](#) ([connection_p](#) connection)
- void [connection_SetHosts](#) ([connection_p](#) connection, char *remote_host, char *local_host)
- int [connection_CreateMessage](#) ([connection_p](#) connection)
- int [connection_SendtoConnection](#) ([connection_p](#) connection, char *send_buffer)
- int [connection_RecvFromConnection](#) ([connection_p](#) connection, struct [mc_platform_s](#) *global)

5.28.1 Typedef Documentation

5.28.1.1 typedef [connection_t](#)* [connection_p](#)

Definition at line 66 of file [connection.h](#).

5.28.1.2 typedef struct [connection_s](#) [connection_t](#)

5.28.2 Function Documentation

5.28.2.1 void [connection_Close](#) ([connection_p](#) *connection*)

5.28.2.2 [connection_p](#) [connection_Copy](#) ([connection_p](#) *connection*)

Definition at line 80 of file [connection.c](#).

References [connection_s::addr](#), [connection_s::clientfd](#), [connection_s::connect_id](#), [connection_New\(\)](#), [connection_s::remote_hostname](#), [connection_s::serverfd](#), and [strdup](#).

5.28.2.3 int connection_CreateMessage (connection_p *connection*)**5.28.2.4 int connection_Destroy (connection_p *connection*)**

Definition at line 48 of file connection.c.

References connection_s::clientfd, MC_SUCCESS, and connection_s::remote_hostname.

Referenced by acc_connection_Thread().

5.28.2.5 connection_p connection_New (void)

Definition at line 69 of file connection.c.

Referenced by connection_Copy(), and listen_Thread().

5.28.2.6 int connection_RecvFromConnection (connection_p *connection*, struct mc_platform_s * *global*)**5.28.2.7 int connection_SendtoConnection (connection_p *connection*, char * *send_buffer*)****5.28.2.8 void connection_SetHosts (connection_p *connection*, char * *remote_host*, char * *local_host*)**

5.29 /home/dko/Projects/mobilec/src/include/data_structures.h File Reference

```
#include "ap_queue_template.h"
#include "../mc_list/list.h"
#include "connection.h"
#include "fipa_acl.h"
#include "agent_mailbox.h"
#include "message.h"
#include "interpreter_variable_data.h"
```

Functions

- [AP_QUEUE_DECL_TEMPLATE](#) (connection_queue, connection) [AP_QUEUE_GENERIC_DECL_TEMPLATE](#)(connection_queue
- [connection_t](#) [int](#) [AP_QUEUE_GENERIC_DECL_TEMPLATE](#) (connection_queue, [Remove](#), [int](#), [int](#)) [int](#) [connection_queue_Print](#)(connection_queue_p clist)
- [AP_QUEUE_DECL_TEMPLATE](#) (message_queue, message) [int](#) [message_queue_Print](#)(message_queue_p queue)
- [AP_QUEUE_DECL_TEMPLATE](#) (agent_queue, agent) [AP_QUEUE_GENERIC_DECL_TEMPLATE](#)(agent_queue
- struct [agent_s](#) [int](#) [AP_QUEUE_GENERIC_DECL_TEMPLATE](#) (agent_queue, [SearchName](#), struct [agent_s](#) *, char *) [AP_QUEUE_GENERIC_DECL_TEMPLATE](#)(agent_queue
- struct [agent_s](#) [int](#) [int](#) [AP_QUEUE_GENERIC_DECL_TEMPLATE](#) (agent_queue, [RemoveName](#), [int](#), char *) [int](#) [agent_queue_Print](#)(agent_queue_p queue)
- [int](#) [agent_queue_Flush](#) (agent_queue_p queue)
- [AP_QUEUE_DECL_TEMPLATE](#) (agent_variable_list, interpreter_variable_data) [AP_QUEUE_GENERIC_DECL_TEMPLATE](#)(agent_variable_list
- [interpreter_variable_data_t](#) char * [AP_QUEUE_GENERIC_DECL_TEMPLATE](#) (agent_variable_list, [Remove](#), [int](#), char *) [AP_QUEUE_DECL_TEMPLATE](#)(mail_queue
- [interpreter_variable_data_t](#) char *fipa_acl_message [AP_QUEUE_GENERIC_DECL_TEMPLATE](#) (mail_queue, [SearchReceivers](#), [fipa_acl_message_p](#), char *) [AP_QUEUE_GENERIC_DECL_TEMPLATE](#)(mail_queue
- [interpreter_variable_data_t](#) char *fipa_acl_message char * [AP_QUEUE_DECL_TEMPLATE](#) (mailbox_queue, agent_mailbox) [AP_QUEUE_GENERIC_DECL_TEMPLATE](#)(mailbox_queue
- [interpreter_variable_data_t](#) char *fipa_acl_message char char * [AP_QUEUE_GENERIC_DECL_TEMPLATE](#) (mailbox_queue, [SearchID](#), [agent_mailbox_p](#), [int](#)) [AP_QUEUE_GENERIC_DECL_TEMPLATE](#)(mailbox_queue
- [interpreter_variable_data_t](#) char *fipa_acl_message char char [int](#) [AP_QUEUE_DECL_TEMPLATE](#) (interpreter_queue, [AP_GENERIC](#)) [AP_GENERIC_p](#) [AP_GENERIC_Copy](#)([AP_GENERIC_p](#) [AP_GENERIC](#))
- [int](#) [AP_GENERIC_Destroy](#) ([AP_GENERIC_t](#) *blah)

Variables

- [Search](#)
- struct [agent_s](#) [int](#) [Remove](#)

- struct `agent_s` int int
- `interpreter_variable_data_t` char *fipa_acl_message `RemoveName`
- `interpreter_variable_data_t` char *fipa_acl_message char * `SearchName`
- `interpreter_variable_data_t` char *fipa_acl_message char `agent_mailbox_p`
- `interpreter_variable_data_t` char *fipa_acl_message char char * `RemoveID`

5.29.1 Function Documentation

5.29.1.1 `int agent_queue_Flush (agent_queue_p queue)`

Definition at line 197 of file `data_structures.c`.

References `agent_s::agent_status`, `agent_s::id`, `ListSearch()`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `agent_s::name`, and `node`.

Referenced by `handler_FLUSH_AGENTS()`.

5.29.1.2 `int AP_GENERIC_Destroy (AP_GENERIC_t * blah)`

Definition at line 291 of file `data_structures.c`.

5.29.1.3 `interpreter_variable_data_t char* fipa_acl_message char char int AP_QUEUE_DECL_TEMPLATE (interpreter_queue, AP_GENERIC)`

Type Constraints

5.29.1.4 `interpreter_variable_data_t char* fipa_acl_message char* AP_QUEUE_DECL_TEMPLATE (mailbox_queue, agent_mailbox)`

Type Constraints

5.29.1.5 `AP_QUEUE_DECL_TEMPLATE (agent_variable_list, interpreter_variable_data)`

5.29.1.6 `AP_QUEUE_DECL_TEMPLATE (agent_queue, agent)`

5.29.1.7 `AP_QUEUE_DECL_TEMPLATE (message_queue, message)`

5.29.1.8 `AP_QUEUE_DECL_TEMPLATE (connection_queue, connection)`

5.29.1.9 `interpreter_variable_data_t char* fipa_acl_message char char* AP_QUEUE_GENERIC_DECL_TEMPLATE (mailbox_queue, SearchID, agent_mailbox_p, int)`

Type Constraints

5.29.1.10 `interpreter_variable_data_t char* fipa_acl_message AP_QUEUE_GENERIC_DECL_TEMPLATE (mail_queue, SearchReceivers, fipa_acl_message_p, char *)`

5.29.1.11 `interpreter_variable_data_t char* AP_QUEUE_GENERIC_DECL_TEMPLATE (agent_variable_list, Remove, int, char *)`

Type Constraints

5.29.1.12 `struct agent_s int int AP_QUEUE_GENERIC_DECL_TEMPLATE (agent_queue, RemoveName, int, char *)`

Type Constraints

5.29.1.13 `struct agent_s int AP_QUEUE_GENERIC_DECL_TEMPLATE (agent_queue, SearchName, struct agent_s *, char *)` **[read]**

Type Constraints

5.29.1.14 `connection_t int AP_QUEUE_GENERIC_DECL_TEMPLATE (connection_queue, Remove, int, int)`

Type Constraints

5.29.2 Variable Documentation

5.29.2.1 `interpreter_variable_data_t char* fipa_acl_message char agent_mailbox_p`

Definition at line 164 of file data_structures.h.

5.29.2.2 `interpreter_variable_data_t char *fipa_acl_message char char int`

Definition at line 101 of file data_structures.h.

Referenced by `aes_en_de()`, `default_callback()`, `main()`, `MC_SetDefaultAgentStatus_chdl()`, `mpi_lsb()`, `mpi_read_string()`, `net_accept()`, `rece_de_msg()`, `remove_nonce_from_MA()`, `rsa_pkcs1_decrypt()`, `rsa_pkcs1_verify()`, `send_AES_en_MA()`, `sha4_finish()`, `sha4_update()`, `split_string()`, and `ssl_parse_certificate()`.

5.29.2.3 `struct agent_s int Remove`

Definition at line 101 of file data_structures.h.

5.29.2.4 interpreter_variable_data_t char* fipa_acl_message char char* RemoveID

Definition at line 178 of file data_structures.h.

5.29.2.5 interpreter_variable_data_t char* fipa_acl_message RemoveName

Definition at line 151 of file data_structures.h.

5.29.2.6 Search

Definition at line 53 of file data_structures.h.

5.29.2.7 interpreter_variable_data_t char* fipa_acl_message char* SearchName

Definition at line 164 of file data_structures.h.

5.30 /home/dko/Projects/mobilec/src/include/df.h File Reference

```
#include "../mc_list/list.h"
#include "../include/macros.h"
#include "df_request.x.h"
```

Defines

- #define [REQUEST](#)(name, string, description) REQUEST_##name,
- #define [REQUEST](#)(name, string, description) int request_handler_##name (struct [mc_platform_s](#) *global, void* data);

Enumerations

- enum [df_request_list_index_e](#)
- enum [service_types_e](#) {
[ZERO](#), [MISC](#), [INSERT](#), [SOME](#),
[TYPES](#), [HERE](#) }

Functions

- [REQUEST](#) (SUBSCRIBE,"subscribe","Subscribe to a directory facilitator") [REQUEST](#)(REGISTER
- Register services with the directory facilitator [REQUEST](#) (DEREGISTER,"deregister","Deregisters mobile agent services from a directory facilitator.") [REQUEST](#)(SEARCH
- [STRUCT](#) (df_request_list_node, MUTEX_T *[lock](#);COND_T *[cond](#);const char *command;void *data;int data_size;) [STRUCT](#)(df_request_list
- [STRUCT](#) (df_search_results, char **agent_names;char **service_names;int *agent_ids;int num_results;) [STRUCT](#)(df_request_search
- [STRUCT](#) (df_node, MUTEX_T *[lock](#);int agent_id;char *agent_name;int num_services;char **service_names;enum [service_types_e](#) service_types;) [STRUCT](#)(df
- [STRUCT](#) (df_deregister, int agent_id;char *service_name;) int df_Add(struct df_s *df
- int df_AddRequest (struct df_s *df, struct df_request_list_node_s *[node](#))
- int df_Destroy (df_p df)
- df_p df_Initialize (struct [mc_platform_s](#) *[mc_platform](#))
- int df_ProcessRequest (struct [mc_platform_s](#) *global)
- int df_SearchForService (df_p df, const char *searchstring, char ***agent_names, char ***service_names, int **agent_ids, int *num_entries)
- void df_Start (struct [mc_platform_s](#) *[mc_platform](#))
- int df_node_Destroy (df_node_p df_node)
- int df_request_list_node_Destroy (df_request_list_node_p [node](#))
- df_request_list_node_p df_request_list_node_New (void)
- int df_request_list_Destroy (df_request_list_p df_request_list)
- df_request_list_p df_request_list_New (void)
- df_request_list_node_p df_request_list_Pop (df_request_list_p requests)
- df_request_search_p df_request_search_New (void)
- int df_request_search_Destroy (df_request_search_p [node](#))
- void * df_Thread (void *arg)

Variables

- `MUTEX_T * lock`
- `COND_T * cond`
- `int size`
- `list_p request_list`
- `char * search_string`
- `df_search_results_p search_results`
- `struct mc_platform_s * mc_platform`
- `list_p service_list`
- `int num_entries`
- `int waiting`
- `MUTEX_T * waiting_lock`
- `COND_T * waiting_cond`
- `THREAD_T thread`
- `struct df_node_s * node`

5.30.1 Define Documentation

5.30.1.1 `#define REQUEST(name, string, description) int request_handler_##name (struct mc_platform_s *global, void* data);`

Definition at line 193 of file df.h.

5.30.1.2 `#define REQUEST(name, string, description) REQUEST_##name,`

Definition at line 193 of file df.h.

5.30.2 Enumeration Type Documentation

5.30.2.1 `enum df_request_list_index_e`

Definition at line 46 of file df.h.

5.30.2.2 `enum service_types_e`

Enumerator:

ZERO
MISC
INSERT
SOME
TYPES
HERE

Definition at line 53 of file df.h.

5.30.3 Function Documentation

5.30.3.1 `int df_AddRequest (struct df_s * df, struct df_request_list_node_s * node)`

Definition at line 66 of file df.c.

References ListAdd(), and SIGNAL.

Referenced by MC_DeregisterService(), MC_RegisterService(), and MC_SearchForService().

5.30.3.2 `int df_Destroy (df_p df)`

Definition at line 83 of file df.c.

References COND_DESTROY, df_node_Destroy(), df_request_list_Destroy(), ListPop(), ListTerminate(), MC_SUCCESS, MUTEX_DESTROY, and MUTEX_LOCK.

Referenced by mc_platform_Destroy().

5.30.3.3 `df_p df_Initialize (struct mc_platform_s * mc_platform)`

5.30.3.4 `int df_node_Destroy (df_node_p df_node)`

Definition at line 414 of file df.c.

References MC_SUCCESS, and MUTEX_LOCK.

Referenced by df_Destroy().

5.30.3.5 `int df_ProcessRequest (struct mc_platform_s * global)`

Definition at line 134 of file df.c.

References mc_platform_s::df, df_request_list_Pop(), MC_ERR_EMPTY, and MC_ERR_INVALID.

Referenced by df_Thread().

5.30.3.6 `int df_request_list_Destroy (df_request_list_p df_request_list)`

Definition at line 323 of file df.c.

References df_request_list_node_Destroy(), ListPop(), ListTerminate(), MC_SUCCESS, and node.

Referenced by df_Destroy().

5.30.3.7 `df_request_list_p df_request_list_New (void)`

Definition at line 345 of file df.c.

References CHECK_NULL, COND_INIT, COND_T, ListInitialize(), MUTEX_INIT, and MUTEX_T.

Referenced by df_Initialize().

5.30.3.8 `int df_request_list_node_Destroy (df_request_list_node_p node)`

Definition at line 294 of file df.c.

References COND_DESTROY, MC_SUCCESS, and MUTEX_DESTROY.

Referenced by df_request_list_Destroy(), and MC_SearchForService().

5.30.3.9 df_request_list_node_p df_request_list_node_New (void)

Definition at line 305 of file df.c.

References CHECK_NULL, COND_INIT, COND_T, MUTEX_INIT, MUTEX_T, and node.

Referenced by MC_DeregisterService(), MC_RegisterService(), and MC_SearchForService().

5.30.3.10 df_request_list_node_p df_request_list_Pop (df_request_list_p requests)

Definition at line 370 of file df.c.

References ListPop(), MUTEX_LOCK, MUTEX_UNLOCK, and node.

Referenced by df_ProcessRequest().

5.30.3.11 int df_request_search_Destroy (df_request_search_p node)

Definition at line 401 of file df.c.

References COND_DESTROY, MC_SUCCESS, and MUTEX_DESTROY.

Referenced by MC_SearchForService().

5.30.3.12 df_request_search_p df_request_search_New (void)

Definition at line 386 of file df.c.

References CHECK_NULL, COND_INIT, COND_T, MUTEX_INIT, MUTEX_T, and search.

Referenced by MC_SearchForService().

5.30.3.13 int df_SearchForService (df_p df, const char * searchstring, char *** agent_names, char *** service_names, int ** agent_ids, int * num_entries)

Definition at line 178 of file df.c.

References MC_ERR_NOT_FOUND, MC_SUCCESS, MUTEX_LOCK, MUTEX_UNLOCK, listNode_s::next, and listNode_s::node_data.

Referenced by request_handler_SEARCH().

5.30.3.14 void df_Start (struct mc_platform_s * mc_platform)

5.30.3.15 void* df_Thread (void * arg)

Definition at line 428 of file df.c.

References COND_BROADCAST, COND_WAIT, mc_platform_s::df, df_ProcessRequest(), MC_SUCCESS, MUTEX_LOCK, MUTEX_UNLOCK, mc_platform_s::quit, mc_platform_s::quit_lock, and THREAD_EXIT.

Referenced by df_Start().

5.30.3.16 Register services with the directory facilitator df_request_list_index_e::REQUEST (DEREGISTER, "deregister", "Deregisters mobile agent services from a directory facilitator.")

Type Constraints

5.30.3.17 df_request_list_index_e::REQUEST (SUBSCRIBE, "subscribe", "Subscribe to a directory facilitator")

5.30.3.18 STRUCT (df_deregister, int agent_id;char *service_name;)

5.30.3.19 STRUCT (df_node, MUTEX_T *lock;int agent_id;char *agent_name;int num_services;char **service_names;enum service_types_e service_types;)

5.30.3.20 STRUCT (df_search_results, char **agent_names;char **service_names;int *agent_ids;int num_results;)

5.30.3.21 STRUCT (df_request_list_node, MUTEX_T *lock;COND_T *cond;const char *command;void *data;int data_size;)

5.30.4 Variable Documentation

5.30.4.1 COND_T * cond

Definition at line 74 of file df.h.

5.30.4.2 MUTEX_T * lock

Definition at line 73 of file df.h.

5.30.4.3 struct mc_platform_s* mc_platform

Definition at line 107 of file df.h.

Referenced by acc_connection_Thread(), acc_MessageHandlerThread(), acc_Thread(), agent_RunChScriptThread(), ams_Thread(), cmd_prompt_Thread(), listen_Thread(), MC_Initialize(), mc_platform_Initialize(), MC_WaitAgent(), message_send_Thread(), and udplisten_Thread().

5.30.4.4 struct df_node_s* node

Definition at line 129 of file df.h.

Referenced by add_variable(), agent_queue_Flush(), agent_xml_compose(), agent_xml_compose__agent_code(), agent_xml_compose__agent_data(), agent_xml_compose__create_row_nodes(), agent_xml_compose__data(), agent_xml_compose__gaf_message(), agent_xml_compose__home(), agent_xml_compose__message(), agent_xml_compose__mobile_agent(), agent_xml_compose__name(),

agent_xml_compose__owner(), agent_xml_compose__row(), agent_xml_compose__task(), agent_xml_compose__tasks(), agent_xml_compose__wg_code(), AP_QUEUE_SEARCH_TEMPLATE(), AP_QUEUE_STD_DEFN_TEMPLATE(), barrier_node_Initialize(), barrier_queue_Destroy(), barrier_queue_Pop(), df_request_list_Destroy(), df_request_list_node_New(), df_request_list_Pop(), fipa_envelope_Compose(), fipa_envelope_Compose__acl_representation(), fipa_envelope_Compose__date(), fipa_envelope_Compose__envelope(), fipa_envelope_Compose__intended_receiver(), fipa_envelope_Compose__params(), fipa_envelope_Compose__payload_encoding(), fipa_envelope_Compose__to(), fipa_envelope_HandleReceived(), main(), MC_Barrier(), MC_BarrierInit(), MC_SyncInit(), mxml_new(), mxmlNewCustom(), mxmlNewElement(), mxmlNewInteger(), mxmlNewOpaque(), mxmlNewReal(), mxmlNewText(), mxmlNewTextf(), request_handler_DEREGISTER(), scan_file(), syncListNew(), write_element(), xml_get_deep_child(), and xml_new_cdata().

5.30.4.5 int num_entries

Definition at line 113 of file df.h.

5.30.4.6 df_request_list_p request_list

Definition at line 76 of file df.h.

5.30.4.7 df_search_results_p search_results

Definition at line 91 of file df.h.

5.30.4.8 char* search_string

Definition at line 90 of file df.h.

5.30.4.9 list_p service_list

Definition at line 110 of file df.h.

5.30.4.10 int size

Definition at line 75 of file df.h.

Referenced by agent_AddPersistentVariable(), agent_xml_compose__create_row_nodes(), interpreter_variable_data_Initialize(), interpreter_variable_data_InitializeFromAgent(), MC_AgentReturnDataSize(), MC_GetAgentReturnData(), MC_SaveData_chdl(), MC_WaitAgent(), mxml_vsnprintf(), receive_AES_en_MA(), and send_AES_en_MA().

5.30.4.11 THREAD_T thread

Definition at line 117 of file df.h.

5.30.4.12 int waiting

Definition at line 114 of file df.h.

5.30.4.13 COND_T* waiting_cond

Definition at line 116 of file df.h.

5.30.4.14 MUTEX_T* waiting_lock

Definition at line 115 of file df.h.

5.31 /home/dko/Projects/mobilec/src/include/df_request.x.h File Reference

Functions

- [REQUEST](#) (SUBSCRIBE,"subscribe","Subscribe to a directory facilitator") [REQUEST](#)(REGISTER
- Register services with the directory facilitator [REQUEST](#) (DEREGISTER,"deregister","Deregisters mobile agent services from a directory facilitator.") [REQUEST](#)(SEARCH

Variables

- [register](#)
- Register services with the directory facilitator [search](#)

5.31.1 Function Documentation

- 5.31.1.1 Register services with the directory facilitator [REQUEST](#) (DEREGISTER, "deregister", "Deregisters mobile agent services from a directory facilitator.")**

Type Constraints

- 5.31.1.2 [REQUEST](#) (SUBSCRIBE, "subscribe", "Subscribe to a directory facilitator")**

5.31.2 Variable Documentation

5.31.2.1 [register](#)

Definition at line 43 of file df_request.x.h.

5.31.2.2 Register services with the directory facilitator [search](#)

Definition at line 54 of file df_request.x.h.

Referenced by [df_request_search_New\(\)](#), [MC_SearchForService\(\)](#), and [request_handler_SEARCH\(\)](#).

5.32 /home/dko/Projects/mobilec/src/include/dynstring.h File Reference

Data Structures

- struct [dynstring_s](#)

Defines

- #define [COMPOSE_BLOCKSIZE](#) 1024

Typedefs

- typedef struct [dynstring_s](#) [dynstring_t](#)
- typedef [dynstring_t](#) * [dynstring_p](#)

Functions

- [dynstring_t](#) * [dynstring_New](#) (void)
- int [dynstring_Append](#) ([dynstring_t](#) *msg, char *str)
- int [dynstring_Destroy](#) ([dynstring_t](#) *dynstring)

5.32.1 Define Documentation

5.32.1.1 #define COMPOSE_BLOCKSIZE 1024

Definition at line 8 of file [dynstring.h](#).

Referenced by [dynstring_Append\(\)](#), and [dynstring_New\(\)](#).

5.32.2 Typedef Documentation

5.32.2.1 typedef [dynstring_t](#)* [dynstring_p](#)

Definition at line 14 of file [dynstring.h](#).

5.32.2.2 typedef struct [dynstring_s](#) [dynstring_t](#)

5.32.3 Function Documentation

5.32.3.1 int [dynstring_Append](#) ([dynstring_t](#) *msg, char *str)

Definition at line 30 of file [dynstring.c](#).

References [COMPOSE_BLOCKSIZE](#), [dynstring_s::len](#), [dynstring_s::message](#), and [dynstring_s::size](#).

Referenced by [fipa_acl_Compose\(\)](#), [fipa_agent_identifier_Compose\(\)](#), [fipa_agent_identifier_set_-Compose\(\)](#), [fipa_DateTime_Compose\(\)](#), [fipa_envelope_Compose__from\(\)](#), [fipa_number_Compose\(\)](#),

fipa_performative_Compose(), fipa_protocol_Compose(), fipa_string_Compose(), fipa_url_Compose(), fipa_url_sequence_Compose(), fipa_word_Compose(), message_send_Thread(), mtp_http_CreateMessage(), and mtp_http_InitializeFromConnection().

5.32.3.2 int dynstring_Destroy (dynstring_t * *dynstring*)

Definition at line 56 of file dynstring.c.

References dynstring_s::message.

Referenced by fipa_envelope_Compose__from(), MC_AclSend(), message_send_Thread(), mtp_http_CreateMessage(), and mtp_http_InitializeFromConnection().

5.32.3.3 dynstring_t* dynstring_New (void)

Definition at line 14 of file dynstring.c.

References COMPOSE_BLOCKSIZE, dynstring_s::len, dynstring_s::message, and dynstring_s::size.

Referenced by fipa_acl_Compose(), fipa_envelope_Compose__from(), message_send_Thread(), mtp_http_CreateMessage(), and mtp_http_InitializeFromConnection().

5.33 /home/dko/Projects/mobilec/src/include/fipa_acl.h File Reference

```
#include "dynstring.h"
```

Data Structures

- struct [fipa_acl_message_s](#)
- struct [fipa_message_string_s](#)
- struct [fipa_url_sequence_s](#)
- struct [fipa_agent_identifier_set_s](#)
- struct [fipa_agent_identifier_s](#)
- struct [fipa_expression_s](#)
- union [fipa_expression_s::content_u](#)
- struct [fipa_word_s](#)
- struct [fipa_string_s](#)
- struct [fipa_DateTime_s](#)
- struct [fipa_url_s](#)
- struct [fipa_number_s](#)

Typedefs

- typedef enum [fipa_expression_type_e](#) [fipa_expression_type_t](#)
- typedef struct [fipa_acl_message_s](#) [fipa_acl_message_t](#)
- typedef [fipa_acl_message_t](#) * [fipa_acl_message_p](#)
- typedef struct [fipa_message_string_s](#) [fipa_message_string_t](#)
- typedef [fipa_message_string_t](#) * [fipa_message_string_p](#)
- typedef struct [fipa_url_sequence_s](#) [fipa_url_sequence_t](#)
- typedef [fipa_url_sequence_t](#) * [fipa_url_sequence_p](#)
- typedef struct [fipa_agent_identifier_set_s](#) [fipa_agent_identifier_set_t](#)
- typedef [fipa_agent_identifier_set_t](#) * [fipa_agent_identifier_set_p](#)
- typedef struct [fipa_agent_identifier_s](#) [fipa_agent_identifier_t](#)
- typedef [fipa_agent_identifier_t](#) * [fipa_agent_identifier_p](#)
- typedef struct [fipa_expression_s](#) [fipa_expression_t](#)
- typedef [fipa_expression_t](#) * [fipa_expression_p](#)
- typedef struct [fipa_word_s](#) [fipa_word_t](#)
- typedef [fipa_word_t](#) * [fipa_word_p](#)
- typedef struct [fipa_string_s](#) [fipa_string_t](#)
- typedef [fipa_string_t](#) * [fipa_string_p](#)
- typedef struct [fipa_DateTime_s](#) [fipa_DateTime_t](#)
- typedef [fipa_DateTime_t](#) * [fipa_DateTime_p](#)
- typedef struct [fipa_url_s](#) [fipa_url_t](#)
- typedef [fipa_url_t](#) * [fipa_url_p](#)
- typedef struct [fipa_number_s](#) [fipa_number_t](#)
- typedef [fipa_number_t](#) * [fipa_number_p](#)

Enumerations

- enum `fipa_performative_e` {
`FIPA_ERROR = -1, FIPA_ZERO, FIPA_ACCEPT_PROPOSAL, FIPA_AGREE,`
`FIPA_CANCEL, FIPA_CALL_FOR_PROPOSAL, FIPA_CONFIRM, FIPA_DISCONFIRM,`
`FIPA_FAILURE, FIPA_INFORM, FIPA_INFORM_IF, FIPA_INFORM_REF,`
`FIPA_NOT_UNDERSTOOD, FIPA_PROPOGATE, FIPA_PROPOSE, FIPA_PROXY,`
`FIPA_QUERY_IF, FIPA_QUERY_REF, FIPA_REFUSE, FIPA_REJECT_PROPOSAL,`
`FIPA_REQUEST, FIPA_REQUEST_WHEN, FIPA_REQUEST_WHENEVER, FIPA_-`
`SUBSCRIBE,`
`FIPA_ERROR = -1, FIPA_ZERO, FIPA_ACCEPT_PROPOSAL, FIPA_AGREE,`
`FIPA_CANCEL, FIPA_CALL_FOR_PROPOSAL, FIPA_CONFIRM, FIPA_DISCONFIRM,`
`FIPA_FAILURE, FIPA_INFORM, FIPA_INFORM_IF, FIPA_INFORM_REF,`
`FIPA_NOT_UNDERSTOOD, FIPA_PROPOGATE, FIPA_PROPOSE, FIPA_PROXY,`
`FIPA_QUERY_IF, FIPA_QUERY_REF, FIPA_REFUSE, FIPA_REJECT_PROPOSAL,`
`FIPA_REQUEST, FIPA_REQUEST_WHEN, FIPA_REQUEST_WHENEVER, FIPA_-`
`SUBSCRIBE }`
- enum `fipa_protocol_e` {
`FIPA_PROTOCOL_ERROR = -1, FIPA_PROTOCOL_NONE, FIPA_PROTOCOL_REQUEST,`
`FIPA_PROTOCOL_QUERY,`
`FIPA_PROTOCOL_REQUEST_WHEN, FIPA_PROTOCOL_CONTRACT_NET, FIPA_-`
`PROTOCOL_ITERATED_CONTRACT_NET, FIPA_PROTOCOL_ENGLISH_AUCTION,`
`FIPA_PROTOCOL_DUTCH_AUCTION, FIPA_PROTOCOL_BROKERING, FIPA_-`
`PROTOCOL_RECRUITING, FIPA_PROTOCOL_SUBSCRIBE,`
`FIPA_PROTOCOL_PROPOSE, FIPA_PROTOCOL_END }`
- enum `fipa_expression_type_e` {
`FIPA_EXPR_ZERO, FIPA_EXPR_WORD, FIPA_EXPR_STRING, FIPA_EXPR_NUMBER,`
`FIPA_EXPR_DATETIME, FIPA_EXPR_EXPRESSION }`

Functions

- `int fipa_performative_Compose (dynstring_t *msg, enum fipa_performative_e performative)`
- `int fipa_protocol_Compose (dynstring_t *msg, enum fipa_protocol_e protocol)`
- `fipa_acl_message_t * fipa_acl_message_New (void)`
- `int fipa_acl_message_Destroy (fipa_acl_message_t *message)`
- `fipa_acl_message_t * fipa_acl_message_Copy (fipa_acl_message_t *src)`
- `int fipa_acl_Compose (dynstring_t **msg, fipa_acl_message_t *acl)`
- `fipa_message_string_t * fipa_message_string_New (void)`
- `int fipa_message_string_Destroy (fipa_message_string_t *message)`
- `fipa_message_string_t * fipa_message_string_Copy (fipa_message_string_t *src)`
- `fipa_url_sequence_t * fipa_url_sequence_New (void)`
- `int fipa_url_sequence_Destroy (fipa_url_sequence_t *sequence)`
- `fipa_url_sequence_t * fipa_url_sequence_Copy (fipa_url_sequence_t *src)`
- `int fipa_url_sequence_Compose (dynstring_t *msg, fipa_url_sequence_t *urls)`
- `fipa_agent_identifier_set_t * fipa_agent_identifier_set_New (void)`
- `int fipa_agent_identifier_set_Destroy (fipa_agent_identifier_set_t *idset)`

- [fipa_agent_identifier_set_t * fipa_agent_identifier_set_Copy \(fipa_agent_identifier_set_t *src\)](#)
- [int fipa_agent_identifier_set_Compose \(dynstring_t *msg, fipa_agent_identifier_set_t *ids\)](#)
- [fipa_agent_identifier_t * fipa_agent_identifier_New \(void\)](#)
- [int fipa_agent_identifier_Destroy \(fipa_agent_identifier_t *id\)](#)
- [fipa_agent_identifier_t * fipa_agent_identifier_Copy \(fipa_agent_identifier_t *src\)](#)
- [int fipa_agent_identifier_Compose \(dynstring_t *msg, fipa_agent_identifier_t *id\)](#)
- [fipa_expression_t * fipa_expression_New \(void\)](#)
- [int fipa_expression_Destroy \(fipa_expression_t *expr\)](#)
- [fipa_expression_t * fipa_expression_Copy \(fipa_expression_t *src\)](#)
- [int fipa_expression_Compose \(dynstring_t *msg, fipa_expression_t *expr\)](#)
- [fipa_word_t * fipa_word_New \(void\)](#)
- [int fipa_word_Destroy \(fipa_word_t *word\)](#)
- [fipa_word_t * fipa_word_Copy \(fipa_word_t *src\)](#)
- [int fipa_word_Compose \(dynstring_t *msg, fipa_word_t *word\)](#)
- [fipa_string_t * fipa_string_New \(void\)](#)
- [int fipa_string_Destroy \(fipa_string_t *str\)](#)
- [fipa_string_t * fipa_string_Copy \(fipa_string_t *src\)](#)
- [int fipa_string_Compose \(dynstring_t *msg, fipa_string_t *string\)](#)
- [fipa_DateTime_t * fipa_DateTime_New \(void\)](#)
- [int fipa_DateTime_Destroy \(fipa_DateTime_t *dt\)](#)
- [fipa_DateTime_t * fipa_DateTime_Copy \(fipa_DateTime_t *src\)](#)
- [int fipa_DateTime_Compose \(dynstring_t *msg, fipa_DateTime_t *date\)](#)
- [fipa_url_t * fipa_url_New \(void\)](#)
- [int fipa_url_Destroy \(fipa_url_t *url\)](#)
- [fipa_url_t * fipa_url_Copy \(fipa_url_t *src\)](#)
- [int fipa_url_Compose \(dynstring_t *msg, fipa_url_t *url\)](#)
- [fipa_number_t * fipa_number_New \(void\)](#)
- [int fipa_number_Destroy \(fipa_number_t *number\)](#)
- [fipa_number_t * fipa_number_Copy \(fipa_number_t *src\)](#)
- [int fipa_number_Compose \(dynstring_t *msg, fipa_number_t *number\)](#)
- [int fipa_acl_Parse \(struct fipa_acl_message_s *acl, fipa_message_string_p message\)](#)
- [int fipa_message_parameter_Parse \(struct fipa_acl_message_s *acl, fipa_message_string_p message\)](#)
- [int fipa_protocol_type_Parse \(enum fipa_protocol_e *protocol, fipa_message_string_p message\)](#)
- [int fipa_message_type_Parse \(enum fipa_performative_e *performative, fipa_message_string_p message\)](#)
- [int fipa_GetAtom \(fipa_message_string_p message, char expected_atom\)](#)
- [int fipa_word_Parse \(fipa_word_t **word, fipa_message_string_p message\)](#)
- [int fipa_CheckNextToken \(const fipa_message_string_p message, const char *token\)](#)
- [int fipa_expression_Parse \(fipa_expression_t **expression, fipa_message_string_p message\)](#)
- [int fipa_GetNextWord \(char **word, const fipa_message_string_p message\)](#)
- [int fipa_GetWholeToken \(char **word, const fipa_message_string_p message\)](#)
- [int fipa_datetime_Parse \(fipa_DateTime_p *datetime, fipa_message_string_p message\)](#)
- [int fipa_string_Parse \(fipa_string_p *fipa_string, fipa_message_string_p message\)](#)
- [int fipa_agent_identifier_Parse \(fipa_agent_identifier_p *aid, fipa_message_string_p message\)](#)
- [int fipa_agent_identifier_set_Parse \(fipa_agent_identifier_set_p *agent_ids, fipa_message_string_p message\)](#)
- [int fipa_url_sequence_Parse \(fipa_url_sequence_p *urls, fipa_message_string_p message\)](#)
- [int fipa_url_Parse \(fipa_url_p *url, fipa_message_string_p message\)](#)
- [struct fipa_acl_message_s * fipa_Reply \(struct fipa_acl_message_s *acl\)](#)

5.33.1 Typedef Documentation

5.33.1.1 typedef fipa_acl_message_t* fipa_acl_message_p

Definition at line 136 of file fipa_acl.h.

5.33.1.2 typedef struct fipa_acl_message_s fipa_acl_message_t

5.33.1.3 typedef fipa_agent_identifier_t* fipa_agent_identifier_p

Definition at line 186 of file fipa_acl.h.

5.33.1.4 typedef fipa_agent_identifier_set_t* fipa_agent_identifier_set_p

Definition at line 172 of file fipa_acl.h.

5.33.1.5 typedef struct fipa_agent_identifier_set_s fipa_agent_identifier_set_t

5.33.1.6 typedef struct fipa_agent_identifier_s fipa_agent_identifier_t

5.33.1.7 typedef fipa_DateTime_t* fipa_DateTime_p

Definition at line 246 of file fipa_acl.h.

5.33.1.8 typedef struct fipa_DateTime_s fipa_DateTime_t

5.33.1.9 typedef fipa_expression_t* fipa_expression_p

Definition at line 205 of file fipa_acl.h.

5.33.1.10 typedef struct fipa_expression_s fipa_expression_t

5.33.1.11 typedef enum fipa_expression_type_e fipa_expression_type_t

5.33.1.12 typedef fipa_message_string_t* fipa_message_string_p

Definition at line 148 of file fipa_acl.h.

5.33.1.13 typedef struct fipa_message_string_s fipa_message_string_t

5.33.1.14 typedef fipa_number_t* fipa_number_p

Definition at line 268 of file fipa_acl.h.

5.33.1.15 typedef struct fipa_number_s fipa_number_t

5.33.1.16 typedef fipa_string_t* fipa_string_p

Definition at line 227 of file fipa_acl.h.

5.33.1.17 `typedef struct fipa_string_s fipa_string_t`

5.33.1.18 `typedef fipa_url_t* fipa_url_p`

Definition at line 257 of file fipa_acl.h.

5.33.1.19 `typedef fipa_url_sequence_t* fipa_url_sequence_p`

Definition at line 159 of file fipa_acl.h.

5.33.1.20 `typedef struct fipa_url_sequence_s fipa_url_sequence_t`

5.33.1.21 `typedef struct fipa_url_s fipa_url_t`

5.33.1.22 `typedef fipa_word_t* fipa_word_p`

Definition at line 216 of file fipa_acl.h.

5.33.1.23 `typedef struct fipa_word_s fipa_word_t`

5.33.2 Enumeration Type Documentation

5.33.2.1 `enum fipa_expression_type_e`

Enumerator:

FIPA_EXPR_ZERO
FIPA_EXPR_WORD
FIPA_EXPR_STRING
FIPA_EXPR_NUMBER
FIPA_EXPR_DATETIME
FIPA_EXPR_EXPRESSION

Definition at line 94 of file fipa_acl.h.

5.33.2.2 `enum fipa_performative_e`

Enumerator:

FIPA_ERROR
FIPA_ZERO
FIPA_ACCEPT_PROPOSAL
FIPA_AGREE
FIPA_CANCEL
FIPA_CALL_FOR_PROPOSAL
FIPA_CONFIRM
FIPA_DISCONFIRM

FIPA_FAILURE
FIPA_INFORM
FIPA_INFORM_IF
FIPA_INFORM_REF
FIPA_NOT_UNDERSTOOD
FIPA_PROPOGATE
FIPA_PROPOSE
FIPA_PROXY
FIPA_QUERY_IF
FIPA_QUERY_REF
FIPA_REFUSE
FIPA_REJECT_PROPOSAL
FIPA_REQUEST
FIPA_REQUEST_WHEN
FIPA_REQUEST_WHENEVER
FIPA_SUBSCRIBE
FIPA_ERROR
FIPA_ZERO
FIPA_ACCEPT_PROPOSAL
FIPA_AGREE
FIPA_CANCEL
FIPA_CALL_FOR_PROPOSAL
FIPA_CONFIRM
FIPA_DISCONFIRM
FIPA_FAILURE
FIPA_INFORM
FIPA_INFORM_IF
FIPA_INFORM_REF
FIPA_NOT_UNDERSTOOD
FIPA_PROPOGATE
FIPA_PROPOSE
FIPA_PROXY
FIPA_QUERY_IF
FIPA_QUERY_REF
FIPA_REFUSE
FIPA_REJECT_PROPOSAL
FIPA_REQUEST
FIPA_REQUEST_WHEN
FIPA_REQUEST_WHENEVER
FIPA_SUBSCRIBE

Definition at line 41 of file fipa_acl.h.

5.33.2.3 enum fipa_protocol_e

Enumerator:

FIPA_PROTOCOL_ERROR
FIPA_PROTOCOL_NONE
FIPA_PROTOCOL_REQUEST
FIPA_PROTOCOL_QUERY
FIPA_PROTOCOL_REQUEST_WHEN
FIPA_PROTOCOL_CONTRACT_NET
FIPA_PROTOCOL_ITERATED_CONTRACT_NET
FIPA_PROTOCOL_ENGLISH_AUCTION
FIPA_PROTOCOL_DUTCH_AUCTION
FIPA_PROTOCOL_BROKERING
FIPA_PROTOCOL_RECRUITING
FIPA_PROTOCOL_SUBSCRIBE
FIPA_PROTOCOL_PROPOSE
FIPA_PROTOCOL_END

Definition at line 72 of file fipa_acl.h.

5.33.3 Function Documentation

5.33.3.1 int fipa_acl_Compose (dynstring_t ** msg, fipa_acl_message_t * acl)

Definition at line 1232 of file fipa_acl.c.

References fipa_acl_message_s::content, fipa_acl_message_s::conversation_id, dynstring_Append(), dynstring_New(), fipa_acl_message_s::encoding, fipa_agent_identifier_Compose(), fipa_agent_identifier_set_Compose(), fipa_DateTime_Compose(), fipa_expression_Compose(), fipa_performative_Compose(), fipa_protocol_Compose(), FIPA_PROTOCOL_NONE, fipa_string_Compose(), fipa_acl_message_s::in_reply_to, fipa_acl_message_s::language, fipa_acl_message_s::ontology, fipa_acl_message_s::performative, fipa_acl_message_s::protocol, fipa_acl_message_s::receiver, fipa_acl_message_s::reply_by, fipa_acl_message_s::reply_to, fipa_acl_message_s::reply_with, and fipa_acl_message_s::sender.

Referenced by MC_AclSend().

5.33.3.2 fipa_acl_message_t* fipa_acl_message_Copy (fipa_acl_message_t * src)

Definition at line 86 of file fipa_acl.c.

References fipa_acl_message_s::content, fipa_acl_message_s::conversation_id, fipa_acl_message_s::encoding, fipa_acl_message_New(), fipa_agent_identifier_Copy(), fipa_agent_identifier_set_Copy(), fipa_DateTime_Copy(), fipa_expression_Copy(), fipa_string_Copy(), fipa_acl_message_s::in_reply_to, fipa_acl_message_s::language, fipa_acl_message_s::ontology, fipa_acl_message_s::performative, fipa_acl_message_s::protocol, fipa_acl_message_s::receiver, fipa_acl_message_s::reply_by, fipa_acl_message_s::reply_to, fipa_acl_message_s::reply_with, and fipa_acl_message_s::sender.

Referenced by MC_AclSend().

5.33.3.3 `int fipa_acl_message_Destroy (fipa_acl_message_t * message)`

Definition at line 65 of file `fipa_acl.c`.

References `fipa_acl_message_s::content`, `fipa_acl_message_s::conversation_id`, `fipa_acl_message_s::encoding`, `fipa_agent_identifier_Destroy()`, `fipa_agent_identifier_set_Destroy()`, `fipa_DateTime_Destroy()`, `fipa_expression_Destroy()`, `fipa_string_Destroy()`, `fipa_acl_message_s::in_reply_to`, `fipa_acl_message_s::language`, `fipa_acl_message_s::ontology`, `fipa_acl_message_s::receiver`, `fipa_acl_message_s::reply_by`, `fipa_acl_message_s::reply_to`, `fipa_acl_message_s::reply_with`, and `fipa_acl_message_s::sender`.

Referenced by `acc_connection_Thread()`, and `MC_AclDestroy()`.

5.33.3.4 `fipa_acl_message_t* fipa_acl_message_New (void)`

Definition at line 57 of file `fipa_acl.c`.

Referenced by `acc_connection_Thread()`, `fipa_acl_message_Copy()`, `fipa_Reply()`, and `MC_AclNew()`.

5.33.3.5 `int fipa_acl_Parse (struct fipa_acl_message_s * acl, fipa_message_string_p message)`

5.33.3.6 `int fipa_agent_identifier_Compose (dynstring_t * msg, fipa_agent_identifier_t * id)`

Definition at line 1446 of file `fipa_acl.c`.

References `fipa_agent_identifier_s::addresses`, `dynstring_Append()`, `fipa_agent_identifier_set_Compose()`, `fipa_url_sequence_Compose()`, `fipa_agent_identifier_s::name`, `fipa_agent_identifier_set_s::num`, `fipa_url_sequence_s::num`, and `fipa_agent_identifier_s::resolvers`.

Referenced by `fipa_acl_Compose()`, and `fipa_agent_identifier_set_Compose()`.

5.33.3.7 `fipa_agent_identifier_t* fipa_agent_identifier_Copy (fipa_agent_identifier_t * src)`

Definition at line 235 of file `fipa_acl.c`.

References `fipa_agent_identifier_s::addresses`, `fipa_agent_identifier_New()`, `fipa_agent_identifier_set_Copy()`, `fipa_url_sequence_Copy()`, `fipa_agent_identifier_s::name`, `fipa_agent_identifier_s::resolvers`, and `strdup`.

Referenced by `fipa_acl_message_Copy()`, `fipa_acl_Param_Copy()`, `fipa_agent_identifier_set_Copy()`, and `fipa_Reply()`.

5.33.3.8 `int fipa_agent_identifier_Destroy (fipa_agent_identifier_t * id)`

Definition at line 223 of file `fipa_acl.c`.

References `fipa_agent_identifier_s::addresses`, `fipa_agent_identifier_set_Destroy()`, `fipa_url_sequence_Destroy()`, `fipa_agent_identifier_s::name`, and `fipa_agent_identifier_s::resolvers`.

Referenced by `fipa_acl_message_Destroy()`, `fipa_acl_Param_Destroy()`, `fipa_agent_identifier_set_Destroy()`, and `MC_AclSetSender()`.

5.33.3.9 `fipa_agent_identifier_t* fipa_agent_identifier_New (void)`

Definition at line 215 of file `fipa_acl.c`.

Referenced by fipa_agent_identifier_Copy(), fipa_envelope_ParseAgentIdentifier(), MC_AclAddReceiver(), MC_AclAddReplyTo(), and MC_AclSetSender().

5.33.3.10 int fipa_agent_identifier_Parse (fipa_agent_identifier_p * *aid*, fipa_message_string_p *message*)

Definition at line 1032 of file fipa_acl.c.

References CHECK_NULL, fipa_word_s::content, fipa_agent_identifier_set_Parse(), fipa_GetAtom(), fipa_url_sequence_Parse(), fipa_word_Destroy(), fipa_word_Parse(), MC_ERR_PARSE, MC_SUCCESS, and fipa_message_string_s::parse.

Referenced by fipa_agent_identifier_set_Parse(), and fipa_message_parameter_Parse().

5.33.3.11 int fipa_agent_identifier_set_Compose (dynstring_t * *msg*, fipa_agent_identifier_set_t * *ids*)

Definition at line 1433 of file fipa_acl.c.

References dynstring_Append(), fipa_agent_identifier_Compose(), fipa_agent_identifier_set_s::fipa_agent_identifiers, and fipa_agent_identifier_set_s::num.

Referenced by fipa_acl_Compose(), and fipa_agent_identifier_Compose().

5.33.3.12 fipa_agent_identifier_set_t* fipa_agent_identifier_set_Copy (fipa_agent_identifier_set_t * *src*)

Definition at line 194 of file fipa_acl.c.

References fipa_agent_identifier_Copy(), fipa_agent_identifier_set_New(), fipa_agent_identifier_set_s::fipa_agent_identifiers, fipa_agent_identifier_set_s::num, and fipa_agent_identifier_set_s::retain_order.

Referenced by fipa_acl_message_Copy(), fipa_acl_Param_Copy(), fipa_agent_identifier_Copy(), and fipa_Reply().

5.33.3.13 int fipa_agent_identifier_set_Destroy (fipa_agent_identifier_set_t * *idset*)

Definition at line 182 of file fipa_acl.c.

References fipa_agent_identifier_Destroy(), fipa_agent_identifier_set_s::fipa_agent_identifiers, and fipa_agent_identifier_set_s::num.

Referenced by fipa_acl_message_Destroy(), fipa_acl_Param_Destroy(), and fipa_agent_identifier_Destroy().

5.33.3.14 fipa_agent_identifier_set_t* fipa_agent_identifier_set_New (void)

Definition at line 174 of file fipa_acl.c.

Referenced by fipa_agent_identifier_set_Copy(), fipa_envelope_HandleIntendedReceiver(), fipa_envelope_HandleTo(), fipa_Reply(), MC_AclAddReceiver(), and MC_AclAddReplyTo().

5.33.3.15 **int fipa_agent_identifier_set_Parse** (fipa_agent_identifier_set_p * *agent_ids*, fipa_message_string_p *message*)

Definition at line 1191 of file fipa_acl.c.

References fipa_word_s::content, fipa_agent_identifier_Parse(), fipa_GetAtom(), fipa_word_Parse(), MC_ERR_PARSE, MC_SUCCESS, and fipa_agent_identifier_set_s::retain_order.

Referenced by fipa_agent_identifier_Parse(), and fipa_message_parameter_Parse().

5.33.3.16 **int fipa_CheckNextToken** (const fipa_message_string_p *message*, const char * *token*)

Definition at line 694 of file fipa_acl.c.

References fipa_message_string_s::parse.

Referenced by fipa_expression_Parse().

5.33.3.17 **int fipa_DateTime_Compose** (dynstring_t * *msg*, fipa_DateTime_t * *date*)

Definition at line 1519 of file fipa_acl.c.

References buf, fipa_DateTime_s::day, dynstring_Append(), fipa_DateTime_s::hour, fipa_DateTime_s::millisecond, fipa_DateTime_s::minute, fipa_DateTime_s::month, fipa_DateTime_s::second, fipa_DateTime_s::sign, and fipa_DateTime_s::year.

Referenced by fipa_acl_Compose(), and fipa_expression_Compose().

5.33.3.18 **fipa_DateTime_t* fipa_DateTime_Copy** (fipa_DateTime_t * *src*)

Definition at line 398 of file fipa_acl.c.

References fipa_DateTime_New().

Referenced by fipa_acl_envelope_Received_Copy(), fipa_acl_message_Copy(), fipa_acl_Param_Copy(), and fipa_expression_Copy().

5.33.3.19 **int fipa_DateTime_Destroy** (fipa_DateTime_t * *dt*)

Definition at line 391 of file fipa_acl.c.

Referenced by fipa_acl_envelope_Received_Destroy(), fipa_acl_message_Destroy(), fipa_acl_Param_Destroy(), and fipa_expression_Destroy().

5.33.3.20 **fipa_DateTime_t* fipa_DateTime_New** (void)

Definition at line 383 of file fipa_acl.c.

Referenced by fipa_DateTime_Copy().

5.33.3.21 **int fipa_datetime_Parse** (fipa_DateTime_p * *datetime*, fipa_message_string_p *message*)

Definition at line 849 of file fipa_acl.c.

References `buf`, `fipa_GetWholeToken()`, `MC_ERR_PARSE`, `MC_SUCCESS`, `fipa_message_string_s::parse`, and `fipa_DateTime_s::sign`.

Referenced by `fipa_envelope_HandleDate()`, `fipa_envelope_HandleReceived()`, `fipa_expression_Parse()`, and `fipa_message_parameter_Parse()`.

5.33.3.22 `int fipa_expression_Compose (dynstring_t * msg, fipa_expression_t * expr)`

Definition at line 1472 of file `fipa_acl.c`.

References `fipa_expression_s::content`, `fipa_expression_s::content_u::datetime`, `fipa_expression_s::content_u::expression`, `fipa_DateTime_Compose()`, `FIPA_EXPR_DATETIME`, `FIPA_EXPR_EXPRESSION`, `FIPA_EXPR_NUMBER`, `FIPA_EXPR_STRING`, `FIPA_EXPR_WORD`, `fipa_expression_Compose()`, `fipa_number_Compose()`, `fipa_string_Compose()`, `fipa_word_Compose()`, `MC_ERR_PARSE`, `fipa_expression_s::content_u::number`, `fipa_expression_s::content_u::string`, `fipa_expression_s::type`, and `fipa_expression_s::content_u::word`.

Referenced by `fipa_acl_Compose()`, and `fipa_expression_Compose()`.

5.33.3.23 `fipa_expression_t* fipa_expression_Copy (fipa_expression_t * src)`

Definition at line 286 of file `fipa_acl.c`.

References `fipa_expression_s::content`, `fipa_expression_s::content_u::datetime`, `fipa_expression_s::content_u::expression`, `fipa_DateTime_Copy()`, `FIPA_EXPR_DATETIME`, `FIPA_EXPR_EXPRESSION`, `FIPA_EXPR_NUMBER`, `FIPA_EXPR_STRING`, `FIPA_EXPR_WORD`, `fipa_expression_Copy()`, `fipa_expression_Destroy()`, `fipa_expression_New()`, `fipa_number_Copy()`, `fipa_string_Copy()`, `fipa_word_Copy()`, `fipa_expression_s::content_u::number`, `fipa_expression_s::content_u::string`, `fipa_expression_s::type`, and `fipa_expression_s::content_u::word`.

Referenced by `fipa_acl_message_Copy()`, `fipa_expression_Copy()`, and `fipa_Reply()`.

5.33.3.24 `int fipa_expression_Destroy (fipa_expression_t * expr)`

Definition at line 255 of file `fipa_acl.c`.

References `fipa_expression_s::content`, `fipa_expression_s::content_u::datetime`, `fipa_expression_s::content_u::expression`, `fipa_DateTime_Destroy()`, `FIPA_EXPR_DATETIME`, `FIPA_EXPR_EXPRESSION`, `FIPA_EXPR_NUMBER`, `FIPA_EXPR_STRING`, `FIPA_EXPR_WORD`, `fipa_expression_Destroy()`, `fipa_number_Destroy()`, `fipa_string_Destroy()`, `fipa_word_Destroy()`, `FREEMEM`, `fipa_expression_s::content_u::number`, `fipa_expression_s::content_u::string`, `fipa_expression_s::type`, and `fipa_expression_s::content_u::word`.

Referenced by `fipa_acl_message_Destroy()`, `fipa_expression_Copy()`, and `fipa_expression_Destroy()`.

5.33.3.25 `fipa_expression_t* fipa_expression_New (void)`

Definition at line 247 of file `fipa_acl.c`.

Referenced by `fipa_expression_Copy()`, and `MC_AclSetConversationID()`.

5.33.3.26 **int fipa_expression_Parse (fipa_expression_t ** *expression*, fipa_message_string_p *message*)**

Definition at line 713 of file fipa_acl.c.

References fipa_CheckNextToken(), fipa_datetime_Parse(), FIPA_EXPR_DATETIME, FIPA_EXPR_EXPRESSION, FIPA_EXPR_STRING, FIPA_EXPR_WORD, fipa_expression_Parse(), fipa_GetAtom(), fipa_string_Parse(), fipa_word_Parse(), MC_ERR_PARSE, MC_SUCCESS, and fipa_expression_s::type.

Referenced by fipa_expression_Parse(), and fipa_message_parameter_Parse().

5.33.3.27 **int fipa_GetAtom (fipa_message_string_p *message*, char *expected_atom*)**

Definition at line 629 of file fipa_acl.c.

References MC_ERR_PARSE, MC_SUCCESS, and fipa_message_string_s::parse.

Referenced by fipa_acl_Parse(), fipa_agent_identifier_Parse(), fipa_agent_identifier_set_Parse(), fipa_expression_Parse(), fipa_message_parameter_Parse(), fipa_string_Parse(), and fipa_url_sequence_Parse().

5.33.3.28 **int fipa_GetNextWord (char ** *word*, const fipa_message_string_p *message*)**

Definition at line 764 of file fipa_acl.c.

References ERR, MC_SUCCESS, and fipa_message_string_s::parse.

5.33.3.29 **int fipa_GetWholeToken (char ** *word*, const fipa_message_string_p *message*)**

Definition at line 812 of file fipa_acl.c.

References MC_SUCCESS, and fipa_message_string_s::parse.

Referenced by fipa_datetime_Parse().

5.33.3.30 **int fipa_message_parameter_Parse (struct fipa_acl_message_s * *acl*, fipa_message_string_p *message*)**

5.33.3.31 **fipa_message_string_t* fipa_message_string_Copy (fipa_message_string_t * *src*)**

Definition at line 128 of file fipa_acl.c.

References fipa_message_string_s::message, fipa_message_string_s::parse, and strdup.

5.33.3.32 **int fipa_message_string_Destroy (fipa_message_string_t * *message*)**

Definition at line 118 of file fipa_acl.c.

References fipa_message_string_s::message.

Referenced by acc_connection_Thread().

5.33.3.33 **fipa_message_string_t* fipa_message_string_New (void)**

Definition at line 110 of file fipa_acl.c.

Referenced by `acc_connection_Thread()`.

5.33.3.34 `int fipa_message_type_Parse (enum fipa_performative_e * performative, fipa_message_string_p message)`

Definition at line 567 of file `fipa_acl.c`.

References `fipa_word_s::content`, `FIPA_ACCEPT_PROPOSAL`, `FIPA_AGREE`, `FIPA_CALL_FOR_PROPOSAL`, `FIPA_CANCEL`, `FIPA_CONFIRM`, `FIPA_DISCONFIRM`, `FIPA_FAILURE`, `FIPA_INFORM`, `FIPA_INFORM_IF`, `FIPA_INFORM_REF`, `FIPA_NOT_UNDERSTOOD`, `FIPA_PROPOGATE`, `FIPA_PROPOSE`, `FIPA_PROXY`, `FIPA_QUERY_IF`, `FIPA_QUERY_REF`, `FIPA_REFUSE`, `FIPA_REJECT_PROPOSAL`, `FIPA_REQUEST`, `FIPA_REQUEST_WHEN`, `FIPA_REQUEST_WHENEVER`, `FIPA_SUBSCRIBE`, `fipa_word_Destroy()`, `fipa_word_Parse()`, and `MC_ERR_PARSE`.

Referenced by `fipa_acl_Parse()`.

5.33.3.35 `int fipa_number_Compose (dynstring_t * msg, fipa_number_t * number)`

Definition at line 1547 of file `fipa_acl.c`.

References `dynstring_Append()`, and `fipa_number_s::str`.

Referenced by `fipa_expression_Compose()`.

5.33.3.36 `fipa_number_t* fipa_number_Copy (fipa_number_t * src)`

Definition at line 454 of file `fipa_acl.c`.

References `fipa_number_New()`, `fipa_number_s::str`, and `strdup`.

Referenced by `fipa_expression_Copy()`.

5.33.3.37 `int fipa_number_Destroy (fipa_number_t * number)`

Definition at line 444 of file `fipa_acl.c`.

References `fipa_number_s::str`.

Referenced by `fipa_expression_Destroy()`.

5.33.3.38 `fipa_number_t* fipa_number_New (void)`

Definition at line 436 of file `fipa_acl.c`.

Referenced by `fipa_number_Copy()`.

5.33.3.39 `int fipa_performative_Compose (dynstring_t * msg, enum fipa_performative_e performative)`

Definition at line 1345 of file `fipa_acl.c`.

References `dynstring_Append()`, `FIPA_ACCEPT_PROPOSAL`, `FIPA_AGREE`, `FIPA_CALL_FOR_PROPOSAL`, `FIPA_CANCEL`, `FIPA_CONFIRM`, `FIPA_DISCONFIRM`, `FIPA_FAILURE`,

FIPA_INFORM, FIPA_INFORM_IF, FIPA_INFORM_REF, FIPA_NOT_UNDERSTOOD, FIPA_PROPOGATE, FIPA_PROPOSE, FIPA_PROXY, FIPA_QUERY_IF, FIPA_QUERY_REF, FIPA_REFUSE, FIPA_REJECT_PROPOSAL, FIPA_REQUEST, FIPA_REQUEST_WHEN, FIPA_REQUEST_WHENEVER, FIPA_SUBSCRIBE, and MC_ERR_PARSE.

Referenced by `fipa_acl_Compose()`.

5.33.3.40 `int fipa_protocol_Compose (dynstring_t * msg, enum fipa_protocol_e protocol)`

Definition at line 1302 of file `fipa_acl.c`.

References `dynstring_Append()`, `FIPA_PROTOCOL_BROKERING`, `FIPA_PROTOCOL_CONTRACT_NET`, `FIPA_PROTOCOL_DUTCH_AUCTION`, `FIPA_PROTOCOL_ENGLISH_AUCTION`, `FIPA_PROTOCOL_ITERATED_CONTRACT_NET`, `FIPA_PROTOCOL_PROPOSE`, `FIPA_PROTOCOL_QUERY`, `FIPA_PROTOCOL_RECRUITING`, `FIPA_PROTOCOL_REQUEST`, `FIPA_PROTOCOL_REQUEST_WHEN`, `FIPA_PROTOCOL_SUBSCRIBE`, and `MC_ERR_PARSE`.

Referenced by `fipa_acl_Compose()`.

5.33.3.41 `int fipa_protocol_type_Parse (enum fipa_protocol_e * protocol, fipa_message_string_p message)`

Definition at line 527 of file `fipa_acl.c`.

References `fipa_word_s::content`, `FIPA_PROTOCOL_BROKERING`, `FIPA_PROTOCOL_CONTRACT_NET`, `FIPA_PROTOCOL_DUTCH_AUCTION`, `FIPA_PROTOCOL_ENGLISH_AUCTION`, `FIPA_PROTOCOL_ITERATED_CONTRACT_NET`, `FIPA_PROTOCOL_PROPOSE`, `FIPA_PROTOCOL_QUERY`, `FIPA_PROTOCOL_RECRUITING`, `FIPA_PROTOCOL_REQUEST`, `FIPA_PROTOCOL_REQUEST_WHEN`, `FIPA_PROTOCOL_SUBSCRIBE`, `fipa_word_Destroy()`, `fipa_word_Parse()`, and `MC_ERR_PARSE`.

Referenced by `fipa_message_parameter_Parse()`.

5.33.3.42 `struct fipa_acl_message_s* fipa_Reply (struct fipa_acl_message_s * acl) [read]`

Definition at line 1555 of file `fipa_acl.c`.

References `fipa_acl_message_s::conversation_id`, `fipa_acl_message_New()`, `fipa_agent_identifier_Copy()`, `fipa_agent_identifier_set_Copy()`, `fipa_agent_identifier_set_New()`, `fipa_agent_identifier_set_s::fipa_agent_identifiers`, `fipa_expression_Copy()`, `fipa_agent_identifier_set_s::num`, `fipa_acl_message_s::protocol`, `fipa_acl_message_s::receiver`, `fipa_acl_message_s::reply_to`, `fipa_agent_identifier_set_s::retain_order`, and `fipa_acl_message_s::sender`.

Referenced by `MC_AclReply()`.

5.33.3.43 `int fipa_string_Compose (dynstring_t * msg, fipa_string_t * string)`

Definition at line 1510 of file `fipa_acl.c`.

References `fipa_string_s::content`, and `dynstring_Append()`.

Referenced by `fipa_acl_Compose()`, and `fipa_expression_Compose()`.

5.33.3.44 fipa_string_t* fipa_string_Copy (fipa_string_t * *src*)

Definition at line 373 of file fipa_acl.c.

References fipa_string_s::content, fipa_string_New(), and strdup.

Referenced by fipa_acl_message_Copy(), and fipa_expression_Copy().

5.33.3.45 int fipa_string_Destroy (fipa_string_t * *str*)

Definition at line 363 of file fipa_acl.c.

References fipa_string_s::content.

Referenced by fipa_acl_message_Destroy(), fipa_expression_Destroy(), and MC_AclSetContent().

5.33.3.46 fipa_string_t* fipa_string_New (void)

Definition at line 355 of file fipa_acl.c.

Referenced by fipa_string_Copy(), MC_AclSetContent(), and MC_AclSetConversationID().

5.33.3.47 int fipa_string_Parse (fipa_string_p * *fipa_string*, fipa_message_string_p *message*)

Definition at line 987 of file fipa_acl.c.

References fipa_string_s::content, fipa_GetAtom(), MC_ERR_PARSE, MC_SUCCESS, and fipa_message_string_s::parse.

Referenced by fipa_expression_Parse(), and fipa_message_parameter_Parse().

5.33.3.48 int fipa_url_Compose (dynstring_t * *msg*, fipa_url_t * *url*)

Definition at line 1539 of file fipa_acl.c.

References dynstring_Append(), and fipa_url_s::str.

Referenced by fipa_url_sequence_Compose().

5.33.3.49 fipa_url_t* fipa_url_Copy (fipa_url_t * *src*)

Definition at line 426 of file fipa_acl.c.

References fipa_url_New(), fipa_url_s::str, and strdup.

Referenced by fipa_acl_envelope_Received_Copy(), and fipa_url_sequence_Copy().

5.33.3.50 int fipa_url_Destroy (fipa_url_t * *url*)

Definition at line 416 of file fipa_acl.c.

References fipa_url_s::str.

Referenced by fipa_acl_envelope_Received_Destroy(), and fipa_url_sequence_Destroy().

5.33.3.51 fipa_url_t* fipa_url_New (void)

Definition at line 408 of file fipa_acl.c.

Referenced by fipa_envelope_HandleReceived(), fipa_envelope_ParseAddresses(), fipa_url_Copy(), MC_AclAddReceiver(), MC_AclAddReplyTo(), and MC_AclSetSender().

5.33.3.52 int fipa_url_Parse (fipa_url_p * url, fipa_message_string_p message)

Definition at line 1171 of file fipa_acl.c.

References fipa_word_s::content, fipa_word_Destroy(), fipa_word_Parse(), and strdup.

Referenced by fipa_url_sequence_Parse().

5.33.3.53 int fipa_url_sequence_Compose (dynstring_t * msg, fipa_url_sequence_t * urls)

Definition at line 1420 of file fipa_acl.c.

References dynstring_Append(), fipa_url_Compose(), fipa_url_sequence_s::num, and fipa_url_sequence_s::urls.

Referenced by fipa_agent_identifier_Compose().

5.33.3.54 fipa_url_sequence_t* fipa_url_sequence_Copy (fipa_url_sequence_t * src)

Definition at line 158 of file fipa_acl.c.

References fipa_url_Copy(), fipa_url_sequence_New(), fipa_url_sequence_s::num, and fipa_url_sequence_s::urls.

Referenced by fipa_agent_identifier_Copy().

5.33.3.55 int fipa_url_sequence_Destroy (fipa_url_sequence_t * sequence)

Definition at line 146 of file fipa_acl.c.

References fipa_url_Destroy(), fipa_url_sequence_s::num, and fipa_url_sequence_s::urls.

Referenced by fipa_agent_identifier_Destroy().

5.33.3.56 fipa_url_sequence_t* fipa_url_sequence_New (void)

Definition at line 138 of file fipa_acl.c.

Referenced by fipa_url_sequence_Copy(), fipa_url_sequence_Parse(), MC_AclAddReceiver(), MC_AclAddReplyTo(), and MC_AclSetSender().

5.33.3.57 int fipa_url_sequence_Parse (fipa_url_sequence_p * urls, fipa_message_string_p message)

Definition at line 1139 of file fipa_acl.c.

References fipa_word_s::content, fipa_GetAtom(), fipa_url_Parse(), fipa_url_sequence_New(), fipa_word_Destroy(), fipa_word_Parse(), and MC_ERR_PARSE.

Referenced by `fipa_agent_identifier_Parse()`.

5.33.3.58 `int fipa_word_Compose (dynstring_t * msg, fipa_word_t * word)`

Definition at line 1502 of file `fipa_acl.c`.

References `fipa_word_s::content`, and `dynstring_Append()`.

Referenced by `fipa_expression_Compose()`.

5.33.3.59 `fipa_word_t* fipa_word_Copy (fipa_word_t * src)`

Definition at line 345 of file `fipa_acl.c`.

References `fipa_word_s::content`, `fipa_word_New()`, and `strdup`.

Referenced by `fipa_expression_Copy()`.

5.33.3.60 `int fipa_word_Destroy (fipa_word_t * word)`

Definition at line 335 of file `fipa_acl.c`.

References `fipa_word_s::content`.

Referenced by `fipa_agent_identifier_Parse()`, `fipa_expression_Destroy()`, `fipa_message_parameter_Parse()`, `fipa_message_type_Parse()`, `fipa_protocol_type_Parse()`, `fipa_url_Parse()`, and `fipa_url_sequence_Parse()`.

5.33.3.61 `fipa_word_t* fipa_word_New (void)`

Definition at line 327 of file `fipa_acl.c`.

Referenced by `fipa_word_Copy()`.

5.33.3.62 `int fipa_word_Parse (fipa_word_t ** word, fipa_message_string_p message)`

Definition at line 652 of file `fipa_acl.c`.

References `CHECK_NULL`, `MC_ERR_PARSE`, `MC_SUCCESS`, and `fipa_message_string_s::parse`.

Referenced by `fipa_agent_identifier_Parse()`, `fipa_agent_identifier_set_Parse()`, `fipa_expression_Parse()`, `fipa_message_parameter_Parse()`, `fipa_message_type_Parse()`, `fipa_protocol_type_Parse()`, `fipa_url_Parse()`, and `fipa_url_sequence_Parse()`.

5.34 /home/dko/Projects/mobilec/src/include/fipa_acl_envelope.h File Reference

```
#include "fipa_acl.h"
```

Data Structures

- struct [fipa_acl_envelope_Received_s](#)
- struct [fipa_acl_Param_s](#)
- struct [fipa_acl_envelope_s](#)

Typedefs

- typedef struct [fipa_acl_envelope_Received_s](#) [fipa_acl_envelope_Received_t](#)
- typedef struct [fipa_acl_Param_s](#) [fipa_acl_Param_t](#)
- typedef struct [fipa_acl_envelope_s](#) [fipa_acl_envelope_t](#)
- typedef [fipa_acl_envelope_t](#) * [fipa_acl_envelope_p](#)

Functions

- [fipa_acl_envelope_Received_t](#) * [fipa_acl_envelope_Received_New](#) (void)
- int [fipa_acl_envelope_Received_Destroy](#) ([fipa_acl_envelope_Received_t](#) *received)
- [fipa_acl_envelope_Received_t](#) * [fipa_acl_envelope_Received_Copy](#) ([fipa_acl_envelope_Received_t](#) *received)
- [fipa_acl_Param_t](#) * [fipa_acl_Param_New](#) (void)
- int [fipa_acl_Param_Destroy](#) ([fipa_acl_Param_t](#) *param)
- [fipa_acl_Param_t](#) * [fipa_acl_Param_Copy](#) ([fipa_acl_Param_t](#) *param)
- [fipa_acl_envelope_t](#) * [fipa_acl_envelope_New](#) (void)
- int [fipa_acl_envelope_Destroy](#) ([fipa_acl_envelope_t](#) *envelope)
- [fipa_acl_envelope_t](#) * [fipa_acl_envelope_Copy](#) ([fipa_acl_envelope_t](#) *envelope)
- int [fipa_envelope_Parse](#) (struct [fipa_acl_envelope_s](#) *envelope, const char *message)
- int [fipa_envelope_HandleEnvelope](#) (struct [fipa_acl_envelope_s](#) *envelope, [mxml_node_t](#) *node)
- int [fipa_envelope_HandleParams](#) (struct [fipa_acl_envelope_s](#) *envelope, [mxml_node_t](#) *node)
- int [fipa_envelope_HandleTo](#) (struct [fipa_acl_envelope_s](#) *envelope, [mxml_node_t](#) *param_node, int cur_param)
- int [fipa_envelope_HandleFrom](#) (struct [fipa_acl_envelope_s](#) *envelope, [mxml_node_t](#) *param_node, int cur_param)
- int [fipa_envelope_HandleComments](#) (struct [fipa_acl_envelope_s](#) *envelope, [mxml_node_t](#) *param_node, int cur_param)
- int [fipa_envelope_HandleAclRepresentation](#) (struct [fipa_acl_envelope_s](#) *envelope, [mxml_node_t](#) *param_node, int cur_param)
- int [fipa_envelope_HandlePayloadLength](#) (struct [fipa_acl_envelope_s](#) *envelope, [mxml_node_t](#) *param_node, int cur_param)
- int [fipa_envelope_HandlePayloadEncoding](#) (struct [fipa_acl_envelope_s](#) *envelope, [mxml_node_t](#) *param_node, int cur_param)
- int [fipa_envelope_HandleDate](#) (struct [fipa_acl_envelope_s](#) *envelope, [mxml_node_t](#) *param_node, int cur_param)
- int [fipa_envelope_HandleIntendedReceiver](#) (struct [fipa_acl_envelope_s](#) *envelope, [mxml_node_t](#) *param_node, int cur_param)

- `int fipa_envelope_HandleReceived` (struct `fipa_acl_envelope_s` *envelope, `mxml_node_t` *param_node, `int` cur_param)
- `int fipa_envelope_ParseAgentIdentifier` (struct `fipa_agent_identifier_s` **aid, `mxml_node_t` *agent_identifier_node)
- `int fipa_envelope_ParseAddresses` (struct `fipa_agent_identifier_s` *aid, `mxml_node_t` *addresses_node)
- `int fipa_envelope_ParseResolvers` (struct `fipa_agent_identifier_s` *aid, `mxml_node_t` *resolvers_node)
- `char * fipa_envelope_Compose` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t * fipa_envelope_Compose__envelope` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t * fipa_envelope_Compose__params` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t * fipa_envelope_Compose__to` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t * fipa_envelope_Compose__from` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t * fipa_envelope_Compose__acl_representation` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t * fipa_envelope_Compose__payload_encoding` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t * fipa_envelope_Compose__date` (`fipa_acl_message_t` *fipa_acl)
- `mxml_node_t * fipa_envelope_Compose__intended_receiver` (`fipa_acl_message_t` *fipa_acl)

5.34.1 Typedef Documentation

5.34.1.1 `typedef fipa_acl_envelope_t* fipa_acl_envelope_p`

Definition at line 45 of file `fipa_acl_envelope.h`.

5.34.1.2 `typedef struct fipa_acl_envelope_Received_s fipa_acl_envelope_Received_t`

5.34.1.3 `typedef struct fipa_acl_envelope_s fipa_acl_envelope_t`

5.34.1.4 `typedef struct fipa_acl_Param_s fipa_acl_Param_t`

5.34.2 Function Documentation

5.34.2.1 `fipa_acl_envelope_t* fipa_acl_envelope_Copy` (`fipa_acl_envelope_t` * envelope)

Definition at line 150 of file `fipa_envelope.c`.

References `fipa_acl_envelope_New()`, `fipa_acl_Param_Copy()`, `fipa_acl_envelope_s::num_params`, and `fipa_acl_envelope_s::params`.

5.34.2.2 `int fipa_acl_envelope_Destroy` (`fipa_acl_envelope_t` * envelope)

Definition at line 137 of file `fipa_envelope.c`.

References `fipa_acl_Param_Destroy()`, `fipa_acl_envelope_s::num_params`, and `fipa_acl_envelope_s::params`.

Referenced by `acc_connection_Thread()`.

5.34.2.3 fipa_acl_envelope_t* fipa_acl_envelope_New (void)

Definition at line 129 of file fipa_envelope.c.

Referenced by acc_connection_Thread(), and fipa_acl_envelope_Copy().

5.34.2.4 fipa_acl_envelope_Received_t* fipa_acl_envelope_Received_Copy (fipa_acl_envelope_Received_t * *received*)

Definition at line 69 of file fipa_envelope.c.

References fipa_acl_envelope_Received_New(), fipa_DateTime_Copy(), fipa_url_Copy(), fipa_acl_envelope_Received_s::received_by, fipa_acl_envelope_Received_s::received_date, fipa_acl_envelope_Received_s::received_from, fipa_acl_envelope_Received_s::received_id, fipa_acl_envelope_Received_s::received_via, and strdup.

Referenced by fipa_acl_Param_Copy().

5.34.2.5 int fipa_acl_envelope_Received_Destroy (fipa_acl_envelope_Received_t * *received*)

Definition at line 57 of file fipa_envelope.c.

References fipa_DateTime_Destroy(), fipa_url_Destroy(), fipa_acl_envelope_Received_s::received_by, fipa_acl_envelope_Received_s::received_date, fipa_acl_envelope_Received_s::received_from, fipa_acl_envelope_Received_s::received_id, and fipa_acl_envelope_Received_s::received_via.

Referenced by fipa_acl_Param_Destroy().

5.34.2.6 fipa_acl_envelope_Received_t* fipa_acl_envelope_Received_New (void)

Definition at line 48 of file fipa_envelope.c.

Referenced by fipa_acl_envelope_Received_Copy(), and fipa_envelope_HandleReceived().

5.34.2.7 fipa_acl_Param_t* fipa_acl_Param_Copy (fipa_acl_Param_t * *param*)

Definition at line 110 of file fipa_envelope.c.

References fipa_acl_Param_s::acl_representation, fipa_acl_Param_s::comments, fipa_acl_Param_s::date, fipa_acl_envelope_Received_Copy(), fipa_acl_Param_New(), fipa_agent_identifier_Copy(), fipa_agent_identifier_set_Copy(), fipa_DateTime_Copy(), fipa_acl_Param_s::from, fipa_acl_Param_s::intended_receiver, fipa_acl_Param_s::payload_encoding, fipa_acl_Param_s::payload_length, fipa_acl_Param_s::received, strdup, and fipa_acl_Param_s::to.

Referenced by fipa_acl_envelope_Copy().

5.34.2.8 int fipa_acl_Param_Destroy (fipa_acl_Param_t * *param*)

Definition at line 93 of file fipa_envelope.c.

References fipa_acl_Param_s::acl_representation, fipa_acl_Param_s::comments, fipa_acl_Param_s::date, fipa_acl_envelope_Received_Destroy(), fipa_agent_identifier_Destroy(), fipa_agent_identifier_set_Destroy(), fipa_DateTime_Destroy(), fipa_acl_Param_s::from, fipa_acl_Param_s::intended_receiver, fipa_acl_Param_s::payload_encoding, fipa_acl_Param_s::payload_length, fipa_acl_Param_s::received, and fipa_acl_Param_s::to.

Referenced by fipa_acl_envelope_Destroy().

5.34.2.9 fipa_acl_Param_t* fipa_acl_Param_New (void)

Definition at line 85 of file fipa_envelope.c.

Referenced by fipa_acl_Param_Copy(), and fipa_envelope_HandleTo().

5.34.2.10 char* fipa_envelope_Compose (fipa_acl_message_t * *fipa_acl*)

Definition at line 869 of file fipa_envelope.c.

References fipa_envelope_Compose__envelope(), MXML_ADD_AFTER, MXML_ADD_TO_PARENT, MXML_NO_CALLBACK, mxmlAdd(), mxmlDelete(), mxmlLoadString(), mxmlSaveAllocString(), and node.

Referenced by MC_AclSend().

5.34.2.11 mxml_node_t* fipa_envelope_Compose__acl_representation (fipa_acl_message_t * *fipa_acl*)

Definition at line 1089 of file fipa_envelope.c.

References mxmlNewElement(), mxmlNewText(), and node.

Referenced by fipa_envelope_Compose__params().

5.34.2.12 mxml_node_t* fipa_envelope_Compose__date (fipa_acl_message_t * *fipa_acl*)

Definition at line 1117 of file fipa_envelope.c.

References buf, mxmlNewElement(), mxmlNewText(), and node.

Referenced by fipa_envelope_Compose__params().

5.34.2.13 mxml_node_t* fipa_envelope_Compose__envelope (fipa_acl_message_t * *fipa_acl*)

Definition at line 894 of file fipa_envelope.c.

References fipa_envelope_Compose__params(), MXML_ADD_AFTER, MXML_ADD_TO_PARENT, mxmlAdd(), mxmlNewElement(), and node.

Referenced by fipa_envelope_Compose().

5.34.2.14 mxml_node_t* fipa_envelope_Compose__from (fipa_acl_message_t * *fipa_acl*)

Definition at line 1021 of file fipa_envelope.c.

References fipa_agent_identifier_s::addresses, buf, dynstring_Append(), dynstring_Destroy(), dynstring_New(), g_mc_platform, mc_platform_s::hostname, dynstring_s::message, mxmlNewElement(), mxmlNewText(), fipa_agent_identifier_s::name, fipa_url_sequence_s::num, mc_platform_s::port, fipa_acl_message_s::sender, fipa_url_s::str, and fipa_url_sequence_s::urls.

Referenced by fipa_envelope_Compose__params().

5.34.2.15 **mxml_node_t* fipa_envelope_Compose__intended_receiver (fipa_acl_message_t * *fipa_acl*)**

Definition at line 1146 of file fipa_envelope.c.

References fipa_agent_identifier_s::addresses, fipa_agent_identifier_set_s::fipa_agent_identifiers, mxml-NewElement(), mxmlNewText(), fipa_agent_identifier_s::name, node, fipa_url_sequence_s::num, fipa_acl_message_s::receiver, fipa_url_s::str, and fipa_url_sequence_s::urls.

Referenced by fipa_envelope_Compose__params().

5.34.2.16 **mxml_node_t* fipa_envelope_Compose__params (fipa_acl_message_t * *fipa_acl*)**

Definition at line 914 of file fipa_envelope.c.

References fipa_envelope_Compose__acl_representation(), fipa_envelope_Compose__date(), fipa_envelope_Compose__from(), fipa_envelope_Compose__intended_receiver(), fipa_envelope_Compose__payload_encoding(), fipa_envelope_Compose__to(), MXML_ADD_AFTER, MXML_ADD_TO_PARENT, mxmlAdd(), mxmlElementSetAttr(), mxmlNewElement(), and node.

Referenced by fipa_envelope_Compose__envelope().

5.34.2.17 **mxml_node_t* fipa_envelope_Compose__payload_encoding (fipa_acl_message_t * *fipa_acl*)**

Definition at line 1103 of file fipa_envelope.c.

References mxmlNewElement(), mxmlNewText(), and node.

Referenced by fipa_envelope_Compose__params().

5.34.2.18 **mxml_node_t* fipa_envelope_Compose__to (fipa_acl_message_t * *fipa_acl*)**

Definition at line 975 of file fipa_envelope.c.

References fipa_agent_identifier_s::addresses, fipa_agent_identifier_set_s::fipa_agent_identifiers, mxml-NewElement(), mxmlNewText(), fipa_agent_identifier_s::name, node, fipa_url_sequence_s::num, fipa_agent_identifier_set_s::num, fipa_acl_message_s::receiver, fipa_url_s::str, and fipa_url_sequence_s::urls.

Referenced by fipa_envelope_Compose__params().

5.34.2.19 **int fipa_envelope_HandleAclRepresentation (struct fipa_acl_envelope_s * *envelope*, mxml_node_t * *param_node*, int *cur_param*)**

Definition at line 381 of file fipa_envelope.c.

References fipa_acl_Param_s::acl_representation, mxml_node_s::child, MC_ERR_PARSE, MXML_DESCEND_FIRST, MXML_TEXT, mxmlFindElement(), fipa_acl_envelope_s::params, mxml_text_s::string, mxml_value_u::text, mxml_node_s::type, and mxml_node_s::value.

Referenced by fipa_envelope_HandleParams().

5.34.2.20 int fipa_envelope_HandleComments (struct fipa_acl_envelope_s * *envelope*, mxml_node_t * *param_node*, int *cur_param*)

Definition at line 357 of file fipa_envelope.c.

References mxml_node_s::child, fipa_acl_Param_s::comments, MC_ERR_PARSE, MXML_DESCEND_FIRST, MXML_TEXT, mxmlFindElement(), fipa_acl_envelope_s::params, mxml_text_s::string, mxml_value_u::text, mxml_node_s::type, and mxml_node_s::value.

Referenced by fipa_envelope_HandleParams().

5.34.2.21 int fipa_envelope_HandleDate (struct fipa_acl_envelope_s * *envelope*, mxml_node_t * *param_node*, int *cur_param*)

Definition at line 452 of file fipa_envelope.c.

References mxml_node_s::child, fipa_acl_Param_s::date, fipa_datetime_Parse(), MC_ERR_PARSE, fipa_message_string_s::message, MXML_DESCEND_FIRST, MXML_TEXT, mxmlFindElement(), fipa_acl_envelope_s::params, fipa_message_string_s::parse, mxml_text_s::string, mxml_value_u::text, mxml_node_s::type, and mxml_node_s::value.

Referenced by fipa_envelope_HandleParams().

5.34.2.22 int fipa_envelope_HandleEnvelope (struct fipa_acl_envelope_s * *envelope*, mxml_node_t * *node*)

Definition at line 178 of file fipa_envelope.c.

References fipa_envelope_HandleParams(), MC_ERR_PARSE, MXML_DESCEND_FIRST, and mxmlFindElement().

Referenced by fipa_envelope_Parse().

5.34.2.23 int fipa_envelope_HandleFrom (struct fipa_acl_envelope_s * *envelope*, mxml_node_t * *param_node*, int *cur_param*)

Definition at line 328 of file fipa_envelope.c.

References fipa_envelope_ParseAgentIdentifier(), fipa_acl_Param_s::from, MC_ERR_PARSE, MXML_DESCEND_FIRST, mxmlFindElement(), and fipa_acl_envelope_s::params.

Referenced by fipa_envelope_HandleParams().

5.34.2.24 int fipa_envelope_HandleIntendedReceiver (struct fipa_acl_envelope_s * *envelope*, mxml_node_t * *param_node*, int *cur_param*)

Definition at line 482 of file fipa_envelope.c.

References fipa_agent_identifier_set_New(), fipa_agent_identifier_set_s::fipa_agent_identifiers, fipa_envelope_ParseAgentIdentifier(), fipa_acl_Param_s::intended_receiver, MC_ERR_PARSE, MXML_DESCEND_FIRST, MXML_NO_DESCEND, mxmlFindElement(), fipa_agent_identifier_set_s::num, fipa_acl_envelope_s::params, and fipa_agent_identifier_set_s::retain_order.

Referenced by fipa_envelope_HandleParams().

5.34.2.25 **int fipa_envelope_HandleParams** (struct fipa_acl_envelope_s * *envelope*, mxml_node_t * *node*)

Definition at line 198 of file fipa_envelope.c.

References buf, fipa_envelope_HandleAclRepresentation(), fipa_envelope_HandleComments(), fipa_envelope_HandleDate(), fipa_envelope_HandleFrom(), fipa_envelope_HandleIntendedReceiver(), fipa_envelope_HandlePayloadEncoding(), fipa_envelope_HandlePayloadLength(), fipa_envelope_HandleReceived(), fipa_envelope_HandleTo(), MC_ERR_PARSE, MXML_DESCEND_FIRST, mxmlFindElement(), fipa_acl_envelope_s::num_params, and fipa_acl_envelope_s::params.

Referenced by fipa_envelope_HandleEnvelope().

5.34.2.26 **int fipa_envelope_HandlePayloadEncoding** (struct fipa_acl_envelope_s * *envelope*, mxml_node_t * *param_node*, int *cur_param*)

Definition at line 428 of file fipa_envelope.c.

References mxml_node_s::child, MC_ERR_PARSE, MXML_DESCEND_FIRST, MXML_TEXT, mxmlFindElement(), fipa_acl_envelope_s::params, fipa_acl_Param_s::payload_encoding, mxml_text_s::string, mxml_value_u::text, mxml_node_s::type, and mxml_node_s::value.

Referenced by fipa_envelope_HandleParams().

5.34.2.27 **int fipa_envelope_HandlePayloadLength** (struct fipa_acl_envelope_s * *envelope*, mxml_node_t * *param_node*, int *cur_param*)

Definition at line 405 of file fipa_envelope.c.

References mxml_node_s::child, MC_ERR_PARSE, MXML_DESCEND_FIRST, MXML_TEXT, mxmlFindElement(), fipa_acl_envelope_s::params, fipa_acl_Param_s::payload_length, mxml_text_s::string, mxml_value_u::text, mxml_node_s::type, and mxml_node_s::value.

Referenced by fipa_envelope_HandleParams().

5.34.2.28 **int fipa_envelope_HandleReceived** (struct fipa_acl_envelope_s * *envelope*, mxml_node_t * *param_node*, int *cur_param*)

Definition at line 560 of file fipa_envelope.c.

References fipa_acl_envelope_Received_New(), fipa_datetime_Parse(), fipa_url_New(), MC_ERR_PARSE, fipa_message_string_s::message, MXML_DESCEND_FIRST, mxmlElementGetAttr(), mxmlFindElement(), node, fipa_acl_envelope_s::params, fipa_message_string_s::parse, fipa_acl_Param_s::received, fipa_acl_envelope_Received_s::received_by, fipa_acl_envelope_Received_s::received_date, fipa_acl_envelope_Received_s::received_from, fipa_acl_envelope_Received_s::received_id, fipa_acl_envelope_Received_s::received_via, and fipa_url_s::str.

Referenced by fipa_envelope_HandleParams().

5.34.2.29 **int fipa_envelope_HandleTo** (struct fipa_acl_envelope_s * *envelope*, mxml_node_t * *param_node*, int *cur_param*)

Definition at line 250 of file fipa_envelope.c.

References fipa_acl_Param_New(), fipa_agent_identifier_set_New(), fipa_agent_identifier_set_s::fipa_agent_identifiers, fipa_envelope_ParseAgentIdentifier(), MC_ERR_PARSE, MXML_DESCEND_FIRST,

MXML_NO_DESCEND, mxmlFindElement(), fipa_agent_identifier_set_s::num, fipa_acl_envelope_s::params, fipa_agent_identifier_set_s::retain_order, and fipa_acl_Param_s::to.

Referenced by fipa_envelope_HandleParams().

5.34.2.30 int fipa_envelope_Parse (struct fipa_acl_envelope_s * *envelope*, const char * *message*)

Definition at line 165 of file fipa_envelope.c.

References fipa_envelope_HandleEnvelope(), MXML_NO_CALLBACK, mxmlDelete(), and mxmlLoadString().

Referenced by acc_connection_Thread().

5.34.2.31 int fipa_envelope_ParseAddresses (struct fipa_agent_identifier_s * *aid*, mxml_node_t * *addresses_node*)

Definition at line 737 of file fipa_envelope.c.

References fipa_agent_identifier_s::addresses, mxml_node_s::child, fipa_url_New(), MC_ERR_PARSE, MXML_DESCEND_FIRST, MXML_NO_DESCEND, MXML_TEXT, mxmlFindElement(), fipa_url_sequence_s::num, fipa_url_s::str, mxml_text_s::string, mxml_value_u::text, mxml_node_s::type, fipa_url_sequence_s::urls, and mxml_node_s::value.

Referenced by fipa_envelope_ParseAgentIdentifier().

5.34.2.32 int fipa_envelope_ParseAgentIdentifier (struct fipa_agent_identifier_s ** *aid*, mxml_node_t * *agent_identifier_node*)

Definition at line 687 of file fipa_envelope.c.

References mxml_node_s::child, fipa_agent_identifier_New(), fipa_envelope_ParseAddresses(), fipa_envelope_ParseResolvers(), MC_ERR_PARSE, MXML_DESCEND_FIRST, MXML_TEXT, mxmlFindElement(), mxml_text_s::string, mxml_value_u::text, mxml_node_s::type, and mxml_node_s::value.

Referenced by fipa_envelope_HandleFrom(), fipa_envelope_HandleIntendedReceiver(), fipa_envelope_HandleTo(), and fipa_envelope_ParseResolvers().

5.34.2.33 int fipa_envelope_ParseResolvers (struct fipa_agent_identifier_s * *aid*, mxml_node_t * *resolvers_node*)

Definition at line 804 of file fipa_envelope.c.

References fipa_agent_identifier_set_s::fipa_agent_identifiers, fipa_envelope_ParseAgentIdentifier(), MC_ERR_PARSE, MXML_DESCEND_FIRST, MXML_NO_DESCEND, mxmlFindElement(), fipa_agent_identifier_set_s::num, fipa_agent_identifier_s::resolvers, and fipa_agent_identifier_set_s::retain_order.

Referenced by fipa_envelope_ParseAgentIdentifier().

5.35 /home/dko/Projects/mobilec/src/include/fipa_comm.h File Reference

```
#include <fipa_acl.h>
```

Data Structures

- struct [fipa_comm_message_check_t](#)
- struct [fipa_comm_reply_t](#)
- struct [fipa_comm_action_t](#)
- struct [fipa_comm_performative_t](#)
- struct [fipa_list_t](#)
- struct [fipa_comm_protocol_cn_t](#)
- struct [fipa_comm_protocol_t](#)
- struct [fipa_comm_t](#)

Defines

- #define [false](#) 0
- #define [MC_NUM_PERFORMATIVES](#) 23

Typedefs

- typedef [int](#)(* [fipa_comm_callback](#))(char *received_content, char **reply_content)
- typedef [int](#)(* [protocol_contract_net_callback](#))(int numBids, char **bids, char *winners)
- typedef struct [fipa_comm_message_check_t](#) [fipa_comm_message_check_s](#)
- typedef struct [fipa_comm_message_check_t](#) * [fipa_comm_message_check_p](#)
- typedef struct [fipa_comm_reply_t](#) [fipa_comm_reply_s](#)
- typedef struct [fipa_comm_reply_t](#) * [fipa_comm_reply_p](#)
- typedef struct [fipa_comm_action_t](#) [fipa_comm_action_s](#)
- typedef struct [fipa_comm_action_t](#) * [fipa_comm_action_p](#)
- typedef struct [fipa_comm_performative_t](#) [fipa_comm_performative_s](#)
- typedef struct [fipa_comm_performative_t](#) * [fipa_comm_performative_p](#)
- typedef struct [fipa_list_t](#) [fipa_list_s](#)
- typedef struct [fipa_list_t](#) * [fipa_list_p](#)
- typedef struct [fipa_comm_protocol_cn_t](#) [fipa_comm_protocol_cn_s](#)
- typedef struct [fipa_comm_protocol_cn_t](#) * [fipa_comm_protocol_cn_p](#)
- typedef struct [fipa_comm_protocol_t](#) * [fipa_comm_protocol_p](#)
- typedef struct [fipa_comm_protocol_t](#) [fipa_comm_protocol_s](#)
- typedef struct [fipa_comm_t](#) [fipa_comm_s](#)
- typedef struct [fipa_comm_t](#) * [fipa_comm_p](#)
- typedef struct [fipa_comm_t](#) [MCFIPAComm_s](#)
- typedef struct [fipa_comm_t](#) * [MCFIPAComm_p](#)

Enumerations

- enum `fipa_comm_type_e` {
`FIPA_COMM_ACTION`, `FIPA_COMM_CHECK`, `FIPA_COMM_REPLY`, `FIPA_COMM_CALLBACK`,
`FIPA_COMM_END` }
- enum `fipa_comm_logic_type_e` { `FIPA_COMM_LOGIC_ERROR` = -1, `FIPA_COMM_LOGIC_OR`, `FIPA_COMM_LOGIC_AND` }
- enum `fipa_comm_check_type_e` {
`FIPA_COMM_CHECK_ERROR` = -1, `FIPA_COMM_CHECK_SENDER_NAME`, `FIPA_COMM_CHECK_SENDER_ADDRESS`, `FIPA_COMM_CHECK_CONTENT`,
`FIPA_COMM_CHECK_CONVERSATIONID`, `FIPA_COMM_CHECK_LANGUAGE`, `FIPA_COMM_CHECK_ONTOLOGY`, `FIPA_COMM_CHECK_ENCODING` }
- enum `fipa_comm_action_type_e` {
`FIPA_COMM_ACTION_ERROR` = -1, `FIPA_COMM_ACTION_BOTH`, `FIPA_COMM_ACTION_REPLY`, `FIPA_COMM_ACTION_CALLBACK`,
`FIPA_COMM_ACTION_NONE` }
- enum `fipa_comm_protocol_cn_state_e` {
`FIPA_COMM_PROTOCOL_CN_ERROR` = -1, `FIPA_COMM_PROTOCOL_CN_START`, `FIPA_COMM_PROTOCOL_CN_CFP`, `FIPA_COMM_PROTOCOL_CN_BID`,
`FIPA_COMM_PROTOCOL_CN_RESULT`, `FIPA_COMM_PROTOCOL_CN_DONE` }

Functions

- `fipa_comm_p mc_FIPAComm_New ()`
- `int mc_FIPAComm_HandleMessage (fipa_comm_p fcomm, fipa_acl_message_p acl)`
- `int mc_FIPAComm_HandleMessageOnce (fipa_comm_p fcomm)`
- `int mc_FIPAComm_HandleMessageWait (fipa_comm_p fcomm)`
- `void mc_FIPAComm_Destroy (fipa_comm_p)`
- `int mc_FIPAComm_RegisterPerformative (fipa_comm_p fcomm, enum fipa_performative_e type)`
- `int mc_FIPAComm_DeregisterPerformative (fipa_comm_p fcomm, enum fipa_performative_e type)`
- `int mc_FIPAComm_SetDefaultReply (fipa_comm_p fcomm, enum fipa_performative_e type, char *content)`
- `int mc_FIPAComm_SetPerformativeDefaultReply (fipa_comm_p fcomm, enum fipa_performative_e ptype, enum fipa_performative_e rtype, char *content)`
- `int mc_FIPAComm_SetAgent (fipa_comm_p fcomm, void *agent, char *agent_name, char *agent_address)`
- `int mc_FIPAComm_RegisterAction (fipa_comm_p fcomm, enum fipa_performative_e pType, enum fipa_comm_action_type_e aType,...)`
- `int mc_FIPAComm_RegisterActionS (fipa_performative_e type, fipa_comm_action_p act)`
- `fipa_comm_protocol_p mc_FIPAComm_New ()`
- `int mc_FIPAComm_RegisterProtocolCallback (fipa_comm_p fcomm, enum fipa_protocol_e protocolType, fipa_comm_callback func)`
- `int mc_FIPAComm_RegisterProtocol (fipa_comm_p fcomm, enum fipa_protocol_e protocolType, char *protocolID, void *info, char *network)`
- `void fipa_comm_protocol_info_COPY (fipa_comm_protocol_p proto, void *info)`
- `int fipa_list_Add (fipa_list_p *list, fipa_acl_message_p acl)`
- `int mc_FIPAComm_StartProtocol (fipa_comm_p fcomm, enum fipa_protocol_e type, char *id)`
- `int mc_FIPAComm_HandleProtocol (fipa_comm_p fcomm, fipa_acl_message_p acl)`

- [fipa_comm_protocol_p mc_FIPAComm_AddNewProtocol](#) ([fipa_comm_p](#) fcomm, [enum fipa_protocol_e](#) type, [char *id](#))
- [int mc_FIPAComm_FSM_CN](#) ([fipa_comm_p](#) fcomm, [fipa_acl_message_p](#) acl)
- [fipa_comm_protocol_p mc_FIPAComm_NewProtocol](#) ([enum fipa_protocol_e](#) type, [char *id](#))
- [int mc_FIPAComm_SetProtocolState](#) ([fipa_comm_protocol_p](#) protocol, [char](#) state)

5.35.1 Define Documentation

5.35.1.1 #define false 0

Definition at line 11 of file [fipa_comm.h](#).

5.35.1.2 #define MC_NUM_PERFORMATIVES 23

Definition at line 14 of file [fipa_comm.h](#).

5.35.2 Typedef Documentation

5.35.2.1 typedef struct fipa_comm_action_t* fipa_comm_action_p

Definition at line 109 of file [fipa_comm.h](#).

5.35.2.2 typedef struct fipa_comm_action_t fipa_comm_action_s

Definition at line 108 of file [fipa_comm.h](#).

5.35.2.3 typedef int(* fipa_comm_callback)(char *received_content, char **reply_content)

Definition at line 17 of file [fipa_comm.h](#).

5.35.2.4 typedef struct fipa_comm_message_check_t* fipa_comm_message_check_p

Definition at line 80 of file [fipa_comm.h](#).

5.35.2.5 typedef struct fipa_comm_message_check_t fipa_comm_message_check_s

Definition at line 79 of file [fipa_comm.h](#).

5.35.2.6 typedef struct fipa_comm_t* fipa_comm_p

Definition at line 193 of file [fipa_comm.h](#).

5.35.2.7 typedef struct fipa_comm_performative_t* fipa_comm_performative_p

Definition at line 121 of file [fipa_comm.h](#).

5.35.2.8 typedef struct fipa_comm_performative_t fipa_comm_performative_s

Definition at line 120 of file fipa_comm.h.

5.35.2.9 typedef struct fipa_comm_protocol_cn_t* fipa_comm_protocol_cn_p

Definition at line 156 of file fipa_comm.h.

5.35.2.10 typedef struct fipa_comm_protocol_cn_t fipa_comm_protocol_cn_s

Definition at line 155 of file fipa_comm.h.

5.35.2.11 typedef struct fipa_comm_protocol_t* fipa_comm_protocol_p

Definition at line 172 of file fipa_comm.h.

5.35.2.12 typedef struct fipa_comm_protocol_t fipa_comm_protocol_s

Definition at line 173 of file fipa_comm.h.

5.35.2.13 typedef struct fipa_comm_reply_t* fipa_comm_reply_p

Definition at line 93 of file fipa_comm.h.

5.35.2.14 typedef struct fipa_comm_reply_t fipa_comm_reply_s

Definition at line 92 of file fipa_comm.h.

5.35.2.15 typedef struct fipa_comm_t fipa_comm_s

Definition at line 192 of file fipa_comm.h.

5.35.2.16 typedef struct fipa_list_t* fipa_list_p

Definition at line 141 of file fipa_comm.h.

5.35.2.17 typedef struct fipa_list_t fipa_list_s

Definition at line 140 of file fipa_comm.h.

5.35.2.18 typedef struct fipa_comm_t* MCFIPAComm_p

Definition at line 195 of file fipa_comm.h.

5.35.2.19 typedef struct fipa_comm_t MCFIPAComm_s

Definition at line 194 of file fipa_comm.h.

5.35.2.20 typedef int(* protocol_contract_net_callback)(int numBids, char **bids, char *winners)

Definition at line 18 of file fipa_comm.h.

5.35.3 Enumeration Type Documentation

5.35.3.1 enum fipa_comm_action_type_e

Enumerator:

FIPA_COMM_ACTION_ERROR
FIPA_COMM_ACTION_BOTH
FIPA_COMM_ACTION_REPLY
FIPA_COMM_ACTION_CALLBACK
FIPA_COMM_ACTION_NONE

Definition at line 45 of file fipa_comm.h.

5.35.3.2 enum fipa_comm_check_type_e

Enumerator:

FIPA_COMM_CHECK_ERROR
FIPA_COMM_CHECK_SENDER_NAME
FIPA_COMM_CHECK_SENDER_ADDRESS
FIPA_COMM_CHECK_CONTENT
FIPA_COMM_CHECK_CONVERSATIONID
FIPA_COMM_CHECK_LANGUAGE
FIPA_COMM_CHECK_ONTOLOGY
FIPA_COMM_CHECK_ENCODING

Definition at line 34 of file fipa_comm.h.

5.35.3.3 enum fipa_comm_logic_type_e

Enumerator:

FIPA_COMM_LOGIC_ERROR
FIPA_COMM_LOGIC_OR
FIPA_COMM_LOGIC_AND

Definition at line 28 of file fipa_comm.h.

5.35.3.4 enum fipa_comm_protocol_cn_state_e

Enumerator:

FIPA_COMM_PROTOCOL_CN_ERROR

FIPA_COMM_PROTOCOL_CN_START

FIPA_COMM_PROTOCOL_CN_CFP

FIPA_COMM_PROTOCOL_CN_BID

FIPA_COMM_PROTOCOL_CN_RESULT

FIPA_COMM_PROTOCOL_CN_DONE

Definition at line 127 of file fipa_comm.h.

5.35.3.5 enum fipa_comm_type_e

Enumerator:

FIPA_COMM_ACTION

FIPA_COMM_CHECK

FIPA_COMM_REPLY

FIPA_COMM_CALLBACK

FIPA_COMM_END

Definition at line 20 of file fipa_comm.h.

5.35.4 Function Documentation

- 5.35.4.1 void fipa_comm_protocol_info_COPY (fipa_comm_protocol_p *proto*, void * *info*)
- 5.35.4.2 int fipa_list_Add (fipa_list_p * *list*, fipa_acl_message_p *acl*)
- 5.35.4.3 fipa_comm_protocol_p mc_FIPAComm_AddNewProtocol (fipa_comm_p *fcomm*, enum fipa_protocol_e *type*, char * *id*)
- 5.35.4.4 int mc_FIPAComm_DeregisterPerformative (fipa_comm_p *fcomm*, enum fipa_performative_e *type*)
- 5.35.4.5 void mc_FIPAComm_Destroy (fipa_comm_p)
- 5.35.4.6 int mc_FIPAComm_FSM_CN (fipa_comm_p *fcomm*, fipa_acl_message_p *acl*)
- 5.35.4.7 int mc_FIPAComm_HandleMessage (fipa_comm_p *fcomm*, fipa_acl_message_p *acl*)
- 5.35.4.8 int mc_FIPAComm_HandleMessageOnce (fipa_comm_p *fcomm*)
- 5.35.4.9 int mc_FIPAComm_HandleMessageWait (fipa_comm_p *fcomm*)
- 5.35.4.10 int mc_FIPAComm_HandleProtocol (fipa_comm_p *fcomm*, fipa_acl_message_p *acl*)
- 5.35.4.11 fipa_comm_p mc_FIPAComm_New ()
- 5.35.4.12 fipa_comm_protocol_p mc_FIPAComm_NewProtocol (enum fipa_protocol_e *type*, char * *id*)
- 5.35.4.13 int mc_FIPAComm_RegisterAction (fipa_comm_p *fcomm*, enum fipa_performative_e *pType*, enum fipa_comm_action_type_e *aType*, ...)
- 5.35.4.14 int mc_FIPAComm_RegisterActionS (fipa_performative_e *type*, fipa_comm_action_p *act*)
- 5.35.4.15 int mc_FIPAComm_RegisterPerformative (fipa_comm_p *fcomm*, enum fipa_performative_e *type*)
- 5.35.4.16 int mc_FIPAComm_RegisterProtocol (fipa_comm_p *fcomm*, enum fipa_protocol_e *protocolType*, char * *protocolID*, void * *info*, char * *network*)
- 5.35.4.17 int mc_FIPAComm_RegisterProtocolCallback (fipa_comm_p *fcomm*, enum fipa_protocol_e *protocolType*, fipa_comm_callback *func*)
- 5.35.4.18 int mc_FIPAComm_SetAgent (fipa_comm_p *fcomm*, void * *agent*, char * *agent_name*, char * *agent_address*)
- 5.35.4.19 int mc_FIPAComm_SetDefaultReply (fipa_comm_p *fcomm*, enum fipa_performative_e *type*, char * *content*)
- 5.35.4.20 int mc_FIPAComm_SetPerformativeDefaultReply (fipa_comm_p *fcomm*, enum fipa_performative_e *ptype*, enum fipa_performative_e *rtype*, char * *content*)
- 5.35.4.21 int mc_FIPAComm_SetProtocolState (fipa_comm_protocol_p *protocol*, char *state*)
- 5.35.4.22 int mc_FIPAComm_StartProtocol (fipa_comm_p *fcomm*, enum fipa_protocol_e *type*, char * *id*)
- 5.35.4.23 fipa_comm_protocol_p mc_FIPAProtocol_New ()

5.36 /home/dko/Projects/mobilec/src/include/host_id.h File Reference

Data Structures

- struct [host_id_s](#)

Typedefs

- typedef struct [host_id_s](#) [host_id_t](#)
- typedef [host_id_t](#) * [host_id_p](#)

Functions

- [host_id_p](#) [host_id_Initialize](#) (const char *hostname, [int](#) port)
- void [host_id_Destroy](#) ([host_id_p](#) host_id)
- [int](#) [host_id_Compare](#) ([host_id_p](#) host1, [host_id_p](#) host2)

5.36.1 Typedef Documentation

5.36.1.1 typedef [host_id_t](#)* [host_id_p](#)

Definition at line 43 of file [host_id.h](#).

5.36.1.2 typedef struct [host_id_s](#) [host_id_t](#)

5.36.2 Function Documentation

5.36.2.1 [int](#) [host_id_Compare](#) ([host_id_p](#) *host1*, [host_id_p](#) *host2*)

5.36.2.2 void [host_id_Destroy](#) ([host_id_p](#) *host_id*)

5.36.2.3 [host_id_p](#) [host_id_Initialize](#) (const char * *hostname*, [int](#) *port*)

5.37 /home/dko/Projects/mobilec/src/include/interpreter_variable_data.h File Reference

```
#include <ch.h>
```

Data Structures

- struct [interpreter_variable_data_s](#)

Typedefs

- typedef struct [interpreter_variable_data_s](#) [interpreter_variable_data_t](#)
- typedef [interpreter_variable_data_t](#) * [interpreter_variable_data_p](#)

Functions

- [interpreter_variable_data_p](#) [interpreter_variable_data_New](#) (void)
- [interpreter_variable_data_p](#) [interpreter_variable_data_Copy](#) ([interpreter_variable_data_p](#) src)
- [interpreter_variable_data_p](#) [interpreter_variable_data_InitializeFromAgent](#) (struct [agent_s](#) *agent)
- [interpreter_variable_data_p](#) [interpreter_variable_data_Initialize](#) (struct [agent_s](#) *agent, const char *varname)
- int [interpreter_variable_data_Destroy](#) ([interpreter_variable_data_p](#) agent_return_data)

5.37.1 Typedef Documentation

5.37.1.1 typedef [interpreter_variable_data_t](#)* [interpreter_variable_data_p](#)

Definition at line 51 of file [interpreter_variable_data.h](#).

5.37.1.2 typedef struct [interpreter_variable_data_s](#) [interpreter_variable_data_t](#)

Definition at line 50 of file [interpreter_variable_data.h](#).

5.37.2 Function Documentation

5.37.2.1 [interpreter_variable_data_p](#) [interpreter_variable_data_Copy](#) ([interpreter_variable_data_p](#) src)

Definition at line 235 of file [agent_return_data.c](#).

References [interpreter_variable_data_s::array_dim](#), [interpreter_variable_data_s::array_extent](#), [interpreter_variable_data_s::data](#), [interpreter_variable_data_s::data_type](#), [interpreter_variable_data_New\(\)](#), [interpreter_variable_data_s::name](#), [interpreter_variable_data_s::size](#), and [strdup](#).

Referenced by [agent_task_Copy\(\)](#).

5.37.2.2 int interpreter_variable_data_Destroy (interpreter_variable_data_p agent_return_data)

Definition at line 216 of file agent_return_data.c.

References interpreter_variable_data_s::array_extent, interpreter_variable_data_s::data, MC_SUCCESS, and interpreter_variable_data_s::name.

Referenced by agent_RunChScriptThread(), and agent_task_Destroy().

5.37.2.3 interpreter_variable_data_p interpreter_variable_data_Initialize (struct agent_s * agent, const char * varname)**5.37.2.4 interpreter_variable_data_p interpreter_variable_data_InitializeFromAgent (struct agent_s * agent)****5.37.2.5 interpreter_variable_data_p interpreter_variable_data_New (void)**

Definition at line 46 of file agent_return_data.c.

References interpreter_variable_data_s::array_dim, interpreter_variable_data_s::array_extent, CHECK_NULL, interpreter_variable_data_s::data, interpreter_variable_data_s::data_type, interpreter_variable_data_s::name, and interpreter_variable_data_s::size.

Referenced by agent_xml_parse__data(), interpreter_variable_data_Copy(), and MC_SaveData_chdl().

5.38 /home/dko/Projects/mobilec/src/include/libmc.h File Reference

MobileC api header file.

```
#include "macros.h"
#include <embedch.h>
```

Data Structures

- struct [agency_s](#)
The agency handle.
- struct [MCAgencyOptions_s](#)
User modifiable agency options.
- struct [stationary_agent_info_s](#)

Defines

- #define [EXPORTMC](#)
- #define [MC_Wait](#)(arg1) MC_MainLoop(arg1)

Typedefs

- typedef enum [error_code_e](#) [error_code_t](#)
- typedef enum [MC_SteerCommand_e](#) [MC_SteerCommand_t](#)
Available commands for MC_Steer.
- typedef struct [agency_s](#) [agency_t](#)
The agency handle.
- typedef [agency_t](#) * [agency_p](#)
- typedef [agency_p](#) [MCAgency_t](#)
- typedef struct [MCAgencyOptions_s](#) [MCAgencyOptions_t](#)
User modifiable agency options.
- typedef struct [stationary_agent_info_s](#) [stationary_agent_info_t](#)
- typedef struct [agent_s](#) [agent_t](#)
- typedef [agent_t](#) * [MCAgent_t](#)
- typedef [agent_t](#) * [agent_p](#)

Enumerations

- enum [error_code_e](#) {
 [MC_SUCCESS](#) = 0, [MC_ERR](#), [MC_ERR_CONNECT](#), [MC_ERR_PARSE](#),
 [MC_ERR_EMPTY](#), [MC_ERR_INVALID](#), [MC_ERR_INVALID_ARGS](#), [MC_ERR_NOT_FOUND](#),
 [MC_ERR_MEMORY](#), [MC_ERR_SEND](#), [MC_WARN_DUPLICATE](#), [MC_SUCCESS](#) = 0,

```

ERR, MC_ERR_CONNECT, MC_ERR_PARSE, MC_ERR_EMPTY,
MC_ERR_INVALID, MC_ERR_INVALID_ARGS, MC_ERR_NOT_FOUND, MC_ERR_
MEMORY,
MC_ERR_SEND, MC_WARN_DUPLICATE }

```

- enum MC_ThreadIndex_e {

```

MC_THREAD_DF = 0, MC_THREAD_AMS, MC_THREAD_ACC, MC_THREAD_CP,
MC_THREAD_AGENT, MC_THREAD_ALL }

```

MobileC Module indices.

- enum MC_SteerCommand_e { MC_RUN = 0, MC_SUSPEND, MC_RESTART, MC_STOP }

Available commands for MC_Steer.

- enum MC_Signal_e {

```

MC_NO_SIGNAL = 0x00, MC_RECV_CONNECTION = 0x01, MC_RECV_MESSAGE = 0x02,
MC_RECV_AGENT = 0x04,
MC_RECV_RETURN = 0x08, MC_EXEC_AGENT = 0x10, MC_ALL_SIGNALS = 0x20 }

```

MobileC system signals.

- enum MC_AgentType_e { MC_NONE = -1, MC_REMOTE_AGENT = 0, MC_LOCAL_AGENT, MC_RETURN_AGENT }

- enum MC_AgentStatus_e {

```

MC_NO_STATUS = -1, MC_WAIT_CH = 0, MC_WAIT_MESSGSEND, MC_AGENT_ACTIVE,
MC_AGENT_NEUTRAL, MC_AGENT_SUSPENDED, MC_WAIT_FINISHED }

```

An agent's current execution state.

- enum fipa_performative_e {

```

FIPA_ERROR = -1, FIPA_ZERO, FIPA_ACCEPT_PROPOSAL, FIPA_AGREE,
FIPA_CANCEL, FIPA_CALL_FOR_PROPOSAL, FIPA_CONFIRM, FIPA_DISCONFIRM,
FIPA_FAILURE, FIPA_INFORM, FIPA_INFORM_IF, FIPA_INFORM_REF,
FIPA_NOT_UNDERSTOOD, FIPA_PROPOGATE, FIPA_PROPOSE, FIPA_PROXY,
FIPA_QUERY_IF, FIPA_QUERY_REF, FIPA_REFUSE, FIPA_REJECT_PROPOSAL,
FIPA_REQUEST, FIPA_REQUEST_WHEN, FIPA_REQUEST_WHENEVER, FIPA_
SUBSCRIBE,
FIPA_ERROR = -1, FIPA_ZERO, FIPA_ACCEPT_PROPOSAL, FIPA_AGREE,
FIPA_CANCEL, FIPA_CALL_FOR_PROPOSAL, FIPA_CONFIRM, FIPA_DISCONFIRM,
FIPA_FAILURE, FIPA_INFORM, FIPA_INFORM_IF, FIPA_INFORM_REF,
FIPA_NOT_UNDERSTOOD, FIPA_PROPOGATE, FIPA_PROPOSE, FIPA_PROXY,
FIPA_QUERY_IF, FIPA_QUERY_REF, FIPA_REFUSE, FIPA_REJECT_PROPOSAL,
FIPA_REQUEST, FIPA_REQUEST_WHEN, FIPA_REQUEST_WHENEVER, FIPA_
SUBSCRIBE }

```

Functions

- EXPORTMC [int MC_AclDestroy](#) (struct [fipa_acl_message_s](#) *message)
Destroy a FIPA ACL message.
- EXPORTMC struct [fipa_acl_message_s](#) * [MC_AclNew](#) (void)
Allocate a new ACL Message.
- EXPORTMC [int MC_AclPost](#) ([MCAgent_t](#) agent, struct [fipa_acl_message_s](#) *message)
Post ACL message to agent.
- EXPORTMC struct [fipa_acl_message_s](#) * [MC_AclReply](#) (struct [fipa_acl_message_s](#) *acl_message)
Reply to an ACL message.
- EXPORTMC struct [fipa_acl_message_s](#) * [MC_AclRetrieve](#) ([MCAgent_t](#) agent)
Retrieve an ACL message.
- EXPORTMC [int MC_AclSend](#) ([MCAgency_t](#) attr, struct [fipa_acl_message_s](#) *acl)
Send a composed ACL Message.
- EXPORTMC struct [fipa_acl_message_s](#) * [MC_AclWaitRetrieve](#) ([MCAgent_t](#) agent)
Wait for and retrieve an ACL message.
- EXPORTMC enum [fipa_protocol_e](#) [MC_AclGetProtocol](#) (struct [fipa_acl_message_s](#) *acl)
- EXPORTMC char * [MC_AclGetConversationID](#) (struct [fipa_acl_message_s](#) *acl)
- EXPORTMC enum [fipa_performative_e](#) [MC_AclGetPerformative](#) (struct [fipa_acl_message_s](#) *acl)
- EXPORTMC [int MC_AclGetSender](#) (struct [fipa_acl_message_s](#) *acl, char **name, char **address)
- EXPORTMC const char * [MC_AclGetContent](#) (struct [fipa_acl_message_s](#) *acl)
- EXPORTMC [int MC_AclSetProtocol](#) (struct [fipa_acl_message_s](#) *acl, enum [fipa_protocol_e](#) performative)
- EXPORTMC [int MC_AclSetConversationID](#) (struct [fipa_acl_message_s](#) *acl, char *id)
- EXPORTMC [int MC_AclSetPerformative](#) (struct [fipa_acl_message_s](#) *acl, enum [fipa_performative_e](#) performative)
- EXPORTMC [int MC_AclSetSender](#) (struct [fipa_acl_message_s](#) *acl, const char *name, const char *address)
- EXPORTMC [int MC_AclAddReceiver](#) (struct [fipa_acl_message_s](#) *acl, const char *name, const char *address)
- EXPORTMC [int MC_AclAddReplyTo](#) (struct [fipa_acl_message_s](#) *acl, const char *name, const char *address)
- EXPORTMC [int MC_AclSetContent](#) (struct [fipa_acl_message_s](#) *acl, const char *content)
- EXPORTMC [int MC_AddAgent](#) ([MCAgency_t](#) attr, [MCAgent_t](#) agent)
Add an agent to the agency 'attr'.
- [int MC_AddStationaryAgent](#) ([MCAgency_t](#) agency, void *(*agent_thread)([stationary_agent_info_t](#) *), const char *name, void *agent_args)
- [int MC_AgentAddTask](#) ([MCAgent_t](#) agent, const char *code, const char *return_var_name, const char *server, [int](#) persistent)
Add a new task to an already existing agent.

- `int MC_AgentAddTaskFromFile (MCAgent_t agent, const char *filename, const char *return_var_name, const char *server, int persistent)`
Add a new task to an already existing agent.
- `MAgency_t MC_AgentInfo_GetAgency (stationary_agent_info_t *stationary_agent_info)`
Get the host Mobile-C agency handle from a "stationary_agent_info_t" data structure.
- `MAgent_t MC_AgentInfo_GetAgent (stationary_agent_info_t *stationary_agent_info)`
Retrieve an agent handle from the stationary agent info from within a stationary agent.
- `void * MC_AgentInfo_GetAgentArgs (stationary_agent_info_t *stationary_agent_info)`
Retrieve the agent argument supplied as the "agent_args" parameter in the `MC_AddStationaryAgent()` function.
- `int MC_AgentReturnArrayDim (MCAgent_t agent, int task_num)`
Get the dimension of an agent's return data, if it is an array.
- `int MC_AgentReturnArrayExtent (MCAgent_t agent, int task_num, int index)`
Get the extent of a dimension of an agent's return data, if it is an array.
- `int MC_AgentReturnArrayNum (MCAgent_t agent, int task_num)`
Get the total number of elements of the agent return data.
- `const void * MC_AgentReturnDataGetSymbolAddr (MCAgent_t agent, int task_num)`
Get a pointer to the agent's return data.
- `size_t MC_AgentReturnDataSize (MCAgent_t agent, int task_num)`
Get the size of an agent's return data type.
- `int MC_AgentReturnDataType (MCAgent_t agent, int task_num)`
Get the type of an agent's return data.
- `int MC_AgentReturnIsArray (MCAgent_t agent, int task_num)`
Check to see whether or not an agent's return data is an array.
- `const void * MC_AgentVariableRetrieve (MCAgent_t agent, const char *var_name, int task_num)`
Retrieve a pointer to a previously saved variable.
- `int MC_AgentVariableRetrieveInfo (MCAgent_t agent, const char *var_name, int task_num, const void **data, int *dim, const int **extent)`
Retrieve a info about a previously saved variable.
- `int MC_AgentVariableSave (MCAgent_t agent, const char *var_name)`
Mark an agent variable for saving.
- `EXPORTMC int MC_Barrier (MAgency_t attr, int id)`
- `EXPORTMC int MC_BarrierDelete (MAgency_t attr, int id)`
Find and delete an initialized MobileC Barrier.
- `EXPORTMC int MC_BarrierInit (MAgency_t attr, int id, int num_procs)`

Initialize a MobileC Barrier.

- EXPORTMC [int MC_CallAgentFunc](#) ([MCAgent_t](#) agent, const char *funcName, void *returnVal, [int](#) numArgs,...)

Use custom ChOptions_t type for internal Ch interpreter.

- EXPORTMC [int MC_CallAgentFuncArg](#) ([MCAgent_t](#) agent, const char *funcName, void *returnVal, void *arg)

Calls a function defined in an agent.

- EXPORTMC [int MC_CallAgentFuncV](#) ([MCAgent_t](#) agent, const char *funcName, void *returnVal, va_list ap)

Calls a function defined in an agent.

- EXPORTMC [int MC_CallAgentFuncVar](#) ([MCAgent_t](#) agent, const char *funcName, void *returnVal, ChVaList_t arglist)

- EXPORTMC [MCAgent_t MC_ComposeAgent](#) (const char *name, const char *home, const char *owner, const char *code, const char *return_var_name, const char *server, [int](#) persistent)

Compose a new agent dynamically without using a prewritten XML file.

- EXPORTMC [MCAgent_t MC_ComposeAgentS](#) (const char *name, const char *home, const char *owner, const char *code, const char *return_var_name, const char *server, [int](#) persistent, const char *workgroup_code)

Compose a new agent dynamically without using a prewritten XML file.

- EXPORTMC [MCAgent_t MC_ComposeAgentWithWorkgroup](#) (const char *name, const char *home, const char *owner, const char *code, const char *return_var_name, const char *server, [int](#) persistent, const char *workgroup_code)

Compose a new agent dynamically without using a prewritten XML file.

- EXPORTMC [MCAgent_t MC_ComposeAgentFromFile](#) (const char *name, const char *home, const char *owner, const char *filename, const char *return_var_name, const char *server, [int](#) persistent)

Compose a new agent dynamically from a source code file.

- EXPORTMC [MCAgent_t MC_ComposeAgentFromFileS](#) (const char *name, const char *home, const char *owner, const char *filename, const char *return_var_name, const char *server, [int](#) persistent, const char *workgroup_code)

Compose a new agent dynamically from a source code file.

- EXPORTMC [MCAgent_t MC_ComposeAgentFromFileWithWorkgroup](#) (const char *name, const char *home, const char *owner, const char *filename, const char *return_var_name, const char *server, [int](#) persistent, const char *workgroup_code)

Compose a new agent dynamically from a source code file.

- EXPORTMC [int MC_CondBroadcast](#) ([MCAgency_t](#) attr, [int](#) id)

Wakes up all agents/threads waiting on a condition variable.

- EXPORTMC [int MC_CondSignal](#) ([MCAgency_t](#) attr, [int](#) id)

Wakes up at least one thread waiting on a condition variable.

- EXPORTMC [int MC_CondReset](#) ([MCAgency_t](#) attr, [int](#) id)

Reset a previously signalled MobileC condition variable.

- EXPORTMC `int MC_CondWait (MCAgency_t attr, int id)`
Wait on a MobileC synchronization variable.
- `int MC_CopyAgent (MCAgent_t *agent_out, const MCAgent_t agent_in)`
Performs a deep-copy of an agent structure.
- EXPORTMC `int MC_DeleteAgent (MCAgent_t agent)`
Stop and remove an agent.
- EXPORTMC `int MC_DeleteAgentWG (MCAgent_t calling_agent, MCAgent_t agent)`
Stop and remove an agent in the same workgroup.
- EXPORTMC `int MC_End (MCAgency_t attr)`
End an agency.
- `int MC_DestroyServiceSearchResult (char **agentName, char **serviceName, int *agentID, int numResult)`
Free memory allocated by a Service Search operation.
- EXPORTMC `MCAgent_t MC_FindAgentByName (MCAgency_t attr, const char *name)`
Find an agent by its name.
- EXPORTMC `MCAgent_t MC_FindAgentByID (MCAgency_t attr, int ID)`
Find an agent by its id.
- EXPORTMC `void * MC_GetAgentExecEngine (MCAgent_t agent)`
Retrieve an agent's Ch interpreter.
- EXPORTMC `int MC_GetAgentID (MCAgent_t agent)`
Retrieve an agent's id.
- EXPORTMC `char * MC_GetAgentName (MCAgent_t agent)`
- EXPORTMC `int MC_GetAgentNumTasks (MCAgent_t agent)`
Retrive the number of tasks an agent has.
- EXPORTMC `int MC_GetAgentReturnData (MCAgent_t agent, int task_num, void **data, int *dim, int **extent)`
Get an agent's return data.
- EXPORTMC `int MC_GetAgentStatus (MCAgent_t agent)`
Get an agent's current status.
- EXPORTMC `enum MC_AgentType_e MC_GetAgentType (MCAgent_t agent)`
Get an agent's type.
- EXPORTMC `char * MC_GetAgentXMLString (MCAgent_t agent)`
Get an agent's xml string.

- EXPORTMC [int MC_HaltAgency](#) ([MCAgency_t](#) agency)
Halt an agency: Do not process new entries in queues.
- EXPORTMC [MCAgency_t MC_Initialize](#) ([int](#) port, [MCAgencyOptions_t](#) *options)
Initialize and start a MobileC agency.
- EXPORTMC [int MC_InitializeAgencyOptions](#) ([struct MCAgencyOptions_s](#) *options)
Initialize MobileC options.
- EXPORTMC [int MC_MainLoop](#) ([MCAgency_t](#) attr)
Wait indefinitely.
- EXPORTMC [int MC_LoadAgentFromFile](#) ([MCAgency_t](#) attr, [const char](#) *filename)
Load an agent from a file into an agency.
- EXPORTMC [int MC_MigrateAgent](#) ([MCAgent_t](#) agent, [const char](#) *hostname, [int](#) port)
Migrates a running agent to another host.
- EXPORTMC [int MC_MutexLock](#) ([MCAgency_t](#) attr, [int](#) id)
Locks a MobileC synchronization variable as a mutex.
- EXPORTMC [int MC_MutexUnlock](#) ([MCAgency_t](#) attr, [int](#) id)
- EXPORTMC [int MC_RegisterService](#) ([MCAgency_t](#) agency, [MCAgent_t](#) agent, [int](#) agentID, [const char](#) *agentName, [char](#) **serviceNames, [int](#) numServices)
Register a new service with the Directory Facilitator.
- EXPORTMC [int MC_ResumeAgency](#) ([MCAgency_t](#) agency)
Resumes a halted agency.
- EXPORTMC [MCAgent_t MC_RetrieveAgent](#) ([MCAgency_t](#) attr)
Retrieves the oldest agent from an agency.
- EXPORTMC [int MC_SemaphorePost](#) ([MCAgency_t](#) attr, [int](#) id)
Post to a MobileC synchronization variable semaphore.
- EXPORTMC [int MC_SemaphoreWait](#) ([MCAgency_t](#) attr, [int](#) id)
Decreases a MobileC synchronization variable semaphore count by one.
- EXPORTMC [int MC_SetDefaultAgentStatus](#) ([MCAgency_t](#) agency, [enum MC_AgentStatus_e](#) status)
Sets default incoming agent status.
- EXPORTMC [int MC_SetThreadOn](#) ([MCAgencyOptions_t](#) *options, [enum MC_ThreadIndex_e](#) index)
Sets a MobileC thread to "on" status.
- EXPORTMC [int MC_SetThreadsAllOn](#) ([MCAgencyOptions_t](#) *options)
Set all Mobile-C threads on.

- EXPORTMC [int MC_SetThreadOff](#) (MCAgencyOptions_t *options, enum [MC_ThreadIndex_e](#) index)
Sets a MobileC thread to "off" status.
- EXPORTMC [int MC_SetThreadsAllOff](#) (MCAgencyOptions_t *options)
Set all MobileC threads to 'off' status.
- EXPORTMC [int MC_PrintAgentCode](#) (MCAgent_t agent)
Prints an agents code to stdout.
- EXPORTMC [char * MC_RetrieveAgentCode](#) (MCAgent_t agent)
Retrieves an agent's Ch code.
- EXPORTMC [int MC_ResetSignal](#) (MCAgency_t attr)
Reset a MobileC signal.
- EXPORTMC [int MC_SearchForService](#) (MCAgency_t attr, const char *searchString, char ***agentNames, char ***serviceNames, int **agentIDs, int *numResults)
Search the directory facilitator for a service.
- EXPORTMC [int MC_SendAgent](#) (MCAgency_t attr, const char *message)
Sends an agent migration message.
- EXPORTMC [int MC_SendAgentFile](#) (MCAgency_t attr, const char *filename)
Sends an agent migration message.
- EXPORTMC [int MC_SendAgentMigrationMessage](#) (MCAgency_t attr, const char *message, const char *hostname, [int port](#))
Sends an agent migration message.
- EXPORTMC [int MC_SendAgentMigrationMessageFile](#) (MCAgency_t attr, const char *filename, const char *hostname, [int port](#))
Sends an agent migration message.
- EXPORTMC [int MC_SetAgentStatus](#) (MCAgent_t agent, enum [MC_AgentStatus_e](#) status)
Set an agent's status.
- EXPORTMC [int MC_Steer](#) (MCAgency_t attr, [int\(*funcptr\)\(void *data\)](#), void *arg)
Set up a steerable algorithm.
- EXPORTMC [enum MC_SteerCommand_e MC_SteerControl](#) (void)
The MobileC user-algorithm steering function.
- EXPORTMC [int MC_SyncDelete](#) (MCAgency_t attr, [int id](#))
Deletes a previously initialized synchronization variable.
- EXPORTMC [int MC_SyncInit](#) (MCAgency_t attr, [int id](#))
Initializes a new MobileC synchronization variable.
- EXPORTMC [int MC_TerminateAgent](#) (MCAgent_t agent)

Halt a running agent.

- EXPORTMC [int MC_TerminateAgentWG](#) ([MCAgent_t](#) calling_agent, [MCAgent_t](#) agent)
- EXPORTMC [int MC_WaitAgent](#) ([MCAgency_t](#) attr)

Wait indefinitely.

- EXPORTMC [MCAgent_t MC_WaitRetrieveAgent](#) ([MCAgency_t](#) attr)

Wait and retrieve an agent.

- EXPORTMC [int MC_WaitSignal](#) ([MCAgency_t](#) attr, [int](#) signals)

Wait for a MobileC signal.

5.38.1 Detailed Description

MobileC api header file.

Definition in file [libmc.h](#).

5.38.2 Define Documentation

5.38.2.1 #define EXPORTMC

Definition at line 140 of file [libmc.h](#).

5.38.2.2 #define MC_Wait(arg1) MC_MainLoop(arg1)

Definition at line 145 of file [libmc.h](#).

5.38.3 Typedef Documentation

5.38.3.1 typedef agency_t* agency_p

Definition at line 236 of file [libmc.h](#).

5.38.3.2 typedef struct agency_s agency_t

The agency handle.

5.38.3.3 typedef agent_t* agent_p

Definition at line 271 of file [libmc.h](#).

5.38.3.4 typedef struct agent_s agent_t

Definition at line 269 of file [libmc.h](#).

5.38.3.5 `typedef enum error_code_e error_code_t`

5.38.3.6 `typedef enum MC_SteerCommand_e MC_SteerCommand_t`

Available commands for MC_Steer.

5.38.3.7 `typedef agency_p MCAgency_t`

Definition at line 237 of file libmc.h.

5.38.3.8 `typedef struct MCAgencyOptions_s MCAgencyOptions_t`

User modifiable agency options.

5.38.3.9 `typedef agent_t* MCAgent_t`

Definition at line 270 of file libmc.h.

5.38.3.10 `typedef struct stationary_agent_info_s stationary_agent_info_t`

5.38.4 Enumeration Type Documentation

5.38.4.1 `enum error_code_e`

Enumerator:

MC_SUCCESS
MC_ERR
MC_ERR_CONNECT
MC_ERR_PARSE
MC_ERR_EMPTY
MC_ERR_INVALID
MC_ERR_INVALID_ARGS
MC_ERR_NOT_FOUND
MC_ERR_MEMORY
MC_ERR_SEND
MC_WARN_DUPLICATE
MC_SUCCESS
ERR
MC_ERR_CONNECT
MC_ERR_PARSE
MC_ERR_EMPTY
MC_ERR_INVALID
MC_ERR_INVALID_ARGS
MC_ERR_NOT_FOUND

MC_ERR_MEMORY
MC_ERR_SEND
MC_WARN_DUPLICATE

Definition at line 159 of file libmc.h.

5.38.4.2 enum fipa_performative_e

Enumerator:

FIPA_ERROR
FIPA_ZERO
FIPA_ACCEPT_PROPOSAL
FIPA_AGREE
FIPA_CANCEL
FIPA_CALL_FOR_PROPOSAL
FIPA_CONFIRM
FIPA_DISCONFIRM
FIPA_FAILURE
FIPA_INFORM
FIPA_INFORM_IF
FIPA_INFORM_REF
FIPA_NOT_UNDERSTOOD
FIPA_PROPOGATE
FIPA_PROPOSE
FIPA_PROXY
FIPA_QUERY_IF
FIPA_QUERY_REF
FIPA_REFUSE
FIPA_REJECT_PROPOSAL
FIPA_REQUEST
FIPA_REQUEST_WHEN
FIPA_REQUEST_WHENEVER
FIPA_SUBSCRIBE
FIPA_ERROR
FIPA_ZERO
FIPA_ACCEPT_PROPOSAL
FIPA_AGREE
FIPA_CANCEL
FIPA_CALL_FOR_PROPOSAL
FIPA_CONFIRM
FIPA_DISCONFIRM
FIPA_FAILURE

FIPA_INFORM
FIPA_INFORM_IF
FIPA_INFORM_REF
FIPA_NOT_UNDERSTOOD
FIPA_PROPOGATE
FIPA_PROPOSE
FIPA_PROXY
FIPA_QUERY_IF
FIPA_QUERY_REF
FIPA_REFUSE
FIPA_REJECT_PROPOSAL
FIPA_REQUEST
FIPA_REQUEST_WHEN
FIPA_REQUEST_WHENEVER
FIPA_SUBSCRIBE

Definition at line 293 of file libmc.h.

5.38.4.3 enum MC_AgentStatus_e

An agent's current execution state.

Enumerator:

MC_NO_STATUS
MC_WAIT_CH Waiting to be started
MC_WAIT_MESSGSEND Finished, waiting to migrate
MC_AGENT_ACTIVE Running
MC_AGENT_NEUTRAL Not running, but do not flush
MC_AGENT_SUSPENDED Unused
MC_WAIT_FINISHED Finished, waiting to be flushed

Definition at line 279 of file libmc.h.

5.38.4.4 enum MC_AgentType_e

Enumerator:

MC_NONE
MC_REMOTE_AGENT
MC_LOCAL_AGENT
MC_RETURN_AGENT

Definition at line 274 of file libmc.h.

5.38.4.5 enum MC_Signal_e

MobileC system signals.

Note

Each signal is activated after the corresponding action. i.e. The 'MC_RECV_MESSAGE' signal is activated after a message is received.

See also

[MC_WaitSignal\(\)](#), [MC_ResetSignal](#)

Enumerator:

MC_NO_SIGNAL No signal has been received
MC_RECV_CONNECTION A Connection has been received
MC_RECV_MESSAGE A Message has been received from a connection
MC_RECV_AGENT An normal agent has been parsed from a message
MC_RECV_RETURN A return agent has been parsed from a message
MC_EXEC_AGENT A normal agent has been executed.
MC_ALL_SIGNALS Catch any of the above signals

Definition at line 204 of file libmc.h.

5.38.4.6 enum MC_SteerCommand_e

Available commands for MC_Steer.

Enumerator:

MC_RUN Continue the algorithm
MC_SUSPEND Suspend/pause the algorithm
MC_RESTART Restart the algorithm from the beginning
MC_STOP Stop the algorithm

Definition at line 189 of file libmc.h.

5.38.4.7 enum MC_ThreadIndex_e

MobileC Module indices.

Enumerator:

MC_THREAD_DF Directory Facilitator
MC_THREAD_AMS Agent Managment system
MC_THREAD_ACC Agency communications
MC_THREAD_CP Command Prompt
MC_THREAD_AGENT Agent threads
MC_THREAD_ALL

Definition at line 177 of file libmc.h.

5.38.5 Function Documentation

5.38.5.1 EXPORTMC int MC_AclAddReceiver (struct fipa_acl_message_s * *acl*, const char * *name*, const char * *address*)

Definition at line 316 of file libmc.c.

References fipa_agent_identifier_s::addresses, fipa_agent_identifier_New(), fipa_agent_identifier_set_New(), fipa_agent_identifier_set_s::fipa_agent_identifiers, fipa_url_New(), fipa_url_sequence_New(), fipa_agent_identifier_s::name, fipa_url_sequence_s::num, fipa_agent_identifier_set_s::num, fipa_acl_message_s::receiver, fipa_acl_message_s::receiver_num, fipa_url_s::str, strdup, and fipa_url_sequence_s::urls.

Referenced by MC_AclAddReceiver_chdl().

5.38.5.2 EXPORTMC int MC_AclAddReplyTo (struct fipa_acl_message_s * *acl*, const char * *name*, const char * *address*)

Definition at line 352 of file libmc.c.

References fipa_agent_identifier_s::addresses, fipa_agent_identifier_New(), fipa_agent_identifier_set_New(), fipa_agent_identifier_set_s::fipa_agent_identifiers, fipa_url_New(), fipa_url_sequence_New(), fipa_agent_identifier_s::name, fipa_url_sequence_s::num, fipa_agent_identifier_set_s::num, fipa_acl_message_s::reply_to, fipa_url_s::str, strdup, and fipa_url_sequence_s::urls.

Referenced by MC_AclAddReplyTo_chdl().

5.38.5.3 EXPORTMC int MC_AclDestroy (struct fipa_acl_message_s * *message*)

Destroy a FIPA ACL message.

Parameters

message The ACL message to destroy

Returns

0 on success, error code on failure.

Definition at line 79 of file libmc.c.

References fipa_acl_message_Destroy().

Referenced by MC_AclDestroy_chdl().

5.38.5.4 EXPORTMC const char* MC_AclGetContent (struct fipa_acl_message_s * *acl*)

Definition at line 244 of file libmc.c.

References fipa_string_s::content, and fipa_acl_message_s::content.

Referenced by MC_AclGetContent_chdl().

5.38.5.5 EXPORTMC char* MC_AclGetConversationID (struct fipa_acl_message_s * *acl*)

Definition at line 219 of file libmc.c.

References `fipa_string_s::content`, `fipa_expression_s::content`, `fipa_acl_message_s::conversation_id`, and `fipa_expression_s::content_u::string`.

Referenced by `MC_AclGetConversationID_chdl()`.

5.38.5.6 EXPORTMC enum `fipa_performative_e` `MC_AclGetPerformative` (struct `fipa_acl_message_s * acl`)

Definition at line 225 of file `libmc.c`.

References `fipa_acl_message_s::performative`.

Referenced by `MC_AclGetPerformative_chdl()`.

5.38.5.7 EXPORTMC enum `fipa_protocol_e` `MC_AclGetProtocol` (struct `fipa_acl_message_s * acl`)

Definition at line 213 of file `libmc.c`.

References `fipa_acl_message_s::performative`.

Referenced by `MC_AclGetProtocol_chdl()`.

5.38.5.8 EXPORTMC int `MC_AclGetSender` (struct `fipa_acl_message_s * acl`, char ** *name*, char ** *address*)

Definition at line 231 of file `libmc.c`.

References `fipa_agent_identifier_s::addresses`, `fipa_agent_identifier_s::name`, `fipa_acl_message_s::sender`, `fipa_url_s::str`, `strdup`, and `fipa_url_sequence_s::urls`.

Referenced by `MC_AclGetSender_chdl()`.

5.38.5.9 EXPORTMC struct `fipa_acl_message_s*` `MC_AclNew` (void) [read]

Allocate a new ACL Message.

Returns

A newly allocated and empty ACL message.

Definition at line 85 of file `libmc.c`.

References `fipa_acl_message_New()`.

Referenced by `MC_AclNew_chdl()`.

5.38.5.10 EXPORTMC int `MC_AclPost` (MCAgent_t *agent*, struct `fipa_acl_message_s * message`)

Post ACL message to agent.

Parameters

agent The agent to post the message to

message The message to post

Returns

0 if successful, or `error_code_t` type.

Definition at line 90 of file `libmc.c`.

References `agent_mailbox_Post()`, and `agent_s::mailbox`.

Referenced by `MC_AclPost_chdl()`, and `MC_AclSend()`.

5.38.5.11 EXPORTMC struct fipa_acl_message_s* MC_AclReply (struct fipa_acl_message_s * *acl_message*) [read]

Reply to an ACL message.

Parameters

acl_message The incoming acl message to reply to

Returns

A newly allocated ACL message

Note

This function simply generates a new ACL message with the 'receiver' field automatically set to the 'sender' field of the incoming message.

Definition at line 96 of file `libmc.c`.

References `fipa_Reply()`.

Referenced by `MC_AclReply_chdl()`.

5.38.5.12 EXPORTMC struct fipa_acl_message_s* MC_AclRetrieve (MCAgent_t *agent*) [read]

Retrieve an ACL message.

Parameters

agent Agent to retrieve message from.

Returns

an ACL message struct on success or NULL on failure

Definition at line 102 of file `libmc.c`.

References `agent_mailbox_Retrieve()`, and `agent_s::mailbox`.

Referenced by `MC_AclRetrieve_chdl()`.

5.38.5.13 EXPORTMC int MC_AclSend (MCAgency_t *attr*, struct fipa_acl_message_s * *acl*)

Send a composed ACL Message.

Parameters

- attr* An initialized and running MobileC agency
- acl* An allocated and fully composed ACL message.

Returns

- 0 if successful, error code on failure.

Definition at line 108 of file libmc.c.

References `fipa_agent_identifier_s::addresses`, `mtp_http_s::content`, `mtp_http_content_s::content_type`, `mtp_http_content_s::data`, `dynstring_Destroy()`, `FIPA_ACL`, `fipa_acl_Compose()`, `fipa_acl_message_Copy()`, `fipa_agent_identifier_set_s::fipa_agent_identifiers`, `fipa_envelope_Compose()`, `mtp_http_s::host`, `http_to_hostport()`, `MC_AclPost()`, `MC_FindAgentByName()`, `agency_s::mc_platform`, `dynstring_s::message`, `mtp_http_s::message_parts`, `message_Send()`, `message_s::message_type`, `mtp_http_CreateMessage()`, `mtp_http_Destroy()`, `mtp_http_New()`, `fipa_agent_identifier_s::name`, `fipa_url_sequence_s::num`, `fipa_agent_identifier_set_s::num`, `port`, `mc_platform_s::private_key`, `fipa_acl_message_s::receiver`, `fipa_url_s::str`, `strdup`, `mtp_http_s::target`, `message_s::target`, and `fipa_url_sequence_s::urls`.

Referenced by `MC_AclSend_chdl()`.

5.38.5.14 EXPORTMC int MC_AclSetContent (struct fipa_acl_message_s * *acl*, const char * *content*)

Definition at line 387 of file libmc.c.

References `fipa_string_s::content`, `fipa_acl_message_s::content`, `fipa_string_Destroy()`, `fipa_string_New()`, and `strdup`.

Referenced by `MC_AclSetContent_chdl()`.

5.38.5.15 EXPORTMC int MC_AclSetConversationID (struct fipa_acl_message_s * *acl*, char * *id*)

Definition at line 266 of file libmc.c.

References `fipa_string_s::content`, `fipa_expression_s::content`, `fipa_acl_message_s::conversation_id`, `FIPA_EXPR_STRING`, `fipa_expression_New()`, `fipa_string_New()`, `strdup`, `fipa_expression_s::content_u::string`, and `fipa_expression_s::type`.

Referenced by `MC_AclSetConversationID_chdl()`.

5.38.5.16 EXPORTMC int MC_AclSetPerformative (struct fipa_acl_message_s * *acl*, enum fipa_performative_e *performative*)

Definition at line 285 of file libmc.c.

References `fipa_acl_message_s::performative`.

Referenced by `MC_AclSetPerformative_chdl()`.

5.38.5.17 EXPORTMC int MC_AclSetProtocol (struct fipa_acl_message_s * *acl*, enum fipa_protocol_e *performative*)

Definition at line 250 of file libmc.c.

References FIPA_PROTOCOL_END, FIPA_PROTOCOL_ERROR, and fipa_acl_message_s::protocol.
 Referenced by MC_AclSetProtocol_chdl().

5.38.5.18 EXPORTMC int MC_AclSetSender (struct fipa_acl_message_s * *acl*, const char * *name*, const char * *address*)

Definition at line 293 of file libmc.c.

References fipa_agent_identifier_s::addresses, fipa_agent_identifier_Destroy(), fipa_agent_identifier_New(), fipa_url_New(), fipa_url_sequence_New(), fipa_agent_identifier_s::name, fipa_url_sequence_s::num, fipa_acl_message_s::sender, fipa_url_s::str, strdup, and fipa_url_sequence_s::urls.

Referenced by MC_AclSetSender_chdl().

5.38.5.19 EXPORTMC struct fipa_acl_message_s* MC_AclWaitRetrieve (MCAgent_t *agent*) [read]

Wait for and retrieve an ACL message.

Parameters

agent Agent to retrieve message from.

Returns

an ACL message struct on success or NULL on failure

Definition at line 206 of file libmc.c.

References agent_mailbox_WaitRetrieve(), and agent_s::mailbox.

Referenced by MC_AclWaitRetrieve_chdl().

5.38.5.20 EXPORTMC int MC_AddAgent (MCAgency_t *attr*, MCAgent_t *agent*)

Add an agent to the agency 'attr'.

Parameters

attr a MobileC agency

agent An initialized MobileC agent

Returns

0 if successful, or error_code_t type

Definition at line 404 of file libmc.c.

References mc_platform_s::agent_queue, mc_platform_s::ams, COND_SIGNAL, agency_s::mc_platform, agent_s::mc_platform, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by handler_COMPOSE_SEND(), and MC_AddAgent_chdl().

5.38.5.21 `int MC_AddStationaryAgent (MCAgency_t agency, void (*)(stationary_agent_info_t *) agent_thread, const char * name, void * agent_args)`

Definition at line 417 of file libmc.c.

References `stationary_agent_info_s::agency`, `stationary_agent_info_s::agent`, `agent_NewBinary()`, `mc_platform_s::agent_queue`, `stationary_agent_info_s::args`, `stationary_agent_info_s::attr`, `agency_s::mc_platform`, `agent_s::name`, `strdup`, `stationary_agent_info_s::thread`, and `THREAD_CREATE`.

5.38.5.22 `int MC_AgentAddTask (MCAgent_t agent, const char * code, const char * return_var_name, const char * server, int persistent)`

Add a new task to an already existing agent.

Parameters

agent An existing agent

code The C code to use in the new task

return_var_name The name of the the return variable, or NULL if there is no return variable.

server The server to perform the task on.

persistent Whether or not the task is persistent. '1' indicates persistent, and '0' indicates not-persistent (the default)

Returns

Returns a valid agency handle or NULL on failure.

Definition at line 460 of file libmc.c.

References `agent_datastate_s::agent_code_ids`, `agent_datastate_s::agent_codes`, `agent_task_New()`, `agent_task_s::code_id`, `agent_s::datastate`, `agent_datastate_s::number_of_tasks`, `agent_task_s::persistent`, `agent_task_s::server_name`, `strdup`, `agent_datastate_s::tasks`, and `agent_task_s::var_name`.

Referenced by `MC_AgentAddTask_chdl()`, and `MC_AgentAddTaskFromFile()`.

5.38.5.23 `int MC_AgentAddTaskFromFile (MCAgent_t agent, const char * filename, const char * return_var_name, const char * server, int persistent)`

Add a new task to an already existing agent.

Parameters

agent An existing agent

filename The C code to use in the new task

return_var_name The name of the the return variable, or NULL if there is no return variable.

server The server to perform the task on.

persistent Whether or not the task is persistent. '1' indicates persistent, and '0' indicates not-persistent (the default)

Returns

Returns a valid agency handle or NULL on failure.

Definition at line 533 of file libmc.c.

References `MC_AgentAddTask()`.

5.38.5.24 **MCAgency_t MC_AgentInfo_GetAgency** (**stationary_agent_info_t * stationary_agent_info**)

Get the host Mobile-C agency handle from a "stationary_agent_info_t" data structure.

Parameters

stationary_agent_info A stationary_agent_info_t type variable provided to a stationary agent function

Returns

Returns a valid agency handle or NULL on failure.

Definition at line 445 of file libmc.c.

References stationary_agent_info_s::agency.

5.38.5.25 **MCAgent_t MC_AgentInfo_GetAgent** (**stationary_agent_info_t * stationary_agent_info**)

Retrieve an agent handle from the stationary agent info from within a stationary agent.

Parameters

stationary_agent_info A stationary_agent_info_t type variable provided to a stationary agent function

Returns

Returns a valid agent handle or NULL on failure.

5.38.6 Examples

The following example demonstrates usage of [MC_AgentInfo_GetAgent\(\)](#)

Definition at line 450 of file libmc.c.

References stationary_agent_info_s::agent.

5.38.6.1 **void* MC_AgentInfo_GetAgentArgs** (**stationary_agent_info_t * stationary_agent_info**)

Retrieve the agent argument supplied as the "agent_args" parameter in the [MC_AddStationaryAgent\(\)](#) function.

Parameters

stationary_agent_info A stationary_agent_info_t type variable provided to a stationary agent function

Returns

Returns a valid pointer or NULL on failure.

Definition at line 455 of file libmc.c.

References stationary_agent_info_s::args.

5.38.6.2 int MC_AgentReturnArrayDim (MCAgent_t agent, int task_num)

Get the dimension of an agent's return data, if it is an array.

Parameters

agent A return agent

task task to retrieve the agent return data size from

Returns

Returns a positive integer on success or -1 on failure.

Definition at line 591 of file libmc.c.

References agent_task_s::agent_return_data, interpreter_variable_data_s::array_dim, agent_s::datastate, agent_datastate_s::number_of_tasks, and agent_datastate_s::tasks.

5.38.6.3 int MC_AgentReturnArrayExtent (MCAgent_t agent, int task_num, int index)

Get the extent of a dimension of an agent's return data, if it is an array.

Parameters

agent A return agent

task task to retrieve the agent return data size from

index The dimension index to get the extent

Returns

Returns a positive integer on success or -1 on failure.

Definition at line 567 of file libmc.c.

References agent_task_s::agent_return_data, interpreter_variable_data_s::array_dim, interpreter_variable_data_s::array_extent, agent_s::datastate, agent_datastate_s::number_of_tasks, and agent_datastate_s::tasks.

5.38.6.4 int MC_AgentReturnArrayNum (MCAgent_t agent, int task_num)

Get the total number of elements of the agent return data.

Parameters

agent A return agent

task task to retrieve the agent return data size from

index The dimension index to get the extent

Returns

Returns a positive integer on success or -1 on failure.

Definition at line 609 of file libmc.c.

References agent_task_s::agent_return_data, interpreter_variable_data_s::array_dim, agent_s::datastate, agent_datastate_s::number_of_tasks, and agent_datastate_s::tasks.

5.38.6.5 `const void* MC_AgentReturnDataGetSymbolAddr (MCAgent_t agent, int task_num)`

Get a pointer to the agent's return data.

Parameters

agent A return agent

task task to retrieve the agent return data from

Returns

Returns a pointer to the beginning of the task's return data on success. Returns NULL on failure.

Definition at line 639 of file libmc.c.

References agent_task_s::agent_return_data, interpreter_variable_data_s::data, agent_s::datastate, agent_datastate_s::number_of_tasks, and agent_datastate_s::tasks.

5.38.6.6 `size_t MC_AgentReturnDataSize (MCAgent_t agent, int task_num)`

Get the size of an agent's return data type.

Parameters

agent A return agent

task task to retrieve the agent return data type size from

Returns

Returns a positive integer on success or -1 on failure.

Definition at line 656 of file libmc.c.

References agent_task_s::agent_return_data, CH_DATATYPE_SIZE, interpreter_variable_data_s::data_type, agent_s::datastate, agent_datastate_s::number_of_tasks, size, and agent_datastate_s::tasks.

5.38.6.7 `int MC_AgentReturnDataType (MCAgent_t agent, int task_num)`

Get the type of an agent's return data.

Parameters

agent A return agent

task task to retrieve the agent return data type from

Returns

Returns a positive integer on success or -1 on failure. The return type is of type ChType_t, defined in ch.h

Definition at line 679 of file libmc.c.

References agent_task_s::agent_return_data, interpreter_variable_data_s::data_type, agent_s::datastate, agent_datastate_s::number_of_tasks, and agent_datastate_s::tasks.

5.38.6.8 int MC_AgentReturnIsArray (MCAgent_t agent, int task_num)

Check to see whether or not an agent's return data is an array.

Parameters

agent A return agent
task task to check to see if the return data is an array.

Returns

Returns 1 if the return variable is an array, 0 if it is not an array, or -1 on failure.

Definition at line 689 of file libmc.c.

References agent_task_s::agent_return_data, interpreter_variable_data_s::array_dim, agent_s::datastate, agent_datastate_s::number_of_tasks, and agent_datastate_s::tasks.

5.38.6.9 const void* MC_AgentVariableRetrieve (MCAgent_t agent, const char * var_name, int task_num)

Retrieve a pointer to a previously saved variable.

Parameters

agent A MobileC agent.
var_name The name of the saved variable that has previously been saved.
task_num The previous completed task from which to retrieve the saved variable.

Returns

A pointer to the data on success or NULL on failure.

5.38.7 Examples

The following example demonstrates usage of [MC_AgentVariableRetrieve\(\)](#) from agent space.

Definition at line 710 of file libmc.c.

References agent_task_s::agent_variable_list, interpreter_variable_data_s::data, agent_s::datastate, agent_datastate_s::task_progress, and agent_datastate_s::tasks.

Referenced by MC_AgentVariableRetrieve_chdl().

5.38.7.1 int MC_AgentVariableRetrieveInfo (MCAgent_t agent, const char * var_name, int task_num, const void ** data, int * dim, const int ** extent)

Retrieve a info about a previously saved variable.

Parameters

agent A MobileC agent.

var_name The name of the saved variable that has previously been saved.

task_num The previous completed task from which to retrieve the saved variable.

data (Output) The Variable Data

dim (Output) The dimension of the data array

extent (Output) The extents of the output array

Returns

Error code.

Definition at line 728 of file libmc.c.

References `agent_task_s::agent_variable_list`, `interpreter_variable_data_s::array_dim`, `interpreter_variable_data_s::array_extent`, `interpreter_variable_data_s::data`, `agent_s::datastate`, `MC_ERR_NOT_FOUND`, `MC_SUCCESS`, `agent_datastate_s::task_progress`, and `agent_datastate_s::tasks`.

5.38.7.2 `int MC_AgentVariableSave (MC_Agent_t agent, const char * var_name)`

Mark an agent variable for saving.

Parameters

agent A MobileC agent.

var_name The name of the variable to mark for saving.

Returns

0 on success, non-zero on failure.

See also

`test1.xml`

5.38.8 Examples

See `agent_saved_variables_example/test1.xml` for an example of usage of this api function.

5.38.9 Examples

The following example demonstrates usage of `MC_AgentVariableSave()` from agent space.

Definition at line 749 of file libmc.c.

References `agent_s::datastate`, `MC_ERR_MEMORY`, `agent_task_s::num_saved_variables`, `agent_task_s::saved_variables`, `strdup`, `agent_datastate_s::task_progress`, and `agent_datastate_s::tasks`.

Referenced by `MC_AgentVariableSave_chdl()`.

5.38.9.1 EXPORTMC int MC_Barrier (MCAgency_t *attr*, int *id*)

Definition at line 770 of file libmc.c.

References `mc_platform_s::barrier_queue`, `barrier_queue_Get()`, `barrier_node_s::cond`, `COND_BROADCAST`, `COND_WAIT`, `barrier_node_s::lock`, `MC_ERR_NOT_FOUND`, `agency_s::mc_platform`, `MC_SUCCESS`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `node`, `barrier_node_s::num_registered`, and `barrier_node_s::num_waiting`.

Referenced by `MC_Barrier_chdl()`.

5.38.9.2 EXPORTMC int MC_BarrierDelete (MCAgency_t *attr*, int *id*)

Find and delete an initialized MobileC Barrier.

Parameters

attr A running MobileC agency
id The id of the barrier node to delete

Returns

returns 0 on success, error if the node is not found or other failure.

Definition at line 810 of file libmc.c.

References `mc_platform_s::barrier_queue`, `barrier_queue_Delete()`, and `agency_s::mc_platform`.

Referenced by `MC_BarrierDelete_chdl()`.

5.38.9.3 EXPORTMC int MC_BarrierInit (MCAgency_t *attr*, int *id*, int *num_procs*)

Initialize a MobileC Barrier.

Parameters

attr A running MobileC agency
id The requested barrier id
num_procs The number of agents/threads/processes that will wait on the barrier

Returns

The allocated barrier id. May differ from the requested id if it is already in use.

5.38.10 Examples

The following example demonstrates an agent which sets up an MC_Barrier.

Definition at line 796 of file libmc.c.

References `barrier_node_Initialize()`, `mc_platform_s::barrier_queue`, `barrier_queue_Add()`, `barrier_queue_Get()`, `MC_ERR`, `agency_s::mc_platform`, `MC_SUCCESS`, and `node`.

Referenced by `MC_BarrierInit_chdl()`.

5.38.10.1 EXPORTMC int MC_CallAgentFunc (MCAgent_t *agent*, const char **funcName*, void **returnVal*, int *numArgs*, ...)

Use custom ChOptions_t type for internal Ch interpreter.

Parameters

attr A running MobileC agency
options Initialized Ch options structure

Returns

0 on success, error_code_t type on failure Calls a function defined in an agent

Parameters

agent An initialized and executed MobileC agent
funcName The name of the function to call
returnVal The agent function's return value
numArgs The number of arguments supplied to the agent function
... A variable argument list to be supplied to the agent function

Returns

0 if successful, error_code_t type on failure

5.38.11 Example

Definition at line 816 of file libmc.c.

References agent_s::agent_interp, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::run_lock.

5.38.11.1 EXPORTMC int MC_CallAgentFuncArg (MCAgent_t *agent*, const char **funcName*, void **returnVal*, void **arg*)

Calls a function defined in an agent.

Parameters

agent An initialized and executed MobileC agent
funcName The name of the function to call
returnVal The agent function's return value
arg The agent functions argument

Note

The agent function must be of the form 'void* func(void* arg);'

Returns

0 if successful, error_code_t type on failure

5.38.12 Example

Definition at line 837 of file libmc.c.

References agent_s::agent_interp, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::run_lock.

5.38.12.1 EXPORTMC int MC_CallAgentFuncV (MCAgent_t *agent*, const char * *funcName*, void * *returnVal*, va_list *ap*)

Calls a function defined in an agent.

Parameters

agent An initialized and executed MobileC agent

funcName The name of the function to call

returnVal The agent function's return value

ap A variable argument list

Returns

0 if successful, error_code_t type on failure

Definition at line 856 of file libmc.c.

References agent_s::agent_interp, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::run_lock.

5.38.12.2 EXPORTMC int MC_CallAgentFuncVar (MCAgent_t *agent*, const char * *funcName*, void * *returnVal*, ChVaList_t *arglist*)

Definition at line 876 of file libmc.c.

References agent_s::agent_interp, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::run_lock.

Referenced by MC_CallAgentFunc_chdl().

5.38.12.3 EXPORTMC MCAgent_t MC_ComposeAgent (const char * *name*, const char * *home*, const char * *owner*, const char * *code*, const char * *return_var_name*, const char * *server*, int *persistent*)

Compose a new agent dynamically without using a prewritten XML file.

Parameters

name The desired name of the new agent.

home The home of the new agent.

owner The owner of the new agent.

code The agent code

return_var_name The name of the agent's return variable. Set to "no-return" if no return variable is desired.

server The target destination of the agent.

persistent A flag indicating whether or not the agent should be persistent. A value of '1' indicates persistence, while a value of '0' indicates default non-persistent behaviour.

Returns

This function returns a valid `MCAgent_t` structure on success or `NULL` on failure.

Definition at line 916 of file `libmc.c`.

References `MC_ComposeAgentWithWorkgroup()`.

5.38.12.4 EXPORTMC MCAgent_t MC_ComposeAgentFromFile (const char * *name*, const char * *home*, const char * *owner*, const char * *filename*, const char * *return_var_name*, const char * *server*, int *persistent*)

Compose a new agent dynamically from a source code file.

Parameters

filename The filename of the source file

name The desired name of the new agent.

home The home of the new agent.

owner The owner of the new agent.

code The agent code

return_var_name The name of the agent's return variable. Set to "no-return" if no return variable is desired.

server The target destination of the agent.

persistent A flag indicating whether or not the agent should be persistent. A value of '1' indicates persistence, while a value of '0' indicates default non-persistent behaviour.

Returns

This function returns a valid `MCAgent_t` structure on success or `NULL` on failure.

Definition at line 1042 of file `libmc.c`.

References `MC_ComposeAgentFromFileWithWorkgroup()`.

Referenced by `handler_COMPOSE_SEND()`.

5.38.12.5 EXPORTMC MCAgent_t MC_ComposeAgentFromFileS (const char * *name*, const char * *home*, const char * *owner*, const char * *filename*, const char * *return_var_name*, const char * *server*, int *persistent*, const char * *workgroup_code*)

Compose a new agent dynamically from a source code file.

Parameters

filename The filename of the source file

name The desired name of the new agent.

home The home of the new agent.

owner The owner of the new agent.

code The agent code

return_var_name The name of the agent's return variable. Set to "no-return" if no return variable is desired.

server The target destination of the agent.

workgroup_code The secret workgroup code of the agent. Only agents with the same workgroup code may perform certain interactions.

persitent A flag indicating whether or not the agent should be persistent. A value of '1' indicates persistence, while a value of '0' indicates default non-persistent behaviour.

Returns

This function returns a valid MCAgent_t structure on success or NULL on failure.

Note

This function is deprecated. Please use the MC_ComposeAgentFromFileWithWorkgroup function instead.

Definition at line 1064 of file libmc.c.

References MC_ComposeAgentFromFileWithWorkgroup().

5.38.12.6 EXPORTMC MCAgent_t MC_ComposeAgentFromFileWithWorkgroup (const char * name, const char * home, const char * owner, const char * filename, const char * return_var_name, const char * server, int persistent, const char * workgroup_code)

Compose a new agent dynamically from a source code file.

Parameters

filename The filename of the source file

name The desired name of the new agent.

home The home of the new agent.

owner The owner of the new agent.

code The agent code

return_var_name The name of the agent's return variable. Set to "no-return" if no return variable is desired.

server The target destination of the agent.

workgroup_code The secret workgroup code of the agent. Only agents with the same workgroup code may perform certain interactions.

persitent A flag indicating whether or not the agent should be persistent. A value of '1' indicates persistence, while a value of '0' indicates default non-persistent behaviour.

Returns

This function returns a valid MCAgent_t structure on success or NULL on failure.

Definition at line 1089 of file libmc.c.

References MC_ComposeAgentWithWorkgroup().

Referenced by MC_ComposeAgentFromFile(), MC_ComposeAgentFromFile_chdl(), MC_ComposeAgentFromFileS(), and MC_ComposeAgentFromFileWithWorkgroup_chdl().

5.38.12.7 EXPORTMC MCAgent_t MC_ComposeAgentS (const char * *name*, const char * *home*, const char * *owner*, const char * *code*, const char * *return_var_name*, const char * *server*, int *persistent*, const char * *workgroup_code*)

Compose a new agent dynamically without using a prewritten XML file.

Parameters

name The desired name of the new agent.

home The home of the new agent.

owner The owner of the new agent.

code The agent code

return_var_name The name of the agent's return variable. Set to "no-return" if no return variable is desired.

server The target destination of the agent.

workgroup_code The secret workgroup code of the agent. Only agents with the same workgroup code may perform certain interactions.

persistant A flag indicating whether or not the agent should be persistent. A value of '1' indicates persistence, while a value of '0' indicates default non-persistent behaviour.

Returns

This function returns a valid MCAgent_t structure on success or NULL on failure.

Note

This function is deprecated. Please use the MC_ComposeAgentWithWorkgroup function instead.

Definition at line 939 of file libmc.c.

References MC_ComposeAgentWithWorkgroup().

Referenced by MC_ComposeAgentWithWorkgroup_chdl().

5.38.12.8 EXPORTMC MCAgent_t MC_ComposeAgentWithWorkgroup (const char * *name*, const char * *home*, const char * *owner*, const char * *code*, const char * *return_var_name*, const char * *server*, int *persistent*, const char * *workgroup_code*)

Compose a new agent dynamically without using a prewritten XML file.

Parameters

name The desired name of the new agent.

home The home of the new agent.

owner The owner of the new agent.

code The agent code

return_var_name The name of the agent's return variable. Set to "no-return" if no return variable is desired.

server The target destination of the agent.

workgroup_code The secret workgroup code of the agent. Only agents with the same workgroup code may perform certain interactions.

persistent A flag indicating whether or not the agent should be persistent. A value of '1' indicates persistence, while a value of '0' indicates default non-persistent behaviour.

Returns

This function returns a valid MCAgent_t structure on success or NULL on failure.

Note

This function is deprecated

Definition at line 965 of file libmc.c.

References agent_datastate_s::agent_code, agent_datastate_s::agent_code_ids, agent_datastate_s::agent_codes, agent_datastate_New(), agent_New(), agent_s::agent_status, agent_task_New(), agent_s::agent_type, agent_s::datastate, agent_s::home, MC_LOCAL_AGENT, MC_WAIT_MESSGSEND, agent_s::name, agent_datastate_s::number_of_tasks, agent_s::orphan, agent_s::owner, agent_task_s::persistent, agent_task_s::server_name, strdup, agent_datastate_s::tasks, agent_task_s::var_name, and agent_s::wg_code.

Referenced by MC_ComposeAgent(), MC_ComposeAgent_chdl(), MC_ComposeAgentFromFileWithWorkgroup(), and MC_ComposeAgentS().

5.38.12.9 EXPORTMC int MC_CondBroadcast (MCAgency_t attr, int id)

Wakes up all agents/threads waiting on a condition variable.

Parameters

attr A MobileC agency

id Synchronization variable id to broadcast to

See also

[MC_SyncInit\(\)](#), [MC_CondSignal\(\)](#)

Returns

0 on success, error_code_t type on failure

Definition at line 1133 of file libmc.c.

References syncListNode_s::cond, COND_BROADCAST, syncListNode_s::lock, MC_ERR_NOT_FOUND, agency_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, syncListNode_s::signalled, mc_platform_s::syncList, and syncListFind().

Referenced by MC_CondBroadcast_chdl().

5.38.12.10 EXPORTMC int MC_CondReset (MCAgency_t attr, int id)

Reset a previously signalled MobileC condition variable.

Parameters

attr A MobileC Agency

id The synchronization variable id to reset

See also[MC_SyncInit\(\)](#)**Returns**

0 on success, `error_code_t` type on failure

Definition at line 1185 of file `libmc.c`.

References `syncListNode_s::lock`, `MC_ERR_NOT_FOUND`, `agency_s::mc_platform`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `syncListNode_s::signalled`, `mc_platform_s::syncList`, and `syncListFind()`.

Referenced by `MC_CondReset_chdl()`.

5.38.12.11 EXPORTMC int MC_CondSignal (MCAgency_t attr, int id)

Wakes up at least one thread waiting on a condition variable.

Parameters

attr A MobileC agency

id synchronization variable id

See also[MC_SyncInit\(\)](#)**Returns**

0 on success, `error_code_t` type on failure

5.38.13 Example

The following example demonstrates the agent-space version of the function, which is nearly identical to the binary space api function.

Definition at line 1148 of file `libmc.c`.

References `syncListNode_s::cond`, `COND_SIGNAL`, `syncListNode_s::lock`, `MC_ERR_NOT_FOUND`, `agency_s::mc_platform`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `syncListNode_s::signalled`, `mc_platform_s::syncList`, and `syncListFind()`.

Referenced by `MC_CondSignal_chdl()`.

5.38.13.1 EXPORTMC int MC_CondWait (MCAgency_t attr, int id)

Wait on a MobileC synchronization variable.

Parameters

attr A MobileC agency

id a synchronization variable id

See also

[MC_SyncInit\(\)](#)

Returns

0 on success, `error_code_t` type on failure

5.38.14 Example

The following example demonstrates the agent-space version of this function.

Definition at line 1163 of file `libmc.c`.

References `syncListNode_s::cond`, `COND_WAIT`, `syncListNode_s::lock`, `MC_ERR_NOT_FOUND`, `agency_s::mc_platform`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `syncListNode_s::signalled`, `mc_platform_s::syncList`, and `syncListFind()`.

Referenced by `MC_CondWait_chdl()`.

5.38.14.1 `int MC_CopyAgent (MCAgent_t * agent_out, const MCAgent_t agent_in)`

Performs a deep-copy of an agent structure.

Parameters

agent_out A pointer to the agent to copy to.

agent_in The agent to copy

Returns

0 on success, `error_code_t` type on failure.

Definition at line 1203 of file `libmc.c`.

References `agent_Copy()`, and `MC_SUCCESS`.

5.38.14.2 `EXPORTMC int MC_DeleteAgent (MCAgent_t agent)`

Stop and remove an agent.

Parameters

agent An agent in any state (running, waiting, etc)

Returns

0 on success, `error_code_t` type on failure

Definition at line 1210 of file `libmc.c`.

References `CHECK_NULL`, `MC_ERR_INVALID`, `MC_ERR_INVALID_ARGS`, `MC_SUCCESS`, `MC_TerminateAgent()`, and `agent_s::wg_code`.

Referenced by `MC_DeleteAgent_chdl()`.

5.38.14.3 EXPORTMC int MC_DeleteAgentWG (MCAgent_t *calling_agent*, MCAgent_t *agent*)

Stop and remove an agent in the same workgroup.

Parameters

calling_agent The calling agent

agent An agent in any state (running, waiting, etc)

Note

The agents must belong to the same workgroup.

Returns

0 on success, error_code_t type on failure

Definition at line 1227 of file libmc.c.

References CHECK_NULL, MC_ERR_INVALID, MC_ERR_INVALID_ARGS, MC_SUCCESS, MC_TerminateAgentWG(), and agent_s::wg_code.

Referenced by MC_DeleteAgentWG_chdl().

5.38.14.4 int MC_DestroyServiceSearchResult (char ** *agentName*, char ** *serviceName*, int * *agentID*, int *numResult*)

Free memory allocated by a Service Search operation.

Parameters

agentName agent names returned by a search operation.

serviceName service names return by a search operation.

agentID list of agent id's returned by a search operation.

numResult The number of hits returned by a search operation.

Returns

0 on success, error code on failure.

Definition at line 1247 of file libmc.c.

Referenced by MC_DestroyServiceSearchResult_chdl().

5.38.14.5 EXPORTMC int MC_End (MCAgency_t *attr*)

End an agency.

Parameters

attr A running agency

Returns

0 on success, error_code_t type on failure

5.38.15 Example

Definition at line 1296 of file libmc.c.

References `mc_platform_s::acc`, `mc_platform_s::ams`, `mc_platform_s::cmd_prompt`, `COND_BROADCAST`, `COND_SIGNAL`, `mc_platform_s::connection_queue`, `mc_platform_s::df`, `GET_THREAD_MODE`, `agency_s::hostName`, `agency_s::mc_platform`, `mc_platform_Destroy()`, `MC_THREAD_ACC`, `MC_THREAD_AMS`, `MC_THREAD_CP`, `MC_THREAD_DF`, `mc_platform_s::message_queue`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `mc_platform_s::quit`, `mc_platform_s::quit_cond`, `mc_platform_s::quit_lock`, `cmd_prompt_s::thread`, `THREAD_CANCEL`, `THREAD_JOIN`, and `agency_s::threads`.

Referenced by `MC_End_chdl()`.

5.38.15.1 EXPORTMC MCAgent_t MC_FindAgentByID (MCAgency_t *attr*, int *ID*)

Find an agent by its id.

Parameters

attr the agency to search

ID the id to search for

Returns

a valid agent on success, NULL on failure

Definition at line 1372 of file libmc.c.

References `mc_platform_s::agent_queue`, and `agency_s::mc_platform`.

Referenced by `MC_FindAgentByID_chdl()`.

5.38.15.2 EXPORTMC MCAgent_t MC_FindAgentByName (MCAgency_t *attr*, const char * *name*)

Find an agent by its name.

Parameters

attr a running agency

name name to search for

Returns

a valid agent on success or NULL on failure

5.38.16 Example

Definition at line 1359 of file libmc.c.

References mc_platform_s::agent_queue, and agency_s::mc_platform.

Referenced by MC_AclSend(), MC_DeleteAgent_chdl(), MC_DeleteAgentWG_chdl(), MC_FindAgentByName_chdl(), MC_TerminateAgent_chdl(), and MC_TerminateAgentWG_chdl().

5.38.16.1 EXPORTMC void* MC_GetAgentExecEngine (MCAgent_t agent)

Retrieve an agent's Ch interpreter.

Parameters

agent a valid agent

Returns

a Ch interpreter of type 'ChInterp_t' on success, or NULL on failure.

Definition at line 1427 of file libmc.c.

References agent_s::agent_interp.

5.38.16.2 EXPORTMC int MC_GetAgentID (MCAgent_t agent)

Retrieve an agent's id.

Definition at line 1433 of file libmc.c.

References agent_s::id.

Referenced by MC_GetAgentID_chdl().

5.38.16.3 EXPORTMC char* MC_GetAgentName (MCAgent_t agent)

Definition at line 1441 of file libmc.c.

References agent_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::name.

Referenced by MC_GetAgentName_chdl().

5.38.16.4 EXPORTMC int MC_GetAgentNumTasks (MCAgent_t agent)

Retrieve the number of tasks an agent has.

5.38.17 Example

Definition at line 1524 of file libmc.c.

References agent_s::datastate, and agent_datastate_s::number_of_tasks.

Referenced by MC_GetAgentNumTasks_chdl().

5.38.17.1 EXPORTMC int MC_GetAgentReturnData (MCAgent_t *agent*, int *task_num*, void ***data*, int **dim*, int ***extent*)

Get an agent's return data.

Parameters

agent a valid agent

task_num the task for which to retrieve the return data. The task must already be completed.

data the return data. May be multi dimensional array.

dim the number of dimensions of the return array.

extent the extent of each one of the array dimensions.

5.38.18 Example

This file demonstrates the retrieval of agent return data from an agent

This is the agent which gets the data

Definition at line 1459 of file libmc.c.

References agent_task_s::agent_return_data, interpreter_variable_data_s::array_dim, interpreter_variable_data_s::array_extent, CH_DATATYPE_SIZE, interpreter_variable_data_s::data_type, agent_s::datastate, agent_datastate_s::number_of_tasks, size, and agent_datastate_s::tasks.

5.38.18.1 EXPORTMC int MC_GetAgentStatus (MCAgent_t *agent*)

Get an agent's current status.

Returns

returns type 'enum MC_AgentStatus_e'

Definition at line 1405 of file libmc.c.

References agent_s::agent_status, agent_s::lock, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by MC_GetAgentStatus_chdl().

5.38.18.2 EXPORTMC enum MC_AgentType_e MC_GetAgentType (MCAgent_t *agent*)

Get an agent's type.

Returns

returns type 'enum MC_AgentType_e'

Definition at line 1530 of file libmc.c.

References agent_s::agent_type.

5.38.18.3 EXPORTMC char* MC_GetAgentXMLString (MCAgent_t *agent*)

Get an agent's xml string.

Returns

a malloc'd character string containing the agent's xml code

Definition at line 1415 of file libmc.c.

References agent_s::datastate, mxmlSaveAllocString(), and agent_datastate_s::xml_agent_root.

Referenced by MC_GetAgentXMLString_chdl().

5.38.18.4 EXPORTMC int MC_HaltAgency (MCAgency_t *agency*)

Halt an agency: Do not process new entries in queues.

Parameters

agency A handle to a running MobileC agency.

Returns

0 on success, non-zero on failure.

Definition at line 1576 of file libmc.c.

References mc_platform_s::giant, mc_platform_s::giant_lock, agency_s::mc_platform, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by MC_GetAllAgents(), and MC_HaltAgency_chdl().

5.38.18.5 EXPORTMC MCAgency_t MC_Initialize (int *port*, MCAgencyOptions_t * *options*)

Initialize and start a MobileC agency.

Parameters

port the TCP port the agency should bind to

options initialized MobileC options or NULL for default options

Returns

a handle to a running MobileC agency or NULL on failure

5.38.19 Example

Definition at line 1585 of file libmc.c.

References MCAgencyOptions_s::bluetooth, agency_s::bluetooth, buf, MCAgencyOptions_s::ch_options, agency_s::client, MCAgencyOptions_s::default_agent_status, agency_s::default_agentstatus, f, agency_s::hostName, MCAgencyOptions_s::initInterps, agency_s::initInterps, agency_s::known_host_filename,

MCAgencyOptions_s::known_host_filename, MC_InitializeAgencyOptions(), mc_platform, agency_s::mc_platform, mc_platform_Initialize(), MC_THREAD_ALL, MCAgencyOptions_s::passphrase, agency_s::portno, agency_s::priv_key_filename, MCAgencyOptions_s::priv_key_filename, read_encrypted_file(), agency_s::server, MCAgencyOptions_s::stack_size, agency_s::stack_size, strdup, MCAgencyOptions_s::threads, and agency_s::threads.

5.38.19.1 EXPORTMC int MC_InitializeAgencyOptions (struct MCAgencyOptions_s * *options*)

Initialize MobileC options.

Parameters

options options to initialize.

Returns

0 on success, error_code_t on failure

Note

MobileC options should be initialized with this function before any of its members are modified.

5.38.20 Example

Definition at line 1695 of file libmc.c.

References MCAgencyOptions_s::bluetooth, MCAgencyOptions_s::default_agent_status, MCAgencyOptions_s::initInterps, MCAgencyOptions_s::known_host_filename, MC_THREAD_ALL, MC_WAIT_CH, MCAgencyOptions_s::modified, MCAgencyOptions_s::passphrase, MCAgencyOptions_s::priv_key_filename, MCAgencyOptions_s::stack_size, and MCAgencyOptions_s::threads.

Referenced by MC_Initialize().

5.38.20.1 EXPORTMC int MC_LoadAgentFromFile (MCAgency_t *attr*, const char * *filename*)

Load an agent from a file into an agency.

Parameters

agency A valid and running Mobile-C agency

filename Filename containing the agent to load

Returns

0 on success, non-zero on failure.

Definition at line 1717 of file libmc.c.

References buf, agency_s::mc_platform, message_Destroy(), message_InitializeFromString(), message_New(), mc_platform_s::message_queue, MXML_DESCEND, mxmFindElement(), mxmLoadString(), message_s::to_address, message_s::xml_payload, and message_s::xml_root.

5.38.20.2 EXPORTMC int MC_MainLoop (MCAgency_t *attr*)

Wait indefinitely.

Note

This function is intended to block the calling thread forever.

Definition at line 2481 of file libmc.c.

References COND_WAIT, agency_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, mc_platform_s::quit, mc_platform_s::quit_cond, and mc_platform_s::quit_lock.

5.38.20.3 EXPORTMC int MC_MigrateAgent (MCAgent_t *agent*, const char * *hostname*, int *port*)

Migrates a running agent to another host.

Parameters

agent The agent to migrate

hostname The new host to migrate the agent to

port The new port to migrate the agent to

Returns

0 on success, error_code_t type on failure.

Definition at line 1787 of file libmc.c.

References agent_s::datastate, agent_datastate_s::progress_modifier, agent_task_s::server_name, agent_datastate_s::task_progress, and agent_datastate_s::tasks.

Referenced by MC_MigrateAgent_chdl().

5.38.20.4 EXPORTMC int MC_MutexLock (MCAgency_t *attr*, int *id*)

Locks a MobileC synchronization variable as a mutex.

Parameters

attr a MobileC agency handle

id the synchronization variable id to lock

Returns

0 on success, error_code_t type on failure

5.38.21 Example

Consider the following agents, which use the agent-space version of this api function. Note that the 'sleep' agent is sent first, followed by the 'wake' agent.

Definition at line 1809 of file libmc.c.

References `syncListNode_s::lock`, `agency_s::mc_platform`, `MUTEX_LOCK`, `mc_platform_s::syncList`, and `syncListFind()`.

Referenced by `MC_MutexLock_chdl()`.

5.38.21.1 EXPORTMC int MC_MutexUnlock (MCAgency_t *attr*, int *id*)

Definition at line 1821 of file libmc.c.

References `syncListNode_s::lock`, `agency_s::mc_platform`, `MUTEX_UNLOCK`, `mc_platform_s::syncList`, and `syncListFind()`.

Referenced by `MC_MutexUnlock_chdl()`.

5.38.21.2 EXPORTMC int MC_PrintAgentCode (MCAgent_t *agent*)

Prints an agents code to stdout.

Returns

0 on success, `error_code_t` on failure

Definition at line 1833 of file libmc.c.

References `agent_datastate_s::agent_code`, `agent_s::datastate`, `agent_s::lock`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `agent_datastate_s::number_of_tasks`, and `agent_datastate_s::task_progress`.

Referenced by `MC_PrintAgentCode_chdl()`.

5.38.21.3 EXPORTMC int MC_RegisterService (MCAgency_t *agency*, MCAgent_t *agent*, int *agentID*, const char * *agentName*, char ** *serviceNames*, int *numServices*)

Register a new service with the Directory Facilitator.

Parameters

agency a MobileC agency handle
agent (OPTIONAL: See note) a MobileC agent
agentID (OPTIONAL: See note) a MobileC agent id
agentName (OPTIONAL: See note) a MobileC agent name
serviceNames an array of character strings of service names
numServices the number of services described in 'serviceNames'

Returns

0 on success, `error_code_t` type on failure

Note

Three of the input arguments are optional. The function expects as input the arguments 'agent XOR (agentID AND agentName)'.

5.38.22 Example

Definition at line 1849 of file libmc.c.

References CHECK_NULL, mc_platform_s::df, df_AddRequest(), df_request_list_node_New(), agent_s::id, MC_ERR_INVALID_ARGS, MC_ERR_MEMORY, agency_s::mc_platform, MUTEX_INIT, MUTEX_T, and agent_s::name.

Referenced by MC_RegisterService_chdl().

5.38.22.1 EXPORTMC int MC_ResetSignal (MCAgency_t *attr*)

Reset a MobileC signal.

Returns

0 on success, error_code_t on failure

See also

[MC_WaitSignal\(\)](#)

Definition at line 1981 of file libmc.c.

References COND_SIGNAL, mc_platform_s::giant, mc_platform_s::giant_cond, mc_platform_s::giant_lock, MC_NO_SIGNAL, agency_s::mc_platform, mc_platform_s::MC_signal, MUTEX_LOCK, and MUTEX_UNLOCK.

5.38.22.2 EXPORTMC int MC_ResumeAgency (MCAgency_t *agency*)

Resumes a halted agency.

Parameters

agency An agency previously halted with the [MC_HaltAgency\(\)](#) function.

Returns

0 on success, non-zero on failure.

Definition at line 1928 of file libmc.c.

References mc_platform_s::giant, mc_platform_s::giant_lock, agency_s::mc_platform, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by MC_GetAllAgents(), and MC_ResumeAgency_chdl().

5.38.22.3 EXPORTMC MCAgent_t MC_RetrieveAgent (MCAgency_t *attr*)

Retrieves the oldest agent from an agency.

Returns

a valid agent or NULL on failure

Definition at line 1937 of file libmc.c.

References mc_platform_s::agent_queue, agent_s::agent_status, ListSearch(), MC_AGENT_NEUTRAL, agency_s::mc_platform, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by MC_RetrieveAgent_chdl().

5.38.22.4 EXPORTMC char* MC_RetrieveAgentCode (MCAgent_t agent)

Retrieves an agent's Ch code.

Returns

a malloc'd character string on success, NULL on failure

Definition at line 1965 of file libmc.c.

References agent_datastate_s::agent_code, buf, agent_s::datastate, agent_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, and agent_datastate_s::task_progress.

Referenced by MC_RetrieveAgentCode_chdl().

5.38.22.5 EXPORTMC int MC_SearchForService (MCAgency_t attr, const char * searchString, char *** agentNames, char *** serviceNames, int ** agentIDs, int * numResults)

Search the directory facilitator for a service.

Returns

0 on success, error_code_t on failure

Parameters

attr (input) a MobileC agency handle

searchString (input) substring to search services for

agentNames (return) array of agent names with matching services

serviceNames (return) array of matching service names

agentIDs (return) array of matching agent IDs

numResults (return) number of matching results

5.38.23 Example

Definition at line 1992 of file libmc.c.

References CHECK_NULL, COND_SLEEP_ACTION, mc_platform_s::df, df_AddRequest(), df_request_list_node_Destroy(), df_request_list_node_New(), df_request_search_Destroy(), df_request_search_New(), MC_ERR_MEMORY, agency_s::mc_platform, MC_SUCCESS, and search.

Referenced by MC_SearchForService_chdl().

5.38.23.1 EXPORTMC int MC_SemaphorePost (MCAgency_t *attr*, int *id*)

Post to a MobileC synchronization variable semaphore.

Parameters

attr a MobileC agency handle

id the synchronization variable id to post to

Returns

0 on success, error_code_t type on failure

5.38.24 Example

Definition at line 2042 of file libmc.c.

References agency_s::mc_platform, syncListNode_s::sem, SEMAPHORE_POST, mc_platform_s::syncList, and syncListFind().

Referenced by MC_SemaphorePost_chdl().

5.38.24.1 EXPORTMC int MC_SemaphoreWait (MCAgency_t *attr*, int *id*)

Decreases a MobileC synchronization variable semaphore count by one.

Parameters

attr a MobileC agency handle

id synchronization variable id to wait on

Returns

0 on MC_SUCCESS, error_code_t type of failure

Note

If the semaphore count is already zero, this function will block until another thread posts to the semaphore.

5.38.25 Example

Definition at line 2054 of file libmc.c.

References agency_s::mc_platform, syncListNode_s::sem, SEMAPHORE_WAIT, mc_platform_s::syncList, and syncListFind().

Referenced by MC_SemaphoreWait_chdl().

5.38.25.1 EXPORTMC int MC_SendAgent (MCAgency_t *attr*, const char * *message*)

Sends an agent migration message.

Parameters

attr a MobileC agency handle

message a valid MobileC xml agent migration message

Definition at line 2076 of file libmc.c.

References agent_Initialize(), mc_platform_s::agent_queue, agent_s::agent_status, mc_platform_s::ams, COND_BROADCAST, MC_ERR, agency_s::mc_platform, MC_WAIT_MESSGSEND, message_Destroy(), message_InitializeFromString(), message_New(), MUTEX_LOCK, and MUTEX_UNLOCK.

5.38.25.2 EXPORTMC int MC_SendAgentFile (MCAgency_t *attr*, const char * *filename*)

Sends an agent migration message.

Parameters

attr a MobileC agency handle

filename file containing a valid MobileC xml agent migration message

Definition at line 2124 of file libmc.c.

References agent_Initialize(), mc_platform_s::agent_queue, agent_s::agent_status, mc_platform_s::ams, buf, COND_BROADCAST, agency_s::mc_platform, MC_WAIT_MESSGSEND, message_Destroy(), message_InitializeFromString(), message_New(), MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by handler_SEND().

5.38.25.3 EXPORTMC int MC_SendAgentMigrationMessage (MCAgency_t *attr*, const char * *message*, const char * *hostname*, int *port*)

Sends an agent migration message.

Parameters

attr a MobileC agency handle

message a valid MobileC xml agent migration message

hostname host to send the message to

port port to send the message to

Definition at line 2190 of file libmc.c.

References MC_ERR, agency_s::mc_platform, message_Destroy(), message_InitializeFromString(), message_New(), and mc_platform_s::message_queue.

Referenced by MC_SendAgentMigrationMessage_chdl().

5.38.25.4 EXPORTMC int MC_SendAgentMigrationMessageFile (MCAgency_t *attr*, const char * *filename*, const char * *hostname*, int *port*)

Sends an agent migration message.

Parameters

attr a MobileC agency handle

filename file containing a valid MobileC xml agent migration message

hostname hostname to send the agent to

port port to send the agent to

Definition at line 2224 of file libmc.c.

References agent_Initialize(), mc_platform_s::agent_queue, agent_s::agent_status, mc_platform_s::ams, buf, COND_BROADCAST, agency_s::mc_platform, MC_WAIT_MESSGSEND, message_Destroy(), message_InitializeFromString(), message_New(), MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by MC_SendAgentMigrationMessageFile_chdl().

5.38.25.5 EXPORTMC int MC_SetAgentStatus (MCAgent_t *agent*, enum MC_AgentStatus_e *status*)

Set an agent's status.

Parameters

agent a MobileC agent

status agent status of type 'enum MC_AgentStatus_e'

Returns

0 on success, or error_code_t on failure

Definition at line 2304 of file libmc.c.

References agent_s::agent_status, mc_platform_s::ams, COND_SIGNAL, agent_s::lock, agent_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::orphan.

Referenced by MC_SetAgentStatus_chdl().

5.38.25.6 EXPORTMC int MC_SetDefaultAgentStatus (MCAgency_t *agency*, enum MC_AgentStatus_e *status*)

Sets default incoming agent status.

Parameters

agency a MobileC agency handle

status the status to set all incoming agents

Returns

0 on success, error_type_t on failure

Note

using this function will override any status the incoming agent attempts to set for itself.

Definition at line 2319 of file libmc.c.

References `mc_platform_s::default_agentstatus`, and `agency_s::mc_platform`.

Referenced by `MC_SetDefaultAgentStatus_chdl()`.

5.38.25.7 EXPORTMC int MC_SetThreadOff (MCAgencyOptions_t * *options*, enum MC_ThreadIndex_e *index*)

Sets a MobileC thread to "off" status.

Parameters

options MobileC options previously initialized with [MC_InitializeAgencyOptions\(\)](#)

index the thread to set

Returns

0 on success, `error_code_t` on failure

Note

This function must be called before [MC_Initialize\(\)](#). Once an agency is started with `MC_Initialize`, the `MC_SetThread` functions will have no effect.

Definition at line 2346 of file libmc.c.

References `SET_THREAD_OFF`, and `MCAgencyOptions_s::threads`.

5.38.25.8 EXPORTMC int MC_SetThreadOn (MCAgencyOptions_t * *options*, enum MC_ThreadIndex_e *index*)

Sets a MobileC thread to "on" status.

Parameters

options MobileC options previously initialized with [MC_InitializeAgencyOptions\(\)](#)

index the thread to set

Returns

0 on success, `error_code_t` on failure

Note

This function must be called before [MC_Initialize\(\)](#). Once an agency is started with `MC_Initialize`, the `MC_SetThread` functions will have no effect.

Definition at line 2329 of file libmc.c.

References `SET_THREAD_ON`, and `MCAgencyOptions_s::threads`.

5.38.25.9 EXPORTMC int MC_SetThreadsAllOff (MCAgencyOptions_t * *options*)

Set all MobileC threads to 'off' status.

Parameters

options a MobileC options structure initialized with with the [MC_InitializeAgencyOptions\(\)](#) function.

Returns

0 on success, error code on failure.

Definition at line 2353 of file libmc.c.

References MC_THREAD_ALL, SET_THREAD_OFF, and MCAgencyOptions_s::threads.

5.38.25.10 EXPORTMC int MC_SetThreadsAllOn (MCAgencyOptions_t * *options*)

Set all Mobile-C threads on.

Parameters

options MobileC options structure, initialized with [MC_InitializeAgencyOptions\(\)](#)

Returns

0 on success, error code on failure.

Definition at line 2336 of file libmc.c.

References MC_THREAD_ALL, SET_THREAD_ON, and MCAgencyOptions_s::threads.

5.38.25.11 EXPORTMC int MC_Steer (MCAgency_t *attr*, int(*) (void **data*) *funcptr*, void * *arg*)

Set up a steerable algorithm.

Parameters

attr a MobileC agency handle

funcptr a function pointer to the algorithm

arg an argument for the algorithm function

Returns

0 on success, error_code_t on failure

Note

The algorithm function must contain a call to MC_SteerControl in order for the algorithm to be steerable.

5.38.26 Example

Definition at line 2363 of file libmc.c.

References agency_s::mc_platform, MC_RESTART, MC_RUN, mc_platform_s::MC_steer_command, mc_platform_s::MC_steer_lock, MUTEX_LOCK, and MUTEX_UNLOCK.

5.38.26.1 EXPORTMC enum MC_SteerCommand_e MC_SteerControl (void)

The MobileC user-algorithm steering function.

Returns

The current steering command

Note

This function belongs inside a user's steerable algorithm.

See also

[MC_Steer\(\)](#)

Definition at line 2382 of file libmc.c.

References COND_WAIT, mc_platform_s::MC_steer_command, mc_platform_s::MC_steer_cond, mc_platform_s::MC_steer_lock, MC_SUSPEND, MUTEX_LOCK, and MUTEX_UNLOCK.

5.38.26.2 EXPORTMC int MC_SyncDelete (MCAgency_t *attr*, int *id*)

Deletes a previously initialized synchronization variable.

Parameters

attr a MobileC agency handle

id the sync variable id to delete

Returns

0 on success, or error_code_t on failure

Definition at line 2398 of file libmc.c.

References syncList_s::giant_lock, syncListNode_s::lock, MC_ERR_NOT_FOUND, agency_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, mc_platform_s::syncList, syncListFind(), syncListNodeDestroy(), and syncListRemove().

Referenced by MC_SyncDelete_chdl().

5.38.26.3 EXPORTMC int MC_SyncInit (MCAgency_t *attr*, int *id*)

Initializes a new MobileC synchronization variable.

Parameters

attr a MobileC agency handle

id the requested sync variable id

Returns

new sync variable's id. May be different than the requested id.

Note

Each synchronization variable may be used as a mutex, condition variable, or semaphore. However, it should only be used as one type of synchronization variable per instance, or undefined behaviour may result.

See also

[MC_MutexLock\(\)](#), [MC_MutexUnlock\(\)](#), [MC_CondWait\(\)](#), [MC_CondSignal\(\)](#), [MC_CondBroadcast](#), [MC_SemaphorePost\(\)](#), [MC_SemaphoreWait\(\)](#)

Definition at line 2428 of file libmc.c.

References `syncList_s::giant_lock`, `syncListNode_s::id`, `agency_s::mc_platform`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `node`, `mc_platform_s::syncList`, `syncListAddNode()`, `syncListFind()`, and `syncListNodeNew()`.

Referenced by `MC_SyncInit_chdl()`.

5.38.26.4 EXPORTMC int MC_TerminateAgent (MCAgent_t *agent*)

Halt a running agent.

Returns

0 on success, `error_code_t` on failure

Definition at line 2453 of file libmc.c.

References `agent_s::agent_interp`.

Referenced by `ams_ManageAgentList()`, `MC_DeleteAgent()`, and `MC_TerminateAgent_chdl()`.

5.38.26.5 EXPORTMC int MC_TerminateAgentWG (MCAgent_t *calling_agent*, MCAgent_t *agent*)

Definition at line 2463 of file libmc.c.

References `agent_s::agent_interp`, `MC_ERR_INVALID_ARGS`, and `agent_s::wg_code`.

Referenced by `MC_DeleteAgentWG()`, and `MC_TerminateAgentWG_chdl()`.

5.38.26.6 EXPORTMC int MC_WaitAgent (MCAgency_t *attr*)

Wait indefinitely.

Note

This function is intended to block the calling thread forever. Wait for an agent arrival event
This function blocks until an agent arrival signal is triggered, at which point it unblocks.

Definition at line 2492 of file libmc.c.

References `mc_platform_s::agent_queue`, `COND_WAIT`, `mc_platform`, `agency_s::mc_platform`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, and `size`.

5.38.26.7 EXPORTMC MCAgent_t MC_WaitRetrieveAgent (MCAgency_t *attr*)

Wait and retrieve an agent.

Returns

a valid MobileC agent on success, or NULL on failure

Note

This function blocks until the arrival of an agent. The agent is retrieved after it is initialized, but before it is executed.

Definition at line 2512 of file libmc.c.

References `mc_platform_s::agent_queue`, `ListSearch()`, `agency_s::mc_platform`, `MC_RECV_AGENT`, `MC_WaitSignal()`, `MUTEX_LOCK`, and `MUTEX_UNLOCK`.

5.38.26.8 EXPORTMC int MC_WaitSignal (MCAgency_t *attr*, int *signals*)

Wait for a MobileC signal.

Parameters

attr a MobileC agency handle

signals a flag of signals to wait for, of type 'enum MC_Signal_e'

Returns

0 on success, `error_code_t` on failure

Note

the parameter 'signals' may be something like 'MC_RECV_MESSAGE | MC_RECV_AGENT', etc.

5.38.27 Example

Definition at line 2530 of file libmc.c.

References `COND_WAIT`, `mc_platform_s::giant`, `mc_platform_s::giant_lock`, `agency_s::mc_platform`, `mc_platform_s::MC_signal`, `mc_platform_s::MC_signal_cond`, `mc_platform_s::MC_signal_lock`, `MUTEX_LOCK`, and `MUTEX_UNLOCK`.

Referenced by `MC_WaitRetrieveAgent()`.

5.39 /home/dko/Projects/mobilec/src/include/macros.h File Reference

```
#include <pthread.h>
#include <semaphore.h>
#include "config.h"
#include <errno.h>
```

Defines

- #define [GET_THREAD_MODE](#)(a, b) ((a & (1<<b)) / (1<<b))
- #define [SET_THREAD_ON](#)(a, b) a = (a | (1<<b))
- #define [SET_THREAD_OFF](#)(a, b) a = (a & (~(1<<b)))
- #define [STRUCT](#)(name, members)
- #define [SOCKET_ERROR](#)()
- #define [PTHREAD_STACK_SIZE](#) 131072
- #define [THREAD_CREATE](#)(thread_handle, function, arg)
- #define [THREAD_CANCEL](#)(thread_handle) pthread_cancel(thread_handle)
- #define [THREAD_JOIN](#)(thread_handle) pthread_join(thread_handle, NULL)
- #define [THREAD_DETACH](#)(thread_handle)
- #define [THREAD_EXIT](#)() pthread_exit(NULL)
- #define [MUTEX_T](#) pthread_mutex_t
- #define [MUTEX_INIT](#)(mutex) pthread_mutex_init(mutex, NULL)
- #define [MUTEX_DESTROY](#)(mutex) pthread_mutex_destroy(mutex)
- #define [MUTEX_LOCK](#)(mutex)
- #define [MUTEX_UNLOCK](#)(mutex) pthread_mutex_unlock(mutex)
- #define [MUTEX_NEW](#)(mutex)
- #define [COND_T](#) pthread_cond_t
- #define [COND_INIT](#)(cond) pthread_cond_init([cond](#), NULL)
- #define [COND_DESTROY](#)(cond) pthread_cond_destroy([cond](#))
- #define [COND_WAIT](#)(cond, mutex) pthread_cond_wait([cond](#), mutex)
- #define [COND_SLEEP](#)(cond, mutex, test)
- #define [COND_RESET](#)(cond, mutex) pthread_mutex_unlock(mutex);
- #define [COND_SLEEP_ACTION](#)(cond, mutex, action)
- #define [SIGNAL](#)(cond, mutex, action)
- #define [COND_BROADCAST](#)(cond) pthread_cond_broadcast([cond](#))
- #define [COND_SIGNAL](#)(cond) pthread_cond_signal([cond](#))
- #define [SEMAPHORE_T](#) sem_t
- #define [SEMAPHORE_INIT](#)(sem) sem_init(sem, 0, 0)
- #define [SEMAPHORE_DESTROY](#)(sem) sem_destroy(sem)
- #define [SEMAPHORE_WAIT](#)(sem) sem_wait(sem)
- #define [SEMAPHORE_POST](#)(sem) sem_post(sem)
- #define [RWLOCK_T](#) mc_rwlock_t
- #define [RWLOCK_INIT](#)(rwlock) mc_rwlock_init(rwlock)
- #define [RWLOCK_DESTROY](#)(rwlock) mc_rwlock_destroy(rwlock)
- #define [RWLOCK_RDLOCK](#)(rwlock) mc_rwlock_rdlock(rwlock)
- #define [RWLOCK_RDUNLOCK](#)(rwlock) mc_rwlock_rdunlock(rwlock)
- #define [RWLOCK_WRLOCK](#)(rwlock) mc_rwlock_wrlock(rwlock)

- #define [RWLOCK_WRUNLOCK](#)(rwlock) mc_rwlock_wrunlock(rwlock)
- #define [WAKE_QUEUE](#)(queue, action)
- #define [SLEEP_QUEUE](#)(queue)
- #define [SLEEP_RESET](#)(queue) pthread_mutex_unlock(queue->thread_mutex)
- #define [CHECK_NULL](#)(var, action)
- #define [WARN](#)(message)
- #define [CH_DATATYPE_SIZE](#)(type, size)
- #define [CH_DATATYPE_STRING](#)(type, string)
- #define [CH_DATATYPE_VALUE_STRING](#)(type, string, p)
- #define [CH_STRING_DATATYPE](#)(string, type)
- #define [CH_DATATYPE_STR_TO_VAL](#)(type, string, val)

5.39.1 Define Documentation

5.39.1.1 #define CH_DATATYPE_SIZE(type, size)

Value:

```

switch(type) {
    case CH_CHARTYPE:
        size = sizeof(char);
        break;
    case CH_INTTYPE:
        size = sizeof(int);
        break;
    case CH_UINTTYPE:
        size = sizeof(unsigned int);
        break;
    case CH_SHORTTYPE:
        size = sizeof(short);
        break;
    case CH_USHORTTYPE:
        size = sizeof(unsigned short);
        break;
    case CH_FLOATTYPE:
        size = sizeof(float);
        break;
    case CH_DOUBLETYPE:
        size = sizeof(double);
        break;
    default:
        fprintf(stderr, "Unknown data type: %d at %s:%d",
            type, __FILE__, __LINE__);
        size=0;
}

```

Definition at line 490 of file macros.h.

Referenced by `agent_AddPersistentVariable()`, `agent_xml_compose__create_row_nodes()`, `agent_xml_parse__data()`, `agent_xml_parse__fill_row_data()`, `agent_xml_parse__row()`, `interpreter_variable_data_Initialize()`, `interpreter_variable_data_InitializeFromAgent()`, `MC_AgentReturnDataSize()`, and `MC_GetAgentReturnData()`.

5.39.1.2 #define CH_DATATYPE_STR_TO_VAL(type, string, val)

Value:

```

switch (type) { \
    case CH_INTTYPE: \
        *(int*)val = atoi(string); \
    break; \
    case CH_UINTTYPE: \
        *(unsigned int*)val = atoi(string); \
    break; \
    case CH_SHORTTYPE: \
        *(short*)val = (short)atoi(string); /*FIXME*/ \
    break; \
    case CH_USHORTTYPE: \
        *(unsigned short*)val = (unsigned short)atoi(string); /*F
        IXME*/ \
    break; \
    case CH_FLOATTYPE: \
        *(float*)val = strtod(string, NULL); \
    break; \
    case CH_DOUBLETTYPE: \
        *(double*)val = strtod(string, NULL); \
    break; \
    default: \
        fprintf(stderr, \
            "Unsupported data type: %d %s:%d\n", \
            type, __FILE__, __LINE__ ); \
}

```

Definition at line 604 of file macros.h.

Referenced by agent_xml_parse__data().

5.39.1.3 #define CH_DATATYPE_STRING(type, string)

Value:

```

switch(type) { \
    case CH_CHARTYPE: \
        strcpy(string, "char"); \
    break; \
    case CH_INTTYPE: \
        strcpy(string, "int"); \
    break; \
    case CH_UINTTYPE: \
        strcpy(string, "unsigned int"); \
    break; \
    case CH_SHORTTYPE: \
        strcpy(string, "short"); \
    break; \
    case CH_USHORTTYPE: \
        strcpy(string, "unsigned short"); \
    break; \
    case CH_FLOATTYPE: \
        strcpy(string, "float"); \
    break; \
    case CH_DOUBLETTYPE: \
        strcpy(string, "double"); \
    break; \
    default: \
        fprintf(stderr, \
            "Unsupported data type: %d %s:%d\n", \
            type, __FILE__, __LINE__ ); \
}

```

Definition at line 521 of file macros.h.

Referenced by agent_xml_compose__data().

5.39.1.4 #define CH_DATATYPE_VALUE_STRING(type, string, p)**Value:**

```

switch(type) {
    case CH_CHARTYPE:
        sprintf(string, "%c", *((char*)p));
        break;
    case CH_INTTYPE:
        sprintf(string, "%d", *((int*)p));
        break;
    case CH_UINTTYPE:
        sprintf(string, "%d", *((unsigned int*)p));
        break;
    case CH_SHORTTYPE:
        sprintf(string, "%d", *((short*)p));
        break;
    case CH_USHORTTYPE:
        sprintf(string, "%d", *((unsigned short*)p));
        break;
    case CH_FLOATTYPE:
        sprintf(string, "%f", *((float*)p));
        break;
    case CH_DOUBLETTYPE:
        sprintf(string, "%f", *((double*)p));
        break;
    default:
        fprintf(stderr,
            "Unsupported data type: %d %s:%d\n",
            type, __FILE__, __LINE__);
}

```

Definition at line 553 of file macros.h.

Referenced by agent_xml_compose__create_row_nodes(), and agent_xml_compose__data().

5.39.1.5 #define CH_STRING_DATATYPE(string, type)**Value:**

```

if (!strcmp(string, "int")) {
    type = CH_INTTYPE;
} else if (!strcmp(string, "float")) {
    type = CH_FLOATTYPE;
} else if (!strcmp(string, "double")) {
    type = CH_DOUBLETTYPE;
} else if (!strcmp(string, "unsigned int")) {
    type = CH_UINTTYPE;
} else if (!strcmp(string, "short")) {
    type = CH_SHORTTYPE;
} else if (!strcmp(string, "unsigned short")) {
    type = CH_USHORTTYPE;
} else if (!strcmp(string, "char")) {
    type = CH_CHARTYPE;
} else {
    fprintf(stderr,
        "Unsupported data type: %d %s:%d\n",
        type, __FILE__, __LINE__);
}

```

Definition at line 582 of file macros.h.

Referenced by agent_xml_parse__data().

5.39.1.6 #define CHECK_NULL(var, action)

Value:

```
if ( var == NULL ) {
    fprintf(stderr, "Pointer var is null: expected otherwise.\n");
    fprintf(stderr, "Error occured at %s:%d", __FILE__, __LINE__);
    action;
}
```

Definition at line 473 of file macros.h.

Referenced by agent_AddPersistentVariable(), agent_datastate_New(), agent_xml_parse__home(), agent_xml_parse__name(), agent_xml_parse__owner(), agent_xml_parse__sender(), agent_xml_parse__task(), ams_Initialize(), barrier_node_Initialize(), barrier_queue_New(), df_request_list_New(), df_request_list_node_New(), df_request_search_New(), fipa_agent_identifier_Parse(), fipa_word_Parse(), http_ParseExpression(), interpreter_variable_data_Initialize(), interpreter_variable_data_InitializeFromAgent(), interpreter_variable_data_New(), MC_AclSend_chdl(), MC_AddAgent_chdl(), MC_Barrier_chdl(), MC_BarrierDelete_chdl(), MC_BarrierInit_chdl(), MC_CondBroadcast_chdl(), MC_CondReset_chdl(), MC_CondSignal_chdl(), MC_CondWait_chdl(), MC_DeleteAgent(), MC_DeleteAgentWG(), MC_DeregisterService_chdl(), MC_End_chdl(), MC_FindAgentByID_chdl(), MC_FindAgentByName_chdl(), MC_HaltAgency_chdl(), MC_MutexLock_chdl(), MC_MutexUnlock_chdl(), mc_platform_Initialize(), MC_RegisterService(), MC_RegisterService_chdl(), MC_ResumeAgency_chdl(), MC_RetrieveAgent_chdl(), mc_rwlock_init(), MC_SearchForService(), MC_SearchForService_chdl(), MC_SemaphorePost_chdl(), MC_SemaphoreWait_chdl(), MC_SendAgentMigrationMessage_chdl(), MC_SendSteerCommand_chdl(), MC_SetDefaultAgentStatus_chdl(), MC_SyncDelete_chdl(), MC_SyncInit_chdl(), message_InitializeFromAgent(), message_InitializeFromConnection(), message_InitializeFromString(), message_New(), message_queue_SendOutgoing(), message_send_Thread(), message_xml_parse__message(), mtp_http_InitializeFromConnection(), mtp_http_New(), syncListNodeInit(), syncListNodeNew(), xml_get_cdata(), xml_get_text(), and xml_new_cdata().

5.39.1.7 #define COND_BROADCAST(cond) pthread_cond_broadcast(cond)

Definition at line 225 of file macros.h.

Referenced by acc_MessageHandlerThread(), acc_Thread(), ams_Thread(), df_Thread(), handler_QUIT(), listen_Thread(), MC_Barrier(), MC_CondBroadcast(), MC_End(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessageFile(), and MC_SendSteerCommand().

5.39.1.8 #define COND_DESTROY(cond) pthread_cond_destroy(cond)

Definition at line 201 of file macros.h.

Referenced by ams_Destroy(), barrier_node_Destroy(), df_Destroy(), df_request_list_node_Destroy(), df_request_search_Destroy(), mc_platform_Destroy(), mc_rwlock_destroy(), and syncListNodeDestroy().

5.39.1.9 #define COND_INIT(cond) pthread_cond_init(cond, NULL)

Definition at line 198 of file macros.h.

Referenced by acc_Initialize(), ams_Initialize(), barrier_node_Initialize(), df_Initialize(), df_request_list_New(), df_request_list_node_New(), df_request_search_New(), mc_platform_Initialize(), mc_rwlock_init(), syncListNodeInit(), and syncListNodeNew().

5.39.1.10 #define COND_RESET(cond, mutex) pthread_mutex_unlock(mutex);

Definition at line 213 of file macros.h.

5.39.1.11 #define COND_SIGNAL(cond) pthread_cond_signal(cond)

Definition at line 227 of file macros.h.

Referenced by agent_RunChScriptThread(), AP_QUEUE_STD_DEFN_TEMPLATE(), MC_AddAgent(), MC_CondSignal(), MC_End(), MC_ResetSignal(), mc_rwlock_rdunlock(), mc_rwlock_wrunlock(), and MC_SetAgentStatus().

5.39.1.12 #define COND_SLEEP(cond, mutex, test)

Value:

```
if (pthread_mutex_lock( mutex )) \
    printf("pthread lock error: %s:%d\n", __FILE__, __LINE__); \
if (!test) { \
    pthread_cond_wait( cond, mutex ); \
}
```

Definition at line 207 of file macros.h.

5.39.1.13 #define COND_SLEEP_ACTION(cond, mutex, action)

Value:

```
if (pthread_mutex_lock( mutex )) \
    printf("pthread lock error: %s:%d\n", __FILE__, __LINE__); \
action; \
pthread_cond_wait( cond, mutex );
```

Definition at line 215 of file macros.h.

Referenced by MC_SearchForService().

5.39.1.14 #define COND_T pthread_cond_t

Definition at line 196 of file macros.h.

Referenced by acc_Initialize(), ams_Initialize(), barrier_node_Initialize(), df_Initialize(), df_request_list_New(), df_request_list_node_New(), df_request_search_New(), mc_platform_Initialize(), mc_rwlock_init(), syncListNodeInit(), and syncListNodeNew().

5.39.1.15 #define COND_WAIT(cond, mutex) pthread_cond_wait(cond, mutex)

Definition at line 204 of file macros.h.

Referenced by acc_MessageHandlerThread(), acc_Thread(), agent_mailbox_WaitRetrieve(), ams_Thread(), df_Thread(), MC_Barrier(), MC_CondWait(), MC_MainLoop(), mc_platform_Initialize(), mc_rwlock_rdlock(), mc_rwlock_wrlock(), MC_SterControl(), MC_WaitAgent(), MC_WaitSignal(), and message_Send().

5.39.1.16 #define GET_THREAD_MODE(a, b) ((a & (1<<b)) / (1<<b))

Definition at line 112 of file macros.h.

Referenced by MC_End(), and mc_platform_Initialize().

5.39.1.17 #define MUTEX_DESTROY(mutex) pthread_mutex_destroy(mutex)

Definition at line 179 of file macros.h.

Referenced by agent_Destroy(), agent_Initialize(), ams_Destroy(), barrier_node_Destroy(), df_Destroy(), df_request_list_node_Destroy(), df_request_search_Destroy(), mc_platform_Destroy(), mc_rwlock_destroy(), and syncListNodeDestroy().

5.39.1.18 #define MUTEX_INIT(mutex) pthread_mutex_init(mutex, NULL)

Definition at line 176 of file macros.h.

Referenced by acc_Initialize(), agent_Copy(), agent_Initialize(), agent_New(), agent_NewBinary(), ams_Initialize(), barrier_node_Initialize(), df_Initialize(), df_request_list_New(), df_request_list_node_New(), df_request_search_New(), mc_platform_Initialize(), MC_RegisterService(), mc_rwlock_init(), syncListInit(), syncListNodeInit(), and syncListNodeNew().

5.39.1.19 #define MUTEX_LOCK(mutex)

Value:

```
if (pthread_mutex_lock( mutex )) \
    fprintf(stderr, "pthread lock error: %s:%d\n", __FILE__, __LINE__)
```

Definition at line 182 of file macros.h.

Referenced by acc_MessageHandlerThread(), acc_Thread(), agent_Copy(), agent_Destroy(), agent_mailbox_WaitRetrieve(), agent_queue_Flush(), agent_RunChScriptThread(), ams_ManageAgentList(), ams_Print(), ams_Thread(), AP_QUEUE_SEARCH_TEMPLATE(), AP_QUEUE_STD_DEFN_TEMPLATE(), df_Destroy(), df_node_Destroy(), df_request_list_Pop(), df_SearchForService(), df_Thread(), handler_QUIT(), interpreter_variable_data_Initialize(), listen_Thread(), MC_AddAgent(), MC_Barrier(), MC_CallAgentFunc(), MC_CallAgentFuncArg(), MC_CallAgentFuncV(), MC_CallAgentFuncVar(), MC_CondBroadcast(), MC_CondReset(), MC_CondSignal(), MC_CondWait(), MC_End(), MC_GetAgentName(), MC_GetAgentStatus(), MC_GetAllAgents(), MC_HaltAgency(), MC_MainLoop(), MC_MutexLock(), mc_platform_Initialize(), MC_PrintAgentCode(), MC_ResetSignal(), MC_ResumeAgency(), MC_RetrieveAgent(), MC_RetrieveAgentCode(), mc_rwlock_rdlock(), mc_rwlock_runlock(), mc_rwlock_wrlock(), mc_rwlock_wrunlock(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessageFile(), MC_SendSteerCommand(), MC_SetAgentStatus(), MC_Steer(), MC_SteerControl(), MC_SyncDelete(), MC_SyncInit(), MC_WaitAgent(), MC_WaitRetrieveAgent(), MC_WaitSignal(), message_queue_SendOutgoing(), message_Send(), and request_handler_DEREGISTER().

5.39.1.20 #define MUTEX_NEW(mutex)

Value:

```
mutex = (pthread_mutex_t*)malloc(sizeof(pthread_mutex_t)); \
    if (mutex == NULL) \
        fprintf(stderr, "Memory Error. %s:%d\n", __FILE__, __LINE__); \
```

Definition at line 187 of file macros.h.

Referenced by agent_New().

5.39.1.21 #define MUTEX_T pthread_mutex_t

Definition at line 174 of file macros.h.

Referenced by acc_Initialize(), agent_Copy(), agent_Initialize(), agent_NewBinary(), ams_Initialize(), barrier_node_Initialize(), df_Initialize(), df_request_list_New(), df_request_list_node_New(), df_request_search_New(), mc_platform_Initialize(), MC_RegisterService(), mc_rwlock_init(), syncListInit(), syncListNodeInit(), and syncListNodeNew().

5.39.1.22 #define MUTEX_UNLOCK(mutex) pthread_mutex_unlock(mutex)

Definition at line 185 of file macros.h.

Referenced by acc_MessageHandlerThread(), acc_Thread(), agent_mailbox_WaitRetrieve(), agent_queue_Flush(), agent_RunChScriptThread(), ams_ManageAgentList(), ams_Print(), ams_Thread(), AP_QUEUE_SEARCH_TEMPLATE(), AP_QUEUE_STD_DEFN_TEMPLATE(), df_request_list_Pop(), df_SearchForService(), df_Thread(), handler_QUIT(), interpreter_variable_data_Initialize(), listen_Thread(), MC_AddAgent(), MC_Barrier(), MC_CallAgentFunc(), MC_CallAgentFuncArg(), MC_CallAgentFuncV(), MC_CallAgentFuncVar(), MC_CondBroadcast(), MC_CondReset(), MC_CondSignal(), MC_CondWait(), MC_End(), MC_GetAgentName(), MC_GetAgentStatus(), MC_GetAllAgents(), MC_HaltAgency(), MC_MainLoop(), MC_MutexUnlock(), mc_platform_Initialize(), MC_PrintAgentCode(), MC_ResetSignal(), MC_ResumeAgency(), MC_RetrieveAgent(), MC_RetrieveAgentCode(), mc_rwlock_rdlock(), mc_rwlock_rdunlock(), mc_rwlock_wrlock(), mc_rwlock_wrunlock(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessageFile(), MC_SendSteerCommand(), MC_SetAgentStatus(), MC_Steer(), MC_SteerControl(), MC_SyncDelete(), MC_SyncInit(), MC_WaitAgent(), MC_WaitRetrieveAgent(), MC_WaitSignal(), message_queue_SendOutgoing(), message_Send(), and request_handler_DEREGISTER().

5.39.1.23 #define PTHREAD_STACK_SIZE 131072

Definition at line 139 of file macros.h.

5.39.1.24 #define RWLOCK_DESTROY(rwlock) mc_rwlock_destroy(rwlock)

Definition at line 269 of file macros.h.

Referenced by barrier_queue_Destroy().

5.39.1.25 #define RWLOCK_INIT(rwlock) mc_rwlock_init(rwlock)

Definition at line 261 of file macros.h.

Referenced by barrier_queue_New(), and syncListInit().

5.39.1.26 #define RWLOCK_RDLOCK(rwlock) mc_rwlock_rdlock(rwlock)

Definition at line 287 of file macros.h.

Referenced by barrier_queue_Get(), and syncListFind().

5.39.1.27 #define RWLOCK_RDUNLOCK(rwlock) mc_rwlock_rdunlock(rwlock)

Definition at line 289 of file macros.h.

Referenced by barrier_queue_Get(), and syncListFind().

5.39.1.28 #define RWLOCK_T mc_rwlock_t

Definition at line 254 of file macros.h.

Referenced by barrier_queue_New(), and syncListInit().

5.39.1.29 #define RWLOCK_WRLOCK(rwlock) mc_rwlock_wrlock(rwlock)

Definition at line 291 of file macros.h.

Referenced by barrier_queue_Add(), barrier_queue_Delete(), syncListAddNode(), syncListDelete(), and syncListRemove().

5.39.1.30 #define RWLOCK_WRUNLOCK(rwlock) mc_rwlock_wrunlock(rwlock)

Definition at line 293 of file macros.h.

Referenced by barrier_queue_Add(), barrier_queue_Delete(), syncListAddNode(), syncListDelete(), and syncListRemove().

5.39.1.31 #define SEMAPHORE_DESTROY(sem) sem_destroy(sem)

Definition at line 239 of file macros.h.

Referenced by syncListNodeDestroy().

5.39.1.32 #define SEMAPHORE_INIT(sem) sem_init(sem, 0, 0)

Definition at line 236 of file macros.h.

Referenced by syncListNodeInit(), and syncListNodeNew().

5.39.1.33 #define SEMAPHORE_POST(sem) sem_post(sem)

Definition at line 244 of file macros.h.

Referenced by MC_SemaphorePost().

5.39.1.34 #define SEMAPHORE_T sem_t

Definition at line 234 of file macros.h.

Referenced by syncListNodeInit(), and syncListNodeNew().

5.39.1.35 #define SEMAPHORE_WAIT(sem) sem_wait(sem)

Definition at line 242 of file macros.h.

Referenced by MC_SemaphoreWait().

5.39.1.36 #define SET_THREAD_OFF(a, b) a = (a & ~(1<<b)))

Definition at line 116 of file macros.h.

Referenced by MC_SetThreadOff(), and MC_SetThreadsAllOff().

5.39.1.37 #define SET_THREAD_ON(a, b) a = (a | (1<<b))

Definition at line 115 of file macros.h.

Referenced by MC_SetThreadOn(), and MC_SetThreadsAllOn().

5.39.1.38 #define SIGNAL(cond, mutex, action)

Value:

```
pthread_mutex_lock( mutex ); \
action; \
pthread_cond_signal( cond ); \
pthread_mutex_unlock( mutex )
```

Definition at line 220 of file macros.h.

Referenced by agent_RunChScriptThread(), df_Add(), df_AddRequest(), and request_handler_SEARCH().

5.39.1.39 #define SLEEP_QUEUE(queue)

Value:

```
if (pthread_mutex_lock( queue->thread_mutex )) \
printf("pthread lock error: %s:%d\n", __FILE__, __LINE__); \
pthread_cond_wait( queue->touched_signal, queue->thread_mutex )
```

Definition at line 307 of file macros.h.

5.39.1.40 #define SLEEP_RESET(queue) pthread_mutex_unlock(queue->thread_mutex)

Definition at line 311 of file macros.h.

5.39.1.41 #define SOCKET_ERROR()

Value:

```
printf("Socket error. %s:%d\nerrno:%d", __FILE__, __LINE__, errno); \
sleep(500)
```

Definition at line 132 of file macros.h.

Referenced by listen_Thread(), mc_platform_Destroy(), message_InitializeFromConnection(), message_send_Thread(), mtp_http_InitializeFromConnection(), net_bind(), and net_connect().

5.39.1.42 #define STRUCT(name, members)

Value:

```
typedef struct name##_s { \
    members \
} name##_t; \
typedef name##_t* name##_p;
```

Definition at line 120 of file macros.h.

5.39.1.43 #define THREAD_CANCEL(thread_handle) pthread_cancel(thread_handle)

Definition at line 155 of file macros.h.

Referenced by MC_End().

5.39.1.44 #define THREAD_CREATE(thread_handle, function, arg)

Value:

```
while(pthread_create( \
    thread_handle, \
    &attr, \
    function, \
    (void*) arg \
) < 0) { \
    printf("pthread_create failed. Trying again...\n"); \
}
```

Definition at line 145 of file macros.h.

Referenced by acc_Start(), acc_Thread(), agent_RunChScript(), ams_Start(), cmd_prompt_Start(), df_Start(), MC_AddStationaryAgent(), and message_Send().

5.39.1.45 #define THREAD_DETACH(thread_handle)

Value:

```
if(pthread_detach(thread_handle) < 0) { \
    printf("pthread_detach failed. %s:%d\n", __FILE__, __LINE__); \
}
```

Definition at line 161 of file macros.h.

Referenced by acc_Thread(), and message_Send().

5.39.1.46 #define THREAD_EXIT() pthread_exit(NULL)

Definition at line 166 of file macros.h.

Referenced by acc_MessageHandlerThread(), acc_Thread(), ams_Thread(), df_Thread(), and listen_Thread().

5.39.1.47 #define THREAD_JOIN(thread_handle) pthread_join(thread_handle, NULL)

Definition at line 158 of file macros.h.

Referenced by MC_End().

5.39.1.48 #define WAKE_QUEUE(queue, action)

Value:

```
if (pthread_mutex_trylock( queue->lock ) == 0) {    \
    action;                                         \
    pthread_cond_signal( queue->cond);              \
    pthread_mutex_unlock( queue->lock);             \
}
```

Definition at line 301 of file macros.h.

5.39.1.49 #define WARN(message)

Value:

```
fprintf(stderr, "\nWARNING: "); \
    fprintf(stderr, message ); \
    fprintf(stderr, " %s:%d\n", __FILE__, __LINE__ )
```

Definition at line 480 of file macros.h.

Referenced by agent_RunChScriptThread(), and message_InitializeFromAgent().

5.40 /home/dko/Projects/mobilec/src/include/mc_error.h File Reference

Typedefs

- typedef enum [error_code_e](#) [error_code_t](#)

Enumerations

- enum [error_code_e](#) {
[MC_SUCCESS](#) = 0, [MC_ERR](#), [MC_ERR_CONNECT](#), [MC_ERR_PARSE](#),
[MC_ERR_EMPTY](#), [MC_ERR_INVALID](#), [MC_ERR_INVALID_ARGS](#), [MC_ERR_NOT_FOUND](#),
[MC_ERR_MEMORY](#), [MC_ERR_SEND](#), [MC_WARN_DUPLICATE](#), [MC_SUCCESS](#) = 0,
[ERR](#), [MC_ERR_CONNECT](#), [MC_ERR_PARSE](#), [MC_ERR_EMPTY](#),
[MC_ERR_INVALID](#), [MC_ERR_INVALID_ARGS](#), [MC_ERR_NOT_FOUND](#), [MC_ERR_MEMORY](#),
[MC_ERR_SEND](#), [MC_WARN_DUPLICATE](#) }

5.40.1 Typedef Documentation

5.40.1.1 typedef enum error_code_e error_code_t

5.40.2 Enumeration Type Documentation

5.40.2.1 enum error_code_e

Enumerator:

MC_SUCCESS
MC_ERR
MC_ERR_CONNECT
MC_ERR_PARSE
MC_ERR_EMPTY
MC_ERR_INVALID
MC_ERR_INVALID_ARGS
MC_ERR_NOT_FOUND
MC_ERR_MEMORY
MC_ERR_SEND
MC_WARN_DUPLICATE
MC_SUCCESS
ERR
MC_ERR_CONNECT
MC_ERR_PARSE
MC_ERR_EMPTY

MC_ERR_INVALID
MC_ERR_INVALID_ARGS
MC_ERR_NOT_FOUND
MC_ERR_MEMORY
MC_ERR_SEND
MC_WARN_DUPLICATE

Definition at line 41 of file mc_error.h.

5.41 /home/dko/Projects/mobilec/src/include/mc_platform.h File Reference

```
#include "acc.h"
#include "ams.h"
#include "barrier.h"
#include "cmd_prompt.h"
#include "config.h"
#include "connection.h"
#include "data_structures.h"
#include "df.h"
#include "libmc.h"
#include "../mc_sync/sync_list.h"
#include ../include/macros.h"
#include ../mc_list/list.h"
#include ../include/mc_rwlock.h"
#include ../include/ap_queue_template.h"
#include ../include/data_structures.h"
#include "asm_node.h"
```

Data Structures

- struct [mc_platform_s](#)

Typedefs

- typedef struct [mc_platform_s](#) [mc_platform_t](#)
- typedef [mc_platform_t](#) * [mc_platform_p](#)

Functions

- [mc_platform_p](#) [mc_platform_Initialize](#) ([MCAgency_t](#) agency, [ChOptions_t](#) *ch_options)
- [int](#) [mc_platform_Destroy](#) ([mc_platform_p](#) mc_platform)

5.41.1 Typedef Documentation

5.41.1.1 typedef [mc_platform_t](#)* [mc_platform_p](#)

Definition at line 124 of file [mc_platform.h](#).

5.41.1.2 typedef struct mc_platform_s mc_platform_t

Definition at line 123 of file mc_platform.h.

5.41.2 Function Documentation

5.41.2.1 int mc_platform_Destroy (mc_platform_p mc_platform)

Definition at line 249 of file mc_platform.c.

References mc_platform_s::acc, acc_Destroy(), mc_platform_s::agent_queue, mc_platform_s::ams, ams_Destroy(), mc_platform_s::barrier_queue, barrier_queue_Destroy(), mc_platform_s::cmd_prompt, cmd_prompt_Destroy(), COND_DESTROY, mc_platform_s::connection_queue, mc_platform_s::df, df_Destroy(), mc_platform_s::giant_cond, mc_platform_s::giant_lock, mc_platform_s::interp_options, mc_platform_s::interpreter_queue, mc_platform_s::MC_signal_cond, mc_platform_s::MC_signal_lock, mc_platform_s::MC_steel_cond, mc_platform_s::MC_steel_lock, MC_SUCCESS, mc_platform_s::MC_sync_cond, mc_platform_s::MC_sync_lock, mc_platform_s::message_queue, MUTEX_DESTROY, mc_platform_s::quit_lock, SOCKET_ERROR, and mc_platform_s::sockfd.

Referenced by MC_End().

5.41.2.2 mc_platform_p mc_platform_Initialize (MCAgency_t agency, ChOptions_t * ch_options)

Definition at line 54 of file mc_platform.c.

References mc_platform_s::acc, acc_Initialize(), acc_Start(), mc_platform_s::agency, agent_ChScriptInitVar(), mc_platform_s::agent_queue, mc_platform_s::ams, ams_Initialize(), ams_Start(), mc_platform_s::barrier_queue, barrier_queue_New(), agency_s::bluetooth, mc_platform_s::bluetooth, CHECK_NULL, mc_platform_s::cmd_prompt, cmd_prompt_Initialize(), cmd_prompt_Start(), COND_INIT, COND_T, COND_WAIT, mc_platform_s::connection_queue, agency_s::default_agentstatus, mc_platform_s::default_agentstatus, DEFAULT_HOSTNAME_LENGTH, mc_platform_s::df, df_Initialize(), df_Start(), mc_platform_s::err, GET_THREAD_MODE, mc_platform_s::giant, mc_platform_s::giant_cond, mc_platform_s::giant_lock, mc_platform_s::hostname, agency_s::initInterps, mc_platform_s::initInterps, mc_platform_s::interp_options, mc_platform_s::interpreter_queue, agency_s::last_error, MC_ERR_MEMORY, MC_NO_SIGNAL, mc_platform, mc_platform_s::MC_signal, mc_platform_s::MC_signal_cond, mc_platform_s::MC_signal_lock, mc_platform_s::MC_steel_cond, mc_platform_s::MC_steel_lock, mc_platform_s::MC_sync_cond, mc_platform_s::MC_sync_lock, MC_THREAD_ACC, MC_THREAD_ALL, MC_THREAD_AMS, MC_THREAD_CP, MC_THREAD_DF, mc_platform_s::message_queue, MUTEX_INIT, MUTEX_LOCK, MUTEX_T, MUTEX_UNLOCK, mc_platform_s::port, agency_s::portno, mc_platform_s::quit, mc_platform_s::quit_cond, mc_platform_s::quit_lock, agency_s::stack_size, mc_platform_s::stack_size, mc_platform_s::syncList, syncListInit(), and agency_s::threads.

Referenced by MC_Initialize().

5.42 /home/dko/Projects/mobilec/src/include/mc_rwlock.h File Reference

```
#include "macros.h"
```

Data Structures

- struct [mc_rwlock_s](#)

Typedefs

- typedef struct [mc_rwlock_s](#) [mc_rwlock_t](#)
- typedef [mc_rwlock_t](#) * [mc_rwlock_p](#)

Functions

- [int mc_rwlock_init](#) ([mc_rwlock_p](#) *rwlock*)
- [int mc_rwlock_destroy](#) ([mc_rwlock_p](#) *rwlock*)
- [int mc_rwlock_rdlock](#) ([mc_rwlock_p](#) *rwlock*)
- [int mc_rwlock_rdunlock](#) ([mc_rwlock_p](#) *rwlock*)
- [int mc_rwlock_wrlock](#) ([mc_rwlock_p](#) *rwlock*)
- [int mc_rwlock_wrunlock](#) ([mc_rwlock_p](#) *rwlock*)

5.42.1 Typedef Documentation

5.42.1.1 typedef [mc_rwlock_t](#)* [mc_rwlock_p](#)

Definition at line 46 of file [mc_rwlock.h](#).

5.42.1.2 typedef struct [mc_rwlock_s](#) [mc_rwlock_t](#)

5.42.2 Function Documentation

5.42.2.1 [int mc_rwlock_destroy](#) ([mc_rwlock_p](#) *rwlock*)

Definition at line 66 of file [mc_rwlock.c](#).

References [mc_rwlock_s::cond](#), [COND_DESTROY](#), [mc_rwlock_s::lock](#), and [MUTEX_DESTROY](#).

5.42.2.2 [int mc_rwlock_init](#) ([mc_rwlock_p](#) *rwlock*)

Definition at line 46 of file [mc_rwlock.c](#).

References [CHECK_NULL](#), [mc_rwlock_s::cond](#), [COND_INIT](#), [COND_T](#), [mc_rwlock_s::lock](#), [MC_ERR_MEMORY](#), [MUTEX_INIT](#), [MUTEX_T](#), [mc_rwlock_s::num_readers](#), [mc_rwlock_s::write_flag](#), and [mc_rwlock_s::write_request](#).

5.42.2.3 int mc_rwlock_rdlock (mc_rwlock_p *rwlock*)

Definition at line 79 of file mc_rwlock.c.

References mc_rwlock_s::cond, COND_WAIT, mc_rwlock_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, mc_rwlock_s::num_readers, mc_rwlock_s::write_flag, and mc_rwlock_s::write_request.

5.42.2.4 int mc_rwlock_rdunlock (mc_rwlock_p *rwlock*)

Definition at line 94 of file mc_rwlock.c.

References mc_rwlock_s::cond, COND_SIGNAL, mc_rwlock_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, and mc_rwlock_s::num_readers.

5.42.2.5 int mc_rwlock_wrlock (mc_rwlock_p *rwlock*)

Definition at line 107 of file mc_rwlock.c.

References mc_rwlock_s::cond, COND_WAIT, mc_rwlock_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, mc_rwlock_s::num_readers, mc_rwlock_s::write_flag, and mc_rwlock_s::write_request.

5.42.2.6 int mc_rwlock_wrunlock (mc_rwlock_p *rwlock*)

Definition at line 126 of file mc_rwlock.c.

References mc_rwlock_s::cond, COND_SIGNAL, mc_rwlock_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, and mc_rwlock_s::write_flag.

5.43 /home/dko/Projects/mobilec/src/include/message.h File Reference

```
#include "mtp_http.h"
#include <mxml.h>
#include <netinet/in.h>
#include "config.h"
#include "security/interface.h"
```

Data Structures

- struct [message_s](#)
- struct [message_send_arg_s](#)

Typedefs

- typedef enum [message_type_e](#) [message_type_t](#)
- typedef struct [message_s](#) [message_t](#)
- typedef [message_t](#) * [message_p](#)
- typedef struct [message_send_arg_s](#) [message_send_arg_t](#)

Enumerations

- enum [message_type_e](#) {
 [RELAY](#), [REQUEST](#), [SUBSCRIBE](#), [CANCEL](#),
 [N_UNDRSTD](#), [MOBILE_AGENT](#), [QUER_IF](#), [QUER_REF](#),
 [AGENT_UPDATE](#), [RETURN_MSG](#), [FIPA_ACL](#), [ENCRYPTED_DATA](#),
 [ENCRYPTION_INITIALIZE](#), [REQUEST_ENCRYPTION_INITIALIZE](#), [NUM_MESSAGE_TYPE](#), [MSG_SEC](#) }

Functions

- [message_p](#) [message_New](#) (void)
- [message_p](#) [message_Copy](#) ([message_p](#) src)
- int [message_InitializeFromAgent](#) (struct [mc_platform_s](#) *[mc_platform](#), [message_p](#) message, struct [agent_s](#) *[agent](#))
- int [message_InitializeFromConnection](#) (struct [mc_platform_s](#) *[mc_platform](#), [message_p](#) message, struct [connection_s](#) *[connection](#))
- int [message_InitializeFromString](#) (struct [mc_platform_s](#) *[mc_platform](#), [message_p](#) message, const char *string, const char *destination_host, int destination_port, const char *target)
- int [message_Destroy](#) ([message_p](#) message)
- int [auth_rece_send_msg](#) (int sockfd, char *hostname, char *message, char *privkey, char *known_host_filename)
- int [message_Send](#) (struct [mc_platform_s](#) *[mc_platform](#), [message_p](#) message, char *privatekey)
- void * [message_send_Thread](#) (void *arg)
- int [http_to_hostport](#) (const char *http_str, char **host, int *port, char **target)

5.43.1 Typedef Documentation

5.43.1.1 typedef message_t* message_p

Definition at line 115 of file message.h.

5.43.1.2 typedef struct message_send_arg_s message_send_arg_t

5.43.1.3 typedef struct message_s message_t

5.43.1.4 typedef enum message_type_e message_type_t

5.43.2 Enumeration Type Documentation

5.43.2.1 enum message_type_e

Enumerator:

RELAY
REQUEST
SUBSCRIBE
CANCEL
N_UNDRSTD
MOBILE_AGENT
QUER_IF
QUER_REF
AGENT_UPDATE
RETURN_MSG
FIPA_ACL
ENCRYPTED_DATA
ENCRYPTION_INITIALIZE
REQUEST_ENCRYPTION_INITIALIZE
NUM_MESSAGE_TYPE
MSG_SEC

Definition at line 52 of file message.h.

5.43.3 Function Documentation

5.43.3.1 int auth_rece_send_msg (int sockfd, char * hostname, char * message, char * privkey, char * known_host_filename)

Definition at line 450 of file message.c.

References `aes_en_de()`, `initiate_migration_process()`, `read_known_host_file()`, and `send_AES_en_MA()`.

Referenced by `message_send_Thread()`.

5.43.3.2 `int http_to_hostport (const char * http_str, char ** host, int * port, char ** target)`

Definition at line 295 of file `message.c`.

References `MC_ERR_PARSE`.

Referenced by `MC_AclSend()`.

5.43.3.3 `message_p message_Copy (message_p src)`

Definition at line 94 of file `message.c`.

5.43.3.4 `int message_Destroy (message_p message)`

Definition at line 411 of file `message.c`.

References `message_s::addr`, `message_s::agent_xml_flag`, `message_s::from_address`, `MC_SUCCESS`, `message_s::message_body`, `mxmlDelete()`, `message_s::target`, `message_s::to_address`, `message_s::update_name`, and `message_s::xml_root`.

Referenced by `acc_connection_Thread()`, `acc_MessageHandlerThread()`, `ams_ManageAgentList()`, `MC_LoadAgentFromFile()`, `MC_SendAgent()`, `MC_SendAgentFile()`, `MC_SendAgentMigrationMessage()`, `MC_SendAgentMigrationMessageFile()`, and `message_InitializeFromConnection()`.

5.43.3.5 `int message_InitializeFromAgent (struct mc_platform_s * mc_platform, message_p message, struct agent_s * agent)`

Referenced by `ams_ManageAgentList()`.

5.43.3.6 `int message_InitializeFromConnection (struct mc_platform_s * mc_platform, message_p message, struct connection_s * connection)`

5.43.3.7 `int message_InitializeFromString (struct mc_platform_s * mc_platform, message_p message, const char * string, const char * destination_host, int destination_port, const char * target)`

Referenced by `MC_LoadAgentFromFile()`, `MC_SendAgent()`, `MC_SendAgentFile()`, `MC_SendAgentMigrationMessage()`, and `MC_SendAgentMigrationMessageFile()`.

5.43.3.8 `message_p message_New (void)`

Definition at line 70 of file `message.c`.

References `message_s::addr`, `message_s::agent_xml_flag`, `CHECK_NULL`, `message_s::connect_id`, `message_s::from_address`, `message_s::http_type`, `message_s::isHTTP`, `message_s::message_body`, `message_s::message_id`, `message_s::message_type`, `message_s::target`, `message_s::to_address`, `message_s::update_name`, `message_s::update_num`, `message_s::xml_payload`, and `message_s::xml_root`.

Referenced by `acc_connection_Thread()`, `ams_ManageAgentList()`, `MC_LoadAgentFromFile()`, `MC_SendAgent()`, `MC_SendAgentFile()`, `MC_SendAgentMigrationMessage()`, `MC_SendAgentMigrationMessageFile()`, and `mtp_http_CreateMessage()`.

5.43.3.9 `int message_Send (struct mc_platform_s * mc_platform, message_p message, char * privatekey)`

Definition at line 572 of file message.c.

References `mc_platform_s::acc`, `COND_WAIT`, `message_send_arg_s::mc_platform`, `message_send_arg_s::message`, `message_send_Thread()`, `MSG_THREADS`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `message_send_arg_s::privatekey`, `THREAD_CREATE`, and `THREAD_DETACH`.

Referenced by `acc_MessageHandlerThread()`, `MC_AclSend()`, and `message_queue_SendOutgoing()`.

5.43.3.10 `void* message_send_Thread (void * arg)`

Definition at line 645 of file message.c.

References `mc_platform_s::agency`, `auth_rece_send_msg()`, `mc_platform_s::bluetooth`, `buf`, `CHECK_NULL`, `dynstring_Append()`, `dynstring_Destroy()`, `dynstring_New()`, `agency_s::known_host_filename`, `mc_platform`, `dynstring_s::message`, `message_s::message_body`, `MSG_THREAD_EXIT`, `mtp_http_ComposeMessage()`, `mtp_http_Destroy()`, `mtp_http_New()`, `mtp_http_Parse()`, `port`, `send`, `SOCKET_ERROR`, `SOCKET_INPUT_SIZE`, `strtok_r`, and `message_s::to_address`.

Referenced by `message_Send()`.

5.44 /home/dko/Projects/mobilec/src/include/mobilec.h File Reference

```
#include <dynstring.h>
#include <fipa_acl.h>
#include <fipa_comm.h>
```

5.45 /home/dko/Projects/mobilec/src/include/mtp_http.h File Reference

Data Structures

- struct [mtp_http_content_s](#)
- struct [mtp_http_s](#)

Defines

- #define [SOCKET_INPUT_SIZE](#) 4096

Typedefs

- typedef struct [mtp_http_content_s](#) [mtp_http_content_t](#)
- typedef struct [mtp_http_s](#) [mtp_http_t](#)
- typedef [mtp_http_t](#) * [mtp_http_p](#)

Enumerations

- enum [http_status_code_e](#) {
 [CONTINUE](#) = 100, [SWITCHING_PROTOCOLS](#), [PROCESSING](#), [OK](#) = 200,
 [CREATED](#), [ACCEPTED](#), [NON_AUTHORITATIVE_INFORMATION](#), [NO_CONTENT](#),
 [RESET_CONTENT](#), [PARTIAL_CONTENT](#), [MULTI_STATUS](#), [BAD_REQUEST](#) = 400,
 [UNAUTHORIZED](#), [PAYMENT_REQUIRED](#), [FORBIDDEN](#), [NOT_FOUND](#),
 [METHOD_NOT_ALLOWED](#), [NOT_ACCEPTABLE](#), [PROXY_AUTHENTICATION_REQUIRED](#), [REQUEST_TIMEOUT](#),
 [CONFLICT](#), [GONE](#), [LENGTH_REQUIRED](#), [PRECONDITION_FAILED](#),
 [REQUEST_ENTITY_TOO_LARGE](#), [REQUEST_URI_TOO_LONG](#), [UNSUPPORTED_MEDIA_TYPE](#), [REQUESTED_RANGE_NOT_SATISFIABLE](#),
 [EXPECTATION_FAILED](#), [UNPROCESSABLE_ENTITY](#), [LOCKED](#), [FAILED_DEPENDANCY](#),
 [UNORDERED_COLLECTION](#), [UPGRADE_REQUIRED](#), [RETRY_WITH](#) }
 http return status codes
- enum [http_performative_e](#) {
 [HTTP_PERFORMATIVE_UNDEF](#) = -1, [HTTP_PERFORMATIVE_ZERO](#) = 0, [HTTP_HEAD](#),
 [HTTP_GET](#),
 [HTTP_POST](#), [HTTP_PUT](#), [HTTP_DELETE](#), [HTTP_TRACE](#),
 [HTTP_OPTIONS](#), [HTTP_CONNECT](#), [HTTP_RESPONSE](#), [HTTP_NUM_PERFORMATIVES](#) }
 http 'verbs'

Functions

- `const char * http_GetExpression (const char *string, char **expr)`
Parse an html expression.
- `int http_ParseExpression (const char *expression_string, char **name, char **value)`
Parse an expression into its name and value.
- `const char * http_ParseRequest (mtp_http_p http, const char *string)`
- `const char * http_GetToken (const char *string, char **token)`
- `int mtp_http_Destroy (mtp_http_p http)`
- `int mtp_http_InitializeFromConnection (struct mtp_http_s *http, struct connection_s *connection, char *privatekey)`
- `mtp_http_p mtp_http_New (void)`
- `const char * mtp_http_ParseHeader (struct mtp_http_s *http, const char *string)`
- `int mtp_http_Parse (struct mtp_http_s *http, const char *string)`
- `int mtp_http_ComposeMessage (struct message_s *message)`
- `struct message_s * mtp_http_CreateMessage (mtp_http_t *mtp_http, char *hostname, int port)`

5.45.1 Define Documentation

5.45.1.1 `#define SOCKET_INPUT_SIZE 4096`

Definition at line 147 of file `mtp_http.h`.

Referenced by `message_InitializeFromConnection()`, `message_send_Thread()`, and `mtp_http_InitializeFromConnection()`.

5.45.2 Typedef Documentation

5.45.2.1 `typedef struct mtp_http_content_s mtp_http_content_t`

5.45.2.2 `typedef mtp_http_t* mtp_http_p`

Definition at line 145 of file `mtp_http.h`.

5.45.2.3 `typedef struct mtp_http_s mtp_http_t`

5.45.3 Enumeration Type Documentation

5.45.3.1 `enum http_performative_e`

http 'verbs'

Enumerator:

`HTTP_PERFORMATIVE_UNDEF`
`HTTP_PERFORMATIVE_ZERO`
`HTTP_HEAD`
`HTTP_GET`

HTTP_POST
HTTP_PUT
HTTP_DELETE
HTTP_TRACE
HTTP_OPTIONS
HTTP_CONNECT
HTTP_RESPONSE
HTTP_NUM_PERFORMATIVES

Definition at line 90 of file mtp_http.h.

5.45.3.2 enum http_status_code_e

http return status codes

Enumerator:

CONTINUE
SWITCHING_PROTOCOLS
PROCESSING
OK
CREATED
ACCEPTED
NON_AUTHORITATIVE_INFORMATION
NO_CONTENT
RESET_CONTENT
PARTIAL_CONTENT
MULTI_STATUS
BAD_REQUEST
UNAUTHORIZED
PAYMENT_REQUIRED
FORBIDDEN
NOT_FOUND
METHOD_NOT_ALLOWED
NOT_ACCEPTABLE
PROXY_AUTHENTICATION_REQUIRED
REQUEST_TIMEOUT
CONFLICT
GONE
LENGTH_REQUIRED
PRECONDITION_FAILED
REQUEST_ENTITY_TOO_LARGE
REQUEST_URI_TOO_LONG

UNSUPPORTED_MEDIA_TYPE
REQUESTED_RANGE_NOT_SATISFIABLE
EXPECTATION_FAILED
UNPROCESSABLE_ENTITY
LOCKED
FAILED_DEPENDANCY
UNORDERED_COLLECTION
UPGRADE_REQUIRED
RETRY_WITH

Definition at line 45 of file mtp_http.h.

5.45.4 Function Documentation

5.45.4.1 `const char* http_GetExpression (const char * string, char ** expr)`

Parse an html expression.

Parameters

string (input) The html block of text: Will parse the first expression pointed to by 'string'.
expr (output) The allocated expression

Returns

A pointer to the next expression segment of the string block, or NULL.

Definition at line 349 of file mtp_http.c.

Referenced by mtp_http_Parse(), and mtp_http_ParseHeader().

5.45.4.2 `const char* http_GetToken (const char * string, char ** token)`

Definition at line 790 of file mtp_http.c.

References cur.

Referenced by http_ParseRequest().

5.45.4.3 `int http_ParseExpression (const char * expression_string, char ** name, char ** value)`

Parse an expression into its name and value.

Parameters

expression_string (input) The expression
name (output) An allocated name string or NULL
value (output) An allocated value string or NULL

Returns

error_code_t type

Note

an http expression is something like 'Date: Mon, 23 May 2005 22:38:34 GMT'
 ' where 'Date' is the name and the remainder of the string is the value

Definition at line 408 of file mtp_http.c.

References CHECK_NULL, MC_ERR_PARSE, and MC_SUCCESS.

Referenced by mtp_http_Parse(), and mtp_http_ParseHeader().

5.45.4.4 const char* http_ParseRequest (mtp_http_p *http*, const char * *string*)

Definition at line 701 of file mtp_http.c.

References cur, HTTP_CONNECT, HTTP_DELETE, HTTP_GET, http_GetToken(), HTTP_HEAD, HTTP_OPTIONS, mtp_http_s::http_performative, HTTP_PERFORMATIVE_UNDEF, HTTP_POST, HTTP_PUT, HTTP_RESPONSE, HTTP_TRACE, mtp_http_s::response_code, mtp_http_s::response_string, and mtp_http_s::target.

Referenced by mtp_http_ParseHeader().

5.45.4.5 int mtp_http_ComposeMessage (struct message_s * *message*)

Referenced by message_send_Thread().

5.45.4.6 struct message_s* mtp_http_CreateMessage (mtp_http_t * *mtp_http*, char * *hostname*, int *port*) [read]

Definition at line 875 of file mtp_http.c.

References buf, mtp_http_s::content, mtp_http_content_s::content_type, mtp_http_content_s::data, dynstring_Append(), dynstring_Destroy(), dynstring_New(), mtp_http_s::host, message_s::isHTTP, dynstring_s::len, dynstring_s::message, message_s::message_body, message_New(), mtp_http_s::message_parts, PACKAGE_VERSION, mtp_http_s::target, and message_s::to_address.

Referenced by MC_AclSend().

5.45.4.7 int mtp_http_Destroy (mtp_http_p *http*)

Definition at line 54 of file mtp_http.c.

References mtp_http_s::accept_ranges, mtp_http_s::boundary, mtp_http_s::cache_control, mtp_http_s::connection, mtp_http_s::content, mtp_http_s::content_length, mtp_http_content_s::content_type, mtp_http_s::content_type, mtp_http_content_s::data, mtp_http_s::date, mtp_http_s::host, mtp_http_s::http_version, mtp_http_s::message_parts, mtp_http_s::mime_version, mtp_http_s::response_string, mtp_http_s::return_code, SAFE_FREE, mtp_http_s::server, mtp_http_s::target, and mtp_http_s::user_agent.

Referenced by acc_connection_Thread(), MC_AclSend(), message_send_Thread(), and mtp_http_InitializeFromConnection().

5.45.4.8 int mtp_http_InitializeFromConnection (struct mtp_http_s * *http*, struct connection_s * *connection*, char * *privatekey*)

Referenced by acc_connection_Thread().

5.45.4.9 `mtp_http_p mtp_http_New (void)`

Definition at line 89 of file `mtp_http.c`.

References `CHECK_NULL`, and `mtp_http_s::content`.

Referenced by `acc_connection_Thread()`, `MC_AclSend()`, `message_send_Thread()`, and `mtp_http_InitializeFromConnection()`.

5.45.4.10 `int mtp_http_Parse (struct mtp_http_s * http, const char * string)`

Definition at line 551 of file `mtp_http.c`.

References `mtp_http_s::boundary`, `mtp_http_s::content`, `mtp_http_s::content_length`, `mtp_http_content_s::content_type`, `mtp_http_s::content_type`, `mtp_http_content_s::data`, `http_GetExpression()`, `HTTP_HEAD`, `http_ParseExpression()`, `mtp_http_s::http_performative`, `HTTP_POST`, `HTTP_PUT`, `HTTP_RESPONSE`, `MC_SUCCESS`, `mtp_http_s::message_parts`, `mtp_http_ParseHeader()`, and `strdup`.

Referenced by `message_send_Thread()`, and `mtp_http_InitializeFromConnection()`.

5.45.4.11 `const char* mtp_http_ParseHeader (struct mtp_http_s * http, const char * string)`

Definition at line 467 of file `mtp_http.c`.

References `mtp_http_s::header_length`, `http_GetExpression()`, `HTTP_PARSE_EXPR`, `http_ParseExpression()`, `http_ParseRequest()`, `MC_SUCCESS`, and `SAFE_FREE`.

Referenced by `mtp_http_InitializeFromConnection()`, and `mtp_http_Parse()`.

5.46 /home/dko/Projects/mobilec/src/include/xml_compose.h File Reference

```
#include "agent.h"
```

Functions

- [mxml_node_t * agent_xml_compose \(agent_p agent\)](#)
- [mxml_node_t * agent_xml_compose__gaf_message \(agent_p agent\)](#)
- [mxml_node_t * agent_xml_compose__message \(agent_p agent\)](#)
- [mxml_node_t * agent_xml_compose__mobile_agent \(agent_p agent\)](#)
- [mxml_node_t * agent_xml_compose__agent_data \(agent_p agent\)](#)
- [mxml_node_t * agent_xml_compose__name \(agent_p agent\)](#)
- [mxml_node_t * agent_xml_compose__owner \(agent_p agent\)](#)
- [mxml_node_t * agent_xml_compose__home \(agent_p agent\)](#)
- [mxml_node_t * agent_xml_compose__wg_code \(agent_p agent\)](#)
- [mxml_node_t * agent_xml_compose__tasks \(agent_p agent\)](#)
- [mxml_node_t * agent_xml_compose__task \(agent_p agent, int index\)](#)
- [mxml_node_t * agent_xml_compose__data \(agent_p agent, int index, interpreter_variable_data_t *interp_variable\)](#)
- [mxml_node_t * agent_xml_compose__agent_code \(agent_p agent, int index\)](#)
- [mxml_node_t * agent_xml_compose__row \(interpreter_variable_data_t *interp_variable, int index\)](#)
- [mxml_node_t * agent_xml_compose__create_row_nodes \(void *data, int index, int *extent, ChType_t type, int dim, int extent_index\)](#)

5.46.1 Function Documentation

5.46.1.1 mxml_node_t* agent_xml_compose (agent_p agent)

Definition at line 46 of file `xml_compose.c`.

References `agent_xml_compose__gaf_message()`, `MXML_ADD_AFTER`, `MXML_ADD_TO_PARENT`, `MXML_NO_CALLBACK`, `mxmlAdd()`, `mxmlLoadString()`, and `node`.

Referenced by `message_InitializeFromAgent()`.

5.46.1.2 mxml_node_t* agent_xml_compose__agent_code (agent_p agent, int index)

Definition at line 521 of file `xml_compose.c`.

References `agent_datastate_s::agent_code_ids`, `agent_datastate_s::agent_codes`, `agent_s::datastate`, `MXML_NO_PARENT`, `mxmlElementSetAttr()`, `mxmlNewElement()`, `node`, and `xml_new_cdata()`.

Referenced by `agent_xml_compose__tasks()`.

5.46.1.3 mxml_node_t* agent_xml_compose__agent_data (agent_p agent)

Definition at line 150 of file `xml_compose.c`.

References `agent_xml_compose__home()`, `agent_xml_compose__name()`, `agent_xml_compose__owner()`, `agent_xml_compose__tasks()`, `agent_xml_compose__wg_code()`, `MXML_ADD_AFTER`, `mxmlAdd()`, `mxmlNewElement()`, and `node`.

Referenced by `agent_xml_compose__mobile_agent()`.

5.46.1.4 `mxml_node_t* agent_xml_compose__create_row_nodes (void * data, int index, int * extent, ChType_t type, int dim, int extent_index)`

Definition at line 572 of file `xml_compose.c`.

References `agent_xml_compose__create_row_nodes()`, `buf`, `CH_DATATYPE_SIZE`, `CH_DATATYPE_VALUE_STRING`, `MXML_ADD_AFTER`, `MXML_ADD_TO_PARENT`, `MXML_NO_PARENT`, `mxm-
lAdd()`, `mxmlElementSetAttr()`, `mxmlNewElement()`, `mxmlNewText()`, `node`, and `size`.

Referenced by `agent_xml_compose__create_row_nodes()`, and `agent_xml_compose__row()`.

5.46.1.5 `mxml_node_t* agent_xml_compose__data (agent_p agent, int index, interpreter_variable_data_t * interp_variable)`

Definition at line 447 of file `xml_compose.c`.

References `agent_xml_compose__row()`, `interpreter_variable_data_s::array_dim`, `buf`, `CH_DATATYPE_ -
STRING`, `CH_DATATYPE_VALUE_STRING`, `interpreter_variable_data_s::data`, `interpreter_variable_ -
data_s::data_type`, `MXML_ADD_AFTER`, `mxmlAdd()`, `mxmlElementSetAttr()`, `mxmlNewElement()`,
`interpreter_variable_data_s::name`, and `node`.

Referenced by `agent_xml_compose__task()`.

5.46.1.6 `mxml_node_t* agent_xml_compose__gaf_message (agent_p agent)`

Definition at line 66 of file `xml_compose.c`.

References `agent_xml_compose__message()`, `MXML_ADD_AFTER`, `mxmlAdd()`, `mxmlNewElement()`,
and `node`.

Referenced by `agent_xml_compose()`.

5.46.1.7 `mxml_node_t* agent_xml_compose__home (agent_p agent)`

Definition at line 253 of file `xml_compose.c`.

References `agent_s::home`, `mxmlNewElement()`, `mxmlNewText()`, and `node`.

Referenced by `agent_xml_compose__agent_data()`.

5.46.1.8 `mxml_node_t* agent_xml_compose__message (agent_p agent)`

Definition at line 85 of file `xml_compose.c`.

References `agent_s::agent_type`, `agent_xml_compose__mobile_agent()`, `MC_LOCAL_AGENT`, `MC_ -
REMOTE_AGENT`, `MC_RETURN_AGENT`, `MXML_ADD_AFTER`, `mxmlAdd()`, `mxmlElementSe-
tAttr()`, `mxmlNewElement()`, and `node`.

Referenced by `agent_xml_compose__gaf_message()`.

5.46.1.9 `mxml_node_t* agent_xml_compose__mobile_agent (agent_p agent)`

Definition at line 129 of file `xml_compose.c`.

References `agent_xml_compose__agent_data()`, `MXML_ADD_AFTER`, `mxmlAdd()`, `mxmlNewElement()`, and `node`.

Referenced by `agent_xml_compose__message()`.

5.46.1.10 `mxml_node_t* agent_xml_compose__name (agent_p agent)`

Definition at line 221 of file `xml_compose.c`.

References `mxmlNewElement()`, `mxmlNewText()`, `agent_s::name`, and `node`.

Referenced by `agent_xml_compose__agent_data()`.

5.46.1.11 `mxml_node_t* agent_xml_compose__owner (agent_p agent)`

Definition at line 237 of file `xml_compose.c`.

References `mxmlNewElement()`, `mxmlNewText()`, `node`, and `agent_s::owner`.

Referenced by `agent_xml_compose__agent_data()`.

5.46.1.12 `mxml_node_t* agent_xml_compose__row (interpreter_variable_data_t * interp_variable, int index)`

Definition at line 549 of file `xml_compose.c`.

References `agent_xml_compose__create_row_nodes()`, `interpreter_variable_data_s::array_dim`, `interpreter_variable_data_s::array_extent`, `interpreter_variable_data_s::data`, `interpreter_variable_data_s::data_type`, and `node`.

Referenced by `agent_xml_compose__data()`.

5.46.1.13 `mxml_node_t* agent_xml_compose__task (agent_p agent, int index)`

Definition at line 342 of file `xml_compose.c`.

References `agent_task_s::agent_return_data`, `agent_task_s::agent_variable_list`, `agent_xml_compose__data()`, `buf`, `agent_task_s::code_id`, `agent_s::datastate`, `MXML_ADD_AFTER`, `mxmlAdd()`, `mxmlElementSetAttr()`, `mxmlNewElement()`, `node`, `agent_task_s::persistent`, `agent_datastate_s::persistent`, `agent_task_s::server_name`, `agent_datastate_s::tasks`, and `agent_task_s::var_name`.

Referenced by `agent_xml_compose__tasks()`.

5.46.1.14 `mxml_node_t* agent_xml_compose__tasks (agent_p agent)`

Definition at line 285 of file `xml_compose.c`.

References `agent_xml_compose__agent_code()`, `agent_xml_compose__task()`, `buf`, `agent_s::datastate`, `MXML_ADD_AFTER`, `mxmlAdd()`, `mxmlElementSetAttr()`, `mxmlNewElement()`, `node`, `agent_datastate_s::number_of_tasks`, and `agent_datastate_s::task_progress`.

Referenced by `agent_xml_compose__agent_data()`.

5.46.1.15 mxml_node_t* agent_xml_compose__wg_code (agent_p *agent*)

Definition at line 269 of file xml_compose.c.

References mxmlNewElement(), mxmlNewText(), node, and agent_s::wg_code.

Referenced by agent_xml_compose__agent_data().

5.47 /home/dko/Projects/mobilec/src/include/xml_helper.h File Reference

```
#include <mxml.h>
```

Functions

- [mxml_node_t * xml_find_sibling](#) (const [mxml_node_t](#) **node*, const char **sibling_name*)
- char * [xml_get_cdata](#) (const [mxml_node_t](#) **node*)
- [mxml_node_t * xml_get_child](#) (const [mxml_node_t](#) **node*, const char **child_name*, [int](#) *descend*)
- [mxml_node_t * xml_get_deep_child](#) (const [mxml_node_t](#) **parent*, const char ***child_path*)
- [mxml_node_t * xml_get_next_element](#) (const [mxml_node_t](#) **node*)
- char * [xml_get_text](#) (const [mxml_node_t](#) **node*)
- char * [xml_get_element_name](#) (const [mxml_node_t](#) **node*)
- [mxml_node_t * xml_new_cdata](#) ([mxml_node_t](#) **parent*, const char **text*)
- const char * [whitespace_cb](#) ([mxml_node_t](#) **node*, [int](#) *where*)

5.47.1 Function Documentation

5.47.1.1 const char * whitespace_cb (mxml_node_t * *node*, int *where*)

Definition at line 572 of file testmxml.c.

References [mxml_node_s::child](#), [mxml_value_u::element](#), [MXML_WS_AFTER_CLOSE](#), [MXML_WS_AFTER_OPEN](#), [MXML_WS_BEFORE_CLOSE](#), [MXML_WS_BEFORE_OPEN](#), [mxml_value_s::name](#), [mxml_node_s::parent](#), and [mxml_node_s::value](#).

Referenced by [main\(\)](#).

5.47.1.2 mxml_node_t* xml_find_sibling (const mxml_node_t * *node*, const char * *sibling_name*)

Definition at line 54 of file xml_helper.c.

References [MXML_NO_DESCEND](#), [mxmlFindElement\(\)](#), [mxml_node_s::parent](#), and [xml_get_element_name\(\)](#).

5.47.1.3 char* xml_get_cdata (const mxml_node_t * *node*)

Definition at line 76 of file xml_helper.c.

References [buf](#), [CHECK_NULL](#), [MXML_ELEMENT](#), [mxml_node_s::type](#), and [xml_get_element_name\(\)](#).

Referenced by [xml_get_text\(\)](#).

5.47.1.4 mxml_node_t* xml_get_child (const mxml_node_t * *node*, const char * *child_name*, int *descend*)

Definition at line 109 of file xml_helper.c.

References [mxmlFindElement\(\)](#).

Referenced by `agent_return_xml_parse()`, `agent_xml_parse__agent_data()`, `agent_xml_parse__data()`, `agent_xml_parse__mobile_agent()`, `message_xml_parse()`, `message_xml_parse__message()`, and `xml_get_deep_child()`.

5.47.1.5 `mxml_node_t* xml_get_deep_child (const mxml_node_t * parent, const char ** child_path)`

Definition at line 128 of file `xml_helper.c`.

References `MXML_NO_DESCEND`, `node`, and `xml_get_child()`.

5.47.1.6 `char* xml_get_element_name (const mxml_node_t * node)`

Definition at line 222 of file `xml_helper.c`.

References `mxml_value_u::element`, `MXML_ELEMENT`, `mxml_value_s::name`, `mxml_node_s::type`, and `mxml_node_s::value`.

Referenced by `agent_xml_parse__data()`, `agent_xml_parse__mobile_agent()`, `agent_xml_parse__row()`, `message_xml_parse()`, `xml_find_sibling()`, and `xml_get_cdata()`.

5.47.1.7 `mxml_node_t* xml_get_next_element (const mxml_node_t * node)`

Definition at line 142 of file `xml_helper.c`.

References `MXML_ELEMENT`, `mxml_node_s::next`, and `mxml_node_s::type`.

5.47.1.8 `char* xml_get_text (const mxml_node_t * node)`

Definition at line 160 of file `xml_helper.c`.

References `CHECK_NULL`, `mxml_node_s::child`, `mxml_value_u::element`, `MXML_ELEMENT`, `MXML_TEXT`, `mxml_value_s::name`, `mxml_node_s::next`, `mxml_text_s::string`, `mxml_value_u::text`, `mxml_node_s::type`, `mxml_node_s::value`, and `xml_get_cdata()`.

Referenced by `agent_xml_parse__agent_code()`, `agent_xml_parse__home()`, `agent_xml_parse__name()`, `agent_xml_parse__owner()`, `agent_xml_parse__sender()`, and `agent_xml_parse__wg_code()`.

5.47.1.9 `mxml_node_t* xml_new_cdata (mxml_node_t * parent, const char * text)`

Definition at line 235 of file `xml_helper.c`.

References `CHECK_NULL`, `mxmlNewElement()`, and `node`.

Referenced by `agent_xml_compose__agent_code()`.

5.48 /home/dko/Projects/mobilec/src/include/xml_parser.h File Reference

```
#include <mxml.h>
#include "macros.h"
#include "agent.h"
```

Functions

- [STRUCT](#) (xml_parser, [mxml_node_t](#) *root; [mxml_node_t](#) *node;)
- [error_code_t agent_xml_parse](#) ([agent_p](#) agent)
- [error_code_t agent_xml_parse__mobile_agent](#) ([agent_p](#) agent, [xml_parser_p](#) xml_parser)
- [error_code_t agent_xml_parse__agent_data](#) ([agent_p](#) agent, [xml_parser_p](#) xml_parser)
- [error_code_t agent_xml_parse__name](#) ([agent_p](#) agent, [xml_parser_p](#) xml_parser)
- [error_code_t agent_xml_parse__owner](#) ([agent_p](#) agent, [xml_parser_p](#) xml_parser)
- [error_code_t agent_xml_parse__home](#) ([agent_p](#) agent, [xml_parser_p](#) xml_parser)
- [error_code_t agent_xml_parse__sender](#) ([agent_p](#) agent, [xml_parser_p](#) xml_parser)
- [error_code_t agent_xml_parse__wg_code](#) ([agent_p](#) agent, [xml_parser_p](#) xml_parser)
- [error_code_t agent_xml_parse__tasks](#) ([agent_p](#) agent, [xml_parser_p](#) xml_parser)
- [error_code_t agent_xml_parse__task](#) ([agent_p](#) agent, [xml_parser_p](#) xml_parser, [int](#) index)
- [error_code_t agent_xml_parse__data](#) ([agent_p](#) agent, [xml_parser_p](#) xml_parser, [int](#) index)
- [error_code_t agent_xml_parse__row](#) ([interpreter_variable_data_t](#) *interp_variable, [xml_parser_p](#) xml_parser, [int](#) index)
- void [agent_xml_parse__fill_row_data](#) (void *data, [ChType_t](#) type, [int](#) *extent, const [mxml_node_t](#) *node, [int](#) *index)
- [error_code_t agent_xml_parse__agent_code](#) ([agent_p](#) agent, [int](#) index, [xml_parser_p](#) xml_parser)
- [error_code_t message_xml_parse](#) ([message_p](#) message)
- [error_code_t message_xml_parse__message](#) ([message_p](#) message, [xml_parser_p](#) xml_parser)

5.48.1 Function Documentation

5.48.1.1 [error_code_t agent_xml_parse](#) ([agent_p](#) agent)

Definition at line 52 of file [xml_parser.c](#).

References [agent_xml_parse__mobile_agent\(\)](#), [agent_s::datastate](#), [MC_SUCCESS](#), and [agent_datastate_s::xml_agent_root](#).

Referenced by [agent_Initialize\(\)](#).

5.48.1.2 [error_code_t agent_xml_parse__agent_code](#) ([agent_p](#) agent, [int](#) index, [xml_parser_p](#) xml_parser)

Definition at line 872 of file [xml_parser.c](#).

References [agent_datastate_s::agent_code](#), [agent_datastate_s::agent_code_ids](#), [agent_datastate_s::agent_codes](#), [agent_task_s::code_id](#), [agent_s::datastate](#), [MC_SUCCESS](#), [mxmlElementGetAttr\(\)](#), [agent_datastate_s::number_of_tasks](#), [agent_datastate_s::task_progress](#), [agent_datastate_s::tasks](#), and [xml_get_text\(\)](#).

Referenced by [agent_xml_parse__tasks\(\)](#).

5.48.1.3 error_code_t agent_xml_parse__agent_data (agent_p agent, xml_parser_p xml_parser)

Definition at line 93 of file xml_parser.c.

References agent_xml_parse__home(), agent_xml_parse__name(), agent_xml_parse__owner(), agent_xml_parse__sender(), agent_xml_parse__tasks(), agent_xml_parse__wg_code(), MC_ERR_PARSE, MC_SUCCESS, and xml_get_child().

Referenced by agent_xml_parse__mobile_agent().

5.48.1.4 error_code_t agent_xml_parse__data (agent_p agent, xml_parser_p xml_parser, int index)

Definition at line 538 of file xml_parser.c.

References agent_task_s::agent_return_data, agent_task_s::agent_variable_list, agent_xml_parse__row(), interpreter_variable_data_s::array_dim, CH_DATATYPE_SIZE, CH_DATATYPE_STR_TO_VAL, CH_STRING_DATATYPE, interpreter_variable_data_s::data, interpreter_variable_data_s::data_type, agent_s::datastate, interpreter_variable_data_New(), MC_ERR_PARSE, MC_SUCCESS, mxMLElementGetAttr(), interpreter_variable_data_s::name, mxml_node_s::parent, agent_task_s::persistent, agent_datastate_s::tasks, xml_get_child(), and xml_get_element_name().

Referenced by agent_xml_parse__task().

5.48.1.5 void agent_xml_parse__fill_row_data (void * data, ChType_t type, int * extent, const mxml_node_t * node, int * index)

Definition at line 751 of file xml_parser.c.

References agent_xml_parse__fill_row_data(), buf, CH_DATATYPE_SIZE, mxml_node_s::child, MXML_DESCEND_FIRST, MXML_ELEMENT, MXML_TEXT, mxmlFindElement(), mxml_text_s::string, strtok_r, mxml_value_u::text, mxml_node_s::type, and mxml_node_s::value.

Referenced by agent_xml_parse__fill_row_data(), and agent_xml_parse__row().

5.48.1.6 error_code_t agent_xml_parse__home (agent_p agent, xml_parser_p xml_parser)

Definition at line 219 of file xml_parser.c.

References CHECK_NULL, agent_s::home, MC_SUCCESS, and xml_get_text().

Referenced by agent_return_xml_parse(), and agent_xml_parse__agent_data().

5.48.1.7 error_code_t agent_xml_parse__mobile_agent (agent_p agent, xml_parser_p xml_parser)

Definition at line 65 of file xml_parser.c.

References agent_xml_parse__agent_data(), MC_ERR_PARSE, xml_get_child(), and xml_get_element_name().

Referenced by agent_xml_parse().

5.48.1.8 error_code_t agent_xml_parse__name (agent_p agent, xml_parser_p xml_parser)

Definition at line 166 of file xml_parser.c.

References CHECK_NULL, MC_ERR_PARSE, MC_SUCCESS, agent_s::name, and xml_get_text().

Referenced by agent_return_xml_parse(), and agent_xml_parse__agent_data().

5.48.1.9 error_code_t agent_xml_parse__owner (agent_p agent, xml_parser_p xml_parser)

Definition at line 192 of file xml_parser.c.

References CHECK_NULL, MC_SUCCESS, agent_s::owner, and xml_get_text().

Referenced by agent_return_xml_parse(), and agent_xml_parse__agent_data().

5.48.1.10 error_code_t agent_xml_parse__row (interpreter_variable_data_t *interp_variable, xml_parser_p xml_parser, int index)

Definition at line 684 of file xml_parser.c.

References agent_xml_parse__fill_row_data(), interpreter_variable_data_s::array_dim, interpreter_variable_data_s::array_extent, CH_DATATYPE_SIZE, interpreter_variable_data_s::data, interpreter_variable_data_s::data_type, MC_SUCCESS, and xml_get_element_name().

Referenced by agent_xml_parse__data().

5.48.1.11 error_code_t agent_xml_parse__sender (agent_p agent, xml_parser_p xml_parser)

Definition at line 245 of file xml_parser.c.

References CHECK_NULL, MC_SUCCESS, agent_s::sender, and xml_get_text().

Referenced by agent_xml_parse__agent_data().

5.48.1.12 error_code_t agent_xml_parse__task (agent_p agent, xml_parser_p xml_parser, int index)

Definition at line 442 of file xml_parser.c.

References agent_xml_parse__data(), CHECK_NULL, agent_task_s::code_id, agent_s::datastate, MC_ERR_PARSE, MC_SUCCESS, MXML_DESCEND_FIRST, MXML_NO_DESCEND, mxmlElementGetAttr(), mxmlFindElement(), agent_task_s::persistent, agent_task_s::server_name, strdup, agent_datastate_s::tasks, and agent_task_s::var_name.

Referenced by agent_xml_parse__tasks().

5.48.1.13 error_code_t agent_xml_parse__tasks (agent_p agent, xml_parser_p xml_parser)

Definition at line 304 of file xml_parser.c.

References agent_datastate_s::agent_code, agent_datastate_s::agent_code_ids, agent_datastate_s::agent_codes, agent_task_New(), agent_xml_parse__agent_code(), agent_xml_parse__task(), buf, agent_s::datastate, MC_ERR_PARSE, MXML_DESCEND, MXML_DESCEND_FIRST, MXML_NO_DESCEND, mxmlElementGetAttr(), mxmlFindElement(), agent_datastate_s::number_of_tasks, agent_datastate_s::task_progress, and agent_datastate_s::tasks.

Referenced by agent_return_xml_parse(), and agent_xml_parse__agent_data().

5.48.1.14 error_code_t agent_xml_parse__wg_code (agent_p agent, xml_parser_p xml_parser)

Definition at line 273 of file xml_parser.c.

References MC_SUCCESS, agent_s::wg_code, and xml_get_text().

Referenced by agent_xml_parse__agent_data().

5.48.1.15 error_code_t message_xml_parse (message_p message)

Definition at line 948 of file xml_parser.c.

References MC_ERR_PARSE, message_xml_parse__message(), MXML_DESCEND, MXML_NO_DESCEND, mxmlFindElement(), xml_get_child(), xml_get_element_name(), and message_s::xml_root.

Referenced by acc_connection_Thread(), message_InitializeFromConnection(), and message_InitializeFromString().

5.48.1.16 error_code_t message_xml_parse__message (message_p message, xml_parser_p xml_parser)

Definition at line 1003 of file xml_parser.c.

References message_s::addr, buf, CHECK_NULL, ENCRYPTED_DATA, ENCRYPTION_INITIALIZE, FIPA_ACL, message_s::from_address, MC_ERR_PARSE, MC_SUCCESS, message_s::message_type, MOBILE_AGENT, mxmlElementGetAttr(), port, REQUEST_ENCRYPTION_INITIALIZE, RETURN_MSG, strtok_r, xml_get_child(), and message_s::xml_payload.

Referenced by message_xml_parse().

5.48.1.17 STRUCT (xml_parser, mxml_node_t *root;mxml_node_t *node;)

5.49 /home/dko/Projects/mobilec/src/libmc.c File Reference

```
#include "config.h"
#include <unistd.h>
#include <pthread.h>
#include <embedch.h>
#include <sys/types.h>
#include <sys/stat.h>
#include <sys/time.h>
#include "include/libmc.h"
#include "include/macros.h"
#include "include/mc_platform.h"
#include "include/message.h"
#include "include/data_structures.h"
#include "include/fipa_acl_envelope.h"
#include "include/fipa_acl.h"
#include "include/agent.h"
#include "include/agent_task.h"
#include "include/agent_lib.h"
```

Functions

- EXPORTMC [int MC_AclDestroy](#) (struct [fipa_acl_message_s](#) *message)
Destroy a FIPA ACL message.
- EXPORTMC [fipa_acl_message_t](#) * [MC_AclNew](#) (void)
Allocate a new ACL Message.
- EXPORTMC [int MC_AclPost](#) ([MCAgent_t](#) agent, struct [fipa_acl_message_s](#) *message)
Post ACL message to agent.
- EXPORTMC [fipa_acl_message_t](#) * [MC_AclReply](#) ([fipa_acl_message_t](#) *acl_message)
Reply to an ACL message.
- EXPORTMC [fipa_acl_message_t](#) * [MC_AclRetrieve](#) ([MCAgent_t](#) agent)
Retrieve an ACL message.
- EXPORTMC [int MC_AclSend](#) ([MCAgency_t](#) attr, [fipa_acl_message_t](#) *acl)
Send a composed ACL Message.
- EXPORTMC [fipa_acl_message_t](#) * [MC_AclWaitRetrieve](#) ([MCAgent_t](#) agent)
Wait for and retrieve an ACL message.

- EXPORTMC enum [fipa_protocol_e](#) [MC_AclGetProtocol](#) (struct [fipa_acl_message_s](#) *acl)
- EXPORTMC char * [MC_AclGetConversationID](#) (struct [fipa_acl_message_s](#) *acl)
- EXPORTMC enum [fipa_performative_e](#) [MC_AclGetPerformative](#) (struct [fipa_acl_message_s](#) *acl)
- EXPORTMC int [MC_AclGetSender](#) (struct [fipa_acl_message_s](#) *acl, char **name, char **address)
- EXPORTMC const char * [MC_AclGetContent](#) (struct [fipa_acl_message_s](#) *acl)
- EXPORTMC int [MC_AclSetProtocol](#) ([fipa_acl_message_t](#) *acl, enum [fipa_protocol_e](#) protocol)
- EXPORTMC int [MC_AclSetConversationID](#) ([fipa_acl_message_t](#) *acl, char *id)
- EXPORTMC int [MC_AclSetPerformative](#) ([fipa_acl_message_t](#) *acl, enum [fipa_performative_e](#) performative)
- EXPORTMC int [MC_AclSetSender](#) ([fipa_acl_message_t](#) *acl, const char *name, const char *address)
- EXPORTMC int [MC_AclAddReceiver](#) ([fipa_acl_message_t](#) *acl, const char *name, const char *address)
- EXPORTMC int [MC_AclAddReplyTo](#) ([fipa_acl_message_t](#) *acl, const char *name, const char *address)
- EXPORTMC int [MC_AclSetContent](#) ([fipa_acl_message_t](#) *acl, const char *content)
- EXPORTMC int [MC_AddAgent](#) ([MCAgency_t](#) attr, [MCAgent_t](#) agent)

Add an agent to the agency 'attr'.

- EXPORTMC int [MC_AddStationaryAgent](#) ([MCAgency_t](#) agency, void *(*agent_thread)([stationary_agent_info_t](#) *), const char *name, void *agent_args)
- EXPORTMC [MCAgency_t](#) [MC_AgentInfo_GetAgency](#) ([stationary_agent_info_t](#) *stationary_agent_info)

Get the host Mobile-C agency handle from a "stationary_agent_info_t" data structure.

- EXPORTMC [MCAgent_t](#) [MC_AgentInfo_GetAgent](#) ([stationary_agent_info_t](#) *stationary_agent_info)

Retrieve an agent handle from the stationary agent info from within a stationary agent.

- EXPORTMC void * [MC_AgentInfo_GetAgentArgs](#) ([stationary_agent_info_t](#) *stationary_agent_info)

Retrieve the agent argument supplied as the "agent_args" parameter in the [MC_AddStationaryAgent\(\)](#) function.

- EXPORTMC int [MC_AgentAddTask](#) ([MCAgent_t](#) agent, const char *code, const char *return_var_name, const char *server, int persistent)

Add a new task to an already existing agent.

- EXPORTMC int [MC_AgentAddTaskFromFile](#) ([MCAgent_t](#) agent, const char *filename, const char *return_var_name, const char *server, int persistent)

Add a new task to an already existing agent.

- EXPORTMC int [MC_AgentReturnArrayExtent](#) ([MCAgent_t](#) agent, int task_num, int index)

Get the extent of a dimension of an agent's return data, if it is an array.

- EXPORTMC int [MC_AgentReturnArrayDim](#) ([MCAgent_t](#) agent, int task_num)

Get the dimension of an agent's return data, if it is an array.

- EXPORTMC int [MC_AgentReturnArrayNum](#) ([MCAgent_t](#) agent, int task_num)

Get the total number of elements of the agent return data.

- EXPORTMC const void * [MC_AgentReturnDataGetSymbolAddr](#) ([MCAgent_t](#) agent, [int](#) task_num)
Get a pointer to the agent's return data.
- EXPORTMC [size_t](#) [MC_AgentReturnDataSize](#) ([MCAgent_t](#) agent, [int](#) task_num)
Get the size of an agent's return data type.
- EXPORTMC [int](#) [MC_AgentReturnDataType](#) ([MCAgent_t](#) agent, [int](#) task_num)
Get the type of an agent's return data.
- EXPORTMC [int](#) [MC_AgentReturnIsArray](#) ([MCAgent_t](#) agent, [int](#) task_num)
Check to see whether or not an agent's return data is an array.
- EXPORTMC const void * [MC_AgentVariableRetrieve](#) ([MCAgent_t](#) agent, const char *var_name, [int](#) task_num)
Retrieve a pointer to a previously saved variable.
- EXPORTMC [int](#) [MC_AgentVariableRetrieveInfo](#) ([MCAgent_t](#) agent, const char *var_name, [int](#) task_num, const void **data, [int](#) *dim, const [int](#) **extent)
Retrieve a info about a previously saved variable.
- EXPORTMC [int](#) [MC_AgentVariableSave](#) ([MCAgent_t](#) agent, const char *var_name)
Mark an agent variable for saving.
- EXPORTMC [int](#) [MC_Barrier](#) ([MCAgency_t](#) attr, [int](#) id)
- EXPORTMC [int](#) [MC_BarrierInit](#) ([MCAgency_t](#) attr, [int](#) id, [int](#) num_procs)
Initialize a MobileC Barrier.
- EXPORTMC [int](#) [MC_BarrierDelete](#) ([MCAgency_t](#) attr, [int](#) id)
Find and delete an initialized MobileC Barrier.
- EXPORTMC [int](#) [MC_CallAgentFunc](#) ([MCAgent_t](#) agent, const char *funcName, void *returnVal, [int](#) numArgs,...)
Use custom ChOptions_t type for internal Ch interpreter.
- EXPORTMC [int](#) [MC_CallAgentFuncArg](#) ([MCAgent_t](#) agent, const char *funcName, void *returnVal, void *arg)
Calls a function defined in an agent.
- EXPORTMC [int](#) [MC_CallAgentFuncV](#) ([MCAgent_t](#) agent, const char *funcName, void *returnVal, va_list ap)
Calls a function defined in an agent.
- EXPORTMC [int](#) [MC_CallAgentFuncVar](#) ([MCAgent_t](#) agent, const char *funcName, void *returnVal, ChVaList_t varg)
- EXPORTMC [MCAgent_t](#) [MC_ComposeAgent](#) (const char *name, const char *home, const char *owner, const char *code, const char *return_var_name, const char *server, [int](#) persistent)
Compose a new agent dynamically without using a prewritten XML file.

- EXPORTMC [MCAgent_t MC_ComposeAgentS](#) (const char *name, const char *home, const char *owner, const char *code, const char *return_var_name, const char *server, [int](#) persistent, const char *workgroup_code)
Compose a new agent dynamically without using a prewritten XML file.
- EXPORTMC [MCAgent_t MC_ComposeAgentWithWorkgroup](#) (const char *name, const char *home, const char *owner, const char *code, const char *return_var_name, const char *server, [int](#) persistent, const char *workgroup_code)
Compose a new agent dynamically without using a prewritten XML file.
- EXPORTMC [MCAgent_t MC_ComposeAgentFromFile](#) (const char *name, const char *home, const char *owner, const char *filename, const char *return_var_name, const char *server, [int](#) persistent)
Compose a new agent dynamically from a source code file.
- EXPORTMC [MCAgent_t MC_ComposeAgentFromFileS](#) (const char *name, const char *home, const char *owner, const char *filename, const char *return_var_name, const char *server, [int](#) persistent, const char *workgroup_code)
Compose a new agent dynamically from a source code file.
- EXPORTMC [MCAgent_t MC_ComposeAgentFromFileWithWorkgroup](#) (const char *name, const char *home, const char *owner, const char *filename, const char *return_var_name, const char *server, [int](#) persistent, const char *workgroup_code)
Compose a new agent dynamically from a source code file.
- EXPORTMC [int MC_CondBroadcast](#) ([MCAgency_t](#) attr, [int](#) id)
Wakes up all agents/threads waiting on a condition variable.
- EXPORTMC [int MC_CondSignal](#) ([MCAgency_t](#) attr, [int](#) id)
Wakes up at least one thread waiting on a condition variable.
- EXPORTMC [int MC_CondWait](#) ([MCAgency_t](#) attr, [int](#) id)
Wait on a MobileC synchronization variable.
- EXPORTMC [int MC_CondReset](#) ([MCAgency_t](#) attr, [int](#) id)
Reset a previously signalled MobileC condition variable.
- EXPORTMC [int MC_CopyAgent](#) ([MCAgent_t](#) *agent_out, const [MCAgent_t](#) agent_in)
Performs a deep-copy of an agent structure.
- EXPORTMC [int MC_DeleteAgent](#) ([MCAgent_t](#) agent)
Stop and remove an agent.
- EXPORTMC [int MC_DeleteAgentWG](#) ([MCAgent_t](#) calling_agent, [MCAgent_t](#) agent)
Stop and remove an agent in the same workgroup.
- EXPORTMC [int MC_DestroyServiceSearchResult](#) (char **agentName, char **serviceName, [int](#) *agentID, [int](#) numResult)
Free memory allocated by a Service Search operation.
- EXPORTMC [int MC_DeregisterService](#) ([MCAgency_t](#) agency, [int](#) agentID, const char *serviceName)

- EXPORTMC [int MC_End](#) ([MCAgency_t](#) agency)
End an agency.
- EXPORTMC [MCAgent_t MC_FindAgentByName](#) ([MCAgency_t](#) attr, const char *name)
Find an agent by its name.
- EXPORTMC [MCAgent_t MC_FindAgentByID](#) ([MCAgency_t](#) attr, [int](#) ID)
Find an agent by its id.
- EXPORTMC [time_t MC_GetAgentArrivalTime](#) ([MCAgent_t](#) agent)
- EXPORTMC [int MC_GetAgentStatus](#) ([MCAgent_t](#) agent)
Get an agent's current status.
- EXPORTMC [char * MC_GetAgentXMLString](#) ([MCAgent_t](#) agent)
Get an agent's xml string.
- EXPORTMC [void * MC_GetAgentExecEngine](#) ([MCAgent_t](#) agent)
Retrieve an agent's Ch interpreter.
- EXPORTMC [int MC_GetAgentID](#) ([MCAgent_t](#) agent)
Retrieve an agent's id.
- EXPORTMC [char * MC_GetAgentName](#) ([MCAgent_t](#) agent)
- EXPORTMC [int MC_GetAgentReturnData](#) ([MCAgent_t](#) agent, [int](#) task_num, void **data, [int](#) *dim, [int](#) **extent)
Get an agent's return data.
- EXPORTMC [int MC_GetAgentNumTasks](#) ([MCAgent_t](#) agent)
Retrive the number of tasks an agent has.
- EXPORTMC [enum MC_AgentType_e MC_GetAgentType](#) ([MCAgent_t](#) agent)
Get an agent's type.
- EXPORTMC [int MC_GetAllAgents](#) ([MCAgency_t](#) attr, [MCAgent_t](#) **agents, [int](#) *num_agents)
- EXPORTMC [int MC_HaltAgency](#) ([MCAgency_t](#) attr)
Halt an agency: Do not process new entries in queues.
- EXPORTMC [MCAgency_t MC_Initialize](#) ([int](#) port, [MCAgencyOptions_t](#) *options)
Initialize and start a MobileC agency.
- EXPORTMC [int MC_InitializeAgencyOptions](#) (struct [MCAgencyOptions_s](#) *options)
Initialize MobileC options.
- EXPORTMC [int MC_LoadAgentFromFile](#) ([MCAgency_t](#) attr, const char *filename)
Load an agent from a file into an agency.
- EXPORTMC [int MC_MigrateAgent](#) ([MCAgent_t](#) agent, const char *hostname, [int](#) port)
Migrates a running agent to another host.
- EXPORTMC [int MC_MutexLock](#) ([MCAgency_t](#) attr, [int](#) id)

Locks a MobileC synchronization variable as a mutex.

- EXPORTMC [int MC_MutexUnlock](#) (MCAgency_t attr, [int](#) id)
- EXPORTMC [int MC_PrintAgentCode](#) (MCAgent_t agent)

Prints an agents code to stdout.

- EXPORTMC [int MC_RegisterService](#) (MCAgency_t agency, MCAgent_t agent, [int](#) agentID, const char *agentName, char **serviceNames, [int](#) numServices)

Register a new service with the Directory Facilitator.

- EXPORTMC [int MC_ResumeAgency](#) (MCAgency_t attr)

Resumes a halted agency.

- EXPORTMC [MCAgent_t MC_RetrieveAgent](#) (MCAgency_t attr)

Retrieves the oldest agent from an agency.

- EXPORTMC [char * MC_RetrieveAgentCode](#) (MCAgent_t agent)

Retrieves an agent's Ch code.

- EXPORTMC [int MC_ResetSignal](#) (MCAgency_t attr)

Reset a MobileC signal.

- EXPORTMC [int MC_SearchForService](#) (MCAgency_t attr, const char *searchString, char ***agentNames, char ***serviceNames, [int](#) **agentIDs, [int](#) *numResults)

Search the directory facilitator for a service.

- EXPORTMC [int MC_SemaphorePost](#) (MCAgency_t attr, [int](#) id)

Post to a MobileC synchronization variable semaphore.

- EXPORTMC [int MC_SemaphoreWait](#) (MCAgency_t attr, [int](#) id)

Decreases a MobileC synchronization variable semaphore count by one.

- EXPORTMC [int MC_SendCh](#) (MCAgency_t attr, const char *filename, const char *remotehost, [int](#) port)

- EXPORTMC [int MC_SendAgent](#) (MCAgency_t attr, const char *string)

Sends an agent migration message.

- EXPORTMC [int MC_SendAgentFile](#) (MCAgency_t attr, const char *filename)

Sends an agent migration message.

- EXPORTMC [int MC_SendAgentMigrationMessage](#) (MCAgency_t attr, const char *string, const char *hostname, [int](#) port)

Sends an agent migration message.

- EXPORTMC [int MC_SendAgentMigrationMessageFile](#) (MCAgency_t attr, const char *filename, const char *hostname, [int](#) port)

Sends an agent migration message.

- EXPORTMC [int MC_SendSteerCommand](#) (MCAgency_t attr, enum [MC_SteerCommand_e](#) cmd)

- EXPORTMC [int MC_SetAgentStatus](#) (MCAgent_t agent, enum [MC_AgentStatus_e](#) status)

Set an agent's status.

- EXPORTMC [int MC_SetDefaultAgentStatus](#) ([MCAgency_t](#) agency, enum [MC_AgentStatus_e](#) status)

Sets default incoming agent status.

- EXPORTMC [int MC_SetThreadOn](#) ([MCAgencyOptions_t](#) *options, enum [MC_ThreadIndex_e](#) index)

Sets a MobileC thread to "on" status.

- EXPORTMC [int MC_SetThreadsAllOn](#) ([MCAgencyOptions_t](#) *options)

Set all Mobile-C threads on.

- EXPORTMC [int MC_SetThreadOff](#) ([MCAgencyOptions_t](#) *options, enum [MC_ThreadIndex_e](#) index)

Sets a MobileC thread to "off" status.

- EXPORTMC [int MC_SetThreadsAllOff](#) ([MCAgencyOptions_t](#) *options)

Set all MobileC threads to 'off' status.

- EXPORTMC [int MC_Steer](#) ([MCAgency_t](#) attr, [int](#)(*funcptr)(void *data), void *arg)

Set up a steerable algorithm.

- EXPORTMC enum [MC_SteerCommand_e](#) [MC_SteerControl](#) (void)

The MobileC user-algorithm steering function.

- EXPORTMC [int MC_SyncDelete](#) ([MCAgency_t](#) attr, [int](#) id)

Deletes a previously initialized synchronization variable.

- EXPORTMC [int MC_SyncInit](#) ([MCAgency_t](#) attr, [int](#) id)

Initializes a new MobileC synchronization variable.

- EXPORTMC [int MC_TerminateAgent](#) ([MCAgent_t](#) agent)

Halt a running agent.

- EXPORTMC [int MC_TerminateAgentWG](#) ([MCAgent_t](#) calling_agent, [MCAgent_t](#) agent)

- EXPORTMC [int MC_MainLoop](#) ([MCAgency_t](#) attr)

Wait indefinitely.

- EXPORTMC [int MC_WaitAgent](#) ([MCAgency_t](#) attr)

Wait indefinitely.

- EXPORTMC [MCAgent_t](#) [MC_WaitRetrieveAgent](#) ([MCAgency_t](#) attr)

Wait and retrieve an agent.

- EXPORTMC [int MC_WaitSignal](#) ([MCAgency_t](#) attr, [int](#) signals)

Wait for a MobileC signal.

- EXPORTMC [int MC_AclDestroy_chdl](#) (void *varg)

- EXPORTMC void * [MC_AclNew_chdl](#) (void *varg)

- EXPORTMC [int MC_AclPost_chdl](#) (void *varg)
- EXPORTCH [void * MC_AclReply_chdl](#) (void *varg)
- EXPORTCH [void * MC_AclRetrieve_chdl](#) (void *varg)
- EXPORTCH [int MC_AclSend_chdl](#) (void *varg)
- EXPORTCH [void * MC_AclWaitRetrieve_chdl](#) (void *varg)
- EXPORTCH [int MC_AclGetProtocol_chdl](#) (void *varg)
- EXPORTCH [char * MC_AclGetConversationID_chdl](#) (void *varg)
- EXPORTCH [int MC_AclGetPerformative_chdl](#) (void *varg)
- EXPORTCH [int MC_AclGetSender_chdl](#) (void *varg)
- EXPORTCH [char * MC_AclGetContent_chdl](#) (void *varg)
- EXPORTCH [int MC_AclSetProtocol_chdl](#) (void *varg)
- EXPORTCH [int MC_AclSetConversationID_chdl](#) (void *varg)
- EXPORTCH [int MC_AclSetPerformative_chdl](#) (void *varg)
- EXPORTCH [int MC_AclSetSender_chdl](#) (void *varg)
- EXPORTCH [int MC_AclAddReceiver_chdl](#) (void *varg)
- EXPORTCH [int MC_AclAddReplyTo_chdl](#) (void *varg)
- EXPORTCH [int MC_AclSetContent_chdl](#) (void *varg)
- EXPORTCH [int MC_AddAgent_chdl](#) (void *varg)
- EXPORTCH [int MC_AgentAddTask_chdl](#) (void *varg)
- EXPORTCH [const void * MC_AgentVariableRetrieve_chdl](#) (void *varg)
- EXPORTCH [int MC_AgentVariableSave_chdl](#) (void *varg)
- EXPORTCH [int MC_CallAgentFunc_chdl](#) (void *varg)
- EXPORTCH [int MC_Barrier_chdl](#) (void *varg)
- EXPORTCH [int MC_BarrierDelete_chdl](#) (void *varg)
- EXPORTCH [int MC_BarrierInit_chdl](#) (void *varg)
- EXPORTCH [int MC_CondBroadcast_chdl](#) (void *varg)
- EXPORTCH [MCAgent_t MC_ComposeAgent_chdl](#) (void *varg)
- EXPORTCH [MCAgent_t MC_ComposeAgentWithWorkgroup_chdl](#) (void *varg)
- EXPORTCH [MCAgent_t MC_ComposeAgentFromFile_chdl](#) (void *varg)
- EXPORTCH [MCAgent_t MC_ComposeAgentFromFileWithWorkgroup_chdl](#) (void *varg)
- EXPORTCH [int MC_CondSignal_chdl](#) (void *varg)
- EXPORTCH [int MC_CondReset_chdl](#) (void *varg)
- EXPORTCH [int MC_CondWait_chdl](#) (void *varg)
- EXPORTCH [int MC_DeleteAgent_chdl](#) (void *varg)
- EXPORTCH [int MC_DeleteAgentWG_chdl](#) (void *varg)
- EXPORTCH [int MC_DestroyServiceSearchResult_chdl](#) (void *varg)
- EXPORTCH [int MC_DeregisterService_chdl](#) (void *varg)
- EXPORTCH [int MC_End_chdl](#) (void *varg)
- EXPORTCH [MCAgent_t MC_FindAgentByID_chdl](#) (void *varg)
- EXPORTCH [MCAgent_t MC_FindAgentByName_chdl](#) (void *varg)
- EXPORTCH [time_t MC_GetAgentArrivalTime_chdl](#) (void *varg)
- EXPORTCH [int MC_GetAgentID_chdl](#) (void *varg)
- EXPORTCH [char * MC_GetAgentName_chdl](#) (void *varg)
- EXPORTCH [int MC_GetAgentNumTasks_chdl](#) (void *varg)
- EXPORTCH [int MC_GetAgentStatus_chdl](#) (void *varg)
- EXPORTCH [char * MC_GetAgentXMLString_chdl](#) (void *varg)
- EXPORTCH [int MC_GetTimeOfDay_chdl](#) (void *varg)
- EXPORTCH [int MC_HaltAgency_chdl](#) (void *varg)
- EXPORTCH [int MC_MigrateAgent_chdl](#) (void *varg)
- EXPORTCH [int MC_MutexLock_chdl](#) (void *varg)

- EXPORTCH [int MC_MutexUnlock_chdl](#) (void *varg)
- EXPORTCH [int MC_PrintAgentCode_chdl](#) (void *varg)
- EXPORTCH [int MC_RegisterService_chdl](#) (void *varg)
- EXPORTCH [int MC_ResumeAgency_chdl](#) (void *varg)
- EXPORTCH [MC_Agent_t MC_RetrieveAgent_chdl](#) (void *varg)
- EXPORTCH [char * MC_RetrieveAgentCode_chdl](#) (void *varg)
- EXPORTCH [int MC_SaveData_chdl](#) (void *varg)
- EXPORTCH [int MC_SearchForService_chdl](#) (void *varg)
- EXPORTCH [int MC_SemaphorePost_chdl](#) (void *varg)
- EXPORTCH [int MC_SemaphoreWait_chdl](#) (void *varg)
- EXPORTCH [int MC_SendAgentMigrationMessage_chdl](#) (void *varg)
- EXPORTCH [int MC_SendAgentMigrationMessageFile_chdl](#) (void *varg)
- EXPORTCH [int MC_SendSteerCommand_chdl](#) (void *varg)
- EXPORTCH [int MC_SetAgentStatus_chdl](#) (void *varg)
- EXPORTCH [int MC_SetDefaultAgentStatus_chdl](#) (void *varg)
- EXPORTCH [int MC_SyncDelete_chdl](#) (void *varg)
- EXPORTCH [int MC_SyncInit_chdl](#) (void *varg)
- EXPORTCH [int MC_TerminateAgent_chdl](#) (void *varg)
- EXPORTCH [int MC_TerminateAgentWG_chdl](#) (void *varg)

Variables

- [mc_platform_p g_mc_platform](#)

5.49.1 Function Documentation

5.49.1.1 EXPORTMC int MC_AclAddReceiver (fipa_acl_message_t * *acl*, const char * *name*, const char * *address*)

Definition at line 316 of file libmc.c.

References [fipa_agent_identifier_s::addresses](#), [fipa_agent_identifier_New\(\)](#), [fipa_agent_identifier_set_New\(\)](#), [fipa_agent_identifier_set_s::fipa_agent_identifiers](#), [fipa_url_New\(\)](#), [fipa_url_sequence_New\(\)](#), [fipa_agent_identifier_s::name](#), [fipa_url_sequence_s::num](#), [fipa_agent_identifier_set_s::num](#), [fipa_acl_message_s::receiver](#), [fipa_acl_message_s::receiver_num](#), [fipa_url_s::str](#), [strdup](#), and [fipa_url_sequence_s::urls](#).

Referenced by [MC_AclAddReceiver_chdl\(\)](#).

5.49.1.2 EXPORTCH int MC_AclAddReceiver_chdl (void * *varg*)

Definition at line 2819 of file libmc.c.

References [MC_AclAddReceiver\(\)](#).

Referenced by [agent_ChScriptInitVar\(\)](#).

5.49.1.3 EXPORTMC int MC_AclAddReplyTo (fipa_acl_message_t * *acl*, const char * *name*, const char * *address*)

Definition at line 352 of file libmc.c.

References fipa_agent_identifier_s::addresses, fipa_agent_identifier_New(), fipa_agent_identifier_set_New(), fipa_agent_identifier_set_s::fipa_agent_identifiers, fipa_url_New(), fipa_url_sequence_New(), fipa_agent_identifier_s::name, fipa_url_sequence_s::num, fipa_agent_identifier_set_s::num, fipa_acl_message_s::reply_to, fipa_url_s::str, strdup, and fipa_url_sequence_s::urls.

Referenced by MC_AclAddReplyTo_chdl().

5.49.1.4 EXPORTCH int MC_AclAddReplyTo_chdl (void * *varg*)

Definition at line 2839 of file libmc.c.

References MC_AclAddReplyTo().

Referenced by agent_ChScriptInitVar().

5.49.1.5 EXPORTMC int MC_AclDestroy (struct fipa_acl_message_s * *message*)

Destroy a FIPA ACL message.

Parameters

message The ACL message to destroy

Returns

0 on success, error code on failure.

Definition at line 79 of file libmc.c.

References fipa_acl_message_Destroy().

Referenced by MC_AclDestroy_chdl().

5.49.1.6 EXPORTMC int MC_AclDestroy_chdl (void * *varg*)

Definition at line 2551 of file libmc.c.

References MC_AclDestroy().

Referenced by agent_ChScriptInitVar().

5.49.1.7 EXPORTMC const char* MC_AclGetContent (struct fipa_acl_message_s * *acl*)

Definition at line 244 of file libmc.c.

References fipa_string_s::content, and fipa_acl_message_s::content.

Referenced by MC_AclGetContent_chdl().

5.49.1.8 EXPORTCH char* MC_AclGetContent_chdl (void * *varg*)

Definition at line 2730 of file libmc.c.

References MC_AclGetContent().

Referenced by agent_ChScriptInitVar().

5.49.1.9 EXPORTMC char* MC_AclGetConversationID (struct fipa_acl_message_s * *acl*)

Definition at line 219 of file libmc.c.

References fipa_string_s::content, fipa_expression_s::content, fipa_acl_message_s::conversation_id, and fipa_expression_s::content_u::string.

Referenced by MC_AclGetConversationID_chdl().

5.49.1.10 EXPORTCH char* MC_AclGetConversationID_chdl (void * *varg*)

Definition at line 2681 of file libmc.c.

References MC_AclGetConversationID().

Referenced by agent_ChScriptInitVar().

5.49.1.11 EXPORTMC enum fipa_performative_e MC_AclGetPerformative (struct fipa_acl_message_s * *acl*)

Definition at line 225 of file libmc.c.

References fipa_acl_message_s::performative.

Referenced by MC_AclGetPerformative_chdl().

5.49.1.12 EXPORTCH int MC_AclGetPerformative_chdl (void * *varg*)

Definition at line 2696 of file libmc.c.

References MC_AclGetPerformative().

Referenced by agent_ChScriptInitVar().

5.49.1.13 EXPORTMC enum fipa_protocol_e MC_AclGetProtocol (struct fipa_acl_message_s * *acl*)

Definition at line 213 of file libmc.c.

References fipa_acl_message_s::performative.

Referenced by MC_AclGetProtocol_chdl().

5.49.1.14 EXPORTCH int MC_AclGetProtocol_chdl (void * *varg*)

Definition at line 2666 of file libmc.c.

References MC_AclGetProtocol().

Referenced by agent_ChScriptInitVar().

5.49.1.15 EXPORTMC int MC_AclGetSender (struct fipa_acl_message_s * *acl*, char ** *name*, char ** *address*)

Definition at line 231 of file libmc.c.

References fipa_agent_identifier_s::addresses, fipa_agent_identifier_s::name, fipa_acl_message_s::sender, fipa_url_s::str, strdup, and fipa_url_sequence_s::urls.

Referenced by MC_AclGetSender_chdl().

5.49.1.16 EXPORTCH int MC_AclGetSender_chdl (void * *varg*)

Definition at line 2711 of file libmc.c.

References MC_AclGetSender().

Referenced by agent_ChScriptInitVar().

5.49.1.17 EXPORTMC fipa_acl_message_t* MC_AclNew (void) [read]

Allocate a new ACL Message.

Returns

A newly allocated and empty ACL message.

Definition at line 85 of file libmc.c.

References fipa_acl_message_New().

Referenced by MC_AclNew_chdl().

5.49.1.18 EXPORTMC void* MC_AclNew_chdl (void * *varg*)

Definition at line 2566 of file libmc.c.

References MC_AclNew().

Referenced by agent_ChScriptInitVar().

5.49.1.19 EXPORTMC int MC_AclPost (MCAgent_t *agent*, struct fipa_acl_message_s * *message*)

Post ACL message to agent.

Parameters

agent The agent to post the message to

message The message to post

Returns

0 if successful, or error_code_t type.

Definition at line 90 of file libmc.c.

References agent_mailbox_Post(), and agent_s::mailbox.

Referenced by MC_AclPost_chdl(), and MC_AclSend().

5.49.1.20 EXPORTMC int MC_AclPost_chdl (void * *varg*)

Definition at line 2574 of file libmc.c.

References MC_AclPost().

Referenced by agent_ChScriptInitVar().

5.49.1.21 EXPORTMC fipa_acl_message_t* MC_AclReply (struct fipa_acl_message_s * *acl_message*) [read]

Reply to an ACL message.

Parameters

acl_message The incoming acl message to reply to

Returns

A newly allocated ACL message

Note

This function simply generates a new ACL message with the 'receiver' field automatically set to the 'sender' field of the incoming message.

Definition at line 96 of file libmc.c.

References fipa_Reply().

Referenced by MC_AclReply_chdl().

5.49.1.22 EXPORTCH void* MC_AclReply_chdl (void * *varg*)

Definition at line 2592 of file libmc.c.

References MC_AclReply().

Referenced by agent_ChScriptInitVar().

5.49.1.23 EXPORTMC fipa_acl_message_t* MC_AclRetrieve (MCAgent_t *agent*) [read]

Retrieve an ACL message.

Parameters

agent Agent to retrieve message from.

Returns

an ACL message struct on success or NULL on failure

Definition at line 102 of file libmc.c.

References agent_mailbox_Retrieve(), and agent_s::mailbox.

Referenced by MC_AclRetrieve_chdl().

5.49.1.24 EXPORTCH void* MC_AclRetrieve_chdl (void * *varg*)

Definition at line 2608 of file libmc.c.

References MC_AclRetrieve().

Referenced by agent_ChScriptInitVar().

5.49.1.25 EXPORTMC int MC_AclSend (MCAgency_t *attr*, struct fipa_acl_message_s * *acl*)

Send a composed ACL Message.

Parameters

attr An initialized and running MobileC agency

acl An allocated and fully composed ACL message.

Returns

0 if successful, error code on failure.

Definition at line 108 of file libmc.c.

References fipa_agent_identifier_s::addresses, mtp_http_s::content, mtp_http_content_s::content_type, mtp_http_content_s::data, dynstring_Destroy(), FIPA_ACL, fipa_acl_Compose(), fipa_acl_message_Copy(), fipa_agent_identifier_set_s::fipa_agent_identifiers, fipa_envelope_Compose(), mtp_http_s::host, http_to_hostport(), MC_AclPost(), MC_FindAgentByName(), agency_s::mc_platform, dynstring_s::message, mtp_http_s::message_parts, message_Send(), message_s::message_type, mtp_http_CreateMessage(), mtp_http_Destroy(), mtp_http_New(), fipa_agent_identifier_s::name, fipa_url_sequence_s::num, fipa_agent_identifier_set_s::num, port, mc_platform_s::private_key, fipa_acl_message_s::receiver, fipa_url_s::str, strdup, mtp_http_s::target, message_s::target, and fipa_url_sequence_s::urls.

Referenced by MC_AclSend_chdl().

5.49.1.26 EXPORTCH int MC_AclSend_chdl (void * *varg*)

Definition at line 2624 of file libmc.c.

References CHECK_NULL, MC_AclSend(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

5.49.1.27 EXPORTMC int MC_AclSetContent (fipa_acl_message_t * *acl*, const char * *content*)

Definition at line 387 of file libmc.c.

References fipa_string_s::content, fipa_acl_message_s::content, fipa_string_Destroy(), fipa_string_New(), and strdup.

Referenced by MC_AclSetContent_chdl().

5.49.1.28 EXPORTCH int MC_AclSetContent_chdl (void * *varg*)

Definition at line 2859 of file libmc.c.

References `fipa_acl_message_s::content`, and `MC_AclSetContent()`.

Referenced by `agent_ChScriptInitVar()`.

5.49.1.29 EXPORTMC int MC_AclSetConversationID (fipa_acl_message_t * *acl*, char * *id*)

Definition at line 266 of file libmc.c.

References `fipa_string_s::content`, `fipa_expression_s::content`, `fipa_acl_message_s::conversation_id`, `FIPA_EXPR_STRING`, `fipa_expression_New()`, `fipa_string_New()`, `strdup`, `fipa_expression_s::content_u::string`, and `fipa_expression_s::type`.

Referenced by `MC_AclSetConversationID_chdl()`.

5.49.1.30 EXPORTCH int MC_AclSetConversationID_chdl (void * *varg*)

Definition at line 2763 of file libmc.c.

References `MC_AclSetConversationID()`.

Referenced by `agent_ChScriptInitVar()`.

5.49.1.31 EXPORTMC int MC_AclSetPerformative (fipa_acl_message_t * *acl*, enum fipa_performative_e *performative*)

Definition at line 285 of file libmc.c.

References `fipa_acl_message_s::performative`.

Referenced by `MC_AclSetPerformative_chdl()`.

5.49.1.32 EXPORTCH int MC_AclSetPerformative_chdl (void * *varg*)

Definition at line 2781 of file libmc.c.

References `MC_AclSetPerformative()`, and `fipa_acl_message_s::performative`.

Referenced by `agent_ChScriptInitVar()`.

5.49.1.33 EXPORTMC int MC_AclSetProtocol (fipa_acl_message_t * *acl*, enum fipa_protocol_e *protocol*)

Definition at line 250 of file libmc.c.

References `FIPA_PROTOCOL_END`, `FIPA_PROTOCOL_ERROR`, and `fipa_acl_message_s::protocol`.

Referenced by `MC_AclSetProtocol_chdl()`.

5.49.1.34 EXPORTCH int MC_AclSetProtocol_chdl (void * *varg*)

Definition at line 2745 of file libmc.c.

References MC_AclSetProtocol(), and fipa_acl_message_s::protocol.

Referenced by agent_ChScriptInitVar().

5.49.1.35 EXPORTMC int MC_AclSetSender (fipa_acl_message_t * *acl*, const char * *name*, const char * *address*)

Definition at line 293 of file libmc.c.

References fipa_agent_identifier_s::addresses, fipa_agent_identifier_Destroy(), fipa_agent_identifier_New(), fipa_url_New(), fipa_url_sequence_New(), fipa_agent_identifier_s::name, fipa_url_sequence_s::num, fipa_acl_message_s::sender, fipa_url_s::str, strdup, and fipa_url_sequence_s::urls.

Referenced by MC_AclSetSender_chdl().

5.49.1.36 EXPORTCH int MC_AclSetSender_chdl (void * *varg*)

Definition at line 2799 of file libmc.c.

References MC_AclSetSender().

Referenced by agent_ChScriptInitVar().

5.49.1.37 EXPORTMC fipa_acl_message_t* MC_AclWaitRetrieve (MCAgent_t *agent*) [read]

Wait for and retrieve an ACL message.

Parameters

agent Agent to retrieve message from.

Returns

an ACL message struct on success or NULL on failure

Definition at line 206 of file libmc.c.

References agent_mailbox_WaitRetrieve(), and agent_s::mailbox.

Referenced by MC_AclWaitRetrieve_chdl().

5.49.1.38 EXPORTCH void* MC_AclWaitRetrieve_chdl (void * *varg*)

Definition at line 2648 of file libmc.c.

References MC_AclWaitRetrieve().

Referenced by agent_ChScriptInitVar().

5.49.1.39 EXPORTMC int MC_AddAgent (MCAgency_t *attr*, MCAgent_t *agent*)

Add an agent to the agency 'attr'.

Parameters

attr a MobileC agency

agent An initialized MobileC agent

Returns

0 if successful, or `error_code_t` type

Definition at line 404 of file `libmc.c`.

References `mc_platform_s::agent_queue`, `mc_platform_s::ams`, `COND_SIGNAL`, `agency_s::mc_platform`, `agent_s::mc_platform`, `MUTEX_LOCK`, and `MUTEX_UNLOCK`.

Referenced by `handler_COMPOSE_SEND()`, and `MC_AddAgent_chdl()`.

5.49.1.40 EXPORTCH int MC_AddAgent_chdl (void * *varg*)

Definition at line 2879 of file `libmc.c`.

References `CHECK_NULL`, `MC_AddAgent()`, and `agency_s::mc_platform`.

Referenced by `agent_ChScriptInitVar()`.

5.49.1.41 EXPORTMC int MC_AddStationaryAgent (MCAgency_t *agency*, void (*)(stationary_agent_info_t *) *agent_thread*, const char * *name*, void * *agent_args*)

Definition at line 417 of file `libmc.c`.

References `stationary_agent_info_s::agency`, `stationary_agent_info_s::agent`, `agent_NewBinary()`, `mc_platform_s::agent_queue`, `stationary_agent_info_s::args`, `stationary_agent_info_s::attr`, `agency_s::mc_platform`, `agent_s::name`, `strdup`, `stationary_agent_info_s::thread`, and `THREAD_CREATE`.

5.49.1.42 EXPORTMC int MC_AgentAddTask (MCAgent_t *agent*, const char * *code*, const char * *return_var_name*, const char * *server*, int *persistent*)

Add a new task to an already existing agent.

Parameters

agent An existing agent

code The C code to use in the new task

return_var_name The name of the the return variable, or NULL if there is no return variable.

server The server to perform the task on.

persistent Whether or not the task is persistent. '1' indicates persistent, and '0' indicates not-persistent (the default)

Returns

Returns a valid agency handle or NULL on failure.

Definition at line 460 of file `libmc.c`.

References `agent_datastate_s::agent_code_ids`, `agent_datastate_s::agent_codes`, `agent_task_New()`, `agent_task_s::code_id`, `agent_s::datastate`, `agent_datastate_s::number_of_tasks`, `agent_task_s::persistent`, `agent_task_s::server_name`, `strdup`, `agent_datastate_s::tasks`, and `agent_task_s::var_name`.

Referenced by `MC_AgentAddTask_chdl()`, and `MC_AgentAddTaskFromFile()`.

5.49.1.43 EXPORTCH int MC_AgentAddTask_chdl (void * *varg*)

Definition at line 2903 of file libmc.c.

References MC_AgentAddTask().

Referenced by agent_ChScriptInitVar().

5.49.1.44 EXPORTMC int MC_AgentAddTaskFromFile (MCAgent_t *agent*, const char * *filename*, const char * *return_var_name*, const char * *server*, int *persistent*)

Add a new task to an already existing agent.

Parameters

agent An existing agent

filename The C code to use in the new task

return_var_name The name of the the return variable, or NULL if there is no return variable.

server The server to perform the task on.

persistent Whether or not the task is persistent. '1' indicates persistent, and '0' indicates not-persistent (the default)

Returns

Returns a valid agency handle or NULL on failure.

Definition at line 533 of file libmc.c.

References MC_AgentAddTask().

5.49.1.45 EXPORTMC MCAgency_t MC_AgentInfo_GetAgency (stationary_agent_info_t * *stationary_agent_info*)

Get the host Mobile-C agency handle from a "stationary_agent_info_t" data structure.

Parameters

stationary_agent_info A stationary_agent_info_t type variable provided to a stationary agent function

Returns

Returns a valid agency handle or NULL on failure.

Definition at line 445 of file libmc.c.

References stationary_agent_info_s::agency.

5.49.1.46 EXPORTMC MCAgent_t MC_AgentInfo_GetAgent (stationary_agent_info_t * *stationary_agent_info*)

Retrieve an agent handle from the stationary agent info from within a stationary agent.

Parameters

stationary_agent_info A stationary_agent_info_t type variable provided to a stationary agent function

Returns

Returns a valid agent handle or NULL on failure.

5.49.2 Examples

The following example demonstrates usage of [MC_AgentInfo_GetAgent\(\)](#)

Definition at line 450 of file libmc.c.

References [stationary_agent_info_s::agent](#).

5.49.2.1 EXPORTMC void* MC_AgentInfo_GetAgentArgs (stationary_agent_info_t * stationary_agent_info)

Retrieve the agent argument supplied as the "agent_args" parameter in the [MC_AddStationaryAgent\(\)](#) function.

Parameters

stationary_agent_info A stationary_agent_info_t type variable provided to a stationary agent function

Returns

Returns a valid pointer or NULL on failure.

Definition at line 455 of file libmc.c.

References [stationary_agent_info_s::args](#).

5.49.2.2 EXPORTMC int MC_AgentReturnArrayDim (MCAgent_t agent, int task_num)

Get the dimension of an agent's return data, if it is an array.

Parameters

agent A return agent

task task to retrieve the agent return data size from

Returns

Returns a positive integer on success or -1 on failure.

Definition at line 591 of file libmc.c.

References [agent_task_s::agent_return_data](#), [interpreter_variable_data_s::array_dim](#), [agent_s::datastate](#), [agent_datastate_s::number_of_tasks](#), and [agent_datastate_s::tasks](#).

5.49.2.3 EXPORTMC int MC_AgentReturnArrayExtent (MCAgent_t agent, int task_num, int index)

Get the extent of a dimension of an agent's return data, if it is an array.

Parameters

agent A return agent
task task to retrieve the agent return data size from
index The dimension index to get the extent

Returns

Returns a positive integer on success or -1 on failure.

Definition at line 567 of file libmc.c.

References agent_task_s::agent_return_data, interpreter_variable_data_s::array_dim, interpreter_variable_data_s::array_extent, agent_s::datastate, agent_datastate_s::number_of_tasks, and agent_datastate_s::tasks.

5.49.2.4 EXPORTMC int MC_AgentReturnArrayNum (MCAgent_t agent, int task_num)

Get the total number of elements of the agent return data.

Parameters

agent A return agent
task task to retrieve the agent return data size from
index The dimension index to get the extent

Returns

Returns a positive integer on success or -1 on failure.

Definition at line 609 of file libmc.c.

References agent_task_s::agent_return_data, interpreter_variable_data_s::array_dim, agent_s::datastate, agent_datastate_s::number_of_tasks, and agent_datastate_s::tasks.

5.49.2.5 EXPORTMC const void* MC_AgentReturnDataGetSymbolAddr (MCAgent_t agent, int task_num)

Get a pointer to the agent's return data.

Parameters

agent A return agent
task task to retrieve the agent return data from

Returns

Returns a pointer to the beginning of the task's return data on success. Returns NULL on failure.

Definition at line 639 of file libmc.c.

References agent_task_s::agent_return_data, interpreter_variable_data_s::data, agent_s::datastate, agent_datastate_s::number_of_tasks, and agent_datastate_s::tasks.

5.49.2.6 EXPORTMC size_t MC_AgentReturnDataSize (MCAgent_t agent, int task_num)

Get the size of an agent's return data type.

Parameters

agent A return agent

task task to retrieve the agent return data type size from

Returns

Returns a positive integer on success or -1 on failure.

Definition at line 656 of file libmc.c.

References agent_task_s::agent_return_data, CH_DATATYPE_SIZE, interpreter_variable_data_s::data_type, agent_s::datastate, agent_datastate_s::number_of_tasks, size, and agent_datastate_s::tasks.

5.49.2.7 EXPORTMC int MC_AgentReturnDataType (MCAgent_t agent, int task_num)

Get the type of an agent's return data.

Parameters

agent A return agent

task task to retrieve the agent return data type from

Returns

Returns a positive integer on success or -1 on failure. The return type is of type ChType_t, defined in ch.h

Definition at line 679 of file libmc.c.

References agent_task_s::agent_return_data, interpreter_variable_data_s::data_type, agent_s::datastate, agent_datastate_s::number_of_tasks, and agent_datastate_s::tasks.

5.49.2.8 EXPORTMC int MC_AgentReturnIsArray (MCAgent_t agent, int task_num)

Check to see whether or not an agent's return data is an array.

Parameters

agent A return agent

task task to check to see if the return data is an array.

Returns

Returns 1 if the return variable is an array, 0 if it is not an array, or -1 on failure.

Definition at line 689 of file libmc.c.

References agent_task_s::agent_return_data, interpreter_variable_data_s::array_dim, agent_s::datastate, agent_datastate_s::number_of_tasks, and agent_datastate_s::tasks.

5.49.2.9 EXPORTMC `const void* MC_AgentVariableRetrieve (MCAgent_t agent, const char * var_name, int task_num)`

Retrieve a pointer to a previously saved variable.

Parameters

agent A MobileC agent.

var_name The name of the saved variable that has previously been saved.

task_num The previous completed task from which to retrieve the saved variable.

Returns

A pointer to the data on success or NULL on failure.

5.49.3 Examples

The following example demonstrates usage of [MC_AgentVariableRetrieve\(\)](#) from agent space.

Definition at line 710 of file libmc.c.

References `agent_task_s::agent_variable_list`, `interpreter_variable_data_s::data`, `agent_s::datastate`, `agent_datastate_s::task_progress`, and `agent_datastate_s::tasks`.

Referenced by `MC_AgentVariableRetrieve_chdl()`.

5.49.3.1 EXPORTCH `const void* MC_AgentVariableRetrieve_chdl (void * varg)`

Definition at line 2937 of file libmc.c.

References `MC_AgentVariableRetrieve()`.

Referenced by `agent_ChScriptInitVar()`.

5.49.3.2 EXPORTMC `int MC_AgentVariableRetrieveInfo (MCAgent_t agent, const char * var_name, int task_num, const void ** data, int * dim, const int ** extent)`

Retrieve a info about a previously saved variable.

Parameters

agent A MobileC agent.

var_name The name of the saved variable that has previously been saved.

task_num The previous completed task from which to retrieve the saved variable.

data (Output) The Variable Data

dim (Output) The dimension of the data array

extent (Output) The extents of the output array

Returns

Error code.

Definition at line 728 of file libmc.c.

References `agent_task_s::agent_variable_list`, `interpreter_variable_data_s::array_dim`, `interpreter_variable_data_s::array_extent`, `interpreter_variable_data_s::data`, `agent_s::datastate`, `MC_ERR_NOT_FOUND`, `MC_SUCCESS`, `agent_datastate_s::task_progress`, and `agent_datastate_s::tasks`.

5.49.3.3 EXPORTMC int MC_AgentVariableSave (MCAgent_t *agent*, const char * *var_name*)

Mark an agent variable for saving.

Parameters

agent A MobileC agent.

var_name The name of the variable to mark for saving.

Returns

0 on success, non-zero on failure.

See also

`test1.xml`

5.49.4 Examples

See `agent_saved_variables_example/test1.xml` for an example of usage of this api function.

5.49.5 Examples

The following example demonstrates usage of [MC_AgentVariableSave\(\)](#) from agent space.

Definition at line 749 of file libmc.c.

References `agent_s::datastate`, `MC_ERR_MEMORY`, `agent_task_s::num_saved_variables`, `agent_task_s::saved_variables`, `strdup`, `agent_datastate_s::task_progress`, and `agent_datastate_s::tasks`.

Referenced by `MC_AgentVariableSave_chdl()`.

5.49.5.1 EXPORTCH int MC_AgentVariableSave_chdl (void * *varg*)

Definition at line 2961 of file libmc.c.

References `MC_AgentVariableSave()`.

Referenced by `agent_ChScriptInitVar()`.

5.49.5.2 EXPORTMC int MC_Barrier (MCAgency_t *attr*, int *id*)

Definition at line 770 of file libmc.c.

References `mc_platform_s::barrier_queue`, `barrier_queue_Get()`, `barrier_node_s::cond`, `COND_BROADCAST`, `COND_WAIT`, `barrier_node_s::lock`, `MC_ERR_NOT_FOUND`, `agency_s::mc_platform`,

MC_SUCCESS, MUTEX_LOCK, MUTEX_UNLOCK, node, barrier_node_s::num_registered, and barrier_node_s::num_waiting.

Referenced by MC_Barrier_chdl().

5.49.5.3 EXPORTCH int MC_Barrier_chdl (void * *varg*)

Definition at line 3013 of file libmc.c.

References CHECK_NULL, MC_Barrier(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

5.49.5.4 EXPORTMC int MC_BarrierDelete (MCAgency_t *attr*, int *id*)

Find and delete an initialized MobileC Barrier.

Parameters

attr A running MobileC agency

id The id of the barrier node to delete

Returns

returns 0 on success, error if the node is not found or other failure.

Definition at line 810 of file libmc.c.

References mc_platform_s::barrier_queue, barrier_queue_Delete(), and agency_s::mc_platform.

Referenced by MC_BarrierDelete_chdl().

5.49.5.5 EXPORTCH int MC_BarrierDelete_chdl (void * *varg*)

Definition at line 3036 of file libmc.c.

References CHECK_NULL, MC_BarrierDelete(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

5.49.5.6 EXPORTMC int MC_BarrierInit (MCAgency_t *attr*, int *id*, int *num_procs*)

Initialize a MobileC Barrier.

Parameters

attr A running MobileC agency

id The requested barrier id

num_procs The number of agents/threads/processes that will wait on the barrier

Returns

The allocated barrier id. May differ from the requested id if it is already in use.

5.49.6 Examples

The following example demonstrates an agent which sets up an MC_Barrier.

Definition at line 796 of file libmc.c.

References `barrier_node_Initialize()`, `mc_platform_s::barrier_queue`, `barrier_queue_Add()`, `barrier_queue_Get()`, `MC_ERR`, `agency_s::mc_platform`, `MC_SUCCESS`, and `node`.

Referenced by `MC_BarrierInit_chdl()`.

5.49.6.1 EXPORTCH int MC_BarrierInit_chdl (void * *varg*)

Definition at line 3059 of file libmc.c.

References `CHECK_NULL`, `MC_BarrierInit()`, and `agency_s::mc_platform`.

Referenced by `agent_ChScriptInitVar()`.

5.49.6.2 EXPORTMC int MC_CallAgentFunc (MCAgent_t *agent*, const char * *funcName*, void * *returnVal*, int *numArgs*, ...)

Use custom `ChOptions_t` type for internal Ch interpreter.

Parameters

- attr* A running MobileC agency
- options* Initialized Ch options structure

Returns

0 on success, `error_code_t` type on failure Calls a function defined in an agent

Parameters

- agent* An initialized and executed MobileC agent
- funcName* The name of the function to call
- returnVal* The agent function's return value
- numArgs* The number of arguments supplied to the agent function
- ... A variable argument list to be supplied to the agent function

Returns

0 if successful, `error_code_t` type on failure

5.49.7 Example

Definition at line 816 of file libmc.c.

References `agent_s::agent_interp`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, and `agent_s::run_lock`.

5.49.7.1 EXPORTCH int MC_CallAgentFunc_chdl (void * *varg*)

Definition at line 2983 of file libmc.c.

References MC_CallAgentFuncVar().

Referenced by agent_ChScriptInitVar().

5.49.7.2 EXPORTMC int MC_CallAgentFuncArg (MCAgent_t *agent*, const char * *funcName*, void * *returnVal*, void * *arg*)

Calls a function defined in an agent.

Parameters

agent An initialized and executed MobileC agent

funcName The name of the function to call

returnVal The agent function's return value

arg The agent functions argument

Note

The agent function must be of the form 'void* func(void* arg);'

Returns

0 if successful, error_code_t type on failure

5.49.8 Example

Definition at line 837 of file libmc.c.

References agent_s::agent_interp, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::run_lock.

5.49.8.1 EXPORTMC int MC_CallAgentFuncV (MCAgent_t *agent*, const char * *funcName*, void * *returnVal*, va_list *ap*)

Calls a function defined in an agent.

Parameters

agent An initialized and executed MobileC agent

funcName The name of the function to call

returnVal The agent function's return value

ap A variable argument list

Returns

0 if successful, error_code_t type on failure

Definition at line 856 of file libmc.c.

References agent_s::agent_interp, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::run_lock.

5.49.8.2 EXPORTMC int MC_CallAgentFuncVar (MCAgent_t *agent*, const char * *funcName*, void * *returnVal*, ChVaList_t *varg*)

Definition at line 876 of file libmc.c.

References agent_s::agent_interp, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::run_lock.

Referenced by MC_CallAgentFunc_chdl().

5.49.8.3 EXPORTMC MCAgent_t MC_ComposeAgent (const char * *name*, const char * *home*, const char * *owner*, const char * *code*, const char * *return_var_name*, const char * *server*, int *persistent*)

Compose a new agent dynamically without using a prewritten XML file.

Parameters

name The desired name of the new agent.

home The home of the new agent.

owner The owner of the new agent.

code The agent code

return_var_name The name of the agent's return variable. Set to "no-return" if no return variable is desired.

server The target destination of the agent.

persistant A flag indicating whether or not the agent should be persistent. A value of '1' indicates persistence, while a value of '0' indicates default non-persistent behaviour.

Returns

This function returns a valid MCAgent_t structure on success or NULL on failure.

Definition at line 916 of file libmc.c.

References MC_ComposeAgentWithWorkgroup().

5.49.8.4 EXPORTCH MCAgent_t MC_ComposeAgent_chdl (void * *varg*)

Definition at line 3107 of file libmc.c.

References MC_ComposeAgentWithWorkgroup().

Referenced by agent_ChScriptInitVar().

5.49.8.5 EXPORTMC MCAgent_t MC_ComposeAgentFromFile (const char * *name*, const char * *home*, const char * *owner*, const char * *filename*, const char * *return_var_name*, const char * *server*, int *persistent*)

Compose a new agent dynamically from a source code file.

Parameters

filename The filename of the source file

name The desired name of the new agent.

home The home of the new agent.

owner The owner of the new agent.

code The agent code

return_var_name The name of the agent's return variable. Set to "no-return" if no return variable is desired.

server The target destination of the agent.

persistent A flag indicating whether or not the agent should be persistent. A value of '1' indicates persistence, while a value of '0' indicates default non-persistent behaviour.

Returns

This function returns a valid `MCAgent_t` structure on success or `NULL` on failure.

Definition at line 1042 of file `libmc.c`.

References `MC_ComposeAgentFromFileWithWorkgroup()`.

Referenced by `handler_COMPOSE_SEND()`.

5.49.8.6 EXPORTCH `MCAgent_t MC_ComposeAgentFromFile_chdl (void * varg)`

Definition at line 3191 of file `libmc.c`.

References `MC_ComposeAgentFromFileWithWorkgroup()`.

Referenced by `agent_ChScriptInitVar()`.

5.49.8.7 EXPORTMC `MCAgent_t MC_ComposeAgentFromFileS (const char * name, const char * home, const char * owner, const char * filename, const char * return_var_name, const char * server, int persistent, const char * workgroup_code)`

Compose a new agent dynamically from a source code file.

Parameters

filename The filename of the source file

name The desired name of the new agent.

home The home of the new agent.

owner The owner of the new agent.

code The agent code

return_var_name The name of the agent's return variable. Set to "no-return" if no return variable is desired.

server The target destination of the agent.

workgroup_code The secret workgroup code of the agent. Only agents with the same workgroup code may perform certain interactions.

persistent A flag indicating whether or not the agent should be persistent. A value of '1' indicates persistence, while a value of '0' indicates default non-persistent behaviour.

Returns

This function returns a valid `MCAgent_t` structure on success or `NULL` on failure.

Note

This function is deprecated. Please use the `MC_ComposeAgentFromFileWithWorkgroup` function instead.

Definition at line 1064 of file `libmc.c`.

References `MC_ComposeAgentFromFileWithWorkgroup()`.

5.49.8.8 EXPORTMC MCAgent_t MC_ComposeAgentFromFileWithWorkgroup (const char * *name*, const char * *home*, const char * *owner*, const char * *filename*, const char * *return_var_name*, const char * *server*, int *persistent*, const char * *workgroup_code*)

Compose a new agent dynamically from a source code file.

Parameters

filename The filename of the source file

name The desired name of the new agent.

home The home of the new agent.

owner The owner of the new agent.

code The agent code

return_var_name The name of the agent's return variable. Set to "no-return" if no return variable is desired.

server The target destination of the agent.

workgroup_code The secret workgroup code of the agent. Only agents with the same workgroup code may perform certain interactions.

persistent A flag indicating whether or not the agent should be persistent. A value of '1' indicates persistence, while a value of '0' indicates default non-persistent behaviour.

Returns

This function returns a valid `MCAgent_t` structure on success or `NULL` on failure.

Definition at line 1089 of file `libmc.c`.

References `MC_ComposeAgentWithWorkgroup()`.

Referenced by `MC_ComposeAgentFromFile()`, `MC_ComposeAgentFromFile_chdl()`, `MC_ComposeAgentFromFileS()`, and `MC_ComposeAgentFromFileWithWorkgroup_chdl()`.

5.49.8.9 EXPORTCH MCAgent_t MC_ComposeAgentFromFileWithWorkgroup_chdl (void * *varg*)

Definition at line 3232 of file `libmc.c`.

References `MC_ComposeAgentFromFileWithWorkgroup()`.

Referenced by `agent_ChScriptInitVar()`.

5.49.8.10 EXPORTMC MCAgent_t MC_ComposeAgentS (const char * *name*, const char * *home*, const char * *owner*, const char * *code*, const char * *return_var_name*, const char * *server*, int *persistent*, const char * *workgroup_code*)

Compose a new agent dynamically without using a prewritten XML file.

Parameters

name The desired name of the new agent.

home The home of the new agent.

owner The owner of the new agent.

code The agent code

return_var_name The name of the agent's return variable. Set to "no-return" if no return variable is desired.

server The target destination of the agent.

workgroup_code The secret workgroup code of the agent. Only agents with the same workgroup code may perform certain interactions.

persistant A flag indicating whether or not the agent should be persistent. A value of '1' indicates persistence, while a value of '0' indicates default non-persistent behaviour.

Returns

This function returns a valid MCAgent_t structure on success or NULL on failure.

Note

This function is deprecated. Please use the MC_ComposeAgentWithWorkgroup function instead.

Definition at line 939 of file libmc.c.

References MC_ComposeAgentWithWorkgroup().

Referenced by MC_ComposeAgentWithWorkgroup_chdl().

5.49.8.11 EXPORTMC MCAgent_t MC_ComposeAgentWithWorkgroup (const char * *name*, const char * *home*, const char * *owner*, const char * *code*, const char * *return_var_name*, const char * *server*, int *persistent*, const char * *workgroup_code*)

Compose a new agent dynamically without using a prewritten XML file.

Parameters

name The desired name of the new agent.

home The home of the new agent.

owner The owner of the new agent.

code The agent code

return_var_name The name of the agent's return variable. Set to "no-return" if no return variable is desired.

server The target destination of the agent.

workgroup_code The secret workgroup code of the agent. Only agents with the same workgroup code may perform certain interactions.

persistent A flag indicating whether or not the agent should be persistent. A value of '1' indicates persistence, while a value of '0' indicates default non-persistent behaviour.

Returns

This function returns a valid MCAgent_t structure on success or NULL on failure.

Note

This function is deprecated

Definition at line 965 of file libmc.c.

References agent_datastate_s::agent_code, agent_datastate_s::agent_code_ids, agent_datastate_s::agent_codes, agent_datastate_New(), agent_New(), agent_s::agent_status, agent_task_New(), agent_s::agent_type, agent_s::datastate, agent_s::home, MC_LOCAL_AGENT, MC_WAIT_MESSGSEND, agent_s::name, agent_datastate_s::number_of_tasks, agent_s::orphan, agent_s::owner, agent_task_s::persistent, agent_task_s::server_name, strdup, agent_datastate_s::tasks, agent_task_s::var_name, and agent_s::wg_code.

Referenced by MC_ComposeAgent(), MC_ComposeAgent_chdl(), MC_ComposeAgentFromFileWithWorkgroup(), and MC_ComposeAgentS().

5.49.8.12 EXPORTCH MCAgent_t MC_ComposeAgentWithWorkgroup_chdl (void * varg)

Definition at line 3148 of file libmc.c.

References MC_ComposeAgentS().

Referenced by agent_ChScriptInitVar().

5.49.8.13 EXPORTMC int MC_CondBroadcast (MCAgency_t attr, int id)

Wakes up all agents/threads waiting on a condition variable.

Parameters

attr A MobileC agency

id Synchronization variable id to broadcast to

See also

[MC_SyncInit\(\)](#), [MC_CondSignal\(\)](#)

Returns

0 on success, error_code_t type on failure

Definition at line 1133 of file libmc.c.

References syncListNode_s::cond, COND_BROADCAST, syncListNode_s::lock, MC_ERR_NOT_FOUND, agency_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, syncListNode_s::signalled, mc_platform_s::syncList, and syncListFind().

Referenced by MC_CondBroadcast_chdl().

5.49.8.14 EXPORTCH int MC_CondBroadcast_chdl (void * *varg*)

Definition at line 3084 of file libmc.c.

References CHECK_NULL, MC_CondBroadcast(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

5.49.8.15 EXPORTMC int MC_CondReset (MCAgency_t *attr*, int *id*)

Reset a previously signalled MobileC condition variable.

Parameters

attr A MobileC Agency

id The synchronization variable id to reset

See also

[MC_SyncInit\(\)](#)

Returns

0 on success, error_code_t type on failure

Definition at line 1185 of file libmc.c.

References syncListNode_s::lock, MC_ERR_NOT_FOUND, agency_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, syncListNode_s::signalled, mc_platform_s::syncList, and syncListFind().

Referenced by MC_CondReset_chdl().

5.49.8.16 EXPORTCH int MC_CondReset_chdl (void * *varg*)

Definition at line 3298 of file libmc.c.

References CHECK_NULL, MC_CondReset(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

5.49.8.17 EXPORTMC int MC_CondSignal (MCAgency_t *attr*, int *id*)

Wakes up at least one thread waiting on a condition variable.

Parameters

attr A MobileC agency

id synchronization variable id

See also

[MC_SyncInit\(\)](#)

Returns

0 on success, error_code_t type on failure

5.49.9 Example

The following example demonstrates the agent-space version of the function, which is nearly identical to the binary space api function.

Definition at line 1148 of file libmc.c.

References syncListNode_s::cond, COND_SIGNAL, syncListNode_s::lock, MC_ERR_NOT_FOUND, agency_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, syncListNode_s::signalled, mc_platform_s::syncList, and syncListFind().

Referenced by MC_CondSignal_chdl().

5.49.9.1 EXPORTCH int MC_CondSignal_chdl (void * *varg*)

Definition at line 3275 of file libmc.c.

References CHECK_NULL, MC_CondSignal(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

5.49.9.2 EXPORTMC int MC_CondWait (MCAgency_t *attr*, int *id*)

Wait on a MobileC synchronization variable.

Parameters

attr A MobileC agency

id a synchronization variable id

See also

[MC_SyncInit\(\)](#)

Returns

0 on success, error_code_t type on failure

5.49.10 Example

The following example demonstrates the agent-space version of this function.

Definition at line 1163 of file libmc.c.

References syncListNode_s::cond, COND_WAIT, syncListNode_s::lock, MC_ERR_NOT_FOUND, agency_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, syncListNode_s::signalled, mc_platform_s::syncList, and syncListFind().

Referenced by MC_CondWait_chdl().

5.49.10.1 EXPORTCH int MC_CondWait_chdl (void * *varg*)

Definition at line 3321 of file libmc.c.

References CHECK_NULL, MC_CondWait(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

5.49.10.2 EXPORTMC int MC_CopyAgent (MCAgent_t * *agent_out*, const MCAgent_t *agent_in*)

Performs a deep-copy of an agent structure.

Parameters

agent_out A pointer to the agent to copy to.

agent_in The agent to copy

Returns

0 on success, error_code_t type on failure.

Definition at line 1203 of file libmc.c.

References agent_Copy(), and MC_SUCCESS.

5.49.10.3 EXPORTMC int MC_DeleteAgent (MCAgent_t *agent*)

Stop and remove an agent.

Parameters

agent An agent in any state (running, waiting, etc)

Returns

0 on success, error_code_t type on failure

Definition at line 1210 of file libmc.c.

References CHECK_NULL, MC_ERR_INVALID, MC_ERR_INVALID_ARGS, MC_SUCCESS, MC_TerminateAgent(), and agent_s::wg_code.

Referenced by MC_DeleteAgent_chdl().

5.49.10.4 EXPORTCH int MC_DeleteAgent_chdl (void * *varg*)

Definition at line 3343 of file libmc.c.

References MC_DeleteAgent(), MC_ERR_NOT_FOUND, and MC_FindAgentByName().

Referenced by agent_ChScriptInitVar().

5.49.10.5 EXPORTMC int MC_DeleteAgentWG (MCAgent_t *calling_agent*, MCAgent_t *agent*)

Stop and remove an agent in the same workgroup.

Parameters

calling_agent The calling agent
agent An agent in any state (running, waiting, etc)

Note

The agents must belong to the same workgroup.

Returns

0 on success, error_code_t type on failure

Definition at line 1227 of file libmc.c.

References CHECK_NULL, MC_ERR_INVALID, MC_ERR_INVALID_ARGS, MC_SUCCESS, MC_TerminateAgentWG(), and agent_s::wg_code.

Referenced by MC_DeleteAgentWG_chdl().

5.49.10.6 EXPORTCH int MC_DeleteAgentWG_chdl (void * *varg*)

Definition at line 3363 of file libmc.c.

References MC_DeleteAgentWG(), MC_ERR_NOT_FOUND, and MC_FindAgentByName().

Referenced by agent_ChScriptInitVar().

5.49.10.7 EXPORTMC int MC_DeregisterService (MCAgency_t *agency*, int *agentID*, const char * *serviceName*)

Definition at line 1267 of file libmc.c.

References mc_platform_s::df, df_AddRequest(), df_request_list_node_New(), and agency_s::mc_platform.

Referenced by MC_DeregisterService_chdl().

5.49.10.8 EXPORTCH int MC_DeregisterService_chdl (void * *varg*)

Definition at line 3412 of file libmc.c.

References CHECK_NULL, MC_DeregisterService(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

5.49.10.9 EXPORTMC int MC_DestroyServiceSearchResult (char ** *agentName*, char ** *serviceName*, int * *agentID*, int *numResult*)

Free memory allocated by a Service Search operation.

Parameters

agentName agent names returned by a search operation.
serviceName service names return by a search operation.
agentID list of agent id's returned by a search operation.

numResult The number of hits returned by a search operation.

Returns

0 on success, error code on failure.

Definition at line 1247 of file libmc.c.

Referenced by MC_DestroyServiceSearchResult_chdl().

5.49.10.10 EXPORTCH int MC_DestroyServiceSearchResult_chdl (void * *varg*)

Definition at line 3385 of file libmc.c.

References MC_DestroyServiceSearchResult().

Referenced by agent_ChScriptInitVar().

5.49.10.11 EXPORTMC int MC_End (MCAgency_t *attr*)

End an agency.

Parameters

attr A running agency

Returns

0 on success, error_code_t type on failure

5.49.11 Example

Definition at line 1296 of file libmc.c.

References mc_platform_s::acc, mc_platform_s::ams, mc_platform_s::cmd_prompt, COND_BROADCAST, COND_SIGNAL, mc_platform_s::connection_queue, mc_platform_s::df, GET_THREAD_MODE, agency_s::hostName, agency_s::mc_platform, mc_platform_Destroy(), MC_THREAD_ACC, MC_THREAD_AMS, MC_THREAD_CP, MC_THREAD_DF, mc_platform_s::message_queue, MUTEX_LOCK, MUTEX_UNLOCK, mc_platform_s::quit, mc_platform_s::quit_cond, mc_platform_s::quit_lock, cmd_prompt_s::thread, THREAD_CANCEL, THREAD_JOIN, and agency_s::threads.

Referenced by MC_End_chdl().

5.49.11.1 EXPORTCH int MC_End_chdl (void * *varg*)

Definition at line 3439 of file libmc.c.

References CHECK_NULL, MC_End(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

5.49.11.2 EXPORTMC MCAgent_t MC_FindAgentByID (MCAgency_t *attr*, int *ID*)

Find an agent by its id.

Parameters

attr the agency to search

ID the id to search for

Returns

a valid agent on success, NULL on failure

Definition at line 1372 of file libmc.c.

References mc_platform_s::agent_queue, and agency_s::mc_platform.

Referenced by MC_FindAgentByID_chdl().

5.49.11.3 EXPORTCH MCAgent_t MC_FindAgentByID_chdl (void * *varg*)

Definition at line 3456 of file libmc.c.

References CHECK_NULL, MC_FindAgentByID(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

5.49.11.4 EXPORTMC MCAgent_t MC_FindAgentByName (MCAgency_t *attr*, const char * *name*)

Find an agent by its name.

Parameters

attr a running agency

name name to search for

Returns

a valid agent on success or NULL on failure

5.49.12 Example

Definition at line 1359 of file libmc.c.

References mc_platform_s::agent_queue, and agency_s::mc_platform.

Referenced by MC_AclSend(), MC_DeleteAgent_chdl(), MC_DeleteAgentWG_chdl(), MC_FindAgentByName_chdl(), MC_TerminateAgent_chdl(), and MC_TerminateAgentWG_chdl().

5.49.12.1 EXPORTCH MCAgent_t MC_FindAgentByName_chdl (void * *varg*)

Definition at line 3479 of file libmc.c.

References CHECK_NULL, MC_FindAgentByName(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

5.49.12.2 EXPORTMC time_t MC_GetAgentArrivalTime (MCAgent_t *agent*)

Definition at line 1390 of file libmc.c.

References agent_s::arrival_time.

Referenced by MC_GetAgentArrivalTime_chdl().

5.49.12.3 EXPORTCH time_t MC_GetAgentArrivalTime_chdl (void * *varg*)

Definition at line 3506 of file libmc.c.

References MC_GetAgentArrivalTime().

5.49.12.4 EXPORTMC void* MC_GetAgentExecEngine (MCAgent_t *agent*)

Retrieve an agent's Ch interpreter.

Parameters

agent a valid agent

Returns

a Ch interpreter of type 'ChInterp_t' on success, or NULL on failure.

Definition at line 1427 of file libmc.c.

References agent_s::agent_interp.

5.49.12.5 EXPORTMC int MC_GetAgentID (MCAgent_t *agent*)

Retrieve an agent's id.

Definition at line 1433 of file libmc.c.

References agent_s::id.

Referenced by MC_GetAgentID_chdl().

5.49.12.6 EXPORTCH int MC_GetAgentID_chdl (void * *varg*)

Definition at line 3526 of file libmc.c.

References MC_GetAgentID().

Referenced by agent_ChScriptInitVar().

5.49.12.7 EXPORTMC char* MC_GetAgentName (MCAgent_t *agent*)

Definition at line 1441 of file libmc.c.

References agent_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::name.

Referenced by MC_GetAgentName_chdl().

5.49.12.8 EXPORTCH char* MC_GetAgentName_chdl (void * *varg*)

Definition at line 3542 of file libmc.c.

References MC_GetAgentName().

Referenced by agent_ChScriptInitVar().

5.49.12.9 EXPORTMC int MC_GetAgentNumTasks (MCAgent_t *agent*)

Retrive the number of tasks an agent has.

5.49.13 Example

Definition at line 1524 of file libmc.c.

References agent_s::datastate, and agent_datastate_s::number_of_tasks.

Referenced by MC_GetAgentNumTasks_chdl().

5.49.13.1 EXPORTCH int MC_GetAgentNumTasks_chdl (void * *varg*)

Definition at line 3558 of file libmc.c.

References MC_GetAgentNumTasks().

5.49.13.2 EXPORTMC int MC_GetAgentReturnData (MCAgent_t *agent*, int *task_num*, void ** *data*, int * *dim*, int ** *extent*)

Get an agent's return data.

Parameters

agent a valid agent

task_num the task for which to retrieve the return data. The task must already be completed.

data the return data. May be multi dimensional array.

dim the number of dimensions of the return array.

extent the extent of each one of the array dimensions.

5.49.14 Example

This file demonstrates the retrieval of agent return data from an agent

This is the agent which gets the data

Definition at line 1459 of file libmc.c.

References agent_task_s::agent_return_data, interpreter_variable_data_s::array_dim, interpreter_variable_data_s::array_extent, CH_DATATYPE_SIZE, interpreter_variable_data_s::data_type, agent_s::datastate, agent_datastate_s::number_of_tasks, size, and agent_datastate_s::tasks.

5.49.14.1 EXPORTMC int MC_GetAgentStatus (MCAgent_t agent)

Get an agent's current status.

Returns

returns type 'enum MC_AgentStatus_e'

Definition at line 1405 of file libmc.c.

References agent_s::agent_status, agent_s::lock, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by MC_GetAgentStatus_chdl().

5.49.14.2 EXPORTCH int MC_GetAgentStatus_chdl (void * varg)

Definition at line 3574 of file libmc.c.

References MC_GetAgentStatus().

Referenced by agent_ChScriptInitVar().

5.49.14.3 EXPORTMC enum MC_AgentType_e MC_GetAgentType (MCAgent_t agent)

Get an agent's type.

Returns

returns type 'enum MC_AgentType_e'

Definition at line 1530 of file libmc.c.

References agent_s::agent_type.

5.49.14.4 EXPORTMC char* MC_GetAgentXMLString (MCAgent_t agent)

Get an agent's xml string.

Returns

a malloc'd character string containing the agent's xml code

Definition at line 1415 of file libmc.c.

References agent_s::datastate, mxmlSaveAllocString(), and agent_datastate_s::xml_agent_root.

Referenced by MC_GetAgentXMLString_chdl().

5.49.14.5 EXPORTCH char* MC_GetAgentXMLString_chdl (void * *varg*)

Definition at line 3590 of file libmc.c.

References MC_GetAgentXMLString().

Referenced by agent_ChScriptInitVar().

5.49.14.6 EXPORTMC int MC_GetAllAgents (MCAgency_t *attr*, MCAgent_t ** *agents*, int * *num_agents*)

Definition at line 1540 of file libmc.c.

References mc_platform_s::agent_queue, mc_platform_s::giant, mc_platform_s::giant_lock, MC_HaltAgency(), agency_s::mc_platform, MC_ResumeAgency(), MUTEX_LOCK, and MUTEX_UNLOCK.

5.49.14.7 EXPORTCH int MC_GetTimeOfDay_chdl (void * *varg*)

Definition at line 3606 of file libmc.c.

Referenced by agent_ChScriptInitVar().

5.49.14.8 EXPORTMC int MC_HaltAgency (MCAgency_t *agency*)

Halt an agency: Do not process new entries in queues.

Parameters

agency A handle to a running MobileC agency.

Returns

0 on success, non-zero on failure.

Definition at line 1576 of file libmc.c.

References mc_platform_s::giant, mc_platform_s::giant_lock, agency_s::mc_platform, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by MC_GetAllAgents(), and MC_HaltAgency_chdl().

5.49.14.9 EXPORTCH int MC_HaltAgency_chdl (void * *varg*)

Definition at line 3621 of file libmc.c.

References CHECK_NULL, MC_HaltAgency(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

5.49.14.10 EXPORTMC MCAgency_t MC_Initialize (int *port*, MCAgencyOptions_t * *options*)

Initialize and start a MobileC agency.

Parameters

port the TCP port the agency should bind to

options initialized MobileC options or NULL for default options

Returns

a handle to a running MobileC agency or NULL on failure

5.49.15 Example

Definition at line 1585 of file libmc.c.

References MCAgencyOptions_s::bluetooth, agency_s::bluetooth, buf, MCAgencyOptions_s::ch_options, agency_s::client, MCAgencyOptions_s::default_agent_status, agency_s::default_agentstatus, f, agency_s::hostName, MCAgencyOptions_s::initInterps, agency_s::initInterps, agency_s::known_host_filename, MCAgencyOptions_s::known_host_filename, MC_InitializeAgencyOptions(), mc_platform, agency_s::mc_platform, mc_platform_Initialize(), MC_THREAD_ALL, MCAgencyOptions_s::passphrase, agency_s::portno, agency_s::priv_key_filename, MCAgencyOptions_s::priv_key_filename, read_encrypted_file(), agency_s::server, MCAgencyOptions_s::stack_size, agency_s::stack_size, strdup, MCAgencyOptions_s::threads, and agency_s::threads.

5.49.15.1 EXPORTMC int MC_InitializeAgencyOptions (struct MCAgencyOptions_s * *options*)

Initialize MobileC options.

Parameters

options options to initialize.

Returns

0 on success, error_code_t on failure

Note

MobileC options should be initialized with this function before any of its members are modified.

5.49.16 Example

Definition at line 1695 of file libmc.c.

References MCAgencyOptions_s::bluetooth, MCAgencyOptions_s::default_agent_status, MCAgencyOptions_s::initInterps, MCAgencyOptions_s::known_host_filename, MC_THREAD_ALL, MC_WAIT_CH, MCAgencyOptions_s::modified, MCAgencyOptions_s::passphrase, MCAgencyOptions_s::priv_key_filename, MCAgencyOptions_s::stack_size, and MCAgencyOptions_s::threads.

Referenced by MC_Initialize().

5.49.16.1 EXPORTMC int MC_LoadAgentFromFile (MCAgency_t *attr*, const char * *filename*)

Load an agent from a file into an agency.

Parameters

agency A valid and running Mobile-C agency
filename Filename containing the agent to load

Returns

0 on success, non-zero on failure.

Definition at line 1717 of file libmc.c.

References buf, agency_s::mc_platform, message_Destroy(), message_InitializeFromString(), message_New(), mc_platform_s::message_queue, MXML_DESCEND, mxmlFindElement(), mxmlLoadString(), message_s::to_address, message_s::xml_payload, and message_s::xml_root.

5.49.16.2 EXPORTMC int MC_MainLoop (MCAgency_t *attr*)

Wait indefinitely.

Note

This function is intended to block the calling thread forever.

Definition at line 2481 of file libmc.c.

References COND_WAIT, agency_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, mc_platform_s::quit, mc_platform_s::quit_cond, and mc_platform_s::quit_lock.

5.49.16.3 EXPORTMC int MC_MigrateAgent (MCAgent_t *agent*, const char * *hostname*, int *port*)

Migrates a running agent to another host.

Parameters

agent The agent to migrate
hostname The new host to migrate the agent to
port The new port to migrate the agent to

Returns

0 on success, error_code_t type on failure.

Definition at line 1787 of file libmc.c.

References agent_s::datastate, agent_datastate_s::progress_modifier, agent_task_s::server_name, agent_datastate_s::task_progress, and agent_datastate_s::tasks.

Referenced by MC_MigrateAgent_chdl().

5.49.16.4 EXPORTCH int MC_MigrateAgent_chdl (void * varg)

Definition at line 3638 of file libmc.c.

References MC_MigrateAgent(), and port.

Referenced by agent_ChScriptInitVar().

5.49.16.5 EXPORTMC int MC_MutexLock (MCAgency_t attr, int id)

Locks a MobileC synchronization variable as a mutex.

Parameters

attr a MobileC agency handle

id the synchronization variable id to lock

Returns

0 on success, error_code_t type on failure

5.49.17 Example

Consider the following agents, which use the agent-space version of this api function. Note that the 'sleep' agent is sent first, followed by the 'wake' agent.

Definition at line 1809 of file libmc.c.

References syncListNode_s::lock, agency_s::mc_platform, MUTEX_LOCK, mc_platform_s::syncList, and syncListFind().

Referenced by MC_MutexLock_chdl().

5.49.17.1 EXPORTCH int MC_MutexLock_chdl (void * varg)

Definition at line 3657 of file libmc.c.

References CHECK_NULL, MC_MutexLock(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

5.49.17.2 EXPORTMC int MC_MutexUnlock (MCAgency_t *attr*, int *id*)

Definition at line 1821 of file libmc.c.

References syncListNode_s::lock, agency_s::mc_platform, MUTEX_UNLOCK, mc_platform_s::syncList, and syncListFind().

Referenced by MC_MutexUnlock_chdl().

5.49.17.3 EXPORTCH int MC_MutexUnlock_chdl (void * *varg*)

Definition at line 3681 of file libmc.c.

References CHECK_NULL, MC_MutexUnlock(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

5.49.17.4 EXPORTMC int MC_PrintAgentCode (MCAgent_t *agent*)

Prints an agents code to stdout.

Returns

0 on success, error_code_t on failure

Definition at line 1833 of file libmc.c.

References agent_datastate_s::agent_code, agent_s::datastate, agent_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, agent_datastate_s::number_of_tasks, and agent_datastate_s::task_progress.

Referenced by MC_PrintAgentCode_chdl().

5.49.17.5 EXPORTCH int MC_PrintAgentCode_chdl (void * *varg*)

Definition at line 3705 of file libmc.c.

References MC_PrintAgentCode().

Referenced by agent_ChScriptInitVar().

5.49.17.6 EXPORTMC int MC_RegisterService (MCAgency_t *agency*, MCAgent_t *agent*, int *agentID*, const char * *agentName*, char ** *serviceNames*, int *numServices*)

Register a new service with the Directory Facilitator.

Parameters

agency a MobileC agency handle

agent (OPTIONAL: See note) a MobileC agent

agentID (OPTIONAL: See note) a MobileC agent id

agentName (OPTIONAL: See note) a MobileC agent name

serviceNames an array of character strings of service names

numServices the number of services described in 'serviceNames'

Returns

0 on success, `error_code_t` type on failure

Note

Three of the input arguments are optional. The function expects as input the arguments 'agent XOR (agentID AND agentName)'.

5.49.18 Example

Definition at line 1849 of file libmc.c.

References `CHECK_NULL`, `mc_platform_s::df`, `df_AddRequest()`, `df_request_list_node_New()`, `agent_s::id`, `MC_ERR_INVALID_ARGS`, `MC_ERR_MEMORY`, `agency_s::mc_platform`, `MUTEX_INIT`, `MUTEX_T`, and `agent_s::name`.

Referenced by `MC_RegisterService_chdl()`.

5.49.18.1 EXPORTCH int MC_RegisterService_chdl (void * *varg*)

Definition at line 3721 of file libmc.c.

References `CHECK_NULL`, `agency_s::mc_platform`, and `MC_RegisterService()`.

Referenced by `agent_ChScriptInitVar()`.

5.49.18.2 EXPORTMC int MC_ResetSignal (MCAgency_t *attr*)

Reset a MobileC signal.

Returns

0 on success, `error_code_t` on failure

See also

[MC_WaitSignal\(\)](#)

Definition at line 1981 of file libmc.c.

References `COND_SIGNAL`, `mc_platform_s::giant`, `mc_platform_s::giant_cond`, `mc_platform_s::giant_lock`, `MC_NO_SIGNAL`, `agency_s::mc_platform`, `mc_platform_s::MC_signal`, `MUTEX_LOCK`, and `MUTEX_UNLOCK`.

5.49.18.3 EXPORTMC int MC_ResumeAgency (MCAgency_t *agency*)

Resumes a halted agency.

Parameters

agency An agency previously halted with the [MC_HaltAgency\(\)](#) function.

Returns

0 on success, non-zero on failure.

Definition at line 1928 of file libmc.c.

References mc_platform_s::giant, mc_platform_s::giant_lock, agency_s::mc_platform, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by MC_GetAllAgents(), and MC_ResumeAgency_chdl().

5.49.18.4 EXPORTCH int MC_ResumeAgency_chdl (void * *varg*)

Definition at line 3758 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_ResumeAgency().

Referenced by agent_ChScriptInitVar().

5.49.18.5 EXPORTMC MCAgent_t MC_RetrieveAgent (MCAgency_t *attr*)

Retrieves the oldest agent from an agency.

Returns

a valid agent or NULL on failure

Definition at line 1937 of file libmc.c.

References mc_platform_s::agent_queue, agent_s::agent_status, ListSearch(), MC_AGENT_NEUTRAL, agency_s::mc_platform, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by MC_RetrieveAgent_chdl().

5.49.18.6 EXPORTCH MCAgent_t MC_RetrieveAgent_chdl (void * *varg*)

Definition at line 3776 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_RetrieveAgent().

Referenced by agent_ChScriptInitVar().

5.49.18.7 EXPORTMC char* MC_RetrieveAgentCode (MCAgent_t *agent*)

Retrieves an agent's Ch code.

Returns

a malloc'd character string on success, NULL on failure

Definition at line 1965 of file libmc.c.

References agent_datastate_s::agent_code, buf, agent_s::datastate, agent_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, and agent_datastate_s::task_progress.

Referenced by MC_RetrieveAgentCode_chdl().

5.49.18.8 EXPORTCH char* MC_RetrieveAgentCode_chdl (void * *varg*)

Definition at line 3793 of file libmc.c.

References MC_RetrieveAgentCode().

Referenced by agent_ChScriptInitVar().

5.49.18.9 EXPORTCH int MC_SaveData_chdl (void * *varg*)

Definition at line 3809 of file libmc.c.

References agent_task_s::agent_variable_list, interpreter_variable_data_s::data, interpreter_variable_data_s::data_type, agent_s::datastate, interpreter_variable_data_New(), interpreter_variable_data_s::name, interpreter_variable_data_s::size, size, strdup, agent_datastate_s::task_progress, and agent_datastate_s::tasks.

Referenced by agent_ChScriptInitVar().

5.49.18.10 EXPORTMC int MC_SearchForService (MCAgency_t *attr*, const char * *searchString*, char * *agentNames*, char *** *serviceNames*, int ** *agentIDs*, int * *numResults*)**

Search the directory facilitator for a service.

Returns

0 on success, error_code_t on failure

Parameters

attr (input) a MobileC agency handle

searchString (input) substring to search services for

agentNames (return) array of agent names with matching services

serviceNames (return) array of matching service names

agentIDs (return) array of matching agent IDs

numResults (return) number of matching results

5.49.19 Example

Definition at line 1992 of file libmc.c.

References CHECK_NULL, COND_SLEEP_ACTION, mc_platform_s::df, df_AddRequest(), df_request_list_node_Destroy(), df_request_list_node_New(), df_request_search_Destroy(), df_request_search_New(), MC_ERR_MEMORY, agency_s::mc_platform, MC_SUCCESS, and search.

Referenced by MC_SearchForService_chdl().

5.49.19.1 EXPORTCH int MC_SearchForService_chdl (void * *varg*)

Definition at line 3844 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SearchForService().

Referenced by agent_ChScriptInitVar().

5.49.19.2 EXPORTMC int MC_SemaphorePost (MCAgency_t *attr*, int *id*)

Post to a MobileC synchronization variable semaphore.

Parameters

attr a MobileC agency handle

id the synchronization variable id to post to

Returns

0 on success, error_code_t type on failure

5.49.20 Example

Definition at line 2042 of file libmc.c.

References agency_s::mc_platform, syncListNode_s::sem, SEMAPHORE_POST, mc_platform_s::syncList, and syncListFind().

Referenced by MC_SemaphorePost_chdl().

5.49.20.1 EXPORTCH int MC_SemaphorePost_chdl (void * *varg*)

Definition at line 3885 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SemaphorePost().

Referenced by agent_ChScriptInitVar().

5.49.20.2 EXPORTMC int MC_SemaphoreWait (MCAgency_t *attr*, int *id*)

Decreases a MobileC synchronization variable semaphore count by one.

Parameters

attr a MobileC agency handle

id synchronization variable id to wait on

Returns

0 on MC_SUCCESS, error_code_t type of failure

Note

If the semaphore count is already zero, this function will block until another thread posts to the semaphore.

5.49.21 Example

Definition at line 2054 of file libmc.c.

References `agency_s::mc_platform`, `syncListNode_s::sem`, `SEMAPHORE_WAIT`, `mc_platform_s::syncList`, and `syncListFind()`.

Referenced by `MC_SemaphoreWait_chdl()`.

5.49.21.1 EXPORTCH int MC_SemaphoreWait_chdl (void * *varg*)

Definition at line 3909 of file libmc.c.

References `CHECK_NULL`, `agency_s::mc_platform`, and `MC_SemaphoreWait()`.

Referenced by `agent_ChScriptInitVar()`.

5.49.21.2 EXPORTMC int MC_SendAgent (MCAgency_t *attr*, const char * *message*)

Sends an agent migration message.

Parameters

attr a MobileC agency handle

message a valid MobileC xml agent migration message

Definition at line 2076 of file libmc.c.

References `agent_Initialize()`, `mc_platform_s::agent_queue`, `agent_s::agent_status`, `mc_platform_s::ams`, `COND_BROADCAST`, `MC_ERR`, `agency_s::mc_platform`, `MC_WAIT_MESSGSEND`, `message_Destroy()`, `message_InitializeFromString()`, `message_New()`, `MUTEX_LOCK`, and `MUTEX_UNLOCK`.

5.49.21.3 EXPORTMC int MC_SendAgentFile (MCAgency_t *attr*, const char * *filename*)

Sends an agent migration message.

Parameters

attr a MobileC agency handle

filename file containing a valid MobileC xml agent migration message

Definition at line 2124 of file libmc.c.

References `agent_Initialize()`, `mc_platform_s::agent_queue`, `agent_s::agent_status`, `mc_platform_s::ams`, `buf`, `COND_BROADCAST`, `agency_s::mc_platform`, `MC_WAIT_MESSGSEND`, `message_Destroy()`, `message_InitializeFromString()`, `message_New()`, `MUTEX_LOCK`, and `MUTEX_UNLOCK`.

Referenced by `handler_SEND()`.

5.49.21.4 EXPORTMC int MC_SendAgentMigrationMessage (MCAgency_t *attr*, const char * *message*, const char * *hostname*, int *port*)

Sends an agent migration message.

Parameters

attr a MobileC agency handle

message a valid MobileC xml agent migration message

hostname host to send the message to

port port to send the message to

Definition at line 2190 of file libmc.c.

References MC_ERR, agency_s::mc_platform, message_Destroy(), message_InitializeFromString(), message_New(), and mc_platform_s::message_queue.

Referenced by MC_SendAgentMigrationMessage_chdl().

5.49.21.5 EXPORTCH int MC_SendAgentMigrationMessage_chdl (void * *varg*)

Definition at line 3933 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, MC_SendAgentMigrationMessage(), and port.

Referenced by agent_ChScriptInitVar().

5.49.21.6 EXPORTMC int MC_SendAgentMigrationMessageFile (MCAgency_t *attr*, const char * *filename*, const char * *hostname*, int *port*)

Sends an agent migration message.

Parameters

attr a MobileC agency handle

filename file containing a valid MobileC xml agent migration message

hostname hostname to send the agent to

port port to send the agent to

Definition at line 2224 of file libmc.c.

References agent_Initialize(), mc_platform_s::agent_queue, agent_s::agent_status, mc_platform_s::ams, buf, COND_BROADCAST, agency_s::mc_platform, MC_WAIT_MESSGSEND, message_Destroy(), message_InitializeFromString(), message_New(), MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by MC_SendAgentMigrationMessageFile_chdl().

5.49.21.7 EXPORTCH int MC_SendAgentMigrationMessageFile_chdl (void * *varg*)

Definition at line 3958 of file libmc.c.

References MC_SendAgentMigrationMessageFile(), and port.

Referenced by agent_ChScriptInitVar().

5.49.21.8 EXPORTMC int MC_SendCh (MCAgency_t *attr*, const char * *filename*, const char * *remotehost*, int *port*)

Definition at line 2066 of file libmc.c.

5.49.21.9 EXPORTMC int MC_SendSteerCommand (MCAgency_t *attr*, enum MC_SteerCommand_e *cmd*)

Definition at line 2294 of file libmc.c.

References COND_BROADCAST, agency_s::mc_platform, mc_platform_s::MC_steer_command, mc_platform_s::MC_steer_cond, mc_platform_s::MC_steer_lock, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by MC_SendSteerCommand_chdl().

5.49.21.10 EXPORTCH int MC_SendSteerCommand_chdl (void * *varg*)

Definition at line 3978 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SendSteerCommand().

Referenced by agent_ChScriptInitVar().

5.49.21.11 EXPORTMC int MC_SetAgentStatus (MCAgent_t *agent*, enum MC_AgentStatus_e *status*)

Set an agent's status.

Parameters

agent a MobileC agent

status agent status of type 'enum MC_AgentStatus_e'

Returns

0 on success, or error_code_t on failure

Definition at line 2304 of file libmc.c.

References agent_s::agent_status, mc_platform_s::ams, COND_SIGNAL, agent_s::lock, agent_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::orphan.

Referenced by MC_SetAgentStatus_chdl().

5.49.21.12 EXPORTCH int MC_SetAgentStatus_chdl (void * *varg*)

Definition at line 4001 of file libmc.c.

References MC_SetAgentStatus().

Referenced by agent_ChScriptInitVar().

5.49.21.13 EXPORTMC int MC_SetDefaultAgentStatus (MCAgency_t *agency*, enum MC_AgentStatus_e *status*)

Sets default incoming agent status.

Parameters

agency a MobileC agency handle

status the status to set all incoming agents

Returns

0 on success, `error_type_t` on failure

Note

using this function will override any status the incoming agent attempts to set for itself.

Definition at line 2319 of file `libmc.c`.

References `mc_platform_s::default_agentstatus`, and `agency_s::mc_platform`.

Referenced by `MC_SetDefaultAgentStatus_chdl()`.

5.49.21.14 EXPORTCH int MC_SetDefaultAgentStatus_chdl (void * *varg*)

Definition at line 4019 of file `libmc.c`.

References `CHECK_NULL`, `int`, `agency_s::mc_platform`, and `MC_SetDefaultAgentStatus()`.

Referenced by `agent_ChScriptInitVar()`.

5.49.21.15 EXPORTMC int MC_SetThreadOff (MCAgencyOptions_t * *options*, enum MC_ThreadIndex_e *index*)

Sets a MobileC thread to "off" status.

Parameters

options MobileC options previously initialized with [MC_InitializeAgencyOptions\(\)](#)

index the thread to set

Returns

0 on success, `error_code_t` on failure

Note

This function must be called before [MC_Initialize\(\)](#). Once an agency is started with `MC_Initialize`, the `MC_SetThread` functions will have no effect.

Definition at line 2346 of file `libmc.c`.

References `SET_THREAD_OFF`, and `MCAgencyOptions_s::threads`.

5.49.21.16 EXPORTMC int MC_SetThreadOn (MCAgencyOptions_t * *options*, enum MC_ThreadIndex_e *index*)

Sets a MobileC thread to "on" status.

Parameters

options MobileC options previously initialized with [MC_InitializeAgencyOptions\(\)](#)

index the thread to set

Returns

0 on success, `error_code_t` on failure

Note

This function must be called before [MC_Initialize\(\)](#). Once an agency is started with `MC_Initialize`, the `MC_SetThread` functions will have no effect.

Definition at line 2329 of file `libmc.c`.

References `SET_THREAD_ON`, and `MCAgencyOptions_s::threads`.

5.49.21.17 EXPORTMC int MC_SetThreadsAllOff (MCAgencyOptions_t * options)

Set all MobileC threads to 'off' status.

Parameters

options a MobileC options structure initialized with with the [MC_InitializeAgencyOptions\(\)](#) function.

Returns

0 on success, error code on failure.

Definition at line 2353 of file `libmc.c`.

References `MC_THREAD_ALL`, `SET_THREAD_OFF`, and `MCAgencyOptions_s::threads`.

5.49.21.18 EXPORTMC int MC_SetThreadsAllOn (MCAgencyOptions_t * options)

Set all Mobile-C threads on.

Parameters

options MobileC options structure, initialized with [MC_InitializeAgencyOptions\(\)](#)

Returns

0 on success, error code on failure.

Definition at line 2336 of file `libmc.c`.

References `MC_THREAD_ALL`, `SET_THREAD_ON`, and `MCAgencyOptions_s::threads`.

5.49.21.19 EXPORTMC int MC_Steer (MCAgency_t attr, int(*) (void *data) funcptr, void * arg)

Set up a steerable algorithm.

Parameters

attr a MobileC agency handle

funcptr a function pointer to the algorithm

arg an argument for the algorithm function

Returns

0 on success, error_code_t on failure

Note

The algorithm function must contain a call to MC_SteerControl in order for the algorithm to be steerable.

5.49.22 Example

Definition at line 2363 of file libmc.c.

References agency_s::mc_platform, MC_RESTART, MC_RUN, mc_platform_s::MC_steer_command, mc_platform_s::MC_steer_lock, MUTEX_LOCK, and MUTEX_UNLOCK.

5.49.22.1 EXPORTMC enum MC_SteerCommand_e MC_SteerControl (void)

The MobileC user-algorithm steering function.

Returns

The current steering command

Note

This function belongs inside a user's steerable algorithm.

See also

[MC_Steer\(\)](#)

Definition at line 2382 of file libmc.c.

References COND_WAIT, mc_platform_s::MC_steer_command, mc_platform_s::MC_steer_cond, mc_platform_s::MC_steer_lock, MC_SUSPEND, MUTEX_LOCK, and MUTEX_UNLOCK.

5.49.22.2 EXPORTMC int MC_SyncDelete (MCAgency_t attr, int id)

Deletes a previously initialized synchronization variable.

Parameters

attr a MobileC agency handle

id the sync variable id to delete

Returns

0 on success, or error_code_t on failure

Definition at line 2398 of file libmc.c.

References syncList_s::giant_lock, syncListNode_s::lock, MC_ERR_NOT_FOUND, agency_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, mc_platform_s::syncList, syncListFind(), syncListNodeDestroy(), and syncListRemove().

Referenced by MC_SyncDelete_chdl().

5.49.22.3 EXPORTCH int MC_SyncDelete_chdl (void * *varg*)

Definition at line 4042 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SyncDelete().

Referenced by agent_ChScriptInitVar().

5.49.22.4 EXPORTMC int MC_SyncInit (MCAgency_t *attr*, int *id*)

Initializes a new MobileC synchronization variable.

Parameters

attr a MobileC agency handle

id the requested sync variable id

Returns

new sync variable's id. May be different than the requested id.

Note

Each synchronization variable may be used as a mutex, condition variable, or semaphore. However, it should only be used as one type of synchronization variable per instance, or undefined behaviour may result.

See also

[MC_MutexLock\(\)](#), [MC_MutexUnlock\(\)](#), [MC_CondWait\(\)](#), [MC_CondSignal\(\)](#), [MC_CondBroadcast](#), [MC_SemaphorePost\(\)](#), [MC_SemaphoreWait\(\)](#)

Definition at line 2428 of file libmc.c.

References syncList_s::giant_lock, syncListNode_s::id, agency_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, node, mc_platform_s::syncList, syncListAddNode(), syncListFind(), and syncListNodeNew().

Referenced by MC_SyncInit_chdl().

5.49.22.5 EXPORTCH int MC_SyncInit_chdl (void * *varg*)

Definition at line 4065 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SyncInit().

Referenced by agent_ChScriptInitVar().

5.49.22.6 EXPORTMC int MC_TerminateAgent (MCAgent_t *agent*)

Halt a running agent.

Returns

0 on success, error_code_t on failure

Definition at line 2453 of file libmc.c.

References agent_s::agent_interp.

Referenced by ams_ManageAgentList(), MC_DeleteAgent(), and MC_TerminateAgent_chdl().

5.49.22.7 EXPORTCH int MC_TerminateAgent_chdl (void * *varg*)

Definition at line 4089 of file libmc.c.

References MC_ERR_NOT_FOUND, MC_FindAgentByName(), and MC_TerminateAgent().

Referenced by agent_ChScriptInitVar().

5.49.22.8 EXPORTMC int MC_TerminateAgentWG (MCAgent_t *calling_agent*, MCAgent_t *agent*)

Definition at line 2463 of file libmc.c.

References agent_s::agent_interp, MC_ERR_INVALID_ARGS, and agent_s::wg_code.

Referenced by MC_DeleteAgentWG(), and MC_TerminateAgentWG_chdl().

5.49.22.9 EXPORTCH int MC_TerminateAgentWG_chdl (void * *varg*)

Definition at line 4110 of file libmc.c.

References MC_ERR_NOT_FOUND, MC_FindAgentByName(), and MC_TerminateAgentWG().

Referenced by agent_ChScriptInitVar().

5.49.22.10 EXPORTMC int MC_WaitAgent (MCAgency_t *attr*)

Wait indefinitely.

Note

This function is intended to block the calling thread forever. Wait for an agent arrival event
This function blocks until an agent arrival signal is triggered, at which point it unblocks.

Definition at line 2492 of file libmc.c.

References mc_platform_s::agent_queue, COND_WAIT, mc_platform, agency_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, and size.

5.49.22.11 EXPORTMC MCAgent_t MC_WaitRetrieveAgent (MCAgency_t *attr*)

Wait and retrieve an agent.

Returns

a valid MobileC agent on success, or NULL on failure

Note

This function blocks until the arrival of an agent. The agent is retrieved after it is initialized, but before it is executed.

Definition at line 2512 of file libmc.c.

References `mc_platform_s::agent_queue`, `ListSearch()`, `agency_s::mc_platform`, `MC_RECV_AGENT`, `MC_WaitSignal()`, `MUTEX_LOCK`, and `MUTEX_UNLOCK`.

5.49.22.12 EXPORTMC int MC_WaitSignal (MCAgency_t *attr*, int *signals*)

Wait for a MobileC signal.

Parameters

attr a MobileC agency handle

signals a flag of signals to wait for, of type 'enum MC_Signal_e'

Returns

0 on success, `error_code_t` on failure

Note

the parameter 'signals' may be something like 'MC_RECV_MESSAGE | MC_RECV_AGENT', etc.

5.49.23 Example

Definition at line 2530 of file libmc.c.

References `COND_WAIT`, `mc_platform_s::giant`, `mc_platform_s::giant_lock`, `agency_s::mc_platform`, `mc_platform_s::MC_signal`, `mc_platform_s::MC_signal_cond`, `mc_platform_s::MC_signal_lock`, `MUTEX_LOCK`, and `MUTEX_UNLOCK`.

Referenced by `MC_WaitRetrieveAgent()`.

5.49.24 Variable Documentation

5.49.24.1 mc_platform_p g_mc_platform

Definition at line 72 of file libmc.c.

Referenced by `fipa_envelope_Compose__from()`.

5.50 /home/dko/Projects/mobilec/src/mc_list/list.c File Reference

```
#include "list.h"
#include <stdio.h>
#include <stdlib.h>
```

Functions

- [list_p ListInitialize](#) (void)
- void [ListTerminate](#) ([list_p](#) list)
- int [list_pGetSize](#) ([list_p](#) list)
- DATA [ListGetHead](#) ([list_p](#) list)
- DATA [ListPop](#) ([list_p](#) list)
- DATA [ListSearch](#) ([list_p](#) list, const int index)
- int [ListAdd](#) ([list_p](#) list, DATA data)
- int [ListInsert](#) ([list_p](#) list, DATA data, const int index)
- DATA [ListDelete](#) ([list_p](#) list, const int index)

5.50.1 Function Documentation

5.50.1.1 int list_pGetSize (list_p list)

Definition at line 73 of file list.c.

References [list_s::size](#).

5.50.1.2 int ListAdd (list_p list, DATA data)

Definition at line 165 of file list.c.

References [list_s::listhead](#), [listNode_s::next](#), [listNode_s::node_data](#), and [list_s::size](#).

Referenced by [agent_task_Copy\(\)](#), [barrier_queue_Add\(\)](#), [df_Add\(\)](#), [df_AddRequest\(\)](#), and [syncListAddNode\(\)](#).

5.50.1.3 DATA ListDelete (list_p list, const int index)

Definition at line 220 of file list.c.

References [DATA](#), [list_s::listhead](#), [listNode_s::next](#), [listNode_s::node_data](#), and [list_s::size](#).

Referenced by [barrier_queue_Delete\(\)](#), [syncListDelete\(\)](#), and [syncListRemove\(\)](#).

5.50.1.4 DATA ListGetHead (list_p list)

Definition at line 79 of file list.c.

References [list_s::listhead](#), and [listNode_s::node_data](#).

5.50.1.5 list_p ListInitialize (void)

Definition at line 33 of file list.c.

References list_s::listhead, and list_s::size.

Referenced by barrier_queue_New(), df_Initialize(), df_request_list_New(), and syncListInit().

5.50.1.6 int ListInsert (list_p list, DATA data, const int index)

Definition at line 207 of file list.c.

5.50.1.7 DATA ListPop (list_p list)

Definition at line 89 of file list.c.

References DATA, list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by AP_QUEUE_STD_DEFN_TEMPLATE(), barrier_queue_Pop(), df_Destroy(), df_request_list_Destroy(), and df_request_list_Pop().

5.50.1.8 DATA ListSearch (list_p list, const int index)

Definition at line 124 of file list.c.

References list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by agent_queue_Flush(), agent_task_Copy(), ams_ManageAgentList(), ams_Print(), AP_QUEUE_SEARCH_TEMPLATE(), AP_QUEUE_STD_DEFN_TEMPLATE(), barrier_queue_Delete(), MC_RetrieveAgent(), MC_WaitRetrieveAgent(), message_queue_SendOutgoing(), syncListDelete(), and syncListRemove().

5.50.1.9 void ListTerminate (list_p list)

Definition at line 49 of file list.c.

References list_s::listhead, and list_s::size.

Referenced by barrier_queue_Destroy(), df_Destroy(), and df_request_list_Destroy().

5.51 /home/dko/Projects/mobilec/src/mc_list/list.h File Reference

```
#include <stdio.h>
#include <stdlib.h>
```

Data Structures

- struct [listNode_s](#)
- struct [list_s](#)

Defines

- #define [DATA](#) void*
- #define [QUEUE_TEMPLATE](#)(name, node_type, search_type, search_var_name)

Typedefs

- typedef struct [listNode_s](#) [listNode_t](#)
- typedef [listNode_t](#) * [listNode_p](#)
- typedef struct [list_s](#) [list_t](#)
- typedef [list_t](#) * [list_p](#)

Functions

- [list_p](#) [ListInitialize](#) (void)
- void [ListTerminate](#) ([list_p](#) list)
- int [ListGetSize](#) ([list_p](#) list)
- int [ListAdd](#) ([list_p](#) list, DATA data)
- int [ListInsert](#) ([list_p](#) list, DATA data, const int index)
- DATA [ListGetHead](#) ([list_p](#) list)
- DATA [ListPop](#) ([list_p](#) list)
- DATA [ListSearch](#) ([list_p](#) list, const int index)
- DATA [ListDelete](#) ([list_p](#) list, const int index)

5.51.1 Define Documentation

5.51.1.1 #define DATA void*

Definition at line 30 of file list.h.

Referenced by [barrier_queue_Add\(\)](#), [ListDelete\(\)](#), [ListPop\(\)](#), and [syncListAddNode\(\)](#).

5.51.1.2 #define QUEUE_TEMPLATE(name, node_type, search_type, search_var_name)

Definition at line 68 of file list.h.

5.51.2 Typedef Documentation

5.51.2.1 typedef list_t* list_p

Definition at line 49 of file list.h.

5.51.2.2 typedef struct list_s list_t

5.51.2.3 typedef listNode_t* listNode_p

Definition at line 39 of file list.h.

5.51.2.4 typedef struct listNode_s listNode_t

5.51.3 Function Documentation

5.51.3.1 int ListAdd (list_p *list*, DATA *data*)

Definition at line 165 of file list.c.

References list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by agent_task_Copy(), barrier_queue_Add(), df_Add(), df_AddRequest(), and syncListAddNode().

5.51.3.2 DATA ListDelete (list_p *list*, const int *index*)

Definition at line 220 of file list.c.

References DATA, list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by barrier_queue_Delete(), syncListDelete(), and syncListRemove().

5.51.3.3 DATA ListGetHead (list_p *list*)

Definition at line 79 of file list.c.

References list_s::listhead, and listNode_s::node_data.

5.51.3.4 int ListGetSize (list_p *list*)

5.51.3.5 list_p ListInitialize (void)

Definition at line 33 of file list.c.

References list_s::listhead, and list_s::size.

Referenced by barrier_queue_New(), df_Initialize(), df_request_list_New(), and syncListInit().

5.51.3.6 int ListInsert (list_p *list*, DATA *data*, const int *index*)

Definition at line 207 of file list.c.

5.51.3.7 DATA ListPop (*list_p list*)

Definition at line 89 of file list.c.

References DATA, list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by AP_QUEUE_STD_DEFN_TEMPLATE(), barrier_queue_Pop(), df_Destroy(), df_request_list_Destroy(), and df_request_list_Pop().

5.51.3.8 DATA ListSearch (*list_p list*, *const int index*)

Definition at line 124 of file list.c.

References list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by agent_queue_Flush(), agent_task_Copy(), ams_ManageAgentList(), ams_Print(), AP_QUEUE_SEARCH_TEMPLATE(), AP_QUEUE_STD_DEFN_TEMPLATE(), barrier_queue_Delete(), MC_RetrieveAgent(), MC_WaitRetrieveAgent(), message_queue_SendOutgoing(), syncListDelete(), and syncListRemove().

5.51.3.9 void ListTerminate (*list_p list*)

Definition at line 49 of file list.c.

References list_s::listhead, and list_s::size.

Referenced by barrier_queue_Destroy(), df_Destroy(), and df_request_list_Destroy().

5.52 /home/dko/Projects/mobilec/src/mc_platform.c File Reference

```
#include "config.h"
#include <unistd.h>
#include <sys/socket.h>
#include <netdb.h>
#include <netinet/in.h>
#include <arpa/inet.h>
#include "include/acc.h"
#include "include/agent.h"
#include "include/mc_platform.h"
#include "include/macros.h"
```

Defines

- `#define` [DEFAULT_HOSTNAME_LENGTH](#) 200

Functions

- [mc_platform_p mc_platform_Initialize](#) ([MCAgency_t](#) agency, [ChOptions_t](#) *ch_options)
- [int mc_platform_Destroy](#) ([mc_platform_p](#) platform)

5.52.1 Define Documentation

5.52.1.1 `#define` [DEFAULT_HOSTNAME_LENGTH](#) 200

Definition at line 52 of file `mc_platform.c`.

Referenced by `mc_platform_Initialize()`.

5.52.2 Function Documentation

5.52.2.1 `int mc_platform_Destroy` ([mc_platform_p](#) platform)

Definition at line 249 of file `mc_platform.c`.

References `mc_platform_s::acc`, `acc_Destroy()`, `mc_platform_s::agent_queue`, `mc_platform_s::ams`, `ams_Destroy()`, `mc_platform_s::barrier_queue`, `barrier_queue_Destroy()`, `mc_platform_s::cmd_prompt`, `cmd_prompt_Destroy()`, `COND_DESTROY`, `mc_platform_s::connection_queue`, `mc_platform_s::df`, `df_Destroy()`, `mc_platform_s::giant_cond`, `mc_platform_s::giant_lock`, `mc_platform_s::interp_options`, `mc_platform_s::interpreter_queue`, `mc_platform_s::MC_signal_cond`, `mc_platform_s::MC_signal_lock`, `mc_platform_s::MC_steer_cond`, `mc_platform_s::MC_steer_lock`, `MC_SUCCESS`, `mc_platform_s::MC_sync_cond`, `mc_platform_s::MC_sync_lock`, `mc_platform_s::message_queue`, `MUTEX_DESTROY`, `mc_platform_s::quit_lock`, `SOCKET_ERROR`, and `mc_platform_s::sockfd`.

Referenced by `MC_End()`.

5.52.2.2 mc_platform_p mc_platform_Initialize (MCAgency_t agency, ChOptions_t * ch_options)

Definition at line 54 of file mc_platform.c.

References mc_platform_s::acc, acc_Initialize(), acc_Start(), mc_platform_s::agency, agent_ChScriptInitVar(), mc_platform_s::agent_queue, mc_platform_s::ams, ams_Initialize(), ams_Start(), mc_platform_s::barrier_queue, barrier_queue_New(), agency_s::bluetooth, mc_platform_s::bluetooth, CHECK_NULL, mc_platform_s::cmd_prompt, cmd_prompt_Initialize(), cmd_prompt_Start(), COND_INIT, COND_T, COND_WAIT, mc_platform_s::connection_queue, agency_s::default_agentstatus, mc_platform_s::default_agentstatus, DEFAULT_HOSTNAME_LENGTH, mc_platform_s::df, df_Initialize(), df_Start(), mc_platform_s::err, GET_THREAD_MODE, mc_platform_s::giant, mc_platform_s::giant_cond, mc_platform_s::giant_lock, mc_platform_s::hostname, agency_s::initInterps, mc_platform_s::initInterps, mc_platform_s::interp_options, mc_platform_s::interpreter_queue, agency_s::last_error, MC_ERR_MEMORY, MC_NO_SIGNAL, mc_platform, mc_platform_s::MC_signal, mc_platform_s::MC_signal_cond, mc_platform_s::MC_signal_lock, mc_platform_s::MC_steer_cond, mc_platform_s::MC_steer_lock, mc_platform_s::MC_sync_cond, mc_platform_s::MC_sync_lock, MC_THREAD_ACC, MC_THREAD_ALL, MC_THREAD_AMS, MC_THREAD_CP, MC_THREAD_DF, mc_platform_s::message_queue, MUTEX_INIT, MUTEX_LOCK, MUTEX_T, MUTEX_UNLOCK, mc_platform_s::port, agency_s::portno, mc_platform_s::quit, mc_platform_s::quit_cond, mc_platform_s::quit_lock, agency_s::stack_size, mc_platform_s::stack_size, mc_platform_s::syncList, syncListInit(), and agency_s::threads.

Referenced by MC_Initialize().

5.53 /home/dko/Projects/mobilec/src/mc_rwlock.c File Reference

```
#include "config.h"
#include <stdio.h>
#include <stdlib.h>
#include "include/macros.h"
#include "include/mc_error.h"
#include "include/mc_rwlock.h"
```

Functions

- [int mc_rwlock_init \(mc_rwlock_p rwlock\)](#)
- [int mc_rwlock_destroy \(mc_rwlock_p rwlock\)](#)
- [int mc_rwlock_rdlock \(mc_rwlock_p rwlock\)](#)
- [int mc_rwlock_rdunlock \(mc_rwlock_p rwlock\)](#)
- [int mc_rwlock_wrlock \(mc_rwlock_p rwlock\)](#)
- [int mc_rwlock_wrunlock \(mc_rwlock_p rwlock\)](#)

5.53.1 Function Documentation

5.53.1.1 int mc_rwlock_destroy (mc_rwlock_p *rwlock*)

Definition at line 66 of file mc_rwlock.c.

References mc_rwlock_s::cond, COND_DESTROY, mc_rwlock_s::lock, and MUTEX_DESTROY.

5.53.1.2 int mc_rwlock_init (mc_rwlock_p *rwlock*)

Definition at line 46 of file mc_rwlock.c.

References CHECK_NULL, mc_rwlock_s::cond, COND_INIT, COND_T, mc_rwlock_s::lock, MC_ERR_MEMORY, MUTEX_INIT, MUTEX_T, mc_rwlock_s::num_readers, mc_rwlock_s::write_flag, and mc_rwlock_s::write_request.

5.53.1.3 int mc_rwlock_rdlock (mc_rwlock_p *rwlock*)

Definition at line 79 of file mc_rwlock.c.

References mc_rwlock_s::cond, COND_WAIT, mc_rwlock_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, mc_rwlock_s::num_readers, mc_rwlock_s::write_flag, and mc_rwlock_s::write_request.

5.53.1.4 int mc_rwlock_rdunlock (mc_rwlock_p *rwlock*)

Definition at line 94 of file mc_rwlock.c.

References mc_rwlock_s::cond, COND_SIGNAL, mc_rwlock_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, and mc_rwlock_s::num_readers.

5.53.1.5 int mc_rwlock_wrlock (mc_rwlock_p *rwlock*)

Definition at line 107 of file mc_rwlock.c.

References mc_rwlock_s::cond, COND_WAIT, mc_rwlock_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, mc_rwlock_s::num_readers, mc_rwlock_s::write_flag, and mc_rwlock_s::write_request.

5.53.1.6 int mc_rwlock_wrunlock (mc_rwlock_p *rwlock*)

Definition at line 126 of file mc_rwlock.c.

References mc_rwlock_s::cond, COND_SIGNAL, mc_rwlock_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, and mc_rwlock_s::write_flag.

5.54 /home/dko/Projects/mobilec/src/mc_sync/sync_list.c File Reference

```
#include <pthread.h>
#include "sync_list.h"
#include "../mc_list/list.h"
#include "../include/mc_error.h"
```

Functions

- [int syncListNodeInit](#) (struct [syncListNode_s](#) **node*)
- [struct syncListNode_s * syncListNodeNew](#) (void)
- [int syncListNodeDestroy](#) (struct [syncListNode_s](#) **node*)
- [syncListNode_t * syncListFind](#) (int *id*, struct [syncList_s](#) **list*)
- [struct syncList_s * syncListInit](#) (void)
- [int syncListAddNode](#) (struct [syncListNode_s](#) **node*, struct [syncList_s](#) **list*)
- [int syncListNew](#) (int *id*, struct [syncList_s](#) **list*)
- [int syncListDelete](#) (int *id*, struct [syncList_s](#) **list*)
- [syncListNode_t * syncListRemove](#) (int *id*, struct [syncList_s](#) **list*)

5.54.1 Function Documentation

5.54.1.1 int syncListAddNode (struct syncListNode_s * *node*, struct syncList_s * *list*)

Definition at line 86 of file `sync_list.c`.

References `DATA`, `syncListNode_s::id`, `syncList_s::list`, `ListAdd()`, `list_s::listhead`, `syncList_s::lock`, `listNode_s::next`, `listNode_s::node_data`, `RWLOCK_WRLock`, and `RWLOCK_WRunlock`.

Referenced by `MC_SyncInit()`, and `syncListNew()`.

5.54.1.2 int syncListDelete (int *id*, struct syncList_s * *list*)

Definition at line 115 of file `sync_list.c`.

References `syncListNode_s::id`, `syncList_s::list`, `ListDelete()`, `ListSearch()`, `syncList_s::lock`, `MC_ERR_NOT_FOUND`, `RWLOCK_WRLock`, `RWLOCK_WRunlock`, `list_s::size`, and `syncListNodeDestroy()`.

5.54.1.3 syncListNode_t* syncListFind (int *id*, struct syncList_s * *list*)

Definition at line 56 of file `sync_list.c`.

References `syncList_s::list`, `list_s::listhead`, `syncList_s::lock`, `listNode_s::next`, `listNode_s::node_data`, `RWLOCK_RDlock`, and `RWLOCK_RDunlock`.

Referenced by `MC_CondBroadcast()`, `MC_CondReset()`, `MC_CondSignal()`, `MC_CondWait()`, `MC_MutexLock()`, `MC_MutexUnlock()`, `MC_SemaphorePost()`, `MC_SemaphoreWait()`, `MC_SyncDelete()`, and `MC_SyncInit()`.

5.54.1.4 struct syncList_s* syncListInit (void) [read]

Definition at line 72 of file sync_list.c.

References syncList_s::giant_lock, syncList_s::list, ListInitialize(), syncList_s::lock, MUTEX_INIT, MUTEX_T, RWLOCK_INIT, and RWLOCK_T.

Referenced by mc_platform_Initialize().

5.54.1.5 int syncListNew (int id, struct syncList_s * list)

Definition at line 105 of file sync_list.c.

References node, syncListAddNode(), and syncListNodeInit().

5.54.1.6 int syncListNodeDestroy (struct syncListNode_s * node)

Definition at line 44 of file sync_list.c.

References syncListNode_s::cond, COND_DESTROY, syncListNode_s::lock, MUTEX_DESTROY, syncListNode_s::sem, and SEMAPHORE_DESTROY.

Referenced by MC_SyncDelete(), and syncListDelete().

5.54.1.7 int syncListNodeInit (struct syncListNode_s * node)

Definition at line 11 of file sync_list.c.

References CHECK_NULL, syncListNode_s::cond, COND_INIT, COND_T, syncListNode_s::lock, MUTEX_INIT, MUTEX_T, syncListNode_s::sem, SEMAPHORE_INIT, and SEMAPHORE_T.

Referenced by syncListNew().

5.54.1.8 struct syncListNode_s* syncListNodeNew (void) [read]

Definition at line 26 of file sync_list.c.

References CHECK_NULL, syncListNode_s::cond, COND_INIT, COND_T, syncListNode_s::lock, MUTEX_INIT, MUTEX_T, syncListNode_s::sem, SEMAPHORE_INIT, SEMAPHORE_T, and syncListNode_s::signalled.

Referenced by MC_SyncInit().

5.54.1.9 syncListNode_t* syncListRemove (int id, struct syncList_s * list)

Definition at line 132 of file sync_list.c.

References syncListNode_s::id, syncList_s::list, ListDelete(), ListSearch(), syncList_s::lock, RWLOCK_WRLock, RWLOCK_WRunLock, and list_s::size.

Referenced by MC_SyncDelete().

5.55 /home/dko/Projects/mobilec/src/mc_sync/sync_list.h File Reference

```
#include "../include/macros.h"
#include "../mc_list/list.h"
#include "../include/mc_rwlock.h"
```

Data Structures

- struct [syncListNode_s](#)
- struct [syncList_s](#)

Typedefs

- typedef struct [syncListNode_s](#) [syncListNode_t](#)
- typedef [syncListNode_t](#) * [syncListNode_p](#)
- typedef struct [syncList_s](#) [syncList_t](#)
- typedef [syncList_t](#) * [syncList_p](#)

Functions

- [int syncListNodeInit](#) (struct [syncListNode_s](#) *[node](#))
- [int syncListNodeDestroy](#) (struct [syncListNode_s](#) *[node](#))
- [syncListNode_t](#) * [syncListFind](#) (int id, struct [syncList_s](#) *[list](#))
- struct [syncListNode_s](#) * [syncListNodeNew](#) (void)
- [int syncListDelete](#) (int id, struct [syncList_s](#) *[list](#))
- [syncListNode_t](#) * [syncListRemove](#) (int id, struct [syncList_s](#) *[list](#))
- struct [syncList_s](#) * [syncListInit](#) (void)
- [int syncListAddNode](#) (struct [syncListNode_s](#) *[node](#), struct [syncList_s](#) *[list](#))
- [int syncListNew](#) (int id, struct [syncList_s](#) *[list](#))
- [syncListNode_t](#) * [syncListGet](#) (int id, struct [syncList_s](#) *[list](#))

5.55.1 Typedef Documentation

5.55.1.1 typedef [syncList_t](#)* [syncList_p](#)

Definition at line 33 of file [sync_list.h](#).

5.55.1.2 typedef struct [syncList_s](#) [syncList_t](#)

5.55.1.3 typedef [syncListNode_t](#)* [syncListNode_p](#)

Definition at line 23 of file [sync_list.h](#).

5.55.1.4 typedef struct syncListNode_s syncListNode_t

5.55.2 Function Documentation

5.55.2.1 int syncListAddNode (struct syncListNode_s * *node*, struct syncList_s * *list*)

Definition at line 86 of file sync_list.c.

References DATA, syncListNode_s::id, syncList_s::list, ListAdd(), list_s::listhead, syncList_s::lock, listNode_s::next, listNode_s::node_data, RWLOCK_WRLock, and RWLOCK_WRunLock.

Referenced by MC_SyncInit(), and syncListNew().

5.55.2.2 int syncListDelete (int *id*, struct syncList_s * *list*)

Definition at line 115 of file sync_list.c.

References syncListNode_s::id, syncList_s::list, ListDelete(), ListSearch(), syncList_s::lock, MC_ERR_NOT_FOUND, RWLOCK_WRLock, RWLOCK_WRunLock, list_s::size, and syncListNodeDestroy().

5.55.2.3 syncListNode_t* syncListFind (int *id*, struct syncList_s * *list*)

Definition at line 56 of file sync_list.c.

References syncList_s::list, list_s::listhead, syncList_s::lock, listNode_s::next, listNode_s::node_data, RWLOCK_RDLOCK, and RWLOCK_RDUnLock.

Referenced by MC_CondBroadcast(), MC_CondReset(), MC_CondSignal(), MC_CondWait(), MC_MutexLock(), MC_MutexUnlock(), MC_SemaphorePost(), MC_SemaphoreWait(), MC_SyncDelete(), and MC_SyncInit().

5.55.2.4 syncListNode_t* syncListGet (int *id*, struct syncList_s * *list*)

5.55.2.5 struct syncList_s* syncListInit (void) [read]

Definition at line 72 of file sync_list.c.

References syncList_s::giant_lock, syncList_s::list, ListInitialize(), syncList_s::lock, MUTEX_INIT, MUTEX_T, RWLOCK_INIT, and RWLOCK_T.

Referenced by mc_platform_Initialize().

5.55.2.6 int syncListNew (int *id*, struct syncList_s * *list*)

Definition at line 105 of file sync_list.c.

References node, syncListAddNode(), and syncListNodeInit().

5.55.2.7 int syncListNodeDestroy (struct syncListNode_s * *node*)

Definition at line 44 of file sync_list.c.

References syncListNode_s::cond, COND_DESTROY, syncListNode_s::lock, MUTEX_DESTROY, syncListNode_s::sem, and SEMAPHORE_DESTROY.

Referenced by MC_SyncDelete(), and syncListDelete().

5.55.2.8 int syncListNodeInit (struct syncListNode_s * node)

Definition at line 11 of file sync_list.c.

References CHECK_NULL, syncListNode_s::cond, COND_INIT, COND_T, syncListNode_s::lock, MUTEX_INIT, MUTEX_T, syncListNode_s::sem, SEMAPHORE_INIT, and SEMAPHORE_T.

Referenced by syncListNew().

5.55.2.9 struct syncListNode_s* syncListNodeNew (void) [read]

Definition at line 26 of file sync_list.c.

References CHECK_NULL, syncListNode_s::cond, COND_INIT, COND_T, syncListNode_s::lock, MUTEX_INIT, MUTEX_T, syncListNode_s::sem, SEMAPHORE_INIT, SEMAPHORE_T, and syncListNode_s::signalled.

Referenced by MC_SyncInit().

5.55.2.10 syncListNode_t* syncListRemove (int id, struct syncList_s * list)

Definition at line 132 of file sync_list.c.

References syncListNode_s::id, syncList_s::list, ListDelete(), ListSearch(), syncList_s::lock, RWLOCK_WRLOCK, RWLOCK_WRUNLOCK, and list_s::size.

Referenced by MC_SyncDelete().

5.56 /home/dko/Projects/mobilec/src/message.c File Reference

```
#include <string.h>
#include <sys/types.h>
#include <sys/socket.h>
#include <netinet/in.h>
#include <arpa/inet.h>
#include <unistd.h>
#include <netdb.h>
#include <errno.h>
#include "config.h"
#include <mxml.h>
#include "include/libmc.h"
#include "include/agent.h"
#include "include/mc_platform.h"
#include "include/message.h"
#include "include/mtp_http.h"
#include "include/xml_compose.h"
#include "include/xml_parser.h"
#include "include/macros.h"
#include "../include/macros.h"
#include "../include/message.h"
#include "xyssl-0.9/include/xyssl/dhm.h"
#include "xyssl-0.9/include/xyssl/rsa.h"
#include "xyssl-0.9/include/xyssl/aes.h"
```

Defines

- `#define SOCKET_INPUT_SIZE 4096`
- `#define MSG_THREADS 40`
- `#define MSG_THREAD_EXIT()`

Functions

- `message_p message_New` (void)
- `message_p message_Copy` (message_p src)
- `int message_InitializeFromAgent` (mc_platform_p mc_platform, message_p message, agent_p agent)
- `int message_InitializeFromConnection` (mc_platform_p mc_platform, message_p message, connection_p connection)
- `int http_to_hostport` (const char *http_str, char **host, int *port, char **target)

- `int message_InitializeFromString (mc_platform_p mc_platform, message_p message, const char *string, const char *destination_host, int destination_port, const char *target)`
- `int message_Destroy (message_p message)`
- `int auth_rece_send_msg (int sockfd, char *hostname, char *message, char *privkey, char *known_host_filename)`
- `int message_Send (mc_platform_t *mc_platform, message_p message, char *privatekey)`
- `void * message_send_Thread (void *arg)`

5.56.1 Define Documentation

5.56.1.1 #define MSG_THREAD_EXIT()

Value:

```
free(arg); \
message_Destroy(message); \
MUTEX_LOCK(&mc_platform->acc->msg_thread_lock); \
mc_platform->acc->num_msg_threads--; \
COND_SIGNAL(&mc_platform->acc->msg_thread_cond); \
MUTEX_UNLOCK(&mc_platform->acc->msg_thread_lock); \
THREAD_EXIT()
```

Definition at line 634 of file message.c.

Referenced by message_send_Thread().

5.56.1.2 #define MSG_THREADS 40

Definition at line 571 of file message.c.

Referenced by message_Send().

5.56.1.3 #define SOCKET_INPUT_SIZE 4096

Definition at line 67 of file message.c.

5.56.2 Function Documentation

5.56.2.1 int auth_rece_send_msg (int sockfd, char * hostname, char * message, char * privkey, char * known_host_filename)

Definition at line 450 of file message.c.

References aes_en_de(), initiate_migration_process(), read_known_host_file(), and send_AES_en_MA().

Referenced by message_send_Thread().

5.56.2.2 int http_to_hostport (const char * http_str, char ** host, int * port, char ** target)

Definition at line 295 of file message.c.

References MC_ERR_PARSE.

Referenced by MC_AclSend().

5.56.2.3 message_p message_Copy (message_p src)

Definition at line 94 of file message.c.

5.56.2.4 int message_Destroy (message_p message)

Definition at line 411 of file message.c.

References message_s::addr, message_s::agent_xml_flag, message_s::from_address, MC_SUCCESS, message_s::message_body, mxmlDelete(), message_s::target, message_s::to_address, message_s::update_name, and message_s::xml_root.

Referenced by acc_connection_Thread(), acc_MessageHandlerThread(), ams_ManageAgentList(), MC_LoadAgentFromFile(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessage(), MC_SendAgentMigrationMessageFile(), and message_InitializeFromConnection().

5.56.2.5 int message_InitializeFromAgent (mc_platform_p mc_platform, message_p message, agent_p agent)

Definition at line 102 of file message.c.

References message_s::addr, agent_xml_compose(), message_s::agent_xml_flag, mc_platform_s::bluetooth, buf, CHECK_NULL, agent_s::datastate, mc_platform_s::err, message_s::from_address, agent_s::home, mc_platform_s::hostname, MC_ERR_MEMORY, MC_SUCCESS, message_s::message_body, message_s::message_id, message_s::message_type, MOBILE_AGENT, MXML_NO_CALLBACK, mxmlSaveAllocString(), agent_s::name, agent_datastate_s::number_of_tasks, mc_platform_s::port, message_s::sending_agent_name, agent_task_s::server_name, strdup, strtok_r, message_s::target, agent_datastate_s::task_progress, agent_datastate_s::tasks, message_s::to_address, message_s::update_name, WARN, and message_s::xml_root.

5.56.2.6 int message_InitializeFromConnection (mc_platform_p mc_platform, message_p message, connection_p connection)

Definition at line 204 of file message.c.

References connection_s::addr, message_s::addr, CHECK_NULL, connection_s::clientfd, connection_s::connect_id, message_s::connect_id, message_s::from_address, MC_ERR_CONNECT, MC_ERR_PARSE, MC_SUCCESS, message_s::message_body, message_Destroy(), message_s::message_id, message_xml_parse(), MXML_NO_CALLBACK, mxmlLoadString(), SOCKET_ERROR, SOCKET_INPUT_SIZE, message_s::target, message_s::to_address, and message_s::xml_root.

5.56.2.7 int message_InitializeFromString (mc_platform_p mc_platform, message_p message, const char * string, const char * destination_host, int destination_port, const char * target)

Definition at line 330 of file message.c.

References message_s::addr, CHECK_NULL, message_s::connect_id, mc_platform_s::err, message_s::from_address, mc_platform_s::hostname, MC_ERR_MEMORY, MC_ERR_PARSE, MC_SUCCESS, message_s::message_body, message_s::message_id, message_s::message_type, message_xml_parse(), MOBILE_AGENT, MXML_NO_CALLBACK, mxmlLoadString(), mc_platform_s::port, message_s::target, message_s::to_address, message_s::update_name, and message_s::xml_root.

5.56.2.8 `message_p message_New (void)`

Definition at line 70 of file `message.c`.

References `message_s::addr`, `message_s::agent_xml_flag`, `CHECK_NULL`, `message_s::connect_id`, `message_s::from_address`, `message_s::http_type`, `message_s::isHTTP`, `message_s::message_body`, `message_s::message_id`, `message_s::message_type`, `message_s::target`, `message_s::to_address`, `message_s::update_name`, `message_s::update_num`, `message_s::xml_payload`, and `message_s::xml_root`.

Referenced by `acc_connection_Thread()`, `ams_ManageAgentList()`, `MC_LoadAgentFromFile()`, `MC_SendAgent()`, `MC_SendAgentFile()`, `MC_SendAgentMigrationMessage()`, `MC_SendAgentMigrationMessageFile()`, and `mtp_http_CreateMessage()`.

5.56.2.9 `int message_Send (mc_platform_t * mc_platform, message_p message, char * privatekey)`

Definition at line 572 of file `message.c`.

References `mc_platform_s::acc`, `COND_WAIT`, `message_send_arg_s::mc_platform`, `message_send_arg_s::message`, `message_send_Thread()`, `MSG_THREADS`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `message_send_arg_s::privatekey`, `THREAD_CREATE`, and `THREAD_DETACH`.

Referenced by `acc_MessageHandlerThread()`, `MC_AclSend()`, and `message_queue_SendOutgoing()`.

5.56.2.10 `void* message_send_Thread (void * arg)`

Definition at line 645 of file `message.c`.

References `mc_platform_s::agency`, `auth_rece_send_msg()`, `mc_platform_s::bluetooth`, `buf`, `CHECK_NULL`, `dynstring_Append()`, `dynstring_Destroy()`, `dynstring_New()`, `agency_s::known_host_filename`, `mc_platform`, `dynstring_s::message`, `message_s::message_body`, `MSG_THREAD_EXIT`, `mtp_http_ComposeMessage()`, `mtp_http_Destroy()`, `mtp_http_New()`, `mtp_http_Parse()`, `port`, `send`, `SOCKET_ERROR`, `SOCKET_INPUT_SIZE`, `strtok_r`, and `message_s::to_address`.

Referenced by `message_Send()`.

5.57 /home/dko/Projects/mobilec/src/message_queue.c File Reference

```
#include "config.h"
#include <stdio.h>
#include <stdlib.h>
#include <pthread.h>
#include "include/data_structures.h"
#include "include/mc_platform.h"
```

Functions

- void [message_queue_SendOutgoing](#) (struct [mc_platform_s](#) *[mc_platform](#), [message_queue_p](#) [mqueue](#))

5.57.1 Function Documentation

5.57.1.1 void [message_queue_SendOutgoing](#) (struct [mc_platform_s](#) * [mc_platform](#), [message_queue_p](#) [mqueue](#))

Definition at line 57 of file [message_queue.c](#).

References [CHECK_NULL](#), [mc_platform_s::hostname](#), [ListSearch\(\)](#), [message_Send\(\)](#), [MUTEX_LOCK](#), [MUTEX_UNLOCK](#), [mc_platform_s::port](#), and [message_s::to_address](#).

5.58 /home/dko/Projects/mobilec/src/mtp_http.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <time.h>
#include <unistd.h>
#include <errno.h>
#include "config.h"
#include "include/connection.h"
#include "include/mtp_http.h"
#include "include/macros.h"
#include "include/mc_error.h"
#include "include/message.h"
#include "include/dynstring.h"
```

Defines

- #define [SAFE_FREE](#)(elem)
- #define [HTTP_PARSE_EXPR](#)(parse_name, struct_name)
- #define [SAFE_FREE](#)(object)

Functions

- [int mtp_http_Destroy](#) ([mtp_http_p](#) http)
- [mtp_http_p mtp_http_New](#) (void)
- [int rece_de_msg](#) (char *buffer, [connection_p](#) con, char *privatekey)
- [int mtp_http_InitializeFromConnection](#) ([mtp_http_p](#) http, [connection_p](#) connection, char *privatekey)
- const char * [http_GetExpression](#) (const char *string, char **expr)

Parse an html expression.

- [int http_ParseExpression](#) (const char *expression_string, char **name, char **value)

Parse an expression into its name and value.

- const char * [mtp_http_ParseHeader](#) (struct [mtp_http_s](#) *http, const char *string)
- [int mtp_http_Parse](#) (struct [mtp_http_s](#) *http, const char *string)
- const char * [http_ParseRequest](#) ([mtp_http_p](#) http, const char *string)
- const char * [http_GetToken](#) (const char *string, char **token)
- [int mtp_http_ParseResponse](#) (struct [mtp_http_s](#) *http, const char *string)
- [int mtp_http_ComposeMessage](#) ([message_p](#) message)
- struct [message_s](#) * [mtp_http_CreateMessage](#) ([mtp_http_t](#) *mtp_http, char *hostname, [int](#) port)

5.58.1 Define Documentation

5.58.1.1 #define HTTP_PARSE_EXPR(parse_name, struct_name)

Value:

```
if ( !strcmp(name, parse_name) ) { \
    http->struct_name = (char*)malloc \
    ( \
        sizeof(char) * \
        (strlen(value)+1) \
    ); \
    strcpy(http->struct_name, value); \
} else
```

Referenced by mtp_http_ParseHeader().

5.58.1.2 #define SAFE_FREE(object)

Value:

```
if(object) free(object); \
    object = NULL
```

5.58.1.3 #define SAFE_FREE(elem)

Value:

```
if(elem) \
    free(elem)
```

Referenced by mtp_http_Destroy(), and mtp_http_ParseHeader().

5.58.2 Function Documentation

5.58.2.1 const char* http_GetExpression (const char * *string*, char ** *expr*)

Parse an html expression.

Parameters

string (input) The html block of text: Will parse the first expression pointed to by 'string'.

expr (output) The allocated expression

Returns

A pointer to the next expression segment of the string block, or NULL.

Definition at line 349 of file mtp_http.c.

Referenced by mtp_http_Parse(), and mtp_http_ParseHeader().

5.58.2.2 const char* http_GetToken (const char * *string*, char ** *token*)

Definition at line 790 of file mtp_http.c.

References cur.

Referenced by http_ParseRequest().

5.58.2.3 int http_ParseExpression (const char * *expression_string*, char ** *name*, char ** *value*)

Parse an expression into its name and value.

Parameters

expression_string (input) The expression

name (output) An allocated name string or NULL

value (output) An allocated value string or NULL

Returns

error_code_t type

Note

an http expression is something like 'Date: Mon, 23 May 2005 22:38:34 GMT
' where 'Date' is the name and the remainder of the string is the value

Definition at line 408 of file mtp_http.c.

References CHECK_NULL, MC_ERR_PARSE, and MC_SUCCESS.

Referenced by mtp_http_Parse(), and mtp_http_ParseHeader().

5.58.2.4 const char* http_ParseRequest (mtp_http_p *http*, const char * *string*)

Definition at line 701 of file mtp_http.c.

References cur, HTTP_CONNECT, HTTP_DELETE, HTTP_GET, http_GetToken(), HTTP_HEAD, HTTP_OPTIONS, mtp_http_s::http_performative, HTTP_PERFORMATIVE_UNDEF, HTTP_POST, HTTP_PUT, HTTP_RESPONSE, HTTP_TRACE, mtp_http_s::response_code, mtp_http_s::response_string, and mtp_http_s::target.

Referenced by mtp_http_ParseHeader().

5.58.2.5 int mtp_http_ComposeMessage (message_p *message*)

Definition at line 829 of file mtp_http.c.

References buf, message_s::isHTTP, MC_SUCCESS, message_s::message_body, PACKAGE_VERSION, message_s::target, and message_s::to_address.

5.58.2.6 struct message_s* mtp_http_CreateMessage (mtp_http_t * *mtp_http*, char * *hostname*, int *port*) [read]

Definition at line 875 of file mtp_http.c.

References `buf`, `mtp_http_s::content`, `mtp_http_content_s::content_type`, `mtp_http_content_s::data`, `dynstring_Append()`, `dynstring_Destroy()`, `dynstring_New()`, `mtp_http_s::host`, `message_s::isHTTP`, `dynstring_s::len`, `dynstring_s::message`, `message_s::message_body`, `message_New()`, `mtp_http_s::message_parts`, `PACKAGE_VERSION`, `mtp_http_s::target`, and `message_s::to_address`.

Referenced by `MC_AclSend()`.

5.58.2.7 `int mtp_http_Destroy (mtp_http_p http)`

Definition at line 54 of file `mtp_http.c`.

References `mtp_http_s::accept_ranges`, `mtp_http_s::boundary`, `mtp_http_s::cache_control`, `mtp_http_s::connection`, `mtp_http_s::content`, `mtp_http_s::content_length`, `mtp_http_content_s::content_type`, `mtp_http_s::content_type`, `mtp_http_content_s::data`, `mtp_http_s::date`, `mtp_http_s::host`, `mtp_http_s::http_version`, `mtp_http_s::message_parts`, `mtp_http_s::mime_version`, `mtp_http_s::response_string`, `mtp_http_s::return_code`, `SAFE_FREE`, `mtp_http_s::server`, `mtp_http_s::target`, and `mtp_http_s::user_agent`.

Referenced by `acc_connection_Thread()`, `MC_AclSend()`, `message_send_Thread()`, and `mtp_http_InitializeFromConnection()`.

5.58.2.8 `int mtp_http_InitializeFromConnection (mtp_http_p http, connection_p connection, char * privatekey)`

Definition at line 180 of file `mtp_http.c`.

References `CHECK_NULL`, `connection_s::clientfd`, `mtp_http_s::content_length`, `dynstring_Append()`, `dynstring_Destroy()`, `dynstring_New()`, `ERR`, `mtp_http_s::header_length`, `HTTP_HEAD`, `mtp_http_s::http_performative`, `MC_ERR_CONNECT`, `mtp_http_Destroy()`, `mtp_http_New()`, `mtp_http_Parse()`, `mtp_http_ParseHeader()`, `PACKAGE_STRING`, `rece_de_msg()`, `send`, `SOCKET_ERROR`, `SOCKET_INPUT_SIZE`, and `strdup`.

5.58.2.9 `mtp_http_p mtp_http_New (void)`

Definition at line 89 of file `mtp_http.c`.

References `CHECK_NULL`, and `mtp_http_s::content`.

Referenced by `acc_connection_Thread()`, `MC_AclSend()`, `message_send_Thread()`, and `mtp_http_InitializeFromConnection()`.

5.58.2.10 `int mtp_http_Parse (struct mtp_http_s * http, const char * string)`

Definition at line 551 of file `mtp_http.c`.

References `mtp_http_s::boundary`, `mtp_http_s::content`, `mtp_http_s::content_length`, `mtp_http_content_s::content_type`, `mtp_http_s::content_type`, `mtp_http_content_s::data`, `http_GetExpression()`, `HTTP_HEAD`, `http_ParseExpression()`, `mtp_http_s::http_performative`, `HTTP_POST`, `HTTP_PUT`, `HTTP_RESPONSE`, `MC_SUCCESS`, `mtp_http_s::message_parts`, `mtp_http_ParseHeader()`, and `strdup`.

Referenced by `message_send_Thread()`, and `mtp_http_InitializeFromConnection()`.

5.58.2.11 `const char* mtp_http_ParseHeader (struct mtp_http_s * http, const char * string)`

Definition at line 467 of file `mtp_http.c`.

References `mtp_http_s::header_length`, `http_GetExpression()`, `HTTP_PARSE_EXPR`, `http_ParseExpression()`, `http_ParseRequest()`, `MC_SUCCESS`, and `SAFE_FREE`.

Referenced by `mtp_http_InitializeFromConnection()`, and `mtp_http_Parse()`.

5.58.2.12 `int mtp_http_ParseResponse (struct mtp_http_s * http, const char * string)`

Definition at line 823 of file `mtp_http.c`.

5.58.2.13 `int rece_de_msg (char * buffer, connection_p con, char * privatekey)`

Definition at line 100 of file `mtp_http.c`.

References `aes_en_de()`, `connection_s::AES_key`, `connection_s::clientfd`, `int`, `connection_s::nonce`, and `receive_AES_en_MA()`.

Referenced by `mtp_http_InitializeFromConnection()`.

5.59 /home/dko/Projects/mobilec/src/mxml-2.2.2/config.h File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <stdarg.h>
#include <ctype.h>
```

Defines

- `#define MXML_VERSION "Mini-XML v2.2.2"`
- `#define HAVE_VSNPRINTF 1`
- `#define HAVE_STRDUP 1`

Functions

- `char * mxml_strdup (const char *, va_list)`

5.59.1 Define Documentation

5.59.1.1 `#define HAVE_STRDUP 1`

Definition at line 49 of file config.h.

5.59.1.2 `#define HAVE_VSNPRINTF 1`

Definition at line 42 of file config.h.

5.59.1.3 `#define MXML_VERSION "Mini-XML v2.2.2"`

Definition at line 35 of file config.h.

Referenced by `write_documentation()`.

5.59.2 Function Documentation

5.59.2.1 `char* mxml_strdup (const char *, va_list)`

Definition at line 66 of file mxml-string.c.

Referenced by `mxml_error()`, `mxmlNewTextf()`, and `mxmlSetTextf()`.

5.60 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/config.h File Reference

Defines

- `#define XYSSL_HAVE_ASM`
- `#define XYSSL_DEBUG_MSG`
- `#define XYSSL_SELF_TEST`
- `#define XYSSL_GENPRIME`
- `#define XYSSL_AES_C`
- `#define XYSSL_ARC4_C`
- `#define XYSSL_BASE64_C`
- `#define XYSSL_BIGNUM_C`
- `#define XYSSL_CERTS_C`
- `#define XYSSL_DEBUG_C`
- `#define XYSSL_DES_C`
- `#define XYSSL_DHM_C`
- `#define XYSSL_HAVEGE_C`
- `#define XYSSL_MD5_C`
- `#define XYSSL_NET_C`
- `#define XYSSL_PADLOCK_C`
- `#define XYSSL_RSA_C`
- `#define XYSSL_SHA1_C`
- `#define XYSSL_SHA2_C`
- `#define XYSSL_SHA4_C`
- `#define XYSSL_SSL_CLI_C`
- `#define XYSSL_SSL_SRV_C`
- `#define XYSSL_SSL_TLS_C`
- `#define XYSSL_TIMING_C`
- `#define XYSSL_X509_PARSE_C`
- `#define XYSSL_X509_WRITE_C`

5.60.1 Define Documentation

5.60.1.1 `#define XYSSL_AES_C`

Definition at line 74 of file config.h.

5.60.1.2 `#define XYSSL_ARC4_C`

Definition at line 84 of file config.h.

5.60.1.3 `#define XYSSL_BASE64_C`

Definition at line 92 of file config.h.

5.60.1.4 `#define XYSSL_BIGNUM_C`

Definition at line 103 of file config.h.

5.60.1.5 #define XYSSL_CERTS_C

Definition at line 111 of file config.h.

5.60.1.6 #define XYSSL_DEBUG_C

Definition at line 121 of file config.h.

5.60.1.7 #define XYSSL_DEBUG_MSG

Definition at line 47 of file config.h.

5.60.1.8 #define XYSSL_DES_C

Definition at line 131 of file config.h.

5.60.1.9 #define XYSSL_DHM_C

Definition at line 142 of file config.h.

5.60.1.10 #define XYSSL_GENPRIME

Definition at line 57 of file config.h.

5.60.1.11 #define XYSSL_HAVE_ASM

Definition at line 36 of file config.h.

5.60.1.12 #define XYSSL_HAVEGE_C

Definition at line 150 of file config.h.

5.60.1.13 #define XYSSL_MD5_C

Definition at line 177 of file config.h.

5.60.1.14 #define XYSSL_NET_C

Definition at line 185 of file config.h.

5.60.1.15 #define XYSSL_PADLOCK_C

Definition at line 193 of file config.h.

5.60.1.16 #define XYSSL_RSA_C

Definition at line 204 of file config.h.

5.60.1.17 #define XYSSL_SELF_TEST

Definition at line 52 of file config.h.

5.60.1.18 #define XYSSL_SHA1_C

Definition at line 215 of file config.h.

5.60.1.19 #define XYSSL_SHA2_C

Definition at line 223 of file config.h.

5.60.1.20 #define XYSSL_SHA4_C

Definition at line 231 of file config.h.

5.60.1.21 #define XYSSL_SSL_CLI_C

Definition at line 239 of file config.h.

5.60.1.22 #define XYSSL_SSL_SRV_C

Definition at line 247 of file config.h.

5.60.1.23 #define XYSSL_SSL_TLS_C

Definition at line 256 of file config.h.

5.60.1.24 #define XYSSL_TIMING_C

Definition at line 264 of file config.h.

5.60.1.25 #define XYSSL_X509_PARSE_C

Definition at line 274 of file config.h.

5.60.1.26 #define XYSSL_X509_WRITE_C

Definition at line 282 of file config.h.

5.61 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-attr.c File Reference

```
#include "config.h"
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <stdarg.h>
#include <ctype.h>
#include <errno.h>
```

Functions

- const char * [mxmlElementGetAttr](#) (mxml_node_t **node*, const char **name*)
- void [mxmlElementSetAttr](#) (mxml_node_t **node*, const char **name*, const char **value*)

5.61.1 Function Documentation

5.61.1.1 const char* mxmlElementGetAttr (mxml_node_t * *node*, const char * *name*)

Definition at line 48 of file mxml-attr.c.

References [mxml_value_s::attrs](#), [mxml_value_u::element](#), [MXML_ELEMENT](#), [mxml_attr_s::name](#), [mxml_value_s::num_attrs](#), [mxml_node_s::type](#), [mxml_attr_s::value](#), and [mxml_node_s::value](#).

Referenced by [agent_xml_parse__agent_code\(\)](#), [agent_xml_parse__data\(\)](#), [agent_xml_parse__task\(\)](#), [agent_xml_parse__tasks\(\)](#), [fipa_envelope_HandleReceived\(\)](#), [index_compare\(\)](#), [index_find\(\)](#), [message_xml_parse__message\(\)](#), [mxml_parse_element\(\)](#), [mxmlFindElement\(\)](#), [mxmlIndexNew\(\)](#), [scan_file\(\)](#), [sort_node\(\)](#), [type_cb\(\)](#), and [write_documentation\(\)](#).

5.61.1.2 void mxmlElementSetAttr (mxml_node_t * *node*, const char * *name*, const char * *value*)

Definition at line 95 of file mxml-attr.c.

References [mxml_value_s::attrs](#), [mxml_value_u::element](#), [MXML_ELEMENT](#), [mxml_error\(\)](#), [mxml_value_s::name](#), [mxml_attr_s::name](#), [mxml_value_s::num_attrs](#), [strdup](#), [mxml_node_s::type](#), [mxml_attr_s::value](#), and [mxml_node_s::value](#).

Referenced by [add_variable\(\)](#), [agent_xml_compose__agent_code\(\)](#), [agent_xml_compose__create_row_nodes\(\)](#), [agent_xml_compose__data\(\)](#), [agent_xml_compose__message\(\)](#), [agent_xml_compose__task\(\)](#), [agent_xml_compose__tasks\(\)](#), [fipa_envelope_Compose_params\(\)](#), [main\(\)](#), [mxml_parse_element\(\)](#), [scan_file\(\)](#), [sort_node\(\)](#), and [update_comment\(\)](#).

5.62 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-entity.c File Reference

```
#include "config.h"
#include "mxml.h"
```

Functions

- static [int default_callback](#) (const char *name)
- [int mxmlEntityAddCallback](#) (int(*cb)(const char *name))
- const char * [mxmlEntityGetName](#) (int val)
- [int mxmlEntityGetValue](#) (const char *name)
- void [mxmlEntityRemoveCallback](#) (int(*cb)(const char *name))

Variables

- static [int num_callbacks](#) = 1
- static [int\(* callbacks](#) [100])(const char *name)

5.62.1 Function Documentation

5.62.1.1 static int default_callback (const char * *name*) [static]

Definition at line 173 of file mxml-entity.c.

References [int](#).

5.62.1.2 int mxmlEntityAddCallback (int(*) (const char *name) *cb*)

Definition at line 69 of file mxml-entity.c.

References [callbacks](#), [mxml_error\(\)](#), and [num_callbacks](#).

5.62.1.3 const char* mxmlEntityGetName (int *val*)

Definition at line 95 of file mxml-entity.c.

Referenced by [mxml_write_name\(\)](#), and [mxml_write_string\(\)](#).

5.62.1.4 int mxmlEntityGetValue (const char * *name*)

Definition at line 125 of file mxml-entity.c.

References [callbacks](#), and [num_callbacks](#).

Referenced by [mxml_get_entity\(\)](#).

5.62.1.5 void mxmlEntityRemoveCallback (int(*) (const char *name) cb)

Definition at line 144 of file mxml-entity.c.

References `callbacks`, and `num_callbacks`.

5.62.2 Variable Documentation

5.62.2.1 int(* callbacks[100])(const char *name) [static]

Initial value:

```
{  
    default_callback  
}
```

Definition at line 58 of file mxml-entity.c.

Referenced by `mxmlEntityAddCallback()`, `mxmlEntityGetValue()`, and `mxmlEntityRemoveCallback()`.

5.62.2.2 int num_callbacks = 1 [static]

Definition at line 57 of file mxml-entity.c.

Referenced by `mxmlEntityAddCallback()`, `mxmlEntityGetValue()`, and `mxmlEntityRemoveCallback()`.

5.63 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-file.c File Reference

```
#include "mxml.h"
#include <unistd.h>
#include "config.h"
```

Data Structures

- struct [mxml_fdbuf_s](#)

Defines

- #define [ENCODE_UTF8](#) 0
- #define [ENCODE_UTF16BE](#) 1
- #define [ENCODE_UTF16LE](#) 2
- #define [mxml_bad_char](#)(ch) ((ch) < ' ' && (ch) != '\n' && (ch) != '\r' && (ch) != '\t')

Typedefs

- typedef struct [mxml_fdbuf_s](#) [mxml_fdbuf_t](#)

Functions

- static [int](#) [mxml_add_char](#) ([int](#) ch, [char](#) **ptr, [char](#) **buffer, [int](#) *bufsize)
- static [int](#) [mxml_fd_getc](#) ([void](#) *p, [int](#) *encoding)
- static [int](#) [mxml_fd_putc](#) ([int](#) ch, [void](#) *p)
- static [int](#) [mxml_fd_read](#) ([mxml_fdbuf_t](#) *buf)
- static [int](#) [mxml_fd_write](#) ([mxml_fdbuf_t](#) *buf)
- static [int](#) [mxml_file_getc](#) ([void](#) *p, [int](#) *encoding)
- static [int](#) [mxml_file_putc](#) ([int](#) ch, [void](#) *p)
- static [int](#) [mxml_get_entity](#) ([mxml_node_t](#) *parent, [void](#) *p, [int](#) *encoding, [int](#)(*getc_cb)([void](#) *, [int](#) *))
- static [mxml_node_t](#) * [mxml_load_data](#) ([mxml_node_t](#) *top, [void](#) *p, [mxml_type_t](#)(*cb)([mxml_node_t](#) *), [int](#)(*getc_cb)([void](#) *, [int](#) *))
- static [int](#) [mxml_parse_element](#) ([mxml_node_t](#) *node, [void](#) *p, [int](#) *encoding, [int](#)(*getc_cb)([void](#) *, [int](#) *))
- static [int](#) [mxml_string_getc](#) ([void](#) *p, [int](#) *encoding)
- static [int](#) [mxml_string_putc](#) ([int](#) ch, [void](#) *p)
- static [int](#) [mxml_write_name](#) ([const](#) [char](#) *s, [void](#) *p, [int](#)(*putc_cb)([int](#), [void](#) *))
- static [int](#) [mxml_write_node](#) ([mxml_node_t](#) *node, [void](#) *p, [const](#) [char](#) *(*cb)([mxml_node_t](#) *, [int](#)), [int](#) col, [int](#)(*putc_cb)([int](#), [void](#) *))
- static [int](#) [mxml_write_string](#) ([const](#) [char](#) *s, [void](#) *p, [int](#)(*putc_cb)([int](#), [void](#) *))
- static [int](#) [mxml_write_ws](#) ([mxml_node_t](#) *node, [void](#) *p, [const](#) [char](#) *(*cb)([mxml_node_t](#) *, [int](#)), [int](#) ws, [int](#) col, [int](#)(*putc_cb)([int](#), [void](#) *))
- [mxml_node_t](#) * [mxmlLoadFd](#) ([mxml_node_t](#) *top, [int](#) fd, [mxml_type_t](#)(*cb)([mxml_node_t](#) *node))
- [mxml_node_t](#) * [mxmlLoadFile](#) ([mxml_node_t](#) *top, [FILE](#) *fp, [mxml_type_t](#)(*cb)([mxml_node_t](#) *node))

- `mxml_node_t * mxmlLoadString (mxml_node_t *top, const char *s, mxml_type_t(*cb)(mxml_node_t *node))`
- `char * mxmlSaveAllocString (mxml_node_t *node, const char *(*cb)(mxml_node_t *node, int ws))`
- `int mxmlSaveFd (mxml_node_t *node, int fd, const char *(*cb)(mxml_node_t *node, int ws))`
- `int mxmlSaveFile (mxml_node_t *node, FILE *fp, const char *(*cb)(mxml_node_t *node, int ws))`
- `int mxmlSaveString (mxml_node_t *node, char *buffer, int bufsize, const char *(*cb)(mxml_node_t *node, int ws))`
- `void mxmlSetCustomHandlers (mxml_custom_load_cb_t load, mxml_custom_save_cb_t save)`
- `void mxmlSetErrorCallback (void(*cb)(const char *))`

Variables

- `void(* mxml_error_cb)(const char *)`
- `static mxml_custom_load_cb_t mxml_custom_load_cb = NULL`
- `static mxml_custom_save_cb_t mxml_custom_save_cb = NULL`

5.63.1 Define Documentation

5.63.1.1 `#define ENCODE_UTF16BE 1`

Definition at line 69 of file mxml-file.c.

Referenced by `mxml_fd_getc()`, `mxml_file_getc()`, and `mxml_string_getc()`.

5.63.1.2 `#define ENCODE_UTF16LE 2`

Definition at line 70 of file mxml-file.c.

Referenced by `mxml_fd_getc()`, `mxml_file_getc()`, and `mxml_string_getc()`.

5.63.1.3 `#define ENCODE_UTF8 0`

Definition at line 68 of file mxml-file.c.

Referenced by `mxml_fd_getc()`, `mxml_file_getc()`, `mxml_load_data()`, and `mxml_string_getc()`.

5.63.1.4 `#define mxml_bad_char(ch) ((ch) < ' ' && (ch) != '\n' && (ch) != '\r' && (ch) != '\t')`

Definition at line 77 of file mxml-file.c.

Referenced by `mxml_fd_getc()`, `mxml_file_getc()`, `mxml_get_entity()`, and `mxml_string_getc()`.

5.63.2 Typedef Documentation

5.63.2.1 `typedef struct mxml_fdbuf_s mxml_fdbuf_t`

5.63.3 Function Documentation

5.63.3.1 `static int mxml_add_char (int ch, char **ptr, char **buffer, int *bufsize) [static]`

Definition at line 484 of file mxml-file.c.

References `mxml_error()`.

Referenced by `mxml_load_data()`, and `mxml_parse_element()`.

5.63.3.2 static int mxml_fd_getc (void * *p*, int * *encoding*) [static]

Definition at line 564 of file `mxml-file.c`.

References `buf`, `mxml_fdbuf_s::current`, `ENCODE_UTF16BE`, `ENCODE_UTF16LE`, `ENCODE_UTF8`, `mxml_fdbuf_s::end`, `mxml_bad_char`, `mxml_error()`, and `mxml_fd_read()`.

Referenced by `mxmlLoadFd()`.

5.63.3.3 static int mxml_fd_putc (int *ch*, void * *p*) [static]

Definition at line 851 of file `mxml-file.c`.

References `buf`, `mxml_fdbuf_s::current`, `mxml_fdbuf_s::end`, and `mxml_fd_write()`.

Referenced by `mxmlSaveFd()`.

5.63.3.4 static int mxml_fd_read (mxml_fdbuf_t * *buf*) [static]

Definition at line 920 of file `mxml-file.c`.

References `mxml_fdbuf_s::buffer`, `mxml_fdbuf_s::current`, `mxml_fdbuf_s::end`, and `mxml_fdbuf_s::fd`.

Referenced by `mxml_fd_getc()`.

5.63.3.5 static int mxml_fd_write (mxml_fdbuf_t * *buf*) [static]

Definition at line 959 of file `mxml-file.c`.

References `mxml_fdbuf_s::buffer`, `mxml_fdbuf_s::current`, and `mxml_fdbuf_s::fd`.

Referenced by `mxml_fd_putc()`, and `mxmlSaveFd()`.

5.63.3.6 static int mxml_file_getc (void * *p*, int * *encoding*) [static]

Definition at line 1002 of file `mxml-file.c`.

References `ENCODE_UTF16BE`, `ENCODE_UTF16LE`, `ENCODE_UTF8`, `mxml_bad_char`, and `mxml_error()`.

Referenced by `mxmlLoadFile()`.

5.63.3.7 static int mxml_file_putc (int *ch*, void * *p*) [static]

Definition at line 1201 of file `mxml-file.c`.

Referenced by `mxmlSaveFile()`.

5.63.3.8 `static int mxml_get_entity (mxml_node_t *parent, void *p, int *encoding, int(*)(void *, int *)getc_cb) [static]`

Definition at line 1256 of file mxml-file.c.

References `mxml_value_u::element`, `mxml_bad_char`, `mxml_error()`, `mxmlEntityGetValue()`, `mxml_value_s::name`, and `mxml_node_s::value`.

Referenced by `mxml_load_data()`, and `mxml_parse_element()`.

5.63.3.9 `static mxml_node_t * mxml_load_data (mxml_node_t *top, void *p, mxml_type_t(*)(mxml_node_t *) cb, int(*)(void *, int *)getc_cb) [static]`

Definition at line 1317 of file mxml-file.c.

References `mxml_value_u::element`, `ENCODE_UTF8`, `mxml_add_char()`, `MXML_CUSTOM`, `mxml_custom_load_cb`, `mxml_error()`, `mxml_get_entity()`, `MXML_INTEGER`, `MXML_OPAQUE`, `mxml_parse_element()`, `MXML_REAL`, `MXML_TEXT`, `mxmlDelete()`, `mxmlNewCustom()`, `mxmlNewElement()`, `mxmlNewInteger()`, `mxmlNewOpaque()`, `mxmlNewReal()`, `mxmlNewText()`, `mxml_value_s::name`, `mxml_node_s::parent`, and `mxml_node_s::value`.

Referenced by `mxmlLoadFd()`, `mxmlLoadFile()`, and `mxmlLoadString()`.

5.63.3.10 `static int mxml_parse_element (mxml_node_t *node, void *p, int *encoding, int(*)(void *, int *)getc_cb) [static]`

Definition at line 1841 of file mxml-file.c.

References `mxml_value_u::element`, `mxml_add_char()`, `mxml_error()`, `mxml_get_entity()`, `mxmlElementGetAttr()`, `mxmlElementSetAttr()`, `mxml_value_s::name`, and `mxml_node_s::value`.

Referenced by `mxml_load_data()`.

5.63.3.11 `static int mxml_string_getc (void *p, int *encoding) [static]`

Definition at line 2103 of file mxml-file.c.

References `ENCODE_UTF16BE`, `ENCODE_UTF16LE`, `ENCODE_UTF8`, `mxml_bad_char`, and `mxml_error()`.

Referenced by `mxmlLoadString()`.

5.63.3.12 `static int mxml_string_putc (int ch, void *p) [static]`

Definition at line 2339 of file mxml-file.c.

Referenced by `mxmlSaveString()`.

5.63.3.13 `static int mxml_write_name (const char *s, void *p, int(*)(int, void *)putc_cb) [static]`

Definition at line 2413 of file mxml-file.c.

References `mxmlEntityGetName()`.

Referenced by `mxml_write_node()`.

5.63.3.14 `static int mxml_write_node (mxml_node_t * node, void * p, const char
()(mxml_node_t *, int) cb, int col, int(*) (int, void *) putc_cb) [static]`

Definition at line 2488 of file mxml-file.c.

References mxml_value_s::attrs, mxml_node_s::child, mxml_value_u::element, mxml_value_u::integer, MXML_CUSTOM, mxml_custom_save_cb, MXML_ELEMENT, MXML_INTEGER, MXML_OPAQUE, MXML_REAL, MXML_TEXT, MXML_WRAP, mxml_write_name(), mxml_write_string(), mxml_write_ws(), MXML_WS_AFTER_CLOSE, MXML_WS_AFTER_OPEN, MXML_WS_BEFORE_CLOSE, MXML_WS_BEFORE_OPEN, mxml_attr_s::name, mxml_value_s::name, mxml_node_s::next, mxml_value_s::num_attrs, mxml_value_u::opaque, mxml_node_s::prev, mxml_value_u::real, mxml_text_s::string, mxml_value_u::text, mxml_node_s::type, mxml_attr_s::value, mxml_node_s::value, and mxml_text_s::whitespace.

Referenced by mxmlSaveFd(), mxmlSaveFile(), and mxmlSaveString().

5.63.3.15 `static int mxml_write_string (const char * s, void * p, int(*) (int, void *) putc_cb)
[static]`

Definition at line 2769 of file mxml-file.c.

References mxmlEntityGetName().

Referenced by mxml_write_node().

5.63.3.16 `static int mxml_write_ws (mxml_node_t * node, void * p, const char *(*)(mxml_node_t
, int) cb, int ws, int col, int() (int, void *) putc_cb) [static]`

Definition at line 2809 of file mxml-file.c.

References MXML_TAB.

Referenced by mxml_write_node().

5.63.3.17 `mxml_node_t* mxmlLoadFd (mxml_node_t * top, int fd, mxml_type_t(*) (mxml_node_t
*node) cb)`

Definition at line 160 of file mxml-file.c.

References buf, mxml_fdbuf_s::buffer, mxml_fdbuf_s::current, mxml_fdbuf_s::end, mxml_fdbuf_s::fd, mxml_fd_getc(), and mxml_load_data().

Referenced by main().

5.63.3.18 `mxml_node_t* mxmlLoadFile (mxml_node_t * top, FILE * fp,
mxml_type_t(*) (mxml_node_t *node) cb)`

Definition at line 200 of file mxml-file.c.

References mxml_file_getc(), and mxml_load_data().

Referenced by main().

5.63.3.19 **mxml_node_t* mxmlLoadString (mxml_node_t * *top*, const char * *s*, mxml_type_t(*) (mxml_node_t **node*) *cb*)**

Definition at line 229 of file mxml-file.c.

References mxml_load_data(), and mxml_string_getc().

Referenced by acc_connection_Thread(), agent_xml_compose(), fipa_envelope_Compose(), fipa_envelope_Parse(), main(), MC_LoadAgentFromFile(), message_InitializeFromConnection(), and message_InitializeFromString().

5.63.3.20 **char* mxmlSaveAllocString (mxml_node_t * *node*, const char *(*) (mxml_node_t **node*, int *ws*) *cb*)**

Definition at line 259 of file mxml-file.c.

References mxmlSaveString(), and strdup.

Referenced by fipa_envelope_Compose(), MC_GetAgentXMLString(), and message_InitializeFromAgent().

5.63.3.21 **int mxmlSaveFd (mxml_node_t * *node*, int *fd*, const char *(*) (mxml_node_t **node*, int *ws*) *cb*)**

Definition at line 316 of file mxml-file.c.

References buf, mxml_fdbuf_s::buffer, mxml_fdbuf_s::current, mxml_fdbuf_s::end, mxml_fdbuf_s::fd, mxml_fd_putc(), mxml_fd_write(), and mxml_write_node().

Referenced by main().

5.63.3.22 **int mxmlSaveFile (mxml_node_t * *node*, FILE * *fp*, const char *(*) (mxml_node_t **node*, int *ws*) *cb*)**

Definition at line 363 of file mxml-file.c.

References mxml_file_putc(), and mxml_write_node().

Referenced by main().

5.63.3.23 **int mxmlSaveString (mxml_node_t * *node*, char * *buffer*, int *bufsize*, const char *(*) (mxml_node_t **node*, int *ws*) *cb*)**

Definition at line 405 of file mxml-file.c.

References mxml_string_putc(), and mxml_write_node().

Referenced by main(), and mxmlSaveAllocString().

5.63.3.24 **void mxmlSetCustomHandlers (mxml_custom_load_cb_t *load*, mxml_custom_save_cb_t *save*)**

Definition at line 457 of file mxml-file.c.

References mxml_custom_load_cb, and mxml_custom_save_cb.

5.63.3.25 void mxmlSetErrorCallback (void(*) (const char *) cb)

Definition at line 472 of file mxml-file.c.

References mxml_error_cb.

5.63.4 Variable Documentation**5.63.4.1 mxml_custom_load_cb_t mxml_custom_load_cb = NULL [static]**

Definition at line 104 of file mxml-file.c.

Referenced by mxml_load_data(), and mxmlSetCustomHandlers().

5.63.4.2 mxml_custom_save_cb_t mxml_custom_save_cb = NULL [static]

Definition at line 105 of file mxml-file.c.

Referenced by mxml_write_node(), and mxmlSetCustomHandlers().

5.63.4.3 void(* mxml_error_cb)(const char *)

Definition at line 45 of file mxml-private.c.

Referenced by mxml_error(), and mxmlSetErrorCallback().

5.64 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-index.c File Reference

```
#include "config.h"
#include "mxml.h"
```

Functions

- static [int](#) [index_compare](#) ([mxml_index_t](#) *ind, [mxml_node_t](#) *first, [mxml_node_t](#) *second)
- static [int](#) [index_find](#) ([mxml_index_t](#) *ind, const char *element, const char *value, [mxml_node_t](#) *node)
- static void [index_sort](#) ([mxml_index_t](#) *ind, [int](#) left, [int](#) right)
- void [mxmlIndexDelete](#) ([mxml_index_t](#) *ind)
- [mxml_node_t](#) * [mxmlIndexEnum](#) ([mxml_index_t](#) *ind)
- [mxml_node_t](#) * [mxmlIndexFind](#) ([mxml_index_t](#) *ind, const char *element, const char *value)
- [mxml_index_t](#) * [mxmlIndexNew](#) ([mxml_node_t](#) *node, const char *element, const char *attr)
- [mxml_node_t](#) * [mxmlIndexReset](#) ([mxml_index_t](#) *ind)

5.64.1 Function Documentation

5.64.1.1 static [int](#) [index_compare](#) ([mxml_index_t](#) * *ind*, [mxml_node_t](#) * *first*, [mxml_node_t](#) * *second*) [**static**]

Definition at line 498 of file [mxml-index.c](#).

References [mxml_index_s::attr](#), [mxml_value_u::element](#), [mxmlElementGetAttr\(\)](#), [mxml_value_s::name](#), and [mxml_node_s::value](#).

Referenced by [index_sort\(\)](#).

5.64.1.2 static [int](#) [index_find](#) ([mxml_index_t](#) * *ind*, const char * *element*, const char * *value*, [mxml_node_t](#) * *node*) [**static**]

Definition at line 537 of file [mxml-index.c](#).

References [mxml_index_s::attr](#), [mxml_value_u::element](#), [mxmlElementGetAttr\(\)](#), [mxml_value_s::name](#), and [mxml_node_s::value](#).

Referenced by [mxmlIndexFind\(\)](#).

5.64.1.3 static void [index_sort](#) ([mxml_index_t](#) * *ind*, [int](#) *left*, [int](#) *right*) [**static**]

Definition at line 580 of file [mxml-index.c](#).

References [index_compare\(\)](#), and [mxml_index_s::nodes](#).

Referenced by [mxmlIndexNew\(\)](#).

5.64.1.4 void [mxmlIndexDelete](#) ([mxml_index_t](#) * *ind*)

Definition at line 62 of file [mxml-index.c](#).

References `mxml_index_s::alloc_nodes`, `mxml_index_s::attr`, and `mxml_index_s::nodes`.

Referenced by `main()`, and `mxmlIndexNew()`.

5.64.1.5 `mxml_node_t* mxmlIndexEnum (mxml_index_t * ind)`

Definition at line 92 of file `mxml-index.c`.

References `mxml_index_s::cur_node`, `mxml_index_s::nodes`, and `mxml_index_s::num_nodes`.

Referenced by `main()`, and `mxmlIndexFind()`.

5.64.1.6 `mxml_node_t* mxmlIndexFind (mxml_index_t * ind, const char * element, const char * value)`

Definition at line 122 of file `mxml-index.c`.

References `mxml_index_s::attr`, `mxml_index_s::cur_node`, `index_find()`, `mxmlIndexEnum()`, `mxml_index_s::nodes`, and `mxml_index_s::num_nodes`.

Referenced by `main()`.

5.64.1.7 `mxml_index_t* mxmlIndexNew (mxml_node_t * node, const char * element, const char * attr)`

Definition at line 305 of file `mxml-index.c`.

References `mxml_index_s::alloc_nodes`, `mxml_index_s::attr`, `mxml_value_u::element`, `index_sort()`, `MXML_DESCEND`, `mxml_error()`, `mxmlElementGetAttr()`, `mxmlFindElement()`, `mxmlIndexDelete()`, `mxml_value_s::name`, `mxml_index_s::nodes`, `mxml_index_s::num_nodes`, `strdup`, and `mxml_node_s::value`.

Referenced by `main()`.

5.64.1.8 `mxml_node_t* mxmlIndexReset (mxml_index_t * ind)`

Definition at line 463 of file `mxml-index.c`.

References `mxml_index_s::cur_node`, `mxml_index_s::nodes`, and `mxml_index_s::num_nodes`.

Referenced by `main()`.

5.65 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-node.c File Reference

```
#include "config.h"
#include "mxml.h"
```

Functions

- static `mxml_node_t * mxml_new (mxml_node_t *parent, mxml_type_t type)`
- void `mxmlAdd (mxml_node_t *parent, int where, mxml_node_t *child, mxml_node_t *node)`
- void `mxmlDelete (mxml_node_t *node)`
- `mxml_node_t * mxmlNewCustom (mxml_node_t *parent, void *data, void(*destroy)(void *))`
- `mxml_node_t * mxmlNewElement (mxml_node_t *parent, const char *name)`
- `mxml_node_t * mxmlNewInteger (mxml_node_t *parent, int integer)`
- `mxml_node_t * mxmlNewOpaque (mxml_node_t *parent, const char *opaque)`
- `mxml_node_t * mxmlNewReal (mxml_node_t *parent, double real)`
- `mxml_node_t * mxmlNewText (mxml_node_t *parent, int whitespace, const char *string)`
- `mxml_node_t * mxmlNewTextf (mxml_node_t *parent, int whitespace, const char *format,...)`
- void `mxmlRemove (mxml_node_t *node)`

5.65.1 Function Documentation

5.65.1.1 static `mxml_node_t * mxml_new (mxml_node_t *parent, mxml_type_t type)` [static]

Definition at line 621 of file `mxml-node.c`.

References `MXML_ADD_AFTER`, `MXML_ADD_TO_PARENT`, `mxmlAdd()`, `node`, and `mxml_node_s::type`.

Referenced by `mxmlNewCustom()`, `mxmlNewElement()`, `mxmlNewInteger()`, `mxmlNewOpaque()`, `mxmlNewReal()`, `mxmlNewText()`, and `mxmlNewTextf()`.

5.65.1.2 void `mxmlAdd (mxml_node_t *parent, int where, mxml_node_t *child, mxml_node_t *node)`

Definition at line 66 of file `mxml-node.c`.

References `mxml_node_s::child`, `mxml_node_s::last_child`, `MXML_ADD_AFTER`, `MXML_ADD_BEFORE`, `mxmlRemove()`, `mxml_node_s::next`, `mxml_node_s::parent`, and `mxml_node_s::prev`.

Referenced by `add_variable()`, `agent_xml_compose()`, `agent_xml_compose__agent_data()`, `agent_xml_compose__create_row_nodes()`, `agent_xml_compose__data()`, `agent_xml_compose__gaf_message()`, `agent_xml_compose__message()`, `agent_xml_compose__mobile_agent()`, `agent_xml_compose__task()`, `agent_xml_compose__tasks()`, `fipa_envelope_Compose()`, `fipa_envelope_Compose__envelope()`, `fipa_envelope_Compose__params()`, `mxml_new()`, `scan_file()`, and `sort_node()`.

5.65.1.3 void `mxmlDelete (mxml_node_t *node)`

Definition at line 200 of file `mxml-node.c`.

References `mxml_value_s::attrs`, `mxml_node_s::child`, `mxml_value_u::custom`, `mxml_custom_s::data`, `mxml_custom_s::destroy`, `mxml_value_u::element`, `MXML_CUSTOM`, `MXML_ELEMENT`, `MXML_INTEGER`, `MXML_OPAQUE`, `MXML_REAL`, `MXML_TEXT`, `mxmlDelete()`, `mxmlRemove()`, `mxml_attr_s::name`, `mxml_value_s::name`, `mxml_value_s::num_attrs`, `mxml_value_u::opaque`, `mxml_text_s::string`, `mxml_value_u::text`, `mxml_node_s::type`, `mxml_attr_s::value`, and `mxml_node_s::value`.

Referenced by `add_variable()`, `agent_datastate_Destroy()`, `fipa_envelope_Compose()`, `fipa_envelope_Parse()`, `main()`, `message_Destroy()`, `mxml_load_data()`, `mxmlDelete()`, `scan_file()`, and `sort_node()`.

5.65.1.4 `mxml_node_t* mxmlNewCustom (mxml_node_t * parent, void * data, void(*) (void *) destroy)`

Definition at line 291 of file `mxml-node.c`.

References `mxml_value_u::custom`, `mxml_custom_s::data`, `mxml_custom_s::destroy`, `MXML_CUSTOM`, `mxml_new()`, `node`, and `mxml_node_s::value`.

Referenced by `mxml_load_data()`.

5.65.1.5 `mxml_node_t* mxmlNewElement (mxml_node_t * parent, const char * name)`

Definition at line 327 of file `mxml-node.c`.

References `mxml_value_u::element`, `MXML_ELEMENT`, `mxml_new()`, `mxml_value_s::name`, `node`, `strdup`, and `mxml_node_s::value`.

Referenced by `add_variable()`, `agent_xml_compose_agent_code()`, `agent_xml_compose_agent_data()`, `agent_xml_compose_create_row_nodes()`, `agent_xml_compose_data()`, `agent_xml_compose_gaf_message()`, `agent_xml_compose_home()`, `agent_xml_compose_message()`, `agent_xml_compose_mobile_agent()`, `agent_xml_compose_name()`, `agent_xml_compose_owner()`, `agent_xml_compose_task()`, `agent_xml_compose_tasks()`, `agent_xml_compose_wg_code()`, `fipa_envelope_Compose_acl_representation()`, `fipa_envelope_Compose_date()`, `fipa_envelope_Compose_envelope()`, `fipa_envelope_Compose_from()`, `fipa_envelope_Compose_intended_receiver()`, `fipa_envelope_Compose_params()`, `fipa_envelope_Compose_payload_encoding()`, `fipa_envelope_Compose_to()`, `main()`, `mxml_load_data()`, `scan_file()`, and `xml_new_cdata()`.

5.65.1.6 `mxml_node_t* mxmlNewInteger (mxml_node_t * parent, int integer)`

Definition at line 365 of file `mxml-node.c`.

References `mxml_value_u::integer`, `MXML_INTEGER`, `mxml_new()`, `node`, and `mxml_node_s::value`.

Referenced by `main()`, and `mxml_load_data()`.

5.65.1.7 `mxml_node_t* mxmlNewOpaque (mxml_node_t * parent, const char * opaque)`

Definition at line 396 of file `mxml-node.c`.

References `mxml_new()`, `MXML_OPAQUE`, `node`, `mxml_value_u::opaque`, `strdup`, and `mxml_node_s::value`.

Referenced by `main()`, and `mxml_load_data()`.

5.65.1.8 mxml_node_t* mxmlNewReal (mxml_node_t * *parent*, double *real*)

Definition at line 434 of file mxml-node.c.

References mxml_new(), MXML_REAL, node, mxml_value_u::real, and mxml_node_s::value.

Referenced by main(), and mxml_load_data().

5.65.1.9 mxml_node_t* mxmlNewText (mxml_node_t * *parent*, int *whitespace*, const char * *string*)

Definition at line 466 of file mxml-node.c.

References mxml_new(), MXML_TEXT, node, strdup, mxml_text_s::string, mxml_value_u::text, mxml_node_s::value, and mxml_text_s::whitespace.

Referenced by agent_xml_compose__create_row_nodes(), agent_xml_compose__home(), agent_xml_compose__name(), agent_xml_compose__owner(), agent_xml_compose__wg_code(), fipa_envelope_Compose__acl_representation(), fipa_envelope_Compose__date(), fipa_envelope_Compose__from(), fipa_envelope_Compose__intended_receiver(), fipa_envelope_Compose__payload_encoding(), fipa_envelope_Compose__to(), main(), mxml_load_data(), and scan_file().

5.65.1.10 mxml_node_t* mxmlNewTextf (mxml_node_t * *parent*, int *whitespace*, const char * *format*, ...)

Definition at line 510 of file mxml-node.c.

References mxml_new(), mxml_strdupf(), MXML_TEXT, node, mxml_text_s::string, mxml_value_u::text, mxml_node_s::value, and mxml_text_s::whitespace.

5.65.1.11 void mxmlRemove (mxml_node_t * *node*)

Definition at line 557 of file mxml-node.c.

References mxml_node_s::child, mxml_node_s::last_child, mxml_node_s::next, mxml_node_s::parent, and mxml_node_s::prev.

Referenced by mxmlAdd(), and mxmlDelete().

5.66 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-private.c

File Reference

```
#include "config.h"
#include "mxml.h"
```

Functions

- void [mxml_error](#) (const char *format,...)
- [mxml_type_t mxml_integer_cb](#) ([mxml_node_t](#) *node)
- [mxml_type_t mxml_opaque_cb](#) ([mxml_node_t](#) *node)
- [mxml_type_t mxml_real_cb](#) ([mxml_node_t](#) *node)

Variables

- void(* [mxml_error_cb](#))(const char *) = NULL

5.66.1 Function Documentation

5.66.1.1 void [mxml_error](#) (const char **format*, ...)

Definition at line 53 of file mxml-private.c.

References [mxml_error_cb](#), and [mxml_strdup\(\)](#).

Referenced by [mxml_add_char\(\)](#), [mxml_fd_getc\(\)](#), [mxml_file_getc\(\)](#), [mxml_get_entity\(\)](#), [mxml_load_data\(\)](#), [mxml_parse_element\(\)](#), [mxml_string_getc\(\)](#), [mxmlElementSetAttr\(\)](#), [mxmlEntityAddCallback\(\)](#), and [mxmlIndexNew\(\)](#).

5.66.1.2 [mxml_type_t mxml_integer_cb](#) ([mxml_node_t](#) **node*)

Definition at line 99 of file mxml-private.c.

References [MXML_INTEGER](#).

5.66.1.3 [mxml_type_t mxml_opaque_cb](#) ([mxml_node_t](#) **node*)

Definition at line 112 of file mxml-private.c.

References [MXML_OPAQUE](#).

5.66.1.4 [mxml_type_t mxml_real_cb](#) ([mxml_node_t](#) **node*)

Definition at line 125 of file mxml-private.c.

References [MXML_REAL](#).

5.66.2 Variable Documentation

5.66.2.1 `void(* mxml_error_cb)(const char *) = NULL`

Definition at line 45 of file mxml-private.c.

Referenced by `mxml_error()`, and `mxmlSetErrorCallback()`.

5.67 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-search.c

File Reference

```
#include "config.h"
#include "mxml.h"
```

Functions

- [mxml_node_t * mxmlFindElement](#) ([mxml_node_t * node](#), [mxml_node_t * top](#), [const char * name](#), [const char * attr](#), [const char * value](#), [int descend](#))
- [mxml_node_t * mxmlWalkNext](#) ([mxml_node_t * node](#), [mxml_node_t * top](#), [int descend](#))
- [mxml_node_t * mxmlWalkPrev](#) ([mxml_node_t * node](#), [mxml_node_t * top](#), [int descend](#))

5.67.1 Function Documentation

5.67.1.1 [mxml_node_t * mxmlFindElement](#) ([mxml_node_t * node](#), [mxml_node_t * top](#), [const char * name](#), [const char * attr](#), [const char * value](#), [int descend](#))

Definition at line 55 of file mxml-search.c.

References [mxml_value_u::element](#), [MXML_DESCEND](#), [MXML_ELEMENT](#), [mxmlElementGetAttr\(\)](#), [mxmlWalkNext\(\)](#), [mxml_value_s::name](#), [mxml_node_s::next](#), [mxml_node_s::type](#), and [mxml_node_s::value](#).

Referenced by [agent_xml_parse__fill_row_data\(\)](#), [agent_xml_parse__task\(\)](#), [agent_xml_parse__tasks\(\)](#), [fipa_envelope_HandleAclRepresentation\(\)](#), [fipa_envelope_HandleComments\(\)](#), [fipa_envelope_HandleDate\(\)](#), [fipa_envelope_HandleEnvelope\(\)](#), [fipa_envelope_HandleFrom\(\)](#), [fipa_envelope_HandleIntendedReceiver\(\)](#), [fipa_envelope_HandleParams\(\)](#), [fipa_envelope_HandlePayloadEncoding\(\)](#), [fipa_envelope_HandlePayloadLength\(\)](#), [fipa_envelope_HandleReceived\(\)](#), [fipa_envelope_HandleTo\(\)](#), [fipa_envelope_ParseAddresses\(\)](#), [fipa_envelope_ParseAgentIdentifier\(\)](#), [fipa_envelope_ParseResolvers\(\)](#), [main\(\)](#), [MC_LoadAgentFromFile\(\)](#), [message_xml_parse\(\)](#), [mxmlIndexNew\(\)](#), [scan_file\(\)](#), [sort_node\(\)](#), [write_documentation\(\)](#), [write_element\(\)](#), [xml_find_sibling\(\)](#), and [xml_get_child\(\)](#).

5.67.1.2 [mxml_node_t * mxmlWalkNext](#) ([mxml_node_t * node](#), [mxml_node_t * top](#), [int descend](#))

Definition at line 137 of file mxml-search.c.

References [mxml_node_s::child](#), [mxml_node_s::next](#), and [mxml_node_s::parent](#).

Referenced by [mxmlFindElement\(\)](#), and [write_element\(\)](#).

5.67.1.3 [mxml_node_t * mxmlWalkPrev](#) ([mxml_node_t * node](#), [mxml_node_t * top](#), [int descend](#))

Definition at line 173 of file mxml-search.c.

References [mxml_node_s::last_child](#), [mxml_node_s::parent](#), and [mxml_node_s::prev](#).

5.68 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-set.c File Reference

```
#include "config.h"
#include "mxml.h"
```

Functions

- [int mxmlSetCustom](#) ([mxml_node_t](#) **node*, void **data*, void(**destroy*)(void *))
- [int mxmlSetElement](#) ([mxml_node_t](#) **node*, const char **name*)
- [int mxmlSetInteger](#) ([mxml_node_t](#) **node*, int *integer*)
- [int mxmlSetOpaque](#) ([mxml_node_t](#) **node*, const char **opaque*)
- [int mxmlSetReal](#) ([mxml_node_t](#) **node*, double *real*)
- [int mxmlSetText](#) ([mxml_node_t](#) **node*, int *whitespace*, const char **string*)
- [int mxmlSetTextf](#) ([mxml_node_t](#) **node*, int *whitespace*, const char **format*,...)

5.68.1 Function Documentation

5.68.1.1 int mxmlSetCustom (mxml_node_t * *node*, void * *data*, void(*) (void *) *destroy*)

Definition at line 50 of file mxml-set.c.

References [mxml_value_u::custom](#), [mxml_custom_s::data](#), [mxml_custom_s::destroy](#), [MXML_CUSTOM](#), [mxml_node_s::type](#), and [mxml_node_s::value](#).

5.68.1.2 int mxmlSetElement (mxml_node_t * *node*, const char * *name*)

Definition at line 83 of file mxml-set.c.

References [mxml_value_u::element](#), [MXML_ELEMENT](#), [mxml_value_s::name](#), [strdup](#), [mxml_node_s::type](#), and [mxml_node_s::value](#).

5.68.1.3 int mxmlSetInteger (mxml_node_t * *node*, int *integer*)

Definition at line 113 of file mxml-set.c.

References [mxml_value_u::integer](#), [MXML_INTEGER](#), [mxml_node_s::type](#), and [mxml_node_s::value](#).

5.68.1.4 int mxmlSetOpaque (mxml_node_t * *node*, const char * *opaque*)

Definition at line 140 of file mxml-set.c.

References [MXML_OPAQUE](#), [mxml_value_u::opaque](#), [strdup](#), [mxml_node_s::type](#), and [mxml_node_s::value](#).

5.68.1.5 int mxmlSetReal (mxml_node_t * *node*, double *real*)

Definition at line 170 of file mxml-set.c.

References [MXML_REAL](#), [mxml_value_u::real](#), [mxml_node_s::type](#), and [mxml_node_s::value](#).

5.68.1.6 int mxmlSetText (mxml_node_t * *node*, int *whitespace*, const char * *string*)

Definition at line 197 of file mxml-set.c.

References MXML_TEXT, strdup, mxml_text_s::string, mxml_value_u::text, mxml_node_s::type, mxml_node_s::value, and mxml_text_s::whitespace.

5.68.1.7 int mxmlSetTextf (mxml_node_t * *node*, int *whitespace*, const char * *format*, ...)

Definition at line 229 of file mxml-set.c.

References mxml_strdupf(), MXML_TEXT, mxml_text_s::string, mxml_value_u::text, mxml_node_s::type, mxml_node_s::value, and mxml_text_s::whitespace.

5.69 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-string.c File Reference

```
#include "config.h"
```

Functions

- `char * mxml_strdup` (`const char *s`)
- `char * mxml_strdupf` (`const char *format, va_list ap`)
- `int mxml_vsnprintf` (`char *buffer, size_t bufsz, const char *format, va_list ap`)

5.69.1 Function Documentation

5.69.1.1 `char* mxml_strdup (const char * s)`

Definition at line 45 of file mxml-string.c.

5.69.1.2 `char* mxml_strdupf (const char * format, va_list ap)`

Definition at line 66 of file mxml-string.c.

References `mxml_vsnprintf()`, and `strdup`.

Referenced by `mxml_error()`, `mxmlNewTextf()`, and `mxmlSetTextf()`.

5.69.1.3 `int mxml_vsnprintf (char * buffer, size_t bufsize, const char * format, va_list ap)`

Definition at line 111 of file mxml-string.c.

References `size`.

Referenced by `mxml_strdupf()`.

5.70 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml.h File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <ctype.h>
#include <errno.h>
```

Data Structures

- struct [mxml_attr_s](#)
- struct [mxml_value_s](#)
- struct [mxml_text_s](#)
- struct [mxml_custom_s](#)
- union [mxml_value_u](#)
- struct [mxml_node_s](#)
- struct [mxml_index_s](#)

Defines

- #define [MXML_WRAP](#) 72
- #define [MXML_TAB](#) 8
- #define [MXML_NO_CALLBACK](#) 0
- #define [MXML_INTEGER_CALLBACK](#) [mxml_integer_cb](#)
- #define [MXML_OPAQUE_CALLBACK](#) [mxml_opaque_cb](#)
- #define [MXML_REAL_CALLBACK](#) [mxml_real_cb](#)
- #define [MXML_TEXT_CALLBACK](#) 0
- #define [MXML_NO_PARENT](#) 0
- #define [MXML_DESCEND](#) 1
- #define [MXML_NO_DESCEND](#) 0
- #define [MXML_DESCEND_FIRST](#) -1
- #define [MXML_WS_BEFORE_OPEN](#) 0
- #define [MXML_WS_AFTER_OPEN](#) 1
- #define [MXML_WS_BEFORE_CLOSE](#) 2
- #define [MXML_WS_AFTER_CLOSE](#) 3
- #define [MXML_ADD_BEFORE](#) 0
- #define [MXML_ADD_AFTER](#) 1
- #define [MXML_ADD_TO_PARENT](#) NULL

Typedefs

- typedef enum [mxml_type_e](#) [mxml_type_t](#)
- typedef struct [mxml_attr_s](#) [mxml_attr_t](#)
- typedef struct [mxml_value_s](#) [mxml_element_t](#)
- typedef struct [mxml_text_s](#) [mxml_text_t](#)
- typedef struct [mxml_custom_s](#) [mxml_custom_t](#)

- typedef union [mxml_value_u](#) [mxml_value_t](#)
- typedef struct [mxml_node_s](#) [mxml_node_t](#)
- typedef struct [mxml_index_s](#) [mxml_index_t](#)
- typedef [int](#)(* [mxml_custom_load_cb_t](#))([mxml_node_t](#) *, const char *)
- typedef char *(* [mxml_custom_save_cb_t](#))([mxml_node_t](#) *)

Enumerations

- enum [mxml_type_e](#) {
[MXML_ELEMENT](#), [MXML_INTEGER](#), [MXML_OPAQUE](#), [MXML_REAL](#),
[MXML_TEXT](#), [MXML_CUSTOM](#) }

Functions

- void [mxmlAdd](#) ([mxml_node_t](#) *parent, [int](#) where, [mxml_node_t](#) *child, [mxml_node_t](#) *node)
- void [mxmlDelete](#) ([mxml_node_t](#) *node)
- const char * [mxmlElementGetAttr](#) ([mxml_node_t](#) *node, const char *name)
- void [mxmlElementSetAttr](#) ([mxml_node_t](#) *node, const char *name, const char *value)
- [int](#) [mxmlEntityAddCallback](#) ([int](#)(*cb)(const char *name))
- const char * [mxmlEntityGetName](#) ([int](#) val)
- [int](#) [mxmlEntityGetValue](#) (const char *name)
- void [mxmlEntityRemoveCallback](#) ([int](#)(*cb)(const char *name))
- [mxml_node_t](#) * [mxmlFindElement](#) ([mxml_node_t](#) *node, [mxml_node_t](#) *top, const char *name, const char *attr, const char *value, [int](#) descend)
- void [mxmlIndexDelete](#) ([mxml_index_t](#) *ind)
- [mxml_node_t](#) * [mxmlIndexEnum](#) ([mxml_index_t](#) *ind)
- [mxml_node_t](#) * [mxmlIndexFind](#) ([mxml_index_t](#) *ind, const char *element, const char *value)
- [mxml_index_t](#) * [mxmlIndexNew](#) ([mxml_node_t](#) *node, const char *element, const char *attr)
- [mxml_node_t](#) * [mxmlIndexReset](#) ([mxml_index_t](#) *ind)
- [mxml_node_t](#) * [mxmlLoadFd](#) ([mxml_node_t](#) *top, [int](#) fd, [mxml_type_t](#)(*cb)([mxml_node_t](#) *))
- [mxml_node_t](#) * [mxmlLoadFile](#) ([mxml_node_t](#) *top, FILE *fp, [mxml_type_t](#)(*cb)([mxml_node_t](#) *))
- [mxml_node_t](#) * [mxmlLoadString](#) ([mxml_node_t](#) *top, const char *s, [mxml_type_t](#)(*cb)([mxml_node_t](#) *))
- [mxml_node_t](#) * [mxmlNewCustom](#) ([mxml_node_t](#) *parent, void *data, void(*destroy)(void *))
- [mxml_node_t](#) * [mxmlNewElement](#) ([mxml_node_t](#) *parent, const char *name)
- [mxml_node_t](#) * [mxmlNewInteger](#) ([mxml_node_t](#) *parent, [int](#) integer)
- [mxml_node_t](#) * [mxmlNewOpaque](#) ([mxml_node_t](#) *parent, const char *opaque)
- [mxml_node_t](#) * [mxmlNewReal](#) ([mxml_node_t](#) *parent, double real)
- [mxml_node_t](#) * [mxmlNewText](#) ([mxml_node_t](#) *parent, [int](#) whitespace, const char *string)
- [mxml_node_t](#) * [mxmlNewTextf](#) ([mxml_node_t](#) *parent, [int](#) whitespace, const char *format,...)
- void [mxmlRemove](#) ([mxml_node_t](#) *node)
- char * [mxmlSaveAllocString](#) ([mxml_node_t](#) *node, const char *(*cb)([mxml_node_t](#) *, [int](#)))
- [int](#) [mxmlSaveFd](#) ([mxml_node_t](#) *node, [int](#) fd, const char *(*cb)([mxml_node_t](#) *, [int](#)))
- [int](#) [mxmlSaveFile](#) ([mxml_node_t](#) *node, FILE *fp, const char *(*cb)([mxml_node_t](#) *, [int](#)))
- [int](#) [mxmlSaveString](#) ([mxml_node_t](#) *node, char *buffer, [int](#) bufsize, const char *(*cb)([mxml_node_t](#) *, [int](#)))
- [int](#) [mxmlSetCustom](#) ([mxml_node_t](#) *node, void *data, void(*destroy)(void *))
- void [mxmlSetCustomHandlers](#) ([mxml_custom_load_cb_t](#) load, [mxml_custom_save_cb_t](#) save)
- [int](#) [mxmlSetElement](#) ([mxml_node_t](#) *node, const char *name)

- void `mxmlSetErrorCallback` (void(*cb)(const char *))
- int `mxmlSetInteger` (mxml_node_t *node, int integer)
- int `mxmlSetOpaque` (mxml_node_t *node, const char *opaque)
- int `mxmlSetReal` (mxml_node_t *node, double real)
- int `mxmlSetText` (mxml_node_t *node, int whitespace, const char *string)
- int `mxmlSetTextf` (mxml_node_t *node, int whitespace, const char *format,...)
- mxml_node_t * `mxmlWalkNext` (mxml_node_t *node, mxml_node_t *top, int descend)
- mxml_node_t * `mxmlWalkPrev` (mxml_node_t *node, mxml_node_t *top, int descend)
- void `mxml_error` (const char *format,...)
- mxml_type_t `mxml_integer_cb` (mxml_node_t *node)
- mxml_type_t `mxml_opaque_cb` (mxml_node_t *node)
- mxml_type_t `mxml_real_cb` (mxml_node_t *node)

5.70.1 Define Documentation

5.70.1.1 #define MXML_ADD_AFTER 1

Definition at line 68 of file `mxml.h`.

Referenced by `add_variable()`, `agent_xml_compose()`, `agent_xml_compose__agent_data()`, `agent_xml_compose__create_row_nodes()`, `agent_xml_compose__data()`, `agent_xml_compose__gaf_message()`, `agent_xml_compose__message()`, `agent_xml_compose__mobile_agent()`, `agent_xml_compose__task()`, `agent_xml_compose__tasks()`, `fipa_envelope_Compose()`, `fipa_envelope_Compose__envelope()`, `fipa_envelope_Compose__params()`, `mxml_new()`, `mxmlAdd()`, `scan_file()`, and `sort_node()`.

5.70.1.2 #define MXML_ADD_BEFORE 0

Definition at line 67 of file `mxml.h`.

Referenced by `mxmlAdd()`, `scan_file()`, and `sort_node()`.

5.70.1.3 #define MXML_ADD_TO_PARENT NULL

Definition at line 69 of file `mxml.h`.

Referenced by `add_variable()`, `agent_xml_compose()`, `agent_xml_compose__create_row_nodes()`, `fipa_envelope_Compose()`, `fipa_envelope_Compose__envelope()`, `fipa_envelope_Compose__params()`, `mxml_new()`, `scan_file()`, and `sort_node()`.

5.70.1.4 #define MXML_DESCEND 1

Definition at line 58 of file `mxml.h`.

Referenced by `agent_xml_parse__tasks()`, `main()`, `MC_LoadAgentFromFile()`, `message_xml_parse()`, `mxmlFindElement()`, `mxmlIndexNew()`, and `write_element()`.

5.70.1.5 #define MXML_DESCEND_FIRST -1

Definition at line 60 of file `mxml.h`.

Referenced by `agent_xml_parse__fill_row_data()`, `agent_xml_parse__task()`, `agent_xml_parse__tasks()`, `fipa_envelope_HandleAclRepresentation()`, `fipa_envelope_HandleComments()`, `fipa_envelope_HandleDate()`, `fipa_envelope_HandleEnvelope()`, `fipa_envelope_HandleFrom()`, `fipa_envelope_HandleIntendedReceiver()`, `fipa_envelope_HandleParams()`, `fipa_envelope_HandlePayloadEncoding()`, `fipa_envelope_HandlePayloadLength()`, `fipa_envelope_HandleReceived()`, `fipa_envelope_HandleTo()`, `fipa_envelope_ParseAddresses()`, `fipa_envelope_ParseAgentIdentifier()`, `fipa_envelope_ParseResolvers()`, `scan_file()`, `sort_node()`, and `write_documentation()`.

5.70.1.6 `#define MXML_INTEGER_CALLBACK mxml_integer_cb`

Definition at line 48 of file `mxml.h`.

Referenced by `main()`.

5.70.1.7 `#define MXML_NO_CALLBACK 0`

Definition at line 47 of file `mxml.h`.

Referenced by `acc_connection_Thread()`, `agent_xml_compose()`, `fipa_envelope_Compose()`, `fipa_envelope_Parse()`, `main()`, `message_InitializeFromAgent()`, `message_InitializeFromConnection()`, and `message_InitializeFromString()`.

5.70.1.8 `#define MXML_NO_DESCEND 0`

Definition at line 59 of file `mxml.h`.

Referenced by `agent_xml_parse__task()`, `agent_xml_parse__tasks()`, `fipa_envelope_HandleIntendedReceiver()`, `fipa_envelope_HandleTo()`, `fipa_envelope_ParseAddresses()`, `fipa_envelope_ParseResolvers()`, `main()`, `message_xml_parse()`, `write_documentation()`, `write_element()`, `xml_find_sibling()`, and `xml_get_deep_child()`.

5.70.1.9 `#define MXML_NO_PARENT 0`

Definition at line 56 of file `mxml.h`.

Referenced by `agent_xml_compose__agent_code()`, `agent_xml_compose__create_row_nodes()`, `main()`, and `scan_file()`.

5.70.1.10 `#define MXML_OPAQUE_CALLBACK mxml_opaque_cb`

Definition at line 50 of file `mxml.h`.

Referenced by `main()`.

5.70.1.11 `#define MXML_REAL_CALLBACK mxml_real_cb`

Definition at line 52 of file `mxml.h`.

Referenced by `main()`.

5.70.1.12 #define MXML_TAB 8

Definition at line 45 of file mxml.h.

Referenced by mxml_write_ws().

5.70.1.13 #define MXML_TEXT_CALLBACK 0

Definition at line 54 of file mxml.h.

5.70.1.14 #define MXML_WRAP 72

Definition at line 44 of file mxml.h.

Referenced by mxml_write_node().

5.70.1.15 #define MXML_WS_AFTER_CLOSE 3

Definition at line 65 of file mxml.h.

Referenced by mxml_write_node(), whitespace_cb(), and ws_cb().

5.70.1.16 #define MXML_WS_AFTER_OPEN 1

Definition at line 63 of file mxml.h.

Referenced by mxml_write_node(), whitespace_cb(), and ws_cb().

5.70.1.17 #define MXML_WS_BEFORE_CLOSE 2

Definition at line 64 of file mxml.h.

Referenced by mxml_write_node(), whitespace_cb(), and ws_cb().

5.70.1.18 #define MXML_WS_BEFORE_OPEN 0

Definition at line 62 of file mxml.h.

Referenced by mxml_write_node(), whitespace_cb(), and ws_cb().

5.70.2 Typedef Documentation**5.70.2.1 typedef struct mxml_attr_s mxml_attr_t****5.70.2.2 typedef int(* mxml_custom_load_cb_t)(mxml_node_t *, const char *)**

Definition at line 142 of file mxml.h.

5.70.2.3 typedef char*(* mxml_custom_save_cb_t)(mxml_node_t *)

Definition at line 145 of file mxml.h.

5.70.2.4 typedef struct mxml_custom_s mxml_custom_t

5.70.2.5 typedef struct mxml_value_s mxml_element_t

5.70.2.6 typedef struct mxml_index_s mxml_index_t

5.70.2.7 typedef struct mxml_node_s mxml_node_t

5.70.2.8 typedef struct mxml_text_s mxml_text_t

5.70.2.9 typedef enum mxml_type_e mxml_type_t

5.70.2.10 typedef union mxml_value_u mxml_value_t

5.70.3 Enumeration Type Documentation

5.70.3.1 enum mxml_type_e

Enumerator:

MXML_ELEMENT

MXML_INTEGER

MXML_OPAQUE

MXML_REAL

MXML_TEXT

MXML_CUSTOM

Definition at line 76 of file mxml.h.

5.70.4 Function Documentation

5.70.4.1 void mxml_error (const char **format*, ...)

Definition at line 53 of file mxml-private.c.

References mxml_error_cb, and mxml_strdup().

Referenced by mxml_add_char(), mxml_fd_getc(), mxml_file_getc(), mxml_get_entity(), mxml_load_data(), mxml_parse_element(), mxml_string_getc(), mxmlElementSetAttr(), mxmlEntityAddCallback(), and mxmlIndexNew().

5.70.4.2 mxml_type_t mxml_integer_cb (mxml_node_t **node*)

Definition at line 99 of file mxml-private.c.

References MXML_INTEGER.

5.70.4.3 mxml_type_t mxml_opaque_cb (mxml_node_t **node*)

Definition at line 112 of file mxml-private.c.

References MXML_OPAQUE.

5.70.4.4 mxmxml_type_t mxml_real_cb (mxml_node_t * node)

Definition at line 125 of file mxml-private.c.

References MXML_REAL.

5.70.4.5 void mxmlAdd (mxml_node_t * parent, int where, mxml_node_t * child, mxml_node_t * node)

Definition at line 66 of file mxml-node.c.

References mxml_node_s::child, mxml_node_s::last_child, MXML_ADD_AFTER, MXML_ADD_BEFORE, mxmlRemove(), mxml_node_s::next, mxml_node_s::parent, and mxml_node_s::prev.

Referenced by add_variable(), agent_xml_compose(), agent_xml_compose__agent_data(), agent_xml_compose__create_row_nodes(), agent_xml_compose__data(), agent_xml_compose__gaf_message(), agent_xml_compose__message(), agent_xml_compose__mobile_agent(), agent_xml_compose__task(), agent_xml_compose__tasks(), fipa_envelope_Compose(), fipa_envelope_Compose__envelope(), fipa_envelope_Compose__params(), mxml_new(), scan_file(), and sort_node().

5.70.4.6 void mxmlDelete (mxml_node_t * node)

Definition at line 200 of file mxml-node.c.

References mxml_value_s::attrs, mxml_node_s::child, mxml_value_u::custom, mxml_custom_s::data, mxml_custom_s::destroy, mxml_value_u::element, MXML_CUSTOM, MXML_ELEMENT, MXML_INTEGER, MXML_OPAQUE, MXML_REAL, MXML_TEXT, mxmlDelete(), mxmlRemove(), mxml_attr_s::name, mxml_value_s::name, mxml_value_s::num_attrs, mxml_value_u::opaque, mxml_text_s::string, mxml_value_u::text, mxml_node_s::type, mxml_attr_s::value, and mxml_node_s::value.

Referenced by add_variable(), agent_datastate_Destroy(), fipa_envelope_Compose(), fipa_envelope_Parse(), main(), message_Destroy(), mxml_load_data(), mxmlDelete(), scan_file(), and sort_node().

5.70.4.7 const char* mxmlElementGetAttr (mxml_node_t * node, const char * name)

Definition at line 48 of file mxml-attr.c.

References mxml_value_s::attrs, mxml_value_u::element, MXML_ELEMENT, mxml_attr_s::name, mxml_value_s::num_attrs, mxml_node_s::type, mxml_attr_s::value, and mxml_node_s::value.

Referenced by agent_xml_parse__agent_code(), agent_xml_parse__data(), agent_xml_parse__task(), agent_xml_parse__tasks(), fipa_envelope_HandleReceived(), index_compare(), index_find(), message_xml_parse__message(), mxml_parse_element(), mxmlFindElement(), mxmlIndexNew(), scan_file(), sort_node(), type_cb(), and write_documentation().

5.70.4.8 void mxmlElementSetAttr (mxml_node_t * node, const char * name, const char * value)

Definition at line 95 of file mxml-attr.c.

References mxml_value_s::attrs, mxml_value_u::element, MXML_ELEMENT, mxml_error(), mxml_value_s::name, mxml_attr_s::name, mxml_value_s::num_attrs, strdup, mxml_node_s::type, mxml_attr_s::value, and mxml_node_s::value.

Referenced by add_variable(), agent_xml_compose__agent_code(), agent_xml_compose__create_row_nodes(), agent_xml_compose__data(), agent_xml_compose__message(), agent_xml_compose__task(),

agent_xml_compose__tasks(), fipa_envelope_Compose__params(), main(), mxml_parse_element(), scan_file(), sort_node(), and update_comment().

5.70.4.9 int mxmlEntityAddCallback (int(*) (const char *name) cb)

Definition at line 69 of file mxml-entity.c.

References callbacks, mxml_error(), and num_callbacks.

5.70.4.10 const char* mxmlEntityGetName (int val)

Definition at line 95 of file mxml-entity.c.

Referenced by mxml_write_name(), and mxml_write_string().

5.70.4.11 int mxmlEntityGetValue (const char * name)

Definition at line 125 of file mxml-entity.c.

References callbacks, and num_callbacks.

Referenced by mxml_get_entity().

5.70.4.12 void mxmlEntityRemoveCallback (int(*) (const char *name) cb)

Definition at line 144 of file mxml-entity.c.

References callbacks, and num_callbacks.

5.70.4.13 mxml_node_t* mxmlFindElement (mxml_node_t * node, mxml_node_t * top, const char * name, const char * attr, const char * value, int descend)

Definition at line 55 of file mxml-search.c.

References mxml_value_u::element, MXML_DESCEND, MXML_ELEMENT, mxmlElementGetAttr(), mxmlWalkNext(), mxml_value_s::name, mxml_node_s::next, mxml_node_s::type, and mxml_node_s::value.

Referenced by agent_xml_parse__fill_row_data(), agent_xml_parse__task(), agent_xml_parse__tasks(), fipa_envelope_HandleAclRepresentation(), fipa_envelope_HandleComments(), fipa_envelope_HandleDate(), fipa_envelope_HandleEnvelope(), fipa_envelope_HandleFrom(), fipa_envelope_HandleIntendedReceiver(), fipa_envelope_HandleParams(), fipa_envelope_HandlePayloadEncoding(), fipa_envelope_HandlePayloadLength(), fipa_envelope_HandleReceived(), fipa_envelope_HandleTo(), fipa_envelope_ParseAddresses(), fipa_envelope_ParseAgentIdentifier(), fipa_envelope_ParseResolvers(), main(), MC_LoadAgentFromFile(), message_xml_parse(), mxmlIndexNew(), scan_file(), sort_node(), write_documentation(), write_element(), xml_find_sibling(), and xml_get_child().

5.70.4.14 void mxmlIndexDelete (mxml_index_t * ind)

Definition at line 62 of file mxml-index.c.

References mxml_index_s::alloc_nodes, mxml_index_s::attr, and mxml_index_s::nodes.

Referenced by main(), and mxmlIndexNew().

5.70.4.15 mxml_node_t* mxmlIndexEnum (mxml_index_t * ind)

Definition at line 92 of file mxml-index.c.

References mxml_index_s::cur_node, mxml_index_s::nodes, and mxml_index_s::num_nodes.

Referenced by main(), and mxmlIndexFind().

5.70.4.16 mxml_node_t* mxmlIndexFind (mxml_index_t * ind, const char * element, const char * value)

Definition at line 122 of file mxml-index.c.

References mxml_index_s::attr, mxml_index_s::cur_node, index_find(), mxmlIndexEnum(), mxml_index_s::nodes, and mxml_index_s::num_nodes.

Referenced by main().

5.70.4.17 mxml_index_t* mxmlIndexNew (mxml_node_t * node, const char * element, const char * attr)

Definition at line 305 of file mxml-index.c.

References mxml_index_s::alloc_nodes, mxml_index_s::attr, mxml_value_u::element, index_sort(), MXML_DESCEND, mxml_error(), mxmlElementGetAttr(), mxmlFindElement(), mxmlIndexDelete(), mxml_value_s::name, mxml_index_s::nodes, mxml_index_s::num_nodes, strdup, and mxml_node_s::value.

Referenced by main().

5.70.4.18 mxml_node_t* mxmlIndexReset (mxml_index_t * ind)

Definition at line 463 of file mxml-index.c.

References mxml_index_s::cur_node, mxml_index_s::nodes, and mxml_index_s::num_nodes.

Referenced by main().

5.70.4.19 mxml_node_t* mxmlLoadFd (mxml_node_t * top, int fd, mxml_type_t(*) (mxml_node_t *) cb)**5.70.4.20 mxml_node_t* mxmlLoadFile (mxml_node_t * top, FILE * fp, mxml_type_t(*) (mxml_node_t *) cb)****5.70.4.21 mxml_node_t* mxmlLoadString (mxml_node_t * top, const char * s, mxml_type_t(*) (mxml_node_t *) cb)****5.70.4.22 mxml_node_t* mxmlNewCustom (mxml_node_t * parent, void * data, void(*) (void *) destroy)**

Definition at line 291 of file mxml-node.c.

References mxml_value_u::custom, mxml_custom_s::data, mxml_custom_s::destroy, MXML_CUSTOM, mxml_new(), node, and mxml_node_s::value.

Referenced by mxml_load_data().

5.70.4.23 mxml_node_t* mxmlNewElement (mxml_node_t * *parent*, const char * *name*)

Definition at line 327 of file mxml-node.c.

References mxml_value_u::element, MXML_ELEMENT, mxml_new(), mxml_value_s::name, node, strdup, and mxml_node_s::value.

Referenced by add_variable(), agent_xml_compose__agent_code(), agent_xml_compose__agent_data(), agent_xml_compose__create_row_nodes(), agent_xml_compose__data(), agent_xml_compose__gaf_message(), agent_xml_compose__home(), agent_xml_compose__message(), agent_xml_compose__mobile_agent(), agent_xml_compose__name(), agent_xml_compose__owner(), agent_xml_compose__task(), agent_xml_compose__tasks(), agent_xml_compose__wg_code(), fipa_envelope_Compose__acl_representation(), fipa_envelope_Compose__date(), fipa_envelope_Compose__envelope(), fipa_envelope_Compose__from(), fipa_envelope_Compose__intended_receiver(), fipa_envelope_Compose__params(), fipa_envelope_Compose__payload_encoding(), fipa_envelope_Compose__to(), main(), mxml_load_data(), scan_file(), and xml_new_cdata().

5.70.4.24 mxml_node_t* mxmlNewInteger (mxml_node_t * *parent*, int *integer*)

Definition at line 365 of file mxml-node.c.

References mxml_value_u::integer, MXML_INTEGER, mxml_new(), node, and mxml_node_s::value.

Referenced by main(), and mxml_load_data().

5.70.4.25 mxml_node_t* mxmlNewOpaque (mxml_node_t * *parent*, const char * *opaque*)

Definition at line 396 of file mxml-node.c.

References mxml_new(), MXML_OPAQUE, node, mxml_value_u::opaque, strdup, and mxml_node_s::value.

Referenced by main(), and mxml_load_data().

5.70.4.26 mxml_node_t* mxmlNewReal (mxml_node_t * *parent*, double *real*)

Definition at line 434 of file mxml-node.c.

References mxml_new(), MXML_REAL, node, mxml_value_u::real, and mxml_node_s::value.

Referenced by main(), and mxml_load_data().

5.70.4.27 mxml_node_t* mxmlNewText (mxml_node_t * *parent*, int *whitespace*, const char * *string*)

Definition at line 466 of file mxml-node.c.

References mxml_new(), MXML_TEXT, node, strdup, mxml_text_s::string, mxml_value_u::text, mxml_node_s::value, and mxml_text_s::whitespace.

Referenced by agent_xml_compose__create_row_nodes(), agent_xml_compose__home(), agent_xml_compose__name(), agent_xml_compose__owner(), agent_xml_compose__wg_code(), fipa_envelope_Compose__acl_representation(), fipa_envelope_Compose__date(), fipa_envelope_Compose__from(), fipa_envelope_Compose__intended_receiver(), fipa_envelope_Compose__payload_encoding(), fipa_envelope_Compose__to(), main(), mxml_load_data(), and scan_file().

5.70.4.28 **mxmxml_node_t*** mxmxmlNewTextf (mxmxml_node_t * *parent*, int *whitespace*, const char * *format*, ...)

Definition at line 510 of file mxmxml-node.c.

References mxmxml_new(), mxmxml_strdupf(), MXMXML_TEXT, node, mxmxml_text_s::string, mxmxml_value_u::text, mxmxml_node_s::value, and mxmxml_text_s::whitespace.

5.70.4.29 **void** mxmxmlRemove (mxmxml_node_t * *node*)

Definition at line 557 of file mxmxml-node.c.

References mxmxml_node_s::child, mxmxml_node_s::last_child, mxmxml_node_s::next, mxmxml_node_s::parent, and mxmxml_node_s::prev.

Referenced by mxmxmlAdd(), and mxmxmlDelete().

5.70.4.30 **char*** mxmxmlSaveAllocString (mxmxml_node_t * *node*, const char *(*)(mxmxml_node_t *, int) *cb*)

5.70.4.31 **int** mxmxmlSaveFd (mxmxml_node_t * *node*, int *fd*, const char *(*)(mxmxml_node_t *, int) *cb*)

5.70.4.32 **int** mxmxmlSaveFile (mxmxml_node_t * *node*, FILE * *fp*, const char *(*)(mxmxml_node_t *, int) *cb*)

5.70.4.33 **int** mxmxmlSaveString (mxmxml_node_t * *node*, char * *buffer*, int *bufsize*, const char *(*)(mxmxml_node_t *, int) *cb*)

5.70.4.34 **int** mxmxmlSetCustom (mxmxml_node_t * *node*, void * *data*, void(*)(void *) *destroy*)

Definition at line 50 of file mxmxml-set.c.

References mxmxml_value_u::custom, mxmxml_custom_s::data, mxmxml_custom_s::destroy, MXMXML_CUSTOM, mxmxml_node_s::type, and mxmxml_node_s::value.

5.70.4.35 **void** mxmxmlSetCustomHandlers (mxmxml_custom_load_cb_t *load*, mxmxml_custom_save_cb_t *save*)

Definition at line 457 of file mxmxml-file.c.

References mxmxml_custom_load_cb, and mxmxml_custom_save_cb.

5.70.4.36 **int** mxmxmlSetElement (mxmxml_node_t * *node*, const char * *name*)

Definition at line 83 of file mxmxml-set.c.

References mxmxml_value_u::element, MXMXML_ELEMENT, mxmxml_value_s::name, strdup, mxmxml_node_s::type, and mxmxml_node_s::value.

5.70.4.37 **void** mxmxmlSetErrorCallback (void(*)(const char *) *cb*)

Definition at line 472 of file mxmxml-file.c.

References mxmxml_error_cb.

5.70.4.38 int mxmlSetInteger (mxml_node_t * node, int integer)

Definition at line 113 of file mxml-set.c.

References mxml_value_u::integer, MXML_INTEGER, mxml_node_s::type, and mxml_node_s::value.

5.70.4.39 int mxmlSetOpaque (mxml_node_t * node, const char * opaque)

Definition at line 140 of file mxml-set.c.

References MXML_OPAQUE, mxml_value_u::opaque, strdup, mxml_node_s::type, and mxml_node_s::value.

5.70.4.40 int mxmlSetReal (mxml_node_t * node, double real)

Definition at line 170 of file mxml-set.c.

References MXML_REAL, mxml_value_u::real, mxml_node_s::type, and mxml_node_s::value.

5.70.4.41 int mxmlSetText (mxml_node_t * node, int whitespace, const char * string)

Definition at line 197 of file mxml-set.c.

References MXML_TEXT, strdup, mxml_text_s::string, mxml_value_u::text, mxml_node_s::type, mxml_node_s::value, and mxml_text_s::whitespace.

5.70.4.42 int mxmlSetTextf (mxml_node_t * node, int whitespace, const char * format, ...)

Definition at line 229 of file mxml-set.c.

References mxml_strdupf(), MXML_TEXT, mxml_text_s::string, mxml_value_u::text, mxml_node_s::type, mxml_node_s::value, and mxml_text_s::whitespace.

5.70.4.43 mxml_node_t* mxmlWalkNext (mxml_node_t * node, mxml_node_t * top, int descend)

Definition at line 137 of file mxml-search.c.

References mxml_node_s::child, mxml_node_s::next, and mxml_node_s::parent.

Referenced by mxmlFindElement(), and write_element().

5.70.4.44 mxml_node_t* mxmlWalkPrev (mxml_node_t * node, mxml_node_t * top, int descend)

Definition at line 173 of file mxml-search.c.

References mxml_node_s::last_child, mxml_node_s::parent, and mxml_node_s::prev.

5.71 /home/dko/Projects/mobilec/src/mxml-2.2.2/mxmldoc.c File Reference

```
#include "config.h"
#include "mxml.h"
```

Defines

- `#define STATE_NONE` 0
- `#define STATE_PREPROCESSOR` 1
- `#define STATE_C_COMMENT` 2
- `#define STATE_CXX_COMMENT` 3
- `#define STATE_STRING` 4
- `#define STATE_CHARACTER` 5
- `#define STATE_IDENTIFIER` 6

Functions

- static `mxml_node_t` * `add_variable` (`mxml_node_t` *parent, const char *name, `mxml_node_t` *type)
- static void `safe_strcpy` (char *dst, const char *src)
- static int `scan_file` (const char *filename, FILE *fp, `mxml_node_t` *doc)
- static void `sort_node` (`mxml_node_t` *tree, `mxml_node_t` *func)
- static void `update_comment` (`mxml_node_t` *parent, `mxml_node_t` *comment)
- static void `write_documentation` (`mxml_node_t` *doc)
- static void `write_element` (`mxml_node_t` *doc, `mxml_node_t` *element)
- static void `write_string` (const char *s)
- static const char * `ws_cb` (`mxml_node_t` *node, int where)
- int `main` (int argc, char *argv[])

5.71.1 Define Documentation

5.71.1.1 `#define STATE_C_COMMENT` 2

Definition at line 129 of file `mxmldoc.c`.

Referenced by `scan_file()`.

5.71.1.2 `#define STATE_CHARACTER` 5

Definition at line 132 of file `mxmldoc.c`.

Referenced by `scan_file()`.

5.71.1.3 `#define STATE_CXX_COMMENT` 3

Definition at line 130 of file `mxmldoc.c`.

Referenced by `scan_file()`.

5.71.1.4 **#define STATE_IDENTIFIER 6**

Definition at line 133 of file mxmldoc.c.

Referenced by scan_file().

5.71.1.5 **#define STATE_NONE 0**

Definition at line 127 of file mxmldoc.c.

Referenced by scan_file().

5.71.1.6 **#define STATE_PREPROCESSOR 1**

Definition at line 128 of file mxmldoc.c.

Referenced by scan_file().

5.71.1.7 **#define STATE_STRING 4**

Definition at line 131 of file mxmldoc.c.

Referenced by scan_file().

5.71.2 **Function Documentation**

5.71.2.1 **static mxml_node_t * add_variable (mxml_node_t * *parent*, const char * *name*, mxml_node_t * *type*) [static]**

Definition at line 313 of file mxmldoc.c.

References mxml_node_s::child, mxml_node_s::last_child, MXML_ADD_AFTER, MXML_ADD_TO_PARENT, mxmlAdd(), mxmlDelete(), mxmlElementSetAttr(), mxmlNewElement(), mxml_node_s::next, node, mxml_text_s::string, mxml_value_u::text, mxml_node_s::value, and mxml_text_s::whitespace.

Referenced by scan_file().

5.71.2.2 **int main (int *argc*, char * *argv*[])**

Definition at line 159 of file mxmldoc.c.

References MXML_DESCEND, MXML_NO_CALLBACK, mxmlDelete(), mxmlElementSetAttr(), mxmlFindElement(), mxmlLoadFile(), mxmlNewElement(), mxmlSaveFile(), scan_file(), write_documentation(), and ws_cb().

5.71.2.3 **static void safe_strcpy (char * *dst*, const char * *src*) [static]**

Definition at line 427 of file mxmldoc.c.

Referenced by update_comment().

5.71.2.4 `static int scan_file (const char *filename, FILE *fp, mxml_node_t *doc) [static]`

Definition at line 442 of file mxmldoc.c.

References `add_variable()`, `mxml_node_s::child`, `mxml_value_u::element`, `mxml_node_s::last_child`, `MXML_ADD_AFTER`, `MXML_ADD_BEFORE`, `MXML_ADD_TO_PARENT`, `MXML_DESCEND_FIRST`, `MXML_NO_PARENT`, `mxmlAdd()`, `mxmlDelete()`, `mxmlElementGetAttr()`, `mxmlElementSetAttr()`, `mxmlFindElement()`, `mxmlNewElement()`, `mxmlNewText()`, `mxml_value_s::name`, `mxml_node_s::next`, `node`, `sort_node()`, `STATE_C_COMMENT`, `STATE_CHARACTER`, `STATE_CXX_COMMENT`, `STATE_IDENTIFIER`, `STATE_NONE`, `STATE_PREPROCESSOR`, `STATE_STRING`, `mxml_text_s::string`, `mxml_value_u::text`, `update_comment()`, `mxml_node_s::value`, and `mxml_text_s::whitespace`.

Referenced by `main()`.

5.71.2.5 `static void sort_node (mxml_node_t *tree, mxml_node_t *func) [static]`

Definition at line 1617 of file mxmldoc.c.

References `mxml_node_s::child`, `mxml_value_u::element`, `MXML_ADD_AFTER`, `MXML_ADD_BEFORE`, `MXML_ADD_TO_PARENT`, `MXML_DESCEND_FIRST`, `mxmlAdd()`, `mxmlDelete()`, `mxmlElementGetAttr()`, `mxmlElementSetAttr()`, `mxmlFindElement()`, `mxml_value_s::name`, `mxml_node_s::next`, `mxml_node_s::parent`, and `mxml_node_s::value`.

Referenced by `scan_file()`.

5.71.2.6 `static void update_comment (mxml_node_t *parent, mxml_node_t *comment) [static]`

Definition at line 1705 of file mxmldoc.c.

References `mxml_value_u::element`, `mxmlElementSetAttr()`, `mxml_value_s::name`, `safe_strcpy()`, `mxml_text_s::string`, `mxml_value_u::text`, and `mxml_node_s::value`.

Referenced by `scan_file()`.

5.71.2.7 `static void write_documentation (mxml_node_t *doc) [static]`

Definition at line 1805 of file mxmldoc.c.

References `mxml_node_s::child`, `MXML_DESCEND_FIRST`, `MXML_NO_DESCEND`, `MXML_VERSION`, `mxmlElementGetAttr()`, `mxmlFindElement()`, and `write_element()`.

Referenced by `main()`.

5.71.2.8 `static void write_element (mxml_node_t *doc, mxml_node_t *element) [static]`

Definition at line 2615 of file mxmldoc.c.

References `mxml_node_s::child`, `MXML_DESCEND`, `MXML_NO_DESCEND`, `MXML_TEXT`, `mxmlFindElement()`, `mxmlWalkNext()`, `node`, `mxml_text_s::string`, `mxml_value_u::text`, `mxml_node_s::type`, `mxml_node_s::value`, `mxml_text_s::whitespace`, and `write_string()`.

Referenced by `write_documentation()`.

5.71.2.9 static void write_string (const char * *s*) [static]

Definition at line 2660 of file mxmldoc.c.

Referenced by write_element().

5.71.2.10 static const char * ws_cb (mxml_node_t * *node*, int *where*) [static]

Definition at line 2718 of file mxmldoc.c.

References mxml_value_u::element, MXML_WS_AFTER_CLOSE, MXML_WS_AFTER_OPEN, MXML_WS_BEFORE_CLOSE, MXML_WS_BEFORE_OPEN, mxml_value_s::name, mxml_node_s::parent, and mxml_node_s::value.

Referenced by main().

5.72 /home/dko/Projects/mobilec/src/mxml-2.2.2/test/class.cxx File Reference

Data Structures

- class `foo_c`

Variables

- `foo_c f`
- `foo_c foo`
- `bar = b`

5.72.1 Variable Documentation

5.72.1.1 `bar = b`

Definition at line 77 of file class.cxx.

5.72.1.2 `foo_c f`

Referenced by `foo_float_function()`, `main()`, `MC_Initialize()`, `md5_check()`, `md5_file()`, `read_encrypted_file()`, `sha1_check()`, `sha1_file()`, `sha2_check()`, `sha2_file()`, `sha4_file()`, `x509parse_crfile()`, and `x509parse_keyfile()`.

5.72.1.3 `foo_c foo`

5.73 /home/dko/Projects/mobilec/src/mxml-2.2.2/test/enum.cxx File Reference

Typedefs

- typedef enum [foo_enum_e](#) [foo_enum_t](#)

Enumerations

- enum [foo_enum_e](#) { [FOO_ONE](#), [FOO_TWO](#), [FOO_RED](#), [FOO_BLUE](#) }

5.73.1 Typedef Documentation

5.73.1.1 typedef enum [foo_enum_e](#) [foo_enum_t](#)

5.73.2 Enumeration Type Documentation

5.73.2.1 enum [foo_enum_e](#)

Enumerator:

[FOO_ONE](#)
[FOO_TWO](#)
[FOO_RED](#)
[FOO_BLUE](#)

Definition at line 1 of file enum.cxx.

5.74 /home/dko/Projects/mobilec/src/mxml-2.2.2/test/function.cxx

File Reference

Functions

- void [foo_void_function](#) ([int](#) one, float *two, const char *three)
- float [foo_float_function](#) ([int](#) one, const char *two)
- [int](#) [foo_default_string](#) ([int](#) one, const char *two="2")
- [int](#) [foo_default_int](#) ([int](#) one, [int](#) two=2)

5.74.1 Function Documentation

5.74.1.1 [int](#) [foo_default_int](#) ([int](#) *one*, [int](#) *two* = 2)

Definition at line 65 of file function.cxx.

5.74.1.2 [int](#) [foo_default_string](#) ([int](#) *one*, const char * *two* = "2")

Definition at line 45 of file function.cxx.

5.74.1.3 [float](#) [foo_float_function](#) ([int](#) *one*, const char * *two*)

Definition at line 26 of file function.cxx.

References [f](#).

5.74.1.4 [void](#) [foo_void_function](#) ([int](#) *one*, [float](#) * *two*, const char * *three*)

Definition at line 6 of file function.cxx.

5.75 /home/dko/Projects/mobilec/src/mxml-2.2.2/test/struct.cxx File Reference

Data Structures

- struct [foo_s](#)

Typedefs

- typedef struct [foo_s](#) [foo_t](#)

5.75.1 Typedef Documentation

5.75.1.1 typedef struct [foo_s](#) [foo_t](#)

5.76 /home/dko/Projects/mobilec/src/mxml-2.2.2/testmxml.c File Reference

```
#include "mxml.h"
#include <unistd.h>
#include "config.h"
#include <fcntl.h>
```

Functions

- [mxml_type_t type_cb \(mxml_node_t *node\)](#)
- [const char * whitespace_cb \(mxml_node_t *node, int where\)](#)
- [int main \(int argc, char *argv\[\]\)](#)

5.76.1 Function Documentation

5.76.1.1 int main (int argc, char * argv[])

Definition at line 60 of file testmxml.c.

References [mxml_node_s::child](#), [mxml_value_u::element](#), [f](#), [mxml_value_u::integer](#), [mxml_node_s::last_child](#), [MXML_DESCEND](#), [MXML_ELEMENT](#), [MXML_INTEGER](#), [MXML_INTEGER_CALLBACK](#), [MXML_NO_CALLBACK](#), [MXML_NO_DESCEND](#), [MXML_NO_PARENT](#), [MXML_OPAQUE](#), [MXML_OPAQUE_CALLBACK](#), [MXML_REAL](#), [MXML_REAL_CALLBACK](#), [MXML_TEXT](#), [mxmlDelete\(\)](#), [mxmlFindElement\(\)](#), [mxmlIndexDelete\(\)](#), [mxmlIndexEnum\(\)](#), [mxmlIndexFind\(\)](#), [mxmlIndexNew\(\)](#), [mxmlIndexReset\(\)](#), [mxmlLoadFd\(\)](#), [mxmlLoadFile\(\)](#), [mxmlLoadString\(\)](#), [mxmlNewElement\(\)](#), [mxmlNewInteger\(\)](#), [mxmlNewOpaque\(\)](#), [mxmlNewReal\(\)](#), [mxmlNewText\(\)](#), [mxmlSaveFd\(\)](#), [mxmlSaveFile\(\)](#), [mxmlSaveString\(\)](#), [mxml_value_s::name](#), [mxml_node_s::next](#), [node](#), [mxml_index_s::num_nodes](#), [mxml_value_u::opaque](#), [mxml_value_u::real](#), [mxml_text_s::string](#), [mxml_value_u::text](#), [mxml_node_s::type](#), [type_cb\(\)](#), [mxml_node_s::value](#), [mxml_text_s::whitespace](#), and [whitespace_cb\(\)](#).

5.76.1.2 mxml_type_t type_cb (mxml_node_t * node)

Definition at line 543 of file testmxml.c.

References [mxml_value_u::element](#), [MXML_INTEGER](#), [MXML_OPAQUE](#), [MXML_REAL](#), [MXML_TEXT](#), [mxmlElementGetAttr\(\)](#), [mxml_value_s::name](#), and [mxml_node_s::value](#).

Referenced by [main\(\)](#).

5.76.1.3 const char* whitespace_cb (mxml_node_t * node, int where)

Definition at line 572 of file testmxml.c.

References [mxml_node_s::child](#), [mxml_value_u::element](#), [MXML_WS_AFTER_CLOSE](#), [MXML_WS_AFTER_OPEN](#), [MXML_WS_BEFORE_CLOSE](#), [MXML_WS_BEFORE_OPEN](#), [mxml_value_s::name](#), [mxml_node_s::parent](#), and [mxml_node_s::value](#).

5.77 /home/dko/Projects/mobilec/src/mxml-2.2.2/winconfig.h File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <stdarg.h>
#include <ctype.h>
```

Defines

- #define [MXML_VERSION](#) "Mini-XML v2.2.2"
- #define [HAVE_VSNPRINTF](#) 1
- #define [HAVE_STRDUP](#) 1
- #define [strdup](#) mxml_strdup
- #define [vsnprintf](#) mxml_vsnprintf

Functions

- char * [mxml_strdup](#) (const char *)
- char * [mxml_strdupf](#) (const char *, va_list)
- int [mxml_vsnprintf](#) (char *, size_t, const char *, va_list)

5.77.1 Define Documentation

5.77.1.1 #define HAVE_STRDUP 1

Definition at line 49 of file winconfig.h.

5.77.1.2 #define HAVE_VSNPRINTF 1

Definition at line 42 of file winconfig.h.

5.77.1.3 #define MXML_VERSION "Mini-XML v2.2.2"

Definition at line 35 of file winconfig.h.

5.77.1.4 #define strdup mxml_strdup

Definition at line 58 of file winconfig.h.

Referenced by [acc_connection_Thread\(\)](#), [agent_AddPersistentVariable\(\)](#), [agent_task_Copy\(\)](#), [agent_xml_parse__task\(\)](#), [connection_Copy\(\)](#), [fipa_acl_envelope_Received_Copy\(\)](#), [fipa_acl_Param_Copy\(\)](#), [fipa_agent_identifier_Copy\(\)](#), [fipa_message_string_Copy\(\)](#), [fipa_number_Copy\(\)](#), [fipa_string_Copy\(\)](#), [fipa_url_Copy\(\)](#), [fipa_url_Parse\(\)](#), [fipa_word_Copy\(\)](#), [interpreter_variable_data_Copy\(\)](#), [interpreter_variable_data_Initialize\(\)](#), [interpreter_variable_data_InitializeFromAgent\(\)](#), [MC_AclAddReceiver\(\)](#), [MC_AclAddReplyTo\(\)](#), [MC_AclGetSender\(\)](#), [MC_AclSend\(\)](#), [MC_AclSetContent\(\)](#),

MC_AclSetConversationID(), MC_AclSetSender(), MC_AddStationaryAgent(), MC_AgentAddTask(), MC_AgentVariableSave(), MC_ComposeAgentWithWorkgroup(), MC_Initialize(), MC_SaveData_chdl(), message_InitializeFromAgent(), mtp_http_InitializeFromConnection(), mtp_http_Parse(), mxml_strdupf(), mxmlElementSetAttr(), mxmlIndexNew(), mxmlNewElement(), mxmlNewOpaque(), mxmlNewText(), mxmlSaveAllocString(), mxmlSetElement(), mxmlSetOpaque(), and mxmlSetText().

5.77.1.5 **#define vsnprintf mxml_vsnprintf**

Definition at line 65 of file winconfig.h.

Referenced by debug_fmt().

5.77.2 **Function Documentation**

5.77.2.1 **char* mxml_strdup (const char *)**

Definition at line 45 of file mxml-string.c.

5.77.2.2 **char* mxml_strdupf (const char *, va_list)**

Definition at line 66 of file mxml-string.c.

References mxml_vsnprintf(), and strdup.

5.77.2.3 **int mxml_vsnprintf (char *, size_t, const char *, va_list)**

Definition at line 111 of file mxml-string.c.

References size.

Referenced by mxml_strdupf().

5.78 /home/dko/Projects/mobilec/src/winconfig.h File Reference

Defines

- #define `PACKAGE_STRING` "MobileC V2.0.0"
- #define `PACKAGE_VERSION` "2.0.0"
- #define `strtok_r(buf, delim, save_ptr)` `strtok(buf, delim)`
- #define `strdup(str)` `_strdup(str)`

5.78.1 Define Documentation

5.78.1.1 #define `PACKAGE_STRING` "MobileC V2.0.0"

Definition at line 4 of file winconfig.h.

Referenced by `mtp_http_InitializeFromConnection()`.

5.78.1.2 #define `PACKAGE_VERSION` "2.0.0"

Definition at line 5 of file winconfig.h.

Referenced by `mtp_http_ComposeMessage()`, `mtp_http_CreateMessage()`, and `udplisten_Thread()`.

5.78.1.3 #define `strdup(str)` `_strdup(str)`

Definition at line 8 of file winconfig.h.

5.78.1.4 #define `strtok_r(buf, delim, save_ptr)` `strtok(buf, delim)`

Definition at line 6 of file winconfig.h.

Referenced by `agent_xml_parse__fill_row_data()`, `message_InitializeFromAgent()`, `message_send_Thread()`, and `message_xml_parse__message()`.

5.79 /home/dko/Projects/mobilec/src/security/asm.c File Reference

```
#include "../include/mc_platform.h"
#include "../include/message.h"
#include "asm.h"
#include "asm_message_composer.h"
#include <mxml.h>
#include "config.h"
#include "bignum.h"
#include "asm_node.h"
```

5.80 /home/dko/Projects/mobilec/src/security/asm.h File Reference

```
#include "config.h"
#include "../include/ap_queue_template.h"
#include "../include/data_structures.h"
#include "../mc_list/list.h"
#include "asm_node.h"
```

5.81 /home/dko/Projects/mobilec/src/security/asm_message_composer.c File Reference

```
#include "asm_message_composer.h"  
#include "config.h"  
#include "../include/mc_platform.h"
```


5.82 /home/dko/Projects/mobilec/src/security/asm_message_composer.h File Reference

```
#include <mxml.h>
#include "asm.h"
#include "config.h"
```

5.83 /home/dko/Projects/mobilec/src/security/asm_message_parser.c File Reference

```
#include "asm_message_parser.h"
#include "../include/mc_error.h"
#include "../include/xml_parser.h"
#include "asm_node.h"
#include "config.h"
#include "../include/xml_helper.h"
```

5.84 /home/dko/Projects/mobilec/src/security/asm_message_parser.h File Reference

```
#include "../include/mc_error.h"
#include "../include/xml_parser.h"
#include "asm_node.h"
#include "config.h"
```

5.85 /home/dko/Projects/mobilec/src/security/asm_node.c File Reference

```
#include <netdb.h>
#include "config.h"
#include "asm.h"
#include "asm_message_parser.h"
#include "asm_node.h"
#include "xyssl-0.9/include/xyssl/havege.h"
#include <stdio.h>
```

5.86 /home/dko/Projects/mobilec/src/security/asm_node.h File Reference

```
#include <mxml.h>
#include <netinet/in.h>
#include "../include/macros.h"
#include "../include/message.h"
#include "xyssl-0.9/include/xyssl/dhm.h"
#include "bignum.h"
#include "xyssl-0.9/include/xyssl/rsa.h"
#include "config.h"
```

5.87 /home/dko/Projects/mobilec/src/security/interface.c File Reference

```
#include "interface.h"
#include <sys/socket.h>
```

Functions

- static void [separate_key_parts](#) (char *key, char *N, char *E, char *D, char *P, char *Q, char *DP, char *DQ, char *QP)
- [int rsa_encryption](#) (char *publickey, char *plaintext, char *ciphertext)
- [int rsa_decryption](#) (char *ciphertext, char *plaintext, char *privatekey)
- static [int append_nonce_to_MA](#) (int *my_nonce, char *MA_file)
- static [int remove_nonce_from_MA](#) (char *MA_file)
- static [int extract_nonce_from_MA](#) (int sockfd, int *my_nonce, char *MA_file)
- [int read_known_host_file](#) (char *pubkey, char *hname, char *filename)
- [int read_encrypted_file](#) (char *enfile, char *string, unsigned char *passphrase)
- [int initiate_migration_process](#) (int new_fd, int *my_nonce, char *pubkey, char *privkey, unsigned char *aes_key)
- [int reply_migration_process](#) (int sockfd, int *my_nonce, char *pubkey, char *privkey, unsigned char *aes_key)
- void [generate_AES_key](#) (char *key)
- [int aes_en_de](#) (int mode, char *infile, char *outfile, unsigned char *AES_key, int *nonce, int new_fd)
- [int send_AES_en_MA](#) (int sockfd, int *my_nonce, char *outfile, char *pubkey)
- [int receive_AES_en_MA](#) (int new_fd, int *nonce, char *infile, char *privkey)
- [int generate_RSA_keys_plaintext](#) (char *pubkeyfile, char *privkeyfile)
- [int generate_RSA_keys_ciphertext](#) (char *pubkeyfile, char *privkeyfile, unsigned char *passphrase)

5.87.1 Function Documentation

5.87.1.1 [int aes_en_de](#) (int mode, char *infile, char *outfile, unsigned char *AES_key, int *nonce, int new_fd)

Definition at line 1122 of file interface.c.

References [aes_crypt_ecb\(\)](#), [AES_DECRYPT](#), [AES_ENCRYPT](#), [aes_setkey_dec\(\)](#), [aes_setkey_enc\(\)](#), [append_nonce_to_MA\(\)](#), [extract_nonce_from_MA\(\)](#), [int](#), [MODE_DECRYPT](#), [MODE_ENCRYPT](#), [sha2_finish\(\)](#), [sha2_hmac_finish\(\)](#), [sha2_hmac_starts\(\)](#), [sha2_hmac_update\(\)](#), [sha2_starts\(\)](#), and [sha2_update\(\)](#).

Referenced by [auth_rece_send_msg\(\)](#), [generate_RSA_keys_ciphertext\(\)](#), [read_encrypted_file\(\)](#), and [rece_de_msg\(\)](#).

5.87.1.2 [static int append_nonce_to_MA](#) (int *my_nonce, char *MA_file) **[static]**

Definition at line 187 of file interface.c.

Referenced by [aes_en_de\(\)](#).

**5.87.1.3 static int extract_nonce_from_MA (int sockfd, int * my_nonce, char * MA_file)
[static]**

Definition at line 264 of file interface.c.

References remove_nonce_from_MA(), and send.

Referenced by aes_en_de().

5.87.1.4 void generate_AES_key (char * key)

Definition at line 1099 of file interface.c.

References havege_init(), and havege_rand().

Referenced by initiate_migration_process(), and reply_migration_process().

5.87.1.5 int generate_RSA_keys_ciphertext (char * pubkeyfile, char * privkeyfile, unsigned char * passphrase)

Definition at line 1752 of file interface.c.

References aes_en_de(), rsa_context::D, rsa_context::DP, rsa_context::DQ, rsa_context::E, EXPONENT, havege_init(), havege_rand(), KEY_SIZE, mpi_write_file(), rsa_context::N, rsa_context::P, rsa_context::Q, rsa_context::QP, rsa_gen_key(), rsa_init(), and RSA_PKCS_V15.

Referenced by main().

5.87.1.6 int generate_RSA_keys_plaintext (char * pubkeyfile, char * privkeyfile)

Definition at line 1693 of file interface.c.

References rsa_context::D, rsa_context::DP, rsa_context::DQ, rsa_context::E, EXPONENT, havege_init(), havege_rand(), KEY_SIZE, mpi_write_file(), rsa_context::N, rsa_context::P, rsa_context::Q, rsa_context::QP, rsa_gen_key(), rsa_init(), and RSA_PKCS_V15.

Referenced by main().

5.87.1.7 int initiate_migration_process (int new_fd, int * my_nonce, char * pubkey, char * privkey, unsigned char * aes_key)

Definition at line 432 of file interface.c.

References generate_AES_key(), havege_init(), havege_rand(), md5(), rsa_decryption(), rsa_encryption(), and send.

Referenced by auth_rece_send_msg().

5.87.1.8 int read_encrypted_file (char * enfile, char * string, unsigned char * passphrase)

Definition at line 398 of file interface.c.

References aes_en_de(), and f.

Referenced by MC_Initialize().

5.87.1.9 int read_known_host_file (char * *pubkey*, char * *hname*, char * *filename*)

Definition at line 329 of file interface.c.

Referenced by auth_conn_rece_key(), and auth_rece_send_msg().

5.87.1.10 int receive_AES_en_MA (int *new_fd*, int * *nonce*, char * *infile*, char * *privkey*)

Definition at line 1555 of file interface.c.

References rsa_decryption(), and size.

Referenced by rece_de_msg().

5.87.1.11 static int remove_nonce_from_MA (char * *MA_file*) [static]

Definition at line 220 of file interface.c.

References int.

Referenced by extract_nonce_from_MA().

5.87.1.12 int reply_migration_process (int *sockfd*, int * *my_nonce*, char * *pubkey*, char * *privkey*, unsigned char * *aes_key*)

Definition at line 777 of file interface.c.

References generate_AES_key(), md5(), rsa_decryption(), rsa_encryption(), and send.

Referenced by auth_conn_rece_key().

5.87.1.13 int rsa_decryption (char * *ciphertext*, char * *plaintext*, char * *privatekey*)

Definition at line 133 of file interface.c.

References rsa_context::D, rsa_context::DP, rsa_context::DQ, rsa_context::E, rsa_context::len, mpi_msb(), mpi_read_mystring(), rsa_context::N, rsa_context::P, P, rsa_context::Q, rsa_context::QP, rsa_check_privkey(), RSA_DE, rsa_init(), rsa_pkcs1_decrypt(), RSA_PKCS_V15, and separate_key_parts().

Referenced by initiate_migration_process(), receive_AES_en_MA(), and reply_migration_process().

5.87.1.14 int rsa_encryption (char * *publickey*, char * *plaintext*, char * *ciphertext*)

Definition at line 91 of file interface.c.

References rsa_context::E, rsa_context::len, mpi_msb(), mpi_read_mystring(), rsa_context::N, rsa_check_pubkey(), RSA_EN, rsa_init(), rsa_pkcs1_encrypt(), RSA_PKCS_V15, and separate_key_parts().

Referenced by initiate_migration_process(), reply_migration_process(), and send_AES_en_MA().

5.87.1.15 int send_AES_en_MA (int *sockfd*, int * *my_nonce*, char * *outfile*, char * *pubkey*)

Definition at line 1419 of file interface.c.

References int, rsa_encryption(), send, and size.

Referenced by `auth_rece_send_msg()`.

5.87.1.16 `static void separate_key_parts (char * key, char * N, char * E, char * D, char * P,
char * Q, char * DP, char * DQ, char * QP) [static]`

Definition at line 28 of file `interface.c`.

Referenced by `rsa_decryption()`, and `rsa_encryption()`.

5.88 /home/dko/Projects/mobilec/src/security/interface.h File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <sys/stat.h>
#include "xyssl-0.9/include/xyssl/havege.h"
#include "xyssl-0.9/include/xyssl/bignum.h"
#include "xyssl-0.9/include/xyssl/rsa.h"
#include "xyssl-0.9/include/xyssl/sha2.h"
#include "xyssl-0.9/include/xyssl/aes.h"
```

Defines

- #define [PATH](#) xyssl-0.9/include/xyssl
- #define [MODE_ENCRYPT](#) 0
- #define [MODE_DECRYPT](#) 1
- #define [MAXDATASIZE](#) 4096
- #define [KEY_SIZE](#) 1024
- #define [EXPONENT](#) 65537
- #define [RSA_EN](#) 0
- #define [RSA_DE](#) 1

Functions

- [int read_known_host_file](#) (char *pubkey, char *hname, char *filename)
- [int read_encrypted_file](#) (char *enfile, char *string, unsigned char *passphrase)
- [int rsa_encryption](#) (char *publickey, char *plaintext, char *ciphertext)
- [int rsa_decryption](#) (char *ciphertext, char *plaintext, char *privatekeyfile)
- [int initiate_migration_process](#) (int sockfd, int *nonce, char *publickey, char *privatekey, unsigned char *aes_key)
- [int reply_migration_process](#) (int new_fd, int *nonce, char *publickey, char *privatekey, unsigned char *aes_key)
- void [generate_AES_key](#) (char *key)
- [int generate_encrypt_send_AES_key](#) (int sockfd, int *nonce, unsigned char *key, char *publickey, char *privkey)
- [int receive_decrypt_AES_key](#) (int new_fd, int *nonce, unsigned char *key, char *privkey, char *publickey)
- [int aes_en_de](#) (int mode, char *infile, char *outfile, unsigned char *AES_key, int *nonce, int sockfd)
- [int send_AES_en_MA](#) (int sockfd, int *nonce, char *outfile, char *peer_pubkey)
- [int receive_AES_en_MA](#) (int new_fd, int *nonce, char *infile, char *privatekey)
- [int receiving_verifying_MA_RSA](#) (int sockfd, char *privkeyfile)
- [int receiving_decrypting_MA_RSA](#) (int new_fd, char *privkeyfile)
- [int generate_RSA_keys_plaintext](#) (char *pubkeyfile, char *privkeyfile)
- [int generate_RSA_keys_ciphertext](#) (char *pubkeyfile, char *privkeyfile, unsigned char *passphrase)

5.88.1 Define Documentation

5.88.1.1 #define EXPONENT 65537

Definition at line 25 of file interface.h.

Referenced by generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), and main().

5.88.1.2 #define KEY_SIZE 1024

Definition at line 24 of file interface.h.

Referenced by generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), and main().

5.88.1.3 #define MAXDATASIZE 4096

Definition at line 22 of file interface.h.

5.88.1.4 #define MODE_DECRYPT 1

Definition at line 21 of file interface.h.

Referenced by aes_en_de(), and main().

5.88.1.5 #define MODE_ENCRYPT 0

Definition at line 20 of file interface.h.

Referenced by aes_en_de(), and main().

5.88.1.6 #define PATH xyssl-0.9/include/xyssl

Definition at line 9 of file interface.h.

5.88.1.7 #define RSA_DE 1

Definition at line 28 of file interface.h.

Referenced by rsa_decryption().

5.88.1.8 #define RSA_EN 0

Definition at line 27 of file interface.h.

Referenced by rsa_encryption().

5.88.2 Function Documentation

5.88.2.1 **int aes_en_de** (int *mode*, char * *infile*, char * *outfile*, unsigned char * *AES_key*, int * *nonce*, int *sockfd*)

Definition at line 1122 of file interface.c.

References aes_crypt_ecb(), AES_DECRYPT, AES_ENCRYPT, aes_setkey_dec(), aes_setkey_enc(), append_nonce_to_MA(), extract_nonce_from_MA(), int, MODE_DECRYPT, MODE_ENCRYPT, sha2_finish(), sha2_hmac_finish(), sha2_hmac_starts(), sha2_hmac_update(), sha2_starts(), and sha2_update().

Referenced by auth_rece_send_msg(), generate_RSA_keys_ciphertext(), read_encrypted_file(), and rece_de_msg().

5.88.2.2 **void generate_AES_key** (char * *key*)

Definition at line 1099 of file interface.c.

References havege_init(), and havege_rand().

Referenced by initiate_migration_process(), and reply_migration_process().

5.88.2.3 **int generate_encrypt_send_AES_key** (int *sockfd*, int * *nonce*, unsigned char * *key*, char * *publickey*, char * *privkey*)

5.88.2.4 **int generate_RSA_keys_ciphertext** (char * *pubkeyfile*, char * *privkeyfile*, unsigned char * *passphrase*)

Definition at line 1752 of file interface.c.

References aes_en_de(), rsa_context::D, rsa_context::DP, rsa_context::DQ, rsa_context::E, EXPONENT, havege_init(), havege_rand(), KEY_SIZE, mpi_write_file(), rsa_context::N, rsa_context::P, rsa_context::Q, rsa_context::QP, rsa_gen_key(), rsa_init(), and RSA_PKCS_V15.

Referenced by main().

5.88.2.5 **int generate_RSA_keys_plaintext** (char * *pubkeyfile*, char * *privkeyfile*)

Definition at line 1693 of file interface.c.

References rsa_context::D, rsa_context::DP, rsa_context::DQ, rsa_context::E, EXPONENT, havege_init(), havege_rand(), KEY_SIZE, mpi_write_file(), rsa_context::N, rsa_context::P, rsa_context::Q, rsa_context::QP, rsa_gen_key(), rsa_init(), and RSA_PKCS_V15.

Referenced by main().

5.88.2.6 **int initiate_migration_process** (int *sockfd*, int * *nonce*, char * *publickey*, char * *privatekey*, unsigned char * *aes_key*)

Definition at line 432 of file interface.c.

References generate_AES_key(), havege_init(), havege_rand(), md5(), rsa_decryption(), rsa_encryption(), and send.

Referenced by auth_rece_send_msg().

5.88.2.7 int read_encrypted_file (char * *enfile*, char * *string*, unsigned char * *passphrase*)

Definition at line 398 of file interface.c.

References aes_en_de(), and f.

Referenced by MC_Initialize().

5.88.2.8 int read_known_host_file (char * *pubkey*, char * *hname*, char * *filename*)

Definition at line 329 of file interface.c.

Referenced by auth_conn_rece_key(), and auth_rece_send_msg().

5.88.2.9 int receive_AES_en_MA (int *new_fd*, int * *nonce*, char * *infile*, char * *privatekey*)

Definition at line 1555 of file interface.c.

References rsa_decryption(), and size.

Referenced by rece_de_msg().

5.88.2.10 int receive_decrypt_AES_key (int *new_fd*, int * *nonce*, unsigned char * *key*, char * *privkey*, char * *publickey*)**5.88.2.11 int receiving_decrypting_MA_RSA (int *new_fd*, char * *privkeyfile*)****5.88.2.12 int receiving_verifying_MA_RSA (int *sockfd*, char * *privkeyfile*)****5.88.2.13 int reply_migration_process (int *new_fd*, int * *nonce*, char * *publickey*, char * *privatekey*, unsigned char * *aes_key*)**

Definition at line 777 of file interface.c.

References generate_AES_key(), md5(), rsa_decryption(), rsa_encryption(), and send.

Referenced by auth_conn_rece_key().

5.88.2.14 int rsa_decryption (char * *ciphertext*, char * *plaintext*, char * *privatekeyfile*)

Definition at line 133 of file interface.c.

References rsa_context::D, rsa_context::DP, rsa_context::DQ, rsa_context::E, rsa_context::len, mpi_msb(), mpi_read_mystring(), rsa_context::N, rsa_context::P, P, rsa_context::Q, rsa_context::QP, rsa_check_privkey(), RSA_DE, rsa_init(), rsa_pkcs1_decrypt(), RSA_PKCS_V15, and separate_key_parts().

Referenced by initiate_migration_process(), receive_AES_en_MA(), and reply_migration_process().

5.88.2.15 int rsa_encryption (char * *publickey*, char * *plaintext*, char * *ciphertext*)

Definition at line 91 of file interface.c.

References rsa_context::E, rsa_context::len, mpi_msb(), mpi_read_mystring(), rsa_context::N, rsa_check_pubkey(), RSA_EN, rsa_init(), rsa_pkcs1_encrypt(), RSA_PKCS_V15, and separate_key_parts().

Referenced by initiate_migration_process(), reply_migration_process(), and send_AES_en_MA().

5.88.2.16 `int send_AES_en_MA (int sockfd, int * nonce, char * outfile, char * peer_pubkey)`

Definition at line 1419 of file `interface.c`.

References `int`, `rsa_encryption()`, `send`, and `size`.

Referenced by `auth_rece_send_msg()`.

5.89 /home/dko/Projects/mobilec/src/security/mc_dh.c File Reference

```
#include <stdio.h>
#include "../include/mc_error.h"
#include "xyssl-0.9/include/xyssl/dhm.h"
#include "xyssl-0.9/include/xyssl/havege.h"
#include "mc_dh.h"
#include "asm_node.h"
#include "config.h"
```

5.90 /home/dko/Projects/mobilec/src/security/mc_dh.h File Reference

```
#include "xyssl-0.9/include/xyssl/rsa.h"
#include "asm_node.h"
#include "config.h"
```


5.91 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/aes.h File Reference

Data Structures

- struct [aes_context](#)
AES context structure.

Defines

- #define [AES_ENCRYPT](#) 1
- #define [AES_DECRYPT](#) 0

Functions

- void [aes_setkey_enc](#) ([aes_context](#) *ctx, unsigned char *key, [int](#) keysize)
AES key schedule (encryption).
- void [aes_setkey_dec](#) ([aes_context](#) *ctx, unsigned char *key, [int](#) keysize)
AES key schedule (decryption).
- void [aes_crypt_ecb](#) ([aes_context](#) *ctx, [int](#) mode, unsigned char input[16], unsigned char output[16])
AES-ECB block encryption/decryption.
- void [aes_crypt_cbc](#) ([aes_context](#) *ctx, [int](#) mode, [int](#) length, unsigned char iv[16], unsigned char *input, unsigned char *output)
AES-CBC buffer encryption/decryption.
- void [aes_crypt_cfb](#) ([aes_context](#) *ctx, [int](#) mode, [int](#) length, [int](#) *iv_off, unsigned char iv[16], unsigned char *input, unsigned char *output)
AES-CFB buffer encryption/decryption.
- [int](#) [aes_self_test](#) ([int](#) verbose)
Checkup routine.

5.91.1 Detailed Description

Definition in file [aes.h](#).

5.91.2 Define Documentation

5.91.2.1 #define AES_DECRYPT 0

Definition at line 8 of file [aes.h](#).

Referenced by [aes_crypt_cbc\(\)](#), [aes_crypt_cfb\(\)](#), [aes_crypt_ecb\(\)](#), [aes_en_de\(\)](#), [aes_self_test\(\)](#), [main\(\)](#), and [ssl_decrypt_buf\(\)](#).

5.91.2.2 #define AES_ENCRYPT 1

Definition at line 7 of file aes.h.

Referenced by aes_crypt_cfb(), aes_en_de(), main(), and ssl_encrypt_buf().

5.91.3 Function Documentation

5.91.3.1 void aes_crypt_cbc (aes_context * ctx, int mode, int length, unsigned char iv[16], unsigned char * input, unsigned char * output)

AES-CBC buffer encryption/decryption.

Parameters

ctx AES context
mode AES_ENCRYPT or AES_DECRYPT
length length of the input data
iv initialization vector (updated after use)
input buffer holding the input data
output buffer holding the output data

Definition at line 732 of file aes.c.

References aes_crypt_ecb(), and AES_DECRYPT.

Referenced by aes_self_test(), main(), ssl_decrypt_buf(), and ssl_encrypt_buf().

5.91.3.2 void aes_crypt_cfb (aes_context * ctx, int mode, int length, int * iv_off, unsigned char iv[16], unsigned char * input, unsigned char * output)

AES-CFB buffer encryption/decryption.

Parameters

ctx AES context
mode AES_ENCRYPT or AES_DECRYPT
length length of the input data
iv_off offset in IV (updated after use)
iv initialization vector (updated after use)
input buffer holding the input data
output buffer holding the output data

Definition at line 787 of file aes.c.

References aes_crypt_ecb(), AES_DECRYPT, and AES_ENCRYPT.

Referenced by aes_self_test().

5.91.3.3 void aes_crypt_ecb (aes_context * *ctx*, int *mode*, unsigned char *input*[16], unsigned char *output*[16])

AES-ECB block encryption/decryption.

Parameters

ctx AES context
mode AES_ENCRYPT or AES_DECRYPT
input 16-byte input block
output 16-byte output block

Definition at line 639 of file aes.c.

References AES_DECRYPT, AES_FROUND, AES_RROUND, FSb, GET_ULONG_LE, aes_context::nr, PUT_ULONG_LE, aes_context::rk, and RSb.

Referenced by aes_crypt_cbc(), aes_crypt_cfb(), aes_en_de(), aes_self_test(), and main().

5.91.3.4 int aes_self_test (int *verbose*)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 902 of file aes.c.

References aes_crypt_cbc(), aes_crypt_cfb(), aes_crypt_ecb(), AES_DECRYPT, aes_setkey_dec(), aes_setkey_enc(), aes_test_cbc_dec, aes_test_cbc_enc, aes_test_cfb_dec, aes_test_cfb_enc, aes_test_ecb_dec, aes_test_ecb_enc, buf, and prv.

Referenced by main().

5.91.3.5 void aes_setkey_dec (aes_context * *ctx*, unsigned char * *key*, int *keysize*)

AES key schedule (decryption).

Parameters

ctx AES context to be initialized
key decryption key
keysize must be 128, 192 or 256

Definition at line 542 of file aes.c.

References aes_setkey_enc(), aes_context::buf, FSb, aes_context::nr, aes_context::rk, RT0, RT1, RT2, and RT3.

Referenced by aes_en_de(), aes_self_test(), main(), and ssl_derive_keys().

5.91.3.6 void aes_setkey_enc (aes_context * *ctx*, unsigned char * *key*, int *keysize*)

AES key schedule (encryption).

Parameters

ctx AES context to be initialized

key encryption key

keysize must be 128, 192 or 256

Definition at line 439 of file aes.c.

References aes_gen_tables(), aes_init_done, aes_context::buf, FSb, GET_ULONG_LE, aes_context::nr, RCON, and aes_context::rk.

Referenced by aes_en_de(), aes_self_test(), aes_setkey_dec(), main(), and ssl_derive_keys().

5.92 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/arc4.h File Reference

Data Structures

- struct [arc4_context](#)
ARC4 context structure.

Functions

- void [arc4_setup](#) ([arc4_context](#) *ctx, unsigned char *key, [int](#) keylen)
ARC4 key schedule.
- void [arc4_crypt](#) ([arc4_context](#) *ctx, unsigned char *buf, [int](#) buflen)
ARC4 cipher function.
- [int](#) [arc4_self_test](#) ([int](#) verbose)

5.92.1 Detailed Description

Definition in file [arc4.h](#).

5.92.2 Function Documentation

5.92.2.1 void [arc4_crypt](#) ([arc4_context](#) * ctx, unsigned char * buf, [int](#) buflen)

ARC4 cipher function.

Parameters

ctx ARC4 context
buf buffer to be processed
buflen amount of data in buf

Definition at line 63 of file [arc4.c](#).

References [arc4_context::m](#), [arc4_context::x](#), and [arc4_context::y](#).

Referenced by [arc4_self_test\(\)](#), [main\(\)](#), [ssl_decrypt_buf\(\)](#), and [ssl_encrypt_buf\(\)](#).

5.92.2.2 [int](#) [arc4_self_test](#) ([int](#) verbose)

Definition at line 122 of file [arc4.c](#).

References [arc4_crypt\(\)](#), [arc4_setup\(\)](#), [arc4_test_ct](#), [arc4_test_key](#), [arc4_test_pt](#), and [buf](#).

Referenced by [main\(\)](#).

5.92.2.3 void arc4_setup (arc4_context * *ctx*, unsigned char * *key*, int *keylen*)

ARC4 key schedule.

Parameters

ctx ARC4 context to be initialized

key the secret key

keylen length of the key

Definition at line 35 of file arc4.c.

References arc4_context::m, arc4_context::x, and arc4_context::y.

Referenced by arc4_self_test(), main(), and ssl_derive_keys().

5.93 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/base64.h File Reference

Defines

- `#define XYSSL_ERR_BASE64_BUFFER_TOO_SMALL -0x0010`
- `#define XYSSL_ERR_BASE64_INVALID_CHARACTER -0x0012`

Functions

- `int base64_encode` (unsigned char *dst, int *dlen, unsigned char *src, int slen)
Encode a buffer into base64 format.
- `int base64_decode` (unsigned char *dst, int *dlen, unsigned char *src, int slen)
Decode a base64-formatted buffer.
- `int base64_self_test` (int verbose)
Checkup routine.

5.93.1 Detailed Description

Definition in file [base64.h](#).

5.93.2 Define Documentation

5.93.2.1 `#define XYSSL_ERR_BASE64_BUFFER_TOO_SMALL -0x0010`

Definition at line 7 of file [base64.h](#).

Referenced by [base64_decode\(\)](#), and [base64_encode\(\)](#).

5.93.2.2 `#define XYSSL_ERR_BASE64_INVALID_CHARACTER -0x0012`

Definition at line 8 of file [base64.h](#).

Referenced by [base64_decode\(\)](#), [x509parse_crt\(\)](#), and [x509parse_key\(\)](#).

5.93.3 Function Documentation

5.93.3.1 `int base64_decode` (unsigned char *dst, int *dlen, unsigned char *src, int slen)

Decode a base64-formatted buffer.

Parameters

- dst* destination buffer
- dlen* size of the buffer
- src* source buffer

slen amount of data to be decoded

Returns

0 if successful, XYSSL_ERR_BASE64_BUFFER_TOO_SMALL, or XYSSL_ERR_BASE64_INVALID_DATA if the input data is not correct. *dlen is always updated to reflect the amount of data that has (or would have) been written.

Note

Call this function with *dlen = 0 to obtain the required buffer size in *dlen

Definition at line 121 of file base64.c.

References base64_dec_map, XYSSL_ERR_BASE64_BUFFER_TOO_SMALL, and XYSSL_ERR_BASE64_INVALID_CHARACTER.

Referenced by base64_self_test(), x509parse_crt(), and x509parse_key().

5.93.3.2 int base64_encode (unsigned char *dst, int *dlen, unsigned char *src, int slen)

Encode a buffer into base64 format.

Parameters

dst destination buffer

dlen size of the buffer

src source buffer

slen amount of data to be encoded

Returns

0 if successful, or XYSSL_ERR_BASE64_BUFFER_TOO_SMALL. *dlen is always updated to reflect the amount of data that has (or would have) been written.

Note

Call this function with *dlen = 0 to obtain the required buffer size in *dlen

Definition at line 58 of file base64.c.

References base64_enc_map, and XYSSL_ERR_BASE64_BUFFER_TOO_SMALL.

Referenced by base64_self_test().

5.93.3.3 int base64_self_test (int verbose)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 206 of file base64.c.

References base64_decode(), base64_encode(), base64_test_dec, and base64_test_enc.

Referenced by main().

5.94 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/bignum.h File Reference

```
#include <stdio.h>
```

Data Structures

- struct [mpi](#)
MPI structure.

Defines

- #define [XYSSL_ERR_MPI_FILE_IO_ERROR](#) -0x0002
- #define [XYSSL_ERR_MPI_BAD_INPUT_DATA](#) -0x0004
- #define [XYSSL_ERR_MPI_INVALID_CHARACTER](#) -0x0006
- #define [XYSSL_ERR_MPI_BUFFER_TOO_SMALL](#) -0x0008
- #define [XYSSL_ERR_MPI_NEGATIVE_VALUE](#) -0x000A
- #define [XYSSL_ERR_MPI_DIVISION_BY_ZERO](#) -0x000C
- #define [XYSSL_ERR_MPI_NOT_ACCEPTABLE](#) -0x000E
- #define [MPI_CHK](#)(f) if((ret = f) != 0) goto cleanup

Typedefs

- typedef unsigned long [t_int](#)
- typedef unsigned long long [t_dbl](#)

Functions

- void [mpi_init](#) ([mpi](#) *X,...)
Initialize one or more mpi.
- void [mpi_free](#) ([mpi](#) *X,...)
Unallocate one or more mpi.
- int [mpi_grow](#) ([mpi](#) *X, int nlimbs)
Enlarge to the specified number of limbs.
- int [mpi_copy](#) ([mpi](#) *X, [mpi](#) *Y)
Copy the contents of Y into X.
- void [mpi_swap](#) ([mpi](#) *X, [mpi](#) *Y)
Swap the contents of X and Y.
- int [mpi_lset](#) ([mpi](#) *X, int z)
Set value from integer.
- int [mpi_lsb](#) ([mpi](#) *X)

Return the number of least significant bits.

- `int mpi_msb (mpi *X)`

Return the number of most significant bits.

- `int mpi_size (mpi *X)`

Return the total size in bytes.

- `int mpi_read_string (mpi *X, int radix, char *s)`

Import from an ASCII string.

- `int mpi_write_string (mpi *X, int radix, char *s, int *slen)`

Export into an ASCII string.

- `int mpi_read_file (mpi *X, int radix, FILE *fin)`

Read X from an opened file.

- `int mpi_read_mystring (mpi *X, int radix, char *s)`

- `int mpi_write_file (char *p, mpi *X, int radix, FILE *fout)`

Write X into an opened file, or stdout.

- `int mpi_read_binary (mpi *X, unsigned char *buf, int buflen)`

Import X from unsigned binary data, big endian.

- `int mpi_write_binary (mpi *X, unsigned char *buf, int buflen)`

Export X into unsigned binary data, big endian.

- `int mpi_shift_l (mpi *X, int count)`

Left-shift: $X \ll = \text{count}$.

- `int mpi_shift_r (mpi *X, int count)`

Right-shift: $X \gg = \text{count}$.

- `int mpi_cmp_abs (mpi *X, mpi *Y)`

Compare unsigned values.

- `int mpi_cmp_mpi (mpi *X, mpi *Y)`

Compare signed values.

- `int mpi_cmp_int (mpi *X, int z)`

Compare signed values.

- `int mpi_add_abs (mpi *X, mpi *A, mpi *B)`

Unsigned addition: $X = |A| + |B|$.

- `int mpi_sub_abs (mpi *X, mpi *A, mpi *B)`

Unsigned subtraction: $X = |A| - |B|$.

- `int mpi_add_mpi (mpi *X, mpi *A, mpi *B)`

Signed addition: $X = A + B$.

- `int mpi_sub_mpi (mpi *X, mpi *A, mpi *B)`
Signed subtraction: $X = A - B$.
- `int mpi_add_int (mpi *X, mpi *A, int b)`
Signed addition: $X = A + b$.
- `int mpi_sub_int (mpi *X, mpi *A, int b)`
Signed subtraction: $X = A - b$.
- `int mpi_mul_mpi (mpi *X, mpi *A, mpi *B)`
*Baseline multiplication: $X = A * B$.*
- `int mpi_mul_int (mpi *X, mpi *A, t_int b)`
*Baseline multiplication: $X = A * b$.*
- `int mpi_div_mpi (mpi *Q, mpi *R, mpi *A, mpi *B)`
*Division by mpi: $A = Q * B + R$.*
- `int mpi_div_int (mpi *Q, mpi *R, mpi *A, int b)`
*Division by int: $A = Q * b + R$.*
- `int mpi_mod_mpi (mpi *R, mpi *A, mpi *B)`
Modulo: $R = A \bmod B$.
- `int mpi_mod_int (t_int *r, mpi *A, int b)`
Modulo: $r = A \bmod b$.
- `int mpi_exp_mod (mpi *X, mpi *A, mpi *E, mpi *N, mpi *_RR)`
Sliding-window exponentiation: $X = A^E \bmod N$.
- `int mpi_gcd (mpi *G, mpi *A, mpi *B)`
Greatest common divisor: $G = \gcd(A, B)$.
- `int mpi_inv_mod (mpi *X, mpi *A, mpi *N)`
Modular inverse: $X = A^{-1} \bmod N$.
- `int mpi_is_prime (mpi *X, int(*f_rng)(void *), void *p_rng)`
Miller-Rabin primality test.
- `int mpi_gen_prime (mpi *X, int nbits, int dh_flag, int(*f_rng)(void *), void *p_rng)`
Prime number generation.
- `int mpi_self_test (int verbose)`
Checkup routine.

5.94.1 Detailed Description

Definition in file [bignum.h](#).

5.94.2 Define Documentation

5.94.2.1 **#define MPI_CHK(f) if((ret = f) != 0) goto cleanup**

Definition at line 17 of file bignum.h.

Referenced by dhmm_calc_secret(), dhmm_make_params(), dhmm_make_public(), mpi_add_abs(), mpi_add_mpi(), mpi_copy(), mpi_div_mpi(), mpi_exp_mod(), mpi_gcd(), mpi_gen_prime(), mpi_inv_mod(), mpi_is_prime(), mpi_lset(), mpi_mod_mpi(), mpi_mul_mpi(), mpi_read_binary(), mpi_read_string(), mpi_self_test(), mpi_shift_l(), mpi_sub_abs(), mpi_sub_mpi(), mpi_write_file(), mpi_write_hlp(), mpi_write_string(), rsa_check_privkey(), rsa_gen_key(), rsa_private(), and rsa_public().

5.94.2.2 **#define XYSSL_ERR_MPI_BAD_INPUT_DATA -0x0004**

Definition at line 10 of file bignum.h.

Referenced by mpi_exp_mod(), mpi_gen_prime(), mpi_inv_mod(), mpi_read_string(), mpi_write_hlp(), and mpi_write_string().

5.94.2.3 **#define XYSSL_ERR_MPI_BUFFER_TOO_SMALL -0x0008**

Definition at line 12 of file bignum.h.

Referenced by mpi_write_binary(), and mpi_write_string().

5.94.2.4 **#define XYSSL_ERR_MPI_DIVISION_BY_ZERO -0x000C**

Definition at line 14 of file bignum.h.

Referenced by mpi_div_mpi(), and mpi_mod_int().

5.94.2.5 **#define XYSSL_ERR_MPI_FILE_IO_ERROR -0x0002**

Definition at line 9 of file bignum.h.

Referenced by mpi_read_file(), and mpi_write_file().

5.94.2.6 **#define XYSSL_ERR_MPI_INVALID_CHARACTER -0x0006**

Definition at line 11 of file bignum.h.

Referenced by mpi_get_digit().

5.94.2.7 **#define XYSSL_ERR_MPI_NEGATIVE_VALUE -0x000A**

Definition at line 13 of file bignum.h.

Referenced by mpi_sub_abs().

5.94.2.8 **#define XYSSL_ERR_MPI_NOT_ACCEPTABLE -0x000E**

Definition at line 15 of file bignum.h.

Referenced by `mpi_gen_prime()`, `mpi_inv_mod()`, and `mpi_is_prime()`.

5.94.3 Typedef Documentation

5.94.3.1 typedef unsigned long long t_dbl

Definition at line 39 of file `bignum.h`.

5.94.3.2 typedef unsigned long t_int

Definition at line 30 of file `bignum.h`.

5.94.4 Function Documentation

5.94.4.1 int mpi_add_abs (mpi * X, mpi * A, mpi * B)

Unsigned addition: $X = |A| + |B|$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 694 of file `bignum.c`.

References `MPI_CHK`, `mpi_copy()`, `mpi_grow()`, `mpi::n`, and `mpi::p`.

Referenced by `mpi_add_mpi()`, and `mpi_sub_mpi()`.

5.94.4.2 int mpi_add_int (mpi * X, mpi * A, int b)

Signed addition: $X = A + b$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 860 of file `bignum.c`.

References `mpi_add_mpi()`, `mpi::n`, `mpi::p`, and `mpi::s`.

Referenced by `mpi_gen_prime()`, and `mpi_read_string()`.

5.94.4.3 int mpi_add_mpi (mpi * X, mpi * A, mpi * B)

Signed addition: $X = A + B$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 798 of file `bignum.c`.

References `mpi_add_abs()`, `MPI_CHK`, `mpi_cmp_abs()`, `mpi_sub_abs()`, and `mpi::s`.

Referenced by `mpi_add_int()`, `mpi_div_mpi()`, `mpi_inv_mod()`, `mpi_mod_mpi()`, and `rsa_private()`.

5.94.4.4 int mpi_cmp_abs (mpi * X, mpi * Y)

Compare unsigned values.

Returns

1 if $|X|$ is greater than $|Y|$, -1 if $|X|$ is lesser than $|Y|$ or 0 if $|X|$ is equal to $|Y|$

Definition at line 615 of file bignum.c.

References `mpi::n`, and `mpi::p`.

Referenced by `mpi_add_mpi()`, `mpi_div_mpi()`, `mpi_montmul()`, `mpi_sub_abs()`, and `mpi_sub_mpi()`.

5.94.4.5 int mpi_cmp_int (mpi * X, int z)

Compare signed values.

Returns

1 if X is greater than z, -1 if X is lesser than z or 0 if X is equal to z

Definition at line 678 of file bignum.c.

References `mpi_cmp_mpi()`, `mpi::n`, `mpi::p`, and `mpi::s`.

Referenced by `mpi_div_mpi()`, `mpi_exp_mod()`, `mpi_gcd()`, `mpi_inv_mod()`, `mpi_is_prime()`, `mpi_mod_mpi()`, `mpi_write_hlp()`, `rsa_check_privkey()`, and `rsa_gen_key()`.

5.94.4.6 int mpi_cmp_mpi (mpi * X, mpi * Y)

Compare signed values.

Returns

1 if X is greater than Y, -1 if X is lesser than Y or 0 if X is equal to Y

Definition at line 645 of file bignum.c.

References `mpi::n`, `mpi::p`, and `mpi::s`.

Referenced by `dhm_make_params()`, `dhm_make_public()`, `mpi_cmp_int()`, `mpi_div_mpi()`, `mpi_exp_mod()`, `mpi_gcd()`, `mpi_inv_mod()`, `mpi_is_prime()`, `mpi_mod_mpi()`, `mpi_self_test()`, `rsa_check_privkey()`, `rsa_gen_key()`, `rsa_private()`, and `rsa_public()`.

5.94.4.7 int mpi_copy (mpi * X, mpi * Y)

Copy the contents of Y into X.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 128 of file bignum.c.

References `ciL`, `MPI_CHK`, `mpi_grow()`, `mpi::n`, `mpi::p`, and `mpi::s`.

Referenced by `mpi_add_abs()`, `mpi_div_mpi()`, `mpi_exp_mod()`, `mpi_gcd()`, `mpi_inv_mod()`, `mpi_is_prime()`, `mpi_mul_mpi()`, `mpi_sub_abs()`, and `mpi_write_string()`.

5.94.4.8 int mpi_div_int (mpi * *Q*, mpi * *R*, mpi * *A*, int *b*)

Division by int: $A = Q * b + R$.

Returns

0 if successful, 1 if memory allocation failed, XYSSL_ERR_MPI_DIVISION_BY_ZERO if $b == 0$

Note

Either *Q* or *R* can be NULL.

Definition at line 1173 of file bignum.c.

References mpi_div_mpi(), mpi::n, mpi::p, and mpi::s.

Referenced by main(), and mpi_write_hlp().

5.94.4.9 int mpi_div_mpi (mpi * *Q*, mpi * *R*, mpi * *A*, mpi * *B*)

Division by mpi: $A = Q * B + R$.

Returns

0 if successful, 1 if memory allocation failed, XYSSL_ERR_MPI_DIVISION_BY_ZERO if $B == 0$

Note

Either *Q* or *R* can be NULL.

Definition at line 1008 of file bignum.c.

References biH, biL, mpi_add_mpi(), MPI_CHK, mpi_cmp_abs(), mpi_cmp_int(), mpi_cmp_mpi(), mpi_copy(), mpi_free(), mpi_grow(), mpi_init(), mpi_lset(), mpi_msb(), mpi_mul_int(), mpi_shift_l(), mpi_shift_r(), mpi_sub_mpi(), mpi::n, mpi::p, mpi::s, and XYSSL_ERR_MPI_DIVISION_BY_ZERO.

Referenced by mpi_div_int(), mpi_mod_mpi(), and mpi_self_test().

5.94.4.10 int mpi_exp_mod (mpi * *X*, mpi * *A*, mpi * *E*, mpi * *N*, mpi * *_RR*)

Sliding-window exponentiation: $X = A^E \bmod N$.

Returns

0 if successful, 1 if memory allocation failed, XYSSL_ERR_MPI_BAD_INPUT_DATA if *N* is negative or even

Note

_RR is used to avoid re-computing $R * R \bmod N$ across multiple calls, which speeds up things a bit. It can be set to NULL if the extra performance is unneeded.

Definition at line 1328 of file bignum.c.

References biL, MPI_CHK, mpi_cmp_int(), mpi_cmp_mpi(), mpi_copy(), mpi_free(), mpi_grow(), mpi_init(), mpi_lset(), mpi_mod_mpi(), mpi_montg_init(), mpi_montmul(), mpi_montred(), mpi_msb(), mpi_shift_l(), mpi::n, mpi::p, and XYSSL_ERR_MPI_BAD_INPUT_DATA.

Referenced by dhm_calc_secret(), dhm_make_params(), dhm_make_public(), main(), mpi_is_prime(), mpi_self_test(), rsa_private(), and rsa_public().

5.94.4.11 void mpi_free (mpi * *X*, ...)

Unallocate one or more mpi.

Definition at line 73 of file bignum.c.

References ciL, mpi::n, mpi::p, and mpi::s.

Referenced by dhm_free(), main(), mpi_div_mpi(), mpi_exp_mod(), mpi_gcd(), mpi_gen_prime(), mpi_inv_mod(), mpi_is_prime(), mpi_mul_mpi(), mpi_read_string(), mpi_self_test(), mpi_sub_abs(), mpi_write_string(), rsa_check_privkey(), rsa_free(), rsa_gen_key(), rsa_private(), and rsa_public().

5.94.4.12 int mpi_gcd (mpi * *G*, mpi * *A*, mpi * *B*)

Greatest common divisor: $G = \gcd(A, B)$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 1507 of file bignum.c.

References MPI_CHK, mpi_cmp_int(), mpi_cmp_mpi(), mpi_copy(), mpi_free(), mpi_init(), mpi_lset(), mpi_mul_mpi(), mpi_shift_r(), mpi_sub_abs(), mpi::p, and mpi::s.

Referenced by mpi_inv_mod(), rsa_check_privkey(), and rsa_gen_key().

5.94.4.13 int mpi_gen_prime (mpi * *X*, int *nbits*, int *dh_flag*, int(*) (void *) *f_rng*, void * *p_rng*)

Prime number generation.

Parameters

X destination mpi

nbits required size of *X* in bits

dh_flag if 1, then $(X-1)/2$ will be prime too

f_rng RNG function

p_rng RNG parameter

Returns

0 if successful (probably prime), 1 if memory allocation failed, XYSSL_ERR_MPI_BAD_INPUT_DATA if *nbits* is < 3

Definition at line 1778 of file bignum.c.

References BITS_TO_LIMBS, ciL, mpi_add_int(), MPI_CHK, mpi_free(), mpi_grow(), mpi_init(), mpi_is_prime(), mpi_lset(), mpi_msb(), mpi_shift_l(), mpi_shift_r(), mpi_sub_int(), mpi::p, XYSSL_ERR_MPI_BAD_INPUT_DATA, and XYSSL_ERR_MPI_NOT_ACCEPTABLE.

Referenced by main(), and rsa_gen_key().

5.94.4.14 int mpi_grow (mpi * *X*, int *nlimbs*)

Enlarge to the specified number of limbs.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 100 of file bignum.c.

References `ciL`, `mpi::n`, and `mpi::p`.

Referenced by `dhm_make_params()`, `dhm_make_public()`, `mpi_add_abs()`, `mpi_copy()`, `mpi_div_mpi()`, `mpi_exp_mod()`, `mpi_gen_prime()`, `mpi_is_prime()`, `mpi_lset()`, `mpi_mul_mpi()`, `mpi_read_binary()`, `mpi_read_string()`, and `mpi_shift_l()`.

5.94.4.15 void mpi_init (mpi * X, ...)

Initialize one or more mpi.

Definition at line 52 of file bignum.c.

References `mpi::n`, `mpi::p`, and `mpi::s`.

Referenced by `main()`, `mpi_div_mpi()`, `mpi_exp_mod()`, `mpi_gcd()`, `mpi_gen_prime()`, `mpi_inv_mod()`, `mpi_is_prime()`, `mpi_mul_mpi()`, `mpi_read_string()`, `mpi_self_test()`, `mpi_sub_abs()`, `mpi_write_string()`, `rsa_check_privkey()`, `rsa_gen_key()`, `rsa_private()`, and `rsa_public()`.

5.94.4.16 int mpi_inv_mod (mpi * X, mpi * A, mpi * N)

Modular inverse: $X = A^{-1} \bmod N$.

Returns

0 if successful, 1 if memory allocation failed, `XYSSL_ERR_MPI_BAD_INPUT_DATA` if `N` is negative or nil `XYSSL_ERR_MPI_NOT_ACCEPTABLE` if `A` has no inverse mod `N`

Definition at line 1549 of file bignum.c.

References `mpi_add_mpi()`, `MPI_CHK`, `mpi_cmp_int()`, `mpi_cmp_mpi()`, `mpi_copy()`, `mpi_free()`, `mpi_gcd()`, `mpi_init()`, `mpi_lset()`, `mpi_mod_mpi()`, `mpi_shift_r()`, `mpi_sub_mpi()`, `mpi::p`, `XYSSL_ERR_MPI_BAD_INPUT_DATA`, and `XYSSL_ERR_MPI_NOT_ACCEPTABLE`.

Referenced by `main()`, `mpi_self_test()`, and `rsa_gen_key()`.

5.94.4.17 int mpi_is_prime (mpi * X, int(*)(void *)f_rng, void * p_rng)

Miller-Rabin primality test.

Returns

0 if successful (probably prime), 1 if memory allocation failed, `XYSSL_ERR_MPI_NOT_ACCEPTABLE` if `X` is not prime

Definition at line 1667 of file bignum.c.

References `ciL`, `MPI_CHK`, `mpi_cmp_int()`, `mpi_cmp_mpi()`, `mpi_copy()`, `mpi_exp_mod()`, `mpi_free()`, `mpi_grow()`, `mpi_init()`, `mpi_lsb()`, `mpi_mod_int()`, `mpi_mod_mpi()`, `mpi_msb()`, `mpi_mul_mpi()`, `mpi_shift_r()`, `mpi_sub_int()`, `mpi::n`, `mpi::p`, `R`, `mpi::s`, `small_prime`, and `XYSSL_ERR_MPI_NOT_ACCEPTABLE`.

Referenced by `main()`, and `mpi_gen_prime()`.

5.94.4.18 int mpi_lsb (mpi * X)

Return the number of least significant bits.

Definition at line 185 of file bignum.c.

References biL, int, mpi::n, and mpi::p.

Referenced by mpi_is_prime().

5.94.4.19 int mpi_lset (mpi * X, int z)

Set value from integer.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 167 of file bignum.c.

References ciL, MPI_CHK, mpi_grow(), mpi::n, mpi::p, and mpi::s.

Referenced by dh_m_make_params(), dh_m_make_public(), mpi_div_mpi(), mpi_exp_mod(), mpi_gcd(), mpi_gen_prime(), mpi_inv_mod(), mpi_mul_mpi(), mpi_read_binary(), mpi_read_string(), and rsa_gen_key().

5.94.4.20 int mpi_mod_int (t_int * r, mpi * A, int b)

Modulo: $r = A \bmod b$.

Returns

0 if successful, 1 if memory allocation failed, XYSSL_ERR_MPI_DIVISION_BY_ZERO if $b == 0$

Definition at line 1209 of file bignum.c.

References biH, mpi::n, mpi::p, and XYSSL_ERR_MPI_DIVISION_BY_ZERO.

Referenced by mpi_is_prime(), and mpi_write_hlp().

5.94.4.21 int mpi_mod_mpi (mpi * R, mpi * A, mpi * B)

Modulo: $R = A \bmod B$.

Returns

0 if successful, 1 if memory allocation failed, XYSSL_ERR_MPI_DIVISION_BY_ZERO if $B == 0$

Definition at line 1189 of file bignum.c.

References mpi_add_mpi(), MPI_CHK, mpi_cmp_int(), mpi_cmp_mpi(), mpi_div_mpi(), and mpi_sub_mpi().

Referenced by mpi_exp_mod(), mpi_inv_mod(), mpi_is_prime(), rsa_check_privkey(), rsa_gen_key(), and rsa_private().

5.94.4.22 int mpi_msb (mpi * X)

Return the number of most significant bits.

Definition at line 200 of file bignum.c.

References `biL`, `mpi::n`, and `mpi::p`.

Referenced by `d2i_RSA_PUBKEY()`, `main()`, `mpi_div_mpi()`, `mpi_exp_mod()`, `mpi_gen_prime()`, `mpi_is_prime()`, `mpi_shift_l()`, `mpi_size()`, `mpi_write_string()`, `rsa_check_pubkey()`, `rsa_decryption()`, `rsa_encryption()`, and `rsa_gen_key()`.

5.94.4.23 int mpi_mul_int (mpi * X, mpi * A, t_int b)

Baseline multiplication: $X = A * b$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 992 of file bignum.c.

References `mpi_mul_mpi()`, `mpi::n`, `mpi::p`, and `mpi::s`.

Referenced by `mpi_div_mpi()`, and `mpi_read_string()`.

5.94.4.24 int mpi_mul_mpi (mpi * X, mpi * A, mpi * B)

Baseline multiplication: $X = A * B$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 956 of file bignum.c.

References `MPI_CHK`, `mpi_copy()`, `mpi_free()`, `mpi_grow()`, `mpi_init()`, `mpi_lset()`, `mpi_mul_hlp()`, `mpi::n`, `mpi::p`, and `mpi::s`.

Referenced by `main()`, `mpi_gcd()`, `mpi_is_prime()`, `mpi_mul_int()`, `mpi_self_test()`, `rsa_check_privkey()`, `rsa_gen_key()`, and `rsa_private()`.

5.94.4.25 int mpi_read_binary (mpi * X, unsigned char * buf, int buflen)

Import X from unsigned binary data, big endian.

Parameters

X destination mpi

buf input buffer

buflen input buffer size

Returns

0 if successful, 1 if memory allocation failed

Definition at line 484 of file bignum.c.

References CHARS_TO_LIMBS, ciL, MPI_CHK, mpi_grow(), mpi_lset(), and mpi::p.

Referenced by asn1_get_mpi(), d2i_RSA_PUBKEY(), dhm_read_bignum(), dhm_read_public(), rsa_private(), and rsa_public().

5.94.4.26 int mpi_read_file (mpi * *X*, int *radix*, FILE * *fin*)

Read *X* from an opened file.

Parameters

X destination mpi
radix input numeric base
fin input file handle

Returns

0 if successful, or an XYSSL_ERR_MPI_XXX error code

Definition at line 391 of file bignum.c.

References mpi_get_digit(), mpi_read_string(), and XYSSL_ERR_MPI_FILE_IO_ERROR.

Referenced by main().

5.94.4.27 int mpi_read_mystring (mpi * *X*, int *radix*, char * *s*)

Definition at line 418 of file bignum.c.

References mpi_get_digit(), and mpi_read_string().

Referenced by rsa_decryption(), and rsa_encryption().

5.94.4.28 int mpi_read_string (mpi * *X*, int *radix*, char * *s*)

Import from an ASCII string.

Parameters

X destination mpi
radix input numeric base
s null-terminated string buffer

Returns

0 if successful, or an XYSSL_ERR_MPI_XXX error code

Definition at line 243 of file bignum.c.

References BITS_TO_LIMBS, ciL, int, mpi_add_int(), MPI_CHK, mpi_free(), mpi_get_digit(), mpi_grow(), mpi_init(), mpi_lset(), mpi_mul_int(), mpi::p, mpi::s, and XYSSL_ERR_MPI_BAD_INPUT_DATA.

Referenced by main(), mpi_read_file(), mpi_read_mystring(), mpi_self_test(), rsa_self_test(), and ssl_set_dh_param().

5.94.4.29 int mpi_self_test (int *verbose*)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 1854 of file bignum.c.

References MPI_CHK, mpi_cmp_mpi(), mpi_div_mpi(), mpi_exp_mod(), mpi_free(), mpi_init(), mpi_inv_mod(), mpi_mul_mpi(), and mpi_read_string().

Referenced by main().

5.94.4.30 int mpi_shift_l (mpi * *X*, int *count*)

Left-shift: $X \ll= \text{count}$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 526 of file bignum.c.

References biL, BITS_TO_LIMBS, MPI_CHK, mpi_grow(), mpi_msb(), mpi::n, and mpi::p.

Referenced by mpi_div_mpi(), mpi_exp_mod(), and mpi_gen_prime().

5.94.4.31 int mpi_shift_r (mpi * *X*, int *count*)

Right-shift: $X \gg= \text{count}$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 575 of file bignum.c.

References biL, mpi::n, and mpi::p.

Referenced by dhm_make_params(), dhm_make_public(), mpi_div_mpi(), mpi_gcd(), mpi_gen_prime(), mpi_inv_mod(), and mpi_is_prime().

5.94.4.32 int mpi_size (mpi * *X*)

Return the total size in bytes.

Definition at line 218 of file bignum.c.

References mpi_msb().

Referenced by dhm_calc_secret(), dhm_make_params(), dhm_read_params(), mpi_write_binary(), x509parse_crt(), and x509parse_key().

5.94.4.33 int mpi_sub_abs (mpi * X, mpi * A, mpi * B)

Unsigned subtraction: $X = |A| - |B|$.

Returns

0 if successful, XYSSL_ERR_MPI_NEGATIVE_VALUE if B is greater than A

Definition at line 761 of file bignum.c.

References MPI_CHK, mpi_cmp_abs(), mpi_copy(), mpi_free(), mpi_init(), mpi_sub_hlp(), mpi::n, mpi::p, and XYSSL_ERR_MPI_NEGATIVE_VALUE.

Referenced by mpi_add_mpi(), mpi_gcd(), and mpi_sub_mpi().

5.94.4.34 int mpi_sub_int (mpi * X, mpi * A, int b)

Signed subtraction: $X = A - b$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 876 of file bignum.c.

References mpi_sub_mpi(), mpi::n, mpi::p, and mpi::s.

Referenced by main(), mpi_gen_prime(), mpi_is_prime(), rsa_check_privkey(), and rsa_gen_key().

5.94.4.35 int mpi_sub_mpi (mpi * X, mpi * A, mpi * B)

Signed subtraction: $X = A - B$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 829 of file bignum.c.

References mpi_add_abs(), MPI_CHK, mpi_cmp_abs(), mpi_sub_abs(), and mpi::s.

Referenced by mpi_div_mpi(), mpi_inv_mod(), mpi_mod_mpi(), mpi_sub_int(), and rsa_private().

5.94.4.36 void mpi_swap (mpi * X, mpi * Y)

Swap the contents of X and Y.

Definition at line 155 of file bignum.c.

Referenced by rsa_gen_key().

5.94.4.37 int mpi_write_binary (mpi * X, unsigned char * buf, int buflen)

Export X into unsigned binary data, big endian.

Parameters

X source mpi
buf output buffer
buflen output buffer size

Returns

0 if successful, XYSSL_ERR_MPI_BUFFER_TOO_SMALL if buf isn't large enough

Note

Call this function with *buflen = 0 to obtain the minimum required buffer size in *buflen.

Definition at line 506 of file bignum.c.

References ciL, mpi_size(), mpi::p, and XYSSL_ERR_MPI_BUFFER_TOO_SMALL.

Referenced by dhm_calc_secret(), dhm_make_public(), rsa_private(), and rsa_public().

5.94.4.38 int mpi_write_file (char * *p*, mpi * *X*, int *radix*, FILE * *fout*)

Write X into an opened file, or stdout.

Parameters

p prefix, can be NULL
X source mpi
radix output numeric base
fout output file handle

Returns

0 if successful, or an XYSSL_ERR_MPI_XXX error code

Note

Set fout == NULL to print X on the console.

Definition at line 447 of file bignum.c.

References MPI_CHK, mpi_write_string(), and XYSSL_ERR_MPI_FILE_IO_ERROR.

Referenced by generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), and main().

5.94.4.39 int mpi_write_string (mpi * *X*, int *radix*, char * *s*, int * *slen*)

Export into an ASCII string.

Parameters

X source mpi
radix output numeric base
s string buffer
slen string buffer size

Returns

0 if successful, or an XYSSL_ERR_MPI_XXX error code

Note

Call this function with *slen = 0 to obtain the minimum required buffer size in *slen.

Definition at line 328 of file bignum.c.

References ciL, MPI_CHK, mpi_copy(), mpi_free(), mpi_init(), mpi_msb(), mpi_write_hlp(), mpi::n, mpi::p, mpi::s, XYSSL_ERR_MPI_BAD_INPUT_DATA, and XYSSL_ERR_MPI_BUFFER_TOO_SMALL.

Referenced by mpi_write_file().

5.95 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/bn_mul.h File Reference

```
#include "xyssl/config.h"
```

Defines

- #define [MULADDC_INIT](#)
- #define [MULADDC_CORE](#)
- #define [MULADDC_STOP](#) }

5.95.1 Detailed Description

Definition in file [bn_mul.h](#).

5.95.2 Define Documentation

5.95.2.1 #define MULADDC_CORE

Value:

```
s0 = ( *s << biH ) >> biH;          \
s1 = ( *s >> biH ); s++;             \
rx = s0 * b1; r0 = s0 * b0;          \
ry = s1 * b0; r1 = s1 * b1;          \
r1 += ( rx >> biH );                 \
r1 += ( ry >> biH );                 \
rx <=<= biH; ry <=<= biH;             \
r0 += rx; r1 += (r0 < rx);            \
r0 += ry; r1 += (r0 < ry);            \
r0 += c; r1 += (r0 < c);              \
r0 += *d; r1 += (r0 < *d);            \
c = r1; *(d++) = r0;
```

Definition at line 662 of file [bn_mul.h](#).

Referenced by [mpi_mul_hlp\(\)](#).

5.95.2.2 #define MULADDC_INIT

Value:

```
{                                     \
    t_int s0, s1, b0, b1;            \
    t_int r0, r1, rx, ry;            \
    b0 = ( b << biH ) >> biH;        \
    b1 = ( b >> biH );
```

Definition at line 655 of file [bn_mul.h](#).

Referenced by [mpi_mul_hlp\(\)](#).

5.95.2.3 #define MULADDC_STOP }

Definition at line 676 of file bn_mul.h.

Referenced by mpi_mul_hlp().

5.96 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/certs.h File Reference

Variables

- char [test_ca_cert](#) []
- char [test_ca_key](#) []
- char [test_ca_pwd](#) []
- char [test_srv_cert](#) []
- char [test_srv_key](#) []
- char [test_cli_cert](#) []
- char [test_cli_key](#) []
- char [xyssl_ca_cert](#) []

5.96.1 Detailed Description

Definition in file [certs.h](#).

5.96.2 Variable Documentation

5.96.2.1 char test_ca_cert[]

Definition at line 25 of file [certs.c](#).

Referenced by [main\(\)](#), [ssl_test\(\)](#), and [x509_self_test\(\)](#).

5.96.2.2 char test_ca_key[]

Definition at line 49 of file [certs.c](#).

Referenced by [x509_self_test\(\)](#).

5.96.2.3 char test_ca_pwd[]

Definition at line 81 of file [certs.c](#).

Referenced by [x509_self_test\(\)](#).

5.96.2.4 char test_cli_cert[]

Definition at line 134 of file [certs.c](#).

Referenced by [main\(\)](#), and [x509_self_test\(\)](#).

5.96.2.5 char test_cli_key[]

Definition at line 156 of file [certs.c](#).

Referenced by [main\(\)](#).

5.96.2.6 char test_srv_cert[]

Definition at line 83 of file certs.c.

Referenced by main(), and ssl_test().

5.96.2.7 char test_srv_key[]

Definition at line 105 of file certs.c.

Referenced by main(), and ssl_test().

5.96.2.8 char xyssl_ca_cert[]

Definition at line 185 of file certs.c.

Referenced by main().

5.97 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/debug.h File Reference

```
#include "xyssl/config.h"
#include "xyssl/ssl.h"
```

Defines

- #define [SSL_DEBUG_MSG](#)(level, args) debug_print_msg(ssl, level, __FILE__, __LINE__, debug_fmt args);
- #define [SSL_DEBUG_RET](#)(level, text, ret) debug_print_ret(ssl, level, __FILE__, __LINE__, text, ret);
- #define [SSL_DEBUG_BUF](#)(level, text, buf, len) debug_print_buf(ssl, level, __FILE__, __LINE__, text, buf, len);
- #define [SSL_DEBUG_MPI](#)(level, text, X) debug_print_mpi(ssl, level, __FILE__, __LINE__, text, X);
- #define [SSL_DEBUG_CRT](#)(level, text, crt) debug_print_crt(ssl, level, __FILE__, __LINE__, text, crt);

Functions

- char * [debug_fmt](#) (const char *format,...)
- void [debug_print_msg](#) (ssl_context *ssl, int level, char *file, int line, char *text)
- void [debug_print_ret](#) (ssl_context *ssl, int level, char *file, int line, char *text, int ret)
- void [debug_print_buf](#) (ssl_context *ssl, int level, char *file, int line, char *text, unsigned char *buf, int len)
- void [debug_print_mpi](#) (ssl_context *ssl, int level, char *file, int line, char *text, mpi *X)
- void [debug_print_crt](#) (ssl_context *ssl, int level, char *file, int line, char *text, x509_cert *crt)

5.97.1 Detailed Description

Definition in file [debug.h](#).

5.97.2 Define Documentation

5.97.2.1 #define [SSL_DEBUG_BUF](#)(level, text, buf, len) debug_print_buf(ssl, level, __FILE__, __LINE__, text, buf, len);

Definition at line 18 of file [debug.h](#).

Referenced by [ssl_calc_finished\(\)](#), [ssl_calc_verify\(\)](#), [ssl_decrypt_buf\(\)](#), [ssl_derive_keys\(\)](#), [ssl_encrypt_buf\(\)](#), [ssl_parse_client_hello\(\)](#), [ssl_parse_server_hello\(\)](#), [ssl_parse_server_key_exchange\(\)](#), [ssl_read_record\(\)](#), [ssl_write_certificate_request\(\)](#), [ssl_write_client_hello\(\)](#), [ssl_write_record\(\)](#), [ssl_write_server_hello\(\)](#), and [ssl_write_server_key_exchange\(\)](#).

5.97.2.2 `#define SSL_DEBUG_CRT(level, text, crt) debug_print_crt(ssl, level, __FILE__,
__LINE__, text, crt);`

Definition at line 24 of file debug.h.

Referenced by `ssl_parse_certificate()`, and `ssl_write_certificate()`.

5.97.2.3 `#define SSL_DEBUG_MPI(level, text, X) debug_print_mpi(ssl, level, __FILE__,
__LINE__, text, X);`

Definition at line 21 of file debug.h.

Referenced by `ssl_parse_client_key_exchange()`, `ssl_parse_server_key_exchange()`, `ssl_write_client_key_exchange()`, and `ssl_write_server_key_exchange()`.

5.97.2.4 `#define SSL_DEBUG_MSG(level, args) debug_print_msg(ssl, level, __FILE__,
__LINE__, debug_fmt args);`

Definition at line 12 of file debug.h.

Referenced by `ssl_calc_finished()`, `ssl_calc_verify()`, `ssl_close_notify()`, `ssl_decrypt_buf()`, `ssl_derive_keys()`, `ssl_encrypt_buf()`, `ssl_fetch_input()`, `ssl_flush_output()`, `ssl_free()`, `ssl_handshake()`, `ssl_handshake_client()`, `ssl_handshake_server()`, `ssl_init()`, `ssl_parse_certificate()`, `ssl_parse_certificate_request()`, `ssl_parse_certificate_verify()`, `ssl_parse_change_cipher_spec()`, `ssl_parse_client_hello()`, `ssl_parse_client_key_exchange()`, `ssl_parse_finished()`, `ssl_parse_server_hello()`, `ssl_parse_server_hello_done()`, `ssl_parse_server_key_exchange()`, `ssl_read()`, `ssl_read_record()`, `ssl_write()`, `ssl_write_certificate()`, `ssl_write_certificate_request()`, `ssl_write_certificate_verify()`, `ssl_write_change_cipher_spec()`, `ssl_write_client_hello()`, `ssl_write_client_key_exchange()`, `ssl_write_finished()`, `ssl_write_record()`, `ssl_write_server_hello()`, `ssl_write_server_hello_done()`, and `ssl_write_server_key_exchange()`.

5.97.2.5 `#define SSL_DEBUG_RET(level, text, ret) debug_print_ret(ssl, level, __FILE__,
__LINE__, text, ret);`

Definition at line 15 of file debug.h.

Referenced by `ssl_close_notify()`, `ssl_fetch_input()`, `ssl_flush_output()`, `ssl_parse_certificate()`, `ssl_parse_certificate_request()`, `ssl_parse_certificate_verify()`, `ssl_parse_change_cipher_spec()`, `ssl_parse_client_hello()`, `ssl_parse_client_key_exchange()`, `ssl_parse_finished()`, `ssl_parse_server_hello()`, `ssl_parse_server_hello_done()`, `ssl_parse_server_key_exchange()`, `ssl_read()`, `ssl_read_record()`, `ssl_set_dh_param()`, `ssl_write()`, `ssl_write_certificate()`, `ssl_write_certificate_verify()`, `ssl_write_change_cipher_spec()`, `ssl_write_client_hello()`, `ssl_write_client_key_exchange()`, `ssl_write_finished()`, `ssl_write_record()`, `ssl_write_server_hello_done()`, and `ssl_write_server_key_exchange()`.

5.97.3 Function Documentation

5.97.3.1 `char* debug_fmt (const char *format, ...)`

Definition at line 38 of file debug.c.

References `vsnprintf`.

5.97.3.2 void debug_print_buf (ssl_context * ssl, int level, char * file, int line, char * text, unsigned char * buf, int len)

Definition at line 82 of file debug.c.

References `_ssl_context::f_dbg`, and `_ssl_context::p_dbg`.

5.97.3.3 void debug_print_cert (ssl_context * ssl, int level, char * file, int line, char * text, x509_cert * crt)

Definition at line 169 of file debug.c.

References `debug_print_mpi()`, `rsa_context::E`, `_ssl_context::f_dbg`, `rsa_context::N`, `_x509_cert::next`, `_ssl_context::p_dbg`, `_x509_cert::rsa`, and `x509parse_cert_info()`.

5.97.3.4 void debug_print_mpi (ssl_context * ssl, int level, char * file, int line, char * text, mpi * X)

Definition at line 124 of file debug.c.

References `_ssl_context::f_dbg`, `mpi::n`, `mpi::p`, and `_ssl_context::p_dbg`.

Referenced by `debug_print_cert()`.

5.97.3.5 void debug_print_msg (ssl_context * ssl, int level, char * file, int line, char * text)

Definition at line 52 of file debug.c.

References `_ssl_context::f_dbg`, and `_ssl_context::p_dbg`.

5.97.3.6 void debug_print_ret (ssl_context * ssl, int level, char * file, int line, char * text, int ret)

Definition at line 66 of file debug.c.

References `_ssl_context::f_dbg`, and `_ssl_context::p_dbg`.

5.98 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/des.h File Reference

Data Structures

- struct [des_context](#)
DES context structure.
- struct [des3_context](#)
Triple-DES context structure.

Defines

- #define [DES_ENCRYPT](#) 1
- #define [DES_DECRYPT](#) 0

Functions

- void [des_setkey_enc](#) ([des_context](#) *ctx, unsigned char key[8])
DES key schedule (56-bit, encryption).
- void [des_setkey_dec](#) ([des_context](#) *ctx, unsigned char key[8])
DES key schedule (56-bit, decryption).
- void [des3_set2key_enc](#) ([des3_context](#) *ctx, unsigned char key[16])
Triple-DES key schedule (112-bit, encryption).
- void [des3_set2key_dec](#) ([des3_context](#) *ctx, unsigned char key[16])
Triple-DES key schedule (112-bit, decryption).
- void [des3_set3key_enc](#) ([des3_context](#) *ctx, unsigned char key[24])
Triple-DES key schedule (168-bit, encryption).
- void [des3_set3key_dec](#) ([des3_context](#) *ctx, unsigned char key[24])
Triple-DES key schedule (168-bit, decryption).
- void [des_crypt_ecb](#) ([des_context](#) *ctx, unsigned char input[8], unsigned char output[8])
DES-ECB block encryption/decryption.
- void [des_crypt_cbc](#) ([des_context](#) *ctx, int mode, int length, unsigned char iv[8], unsigned char *input, unsigned char *output)
DES-CBC buffer encryption/decryption.
- void [des3_crypt_ecb](#) ([des3_context](#) *ctx, unsigned char input[8], unsigned char output[8])
3DES-ECB block encryption/decryption
- void [des3_crypt_cbc](#) ([des3_context](#) *ctx, int mode, int length, unsigned char iv[8], unsigned char *input, unsigned char *output)

3DES-CBC buffer encryption/decryption

- [int des_self_test](#) ([int](#) verbose)

5.98.1 Detailed Description

Definition in file [des.h](#).

5.98.2 Define Documentation

5.98.2.1 #define DES_DECRYPT 0

Definition at line 8 of file [des.h](#).

Referenced by [des_self_test\(\)](#), [ssl_decrypt_buf\(\)](#), and [x509_des3_decrypt\(\)](#).

5.98.2.2 #define DES_ENCRYPT 1

Definition at line 7 of file [des.h](#).

Referenced by [des3_crypt_cbc\(\)](#), [des_crypt_cbc\(\)](#), [main\(\)](#), and [ssl_encrypt_buf\(\)](#).

5.98.3 Function Documentation

5.98.3.1 void des3_crypt_cbc (des3_context * *ctx*, int *mode*, int *length*, unsigned char *iv*[8], unsigned char * *input*, unsigned char * *output*)

3DES-CBC buffer encryption/decryption

Parameters

ctx 3DES context
mode DES_ENCRYPT or DES_DECRYPT
length length of the input data
iv initialization vector (updated after use)
input buffer holding the input data
output buffer holding the output data

Definition at line 593 of file [des.c](#).

References [des3_crypt_ecb\(\)](#), and [DES_ENCRYPT](#).

Referenced by [des_self_test\(\)](#), [main\(\)](#), [ssl_decrypt_buf\(\)](#), [ssl_encrypt_buf\(\)](#), and [x509_des3_decrypt\(\)](#).

5.98.3.2 void des3_crypt_ecb (des3_context * *ctx*, unsigned char *input*[8], unsigned char *output*[8])

3DES-ECB block encryption/decryption

Parameters

ctx 3DES context

input 64-bit input block

output 64-bit output block

Definition at line 552 of file des.c.

References DES_FP, DES_IP, DES_ROUND, GET_ULONG_BE, PUT_ULONG_BE, and des3_context::sk.

Referenced by des3_crypt_cbc(), and des_self_test().

5.98.3.3 void des3_set2key_dec (des3_context * ctx, unsigned char key[16])

Triple-DES key schedule (112-bit, decryption).

Parameters

ctx 3DES context to be initialized

key 16-byte secret key

Definition at line 420 of file des.c.

References des3_set2key(), and des3_context::sk.

Referenced by des_self_test().

5.98.3.4 void des3_set2key_enc (des3_context * ctx, unsigned char key[16])

Triple-DES key schedule (112-bit, encryption).

Parameters

ctx 3DES context to be initialized

key 16-byte secret key

Definition at line 409 of file des.c.

References des3_set2key(), and des3_context::sk.

Referenced by des_self_test().

5.98.3.5 void des3_set3key_dec (des3_context * ctx, unsigned char key[24])

Triple-DES key schedule (168-bit, decryption).

Parameters

ctx 3DES context to be initialized

key 24-byte secret key

Definition at line 465 of file des.c.

References des3_set3key(), and des3_context::sk.

Referenced by des_self_test(), ssl_derive_keys(), and x509_des3_decrypt().

5.98.3.6 void des3_set3key_enc (des3_context * ctx, unsigned char key[24])

Triple-DES key schedule (168-bit, encryption).

Parameters

ctx 3DES context to be initialized

key 24-byte secret key

Definition at line 454 of file des.c.

References des3_set3key(), and des3_context::sk.

Referenced by des_self_test(), main(), and ssl_derive_keys().

5.98.3.7 void des_crypt_cbc (des_context * ctx, int mode, int length, unsigned char iv[8], unsigned char * input, unsigned char * output)

DES-CBC buffer encryption/decryption.

Parameters

ctx DES context

mode DES_ENCRYPT or DES_DECRYPT

length length of the input data

iv initialization vector (updated after use)

input buffer holding the input data

output buffer holding the output data

Definition at line 505 of file des.c.

References des_crypt_ecb(), and DES_ENCRYPT.

Referenced by des_self_test(), and main().

5.98.3.8 void des_crypt_ecb (des_context * ctx, unsigned char input[8], unsigned char output[8])

DES-ECB block encryption/decryption.

Parameters

ctx DES context

input 64-bit input block

output 64-bit output block

Definition at line 476 of file des.c.

References DES_FP, DES_IP, DES_ROUND, GET_ULONG_BE, PUT_ULONG_BE, and des_context::sk.

Referenced by des_crypt_cbc(), and des_self_test().

5.98.3.9 int des_self_test (int *verbose*)

Definition at line 694 of file des.c.

References `buf`, `des3_crypt_cbc()`, `des3_crypt_ecb()`, `des3_set2key_dec()`, `des3_set2key_enc()`, `des3_set3key_dec()`, `des3_set3key_enc()`, `des3_test_buf`, `des3_test_cbc_dec`, `des3_test_cbc_enc`, `des3_test_ecb_dec`, `des3_test_ecb_enc`, `des3_test_iv`, `des3_test_keys`, `des_crypt_cbc()`, `des_crypt_ecb()`, `DES_DECRYPT`, `des_setkey_dec()`, `des_setkey_enc()`, and `prv`.

Referenced by `main()`.

5.98.3.10 void des_setkey_dec (des_context * *ctx*, unsigned char *key*[8])

DES key schedule (56-bit, decryption).

Parameters

ctx DES context to be initialized

key 8-byte secret key

Definition at line 368 of file des.c.

References `des_setkey()`, `des_context::sk`, and `SWAP`.

Referenced by `des_self_test()`.

5.98.3.11 void des_setkey_enc (des_context * *ctx*, unsigned char *key*[8])

DES key schedule (56-bit, encryption).

Parameters

ctx DES context to be initialized

key 8-byte secret key

Definition at line 360 of file des.c.

References `des_setkey()`, and `des_context::sk`.

Referenced by `des_self_test()`, and `main()`.

5.99 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/dhm.h File Reference

```
#include "bignum.h"
```

Data Structures

- struct [dhm_context](#)

Defines

- #define [XYSSL_ERR_DHM_BAD_INPUT_DATA](#) -0x0480
- #define [XYSSL_ERR_DHM_READ_PARAMS_FAILED](#) -0x0490
- #define [XYSSL_ERR_DHM_MAKE_PARAMS_FAILED](#) -0x04A0
- #define [XYSSL_ERR_DHM_READ_PUBLIC_FAILED](#) -0x04B0
- #define [XYSSL_ERR_DHM_MAKE_PUBLIC_FAILED](#) -0x04C0
- #define [XYSSL_ERR_DHM_CALC_SECRET_FAILED](#) -0x04D0

Functions

- [int dhm_read_params](#) ([dhm_context](#) *ctx, unsigned char **p, unsigned char *end)
Parse the ServerKeyExchange parameters.
- [int dhm_make_params](#) ([dhm_context](#) *ctx, [int](#) s_size, unsigned char *output, [int](#) *olen, [int](#)(*f_rng)(void *), void *p_rng)
Setup and write the ServerKeyExchange parameters.
- [int dhm_read_public](#) ([dhm_context](#) *ctx, unsigned char *input, [int](#) ilen)
Import the peer's public value G^Y .
- [int dhm_make_public](#) ([dhm_context](#) *ctx, [int](#) s_size, unsigned char *output, [int](#) olen, [int](#)(*f_rng)(void *), void *p_rng)
Create own private value X and export G^X .
- [int dhm_calc_secret](#) ([dhm_context](#) *ctx, unsigned char *output, [int](#) *olen)
Derive and export the shared secret $(G^Y)^X \bmod P$.
- void [dhm_free](#) ([dhm_context](#) *ctx)
- [int dhm_self_test](#) ([int](#) verbose)
Checkup routine.

5.99.1 Detailed Description

Definition in file [dhm.h](#).

5.99.2 Define Documentation

5.99.2.1 `#define XYSSL_ERR_DHM_BAD_INPUT_DATA -0x0480`

Definition at line 9 of file dhm.h.

Referenced by `dhm_calc_secret()`, `dhm_make_public()`, `dhm_read_bignum()`, `dhm_read_params()`, and `dhm_read_public()`.

5.99.2.2 `#define XYSSL_ERR_DHM_CALC_SECRET_FAILED -0x04D0`

Definition at line 14 of file dhm.h.

Referenced by `dhm_calc_secret()`.

5.99.2.3 `#define XYSSL_ERR_DHM_MAKE_PARAMS_FAILED -0x04A0`

Definition at line 11 of file dhm.h.

Referenced by `dhm_make_params()`.

5.99.2.4 `#define XYSSL_ERR_DHM_MAKE_PUBLIC_FAILED -0x04C0`

Definition at line 13 of file dhm.h.

Referenced by `dhm_make_public()`.

5.99.2.5 `#define XYSSL_ERR_DHM_READ_PARAMS_FAILED -0x0490`

Definition at line 10 of file dhm.h.

Referenced by `dhm_read_bignum()`.

5.99.2.6 `#define XYSSL_ERR_DHM_READ_PUBLIC_FAILED -0x04B0`

Definition at line 12 of file dhm.h.

Referenced by `dhm_read_public()`.

5.99.3 Function Documentation

5.99.3.1 `int dhm_calc_secret (dhm_context * ctx, unsigned char * output, int * olen)`

Derive and export the shared secret $(G^Y)^X \bmod P$.

Parameters

ctx DHM context

output destination buffer

olen number of chars written

Returns

0 if successful, or an XYSSL_ERR_DHM_XXX error code

Definition at line 208 of file dhm.c.

References dhm_context::GY, dhm_context::K, MPI_CHK, mpi_exp_mod(), mpi_size(), mpi_write_binary(), dhm_context::P, dhm_context::RP, dhm_context::X, XYSSL_ERR_DHM_BAD_INPUT_DATA, and XYSSL_ERR_DHM_CALC_SECRET_FAILED.

Referenced by main(), ssl_parse_client_key_exchange(), and ssl_write_client_key_exchange().

5.99.3.2 void dhm_free (dhm_context * ctx)

Definition at line 234 of file dhm.c.

References dhm_context::G, dhm_context::GX, dhm_context::GY, dhm_context::K, mpi_free(), dhm_context::P, dhm_context::RP, and dhm_context::X.

Referenced by main(), and ssl_free().

5.99.3.3 int dhm_make_params (dhm_context * ctx, int s_size, unsigned char * output, int * olen, int(*) (void *) f_rng, void * p_rng)

Setup and write the ServerKeyExchange parameters.

Parameters

ctx DHM context
s_size private value size in bits
output destination buffer
olen number of chars written
f_rng RNG function
p_rng RNG parameter

Note

This function assumes that ctx->P and ctx->G have already been properly set (for example using mpi_read_string or mpi_read_binary).

Returns

0 if successful, or an XYSSL_ERR_DHM_XXX error code

Definition at line 93 of file dhm.c.

References DHM_MPI_EXPORT, dhm_context::G, dhm_context::GX, dhm_context::len, MPI_CHK, mpi_cmp_mpi(), mpi_exp_mod(), mpi_grow(), mpi_lset(), mpi_shift_r(), mpi_size(), dhm_context::P, mpi::p, dhm_context::RP, dhm_context::X, and XYSSL_ERR_DHM_MAKE_PARAMS_FAILED.

Referenced by main(), and ssl_write_server_key_exchange().

5.99.3.4 int dhm_make_public (dhm_context * ctx, int s_size, unsigned char * output, int olen, int(*) (void *) f_rng, void * p_rng)

Create own private value X and export G^X .

Parameters

ctx DHM context
x_size private value size in bits
output destination buffer
olen must be equal to *ctx->P.len*
f_rng RNG function
p_rng RNG parameter

Returns

0 if successful, or an `XYSSL_ERR_DHM_XXX` error code

Definition at line 167 of file `dhm.c`.

References `dhm_context::G`, `dhm_context::GX`, `dhm_context::len`, `MPI_CHK`, `mpi_cmp_mpi()`, `mpi_exp_mod()`, `mpi_grow()`, `mpi_lset()`, `mpi_shift_r()`, `mpi_write_binary()`, `dhm_context::P`, `mpi::p`, `dhm_context::RP`, `dhm_context::X`, `XYSSL_ERR_DHM_BAD_INPUT_DATA`, and `XYSSL_ERR_DHM_MAKE_PUBLIC_FAILED`.

Referenced by `main()`, and `ssl_write_client_key_exchange()`.

5.99.3.5 int dhm_read_params (dhm_context * ctx, unsigned char ** p, unsigned char * end)

Parse the ServerKeyExchange parameters.

Parameters

ctx DHM context
p &(start of input buffer)
end end of buffer

Returns

0 if successful, or an `XYSSL_ERR_DHM_XXX` error code

Definition at line 63 of file `dhm.c`.

References `dhm_read_bignum()`, `dhm_context::G`, `dhm_context::GY`, `dhm_context::len`, `mpi_size()`, `dhm_context::P`, and `XYSSL_ERR_DHM_BAD_INPUT_DATA`.

Referenced by `main()`, and `ssl_parse_server_key_exchange()`.

5.99.3.6 int dhm_read_public (dhm_context * ctx, unsigned char * input, int ilen)

Import the peer's public value G^Y .

Parameters

ctx DHM context
input input buffer
ilen size of buffer

Returns

0 if successful, or an XYSSL_ERR_DHM_XXX error code

Definition at line 150 of file dhm.c.

References dhm_context::GY, dhm_context::len, mpi_read_binary(), XYSSL_ERR_DHM_BAD_INPUT_DATA, and XYSSL_ERR_DHM_READ_PUBLIC_FAILED.

Referenced by main(), and ssl_parse_client_key_exchange().

5.99.3.7 int dhm_self_test (int *verbose*)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 246 of file dhm.c.

5.100 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/havege.h File Reference

Data Structures

- struct [havege_state](#)
HAVEGE state structure.

Defines

- #define [COLLECT_SIZE](#) 1024

Functions

- void [havege_init](#) ([havege_state](#) *hs)
HAVEGE initialization.
- int [havege_rand](#) (void *p_rng)
HAVEGE rand function.

5.100.1 Detailed Description

Definition in file [havege.h](#).

5.100.2 Define Documentation

5.100.2.1 #define COLLECT_SIZE 1024

Definition at line 7 of file [havege.h](#).

Referenced by [havege_fill\(\)](#), and [havege_rand\(\)](#).

5.100.3 Function Documentation

5.100.3.1 void havege_init (havege_state * hs)

HAVEGE initialization.

Parameters

hs HAVEGE state to be initialized

Definition at line 188 of file [havege.c](#).

References [havege_fill\(\)](#).

Referenced by [generate_AES_key\(\)](#), [generate_RSA_keys_ciphertext\(\)](#), [generate_RSA_keys_plaintext\(\)](#), [initiate_migration_process\(\)](#), [main\(\)](#), and [ssl_test\(\)](#).

5.100.3.2 int havege_rand (void * *p_rng*)

HAVEGE rand function.

Parameters

rng_st points to an HAVEGE state

Returns

A random int

Definition at line 198 of file havege.c.

References COLLECT_SIZE, havege_fill(), havege_state::offset, and havege_state::pool.

Referenced by generate_AES_key(), generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), initiate_migration_process(), main(), and ssl_test().

5.101 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/md2.h File Reference

Data Structures

- struct [md2_context](#)
MD2 context structure.

Functions

- void [md2_starts](#) ([md2_context](#) *ctx)
MD2 context setup.
- void [md2_update](#) ([md2_context](#) *ctx, unsigned char *input, [int](#) ilen)
MD2 process buffer.
- void [md2_finish](#) ([md2_context](#) *ctx, unsigned char output[16])
MD2 final digest.
- void [md2](#) (unsigned char *input, [int](#) ilen, unsigned char output[16])
Output = MD2(input buffer).
- [int](#) [md2_file](#) (char *path, unsigned char output[16])
Output = MD2(file contents).
- void [md2_hmac_starts](#) ([md2_context](#) *ctx, unsigned char *key, [int](#) keylen)
MD2 HMAC context setup.
- void [md2_hmac_update](#) ([md2_context](#) *ctx, unsigned char *input, [int](#) ilen)
MD2 HMAC process buffer.
- void [md2_hmac_finish](#) ([md2_context](#) *ctx, unsigned char output[16])
MD2 HMAC final digest.
- void [md2_hmac](#) (unsigned char *key, [int](#) keylen, unsigned char *input, [int](#) ilen, unsigned char output[16])
Output = HMAC-MD2(hmac key, input buffer).
- [int](#) [md2_self_test](#) ([int](#) verbose)
Checkup routine.

5.101.1 Detailed Description

Definition in file [md2.h](#).

5.101.2 Function Documentation

5.101.2.1 void md2 (unsigned char * *input*, int *ilen*, unsigned char *output*[16])

Output = MD2(input buffer).

Parameters

input buffer holding the data
ilen length of the input data
output MD2 checksum result

Referenced by x509_hash().

5.101.2.2 int md2_file (char * *path*, unsigned char *output*[16])

Output = MD2(file contents).

Parameters

path input file name
output MD2 checksum result

Returns

0 if successful, 1 if fopen failed, or 2 if fread failed

5.101.2.3 void md2_finish (md2_context * *ctx*, unsigned char *output*[16])

MD2 final digest.

Parameters

ctx MD2 context
output MD2 checksum result

5.101.2.4 void md2_hmac (unsigned char * *key*, int *keylen*, unsigned char * *input*, int *ilen*, unsigned char *output*[16])

Output = HMAC-MD2(hmac key, input buffer).

Parameters

key HMAC secret key
keylen length of the HMAC key
input buffer holding the data
ilen length of the input data
output HMAC-MD2 result

5.101.2.5 void md2_hmac_finish (md2_context * *ctx*, unsigned char *output*[16])

MD2 HMAC final digest.

Parameters

ctx HMAC context

output MD2 HMAC checksum result

5.101.2.6 void md2_hmac_starts (md2_context * *ctx*, unsigned char * *key*, int *keylen*)

MD2 HMAC context setup.

Parameters

ctx HMAC context to be initialized

key HMAC secret key

keylen length of the HMAC key

5.101.2.7 void md2_hmac_update (md2_context * *ctx*, unsigned char * *input*, int *ilen*)

MD2 HMAC process buffer.

Parameters

ctx HMAC context

input buffer holding the data

ilen length of the input data

5.101.2.8 int md2_self_test (int *verbose*)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Referenced by main().

5.101.2.9 void md2_starts (md2_context * *ctx*)

MD2 context setup.

Parameters

ctx context to be initialized

5.101.2.10 void md2_update (md2_context * *ctx*, unsigned char * *input*, int *ilen*)

MD2 process buffer.

Parameters

ctx MD2 context

input buffer holding the data

ilen length of the input data

5.102 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/md4.h File Reference

Data Structures

- struct [md4_context](#)
MD4 context structure.

Functions

- void [md4_starts](#) ([md4_context](#) *ctx)
MD4 context setup.
- void [md4_update](#) ([md4_context](#) *ctx, unsigned char *input, [int](#) ilen)
MD4 process buffer.
- void [md4_finish](#) ([md4_context](#) *ctx, unsigned char output[16])
MD4 final digest.
- void [md4](#) (unsigned char *input, [int](#) ilen, unsigned char output[16])
Output = MD4(input buffer).
- [int](#) [md4_file](#) (char *path, unsigned char output[16])
Output = MD4(file contents).
- void [md4_hmac_starts](#) ([md4_context](#) *ctx, unsigned char *key, [int](#) keylen)
MD4 HMAC context setup.
- void [md4_hmac_update](#) ([md4_context](#) *ctx, unsigned char *input, [int](#) ilen)
MD4 HMAC process buffer.
- void [md4_hmac_finish](#) ([md4_context](#) *ctx, unsigned char output[16])
MD4 HMAC final digest.
- void [md4_hmac](#) (unsigned char *key, [int](#) keylen, unsigned char *input, [int](#) ilen, unsigned char output[16])
Output = HMAC-MD4(hmac key, input buffer).
- [int](#) [md4_self_test](#) ([int](#) verbose)
Checkup routine.

5.102.1 Detailed Description

Definition in file [md4.h](#).

5.102.2 Function Documentation

5.102.2.1 void md4 (unsigned char * *input*, int *ilen*, unsigned char *output*[16])

Output = MD4(input buffer).

Parameters

input buffer holding the data
ilen length of the input data
output MD4 checksum result

Referenced by main(), and x509_hash().

5.102.2.2 int md4_file (char * *path*, unsigned char *output*[16])

Output = MD4(file contents).

Parameters

path input file name
output MD4 checksum result

Returns

0 if successful, 1 if fopen failed, or 2 if fread failed

5.102.2.3 void md4_finish (md4_context * *ctx*, unsigned char *output*[16])

MD4 final digest.

Parameters

ctx MD4 context
output MD4 checksum result

5.102.2.4 void md4_hmac (unsigned char * *key*, int *keylen*, unsigned char * *input*, int *ilen*, unsigned char *output*[16])

Output = HMAC-MD4(hmac key, input buffer).

Parameters

key HMAC secret key
keylen length of the HMAC key
input buffer holding the data
ilen length of the input data
output HMAC-MD4 result

5.102.2.5 void md4_hmac_finish (md4_context * *ctx*, unsigned char *output*[16])

MD4 HMAC final digest.

Parameters

ctx HMAC context
output MD4 HMAC checksum result

5.102.2.6 void md4_hmac_starts (md4_context * *ctx*, unsigned char * *key*, int *keylen*)

MD4 HMAC context setup.

Parameters

ctx HMAC context to be initialized
key HMAC secret key
keylen length of the HMAC key

5.102.2.7 void md4_hmac_update (md4_context * *ctx*, unsigned char * *input*, int *ilen*)

MD4 HMAC process buffer.

Parameters

ctx HMAC context
input buffer holding the data
ilen length of the input data

5.102.2.8 int md4_self_test (int *verbose*)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Referenced by main().

5.102.2.9 void md4_starts (md4_context * *ctx*)

MD4 context setup.

Parameters

ctx context to be initialized

5.102.2.10 void md4_update (md4_context * *ctx*, unsigned char * *input*, int *ilen*)

MD4 process buffer.

Parameters

ctx MD4 context

input buffer holding the data

ilen length of the input data

5.103 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/md5.h File Reference

Data Structures

- struct [md5_context](#)
MD5 context structure.

Functions

- void [md5_starts](#) ([md5_context](#) *ctx)
MD5 context setup.
- void [md5_update](#) ([md5_context](#) *ctx, unsigned char *input, [int](#) ilen)
MD5 process buffer.
- void [md5_finish](#) ([md5_context](#) *ctx, unsigned char output[16])
MD5 final digest.
- void [md5](#) (unsigned char *input, [int](#) ilen, unsigned char output[16])
Output = MD5(input buffer).
- [int](#) [md5_file](#) (char *path, unsigned char output[16])
Output = MD5(file contents).
- void [md5_hmac_starts](#) ([md5_context](#) *ctx, unsigned char *key, [int](#) keylen)
MD5 HMAC context setup.
- void [md5_hmac_update](#) ([md5_context](#) *ctx, unsigned char *input, [int](#) ilen)
MD5 HMAC process buffer.
- void [md5_hmac_finish](#) ([md5_context](#) *ctx, unsigned char output[16])
MD5 HMAC final digest.
- void [md5_hmac](#) (unsigned char *key, [int](#) keylen, unsigned char *input, [int](#) ilen, unsigned char output[16])
Output = HMAC-MD5(hmac key, input buffer).
- [int](#) [md5_self_test](#) ([int](#) verbose)
Checkup routine.

5.103.1 Detailed Description

Definition in file [md5.h](#).

5.103.2 Function Documentation

5.103.2.1 void md5 (unsigned char * *input*, int *ilen*, unsigned char *output*[16])

Output = MD5(*input* buffer).

Parameters

input buffer holding the data
ilen length of the input data
output MD5 checksum result

Definition at line 278 of file md5.c.

References md5_finish(), md5_starts(), and md5_update().

Referenced by initiate_migration_process(), main(), md5_hmac_starts(), md5_self_test(), reply_migration_process(), ssl_calc_verify(), ssl_derive_keys(), ssl_mac_md5(), ssl_parse_finished(), ssl_parse_server_key_exchange(), ssl_write_finished(), ssl_write_server_key_exchange(), and x509_hash().

5.103.2.2 int md5_file (char * *path*, unsigned char *output*[16])

Output = MD5(*file* contents).

Parameters

path input file name
output MD5 checksum result

Returns

0 if successful, 1 if fopen failed, or 2 if fread failed

Definition at line 292 of file md5.c.

References buf, f, md5_finish(), md5_starts(), and md5_update().

Referenced by md5_wrapper().

5.103.2.3 void md5_finish (md5_context * *ctx*, unsigned char *output*[16])

MD5 final digest.

Parameters

ctx MD5 context
output MD5 checksum result

Definition at line 250 of file md5.c.

References md5_padding, md5_update(), PUT_ULONG_LE, md5_context::state, and md5_context::total.

Referenced by md5(), md5_file(), md5_hmac_finish(), ssl_calc_finished(), ssl_calc_verify(), ssl_derive_keys(), ssl_mac_md5(), ssl_parse_server_key_exchange(), ssl_write_server_key_exchange(), and x509_des3_decrypt().

5.103.2.4 void md5_hmac (unsigned char * *key*, int *keylen*, unsigned char * *input*, int *ilen*, unsigned char *output*[16])

Output = HMAC-MD5(hmac key, input buffer).

Parameters

key HMAC secret key
keylen length of the HMAC key
input buffer holding the data
ilen length of the input data
output HMAC-MD5 result

Definition at line 378 of file md5.c.

References md5_hmac_finish(), md5_hmac_starts(), and md5_hmac_update().

Referenced by ssl_decrypt_buf(), ssl_encrypt_buf(), and tls1_prf().

5.103.2.5 void md5_hmac_finish (md5_context * *ctx*, unsigned char *output*[16])

MD5 HMAC final digest.

Parameters

ctx HMAC context
output MD5 HMAC checksum result

Definition at line 362 of file md5.c.

References md5_finish(), md5_starts(), md5_update(), and md5_context::opad.

Referenced by md5_hmac(), and md5_self_test().

5.103.2.6 void md5_hmac_starts (md5_context * *ctx*, unsigned char * *key*, int *keylen*)

MD5 HMAC context setup.

Parameters

ctx HMAC context to be initialized
key HMAC secret key
keylen length of the HMAC key

Definition at line 324 of file md5.c.

References md5_context::ipad, md5(), md5_starts(), md5_update(), and md5_context::opad.

Referenced by md5_hmac(), and md5_self_test().

5.103.2.7 void md5_hmac_update (md5_context * *ctx*, unsigned char * *input*, int *ilen*)

MD5 HMAC process buffer.

Parameters

ctx HMAC context

input buffer holding the data

ilen length of the input data

Definition at line 354 of file md5.c.

References md5_update().

Referenced by md5_hmac(), and md5_self_test().

5.103.2.8 int md5_self_test (int *verbose*)

Checksum routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 495 of file md5.c.

References buf, md5(), md5_hmac_finish(), md5_hmac_starts(), md5_hmac_test_buf, md5_hmac_test_buflen, md5_hmac_test_key, md5_hmac_test_keylen, md5_hmac_test_sum, md5_hmac_update(), md5_test_buf, md5_test_buflen, and md5_test_sum.

Referenced by main().

5.103.2.9 void md5_starts (md5_context * *ctx*)

MD5 context setup.

Parameters

ctx context to be initialized

Definition at line 61 of file md5.c.

References md5_context::state, and md5_context::total.

Referenced by md5(), md5_file(), md5_hmac_finish(), md5_hmac_starts(), ssl_calc_finished(), ssl_calc_verify(), ssl_derive_keys(), ssl_init(), ssl_mac_md5(), ssl_parse_server_key_exchange(), ssl_write_server_key_exchange(), and x509_des3_decrypt().

5.103.2.10 void md5_update (md5_context * *ctx*, unsigned char * *input*, int *ilen*)

MD5 process buffer.

Parameters

ctx MD5 context

input buffer holding the data

ilen length of the input data

Definition at line 198 of file md5.c.

References md5_context::buffer, md5_process(), and md5_context::total.

Referenced by md5(), md5_file(), md5_finish(), md5_hmac_finish(), md5_hmac_starts(), md5_hmac_update(), ssl_calc_finished(), ssl_calc_verify(), ssl_derive_keys(), ssl_mac_md5(), ssl_parse_client_hello(), ssl_parse_server_key_exchange(), ssl_read_record(), ssl_write_record(), ssl_write_server_key_exchange(), and x509_des3_decrypt().

5.104 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/net.h File Reference

Defines

- `#define XYSSL_ERR_NET_UNKNOWN_HOST -0x0F00`
- `#define XYSSL_ERR_NET_SOCKET_FAILED -0x0F10`
- `#define XYSSL_ERR_NET_CONNECT_FAILED -0x0F20`
- `#define XYSSL_ERR_NET_BIND_FAILED -0x0F30`
- `#define XYSSL_ERR_NET_LISTEN_FAILED -0x0F40`
- `#define XYSSL_ERR_NET_ACCEPT_FAILED -0x0F50`
- `#define XYSSL_ERR_NET_RECV_FAILED -0x0F60`
- `#define XYSSL_ERR_NET_SEND_FAILED -0x0F70`
- `#define XYSSL_ERR_NET_CONN_RESET -0x0F80`
- `#define XYSSL_ERR_NET_TRY_AGAIN -0x0F90`

Functions

- `int net_connect (int *fd, char *host, int port)`
Initiate a TCP connection with host:port.
- `int net_bind (int *fd, char *bind_ip, int port)`
Create a listening socket on bind_ip:port. If bind_ip == NULL, all interfaces are binded.
- `int net_accept (int bind_fd, int *client_fd, void *client_ip)`
Accept a connection from a remote client.
- `int net_set_block (int fd)`
Set the socket blocking.
- `int net_set_nonblock (int fd)`
Set the socket non-blocking.
- `void net_usleep (unsigned long usec)`
Portable usleep helper.
- `int net_recv (void *ctx, unsigned char *buf, int len)`
Read at most 'len' characters. len is updated to reflect the actual number of characters read.
- `int net_send (void *ctx, unsigned char *buf, int len)`
Write at most 'len' characters. len is updated to reflect the number of characters _not_ written.
- `void net_close (int fd)`
Gracefully shutdown the connection.

5.104.1 Detailed Description

Definition in file [net.h](#).

5.104.2 Define Documentation

5.104.2.1 **#define XYSSL_ERR_NET_ACCEPT_FAILED -0x0F50**

Definition at line 12 of file net.h.

Referenced by net_accept().

5.104.2.2 **#define XYSSL_ERR_NET_BIND_FAILED -0x0F30**

Definition at line 10 of file net.h.

Referenced by net_bind().

5.104.2.3 **#define XYSSL_ERR_NET_CONN_RESET -0x0F80**

Definition at line 15 of file net.h.

Referenced by main(), net_recv(), net_send(), and ssl_test().

5.104.2.4 **#define XYSSL_ERR_NET_CONNECT_FAILED -0x0F20**

Definition at line 9 of file net.h.

Referenced by net_connect().

5.104.2.5 **#define XYSSL_ERR_NET_LISTEN_FAILED -0x0F40**

Definition at line 11 of file net.h.

Referenced by net_bind().

5.104.2.6 **#define XYSSL_ERR_NET_RECV_FAILED -0x0F60**

Definition at line 13 of file net.h.

Referenced by net_recv().

5.104.2.7 **#define XYSSL_ERR_NET_SEND_FAILED -0x0F70**

Definition at line 14 of file net.h.

Referenced by net_send().

5.104.2.8 **#define XYSSL_ERR_NET_SOCKET_FAILED -0x0F10**

Definition at line 8 of file net.h.

Referenced by net_bind(), and net_connect().

5.104.2.9 `#define XYSSL_ERR_NET_TRY_AGAIN -0x0F90`

Definition at line 16 of file net.h.

Referenced by `main()`, `net_accept()`, `net_recv()`, `net_send()`, and `ssl_test()`.

5.104.2.10 `#define XYSSL_ERR_NET_UNKNOWN_HOST -0x0F00`

Definition at line 7 of file net.h.

Referenced by `net_connect()`.

5.104.3 Function Documentation

5.104.3.1 `int net_accept (int bind_fd, int * client_fd, void * client_ip)`

Accept a connection from a remote client.

Returns

0 if successful, `XYSSL_ERR_NET_ACCEPT_FAILED`, or `XYSSL_ERR_NET_WOULD_BLOCK` if `bind_fd` was set to non-blocking and `accept()` is blocking.

Definition at line 212 of file net.c.

References `int`, `net_is_blocking()`, `XYSSL_ERR_NET_ACCEPT_FAILED`, and `XYSSL_ERR_NET_TRY_AGAIN`.

Referenced by `main()`, and `ssl_test()`.

5.104.3.2 `int net_bind (int * fd, char * bind_ip, int port)`

Create a listening socket on `bind_ip:port`. If `bind_ip == NULL`, all interfaces are binded.

Returns

0 if successful, or one of: `XYSSL_ERR_NET_SOCKET_FAILED`, `XYSSL_ERR_NET_BIND_FAILED`, `XYSSL_ERR_NET_LISTEN_FAILED`

Definition at line 126 of file net.c.

References `net_htons()`, `SOCKET_ERROR`, `XYSSL_ERR_NET_BIND_FAILED`, `XYSSL_ERR_NET_LISTEN_FAILED`, and `XYSSL_ERR_NET_SOCKET_FAILED`.

Referenced by `main()`, and `ssl_test()`.

5.104.3.3 `void net_close (int fd)`

Gracefully shutdown the connection.

Definition at line 338 of file net.c.

Referenced by `main()`, and `ssl_test()`.

5.104.3.4 `int net_connect (int *fd, char *host, int port)`

Initiate a TCP connection with host:port.

Returns

0 if successful, or one of: XYSSL_ERR_NET_SOCKET_FAILED, XYSSL_ERR_NET_UNKNOWN_HOST, XYSSL_ERR_NET_CONNECT_FAILED

Definition at line 81 of file net.c.

References `net_htons()`, `SOCKET_ERROR`, `XYSSL_ERR_NET_CONNECT_FAILED`, `XYSSL_ERR_NET_SOCKET_FAILED`, and `XYSSL_ERR_NET_UNKNOWN_HOST`.

Referenced by `main()`, and `ssl_test()`.

5.104.3.5 `int net_recv (void *ctx, unsigned char *buf, int len)`

Read at most 'len' characters. len is updated to reflect the actual number of characters read.

Returns

This function returns the number of bytes received, or a negative error code; XYSSL_ERR_NET_TRY_AGAIN indicates `read()` is blocking.

Definition at line 277 of file net.c.

References `net_is_blocking()`, `XYSSL_ERR_NET_CONN_RESET`, `XYSSL_ERR_NET_RECV_FAILED`, and `XYSSL_ERR_NET_TRY_AGAIN`.

Referenced by `main()`, and `ssl_test()`.

5.104.3.6 `int net_send (void *ctx, unsigned char *buf, int len)`

Write at most 'len' characters. len is updated to reflect the number of characters `_not_` written.

Returns

This function returns the number of bytes sent, or a negative error code; XYSSL_ERR_NET_TRY_AGAIN indicates `write()` is blocking.

Definition at line 309 of file net.c.

References `net_is_blocking()`, `XYSSL_ERR_NET_CONN_RESET`, `XYSSL_ERR_NET_SEND_FAILED`, and `XYSSL_ERR_NET_TRY_AGAIN`.

Referenced by `main()`, and `ssl_test()`.

5.104.3.7 `int net_set_block (int fd)`

Set the socket blocking.

Returns

0 if successful, or a non-zero error code

Definition at line 243 of file net.c.

5.104.3.8 `int net_set_nonblock (int fd)`

Set the socket non-blocking.

Returns

0 if successful, or a non-zero error code

Definition at line 253 of file net.c.

Referenced by ssl_test().

5.104.3.9 `void net_usleep (unsigned long usec)`

Portable usleep helper.

Note

Real amount of time slept will not be less than select()'s timeout granularity (typically, 10ms).

Definition at line 266 of file net.c.

5.105 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/openssl.h File Reference

```
#include "xyssl/aes.h"
#include "xyssl/md5.h"
#include "xyssl/rsa.h"
#include "xyssl/sha1.h"
```

Defines

- #define [AES_SIZE](#) 16
- #define [AES_BLOCK_SIZE](#) 16
- #define [AES_KEY](#) aes_context
- #define [MD5_CTX](#) md5_context
- #define [SHA_CTX](#) sha1_context
- #define [SHA1_Init](#)(CTX) sha1_starts((CTX))
- #define [SHA1_Update](#)(CTX, BUF, LEN) sha1_update((CTX), (unsigned char *) (BUF), (LEN))
- #define [SHA1_Final](#)(OUT, CTX) sha1_finish((CTX), (OUT))
- #define [MD5_Init](#)(CTX) md5_starts((CTX))
- #define [MD5_Update](#)(CTX, BUF, LEN) md5_update((CTX), (unsigned char *) (BUF), (LEN))
- #define [MD5_Final](#)(OUT, CTX) md5_finish((CTX), (OUT))
- #define [AES_set_encrypt_key](#)(KEY, KEYSIZE, CTX) aes_setkey_enc((CTX), (KEY), (KEYSIZE))
- #define [AES_set_decrypt_key](#)(KEY, KEYSIZE, CTX) aes_setkey_dec((CTX), (KEY), (KEYSIZE))
- #define [AES_cbc_encrypt](#)(INPUT, OUTPUT, LEN, CTX, IV, MODE) aes_crypt_cbc((CTX), (MODE), (LEN), (IV), (INPUT), (OUTPUT))
- #define [RSA](#) rsa_context
- #define [RSA_PKCS1_PADDING](#) 1
- #define [RSA_size](#)(CTX) (CTX)->len
- #define [RSA_free](#)(CTX) rsa_free(CTX)
- #define [ERR_get_error](#)() "ERR_get_error() not supported"
- #define [RSA_blinding_off](#)(IGNORE)
- #define [d2i_RSAPrivateKey](#)(a, b, c) new rsa_context

Functions

- [int __RSA_Passthrough](#) (void *output, void *input, [int size](#))
- [rsa_context * d2i_RSA_PUBKEY](#) (void *ignore, unsigned char **bufptr, [int len](#))
- [int RSA_public_decrypt](#) ([int size](#), unsigned char *input, unsigned char *output, RSA *key, [int ignore](#))
- [int RSA_private_decrypt](#) ([int size](#), unsigned char *input, unsigned char *output, RSA *key, [int ignore](#))
- [int RSA_public_encrypt](#) ([int size](#), unsigned char *input, unsigned char *output, RSA *key, [int ignore](#))
- [int RSA_private_encrypt](#) ([int size](#), unsigned char *input, unsigned char *output, RSA *key, [int ignore](#))

5.105.1 Detailed Description

Definition in file [openssl.h](#).

5.105.2 Define Documentation

5.105.2.1 #define AES_BLOCK_SIZE 16

Definition at line 16 of file openssl.h.

5.105.2.2 #define AES_cbc_encrypt(INPUT, OUTPUT, LEN, CTX, IV, MODE) aes_crypt_cbc((CTX), (MODE), (LEN), (IV), (INPUT), (OUTPUT))

Definition at line 39 of file openssl.h.

5.105.2.3 #define AES_KEY aes_context

Definition at line 17 of file openssl.h.

5.105.2.4 #define AES_set_decrypt_key(KEY, KEYSIZE, CTX) aes_setkey_dec((CTX), (KEY), (KEYSIZE))

Definition at line 37 of file openssl.h.

5.105.2.5 #define AES_set_encrypt_key(KEY, KEYSIZE, CTX) aes_setkey_enc((CTX), (KEY), (KEYSIZE))

Definition at line 35 of file openssl.h.

5.105.2.6 #define AES_SIZE 16

Definition at line 15 of file openssl.h.

5.105.2.7 #define d2i_RSAPrivateKey(a, b, c) new rsa_context

Definition at line 102 of file openssl.h.

5.105.2.8 #define ERR_get_error() "ERR_get_error() not supported"

Definition at line 99 of file openssl.h.

5.105.2.9 #define MD5_CTX md5_context

Definition at line 18 of file openssl.h.

5.105.2.10 #define MD5_Final(OUT, CTX) md5_finish((CTX), (OUT))

Definition at line 32 of file openssl.h.

5.105.2.11 #define MD5_Init(CTX) md5_starts((CTX))

Definition at line 28 of file openssl.h.

5.105.2.12 #define MD5_Update(CTX, BUF, LEN) md5_update((CTX), (unsigned char *) (BUF), (LEN))

Definition at line 30 of file openssl.h.

5.105.2.13 #define RSA_rsa_context

Definition at line 95 of file openssl.h.

5.105.2.14 #define RSA_blinding_off(IGNORE)

Definition at line 100 of file openssl.h.

5.105.2.15 #define RSA_free(CTX) rsa_free(CTX)

Definition at line 98 of file openssl.h.

5.105.2.16 #define RSA_PKCS1_PADDING 1

Definition at line 96 of file openssl.h.

5.105.2.17 #define RSA_size(CTX) (CTX)->len

Definition at line 97 of file openssl.h.

Referenced by RSA_private_encrypt(), and RSA_public_encrypt().

5.105.2.18 #define SHA1_Final(OUT, CTX) sha1_finish((CTX), (OUT))

Definition at line 25 of file openssl.h.

5.105.2.19 #define SHA1_Init(CTX) sha1_starts((CTX))

Definition at line 21 of file openssl.h.

5.105.2.20 #define SHA1_Update(CTX, BUF, LEN) sha1_update((CTX), (unsigned char *) (BUF), (LEN))

Definition at line 23 of file openssl.h.

5.105.2.21 #define SHA_CTX sha1_context

Definition at line 19 of file openssl.h.

5.105.3 Function Documentation**5.105.3.1 int __RSA_Passthrough (void * *output*, void * *input*, int *size*) [inline]**

Definition at line 45 of file openssl.h.

5.105.3.2 rsa_context* d2i_RSA_PUBKEY (void * *ignore*, unsigned char ** *bufptr*, int *len*) [inline]

Definition at line 51 of file openssl.h.

References `rsa_context::E`, `rsa_context::len`, `mpi_msb()`, `mpi_read_binary()`, and `rsa_context::N`.

5.105.3.3 int RSA_private_decrypt (int *size*, unsigned char * *input*, unsigned char * *output*, RSA * *key*, int *ignore*) [inline]

Definition at line 105 of file openssl.h.

References `rsa_pkcs1_decrypt()`, and `RSA_PRIVATE`.

5.105.3.4 int RSA_private_encrypt (int *size*, unsigned char * *input*, unsigned char * *output*, RSA * *key*, int *ignore*) [inline]

Definition at line 107 of file openssl.h.

References `rsa_pkcs1_encrypt()`, `RSA_PRIVATE`, and `RSA_size`.

5.105.3.5 int RSA_public_decrypt (int *size*, unsigned char * *input*, unsigned char * *output*, RSA * *key*, int *ignore*) [inline]

Definition at line 104 of file openssl.h.

References `rsa_pkcs1_decrypt()`, and `RSA_PUBLIC`.

5.105.3.6 int RSA_public_encrypt (int *size*, unsigned char * *input*, unsigned char * *output*, RSA * *key*, int *ignore*) [inline]

Definition at line 106 of file openssl.h.

References `rsa_pkcs1_encrypt()`, `RSA_PUBLIC`, and `RSA_size`.

5.106 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/padlock.h File Reference

```
#include "xyssl/aes.h"
```

5.106.1 Detailed Description

Definition in file [padlock.h](#).

5.107 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/rsa.h File Reference

```
#include "bignum.h"
```

Data Structures

- struct [rsa_context](#)
RSA context structure.

Defines

- #define [XYSSL_ERR_RSA_BAD_INPUT_DATA](#) -0x0400
- #define [XYSSL_ERR_RSA_INVALID_PADDING](#) -0x0410
- #define [XYSSL_ERR_RSA_KEY_GEN_FAILED](#) -0x0420
- #define [XYSSL_ERR_RSA_KEY_CHECK_FAILED](#) -0x0430
- #define [XYSSL_ERR_RSA_PUBLIC_FAILED](#) -0x0440
- #define [XYSSL_ERR_RSA_PRIVATE_FAILED](#) -0x0450
- #define [XYSSL_ERR_RSA_VERIFY_FAILED](#) -0x0460
- #define [RSA_RAW](#) 0
- #define [RSA_MD2](#) 2
- #define [RSA_MD4](#) 3
- #define [RSA_MD5](#) 4
- #define [RSA_SHA1](#) 5
- #define [RSA_SHA256](#) 6
- #define [RSA_PUBLIC](#) 0
- #define [RSA_PRIVATE](#) 1
- #define [RSA_PKCS_V15](#) 0
- #define [RSA_PKCS_V21](#) 1
- #define [RSA_SIGN](#) 1
- #define [RSA_CRYPT](#) 2
- #define [ASN1_HASH_MDX](#)
- #define [ASN1_HASH_SHA1](#)

Functions

- void [rsa_init](#) ([rsa_context](#) *ctx, int padding, int hash_id, int(*f_rng)(void *), void *p_rng)
Initialize an RSA context.
- int [rsa_gen_key](#) ([rsa_context](#) *ctx, int nbits, int exponent)
Generate an RSA keypair.
- int [rsa_check_pubkey](#) ([rsa_context](#) *ctx)
Check a public RSA key.
- int [rsa_check_privkey](#) ([rsa_context](#) *ctx)
Check a private RSA key.

- `int rsa_public` (`rsa_context` *ctx, unsigned char *input, unsigned char *output)
Do an RSA public key operation.
- `int rsa_private` (`rsa_context` *ctx, unsigned char *input, unsigned char *output)
Do an RSA private key operation.
- `int rsa_pkcs1_encrypt` (`rsa_context` *ctx, `int` mode, `int` ilen, unsigned char *input, unsigned char *output)
Add the message padding, then do an RSA operation.
- `int rsa_pkcs1_decrypt` (`rsa_context` *ctx, `int` mode, `int` *olen, unsigned char *input, unsigned char *output)
Do an RSA operation, then remove the message padding.
- `int rsa_pkcs1_sign` (`rsa_context` *ctx, `int` mode, `int` hash_id, `int` hashlen, unsigned char *hash, unsigned char *sig)
Do a private RSA to sign a message digest.
- `int rsa_pkcs1_verify` (`rsa_context` *ctx, `int` mode, `int` hash_id, `int` hashlen, unsigned char *hash, unsigned char *sig)
Do a public RSA and check the message digest.
- `void rsa_free` (`rsa_context` *ctx)
Free the components of an RSA key.
- `int rsa_self_test` (`int` verbose)
Checkup routine.

5.107.1 Detailed Description

Definition in file [rsa.h](#).

5.107.2 Define Documentation

5.107.2.1 #define ASN1_HASH_MDX

Value:

```
"\x30\x20\x30\x0C\x06\x08\x2A\x86\x48" \
"\x86\xF7\x0D\x02\x00\x05\x00\x04\x10"
```

Definition at line 45 of file [rsa.h](#).

Referenced by [rsa_pkcs1_sign\(\)](#), and [rsa_pkcs1_verify\(\)](#).

5.107.2.2 #define ASN1_HASH_SHA1

Value:

```
"\x30\x21\x30\x09\x06\x05\x2B\x0E\x03" \
"\x02\x1A\x05\x00\x04\x14"
```

Definition at line 49 of file rsa.h.

Referenced by rsa_pkcs1_sign(), and rsa_pkcs1_verify().

5.107.2.3 #define RSA_CRYPT 2

Definition at line 34 of file rsa.h.

Referenced by rsa_pkcs1_decrypt(), and rsa_pkcs1_encrypt().

5.107.2.4 #define RSA_MD2 2

Definition at line 21 of file rsa.h.

Referenced by rsa_pkcs1_sign(), rsa_pkcs1_verify(), x509_hash(), and x509parse_cert_info().

5.107.2.5 #define RSA_MD4 3

Definition at line 22 of file rsa.h.

Referenced by rsa_pkcs1_sign(), rsa_pkcs1_verify(), x509_hash(), and x509parse_cert_info().

5.107.2.6 #define RSA_MD5 4

Definition at line 23 of file rsa.h.

Referenced by rsa_pkcs1_sign(), rsa_pkcs1_verify(), x509_hash(), and x509parse_cert_info().

5.107.2.7 #define RSA_PKCS_V15 0

Definition at line 30 of file rsa.h.

Referenced by generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), main(), rsa_decryption(), rsa_encryption(), rsa_pkcs1_decrypt(), rsa_pkcs1_encrypt(), rsa_pkcs1_sign(), and rsa_pkcs1_verify().

5.107.2.8 #define RSA_PKCS_V21 1

Definition at line 31 of file rsa.h.

5.107.2.9 #define RSA_PRIVATE 1

Definition at line 28 of file rsa.h.

Referenced by main(), RSA_private_decrypt(), RSA_private_encrypt(), rsa_self_test(), ssl_parse_client_key_exchange(), ssl_write_certificate_verify(), and ssl_write_server_key_exchange().

5.107.2.10 #define RSA_PUBLIC 0

Definition at line 27 of file rsa.h.

Referenced by main(), rsa_pkcs1_decrypt(), rsa_pkcs1_encrypt(), rsa_pkcs1_sign(), rsa_pkcs1_verify(), RSA_public_decrypt(), RSA_public_encrypt(), rsa_self_test(), ssl_parse_certificate_verify(), ssl_parse_server_key_exchange(), ssl_write_client_key_exchange(), and x509parse_verify().

5.107.2.11 #define RSA_RAW 0

Definition at line 20 of file rsa.h.

Referenced by rsa_pkcs1_sign(), rsa_pkcs1_verify(), ssl_parse_certificate_verify(), ssl_parse_server_key_exchange(), ssl_write_certificate_verify(), and ssl_write_server_key_exchange().

5.107.2.12 #define RSA_SHA1 5

Definition at line 24 of file rsa.h.

Referenced by main(), rsa_pkcs1_sign(), rsa_pkcs1_verify(), rsa_self_test(), x509_hash(), and x509parse_cert_info().

5.107.2.13 #define RSA_SHA256 6

Definition at line 25 of file rsa.h.

5.107.2.14 #define RSA_SIGN 1

Definition at line 33 of file rsa.h.

Referenced by rsa_pkcs1_sign(), and rsa_pkcs1_verify().

5.107.2.15 #define XYSSL_ERR_RSA_BAD_INPUT_DATA -0x0400

Definition at line 9 of file rsa.h.

Referenced by rsa_gen_key(), rsa_pkcs1_decrypt(), rsa_pkcs1_encrypt(), rsa_pkcs1_sign(), rsa_pkcs1_verify(), rsa_private(), and rsa_public().

5.107.2.16 #define XYSSL_ERR_RSA_INVALID_PADDING -0x0410

Definition at line 10 of file rsa.h.

Referenced by rsa_pkcs1_decrypt(), rsa_pkcs1_encrypt(), rsa_pkcs1_sign(), and rsa_pkcs1_verify().

5.107.2.17 #define XYSSL_ERR_RSA_KEY_CHECK_FAILED -0x0430

Definition at line 12 of file rsa.h.

Referenced by rsa_check_privkey(), and rsa_check_pubkey().

5.107.2.18 #define XYSSL_ERR_RSA_KEY_GEN_FAILED -0x0420

Definition at line 11 of file rsa.h.

Referenced by rsa_gen_key().

5.107.2.19 #define XYSSL_ERR_RSA_PRIVATE_FAILED -0x0450

Definition at line 14 of file rsa.h.

Referenced by rsa_private().

5.107.2.20 #define XYSSL_ERR_RSA_PUBLIC_FAILED -0x0440

Definition at line 13 of file rsa.h.

Referenced by rsa_public().

5.107.2.21 #define XYSSL_ERR_RSA_VERIFY_FAILED -0x0460

Definition at line 15 of file rsa.h.

Referenced by rsa_pkcs1_verify().

5.107.3 Function Documentation**5.107.3.1 int rsa_check_privkey (rsa_context * ctx)**

Check a private RSA key.

Parameters

ctx RSA context to be checked

Returns

0 if successful, or an XYSSL_ERR_RSA_XXX error code

Definition at line 152 of file rsa.c.

References rsa_context::D, rsa_context::E, MPI_CHK, mpi_cmp_int(), mpi_cmp_mpi(), mpi_free(), mpi_gcd(), mpi_init(), mpi_mod_mpi(), mpi_mul_mpi(), mpi_sub_int(), rsa_context::N, rsa_context::P, rsa_context::Q, rsa_check_pubkey(), and XYSSL_ERR_RSA_KEY_CHECK_FAILED.

Referenced by rsa_decryption(), rsa_self_test(), and x509parse_key().

5.107.3.2 int rsa_check_pubkey (rsa_context * ctx)

Check a public RSA key.

Parameters

ctx RSA context to be checked

Returns

0 if successful, or an XYSSL_ERR_RSA_XXX error code

Definition at line 132 of file rsa.c.

References `rsa_context::E`, `mpi_msb()`, `rsa_context::N`, `mpi::p`, and `XYSSL_ERR_RSA_KEY_CHECK_FAILED`.

Referenced by `rsa_check_privkey()`, `rsa_encryption()`, `rsa_self_test()`, and `x509parse_crt()`.

5.107.3.3 void rsa_free (rsa_context * ctx)

Free the components of an RSA key.

Definition at line 558 of file rsa.c.

References `rsa_context::D`, `rsa_context::DP`, `rsa_context::DQ`, `rsa_context::E`, `mpi_free()`, `rsa_context::N`, `rsa_context::P`, `rsa_context::Q`, `rsa_context::QP`, `rsa_context::RN`, `rsa_context::RP`, and `rsa_context::RQ`.

Referenced by `main()`, `rsa_gen_key()`, `rsa_self_test()`, `ssl_test()`, `x509_free()`, `x509_self_test()`, and `x509parse_key()`.

5.107.3.4 int rsa_gen_key (rsa_context * ctx, int nbits, int exponent)

Generate an RSA keypair.

Parameters

ctx RSA context that will hold the key

nbits size of the public key in bits

exponent public exponent (e.g., 65537)

Note

[rsa_init\(\)](#) must be called beforehand to setup the RSA context (especially `f_rng` and `p_rng`).

Returns

0 if successful, or an XYSSL_ERR_RSA_XXX error code

Definition at line 60 of file rsa.c.

References `rsa_context::D`, `rsa_context::DP`, `rsa_context::DQ`, `rsa_context::E`, `rsa_context::f_rng`, `rsa_context::len`, `MPI_CHK`, `mpi_cmp_int()`, `mpi_cmp_mpi()`, `mpi_free()`, `mpi_gcd()`, `mpi_gen_prime()`, `mpi_init()`, `mpi_inv_mod()`, `mpi_lset()`, `mpi_mod_mpi()`, `mpi_msb()`, `mpi_mul_mpi()`, `mpi_sub_int()`, `mpi_swap()`, `rsa_context::N`, `rsa_context::P`, `rsa_context::p_rng`, `rsa_context::Q`, `rsa_context::QP`, `rsa_free()`, `XYSSL_ERR_RSA_BAD_INPUT_DATA`, and `XYSSL_ERR_RSA_KEY_GEN_FAILED`.

Referenced by `generate_RSA_keys_ciphertext()`, `generate_RSA_keys_plaintext()`, and `main()`.

5.107.3.5 void rsa_init (rsa_context * ctx, int padding, int hash_id, int(*) (void *) f_rng, void * p_rng)

Initialize an RSA context.

Parameters

ctx RSA context to be initialized
padding RSA_PKCS_V15 or RSA_PKCS_V21
hash_id RSA_PKCS_V21 hash identifier
f_rng RNG function
p_rng RNG parameter

Note

The *hash_id* parameter is actually ignored when using RSA_PKCS_V15 padding.
 Currently (xyssl-0.8), RSA_PKCS_V21 padding is not supported.

Definition at line 40 of file *rsa.c*.

References *rsa_context::f_rng*, *rsa_context::hash_id*, *rsa_context::p_rng*, and *rsa_context::padding*.

Referenced by *generate_RSA_keys_ciphertext()*, *generate_RSA_keys_plaintext()*, *main()*, *rsa_decryption()*, and *rsa_encryption()*.

5.107.3.6 **int rsa_pkcs1_decrypt** (*rsa_context* * *ctx*, *int mode*, *int* * *olen*, *unsigned char* * *input*, *unsigned char* * *output*)

Do an RSA operation, then remove the message padding.

Parameters

ctx RSA context
mode RSA_PUBLIC or RSA_PRIVATE
input buffer holding the encrypted data
output buffer that will hold the plaintext
olen will contain the plaintext length

Returns

0 if successful, or an XYSSL_ERR_RSA_XXX error code

Note

The output buffer must be as large as the size of *ctx->N* (eg. 128 bytes if RSA-1024 is used).

Definition at line 326 of file *rsa.c*.

References *buf*, *int*, *rsa_context::len*, *rsa_context::padding*, *RSA_CRYPT*, *RSA_PKCS_V15*, *rsa_private()*, *rsa_public()*, *RSA_PUBLIC*, *XYSSL_ERR_RSA_BAD_INPUT_DATA*, and *XYSSL_ERR_RSA_INVALID_PADDING*.

Referenced by *rsa_decryption()*, *RSA_private_decrypt()*, *RSA_public_decrypt()*, *rsa_self_test()*, and *ssl_parse_client_key_exchange()*.

5.107.3.7 **int rsa_pkcs1_encrypt** (*rsa_context* * *ctx*, *int mode*, *int* *ilen*, *unsigned char* * *input*, *unsigned char* * *output*)

Add the message padding, then do an RSA operation.

Parameters

ctx RSA context
mode RSA_PUBLIC or RSA_PRIVATE
ilen contains the the plaintext length
input buffer holding the data to be encrypted
output buffer that will hold the ciphertext

Returns

0 if successful, or an XYSSL_ERR_RSA_XXX error code

Note

The output buffer must be as large as the size of ctx->N (eg. 128 bytes if RSA-1024 is used).

Definition at line 280 of file rsa.c.

References `rsa_context::len`, `rsa_context::padding`, `RSA_CRYPT`, `RSA_PKCS_V15`, `rsa_private()`, `rsa_public()`, `RSA_PUBLIC`, `XYSSL_ERR_RSA_BAD_INPUT_DATA`, and `XYSSL_ERR_RSA_INVALID_PADDING`.

Referenced by `rsa_encryption()`, `RSA_private_encrypt()`, `RSA_public_encrypt()`, `rsa_self_test()`, and `ssl_write_client_key_exchange()`.

5.107.3.8 `int rsa_pkcs1_sign(rsa_context * ctx, int mode, int hash_id, int hashlen, unsigned char * hash, unsigned char * sig)`

Do a private RSA to sign a message digest.

Parameters

ctx RSA context
mode RSA_PUBLIC or RSA_PRIVATE
hash_id RSA_RAW, RSA_MD{2,4,5} or RSA_SHA{1,256}
hashlen message digest length (for RSA_RAW only)
hash buffer holding the message digest
sig buffer that will hold the ciphertext

Returns

0 if the signing operation was successful, or an XYSSL_ERR_RSA_XXX error code

Note

The "sig" buffer must be as large as the size of ctx->N (eg. 128 bytes if RSA-1024 is used).

Definition at line 379 of file rsa.c.

References `ASN1_HASH_MD5`, `ASN1_HASH_SHA1`, `rsa_context::len`, `rsa_context::padding`, `RSA_MD2`, `RSA_MD4`, `RSA_MD5`, `RSA_PKCS_V15`, `rsa_private()`, `rsa_public()`, `RSA_PUBLIC`, `RSA_RAW`, `RSA_SHA1`, `RSA_SIGN`, `XYSSL_ERR_RSA_BAD_INPUT_DATA`, and `XYSSL_ERR_RSA_INVALID_PADDING`.

Referenced by `main()`, `rsa_self_test()`, `ssl_write_certificate_verify()`, and `ssl_write_server_key_exchange()`.

5.107.3.9 int rsa_pkcs1_verify (rsa_context * ctx, int mode, int hash_id, int hashlen, unsigned char * hash, unsigned char * sig)

Do a public RSA and check the message digest.

Parameters

ctx points to an RSA public key
mode RSA_PUBLIC or RSA_PRIVATE
hash_id RSA_RAW, RSA_MD{2,4,5} or RSA_SHA{1,256}
hashlen message digest length (for RSA_RAW only)
hash buffer holding the message digest
sig buffer holding the ciphertext

Returns

0 if the verify operation was successful, or an XYSSL_ERR_RSA_XXX error code

Note

The "sig" buffer must be as large as the size of ctx->N (eg. 128 bytes if RSA-1024 is used).

Definition at line 468 of file rsa.c.

References ASN1_HASH_MDX, ASN1_HASH_SHA1, buf, int, rsa_context::len, rsa_context::padding, RSA_MD2, RSA_MD4, RSA_MD5, RSA_PKCS_V15, rsa_private(), rsa_public(), RSA_PUBLIC, RSA_RAW, RSA_SHA1, RSA_SIGN, XYSSL_ERR_RSA_BAD_INPUT_DATA, XYSSL_ERR_RSA_INVALID_PADDING, and XYSSL_ERR_RSA_VERIFY_FAILED.

Referenced by main(), rsa_self_test(), ssl_parse_certificate_verify(), ssl_parse_server_key_exchange(), and x509parse_verify().

5.107.3.10 int rsa_private (rsa_context * ctx, unsigned char * input, unsigned char * output)

Do an RSA private key operation.

Parameters

ctx RSA context
input input buffer
output output buffer

Returns

0 if successful, or an XYSSL_ERR_RSA_XXX error code

Note

The input and output buffers must be large enough (eg. 128 bytes if RSA-1024 is used).

Definition at line 221 of file rsa.c.

References rsa_context::D, rsa_context::DP, rsa_context::DQ, rsa_context::len, mpi_add_mpi(), MPI_CHK, mpi_cmp_mpi(), mpi_exp_mod(), mpi_free(), mpi_init(), mpi_mod_mpi(), mpi_mul_mpi(), mpi_read_binary(), mpi_sub_mpi(), mpi_write_binary(), rsa_context::N, rsa_context::P, rsa_context::Q, rsa_context::QP, rsa_context::RN, rsa_context::RP, rsa_context::RQ, XYSSL_ERR_RSA_BAD_INPUT_DATA, and XYSSL_ERR_RSA_PRIVATE_FAILED.

Referenced by `main()`, `rsa_pkcs1_decrypt()`, `rsa_pkcs1_encrypt()`, `rsa_pkcs1_sign()`, and `rsa_pkcs1_verify()`.

5.107.3.11 `int rsa_public (rsa_context * ctx, unsigned char * input, unsigned char * output)`

Do an RSA public key operation.

Parameters

ctx RSA context
input input buffer
output output buffer

Returns

0 if successful, or an `XYSSL_ERR_RSA_XXX` error code

Note

This function does NOT take care of message padding. Also, be sure to set `input[0] = 0`.
 The input and output buffers must be large enough (eg. 128 bytes if RSA-1024 is used).

Definition at line 187 of file `rsa.c`.

References `rsa_context::E`, `rsa_context::len`, `MPI_CHK`, `mpi_cmp_mpi()`, `mpi_exp_mod()`, `mpi_free()`, `mpi_init()`, `mpi_read_binary()`, `mpi_write_binary()`, `rsa_context::N`, `rsa_context::RN`, `XYSSL_ERR_RSA_BAD_INPUT_DATA`, and `XYSSL_ERR_RSA_PUBLIC_FAILED`.

Referenced by `main()`, `rsa_pkcs1_decrypt()`, `rsa_pkcs1_encrypt()`, `rsa_pkcs1_sign()`, and `rsa_pkcs1_verify()`.

5.107.3.12 `int rsa_self_test (int verbose)`

Checksum routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 627 of file `rsa.c`.

References `rsa_context::D`, `rsa_context::DP`, `rsa_context::DQ`, `rsa_context::E`, `KEY_LEN`, `rsa_context::len`, `mpi_read_string()`, `rsa_context::N`, `rsa_context::P`, `PT_LEN`, `rsa_context::Q`, `rsa_context::QP`, `rsa_check_privkey()`, `rsa_check_pubkey()`, `RSA_D`, `RSA_DP`, `RSA_DQ`, `RSA_E`, `rsa_free()`, `RSA_N`, `RSA_P`, `rsa_pkcs1_decrypt()`, `rsa_pkcs1_encrypt()`, `rsa_pkcs1_sign()`, `rsa_pkcs1_verify()`, `RSA_PRIVATE`, `RSA_PT`, `RSA_PUBLIC`, `RSA_Q`, `RSA_QP`, `RSA_SHA1`, and `sha1()`.

Referenced by `main()`.

5.108 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/sha1.h File Reference

Data Structures

- struct [sha1_context](#)
SHA-1 context structure.

Functions

- void [sha1_starts](#) ([sha1_context](#) *ctx)
SHA-1 context setup.
- void [sha1_update](#) ([sha1_context](#) *ctx, unsigned char *input, int ilen)
SHA-1 process buffer.
- void [sha1_finish](#) ([sha1_context](#) *ctx, unsigned char output[20])
SHA-1 final digest.
- void [sha1](#) (unsigned char *input, int ilen, unsigned char output[20])
Output = SHA-1(input buffer).
- int [sha1_file](#) (char *path, unsigned char output[20])
Output = SHA-1(file contents).
- void [sha1_hmac_starts](#) ([sha1_context](#) *ctx, unsigned char *key, int keylen)
SHA-1 HMAC context setup.
- void [sha1_hmac_update](#) ([sha1_context](#) *ctx, unsigned char *input, int ilen)
SHA-1 HMAC process buffer.
- void [sha1_hmac_finish](#) ([sha1_context](#) *ctx, unsigned char output[20])
SHA-1 HMAC final digest.
- void [sha1_hmac](#) (unsigned char *key, int keylen, unsigned char *input, int ilen, unsigned char output[20])
Output = HMAC-SHA-1(hmac key, input buffer).
- int [sha1_self_test](#) (int verbose)
Checkup routine.

5.108.1 Detailed Description

Definition in file [sha1.h](#).

5.108.2 Function Documentation

5.108.2.1 void sha1 (unsigned char * *input*, int *ilen*, unsigned char *output*[20])

Output = SHA-1(*input* buffer).

Parameters

input buffer holding the data
ilen length of the input data
output SHA-1 checksum result

Definition at line 313 of file sha1.c.

References sha1_finish(), sha1_starts(), and sha1_update().

Referenced by main(), rsa_self_test(), sha1_hmac_starts(), ssl_calc_verify(), ssl_derive_keys(), ssl_mac_sha1(), ssl_parse_finished(), ssl_parse_server_key_exchange(), ssl_write_finished(), ssl_write_server_key_exchange(), and x509_hash().

5.108.2.2 int sha1_file (char * *path*, unsigned char *output*[20])

Output = SHA-1(*file* contents).

Parameters

path input file name
output SHA-1 checksum result

Returns

0 if successful, 1 if fopen failed, or 2 if fread failed

Definition at line 327 of file sha1.c.

References buf, f, sha1_finish(), sha1_starts(), and sha1_update().

Referenced by main(), and sha1_wrapper().

5.108.2.3 void sha1_finish (sha1_context * *ctx*, unsigned char *output*[20])

SHA-1 final digest.

Parameters

ctx SHA-1 context
output SHA-1 checksum result

Definition at line 284 of file sha1.c.

References PUT_ULONG_BE, sha1_padding, sha1_update(), sha1_context::state, and sha1_context::total.

Referenced by sha1(), sha1_file(), sha1_hmac_finish(), sha1_self_test(), ssl_calc_finished(), ssl_calc_verify(), ssl_derive_keys(), ssl_mac_sha1(), ssl_parse_server_key_exchange(), and ssl_write_server_key_exchange().

5.108.2.4 void sha1_hmac (unsigned char * *key*, int *keylen*, unsigned char * *input*, int *ilen*, unsigned char *output*[20])

Output = HMAC-SHA-1(hmac key, input buffer).

Parameters

key HMAC secret key
keylen length of the HMAC key
input buffer holding the data
ilen length of the input data
output HMAC-SHA-1 result

Definition at line 413 of file sha1.c.

References sha1_hmac_finish(), sha1_hmac_starts(), and sha1_hmac_update().

Referenced by ssl_decrypt_buf(), ssl_encrypt_buf(), and tls1_prf().

5.108.2.5 void sha1_hmac_finish (sha1_context * *ctx*, unsigned char *output*[20])

SHA-1 HMAC final digest.

Parameters

ctx HMAC context
output SHA-1 HMAC checksum result

Definition at line 397 of file sha1.c.

References sha1_context::opad, sha1_finish(), sha1_starts(), and sha1_update().

Referenced by sha1_hmac(), and sha1_self_test().

5.108.2.6 void sha1_hmac_starts (sha1_context * *ctx*, unsigned char * *key*, int *keylen*)

SHA-1 HMAC context setup.

Parameters

ctx HMAC context to be initialized
key HMAC secret key
keylen length of the HMAC key

Definition at line 359 of file sha1.c.

References sha1_context::ipad, sha1_context::opad, sha1(), sha1_starts(), and sha1_update().

Referenced by sha1_hmac(), and sha1_self_test().

5.108.2.7 void sha1_hmac_update (sha1_context * *ctx*, unsigned char * *input*, int *ilen*)

SHA-1 HMAC process buffer.

Parameters

ctx HMAC context

input buffer holding the data

ilen length of the input data

Definition at line 389 of file sha1.c.

References sha1_update().

Referenced by sha1_hmac(), and sha1_self_test().

5.108.2.8 int sha1_self_test (int *verbose*)

Checksum routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 521 of file sha1.c.

References buf, sha1_finish(), sha1_hmac_finish(), sha1_hmac_starts(), sha1_hmac_test_buf, sha1_hmac_test_buflen, sha1_hmac_test_key, sha1_hmac_test_keylen, sha1_hmac_test_sum, sha1_hmac_update(), sha1_starts(), sha1_test_buf, sha1_test_buflen, sha1_test_sum, and sha1_update().

Referenced by main().

5.108.2.9 void sha1_starts (sha1_context * *ctx*)

SHA-1 context setup.

Parameters

ctx context to be initialized

Definition at line 61 of file sha1.c.

References sha1_context::state, and sha1_context::total.

Referenced by sha1(), sha1_file(), sha1_hmac_finish(), sha1_hmac_starts(), sha1_self_test(), ssl_calc_finished(), ssl_calc_verify(), ssl_derive_keys(), ssl_init(), ssl_mac_sha1(), ssl_parse_server_key_exchange(), and ssl_write_server_key_exchange().

5.108.2.10 void sha1_update (sha1_context * *ctx*, unsigned char * *input*, int *ilen*)

SHA-1 process buffer.

Parameters

ctx SHA-1 context

input buffer holding the data

ilen length of the input data

Definition at line 232 of file sha1.c.

References sha1_context::buffer, sha1_process(), and sha1_context::total.

Referenced by sha1(), sha1_file(), sha1_finish(), sha1_hmac_finish(), sha1_hmac_starts(), sha1_hmac_update(), sha1_self_test(), ssl_calc_finished(), ssl_calc_verify(), ssl_derive_keys(), ssl_mac_sha1(), ssl_parse_client_hello(), ssl_parse_server_key_exchange(), ssl_read_record(), ssl_write_record(), and ssl_write_server_key_exchange().

5.109 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/sha2.h File Reference

Data Structures

- struct [sha2_context](#)
SHA-256 context structure.

Functions

- void [sha2_starts](#) ([sha2_context](#) *ctx, [int](#) is224)
SHA-256 context setup.
- void [sha2_update](#) ([sha2_context](#) *ctx, unsigned char *input, [int](#) ilen)
SHA-256 process buffer.
- void [sha2_finish](#) ([sha2_context](#) *ctx, unsigned char output[32])
SHA-256 final digest.
- void [sha2](#) (unsigned char *input, [int](#) ilen, unsigned char output[32], [int](#) is224)
Output = SHA-256(input buffer).
- [int](#) [sha2_file](#) (char *path, unsigned char output[32], [int](#) is224)
Output = SHA-256(file contents).
- void [sha2_hmac_starts](#) ([sha2_context](#) *ctx, unsigned char *key, [int](#) keylen, [int](#) is224)
SHA-256 HMAC context setup.
- void [sha2_hmac_update](#) ([sha2_context](#) *ctx, unsigned char *input, [int](#) ilen)
SHA-256 HMAC process buffer.
- void [sha2_hmac_finish](#) ([sha2_context](#) *ctx, unsigned char output[32])
SHA-256 HMAC final digest.
- void [sha2_hmac](#) (unsigned char *key, [int](#) keylen, unsigned char *input, [int](#) ilen, unsigned char output[32], [int](#) is224)
Output = HMAC-SHA-256(hmac key, input buffer).
- [int](#) [sha2_self_test](#) ([int](#) verbose)
Checkup routine.

5.109.1 Detailed Description

Definition in file [sha2.h](#).

5.109.2 Function Documentation

5.109.2.1 void sha2 (unsigned char * *input*, int *ilen*, unsigned char *output*[32], int *is224*)

Output = SHA-256(input buffer).

Parameters

input buffer holding the data
ilen length of the input data
output SHA-224/256 checksum result
is224 0 = use SHA256, 1 = use SHA224

Definition at line 314 of file sha2.c.

References sha2_finish(), sha2_starts(), and sha2_update().

Referenced by main(), and sha2_hmac_starts().

5.109.2.2 int sha2_file (char * *path*, unsigned char *output*[32], int *is224*)

Output = SHA-256(file contents).

Parameters

path input file name
output SHA-224/256 checksum result
is224 0 = use SHA256, 1 = use SHA224

Returns

0 if successful, 1 if fopen failed, or 2 if fread failed

Definition at line 329 of file sha2.c.

References buf, f, sha2_finish(), sha2_starts(), and sha2_update().

Referenced by sha2_wrapper().

5.109.2.3 void sha2_finish (sha2_context * *ctx*, unsigned char *output*[32])

SHA-256 final digest.

Parameters

ctx SHA-256 context
output SHA-224/256 checksum result

Definition at line 280 of file sha2.c.

References sha2_context::is224, PUT_ULONG_BE, sha2_padding, sha2_update(), sha2_context::state, and sha2_context::total.

Referenced by aes_en_de(), main(), sha2(), sha2_file(), sha2_hmac_finish(), and sha2_self_test().

5.109.2.4 `void sha2_hmac (unsigned char * key, int keylen, unsigned char * input, int ilen, unsigned char output[32], int is224)`

Output = HMAC-SHA-256(hmac key, input buffer).

Parameters

key HMAC secret key
keylen length of the HMAC key
input buffer holding the data
ilen length of the input data
output HMAC-SHA-224/256 result
is224 0 = use SHA256, 1 = use SHA224

Definition at line 420 of file sha2.c.

References sha2_hmac_finish(), sha2_hmac_starts(), and sha2_hmac_update().

5.109.2.5 `void sha2_hmac_finish (sha2_context * ctx, unsigned char output[32])`

SHA-256 HMAC final digest.

Parameters

ctx HMAC context
output SHA-224/256 HMAC checksum result

Definition at line 400 of file sha2.c.

References sha2_context::is224, sha2_context::opad, sha2_finish(), sha2_starts(), and sha2_update().

Referenced by aes_en_de(), main(), sha2_hmac(), and sha2_self_test().

5.109.2.6 `void sha2_hmac_starts (sha2_context * ctx, unsigned char * key, int keylen, int is224)`

SHA-256 HMAC context setup.

Parameters

ctx HMAC context to be initialized
key HMAC secret key
keylen length of the HMAC key
is224 0 = use SHA256, 1 = use SHA224

Definition at line 361 of file sha2.c.

References sha2_context::ipad, sha2_context::opad, sha2(), sha2_starts(), and sha2_update().

Referenced by aes_en_de(), main(), sha2_hmac(), and sha2_self_test().

5.109.2.7 void sha2_hmac_update (sha2_context * *ctx*, unsigned char * *input*, int *ilen*)

SHA-256 HMAC process buffer.

Parameters

ctx HMAC context

input buffer holding the data

ilen length of the input data

Definition at line 392 of file sha2.c.

References sha2_update().

Referenced by aes_en_de(), main(), sha2_hmac(), and sha2_self_test().

5.109.2.8 int sha2_self_test (int *verbose*)

Checksum routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 599 of file sha2.c.

References buf, sha2_finish(), sha2_hmac_finish(), sha2_hmac_starts(), sha2_hmac_test_buf, sha2_hmac_test_buflen, sha2_hmac_test_key, sha2_hmac_test_keylen, sha2_hmac_test_sum, sha2_hmac_update(), sha2_starts(), sha2_test_buf, sha2_test_buflen, sha2_test_sum, and sha2_update().

Referenced by main().

5.109.2.9 void sha2_starts (sha2_context * *ctx*, int *is224*)

SHA-256 context setup.

Parameters

ctx context to be initialized

is224 0 = use SHA256, 1 = use SHA224

Definition at line 61 of file sha2.c.

References sha2_context::is224, sha2_context::state, and sha2_context::total.

Referenced by aes_en_de(), main(), sha2(), sha2_file(), sha2_hmac_finish(), sha2_hmac_starts(), and sha2_self_test().

5.109.2.10 void sha2_update (sha2_context * *ctx*, unsigned char * *input*, int *ilen*)

SHA-256 process buffer.

Parameters

ctx SHA-256 context

input buffer holding the data

ilen length of the input data

Definition at line 228 of file sha2.c.

References sha2_context::buffer, sha2_process(), and sha2_context::total.

Referenced by aes_en_de(), main(), sha2(), sha2_file(), sha2_finish(), sha2_hmac_finish(), sha2_hmac_starts(), sha2_hmac_update(), and sha2_self_test().

5.110 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/sha4.h File Reference

Data Structures

- struct [sha4_context](#)
SHA-512 context structure.

Defines

- #define [UL64](#)(x) x##ULL
- #define [int64](#) long long

Functions

- void [sha4_starts](#) ([sha4_context](#) *ctx, [int](#) is384)
SHA-512 context setup.
- void [sha4_update](#) ([sha4_context](#) *ctx, unsigned char *input, [int](#) ilen)
SHA-512 process buffer.
- void [sha4_finish](#) ([sha4_context](#) *ctx, unsigned char output[64])
SHA-512 final digest.
- void [sha4](#) (unsigned char *input, [int](#) ilen, unsigned char output[64], [int](#) is384)
Output = SHA-512(input buffer).
- [int](#) [sha4_file](#) (char *path, unsigned char output[64], [int](#) is384)
Output = SHA-512(file contents).
- void [sha4_hmac_starts](#) ([sha4_context](#) *ctx, unsigned char *key, [int](#) keylen, [int](#) is384)
SHA-512 HMAC context setup.
- void [sha4_hmac_update](#) ([sha4_context](#) *ctx, unsigned char *input, [int](#) ilen)
SHA-512 HMAC process buffer.
- void [sha4_hmac_finish](#) ([sha4_context](#) *ctx, unsigned char output[64])
SHA-512 HMAC final digest.
- void [sha4_hmac](#) (unsigned char *key, [int](#) keylen, unsigned char *input, [int](#) ilen, unsigned char output[64], [int](#) is384)
Output = HMAC-SHA-512(hmac key, input buffer).
- [int](#) [sha4_self_test](#) ([int](#) verbose)
Checkup routine.

5.110.1 Detailed Description

Definition in file [sha4.h](#).

5.110.2 Define Documentation

5.110.2.1 #define int64 long long

Definition at line 12 of file sha4.h.

Referenced by sha4_finish(), sha4_process(), and sha4_update().

5.110.2.2 #define UL64(x) x##ULL

Definition at line 11 of file sha4.h.

Referenced by sha4_starts().

5.110.3 Function Documentation

5.110.3.1 void sha4 (unsigned char * *input*, int *ilen*, unsigned char *output*[64], int *is384*)

Output = SHA-512(input buffer).

Parameters

input buffer holding the data
ilen length of the input data
output SHA-384/512 checksum result
is384 0 = use SHA512, 1 = use SHA384

Definition at line 312 of file sha4.c.

References sha4_finish(), sha4_starts(), and sha4_update().

Referenced by sha4_hmac_starts().

5.110.3.2 int sha4_file (char * *path*, unsigned char *output*[64], int *is384*)

Output = SHA-512(file contents).

Parameters

path input file name
output SHA-384/512 checksum result
is384 0 = use SHA512, 1 = use SHA384

Returns

0 if successful, 1 if fopen failed, or 2 if fread failed

Definition at line 327 of file sha4.c.

References buf, f, sha4_finish(), sha4_starts(), and sha4_update().

5.110.3.3 void sha4_finish (sha4_context * ctx, unsigned char output[64])

SHA-512 final digest.

Parameters

ctx SHA-512 context

output SHA-384/512 checksum result

Definition at line 276 of file sha4.c.

References int, int64, sha4_context::is384, PUT_UINT64_BE, sha4_padding, sha4_update(), sha4_context::state, and sha4_context::total.

Referenced by sha4(), sha4_file(), sha4_hmac_finish(), and sha4_self_test().

5.110.3.4 void sha4_hmac (unsigned char * key, int keylen, unsigned char * input, int ilen, unsigned char output[64], int is384)

Output = HMAC-SHA-512(hmac key, input buffer).

Parameters

key HMAC secret key

keylen length of the HMAC key

input buffer holding the data

ilen length of the input data

output HMAC-SHA-384/512 result

is384 0 = use SHA512, 1 = use SHA384

Definition at line 419 of file sha4.c.

References sha4_hmac_finish(), sha4_hmac_starts(), and sha4_hmac_update().

5.110.3.5 void sha4_hmac_finish (sha4_context * ctx, unsigned char output[64])

SHA-512 HMAC final digest.

Parameters

ctx HMAC context

output SHA-384/512 HMAC checksum result

Definition at line 399 of file sha4.c.

References sha4_context::is384, sha4_context::opad, sha4_finish(), sha4_starts(), and sha4_update().

Referenced by sha4_hmac(), and sha4_self_test().

5.110.3.6 void sha4_hmac_starts (sha4_context * ctx, unsigned char * key, int keylen, int is384)

SHA-512 HMAC context setup.

Parameters

ctx HMAC context to be initialized
is384 0 = use SHA512, 1 = use SHA384
key HMAC secret key
keylen length of the HMAC key

Definition at line 359 of file sha4.c.

References sha4_context::ipad, sha4_context::opad, sha4(), sha4_starts(), and sha4_update().

Referenced by sha4_hmac(), and sha4_self_test().

5.110.3.7 void sha4_hmac_update (sha4_context * ctx, unsigned char * input, int ilen)

SHA-512 HMAC process buffer.

Parameters

ctx HMAC context
input buffer holding the data
ilen length of the input data

Definition at line 390 of file sha4.c.

References sha4_update().

Referenced by sha4_hmac(), and sha4_self_test().

5.110.3.8 int sha4_self_test (int verbose)

Checksum routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 654 of file sha4.c.

References buf, sha4_finish(), sha4_hmac_finish(), sha4_hmac_starts(), sha4_hmac_test_buf, sha4_hmac_test_buflen, sha4_hmac_test_key, sha4_hmac_test_keylen, sha4_hmac_test_sum, sha4_hmac_update(), sha4_starts(), sha4_test_buf, sha4_test_buflen, sha4_test_sum, and sha4_update().

Referenced by main().

5.110.3.9 void sha4_starts (sha4_context * ctx, int is384)

SHA-512 context setup.

Parameters

ctx context to be initialized

is384 0 = use SHA512, 1 = use SHA384

Definition at line 116 of file sha4.c.

References sha4_context::is384, sha4_context::state, sha4_context::total, and UL64.

Referenced by sha4(), sha4_file(), sha4_hmac_finish(), sha4_hmac_starts(), and sha4_self_test().

5.110.3.10 void sha4_update (sha4_context * ctx, unsigned char * input, int ilen)

SHA-512 process buffer.

Parameters

ctx SHA-512 context

input buffer holding the data

ilen length of the input data

Definition at line 221 of file sha4.c.

References sha4_context::buffer, int, int64, sha4_process(), and sha4_context::total.

Referenced by sha4(), sha4_file(), sha4_finish(), sha4_hmac_finish(), sha4_hmac_starts(), sha4_hmac_update(), and sha4_self_test().

5.111 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/ssl.h File Reference

```
#include <time.h>
#include "xyssl/net.h"
#include "xyssl/dhm.h"
#include "xyssl/rsa.h"
#include "xyssl/md5.h"
#include "xyssl/sha1.h"
#include "xyssl/x509.h"
```

Data Structures

- struct [_ssl_session](#)
- struct [_ssl_context](#)

Defines

- #define [XYSSL_ERR_SSL_FEATURE_UNAVAILABLE](#) -0x1000
- #define [XYSSL_ERR_SSL_BAD_INPUT_DATA](#) -0x1800
- #define [XYSSL_ERR_SSL_INVALID_MAC](#) -0x2000
- #define [XYSSL_ERR_SSL_INVALID_RECORD](#) -0x2800
- #define [XYSSL_ERR_SSL_INVALID_MODULUS_SIZE](#) -0x3000
- #define [XYSSL_ERR_SSL_UNKNOWN_CIPHER](#) -0x3800
- #define [XYSSL_ERR_SSL_NO_CIPHER_CHOSEN](#) -0x4000
- #define [XYSSL_ERR_SSL_NO_SESSION_FOUND](#) -0x4800
- #define [XYSSL_ERR_SSL_NO_CLIENT_CERTIFICATE](#) -0x5000
- #define [XYSSL_ERR_SSL_CERTIFICATE_TOO_LARGE](#) -0x5800
- #define [XYSSL_ERR_SSL_CERTIFICATE_REQUIRED](#) -0x6000
- #define [XYSSL_ERR_SSL_PRIVATE_KEY_REQUIRED](#) -0x6800
- #define [XYSSL_ERR_SSL_CA_CHAIN_REQUIRED](#) -0x7000
- #define [XYSSL_ERR_SSL_UNEXPECTED_MESSAGE](#) -0x7800
- #define [XYSSL_ERR_SSL_FATAL_ALERT_MESSAGE](#) -0x8000
- #define [XYSSL_ERR_SSL_PEER_VERIFY_FAILED](#) -0x8800
- #define [XYSSL_ERR_SSL_PEER_CLOSE_NOTIFY](#) -0x9000
- #define [XYSSL_ERR_SSL_BAD_HS_CLIENT_HELLO](#) -0x9800
- #define [XYSSL_ERR_SSL_BAD_HS_SERVER_HELLO](#) -0xA000
- #define [XYSSL_ERR_SSL_BAD_HS_CERTIFICATE](#) -0xA800
- #define [XYSSL_ERR_SSL_BAD_HS_CERTIFICATE_REQUEST](#) -0xB000
- #define [XYSSL_ERR_SSL_BAD_HS_SERVER_KEY_EXCHANGE](#) -0xB800
- #define [XYSSL_ERR_SSL_BAD_HS_SERVER_HELLO_DONE](#) -0xC000
- #define [XYSSL_ERR_SSL_BAD_HS_CLIENT_KEY_EXCHANGE](#) -0xC800
- #define [XYSSL_ERR_SSL_BAD_HS_CERTIFICATE_VERIFY](#) -0xD000
- #define [XYSSL_ERR_SSL_BAD_HS_CHANGE_CIPHER_SPEC](#) -0xD800
- #define [XYSSL_ERR_SSL_BAD_HS_FINISHED](#) -0xE000
- #define [SSL_MAJOR_VERSION_3](#) 3

- #define [SSL_MINOR_VERSION_0](#) 0
- #define [SSL_MINOR_VERSION_1](#) 1
- #define [SSL_MINOR_VERSION_2](#) 2
- #define [SSL_IS_CLIENT](#) 0
- #define [SSL_IS_SERVER](#) 1
- #define [SSL_COMPRESS_NULL](#) 0
- #define [SSL_VERIFY_NONE](#) 0
- #define [SSL_VERIFY_OPTIONAL](#) 1
- #define [SSL_VERIFY_REQUIRED](#) 2
- #define [SSL_MAX_CONTENT_LEN](#) 16384
- #define [SSL_BUFFER_LEN](#) (SSL_MAX_CONTENT_LEN + 512)
- #define [SSL_RSA_RC4_128_MD5](#) 4
- #define [SSL_RSA_RC4_128_SHA](#) 5
- #define [SSL_RSA_DES_168_SHA](#) 10
- #define [SSL_EDH_RSA_DES_168_SHA](#) 22
- #define [SSL_RSA_AES_128_SHA](#) 47
- #define [SSL_RSA_AES_256_SHA](#) 53
- #define [SSL_EDH_RSA_AES_256_SHA](#) 57
- #define [SSL_MSG_CHANGE_CIPHER_SPEC](#) 20
- #define [SSL_MSG_ALERT](#) 21
- #define [SSL_MSG_HANDSHAKE](#) 22
- #define [SSL_MSG_APPLICATION_DATA](#) 23
- #define [SSL_ALERT_CLOSE_NOTIFY](#) 0
- #define [SSL_ALERT_WARNING](#) 1
- #define [SSL_ALERT_FATAL](#) 2
- #define [SSL_ALERT_NO_CERTIFICATE](#) 41
- #define [SSL_HS_HELLO_REQUEST](#) 0
- #define [SSL_HS_CLIENT_HELLO](#) 1
- #define [SSL_HS_SERVER_HELLO](#) 2
- #define [SSL_HS_CERTIFICATE](#) 11
- #define [SSL_HS_SERVER_KEY_EXCHANGE](#) 12
- #define [SSL_HS_CERTIFICATE_REQUEST](#) 13
- #define [SSL_HS_SERVER_HELLO_DONE](#) 14
- #define [SSL_HS_CERTIFICATE_VERIFY](#) 15
- #define [SSL_HS_CLIENT_KEY_EXCHANGE](#) 16
- #define [SSL_HS_FINISHED](#) 20
- #define [TLS_EXT_SERVERNAME](#) 0
- #define [TLS_EXT_SERVERNAME_HOSTNAME](#) 0

Typedefs

- typedef struct [_ssl_session](#) [ssl_session](#)
- typedef struct [_ssl_context](#) [ssl_context](#)

Enumerations

- enum `ssl_states` {
`SSL_HELLO_REQUEST`, `SSL_CLIENT_HELLO`, `SSL_SERVER_HELLO`, `SSL_SERVER_CERTIFICATE`,
`SSL_SERVER_KEY_EXCHANGE`, `SSL_CERTIFICATE_REQUEST`, `SSL_SERVER_HELLO_DONE`, `SSL_CLIENT_CERTIFICATE`,
`SSL_CLIENT_KEY_EXCHANGE`, `SSL_CERTIFICATE_VERIFY`, `SSL_CLIENT_CHANGE_CIPHER_SPEC`, `SSL_CLIENT_FINISHED`,
`SSL_SERVER_CHANGE_CIPHER_SPEC`, `SSL_SERVER_FINISHED`, `SSL_FLUSH_BUFFERS`, `SSL_HANDSHAKE_OVER` }

Functions

- int `ssl_init` (`ssl_context` *ssl)
Initialize an SSL context.
- void `ssl_set_endpoint` (`ssl_context` *ssl, int endpoint)
Set the current endpoint type.
- void `ssl_set_authmode` (`ssl_context` *ssl, int authmode)
Set the certificate verification mode.
- void `ssl_set_rng` (`ssl_context` *ssl, int(*f_rng)(void *), void *p_rng)
Set the random number generator callback.
- void `ssl_set_dbg` (`ssl_context` *ssl, void(*f_dbg)(void *, int, char *), void *p_dbg)
Set the debug callback.
- void `ssl_set_bio` (`ssl_context` *ssl, int(*f_rcv)(void *, unsigned char *, int), void *p_rcv, int(*f_send)(void *, unsigned char *, int), void *p_send)
Set the underlying BIO read and write callbacks.
- void `ssl_set_scb` (`ssl_context` *ssl, int(*s_get)(`ssl_context` *), int(*s_set)(`ssl_context` *))
Set the session callbacks (server-side only).
- void `ssl_set_session` (`ssl_context` *ssl, int resume, int timeout, `ssl_session` *session)
Set the session resuming flag, timeout and data.
- void `ssl_set_ciphers` (`ssl_context` *ssl, int *ciphers)
Set the list of allowed ciphersuites.
- void `ssl_set_ca_chain` (`ssl_context` *ssl, `x509_cert` *ca_chain, char *peer_cn)
Set the data required to verify peer certificate.
- void `ssl_set_own_cert` (`ssl_context` *ssl, `x509_cert` *own_cert, `rsa_context` *rsa_key)
Set own certificate and private key.
- int `ssl_set_dh_param` (`ssl_context` *ssl, char *dhm_P, char *dhm_G)

Set the Diffie-Hellman public P and G values, read as hexadecimal strings (server-side only).

- `int ssl_set_hostname (ssl_context *ssl, char *hostname)`
Set hostname for ServerName TLS Extension.
- `int ssl_get_bytes_avail (ssl_context *ssl)`
Return the number of data bytes available to read.
- `int ssl_get_verify_result (ssl_context *ssl)`
Return the result of the certificate verification.
- `char * ssl_get_cipher (ssl_context *ssl)`
Return the name of the current cipher.
- `int ssl_handshake (ssl_context *ssl)`
Perform the SSL handshake.
- `int ssl_read (ssl_context *ssl, unsigned char *buf, int len)`
Read at most 'len' application data bytes.
- `int ssl_write (ssl_context *ssl, unsigned char *buf, int len)`
Write exactly 'len' application data bytes.
- `int ssl_close_notify (ssl_context *ssl)`
Notify the peer that the connection is being closed.
- `void ssl_free (ssl_context *ssl)`
Free an SSL context.
- `int ssl_handshake_client (ssl_context *ssl)`
- `int ssl_handshake_server (ssl_context *ssl)`
- `int ssl_derive_keys (ssl_context *ssl)`
- `void ssl_calc_verify (ssl_context *ssl, unsigned char hash[36])`
- `int ssl_read_record (ssl_context *ssl)`
- `int ssl_fetch_input (ssl_context *ssl, int nb_want)`
- `int ssl_write_record (ssl_context *ssl)`
- `int ssl_flush_output (ssl_context *ssl)`
- `int ssl_parse_certificate (ssl_context *ssl)`
- `int ssl_write_certificate (ssl_context *ssl)`
- `int ssl_parse_change_cipher_spec (ssl_context *ssl)`
- `int ssl_write_change_cipher_spec (ssl_context *ssl)`
- `int ssl_parse_finished (ssl_context *ssl)`
- `int ssl_write_finished (ssl_context *ssl)`

Variables

- `int ssl_default_ciphers []`

5.111.1 Detailed Description

Definition in file [ssl.h](#).

5.111.2 Define Documentation

5.111.2.1 **#define SSL_ALERT_CLOSE_NOTIFY 0**

Definition at line 87 of file [ssl.h](#).

Referenced by [ssl_close_notify\(\)](#), and [ssl_read_record\(\)](#).

5.111.2.2 **#define SSL_ALERT_FATAL 2**

Definition at line 89 of file [ssl.h](#).

Referenced by [ssl_read_record\(\)](#).

5.111.2.3 **#define SSL_ALERT_NO_CERTIFICATE 41**

Definition at line 90 of file [ssl.h](#).

Referenced by [ssl_parse_certificate\(\)](#), and [ssl_write_certificate\(\)](#).

5.111.2.4 **#define SSL_ALERT_WARNING 1**

Definition at line 88 of file [ssl.h](#).

Referenced by [ssl_close_notify\(\)](#), [ssl_parse_certificate\(\)](#), [ssl_read_record\(\)](#), and [ssl_write_certificate\(\)](#).

5.111.2.5 **#define SSL_BUFFER_LEN (SSL_MAX_CONTENT_LEN + 512)**

Definition at line 66 of file [ssl.h](#).

Referenced by [ssl_free\(\)](#), and [ssl_init\(\)](#).

5.111.2.6 **#define SSL_COMPRESS_NULL 0**

Definition at line 54 of file [ssl.h](#).

Referenced by [ssl_parse_server_hello\(\)](#), [ssl_write_client_hello\(\)](#), and [ssl_write_server_hello\(\)](#).

5.111.2.7 **#define SSL_EDH_RSA_AES_256_SHA 57**

Definition at line 77 of file [ssl.h](#).

Referenced by [main\(\)](#), [ssl_derive_keys\(\)](#), [ssl_get_cipher\(\)](#), [ssl_parse_client_key_exchange\(\)](#), [ssl_parse_server_key_exchange\(\)](#), [ssl_write_client_key_exchange\(\)](#), and [ssl_write_server_key_exchange\(\)](#).

5.111.2.8 #define SSL_EDH_RSA_DES_168_SHA 22

Definition at line 74 of file ssl.h.

Referenced by main(), ssl_derive_keys(), ssl_get_cipher(), ssl_parse_client_key_exchange(), ssl_parse_server_key_exchange(), ssl_write_client_key_exchange(), and ssl_write_server_key_exchange().

5.111.2.9 #define SSL_HS_CERTIFICATE 11

Definition at line 95 of file ssl.h.

Referenced by ssl_parse_certificate(), and ssl_write_certificate().

5.111.2.10 #define SSL_HS_CERTIFICATE_REQUEST 13

Definition at line 97 of file ssl.h.

Referenced by ssl_parse_certificate_request(), and ssl_write_certificate_request().

5.111.2.11 #define SSL_HS_CERTIFICATE_VERIFY 15

Definition at line 99 of file ssl.h.

Referenced by ssl_parse_certificate_verify(), and ssl_write_certificate_verify().

5.111.2.12 #define SSL_HS_CLIENT_HELLO 1

Definition at line 93 of file ssl.h.

Referenced by ssl_parse_client_hello(), and ssl_write_client_hello().

5.111.2.13 #define SSL_HS_CLIENT_KEY_EXCHANGE 16

Definition at line 100 of file ssl.h.

Referenced by ssl_parse_client_key_exchange(), and ssl_write_client_key_exchange().

5.111.2.14 #define SSL_HS_FINISHED 20

Definition at line 101 of file ssl.h.

Referenced by ssl_parse_finished(), and ssl_write_finished().

5.111.2.15 #define SSL_HS_HELLO_REQUEST 0

Definition at line 92 of file ssl.h.

5.111.2.16 #define SSL_HS_SERVER_HELLO 2

Definition at line 94 of file ssl.h.

Referenced by ssl_parse_server_hello(), and ssl_write_server_hello().

5.111.2.17 #define SSL_HS_SERVER_HELLO_DONE 14

Definition at line 98 of file ssl.h.

Referenced by ssl_parse_server_hello_done(), and ssl_write_server_hello_done().

5.111.2.18 #define SSL_HS_SERVER_KEY_EXCHANGE 12

Definition at line 96 of file ssl.h.

Referenced by ssl_parse_server_key_exchange(), and ssl_write_server_key_exchange().

5.111.2.19 #define SSL_IS_CLIENT 0

Definition at line 52 of file ssl.h.

Referenced by main(), ssl_calc_finished(), ssl_derive_keys(), ssl_handshake(), ssl_parse_finished(), ssl_test(), ssl_write_certificate(), and ssl_write_finished().

5.111.2.20 #define SSL_IS_SERVER 1

Definition at line 53 of file ssl.h.

Referenced by main(), ssl_handshake(), ssl_parse_certificate(), ssl_parse_finished(), and ssl_test().

5.111.2.21 #define SSL_MAJOR_VERSION_3 3

Definition at line 47 of file ssl.h.

Referenced by ssl_parse_client_hello(), ssl_parse_server_hello(), and ssl_write_client_hello().

5.111.2.22 #define SSL_MAX_CONTENT_LEN 16384

Definition at line 60 of file ssl.h.

Referenced by ssl_read_record(), ssl_write(), and ssl_write_certificate().

5.111.2.23 #define SSL_MINOR_VERSION_0 0

SSL v3.0

Definition at line 48 of file ssl.h.

Referenced by ssl_calc_finished(), ssl_calc_verify(), ssl_decrypt_buf(), ssl_derive_keys(), ssl_encrypt_buf(), ssl_parse_certificate(), ssl_parse_client_key_exchange(), ssl_parse_finished(), ssl_parse_server_hello(), ssl_read_record(), ssl_write_certificate(), ssl_write_client_hello(), ssl_write_client_key_exchange(), and ssl_write_finished().

5.111.2.24 #define SSL_MINOR_VERSION_1 1

TLS v1.0

Definition at line 49 of file ssl.h.

Referenced by `ssl_parse_client_hello()`, `ssl_parse_server_hello()`, `ssl_read_record()`, and `ssl_write_client_hello()`.

5.111.2.25 `#define SSL_MINOR_VERSION_2 2`

TLS v1.1

Definition at line 50 of file `ssl.h`.

5.111.2.26 `#define SSL_MSG_ALERT 21`

Definition at line 83 of file `ssl.h`.

Referenced by `ssl_close_notify()`, `ssl_parse_certificate()`, `ssl_read_record()`, and `ssl_write_certificate()`.

5.111.2.27 `#define SSL_MSG_APPLICATION_DATA 23`

Definition at line 85 of file `ssl.h`.

Referenced by `ssl_read()`, and `ssl_write()`.

5.111.2.28 `#define SSL_MSG_CHANGE_CIPHER_SPEC 20`

Definition at line 82 of file `ssl.h`.

Referenced by `ssl_parse_change_cipher_spec()`, and `ssl_write_change_cipher_spec()`.

5.111.2.29 `#define SSL_MSG_HANDSHAKE 22`

Definition at line 84 of file `ssl.h`.

Referenced by `ssl_parse_certificate()`, `ssl_parse_certificate_request()`, `ssl_parse_certificate_verify()`, `ssl_parse_client_hello()`, `ssl_parse_client_key_exchange()`, `ssl_parse_finished()`, `ssl_parse_server_hello()`, `ssl_parse_server_hello_done()`, `ssl_parse_server_key_exchange()`, `ssl_read_record()`, `ssl_write_certificate()`, `ssl_write_certificate_request()`, `ssl_write_certificate_verify()`, `ssl_write_client_hello()`, `ssl_write_client_key_exchange()`, `ssl_write_finished()`, `ssl_write_record()`, `ssl_write_server_hello()`, `ssl_write_server_hello_done()`, and `ssl_write_server_key_exchange()`.

5.111.2.30 `#define SSL_RSA_AES_128_SHA 47`

Definition at line 75 of file `ssl.h`.

Referenced by `main()`, `ssl_derive_keys()`, and `ssl_get_cipher()`.

5.111.2.31 `#define SSL_RSA_AES_256_SHA 53`

Definition at line 76 of file `ssl.h`.

Referenced by `main()`, `ssl_derive_keys()`, and `ssl_get_cipher()`.

5.111.2.32 #define SSL_RSA_DES_168_SHA 10

Definition at line 73 of file ssl.h.

Referenced by main(), ssl_derive_keys(), and ssl_get_cipher().

5.111.2.33 #define SSL_RSA_RC4_128_MD5 4

Definition at line 71 of file ssl.h.

Referenced by main(), ssl_derive_keys(), and ssl_get_cipher().

5.111.2.34 #define SSL_RSA_RC4_128_SHA 5

Definition at line 72 of file ssl.h.

Referenced by main(), ssl_derive_keys(), and ssl_get_cipher().

5.111.2.35 #define SSL_VERIFY_NONE 0

Definition at line 56 of file ssl.h.

Referenced by main(), ssl_parse_certificate(), ssl_test(), and ssl_write_certificate_request().

5.111.2.36 #define SSL_VERIFY_OPTIONAL 1

Definition at line 57 of file ssl.h.

Referenced by main(), and ssl_parse_certificate().

5.111.2.37 #define SSL_VERIFY_REQUIRED 2

Definition at line 58 of file ssl.h.

Referenced by ssl_parse_certificate().

5.111.2.38 #define TLS_EXT_SERVERNAME 0

Definition at line 106 of file ssl.h.

Referenced by ssl_write_client_hello().

5.111.2.39 #define TLS_EXT_SERVERNAME_HOSTNAME 0

Definition at line 107 of file ssl.h.

Referenced by ssl_write_client_hello().

5.111.2.40 #define XYSSL_ERR_SSL_BAD_HS_CERTIFICATE -0xA800

Definition at line 35 of file ssl.h.

Referenced by ssl_parse_certificate().

5.111.2.41 #define XYSSL_ERR_SSL_BAD_HS_CERTIFICATE_REQUEST -0xB000

Definition at line 36 of file ssl.h.

5.111.2.42 #define XYSSL_ERR_SSL_BAD_HS_CERTIFICATE_VERIFY -0xD000

Definition at line 40 of file ssl.h.

Referenced by ssl_parse_certificate_verify().

5.111.2.43 #define XYSSL_ERR_SSL_BAD_HS_CHANGE_CIPHER_SPEC -0xD800

Definition at line 41 of file ssl.h.

Referenced by ssl_parse_change_cipher_spec().

5.111.2.44 #define XYSSL_ERR_SSL_BAD_HS_CLIENT_HELLO -0x9800

Definition at line 33 of file ssl.h.

Referenced by ssl_parse_client_hello().

5.111.2.45 #define XYSSL_ERR_SSL_BAD_HS_CLIENT_KEY_EXCHANGE -0xC800

Definition at line 39 of file ssl.h.

Referenced by ssl_parse_client_key_exchange().

5.111.2.46 #define XYSSL_ERR_SSL_BAD_HS_FINISHED -0xE000

Definition at line 42 of file ssl.h.

Referenced by ssl_parse_finished().

5.111.2.47 #define XYSSL_ERR_SSL_BAD_HS_SERVER_HELLO -0xA000

Definition at line 34 of file ssl.h.

Referenced by ssl_parse_server_hello().

5.111.2.48 #define XYSSL_ERR_SSL_BAD_HS_SERVER_HELLO_DONE -0xC000

Definition at line 38 of file ssl.h.

Referenced by ssl_parse_server_hello_done().

5.111.2.49 #define XYSSL_ERR_SSL_BAD_HS_SERVER_KEY_EXCHANGE -0xB800

Definition at line 37 of file ssl.h.

Referenced by ssl_parse_server_key_exchange().

5.111.2.50 #define XYSSL_ERR_SSL_BAD_INPUT_DATA -0x1800

Definition at line 17 of file ssl.h.

Referenced by ssl_handshake_client(), ssl_handshake_server(), ssl_set_hostname(), and tls1_prf().

5.111.2.51 #define XYSSL_ERR_SSL_CA_CHAIN_REQUIRED -0x7000

Definition at line 28 of file ssl.h.

Referenced by ssl_parse_certificate().

5.111.2.52 #define XYSSL_ERR_SSL_CERTIFICATE_REQUIRED -0x6000

Definition at line 26 of file ssl.h.

Referenced by ssl_write_certificate().

5.111.2.53 #define XYSSL_ERR_SSL_CERTIFICATE_TOO_LARGE -0x5800

Definition at line 25 of file ssl.h.

Referenced by ssl_write_certificate().

5.111.2.54 #define XYSSL_ERR_SSL_FATAL_ALERT_MESSAGE -0x8000

Definition at line 30 of file ssl.h.

Referenced by ssl_read_record().

5.111.2.55 #define XYSSL_ERR_SSL_FEATURE_UNAVAILABLE -0x1000

Definition at line 16 of file ssl.h.

Referenced by ssl_decrypt_buf(), ssl_derive_keys(), ssl_encrypt_buf(), ssl_handshake(), ssl_parse_client_key_exchange(), ssl_parse_server_key_exchange(), ssl_write_client_key_exchange(), and ssl_write_server_key_exchange().

5.111.2.56 #define XYSSL_ERR_SSL_INVALID_MAC -0x2000

Definition at line 18 of file ssl.h.

Referenced by ssl_decrypt_buf().

5.111.2.57 #define XYSSL_ERR_SSL_INVALID_MODULUS_SIZE -0x3000

Definition at line 20 of file ssl.h.

5.111.2.58 #define XYSSL_ERR_SSL_INVALID_RECORD -0x2800

Definition at line 19 of file ssl.h.

Referenced by ssl_read_record().

5.111.2.59 #define XYSSL_ERR_SSL_NO_CIPHER_CHOSEN -0x4000

Definition at line 22 of file ssl.h.

Referenced by ssl_parse_client_hello().

5.111.2.60 #define XYSSL_ERR_SSL_NO_CLIENT_CERTIFICATE -0x5000

Definition at line 24 of file ssl.h.

Referenced by ssl_parse_certificate().

5.111.2.61 #define XYSSL_ERR_SSL_NO_SESSION_FOUND -0x4800

Definition at line 23 of file ssl.h.

5.111.2.62 #define XYSSL_ERR_SSL_PEER_CLOSE_NOTIFY -0x9000

Definition at line 32 of file ssl.h.

Referenced by main(), ssl_read_record(), and ssl_test().

5.111.2.63 #define XYSSL_ERR_SSL_PEER_VERIFY_FAILED -0x8800

Definition at line 31 of file ssl.h.

5.111.2.64 #define XYSSL_ERR_SSL_PRIVATE_KEY_REQUIRED -0x6800

Definition at line 27 of file ssl.h.

Referenced by ssl_write_certificate_verify().

5.111.2.65 #define XYSSL_ERR_SSL_UNEXPECTED_MESSAGE -0x7800

Definition at line 29 of file ssl.h.

Referenced by ssl_parse_certificate(), ssl_parse_certificate_request(), ssl_parse_change_cipher_spec(), ssl_parse_finished(), ssl_parse_server_hello(), ssl_parse_server_hello_done(), ssl_parse_server_key_exchange(), and ssl_read().

5.111.2.66 #define XYSSL_ERR_SSL_UNKNOWN_CIPHER -0x3800

Definition at line 21 of file ssl.h.

5.111.3 Typedef Documentation

5.111.3.1 typedef struct _ssl_context ssl_context

Definition at line 134 of file ssl.h.

5.111.3.2 typedef struct _ssl_session ssl_session

Definition at line 133 of file ssl.h.

5.111.4 Enumeration Type Documentation

5.111.4.1 enum ssl_states

Enumerator:

SSL_HELLO_REQUEST
SSL_CLIENT_HELLO
SSL_SERVER_HELLO
SSL_SERVER_CERTIFICATE
SSL_SERVER_KEY_EXCHANGE
SSL_CERTIFICATE_REQUEST
SSL_SERVER_HELLO_DONE
SSL_CLIENT_CERTIFICATE
SSL_CLIENT_KEY_EXCHANGE
SSL_CERTIFICATE_VERIFY
SSL_CLIENT_CHANGE_CIPHER_SPEC
SSL_CLIENT_FINISHED
SSL_SERVER_CHANGE_CIPHER_SPEC
SSL_SERVER_FINISHED
SSL_FLUSH_BUFFERS
SSL_HANDSHAKE_OVER

Definition at line 112 of file ssl.h.

5.111.5 Function Documentation

5.111.5.1 void ssl_calc_verify (ssl_context * ssl, unsigned char hash[36])

Definition at line 335 of file ssl_tls.c.

References `_ssl_context::fin_md5`, `_ssl_context::fin_sha1`, `_ssl_session::master`, `md5()`, `md5_finish()`, `md5_starts()`, `md5_update()`, `_ssl_context::minor_ver`, `_ssl_context::session`, `sha1()`, `sha1_finish()`, `sha1_starts()`, `sha1_update()`, `SSL_DEBUG_BUF`, `SSL_DEBUG_MSG`, and `SSL_MINOR_VERSION_0`.

Referenced by `ssl_parse_certificate_verify()`, and `ssl_write_certificate_verify()`.

5.111.5.2 int ssl_close_notify (ssl_context * ssl)

Notify the peer that the connection is being closed.

Definition at line 1904 of file ssl_tls.c.

References `_ssl_context::out_msg`, `_ssl_context::out_msglen`, `_ssl_context::out_msgtype`, `SSL_ALERT_CLOSE_NOTIFY`, `SSL_ALERT_WARNING`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `ssl_flush_output()`, `SSL_HANDSHAKE_OVER`, `SSL_MSG_ALERT`, `ssl_write_record()`, and `_ssl_context::state`.

Referenced by `main()`, and `ssl_test()`.

5.111.5.3 int ssl_derive_keys (ssl_context * ssl)

Definition at line 106 of file ssl_tls.c.

References `aes_setkey_dec()`, `aes_setkey_enc()`, `arc4_setup()`, `_ssl_session::cipher`, `_ssl_context::ctx_dec`, `_ssl_context::ctx_enc`, `des3_set3key_dec()`, `des3_set3key_enc()`, `_ssl_context::endpoint`, `_ssl_context::iv_dec`, `_ssl_context::iv_enc`, `_ssl_context::ivlen`, `_ssl_context::keylen`, `_ssl_context::mac_dec`, `_ssl_context::mac_enc`, `_ssl_context::maclen`, `_ssl_session::master`, `md5()`, `md5_finish()`, `md5_starts()`, `md5_update()`, `_ssl_context::minlen`, `_ssl_context::minor_ver`, `_ssl_context::pmslen`, `_ssl_context::premaster`, `_ssl_context::randbytes`, `_ssl_context::resume`, `_ssl_context::session`, `sha1()`, `sha1_finish()`, `sha1_starts()`, `sha1_update()`, `SSL_DEBUG_BUF`, `SSL_DEBUG_MSG`, `SSL_EDH_RSA_AES_256_SHA`, `SSL_EDH_RSA_DES_168_SHA`, `ssl_get_cipher()`, `SSL_IS_CLIENT`, `SSL_MINOR_VERSION_0`, `SSL_RSA_AES_128_SHA`, `SSL_RSA_AES_256_SHA`, `SSL_RSA_DES_168_SHA`, `SSL_RSA_RC4_128_MD5`, `SSL_RSA_RC4_128_SHA`, `tls1_prf()`, and `XYSSL_ERR_SSL_FEATURE_UNAVAILABLE`.

Referenced by `ssl_parse_client_key_exchange()`, `ssl_parse_server_hello()`, `ssl_write_client_key_exchange()`, and `ssl_write_server_hello()`.

5.111.5.4 int ssl_fetch_input (ssl_context * ssl, int nb_want)

Definition at line 727 of file ssl_tls.c.

References `_ssl_context::f_recv`, `_ssl_context::in_hdr`, `_ssl_context::in_left`, `_ssl_context::p_recv`, `SSL_DEBUG_MSG`, and `SSL_DEBUG_RET`.

Referenced by `ssl_parse_client_hello()`, and `ssl_read_record()`.

5.111.5.5 int ssl_flush_output (ssl_context * ssl)

Definition at line 756 of file ssl_tls.c.

References `buf`, `_ssl_context::f_send`, `_ssl_context::out_hdr`, `_ssl_context::out_left`, `_ssl_context::out_msglen`, `_ssl_context::p_send`, `SSL_DEBUG_MSG`, and `SSL_DEBUG_RET`.

Referenced by `ssl_close_notify()`, `ssl_handshake_client()`, `ssl_handshake_server()`, `ssl_write()`, and `ssl_write_record()`.

5.111.5.6 void ssl_free (ssl_context * ssl)

Free an SSL context.

Definition at line 1938 of file ssl_tls.c.

References `_ssl_context::dhm_ctx`, `dhm_free()`, `_ssl_context::hostname`, `_ssl_context::hostname_len`, `_ssl_context::in_ctr`, `_ssl_context::out_ctr`, `_ssl_context::peer_cert`, `SSL_BUFFER_LEN`, `SSL_DEBUG_MSG`, and `x509_free()`.

Referenced by `main()`, and `ssl_test()`.

5.111.5.7 `int ssl_get_bytes_avail (ssl_context * ssl)`

Return the number of data bytes available to read.

Parameters

ssl SSL context

Returns

how many bytes are available in the read buffer

Definition at line 1691 of file `ssl_tls.c`.

References `_ssl_context::in_msglen`, and `_ssl_context::in_offt`.

5.111.5.8 `char* ssl_get_cipher (ssl_context * ssl)`

Return the name of the current cipher.

Parameters

ssl SSL context

Returns

a string containing the cipher name

Definition at line 1701 of file `ssl_tls.c`.

References `_ssl_session::cipher`, `_ssl_context::session`, `SSL_EDH_RSA_AES_256_SHA`, `SSL_EDH_RSA_DES_168_SHA`, `SSL_RSA_AES_128_SHA`, `SSL_RSA_AES_256_SHA`, `SSL_RSA_DES_168_SHA`, `SSL_RSA_RC4_128_MD5`, and `SSL_RSA_RC4_128_SHA`.

Referenced by `main()`, and `ssl_derive_keys()`.

5.111.5.9 `int ssl_get_verify_result (ssl_context * ssl)`

Return the result of the certificate verification.

Parameters

ssl SSL context

Returns

0 if successful, or a combination of: `BADCERT_EXPIRED` `BADCERT_REVOKED` `BADCERT_CN_MISMATCH` `BADCERT_NOT_TRUSTED`

Definition at line 1696 of file `ssl_tls.c`.

References `_ssl_context::verify_result`.

Referenced by `main()`.

5.111.5.10 `int ssl_handshake(ssl_context *ssl)`

Perform the SSL handshake.

Parameters

ssl SSL context

Returns

0 if successful, XYSSL_ERR_NET_TRY_AGAIN, or a specific SSL error code.

Definition at line 1767 of file `ssl_tls.c`.

References `_ssl_context::endpoint`, `SSL_DEBUG_MSG`, `ssl_handshake_client()`, `ssl_handshake_server()`, `SSL_IS_CLIENT`, `SSL_IS_SERVER`, and `XYSSL_ERR_SSL_FEATURE_UNAVAILABLE`.

Referenced by `main()`, `ssl_read()`, and `ssl_write()`.

5.111.5.11 `int ssl_handshake_client(ssl_context *ssl)`

Definition at line 660 of file `ssl_cli.c`.

References `SSL_CERTIFICATE_REQUEST`, `SSL_CERTIFICATE_VERIFY`, `SSL_CLIENT_CERTIFICATE`, `SSL_CLIENT_CHANGE_CIPHER_SPEC`, `SSL_CLIENT_FINISHED`, `SSL_CLIENT_HELLO`, `SSL_CLIENT_KEY_EXCHANGE`, `SSL_DEBUG_MSG`, `SSL_FLUSH_BUFFERS`, `ssl_flush_output()`, `SSL_HANDSHAKE_OVER`, `SSL_HELLO_REQUEST`, `ssl_parse_certificate()`, `ssl_parse_certificate_request()`, `ssl_parse_change_cipher_spec()`, `ssl_parse_finished()`, `ssl_parse_server_hello()`, `ssl_parse_server_hello_done()`, `ssl_parse_server_key_exchange()`, `SSL_SERVER_CERTIFICATE`, `SSL_SERVER_CHANGE_CIPHER_SPEC`, `SSL_SERVER_FINISHED`, `SSL_SERVER_HELLO`, `SSL_SERVER_HELLO_DONE`, `SSL_SERVER_KEY_EXCHANGE`, `ssl_write_certificate()`, `ssl_write_certificate_verify()`, `ssl_write_change_cipher_spec()`, `ssl_write_client_hello()`, `ssl_write_client_key_exchange()`, `ssl_write_finished()`, `_ssl_context::state`, and `XYSSL_ERR_SSL_BAD_INPUT_DATA`.

Referenced by `ssl_handshake()`.

5.111.5.12 `int ssl_handshake_server(ssl_context *ssl)`

Definition at line 819 of file `ssl_srv.c`.

References `SSL_CERTIFICATE_REQUEST`, `SSL_CERTIFICATE_VERIFY`, `SSL_CLIENT_CERTIFICATE`, `SSL_CLIENT_CHANGE_CIPHER_SPEC`, `SSL_CLIENT_FINISHED`, `SSL_CLIENT_HELLO`, `SSL_CLIENT_KEY_EXCHANGE`, `SSL_DEBUG_MSG`, `SSL_FLUSH_BUFFERS`, `ssl_flush_output()`, `SSL_HANDSHAKE_OVER`, `SSL_HELLO_REQUEST`, `ssl_parse_certificate()`, `ssl_parse_certificate_verify()`, `ssl_parse_change_cipher_spec()`, `ssl_parse_client_hello()`, `ssl_parse_client_key_exchange()`, `ssl_parse_finished()`, `SSL_SERVER_CERTIFICATE`, `SSL_SERVER_CHANGE_CIPHER_SPEC`, `SSL_SERVER_FINISHED`, `SSL_SERVER_HELLO`, `SSL_SERVER_HELLO_DONE`, `SSL_SERVER_KEY_EXCHANGE`, `ssl_write_certificate()`, `ssl_write_certificate_request()`, `ssl_write_change_cipher_spec()`, `ssl_write_finished()`, `ssl_write_server_hello()`, `ssl_write_server_hello_done()`, `ssl_write_server_key_exchange()`, `_ssl_context::state`, and `XYSSL_ERR_SSL_BAD_INPUT_DATA`.

Referenced by `ssl_handshake()`.

5.111.5.13 `int ssl_init(ssl_context *ssl)`

Initialize an SSL context.

Parameters

ssl SSL context

Returns

0 if successful, or 1 if memory allocation failed

Definition at line 1542 of file `ssl_tls.c`.

References `_ssl_context::fin_md5`, `_ssl_context::fin_sha1`, `_ssl_context::hostname`, `_ssl_context::hostname_len`, `_ssl_context::in_ctr`, `_ssl_context::in_hdr`, `_ssl_context::in_msg`, `md5_starts()`, `_ssl_context::out_ctr`, `_ssl_context::out_hdr`, `_ssl_context::out_msg`, `sha1_starts()`, `SSL_BUFFER_LEN`, and `SSL_DEBUG_MSG`.

Referenced by `main()`, and `ssl_test()`.

5.111.5.14 int ssl_parse_certificate (ssl_context * ssl)

Definition at line 1140 of file `ssl_tls.c`.

References `_ssl_context::authmode`, `_ssl_context::ca_chain`, `_ssl_context::endpoint`, `_ssl_context::in_hslen`, `_ssl_context::in_msg`, `_ssl_context::in_msglen`, `_ssl_context::in_msgtype`, `int`, `_ssl_context::minor_ver`, `_ssl_context::peer_cert`, `_ssl_context::peer_cn`, `SSL_ALERT_NO_CERTIFICATE`, `SSL_ALERT_WARNING`, `SSL_DEBUG_CRT`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `SSL_HS_CERTIFICATE`, `SSL_IS_SERVER`, `SSL_MINOR_VERSION_0`, `SSL_MSG_ALERT`, `SSL_MSG_HANDSHAKE`, `ssl_read_record()`, `SSL_VERIFY_NONE`, `SSL_VERIFY_OPTIONAL`, `SSL_VERIFY_REQUIRED`, `_ssl_context::state`, `_ssl_context::verify_result`, `x509parse_cert()`, `x509parse_verify()`, `XYSSL_ERR_SSL_BAD_HS_CERTIFICATE`, `XYSSL_ERR_SSL_CA_CHAIN_REQUIRED`, `XYSSL_ERR_SSL_NO_CLIENT_CERTIFICATE`, and `XYSSL_ERR_SSL_UNEXPECTED_MESSAGE`.

Referenced by `ssl_handshake_client()`, and `ssl_handshake_server()`.

5.111.5.15 int ssl_parse_change_cipher_spec (ssl_context * ssl)

Definition at line 1311 of file `ssl_tls.c`.

References `_ssl_context::do_crypt`, `_ssl_context::in_msg`, `_ssl_context::in_msglen`, `_ssl_context::in_msgtype`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `SSL_MSG_CHANGE_CIPHER_SPEC`, `ssl_read_record()`, `_ssl_context::state`, `XYSSL_ERR_SSL_BAD_HS_CHANGE_CIPHER_SPEC`, and `XYSSL_ERR_SSL_UNEXPECTED_MESSAGE`.

Referenced by `ssl_handshake_client()`, and `ssl_handshake_server()`.

5.111.5.16 int ssl_parse_finished (ssl_context * ssl)

Definition at line 1480 of file `ssl_tls.c`.

References `buf`, `_ssl_context::do_crypt`, `_ssl_context::endpoint`, `_ssl_context::fin_md5`, `_ssl_context::fin_sha1`, `_ssl_context::in_hslen`, `_ssl_context::in_msg`, `_ssl_context::in_msgtype`, `md5()`, `_ssl_context::minor_ver`, `_ssl_context::resume`, `sha1()`, `ssl_calc_finished()`, `SSL_CLIENT_CHANGE_CIPHER_SPEC`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `SSL_HANDSHAKE_OVER`, `SSL_HS_FINISHED`, `SSL_IS_CLIENT`, `SSL_IS_SERVER`, `SSL_MINOR_VERSION_0`, `SSL_MSG_HANDSHAKE`, `ssl_read_record()`, `_ssl_context::state`, `XYSSL_ERR_SSL_BAD_HS_FINISHED`, and `XYSSL_ERR_SSL_UNEXPECTED_MESSAGE`.

Referenced by `ssl_handshake_client()`, and `ssl_handshake_server()`.

5.111.5.17 int ssl_read (ssl_context * ssl, unsigned char * buf, int len)

Read at most 'len' application data bytes.

Parameters

ssl SSL context

buf buffer that will hold the data

len how many bytes must be read

Returns

This function returns the number of bytes read, or a negative error code.

Definition at line 1791 of file ssl_tls.c.

References `_ssl_context::in_msg`, `_ssl_context::in_msglen`, `_ssl_context::in_msgtype`, `_ssl_context::in_offt`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `ssl_handshake()`, `SSL_HANDSHAKE_OVER`, `SSL_MSG_APPLICATION_DATA`, `ssl_read_record()`, `_ssl_context::state`, and `XYSSL_ERR_SSL_UNEXPECTED_MESSAGE`.

Referenced by `main()`, and `ssl_test()`.

5.111.5.18 int ssl_read_record (ssl_context * ssl)

Definition at line 842 of file ssl_tls.c.

References `_ssl_context::do_crypt`, `_ssl_context::fin_md5`, `_ssl_context::fin_sha1`, `_ssl_context::in_hdr`, `_ssl_context::in_hhlen`, `_ssl_context::in_left`, `_ssl_context::in_msg`, `_ssl_context::in_msglen`, `_ssl_context::in_msgtype`, `_ssl_context::major_ver`, `md5_update()`, `_ssl_context::minlen`, `_ssl_context::minor_ver`, `sha1_update()`, `SSL_ALERT_CLOSE_NOTIFY`, `SSL_ALERT_FATAL`, `SSL_ALERT_WARNING`, `SSL_DEBUG_BUF`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `ssl_decrypt_buf()`, `ssl_fetch_input()`, `SSL_MAX_CONTENT_LEN`, `SSL_MINOR_VERSION_0`, `SSL_MINOR_VERSION_1`, `SSL_MSG_ALERT`, `SSL_MSG_HANDSHAKE`, `XYSSL_ERR_SSL_FATAL_ALERT_MESSAGE`, `XYSSL_ERR_SSL_INVALID_RECORD`, and `XYSSL_ERR_SSL_PEER_CLOSE_NOTIFY`.

Referenced by `ssl_parse_certificate()`, `ssl_parse_certificate_request()`, `ssl_parse_certificate_verify()`, `ssl_parse_change_cipher_spec()`, `ssl_parse_client_key_exchange()`, `ssl_parse_finished()`, `ssl_parse_server_hello()`, `ssl_parse_server_hello_done()`, `ssl_parse_server_key_exchange()`, and `ssl_read()`.

5.111.5.19 void ssl_set_authmode (ssl_context * ssl, int authmode)

Set the certificate verification mode.

Parameters

ssl SSL context

mode can be:

`SSL_VERIFY_NONE`: peer certificate is not checked (default), this is insecure and SHOULD be avoided.

`SSL_VERIFY_OPTIONAL`: peer certificate is checked, however the handshake continues even if verification failed; `ssl_get_verify_result()` can be called after the handshake is complete.

`SSL_VERIFY_REQUIRED`: peer *must* present a valid certificate, handshake is aborted if verification failed.

Definition at line 1589 of file ssl_tls.c.

References `_ssl_context::authmode`.

Referenced by `main()`, and `ssl_test()`.

5.111.5.20 `void ssl_set_bio (ssl_context * ssl, int(*) (void *, unsigned char *, int) f_recv, void * p_recv, int(*) (void *, unsigned char *, int) f_send, void * p_send)`

Set the underlying BIO read and write callbacks.

Parameters

ssl SSL context

f_recv read callback

p_recv read parameter

f_send write callback

p_send write parameter

Definition at line 1610 of file ssl_tls.c.

References `_ssl_context::f_recv`, `_ssl_context::f_send`, `_ssl_context::p_recv`, and `_ssl_context::p_send`.

Referenced by `main()`, and `ssl_test()`.

5.111.5.21 `void ssl_set_ca_chain (ssl_context * ssl, x509_cert * ca_chain, char * peer_cn)`

Set the data required to verify peer certificate.

Parameters

ssl SSL context

ca_chain trusted CA chain

peer_cn expected peer CommonName (or NULL)

Note

TODO: add two more parameters: depth and crl

Definition at line 1641 of file ssl_tls.c.

References `_ssl_context::ca_chain`, and `_ssl_context::peer_cn`.

Referenced by `main()`, and `ssl_test()`.

5.111.5.22 `void ssl_set_ciphers (ssl_context * ssl, int * ciphers)`

Set the list of allowed ciphersuites.

Parameters

ssl SSL context

ciphers 0-terminated list of allowed ciphers

Definition at line 1636 of file ssl_tls.c.

References `_ssl_context::ciphers`.

Referenced by `main()`, and `ssl_test()`.

5.111.5.23 `void ssl_set_dbg (ssl_context * ssl, void(*) (void *, int, char *) f_dbg, void * p_dbg)`

Set the debug callback.

Parameters

ssl SSL context

f_dbg debug function

p_dbg debug parameter

Definition at line 1602 of file ssl_tls.c.

References `_ssl_context::f_dbg`, and `_ssl_context::p_dbg`.

Referenced by `main()`, and `ssl_test()`.

5.111.5.24 `int ssl_set_dh_param (ssl_context * ssl, char * dhm_P, char * dhm_G)`

Set the Diffie-Hellman public P and G values, read as hexadecimal strings (server-side only).

Parameters

ssl SSL context

dhm_P Diffie-Hellman-Merkle modulus

dhm_G Diffie-Hellman-Merkle generator

Returns

0 if successful

Definition at line 1655 of file ssl_tls.c.

References `_ssl_context::dhm_ctx`, `dhm_context::G`, `mpi_read_string()`, `dhm_context::P`, and `SSL_DEBUG_RET`.

Referenced by `main()`, and `ssl_test()`.

5.111.5.25 `void ssl_set_endpoint (ssl_context * ssl, int endpoint)`

Set the current endpoint type.

Parameters

ssl SSL context

endpoint must be `SSL_IS_CLIENT` or `SSL_IS_SERVER`

Definition at line 1584 of file ssl_tls.c.

References `_ssl_context::endpoint`.

Referenced by `main()`, and `ssl_test()`.

5.111.5.26 `int ssl_set_hostname (ssl_context * ssl, char * hostname)`

Set hostname for ServerName TLS Extension.

Parameters

ssl SSL context

hostname the server hostname

Returns

0 if successful

Definition at line 1674 of file `ssl_tls.c`.

References `_ssl_context::hostname`, `_ssl_context::hostname_len`, and `XYSSL_ERR_SSL_BAD_INPUT_DATA`.

Referenced by `main()`.

5.111.5.27 `void ssl_set_own_cert (ssl_context * ssl, x509_cert * own_cert, rsa_context * rsa_key)`

Set own certificate and private key.

Parameters

ssl SSL context

own_cert own public certificate

rsa_key own private RSA key

Definition at line 1648 of file `ssl_tls.c`.

References `_ssl_context::own_cert`, and `_ssl_context::rsa_key`.

Referenced by `main()`, and `ssl_test()`.

5.111.5.28 `void ssl_set_rng (ssl_context * ssl, int(*) (void *) f_rng, void * p_rng)`

Set the random number generator callback.

Parameters

ssl SSL context

f_rng RNG function

p_rng RNG parameter

Definition at line 1594 of file `ssl_tls.c`.

References `_ssl_context::f_rng`, and `_ssl_context::p_rng`.

Referenced by `main()`, and `ssl_test()`.

5.111.5.29 void ssl_set_scb (ssl_context * *ssl*, int(*) (ssl_context *) *s_get*, int(*) (ssl_context *) *s_set*)

Set the session callbacks (server-side only).

Parameters

ssl SSL context
s_get session get callback
s_set session set callback

Definition at line 1620 of file ssl_tls.c.

References _ssl_context::s_get, and _ssl_context::s_set.

Referenced by main().

5.111.5.30 void ssl_set_session (ssl_context * *ssl*, int *resume*, int *timeout*, ssl_session * *session*)

Set the session resuming flag, timeout and data.

Parameters

ssl SSL context
resume if 0 (default), the session will not be resumed
timeout session timeout in seconds, or 0 (no timeout)
session session context

Definition at line 1628 of file ssl_tls.c.

References _ssl_context::resume, _ssl_context::session, and _ssl_context::timeout.

Referenced by main(), and ssl_test().

5.111.5.31 int ssl_write (ssl_context * *ssl*, unsigned char * *buf*, int *len*)

Write exactly 'len' application data bytes.

Parameters

ssl SSL context
buf buffer holding the data
len how many bytes must be written

Returns

This function returns the number of bytes written, or a negative error code.

Note

When this function returns XYSSL_ERR_NET_TRY_AGAIN, it must be called later with the **same** arguments, until it returns a positive value.

Definition at line 1857 of file `ssl_tls.c`.

References `_ssl_context::out_left`, `_ssl_context::out_msg`, `_ssl_context::out_msglen`, `_ssl_context::out_msgtype`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `ssl_flush_output()`, `ssl_handshake()`, `SSL_HANDSHAKE_OVER`, `SSL_MAX_CONTENT_LEN`, `SSL_MSG_APPLICATION_DATA`, `ssl_write_record()`, and `_ssl_context::state`.

Referenced by `main()`, and `ssl_test()`.

5.111.5.32 `int ssl_write_certificate(ssl_context *ssl)`

Definition at line 1044 of file `ssl_tls.c`.

References `_ssl_context::client_auth`, `_ssl_context::endpoint`, `_x509_buf::len`, `_ssl_context::minor_ver`, `_x509_cert::next`, `_ssl_context::out_msg`, `_ssl_context::out_msglen`, `_ssl_context::out_msgtype`, `_ssl_context::own_cert`, `_x509_buf::p`, `_x509_cert::raw`, `SSL_ALERT_NO_CERTIFICATE`, `SSL_ALERT_WARNING`, `SSL_DEBUG_CRT`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `SSL_HS_CERTIFICATE`, `SSL_IS_CLIENT`, `SSL_MAX_CONTENT_LEN`, `SSL_MINOR_VERSION_0`, `SSL_MSG_ALERT`, `SSL_MSG_HANDSHAKE`, `ssl_write_record()`, `_ssl_context::state`, `XYSSL_ERR_SSL_CERTIFICATE_REQUIRED`, and `XYSSL_ERR_SSL_CERTIFICATE_TOO_LARGE`.

Referenced by `ssl_handshake_client()`, and `ssl_handshake_server()`.

5.111.5.33 `int ssl_write_change_cipher_spec(ssl_context *ssl)`

Definition at line 1287 of file `ssl_tls.c`.

References `_ssl_context::do_crypt`, `_ssl_context::out_msg`, `_ssl_context::out_msglen`, `_ssl_context::out_msgtype`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `SSL_MSG_CHANGE_CIPHER_SPEC`, `ssl_write_record()`, and `_ssl_context::state`.

Referenced by `ssl_handshake_client()`, and `ssl_handshake_server()`.

5.111.5.34 `int ssl_write_finished(ssl_context *ssl)`

Definition at line 1433 of file `ssl_tls.c`.

References `_ssl_context::do_crypt`, `_ssl_context::endpoint`, `_ssl_context::fin_md5`, `_ssl_context::fin_sha1`, `md5()`, `_ssl_context::minor_ver`, `_ssl_context::out_msg`, `_ssl_context::out_msglen`, `_ssl_context::out_msgtype`, `_ssl_context::resume`, `sha1()`, `ssl_calc_finished()`, `SSL_CLIENT_CHANGE_CIPHER_SPEC`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `SSL_HANDSHAKE_OVER`, `SSL_HS_FINISHED`, `SSL_IS_CLIENT`, `SSL_MINOR_VERSION_0`, `SSL_MSG_HANDSHAKE`, `ssl_write_record()`, and `_ssl_context::state`.

Referenced by `ssl_handshake_client()`, and `ssl_handshake_server()`.

5.111.5.35 `int ssl_write_record(ssl_context *ssl)`

Definition at line 786 of file `ssl_tls.c`.

References `_ssl_context::do_crypt`, `_ssl_context::fin_md5`, `_ssl_context::fin_sha1`, `_ssl_context::major_ver`, `md5_update()`, `_ssl_context::minor_ver`, `_ssl_context::out_hdr`, `_ssl_context::out_left`, `_ssl_context::out_msg`, `_ssl_context::out_msglen`, `_ssl_context::out_msgtype`, `sha1_update()`, `SSL_DEBUG_BUF`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `ssl_encrypt_buf()`, `ssl_flush_output()`, and `SSL_MSG_HANDSHAKE`.

Referenced by `ssl_close_notify()`, `ssl_write()`, `ssl_write_certificate()`, `ssl_write_certificate_request()`, `ssl_write_certificate_verify()`, `ssl_write_change_cipher_spec()`, `ssl_write_client_hello()`, `ssl_write_client_key_exchange()`, `ssl_write_finished()`, `ssl_write_server_hello()`, `ssl_write_server_hello_done()`, and `ssl_write_server_key_exchange()`.

5.111.6 Variable Documentation

5.111.6.1 `int ssl_default_ciphers[]`

Definition at line 1739 of file `ssl_tls.c`.

Referenced by `main()`, and `ssl_test()`.

5.112 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/timing.h File Reference

Data Structures

- struct [hr_time](#)
timer structure

Functions

- unsigned long [hardclock](#) (void)
Return the CPU cycle counter value.
- unsigned long [get_timer](#) (struct [hr_time](#) *val, int reset)
Return the elapsed time in milliseconds.
- void [set_alarm](#) (int seconds)
Setup an alarm clock.
- void [m_sleep](#) (int milliseconds)
Sleep for a certain amount of time.

Variables

- [int alarmed](#)

5.112.1 Detailed Description

Definition in file [timing.h](#).

5.112.2 Function Documentation

5.112.2.1 unsigned long get_timer (struct hr_time * val, int reset)

Return the elapsed time in milliseconds.

Parameters

val points to a timer structure
reset if set to 1, the timer is restarted

Definition at line 225 of file [timing.c](#).

References [_hr_time::start](#).

Referenced by [ssl_test\(\)](#).

5.112.2.2 unsigned long hardclock (void)

Return the CPU cycle counter value.

Definition at line 155 of file timing.c.

References tv_init.

Referenced by main().

5.112.2.3 void m_sleep (int milliseconds)

Sleep for a certain amount of time.

Definition at line 258 of file timing.c.

5.112.2.4 void set_alarm (int seconds)

Setup an alarm clock.

Parameters

seconds delay before the "alarmed" flag is set

Definition at line 251 of file timing.c.

References sighandler().

Referenced by main().

5.112.3 Variable Documentation

5.112.3.1 int alarmed

Definition at line 179 of file timing.c.

Referenced by main().

5.113 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/x509.h File Reference

```
#include "xyssl/rsa.h"
```

Data Structures

- struct [_x509_buf](#)
- struct [_x509_name](#)
- struct [_x509_time](#)
- struct [_x509_cert](#)
- struct [_x509_node](#)
- struct [_x509_raw](#)

Defines

- #define [XYSSL_ERR_ASN1_OUT_OF_DATA](#) -0x0014
- #define [XYSSL_ERR_ASN1_UNEXPECTED_TAG](#) -0x0016
- #define [XYSSL_ERR_ASN1_INVALID_LENGTH](#) -0x0018
- #define [XYSSL_ERR_ASN1_LENGTH_MISMATCH](#) -0x001A
- #define [XYSSL_ERR_ASN1_INVALID_DATA](#) -0x001C
- #define [XYSSL_ERR_X509_FEATURE_UNAVAILABLE](#) -0x0020
- #define [XYSSL_ERR_X509_CERT_INVALID_PEM](#) -0x0040
- #define [XYSSL_ERR_X509_CERT_INVALID_FORMAT](#) -0x0060
- #define [XYSSL_ERR_X509_CERT_INVALID_VERSION](#) -0x0080
- #define [XYSSL_ERR_X509_CERT_INVALID_SERIAL](#) -0x00A0
- #define [XYSSL_ERR_X509_CERT_INVALID_ALG](#) -0x00C0
- #define [XYSSL_ERR_X509_CERT_INVALID_NAME](#) -0x00E0
- #define [XYSSL_ERR_X509_CERT_INVALID_DATE](#) -0x0100
- #define [XYSSL_ERR_X509_CERT_INVALID_PUBKEY](#) -0x0120
- #define [XYSSL_ERR_X509_CERT_INVALID_SIGNATURE](#) -0x0140
- #define [XYSSL_ERR_X509_CERT_INVALID_EXTENSIONS](#) -0x0160
- #define [XYSSL_ERR_X509_CERT_UNKNOWN_VERSION](#) -0x0180
- #define [XYSSL_ERR_X509_CERT_UNKNOWN_SIG_ALG](#) -0x01A0
- #define [XYSSL_ERR_X509_CERT_UNKNOWN_PK_ALG](#) -0x01C0
- #define [XYSSL_ERR_X509_CERT_SIG_MISMATCH](#) -0x01E0
- #define [XYSSL_ERR_X509_CERT_VERIFY_FAILED](#) -0x0200
- #define [XYSSL_ERR_X509_KEY_INVALID_PEM](#) -0x0220
- #define [XYSSL_ERR_X509_KEY_INVALID_VERSION](#) -0x0240
- #define [XYSSL_ERR_X509_KEY_INVALID_FORMAT](#) -0x0260
- #define [XYSSL_ERR_X509_KEY_INVALID_ENC_IV](#) -0x0280
- #define [XYSSL_ERR_X509_KEY_UNKNOWN_ENC_ALG](#) -0x02A0
- #define [XYSSL_ERR_X509_KEY_PASSWORD_REQUIRED](#) -0x02C0
- #define [XYSSL_ERR_X509_KEY_PASSWORD_MISMATCH](#) -0x02E0
- #define [XYSSL_ERR_X509_POINT_ERROR](#) -0x0300
- #define [XYSSL_ERR_X509_VALUE_TO_LENGTH](#) -0x0320
- #define [BADCERT_EXPIRED](#) 1
- #define [BADCERT_REVOKED](#) 2
- #define [BADCERT_CN_MISMATCH](#) 4

- #define [BADCERT_NOT_TRUSTED](#) 8
- #define [ASN1_BOOLEAN](#) 0x01
- #define [ASN1_INTEGER](#) 0x02
- #define [ASN1_BIT_STRING](#) 0x03
- #define [ASN1_OCTET_STRING](#) 0x04
- #define [ASN1_NULL](#) 0x05
- #define [ASN1_OID](#) 0x06
- #define [ASN1_UTF8_STRING](#) 0x0C
- #define [ASN1_SEQUENCE](#) 0x10
- #define [ASN1_SET](#) 0x11
- #define [ASN1_PRINTABLE_STRING](#) 0x13
- #define [ASN1_T61_STRING](#) 0x14
- #define [ASN1_IA5_STRING](#) 0x16
- #define [ASN1_UTC_TIME](#) 0x17
- #define [ASN1_UNIVERSAL_STRING](#) 0x1C
- #define [ASN1_BMP_STRING](#) 0x1E
- #define [ASN1_PRIMITIVE](#) 0x00
- #define [ASN1_CONSTRUCTED](#) 0x20
- #define [ASN1_CONTEXT_SPECIFIC](#) 0x80
- #define [X520_COMMON_NAME](#) 3
- #define [X520_COUNTRY](#) 6
- #define [X520_LOCALITY](#) 7
- #define [X520_STATE](#) 8
- #define [X520_ORGANIZATION](#) 10
- #define [X520_ORG_UNIT](#) 11
- #define [PKCS9_EMAIL](#) 1
- #define [X509_OUTPUT_DER](#) 0x01
- #define [X509_OUTPUT_PEM](#) 0x02
- #define [PEM_LINE_LENGTH](#) 72
- #define [X509_ISSUER](#) 0x01
- #define [X509_SUBJECT](#) 0x02
- #define [OID_X520](#) "\x55\x04"
- #define [OID_CN](#) "\x55\x04\x03"
- #define [OID_PKCS1](#) "\x2A\x86\x48\x86\xF7\x0D\x01\x01"
- #define [OID_PKCS1_RSA](#) "\x2A\x86\x48\x86\xF7\x0D\x01\x01\x01"
- #define [OID_PKCS1_RSA_SHA](#) "\x2A\x86\x48\x86\xF7\x0D\x01\x01\x05"
- #define [OID_PKCS9](#) "\x2A\x86\x48\x86\xF7\x0D\x01\x09"
- #define [OID_PKCS9_EMAIL](#) "\x2A\x86\x48\x86\xF7\x0D\x01\x09\x01"

Typedefs

- typedef struct [_x509_buf](#) [x509_buf](#)
- typedef struct [_x509_name](#) [x509_name](#)
- typedef struct [_x509_time](#) [x509_time](#)
- typedef struct [_x509_cert](#) [x509_cert](#)
- typedef struct [_x509_node](#) [x509_node](#)
- typedef struct [_x509_raw](#) [x509_raw](#)

Functions

- `int x509parse_cert (x509_cert *crt, unsigned char *buf, int buflen)`
Parse one or more certificates and add them to the chained list.
- `int x509parse_crtfile (x509_cert *crt, char *path)`
Load one or more certificates and add them to the chained list.
- `int x509parse_key (rsa_context *rsa, unsigned char *buf, int buflen, unsigned char *pwd, int pwrlen)`
Parse a private RSA key.
- `int x509parse_keyfile (rsa_context *rsa, char *path, char *password)`
Load and parse a private RSA key.
- `int x509parse_dn_gets (char *buf, char *end, x509_name *dn)`
Store the certificate DN in printable form into buf; no more than (end - buf) characters will be written.
- `char * x509parse_cert_info (char *prefix, x509_cert *crt)`
Returns an informational string about the certificate.
- `int x509parse_expired (x509_cert *crt)`
Return 0 if the certificate is still valid, or BADCERT_EXPIRED.
- `int x509parse_verify (x509_cert *crt, x509_cert *trust_ca, char *cn, int *flags)`
Verify the certificate signature.
- `void x509_free (x509_cert *crt)`
Unallocate all certificate data.
- `int x509_self_test (int verbose)`
Checkup routine.

5.113.1 Detailed Description

Definition in file [x509.h](#).

5.113.2 Define Documentation

5.113.2.1 #define ASN1_BIT_STRING 0x03

Definition at line 51 of file [x509.h](#).

Referenced by [x509_get_pubkey\(\)](#), and [x509_get_sig\(\)](#).

5.113.2.2 #define ASN1_BMP_STRING 0x1E

Definition at line 63 of file [x509.h](#).

Referenced by [x509_get_name\(\)](#).

5.113.2.3 #define ASN1_BOOLEAN 0x01

Definition at line 49 of file x509.h.

Referenced by `asn1_get_bool()`.

5.113.2.4 #define ASN1_CONSTRUCTED 0x20

Definition at line 65 of file x509.h.

Referenced by `x509_get_alg()`, `x509_get_dates()`, `x509_get_ext()`, `x509_get_name()`, `x509_get_pubkey()`, `x509_get_uid()`, `x509_get_version()`, `x509parse_crt()`, and `x509parse_key()`.

5.113.2.5 #define ASN1_CONTEXT_SPECIFIC 0x80

Definition at line 66 of file x509.h.

Referenced by `x509_get_ext()`, `x509_get_serial()`, `x509_get_uid()`, and `x509_get_version()`.

5.113.2.6 #define ASN1_IA5_STRING 0x16

Definition at line 60 of file x509.h.

Referenced by `x509_get_name()`.

5.113.2.7 #define ASN1_INTEGER 0x02

Definition at line 50 of file x509.h.

Referenced by `asn1_get_int()`, `asn1_get_mpi()`, and `x509_get_serial()`.

5.113.2.8 #define ASN1_NULL 0x05

Definition at line 53 of file x509.h.

Referenced by `x509_get_alg()`.

5.113.2.9 #define ASN1_OCTET_STRING 0x04

Definition at line 52 of file x509.h.

Referenced by `x509_get_ext()`.

5.113.2.10 #define ASN1_OID 0x06

Definition at line 54 of file x509.h.

Referenced by `x509_get_alg()`, and `x509_get_name()`.

5.113.2.11 #define ASN1_PRIMITIVE 0x00

Definition at line 64 of file x509.h.

Referenced by x509_get_serial().

5.113.2.12 #define ASN1_PRINTABLE_STRING 0x13

Definition at line 58 of file x509.h.

Referenced by x509_get_name().

5.113.2.13 #define ASN1_SEQUENCE 0x10

Definition at line 56 of file x509.h.

Referenced by x509_get_alg(), x509_get_dates(), x509_get_ext(), x509_get_name(), x509_get_pubkey(), x509parse_crt(), and x509parse_key().

5.113.2.14 #define ASN1_SET 0x11

Definition at line 57 of file x509.h.

Referenced by x509_get_name().

5.113.2.15 #define ASN1_T61_STRING 0x14

Definition at line 59 of file x509.h.

Referenced by x509_get_name().

5.113.2.16 #define ASN1_UNIVERSAL_STRING 0x1C

Definition at line 62 of file x509.h.

Referenced by x509_get_name().

5.113.2.17 #define ASN1.UTC_TIME 0x17

Definition at line 61 of file x509.h.

Referenced by x509_get_dates().

5.113.2.18 #define ASN1_UTF8_STRING 0x0C

Definition at line 55 of file x509.h.

Referenced by x509_get_name().

5.113.2.19 #define BADCERT_CN_MISMATCH 4

Definition at line 43 of file x509.h.

Referenced by main(), and x509parse_verify().

5.113.2.20 #define BADCERT_EXPIRED 1

Definition at line 41 of file x509.h.

Referenced by main(), and x509parse_expired().

5.113.2.21 #define BADCERT_NOT_TRUSTED 8

Definition at line 44 of file x509.h.

Referenced by main(), and x509parse_verify().

5.113.2.22 #define BADCERT_REVOKED 2

Definition at line 42 of file x509.h.

Referenced by main().

5.113.2.23 #define OID_CN "\x55\x04\x03"

Definition at line 86 of file x509.h.

Referenced by x509parse_verify().

5.113.2.24 #define OID_PKCS1 "\x2A\x86\x48\x86\xF7\x0D\x01\x01"

Definition at line 87 of file x509.h.

Referenced by x509parse_crt().

5.113.2.25 #define OID_PKCS1_RSA "\x2A\x86\x48\x86\xF7\x0D\x01\x01\x01"

Definition at line 88 of file x509.h.

Referenced by x509_get_pubkey().

5.113.2.26 #define OID_PKCS1_RSA_SHA "\x2A\x86\x48\x86\xF7\x0D\x01\x01\x05"

Definition at line 89 of file x509.h.

5.113.2.27 #define OID_PKCS9 "\x2A\x86\x48\x86\xF7\x0D\x01\x09"

Definition at line 90 of file x509.h.

Referenced by x509parse_dn_gets().

5.113.2.28 #define OID_PKCS9_EMAIL "\x2A\x86\x48\x86\xF7\x0D\x01\x09\x01"

Definition at line 91 of file x509.h.

5.113.2.29 #define OID_X520 "\x55\x04"

Definition at line 85 of file x509.h.

Referenced by x509parse_dn_gets().

5.113.2.30 #define PEM_LINE_LENGTH 72

Definition at line 81 of file x509.h.

5.113.2.31 #define PKCS9_EMAIL 1

Definition at line 77 of file x509.h.

Referenced by x509parse_dn_gets().

5.113.2.32 #define X509_ISSUER 0x01

Definition at line 82 of file x509.h.

5.113.2.33 #define X509_OUTPUT_DER 0x01

Definition at line 79 of file x509.h.

5.113.2.34 #define X509_OUTPUT_PEM 0x02

Definition at line 80 of file x509.h.

5.113.2.35 #define X509_SUBJECT 0x02

Definition at line 83 of file x509.h.

5.113.2.36 #define X520_COMMON_NAME 3

Definition at line 71 of file x509.h.

Referenced by x509parse_dn_gets().

5.113.2.37 #define X520_COUNTRY 6

Definition at line 72 of file x509.h.

Referenced by x509parse_dn_gets().

5.113.2.38 #define X520_LOCALITY 7

Definition at line 73 of file x509.h.

Referenced by x509parse_dn_gets().

5.113.2.39 #define X520_ORG_UNIT 11

Definition at line 76 of file x509.h.

Referenced by x509parse_dn_gets().

5.113.2.40 #define X520_ORGANIZATION 10

Definition at line 75 of file x509.h.

Referenced by x509parse_dn_gets().

5.113.2.41 #define X520_STATE 8

Definition at line 74 of file x509.h.

Referenced by x509parse_dn_gets().

5.113.2.42 #define XYSSL_ERR_ASN1_INVALID_DATA -0x001C

Definition at line 13 of file x509.h.

5.113.2.43 #define XYSSL_ERR_ASN1_INVALID_LENGTH -0x0018

Definition at line 11 of file x509.h.

Referenced by asn1_get_bool(), asn1_get_int(), and asn1_get_len().

5.113.2.44 #define XYSSL_ERR_ASN1_LENGTH_MISMATCH -0x001A

Definition at line 12 of file x509.h.

Referenced by x509_get_alg(), x509_get_dates(), x509_get_ext(), x509_get_name(), x509_get_pubkey(), x509_get_version(), x509parse_crt(), and x509parse_key().

5.113.2.45 #define XYSSL_ERR_ASN1_OUT_OF_DATA -0x0014

Definition at line 9 of file x509.h.

Referenced by asn1_get_len(), asn1_get_tag(), x509_get_name(), x509_get_pubkey(), and x509_get_serial().

5.113.2.46 #define XYSSL_ERR_ASN1_UNEXPECTED_TAG -0x0016

Definition at line 10 of file x509.h.

Referenced by asn1_get_tag(), x509_get_ext(), x509_get_name(), x509_get_serial(), x509_get_uid(), and x509_get_version().

5.113.2.47 #define XYSSL_ERR_X509_CERT_INVALID_ALG -0x00C0

Definition at line 20 of file x509.h.

Referenced by x509_get_alg().

5.113.2.48 #define XYSSL_ERR_X509_CERT_INVALID_DATE -0x0100

Definition at line 22 of file x509.h.

Referenced by x509_get_dates().

5.113.2.49 #define XYSSL_ERR_X509_CERT_INVALID_EXTENSIONS -0x0160

Definition at line 25 of file x509.h.

Referenced by x509_get_ext().

5.113.2.50 #define XYSSL_ERR_X509_CERT_INVALID_FORMAT -0x0060

Definition at line 17 of file x509.h.

Referenced by x509parse_crt().

5.113.2.51 #define XYSSL_ERR_X509_CERT_INVALID_NAME -0x00E0

Definition at line 21 of file x509.h.

Referenced by x509_get_name().

5.113.2.52 #define XYSSL_ERR_X509_CERT_INVALID_PEM -0x0040

Definition at line 16 of file x509.h.

Referenced by x509parse_crt().

5.113.2.53 #define XYSSL_ERR_X509_CERT_INVALID_PUBKEY -0x0120

Definition at line 23 of file x509.h.

Referenced by x509_get_pubkey().

5.113.2.54 #define XYSSL_ERR_X509_CERT_INVALID_SERIAL -0x00A0

Definition at line 19 of file x509.h.

Referenced by x509_get_serial().

5.113.2.55 #define XYSSL_ERR_X509_CERT_INVALID_SIGNATURE -0x0140

Definition at line 24 of file x509.h.

Referenced by x509_get_sig().

5.113.2.56 #define XYSSL_ERR_X509_CERT_INVALID_VERSION -0x0080

Definition at line 18 of file x509.h.

Referenced by x509_get_version().

5.113.2.57 #define XYSSL_ERR_X509_CERT_SIG_MISMATCH -0x01E0

Definition at line 29 of file x509.h.

Referenced by x509parse_crt().

5.113.2.58 #define XYSSL_ERR_X509_CERT_UNKNOWN_PK_ALG -0x01C0

Definition at line 28 of file x509.h.

Referenced by x509_get_pubkey().

5.113.2.59 #define XYSSL_ERR_X509_CERT_UNKNOWN_SIG_ALG -0x01A0

Definition at line 27 of file x509.h.

Referenced by x509parse_crt().

5.113.2.60 #define XYSSL_ERR_X509_CERT_UNKNOWN_VERSION -0x0180

Definition at line 26 of file x509.h.

Referenced by x509parse_crt().

5.113.2.61 #define XYSSL_ERR_X509_CERT_VERIFY_FAILED -0x0200

Definition at line 30 of file x509.h.

Referenced by x509parse_verify().

5.113.2.62 #define XYSSL_ERR_X509_FEATURE_UNAVAILABLE -0x0020

Definition at line 15 of file x509.h.

Referenced by x509parse_key().

5.113.2.63 #define XYSSL_ERR_X509_KEY_INVALID_ENC_IV -0x0280

Definition at line 34 of file x509.h.

Referenced by x509_get_iv(), and x509parse_key().

5.113.2.64 #define XYSSL_ERR_X509_KEY_INVALID_FORMAT -0x0260

Definition at line 33 of file x509.h.

Referenced by x509parse_key().

5.113.2.65 #define XYSSL_ERR_X509_KEY_INVALID_PEM -0x0220

Definition at line 31 of file x509.h.

Referenced by x509parse_key().

5.113.2.66 #define XYSSL_ERR_X509_KEY_INVALID_VERSION -0x0240

Definition at line 32 of file x509.h.

Referenced by x509parse_key().

5.113.2.67 #define XYSSL_ERR_X509_KEY_PASSWORD_MISMATCH -0x02E0

Definition at line 37 of file x509.h.

Referenced by x509parse_key().

5.113.2.68 #define XYSSL_ERR_X509_KEY_PASSWORD_REQUIRED -0x02C0

Definition at line 36 of file x509.h.

Referenced by x509parse_key().

5.113.2.69 #define XYSSL_ERR_X509_KEY_UNKNOWN_ENC_ALG -0x02A0

Definition at line 35 of file x509.h.

Referenced by x509parse_key().

5.113.2.70 #define XYSSL_ERR_X509_POINT_ERROR -0x0300

Definition at line 38 of file x509.h.

5.113.2.71 #define XYSSL_ERR_X509_VALUE_TO_LENGTH -0x0320

Definition at line 39 of file x509.h.

5.113.3 Typedef Documentation

5.113.3.1 `typedef struct _x509_buf x509_buf`

5.113.3.2 `typedef struct _x509_cert x509_cert`

5.113.3.3 `typedef struct _x509_name x509_name`

5.113.3.4 `typedef struct _x509_node x509_node`

5.113.3.5 `typedef struct _x509_raw x509_raw`

5.113.3.6 `typedef struct _x509_time x509_time`

5.113.4 Function Documentation

5.113.4.1 `void x509_free (x509_cert * crt)`

Unallocate all certificate data.

Definition at line 1613 of file x509parse.c.

References `_x509_cert::issuer`, `_x509_buf::len`, `_x509_cert::next`, `_x509_name::next`, `_x509_buf::p`, `_x509_cert::raw`, `_x509_cert::rsa`, `rsa_free()`, and `_x509_cert::subject`.

Referenced by `main()`, `ssl_free()`, `ssl_test()`, `x509_self_test()`, and `x509parse_cert()`.

5.113.4.2 `int x509_self_test (int verbose)`

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 1675 of file x509parse.c.

References `rsa_free()`, `test_ca_cert`, `test_ca_key`, `test_ca_pwd`, `test_cli_cert`, `x509_free()`, `x509parse_cert()`, `x509parse_key()`, and `x509parse_verify()`.

Referenced by `main()`.

5.113.4.3 `char* x509parse_cert_info (char * prefix, x509_cert * crt)`

Returns an informational string about the certificate.

Definition at line 1399 of file x509parse.c.

References `buf`, `_x509_time::day`, `_x509_time::hour`, `_x509_cert::issuer`, `_x509_buf::len`, `_x509_time::min`, `_x509_time::mon`, `mpi::n`, `rsa_context::N`, `_x509_buf::p`, `_x509_cert::rsa`, `RSA_MD2`, `RSA_MD4`, `RSA_MD5`, `RSA_SHA1`, `_x509_time::sec`, `_x509_cert::serial`, `_x509_cert::sig_oid1`, `_x509_cert::subject`, `_x509_cert::valid_from`, `_x509_cert::valid_to`, `_x509_cert::version`, `x509parse_dn_gets()`, and `_x509_time::year`.

Referenced by `debug_print_cert()`, and `main()`.

5.113.4.4 `int x509parse_crt(x509_cert *crt, unsigned char *buf, int buflen)`

Parse one or more certificates and add them to the chained list.

Parameters

chain points to the start of the chain
buf buffer holding the certificate data
buflen size of the buffer

Returns

0 if successful, or a specific X509 error code

Definition at line 647 of file x509parse.c.

References ASN1_CONSTRUCTED, asn1_get_tag(), ASN1_SEQUENCE, base64_decode(), _x509_cert::ca_istrue, rsa_context::E, _x509_cert::issuer, _x509_cert::issuer_id, _x509_cert::issuer_raw, rsa_context::len, _x509_buf::len, _x509_cert::max_pathlen, mpi_size(), rsa_context::N, _x509_cert::next, OID_PKCS1, _x509_buf::p, _x509_cert::pk_oid, _x509_cert::raw, _x509_cert::rsa, rsa_check_pubkey(), _x509_cert::serial, _x509_cert::sig, _x509_cert::sig_oid1, _x509_cert::sig_oid2, _x509_cert::subject, _x509_cert::subject_id, _x509_cert::subject_raw, _x509_cert::tbs, _x509_cert::v3_ext, _x509_cert::valid_from, _x509_cert::valid_to, _x509_cert::version, x509_free(), x509_get_alg(), x509_get_dates(), x509_get_ext(), x509_get_name(), x509_get_pubkey(), x509_get_serial(), x509_get_sig(), x509_get_uid(), x509_get_version(), x509parse_crt(), XYSSL_ERR_ASN1_LENGTH_MISMATCH, XYSSL_ERR_BASE64_INVALID_CHARACTER, XYSSL_ERR_X509_CERT_INVALID_FORMAT, XYSSL_ERR_X509_CERT_INVALID_PEM, XYSSL_ERR_X509_CERT_SIG_MISMATCH, XYSSL_ERR_X509_CERT_UNKNOWN_SIG_ALG, and XYSSL_ERR_X509_CERT_UNKNOWN_VERSION.

Referenced by main(), ssl_parse_certificate(), ssl_test(), x509_self_test(), x509parse_crt(), and x509parse_crtfile().

5.113.4.5 `int x509parse_crtfile(x509_cert *crt, char *path)`

Load one or more certificates and add them to the chained list.

Parameters

chain points to the start of the chain
path filename to read the certificates from

Returns

0 if successful, or a specific X509 error code

Definition at line 979 of file x509parse.c.

References buf, f, and x509parse_crt().

5.113.4.6 `int x509parse_dn_gets(char *buf, char *end, x509_name *dn)`

Store the certificate DN in printable form into buf; no more than (end - buf) characters will be written.

Definition at line 1316 of file x509parse.c.

References `_x509_buf::len`, `_x509_name::next`, `_x509_name::oid`, `OID_PKCS9`, `OID_X520`, `_x509_buf::p`, `PKCS9_EMAIL`, `_x509_name::val`, `X520_COMMON_NAME`, `X520_COUNTRY`, `X520_LOCALITY`, `X520_ORG_UNIT`, `X520_ORGANIZATION`, and `X520_STATE`.

Referenced by `x509parse_cert_info()`.

5.113.4.7 `int x509parse_expired(x509_cert * crt)`

Return 0 if the certificate is still valid, or `BADCERT_EXPIRED`.

Definition at line 1458 of file `x509parse.c`.

References `BADCERT_EXPIRED`, `_x509_time::day`, `_x509_time::mon`, `_x509_cert::valid_to`, and `_x509_time::year`.

Referenced by `x509parse_verify()`.

5.113.4.8 `int x509parse_key(rsa_context * rsa, unsigned char * buf, int buflen, unsigned char * pwd, int pwrlen)`

Parse a private RSA key.

Parameters

rsa RSA context to be initialized

buf input buffer

buflen size of the buffer

pwd password for decryption (optional)

pwrlen size of the password

Returns

0 if successful, or a specific X509 error code

Definition at line 1082 of file `x509parse.c`.

References `ASN1_CONSTRUCTED`, `asn1_get_int()`, `asn1_get_mpi()`, `asn1_get_tag()`, `ASN1_SEQUENCE`, `base64_decode()`, `rsa_context::D`, `rsa_context::DP`, `rsa_context::DQ`, `rsa_context::E`, `rsa_context::len`, `mpi_size()`, `rsa_context::N`, `rsa_context::P`, `rsa_context::Q`, `rsa_context::QP`, `rsa_check_privkey()`, `rsa_free()`, `rsa_context::ver`, `x509_des3_decrypt()`, `x509_get_iv()`, `XYSSL_ERR_ASN1_LENGTH_MISMATCH`, `XYSSL_ERR_BASE64_INVALID_CHARACTER`, `XYSSL_ERR_X509_FEATURE_UNAVAILABLE`, `XYSSL_ERR_X509_KEY_INVALID_ENC_IV`, `XYSSL_ERR_X509_KEY_INVALID_FORMAT`, `XYSSL_ERR_X509_KEY_INVALID_PEM`, `XYSSL_ERR_X509_KEY_INVALID_VERSION`, `XYSSL_ERR_X509_KEY_PASSWORD_MISMATCH`, `XYSSL_ERR_X509_KEY_PASSWORD_REQUIRED`, and `XYSSL_ERR_X509_KEY_UNKNOWN_ENC_ALG`.

Referenced by `main()`, `ssl_test()`, `x509_self_test()`, and `x509parse_keyfile()`.

5.113.4.9 `int x509parse_keyfile(rsa_context * rsa, char * path, char * password)`

Load and parse a private RSA key.

Parameters

rsa RSA context to be initialized

path filename to read the private key from
pwd password to decrypt the file (can be NULL)

Returns

0 if successful, or a specific X509 error code

Definition at line 1269 of file x509parse.c.

References buf, f, and x509parse_key().

5.113.4.10 int x509parse_verify(x509_cert **crt*, x509_cert **trust_ca*, char **cn*, int **flags*)

Verify the certificate signature.

Parameters

crt a certificate to be verified
trust_ca the trusted CA chain
cn expected Common Name (can be set to NULL if the CN must not be verified)
flags result of the verification

Returns

0 if successful or XYSSL_ERR_X509_SIG_VERIFY_FAILED, in which case *flags will have one or more of the following values set: BADCERT_EXPIRED -- BADCERT_REVOKED -- BADCERT_CN_MISMATCH -- BADCERT_NOT_TRUSTED

Note

TODO: add two arguments, depth and crl

Definition at line 1503 of file x509parse.c.

References BADCERT_CN_MISMATCH, BADCERT_NOT_TRUSTED, _x509_cert::ca_istrue, cur, _x509_cert::issuer_raw, _x509_buf::len, _x509_cert::max_pathlen, _x509_cert::next, _x509_name::next, _x509_name::oid, OID_CN, _x509_buf::p, _x509_cert::rsa, rsa_pkcs1_verify(), RSA_PUBLIC, _x509_cert::sig, _x509_cert::sig_oid1, _x509_cert::subject, _x509_cert::subject_raw, _x509_cert::tbs, _x509_name::val, _x509_cert::version, x509_hash(), x509parse_expired(), and XYSSL_ERR_X509_CERT_VERIFY_FAILED.

Referenced by ssl_parse_certificate(), and x509_self_test().

5.114 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/aes.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/aes.h"
#include "xyssl/padlock.h"
#include <string.h>
#include <stdio.h>
```

Defines

- #define [GET_ULONG_LE](#)(n, b, i)
- #define [PUT_ULONG_LE](#)(n, b, i)
- #define [ROTL8](#)(x) ((x << 8) & 0xFFFFFFFF) | (x >> 24)
- #define [XTIME](#)(x) ((x << 1) ^ ((x & 0x80) ? 0x1B : 0x00))
- #define [MUL](#)(x, y) ((x && y) ? pow[(log[x]+log[y]) % 255] : 0)
- #define [AES_FROUND](#)(X0, X1, X2, X3, Y0, Y1, Y2, Y3)
- #define [AES_RROUND](#)(X0, X1, X2, X3, Y0, Y1, Y2, Y3)

Functions

- static void [aes_gen_tables](#) (void)
- void [aes_setkey_enc](#) ([aes_context](#) *ctx, unsigned char *key, [int](#) keysize)
AES key schedule (encryption).
- void [aes_setkey_dec](#) ([aes_context](#) *ctx, unsigned char *key, [int](#) keysize)
AES key schedule (decryption).
- void [aes_crypt_ecb](#) ([aes_context](#) *ctx, [int](#) mode, unsigned char input[16], unsigned char output[16])
AES-ECB block encryption/decryption.
- void [aes_crypt_cbc](#) ([aes_context](#) *ctx, [int](#) mode, [int](#) length, unsigned char iv[16], unsigned char *input, unsigned char *output)
AES-CBC buffer encryption/decryption.
- void [aes_crypt_cfb](#) ([aes_context](#) *ctx, [int](#) mode, [int](#) length, [int](#) *iv_off, unsigned char iv[16], unsigned char *input, unsigned char *output)
AES-CFB buffer encryption/decryption.
- [int](#) [aes_self_test](#) ([int](#) verbose)
Checkup routine.

Variables

- static unsigned char [FSb](#) [256]
- static unsigned long [FT0](#) [256]
- static unsigned long [FT1](#) [256]
- static unsigned long [FT2](#) [256]
- static unsigned long [FT3](#) [256]
- static unsigned char [RSb](#) [256]
- static unsigned long [RT0](#) [256]
- static unsigned long [RT1](#) [256]
- static unsigned long [RT2](#) [256]
- static unsigned long [RT3](#) [256]
- static unsigned long [RCON](#) [10]
- static `int` [aes_init_done](#) = 0
- static const unsigned char [aes_test_ecb_dec](#) [3][16]
- static const unsigned char [aes_test_ecb_enc](#) [3][16]
- static const unsigned char [aes_test_cbc_dec](#) [3][16]
- static const unsigned char [aes_test_cbc_enc](#) [3][16]
- static const unsigned char [aes_test_cfb_dec](#) [3][16]
- static const unsigned char [aes_test_cfb_enc](#) [3][16]

5.114.1 Define Documentation

5.114.1.1 #define AES_FROUND(X0, X1, X2, X3, Y0, Y1, Y2, Y3)

Value:

```
{
    X0 = *RK++ ^ FT0[ ( Y0          ) & 0xFF ] ^ \
              FT1[ ( Y1 >>  8 ) & 0xFF ] ^ \
              FT2[ ( Y2 >> 16 ) & 0xFF ] ^ \
              FT3[ ( Y3 >> 24 ) & 0xFF ]; \
    X1 = *RK++ ^ FT0[ ( Y1          ) & 0xFF ] ^ \
              FT1[ ( Y2 >>  8 ) & 0xFF ] ^ \
              FT2[ ( Y3 >> 16 ) & 0xFF ] ^ \
              FT3[ ( Y0 >> 24 ) & 0xFF ]; \
    X2 = *RK++ ^ FT0[ ( Y2          ) & 0xFF ] ^ \
              FT1[ ( Y3 >>  8 ) & 0xFF ] ^ \
              FT2[ ( Y0 >> 16 ) & 0xFF ] ^ \
              FT3[ ( Y1 >> 24 ) & 0xFF ]; \
    X3 = *RK++ ^ FT0[ ( Y3          ) & 0xFF ] ^ \
              FT1[ ( Y0 >>  8 ) & 0xFF ] ^ \
              FT2[ ( Y1 >> 16 ) & 0xFF ] ^ \
              FT3[ ( Y2 >> 24 ) & 0xFF ]; \
}
```

Definition at line 590 of file `aes.c`.

Referenced by `aes_crypt_ecb()`.

5.114.1.2 #define AES_RROUND(X0, X1, X2, X3, Y0, Y1, Y2, Y3)**Value:**

```

{
    X0 = *RK++ ^ RT0[ ( Y0          ) & 0xFF ] ^ \
              RT1[ ( Y3 >> 8 ) & 0xFF ] ^ \
              RT2[ ( Y2 >> 16 ) & 0xFF ] ^ \
              RT3[ ( Y1 >> 24 ) & 0xFF ]; \
    X1 = *RK++ ^ RT0[ ( Y1          ) & 0xFF ] ^ \
              RT1[ ( Y0 >> 8 ) & 0xFF ] ^ \
              RT2[ ( Y3 >> 16 ) & 0xFF ] ^ \
              RT3[ ( Y2 >> 24 ) & 0xFF ]; \
    X2 = *RK++ ^ RT0[ ( Y2          ) & 0xFF ] ^ \
              RT1[ ( Y1 >> 8 ) & 0xFF ] ^ \
              RT2[ ( Y0 >> 16 ) & 0xFF ] ^ \
              RT3[ ( Y3 >> 24 ) & 0xFF ]; \
    X3 = *RK++ ^ RT0[ ( Y3          ) & 0xFF ] ^ \
              RT1[ ( Y2 >> 8 ) & 0xFF ] ^ \
              RT2[ ( Y1 >> 16 ) & 0xFF ] ^ \
              RT3[ ( Y0 >> 24 ) & 0xFF ]; \
}

```

Definition at line 613 of file aes.c.

Referenced by aes_crypt_ecb().

5.114.1.3 #define GET_ULONG_LE(n, b, i)**Value:**

```

{
    (n) = ( (unsigned long) (b)[(i)      ]          ) \
    | ( (unsigned long) (b)[(i) + 1] << 8 )          \
    | ( (unsigned long) (b)[(i) + 2] << 16 )          \
    | ( (unsigned long) (b)[(i) + 3] << 24 ); \
}

```

Definition at line 40 of file aes.c.

Referenced by aes_crypt_ecb(), aes_setkey_enc(), and md5_process().

5.114.1.4 #define MUL(x, y) ((x && y) ? pow[(log[x]+log[y]) % 255] : 0)

Definition at line 354 of file aes.c.

Referenced by aes_gen_tables().

5.114.1.5 #define PUT_ULONG_LE(n, b, i)**Value:**

```

{
    (b)[(i)      ] = (unsigned char) ( (n)          ); \
    (b)[(i) + 1] = (unsigned char) ( (n) >> 8 ); \
    (b)[(i) + 2] = (unsigned char) ( (n) >> 16 ); \
    (b)[(i) + 3] = (unsigned char) ( (n) >> 24 ); \
}

```

Definition at line 50 of file aes.c.

Referenced by aes_crypt_ecb(), and md5_finish().

5.114.1.6 **#define ROTL8(x) ((x << 8) & 0xFFFFFFFF) | (x >> 24)**

Definition at line 352 of file aes.c.

Referenced by aes_gen_tables().

5.114.1.7 **#define XTIME(x) ((x << 1) ^ ((x & 0x80) ? 0x1B : 0x00))**

Definition at line 353 of file aes.c.

Referenced by aes_gen_tables().

5.114.2 Function Documentation

5.114.2.1 **void aes_crypt_cbc (aes_context * ctx, int mode, int length, unsigned char iv[16], unsigned char * input, unsigned char * output)**

AES-CBC buffer encryption/decryption.

Parameters

ctx AES context
mode AES_ENCRYPT or AES_DECRYPT
length length of the input data
iv initialization vector (updated after use)
input buffer holding the input data
output buffer holding the output data

Definition at line 732 of file aes.c.

References aes_crypt_ecb(), and AES_DECRYPT.

Referenced by aes_self_test(), main(), ssl_decrypt_buf(), and ssl_encrypt_buf().

5.114.2.2 **void aes_crypt_cfb (aes_context * ctx, int mode, int length, int * iv_off, unsigned char iv[16], unsigned char * input, unsigned char * output)**

AES-CFB buffer encryption/decryption.

Parameters

ctx AES context
mode AES_ENCRYPT or AES_DECRYPT
length length of the input data
iv_off offset in IV (updated after use)
iv initialization vector (updated after use)
input buffer holding the input data

output buffer holding the output data

Definition at line 787 of file aes.c.

References `aes_crypt_ecb()`, `AES_DECRYPT`, and `AES_ENCRYPT`.

Referenced by `aes_self_test()`.

5.114.2.3 `void aes_crypt_ecb (aes_context * ctx, int mode, unsigned char input[16], unsigned char output[16])`

AES-ECB block encryption/decryption.

Parameters

ctx AES context

mode `AES_ENCRYPT` or `AES_DECRYPT`

input 16-byte input block

output 16-byte output block

Definition at line 639 of file aes.c.

References `AES_DECRYPT`, `AES_FROUND`, `AES_RROUND`, `FSb`, `GET_ULONG_LE`, `aes_context::nr`, `PUT_ULONG_LE`, `aes_context::rk`, and `RSb`.

Referenced by `aes_crypt_cbc()`, `aes_crypt_cfb()`, `aes_en_de()`, `aes_self_test()`, and `main()`.

5.114.2.4 `static void aes_gen_tables (void) [static]`

Definition at line 358 of file aes.c.

References `FSb`, `FT0`, `FT1`, `FT2`, `FT3`, `MUL`, `RCON`, `ROTL8`, `RSb`, `RT0`, `RT1`, `RT2`, `RT3`, and `XTIME`.

Referenced by `aes_setkey_enc()`.

5.114.2.5 `int aes_self_test (int verbose)`

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 902 of file aes.c.

References `aes_crypt_cbc()`, `aes_crypt_cfb()`, `aes_crypt_ecb()`, `AES_DECRYPT`, `aes_setkey_dec()`, `aes_setkey_enc()`, `aes_test_cbc_dec`, `aes_test_cbc_enc`, `aes_test_cfb_dec`, `aes_test_cfb_enc`, `aes_test_ecb_dec`, `aes_test_ecb_enc`, `buf`, and `prv`.

Referenced by `main()`.

5.114.2.6 `void aes_setkey_dec (aes_context * ctx, unsigned char * key, int keysize)`

AES key schedule (decryption).

Parameters*ctx* AES context to be initialized*key* decryption key*keysize* must be 128, 192 or 256

Definition at line 542 of file aes.c.

References aes_setkey_enc(), aes_context::buf, FSb, aes_context::nr, aes_context::rk, RT0, RT1, RT2, and RT3.

Referenced by aes_en_de(), aes_self_test(), main(), and ssl_derive_keys().

5.114.2.7 void aes_setkey_enc(aes_context * ctx, unsigned char * key, int keysize)

AES key schedule (encryption).

Parameters*ctx* AES context to be initialized*key* encryption key*keysize* must be 128, 192 or 256

Definition at line 439 of file aes.c.

References aes_gen_tables(), aes_init_done, aes_context::buf, FSb, GET_ULONG_LE, aes_context::nr, RCON, and aes_context::rk.

Referenced by aes_en_de(), aes_self_test(), aes_setkey_dec(), main(), and ssl_derive_keys().

5.114.3 Variable Documentation**5.114.3.1 int aes_init_done = 0 [static]**

Definition at line 356 of file aes.c.

Referenced by aes_setkey_enc().

5.114.3.2 const unsigned char aes_test_cbc_dec[3][16] [static]**Initial value:**

```
{
    { 0xFA, 0xCA, 0x37, 0xE0, 0xB0, 0xC8, 0x53, 0x73,
      0xDF, 0x70, 0x6E, 0x73, 0xF7, 0xC9, 0xAF, 0x86 },
    { 0x5D, 0xF6, 0x78, 0xDD, 0x17, 0xBA, 0x4E, 0x75,
      0xB6, 0x17, 0x68, 0xC6, 0xAD, 0xEF, 0x7C, 0x7B },
    { 0x48, 0x04, 0xE1, 0x81, 0x8F, 0xE6, 0x29, 0x75,
      0x19, 0xA3, 0xE8, 0x8C, 0x57, 0x31, 0x04, 0x13 }
}
```

Definition at line 856 of file aes.c.

Referenced by aes_self_test().

5.114.3.3 const unsigned char aes_test_cbc_enc[3][16] [static]**Initial value:**

```
{
    { 0x8A, 0x05, 0xFC, 0x5E, 0x09, 0x5A, 0xF4, 0x84,
      0x8A, 0x08, 0xD3, 0x28, 0xD3, 0x68, 0x8E, 0x3D },
    { 0x7B, 0xD9, 0x66, 0xD5, 0x3A, 0xD8, 0xC1, 0xBB,
      0x85, 0xD2, 0xAD, 0xFA, 0xE8, 0x7B, 0xB1, 0x04 },
    { 0xFE, 0x3C, 0x53, 0x65, 0x3E, 0x2F, 0x45, 0xB5,
      0x6F, 0xCD, 0x88, 0xB2, 0xCC, 0x89, 0x8F, 0xF0 }
}
```

Definition at line 866 of file aes.c.

Referenced by aes_self_test().

5.114.3.4 const unsigned char aes_test_cfb_dec[3][16] [static]**Initial value:**

```
{
    { 0xBA, 0x75, 0x0C, 0xC9, 0x77, 0xF8, 0xD4, 0xE1,
      0x3E, 0x0F, 0xB5, 0x46, 0x2E, 0xA6, 0x33, 0xF6 },
    { 0xDB, 0x40, 0x4A, 0x98, 0x7B, 0xAA, 0xA3, 0xF3,
      0x92, 0x35, 0xAD, 0x58, 0x09, 0x9B, 0xFF, 0x6E },
    { 0xA8, 0x17, 0x41, 0x0E, 0x76, 0x71, 0x60, 0xE5,
      0xFD, 0x37, 0xC5, 0x43, 0xCC, 0xC8, 0xD6, 0xDA }
}
```

Definition at line 879 of file aes.c.

Referenced by aes_self_test().

5.114.3.5 const unsigned char aes_test_cfb_enc[3][16] [static]**Initial value:**

```
{
    { 0x45, 0x62, 0xC5, 0xA1, 0xF9, 0x10, 0x8F, 0xE0,
      0x87, 0x24, 0x25, 0x68, 0xB5, 0x12, 0xF3, 0x8B },
    { 0xB8, 0xD4, 0xD5, 0x09, 0xF5, 0xEE, 0x08, 0x38,
      0x48, 0x9B, 0x9D, 0xAD, 0x11, 0xB4, 0x2E, 0xD2 },
    { 0xE9, 0x10, 0x80, 0xDA, 0xEE, 0x2D, 0x81, 0xD9,
      0x41, 0x78, 0x91, 0xD5, 0x98, 0x78, 0xE1, 0xFA }
}
```

Definition at line 889 of file aes.c.

Referenced by aes_self_test().

5.114.3.6 const unsigned char aes_test_ecb_dec[3][16] [static]**Initial value:**

```
{
    { 0x44, 0x41, 0x6A, 0xC2, 0xD1, 0xF5, 0x3C, 0x58,
      0x33, 0x03, 0x91, 0x7E, 0x6B, 0xE9, 0xEB, 0xE0 },
    { 0x48, 0xE3, 0x1E, 0x9E, 0x25, 0x67, 0x18, 0xF2,
      0x92, 0x29, 0x31, 0x9C, 0x19, 0xF1, 0x5B, 0xA4 },
    { 0x05, 0x8C, 0xCF, 0xFD, 0xBB, 0xCB, 0x38, 0x2D,
      0x1F, 0x6F, 0x56, 0x58, 0x5D, 0x8A, 0x4A, 0xDE }
}
```

Definition at line 836 of file aes.c.

Referenced by aes_self_test().

5.114.3.7 `const unsigned char aes_test_ecb_enc[3][16] [static]`

Initial value:

```
{
    { 0xC3, 0x4C, 0x05, 0x2C, 0xC0, 0xDA, 0x8D, 0x73,
      0x45, 0x1A, 0xFE, 0x5F, 0x03, 0xBE, 0x29, 0x7F },
    { 0xF3, 0xF6, 0x75, 0x2A, 0xE8, 0xD7, 0x83, 0x11,
      0x38, 0xF0, 0x41, 0x56, 0x06, 0x31, 0xB1, 0x14 },
    { 0x8B, 0x79, 0xEE, 0xCC, 0x93, 0xA0, 0xEE, 0x5D,
      0xFF, 0x30, 0xB4, 0xEA, 0x21, 0x63, 0x6D, 0xA4 }
}
```

Definition at line 846 of file aes.c.

Referenced by aes_self_test().

5.114.3.8 `unsigned char FSb[256] [static]`

Definition at line 329 of file aes.c.

Referenced by aes_crypt_ecb(), aes_gen_tables(), aes_setkey_dec(), and aes_setkey_enc().

5.114.3.9 `unsigned long FT0[256] [static]`

Definition at line 330 of file aes.c.

Referenced by aes_gen_tables().

5.114.3.10 `unsigned long FT1[256] [static]`

Definition at line 331 of file aes.c.

Referenced by aes_gen_tables().

5.114.3.11 `unsigned long FT2[256] [static]`

Definition at line 332 of file aes.c.

Referenced by aes_gen_tables().

5.114.3.12 unsigned long FT3[256] [static]

Definition at line 333 of file aes.c.

Referenced by aes_gen_tables().

5.114.3.13 unsigned long RCON[10] [static]

Definition at line 347 of file aes.c.

Referenced by aes_gen_tables(), and aes_setkey_enc().

5.114.3.14 unsigned char RSb[256] [static]

Definition at line 338 of file aes.c.

Referenced by aes_crypt_ecb(), and aes_gen_tables().

5.114.3.15 unsigned long RT0[256] [static]

Definition at line 339 of file aes.c.

Referenced by aes_gen_tables(), and aes_setkey_dec().

5.114.3.16 unsigned long RT1[256] [static]

Definition at line 340 of file aes.c.

Referenced by aes_gen_tables(), and aes_setkey_dec().

5.114.3.17 unsigned long RT2[256] [static]

Definition at line 341 of file aes.c.

Referenced by aes_gen_tables(), and aes_setkey_dec().

5.114.3.18 unsigned long RT3[256] [static]

Definition at line 342 of file aes.c.

Referenced by aes_gen_tables(), and aes_setkey_dec().

5.115 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/arc4.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/arc4.h"
#include <string.h>
#include <stdio.h>
```

Functions

- void [arc4_setup](#) ([arc4_context](#) *ctx, unsigned char *key, int keylen)
ARC4 key schedule.
- void [arc4_crypt](#) ([arc4_context](#) *ctx, unsigned char *buf, int buflen)
ARC4 cipher function.
- int [arc4_self_test](#) (int verbose)

Variables

- static const unsigned char [arc4_test_key](#) [3][8]
- static const unsigned char [arc4_test_pt](#) [3][8]
- static const unsigned char [arc4_test_ct](#) [3][8]

5.115.1 Function Documentation

5.115.1.1 void [arc4_crypt](#) ([arc4_context](#) * ctx, unsigned char * buf, int buflen)

ARC4 cipher function.

Parameters

ctx ARC4 context
buf buffer to be processed
buflen amount of data in buf

Definition at line 63 of file arc4.c.

References [arc4_context::m](#), [arc4_context::x](#), and [arc4_context::y](#).

Referenced by [arc4_self_test\(\)](#), [main\(\)](#), [ssl_decrypt_buf\(\)](#), and [ssl_encrypt_buf\(\)](#).

5.115.1.2 int [arc4_self_test](#) (int verbose)

Definition at line 122 of file arc4.c.

References [arc4_crypt\(\)](#), [arc4_setup\(\)](#), [arc4_test_ct](#), [arc4_test_key](#), [arc4_test_pt](#), and [buf](#).

Referenced by [main\(\)](#).

5.115.1.3 void arc4_setup (arc4_context * *ctx*, unsigned char * *key*, int *keylen*)

ARC4 key schedule.

Parameters

ctx ARC4 context to be initialized

key the secret key

keylen length of the key

Definition at line 35 of file arc4.c.

References arc4_context::m, arc4_context::x, and arc4_context::y.

Referenced by arc4_self_test(), main(), and ssl_derive_keys().

5.115.2 Variable Documentation**5.115.2.1 const unsigned char arc4_test_ct[3][8] [static]****Initial value:**

```
{
    { 0x75, 0xB7, 0x87, 0x80, 0x99, 0xE0, 0xC5, 0x96 },
    { 0x74, 0x94, 0xC2, 0xE7, 0x10, 0x4B, 0x08, 0x79 },
    { 0xDE, 0x18, 0x89, 0x41, 0xA3, 0x37, 0x5D, 0x3A }
}
```

Definition at line 112 of file arc4.c.

Referenced by arc4_self_test().

5.115.2.2 const unsigned char arc4_test_key[3][8] [static]**Initial value:**

```
{
    { 0x01, 0x23, 0x45, 0x67, 0x89, 0xAB, 0xCD, 0xEF },
    { 0x01, 0x23, 0x45, 0x67, 0x89, 0xAB, 0xCD, 0xEF },
    { 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00 }
}
```

Definition at line 98 of file arc4.c.

Referenced by arc4_self_test().

5.115.2.3 const unsigned char arc4_test_pt[3][8] [static]**Initial value:**

```
{
    { 0x01, 0x23, 0x45, 0x67, 0x89, 0xAB, 0xCD, 0xEF },
    { 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00 },
    { 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00, 0x00 }
}
```

Definition at line 105 of file arc4.c.

Referenced by arc4_self_test().

5.116 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/base64.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/base64.h"
#include <string.h>
#include <stdio.h>
```

Functions

- `int base64_encode` (unsigned char *dst, int *dlen, unsigned char *src, int slen)
Encode a buffer into base64 format.
- `int base64_decode` (unsigned char *dst, int *dlen, unsigned char *src, int slen)
Decode a base64-formatted buffer.
- `int base64_self_test` (int verbose)
Checkup routine.

Variables

- static const unsigned char `base64_enc_map` [64]
- static const unsigned char `base64_dec_map` [128]
- static const unsigned char `base64_test_dec` [64]
- static const unsigned char `base64_test_enc` []

5.116.1 Function Documentation

5.116.1.1 int base64_decode (unsigned char *dst, int *dlen, unsigned char *src, int slen)

Decode a base64-formatted buffer.

Parameters

dst destination buffer
dlen size of the buffer
src source buffer
slen amount of data to be decoded

Returns

0 if successful, XYSSL_ERR_BASE64_BUFFER_TOO_SMALL, or XYSSL_ERR_BASE64_INVALID_DATA if the input data is not correct. *dlen is always updated to reflect the amount of data that has (or would have) been written.

Note

Call this function with *dlen = 0 to obtain the required buffer size in *dlen

Definition at line 121 of file base64.c.

References `base64_dec_map`, `XYSSL_ERR_BASE64_BUFFER_TOO_SMALL`, and `XYSSL_ERR_BASE64_INVALID_CHARACTER`.

Referenced by `base64_self_test()`, `x509parse_crt()`, and `x509parse_key()`.

5.116.1.2 `int base64_encode (unsigned char *dst, int *dlen, unsigned char *src, int slen)`

Encode a buffer into base64 format.

Parameters

dst destination buffer
dlen size of the buffer
src source buffer
slen amount of data to be encoded

Returns

0 if successful, or `XYSSL_ERR_BASE64_BUFFER_TOO_SMALL`. **dlen* is always updated to reflect the amount of data that has (or would have) been written.

Note

Call this function with **dlen* = 0 to obtain the required buffer size in **dlen*

Definition at line 58 of file base64.c.

References `base64_enc_map`, and `XYSSL_ERR_BASE64_BUFFER_TOO_SMALL`.

Referenced by `base64_self_test()`.

5.116.1.3 `int base64_self_test (int verbose)`

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 206 of file base64.c.

References `base64_decode()`, `base64_encode()`, `base64_test_dec`, and `base64_test_enc`.

Referenced by `main()`.

5.116.2 Variable Documentation

5.116.2.1 `const unsigned char base64_dec_map[128] [static]`

Initial value:

```
{
    127, 127, 127, 127, 127, 127, 127, 127, 127, 127,
```

```

127, 127, 127, 127, 127, 127, 127, 127, 127, 127,
127, 127, 127, 127, 127, 127, 127, 127, 127, 127,
127, 127, 127, 127, 127, 127, 127, 127, 127, 127,
127, 127, 127, 62, 127, 127, 127, 63, 52, 53,
54, 55, 56, 57, 58, 59, 60, 61, 127, 127,
127, 64, 127, 127, 127, 0, 1, 2, 3, 4,
5, 6, 7, 8, 9, 10, 11, 12, 13, 14,
15, 16, 17, 18, 19, 20, 21, 22, 23, 24,
25, 127, 127, 127, 127, 127, 127, 26, 27, 28,
29, 30, 31, 32, 33, 34, 35, 36, 37, 38,
39, 40, 41, 42, 43, 44, 45, 46, 47, 48,
49, 50, 51, 127, 127, 127, 127, 127, 127
}

```

Definition at line 38 of file base64.c.

Referenced by base64_decode().

5.116.2.2 const unsigned char base64_enc_map[64] [static]

Initial value:

```

{
    'A', 'B', 'C', 'D', 'E', 'F', 'G', 'H', 'I', 'J',
    'K', 'L', 'M', 'N', 'O', 'P', 'Q', 'R', 'S', 'T',
    'U', 'V', 'W', 'X', 'Y', 'Z', 'a', 'b', 'c', 'd',
    'e', 'f', 'g', 'h', 'i', 'j', 'k', 'l', 'm', 'n',
    'o', 'p', 'q', 'r', 's', 't', 'u', 'v', 'w', 'x',
    'y', 'z', '0', '1', '2', '3', '4', '5', '6', '7',
    '8', '9', '+', '/'
}

```

Definition at line 27 of file base64.c.

Referenced by base64_encode().

5.116.2.3 const unsigned char base64_test_dec[64] [static]

Initial value:

```

{
    0x24, 0x48, 0x6E, 0x56, 0x87, 0x62, 0x5A, 0xBD,
    0xBF, 0x17, 0xD9, 0xA2, 0xC4, 0x17, 0x1A, 0x01,
    0x94, 0xED, 0x8F, 0x1E, 0x11, 0xB3, 0xD7, 0x09,
    0x0C, 0xB6, 0xE9, 0x10, 0x6F, 0x22, 0xEE, 0x13,
    0xCA, 0xB3, 0x07, 0x05, 0x76, 0xC9, 0xFA, 0x31,
    0x6C, 0x08, 0x34, 0xFF, 0x8D, 0xC2, 0x6C, 0x38,
    0x00, 0x43, 0xE9, 0x54, 0x97, 0xAF, 0x50, 0x4B,
    0xD1, 0x41, 0xBA, 0x95, 0x31, 0x5A, 0x0B, 0x97
}

```

Definition at line 187 of file base64.c.

Referenced by base64_self_test().

5.116.2.4 const unsigned char base64_test_enc[] [static]

Initial value:

```
"JEhuVodiWr2/F9mixBcaAZTtjx4Rs9cJDLbpEG8i7hPK"  
"swcFdsn6MWwINP+Nwmw4AEPpVJevUEvRQbqVMVoLlw=="
```

Definition at line 199 of file base64.c.

Referenced by base64_self_test().

5.117 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/bignum.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/bignum.h"
#include "xyssl/bn_mul.h"
#include <string.h>
#include <stdlib.h>
#include <stdarg.h>
```

Defines

- #define `ciL` ((int) sizeof(t_int))
- #define `biL` (ciL << 3)
- #define `biH` (ciL << 2)
- #define `BITS_TO_LIMBS`(i) (((i) + biL - 1) / biL)
- #define `CHARS_TO_LIMBS`(i) (((i) + ciL - 1) / ciL)

Functions

- void `mpi_init` (mpi *X,...)
Initialize one or more mpi.
- void `mpi_free` (mpi *X,...)
Unallocate one or more mpi.
- int `mpi_grow` (mpi *X, int nlimbs)
Enlarge to the specified number of limbs.
- int `mpi_copy` (mpi *X, mpi *Y)
Copy the contents of Y into X.
- void `mpi_swap` (mpi *X, mpi *Y)
Swap the contents of X and Y.
- int `mpi_lset` (mpi *X, int z)
Set value from integer.
- int `mpi_lsb` (mpi *X)
Return the number of least significant bits.
- int `mpi_msb` (mpi *X)
Return the number of most significant bits.
- int `mpi_size` (mpi *X)
Return the total size in bytes.

- static `int mpi_get_digit (t_int *d, int radix, char c)`
- `int mpi_read_string (mpi *X, int radix, char *s)`
Import from an ASCII string.
- static `int mpi_write_hlp (mpi *X, int radix, char **p)`
- `int mpi_write_string (mpi *X, int radix, char *s, int *slen)`
Export into an ASCII string.
- `int mpi_read_file (mpi *X, int radix, FILE *fin)`
Read X from an opened file.
- `int mpi_read_mystring (mpi *X, int radix, char *s)`
- `int mpi_write_file (char *p, mpi *X, int radix, FILE *fout)`
Write X into an opened file, or stdout.
- `int mpi_read_binary (mpi *X, unsigned char *buf, int buflen)`
Import X from unsigned binary data, big endian.
- `int mpi_write_binary (mpi *X, unsigned char *buf, int buflen)`
Export X into unsigned binary data, big endian.
- `int mpi_shift_l (mpi *X, int count)`
Left-shift: $X \ll = \text{count}$.
- `int mpi_shift_r (mpi *X, int count)`
Right-shift: $X \gg = \text{count}$.
- `int mpi_cmp_abs (mpi *X, mpi *Y)`
Compare unsigned values.
- `int mpi_cmp_mpi (mpi *X, mpi *Y)`
Compare signed values.
- `int mpi_cmp_int (mpi *X, int z)`
Compare signed values.
- `int mpi_add_abs (mpi *X, mpi *A, mpi *B)`
Unsigned addition: $X = |A| + |B|$.
- static void `mpi_sub_hlp (int n, t_int *s, t_int *d)`
- `int mpi_sub_abs (mpi *X, mpi *A, mpi *B)`
Unsigned subtraction: $X = |A| - |B|$.
- `int mpi_add_mpi (mpi *X, mpi *A, mpi *B)`
Signed addition: $X = A + B$.
- `int mpi_sub_mpi (mpi *X, mpi *A, mpi *B)`
Signed subtraction: $X = A - B$.
- `int mpi_add_int (mpi *X, mpi *A, int b)`

Signed addition: $X = A + b$.

- `int mpi_sub_int (mpi *X, mpi *A, int b)`

Signed subtraction: $X = A - b$.

- `static void mpi_mul_hlp (int i, t_int *s, t_int *d, t_int b)`
- `int mpi_mul_mpi (mpi *X, mpi *A, mpi *B)`

*Baseline multiplication: $X = A * B$.*

- `int mpi_mul_int (mpi *X, mpi *A, t_int b)`

*Baseline multiplication: $X = A * b$.*

- `int mpi_div_mpi (mpi *Q, mpi *R, mpi *A, mpi *B)`

*Division by mpi: $A = Q * B + R$.*

- `int mpi_div_int (mpi *Q, mpi *R, mpi *A, int b)`

*Division by int: $A = Q * b + R$.*

- `int mpi_mod_mpi (mpi *R, mpi *A, mpi *B)`

Modulo: $R = A \bmod B$.

- `int mpi_mod_int (t_int *r, mpi *A, int b)`

Modulo: $r = A \bmod b$.

- `static void mpi_montg_init (t_int *mm, mpi *N)`
- `static void mpi_montmul (mpi *A, mpi *B, mpi *N, t_int mm, mpi *T)`
- `static void mpi_montred (mpi *A, mpi *N, t_int mm, mpi *T)`
- `int mpi_exp_mod (mpi *X, mpi *A, mpi *E, mpi *N, mpi *_RR)`

Sliding-window exponentiation: $X = A^E \bmod N$.

- `int mpi_gcd (mpi *G, mpi *A, mpi *B)`

Greatest common divisor: $G = \gcd(A, B)$.

- `int mpi_inv_mod (mpi *X, mpi *A, mpi *N)`

Modular inverse: $X = A^{-1} \bmod N$.

- `int mpi_is_prime (mpi *X, int(*f_rng)(void *), void *p_rng)`

Miller-Rabin primality test.

- `int mpi_gen_prime (mpi *X, int nbits, int dh_flag, int(*f_rng)(void *), void *p_rng)`

Prime number generation.

- `int mpi_self_test (int verbose)`

Checkup routine.

Variables

- `static const int small_prime []`

5.117.1 Define Documentation

5.117.1.1 `#define biH (ciL << 2)`

Definition at line 41 of file `bignum.c`.

Referenced by `mpi_div_mpi()`, and `mpi_mod_int()`.

5.117.1.2 `#define biL (ciL << 3)`

Definition at line 40 of file `bignum.c`.

Referenced by `mpi_div_mpi()`, `mpi_exp_mod()`, `mpi_lsb()`, `mpi_montg_init()`, `mpi_msb()`, `mpi_shift_l()`, and `mpi_shift_r()`.

5.117.1.3 `#define BITS_TO_LIMBS(i) (((i) + biL - 1) / biL)`

Definition at line 46 of file `bignum.c`.

Referenced by `mpi_gen_prime()`, `mpi_read_string()`, and `mpi_shift_l()`.

5.117.1.4 `#define CHARS_TO_LIMBS(i) (((i) + ciL - 1) / ciL)`

Definition at line 47 of file `bignum.c`.

Referenced by `mpi_read_binary()`.

5.117.1.5 `#define ciL ((int) sizeof(t_int))`

Definition at line 39 of file `bignum.c`.

Referenced by `mpi_copy()`, `mpi_free()`, `mpi_gen_prime()`, `mpi_grow()`, `mpi_is_prime()`, `mpi_lset()`, `mpi_montmul()`, `mpi_read_binary()`, `mpi_read_string()`, `mpi_write_binary()`, and `mpi_write_string()`.

5.117.2 Function Documentation

5.117.2.1 `int mpi_add_abs (mpi * X, mpi * A, mpi * B)`

Unsigned addition: $X = |A| + |B|$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 694 of file `bignum.c`.

References `MPI_CHK`, `mpi_copy()`, `mpi_grow()`, `mpi::n`, and `mpi::p`.

Referenced by `mpi_add_mpi()`, and `mpi_sub_mpi()`.

5.117.2.2 `int mpi_add_int (mpi * X, mpi * A, int b)`

Signed addition: $X = A + b$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 860 of file bignum.c.

References `mpi_add_mpi()`, `mpi::n`, `mpi::p`, and `mpi::s`.

Referenced by `mpi_gen_prime()`, and `mpi_read_string()`.

5.117.2.3 int mpi_add_mpi (mpi * X, mpi * A, mpi * B)

Signed addition: $X = A + B$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 798 of file bignum.c.

References `mpi_add_abs()`, `MPI_CHK`, `mpi_cmp_abs()`, `mpi_sub_abs()`, and `mpi::s`.

Referenced by `mpi_add_int()`, `mpi_div_mpi()`, `mpi_inv_mod()`, `mpi_mod_mpi()`, and `rsa_private()`.

5.117.2.4 int mpi_cmp_abs (mpi * X, mpi * Y)

Compare unsigned values.

Returns

1 if $|X|$ is greater than $|Y|$, -1 if $|X|$ is lesser than $|Y|$ or 0 if $|X|$ is equal to $|Y|$

Definition at line 615 of file bignum.c.

References `mpi::n`, and `mpi::p`.

Referenced by `mpi_add_mpi()`, `mpi_div_mpi()`, `mpi_montmul()`, `mpi_sub_abs()`, and `mpi_sub_mpi()`.

5.117.2.5 int mpi_cmp_int (mpi * X, int z)

Compare signed values.

Returns

1 if X is greater than z, -1 if X is lesser than z or 0 if X is equal to z

Definition at line 678 of file bignum.c.

References `mpi_cmp_mpi()`, `mpi::n`, `mpi::p`, and `mpi::s`.

Referenced by `mpi_div_mpi()`, `mpi_exp_mod()`, `mpi_gcd()`, `mpi_inv_mod()`, `mpi_is_prime()`, `mpi_mod_mpi()`, `mpi_write_hlp()`, `rsa_check_privkey()`, and `rsa_gen_key()`.

5.117.2.6 int mpi_cmp_mpi (mpi * X, mpi * Y)

Compare signed values.

Returns

1 if X is greater than Y, -1 if X is lesser than Y or 0 if X is equal to Y

Definition at line 645 of file bignum.c.

References `mpi::n`, `mpi::p`, and `mpi::s`.

Referenced by `dhm_make_params()`, `dhm_make_public()`, `mpi_cmp_int()`, `mpi_div_mpi()`, `mpi_exp_mod()`, `mpi_gcd()`, `mpi_inv_mod()`, `mpi_is_prime()`, `mpi_mod_mpi()`, `mpi_self_test()`, `rsa_check_privkey()`, `rsa_gen_key()`, `rsa_private()`, and `rsa_public()`.

5.117.2.7 int mpi_copy (mpi * X, mpi * Y)

Copy the contents of Y into X.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 128 of file bignum.c.

References `ciL`, `MPI_CHK`, `mpi_grow()`, `mpi::n`, `mpi::p`, and `mpi::s`.

Referenced by `mpi_add_abs()`, `mpi_div_mpi()`, `mpi_exp_mod()`, `mpi_gcd()`, `mpi_inv_mod()`, `mpi_is_prime()`, `mpi_mul_mpi()`, `mpi_sub_abs()`, and `mpi_write_string()`.

5.117.2.8 int mpi_div_int (mpi * Q, mpi * R, mpi * A, int b)

Division by int: $A = Q * b + R$.

Returns

0 if successful, 1 if memory allocation failed, `XYSSL_ERR_MPI_DIVISION_BY_ZERO` if $b == 0$

Note

Either Q or R can be NULL.

Definition at line 1173 of file bignum.c.

References `mpi_div_mpi()`, `mpi::n`, `mpi::p`, and `mpi::s`.

Referenced by `main()`, and `mpi_write_hlp()`.

5.117.2.9 int mpi_div_mpi (mpi * Q, mpi * R, mpi * A, mpi * B)

Division by mpi: $A = Q * B + R$.

Returns

0 if successful, 1 if memory allocation failed, `XYSSL_ERR_MPI_DIVISION_BY_ZERO` if $B == 0$

Note

Either Q or R can be NULL.

Definition at line 1008 of file bignum.c.

References biH, biL, mpi_add_mpi(), MPI_CHK, mpi_cmp_abs(), mpi_cmp_int(), mpi_cmp_mpi(), mpi_copy(), mpi_free(), mpi_grow(), mpi_init(), mpi_lset(), mpi_msb(), mpi_mul_int(), mpi_shift_l(), mpi_shift_r(), mpi_sub_mpi(), mpi::n, mpi::p, mpi::s, and XYSSL_ERR_MPI_DIVISION_BY_ZERO.

Referenced by mpi_div_int(), mpi_mod_mpi(), and mpi_self_test().

5.117.2.10 int mpi_exp_mod (mpi * X, mpi * A, mpi * E, mpi * N, mpi * _RR)

Sliding-window exponentiation: $X = A^E \bmod N$.

Returns

0 if successful, 1 if memory allocation failed, XYSSL_ERR_MPI_BAD_INPUT_DATA if N is negative or even

Note

_RR is used to avoid re-computing $R \cdot R \bmod N$ across multiple calls, which speeds up things a bit. It can be set to NULL if the extra performance is unneeded.

Definition at line 1328 of file bignum.c.

References biL, MPI_CHK, mpi_cmp_int(), mpi_cmp_mpi(), mpi_copy(), mpi_free(), mpi_grow(), mpi_init(), mpi_lset(), mpi_mod_mpi(), mpi_montg_init(), mpi_montmul(), mpi_montred(), mpi_msb(), mpi_shift_l(), mpi::n, mpi::p, and XYSSL_ERR_MPI_BAD_INPUT_DATA.

Referenced by dhm_calc_secret(), dhm_make_params(), dhm_make_public(), main(), mpi_is_prime(), mpi_self_test(), rsa_private(), and rsa_public().

5.117.2.11 void mpi_free (mpi * X, ...)

Unallocate one or more mpi.

Definition at line 73 of file bignum.c.

References ciL, mpi::n, mpi::p, and mpi::s.

Referenced by dhm_free(), main(), mpi_div_mpi(), mpi_exp_mod(), mpi_gcd(), mpi_gen_prime(), mpi_inv_mod(), mpi_is_prime(), mpi_mul_mpi(), mpi_read_string(), mpi_self_test(), mpi_sub_abs(), mpi_write_string(), rsa_check_privkey(), rsa_free(), rsa_gen_key(), rsa_private(), and rsa_public().

5.117.2.12 int mpi_gcd (mpi * G, mpi * A, mpi * B)

Greatest common divisor: $G = \gcd(A, B)$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 1507 of file bignum.c.

References MPI_CHK, mpi_cmp_int(), mpi_cmp_mpi(), mpi_copy(), mpi_free(), mpi_init(), mpi_lset(), mpi_mul_mpi(), mpi_shift_r(), mpi_sub_abs(), mpi::p, and mpi::s.

Referenced by mpi_inv_mod(), rsa_check_privkey(), and rsa_gen_key().

5.117.2.13 `int mpi_gen_prime (mpi * X, int nbits, int dh_flag, int(*) (void *) f_rng, void * p_rng)`

Prime number generation.

Parameters

X destination mpi
nbits required size of X in bits
dh_flag if 1, then (X-1)/2 will be prime too
f_rng RNG function
p_rng RNG parameter

Returns

0 if successful (probably prime), 1 if memory allocation failed, XYSSL_ERR_MPI_BAD_INPUT_DATA if nbits is < 3

Definition at line 1778 of file bignum.c.

References BITS_TO_LIMBS, ciL, mpi_add_int(), MPI_CHK, mpi_free(), mpi_grow(), mpi_init(), mpi_is_prime(), mpi_lset(), mpi_msb(), mpi_shift_l(), mpi_shift_r(), mpi_sub_int(), mpi::p, XYSSL_ERR_MPI_BAD_INPUT_DATA, and XYSSL_ERR_MPI_NOT_ACCEPTABLE.

Referenced by main(), and rsa_gen_key().

5.117.2.14 `static int mpi_get_digit (t_int * d, int radix, char c) [static]`

Definition at line 226 of file bignum.c.

References XYSSL_ERR_MPI_INVALID_CHARACTER.

Referenced by mpi_read_file(), mpi_read_mystring(), and mpi_read_string().

5.117.2.15 `int mpi_grow (mpi * X, int nblimbs)`

Enlarge to the specified number of limbs.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 100 of file bignum.c.

References ciL, mpi::n, and mpi::p.

Referenced by dhm_make_params(), dhm_make_public(), mpi_add_abs(), mpi_copy(), mpi_div_mpi(), mpi_exp_mod(), mpi_gen_prime(), mpi_is_prime(), mpi_lset(), mpi_mul_mpi(), mpi_read_binary(), mpi_read_string(), and mpi_shift_l().

5.117.2.16 `void mpi_init (mpi * X, ...)`

Initialize one or more mpi.

Definition at line 52 of file bignum.c.

References `mpi::n`, `mpi::p`, and `mpi::s`.

Referenced by `main()`, `mpi_div_mpi()`, `mpi_exp_mod()`, `mpi_gcd()`, `mpi_gen_prime()`, `mpi_inv_mod()`, `mpi_is_prime()`, `mpi_mul_mpi()`, `mpi_read_string()`, `mpi_self_test()`, `mpi_sub_abs()`, `mpi_write_string()`, `rsa_check_privkey()`, `rsa_gen_key()`, `rsa_private()`, and `rsa_public()`.

5.117.2.17 `int mpi_inv_mod (mpi * X, mpi * A, mpi * N)`

Modular inverse: $X = A^{-1} \bmod N$.

Returns

0 if successful, 1 if memory allocation failed, `XYSSL_ERR_MPI_BAD_INPUT_DATA` if `N` is negative or nil `XYSSL_ERR_MPI_NOT_ACCEPTABLE` if `A` has no inverse mod `N`

Definition at line 1549 of file `bignum.c`.

References `mpi_add_mpi()`, `MPI_CHK`, `mpi_cmp_int()`, `mpi_cmp_mpi()`, `mpi_copy()`, `mpi_free()`, `mpi_gcd()`, `mpi_init()`, `mpi_lset()`, `mpi_mod_mpi()`, `mpi_shift_r()`, `mpi_sub_mpi()`, `mpi::p`, `XYSSL_ERR_MPI_BAD_INPUT_DATA`, and `XYSSL_ERR_MPI_NOT_ACCEPTABLE`.

Referenced by `main()`, `mpi_self_test()`, and `rsa_gen_key()`.

5.117.2.18 `int mpi_is_prime (mpi * X, int(*) (void *) f_rng, void * p_rng)`

Miller-Rabin primality test.

Returns

0 if successful (probably prime), 1 if memory allocation failed, `XYSSL_ERR_MPI_NOT_ACCEPTABLE` if `X` is not prime

Definition at line 1667 of file `bignum.c`.

References `ciL`, `MPI_CHK`, `mpi_cmp_int()`, `mpi_cmp_mpi()`, `mpi_copy()`, `mpi_exp_mod()`, `mpi_free()`, `mpi_grow()`, `mpi_init()`, `mpi_lsb()`, `mpi_mod_int()`, `mpi_mod_mpi()`, `mpi_msb()`, `mpi_mul_mpi()`, `mpi_shift_r()`, `mpi_sub_int()`, `mpi::n`, `mpi::p`, `R`, `mpi::s`, `small_prime`, and `XYSSL_ERR_MPI_NOT_ACCEPTABLE`.

Referenced by `main()`, and `mpi_gen_prime()`.

5.117.2.19 `int mpi_lsb (mpi * X)`

Return the number of least significant bits.

Definition at line 185 of file `bignum.c`.

References `biL`, `int`, `mpi::n`, and `mpi::p`.

Referenced by `mpi_is_prime()`.

5.117.2.20 `int mpi_lset (mpi * X, int z)`

Set value from integer.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 167 of file bignum.c.

References ciL, MPI_CHK, mpi_grow(), mpi::n, mpi::p, and mpi::s.

Referenced by dhmake_params(), dhmake_public(), mpi_div_mpi(), mpi_exp_mod(), mpi_gcd(), mpi_gen_prime(), mpi_inv_mod(), mpi_mul_mpi(), mpi_read_binary(), mpi_read_string(), and rsa_gen_key().

5.117.2.21 int mpi_mod_int (t_int *r, mpi *A, int b)

Modulo: $r = A \bmod b$.

Returns

0 if successful, 1 if memory allocation failed, XYSSL_ERR_MPI_DIVISION_BY_ZERO if $b == 0$

Definition at line 1209 of file bignum.c.

References biH, mpi::n, mpi::p, and XYSSL_ERR_MPI_DIVISION_BY_ZERO.

Referenced by mpi_is_prime(), and mpi_write_hlp().

5.117.2.22 int mpi_mod_mpi (mpi *R, mpi *A, mpi *B)

Modulo: $R = A \bmod B$.

Returns

0 if successful, 1 if memory allocation failed, XYSSL_ERR_MPI_DIVISION_BY_ZERO if $B == 0$

Definition at line 1189 of file bignum.c.

References mpi_add_mpi(), MPI_CHK, mpi_cmp_int(), mpi_cmp_mpi(), mpi_div_mpi(), and mpi_sub_mpi().

Referenced by mpi_exp_mod(), mpi_inv_mod(), mpi_is_prime(), rsa_check_privkey(), rsa_gen_key(), and rsa_private().

5.117.2.23 static void mpi_montg_init (t_int *mm, mpi *N) [static]

Definition at line 1259 of file bignum.c.

References biL, and mpi::p.

Referenced by mpi_exp_mod().

5.117.2.24 static void mpi_montmul (mpi *A, mpi *B, mpi *N, t_int mm, mpi *T) [static]

Definition at line 1277 of file bignum.c.

References ciL, mpi_cmp_abs(), mpi_mul_hlp(), mpi_sub_hlp(), mpi::n, and mpi::p.

Referenced by mpi_exp_mod(), and mpi_montred().

5.117.2.25 static void mpi_montred (mpi * A, mpi * N, t_int mm, mpi * T) [static]

Definition at line 1314 of file bignum.c.

References mpi_montmul(), mpi::n, mpi::p, and mpi::s.

Referenced by mpi_exp_mod().

5.117.2.26 int mpi_msb (mpi * X)

Return the number of most significant bits.

Definition at line 200 of file bignum.c.

References biL, mpi::n, and mpi::p.

Referenced by d2i_RSA_PUBKEY(), main(), mpi_div_mpi(), mpi_exp_mod(), mpi_gen_prime(), mpi_is_prime(), mpi_shift_l(), mpi_size(), mpi_write_string(), rsa_check_pubkey(), rsa_decryption(), rsa_encryption(), and rsa_gen_key().

5.117.2.27 static void mpi_mul_hlp (int i, t_int * s, t_int * d, t_int b) [static]

Definition at line 892 of file bignum.c.

References MULADDC_CORE, MULADDC_INIT, and MULADDC_STOP.

Referenced by mpi_montmul(), and mpi_mul_mpi().

5.117.2.28 int mpi_mul_int (mpi * X, mpi * A, t_int b)

Baseline multiplication: $X = A * b$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 992 of file bignum.c.

References mpi_mul_mpi(), mpi::n, mpi::p, and mpi::s.

Referenced by mpi_div_mpi(), and mpi_read_string().

5.117.2.29 int mpi_mul_mpi (mpi * X, mpi * A, mpi * B)

Baseline multiplication: $X = A * B$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 956 of file bignum.c.

References MPI_CHK, mpi_copy(), mpi_free(), mpi_grow(), mpi_init(), mpi_lset(), mpi_mul_hlp(), mpi::n, mpi::p, and mpi::s.

Referenced by main(), mpi_gcd(), mpi_is_prime(), mpi_mul_int(), mpi_self_test(), rsa_check_privkey(), rsa_gen_key(), and rsa_private().

5.117.2.30 int mpi_read_binary (mpi * *X*, unsigned char * *buf*, int *buflen*)

Import *X* from unsigned binary data, big endian.

Parameters

X destination mpi
buf input buffer
buflen input buffer size

Returns

0 if successful, 1 if memory allocation failed

Definition at line 484 of file bignum.c.

References CHARS_TO_LIMBS, ciL, MPI_CHK, mpi_grow(), mpi_lset(), and mpi::p.

Referenced by asn1_get_mpi(), d2i_RSA_PUBKEY(), dhm_read_bignum(), dhm_read_public(), rsa_private(), and rsa_public().

5.117.2.31 int mpi_read_file (mpi * *X*, int *radix*, FILE * *fin*)

Read *X* from an opened file.

Parameters

X destination mpi
radix input numeric base
fin input file handle

Returns

0 if successful, or an XYSSL_ERR_MPI_XXX error code

Definition at line 391 of file bignum.c.

References mpi_get_digit(), mpi_read_string(), and XYSSL_ERR_MPI_FILE_IO_ERROR.

Referenced by main().

5.117.2.32 int mpi_read_mystring (mpi * *X*, int *radix*, char * *s*)

Definition at line 418 of file bignum.c.

References mpi_get_digit(), and mpi_read_string().

Referenced by rsa_decryption(), and rsa_encryption().

5.117.2.33 int mpi_read_string (mpi * *X*, int *radix*, char * *s*)

Import from an ASCII string.

Parameters

X destination mpi

radix input numeric base
s null-terminated string buffer

Returns

0 if successful, or an XYSSL_ERR_MPI_XXX error code

Definition at line 243 of file bignum.c.

References BITS_TO_LIMBS, ciL, int, mpi_add_int(), MPI_CHK, mpi_free(), mpi_get_digit(), mpi_grow(), mpi_init(), mpi_lset(), mpi_mul_int(), mpi::p, mpi::s, and XYSSL_ERR_MPI_BAD_INPUT_DATA.

Referenced by main(), mpi_read_file(), mpi_read_mystring(), mpi_self_test(), rsa_self_test(), and ssl_set_dh_param().

5.117.2.34 int mpi_self_test (int *verbose*)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 1854 of file bignum.c.

References MPI_CHK, mpi_cmp_mpi(), mpi_div_mpi(), mpi_exp_mod(), mpi_free(), mpi_init(), mpi_inv_mod(), mpi_mul_mpi(), and mpi_read_string().

Referenced by main().

5.117.2.35 int mpi_shift_l (mpi * *X*, int *count*)

Left-shift: $X \ll= \text{count}$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 526 of file bignum.c.

References biL, BITS_TO_LIMBS, MPI_CHK, mpi_grow(), mpi_msb(), mpi::n, and mpi::p.

Referenced by mpi_div_mpi(), mpi_exp_mod(), and mpi_gen_prime().

5.117.2.36 int mpi_shift_r (mpi * *X*, int *count*)

Right-shift: $X \gg= \text{count}$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 575 of file bignum.c.

References biL, mpi::n, and mpi::p.

Referenced by dhm_make_params(), dhm_make_public(), mpi_div_mpi(), mpi_gcd(), mpi_gen_prime(), mpi_inv_mod(), and mpi_is_prime().

5.117.2.37 int mpi_size (mpi * X)

Return the total size in bytes.

Definition at line 218 of file bignum.c.

References mpi_msb().

Referenced by dhm_calc_secret(), dhm_make_params(), dhm_read_params(), mpi_write_binary(), x509parse_crt(), and x509parse_key().

5.117.2.38 int mpi_sub_abs (mpi * X, mpi * A, mpi * B)

Unsigned subtraction: $X = |A| - |B|$.

Returns

0 if successful, XYSSL_ERR_MPI_NEGATIVE_VALUE if B is greater than A

Definition at line 761 of file bignum.c.

References MPI_CHK, mpi_cmp_abs(), mpi_copy(), mpi_free(), mpi_init(), mpi_sub_hlp(), mpi::n, mpi::p, and XYSSL_ERR_MPI_NEGATIVE_VALUE.

Referenced by mpi_add_mpi(), mpi_gcd(), and mpi_sub_mpi().

5.117.2.39 static void mpi_sub_hlp (int n, t_int * s, t_int * d) [static]

Definition at line 740 of file bignum.c.

Referenced by mpi_montmul(), and mpi_sub_abs().

5.117.2.40 int mpi_sub_int (mpi * X, mpi * A, int b)

Signed subtraction: $X = A - b$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 876 of file bignum.c.

References mpi_sub_mpi(), mpi::n, mpi::p, and mpi::s.

Referenced by main(), mpi_gen_prime(), mpi_is_prime(), rsa_check_privkey(), and rsa_gen_key().

5.117.2.41 int mpi_sub_mpi (mpi * X, mpi * A, mpi * B)

Signed subtraction: $X = A - B$.

Returns

0 if successful, 1 if memory allocation failed

Definition at line 829 of file bignum.c.

References mpi_add_abs(), MPI_CHK, mpi_cmp_abs(), mpi_sub_abs(), and mpi::s.

Referenced by mpi_div_mpi(), mpi_inv_mod(), mpi_mod_mpi(), mpi_sub_int(), and rsa_private().

5.117.2.42 void mpi_swap (mpi * *X*, mpi * *Y*)

Swap the contents of *X* and *Y*.

Definition at line 155 of file bignum.c.

Referenced by rsa_gen_key().

5.117.2.43 int mpi_write_binary (mpi * *X*, unsigned char * *buf*, int *buflen*)

Export *X* into unsigned binary data, big endian.

Parameters

X source mpi

buf output buffer

buflen output buffer size

Returns

0 if successful, XYSSL_ERR_MPI_BUFFER_TOO_SMALL if *buf* isn't large enough

Note

Call this function with **buflen* = 0 to obtain the minimum required buffer size in **buflen*.

Definition at line 506 of file bignum.c.

References ciL, mpi_size(), mpi::p, and XYSSL_ERR_MPI_BUFFER_TOO_SMALL.

Referenced by dhm_calc_secret(), dhm_make_public(), rsa_private(), and rsa_public().

5.117.2.44 int mpi_write_file (char * *p*, mpi * *X*, int *radix*, FILE * *fout*)

Write *X* into an opened file, or stdout.

Parameters

p prefix, can be NULL

X source mpi

radix output numeric base

fout output file handle

Returns

0 if successful, or an XYSSL_ERR_MPI_XXX error code

Note

Set *fout* == NULL to print *X* on the console.

Definition at line 447 of file bignum.c.

References MPI_CHK, mpi_write_string(), and XYSSL_ERR_MPI_FILE_IO_ERROR.

Referenced by generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), and main().

5.117.2.45 static int mpi_write_hlp (mpi * *X*, int *radix*, char ** *p*) [static]

Definition at line 301 of file bignum.c.

References MPI_CHK, mpi_cmp_int(), mpi_div_int(), mpi_mod_int(), and XYSSL_ERR_MPI_BAD_INPUT_DATA.

Referenced by mpi_write_string().

5.117.2.46 int mpi_write_string (mpi * *X*, int *radix*, char * *s*, int * *slen*)

Export into an ASCII string.

Parameters

X source mpi
radix output numeric base
s string buffer
slen string buffer size

Returns

0 if successful, or an XYSSL_ERR_MPI_XXX error code

Note

Call this function with *slen = 0 to obtain the minimum required buffer size in *slen.

Definition at line 328 of file bignum.c.

References ciL, MPI_CHK, mpi_copy(), mpi_free(), mpi_init(), mpi_msb(), mpi_write_hlp(), mpi::n, mpi::p, mpi::s, XYSSL_ERR_MPI_BAD_INPUT_DATA, and XYSSL_ERR_MPI_BUFFER_TOO_SMALL.

Referenced by mpi_write_file().

5.117.3 Variable Documentation**5.117.3.1 const int small_prime[] [static]****Initial value:**

```
{
    3,    5,    7,   11,   13,   17,   19,   23,
   29,   31,   37,   41,   43,   47,   53,   59,
   61,   67,   71,   73,   79,   83,   89,   97,
  101,  103,  107,  109,  113,  127,  131,  137,
  139,  149,  151,  157,  163,  167,  173,  179,
  181,  191,  193,  197,  199,  211,  223,  227,
  229,  233,  239,  241,  251,  257,  263,  269,
  271,  277,  281,  283,  293,  307,  311,  313,
  317,  331,  337,  347,  349,  353,  359,  367,
  373,  379,  383,  389,  397,  401,  409,  419,
  421,  431,  433,  439,  443,  449,  457,  461,
  463,  467,  479,  487,  491,  499,  503,  509,
  521,  523,  541,  547,  557,  563,  569,  571,
  577,  587,  593,  599,  601,  607,  613,  617,
```

```
        619,  631,  641,  643,  647,  653,  659,  661,  
        673,  677,  683,  691,  701,  709,  719,  727,  
        733,  739,  743,  751,  757,  761,  769,  773,  
        787,  797,  809,  811,  821,  823,  827,  829,  
        839,  853,  857,  859,  863,  877,  881,  883,  
        887,  907,  911,  919,  929,  937,  941,  947,  
        953,  967,  971,  977,  983,  991,  997, -103  
    }
```

Definition at line 1639 of file bignum.c.

Referenced by mpi_is_prime().

5.118 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/certs.c File Reference

```
#include "xyssl/config.h"
```

Variables

- char [test_ca_crt](#) []
- char [test_ca_key](#) []
- char [test_ca_pwd](#) [] = "test"
- char [test_srv_crt](#) []
- char [test_srv_key](#) []
- char [test_cli_crt](#) []
- char [test_cli_key](#) []
- char [xyssl_ca_crt](#) []

5.118.1 Variable Documentation

5.118.1.1 char test_ca_crt[]

Initial value:

```
"-----BEGIN CERTIFICATE-----\r\n"
"MIIDpTCCAo2gAwIBAgIBADANBgkqhkiG9w0BAQUFADBFMQswCQYDVQQGEwJGUjEO\r\n"
"MAwGA1UEBxMFUGFyaXMxDjAMBgNVBAoTBVh5U1NMMRYwFAYDVQQDEw1YeVNTTCBU\r\n"
"ZXN0IENBMB4XDTA3MDcwNzA1MDAxOFoXDTE3MDcwNzA1MDAxOFowRTElMAkGA1UE\r\n"
"BhMCRlIxZjAMBgNVBAcTBVBhcm1zMQ4wDAYDVQQKEwVYeVNTTDEWMBQGA1UEAxMN\r\n"
"WH1TU0wgVGZvdCBBDQTCASiWdQYJKoZIhvcNAQEBBQADggEPADCCAQoCggEBAM+k\r\n"
"gt70fIPiYqmvXr+9uPmW0N405eoSzxdiRLLCHqL4V/Ts0E/H+JNfHS4DHLAgxrJu\r\n"
"+ZiadvSJuhKI6eliMkAh5SU1DqaF3jrrFdJCooM6a077M4CRKE1tdAeZdf+BYp0q\r\n"
"BeMU9Y2+j7ibsQaPaizunbXLf4QdteExCwhYRJ8OVXSEasNt339gJzTD6k0hES3b\r\n"
"lEN3qbx61qFaJ5MLHTix5uNVc2rvbOizV5oLhJNqm52AKOp1ltv6WTiI8loagvAc\r\n"
"jlhEZRNB9e15SL6Jai/uFcqXKzfXNKW3FYpQHfGobmiMfGt1lUSBj3F2mrqEC7gC\r\n"
"whY/FDvAI64/k5LZAFkCAwEAAOBnzCBnDAMBgNVHRMEBTADAQH/MB0GA1UdDgQW\r\n"
"BBS87h+Y6Porg+SkfV7DdXKTMdkyZzBtBgNVHSMZjBkgBS87h+Y6Porg+SkfV7D\r\n"
"dXKTMdkyZ6FJpEcwRTElMAkGA1UEBhMCRlIxZjAMBgNVBAcTBVBhcm1zMQ4wDAYD\r\n"
"VQOKEwVYeVNTTDEWMBQGA1UEAxMNWH1TU0wgVGZvdCBBDQYIBADANBgkqhkiG9w0B\r\n"
"AQUFAAOCAQEAIHdohONCg6KAAhWDSmfEgSbKUI8/Zr/d56uw42H00sj/uKPQzUco\r\n"
"3Mx2BYElm1itg7q5OhrkB7J4ZB78EtNZM84nV+y6od3YpR0Z9VUxCx7948MozYRy\r\n"
"TKF5x/lKHXr1PJKfEO4clKdWTFAtWtGhewXrHJQ8C+ENh2Up2wTVh3Z+pEzuZNv3\r\n"
"u/JYulH+vkt3l1WCy/9mxUnu+anW1DzxPwnjy4lX6Mi0BD2qfKBWLjVS+7v6ALCj\r\n"
"S2oRWWr4LUvXT7z9BBAvw2eJQD+a4uAya6EURG7AsAvr5MnWn/r0wLWmBJ6fBlYp\r\n"
"FlkOmamOFvstLMf74rLX+LGKeJ/nwui5FQ==\r\n"
"-----END CERTIFICATE-----\r\n"
```

Definition at line 25 of file certs.c.

Referenced by [main\(\)](#), [ssl_test\(\)](#), and [x509_self_test\(\)](#).

5.118.1.2 char test_ca_key[]

Definition at line 49 of file certs.c.

Referenced by [x509_self_test\(\)](#).

5.118.1.3 char test_ca_pwd[] = "test"

Definition at line 81 of file certs.c.

Referenced by x509_self_test().

5.118.1.4 char test_cli_crt[]

Initial value:

```
"-----BEGIN CERTIFICATE-----\r\n"
"MIIDPTCCAiwGAwIBAgIBATANBgkqhkiG9w0BAQUFADBQMswCQYDVQQGEwJGUjE0\r\n"
"MAwGA1UEBxMFUGFyaXMxdjAMBgNVBAoTBVh5U1NMMRYwFAYDVQQDEw1YeVNTTCBU\r\n"
"ZXN0IENBMB4XDTA3MDcwNzAlMDEyMFoXDTA4MDcwNjAlMDEyMFowMDELMAkGA1UE\r\n"
"BhMCRlIxdjAMBgNVBAoTBVh5U1NMMREwDwYDVQQDEwhKb2UgVXNlcjCCASIdQYJ\r\n"
"KoZlIhvcNAQEBBQADgEPADCCAQoCggEBAKZkg8ANl6kGmLGqKc6KUHb9IsZwb2+K\r\n"
"jBw83Qb0KuvPVnu3MzEcXFvOZ83g0PL/z8ob5PKr8HP6bVYzhsD65imcCDEEVPk2\r\n"
"9r0XGTggGjB601Fd8aTShUWE4NLrKw6YNXTXgTndvhHNxXwqmdNVLkmZjj3ZwYUc\r\n"
"eE8eE5jHs8cMDXJLMCwgKIM7Sax220hSHQHKwifvO4/Fdw5G+Suys8PhMX2jDXM\r\n"
"ICFwq8ld+bZGoNUtgpp48FWhAMfJyTEaHh9LC46KkqGSDRIzx7/4cPB6QqrpzJN0o\r\n"
"Kr8kh7vdrDTFDm023D4C5l0Bw/2aC76DhEJpB2bGA4iIszJs+F/PIL8CAwEAAaNN\r\n"
"MEswCQYDVROTBAlwADAdBgNVHQ4EFgQUiWX1IvjrDYgt0zz5Sq16x01k0o4wHwYD\r\n"
"VR0jBBBgwFoAUvO4fmOj6K4PkpH1ew3VyKzHZMmcwDQYJKoZIhvcNAQEFBQADggEB\r\n"
"AGdqD7VthJmC+oeemuHk2TQX2wZNU+GsC+RLjtlencnky95KnljGvMtCznyLkS5D\r\n"
"faJLkFRLNo8pk5gRdscqgyIuQx5WnHNv4QBZmMsmvDICxzRQaxuPFHbS4aLXldL\r\n"
"yOWm524qkMHPCKvA86blYsEkksGDV47fF9ZkOQ8nkh7Z4eY4/5TwqTY72ww5g4NL\r\n"
"6DZtWpcpGbX99NRANvzcq9D+ElxkgHnH4YWafOKBclSgqrutbRLi2uZx/QpvuF+i\r\n"
"sUbe+HFPmWwU5lBv/oOhQkz0VD+HusYtXWS2lG88ct40aNLy2CkYUugdTR/b9Uea\r\n"
"p/i862sL/lo40qlQ0xv5N7U=\r\n"
"-----END CERTIFICATE-----\r\n"
```

Definition at line 134 of file certs.c.

Referenced by main(), and x509_self_test().

5.118.1.5 char test_cli_key[]

Initial value:

```
"-----BEGIN RSA PRIVATE KEY-----\r\n"
"MIIEowIBAAKCAQEApmSDwa2XqQaYsaopzopQdv0ixnBvb4qMHDzdBvQq689We7cz\r\n"
"MRxcW85nzeDQ8v/Pyhvk8qvw/ptVjOGwPrmKZwIMQRU+Tb2vRcZOCaAMHrTUV3x\r\n"
"pnKFRYtg0usrDpgldNeBM12+Ec3FfCqZ01UuSZmOPdnBhRxwQTx4TmMezxwNcks\r\n"
"wLCAogztJrHbY6FIdAcrCJ9U7j8V3Dkb5K7Kzw+ExfaMNCwgIXCryV35tkag1S2C\r\n"
"njwVaEAx8nJMRoeH0sLjoqSoZINEjPHv/hw8HpCqunMk3SgqvyQfu91ENMUOY7bc\r\n"
"PgLMxQHD/ZoLvoOEQmKHZSYDiIizMmz4X88gvwIDAQABAoIBAEOBnBKAjDVN+j4ax\r\n"
"lDjEwZKqxVkmAUXDBDyDrCjxRoWY2gz7YWlALUMUbeV0f05v1zVrwbkUKKZeVBxI\r\n"
"QA9zRw28H8A6tfvolHgrIcx4dixMh3ePC+DVDJ6zglvKV2ipAwBufKYIrX0r4Io2\r\n"
"ZqUrNg9CeEYNlkHWceaN12rhYwO82pgHxnB1p5pI42pY7lzyLgSddf5n+M5UBOJI\r\n"
"gsNCKvbGdv7WQPVFTRDiRgEnCJ3rI8oPSK6MOUWJw3rh2hbkx+ex8NPvEKbzEXiU\r\n"
"p5jlAlbHIWP5sYBbAlYviFtryAV4fyfLcWpfoqa33Oozofjlwoj0Aixz+6rerLjZ\r\n"
"cpTSrAECgYEA2oCffUo6HH3Lq9oeWhFCOyG3YjZmFrJaJwJHnvroX9/pXHqYKog\r\n"
"TeHcjUJBtFzW0klcetYbZCFqT8v9nf0uPlgaiVGctXf1MSbFXDUFKkYBiFwzdWMT\r\n"
"Ysmvfhf82jMWZ8ecsXTyDR1858R5WPZ52qEsCc5X2un7QENm6FtVT8CgYEAwwKS\r\n"
"zQNzuoJETqZX7AalMk3JM8Fdam+Qm5LNMcbvbkKI8HKMS1VMuqaR0XdAX/imXAx\r\n"
"PlVhSsmoSDbsMpxBEZlptpCen/GcqtITxANTakrBHxqb2aQ5EEu7SgzfHZWse3\r\n"
"vQEYfcFTB1PldcZUDzk4/w7WmyivpYtCWoaAh1IECgYEA0UYZ+1UJfVpapRj+swMP\r\n"
"DrQbo7i7t7lUaFYLNpFX2OPLTWC5txqn1OruTu5VHDqE+5hneDNUUTT3uOg4B2q\r\n"
"mdmmaNjh2M6wz0e0BVfexhNQynqMaqTe32IOM8DFs3L0xacgg7JfVn6P7CeQGOVe\r\n"
"wc96kICw6ZxhtJSqpOGipt8CgYBI/OPw+IXxJK4nNSpe+u4vCYP5mUI9hKEFYCbt\r\n"
"qKwvyAUknn/zgiIQ+z/iSErFMPmlwXjvWi0gL/qPb+Pp4hCLX8u2zNhY08Ppx4Gin\r\n"
```

```
"Ej+pAntWxq+kHyfKEI5dyRwV/snfv1qwJy404JsSF3VMhIMdYDPzbb72Qnni5w5l\r\n"
"j00eAQKBgBqt9jJMd1JdpemC2dm0BuuDIz2h3/MH+CMjfaDLenVpKykn17B6N92h\r\n"
"k1MesqK3RQzDGwauDw431LQw0R69onn9fCM3wJw2yEC6wC9sF8I8hsNZbt64yZhZ\r\n"
"4Bi2YRTiHhpEuBqKlHHLDFHneo3SMYh8PU/PDQQcyWGHHUi9z1RE\r\n"
"-----END RSA PRIVATE KEY-----\r\n"
```

Definition at line 156 of file certs.c.

Referenced by main().

5.118.1.6 char test_srv_crt[]

Initial value:

```
"-----BEGIN CERTIFICATE-----\r\n"
"MIIDPjCCAiaGAWIBAgIBAJANBgkqhkiG9w0BAQUFADBFMQswCQYDVQQGEwJGUjE0\r\n"
"MAwGA1UEBxMFUGFyaXMxMDjAMBGNVBAoTBVh5U1NMMRYwFAyDVQQDEw1YeVNTTCBU\r\n"
"ZXN0IENBMB4XDTA3MDcwNzA1MDEyOVVoXDTA4MDcwNjA1MDEyOVowMTELMakGA1UE\r\n"
"BhMCRlIxDjAMBGNVBAoTBVh5U1NMMRIwEAYDVQQDEwlsb2NhbGhvc3QwgGEiMA0G\r\n"
"CSqGSIb3DQEBAQUAA4IBDwAwggEKAoIBAQC40PDcGTgmHkt6noXDfkjVuymjiNYB\r\n"
"gtjtI7uAlKe3tXStacEecQek/OJxYqYr7ffcWals29LL6HbKpi0xLZKBbD9ACkDh\r\n"
"1Z/SvHlyQPILJdYb9DMw+kzZds5myXUjzn7Aem1YjoxMZUAMyc34i2900X2pL0v2\r\n"
"SFCEJ9Ym4MOnZxYl217+dX9ZbkGIgrT6uY2IYK4boDwxbTcyT8i/NPsvsiMwtWPM\r\n"
"rnQMr+XbgS98sUzcZE70Pe1TlV9Iy8j/8d2OiFo+qTyMu/6UpM2s3gdkQkMzx+Sm\r\n"
"4QitRUjzmEXeUePRUjEgHiv7vz069xuVBzrks36w5BXiVAhLke/OTKVPAGMBAAGj\r\n"
"TTBLMAkGA1UdEwQCAAAwHQYDVR0OBBYEFNkOyCTx64SDdPySGW1/tzD7/WMSMB8G\r\n"
"AlUdIwQYMBaAFZLzuH5jo+iuD5KR9XsN1cpMx2TJnMA0GCSqGSIb3DQEBBQUAA4IB\r\n"
"AQBelJv5t+suayq5Lo5bJneHjNZfgg8EigDQ7Nqaosv1QZAsh2N34Gg5YdkGyVdg\r\n"
"s32I/K5aaywyUbG9qVXQxCM2T95qBqyK56h9yJoZKWQD9H//+zB8kCK/16WvRfv3\r\n"
"V7eSR19qOFwLHe+1qGh2YhxeDUfYi+fm4D36dGxqC2A34tZjo0QPHKtIeqM0kJy\r\n"
"zzL65T1bJQKkyTurHofFv0jW9ZFG2wkGysVgCY5fjuLi1do/sWUaXd2987iNfa+K\r\n"
"FrHsTi6urSfZuG1ZNxDXDHEE7Q2snAvvev+KR7DD9X4DJGcPX9gA4CGJj+9ZzyAA\r\n"
"ZTGpOzk1hIH44RFs2lJMZR1E\r\n"
"-----END CERTIFICATE-----\r\n"
```

Definition at line 83 of file certs.c.

Referenced by main(), and ssl_test().

5.118.1.7 char test_srv_key[]

Initial value:

```
"-----BEGIN RSA PRIVATE KEY-----\r\n"
"MIIEowIBAAKCAQEAuNDw3Bk4Jh5Lep6Fw35I1bsp04jWAYI7Yi+7gNSnt7V0rWnB\r\n"
"HnEHpZicWKmK+333FmpUtvSy+h2yqYtMS2SgWw/QApA4dWf0rx5ckDyCyXWG/Qz\r\n"
"MPpM2XbOZs11I85+wHptWI6MTGVADMnN+ItvdNF9qS9L9knwni fWJuDDp2cWJdte\r\n"
"/nV/WW5ICIK0+rmNiGCuG6A8MW03Mk/IvzT7FbIjMLVjzK50DK/124EvfLFM3GRO\r\n"
"9D3tU5VfSMvI/HdjohaPqk8jLv+1KTNrN4HZEJDM8fkpuEIrUVI85hF31Hj0Vix\r\n"
"IBYL+7890vcblQc65LN+sOQV4lQIS5HvzkylTwIDAQABAoIBABeah8h0aBlmMRmd\r\n"
"+VN4Y3D4kf7UcRCMQ21MzlOq1Si/QgGLyiBLK0DFE16LzNE7eTZpNRjh/lAQhmtn\r\n"
"QcpQGa/xlTomlRbCo8DUVWZkKQWHdYroa0lMDliPtDimzhEepE2M1T5EJmLzY3S+\r\n"
"qVGe7UMsJjJfWgJAezyXteANQK+2YSt+CjPIqIHch1KexUnvdN9++1oEx6AbuZ8T\r\n"
"4avhFYZQP15tZNGsk2LfQlYS/NfbowkCsd0/TVubJBmDGUML/E5MbxjxLz1aNB2M\r\n"
"V59cBNngsgA35CODAUf4xOyoSfZGqG1Rb9qQrv1E6Jz56dG8SsKF3HqndJxiPOVBN\r\n"
"FBnVJ+ECgYEA29MhAsKmm4XqBUKp6pIMFTgm/s1E5vxiG70vqiL+guvBhhQ7zs1\r\n"
"8UMTNXzOMELOb/ev9fN0Cjc1Vr46b/x/yDw7wMb96i+vzEN0zu4RHWi3OWpCPbp\r\n"
"qBKEi3hzN8M+BulPX8CDQx3aLRrfxw51J5EuA0NeybngbItgxTi0u6kCgYEA1zr0\r\n"
"6P5YdOhYHTSWD1keD49MApcVuzaHnsHZVAhUqu3Rwiy9LRaJLZfr7fQDb9DYJbZp\r\n"
"sxTRLG6LSacsR7mw+m+GvNqGt/9pSqbtW+L/VwVWSyF+YYklxZUD3UAAyrDVcDEC\r\n"
"a5S+jad4Csi/1Vht5ulWICKwL1fJvadnSubKNDcCgYA+71xVGPP+1sFgTiytfrC8\r\n"
```



```
"5n2rl4MxinJ9+w0I+EbZCKNMYGvTgiU4dJasSMEdiBKslFMGo7dF8F0BLHF1IsIa\r\n"
"5Ah2tXItXn9l54o90iTQXMmK6qmRaneM6fhOoeaCwYAhpGxYIpqx/Xr4TOhiag46\r\n"
"jMMaphAeOvw4t1K2RDziOQKBgQCYPCCU0gxuw/o1jda2CxbZy9EmU/erEX09+0n+\r\n"
"TOFQpSEPq/z9WaxAFY9LfsdZ0ZktoeHmalbNdL3i6A3DWAM3YSQzQMRPmzOWnqXx\r\n"
"cgoCBmlvzkzaeLjO5phMoLQHJmmafvuCG6uxov3F8Hi3LyHUF2c8k0nL6ucmJ3vj\r\n"
"uzu4AQKBgBSASMAJS63M9UJB1Eazy2v2Nww04CmzNxUfWrHuKpd/C2ik4QKu0sRO\r\n"
"r9KnkDgxxEhjDm7lXhlW12PU42yORst5I3EaalCfi4KPFn/ozt+iNBYrzd8Tyvnb\r\n"
"qkdEC10+G2Fo/ER4NRCv7a24WNEsOMGzGRqw5cnSJrjzbZLYMaIyK\r\n"
"-----END RSA PRIVATE KEY-----\r\n"
```

Definition at line 105 of file certs.c.

Referenced by main(), and ssl_test().

5.118.1.8 char xyssl_ca_crt[]

Initial value:

```
"-----BEGIN CERTIFICATE-----\r\n"
"MIID4DCCAsigAwIBAgIJAOLw9BMV1jxMMA0GCSqGSIb3DQEBBQUAMFMxCzAJBgNV\r\n"
"BAYTAKZSMQ4wDAYDVQQIEwVQYXJpczEOMAwGA1UEChMFWH1TU0wxJDAiBgNVBAMT\r\n"
"G1h5U1NMIENlcnRpZmljYXRlIEF1dGhvcml0eTAeFw0wNjEwMzEyMjU5MjRaFw0x\r\n"
"NjEwMzEyMjU5MjRaMFmxCzAJBgNVBAYTAKZSMQ4wDAYDVQQIEwVQYXJpczEOMAwG\r\n"
"A1UEChMFWH1TU0wxJDAiBgNVBAMTG1h5U1NMIENlcnRpZmljYXRlIEF1dGhvcml0\r\n"
"eTCCASIwDQYJKoZIhvcNAQEBBQADggEPADCCAQoCggEBAKnprf1RQ7IYPI3FmI/h\r\n"
"f2EJGfaiP+Jt551VZWFrs3A56Nn4KS57zTAKZUA7YGBLwLAznfaphJ7SvENALeZR\r\n"
"/J0c/n9jwMpfXReQL7RVpgg/zlR+t2DUI3DAwigPZiHHCSJSBC73vpMc6uH0eV2d\r\n"
"itqjjUnJG5F8Zg9/gX4UMRADlwGWqxvs+jc9i0XFKOEzga8+rOn6WvKyBM4e20I\r\n"
"Hc04BPF92d6sm4qLgyR4oXUkBz6NfDWX8ZdTvXuRaK9qMy1327cCT48sis9F6/eK\r\n"
"QAx0VHlqGtTxDYjHJPsmLNejuyUDvsaC8TMCSpFTXpMTUvJdmxsF1LZWmIo5lY5\r\n"
"zh0CAwEAAaOBtjCBszAdBgNVHQ4EFgQUBlVzoNjrkkgPkj8xjuFvVP2E4GswgYMG\r\n"
"AlUdIwR8MHqAFaZVc6DSa5JID5CFMY7hb1T9hOBroVekVTBTMQswCQYDVQQGEwJG\r\n"
"UjEOMAwGA1UECBMFUGFyaXMxDjAMBGNVBAoTBVh5U1NMMSQwIgYDVQQDExtYevNT\r\n"
"TCBDZXJ0aWZpY2F0ZSBBDXRob3JpdHmCCQDi8PQTFdY8TDAMBGNVHRMEBTADAQH/\r\n"
"MA0GCSqGSIb3DQEBBQUAA4IBAQCgD65b2l5BASFSpVlrcRnLzu/99eWTVAJwJbbD\r\n"
"VhPAQiET0W4U/85EDK7uoFo/SEjyMB/m4T20A8FIDaK7jBPo/1gtbuQjGMR17h+z\r\n"
"F2iGuNh26Td2Uzqc1t3oiFtSvDRoZ/9kqkEy7Lrs7FBzOmvfTvrqvAdf7cLMA2D\r\n"
"ri/otDpzPr4XoDnwd4C+4bQC/Gr3Uder4VAeTOJtKdGqfYLVpWpPSPVBDuVLUybKi\r\n"
"8cMAT6p9IG1e12u6vFqcBT/I67Q0bGU6gzVVz9ZVULXOYZMjjLafVXC1gesUH2WT\r\n"
"gTEAnEBkSRrkfAi+RezoEFAbme13fPt09dwSPku3x7cB3zaJ\r\n"
"-----END CERTIFICATE-----\r\n"
```

Definition at line 185 of file certs.c.

Referenced by main().

5.119 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/debug.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/debug.h"
#include <stdarg.h>
#include <stdlib.h>
```

Functions

- char * [debug_fmt](#) (const char *format,...)
- void [debug_print_msg](#) (ssl_context *ssl, int level, char *file, int line, char *text)
- void [debug_print_ret](#) (ssl_context *ssl, int level, char *file, int line, char *text, int ret)
- void [debug_print_buf](#) (ssl_context *ssl, int level, char *file, int line, char *text, unsigned char *buf, int len)
- void [debug_print_mpi](#) (ssl_context *ssl, int level, char *file, int line, char *text, mpi *X)
- void [debug_print_cert](#) (ssl_context *ssl, int level, char *file, int line, char *text, x509_cert *crt)

5.119.1 Function Documentation

5.119.1.1 char* debug_fmt (const char *format, ...)

Definition at line 38 of file debug.c.

References vsnprintf.

5.119.1.2 void debug_print_buf (ssl_context *ssl, int level, char *file, int line, char *text, unsigned char *buf, int len)

Definition at line 82 of file debug.c.

References `_ssl_context::f_dbg`, and `_ssl_context::p_dbg`.

5.119.1.3 void debug_print_cert (ssl_context *ssl, int level, char *file, int line, char *text, x509_cert *crt)

Definition at line 169 of file debug.c.

References `debug_print_mpi()`, `rsa_context::E`, `_ssl_context::f_dbg`, `rsa_context::N`, `_x509_cert::next`, `_ssl_context::p_dbg`, `_x509_cert::rsa`, and `x509parse_cert_info()`.

5.119.1.4 void debug_print_mpi (ssl_context *ssl, int level, char *file, int line, char *text, mpi *X)

Definition at line 124 of file debug.c.

References `_ssl_context::f_dbg`, `mpi::n`, `mpi::p`, and `_ssl_context::p_dbg`.

Referenced by `debug_print_cert()`.

5.119.1.5 void debug_print_msg (ssl_context * *ssl*, int *level*, char * *file*, int *line*, char * *text*)

Definition at line 52 of file debug.c.

References `_ssl_context::f_dbg`, and `_ssl_context::p_dbg`.

5.119.1.6 void debug_print_ret (ssl_context * *ssl*, int *level*, char * *file*, int *line*, char * *text*, int *ret*)

Definition at line 66 of file debug.c.

References `_ssl_context::f_dbg`, and `_ssl_context::p_dbg`.

5.120 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/des.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/des.h"
#include <string.h>
#include <stdio.h>
```

Defines

- #define [GET_ULONG_BE](#)(n, b, i)
- #define [PUT_ULONG_BE](#)(n, b, i)
- #define [DES_IP](#)(X, Y)
- #define [DES_FP](#)(X, Y)
- #define [DES_ROUND](#)(X, Y)
- #define [SWAP](#)(a, b) { unsigned long t = a; a = b; b = t; t = 0; }

Functions

- static void [des_setkey](#) (unsigned long SK[32], unsigned char key[8])
- void [des_setkey_enc](#) ([des_context](#) *ctx, unsigned char key[8])
DES key schedule (56-bit, encryption).
- void [des_setkey_dec](#) ([des_context](#) *ctx, unsigned char key[8])
DES key schedule (56-bit, decryption).
- static void [des3_set2key](#) (unsigned long esk[96], unsigned long dsk[96], unsigned char key[16])
- void [des3_set2key_enc](#) ([des3_context](#) *ctx, unsigned char key[16])
Triple-DES key schedule (112-bit, encryption).
- void [des3_set2key_dec](#) ([des3_context](#) *ctx, unsigned char key[16])
Triple-DES key schedule (112-bit, decryption).
- static void [des3_set3key](#) (unsigned long esk[96], unsigned long dsk[96], unsigned char key[24])
- void [des3_set3key_enc](#) ([des3_context](#) *ctx, unsigned char key[24])
Triple-DES key schedule (168-bit, encryption).
- void [des3_set3key_dec](#) ([des3_context](#) *ctx, unsigned char key[24])
Triple-DES key schedule (168-bit, decryption).
- void [des_crypt_ecb](#) ([des_context](#) *ctx, unsigned char input[8], unsigned char output[8])
DES-ECB block encryption/decryption.
- void [des_crypt_cbc](#) ([des_context](#) *ctx, int mode, int length, unsigned char iv[8], unsigned char *input, unsigned char *output)
DES-CBC buffer encryption/decryption.

- void [des3_crypt_ecb](#) ([des3_context](#) *ctx, unsigned char input[8], unsigned char output[8])
3DES-ECB block encryption/decryption
- void [des3_crypt_cbc](#) ([des3_context](#) *ctx, [int](#) mode, [int](#) length, unsigned char iv[8], unsigned char *input, unsigned char *output)
3DES-CBC buffer encryption/decryption
- [int](#) [des_self_test](#) ([int](#) verbose)

Variables

- static const unsigned long [SB1](#) [64]
- static const unsigned long [SB2](#) [64]
- static const unsigned long [SB3](#) [64]
- static const unsigned long [SB4](#) [64]
- static const unsigned long [SB5](#) [64]
- static const unsigned long [SB6](#) [64]
- static const unsigned long [SB7](#) [64]
- static const unsigned long [SB8](#) [64]
- static const unsigned long [LHs](#) [16]
- static const unsigned long [RHs](#) [16]
- static const unsigned char [des3_test_keys](#) [24]
- static const unsigned char [des3_test_iv](#) [8]
- static const unsigned char [des3_test_buf](#) [8]
- static const unsigned char [des3_test_ecb_dec](#) [3][8]
- static const unsigned char [des3_test_ecb_enc](#) [3][8]
- static const unsigned char [des3_test_cbc_dec](#) [3][8]
- static const unsigned char [des3_test_cbc_enc](#) [3][8]

5.120.1 Define Documentation

5.120.1.1 #define DES_FP(X, Y)

Value:

```
{
    X = ((X << 31) | (X >> 1)) & 0xFFFFFFFF; \
    T = (X ^ Y) & 0xAAAAAAAA; X ^= T; Y ^= T; \
    Y = ((Y << 31) | (Y >> 1)) & 0xFFFFFFFF; \
    T = ((Y >> 8) ^ X) & 0x00FF00FF; X ^= T; Y ^= (T << 8); \
    T = ((Y >> 2) ^ X) & 0x33333333; X ^= T; Y ^= (T << 2); \
    T = ((X >> 16) ^ Y) & 0x0000FFFF; Y ^= T; X ^= (T << 16); \
    T = ((X >> 4) ^ Y) & 0x0F0F0F0F; Y ^= T; X ^= (T << 4); \
}
```

Definition at line 257 of file des.c.

Referenced by [des3_crypt_ecb\(\)](#), and [des_crypt_ecb\(\)](#).

5.120.1.2 #define DES_IP(X, Y)**Value:**

```

{
    T = ((X >> 4) ^ Y) & 0x0F0F0F0F; Y ^= T; X ^= (T << 4); \
    T = ((X >> 16) ^ Y) & 0x0000FFFF; Y ^= T; X ^= (T << 16); \
    T = ((Y >> 2) ^ X) & 0x33333333; X ^= T; Y ^= (T << 2); \
    T = ((Y >> 8) ^ X) & 0x00FF00FF; X ^= T; Y ^= (T << 8); \
    Y = ((Y << 1) | (Y >> 31)) & 0xFFFFFFFF; \
    T = (X ^ Y) & 0xAAAAAAAA; Y ^= T; X ^= T; \
    X = ((X << 1) | (X >> 31)) & 0xFFFFFFFF; \
}

```

Definition at line 243 of file des.c.

Referenced by des3_crypt_ecb(), and des_crypt_ecb().

5.120.1.3 #define DES_ROUND(X, Y)**Value:**

```

{
    T = *SK++ ^ X; \
    Y ^= SB8[ (T & 0x3F) ^ \
    SB6[ (T >> 8) & 0x3F ] ^ \
    SB4[ (T >> 16) & 0x3F ] ^ \
    SB2[ (T >> 24) & 0x3F ]; \
    T = *SK++ ^ ((X << 28) | (X >> 4)); \
    Y ^= SB7[ (T & 0x3F) ^ \
    SB5[ (T >> 8) & 0x3F ] ^ \
    SB3[ (T >> 16) & 0x3F ] ^ \
    SB1[ (T >> 24) & 0x3F ]; \
}

```

Definition at line 271 of file des.c.

Referenced by des3_crypt_ecb(), and des_crypt_ecb().

5.120.1.4 #define GET_ULONG_BE(n, b, i)**Value:**

```

{
    (n) = ( (unsigned long) (b)[(i) << 24] \
    | ( (unsigned long) (b)[(i) + 1] << 16) \
    | ( (unsigned long) (b)[(i) + 2] << 8) \
    | ( (unsigned long) (b)[(i) + 3] ); \
}

```

Definition at line 39 of file des.c.

Referenced by des3_crypt_ecb(), des_crypt_ecb(), des_setkey(), sha1_process(), and sha2_process().

5.120.1.5 #define PUT_ULONG_BE(n, b, i)**Value:**

```

{
    (b) [(i)      ] = (unsigned char) ( (n) >> 24 ); \
    (b) [(i) + 1] = (unsigned char) ( (n) >> 16 ); \
    (b) [(i) + 2] = (unsigned char) ( (n) >>  8 ); \
    (b) [(i) + 3] = (unsigned char) ( (n)          ); \
}

```

Definition at line 49 of file des.c.

Referenced by des3_crypt_ecb(), des_crypt_ecb(), sha1_finish(), and sha2_finish().

5.120.1.6 #define SWAP(a, b) { unsigned long t = a; a = b; b = t; t = 0; }

Definition at line 286 of file des.c.

Referenced by des_setkey_dec().

5.120.2 Function Documentation

5.120.2.1 void des3_crypt_cbc (des3_context * ctx, int mode, int length, unsigned char iv[8], unsigned char * input, unsigned char * output)

3DES-CBC buffer encryption/decryption

Parameters

ctx 3DES context
mode DES_ENCRYPT or DES_DECRYPT
length length of the input data
iv initialization vector (updated after use)
input buffer holding the input data
output buffer holding the output data

Definition at line 593 of file des.c.

References des3_crypt_ecb(), and DES_ENCRYPT.

Referenced by des_self_test(), main(), ssl_decrypt_buf(), ssl_encrypt_buf(), and x509_des3_decrypt().

5.120.2.2 void des3_crypt_ecb (des3_context * ctx, unsigned char input[8], unsigned char output[8])

3DES-ECB block encryption/decryption

Parameters

ctx 3DES context
input 64-bit input block
output 64-bit output block

Definition at line 552 of file des.c.

References DES_FP, DES_IP, DES_ROUND, GET_ULONG_BE, PUT_ULONG_BE, and des3_context::sk.

Referenced by des3_crypt_cbc(), and des_self_test().

5.120.2.3 `static void des3_set2key (unsigned long esk[96], unsigned long dsk[96], unsigned char key[16]) [static]`

Definition at line 381 of file `des.c`.

References `des_setkey()`.

Referenced by `des3_set2key_dec()`, and `des3_set2key_enc()`.

5.120.2.4 `void des3_set2key_dec (des3_context * ctx, unsigned char key[16])`

Triple-DES key schedule (112-bit, decryption).

Parameters

ctx 3DES context to be initialized

key 16-byte secret key

Definition at line 420 of file `des.c`.

References `des3_set2key()`, and `des3_context::sk`.

Referenced by `des_self_test()`.

5.120.2.5 `void des3_set2key_enc (des3_context * ctx, unsigned char key[16])`

Triple-DES key schedule (112-bit, encryption).

Parameters

ctx 3DES context to be initialized

key 16-byte secret key

Definition at line 409 of file `des.c`.

References `des3_set2key()`, and `des3_context::sk`.

Referenced by `des_self_test()`.

5.120.2.6 `static void des3_set3key (unsigned long esk[96], unsigned long dsk[96], unsigned char key[24]) [static]`

Definition at line 428 of file `des.c`.

References `des_setkey()`.

Referenced by `des3_set3key_dec()`, and `des3_set3key_enc()`.

5.120.2.7 `void des3_set3key_dec (des3_context * ctx, unsigned char key[24])`

Triple-DES key schedule (168-bit, decryption).

Parameters

ctx 3DES context to be initialized

key 24-byte secret key

Definition at line 465 of file des.c.

References `des3_set3key()`, and `des3_context::sk`.

Referenced by `des_self_test()`, `ssl_derive_keys()`, and `x509_des3_decrypt()`.

5.120.2.8 `void des3_set3key_enc (des3_context * ctx, unsigned char key[24])`

Triple-DES key schedule (168-bit, encryption).

Parameters

ctx 3DES context to be initialized

key 24-byte secret key

Definition at line 454 of file des.c.

References `des3_set3key()`, and `des3_context::sk`.

Referenced by `des_self_test()`, `main()`, and `ssl_derive_keys()`.

5.120.2.9 `void des_crypt_cbc (des_context * ctx, int mode, int length, unsigned char iv[8], unsigned char * input, unsigned char * output)`

DES-CBC buffer encryption/decryption.

Parameters

ctx DES context

mode DES_ENCRYPT or DES_DECRYPT

length length of the input data

iv initialization vector (updated after use)

input buffer holding the input data

output buffer holding the output data

Definition at line 505 of file des.c.

References `des_crypt_ecb()`, and `DES_ENCRYPT`.

Referenced by `des_self_test()`, and `main()`.

5.120.2.10 `void des_crypt_ecb (des_context * ctx, unsigned char input[8], unsigned char output[8])`

DES-ECB block encryption/decryption.

Parameters

ctx DES context

input 64-bit input block

output 64-bit output block

Definition at line 476 of file des.c.

References DES_FP, DES_IP, DES_ROUND, GET_ULONG_BE, PUT_ULONG_BE, and des_context::sk.

Referenced by des_crypt_cbc(), and des_self_test().

5.120.2.11 int des_self_test (int *verbose*)

Definition at line 694 of file des.c.

References buf, des3_crypt_cbc(), des3_crypt_ecb(), des3_set2key_dec(), des3_set2key_enc(), des3_set3key_dec(), des3_set3key_enc(), des3_test_buf, des3_test_cbc_dec, des3_test_cbc_enc, des3_test_ecb_dec, des3_test_ecb_enc, des3_test_iv, des3_test_keys, des_crypt_cbc(), des_crypt_ecb(), DES_DECRYPT, des_setkey_dec(), des_setkey_enc(), and prv.

Referenced by main().

5.120.2.12 static void des_setkey (unsigned long *SK*[32], unsigned char *key*[8]) [static]

Definition at line 288 of file des.c.

References GET_ULONG_BE, LHs, and RHs.

Referenced by des3_set2key(), des3_set3key(), des_setkey_dec(), and des_setkey_enc().

5.120.2.13 void des_setkey_dec (des_context * *ctx*, unsigned char *key*[8])

DES key schedule (56-bit, decryption).

Parameters

ctx DES context to be initialized

key 8-byte secret key

Definition at line 368 of file des.c.

References des_setkey(), des_context::sk, and SWAP.

Referenced by des_self_test().

5.120.2.14 void des_setkey_enc (des_context * *ctx*, unsigned char *key*[8])

DES key schedule (56-bit, encryption).

Parameters

ctx DES context to be initialized

key 8-byte secret key

Definition at line 360 of file des.c.

References des_setkey(), and des_context::sk.

Referenced by des_self_test(), and main().

5.120.3 Variable Documentation

5.120.3.1 `const unsigned char des3_test_buf[8] [static]`

Initial value:

```
{
    0x4E, 0x6F, 0x77, 0x20, 0x69, 0x73, 0x20, 0x74
}
```

Definition at line 658 of file des.c.

Referenced by des_self_test().

5.120.3.2 `const unsigned char des3_test_cbc_dec[3][8] [static]`

Initial value:

```
{
    { 0x12, 0x9F, 0x40, 0xB9, 0xD2, 0x00, 0x56, 0xB3 },
    { 0x47, 0x0E, 0xFC, 0x9A, 0x6B, 0x8E, 0xE3, 0x93 },
    { 0xC5, 0xCE, 0xCF, 0x63, 0xEC, 0xEC, 0x51, 0x4C }
}
```

Definition at line 677 of file des.c.

Referenced by des_self_test().

5.120.3.3 `const unsigned char des3_test_cbc_enc[3][8] [static]`

Initial value:

```
{
    { 0x54, 0xF1, 0x5A, 0xF6, 0xEB, 0xE3, 0xA4, 0xB4 },
    { 0x35, 0x76, 0x11, 0x56, 0x5F, 0xA1, 0x8E, 0x4D },
    { 0xCB, 0x19, 0x1F, 0x85, 0xD1, 0xED, 0x84, 0x39 }
}
```

Definition at line 684 of file des.c.

Referenced by des_self_test().

5.120.3.4 `const unsigned char des3_test_ecb_dec[3][8] [static]`

Initial value:

```
{
    { 0xCD, 0xD6, 0x4F, 0x2F, 0x94, 0x27, 0xC1, 0x5D },
    { 0x69, 0x96, 0xC8, 0xFA, 0x47, 0xA2, 0xAB, 0xEB },
    { 0x83, 0x25, 0x39, 0x76, 0x44, 0x09, 0x1A, 0x0A }
}
```

Definition at line 663 of file des.c.

Referenced by des_self_test().

5.120.3.5 const unsigned char des3_test_ecb_enc[3][8] [static]**Initial value:**

```
{
    { 0x6A, 0x2A, 0x19, 0xF4, 0x1E, 0xCA, 0x85, 0x4B },
    { 0x03, 0xE6, 0x9F, 0x5B, 0xFA, 0x58, 0xEB, 0x42 },
    { 0xDD, 0x17, 0xE8, 0xB8, 0xB4, 0x37, 0xD2, 0x32 }
}
```

Definition at line 670 of file des.c.

Referenced by des_self_test().

5.120.3.6 const unsigned char des3_test_iv[8] [static]**Initial value:**

```
{
    0x12, 0x34, 0x56, 0x78, 0x90, 0xAB, 0xCD, 0xEF,
}
```

Definition at line 653 of file des.c.

Referenced by des_self_test().

5.120.3.7 const unsigned char des3_test_keys[24] [static]**Initial value:**

```
{
    0x01, 0x23, 0x45, 0x67, 0x89, 0xAB, 0xCD, 0xEF,
    0x23, 0x45, 0x67, 0x89, 0xAB, 0xCD, 0xEF, 0x01,
    0x45, 0x67, 0x89, 0xAB, 0xCD, 0xEF, 0x01, 0x23
}
```

Definition at line 646 of file des.c.

Referenced by des_self_test().

5.120.3.8 const unsigned long LHs[16] [static]**Initial value:**

```
{
    0x00000000, 0x00000001, 0x00000100, 0x00000101,
    0x00010000, 0x00010001, 0x00010100, 0x00010101,
    0x01000000, 0x01000001, 0x01000100, 0x01000101,
    0x01010000, 0x01010001, 0x01010100, 0x01010101
}
```

Definition at line 224 of file des.c.

Referenced by des_setkey().

5.120.3.9 const unsigned long RHs[16] [static]**Initial value:**

```
{
    0x00000000, 0x01000000, 0x00010000, 0x01010000,
    0x00000100, 0x01000100, 0x00010100, 0x01010100,
    0x00000001, 0x01000001, 0x00010001, 0x01010001,
    0x00000101, 0x01000101, 0x00010101, 0x01010101,
}
```

Definition at line 232 of file des.c.

Referenced by des_setkey().

5.120.3.10 const unsigned long SB1[64] [static]**Initial value:**

```
{
    0x01010400, 0x00000000, 0x00010000, 0x01010404,
    0x01010004, 0x00010404, 0x00000004, 0x00010000,
    0x00000400, 0x01010400, 0x01010404, 0x00000400,
    0x01000404, 0x01010004, 0x01000000, 0x00000004,
    0x00000404, 0x01000400, 0x01000400, 0x00010400,
    0x00010400, 0x01010000, 0x01010000, 0x01000404,
    0x00010004, 0x01000004, 0x01000004, 0x00010004,
    0x00000000, 0x00000404, 0x00010404, 0x01000000,
    0x00010000, 0x01010404, 0x00000004, 0x01010000,
    0x01010400, 0x01000000, 0x01000000, 0x00000400,
    0x01010004, 0x00010000, 0x00010400, 0x01000004,
    0x00000400, 0x00000004, 0x01000404, 0x00010404,
    0x01010404, 0x00010004, 0x01010000, 0x01000404,
    0x01000004, 0x00000404, 0x00010404, 0x01010400,
    0x00000404, 0x01000400, 0x01000400, 0x00000000,
    0x00010004, 0x00010400, 0x00000000, 0x01010004
}
```

Definition at line 61 of file des.c.

5.120.3.11 const unsigned long SB2[64] [static]**Initial value:**

```
{
    0x80108020, 0x80008000, 0x00008000, 0x00108020,
    0x00100000, 0x00000020, 0x80100020, 0x80008020,
    0x80000020, 0x80108020, 0x80108000, 0x80000000,
    0x80008000, 0x00100000, 0x00000020, 0x80100020,
    0x00108000, 0x00100020, 0x80008020, 0x00000000,
    0x80000000, 0x00008000, 0x00108020, 0x80100000,
    0x00100020, 0x80000020, 0x00000000, 0x00108000,
    0x00008020, 0x80108000, 0x80100000, 0x00008020,
    0x00000000, 0x00108020, 0x80100020, 0x00100000,
    0x80008020, 0x80100000, 0x80108000, 0x00008000,
    0x80100000, 0x80008000, 0x00000020, 0x80108020,
    0x00108020, 0x00000020, 0x00008000, 0x80000000,
    0x00008020, 0x80108000, 0x00100000, 0x80000020,
    0x00100020, 0x80008020, 0x80000020, 0x00100020,
}
```

```

    0x00108000, 0x00000000, 0x80008000, 0x00008020,
    0x80000000, 0x80100020, 0x80108020, 0x00108000
}

```

Definition at line 81 of file des.c.

5.120.3.12 const unsigned long SB3[64] [static]

Initial value:

```

{
    0x00000208, 0x08020200, 0x00000000, 0x08020008,
    0x08000200, 0x00000000, 0x00020208, 0x08000200,
    0x00020008, 0x08000008, 0x08000008, 0x00020000,
    0x08020208, 0x00020008, 0x08020000, 0x00000208,
    0x08000000, 0x00000008, 0x08020200, 0x00000200,
    0x00020200, 0x08020000, 0x08020008, 0x00020208,
    0x08000208, 0x00020200, 0x00020000, 0x08000208,
    0x00000008, 0x08020208, 0x00000200, 0x08000000,
    0x08020200, 0x08000000, 0x00020008, 0x00000208,
    0x00020000, 0x08020200, 0x08000200, 0x00000000,
    0x00000200, 0x00020008, 0x08020208, 0x08000200,
    0x08000008, 0x00000200, 0x00000000, 0x08020008,
    0x08000208, 0x00020000, 0x08000000, 0x08020208,
    0x00000008, 0x00020208, 0x00020200, 0x08000008,
    0x08020000, 0x08000208, 0x00000208, 0x08020000,
    0x00020208, 0x00000008, 0x08020008, 0x00020200
}

```

Definition at line 101 of file des.c.

5.120.3.13 const unsigned long SB4[64] [static]

Initial value:

```

{
    0x00802001, 0x00002081, 0x00002081, 0x00000080,
    0x00802080, 0x00800081, 0x00800001, 0x00002001,
    0x00000000, 0x00802000, 0x00802000, 0x00802081,
    0x00000081, 0x00000000, 0x00800080, 0x00800001,
    0x00000001, 0x00002000, 0x00800000, 0x00802001,
    0x00000080, 0x00800000, 0x00002001, 0x00002080,
    0x00800081, 0x00000001, 0x00002080, 0x00800080,
    0x00002000, 0x00802080, 0x00802081, 0x00000081,
    0x00800080, 0x00800001, 0x00802000, 0x00802081,
    0x00000081, 0x00000000, 0x00000000, 0x00802000,
    0x00002080, 0x00800080, 0x00800081, 0x00000001,
    0x00802001, 0x00002081, 0x00002081, 0x00000080,
    0x00802081, 0x00000081, 0x00000001, 0x00002000,
    0x00800001, 0x00002001, 0x00802080, 0x00800081,
    0x00002001, 0x00002080, 0x00800000, 0x00802001,
    0x00000080, 0x00800000, 0x00002000, 0x00802080
}

```

Definition at line 121 of file des.c.

5.120.3.14 const unsigned long SB5[64] [static]

Initial value:

```

{
    0x00000100, 0x02080100, 0x02080000, 0x42000100,
    0x00080000, 0x00000100, 0x40000000, 0x02080000,
    0x40080100, 0x00080000, 0x02000100, 0x40080100,
    0x42000100, 0x42080000, 0x00080100, 0x40000000,
    0x02000000, 0x40080000, 0x40080000, 0x00000000,
    0x40000100, 0x42080100, 0x42080100, 0x02000100,
    0x42080000, 0x40000100, 0x00000000, 0x42000000,
    0x02080100, 0x02000000, 0x42000000, 0x00080100,
    0x00080000, 0x42000100, 0x00000100, 0x02000000,
    0x40000000, 0x02080000, 0x42000100, 0x40080100,
    0x02000100, 0x40000000, 0x42080000, 0x02080100,
    0x40080100, 0x00000100, 0x02000000, 0x42080000,
    0x42080100, 0x00080100, 0x42000000, 0x42080100,
    0x02080000, 0x00000000, 0x40080000, 0x42000000,
    0x00080100, 0x02000100, 0x40000100, 0x00080000,
    0x00000000, 0x40080000, 0x02080100, 0x40000100
}

```

Definition at line 141 of file des.c.

5.120.3.15 const unsigned long SB6[64] [static]

Initial value:

```

{
    0x20000010, 0x20400000, 0x00004000, 0x20404010,
    0x20400000, 0x00000010, 0x20404010, 0x00400000,
    0x20004000, 0x00404010, 0x00400000, 0x20000010,
    0x00400010, 0x20004000, 0x20000000, 0x00004010,
    0x00000000, 0x00400010, 0x20004010, 0x00004000,
    0x00404000, 0x20004010, 0x00000010, 0x20400010,
    0x20400010, 0x00000000, 0x00404010, 0x20404000,
    0x00004010, 0x00404000, 0x20404000, 0x20000000,
    0x20004000, 0x00000010, 0x20400010, 0x00404000,
    0x20404010, 0x00400000, 0x00004010, 0x20000010,
    0x00400000, 0x20004000, 0x20000000, 0x00004010,
    0x20000010, 0x20404010, 0x00404000, 0x20400000,
    0x00404010, 0x20404000, 0x00000000, 0x20400010,
    0x00000010, 0x00004000, 0x20400000, 0x00404010,
    0x00004000, 0x00400010, 0x20004010, 0x00000000,
    0x20404000, 0x20000000, 0x00400010, 0x20004010
}

```

Definition at line 161 of file des.c.

5.120.3.16 const unsigned long SB7[64] [static]

Initial value:

```

{
    0x00200000, 0x04200002, 0x04000802, 0x00000000,
    0x00000800, 0x04000802, 0x00200802, 0x04200800,
    0x04200802, 0x00200000, 0x00000000, 0x04000002,
    0x00000002, 0x04000000, 0x04200002, 0x00000802,
    0x04000800, 0x00200802, 0x00200002, 0x04000800,
    0x04000002, 0x04200000, 0x04200800, 0x00200002,
    0x04200000, 0x00000800, 0x00000802, 0x04200802,
    0x00200800, 0x00000002, 0x04000000, 0x00200800,

```

```

    0x04000000, 0x00200800, 0x00200000, 0x04000802,
    0x04000802, 0x04200002, 0x04200002, 0x00000002,
    0x00200002, 0x04000000, 0x04000800, 0x00200000,
    0x04200800, 0x00000802, 0x00200802, 0x04200800,
    0x00000802, 0x04000002, 0x04200802, 0x04200000,
    0x00200800, 0x00000000, 0x00000002, 0x04200802,
    0x00000000, 0x00200802, 0x04200000, 0x00000800,
    0x04000002, 0x04000800, 0x00000800, 0x00200002
}

```

Definition at line 181 of file des.c.

5.120.3.17 const unsigned long SB8[64] [static]

Initial value:

```

{
    0x10001040, 0x00001000, 0x00040000, 0x10041040,
    0x10000000, 0x10001040, 0x00000040, 0x10000000,
    0x00040040, 0x10040000, 0x10041040, 0x00041000,
    0x10041000, 0x00041040, 0x00001000, 0x00000040,
    0x10040000, 0x10000040, 0x10001000, 0x00001040,
    0x00041000, 0x00040040, 0x10040040, 0x10041000,
    0x00001040, 0x00000000, 0x00000000, 0x10040040,
    0x10000040, 0x10001000, 0x00041040, 0x00040000,
    0x00041040, 0x00040000, 0x10041000, 0x00001000,
    0x00000040, 0x10040040, 0x00001000, 0x00041040,
    0x10001000, 0x00000040, 0x10000040, 0x10040000,
    0x10040040, 0x10000000, 0x00040000, 0x10001040,
    0x00000000, 0x10041040, 0x00040040, 0x10000040,
    0x10040000, 0x10001000, 0x10001040, 0x00000000,
    0x10041040, 0x00041000, 0x00041000, 0x00001040,
    0x00001040, 0x00040040, 0x10000000, 0x10041000
}

```

Definition at line 201 of file des.c.

5.121 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/dhm.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/dhm.h"
#include <string.h>
```

Defines

- #define [DHM_MPI_EXPORT](#)(X, n)

Functions

- static [int dhm_read_bignum](#) ([mpi](#) *X, unsigned char **p, unsigned char *end)
- [int dhm_read_params](#) ([dhm_context](#) *ctx, unsigned char **p, unsigned char *end)
Parse the ServerKeyExchange parameters.
- [int dhm_make_params](#) ([dhm_context](#) *ctx, [int](#) x_size, unsigned char *output, [int](#) *olen, [int](#)(*f_rng)(void *), void *p_rng)
Setup and write the ServerKeyExchange parameters.
- [int dhm_read_public](#) ([dhm_context](#) *ctx, unsigned char *input, [int](#) ilen)
Import the peer's public value G^Y .
- [int dhm_make_public](#) ([dhm_context](#) *ctx, [int](#) x_size, unsigned char *output, [int](#) olen, [int](#)(*f_rng)(void *), void *p_rng)
Create own private value X and export G^X .
- [int dhm_calc_secret](#) ([dhm_context](#) *ctx, unsigned char *output, [int](#) *olen)
Derive and export the shared secret $(G^Y)^X \bmod P$.
- void [dhm_free](#) ([dhm_context](#) *ctx)
- [int dhm_self_test](#) ([int](#) verbose)
Checkup routine.

5.121.1 Define Documentation

5.121.1.1 #define [DHM_MPI_EXPORT](#)(X, n)

Value:

```
MPI_CHK( mpi_write_binary( X, p + 2, n ) ); \
    *p++ = (unsigned char)( n >> 8 ); \
    *p++ = (unsigned char)( n ); p += n;
```

Referenced by [dhm_make_params](#)().

5.121.2 Function Documentation

5.121.2.1 `int dhm_calc_secret (dhm_context * ctx, unsigned char * output, int * olen)`

Derive and export the shared secret $(G^Y)^X \bmod P$.

Parameters

ctx DHM context
output destination buffer
olen number of chars written

Returns

0 if successful, or an XYSSL_ERR_DHM_XXX error code

Definition at line 208 of file dhm.c.

References dhm_context::GY, dhm_context::K, MPI_CHK, mpi_exp_mod(), mpi_size(), mpi_write_binary(), dhm_context::P, dhm_context::RP, dhm_context::X, XYSSL_ERR_DHM_BAD_INPUT_DATA, and XYSSL_ERR_DHM_CALC_SECRET_FAILED.

Referenced by main(), ssl_parse_client_key_exchange(), and ssl_write_client_key_exchange().

5.121.2.2 `void dhm_free (dhm_context * ctx)`

Definition at line 234 of file dhm.c.

References dhm_context::G, dhm_context::GX, dhm_context::GY, dhm_context::K, mpi_free(), dhm_context::P, dhm_context::RP, and dhm_context::X.

Referenced by main(), and ssl_free().

5.121.2.3 `int dhm_make_params (dhm_context * ctx, int s_size, unsigned char * output, int * olen, int(*) (void *) f_rng, void * p_rng)`

Setup and write the ServerKeyExchange parameters.

Parameters

ctx DHM context
s_size private value size in bits
output destination buffer
olen number of chars written
f_rng RNG function
p_rng RNG parameter

Note

This function assumes that *ctx*->P and *ctx*->G have already been properly set (for example using mpi_read_string or mpi_read_binary).

Returns

0 if successful, or an XYSSL_ERR_DHM_XXX error code

Definition at line 93 of file dhm.c.

References DHM_MPI_EXPORT, dhm_context::G, dhm_context::GX, dhm_context::len, MPI_CHK, mpi_cmp_mpi(), mpi_exp_mod(), mpi_grow(), mpi_lset(), mpi_shift_r(), mpi_size(), dhm_context::P, mpi::p, dhm_context::RP, dhm_context::X, and XYSSL_ERR_DHM_MAKE_PARAMS_FAILED.

Referenced by main(), and ssl_write_server_key_exchange().

5.121.2.4 `int dhm_make_public(dhm_context * ctx, int s_size, unsigned char * output, int olen, int(*) (void *) f_rng, void * p_rng)`

Create own private value X and export G^X .

Parameters

ctx DHM context
s_size private value size in bits
output destination buffer
olen must be equal to `ctx->P.len`
f_rng RNG function
p_rng RNG parameter

Returns

0 if successful, or an XYSSL_ERR_DHM_XXX error code

Definition at line 167 of file dhm.c.

References dhm_context::G, dhm_context::GX, dhm_context::len, MPI_CHK, mpi_cmp_mpi(), mpi_exp_mod(), mpi_grow(), mpi_lset(), mpi_shift_r(), mpi_write_binary(), dhm_context::P, mpi::p, dhm_context::RP, dhm_context::X, XYSSL_ERR_DHM_BAD_INPUT_DATA, and XYSSL_ERR_DHM_MAKE_PUBLIC_FAILED.

Referenced by main(), and ssl_write_client_key_exchange().

5.121.2.5 `static int dhm_read_bignum(mpi * X, unsigned char ** p, unsigned char * end) [static]`

Definition at line 37 of file dhm.c.

References mpi_read_binary(), XYSSL_ERR_DHM_BAD_INPUT_DATA, and XYSSL_ERR_DHM_READ_PARAMS_FAILED.

Referenced by dhm_read_params().

5.121.2.6 `int dhm_read_params(dhm_context * ctx, unsigned char ** p, unsigned char * end)`

Parse the ServerKeyExchange parameters.

Parameters

ctx DHM context
p &(start of input buffer)
end end of buffer

Returns

0 if successful, or an XYSSL_ERR_DHM_XXX error code

Definition at line 63 of file dhm.c.

References dhm_read_bignum(), dhm_context::G, dhm_context::GY, dhm_context::len, mpi_size(), dhm_context::P, and XYSSL_ERR_DHM_BAD_INPUT_DATA.

Referenced by main(), and ssl_parse_server_key_exchange().

5.121.2.7 int dhm_read_public (dhm_context * *ctx*, unsigned char * *input*, int *ilen*)

Import the peer's public value G^Y .

Parameters

ctx DHM context

input input buffer

ilen size of buffer

Returns

0 if successful, or an XYSSL_ERR_DHM_XXX error code

Definition at line 150 of file dhm.c.

References dhm_context::GY, dhm_context::len, mpi_read_binary(), XYSSL_ERR_DHM_BAD_INPUT_DATA, and XYSSL_ERR_DHM_READ_PUBLIC_FAILED.

Referenced by main(), and ssl_parse_client_key_exchange().

5.121.2.8 int dhm_self_test (int *verbose*)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 246 of file dhm.c.

5.122 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/havege.c File Reference

```
#include <string.h>
#include <time.h>
#include "xyssl/config.h"
#include "xyssl/havege.h"
#include "xyssl/timing.h"
```

Defines

- `#define SWAP(X, Y) { int *T = X; X = Y; Y = T; }`
- `#define TST1_ENTER if(PTEST & 1) { PTEST ^= 3; PTEST >>= 1;`
- `#define TST2_ENTER if(PTEST & 1) { PTEST ^= 3; PTEST >>= 1;`
- `#define TST1_LEAVE U1++; }`
- `#define TST2_LEAVE U2++; }`
- `#define ONE_ITERATION`

Functions

- `static void havege_fill (havege_state *hs)`
- `void havege_init (havege_state *hs)`
HAVEGE initialization.
- `int havege_rand (void *p_rng)`
HAVEGE rand function.

5.122.1 Define Documentation

5.122.1.1 `#define ONE_ITERATION`

Definition at line 60 of file havege.c.

Referenced by `havege_fill()`.

5.122.1.2 `#define SWAP(X, Y) { int *T = X; X = Y; Y = T; }`

Definition at line 52 of file havege.c.

5.122.1.3 `#define TST1_ENTER if(PTEST & 1) { PTEST ^= 3; PTEST >>= 1;`

Definition at line 54 of file havege.c.

5.122.1.4 `#define TST1_LEAVE U1++; }`

Definition at line 57 of file havege.c.

5.122.1.5 #define TST2_ENTER if(PTEST & 1) { PTEST ^= 3; PTEST >>= 1;

Definition at line 55 of file havege.c.

5.122.1.6 #define TST2_LEAVE U2++; }

Definition at line 58 of file havege.c.

5.122.2 Function Documentation**5.122.2.1 static void havege_fill (havege_state * *hs*) [static]**

Definition at line 154 of file havege.c.

References COLLECT_SIZE, havege_state::offset, ONE_ITERATION, havege_state::PT1, havege_state::PT2, and havege_state::WALK.

Referenced by havege_init(), and havege_rand().

5.122.2.2 void havege_init (havege_state * *hs*)

HAVEGE initialization.

Parameters

hs HAVEGE state to be initialized

Definition at line 188 of file havege.c.

References havege_fill().

Referenced by generate_AES_key(), generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), initiate_migration_process(), main(), and ssl_test().

5.122.2.3 int havege_rand (void * *p_rng*)

HAVEGE rand function.

Parameters

rng_st points to an HAVEGE state

Returns

A random int

Definition at line 198 of file havege.c.

References COLLECT_SIZE, havege_fill(), havege_state::offset, and havege_state::pool.

Referenced by generate_AES_key(), generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), initiate_migration_process(), main(), and ssl_test().

5.123 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/md2.c File Reference

```
#include "xyssl/config.h"
```

5.124 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/md4.c File Reference

```
#include "xyssl/config.h"
```


5.125 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/md5.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/md5.h"
#include <string.h>
#include <stdio.h>
```

Defines

- #define [GET_ULONG_LE](#)(n, b, i)
- #define [PUT_ULONG_LE](#)(n, b, i)
- #define [S](#)(x, n) ((x << n) | ((x & 0xFFFFFFFF) >> (32 - n)))
- #define [P](#)(a, b, c, d, k, s, t)
- #define [F](#)(x, y, z) (z ^ (x & (y ^ z)))
- #define [F](#)(x, y, z) (y ^ (z & (x ^ y)))
- #define [F](#)(x, y, z) (x ^ y ^ z)
- #define [F](#)(x, y, z) (y ^ (x | ~z))

Functions

- void [md5_starts](#) ([md5_context](#) *ctx)
MD5 context setup.
- static void [md5_process](#) ([md5_context](#) *ctx, unsigned char data[64])
- void [md5_update](#) ([md5_context](#) *ctx, unsigned char *input, [int](#) ilen)
MD5 process buffer.
- void [md5_finish](#) ([md5_context](#) *ctx, unsigned char output[16])
MD5 final digest.
- void [md5](#) (unsigned char *input, [int](#) ilen, unsigned char output[16])
Output = MD5(input buffer).
- [int](#) [md5_file](#) (char *path, unsigned char output[16])
Output = MD5(file contents).
- void [md5_hmac_starts](#) ([md5_context](#) *ctx, unsigned char *key, [int](#) keylen)
MD5 HMAC context setup.
- void [md5_hmac_update](#) ([md5_context](#) *ctx, unsigned char *input, [int](#) ilen)
MD5 HMAC process buffer.
- void [md5_hmac_finish](#) ([md5_context](#) *ctx, unsigned char output[16])
MD5 HMAC final digest.
- void [md5_hmac](#) (unsigned char *key, [int](#) keylen, unsigned char *input, [int](#) ilen, unsigned char output[16])

Output = HMAC-MD5(hmac key, input buffer).

- `int md5_self_test (int verbose)`

Checkup routine.

Variables

- static const unsigned char `md5_padding` [64]
- static unsigned char `md5_test_buf` [7][81]
- static const `int md5_test_buflen` [7]
- static const unsigned char `md5_test_sum` [7][16]
- static unsigned char `md5_hmac_test_key` [7][26]
- static const `int md5_hmac_test_keylen` [7]
- static unsigned char `md5_hmac_test_buf` [7][74]
- static const `int md5_hmac_test_buflen` [7]
- static const unsigned char `md5_hmac_test_sum` [7][16]

5.125.1 Define Documentation

5.125.1.1 `#define F(x, y, z) (y ^ (x | ~z))`

5.125.1.2 `#define F(x, y, z) (x ^ y ^ z)`

5.125.1.3 `#define F(x, y, z) (y ^ (z & (x ^ y)))`

5.125.1.4 `#define F(x, y, z) (z ^ (x & (y ^ z)))`

Referenced by `sha2_process()`, and `sha4_process()`.

5.125.1.5 `#define GET_ULONG_LE(n, b, i)`

Value:

```
{
    (n) = ( (unsigned long) (b)[(i)      ]          ) \
    | ( (unsigned long) (b)[(i) + 1] << 8 )          \
    | ( (unsigned long) (b)[(i) + 2] << 16 )          \
    | ( (unsigned long) (b)[(i) + 3] << 24 );        \
}
```

Definition at line 39 of file `md5.c`.

5.125.1.6 `#define P(a, b, c, d, k, s, t)`

Value:

```
{
    a += F(b, c, d) + X[k] + t; a = S(a, s) + b; \
}
```

Referenced by `main()`, `md5_process()`, `rsa_decryption()`, `sha1_process()`, `sha2_process()`, and `sha4_process()`.

5.125.1.7 #define PUT_ULONG_LE(n, b, i)**Value:**

```

{
    (b)[(i)] = (unsigned char) ((n) >> 0);
    (b)[(i) + 1] = (unsigned char) ((n) >> 8);
    (b)[(i) + 2] = (unsigned char) ((n) >> 16);
    (b)[(i) + 3] = (unsigned char) ((n) >> 24);
}

```

Definition at line 49 of file md5.c.

5.125.1.8 #define S(x, n) ((x << n) | ((x & 0xFFFFFFFF) >> (32 - n)))**5.125.2 Function Documentation****5.125.2.1 void md5 (unsigned char * *input*, int *ilen*, unsigned char *output*[16])**Output = MD5(*input buffer*).**Parameters**

input buffer holding the data
ilen length of the input data
output MD5 checksum result

Definition at line 278 of file md5.c.

References md5_finish(), md5_starts(), and md5_update().

Referenced by initiate_migration_process(), main(), md5_hmac_starts(), md5_self_test(), reply_migration_process(), ssl_calc_verify(), ssl_derive_keys(), ssl_mac_md5(), ssl_parse_finished(), ssl_parse_server_key_exchange(), ssl_write_finished(), ssl_write_server_key_exchange(), and x509_hash().

5.125.2.2 int md5_file (char * *path*, unsigned char *output*[16])Output = MD5(*file contents*).**Parameters**

path input file name
output MD5 checksum result

Returns

0 if successful, 1 if fopen failed, or 2 if fread failed

Definition at line 292 of file md5.c.

References buf, f, md5_finish(), md5_starts(), and md5_update().

Referenced by md5_wrapper().

5.125.2.3 void md5_finish (md5_context * *ctx*, unsigned char *output*[16])

MD5 final digest.

Parameters

ctx MD5 context

output MD5 checksum result

Definition at line 250 of file md5.c.

References md5_padding, md5_update(), PUT_ULONG_LE, md5_context::state, and md5_context::total.

Referenced by md5(), md5_file(), md5_hmac_finish(), ssl_calc_finished(), ssl_calc_verify(), ssl_derive_keys(), ssl_mac_md5(), ssl_parse_server_key_exchange(), ssl_write_server_key_exchange(), and x509_des3_decrypt().

5.125.2.4 void md5_hmac (unsigned char * *key*, int *keylen*, unsigned char * *input*, int *ilen*, unsigned char *output*[16])

Output = HMAC-MD5(hmac key, input buffer).

Parameters

key HMAC secret key

keylen length of the HMAC key

input buffer holding the data

ilen length of the input data

output HMAC-MD5 result

Definition at line 378 of file md5.c.

References md5_hmac_finish(), md5_hmac_starts(), and md5_hmac_update().

Referenced by ssl_decrypt_buf(), ssl_encrypt_buf(), and tls1_prf().

5.125.2.5 void md5_hmac_finish (md5_context * *ctx*, unsigned char *output*[16])

MD5 HMAC final digest.

Parameters

ctx HMAC context

output MD5 HMAC checksum result

Definition at line 362 of file md5.c.

References md5_finish(), md5_starts(), md5_update(), and md5_context::opad.

Referenced by md5_hmac(), and md5_self_test().

5.125.2.6 void md5_hmac_starts (md5_context * *ctx*, unsigned char * *key*, int *keylen*)

MD5 HMAC context setup.

Parameters

ctx HMAC context to be initialized

key HMAC secret key

keylen length of the HMAC key

Definition at line 324 of file md5.c.

References md5_context::ipad, md5(), md5_starts(), md5_update(), and md5_context::opad.

Referenced by md5_hmac(), and md5_self_test().

5.125.2.7 void md5_hmac_update (md5_context * *ctx*, unsigned char * *input*, int *ilen*)

MD5 HMAC process buffer.

Parameters

ctx HMAC context

input buffer holding the data

ilen length of the input data

Definition at line 354 of file md5.c.

References md5_update().

Referenced by md5_hmac(), and md5_self_test().

5.125.2.8 static void md5_process (md5_context * *ctx*, unsigned char *data*[64]) [static]

Definition at line 72 of file md5.c.

References GET_ULONGLONG_LE, P, and md5_context::state.

Referenced by md5_update().

5.125.2.9 int md5_self_test (int *verbose*)

Checksum routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 495 of file md5.c.

References buf, md5(), md5_hmac_finish(), md5_hmac_starts(), md5_hmac_test_buf, md5_hmac_test_buflen, md5_hmac_test_key, md5_hmac_test_keylen, md5_hmac_test_sum, md5_hmac_update(), md5_test_buf, md5_test_buflen, and md5_test_sum.

Referenced by main().

5.125.2.10 void md5_starts (md5_context * ctx)

MD5 context setup.

Parameters

ctx context to be initialized

Definition at line 61 of file md5.c.

References md5_context::state, and md5_context::total.

Referenced by md5(), md5_file(), md5_hmac_finish(), md5_hmac_starts(), ssl_calc_finished(), ssl_calc_verify(), ssl_derive_keys(), ssl_init(), ssl_mac_md5(), ssl_parse_server_key_exchange(), ssl_write_server_key_exchange(), and x509_des3_decrypt().

5.125.2.11 void md5_update (md5_context * ctx, unsigned char * input, int ilen)

MD5 process buffer.

Parameters

ctx MD5 context

input buffer holding the data

ilen length of the input data

Definition at line 198 of file md5.c.

References md5_context::buffer, md5_process(), and md5_context::total.

Referenced by md5(), md5_file(), md5_finish(), md5_hmac_finish(), md5_hmac_starts(), md5_hmac_update(), ssl_calc_finished(), ssl_calc_verify(), ssl_derive_keys(), ssl_mac_md5(), ssl_parse_client_hello(), ssl_parse_server_key_exchange(), ssl_read_record(), ssl_write_record(), ssl_write_server_key_exchange(), and x509_des3_decrypt().

5.125.3 Variable Documentation

5.125.3.1 unsigned char md5_hmac_test_buf[7][74] [static]

Initial value:

```
{
    { "Hi There" },
    { "what do ya want for nothing?" },
    { "\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD"
      "\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD"
      "\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD"
      "\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD"
      "\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD" },
    { "\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD"
      "\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD"
      "\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD"
      "\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD"
      "\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD" },
    { "Test With Truncation" },
    { "Test Using Larger Than Block-Size Key - Hash Key First" },
```

```

{ "Test Using Larger Than Block-Size Key and Larger"
  " Than One Block-Size Data" }
}

```

Definition at line 449 of file md5.c.

Referenced by md5_self_test().

5.125.3.2 `const int md5_hmac_test_buflen[7] [static]`

Initial value:

$$\{8, 28, 50, 50, 20, 54, 73\}$$

Definition at line 469 of file md5.c.

Referenced by md5_self_test().

5.125.3.3 unsigned char md5_hmac_test_key[7][26] [static]

Initial value:

[illegible]

Definition at line 432 of file md5.c.

Referenced by md5_self_test().

5.125.3.4 `const int md5_hmac_test_keylen[7] [static]`

Initial value:

$$\{16, 4, 16, 25, 16, 80, 80\}$$

Definition at line 444 of file md5.c.

Referenced by md5_self_test().

5.125.3.5 `const unsigned char md5_hmac_test_sum[7][16] [static]`

Initial value:

```
{
    { 0x92, 0x94, 0x72, 0x7A, 0x36, 0x38, 0xBB, 0x1C,
      0x13, 0xF4, 0x8E, 0xF8, 0x15, 0x8B, 0xFC, 0x9D },
    { 0x75, 0x0C, 0x78, 0x3E, 0x6A, 0xB0, 0xB5, 0x03,
      0xEA, 0xA8, 0x6E, 0x31, 0x0A, 0x5D, 0xB7, 0x38 },
    { 0x56, 0xBE, 0x34, 0x52, 0x1D, 0x14, 0x4C, 0x88,
      0xDB, 0xB8, 0xC7, 0x33, 0xF0, 0xE8, 0xB3, 0xF6 },
    { 0x69, 0x7E, 0xAF, 0x0A, 0xCA, 0x3A, 0x3A, 0xEA,
      0x3A, 0x75, 0x16, 0x47, 0x46, 0xFF, 0xAA, 0x79 },
    { 0x56, 0x46, 0x1E, 0xF2, 0x34, 0x2E, 0xDC, 0x00,
      0xF9, 0xBA, 0xB9, 0x95 },
    { 0x6B, 0x1A, 0xB7, 0xFE, 0x4B, 0xD7, 0xBF, 0x8F,
      0x0B, 0x62, 0xE6, 0xCE, 0x61, 0xB9, 0xD0, 0xCD },
    { 0x6F, 0x63, 0x0F, 0xAD, 0x67, 0xCD, 0xA0, 0xEE,
      0x1F, 0xB1, 0xF5, 0x62, 0xDB, 0x3A, 0xA5, 0x3E }
}
```

Definition at line 474 of file md5.c.

Referenced by md5_self_test().

5.125.3.6 `const unsigned char md5_padding[64] [static]`

Initial value:

```
{
    0x80, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
    0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
    0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
    0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0
}
```

Definition at line 239 of file md5.c.

Referenced by md5_finish().

5.125.3.7 `unsigned char md5_test_buf[7][81] [static]`

Initial value:

```
{
    { "" },
    { "a" },
    { "abc" },
    { "message digest" },
    { "abcdefghijklmnopqrstuvwxyz" },
    { "ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789" },
    { "12345678901234567890123456789012345678901234567890123456789012"
      "345678901234567890" }
}
```

Definition at line 394 of file md5.c.

Referenced by md5_self_test().

5.125.3.8 `const int md5_test_buflen[7] [static]`

Initial value:


```
{  
    0, 1, 3, 14, 26, 62, 80  
}
```

Definition at line 406 of file md5.c.

Referenced by md5_self_test().

5.125.3.9 const unsigned char md5_test_sum[7][16] [static]

Initial value:

```
{  
    { 0xD4, 0x1D, 0x8C, 0xD9, 0x8F, 0x00, 0xB2, 0x04,  
      0xE9, 0x80, 0x09, 0x98, 0xEC, 0xF8, 0x42, 0x7E },  
    { 0x0C, 0xC1, 0x75, 0xB9, 0xC0, 0xF1, 0xB6, 0xA8,  
      0x31, 0xC3, 0x99, 0xE2, 0x69, 0x77, 0x26, 0x61 },  
    { 0x90, 0x01, 0x50, 0x98, 0x3C, 0xD2, 0x4F, 0xB0,  
      0xD6, 0x96, 0x3F, 0x7D, 0x28, 0xE1, 0x7F, 0x72 },  
    { 0xF9, 0x6B, 0x69, 0x7D, 0x7C, 0xB7, 0x93, 0x8D,  
      0x52, 0x5A, 0x2F, 0x31, 0xAA, 0xF1, 0x61, 0xD0 },  
    { 0xC3, 0xFC, 0xD3, 0xD7, 0x61, 0x92, 0xE4, 0x00,  
      0x7D, 0xFB, 0x49, 0x6C, 0xCA, 0x67, 0xE1, 0x3B },  
    { 0xD1, 0x74, 0xAB, 0x98, 0xD2, 0x77, 0xD9, 0xF5,  
      0xA5, 0x61, 0x1C, 0x2C, 0x9F, 0x41, 0x9D, 0x9F },  
    { 0x57, 0xED, 0xF4, 0xA2, 0x2B, 0xE3, 0xC9, 0x55,  
      0xAC, 0x49, 0xDA, 0x2E, 0x21, 0x07, 0xB6, 0x7A }  
}
```

Definition at line 411 of file md5.c.

Referenced by md5_self_test().

5.126 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/net.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/net.h"
#include <sys/types.h>
#include <sys/socket.h>
#include <netinet/in.h>
#include <arpa/inet.h>
#include <sys/time.h>
#include <unistd.h>
#include <signal.h>
#include <fcntl.h>
#include <netdb.h>
#include <errno.h>
#include <string.h>
#include <stdlib.h>
#include <stdio.h>
#include <time.h>
```

Functions

- static unsigned short [net_htons](#) (int port)
- [int net_connect](#) (int *fd, char *host, int port)
Initiate a TCP connection with host:port.
- [int net_bind](#) (int *fd, char *bind_ip, int port)
Create a listening socket on bind_ip:port. If bind_ip == NULL, all interfaces are binded.
- static [int net_is_blocking](#) (void)
- [int net_accept](#) (int bind_fd, int *client_fd, void *client_ip)
Accept a connection from a remote client.
- [int net_set_block](#) (int fd)
Set the socket blocking.
- [int net_set_nonblock](#) (int fd)
Set the socket non-blocking.
- void [net_usleep](#) (unsigned long usec)
Portable usleep helper.
- [int net_recv](#) (void *ctx, unsigned char *buf, int len)

Read at most 'len' characters. len is updated to reflect the actual number of characters read.

- `int net_send` (`void *ctx`, `unsigned char *buf`, `int len`)

Write at most 'len' characters. len is updated to reflect the number of characters `_not_` written.

- `void net_close` (`int fd`)

Gracefully shutdown the connection.

5.126.1 Function Documentation

5.126.1.1 `int net_accept` (`int bind_fd`, `int * client_fd`, `void * client_ip`)

Accept a connection from a remote client.

Returns

0 if successful, `XYSSL_ERR_NET_ACCEPT_FAILED`, or `XYSSL_ERR_NET_WOULD_BLOCK` if `bind_fd` was set to non-blocking and `accept()` is blocking.

Definition at line 212 of file `net.c`.

References `int`, `net_is_blocking()`, `XYSSL_ERR_NET_ACCEPT_FAILED`, and `XYSSL_ERR_NET_TRY_AGAIN`.

Referenced by `main()`, and `ssl_test()`.

5.126.1.2 `int net_bind` (`int * fd`, `char * bind_ip`, `int port`)

Create a listening socket on `bind_ip:port`. If `bind_ip == NULL`, all interfaces are binded.

Returns

0 if successful, or one of: `XYSSL_ERR_NET_SOCKET_FAILED`, `XYSSL_ERR_NET_BIND_FAILED`, `XYSSL_ERR_NET_LISTEN_FAILED`

Definition at line 126 of file `net.c`.

References `net_htons()`, `SOCKET_ERROR`, `XYSSL_ERR_NET_BIND_FAILED`, `XYSSL_ERR_NET_LISTEN_FAILED`, and `XYSSL_ERR_NET_SOCKET_FAILED`.

Referenced by `main()`, and `ssl_test()`.

5.126.1.3 `void net_close` (`int fd`)

Gracefully shutdown the connection.

Definition at line 338 of file `net.c`.

Referenced by `main()`, and `ssl_test()`.

5.126.1.4 `int net_connect` (`int * fd`, `char * host`, `int port`)

Initiate a TCP connection with `host:port`.

Returns

0 if successful, or one of: XYSSL_ERR_NET_SOCKET_FAILED, XYSSL_ERR_NET_UNKNOWN_HOST, XYSSL_ERR_NET_CONNECT_FAILED

Definition at line 81 of file net.c.

References net_htons(), SOCKET_ERROR, XYSSL_ERR_NET_CONNECT_FAILED, XYSSL_ERR_NET_SOCKET_FAILED, and XYSSL_ERR_NET_UNKNOWN_HOST.

Referenced by main(), and ssl_test().

5.126.1.5 static unsigned short net_htons (int *port*) [static]

Definition at line 67 of file net.c.

References buf.

Referenced by net_bind(), and net_connect().

5.126.1.6 static int net_is_blocking (void) [static]

Definition at line 190 of file net.c.

Referenced by net_accept(), net_recv(), and net_send().

5.126.1.7 int net_recv (void * *ctx*, unsigned char * *buf*, int *len*)

Read at most 'len' characters. len is updated to reflect the actual number of characters read.

Returns

This function returns the number of bytes received, or a negative error code; XYSSL_ERR_NET_TRY_AGAIN indicates read() is blocking.

Definition at line 277 of file net.c.

References net_is_blocking(), XYSSL_ERR_NET_CONN_RESET, XYSSL_ERR_NET_RECV_FAILED, and XYSSL_ERR_NET_TRY_AGAIN.

Referenced by main(), and ssl_test().

5.126.1.8 int net_send (void * *ctx*, unsigned char * *buf*, int *len*)

Write at most 'len' characters. len is updated to reflect the number of characters _not_ written.

Returns

This function returns the number of bytes sent, or a negative error code; XYSSL_ERR_NET_TRY_AGAIN indicates write() is blocking.

Definition at line 309 of file net.c.

References net_is_blocking(), XYSSL_ERR_NET_CONN_RESET, XYSSL_ERR_NET_SEND_FAILED, and XYSSL_ERR_NET_TRY_AGAIN.

Referenced by main(), and ssl_test().

5.126.1.9 int net_set_block (int *fd*)

Set the socket blocking.

Returns

0 if successful, or a non-zero error code

Definition at line 243 of file net.c.

5.126.1.10 int net_set_nonblock (int *fd*)

Set the socket non-blocking.

Returns

0 if successful, or a non-zero error code

Definition at line 253 of file net.c.

Referenced by ssl_test().

5.126.1.11 void net_usleep (unsigned long *usec*)

Portable usleep helper.

Note

Real amount of time slept will not be less than select()'s timeout granularity (typically, 10ms).

Definition at line 266 of file net.c.

5.127 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/padlock.c File Reference

```
#include "xyssl/config.h"  
#include "xyssl/aes.h"  
#include "xyssl/padlock.h"
```

5.128 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/rsa.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/rsa.h"
#include <stdlib.h>
#include <string.h>
#include <stdio.h>
#include "xyssl/sha1.h"
```

Defines

- #define [KEY_LEN](#) 128
- #define [RSA_N](#)
- #define [RSA_E](#) "10001"
- #define [RSA_D](#)
- #define [RSA_P](#)
- #define [RSA_Q](#)
- #define [RSA_DP](#)
- #define [RSA_DQ](#)
- #define [RSA_QP](#)
- #define [PT_LEN](#) 24
- #define [RSA_PT](#)

Functions

- void [rsa_init](#) ([rsa_context](#) *ctx, int padding, int hash_id, int(*f_rng)(void *), void *p_rng)
Initialize an RSA context.
- int [rsa_gen_key](#) ([rsa_context](#) *ctx, int nbits, int exponent)
Generate an RSA keypair.
- int [rsa_check_pubkey](#) ([rsa_context](#) *ctx)
Check a public RSA key.
- int [rsa_check_privkey](#) ([rsa_context](#) *ctx)
Check a private RSA key.
- int [rsa_public](#) ([rsa_context](#) *ctx, unsigned char *input, unsigned char *output)
Do an RSA public key operation.
- int [rsa_private](#) ([rsa_context](#) *ctx, unsigned char *input, unsigned char *output)
Do an RSA private key operation.
- int [rsa_pkcs1_encrypt](#) ([rsa_context](#) *ctx, int mode, int ilen, unsigned char *input, unsigned char *output)
Add the message padding, then do an RSA operation.

- `int rsa_pkcs1_decrypt (rsa_context *ctx, int mode, int *olen, unsigned char *input, unsigned char *output)`

Do an RSA operation, then remove the message padding.

- `int rsa_pkcs1_sign (rsa_context *ctx, int mode, int hash_id, int hashlen, unsigned char *hash, unsigned char *sig)`

Do a private RSA to sign a message digest.

- `int rsa_pkcs1_verify (rsa_context *ctx, int mode, int hash_id, int hashlen, unsigned char *hash, unsigned char *sig)`

Do a public RSA and check the message digest.

- `void rsa_free (rsa_context *ctx)`

Free the components of an RSA key.

- `int rsa_self_test (int verbose)`

Checkup routine.

5.128.1 Define Documentation

5.128.1.1 #define KEY_LEN 128

Definition at line 573 of file rsa.c.

Referenced by `rsa_self_test()`.

5.128.1.2 #define PT_LEN 24

Definition at line 620 of file rsa.c.

Referenced by `rsa_self_test()`.

5.128.1.3 #define RSA_D

Value:

```
"24BF6185468786FDD303083D25E64EFC" \
    "66CA472BC44D253102F8B4A9D3BFA750" \
    "91386C0077937FE33FA3252D28855837" \
    "AE1B484A8A9A45F7EE8C0C634F99E8CD" \
    "DF79C5CE07EE72C7F123142198164234" \
    "CABB724CF78B8173B9F880FC86322407" \
    "AF1FEDFDDE2BEB674CA15F3E81A1521E" \
    "071513A1E85B5DFA031F21ECAE91A34D"
```

Definition at line 586 of file rsa.c.

Referenced by `rsa_self_test()`.

5.128.1.4 #define RSA_DP

Value:

```
"C1ACF567564274FB07A0BBAD5D26E298" \
    "3C94D22288ACD763FD8E5600ED4A702D" \
    "F84198A5F06C2E72236AE490C93F07F8" \
    "3CC559CD27BC2D1CA488811730BB5725"
```

Definition at line 605 of file rsa.c.

Referenced by rsa_self_test().

5.128.1.5 #define RSA_DQ

Value:

```
"4959CBF6F8FEF750AEE6977C155579C7" \
    "D8AAEA56749EA28623272E4F7D0592AF" \
    "7C1F1313CAC9471B5C523BFE592F517B" \
    "407A1BD76C164B93DA2D32A383E58357"
```

Definition at line 610 of file rsa.c.

Referenced by rsa_self_test().

5.128.1.6 #define RSA_E "10001"

Definition at line 584 of file rsa.c.

Referenced by rsa_self_test().

5.128.1.7 #define RSA_N

Value:

```
"9292758453063D803DD603D5E777D788" \
    "8ED1D5BF35786190FA2F23EBC0848AEA" \
    "DDA92CA6C3D80B32C4D109BE0F36D6AE" \
    "7130B9CED7ACDF54CFC7555AC14EEBAA" \
    "93A89813FBF3C4F8066D2D800F7C38A8" \
    "1AE31942917403FF4946B0A83D3D3E05" \
    "EE57C6F5F5606FB5D4BC6CD34EE0801A" \
    "5E94BB77B07507233A0BC7BAC8F90F79"
```

Definition at line 575 of file rsa.c.

Referenced by rsa_self_test().

5.128.1.8 #define RSA_P

Value:

```
"C36D0EB7FCD285223CFB5AABA5BDA3D8" \
    "2C01CAD19EA484A87EA4377637E75500" \
    "FCB2005C5C7DD6EC4AC023CDA285D796" \
    "C3D9E75E1EFC42488BB4F1D13AC30A57"
```

Definition at line 595 of file rsa.c.

Referenced by rsa_self_test().

5.128.1.9 #define RSA_PT

Value:

```
"\xAA\xBB\xCC\x03\x02\x01\x00\xff\xff\xff\xff" \
"\x11\x22\x33\x0A\x0B\x0C\xCC\xDD\xDD\xDD\xDD"
```

Definition at line 621 of file rsa.c.

Referenced by rsa_self_test().

5.128.1.10 #define RSA_Q

Value:

```
"C000DF51A7C77AE8D7C7370C1FF55B69" \
"E211C2B9E5DB1ED0BF61D0D9899620F4" \
"910E4168387E3C30AA1E00C339A79508" \
"8452DD96A9A5EA5D9DCA68DA636032AF"
```

Definition at line 600 of file rsa.c.

Referenced by rsa_self_test().

5.128.1.11 #define RSA_QP

Value:

```
"9AE7FBC99546432DF71896FC239EADAE" \
"F38D18D2B2F0E2DD275AA977E2BF4411" \
"F5A3B2A5D33605AEBBCCBA7FEB9F2D2F" \
"A74206CEC169D74BF5A8C50D6F48EA08"
```

Definition at line 615 of file rsa.c.

Referenced by rsa_self_test().

5.128.2 Function Documentation

5.128.2.1 int rsa_check_privkey (rsa_context * ctx)

Check a private RSA key.

Parameters

ctx RSA context to be checked

Returns

0 if successful, or an XYSSL_ERR_RSA_XXX error code

Definition at line 152 of file rsa.c.

References `rsa_context::D`, `rsa_context::E`, `MPI_CHK`, `mpi_cmp_int()`, `mpi_cmp_mpi()`, `mpi_free()`, `mpi_gcd()`, `mpi_init()`, `mpi_mod_mpi()`, `mpi_mul_mpi()`, `mpi_sub_int()`, `rsa_context::N`, `rsa_context::P`, `rsa_context::Q`, `rsa_check_pubkey()`, and `XYSSL_ERR_RSA_KEY_CHECK_FAILED`.

Referenced by `rsa_decryption()`, `rsa_self_test()`, and `x509parse_key()`.

5.128.2.2 `int rsa_check_pubkey (rsa_context * ctx)`

Check a public RSA key.

Parameters

ctx RSA context to be checked

Returns

0 if successful, or an `XYSSL_ERR_RSA_XXX` error code

Definition at line 132 of file rsa.c.

References `rsa_context::E`, `mpi_msb()`, `rsa_context::N`, `mpi::p`, and `XYSSL_ERR_RSA_KEY_CHECK_FAILED`.

Referenced by `rsa_check_privkey()`, `rsa_encryption()`, `rsa_self_test()`, and `x509parse_crt()`.

5.128.2.3 `void rsa_free (rsa_context * ctx)`

Free the components of an RSA key.

Definition at line 558 of file rsa.c.

References `rsa_context::D`, `rsa_context::DP`, `rsa_context::DQ`, `rsa_context::E`, `mpi_free()`, `rsa_context::N`, `rsa_context::P`, `rsa_context::Q`, `rsa_context::QP`, `rsa_context::RN`, `rsa_context::RP`, and `rsa_context::RQ`.

Referenced by `main()`, `rsa_gen_key()`, `rsa_self_test()`, `ssl_test()`, `x509_free()`, `x509_self_test()`, and `x509parse_key()`.

5.128.2.4 `int rsa_gen_key (rsa_context * ctx, int nbits, int exponent)`

Generate an RSA keypair.

Parameters

ctx RSA context that will hold the key

nbits size of the public key in bits

exponent public exponent (e.g., 65537)

Note

[rsa_init\(\)](#) must be called beforehand to setup the RSA context (especially `f_rng` and `p_rng`).

Returns

0 if successful, or an `XYSSL_ERR_RSA_XXX` error code

Definition at line 60 of file rsa.c.

References `rsa_context::D`, `rsa_context::DP`, `rsa_context::DQ`, `rsa_context::E`, `rsa_context::f_rng`, `rsa_context::len`, `MPI_CHK`, `mpi_cmp_int()`, `mpi_cmp_mpi()`, `mpi_free()`, `mpi_gcd()`, `mpi_gen_prime()`, `mpi_init()`, `mpi_inv_mod()`, `mpi_lset()`, `mpi_mod_mpi()`, `mpi_msb()`, `mpi_mul_mpi()`, `mpi_sub_int()`, `mpi_swap()`, `rsa_context::N`, `rsa_context::P`, `rsa_context::p_rng`, `rsa_context::Q`, `rsa_context::QP`, `rsa_free()`, `XYSSL_ERR_RSA_BAD_INPUT_DATA`, and `XYSSL_ERR_RSA_KEY_GEN_FAILED`.

Referenced by `generate_RSA_keys_ciphertext()`, `generate_RSA_keys_plaintext()`, and `main()`.

5.128.2.5 `void rsa_init (rsa_context * ctx, int padding, int hash_id, int(*) (void *) f_rng, void * p_rng)`

Initialize an RSA context.

Parameters

ctx RSA context to be initialized
padding RSA_PKCS_V15 or RSA_PKCS_V21
hash_id RSA_PKCS_V21 hash identifier
f_rng RNG function
p_rng RNG parameter

Note

The *hash_id* parameter is actually ignored when using RSA_PKCS_V15 padding.
 Currently (xyssl-0.8), RSA_PKCS_V21 padding is not supported.

Definition at line 40 of file rsa.c.

References `rsa_context::f_rng`, `rsa_context::hash_id`, `rsa_context::p_rng`, and `rsa_context::padding`.

Referenced by `generate_RSA_keys_ciphertext()`, `generate_RSA_keys_plaintext()`, `main()`, `rsa_decryption()`, and `rsa_encryption()`.

5.128.2.6 `int rsa_pkcs1_decrypt (rsa_context * ctx, int mode, int * olen, unsigned char * input, unsigned char * output)`

Do an RSA operation, then remove the message padding.

Parameters

ctx RSA context
mode RSA_PUBLIC or RSA_PRIVATE
input buffer holding the encrypted data
output buffer that will hold the plaintext
olen will contain the plaintext length

Returns

0 if successful, or an `XYSSL_ERR_RSA_XXX` error code

Note

The output buffer must be as large as the size of `ctx->N` (eg. 128 bytes if RSA-1024 is used).

Definition at line 326 of file rsa.c.

References `buf`, `int`, `rsa_context::len`, `rsa_context::padding`, `RSA_CRYPT`, `RSA_PKCS_V15`, `rsa_private()`, `rsa_public()`, `RSA_PUBLIC`, `XYSSL_ERR_RSA_BAD_INPUT_DATA`, and `XYSSL_ERR_RSA_INVALID_PADDING`.

Referenced by `rsa_decryption()`, `RSA_private_decrypt()`, `RSA_public_decrypt()`, `rsa_self_test()`, and `ssl_parse_client_key_exchange()`.

5.128.2.7 `int rsa_pkcs1_encrypt(rsa_context * ctx, int mode, int ilen, unsigned char * input, unsigned char * output)`

Add the message padding, then do an RSA operation.

Parameters

ctx RSA context
mode `RSA_PUBLIC` or `RSA_PRIVATE`
ilen contains the the plaintext length
input buffer holding the data to be encrypted
output buffer that will hold the ciphertext

Returns

0 if successful, or an `XYSSL_ERR_RSA_XXX` error code

Note

The output buffer must be as large as the size of `ctx->N` (eg. 128 bytes if RSA-1024 is used).

Definition at line 280 of file rsa.c.

References `rsa_context::len`, `rsa_context::padding`, `RSA_CRYPT`, `RSA_PKCS_V15`, `rsa_private()`, `rsa_public()`, `RSA_PUBLIC`, `XYSSL_ERR_RSA_BAD_INPUT_DATA`, and `XYSSL_ERR_RSA_INVALID_PADDING`.

Referenced by `rsa_encryption()`, `RSA_private_encrypt()`, `RSA_public_encrypt()`, `rsa_self_test()`, and `ssl_write_client_key_exchange()`.

5.128.2.8 `int rsa_pkcs1_sign(rsa_context * ctx, int mode, int hash_id, int hashlen, unsigned char * hash, unsigned char * sig)`

Do a private RSA to sign a message digest.

Parameters

ctx RSA context
mode `RSA_PUBLIC` or `RSA_PRIVATE`
hash_id `RSA_RAW`, `RSA_MD{2,4,5}` or `RSA_SHA{1,256}`
hashlen message digest length (for `RSA_RAW` only)
hash buffer holding the message digest
sig buffer that will hold the ciphertext

Returns

0 if the signing operation was successful, or an XYSSL_ERR_RSA_XXX error code

Note

The "sig" buffer must be as large as the size of ctx->N (eg. 128 bytes if RSA-1024 is used).

Definition at line 379 of file rsa.c.

References ASN1_HASH_MDX, ASN1_HASH_SHA1, rsa_context::len, rsa_context::padding, RSA_MD2, RSA_MD4, RSA_MD5, RSA_PKCS_V15, rsa_private(), rsa_public(), RSA_PUBLIC, RSA_RAW, RSA_SHA1, RSA_SIGN, XYSSL_ERR_RSA_BAD_INPUT_DATA, and XYSSL_ERR_RSA_INVALID_PADDING.

Referenced by main(), rsa_self_test(), ssl_write_certificate_verify(), and ssl_write_server_key_exchange().

5.128.2.9 int rsa_pkcs1_verify (rsa_context * ctx, int mode, int hash_id, int hashlen, unsigned char * hash, unsigned char * sig)

Do a public RSA and check the message digest.

Parameters

ctx points to an RSA public key
mode RSA_PUBLIC or RSA_PRIVATE
hash_id RSA_RAW, RSA_MD{2,4,5} or RSA_SHA{1,256}
hashlen message digest length (for RSA_RAW only)
hash buffer holding the message digest
sig buffer holding the ciphertext

Returns

0 if the verify operation was successful, or an XYSSL_ERR_RSA_XXX error code

Note

The "sig" buffer must be as large as the size of ctx->N (eg. 128 bytes if RSA-1024 is used).

Definition at line 468 of file rsa.c.

References ASN1_HASH_MDX, ASN1_HASH_SHA1, buf, int, rsa_context::len, rsa_context::padding, RSA_MD2, RSA_MD4, RSA_MD5, RSA_PKCS_V15, rsa_private(), rsa_public(), RSA_PUBLIC, RSA_RAW, RSA_SHA1, RSA_SIGN, XYSSL_ERR_RSA_BAD_INPUT_DATA, XYSSL_ERR_RSA_INVALID_PADDING, and XYSSL_ERR_RSA_VERIFY_FAILED.

Referenced by main(), rsa_self_test(), ssl_parse_certificate_verify(), ssl_parse_server_key_exchange(), and x509parse_verify().

5.128.2.10 int rsa_private (rsa_context * ctx, unsigned char * input, unsigned char * output)

Do an RSA private key operation.

Parameters

ctx RSA context
input input buffer
output output buffer

Returns

0 if successful, or an XYSSL_ERR_RSA_XXX error code

Note

The input and output buffers must be large enough (eg. 128 bytes if RSA-1024 is used).

Definition at line 221 of file rsa.c.

References `rsa_context::D`, `rsa_context::DP`, `rsa_context::DQ`, `rsa_context::len`, `mpi_add_mpi()`, `MPI_CHK`, `mpi_cmp_mpi()`, `mpi_exp_mod()`, `mpi_free()`, `mpi_init()`, `mpi_mod_mpi()`, `mpi_mul_mpi()`, `mpi_read_binary()`, `mpi_sub_mpi()`, `mpi_write_binary()`, `rsa_context::N`, `rsa_context::P`, `rsa_context::Q`, `rsa_context::QP`, `rsa_context::RN`, `rsa_context::RP`, `rsa_context::RQ`, `XYSSL_ERR_RSA_BAD_INPUT_DATA`, and `XYSSL_ERR_RSA_PRIVATE_FAILED`.

Referenced by `main()`, `rsa_pkcs1_decrypt()`, `rsa_pkcs1_encrypt()`, `rsa_pkcs1_sign()`, and `rsa_pkcs1_verify()`.

5.128.2.11 int rsa_public (rsa_context * ctx, unsigned char * input, unsigned char * output)

Do an RSA public key operation.

Parameters

ctx RSA context
input input buffer
output output buffer

Returns

0 if successful, or an XYSSL_ERR_RSA_XXX error code

Note

This function does NOT take care of message padding. Also, be sure to set `input[0] = 0`.
 The input and output buffers must be large enough (eg. 128 bytes if RSA-1024 is used).

Definition at line 187 of file rsa.c.

References `rsa_context::E`, `rsa_context::len`, `MPI_CHK`, `mpi_cmp_mpi()`, `mpi_exp_mod()`, `mpi_free()`, `mpi_init()`, `mpi_read_binary()`, `mpi_write_binary()`, `rsa_context::N`, `rsa_context::RN`, `XYSSL_ERR_RSA_BAD_INPUT_DATA`, and `XYSSL_ERR_RSA_PUBLIC_FAILED`.

Referenced by `main()`, `rsa_pkcs1_decrypt()`, `rsa_pkcs1_encrypt()`, `rsa_pkcs1_sign()`, and `rsa_pkcs1_verify()`.

5.128.2.12 int rsa_self_test (int verbose)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 627 of file rsa.c.

References `rsa_context::D`, `rsa_context::DP`, `rsa_context::DQ`, `rsa_context::E`, `KEY_LEN`, `rsa_context::len`, `mpi_read_string()`, `rsa_context::N`, `rsa_context::P`, `PT_LEN`, `rsa_context::Q`, `rsa_context::QP`, `rsa_check_privkey()`, `rsa_check_pubkey()`, `RSA_D`, `RSA_DP`, `RSA_DQ`, `RSA_E`, `rsa_free()`, `RSA_N`, `RSA_P`, `rsa_pkcs1_decrypt()`, `rsa_pkcs1_encrypt()`, `rsa_pkcs1_sign()`, `rsa_pkcs1_verify()`, `RSA_PRIVATE`, `RSA_PT`, `RSA_PUBLIC`, `RSA_Q`, `RSA_QP`, `RSA_SHA1`, and `sha1()`.

Referenced by `main()`.

5.129 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/sha1.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/sha1.h"
#include <string.h>
#include <stdio.h>
```

Defines

- #define [GET_ULONG_BE](#)(n, b, i)
- #define [PUT_ULONG_BE](#)(n, b, i)
- #define [S](#)(x, n) (((x << n) | ((x & 0xFFFFFFFF) >> (32 - n)))
- #define [R](#)(t)
- #define [P](#)(a, b, c, d, e, x)
- #define [F](#)(x, y, z) (z ^ (x & (y ^ z)))
- #define [K](#) 0x5A827999
- #define [F](#)(x, y, z) (x ^ y ^ z)
- #define [K](#) 0x6ED9EBA1
- #define [F](#)(x, y, z) ((x & y) | (z & (x | y)))
- #define [K](#) 0x8F1BBCDC
- #define [F](#)(x, y, z) (x ^ y ^ z)
- #define [K](#) 0xCA62C1D6

Functions

- void [sha1_starts](#) ([sha1_context](#) *ctx)
SHA-1 context setup.
- static void [sha1_process](#) ([sha1_context](#) *ctx, unsigned char data[64])
- void [sha1_update](#) ([sha1_context](#) *ctx, unsigned char *input, [int](#) ilen)
SHA-1 process buffer.
- void [sha1_finish](#) ([sha1_context](#) *ctx, unsigned char output[20])
SHA-1 final digest.
- void [sha1](#) (unsigned char *input, [int](#) ilen, unsigned char output[20])
Output = SHA-1(input buffer).
- [int](#) [sha1_file](#) (char *path, unsigned char output[20])
Output = SHA-1(file contents).
- void [sha1_hmac_starts](#) ([sha1_context](#) *ctx, unsigned char *key, [int](#) keylen)
SHA-1 HMAC context setup.
- void [sha1_hmac_update](#) ([sha1_context](#) *ctx, unsigned char *input, [int](#) ilen)
SHA-1 HMAC process buffer.

- void `sha1_hmac_finish` (`sha1_context` *ctx, unsigned char output[20])
SHA-1 HMAC final digest.
- void `sha1_hmac` (unsigned char *key, int keylen, unsigned char *input, int ilen, unsigned char output[20])
Output = HMAC-SHA-1(hmac key, input buffer).
- int `sha1_self_test` (int verbose)
Checkup routine.

Variables

- static const unsigned char `sha1_padding` [64]
- static unsigned char `sha1_test_buf` [3][57]
- static const int `sha1_test_buflen` [3]
- static const unsigned char `sha1_test_sum` [3][20]
- static unsigned char `sha1_hmac_test_key` [7][26]
- static const int `sha1_hmac_test_keylen` [7]
- static unsigned char `sha1_hmac_test_buf` [7][74]
- static const int `sha1_hmac_test_buflen` [7]
- static const unsigned char `sha1_hmac_test_sum` [7][20]

5.129.1 Define Documentation

5.129.1.1 `#define F(x, y, z) (x ^ y ^ z)`

5.129.1.2 `#define F(x, y, z) ((x & y) | (z & (x | y)))`

5.129.1.3 `#define F(x, y, z) (x ^ y ^ z)`

5.129.1.4 `#define F(x, y, z) (z ^ (x & (y ^ z)))`

5.129.1.5 `#define GET_ULONG_BE(n, b, i)`

Value:

```
{
    (n) = ( (unsigned long) (b)[(i)      ] << 24 ) \
    | ( (unsigned long) (b)[(i) + 1] << 16 ) \
    | ( (unsigned long) (b)[(i) + 2] <<  8 ) \
    | ( (unsigned long) (b)[(i) + 3]      ); \
}
```

Definition at line 39 of file sha1.c.

5.129.1.6 `#define K 0xCA62C1D6`

5.129.1.7 `#define K 0x8F1BBCDC`

5.129.1.8 `#define K 0x6ED9EBA1`

5.129.1.9 `#define K 0x5A827999`

Referenced by sha4_process().

5.129.1.10 `#define P(a, b, c, d, e, x)`

Value:

```
{
    e += S(a,5) + F(b,c,d) + K + x; b = S(b,30);
}
```

5.129.1.11 `#define PUT_ULONG_BE(n, b, i)`

Value:

```
{
    (b)[(i)    ] = (unsigned char) ( (n) >> 24 );
    (b)[(i) + 1] = (unsigned char) ( (n) >> 16 );
    (b)[(i) + 2] = (unsigned char) ( (n) >>  8 );
    (b)[(i) + 3] = (unsigned char) ( (n) );
}
```

Definition at line 49 of file sha1.c.

5.129.1.12 `#define R(t)`

Value:

```
(
    temp = W[(t - 3) & 0x0F] ^ W[(t - 8) & 0x0F] ^
           W[(t - 14) & 0x0F] ^ W[t & 0x0F],
    ( W[t & 0x0F] = S(temp,1) )
)
```

Referenced by mpi_is_prime(), sha1_process(), and sha2_process().

5.129.1.13 `#define S(x, n) ((x << n) | ((x & 0xFFFFFFFF) >> (32 - n)))`

5.129.2 Function Documentation

5.129.2.1 `void sha1 (unsigned char *input, int ilen, unsigned char output[20])`

Output = SHA-1(input buffer).

Parameters

input buffer holding the data

ilen length of the input data
output SHA-1 checksum result

Definition at line 313 of file sha1.c.

References sha1_finish(), sha1_starts(), and sha1_update().

Referenced by main(), rsa_self_test(), sha1_hmac_starts(), ssl_calc_verify(), ssl_derive_keys(), ssl_mac_sha1(), ssl_parse_finished(), ssl_parse_server_key_exchange(), ssl_write_finished(), ssl_write_server_key_exchange(), and x509_hash().

5.129.2.2 int sha1_file (char * *path*, unsigned char *output*[20])

Output = SHA-1(file contents).

Parameters

path input file name
output SHA-1 checksum result

Returns

0 if successful, 1 if fopen failed, or 2 if fread failed

Definition at line 327 of file sha1.c.

References buf, f, sha1_finish(), sha1_starts(), and sha1_update().

Referenced by main(), and sha1_wrapper().

5.129.2.3 void sha1_finish (sha1_context * *ctx*, unsigned char *output*[20])

SHA-1 final digest.

Parameters

ctx SHA-1 context
output SHA-1 checksum result

Definition at line 284 of file sha1.c.

References PUT_ULONG_BE, sha1_padding, sha1_update(), sha1_context::state, and sha1_context::total.

Referenced by sha1(), sha1_file(), sha1_hmac_finish(), sha1_self_test(), ssl_calc_finished(), ssl_calc_verify(), ssl_derive_keys(), ssl_mac_sha1(), ssl_parse_server_key_exchange(), and ssl_write_server_key_exchange().

5.129.2.4 void sha1_hmac (unsigned char * *key*, int *keylen*, unsigned char * *input*, int *ilen*, unsigned char *output*[20])

Output = HMAC-SHA-1(hmac key, input buffer).

Parameters

key HMAC secret key

keylen length of the HMAC key
input buffer holding the data
ilen length of the input data
output HMAC-SHA-1 result

Definition at line 413 of file sha1.c.

References sha1_hmac_finish(), sha1_hmac_starts(), and sha1_hmac_update().

Referenced by ssl_decrypt_buf(), ssl_encrypt_buf(), and tls1_prf().

5.129.2.5 void sha1_hmac_finish (sha1_context * ctx, unsigned char output[20])

SHA-1 HMAC final digest.

Parameters

ctx HMAC context
output SHA-1 HMAC checksum result

Definition at line 397 of file sha1.c.

References sha1_context::opad, sha1_finish(), sha1_starts(), and sha1_update().

Referenced by sha1_hmac(), and sha1_self_test().

5.129.2.6 void sha1_hmac_starts (sha1_context * ctx, unsigned char * key, int keylen)

SHA-1 HMAC context setup.

Parameters

ctx HMAC context to be initialized
key HMAC secret key
keylen length of the HMAC key

Definition at line 359 of file sha1.c.

References sha1_context::ipad, sha1_context::opad, sha1(), sha1_starts(), and sha1_update().

Referenced by sha1_hmac(), and sha1_self_test().

5.129.2.7 void sha1_hmac_update (sha1_context * ctx, unsigned char * input, int ilen)

SHA-1 HMAC process buffer.

Parameters

ctx HMAC context
input buffer holding the data
ilen length of the input data

Definition at line 389 of file sha1.c.

References sha1_update().

Referenced by sha1_hmac(), and sha1_self_test().

5.129.2.8 static void sha1_process (sha1_context * ctx, unsigned char data[64]) [static]

Definition at line 73 of file sha1.c.

References GET_ULONG_BE, P, R, and sha1_context::state.

Referenced by sha1_update().

5.129.2.9 int sha1_self_test (int verbose)

Checksum routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 521 of file sha1.c.

References buf, sha1_finish(), sha1_hmac_finish(), sha1_hmac_starts(), sha1_hmac_test_buf, sha1_hmac_test_buflen, sha1_hmac_test_key, sha1_hmac_test_keylen, sha1_hmac_test_sum, sha1_hmac_update(), sha1_starts(), sha1_test_buf, sha1_test_buflen, sha1_test_sum, and sha1_update().

Referenced by main().

5.129.2.10 void sha1_starts (sha1_context * ctx)

SHA-1 context setup.

Parameters

ctx context to be initialized

Definition at line 61 of file sha1.c.

References sha1_context::state, and sha1_context::total.

Referenced by sha1(), sha1_file(), sha1_hmac_finish(), sha1_hmac_starts(), sha1_self_test(), ssl_calc_finished(), ssl_calc_verify(), ssl_derive_keys(), ssl_init(), ssl_mac_sha1(), ssl_parse_server_key_exchange(), and ssl_write_server_key_exchange().

5.129.2.11 void sha1_update (sha1_context * ctx, unsigned char * input, int ilen)

SHA-1 process buffer.

Parameters

ctx SHA-1 context

input buffer holding the data

ilen length of the input data

Definition at line 232 of file sha1.c.

References sha1_context::buffer, sha1_process(), and sha1_context::total.

Referenced by sha1(), sha1_file(), sha1_finish(), sha1_hmac_finish(), sha1_hmac_starts(), sha1_hmac_update(), sha1_self_test(), ssl_calc_finished(), ssl_calc_verify(), ssl_derive_keys(), ssl_mac_sha1(), ssl_parse_client_hello(), ssl_parse_server_key_exchange(), ssl_read_record(), ssl_write_record(), and ssl_write_server_key_exchange().

5.129.3 Variable Documentation

5.129.3.1 unsigned char sha1_hmac_test_buf[7][74] [static]

Initial value:

```
{
    { "Hi There" },
    { "what do ya want for nothing?" },
    { "\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD"
      "\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD"
      "\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD"
      "\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD"
      "\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD" },
    { "\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD"
      "\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD"
      "\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD"
      "\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD"
      "\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD" },
    { "Test With Truncation" },
    { "Test Using Larger Than Block-Size Key - Hash Key First" },
    { "Test Using Larger Than Block-Size Key and Larger"
      " Than One Block-Size Data" }
}
```

Definition at line 475 of file sha1.c.

Referenced by sha1_self_test().

5.129.3.2 const int sha1_hmac_test_buflen[7] [static]

Initial value:

```
{
    8, 28, 50, 50, 20, 54, 73
}
```

Definition at line 495 of file sha1.c.

Referenced by sha1_self_test().

5.129.3.3 unsigned char sha1_hmac_test_key[7][26] [static]

Initial value:

```
{
    { "\x0B\x0B\x0B\x0B\x0B\x0B\x0B\x0B\x0B\x0B\x0B\x0B\x0B\x0B\x0B"
      "\x0B\x0B\x0B\x0B" },
    { "Jefe" },
    { "\xAA\xAA\xAA\xAA\xAA\xAA\xAA\xAA\xAA\xAA\xAA\xAA\xAA\xAA"
      "\xAA\xAA\xAA\xAA" },
    { "\x01\x02\x03\x04\x05\x06\x07\x08\x09\x0A\x0B\x0C\x0D\x0E\x0F\x10"
      "\x11\x12\x13\x14\x15\x16\x17\x18\x19" },
    { "\x0C\x0C\x0C\x0C\x0C\x0C\x0C\x0C\x0C\x0C\x0C\x0C\x0C\x0C"
      "\x0C\x0C\x0C\x0C" },
    { "" },
    { "" }
}
```

Definition at line 455 of file sha1.c.

Referenced by sha1_self_test().

5.129.3.4 `const int sha1_hmac_test_keylen[7] [static]`

Initial value:

```
{
    20, 4, 20, 25, 20, 80, 80
}
```

Definition at line 470 of file sha1.c.

Referenced by sha1_self_test().

5.129.3.5 `const unsigned char sha1_hmac_test_sum[7][20] [static]`

Initial value:

```
{
    { 0xB6, 0x17, 0x31, 0x86, 0x55, 0x05, 0x72, 0x64, 0xE2, 0x8B,
      0xC0, 0xB6, 0xFB, 0x37, 0x8C, 0x8E, 0xF1, 0x46, 0xBE, 0x00 },
    { 0xEF, 0xFC, 0xDF, 0x6A, 0xE5, 0xEB, 0x2F, 0xA2, 0xD2, 0x74,
      0x16, 0xD5, 0xF1, 0x84, 0xDF, 0x9C, 0x25, 0x9A, 0x7C, 0x79 },
    { 0x12, 0x5D, 0x73, 0x42, 0xB9, 0xAC, 0x11, 0xCD, 0x91, 0xA3,
      0x9A, 0xF4, 0x8A, 0xA1, 0x7B, 0x4F, 0x63, 0xF1, 0x75, 0xD3 },
    { 0x4C, 0x90, 0x07, 0xF4, 0x02, 0x62, 0x50, 0xC6, 0xBC, 0x84,
      0x14, 0xF9, 0xBF, 0x50, 0xC8, 0x6C, 0x2D, 0x72, 0x35, 0xDA },
    { 0x4C, 0x1A, 0x03, 0x42, 0x4B, 0x55, 0xE0, 0x7F, 0xE7, 0xF2,
      0x7B, 0xE1 },
    { 0xAA, 0x4A, 0xE5, 0xE1, 0x52, 0x72, 0xD0, 0x0E, 0x95, 0x70,
      0x56, 0x37, 0xCE, 0x8A, 0x3B, 0x55, 0xED, 0x40, 0x21, 0x12 },
    { 0xE8, 0xE9, 0x9D, 0x0F, 0x45, 0x23, 0x7D, 0x78, 0x6D, 0x6B,
      0xBA, 0xA7, 0x96, 0x5C, 0x78, 0x08, 0xBB, 0xFF, 0x1A, 0x91 }
}
```

Definition at line 500 of file sha1.c.

Referenced by sha1_self_test().

5.129.3.6 `const unsigned char sha1_padding[64] [static]`

Initial value:

```
{
    0x80, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
    0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
    0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
    0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0
}
```

Definition at line 273 of file sha1.c.

Referenced by sha1_finish().

5.129.3.7 unsigned char sha1_test_buf[3][57] [static]**Initial value:**

```
{
    { "abc" },
    { "abcdbcdecdefdefgfegefghfghighijhi jkijkljklmklmnlmnomnopq" },
    { "" }
}
```

Definition at line 430 of file sha1.c.

Referenced by sha1_self_test().

5.129.3.8 const int sha1_test_buflen[3] [static]**Initial value:**

```
{
    3, 56, 1000
}
```

Definition at line 437 of file sha1.c.

Referenced by sha1_self_test().

5.129.3.9 const unsigned char sha1_test_sum[3][20] [static]**Initial value:**

```
{
    { 0xA9, 0x99, 0x3E, 0x36, 0x47, 0x06, 0x81, 0x6A, 0xBA, 0x3E,
      0x25, 0x71, 0x78, 0x50, 0xC2, 0x6C, 0x9C, 0xD0, 0xD8, 0x9D },
    { 0x84, 0x98, 0x3E, 0x44, 0x1C, 0x3B, 0xD2, 0x6E, 0xBA, 0xAE,
      0x4A, 0xA1, 0xF9, 0x51, 0x29, 0xE5, 0xE5, 0x46, 0x70, 0xF1 },
    { 0x34, 0xAA, 0x97, 0x3C, 0xD4, 0xC4, 0xDA, 0xA4, 0xF6, 0x1E,
      0xEB, 0x2B, 0xDB, 0xAD, 0x27, 0x31, 0x65, 0x34, 0x01, 0x6F }
}
```

Definition at line 442 of file sha1.c.

Referenced by sha1_self_test().

5.130 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/sha2.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/sha2.h"
#include <string.h>
#include <stdio.h>
```

Defines

- #define [GET_ULONG_BE](#)(n, b, i)
- #define [PUT_ULONG_BE](#)(n, b, i)
- #define [SHR](#)(x, n) ((x & 0xFFFFFFFF) >> n)
- #define [ROTR](#)(x, n) (SHR(x,n) | (x << (32 - n)))
- #define [S0](#)(x) (ROTR(x, 7) ^ ROTR(x,18) ^ SHR(x, 3))
- #define [S1](#)(x) (ROTR(x,17) ^ ROTR(x,19) ^ SHR(x,10))
- #define [S2](#)(x) (ROTR(x, 2) ^ ROTR(x,13) ^ ROTR(x,22))
- #define [S3](#)(x) (ROTR(x, 6) ^ ROTR(x,11) ^ ROTR(x,25))
- #define [F0](#)(x, y, z) ((x & y) | (z & (x | y)))
- #define [F1](#)(x, y, z) (z ^ (x & (y ^ z)))
- #define [R](#)(t)
- #define [P](#)(a, b, c, d, e, [f](#), g, h, x, [K](#))

Functions

- void [sha2_starts](#) ([sha2_context](#) *ctx, [int](#) is224)
SHA-256 context setup.
- static void [sha2_process](#) ([sha2_context](#) *ctx, unsigned char data[64])
- void [sha2_update](#) ([sha2_context](#) *ctx, unsigned char *input, [int](#) ilen)
SHA-256 process buffer.
- void [sha2_finish](#) ([sha2_context](#) *ctx, unsigned char output[32])
SHA-256 final digest.
- void [sha2](#) (unsigned char *input, [int](#) ilen, unsigned char output[32], [int](#) is224)
Output = SHA-256(input buffer).
- [int](#) [sha2_file](#) (char *path, unsigned char output[32], [int](#) is224)
Output = SHA-256(file contents).
- void [sha2_hmac_starts](#) ([sha2_context](#) *ctx, unsigned char *key, [int](#) keylen, [int](#) is224)
SHA-256 HMAC context setup.
- void [sha2_hmac_update](#) ([sha2_context](#) *ctx, unsigned char *input, [int](#) ilen)
SHA-256 HMAC process buffer.

- void [sha2_hmac_finish](#) ([sha2_context](#) *ctx, unsigned char output[32])
SHA-256 HMAC final digest.
- void [sha2_hmac](#) (unsigned char *key, [int](#) keylen, unsigned char *input, [int](#) ilen, unsigned char output[32], [int](#) is224)
Output = HMAC-SHA-256(hmac key, input buffer).
- [int](#) [sha2_self_test](#) ([int](#) verbose)
Checkup routine.

Variables

- static const unsigned char [sha2_padding](#) [64]
- static unsigned char [sha2_test_buf](#) [3][57]
- static const [int](#) [sha2_test_buflen](#) [3]
- static const unsigned char [sha2_test_sum](#) [6][32]
- static unsigned char [sha2_hmac_test_key](#) [7][26]
- static const [int](#) [sha2_hmac_test_keylen](#) [7]
- static unsigned char [sha2_hmac_test_buf](#) [7][153]
- static const [int](#) [sha2_hmac_test_buflen](#) [7]
- static const unsigned char [sha2_hmac_test_sum](#) [14][32]

5.130.1 Define Documentation

5.130.1.1 `#define F0(x, y, z) ((x & y) | (z & (x | y)))`

5.130.1.2 `#define F1(x, y, z) (z ^ (x & (y ^ z)))`

5.130.1.3 `#define GET_ULONG_BE(n, b, i)`

Value:

```
{
    (n) = ( (unsigned long) (b)[(i)      ] << 24 ) \
    | ( (unsigned long) (b)[(i) + 1] << 16 ) \
    | ( (unsigned long) (b)[(i) + 2] <<  8 ) \
    | ( (unsigned long) (b)[(i) + 3]      ); \
}
```

Definition at line 39 of file sha2.c.

5.130.1.4 `#define P(a, b, c, d, e, f, g, h, x, K)`

Value:

```
{
    temp1 = h + S3(e) + F1(e, f, g) + K + x; \
    temp2 = S2(a) + F0(a, b, c); \
    d += temp1; h = temp1 + temp2; \
}
```

5.130.1.5 #define PUT_ULONG_BE(n, b, i)**Value:**

```

{
    (b)[(i)] = (unsigned char) ((n) >> 24); \
    (b)[(i) + 1] = (unsigned char) ((n) >> 16); \
    (b)[(i) + 2] = (unsigned char) ((n) >> 8); \
    (b)[(i) + 3] = (unsigned char) (n); \
}

```

Definition at line 49 of file sha2.c.

5.130.1.6 #define R(t)**Value:**

```

(
    W[t] = S1(W[t - 2]) + W[t - 7] + \
    S0(W[t - 15]) + W[t - 16] \
)

```

5.130.1.7 #define ROTR(x, n) (SHR(x,n) | (x << (32 - n)))**5.130.1.8 #define S0(x) (ROTR(x, 7) ^ ROTR(x,18) ^ SHR(x, 3))**

Referenced by sha4_process().

5.130.1.9 #define S1(x) (ROTR(x,17) ^ ROTR(x,19) ^ SHR(x,10))

Referenced by sha4_process(), and tls1_prf().

5.130.1.10 #define S2(x) (ROTR(x, 2) ^ ROTR(x,13) ^ ROTR(x,22))

Referenced by tls1_prf().

5.130.1.11 #define S3(x) (ROTR(x, 6) ^ ROTR(x,11) ^ ROTR(x,25))**5.130.1.12 #define SHR(x, n) ((x & 0xFFFFFFFF) >> n)****5.130.2 Function Documentation****5.130.2.1 void sha2 (unsigned char * *input*, int *ilen*, unsigned char *output*[32], int *is224*)**Output = SHA-256(*input* buffer).**Parameters***input* buffer holding the data*ilen* length of the input data*output* SHA-224/256 checksum result

is224 0 = use SHA256, 1 = use SHA224

Definition at line 314 of file sha2.c.

References sha2_finish(), sha2_starts(), and sha2_update().

Referenced by main(), and sha2_hmac_starts().

5.130.2.2 int sha2_file (char * *path*, unsigned char *output*[32], int *is224*)

Output = SHA-256(file contents).

Parameters

path input file name

output SHA-224/256 checksum result

is224 0 = use SHA256, 1 = use SHA224

Returns

0 if successful, 1 if fopen failed, or 2 if fread failed

Definition at line 329 of file sha2.c.

References buf, f, sha2_finish(), sha2_starts(), and sha2_update().

Referenced by sha2_wrapper().

5.130.2.3 void sha2_finish (sha2_context * *ctx*, unsigned char *output*[32])

SHA-256 final digest.

Parameters

ctx SHA-256 context

output SHA-224/256 checksum result

Definition at line 280 of file sha2.c.

References sha2_context::is224, PUT_ULONG_BE, sha2_padding, sha2_update(), sha2_context::state, and sha2_context::total.

Referenced by aes_en_de(), main(), sha2(), sha2_file(), sha2_hmac_finish(), and sha2_self_test().

5.130.2.4 void sha2_hmac (unsigned char * *key*, int *keylen*, unsigned char * *input*, int *ilen*, unsigned char *output*[32], int *is224*)

Output = HMAC-SHA-256(hmac key, input buffer).

Parameters

key HMAC secret key

keylen length of the HMAC key

input buffer holding the data

ilen length of the input data
output HMAC-SHA-224/256 result
is224 0 = use SHA256, 1 = use SHA224

Definition at line 420 of file sha2.c.

References sha2_hmac_finish(), sha2_hmac_starts(), and sha2_hmac_update().

5.130.2.5 void sha2_hmac_finish (sha2_context * ctx, unsigned char output[32])

SHA-256 HMAC final digest.

Parameters

ctx HMAC context
output SHA-224/256 HMAC checksum result

Definition at line 400 of file sha2.c.

References sha2_context::is224, sha2_context::opad, sha2_finish(), sha2_starts(), and sha2_update().

Referenced by aes_en_de(), main(), sha2_hmac(), and sha2_self_test().

5.130.2.6 void sha2_hmac_starts (sha2_context * ctx, unsigned char * key, int keylen, int is224)

SHA-256 HMAC context setup.

Parameters

ctx HMAC context to be initialized
key HMAC secret key
keylen length of the HMAC key
is224 0 = use SHA256, 1 = use SHA224

Definition at line 361 of file sha2.c.

References sha2_context::ipad, sha2_context::opad, sha2(), sha2_starts(), and sha2_update().

Referenced by aes_en_de(), main(), sha2_hmac(), and sha2_self_test().

5.130.2.7 void sha2_hmac_update (sha2_context * ctx, unsigned char * input, int ilen)

SHA-256 HMAC process buffer.

Parameters

ctx HMAC context
input buffer holding the data
ilen length of the input data

Definition at line 392 of file sha2.c.

References sha2_update().

Referenced by aes_en_de(), main(), sha2_hmac(), and sha2_self_test().

5.130.2.8 static void sha2_process (sha2_context * ctx, unsigned char data[64]) [static]

Definition at line 94 of file sha2.c.

References F, GET_ULONG_BE, P, R, and sha2_context::state.

Referenced by sha2_update().

5.130.2.9 int sha2_self_test (int verbose)

Checksum routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 599 of file sha2.c.

References buf, sha2_finish(), sha2_hmac_finish(), sha2_hmac_starts(), sha2_hmac_test_buf, sha2_hmac_test_buflen, sha2_hmac_test_key, sha2_hmac_test_keylen, sha2_hmac_test_sum, sha2_hmac_update(), sha2_starts(), sha2_test_buf, sha2_test_buflen, sha2_test_sum, and sha2_update().

Referenced by main().

5.130.2.10 void sha2_starts (sha2_context * ctx, int is224)

SHA-256 context setup.

Parameters

ctx context to be initialized

is224 0 = use SHA256, 1 = use SHA224

Definition at line 61 of file sha2.c.

References sha2_context::is224, sha2_context::state, and sha2_context::total.

Referenced by aes_en_de(), main(), sha2(), sha2_file(), sha2_hmac_finish(), sha2_hmac_starts(), and sha2_self_test().

5.130.2.11 void sha2_update (sha2_context * ctx, unsigned char * input, int ilen)

SHA-256 process buffer.

Parameters

ctx SHA-256 context

input buffer holding the data

ilen length of the input data

Definition at line 228 of file sha2.c.

References sha2_context::buffer, sha2_process(), and sha2_context::total.

Referenced by aes_en_de(), main(), sha2(), sha2_file(), sha2_finish(), sha2_hmac_finish(), sha2_hmac_starts(), sha2_hmac_update(), and sha2_self_test().

5.130.3 Variable Documentation

5.130.3.1 unsigned char sha2_hmac_test_buf[7][153] [static]

Initial value:

```
{
    { "Hi There" },
    { "what do ya want for nothing?" },
    { "\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD"
      "\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD"
      "\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD"
      "\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD"
      "\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD" },
    { "\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD"
      "\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD"
      "\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD"
      "\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD"
      "\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD" },
    { "Test With Truncation" },
    { "Test Using Larger Than Block-Size Key - Hash Key First" },
    { "This is a test using a larger than block-size key "
      "and a larger than block-size data. The key needs to "
      "be hashed before being used by the HMAC algorithm." }
}
```

Definition at line 507 of file sha2.c.

Referenced by sha2_self_test().

5.130.3.2 const int sha2_hmac_test_buflen[7] [static]

Initial value:

```
{
    8, 28, 50, 50, 20, 54, 152
}
```

Definition at line 528 of file sha2.c.

Referenced by sha2_self_test().

5.130.3.3 unsigned char sha2_hmac_test_key[7][26] [static]

Initial value:

```
{
    { "\x0B\x0B\x0B\x0B\x0B\x0B\x0B\x0B\x0B\x0B\x0B\x0B\x0B\x0B\x0B"
      "\x0B\x0B\x0B\x0B" },
    { "Jefe" },
    { "\xAA\xAA\xAA\xAA\xAA\xAA\xAA\xAA\xAA\xAA\xAA\xAA\xAA\xAA"
      "\xAA\xAA\xAA\xAA" },
    { "\x01\x02\x03\x04\x05\x06\x07\x08\x09\x0A\x0B\x0C\x0D\x0E\x0F\x10"
      "\x11\x12\x13\x14\x15\x16\x17\x18\x19" },
    { "\x0C\x0C\x0C\x0C\x0C\x0C\x0C\x0C\x0C\x0C\x0C\x0C\x0C\x0C"
      "\x0C\x0C\x0C\x0C" },
    { "" },
    { "" }
}
```


Definition at line 487 of file sha2.c.

Referenced by sha2_self_test().

5.130.3.4 const int sha2_hmac_test_keylen[7] [static]

Initial value:

```
{
    20, 4, 20, 25, 20, 131, 131
}
```

Definition at line 502 of file sha2.c.

Referenced by sha2_self_test().

5.130.3.5 const unsigned char sha2_hmac_test_sum[14][32] [static]

Definition at line 533 of file sha2.c.

Referenced by sha2_self_test().

5.130.3.6 const unsigned char sha2_padding[64] [static]

Initial value:

```
{
    0x80, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
    0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
    0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
    0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0
}
```

Definition at line 269 of file sha2.c.

Referenced by sha2_finish().

5.130.3.7 unsigned char sha2_test_buf[3][57] [static]

Initial value:

```
{
    { "abc" },
    { "abcdbcdecdefdefgefghfghighijhijkijkljklmklmnlmnomnopnopq" },
    { "" }
}
```

Definition at line 437 of file sha2.c.

Referenced by sha2_self_test().

5.130.3.8 const int sha2_test_buflen[3] [static]

Initial value:

```
{
    3, 56, 1000
}
```

Definition at line 444 of file sha2.c.

Referenced by sha2_self_test().

5.130.3.9 const unsigned char sha2_test_sum[6][32] [static]

Initial value:

```
{
    { 0x23, 0x09, 0x7D, 0x22, 0x34, 0x05, 0xD8, 0x22,
      0x86, 0x42, 0xA4, 0x77, 0xBD, 0xA2, 0x55, 0xB3,
      0x2A, 0xAD, 0xBC, 0xE4, 0xBD, 0xA0, 0xB3, 0xF7,
      0xE3, 0x6C, 0x9D, 0xA7 },
    { 0x75, 0x38, 0x8B, 0x16, 0x51, 0x27, 0x76, 0xCC,
      0x5D, 0xBA, 0x5D, 0xA1, 0xFD, 0x89, 0x01, 0x50,
      0xB0, 0xC6, 0x45, 0x5C, 0xB4, 0xF5, 0x8B, 0x19,
      0x52, 0x52, 0x25, 0x25 },
    { 0x20, 0x79, 0x46, 0x55, 0x98, 0x0C, 0x91, 0xD8,
      0xBB, 0xB4, 0xC1, 0xEA, 0x97, 0x61, 0x8A, 0x4B,
      0xF0, 0x3F, 0x42, 0x58, 0x19, 0x48, 0xB2, 0xEE,
      0x4E, 0xE7, 0xAD, 0x67 },

    { 0xBA, 0x78, 0x16, 0xBF, 0x8F, 0x01, 0xCF, 0xEA,
      0x41, 0x41, 0x40, 0xDE, 0x5D, 0xAE, 0x22, 0x23,
      0xB0, 0x03, 0x61, 0xA3, 0x96, 0x17, 0x7A, 0x9C,
      0xB4, 0x10, 0xFF, 0x61, 0xF2, 0x00, 0x15, 0xAD },
    { 0x24, 0x8D, 0x6A, 0x61, 0xD2, 0x06, 0x38, 0xB8,
      0xE5, 0xC0, 0x26, 0x93, 0x0C, 0x3E, 0x60, 0x39,
      0xA3, 0x3C, 0xE4, 0x59, 0x64, 0xFF, 0x21, 0x67,
      0xF6, 0xEC, 0xED, 0xD4, 0x19, 0xDB, 0x06, 0xC1 },
    { 0xCD, 0xC7, 0x6E, 0x5C, 0x99, 0x14, 0xFB, 0x92,
      0x81, 0xA1, 0xC7, 0xE2, 0x84, 0xD7, 0x3E, 0x67,
      0xF1, 0x80, 0x9A, 0x48, 0xA4, 0x97, 0x20, 0x0E,
      0x04, 0x6D, 0x39, 0xCC, 0xC7, 0x11, 0x2C, 0xD0 }
}
```

Definition at line 449 of file sha2.c.

Referenced by sha2_self_test().

5.131 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/sha4.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/sha4.h"
#include <string.h>
#include <stdio.h>
```

Defines

- #define [GET_UINT64_BE](#)(n, b, i)
- #define [PUT_UINT64_BE](#)(n, b, i)
- #define [SHR](#)(x, n) (x >> n)
- #define [ROTR](#)(x, n) (SHR(x,n) | (x << (64 - n)))
- #define [S0](#)(x) (ROTR(x, 1) ^ ROTR(x, 8) ^ SHR(x, 7))
- #define [S1](#)(x) (ROTR(x,19) ^ ROTR(x,61) ^ SHR(x, 6))
- #define [S2](#)(x) (ROTR(x,28) ^ ROTR(x,34) ^ ROTR(x,39))
- #define [S3](#)(x) (ROTR(x,14) ^ ROTR(x,18) ^ ROTR(x,41))
- #define [F0](#)(x, y, z) ((x & y) | (z & (x | y)))
- #define [F1](#)(x, y, z) (z ^ (x & (y ^ z)))
- #define [P](#)(a, b, c, d, e, f, g, h, x, K)

Functions

- void [sha4_starts](#) ([sha4_context](#) *ctx, [int](#) is384)
SHA-512 context setup.
- static void [sha4_process](#) ([sha4_context](#) *ctx, unsigned char data[128])
- void [sha4_update](#) ([sha4_context](#) *ctx, unsigned char *input, [int](#) ilen)
SHA-512 process buffer.
- void [sha4_finish](#) ([sha4_context](#) *ctx, unsigned char output[64])
SHA-512 final digest.
- void [sha4](#) (unsigned char *input, [int](#) ilen, unsigned char output[64], [int](#) is384)
Output = SHA-512(input buffer).
- [int](#) [sha4_file](#) (char *path, unsigned char output[64], [int](#) is384)
Output = SHA-512(file contents).
- void [sha4_hmac_starts](#) ([sha4_context](#) *ctx, unsigned char *key, [int](#) keylen, [int](#) is384)
SHA-512 HMAC context setup.
- void [sha4_hmac_update](#) ([sha4_context](#) *ctx, unsigned char *input, [int](#) ilen)
SHA-512 HMAC process buffer.
- void [sha4_hmac_finish](#) ([sha4_context](#) *ctx, unsigned char output[64])

SHA-512 HMAC final digest.

- void `sha4_hmac` (unsigned char *key, int keylen, unsigned char *input, int ilen, unsigned char output[64], int is384)

Output = HMAC-SHA-512(hmac key, input buffer).

- int `sha4_self_test` (int verbose)

Checkup routine.

Variables

- static const unsigned int64 `K` [80]
- static const unsigned char `sha4_padding` [128]
- static unsigned char `sha4_test_buf` [3][113]
- static const int `sha4_test_buflen` [3]
- static const unsigned char `sha4_test_sum` [6][64]
- static unsigned char `sha4_hmac_test_key` [7][26]
- static const int `sha4_hmac_test_keylen` [7]
- static unsigned char `sha4_hmac_test_buf` [7][153]
- static const int `sha4_hmac_test_buflen` [7]
- static const unsigned char `sha4_hmac_test_sum` [14][64]

5.131.1 Define Documentation

5.131.1.1 `#define F0(x, y, z) ((x & y) | (z & (x | y)))`

5.131.1.2 `#define F1(x, y, z) (z ^ (x & (y ^ z)))`

5.131.1.3 `#define GET_UINT64_BE(n, b, i)`

Value:

```
{
    (n) = ( (unsigned int64) (b)[(i)      ] << 56 ) \
    | ( (unsigned int64) (b)[(i) + 1] << 48 ) \
    | ( (unsigned int64) (b)[(i) + 2] << 40 ) \
    | ( (unsigned int64) (b)[(i) + 3] << 32 ) \
    | ( (unsigned int64) (b)[(i) + 4] << 24 ) \
    | ( (unsigned int64) (b)[(i) + 5] << 16 ) \
    | ( (unsigned int64) (b)[(i) + 6] <<  8 ) \
    | ( (unsigned int64) (b)[(i) + 7]      ); \
}
```

Definition at line 39 of file sha4.c.

Referenced by `sha4_process()`.

5.131.1.4 `#define P(a, b, c, d, e, f, g, h, x, K)`

Value:

```

{
    temp1 = h + S3(e) + F1(e,f,g) + K + x;
    temp2 = S2(a) + F0(a,b,c);
    d += temp1; h = temp1 + temp2;
}

```

5.131.1.5 #define PUT_UINT64_BE(n, b, i)

Value:

```

{
    (b)[(i)    ] = (unsigned char) ( (n) >> 56 );
    (b)[(i) + 1] = (unsigned char) ( (n) >> 48 );
    (b)[(i) + 2] = (unsigned char) ( (n) >> 40 );
    (b)[(i) + 3] = (unsigned char) ( (n) >> 32 );
    (b)[(i) + 4] = (unsigned char) ( (n) >> 24 );
    (b)[(i) + 5] = (unsigned char) ( (n) >> 16 );
    (b)[(i) + 6] = (unsigned char) ( (n) >> 8 );
    (b)[(i) + 7] = (unsigned char) ( (n) );
}

```

Definition at line 53 of file sha4.c.

Referenced by sha4_finish().

5.131.1.6 #define ROTR(x, n) (SHR(x,n) | (x << (64 - n)))

5.131.1.7 #define S0(x) (ROTR(x, 1) ^ ROTR(x, 8) ^ SHR(x, 7))

5.131.1.8 #define S1(x) (ROTR(x,19) ^ ROTR(x,61) ^ SHR(x, 6))

5.131.1.9 #define S2(x) (ROTR(x,28) ^ ROTR(x,34) ^ ROTR(x,39))

5.131.1.10 #define S3(x) (ROTR(x,14) ^ ROTR(x,18) ^ ROTR(x,41))

5.131.1.11 #define SHR(x, n) (x >> n)

5.131.2 Function Documentation

5.131.2.1 void sha4 (unsigned char * *input*, int *ilen*, unsigned char *output*[64], int *is384*)

Output = SHA-512(input buffer).

Parameters

input buffer holding the data

ilen length of the input data

output SHA-384/512 checksum result

is384 0 = use SHA512, 1 = use SHA384

Definition at line 312 of file sha4.c.

References sha4_finish(), sha4_starts(), and sha4_update().

Referenced by sha4_hmac_starts().

5.131.2.2 int sha4_file (char * *path*, unsigned char *output*[64], int *is384*)

Output = SHA-512(file contents).

Parameters

path input file name

output SHA-384/512 checksum result

is384 0 = use SHA512, 1 = use SHA384

Returns

0 if successful, 1 if fopen failed, or 2 if fread failed

Definition at line 327 of file sha4.c.

References buf, f, sha4_finish(), sha4_starts(), and sha4_update().

5.131.2.3 void sha4_finish (sha4_context * *ctx*, unsigned char *output*[64])

SHA-512 final digest.

Parameters

ctx SHA-512 context

output SHA-384/512 checksum result

Definition at line 276 of file sha4.c.

References int, int64, sha4_context::is384, PUT_UINT64_BE, sha4_padding, sha4_update(), sha4_context::state, and sha4_context::total.

Referenced by sha4(), sha4_file(), sha4_hmac_finish(), and sha4_self_test().

5.131.2.4 void sha4_hmac (unsigned char * *key*, int *keylen*, unsigned char * *input*, int *ilen*, unsigned char *output*[64], int *is384*)

Output = HMAC-SHA-512(hmac key, input buffer).

Parameters

key HMAC secret key

keylen length of the HMAC key

input buffer holding the data

ilen length of the input data

output HMAC-SHA-384/512 result

is384 0 = use SHA512, 1 = use SHA384

Definition at line 419 of file sha4.c.

References sha4_hmac_finish(), sha4_hmac_starts(), and sha4_hmac_update().

5.131.2.5 void sha4_hmac_finish (sha4_context * *ctx*, unsigned char *output*[64])

SHA-512 HMAC final digest.

Parameters

ctx HMAC context

output SHA-384/512 HMAC checksum result

Definition at line 399 of file sha4.c.

References sha4_context::is384, sha4_context::opad, sha4_finish(), sha4_starts(), and sha4_update().

Referenced by sha4_hmac(), and sha4_self_test().

5.131.2.6 void sha4_hmac_starts (sha4_context * *ctx*, unsigned char * *key*, int *keylen*, int *is384*)

SHA-512 HMAC context setup.

Parameters

ctx HMAC context to be initialized

is384 0 = use SHA512, 1 = use SHA384

key HMAC secret key

keylen length of the HMAC key

Definition at line 359 of file sha4.c.

References sha4_context::ipad, sha4_context::opad, sha4(), sha4_starts(), and sha4_update().

Referenced by sha4_hmac(), and sha4_self_test().

5.131.2.7 void sha4_hmac_update (sha4_context * *ctx*, unsigned char * *input*, int *ilen*)

SHA-512 HMAC process buffer.

Parameters

ctx HMAC context

input buffer holding the data

ilen length of the input data

Definition at line 390 of file sha4.c.

References sha4_update().

Referenced by sha4_hmac(), and sha4_self_test().

5.131.2.8 static void sha4_process (sha4_context * *ctx*, unsigned char *data*[128]) [static]

Definition at line 149 of file sha4.c.

References F, GET_UINT64_BE, int64, K, P, S0, S1, and sha4_context::state.

Referenced by sha4_update().

5.131.2.9 `int sha4_self_test (int verbose)`

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 654 of file sha4.c.

References `buf`, `sha4_finish()`, `sha4_hmac_finish()`, `sha4_hmac_starts()`, `sha4_hmac_test_buf`, `sha4_hmac_test_buflen`, `sha4_hmac_test_key`, `sha4_hmac_test_keylen`, `sha4_hmac_test_sum`, `sha4_hmac_update()`, `sha4_starts()`, `sha4_test_buf`, `sha4_test_buflen`, `sha4_test_sum`, and `sha4_update()`.

Referenced by `main()`.

5.131.2.10 `void sha4_starts (sha4_context * ctx, int is384)`

SHA-512 context setup.

Parameters

ctx context to be initialized

is384 0 = use SHA512, 1 = use SHA384

Definition at line 116 of file sha4.c.

References `sha4_context::is384`, `sha4_context::state`, `sha4_context::total`, and `UL64`.

Referenced by `sha4()`, `sha4_file()`, `sha4_hmac_finish()`, `sha4_hmac_starts()`, and `sha4_self_test()`.

5.131.2.11 `void sha4_update (sha4_context * ctx, unsigned char * input, int ilen)`

SHA-512 process buffer.

Parameters

ctx SHA-512 context

input buffer holding the data

ilen length of the input data

Definition at line 221 of file sha4.c.

References `sha4_context::buffer`, `int`, `int64`, `sha4_process()`, and `sha4_context::total`.

Referenced by `sha4()`, `sha4_file()`, `sha4_finish()`, `sha4_hmac_finish()`, `sha4_hmac_starts()`, `sha4_hmac_update()`, and `sha4_self_test()`.

5.131.3 Variable Documentation

5.131.3.1 `const unsigned int64 K[80] [static]`

Definition at line 69 of file sha4.c.

5.131.3.2 unsigned char sha4_hmac_test_buf[7][153] [static]

Initial value:

```
{
  { "Hi There" },
  { "what do ya want for nothing?" },
  { "\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD"
    "\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD"
    "\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD"
    "\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD"
    "\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD\xDD" },
  { "\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD"
    "\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD"
    "\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD"
    "\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD"
    "\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD\xCD" },
  { "Test With Truncation" },
  { "Test Using Larger Than Block-Size Key - Hash Key First" },
  { "This is a test using a larger than block-size key "
    "and a larger than block-size data. The key needs to "
    "be hashed before being used by the HMAC algorithm." }
}
```

Definition at line 526 of file sha4.c.

Referenced by sha4_self_test().

5.131.3.3 `const int sha4_hmac_test_buflen[7] [static]`

Initial value:

$$\{8, 28, 50, 50, 20, 54, 152\}$$

Definition at line 547 of file sha4.c.

Referenced by sha4_self_test().

5.131.3.4 unsigned char sha4_hmac_test_key[7][26] [static]

Initial value:

```
{  
    { "      "\x0B\x0B\x0B\x0B" },  
    { "Jefe" },  
    { "      "\xAA\xAA\xAA\xAA" },  
    { "      "\x11\x12\x13\x14\x15\x16\x17\x18\x19" },  
    { "      "\x0C\x0C\x0C\x0C" },  
    { "" },  
    { "" }  
}
```

Definition at line 506 of file sha4.c.

Referenced by sha4_self_test().

5.131.3.5 `const int sha4_hmac_test_keylen[7] [static]`

Initial value:

```
{
    20, 4, 20, 25, 20, 131, 131
}
```

Definition at line 521 of file sha4.c.

Referenced by sha4_self_test().

5.131.3.6 `const unsigned char sha4_hmac_test_sum[14][64] [static]`

Definition at line 552 of file sha4.c.

Referenced by sha4_self_test().

5.131.3.7 `const unsigned char sha4_padding[128] [static]`

Initial value:

```
{
    0x80, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
    0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
    0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
    0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
    0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
    0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
    0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
    0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0
}
```

Definition at line 261 of file sha4.c.

Referenced by sha4_finish().

5.131.3.8 `unsigned char sha4_test_buf[3][113] [static]`

Initial value:

```
{
    { "abc" },
    { "abcdefghijklghicdefghijdefghijkefghijklfghijklmghijklmn"
      "hijklmnoijklmnopjklmnopqklmnopqrlmnopqrsmnopqrstnoprstu" },
    { "" }
}
```

Definition at line 437 of file sha4.c.

Referenced by sha4_self_test().

5.131.3.9 const int sha4_test_buflen[3] [static]

Initial value:

```
{  
    3, 112, 1000  
}
```

Definition at line 445 of file sha4.c.

Referenced by sha4_self_test().

5.131.3.10 const unsigned char sha4_test_sum[6][64] [static]

Definition at line 450 of file sha4.c.

Referenced by sha4_self_test().

5.132 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/ssl_cli.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/debug.h"
#include "xyssl/ssl.h"
#include <string.h>
#include <stdlib.h>
#include <stdio.h>
#include <time.h>
```

Functions

- static [int ssl_write_client_hello](#) (ssl_context *ssl)
- static [int ssl_parse_server_hello](#) (ssl_context *ssl)
- static [int ssl_parse_server_key_exchange](#) (ssl_context *ssl)
- static [int ssl_parse_certificate_request](#) (ssl_context *ssl)
- static [int ssl_parse_server_hello_done](#) (ssl_context *ssl)
- static [int ssl_write_client_key_exchange](#) (ssl_context *ssl)
- static [int ssl_write_certificate_verify](#) (ssl_context *ssl)
- [int ssl_handshake_client](#) (ssl_context *ssl)

5.132.1 Function Documentation

5.132.1.1 [int ssl_handshake_client](#) (ssl_context *ssl)

Definition at line 660 of file `ssl_cli.c`.

References `SSL_CERTIFICATE_REQUEST`, `SSL_CERTIFICATE_VERIFY`, `SSL_CLIENT_CERTIFICATE`, `SSL_CLIENT_CHANGE_CIPHER_SPEC`, `SSL_CLIENT_FINISHED`, `SSL_CLIENT_HELLO`, `SSL_CLIENT_KEY_EXCHANGE`, `SSL_DEBUG_MSG`, `SSL_FLUSH_BUFFERS`, `ssl_flush_output()`, `SSL_HANDSHAKE_OVER`, `SSL_HELLO_REQUEST`, `ssl_parse_certificate()`, `ssl_parse_certificate_request()`, `ssl_parse_change_cipher_spec()`, `ssl_parse_finished()`, `ssl_parse_server_hello()`, `ssl_parse_server_hello_done()`, `ssl_parse_server_key_exchange()`, `SSL_SERVER_CERTIFICATE`, `SSL_SERVER_CHANGE_CIPHER_SPEC`, `SSL_SERVER_FINISHED`, `SSL_SERVER_HELLO`, `SSL_SERVER_HELLO_DONE`, `SSL_SERVER_KEY_EXCHANGE`, `ssl_write_certificate()`, `ssl_write_certificate_verify()`, `ssl_write_change_cipher_spec()`, `ssl_write_client_hello()`, `ssl_write_client_key_exchange()`, `ssl_write_finished()`, `_ssl_context::state`, and `XYSSL_ERR_SSL_BAD_INPUT_DATA`.

Referenced by `ssl_handshake()`.

5.132.1.2 [static int ssl_parse_certificate_request](#) (ssl_context *ssl) **[static]**

Definition at line 428 of file `ssl_cli.c`.

References `_ssl_context::client_auth`, `_ssl_context::in_msg`, `_ssl_context::in_msgtype`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `SSL_HS_CERTIFICATE_REQUEST`, `SSL_MSG_HANDSHAKE`, `ssl_read_record()`, `_ssl_context::state`, and `XYSSL_ERR_SSL_UNEXPECTED_MESSAGE`.

Referenced by `ssl_handshake_client()`.

5.132.1.3 static int ssl_parse_server_hello (ssl_context * ssl) [static]

Definition at line 168 of file ssl_cli.c.

References buf, _ssl_session::cipher, _ssl_context::ciphers, _ssl_session::id, _ssl_context::in_hslen, _ssl_context::in_msg, _ssl_context::in_msgtype, _ssl_session::length, _ssl_context::minor_ver, _ssl_context::randbytes, _ssl_context::resume, _ssl_context::session, SSL_COMPRESS_NULL, SSL_DEBUG_BUF, SSL_DEBUG_MSG, SSL_DEBUG_RET, ssl_derive_keys(), SSL_HS_SERVER_HELLO, SSL_MAJOR_VERSION_3, SSL_MINOR_VERSION_0, SSL_MINOR_VERSION_1, SSL_MSG_HANDSHAKE, ssl_read_record(), SSL_SERVER_CHANGE_CIPHER_SPEC, _ssl_session::start, _ssl_context::state, XYSSL_ERR_SSL_BAD_HS_SERVER_HELLO, and XYSSL_ERR_SSL_UNEXPECTED_MESSAGE.

Referenced by ssl_handshake_client().

5.132.1.4 static int ssl_parse_server_hello_done (ssl_context * ssl) [static]

Definition at line 471 of file ssl_cli.c.

References _ssl_context::client_auth, _ssl_context::in_hslen, _ssl_context::in_msg, _ssl_context::in_msgtype, SSL_DEBUG_MSG, SSL_DEBUG_RET, SSL_HS_SERVER_HELLO_DONE, SSL_MSG_HANDSHAKE, ssl_read_record(), _ssl_context::state, XYSSL_ERR_SSL_BAD_HS_SERVER_HELLO_DONE, and XYSSL_ERR_SSL_UNEXPECTED_MESSAGE.

Referenced by ssl_handshake_client().

5.132.1.5 static int ssl_parse_server_key_exchange (ssl_context * ssl) [static]

Definition at line 312 of file ssl_cli.c.

References _ssl_session::cipher, _ssl_context::dhm_ctx, dhm_read_params(), dhm_context::G, dhm_context::GY, _ssl_context::in_hslen, _ssl_context::in_msg, _ssl_context::in_msgtype, dhm_context::len, rsa_context::len, md5(), md5_finish(), md5_starts(), md5_update(), dhm_context::P, _ssl_context::peer_cert, _ssl_context::randbytes, x509_cert::rsa, rsa_pkcs1_verify(), RSA_PUBLIC, RSA_RAW, _ssl_context::session, sha1(), sha1_finish(), sha1_starts(), sha1_update(), SSL_DEBUG_BUF, SSL_DEBUG_MPI, SSL_DEBUG_MSG, SSL_DEBUG_RET, SSL_EDH_RSA_AES_256_SHA, SSL_EDH_RSA_DES_168_SHA, SSL_HS_SERVER_KEY_EXCHANGE, SSL_MSG_HANDSHAKE, ssl_read_record(), _ssl_context::state, XYSSL_ERR_SSL_BAD_HS_SERVER_KEY_EXCHANGE, XYSSL_ERR_SSL_FEATURE_UNAVAILABLE, and XYSSL_ERR_SSL_UNEXPECTED_MESSAGE.

Referenced by ssl_handshake_client().

5.132.1.6 static int ssl_write_certificate_verify (ssl_context * ssl) [static]

Definition at line 604 of file ssl_cli.c.

References _ssl_context::client_auth, rsa_context::len, _ssl_context::out_msg, _ssl_context::out_msglen, _ssl_context::out_msgtype, _ssl_context::rsa_key, rsa_pkcs1_sign(), RSA_PRIVATE, RSA_RAW, ssl_calc_verify(), SSL_DEBUG_MSG, SSL_DEBUG_RET, SSL_HS_CERTIFICATE_VERIFY, SSL_MSG_HANDSHAKE, ssl_write_record(), _ssl_context::state, and XYSSL_ERR_SSL_PRIVATE_KEY_REQUIRED.

Referenced by ssl_handshake_client().

5.132.1.7 static int ssl_write_client_hello (ssl_context * ssl) [static]

Definition at line 33 of file ssl_cli.c.

References buf, _ssl_context::ciphers, _ssl_context::f_rng, _ssl_context::hostname, _ssl_context::hostname_len, _ssl_session::id, _ssl_session::length, _ssl_context::major_ver, _ssl_context::max_major_ver, _ssl_context::max_minor_ver, _ssl_context::minor_ver, _ssl_context::out_msg, _ssl_context::out_msglen, _ssl_context::out_msgtype, _ssl_context::p_rng, _ssl_context::randbytes, _ssl_context::resume, _ssl_context::session, SSL_COMPRESS_NULL, SSL_DEBUG_BUF, SSL_DEBUG_MSG, SSL_DEBUG_RET, SSL_HS_CLIENT_HELLO, SSL_MAJOR_VERSION_3, SSL_MINOR_VERSION_0, SSL_MINOR_VERSION_1, SSL_MSG_HANDSHAKE, ssl_write_record(), _ssl_session::start, _ssl_context::state, _ssl_context::timeout, TLS_EXT_SERVERNAME, and TLS_EXT_SERVERNAME_HOSTNAME.

Referenced by ssl_handshake_client().

5.132.1.8 static int ssl_write_client_key_exchange (ssl_context * ssl) [static]

Definition at line 506 of file ssl_cli.c.

References _ssl_session::cipher, dhm_calc_secret(), _ssl_context::dhm_ctx, dhm_make_public(), _ssl_context::f_rng, dhm_context::GX, dhm_context::K, rsa_context::len, dhm_context::len, _ssl_context::max_major_ver, _ssl_context::max_minor_ver, _ssl_context::minor_ver, _ssl_context::out_msg, _ssl_context::out_msglen, _ssl_context::out_msgtype, _ssl_context::p_rng, _ssl_context::peer_cert, _ssl_context::pmslen, _ssl_context::premaster, x509_cert::rsa, rsa_pkcs1_encrypt(), RSA_PUBLIC, _ssl_context::session, SSL_DEBUG_MPI, SSL_DEBUG_MSG, SSL_DEBUG_RET, ssl_derive_keys(), SSL_EDH_RSA_AES_256_SHA, SSL_EDH_RSA_DES_168_SHA, SSL_HS_CLIENT_KEY_EXCHANGE, SSL_MINOR_VERSION_0, SSL_MSG_HANDSHAKE, ssl_write_record(), _ssl_context::state, dhm_context::X, and XYSSL_ERR_SSL_FEATURE_UNAVAILABLE.

Referenced by ssl_handshake_client().

5.133 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/ssl_srv.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/debug.h"
#include "xyssl/ssl.h"
#include <string.h>
#include <stdlib.h>
#include <stdio.h>
#include <time.h>
```

Functions

- static [int ssl_parse_client_hello](#) (ssl_context *ssl)
- static [int ssl_write_server_hello](#) (ssl_context *ssl)
- static [int ssl_write_certificate_request](#) (ssl_context *ssl)
- static [int ssl_write_server_key_exchange](#) (ssl_context *ssl)
- static [int ssl_write_server_hello_done](#) (ssl_context *ssl)
- static [int ssl_parse_client_key_exchange](#) (ssl_context *ssl)
- static [int ssl_parse_certificate_verify](#) (ssl_context *ssl)
- [int ssl_handshake_server](#) (ssl_context *ssl)

5.133.1 Function Documentation

5.133.1.1 [int ssl_handshake_server](#) (ssl_context *ssl)

Definition at line 819 of file ssl_srv.c.

References [SSL_CERTIFICATE_REQUEST](#), [SSL_CERTIFICATE_VERIFY](#), [SSL_CLIENT_CERTIFICATE](#), [SSL_CLIENT_CHANGE_CIPHER_SPEC](#), [SSL_CLIENT_FINISHED](#), [SSL_CLIENT_HELLO](#), [SSL_CLIENT_KEY_EXCHANGE](#), [SSL_DEBUG_MSG](#), [SSL_FLUSH_BUFFERS](#), [ssl_flush_output\(\)](#), [SSL_HANDSHAKE_OVER](#), [SSL_HELLO_REQUEST](#), [ssl_parse_certificate\(\)](#), [ssl_parse_certificate_verify\(\)](#), [ssl_parse_change_cipher_spec\(\)](#), [ssl_parse_client_hello\(\)](#), [ssl_parse_client_key_exchange\(\)](#), [ssl_parse_finished\(\)](#), [SSL_SERVER_CERTIFICATE](#), [SSL_SERVER_CHANGE_CIPHER_SPEC](#), [SSL_SERVER_FINISHED](#), [SSL_SERVER_HELLO](#), [SSL_SERVER_HELLO_DONE](#), [SSL_SERVER_KEY_EXCHANGE](#), [ssl_write_certificate\(\)](#), [ssl_write_certificate_request\(\)](#), [ssl_write_change_cipher_spec\(\)](#), [ssl_write_finished\(\)](#), [ssl_write_server_hello\(\)](#), [ssl_write_server_hello_done\(\)](#), [ssl_write_server_key_exchange\(\)](#), [_ssl_context::state](#), and [XYSSL_ERR_SSL_BAD_INPUT_DATA](#).

Referenced by [ssl_handshake\(\)](#).

5.133.1.2 [static int ssl_parse_certificate_verify](#) (ssl_context *ssl) [**static**]

Definition at line 758 of file ssl_srv.c.

References [_ssl_context::in_hrlen](#), [_ssl_context::in_msg](#), [_ssl_context::in_msgtype](#), [rsa_context::len](#), [_ssl_context::peer_cert](#), [_x509_cert::rsa](#), [rsa_pkcs1_verify\(\)](#), [RSA_PUBLIC](#), [RSA_RAW](#), [ssl_calc_verify\(\)](#), [SSL_DEBUG_MSG](#), [SSL_DEBUG_RET](#), [SSL_HS_CERTIFICATE_VERIFY](#), [SSL_](#)

MSG_HANDSHAKE, ssl_read_record(), _ssl_context::state, and XYSSL_ERR_SSL_BAD_HS_CERTIFICATE_VERIFY.

Referenced by ssl_handshake_server().

5.133.1.3 static int ssl_parse_client_hello (ssl_context * ssl) [static]

Definition at line 33 of file ssl_srv.c.

References buf, _ssl_session::cipher, _ssl_context::ciphers, _ssl_context::fin_md5, _ssl_context::fin_sha1, _ssl_session::id, _ssl_context::in_hdr, _ssl_context::in_left, _ssl_context::in_msg, _ssl_session::length, _ssl_context::major_ver, _ssl_context::max_major_ver, _ssl_context::max_minor_ver, md5_update(), _ssl_context::minor_ver, _ssl_context::randbytes, _ssl_context::session, sha1_update(), SSL_DEBUG_BUF, SSL_DEBUG_MSG, SSL_DEBUG_RET, ssl_fetch_input(), SSL_HS_CLIENT_HELLO, SSL_MAJOR_VERSION_3, SSL_MINOR_VERSION_1, SSL_MSG_HANDSHAKE, _ssl_context::state, XYSSL_ERR_SSL_BAD_HS_CLIENT_HELLO, and XYSSL_ERR_SSL_NO_CIPHER_CHOSEN.

Referenced by ssl_handshake_server().

5.133.1.4 static int ssl_parse_client_key_exchange (ssl_context * ssl) [static]

Definition at line 634 of file ssl_srv.c.

References _ssl_session::cipher, dhm_calc_secret(), _ssl_context::dhm_ctx, dhm_read_public(), _ssl_context::f_rng, dhm_context::GY, _ssl_context::in_hslen, _ssl_context::in_msg, _ssl_context::in_msgtype, dhm_context::K, rsa_context::len, dhm_context::len, _ssl_context::max_major_ver, _ssl_context::max_minor_ver, _ssl_context::minor_ver, _ssl_context::p_rng, _ssl_context::pmslen, _ssl_context::premaster, _ssl_context::rsa_key, rsa_pkcs1_decrypt(), RSA_PRIVATE, _ssl_context::s_set, _ssl_context::session, SSL_DEBUG_MPI, SSL_DEBUG_MSG, SSL_DEBUG_RET, ssl_derive_keys(), SSL_EDH_RSA_AES_256_SHA, SSL_EDH_RSA_DES_168_SHA, SSL_HS_CLIENT_KEY_EXCHANGE, SSL_MINOR_VERSION_0, SSL_MSG_HANDSHAKE, ssl_read_record(), _ssl_context::state, XYSSL_ERR_SSL_BAD_HS_CLIENT_KEY_EXCHANGE, and XYSSL_ERR_SSL_FEATURE_UNAVAILABLE.

Referenced by ssl_handshake_server().

5.133.1.5 static int ssl_write_certificate_request (ssl_context * ssl) [static]

Definition at line 447 of file ssl_srv.c.

References _ssl_context::authmode, buf, _ssl_context::ca_chain, _x509_buf::len, _x509_cert::next, _ssl_context::out_msg, _ssl_context::out_msglen, _ssl_context::out_msgtype, _x509_buf::p, SSL_DEBUG_BUF, SSL_DEBUG_MSG, SSL_HS_CERTIFICATE_REQUEST, SSL_MSG_HANDSHAKE, SSL_VERIFY_NONE, ssl_write_record(), _ssl_context::state, and _x509_cert::subject_raw.

Referenced by ssl_handshake_server().

5.133.1.6 static int ssl_write_server_hello (ssl_context * ssl) [static]

Definition at line 349 of file ssl_srv.c.

References buf, _ssl_session::cipher, _ssl_context::f_rng, _ssl_session::id, _ssl_session::length, _ssl_context::major_ver, _ssl_context::minor_ver, _ssl_context::out_msg, _ssl_context::out_msglen, _ssl_context::out_msgtype, _ssl_context::p_rng, _ssl_context::randbytes, _ssl_context::resume, _ssl_context::s_get, _ssl_context::session, SSL_COMPRESS_NULL, SSL_DEBUG_BUF, SSL_DEBUG_

MSG, ssl_derive_keys(), SSL_HS_SERVER_HELLO, SSL_MSG_HANDSHAKE, SSL_SERVER_CHANGE_CIPHER_SPEC, ssl_write_record(), and _ssl_context::state.

Referenced by ssl_handshake_server().

5.133.1.7 static int ssl_write_server_hello_done (ssl_context * ssl) [static]

Definition at line 611 of file ssl_srv.c.

References _ssl_context::out_msg, _ssl_context::out_msglen, _ssl_context::out_msgtype, SSL_DEBUG_MSG, SSL_DEBUG_RET, SSL_HS_SERVER_HELLO_DONE, SSL_MSG_HANDSHAKE, ssl_write_record(), and _ssl_context::state.

Referenced by ssl_handshake_server().

5.133.1.8 static int ssl_write_server_key_exchange (ssl_context * ssl) [static]

Definition at line 512 of file ssl_srv.c.

References _ssl_session::cipher, _ssl_context::dhm_ctx, dhm_make_params(), _ssl_context::f_rng, dhm_context::G, dhm_context::GX, rsa_context::len, md5(), md5_finish(), md5_starts(), md5_update(), _ssl_context::out_msg, _ssl_context::out_msglen, _ssl_context::out_msgtype, dhm_context::P, _ssl_context::p_rng, _ssl_context::randbytes, _ssl_context::rsa_key, rsa_pkcs1_sign(), RSA_PRIVATE, RSA_RAW, _ssl_context::session, sha1(), sha1_finish(), sha1_starts(), sha1_update(), SSL_DEBUG_BUF, SSL_DEBUG_MPI, SSL_DEBUG_MSG, SSL_DEBUG_RET, SSL_EDH_RSA_AES_256_SHA, SSL_EDH_RSA_DES_168_SHA, SSL_HS_SERVER_KEY_EXCHANGE, SSL_MSG_HANDSHAKE, ssl_write_record(), _ssl_context::state, dhm_context::X, and XYSSL_ERR_SSL_FEATURE_UNAVAILABLE.

Referenced by ssl_handshake_server().

5.134 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/ssl_tls.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/aes.h"
#include "xyssl/arc4.h"
#include "xyssl/des.h"
#include "xyssl/debug.h"
#include "xyssl/ssl.h"
#include <string.h>
#include <stdlib.h>
#include <time.h>
```

Functions

- static [int](#) [tls1_prf](#) (unsigned char *secret, [int](#) slen, char *label, unsigned char *random, [int](#) rlen, unsigned char *dstbuf, [int](#) dlen)
- [int](#) [ssl_derive_keys](#) ([ssl_context](#) *ssl)
- void [ssl_calc_verify](#) ([ssl_context](#) *ssl, unsigned char hash[36])
- static void [ssl_mac_md5](#) (unsigned char *secret, unsigned char *buf, [int](#) len, unsigned char *ctr, [int](#) type)
- static void [ssl_mac_sha1](#) (unsigned char *secret, unsigned char *buf, [int](#) len, unsigned char *ctr, [int](#) type)
- static [int](#) [ssl_encrypt_buf](#) ([ssl_context](#) *ssl)
- static [int](#) [ssl_decrypt_buf](#) ([ssl_context](#) *ssl)
- [int](#) [ssl_fetch_input](#) ([ssl_context](#) *ssl, [int](#) nb_want)
- [int](#) [ssl_flush_output](#) ([ssl_context](#) *ssl)
- [int](#) [ssl_write_record](#) ([ssl_context](#) *ssl)
- [int](#) [ssl_read_record](#) ([ssl_context](#) *ssl)
- [int](#) [ssl_write_certificate](#) ([ssl_context](#) *ssl)
- [int](#) [ssl_parse_certificate](#) ([ssl_context](#) *ssl)
- [int](#) [ssl_write_change_cipher_spec](#) ([ssl_context](#) *ssl)
- [int](#) [ssl_parse_change_cipher_spec](#) ([ssl_context](#) *ssl)
- static void [ssl_calc_finished](#) ([ssl_context](#) *ssl, unsigned char *buf, [int](#) from, [md5_context](#) *md5, [sha1_context](#) *sha1)
- [int](#) [ssl_write_finished](#) ([ssl_context](#) *ssl)
- [int](#) [ssl_parse_finished](#) ([ssl_context](#) *ssl)
- [int](#) [ssl_init](#) ([ssl_context](#) *ssl)

Initialize an SSL context.

- void [ssl_set_endpoint](#) ([ssl_context](#) *ssl, [int](#) endpoint)

Set the current endpoint type.

- void [ssl_set_authmode](#) ([ssl_context](#) *ssl, [int](#) authmode)

Set the certificate verification mode.

- void `ssl_set_rng` (`ssl_context` *ssl, `int`(*f_rng)(void *), void *p_rng)
Set the random number generator callback.
- void `ssl_set_dbg` (`ssl_context` *ssl, void(*f_dbg)(void *, `int`, char *), void *p_dbg)
Set the debug callback.
- void `ssl_set_bio` (`ssl_context` *ssl, `int`(*f_recv)(void *, unsigned char *, `int`), void *p_recv, `int`(*f_send)(void *, unsigned char *, `int`), void *p_send)
Set the underlying BIO read and write callbacks.
- void `ssl_set_scb` (`ssl_context` *ssl, `int`(*s_get)(`ssl_context` *), `int`(*s_set)(`ssl_context` *))
Set the session callbacks (server-side only).
- void `ssl_set_session` (`ssl_context` *ssl, `int` resume, `int` timeout, `ssl_session` *session)
Set the session resuming flag, timeout and data.
- void `ssl_set_ciphers` (`ssl_context` *ssl, `int` *ciphers)
Set the list of allowed ciphersuites.
- void `ssl_set_ca_chain` (`ssl_context` *ssl, `x509_cert` *ca_chain, char *peer_cn)
Set the data required to verify peer certificate.
- void `ssl_set_own_cert` (`ssl_context` *ssl, `x509_cert` *own_cert, `rsa_context` *rsa_key)
Set own certificate and private key.
- `int` `ssl_set_dh_param` (`ssl_context` *ssl, char *dhm_P, char *dhm_G)
Set the Diffie-Hellman public P and G values, read as hexadecimal strings (server-side only).
- `int` `ssl_set_hostname` (`ssl_context` *ssl, char *hostname)
Set hostname for ServerName TLS Extension.
- `int` `ssl_get_bytes_avail` (`ssl_context` *ssl)
Return the number of data bytes available to read.
- `int` `ssl_get_verify_result` (`ssl_context` *ssl)
Return the result of the certificate verification.
- char * `ssl_get_cipher` (`ssl_context` *ssl)
Return the name of the current cipher.
- `int` `ssl_handshake` (`ssl_context` *ssl)
Perform the SSL handshake.
- `int` `ssl_read` (`ssl_context` *ssl, unsigned char *buf, `int` len)
Read at most 'len' application data bytes.
- `int` `ssl_write` (`ssl_context` *ssl, unsigned char *buf, `int` len)
Write exactly 'len' application data bytes.
- `int` `ssl_close_notify` (`ssl_context` *ssl)

Notify the peer that the connection is being closed.

- void `ssl_free` (`ssl_context` *`ssl`)

Free an SSL context.

Variables

- int `ssl_default_ciphers` []

5.134.1 Function Documentation

5.134.1.1 static void `ssl_calc_finished` (`ssl_context` *`ssl`, unsigned char *`buf`, int `from`, `md5_context` *`md5`, `sha1_context` *`sha1`) [static]

Definition at line 1344 of file `ssl_tls.c`.

References `_ssl_session::master`, `md5_finish()`, `md5_starts()`, `md5_update()`, `_ssl_context::minor_ver`, `_ssl_context::session`, `sha1_finish()`, `sha1_starts()`, `sha1_update()`, `SSL_DEBUG_BUF`, `SSL_DEBUG_MSG`, `SSL_IS_CLIENT`, `SSL_MINOR_VERSION_0`, `sha1_context::state`, `md5_context::state`, and `tls1_prf()`.

Referenced by `ssl_parse_finished()`, and `ssl_write_finished()`.

5.134.1.2 void `ssl_calc_verify` (`ssl_context` *`ssl`, unsigned char `hash`[36])

Definition at line 335 of file `ssl_tls.c`.

References `_ssl_context::fin_md5`, `_ssl_context::fin_sha1`, `_ssl_session::master`, `md5()`, `md5_finish()`, `md5_starts()`, `md5_update()`, `_ssl_context::minor_ver`, `_ssl_context::session`, `sha1()`, `sha1_finish()`, `sha1_starts()`, `sha1_update()`, `SSL_DEBUG_BUF`, `SSL_DEBUG_MSG`, and `SSL_MINOR_VERSION_0`.

Referenced by `ssl_parse_certificate_verify()`, and `ssl_write_certificate_verify()`.

5.134.1.3 int `ssl_close_notify` (`ssl_context` *`ssl`)

Notify the peer that the connection is being closed.

Definition at line 1904 of file `ssl_tls.c`.

References `_ssl_context::out_msg`, `_ssl_context::out_msglen`, `_ssl_context::out_msgtype`, `SSL_ALERT_CLOSE_NOTIFY`, `SSL_ALERT_WARNING`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `ssl_flush_output()`, `SSL_HANDSHAKE_OVER`, `SSL_MSG_ALERT`, `ssl_write_record()`, and `_ssl_context::state`.

Referenced by `main()`, and `ssl_test()`.

5.134.1.4 static int `ssl_decrypt_buf` (`ssl_context` *`ssl`) [static]

Definition at line 555 of file `ssl_tls.c`.

References `aes_crypt_cbc()`, `AES_DECRYPT`, `arc4_crypt()`, `_ssl_context::ctx_dec`, `des3_crypt_cbc()`, `DES_DECRYPT`, `_ssl_context::in_ctr`, `_ssl_context::in_hdr`, `_ssl_context::in_msg`, `_ssl_context::in_msglen`, `_ssl_context::in_msgtype`, `_ssl_context::iv_dec`, `_ssl_context::ivlen`, `_ssl_context::mac_dec`, `_ssl_context::maclen`, `md5_hmac()`, `_ssl_context::minlen`, `_ssl_context::minor_ver`, `_ssl_context::nb_`

zero, sha1_hmac(), SSL_DEBUG_BUF, SSL_DEBUG_MSG, ssl_mac_md5(), ssl_mac_sha1(), SSL_MINOR_VERSION_0, XYSSL_ERR_SSL_FEATURE_UNAVAILABLE, and XYSSL_ERR_SSL_INVALID_MAC.

Referenced by ssl_read_record().

5.134.1.5 int ssl_derive_keys (ssl_context * ssl)

Definition at line 106 of file ssl_tls.c.

References aes_setkey_dec(), aes_setkey_enc(), arc4_setup(), _ssl_session::cipher, _ssl_context::ctx_dec, _ssl_context::ctx_enc, des3_set3key_dec(), des3_set3key_enc(), _ssl_context::endpoint, _ssl_context::iv_dec, _ssl_context::iv_enc, _ssl_context::ivlen, _ssl_context::keylen, _ssl_context::mac_dec, _ssl_context::mac_enc, _ssl_context::maclen, _ssl_session::master, md5(), md5_finish(), md5_starts(), md5_update(), _ssl_context::minlen, _ssl_context::minor_ver, _ssl_context::pmslen, _ssl_context::premaster, _ssl_context::randbytes, _ssl_context::resume, _ssl_context::session, sha1(), sha1_finish(), sha1_starts(), sha1_update(), SSL_DEBUG_BUF, SSL_DEBUG_MSG, SSL_EDH_RSA_AES_256_SHA, SSL_EDH_RSA_DES_168_SHA, ssl_get_cipher(), SSL_IS_CLIENT, SSL_MINOR_VERSION_0, SSL_RSA_AES_128_SHA, SSL_RSA_AES_256_SHA, SSL_RSA_DES_168_SHA, SSL_RSA_RC4_128_MD5, SSL_RSA_RC4_128_SHA, tls1_prf(), and XYSSL_ERR_SSL_FEATURE_UNAVAILABLE.

Referenced by ssl_parse_client_key_exchange(), ssl_parse_server_hello(), ssl_write_client_key_exchange(), and ssl_write_server_hello().

5.134.1.6 static int ssl_encrypt_buf (ssl_context * ssl) [static]

Definition at line 448 of file ssl_tls.c.

References aes_crypt_cbc(), AES_ENCRYPT, arc4_crypt(), _ssl_context::ctx_enc, des3_crypt_cbc(), DES_ENCRYPT, _ssl_context::iv_enc, _ssl_context::ivlen, _ssl_context::mac_enc, _ssl_context::maclen, md5_hmac(), _ssl_context::minor_ver, _ssl_context::out_ctr, _ssl_context::out_msg, _ssl_context::out_msglen, _ssl_context::out_msgtype, sha1_hmac(), SSL_DEBUG_BUF, SSL_DEBUG_MSG, ssl_mac_md5(), ssl_mac_sha1(), SSL_MINOR_VERSION_0, and XYSSL_ERR_SSL_FEATURE_UNAVAILABLE.

Referenced by ssl_write_record().

5.134.1.7 int ssl_fetch_input (ssl_context * ssl, int nb_want)

Definition at line 727 of file ssl_tls.c.

References _ssl_context::f_recv, _ssl_context::in_hdr, _ssl_context::in_left, _ssl_context::p_recv, SSL_DEBUG_MSG, and SSL_DEBUG_RET.

Referenced by ssl_parse_client_hello(), and ssl_read_record().

5.134.1.8 int ssl_flush_output (ssl_context * ssl)

Definition at line 756 of file ssl_tls.c.

References buf, _ssl_context::f_send, _ssl_context::out_hdr, _ssl_context::out_left, _ssl_context::out_msglen, _ssl_context::p_send, SSL_DEBUG_MSG, and SSL_DEBUG_RET.

Referenced by ssl_close_notify(), ssl_handshake_client(), ssl_handshake_server(), ssl_write(), and ssl_write_record().

5.134.1.9 void ssl_free (ssl_context * ssl)

Free an SSL context.

Definition at line 1938 of file ssl_tls.c.

References `_ssl_context::dhm_ctx`, `dhm_free()`, `_ssl_context::hostname`, `_ssl_context::hostname_len`, `_ssl_context::in_ctr`, `_ssl_context::out_ctr`, `_ssl_context::peer_cert`, `SSL_BUFFER_LEN`, `SSL_DEBUG_MSG`, and `x509_free()`.

Referenced by `main()`, and `ssl_test()`.

5.134.1.10 int ssl_get_bytes_avail (ssl_context * ssl)

Return the number of data bytes available to read.

Parameters

ssl SSL context

Returns

how many bytes are available in the read buffer

Definition at line 1691 of file ssl_tls.c.

References `_ssl_context::in_msglen`, and `_ssl_context::in_offt`.

5.134.1.11 char* ssl_get_cipher (ssl_context * ssl)

Return the name of the current cipher.

Parameters

ssl SSL context

Returns

a string containing the cipher name

Definition at line 1701 of file ssl_tls.c.

References `_ssl_session::cipher`, `_ssl_context::session`, `SSL_EDH_RSA_AES_256_SHA`, `SSL_EDH_RSA_DES_168_SHA`, `SSL_RSA_AES_128_SHA`, `SSL_RSA_AES_256_SHA`, `SSL_RSA_DES_168_SHA`, `SSL_RSA_RC4_128_MD5`, and `SSL_RSA_RC4_128_SHA`.

Referenced by `main()`, and `ssl_derive_keys()`.

5.134.1.12 int ssl_get_verify_result (ssl_context * ssl)

Return the result of the certificate verification.

Parameters

ssl SSL context

Returns

0 if successful, or a combination of: BADCERT_EXPIRED BADCERT_REVOKED BADCERT_CN_MISMATCH BADCERT_NOT_TRUSTED

Definition at line 1696 of file ssl_tls.c.

References `_ssl_context::verify_result`.

Referenced by `main()`.

5.134.1.13 int ssl_handshake (ssl_context * ssl)

Perform the SSL handshake.

Parameters

ssl SSL context

Returns

0 if successful, XYSSL_ERR_NET_TRY_AGAIN, or a specific SSL error code.

Definition at line 1767 of file ssl_tls.c.

References `_ssl_context::endpoint`, `SSL_DEBUG_MSG`, `ssl_handshake_client()`, `ssl_handshake_server()`, `SSL_IS_CLIENT`, `SSL_IS_SERVER`, and `XYSSL_ERR_SSL_FEATURE_UNAVAILABLE`.

Referenced by `main()`, `ssl_read()`, and `ssl_write()`.

5.134.1.14 int ssl_init (ssl_context * ssl)

Initialize an SSL context.

Parameters

ssl SSL context

Returns

0 if successful, or 1 if memory allocation failed

Definition at line 1542 of file ssl_tls.c.

References `_ssl_context::fin_md5`, `_ssl_context::fin_sha1`, `_ssl_context::hostname`, `_ssl_context::hostname_len`, `_ssl_context::in_ctr`, `_ssl_context::in_hdr`, `_ssl_context::in_msg`, `md5_starts()`, `_ssl_context::out_ctr`, `_ssl_context::out_hdr`, `_ssl_context::out_msg`, `sha1_starts()`, `SSL_BUFFER_LEN`, and `SSL_DEBUG_MSG`.

Referenced by `main()`, and `ssl_test()`.

5.134.1.15 static void ssl_mac_md5 (unsigned char * secret, unsigned char * buf, int len, unsigned char * ctr, int type) [static]

Definition at line 387 of file ssl_tls.c.

References `md5()`, `md5_finish()`, `md5_starts()`, and `md5_update()`.

Referenced by `ssl_decrypt_buf()`, and `ssl_encrypt_buf()`.

5.134.1.16 **static void ssl_mac_sha1 (unsigned char * *secret*, unsigned char * *buf*, int *len*, unsigned char * *ctr*, int *type*) [static]**

Definition at line 416 of file ssl_tls.c.

References sha1(), sha1_finish(), sha1_starts(), and sha1_update().

Referenced by ssl_decrypt_buf(), and ssl_encrypt_buf().

5.134.1.17 **int ssl_parse_certificate (ssl_context * *ssl*)**

Definition at line 1140 of file ssl_tls.c.

References _ssl_context::authmode, _ssl_context::ca_chain, _ssl_context::endpoint, _ssl_context::in_hslen, _ssl_context::in_msg, _ssl_context::in_msglen, _ssl_context::in_msgtype, int, _ssl_context::minor_ver, _ssl_context::peer_cert, _ssl_context::peer_cn, SSL_ALERT_NO_CERTIFICATE, SSL_ALERT_WARNING, SSL_DEBUG_CRT, SSL_DEBUG_MSG, SSL_DEBUG_RET, SSL_HS_CERTIFICATE, SSL_IS_SERVER, SSL_MINOR_VERSION_0, SSL_MSG_ALERT, SSL_MSG_HANDSHAKE, ssl_read_record(), SSL_VERIFY_NONE, SSL_VERIFY_OPTIONAL, SSL_VERIFY_REQUIRED, _ssl_context::state, _ssl_context::verify_result, x509parse_cert(), x509parse_verify(), XYSSL_ERR_SSL_BAD_HS_CERTIFICATE, XYSSL_ERR_SSL_CA_CHAIN_REQUIRED, XYSSL_ERR_SSL_NO_CLIENT_CERTIFICATE, and XYSSL_ERR_SSL_UNEXPECTED_MESSAGE.

Referenced by ssl_handshake_client(), and ssl_handshake_server().

5.134.1.18 **int ssl_parse_change_cipher_spec (ssl_context * *ssl*)**

Definition at line 1311 of file ssl_tls.c.

References _ssl_context::do_crypt, _ssl_context::in_msg, _ssl_context::in_msglen, _ssl_context::in_msgtype, SSL_DEBUG_MSG, SSL_DEBUG_RET, SSL_MSG_CHANGE_CIPHER_SPEC, ssl_read_record(), _ssl_context::state, XYSSL_ERR_SSL_BAD_HS_CHANGE_CIPHER_SPEC, and XYSSL_ERR_SSL_UNEXPECTED_MESSAGE.

Referenced by ssl_handshake_client(), and ssl_handshake_server().

5.134.1.19 **int ssl_parse_finished (ssl_context * *ssl*)**

Definition at line 1480 of file ssl_tls.c.

References buf, _ssl_context::do_crypt, _ssl_context::endpoint, _ssl_context::fin_md5, _ssl_context::fin_sha1, _ssl_context::in_hslen, _ssl_context::in_msg, _ssl_context::in_msgtype, md5(), _ssl_context::minor_ver, _ssl_context::resume, sha1(), ssl_calc_finished(), SSL_CLIENT_CHANGE_CIPHER_SPEC, SSL_DEBUG_MSG, SSL_DEBUG_RET, SSL_HANDSHAKE_OVER, SSL_HS_FINISHED, SSL_IS_CLIENT, SSL_IS_SERVER, SSL_MINOR_VERSION_0, SSL_MSG_HANDSHAKE, ssl_read_record(), _ssl_context::state, XYSSL_ERR_SSL_BAD_HS_FINISHED, and XYSSL_ERR_SSL_UNEXPECTED_MESSAGE.

Referenced by ssl_handshake_client(), and ssl_handshake_server().

5.134.1.20 **int ssl_read (ssl_context * *ssl*, unsigned char * *buf*, int *len*)**

Read at most 'len' application data bytes.

Parameters

ssl SSL context
buf buffer that will hold the data
len how many bytes must be read

Returns

This function returns the number of bytes read, or a negative error code.

Definition at line 1791 of file ssl_tls.c.

References `_ssl_context::in_msg`, `_ssl_context::in_msglen`, `_ssl_context::in_msgtype`, `_ssl_context::in_offt`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `ssl_handshake()`, `SSL_HANDSHAKE_OVER`, `SSL_MSG_APPLICATION_DATA`, `ssl_read_record()`, `_ssl_context::state`, and `XYSSL_ERR_SSL_UNEXPECTED_MESSAGE`.

Referenced by `main()`, and `ssl_test()`.

5.134.1.21 int ssl_read_record (ssl_context * ssl)

Definition at line 842 of file ssl_tls.c.

References `_ssl_context::do_crypt`, `_ssl_context::fin_md5`, `_ssl_context::fin_sha1`, `_ssl_context::in_hdr`, `_ssl_context::in_hslen`, `_ssl_context::in_left`, `_ssl_context::in_msg`, `_ssl_context::in_msglen`, `_ssl_context::in_msgtype`, `_ssl_context::major_ver`, `md5_update()`, `_ssl_context::minlen`, `_ssl_context::minor_ver`, `sha1_update()`, `SSL_ALERT_CLOSE_NOTIFY`, `SSL_ALERT_FATAL`, `SSL_ALERT_WARNING`, `SSL_DEBUG_BUF`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `ssl_decrypt_buf()`, `ssl_fetch_input()`, `SSL_MAX_CONTENT_LEN`, `SSL_MINOR_VERSION_0`, `SSL_MINOR_VERSION_1`, `SSL_MSG_ALERT`, `SSL_MSG_HANDSHAKE`, `XYSSL_ERR_SSL_FATAL_ALERT_MESSAGE`, `XYSSL_ERR_SSL_INVALID_RECORD`, and `XYSSL_ERR_SSL_PEER_CLOSE_NOTIFY`.

Referenced by `ssl_parse_certificate()`, `ssl_parse_certificate_request()`, `ssl_parse_certificate_verify()`, `ssl_parse_change_cipher_spec()`, `ssl_parse_client_key_exchange()`, `ssl_parse_finished()`, `ssl_parse_server_hello()`, `ssl_parse_server_hello_done()`, `ssl_parse_server_key_exchange()`, and `ssl_read()`.

5.134.1.22 void ssl_set_authmode (ssl_context * ssl, int authmode)

Set the certificate verification mode.

Parameters

ssl SSL context
mode can be:

`SSL_VERIFY_NONE`: peer certificate is not checked (default), this is insecure and SHOULD be avoided.

`SSL_VERIFY_OPTIONAL`: peer certificate is checked, however the handshake continues even if verification failed; [ssl_get_verify_result\(\)](#) can be called after the handshake is complete.

`SSL_VERIFY_REQUIRED`: peer *must* present a valid certificate, handshake is aborted if verification failed.

Definition at line 1589 of file ssl_tls.c.

References `_ssl_context::authmode`.

Referenced by `main()`, and `ssl_test()`.

5.134.1.23 `void ssl_set_bio (ssl_context * ssl, int(*)(void *, unsigned char *, int) f_recv, void * p_recv, int(*)(void *, unsigned char *, int) f_send, void * p_send)`

Set the underlying BIO read and write callbacks.

Parameters

ssl SSL context
f_recv read callback
p_recv read parameter
f_send write callback
p_send write parameter

Definition at line 1610 of file `ssl_tls.c`.

References `_ssl_context::f_recv`, `_ssl_context::f_send`, `_ssl_context::p_recv`, and `_ssl_context::p_send`.

Referenced by `main()`, and `ssl_test()`.

5.134.1.24 `void ssl_set_ca_chain (ssl_context * ssl, x509_cert * ca_chain, char * peer_cn)`

Set the data required to verify peer certificate.

Parameters

ssl SSL context
ca_chain trusted CA chain
peer_cn expected peer CommonName (or NULL)

Note

TODO: add two more parameters: depth and `crl`

Definition at line 1641 of file `ssl_tls.c`.

References `_ssl_context::ca_chain`, and `_ssl_context::peer_cn`.

Referenced by `main()`, and `ssl_test()`.

5.134.1.25 `void ssl_set_ciphers (ssl_context * ssl, int * ciphers)`

Set the list of allowed ciphersuites.

Parameters

ssl SSL context
ciphers 0-terminated list of allowed ciphers

Definition at line 1636 of file `ssl_tls.c`.

References `_ssl_context::ciphers`.

Referenced by `main()`, and `ssl_test()`.

5.134.1.26 void ssl_set_dbg (ssl_context * ssl, void(*) (void *, int, char *) f_dbg, void * p_dbg)

Set the debug callback.

Parameters

ssl SSL context

f_dbg debug function

p_dbg debug parameter

Definition at line 1602 of file ssl_tls.c.

References `_ssl_context::f_dbg`, and `_ssl_context::p_dbg`.

Referenced by `main()`, and `ssl_test()`.

5.134.1.27 int ssl_set_dh_param (ssl_context * ssl, char * dhm_P, char * dhm_G)

Set the Diffie-Hellman public P and G values, read as hexadecimal strings (server-side only).

Parameters

ssl SSL context

dhm_P Diffie-Hellman-Merkle modulus

dhm_G Diffie-Hellman-Merkle generator

Returns

0 if successful

Definition at line 1655 of file ssl_tls.c.

References `_ssl_context::dhm_ctx`, `dhm_context::G`, `mpi_read_string()`, `dhm_context::P`, and `SSL_DEBUG_RET`.

Referenced by `main()`, and `ssl_test()`.

5.134.1.28 void ssl_set_endpoint (ssl_context * ssl, int endpoint)

Set the current endpoint type.

Parameters

ssl SSL context

endpoint must be `SSL_IS_CLIENT` or `SSL_IS_SERVER`

Definition at line 1584 of file ssl_tls.c.

References `_ssl_context::endpoint`.

Referenced by `main()`, and `ssl_test()`.

5.134.1.29 `int ssl_set_hostname (ssl_context * ssl, char * hostname)`

Set hostname for ServerName TLS Extension.

Parameters

ssl SSL context

hostname the server hostname

Returns

0 if successful

Definition at line 1674 of file `ssl_tls.c`.

References `_ssl_context::hostname`, `_ssl_context::hostname_len`, and `XYSSL_ERR_SSL_BAD_INPUT_DATA`.

Referenced by `main()`.

5.134.1.30 `void ssl_set_own_cert (ssl_context * ssl, x509_cert * own_cert, rsa_context * rsa_key)`

Set own certificate and private key.

Parameters

ssl SSL context

own_cert own public certificate

rsa_key own private RSA key

Definition at line 1648 of file `ssl_tls.c`.

References `_ssl_context::own_cert`, and `_ssl_context::rsa_key`.

Referenced by `main()`, and `ssl_test()`.

5.134.1.31 `void ssl_set_rng (ssl_context * ssl, int(*) (void *) f_rng, void * p_rng)`

Set the random number generator callback.

Parameters

ssl SSL context

f_rng RNG function

p_rng RNG parameter

Definition at line 1594 of file `ssl_tls.c`.

References `_ssl_context::f_rng`, and `_ssl_context::p_rng`.

Referenced by `main()`, and `ssl_test()`.

5.134.1.32 void ssl_set_scb (ssl_context * *ssl*, int(*) (ssl_context *) *s_get*, int(*) (ssl_context *) *s_set*)

Set the session callbacks (server-side only).

Parameters

ssl SSL context
s_get session get callback
s_set session set callback

Definition at line 1620 of file ssl_tls.c.

References _ssl_context::s_get, and _ssl_context::s_set.

Referenced by main().

5.134.1.33 void ssl_set_session (ssl_context * *ssl*, int *resume*, int *timeout*, ssl_session * *session*)

Set the session resuming flag, timeout and data.

Parameters

ssl SSL context
resume if 0 (default), the session will not be resumed
timeout session timeout in seconds, or 0 (no timeout)
session session context

Definition at line 1628 of file ssl_tls.c.

References _ssl_context::resume, _ssl_context::session, and _ssl_context::timeout.

Referenced by main(), and ssl_test().

5.134.1.34 int ssl_write (ssl_context * *ssl*, unsigned char * *buf*, int *len*)

Write exactly 'len' application data bytes.

Parameters

ssl SSL context
buf buffer holding the data
len how many bytes must be written

Returns

This function returns the number of bytes written, or a negative error code.

Note

When this function returns XYSSL_ERR_NET_TRY_AGAIN, it must be called later with the **same** arguments, until it returns a positive value.

Definition at line 1857 of file `ssl_tls.c`.

References `_ssl_context::out_left`, `_ssl_context::out_msg`, `_ssl_context::out_msglen`, `_ssl_context::out_msgtype`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `ssl_flush_output()`, `ssl_handshake()`, `SSL_HANDSHAKE_OVER`, `SSL_MAX_CONTENT_LEN`, `SSL_MSG_APPLICATION_DATA`, `ssl_write_record()`, and `_ssl_context::state`.

Referenced by `main()`, and `ssl_test()`.

5.134.1.35 `int ssl_write_certificate(ssl_context *ssl)`

Definition at line 1044 of file `ssl_tls.c`.

References `_ssl_context::client_auth`, `_ssl_context::endpoint`, `_x509_buf::len`, `_ssl_context::minor_ver`, `_x509_cert::next`, `_ssl_context::out_msg`, `_ssl_context::out_msglen`, `_ssl_context::out_msgtype`, `_ssl_context::own_cert`, `_x509_buf::p`, `_x509_cert::raw`, `SSL_ALERT_NO_CERTIFICATE`, `SSL_ALERT_WARNING`, `SSL_DEBUG_CRT`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `SSL_HS_CERTIFICATE`, `SSL_IS_CLIENT`, `SSL_MAX_CONTENT_LEN`, `SSL_MINOR_VERSION_0`, `SSL_MSG_ALERT`, `SSL_MSG_HANDSHAKE`, `ssl_write_record()`, `_ssl_context::state`, `XYSSL_ERR_SSL_CERTIFICATE_REQUIRED`, and `XYSSL_ERR_SSL_CERTIFICATE_TOO_LARGE`.

Referenced by `ssl_handshake_client()`, and `ssl_handshake_server()`.

5.134.1.36 `int ssl_write_change_cipher_spec(ssl_context *ssl)`

Definition at line 1287 of file `ssl_tls.c`.

References `_ssl_context::do_crypt`, `_ssl_context::out_msg`, `_ssl_context::out_msglen`, `_ssl_context::out_msgtype`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `SSL_MSG_CHANGE_CIPHER_SPEC`, `ssl_write_record()`, and `_ssl_context::state`.

Referenced by `ssl_handshake_client()`, and `ssl_handshake_server()`.

5.134.1.37 `int ssl_write_finished(ssl_context *ssl)`

Definition at line 1433 of file `ssl_tls.c`.

References `_ssl_context::do_crypt`, `_ssl_context::endpoint`, `_ssl_context::fin_md5`, `_ssl_context::fin_sha1`, `md5()`, `_ssl_context::minor_ver`, `_ssl_context::out_msg`, `_ssl_context::out_msglen`, `_ssl_context::out_msgtype`, `_ssl_context::resume`, `sha1()`, `ssl_calc_finished()`, `SSL_CLIENT_CHANGE_CIPHER_SPEC`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `SSL_HANDSHAKE_OVER`, `SSL_HS_FINISHED`, `SSL_IS_CLIENT`, `SSL_MINOR_VERSION_0`, `SSL_MSG_HANDSHAKE`, `ssl_write_record()`, and `_ssl_context::state`.

Referenced by `ssl_handshake_client()`, and `ssl_handshake_server()`.

5.134.1.38 `int ssl_write_record(ssl_context *ssl)`

Definition at line 786 of file `ssl_tls.c`.

References `_ssl_context::do_crypt`, `_ssl_context::fin_md5`, `_ssl_context::fin_sha1`, `_ssl_context::major_ver`, `md5_update()`, `_ssl_context::minor_ver`, `_ssl_context::out_hdr`, `_ssl_context::out_left`, `_ssl_context::out_msg`, `_ssl_context::out_msglen`, `_ssl_context::out_msgtype`, `sha1_update()`, `SSL_DEBUG_BUF`, `SSL_DEBUG_MSG`, `SSL_DEBUG_RET`, `ssl_encrypt_buf()`, `ssl_flush_output()`, and `SSL_MSG_HANDSHAKE`.

Referenced by `ssl_close_notify()`, `ssl_write()`, `ssl_write_certificate()`, `ssl_write_certificate_request()`, `ssl_write_certificate_verify()`, `ssl_write_change_cipher_spec()`, `ssl_write_client_hello()`, `ssl_write_client_key_exchange()`, `ssl_write_finished()`, `ssl_write_server_hello()`, `ssl_write_server_hello_done()`, and `ssl_write_server_key_exchange()`.

5.134.1.39 `static int tls1_prf (unsigned char * secret, int slen, char * label, unsigned char * random, int rlen, unsigned char * dstbuf, int dlen) [static]`

Definition at line 46 of file `ssl_tls.c`.

References `md5_hmac()`, `S1`, `S2`, `sha1_hmac()`, and `XYSSL_ERR_SSL_BAD_INPUT_DATA`.

Referenced by `ssl_calc_finished()`, and `ssl_derive_keys()`.

5.134.2 Variable Documentation

5.134.2.1 `int ssl_default_ciphers[]`

Initial value:

```
{  
  
    SSL_EDH_RSA_AES_256_SHA,  
  
    SSL_EDH_RSA_DES_168_SHA,  
  
    SSL_RSA_AES_128_SHA,  
    SSL_RSA_AES_256_SHA,  
  
    SSL_RSA_DES_168_SHA,  
  
    SSL_RSA_RC4_128_SHA,  
    SSL_RSA_RC4_128_MD5,  
  
    0  
}
```

Definition at line 1739 of file `ssl_tls.c`.

Referenced by `main()`, and `ssl_test()`.

5.135 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/timing.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/timing.h"
#include <unistd.h>
#include <sys/types.h>
#include <sys/time.h>
#include <signal.h>
#include <time.h>
```

Data Structures

- struct [_hr_time](#)

Functions

- unsigned long [hardclock](#) (void)
Return the CPU cycle counter value.
- unsigned long [get_timer](#) (struct [hr_time](#) *val, int reset)
Return the elapsed time in milliseconds.
- static void [sighandler](#) (int signum)
- void [set_alarm](#) (int seconds)
Setup an alarm clock.
- void [m_sleep](#) (int milliseconds)
Sleep for a certain amount of time.

Variables

- static int [hardclock_init](#) = 0
- static struct timeval [tv_init](#)
- int [alarmed](#) = 0

5.135.1 Function Documentation

5.135.1.1 unsigned long [get_timer](#) (struct [hr_time](#) * val, int reset)

Return the elapsed time in milliseconds.

Parameters

val points to a timer structure

reset if set to 1, the timer is restarted

Definition at line 225 of file timing.c.

References `_hr_time::start`.

Referenced by `ssl_test()`.

5.135.1.2 unsigned long hardclock (void)

Return the CPU cycle counter value.

Definition at line 155 of file timing.c.

References `tv_init`.

Referenced by `main()`.

5.135.1.3 void m_sleep (int milliseconds)

Sleep for a certain amount of time.

Definition at line 258 of file timing.c.

5.135.1.4 void set_alarm (int seconds)

Setup an alarm clock.

Parameters

seconds delay before the "alarmed" flag is set

Definition at line 251 of file timing.c.

References `sighandler()`.

Referenced by `main()`.

5.135.1.5 static void sighandler (int signum) [static]

Definition at line 245 of file timing.c.

Referenced by `set_alarm()`.

5.135.2 Variable Documentation

5.135.2.1 int alarmed = 0

Definition at line 179 of file timing.c.

Referenced by `main()`.

5.135.2.2 int hardclock_init = 0 [static]

Definition at line 152 of file timing.c.

5.135.2.3 struct timeval tv_init [static]

Definition at line 153 of file timing.c.

Referenced by hardclock().

5.136 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/x509parse.c File Reference

```
#include "xyssl/config.h"
#include "xyssl/x509.h"
#include "xyssl/base64.h"
#include "xyssl/des.h"
#include "xyssl/md2.h"
#include "xyssl/md4.h"
#include "xyssl/md5.h"
#include "xyssl/sha1.h"
#include <string.h>
#include <stdlib.h>
#include <stdio.h>
#include <time.h>
#include "xyssl/certs.h"
```

Functions

- static [int](#) [asn1_get_len](#) (unsigned char **p, unsigned char *end, [int](#) *len)
- static [int](#) [asn1_get_tag](#) (unsigned char **p, unsigned char *end, [int](#) *len, [int](#) tag)
- static [int](#) [asn1_get_bool](#) (unsigned char **p, unsigned char *end, [int](#) *val)
- static [int](#) [asn1_get_int](#) (unsigned char **p, unsigned char *end, [int](#) *val)
- static [int](#) [asn1_get_mpi](#) (unsigned char **p, unsigned char *end, [mpi](#) *X)
- static [int](#) [x509_get_version](#) (unsigned char **p, unsigned char *end, [int](#) *ver)
- static [int](#) [x509_get_serial](#) (unsigned char **p, unsigned char *end, [x509_buf](#) *serial)
- static [int](#) [x509_get_alg](#) (unsigned char **p, unsigned char *end, [x509_buf](#) *alg)
- static [int](#) [x509_get_name](#) (unsigned char **p, unsigned char *end, [x509_name](#) *cur)
- static [int](#) [x509_get_dates](#) (unsigned char **p, unsigned char *end, [x509_time](#) *from, [x509_time](#) *to)
- static [int](#) [x509_get_pubkey](#) (unsigned char **p, unsigned char *end, [x509_buf](#) *pk_alg_oid, [mpi](#) *N, [mpi](#) *E)
- static [int](#) [x509_get_sig](#) (unsigned char **p, unsigned char *end, [x509_buf](#) *sig)
- static [int](#) [x509_get_uid](#) (unsigned char **p, unsigned char *end, [x509_buf](#) *uid, [int](#) n)
- static [int](#) [x509_get_ext](#) (unsigned char **p, unsigned char *end, [x509_buf](#) *ext, [int](#) *ca_istrue, [int](#) *max_pathlen)
- [int](#) [x509parse_crt](#) ([x509_cert](#) *chain, unsigned char *buf, [int](#) buflen)
Parse one or more certificates and add them to the chained list.
- [int](#) [x509parse_crtfile](#) ([x509_cert](#) *chain, char *path)
Load one or more certificates and add them to the chained list.
- static [int](#) [x509_get_iv](#) (unsigned char *s, unsigned char iv[8])
- static void [x509_des3_decrypt](#) (unsigned char des3_iv[8], unsigned char *buf, [int](#) buflen, unsigned char *pwd, [int](#) pwrlen)

- `int x509parse_key` (`rsa_context` *rsa, unsigned char *buf, int buflen, unsigned char *pwd, int pwrlen)
Parse a private RSA key.
- `int x509parse_keyfile` (`rsa_context` *rsa, char *path, char *pwd)
Load and parse a private RSA key.
- `int x509parse_dn_gets` (char *buf, char *end, `x509_name` *dn)
Store the certificate DN in printable form into buf; no more than (end - buf) characters will be written.
- char * `x509parse_cert_info` (char *prefix, `x509_cert` *crt)
Returns an informational string about the certificate.
- `int x509parse_expired` (`x509_cert` *crt)
Return 0 if the certificate is still valid, or BADCERT_EXPIRED.
- static void `x509_hash` (unsigned char *in, int len, int alg, unsigned char *out)
- `int x509parse_verify` (`x509_cert` *crt, `x509_cert` *trust_ca, char *cn, int *flags)
Verify the certificate signature.
- void `x509_free` (`x509_cert` *crt)
Unallocate all certificate data.
- `int x509_self_test` (int verbose)
Checkup routine.

5.136.1 Function Documentation

5.136.1.1 static int asn1_get_bool (unsigned char **p, unsigned char *end, int *val) [static]

Definition at line 108 of file x509parse.c.

References ASN1_BOOLEAN, asn1_get_tag(), and XYSSL_ERR_ASN1_INVALID_LENGTH.

Referenced by x509_get_ext().

5.136.1.2 static int asn1_get_int (unsigned char **p, unsigned char *end, int *val) [static]

Definition at line 126 of file x509parse.c.

References asn1_get_tag(), ASN1_INTEGER, and XYSSL_ERR_ASN1_INVALID_LENGTH.

Referenced by x509_get_ext(), x509_get_version(), and x509parse_key().

5.136.1.3 static int asn1_get_len (unsigned char **p, unsigned char *end, int *len) [static]

Definition at line 52 of file x509parse.c.

References XYSSL_ERR_ASN1_INVALID_LENGTH, and XYSSL_ERR_ASN1_OUT_OF_DATA.

Referenced by asn1_get_tag(), x509_get_name(), and x509_get_serial().

5.136.1.4 static int asn1_get_mpi (unsigned char *p*, unsigned char **end*, mpi **X*) [static]**

Definition at line 149 of file x509parse.c.

References `asn1_get_tag()`, `ASN1_INTEGER`, and `mpi_read_binary()`.

Referenced by `x509_get_pubkey()`, and `x509parse_key()`.

5.136.1.5 static int asn1_get_tag (unsigned char *p*, unsigned char **end*, int **len*, int *tag*) [static]**

Definition at line 93 of file x509parse.c.

References `asn1_get_len()`, `XYSSL_ERR_ASN1_OUT_OF_DATA`, and `XYSSL_ERR_ASN1_UNEXPECTED_TAG`.

Referenced by `asn1_get_bool()`, `asn1_get_int()`, `asn1_get_mpi()`, `x509_get_alg()`, `x509_get_dates()`, `x509_get_ext()`, `x509_get_name()`, `x509_get_pubkey()`, `x509_get_sig()`, `x509_get_uid()`, `x509_get_version()`, `x509parse_crt()`, and `x509parse_key()`.

5.136.1.6 static void x509_des3_decrypt (unsigned char *des3_iv*[8], unsigned char **buf*, int *buflen*, unsigned char **pwd*, int *pwdlen*) [static]

Definition at line 1042 of file x509parse.c.

References `des3_crypt_cbc()`, `des3_set3key_dec()`, `DES_DECRYPT`, `md5_finish()`, `md5_starts()`, and `md5_update()`.

Referenced by `x509parse_key()`.

5.136.1.7 void x509_free (x509_cert **crt*)

Unallocate all certificate data.

Definition at line 1613 of file x509parse.c.

References `_x509_cert::issuer`, `_x509_buf::len`, `_x509_cert::next`, `_x509_name::next`, `_x509_buf::p`, `_x509_cert::raw`, `_x509_cert::rsa`, `rsa_free()`, and `_x509_cert::subject`.

Referenced by `main()`, `ssl_free()`, `ssl_test()`, `x509_self_test()`, and `x509parse_crt()`.

5.136.1.8 static int x509_get_alg (unsigned char *p*, unsigned char **end*, x509_buf **alg*) [static]**

Definition at line 229 of file x509parse.c.

References `ASN1_CONSTRUCTED`, `asn1_get_tag()`, `ASN1_NULL`, `ASN1_OID`, `ASN1_SEQUENCE`, `_x509_buf::len`, `_x509_buf::p`, `_x509_buf::tag`, `XYSSL_ERR_ASN1_LENGTH_MISMATCH`, and `XYSSL_ERR_X509_CERT_INVALID_ALG`.

Referenced by `x509_get_pubkey()`, and `x509parse_crt()`.

5.136.1.9 static int x509_get_dates (unsigned char *p*, unsigned char **end*, x509_time **from*, x509_time **to*) [static]**

Definition at line 358 of file x509parse.c.

References ASN1_CONSTRUCTED, asn1_get_tag(), ASN1_SEQUENCE, ASN1_UTC_TIME, _x509_time::day, _x509_time::hour, _x509_time::min, _x509_time::mon, _x509_time::sec, XYSSL_ERR_ASN1_LENGTH_MISMATCH, XYSSL_ERR_X509_CERT_INVALID_DATE, and _x509_time::year.

Referenced by x509parse_crt().

5.136.1.10 `static int x509_get_ext (unsigned char **p, unsigned char *end, x509_buf *ext, int *ca_istrue, int *max_pathlen) [static]`

Definition at line 530 of file x509parse.c.

References ASN1_CONSTRUCTED, ASN1_CONTEXT_SPECIFIC, asn1_get_bool(), asn1_get_int(), asn1_get_tag(), ASN1_OCTET_STRING, ASN1_SEQUENCE, _x509_buf::len, _x509_buf::p, _x509_buf::tag, XYSSL_ERR_ASN1_LENGTH_MISMATCH, XYSSL_ERR_ASN1_UNEXPECTED_TAG, and XYSSL_ERR_X509_CERT_INVALID_EXTENSIONS.

Referenced by x509parse_crt().

5.136.1.11 `static int x509_get_iv (unsigned char *s, unsigned char iv[8]) [static]`

Definition at line 1018 of file x509parse.c.

References XYSSL_ERR_X509_KEY_INVALID_ENC_IV.

Referenced by x509parse_key().

5.136.1.12 `static int x509_get_name (unsigned char **p, unsigned char *end, x509_name *cur) [static]`

Definition at line 276 of file x509parse.c.

References ASN1_BMP_STRING, ASN1_CONSTRUCTED, asn1_get_len(), asn1_get_tag(), ASN1_IA5_STRING, ASN1_OID, ASN1_PRINTABLE_STRING, ASN1_SEQUENCE, ASN1_SET, ASN1_T61_STRING, ASN1_UNIVERSAL_STRING, ASN1_UTF8_STRING, _x509_buf::len, _x509_name::next, _x509_name::oid, _x509_buf::p, _x509_buf::tag, _x509_name::val, XYSSL_ERR_ASN1_LENGTH_MISMATCH, XYSSL_ERR_ASN1_OUT_OF_DATA, XYSSL_ERR_ASN1_UNEXPECTED_TAG, and XYSSL_ERR_X509_CERT_INVALID_NAME.

Referenced by x509parse_crt().

5.136.1.13 `static int x509_get_pubkey (unsigned char **p, unsigned char *end, x509_buf *pk_alg_oid, mpi *N, mpi *E) [static]`

Definition at line 421 of file x509parse.c.

References ASN1_BIT_STRING, ASN1_CONSTRUCTED, asn1_get_mpi(), asn1_get_tag(), ASN1_SEQUENCE, _x509_buf::len, OID_PKCS1_RSA, _x509_buf::p, x509_get_alg(), XYSSL_ERR_ASN1_LENGTH_MISMATCH, XYSSL_ERR_ASN1_OUT_OF_DATA, XYSSL_ERR_X509_CERT_INVALID_PUBKEY, and XYSSL_ERR_X509_CERT_UNKNOWN_PK_ALG.

Referenced by x509parse_crt().

5.136.1.14 static int x509_get_serial (unsigned char ** *p*, unsigned char * *end*, x509_buf * *serial*) [static]

Definition at line 198 of file x509parse.c.

References ASN1_CONTEXT_SPECIFIC, asn1_get_len(), ASN1_INTEGER, ASN1_PRIMITIVE, _x509_buf::len, _x509_buf::p, _x509_buf::tag, XYSSL_ERR_ASN1_OUT_OF_DATA, XYSSL_ERR_ASN1_UNEXPECTED_TAG, and XYSSL_ERR_X509_CERT_INVALID_SERIAL.

Referenced by x509parse_crt().

5.136.1.15 static int x509_get_sig (unsigned char ** *p*, unsigned char * *end*, x509_buf * *sig*) [static]

Definition at line 476 of file x509parse.c.

References ASN1_BIT_STRING, asn1_get_tag(), _x509_buf::len, _x509_buf::p, _x509_buf::tag, and XYSSL_ERR_X509_CERT_INVALID_SIGNATURE.

Referenced by x509parse_crt().

5.136.1.16 static int x509_get_uid (unsigned char ** *p*, unsigned char * *end*, x509_buf * *uid*, int *n*) [static]

Definition at line 501 of file x509parse.c.

References ASN1_CONSTRUCTED, ASN1_CONTEXT_SPECIFIC, asn1_get_tag(), _x509_buf::len, _x509_buf::p, _x509_buf::tag, and XYSSL_ERR_ASN1_UNEXPECTED_TAG.

Referenced by x509parse_crt().

5.136.1.17 static int x509_get_version (unsigned char ** *p*, unsigned char * *end*, int * *ver*) [static]

Definition at line 168 of file x509parse.c.

References ASN1_CONSTRUCTED, ASN1_CONTEXT_SPECIFIC, asn1_get_int(), asn1_get_tag(), XYSSL_ERR_ASN1_LENGTH_MISMATCH, XYSSL_ERR_ASN1_UNEXPECTED_TAG, and XYSSL_ERR_X509_CERT_INVALID_VERSION.

Referenced by x509parse_crt().

5.136.1.18 static void x509_hash (unsigned char * *in*, int *len*, int *alg*, unsigned char * *out*) [static]

Definition at line 1481 of file x509parse.c.

References md2(), md4(), md5(), RSA_MD2, RSA_MD4, RSA_MD5, RSA_SHA1, and sha1().

Referenced by x509parse_verify().

5.136.1.19 int x509_self_test (int *verbose*)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Definition at line 1675 of file x509parse.c.

References `rsa_free()`, `test_ca_cert`, `test_ca_key`, `test_ca_pwd`, `test_cli_cert`, `x509_free()`, `x509parse_cert()`, `x509parse_key()`, and `x509parse_verify()`.

Referenced by `main()`.

5.136.1.20 char* x509parse_cert_info (char * prefix, x509_cert * crt)

Returns an informational string about the certificate.

Definition at line 1399 of file x509parse.c.

References `buf`, `_x509_time::day`, `_x509_time::hour`, `_x509_cert::issuer`, `_x509_buf::len`, `_x509_time::min`, `_x509_time::mon`, `mpi::n`, `rsa_context::N`, `_x509_buf::p`, `_x509_cert::rsa`, `RSA_MD2`, `RSA_MD4`, `RSA_MD5`, `RSA_SHA1`, `_x509_time::sec`, `_x509_cert::serial`, `_x509_cert::sig_oid1`, `_x509_cert::subject`, `_x509_cert::valid_from`, `_x509_cert::valid_to`, `_x509_cert::version`, `x509parse_dn_gets()`, and `_x509_time::year`.

Referenced by `debug_print_cert()`, and `main()`.

5.136.1.21 int x509parse_cert (x509_cert * crt, unsigned char * buf, int buflen)

Parse one or more certificates and add them to the chained list.

Parameters

chain points to the start of the chain
buf buffer holding the certificate data
buflen size of the buffer

Returns

0 if successful, or a specific X509 error code

Definition at line 647 of file x509parse.c.

References `ASN1_CONSTRUCTED`, `asn1_get_tag()`, `ASN1_SEQUENCE`, `base64_decode()`, `_x509_cert::ca_istrue`, `rsa_context::E`, `_x509_cert::issuer`, `_x509_cert::issuer_id`, `_x509_cert::issuer_raw`, `rsa_context::len`, `_x509_buf::len`, `_x509_cert::max_pathlen`, `mpi_size()`, `rsa_context::N`, `_x509_cert::next`, `OID_PKCS1`, `_x509_buf::p`, `_x509_cert::pk_oid`, `_x509_cert::raw`, `_x509_cert::rsa`, `rsa_check_pubkey()`, `_x509_cert::serial`, `_x509_cert::sig`, `_x509_cert::sig_oid1`, `_x509_cert::sig_oid2`, `_x509_cert::subject`, `_x509_cert::subject_id`, `_x509_cert::subject_raw`, `_x509_cert::tbs`, `_x509_cert::v3_ext`, `_x509_cert::valid_from`, `_x509_cert::valid_to`, `_x509_cert::version`, `x509_free()`, `x509_get_alg()`, `x509_get_dates()`, `x509_get_ext()`, `x509_get_name()`, `x509_get_pubkey()`, `x509_get_serial()`, `x509_get_sig()`, `x509_get_uid()`, `x509_get_version()`, `x509parse_cert()`, `XYSSL_ERR_ASN1_LENGTH_MISMATCH`, `XYSSL_ERR_BASE64_INVALID_CHARACTER`, `XYSSL_ERR_X509_CERT_INVALID_FORMAT`, `XYSSL_ERR_X509_CERT_INVALID_PEM`, `XYSSL_ERR_X509_CERT_SIG_MISMATCH`, `XYSSL_ERR_X509_CERT_UNKNOWN_SIG_ALG`, and `XYSSL_ERR_X509_CERT_UNKNOWN_VERSION`.

Referenced by `main()`, `ssl_parse_certificate()`, `ssl_test()`, `x509_self_test()`, `x509parse_cert()`, and `x509parse_crfile()`.

5.136.1.22 int x509parse_crtfile (x509_cert * *crt*, char * *path*)

Load one or more certificates and add them to the chained list.

Parameters

chain points to the start of the chain
path filename to read the certificates from

Returns

0 if successful, or a specific X509 error code

Definition at line 979 of file x509parse.c.

References buf, f, and x509parse_crt().

5.136.1.23 int x509parse_dn_gets (char * *buf*, char * *end*, x509_name * *dn*)

Store the certificate DN in printable form into buf; no more than (end - buf) characters will be written.

Definition at line 1316 of file x509parse.c.

References _x509_buf::len, _x509_name::next, _x509_name::oid, OID_PKCS9, OID_X520, _x509_buf::p, PKCS9_EMAIL, _x509_name::val, X520_COMMON_NAME, X520_COUNTRY, X520_LOCALITY, X520_ORG_UNIT, X520_ORGANIZATION, and X520_STATE.

Referenced by x509parse_cert_info().

5.136.1.24 int x509parse_expired (x509_cert * *crt*)

Return 0 if the certificate is still valid, or BADCERT_EXPIRED.

Definition at line 1458 of file x509parse.c.

References BADCERT_EXPIRED, _x509_time::day, _x509_time::mon, _x509_cert::valid_to, and _x509_time::year.

Referenced by x509parse_verify().

5.136.1.25 int x509parse_key (rsa_context * *rsa*, unsigned char * *buf*, int *buflen*, unsigned char * *pwd*, int *pwdlen*)

Parse a private RSA key.

Parameters

rsa RSA context to be initialized
buf input buffer
buflen size of the buffer
pwd password for decryption (optional)
pwdlen size of the password

Returns

0 if successful, or a specific X509 error code

Definition at line 1082 of file x509parse.c.

References ASN1_CONSTRUCTED, asn1_get_int(), asn1_get_mpi(), asn1_get_tag(), ASN1_SEQUENCE, base64_decode(), rsa_context::D, rsa_context::DP, rsa_context::DQ, rsa_context::E, rsa_context::len, mpi_size(), rsa_context::N, rsa_context::P, rsa_context::Q, rsa_context::QP, rsa_check_privkey(), rsa_free(), rsa_context::ver, x509_des3_decrypt(), x509_get_iv(), XYSSL_ERR_ASN1_LENGTH_MISMATCH, XYSSL_ERR_BASE64_INVALID_CHARACTER, XYSSL_ERR_X509_FEATURE_UNAVAILABLE, XYSSL_ERR_X509_KEY_INVALID_ENC_IV, XYSSL_ERR_X509_KEY_INVALID_FORMAT, XYSSL_ERR_X509_KEY_INVALID_PEM, XYSSL_ERR_X509_KEY_INVALID_VERSION, XYSSL_ERR_X509_KEY_PASSWORD_MISMATCH, XYSSL_ERR_X509_KEY_PASSWORD_REQUIRED, and XYSSL_ERR_X509_KEY_UNKNOWN_ENC_ALG.

Referenced by main(), ssl_test(), x509_self_test(), and x509parse_keyfile().

5.136.1.26 int x509parse_keyfile (rsa_context *rsa, char *path, char *password)

Load and parse a private RSA key.

Parameters

- rsa* RSA context to be initialized
- path* filename to read the private key from
- pwd* password to decrypt the file (can be NULL)

Returns

0 if successful, or a specific X509 error code

Definition at line 1269 of file x509parse.c.

References buf, f, and x509parse_key().

5.136.1.27 int x509parse_verify (x509_cert *crt, x509_cert *trust_ca, char *cn, int *flags)

Verify the certificate signature.

Parameters

- crt* a certificate to be verified
- trust_ca* the trusted CA chain
- cn* expected Common Name (can be set to NULL if the CN must not be verified)
- flags* result of the verification

Returns

0 if successful or XYSSL_ERR_X509_SIG_VERIFY_FAILED, in which case *flags will have one or more of the following values set: BADCERT_EXPIRED -- BADCERT_REVOKED -- BADCERT_CN_MISMATCH -- BADCERT_NOT_TRUSTED

Note

TODO: add two arguments, depth and crl

Definition at line 1503 of file x509parse.c.

References BADCERT_CN_MISMATCH, BADCERT_NOT_TRUSTED, _x509_cert::ca_istrue, cur, _x509_cert::issuer_raw, _x509_buf::len, _x509_cert::max_pathlen, _x509_cert::next, _x509_name::next, _x509_name::oid, OID_CN, _x509_buf::p, _x509_cert::rsa, rsa_pkcs1_verify(), RSA_PUBLIC, _x509_cert::sig, _x509_cert::sig_oid1, _x509_cert::subject, _x509_cert::subject_raw, _x509_cert::tbs, _x509_name::val, _x509_cert::version, x509_hash(), x509parse_expired(), and XYSSL_ERR_X509_CERT_VERIFY_FAILED.

Referenced by ssl_parse_certificate(), and x509_self_test().

5.137 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/aes/aescript2.c File Reference

```
#include <sys/types.h>
#include <unistd.h>
#include <string.h>
#include <stdlib.h>
#include <stdio.h>
#include <time.h>
#include "xyssl/aes.h"
#include "xyssl/sha2.h"
```

Defines

- `#define MODE_ENCRYPT 0`
- `#define MODE_DECRYPT 1`
- `#define USAGE`

Functions

- `int main (int argc, char *argv[])`

5.137.1 Define Documentation

5.137.1.1 `#define MODE_DECRYPT 1`

Definition at line 42 of file aescript2.c.

5.137.1.2 `#define MODE_ENCRYPT 0`

Definition at line 41 of file aescript2.c.

5.137.1.3 `#define USAGE`

Value:

```
"\n  aescript2 <mode> <input filename> <output filename> <key>\n" \
"\n    <mode>: 0 = encrypt, 1 = decrypt\n" \
"\n  example: aescript2 0 file file.aes hex:E76B2413958B00E193\n" \
"\n"
```

Definition at line 44 of file aescript2.c.

Referenced by `main()`.

5.137.2 Function Documentation

5.137.2.1 int main (int *argc*, char * *argv*[])

Definition at line 50 of file aescrypt2.c.

References `aes_crypt_ecb()`, `AES_DECRYPT`, `AES_ENCRYPT`, `aes_setkey_dec()`, `aes_setkey_enc()`, `int`, `MODE_DECRYPT`, `MODE_ENCRYPT`, `sha2_finish()`, `sha2_hmac_finish()`, `sha2_hmac_starts()`, `sha2_hmac_update()`, `sha2_starts()`, `sha2_update()`, and `USAGE`.

5.138 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/hello.c File Reference

```
#include <stdio.h>
#include "xyssl/md5.h"
```

Functions

- [int main](#) (void)

5.138.1 Function Documentation

5.138.1.1 int main (void)

Definition at line 29 of file hello.c.

References [md5\(\)](#).

5.139 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/md5sum.c File Reference

```
#include <string.h>
#include <stdio.h>
#include "xyssl/md5.h"
```

Functions

- static [int md5_wrapper](#) (char *filename, unsigned char *sum)
- static [int md5_print](#) (char *filename)
- static [int md5_check](#) (char *filename)
- [int main](#) (int argc, char *argv[])

5.139.1 Function Documentation

5.139.1.1 [int main](#) (int *argc*, char * *argv*[])

Definition at line 131 of file md5sum.c.

References [md5_check\(\)](#), and [md5_print\(\)](#).

5.139.1.2 [static int md5_check](#) (char * *filename*) [[static](#)]

Definition at line 58 of file md5sum.c.

References [buf](#), [f](#), and [md5_wrapper\(\)](#).

Referenced by [main\(\)](#).

5.139.1.3 [static int md5_print](#) (char * *filename*) [[static](#)]

Definition at line 43 of file md5sum.c.

References [md5_wrapper\(\)](#).

Referenced by [main\(\)](#).

5.139.1.4 [static int md5_wrapper](#) (char * *filename*, unsigned char * *sum*) [[static](#)]

Definition at line 30 of file md5sum.c.

References [md5_file\(\)](#).

Referenced by [md5_check\(\)](#), and [md5_print\(\)](#).

5.140 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/sha1sum.c File Reference

```
#include <string.h>
#include <stdio.h>
#include "xyssl/sha1.h"
```

Functions

- static [int sha1_wrapper](#) (char *filename, unsigned char *sum)
- static [int sha1_print](#) (char *filename)
- static [int sha1_check](#) (char *filename)
- [int main](#) (int argc, char *argv[])

5.140.1 Function Documentation

5.140.1.1 [int main](#) (int *argc*, char * *argv*[])

Definition at line 131 of file sha1sum.c.

References [sha1_check\(\)](#), and [sha1_print\(\)](#).

5.140.1.2 [static int sha1_check](#) (char * *filename*) [[static](#)]

Definition at line 58 of file sha1sum.c.

References [buf](#), [f](#), and [sha1_wrapper\(\)](#).

Referenced by [main\(\)](#).

5.140.1.3 [static int sha1_print](#) (char * *filename*) [[static](#)]

Definition at line 43 of file sha1sum.c.

References [sha1_wrapper\(\)](#).

Referenced by [main\(\)](#).

5.140.1.4 [static int sha1_wrapper](#) (char * *filename*, unsigned char * *sum*) [[static](#)]

Definition at line 30 of file sha1sum.c.

References [sha1_file\(\)](#).

Referenced by [sha1_check\(\)](#), and [sha1_print\(\)](#).

5.141 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/sha2sum.c File Reference

```
#include <string.h>
#include <stdio.h>
#include "xyssl/sha2.h"
```

Functions

- static [int sha2_wrapper](#) (char *filename, unsigned char *sum)
- static [int sha2_print](#) (char *filename)
- static [int sha2_check](#) (char *filename)
- [int main](#) (int argc, char *argv[])

5.141.1 Function Documentation

5.141.1.1 [int main](#) (int *argc*, char * *argv*[])

Definition at line 131 of file sha2sum.c.

References [sha2_check\(\)](#), and [sha2_print\(\)](#).

5.141.1.2 [static int sha2_check](#) (char * *filename*) [[static](#)]

Definition at line 58 of file sha2sum.c.

References [buf](#), [f](#), and [sha2_wrapper\(\)](#).

Referenced by [main\(\)](#).

5.141.1.3 [static int sha2_print](#) (char * *filename*) [[static](#)]

Definition at line 43 of file sha2sum.c.

References [sha2_wrapper\(\)](#).

Referenced by [main\(\)](#).

5.141.1.4 [static int sha2_wrapper](#) (char * *filename*, unsigned char * *sum*) [[static](#)]

Definition at line 30 of file sha2sum.c.

References [sha2_file\(\)](#).

Referenced by [sha2_check\(\)](#), and [sha2_print\(\)](#).

5.142 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/dh_client.c File Reference

```
#include <string.h>
#include <stdio.h>
#include "xyssl/net.h"
#include "xyssl/aes.h"
#include "xyssl/dhm.h"
#include "xyssl/rsa.h"
#include "xyssl/sha1.h"
#include "xyssl/havege.h"
```

Defines

- `#define SERVER_NAME "localhost"`
- `#define SERVER_PORT 11999`

Functions

- `int main (void)`

5.142.1 Define Documentation

5.142.1.1 `#define SERVER_NAME "localhost"`

Definition at line 35 of file `dh_client.c`.

Referenced by `main()`.

5.142.1.2 `#define SERVER_PORT 11999`

Definition at line 36 of file `dh_client.c`.

Referenced by `main()`.

5.142.2 Function Documentation

5.142.2.1 `int main (void)`

Definition at line 38 of file `dh_client.c`.

References `aes_crypt_ecb()`, `AES_DECRYPT`, `aes_setkey_dec()`, `buf`, `dhm_calc_secret()`, `dhm_free()`, `dhm_make_public()`, `dhm_read_params()`, `rsa_context::E`, `f`, `havege_init()`, `havege_rand()`, `dhm_context::len`, `rsa_context::len`, `mpi_msb()`, `mpi_read_file()`, `rsa_context::N`, `net_close()`, `net_connect()`, `net_recv()`, `net_send()`, `rsa_free()`, `rsa_init()`, `rsa_pkcs1_verify()`, `RSA_PKCS_V15`, `RSA_PUBLIC`, `RSA_SHA1`, `server_fd`, `SERVER_NAME`, `SERVER_PORT`, and `sha1()`.

5.143 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/dh_genprime.c File Reference

```
#include <stdio.h>
#include "xyssl/bignum.h"
#include "xyssl/config.h"
#include "xyssl/havege.h"
```

Defines

- `#define DH_P_SIZE 1024`
- `#define GENERATOR "4"`

Functions

- `int main (void)`

5.143.1 Define Documentation

5.143.1.1 `#define DH_P_SIZE 1024`

Definition at line 35 of file dh_genprime.c.

Referenced by main().

5.143.1.2 `#define GENERATOR "4"`

Definition at line 36 of file dh_genprime.c.

Referenced by main().

5.143.2 Function Documentation

5.143.2.1 `int main (void)`

Definition at line 38 of file dh_genprime.c.

References DH_P_SIZE, GENERATOR, havege_init(), havege_rand(), mpi_div_int(), mpi_free(), mpi_gen_prime(), mpi_init(), mpi_is_prime(), mpi_read_string(), mpi_sub_int(), mpi_write_file(), and P.

5.144 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/dh_server.c File Reference

```
#include <string.h>
#include <stdio.h>
#include "xyssl/net.h"
#include "xyssl/aes.h"
#include "xyssl/dhm.h"
#include "xyssl/rsa.h"
#include "xyssl/sha1.h"
#include "xyssl/havege.h"
```

Defines

- `#define SERVER_PORT 11999`
- `#define PLAINTEXT "==Hello there!=="`

Functions

- `int main (void)`

5.144.1 Define Documentation

5.144.1.1 `#define PLAINTEXT "==Hello there!=="`

Definition at line 36 of file `dh_server.c`.

Referenced by `main()`.

5.144.1.2 `#define SERVER_PORT 11999`

Definition at line 35 of file `dh_server.c`.

5.144.2 Function Documentation

5.144.2.1 `int main (void)`

Definition at line 38 of file `dh_server.c`.

References `aes_crypt_ecb()`, `AES_ENCRYPT`, `aes_setkey_enc()`, `buf`, `client_fd`, `rsa_context::D`, `dhm_calc_secret()`, `dhm_free()`, `dhm_make_params()`, `dhm_read_public()`, `rsa_context::DP`, `rsa_context::DQ`, `rsa_context::E`, `f`, `dhm_context::G`, `havege_init()`, `havege_rand()`, `dhm_context::len`, `rsa_context::len`, `mpi_msb()`, `mpi_read_file()`, `rsa_context::N`, `net_accept()`, `net_bind()`, `net_close()`, `net_recv()`, `net_send()`, `dhm_context::P`, `rsa_context::P`, `PLAINTEXT`, `rsa_context::Q`, `rsa_context::QP`, `rsa_free()`, `rsa_init()`, `rsa_pkcs1_sign()`, `RSA_PKCS_V15`, `RSA_PRIVATE`, `RSA_SHA1`, `SERVER_PORT`, and `sha1()`.

5.145 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/mpi_demo.c File Reference

```
#include <stdio.h>
#include "xyssl/bignum.h"
```

Functions

- [int main](#) (void)

5.145.1 Function Documentation

5.145.1.1 int main (void)

Definition at line 29 of file mpi_demo.c.

References [mpi_exp_mod\(\)](#), [mpi_free\(\)](#), [mpi_init\(\)](#), [mpi_inv_mod\(\)](#), [mpi_mul_mpi\(\)](#), [mpi_read_string\(\)](#), [mpi_sub_int\(\)](#), [mpi_write_file\(\)](#), and [P](#).

5.146 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/rsa_genkey.c File Reference

```
#include <stdio.h>
#include "xyssl/havege.h"
#include "xyssl/bignum.h"
#include "xyssl/x509.h"
#include "xyssl/rsa.h"
```

Defines

- `#define KEY_SIZE 1024`
- `#define EXPONENT 65537`

Functions

- `int main (void)`

5.146.1 Define Documentation

5.146.1.1 `#define EXPONENT 65537`

Definition at line 33 of file `rsa_genkey.c`.

5.146.1.2 `#define KEY_SIZE 1024`

Definition at line 32 of file `rsa_genkey.c`.

5.146.2 Function Documentation

5.146.2.1 `int main (void)`

Definition at line 35 of file `rsa_genkey.c`.

References `rsa_context::D`, `rsa_context::DP`, `rsa_context::DQ`, `rsa_context::E`, `EXPONENT`, `havege_init()`, `havege_rand()`, `KEY_SIZE`, `mpi_write_file()`, `rsa_context::N`, `rsa_context::P`, `rsa_context::Q`, `rsa_context::QP`, `rsa_free()`, `rsa_gen_key()`, `rsa_init()`, and `RSA_PKCS_V15`.

5.147 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/rsa_sign.c File Reference

```
#include <string.h>
#include <stdio.h>
#include "xyssl/rsa.h"
#include "xyssl/sha1.h"
```

Functions

- `int main (int argc, char *argv[])`

5.147.1 Function Documentation

5.147.1.1 `int main (int argc, char *argv[])`

Definition at line 31 of file `rsa_sign.c`.

References `buf`, `rsa_context::D`, `rsa_context::DP`, `rsa_context::DQ`, `rsa_context::E`, `f`, `rsa_context::len`, `mpi_msb()`, `mpi_read_file()`, `rsa_context::N`, `rsa_context::P`, `rsa_context::Q`, `rsa_context::QP`, `rsa_init()`, `rsa_pkcs1_sign()`, `RSA_PKCS_V15`, `RSA_PRIVATE`, `RSA_SHA1`, and `sha1_file()`.

5.148 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/rsa_verify.c File Reference

```
#include <string.h>
#include <stdio.h>
#include "xyssl/rsa.h"
#include "xyssl/sha1.h"
```

Functions

- [int main](#) ([int](#) argc, [char](#) *argv[])

5.148.1 Function Documentation

5.148.1.1 [int main](#) ([int](#) argc, [char](#) * argv[])

Definition at line 31 of file `rsa_verify.c`.

References `buf`, `rsa_context::E`, `f`, `rsa_context::len`, `mpi_msb()`, `mpi_read_file()`, `rsa_context::N`, `rsa_init()`, `rsa_pkcs1_verify()`, `RSA_PKCS_V15`, `RSA_PUBLIC`, `RSA_SHA1`, and `sha1_file()`.

5.149 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/ssl/ssl_client1.c File Reference

```
#include <string.h>
#include <stdio.h>
#include "xyssl/net.h"
#include "xyssl/ssl.h"
#include "xyssl/havege.h"
```

Defines

- #define [SERVER_PORT](#) 443
- #define [SERVER_NAME](#) "xyssl.org"
- #define [GET_REQUEST](#)
- #define [DEBUG_LEVEL](#) 0

Functions

- void [my_debug](#) (void *ctx, [int](#) level, char *str)
- [int](#) [main](#) (void)

5.149.1 Define Documentation

5.149.1.1 #define [DEBUG_LEVEL](#) 0

Definition at line 42 of file ssl_client1.c.

Referenced by [my_debug\(\)](#).

5.149.1.2 #define [GET_REQUEST](#)

Value:

```
"GET /hello/ HTTP/1.1\r\n" \
"Host: xyssl.org\r\n\r\n"
```

Definition at line 38 of file ssl_client1.c.

Referenced by [main\(\)](#).

5.149.1.3 #define [SERVER_NAME](#) "xyssl.org"

Definition at line 37 of file ssl_client1.c.

5.149.1.4 #define [SERVER_PORT](#) 443

Definition at line 32 of file ssl_client1.c.

5.149.2 Function Documentation

5.149.2.1 `int main (void)`

Definition at line 53 of file `ssl_client1.c`.

References `buf`, `GET_REQUEST`, `havege_init()`, `havege_rand()`, `my_debug()`, `net_close()`, `net_connect()`, `net_recv()`, `net_send()`, `server_fd`, `SERVER_NAME`, `SERVER_PORT`, `ssl_close_notify()`, `ssl_default_ciphers`, `ssl_free()`, `ssl_init()`, `SSL_IS_CLIENT`, `ssl_read()`, `ssl_set_authmode()`, `ssl_set_bio()`, `ssl_set_ciphers()`, `ssl_set_dbg()`, `ssl_set_endpoint()`, `ssl_set_rng()`, `ssl_set_session()`, `SSL_VERIFY_NONE`, `ssl_write()`, `XYSSL_ERR_NET_TRY_AGAIN`, and `XYSSL_ERR_SSL_PEER_CLOSE_NOTIFY`.

5.149.2.2 `void my_debug (void * ctx, int level, char * str)`

Definition at line 44 of file `ssl_client1.c`.

References `DEBUG_LEVEL`.

Referenced by `main()`, and `ssl_test()`.

5.150 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/ssl/ssl_client2.c File Reference

```
#include <string.h>
#include <stdio.h>
#include "xyssl/net.h"
#include "xyssl/ssl.h"
#include "xyssl/havege.h"
#include "xyssl/certs.h"
#include "xyssl/x509.h"
```

Defines

- #define [SERVER_PORT](#) 443
- #define [SERVER_NAME](#) "xyssl.org"
- #define [GET_REQUEST](#)
- #define [DEBUG_LEVEL](#) 0

Functions

- void [my_debug](#) (void *ctx, int level, char *str)
- int [main](#) (void)

5.150.1 Define Documentation

5.150.1.1 #define [DEBUG_LEVEL](#) 0

Definition at line 44 of file ssl_client2.c.

5.150.1.2 #define [GET_REQUEST](#)

Value:

```
"GET /hello/ HTTP/1.1\r\n" \
"Host: xyssl.org\r\n\r\n"
```

Definition at line 40 of file ssl_client2.c.

5.150.1.3 #define [SERVER_NAME](#) "xyssl.org"

Definition at line 39 of file ssl_client2.c.

5.150.1.4 #define [SERVER_PORT](#) 443

Definition at line 34 of file ssl_client2.c.

5.150.2 Function Documentation

5.150.2.1 `int main (void)`

Definition at line 55 of file `ssl_client2.c`.

References `BADCERT_CN_MISMATCH`, `BADCERT_EXPIRED`, `BADCERT_NOT_TRUSTED`, `BADCERT_REVOKED`, `buf`, `GET_REQUEST`, `havege_init()`, `havege_rand()`, `net_close()`, `net_connect()`, `net_recv()`, `net_send()`, `_ssl_context::peer_cert`, `rsa_free()`, `server_fd`, `SERVER_NAME`, `SERVER_PORT`, `ssl_close_notify()`, `ssl_default_ciphers`, `ssl_free()`, `ssl_get_cipher()`, `ssl_get_verify_result()`, `ssl_handshake()`, `ssl_init()`, `SSL_IS_CLIENT`, `ssl_read()`, `ssl_set_authmode()`, `ssl_set_bio()`, `ssl_set_ca_chain()`, `ssl_set_ciphers()`, `ssl_set_endpoint()`, `ssl_set_hostname()`, `ssl_set_own_cert()`, `ssl_set_rng()`, `ssl_set_session()`, `SSL_VERIFY_OPTIONAL`, `ssl_write()`, `test_cli_cert`, `test_cli_key`, `x509_free()`, `x509parse_cert_info()`, `x509parse_cert()`, `x509parse_key()`, `xyssl_ca_cert`, `XYSSL_ERR_NET_TRY_AGAIN`, and `XYSSL_ERR_SSL_PEER_CLOSE_NOTIFY`.

5.150.2.2 `void my_debug (void *ctx, int level, char *str)`

Definition at line 46 of file `ssl_client2.c`.

References `DEBUG_LEVEL`.

5.151 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/ssl/ssl_server.c File Reference

```
#include <string.h>
#include <stdlib.h>
#include <stdio.h>
#include "xyssl/havege.h"
#include "xyssl/certs.h"
#include "xyssl/x509.h"
#include "xyssl/ssl.h"
#include "xyssl/net.h"
```

Defines

- #define [HTTP_RESPONSE](#)
- #define [DEBUG_LEVEL](#) 0

Functions

- void [my_debug](#) (void *ctx, [int](#) level, char *str)
- static [int](#) [my_get_session](#) ([ssl_context](#) *ssl)
- static [int](#) [my_set_session](#) ([ssl_context](#) *ssl)
- [int](#) [main](#) (void)

Variables

- char * [my_dhm_P](#)
- char * [my_dhm_G](#) = "4"
- [int](#) [my_ciphers](#) []
- [ssl_session](#) * [s_list_1st](#) = NULL
- [ssl_session](#) * [cur](#)
- [ssl_session](#) * [prv](#)

5.151.1 Define Documentation

5.151.1.1 #define [DEBUG_LEVEL](#) 0

Definition at line 75 of file `ssl_server.c`.

5.151.1.2 #define [HTTP_RESPONSE](#)

Value:

```
"HTTP/1.0 200 OK\r\nContent-Type: text/html\r\n\r\n" \
"<h2><p><center>Successful connection using: %s\r\n"
```

Definition at line 39 of file ssl_server.c.

Referenced by http_ParseRequest(), main(), and mtp_http_Parse().

5.151.2 Function Documentation

5.151.2.1 int main (void)

Definition at line 160 of file ssl_server.c.

References buf, client_fd, havege_init(), havege_rand(), HTTP_RESPONSE, my_ciphers, my_debug(), my_dhm_G, my_dhm_P, my_get_session(), my_set_session(), net_accept(), net_bind(), net_close(), net_recv(), net_send(), _ssl_session::next, x509_cert::next, rsa_free(), ssl_close_notify(), ssl_free(), ssl_get_cipher(), ssl_handshake(), ssl_init(), SSL_IS_SERVER, ssl_read(), ssl_set_authmode(), ssl_set_bio(), ssl_set_ca_chain(), ssl_set_ciphers(), ssl_set_dbg(), ssl_set_dh_param(), ssl_set_endpoint(), ssl_set_own_cert(), ssl_set_rng(), ssl_set_scb(), ssl_set_session(), SSL_VERIFY_NONE, ssl_write(), test_ca_cert, test_srv_cert, test_srv_key, x509_free(), x509parse_cert(), x509parse_key(), XYSSL_ERR_NET_CONN_RESET, XYSSL_ERR_NET_TRY_AGAIN, and XYSSL_ERR_SSL_PEER_CLOSE_NOTIFY.

5.151.2.2 void my_debug (void * ctx, int level, char * str)

Definition at line 77 of file ssl_server.c.

References DEBUG_LEVEL.

5.151.2.3 static int my_get_session (ssl_context * ssl) [static]

Definition at line 93 of file ssl_server.c.

References _ssl_session::cipher, _ssl_session::id, _ssl_session::length, _ssl_session::master, _ssl_session::next, _ssl_context::resume, _ssl_context::session, _ssl_session::start, and _ssl_context::timeout.

Referenced by main().

5.151.2.4 static int my_set_session (ssl_context * ssl) [static]

Definition at line 125 of file ssl_server.c.

References _ssl_session::id, _ssl_session::length, _ssl_session::next, _ssl_context::session, _ssl_session::start, and _ssl_context::timeout.

Referenced by main().

5.151.3 Variable Documentation

5.151.3.1 ssl_session* cur

Definition at line 91 of file ssl_server.c.

Referenced by http_GetToken(), http_ParseRequest(), and x509parse_verify().

5.151.3.2 int my_ciphers[]

Initial value:

```
{
    SSL_EDH_RSA_AES_256_SHA,
    SSL_EDH_RSA_DES_168_SHA,
    SSL_RSA_AES_256_SHA,
    SSL_RSA_AES_128_SHA,
    SSL_RSA_DES_168_SHA,
    SSL_RSA_RC4_128_SHA,
    SSL_RSA_RC4_128_MD5,
    0
}
```

Definition at line 63 of file ssl_server.c.

Referenced by main().

5.151.3.3 char* my_dhm_G = "4"

Definition at line 58 of file ssl_server.c.

Referenced by main().

5.151.3.4 char* my_dhm_P

Initial value:

```
"E4004C1F94182000103D883A448B3F80"
"2CE4B44A83301270002C20D0321CFD00"
"11CCEF784C26A400F43DFB901BCA7538"
"F2C6B176001CF5A0FD16D2C48B1D0C1C"
"F6AC8E1DA6BCC3B4E1F96B0564965300"
"FFA1D0B601EB2800F489AA512C4B248C"
"01F76949A60BB7F00A40B1EAB64BDD48"
"E8A700D60B7F1200FA8E77B0A979DABF"
```

Definition at line 48 of file ssl_server.c.

Referenced by main().

5.151.3.5 ssl_session * prv

Definition at line 91 of file ssl_server.c.

Referenced by aes_self_test(), and des_self_test().

5.151.3.6 ssl_session* s_list_1st = NULL

Definition at line 90 of file ssl_server.c.

5.152 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/test/benchmark.c File Reference

```
#include <string.h>
#include <stdlib.h>
#include <stdio.h>
#include "xyssl/config.h"
#include "xyssl/md4.h"
#include "xyssl/md5.h"
#include "xyssl/sha1.h"
#include "xyssl/sha2.h"
#include "xyssl/arc4.h"
#include "xyssl/des.h"
#include "xyssl/aes.h"
#include "xyssl/rsa.h"
#include "xyssl/timing.h"
```

Defines

- #define [BUFSIZE](#) 1024

Functions

- static [int myrand](#) (void *rng_state)
- [int main](#) (void)

Variables

- unsigned char [buf](#) [BUFSIZE]

5.152.1 Define Documentation

5.152.1.1 #define BUFSIZE 1024

Definition at line 41 of file benchmark.c.

Referenced by [main\(\)](#).

5.152.2 Function Documentation

5.152.2.1 int main (void)

Definition at line 53 of file benchmark.c.

References `aes_crypt_cbc()`, `AES_ENCRYPT`, `aes_setkey_enc()`, `alarmed`, `arc4_crypt()`, `arc4_setup()`, `buf`, `BUFSIZE`, `des3_crypt_cbc()`, `des3_set3key_enc()`, `des_crypt_cbc()`, `DES_ENCRYPT`, `des_setkey_enc()`, `hardclock()`, `md4()`, `md5()`, `myrand()`, `rsa_free()`, `rsa_gen_key()`, `rsa_init()`, `RSA_PKCS_V15`, `rsa_private()`, `rsa_public()`, `set_alarm()`, `sha1()`, and `sha2()`.

5.152.2.2 `static int myrand (void * rng_state) [static]`

Definition at line 43 of file `benchmark.c`.

Referenced by `main()`.

5.152.3 Variable Documentation

5.152.3.1 `unsigned char buf[BUFSIZE]`

Definition at line 51 of file `benchmark.c`.

Referenced by `aes_self_test()`, `agent_xml_compose__create_row_nodes()`, `agent_xml_compose__data()`, `agent_xml_compose__task()`, `agent_xml_compose__tasks()`, `agent_xml_parse__fill_row_data()`, `agent_xml_parse__tasks()`, `arc4_self_test()`, `cmd_prompt_Thread()`, `des_self_test()`, `fipa_DateTime__Compose()`, `fipa_datetime_Parse()`, `fipa_envelope_Compose__date()`, `fipa_envelope_Compose__from()`, `fipa_envelope_HandleParams()`, `main()`, `MC_Initialize()`, `MC_LoadAgentFromFile()`, `MC_RetrieveAgentCode()`, `MC_SendAgentFile()`, `MC_SendAgentMigrationMessageFile()`, `md5_check()`, `md5_file()`, `md5_self_test()`, `message_InitializeFromAgent()`, `message_send_Thread()`, `message__xml_parse__message()`, `mtp_http_ComposeMessage()`, `mtp_http_CreateMessage()`, `mxml_fd_getc()`, `mxml_fd_putc()`, `mxmlLoadFd()`, `mxmlSaveFd()`, `net_htons()`, `rsa_pkcs1_decrypt()`, `rsa_pkcs1_verify()`, `sha1_check()`, `sha1_file()`, `sha1_self_test()`, `sha2_check()`, `sha2_file()`, `sha2_self_test()`, `sha4_file()`, `sha4__self_test()`, `ssl_flush_output()`, `ssl_parse_client_hello()`, `ssl_parse_finished()`, `ssl_parse_server_hello()`, `ssl_write_certificate_request()`, `ssl_write_client_hello()`, `ssl_write_server_hello()`, `udplisten_Thread()`, `x509parse_cert_info()`, `x509parse_crtfile()`, `x509parse_keyfile()`, and `xml_get_cdata()`.

5.153 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/test/selftest.c File Reference

```
#include <string.h>
#include <stdio.h>
#include "xyssl/config.h"
#include "xyssl/md2.h"
#include "xyssl/md4.h"
#include "xyssl/md5.h"
#include "xyssl/sha1.h"
#include "xyssl/sha2.h"
#include "xyssl/sha4.h"
#include "xyssl/arc4.h"
#include "xyssl/des.h"
#include "xyssl/aes.h"
#include "xyssl/base64.h"
#include "xyssl/bignum.h"
#include "xyssl/rsa.h"
#include "xyssl/x509.h"
```

Functions

- `int main (int argc, char *argv[])`

5.153.1 Function Documentation

5.153.1.1 `int main (int argc, char * argv[])`

Definition at line 44 of file selftest.c.

References `aes_self_test()`, `arc4_self_test()`, `base64_self_test()`, `des_self_test()`, `md2_self_test()`, `md4_self_test()`, `md5_self_test()`, `mpi_self_test()`, `rsa_self_test()`, `sha1_self_test()`, `sha2_self_test()`, `sha4_self_test()`, and `x509_self_test()`.

5.154 /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/test/ssl_test.c File Reference

```
#include <string.h>
#include <stdlib.h>
#include <stdio.h>
#include "xyssl/net.h"
#include "xyssl/ssl.h"
#include "xyssl/havege.h"
#include "xyssl/timing.h"
#include "xyssl/certs.h"
```

Data Structures

- struct [options](#)

Defines

- #define [OPMODE_NONE](#) 0
- #define [OPMODE_CLIENT](#) 1
- #define [OPMODE_SERVER](#) 2
- #define [IOMODE_BLOCK](#) 0
- #define [IOMODE_NONBLOCK](#) 1
- #define [COMMAND_READ](#) 1
- #define [COMMAND_WRITE](#) 2
- #define [COMMAND_BOTH](#) 3
- #define [DFL_OPMODE](#) OPMODE_NONE
- #define [DFL_IOMODE](#) IOMODE_BLOCK
- #define [DFL_SERVER_NAME](#) "localhost"
- #define [DFL_SERVER_PORT](#) 4433
- #define [DFL_COMMAND](#) COMMAND_READ
- #define [DFL_BUFFER_SIZE](#) 1024
- #define [DFL_MAX_BYTES](#) 0
- #define [DFL_DEBUG_LEVEL](#) 0
- #define [DFL_CONN_TIMEOUT](#) 0
- #define [DFL_MAX_CONNECTIONS](#) 0
- #define [DFL_SESSION_REUSE](#) 1
- #define [DFL_SESSION_LIFETIME](#) 86400
- #define [DFL_FORCE_CIPHER](#) 0
- #define [USAGE](#)

Functions

- unsigned long [lcppm5](#) (unsigned long [int](#) *state)
- void [my_debug](#) (void *ctx, [int](#) level, char *str)
- static [int](#) [ssl_test](#) (struct [options](#) *opt)
- [int](#) [main](#) ([int](#) argc, char *argv[])

Variables

- char * [dhm_G](#) = "4"
- char * [dhm_P](#)
- int [server_fd](#) = -1

5.154.1 Define Documentation

5.154.1.1 #define COMMAND_BOTH 3

Definition at line 44 of file `ssl_test.c`.

Referenced by `main()`.

5.154.1.2 #define COMMAND_READ 1

Definition at line 42 of file `ssl_test.c`.

Referenced by `main()`, and `ssl_test()`.

5.154.1.3 #define COMMAND_WRITE 2

Definition at line 43 of file `ssl_test.c`.

Referenced by `main()`, and `ssl_test()`.

5.154.1.4 #define DFL_BUFFER_SIZE 1024

Definition at line 51 of file `ssl_test.c`.

Referenced by `main()`.

5.154.1.5 #define DFL_COMMAND COMMAND_READ

Definition at line 50 of file `ssl_test.c`.

Referenced by `main()`.

5.154.1.6 #define DFL_CONN_TIMEOUT 0

Definition at line 54 of file `ssl_test.c`.

Referenced by `main()`.

5.154.1.7 #define DFL_DEBUG_LEVEL 0

Definition at line 53 of file `ssl_test.c`.

Referenced by `main()`.

5.154.1.8 #define DFL_FORCE_CIPHER 0

Definition at line 58 of file ssl_test.c.

Referenced by main(), and ssl_test().

5.154.1.9 #define DFL_IOMODE IOMODE_BLOCK

Definition at line 47 of file ssl_test.c.

Referenced by main().

5.154.1.10 #define DFL_MAX_BYTES 0

Definition at line 52 of file ssl_test.c.

Referenced by main().

5.154.1.11 #define DFL_MAX_CONNECTIONS 0

Definition at line 55 of file ssl_test.c.

Referenced by main().

5.154.1.12 #define DFL_OPMODE OPMODE_NONE

Definition at line 46 of file ssl_test.c.

Referenced by main().

5.154.1.13 #define DFL_SERVER_NAME "localhost"

Definition at line 48 of file ssl_test.c.

Referenced by main().

5.154.1.14 #define DFL_SERVER_PORT 4433

Definition at line 49 of file ssl_test.c.

Referenced by main().

5.154.1.15 #define DFL_SESSION_LIFETIME 86400

Definition at line 57 of file ssl_test.c.

Referenced by main().

5.154.1.16 #define DFL_SESSION_REUSE 1

Definition at line 56 of file ssl_test.c.

Referenced by main().

5.154.1.17 #define IOMODE_BLOCK 0

Definition at line 39 of file ssl_test.c.

Referenced by main().

5.154.1.18 #define IOMODE_NONBLOCK 1

Definition at line 40 of file ssl_test.c.

Referenced by main(), and ssl_test().

5.154.1.19 #define OPMODE_CLIENT 1

Definition at line 36 of file ssl_test.c.

Referenced by main(), and ssl_test().

5.154.1.20 #define OPMODE_NONE 0

Definition at line 35 of file ssl_test.c.

5.154.1.21 #define OPMODE_SERVER 2

Definition at line 37 of file ssl_test.c.

Referenced by main(), and ssl_test().

5.154.1.22 #define USAGE

Value:

```
"\n usage: ssl_test opmode=<> command=<>...\n"
"\n acceptable parameters:\n"
"  opmode=client/server      default: <none>\n"
"  iomode=block/nonblock    default: block\n"
"  server_name=%s           default: localhost\n"
"  server_port=%d           default: 4433\n"
"  command=read/write/both  default: read\n"
"  buffer_size=%d (bytes)   default: 1024\n"
"  max_bytes=%d (bytes)     default: 0 (no limit)\n"
"  debug_level=%d           default: 0 (disabled)\n"
"  conn_timeout=%d (ms)     default: 0 (no timeout)\n"
"  max_connections=%d       default: 0 (no limit)\n"
"  session_reuse=on/off     default: on (enabled)\n"
"  session_lifetime=%d (s)  default: 86400\n"
"  force_cipher=<name>      default: all enabled\n"
" acceptable cipher names:\n"
"  SSL_RSA_RC4_128_MD5      SSL_RSA_RC4_128_SHA\n"
"  SSL_RSA_DES_168_SHA      SSL_EDH_RSA_DES_168_SHA\n"
"  SSL_RSA_AES_128_SHA      SSL_EDH_RSA_AES_256_SHA\n"
"  SSL_RSA_AES_256_SHA\n"
```

Definition at line 372 of file ssl_test.c.

5.154.2 Function Documentation

5.154.2.1 unsigned long int lc ppm5 (unsigned long int * state)

Definition at line 96 of file ssl_test.c.

Referenced by ssl_test().

5.154.2.2 int main (int argc, char * argv[])

Definition at line 394 of file ssl_test.c.

References options::buffer_size, options::command, COMMAND_BOTH, COMMAND_READ, COMMAND_WRITE, options::conn_timeout, options::debug_level, DFL_BUFFER_SIZE, DFL_COMMAND, DFL_CONN_TIMEOUT, DFL_DEBUG_LEVEL, DFL_FORCE_CIPHER, DFL_IOMODE, DFL_MAX_BYTES, DFL_MAX_CONNECTIONS, DFL_OPMODE, DFL_SERVER_NAME, DFL_SERVER_PORT, DFL_SESSION_LIFETIME, DFL_SESSION_REUSE, options::force_cipher, options::iomode, IOMODE_BLOCK, IOMODE_NONBLOCK, options::max_bytes, options::max_connections, options::opmode, OPMODE_CLIENT, OPMODE_SERVER, options::server_name, options::server_port, options::session_lifetime, options::session_reuse, SSL_EDH_RSA_AES_256_SHA, SSL_EDH_RSA_DES_168_SHA, SSL_RSA_AES_128_SHA, SSL_RSA_AES_256_SHA, SSL_RSA_DES_168_SHA, SSL_RSA_RC4_128_MD5, SSL_RSA_RC4_128_SHA, ssl_test(), and USAGE.

5.154.2.3 void my_debug (void * ctx, int level, char * str)

Definition at line 113 of file ssl_test.c.

5.154.2.4 static int ssl_test (struct options * opt) [static]

Definition at line 122 of file ssl_test.c.

References options::buffer_size, client_fd, options::command, COMMAND_READ, COMMAND_WRITE, options::conn_timeout, DFL_FORCE_CIPHER, dhm_G, dhm_P, options::force_cipher, get_timer(), havege_init(), havege_rand(), options::iomode, IOMODE_NONBLOCK, lc ppm5(), options::max_bytes, my_debug(), net_accept(), net_bind(), net_close(), net_connect(), net_recv(), net_send(), net_set_nonblock(), x509_cert::next, options::opmode, OPMODE_CLIENT, OPMODE_SERVER, rsa_free(), server_fd, options::server_name, options::server_port, options::session_lifetime, options::session_reuse, ssl_close_notify(), ssl_default_ciphers, ssl_free(), ssl_init(), SSL_IS_CLIENT, SSL_IS_SERVER, ssl_read(), ssl_set_authmode(), ssl_set_bio(), ssl_set_ca_chain(), ssl_set_ciphers(), ssl_set_dbg(), ssl_set_dh_param(), ssl_set_endpoint(), ssl_set_own_cert(), ssl_set_rng(), ssl_set_session(), SSL_VERIFY_NONE, ssl_write(), test_ca crt, test_srv crt, test_srv_key, x509_free(), x509parse crt(), x509parse_key(), XYSSL_ERR_NET_CONN_RESET, XYSSL_ERR_NET_TRY_AGAIN, and XYSSL_ERR_SSL_PEER_CLOSE_NOTIFY.

Referenced by main().

5.154.3 Variable Documentation

5.154.3.1 char* dhm_G = "4"

Definition at line 63 of file ssl_test.c.

Referenced by ssl_test().

5.154.3.2 char* dhm_P

Initial value:

```
"E4004C1F94182000103D883A448B3F802CE4B44A83301270002C20D0321CFD00"  
"11CCEF784C26A400F43DFB901BCA7538F2C6B176001CF5A0FD16D2C48B1D0C1C"  
"F6AC8E1DA6BCC3B4E1F96B0564965300FFA1D0B601EB2800F489AA512C4B248C"  
"01F76949A60BB7F00A40B1EAB64BDD48E8A700D60B7F1200FA8E77B0A979DABF"
```

Definition at line 64 of file ssl_test.c.

Referenced by ssl_test().

5.154.3.3 int server_fd = -1

Definition at line 70 of file ssl_test.c.

5.155 /home/dko/Projects/mobilec/src/util/mc_genkey.c File Reference

```
#include "../security/interface.h"
```

Functions

- void [print_usage](#) ()
- int [main](#) (int argc, char *argv[])

5.155.1 Function Documentation

5.155.1.1 int main (int *argc*, char * *argv*[])

Definition at line 19 of file mc_genkey.c.

References [generate_RSA_keys_ciphertext\(\)](#), [generate_RSA_keys_plaintext\(\)](#), and [print_usage\(\)](#).

5.155.1.2 void [print_usage](#) ()

Definition at line 11 of file mc_genkey.c.

Referenced by [main\(\)](#).

5.156 /home/dko/Projects/mobilec/src/xml_compose.c File Reference

```
#include "config.h"
#include <mxml.h>
#include "include/agent.h"
#include "include/xml_compose.h"
#include "include/xml_helper.h"
```

Functions

- [mxml_node_t * agent_xml_compose \(agent_p agent\)](#)
- [mxml_node_t * agent_xml_compose__gaf_message \(agent_p agent\)](#)
- [mxml_node_t * agent_xml_compose__message \(agent_p agent\)](#)
- [mxml_node_t * agent_xml_compose__mobile_agent \(agent_p agent\)](#)
- [mxml_node_t * agent_xml_compose__agent_data \(agent_p agent\)](#)
- [mxml_node_t * agent_xml_compose__name \(agent_p agent\)](#)
- [mxml_node_t * agent_xml_compose__owner \(agent_p agent\)](#)
- [mxml_node_t * agent_xml_compose__home \(agent_p agent\)](#)
- [mxml_node_t * agent_xml_compose__wg_code \(agent_p agent\)](#)
- [mxml_node_t * agent_xml_compose__tasks \(agent_p agent\)](#)
- [mxml_node_t * agent_xml_compose__task \(agent_p agent, int index\)](#)
- [mxml_node_t * agent_xml_compose__data \(agent_p agent, int index, interpreter_variable_data_t *interp_variable\)](#)
- [mxml_node_t * agent_xml_compose__agent_code \(agent_p agent, int index\)](#)
- [mxml_node_t * agent_xml_compose__row \(interpreter_variable_data_t *interp_variable, int index\)](#)
- [mxml_node_t * agent_xml_compose__create_row_nodes \(void *data, int index, int *extent, ChType_t type, int dim, int extent_index\)](#)

5.156.1 Function Documentation

5.156.1.1 [mxml_node_t* agent_xml_compose \(agent_p agent\)](#)

Definition at line 46 of file `xml_compose.c`.

References `agent_xml_compose__gaf_message()`, `MXML_ADD_AFTER`, `MXML_ADD_TO_PARENT`, `MXML_NO_CALLBACK`, `mxmlAdd()`, `mxmlLoadString()`, and `node`.

Referenced by `message_InitializeFromAgent()`.

5.156.1.2 [mxml_node_t* agent_xml_compose__agent_code \(agent_p agent, int index\)](#)

Definition at line 521 of file `xml_compose.c`.

References `agent_datastate_s::agent_code_ids`, `agent_datastate_s::agent_codes`, `agent_s::datastate`, `MXML_NO_PARENT`, `mxmlElementSetAttr()`, `mxmlNewElement()`, `node`, and `xml_new_cdata()`.

Referenced by `agent_xml_compose__tasks()`.

5.156.1.3 mxml_node_t* agent_xml_compose__agent_data (agent_p agent)

Definition at line 150 of file xml_compose.c.

References agent_xml_compose__home(), agent_xml_compose__name(), agent_xml_compose__owner(), agent_xml_compose__tasks(), agent_xml_compose__wg_code(), MXML_ADD_AFTER, mxmlAdd(), mxmlNewElement(), and node.

Referenced by agent_xml_compose__mobile_agent().

5.156.1.4 mxml_node_t* agent_xml_compose__create_row_nodes (void * data, int index, int * extent, CType_t type, int dim, int extent_index)

Definition at line 572 of file xml_compose.c.

References agent_xml_compose__create_row_nodes(), buf, CH_DATATYPE_SIZE, CH_DATATYPE_VALUE_STRING, MXML_ADD_AFTER, MXML_ADD_TO_PARENT, MXML_NO_PARENT, mxmlAdd(), mxmlElementSetAttr(), mxmlNewElement(), mxmlNewText(), node, and size.

Referenced by agent_xml_compose__create_row_nodes(), and agent_xml_compose__row().

5.156.1.5 mxml_node_t* agent_xml_compose__data (agent_p agent, int index, interpreter_variable_data_t * interp_variable)

Definition at line 447 of file xml_compose.c.

References agent_xml_compose__row(), interpreter_variable_data_s::array_dim, buf, CH_DATATYPE_STRING, CH_DATATYPE_VALUE_STRING, interpreter_variable_data_s::data, interpreter_variable_data_s::data_type, MXML_ADD_AFTER, mxmlAdd(), mxmlElementSetAttr(), mxmlNewElement(), interpreter_variable_data_s::name, and node.

Referenced by agent_xml_compose__task().

5.156.1.6 mxml_node_t* agent_xml_compose__gaf_message (agent_p agent)

Definition at line 66 of file xml_compose.c.

References agent_xml_compose__message(), MXML_ADD_AFTER, mxmlAdd(), mxmlNewElement(), and node.

Referenced by agent_xml_compose().

5.156.1.7 mxml_node_t* agent_xml_compose__home (agent_p agent)

Definition at line 253 of file xml_compose.c.

References agent_s::home, mxmlNewElement(), mxmlNewText(), and node.

Referenced by agent_xml_compose__agent_data().

5.156.1.8 mxml_node_t* agent_xml_compose__message (agent_p agent)

Definition at line 85 of file xml_compose.c.

References `agent_s::agent_type`, `agent_xml_compose__mobile_agent()`, `MC_LOCAL_AGENT`, `MC_REMOTE_AGENT`, `MC_RETURN_AGENT`, `MXML_ADD_AFTER`, `mxmlAdd()`, `mxmlElementSetAttr()`, `mxmlNewElement()`, and `node`.

Referenced by `agent_xml_compose__gaf_message()`.

5.156.1.9 `mxml_node_t* agent_xml_compose__mobile_agent (agent_p agent)`

Definition at line 129 of file `xml_compose.c`.

References `agent_xml_compose__agent_data()`, `MXML_ADD_AFTER`, `mxmlAdd()`, `mxmlNewElement()`, and `node`.

Referenced by `agent_xml_compose__message()`.

5.156.1.10 `mxml_node_t* agent_xml_compose__name (agent_p agent)`

Definition at line 221 of file `xml_compose.c`.

References `mxmlNewElement()`, `mxmlNewText()`, `agent_s::name`, and `node`.

Referenced by `agent_xml_compose__agent_data()`.

5.156.1.11 `mxml_node_t* agent_xml_compose__owner (agent_p agent)`

Definition at line 237 of file `xml_compose.c`.

References `mxmlNewElement()`, `mxmlNewText()`, `node`, and `agent_s::owner`.

Referenced by `agent_xml_compose__agent_data()`.

5.156.1.12 `mxml_node_t* agent_xml_compose__row (interpreter_variable_data_t * interp_variable, int index)`

Definition at line 549 of file `xml_compose.c`.

References `agent_xml_compose__create_row_nodes()`, `interpreter_variable_data_s::array_dim`, `interpreter_variable_data_s::array_extent`, `interpreter_variable_data_s::data`, `interpreter_variable_data_s::data_type`, and `node`.

Referenced by `agent_xml_compose__data()`.

5.156.1.13 `mxml_node_t* agent_xml_compose__task (agent_p agent, int index)`

Definition at line 342 of file `xml_compose.c`.

References `agent_task_s::agent_return_data`, `agent_task_s::agent_variable_list`, `agent_xml_compose__data()`, `buf`, `agent_task_s::code_id`, `agent_s::datastate`, `MXML_ADD_AFTER`, `mxmlAdd()`, `mxmlElementSetAttr()`, `mxmlNewElement()`, `node`, `agent_task_s::persistent`, `agent_datastate_s::persistent`, `agent_task_s::server_name`, `agent_datastate_s::tasks`, and `agent_task_s::var_name`.

Referenced by `agent_xml_compose__tasks()`.

5.156.1.14 mxml_node_t* agent_xml_compose__tasks (agent_p *agent*)

Definition at line 285 of file xml_compose.c.

References agent_xml_compose__agent_code(), agent_xml_compose__task(), buf, agent_s::datastate, MXML_ADD_AFTER, mxmlAdd(), mxmlElementSetAttr(), mxmlNewElement(), node, agent_datastate_s::number_of_tasks, and agent_datastate_s::task_progress.

Referenced by agent_xml_compose__agent_data().

5.156.1.15 mxml_node_t* agent_xml_compose__wg_code (agent_p *agent*)

Definition at line 269 of file xml_compose.c.

References mxmlNewElement(), mxmlNewText(), node, and agent_s::wg_code.

Referenced by agent_xml_compose__agent_data().

5.157 /home/dko/Projects/mobilec/src/xml_helper.c File Reference

```
#include "config.h"
#include <stdio.h>
#include <string.h>
#include <stdlib.h>
#include <mxml.h>
#include "include/xml_helper.h"
#include "include/macros.h"
```

Functions

- [mxml_node_t * xml_find_sibling](#) (const [mxml_node_t *node](#), const char *sibling_name)
- char * [xml_get_cdata](#) (const [mxml_node_t *node](#))
- [mxml_node_t * xml_get_child](#) (const [mxml_node_t *node](#), const char *child_name, [int](#) descend)
- [mxml_node_t * xml_get_deep_child](#) (const [mxml_node_t *parent](#), const char **child_path)
- [mxml_node_t * xml_get_next_element](#) (const [mxml_node_t *node](#))
- char * [xml_get_text](#) (const [mxml_node_t *node](#))
- char * [xml_get_element_name](#) (const [mxml_node_t *node](#))
- [mxml_node_t * xml_new_cdata](#) ([mxml_node_t *parent](#), const char *text)
- const char * [whitespace_cb](#) ([mxml_node_t *node](#), [int](#) where)

5.157.1 Function Documentation

5.157.1.1 const char* whitespace_cb (mxml_node_t * node, int where)

Definition at line 254 of file xml_helper.c.

References `MXML_WS_AFTER_CLOSE`, and `MXML_WS_BEFORE_OPEN`.

Referenced by `main()`.

5.157.1.2 mxml_node_t* xml_find_sibling (const mxml_node_t * node, const char * sibling_name)

Definition at line 54 of file xml_helper.c.

References `MXML_NO_DESCEND`, `mxmlFindElement()`, `mxml_node_s::parent`, and `xml_get_element_name()`.

5.157.1.3 char* xml_get_cdata (const mxml_node_t * node)

Definition at line 76 of file xml_helper.c.

References `buf`, `CHECK_NULL`, `MXML_ELEMENT`, `mxml_node_s::type`, and `xml_get_element_name()`.

Referenced by `xml_get_text()`.

5.157.1.4 mxml_node_t* xml_get_child (const mxml_node_t * *node*, const char * *child_name*, int *descend*)

Definition at line 109 of file xml_helper.c.

References mxmlFindElement().

Referenced by agent_return_xml_parse(), agent_xml_parse__agent_data(), agent_xml_parse__data(), agent_xml_parse__mobile_agent(), message_xml_parse(), message_xml_parse__message(), and xml_get_deep_child().

5.157.1.5 mxml_node_t* xml_get_deep_child (const mxml_node_t * *parent*, const char ** *child_path*)

Definition at line 128 of file xml_helper.c.

References MXML_NO_DESCEND, node, and xml_get_child().

5.157.1.6 char* xml_get_element_name (const mxml_node_t * *node*)

Definition at line 222 of file xml_helper.c.

References mxml_value_u::element, MXML_ELEMENT, mxml_value_s::name, mxml_node_s::type, and mxml_node_s::value.

Referenced by agent_xml_parse__data(), agent_xml_parse__mobile_agent(), agent_xml_parse__row(), message_xml_parse(), xml_find_sibling(), and xml_get_cdata().

5.157.1.7 mxml_node_t* xml_get_next_element (const mxml_node_t * *node*)

Definition at line 142 of file xml_helper.c.

References MXML_ELEMENT, mxml_node_s::next, and mxml_node_s::type.

5.157.1.8 char* xml_get_text (const mxml_node_t * *node*)

Definition at line 160 of file xml_helper.c.

References CHECK_NULL, mxml_node_s::child, mxml_value_u::element, MXML_ELEMENT, MXML_TEXT, mxml_value_s::name, mxml_node_s::next, mxml_text_s::string, mxml_value_u::text, mxml_node_s::type, mxml_node_s::value, and xml_get_cdata().

Referenced by agent_xml_parse__agent_code(), agent_xml_parse__home(), agent_xml_parse__name(), agent_xml_parse__owner(), agent_xml_parse__sender(), and agent_xml_parse__wg_code().

5.157.1.9 mxml_node_t* xml_new_cdata (mxml_node_t * *parent*, const char * *text*)

Definition at line 235 of file xml_helper.c.

References CHECK_NULL, mxmlNewElement(), and node.

Referenced by agent_xml_compose__agent_code().

5.158 /home/dko/Projects/mobilec/src/xml_parser.c File Reference

```
#include <mxml.h>
#include <string.h>
#include <stdlib.h>
#include "config.h"
#include "include/interpreter_variable_data.h"
#include "include/message.h"
#include "include/xml_parser.h"
#include "include/xml_helper.h"
```

Defines

- `#define _XOPEN_SOURCE 600`

Functions

- `error_code_t agent_xml_parse (agent_p agent)`
- `error_code_t agent_xml_parse__mobile_agent (agent_p agent, xml_parser_p xml_parser)`
- `error_code_t agent_xml_parse__agent_data (agent_p agent, xml_parser_p xml_parser)`
- `error_code_t agent_xml_parse__name (agent_p agent, xml_parser_p xml_parser)`
- `error_code_t agent_xml_parse__owner (agent_p agent, xml_parser_p xml_parser)`
- `error_code_t agent_xml_parse__home (agent_p agent, xml_parser_p xml_parser)`
- `error_code_t agent_xml_parse__sender (agent_p agent, xml_parser_p xml_parser)`
- `error_code_t agent_xml_parse__wg_code (agent_p agent, xml_parser_p xml_parser)`
- `error_code_t agent_xml_parse__tasks (agent_p agent, xml_parser_p xml_parser)`
- `error_code_t agent_xml_parse__task (agent_p agent, xml_parser_p xml_parser, int index)`
- `error_code_t agent_xml_parse__data (agent_p agent, xml_parser_p xml_parser, int index)`
- `error_code_t agent_xml_parse__row (interpreter_variable_data_t *interp_variable, xml_parser_p xml_parser, int index)`
- `void agent_xml_parse__fill_row_data (void *data, ChType_t type, int *extent, const mxml_node_t *node, int *index)`
- `error_code_t agent_xml_parse__agent_code (agent_p agent, int index, xml_parser_p xml_parser)`
- `error_code_t agent_return_xml_parse (agent_p agent)`
- `error_code_t message_xml_parse (message_p message)`
- `error_code_t message_xml_parse__message (message_p message, xml_parser_p xml_parser)`

5.158.1 Define Documentation

5.158.1.1 `#define _XOPEN_SOURCE 600`

Definition at line 38 of file `xml_parser.c`.

5.158.2 Function Documentation

5.158.2.1 `error_code_t agent_return_xml_parse (agent_p agent)`

Definition at line 913 of file `xml_parser.c`.

References `agent_xml_parse__home()`, `agent_xml_parse__name()`, `agent_xml_parse__owner()`, `agent_xml_parse__tasks()`, `agent_s::datastate`, `MC_SUCCESS`, `xml_get_child()`, and `agent_datastate_s::xml_root`.

5.158.2.2 `error_code_t agent_xml_parse (agent_p agent)`

Definition at line 52 of file `xml_parser.c`.

References `agent_xml_parse__mobile_agent()`, `agent_s::datastate`, `MC_SUCCESS`, and `agent_datastate_s::xml_agent_root`.

Referenced by `agent_initialize()`.

5.158.2.3 `error_code_t agent_xml_parse__agent_code (agent_p agent, int index, xml_parser_p xml_parser)`

Definition at line 872 of file `xml_parser.c`.

References `agent_datastate_s::agent_code`, `agent_datastate_s::agent_code_ids`, `agent_datastate_s::agent_codes`, `agent_task_s::code_id`, `agent_s::datastate`, `MC_SUCCESS`, `mxmlElementGetAttr()`, `agent_datastate_s::number_of_tasks`, `agent_datastate_s::task_progress`, `agent_datastate_s::tasks`, and `xml_get_text()`.

Referenced by `agent_xml_parse__tasks()`.

5.158.2.4 `error_code_t agent_xml_parse__agent_data (agent_p agent, xml_parser_p xml_parser)`

Definition at line 93 of file `xml_parser.c`.

References `agent_xml_parse__home()`, `agent_xml_parse__name()`, `agent_xml_parse__owner()`, `agent_xml_parse__sender()`, `agent_xml_parse__tasks()`, `agent_xml_parse__wg_code()`, `MC_ERR_PARSE`, `MC_SUCCESS`, and `xml_get_child()`.

Referenced by `agent_xml_parse__mobile_agent()`.

5.158.2.5 `error_code_t agent_xml_parse__data (agent_p agent, xml_parser_p xml_parser, int index)`

Definition at line 538 of file `xml_parser.c`.

References `agent_task_s::agent_return_data`, `agent_task_s::agent_variable_list`, `agent_xml_parse__row()`, `interpreter_variable_data_s::array_dim`, `CH_DATATYPE_SIZE`, `CH_DATATYPE_STR_TO_VAL`, `CH_STRING_DATATYPE`, `interpreter_variable_data_s::data`, `interpreter_variable_data_s::data_type`, `agent_s::datastate`, `interpreter_variable_data_New()`, `MC_ERR_PARSE`, `MC_SUCCESS`, `mxmlElementGetAttr()`, `interpreter_variable_data_s::name`, `mxml_node_s::parent`, `agent_task_s::persistent`, `agent_datastate_s::tasks`, `xml_get_child()`, and `xml_get_element_name()`.

Referenced by `agent_xml_parse__task()`.

5.158.2.6 **void agent_xml_parse__fill_row_data (void * *data*, ChType_t *type*, int * *extent*, const mxml_node_t * *node*, int * *index*)**

Definition at line 751 of file xml_parser.c.

References agent_xml_parse__fill_row_data(), buf, CH_DATATYPE_SIZE, mxml_node_s::child, MXML_DESCEND_FIRST, MXML_ELEMENT, MXML_TEXT, mxmlFindElement(), mxml_text_s::string, strtok_r, mxml_value_u::text, mxml_node_s::type, and mxml_node_s::value.

Referenced by agent_xml_parse__fill_row_data(), and agent_xml_parse__row().

5.158.2.7 **error_code_t agent_xml_parse__home (agent_p *agent*, xml_parser_p *xml_parser*)**

Definition at line 219 of file xml_parser.c.

References CHECK_NULL, agent_s::home, MC_SUCCESS, and xml_get_text().

Referenced by agent_return_xml_parse(), and agent_xml_parse__agent_data().

5.158.2.8 **error_code_t agent_xml_parse__mobile_agent (agent_p *agent*, xml_parser_p *xml_parser*)**

Definition at line 65 of file xml_parser.c.

References agent_xml_parse__agent_data(), MC_ERR_PARSE, xml_get_child(), and xml_get_element_name().

Referenced by agent_xml_parse().

5.158.2.9 **error_code_t agent_xml_parse__name (agent_p *agent*, xml_parser_p *xml_parser*)**

Definition at line 166 of file xml_parser.c.

References CHECK_NULL, MC_ERR_PARSE, MC_SUCCESS, agent_s::name, and xml_get_text().

Referenced by agent_return_xml_parse(), and agent_xml_parse__agent_data().

5.158.2.10 **error_code_t agent_xml_parse__owner (agent_p *agent*, xml_parser_p *xml_parser*)**

Definition at line 192 of file xml_parser.c.

References CHECK_NULL, MC_SUCCESS, agent_s::owner, and xml_get_text().

Referenced by agent_return_xml_parse(), and agent_xml_parse__agent_data().

5.158.2.11 **error_code_t agent_xml_parse__row (interpreter_variable_data_t * *interp_variable*, xml_parser_p *xml_parser*, int *index*)**

Definition at line 684 of file xml_parser.c.

References agent_xml_parse__fill_row_data(), interpreter_variable_data_s::array_dim, interpreter_variable_data_s::array_extent, CH_DATATYPE_SIZE, interpreter_variable_data_s::data, interpreter_variable_data_s::data_type, MC_SUCCESS, and xml_get_element_name().

Referenced by agent_xml_parse__data().

5.158.2.12 error_code_t agent_xml_parse__sender (agent_p agent, xml_parser_p xml_parser)

Definition at line 245 of file xml_parser.c.

References CHECK_NULL, MC_SUCCESS, agent_s::sender, and xml_get_text().

Referenced by agent_xml_parse__agent_data().

5.158.2.13 error_code_t agent_xml_parse__task (agent_p agent, xml_parser_p xml_parser, int index)

Definition at line 442 of file xml_parser.c.

References agent_xml_parse__data(), CHECK_NULL, agent_task_s::code_id, agent_s::datastate, MC_ERR_PARSE, MC_SUCCESS, MXML_DESCEND_FIRST, MXML_NO_DESCEND, mxmlElementGetAttr(), mxmlFindElement(), agent_task_s::persistent, agent_task_s::server_name, strdup, agent_datastate_s::tasks, and agent_task_s::var_name.

Referenced by agent_xml_parse__tasks().

5.158.2.14 error_code_t agent_xml_parse__tasks (agent_p agent, xml_parser_p xml_parser)

Definition at line 304 of file xml_parser.c.

References agent_datastate_s::agent_code, agent_datastate_s::agent_code_ids, agent_datastate_s::agent_codes, agent_task_New(), agent_xml_parse__agent_code(), agent_xml_parse__task(), buf, agent_s::datastate, MC_ERR_PARSE, MXML_DESCEND, MXML_DESCEND_FIRST, MXML_NO_DESCEND, mxmlElementGetAttr(), mxmlFindElement(), agent_datastate_s::number_of_tasks, agent_datastate_s::task_progress, and agent_datastate_s::tasks.

Referenced by agent_return_xml_parse(), and agent_xml_parse__agent_data().

5.158.2.15 error_code_t agent_xml_parse__wg_code (agent_p agent, xml_parser_p xml_parser)

Definition at line 273 of file xml_parser.c.

References MC_SUCCESS, agent_s::wg_code, and xml_get_text().

Referenced by agent_xml_parse__agent_data().

5.158.2.16 error_code_t message_xml_parse (message_p message)

Definition at line 948 of file xml_parser.c.

References MC_ERR_PARSE, message_xml_parse__message(), MXML_DESCEND, MXML_NO_DESCEND, mxmlFindElement(), xml_get_child(), xml_get_element_name(), and message_s::xml_root.

Referenced by acc_connection_Thread(), message_InitializeFromConnection(), and message_InitializeFromString().

5.158.2.17 error_code_t message_xml_parse__message (message_p message, xml_parser_p xml_parser)

Definition at line 1003 of file xml_parser.c.

References message_s::addr, buf, CHECK_NULL, ENCRYPTED_DATA, ENCRYPTION_INITIALIZE, FIPA_ACL, message_s::from_address, MC_ERR_PARSE, MC_SUCCESS, message_s::message_type, MOBILE_AGENT, mxmlElementGetAttr(), port, REQUEST_ENCRYPTION_INITIALIZE, RETURN_MSG, strtok_r, xml_get_child(), and message_s::xml_payload.

Referenced by message_xml_parse().

Index

~foo_c
 foo_c, 96
~foo_s
 foo_s, 99
/home/dko/Projects/mobilec/src/acc.c, 165
/home/dko/Projects/mobilec/src/agent.c, 170
/home/dko/Projects/mobilec/src/agent_datastate.c, 173
/home/dko/Projects/mobilec/src/agent_mailbox.c, 174
/home/dko/Projects/mobilec/src/agent_return_data.c, 176
/home/dko/Projects/mobilec/src/agent_task.c, 178
/home/dko/Projects/mobilec/src/ams.c, 179
/home/dko/Projects/mobilec/src/barrier.c, 181
/home/dko/Projects/mobilec/src/cmd_prompt.c, 183
/home/dko/Projects/mobilec/src/connection.c, 186
/home/dko/Projects/mobilec/src/data_structures.c, 187
/home/dko/Projects/mobilec/src/df.c, 189
/home/dko/Projects/mobilec/src/dynstring.c, 194
/home/dko/Projects/mobilec/src/fipa_acl.c, 195
/home/dko/Projects/mobilec/src/fipa_envelope.c, 208
/home/dko/Projects/mobilec/src/include/acc.h, 216
/home/dko/Projects/mobilec/src/include/agent.h, 219
/home/dko/Projects/mobilec/src/include/agent_datastate.h, 223
/home/dko/Projects/mobilec/src/include/agent_lib.h, 225
/home/dko/Projects/mobilec/src/include/agent_mailbox.h, 237
/home/dko/Projects/mobilec/src/include/agent_task.h, 239
/home/dko/Projects/mobilec/src/include/ams.h, 241
/home/dko/Projects/mobilec/src/include/ap_queue_template.h, 243
/home/dko/Projects/mobilec/src/include/barrier.h, 246
/home/dko/Projects/mobilec/src/include/cmd_prompt.h, 249
/home/dko/Projects/mobilec/src/include/commands.h, 252
/home/dko/Projects/mobilec/src/include/commands.x.h, 255
/home/dko/Projects/mobilec/src/include/connection.h, 257
/home/dko/Projects/mobilec/src/include/data_structures.h, 259
/home/dko/Projects/mobilec/src/include/df.h, 263
/home/dko/Projects/mobilec/src/include/df_request.x.h, 270
/home/dko/Projects/mobilec/src/include/dynstring.h, 271
/home/dko/Projects/mobilec/src/include/fipa_acl.h, 273
/home/dko/Projects/mobilec/src/include/fipa_acl_envelope.h, 290
/home/dko/Projects/mobilec/src/include/fipa_comm.h, 298
/home/dko/Projects/mobilec/src/include/host_id.h, 306
/home/dko/Projects/mobilec/src/include/interpreter_variable_data.h, 307
/home/dko/Projects/mobilec/src/include/libmc.h, 309
/home/dko/Projects/mobilec/src/include/macros.h, 360
/home/dko/Projects/mobilec/src/include/mc_error.h, 372
/home/dko/Projects/mobilec/src/include/mc_platform.h, 374
/home/dko/Projects/mobilec/src/include/mc_rwlock.h, 376
/home/dko/Projects/mobilec/src/include/message.h, 378
/home/dko/Projects/mobilec/src/include/mobilec.h, 382
/home/dko/Projects/mobilec/src/include/mtp_http.h, 383
/home/dko/Projects/mobilec/src/include/xml_compose.h, 389
/home/dko/Projects/mobilec/src/include/xml_helper.h, 393
/home/dko/Projects/mobilec/src/include/xml_parser.h, 395
/home/dko/Projects/mobilec/src/libmc.c, 399
/home/dko/Projects/mobilec/src/mc_list/list.c, 457

- /home/dko/Projects/mobilec/src/mc_list/list.h, [459](#)
- /home/dko/Projects/mobilec/src/mc_platform.c, [462](#)
- /home/dko/Projects/mobilec/src/mc_rwlock.c, [464](#)
- /home/dko/Projects/mobilec/src/mc_sync/sync_list.c, [466](#)
- /home/dko/Projects/mobilec/src/mc_sync/sync_list.h, [468](#)
- /home/dko/Projects/mobilec/src/message.c, [471](#)
- /home/dko/Projects/mobilec/src/message_queue.c, [475](#)
- /home/dko/Projects/mobilec/src/mtp_http.c, [476](#)
- /home/dko/Projects/mobilec/src/mxml-2.2.2/config.h, [481](#)
- /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-attr.c, [485](#)
- /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-entity.c, [486](#)
- /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-file.c, [488](#)
- /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-index.c, [495](#)
- /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-node.c, [497](#)
- /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-private.c, [500](#)
- /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-search.c, [502](#)
- /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-set.c, [503](#)
- /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml-string.c, [505](#)
- /home/dko/Projects/mobilec/src/mxml-2.2.2/mxml.h, [506](#)
- /home/dko/Projects/mobilec/src/mxml-2.2.2/mxmldoc.c, [518](#)
- /home/dko/Projects/mobilec/src/mxml-2.2.2/test/class.cxx, [522](#)
- /home/dko/Projects/mobilec/src/mxml-2.2.2/test/enum.cxx, [523](#)
- /home/dko/Projects/mobilec/src/mxml-2.2.2/test/function.cxx, [524](#)
- /home/dko/Projects/mobilec/src/mxml-2.2.2/test/struct.cxx, [525](#)
- /home/dko/Projects/mobilec/src/mxml-2.2.2/testmxml.c, [526](#)
- /home/dko/Projects/mobilec/src/mxml-2.2.2/winconfig.h, [527](#)
- /home/dko/Projects/mobilec/src/security/asm.c, [530](#)
- /home/dko/Projects/mobilec/src/security/asm.h, [531](#)
- /home/dko/Projects/mobilec/src/security/asm_message_composer.c, [532](#)
- /home/dko/Projects/mobilec/src/security/asm_message_composer.h, [533](#)
- /home/dko/Projects/mobilec/src/security/asm_message_parser.c, [534](#)
- /home/dko/Projects/mobilec/src/security/asm_message_parser.h, [535](#)
- /home/dko/Projects/mobilec/src/security/asm_node.c, [536](#)
- /home/dko/Projects/mobilec/src/security/asm_node.h, [537](#)
- /home/dko/Projects/mobilec/src/security/interface.c, [538](#)
- /home/dko/Projects/mobilec/src/security/interface.h, [542](#)
- /home/dko/Projects/mobilec/src/security/mc_dh.c, [547](#)
- /home/dko/Projects/mobilec/src/security/mc_dh.h, [548](#)
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/aes.h, [549](#)
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/arc4.h, [553](#)
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/base64.h, [555](#)
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/bignum.h, [557](#)
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/bn_mul.h, [573](#)
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/certs.h, [575](#)
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/config.h, [482](#)
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/debug.h, [577](#)
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/des.h, [580](#)
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/dhm.h, [585](#)
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/curve25519.h, [590](#)
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/md2.h, [592](#)
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/md4.h, [596](#)
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/md5.h, [600](#)
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/net.h, [605](#)
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/openssl.h, [610](#)
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/padlock.h, [614](#)
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/rsa.h, [615](#)

- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/sha1.h, 625
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/sha2.h, 630
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/sha4.h, 635
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/ssl.h, 640
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/timing.h, 664
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/x509.h, 666
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/aes.c, 681
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/arc4.c, 690
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/base64.c, 693
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/bignum.c, 697
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/certs.c, 714
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/debug.c, 718
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/des.c, 720
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/dhm.c, 733
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/havege.c, 737
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/md2.c, 739
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/md4.c, 740
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/md5.c, 741
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/net.c, 750
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/padlock.c, 754
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/rsa.c, 755
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/sha1.c, 765
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/sha2.c, 774
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/sha4.c, 783
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/ssl_cli.c, 792
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/ssl_srv.c, 795
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/ssl_tls.c, 798
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/timing.c, 812
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/x509parse.c, 815
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/aes/aesencrypt2.c, 824
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/hello.c, 826
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/md5sum.c, 827
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/sha1sum.c, 828
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/sha2sum.c, 829
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/dh_client.c, 830
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/dh_genprime.c, 831
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/dh_server.c, 832
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/mpi_demo.c, 833
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/rsa_genkey.c, 834
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/rsa_sign.c, 835
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/rsa_verify.c, 836
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/ssl/ssl_client1.c, 837
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/ssl/ssl_client2.c, 839
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/ssl/ssl_server.c, 841
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/test/benchmark.c, 844
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/test/selftest.c, 846
- /home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/test/ssl_test.c, 847
- /home/dko/Projects/mobilec/src/util/mc_genkey.c, 853
- /home/dko/Projects/mobilec/src/winconfig.h, 529
- /home/dko/Projects/mobilec/src/xml_compose.c, 854
- /home/dko/Projects/mobilec/src/xml_helper.c, 858
- /home/dko/Projects/mobilec/src/xml_parser.c, 860
- _XOPEN_SOURCE
- xml_parser.c, 860
- __RSA_Passthrough
- openssl.h, 613
- _hr_time, 9
- start, 9
- ssl_context, 10

authmode, 11
ca_chain, 11
ciphers, 11
client_auth, 11
ctx_dec, 12
ctx_enc, 12
dhm_ctx, 12
do_crypt, 12
endpoint, 12
f_dbg, 12
f_recv, 13
f_rng, 13
f_send, 13
fin_md5, 13
fin_sha1, 13
hostname, 13
hostname_len, 13
in_ctr, 13
in_hdr, 14
in_hslen, 14
in_left, 14
in_msg, 14
in_msglen, 14
in_msgtype, 14
in_offt, 15
iv_dec, 15
iv_enc, 15
ivlen, 15
keylen, 15
mac_dec, 15
mac_enc, 16
maclen, 16
major_ver, 16
max_major_ver, 16
max_minor_ver, 16
minlen, 16
minor_ver, 16
nb_zero, 17
out_ctr, 17
out_hdr, 17
out_left, 17
out_msg, 17
out_msglen, 17
out_msgtype, 18
own_cert, 18
p_dbg, 18
p_recv, 18
p_rng, 18
p_send, 18
peer_cert, 19
peer_cn, 19
pmslen, 19
premaster, 19
randbytes, 19
resume, 19
rsa_key, 20
s_get, 20
s_set, 20
session, 20
state, 20
timeout, 20
verify_result, 21
_ssl_session, 22
cipher, 22
id, 22
length, 22
master, 22
next, 23
start, 23
_x509_buf, 24
len, 24
p, 24
tag, 24
_x509_cert, 25
ca_istrue, 25
issuer, 25
issuer_id, 25
issuer_raw, 25
max_pathlen, 26
next, 26
pk_oid, 26
raw, 26
rsa, 26
serial, 26
sig, 26
sig_oid1, 26
sig_oid2, 27
subject, 27
subject_id, 27
subject_raw, 27
tbs, 27
v3_ext, 27
valid_from, 27
valid_to, 27
version, 27
_x509_name, 29
next, 29
oid, 29
val, 29
_x509_node, 30
data, 30
end, 30
len, 30
p, 30
_x509_raw, 31
issuer, 31
raw, 31
serial, 31

- sign, 31
- signalg, 31
- subject, 31
- subpubkey, 31
- tbs, 32
- tbs_signalg, 32
- validity, 32
- version, 32
- _x509_time, 33
 - day, 33
 - hour, 33
 - min, 33
 - mon, 33
 - sec, 33
 - year, 33
- acc
 - mc_platform_s, 110
- acc.c
 - acc_connection_Thread, 167
 - acc_Destroy, 168
 - acc_Initialize, 168
 - acc_MessageHandlerThread, 168
 - acc_Start, 168
 - acc_Thread, 168
 - auth_conn_rece_key, 169
 - BACKLOG, 167
 - BUFLen, 167
 - CONN_THREADS, 167
 - CONNECT_THREAD_EXIT, 167
 - listen_Thread, 169
 - udplisten_Thread, 169
 - UDPPORT, 167
- acc.h
 - acc_connection_Thread, 216
 - acc_Destroy, 217
 - acc_MessageHandlerThread, 217
 - acc_Start, 217
 - acc_Thread, 217
 - addr, 218
 - client_fd, 218
 - listen_Thread, 217
 - port, 218
 - server_fd, 218
 - STRUCT, 217, 218
 - udplisten_Thread, 218
- acc_connection_Thread
 - acc.c, 167
 - acc.h, 216
- acc_Destroy
 - acc.c, 168
 - acc.h, 217
- acc_Initialize
 - acc.c, 168
- acc_MessageHandlerThread
 - acc.c, 168
 - acc.h, 217
- acc_Start
 - acc.c, 168
 - acc.h, 217
- acc_Thread
 - acc.c, 168
 - acc.h, 217
- accept_ranges
 - mtp_http_s, 133
- ACCEPTED
 - mtp_http.h, 385
- acl_representation
 - fipa_acl_Param_s, 72
- action_list
 - fipa_comm_performative_t, 78
- add_variable
 - mxmldoc.c, 519
- addr
 - acc.h, 218
 - connection_s, 57
 - message_s, 126
- addresses
 - fipa_agent_identifier_s, 74
- aes.c
 - aes_crypt_cbc, 684
 - aes_crypt_cfb, 684
 - aes_crypt_ecb, 685
 - AES_FROUND, 682
 - aes_gen_tables, 685
 - aes_init_done, 686
 - AES_RROUND, 682
 - aes_self_test, 685
 - aes_setkey_dec, 685
 - aes_setkey_enc, 686
 - aes_test_cbc_dec, 686
 - aes_test_cbc_enc, 686
 - aes_test_cfb_dec, 687
 - aes_test_cfb_enc, 687
 - aes_test_ecb_dec, 687
 - aes_test_ecb_enc, 688
 - FSb, 688
 - FT0, 688
 - FT1, 688
 - FT2, 688
 - FT3, 688
 - GET_ULONG_LE, 683
 - MUL, 683
 - PUT_ULONG_LE, 683
 - RCON, 689
 - ROTL8, 684
 - RSb, 689
 - RT0, 689

- RT1, [689](#)
- RT2, [689](#)
- RT3, [689](#)
- XTIME, [684](#)
- aes.h
 - aes_crypt_cbc, [550](#)
 - aes_crypt_cfb, [550](#)
 - aes_crypt_ecb, [550](#)
 - AES_DECRYPT, [549](#)
 - AES_ENCRYPT, [549](#)
 - aes_self_test, [551](#)
 - aes_setkey_dec, [551](#)
 - aes_setkey_enc, [551](#)
- AES_BLOCK_SIZE
 - openssl.h, [611](#)
- AES_cbc_encrypt
 - openssl.h, [611](#)
- aes_context, [35](#)
 - buf, [35](#)
 - nr, [35](#)
 - rk, [35](#)
- aes_crypt_cbc
 - aes.c, [684](#)
 - aes.h, [550](#)
- aes_crypt_cfb
 - aes.c, [684](#)
 - aes.h, [550](#)
- aes_crypt_ecb
 - aes.c, [685](#)
 - aes.h, [550](#)
- AES_DECRYPT
 - aes.h, [549](#)
- aes_en_de
 - interface.c, [538](#)
 - interface.h, [544](#)
- AES_ENCRYPT
 - aes.h, [549](#)
- AES_FROUND
 - aes.c, [682](#)
- aes_gen_tables
 - aes.c, [685](#)
- aes_init_done
 - aes.c, [686](#)
- AES_KEY
 - openssl.h, [611](#)
- AES_key
 - connection_s, [57](#)
- AES_RROUND
 - aes.c, [682](#)
- aes_self_test
 - aes.c, [685](#)
 - aes.h, [551](#)
- AES_set_decrypt_key
 - openssl.h, [611](#)
- AES_set_encrypt_key
 - openssl.h, [611](#)
- aes_setkey_dec
 - aes.c, [685](#)
 - aes.h, [551](#)
- aes_setkey_enc
 - aes.c, [686](#)
 - aes.h, [551](#)
- AES_SIZE
 - openssl.h, [611](#)
- aes_test_cbc_dec
 - aes.c, [686](#)
- aes_test_cbc_enc
 - aes.c, [686](#)
- aes_test_cfb_dec
 - aes.c, [687](#)
- aes_test_cfb_enc
 - aes.c, [687](#)
- aes_test_ecb_dec
 - aes.c, [687](#)
- aes_test_ecb_enc
 - aes.c, [688](#)
- aesencrypt2.c
 - main, [825](#)
 - MODE_DECRYPT, [824](#)
 - MODE_ENCRYPT, [824](#)
 - USAGE, [824](#)
- agency
 - mc_platform_s, [110](#)
 - stationary_agent_info_s, [161](#)
- agency_p
 - libmc.h, [317](#)
- agency_s, [36](#)
 - bluetooth, [36](#)
 - client, [36](#)
 - default_agentstatus, [36](#)
 - enable_security, [36](#)
 - filename, [37](#)
 - hostName, [37](#)
 - initInterps, [37](#)
 - known_host_filename, [37](#)
 - last_error, [37](#)
 - mc_platform, [37](#)
 - portno, [38](#)
 - portnoc, [38](#)
 - priv_key_filename, [38](#)
 - server, [38](#)
 - stack_size, [38](#)
 - threads, [38](#)
- agency_t
 - libmc.h, [317](#)
- agent
 - fipa_comm_t, [84](#)
 - stationary_agent_info_s, [161](#)

- agent.c
 - agent_AddPersistentVariable, 170
 - agent_ChScriptInitVar, 170
 - agent_Copy, 171
 - agent_Destroy, 171
 - agent_Initialize, 171
 - agent_New, 172
 - agent_NewBinary, 172
 - agent_RunChScript, 172
 - agent_RunChScriptThread, 172
- agent.h
 - agent_AddPersistentVariable, 220
 - agent_ChScriptInitVar, 220
 - agent_Copy, 221
 - agent_Destroy, 221
 - agent_Initialize, 221
 - agent_New, 221
 - agent_NewBinary, 221
 - agent_p, 220
 - agent_RunChScript, 222
 - agent_RunChScriptThread, 222
 - AGENT_T, 219
 - agent_t, 220
 - MCAgent_t, 220
- AGENT_UPDATE
 - message.h, 379
- agent_AddPersistentVariable
 - agent.c, 170
 - agent.h, 220
- agent_address
 - agent_s, 43
 - fipa_comm_t, 84
- agent_ChScriptInitVar
 - agent.c, 170
 - agent.h, 220
- agent_code
 - agent_datastate_s, 39
- agent_code_ids
 - agent_datastate_s, 39
- agent_codes
 - agent_datastate_s, 39
- agent_Copy
 - agent.c, 171
 - agent.h, 221
- agent_datastate.c
 - agent_datastate_Copy, 173
 - agent_datastate_Destroy, 173
 - agent_datastate_New, 173
- agent_datastate.h
 - agent_datastate_Copy, 223
 - agent_datastate_Destroy, 223
 - agent_datastate_New, 224
 - agent_datastate_p, 223
 - agent_datastate_t, 223
- agent_datastate_Copy
 - agent_datastate.c, 173
 - agent_datastate.h, 223
- agent_datastate_Destroy
 - agent_datastate.c, 173
 - agent_datastate.h, 223
- agent_datastate_New
 - agent_datastate.c, 173
 - agent_datastate.h, 224
- agent_datastate_p
 - agent_datastate.h, 223
- agent_datastate_s, 39
 - agent_code, 39
 - agent_code_ids, 39
 - agent_codes, 39
 - init_agent_status, 39
 - number_of_tasks, 40
 - persistent, 40
 - progress_modifier, 40
 - return_data, 40
 - task_progress, 40
 - tasks, 40
 - xml_agent_root, 41
 - xml_root, 41
- agent_datastate_t
 - agent_datastate.h, 223
- agent_Destroy
 - agent.c, 171
 - agent.h, 221
- agent_Initialize
 - agent.c, 171
 - agent.h, 221
- agent_interp
 - agent_s, 43
- agent_lib.h
 - MC_AclAddReceiver_chdl, 226
 - MC_AclAddReplyTo_chdl, 226
 - MC_AclDestroy_chdl, 226
 - MC_AclGetContent_chdl, 226
 - MC_AclGetConversationID_chdl, 227
 - MC_AclGetPerformative_chdl, 227
 - MC_AclGetProtocol_chdl, 227
 - MC_AclGetSender_chdl, 227
 - MC_AclNew_chdl, 227
 - MC_AclPost_chdl, 227
 - MC_AclReply_chdl, 227
 - MC_AclRetrieve_chdl, 228
 - MC_AclSend_chdl, 228
 - MC_AclSetContent_chdl, 228
 - MC_AclSetConversationID_chdl, 228
 - MC_AclSetPerformative_chdl, 228
 - MC_AclSetProtocol_chdl, 228
 - MC_AclSetSender_chdl, 228
 - MC_AclWaitRetrieve_chdl, 229

- MC_AddAgent_chdl, [229](#)
- MC_AgentAddTask_chdl, [229](#)
- MC_AgentVariableRetrieve_chdl, [229](#)
- MC_AgentVariableSave_chdl, [229](#)
- MC_Barrier_chdl, [229](#)
- MC_BarrierDelete_chdl, [229](#)
- MC_BarrierInit_chdl, [230](#)
- MC_CallAgentFunc_chdl, [230](#)
- MC_ComposeAgent_chdl, [230](#)
- MC_ComposeAgentFromFile_chdl, [230](#)
- MC_ComposeAgentFromFileWithWorkgroup_chdl, [230](#)
- MC_ComposeAgentWithWorkgroup_chdl, [230](#)
- MC_CondBroadcast_chdl, [230](#)
- MC_CondReset_chdl, [231](#)
- MC_CondSignal_chdl, [231](#)
- MC_CondWait_chdl, [231](#)
- MC_DeleteAgent_chdl, [231](#)
- MC_DeleteAgentWG_chdl, [231](#)
- MC_DeregisterService_chdl, [231](#)
- MC_DestroyServiceSearchResult_chdl, [231](#)
- MC_End_chdl, [232](#)
- MC_FindAgentByID_chdl, [232](#)
- MC_FindAgentByName_chdl, [232](#)
- MC_GetAgentID_chdl, [232](#)
- MC_GetAgentName_chdl, [232](#)
- MC_GetAgentNumTasks_chdl, [232](#)
- MC_GetAgentStatus_chdl, [232](#)
- MC_GetAgentXMLString_chdl, [233](#)
- MC_GetTimeOfDay_chdl, [233](#)
- MC_HaltAgency_chdl, [233](#)
- MC_MigrateAgent_chdl, [233](#)
- MC_MutexLock_chdl, [233](#)
- MC_MutexUnlock_chdl, [233](#)
- MC_PrintAgentCode_chdl, [233](#)
- MC_RegisterService_chdl, [234](#)
- MC_ResumeAgency_chdl, [234](#)
- MC_RetrieveAgent_chdl, [234](#)
- MC_RetrieveAgentCode_chdl, [234](#)
- MC_SaveData_chdl, [234](#)
- MC_SearchForService_chdl, [234](#)
- MC_SemaphorePost_chdl, [235](#)
- MC_SemaphoreWait_chdl, [235](#)
- MC_SendAgentMigrationMessage_chdl, [235](#)
- MC_SendAgentMigrationMessageFile_chdl, [235](#)
- MC_SendSteerCommand_chdl, [235](#)
- MC_SetAgentStatus_chdl, [235](#)
- MC_SetDefaultAgentStatus_chdl, [235](#)
- MC_SyncDelete_chdl, [236](#)
- MC_SyncInit_chdl, [236](#)
- MC_TerminateAgent_chdl, [236](#)
- MC_TerminateAgentWG_chdl, [236](#)
- agent_mailbox.c
 - agent_mailbox_Copy, [174](#)
 - agent_mailbox_Destroy, [174](#)
 - agent_mailbox_New, [174](#)
 - agent_mailbox_Post, [174](#)
 - agent_mailbox_Retrieve, [174](#)
 - agent_mailbox_WaitRetrieve, [174](#)
- agent_mailbox.h
 - agent_mailbox_Copy, [237](#)
 - agent_mailbox_Destroy, [237](#)
 - agent_mailbox_New, [237](#)
 - agent_mailbox_p, [237](#)
 - agent_mailbox_Post, [238](#)
 - agent_mailbox_Retrieve, [238](#)
 - agent_mailbox_t, [237](#)
 - agent_mailbox_WaitRetrieve, [238](#)
- agent_mailbox_Copy
 - agent_mailbox.c, [174](#)
 - agent_mailbox.h, [237](#)
- agent_mailbox_Destroy
 - agent_mailbox.c, [174](#)
 - agent_mailbox.h, [237](#)
- agent_mailbox_New
 - agent_mailbox.c, [174](#)
 - agent_mailbox.h, [237](#)
- agent_mailbox_p
 - agent_mailbox.h, [237](#)
 - data_structures.h, [261](#)
- agent_mailbox_Post
 - agent_mailbox.c, [174](#)
 - agent_mailbox.h, [238](#)
- agent_mailbox_Retrieve
 - agent_mailbox.c, [174](#)
 - agent_mailbox.h, [238](#)
- agent_mailbox_s, [42](#)
 - mail_queue, [42](#)
- agent_mailbox_t
 - agent_mailbox.h, [237](#)
- agent_mailbox_WaitRetrieve
 - agent_mailbox.c, [174](#)
 - agent_mailbox.h, [238](#)
- agent_name
 - fipa_comm_t, [84](#)
- agent_New
 - agent.c, [172](#)
 - agent.h, [221](#)
- agent_NewBinary
 - agent.c, [172](#)
 - agent.h, [221](#)
- agent_p
 - agent.h, [220](#)
 - libmc.h, [317](#)
- agent_persistent
 - agent_s, [44](#)

- agent_pipe_active
 - agent_s, [44](#)
- agent_pipe_ready_to_read
 - agent_s, [44](#)
- agent_queue
 - mc_platform_s, [110](#)
- agent_queue_Flush
 - data_structures.c, [187](#)
 - data_structures.h, [260](#)
- agent_ready_to_send
 - agent_s, [44](#)
- agent_return_data
 - agent_task_s, [48](#)
- agent_return_data.c
 - interpreter_variable_data_Copy, [176](#)
 - interpreter_variable_data_Destroy, [176](#)
 - interpreter_variable_data_Initialize, [176](#)
 - interpreter_variable_data_InitializeFromAgent, [176](#)
 - interpreter_variable_data_New, [177](#)
- agent_return_xml_parse
 - xml_parser.c, [861](#)
- agent_RunChScript
 - agent.c, [172](#)
 - agent.h, [222](#)
- agent_RunChScriptThread
 - agent.c, [172](#)
 - agent.h, [222](#)
- agent_s, [43](#)
 - agent_address, [43](#)
 - agent_interp, [43](#)
 - agent_persistent, [44](#)
 - agent_pipe_active, [44](#)
 - agent_pipe_ready_to_read, [44](#)
 - agent_ready_to_send, [44](#)
 - agent_script_ready, [44](#)
 - agent_status, [44](#)
 - agent_thread, [44](#)
 - agent_thread_id, [45](#)
 - agent_type, [45](#)
 - arrival_time, [45](#)
 - binary, [45](#)
 - connect_id, [45](#)
 - datastate, [45](#)
 - home, [45](#)
 - home_port, [46](#)
 - id, [46](#)
 - lock, [46](#)
 - mailbox, [46](#)
 - mc_platform, [46](#)
 - name, [46](#)
 - orphan, [46](#)
 - owner, [47](#)
 - return_data, [47](#)
 - run_lock, [47](#)
 - sender, [47](#)
 - wg_code, [47](#)
- agent_script_ready
 - agent_s, [44](#)
- agent_status
 - agent_s, [44](#)
- AGENT_T
 - agent.h, [219](#)
- agent_t
 - agent.h, [220](#)
 - libmc.h, [317](#)
- agent_task.c
 - agent_task_Copy, [178](#)
 - agent_task_Destroy, [178](#)
 - agent_task_New, [178](#)
- agent_task.h
 - agent_task_Copy, [239](#)
 - agent_task_Destroy, [239](#)
 - agent_task_New, [240](#)
 - agent_task_p, [239](#)
 - agent_task_t, [239](#)
- agent_task_Copy
 - agent_task.c, [178](#)
 - agent_task.h, [239](#)
- agent_task_Destroy
 - agent_task.c, [178](#)
 - agent_task.h, [239](#)
- agent_task_New
 - agent_task.c, [178](#)
 - agent_task.h, [240](#)
- agent_task_p
 - agent_task.h, [239](#)
- agent_task_s, [48](#)
 - agent_return_data, [48](#)
 - agent_variable_list, [48](#)
 - code_id, [48](#)
 - init_agent_status, [48](#)
 - num_saved_variables, [49](#)
 - number_of_elements, [49](#)
 - persistent, [49](#)
 - saved_variables, [49](#)
 - server_name, [49](#)
 - size_of_element_array, [49](#)
 - var_name, [49](#)
- agent_task_t
 - agent_task.h, [239](#)
- agent_thread
 - agent_s, [44](#)
- agent_thread_id
 - agent_s, [45](#)
- agent_type
 - agent_s, [45](#)
- agent_variable_list

- agent_task_s, 48
- agent_xml_compose
 - xml_compose.c, 854
 - xml_compose.h, 389
- agent_xml_compose__agent_code
 - xml_compose.c, 854
 - xml_compose.h, 389
- agent_xml_compose__agent_data
 - xml_compose.c, 854
 - xml_compose.h, 389
- agent_xml_compose__create_row_nodes
 - xml_compose.c, 855
 - xml_compose.h, 390
- agent_xml_compose__data
 - xml_compose.c, 855
 - xml_compose.h, 390
- agent_xml_compose__gaf_message
 - xml_compose.c, 855
 - xml_compose.h, 390
- agent_xml_compose__home
 - xml_compose.c, 855
 - xml_compose.h, 390
- agent_xml_compose__message
 - xml_compose.c, 855
 - xml_compose.h, 390
- agent_xml_compose__mobile_agent
 - xml_compose.c, 856
 - xml_compose.h, 390
- agent_xml_compose__name
 - xml_compose.c, 856
 - xml_compose.h, 391
- agent_xml_compose__owner
 - xml_compose.c, 856
 - xml_compose.h, 391
- agent_xml_compose__row
 - xml_compose.c, 856
 - xml_compose.h, 391
- agent_xml_compose__task
 - xml_compose.c, 856
 - xml_compose.h, 391
- agent_xml_compose__tasks
 - xml_compose.c, 856
 - xml_compose.h, 391
- agent_xml_compose__wg_code
 - xml_compose.c, 857
 - xml_compose.h, 391
- agent_xml_flag
 - message_s, 126
- agent_xml_parse
 - xml_parser.c, 861
 - xml_parser.h, 395
- agent_xml_parse__agent_code
 - xml_parser.c, 861
 - xml_parser.h, 395
- agent_xml_parse__agent_data
 - xml_parser.c, 861
 - xml_parser.h, 395
- agent_xml_parse__data
 - xml_parser.c, 861
 - xml_parser.h, 396
- agent_xml_parse__fill_row_data
 - xml_parser.c, 861
 - xml_parser.h, 396
- agent_xml_parse__home
 - xml_parser.c, 862
 - xml_parser.h, 396
- agent_xml_parse__mobile_agent
 - xml_parser.c, 862
 - xml_parser.h, 396
- agent_xml_parse__name
 - xml_parser.c, 862
 - xml_parser.h, 396
- agent_xml_parse__owner
 - xml_parser.c, 862
 - xml_parser.h, 397
- agent_xml_parse__row
 - xml_parser.c, 862
 - xml_parser.h, 397
- agent_xml_parse__sender
 - xml_parser.c, 862
 - xml_parser.h, 397
- agent_xml_parse__task
 - xml_parser.c, 863
 - xml_parser.h, 397
- agent_xml_parse__tasks
 - xml_parser.c, 863
 - xml_parser.h, 397
- agent_xml_parse__wg_code
 - xml_parser.c, 863
 - xml_parser.h, 397
- alarmed
 - timing.c, 813
 - timing.h, 665
- alloc_nodes
 - mxml_index_s, 140
- ams
 - mc_platform_s, 110
- ams.c
 - ams_Destroy, 179
 - ams_Initialize, 179
 - ams_ManageAgentList, 179
 - ams_Print, 179
 - ams_Start, 180
 - ams_Thread, 180
- ams.h
 - ams_Destroy, 241
 - ams_ManageAgentList, 241
 - ams_Print, 241

- ams_RemoveFinishedAgents, [241](#)
- ams_Start, [241](#)
- ams_Thread, [241](#)
- STRUCT, [242](#)
- ams_Destroy
 - ams.c, [179](#)
 - ams.h, [241](#)
- ams_Initialize
 - ams.c, [179](#)
- ams_ManageAgentList
 - ams.c, [179](#)
 - ams.h, [241](#)
- ams_Print
 - ams.c, [179](#)
 - ams.h, [241](#)
- ams_RemoveFinishedAgents
 - ams.h, [241](#)
- ams_Start
 - ams.c, [180](#)
 - ams.h, [241](#)
- ams_Thread
 - ams.c, [180](#)
 - ams.h, [241](#)
- AP_GENERIC_Copy
 - data_structures.c, [187](#)
- AP_GENERIC_Destroy
 - data_structures.c, [187](#)
 - data_structures.h, [260](#)
- AP_GENERIC_p
 - ap_queue_template.h, [245](#)
- AP_GENERIC_s, [51](#)
 - none, [51](#)
- AP_GENERIC_t
 - ap_queue_template.h, [245](#)
- AP_QUEUE_DECL_TEMPLATE
 - ap_queue_template.h, [243](#)
 - data_structures.h, [260](#)
- AP_QUEUE_GENERIC_DECL_TEMPLATE
 - ap_queue_template.h, [244](#)
 - data_structures.h, [260](#), [261](#)
- AP_QUEUE_REMOVE_TEMPLATE
 - ap_queue_template.h, [244](#)
- AP_QUEUE_SEARCH_TEMPLATE
 - ap_queue_template.h, [244](#)
 - data_structures.c, [187](#), [188](#)
- AP_QUEUE_STD_DEFN_TEMPLATE
 - ap_queue_template.h, [245](#)
 - data_structures.c, [188](#)
- ap_queue_template.h
 - AP_GENERIC_p, [245](#)
 - AP_GENERIC_t, [245](#)
 - AP_QUEUE_DECL_TEMPLATE, [243](#)
 - AP_QUEUE_GENERIC_DECL_TEMPLATE, [244](#)
- AP_QUEUE_REMOVE_TEMPLATE, [244](#)
- AP_QUEUE_SEARCH_TEMPLATE, [244](#)
- AP_QUEUE_STD_DEFN_TEMPLATE, [245](#)
- interpreter_queue_CreateRetrieve, [245](#)
- append_nonce_to_MA
 - interface.c, [538](#)
- arc4.c
 - arc4_crypt, [690](#)
 - arc4_self_test, [690](#)
 - arc4_setup, [690](#)
 - arc4_test_ct, [691](#)
 - arc4_test_key, [691](#)
 - arc4_test_pt, [691](#)
- arc4.h
 - arc4_crypt, [553](#)
 - arc4_self_test, [553](#)
 - arc4_setup, [553](#)
- arc4_context, [52](#)
 - m, [52](#)
 - x, [52](#)
 - y, [52](#)
- arc4_crypt
 - arc4.c, [690](#)
 - arc4.h, [553](#)
- arc4_self_test
 - arc4.c, [690](#)
 - arc4.h, [553](#)
- arc4_setup
 - arc4.c, [690](#)
 - arc4.h, [553](#)
- arc4_test_ct
 - arc4.c, [691](#)
- arc4_test_key
 - arc4.c, [691](#)
- arc4_test_pt
 - arc4.c, [691](#)
- args
 - command_s, [56](#)
 - stationary_agent_info_s, [161](#)
- array_dim
 - interpreter_variable_data_s, [105](#)
- array_extent
 - interpreter_variable_data_s, [105](#)
- arrival_time
 - agent_s, [45](#)
- asm_message_queue
 - mc_platform_s, [110](#)
- ASN1_BIT_STRING
 - x509.h, [668](#)
- ASN1_BMP_STRING
 - x509.h, [668](#)
- ASN1_BOOLEAN
 - x509.h, [668](#)
- ASN1_CONSTRUCTED

- x509.h, [669](#)
- ASN1_CONTEXT_SPECIFIC
 - x509.h, [669](#)
- asn1_get_bool
 - x509parse.c, [816](#)
- asn1_get_int
 - x509parse.c, [816](#)
- asn1_get_len
 - x509parse.c, [816](#)
- asn1_get_mpi
 - x509parse.c, [816](#)
- asn1_get_tag
 - x509parse.c, [817](#)
- ASN1_HASH_MD5
 - rsa.h, [616](#)
- ASN1_HASH_SHA1
 - rsa.h, [616](#)
- ASN1_IA5_STRING
 - x509.h, [669](#)
- ASN1_INTEGER
 - x509.h, [669](#)
- ASN1_NULL
 - x509.h, [669](#)
- ASN1_OCTET_STRING
 - x509.h, [669](#)
- ASN1_OID
 - x509.h, [669](#)
- ASN1_PRIMITIVE
 - x509.h, [669](#)
- ASN1_PRINTABLE_STRING
 - x509.h, [670](#)
- ASN1_SEQUENCE
 - x509.h, [670](#)
- ASN1_SET
 - x509.h, [670](#)
- ASN1_T61_STRING
 - x509.h, [670](#)
- ASN1_UNIVERSAL_STRING
 - x509.h, [670](#)
- ASN1_UTCTIME
 - x509.h, [670](#)
- ASN1_UTF8_STRING
 - x509.h, [670](#)
- attr
 - mxml_index_s, [140](#)
 - stationary_agent_info_s, [161](#)
- attrs
 - mxml_value_s, [145](#)
- auth_conn_rece_key
 - acc.c, [169](#)
- auth_rece_send_msg
 - message.c, [472](#)
 - message.h, [379](#)
- authmode
 - _ssl_context, [11](#)
- BACKLOG
 - acc.c, [167](#)
- BAD_REQUEST
 - mtp_http.h, [385](#)
- BADCERT_CN_MISMATCH
 - x509.h, [670](#)
- BADCERT_EXPIRED
 - x509.h, [670](#)
- BADCERT_NOT_TRUSTED
 - x509.h, [671](#)
- BADCERT_REVOKED
 - x509.h, [671](#)
- bar
 - class.cxx, [522](#)
 - foo_c, [97](#)
 - foo_s, [100](#)
- barfoo
 - foo_c, [97](#)
- barrier.c
 - barrier_node_Destroy, [181](#)
 - barrier_node_Initialize, [181](#)
 - barrier_queue_Add, [181](#)
 - barrier_queue_Delete, [181](#)
 - barrier_queue_Destroy, [182](#)
 - barrier_queue_Get, [182](#)
 - barrier_queue_New, [182](#)
 - barrier_queue_Pop, [182](#)
- barrier.h
 - barrier_node_Destroy, [247](#)
 - barrier_node_Initialize, [247](#)
 - barrier_node_p, [246](#)
 - barrier_node_t, [246](#)
 - barrier_queue_Add, [247](#)
 - barrier_queue_Delete, [247](#)
 - barrier_queue_Destroy, [247](#)
 - barrier_queue_Get, [247](#)
 - barrier_queue_New, [248](#)
 - barrier_queue_p, [246](#)
 - barrier_queue_Pop, [248](#)
 - barrier_queue_t, [246](#)
- barrier_node_Destroy
 - barrier.c, [181](#)
 - barrier.h, [247](#)
- barrier_node_Initialize
 - barrier.c, [181](#)
 - barrier.h, [247](#)
- barrier_node_p
 - barrier.h, [246](#)
- barrier_node_s, [53](#)
 - cond, [53](#)
 - id, [53](#)
 - lock, [53](#)

- num_registered, 53
- num_waiting, 53
- barrier_node_t
 - barrier.h, 246
- barrier_queue
 - mc_platform_s, 110
- barrier_queue_Add
 - barrier.c, 181
 - barrier.h, 247
- barrier_queue_Delete
 - barrier.c, 181
 - barrier.h, 247
- barrier_queue_Destroy
 - barrier.c, 182
 - barrier.h, 247
- barrier_queue_Get
 - barrier.c, 182
 - barrier.h, 247
- barrier_queue_New
 - barrier.c, 182
 - barrier.h, 248
- barrier_queue_p
 - barrier.h, 246
- barrier_queue_Pop
 - barrier.c, 182
 - barrier.h, 248
- barrier_queue_s, 54
 - list, 54
 - lock, 54
 - size, 54
- barrier_queue_t
 - barrier.h, 246
- base64.c
 - base64_dec_map, 694
 - base64_decode, 693
 - base64_enc_map, 695
 - base64_encode, 694
 - base64_self_test, 694
 - base64_test_dec, 695
 - base64_test_enc, 695
- base64.h
 - base64_decode, 555
 - base64_encode, 556
 - base64_self_test, 556
 - XYSSL_ERR_BASE64_BUFFER_TOO_ -
SMALL, 555
 - XYSSL_ERR_BASE64_INVALID_ -
CHARACTER, 555
- base64_dec_map
 - base64.c, 694
- base64_decode
 - base64.c, 693
 - base64.h, 555
- base64_enc_map
 - base64.c, 695
- base64_encode
 - base64.c, 694
 - base64.h, 556
- base64_self_test
 - base64.c, 694
 - base64.h, 556
- base64_test_dec
 - base64.c, 695
- base64_test_enc
 - base64.c, 695
- benchmark.c
 - buf, 845
 - BUFSIZE, 844
 - main, 844
 - myrand, 845
- bignum.c
 - biH, 700
 - biL, 700
 - BITS_TO_LIMBS, 700
 - CHARS_TO_LIMBS, 700
 - ciL, 700
 - mpi_add_abs, 700
 - mpi_add_int, 700
 - mpi_add_mpi, 701
 - mpi_cmp_abs, 701
 - mpi_cmp_int, 701
 - mpi_cmp_mpi, 701
 - mpi_copy, 702
 - mpi_div_int, 702
 - mpi_div_mpi, 702
 - mpi_exp_mod, 703
 - mpi_free, 703
 - mpi_gcd, 703
 - mpi_gen_prime, 703
 - mpi_get_digit, 704
 - mpi_grow, 704
 - mpi_init, 704
 - mpi_inv_mod, 705
 - mpi_is_prime, 705
 - mpi_lsb, 705
 - mpi_lset, 705
 - mpi_mod_int, 706
 - mpi_mod_mpi, 706
 - mpi_montg_init, 706
 - mpi_montmul, 706
 - mpi_montred, 706
 - mpi_msb, 707
 - mpi_mul_hlp, 707
 - mpi_mul_int, 707
 - mpi_mul_mpi, 707
 - mpi_read_binary, 707
 - mpi_read_file, 708
 - mpi_read_mystring, 708

- mpi_read_string, 708
- mpi_self_test, 709
- mpi_shift_l, 709
- mpi_shift_r, 709
- mpi_size, 709
- mpi_sub_abs, 710
- mpi_sub_hlp, 710
- mpi_sub_int, 710
- mpi_sub_mpi, 710
- mpi_swap, 710
- mpi_write_binary, 711
- mpi_write_file, 711
- mpi_write_hlp, 711
- mpi_write_string, 712
- small_prime, 712
- bignum.h
 - mpi_add_abs, 561
 - mpi_add_int, 561
 - mpi_add_mpi, 561
 - MPI_CHK, 560
 - mpi_cmp_abs, 561
 - mpi_cmp_int, 562
 - mpi_cmp_mpi, 562
 - mpi_copy, 562
 - mpi_div_int, 562
 - mpi_div_mpi, 563
 - mpi_exp_mod, 563
 - mpi_free, 563
 - mpi_gcd, 564
 - mpi_gen_prime, 564
 - mpi_grow, 564
 - mpi_init, 565
 - mpi_inv_mod, 565
 - mpi_is_prime, 565
 - mpi_lsb, 565
 - mpi_lset, 566
 - mpi_mod_int, 566
 - mpi_mod_mpi, 566
 - mpi_msb, 566
 - mpi_mul_int, 567
 - mpi_mul_mpi, 567
 - mpi_read_binary, 567
 - mpi_read_file, 568
 - mpi_read_mystring, 568
 - mpi_read_string, 568
 - mpi_self_test, 568
 - mpi_shift_l, 569
 - mpi_shift_r, 569
 - mpi_size, 569
 - mpi_sub_abs, 569
 - mpi_sub_int, 570
 - mpi_sub_mpi, 570
 - mpi_swap, 570
 - mpi_write_binary, 570
 - mpi_write_file, 571
 - mpi_write_string, 571
 - t_dbl, 561
 - t_int, 561
 - XYSSL_ERR_MPI_BAD_INPUT_DATA, 560
 - XYSSL_ERR_MPI_BUFFER_TOO_SMALL, 560
 - XYSSL_ERR_MPI_DIVISION_BY_ZERO, 560
 - XYSSL_ERR_MPI_FILE_IO_ERROR, 560
 - XYSSL_ERR_MPI_INVALID_CHARACTER, 560
 - XYSSL_ERR_MPI_NEGATIVE_VALUE, 560
 - XYSSL_ERR_MPI_NOT_ACCEPTABLE, 560
- biH
 - bignum.c, 700
- biL
 - bignum.c, 700
- binary
 - agent_s, 45
- BITS_TO_LIMBS
 - bignum.c, 700
- bluetooth
 - agency_s, 36
 - mc_platform_s, 110
 - MCAgencyOptions_s, 118
- bn_mul.h
 - MULADDC_CORE, 573
 - MULADDC_INIT, 573
 - MULADDC_STOP, 573
- boundary
 - mtp_http_s, 133
- buf
 - aes_context, 35
 - benchmark.c, 845
- buffer
 - md2_context, 120
 - md4_context, 122
 - md5_context, 124
 - mxml_fdbuf_s, 139
 - sha1_context, 155
 - sha2_context, 157
 - sha4_context, 159
- buffer_size
 - options, 148
- BUFLen
 - acc.c, 167
- BUFSIZE
 - benchmark.c, 844
- ca_chain

- [_ssl_context](#), [11](#)
- [ca_istrue](#)
 - [_x509_cert](#), [25](#)
- [cache_control](#)
 - [mtp_http_s](#), [133](#)
- [callback](#)
 - [fipa_comm_action_t](#), [76](#)
- [callbacks](#)
 - [mxml-entity.c](#), [487](#)
- [CANCEL](#)
 - [message.h](#), [379](#)
- [certs.c](#)
 - [test_ca_cert](#), [714](#)
 - [test_ca_key](#), [714](#)
 - [test_ca_pwd](#), [714](#)
 - [test_cli_cert](#), [715](#)
 - [test_cli_key](#), [715](#)
 - [test_srv_cert](#), [716](#)
 - [test_srv_key](#), [716](#)
 - [xyssl_ca_cert](#), [717](#)
- [certs.h](#)
 - [test_ca_cert](#), [575](#)
 - [test_ca_key](#), [575](#)
 - [test_ca_pwd](#), [575](#)
 - [test_cli_cert](#), [575](#)
 - [test_cli_key](#), [575](#)
 - [test_srv_cert](#), [575](#)
 - [test_srv_key](#), [576](#)
 - [xyssl_ca_cert](#), [576](#)
- [cfp_request](#)
 - [fipa_comm_protocol_cn_t](#), [79](#)
- [CH_DATATYPE_SIZE](#)
 - [macros.h](#), [361](#)
- [CH_DATATYPE_STR_TO_VAL](#)
 - [macros.h](#), [361](#)
- [CH_DATATYPE_STRING](#)
 - [macros.h](#), [362](#)
- [CH_DATATYPE_VALUE_STRING](#)
 - [macros.h](#), [362](#)
- [ch_options](#)
 - [MCAgencyOptions_s](#), [118](#)
- [CH_STRING_DATATYPE](#)
 - [macros.h](#), [363](#)
- [CHARS_TO_LIMBS](#)
 - [bignum.c](#), [700](#)
- [check_list](#)
 - [fipa_comm_action_t](#), [76](#)
- [CHECK_NULL](#)
 - [macros.h](#), [363](#)
- [child](#)
 - [mxml_node_s](#), [142](#)
- [ciL](#)
 - [bignum.c](#), [700](#)
- [cipher](#)
 - [_ssl_session](#), [22](#)
- [ciphers](#)
 - [_ssl_context](#), [11](#)
- [cksum](#)
 - [md2_context](#), [120](#)
- [class.cxx](#)
 - [bar](#), [522](#)
 - [f](#), [522](#)
 - [foo](#), [522](#)
- [client](#)
 - [agency_s](#), [36](#)
- [client_auth](#)
 - [_ssl_context](#), [11](#)
- [client_fd](#)
 - [acc.h](#), [218](#)
- [client_thread_arg](#)
 - [mc_platform_s](#), [110](#)
- [clientfd](#)
 - [connection_s](#), [57](#)
- [cmd_handler_t](#)
 - [commands.h](#), [253](#)
- [cmd_handlers](#)
 - [commands.h](#), [254](#)
- [cmd_prompt](#)
 - [mc_platform_s](#), [111](#)
- [cmd_prompt.c](#)
 - [cmd_prompt_Destroy](#), [183](#)
 - [cmd_prompt_Initialize](#), [183](#)
 - [cmd_prompt_Start](#), [183](#)
 - [cmd_prompt_Thread](#), [184](#)
 - [dealloc_command](#), [184](#)
 - [exec_command](#), [184](#)
 - [handler_COMPOSE_SEND](#), [184](#)
 - [handler_FLUSH_AGENTS](#), [184](#)
 - [handler_HELP](#), [184](#)
 - [handler_PRINT_CONNECTLIST](#), [184](#)
 - [handler_PRINTLIST_AGENTS](#), [185](#)
 - [handler_PRINTLIST_MESSAGE](#), [185](#)
 - [handler_QUIT](#), [185](#)
 - [handler_SEND](#), [185](#)
 - [process_command](#), [185](#)
 - [split_string](#), [185](#)
- [cmd_prompt.h](#)
 - [cmd_prompt_Destroy](#), [250](#)
 - [cmd_prompt_Initialize](#), [250](#)
 - [cmd_prompt_p](#), [249](#)
 - [cmd_prompt_Start](#), [250](#)
 - [cmd_prompt_t](#), [249](#)
 - [cmd_prompt_Thread](#), [250](#)
 - [CMDLINE_SIZE](#), [249](#)
 - [command_p](#), [250](#)
 - [command_t](#), [250](#)
 - [dealloc_command](#), [250](#)
 - [exec_command](#), [250](#)

- process_command, 250
- split_string, 250
- cmd_prompt_Destroy
 - cmd_prompt.c, 183
 - cmd_prompt.h, 250
- cmd_prompt_Initialize
 - cmd_prompt.c, 183
 - cmd_prompt.h, 250
- cmd_prompt_p
 - cmd_prompt.h, 249
- cmd_prompt_s, 55
 - thread, 55
- cmd_prompt_Start
 - cmd_prompt.c, 183
 - cmd_prompt.h, 250
- cmd_prompt_t
 - cmd_prompt.h, 249
- cmd_prompt_Thread
 - cmd_prompt.c, 184
 - cmd_prompt.h, 250
- CMDLINE_SIZE
 - cmd_prompt.h, 249
- code_id
 - agent_task_s, 48
- COLLECT_SIZE
 - havege.h, 590
- COMMAND
 - commands.h, 252–254
 - commands.x.h, 255
- command
 - options, 148
- COMMAND_BOTH
 - ssl_test.c, 848
- command_cmds
 - commands.h, 254
- command_descriptions
 - commands.h, 254
- command_indices_e
 - commands.h, 253
- command_p
 - cmd_prompt.h, 250
- COMMAND_READ
 - ssl_test.c, 848
- command_s, 56
 - args, 56
 - index, 56
 - num_args, 56
- command_t
 - cmd_prompt.h, 250
- COMMAND_WRITE
 - ssl_test.c, 848
- commands.h
 - cmd_handler_t, 253
 - cmd_handlers, 254
 - COMMAND, 252–254
 - command_cmds, 254
 - command_descriptions, 254
 - command_indices_e, 253
- commands.x.h
 - COMMAND, 255
 - compose_send, 256
 - help, 256
 - is, 256
 - print_connectlist, 256
 - printlist_agents, 256
 - send, 256
- comments
 - fipa_acl_Param_s, 72
- COMPOSE_BLOCKSIZE
 - dynstring.h, 271
- compose_send
 - commands.x.h, 256
- cond
 - barrier_node_s, 53
 - df.h, 267
 - mc_rwlock_s, 116
 - syncListNode_s, 163
- COND_BROADCAST
 - macros.h, 364
- COND_DESTROY
 - macros.h, 364
- COND_INIT
 - macros.h, 364
- COND_RESET
 - macros.h, 364
- COND_SIGNAL
 - macros.h, 365
- COND_SLEEP
 - macros.h, 365
- COND_SLEEP_ACTION
 - macros.h, 365
- COND_T
 - macros.h, 365
- COND_WAIT
 - macros.h, 365
- CONFLICT
 - mtp_http.h, 385
- CONN_THREADS
 - acc.c, 167
- conn_timeout
 - options, 148
- connect_id
 - agent_s, 45
 - connection_s, 57
 - message_s, 126
- CONNECT_THREAD_EXIT
 - acc.c, 167
- connection

- mtp_http_s, 133
- connection.c
 - connection_Copy, 186
 - connection_Destroy, 186
 - connection_New, 186
- connection.h
 - connection_Close, 257
 - connection_Copy, 257
 - connection_CreateMessage, 257
 - connection_Destroy, 258
 - connection_New, 258
 - connection_p, 257
 - connection_RecvFromConnection, 258
 - connection_SendtoConnection, 258
 - connection_SetHosts, 258
 - connection_t, 257
- connection_Close
 - connection.h, 257
- connection_Copy
 - connection.c, 186
 - connection.h, 257
- connection_CreateMessage
 - connection.h, 257
- connection_Destroy
 - connection.c, 186
 - connection.h, 258
- connection_New
 - connection.c, 186
 - connection.h, 258
- connection_p
 - connection.h, 257
- connection_queue
 - mc_platform_s, 111
- connection_RecvFromConnection
 - connection.h, 258
- connection_s, 57
 - addr, 57
 - AES_key, 57
 - clientfd, 57
 - connect_id, 57
 - nonce, 57
 - remote_hostname, 57
 - serverfd, 58
- connection_SendtoConnection
 - connection.h, 258
- connection_SetHosts
 - connection.h, 258
- connection_t
 - connection.h, 257
- content
 - fipa_acl_message_s, 69
 - fipa_comm_reply_t, 83
 - fipa_expression_s, 88
 - fipa_string_s, 92
 - fipa_word_s, 95
 - mtp_http_s, 134
- content_length
 - mtp_http_s, 134
- content_type
 - mtp_http_content_s, 132
 - mtp_http_s, 134
- CONTINUE
 - mtp_http.h, 385
- contract_func
 - fipa_comm_protocol_cn_t, 79
- conversation_id
 - fipa_acl_message_s, 69
 - fipa_comm_protocol_t, 81
- CREATED
 - mtp_http.h, 385
- ctx_dec
 - _ssl_context, 12
- ctx_enc
 - _ssl_context, 12
- cur
 - ssl_server.c, 842
- cur_node
 - mxml_index_s, 140
- current
 - mxml_fdbuf_s, 139
- custom
 - mxml_value_u, 146
- D
 - rsa_context, 151
- d2i_RSA_PUBKEY
 - openssl.h, 613
- d2i_RSAPrivateKey
 - openssl.h, 611
- DATA
 - list.h, 459
- data
 - _x509_node, 30
 - fipa_list_t, 89
 - interpreter_variable_data_s, 105
 - mtp_http_content_s, 132
 - mxml_custom_s, 138
- data_structures.c
 - agent_queue_Flush, 187
 - AP_GENERIC_Copy, 187
 - AP_GENERIC_Destroy, 187
 - AP_QUEUE_SEARCH_TEMPLATE, 187, 188
 - AP_QUEUE_STD_DEFN_TEMPLATE, 188
- data_structures.h
 - agent_mailbox_p, 261
 - agent_queue_Flush, 260
 - AP_GENERIC_Destroy, 260

- AP_QUEUE_DECL_TEMPLATE, 260
- AP_QUEUE_GENERIC_DECL_TEMPLATE, 260, 261
- int, 261
- Remove, 261
- RemoveID, 261
- RemoveName, 262
- Search, 262
- SearchName, 262
- data_type
 - interpreter_variable_data_s, 105
- datastate
 - agent_s, 45
- date
 - fipa_acl_Param_s, 72
 - mtp_http_s, 134
- datetime
 - fipa_expression_s::content_u, 59
- day
 - _x509_time, 33
 - fipa_DateTime_s, 86
- dealloc_command
 - cmd_prompt.c, 184
 - cmd_prompt.h, 250
- debug
 - fipa_comm_t, 84
- debug.c
 - debug_fmt, 718
 - debug_print_buf, 718
 - debug_print_crt, 718
 - debug_print_mpi, 718
 - debug_print_msg, 718
 - debug_print_ret, 719
- debug.h
 - debug_fmt, 578
 - debug_print_buf, 578
 - debug_print_crt, 579
 - debug_print_mpi, 579
 - debug_print_msg, 579
 - debug_print_ret, 579
 - SSL_DEBUG_BUF, 577
 - SSL_DEBUG_CRT, 577
 - SSL_DEBUG_MPI, 578
 - SSL_DEBUG_MSG, 578
 - SSL_DEBUG_RET, 578
- debug_fmt
 - debug.c, 718
 - debug.h, 578
- DEBUG_LEVEL
 - ssl_client1.c, 837
 - ssl_client2.c, 839
 - ssl_server.c, 841
- debug_level
 - options, 148
- debug_print_buf
 - debug.c, 718
 - debug.h, 578
- debug_print_crt
 - debug.c, 718
 - debug.h, 579
- debug_print_mpi
 - debug.c, 718
 - debug.h, 579
- debug_print_msg
 - debug.c, 718
 - debug.h, 579
- debug_print_ret
 - debug.c, 719
 - debug.h, 579
- default_agent_status
 - MCAgencyOptions_s, 118
- default_agentstatus
 - agency_s, 36
 - mc_platform_s, 111
- default_callback
 - mxml-entity.c, 486
- DEFAULT_HOSTNAME_LENGTH
 - mc_platform.c, 462
- default_reply
 - fipa_comm_performative_t, 78
 - fipa_comm_t, 84
- des.c
 - des3_crypt_cbc, 723
 - des3_crypt_ecb, 723
 - des3_set2key, 723
 - des3_set2key_dec, 724
 - des3_set2key_enc, 724
 - des3_set3key, 724
 - des3_set3key_dec, 724
 - des3_set3key_enc, 725
 - des3_test_buf, 727
 - des3_test_cbc_dec, 727
 - des3_test_cbc_enc, 727
 - des3_test_ecb_dec, 727
 - des3_test_ecb_enc, 727
 - des3_test_iv, 728
 - des3_test_keys, 728
 - des_crypt_cbc, 725
 - des_crypt_ecb, 725
 - DES_FP, 721
 - DES_IP, 721
 - DES_ROUND, 722
 - des_self_test, 726
 - des_setkey, 726
 - des_setkey_dec, 726
 - des_setkey_enc, 726
 - GET_ULONG_BE, 722
 - LHs, 728

- PUT_ULONG_BE, [722](#)
- RHs, [728](#)
- SB1, [729](#)
- SB2, [729](#)
- SB3, [730](#)
- SB4, [730](#)
- SB5, [730](#)
- SB6, [731](#)
- SB7, [731](#)
- SB8, [732](#)
- SWAP, [723](#)
- des.h
 - des3_crypt_cbc, [581](#)
 - des3_crypt_ecb, [581](#)
 - des3_set2key_dec, [582](#)
 - des3_set2key_enc, [582](#)
 - des3_set3key_dec, [582](#)
 - des3_set3key_enc, [582](#)
 - des_crypt_cbc, [583](#)
 - des_crypt_ecb, [583](#)
 - DES_DECRYPT, [581](#)
 - DES_ENCRYPT, [581](#)
 - des_self_test, [583](#)
 - des_setkey_dec, [584](#)
 - des_setkey_enc, [584](#)
- des3_context, [61](#)
 - mode, [61](#)
 - sk, [61](#)
- des3_crypt_cbc
 - des.c, [723](#)
 - des.h, [581](#)
- des3_crypt_ecb
 - des.c, [723](#)
 - des.h, [581](#)
- des3_set2key
 - des.c, [723](#)
- des3_set2key_dec
 - des.c, [724](#)
 - des.h, [582](#)
- des3_set2key_enc
 - des.c, [724](#)
 - des.h, [582](#)
- des3_set3key
 - des.c, [724](#)
- des3_set3key_dec
 - des.c, [724](#)
 - des.h, [582](#)
- des3_set3key_enc
 - des.c, [725](#)
 - des.h, [582](#)
- des3_test_buf
 - des.c, [727](#)
- des3_test_cbc_dec
 - des.c, [727](#)
- des3_test_cbc_enc
 - des.c, [727](#)
- des3_test_ecb_dec
 - des.c, [727](#)
- des3_test_ecb_enc
 - des.c, [727](#)
- des3_test_iv
 - des.c, [728](#)
- des3_test_keys
 - des.c, [728](#)
- des_context, [62](#)
 - mode, [62](#)
 - sk, [62](#)
- des_crypt_cbc
 - des.c, [725](#)
 - des.h, [583](#)
- des_crypt_ecb
 - des.c, [725](#)
 - des.h, [583](#)
- DES_DECRYPT
 - des.h, [581](#)
- DES_ENCRYPT
 - des.h, [581](#)
- DES_FP
 - des.c, [721](#)
- DES_IP
 - des.c, [721](#)
- DES_ROUND
 - des.c, [722](#)
- des_self_test
 - des.c, [726](#)
 - des.h, [583](#)
- des_setkey
 - des.c, [726](#)
- des_setkey_dec
 - des.c, [726](#)
 - des.h, [584](#)
- des_setkey_enc
 - des.c, [726](#)
 - des.h, [584](#)
- destroy
 - mxml_custom_s, [138](#)
- df
 - mc_platform_s, [111](#)
- df.c
 - df_Add, [190](#)
 - df_AddRequest, [190](#)
 - df_Destroy, [190](#)
 - df_Initialize, [190](#)
 - df_node_Destroy, [190](#)
 - df_ProcessRequest, [190](#)
 - df_request_list_Destroy, [191](#)
 - df_request_list_New, [191](#)
 - df_request_list_node_Destroy, [191](#)

- df_request_list_node_New, 191
- df_request_list_Pop, 191
- df_request_search_Destroy, 191
- df_request_search_New, 191
- df_SearchForService, 192
- df_Start, 192
- df_Thread, 192
- REQUEST, 189
- request_handler_DEREGISTER, 192
- request_handler_REGISTER, 192
- request_handler_SEARCH, 192
- request_handler_SUBSCRIBE, 192
- df.h
 - cond, 267
 - df_AddRequest, 265
 - df_Destroy, 265
 - df_Initialize, 265
 - df_node_Destroy, 265
 - df_ProcessRequest, 265
 - df_request_list_Destroy, 265
 - df_request_list_index_e, 264
 - df_request_list_New, 265
 - df_request_list_node_Destroy, 265
 - df_request_list_node_New, 266
 - df_request_list_Pop, 266
 - df_request_search_Destroy, 266
 - df_request_search_New, 266
 - df_SearchForService, 266
 - df_Start, 266
 - df_Thread, 266
 - HERE, 264
 - INSERT, 264
 - lock, 267
 - mc_platform, 267
 - MISC, 264
 - node, 267
 - num_entries, 268
 - REQUEST, 264, 267
 - request_list, 268
 - search_results, 268
 - search_string, 268
 - service_list, 268
 - service_types_e, 264
 - size, 268
 - SOME, 264
 - STRUCT, 267
 - thread, 268
 - TYPES, 264
 - waiting, 268
 - waiting_cond, 268
 - waiting_lock, 269
 - ZERO, 264
- df_Add
 - df.c, 190
- df_AddRequest
 - df.c, 190
 - df.h, 265
- df_Destroy
 - df.c, 190
 - df.h, 265
- df_Initialize
 - df.c, 190
 - df.h, 265
- df_node_Destroy
 - df.c, 190
 - df.h, 265
- df_ProcessRequest
 - df.c, 190
 - df.h, 265
- df_request.x.h
 - register, 270
 - REQUEST, 270
 - search, 270
- df_request_list_Destroy
 - df.c, 191
 - df.h, 265
- df_request_list_index_e
 - df.h, 264
- df_request_list_New
 - df.c, 191
 - df.h, 265
- df_request_list_node_Destroy
 - df.c, 191
 - df.h, 265
- df_request_list_node_New
 - df.c, 191
 - df.h, 266
- df_request_list_Pop
 - df.c, 191
 - df.h, 266
- df_request_search_Destroy
 - df.c, 191
 - df.h, 266
- df_request_search_New
 - df.c, 191
 - df.h, 266
- df_SearchForService
 - df.c, 192
 - df.h, 266
- df_Start
 - df.c, 192
 - df.h, 266
- df_Thread
 - df.c, 192
 - df.h, 266
- DFL_BUFFER_SIZE
 - ssl_test.c, 848
- DFL_COMMAND

- ssl_test.c, [848](#)
- DFL_CONN_TIMEOUT
 - ssl_test.c, [848](#)
- DFL_DEBUG_LEVEL
 - ssl_test.c, [848](#)
- DFL_FORCE_CIPHER
 - ssl_test.c, [848](#)
- DFL_IOMODE
 - ssl_test.c, [849](#)
- DFL_MAX_BYTES
 - ssl_test.c, [849](#)
- DFL_MAX_CONNECTIONS
 - ssl_test.c, [849](#)
- DFL_OPMODE
 - ssl_test.c, [849](#)
- DFL_SERVER_NAME
 - ssl_test.c, [849](#)
- DFL_SERVER_PORT
 - ssl_test.c, [849](#)
- DFL_SESSION_LIFETIME
 - ssl_test.c, [849](#)
- DFL_SESSION_REUSE
 - ssl_test.c, [849](#)
- dh_client.c
 - main, [830](#)
 - SERVER_NAME, [830](#)
 - SERVER_PORT, [830](#)
- dh_genprime.c
 - DH_P_SIZE, [831](#)
 - GENERATOR, [831](#)
 - main, [831](#)
- DH_P_SIZE
 - dh_genprime.c, [831](#)
- dh_server.c
 - main, [832](#)
 - PLAINTEXT, [832](#)
 - SERVER_PORT, [832](#)
- dhm.c
 - dhm_calc_secret, [734](#)
 - dhm_free, [734](#)
 - dhm_make_params, [734](#)
 - dhm_make_public, [735](#)
 - DHM_MPI_EXPORT, [733](#)
 - dhm_read_bignum, [735](#)
 - dhm_read_params, [735](#)
 - dhm_read_public, [736](#)
 - dhm_self_test, [736](#)
- dhm.h
 - dhm_calc_secret, [586](#)
 - dhm_free, [587](#)
 - dhm_make_params, [587](#)
 - dhm_make_public, [587](#)
 - dhm_read_params, [588](#)
 - dhm_read_public, [588](#)
- dhm_self_test, [589](#)
- XYSSL_ERR_DHM_BAD_INPUT_DATA, [586](#)
- XYSSL_ERR_DHM_CALC_SECRET_FAILED, [586](#)
- XYSSL_ERR_DHM_MAKE_PARAMS_FAILED, [586](#)
- XYSSL_ERR_DHM_MAKE_PUBLIC_FAILED, [586](#)
- XYSSL_ERR_DHM_READ_PARAMS_FAILED, [586](#)
- XYSSL_ERR_DHM_READ_PUBLIC_FAILED, [586](#)
- dhm_calc_secret
 - dhm.c, [734](#)
 - dhm.h, [586](#)
- dhm_context, [63](#)
 - G, [63](#)
 - GX, [63](#)
 - GY, [63](#)
 - K, [63](#)
 - len, [64](#)
 - P, [64](#)
 - RP, [64](#)
 - X, [64](#)
- dhm_ctx
 - _ssl_context, [12](#)
- dhm_free
 - dhm.c, [734](#)
 - dhm.h, [587](#)
- dhm_G
 - ssl_test.c, [851](#)
- dhm_make_params
 - dhm.c, [734](#)
 - dhm.h, [587](#)
- dhm_make_public
 - dhm.c, [735](#)
 - dhm.h, [587](#)
- DHM_MPI_EXPORT
 - dhm.c, [733](#)
- dhm_P
 - ssl_test.c, [852](#)
- dhm_read_bignum
 - dhm.c, [735](#)
- dhm_read_params
 - dhm.c, [735](#)
 - dhm.h, [588](#)
- dhm_read_public
 - dhm.c, [736](#)
 - dhm.h, [588](#)
- dhm_self_test
 - dhm.c, [736](#)
 - dhm.h, [589](#)
- do_crypt

- [_ssl_context, 12](#)
- DP
 - [rsa_context, 151](#)
- DQ
 - [rsa_context, 151](#)
- dynstring.c
 - [dynstring_Append, 194](#)
 - [dynstring_Destroy, 194](#)
 - [dynstring_New, 194](#)
- dynstring.h
 - [COMPOSE_BLOCKSIZE, 271](#)
 - [dynstring_Append, 271](#)
 - [dynstring_Destroy, 272](#)
 - [dynstring_New, 272](#)
 - [dynstring_p, 271](#)
 - [dynstring_t, 271](#)
- dynstring_Append
 - [dynstring.c, 194](#)
 - [dynstring.h, 271](#)
- dynstring_Destroy
 - [dynstring.c, 194](#)
 - [dynstring.h, 272](#)
- dynstring_New
 - [dynstring.c, 194](#)
 - [dynstring.h, 272](#)
- dynstring_p
 - [dynstring.h, 271](#)
- dynstring_s, [65](#)
 - [len, 65](#)
 - [message, 65](#)
 - [size, 65](#)
- dynstring_t
 - [dynstring.h, 271](#)
- E
 - [rsa_context, 152](#)
- element
 - [mxml_value_u, 146](#)
- enable_security
 - [agency_s, 36](#)
 - [MCAgencyOptions_s, 118](#)
- ENCODE_UTF16BE
 - [mxml-file.c, 489](#)
- ENCODE_UTF16LE
 - [mxml-file.c, 489](#)
- ENCODE_UTF8
 - [mxml-file.c, 489](#)
- encoding
 - [fipa_acl_message_s, 69](#)
- ENCRYPTED_DATA
 - [message.h, 379](#)
- ENCRYPTION_INITIALIZE
 - [message.h, 379](#)
- end
 - [_x509_node, 30](#)
 - [mxml_fdbuf_s, 139](#)
- endpoint
 - [_ssl_context, 12](#)
- enum.cxx
 - [FOO_BLUE, 523](#)
 - [FOO_ONE, 523](#)
 - [FOO_RED, 523](#)
 - [FOO_TWO, 523](#)
 - [foo_enum_e, 523](#)
 - [foo_enum_t, 523](#)
- ERR
 - [libmc.h, 318](#)
 - [mc_error.h, 372](#)
- err
 - [mc_platform_s, 111](#)
- ERR_get_error
 - [openssl.h, 611](#)
- error
 - [fipa_comm_protocol_t, 81](#)
 - [fipa_comm_t, 84](#)
- error_code_e
 - [libmc.h, 318](#)
 - [mc_error.h, 372](#)
- error_code_t
 - [libmc.h, 317](#)
 - [mc_error.h, 372](#)
- exec_command
 - [cmd_prompt.c, 184](#)
 - [cmd_prompt.h, 250](#)
- EXPECTATION_FAILED
 - [mtp_http.h, 386](#)
- EXPONENT
 - [interface.h, 543](#)
 - [rsa_genkey.c, 834](#)
- EXPORTMC
 - [libmc.h, 317](#)
- expression
 - [fipa_expression_s::content_u, 59](#)
- extract_nonce_from_MA
 - [interface.c, 538](#)
- F
 - [md5.c, 742](#)
 - [sha1.c, 766](#)
- f
 - [class.cxx, 522](#)
- F0
 - [sha2.c, 775](#)
 - [sha4.c, 784](#)
- F1
 - [sha2.c, 775](#)
 - [sha4.c, 784](#)
- f_dbg

- [_ssl_context](#), [12](#)
- [f_recv](#)
 - [_ssl_context](#), [13](#)
- [f_rng](#)
 - [_ssl_context](#), [13](#)
 - [rsa_context](#), [152](#)
- [f_send](#)
 - [_ssl_context](#), [13](#)
- [FAILED_DEPENDANCY](#)
 - [mtp_http.h](#), [386](#)
- [false](#)
 - [fipa_comm.h](#), [300](#)
- [fd](#)
 - [mxmml_fdbuf_s](#), [139](#)
- [filename](#)
 - [agency_s](#), [37](#)
- [fin_md5](#)
 - [_ssl_context](#), [13](#)
- [fin_sha1](#)
 - [_ssl_context](#), [13](#)
- [FIPA_ACCEPT_PROPOSAL](#)
 - [fipa_acl.h](#), [277](#), [278](#)
 - [libmc.h](#), [319](#)
- [FIPA_ACL](#)
 - [message.h](#), [379](#)
- [fipa_acl.h](#)
 - [FIPA_ACCEPT_PROPOSAL](#), [277](#), [278](#)
 - [FIPA_AGREE](#), [277](#), [278](#)
 - [FIPA_CALL_FOR_PROPOSAL](#), [277](#), [278](#)
 - [FIPA_CANCEL](#), [277](#), [278](#)
 - [FIPA_CONFIRM](#), [277](#), [278](#)
 - [FIPA_DISCONFIRM](#), [277](#), [278](#)
 - [FIPA_ERROR](#), [277](#), [278](#)
 - [FIPA_EXPR_DATETIME](#), [277](#)
 - [FIPA_EXPR_EXPRESSION](#), [277](#)
 - [FIPA_EXPR_NUMBER](#), [277](#)
 - [FIPA_EXPR_STRING](#), [277](#)
 - [FIPA_EXPR_WORD](#), [277](#)
 - [FIPA_EXPR_ZERO](#), [277](#)
 - [FIPA_FAILURE](#), [277](#), [278](#)
 - [FIPA_INFORM](#), [278](#)
 - [FIPA_INFORM_IF](#), [278](#)
 - [FIPA_INFORM_REF](#), [278](#)
 - [FIPA_NOT_UNDERSTOOD](#), [278](#)
 - [FIPA_PROPOGATE](#), [278](#)
 - [FIPA_PROPOSE](#), [278](#)
 - [FIPA_PROTOCOL_BROKERING](#), [279](#)
 - [FIPA_PROTOCOL_CONTRACT_NET](#), [279](#)
 - [FIPA_PROTOCOL_DUTCH_AUCTION](#), [279](#)
 - [FIPA_PROTOCOL_END](#), [279](#)
 - [FIPA_PROTOCOL_ENGLISH_AUCTION](#), [279](#)
 - [FIPA_PROTOCOL_ERROR](#), [279](#)
 - [FIPA_PROTOCOL_ITERATED_CONTRACT_NET](#), [279](#)
 - [FIPA_PROTOCOL_NONE](#), [279](#)
 - [FIPA_PROTOCOL_PROPOSE](#), [279](#)
 - [FIPA_PROTOCOL_QUERY](#), [279](#)
 - [FIPA_PROTOCOL_RECRUITING](#), [279](#)
 - [FIPA_PROTOCOL_REQUEST](#), [279](#)
 - [FIPA_PROTOCOL_REQUEST_WHEN](#), [279](#)
 - [FIPA_PROTOCOL_SUBSCRIBE](#), [279](#)
 - [FIPA_PROXY](#), [278](#)
 - [FIPA_QUERY_IF](#), [278](#)
 - [FIPA_QUERY_REF](#), [278](#)
 - [FIPA_REFUSE](#), [278](#)
 - [FIPA_REJECT_PROPOSAL](#), [278](#)
 - [FIPA_REQUEST](#), [278](#)
 - [FIPA_REQUEST_WHEN](#), [278](#)
 - [FIPA_REQUEST_WHENEVER](#), [278](#)
 - [FIPA_SUBSCRIBE](#), [278](#)
 - [FIPA_ZERO](#), [277](#), [278](#)
- [FIPA_AGREE](#)
 - [fipa_acl.h](#), [277](#), [278](#)
 - [libmc.h](#), [319](#)
- [FIPA_CALL_FOR_PROPOSAL](#)
 - [fipa_acl.h](#), [277](#), [278](#)
 - [libmc.h](#), [319](#)
- [FIPA_CANCEL](#)
 - [fipa_acl.h](#), [277](#), [278](#)
 - [libmc.h](#), [319](#)
- [fipa_comm.h](#)
 - [FIPA_COMM_ACTION](#), [303](#)
 - [FIPA_COMM_ACTION_BOTH](#), [302](#)
 - [FIPA_COMM_ACTION_CALLBACK](#), [302](#)
 - [FIPA_COMM_ACTION_ERROR](#), [302](#)
 - [FIPA_COMM_ACTION_NONE](#), [302](#)
 - [FIPA_COMM_ACTION_REPLY](#), [302](#)
 - [FIPA_COMM_CALLBACK](#), [303](#)
 - [FIPA_COMM_CHECK](#), [303](#)
 - [FIPA_COMM_CHECK_CONTENT](#), [302](#)
 - [FIPA_COMM_CHECK_CONVERSATIONID](#), [302](#)
 - [FIPA_COMM_CHECK_ENCODING](#), [302](#)
 - [FIPA_COMM_CHECK_ERROR](#), [302](#)
 - [FIPA_COMM_CHECK_LANGUAGE](#), [302](#)
 - [FIPA_COMM_CHECK_ONTOLOGY](#), [302](#)
 - [FIPA_COMM_CHECK_SENDER_ADDRESS](#), [302](#)
 - [FIPA_COMM_CHECK_SENDER_NAME](#), [302](#)
 - [FIPA_COMM_END](#), [303](#)
 - [FIPA_COMM_LOGIC_AND](#), [302](#)
 - [FIPA_COMM_LOGIC_ERROR](#), [302](#)
 - [FIPA_COMM_LOGIC_OR](#), [302](#)
 - [FIPA_COMM_PROTOCOL_CN_BID](#), [303](#)
 - [FIPA_COMM_PROTOCOL_CN_CFP](#), [303](#)

- FIPA_COMM_PROTOCOL_CN_DONE, 303
- FIPA_COMM_PROTOCOL_CN_ERROR, 303
- FIPA_COMM_PROTOCOL_CN_RESULT, 303
- FIPA_COMM_PROTOCOL_CN_START, 303
- FIPA_COMM_REPLY, 303
- FIPA_COMM_ACTION
 - fipa_comm.h, 303
- FIPA_COMM_ACTION_BOTH
 - fipa_comm.h, 302
- FIPA_COMM_ACTION_CALLBACK
 - fipa_comm.h, 302
- FIPA_COMM_ACTION_ERROR
 - fipa_comm.h, 302
- FIPA_COMM_ACTION_NONE
 - fipa_comm.h, 302
- FIPA_COMM_ACTION_REPLY
 - fipa_comm.h, 302
- FIPA_COMM_CALLBACK
 - fipa_comm.h, 303
- FIPA_COMM_CHECK
 - fipa_comm.h, 303
- FIPA_COMM_CHECK_CONTENT
 - fipa_comm.h, 302
- FIPA_COMM_CHECK_CONVERSATIONID
 - fipa_comm.h, 302
- FIPA_COMM_CHECK_ENCODING
 - fipa_comm.h, 302
- FIPA_COMM_CHECK_ERROR
 - fipa_comm.h, 302
- FIPA_COMM_CHECK_LANGUAGE
 - fipa_comm.h, 302
- FIPA_COMM_CHECK_ONTOLOGY
 - fipa_comm.h, 302
- FIPA_COMM_CHECK_SENDER_ADDRESS
 - fipa_comm.h, 302
- FIPA_COMM_CHECK_SENDER_NAME
 - fipa_comm.h, 302
- FIPA_COMM_END
 - fipa_comm.h, 303
- FIPA_COMM_LOGIC_AND
 - fipa_comm.h, 302
- FIPA_COMM_LOGIC_ERROR
 - fipa_comm.h, 302
- FIPA_COMM_LOGIC_OR
 - fipa_comm.h, 302
- FIPA_COMM_PROTOCOL_CN_BID
 - fipa_comm.h, 303
- FIPA_COMM_PROTOCOL_CN_CFP
 - fipa_comm.h, 303
- FIPA_COMM_PROTOCOL_CN_DONE
 - fipa_comm.h, 303
- FIPA_COMM_PROTOCOL_CN_ERROR
 - fipa_comm.h, 303
- FIPA_COMM_PROTOCOL_CN_RESULT
 - fipa_comm.h, 303
- FIPA_COMM_PROTOCOL_CN_START
 - fipa_comm.h, 303
- FIPA_COMM_REPLY
 - fipa_comm.h, 303
- FIPA_CONFIRM
 - fipa_acl.h, 277, 278
 - libmc.h, 319
- FIPA_DISCONFIRM
 - fipa_acl.h, 277, 278
 - libmc.h, 319
- FIPA_ERROR
 - fipa_acl.h, 277, 278
 - libmc.h, 319
- FIPA_EXPR_DATETIME
 - fipa_acl.h, 277
- FIPA_EXPR_EXPRESSION
 - fipa_acl.h, 277
- FIPA_EXPR_NUMBER
 - fipa_acl.h, 277
- FIPA_EXPR_STRING
 - fipa_acl.h, 277
- FIPA_EXPR_WORD
 - fipa_acl.h, 277
- FIPA_EXPR_ZERO
 - fipa_acl.h, 277
- FIPA_FAILURE
 - fipa_acl.h, 277, 278
 - libmc.h, 319
- FIPA_INFORM
 - fipa_acl.h, 278
 - libmc.h, 319
- FIPA_INFORM_IF
 - fipa_acl.h, 278
 - libmc.h, 319, 320
- FIPA_INFORM_REF
 - fipa_acl.h, 278
 - libmc.h, 319, 320
- FIPA_NOT_UNDERSTOOD
 - fipa_acl.h, 278
 - libmc.h, 319, 320
- FIPA_PROPOGATE
 - fipa_acl.h, 278
 - libmc.h, 319, 320
- FIPA_PROPOSE
 - fipa_acl.h, 278
 - libmc.h, 319, 320
- FIPA_PROTOCOL_BROKERING
 - fipa_acl.h, 279
- FIPA_PROTOCOL_CONTRACT_NET
 - fipa_acl.h, 279

- FIPA_PROTOCOL_DUTCH_AUCTION
 - [fipa_acl.h](#), 279
- FIPA_PROTOCOL_END
 - [fipa_acl.h](#), 279
- FIPA_PROTOCOL_ENGLISH_AUCTION
 - [fipa_acl.h](#), 279
- FIPA_PROTOCOL_ERROR
 - [fipa_acl.h](#), 279
- FIPA_PROTOCOL_ITERATED_CONTRACT_-_NET
 - [fipa_acl.h](#), 279
- FIPA_PROTOCOL_NONE
 - [fipa_acl.h](#), 279
- FIPA_PROTOCOL_PROPOSE
 - [fipa_acl.h](#), 279
- FIPA_PROTOCOL_QUERY
 - [fipa_acl.h](#), 279
- FIPA_PROTOCOL_RECRUITING
 - [fipa_acl.h](#), 279
- FIPA_PROTOCOL_REQUEST
 - [fipa_acl.h](#), 279
- FIPA_PROTOCOL_REQUEST_WHEN
 - [fipa_acl.h](#), 279
- FIPA_PROTOCOL_SUBSCRIBE
 - [fipa_acl.h](#), 279
- FIPA_PROXY
 - [fipa_acl.h](#), 278
 - [libmc.h](#), 319, 320
- FIPA_QUERY_IF
 - [fipa_acl.h](#), 278
 - [libmc.h](#), 319, 320
- FIPA_QUERY_REF
 - [fipa_acl.h](#), 278
 - [libmc.h](#), 319, 320
- FIPA_REFUSE
 - [fipa_acl.h](#), 278
 - [libmc.h](#), 319, 320
- FIPA_REJECT_PROPOSAL
 - [fipa_acl.h](#), 278
 - [libmc.h](#), 319, 320
- FIPA_REQUEST
 - [fipa_acl.h](#), 278
 - [libmc.h](#), 319, 320
- FIPA_REQUEST_WHEN
 - [fipa_acl.h](#), 278
 - [libmc.h](#), 319, 320
- FIPA_REQUEST_WHENEVER
 - [fipa_acl.h](#), 278
 - [libmc.h](#), 319, 320
- FIPA_SUBSCRIBE
 - [fipa_acl.h](#), 278
 - [libmc.h](#), 319, 320
- FIPA_ZERO
 - [fipa_acl.h](#), 277, 278
- [libmc.h](#), 319
- [fipa_acl.c](#)
 - [fipa_acl_Compose](#), 197
 - [fipa_acl_message_Copy](#), 197
 - [fipa_acl_message_Destroy](#), 197
 - [fipa_acl_message_New](#), 197
 - [fipa_acl_Parse](#), 197
 - [fipa_agent_identifier_Compose](#), 198
 - [fipa_agent_identifier_Copy](#), 198
 - [fipa_agent_identifier_Destroy](#), 198
 - [fipa_agent_identifier_New](#), 198
 - [fipa_agent_identifier_Parse](#), 198
 - [fipa_agent_identifier_set_Compose](#), 198
 - [fipa_agent_identifier_set_Copy](#), 199
 - [fipa_agent_identifier_set_Destroy](#), 199
 - [fipa_agent_identifier_set_New](#), 199
 - [fipa_agent_identifier_set_Parse](#), 199
 - [fipa_CheckNextToken](#), 199
 - [fipa_DateTime_Compose](#), 199
 - [fipa_DateTime_Copy](#), 200
 - [fipa_DateTime_Destroy](#), 200
 - [fipa_DateTime_New](#), 200
 - [fipa_datetime_Parse](#), 200
 - [fipa_expression_Compose](#), 200
 - [fipa_expression_Copy](#), 200
 - [fipa_expression_Destroy](#), 201
 - [fipa_expression_New](#), 201
 - [fipa_expression_Parse](#), 201
 - [fipa_GetAtom](#), 201
 - [fipa_GetNextWord](#), 201
 - [fipa_GetWholeToken](#), 202
 - [fipa_message_parameter_Parse](#), 202
 - [fipa_message_string_Copy](#), 202
 - [fipa_message_string_Destroy](#), 202
 - [fipa_message_string_New](#), 202
 - [fipa_message_type_Parse](#), 202
 - [fipa_number_Compose](#), 203
 - [fipa_number_Copy](#), 203
 - [fipa_number_Destroy](#), 203
 - [fipa_number_New](#), 203
 - [fipa_performative_Compose](#), 203
 - [fipa_protocol_Compose](#), 203
 - [fipa_protocol_type_Parse](#), 204
 - [fipa_Reply](#), 204
 - [fipa_string_Compose](#), 204
 - [fipa_string_Copy](#), 204
 - [fipa_string_Destroy](#), 204
 - [fipa_string_New](#), 205
 - [fipa_string_Parse](#), 205
 - [fipa_url_Compose](#), 205
 - [fipa_url_Copy](#), 205
 - [fipa_url_Destroy](#), 205
 - [fipa_url_New](#), 205
 - [fipa_url_Parse](#), 205

- fipa_url_sequence_Compose, 205
- fipa_url_sequence_Copy, 206
- fipa_url_sequence_Destroy, 206
- fipa_url_sequence_New, 206
- fipa_url_sequence_Parse, 206
- fipa_word_Compose, 206
- fipa_word_Copy, 206
- fipa_word_Destroy, 207
- fipa_word_New, 207
- fipa_word_Parse, 207
- FREEMEM, 196
- fipa_acl.h
 - fipa_acl_Compose, 279
 - fipa_acl_message_Copy, 279
 - fipa_acl_message_Destroy, 279
 - fipa_acl_message_New, 280
 - fipa_acl_message_p, 276
 - fipa_acl_message_t, 276
 - fipa_acl_Parse, 280
 - fipa_agent_identifier_Compose, 280
 - fipa_agent_identifier_Copy, 280
 - fipa_agent_identifier_Destroy, 280
 - fipa_agent_identifier_New, 280
 - fipa_agent_identifier_p, 276
 - fipa_agent_identifier_Parse, 281
 - fipa_agent_identifier_set_Compose, 281
 - fipa_agent_identifier_set_Copy, 281
 - fipa_agent_identifier_set_Destroy, 281
 - fipa_agent_identifier_set_New, 281
 - fipa_agent_identifier_set_p, 276
 - fipa_agent_identifier_set_Parse, 281
 - fipa_agent_identifier_set_t, 276
 - fipa_agent_identifier_t, 276
 - fipa_CheckNextToken, 282
 - fipa_DateTime_Compose, 282
 - fipa_DateTime_Copy, 282
 - fipa_DateTime_Destroy, 282
 - fipa_DateTime_New, 282
 - fipa_DateTime_p, 276
 - fipa_datetime_Parse, 282
 - fipa_DateTime_t, 276
 - fipa_expression_Compose, 283
 - fipa_expression_Copy, 283
 - fipa_expression_Destroy, 283
 - fipa_expression_New, 283
 - fipa_expression_p, 276
 - fipa_expression_Parse, 283
 - fipa_expression_t, 276
 - fipa_expression_type_e, 277
 - fipa_expression_type_t, 276
 - fipa_GetAtom, 284
 - fipa_GetNextWord, 284
 - fipa_GetWholeToken, 284
 - fipa_message_parameter_Parse, 284
 - fipa_message_string_Copy, 284
 - fipa_message_string_Destroy, 284
 - fipa_message_string_New, 284
 - fipa_message_string_p, 276
 - fipa_message_string_t, 276
 - fipa_message_type_Parse, 285
 - fipa_number_Compose, 285
 - fipa_number_Copy, 285
 - fipa_number_Destroy, 285
 - fipa_number_New, 285
 - fipa_number_p, 276
 - fipa_number_t, 276
 - fipa_performative_Compose, 285
 - fipa_performative_e, 277
 - fipa_protocol_Compose, 286
 - fipa_protocol_e, 278
 - fipa_protocol_type_Parse, 286
 - fipa_Reply, 286
 - fipa_string_Compose, 286
 - fipa_string_Copy, 286
 - fipa_string_Destroy, 287
 - fipa_string_New, 287
 - fipa_string_p, 276
 - fipa_string_Parse, 287
 - fipa_string_t, 276
 - fipa_url_Compose, 287
 - fipa_url_Copy, 287
 - fipa_url_Destroy, 287
 - fipa_url_New, 287
 - fipa_url_p, 277
 - fipa_url_Parse, 288
 - fipa_url_sequence_Compose, 288
 - fipa_url_sequence_Copy, 288
 - fipa_url_sequence_Destroy, 288
 - fipa_url_sequence_New, 288
 - fipa_url_sequence_p, 277
 - fipa_url_sequence_Parse, 288
 - fipa_url_sequence_t, 277
 - fipa_url_t, 277
 - fipa_word_Compose, 289
 - fipa_word_Copy, 289
 - fipa_word_Destroy, 289
 - fipa_word_New, 289
 - fipa_word_p, 277
 - fipa_word_Parse, 289
 - fipa_word_t, 277
- fipa_acl_Compose
 - fipa_acl.c, 197
 - fipa_acl.h, 279
- fipa_acl_envelope.h
 - fipa_acl_envelope_Copy, 291
 - fipa_acl_envelope_Destroy, 291
 - fipa_acl_envelope_New, 291
 - fipa_acl_envelope_p, 291

- fipa_acl_envelope_Received_Copy, 292
- fipa_acl_envelope_Received_Destroy, 292
- fipa_acl_envelope_Received_New, 292
- fipa_acl_envelope_Received_t, 291
- fipa_acl_envelope_t, 291
- fipa_acl_Param_Copy, 292
- fipa_acl_Param_Destroy, 292
- fipa_acl_Param_New, 293
- fipa_acl_Param_t, 291
- fipa_envelope_Compose, 293
- fipa_envelope_Compose__acl_representation, 293
- fipa_envelope_Compose__date, 293
- fipa_envelope_Compose__envelope, 293
- fipa_envelope_Compose__from, 293
- fipa_envelope_Compose__intended_receiver, 293
- fipa_envelope_Compose__params, 294
- fipa_envelope_Compose__payload_encoding, 294
- fipa_envelope_Compose__to, 294
- fipa_envelope_HandleAclRepresentation, 294
- fipa_envelope_HandleComments, 294
- fipa_envelope_HandleDate, 295
- fipa_envelope_HandleEnvelope, 295
- fipa_envelope_HandleFrom, 295
- fipa_envelope_HandleIntendedReceiver, 295
- fipa_envelope_HandleParams, 295
- fipa_envelope_HandlePayloadEncoding, 296
- fipa_envelope_HandlePayloadLength, 296
- fipa_envelope_HandleReceived, 296
- fipa_envelope_HandleTo, 296
- fipa_envelope_Parse, 297
- fipa_envelope_ParseAddresses, 297
- fipa_envelope_ParseAgentIdentifier, 297
- fipa_envelope_ParseResolvers, 297
- fipa_acl_envelope_Copy
 - fipa_acl_envelope.h, 291
 - fipa_envelope.c, 209
- fipa_acl_envelope_Destroy
 - fipa_acl_envelope.h, 291
 - fipa_envelope.c, 209
- fipa_acl_envelope_New
 - fipa_acl_envelope.h, 291
 - fipa_envelope.c, 209
- fipa_acl_envelope_p
 - fipa_acl_envelope.h, 291
- fipa_acl_envelope_Received_Copy
 - fipa_acl_envelope.h, 292
 - fipa_envelope.c, 209
- fipa_acl_envelope_Received_Destroy
 - fipa_acl_envelope.h, 292
 - fipa_envelope.c, 209
- fipa_acl_envelope_Received_New
 - fipa_acl_envelope.h, 292
 - fipa_envelope.c, 210
- fipa_acl_envelope_Received_s, 66
 - received_by, 66
 - received_date, 66
 - received_from, 66
 - received_id, 66
 - received_via, 66
- fipa_acl_envelope_Received_t
 - fipa_acl_envelope.h, 291
- fipa_acl_envelope_s, 68
 - num_params, 68
 - params, 68
- fipa_acl_envelope_t
 - fipa_acl_envelope.h, 291
- fipa_acl_message_Copy
 - fipa_acl.c, 197
 - fipa_acl.h, 279
- fipa_acl_message_Destroy
 - fipa_acl.c, 197
 - fipa_acl.h, 279
- fipa_acl_message_New
 - fipa_acl.c, 197
 - fipa_acl.h, 280
- fipa_acl_message_p
 - fipa_acl.h, 276
- fipa_acl_message_s, 69
 - content, 69
 - conversation_id, 69
 - encoding, 69
 - in_reply_to, 69
 - language, 70
 - ontology, 70
 - performative, 70
 - protocol, 70
 - receiver, 70
 - receiver_num, 70
 - reply_by, 70
 - reply_to, 71
 - reply_with, 71
 - sender, 71
- fipa_acl_message_t
 - fipa_acl.h, 276
- fipa_acl_Param_Copy
 - fipa_acl_envelope.h, 292
 - fipa_envelope.c, 210
- fipa_acl_Param_Destroy
 - fipa_acl_envelope.h, 292
 - fipa_envelope.c, 210
- fipa_acl_Param_New
 - fipa_acl_envelope.h, 293
 - fipa_envelope.c, 210
- fipa_acl_Param_s, 72
 - acl_representation, 72

- comments, [72](#)
 - date, [72](#)
 - from, [72](#)
 - intended_receiver, [72](#)
 - payload_encoding, [73](#)
 - payload_length, [73](#)
 - received, [73](#)
 - to, [73](#)
- fipa_acl_Param_t
 - fipa_acl_envelope.h, [291](#)
- fipa_acl_Parse
 - fipa_acl.c, [197](#)
 - fipa_acl.h, [280](#)
- fipa_agent_identifier_Compose
 - fipa_acl.c, [198](#)
 - fipa_acl.h, [280](#)
- fipa_agent_identifier_Copy
 - fipa_acl.c, [198](#)
 - fipa_acl.h, [280](#)
- fipa_agent_identifier_Destroy
 - fipa_acl.c, [198](#)
 - fipa_acl.h, [280](#)
- fipa_agent_identifier_New
 - fipa_acl.c, [198](#)
 - fipa_acl.h, [280](#)
- fipa_agent_identifier_p
 - fipa_acl.h, [276](#)
- fipa_agent_identifier_Parse
 - fipa_acl.c, [198](#)
 - fipa_acl.h, [281](#)
- fipa_agent_identifier_s, [74](#)
 - addresses, [74](#)
 - name, [74](#)
 - resolvers, [74](#)
- fipa_agent_identifier_set_Compose
 - fipa_acl.c, [198](#)
 - fipa_acl.h, [281](#)
- fipa_agent_identifier_set_Copy
 - fipa_acl.c, [199](#)
 - fipa_acl.h, [281](#)
- fipa_agent_identifier_set_Destroy
 - fipa_acl.c, [199](#)
 - fipa_acl.h, [281](#)
- fipa_agent_identifier_set_New
 - fipa_acl.c, [199](#)
 - fipa_acl.h, [281](#)
- fipa_agent_identifier_set_p
 - fipa_acl.h, [276](#)
- fipa_agent_identifier_set_Parse
 - fipa_acl.c, [199](#)
 - fipa_acl.h, [281](#)
- fipa_agent_identifier_set_s, [75](#)
 - fipa_agent_identifiers, [75](#)
 - num, [75](#)
 - retain_order, [75](#)
- fipa_agent_identifier_set_t
 - fipa_acl.h, [276](#)
- fipa_agent_identifier_t
 - fipa_acl.h, [276](#)
- fipa_agent_identifiers
 - fipa_agent_identifier_set_s, [75](#)
- fipa_CheckNextToken
 - fipa_acl.c, [199](#)
 - fipa_acl.h, [282](#)
- fipa_comm.h
 - false, [300](#)
 - fipa_comm_action_p, [300](#)
 - fipa_comm_action_s, [300](#)
 - fipa_comm_action_type_e, [302](#)
 - fipa_comm_callback, [300](#)
 - fipa_comm_check_type_e, [302](#)
 - fipa_comm_logic_type_e, [302](#)
 - fipa_comm_message_check_p, [300](#)
 - fipa_comm_message_check_s, [300](#)
 - fipa_comm_p, [300](#)
 - fipa_comm_performative_p, [300](#)
 - fipa_comm_performative_s, [300](#)
 - fipa_comm_protocol_cn_p, [301](#)
 - fipa_comm_protocol_cn_s, [301](#)
 - fipa_comm_protocol_cn_state_e, [302](#)
 - fipa_comm_protocol_info_COPY, [305](#)
 - fipa_comm_protocol_p, [301](#)
 - fipa_comm_protocol_s, [301](#)
 - fipa_comm_reply_p, [301](#)
 - fipa_comm_reply_s, [301](#)
 - fipa_comm_s, [301](#)
 - fipa_comm_type_e, [303](#)
 - fipa_list_Add, [305](#)
 - fipa_list_p, [301](#)
 - fipa_list_s, [301](#)
 - mc_FIPAComm_AddNewProtocol, [305](#)
 - mc_FIPAComm_DeregisterPerformative, [305](#)
 - mc_FIPAComm_Destroy, [305](#)
 - mc_FIPAComm_FSM_CN, [305](#)
 - mc_FIPAComm_HandleMessage, [305](#)
 - mc_FIPAComm_HandleMessageOnce, [305](#)
 - mc_FIPAComm_HandleMessageWait, [305](#)
 - mc_FIPAComm_HandleProtocol, [305](#)
 - mc_FIPAComm_New, [305](#)
 - mc_FIPAComm_NewProtocol, [305](#)
 - mc_FIPAComm_RegisterAction, [305](#)
 - mc_FIPAComm_RegisterActionS, [305](#)
 - mc_FIPAComm_RegisterPerformative, [305](#)
 - mc_FIPAComm_RegisterProtocol, [305](#)
 - mc_FIPAComm_RegisterProtocolCallback, [305](#)
 - mc_FIPAComm_SetAgent, [305](#)
 - mc_FIPAComm_SetDefaultReply, [305](#)

- mc_FIPAComm_
 - SetPerformativeDefaultReply, 305
- mc_FIPAComm_SetProtocolState, 305
- mc_FIPAComm_StartProtocol, 305
- mc_FIPAProtocol_New, 305
- MC_NUM_PERFORMATIVES, 300
- MCFIPAComm_p, 301
- MCFIPAComm_s, 301
- protocol_contract_net_callback, 302
- fipa_comm_action_p
 - fipa_comm.h, 300
- fipa_comm_action_s
 - fipa_comm.h, 300
- fipa_comm_action_t, 76
 - callback, 76
 - check_list, 76
 - next, 76
 - reply, 76
 - type, 76
- fipa_comm_action_type_e
 - fipa_comm.h, 302
- fipa_comm_callback
 - fipa_comm.h, 300
- fipa_comm_check_type_e
 - fipa_comm.h, 302
- fipa_comm_logic_type_e
 - fipa_comm.h, 302
- fipa_comm_message_check_p
 - fipa_comm.h, 300
- fipa_comm_message_check_s
 - fipa_comm.h, 300
- fipa_comm_message_check_t, 77
 - macro, 77
 - next, 77
 - type, 77
- fipa_comm_p
 - fipa_comm.h, 300
- fipa_comm_performative_p
 - fipa_comm.h, 300
- fipa_comm_performative_s
 - fipa_comm.h, 300
- fipa_comm_performative_t, 78
 - action_list, 78
 - default_reply, 78
- fipa_comm_protocol_cn_p
 - fipa_comm.h, 301
- fipa_comm_protocol_cn_s
 - fipa_comm.h, 301
- fipa_comm_protocol_cn_state_e
 - fipa_comm.h, 302
- fipa_comm_protocol_cn_t, 79
 - cfp_request, 79
 - contract_func, 79
 - proposal_func, 79
 - queue, 79
 - replies, 79
 - require_inform, 79
 - time_out, 79
- fipa_comm_protocol_info_COPY
 - fipa_comm.h, 305
- fipa_comm_protocol_p
 - fipa_comm.h, 301
- fipa_comm_protocol_s
 - fipa_comm.h, 301
- fipa_comm_protocol_t, 81
 - conversation_id, 81
 - error, 81
 - info, 81
 - network, 81
 - next, 81
 - state, 81
 - type, 81
- fipa_comm_reply_p
 - fipa_comm.h, 301
- fipa_comm_reply_s
 - fipa_comm.h, 301
- fipa_comm_reply_t, 83
 - content, 83
 - type, 83
- fipa_comm_s
 - fipa_comm.h, 301
- fipa_comm_t, 84
 - agent, 84
 - agent_address, 84
 - agent_name, 84
 - debug, 84
 - default_reply, 84
 - error, 84
 - pCallbacks, 84
 - performative, 85
 - protocol, 85
- fipa_comm_type_e
 - fipa_comm.h, 303
- fipa_DateTime_Compose
 - fipa_acl.c, 199
 - fipa_acl.h, 282
- fipa_DateTime_Copy
 - fipa_acl.c, 200
 - fipa_acl.h, 282
- fipa_DateTime_Destroy
 - fipa_acl.c, 200
 - fipa_acl.h, 282
- fipa_DateTime_New
 - fipa_acl.c, 200
 - fipa_acl.h, 282
- fipa_DateTime_p
 - fipa_acl.h, 276
- fipa_datetime_Parse

- fipa_acl.c, 200
- fipa_acl.h, 282
- fipa_DateTime_s, 86
 - day, 86
 - hour, 86
 - is_utc, 86
 - millisecond, 86
 - minute, 86
 - month, 86
 - second, 87
 - sign, 87
 - year, 87
- fipa_DateTime_t
 - fipa_acl.h, 276
- fipa_envelope.c
 - fipa_acl_envelope_Copy, 209
 - fipa_acl_envelope_Destroy, 209
 - fipa_acl_envelope_New, 209
 - fipa_acl_envelope_Received_Copy, 209
 - fipa_acl_envelope_Received_Destroy, 209
 - fipa_acl_envelope_Received_New, 210
 - fipa_acl_Param_Copy, 210
 - fipa_acl_Param_Destroy, 210
 - fipa_acl_Param_New, 210
 - fipa_envelope_Compose, 210
 - fipa_envelope_Compose__acl_representation, 210
 - fipa_envelope_Compose__date, 211
 - fipa_envelope_Compose__envelope, 211
 - fipa_envelope_Compose__from, 211
 - fipa_envelope_Compose__intended_receiver, 211
 - fipa_envelope_Compose__params, 211
 - fipa_envelope_Compose__payload_encoding, 212
 - fipa_envelope_Compose__to, 212
 - fipa_envelope_HandleAclRepresentation, 212
 - fipa_envelope_HandleComments, 212
 - fipa_envelope_HandleDate, 212
 - fipa_envelope_HandleEnvelope, 212
 - fipa_envelope_HandleFrom, 213
 - fipa_envelope_HandleIntendedReceiver, 213
 - fipa_envelope_HandleParams, 213
 - fipa_envelope_HandlePayloadEncoding, 213
 - fipa_envelope_HandlePayloadLength, 213
 - fipa_envelope_HandleReceived, 214
 - fipa_envelope_HandleTo, 214
 - fipa_envelope_Parse, 214
 - fipa_envelope_ParseAddresses, 214
 - fipa_envelope_ParseAgentIdentifier, 215
 - fipa_envelope_ParseResolvers, 215
- fipa_envelope_Compose
 - fipa_acl_envelope.h, 293
 - fipa_envelope.c, 210
- fipa_envelope_Compose__acl_representation
 - fipa_acl_envelope.h, 293
 - fipa_envelope.c, 210
- fipa_envelope_Compose__date
 - fipa_acl_envelope.h, 293
 - fipa_envelope.c, 211
- fipa_envelope_Compose__envelope
 - fipa_acl_envelope.h, 293
 - fipa_envelope.c, 211
- fipa_envelope_Compose__from
 - fipa_acl_envelope.h, 293
 - fipa_envelope.c, 211
- fipa_envelope_Compose__intended_receiver
 - fipa_acl_envelope.h, 293
 - fipa_envelope.c, 211
- fipa_envelope_Compose__params
 - fipa_acl_envelope.h, 294
 - fipa_envelope.c, 211
- fipa_envelope_Compose__payload_encoding
 - fipa_acl_envelope.h, 294
 - fipa_envelope.c, 212
- fipa_envelope_Compose__to
 - fipa_acl_envelope.h, 294
 - fipa_envelope.c, 212
- fipa_envelope_HandleAclRepresentation
 - fipa_acl_envelope.h, 294
 - fipa_envelope.c, 212
- fipa_envelope_HandleComments
 - fipa_acl_envelope.h, 294
 - fipa_envelope.c, 212
- fipa_envelope_HandleDate
 - fipa_acl_envelope.h, 295
 - fipa_envelope.c, 212
- fipa_envelope_HandleEnvelope
 - fipa_acl_envelope.h, 295
 - fipa_envelope.c, 212
- fipa_envelope_HandleFrom
 - fipa_acl_envelope.h, 295
 - fipa_envelope.c, 213
- fipa_envelope_HandleIntendedReceiver
 - fipa_acl_envelope.h, 295
 - fipa_envelope.c, 213
- fipa_envelope_HandleParams
 - fipa_acl_envelope.h, 295
 - fipa_envelope.c, 213
- fipa_envelope_HandlePayloadEncoding
 - fipa_acl_envelope.h, 296
 - fipa_envelope.c, 213
- fipa_envelope_HandlePayloadLength
 - fipa_acl_envelope.h, 296
 - fipa_envelope.c, 213
- fipa_envelope_HandleReceived
 - fipa_acl_envelope.h, 296
 - fipa_envelope.c, 214

- fipa_envelope_HandleTo
 - fipa_acl_envelope.h, 296
 - fipa_envelope.c, 214
- fipa_envelope_Parse
 - fipa_acl_envelope.h, 297
 - fipa_envelope.c, 214
- fipa_envelope_ParseAddresses
 - fipa_acl_envelope.h, 297
 - fipa_envelope.c, 214
- fipa_envelope_ParseAgentIdentifier
 - fipa_acl_envelope.h, 297
 - fipa_envelope.c, 215
- fipa_envelope_ParseResolvers
 - fipa_acl_envelope.h, 297
 - fipa_envelope.c, 215
- fipa_expression_Compose
 - fipa_acl.c, 200
 - fipa_acl.h, 283
- fipa_expression_Copy
 - fipa_acl.c, 200
 - fipa_acl.h, 283
- fipa_expression_Destroy
 - fipa_acl.c, 201
 - fipa_acl.h, 283
- fipa_expression_New
 - fipa_acl.c, 201
 - fipa_acl.h, 283
- fipa_expression_p
 - fipa_acl.h, 276
- fipa_expression_Parse
 - fipa_acl.c, 201
 - fipa_acl.h, 283
- fipa_expression_s, 88
 - content, 88
 - type, 88
- fipa_expression_s::content_u, 59
 - datetime, 59
 - expression, 59
 - number, 59
 - string, 59
 - word, 59
- fipa_expression_t
 - fipa_acl.h, 276
- fipa_expression_type_e
 - fipa_acl.h, 277
- fipa_expression_type_t
 - fipa_acl.h, 276
- fipa_GetAtom
 - fipa_acl.c, 201
 - fipa_acl.h, 284
- fipa_GetNextWord
 - fipa_acl.c, 201
 - fipa_acl.h, 284
- fipa_GetWholeToken
 - fipa_acl.c, 202
 - fipa_acl.h, 284
- fipa_list_Add
 - fipa_comm.h, 305
- fipa_list_p
 - fipa_comm.h, 301
- fipa_list_s
 - fipa_comm.h, 301
- fipa_list_t, 89
 - data, 89
 - next, 89
- fipa_message_parameter_Parse
 - fipa_acl.c, 202
 - fipa_acl.h, 284
- fipa_message_string_Copy
 - fipa_acl.c, 202
 - fipa_acl.h, 284
- fipa_message_string_Destroy
 - fipa_acl.c, 202
 - fipa_acl.h, 284
- fipa_message_string_New
 - fipa_acl.c, 202
 - fipa_acl.h, 284
- fipa_message_string_p
 - fipa_acl.h, 276
- fipa_message_string_s, 90
 - message, 90
 - parse, 90
- fipa_message_string_t
 - fipa_acl.h, 276
- fipa_message_type_Parse
 - fipa_acl.c, 202
 - fipa_acl.h, 285
- fipa_number_Compose
 - fipa_acl.c, 203
 - fipa_acl.h, 285
- fipa_number_Copy
 - fipa_acl.c, 203
 - fipa_acl.h, 285
- fipa_number_Destroy
 - fipa_acl.c, 203
 - fipa_acl.h, 285
- fipa_number_New
 - fipa_acl.c, 203
 - fipa_acl.h, 285
- fipa_number_p
 - fipa_acl.h, 276
- fipa_number_s, 91
 - str, 91
- fipa_number_t
 - fipa_acl.h, 276
- fipa_performative_Compose
 - fipa_acl.c, 203
 - fipa_acl.h, 285

- fipa_performative_e
 - fipa_acl.h, [277](#)
 - libmc.h, [319](#)
- fipa_protocol_Compose
 - fipa_acl.c, [203](#)
 - fipa_acl.h, [286](#)
- fipa_protocol_e
 - fipa_acl.h, [278](#)
- fipa_protocol_type_Parse
 - fipa_acl.c, [204](#)
 - fipa_acl.h, [286](#)
- fipa_Reply
 - fipa_acl.c, [204](#)
 - fipa_acl.h, [286](#)
- fipa_string_Compose
 - fipa_acl.c, [204](#)
 - fipa_acl.h, [286](#)
- fipa_string_Copy
 - fipa_acl.c, [204](#)
 - fipa_acl.h, [286](#)
- fipa_string_Destroy
 - fipa_acl.c, [204](#)
 - fipa_acl.h, [287](#)
- fipa_string_New
 - fipa_acl.c, [205](#)
 - fipa_acl.h, [287](#)
- fipa_string_p
 - fipa_acl.h, [276](#)
- fipa_string_Parse
 - fipa_acl.c, [205](#)
 - fipa_acl.h, [287](#)
- fipa_string_s, [92](#)
 - content, [92](#)
- fipa_string_t
 - fipa_acl.h, [276](#)
- fipa_url_Compose
 - fipa_acl.c, [205](#)
 - fipa_acl.h, [287](#)
- fipa_url_Copy
 - fipa_acl.c, [205](#)
 - fipa_acl.h, [287](#)
- fipa_url_Destroy
 - fipa_acl.c, [205](#)
 - fipa_acl.h, [287](#)
- fipa_url_New
 - fipa_acl.c, [205](#)
 - fipa_acl.h, [287](#)
- fipa_url_p
 - fipa_acl.h, [277](#)
- fipa_url_Parse
 - fipa_acl.c, [205](#)
 - fipa_acl.h, [288](#)
- fipa_url_s, [93](#)
 - str, [93](#)
- fipa_url_sequence_Compose
 - fipa_acl.c, [205](#)
 - fipa_acl.h, [288](#)
- fipa_url_sequence_Copy
 - fipa_acl.c, [206](#)
 - fipa_acl.h, [288](#)
- fipa_url_sequence_Destroy
 - fipa_acl.c, [206](#)
 - fipa_acl.h, [288](#)
- fipa_url_sequence_New
 - fipa_acl.c, [206](#)
 - fipa_acl.h, [288](#)
- fipa_url_sequence_p
 - fipa_acl.h, [277](#)
- fipa_url_sequence_Parse
 - fipa_acl.c, [206](#)
 - fipa_acl.h, [288](#)
- fipa_url_sequence_s, [94](#)
 - num, [94](#)
 - urls, [94](#)
- fipa_url_sequence_t
 - fipa_acl.h, [277](#)
- fipa_url_t
 - fipa_acl.h, [277](#)
- fipa_word_Compose
 - fipa_acl.c, [206](#)
 - fipa_acl.h, [289](#)
- fipa_word_Copy
 - fipa_acl.c, [206](#)
 - fipa_acl.h, [289](#)
- fipa_word_Destroy
 - fipa_acl.c, [207](#)
 - fipa_acl.h, [289](#)
- fipa_word_New
 - fipa_acl.c, [207](#)
 - fipa_acl.h, [289](#)
- fipa_word_p
 - fipa_acl.h, [277](#)
- fipa_word_Parse
 - fipa_acl.c, [207](#)
 - fipa_acl.h, [289](#)
- fipa_word_s, [95](#)
 - content, [95](#)
- fipa_word_t
 - fipa_acl.h, [277](#)
- foo
 - class.cxx, [522](#)
 - foo_c, [97](#)
 - foo_s, [100](#)
- FOO_BLUE
 - enum.cxx, [523](#)
- FOO_ONE
 - enum.cxx, [523](#)
- FOO_RED

- enum.cxx, 523
- FOO_TWO
 - enum.cxx, 523
- foo_c, 96
 - ~foo_c, 96
 - bar, 97
 - barfoo, 97
 - foo, 97
 - foo_c, 96
 - foo_c, 96
 - get_bar, 96
 - get_barfoo, 96
 - get_foo, 97
 - get_global, 97
 - global, 98
 - set_bar, 97
 - set_foo, 97
 - set_foobar, 97
- foo_default_int
 - function.cxx, 524
- foo_default_string
 - function.cxx, 524
- foo_enum_e
 - enum.cxx, 523
- foo_enum_t
 - enum.cxx, 523
- foo_float_function
 - function.cxx, 524
- foo_s, 99
 - ~foo_s, 99
 - bar, 100
 - foo, 100
 - foo_s, 99
 - foo_s, 99
 - get_bar, 99
 - get_foo, 99
 - set_bar, 99
 - set_foo, 100
- foo_t
 - struct.cxx, 525
- foo_void_function
 - function.cxx, 524
- FORBIDDEN
 - mtp_http.h, 385
- force_cipher
 - options, 148
- FREEMEM
 - fipa_acl.c, 196
- from
 - fipa_acl_Param_s, 72
- from_address
 - message_s, 126
- FSb
 - aes.c, 688
- FT0
 - aes.c, 688
- FT1
 - aes.c, 688
- FT2
 - aes.c, 688
- FT3
 - aes.c, 688
- function.cxx
 - foo_default_int, 524
 - foo_default_string, 524
 - foo_float_function, 524
 - foo_void_function, 524
- G
 - dhm_context, 63
- g_mc_platform
 - libmc.c, 456
- generate_AES_key
 - interface.c, 539
 - interface.h, 544
- generate_encrypt_send_AES_key
 - interface.h, 544
- generate_RSA_keys_ciphertext
 - interface.c, 539
 - interface.h, 544
- generate_RSA_keys_plaintext
 - interface.c, 539
 - interface.h, 544
- GENERATOR
 - dh_genprime.c, 831
- get_bar
 - foo_c, 96
 - foo_s, 99
- get_barfoo
 - foo_c, 96
- get_foo
 - foo_c, 97
 - foo_s, 99
- get_global
 - foo_c, 97
- GET_REQUEST
 - ssl_client1.c, 837
 - ssl_client2.c, 839
- GET_THREAD_MODE
 - macros.h, 365
- get_timer
 - timing.c, 812
 - timing.h, 664
- GET_UINT64_BE
 - sha4.c, 784
- GET_ULONG_BE
 - des.c, 722
 - sha1.c, 766

- sha2.c, [775](#)
- GET_ULONG_LE
 - aes.c, [683](#)
 - md5.c, [742](#)
- giant
 - mc_platform_s, [111](#)
- giant_cond
 - mc_platform_s, [111](#)
- giant_lock
 - mc_platform_s, [111](#)
 - syncList_s, [162](#)
- global
 - foo_c, [98](#)
- GONE
 - mtp_http.h, [385](#)
- GX
 - dhm_context, [63](#)
- GY
 - dhm_context, [63](#)
- handler_COMPOSE_SEND
 - cmd_prompt.c, [184](#)
- handler_FLUSH_AGENTS
 - cmd_prompt.c, [184](#)
- handler_HELP
 - cmd_prompt.c, [184](#)
- handler_PRINT_CONNECTLIST
 - cmd_prompt.c, [184](#)
- handler_PRINTLIST_AGENTS
 - cmd_prompt.c, [185](#)
- handler_PRINTLIST_MESSAGE
 - cmd_prompt.c, [185](#)
- handler_QUIT
 - cmd_prompt.c, [185](#)
- handler_SEND
 - cmd_prompt.c, [185](#)
- hardclock
 - timing.c, [813](#)
 - timing.h, [664](#)
- hardclock_init
 - timing.c, [813](#)
- hash_id
 - rsa_context, [152](#)
- HAVE_STRDUP
 - mxml-2.2.2/config.h, [481](#)
 - mxml-2.2.2/winconfig.h, [527](#)
- HAVE_VSNPRINTF
 - mxml-2.2.2/config.h, [481](#)
 - mxml-2.2.2/winconfig.h, [527](#)
- havege.c
 - havege_fill, [738](#)
 - havege_init, [738](#)
 - havege_rand, [738](#)
 - ONE_ITERATION, [737](#)
 - SWAP, [737](#)
 - TST1_ENTER, [737](#)
 - TST1_LEAVE, [737](#)
 - TST2_ENTER, [737](#)
 - TST2_LEAVE, [738](#)
- havege.h
 - COLLECT_SIZE, [590](#)
 - havege_init, [590](#)
 - havege_rand, [590](#)
- havege_fill
 - havege.c, [738](#)
- havege_init
 - havege.c, [738](#)
 - havege.h, [590](#)
- havege_rand
 - havege.c, [738](#)
 - havege.h, [590](#)
- havege_state, [101](#)
 - offset, [101](#)
 - pool, [101](#)
 - PT1, [101](#)
 - PT2, [101](#)
 - WALK, [101](#)
- header_length
 - mtp_http_s, [134](#)
- hello.c
 - main, [826](#)
- help
 - commands.x.h, [256](#)
- HERE
 - df.h, [264](#)
- home
 - agent_s, [45](#)
- home_port
 - agent_s, [46](#)
- host
 - mtp_http_s, [134](#)
- host_id.h
 - host_id_Compare, [306](#)
 - host_id_Destroy, [306](#)
 - host_id_Initialize, [306](#)
 - host_id_p, [306](#)
 - host_id_t, [306](#)
- host_id_Compare
 - host_id.h, [306](#)
- host_id_Destroy
 - host_id.h, [306](#)
- host_id_Initialize
 - host_id.h, [306](#)
- host_id_p
 - host_id.h, [306](#)
- host_id_s, [103](#)
 - hostname, [103](#)
 - port, [103](#)

- host_id_t
 - host_id.h, 306
- hostName
 - agency_s, 37
- hostname
 - _ssl_context, 13
 - host_id_s, 103
 - mc_platform_s, 112
- hostname_len
 - _ssl_context, 13
- hour
 - _x509_time, 33
 - fipa_DateTime_s, 86
- hr_time, 104
 - opaque, 104
- HTTP_CONNECT
 - mtp_http.h, 385
- HTTP_DELETE
 - mtp_http.h, 385
- HTTP_GET
 - mtp_http.h, 384
- HTTP_HEAD
 - mtp_http.h, 384
- HTTP_NUM_PERFORMATIVES
 - mtp_http.h, 385
- HTTP_OPTIONS
 - mtp_http.h, 385
- HTTP_PERFORMATIVE_UNDEF
 - mtp_http.h, 384
- HTTP_PERFORMATIVE_ZERO
 - mtp_http.h, 384
- HTTP_POST
 - mtp_http.h, 384
- HTTP_PUT
 - mtp_http.h, 385
- HTTP_RESPONSE
 - mtp_http.h, 385
- HTTP_TRACE
 - mtp_http.h, 385
- http_GetExpression
 - mtp_http.c, 477
 - mtp_http.h, 386
- http_GetToken
 - mtp_http.c, 477
 - mtp_http.h, 386
- HTTP_PARSE_EXPR
 - mtp_http.c, 477
- http_ParseExpression
 - mtp_http.c, 478
 - mtp_http.h, 386
- http_ParseRequest
 - mtp_http.c, 478
 - mtp_http.h, 387
- http_performative
 - mtp_http_s, 134
- http_performative_e
 - mtp_http.h, 384
- HTTP_RESPONSE
 - ssl_server.c, 841
- http_status_code
 - mtp_http_s, 134
- http_status_code_e
 - mtp_http.h, 385
- http_to_hostport
 - message.c, 472
 - message.h, 379
- http_type
 - message_s, 127
- http_version
 - mtp_http_s, 135
- id
 - _ssl_session, 22
 - agent_s, 46
 - barrier_node_s, 53
 - syncListNode_s, 163
- in_ctr
 - _ssl_context, 13
- in_hdr
 - _ssl_context, 14
- in_hrlen
 - _ssl_context, 14
- in_left
 - _ssl_context, 14
- in_msg
 - _ssl_context, 14
- in_msglen
 - _ssl_context, 14
- in_msgtype
 - _ssl_context, 14
- in_offt
 - _ssl_context, 15
- in_reply_to
 - fipa_acl_message_s, 69
- index
 - command_s, 56
- index_compare
 - mxml-index.c, 495
- index_find
 - mxml-index.c, 495
- index_sort
 - mxml-index.c, 495
- info
 - fipa_comm_protocol_t, 81
- init_agent_status
 - agent_datastate_s, 39
 - agent_task_s, 48
- initiate_migration_process

- interface.c, 539
- interface.h, 544
- initInterps
 - agency_s, 37
 - mc_platform_s, 112
 - MCAgencyOptions_s, 118
- INSERT
 - df.h, 264
- int
 - data_structures.h, 261
- int64
 - sha4.h, 636
- integer
 - mxml_value_u, 146
- intended_receiver
 - fipa_acl_Param_s, 72
- interface.c
 - aes_en_de, 538
 - append_nonce_to_MA, 538
 - extract_nonce_from_MA, 538
 - generate_AES_key, 539
 - generate_RSA_keys_ciphertext, 539
 - generate_RSA_keys_plaintext, 539
 - initiate_migration_process, 539
 - read_encrypted_file, 539
 - read_known_host_file, 539
 - receive_AES_en_MA, 540
 - remove_nonce_from_MA, 540
 - reply_migration_process, 540
 - rsa_decryption, 540
 - rsa_encryption, 540
 - send_AES_en_MA, 540
 - separate_key_parts, 541
- interface.h
 - aes_en_de, 544
 - EXPONENT, 543
 - generate_AES_key, 544
 - generate_encrypt_send_AES_key, 544
 - generate_RSA_keys_ciphertext, 544
 - generate_RSA_keys_plaintext, 544
 - initiate_migration_process, 544
 - KEY_SIZE, 543
 - MAXDATASIZE, 543
 - MODE_DECRYPT, 543
 - MODE_ENCRYPT, 543
 - PATH, 543
 - read_encrypted_file, 544
 - read_known_host_file, 545
 - receive_AES_en_MA, 545
 - receive_decrypt_AES_key, 545
 - receiving_decrypting_MA_RSA, 545
 - receiving_verifying_MA_RSA, 545
 - reply_migration_process, 545
 - RSA_DE, 543
 - rsa_decryption, 545
 - RSA_EN, 543
 - rsa_encryption, 545
 - send_AES_en_MA, 545
- interp_options
 - mc_platform_s, 112
- interpreter_queue
 - mc_platform_s, 112
- interpreter_queue_CreateRetrieve
 - ap_queue_template.h, 245
- interpreter_variable_data.h
 - interpreter_variable_data_Copy, 307
 - interpreter_variable_data_Destroy, 307
 - interpreter_variable_data_Initialize, 308
 - interpreter_variable_data_InitializeFromAgent, 308
 - interpreter_variable_data_New, 308
 - interpreter_variable_data_p, 307
 - interpreter_variable_data_t, 307
- interpreter_variable_data_Copy
 - agent_return_data.c, 176
 - interpreter_variable_data.h, 307
- interpreter_variable_data_Destroy
 - agent_return_data.c, 176
 - interpreter_variable_data.h, 307
- interpreter_variable_data_Initialize
 - agent_return_data.c, 176
 - interpreter_variable_data.h, 308
- interpreter_variable_data_InitializeFromAgent
 - agent_return_data.c, 176
 - interpreter_variable_data.h, 308
- interpreter_variable_data_New
 - agent_return_data.c, 177
 - interpreter_variable_data.h, 308
- interpreter_variable_data_p
 - interpreter_variable_data.h, 307
- interpreter_variable_data_s, 105
 - array_dim, 105
 - array_extent, 105
 - data, 105
 - data_type, 105
 - name, 106
 - size, 106
- interpreter_variable_data_t
 - interpreter_variable_data.h, 307
- iomode
 - options, 149
- IOMODE_BLOCK
 - ssl_test.c, 849
- IOMODE_NONBLOCK
 - ssl_test.c, 850
- ipad
 - md2_context, 120
 - md4_context, 122

- md5_context, [124](#)
- sha1_context, [155](#)
- sha2_context, [157](#)
- sha4_context, [159](#)
- is
 - commands.x.h, [256](#)
- is224
 - sha2_context, [157](#)
- is384
 - sha4_context, [159](#)
- is_utc
 - fipa_DateTime_s, [86](#)
- isHTTP
 - message_s, [127](#)
- issuer
 - _x509_cert, [25](#)
 - _x509_raw, [31](#)
- issuer_id
 - _x509_cert, [25](#)
- issuer_raw
 - _x509_cert, [25](#)
- iv_dec
 - _ssl_context, [15](#)
- iv_enc
 - _ssl_context, [15](#)
- ivlen
 - _ssl_context, [15](#)
- K
 - dhm_context, [63](#)
 - sha1.c, [766](#), [767](#)
 - sha4.c, [788](#)
- KEY_LEN
 - rsa.c, [756](#)
- KEY_SIZE
 - interface.h, [543](#)
 - rsa_genkey.c, [834](#)
- keylen
 - _ssl_context, [15](#)
- known_host_filename
 - agency_s, [37](#)
 - MCAgencyOptions_s, [119](#)
- language
 - fipa_acl_message_s, [70](#)
- last_child
 - mxm1_node_s, [142](#)
- last_error
 - agency_s, [37](#)
- lcppm5
 - ssl_test.c, [851](#)
- left
 - md2_context, [120](#)
- len
 - _x509_buf, [24](#)
 - _x509_node, [30](#)
 - dhm_context, [64](#)
 - dynstring_s, [65](#)
 - rsa_context, [152](#)
- length
 - _ssl_session, [22](#)
- LENGTH_REQUIRED
 - mtp_http.h, [385](#)
- LHs
 - des.c, [728](#)
- libmc.c
 - g_mc_platform, [456](#)
 - MC_AclAddReceiver, [407](#)
 - MC_AclAddReceiver_chdl, [407](#)
 - MC_AclAddReplyTo, [407](#)
 - MC_AclAddReplyTo_chdl, [408](#)
 - MC_AclDestroy, [408](#)
 - MC_AclDestroy_chdl, [408](#)
 - MC_AclGetContent, [408](#)
 - MC_AclGetContent_chdl, [408](#)
 - MC_AclGetConversationID, [409](#)
 - MC_AclGetConversationID_chdl, [409](#)
 - MC_AclGetPerformative, [409](#)
 - MC_AclGetPerformative_chdl, [409](#)
 - MC_AclGetProtocol, [409](#)
 - MC_AclGetProtocol_chdl, [409](#)
 - MC_AclGetSender, [410](#)
 - MC_AclGetSender_chdl, [410](#)
 - MC_AclNew, [410](#)
 - MC_AclNew_chdl, [410](#)
 - MC_AclPost, [410](#)
 - MC_AclPost_chdl, [411](#)
 - MC_AclReply, [411](#)
 - MC_AclReply_chdl, [411](#)
 - MC_AclRetrieve, [411](#)
 - MC_AclRetrieve_chdl, [412](#)
 - MC_AclSend, [412](#)
 - MC_AclSend_chdl, [412](#)
 - MC_AclSetContent, [412](#)
 - MC_AclSetContent_chdl, [412](#)
 - MC_AclSetConversationID, [413](#)
 - MC_AclSetConversationID_chdl, [413](#)
 - MC_AclSetPerformative, [413](#)
 - MC_AclSetPerformative_chdl, [413](#)
 - MC_AclSetProtocol, [413](#)
 - MC_AclSetProtocol_chdl, [413](#)
 - MC_AclSetSender, [414](#)
 - MC_AclSetSender_chdl, [414](#)
 - MC_AclWaitRetrieve, [414](#)
 - MC_AclWaitRetrieve_chdl, [414](#)
 - MC_AddAgent, [414](#)
 - MC_AddAgent_chdl, [415](#)
 - MC_AddStationaryAgent, [415](#)

- MC_AgentAddTask, [415](#)
- MC_AgentAddTask_chdl, [415](#)
- MC_AgentAddTaskFromFile, [416](#)
- MC_AgentInfo_GetAgency, [416](#)
- MC_AgentInfo_GetAgent, [416](#)
- MC_AgentInfo_GetAgentArgs, [417](#)
- MC_AgentReturnArrayDim, [417](#)
- MC_AgentReturnArrayExtent, [417](#)
- MC_AgentReturnArrayNum, [418](#)
- MC_AgentReturnDataGetSymbolAddr, [418](#)
- MC_AgentReturnDataSize, [418](#)
- MC_AgentReturnDataType, [419](#)
- MC_AgentReturnIsArray, [419](#)
- MC_AgentVariableRetrieve, [419](#)
- MC_AgentVariableRetrieve_chdl, [420](#)
- MC_AgentVariableRetrieveInfo, [420](#)
- MC_AgentVariableSave, [421](#)
- MC_AgentVariableSave_chdl, [421](#)
- MC_Barrier, [421](#)
- MC_Barrier_chdl, [422](#)
- MC_BarrierDelete, [422](#)
- MC_BarrierDelete_chdl, [422](#)
- MC_BarrierInit, [422](#)
- MC_BarrierInit_chdl, [423](#)
- MC_CallAgentFunc, [423](#)
- MC_CallAgentFunc_chdl, [423](#)
- MC_CallAgentFuncArg, [424](#)
- MC_CallAgentFuncV, [424](#)
- MC_CallAgentFuncVar, [424](#)
- MC_ComposeAgent, [425](#)
- MC_ComposeAgent_chdl, [425](#)
- MC_ComposeAgentFromFile, [425](#)
- MC_ComposeAgentFromFile_chdl, [426](#)
- MC_ComposeAgentFromFileS, [426](#)
- MC_ComposeAgentFromFileWithWorkgroup, [427](#)
- MC_ComposeAgentFromFileWithWorkgroup_chdl, [427](#)
- MC_ComposeAgentS, [427](#)
- MC_ComposeAgentWithWorkgroup, [428](#)
- MC_ComposeAgentWithWorkgroup_chdl, [429](#)
- MC_CondBroadcast, [429](#)
- MC_CondBroadcast_chdl, [429](#)
- MC_CondReset, [430](#)
- MC_CondReset_chdl, [430](#)
- MC_CondSignal, [430](#)
- MC_CondSignal_chdl, [431](#)
- MC_CondWait, [431](#)
- MC_CondWait_chdl, [431](#)
- MC_CopyAgent, [432](#)
- MC_DeleteAgent, [432](#)
- MC_DeleteAgent_chdl, [432](#)
- MC_DeleteAgentWG, [432](#)
- MC_DeleteAgentWG_chdl, [433](#)
- MC_DeregisterService, [433](#)
- MC_DeregisterService_chdl, [433](#)
- MC_DestroyServiceSearchResult, [433](#)
- MC_DestroyServiceSearchResult_chdl, [434](#)
- MC_End, [434](#)
- MC_End_chdl, [434](#)
- MC_FindAgentByID, [434](#)
- MC_FindAgentByID_chdl, [435](#)
- MC_FindAgentByName, [435](#)
- MC_FindAgentByName_chdl, [435](#)
- MC_GetAgentArrivalTime, [436](#)
- MC_GetAgentArrivalTime_chdl, [436](#)
- MC_GetAgentExecEngine, [436](#)
- MC_GetAgentID, [436](#)
- MC_GetAgentID_chdl, [436](#)
- MC_GetAgentName, [436](#)
- MC_GetAgentName_chdl, [437](#)
- MC_GetAgentNumTasks, [437](#)
- MC_GetAgentNumTasks_chdl, [437](#)
- MC_GetAgentReturnData, [437](#)
- MC_GetAgentStatus, [438](#)
- MC_GetAgentStatus_chdl, [438](#)
- MC_GetAgentType, [438](#)
- MC_GetAgentXMLString, [438](#)
- MC_GetAgentXMLString_chdl, [439](#)
- MC_GetAllAgents, [439](#)
- MC_GetTimeOfDay_chdl, [439](#)
- MC_HaltAgency, [439](#)
- MC_HaltAgency_chdl, [439](#)
- MC_Initialize, [440](#)
- MC_InitializeAgencyOptions, [440](#)
- MC_LoadAgentFromFile, [441](#)
- MC_MainLoop, [441](#)
- MC_MigrateAgent, [441](#)
- MC_MigrateAgent_chdl, [442](#)
- MC_MutexLock, [442](#)
- MC_MutexLock_chdl, [442](#)
- MC_MutexUnlock, [442](#)
- MC_MutexUnlock_chdl, [443](#)
- MC_PrintAgentCode, [443](#)
- MC_PrintAgentCode_chdl, [443](#)
- MC_RegisterService, [443](#)
- MC_RegisterService_chdl, [444](#)
- MC_ResetSignal, [444](#)
- MC_ResumeAgency, [444](#)
- MC_ResumeAgency_chdl, [445](#)
- MC_RetrieveAgent, [445](#)
- MC_RetrieveAgent_chdl, [445](#)
- MC_RetrieveAgentCode, [445](#)
- MC_RetrieveAgentCode_chdl, [445](#)
- MC_SaveData_chdl, [446](#)
- MC_SearchForService, [446](#)
- MC_SearchForService_chdl, [446](#)

- MC_SemaphorePost, 446
- MC_SemaphorePost_chdl, 447
- MC_SemaphoreWait, 447
- MC_SemaphoreWait_chdl, 448
- MC_SendAgent, 448
- MC_SendAgentFile, 448
- MC_SendAgentMigrationMessage, 448
- MC_SendAgentMigrationMessage_chdl, 449
- MC_SendAgentMigrationMessageFile, 449
- MC_SendAgentMigrationMessageFile_chdl, 449
- MC_SendCh, 449
- MC_SendSteerCommand, 449
- MC_SendSteerCommand_chdl, 450
- MC_SetAgentStatus, 450
- MC_SetAgentStatus_chdl, 450
- MC_SetDefaultAgentStatus, 450
- MC_SetDefaultAgentStatus_chdl, 451
- MC_SetThreadOff, 451
- MC_SetThreadOn, 451
- MC_SetThreadsAllOff, 452
- MC_SetThreadsAllOn, 452
- MC_Steer, 452
- MC_SteerControl, 453
- MC_SyncDelete, 453
- MC_SyncDelete_chdl, 453
- MC_SyncInit, 454
- MC_SyncInit_chdl, 454
- MC_TerminateAgent, 454
- MC_TerminateAgent_chdl, 455
- MC_TerminateAgentWG, 455
- MC_TerminateAgentWG_chdl, 455
- MC_WaitAgent, 455
- MC_WaitRetrieveAgent, 455
- MC_WaitSignal, 456
- libmc.h
 - agency_p, 317
 - agency_t, 317
 - agent_p, 317
 - agent_t, 317
 - ERR, 318
 - error_code_e, 318
 - error_code_t, 317
 - EXPORTMC, 317
 - FIPA_ACCEPT_PROPOSAL, 319
 - FIPA_AGREE, 319
 - FIPA_CALL_FOR_PROPOSAL, 319
 - FIPA_CANCEL, 319
 - FIPA_CONFIRM, 319
 - FIPA_DISCONFIRM, 319
 - FIPA_ERROR, 319
 - FIPA_FAILURE, 319
 - FIPA_INFORM, 319
 - FIPA_INFORM_IF, 319, 320
 - FIPA_INFORM_REF, 319, 320
 - FIPA_NOT_UNDERSTOOD, 319, 320
 - FIPA_PROPOGATE, 319, 320
 - FIPA_PROPOSE, 319, 320
 - FIPA_PROXY, 319, 320
 - FIPA_QUERY_IF, 319, 320
 - FIPA_QUERY_REF, 319, 320
 - FIPA_REFUSE, 319, 320
 - FIPA_REJECT_PROPOSAL, 319, 320
 - FIPA_REQUEST, 319, 320
 - FIPA_REQUEST_WHEN, 319, 320
 - FIPA_REQUEST_WHENEVER, 319, 320
 - FIPA_SUBSCRIBE, 319, 320
 - FIPA_ZERO, 319
 - fipa_performative_e, 319
 - MC_AGENT_ACTIVE, 320
 - MC_AGENT_NEUTRAL, 320
 - MC_AGENT_SUSPENDED, 320
 - MC_ALL_SIGNALS, 321
 - MC_ERR, 318
 - MC_ERR_CONNECT, 318
 - MC_ERR_EMPTY, 318
 - MC_ERR_INVALID, 318
 - MC_ERR_INVALID_ARGS, 318
 - MC_ERR_MEMORY, 318
 - MC_ERR_NOT_FOUND, 318
 - MC_ERR_PARSE, 318
 - MC_ERR_SEND, 318, 319
 - MC_EXEC_AGENT, 321
 - MC_LOCAL_AGENT, 320
 - MC_NO_SIGNAL, 321
 - MC_NO_STATUS, 320
 - MC_NONE, 320
 - MC_RECV_AGENT, 321
 - MC_RECV_CONNECTION, 321
 - MC_RECV_MESSAGE, 321
 - MC_RECV_RETURN, 321
 - MC_REMOTE_AGENT, 320
 - MC_RESTART, 321
 - MC_RETURN_AGENT, 320
 - MC_RUN, 321
 - MC_STOP, 321
 - MC_SUCCESS, 318
 - MC_SUSPEND, 321
 - MC_THREAD_ACC, 321
 - MC_THREAD_AGENT, 321
 - MC_THREAD_ALL, 321
 - MC_THREAD_AMS, 321
 - MC_THREAD_CP, 321
 - MC_THREAD_DF, 321
 - MC_WAIT_CH, 320
 - MC_WAIT_FINISHED, 320
 - MC_WAIT_MESSGSEND, 320
 - MC_WARN_DUPLICATE, 318, 319

- MC_AclAddReceiver, [322](#)
- MC_AclAddReplyTo, [322](#)
- MC_AclDestroy, [322](#)
- MC_AclGetContent, [322](#)
- MC_AclGetConversationID, [322](#)
- MC_AclGetPerformative, [323](#)
- MC_AclGetProtocol, [323](#)
- MC_AclGetSender, [323](#)
- MC_AclNew, [323](#)
- MC_AclPost, [323](#)
- MC_AclReply, [324](#)
- MC_AclRetrieve, [324](#)
- MC_AclSend, [324](#)
- MC_AclSetContent, [325](#)
- MC_AclSetConversationID, [325](#)
- MC_AclSetPerformative, [325](#)
- MC_AclSetProtocol, [325](#)
- MC_AclSetSender, [326](#)
- MC_AclWaitRetrieve, [326](#)
- MC_AddAgent, [326](#)
- MC_AddStationaryAgent, [326](#)
- MC_AgentAddTask, [327](#)
- MC_AgentAddTaskFromFile, [327](#)
- MC_AgentInfo_GetAgency, [327](#)
- MC_AgentInfo_GetAgent, [328](#)
- MC_AgentInfo_GetAgentArgs, [328](#)
- MC_AgentReturnArrayDim, [328](#)
- MC_AgentReturnArrayExtent, [329](#)
- MC_AgentReturnArrayNum, [329](#)
- MC_AgentReturnDataGetSymbolAddr, [329](#)
- MC_AgentReturnDataSize, [330](#)
- MC_AgentReturnDataType, [330](#)
- MC_AgentReturnIsArray, [330](#)
- MC_AgentStatus_e, [320](#)
- MC_AgentType_e, [320](#)
- MC_AgentVariableRetrieve, [331](#)
- MC_AgentVariableRetrieveInfo, [331](#)
- MC_AgentVariableSave, [332](#)
- MC_Barrier, [332](#)
- MC_BarrierDelete, [333](#)
- MC_BarrierInit, [333](#)
- MC_CallAgentFunc, [333](#)
- MC_CallAgentFuncArg, [334](#)
- MC_CallAgentFuncV, [335](#)
- MC_CallAgentFuncVar, [335](#)
- MC_ComposeAgent, [335](#)
- MC_ComposeAgentFromFile, [336](#)
- MC_ComposeAgentFromFileS, [336](#)
- MC_ComposeAgentFromFileWithWorkgroup, [337](#)
- MC_ComposeAgentS, [337](#)
- MC_ComposeAgentWithWorkgroup, [338](#)
- MC_CondBroadcast, [339](#)
- MC_CondReset, [339](#)
- MC_CondSignal, [340](#)
- MC_CondWait, [340](#)
- MC_CopyAgent, [341](#)
- MC_DeleteAgent, [341](#)
- MC_DeleteAgentWG, [341](#)
- MC_DestroyServiceSearchResult, [342](#)
- MC_End, [342](#)
- MC_FindAgentByID, [343](#)
- MC_FindAgentByName, [343](#)
- MC_GetAgentExecEngine, [344](#)
- MC_GetAgentID, [344](#)
- MC_GetAgentName, [344](#)
- MC_GetAgentNumTasks, [344](#)
- MC_GetAgentReturnData, [344](#)
- MC_GetAgentStatus, [345](#)
- MC_GetAgentType, [345](#)
- MC_GetAgentXMLString, [345](#)
- MC_HaltAgency, [346](#)
- MC_Initialize, [346](#)
- MC_InitializeAgencyOptions, [347](#)
- MC_LoadAgentFromFile, [347](#)
- MC_MainLoop, [347](#)
- MC_MigrateAgent, [348](#)
- MC_MutexLock, [348](#)
- MC_MutexUnlock, [349](#)
- MC_PrintAgentCode, [349](#)
- MC_RegisterService, [349](#)
- MC_ResetSignal, [350](#)
- MC_ResumeAgency, [350](#)
- MC_RetrieveAgent, [350](#)
- MC_RetrieveAgentCode, [351](#)
- MC_SearchForService, [351](#)
- MC_SemaphorePost, [351](#)
- MC_SemaphoreWait, [352](#)
- MC_SendAgent, [352](#)
- MC_SendAgentFile, [353](#)
- MC_SendAgentMigrationMessage, [353](#)
- MC_SendAgentMigrationMessageFile, [353](#)
- MC_SetAgentStatus, [354](#)
- MC_SetDefaultAgentStatus, [354](#)
- MC_SetThreadOff, [355](#)
- MC_SetThreadOn, [355](#)
- MC_SetThreadsAllOff, [355](#)
- MC_SetThreadsAllOn, [356](#)
- MC_Signal_e, [320](#)
- MC_Steer, [356](#)
- MC_SteerCommand_e, [321](#)
- MC_SteerCommand_t, [318](#)
- MC_SteerControl, [356](#)
- MC_SyncDelete, [357](#)
- MC_SyncInit, [357](#)
- MC_TerminateAgent, [358](#)
- MC_TerminateAgentWG, [358](#)
- MC_ThreadIndex_e, [321](#)

- MC_Wait, 317
- MC_WaitAgent, 358
- MC_WaitRetrieveAgent, 358
- MC_WaitSignal, 359
- MCAgency_t, 318
- MCAgencyOptions_t, 318
- MCAgent_t, 318
- stationary_agent_info_t, 318
- list
 - barrier_queue_s, 54
 - syncList_s, 162
- list.c
 - list_pGetSize, 457
 - ListAdd, 457
 - ListDelete, 457
 - ListGetHead, 457
 - ListInitialize, 457
 - ListInsert, 458
 - ListPop, 458
 - ListSearch, 458
 - ListTerminate, 458
- list.h
 - DATA, 459
 - list_p, 460
 - list_t, 460
 - ListAdd, 460
 - ListDelete, 460
 - ListGetHead, 460
 - ListGetSize, 460
 - ListInitialize, 460
 - ListInsert, 460
 - listNode_p, 460
 - listNode_t, 460
 - ListPop, 460
 - ListSearch, 461
 - ListTerminate, 461
 - QUEUE_TEMPLATE, 459
- list_p
 - list.h, 460
- list_pGetSize
 - list.c, 457
- list_s, 107
 - listhead, 107
 - size, 107
- list_t
 - list.h, 460
- ListAdd
 - list.c, 457
 - list.h, 460
- ListDelete
 - list.c, 457
 - list.h, 460
- listen_Thread
 - acc.c, 169
 - acc.h, 217
- listen_thread_arg
 - mc_platform_s, 112
- ListGetHead
 - list.c, 457
 - list.h, 460
- ListGetSize
 - list.h, 460
- listhead
 - list_s, 107
- ListInitialize
 - list.c, 457
 - list.h, 460
- ListInsert
 - list.c, 458
 - list.h, 460
- listNode_p
 - list.h, 460
- listNode_s, 108
 - next, 108
 - node_data, 108
- listNode_t
 - list.h, 460
- ListPop
 - list.c, 458
 - list.h, 460
- ListSearch
 - list.c, 458
 - list.h, 461
- ListTerminate
 - list.c, 458
 - list.h, 461
- lock
 - agent_s, 46
 - barrier_node_s, 53
 - barrier_queue_s, 54
 - df.h, 267
 - mc_rwlock_s, 116
 - syncList_s, 162
 - syncListNode_s, 163
- LOCKED
 - mtp_http.h, 386
- m
 - arc4_context, 52
- m_sleep
 - timing.c, 813
 - timing.h, 665
- mac_dec
 - _ssl_context, 15
- mac_enc
 - _ssl_context, 16
- maclen
 - _ssl_context, 16

- macro
 - fipa_comm_message_check_t, 77
- macros.h
 - CH_DATATYPE_SIZE, 361
 - CH_DATATYPE_STR_TO_VAL, 361
 - CH_DATATYPE_STRING, 362
 - CH_DATATYPE_VALUE_STRING, 362
 - CH_STRING_DATATYPE, 363
 - CHECK_NULL, 363
 - COND_BROADCAST, 364
 - COND_DESTROY, 364
 - COND_INIT, 364
 - COND_RESET, 364
 - COND_SIGNAL, 365
 - COND_SLEEP, 365
 - COND_SLEEP_ACTION, 365
 - COND_T, 365
 - COND_WAIT, 365
 - GET_THREAD_MODE, 365
 - MUTEX_DESTROY, 366
 - MUTEX_INIT, 366
 - MUTEX_LOCK, 366
 - MUTEX_NEW, 366
 - MUTEX_T, 367
 - MUTEX_UNLOCK, 367
 - PTHREAD_STACK_SIZE, 367
 - RWLOCK_DESTROY, 367
 - RWLOCK_INIT, 367
 - RWLOCK_RDLOCK, 367
 - RWLOCK_RDUNLOCK, 367
 - RWLOCK_T, 368
 - RWLOCK_WRLock, 368
 - RWLOCK_WRLock, 368
 - SEMAPHORE_DESTROY, 368
 - SEMAPHORE_INIT, 368
 - SEMAPHORE_POST, 368
 - SEMAPHORE_T, 368
 - SEMAPHORE_WAIT, 368
 - SET_THREAD_OFF, 369
 - SET_THREAD_ON, 369
 - SIGNAL, 369
 - SLEEP_QUEUE, 369
 - SLEEP_RESET, 369
 - SOCKET_ERROR, 369
 - STRUCT, 370
 - THREAD_CANCEL, 370
 - THREAD_CREATE, 370
 - THREAD_DETACH, 370
 - THREAD_EXIT, 370
 - THREAD_JOIN, 370
 - WAKE_QUEUE, 371
 - WARN, 371
- mail_queue
 - agent_mailbox_s, 42
- mailbox
 - agent_s, 46
- main
 - aescript2.c, 825
 - benchmark.c, 844
 - dh_client.c, 830
 - dh_genprime.c, 831
 - dh_server.c, 832
 - hello.c, 826
 - mc_genkey.c, 853
 - md5sum.c, 827
 - mpi_demo.c, 833
 - mxmldoc.c, 519
 - rsa_genkey.c, 834
 - rsa_sign.c, 835
 - rsa_verify.c, 836
 - selftest.c, 846
 - sha1sum.c, 828
 - sha2sum.c, 829
 - ssl_client1.c, 838
 - ssl_client2.c, 840
 - ssl_server.c, 842
 - ssl_test.c, 851
 - testmxml.c, 526
- major_ver
 - _ssl_context, 16
- master
 - _ssl_session, 22
- max_bytes
 - options, 149
- max_connections
 - options, 149
- max_major_ver
 - _ssl_context, 16
- max_minor_ver
 - _ssl_context, 16
- max_pathlen
 - _x509_cert, 26
- MAXDATASIZE
 - interface.h, 543
- MC_AGENT_ACTIVE
 - libmc.h, 320
- MC_AGENT_NEUTRAL
 - libmc.h, 320
- MC_AGENT_SUSPENDED
 - libmc.h, 320
- MC_ALL_SIGNALS
 - libmc.h, 321
- MC_ERR
 - libmc.h, 318
 - mc_error.h, 372
- MC_ERR_CONNECT
 - libmc.h, 318
 - mc_error.h, 372

- MC_ERR_EMPTY
 - libmc.h, 318
 - mc_error.h, 372
- MC_ERR_INVALID
 - libmc.h, 318
 - mc_error.h, 372
- MC_ERR_INVALID_ARGS
 - libmc.h, 318
 - mc_error.h, 372, 373
- MC_ERR_MEMORY
 - libmc.h, 318
 - mc_error.h, 372, 373
- MC_ERR_NOT_FOUND
 - libmc.h, 318
 - mc_error.h, 372, 373
- MC_ERR_PARSE
 - libmc.h, 318
 - mc_error.h, 372
- MC_ERR_SEND
 - libmc.h, 318, 319
 - mc_error.h, 372, 373
- mc_error.h
 - ERR, 372
 - MC_ERR, 372
 - MC_ERR_CONNECT, 372
 - MC_ERR_EMPTY, 372
 - MC_ERR_INVALID, 372
 - MC_ERR_INVALID_ARGS, 372, 373
 - MC_ERR_MEMORY, 372, 373
 - MC_ERR_NOT_FOUND, 372, 373
 - MC_ERR_PARSE, 372
 - MC_ERR_SEND, 372, 373
 - MC_SUCCESS, 372
 - MC_WARN_DUPLICATE, 372, 373
- MC_EXEC_AGENT
 - libmc.h, 321
- MC_LOCAL_AGENT
 - libmc.h, 320
- MC_NO_SIGNAL
 - libmc.h, 321
- MC_NO_STATUS
 - libmc.h, 320
- MC_NONE
 - libmc.h, 320
- MC_RECV_AGENT
 - libmc.h, 321
- MC_RECV_CONNECTION
 - libmc.h, 321
- MC_RECV_MESSAGE
 - libmc.h, 321
- MC_RECV_RETURN
 - libmc.h, 321
- MC_REMOTE_AGENT
 - libmc.h, 320
- MC_RESTART
 - libmc.h, 321
- MC_RETURN_AGENT
 - libmc.h, 320
- MC_RUN
 - libmc.h, 321
- MC_STOP
 - libmc.h, 321
- MC_SUCCESS
 - libmc.h, 318
 - mc_error.h, 372
- MC_SUSPEND
 - libmc.h, 321
- MC_THREAD_ACC
 - libmc.h, 321
- MC_THREAD_AGENT
 - libmc.h, 321
- MC_THREAD_ALL
 - libmc.h, 321
- MC_THREAD_AMS
 - libmc.h, 321
- MC_THREAD_CP
 - libmc.h, 321
- MC_THREAD_DF
 - libmc.h, 321
- MC_WAIT_CH
 - libmc.h, 320
- MC_WAIT_FINISHED
 - libmc.h, 320
- MC_WAIT_MESSGSEND
 - libmc.h, 320
- MC_WARN_DUPLICATE
 - libmc.h, 318, 319
 - mc_error.h, 372, 373
- MC_AclAddReceiver
 - libmc.c, 407
 - libmc.h, 322
- MC_AclAddReceiver_chdl
 - agent_lib.h, 226
 - libmc.c, 407
- MC_AclAddReplyTo
 - libmc.c, 407
 - libmc.h, 322
- MC_AclAddReplyTo_chdl
 - agent_lib.h, 226
 - libmc.c, 408
- MC_AclDestroy
 - libmc.c, 408
 - libmc.h, 322
- MC_AclDestroy_chdl
 - agent_lib.h, 226
 - libmc.c, 408
- MC_AclGetContent
 - libmc.c, 408

- libmc.h, 322
- MC_AclGetContent_chdl
 - agent_lib.h, 226
 - libmc.c, 408
- MC_AclGetConversationID
 - libmc.c, 409
 - libmc.h, 322
- MC_AclGetConversationID_chdl
 - agent_lib.h, 227
 - libmc.c, 409
- MC_AclGetPerformative
 - libmc.c, 409
 - libmc.h, 323
- MC_AclGetPerformative_chdl
 - agent_lib.h, 227
 - libmc.c, 409
- MC_AclGetProtocol
 - libmc.c, 409
 - libmc.h, 323
- MC_AclGetProtocol_chdl
 - agent_lib.h, 227
 - libmc.c, 409
- MC_AclGetSender
 - libmc.c, 410
 - libmc.h, 323
- MC_AclGetSender_chdl
 - agent_lib.h, 227
 - libmc.c, 410
- MC_AclNew
 - libmc.c, 410
 - libmc.h, 323
- MC_AclNew_chdl
 - agent_lib.h, 227
 - libmc.c, 410
- MC_AclPost
 - libmc.c, 410
 - libmc.h, 323
- MC_AclPost_chdl
 - agent_lib.h, 227
 - libmc.c, 411
- MC_AclReply
 - libmc.c, 411
 - libmc.h, 324
- MC_AclReply_chdl
 - agent_lib.h, 227
 - libmc.c, 411
- MC_AclRetrieve
 - libmc.c, 411
 - libmc.h, 324
- MC_AclRetrieve_chdl
 - agent_lib.h, 228
 - libmc.c, 412
- MC_AclSend
 - libmc.c, 412
- libmc.h, 324
- MC_AclSend_chdl
 - agent_lib.h, 228
 - libmc.c, 412
- MC_AclSetContent
 - libmc.c, 412
 - libmc.h, 325
- MC_AclSetContent_chdl
 - agent_lib.h, 228
 - libmc.c, 412
- MC_AclSetConversationID
 - libmc.c, 413
 - libmc.h, 325
- MC_AclSetConversationID_chdl
 - agent_lib.h, 228
 - libmc.c, 413
- MC_AclSetPerformative
 - libmc.c, 413
 - libmc.h, 325
- MC_AclSetPerformative_chdl
 - agent_lib.h, 228
 - libmc.c, 413
- MC_AclSetProtocol
 - libmc.c, 413
 - libmc.h, 325
- MC_AclSetProtocol_chdl
 - agent_lib.h, 228
 - libmc.c, 413
- MC_AclSetSender
 - libmc.c, 414
 - libmc.h, 326
- MC_AclSetSender_chdl
 - agent_lib.h, 228
 - libmc.c, 414
- MC_AclWaitRetrieve
 - libmc.c, 414
 - libmc.h, 326
- MC_AclWaitRetrieve_chdl
 - agent_lib.h, 229
 - libmc.c, 414
- MC_AddAgent
 - libmc.c, 414
 - libmc.h, 326
- MC_AddAgent_chdl
 - agent_lib.h, 229
 - libmc.c, 415
- MC_AddStationaryAgent
 - libmc.c, 415
 - libmc.h, 326
- MC_AgentAddTask
 - libmc.c, 415
 - libmc.h, 327
- MC_AgentAddTask_chdl
 - agent_lib.h, 229

- libmc.c, [415](#)
- MC_AgentAddTaskFromFile
 - libmc.c, [416](#)
 - libmc.h, [327](#)
- MC_AgentInfo_GetAgency
 - libmc.c, [416](#)
 - libmc.h, [327](#)
- MC_AgentInfo_GetAgent
 - libmc.c, [416](#)
 - libmc.h, [328](#)
- MC_AgentInfo_GetAgentArgs
 - libmc.c, [417](#)
 - libmc.h, [328](#)
- MC_AgentReturnArrayDim
 - libmc.c, [417](#)
 - libmc.h, [328](#)
- MC_AgentReturnArrayExtent
 - libmc.c, [417](#)
 - libmc.h, [329](#)
- MC_AgentReturnArrayNum
 - libmc.c, [418](#)
 - libmc.h, [329](#)
- MC_AgentReturnDataGetSymbolAddr
 - libmc.c, [418](#)
 - libmc.h, [329](#)
- MC_AgentReturnDataSize
 - libmc.c, [418](#)
 - libmc.h, [330](#)
- MC_AgentReturnDataType
 - libmc.c, [419](#)
 - libmc.h, [330](#)
- MC_AgentReturnIsArray
 - libmc.c, [419](#)
 - libmc.h, [330](#)
- MC_AgentStatus_e
 - libmc.h, [320](#)
- MC_AgentType_e
 - libmc.h, [320](#)
- MC_AgentVariableRetrieve
 - libmc.c, [419](#)
 - libmc.h, [331](#)
- MC_AgentVariableRetrieve_chdl
 - agent_lib.h, [229](#)
 - libmc.c, [420](#)
- MC_AgentVariableRetrieveInfo
 - libmc.c, [420](#)
 - libmc.h, [331](#)
- MC_AgentVariableSave
 - libmc.c, [421](#)
 - libmc.h, [332](#)
- MC_AgentVariableSave_chdl
 - agent_lib.h, [229](#)
 - libmc.c, [421](#)
- MC_Barrier
 - libmc.c, [421](#)
 - libmc.h, [332](#)
- MC_Barrier_chdl
 - agent_lib.h, [229](#)
 - libmc.c, [422](#)
- MC_BarrierDelete
 - libmc.c, [422](#)
 - libmc.h, [333](#)
- MC_BarrierDelete_chdl
 - agent_lib.h, [229](#)
 - libmc.c, [422](#)
- MC_BarrierInit
 - libmc.c, [422](#)
 - libmc.h, [333](#)
- MC_BarrierInit_chdl
 - agent_lib.h, [230](#)
 - libmc.c, [423](#)
- MC_CallAgentFunc
 - libmc.c, [423](#)
 - libmc.h, [333](#)
- MC_CallAgentFunc_chdl
 - agent_lib.h, [230](#)
 - libmc.c, [423](#)
- MC_CallAgentFuncArg
 - libmc.c, [424](#)
 - libmc.h, [334](#)
- MC_CallAgentFuncV
 - libmc.c, [424](#)
 - libmc.h, [335](#)
- MC_CallAgentFuncVar
 - libmc.c, [424](#)
 - libmc.h, [335](#)
- MC_ComposeAgent
 - libmc.c, [425](#)
 - libmc.h, [335](#)
- MC_ComposeAgent_chdl
 - agent_lib.h, [230](#)
 - libmc.c, [425](#)
- MC_ComposeAgentFromFile
 - libmc.c, [425](#)
 - libmc.h, [336](#)
- MC_ComposeAgentFromFile_chdl
 - agent_lib.h, [230](#)
 - libmc.c, [426](#)
- MC_ComposeAgentFromFileS
 - libmc.c, [426](#)
 - libmc.h, [336](#)
- MC_ComposeAgentFromFileWithWorkgroup
 - libmc.c, [427](#)
 - libmc.h, [337](#)
- MC_ComposeAgentFromFileWithWorkgroup_chdl
 - agent_lib.h, [230](#)
 - libmc.c, [427](#)
- MC_ComposeAgentS

- libmc.c, [427](#)
- libmc.h, [337](#)
- MC_ComposeAgentWithWorkgroup
 - libmc.c, [428](#)
 - libmc.h, [338](#)
- MC_ComposeAgentWithWorkgroup_chdl
 - agent_lib.h, [230](#)
 - libmc.c, [429](#)
- MC_CondBroadcast
 - libmc.c, [429](#)
 - libmc.h, [339](#)
- MC_CondBroadcast_chdl
 - agent_lib.h, [230](#)
 - libmc.c, [429](#)
- MC_CondReset
 - libmc.c, [430](#)
 - libmc.h, [339](#)
- MC_CondReset_chdl
 - agent_lib.h, [231](#)
 - libmc.c, [430](#)
- MC_CondSignal
 - libmc.c, [430](#)
 - libmc.h, [340](#)
- MC_CondSignal_chdl
 - agent_lib.h, [231](#)
 - libmc.c, [431](#)
- MC_CondWait
 - libmc.c, [431](#)
 - libmc.h, [340](#)
- MC_CondWait_chdl
 - agent_lib.h, [231](#)
 - libmc.c, [431](#)
- MC_CopyAgent
 - libmc.c, [432](#)
 - libmc.h, [341](#)
- MC_DeleteAgent
 - libmc.c, [432](#)
 - libmc.h, [341](#)
- MC_DeleteAgent_chdl
 - agent_lib.h, [231](#)
 - libmc.c, [432](#)
- MC_DeleteAgentWG
 - libmc.c, [432](#)
 - libmc.h, [341](#)
- MC_DeleteAgentWG_chdl
 - agent_lib.h, [231](#)
 - libmc.c, [433](#)
- MC_DeregisterService
 - libmc.c, [433](#)
- MC_DeregisterService_chdl
 - agent_lib.h, [231](#)
 - libmc.c, [433](#)
- MC_DestroyServiceSearchResult
 - libmc.c, [433](#)
- libmc.h, [342](#)
- MC_DestroyServiceSearchResult_chdl
 - agent_lib.h, [231](#)
 - libmc.c, [434](#)
- MC_End
 - libmc.c, [434](#)
 - libmc.h, [342](#)
- MC_End_chdl
 - agent_lib.h, [232](#)
 - libmc.c, [434](#)
- mc_error.h
 - error_code_e, [372](#)
 - error_code_t, [372](#)
- MC_FindAgentByID
 - libmc.c, [434](#)
 - libmc.h, [343](#)
- MC_FindAgentByID_chdl
 - agent_lib.h, [232](#)
 - libmc.c, [435](#)
- MC_FindAgentByName
 - libmc.c, [435](#)
 - libmc.h, [343](#)
- MC_FindAgentByName_chdl
 - agent_lib.h, [232](#)
 - libmc.c, [435](#)
- mc_FIPAComm_AddNewProtocol
 - fipa_comm.h, [305](#)
- mc_FIPAComm_DeregisterPerformative
 - fipa_comm.h, [305](#)
- mc_FIPAComm_Destroy
 - fipa_comm.h, [305](#)
- mc_FIPAComm_FSM_CN
 - fipa_comm.h, [305](#)
- mc_FIPAComm_HandleMessage
 - fipa_comm.h, [305](#)
- mc_FIPAComm_HandleMessageOnce
 - fipa_comm.h, [305](#)
- mc_FIPAComm_HandleMessageWait
 - fipa_comm.h, [305](#)
- mc_FIPAComm_HandleProtocol
 - fipa_comm.h, [305](#)
- mc_FIPAComm_New
 - fipa_comm.h, [305](#)
- mc_FIPAComm_NewProtocol
 - fipa_comm.h, [305](#)
- mc_FIPAComm_RegisterAction
 - fipa_comm.h, [305](#)
- mc_FIPAComm_RegisterActionS
 - fipa_comm.h, [305](#)
- mc_FIPAComm_RegisterPerformative
 - fipa_comm.h, [305](#)
- mc_FIPAComm_RegisterProtocol
 - fipa_comm.h, [305](#)
- mc_FIPAComm_RegisterProtocolCallback

- fipa_comm.h, 305
- mc_FIPAComm_SetAgent
 - fipa_comm.h, 305
- mc_FIPAComm_SetDefaultReply
 - fipa_comm.h, 305
- mc_FIPAComm_SetPerformativeDefaultReply
 - fipa_comm.h, 305
- mc_FIPAComm_SetProtocolState
 - fipa_comm.h, 305
- mc_FIPAComm_StartProtocol
 - fipa_comm.h, 305
- mc_FIPAProtocol_New
 - fipa_comm.h, 305
- mc_genkey.c
 - main, 853
 - print_usage, 853
- MC_GetAgentArrivalTime
 - libmc.c, 436
- MC_GetAgentArrivalTime_chdl
 - libmc.c, 436
- MC_GetAgentExecEngine
 - libmc.c, 436
 - libmc.h, 344
- MC_GetAgentID
 - libmc.c, 436
 - libmc.h, 344
- MC_GetAgentID_chdl
 - agent_lib.h, 232
 - libmc.c, 436
- MC_GetAgentName
 - libmc.c, 436
 - libmc.h, 344
- MC_GetAgentName_chdl
 - agent_lib.h, 232
 - libmc.c, 437
- MC_GetAgentNumTasks
 - libmc.c, 437
 - libmc.h, 344
- MC_GetAgentNumTasks_chdl
 - agent_lib.h, 232
 - libmc.c, 437
- MC_GetAgentReturnData
 - libmc.c, 437
 - libmc.h, 344
- MC_GetAgentStatus
 - libmc.c, 438
 - libmc.h, 345
- MC_GetAgentStatus_chdl
 - agent_lib.h, 232
 - libmc.c, 438
- MC_GetAgentType
 - libmc.c, 438
 - libmc.h, 345
- MC_GetAgentXMLString
 - libmc.c, 438
 - libmc.h, 345
- MC_GetAgentXMLString_chdl
 - agent_lib.h, 233
 - libmc.c, 439
- MC_GetAllAgents
 - libmc.c, 439
- MC_GetTimeOfDay_chdl
 - agent_lib.h, 233
 - libmc.c, 439
- MC_HaltAgency
 - libmc.c, 439
 - libmc.h, 346
- MC_HaltAgency_chdl
 - agent_lib.h, 233
 - libmc.c, 439
- MC_Initialize
 - libmc.c, 440
 - libmc.h, 346
- MC_InitializeAgencyOptions
 - libmc.c, 440
 - libmc.h, 347
- MC_LoadAgentFromFile
 - libmc.c, 441
 - libmc.h, 347
- MC_MainLoop
 - libmc.c, 441
 - libmc.h, 347
- MC_MigrateAgent
 - libmc.c, 441
 - libmc.h, 348
- MC_MigrateAgent_chdl
 - agent_lib.h, 233
 - libmc.c, 442
- MC_MutexLock
 - libmc.c, 442
 - libmc.h, 348
- MC_MutexLock_chdl
 - agent_lib.h, 233
 - libmc.c, 442
- MC_MutexUnlock
 - libmc.c, 442
 - libmc.h, 349
- MC_MutexUnlock_chdl
 - agent_lib.h, 233
 - libmc.c, 443
- MC_NUM_PERFORMATIVES
 - fipa_comm.h, 300
- mc_platform
 - agency_s, 37
 - agent_s, 46
 - df.h, 267
 - message_send_arg_s, 129
- mc_platform.c

- DEFAULT_HOSTNAME_LENGTH, 462
- mc_platform_Destroy, 462
- mc_platform_Initialize, 462
- mc_platform.h
 - mc_platform_Destroy, 375
 - mc_platform_Initialize, 375
 - mc_platform_p, 374
 - mc_platform_t, 374
- mc_platform_Destroy
 - mc_platform.c, 462
 - mc_platform.h, 375
- mc_platform_Initialize
 - mc_platform.c, 462
 - mc_platform.h, 375
- mc_platform_p
 - mc_platform.h, 374
- mc_platform_s, 109
 - acc, 110
 - agency, 110
 - agent_queue, 110
 - ams, 110
 - asm_message_queue, 110
 - barrier_queue, 110
 - bluetooth, 110
 - client_thread_arg, 110
 - cmd_prompt, 111
 - connection_queue, 111
 - default_agentstatus, 111
 - df, 111
 - err, 111
 - giant, 111
 - giant_cond, 111
 - giant_lock, 111
 - hostname, 112
 - initInterps, 112
 - interp_options, 112
 - interpreter_queue, 112
 - listen_thread_arg, 112
 - MC_signal, 112
 - MC_signal_cond, 112
 - MC_signal_lock, 112
 - MC_steer_command, 113
 - MC_steer_cond, 113
 - MC_steer_lock, 113
 - MC_sync_cond, 113
 - MC_sync_lock, 113
 - message_queue, 113
 - port, 113
 - private_key, 114
 - quit, 114
 - quit_cond, 114
 - quit_lock, 114
 - sockfd, 114
 - stack_size, 114
 - syncList, 114
- mc_platform_t
 - mc_platform.h, 374
- MC_PrintAgentCode
 - libmc.c, 443
 - libmc.h, 349
- MC_PrintAgentCode_chdl
 - agent_lib.h, 233
 - libmc.c, 443
- MC_RegisterService
 - libmc.c, 443
 - libmc.h, 349
- MC_RegisterService_chdl
 - agent_lib.h, 234
 - libmc.c, 444
- MC_ResetSignal
 - libmc.c, 444
 - libmc.h, 350
- MC_ResumeAgency
 - libmc.c, 444
 - libmc.h, 350
- MC_ResumeAgency_chdl
 - agent_lib.h, 234
 - libmc.c, 445
- MC_RetrieveAgent
 - libmc.c, 445
 - libmc.h, 350
- MC_RetrieveAgent_chdl
 - agent_lib.h, 234
 - libmc.c, 445
- MC_RetrieveAgentCode
 - libmc.c, 445
 - libmc.h, 351
- MC_RetrieveAgentCode_chdl
 - agent_lib.h, 234
 - libmc.c, 445
- mc_rwlock.c
 - mc_rwlock_destroy, 464
 - mc_rwlock_init, 464
 - mc_rwlock_rdlock, 464
 - mc_rwlock_rdunlock, 464
 - mc_rwlock_wrlock, 464
 - mc_rwlock_wrunlock, 465
- mc_rwlock.h
 - mc_rwlock_destroy, 376
 - mc_rwlock_init, 376
 - mc_rwlock_p, 376
 - mc_rwlock_rdlock, 376
 - mc_rwlock_rdunlock, 377
 - mc_rwlock_t, 376
 - mc_rwlock_wrlock, 377
 - mc_rwlock_wrunlock, 377
- mc_rwlock_destroy
 - mc_rwlock.c, 464

- mc_rwlock.h, 376
- mc_rwlock_init
 - mc_rwlock.c, 464
 - mc_rwlock.h, 376
- mc_rwlock_p
 - mc_rwlock.h, 376
- mc_rwlock_rdlock
 - mc_rwlock.c, 464
 - mc_rwlock.h, 376
- mc_rwlock_rdunlock
 - mc_rwlock.c, 464
 - mc_rwlock.h, 377
- mc_rwlock_s, 116
 - cond, 116
 - lock, 116
 - num_readers, 116
 - write_flag, 116
 - write_request, 116
- mc_rwlock_t
 - mc_rwlock.h, 376
- mc_rwlock_wrlock
 - mc_rwlock.c, 464
 - mc_rwlock.h, 377
- mc_rwlock_wrunlock
 - mc_rwlock.c, 465
 - mc_rwlock.h, 377
- MC_SaveData_chdl
 - agent_lib.h, 234
 - libmc.c, 446
- MC_SearchForService
 - libmc.c, 446
 - libmc.h, 351
- MC_SearchForService_chdl
 - agent_lib.h, 234
 - libmc.c, 446
- MC_SemaphorePost
 - libmc.c, 446
 - libmc.h, 351
- MC_SemaphorePost_chdl
 - agent_lib.h, 235
 - libmc.c, 447
- MC_SemaphoreWait
 - libmc.c, 447
 - libmc.h, 352
- MC_SemaphoreWait_chdl
 - agent_lib.h, 235
 - libmc.c, 448
- MC_SendAgent
 - libmc.c, 448
 - libmc.h, 352
- MC_SendAgentFile
 - libmc.c, 448
 - libmc.h, 353
- MC_SendAgentMigrationMessage
 - libmc.c, 448
 - libmc.h, 353
- MC_SendAgentMigrationMessage_chdl
 - agent_lib.h, 235
 - libmc.c, 449
- MC_SendAgentMigrationMessageFile
 - libmc.c, 449
 - libmc.h, 353
- MC_SendAgentMigrationMessageFile_chdl
 - agent_lib.h, 235
 - libmc.c, 449
- MC_SendCh
 - libmc.c, 449
- MC_SendSteerCommand
 - libmc.c, 449
- MC_SendSteerCommand_chdl
 - agent_lib.h, 235
 - libmc.c, 450
- MC_SetAgentStatus
 - libmc.c, 450
 - libmc.h, 354
- MC_SetAgentStatus_chdl
 - agent_lib.h, 235
 - libmc.c, 450
- MC_SetDefaultAgentStatus
 - libmc.c, 450
 - libmc.h, 354
- MC_SetDefaultAgentStatus_chdl
 - agent_lib.h, 235
 - libmc.c, 451
- MC_SetThreadOff
 - libmc.c, 451
 - libmc.h, 355
- MC_SetThreadOn
 - libmc.c, 451
 - libmc.h, 355
- MC_SetThreadsAllOff
 - libmc.c, 452
 - libmc.h, 355
- MC_SetThreadsAllOn
 - libmc.c, 452
 - libmc.h, 356
- MC_signal
 - mc_platform_s, 112
- MC_signal_cond
 - mc_platform_s, 112
- MC_Signal_e
 - libmc.h, 320
- MC_signal_lock
 - mc_platform_s, 112
- MC_Steer
 - libmc.c, 452
 - libmc.h, 356
- MC_steer_command

- mc_platform_s, 113
- MC_steer_cond
 - mc_platform_s, 113
- MC_steer_lock
 - mc_platform_s, 113
- MC_SteerCommand_e
 - libmc.h, 321
- MC_SteerCommand_t
 - libmc.h, 318
- MC_SteerControl
 - libmc.c, 453
 - libmc.h, 356
- MC_sync_cond
 - mc_platform_s, 113
- MC_sync_lock
 - mc_platform_s, 113
- MC_SyncDelete
 - libmc.c, 453
 - libmc.h, 357
- MC_SyncDelete_chdl
 - agent_lib.h, 236
 - libmc.c, 453
- MC_SyncInit
 - libmc.c, 454
 - libmc.h, 357
- MC_SyncInit_chdl
 - agent_lib.h, 236
 - libmc.c, 454
- MC_TerminateAgent
 - libmc.c, 454
 - libmc.h, 358
- MC_TerminateAgent_chdl
 - agent_lib.h, 236
 - libmc.c, 455
- MC_TerminateAgentWG
 - libmc.c, 455
 - libmc.h, 358
- MC_TerminateAgentWG_chdl
 - agent_lib.h, 236
 - libmc.c, 455
- MC_ThreadIndex_e
 - libmc.h, 321
- MC_Wait
 - libmc.h, 317
- MC_WaitAgent
 - libmc.c, 455
 - libmc.h, 358
- MC_WaitRetrieveAgent
 - libmc.c, 455
 - libmc.h, 358
- MC_WaitSignal
 - libmc.c, 456
 - libmc.h, 359
- MCAgency_t
 - libmc.h, 318
- MCAgencyOptions_s, 118
 - bluetooth, 118
 - ch_options, 118
 - default_agent_status, 118
 - enable_security, 118
 - initInterps, 118
 - known_host_filename, 119
 - modified, 119
 - passphrase, 119
 - priv_key_filename, 119
 - stack_size, 119
 - threads, 119
- MCAgencyOptions_t
 - libmc.h, 318
- MCAgent_t
 - agent.h, 220
 - libmc.h, 318
- MCFIPAComm_p
 - fipa_comm.h, 301
- MCFIPAComm_s
 - fipa_comm.h, 301
- md2
 - md2.h, 593
- md2.h
 - md2, 593
 - md2_file, 593
 - md2_finish, 593
 - md2_hmac, 593
 - md2_hmac_finish, 593
 - md2_hmac_starts, 594
 - md2_hmac_update, 594
 - md2_self_test, 594
 - md2_starts, 594
 - md2_update, 594
- md2_context, 120
 - buffer, 120
 - cksum, 120
 - ipad, 120
 - left, 120
 - opad, 120
 - state, 120
- md2_file
 - md2.h, 593
- md2_finish
 - md2.h, 593
- md2_hmac
 - md2.h, 593
- md2_hmac_finish
 - md2.h, 593
- md2_hmac_starts
 - md2.h, 594
- md2_hmac_update
 - md2.h, 594

- md2_self_test
 - md2.h, [594](#)
- md2_starts
 - md2.h, [594](#)
- md2_update
 - md2.h, [594](#)
- md4
 - md4.h, [597](#)
- md4.h
 - md4, [597](#)
 - md4_file, [597](#)
 - md4_finish, [597](#)
 - md4_hmac, [597](#)
 - md4_hmac_finish, [597](#)
 - md4_hmac_starts, [598](#)
 - md4_hmac_update, [598](#)
 - md4_self_test, [598](#)
 - md4_starts, [598](#)
 - md4_update, [598](#)
- md4_context, [122](#)
 - buffer, [122](#)
 - ipad, [122](#)
 - opad, [122](#)
 - state, [122](#)
 - total, [122](#)
- md4_file
 - md4.h, [597](#)
- md4_finish
 - md4.h, [597](#)
- md4_hmac
 - md4.h, [597](#)
- md4_hmac_finish
 - md4.h, [597](#)
- md4_hmac_starts
 - md4.h, [598](#)
- md4_hmac_update
 - md4.h, [598](#)
- md4_self_test
 - md4.h, [598](#)
- md4_starts
 - md4.h, [598](#)
- md4_update
 - md4.h, [598](#)
- md5
 - md5.c, [743](#)
 - md5.h, [601](#)
- md5.c
 - F, [742](#)
 - GET_ULONG_LE, [742](#)
 - md5, [743](#)
 - md5_file, [743](#)
 - md5_finish, [743](#)
 - md5_hmac, [744](#)
 - md5_hmac_finish, [744](#)
 - md5_hmac_starts, [744](#)
 - md5_hmac_test_buf, [746](#)
 - md5_hmac_test_buflen, [747](#)
 - md5_hmac_test_key, [747](#)
 - md5_hmac_test_keylen, [747](#)
 - md5_hmac_test_sum, [747](#)
 - md5_hmac_update, [745](#)
 - md5_padding, [748](#)
 - md5_process, [745](#)
 - md5_self_test, [745](#)
 - md5_starts, [745](#)
 - md5_test_buf, [748](#)
 - md5_test_buflen, [748](#)
 - md5_test_sum, [749](#)
 - md5_update, [746](#)
 - P, [742](#)
 - PUT_ULONG_LE, [742](#)
 - S, [743](#)
- md5.h
 - md5, [601](#)
 - md5_file, [601](#)
 - md5_finish, [601](#)
 - md5_hmac, [601](#)
 - md5_hmac_finish, [602](#)
 - md5_hmac_starts, [602](#)
 - md5_hmac_update, [602](#)
 - md5_self_test, [603](#)
 - md5_starts, [603](#)
 - md5_update, [603](#)
- md5_check
 - md5sum.c, [827](#)
- md5_context, [124](#)
 - buffer, [124](#)
 - ipad, [124](#)
 - opad, [124](#)
 - state, [124](#)
 - total, [124](#)
- MD5_CTX
 - openssl.h, [611](#)
- md5_file
 - md5.c, [743](#)
 - md5.h, [601](#)
- MD5_Final
 - openssl.h, [611](#)
- md5_finish
 - md5.c, [743](#)
 - md5.h, [601](#)
- md5_hmac
 - md5.c, [744](#)
 - md5.h, [601](#)
- md5_hmac_finish
 - md5.c, [744](#)
 - md5.h, [602](#)
- md5_hmac_starts

- md5.c, 744
- md5.h, 602
- md5_hmac_test_buf
 - md5.c, 746
- md5_hmac_test_buflen
 - md5.c, 747
- md5_hmac_test_key
 - md5.c, 747
- md5_hmac_test_keylen
 - md5.c, 747
- md5_hmac_test_sum
 - md5.c, 747
- md5_hmac_update
 - md5.c, 745
 - md5.h, 602
- MD5_Init
 - openssl.h, 612
- md5_padding
 - md5.c, 748
- md5_print
 - md5sum.c, 827
- md5_process
 - md5.c, 745
- md5_self_test
 - md5.c, 745
 - md5.h, 603
- md5_starts
 - md5.c, 745
 - md5.h, 603
- md5_test_buf
 - md5.c, 748
- md5_test_buflen
 - md5.c, 748
- md5_test_sum
 - md5.c, 749
- MD5_Update
 - openssl.h, 612
- md5_update
 - md5.c, 746
 - md5.h, 603
- md5_wrapper
 - md5sum.c, 827
- md5sum.c
 - main, 827
 - md5_check, 827
 - md5_print, 827
 - md5_wrapper, 827
- message
 - dynstring_s, 65
 - fipa_message_string_s, 90
 - message_send_arg_s, 129
- message.c
 - auth_rece_send_msg, 472
 - http_to_hostport, 472
 - message_Copy, 472
 - message_Destroy, 473
 - message_InitializeFromAgent, 473
 - message_InitializeFromConnection, 473
 - message_InitializeFromString, 473
 - message_New, 473
 - message_Send, 474
 - message_send_Thread, 474
 - MSG_THREAD_EXIT, 472
 - MSG_THREADS, 472
 - SOCKET_INPUT_SIZE, 472
- message.h
 - AGENT_UPDATE, 379
 - auth_rece_send_msg, 379
 - CANCEL, 379
 - ENCRYPTED_DATA, 379
 - ENCRYPTION_INITIALIZE, 379
 - FIPA_ACL, 379
 - http_to_hostport, 379
 - message_Copy, 380
 - message_Destroy, 380
 - message_InitializeFromAgent, 380
 - message_InitializeFromConnection, 380
 - message_InitializeFromString, 380
 - message_New, 380
 - message_p, 379
 - message_Send, 380
 - message_send_arg_t, 379
 - message_send_Thread, 381
 - message_t, 379
 - message_type_e, 379
 - message_type_t, 379
 - MOBILE_AGENT, 379
 - MSG_SEC, 379
 - N_UNDRSTD, 379
 - NUM_MESSAGE_TYPE, 379
 - QUER_IF, 379
 - QUER_REF, 379
 - RELAY, 379
 - REQUEST, 379
 - REQUEST_ENCRYPTION_INITIALIZE, 379
 - RETURN_MSG, 379
 - SUBSCRIBE, 379
- message_body
 - message_s, 127
- message_Copy
 - message.c, 472
 - message.h, 380
- message_Destroy
 - message.c, 473
 - message.h, 380
- message_id
 - message_s, 127

- message_InitializeFromAgent
 - message.c, [473](#)
 - message.h, [380](#)
- message_InitializeFromConnection
 - message.c, [473](#)
 - message.h, [380](#)
- message_InitializeFromString
 - message.c, [473](#)
 - message.h, [380](#)
- message_New
 - message.c, [473](#)
 - message.h, [380](#)
- message_p
 - message.h, [379](#)
- message_parts
 - mtp_http_s, [135](#)
- message_queue
 - mc_platform_s, [113](#)
- message_queue.c
 - message_queue_SendOutgoing, [475](#)
- message_queue_SendOutgoing
 - message_queue.c, [475](#)
- message_s, [126](#)
 - addr, [126](#)
 - agent_xml_flag, [126](#)
 - connect_id, [126](#)
 - from_address, [126](#)
 - http_type, [127](#)
 - isHTTP, [127](#)
 - message_body, [127](#)
 - message_id, [127](#)
 - message_type, [127](#)
 - sending_agent_name, [127](#)
 - target, [127](#)
 - to_address, [128](#)
 - update_name, [128](#)
 - update_num, [128](#)
 - xml_payload, [128](#)
 - xml_root, [128](#)
- message_Send
 - message.c, [474](#)
 - message.h, [380](#)
- message_send_arg_s, [129](#)
 - mc_platform, [129](#)
 - message, [129](#)
 - privatekey, [129](#)
- message_send_arg_t
 - message.h, [379](#)
- message_send_Thread
 - message.c, [474](#)
 - message.h, [381](#)
- message_t
 - message.h, [379](#)
- message_type
 - message_s, [127](#)
- message_type_e
 - message.h, [379](#)
- message_type_t
 - message.h, [379](#)
- message_xml_parse
 - xml_parser.c, [863](#)
 - xml_parser.h, [398](#)
- message_xml_parse__message
 - xml_parser.c, [863](#)
 - xml_parser.h, [398](#)
- METHOD_NOT_ALLOWED
 - mtp_http.h, [385](#)
- millisecond
 - fipa_DateTime_s, [86](#)
- mime_version
 - mtp_http_s, [135](#)
- min
 - _x509_time, [33](#)
- minlen
 - _ssl_context, [16](#)
- minor_ver
 - _ssl_context, [16](#)
- minute
 - fipa_DateTime_s, [86](#)
- MISC
 - df.h, [264](#)
- MOBILE_AGENT
 - message.h, [379](#)
- mode
 - des3_context, [61](#)
 - des_context, [62](#)
- MODE_DECRYPT
 - aesencrypt2.c, [824](#)
 - interface.h, [543](#)
- MODE_ENCRYPT
 - aesencrypt2.c, [824](#)
 - interface.h, [543](#)
- modified
 - MCAgencyOptions_s, [119](#)
- mon
 - _x509_time, [33](#)
- month
 - fipa_DateTime_s, [86](#)
- mpi, [130](#)
 - n, [130](#)
 - p, [130](#)
 - s, [130](#)
- mpi_add_abs
 - bignum.c, [700](#)
 - bignum.h, [561](#)
- mpi_add_int
 - bignum.c, [700](#)
 - bignum.h, [561](#)

- mpi_add_mpi
 - bignum.c, 701
 - bignum.h, 561
- MPI_CHK
 - bignum.h, 560
- mpi_cmp_abs
 - bignum.c, 701
 - bignum.h, 561
- mpi_cmp_int
 - bignum.c, 701
 - bignum.h, 562
- mpi_cmp_mpi
 - bignum.c, 701
 - bignum.h, 562
- mpi_copy
 - bignum.c, 702
 - bignum.h, 562
- mpi_demo.c
 - main, 833
- mpi_div_int
 - bignum.c, 702
 - bignum.h, 562
- mpi_div_mpi
 - bignum.c, 702
 - bignum.h, 563
- mpi_exp_mod
 - bignum.c, 703
 - bignum.h, 563
- mpi_free
 - bignum.c, 703
 - bignum.h, 563
- mpi_gcd
 - bignum.c, 703
 - bignum.h, 564
- mpi_gen_prime
 - bignum.c, 703
 - bignum.h, 564
- mpi_get_digit
 - bignum.c, 704
- mpi_grow
 - bignum.c, 704
 - bignum.h, 564
- mpi_init
 - bignum.c, 704
 - bignum.h, 565
- mpi_inv_mod
 - bignum.c, 705
 - bignum.h, 565
- mpi_is_prime
 - bignum.c, 705
 - bignum.h, 565
- mpi_lsb
 - bignum.c, 705
 - bignum.h, 565
- mpi_lset
 - bignum.c, 705
 - bignum.h, 566
- mpi_mod_int
 - bignum.c, 706
 - bignum.h, 566
- mpi_mod_mpi
 - bignum.c, 706
 - bignum.h, 566
- mpi_montg_init
 - bignum.c, 706
- mpi_montmul
 - bignum.c, 706
- mpi_montred
 - bignum.c, 706
- mpi_msb
 - bignum.c, 707
 - bignum.h, 566
- mpi_mul_hlp
 - bignum.c, 707
- mpi_mul_int
 - bignum.c, 707
 - bignum.h, 567
- mpi_mul_mpi
 - bignum.c, 707
 - bignum.h, 567
- mpi_read_binary
 - bignum.c, 707
 - bignum.h, 567
- mpi_read_file
 - bignum.c, 708
 - bignum.h, 568
- mpi_read_mystring
 - bignum.c, 708
 - bignum.h, 568
- mpi_read_string
 - bignum.c, 708
 - bignum.h, 568
- mpi_self_test
 - bignum.c, 709
 - bignum.h, 568
- mpi_shift_l
 - bignum.c, 709
 - bignum.h, 569
- mpi_shift_r
 - bignum.c, 709
 - bignum.h, 569
- mpi_size
 - bignum.c, 709
 - bignum.h, 569
- mpi_sub_abs
 - bignum.c, 710
 - bignum.h, 569
- mpi_sub_hlp

- bignum.c, 710
- mpi_sub_int
 - bignum.c, 710
 - bignum.h, 570
- mpi_sub_mpi
 - bignum.c, 710
 - bignum.h, 570
- mpi_swap
 - bignum.c, 710
 - bignum.h, 570
- mpi_write_binary
 - bignum.c, 711
 - bignum.h, 570
- mpi_write_file
 - bignum.c, 711
 - bignum.h, 571
- mpi_write_hlp
 - bignum.c, 711
- mpi_write_string
 - bignum.c, 712
 - bignum.h, 571
- MSG_SEC
 - message.h, 379
- MSG_THREAD_EXIT
 - message.c, 472
- MSG_THREADS
 - message.c, 472
- mtp_http.h
 - ACCEPTED, 385
 - BAD_REQUEST, 385
 - CONFLICT, 385
 - CONTINUE, 385
 - CREATED, 385
 - EXPECTATION_FAILED, 386
 - FAILED_DEPENDANCY, 386
 - FORBIDDEN, 385
 - GONE, 385
 - HTTP_CONNECT, 385
 - HTTP_DELETE, 385
 - HTTP_GET, 384
 - HTTP_HEAD, 384
 - HTTP_NUM_PERFORMATIVES, 385
 - HTTP_OPTIONS, 385
 - HTTP_PERFORMATIVE_UNDEF, 384
 - HTTP_PERFORMATIVE_ZERO, 384
 - HTTP_POST, 384
 - HTTP_PUT, 385
 - HTTP_RESPONSE, 385
 - HTTP_TRACE, 385
 - LENGTH_REQUIRED, 385
 - LOCKED, 386
 - METHOD_NOT_ALLOWED, 385
 - MULTI_STATUS, 385
 - NO_CONTENT, 385
 - NON_AUTHORITATIVE_INFORMATION, 385
 - NOT_ACCEPTABLE, 385
 - NOT_FOUND, 385
 - OK, 385
 - PARTIAL_CONTENT, 385
 - PAYMENT_REQUIRED, 385
 - PRECONDITION_FAILED, 385
 - PROCESSING, 385
 - PROXY_AUTHENTICATION_REQUIRED, 385
 - REQUEST_TIMEOUT, 385
 - REQUEST_URI_TOO_LONG, 385
 - REQUESTED_RANGE_NOT_SATISFIABLE, 386
 - REQUEST_ENTITY_TOO_LARGE, 385
 - RESET_CONTENT, 385
 - RETRY_WITH, 386
 - SWITCHING_PROTOCOLS, 385
 - UNAUTHORIZED, 385
 - UNORDERED_COLLECTION, 386
 - UNPROCESSABLE_ENTITY, 386
 - UNSUPPORTED_MEDIA_TYPE, 385
 - UPGRADE_REQUIRED, 386
- mtp_http.c
 - http_GetExpression, 477
 - http_GetToken, 477
 - HTTP_PARSE_EXPR, 477
 - http_ParseExpression, 478
 - http_ParseRequest, 478
 - mtp_http_ComposeMessage, 478
 - mtp_http_CreateMessage, 478
 - mtp_http_Destroy, 479
 - mtp_http_InitializeFromConnection, 479
 - mtp_http_New, 479
 - mtp_http_Parse, 479
 - mtp_http_ParseHeader, 479
 - mtp_http_ParseResponse, 480
 - rece_de_msg, 480
 - SAFE_FREE, 477
- mtp_http.h
 - http_GetExpression, 386
 - http_GetToken, 386
 - http_ParseExpression, 386
 - http_ParseRequest, 387
 - http_performative_e, 384
 - http_status_code_e, 385
 - mtp_http_ComposeMessage, 387
 - mtp_http_content_t, 384
 - mtp_http_CreateMessage, 387
 - mtp_http_Destroy, 387
 - mtp_http_InitializeFromConnection, 387
 - mtp_http_New, 387
 - mtp_http_p, 384

- mtp_http_Parse, 388
 - mtp_http_ParseHeader, 388
 - mtp_http_t, 384
 - SOCKET_INPUT_SIZE, 384
- mtp_http_ComposeMessage
 - mtp_http.c, 478
 - mtp_http.h, 387
- mtp_http_content_s, 132
 - content_type, 132
 - data, 132
- mtp_http_content_t
 - mtp_http.h, 384
- mtp_http_CreateMessage
 - mtp_http.c, 478
 - mtp_http.h, 387
- mtp_http_Destroy
 - mtp_http.c, 479
 - mtp_http.h, 387
- mtp_http_InitializeFromConnection
 - mtp_http.c, 479
 - mtp_http.h, 387
- mtp_http_New
 - mtp_http.c, 479
 - mtp_http.h, 387
- mtp_http_p
 - mtp_http.h, 384
- mtp_http_Parse
 - mtp_http.c, 479
 - mtp_http.h, 388
- mtp_http_ParseHeader
 - mtp_http.c, 479
 - mtp_http.h, 388
- mtp_http_ParseResponse
 - mtp_http.c, 480
- mtp_http_s, 133
 - accept_ranges, 133
 - boundary, 133
 - cache_control, 133
 - connection, 133
 - content, 134
 - content_length, 134
 - content_type, 134
 - date, 134
 - header_length, 134
 - host, 134
 - http_performative, 134
 - http_status_code, 134
 - http_version, 135
 - message_parts, 135
 - mime_version, 135
 - response_code, 135
 - response_string, 135
 - return_code, 135
 - server, 135
 - target, 135
 - user_agent, 136
- mtp_http_t
 - mtp_http.h, 384
- MUL
 - aes.c, 683
- MULADDC_CORE
 - bn_mul.h, 573
- MULADDC_INIT
 - bn_mul.h, 573
- MULADDC_STOP
 - bn_mul.h, 573
- MULTI_STATUS
 - mtp_http.h, 385
- MUTEX_DESTROY
 - macros.h, 366
- MUTEX_INIT
 - macros.h, 366
- MUTEX_LOCK
 - macros.h, 366
- MUTEX_NEW
 - macros.h, 366
- MUTEX_T
 - macros.h, 367
- MUTEX_UNLOCK
 - macros.h, 367
- mxml-2.2.2/config.h
 - HAVE_STRDUP, 481
 - HAVE_VSNPRINTF, 481
 - mxml_strdupf, 481
 - MXML_VERSION, 481
- mxml-2.2.2/winconfig.h
 - HAVE_STRDUP, 527
 - HAVE_VSNPRINTF, 527
 - mxml_strdup, 528
 - mxml_strdupf, 528
 - MXML_VERSION, 527
 - mxml_vsnprintf, 528
 - strdup, 527
 - vsnprintf, 528
- mxml-attr.c
 - mxmlElementGetAttr, 485
 - mxmlElementSetAttr, 485
- mxml-entity.c
 - callbacks, 487
 - default_callback, 486
 - mxmlEntityAddCallback, 486
 - mxmlEntityGetName, 486
 - mxmlEntityGetValue, 486
 - mxmlEntityRemoveCallback, 486
 - num_callbacks, 487
- mxml-file.c
 - ENCODE_UTF16BE, 489
 - ENCODE_UTF16LE, 489

- ENCODE_UTF8, 489
- mxml_add_char, 489
- mxml_bad_char, 489
- mxml_custom_load_cb, 494
- mxml_custom_save_cb, 494
- mxml_error_cb, 494
- mxml_fd_getc, 490
- mxml_fd_putc, 490
- mxml_fd_read, 490
- mxml_fd_write, 490
- mxml_fdbuf_t, 489
- mxml_file_getc, 490
- mxml_file_putc, 490
- mxml_get_entity, 490
- mxml_load_data, 491
- mxml_parse_element, 491
- mxml_string_getc, 491
- mxml_string_putc, 491
- mxml_write_name, 491
- mxml_write_node, 491
- mxml_write_string, 492
- mxml_write_ws, 492
- mxmlLoadFd, 492
- mxmlLoadFile, 492
- mxmlLoadString, 492
- mxmlSaveAllocString, 493
- mxmlSaveFd, 493
- mxmlSaveFile, 493
- mxmlSaveString, 493
- mxmlSetCustomHandlers, 493
- mxmlSetErrorCallback, 493
- mxml-index.c
 - index_compare, 495
 - index_find, 495
 - index_sort, 495
 - mxmlIndexDelete, 495
 - mxmlIndexEnum, 496
 - mxmlIndexFind, 496
 - mxmlIndexNew, 496
 - mxmlIndexReset, 496
- mxml-node.c
 - mxml_new, 497
 - mxmlAdd, 497
 - mxmlDelete, 497
 - mxmlNewCustom, 498
 - mxmlNewElement, 498
 - mxmlNewInteger, 498
 - mxmlNewOpaque, 498
 - mxmlNewReal, 498
 - mxmlNewText, 499
 - mxmlNewTextf, 499
 - mxmlRemove, 499
- mxml-private.c
 - mxml_error, 500
 - mxml_error_cb, 501
 - mxml_integer_cb, 500
 - mxml_opaque_cb, 500
 - mxml_real_cb, 500
- mxml-search.c
 - mxmlFindElement, 502
 - mxmlWalkNext, 502
 - mxmlWalkPrev, 502
- mxml-set.c
 - mxmlSetCustom, 503
 - mxmlSetElement, 503
 - mxmlSetInteger, 503
 - mxmlSetOpaque, 503
 - mxmlSetReal, 503
 - mxmlSetText, 503
 - mxmlSetTextf, 504
- mxml-string.c
 - mxml_strdup, 505
 - mxml_strdupf, 505
 - mxml_vsnprintf, 505
- mxml.h
 - MXML_CUSTOM, 511
 - MXML_ELEMENT, 511
 - MXML_INTEGER, 511
 - MXML_OPAQUE, 511
 - MXML_REAL, 511
 - MXML_TEXT, 511
 - MXML_ADD_AFTER, 508
 - MXML_ADD_BEFORE, 508
 - MXML_ADD_TO_PARENT, 508
 - mxml_attr_t, 510
 - mxml_custom_load_cb_t, 510
 - mxml_custom_save_cb_t, 510
 - mxml_custom_t, 510
 - MXML_DESCEND, 508
 - MXML_DESCEND_FIRST, 508
 - mxml_element_t, 511
 - mxml_error, 511
 - mxml_index_t, 511
 - MXML_INTEGER_CALLBACK, 509
 - mxml_integer_cb, 511
 - MXML_NO_CALLBACK, 509
 - MXML_NO_DESCEND, 509
 - MXML_NO_PARENT, 509
 - mxml_node_t, 511
 - MXML_OPAQUE_CALLBACK, 509
 - mxml_opaque_cb, 511
 - MXML_REAL_CALLBACK, 509
 - mxml_real_cb, 511
 - MXML_TAB, 509
 - MXML_TEXT_CALLBACK, 510
 - mxml_text_t, 511
 - mxml_type_e, 511
 - mxml_type_t, 511

- mxml_value_t, 511
- MXML_WRAP, 510
- MXML_WS_AFTER_CLOSE, 510
- MXML_WS_AFTER_OPEN, 510
- MXML_WS_BEFORE_CLOSE, 510
- MXML_WS_BEFORE_OPEN, 510
- mxmlAdd, 512
- mxmlDelete, 512
- mxmlElementGetAttr, 512
- mxmlElementSetAttr, 512
- mxmlEntityAddCallback, 513
- mxmlEntityGetName, 513
- mxmlEntityGetValue, 513
- mxmlEntityRemoveCallback, 513
- mxmlFindElement, 513
- mxmlIndexDelete, 513
- mxmlIndexEnum, 513
- mxmlIndexFind, 514
- mxmlIndexNew, 514
- mxmlIndexReset, 514
- mxmlLoadFd, 514
- mxmlLoadFile, 514
- mxmlLoadString, 514
- mxmlNewCustom, 514
- mxmlNewElement, 514
- mxmlNewInteger, 515
- mxmlNewOpaque, 515
- mxmlNewReal, 515
- mxmlNewText, 515
- mxmlNewTextf, 515
- mxmlRemove, 516
- mxmlSaveAllocString, 516
- mxmlSaveFd, 516
- mxmlSaveFile, 516
- mxmlSaveString, 516
- mxmlSetCustom, 516
- mxmlSetCustomHandlers, 516
- mxmlSetElement, 516
- mxmlSetErrorCallback, 516
- mxmlSetInteger, 516
- mxmlSetOpaque, 517
- mxmlSetReal, 517
- mxmlSetText, 517
- mxmlSetTextf, 517
- mxmlWalkNext, 517
- mxmlWalkPrev, 517
- MXML_CUSTOM
 - mxml.h, 511
- MXML_ELEMENT
 - mxml.h, 511
- MXML_INTEGER
 - mxml.h, 511
- MXML_OPAQUE
 - mxml.h, 511
- MXML_REAL
 - mxml.h, 511
- MXML_TEXT
 - mxml.h, 511
- MXML_ADD_AFTER
 - mxml.h, 508
- MXML_ADD_BEFORE
 - mxml.h, 508
- mxml_add_char
 - mxml-file.c, 489
- MXML_ADD_TO_PARENT
 - mxml.h, 508
- mxml_attr_s, 137
 - name, 137
 - value, 137
- mxml_attr_t
 - mxml.h, 510
- mxml_bad_char
 - mxml-file.c, 489
- mxml_custom_load_cb
 - mxml-file.c, 494
- mxml_custom_load_cb_t
 - mxml.h, 510
- mxml_custom_s, 138
 - data, 138
 - destroy, 138
- mxml_custom_save_cb
 - mxml-file.c, 494
- mxml_custom_save_cb_t
 - mxml.h, 510
- mxml_custom_t
 - mxml.h, 510
- MXML_DESCEND
 - mxml.h, 508
- MXML_DESCEND_FIRST
 - mxml.h, 508
- mxml_element_t
 - mxml.h, 511
- mxml_error
 - mxml-private.c, 500
 - mxml.h, 511
- mxml_error_cb
 - mxml-file.c, 494
 - mxml-private.c, 501
- mxml_fd_getc
 - mxml-file.c, 490
- mxml_fd_putc
 - mxml-file.c, 490
- mxml_fd_read
 - mxml-file.c, 490
- mxml_fd_write
 - mxml-file.c, 490
- mxml_fdbuf_s, 139
 - buffer, 139

- current, 139
- end, 139
- fd, 139
- mxml_fdbuf_t
 - mxml-file.c, 489
- mxml_file_getc
 - mxml-file.c, 490
- mxml_file_putc
 - mxml-file.c, 490
- mxml_get_entity
 - mxml-file.c, 490
- mxml_index_s, 140
 - alloc_nodes, 140
 - attr, 140
 - cur_node, 140
 - nodes, 140
 - num_nodes, 140
- mxml_index_t
 - mxml.h, 511
- MXML_INTEGER_CALLBACK
 - mxml.h, 509
- mxml_integer_cb
 - mxml-private.c, 500
 - mxml.h, 511
- mxml_load_data
 - mxml-file.c, 491
- mxml_new
 - mxml-node.c, 497
- MXML_NO_CALLBACK
 - mxml.h, 509
- MXML_NO_DESCEND
 - mxml.h, 509
- MXML_NO_PARENT
 - mxml.h, 509
- mxml_node_s, 142
 - child, 142
 - last_child, 142
 - next, 142
 - parent, 142
 - prev, 142
 - type, 143
 - value, 143
- mxml_node_t
 - mxml.h, 511
- MXML_OPAQUE_CALLBACK
 - mxml.h, 509
- mxml_opaque_cb
 - mxml-private.c, 500
 - mxml.h, 511
- mxml_parse_element
 - mxml-file.c, 491
- MXML_REAL_CALLBACK
 - mxml.h, 509
- mxml_real_cb
 - mxml-private.c, 500
 - mxml.h, 511
- mxml_strdup
 - mxml-2.2.2/winconfig.h, 528
 - mxml-string.c, 505
- mxml_strdupf
 - mxml-2.2.2/config.h, 481
 - mxml-2.2.2/winconfig.h, 528
 - mxml-string.c, 505
- mxml_string_getc
 - mxml-file.c, 491
- mxml_string_putc
 - mxml-file.c, 491
- MXML_TAB
 - mxml.h, 509
- MXML_TEXT_CALLBACK
 - mxml.h, 510
- mxml_text_s, 144
 - string, 144
 - whitespace, 144
- mxml_text_t
 - mxml.h, 511
- mxml_type_e
 - mxml.h, 511
- mxml_type_t
 - mxml.h, 511
- mxml_value_s, 145
 - attrs, 145
 - name, 145
 - num_attrs, 145
- mxml_value_t
 - mxml.h, 511
- mxml_value_u, 146
 - custom, 146
 - element, 146
 - integer, 146
 - opaque, 146
 - real, 146
 - text, 146
- MXML_VERSION
 - mxml-2.2.2/config.h, 481
 - mxml-2.2.2/winconfig.h, 527
- mxml_vsnprintf
 - mxml-2.2.2/winconfig.h, 528
 - mxml-string.c, 505
- MXML_WRAP
 - mxml.h, 510
- mxml_write_name
 - mxml-file.c, 491
- mxml_write_node
 - mxml-file.c, 491
- mxml_write_string
 - mxml-file.c, 492
- mxml_write_ws

- mxml-file.c, 492
- MXML_WS_AFTER_CLOSE
 - mxml.h, 510
- MXML_WS_AFTER_OPEN
 - mxml.h, 510
- MXML_WS_BEFORE_CLOSE
 - mxml.h, 510
- MXML_WS_BEFORE_OPEN
 - mxml.h, 510
- mxxmlAdd
 - mxml-node.c, 497
 - mxml.h, 512
- mxxmlDelete
 - mxml-node.c, 497
 - mxml.h, 512
- mxmldoc.c
 - add_variable, 519
 - main, 519
 - safe_strcpy, 519
 - scan_file, 519
 - sort_node, 520
 - STATE_C_COMMENT, 518
 - STATE_CHARACTER, 518
 - STATE_CXX_COMMENT, 518
 - STATE_IDENTIFIER, 518
 - STATE_NONE, 519
 - STATE_PREPROCESSOR, 519
 - STATE_STRING, 519
 - update_comment, 520
 - write_documentation, 520
 - write_element, 520
 - write_string, 520
 - ws_cb, 521
- mxxmlElementGetAttr
 - mxml-attr.c, 485
 - mxml.h, 512
- mxxmlElementSetAttr
 - mxml-attr.c, 485
 - mxml.h, 512
- mxxmlEntityAddCallback
 - mxml-entity.c, 486
 - mxml.h, 513
- mxxmlEntityGetName
 - mxml-entity.c, 486
 - mxml.h, 513
- mxxmlEntityGetValue
 - mxml-entity.c, 486
 - mxml.h, 513
- mxxmlEntityRemoveCallback
 - mxml-entity.c, 486
 - mxml.h, 513
- mxxmlFindElement
 - mxml-search.c, 502
 - mxml.h, 513
- mxxmlIndexDelete
 - mxml-index.c, 495
 - mxml.h, 513
- mxxmlIndexEnum
 - mxml-index.c, 496
 - mxml.h, 513
- mxxmlIndexFind
 - mxml-index.c, 496
 - mxml.h, 514
- mxxmlIndexNew
 - mxml-index.c, 496
 - mxml.h, 514
- mxxmlIndexReset
 - mxml-index.c, 496
 - mxml.h, 514
- mxxmlLoadFd
 - mxml-file.c, 492
 - mxml.h, 514
- mxxmlLoadFile
 - mxml-file.c, 492
 - mxml.h, 514
- mxxmlLoadString
 - mxml-file.c, 492
 - mxml.h, 514
- mxxmlNewCustom
 - mxml-node.c, 498
 - mxml.h, 514
- mxxmlNewElement
 - mxml-node.c, 498
 - mxml.h, 514
- mxxmlNewInteger
 - mxml-node.c, 498
 - mxml.h, 515
- mxxmlNewOpaque
 - mxml-node.c, 498
 - mxml.h, 515
- mxxmlNewReal
 - mxml-node.c, 498
 - mxml.h, 515
- mxxmlNewText
 - mxml-node.c, 499
 - mxml.h, 515
- mxxmlNewTextf
 - mxml-node.c, 499
 - mxml.h, 515
- mxxmlRemove
 - mxml-node.c, 499
 - mxml.h, 516
- mxxmlSaveAllocString
 - mxml-file.c, 493
 - mxml.h, 516
- mxxmlSaveFd
 - mxml-file.c, 493
 - mxml.h, 516

- mxmmlSaveFile
 - mxmml-file.c, 493
 - mxmml.h, 516
- mxmmlSaveString
 - mxmml-file.c, 493
 - mxmml.h, 516
- mxmmlSetCustom
 - mxmml-set.c, 503
 - mxmml.h, 516
- mxmmlSetCustomHandlers
 - mxmml-file.c, 493
 - mxmml.h, 516
- mxmmlSetElement
 - mxmml-set.c, 503
 - mxmml.h, 516
- mxmmlSetErrorCallback
 - mxmml-file.c, 493
 - mxmml.h, 516
- mxmmlSetInteger
 - mxmml-set.c, 503
 - mxmml.h, 516
- mxmmlSetOpaque
 - mxmml-set.c, 503
 - mxmml.h, 517
- mxmmlSetReal
 - mxmml-set.c, 503
 - mxmml.h, 517
- mxmmlSetText
 - mxmml-set.c, 503
 - mxmml.h, 517
- mxmmlSetTextf
 - mxmml-set.c, 504
 - mxmml.h, 517
- mxmmlWalkNext
 - mxmml-search.c, 502
 - mxmml.h, 517
- mxmmlWalkPrev
 - mxmml-search.c, 502
 - mxmml.h, 517
- my_ciphers
 - ssl_server.c, 842
- my_debug
 - ssl_client1.c, 838
 - ssl_client2.c, 840
 - ssl_server.c, 842
 - ssl_test.c, 851
- my_dhm_G
 - ssl_server.c, 843
- my_dhm_P
 - ssl_server.c, 843
- my_get_session
 - ssl_server.c, 842
- my_set_session
 - ssl_server.c, 842
- myrand
 - benchmark.c, 845
- N
 - rsa_context, 152
- n
 - mpi, 130
- N_UNDRSTD
 - message.h, 379
- name
 - agent_s, 46
 - fipa_agent_identifier_s, 74
 - interpreter_variable_data_s, 106
 - mxmml_attr_s, 137
 - mxmml_value_s, 145
- nb_zero
 - _ssl_context, 17
- net.c
 - net_accept, 751
 - net_bind, 751
 - net_close, 751
 - net_connect, 751
 - net_htons, 752
 - net_is_blocking, 752
 - net_recv, 752
 - net_send, 752
 - net_set_block, 752
 - net_set_nonblock, 753
 - net_usleep, 753
- net.h
 - net_accept, 607
 - net_bind, 607
 - net_close, 607
 - net_connect, 607
 - net_recv, 608
 - net_send, 608
 - net_set_block, 608
 - net_set_nonblock, 608
 - net_usleep, 609
 - XYSSL_ERR_NET_ACCEPT_FAILED, 606
 - XYSSL_ERR_NET_BIND_FAILED, 606
 - XYSSL_ERR_NET_CONN_RESET, 606
 - XYSSL_ERR_NET_CONNECT_FAILED, 606
 - XYSSL_ERR_NET_LISTEN_FAILED, 606
 - XYSSL_ERR_NET_RECV_FAILED, 606
 - XYSSL_ERR_NET_SEND_FAILED, 606
 - XYSSL_ERR_NET_SOCKET_FAILED, 606
 - XYSSL_ERR_NET_TRY_AGAIN, 606
 - XYSSL_ERR_NET_UNKNOWN_HOST, 607
- net_accept
 - net.c, 751
 - net.h, 607

- net_bind
 - net.c, [751](#)
 - net.h, [607](#)
- net_close
 - net.c, [751](#)
 - net.h, [607](#)
- net_connect
 - net.c, [751](#)
 - net.h, [607](#)
- net_htons
 - net.c, [752](#)
- net_is_blocking
 - net.c, [752](#)
- net_recv
 - net.c, [752](#)
 - net.h, [608](#)
- net_send
 - net.c, [752](#)
 - net.h, [608](#)
- net_set_block
 - net.c, [752](#)
 - net.h, [608](#)
- net_set_nonblock
 - net.c, [753](#)
 - net.h, [608](#)
- net_usleep
 - net.c, [753](#)
 - net.h, [609](#)
- network
 - fipa_comm_protocol_t, [81](#)
- next
 - _ssl_session, [23](#)
 - _x509_cert, [26](#)
 - _x509_name, [29](#)
 - fipa_comm_action_t, [76](#)
 - fipa_comm_message_check_t, [77](#)
 - fipa_comm_protocol_t, [81](#)
 - fipa_list_t, [89](#)
 - listNode_s, [108](#)
 - mxml_node_s, [142](#)
- NO_CONTENT
 - mtp_http.h, [385](#)
- node
 - df.h, [267](#)
- node_data
 - listNode_s, [108](#)
- nodes
 - mxml_index_s, [140](#)
- NON_AUTHORITATIVE_INFORMATION
 - mtp_http.h, [385](#)
- nonce
 - connection_s, [57](#)
- none
 - AP_GENERIC_s, [51](#)
- NOT_ACCEPTABLE
 - mtp_http.h, [385](#)
- NOT_FOUND
 - mtp_http.h, [385](#)
- nr
 - aes_context, [35](#)
- num
 - fipa_agent_identifier_set_s, [75](#)
 - fipa_url_sequence_s, [94](#)
- NUM_MESSAGE_TYPE
 - message.h, [379](#)
- num_args
 - command_s, [56](#)
- num_attrs
 - mxml_value_s, [145](#)
- num_callbacks
 - mxml-entity.c, [487](#)
- num_entries
 - df.h, [268](#)
- num_nodes
 - mxml_index_s, [140](#)
- num_params
 - fipa_acl_envelope_s, [68](#)
- num_readers
 - mc_rwlock_s, [116](#)
- num_registered
 - barrier_node_s, [53](#)
- num_saved_variables
 - agent_task_s, [49](#)
- num_waiting
 - barrier_node_s, [53](#)
- number
 - fipa_expression_s::content_u, [59](#)
- number_of_elements
 - agent_task_s, [49](#)
- number_of_tasks
 - agent_datastate_s, [40](#)
- offset
 - havege_state, [101](#)
- oid
 - _x509_name, [29](#)
- OID_CN
 - x509.h, [671](#)
- OID_PKCS1
 - x509.h, [671](#)
- OID_PKCS1_RSA
 - x509.h, [671](#)
- OID_PKCS1_RSA_SHA
 - x509.h, [671](#)
- OID_PKCS9
 - x509.h, [671](#)
- OID_PKCS9_EMAIL
 - x509.h, [671](#)

- OID_X520
 - x509.h, [671](#)
- OK
 - mtp_http.h, [385](#)
- ONE_ITERATION
 - havege.c, [737](#)
- ontology
 - fipa_acl_message_s, [70](#)
- opad
 - md2_context, [120](#)
 - md4_context, [122](#)
 - md5_context, [124](#)
 - sha1_context, [155](#)
 - sha2_context, [157](#)
 - sha4_context, [159](#)
- opaque
 - hr_time, [104](#)
 - mxml_value_u, [146](#)
- openssl.h
 - __RSA_Passthrough, [613](#)
 - AES_BLOCK_SIZE, [611](#)
 - AES_cbc_encrypt, [611](#)
 - AES_KEY, [611](#)
 - AES_set_decrypt_key, [611](#)
 - AES_set_encrypt_key, [611](#)
 - AES_SIZE, [611](#)
 - d2i_RSA_PUBKEY, [613](#)
 - d2i_RSAPrivateKey, [611](#)
 - ERR_get_error, [611](#)
 - MD5_CTX, [611](#)
 - MD5_Final, [611](#)
 - MD5_Init, [612](#)
 - MD5_Update, [612](#)
 - RSA, [612](#)
 - RSA_blinding_off, [612](#)
 - RSA_free, [612](#)
 - RSA_PKCS1_PADDING, [612](#)
 - RSA_private_decrypt, [613](#)
 - RSA_private_encrypt, [613](#)
 - RSA_public_decrypt, [613](#)
 - RSA_public_encrypt, [613](#)
 - RSA_size, [612](#)
 - SHA1_Final, [612](#)
 - SHA1_Init, [612](#)
 - SHA1_Update, [612](#)
 - SHA_CTX, [612](#)
- opmode
 - options, [149](#)
- OPMODE_CLIENT
 - ssl_test.c, [850](#)
- OPMODE_NONE
 - ssl_test.c, [850](#)
- OPMODE_SERVER
 - ssl_test.c, [850](#)
- options, [148](#)
 - buffer_size, [148](#)
 - command, [148](#)
 - conn_timeout, [148](#)
 - debug_level, [148](#)
 - force_cipher, [148](#)
 - iomode, [149](#)
 - max_bytes, [149](#)
 - max_connections, [149](#)
 - opmode, [149](#)
 - server_name, [149](#)
 - server_port, [149](#)
 - session_lifetime, [149](#)
 - session_reuse, [149](#)
- orphan
 - agent_s, [46](#)
- out_ctr
 - _ssl_context, [17](#)
- out_hdr
 - _ssl_context, [17](#)
- out_left
 - _ssl_context, [17](#)
- out_msg
 - _ssl_context, [17](#)
- out_msglen
 - _ssl_context, [17](#)
- out_msgtype
 - _ssl_context, [18](#)
- own_cert
 - _ssl_context, [18](#)
- owner
 - agent_s, [47](#)
- P
 - dhm_context, [64](#)
 - md5.c, [742](#)
 - rsa_context, [153](#)
 - sha1.c, [767](#)
 - sha2.c, [775](#)
 - sha4.c, [784](#)
- p
 - _x509_buf, [24](#)
 - _x509_node, [30](#)
 - mpi, [130](#)
- p_dbg
 - _ssl_context, [18](#)
- p_recv
 - _ssl_context, [18](#)
- p_rng
 - _ssl_context, [18](#)
 - rsa_context, [153](#)
- p_send
 - _ssl_context, [18](#)
- PACKAGE_STRING

- winconfig.h, [529](#)
- PACKAGE_VERSION
 - winconfig.h, [529](#)
- padding
 - rsa_context, [153](#)
- params
 - fipa_acl_envelope_s, [68](#)
- parent
 - mxml_node_s, [142](#)
- parse
 - fipa_message_string_s, [90](#)
- PARTIAL_CONTENT
 - mtp_http.h, [385](#)
- passphrase
 - MCAgencyOptions_s, [119](#)
- PATH
 - interface.h, [543](#)
- payload_encoding
 - fipa_acl_Param_s, [73](#)
- payload_length
 - fipa_acl_Param_s, [73](#)
- PAYMENT_REQUIRED
 - mtp_http.h, [385](#)
- pCallbacks
 - fipa_comm_t, [84](#)
- peer_cert
 - _ssl_context, [19](#)
- peer_cn
 - _ssl_context, [19](#)
- PEM_LINE_LENGTH
 - x509.h, [672](#)
- performative
 - fipa_acl_message_s, [70](#)
 - fipa_comm_t, [85](#)
- persistent
 - agent_datastate_s, [40](#)
 - agent_task_s, [49](#)
- pk_oid
 - _x509_cert, [26](#)
- PKCS9_EMAIL
 - x509.h, [672](#)
- PLAINTEXT
 - dh_server.c, [832](#)
- pmslen
 - _ssl_context, [19](#)
- pool
 - havege_state, [101](#)
- port
 - acc.h, [218](#)
 - host_id_s, [103](#)
 - mc_platform_s, [113](#)
- portno
 - agency_s, [38](#)
- portnoc
 - agency_s, [38](#)
- PRECONDITION_FAILED
 - mtp_http.h, [385](#)
- premaster
 - _ssl_context, [19](#)
- prev
 - mxml_node_s, [142](#)
- print_connectlist
 - commands.x.h, [256](#)
- print_usage
 - mc_genkey.c, [853](#)
- printlist_agents
 - commands.x.h, [256](#)
- priv_key_filename
 - agency_s, [38](#)
 - MCAgencyOptions_s, [119](#)
- private_key
 - mc_platform_s, [114](#)
- privatekey
 - message_send_arg_s, [129](#)
- process_command
 - cmd_prompt.c, [185](#)
 - cmd_prompt.h, [250](#)
- PROCESSING
 - mtp_http.h, [385](#)
- progress_modifier
 - agent_datastate_s, [40](#)
- proposal_func
 - fipa_comm_protocol_cn_t, [79](#)
- protocol
 - fipa_acl_message_s, [70](#)
 - fipa_comm_t, [85](#)
- protocol_contract_net_callback
 - fipa_comm.h, [302](#)
- PROXY_AUTHENTICATION_REQUIRED
 - mtp_http.h, [385](#)
- prv
 - ssl_server.c, [843](#)
- PT1
 - havege_state, [101](#)
- PT2
 - havege_state, [101](#)
- PT_LEN
 - rsa.c, [756](#)
- PTHREAD_STACK_SIZE
 - macros.h, [367](#)
- PUT_UINT64_BE
 - sha4.c, [785](#)
- PUT_ULONG_BE
 - des.c, [722](#)
 - sha1.c, [767](#)
 - sha2.c, [775](#)
- PUT_ULONG_LE
 - aes.c, [683](#)

- md5.c, [742](#)
- Q
 - rsa_context, [153](#)
- QP
 - rsa_context, [153](#)
- QUER_IF
 - message.h, [379](#)
- QUER_REF
 - message.h, [379](#)
- queue
 - fipa_comm_protocol_cn_t, [79](#)
- QUEUE_TEMPLATE
 - list.h, [459](#)
- quit
 - mc_platform_s, [114](#)
- quit_cond
 - mc_platform_s, [114](#)
- quit_lock
 - mc_platform_s, [114](#)
- R
 - sha1.c, [767](#)
 - sha2.c, [776](#)
- randbytes
 - _ssl_context, [19](#)
- raw
 - _x509_cert, [26](#)
 - _x509_raw, [31](#)
- RCON
 - aes.c, [689](#)
- read_encrypted_file
 - interface.c, [539](#)
 - interface.h, [544](#)
- read_known_host_file
 - interface.c, [539](#)
 - interface.h, [545](#)
- real
 - mxml_value_u, [146](#)
- rece_de_msg
 - mtp_http.c, [480](#)
- receive_AES_en_MA
 - interface.c, [540](#)
 - interface.h, [545](#)
- receive_decrypt_AES_key
 - interface.h, [545](#)
- received
 - fipa_acl_Param_s, [73](#)
- received_by
 - fipa_acl_envelope_Received_s, [66](#)
- received_date
 - fipa_acl_envelope_Received_s, [66](#)
- received_from
 - fipa_acl_envelope_Received_s, [66](#)
- received_id
 - fipa_acl_envelope_Received_s, [66](#)
- received_via
 - fipa_acl_envelope_Received_s, [66](#)
- receiver
 - fipa_acl_message_s, [70](#)
- receiver_num
 - fipa_acl_message_s, [70](#)
- receiving_decrypting_MA_RSA
 - interface.h, [545](#)
- receiving_verifying_MA_RSA
 - interface.h, [545](#)
- register
 - df_request.x.h, [270](#)
- RELAY
 - message.h, [379](#)
- remote_hostname
 - connection_s, [57](#)
- Remove
 - data_structures.h, [261](#)
- remove_nonce_from_MA
 - interface.c, [540](#)
- RemoveID
 - data_structures.h, [261](#)
- RemoveName
 - data_structures.h, [262](#)
- replies
 - fipa_comm_protocol_cn_t, [79](#)
- reply
 - fipa_comm_action_t, [76](#)
- reply_by
 - fipa_acl_message_s, [70](#)
- reply_migration_process
 - interface.c, [540](#)
 - interface.h, [545](#)
- reply_to
 - fipa_acl_message_s, [71](#)
- reply_with
 - fipa_acl_message_s, [71](#)
- REQUEST
 - df.c, [189](#)
 - df.h, [264](#), [267](#)
 - df_request.x.h, [270](#)
 - message.h, [379](#)
- REQUEST_ENCRYPTION_INITIALIZE
 - message.h, [379](#)
- REQUEST_TIMEOUT
 - mtp_http.h, [385](#)
- REQUEST_URI_TOO_LONG
 - mtp_http.h, [385](#)
- request_handler_DEREGISTER
 - df.c, [192](#)
- request_handler_REGISTER
 - df.c, [192](#)

- request_handler_SEARCH
 - df.c, [192](#)
- request_handler_SUBSCRIBE
 - df.c, [192](#)
- request_list
 - df.h, [268](#)
- REQUESTED_RANGE_NOT_SATISFIABLE
 - mtp_http.h, [386](#)
- require_inform
 - fipa_comm_protocol_cn_t, [79](#)
- REQUEST_ENTITY_TOO_LARGE
 - mtp_http.h, [385](#)
- RESET_CONTENT
 - mtp_http.h, [385](#)
- resolvers
 - fipa_agent_identifier_s, [74](#)
- response_code
 - mtp_http_s, [135](#)
- response_string
 - mtp_http_s, [135](#)
- resume
 - _ssl_context, [19](#)
- retain_order
 - fipa_agent_identifier_set_s, [75](#)
- RETRY_WITH
 - mtp_http.h, [386](#)
- RETURN_MSG
 - message.h, [379](#)
- return_code
 - mtp_http_s, [135](#)
- return_data
 - agent_datastate_s, [40](#)
 - agent_s, [47](#)
- RHs
 - des.c, [728](#)
- rk
 - aes_context, [35](#)
- RN
 - rsa_context, [153](#)
- ROTL8
 - aes.c, [684](#)
- ROTR
 - sha2.c, [776](#)
 - sha4.c, [785](#)
- RP
 - dhm_context, [64](#)
 - rsa_context, [153](#)
- RQ
 - rsa_context, [154](#)
- RSA
 - openssl.h, [612](#)
- rsa
 - _x509_cert, [26](#)
- rsa.c
 - KEY_LEN, [756](#)
 - PT_LEN, [756](#)
 - rsa_check_privkey, [758](#)
 - rsa_check_pubkey, [759](#)
 - RSA_D, [756](#)
 - RSA_DP, [756](#)
 - RSA_DQ, [757](#)
 - RSA_E, [757](#)
 - rsa_free, [759](#)
 - rsa_gen_key, [759](#)
 - rsa_init, [760](#)
 - RSA_N, [757](#)
 - RSA_P, [757](#)
 - rsa_pkcs1_decrypt, [760](#)
 - rsa_pkcs1_encrypt, [761](#)
 - rsa_pkcs1_sign, [761](#)
 - rsa_pkcs1_verify, [762](#)
 - rsa_private, [762](#)
 - RSA_PT, [758](#)
 - rsa_public, [763](#)
 - RSA_Q, [758](#)
 - RSA_QP, [758](#)
 - rsa_self_test, [763](#)
- rsa.h
 - ASN1_HASH_MD5, [616](#)
 - ASN1_HASH_SHA1, [616](#)
 - rsa_check_privkey, [619](#)
 - rsa_check_pubkey, [619](#)
 - RSA_CRYPT, [617](#)
 - rsa_free, [620](#)
 - rsa_gen_key, [620](#)
 - rsa_init, [620](#)
 - RSA_MD2, [617](#)
 - RSA_MD4, [617](#)
 - RSA_MD5, [617](#)
 - rsa_pkcs1_decrypt, [621](#)
 - rsa_pkcs1_encrypt, [621](#)
 - rsa_pkcs1_sign, [622](#)
 - rsa_pkcs1_verify, [622](#)
 - RSA_PKCS_V15, [617](#)
 - RSA_PKCS_V21, [617](#)
 - RSA_PRIVATE, [617](#)
 - rsa_private, [623](#)
 - RSA_PUBLIC, [617](#)
 - rsa_public, [624](#)
 - RSA_RAW, [618](#)
 - rsa_self_test, [624](#)
 - RSA_SHA1, [618](#)
 - RSA_SHA256, [618](#)
 - RSA_SIGN, [618](#)
 - XYSSL_ERR_RSA_BAD_INPUT_DATA, [618](#)
 - XYSSL_ERR_RSA_INVALID_PADDING, [618](#)

- XYSSL_ERR_RSA_KEY_CHECK_FAILED, 618
- XYSSL_ERR_RSA_KEY_GEN_FAILED, 618
- XYSSL_ERR_RSA_PRIVATE_FAILED, 619
- XYSSL_ERR_RSA_PUBLIC_FAILED, 619
- XYSSL_ERR_RSA_VERIFY_FAILED, 619
- RSA_blinding_off
 - openssl.h, 612
- rsa_check_privkey
 - rsa.c, 758
 - rsa.h, 619
- rsa_check_pubkey
 - rsa.c, 759
 - rsa.h, 619
- rsa_context, 151
 - D, 151
 - DP, 151
 - DQ, 151
 - E, 152
 - f_rng, 152
 - hash_id, 152
 - len, 152
 - N, 152
 - P, 153
 - p_rng, 153
 - padding, 153
 - Q, 153
 - QP, 153
 - RN, 153
 - RP, 153
 - RQ, 154
 - ver, 154
- RSA_CRYPT
 - rsa.h, 617
- RSA_D
 - rsa.c, 756
- RSA_DE
 - interface.h, 543
- rsa_decryption
 - interface.c, 540
 - interface.h, 545
- RSA_DP
 - rsa.c, 756
- RSA_DQ
 - rsa.c, 757
- RSA_E
 - rsa.c, 757
- RSA_EN
 - interface.h, 543
- rsa_encryption
 - interface.c, 540
 - interface.h, 545
- RSA_free
 - openssl.h, 612
- rsa_free
 - rsa.c, 759
 - rsa.h, 620
- rsa_gen_key
 - rsa.c, 759
 - rsa.h, 620
- rsa_genkey.c
 - EXPONENT, 834
 - KEY_SIZE, 834
 - main, 834
- rsa_init
 - rsa.c, 760
 - rsa.h, 620
- rsa_key
 - _ssl_context, 20
- RSA_MD2
 - rsa.h, 617
- RSA_MD4
 - rsa.h, 617
- RSA_MD5
 - rsa.h, 617
- RSA_N
 - rsa.c, 757
- RSA_P
 - rsa.c, 757
- rsa_pkcs1_decrypt
 - rsa.c, 760
 - rsa.h, 621
- rsa_pkcs1_encrypt
 - rsa.c, 761
 - rsa.h, 621
- RSA_PKCS1_PADDING
 - openssl.h, 612
- rsa_pkcs1_sign
 - rsa.c, 761
 - rsa.h, 622
- rsa_pkcs1_verify
 - rsa.c, 762
 - rsa.h, 622
- RSA_PKCS_V15
 - rsa.h, 617
- RSA_PKCS_V21
 - rsa.h, 617
- RSA_PRIVATE
 - rsa.h, 617
- rsa_private
 - rsa.c, 762
 - rsa.h, 623
- RSA_private_decrypt
 - openssl.h, 613
- RSA_private_encrypt
 - openssl.h, 613
- RSA_PT

- rsa.c, 758
- RSA_PUBLIC
 - rsa.h, 617
- rsa_public
 - rsa.c, 763
 - rsa.h, 624
- RSA_public_decrypt
 - openssl.h, 613
- RSA_public_encrypt
 - openssl.h, 613
- RSA_Q
 - rsa.c, 758
- RSA_QP
 - rsa.c, 758
- RSA_RAW
 - rsa.h, 618
- rsa_self_test
 - rsa.c, 763
 - rsa.h, 624
- RSA_SHA1
 - rsa.h, 618
- RSA_SHA256
 - rsa.h, 618
- RSA_SIGN
 - rsa.h, 618
- rsa_sign.c
 - main, 835
- RSA_size
 - openssl.h, 612
- rsa_verify.c
 - main, 836
- RSb
 - aes.c, 689
- RT0
 - aes.c, 689
- RT1
 - aes.c, 689
- RT2
 - aes.c, 689
- RT3
 - aes.c, 689
- run_lock
 - agent_s, 47
- RWLOCK_DESTROY
 - macros.h, 367
- RWLOCK_INIT
 - macros.h, 367
- RWLOCK_RDLOCK
 - macros.h, 367
- RWLOCK_RDUNLOCK
 - macros.h, 367
- RWLOCK_T
 - macros.h, 368
- RWLOCK_WRLock
 - macros.h, 368
- S
 - md5.c, 743
 - sha1.c, 767
- s
 - mpi, 130
- S0
 - sha2.c, 776
 - sha4.c, 785
- S1
 - sha2.c, 776
 - sha4.c, 785
- S2
 - sha2.c, 776
 - sha4.c, 785
- S3
 - sha2.c, 776
 - sha4.c, 785
- s_get
 - _ssl_context, 20
- s_list_1st
 - ssl_server.c, 843
- s_set
 - _ssl_context, 20
- SAFE_FREE
 - mtp_http.c, 477
- safe_strcpy
 - mxmldoc.c, 519
- saved_variables
 - agent_task_s, 49
- SB1
 - des.c, 729
- SB2
 - des.c, 729
- SB3
 - des.c, 730
- SB4
 - des.c, 730
- SB5
 - des.c, 730
- SB6
 - des.c, 731
- SB7
 - des.c, 731
- SB8
 - des.c, 732
- scan_file
 - mxmldoc.c, 519
- Search
 - data_structures.h, 262
- search

- df_request.x.h, 270
- search_results
 - df.h, 268
- search_string
 - df.h, 268
- SearchName
 - data_structures.h, 262
- sec
 - _x509_time, 33
- second
 - fipa_DateTime_s, 87
- security/xyssl-0.9/include/xyssl/config.h
 - XYSSL_AES_C, 482
 - XYSSL_ARC4_C, 482
 - XYSSL_BASE64_C, 482
 - XYSSL_BIGNUM_C, 482
 - XYSSL_CERTS_C, 482
 - XYSSL_DEBUG_C, 483
 - XYSSL_DEBUG_MSG, 483
 - XYSSL_DES_C, 483
 - XYSSL_DHM_C, 483
 - XYSSL_GENPRIME, 483
 - XYSSL_HAVE_ASM, 483
 - XYSSL_HAVEGE_C, 483
 - XYSSL_MD5_C, 483
 - XYSSL_NET_C, 483
 - XYSSL_PADLOCK_C, 483
 - XYSSL_RSA_C, 483
 - XYSSL_SELF_TEST, 484
 - XYSSL_SHA1_C, 484
 - XYSSL_SHA2_C, 484
 - XYSSL_SHA4_C, 484
 - XYSSL_SSL_CLI_C, 484
 - XYSSL_SSL_SRV_C, 484
 - XYSSL_SSL_TLS_C, 484
 - XYSSL_TIMING_C, 484
 - XYSSL_X509_PARSE_C, 484
 - XYSSL_X509_WRITE_C, 484
- selftest.c
 - main, 846
- sem
 - syncListNode_s, 163
- SEMAPHORE_DESTROY
 - macros.h, 368
- SEMAPHORE_INIT
 - macros.h, 368
- SEMAPHORE_POST
 - macros.h, 368
- SEMAPHORE_T
 - macros.h, 368
- SEMAPHORE_WAIT
 - macros.h, 368
- send
 - commands.x.h, 256
- send_AES_en_MA
 - interface.c, 540
 - interface.h, 545
- sender
 - agent_s, 47
 - fipa_acl_message_s, 71
- sending_agent_name
 - message_s, 127
- separate_key_parts
 - interface.c, 541
- serial
 - _x509_cert, 26
 - _x509_raw, 31
- server
 - agency_s, 38
 - mtp_http_s, 135
- server_fd
 - acc.h, 218
 - ssl_test.c, 852
- SERVER_NAME
 - dh_client.c, 830
 - ssl_client1.c, 837
 - ssl_client2.c, 839
- server_name
 - agent_task_s, 49
 - options, 149
- SERVER_PORT
 - dh_client.c, 830
 - dh_server.c, 832
 - ssl_client1.c, 837
 - ssl_client2.c, 839
- server_port
 - options, 149
- serverfd
 - connection_s, 58
- service_list
 - df.h, 268
- service_types_e
 - df.h, 264
- session
 - _ssl_context, 20
- session_lifetime
 - options, 149
- session_reuse
 - options, 149
- set_alarm
 - timing.c, 813
 - timing.h, 665
- set_bar
 - foo_c, 97
 - foo_s, 99
- set_foo
 - foo_c, 97
 - foo_s, 100

- set_foobar
 - foo_c, 97
- SET_THREAD_OFF
 - macros.h, 369
- SET_THREAD_ON
 - macros.h, 369
- sha1
 - sha1.c, 767
 - sha1.h, 626
- sha1.c
 - F, 766
 - GET_ULONG_BE, 766
 - K, 766, 767
 - P, 767
 - PUT_ULONG_BE, 767
 - R, 767
 - S, 767
 - sha1, 767
 - sha1_file, 768
 - sha1_finish, 768
 - sha1_hmac, 768
 - sha1_hmac_finish, 769
 - sha1_hmac_starts, 769
 - sha1_hmac_test_buf, 771
 - sha1_hmac_test_buflen, 771
 - sha1_hmac_test_key, 771
 - sha1_hmac_test_keylen, 772
 - sha1_hmac_test_sum, 772
 - sha1_hmac_update, 769
 - sha1_padding, 772
 - sha1_process, 769
 - sha1_self_test, 770
 - sha1_starts, 770
 - sha1_test_buf, 772
 - sha1_test_buflen, 773
 - sha1_test_sum, 773
 - sha1_update, 770
- sha1.h
 - sha1, 626
 - sha1_file, 626
 - sha1_finish, 626
 - sha1_hmac, 626
 - sha1_hmac_finish, 627
 - sha1_hmac_starts, 627
 - sha1_hmac_update, 627
 - sha1_self_test, 628
 - sha1_starts, 628
 - sha1_update, 628
- sha1_check
 - sha1sum.c, 828
- sha1_context, 155
 - buffer, 155
 - ipad, 155
 - opad, 155
 - state, 155
 - total, 155
- sha1_file
 - sha1.c, 768
 - sha1.h, 626
- SHA1_Final
 - openssl.h, 612
- sha1_finish
 - sha1.c, 768
 - sha1.h, 626
- sha1_hmac
 - sha1.c, 768
 - sha1.h, 626
- sha1_hmac_finish
 - sha1.c, 769
 - sha1.h, 627
- sha1_hmac_starts
 - sha1.c, 769
 - sha1.h, 627
- sha1_hmac_test_buf
 - sha1.c, 771
- sha1_hmac_test_buflen
 - sha1.c, 771
- sha1_hmac_test_key
 - sha1.c, 771
- sha1_hmac_test_keylen
 - sha1.c, 772
- sha1_hmac_test_sum
 - sha1.c, 772
- sha1_hmac_update
 - sha1.c, 769
 - sha1.h, 627
- SHA1_Init
 - openssl.h, 612
- sha1_padding
 - sha1.c, 772
- sha1_print
 - sha1sum.c, 828
- sha1_process
 - sha1.c, 769
- sha1_self_test
 - sha1.c, 770
 - sha1.h, 628
- sha1_starts
 - sha1.c, 770
 - sha1.h, 628
- sha1_test_buf
 - sha1.c, 772
- sha1_test_buflen
 - sha1.c, 773
- sha1_test_sum
 - sha1.c, 773
- SHA1_Update
 - openssl.h, 612

- sha1_update
 - sha1.c, 770
 - sha1.h, 628
- sha1_wrapper
 - sha1sum.c, 828
- sha1sum.c
 - main, 828
 - sha1_check, 828
 - sha1_print, 828
 - sha1_wrapper, 828
- sha2
 - sha2.c, 776
 - sha2.h, 631
- sha2.c
 - F0, 775
 - F1, 775
 - GET_ULONG_BE, 775
 - P, 775
 - PUT_ULONG_BE, 775
 - R, 776
 - ROTR, 776
 - S0, 776
 - S1, 776
 - S2, 776
 - S3, 776
 - sha2, 776
 - sha2_file, 777
 - sha2_finish, 777
 - sha2_hmac, 777
 - sha2_hmac_finish, 778
 - sha2_hmac_starts, 778
 - sha2_hmac_test_buf, 780
 - sha2_hmac_test_buflen, 780
 - sha2_hmac_test_key, 780
 - sha2_hmac_test_keylen, 781
 - sha2_hmac_test_sum, 781
 - sha2_hmac_update, 778
 - sha2_padding, 781
 - sha2_process, 778
 - sha2_self_test, 779
 - sha2_starts, 779
 - sha2_test_buf, 781
 - sha2_test_buflen, 781
 - sha2_test_sum, 782
 - sha2_update, 779
 - SHR, 776
- sha2.h
 - sha2, 631
 - sha2_file, 631
 - sha2_finish, 631
 - sha2_hmac, 631
 - sha2_hmac_finish, 632
 - sha2_hmac_starts, 632
 - sha2_hmac_update, 632
 - sha2_self_test, 633
 - sha2_starts, 633
 - sha2_update, 633
- sha2_check
 - sha2sum.c, 829
- sha2_context, 157
 - buffer, 157
 - ipad, 157
 - is224, 157
 - opad, 157
 - state, 157
 - total, 158
- sha2_file
 - sha2.c, 777
 - sha2.h, 631
- sha2_finish
 - sha2.c, 777
 - sha2.h, 631
- sha2_hmac
 - sha2.c, 777
 - sha2.h, 631
- sha2_hmac_finish
 - sha2.c, 778
 - sha2.h, 632
- sha2_hmac_starts
 - sha2.c, 778
 - sha2.h, 632
- sha2_hmac_test_buf
 - sha2.c, 780
- sha2_hmac_test_buflen
 - sha2.c, 780
- sha2_hmac_test_key
 - sha2.c, 780
- sha2_hmac_test_keylen
 - sha2.c, 781
- sha2_hmac_test_sum
 - sha2.c, 781
- sha2_hmac_update
 - sha2.c, 778
 - sha2.h, 632
- sha2_padding
 - sha2.c, 781
- sha2_print
 - sha2sum.c, 829
- sha2_process
 - sha2.c, 778
- sha2_self_test
 - sha2.c, 779
 - sha2.h, 633
- sha2_starts
 - sha2.c, 779
 - sha2.h, 633
- sha2_test_buf
 - sha2.c, 781

- sha2_test_buflen
 - sha2.c, 781
- sha2_test_sum
 - sha2.c, 782
- sha2_update
 - sha2.c, 779
 - sha2.h, 633
- sha2_wrapper
 - sha2sum.c, 829
- sha2sum.c
 - main, 829
 - sha2_check, 829
 - sha2_print, 829
 - sha2_wrapper, 829
- sha4
 - sha4.c, 785
 - sha4.h, 636
- sha4.c
 - F0, 784
 - F1, 784
 - GET_UINT64_BE, 784
 - K, 788
 - P, 784
 - PUT_UINT64_BE, 785
 - ROTR, 785
 - S0, 785
 - S1, 785
 - S2, 785
 - S3, 785
 - sha4, 785
 - sha4_file, 785
 - sha4_finish, 786
 - sha4_hmac, 786
 - sha4_hmac_finish, 786
 - sha4_hmac_starts, 787
 - sha4_hmac_test_buf, 788
 - sha4_hmac_test_buflen, 789
 - sha4_hmac_test_key, 789
 - sha4_hmac_test_keylen, 790
 - sha4_hmac_test_sum, 790
 - sha4_hmac_update, 787
 - sha4_padding, 790
 - sha4_process, 787
 - sha4_self_test, 787
 - sha4_starts, 788
 - sha4_test_buf, 790
 - sha4_test_buflen, 790
 - sha4_test_sum, 791
 - sha4_update, 788
 - SHR, 785
- sha4.h
 - int64, 636
 - sha4, 636
 - sha4_file, 636
 - sha4_finish, 636
 - sha4_hmac, 637
 - sha4_hmac_finish, 637
 - sha4_hmac_starts, 637
 - sha4_hmac_update, 638
 - sha4_self_test, 638
 - sha4_starts, 638
 - sha4_update, 639
 - UL64, 636
- sha4_context, 159
 - buffer, 159
 - ipad, 159
 - is384, 159
 - opad, 159
 - state, 159
 - total, 160
- sha4_file
 - sha4.c, 785
 - sha4.h, 636
- sha4_finish
 - sha4.c, 786
 - sha4.h, 636
- sha4_hmac
 - sha4.c, 786
 - sha4.h, 637
- sha4_hmac_finish
 - sha4.c, 786
 - sha4.h, 637
- sha4_hmac_starts
 - sha4.c, 787
 - sha4.h, 637
- sha4_hmac_test_buf
 - sha4.c, 788
- sha4_hmac_test_buflen
 - sha4.c, 789
- sha4_hmac_test_key
 - sha4.c, 789
- sha4_hmac_test_keylen
 - sha4.c, 790
- sha4_hmac_test_sum
 - sha4.c, 790
- sha4_hmac_update
 - sha4.c, 787
 - sha4.h, 638
- sha4_padding
 - sha4.c, 790
- sha4_process
 - sha4.c, 787
- sha4_self_test
 - sha4.c, 787
 - sha4.h, 638
- sha4_starts
 - sha4.c, 788
 - sha4.h, 638

- sha4_test_buf
 - sha4.c, [790](#)
- sha4_test_buflen
 - sha4.c, [790](#)
- sha4_test_sum
 - sha4.c, [791](#)
- sha4_update
 - sha4.c, [788](#)
 - sha4.h, [639](#)
- SHA_CTX
 - openssl.h, [612](#)
- SHR
 - sha2.c, [776](#)
 - sha4.c, [785](#)
- sig
 - _x509_cert, [26](#)
- sig_oid1
 - _x509_cert, [26](#)
- sig_oid2
 - _x509_cert, [27](#)
- sighandler
 - timing.c, [813](#)
- sign
 - _x509_raw, [31](#)
 - fipa_DateTime_s, [87](#)
- SIGNAL
 - macros.h, [369](#)
- signalg
 - _x509_raw, [31](#)
- signalled
 - syncListNode_s, [163](#)
- size
 - barrier_queue_s, [54](#)
 - df.h, [268](#)
 - dynstring_s, [65](#)
 - interpreter_variable_data_s, [106](#)
 - list_s, [107](#)
 - syncList_s, [162](#)
- size_of_element_array
 - agent_task_s, [49](#)
- sk
 - des3_context, [61](#)
 - des_context, [62](#)
- SLEEP_QUEUE
 - macros.h, [369](#)
- SLEEP_RESET
 - macros.h, [369](#)
- small_prime
 - bignum.c, [712](#)
- SOCKET_ERROR
 - macros.h, [369](#)
- SOCKET_INPUT_SIZE
 - message.c, [472](#)
 - mtp_http.h, [384](#)
- sockfd
 - mc_platform_s, [114](#)
- SOME
 - df.h, [264](#)
- sort_node
 - mxmldoc.c, [520](#)
- split_string
 - cmd_prompt.c, [185](#)
 - cmd_prompt.h, [250](#)
- ssl.h
 - SSL_CERTIFICATE_REQUEST, [652](#)
 - SSL_CERTIFICATE_VERIFY, [652](#)
 - SSL_CLIENT_CERTIFICATE, [652](#)
 - SSL_CLIENT_CHANGE_CIPHER_SPEC, [652](#)
 - SSL_CLIENT_FINISHED, [652](#)
 - SSL_CLIENT_HELLO, [652](#)
 - SSL_CLIENT_KEY_EXCHANGE, [652](#)
 - SSL_FLUSH_BUFFERS, [652](#)
 - SSL_HANDSHAKE_OVER, [652](#)
 - SSL_HELLO_REQUEST, [652](#)
 - SSL_SERVER_CERTIFICATE, [652](#)
 - SSL_SERVER_CHANGE_CIPHER_SPEC, [652](#)
 - SSL_SERVER_FINISHED, [652](#)
 - SSL_SERVER_HELLO, [652](#)
 - SSL_SERVER_HELLO_DONE, [652](#)
 - SSL_SERVER_KEY_EXCHANGE, [652](#)
 - SSL_ALERT_CLOSE_NOTIFY, [644](#)
 - SSL_ALERT_FATAL, [644](#)
 - SSL_ALERT_NO_CERTIFICATE, [644](#)
 - SSL_ALERT_WARNING, [644](#)
 - SSL_BUFFER_LEN, [644](#)
 - ssl_calc_verify, [652](#)
 - ssl_close_notify, [652](#)
 - SSL_COMPRESS_NULL, [644](#)
 - ssl_context, [652](#)
 - ssl_default_ciphers, [663](#)
 - ssl_derive_keys, [653](#)
 - SSL_EDH_RSA_AES_256_SHA, [644](#)
 - SSL_EDH_RSA_DES_168_SHA, [644](#)
 - ssl_fetch_input, [653](#)
 - ssl_flush_output, [653](#)
 - ssl_free, [653](#)
 - ssl_get_bytes_avail, [654](#)
 - ssl_get_cipher, [654](#)
 - ssl_get_verify_result, [654](#)
 - ssl_handshake, [654](#)
 - ssl_handshake_client, [655](#)
 - ssl_handshake_server, [655](#)
 - SSL_HS_CERTIFICATE, [645](#)
 - SSL_HS_CERTIFICATE_REQUEST, [645](#)
 - SSL_HS_CERTIFICATE_VERIFY, [645](#)
 - SSL_HS_CLIENT_HELLO, [645](#)

- SSL_HS_CLIENT_KEY_EXCHANGE, [645](#)
- SSL_HS_FINISHED, [645](#)
- SSL_HS_HELLO_REQUEST, [645](#)
- SSL_HS_SERVER_HELLO, [645](#)
- SSL_HS_SERVER_HELLO_DONE, [645](#)
- SSL_HS_SERVER_KEY_EXCHANGE, [646](#)
- ssl_init, [655](#)
- SSL_IS_CLIENT, [646](#)
- SSL_IS_SERVER, [646](#)
- SSL_MAJOR_VERSION_3, [646](#)
- SSL_MAX_CONTENT_LEN, [646](#)
- SSL_MINOR_VERSION_0, [646](#)
- SSL_MINOR_VERSION_1, [646](#)
- SSL_MINOR_VERSION_2, [647](#)
- SSL_MSG_ALERT, [647](#)
- SSL_MSG_APPLICATION_DATA, [647](#)
- SSL_MSG_CHANGE_CIPHER_SPEC, [647](#)
- SSL_MSG_HANDSHAKE, [647](#)
- ssl_parse_certificate, [656](#)
- ssl_parse_change_cipher_spec, [656](#)
- ssl_parse_finished, [656](#)
- ssl_read, [656](#)
- ssl_read_record, [657](#)
- SSL_RSA_AES_128_SHA, [647](#)
- SSL_RSA_AES_256_SHA, [647](#)
- SSL_RSA_DES_168_SHA, [647](#)
- SSL_RSA_RC4_128_MD5, [648](#)
- SSL_RSA_RC4_128_SHA, [648](#)
- ssl_session, [652](#)
- ssl_set_authmode, [657](#)
- ssl_set_bio, [658](#)
- ssl_set_ca_chain, [658](#)
- ssl_set_ciphers, [658](#)
- ssl_set_dbg, [659](#)
- ssl_set_dh_param, [659](#)
- ssl_set_endpoint, [659](#)
- ssl_set_hostname, [659](#)
- ssl_set_own_cert, [660](#)
- ssl_set_rng, [660](#)
- ssl_set_scb, [660](#)
- ssl_set_session, [661](#)
- ssl_states, [652](#)
- SSL_VERIFY_NONE, [648](#)
- SSL_VERIFY_OPTIONAL, [648](#)
- SSL_VERIFY_REQUIRED, [648](#)
- ssl_write, [661](#)
- ssl_write_certificate, [662](#)
- ssl_write_change_cipher_spec, [662](#)
- ssl_write_finished, [662](#)
- ssl_write_record, [662](#)
- TLS_EXT_SERVERNAME, [648](#)
- TLS_EXT_SERVERNAME_HOSTNAME, [648](#)
- XYSSL_ERR_SSL_BAD_HS_-
CERTIFICATE, [648](#)
- XYSSL_ERR_SSL_BAD_HS_-
CERTIFICATE_REQUEST, [648](#)
- XYSSL_ERR_SSL_BAD_HS_-
CERTIFICATE_VERIFY, [649](#)
- XYSSL_ERR_SSL_BAD_HS_CHANGE_-
CIPHER_SPEC, [649](#)
- XYSSL_ERR_SSL_BAD_HS_CLIENT_-
HELLO, [649](#)
- XYSSL_ERR_SSL_BAD_HS_CLIENT_-
KEY_EXCHANGE, [649](#)
- XYSSL_ERR_SSL_BAD_HS_FINISHED, [649](#)
- XYSSL_ERR_SSL_BAD_HS_SERVER_-
HELLO, [649](#)
- XYSSL_ERR_SSL_BAD_HS_SERVER_-
HELLO_DONE, [649](#)
- XYSSL_ERR_SSL_BAD_HS_SERVER_-
KEY_EXCHANGE, [649](#)
- XYSSL_ERR_SSL_BAD_INPUT_DATA, [649](#)
- XYSSL_ERR_SSL_CA_CHAIN_-
REQUIRED, [650](#)
- XYSSL_ERR_SSL_CERTIFICATE_-
REQUIRED, [650](#)
- XYSSL_ERR_SSL_CERTIFICATE_TOO_-
LARGE, [650](#)
- XYSSL_ERR_SSL_FATAL_ALERT_-
MESSAGE, [650](#)
- XYSSL_ERR_SSL_FEATURE_-
UNAVAILABLE, [650](#)
- XYSSL_ERR_SSL_INVALID_MAC, [650](#)
- XYSSL_ERR_SSL_INVALID_MODULUS_-
SIZE, [650](#)
- XYSSL_ERR_SSL_INVALID_RECORD, [650](#)
- XYSSL_ERR_SSL_NO_CIPHER_CHOSEN, [651](#)
- XYSSL_ERR_SSL_NO_CLIENT_-
CERTIFICATE, [651](#)
- XYSSL_ERR_SSL_NO_SESSION_FOUND, [651](#)
- XYSSL_ERR_SSL_PEER_CLOSE_-
NOTIFY, [651](#)
- XYSSL_ERR_SSL_PEER_VERIFY_-
FAILED, [651](#)
- XYSSL_ERR_SSL_PRIVATE_KEY_-
REQUIRED, [651](#)
- XYSSL_ERR_SSL_UNEXPECTED_-
MESSAGE, [651](#)
- XYSSL_ERR_SSL_UNKNOWN_CIPHER, [651](#)
- SSL_CERTIFICATE_REQUEST

- ssl.h, [652](#)
- SSL_CERTIFICATE_VERIFY
 - ssl.h, [652](#)
- SSL_CLIENT_CERTIFICATE
 - ssl.h, [652](#)
- SSL_CLIENT_CHANGE_CIPHER_SPEC
 - ssl.h, [652](#)
- SSL_CLIENT_FINISHED
 - ssl.h, [652](#)
- SSL_CLIENT_HELLO
 - ssl.h, [652](#)
- SSL_CLIENT_KEY_EXCHANGE
 - ssl.h, [652](#)
- SSL_FLUSH_BUFFERS
 - ssl.h, [652](#)
- SSL_HANDSHAKE_OVER
 - ssl.h, [652](#)
- SSL_HELLO_REQUEST
 - ssl.h, [652](#)
- SSL_SERVER_CERTIFICATE
 - ssl.h, [652](#)
- SSL_SERVER_CHANGE_CIPHER_SPEC
 - ssl.h, [652](#)
- SSL_SERVER_FINISHED
 - ssl.h, [652](#)
- SSL_SERVER_HELLO
 - ssl.h, [652](#)
- SSL_SERVER_HELLO_DONE
 - ssl.h, [652](#)
- SSL_SERVER_KEY_EXCHANGE
 - ssl.h, [652](#)
- SSL_ALERT_CLOSE_NOTIFY
 - ssl.h, [644](#)
- SSL_ALERT_FATAL
 - ssl.h, [644](#)
- SSL_ALERT_NO_CERTIFICATE
 - ssl.h, [644](#)
- SSL_ALERT_WARNING
 - ssl.h, [644](#)
- SSL_BUFFER_LEN
 - ssl.h, [644](#)
- ssl_calc_finished
 - ssl_tls.c, [800](#)
- ssl_calc_verify
 - ssl.h, [652](#)
 - ssl_tls.c, [800](#)
- ssl_cli.c
 - ssl_handshake_client, [792](#)
 - ssl_parse_certificate_request, [792](#)
 - ssl_parse_server_hello, [792](#)
 - ssl_parse_server_hello_done, [793](#)
 - ssl_parse_server_key_exchange, [793](#)
 - ssl_write_certificate_verify, [793](#)
 - ssl_write_client_hello, [793](#)
 - ssl_write_client_key_exchange, [794](#)
- ssl_client1.c
 - DEBUG_LEVEL, [837](#)
 - GET_REQUEST, [837](#)
 - main, [838](#)
 - my_debug, [838](#)
 - SERVER_NAME, [837](#)
 - SERVER_PORT, [837](#)
- ssl_client2.c
 - DEBUG_LEVEL, [839](#)
 - GET_REQUEST, [839](#)
 - main, [840](#)
 - my_debug, [840](#)
 - SERVER_NAME, [839](#)
 - SERVER_PORT, [839](#)
- ssl_close_notify
 - ssl.h, [652](#)
 - ssl_tls.c, [800](#)
- SSL_COMPRESS_NULL
 - ssl.h, [644](#)
- ssl_context
 - ssl.h, [652](#)
- SSL_DEBUG_BUF
 - debug.h, [577](#)
- SSL_DEBUG_CRT
 - debug.h, [577](#)
- SSL_DEBUG_MPI
 - debug.h, [578](#)
- SSL_DEBUG_MSG
 - debug.h, [578](#)
- SSL_DEBUG_RET
 - debug.h, [578](#)
- ssl_decrypt_buf
 - ssl_tls.c, [800](#)
- ssl_default_ciphers
 - ssl.h, [663](#)
 - ssl_tls.c, [811](#)
- ssl_derive_keys
 - ssl.h, [653](#)
 - ssl_tls.c, [801](#)
- SSL_EDH_RSA_AES_256_SHA
 - ssl.h, [644](#)
- SSL_EDH_RSA_DES_168_SHA
 - ssl.h, [644](#)
- ssl_encrypt_buf
 - ssl_tls.c, [801](#)
- ssl_fetch_input
 - ssl.h, [653](#)
 - ssl_tls.c, [801](#)
- ssl_flush_output
 - ssl.h, [653](#)
 - ssl_tls.c, [801](#)
- ssl_free
 - ssl.h, [653](#)

- ssl_tls.c, 801
- ssl_get_bytes_avail
 - ssl.h, 654
 - ssl_tls.c, 802
- ssl_get_cipher
 - ssl.h, 654
 - ssl_tls.c, 802
- ssl_get_verify_result
 - ssl.h, 654
 - ssl_tls.c, 802
- ssl_handshake
 - ssl.h, 654
 - ssl_tls.c, 803
- ssl_handshake_client
 - ssl.h, 655
 - ssl_cli.c, 792
- ssl_handshake_server
 - ssl.h, 655
 - ssl_srv.c, 795
- SSL_HS_CERTIFICATE
 - ssl.h, 645
- SSL_HS_CERTIFICATE_REQUEST
 - ssl.h, 645
- SSL_HS_CERTIFICATE_VERIFY
 - ssl.h, 645
- SSL_HS_CLIENT_HELLO
 - ssl.h, 645
- SSL_HS_CLIENT_KEY_EXCHANGE
 - ssl.h, 645
- SSL_HS_FINISHED
 - ssl.h, 645
- SSL_HS_HELLO_REQUEST
 - ssl.h, 645
- SSL_HS_SERVER_HELLO
 - ssl.h, 645
- SSL_HS_SERVER_HELLO_DONE
 - ssl.h, 645
- SSL_HS_SERVER_KEY_EXCHANGE
 - ssl.h, 646
- ssl_init
 - ssl.h, 655
 - ssl_tls.c, 803
- SSL_IS_CLIENT
 - ssl.h, 646
- SSL_IS_SERVER
 - ssl.h, 646
- ssl_mac_md5
 - ssl_tls.c, 803
- ssl_mac_shal
 - ssl_tls.c, 803
- SSL_MAJOR_VERSION_3
 - ssl.h, 646
- SSL_MAX_CONTENT_LEN
 - ssl.h, 646
- SSL_MINOR_VERSION_0
 - ssl.h, 646
- SSL_MINOR_VERSION_1
 - ssl.h, 646
- SSL_MINOR_VERSION_2
 - ssl.h, 647
- SSL_MSG_ALERT
 - ssl.h, 647
- SSL_MSG_APPLICATION_DATA
 - ssl.h, 647
- SSL_MSG_CHANGE_CIPHER_SPEC
 - ssl.h, 647
- SSL_MSG_HANDSHAKE
 - ssl.h, 647
- ssl_parse_certificate
 - ssl.h, 656
 - ssl_tls.c, 804
- ssl_parse_certificate_request
 - ssl_cli.c, 792
- ssl_parse_certificate_verify
 - ssl_srv.c, 795
- ssl_parse_change_cipher_spec
 - ssl.h, 656
 - ssl_tls.c, 804
- ssl_parse_client_hello
 - ssl_srv.c, 796
- ssl_parse_client_key_exchange
 - ssl_srv.c, 796
- ssl_parse_finished
 - ssl.h, 656
 - ssl_tls.c, 804
- ssl_parse_server_hello
 - ssl_cli.c, 792
- ssl_parse_server_hello_done
 - ssl_cli.c, 793
- ssl_parse_server_key_exchange
 - ssl_cli.c, 793
- ssl_read
 - ssl.h, 656
 - ssl_tls.c, 804
- ssl_read_record
 - ssl.h, 657
 - ssl_tls.c, 805
- SSL_RSA_AES_128_SHA
 - ssl.h, 647
- SSL_RSA_AES_256_SHA
 - ssl.h, 647
- SSL_RSA_DES_168_SHA
 - ssl.h, 647
- SSL_RSA_RC4_128_MD5
 - ssl.h, 648
- SSL_RSA_RC4_128_SHA
 - ssl.h, 648
- ssl_server.c

- cur, 842
- DEBUG_LEVEL, 841
- HTTP_RESPONSE, 841
- main, 842
- my_ciphers, 842
- my_debug, 842
- my_dhm_G, 843
- my_dhm_P, 843
- my_get_session, 842
- my_set_session, 842
- prv, 843
- s_list_1st, 843
- ssl_session
 - ssl.h, 652
- ssl_set_authmode
 - ssl.h, 657
 - ssl_tls.c, 805
- ssl_set_bio
 - ssl.h, 658
 - ssl_tls.c, 805
- ssl_set_ca_chain
 - ssl.h, 658
 - ssl_tls.c, 806
- ssl_set_ciphers
 - ssl.h, 658
 - ssl_tls.c, 806
- ssl_set_dbg
 - ssl.h, 659
 - ssl_tls.c, 806
- ssl_set_dh_param
 - ssl.h, 659
 - ssl_tls.c, 807
- ssl_set_endpoint
 - ssl.h, 659
 - ssl_tls.c, 807
- ssl_set_hostname
 - ssl.h, 659
 - ssl_tls.c, 807
- ssl_set_own_cert
 - ssl.h, 660
 - ssl_tls.c, 808
- ssl_set_rng
 - ssl.h, 660
 - ssl_tls.c, 808
- ssl_set_scb
 - ssl.h, 660
 - ssl_tls.c, 808
- ssl_set_session
 - ssl.h, 661
 - ssl_tls.c, 809
- ssl_srv.c
 - ssl_handshake_server, 795
 - ssl_parse_certificate_verify, 795
 - ssl_parse_client_hello, 796
 - ssl_parse_client_key_exchange, 796
 - ssl_write_certificate_request, 796
 - ssl_write_server_hello, 796
 - ssl_write_server_hello_done, 797
 - ssl_write_server_key_exchange, 797
- ssl_states
 - ssl.h, 652
- ssl_test
 - ssl_test.c, 851
- ssl_test.c
 - COMMAND_BOTH, 848
 - COMMAND_READ, 848
 - COMMAND_WRITE, 848
 - DFL_BUFFER_SIZE, 848
 - DFL_COMMAND, 848
 - DFL_CONN_TIMEOUT, 848
 - DFL_DEBUG_LEVEL, 848
 - DFL_FORCE_CIPHER, 848
 - DFL_IOMODE, 849
 - DFL_MAX_BYTES, 849
 - DFL_MAX_CONNECTIONS, 849
 - DFL_OPMODE, 849
 - DFL_SERVER_NAME, 849
 - DFL_SERVER_PORT, 849
 - DFL_SESSION_LIFETIME, 849
 - DFL_SESSION_REUSE, 849
 - dhm_G, 851
 - dhm_P, 852
 - IOMODE_BLOCK, 849
 - IOMODE_NONBLOCK, 850
 - lcppm5, 851
 - main, 851
 - my_debug, 851
 - OPMODE_CLIENT, 850
 - OPMODE_NONE, 850
 - OPMODE_SERVER, 850
 - server_fd, 852
 - ssl_test, 851
 - USAGE, 850
- ssl_tls.c
 - ssl_calc_finished, 800
 - ssl_calc_verify, 800
 - ssl_close_notify, 800
 - ssl_decrypt_buf, 800
 - ssl_default_ciphers, 811
 - ssl_derive_keys, 801
 - ssl_encrypt_buf, 801
 - ssl_fetch_input, 801
 - ssl_flush_output, 801
 - ssl_free, 801
 - ssl_get_bytes_avail, 802
 - ssl_get_cipher, 802
 - ssl_get_verify_result, 802
 - ssl_handshake, 803

- ssl_init, 803
- ssl_mac_md5, 803
- ssl_mac_sha1, 803
- ssl_parse_certificate, 804
- ssl_parse_change_cipher_spec, 804
- ssl_parse_finished, 804
- ssl_read, 804
- ssl_read_record, 805
- ssl_set_authmode, 805
- ssl_set_bio, 805
- ssl_set_ca_chain, 806
- ssl_set_ciphers, 806
- ssl_set_dbg, 806
- ssl_set_dh_param, 807
- ssl_set_endpoint, 807
- ssl_set_hostname, 807
- ssl_set_own_cert, 808
- ssl_set_rng, 808
- ssl_set_scb, 808
- ssl_set_session, 809
- ssl_write, 809
- ssl_write_certificate, 810
- ssl_write_change_cipher_spec, 810
- ssl_write_finished, 810
- ssl_write_record, 810
- tls1_prf, 811
- SSL_VERIFY_NONE
 - ssl.h, 648
- SSL_VERIFY_OPTIONAL
 - ssl.h, 648
- SSL_VERIFY_REQUIRED
 - ssl.h, 648
- ssl_write
 - ssl.h, 661
 - ssl_tls.c, 809
- ssl_write_certificate
 - ssl.h, 662
 - ssl_tls.c, 810
- ssl_write_certificate_request
 - ssl_srv.c, 796
- ssl_write_certificate_verify
 - ssl_cli.c, 793
- ssl_write_change_cipher_spec
 - ssl.h, 662
 - ssl_tls.c, 810
- ssl_write_client_hello
 - ssl_cli.c, 793
- ssl_write_client_key_exchange
 - ssl_cli.c, 794
- ssl_write_finished
 - ssl.h, 662
 - ssl_tls.c, 810
- ssl_write_record
 - ssl.h, 662
- ssl_tls.c, 810
- ssl_write_server_hello
 - ssl_srv.c, 796
- ssl_write_server_hello_done
 - ssl_srv.c, 797
- ssl_write_server_key_exchange
 - ssl_srv.c, 797
- stack_size
 - agency_s, 38
 - mc_platform_s, 114
 - MCAgencyOptions_s, 119
- start
 - _hr_time, 9
 - _ssl_session, 23
- state
 - _ssl_context, 20
 - fipa_comm_protocol_t, 81
 - md2_context, 120
 - md4_context, 122
 - md5_context, 124
 - sha1_context, 155
 - sha2_context, 157
 - sha4_context, 159
- STATE_C_COMMENT
 - mxmldoc.c, 518
- STATE_CHARACTER
 - mxmldoc.c, 518
- STATE_CXX_COMMENT
 - mxmldoc.c, 518
- STATE_IDENTIFIER
 - mxmldoc.c, 518
- STATE_NONE
 - mxmldoc.c, 519
- STATE_PREPROCESSOR
 - mxmldoc.c, 519
- STATE_STRING
 - mxmldoc.c, 519
- stationary_agent_info_s, 161
 - agency, 161
 - agent, 161
 - args, 161
 - attr, 161
 - thread, 161
- stationary_agent_info_t
 - libmc.h, 318
- str
 - fipa_number_s, 91
 - fipa_url_s, 93
- strdup
 - mxmml-2.2.2/winconfig.h, 527
 - winconfig.h, 529
- string
 - fipa_expression_s::content_u, 59
 - mxmml_text_s, 144

strtok_r
 winconfig.h, 529

STRUCT
 acc.h, 217, 218
 ams.h, 242
 df.h, 267
 macros.h, 370
 xml_parser.h, 398

struct.cxx
 foo_t, 525

subject
 _x509_cert, 27
 _x509_raw, 31

subject_id
 _x509_cert, 27

subject_raw
 _x509_cert, 27

subpubkey
 _x509_raw, 31

SUBSCRIBE
 message.h, 379

SWAP
 des.c, 723
 havege.c, 737

SWITCHING_PROTOCOLS
 mtp_http.h, 385

sync_list.c
 syncListAddNode, 466
 syncListDelete, 466
 syncListFind, 466
 syncListInit, 466
 syncListNew, 467
 syncListNodeDestroy, 467
 syncListNodeInit, 467
 syncListNodeNew, 467
 syncListRemove, 467

sync_list.h
 syncList_p, 468
 syncList_t, 468
 syncListAddNode, 469
 syncListDelete, 469
 syncListFind, 469
 syncListGet, 469
 syncListInit, 469
 syncListNew, 469
 syncListNode_p, 468
 syncListNode_t, 468
 syncListNodeDestroy, 469
 syncListNodeInit, 470
 syncListNodeNew, 470
 syncListRemove, 470

syncList
 mc_platform_s, 114

syncList_p
 sync_list.h, 468

syncList_s, 162
 giant_lock, 162
 list, 162
 lock, 162
 size, 162

syncList_t
 sync_list.h, 468

syncListAddNode
 sync_list.c, 466
 sync_list.h, 469

syncListDelete
 sync_list.c, 466
 sync_list.h, 469

syncListFind
 sync_list.c, 466
 sync_list.h, 469

syncListGet
 sync_list.h, 469

syncListInit
 sync_list.c, 466
 sync_list.h, 469

syncListNew
 sync_list.c, 467
 sync_list.h, 469

syncListNode_p
 sync_list.h, 468

syncListNode_s, 163
 cond, 163
 id, 163
 lock, 163
 sem, 163
 signalled, 163

syncListNode_t
 sync_list.h, 468

syncListNodeDestroy
 sync_list.c, 467
 sync_list.h, 469

syncListNodeInit
 sync_list.c, 467
 sync_list.h, 470

syncListNodeNew
 sync_list.c, 467
 sync_list.h, 470

syncListRemove
 sync_list.c, 467
 sync_list.h, 470

t_dbl
 bignum.h, 561

t_int
 bignum.h, 561

tag
 _x509_buf, 24

- target
 - message_s, 127
 - mtp_http_s, 135
- task_progress
 - agent_datastate_s, 40
- tasks
 - agent_datastate_s, 40
- tbs
 - _x509_cert, 27
 - _x509_raw, 32
- tbs_signalg
 - _x509_raw, 32
- test_ca_cert
 - certs.c, 714
 - certs.h, 575
- test_ca_key
 - certs.c, 714
 - certs.h, 575
- test_ca_pwd
 - certs.c, 714
 - certs.h, 575
- test_cli_cert
 - certs.c, 715
 - certs.h, 575
- test_cli_key
 - certs.c, 715
 - certs.h, 575
- test_srv_cert
 - certs.c, 716
 - certs.h, 575
- test_srv_key
 - certs.c, 716
 - certs.h, 576
- testmxml.c
 - main, 526
 - type_cb, 526
 - whitespace_cb, 526
- text
 - mxml_value_u, 146
- thread
 - cmd_prompt_s, 55
 - df.h, 268
 - stationary_agent_info_s, 161
- THREAD_CANCEL
 - macros.h, 370
- THREAD_CREATE
 - macros.h, 370
- THREAD_DETACH
 - macros.h, 370
- THREAD_EXIT
 - macros.h, 370
- THREAD_JOIN
 - macros.h, 370
- threads
 - agency_s, 38
 - MCAgencyOptions_s, 119
- time_out
 - fipa_comm_protocol_cn_t, 79
- timeout
 - _ssl_context, 20
- timing.c
 - alarmed, 813
 - get_timer, 812
 - hardclock, 813
 - hardclock_init, 813
 - m_sleep, 813
 - set_alarm, 813
 - sighandler, 813
 - tv_init, 813
- timing.h
 - alarmed, 665
 - get_timer, 664
 - hardclock, 664
 - m_sleep, 665
 - set_alarm, 665
- tls1_prf
 - ssl_tls.c, 811
- TLS_EXT_SERVERNAME
 - ssl.h, 648
- TLS_EXT_SERVERNAME_HOSTNAME
 - ssl.h, 648
- to
 - fipa_acl_Param_s, 73
- to_address
 - message_s, 128
- total
 - md4_context, 122
 - md5_context, 124
 - sha1_context, 155
 - sha2_context, 158
 - sha4_context, 160
- TST1_ENTER
 - havege.c, 737
- TST1_LEAVE
 - havege.c, 737
- TST2_ENTER
 - havege.c, 737
- TST2_LEAVE
 - havege.c, 738
- tv_init
 - timing.c, 813
- type
 - fipa_comm_action_t, 76
 - fipa_comm_message_check_t, 77
 - fipa_comm_protocol_t, 81
 - fipa_comm_reply_t, 83
 - fipa_expression_s, 88
 - mxml_node_s, 143

- type_cb
 - testmxml.c, 526
- TYPES
 - df.h, 264
- udplisten_Thread
 - acc.c, 169
 - acc.h, 218
- UDPPORT
 - acc.c, 167
- UL64
 - sha4.h, 636
- UNAUTHORIZED
 - mtp_http.h, 385
- UNORDERED_COLLECTION
 - mtp_http.h, 386
- UNPROCESSABLE_ENTITY
 - mtp_http.h, 386
- UNSUPPORTED_MEDIA_TYPE
 - mtp_http.h, 385
- update_comment
 - mxmldoc.c, 520
- update_name
 - message_s, 128
- update_num
 - message_s, 128
- UPGRADE_REQUIRED
 - mtp_http.h, 386
- urls
 - fipa_url_sequence_s, 94
- USAGE
 - aescript2.c, 824
 - ssl_test.c, 850
- user_agent
 - mtp_http_s, 136
- v3_ext
 - _x509_cert, 27
- val
 - _x509_name, 29
- valid_from
 - _x509_cert, 27
- valid_to
 - _x509_cert, 27
- validity
 - _x509_raw, 32
- value
 - mxml_attr_s, 137
 - mxml_node_s, 143
- var_name
 - agent_task_s, 49
- ver
 - rsa_context, 154
- verify_result
 - _ssl_context, 21
- version
 - _x509_cert, 27
 - _x509_raw, 32
- vsnprintf
 - mxml-2.2.2/winconfig.h, 528
- waiting
 - df.h, 268
- waiting_cond
 - df.h, 268
- waiting_lock
 - df.h, 269
- WAKE_QUEUE
 - macros.h, 371
- WALK
 - havege_state, 101
- WARN
 - macros.h, 371
- wg_code
 - agent_s, 47
- whitespace
 - mxml_text_s, 144
- whitespace_cb
 - testmxml.c, 526
 - xml_helper.c, 858
 - xml_helper.h, 393
- winconfig.h
 - PACKAGE_STRING, 529
 - PACKAGE_VERSION, 529
 - strdup, 529
 - strtok_r, 529
- word
 - fipa_expression_s::content_u, 59
- write_documentation
 - mxmldoc.c, 520
- write_element
 - mxmldoc.c, 520
- write_flag
 - mc_rwlock_s, 116
- write_request
 - mc_rwlock_s, 116
- write_string
 - mxmldoc.c, 520
- ws_cb
 - mxmldoc.c, 521
- X
 - dhm_context, 64
- x
 - arc4_context, 52
- x509.h
 - ASN1_BIT_STRING, 668
 - ASN1_BMP_STRING, 668

- ASN1_BOOLEAN, 668
- ASN1_CONSTRUCTED, 669
- ASN1_CONTEXT_SPECIFIC, 669
- ASN1_IA5_STRING, 669
- ASN1_INTEGER, 669
- ASN1_NULL, 669
- ASN1_OCTET_STRING, 669
- ASN1_OID, 669
- ASN1_PRIMITIVE, 669
- ASN1_PRINTABLE_STRING, 670
- ASN1_SEQUENCE, 670
- ASN1_SET, 670
- ASN1_T61_STRING, 670
- ASN1_UNIVERSAL_STRING, 670
- ASN1_UTC_TIME, 670
- ASN1_UTF8_STRING, 670
- BADCERT_CN_MISMATCH, 670
- BADCERT_EXPIRED, 670
- BADCERT_NOT_TRUSTED, 671
- BADCERT_REVOKED, 671
- OID_CN, 671
- OID_PKCS1, 671
- OID_PKCS1_RSA, 671
- OID_PKCS1_RSA_SHA, 671
- OID_PKCS9, 671
- OID_PKCS9_EMAIL, 671
- OID_X520, 671
- PEM_LINE_LENGTH, 672
- PKCS9_EMAIL, 672
- x509_buf, 677
- x509_cert, 677
- x509_free, 677
- X509_ISSUER, 672
- x509_name, 677
- x509_node, 677
- X509_OUTPUT_DER, 672
- X509_OUTPUT_PEM, 672
- x509_raw, 677
- x509_self_test, 677
- X509_SUBJECT, 672
- x509_time, 677
- x509parse_cert_info, 677
- x509parse_cert, 677
- x509parse_crfile, 678
- x509parse_dn_gets, 678
- x509parse_expired, 679
- x509parse_key, 679
- x509parse_keyfile, 679
- x509parse_verify, 680
- X520_COMMON_NAME, 672
- X520_COUNTRY, 672
- X520_LOCALITY, 672
- X520_ORG_UNIT, 672
- X520_ORGANIZATION, 673
- X520_STATE, 673
- XYSSL_ERR_ASN1_INVALID_DATA, 673
- XYSSL_ERR_ASN1_INVALID_LENGTH, 673
- XYSSL_ERR_ASN1_LENGTH_-
MISMATCH, 673
- XYSSL_ERR_ASN1_OUT_OF_DATA, 673
- XYSSL_ERR_ASN1_UNEXPECTED_TAG, 673
- XYSSL_ERR_X509_CERT_INVALID_ALG, 673
- XYSSL_ERR_X509_CERT_INVALID_-
DATE, 674
- XYSSL_ERR_X509_CERT_INVALID_-
EXTENSIONS, 674
- XYSSL_ERR_X509_CERT_INVALID_-
FORMAT, 674
- XYSSL_ERR_X509_CERT_INVALID_-
NAME, 674
- XYSSL_ERR_X509_CERT_INVALID_PEM, 674
- XYSSL_ERR_X509_CERT_INVALID_-
PUBKEY, 674
- XYSSL_ERR_X509_CERT_INVALID_-
SERIAL, 674
- XYSSL_ERR_X509_CERT_INVALID_-
SIGNATURE, 674
- XYSSL_ERR_X509_CERT_INVALID_-
VERSION, 674
- XYSSL_ERR_X509_CERT_SIG_-
MISMATCH, 675
- XYSSL_ERR_X509_CERT_UNKNOWN_-
PK_ALG, 675
- XYSSL_ERR_X509_CERT_UNKNOWN_-
SIG_ALG, 675
- XYSSL_ERR_X509_CERT_UNKNOWN_-
VERSION, 675
- XYSSL_ERR_X509_CERT_VERIFY_-
FAILED, 675
- XYSSL_ERR_X509_FEATURE_-
UNAVAILABLE, 675
- XYSSL_ERR_X509_KEY_INVALID_-
ENC_IV, 675
- XYSSL_ERR_X509_KEY_INVALID_-
FORMAT, 675
- XYSSL_ERR_X509_KEY_INVALID_PEM, 675
- XYSSL_ERR_X509_KEY_INVALID_-
VERSION, 676
- XYSSL_ERR_X509_KEY_PASSWORD_-
MISMATCH, 676
- XYSSL_ERR_X509_KEY_PASSWORD_-
REQUIRED, 676

- XYSSL_ERR_X509_KEY_UNKNOWN_-
ENC_ALG, [676](#)
- XYSSL_ERR_X509_POINT_ERROR, [676](#)
- XYSSL_ERR_X509_VALUE_TO_LENGTH,
[676](#)
- x509_buf
 - x509.h, [677](#)
- x509_cert
 - x509.h, [677](#)
- x509_des3_decrypt
 - x509parse.c, [817](#)
- x509_free
 - x509.h, [677](#)
 - x509parse.c, [817](#)
- x509_get_alg
 - x509parse.c, [817](#)
- x509_get_dates
 - x509parse.c, [817](#)
- x509_get_ext
 - x509parse.c, [818](#)
- x509_get_iv
 - x509parse.c, [818](#)
- x509_get_name
 - x509parse.c, [818](#)
- x509_get_pubkey
 - x509parse.c, [818](#)
- x509_get_serial
 - x509parse.c, [818](#)
- x509_get_sig
 - x509parse.c, [819](#)
- x509_get_uid
 - x509parse.c, [819](#)
- x509_get_version
 - x509parse.c, [819](#)
- x509_hash
 - x509parse.c, [819](#)
- X509_ISSUER
 - x509.h, [672](#)
- x509_name
 - x509.h, [677](#)
- x509_node
 - x509.h, [677](#)
- X509_OUTPUT_DER
 - x509.h, [672](#)
- X509_OUTPUT_PEM
 - x509.h, [672](#)
- x509_raw
 - x509.h, [677](#)
- x509_self_test
 - x509.h, [677](#)
 - x509parse.c, [819](#)
- X509_SUBJECT
 - x509.h, [672](#)
- x509_time
 - x509.h, [677](#)
- x509parse.c
 - asn1_get_bool, [816](#)
 - asn1_get_int, [816](#)
 - asn1_get_len, [816](#)
 - asn1_get_mpi, [816](#)
 - asn1_get_tag, [817](#)
 - x509_des3_decrypt, [817](#)
 - x509_free, [817](#)
 - x509_get_alg, [817](#)
 - x509_get_dates, [817](#)
 - x509_get_ext, [818](#)
 - x509_get_iv, [818](#)
 - x509_get_name, [818](#)
 - x509_get_pubkey, [818](#)
 - x509_get_serial, [818](#)
 - x509_get_sig, [819](#)
 - x509_get_uid, [819](#)
 - x509_get_version, [819](#)
 - x509_hash, [819](#)
 - x509_self_test, [819](#)
 - x509parse_cert_info, [820](#)
 - x509parse_crt, [820](#)
 - x509parse_crtfile, [820](#)
 - x509parse_dn_gets, [821](#)
 - x509parse_expired, [821](#)
 - x509parse_key, [821](#)
 - x509parse_keyfile, [822](#)
 - x509parse_verify, [822](#)
- x509parse_cert_info
 - x509.h, [677](#)
 - x509parse.c, [820](#)
- x509parse_crt
 - x509.h, [677](#)
 - x509parse.c, [820](#)
- x509parse_crtfile
 - x509.h, [678](#)
 - x509parse.c, [820](#)
- x509parse_dn_gets
 - x509.h, [678](#)
 - x509parse.c, [821](#)
- x509parse_expired
 - x509.h, [679](#)
 - x509parse.c, [821](#)
- x509parse_key
 - x509.h, [679](#)
 - x509parse.c, [821](#)
- x509parse_keyfile
 - x509.h, [679](#)
 - x509parse.c, [822](#)
- x509parse_verify
 - x509.h, [680](#)
 - x509parse.c, [822](#)
- X520_COMMON_NAME

- x509.h, 672
- X520_COUNTRY
 - x509.h, 672
- X520_LOCALITY
 - x509.h, 672
- X520_ORG_UNIT
 - x509.h, 672
- X520_ORGANIZATION
 - x509.h, 673
- X520_STATE
 - x509.h, 673
- xml_agent_root
 - agent_datastate_s, 41
- xml_compose.c
 - agent_xml_compose, 854
 - agent_xml_compose__agent_code, 854
 - agent_xml_compose__agent_data, 854
 - agent_xml_compose__create_row_nodes, 855
 - agent_xml_compose__data, 855
 - agent_xml_compose__gaf_message, 855
 - agent_xml_compose__home, 855
 - agent_xml_compose__message, 855
 - agent_xml_compose__mobile_agent, 856
 - agent_xml_compose__name, 856
 - agent_xml_compose__owner, 856
 - agent_xml_compose__row, 856
 - agent_xml_compose__task, 856
 - agent_xml_compose__tasks, 856
 - agent_xml_compose__wg_code, 857
- xml_compose.h
 - agent_xml_compose, 389
 - agent_xml_compose__agent_code, 389
 - agent_xml_compose__agent_data, 389
 - agent_xml_compose__create_row_nodes, 390
 - agent_xml_compose__data, 390
 - agent_xml_compose__gaf_message, 390
 - agent_xml_compose__home, 390
 - agent_xml_compose__message, 390
 - agent_xml_compose__mobile_agent, 390
 - agent_xml_compose__name, 391
 - agent_xml_compose__owner, 391
 - agent_xml_compose__row, 391
 - agent_xml_compose__task, 391
 - agent_xml_compose__tasks, 391
 - agent_xml_compose__wg_code, 391
- xml_find_sibling
 - xml_helper.c, 858
 - xml_helper.h, 393
- xml_get_cdata
 - xml_helper.c, 858
 - xml_helper.h, 393
- xml_get_child
 - xml_helper.c, 858
 - xml_helper.h, 393
- xml_get_deep_child
 - xml_helper.c, 859
 - xml_helper.h, 394
- xml_get_element_name
 - xml_helper.c, 859
 - xml_helper.h, 394
- xml_get_next_element
 - xml_helper.c, 859
 - xml_helper.h, 394
- xml_get_text
 - xml_helper.c, 859
 - xml_helper.h, 394
- xml_helper.c
 - whitespace_cb, 858
 - xml_find_sibling, 858
 - xml_get_cdata, 858
 - xml_get_child, 858
 - xml_get_deep_child, 859
 - xml_get_element_name, 859
 - xml_get_next_element, 859
 - xml_get_text, 859
 - xml_new_cdata, 859
- xml_helper.h
 - whitespace_cb, 393
 - xml_find_sibling, 393
 - xml_get_cdata, 393
 - xml_get_child, 393
 - xml_get_deep_child, 394
 - xml_get_element_name, 394
 - xml_get_next_element, 394
 - xml_get_text, 394
 - xml_new_cdata, 394
- xml_new_cdata
 - xml_helper.c, 859
 - xml_helper.h, 394
- xml_parser.c
 - _XOPEN_SOURCE, 860
 - agent_return_xml_parse, 861
 - agent_xml_parse, 861
 - agent_xml_parse__agent_code, 861
 - agent_xml_parse__agent_data, 861
 - agent_xml_parse__data, 861
 - agent_xml_parse__fill_row_data, 861
 - agent_xml_parse__home, 862
 - agent_xml_parse__mobile_agent, 862
 - agent_xml_parse__name, 862
 - agent_xml_parse__owner, 862
 - agent_xml_parse__row, 862
 - agent_xml_parse__sender, 862
 - agent_xml_parse__task, 863
 - agent_xml_parse__tasks, 863
 - agent_xml_parse__wg_code, 863
 - message_xml_parse, 863
 - message_xml_parse__message, 863

- xml_parser.h
 - agent_xml_parse, 395
 - agent_xml_parse__agent_code, 395
 - agent_xml_parse__agent_data, 395
 - agent_xml_parse__data, 396
 - agent_xml_parse__fill_row_data, 396
 - agent_xml_parse__home, 396
 - agent_xml_parse__mobile_agent, 396
 - agent_xml_parse__name, 396
 - agent_xml_parse__owner, 397
 - agent_xml_parse__row, 397
 - agent_xml_parse__sender, 397
 - agent_xml_parse__task, 397
 - agent_xml_parse__tasks, 397
 - agent_xml_parse__wg_code, 397
 - message_xml_parse, 398
 - message_xml_parse__message, 398
 - STRUCT, 398
- xml_payload
 - message_s, 128
- xml_root
 - agent_datastate_s, 41
 - message_s, 128
- XTIME
 - aes.c, 684
- XYSSL_AES_C
 - security/xyssl-0.9/include/xyssl/config.h, 482
- XYSSL_ARC4_C
 - security/xyssl-0.9/include/xyssl/config.h, 482
- XYSSL_BASE64_C
 - security/xyssl-0.9/include/xyssl/config.h, 482
- XYSSL_BIGNUM_C
 - security/xyssl-0.9/include/xyssl/config.h, 482
- xyssl_ca_crt
 - certs.c, 717
 - certs.h, 576
- XYSSL_CERTS_C
 - security/xyssl-0.9/include/xyssl/config.h, 482
- XYSSL_DEBUG_C
 - security/xyssl-0.9/include/xyssl/config.h, 483
- XYSSL_DEBUG_MSG
 - security/xyssl-0.9/include/xyssl/config.h, 483
- XYSSL_DES_C
 - security/xyssl-0.9/include/xyssl/config.h, 483
- XYSSL_DHM_C
 - security/xyssl-0.9/include/xyssl/config.h, 483
- XYSSL_ERR_ASN1_INVALID_DATA
 - x509.h, 673
- XYSSL_ERR_ASN1_INVALID_LENGTH
 - x509.h, 673
- XYSSL_ERR_ASN1_LENGTH_MISMATCH
 - x509.h, 673
- XYSSL_ERR_ASN1_OUT_OF_DATA
 - x509.h, 673
- XYSSL_ERR_ASN1_UNEXPECTED_TAG
 - x509.h, 673
- XYSSL_ERR_BASE64_BUFFER_TOO_SMALL
 - base64.h, 555
- XYSSL_ERR_BASE64_INVALID_CHARACTER
 - base64.h, 555
- XYSSL_ERR_DHM_BAD_INPUT_DATA
 - dhm.h, 586
- XYSSL_ERR_DHM_CALC_SECRET_FAILED
 - dhm.h, 586
- XYSSL_ERR_DHM_MAKE_PARAMS_FAILED
 - dhm.h, 586
- XYSSL_ERR_DHM_MAKE_PUBLIC_FAILED
 - dhm.h, 586
- XYSSL_ERR_DHM_READ_PARAMS_FAILED
 - dhm.h, 586
- XYSSL_ERR_DHM_READ_PUBLIC_FAILED
 - dhm.h, 586
- XYSSL_ERR_MPI_BAD_INPUT_DATA
 - bignum.h, 560
- XYSSL_ERR_MPI_BUFFER_TOO_SMALL
 - bignum.h, 560
- XYSSL_ERR_MPI_DIVISION_BY_ZERO
 - bignum.h, 560
- XYSSL_ERR_MPI_FILE_IO_ERROR
 - bignum.h, 560
- XYSSL_ERR_MPI_INVALID_CHARACTER
 - bignum.h, 560
- XYSSL_ERR_MPI_NEGATIVE_VALUE
 - bignum.h, 560
- XYSSL_ERR_MPI_NOT_ACCEPTABLE
 - bignum.h, 560
- XYSSL_ERR_NET_ACCEPT_FAILED
 - net.h, 606
- XYSSL_ERR_NET_BIND_FAILED
 - net.h, 606
- XYSSL_ERR_NET_CONN_RESET
 - net.h, 606
- XYSSL_ERR_NET_CONNECT_FAILED
 - net.h, 606
- XYSSL_ERR_NET_LISTEN_FAILED
 - net.h, 606
- XYSSL_ERR_NET_RECV_FAILED
 - net.h, 606
- XYSSL_ERR_NET_SEND_FAILED
 - net.h, 606
- XYSSL_ERR_NET_SOCKET_FAILED
 - net.h, 606
- XYSSL_ERR_NET_TRY_AGAIN
 - net.h, 606
- XYSSL_ERR_NET_UNKNOWN_HOST
 - net.h, 607
- XYSSL_ERR_RSA_BAD_INPUT_DATA
 - rsa.h, 618

- XYSSL_ERR_RSA_INVALID_PADDING
rsa.h, [618](#)
- XYSSL_ERR_RSA_KEY_CHECK_FAILED
rsa.h, [618](#)
- XYSSL_ERR_RSA_KEY_GEN_FAILED
rsa.h, [618](#)
- XYSSL_ERR_RSA_PRIVATE_FAILED
rsa.h, [619](#)
- XYSSL_ERR_RSA_PUBLIC_FAILED
rsa.h, [619](#)
- XYSSL_ERR_RSA_VERIFY_FAILED
rsa.h, [619](#)
- XYSSL_ERR_SSL_BAD_HS_CERTIFICATE
ssl.h, [648](#)
- XYSSL_ERR_SSL_BAD_HS_CERTIFICATE_-
REQUEST
ssl.h, [648](#)
- XYSSL_ERR_SSL_BAD_HS_CERTIFICATE_-
VERIFY
ssl.h, [649](#)
- XYSSL_ERR_SSL_BAD_HS_CHANGE_-
CIPHER_SPEC
ssl.h, [649](#)
- XYSSL_ERR_SSL_BAD_HS_CLIENT_HELLO
ssl.h, [649](#)
- XYSSL_ERR_SSL_BAD_HS_CLIENT_KEY_-
EXCHANGE
ssl.h, [649](#)
- XYSSL_ERR_SSL_BAD_HS_FINISHED
ssl.h, [649](#)
- XYSSL_ERR_SSL_BAD_HS_SERVER_HELLO
ssl.h, [649](#)
- XYSSL_ERR_SSL_BAD_HS_SERVER_-
HELLO_DONE
ssl.h, [649](#)
- XYSSL_ERR_SSL_BAD_HS_SERVER_KEY_-
EXCHANGE
ssl.h, [649](#)
- XYSSL_ERR_SSL_BAD_INPUT_DATA
ssl.h, [649](#)
- XYSSL_ERR_SSL_CA_CHAIN_REQUIRED
ssl.h, [650](#)
- XYSSL_ERR_SSL_CERTIFICATE_REQUIRED
ssl.h, [650](#)
- XYSSL_ERR_SSL_CERTIFICATE_TOO_-
LARGE
ssl.h, [650](#)
- XYSSL_ERR_SSL_FATAL_ALERT_MESSAGE
ssl.h, [650](#)
- XYSSL_ERR_SSL_FEATURE_UNAVAILABLE
ssl.h, [650](#)
- XYSSL_ERR_SSL_INVALID_MAC
ssl.h, [650](#)
- XYSSL_ERR_SSL_INVALID_MODULUS_SIZE
ssl.h, [650](#)
- XYSSL_ERR_SSL_INVALID_RECORD
ssl.h, [650](#)
- XYSSL_ERR_SSL_NO_CIPHER_CHOSEN
ssl.h, [651](#)
- XYSSL_ERR_SSL_NO_CLIENT_CERTIFICATE
ssl.h, [651](#)
- XYSSL_ERR_SSL_NO_SESSION_FOUND
ssl.h, [651](#)
- XYSSL_ERR_SSL_PEER_CLOSE_NOTIFY
ssl.h, [651](#)
- XYSSL_ERR_SSL_PEER_VERIFY_FAILED
ssl.h, [651](#)
- XYSSL_ERR_SSL_PRIVATE_KEY_REQUIRED
ssl.h, [651](#)
- XYSSL_ERR_SSL_UNEXPECTED_MESSAGE
ssl.h, [651](#)
- XYSSL_ERR_SSL_UNKNOWN_CIPHER
ssl.h, [651](#)
- XYSSL_ERR_X509_CERT_INVALID_ALG
x509.h, [673](#)
- XYSSL_ERR_X509_CERT_INVALID_DATE
x509.h, [674](#)
- XYSSL_ERR_X509_CERT_INVALID_-
EXTENSIONS
x509.h, [674](#)
- XYSSL_ERR_X509_CERT_INVALID_FORMAT
x509.h, [674](#)
- XYSSL_ERR_X509_CERT_INVALID_NAME
x509.h, [674](#)
- XYSSL_ERR_X509_CERT_INVALID_PEM
x509.h, [674](#)
- XYSSL_ERR_X509_CERT_INVALID_PUBKEY
x509.h, [674](#)
- XYSSL_ERR_X509_CERT_INVALID_SERIAL
x509.h, [674](#)
- XYSSL_ERR_X509_CERT_INVALID_-
SIGNATURE
x509.h, [674](#)
- XYSSL_ERR_X509_CERT_INVALID_VERSION
x509.h, [674](#)
- XYSSL_ERR_X509_CERT_SIG_MISMATCH
x509.h, [675](#)
- XYSSL_ERR_X509_CERT_UNKNOWN_PK_-
ALG
x509.h, [675](#)
- XYSSL_ERR_X509_CERT_UNKNOWN_SIG_-
ALG
x509.h, [675](#)
- XYSSL_ERR_X509_CERT_UNKNOWN_-
VERSION
x509.h, [675](#)
- XYSSL_ERR_X509_CERT_VERIFY_FAILED
x509.h, [675](#)

- XYSSL_ERR_X509_FEATURE_UNAVAILABLE
x509.h, [675](#)
- XYSSL_ERR_X509_KEY_INVALID_ENC_IV
x509.h, [675](#)
- XYSSL_ERR_X509_KEY_INVALID_FORMAT
x509.h, [675](#)
- XYSSL_ERR_X509_KEY_INVALID_PEM
x509.h, [675](#)
- XYSSL_ERR_X509_KEY_INVALID_VERSION
x509.h, [676](#)
- XYSSL_ERR_X509_KEY_PASSWORD_-
MISMATCH
x509.h, [676](#)
- XYSSL_ERR_X509_KEY_PASSWORD_-
REQUIRED
x509.h, [676](#)
- XYSSL_ERR_X509_KEY_UNKNOWN_ENC_-
ALG
x509.h, [676](#)
- XYSSL_ERR_X509_POINT_ERROR
x509.h, [676](#)
- XYSSL_ERR_X509_VALUE_TO_LENGTH
x509.h, [676](#)
- XYSSL_GENPRIME
security/xyssl-0.9/include/xyssl/config.h, [483](#)
- XYSSL_HAVE_ASM
security/xyssl-0.9/include/xyssl/config.h, [483](#)
- XYSSL_HAVEGE_C
security/xyssl-0.9/include/xyssl/config.h, [483](#)
- XYSSL_MD5_C
security/xyssl-0.9/include/xyssl/config.h, [483](#)
- XYSSL_NET_C
security/xyssl-0.9/include/xyssl/config.h, [483](#)
- XYSSL_PADLOCK_C
security/xyssl-0.9/include/xyssl/config.h, [483](#)
- XYSSL_RSA_C
security/xyssl-0.9/include/xyssl/config.h, [483](#)
- XYSSL_SELF_TEST
security/xyssl-0.9/include/xyssl/config.h, [484](#)
- XYSSL_SHA1_C
security/xyssl-0.9/include/xyssl/config.h, [484](#)
- XYSSL_SHA2_C
security/xyssl-0.9/include/xyssl/config.h, [484](#)
- XYSSL_SHA4_C
security/xyssl-0.9/include/xyssl/config.h, [484](#)
- XYSSL_SSL_CLI_C
security/xyssl-0.9/include/xyssl/config.h, [484](#)
- XYSSL_SSL_SRV_C
security/xyssl-0.9/include/xyssl/config.h, [484](#)
- XYSSL_SSL_TLS_C
security/xyssl-0.9/include/xyssl/config.h, [484](#)
- XYSSL_TIMING_C
security/xyssl-0.9/include/xyssl/config.h, [484](#)
- XYSSL_X509_PARSE_C
security/xyssl-0.9/include/xyssl/config.h, [484](#)
- XYSSL_X509_WRITE_C
security/xyssl-0.9/include/xyssl/config.h, [484](#)
- y
arc4_context, [52](#)
- year
_x509_time, [33](#)
fipa_DateTime_s, [87](#)
- ZERO
df.h, [264](#)