

Mobile-C

2.1.4

Generated by Doxygen 1.6.3

Fri Jun 17 16:59:04 2011

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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 .

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/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/md5sum.c	869
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/hash/sha1sum.c	870
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/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/dh_client.c	872
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/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/pkey/rsa_verify.c	878
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/ssl/ssl_client1.c	879
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/ssl/ssl_client2.c	881
/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/ssl/ssl_server.c	883
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/home/dko/Projects/mobilec/src/security/xyssl-0.9/programs/test/ssl_test.c	889
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Chapter 5

Namespace Documentation

5.1 base64 Namespace Reference

Data Structures

- struct [base64_decodestate](#)
- struct [decoder](#)
- struct [base64_encodestate](#)
- struct [encoder](#)

Enumerations

- enum [base64_decodestep](#) { [step_a](#), [step_b](#), [step_c](#), [step_d](#) }
- enum [base64_encodestep](#) { [step_A](#), [step_B](#), [step_C](#) }

Functions

- void [base64_init_decodestate](#) ([base64_decodestate](#) *state_in)
- int [base64_decode_value](#) (char value_in)
- int [base64_decode_block](#) (const char *code_in, const int length_in, char *plaintext_out, [base64_decodestate](#) *state_in)
- void [base64_init_encodestate](#) ([base64_encodestate](#) *state_in)
- char [base64_encode_value](#) (char value_in)
- int [base64_encode_block](#) (const char *plaintext_in, int length_in, char *code_out, [base64_encodestate](#) *state_in)
- int [base64_encode_blockend](#) (char *code_out, [base64_encodestate](#) *state_in)

5.1.1 Enumeration Type Documentation

5.1.1.1 enum base64::base64_decodestep

Enumerator:

step_a

step_b

step_c
step_d

Definition at line 12 of file decode.h.

5.1.1.2 enum base64::base64_encodestep

Enumerator:

step_A
step_B
step_C

Definition at line 12 of file encode.h.

5.1.2 Function Documentation

5.1.2.1 int base64::base64_decode_block (const char * *code_in*, const int *length_in*, char * *plaintext_out*, base64_decodestate * *state_in*)

5.1.2.2 int base64::base64_decode_value (char *value_in*)

Definition at line 10 of file cdecode.c.

5.1.2.3 int base64::base64_encode_block (const char * *plaintext_in*, int *length_in*, char * *code_out*, base64_encodestate * *state_in*)

5.1.2.4 int base64::base64_encode_blockend (char * *code_out*, base64_encodestate * *state_in*)

5.1.2.5 char base64::base64_encode_value (char *value_in*)

Definition at line 19 of file cencode.c.

5.1.2.6 void base64::base64_init_decodestate (base64_decodestate * *state_in*)

5.1.2.7 void base64::base64_init_encodestate (base64_encodestate * *state_in*)

Chapter 6

Data Structure Documentation

6.1 `_hr_time` Struct Reference

Data Fields

- struct timeval [start](#)

6.1.1 Detailed Description

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

6.1.2 Field Documentation

6.1.2.1 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`

6.2 _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_hhlen](#)
- 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`

6.2.1 Detailed Description

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

6.2.2 Field Documentation

6.2.2.1 `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()`.

6.2.2.2 `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()`.

6.2.2.3 `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()`.

6.2.2.4 `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()`.

6.2.2.5 `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()`.

6.2.2.6 `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()`.

6.2.2.7 `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()`.

6.2.2.8 `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()`.

6.2.2.9 `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()`.

6.2.2.10 `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().

6.2.2.11 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().

6.2.2.12 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().

6.2.2.13 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().

6.2.2.14 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().

6.2.2.15 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().

6.2.2.16 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().

6.2.2.17 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().

6.2.2.18 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().

6.2.2.19 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().

6.2.2.20 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().

6.2.2.21 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().

6.2.2.22 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().

6.2.2.23 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().

6.2.2.24 `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()`.

6.2.2.25 `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()`.

6.2.2.26 `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()`.

6.2.2.27 `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()`.

6.2.2.28 `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()`.

6.2.2.29 `int _ssl_context::keylen`

symmetric key length

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

Referenced by `ssl_derive_keys()`.

6.2.2.30 `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()`.

6.2.2.31 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()`.

6.2.2.32 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()`.

6.2.2.33 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()`.

6.2.2.34 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()`.

6.2.2.35 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()`.

6.2.2.36 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()`.

6.2.2.37 `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()`.

6.2.2.38 `int _ssl_context::nb_zero`

of 0-length encrypted messages

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

Referenced by `ssl_decrypt_buf()`.

6.2.2.39 `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()`.

6.2.2.40 `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()`.

6.2.2.41 `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()`.

6.2.2.42 `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()`.

6.2.2.43 `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()`.

6.2.2.44 `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()`.

6.2.2.45 `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()`.

6.2.2.46 `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()`.

6.2.2.47 `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()`.

6.2.2.48 `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()`.

6.2.2.49 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()`.

6.2.2.50 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()`.

6.2.2.51 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()`.

6.2.2.52 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()`.

6.2.2.53 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()`.

6.2.2.54 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()`.

6.2.2.55 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()`.

6.2.2.56 `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()`.

6.2.2.57 `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()`.

6.2.2.58 `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()`.

6.2.2.59 `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()`.

6.2.2.60 `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()`.

6.2.2.61 `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()`.

6.2.2.62 `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`

6.3 `_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`

6.3.1 Detailed Description

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

6.3.2 Field Documentation

6.3.2.1 `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()`.

6.3.2.2 `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()`.

6.3.2.3 `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()`.

6.3.2.4 `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()`.

6.3.2.5 `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()`.

6.3.2.6 `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`

6.4 `_x509_buf` Struct Reference

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

Data Fields

- int [tag](#)
- int [len](#)
- unsigned char * [p](#)

6.4.1 Detailed Description

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

6.4.2 Field Documentation

6.4.2.1 `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()`.

6.4.2.2 `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()`.

6.4.2.3 `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`

6.5 `_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

6.5.1 Detailed Description

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

6.5.2 Field Documentation

6.5.2.1 `int _x509_cert::ca_istrue`

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

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

6.5.2.2 `x509_name _x509_cert::issuer`

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

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

6.5.2.3 `x509_buf _x509_cert::issuer_id`

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

Referenced by `x509parse_cert()`.

6.5.2.4 x509_buf_x509_cert::issuer_raw

Definition at line 128 of file x509.h.

Referenced by x509parse_cert(), and x509parse_verify().

6.5.2.5 int_x509_cert::max_pathlen

Definition at line 145 of file x509.h.

Referenced by x509parse_cert(), and x509parse_verify().

6.5.2.6 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().

6.5.2.7 x509_buf_x509_cert::pk_oid

Definition at line 137 of file x509.h.

Referenced by x509parse_cert().

6.5.2.8 x509_buf_x509_cert::raw

Definition at line 121 of file x509.h.

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

6.5.2.9 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().

6.5.2.10 x509_buf_x509_cert::serial

Definition at line 125 of file x509.h.

Referenced by x509parse_cert_info(), and x509parse_cert().

6.5.2.11 x509_buf_x509_cert::sig

Definition at line 148 of file x509.h.

Referenced by x509parse_cert(), and x509parse_verify().

6.5.2.12 `x509_buf_x509_cert::sig_oid1`

Definition at line 126 of file `x509.h`.

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

6.5.2.13 `x509_buf_x509_cert::sig_oid2`

Definition at line 147 of file `x509.h`.

Referenced by `x509parse_cert()`.

6.5.2.14 `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()`.

6.5.2.15 `x509_buf_x509_cert::subject_id`

Definition at line 141 of file `x509.h`.

Referenced by `x509parse_cert()`.

6.5.2.16 `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()`.

6.5.2.17 `x509_buf_x509_cert::tbs`

Definition at line 122 of file `x509.h`.

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

6.5.2.18 `x509_buf_x509_cert::v3_ext`

Definition at line 142 of file `x509.h`.

Referenced by `x509parse_cert()`.

6.5.2.19 `x509_time_x509_cert::valid_from`

Definition at line 134 of file `x509.h`.

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

6.5.2.20 `x509_time_x509_cert::valid_to`

Definition at line 135 of file `x509.h`.

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

6.5.2.21 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](#)

6.6 `_x509_name` Struct Reference

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

Data Fields

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

6.6.1 Detailed Description

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

6.6.2 Field Documentation

6.6.2.1 `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()`.

6.6.2.2 `x509_buf _x509_name::oid`

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

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

6.6.2.3 `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](#)

6.7 `_x509_node` Struct Reference

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

Data Fields

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

6.7.1 Detailed Description

Definition at line 157 of file x509.h.

6.7.2 Field Documentation

6.7.2.1 unsigned char* `_x509_node::data`

Definition at line 159 of file x509.h.

6.7.2.2 unsigned char* `_x509_node::end`

Definition at line 161 of file x509.h.

6.7.2.3 size_t `_x509_node::len`

Definition at line 163 of file x509.h.

6.7.2.4 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`

6.8 `_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](#)

6.8.1 Detailed Description

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

6.8.2 Field Documentation

6.8.2.1 `x509_node _x509_raw::issuer`

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

6.8.2.2 `x509_node _x509_raw::raw`

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

6.8.2.3 `x509_node _x509_raw::serial`

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

6.8.2.4 `x509_node _x509_raw::sign`

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

6.8.2.5 `x509_node _x509_raw::signalg`

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

6.8.2.6 `x509_node _x509_raw::subject`

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

6.8.2.7 x509_node_x509_raw::subpubkey

Definition at line 178 of file x509.h.

6.8.2.8 x509_node_x509_raw::tbs

Definition at line 170 of file x509.h.

6.8.2.9 x509_node_x509_raw::tbs_signalg

Definition at line 174 of file x509.h.

6.8.2.10 x509_node_x509_raw::validity

Definition at line 176 of file x509.h.

6.8.2.11 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](#)

6.9 _x509_time Struct Reference

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

Data Fields

- int [year](#)
- int [mon](#)
- int [day](#)
- int [hour](#)
- int [min](#)
- int [sec](#)

6.9.1 Detailed Description

Definition at line 112 of file x509.h.

6.9.2 Field Documentation

6.9.2.1 int _x509_time::day

Definition at line 114 of file x509.h.

Referenced by [x509_get_dates\(\)](#), [x509parse_cert_info\(\)](#), and [x509parse_expired\(\)](#).

6.9.2.2 int _x509_time::hour

Definition at line 115 of file x509.h.

Referenced by [x509_get_dates\(\)](#), and [x509parse_cert_info\(\)](#).

6.9.2.3 int _x509_time::min

Definition at line 115 of file x509.h.

Referenced by [x509_get_dates\(\)](#), and [x509parse_cert_info\(\)](#).

6.9.2.4 int _x509_time::mon

Definition at line 114 of file x509.h.

Referenced by [x509_get_dates\(\)](#), [x509parse_cert_info\(\)](#), and [x509parse_expired\(\)](#).

6.9.2.5 int _x509_time::sec

Definition at line 115 of file x509.h.

Referenced by [x509_get_dates\(\)](#), and [x509parse_cert_info\(\)](#).

6.9.2.6 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](#)

6.10 aes_context Struct Reference

AES context structure.

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

Data Fields

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

6.10.1 Detailed Description

AES context structure.

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

6.10.2 Field Documentation

6.10.2.1 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()`.

6.10.2.2 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()`.

6.10.2.3 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`

6.11 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](#)
- [MC_AgentInitCallbackFunc_t](#) [agentInitCallback](#)
- void * [agentInitUserData](#)

6.11.1 Detailed Description

The agency handle.

Definition at line 235 of file libmc.h.

6.11.2 Field Documentation

6.11.2.1 MC_AgentInitCallbackFunc_t agency_s::agentInitCallback

Definition at line 255 of file libmc.h.

Referenced by [agent_RunChScriptThread\(\)](#), [MC_AddAgentInitCallback\(\)](#), and [MC_Initialize\(\)](#).

6.11.2.2 void* agency_s::agentInitUserData

Definition at line 256 of file libmc.h.

Referenced by [agent_RunChScriptThread\(\)](#), [MC_AddAgentInitCallback\(\)](#), and [MC_Initialize\(\)](#).

6.11.2.3 int agency_s::bluetooth

Definition at line 248 of file libmc.h.

Referenced by [MC_Initialize\(\)](#), and [mc_platform_Initialize\(\)](#).

6.11.2.4 int agency_s::client

Definition at line 236 of file libmc.h.

Referenced by MC_Initialize().

6.11.2.5 int agency_s::default_agentstatus

Agency default agent status

Definition at line 244 of file libmc.h.

Referenced by MC_Initialize(), and mc_platform_Initialize().

6.11.2.6 int agency_s::enable_security

Security flag

Definition at line 246 of file libmc.h.

6.11.2.7 char* agency_s::filename

Definition at line 239 of file libmc.h.

6.11.2.8 char* agency_s::hostName

Local Hostname

Definition at line 238 of file libmc.h.

Referenced by MC_End(), and MC_Initialize().

6.11.2.9 int agency_s::initInterps

Definition at line 242 of file libmc.h.

Referenced by MC_Initialize(), and mc_platform_Initialize().

6.11.2.10 char* agency_s::known_host_filename

Definition at line 251 of file libmc.h.

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

6.11.2.11 error_code_t agency_s::last_error

Definition at line 252 of file libmc.h.

Referenced by mc_platform_Initialize().

6.11.2.12 struct mc_platform_s* agency_s::mc_platform

Local MobileC Platform

Definition at line 243 of file libmc.h.

Referenced by MC_AclSend(), MC_AclSend_chdl(), MC_AddAgent(), MC_AddAgent_chdl(), MC_AddStationaryAgent(), MC_AgentProcessingBegin(), MC_AgentProcessingEnd(), 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_GetAgents(), MC_GetAllAgents(), MC_GetNumAgents(), MC_HaltAgency(), MC_HaltAgency_chdl(), MC_Initialize(), MC_LoadAgentFromFile(), MC_MainLoop(), MC_MutexLock(), MC_MutexLock_chdl(), MC_MutexUnlock(), MC_MutexUnlock_chdl(), MC_QueueRDLock(), MC_QueueRDUnlock(), MC_QueueWRLock(), MC_QueueWRUnlock(), 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().

6.11.2.13 int agency_s::portno

Local port number

Definition at line 240 of file libmc.h.

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

6.11.2.14 int agency_s::portnoc

Definition at line 241 of file libmc.h.

6.11.2.15 char* agency_s::priv_key_filename

Definition at line 250 of file libmc.h.

Referenced by MC_Initialize().

6.11.2.16 int agency_s::server

Definition at line 237 of file libmc.h.

Referenced by MC_Initialize().

6.11.2.17 int agency_s::stack_size[MC_THREAD_ALL]

Definition at line 247 of file libmc.h.

Referenced by MC_Initialize(), and mc_platform_Initialize().

6.11.2.18 int agency_s::threads

flag which determines which threads to start

Definition at line 245 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](#)

6.12 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

6.12.1 Detailed Description

Definition at line 41 of file agent_datastate.h.

6.12.2 Field Documentation

6.12.2.1 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().

6.12.2.2 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().

6.12.2.3 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().

6.12.2.4 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().

6.12.2.5 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_AgentListFiles(), MC_AgentRetrieveFile(), 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().

6.12.2.6 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().

6.12.2.7 int agent_datastate_s::progress_modifier

Definition at line 71 of file agent_datastate.h.

Referenced by agent_datastate_New(), and MC_MigrateAgent().

6.12.2.8 int agent_datastate_s::return_data

Definition at line 56 of file agent_datastate.h.

Referenced by agent_datastate_Copy(), and agent_datastate_New().

6.12.2.9 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_AgentAttachFile(), MC_AgentVariableRetrieve(), MC_AgentVariableRetrieveInfo(), MC_AgentVariableSave(), MC_MigrateAgent(), MC_PrintAgentCode(), MC_RetrieveAgentCode(), MC_SaveData_chdl(), and message_InitializeFromAgent().

6.12.2.10 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__file()`, `agent_xml_parse__task()`, `agent_xml_parse__tasks()`, `interpreter_variable_data_InitializeFromAgent()`, `MC_AgentAddTask()`, `MC_AgentAttachFile()`, `MC_AgentListFiles()`, `MC_AgentRetrieveFile()`, `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()`.

6.12.2.11 `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()`.

6.12.2.12 `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`

6.13 agent_file_data_s Struct Reference

```
#include <agent_file_data.h>
```

Data Fields

- char * [name](#)
- char * [data](#)

6.13.1 Detailed Description

Definition at line 35 of file agent_file_data.h.

6.13.2 Field Documentation

6.13.2.1 char* agent_file_data_s::data

Definition at line 38 of file agent_file_data.h.

Referenced by agent_file_data_Copy(), agent_file_data_Destroy(), agent_file_data_InitializeFromFilename(), agent_file_data_New(), agent_file_data_NewWithData(), agent_xml_compose__file(), and MC_AgentRetrieveFile().

6.13.2.2 char* agent_file_data_s::name

Definition at line 37 of file agent_file_data.h.

Referenced by agent_file_data_CmpName(), agent_file_data_Copy(), agent_file_data_Destroy(), agent_file_data_InitializeFromFilename(), agent_file_data_New(), agent_file_data_NewWithData(), agent_xml_compose__file(), MC_AgentAttachFile(), and MC_AgentListFiles().

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

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

6.14 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](#)
- [list_t](#) * [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](#)
- MUTEX_T * [agent_status_lock](#)
- COND_T * [agent_status_cond](#)
- int [binary](#)

6.14.1 Detailed Description

Definition at line 46 of file [agent.h](#).

6.14.2 Field Documentation

6.14.2.1 char* agent_s::agent_address

Definition at line 64 of file [agent.h](#).

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

6.14.2.2 ChInterp_t* agent_s::agent_interp

Definition at line 77 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().

6.14.2.3 int agent_s::agent_persistent

Definition at line 97 of file agent.h.

Referenced by agent_Copy().

6.14.2.4 int agent_s::agent_pipe_active

Definition at line 93 of file agent.h.

Referenced by agent_Initialize(), and agent_NewBinary().

6.14.2.5 int agent_s::agent_pipe_ready_to_read

Definition at line 95 of file agent.h.

Referenced by agent_Initialize(), and agent_NewBinary().

6.14.2.6 int agent_s::agent_ready_to_send

Definition at line 94 of file agent.h.

Referenced by agent_Initialize(), and agent_NewBinary().

6.14.2.7 int agent_s::agent_script_ready

Definition at line 96 of file agent.h.

Referenced by agent_Initialize(), and agent_NewBinary().

6.14.2.8 enum MC_AgentStatus_e agent_s::agent_status

Definition at line 72 of file agent.h.

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

6.14.2.9 COND_T* agent_s::agent_status_cond

Definition at line 103 of file agent.h.

Referenced by `acc_MessageHandlerThread()`, `agent_Copy()`, `agent_Destroy()`, `agent_Initialize()`, `agent_New()`, `agent_NewBinary()`, `agent_RunChScript()`, `ams_ManageAgentList()`, `MC_SendAgent()`, `MC_SendAgentFile()`, `MC_SendAgentMigrationMessageFile()`, and `MC_SetAgentStatus()`.

6.14.2.10 MUTEX_T* agent_s::agent_status_lock

Definition at line 102 of file `agent.h`.

Referenced by `acc_MessageHandlerThread()`, `agent_Copy()`, `agent_Destroy()`, `agent_Initialize()`, `agent_New()`, `agent_NewBinary()`, `agent_Print()`, `agent_RunChScript()`, `ams_ManageAgentList()`, `MC_GetAgentStatus()`, `MC_RetrieveAgent()`, `MC_SendAgent()`, `MC_SendAgentFile()`, `MC_SendAgentMigrationMessageFile()`, and `MC_SetAgentStatus()`.

6.14.2.11 THREAD_T agent_s::agent_thread

Definition at line 87 of file `agent.h`.

Referenced by `agent_RunChScript()`.

6.14.2.12 int agent_s::agent_thread_id

Definition at line 83 of file `agent.h`.

Referenced by `agent_Initialize()`, and `agent_NewBinary()`.

6.14.2.13 enum MC_AgentType_e agent_s::agent_type

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

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

6.14.2.14 time_t agent_s::arrival_time

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

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

6.14.2.15 int agent_s::binary

Definition at line 105 of file `agent.h`.

Referenced by `agent_NewBinary()`, and `ams_ManageAgentList()`.

6.14.2.16 u_long agent_s::connect_id

Definition at line 51 of file `agent.h`.

Referenced by `agent_Print()`.

6.14.2.17 agent_datastate_p agent_s::datastate

Definition at line 70 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__file(), agent_xml_parse__task(), agent_xml_parse__tasks(), interpreter_variable_data_InitializeFromAgent(), MC_AgentAddTask(), MC_AgentAttachFile(), MC_AgentListFiles(), MC_AgentRetrieveFile(), 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().

6.14.2.18 char* agent_s::home

Definition at line 59 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().

6.14.2.19 int agent_s::home_port

Definition at line 61 of file agent.h.

Referenced by agent_Copy().

6.14.2.20 u_long agent_s::id

Definition at line 49 of file agent.h.

Referenced by agent_CmpID(), agent_Copy(), agent_Initialize(), agent_NewBinary(), agent_Print(), agent_RunChScriptThread(), MC_GetAgentID(), and MC_RegisterService().

6.14.2.21 MUTEX_T* agent_s::lock

Definition at line 101 of file agent.h.

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

6.14.2.22 list_t* agent_s::mailbox

Definition at line 90 of file agent.h.

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

6.14.2.23 struct mc_platform_s* agent_s::mc_platform

Definition at line 99 of file agent.h.

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

6.14.2.24 char* agent_s::name

Definition at line 50 of file agent.h.

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

6.14.2.25 int agent_s::orphan

Definition at line 66 of file agent.h.

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

6.14.2.26 char* agent_s::owner

Definition at line 58 of file agent.h.

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

6.14.2.27 int agent_s::return_data

Definition at line 74 of file agent.h.

Referenced by agent_Copy().

6.14.2.28 MUTEX_T* agent_s::run_lock

Definition at line 80 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().

6.14.2.29 char* agent_s::sender

Definition at line 60 of file agent.h.

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

6.14.2.30 char* agent_s::wg_code

Definition at line 62 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](#)

6.15 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](#)
- [list_t](#) * [agent_variable_list](#)
- char ** [saved_variables](#)
- int [num_saved_variables](#)
- [list_t](#) * [agent_file_list](#)

6.15.1 Detailed Description

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

6.15.2 Field Documentation

6.15.2.1 `list_t* agent_task_s::agent_file_list`

Definition at line 57 of file `agent_task.h`.

Referenced by `agent_task_Copy()`, `agent_task_Destroy()`, `agent_task_New()`, `agent_xml_compose__task()`, `agent_xml_parse__file()`, `MC_AgentAttachFile()`, `MC_AgentListFiles()`, and `MC_AgentRetrieveFile()`.

6.15.2.2 `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()`.

6.15.2.3 `list_t* 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()`.

6.15.2.4 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().

6.15.2.5 int agent_task_s::init_agent_status

Definition at line 45 of file agent_task.h.

Referenced by agent_task_Copy().

6.15.2.6 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().

6.15.2.7 int agent_task_s::number_of_elements

Definition at line 42 of file agent_task.h.

Referenced by agent_task_Copy().

6.15.2.8 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().

6.15.2.9 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().

6.15.2.10 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().

6.15.2.11 int agent_task_s::size_of_element_array

Definition at line 43 of file agent_task.h.

Referenced by agent_task_Copy().

6.15.2.12 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](#)

6.16 arc4_context Struct Reference

ARC4 context structure.

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

Data Fields

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

6.16.1 Detailed Description

ARC4 context structure.

Definition at line 10 of file arc4.h.

6.16.2 Field Documentation

6.16.2.1 unsigned char arc4_context::m[256]

permutation table

Definition at line 14 of file arc4.h.

Referenced by arc4_crypt(), and arc4_setup().

6.16.2.2 int arc4_context::x

permutation index

Definition at line 12 of file arc4.h.

Referenced by arc4_crypt(), and arc4_setup().

6.16.2.3 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](#)

6.17 barrier_node_s Struct Reference

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

Data Fields

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

6.17.1 Detailed Description

Definition at line 42 of file barrier.h.

6.17.2 Field Documentation

6.17.2.1 `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()`.

6.17.2.2 `int barrier_node_s::id`

Definition at line 44 of file barrier.h.

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

6.17.2.3 `MUTEX_T* barrier_node_s::lock`

Definition at line 42 of file barrier.h.

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

6.17.2.4 `int barrier_node_s::num_registered`

Definition at line 45 of file barrier.h.

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

6.17.2.5 `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](#)

6.18 barrier_queue_s Struct Reference

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

Data Fields

- RWLOCK_T * [lock](#)
- [list_p](#) list
- int [size](#)

6.18.1 Detailed Description

Definition at line 51 of file barrier.h.

6.18.2 Field Documentation

6.18.2.1 list_p barrier_queue_s::list

Definition at line 54 of file barrier.h.

6.18.2.2 RWLOCK_T* barrier_queue_s::lock

Definition at line 52 of file barrier.h.

6.18.2.3 int barrier_queue_s::size

Definition at line 55 of file barrier.h.

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

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

6.19 base64_decodestate Struct Reference

```
#include <cdecode.h>
```

Data Fields

- [base64_decodestep](#) `step`
- `char` [plainchar](#)

6.19.1 Detailed Description

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

6.19.2 Field Documentation

6.19.2.1 `char base64_decodestate::plainchar`

Definition at line 19 of file `cdecode.h`.

Referenced by `base64_decode_block()`, and `base64_init_decodestate()`.

6.19.2.2 `base64_decodestep base64_decodestate::step`

Definition at line 18 of file `cdecode.h`.

Referenced by `base64_decode_block()`, and `base64_init_decodestate()`.

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

- [/home/dko/Projects/mobilec/src/libb64-1.2/include/b64/cdecode.h](#)

6.20 base64::base64_decodestate Struct Reference

```
#include <decode.h>
```

Data Fields

- [base64_decodestep](#) `step`
- `char` [plainchar](#)

6.20.1 Detailed Description

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

6.20.2 Field Documentation

6.20.2.1 `char base64::base64_decodestate::plainchar`

Definition at line 20 of file `decode.h`.

6.20.2.2 `base64_decodestep base64::base64_decodestate::step`

Definition at line 19 of file `decode.h`.

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

- `/home/dko/Projects/mobilec/src/libb64-1.2/include/b64/decode.h`

6.21 base64_encodestate Struct Reference

```
#include <encode.h>
```

Data Fields

- [base64_encodestep](#) [step](#)
- [char](#) [result](#)
- [int](#) [stepcount](#)

6.21.1 Detailed Description

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

6.21.2 Field Documentation

6.21.2.1 `char base64_encodestate::result`

Definition at line 19 of file `encode.h`.

Referenced by `base64_encode_block()`, `base64_encode_blockend()`, and `base64_init_encodestate()`.

6.21.2.2 `base64_encodestep base64_encodestate::step`

Definition at line 18 of file `encode.h`.

Referenced by `base64_encode_block()`, `base64_encode_blockend()`, and `base64_init_encodestate()`.

6.21.2.3 `int base64_encodestate::stepcount`

Definition at line 20 of file `encode.h`.

Referenced by `base64_encode_block()`, and `base64_init_encodestate()`.

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

- `/home/dko/Projects/mobilec/src/libb64-1.2/include/b64/encode.h`

6.22 base64::base64_encodestate Struct Reference

```
#include <encode.h>
```

Data Fields

- [base64_encodestep](#) [step](#)
- [char](#) [result](#)
- [int](#) [stepcount](#)

6.22.1 Detailed Description

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

6.22.2 Field Documentation

6.22.2.1 `char base64::base64_encodestate::result`

Definition at line 20 of file `encode.h`.

6.22.2.2 `base64_encodestep base64::base64_encodestate::step`

Definition at line 19 of file `encode.h`.

6.22.2.3 `int base64::base64_encodestate::stepcount`

Definition at line 21 of file `encode.h`.

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

- `/home/dko/Projects/mobilec/src/libb64-1.2/include/b64/encode.h`

6.23 cmd_prompt_s Struct Reference

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

Data Fields

- `THREAD_T` [thread](#)

6.23.1 Detailed Description

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

6.23.2 Field Documentation

6.23.2.1 `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`

6.24 `command_s` Struct Reference

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

Data Fields

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

6.24.1 Detailed Description

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

6.24.2 Field Documentation

6.24.2.1 `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()`.

6.24.2.2 `int command_s::index`

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

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

6.24.2.3 `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`

6.25 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](#)

6.25.1 Detailed Description

Definition at line 46 of file connection.h.

6.25.2 Field Documentation

6.25.2.1 struct sockaddr_in connection_s::addr

Definition at line 56 of file connection.h.

Referenced by [connection_Copy\(\)](#), [listen_Thread\(\)](#), and [message_InitializeFromConnection\(\)](#).

6.25.2.2 unsigned char* connection_s::AES_key

Definition at line 63 of file connection.h.

Referenced by [listen_Thread\(\)](#), and [rece_de_msg\(\)](#).

6.25.2.3 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\(\)](#).

6.25.2.4 int connection_s::connect_id

Definition at line 49 of file connection.h.

Referenced by [connection_Copy\(\)](#), [connection_Print\(\)](#), [listen_Thread\(\)](#), and [message_InitializeFromConnection\(\)](#).

6.25.2.5 int connection_s::nonce

Definition at line 51 of file connection.h.

Referenced by [listen_Thread\(\)](#), and [rece_de_msg\(\)](#).

6.25.2.6 char* connection_s::remote_hostname

Definition at line 54 of file connection.h.

Referenced by connection_Copy(), connection_Destroy(), connection_Print(), and listen_Thread().

6.25.2.7 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](#)

6.26 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

6.26.1 Detailed Description

Definition at line 196 of file [fipa_acl.h](#).

6.26.2 Field Documentation

6.26.2.1 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\(\)](#).

6.26.2.2 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\(\)](#).

6.26.2.3 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\(\)](#).

6.26.2.4 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\(\)](#).

6.26.2.5 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](#)

6.27 base64::decoder Struct Reference

```
#include <decode.h>
```

Public Member Functions

- [decoder](#) (int buffersize_in=BUFFERSIZE)
- int [decode](#) (char value_in)
- int [decode](#) (const char *code_in, const int length_in, char *plaintext_out)
- void [decode](#) (std::istream &istream_in, std::ostream &ostream_in)

Data Fields

- [base64_decodestate _state](#)
- int [_buffersize](#)

6.27.1 Detailed Description

Definition at line 20 of file decode.h.

6.27.2 Constructor & Destructor Documentation

6.27.2.1 `base64::decoder::decoder (int buffersize_in = BUFFERSIZE) [inline]`

Definition at line 22 of file decode.h.

6.27.3 Member Function Documentation

6.27.3.1 `void base64::decoder::decode (std::istream & istream_in, std::ostream & ostream_in) [inline]`

Definition at line 36 of file decode.h.

6.27.3.2 `int base64::decoder::decode (const char * code_in, const int length_in, char * plaintext_out) [inline]`

Definition at line 31 of file decode.h.

6.27.3.3 `int base64::decoder::decode (char value_in) [inline]`

Definition at line 26 of file decode.h.

Referenced by main().

6.27.4 Field Documentation

6.27.4.1 `int base64::decoder::_buffersize`

Definition at line 20 of file `decode.h`.

6.27.4.2 `base64_decodestate base64::decoder::_state`

Definition at line 19 of file `decode.h`.

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

- `/home/dko/Projects/mobilec/src/libb64-1.2/include/b64/decode.h`

6.28 des3_context Struct Reference

Triple-DES context structure.

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

Data Fields

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

6.28.1 Detailed Description

Triple-DES context structure.

Definition at line 23 of file des.h.

6.28.2 Field Documentation

6.28.2.1 int des3_context::mode

encrypt/decrypt

Definition at line 25 of file des.h.

6.28.2.2 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`

6.29 des_context Struct Reference

DES context structure.

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

Data Fields

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

6.29.1 Detailed Description

DES context structure.

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

6.29.2 Field Documentation

6.29.2.1 int des_context::mode

encrypt/decrypt

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

6.29.2.2 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`

6.30 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](#)

6.30.1 Detailed Description

Definition at line 16 of file dhm.h.

6.30.2 Field Documentation

6.30.2.1 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().

6.30.2.2 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().

6.30.2.3 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().

6.30.2.4 `mpi dhm_context::K`

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

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()`.

6.30.2.5 `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()`.

6.30.2.6 `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()`.

6.30.2.7 `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()`.

6.30.2.8 `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`

6.31 dynstring_s Struct Reference

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

Data Fields

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

6.31.1 Detailed Description

Definition at line 9 of file dynstring.h.

6.31.2 Field Documentation

6.31.2.1 int dynstring_s::len

Definition at line 10 of file dynstring.h.

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

6.31.2.2 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\(\)](#).

6.31.2.3 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](#)

6.32 base64::encoder Struct Reference

```
#include <encode.h>
```

Public Member Functions

- [encoder](#) (int buffersize_in=BUFFERSIZE)
- int [encode](#) (char value_in)
- int [encode](#) (const char *code_in, const int length_in, char *plaintext_out)
- int [encode_end](#) (char *plaintext_out)
- void [encode](#) (std::istream &istream_in, std::ostream &ostream_in)

Data Fields

- [base64_encodestate _state](#)
- int [_buffersize](#)

6.32.1 Detailed Description

Definition at line 20 of file encode.h.

6.32.2 Constructor & Destructor Documentation

6.32.2.1 `base64::encoder::encoder (int buffersize_in = BUFFERSIZE) [inline]`

Definition at line 22 of file encode.h.

6.32.3 Member Function Documentation

6.32.3.1 `void base64::encoder::encode (std::istream & istream_in, std::ostream & ostream_in) [inline]`

Definition at line 41 of file encode.h.

6.32.3.2 `int base64::encoder::encode (const char * code_in, const int length_in, char * plaintext_out) [inline]`

Definition at line 31 of file encode.h.

6.32.3.3 `int base64::encoder::encode (char value_in) [inline]`

Definition at line 26 of file encode.h.

Referenced by main().

6.32.3.4 `int base64::encoder::encode_end (char * plaintext_out) [inline]`

Definition at line 36 of file encode.h.

6.32.4 Field Documentation

6.32.4.1 int base64::encoder::_buffersize

Definition at line 20 of file encode.h.

6.32.4.2 base64_encodestate base64::encoder::_state

Definition at line 19 of file encode.h.

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

- /home/dko/Projects/mobilec/src/libb64-1.2/include/b64/[encode.h](#)

6.33 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](#)

6.33.1 Detailed Description

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

6.33.2 Field Documentation

6.33.2.1 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()`.

6.33.2.2 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()`.

6.33.2.3 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()`.

6.33.2.4 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()`.

6.33.2.5 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](#)

6.34 fipa_acl_envelope_s Struct Reference

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

Data Fields

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

6.34.1 Detailed Description

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

6.34.2 Field Documentation

6.34.2.1 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\(\)](#).

6.34.2.2 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](#)

6.35 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

6.35.1 Detailed Description

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

6.35.2 Field Documentation

6.35.2.1 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\(\)](#).

6.35.2.2 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\(\)](#).

6.35.2.3 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\(\)](#).

6.35.2.4 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().

6.35.2.5 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().

6.35.2.6 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().

6.35.2.7 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().

6.35.2.8 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().

6.35.2.9 struct fipa_agent_identifier_set_s* fipa_acl_message_s::receiver

Definition at line 111 of file fipa_acl.h.

Referenced by 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().

6.35.2.10 int fipa_acl_message_s::receiver_num

Definition at line 112 of file fipa_acl.h.

Referenced by MC_AclAddReceiver().

6.35.2.11 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().

6.35.2.12 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().

6.35.2.13 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().

6.35.2.14 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](#)

6.36 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

6.36.1 Detailed Description

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

6.36.2 Field Documentation

6.36.2.1 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\(\)](#).

6.36.2.2 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\(\)](#).

6.36.2.3 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\(\)](#).

6.36.2.4 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\(\)](#).

6.36.2.5 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().

6.36.2.6 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().

6.36.2.7 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().

6.36.2.8 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().

6.36.2.9 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](#)

6.37 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](#)

6.37.1 Detailed Description

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

6.37.2 Field Documentation

6.37.2.1 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\(\)](#).

6.37.2.2 char* fipa_agent_identifier_s::name

Definition at line 182 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\(\)](#), [MC_AclAddReceiver\(\)](#), [MC_AclAddReplyTo\(\)](#), [MC_AclGetSender\(\)](#), [MC_AclSend\(\)](#), and [MC_AclSetSender\(\)](#).

6.37.2.3 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](#)

6.38 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](#)

6.38.1 Detailed Description

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

6.38.2 Field Documentation

6.38.2.1 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\(\)](#), [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\(\)](#).

6.38.2.2 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\(\)](#).

6.38.2.3 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](#)

6.39 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

6.39.1 Detailed Description

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

6.39.2 Field Documentation

6.39.2.1 fipa_comm_callback fipa_comm_action_t::callback

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

6.39.2.2 fipa_comm_message_check_p fipa_comm_action_t::check_list

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

6.39.2.3 struct fipa_comm_action_t* fipa_comm_action_t::next

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

6.39.2.4 fipa_comm_reply_p fipa_comm_action_t::reply

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

6.39.2.5 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](#)

6.40 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

6.40.1 Detailed Description

Definition at line 72 of file fipa_comm.h.

6.40.2 Field Documentation

6.40.2.1 char* fipa_comm_message_check_t::macro

Definition at line 74 of file fipa_comm.h.

6.40.2.2 struct fipa_comm_message_check_t* fipa_comm_message_check_t::next

Definition at line 76 of file fipa_comm.h.

6.40.2.3 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](#)

6.41 fipa_comm_performative_t Struct Reference

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

Data Fields

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

6.41.1 Detailed Description

Definition at line 115 of file fipa_comm.h.

6.41.2 Field Documentation

6.41.2.1 fipa_comm_action_p fipa_comm_performative_t::action_list

Definition at line 117 of file fipa_comm.h.

6.41.2.2 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](#)

6.42 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

6.42.1 Detailed Description

Definition at line 143 of file fipa_comm.h.

6.42.2 Field Documentation

6.42.2.1 char* fipa_comm_protocol_cn_t::cfp_request

Definition at line 149 of file fipa_comm.h.

6.42.2.2 protocol_contract_net_callback fipa_comm_protocol_cn_t::contract_func

Definition at line 145 of file fipa_comm.h.

6.42.2.3 fipa_comm_callback fipa_comm_protocol_cn_t::proposal_func

Definition at line 146 of file fipa_comm.h.

6.42.2.4 fipa_list_p fipa_comm_protocol_cn_t::queue

Definition at line 153 of file fipa_comm.h.

6.42.2.5 fipa_list_p fipa_comm_protocol_cn_t::replies

Definition at line 152 of file fipa_comm.h.

6.42.2.6 char fipa_comm_protocol_cn_t::require_inform

Definition at line 147 of file fipa_comm.h.

6.42.2.7 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](#)

6.43 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](#)

6.43.1 Detailed Description

Definition at line 163 of file fipa_comm.h.

6.43.2 Field Documentation

6.43.2.1 char* fipa_comm_protocol_t::conversation_id

Definition at line 166 of file fipa_comm.h.

6.43.2.2 char fipa_comm_protocol_t::error

Definition at line 164 of file fipa_comm.h.

6.43.2.3 void* fipa_comm_protocol_t::info

Definition at line 169 of file fipa_comm.h.

6.43.2.4 char* fipa_comm_protocol_t::network

Definition at line 167 of file fipa_comm.h.

6.43.2.5 struct fipa_comm_protocol_t* fipa_comm_protocol_t::next

Definition at line 170 of file fipa_comm.h.

6.43.2.6 char fipa_comm_protocol_t::state

Definition at line 165 of file fipa_comm.h.

6.43.2.7 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](#)

6.44 fipa_comm_reply_t Struct Reference

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

Data Fields

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

6.44.1 Detailed Description

Definition at line 86 of file fipa_comm.h.

6.44.2 Field Documentation

6.44.2.1 char* fipa_comm_reply_t::content

Definition at line 89 of file fipa_comm.h.

6.44.2.2 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](#)

6.45 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]

6.45.1 Detailed Description

Definition at line 179 of file [fipa_comm.h](#).

6.45.2 Field Documentation

6.45.2.1 void* fipa_comm_t::agent

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

6.45.2.2 char* fipa_comm_t::agent_address

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

6.45.2.3 char* fipa_comm_t::agent_name

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

6.45.2.4 char fipa_comm_t::debug

Definition at line 185 of file [fipa_comm.h](#).

6.45.2.5 fipa_comm_reply_p fipa_comm_t::default_reply

Definition at line 187 of file [fipa_comm.h](#).

6.45.2.6 int fipa_comm_t::error

Definition at line 181 of file [fipa_comm.h](#).

6.45.2.7 fipa_comm_callback fipa_comm_t::pCallbacks[FIPA_PROTOCOL_END]

Definition at line 189 of file fipa_comm.h.

6.45.2.8 fipa_comm_performative_p fipa_comm_t::performative[MC_NUM_PERFORMATIVES]

Definition at line 186 of file fipa_comm.h.

6.45.2.9 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](#)

6.46 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](#)

6.46.1 Detailed Description

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

6.46.2 Field Documentation

6.46.2.1 int fipa_DateTime_s::day

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

Referenced by `fipa_DateTime_Compose()`.

6.46.2.2 int fipa_DateTime_s::hour

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

Referenced by `fipa_DateTime_Compose()`.

6.46.2.3 int fipa_DateTime_s::is_utc

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

6.46.2.4 int fipa_DateTime_s::millisecond

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

Referenced by `fipa_DateTime_Compose()`.

6.46.2.5 int fipa_DateTime_s::minute

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

Referenced by `fipa_DateTime_Compose()`.

6.46.2.6 int fipa_DateTime_s::month

Definition at line 237 of file fipa_acl.h.

Referenced by fipa_DateTime_Compose().

6.46.2.7 int fipa_DateTime_s::second

Definition at line 241 of file fipa_acl.h.

Referenced by fipa_DateTime_Compose().

6.46.2.8 char fipa_DateTime_s::sign

Definition at line 243 of file fipa_acl.h.

Referenced by fipa_DateTime_Compose(), and fipa_datetime_Parse().

6.46.2.9 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](#)

6.47 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

6.47.1 Detailed Description

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

6.47.2 Field Documentation

6.47.2.1 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\(\)](#).

6.47.2.2 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](#)

6.48 fipa_list_t Struct Reference

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

Data Fields

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

6.48.1 Detailed Description

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

6.48.2 Field Documentation

6.48.2.1 void* fipa_list_t::data

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

6.48.2.2 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](#)

6.49 fipa_message_string_s Struct Reference

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

Data Fields

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

6.49.1 Detailed Description

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

6.49.2 Field Documentation

6.49.2.1 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()`.

6.49.2.2 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`

6.50 fipa_number_s Struct Reference

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

Data Fields

- char * [str](#)

6.50.1 Detailed Description

Definition at line 264 of file fipa_acl.h.

6.50.2 Field Documentation

6.50.2.1 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](#)

6.51 fipa_string_s Struct Reference

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

Data Fields

- char * [content](#)

6.51.1 Detailed Description

Definition at line 223 of file fipa_acl.h.

6.51.2 Field Documentation

6.51.2.1 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](#)

6.52 fipa_url_s Struct Reference

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

Data Fields

- char * [str](#)

6.52.1 Detailed Description

Definition at line 253 of file fipa_acl.h.

6.52.2 Field Documentation

6.52.2.1 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](#)

6.53 fipa_url_sequence_s Struct Reference

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

Data Fields

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

6.53.1 Detailed Description

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

6.53.2 Field Documentation

6.53.2.1 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\(\)](#).

6.53.2.2 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](#)

6.54 fipa_word_s Struct Reference

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

Data Fields

- char * [content](#)

6.54.1 Detailed Description

Definition at line 212 of file fipa_acl.h.

6.54.2 Field Documentation

6.54.2.1 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](#)

6.55 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](#)

6.55.1 Detailed Description

Definition at line 1 of file class.cxx.

6.55.2 Constructor & Destructor Documentation

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

6.55.2.2 foo_c::~~foo_c ()

Definition at line 81 of file class.cxx.

6.55.3 Member Function Documentation

6.55.3.1 int foo_c::get_bar () [inline]

Definition at line 13 of file class.cxx.

References [bar](#).

6.55.3.2 int foo_c::get_barfoo () [inline]

Definition at line 67 of file class.cxx.

References barfoo.

6.55.3.3 float foo_c::get_foo () [inline]

Definition at line 20 of file class.cxx.

References foo.

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

Definition at line 54 of file class.cxx.

References global.

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

Definition at line 27 of file class.cxx.

References bar.

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

Definition at line 34 of file class.cxx.

References foo.

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

Definition at line 41 of file class.cxx.

References bar, and foo.

6.55.4 Field Documentation**6.55.4.1 int foo_c::bar [private]**

Definition at line 4 of file class.cxx.

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

6.55.4.2 int foo_c::barfoo [private]

Definition at line 61 of file class.cxx.

Referenced by get_barfoo().

6.55.4.3 float foo_c::foo [private]

Definition at line 3 of file class.cxx.

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

6.55.4.4 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`

6.56 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](#)

6.56.1 Detailed Description

Definition at line 1 of file struct.cxx.

6.56.2 Constructor & Destructor Documentation

6.56.2.1 foo_s::foo_s (float *f*, int *b*)

Definition at line 39 of file struct.cxx.

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

6.56.2.2 foo_s::~~foo_s ()

Definition at line 46 of file struct.cxx.

6.56.3 Member Function Documentation

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

Definition at line 11 of file struct.cxx.

References [bar](#).

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

Definition at line 18 of file struct.cxx.

References [foo](#).

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

Definition at line 25 of file struct.cxx.

References bar.

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

Definition at line 32 of file struct.cxx.

References foo.

6.56.4 Field Documentation**6.56.4.1 int foo_s::bar**

Definition at line 4 of file struct.cxx.

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

6.56.4.2 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](#)

6.57 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]

6.57.1 Detailed Description

HAVEGE state structure.

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

6.57.2 Field Documentation

6.57.2.1 int havege_state::offset[2]

Definition at line 14 of file `havege.h`.

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

6.57.2.2 int havege_state::pool[COLLECT_SIZE]

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

Referenced by `havege_rand()`.

6.57.2.3 int havege_state::PT1

Definition at line 14 of file `havege.h`.

Referenced by `havege_fill()`.

6.57.2.4 int havege_state::PT2

Definition at line 14 of file `havege.h`.

Referenced by `havege_fill()`.

6.57.2.5 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](#)

6.58 host_id_s Struct Reference

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

Data Fields

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

6.58.1 Detailed Description

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

6.58.2 Field Documentation

6.58.2.1 char* host_id_s::hostname

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

6.58.2.2 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`

6.59 hr_time Struct Reference

timer structure

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

Data Fields

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

6.59.1 Detailed Description

timer structure

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

6.59.2 Field Documentation

6.59.2.1 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`

6.60 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](#)

6.60.1 Detailed Description

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

6.60.2 Field Documentation

6.60.2.1 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()`.

6.60.2.2 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()`.

6.60.2.3 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()`.

6.60.2.4 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().

6.60.2.5 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_CmpName(), interpreter_variable_data_Copy(), interpreter_variable_data_Destroy(), interpreter_variable_data_Initialize(), interpreter_variable_data_InitializeFromAgent(), interpreter_variable_data_New(), and MC_SaveData_chdl().

6.60.2.6 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](#)

6.61 list_s Struct Reference

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

Data Fields

- [listNode_p listhead](#)
- [int size](#)
- [rwlock_t * rwlock](#)

6.61.1 Detailed Description

Definition at line 49 of file list.h.

6.61.2 Field Documentation

6.61.2.1 listNode_p list_s::listhead

Definition at line 51 of file list.h.

Referenced by ListAdd(), ListAppend(), ListCopy(), ListDelete(), ListDeleteCB(), ListForEachCB(), ListGetHead(), ListInitialize(), ListPop(), ListSearch(), ListSearchCB(), and ListTerminate().

6.61.2.2 rwlock_t* list_s::rwlock

Definition at line 54 of file list.h.

Referenced by ListInitialize(), ListRDLock(), ListRDtoWR(), ListRDUnlock(), ListRDWait(), ListTerminate(), ListWait(), ListWRLock(), ListWRtoRD(), ListWRUnlock(), and ListWRWait().

6.61.2.3 int list_s::size

Definition at line 52 of file list.h.

Referenced by agent_task_Copy(), ams_ManageAgentList(), ams_Print(), ListAdd(), ListAppend(), ListDelete(), ListDeleteCB(), ListGetSize(), ListInitialize(), ListPop(), ListSearch(), ListSearchCB(), ListTerminate(), and MC_RetrieveAgent().

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

- [/home/dko/Projects/mobilec/src/mc_list/list.h](#)

6.62 listNode_s Struct Reference

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

Data Fields

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

6.62.1 Detailed Description

Definition at line 40 of file list.h.

6.62.2 Field Documentation

6.62.2.1 struct listNode_s* listNode_s::next

Definition at line 43 of file list.h.

Referenced by [df_SearchForService\(\)](#), [ListAdd\(\)](#), [ListAppend\(\)](#), [ListCopy\(\)](#), [ListDelete\(\)](#), [ListDeleteCB\(\)](#), [ListForEachCB\(\)](#), [ListPop\(\)](#), [ListSearch\(\)](#), [ListSearchCB\(\)](#), and [request_handler_DEREGISTER\(\)](#).

6.62.2.2 void* listNode_s::node_data

Definition at line 42 of file list.h.

Referenced by [df_SearchForService\(\)](#), [ListAdd\(\)](#), [ListAppend\(\)](#), [ListCopy\(\)](#), [ListDelete\(\)](#), [ListDeleteCB\(\)](#), [ListForEachCB\(\)](#), [ListGetHead\(\)](#), [ListPop\(\)](#), [ListSearch\(\)](#), [ListSearchCB\(\)](#), and [request_handler_DEREGISTER\(\)](#).

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

- [/home/dko/Projects/mobilec/src/mc_list/list.h](#)

6.63 mc_platform_s Struct Reference

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

Data Fields

- int [err](#)
- char * [hostname](#)
- unsigned short [port](#)
- int [initInterps](#)
- [list_t](#) * [asm_message_queue](#)
- [list_t](#) * [message_queue](#)
- [list_t](#) * [agent_queue](#)
- [list_t](#) * [connection_queue](#)
- int [agent_processing](#)
- [df_p](#) [df](#)
- [ams_p](#) [ams](#)
- [acc_p](#) [acc](#)
- [cmd_prompt_p](#) [cmd_prompt](#)
- [list_t](#) * [syncList](#)
- [list_t](#) * [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](#)
- [list_t](#) * [interpreter_queue](#)
- int [bluetooth](#)

6.63.1 Detailed Description

Definition at line 49 of file [mc_platform.h](#).

6.63.2 Field Documentation

6.63.2.1 `acc_p mc_platform_s::acc`

Definition at line 74 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()`.

6.63.2.2 `MCAgency_t mc_platform_s::agency`

Definition at line 116 of file `mc_platform.h`.

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

6.63.2.3 `int mc_platform_s::agent_processing`

Definition at line 69 of file `mc_platform.h`.

Referenced by `MC_AddAgent()`, `MC_AddStationaryAgent()`, `MC_AgentProcessingBegin()`, `MC_AgentProcessingEnd()`, `MC_DeleteAgent()`, `MC_DeleteAgentWG()`, `MC_FindAgentByID()`, `MC_FindAgentByName()`, `MC_GetAgents()`, `MC_GetAllAgents()`, `MC_GetNumAgents()`, `mc_platform_Initialize()`, `MC_RetrieveAgent()`, `MC_SendAgent()`, `MC_SendAgentFile()`, `MC_SendAgentMigrationMessageFile()`, `MC_WaitAgent()`, and `MC_WaitRetrieveAgent()`.

6.63.2.4 `list_t* 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_AgentProcessingBegin()`, `MC_AgentProcessingEnd()`, `MC_DeleteAgent()`, `MC_DeleteAgentWG()`, `MC_FindAgentByID()`, `MC_FindAgentByName()`, `MC_GetAgents()`, `MC_GetAllAgents()`, `MC_GetNumAgents()`, `mc_platform_Destroy()`, `mc_platform_GetQueue()`, `mc_platform_Initialize()`, `MC_RetrieveAgent()`, `MC_SendAgent()`, `MC_SendAgentFile()`, `MC_SendAgentMigrationMessageFile()`, `MC_WaitAgent()`, and `MC_WaitRetrieveAgent()`.

6.63.2.5 `ams_p mc_platform_s::ams`

Definition at line 73 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()`.

6.63.2.6 `list_t* mc_platform_s::asm_message_queue`

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

6.63.2.7 list_t* mc_platform_s::barrier_queue

Definition at line 81 of file mc_platform.h.

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

6.63.2.8 int mc_platform_s::bluetooth

Definition at line 122 of file mc_platform.h.

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

6.63.2.9 listen_thread_arg_p mc_platform_s::client_thread_arg

Definition at line 84 of file mc_platform.h.

6.63.2.10 cmd_prompt_p mc_platform_s::cmd_prompt

Definition at line 75 of file mc_platform.h.

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

6.63.2.11 list_t* 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(), mc_platform_GetQueue(), and mc_platform_Initialize().

6.63.2.12 int mc_platform_s::default_agentstatus

Definition at line 86 of file mc_platform.h.

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

6.63.2.13 df_p mc_platform_s::df

Definition at line 72 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().

6.63.2.14 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().

6.63.2.15 int mc_platform_s::giant

Definition at line 106 of file mc_platform.h.

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

6.63.2.16 COND_T* mc_platform_s::giant_cond

Definition at line 108 of file mc_platform.h.

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

6.63.2.17 MUTEX_T* mc_platform_s::giant_lock

Definition at line 107 of file mc_platform.h.

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

6.63.2.18 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_Destroy(), mc_platform_Initialize(), message_InitializeFromAgent(), message_InitializeFromString(), message_queue_SendOutgoing(), and udplisten_Thread().

6.63.2.19 int mc_platform_s::initInterps

Definition at line 59 of file mc_platform.h.

Referenced by mc_platform_Initialize().

6.63.2.20 ChOptions_t* mc_platform_s::interp_options

Definition at line 90 of file mc_platform.h.

Referenced by agent_RunChScriptThread(), mc_platform_Destroy(), and mc_platform_Initialize().

6.63.2.21 list_t* mc_platform_s::interpreter_queue

Definition at line 119 of file mc_platform.h.

Referenced by agent_Destroy(), agent_RunChScriptThread(), mc_platform_Destroy(), and mc_platform_Initialize().

6.63.2.22 listen_thread_arg_p mc_platform_s::listen_thread_arg

Definition at line 83 of file mc_platform.h.

6.63.2.23 enum MC_Signal_e mc_platform_s::MC_signal

Definition at line 97 of file mc_platform.h.

Referenced by acc_MessageHandlerThread(), acc_Thread(), agent_RunChScriptThread(), mc_platform_Initialize(), MC_ResetSignal(), and MC_WaitSignal().

6.63.2.24 COND_T* mc_platform_s::MC_signal_cond

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().

6.63.2.25 MUTEX_T* mc_platform_s::MC_signal_lock

Definition at line 95 of file mc_platform.h.

Referenced by acc_MessageHandlerThread(), acc_Thread(), agent_RunChScriptThread(), mc_platform_Destroy(), mc_platform_Initialize(), and MC_WaitSignal().

6.63.2.26 enum MC_SteerCommand_e mc_platform_s::MC_steer_command

Definition at line 100 of file mc_platform.h.

Referenced by MC_SendSteerCommand(), MC_Steer(), and MC_SteerControl().

6.63.2.27 COND_T* mc_platform_s::MC_steer_cond

Definition at line 102 of file mc_platform.h.

Referenced by mc_platform_Destroy(), mc_platform_Initialize(), MC_SendSteerCommand(), and MC_SteerControl().

6.63.2.28 MUTEX_T* mc_platform_s::MC_steer_lock

Definition at line 101 of file mc_platform.h.

Referenced by mc_platform_Destroy(), mc_platform_Initialize(), MC_SendSteerCommand(), MC_Steer(), and MC_SteerControl().

6.63.2.29 COND_T* mc_platform_s::MC_sync_cond

Definition at line 94 of file mc_platform.h.

Referenced by mc_platform_Destroy(), and mc_platform_Initialize().

6.63.2.30 MUTEX_T* mc_platform_s::MC_sync_lock

Definition at line 96 of file mc_platform.h.

Referenced by mc_platform_Destroy(), and mc_platform_Initialize().

6.63.2.31 list_t* 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_GetQueue(), mc_platform_Initialize(), and MC_SendAgentMigrationMessage().

6.63.2.32 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().

6.63.2.33 char mc_platform_s::private_key[1210]

Definition at line 114 of file mc_platform.h.

Referenced by acc_connection_Thread(), listen_Thread(), and MC_AclSend().

6.63.2.34 int mc_platform_s::quit

Definition at line 110 of file mc_platform.h.

Referenced by acc_MessageHandlerThread(), acc_Thread(), ams_ManageAgentList(), ams_Thread(), df_Thread(), handler_QUIT(), listen_Thread(), MC_End(), MC_MainLoop(), and mc_platform_Initialize().

6.63.2.35 COND_T* mc_platform_s::quit_cond

Definition at line 112 of file mc_platform.h.

Referenced by handler_QUIT(), MC_End(), MC_MainLoop(), mc_platform_Destroy(), and mc_platform_Initialize().

6.63.2.36 MUTEX_T* mc_platform_s::quit_lock

Definition at line 111 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().

6.63.2.37 int mc_platform_s::sockfd

Definition at line 113 of file mc_platform.h.

Referenced by listen_Thread(), and mc_platform_Destroy().

6.63.2.38 int mc_platform_s::stack_size[MC_THREAD_ALL]

Definition at line 88 of file mc_platform.h.

Referenced by acc_Start(), agent_RunChScript(), ams_Start(), cmd_prompt_Start(), df_Start(), and mc_platform_Initialize().

6.63.2.39 list_t* mc_platform_s::syncList

Definition at line 80 of file mc_platform.h.

Referenced by MC_CondBroadcast(), MC_CondReset(), MC_CondSignal(), MC_CondWait(), MC_MutexLock(), MC_MutexUnlock(), mc_platform_Destroy(), mc_platform_GetQueue(), 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](#)

6.64 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](#)

6.64.1 Detailed Description

Definition at line 39 of file `mc_rwlock.h`.

6.64.2 Field Documentation

6.64.2.1 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()`.

6.64.2.2 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()`.

6.64.2.3 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()`.

6.64.2.4 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()`.

6.64.2.5 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](#)

6.65 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](#)
- unsigned long long [initialized](#)

6.65.1 Detailed Description

User modifiable agency options.

Definition at line 264 of file libmc.h.

6.65.2 Field Documentation

6.65.2.1 int MCAgencyOptions_s::bluetooth

Definition at line 277 of file libmc.h.

Referenced by [MC_Initialize\(\)](#), and [MC_InitializeAgencyOptions\(\)](#).

6.65.2.2 ChOptions_t* MCAgencyOptions_s::ch_options

Definition at line 278 of file libmc.h.

Referenced by [MC_Initialize\(\)](#).

6.65.2.3 int MCAgencyOptions_s::default_agent_status

Default agent status

Definition at line 266 of file libmc.h.

Referenced by [MC_Initialize\(\)](#), and [MC_InitializeAgencyOptions\(\)](#).

6.65.2.4 int MCAgencyOptions_s::enable_security

security enable flag

Definition at line 268 of file libmc.h.

6.65.2.5 unsigned long long MCAgencyOptions_s::initialized

Definition at line 280 of file libmc.h.

Referenced by MC_Initialize(), and MC_InitializeAgencyOptions().

6.65.2.6 int MCAgencyOptions_s::initInterps

Definition at line 276 of file libmc.h.

Referenced by MC_Initialize(), and MC_InitializeAgencyOptions().

6.65.2.7 char* MCAgencyOptions_s::known_host_filename

Definition at line 274 of file libmc.h.

Referenced by MC_Initialize(), and MC_InitializeAgencyOptions().

6.65.2.8 int MCAgencyOptions_s::modified

unused

Definition at line 267 of file libmc.h.

Referenced by MC_InitializeAgencyOptions().

6.65.2.9 unsigned char MCAgencyOptions_s::passphrase[32]

security enable flag

Definition at line 269 of file libmc.h.

Referenced by MC_Initialize(), and MC_InitializeAgencyOptions().

6.65.2.10 char* MCAgencyOptions_s::priv_key_filename

Definition at line 275 of file libmc.h.

Referenced by MC_Initialize(), and MC_InitializeAgencyOptions().

6.65.2.11 int MCAgencyOptions_s::stack_size[MC_THREAD_ALL]

If the stack size is -1, use system def.

Definition at line 272 of file libmc.h.

Referenced by MC_Initialize(), and MC_InitializeAgencyOptions().

6.65.2.12 int MCAgencyOptions_s::threads

Threads to start

Definition at line 265 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>

6.66 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](#)

6.66.1 Detailed Description

MD2 context structure.

Definition at line 10 of file md2.h.

6.66.2 Field Documentation

6.66.2.1 unsigned char md2_context::buffer[16]

data block being processed

Definition at line 14 of file md2.h.

6.66.2.2 unsigned char md2_context::cksum[16]

checksum of the data block

Definition at line 12 of file md2.h.

6.66.2.3 unsigned char md2_context::ipad[64]

HMAC: inner padding

Definition at line 16 of file md2.h.

6.66.2.4 int md2_context::left

amount of data in buffer

Definition at line 18 of file md2.h.

6.66.2.5 unsigned char md2_context::opad[64]

HMAC: outer padding

Definition at line 17 of file md2.h.

6.66.2.6 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>

6.67 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]

6.67.1 Detailed Description

MD4 context structure.

Definition at line 10 of file md4.h.

6.67.2 Field Documentation

6.67.2.1 unsigned char md4_context::buffer[64]

data block being processed

Definition at line 14 of file md4.h.

6.67.2.2 unsigned char md4_context::ipad[64]

HMAC: inner padding

Definition at line 16 of file md4.h.

6.67.2.3 unsigned char md4_context::opad[64]

HMAC: outer padding

Definition at line 17 of file md4.h.

6.67.2.4 unsigned long md4_context::state[4]

intermediate digest state

Definition at line 13 of file md4.h.

6.67.2.5 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>

6.68 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]

6.68.1 Detailed Description

MD5 context structure.

Definition at line 10 of file md5.h.

6.68.2 Field Documentation

6.68.2.1 unsigned char md5_context::buffer[64]

data block being processed

Definition at line 14 of file md5.h.

Referenced by md5_update().

6.68.2.2 unsigned char md5_context::ipad[64]

HMAC: inner padding

Definition at line 16 of file md5.h.

Referenced by md5_hmac_starts().

6.68.2.3 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().

6.68.2.4 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().

6.68.2.5 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>

6.69 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](#)

6.69.1 Detailed Description

Definition at line 78 of file message.h.

6.69.2 Field Documentation

6.69.2.1 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\(\)](#).

6.69.2.2 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\(\)](#).

6.69.2.3 int message_s::connect_id

Definition at line 83 of file message.h.

Referenced by [message_InitializeFromConnection\(\)](#), [message_InitializeFromString\(\)](#), [message_New\(\)](#), and [message_Print\(\)](#).

6.69.2.4 char* message_s::from_address

Definition at line 102 of file message.h.

Referenced by message_Destroy(), message_InitializeFromAgent(), message_InitializeFromConnection(), message_InitializeFromString(), message_New(), and message_xml_parse__message().

6.69.2.5 enum http_performative_e message_s::http_type

Definition at line 91 of file message.h.

Referenced by message_New().

6.69.2.6 int message_s::isHTTP

Definition at line 87 of file message.h.

Referenced by message_New(), mtp_http_ComposeMessage(), and mtp_http_CreateMessage().

6.69.2.7 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().

6.69.2.8 int message_s::message_id

Definition at line 84 of file message.h.

Referenced by message_InitializeFromAgent(), message_InitializeFromConnection(), message_InitializeFromString(), message_New(), and message_Print().

6.69.2.9 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().

6.69.2.10 char* message_s::sending_agent_name

Definition at line 113 of file message.h.

Referenced by message_Destroy(), message_InitializeFromAgent(), and message_New().

6.69.2.11 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().

6.69.2.12 char* message_s::to_address

Definition at line 103 of file message.h.

Referenced by acc_MessageHandlerThread(), 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().

6.69.2.13 char* message_s::update_name

Definition at line 99 of file message.h.

Referenced by message_Destroy(), message_InitializeFromAgent(), message_InitializeFromString(), and message_New().

6.69.2.14 int message_s::update_num

Definition at line 100 of file message.h.

Referenced by message_New().

6.69.2.15 mxml_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().

6.69.2.16 mxml_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](#)

6.70 message_send_arg_s Struct Reference

```
#include <message.h>
```

Data Fields

- struct [mc_platform_s](#) * [mc_platform](#)
- [message_p](#) [message](#)
- char * [privatekey](#)

6.70.1 Detailed Description

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

6.70.2 Field Documentation

6.70.2.1 struct [mc_platform_s](#)* [message_send_arg_s::mc_platform](#)

Definition at line 119 of file [message.h](#).

Referenced by [message_Send\(\)](#).

6.70.2.2 [message_p](#) [message_send_arg_s::message](#)

Definition at line 120 of file [message.h](#).

Referenced by [message_Send\(\)](#).

6.70.2.3 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](#)

6.71 mpi Struct Reference

MPI structure.

```
#include <bignum.h>
```

Data Fields

- `int s`
- `int n`
- `t_int * p`

6.71.1 Detailed Description

MPI structure.

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

6.71.2 Field Documentation

6.71.2.1 `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()`.

6.71.2.2 `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()`.

6.71.2.3 `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>

6.72 mtp_http_content_s Struct Reference

```
#include <mtp_http.h>
```

Data Fields

- char * [content_type](#)
- void * [data](#)

6.72.1 Detailed Description

Definition at line 106 of file mtp_http.h.

6.72.2 Field Documentation

6.72.2.1 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().

6.72.2.2 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](#)

6.73 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](#)

6.73.1 Detailed Description

Definition at line 112 of file [mtp_http.h](#).

6.73.2 Field Documentation

6.73.2.1 char* mtp_http_s::accept_ranges

Definition at line 123 of file [mtp_http.h](#).

Referenced by [mtp_http_Destroy\(\)](#).

6.73.2.2 char* mtp_http_s::boundary

Definition at line 139 of file [mtp_http.h](#).

Referenced by [mtp_http_Destroy\(\)](#), and [mtp_http_Parse\(\)](#).

6.73.2.3 char* mtp_http_s::cache_control

Definition at line 129 of file [mtp_http.h](#).

Referenced by [mtp_http_Destroy\(\)](#).

6.73.2.4 char* mtp_http_s::connection

Definition at line 125 of file mtp_http.h.

Referenced by mtp_http_Destroy().

6.73.2.5 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().

6.73.2.6 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().

6.73.2.7 char* mtp_http_s::content_type

Definition at line 126 of file mtp_http.h.

Referenced by mtp_http_Destroy(), and mtp_http_Parse().

6.73.2.8 char* mtp_http_s::date

Definition at line 121 of file mtp_http.h.

Referenced by mtp_http_Destroy().

6.73.2.9 int mtp_http_s::header_length

Definition at line 143 of file mtp_http.h.

Referenced by mtp_http_InitializeFromConnection(), and mtp_http_ParseHeader().

6.73.2.10 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().

6.73.2.11 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().

6.73.2.12 enum http_status_code_e mtp_http_s::http_status_code

Definition at line 114 of file mtp_http.h.

6.73.2.13 char* mtp_http_s::http_version

Definition at line 116 of file mtp_http.h.

Referenced by mtp_http_Destroy().

6.73.2.14 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().

6.73.2.15 char* mtp_http_s::mime_version

Definition at line 130 of file mtp_http.h.

Referenced by mtp_http_Destroy().

6.73.2.16 int mtp_http_s::response_code

Definition at line 133 of file mtp_http.h.

Referenced by http_ParseRequest().

6.73.2.17 char* mtp_http_s::response_string

Definition at line 134 of file mtp_http.h.

Referenced by http_ParseRequest(), and mtp_http_Destroy().

6.73.2.18 char* mtp_http_s::return_code

Definition at line 118 of file mtp_http.h.

Referenced by mtp_http_Destroy().

6.73.2.19 char* mtp_http_s::server

Definition at line 122 of file mtp_http.h.

Referenced by mtp_http_Destroy().

6.73.2.20 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()`.

6.73.2.21 `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`

6.74 mxml_attr_s Struct Reference

```
#include <mxml.h>
```

Data Fields

- char * [name](#)
- char * [value](#)

6.74.1 Detailed Description

Definition at line 86 of file mxml.h.

6.74.2 Field Documentation

6.74.2.1 char* mxml_attr_s::name

Definition at line 88 of file mxml.h.

Referenced by `mxml_write_node()`, `mxmlDelete()`, `mxmlElementGetAttr()`, and `mxmlElementSetAttr()`.

6.74.2.2 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`

6.75 mxml_custom_s Struct Reference

```
#include <mxml.h>
```

Data Fields

- void * [data](#)
- void(* [destroy](#))(void *)

6.75.1 Detailed Description

Definition at line 105 of file mxml.h.

6.75.2 Field Documentation

6.75.2.1 void* mxml_custom_s::data

Definition at line 107 of file mxml.h.

Referenced by mxmlDelete(), mxmlNewCustom(), and mxmlSetCustom().

6.75.2.2 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](#)

6.76 mxml_fdbuf_s Struct Reference

Data Fields

- int [fd](#)
- unsigned char * [current](#)
- unsigned char * [end](#)
- unsigned char [buffer](#) [8192]

6.76.1 Detailed Description

Definition at line 84 of file mxml-file.c.

6.76.2 Field Documentation

6.76.2.1 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\(\)](#).

6.76.2.2 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\(\)](#).

6.76.2.3 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\(\)](#).

6.76.2.4 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](#)

6.77 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](#)

6.77.1 Detailed Description

Definition at line 133 of file mxml.h.

6.77.2 Field Documentation

6.77.2.1 int mxml_index_s::alloc_nodes

Definition at line 137 of file mxml.h.

Referenced by [mxmlIndexDelete\(\)](#), and [mxmlIndexNew\(\)](#).

6.77.2.2 char* mxml_index_s::attr

Definition at line 135 of file mxml.h.

Referenced by [index_compare\(\)](#), [index_find\(\)](#), [mxmlIndexDelete\(\)](#), [mxmlIndexFind\(\)](#), and [mxmlIndexNew\(\)](#).

6.77.2.3 int mxml_index_s::cur_node

Definition at line 138 of file mxml.h.

Referenced by [mxmlIndexEnum\(\)](#), [mxmlIndexFind\(\)](#), and [mxmlIndexReset\(\)](#).

6.77.2.4 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\(\)](#).

6.77.2.5 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>

6.78 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

6.78.1 Detailed Description

Definition at line 122 of file mxml.h.

6.78.2 Field Documentation

6.78.2.1 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()`.

6.78.2.2 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()`.

6.78.2.3 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()`.

6.78.2.4 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()`.

6.78.2.5 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().

6.78.2.6 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().

6.78.2.7 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](#)

6.79 mxml_text_s Struct Reference

```
#include <mxml.h>
```

Data Fields

- int [whitespace](#)
- char * [string](#)

6.79.1 Detailed Description

Definition at line 99 of file mxml.h.

6.79.2 Field Documentation

6.79.2.1 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()`.

6.79.2.2 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`

6.80 mxml_value_s Struct Reference

```
#include <mxml.h>
```

Data Fields

- char * [name](#)
- int [num_attrs](#)
- [mxml_attr_t](#) * [attrs](#)

6.80.1 Detailed Description

Definition at line 92 of file [mxml.h](#).

6.80.2 Field Documentation

6.80.2.1 mxml_attr_t* mxml_value_s::attrs

Definition at line 96 of file [mxml.h](#).

Referenced by [mxml_write_node\(\)](#), [mxmlDelete\(\)](#), [mxmlElementGetAttr\(\)](#), and [mxmlElementSetAttr\(\)](#).

6.80.2.2 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\(\)](#), [mxmlIndexNew\(\)](#), [mxmlNewElement\(\)](#), [mxmlSetElement\(\)](#), [scan_file\(\)](#), [sort_node\(\)](#), [type_cb\(\)](#), [update_comment\(\)](#), [whitespace_cb\(\)](#), [ws_cb\(\)](#), [xml_get_element_name\(\)](#), and [xml_get_text\(\)](#).

6.80.2.3 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](#)

6.81 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

6.81.1 Detailed Description

Definition at line 112 of file mxml.h.

6.81.2 Field Documentation

6.81.2.1 mxml_custom_t mxml_value_u::custom

Definition at line 119 of file mxml.h.

Referenced by [mxmlDelete\(\)](#), [mxmlNewCustom\(\)](#), and [mxmlSetCustom\(\)](#).

6.81.2.2 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\(\)](#).

6.81.2.3 int mxml_value_u::integer

Definition at line 115 of file mxml.h.

Referenced by [main\(\)](#), [mxml_write_node\(\)](#), [mxmlNewInteger\(\)](#), and [mxmlSetInteger\(\)](#).

6.81.2.4 char* mxml_value_u::opaque

Definition at line 116 of file mxml.h.

Referenced by [main\(\)](#), [mxml_write_node\(\)](#), [mxmlDelete\(\)](#), [mxmlNewOpaque\(\)](#), and [mxmlSetOpaque\(\)](#).

6.81.2.5 double mxml_value_u::real

Definition at line 117 of file mxml.h.

Referenced by [main\(\)](#), [mxml_write_node\(\)](#), [mxmlNewReal\(\)](#), and [mxmlSetReal\(\)](#).

6.81.2.6 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](#)

6.82 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]

6.82.1 Detailed Description

Definition at line 75 of file `ssl_test.c`.

6.82.2 Field Documentation

6.82.2.1 int options::buffer_size

Definition at line 82 of file `ssl_test.c`.

Referenced by `main()`, and `ssl_test()`.

6.82.2.2 int options::command

Definition at line 81 of file `ssl_test.c`.

Referenced by `main()`, and `ssl_test()`.

6.82.2.3 int options::conn_timeout

Definition at line 85 of file `ssl_test.c`.

Referenced by `main()`, and `ssl_test()`.

6.82.2.4 int options::debug_level

Definition at line 84 of file `ssl_test.c`.

Referenced by `main()`.

6.82.2.5 int options::force_cipher[2]

Definition at line 89 of file ssl_test.c.

Referenced by main(), and ssl_test().

6.82.2.6 int options::iomode

Definition at line 78 of file ssl_test.c.

Referenced by main(), and ssl_test().

6.82.2.7 int options::max_bytes

Definition at line 83 of file ssl_test.c.

Referenced by main(), and ssl_test().

6.82.2.8 int options::max_connections

Definition at line 86 of file ssl_test.c.

Referenced by main().

6.82.2.9 int options::opmode

Definition at line 77 of file ssl_test.c.

Referenced by main(), and ssl_test().

6.82.2.10 char* options::server_name

Definition at line 79 of file ssl_test.c.

Referenced by main(), and ssl_test().

6.82.2.11 int options::server_port

Definition at line 80 of file ssl_test.c.

Referenced by main(), and ssl_test().

6.82.2.12 int options::session_lifetime

Definition at line 88 of file ssl_test.c.

Referenced by main(), and ssl_test().

6.82.2.13 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](#)

6.83 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](#)

6.83.1 Detailed Description

RSA context structure.

Definition at line 56 of file `rsa.h`.

6.83.2 Field Documentation

6.83.2.1 `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()`.

6.83.2.2 `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()`.

6.83.2.3 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().

6.83.2.4 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().

6.83.2.5 int(* rsa_context::f_rng)(void *)

RNG function

Definition at line 77 of file rsa.h.

Referenced by rsa_gen_key(), and rsa_init().

6.83.2.6 int rsa_context::hash_id

hash identifier

Definition at line 76 of file rsa.h.

Referenced by rsa_init().

6.83.2.7 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().

6.83.2.8 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().

6.83.2.9 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().

6.83.2.10 void* rsa_context::p_rng

RNG parameter

Definition at line 78 of file rsa.h.

Referenced by rsa_gen_key(), and rsa_init().

6.83.2.11 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().

6.83.2.12 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().

6.83.2.13 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().

6.83.2.14 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().

6.83.2.15 mpi rsa_context::RP

cached $R^2 \bmod P$

Definition at line 72 of file rsa.h.

Referenced by rsa_free(), and rsa_private().

6.83.2.16 mpi rsa_context::RQ

cached $R^2 \bmod Q$

Definition at line 73 of file rsa.h.

Referenced by rsa_free(), and rsa_private().

6.83.2.17 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](#)

6.84 rwlock_s Struct Reference

```
#include <rwlock.h>
```

Data Fields

- int [readers](#)
- MUTEX_T * [lock](#)
- COND_T * [reader_cond](#)
- COND_T * [writer_cond](#)

6.84.1 Detailed Description

Definition at line 6 of file `rwlock.h`.

6.84.2 Field Documentation

6.84.2.1 MUTEX_T* `rwlock_s::lock`

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

Referenced by `ListRDtoWR()`, `ListRDWait()`, `ListWRtoRD()`, `ListWRWait()`, `rwlock_Destroy()`, `rwlock_New()`, `rwlock_rdlock()`, `rwlock_rdunlock()`, `rwlock_rdwait()`, `rwlock_wrlock()`, and `rwlock_wrunlock()`.

6.84.2.2 COND_T* `rwlock_s::reader_cond`

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

Referenced by `ListRDWait()`, `ListWRWait()`, `rwlock_Destroy()`, `rwlock_New()`, `rwlock_rdwait()`, and `rwlock_wrunlock()`.

6.84.2.3 int `rwlock_s::readers`

Definition at line 8 of file `rwlock.h`.

Referenced by `ListRDtoWR()`, `ListRDWait()`, `ListWRtoRD()`, `rwlock_New()`, `rwlock_rdlock()`, `rwlock_rdunlock()`, `rwlock_rdwait()`, and `rwlock_wrlock()`.

6.84.2.4 COND_T* `rwlock_s::writer_cond`

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

Referenced by `ListRDtoWR()`, `rwlock_Destroy()`, `rwlock_New()`, `rwlock_rdunlock()`, and `rwlock_wrlock()`.

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

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

6.85 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]

6.85.1 Detailed Description

SHA-1 context structure.

Definition at line 10 of file sha1.h.

6.85.2 Field Documentation

6.85.2.1 unsigned char sha1_context::buffer[64]

data block being processed

Definition at line 14 of file sha1.h.

Referenced by sha1_update().

6.85.2.2 unsigned char sha1_context::ipad[64]

HMAC: inner padding

Definition at line 16 of file sha1.h.

Referenced by sha1_hmac_starts().

6.85.2.3 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().

6.85.2.4 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().

6.85.2.5 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>

6.86 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](#)

6.86.1 Detailed Description

SHA-256 context structure.

Definition at line 10 of file sha2.h.

6.86.2 Field Documentation

6.86.2.1 unsigned char sha2_context::buffer[64]

data block being processed

Definition at line 14 of file sha2.h.

Referenced by sha2_update().

6.86.2.2 unsigned char sha2_context::ipad[64]

HMAC: inner padding

Definition at line 16 of file sha2.h.

Referenced by sha2_hmac_starts().

6.86.2.3 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().

6.86.2.4 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().

6.86.2.5 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().

6.86.2.6 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](#)

6.87 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](#)

6.87.1 Detailed Description

SHA-512 context structure.

Definition at line 18 of file sha4.h.

6.87.2 Field Documentation

6.87.2.1 unsigned char sha4_context::buffer[128]

data block being processed

Definition at line 22 of file sha4.h.

Referenced by sha4_update().

6.87.2.2 unsigned char sha4_context::ipad[128]

HMAC: inner padding

Definition at line 24 of file sha4.h.

Referenced by sha4_hmac_starts().

6.87.2.3 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().

6.87.2.4 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().

6.87.2.5 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().

6.87.2.6 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](#)

6.88 stationary_agent_info_s Struct Reference

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

Data Fields

- void * [args](#)
- struct [agent_s](#) * [agent](#)
- [MCAgency_t](#) [attr](#)
- [MCAgency_t](#) [agency](#)
- [pthread_t](#) [thread](#)

6.88.1 Detailed Description

Definition at line 286 of file libmc.h.

6.88.2 Field Documentation

6.88.2.1 MCAgency_t stationary_agent_info_s::agency

Definition at line 290 of file libmc.h.

Referenced by [MC_AddStationaryAgent\(\)](#), and [MC_AgentInfo_GetAgency\(\)](#).

6.88.2.2 struct agent_s* stationary_agent_info_s::agent

Definition at line 288 of file libmc.h.

Referenced by [MC_AddStationaryAgent\(\)](#), and [MC_AgentInfo_GetAgent\(\)](#).

6.88.2.3 void* stationary_agent_info_s::args

Definition at line 287 of file libmc.h.

Referenced by [MC_AddStationaryAgent\(\)](#), and [MC_AgentInfo_GetAgentArgs\(\)](#).

6.88.2.4 MCAgency_t stationary_agent_info_s::attr

Definition at line 289 of file libmc.h.

Referenced by [MC_AddStationaryAgent\(\)](#).

6.88.2.5 pthread_t stationary_agent_info_s::thread

Definition at line 294 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](#)

6.89 syncListNode_s Struct Reference

```
#include <sync_list.h>
```

Data Fields

- MUTEX_T * [lock](#)
- COND_T * [cond](#)
- SEMAPHORE_T * [sem](#)
- int [id](#)
- int [signalled](#)

6.89.1 Detailed Description

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

6.89.2 Field Documentation

6.89.2.1 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()`.

6.89.2.2 int syncListNode_s::id

Definition at line 20 of file `sync_list.h`.

Referenced by `MC_SyncInit()`, `syncListAddNode()`, `syncListNew()`, and `syncListNode_CmpID()`.

6.89.2.3 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()`, `syncListNodeDestroy()`, `syncListNodeInit()`, and `syncListNodeNew()`.

6.89.2.4 SEMAPHORE_T* syncListNode_s::sem

Definition at line 19 of file `sync_list.h`.

Referenced by `MC_SemaphorePost()`, `MC_SemaphoreWait()`, `syncListNodeDestroy()`, `syncListNodeInit()`, and `syncListNodeNew()`.

6.89.2.5 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 7

File Documentation

7.1 /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 "agent_datastate.h"
#include "agent_task.h"
#include "libmc.h"
#include "message.h"
#include <sys/types.h>
#include <semaphore.h>
#include <errno.h>
#include "acc.h"
#include "ams.h"
#include "barrier.h"
#include "cmd_prompt.h"
#include "connection.h"
```

```
#include "df.h"
#include "../mc_sync/sync_list.h"
#include "../mc_list/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"
#include "fipa_acl.h"
```

Defines

- #define [BACKLOG](#) 200
- #define [CONN_THREADS](#) 40
- #define [CONNECT_THREAD_EXIT](#)()
- #define [BUFLen](#) 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)

7.1.1 Define Documentation

7.1.1.1 #define BACKLOG 200

Definition at line 74 of file acc.c.

Referenced by listen_Thread().

7.1.1.2 #define BUFLLEN 512

Definition at line 934 of file acc.c.

Referenced by udplisten_Thread().

7.1.1.3 #define CONN_THREADS 40

Definition at line 304 of file acc.c.

Referenced by acc_Thread().

7.1.1.4 #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 395 of file acc.c.

Referenced by acc_connection_Thread().

7.1.1.5 #define UDPPORT 8866

Definition at line 935 of file acc.c.

Referenced by udplisten_Thread().

7.1.2 Function Documentation

7.1.2.1 void* acc_connection_Thread (void *arg)

Definition at line 405 of file acc.c.

References mc_platform_s::acc, fipa_agent_identifier_s::addresses, agent_CmpName(), 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, ListAdd(), ListRDLock(), ListRDUnlock(), ListSearchCB(), ListWRLock(), ListWRUnlock(), agent_s::mailbox,

agent_s::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, mxmlLoadString(), 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().

7.1.2.2 int acc_Destroy (acc_p acc)

Definition at line 102 of file acc.c.

References COND_DESTROY, MC_SUCCESS, and MUTEX_DESTROY.

Referenced by mc_platform_Destroy().

7.1.2.3 acc_p acc_Initialize (struct mc_platform_s * mc_platform)

Definition at line 77 of file acc.c.

References COND_INIT, COND_T, MUTEX_INIT, and MUTEX_T.

Referenced by mc_platform_Initialize().

7.1.2.4 void* acc_MessageHandlerThread (void * arg)

Definition at line 118 of file acc.c.

References mc_platform_s::acc, agent_CmpName(), agent_Initialize(), mc_platform_s::agent_queue, agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, 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, ListAdd(), ListPop(), ListSearchCB(), ListWRLock(), ListWRUnlock(), ListWRWait(), agent_s::lock, MC_AGENT_NEUTRAL, 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().

7.1.2.5 void acc_Start (mc_platform_p mc_platform)

Definition at line 589 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().

7.1.2.6 void* acc_Thread (void * arg)

Definition at line 307 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, ListGetSize(), ListPop(), ListRDLock(), ListRDtoWR(), ListRDUnlock(), ListRDWait(), ListWRUnlock(), 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().

7.1.2.7 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 638 of file acc.c.

References read_known_host_file(), and reply_migration_process().

Referenced by listen_Thread().

7.1.2.8 void* listen_Thread (void * arg)

Definition at line 677 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, ListAdd(), ListWRLock(), ListWRUnlock(), MUTEX_LOCK, MUTEX_UNLOCK, connection_s::nonce, mc_platform_s::port, agency_s::portno, mc_platform_s::private_key, mc_platform_s::quit, connection_s::remote_hostname, connection_s::serverfd, SOCKET_ERROR, mc_platform_s::sockfd, and THREAD_EXIT.

Referenced by acc_Start().

7.1.2.9 void* udplisten_Thread (void * arg)

Definition at line 938 of file acc.c.

References buf, BUFLen, mc_platform_s::hostname, PACKAGE_VERSION, mc_platform_s::port, and UDPPORT.

Referenced by acc_Start().

7.2 /home/dko/Projects/mobilec/src/agent.c File Reference

```
#include <unistd.h>
#include "config.h"
#include <embedch.h>
#include "include/libmc.h"
#include "include/agent.h"
#include "include/mc_platform.h"
#include "include/message.h"
#include <ch.h>
#include "include/xml_parser.h"
#include "dynstring.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)`
- `int agent_Print (agent_t *agent)`
- `int agent_CmpName (const void *key, void *element)`
- `int agent_CmpID (int *id, agent_t *agent)`

7.2.1 Function Documentation

7.2.1.1 `int agent_AddPersistentVariable (agent_p agent, int task_num, const char * var_name)`

Definition at line 53 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`, `interpreter_variable_data_CmpName()`, `interpreter_variable_data_Destroy()`, `ListAdd()`, `ListDeleteCB()`, `ListWRLock()`, `ListWRUnlock()`, `MC_ERR`, `agent_s::name`, `interpreter_variable_data_s::name`, `interpreter_variable_data_s::size`, `strdup`, `agent_datastate_s::task_progress`, and `agent_datastate_s::tasks`.

7.2.1.2 `void* agent_ChScriptInitVar (ChInterp_t * interp)`

Definition at line 554 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_AgentAttachFile_chdl(), MC_AgentListFiles_chdl(), MC_AgentRetrieveFile_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 interpreter_queue_CreateRetrieve(), and mc_platform_Initialize().

7.2.1.3 int agent_CmpID (int * *id*, agent_t * *agent*)

Definition at line 1377 of file agent.c.

References agent_s::id, agent_s::lock, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by MC_FindAgentByID().

7.2.1.4 int agent_CmpName (const void * *key*, void * *element*)

Definition at line 1366 of file agent.c.

References agent_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::name.

Referenced by acc_connection_Thread(), acc_MessageHandlerThread(), MC_DeleteAgent(), MC_DeleteAgentWG(), and MC_FindAgentByName().

7.2.1.5 agent_p agent_Copy (const agent_p *agent*)

Definition at line 140 of file agent.c.

References agent_datastate_Copy(), agent_s::agent_interp, agent_New(), agent_s::agent_persistent, agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, agent_s::agent_type, agent_s::arrival_time, COND_INIT, COND_NEW, agent_s::datastate, agent_s::home, agent_s::home_port, agent_s::id, ListInitialize(), agent_s::lock, agent_s::mailbox, MUTEX_INIT, MUTEX_LOCK, MUTEX_NEW, MUTEX_T, agent_s::name, agent_s::orphan, agent_s::owner, agent_s::return_data, and agent_s::run_lock.

Referenced by MC_CopyAgent().

7.2.1.6 `int agent_Destroy (agent_p agent)`

Definition at line 455 of file agent.c.

References `agent_s::agent_address`, `agent_datastate_Destroy()`, `agent_s::agent_interp`, `agent_s::agent_status`, `agent_s::agent_status_cond`, `agent_s::agent_status_lock`, `COND_DESTROY`, `agent_s::datastate`, `fipa_acl_message_Destroy()`, `agent_s::home`, `mc_platform_s::interpreter_queue`, `ListAdd()`, `ListClearCB()`, `ListTerminate()`, `ListWRLock()`, `ListWRUnlock()`, `agent_s::lock`, `agent_s::mailbox`, `MC_AGENT_NEUTRAL`, `agent_s::mc_platform`, `MC_SUCCESS`, `MUTEX_DESTROY`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `agent_s::name`, `agent_s::owner`, `agent_s::run_lock`, `agent_s::sender`, and `agent_s::wg_code`.

Referenced by `agent_Initialize()`, `handler_FLUSH_AGENTS()`, `MC_DeleteAgentWG()`, and `mc_platform_Destroy()`.

7.2.1.7 `agent_p agent_Initialize (struct mc_platform_s * mc_platform, message_p message, int id)`

Definition at line 318 of file agent.c.

References `agent_s::agent_address`, `agent_datastate_New()`, `agent_Destroy()`, `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_status_cond`, `agent_s::agent_status_lock`, `agent_s::agent_thread_id`, `agent_s::agent_type`, `message_s::agent_xml_flag`, `agent_xml_parse()`, `agent_s::arrival_time`, `COND_BROADCAST`, `COND_DESTROY`, `COND_INIT`, `COND_NEW`, `agent_s::datastate`, `mc_platform_s::default_agentstatus`, `mc_platform_s::err`, `agent_s::home`, `mc_platform_s::hostname`, `agent_s::id`, `ListInitialize()`, `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_LOCK`, `MUTEX_NEW`, `MUTEX_T`, `MUTEX_UNLOCK`, `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()`.

7.2.1.8 `agent_p agent_New (void)`

Definition at line 207 of file agent.c.

References `agent_s::agent_status_cond`, `agent_s::agent_status_lock`, `COND_INIT`, `COND_NEW`, `ListInitialize()`, `agent_s::lock`, `agent_s::mailbox`, `MUTEX_INIT`, `MUTEX_NEW`, and `agent_s::run_lock`.

Referenced by `agent_Copy()`, and `MC_ComposeAgentWithWorkgroup()`.

7.2.1.9 `agent_p agent_NewBinary (struct mc_platform_s * mc_platform)`

Definition at line 237 of file agent.c.

References `agent_s::agent_address`, `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_status_cond`, `agent_s::agent_status_lock`, `agent_s::agent_thread_id`, `agent_s::arrival_time`, `agent_s::binary`, `COND_BROADCAST`, `COND_INIT`, `COND_NEW`, `agent_s::home`, `mc_platform_s::hostname`, `agent_s::id`, `ListInitialize()`, `agent_s::lock`, `agent_s::mailbox`, `MC_AGENT_ACTIVE`, `agent_s::mc_platform`, `MUTEX_INIT`, `MUTEX_LOCK`, `MUTEX_NEW`, `MUTEX_T`, `MUTEX_UNLOCK`, `agent_s::orphan`, `mc_platform_s::port`, `agent_s::run_lock`, and `agent_s::sender`.

Referenced by MC_AddStationaryAgent().

7.2.1.10 int agent_Print (agent_t * agent)

Definition at line 1356 of file agent.c.

References agent_s::agent_status, agent_s::agent_status_lock, agent_s::connect_id, agent_s::id, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by ams_Print(), and handler_PRINTLIST_AGENTS().

7.2.1.11 void agent_RunChScript (agent_p agent, mc_platform_p mc_platform)

Definition at line 513 of file agent.c.

References agent_RunChScriptThread(), agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, agent_s::agent_thread, COND_BROADCAST, MC_AGENT_ACTIVE, agent_s::mc_platform, MC_THREAD_AGENT, MUTEX_LOCK, MUTEX_UNLOCK, mc_platform_s::stack_size, and THREAD_CREATE.

Referenced by ams_ManageAgentList().

7.2.1.12 void* agent_RunChScriptThread (void * ChAgent)

Definition at line 1049 of file agent.c.

References mc_platform_s::agency, agent_s::agent_interp, agency_s::agentInitCallback, agency_s::agentInitUserData, mc_platform_s::ams, COND_SIGNAL, COND_WAIT, 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(), ListAdd(), ListClearCB(), ListWRLock(), ListWRUnlock(), MC_AGENT_NEUTRAL, MC_EXEC_AGENT, agent_s::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().

7.3 /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)

7.3.1 Function Documentation

7.3.1.1 [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()`.

7.3.1.2 [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()`.

7.3.1.3 [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()`.

7.4 /home/dko/Projects/mobilec/src/agent_file_data.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include "include/agent_file_data.h"
#include <b64/cencode.h>
```

Functions

- [agent_file_data_p agent_file_data_New](#) (void)
- [agent_file_data_p agent_file_data_NewWithData](#) (const char *name, const char *data)
- [agent_file_data_p agent_file_data_Copy](#) (agent_file_data_p src)
- [agent_file_data_p agent_file_data_InitializeFromFilename](#) (const char *filename)
- [agent_file_data_p agent_file_data_Encode](#) (const char *name, void *data, int size)
- [int agent_file_data_Destroy](#) (agent_file_data_p agent_file_data)
- [int agent_file_data_CmpName](#) (const void *key, void *element)

7.4.1 Function Documentation

7.4.1.1 [int agent_file_data_CmpName](#) (const void * *key*, void * *element*)

Definition at line 102 of file agent_file_data.c.

References agent_file_data_s::name.

Referenced by MC_AgentRetrieveFile().

7.4.1.2 [agent_file_data_p agent_file_data_Copy](#) (agent_file_data_p *src*)

Definition at line 26 of file agent_file_data.c.

References agent_file_data_s::data, agent_file_data_s::name, and strdup.

Referenced by agent_task_Copy().

7.4.1.3 [int agent_file_data_Destroy](#) (agent_file_data_p *agent_file_data*)

Definition at line 89 of file agent_file_data.c.

References agent_file_data_s::data, and agent_file_data_s::name.

Referenced by agent_task_Destroy(), and agent_xml_compose__task().

7.4.1.4 [agent_file_data_p agent_file_data_Encode](#) (const char * *name*, void * *data*, int *size*)

Definition at line 84 of file agent_file_data.c.

7.4.1.5 agent_file_data_p agent_file_data_InitializeFromFilename (const char * *filename*)

Definition at line 44 of file agent_file_data.c.

References `base64_encode_block()`, `base64_encode_blockend()`, `base64_init_encodestate()`, `agent_file_data_s::data`, `agent_file_data_s::name`, and `strdup`.

Referenced by `MC_AgentAttachFile()`.

7.4.1.6 agent_file_data_p agent_file_data_New (void)

Definition at line 8 of file agent_file_data.c.

References `agent_file_data_s::data`, and `agent_file_data_s::name`.

Referenced by `agent_file_data_NewWithData()`.

7.4.1.7 agent_file_data_p agent_file_data_NewWithData (const char * *name*, const char * *data*)

Definition at line 17 of file agent_file_data.c.

References `agent_file_data_New()`, `agent_file_data_s::data`, `agent_file_data_s::name`, and `strdup`.

Referenced by `agent_xml_parse__file()`.

7.5 /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)
- [int interpreter_variable_data_CmpName](#) (const char *name, [interpreter_variable_data_t](#) *data)

7.5.1 Function Documentation

7.5.1.1 [int interpreter_variable_data_CmpName](#) (const char * *name*, [interpreter_variable_data_t](#) * *data*)

Definition at line 256 of file `agent_return_data.c`.

References `interpreter_variable_data_s::name`.

Referenced by `agent_AddPersistentVariable()`, `MC_AgentVariableRetrieve()`, and `MC_AgentVariableRetrieveInfo()`.

7.5.1.2 [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()`.

7.5.1.3 [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_AddPersistentVariable()`, `agent_RunChScriptThread()`, and `agent_task_Destroy()`.

7.5.1.4 `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_extnt`, `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`, and `strdup`.

Referenced by `agent_RunChScriptThread()`.

7.5.1.5 `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_extnt`, `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`, `strdup`, `agent_datastate_s::task_progress`, `agent_datastate_s::tasks`, and `agent_task_s::var_name`.

Referenced by `agent_RunChScriptThread()`.

7.5.1.6 `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_extnt`, `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()`.

7.6 /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_file_data.h"
#include "include/agent_task.h"
#include "../mc_list/list.h"
#include "interpreter_variable_data.h"
#include "include/mc_error.h"
#include "../include/macros.h"
#include "../include/rwlock.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)

7.6.1 Function Documentation

7.6.1.1 [agent_task_p agent_task_Copy](#) ([agent_task_p](#) task)

Definition at line 70 of file `agent_task.c`.

References `agent_file_data_Copy()`, `agent_task_s::agent_file_list`, `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()`, `ListCopy()`, `ListInitialize()`, `ListRDLock()`, `ListRDUnlock()`, `ListSearch()`, `ListWRLock()`, `ListWRUnlock()`, `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`, `list_s::size`, `agent_task_s::size_of_element_array`, `strdup`, and `agent_task_s::var_name`.

Referenced by `agent_datastate_Copy()`.

7.6.1.2 [int agent_task_Destroy](#) ([agent_task_p](#) agent_task)

Definition at line 143 of file `agent_task.c`.

References `agent_file_data_Destroy()`, `agent_task_s::agent_file_list`, `agent_task_s::agent_return_data`, `agent_task_s::agent_variable_list`, `agent_task_s::code_id`, `interpreter_variable_data_Destroy()`, `ListClearCB()`, `ListTerminate()`, `ListWRLock()`, `ListWRUnlock()`, `MC_SUCCESS`, `agent_task_s::saved_variables`, `agent_task_s::server_name`, and `agent_task_s::var_name`.

Referenced by `agent_datastate_Destroy()`.

7.6.1.3 agent_task_p agent_task_New (void)

Definition at line 50 of file agent_task.c.

References agent_task_s::agent_file_list, agent_task_s::agent_variable_list, ListInitialize(), agent_task_s::num_saved_variables, and agent_task_s::saved_variables.

Referenced by agent_xml_parse__tasks(), MC_AgentAddTask(), and MC_ComposeAgentWithWorkgroup().

7.7 /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/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)

7.7.1 Function Documentation

7.7.1.1 int [ams_Destroy](#) (ams_p *ams*)

Definition at line 45 of file ams.c.

References `COND_DESTROY`, `MC_SUCCESS`, and `MUTEX_DESTROY`.

Referenced by `mc_platform_Destroy()`.

7.7.1.2 ams_p [ams_Initialize](#) (mc_platform_p *mc_platform*)

Definition at line 60 of file ams.c.

References `CHECK_NULL`, `COND_INIT`, `COND_T`, `MUTEX_INIT`, and `MUTEX_T`.

Referenced by `mc_platform_Initialize()`.

7.7.1.3 int [ams_ManageAgentList](#) (ams_p *ams*)

Definition at line 108 of file ams.c.

References `agent_RunChScript()`, `agent_s::agent_status`, `agent_s::agent_status_cond`, `agent_s::agent_status_lock`, `agent_s::binary`, `COND_BROADCAST`, `ListAdd()`, `ListDelete()`, `ListRDLock()`, `ListRDtoWR()`, `ListRDUnlock()`, `ListSearch()`, `ListWRLock()`, `ListWRtoRD()`, `ListWRUnlock()`, `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`, `agent_s::run_lock`, and `list_s::size`.

Referenced by `ams_Thread()`.

7.7.1.4 void ams_Print (ams_p *ams*)

Definition at line 87 of file ams.c.

References agent_Print(), ListForEachCB(), ListGetSize(), ListRDLock(), ListRDUnlock(), and list_s::size.

7.7.1.5 void ams_Start (mc_platform_p *mc_platform*)

Definition at line 227 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().

7.7.1.6 void* ams_Thread (void * *arg*)

Definition at line 258 of file ams.c.

References mc_platform_s::ams, ams_ManageAgentList(), COND_BROADCAST, COND_WAIT, MUTEX_LOCK, MUTEX_UNLOCK, mc_platform_s::quit, mc_platform_s::quit_lock, and THREAD_EXIT.

Referenced by ams_Start().

7.8 /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_node_CmpID](#) (const void *key, void *element)

7.8.1 Function Documentation

7.8.1.1 int barrier_node_CmpID (const void * key, void * element)

Definition at line 86 of file barrier.c.

References [barrier_node_s::id](#), [barrier_node_s::lock](#), [MUTEX_LOCK](#), and [MUTEX_UNLOCK](#).

Referenced by [MC_Barrier\(\)](#), [MC_BarrierDelete\(\)](#), and [MC_BarrierInit\(\)](#).

7.8.1.2 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 [MC_BarrierDelete\(\)](#), and [mc_platform_Destroy\(\)](#).

7.8.1.3 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](#), [barrier_node_s::num_registered](#), and [barrier_node_s::num_waiting](#).

Referenced by [MC_BarrierInit\(\)](#).

7.9 /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"
#include "include/agent.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)

7.9.1 Function Documentation

7.9.1.1 [int cmd_prompt_Destroy](#) ([cmd_prompt_p](#) *cmd_prompt*)

Definition at line 130 of file `cmd_prompt.c`.

References `MC_SUCCESS`.

Referenced by `mc_platform_Destroy()`.

7.9.1.2 [cmd_prompt_p cmd_prompt_Initialize](#) ([mc_platform_p](#) *mc_platform*)

Definition at line 122 of file `cmd_prompt.c`.

Referenced by `mc_platform_Initialize()`.

7.9.1.3 void cmd_prompt_Start (mc_platform_p mc_platform)

Definition at line 137 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().

7.9.1.4 void* cmd_prompt_Thread (void * arg)

Definition at line 169 of file cmd_prompt.c.

References command_s::args, buf, dealloc_command(), exec_command(), command_s::index, command_s::num_args, process_command(), and split_string().

Referenced by cmd_prompt_Start().

7.9.1.5 int dealloc_command (command_t * cmd)

Definition at line 322 of file cmd_prompt.c.

References command_s::args, and command_s::num_args.

Referenced by cmd_prompt_Thread().

7.9.1.6 int exec_command (command_t cmd, mc_platform_p global)

Definition at line 306 of file cmd_prompt.c.

References command_s::args, cmd_handlers, command_s::index, and command_s::num_args.

Referenced by cmd_prompt_Thread().

7.9.1.7 int handler_COMPOSE_SEND (void * arg, mc_platform_p global)

Definition at line 427 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.

7.9.1.8 int handler_FLUSH_AGENTS (void * arg, mc_platform_p global)

Definition at line 419 of file cmd_prompt.c.

References agent_Destroy(), mc_platform_s::agent_queue, ListClearCB(), ListWRLock(), and ListWRUnlock().

7.9.1.9 int handler_HELP (void * arg, mc_platform_p global)

Definition at line 346 of file cmd_prompt.c.

References command_s::args, command_cmds, command_descriptions, and command_s::num_args.

7.9.1.10 int handler_PRINT_CONNECTLIST (void * *arg*, mc_platform_p *global*)

Definition at line 395 of file cmd_prompt.c.

References connection_Print(), mc_platform_s::connection_queue, ListForEachCB(), ListRDLock(), and ListRDUnlock().

7.9.1.11 int handler_PRINTLIST_AGENTS (void * *arg*, mc_platform_p *global*)

Definition at line 411 of file cmd_prompt.c.

References agent_Print(), mc_platform_s::agent_queue, ListForEachCB(), ListRDLock(), and ListRDUnlock().

7.9.1.12 int handler_PRINTLIST_MESSAGE (void * *arg*, mc_platform_p *global*)

Definition at line 403 of file cmd_prompt.c.

References ListForEachCB(), ListRDLock(), ListRDUnlock(), message_Print(), and mc_platform_s::message_queue.

7.9.1.13 int handler_QUIT (void * *arg*, mc_platform_p *global*)

Definition at line 337 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.

7.9.1.14 int handler_SEND (void * *arg*, mc_platform_p *global*)

Definition at line 384 of file cmd_prompt.c.

References command_s::args, command_descriptions, MC_SendAgentFile(), and command_s::num_args.

7.9.1.15 int process_command (command_t * *cmd*)

Definition at line 288 of file cmd_prompt.c.

References command_s::args, command_cmds, command_s::index, and command_s::num_args.

Referenced by cmd_prompt_Thread().

7.9.1.16 int split_string (char * *args*, const char * *buf*)**

Definition at line 240 of file cmd_prompt.c.

Referenced by cmd_prompt_Thread().

7.10 /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)
- int [connection_Print](#) ([connection_p](#) connection)

7.10.1 Function Documentation

7.10.1.1 [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](#).

7.10.1.2 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\(\)](#), and [mc_platform_Destroy\(\)](#).

7.10.1.3 [connection_p](#) [connection_New](#) (void)

Definition at line 69 of file connection.c.

Referenced by [connection_Copy\(\)](#), and [listen_Thread\(\)](#).

7.10.1.4 int [connection_Print](#) ([connection_p](#) *connection*)

Definition at line 92 of file connection.c.

References [connection_s::connect_id](#), and [connection_s::remote_hostname](#).

Referenced by [handler_PRINT_CONNECTLIST\(\)](#).

7.11 /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](#) (list_t *df_request_list)
- 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)

7.11.1 Define Documentation

7.11.1.1 #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()`.

7.11.2 Function Documentation

7.11.2.1 `int df_Add (struct df_s * df, struct df_node_s * node)`

Definition at line 50 of file `df.c`.

References `ListAdd()`, `ListWRLock()`, `ListWRUnlock()`, and `MC_SUCCESS`.

Referenced by `request_handler_REGISTER()`.

7.11.2.2 `int df_AddRequest (struct df_s * df, struct df_request_list_node_s * node)`

Definition at line 62 of file `df.c`.

References `ListAdd()`, `ListWRLock()`, and `ListWRUnlock()`.

Referenced by `MC_DeregisterService()`, `MC_RegisterService()`, and `MC_SearchForService()`.

7.11.2.3 `int df_Destroy (df_p df)`

Definition at line 75 of file `df.c`.

References `COND_DESTROY`, `df_node_Destroy()`, `df_request_list_Destroy()`, `ListPop()`, `ListTerminate()`, `ListWRLock()`, `ListWRUnlock()`, `MC_SUCCESS`, `MUTEX_DESTROY`, and `MUTEX_LOCK`.

Referenced by `mc_platform_Destroy()`.

7.11.2.4 `df_p df_Initialize (mc_platform_p mc_platform)`

Definition at line 97 of file `df.c`.

References `COND_INIT`, `COND_T`, `ListInitialize()`, `MUTEX_INIT`, and `MUTEX_T`.

Referenced by `mc_platform_Initialize()`.

7.11.2.5 `int df_node_Destroy (df_node_p df_node)`

Definition at line 372 of file `df.c`.

References `MC_SUCCESS`, and `MUTEX_LOCK`.

Referenced by `df_Destroy()`.

7.11.2.6 `int df_ProcessRequest (struct mc_platform_s * global)`

Definition at line 128 of file `df.c`.

References `mc_platform_s::df`, `ListPop()`, `ListWRLock()`, `ListWRUnlock()`, `MC_ERR_EMPTY`, and `MC_ERR_INVALID`.

Referenced by `df_Thread()`.

7.11.2.7 `int df_request_list_Destroy (list_t * df_request_list)`

Definition at line 320 of file `df.c`.

References `df_request_list_node_Destroy()`, `ListPop()`, `ListTerminate()`, `ListWRLock()`, `ListWRUnlock()`, and `MC_SUCCESS`.

Referenced by `df_Destroy()`.

7.11.2.8 `int df_request_list_node_Destroy (df_request_list_node_p node)`

Definition at line 291 of file `df.c`.

References `COND_DESTROY`, `MC_SUCCESS`, and `MUTEX_DESTROY`.

Referenced by `df_request_list_Destroy()`, and `MC_SearchForService()`.

7.11.2.9 `df_request_list_node_p df_request_list_node_New (void)`

Definition at line 302 of file `df.c`.

References `CHECK_NULL`, `COND_INIT`, `COND_T`, `MUTEX_INIT`, and `MUTEX_T`.

Referenced by `MC_DeregisterService()`, `MC_RegisterService()`, and `MC_SearchForService()`.

7.11.2.10 `int df_request_search_Destroy (df_request_search_p node)`

Definition at line 359 of file `df.c`.

References `COND_DESTROY`, `MC_SUCCESS`, and `MUTEX_DESTROY`.

Referenced by `MC_SearchForService()`.

7.11.2.11 `df_request_search_p df_request_search_New (void)`

Definition at line 344 of file `df.c`.

References `CHECK_NULL`, `COND_INIT`, `COND_T`, `MUTEX_INIT`, `MUTEX_T`, and `search`.

Referenced by `MC_SearchForService()`.

7.11.2.12 `int df_SearchForService (df_p df, const char * searchstring, char *** agent_names, char *** service_names, int ** agent_ids, int * num_entries)`

Definition at line 175 of file `df.c`.

References `MC_ERR_NOT_FOUND`, `MC_SUCCESS`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `listNode_s::next`, `listNode_s::node_data`, and `num_services`.

Referenced by `request_handler_SEARCH()`.

7.11.2.13 void df_Start (mc_platform_p mc_platform)

Definition at line 260 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().

7.11.2.14 void* df_Thread (void * arg)

Definition at line 386 of file df.c.

References COND_BROADCAST, mc_platform_s::df, df_ProcessRequest(), ListRDLock(), ListRDUnlock(), ListRDWait(), MC_SUCCESS, MUTEX_LOCK, MUTEX_UNLOCK, mc_platform_s::quit, mc_platform_s::quit_lock, and THREAD_EXIT.

Referenced by df_Start().

7.11.2.15 int request_handler_DEREGISTER (struct mc_platform_s * global, void * data)

Definition at line 473 of file df.c.

References mc_platform_s::df, MC_SUCCESS, MUTEX_LOCK, MUTEX_UNLOCK, listNode_s::next, and listNode_s::node_data.

7.11.2.16 int request_handler_REGISTER (struct mc_platform_s * global, void * data)

Definition at line 443 of file df.c.

References mc_platform_s::df, and df_Add().

7.11.2.17 int request_handler_SEARCH (struct mc_platform_s * global, void * data)

Definition at line 449 of file df.c.

References mc_platform_s::df, df_SearchForService(), MC_SUCCESS, search, and SIGNAL.

7.11.2.18 int request_handler_SUBSCRIBE (struct mc_platform_s * global, void * data)

Definition at line 468 of file df.c.

7.12 /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, const char *str)
- [int dynstring_Destroy](#) ([dynstring_t](#) *dynstring)

7.12.1 Function Documentation

7.12.1.1 [int dynstring_Append](#) ([dynstring_t](#) * *msg*, const 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()`.

7.12.1.2 [int dynstring_Destroy](#) ([dynstring_t](#) * *dynstring*)

Definition at line 53 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()`.

7.12.1.3 [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()`.

7.13 /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 "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 \(struct fipa_acl_message_s *acl\)](#)

7.13.1 Define Documentation

7.13.1.1 #define FREEMEM(x) if (x != NULL) free(x)

Definition at line 53 of file `fipa_acl.c`.

Referenced by `fipa_expression_Destroy()`.

7.13.2 Function Documentation

7.13.2.1 `int fipa_acl_Compose (dynstring_t ** msg, fipa_acl_message_t * acl)`

Definition at line 1233 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()`.

7.13.2.2 `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()`.

7.13.2.3 `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()`, `agent_Destroy()`, and `MC_AclDestroy()`.

7.13.2.4 `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()`.

7.13.2.5 `int fipa_acl_Parse (fipa_acl_message_p acl, fipa_message_string_p message)`

Definition at line 465 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()`.

7.13.2.6 `int fipa_agent_identifier_Compose (dynstring_t * msg, fipa_agent_identifier_t * id)`

Definition at line 1447 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()`.

7.13.2.7 `fipa_agent_identifier_t* fipa_agent_identifier_Copy (fipa_agent_identifier_t * src)`

Definition at line 236 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()`.

7.13.2.8 `int fipa_agent_identifier_Destroy (fipa_agent_identifier_t * id)`

Definition at line 224 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()`.

7.13.2.9 `fipa_agent_identifier_t* fipa_agent_identifier_New (void)`

Definition at line 216 of file `fipa_acl.c`.

Referenced by `fipa_agent_identifier_Copy()`, `fipa_envelope_ParseAgentIdentifier()`, `MC_AclAddReceiver()`, `MC_AclAddReplyTo()`, and `MC_AclSetSender()`.

7.13.2.10 `int fipa_agent_identifier_Parse (fipa_agent_identifier_p * aid, fipa_message_string_p message)`

Definition at line 1033 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()`.

7.13.2.11 int fipa_agent_identifier_set_Compose (dynstring_t * *msg*, fipa_agent_identifier_set_t * *ids*)

Definition at line 1434 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().

7.13.2.12 fipa_agent_identifier_set_t* fipa_agent_identifier_set_Copy (fipa_agent_identifier_set_t * *src*)

Definition at line 195 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().

7.13.2.13 int fipa_agent_identifier_set_Destroy (fipa_agent_identifier_set_t * *idset*)

Definition at line 183 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().

7.13.2.14 fipa_agent_identifier_set_t* fipa_agent_identifier_set_New (void)

Definition at line 175 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().

7.13.2.15 int fipa_agent_identifier_set_Parse (fipa_agent_identifier_set_p * *agent_ids*, fipa_message_string_p *message*)

Definition at line 1192 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().

7.13.2.16 int fipa_CheckNextToken (const fipa_message_string_p *message*, const char * *token*)

Definition at line 695 of file fipa_acl.c.

References fipa_message_string_s::parse.

Referenced by fipa_expression_Parse().

7.13.2.17 int fipa_DateTime_Compose (dynstring_t * msg, fipa_DateTime_t * date)

Definition at line 1520 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().

7.13.2.18 fipa_DateTime_t* fipa_DateTime_Copy (fipa_DateTime_t * src)

Definition at line 399 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().

7.13.2.19 int fipa_DateTime_Destroy (fipa_DateTime_t * dt)

Definition at line 392 of file fipa_acl.c.

Referenced by fipa_acl_envelope_Received_Destroy(), fipa_acl_message_Destroy(), fipa_acl_Param_Destroy(), and fipa_expression_Destroy().

7.13.2.20 fipa_DateTime_t* fipa_DateTime_New (void)

Definition at line 384 of file fipa_acl.c.

Referenced by fipa_DateTime_Copy().

7.13.2.21 int fipa_datetime_Parse (fipa_DateTime_p * datetime, fipa_message_string_p message)

Definition at line 850 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().

7.13.2.22 int fipa_expression_Compose (dynstring_t * msg, fipa_expression_t * expr)

Definition at line 1473 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().

7.13.2.23 fipa_expression_t* fipa_expression_Copy (fipa_expression_t * src)

Definition at line 287 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().

7.13.2.24 int fipa_expression_Destroy (fipa_expression_t * expr)

Definition at line 256 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().

7.13.2.25 fipa_expression_t* fipa_expression_New (void)

Definition at line 248 of file fipa_acl.c.

Referenced by fipa_expression_Copy(), and MC_AclSetConversationID().

7.13.2.26 int fipa_expression_Parse (fipa_expression_t ** expression, fipa_message_string_p message)

Definition at line 714 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().

7.13.2.27 int fipa_GetAtom (fipa_message_string_p message, char expected_atom)

Definition at line 630 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().

7.13.2.28 int fipa_GetNextWord (char ** word, const fipa_message_string_p message)

Definition at line 765 of file fipa_acl.c.

References ERR, MC_SUCCESS, and fipa_message_string_s::parse.

7.13.2.29 int fipa_GetWholeToken (char ** word, fipa_message_string_p message)

Definition at line 813 of file fipa_acl.c.

References MC_SUCCESS, and fipa_message_string_s::parse.

Referenced by fipa_datetime_Parse().

7.13.2.30 int fipa_message_parameter_Parse (fipa_acl_message_p acl, fipa_message_string_p message)

Definition at line 485 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().

7.13.2.31 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.

7.13.2.32 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().

7.13.2.33 fipa_message_string_t* fipa_message_string_New (void)

Definition at line 110 of file fipa_acl.c.

Referenced by acc_connection_Thread().

7.13.2.34 int fipa_message_type_Parse (enum fipa_performative_e * performative, fipa_message_string_p message)

Definition at line 568 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().

7.13.2.35 int fipa_number_Compose (dynstring_t * msg, fipa_number_t * number)

Definition at line 1548 of file fipa_acl.c.

References dynstring_Append(), and fipa_number_s::str.

Referenced by fipa_expression_Compose().

7.13.2.36 fipa_number_t* fipa_number_Copy (fipa_number_t * src)

Definition at line 455 of file fipa_acl.c.

References fipa_number_New(), fipa_number_s::str, and strdup.

Referenced by fipa_expression_Copy().

7.13.2.37 int fipa_number_Destroy (fipa_number_t * number)

Definition at line 445 of file fipa_acl.c.

References fipa_number_s::str.

Referenced by fipa_expression_Destroy().

7.13.2.38 fipa_number_t* fipa_number_New (void)

Definition at line 437 of file fipa_acl.c.

Referenced by fipa_number_Copy().

7.13.2.39 int fipa_performative_Compose (dynstring_t * msg, enum fipa_performative_e performative)

Definition at line 1346 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().

7.13.2.40 int fipa_protocol_Compose (dynstring_t * msg, enum fipa_protocol_e protocol)

Definition at line 1303 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()`.

7.13.2.41 `int fipa_protocol_type_Parse (enum fipa_protocol_e * protocol, fipa_message_string_p message)`

Definition at line 528 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()`.

7.13.2.42 `struct fipa_acl_message_s* fipa_Reply (struct fipa_acl_message_s * acl) [read]`

Definition at line 1556 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()`.

7.13.2.43 `int fipa_string_Compose (dynstring_t * msg, fipa_string_t * string)`

Definition at line 1511 of file `fipa_acl.c`.

References `fipa_string_s::content`, and `dynstring_Append()`.

Referenced by `fipa_acl_Compose()`, and `fipa_expression_Compose()`.

7.13.2.44 `fipa_string_t* fipa_string_Copy (fipa_string_t * src)`

Definition at line 374 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()`.

7.13.2.45 `int fipa_string_Destroy (fipa_string_t * str)`

Definition at line 364 of file `fipa_acl.c`.

References `fipa_string_s::content`.

Referenced by fipa_acl_message_Destroy(), fipa_expression_Destroy(), and MC_AclSetContent().

7.13.2.46 fipa_string_t* fipa_string_New (void)

Definition at line 356 of file fipa_acl.c.

Referenced by fipa_string_Copy(), MC_AclSetContent(), and MC_AclSetConversationID().

7.13.2.47 int fipa_string_Parse (fipa_string_p * *fipa_string*, fipa_message_string_p *message*)

Definition at line 988 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().

7.13.2.48 int fipa_url_Compose (dynstring_t * *msg*, fipa_url_t * *url*)

Definition at line 1540 of file fipa_acl.c.

References dynstring_Append(), and fipa_url_s::str.

Referenced by fipa_url_sequence_Compose().

7.13.2.49 fipa_url_t* fipa_url_Copy (fipa_url_t * *src*)

Definition at line 427 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().

7.13.2.50 int fipa_url_Destroy (fipa_url_t * *url*)

Definition at line 417 of file fipa_acl.c.

References fipa_url_s::str.

Referenced by fipa_acl_envelope_Received_Destroy(), and fipa_url_sequence_Destroy().

7.13.2.51 fipa_url_t* fipa_url_New (void)

Definition at line 409 of file fipa_acl.c.

Referenced by fipa_envelope_HandleReceived(), fipa_envelope_ParseAddresses(), fipa_url_Copy(), MC_AclAddReceiver(), MC_AclAddReplyTo(), and MC_AclSetSender().

7.13.2.52 int fipa_url_Parse (fipa_url_p * *url*, fipa_message_string_p *message*)

Definition at line 1172 of file fipa_acl.c.

References fipa_word_s::content, fipa_word_Destroy(), fipa_word_Parse(), and strdup.

Referenced by fipa_url_sequence_Parse().

7.13.2.53 int fipa_url_sequence_Compose (dynstring_t * msg, fipa_url_sequence_t * urls)

Definition at line 1421 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().

7.13.2.54 fipa_url_sequence_t* fipa_url_sequence_Copy (fipa_url_sequence_t * src)

Definition at line 159 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().

7.13.2.55 int fipa_url_sequence_Destroy (fipa_url_sequence_t * sequence)

Definition at line 147 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().

7.13.2.56 fipa_url_sequence_t* fipa_url_sequence_New (void)

Definition at line 139 of file fipa_acl.c.

Referenced by fipa_url_sequence_Copy(), fipa_url_sequence_Parse(), MC_AclAddReceiver(), MC_AclAddReplyTo(), and MC_AclSetSender().

7.13.2.57 int fipa_url_sequence_Parse (fipa_url_sequence_p * urls, fipa_message_string_p message)

Definition at line 1140 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().

7.13.2.58 int fipa_word_Compose (dynstring_t * msg, fipa_word_t * word)

Definition at line 1503 of file fipa_acl.c.

References fipa_word_s::content, and dynstring_Append().

Referenced by fipa_expression_Compose().

7.13.2.59 fipa_word_t* fipa_word_Copy (fipa_word_t * src)

Definition at line 346 of file fipa_acl.c.

References fipa_word_s::content, fipa_word_New(), and strdup.

Referenced by fipa_expression_Copy().

7.13.2.60 int fipa_word_Destroy (fipa_word_t * word)

Definition at line 336 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().

7.13.2.61 fipa_word_t* fipa_word_New (void)

Definition at line 328 of file fipa_acl.c.

Referenced by fipa_word_Copy().

7.13.2.62 int fipa_word_Parse (fipa_word_t ** word, fipa_message_string_p message)

Definition at line 653 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().

7.14 /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)

7.14.1 Function Documentation

7.14.1.1 `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`.

7.14.1.2 `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()`.

7.14.1.3 `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()`.

7.14.1.4 `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()`.

7.14.1.5 `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()`.

7.14.1.6 `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()`.

7.14.1.7 `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()`.

7.14.1.8 `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()`.

7.14.1.9 `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()`.

7.14.1.10 `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()`, and `mxmlSaveAllocString()`.

Referenced by `MC_AclSend()`.

7.14.1.11 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(), and mxmlNewText().

Referenced by fipa_envelope_Compose__params().

7.14.1.12 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(), and mxmlNewText().

Referenced by fipa_envelope_Compose__params().

7.14.1.13 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(), and mxmlNewElement().

Referenced by fipa_envelope_Compose().

7.14.1.14 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().

7.14.1.15 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, 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().

7.14.1.16 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(), and mxmlNewElement().

Referenced by `fipa_envelope_Compose__envelope()`.

7.14.1.17 `mxmml_node_t* fipa_envelope_Compose__payload_encoding (fipa_acl_message_t * fipa_acl)`

Definition at line 1103 of file `fipa_envelope.c`.

References `mxmmlNewElement()`, and `mxmmlNewText()`.

Referenced by `fipa_envelope_Compose__params()`.

7.14.1.18 `mxmml_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`, `mxmmlNewElement()`, `mxmmlNewText()`, `fipa_agent_identifier_s::name`, `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()`.

7.14.1.19 `int fipa_envelope_HandleAclRepresentation (struct fipa_acl_envelope_s * envelope, mxmml_node_t * param_node, int cur_param)`

Definition at line 381 of file `fipa_envelope.c`.

References `fipa_acl_Param_s::acl_representation`, `mxmml_node_s::child`, `MC_ERR_PARSE`, `MXMML_DESCEND_FIRST`, `MXMML_TEXT`, `mxmmlFindElement()`, `fipa_acl_envelope_s::params`, `mxmml_text_s::string`, `mxmml_value_u::text`, `mxmml_node_s::type`, and `mxmml_node_s::value`.

Referenced by `fipa_envelope_HandleParams()`.

7.14.1.20 `int fipa_envelope_HandleComments (struct fipa_acl_envelope_s * envelope, mxmml_node_t * param_node, int cur_param)`

Definition at line 357 of file `fipa_envelope.c`.

References `mxmml_node_s::child`, `fipa_acl_Param_s::comments`, `MC_ERR_PARSE`, `MXMML_DESCEND_FIRST`, `MXMML_TEXT`, `mxmmlFindElement()`, `fipa_acl_envelope_s::params`, `mxmml_text_s::string`, `mxmml_value_u::text`, `mxmml_node_s::type`, and `mxmml_node_s::value`.

Referenced by `fipa_envelope_HandleParams()`.

7.14.1.21 `int fipa_envelope_HandleDate (struct fipa_acl_envelope_s * envelope, mxmml_node_t * param_node, int cur_param)`

Definition at line 452 of file `fipa_envelope.c`.

References `mxmml_node_s::child`, `fipa_acl_Param_s::date`, `fipa_datetime_Parse()`, `MC_ERR_PARSE`, `fipa_message_string_s::message`, `MXMML_DESCEND_FIRST`, `MXMML_TEXT`, `mxmmlFindElement()`, `fipa_acl_envelope_s::params`, `fipa_message_string_s::parse`, `mxmml_text_s::string`, `mxmml_value_u::text`, `mxmml_node_s::type`, and `mxmml_node_s::value`.

Referenced by `fipa_envelope_HandleParams()`.

7.14.1.22 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().

7.14.1.23 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().

7.14.1.24 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().

7.14.1.25 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().

7.14.1.26 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().

7.14.1.27 **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().

7.14.1.28 **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(), 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().

7.14.1.29 **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().

7.14.1.30 **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().

7.14.1.31 **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().

7.14.1.32 `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().

7.14.1.33 `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().

7.15 /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](#)

7.15.1 Function Documentation

7.15.1.1 void* acc_connection_Thread (void * arg)

Definition at line 405 of file acc.c.

References [mc_platform_s::acc](#), [fipa_agent_identifier_s::addresses](#), [agent_CmpName\(\)](#), [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](#), [ListAdd\(\)](#), [ListRDLock\(\)](#), [ListRDUnlock\(\)](#), [ListSearchCB\(\)](#), [ListWRLock\(\)](#), [ListWRUnlock\(\)](#), [agent_s::mailbox](#), [agent_s::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().

7.15.1.2 int acc_Destroy (acc_p acc)

Definition at line 102 of file acc.c.

References COND_DESTROY, MC_SUCCESS, and MUTEX_DESTROY.

Referenced by mc_platform_Destroy().

7.15.1.3 void* acc_MessageHandlerThread (void * arg)

Definition at line 118 of file acc.c.

References mc_platform_s::acc, agent_CmpName(), agent_Initialize(), mc_platform_s::agent_queue, agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, 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, ListAdd(), ListPop(), ListSearchCB(), ListWRLock(), ListWRUnlock(), ListWRWait(), agent_s::lock, MC_AGENT_NEUTRAL, 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().

7.15.1.4 void acc_Start (struct mc_platform_s * mc_platform)

7.15.1.5 void* acc_Thread (void * arg)

Definition at line 307 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, ListGetSize(), ListPop(), ListRDLock(), ListRDtoWR(), ListRDUnlock(), ListRDWait(), ListWRUnlock(), 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().

7.15.1.6 void* listen_Thread (void * arg)

Definition at line 677 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, ListAdd(), ListWRLock(), ListWRUnlock(), MUTEX_LOCK,

MUTEX_UNLOCK, connection_s::nonce, mc_platform_s::port, agency_s::portno, mc_platform_s::private_key, mc_platform_s::quit, connection_s::remote_hostname, connection_s::serverfd, SOCKET_ERROR, mc_platform_s::sockfd, and THREAD_EXIT.

Referenced by acc_Start().

7.15.1.7 STRUCT (connection_thread_arg, struct mc_platform_s *mc_platform;struct connection_s *connection;)

7.15.1.8 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;)

7.15.1.9 void* udplisten_Thread (void *arg)

Definition at line 938 of file acc.c.

References buf, BUFLen, mc_platform_s::hostname, PACKAGE_VERSION, mc_platform_s::port, and UDPPORT.

Referenced by acc_Start().

7.15.2 Variable Documentation

7.15.2.1 struct sockaddr_in* addr

Definition at line 78 of file acc.h.

7.15.2.2 unsigned long int client_fd

Definition at line 79 of file acc.h.

Referenced by main(), and ssl_test().

7.15.2.3 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().

7.15.2.4 unsigned long int server_fd

Definition at line 80 of file acc.h.

Referenced by main(), and ssl_test().

7.16 /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"
```

Data Structures

- struct [agent_s](#)

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)
- int [agent_Print](#) ([agent_t](#) *agent)
- int [agent_CmpName](#) (const void *key, void *element)
- int [agent_CmpID](#) (int *id, [agent_t](#) *agent)

7.16.1 Typedef Documentation

7.16.1.1 typedef [agent_t](#)* [agent_p](#)

Definition at line 111 of file agent.h.

7.16.1.2 typedef struct [agent_s](#) [agent_t](#)

Definition at line 109 of file agent.h.

7.16.1.3 typedef [agent_t](#)* [MCAgent_t](#)

Definition at line 110 of file agent.h.

7.16.2 Function Documentation

7.16.2.1 `int agent_AddPersistentVariable (agent_p agent, int task_num, const char * var_name)`

Definition at line 53 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, interpreter_variable_data_CmpName(), interpreter_variable_data_Destroy(), ListAdd(), ListDeleteCB(), ListWRLock(), ListWRUnlock(), MC_ERR, agent_s::name, interpreter_variable_data_s::name, interpreter_variable_data_s::size, strdup, agent_datastate_s::task_progress, and agent_datastate_s::tasks.

7.16.2.2 `void* agent_ChScriptInitVar (ChInterp_t * interp)`

Definition at line 554 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_AgentAttachFile_chdl(), MC_AgentListFiles_chdl(), MC_AgentRetrieveFile_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 interpreter_queue_CreateRetrieve(), and mc_platform_Initialize().

7.16.2.3 `int agent_CmpID (int * id, agent_t * agent)`

Definition at line 1377 of file agent.c.

References agent_s::id, agent_s::lock, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by MC_FindAgentByID().

7.16.2.4 `int agent_CmpName (const void * key, void * element)`

Definition at line 1366 of file agent.c.

References `agent_s::lock`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, and `agent_s::name`.

Referenced by `acc_connection_Thread()`, `acc_MessageHandlerThread()`, `MC_DeleteAgent()`, `MC_DeleteAgentWG()`, and `MC_FindAgentByName()`.

7.16.2.5 `agent_p agent_Copy (const agent_p agent)`

Definition at line 140 of file `agent.c`.

References `agent_datastate_Copy()`, `agent_s::agent_interp`, `agent_New()`, `agent_s::agent_persistent`, `agent_s::agent_status`, `agent_s::agent_status_cond`, `agent_s::agent_status_lock`, `agent_s::agent_type`, `agent_s::arrival_time`, `COND_INIT`, `COND_NEW`, `agent_s::datastate`, `agent_s::home`, `agent_s::home_port`, `agent_s::id`, `ListInitialize()`, `agent_s::lock`, `agent_s::mailbox`, `MUTEX_INIT`, `MUTEX_LOCK`, `MUTEX_NEW`, `MUTEX_T`, `agent_s::name`, `agent_s::orphan`, `agent_s::owner`, `agent_s::return_data`, and `agent_s::run_lock`.

Referenced by `MC_CopyAgent()`.

7.16.2.6 `int agent_Destroy (agent_p agent)`

Definition at line 455 of file `agent.c`.

References `agent_s::agent_address`, `agent_datastate_Destroy()`, `agent_s::agent_interp`, `agent_s::agent_status`, `agent_s::agent_status_cond`, `agent_s::agent_status_lock`, `COND_DESTROY`, `agent_s::datastate`, `fipa_acl_message_Destroy()`, `agent_s::home`, `mc_platform_s::interpreter_queue`, `ListAdd()`, `ListClearCB()`, `ListTerminate()`, `ListWRLock()`, `ListWRUnlock()`, `agent_s::lock`, `agent_s::mailbox`, `MC_AGENT_NEUTRAL`, `agent_s::mc_platform`, `MC_SUCCESS`, `MUTEX_DESTROY`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `agent_s::name`, `agent_s::owner`, `agent_s::run_lock`, `agent_s::sender`, and `agent_s::wg_code`.

Referenced by `agent_Initialize()`, `handler_FLUSH_AGENTS()`, `MC_DeleteAgentWG()`, and `mc_platform_Destroy()`.

7.16.2.7 `agent_p agent_Initialize (struct mc_platform_s * mc_platform, message_p message, int id)`

Definition at line 318 of file `agent.c`.

References `agent_s::agent_address`, `agent_datastate_New()`, `agent_Destroy()`, `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_status_cond`, `agent_s::agent_status_lock`, `agent_s::agent_thread_id`, `agent_s::agent_type`, `message_s::agent_xml_flag`, `agent_xml_parse()`, `agent_s::arrival_time`, `COND_BROADCAST`, `COND_DESTROY`, `COND_INIT`, `COND_NEW`, `agent_s::datastate`, `mc_platform_s::default_agentstatus`, `mc_platform_s::err`, `agent_s::home`, `mc_platform_s::hostname`, `agent_s::id`, `ListInitialize()`, `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_LOCK`, `MUTEX_NEW`, `MUTEX_T`, `MUTEX_UNLOCK`, `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()`.

7.16.2.8 agent_p agent_New (void)

Definition at line 207 of file agent.c.

References agent_s::agent_status_cond, agent_s::agent_status_lock, COND_INIT, COND_NEW, ListInitialize(), agent_s::lock, agent_s::mailbox, MUTEX_INIT, MUTEX_NEW, and agent_s::run_lock.

Referenced by agent_Copy(), and MC_ComposeAgentWithWorkgroup().

7.16.2.9 agent_p agent_NewBinary (struct mc_platform_s * mc_platform)

Definition at line 237 of file agent.c.

References agent_s::agent_address, 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_status_cond, agent_s::agent_status_lock, agent_s::agent_thread_id, agent_s::arrival_time, agent_s::binary, COND_BROADCAST, COND_INIT, COND_NEW, agent_s::home, mc_platform_s::hostname, agent_s::id, ListInitialize(), agent_s::lock, agent_s::mailbox, MC_AGENT_ACTIVE, agent_s::mc_platform, MUTEX_INIT, MUTEX_LOCK, MUTEX_NEW, MUTEX_T, MUTEX_UNLOCK, agent_s::orphan, mc_platform_s::port, agent_s::run_lock, and agent_s::sender.

Referenced by MC_AddStationaryAgent().

7.16.2.10 int agent_Print (agent_t * agent)

Definition at line 1356 of file agent.c.

References agent_s::agent_status, agent_s::agent_status_lock, agent_s::connect_id, agent_s::id, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by ams_Print(), and handler_PRINTLIST_AGENTS().

7.16.2.11 void agent_RunChScript (MCAgent_t agent, struct mc_platform_s * global)**7.16.2.12 void* agent_RunChScriptThread (void * agent)**

Definition at line 1049 of file agent.c.

References mc_platform_s::agency, agent_s::agent_interp, agency_s::agentInitCallback, agency_s::agentInitUserData, mc_platform_s::ams, COND_SIGNAL, COND_WAIT, 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(), ListAdd(), ListClearCB(), ListWRLock(), ListWRUnlock(), MC_AGENT_NEUTRAL, MC_EXEC_AGENT, agent_s::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().

7.17 /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*)

7.17.1 Typedef Documentation

7.17.1.1 typedef [agent_datastate_t](#)* [agent_datastate_p](#)

Definition at line 73 of file [agent_datastate.h](#).

7.17.1.2 typedef struct [agent_datastate_s](#) [agent_datastate_t](#)

7.17.2 Function Documentation

7.17.2.1 [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\(\)](#).

7.17.2.2 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().

7.17.2.3 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().

7.18 /home/dko/Projects/mobilec/src/include/agent_file_data.h File Reference

Data Structures

- struct [agent_file_data_s](#)

Typedefs

- typedef struct [agent_file_data_s](#) [agent_file_data_t](#)
- typedef struct [agent_file_data_s](#) * [agent_file_data_p](#)

Functions

- [agent_file_data_p](#) [agent_file_data_New](#) (void)
- [agent_file_data_p](#) [agent_file_data_NewWithData](#) (const char *name, const char *data)
- [agent_file_data_p](#) [agent_file_data_Copy](#) ([agent_file_data_p](#) src)
- [agent_file_data_p](#) [agent_file_data_InitializeFromFilename](#) (const char *filename)
- [agent_file_data_p](#) [agent_file_data_Encode](#) (const char *name, void *data, int size)
- int [agent_file_data_SaveToFile](#) (const char *filename, [agent_file_data_p](#) afd)
- int [agent_file_data_Destroy](#) ([agent_file_data_p](#) agent_file_data)
- int [agent_file_data_CmpName](#) (const void *key, void *element)

7.18.1 Typedef Documentation

7.18.1.1 typedef struct [agent_file_data_s](#)* [agent_file_data_p](#)

Definition at line 41 of file [agent_file_data.h](#).

7.18.1.2 typedef struct [agent_file_data_s](#) [agent_file_data_t](#)

7.18.2 Function Documentation

7.18.2.1 int [agent_file_data_CmpName](#) (const void * *key*, void * *element*)

Definition at line 102 of file [agent_file_data.c](#).

References [agent_file_data_s::name](#).

Referenced by [MC_AgentRetrieveFile\(\)](#).

7.18.2.2 [agent_file_data_p](#) [agent_file_data_Copy](#) ([agent_file_data_p](#) *src*)

Definition at line 26 of file [agent_file_data.c](#).

References [agent_file_data_s::data](#), [agent_file_data_s::name](#), and [strdup](#).

Referenced by [agent_task_Copy\(\)](#).

7.18.2.3 int agent_file_data_Destroy (agent_file_data_p *agent_file_data*)

Definition at line 89 of file agent_file_data.c.

References agent_file_data_s::data, and agent_file_data_s::name.

Referenced by agent_task_Destroy(), and agent_xml_compose__task().

7.18.2.4 agent_file_data_p agent_file_data_Encode (const char * *name*, void * *data*, int *size*)

Definition at line 84 of file agent_file_data.c.

7.18.2.5 agent_file_data_p agent_file_data_InitializeFromFilename (const char * *filename*)

Definition at line 44 of file agent_file_data.c.

References base64_encode_block(), base64_encode_blockend(), base64_init_encodestate(), agent_file_data_s::data, agent_file_data_s::name, and strdup.

Referenced by MC_AgentAttachFile().

7.18.2.6 agent_file_data_p agent_file_data_New (void)

Definition at line 8 of file agent_file_data.c.

References agent_file_data_s::data, and agent_file_data_s::name.

Referenced by agent_file_data_NewWithData().

7.18.2.7 agent_file_data_p agent_file_data_NewWithData (const char * *name*, const char * *data*)

Definition at line 17 of file agent_file_data.c.

References agent_file_data_New(), agent_file_data_s::data, agent_file_data_s::name, and strdup.

Referenced by agent_xml_parse__file().

7.18.2.8 int agent_file_data_SaveToFile (const char * *filename*, agent_file_data_p *afd*)

7.19 /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 int [MC_AgentAttachFile_chdl](#) (void *varg)
- EXPORTCH int [MC_AgentListFiles_chdl](#) (void *varg)
- EXPORTCH int [MC_AgentRetrieveFile_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 [MCAgent_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)

7.19.1 Function Documentation

7.19.1.1 EXPORTCH int [MC_AclAddReceiver_chdl](#) (void * *varg*)

Definition at line 3261 of file libmc.c.

References [MC_AclAddReceiver\(\)](#).

Referenced by [agent_ChScriptInitVar\(\)](#).

7.19.1.2 EXPORTCH int [MC_AclAddReplyTo_chdl](#) (void * *varg*)

Definition at line 3281 of file libmc.c.

References [MC_AclAddReplyTo\(\)](#).

Referenced by [agent_ChScriptInitVar\(\)](#).

7.19.1.3 EXPORTCH int [MC_AclDestroy_chdl](#) (void * *varg*)

Definition at line 2993 of file libmc.c.

References [MC_AclDestroy\(\)](#).

Referenced by [agent_ChScriptInitVar\(\)](#).

7.19.1.4 EXPORTCH char* MC_AclGetContent_chdl (void * *varg*)

Definition at line 3172 of file libmc.c.

References MC_AclGetContent().

Referenced by agent_ChScriptInitVar().

7.19.1.5 EXPORTCH char* MC_AclGetConversationID_chdl (void * *varg*)

Definition at line 3123 of file libmc.c.

References MC_AclGetConversationID().

Referenced by agent_ChScriptInitVar().

7.19.1.6 EXPORTCH int MC_AclGetPerformative_chdl (void * *varg*)

Definition at line 3138 of file libmc.c.

References MC_AclGetPerformative().

Referenced by agent_ChScriptInitVar().

7.19.1.7 EXPORTCH int MC_AclGetProtocol_chdl (void * *varg*)

Definition at line 3108 of file libmc.c.

References MC_AclGetProtocol().

Referenced by agent_ChScriptInitVar().

7.19.1.8 EXPORTCH int MC_AclGetSender_chdl (void * *varg*)

Definition at line 3153 of file libmc.c.

References MC_AclGetSender().

Referenced by agent_ChScriptInitVar().

7.19.1.9 EXPORTCH void* MC_AclNew_chdl (void * *varg*)

Definition at line 3008 of file libmc.c.

References MC_AclNew().

Referenced by agent_ChScriptInitVar().

7.19.1.10 EXPORTCH int MC_AclPost_chdl (void * *varg*)

Definition at line 3016 of file libmc.c.

References MC_AclPost().

Referenced by agent_ChScriptInitVar().

7.19.1.11 EXPORTCH void* MC_AclReply_chdl (void * *varg*)

Definition at line 3034 of file libmc.c.

References MC_AclReply().

Referenced by agent_ChScriptInitVar().

7.19.1.12 EXPORTCH void* MC_AclRetrieve_chdl (void * *varg*)

Definition at line 3050 of file libmc.c.

References MC_AclRetrieve().

Referenced by agent_ChScriptInitVar().

7.19.1.13 EXPORTCH int MC_AclSend_chdl (void * *varg*)

Definition at line 3066 of file libmc.c.

References CHECK_NULL, MC_AclSend(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.14 EXPORTCH int MC_AclSetContent_chdl (void * *varg*)

Definition at line 3301 of file libmc.c.

References fipa_acl_message_s::content, and MC_AclSetContent().

Referenced by agent_ChScriptInitVar().

7.19.1.15 EXPORTCH int MC_AclSetConversationID_chdl (void * *varg*)

Definition at line 3205 of file libmc.c.

References MC_AclSetConversationID().

Referenced by agent_ChScriptInitVar().

7.19.1.16 EXPORTCH int MC_AclSetPerformative_chdl (void * *varg*)

Definition at line 3223 of file libmc.c.

References MC_AclSetPerformative(), and fipa_acl_message_s::performative.

Referenced by agent_ChScriptInitVar().

7.19.1.17 EXPORTCH int MC_AclSetProtocol_chdl (void * *varg*)

Definition at line 3187 of file libmc.c.

References MC_AclSetProtocol(), and fipa_acl_message_s::protocol.

Referenced by agent_ChScriptInitVar().

7.19.1.18 EXPORTCH int MC_AclSetSender_chdl (void * *varg*)

Definition at line 3241 of file libmc.c.

References MC_AclSetSender().

Referenced by agent_ChScriptInitVar().

7.19.1.19 EXPORTCH void* MC_AclWaitRetrieve_chdl (void * *varg*)

Definition at line 3090 of file libmc.c.

References MC_AclWaitRetrieve().

Referenced by agent_ChScriptInitVar().

7.19.1.20 EXPORTCH int MC_AddAgent_chdl (void * *varg*)

Definition at line 3321 of file libmc.c.

References CHECK_NULL, MC_AddAgent(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.21 EXPORTCH int MC_AgentAddTask_chdl (void * *varg*)

Definition at line 3345 of file libmc.c.

References MC_AgentAddTask().

Referenced by agent_ChScriptInitVar().

7.19.1.22 EXPORTCH int MC_AgentAttachFile_chdl (void * *varg*)

Definition at line 3379 of file libmc.c.

References MC_AgentAttachFile().

Referenced by agent_ChScriptInitVar().

7.19.1.23 EXPORTCH int MC_AgentListFiles_chdl (void * *varg*)

Definition at line 3403 of file libmc.c.

References MC_AgentListFiles().

Referenced by agent_ChScriptInitVar().

7.19.1.24 EXPORTCH int MC_AgentRetrieveFile_chdl (void * *varg*)

Definition at line 3430 of file libmc.c.

References MC_AgentRetrieveFile().

Referenced by agent_ChScriptInitVar().

7.19.1.25 EXPORTCH const void* MC_AgentVariableRetrieve_chdl (void * *varg*)

Definition at line 3458 of file libmc.c.

References MC_AgentVariableRetrieve().

Referenced by agent_ChScriptInitVar().

7.19.1.26 EXPORTCH int MC_AgentVariableSave_chdl (void * *varg*)

Definition at line 3482 of file libmc.c.

References MC_AgentVariableSave().

Referenced by agent_ChScriptInitVar().

7.19.1.27 EXPORTCH int MC_Barrier_chdl (void * *varg*)

Definition at line 3534 of file libmc.c.

References CHECK_NULL, MC_Barrier(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.28 EXPORTCH int MC_BarrierDelete_chdl (void * *varg*)

Definition at line 3557 of file libmc.c.

References CHECK_NULL, MC_BarrierDelete(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.29 EXPORTCH int MC_BarrierInit_chdl (void * *varg*)

Definition at line 3580 of file libmc.c.

References CHECK_NULL, MC_BarrierInit(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.30 EXPORTCH int MC_CallAgentFunc_chdl (void * *varg*)

Definition at line 3504 of file libmc.c.

References MC_CallAgentFuncVar().

Referenced by agent_ChScriptInitVar().

7.19.1.31 EXPORTCH MCAgent_t MC_ComposeAgent_chdl (void * *varg*)

Definition at line 3628 of file libmc.c.

References MC_ComposeAgentWithWorkgroup().

Referenced by agent_ChScriptInitVar().

7.19.1.32 EXPORTCH MCAgent_t MC_ComposeAgentFromFile_chdl (void * *varg*)

Definition at line 3712 of file libmc.c.

References MC_ComposeAgentFromFileWithWorkgroup().

Referenced by agent_ChScriptInitVar().

7.19.1.33 EXPORTCH MCAgent_t MC_ComposeAgentFromFileWithWorkgroup_chdl (void * *varg*)

Definition at line 3753 of file libmc.c.

References MC_ComposeAgentFromFileWithWorkgroup().

Referenced by agent_ChScriptInitVar().

7.19.1.34 EXPORTCH MCAgent_t MC_ComposeAgentWithWorkgroup_chdl (void * *varg*)

Definition at line 3669 of file libmc.c.

References MC_ComposeAgentS().

Referenced by agent_ChScriptInitVar().

7.19.1.35 EXPORTCH int MC_CondBroadcast_chdl (void * *varg*)

Definition at line 3605 of file libmc.c.

References CHECK_NULL, MC_CondBroadcast(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.36 EXPORTCH int MC_CondReset_chdl (void * *varg*)

Definition at line 3819 of file libmc.c.

References CHECK_NULL, MC_CondReset(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.37 EXPORTCH int MC_CondSignal_chdl (void * *varg*)

Definition at line 3796 of file libmc.c.

References CHECK_NULL, MC_CondSignal(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.38 EXPORTCH int MC_CondWait_chdl (void * *varg*)

Definition at line 3842 of file libmc.c.

References CHECK_NULL, MC_CondWait(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.39 EXPORTCH int MC_DeleteAgent_chdl (void * *varg*)

Definition at line 3864 of file libmc.c.

References MC_DeleteAgent(), MC_ERR_NOT_FOUND, and MC_FindAgentByName().

Referenced by agent_ChScriptInitVar().

7.19.1.40 EXPORTCH int MC_DeleteAgentWG_chdl (void * *varg*)

Definition at line 3884 of file libmc.c.

References MC_DeleteAgentWG(), MC_ERR_NOT_FOUND, and MC_FindAgentByName().

Referenced by agent_ChScriptInitVar().

7.19.1.41 EXPORTCH int MC_DeregisterService_chdl (void * *varg*)

Definition at line 3933 of file libmc.c.

References CHECK_NULL, MC_DeregisterService(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.42 EXPORTCH int MC_DestroyServiceSearchResult_chdl (void * *varg*)

Definition at line 3906 of file libmc.c.

References MC_DestroyServiceSearchResult().

Referenced by agent_ChScriptInitVar().

7.19.1.43 EXPORTCH int MC_End_chdl (void * *varg*)

Definition at line 3960 of file libmc.c.

References CHECK_NULL, MC_End(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.44 EXPORTCH MCAgent_t MC_FindAgentByID_chdl (void * *varg*)

Definition at line 3977 of file libmc.c.

References CHECK_NULL, MC_FindAgentByID(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.45 EXPORTCH MCAgent_t MC_FindAgentByName_chdl (void * *varg*)

Definition at line 4000 of file libmc.c.

References CHECK_NULL, MC_FindAgentByName(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.46 EXPORTCH int MC_GetAgentID_chdl (void * *varg*)

Definition at line 4047 of file libmc.c.

References MC_GetAgentID().

Referenced by agent_ChScriptInitVar().

7.19.1.47 EXPORTCH char* MC_GetAgentName_chdl (void * *varg*)

Definition at line 4063 of file libmc.c.

References MC_GetAgentName().

Referenced by agent_ChScriptInitVar().

7.19.1.48 EXPORTCH int MC_GetAgentNumTasks_chdl (void * *varg*)

Definition at line 4079 of file libmc.c.

References MC_GetAgentNumTasks().

7.19.1.49 EXPORTCH int MC_GetAgentStatus_chdl (void * *varg*)

Definition at line 4095 of file libmc.c.

References MC_GetAgentStatus().

Referenced by agent_ChScriptInitVar().

7.19.1.50 EXPORTCH char* MC_GetAgentXMLString_chdl (void * *varg*)

Definition at line 4111 of file libmc.c.

References MC_GetAgentXMLString().

Referenced by agent_ChScriptInitVar().

7.19.1.51 EXPORTCH int MC_GetTimeOfDay_chdl (void * *varg*)

Definition at line 4127 of file libmc.c.

Referenced by agent_ChScriptInitVar().

7.19.1.52 EXPORTCH int MC_HaltAgency_chdl (void * *varg*)

Definition at line 4142 of file libmc.c.

References CHECK_NULL, MC_HaltAgency(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.53 EXPORTCH int MC_MigrateAgent_chdl (void * *varg*)

Definition at line 4159 of file libmc.c.

References MC_MigrateAgent(), and port.

Referenced by agent_ChScriptInitVar().

7.19.1.54 EXPORTCH int MC_MutexLock_chdl (void * *varg*)

Definition at line 4178 of file libmc.c.

References CHECK_NULL, MC_MutexLock(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.55 EXPORTCH int MC_MutexUnlock_chdl (void * *varg*)

Definition at line 4202 of file libmc.c.

References CHECK_NULL, MC_MutexUnlock(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.19.1.56 EXPORTCH int MC_PrintAgentCode_chdl (void * *varg*)

Definition at line 4226 of file libmc.c.

References MC_PrintAgentCode().

Referenced by agent_ChScriptInitVar().

7.19.1.57 EXPORTCH int MC_RegisterService_chdl (void * *varg*)

Definition at line 4242 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_RegisterService().

Referenced by agent_ChScriptInitVar().

7.19.1.58 EXPORTCH int MC_ResumeAgency_chdl (void * *varg*)

Definition at line 4279 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_ResumeAgency().

Referenced by agent_ChScriptInitVar().

7.19.1.59 EXPORTCH MCAgent_t MC_RetrieveAgent_chdl (void * *varg*)

Definition at line 4297 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_RetrieveAgent().

Referenced by agent_ChScriptInitVar().

7.19.1.60 EXPORTCH char* MC_RetrieveAgentCode_chdl (void * *varg*)

Definition at line 4314 of file libmc.c.

References MC_RetrieveAgentCode().

Referenced by agent_ChScriptInitVar().

7.19.1.61 EXPORTCH int MC_SaveData_chdl (void * *varg*)

Definition at line 4330 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(), ListAdd(), ListWRLock(), ListWRUnlock(), interpreter_variable_data_s::name, interpreter_variable_data_s::size, strdup, agent_datastate_s::task_progress, and agent_datastate_s::tasks.

Referenced by agent_ChScriptInitVar().

7.19.1.62 EXPORTCH int MC_SearchForService_chdl (void * *varg*)

Definition at line 4369 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SearchForService().

Referenced by agent_ChScriptInitVar().

7.19.1.63 EXPORTCH int MC_SemaphorePost_chdl (void * *varg*)

Definition at line 4410 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SemaphorePost().

Referenced by agent_ChScriptInitVar().

7.19.1.64 EXPORTCH int MC_SemaphoreWait_chdl (void * *varg*)

Definition at line 4434 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SemaphoreWait().

Referenced by agent_ChScriptInitVar().

7.19.1.65 EXPORTCH int MC_SendAgentMigrationMessage_chdl (void * *varg*)

Definition at line 4458 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, MC_SendAgentMigrationMessage(), and port.

Referenced by agent_ChScriptInitVar().

7.19.1.66 EXPORTCH int MC_SendAgentMigrationMessageFile_chdl (void * *varg*)

Definition at line 4483 of file libmc.c.

References MC_SendAgentMigrationMessageFile(), and port.

Referenced by agent_ChScriptInitVar().

7.19.1.67 EXPORTCH int MC_SendSteerCommand_chdl (void * *varg*)

Definition at line 4503 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SendSteerCommand().

Referenced by agent_ChScriptInitVar().

7.19.1.68 EXPORTCH int MC_SetAgentStatus_chdl (void * *varg*)

Definition at line 4526 of file libmc.c.

References MC_SetAgentStatus().

Referenced by agent_ChScriptInitVar().

7.19.1.69 EXPORTCH int MC_SetDefaultAgentStatus_chdl (void * *varg*)

Definition at line 4544 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SetDefaultAgentStatus().

Referenced by agent_ChScriptInitVar().

7.19.1.70 EXPORTCH int MC_SyncDelete_chdl (void * *varg*)

Definition at line 4567 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SyncDelete().

Referenced by agent_ChScriptInitVar().

7.19.1.71 EXPORTCH int MC_SyncInit_chdl (void * *varg*)

Definition at line 4590 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SyncInit().

Referenced by agent_ChScriptInitVar().

7.19.1.72 EXPORTCH int MC_TerminateAgent_chdl (void * *varg*)

Definition at line 4614 of file libmc.c.

References MC_ERR_NOT_FOUND, MC_FindAgentByName(), and MC_TerminateAgent().

Referenced by agent_ChScriptInitVar().

7.19.1.73 EXPORTCH int MC_TerminateAgentWG_chdl (void * *varg*)

Definition at line 4635 of file libmc.c.

References MC_ERR_NOT_FOUND, MC_FindAgentByName(), and MC_TerminateAgentWG().

Referenced by agent_ChScriptInitVar().

7.20 /home/dko/Projects/mobilec/src/include/agent_task.h File Reference

```
#include "../mc_list/list.h"
#include "interpreter_variable_data.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)

7.20.1 Typedef Documentation

7.20.1.1 typedef [agent_task_t](#)* [agent_task_p](#)

Definition at line 61 of file [agent_task.h](#).

7.20.1.2 typedef struct [agent_task_s](#) [agent_task_t](#)

7.20.2 Function Documentation

7.20.2.1 [agent_task_p](#) [agent_task_Copy](#) ([agent_task_p](#) task)

Definition at line 70 of file [agent_task.c](#).

References [agent_file_data_Copy\(\)](#), [agent_task_s::agent_file_list](#), [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\(\)](#), [ListCopy\(\)](#), [ListInitialize\(\)](#), [ListRDLock\(\)](#), [ListRDUnlock\(\)](#), [ListSearch\(\)](#), [ListWRLock\(\)](#), [ListWRUnlock\(\)](#), [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](#), [list_s::size](#), [agent_task_s::size_of_element_array](#), [strdup](#), and [agent_task_s::var_name](#).

Referenced by [agent_datastate_Copy\(\)](#).

7.20.2.2 int [agent_task_Destroy](#) ([agent_task_p](#) agent_task)

Definition at line 143 of file [agent_task.c](#).

References `agent_file_data_Destroy()`, `agent_task_s::agent_file_list`, `agent_task_s::agent_return_data`, `agent_task_s::agent_variable_list`, `agent_task_s::code_id`, `interpreter_variable_data_Destroy()`, `ListClearCB()`, `ListTerminate()`, `ListWRLock()`, `ListWRUnlock()`, `MC_SUCCESS`, `agent_task_s::saved_variables`, `agent_task_s::server_name`, and `agent_task_s::var_name`.

Referenced by `agent_datastate_Destroy()`.

7.20.2.3 `agent_task_p agent_task_New (void)`

Definition at line 50 of file `agent_task.c`.

References `agent_task_s::agent_file_list`, `agent_task_s::agent_variable_list`, `ListInitialize()`, `agent_task_s::num_saved_variables`, and `agent_task_s::saved_variables`.

Referenced by `agent_xml_parse_tasks()`, `MC_AgentAddTask()`, and `MC_ComposeAgentWithWorkgroup()`.

7.21 /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)

7.21.1 Function Documentation

7.21.1.1 int ams_Destroy (ams_p ams)

Definition at line 45 of file ams.c.

References COND_DESTROY, MC_SUCCESS, and MUTEX_DESTROY.

Referenced by mc_platform_Destroy().

7.21.1.2 int ams_ManageAgentList (ams_p ams)

Definition at line 108 of file ams.c.

References agent_RunChScript(), agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, agent_s::binary, COND_BROADCAST, ListAdd(), ListDelete(), ListRDLock(), ListRDtoWR(), ListRDUnlock(), ListSearch(), ListWRLock(), ListWRtoRD(), ListWRUnlock(), 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, agent_s::run_lock, and list_s::size.

Referenced by ams_Thread().

7.21.1.3 void ams_Print (ams_p ams)

Definition at line 87 of file ams.c.

References agent_Print(), ListForEachCB(), ListGetSize(), ListRDLock(), ListRDUnlock(), and list_s::size.

7.21.1.4 `int ams_RemoveFinishedAgents (ams_p ams)`

7.21.1.5 `void ams_Start (struct mc_platform_s * mc_platform)`

7.21.1.6 `void* ams_Thread (void * arg)`

Definition at line 258 of file ams.c.

References `mc_platform_s::ams`, `ams_ManageAgentList()`, `COND_BROADCAST`, `COND_WAIT`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `mc_platform_s::quit`, `mc_platform_s::quit_lock`, and `THREAD_EXIT`.

Referenced by `ams_Start()`.

7.21.1.7 `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;)`

7.22 /home/dko/Projects/mobilec/src/include/barrier.h File Reference

```
#include "macros.h"
#include "../mc_list/list.h"
#include "mc_rwlock.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_node_CmpID](#) (const void *key, void *element)

7.22.1 Typedef Documentation

7.22.1.1 typedef [barrier_node_t](#)* [barrier_node_p](#)

Definition at line 49 of file [barrier.h](#).

7.22.1.2 typedef struct [barrier_node_s](#) [barrier_node_t](#)

7.22.1.3 typedef [barrier_queue_t](#)* [barrier_queue_p](#)

Definition at line 57 of file [barrier.h](#).

7.22.1.4 typedef struct [barrier_queue_s](#) [barrier_queue_t](#)

7.22.2 Function Documentation

7.22.2.1 int [barrier_node_CmpID](#) (const void * *key*, void * *element*)

Definition at line 86 of file [barrier.c](#).

References [barrier_node_s::id](#), [barrier_node_s::lock](#), [MUTEX_LOCK](#), and [MUTEX_UNLOCK](#).

Referenced by [MC_Barrier\(\)](#), [MC_BarrierDelete\(\)](#), and [MC_BarrierInit\(\)](#).

7.22.2.2 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 MC_BarrierDelete(), and mc_platform_Destroy().

7.22.2.3 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, barrier_node_s::num_registered, and barrier_node_s::num_waiting.

Referenced by MC_BarrierInit().

7.23 /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)

7.23.1 Define Documentation

7.23.1.1 #define CMDLINE_SIZE 80

Definition at line 37 of file cmd_prompt.h.

7.23.2 Typedef Documentation

7.23.2.1 typedef cmd_prompt_t* cmd_prompt_p

Definition at line 44 of file cmd_prompt.h.

7.23.2.2 `typedef struct cmd_prompt_s cmd_prompt_t`

7.23.2.3 `typedef command_t* command_p`

Definition at line 51 of file cmd_prompt.h.

7.23.2.4 `typedef struct command_s command_t`

7.23.3 Function Documentation

7.23.3.1 `int cmd_prompt_Destroy (cmd_prompt_p cmd_prompt)`

Definition at line 130 of file cmd_prompt.c.

References MC_SUCCESS.

Referenced by mc_platform_Destroy().

7.23.3.2 `cmd_prompt_p cmd_prompt_Initialize (struct mc_platform_s * mc_platform)`

7.23.3.3 `void cmd_prompt_Start (struct mc_platform_s * mc_platform)`

7.23.3.4 `void* cmd_prompt_Thread (void * arg)`

Definition at line 169 of file cmd_prompt.c.

References `command_s::args`, `buf`, `dealloc_command()`, `exec_command()`, `command_s::index`, `command_s::num_args`, `process_command()`, and `split_string()`.

Referenced by `cmd_prompt_Start()`.

7.23.3.5 `int dealloc_command (command_t * cmd)`

Definition at line 322 of file cmd_prompt.c.

References `command_s::args`, and `command_s::num_args`.

Referenced by `cmd_prompt_Thread()`.

7.23.3.6 `int exec_command (command_t cmd, struct mc_platform_s * global)`

7.23.3.7 `int process_command (command_t * cmd)`

Definition at line 288 of file cmd_prompt.c.

References `command_s::args`, `command_cmds`, `command_s::index`, and `command_s::num_args`.

Referenced by `cmd_prompt_Thread()`.

7.23.3.8 `int split_string (char *** args, const char * buf)`

Definition at line 240 of file cmd_prompt.c.

Referenced by `cmd_prompt_Thread()`.

7.24 /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](#) []

7.24.1 Define Documentation

7.24.1.1 #define [COMMAND](#)(name, cmd, description) cmd ,

Definition at line 48 of file commands.h.

7.24.1.2 **#define COMMAND(name, cmd, description) description ,**

Definition at line 48 of file commands.h.

7.24.1.3 **#define COMMAND(name, cmd, description) &handler_##name ,**

Definition at line 48 of file commands.h.

7.24.1.4 **#define COMMAND(name, cmd, description) COMMAND_##name ,**

Definition at line 48 of file commands.h.

7.24.1.5 **#define COMMAND(name, cmd, desc) int handler_##name (void *arg, mc_platform_p global);**

Definition at line 48 of file commands.h.

7.24.2 **Typedef Documentation**

7.24.2.1 **typedef int(* cmd_handler_t)(void *, mc_platform_p global)**

Definition at line 45 of file commands.h.

7.24.3 **Enumeration Type Documentation**

7.24.3.1 **enum command_indices_e**

Definition at line 47 of file commands.h.

7.24.4 **Function Documentation**

7.24.4.1 **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

7.24.4.2 **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

7.24.4.3 `command_indices_e::COMMAND (QUIT, "quit", "This command ends the MobileC application.")`

7.24.5 Variable Documentation

7.24.5.1 `cmd_handler_t cmd_handlers[]`

Definition at line 54 of file commands.h.

Referenced by `exec_command()`.

7.24.5.2 `char* command_cmds[]`

Definition at line 68 of file commands.h.

Referenced by `handler_HELP()`, and `process_command()`.

7.24.5.3 `char* command_descriptions[]`

Definition at line 61 of file commands.h.

Referenced by `handler_COMPOSE_SEND()`, `handler_HELP()`, and `handler_SEND()`.

7.25 /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](#)

7.25.1 Function Documentation

- 7.25.1.1 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

- 7.25.1.2 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

7.25.1.3 COMMAND (QUIT, "quit", "This command ends the MobileC application.")

7.25.2 Variable Documentation

7.25.2.1 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.

7.25.2.2 help

Definition at line 40 of file commands.x.h.

7.25.2.3 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.

7.25.2.4 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.

7.25.2.5 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.

7.25.2.6 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()`, `MC_End()`, `message_send_Thread()`, `mtp_http_InitializeFromConnection()`, `reply_migration_process()`, and `send_AES_en_MA()`.

7.26 /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)
- int [connection_Print](#) ([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)

7.26.1 Typedef Documentation

7.26.1.1 typedef [connection_t](#)* [connection_p](#)

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

7.26.1.2 typedef struct [connection_s](#) [connection_t](#)

7.26.2 Function Documentation

7.26.2.1 void [connection_Close](#) ([connection_p](#) *connection*)

7.26.2.2 [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](#).

7.26.2.3 int connection_CreateMessage (connection_p *connection*)**7.26.2.4 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(), and mc_platform_Destroy().

7.26.2.5 connection_p connection_New (void)

Definition at line 69 of file connection.c.

Referenced by connection_Copy(), and listen_Thread().

7.26.2.6 int connection_Print (connection_p *connection*)

Definition at line 92 of file connection.c.

References connection_s::connect_id, and connection_s::remote_hostname.

Referenced by handler_PRINT_CONNECTLIST().

7.26.2.7 int connection_RecvFromConnection (connection_p *connection*, struct mc_platform_s * *global*)**7.26.2.8 int connection_SendtoConnection (connection_p *connection*, char * *send_buffer*)****7.26.2.9 void connection_SetHosts (connection_p *connection*, char * *remote_host*, char * *local_host*)**

7.27 /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_search_results
- [STRUCT](#) (df_request_search, MUTEX_T *[lock](#);COND_T *cond;char *search_string;df_search_results_p search_results;) [STRUCT](#)(df_node
- [STRUCT](#) (df, struct [mc_platform_s](#) *mc_platform;MUTEX_T *[lock](#);COND_T *cond;[list_p](#) service_list;[list_p](#) request_list;int num_entries;int waiting;MUTEX_T *waiting_lock;COND_T *waiting_cond;THREAD_T thread;) [STRUCT](#)(df_deregister
- 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](#) (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](#) ([list_t](#) *df_request_list)
- 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

- char ** [agent_names](#)
- char ** [service_names](#)
- int * [agent_ids](#)
- int [num_results](#)
- MUTEX_T * [lock](#)
- int [agent_id](#)
- char * [agent_name](#)
- int [num_services](#)
- enum [service_types_e](#) [service_types](#)
- char * [service_name](#)

7.27.1 Define Documentation

7.27.1.1 `#define REQUEST(name, string, description) int request_handler_##name (struct mc_platform_s *global, void* data);`

Definition at line 179 of file df.h.

7.27.1.2 `#define REQUEST(name, string, description) REQUEST_##name,`

Definition at line 179 of file df.h.

7.27.2 Enumeration Type Documentation

7.27.2.1 `enum df_request_list_index_e`

Definition at line 46 of file df.h.

7.27.2.2 `enum service_types_e`

Enumerator:

ZERO

MISC

INSERT

SOME

TYPES

HERE

Definition at line 53 of file df.h.

7.27.3 Function Documentation

7.27.3.1 `int df_Add (struct df_s * df, struct df_node_s * node)`

Definition at line 50 of file df.c.

References ListAdd(), ListWRLock(), ListWRUnlock(), and MC_SUCCESS.

Referenced by request_handler_REGISTER().

7.27.3.2 `int df_AddRequest (struct df_s * df, struct df_request_list_node_s * node)`

Definition at line 62 of file df.c.

References ListAdd(), ListWRLock(), and ListWRUnlock().

Referenced by MC_DeregisterService(), MC_RegisterService(), and MC_SearchForService().

7.27.3.3 `int df_Destroy (df_p df)`

Definition at line 75 of file df.c.

References COND_DESTROY, df_node_Destroy(), df_request_list_Destroy(), ListPop(), ListTerminate(), ListWRLock(), ListWRUnlock(), MC_SUCCESS, MUTEX_DESTROY, and MUTEX_LOCK.

Referenced by mc_platform_Destroy().

7.27.3.4 `df_p df_Initialize (struct mc_platform_s * mc_platform)`

7.27.3.5 `int df_node_Destroy (df_node_p df_node)`

Definition at line 372 of file df.c.

References MC_SUCCESS, and MUTEX_LOCK.

Referenced by df_Destroy().

7.27.3.6 `int df_ProcessRequest (struct mc_platform_s * global)`

Definition at line 128 of file df.c.

References mc_platform_s::df, ListPop(), ListWRLock(), ListWRUnlock(), MC_ERR_EMPTY, and MC_ERR_INVALID.

Referenced by df_Thread().

7.27.3.7 `int df_request_list_Destroy (list_t * df_request_list)`

Definition at line 320 of file df.c.

References df_request_list_node_Destroy(), ListPop(), ListTerminate(), ListWRLock(), ListWRUnlock(), and MC_SUCCESS.

Referenced by df_Destroy().

7.27.3.8 int df_request_list_node_Destroy (df_request_list_node_p node)

Definition at line 291 of file df.c.

References COND_DESTROY, MC_SUCCESS, and MUTEX_DESTROY.

Referenced by df_request_list_Destroy(), and MC_SearchForService().

7.27.3.9 df_request_list_node_p df_request_list_node_New (void)

Definition at line 302 of file df.c.

References CHECK_NULL, COND_INIT, COND_T, MUTEX_INIT, and MUTEX_T.

Referenced by MC_DeregisterService(), MC_RegisterService(), and MC_SearchForService().

7.27.3.10 int df_request_search_Destroy (df_request_search_p node)

Definition at line 359 of file df.c.

References COND_DESTROY, MC_SUCCESS, and MUTEX_DESTROY.

Referenced by MC_SearchForService().

7.27.3.11 df_request_search_p df_request_search_New (void)

Definition at line 344 of file df.c.

References CHECK_NULL, COND_INIT, COND_T, MUTEX_INIT, MUTEX_T, and search.

Referenced by MC_SearchForService().

7.27.3.12 int df_SearchForService (df_p df, const char * searchstring, char * agent_names, char *** service_names, int ** agent_ids, int * num_entries)**

Definition at line 175 of file df.c.

References MC_ERR_NOT_FOUND, MC_SUCCESS, MUTEX_LOCK, MUTEX_UNLOCK, listNode_s::next, listNode_s::node_data, and num_services.

Referenced by request_handler_SEARCH().

7.27.3.13 void df_Start (struct mc_platform_s * mc_platform)**7.27.3.14 void* df_Thread (void * arg)**

Definition at line 386 of file df.c.

References COND_BROADCAST, mc_platform_s::df, df_ProcessRequest(), ListRDLock(), ListRDUnlock(), ListRDWait(), MC_SUCCESS, MUTEX_LOCK, MUTEX_UNLOCK, mc_platform_s::quit, mc_platform_s::quit_lock, and THREAD_EXIT.

Referenced by df_Start().

7.27.3.15 Register services with the directory facilitator `df_request_list_index_e::REQUEST (DEREGISTER, "deregister", "Deregisters mobile agent services from a directory facilitator.")`

Type Constraints

7.27.3.16 `df_request_list_index_e::REQUEST (SUBSCRIBE, "subscribe", "Subscribe to a directory facilitator")`

7.27.3.17 `STRUCT (df, struct mc_platform_s *mc_platform;MUTEX_T *lock;COND_T *cond;list_p service_list;list_p request_list;int num_entries;int waiting;MUTEX_T *waiting_lock;COND_T *waiting_cond;THREAD_T thread;)`

7.27.3.18 `STRUCT (df_request_search, MUTEX_T *lock;COND_T *cond;char *search_string;df_search_results_p search_results;)`

7.27.3.19 `STRUCT (df_request_list_node, MUTEX_T *lock;COND_T *cond;const char *command;void *data;int data_size;)`

7.27.4 Variable Documentation

7.27.4.1 `int agent_id`

Definition at line 90 of file `df.h`.

7.27.4.2 `int* agent_ids`

Definition at line 75 of file `df.h`.

7.27.4.3 `char* agent_name`

Definition at line 91 of file `df.h`.

7.27.4.4 `char** agent_names`

Definition at line 73 of file `df.h`.

7.27.4.5 `MUTEX_T* lock`

Definition at line 88 of file `df.h`.

7.27.4.6 `int num_results`

Definition at line 76 of file `df.h`.

7.27.4.7 int num_services

Definition at line 93 of file df.h.

Referenced by df_SearchForService().

7.27.4.8 char* service_name

Definition at line 115 of file df.h.

7.27.4.9 char ** service_names

Definition at line 74 of file df.h.

7.27.4.10 enum service_types_e service_types

Definition at line 95 of file df.h.

7.28 /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](#)

7.28.1 Function Documentation

- 7.28.1.1 Register services with the directory facilitator [REQUEST](#) (DEREGISTER, "deregister", "Deregisters mobile agent services from a directory facilitator.")**

Type Constraints

- 7.28.1.2 [REQUEST](#) (SUBSCRIBE, "subscribe", "Subscribe to a directory facilitator")**

7.28.2 Variable Documentation

7.28.2.1 [register](#)

Definition at line 43 of file df_request.x.h.

7.28.2.2 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\(\)](#).

7.29 /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, const char *str)
- int [dynstring_Destroy](#) ([dynstring_t](#) *dynstring)

7.29.1 Define Documentation

7.29.1.1 #define COMPOSE_BLOCKSIZE 1024

Definition at line 8 of file [dynstring.h](#).

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

7.29.2 Typedef Documentation

7.29.2.1 typedef [dynstring_t](#)* [dynstring_p](#)

Definition at line 14 of file [dynstring.h](#).

7.29.2.2 typedef struct [dynstring_s](#) [dynstring_t](#)

7.29.3 Function Documentation

7.29.3.1 int [dynstring_Append](#) ([dynstring_t](#) *msg, const 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().

7.29.3.2 int dynstring_Destroy (dynstring_t * *dynstring*)

Definition at line 53 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().

7.29.3.3 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().

7.30 /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 \(struct fipa_acl_message_s *acl\)](#)

7.30.1 Typedef Documentation

7.30.1.1 typedef fipa_acl_message_t* fipa_acl_message_p

Definition at line 136 of file fipa_acl.h.

7.30.1.2 typedef struct fipa_acl_message_s fipa_acl_message_t

7.30.1.3 typedef fipa_agent_identifier_t* fipa_agent_identifier_p

Definition at line 186 of file fipa_acl.h.

7.30.1.4 typedef fipa_agent_identifier_set_t* fipa_agent_identifier_set_p

Definition at line 172 of file fipa_acl.h.

7.30.1.5 typedef struct fipa_agent_identifier_set_s fipa_agent_identifier_set_t

7.30.1.6 typedef struct fipa_agent_identifier_s fipa_agent_identifier_t

7.30.1.7 typedef fipa_DateTime_t* fipa_DateTime_p

Definition at line 246 of file fipa_acl.h.

7.30.1.8 typedef struct fipa_DateTime_s fipa_DateTime_t

7.30.1.9 typedef fipa_expression_t* fipa_expression_p

Definition at line 205 of file fipa_acl.h.

7.30.1.10 typedef struct fipa_expression_s fipa_expression_t

7.30.1.11 typedef enum fipa_expression_type_e fipa_expression_type_t

7.30.1.12 typedef fipa_message_string_t* fipa_message_string_p

Definition at line 148 of file fipa_acl.h.

7.30.1.13 typedef struct fipa_message_string_s fipa_message_string_t

7.30.1.14 typedef fipa_number_t* fipa_number_p

Definition at line 268 of file fipa_acl.h.

7.30.1.15 typedef struct fipa_number_s fipa_number_t

7.30.1.16 typedef fipa_string_t* fipa_string_p

Definition at line 227 of file fipa_acl.h.

7.30.1.17 `typedef struct fipa_string_s fipa_string_t`

7.30.1.18 `typedef fipa_url_t* fipa_url_p`

Definition at line 257 of file fipa_acl.h.

7.30.1.19 `typedef fipa_url_sequence_t* fipa_url_sequence_p`

Definition at line 159 of file fipa_acl.h.

7.30.1.20 `typedef struct fipa_url_sequence_s fipa_url_sequence_t`

7.30.1.21 `typedef struct fipa_url_s fipa_url_t`

7.30.1.22 `typedef fipa_word_t* fipa_word_p`

Definition at line 216 of file fipa_acl.h.

7.30.1.23 `typedef struct fipa_word_s fipa_word_t`

7.30.2 Enumeration Type Documentation

7.30.2.1 `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.

7.30.2.2 `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.

7.30.2.3 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.

7.30.3 Function Documentation

7.30.3.1 int fipa_acl_Compose (dynstring_t ** msg, fipa_acl_message_t * acl)

Definition at line 1233 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().

7.30.3.2 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().

7.30.3.3 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(), agent_Destroy(), and MC_AclDestroy().

7.30.3.4 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().

7.30.3.5 int fipa_acl_Parse (struct fipa_acl_message_s * acl, fipa_message_string_p message)**7.30.3.6 int fipa_agent_identifier_Compose (dynstring_t * msg, fipa_agent_identifier_t * id)**

Definition at line 1447 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().

7.30.3.7 fipa_agent_identifier_t* fipa_agent_identifier_Copy (fipa_agent_identifier_t * src)

Definition at line 236 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().

7.30.3.8 int fipa_agent_identifier_Destroy (fipa_agent_identifier_t * id)

Definition at line 224 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().

7.30.3.9 fipa_agent_identifier_t* fipa_agent_identifier_New (void)

Definition at line 216 of file fipa_acl.c.

Referenced by fipa_agent_identifier_Copy(), fipa_envelope_ParseAgentIdentifier(), MC_AclAddReceiver(), MC_AclAddReplyTo(), and MC_AclSetSender().

7.30.3.10 int fipa_agent_identifier_Parse (fipa_agent_identifier_p * *aid*, fipa_message_string_p *message*)

Definition at line 1033 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().

7.30.3.11 int fipa_agent_identifier_set_Compose (dynstring_t * *msg*, fipa_agent_identifier_set_t * *ids*)

Definition at line 1434 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().

7.30.3.12 fipa_agent_identifier_set_t* fipa_agent_identifier_set_Copy (fipa_agent_identifier_set_t * *src*)

Definition at line 195 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().

7.30.3.13 int fipa_agent_identifier_set_Destroy (fipa_agent_identifier_set_t * *idset*)

Definition at line 183 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().

7.30.3.14 fipa_agent_identifier_set_t* fipa_agent_identifier_set_New (void)

Definition at line 175 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().

7.30.3.15 int fipa_agent_identifier_set_Parse (fipa_agent_identifier_set_p * *agent_ids*, fipa_message_string_p *message*)

Definition at line 1192 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().

7.30.3.16 int fipa_CheckNextToken (const fipa_message_string_p *message*, const char * *token*)

Definition at line 695 of file fipa_acl.c.

References fipa_message_string_s::parse.

Referenced by fipa_expression_Parse().

7.30.3.17 int fipa_DateTime_Compose (dynstring_t * *msg*, fipa_DateTime_t * *date*)

Definition at line 1520 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().

7.30.3.18 fipa_DateTime_t* fipa_DateTime_Copy (fipa_DateTime_t * *src*)

Definition at line 399 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().

7.30.3.19 int fipa_DateTime_Destroy (fipa_DateTime_t * *dt*)

Definition at line 392 of file fipa_acl.c.

Referenced by fipa_acl_envelope_Received_Destroy(), fipa_acl_message_Destroy(), fipa_acl_Param_Destroy(), and fipa_expression_Destroy().

7.30.3.20 fipa_DateTime_t* fipa_DateTime_New (void)

Definition at line 384 of file fipa_acl.c.

Referenced by fipa_DateTime_Copy().

7.30.3.21 int fipa_datetime_Parse (fipa_DateTime_p * *datetime*, fipa_message_string_p *message*)

Definition at line 850 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()`.

7.30.3.22 `int fipa_expression_Compose (dynstring_t * msg, fipa_expression_t * expr)`

Definition at line 1473 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()`.

7.30.3.23 `fipa_expression_t* fipa_expression_Copy (fipa_expression_t * src)`

Definition at line 287 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()`.

7.30.3.24 `int fipa_expression_Destroy (fipa_expression_t * expr)`

Definition at line 256 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()`.

7.30.3.25 `fipa_expression_t* fipa_expression_New (void)`

Definition at line 248 of file `fipa_acl.c`.

Referenced by `fipa_expression_Copy()`, and `MC_AclSetConversationID()`.

7.30.3.26 int fipa_expression_Parse (fipa_expression_t ** *expression*, fipa_message_string_p *message*)

Definition at line 714 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().

7.30.3.27 int fipa_GetAtom (fipa_message_string_p *message*, char *expected_atom*)

Definition at line 630 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().

7.30.3.28 int fipa_GetNextWord (char ** *word*, const fipa_message_string_p *message*)

Definition at line 765 of file fipa_acl.c.

References ERR, MC_SUCCESS, and fipa_message_string_s::parse.

7.30.3.29 int fipa_GetWholeToken (char ** *word*, const fipa_message_string_p *message*)

Definition at line 813 of file fipa_acl.c.

References MC_SUCCESS, and fipa_message_string_s::parse.

Referenced by fipa_datetime_Parse().

7.30.3.30 int fipa_message_parameter_Parse (struct fipa_acl_message_s * *acl*, fipa_message_string_p *message*)**7.30.3.31 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.

7.30.3.32 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().

7.30.3.33 fipa_message_string_t* fipa_message_string_New (void)

Definition at line 110 of file fipa_acl.c.

Referenced by `acc_connection_Thread()`.

7.30.3.34 `int fipa_message_type_Parse (enum fipa_performative_e * performative, fipa_message_string_p message)`

Definition at line 568 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()`.

7.30.3.35 `int fipa_number_Compose (dynstring_t * msg, fipa_number_t * number)`

Definition at line 1548 of file `fipa_acl.c`.

References `dynstring_Append()`, and `fipa_number_s::str`.

Referenced by `fipa_expression_Compose()`.

7.30.3.36 `fipa_number_t* fipa_number_Copy (fipa_number_t * src)`

Definition at line 455 of file `fipa_acl.c`.

References `fipa_number_New()`, `fipa_number_s::str`, and `strdup`.

Referenced by `fipa_expression_Copy()`.

7.30.3.37 `int fipa_number_Destroy (fipa_number_t * number)`

Definition at line 445 of file `fipa_acl.c`.

References `fipa_number_s::str`.

Referenced by `fipa_expression_Destroy()`.

7.30.3.38 `fipa_number_t* fipa_number_New (void)`

Definition at line 437 of file `fipa_acl.c`.

Referenced by `fipa_number_Copy()`.

7.30.3.39 `int fipa_performative_Compose (dynstring_t * msg, enum fipa_performative_e performative)`

Definition at line 1346 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().

7.30.3.40 int fipa_protocol_Compose (dynstring_t * msg, enum fipa_protocol_e protocol)

Definition at line 1303 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().

7.30.3.41 int fipa_protocol_type_Parse (enum fipa_protocol_e * protocol, fipa_message_string_p message)

Definition at line 528 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().

7.30.3.42 struct fipa_acl_message_s* fipa_Reply (struct fipa_acl_message_s * acl) [read]

Definition at line 1556 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().

7.30.3.43 int fipa_string_Compose (dynstring_t * msg, fipa_string_t * string)

Definition at line 1511 of file fipa_acl.c.

References fipa_string_s::content, and dynstring_Append().

Referenced by fipa_acl_Compose(), and fipa_expression_Compose().

7.30.3.44 fipa_string_t* fipa_string_Copy (fipa_string_t * *src*)

Definition at line 374 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().

7.30.3.45 int fipa_string_Destroy (fipa_string_t * *str*)

Definition at line 364 of file fipa_acl.c.

References fipa_string_s::content.

Referenced by fipa_acl_message_Destroy(), fipa_expression_Destroy(), and MC_AclSetContent().

7.30.3.46 fipa_string_t* fipa_string_New (void)

Definition at line 356 of file fipa_acl.c.

Referenced by fipa_string_Copy(), MC_AclSetContent(), and MC_AclSetConversationID().

7.30.3.47 int fipa_string_Parse (fipa_string_p * *fipa_string*, fipa_message_string_p *message*)

Definition at line 988 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().

7.30.3.48 int fipa_url_Compose (dynstring_t * *msg*, fipa_url_t * *url*)

Definition at line 1540 of file fipa_acl.c.

References dynstring_Append(), and fipa_url_s::str.

Referenced by fipa_url_sequence_Compose().

7.30.3.49 fipa_url_t* fipa_url_Copy (fipa_url_t * *src*)

Definition at line 427 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().

7.30.3.50 int fipa_url_Destroy (fipa_url_t * *url*)

Definition at line 417 of file fipa_acl.c.

References fipa_url_s::str.

Referenced by fipa_acl_envelope_Received_Destroy(), and fipa_url_sequence_Destroy().

7.30.3.51 fipa_url_t* fipa_url_New (void)

Definition at line 409 of file fipa_acl.c.

Referenced by fipa_envelope_HandleReceived(), fipa_envelope_ParseAddresses(), fipa_url_Copy(), MC_AclAddReceiver(), MC_AclAddReplyTo(), and MC_AclSetSender().

7.30.3.52 int fipa_url_Parse (fipa_url_p * url, fipa_message_string_p message)

Definition at line 1172 of file fipa_acl.c.

References fipa_word_s::content, fipa_word_Destroy(), fipa_word_Parse(), and strdup.

Referenced by fipa_url_sequence_Parse().

7.30.3.53 int fipa_url_sequence_Compose (dynstring_t * msg, fipa_url_sequence_t * urls)

Definition at line 1421 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().

7.30.3.54 fipa_url_sequence_t* fipa_url_sequence_Copy (fipa_url_sequence_t * src)

Definition at line 159 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().

7.30.3.55 int fipa_url_sequence_Destroy (fipa_url_sequence_t * sequence)

Definition at line 147 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().

7.30.3.56 fipa_url_sequence_t* fipa_url_sequence_New (void)

Definition at line 139 of file fipa_acl.c.

Referenced by fipa_url_sequence_Copy(), fipa_url_sequence_Parse(), MC_AclAddReceiver(), MC_AclAddReplyTo(), and MC_AclSetSender().

7.30.3.57 int fipa_url_sequence_Parse (fipa_url_sequence_p * urls, fipa_message_string_p message)

Definition at line 1140 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()`.

7.30.3.58 `int fipa_word_Compose (dynstring_t * msg, fipa_word_t * word)`

Definition at line 1503 of file `fipa_acl.c`.

References `fipa_word_s::content`, and `dynstring_Append()`.

Referenced by `fipa_expression_Compose()`.

7.30.3.59 `fipa_word_t* fipa_word_Copy (fipa_word_t * src)`

Definition at line 346 of file `fipa_acl.c`.

References `fipa_word_s::content`, `fipa_word_New()`, and `strdup`.

Referenced by `fipa_expression_Copy()`.

7.30.3.60 `int fipa_word_Destroy (fipa_word_t * word)`

Definition at line 336 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()`.

7.30.3.61 `fipa_word_t* fipa_word_New (void)`

Definition at line 328 of file `fipa_acl.c`.

Referenced by `fipa_word_Copy()`.

7.30.3.62 `int fipa_word_Parse (fipa_word_t ** word, fipa_message_string_p message)`

Definition at line 653 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()`.

7.31 /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)

7.31.1 Typedef Documentation

7.31.1.1 `typedef fipa_acl_envelope_t* fipa_acl_envelope_p`

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

7.31.1.2 `typedef struct fipa_acl_envelope_Received_s fipa_acl_envelope_Received_t`

7.31.1.3 `typedef struct fipa_acl_envelope_s fipa_acl_envelope_t`

7.31.1.4 `typedef struct fipa_acl_Param_s fipa_acl_Param_t`

7.31.2 Function Documentation

7.31.2.1 `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`.

7.31.2.2 `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()`.

7.31.2.3 **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().

7.31.2.4 **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().

7.31.2.5 **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().

7.31.2.6 **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().

7.31.2.7 **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().

7.31.2.8 **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().

7.31.2.9 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().

7.31.2.10 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(), and mxmlSaveAllocString().

Referenced by MC_AclSend().

7.31.2.11 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(), and mxmlNewText().

Referenced by fipa_envelope_Compose__params().

7.31.2.12 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(), and mxmlNewText().

Referenced by fipa_envelope_Compose__params().

7.31.2.13 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(), and mxmlNewElement().

Referenced by fipa_envelope_Compose().

7.31.2.14 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().

7.31.2.15 **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, 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().

7.31.2.16 **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(), and mxmlNewElement().

Referenced by fipa_envelope_Compose__envelope().

7.31.2.17 **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(), and mxmlNewText().

Referenced by fipa_envelope_Compose__params().

7.31.2.18 **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, 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().

7.31.2.19 **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().

7.31.2.20 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().

7.31.2.21 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().

7.31.2.22 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().

7.31.2.23 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().

7.31.2.24 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().

7.31.2.25 **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`, `mxmFindElement()`, `fipa_acl_envelope_s::num_params`, and `fipa_acl_envelope_s::params`.

Referenced by `fipa_envelope_HandleEnvelope()`.

7.31.2.26 **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`, `mxmFindElement()`, `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()`.

7.31.2.27 **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`, `mxmFindElement()`, `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()`.

7.31.2.28 **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()`, `mxmFindElement()`, `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()`.

7.31.2.29 **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().

7.31.2.30 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().

7.31.2.31 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().

7.31.2.32 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().

7.31.2.33 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().

7.32 /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)

7.32.1 Define Documentation

7.32.1.1 `#define false 0`

Definition at line 11 of file [fipa_comm.h](#).

7.32.1.2 `#define MC_NUM_PERFORMATIVES 23`

Definition at line 14 of file [fipa_comm.h](#).

7.32.2 Typedef Documentation

7.32.2.1 `typedef struct fipa_comm_action_t* fipa_comm_action_p`

Definition at line 109 of file [fipa_comm.h](#).

7.32.2.2 `typedef struct fipa_comm_action_t fipa_comm_action_s`

Definition at line 108 of file [fipa_comm.h](#).

7.32.2.3 `typedef int(* fipa_comm_callback)(char *received_content, char **reply_content)`

Definition at line 17 of file [fipa_comm.h](#).

7.32.2.4 `typedef struct fipa_comm_message_check_t* fipa_comm_message_check_p`

Definition at line 80 of file [fipa_comm.h](#).

7.32.2.5 `typedef struct fipa_comm_message_check_t fipa_comm_message_check_s`

Definition at line 79 of file [fipa_comm.h](#).

7.32.2.6 `typedef struct fipa_comm_t* fipa_comm_p`

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

7.32.2.7 `typedef struct fipa_comm_performative_t* fipa_comm_performative_p`

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

7.32.2.8 typedef struct fipa_comm_performative_t fipa_comm_performative_s

Definition at line 120 of file fipa_comm.h.

7.32.2.9 typedef struct fipa_comm_protocol_cn_t* fipa_comm_protocol_cn_p

Definition at line 156 of file fipa_comm.h.

7.32.2.10 typedef struct fipa_comm_protocol_cn_t fipa_comm_protocol_cn_s

Definition at line 155 of file fipa_comm.h.

7.32.2.11 typedef struct fipa_comm_protocol_t* fipa_comm_protocol_p

Definition at line 172 of file fipa_comm.h.

7.32.2.12 typedef struct fipa_comm_protocol_t fipa_comm_protocol_s

Definition at line 173 of file fipa_comm.h.

7.32.2.13 typedef struct fipa_comm_reply_t* fipa_comm_reply_p

Definition at line 93 of file fipa_comm.h.

7.32.2.14 typedef struct fipa_comm_reply_t fipa_comm_reply_s

Definition at line 92 of file fipa_comm.h.

7.32.2.15 typedef struct fipa_comm_t fipa_comm_s

Definition at line 192 of file fipa_comm.h.

7.32.2.16 typedef struct fipa_list_t* fipa_list_p

Definition at line 141 of file fipa_comm.h.

7.32.2.17 typedef struct fipa_list_t fipa_list_s

Definition at line 140 of file fipa_comm.h.

7.32.2.18 typedef struct fipa_comm_t* MCFIPAComm_p

Definition at line 195 of file fipa_comm.h.

7.32.2.19 typedef struct fipa_comm_t MCFIPAComm_s

Definition at line 194 of file fipa_comm.h.

7.32.2.20 typedef int(* protocol_contract_net_callback)(int numBids, char **bids, char *winners)

Definition at line 18 of file fipa_comm.h.

7.32.3 Enumeration Type Documentation

7.32.3.1 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.

7.32.3.2 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.

7.32.3.3 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.

7.32.3.4 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.

7.32.3.5 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.

7.32.4 Function Documentation

- 7.32.4.1 void fipa_comm_protocol_info_COPY (fipa_comm_protocol_p *proto*, void * *info*)
- 7.32.4.2 int fipa_list_Add (fipa_list_p * *list*, fipa_acl_message_p *acl*)
- 7.32.4.3 fipa_comm_protocol_p mc_FIPAComm_AddNewProtocol (fipa_comm_p *fcomm*, enum fipa_protocol_e *type*, char * *id*)
- 7.32.4.4 int mc_FIPAComm_DeregisterPerformative (fipa_comm_p *fcomm*, enum fipa_performative_e *type*)
- 7.32.4.5 void mc_FIPAComm_Destroy (fipa_comm_p)
- 7.32.4.6 int mc_FIPAComm_FSM_CN (fipa_comm_p *fcomm*, fipa_acl_message_p *acl*)
- 7.32.4.7 int mc_FIPAComm_HandleMessage (fipa_comm_p *fcomm*, fipa_acl_message_p *acl*)
- 7.32.4.8 int mc_FIPAComm_HandleMessageOnce (fipa_comm_p *fcomm*)
- 7.32.4.9 int mc_FIPAComm_HandleMessageWait (fipa_comm_p *fcomm*)
- 7.32.4.10 int mc_FIPAComm_HandleProtocol (fipa_comm_p *fcomm*, fipa_acl_message_p *acl*)
- 7.32.4.11 fipa_comm_p mc_FIPAComm_New ()
- 7.32.4.12 fipa_comm_protocol_p mc_FIPAComm_NewProtocol (enum fipa_protocol_e *type*, char * *id*)
- 7.32.4.13 int mc_FIPAComm_RegisterAction (fipa_comm_p *fcomm*, enum fipa_performative_e *pType*, enum fipa_comm_action_type_e *aType*, ...)
- 7.32.4.14 int mc_FIPAComm_RegisterActionS (fipa_performative_e *type*, fipa_comm_action_p *act*)
- 7.32.4.15 int mc_FIPAComm_RegisterPerformative (fipa_comm_p *fcomm*, enum fipa_performative_e *type*)
- 7.32.4.16 int mc_FIPAComm_RegisterProtocol (fipa_comm_p *fcomm*, enum fipa_protocol_e *protocolType*, char * *protocolID*, void * *info*, char * *network*)
- 7.32.4.17 int mc_FIPAComm_RegisterProtocolCallback (fipa_comm_p *fcomm*, enum fipa_protocol_e *protocolType*, fipa_comm_callback_func)
- 7.32.4.18 int mc_FIPAComm_SetAgent (fipa_comm_p *fcomm*, void * *agent*, char * *agent_name*, char * *agent_address*)
- 7.32.4.19 int mc_FIPAComm_SetDefaultReply (fipa_comm_p *fcomm*, enum fipa_performative_e *type*, char * *content*)
- 7.32.4.20 int mc_FIPAComm_SetPerformativeDefaultReply (fipa_comm_p *fcomm*, enum fipa_performative_e *ptype*, enum fipa_performative_e *rtype*, char * *content*)
- 7.32.4.21 int mc_FIPAComm_SetProtocolState (fipa_comm_protocol_p *protocol*, char *state*)
-
- Generated on Fri Jun 17 16:59:04 2011 for Mobile-C by Doxygen
- 7.32.4.22 int mc_FIPAComm_StartProtocol (fipa_comm_p *fcomm*, enum fipa_protocol_e *type*, char * *id*)
- 7.32.4.23 fipa_comm_protocol_p mc_FIPAComm_New ()

7.33 /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)

7.33.1 Typedef Documentation

7.33.1.1 typedef [host_id_t](#)* [host_id_p](#)

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

7.33.1.2 typedef struct [host_id_s](#) [host_id_t](#)

7.33.2 Function Documentation

7.33.2.1 int [host_id_Compare](#) ([host_id_p](#) *host1*, [host_id_p](#) *host2*)

7.33.2.2 void [host_id_Destroy](#) ([host_id_p](#) *host_id*)

7.33.2.3 [host_id_p](#) [host_id_Initialize](#) (const char * *hostname*, int *port*)

7.34 /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)
- int [interpreter_variable_data_CmpName](#) (const char *name, [interpreter_variable_data_t](#) *data)

7.34.1 Typedef Documentation

7.34.1.1 typedef [interpreter_variable_data_t](#)* [interpreter_variable_data_p](#)

Definition at line 51 of file [interpreter_variable_data.h](#).

7.34.1.2 typedef struct [interpreter_variable_data_s](#) [interpreter_variable_data_t](#)

Definition at line 50 of file [interpreter_variable_data.h](#).

7.34.2 Function Documentation

7.34.2.1 int [interpreter_variable_data_CmpName](#) (const char * *name*, [interpreter_variable_data_t](#) * *data*)

Definition at line 256 of file [agent_return_data.c](#).

References [interpreter_variable_data_s::name](#).

Referenced by [agent_AddPersistentVariable\(\)](#), [MC_AgentVariableRetrieve\(\)](#), and [MC_AgentVariableRetrieveInfo\(\)](#).

7.34.2.2 `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()`.

7.34.2.3 `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_AddPersistentVariable()`, `agent_RunChScriptThread()`, and `agent_task_Destroy()`.

7.34.2.4 `interpreter_variable_data_p` `interpreter_variable_data_Initialize` (`struct agent_s * agent`, `const char * varname`)

7.34.2.5 `interpreter_variable_data_p` `interpreter_variable_data_InitializeFromAgent` (`struct agent_s * agent`)

7.34.2.6 `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()`.

7.35 /home/dko/Projects/mobilec/src/include/libmc.h File Reference

MobileC api header file.

```
#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)
- #define [_ERROR_CODE_E_](#)
- #define [MC_INITIALIZED_CODE](#) 63280583
- #define [AGENT_T](#)
- #define [_FIPA_PERFORMATIVE_E_](#)

Typedefs

- typedef int(* [MC_AgentInitCallbackFunc_t](#))(ChInterp_t interp, struct [agent_s](#) *agent, void *user_data)
- 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_ERR_OPTIONS_UNINITIALIZED, 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_QueueIndex_e` {
`MC_QUEUE_MESSAGE, MC_QUEUE_AGENT, MC_QUEUE_CONNECTION, MC_QUEUE_SYNC,`
`MC_QUEUE_BARRIER, MC_QUEUE_NUM }`
MobileC data queue 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, const 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)
Add a stationary agent to the agency.
- int [MC_AddAgentInitCallback](#) ([MCAgency_t](#) agency, [MC_AgentInitCallbackFunc_t](#) function, void *user_data)
Add an agent initialization callback function.
- 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_AgentAttachFile](#) ([MCAgent_t](#) agent, const char *name, const char *filepath)
Attach a file to the agent's current task.
- EXPORTMC int [MC_AgentListFiles](#) ([MCAgent_t](#) agent, int task_num, char ***names, int *num_files)
Get a list of an agent's attached files.
- EXPORTMC int [MC_AgentProcessingBegin](#) ([MCAgency_t](#) attr)
Begin a series of agent functions.
- EXPORTMC int [MC_AgentProcessingEnd](#) ([MCAgency_t](#) attr)
- EXPORTMC int [MC_AgentRetrieveFile](#) ([MCAgent_t](#) agent, int task_num, const char *name, const char *save_path)
Saves an agent's attached file to the filesystem.
- 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.
- [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.
- [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.
- 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](#) (MC_Agent_t agent, int task_num)
Get the total number of elements of the agent return data.
- const void * [MC_AgentReturnDataGetSymbolAddr](#) (MC_Agent_t agent, int task_num)
Get a pointer to the agent's return data.
- size_t [MC_AgentReturnDataSize](#) (MC_Agent_t agent, int task_num)
Get the size of an agent's return data type.
- int [MC_AgentReturnDataType](#) (MC_Agent_t agent, int task_num)
Get the type of an agent's return data.
- int [MC_AgentReturnIsArray](#) (MC_Agent_t agent, int task_num)
Check to see whether or not an agent's return data is an array.
- const void * [MC_AgentVariableRetrieve](#) (MC_Agent_t agent, const char *var_name, int task_num)
Retrieve a pointer to a previously saved variable.
- int [MC_AgentVariableRetrieveInfo](#) (MC_Agent_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](#) (MC_Agent_t agent, const char *var_name)
Mark an agent variable for saving.
- EXPORTMC int [MC_Barrier](#) (MC_Agency_t attr, int id)
- EXPORTMC int [MC_BarrierDelete](#) (MC_Agency_t attr, int id)
Find and delete an initialized MobileC Barrier.
- EXPORTMC int [MC_BarrierInit](#) (MC_Agency_t attr, int id, int num_procs)
Initialize a MobileC Barrier.
- EXPORTMC int [MC_CallAgentFunc](#) (MC_Agent_t agent, const char *funcName, void *returnVal, int numArgs,...)
Use custom ChOptions_t type for internal Ch interpreter.
- EXPORTMC int [MC_CallAgentFuncArg](#) (MC_Agent_t agent, const char *funcName, void *returnVal, void *arg)
Calls a function defined in an agent.
- EXPORTMC int [MC_CallAgentFuncV](#) (MC_Agent_t agent, const char *funcName, void *returnVal, va_list ap)
Calls a function defined in an agent.
- EXPORTMC int [MC_CallAgentFuncVar](#) (MC_Agent_t agent, const char *funcName, void *returnVal, ChVaList_t arglist)
- EXPORTMC [MC_Agent_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 int [MC_GetAgents](#) (MCAgency_t attr, MCAgent_t **agents, int *num_agents, unsigned int agent_status_flags)
Get a list of agents that match a certain agent status.
- EXPORTMC int [MC_GetAllAgents](#) (MCAgency_t attr, MCAgent_t **agents, int *num_agents)
Get all of the agents on an agency.
- EXPORTMC int [MC_GetNumAgents](#) (MCAgency_t attr, int *num_agents)
Get the number of agents residing on an agency.
- 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 int [MC_QueueRDLock](#) (MCAgency_t agency, enum [MC_QueueIndex_e](#) queue)

Lock an agency queue for reading. Prevents other threads from writing.

- EXPORTMC int [MC_QueueRDUnlock](#) (MCAgency_t agency, enum [MC_QueueIndex_e](#) queue)
Unlock an agency queue that was previously locked for reading.
- EXPORTMC int [MC_QueueWRLock](#) (MCAgency_t agency, enum [MC_QueueIndex_e](#) queue)
Lock an agency queue for writing. Prevents other threads from reading and writing.
- EXPORTMC int [MC_QueueWRUnlock](#) (MCAgency_t agency, enum [MC_QueueIndex_e](#) queue)
Unlock an agency queue that was previously locked for writing.
- 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.

7.35.1 Detailed Description

MobileC api header file.

Definition in file [libmc.h](#).

7.35.2 Define Documentation

7.35.2.1 `#define _ERROR_CODE_E_`

Definition at line 161 of file [libmc.h](#).

7.35.2.2 `#define _FIPA_PERFORMATIVE_E_`

Definition at line 323 of file [libmc.h](#).

7.35.2.3 `#define AGENT_T`

Definition at line 299 of file [libmc.h](#).

7.35.2.4 `#define EXPORTMC`

Definition at line 139 of file [libmc.h](#).

7.35.2.5 `#define MC_INITIALIZED_CODE 63280583`

Definition at line 284 of file [libmc.h](#).

Referenced by [MC_Initialize\(\)](#), and [MC_InitializeAgencyOptions\(\)](#).

7.35.2.6 `#define MC_Wait(arg1) MC_MainLoop(arg1)`

Definition at line 144 of file [libmc.h](#).

7.35.3 Typedef Documentation

7.35.3.1 typedef agency_t* agency_p

Definition at line 258 of file libmc.h.

7.35.3.2 typedef struct agency_s agency_t

The agency handle.

7.35.3.3 typedef agent_t* agent_p

Definition at line 302 of file libmc.h.

7.35.3.4 typedef struct agent_s agent_t

Definition at line 300 of file libmc.h.

7.35.3.5 typedef enum error_code_e error_code_t

7.35.3.6 typedef int(* MC_AgentInitCallbackFunc_t)(ChInterp_t interp, struct agent_s *agent, void *user_data)

Definition at line 155 of file libmc.h.

7.35.3.7 typedef enum MC_SteerCommand_e MC_SteerCommand_t

Available commands for MC_Steer.

7.35.3.8 typedef agency_p MCAgency_t

Definition at line 259 of file libmc.h.

7.35.3.9 typedef struct MCAgencyOptions_s MCAgencyOptions_t

User modifiable agency options.

7.35.3.10 typedef agent_t* MCAgent_t

Definition at line 301 of file libmc.h.

7.35.3.11 typedef struct stationary_agent_info_s stationary_agent_info_t

7.35.4 Enumeration Type Documentation

7.35.4.1 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_ERR_OPTIONS_UNINITIALIZED
MC_WARN_DUPLICATE

Definition at line 166 of file libmc.h.

7.35.4.2 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 324 of file libmc.h.

7.35.4.3 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 310 of file libmc.h.

7.35.4.4 enum MC_AgentType_e

Enumerator:

MC_NONE
MC_REMOTE_AGENT
MC_LOCAL_AGENT
MC_RETURN_AGENT

Definition at line 305 of file libmc.h.

7.35.4.5 enum MC_QueueIndex_e

MobileC data queue indices.

Enumerator:

MC_QUEUE_MESSAGE
MC_QUEUE_AGENT
MC_QUEUE_CONNECTION
MC_QUEUE_SYNC
MC_QUEUE_BARRIER
MC_QUEUE_NUM

Definition at line 195 of file libmc.h.

7.35.4.6 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 222 of file libmc.h.

7.35.4.7 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 207 of file libmc.h.

7.35.4.8 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 184 of file libmc.h.

7.35.5 Function Documentation

7.35.5.1 EXPORTMC int MC_AclAddReceiver (struct fipa_acl_message_s * *acl*, const char * *name*, const char * *address*)

Definition at line 337 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().

7.35.5.2 EXPORTMC int MC_AclAddReplyTo (struct fipa_acl_message_s * *acl*, const char * *name*, const char * *address*)

Definition at line 373 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().

7.35.5.3 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 84 of file libmc.c.

References fipa_acl_message_Destroy().

Referenced by MC_AclDestroy_chdl().

7.35.5.4 EXPORTMC const char* MC_AclGetContent (struct fipa_acl_message_s * *acl*)

Definition at line 265 of file libmc.c.

References fipa_string_s::content, and fipa_acl_message_s::content.

Referenced by MC_AclGetContent_chdl().

7.35.5.5 EXPORTMC char* MC_AclGetConversationID (struct fipa_acl_message_s * *acl*)

Definition at line 240 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()`.

7.35.5.6 EXPORTMC enum `fipa_performative_e` `MC_AclGetPerformative` (struct `fipa_acl_message_s * acl`)

Definition at line 246 of file `libmc.c`.

References `fipa_acl_message_s::performative`.

Referenced by `MC_AclGetPerformative_chdl()`.

7.35.5.7 EXPORTMC enum `fipa_protocol_e` `MC_AclGetProtocol` (struct `fipa_acl_message_s * acl`)

Definition at line 234 of file `libmc.c`.

References `fipa_acl_message_s::performative`.

Referenced by `MC_AclGetProtocol_chdl()`.

7.35.5.8 EXPORTMC int `MC_AclGetSender` (struct `fipa_acl_message_s * acl`, char ** *name*, char ** *address*)

Definition at line 252 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()`.

7.35.5.9 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 90 of file `libmc.c`.

References `fipa_acl_message_New()`.

Referenced by `MC_AclNew_chdl()`.

7.35.5.10 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 95 of file `libmc.c`.

References `ListAdd()`, `ListWRLock()`, `ListWRUnlock()`, and `agent_s::mailbox`.

Referenced by `MC_AclPost_chdl()`, and `MC_AclSend()`.

7.35.5.11 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 104 of file `libmc.c`.

References `fipa_Reply()`.

Referenced by `MC_AclReply_chdl()`.

7.35.5.12 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 110 of file `libmc.c`.

References `ListPop()`, `ListWRLock()`, `ListWRUnlock()`, and `agent_s::mailbox`.

Referenced by `MC_AclRetrieve_chdl()`.

7.35.5.13 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 120 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`, `message_s::target`, `mtp_http_s::target`, and `fipa_url_sequence_s::urls`.

Referenced by `MC_AclSend_chdl()`.

7.35.5.14 EXPORTMC int MC_AclSetContent (struct fipa_acl_message_s * *acl*, const char * *content*)

Definition at line 408 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()`.

7.35.5.15 EXPORTMC int MC_AclSetConversationID (struct fipa_acl_message_s * *acl*, const char * *id*)

Definition at line 287 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()`.

7.35.5.16 EXPORTMC int MC_AclSetPerformative (struct fipa_acl_message_s * *acl*, enum fipa_performative_e *performative*)

Definition at line 306 of file libmc.c.

References `fipa_acl_message_s::performative`.

Referenced by `MC_AclSetPerformative_chdl()`.

7.35.5.17 EXPORTMC int MC_AclSetProtocol (struct fipa_acl_message_s * *acl*, enum fipa_protocol_e *performative*)

Definition at line 271 of file libmc.c.

References FIPA_PROTOCOL_END, FIPA_PROTOCOL_ERROR, and fipa_acl_message_s::protocol.

Referenced by MC_AclSetProtocol_chdl().

7.35.5.18 EXPORTMC int MC_AclSetSender (struct fipa_acl_message_s * *acl*, const char * *name*, const char * *address*)

Definition at line 314 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().

7.35.5.19 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 218 of file libmc.c.

References ListPop(), ListWRLock(), ListWRUnlock(), ListWRWait(), and agent_s::mailbox.

Referenced by MC_AclWaitRetrieve_chdl().

7.35.5.20 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 425 of file libmc.c.

References mc_platform_s::agent_processing, mc_platform_s::agent_queue, mc_platform_s::ams, COND_SIGNAL, ListAdd(), ListWRLock(), ListWRUnlock(), agency_s::mc_platform, agent_s::mc_platform, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by handler_COMPOSE_SEND(), and MC_AddAgent_chdl().

7.35.5.21 **int MC_AddAgentInitCallback (MCAgency_t *agency*, MC_AgentInitCallbackFunc_t *function*, void * *user_data*)**

Add an agent initialization callback function.

Parameters

agency a MobileC agency

function The callback function to add. This callback function will be called after an interpreter is initialized for an agent but before the agent is executed.

user_data A pointer to any user data that should be made available to the callback function

Returns

0 if successful, or error_code_t type

Definition at line 474 of file libmc.c.

References agency_s::agentInitCallback, and agency_s::agentInitUserData.

7.35.5.22 **int MC_AddStationaryAgent (MCAgency_t *agency*, void (*)(stationary_agent_info_t *) *agent_thread*, const char * *name*, void * *agent_args*)**

Add a stationary agent to the agency.

Parameters

agency a MobileC agency

agent_thread The binary-space agent function

name The new agent's name

agent_args user arguments to pass to the agent

Returns

0 if successful, or error_code_t type

Definition at line 442 of file libmc.c.

References stationary_agent_info_s::agency, stationary_agent_info_s::agent, agent_NewBinary(), mc_platform_s::agent_processing, mc_platform_s::agent_queue, stationary_agent_info_s::args, stationary_agent_info_s::attr, ListAdd(), ListWRLock(), ListWRUnlock(), agency_s::mc_platform, agent_s::name, strdup, stationary_agent_info_s::thread, and THREAD_CREATE.

7.35.5.23 **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 499 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().

7.35.5.24 `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 572 of file libmc.c.

References MC_AgentAddTask().

7.35.5.25 `EXPORTMC int MC_AgentAttachFile (MCAgent_t agent, const char * name, const char * filepath)`

Attach a file to the agent's current task.

Parameters

agent An existing agent

name The name to give the file

filepath The absolute path of the file

Returns

Returns 0 on success, or an error code on failure.

Definition at line 608 of file libmc.c.

References `agent_file_data_InitializeFromFilename()`, `agent_task_s::agent_file_list`, `agent_s::datastate`, `ListAdd()`, `ListWRLock()`, `ListWRUnlock()`, `agent_file_data_s::name`, `strdup`, `agent_datastate_s::task_progress`, and `agent_datastate_s::tasks`.

Referenced by `MC_AgentAttachFile_chdl()`.

7.35.5.26 `MC_Agency_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 484 of file libmc.c.

References `stationary_agent_info_s::agency`.

7.35.5.27 `MC_Agent_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.

7.35.6 Examples

The following example demonstrates usage of [MC_AgentInfo_GetAgent\(\)](#)

Definition at line 489 of file libmc.c.

References `stationary_agent_info_s::agent`.

7.35.6.1 `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 494 of file libmc.c.

References `stationary_agent_info_s::args`.

7.35.6.2 EXPORTMC int MC_AgentListFiles (MCAgent_t agent, int task_num, char * names, int * num_files)**

Get a list of an agent's attached files.

Parameters

agent An existing agent

names A pointer to an unallocated two dimensional character array. The function will allocate any necessary memory for storing the names. If names are allocated, the array must be freed by the user.

num_files A pointer to an integer which will be filled with the number of filenames

Returns

returns 0 on success, -1 on failure.

Definition at line 630 of file libmc.c.

References `agent_task_s::agent_file_list`, `agent_s::datastate`, `ListGetSize()`, `ListRDLock()`, `ListRDUnlock()`, `ListSearch()`, `agent_file_data_s::name`, `agent_datastate_s::number_of_tasks`, `strdup`, and `agent_datastate_s::tasks`.

Referenced by `MC_AgentListFiles_chdl()`.

7.35.6.3 EXPORTMC int MC_AgentProcessingBegin (MCAgency_t attr)

Begin a series of agent functions.

Parameters

agency A handle to a running agency

Returns

returns 0 on success, -1 on failure.

Definition at line 663 of file libmc.c.

References `mc_platform_s::agent_processing`, `mc_platform_s::agent_queue`, `ListWRLock()`, and `agency_s::mc_platform`.

7.35.6.4 EXPORTMC int MC_AgentProcessingEnd (MCAgency_t attr)

Definition at line 671 of file libmc.c.

References `mc_platform_s::agent_processing`, `mc_platform_s::agent_queue`, `ListWRUnlock()`, and `agency_s::mc_platform`.

7.35.6.5 EXPORTMC int MC_AgentRetrieveFile (MCAgent_t *agent*, int *task_num*, const char * *name*, const char * *save_path*)

Saves an agent's attached file to the filesystem.

Parameters

name The name of the agent's stored file

save_path The location to save the file (including the filename)

Returns

Returns 0 on success, -1 on failure.

Definition at line 678 of file libmc.c.

References agent_file_data_CmpName(), agent_task_s::agent_file_list, base64_decode_block(), base64_init_decodestate(), agent_file_data_s::data, agent_s::datastate, ListRDLock(), ListRDUnlock(), ListSearchCB(), agent_datastate_s::number_of_tasks, and agent_datastate_s::tasks.

Referenced by MC_AgentRetrieveFile_chdl().

7.35.6.6 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 748 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.

7.35.6.7 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 724 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`.

7.35.6.8 `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 766 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`.

7.35.6.9 `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 796 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`.

7.35.6.10 `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 813 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`, and `agent_datastate_s::tasks`.

7.35.6.11 `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 836 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`.

7.35.6.12 `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 846 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`.

7.35.6.13 `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.

7.35.7 Examples

The following example demonstrates usage of [MC_AgentVariableRetrieve\(\)](#) from agent space.

Definition at line 867 of file libmc.c.

References `agent_task_s::agent_variable_list`, `interpreter_variable_data_s::data`, `agent_s::datastate`, `interpreter_variable_data_CmpName()`, `ListRDLock()`, `ListRDUnlock()`, `ListSearchCB()`, `agent_datastate_s::task_progress`, and `agent_datastate_s::tasks`.

Referenced by `MC_AgentVariableRetrieve_chdl()`.

7.35.7.1 `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 888 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`, `interpreter_variable_data_CmpName()`, `ListRDLock()`, `ListRDUnlock()`, `ListSearchCB()`, `MC_ERR_NOT_FOUND`, `MC_SUCCESS`, `agent_datastate_s::task_progress`, and `agent_datastate_s::tasks`.

7.35.7.2 `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`

7.35.8 Examples

See `agent_saved_variables_example/test1.xml` for an example of usage of this api function.

7.35.9 Examples

The following example demonstrates usage of `MC_AgentVariableSave()` from agent space.

Definition at line 912 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()`.

7.35.9.1 EXPORTMC int MC_Barrier (MCAgency_t attr, int id)

Definition at line 933 of file `libmc.c`.

References `barrier_node_CmpID()`, `mc_platform_s::barrier_queue`, `barrier_node_s::cond`, `COND_BROADCAST`, `COND_WAIT`, `ListRDLock()`, `ListRDUnlock()`, `ListSearchCB()`, `barrier_node_s::lock`, `MC_ERR_NOT_FOUND`, `agency_s::mc_platform`, `MC_SUCCESS`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `barrier_node_s::num_registered`, and `barrier_node_s::num_waiting`.

Referenced by `MC_Barrier_chdl()`.

7.35.9.2 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 982 of file `libmc.c`.

References `barrier_node_CmpID()`, `barrier_node_Destroy()`, `mc_platform_s::barrier_queue`, `ListDeleteCB()`, `ListWRLock()`, `ListWRUnlock()`, and `agency_s::mc_platform`.

Referenced by `MC_BarrierDelete_chdl()`.

7.35.9.3 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.

7.35.10 Examples

The following example demonstrates an agent which sets up an MC_Barrier.

Definition at line 961 of file libmc.c.

References barrier_node_CmpID(), barrier_node_Initialize(), mc_platform_s::barrier_queue, ListAdd(), ListRDLock(), ListRDUnlock(), ListSearchCB(), ListWRLock(), ListWRUnlock(), MC_ERR, agency_s::mc_platform, and MC_SUCCESS.

Referenced by MC_BarrierInit_chdl().

7.35.10.1 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

7.35.11 Example

Definition at line 1000 of file libmc.c.

References agent_s::agent_interp, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::run_lock.

7.35.11.1 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

7.35.12 Example

Definition at line 1021 of file libmc.c.

References agent_s::agent_interp, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::run_lock.

7.35.12.1 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 1040 of file libmc.c.

References agent_s::agent_interp, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::run_lock.

7.35.12.2 EXPORTMC int MC_CallAgentFuncVar (MCAgent_t *agent*, const char **funcName*, void **returnVal*, ChVaList_t *arglist*)

Definition at line 1060 of file libmc.c.

References agent_s::agent_interp, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::run_lock.

Referenced by MC_CallAgentFunc_chdl().

7.35.12.3 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 1100 of file libmc.c.

References MC_ComposeAgentWithWorkgroup().

7.35.12.4 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 1226 of file libmc.c.

References MC_ComposeAgentFromFileWithWorkgroup().

Referenced by handler_COMPOSE_SEND().

7.35.12.5 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 1248 of file libmc.c.

References MC_ComposeAgentFromFileWithWorkgroup().

7.35.12.6 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.

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 1273 of file `libmc.c`.

References `MC_ComposeAgentWithWorkgroup()`.

Referenced by `MC_ComposeAgentFromFile()`, `MC_ComposeAgentFromFile_chdl()`, `MC_ComposeAgentFromFileS()`, and `MC_ComposeAgentFromFileWithWorkgroup_chdl()`.

7.35.12.7 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.

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_ComposeAgentWithWorkgroup` function instead.

Definition at line 1123 of file `libmc.c`.

References `MC_ComposeAgentWithWorkgroup()`.

Referenced by `MC_ComposeAgentWithWorkgroup_chdl()`.

7.35.12.8 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.

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

Definition at line 1149 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().

7.35.12.9 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 1319 of file `libmc.c`.

References `syncListNode_s::cond`, `COND_BROADCAST`, `ListRDLock()`, `ListRDUnlock()`, `ListSearchCB()`, `syncListNode_s::lock`, `MC_ERR_NOT_FOUND`, `agency_s::mc_platform`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `syncListNode_s::signalled`, `mc_platform_s::syncList`, and `syncListNode_CmpID()`.

Referenced by `MC_CondBroadcast_chdl()`.

7.35.12.10 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 1386 of file `libmc.c`.

References `ListRDLock()`, `ListRDUnlock()`, `ListSearchCB()`, `syncListNode_s::lock`, `MC_ERR_NOT_FOUND`, `agency_s::mc_platform`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `syncListNode_s::signalled`, `mc_platform_s::syncList`, and `syncListNode_CmpID()`.

Referenced by `MC_CondReset_chdl()`.

7.35.12.11 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

7.35.13 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 1339 of file libmc.c.

References `syncListNode_s::cond`, `COND_SIGNAL`, `ListRDLock()`, `ListRDUnlock()`, `ListSearchCB()`, `syncListNode_s::lock`, `MC_ERR_NOT_FOUND`, `agency_s::mc_platform`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `syncListNode_s::signalled`, `mc_platform_s::syncList`, and `syncListNode_CmpID()`.

Referenced by `MC_CondSignal_chdl()`.

7.35.13.1 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

7.35.14 Example

The following example demonstrates the agent-space version of this function.

Definition at line 1359 of file libmc.c.

References `syncListNode_s::cond`, `COND_WAIT`, `ListRDLock()`, `ListRDUnlock()`, `ListSearchCB()`, `syncListNode_s::lock`, `MC_ERR_NOT_FOUND`, `agency_s::mc_platform`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `syncListNode_s::signalled`, `mc_platform_s::syncList`, and `syncListNode_CmpID()`.

Referenced by `MC_CondWait_chdl()`.

7.35.14.1 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 1409 of file `libmc.c`.

References `agent_Copy()`, and `MC_SUCCESS`.

7.35.14.2 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 1416 of file `libmc.c`.

References `agent_CmpName()`, `mc_platform_s::agent_processing`, `mc_platform_s::agent_queue`, `CHECK_NULL`, `ListDeleteCB()`, `ListWRLock()`, `ListWRUnlock()`, `MC_ERR_INVALID`, `MC_ERR_INVALID_ARGS`, `agent_s::mc_platform`, `MC_SUCCESS`, `MC_TerminateAgent()`, `agent_s::name`, `strdup`, and `agent_s::wg_code`.

Referenced by `MC_DeleteAgent_chdl()`.

7.35.14.3 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 1446 of file `libmc.c`.

References `agent_CmpName()`, `agent_Destroy()`, `mc_platform_s::agent_processing`, `mc_platform_s::agent_queue`, `CHECK_NULL`, `ListDeleteCB()`, `ListWRLock()`, `ListWRUnlock()`, `MC_ERR_INVALID`, `MC_ERR_INVALID_ARGS`, `agent_s::mc_platform`, `MC_SUCCESS`, `MC_TerminateAgentWG()`, `agent_s::name`, `strdup`, and `agent_s::wg_code`.

Referenced by `MC_DeleteAgentWG_chdl()`.

7.35.14.4 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 1483 of file libmc.c.

Referenced by MC_DestroyServiceSearchResult_chdl().

7.35.14.5 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

7.35.15 Example

Definition at line 1532 of file libmc.c.

References mc_platform_s::acc, mc_platform_s::ams, buf, mc_platform_s::cmd_prompt, COND_-BROADCAST, COND_SIGNAL, mc_platform_s::connection_queue, mc_platform_s::df, GET_-THREAD_MODE, agency_s::hostName, ListWRLock(), ListWRUnlock(), 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, agency_s::portno, mc_-platform_s::quit, mc_platform_s::quit_cond, mc_platform_s::quit_lock, send, cmd_prompt_s::thread, THREAD_CANCEL, THREAD_JOIN, and agency_s::threads.

Referenced by MC_End_chdl().

7.35.15.1 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 1652 of file libmc.c.

References agent_CmpID(), mc_platform_s::agent_processing, mc_platform_s::agent_queue, ListRD-Lock(), ListRDUnlock(), ListSearchCB(), and agency_s::mc_platform.

Referenced by MC_FindAgentByID_chdl().

7.35.15.2 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

7.35.16 Example

Definition at line 1631 of file libmc.c.

References agent_CmpName(), mc_platform_s::agent_processing, mc_platform_s::agent_queue, ListRD-Lock(), ListRDUnlock(), ListSearchCB(), 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().

7.35.16.1 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 1717 of file libmc.c.

References agent_s::agent_interp.

7.35.16.2 EXPORTMC int MC_GetAgentID (MCAgent_t *agent*)

Retrieve an agent's id.

Definition at line 1723 of file libmc.c.

References agent_s::id.

Referenced by MC_GetAgentID_chdl().

7.35.16.3 EXPORTMC char* MC_GetAgentName (MCAgent_t *agent*)

Definition at line 1731 of file libmc.c.

References agent_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::name.

Referenced by MC_GetAgentName_chdl().

7.35.16.4 EXPORTMC int MC_GetAgentNumTasks (MCAgent_t *agent*)

Retrive the number of tasks an agent has.

7.35.17 Example

Definition at line 1814 of file libmc.c.

References agent_s::datastate, and agent_datastate_s::number_of_tasks.

Referenced by MC_GetAgentNumTasks_chdl().

**7.35.17.1 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.

7.35.18 Example

This file demonstrates the retrieval of agent return data from an agent

This is the agent which gets the data

Definition at line 1749 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`, and `agent_datastate_s::tasks`.

7.35.18.1 EXPORTMC int MC_GetAgents (MCAgency_t attr, MCAgent_t ** agents, int * num_agents, unsigned int agent_status_flags)

Get a list of agents that match a certain agent status.

Parameters

agency A handle to a running Mobile-C agency

agents The address of an uninitialized pointer to an agent. An array of agents will be allocated, which will need to be freed by the user.

num_agents A pointer to an integer. The integer will be filled with the number of agents allocated for the 'agents' variable.

agent_status_flags These contain flags of agent statuses. For instance, if a user wishes to retrieve all agents with either the status `MC_WAIT_CH` or `MC_AGENT_NEUTRAL`, they may use an `agent_status_flag` of `((1 < MC_WAIT_CH) | (1 < MC_AGENT_NEUTRAL))`. All valid agent statuses are enumerated in the enumeration `MC_AgentStatus_e`, located in [libmc.h](#).

Definition at line 1830 of file libmc.c.

References `mc_platform_s::agent_processing`, `mc_platform_s::agent_queue`, `agent_s::agent_status`, `ListRDLock()`, `ListRDUnlock()`, `ListSearch()`, and `agency_s::mc_platform`.

7.35.18.2 EXPORTMC int MC_GetAgentStatus (MCAgent_t agent)

Get an agent's current status.

Returns

returns type 'enum `MC_AgentStatus_e`'

Definition at line 1693 of file libmc.c.

References `agent_s::agent_status`, `agent_s::agent_status_lock`, `agent_s::lock`, `MUTEX_LOCK`, and `MUTEX_UNLOCK`.

Referenced by `MC_GetAgentStatus_chdl()`.

7.35.18.3 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 1820 of file libmc.c.

References `agent_s::agent_type`.

7.35.18.4 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 1705 of file libmc.c.

References agent_s::datastate, mxmlSaveAllocString(), and agent_datastate_s::xml_agent_root.

Referenced by MC_GetAgentXMLString_chdl().

7.35.18.5 EXPORTMC int MC_GetAllAgents (MCAgency_t *attr*, MCAgent_t ** *agents*, int * *num_agents*)

Get all of the agents on an agency.

Parameters

agency A handle to a running Mobile-C agency

agents The address of an uninitialized pointer to an agent. An array of agents will be allocated, which will need to be freed by the user.

num_agents A pointer to an integer. The integer will be filled with the number of agents allocated for the 'agents' variable.

Definition at line 1876 of file libmc.c.

References mc_platform_s::agent_processing, mc_platform_s::agent_queue, ListGetSize(), ListRD-Lock(), ListRDUnlock(), ListSearch(), and agency_s::mc_platform.

7.35.18.6 EXPORTMC int MC_GetNumAgents (MCAgency_t *attr*, int * *num_agents*)

Get the number of agents residing on an agency.

Parameters

attr A handle to a running Mobile-C agency

num_agents A pointer to an integer to fill with the number of agents

Returns

Returns 0 on success, non-zero on failure.

Definition at line 1907 of file libmc.c.

References mc_platform_s::agent_processing, mc_platform_s::agent_queue, ListGetSize(), ListRD-Lock(), ListRDUnlock(), and agency_s::mc_platform.

7.35.18.7 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 1920 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_HaltAgency_chdl().

7.35.18.8 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

7.35.19 Example

Definition at line 1929 of file libmc.c.

References agency_s::agentInitCallback, agency_s::agentInitUserData, 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::initialized, MCAgencyOptions_s::initInterps, agency_s::initInterps, agency_s::known_host_filename, MCAgencyOptions_s::known_host_filename, MC_InitializeAgencyOptions(), MC_INITIALIZED_CODE, 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.

7.35.19.1 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.

7.35.20 Example

Definition at line 2049 of file libmc.c.

References MCAgencyOptions_s::bluetooth, MCAgencyOptions_s::default_agent_status, MCAgencyOptions_s::initialized, MCAgencyOptions_s::initInterps, MCAgencyOptions_s::known_host_filename, MC_INITIALIZED_CODE, 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().

7.35.20.1 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 2072 of file libmc.c.

References buf, ListAdd(), ListWRLock(), ListWRUnlock(), 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.

7.35.20.2 EXPORTMC int MC_MainLoop (MCAgency_t attr)

Wait indefinitely.

Note

This function is intended to block the calling thread forever.

Definition at line 2923 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.

7.35.20.3 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 2146 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()`.

7.35.20.4 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

7.35.21 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 2168 of file `libmc.c`.

References `ListRDLock()`, `ListRDUnlock()`, `ListSearchCB()`, `syncListNode_s::lock`, `agency_s::mc_platform`, `MUTEX_LOCK`, `mc_platform_s::syncList`, and `syncListNode_CmpID()`.

Referenced by `MC_MutexLock_chdl()`.

7.35.21.1 EXPORTMC int MC_MutexUnlock (MCAgency_t attr, int id)

Definition at line 2185 of file `libmc.c`.

References `ListRDLock()`, `ListRDUnlock()`, `ListSearchCB()`, `syncListNode_s::lock`, `agency_s::mc_platform`, `MUTEX_UNLOCK`, `mc_platform_s::syncList`, and `syncListNode_CmpID()`.

Referenced by `MC_MutexUnlock_chdl()`.

7.35.21.2 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 2202 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().

7.35.21.3 EXPORTMC int MC_QueueRDLock (MCAgency_t *agency*, enum MC_QueueIndex_e *queue*)

Lock an agency queue for reading. Prevents other threads from writing.

Definition at line 2218 of file libmc.c.

References ListRDLock(), agency_s::mc_platform, and mc_platform_GetQueue().

7.35.21.4 EXPORTMC int MC_QueueRDUnlock (MCAgency_t *agency*, enum MC_QueueIndex_e *queue*)

Unlock an agency queue that was previously locked for reading.

Definition at line 2230 of file libmc.c.

References ListRDUnlock(), agency_s::mc_platform, and mc_platform_GetQueue().

7.35.21.5 EXPORTMC int MC_QueueWRLock (MCAgency_t *agency*, enum MC_QueueIndex_e *queue*)

Lock an agency queue for writing. Prevents other threads from reading and writing.

Definition at line 2242 of file libmc.c.

References ListWRLock(), agency_s::mc_platform, and mc_platform_GetQueue().

7.35.21.6 EXPORTMC int MC_QueueWRUnlock (MCAgency_t *agency*, enum MC_QueueIndex_e *queue*)

Unlock an agency queue that was previously locked for writing.

Definition at line 2254 of file libmc.c.

References ListWRUnlock(), agency_s::mc_platform, and mc_platform_GetQueue().

7.35.21.7 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)'.

7.35.22 Example

Definition at line 2266 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().

7.35.22.1 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 2405 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.

7.35.22.2 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 2345 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_ResumeAgency_chdl()`.

7.35.22.3 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 2354 of file libmc.c.

References `mc_platform_s::agent_processing`, `mc_platform_s::agent_queue`, `agent_s::agent_status`, `agent_s::agent_status_lock`, `ListRDLock()`, `ListRDUnlock()`, `ListSearch()`, `MC_AGENT_NEUTRAL`, `agency_s::mc_platform`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, and `list_s::size`.

Referenced by `MC_RetrieveAgent_chdl()`.

7.35.22.4 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 2389 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()`.

7.35.22.5 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

7.35.23 Example

Definition at line 2416 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().

7.35.23.1 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

7.35.24 Example

Definition at line 2466 of file libmc.c.

References ListRDLock(), ListRDUnlock(), ListSearchCB(), agency_s::mc_platform, syncListNode_s::sem, SEMAPHORE_POST, mc_platform_s::syncList, and syncListNode_CmpID().

Referenced by MC_SemaphorePost_chdl().

7.35.24.1 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.

7.35.25 Example

Definition at line 2483 of file libmc.c.

References ListRDLock(), ListRDUnlock(), ListSearchCB(), agency_s::mc_platform, syncListNode_s::sem, SEMAPHORE_WAIT, mc_platform_s::syncList, and syncListNode_CmpID().

Referenced by MC_SemaphoreWait_chdl().

7.35.25.1 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 2510 of file libmc.c.

References agent_Initialize(), mc_platform_s::agent_processing, mc_platform_s::agent_queue, agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, mc_platform_s::ams, COND_BROADCAST, ListAdd(), ListWRLock(), ListWRUnlock(), MC_ERR, agency_s::mc_platform, MC_WAIT_MESSGSEND, message_Destroy(), message_InitializeFromString(), message_New(), MUTEX_LOCK, and MUTEX_UNLOCK.

7.35.25.2 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 2565 of file libmc.c.

References agent_Initialize(), mc_platform_s::agent_processing, mc_platform_s::agent_queue, agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, mc_platform_s::ams, buf, COND_BROADCAST, ListAdd(), ListWRLock(), ListWRUnlock(), agency_s::mc_platform, MC_WAIT_MESSGSEND, message_Destroy(), message_InitializeFromString(), message_New(), MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by handler_SEND().

7.35.25.3 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 2640 of file libmc.c.

References ListAdd(), ListWRLock(), ListWRUnlock(), MC_ERR, agency_s::mc_platform, message_Destroy(), message_InitializeFromString(), message_New(), and mc_platform_s::message_queue.

Referenced by MC_SendAgentMigrationMessage_chdl().

7.35.25.4 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 2677 of file libmc.c.

References agent_Initialize(), mc_platform_s::agent_processing, mc_platform_s::agent_queue, agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, mc_platform_s::ams, buf, COND_BROADCAST, ListAdd(), ListWRLock(), ListWRUnlock(), agency_s::mc_platform, MC_WAIT_MESSGSEND, message_Destroy(), message_InitializeFromString(), message_New(), MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by MC_SendAgentMigrationMessageFile_chdl().

7.35.25.5 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 2764 of file libmc.c.

References `agent_s::agent_status`, `agent_s::agent_status_cond`, `agent_s::agent_status_lock`, `mc_platform_s::ams`, `COND_BROADCAST`, `COND_SIGNAL`, `agent_s::lock`, `agent_s::mc_platform`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, and `agent_s::orphan`.

Referenced by `MC_SetAgentStatus_chdl()`.

7.35.25.6 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 2782 of file libmc.c.

References `mc_platform_s::default_agentstatus`, and `agency_s::mc_platform`.

Referenced by `MC_SetDefaultAgentStatus_chdl()`.

7.35.25.7 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 2809 of file libmc.c.

References `SET_THREAD_OFF`, and `MCAgencyOptions_s::threads`.

7.35.25.8 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 2792 of file libmc.c.

References SET_THREAD_ON, and MCAgencyOptions_s::threads.

7.35.25.9 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 2816 of file libmc.c.

References MC_THREAD_ALL, SET_THREAD_OFF, and MCAgencyOptions_s::threads.

7.35.25.10 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 2799 of file libmc.c.

References MC_THREAD_ALL, SET_THREAD_ON, and MCAgencyOptions_s::threads.

7.35.25.11 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.

7.35.26 Example

Definition at line 2826 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.

7.35.26.1 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 2845 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.

7.35.26.2 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 2861 of file `libmc.c`.

References `agency_s::mc_platform`, `mc_platform_s::syncList`, and `syncListDelete()`.

Referenced by `MC_SyncDelete_chdl()`.

7.35.26.3 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 2867 of file `libmc.c`.

References `syncListNode_s::id`, `ListSearchCB()`, `ListWRLock()`, `ListWRUnlock()`, `agency_s::mc_platform`, `mc_platform_s::syncList`, `syncListAddNode()`, `syncListNode_CmpID()`, and `syncListNode-New()`.

Referenced by `MC_SyncInit_chdl()`.

7.35.26.4 EXPORTMC int MC_TerminateAgent (MCAgent_t agent)

Halt a running agent.

Returns

0 on success, `error_code_t` on failure

Definition at line 2893 of file `libmc.c`.

References `agent_s::agent_interp`, `agent_s::lock`, `MUTEX_LOCK`, and `MUTEX_UNLOCK`.

Referenced by `ams_ManageAgentList()`, `MC_DeleteAgent()`, and `MC_TerminateAgent_chdl()`.

7.35.26.5 EXPORTMC int MC_TerminateAgentWG (MCAgent_t *calling_agent*, MCAgent_t *agent*)

Definition at line 2905 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().

7.35.26.6 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 2934 of file libmc.c.

References mc_platform_s::agent_processing, mc_platform_s::agent_queue, ListGetSize(), ListRD-Lock(), ListRDUnlock(), ListRDWait(), and agency_s::mc_platform.

7.35.26.7 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 2952 of file libmc.c.

References mc_platform_s::agent_processing, mc_platform_s::agent_queue, ListGetSize(), ListRD-Lock(), ListRDUnlock(), ListSearch(), agency_s::mc_platform, MC_RECV_AGENT, and MC_WaitSignal().

7.35.26.8 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.

7.35.27 Example

Definition at line 2972 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().

7.36 /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_NEW](#)(cond)
- #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)

7.36.1 Define Documentation

7.36.1.1 #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_DOUBLETTYPE:
        size = sizeof(double);
        break;
    default:
        fprintf(stderr, "Unknown data type: %d at %s:%d",
            type, __FILE__, __LINE__);
        size=0;
}

```

Definition at line 501 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\(\)](#).

7.36.1.2 #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 615 of file macros.h.

Referenced by agent_xml_parse__data().

7.36.1.3 #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 532 of file macros.h.

Referenced by agent_xml_compose__data().

7.36.1.4 #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 564 of file macros.h.

Referenced by agent_xml_compose__create_row_nodes(), and agent_xml_compose__data().

7.36.1.5 #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 593 of file macros.h.

Referenced by agent_xml_parse__data().

7.36.1.6 #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 484 of file macros.h.

Referenced by agent_AddPersistentVariable(), agent_datastate_New(), agent_xml_parse__file(), 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(), 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().

7.36.1.7 #define COND_BROADCAST(cond) pthread_cond_broadcast(cond)

Definition at line 230 of file macros.h.

Referenced by acc_MessageHandlerThread(), acc_Thread(), agent_Initialize(), agent_NewBinary(), agent_RunChScript(), ams_ManageAgentList(), ams_Thread(), df_Thread(), handler_QUIT(), listen_Thread(), MC_Barrier(), MC_CondBroadcast(), MC_End(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessageFile(), MC_SendSteerCommand(), and MC_SetAgentStatus().

7.36.1.8 #define COND_DESTROY(cond) pthread_cond_destroy(cond)

Definition at line 206 of file macros.h.

Referenced by acc_Destroy(), 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(), rwlock_Destroy(), and syncListNodeDestroy().

7.36.1.9 #define COND_INIT(cond) pthread_cond_init(cond, NULL)

Definition at line 198 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_node_New(), df_request_search_

New(), mc_platform_Initialize(), mc_rwlock_init(), rwlock_New(), syncListNodeInit(), and syncListNodeNew().

7.36.1.10 #define COND_NEW(cond)

Value:

```
cond = (pthread_cond_t*)malloc(sizeof(pthread_cond_t)); \
if (cond == NULL) \
    fprintf(stderr, "Memory Error. %s:%d\n", __FILE__, __LINE__); \
```

Definition at line 201 of file macros.h.

Referenced by agent_Copy(), agent_Initialize(), agent_New(), agent_NewBinary(), and rwlock_New().

7.36.1.11 #define COND_RESET(cond, mutex) pthread_mutex_unlock(mutex);

Definition at line 218 of file macros.h.

7.36.1.12 #define COND_SIGNAL(cond) pthread_cond_signal(cond)

Definition at line 232 of file macros.h.

Referenced by agent_RunChScriptThread(), MC_AddAgent(), MC_ConcSignal(), MC_End(), MC_ResetSignal(), mc_rwlock_rdunlock(), mc_rwlock_wrunlock(), MC_SetAgentStatus(), rwlock_rdunlock(), and rwlock_wrunlock().

7.36.1.13 #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 212 of file macros.h.

7.36.1.14 #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 220 of file macros.h.

Referenced by MC_SearchForService().

7.36.1.15 #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_node_New(), df_request_search_New(), mc_platform_Initialize(), mc_rwlock_init(), syncListNodeInit(), and syncListNodeNew().

7.36.1.16 #define COND_WAIT(cond, mutex) pthread_cond_wait(cond, mutex)

Definition at line 209 of file macros.h.

Referenced by acc_MessageHandlerThread(), acc_Thread(), agent_RunChScriptThread(), ams_Thread(), ListRDtoWR(), ListRDWait(), ListWRWait(), MC_Barrier(), MC_CondWait(), MC_MainLoop(), mc_platform_Initialize(), mc_rwlock_rdlock(), mc_rwlock_wrlock(), MC_SteerControl(), MC_WaitSignal(), message_Send(), rwlock_rdwait(), and rwlock_wrlock().

7.36.1.17 #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().

7.36.1.18 #define MUTEX_DESTROY(mutex) pthread_mutex_destroy(mutex)

Definition at line 179 of file macros.h.

Referenced by acc_Destroy(), 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(), rwlock_Destroy(), and syncListNodeDestroy().

7.36.1.19 #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_node_New(), df_request_search_New(), mc_platform_Initialize(), MC_RegisterService(), mc_rwlock_init(), rwlock_New(), syncListNodeInit(), and syncListNodeNew().

7.36.1.20 #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_CmpID(), agent_CmpName(), agent_Copy(), agent_Destroy(), agent_Initialize(), agent_NewBinary(), agent_Print(), agent_RunChScript(), agent_RunChScriptThread(), ams_ManageAgentList(), ams_Thread(), barrier_node_CmpID(), df_Destroy(), df_node_Destroy(), df_SearchForService(), df_Thread(), handler_QUIT(), interpreter_variable_data_Initialize(), listen_Thread(), ListRDtoWR(), ListRDWait(), 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_HaltAgency(), MC_MainLoop(), MC_MutexLock(), 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_TerminateAgent(), MC_WaitSignal(), message_Send(), request_handler_DEREGISTER(), rwlock_rdlock(), rwlock_rdunlock(), rwlock_rdwait(), and rwlock_wrlock().

7.36.1.21 #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_Copy(), agent_Initialize(), agent_New(), agent_NewBinary(), and rwlock_New().

7.36.1.22 #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_node_New(), df_request_search_New(), mc_platform_Initialize(), MC_RegisterService(), mc_rwlock_init(), syncListNodeInit(), and syncListNode_New().

7.36.1.23 #define MUTEX_UNLOCK(mutex) pthread_mutex_unlock(mutex)

Definition at line 185 of file macros.h.

Referenced by acc_MessageHandlerThread(), acc_Thread(), agent_CmpID(), agent_CmpName(), agent_Destroy(), agent_Initialize(), agent_NewBinary(), agent_Print(), agent_RunChScript(), agent_RunChScriptThread(), ams_ManageAgentList(), ams_Thread(), barrier_node_CmpID(), df_SearchForService(), df_Thread(), handler_QUIT(), interpreter_variable_data_Initialize(), listen_Thread(), ListRDWait(), ListWRtoRD(), 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_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_TerminateAgent(), MC_WaitSignal(), message_Send(), request_handler_DEREGISTER(), rwlock_rdlock(), rwlock_rdunlock(), rwlock_rdwait(), and rwlock_wrunlock().

7.36.1.24 #define PTHREAD_STACK_SIZE 131072

Definition at line 139 of file macros.h.

7.36.1.25 #define RWLOCK_DESTROY(rwlock) mc_rwlock_destroy(rwlock)

Definition at line 274 of file macros.h.

7.36.1.26 #define RWLOCK_INIT(rwlock) mc_rwlock_init(rwlock)

Definition at line 266 of file macros.h.

7.36.1.27 #define RWLOCK_RDLOCK(rwlock) mc_rwlock_rdlock(rwlock)

Definition at line 292 of file macros.h.

7.36.1.28 #define RWLOCK_RDUNLOCK(rwlock) mc_rwlock_rdunlock(rwlock)

Definition at line 294 of file macros.h.

7.36.1.29 #define RWLOCK_T mc_rwlock_t

Definition at line 259 of file macros.h.

7.36.1.30 #define RWLOCK_WRLOCK(rwlock) mc_rwlock_wrlock(rwlock)

Definition at line 296 of file macros.h.

7.36.1.31 #define RWLOCK_WRUNLOCK(rwlock) mc_rwlock_wrunlock(rwlock)

Definition at line 298 of file macros.h.

7.36.1.32 #define SEMAPHORE_DESTROY(sem) sem_destroy(sem)

Definition at line 244 of file macros.h.

Referenced by syncListNodeDestroy().

7.36.1.33 #define SEMAPHORE_INIT(sem) sem_init(sem, 0, 0)

Definition at line 241 of file macros.h.

Referenced by syncListNodeInit(), and syncListNodeNew().

7.36.1.34 #define SEMAPHORE_POST(sem) sem_post(sem)

Definition at line 249 of file macros.h.

Referenced by MC_SemaphorePost().

7.36.1.35 #define SEMAPHORE_T sem_t

Definition at line 239 of file macros.h.

Referenced by syncListNodeInit(), and syncListNodeNew().

7.36.1.36 #define SEMAPHORE_WAIT(sem) sem_wait(sem)

Definition at line 247 of file macros.h.

Referenced by MC_SemaphoreWait().

7.36.1.37 #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().

7.36.1.38 #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().

7.36.1.39 #define SIGNAL(cond, mutex, action)

Value:

```
pthread_mutex_lock( mutex ); \
action; \
pthread_cond_signal( cond ); \
pthread_mutex_unlock( mutex )
```

Definition at line 225 of file macros.h.

Referenced by agent_RunChScriptThread(), and request_handler_SEARCH().

7.36.1.40 #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 312 of file macros.h.

7.36.1.41 #define SLEEP_RESET(queue) pthread_mutex_unlock(queue->thread_mutex)

Definition at line 316 of file macros.h.

7.36.1.42 #define SOCKET_ERROR()**Value:**

```
printf("Socket error. %s:%d\n", __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().

7.36.1.43 #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.

7.36.1.44 #define THREAD_CANCEL(thread_handle) pthread_cancel(thread_handle)

Definition at line 155 of file macros.h.

Referenced by MC_End().

7.36.1.45 #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().

7.36.1.46 #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().

7.36.1.47 #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().

7.36.1.48 #define THREAD_JOIN(thread_handle) pthread_join(thread_handle, NULL)

Definition at line 158 of file macros.h.

Referenced by MC_End().

7.36.1.49 #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 306 of file macros.h.

7.36.1.50 #define WARN(message)

Value:

```
fprintf(stderr, "\nWARNING: "); \
    fprintf(stderr, message ); \
    fprintf(stderr, " %s:%d\n", __FILE__, __LINE__ )
```

Definition at line 491 of file macros.h.

Referenced by agent_RunChScriptThread(), and message_InitializeFromAgent().

7.37 /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_ERR_OPTIONS_UNINITIALIZED](#), [MC_WARN_DUPLICATE](#) }

7.37.1 Typedef Documentation

7.37.1.1 typedef enum [error_code_e](#) [error_code_t](#)

7.37.2 Enumeration Type Documentation

7.37.2.1 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_ERR_OPTIONS_UNINITIALIZED
MC_WARN_DUPLICATE

Definition at line 41 of file mc_error.h.

7.38 /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 "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 "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)
- [ChInterp_t](#) * [interpreter_queue_CreateRetrieve](#) ([list_t](#) *queue, [ChOptions_t](#) *interp_options)
- [list_t](#) * [mc_platform_GetQueue](#) ([mc_platform_p](#) platform, enum [MC_QueueIndex_e](#) index)

7.38.1 Typedef Documentation

7.38.1.1 typedef [mc_platform_t](#)* [mc_platform_p](#)

Definition at line 126 of file [mc_platform.h](#).

7.38.1.2 typedef struct [mc_platform_s](#) [mc_platform_t](#)

Definition at line 125 of file [mc_platform.h](#).

7.38.2 Function Documentation

7.38.2.1 **ChInterp_t* interpreter_queue_CreateRetrieve (list_t * *queue*, ChOptions_t * *interp_options*)**

Definition at line 346 of file mc_platform.c.

References agent_ChScriptInitVar(), ListPop(), ListWRLock(), and ListWRUnlock().

Referenced by agent_RunChScriptThread().

7.38.2.2 **int mc_platform_Destroy (mc_platform_p *mc_platform*)**

Definition at line 250 of file mc_platform.c.

References mc_platform_s::acc, acc_Destroy(), agent_Destroy(), mc_platform_s::agent_queue, mc_platform_s::ams, ams_Destroy(), barrier_node_Destroy(), mc_platform_s::barrier_queue, mc_platform_s::cmd_prompt, cmd_prompt_Destroy(), COND_DESTROY, connection_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::hostname, mc_platform_s::interp_options, mc_platform_s::interpreter_queue, ListClearCB(), ListPop(), ListTerminate(), ListWRLock(), ListWRUnlock(), 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, message_Destroy(), mc_platform_s::message_queue, MUTEX_DESTROY, mc_platform_s::quit_cond, mc_platform_s::quit_lock, SOCKET_ERROR, mc_platform_s::sockfd, mc_platform_s::syncList, and syncListNodeDestroy().

Referenced by MC_End().

7.38.2.3 **list_t* mc_platform_GetQueue (mc_platform_p *platform*, enum MC_QueueIndex_e *index*)**

Definition at line 366 of file mc_platform.c.

References mc_platform_s::agent_queue, mc_platform_s::barrier_queue, mc_platform_s::connection_queue, MC_QUEUE_AGENT, MC_QUEUE_BARRIER, MC_QUEUE_CONNECTION, MC_QUEUE_MESSAGE, MC_QUEUE_SYNC, mc_platform_s::message_queue, and mc_platform_s::syncList.

Referenced by MC_QueueRDLock(), MC_QueueRDUnlock(), MC_QueueWRLock(), and MC_QueueWRUnlock().

7.38.2.4 **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_processing, mc_platform_s::agent_queue, mc_platform_s::ams, ams_Initialize(), ams_Start(), mc_platform_s::barrier_queue, 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, ListAdd(), ListInitialize(), ListWRLock(), ListWRUnlock(), MC_ERR_MEMORY,

MC_NO_SIGNAL, 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, and agency_s::threads.

Referenced by MC_Initialize().

7.39 /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*)

7.39.1 Typedef Documentation

7.39.1.1 typedef [mc_rwlock_t](#)* [mc_rwlock_p](#)

Definition at line 46 of file [mc_rwlock.h](#).

7.39.1.2 typedef struct [mc_rwlock_s](#) [mc_rwlock_t](#)

7.39.2 Function Documentation

7.39.2.1 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](#).

7.39.2.2 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](#).

7.39.2.3 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.

7.39.2.4 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.

7.39.2.5 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.

7.39.2.6 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.

7.40 /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)
- int [message_Print](#) ([message_t](#) *message)

7.40.1 Typedef Documentation

7.40.1.1 typedef message_t* message_p

Definition at line 115 of file message.h.

7.40.1.2 typedef struct message_send_arg_s message_send_arg_t

7.40.1.3 typedef struct message_s message_t

7.40.1.4 typedef enum message_type_e message_type_t

7.40.2 Enumeration Type Documentation

7.40.2.1 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.

7.40.3 Function Documentation

7.40.3.1 int auth_rece_send_msg (int sockfd, char * hostname, char * message, char * privkey, char * known_host_filename)

Definition at line 458 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()`.

7.40.3.2 **int http_to_hostport (const char * *http_str*, char ** *host*, int * *port*, char ** *target*)**

Definition at line 300 of file message.c.

References MC_ERR_PARSE.

Referenced by MC_AclSend().

7.40.3.3 **message_p message_Copy (message_p *src*)**

Definition at line 99 of file message.c.

7.40.3.4 **int message_Destroy (message_p *message*)**

Definition at line 416 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::sending_agent_name, 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_platform_Destroy(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessage(), MC_SendAgentMigrationMessageFile(), and message_InitializeFromConnection().

7.40.3.5 **int message_InitializeFromAgent (struct mc_platform_s * *mc_platform*, message_p *message*, struct agent_s * *agent*)**

Referenced by ams_ManageAgentList().

7.40.3.6 **int message_InitializeFromConnection (struct mc_platform_s * *mc_platform*, message_p *message*, struct connection_s * *connection*)**

7.40.3.7 **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().

7.40.3.8 **message_p message_New (void)**

Definition at line 74 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::sending_agent_name, 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().

7.40.3.9 int message_Print (message_t * message)

Definition at line 956 of file message.c.

References message_s::connect_id, and message_s::message_id.

Referenced by handler_PRINTLIST_MESSAGE().

7.40.3.10 int message_Send (struct mc_platform_s * mc_platform, message_p message, char * privatekey)

Definition at line 580 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().

7.40.3.11 void* message_send_Thread (void * arg)

Definition at line 667 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, 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().

7.41 /home/dko/Projects/mobilec/src/include/mobilec.h File Reference

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

7.42 /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)

7.42.1 Define Documentation

7.42.1.1 #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\(\)](#).

7.42.2 Typedef Documentation

7.42.2.1 typedef struct mtp_http_content_s mtp_http_content_t

7.42.2.2 typedef mtp_http_t* mtp_http_p

Definition at line 145 of file mtp_http.h.

7.42.2.3 typedef struct mtp_http_s mtp_http_t

7.42.3 Enumeration Type Documentation

7.42.3.1 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.

7.42.3.2 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.

7.42.4 Function Documentation

7.42.4.1 `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().

7.42.4.2 `const char* http_GetToken (const char * string, char ** token)`

Definition at line 790 of file mtp_http.c.

References cur.

Referenced by http_ParseRequest().

7.42.4.3 `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().

7.42.4.4 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().

7.42.4.5 int mtp_http_ComposeMessage (struct message_s * *message*)

Referenced by message_send_Thread().

7.42.4.6 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().

7.42.4.7 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().

7.42.4.8 int mtp_http_InitializeFromConnection (struct mtp_http_s * *http*, struct connection_s * *connection*, char * *privatekey*)

Referenced by acc_connection_Thread().

7.42.4.9 `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()`.

7.42.4.10 `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()`.

7.42.4.11 `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()`.

7.43 /home/dko/Projects/mobilec/src/include/rwlock.h File Reference

```
#include "macros.h"
```

Data Structures

- struct [rwlock_s](#)

Typedefs

- typedef struct [rwlock_s](#) [rwlock_t](#)

Functions

- int [rwlock_wrlock](#) ([rwlock_t](#) **rwlock*)
- int [rwlock_wrunlock](#) ([rwlock_t](#) **rwlock*)
- int [rwlock_rdlock](#) ([rwlock_t](#) **rwlock*)
- int [rwlock_rdunlock](#) ([rwlock_t](#) **rwlock*)
- int [rwlock_rdwait](#) ([rwlock_t](#) **rwlock*)
- [rwlock_t](#) * [rwlock_New](#) (void)
- int [rwlock_Destroy](#) ([rwlock_t](#) **rwlock*)

7.43.1 Typedef Documentation

7.43.1.1 typedef struct [rwlock_s](#) [rwlock_t](#)

7.43.2 Function Documentation

7.43.2.1 int [rwlock_Destroy](#) ([rwlock_t](#) * *rwlock*)

Definition at line 61 of file [rwlock.c](#).

References [COND_DESTROY](#), [rwlock_s::lock](#), [MUTEX_DESTROY](#), [rwlock_s::reader_cond](#), and [rwlock_s::writer_cond](#).

Referenced by [ListTerminate\(\)](#).

7.43.2.2 [rwlock_t](#)* [rwlock_New](#) (void)

Definition at line 48 of file [rwlock.c](#).

References [COND_INIT](#), [COND_NEW](#), [rwlock_s::lock](#), [MUTEX_INIT](#), [MUTEX_NEW](#), [rwlock_s::reader_cond](#), [rwlock_s::readers](#), and [rwlock_s::writer_cond](#).

Referenced by [ListInitialize\(\)](#).

7.43.2.3 int rwlock_rdlock (rwlock_t * *rwlock*)

Definition at line 21 of file rwlock.c.

References `rwlock_s::lock`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, and `rwlock_s::readers`.

Referenced by `ListRDLock()`.

7.43.2.4 int rwlock_rdunlock (rwlock_t * *rwlock*)

Definition at line 29 of file rwlock.c.

References `COND_SIGNAL`, `rwlock_s::lock`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `rwlock_s::readers`, and `rwlock_s::writer_cond`.

Referenced by `ListRDUnlock()`.

7.43.2.5 int rwlock_rdwait (rwlock_t * *rwlock*)

Definition at line 38 of file rwlock.c.

References `COND_WAIT`, `rwlock_s::lock`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `rwlock_s::reader_cond`, and `rwlock_s::readers`.

Referenced by `ListWait()`.

7.43.2.6 int rwlock_wrlock (rwlock_t * *rwlock*)

Definition at line 5 of file rwlock.c.

References `COND_WAIT`, `rwlock_s::lock`, `MUTEX_LOCK`, `rwlock_s::readers`, and `rwlock_s::writer_cond`.

Referenced by `ListWRLock()`.

7.43.2.7 int rwlock_wrunlock (rwlock_t * *rwlock*)

Definition at line 14 of file rwlock.c.

References `COND_SIGNAL`, `rwlock_s::lock`, `MUTEX_UNLOCK`, and `rwlock_s::reader_cond`.

Referenced by `ListWRUnlock()`.

7.44 /home/dko/Projects/mobilec/src/include/xml_compose.h File Reference

```
#include "agent.h"
#include "agent_file_data.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__file \(agent_p agent, int index, agent_file_data_t *agent_file_data\)](#)
- [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 \(void *data, int index, int *extent, CType_t type, int dim, int extent_index\)](#)

7.44.1 Function Documentation

7.44.1.1 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()`, and `mxmlLoadString()`.

Referenced by `message_InitializeFromAgent()`.

7.44.1.2 mxml_node_t* agent_xml_compose__agent_code (agent_p agent, int index)

Definition at line 571 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()`, and `xml_new_cdata()`.

Referenced by `agent_xml_compose__tasks()`.

7.44.1.3 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(), and mxmlNewElement().

Referenced by agent_xml_compose__mobile_agent().

7.44.1.4 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 622 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(), and mxmlNewText().

Referenced by agent_xml_compose__create_row_nodes(), and agent_xml_compose__row().

7.44.1.5 mxml_node_t* agent_xml_compose__data (agent_p agent, int index, interpreter_variable_data_t * interp_variable)

Definition at line 478 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(), and interpreter_variable_data_s::name.

Referenced by agent_xml_compose__task().

7.44.1.6 mxml_node_t* agent_xml_compose__file (agent_p agent, int index, agent_file_data_t * agent_file_data)

Definition at line 552 of file xml_compose.c.

References agent_file_data_s::data, MXML_NO_PARENT, mxmlElementSetAttr(), mxmlNewElement(), mxmlNewText(), and agent_file_data_s::name.

Referenced by agent_xml_compose__task().

7.44.1.7 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(), and mxmlNewElement().

Referenced by agent_xml_compose().

7.44.1.8 mxml_node_t* agent_xml_compose__home (agent_p agent)

Definition at line 253 of file xml_compose.c.

References agent_s::home, mxmlNewElement(), and mxmlNewText().

Referenced by agent_xml_compose__agent_data().

7.44.1.9 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(), and mxmlNewElement().

Referenced by agent_xml_compose__gaf_message().

7.44.1.10 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(), and mxmlNewElement().

Referenced by agent_xml_compose__message().

7.44.1.11 mxml_node_t* agent_xml_compose__name (agent_p agent)

Definition at line 221 of file xml_compose.c.

References mxmlNewElement(), mxmlNewText(), and agent_s::name.

Referenced by agent_xml_compose__agent_data().

7.44.1.12 mxml_node_t* agent_xml_compose__owner (agent_p agent)

Definition at line 237 of file xml_compose.c.

References mxmlNewElement(), mxmlNewText(), and agent_s::owner.

Referenced by agent_xml_compose__agent_data().

7.44.1.13 mxml_node_t* agent_xml_compose__row (interpreter_variable_data_t * interp_variable, int index)

Definition at line 599 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, and interpreter_variable_data_s::data_type.

Referenced by agent_xml_compose__data().

7.44.1.14 mxml_node_t* agent_xml_compose__task (agent_p agent, int index)

Definition at line 342 of file xml_compose.c.

References `agent_file_data_Destroy()`, `agent_task_s::agent_file_list`, `agent_task_s::agent_return_data`, `agent_task_s::agent_variable_list`, `agent_xml_compose__data()`, `agent_xml_compose__file()`, `buf`, `agent_task_s::code_id`, `agent_s::datastate`, `ListPop()`, `ListWRLock()`, `ListWRUnlock()`, `MXML_ADD_AFTER`, `mxmlAdd()`, `mxmlElementSetAttr()`, `mxmlNewElement()`, `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()`.

7.44.1.15 `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()`, `agent_datastate_s::number_of_tasks`, and `agent_datastate_s::task_progress`.

Referenced by `agent_xml_compose__agent_data()`.

7.44.1.16 `mxml_node_t* agent_xml_compose__wg_code (agent_p agent)`

Definition at line 269 of file `xml_compose.c`.

References `mxmlNewElement()`, `mxmlNewText()`, and `agent_s::wg_code`.

Referenced by `agent_xml_compose__agent_data()`.

7.45 /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)

7.45.1 Function Documentation

7.45.1.1 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\(\)](#).

7.45.1.2 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\(\)](#).

7.45.1.3 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\(\)](#).

7.45.1.4 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()`.

7.45.1.5 `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`, and `xml_get_child()`.

7.45.1.6 `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()`.

7.45.1.7 `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`.

7.45.1.8 `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__file()`, `agent_xml_parse__home()`, `agent_xml_parse__name()`, `agent_xml_parse__owner()`, `agent_xml_parse__sender()`, and `agent_xml_parse__wg_code()`.

7.45.1.9 `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`, and `mxmlNewElement()`.

Referenced by `agent_xml_compose__agent_code()`.

7.46 /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__file](#) (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)

7.46.1 Function Documentation

7.46.1.1 error_code_t agent_xml_parse (agent_p agent)

Definition at line 53 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\(\)](#).

7.46.1.2 error_code_t agent_xml_parse__agent_code (agent_p agent, int index, xml_parser_p xml_parser)

Definition at line 932 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\(\)](#).

7.46.1.3 **error_code_t agent_xml_parse__agent_data (agent_p agent, xml_parser_p xml_parser)**

Definition at line 94 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().

7.46.1.4 **error_code_t agent_xml_parse__data (agent_p agent, xml_parser_p xml_parser, int index)**

Definition at line 561 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(), ListAdd(), ListWRLock(), ListWRUnlock(), 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().

7.46.1.5 **error_code_t agent_xml_parse__file (agent_p agent, xml_parser_p xml_parser, int index)**

Definition at line 709 of file xml_parser.c.

References agent_file_data_NewWithData(), agent_task_s::agent_file_list, CHECK_NULL, agent_s::datastate, ListAdd(), ListWRLock(), ListWRUnlock(), MC_ERR_PARSE, MC_SUCCESS, mxmlElementGetAttr(), agent_datastate_s::tasks, and xml_get_text().

Referenced by agent_xml_parse__task().

7.46.1.6 **void agent_xml_parse__fill_row_data (void *data, ChType_t type, int *extent, const mxml_node_t *node, int *index)**

Definition at line 811 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().

7.46.1.7 **error_code_t agent_xml_parse__home (agent_p agent, xml_parser_p xml_parser)**

Definition at line 220 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().

7.46.1.8 error_code_t agent_xml_parse__mobile_agent (agent_p agent, xml_parser_p xml_parser)

Definition at line 66 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().

7.46.1.9 error_code_t agent_xml_parse__name (agent_p agent, xml_parser_p xml_parser)

Definition at line 167 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().

7.46.1.10 error_code_t agent_xml_parse__owner (agent_p agent, xml_parser_p xml_parser)

Definition at line 193 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().

7.46.1.11 error_code_t agent_xml_parse__row (interpreter_variable_data_t * interp_variable, xml_parser_p xml_parser, int index)

Definition at line 744 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().

7.46.1.12 error_code_t agent_xml_parse__sender (agent_p agent, xml_parser_p xml_parser)

Definition at line 246 of file xml_parser.c.

References CHECK_NULL, MC_SUCCESS, agent_s::sender, and xml_get_text().

Referenced by agent_xml_parse__agent_data().

7.46.1.13 error_code_t agent_xml_parse__task (agent_p agent, xml_parser_p xml_parser, int index)

Definition at line 443 of file xml_parser.c.

References agent_xml_parse__data(), agent_xml_parse__file(), 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().

7.46.1.14 error_code_t agent_xml_parse__tasks (agent_p agent, xml_parser_p xml_parser)

Definition at line 305 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().

7.46.1.15 error_code_t agent_xml_parse__wg_code (agent_p agent, xml_parser_p xml_parser)

Definition at line 274 of file xml_parser.c.

References MC_SUCCESS, agent_s::wg_code, and xml_get_text().

Referenced by agent_xml_parse__agent_data().

7.46.1.16 error_code_t message_xml_parse (message_p message)

Definition at line 1008 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().

7.46.1.17 error_code_t message_xml_parse__message (message_p message, xml_parser_p xml_parser)

Definition at line 1063 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().

7.46.1.18 STRUCT (xml_parser, mxml_node_t *root;mxml_node_t *node;)

7.47 /home/dko/Projects/mobilec/src/libb64-1.2/base64/base64.cc File Reference

```
#include <b64/encode.h>
#include <b64/decode.h>
#include <iostream>
#include <fstream>
#include <string>
#include <stdlib.h>
```

Functions

- void [usage](#) ()
- void [usage](#) (const std::string &message)
- int [main](#) (int argc, char **argv)

7.47.1 Function Documentation

7.47.1.1 int main (int *argc*, char ** *argv*)

Definition at line 35 of file base64.cc.

References [base64::decoder::decode\(\)](#), [base64::encoder::encode\(\)](#), and [usage\(\)](#).

7.47.1.2 void [usage](#) (const std::string & *message*)

Definition at line 28 of file base64.cc.

References [usage\(\)](#).

7.47.1.3 void [usage](#) ()

Definition at line 18 of file base64.cc.

Referenced by [main\(\)](#), and [usage\(\)](#).

7.48 /home/dko/Projects/mobilec/src/libb64-1.2/include/b64/cdecode.h File Reference

Data Structures

- struct [base64_decodestate](#)

Enumerations

- enum [base64_decodestep](#) { [step_a](#), [step_b](#), [step_c](#), [step_d](#) }

Functions

- void [base64_init_decodestate](#) ([base64_decodestate](#) *state_in)
- int [base64_decode_value](#) (char value_in)
- int [base64_decode_block](#) (const char *code_in, const int length_in, char *plaintext_out, [base64_decodestate](#) *state_in)

7.48.1 Enumeration Type Documentation

7.48.1.1 enum base64_decodestep

Enumerator:

step_a

step_b

step_c

step_d

Definition at line 11 of file cdecode.h.

7.48.2 Function Documentation

7.48.2.1 int base64_decode_block (const char * *code_in*, const int *length_in*, char * *plaintext_out*, [base64_decodestate](#) * *state_in*)

Definition at line 25 of file cdecode.c.

References [base64_decode_value\(\)](#), [base64_decodestate::plainchar](#), [base64_decodestate::step](#), [step_a](#), [step_b](#), [step_c](#), and [step_d](#).

Referenced by [MC_AgentRetrieveFile\(\)](#).

7.48.2.2 int base64_decode_value (char *value_in*)

Definition at line 10 of file cdecode.c.

Referenced by [base64_decode_block\(\)](#).

7.48.2.3 void base64_init_decodestate (base64_decodestate * *state_in*)

Definition at line 19 of file cdecode.c.

References `base64_decodestate::plainchar`, `base64_decodestate::step`, and `step_a`.

Referenced by `MC_AgentRetrieveFile()`.

7.49 /home/dko/Projects/mobilec/src/libb64-1.2/include/b64/cencode.h File Reference

Data Structures

- struct [base64_encodestate](#)

Enumerations

- enum [base64_encodestep](#) { [step_A](#), [step_B](#), [step_C](#) }

Functions

- void [base64_init_encodestate](#) ([base64_encodestate](#) *state_in)
- char [base64_encode_value](#) (char value_in)
- int [base64_encode_block](#) (const char *plaintext_in, int length_in, char *code_out, [base64_encodestate](#) *state_in)
- int [base64_encode_blockend](#) (char *code_out, [base64_encodestate](#) *state_in)

7.49.1 Enumeration Type Documentation

7.49.1.1 enum [base64_encodestep](#)

Enumerator:

step_A
step_B
step_C

Definition at line 11 of file cencode.h.

7.49.2 Function Documentation

7.49.2.1 int [base64_encode_block](#) (const char * *plaintext_in*, int *length_in*, char * *code_out*, [base64_encodestate](#) * *state_in*)

Definition at line 26 of file cencode.c.

References [base64_encode_value\(\)](#), [CHARS_PER_LINE](#), [base64_encodestate::result](#), [base64_encodestate::step](#), [step_A](#), [step_B](#), [step_C](#), and [base64_encodestate::stepcount](#).

Referenced by [agent_file_data_InitializeFromFilename\(\)](#).

7.49.2.2 int [base64_encode_blockend](#) (char * *code_out*, [base64_encodestate](#) * *state_in*)

Definition at line 87 of file cencode.c.

References [base64_encode_value\(\)](#), [base64_encodestate::result](#), [base64_encodestate::step](#), [step_A](#), [step_B](#), and [step_C](#).

Referenced by [agent_file_data_InitializeFromFilename\(\)](#).

7.49.2.3 char base64_encode_value (char *value_in*)

Definition at line 19 of file cencode.c.

Referenced by base64_encode_block(), and base64_encode_blockend().

7.49.2.4 void base64_init_encodestate (base64_encodestate * *state_in*)

Definition at line 12 of file cencode.c.

References base64_encodestate::result, base64_encodestate::step, step_A, and base64_encodestate::stepcount.

Referenced by agent_file_data_InitializeFromFilename().

7.50 /home/dko/Projects/mobilec/src/libb64-1.2/include/b64/decode.h File Reference

```
#include <iostream>
#include "cdecode.h"
```

Data Structures

- struct [base64::base64_decodestate](#)
- struct [base64::decoder](#)

Namespaces

- namespace [base64](#)

Enumerations

- enum [base64::base64_decodestep](#) { [base64::step_a](#), [base64::step_b](#), [base64::step_c](#), [base64::step_d](#) }

Functions

- void [base64::base64_init_decodestate](#) ([base64_decodestate](#) *state_in)
- int [base64::base64_decode_value](#) (char value_in)
- int [base64::base64_decode_block](#) (const char *code_in, const int length_in, char *plaintext_out, [base64_decodestate](#) *state_in)

7.51 /home/dko/Projects/mobilec/src/libb64-1.2/include/b64/encode.h File Reference

```
#include <iostream>
#include "cencode.h"
```

Data Structures

- struct [base64::base64_encodestate](#)
- struct [base64::encoder](#)

Namespaces

- namespace [base64](#)

Enumerations

- enum [base64::base64_encodestep](#) { [base64::step_A](#), [base64::step_B](#), [base64::step_C](#) }

Functions

- void [base64::base64_init_encodestate](#) ([base64_encodestate](#) *state_in)
- char [base64::base64_encode_value](#) (char value_in)
- int [base64::base64_encode_block](#) (const char *plaintext_in, int length_in, char *code_out, [base64_encodestate](#) *state_in)
- int [base64::base64_encode_blockend](#) (char *code_out, [base64_encodestate](#) *state_in)

7.52 /home/dko/Projects/mobilec/src/libb64-1.2/src/cdecode.c File Reference

```
#include <b64/cdecode.h>
```

Functions

- int [base64_decode_value](#) (char *value_in*)
- void [base64_init_decodestate](#) ([base64_decodestate](#) **state_in*)
- int [base64_decode_block](#) (const char **code_in*, const int *length_in*, char **plaintext_out*, [base64_decodestate](#) **state_in*)

7.52.1 Function Documentation

7.52.1.1 int [base64_decode_block](#) (const char * *code_in*, const int *length_in*, char * *plaintext_out*, [base64_decodestate](#) * *state_in*)

Definition at line 25 of file `cdecode.c`.

References [base64_decode_value\(\)](#), [base64_decodestate::plainchar](#), [base64_decodestate::step](#), [step_a](#), [step_b](#), [step_c](#), and [step_d](#).

Referenced by [MC_AgentRetrieveFile\(\)](#).

7.52.1.2 int [base64_decode_value](#) (char *value_in*)

Definition at line 10 of file `cdecode.c`.

Referenced by [base64_decode_block\(\)](#).

7.52.1.3 void [base64_init_decodestate](#) ([base64_decodestate](#) * *state_in*)

Definition at line 19 of file `cdecode.c`.

References [base64_decodestate::plainchar](#), [base64_decodestate::step](#), and [step_a](#).

Referenced by [MC_AgentRetrieveFile\(\)](#).

7.53 /home/dko/Projects/mobilec/src/libb64-1.2/src/cencode.c File Reference

```
#include <b64/cencode.h>
```

Functions

- void [base64_init_encodestate](#) ([base64_encodestate](#) *state_in)
- char [base64_encode_value](#) (char value_in)
- int [base64_encode_block](#) (const char *plaintext_in, int length_in, char *code_out, [base64_encodestate](#) *state_in)
- int [base64_encode_blockend](#) (char *code_out, [base64_encodestate](#) *state_in)

Variables

- const int [CHARS_PER_LINE](#) = 72

7.53.1 Function Documentation

7.53.1.1 int [base64_encode_block](#) (const char * *plaintext_in*, int *length_in*, char * *code_out*, [base64_encodestate](#) * *state_in*)

Definition at line 26 of file `cencode.c`.

References [base64_encode_value\(\)](#), [CHARS_PER_LINE](#), [base64_encodestate::result](#), [base64_encodestate::step](#), [step_A](#), [step_B](#), [step_C](#), and [base64_encodestate::stepcount](#).

Referenced by [agent_file_data_InitializeFromFilename\(\)](#).

7.53.1.2 int [base64_encode_blockend](#) (char * *code_out*, [base64_encodestate](#) * *state_in*)

Definition at line 87 of file `cencode.c`.

References [base64_encode_value\(\)](#), [base64_encodestate::result](#), [base64_encodestate::step](#), [step_A](#), [step_B](#), and [step_C](#).

Referenced by [agent_file_data_InitializeFromFilename\(\)](#).

7.53.1.3 char [base64_encode_value](#) (char *value_in*)

Definition at line 19 of file `cencode.c`.

Referenced by [base64_encode_block\(\)](#), and [base64_encode_blockend\(\)](#).

7.53.1.4 void [base64_init_encodestate](#) ([base64_encodestate](#) * *state_in*)

Definition at line 12 of file `cencode.c`.

References [base64_encodestate::result](#), [base64_encodestate::step](#), [step_A](#), and [base64_encodestate::stepcount](#).

Referenced by [agent_file_data_InitializeFromFilename\(\)](#).

7.53.2 Variable Documentation

7.53.2.1 `const int CHARS_PER_LINE = 72`

Definition at line 10 of file `cencode.c`.

Referenced by `base64_encode_block()`.

7.54 /home/dko/Projects/mobilec/src/libmc.c File Reference

```
#include "config.h"
#include <unistd.h>
#include <pthread.h>
#include <sys/socket.h>
#include <netdb.h>
#include <embedch.h>
#include <sys/types.h>
#include <sys/stat.h>
#include <sys/time.h>
#include <b64/cdecode.h>
#include "include/libmc.h"
#include "include/mc_error.h"
#include "include/macros.h"
#include "include/mc_platform.h"
#include "include/message.h"
#include "include/fipa_acl_envelope.h"
#include "include/fipa_acl.h"
#include "include/agent.h"
#include "include/agent_file_data.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](#) ([MC_Agent_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](#) ([MC_Agent_t](#) agent)
Retrieve an ACL message.
- EXPORTMC int [MC_AclSend](#) ([MC_Agency_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, const 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)

Add a stationary agent to the agency.

- EXPORTMC int [MC_AddAgentInitCallback](#) ([MCAgency_t](#) agency, [MC_AgentInitCallbackFunc_t](#) function, void *user_data)

Add an agent initialization callback function.

- 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_AgentAttachFile](#) (MCAgent_t agent, const char *name, const char *filepath)
Attach a file to the agent's current task.
- EXPORTMC int [MC_AgentListFiles](#) (MCAgent_t agent, int task_num, char ***names, int *num_files)
Get a list of an agent's attached files.
- EXPORTMC int [MC_AgentProcessingBegin](#) (MCAgency_t attr)
Begin a series of agent functions.
- EXPORTMC int [MC_AgentProcessingEnd](#) (MCAgency_t attr)
- EXPORTMC int [MC_AgentRetrieveFile](#) (MCAgent_t agent, int task_num, const char *name, const char *save_path)
Saves an agent's attached file to the filesystem.
- 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_GetAgents](#) ([MCAgency_t](#) attr, [MCAgent_t](#) **agents, int *num_agents, unsigned int agent_status_flags)
Get a list of agents that match a certain agent status.
- EXPORTMC int [MC_GetAllAgents](#) ([MCAgency_t](#) attr, [MCAgent_t](#) **agents, int *num_agents)
Get all of the agents on an agency.
- EXPORTMC int [MC_GetNumAgents](#) ([MCAgency_t](#) attr, int *num_agents)
Get the number of agents residing on an agency.
- 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_QueueRDLock](#) ([MCAgency_t](#) agency, enum [MC_QueueIndex_e](#) queue)
Lock an agency queue for reading. Prevents other threads from writing.
- EXPORTMC int [MC_QueueRDUnlock](#) ([MCAgency_t](#) agency, enum [MC_QueueIndex_e](#) queue)
Unlock an agency queue that was previously locked for reading.
- EXPORTMC int [MC_QueueWRLock](#) ([MCAgency_t](#) agency, enum [MC_QueueIndex_e](#) queue)
Lock an agency queue for writing. Prevents other threads from reading and writing.
- EXPORTMC int [MC_QueueWRUnlock](#) ([MCAgency_t](#) agency, enum [MC_QueueIndex_e](#) queue)

Unlock an agency queue that was previously locked for writing.

- 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 int [MC_AgentAttachFile_chdl](#) (void *varg)
- EXPORTCH int [MC_AgentListFiles_chdl](#) (void *varg)
- EXPORTCH int [MC_AgentRetrieveFile_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](#)

7.54.1 Function Documentation

7.54.1.1 EXPORTMC int MC_AclAddReceiver (fipa_acl_message_t * *acl*, const char * *name*, const char * *address*)

Definition at line 337 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\(\)](#).

7.54.1.2 EXPORTCH int MC_AclAddReceiver_chdl (void * *varg*)

Definition at line 3261 of file libmc.c.

References [MC_AclAddReceiver\(\)](#).

Referenced by [agent_ChScriptInitVar\(\)](#).

7.54.1.3 EXPORTMC int MC_AclAddReplyTo (fipa_acl_message_t * *acl*, const char * *name*, const char * *address*)

Definition at line 373 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()`.

7.54.1.4 EXPORTCH int MC_AclAddReplyTo_chdl (void * *varg*)

Definition at line 3281 of file `libmc.c`.

References `MC_AclAddReplyTo()`.

Referenced by `agent_ChScriptInitVar()`.

7.54.1.5 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 84 of file `libmc.c`.

References `fipa_acl_message_Destroy()`.

Referenced by `MC_AclDestroy_chdl()`.

7.54.1.6 EXPORTMC int MC_AclDestroy_chdl (void * *varg*)

Definition at line 2993 of file `libmc.c`.

References `MC_AclDestroy()`.

Referenced by `agent_ChScriptInitVar()`.

7.54.1.7 EXPORTMC const char* MC_AclGetContent (struct `fipa_acl_message_s` * *acl*)

Definition at line 265 of file `libmc.c`.

References `fipa_string_s::content`, and `fipa_acl_message_s::content`.

Referenced by `MC_AclGetContent_chdl()`.

7.54.1.8 EXPORTCH char* MC_AclGetContent_chdl (void * *varg*)

Definition at line 3172 of file `libmc.c`.

References `MC_AclGetContent()`.

Referenced by `agent_ChScriptInitVar()`.

7.54.1.9 EXPORTMC char* MC_AclGetConversationID (struct fipa_acl_message_s * *acl*)

Definition at line 240 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().

7.54.1.10 EXPORTCH char* MC_AclGetConversationID_chdl (void * *varg*)

Definition at line 3123 of file libmc.c.

References MC_AclGetConversationID().

Referenced by agent_ChScriptInitVar().

7.54.1.11 EXPORTMC enum fipa_performative_e MC_AclGetPerformative (struct fipa_acl_message_s * *acl*)

Definition at line 246 of file libmc.c.

References fipa_acl_message_s::performative.

Referenced by MC_AclGetPerformative_chdl().

7.54.1.12 EXPORTCH int MC_AclGetPerformative_chdl (void * *varg*)

Definition at line 3138 of file libmc.c.

References MC_AclGetPerformative().

Referenced by agent_ChScriptInitVar().

7.54.1.13 EXPORTMC enum fipa_protocol_e MC_AclGetProtocol (struct fipa_acl_message_s * *acl*)

Definition at line 234 of file libmc.c.

References fipa_acl_message_s::performative.

Referenced by MC_AclGetProtocol_chdl().

7.54.1.14 EXPORTCH int MC_AclGetProtocol_chdl (void * *varg*)

Definition at line 3108 of file libmc.c.

References MC_AclGetProtocol().

Referenced by agent_ChScriptInitVar().

7.54.1.15 EXPORTMC int MC_AclGetSender (struct fipa_acl_message_s * *acl*, char ** *name*, char ** *address*)

Definition at line 252 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()`.

7.54.1.16 EXPORTCH int MC_AclGetSender_chdl (void * *varg*)

Definition at line 3153 of file `libmc.c`.

References `MC_AclGetSender()`.

Referenced by `agent_ChScriptInitVar()`.

7.54.1.17 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 90 of file `libmc.c`.

References `fipa_acl_message_New()`.

Referenced by `MC_AclNew_chdl()`.

7.54.1.18 EXPORTMC void* MC_AclNew_chdl (void * *varg*)

Definition at line 3008 of file `libmc.c`.

References `MC_AclNew()`.

Referenced by `agent_ChScriptInitVar()`.

7.54.1.19 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 95 of file `libmc.c`.

References `ListAdd()`, `ListWRLock()`, `ListWRUnlock()`, and `agent_s::mailbox`.

Referenced by `MC_AclPost_chdl()`, and `MC_AclSend()`.

7.54.1.20 EXPORTMC int MC_AclPost_chdl (void * *varg*)

Definition at line 3016 of file libmc.c.

References MC_AclPost().

Referenced by agent_ChScriptInitVar().

7.54.1.21 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 104 of file libmc.c.

References fipa_Reply().

Referenced by MC_AclReply_chdl().

7.54.1.22 EXPORTCH void* MC_AclReply_chdl (void * *varg*)

Definition at line 3034 of file libmc.c.

References MC_AclReply().

Referenced by agent_ChScriptInitVar().

7.54.1.23 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 110 of file libmc.c.

References ListPop(), ListWRLock(), ListWRUnlock(), and agent_s::mailbox.

Referenced by MC_AclRetrieve_chdl().

7.54.1.24 EXPORTCH void* MC_AclRetrieve_chdl (void * *varg*)

Definition at line 3050 of file libmc.c.

References MC_AclRetrieve().

Referenced by agent_ChScriptInitVar().

7.54.1.25 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 120 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, message_s::target, mtp_http_s::target, and fipa_url_sequence_s::urls.

Referenced by MC_AclSend_chdl().

7.54.1.26 EXPORTCH int MC_AclSend_chdl (void * *varg*)

Definition at line 3066 of file libmc.c.

References CHECK_NULL, MC_AclSend(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.54.1.27 EXPORTMC int MC_AclSetContent (fipa_acl_message_t * *acl*, const char * *content*)

Definition at line 408 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().

7.54.1.28 EXPORTCH int MC_AclSetContent_chdl (void * *varg*)

Definition at line 3301 of file libmc.c.

References `fipa_acl_message_s::content`, and `MC_AclSetContent()`.

Referenced by `agent_ChScriptInitVar()`.

7.54.1.29 EXPORTMC int MC_AclSetConversationID (fipa_acl_message_t * *acl*, const char * *id*)

Definition at line 287 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()`.

7.54.1.30 EXPORTCH int MC_AclSetConversationID_chdl (void * *varg*)

Definition at line 3205 of file `libmc.c`.

References `MC_AclSetConversationID()`.

Referenced by `agent_ChScriptInitVar()`.

7.54.1.31 EXPORTMC int MC_AclSetPerformative (fipa_acl_message_t * *acl*, enum fipa_performative_e *performative*)

Definition at line 306 of file `libmc.c`.

References `fipa_acl_message_s::performative`.

Referenced by `MC_AclSetPerformative_chdl()`.

7.54.1.32 EXPORTCH int MC_AclSetPerformative_chdl (void * *varg*)

Definition at line 3223 of file `libmc.c`.

References `MC_AclSetPerformative()`, and `fipa_acl_message_s::performative`.

Referenced by `agent_ChScriptInitVar()`.

7.54.1.33 EXPORTMC int MC_AclSetProtocol (fipa_acl_message_t * *acl*, enum fipa_protocol_e *protocol*)

Definition at line 271 of file `libmc.c`.

References `FIPA_PROTOCOL_END`, `FIPA_PROTOCOL_ERROR`, and `fipa_acl_message_s::protocol`.

Referenced by `MC_AclSetProtocol_chdl()`.

7.54.1.34 EXPORTCH int MC_AclSetProtocol_chdl (void * *varg*)

Definition at line 3187 of file `libmc.c`.

References `MC_AclSetProtocol()`, and `fipa_acl_message_s::protocol`.

Referenced by `agent_ChScriptInitVar()`.

7.54.1.35 EXPORTMC int MC_AclSetSender (fipa_acl_message_t * *acl*, const char * *name*, const char * *address*)

Definition at line 314 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().

7.54.1.36 EXPORTCH int MC_AclSetSender_chdl (void * *varg*)

Definition at line 3241 of file libmc.c.

References MC_AclSetSender().

Referenced by agent_ChScriptInitVar().

7.54.1.37 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 218 of file libmc.c.

References ListPop(), ListWRLock(), ListWRUnlock(), ListWRWait(), and agent_s::mailbox.

Referenced by MC_AclWaitRetrieve_chdl().

7.54.1.38 EXPORTCH void* MC_AclWaitRetrieve_chdl (void * *varg*)

Definition at line 3090 of file libmc.c.

References MC_AclWaitRetrieve().

Referenced by agent_ChScriptInitVar().

7.54.1.39 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 425 of file libmc.c.

References `mc_platform_s::agent_processing`, `mc_platform_s::agent_queue`, `mc_platform_s::ams`, `COND_SIGNAL`, `ListAdd()`, `ListWRLock()`, `ListWRUnlock()`, `agency_s::mc_platform`, `agent_s::mc_platform`, `MUTEX_LOCK`, and `MUTEX_UNLOCK`.

Referenced by `handler_COMPOSE_SEND()`, and `MC_AddAgent_chdl()`.

7.54.1.40 EXPORTCH int MC_AddAgent_chdl (void * *varg*)

Definition at line 3321 of file libmc.c.

References `CHECK_NULL`, `MC_AddAgent()`, and `agency_s::mc_platform`.

Referenced by `agent_ChScriptInitVar()`.

7.54.1.41 EXPORTMC int MC_AddAgentInitCallback (MCAgency_t *agency*, MC_AgentInitCallbackFunc_t *function*, void * *user_data*)

Add an agent initialization callback function.

Parameters

agency a MobileC agency

function The callback function to add. This callback function will be called after an interpreter is initialized for an agent but before the agent is executed.

user_data A pointer to any user data that should be made available to the callback function

Returns

0 if successful, or `error_code_t` type

Definition at line 474 of file libmc.c.

References `agency_s::agentInitCallback`, and `agency_s::agentInitUserData`.

7.54.1.42 EXPORTMC int MC_AddStationaryAgent (MCAgency_t *agency*, void (*)(stationary_agent_info_t *) *agent_thread*, const char * *name*, void * *agent_args*)

Add a stationary agent to the agency.

Parameters

agency a MobileC agency

agent_thread The binary-space agent function

name The new agent's name

agent_args user arguments to pass to the agent

Returns

0 if successful, or `error_code_t` type

Definition at line 442 of file libmc.c.

References `stationary_agent_info_s::agency`, `stationary_agent_info_s::agent`, `agent_NewBinary()`, `mc_platform_s::agent_processing`, `mc_platform_s::agent_queue`, `stationary_agent_info_s::args`, `stationary_agent_info_s::attr`, `ListAdd()`, `ListWRLock()`, `ListWRUnlock()`, `agency_s::mc_platform`, `agent_s::name`, `strdup`, `stationary_agent_info_s::thread`, and `THREAD_CREATE`.

7.54.1.43 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 499 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()`.

7.54.1.44 EXPORTCH int MC_AgentAddTask_chdl (void * *varg*)

Definition at line 3345 of file `libmc.c`.

References `MC_AgentAddTask()`.

Referenced by `agent_ChScriptInitVar()`.

7.54.1.45 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 572 of file libmc.c.

References MC_AgentAddTask().

7.54.1.46 EXPORTMC int MC_AgentAttachFile (MCAgent_t agent, const char * name, const char * filepath)

Attach a file to the agent's current task.

Parameters

agent An existing agent

name The name to give the file

filepath The absolute path of the file

Returns

Returns 0 on success, or an error code on failure.

Definition at line 608 of file libmc.c.

References agent_file_data_InitializeFromFilename(), agent_task_s::agent_file_list, agent_s::datastate, ListAdd(), ListWRLock(), ListWRUnlock(), agent_file_data_s::name, strdup, agent_datastate_s::task_progress, and agent_datastate_s::tasks.

Referenced by MC_AgentAttachFile_chdl().

7.54.1.47 EXPORTCH int MC_AgentAttachFile_chdl (void * varg)

Definition at line 3379 of file libmc.c.

References MC_AgentAttachFile().

Referenced by agent_ChScriptInitVar().

7.54.1.48 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 484 of file libmc.c.

References stationary_agent_info_s::agency.

7.54.1.49 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.

7.54.2 Examples

The following example demonstrates usage of [MC_AgentInfo_GetAgent\(\)](#)

Definition at line 489 of file libmc.c.

References stationary_agent_info_s::agent.

7.54.2.1 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 494 of file libmc.c.

References stationary_agent_info_s::args.

7.54.2.2 EXPORTMC int MC_AgentListFiles (MCagent_t agent, int task_num, char *** names, int * num_files)

Get a list of an agent's attached files.

Parameters

agent An existing agent

names A pointer to an unallocated two dimensional character array. The function will allocate any necessary memory for storing the names. If names are allocated, the array must be freed by the user.

num_files A pointer to an integer which will be filled with the number of filenames

Returns

returns 0 on success, -1 on failure.

Definition at line 630 of file libmc.c.

References `agent_task_s::agent_file_list`, `agent_s::datastate`, `ListGetSize()`, `ListRDLock()`, `ListRDUnlock()`, `ListSearch()`, `agent_file_data_s::name`, `agent_datastate_s::number_of_tasks`, `strdup`, and `agent_datastate_s::tasks`.

Referenced by `MC_AgentListFiles_chdl()`.

7.54.2.3 EXPORTCH int MC_AgentListFiles_chdl (void * varg)

Definition at line 3403 of file libmc.c.

References `MC_AgentListFiles()`.

Referenced by `agent_ChScriptInitVar()`.

7.54.2.4 EXPORTMC int MC_AgentProcessingBegin (MCAgency_t attr)

Begin a series of agent functions.

Parameters

agency A handle to a running agency

Returns

returns 0 on success, -1 on failure.

Definition at line 663 of file libmc.c.

References `mc_platform_s::agent_processing`, `mc_platform_s::agent_queue`, `ListWRLock()`, and `agency_s::mc_platform`.

7.54.2.5 EXPORTMC int MC_AgentProcessingEnd (MCAgency_t attr)

Definition at line 671 of file libmc.c.

References `mc_platform_s::agent_processing`, `mc_platform_s::agent_queue`, `ListWRUnlock()`, and `agency_s::mc_platform`.

7.54.2.6 EXPORTMC int MC_AgentRetrieveFile (MCAgent_t agent, int task_num, const char * name, const char * save_path)

Saves an agent's attached file to the filesystem.

Parameters

name The name of the agent's stored file

save_path The location to save the file (including the filename)

Returns

Returns 0 on success, -1 on failure.

Definition at line 678 of file libmc.c.

References `agent_file_data_CmpName()`, `agent_task_s::agent_file_list`, `base64_decode_block()`, `base64_init_decodestate()`, `agent_file_data_s::data`, `agent_s::datastate`, `ListRDLock()`, `ListRDUnlock()`, `ListSearchCB()`, `agent_datastate_s::number_of_tasks`, and `agent_datastate_s::tasks`.

Referenced by `MC_AgentRetrieveFile_chdl()`.

7.54.2.7 EXPORTCH int MC_AgentRetrieveFile_chdl (void * *varg*)

Definition at line 3430 of file libmc.c.

References `MC_AgentRetrieveFile()`.

Referenced by `agent_ChScriptInitVar()`.

7.54.2.8 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 748 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`.

7.54.2.9 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 724 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`.

7.54.2.10 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 766 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.

7.54.2.11 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 796 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.

7.54.2.12 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 813 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, and agent_datastate_s::tasks.

7.54.2.13 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 836 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.

7.54.2.14 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 846 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.

7.54.2.15 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.

7.54.3 Examples

The following example demonstrates usage of [MC_AgentVariableRetrieve\(\)](#) from agent space.

Definition at line 867 of file libmc.c.

References `agent_task_s::agent_variable_list`, `interpreter_variable_data_s::data`, `agent_s::datastate`, `interpreter_variable_data_CmpName()`, `ListRDLock()`, `ListRDUnlock()`, `ListSearchCB()`, `agent_datastate_s::task_progress`, and `agent_datastate_s::tasks`.

Referenced by `MC_AgentVariableRetrieve_chdl()`.

7.54.3.1 EXPORTCH const void* MC_AgentVariableRetrieve_chdl (void * varg)

Definition at line 3458 of file libmc.c.

References `MC_AgentVariableRetrieve()`.

Referenced by `agent_ChScriptInitVar()`.

7.54.3.2 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 888 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`, `interpreter_variable_data_CmpName()`, `ListRDLock()`, `ListRDUnlock()`, `ListSearchCB()`, `MC_ERR_NOT_FOUND`, `MC_SUCCESS`, `agent_datastate_s::task_progress`, and `agent_datastate_s::tasks`.

7.54.3.3 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

7.54.4 Examples

See agent_saved_variables_example/test1.xml for an example of usage of this api function.

7.54.5 Examples

The following example demonstrates usage of [MC_AgentVariableSave\(\)](#) from agent space.

Definition at line 912 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().

7.54.5.1 EXPORTCH int MC_AgentVariableSave_chdl (void * *varg*)

Definition at line 3482 of file libmc.c.

References MC_AgentVariableSave().

Referenced by agent_ChScriptInitVar().

7.54.5.2 EXPORTMC int MC_Barrier (MCAgency_t *attr*, int *id*)

Definition at line 933 of file libmc.c.

References barrier_node_CmpID(), mc_platform_s::barrier_queue, barrier_node_s::cond, COND_BROADCAST, COND_WAIT, ListRDLock(), ListRDUnlock(), ListSearchCB(), barrier_node_s::lock, MC_ERR_NOT_FOUND, agency_s::mc_platform, MC_SUCCESS, MUTEX_LOCK, MUTEX_UNLOCK, barrier_node_s::num_registered, and barrier_node_s::num_waiting.

Referenced by MC_Barrier_chdl().

7.54.5.3 EXPORTCH int MC_Barrier_chdl (void * *varg*)

Definition at line 3534 of file libmc.c.

References CHECK_NULL, MC_Barrier(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.54.5.4 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 982 of file libmc.c.

References `barrier_node_CmpID()`, `barrier_node_Destroy()`, `mc_platform_s::barrier_queue`, `ListDeleteCB()`, `ListWRLock()`, `ListWRUnlock()`, and `agency_s::mc_platform`.

Referenced by `MC_BarrierDelete_chdl()`.

7.54.5.5 EXPORTCH int MC_BarrierDelete_chdl (void * *varg*)

Definition at line 3557 of file libmc.c.

References `CHECK_NULL`, `MC_BarrierDelete()`, and `agency_s::mc_platform`.

Referenced by `agent_ChScriptInitVar()`.

7.54.5.6 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.

7.54.6 Examples

The following example demonstrates an agent which sets up an MC_Barrier.

Definition at line 961 of file libmc.c.

References `barrier_node_CmpID()`, `barrier_node_Initialize()`, `mc_platform_s::barrier_queue`, `ListAdd()`, `ListRDLock()`, `ListRDUnlock()`, `ListSearchCB()`, `ListWRLock()`, `ListWRUnlock()`, `MC_ERR`, `agency_s::mc_platform`, and `MC_SUCCESS`.

Referenced by `MC_BarrierInit_chdl()`.

7.54.6.1 EXPORTCH int MC_BarrierInit_chdl (void * *varg*)

Definition at line 3580 of file libmc.c.

References CHECK_NULL, MC_BarrierInit(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.54.6.2 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

7.54.7 Example

Definition at line 1000 of file libmc.c.

References agent_s::agent_interp, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::run_lock.

7.54.7.1 EXPORTCH int MC_CallAgentFunc_chdl (void * *varg*)

Definition at line 3504 of file libmc.c.

References MC_CallAgentFuncVar().

Referenced by agent_ChScriptInitVar().

7.54.7.2 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

7.54.8 Example

Definition at line 1021 of file libmc.c.

References agent_s::agent_interp, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::run_lock.

7.54.8.1 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 1040 of file libmc.c.

References agent_s::agent_interp, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::run_lock.

7.54.8.2 EXPORTMC int MC_CallAgentFuncVar (MCAgent_t *agent*, const char * *funcName*, void * *returnVal*, ChVaList_t *varg*)

Definition at line 1060 of file libmc.c.

References agent_s::agent_interp, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::run_lock.

Referenced by MC_CallAgentFunc_chdl().

7.54.8.3 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.

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 1100 of file libmc.c.

References MC_ComposeAgentWithWorkgroup().

7.54.8.4 EXPORTCH MCAgent_t MC_ComposeAgent_chdl (void * *varg*)

Definition at line 3628 of file libmc.c.

References MC_ComposeAgentWithWorkgroup().

Referenced by agent_ChScriptInitVar().

7.54.8.5 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 1226 of file libmc.c.

References MC_ComposeAgentFromFileWithWorkgroup().

Referenced by handler_COMPOSE_SEND().

7.54.8.6 EXPORTCH MCAgent_t MC_ComposeAgentFromFile_chdl (void * varg)

Definition at line 3712 of file libmc.c.

References MC_ComposeAgentFromFileWithWorkgroup().

Referenced by agent_ChScriptInitVar().

7.54.8.7 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 1248 of file libmc.c.

References MC_ComposeAgentFromFileWithWorkgroup().

7.54.8.8 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.

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 1273 of file libmc.c.

References MC_ComposeAgentWithWorkgroup().

Referenced by MC_ComposeAgentFromFile(), MC_ComposeAgentFromFile_chdl(), MC_ComposeAgentFromFileS(), and MC_ComposeAgentFromFileWithWorkgroup_chdl().

7.54.8.9 EXPORTCH MCAgent_t MC_ComposeAgentFromFileWithWorkgroup_chdl (void * *varg*)

Definition at line 3753 of file libmc.c.

References MC_ComposeAgentFromFileWithWorkgroup().

Referenced by agent_ChScriptInitVar().

7.54.8.10 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 1123 of file libmc.c.

References MC_ComposeAgentWithWorkgroup().

Referenced by MC_ComposeAgentWithWorkgroup_chdl().

7.54.8.11 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 persistant, 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

Definition at line 1149 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().

7.54.8.12 EXPORTCH MCAgent_t MC_ComposeAgentWithWorkgroup_chdl (void * *varg*)

Definition at line 3669 of file libmc.c.

References MC_ComposeAgentS().

Referenced by agent_ChScriptInitVar().

7.54.8.13 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 1319 of file libmc.c.

References syncListNode_s::cond, COND_BROADCAST, ListRDLock(), ListRDUnlock(), ListSearchCB(), syncListNode_s::lock, MC_ERR_NOT_FOUND, agency_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, syncListNode_s::signalled, mc_platform_s::syncList, and syncListNode_CmpID().

Referenced by MC_CondBroadcast_chdl().

7.54.8.14 EXPORTCH int MC_CondBroadcast_chdl (void * *varg*)

Definition at line 3605 of file libmc.c.

References CHECK_NULL, MC_CondBroadcast(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.54.8.15 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 1386 of file libmc.c.

References `ListRDLock()`, `ListRDUnlock()`, `ListSearchCB()`, `syncListNode_s::lock`, `MC_ERR_NOT_FOUND`, `agency_s::mc_platform`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `syncListNode_s::signalled`, `mc_platform_s::syncList`, and `syncListNode_CmpID()`.

Referenced by `MC_CondReset_chdl()`.

7.54.8.16 EXPORTCH int MC_CondReset_chdl (void * varg)

Definition at line 3819 of file libmc.c.

References `CHECK_NULL`, `MC_CondReset()`, and `agency_s::mc_platform`.

Referenced by `agent_ChScriptInitVar()`.

7.54.8.17 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

7.54.9 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 1339 of file libmc.c.

References `syncListNode_s::cond`, `COND_SIGNAL`, `ListRDLock()`, `ListRDUnlock()`, `ListSearchCB()`, `syncListNode_s::lock`, `MC_ERR_NOT_FOUND`, `agency_s::mc_platform`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `syncListNode_s::signalled`, `mc_platform_s::syncList`, and `syncListNode_CmpID()`.

Referenced by `MC_CondSignal_chdl()`.

7.54.9.1 EXPORTCH int MC_CondSignal_chdl (void * *varg*)

Definition at line 3796 of file libmc.c.

References CHECK_NULL, MC_CondSignal(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.54.9.2 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

7.54.10 Example

The following example demonstrates the agent-space version of this function.

Definition at line 1359 of file libmc.c.

References syncListNode_s::cond, COND_WAIT, ListRDLock(), ListRDUnlock(), ListSearchCB(), syncListNode_s::lock, MC_ERR_NOT_FOUND, agency_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, syncListNode_s::signalled, mc_platform_s::syncList, and syncListNode_CmpID().

Referenced by MC_CondWait_chdl().

7.54.10.1 EXPORTCH int MC_CondWait_chdl (void * *varg*)

Definition at line 3842 of file libmc.c.

References CHECK_NULL, MC_CondWait(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.54.10.2 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 1409 of file `libmc.c`.

References `agent_Copy()`, and `MC_SUCCESS`.

7.54.10.3 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 1416 of file `libmc.c`.

References `agent_CmpName()`, `mc_platform_s::agent_processing`, `mc_platform_s::agent_queue`, `CHECK_NULL`, `ListDeleteCB()`, `ListWRLock()`, `ListWRUnlock()`, `MC_ERR_INVALID`, `MC_ERR_INVALID_ARGS`, `agent_s::mc_platform`, `MC_SUCCESS`, `MC_TerminateAgent()`, `agent_s::name`, `strdup`, and `agent_s::wg_code`.

Referenced by `MC_DeleteAgent_chdl()`.

7.54.10.4 EXPORTCH int MC_DeleteAgent_chdl (void * varg)

Definition at line 3864 of file `libmc.c`.

References `MC_DeleteAgent()`, `MC_ERR_NOT_FOUND`, and `MC_FindAgentByName()`.

Referenced by `agent_ChScriptInitVar()`.

7.54.10.5 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 1446 of file `libmc.c`.

References `agent_CmpName()`, `agent_Destroy()`, `mc_platform_s::agent_processing`, `mc_platform_s::agent_queue`, `CHECK_NULL`, `ListDeleteCB()`, `ListWRLock()`, `ListWRUnlock()`, `MC_ERR_INVALID`, `MC_ERR_INVALID_ARGS`, `agent_s::mc_platform`, `MC_SUCCESS`, `MC_TerminateAgentWG()`, `agent_s::name`, `strdup`, and `agent_s::wg_code`.

Referenced by `MC_DeleteAgentWG_chdl()`.

7.54.10.6 EXPORTCH int MC_DeleteAgentWG_chdl (void * varg)

Definition at line 3884 of file `libmc.c`.

References `MC_DeleteAgentWG()`, `MC_ERR_NOT_FOUND`, and `MC_FindAgentByName()`.

Referenced by `agent_ChScriptInitVar()`.

7.54.10.7 EXPORTMC int MC_DeregisterService (MCAgency_t agency, int agentID, const char * serviceName)

Definition at line 1503 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()`.

7.54.10.8 EXPORTCH int MC_DeregisterService_chdl (void * varg)

Definition at line 3933 of file `libmc.c`.

References `CHECK_NULL`, `MC_DeregisterService()`, and `agency_s::mc_platform`.

Referenced by `agent_ChScriptInitVar()`.

7.54.10.9 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 1483 of file `libmc.c`.

Referenced by `MC_DestroyServiceSearchResult_chdl()`.

7.54.10.10 EXPORTCH int MC_DestroyServiceSearchResult_chdl (void * *varg*)

Definition at line 3906 of file libmc.c.

References MC_DestroyServiceSearchResult().

Referenced by agent_ChScriptInitVar().

7.54.10.11 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

7.54.11 Example

Definition at line 1532 of file libmc.c.

References mc_platform_s::acc, mc_platform_s::ams, buf, mc_platform_s::cmd_prompt, COND_BROADCAST, COND_SIGNAL, mc_platform_s::connection_queue, mc_platform_s::df, GET_THREAD_MODE, agency_s::hostName, ListWRLock(), ListWRUnlock(), 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, agency_s::portno, mc_platform_s::quit, mc_platform_s::quit_cond, mc_platform_s::quit_lock, send, cmd_prompt_s::thread, THREAD_CANCEL, THREAD_JOIN, and agency_s::threads.

Referenced by MC_End_chdl().

7.54.11.1 EXPORTCH int MC_End_chdl (void * *varg*)

Definition at line 3960 of file libmc.c.

References CHECK_NULL, MC_End(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.54.11.2 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 1652 of file libmc.c.

References `agent_CmpID()`, `mc_platform_s::agent_processing`, `mc_platform_s::agent_queue`, `ListRD-Lock()`, `ListRDUnlock()`, `ListSearchCB()`, and `agency_s::mc_platform`.

Referenced by `MC_FindAgentByID_chdl()`.

7.54.11.3 EXPORTCH MCAgent_t MC_FindAgentByID_chdl (void * varg)

Definition at line 3977 of file libmc.c.

References `CHECK_NULL`, `MC_FindAgentByID()`, and `agency_s::mc_platform`.

Referenced by `agent_ChScriptInitVar()`.

7.54.11.4 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

7.54.12 Example

Definition at line 1631 of file libmc.c.

References `agent_CmpName()`, `mc_platform_s::agent_processing`, `mc_platform_s::agent_queue`, `ListRD-Lock()`, `ListRDUnlock()`, `ListSearchCB()`, 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()`.

7.54.12.1 EXPORTCH MCAgent_t MC_FindAgentByName_chdl (void * varg)

Definition at line 4000 of file libmc.c.

References `CHECK_NULL`, `MC_FindAgentByName()`, and `agency_s::mc_platform`.

Referenced by `agent_ChScriptInitVar()`.

7.54.12.2 EXPORTMC time_t MC_GetAgentArrivalTime (MCAgent_t agent)

Definition at line 1678 of file libmc.c.

References `agent_s::arrival_time`.

Referenced by `MC_GetAgentArrivalTime_chdl()`.

7.54.12.3 EXPORTCH time_t MC_GetAgentArrivalTime_chdl (void * *varg*)

Definition at line 4027 of file libmc.c.

References MC_GetAgentArrivalTime().

7.54.12.4 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 1717 of file libmc.c.

References agent_s::agent_interp.

7.54.12.5 EXPORTMC int MC_GetAgentID (MCAgent_t *agent*)

Retrieve an agent's id.

Definition at line 1723 of file libmc.c.

References agent_s::id.

Referenced by MC_GetAgentID_chdl().

7.54.12.6 EXPORTCH int MC_GetAgentID_chdl (void * *varg*)

Definition at line 4047 of file libmc.c.

References MC_GetAgentID().

Referenced by agent_ChScriptInitVar().

7.54.12.7 EXPORTMC char* MC_GetAgentName (MCAgent_t *agent*)

Definition at line 1731 of file libmc.c.

References agent_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::name.

Referenced by MC_GetAgentName_chdl().

7.54.12.8 EXPORTCH char* MC_GetAgentName_chdl (void * *varg*)

Definition at line 4063 of file libmc.c.

References MC_GetAgentName().

Referenced by agent_ChScriptInitVar().

7.54.12.9 EXPORTMC int MC_GetAgentNumTasks (MCAgent_t *agent*)

Retrive the number of tasks an agent has.

7.54.13 Example

Definition at line 1814 of file libmc.c.

References agent_s::datastate, and agent_datastate_s::number_of_tasks.

Referenced by MC_GetAgentNumTasks_chdl().

7.54.13.1 EXPORTCH int MC_GetAgentNumTasks_chdl (void * *varg*)

Definition at line 4079 of file libmc.c.

References MC_GetAgentNumTasks().

7.54.13.2 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.

7.54.14 Example

This file demonstrates the retrieval of agent return data from an agent

This is the agent which gets the data

Definition at line 1749 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, and agent_datastate_s::tasks.

7.54.14.1 EXPORTMC int MC_GetAgents (MCAgency_t *attr*, MCAgent_t ** *agents*, int * *num_agents*, unsigned int *agent_status_flags*)

Get a list of agents that match a certain agent status.

Parameters

agency A handle to a running Mobile-C agency

agents The address of an uninitialized pointer to an agent. An array of agents will be allocated, which will need to be freed by the user.

num_agents A pointer to an integer. The integer will be filled with the number of agents allocated for the 'agents' variable.

agent_status_flags These contain flags of agent statuses. For instance, if a user wishes to retrieve all agents with either the status MC_WAIT_CH or MC_AGENT_NEUTRAL, they may use an agent_status_flag of ((1<<MC_WAIT_CH) | (1<<MC_AGENT_NEUTRAL)). All valid agent statuses are enumerated in the enumeration MC_AgentStatus_e, located in [libmc.h](#).

Definition at line 1830 of file libmc.c.

References mc_platform_s::agent_processing, mc_platform_s::agent_queue, agent_s::agent_status, ListRDLock(), ListRDUnlock(), ListSearch(), and agency_s::mc_platform.

7.54.14.2 EXPORTMC int MC_GetAgentStatus (MCAgent_t *agent*)

Get an agent's current status.

Returns

returns type 'enum MC_AgentStatus_e'

Definition at line 1693 of file libmc.c.

References agent_s::agent_status, agent_s::agent_status_lock, agent_s::lock, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by MC_GetAgentStatus_chdl().

7.54.14.3 EXPORTCH int MC_GetAgentStatus_chdl (void * *varg*)

Definition at line 4095 of file libmc.c.

References MC_GetAgentStatus().

Referenced by agent_ChScriptInitVar().

7.54.14.4 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 1820 of file libmc.c.

References agent_s::agent_type.

7.54.14.5 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 1705 of file libmc.c.

References agent_s::datastate, mxmlSaveAllocString(), and agent_datastate_s::xml_agent_root.

Referenced by MC_GetAgentXMLString_chdl().

7.54.14.6 EXPORTCH char* MC_GetAgentXMLString_chdl (void * varg)

Definition at line 4111 of file libmc.c.

References MC_GetAgentXMLString().

Referenced by agent_ChScriptInitVar().

7.54.14.7 EXPORTMC int MC_GetAllAgents (MCAgency_t attr, MCAgent_t ** agents, int * num_agents)

Get all of the agents on an agency.

Parameters

agency A handle to a running Mobile-C agency

agents The address of an uninitialized pointer to an agent. An array of agents will be allocated, which will need to be freed by the user.

num_agents A pointer to an integer. The integer will be filled with the number of agents allocated for the 'agents' variable.

Definition at line 1876 of file libmc.c.

References mc_platform_s::agent_processing, mc_platform_s::agent_queue, ListGetSize(), ListRD-Lock(), ListRDUnlock(), ListSearch(), and agency_s::mc_platform.

7.54.14.8 EXPORTMC int MC_GetNumAgents (MCAgency_t attr, int * num_agents)

Get the number of agents residing on an agency.

Parameters

attr A handle to a running Mobile-C agency

num_agents A pointer to an integer to fill with the number of agents

Returns

Returns 0 on success, non-zero on failure.

Definition at line 1907 of file libmc.c.

References mc_platform_s::agent_processing, mc_platform_s::agent_queue, ListGetSize(), ListRD-Lock(), ListRDUnlock(), and agency_s::mc_platform.

7.54.14.9 EXPORTCH int MC_GetTimeOfDay_chdl (void * *varg*)

Definition at line 4127 of file libmc.c.

Referenced by agent_ChScriptInitVar().

7.54.14.10 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 1920 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_HaltAgency_chdl().

7.54.14.11 EXPORTCH int MC_HaltAgency_chdl (void * *varg*)

Definition at line 4142 of file libmc.c.

References CHECK_NULL, MC_HaltAgency(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.54.14.12 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

7.54.15 Example

Definition at line 1929 of file libmc.c.

References agency_s::agentInitCallback, agency_s::agentInitUserData, 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::initialized, MCAgencyOptions_s::initInterps, agency_s::initInterps, agency_s::known_host_filename,

MCAgencyOptions_s::known_host_filename, MC_InitializeAgencyOptions(), MC_INITIALIZED_CODE, 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.

7.54.15.1 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.

7.54.16 Example

Definition at line 2049 of file libmc.c.

References MCAgencyOptions_s::bluetooth, MCAgencyOptions_s::default_agent_status, MCAgencyOptions_s::initialized, MCAgencyOptions_s::initInterps, MCAgencyOptions_s::known_host_filename, MC_INITIALIZED_CODE, 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().

7.54.16.1 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 2072 of file libmc.c.

References buf, ListAdd(), ListWRLock(), ListWRUnlock(), 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.

7.54.16.2 EXPORTMC int MC_MainLoop (MCAgency_t *attr*)

Wait indefinitely.

Note

This function is intended to block the calling thread forever.

Definition at line 2923 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.

7.54.16.3 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 2146 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().

7.54.16.4 EXPORTCH int MC_MigrateAgent_chdl (void * *varg*)

Definition at line 4159 of file libmc.c.

References MC_MigrateAgent(), and port.

Referenced by agent_ChScriptInitVar().

7.54.16.5 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

7.54.17 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 2168 of file libmc.c.

References ListRDLock(), ListRDUnlock(), ListSearchCB(), syncListNode_s::lock, agency_s::mc_platform, MUTEX_LOCK, mc_platform_s::syncList, and syncListNode_CmpID().

Referenced by MC_MutexLock_chdl().

7.54.17.1 EXPORTCH int MC_MutexLock_chdl (void * *varg*)

Definition at line 4178 of file libmc.c.

References CHECK_NULL, MC_MutexLock(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.54.17.2 EXPORTMC int MC_MutexUnlock (MCAgency_t *attr*, int *id*)

Definition at line 2185 of file libmc.c.

References ListRDLock(), ListRDUnlock(), ListSearchCB(), syncListNode_s::lock, agency_s::mc_platform, MUTEX_UNLOCK, mc_platform_s::syncList, and syncListNode_CmpID().

Referenced by MC_MutexUnlock_chdl().

7.54.17.3 EXPORTCH int MC_MutexUnlock_chdl (void * *varg*)

Definition at line 4202 of file libmc.c.

References CHECK_NULL, MC_MutexUnlock(), and agency_s::mc_platform.

Referenced by agent_ChScriptInitVar().

7.54.17.4 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 2202 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().

7.54.17.5 EXPORTCH int MC_PrintAgentCode_chdl (void * *varg*)

Definition at line 4226 of file libmc.c.

References MC_PrintAgentCode().

Referenced by agent_ChScriptInitVar().

7.54.17.6 EXPORTMC int MC_QueueRDLock (MCAgency_t *agency*, enum MC_QueueIndex_e *queue*)

Lock an agency queue for reading. Prevents other threads from writing.

Definition at line 2218 of file libmc.c.

References ListRDLock(), agency_s::mc_platform, and mc_platform_GetQueue().

7.54.17.7 EXPORTMC int MC_QueueRDUnlock (MCAgency_t *agency*, enum MC_QueueIndex_e *queue*)

Unlock an agency queue that was previously locked for reading.

Definition at line 2230 of file libmc.c.

References ListRDUnlock(), agency_s::mc_platform, and mc_platform_GetQueue().

7.54.17.8 EXPORTMC int MC_QueueWRLock (MCAgency_t *agency*, enum MC_QueueIndex_e *queue*)

Lock an agency queue for writing. Prevents other threads from reading and writing.

Definition at line 2242 of file libmc.c.

References ListWRLock(), agency_s::mc_platform, and mc_platform_GetQueue().

7.54.17.9 EXPORTMC int MC_QueueWRUnlock (MCAgency_t *agency*, enum MC_QueueIndex_e *queue*)

Unlock an agency queue that was previously locked for writing.

Definition at line 2254 of file libmc.c.

References ListWRUnlock(), agency_s::mc_platform, and mc_platform_GetQueue().

7.54.17.10 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)'.

7.54.18 Example

Definition at line 2266 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().

7.54.18.1 EXPORTCH int MC_RegisterService_chdl (void * *varg*)

Definition at line 4242 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_RegisterService().

Referenced by agent_ChScriptInitVar().

7.54.18.2 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 2405 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.

7.54.18.3 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 2345 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_ResumeAgency_chdl().

7.54.18.4 EXPORTCH int MC_ResumeAgency_chdl (void * *varg*)

Definition at line 4279 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_ResumeAgency().

Referenced by agent_ChScriptInitVar().

7.54.18.5 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 2354 of file libmc.c.

References mc_platform_s::agent_processing, mc_platform_s::agent_queue, agent_s::agent_status, agent_s::agent_status_lock, ListRDLock(), ListRDUnlock(), ListSearch(), MC_AGENT_NEUTRAL, agency_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, and list_s::size.

Referenced by MC_RetrieveAgent_chdl().

7.54.18.6 EXPORTCH MCAgent_t MC_RetrieveAgent_chdl (void * *varg*)

Definition at line 4297 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_RetrieveAgent().

Referenced by agent_ChScriptInitVar().

7.54.18.7 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 2389 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()`.

7.54.18.8 EXPORTCH `char* MC_RetrieveAgentCode_chdl (void * varg)`

Definition at line 4314 of file `libmc.c`.

References `MC_RetrieveAgentCode()`.

Referenced by `agent_ChScriptInitVar()`.

7.54.18.9 EXPORTCH `int MC_SaveData_chdl (void * varg)`

Definition at line 4330 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()`, `ListAdd()`, `ListWRLock()`, `ListWRUnlock()`, `interpreter_variable_data_s::name`, `interpreter_variable_data_s::size`, `strdup`, `agent_datastate_s::task_progress`, and `agent_datastate_s::tasks`.

Referenced by `agent_ChScriptInitVar()`.

7.54.18.10 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

7.54.19 Example

Definition at line 2416 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()`.

7.54.19.1 EXPORTCH int MC_SearchForService_chdl (void * *varg*)

Definition at line 4369 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SearchForService().

Referenced by agent_ChScriptInitVar().

7.54.19.2 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

7.54.20 Example

Definition at line 2466 of file libmc.c.

References ListRDLock(), ListRDUnlock(), ListSearchCB(), agency_s::mc_platform, syncListNode_s::sem, SEMAPHORE_POST, mc_platform_s::syncList, and syncListNode_CmpID().

Referenced by MC_SemaphorePost_chdl().

7.54.20.1 EXPORTCH int MC_SemaphorePost_chdl (void * *varg*)

Definition at line 4410 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SemaphorePost().

Referenced by agent_ChScriptInitVar().

7.54.20.2 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.

7.54.21 Example

Definition at line 2483 of file libmc.c.

References ListRDLock(), ListRDUnlock(), ListSearchCB(), agency_s::mc_platform, syncListNode_s::sem, SEMAPHORE_WAIT, mc_platform_s::syncList, and syncListNode_CmpID().

Referenced by MC_SemaphoreWait_chdl().

7.54.21.1 EXPORTCH int MC_SemaphoreWait_chdl (void * *varg*)

Definition at line 4434 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SemaphoreWait().

Referenced by agent_ChScriptInitVar().

7.54.21.2 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 2510 of file libmc.c.

References agent_Initialize(), mc_platform_s::agent_processing, mc_platform_s::agent_queue, agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, mc_platform_s::ams, COND_BROADCAST, ListAdd(), ListWRLock(), ListWRUnlock(), MC_ERR, agency_s::mc_platform, MC_WAIT_MESSGSEND, message_Destroy(), message_InitializeFromString(), message_New(), MUTEX_LOCK, and MUTEX_UNLOCK.

7.54.21.3 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 2565 of file libmc.c.

References agent_Initialize(), mc_platform_s::agent_processing, mc_platform_s::agent_queue, agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, mc_platform_s::ams, buf, COND_BROADCAST, ListAdd(), ListWRLock(), ListWRUnlock(), agency_s::mc_platform, MC_WAIT_MESSGSEND, message_Destroy(), message_InitializeFromString(), message_New(), MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by handler_SEND().

7.54.21.4 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 2640 of file libmc.c.

References ListAdd(), ListWRLock(), ListWRUnlock(), MC_ERR, agency_s::mc_platform, message_Destroy(), message_InitializeFromString(), message_New(), and mc_platform_s::message_queue.

Referenced by MC_SendAgentMigrationMessage_chdl().

7.54.21.5 EXPORTCH int MC_SendAgentMigrationMessage_chdl (void * *varg*)

Definition at line 4458 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, MC_SendAgentMigrationMessage(), and port.

Referenced by agent_ChScriptInitVar().

7.54.21.6 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 2677 of file libmc.c.

References agent_Initialize(), mc_platform_s::agent_processing, mc_platform_s::agent_queue, agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, mc_platform_s::ams, buf, COND_BROADCAST, ListAdd(), ListWRLock(), ListWRUnlock(), agency_s::mc_platform, MC_WAIT_MESSGSEND, message_Destroy(), message_InitializeFromString(), message_New(), MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by MC_SendAgentMigrationMessageFile_chdl().

7.54.21.7 EXPORTCH int MC_SendAgentMigrationMessageFile_chdl (void * *varg*)

Definition at line 4483 of file libmc.c.

References MC_SendAgentMigrationMessageFile(), and port.

Referenced by agent_ChScriptInitVar().

7.54.21.8 EXPORTMC int MC_SendCh (MCAgency_t *attr*, const char * *filename*, const char * *remotehost*, int *port*)

Definition at line 2500 of file libmc.c.

7.54.21.9 EXPORTMC int MC_SendSteerCommand (MCAgency_t *attr*, enum MC_SteerCommand_e *cmd*)

Definition at line 2754 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().

7.54.21.10 EXPORTCH int MC_SendSteerCommand_chdl (void * *varg*)

Definition at line 4503 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SendSteerCommand().

Referenced by agent_ChScriptInitVar().

7.54.21.11 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 2764 of file libmc.c.

References agent_s::agent_status, agent_s::agent_status_cond, agent_s::agent_status_lock, mc_platform_s::ams, COND_BROADCAST, COND_SIGNAL, agent_s::lock, agent_s::mc_platform, MUTEX_LOCK, MUTEX_UNLOCK, and agent_s::orphan.

Referenced by MC_SetAgentStatus_chdl().

7.54.21.12 EXPORTCH int MC_SetAgentStatus_chdl (void * *varg*)

Definition at line 4526 of file libmc.c.

References MC_SetAgentStatus().

Referenced by agent_ChScriptInitVar().

7.54.21.13 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 2782 of file libmc.c.

References mc_platform_s::default_agentstatus, and agency_s::mc_platform.

Referenced by MC_SetDefaultAgentStatus_chdl().

7.54.21.14 EXPORTCH int MC_SetDefaultAgentStatus_chdl (void * *varg*)

Definition at line 4544 of file libmc.c.

References CHECK_NULL, agency_s::mc_platform, and MC_SetDefaultAgentStatus().

Referenced by agent_ChScriptInitVar().

7.54.21.15 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 2809 of file libmc.c.

References SET_THREAD_OFF, and MCAgencyOptions_s::threads.

7.54.21.16 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 2792 of file libmc.c.

References SET_THREAD_ON, and MCAgencyOptions_s::threads.

7.54.21.17 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 2816 of file libmc.c.

References MC_THREAD_ALL, SET_THREAD_OFF, and MCAgencyOptions_s::threads.

7.54.21.18 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 2799 of file libmc.c.

References MC_THREAD_ALL, SET_THREAD_ON, and MCAgencyOptions_s::threads.

7.54.21.19 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.

7.54.22 Example

Definition at line 2826 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.

7.54.22.1 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 2845 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.

7.54.22.2 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 2861 of file libmc.c.

References `agency_s::mc_platform`, `mc_platform_s::syncList`, and `syncListDelete()`.

Referenced by `MC_SyncDelete_chdl()`.

7.54.22.3 EXPORTCH int MC_SyncDelete_chdl (void * *varg*)

Definition at line 4567 of file libmc.c.

References `CHECK_NULL`, `agency_s::mc_platform`, and `MC_SyncDelete()`.

Referenced by `agent_ChScriptInitVar()`.

7.54.22.4 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 2867 of file libmc.c.

References `syncListNode_s::id`, `ListSearchCB()`, `ListWRLock()`, `ListWRUnlock()`, `agency_s::mc_platform`, `mc_platform_s::syncList`, `syncListAddNode()`, `syncListNode_CmpID()`, and `syncListNode-New()`.

Referenced by `MC_SyncInit_chdl()`.

7.54.22.5 EXPORTCH int MC_SyncInit_chdl (void * *varg*)

Definition at line 4590 of file libmc.c.

References `CHECK_NULL`, `agency_s::mc_platform`, and `MC_SyncInit()`.

Referenced by `agent_ChScriptInitVar()`.

7.54.22.6 EXPORTMC int MC_TerminateAgent (MCAgent_t *agent*)

Halt a running agent.

Returns

0 on success, error_code_t on failure

Definition at line 2893 of file libmc.c.

References agent_s::agent_interp, agent_s::lock, MUTEX_LOCK, and MUTEX_UNLOCK.

Referenced by ams_ManageAgentList(), MC_DeleteAgent(), and MC_TerminateAgent_chdl().

7.54.22.7 EXPORTCH int MC_TerminateAgent_chdl (void * *varg*)

Definition at line 4614 of file libmc.c.

References MC_ERR_NOT_FOUND, MC_FindAgentByName(), and MC_TerminateAgent().

Referenced by agent_ChScriptInitVar().

7.54.22.8 EXPORTMC int MC_TerminateAgentWG (MCAgent_t *calling_agent*, MCAgent_t *agent*)

Definition at line 2905 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().

7.54.22.9 EXPORTCH int MC_TerminateAgentWG_chdl (void * *varg*)

Definition at line 4635 of file libmc.c.

References MC_ERR_NOT_FOUND, MC_FindAgentByName(), and MC_TerminateAgentWG().

Referenced by agent_ChScriptInitVar().

7.54.22.10 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 2934 of file libmc.c.

References mc_platform_s::agent_processing, mc_platform_s::agent_queue, ListGetSize(), ListRD-Lock(), ListRDUnlock(), ListRDWait(), and agency_s::mc_platform.

7.54.22.11 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 2952 of file libmc.c.

References mc_platform_s::agent_processing, mc_platform_s::agent_queue, ListGetSize(), ListRD-Lock(), ListRDUnlock(), ListSearch(), agency_s::mc_platform, MC_RECV_AGENT, and MC_WaitSignal().

7.54.22.12 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.

7.54.23 Example

Definition at line 2972 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().

7.54.24 Variable Documentation

7.54.24.1 mc_platform_p g_mc_platform

Definition at line 77 of file libmc.c.

Referenced by fipa_envelope_Compose__from().

7.55 /home/dko/Projects/mobilec/src/mc_list/list.c File Reference

```
#include "list.h"
#include "../include/rwlock.h"
#include "macros.h"
#include <stdio.h>
#include <stdlib.h>
```

Functions

- [list_p ListInitialize](#) (void)
- void [ListTerminate](#) ([list_p](#) list)
- void [ListClearCB](#) ([list_p](#) list, [ListElemDestroyFunc_t](#) cb)
- int [ListGetSize](#) ([list_p](#) list)
- void * [ListGetHead](#) ([list_p](#) list)
- void * [ListPop](#) ([list_p](#) list)
- void * [ListSearch](#) ([list_p](#) list, const int index)
- int [ListAdd](#) ([list_p](#) list, void *data)
- int [ListAppend](#) ([list_p](#) list, void *data)
- int [ListInsert](#) ([list_p](#) list, void *data, const int index)
- [list_p](#) [ListCopy](#) ([list_p](#) list, void *(*data_copy_callback)(const void *data))
- void * [ListDelete](#) ([list_p](#) list, const int index)
- void * [ListSearchCB](#) ([list_p](#) list, const void *key, [ListSearchFunc_t](#) cb)
- void * [ListDeleteCB](#) ([list_p](#) list, const void *key, [ListSearchFunc_t](#) cb)
- void [ListWait](#) ([list_p](#) list)
- int [ListForEachCB](#) ([list_p](#) list, [ListElemGenericFunc_t](#) cb)
- void [ListRDLock](#) ([list_p](#) list)
- void [ListRDUnlock](#) ([list_p](#) list)
- void [ListWRLock](#) ([list_p](#) list)
- void [ListWRUnlock](#) ([list_p](#) list)
- void [ListWRWait](#) ([list_p](#) list)
- void [ListRDWait](#) ([list_p](#) list)
- void [ListRDtoWR](#) ([list_p](#) list)
- void [ListWRtoRD](#) ([list_p](#) list)

7.55.1 Function Documentation

7.55.1.1 int ListAdd ([list_p](#) list, void * data)

Definition at line 185 of file list.c.

References [list_s::listhead](#), [listNode_s::next](#), [listNode_s::node_data](#), and [list_s::size](#).

Referenced by [acc_connection_Thread\(\)](#), [acc_MessageHandlerThread\(\)](#), [agent_AddPersistentVariable\(\)](#), [agent_Destroy\(\)](#), [agent_RunChScriptThread\(\)](#), [agent_task_Copy\(\)](#), [agent_xml_parse__data\(\)](#), [agent_xml_parse__file\(\)](#), [ams_ManageAgentList\(\)](#), [df_Add\(\)](#), [df_AddRequest\(\)](#), [listen_Thread\(\)](#), [MC_AclPost\(\)](#), [MC_AddAgent\(\)](#), [MC_AddStationaryAgent\(\)](#), [MC_AgentAttachFile\(\)](#), [MC_BarrierInit\(\)](#), [MC_LoadAgentFromFile\(\)](#), [mc_platform_Initialize\(\)](#), [MC_SaveData_chdl\(\)](#), [MC_SendAgent\(\)](#), [MC_SendAgentFile\(\)](#), [MC_SendAgentMigrationMessage\(\)](#), [MC_SendAgentMigrationMessageFile\(\)](#), and [syncListAddNode\(\)](#).

7.55.1.2 int ListAppend (list_p list, void * data)

Definition at line 221 of file list.c.

References list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by ListCopy().

7.55.1.3 void ListClearCB (list_p list, ListElemDestroyFunc_t cb)

Definition at line 72 of file list.c.

References ListPop().

Referenced by agent_Destroy(), agent_RunChScriptThread(), agent_task_Destroy(), handler_FLUSH_AGENTS(), and mc_platform_Destroy().

7.55.1.4 list_p ListCopy (list_p list, void (*)(const void *data) data_copy_callback)

Definition at line 257 of file list.c.

References ListAppend(), list_s::listhead, ListInitialize(), listNode_s::next, and listNode_s::node_data.

Referenced by agent_task_Copy().

7.55.1.5 void* ListDelete (list_p list, const int index)

Definition at line 272 of file list.c.

References list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by ams_ManageAgentList(), and message_queue_SendOutgoing().

7.55.1.6 void* ListDeleteCB (list_p list, const void * key, ListSearchFunc_t cb)

Definition at line 362 of file list.c.

References list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by agent_AddPersistentVariable(), MC_BarrierDelete(), MC_DeleteAgent(), MC_DeleteAgentWG(), syncListDelete(), and syncListRemove().

7.55.1.7 int ListForEachCB (list_p list, ListElemGenericFunc_t cb)

Definition at line 408 of file list.c.

References list_s::listhead, listNode_s::next, and listNode_s::node_data.

Referenced by ams_Print(), handler_PRINT_CONNECTLIST(), handler_PRINTLIST_AGENTS(), and handler_PRINTLIST_MESSAGE().

7.55.1.8 void* ListGetHead (list_p list)

Definition at line 92 of file list.c.

References list_s::listhead, and listNode_s::node_data.

7.55.1.9 int ListGetSize (list_p list)

Definition at line 85 of file list.c.

References list_s::size.

Referenced by acc_Thread(), ams_Print(), MC_AgentListFiles(), MC_GetAllAgents(), MC_GetNumAgents(), MC_WaitAgent(), and MC_WaitRetrieveAgent().

7.55.1.10 list_p ListInitialize (void)

Definition at line 34 of file list.c.

References list_s::listhead, list_s::rwlock, rwlock_New(), and list_s::size.

Referenced by agent_Copy(), agent_Initialize(), agent_New(), agent_NewBinary(), agent_task_Copy(), agent_task_New(), df_Initialize(), ListCopy(), and mc_platform_Initialize().

7.55.1.11 int ListInsert (list_p list, void * data, const int index)

Definition at line 249 of file list.c.

7.55.1.12 void* ListPop (list_p list)

Definition at line 104 of file list.c.

References list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by acc_MessageHandlerThread(), acc_Thread(), agent_xml_compose__task(), df_Destroy(), df_ProcessRequest(), df_request_list_Destroy(), interpreter_queue_CreateRetrieve(), ListClearCB(), MC_AclRetrieve(), MC_AclWaitRetrieve(), and mc_platform_Destroy().

7.55.1.13 void ListRDLock (list_p list)

Definition at line 422 of file list.c.

References list_s::rwlock, and rwlock_rdlock().

Referenced by acc_connection_Thread(), acc_Thread(), agent_task_Copy(), ams_ManageAgentList(), ams_Print(), df_Thread(), handler_PRINT_CONNECTLIST(), handler_PRINTLIST_AGENTS(), handler_PRINTLIST_MESSAGE(), MC_AgentListFiles(), MC_AgentRetrieveFile(), MC_AgentVariableRetrieve(), MC_AgentVariableRetrieveInfo(), MC_Barrier(), MC_BarrierInit(), MC_CondBroadcast(), MC_CondReset(), MC_CondSignal(), MC_CondWait(), MC_FindAgentByID(), MC_FindAgentByName(), MC_GetAgents(), MC_GetAllAgents(), MC_GetNumAgents(), MC_MutexLock(), MC_MutexUnlock(), MC_QueueRDLock(), MC_RetrieveAgent(), MC_SemaphorePost(), MC_SemaphoreWait(), MC_WaitAgent(), MC_WaitRetrieveAgent(), and message_queue_SendOutgoing().

7.55.1.14 void ListRDtoWR (list_p list)

Definition at line 456 of file list.c.

References COND_WAIT, rwlock_s::lock, MUTEX_LOCK, rwlock_s::readers, list_s::rwlock, and rwlock_s::writer_cond.

Referenced by acc_Thread(), ams_ManageAgentList(), and message_queue_SendOutgoing().

7.55.1.15 void ListRDUnlock (list_p list)

Definition at line 427 of file list.c.

References list_s::rwlock, and rwlock_rdunlock().

Referenced by acc_connection_Thread(), acc_Thread(), agent_task_Copy(), ams_ManageAgentList(), ams_Print(), df_Thread(), handler_PRINT_CONNECTLIST(), handler_PRINTLIST_AGENTS(), handler_PRINTLIST_MESSAGE(), MC_AgentListFiles(), MC_AgentRetrieveFile(), MC_AgentVariableRetrieve(), MC_AgentVariableRetrieveInfo(), MC_Barrier(), MC_BarrierInit(), MC_CondBroadcast(), MC_CondReset(), MC_CondSignal(), MC_CondWait(), MC_FindAgentByID(), MC_FindAgentByName(), MC_GetAgents(), MC_GetAllAgents(), MC_GetNumAgents(), MC_MutexLock(), MC_MutexUnlock(), MC_QueueRDUnlock(), MC_RetrieveAgent(), MC_SemaphorePost(), MC_SemaphoreWait(), MC_WaitAgent(), MC_WaitRetrieveAgent(), and message_queue_SendOutgoing().

7.55.1.16 void ListRDWait (list_p list)

Definition at line 447 of file list.c.

References COND_WAIT, rwlock_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, rwlock_s::reader_cond, rwlock_s::readers, and list_s::rwlock.

Referenced by acc_Thread(), df_Thread(), and MC_WaitAgent().

7.55.1.17 void* ListSearch (list_p list, const int index)

Definition at line 139 of file list.c.

References list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by agent_task_Copy(), ams_ManageAgentList(), MC_AgentListFiles(), MC_GetAgents(), MC_GetAllAgents(), MC_RetrieveAgent(), MC_WaitRetrieveAgent(), and message_queue_SendOutgoing().

7.55.1.18 void* ListSearchCB (list_p list, const void *key, ListSearchFunc_t cb)

Definition at line 319 of file list.c.

References list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by acc_connection_Thread(), acc_MessageHandlerThread(), MC_AgentRetrieveFile(), MC_AgentVariableRetrieve(), MC_AgentVariableRetrieveInfo(), MC_Barrier(), MC_BarrierInit(), MC_CondBroadcast(), MC_CondReset(), MC_CondSignal(), MC_CondWait(), MC_FindAgentByID(), MC_FindAgentByName(), MC_MutexLock(), MC_MutexUnlock(), MC_SemaphorePost(), MC_SemaphoreWait(), MC_SyncInit(), and syncListAddNode().

7.55.1.19 void ListTerminate (list_p list)

Definition at line 51 of file list.c.

References list_s::listhead, list_s::rwlock, rwlock_Destroy(), and list_s::size.

Referenced by agent_Destroy(), agent_task_Destroy(), df_Destroy(), df_request_list_Destroy(), and mc_platform_Destroy().

7.55.1.20 void ListWait (list_p list)

Definition at line 403 of file list.c.

References list_s::rwlock, and rwlock_rdwait().

7.55.1.21 void ListWRLock (list_p list)

Definition at line 432 of file list.c.

References list_s::rwlock, and rwlock_wrlock().

Referenced by acc_connection_Thread(), acc_MessageHandlerThread(), agent_AddPersistentVariable(), agent_Destroy(), agent_RunChScriptThread(), agent_task_Copy(), agent_task_Destroy(), agent_xml_compose__task(), agent_xml_parse__data(), agent_xml_parse__file(), ams_ManageAgentList(), df_Add(), df_AddRequest(), df_Destroy(), df_ProcessRequest(), df_request_list_Destroy(), handler_FLUSH_AGENTS(), interpreter_queue_CreateRetrieve(), listen_Thread(), MC_AclPost(), MC_AclRetrieve(), MC_AclWaitRetrieve(), MC_AddAgent(), MC_AddStationaryAgent(), MC_AgentAttachFile(), MC_AgentProcessingBegin(), MC_BarrierDelete(), MC_BarrierInit(), MC_DeleteAgent(), MC_DeleteAgentWG(), MC_End(), MC_LoadAgentFromFile(), mc_platform_Destroy(), mc_platform_Initialize(), MC_QueueWRLock(), MC_SaveData_chdl(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessage(), MC_SendAgentMigrationMessageFile(), and MC_SyncInit().

7.55.1.22 void ListWRtoRD (list_p list)

Definition at line 465 of file list.c.

References rwlock_s::lock, MUTEX_UNLOCK, rwlock_s::readers, and list_s::rwlock.

Referenced by ams_ManageAgentList(), and message_queue_SendOutgoing().

7.55.1.23 void ListWRUnlock (list_p list)

Definition at line 437 of file list.c.

References list_s::rwlock, and rwlock_wrunlock().

Referenced by acc_connection_Thread(), acc_MessageHandlerThread(), acc_Thread(), agent_AddPersistentVariable(), agent_Destroy(), agent_RunChScriptThread(), agent_task_Copy(), agent_task_Destroy(), agent_xml_compose__task(), agent_xml_parse__data(), agent_xml_parse__file(), ams_ManageAgentList(), df_Add(), df_AddRequest(), df_Destroy(), df_ProcessRequest(), df_request_list_Destroy(), handler_FLUSH_AGENTS(), interpreter_queue_CreateRetrieve(), listen_Thread(), MC_AclPost(), MC_AclRetrieve(), MC_AclWaitRetrieve(), MC_AddAgent(), MC_AddStationaryAgent(), MC_AgentAttachFile(), MC_AgentProcessingEnd(), MC_BarrierDelete(), MC_BarrierInit(), MC_DeleteAgent(), MC_DeleteAgentWG(), MC_End(), MC_LoadAgentFromFile(), mc_platform_Destroy(), mc_platform_Initialize(), MC_QueueWRUnlock(), MC_SaveData_chdl(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessage(), MC_SendAgentMigrationMessageFile(), and MC_SyncInit().

7.55.1.24 void ListWRWait (list_p list)

Definition at line 442 of file list.c.

References COND_WAIT, rwlock_s::lock, rwlock_s::reader_cond, and list_s::rwlock.

Referenced by `acc_MessageHandlerThread()`, and `MC_AclWaitRetrieve()`.

7.56 /home/dko/Projects/mobilec/src/mc_list/list.h File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include "../include/macros.h"
#include "../include/rwlock.h"
```

Data Structures

- struct [listNode_s](#)
- struct [list_s](#)

Typedefs

- typedef int(* [ListSearchFunc_t](#))(const void *key, void *element)
- typedef void *(* [ListElemCopyFunc_t](#))(const void *src)
- typedef int(* [ListElemDestroyFunc_t](#))(void *elem)
- typedef int(* [ListElemGenericFunc_t](#))(void *elem)
- 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)
- void [ListClearCB](#) ([list_p](#) list, [ListElemDestroyFunc_t](#) cb)
- int [ListGetSize](#) ([list_p](#) list)
- int [ListAdd](#) ([list_p](#) list, void *data)
- int [ListAppend](#) ([list_p](#) list, void *data)
- int [ListInsert](#) ([list_p](#) list, void *data, const int index)
- [list_p](#) [ListCopy](#) ([list_p](#) list, void *(*data_copy_callback)(const void *data))
- void * [ListGetHead](#) ([list_p](#) list)
- void * [ListPop](#) ([list_p](#) list)
- void * [ListSearch](#) ([list_p](#) list, const int index)
- void * [ListDelete](#) ([list_p](#) list, const int index)
- void * [ListSearchCB](#) ([list_p](#) list, const void *key, [ListSearchFunc_t](#) cb)
- void * [ListDeleteCB](#) ([list_p](#) list, const void *key, [ListSearchFunc_t](#) cb)
- void [ListWait](#) ([list_p](#) list)
- int [ListForEachCB](#) ([list_p](#) list, [ListElemGenericFunc_t](#) cb)
- void [ListRDLock](#) ([list_p](#) list)
- void [ListRDUnlock](#) ([list_p](#) list)
- void [ListWRLock](#) ([list_p](#) list)
- void [ListWRUnlock](#) ([list_p](#) list)
- void [ListWRWait](#) ([list_p](#) list)
- void [ListRDWait](#) ([list_p](#) list)
- void [ListRDtoWR](#) ([list_p](#) list)
- void [ListWRtoRD](#) ([list_p](#) list)

7.56.1 Typedef Documentation

7.56.1.1 typedef list_t* list_p

Definition at line 58 of file list.h.

7.56.1.2 typedef struct list_s list_t

7.56.1.3 typedef void*(* ListElemCopyFunc_t)(const void *src)

Definition at line 36 of file list.h.

7.56.1.4 typedef int(* ListElemDestroyFunc_t)(void *elem)

Definition at line 37 of file list.h.

7.56.1.5 typedef int(* ListElemGenericFunc_t)(void *elem)

Definition at line 38 of file list.h.

7.56.1.6 typedef listNode_t* listNode_p

Definition at line 47 of file list.h.

7.56.1.7 typedef struct listNode_s listNode_t

7.56.1.8 typedef int(* ListSearchFunc_t)(const void *key, void *element)

Definition at line 35 of file list.h.

7.56.2 Function Documentation

7.56.2.1 int ListAdd (list_p list, void * data)

Definition at line 185 of file list.c.

References list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by acc_connection_Thread(), acc_MessageHandlerThread(), agent_AddPersistentVariable(), agent_Destroy(), agent_RunChScriptThread(), agent_task_Copy(), agent_xml_parse__data(), agent_xml_parse__file(), ams_ManageAgentList(), df_Add(), df_AddRequest(), listen_Thread(), MC_AclPost(), MC_AddAgent(), MC_AddStationaryAgent(), MC_AgentAttachFile(), MC_BarrierInit(), MC_LoadAgentFromFile(), mc_platform_Initialize(), MC_SaveData_chdl(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessage(), MC_SendAgentMigrationMessageFile(), and syncListAddNode().

7.56.2.2 int ListAppend (list_p list, void * data)

Definition at line 221 of file list.c.

References list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by ListCopy().

7.56.2.3 void ListClearCB (list_p list, ListElemDestroyFunc_t cb)

Definition at line 72 of file list.c.

References ListPop().

Referenced by agent_Destroy(), agent_RunChScriptThread(), agent_task_Destroy(), handler_FLUSH_AGENTS(), and mc_platform_Destroy().

7.56.2.4 list_p ListCopy (list_p list, void (*)(const void *data) data_copy_callback)

Definition at line 257 of file list.c.

References ListAppend(), list_s::listhead, ListInitialize(), listNode_s::next, and listNode_s::node_data.

Referenced by agent_task_Copy().

7.56.2.5 void* ListDelete (list_p list, const int index)

Definition at line 272 of file list.c.

References list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by ams_ManageAgentList(), and message_queue_SendOutgoing().

7.56.2.6 void* ListDeleteCB (list_p list, const void *key, ListSearchFunc_t cb)

Definition at line 362 of file list.c.

References list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by agent_AddPersistentVariable(), MC_BarrierDelete(), MC_DeleteAgent(), MC_DeleteAgentWG(), syncListDelete(), and syncListRemove().

7.56.2.7 int ListForEachCB (list_p list, ListElemGenericFunc_t cb)

Definition at line 408 of file list.c.

References list_s::listhead, listNode_s::next, and listNode_s::node_data.

Referenced by ams_Print(), handler_PRINT_CONNECTLIST(), handler_PRINTLIST_AGENTS(), and handler_PRINTLIST_MESSAGE().

7.56.2.8 void* ListGetHead (list_p list)

Definition at line 92 of file list.c.

References list_s::listhead, and listNode_s::node_data.

7.56.2.9 int ListGetSize (list_p list)

Definition at line 85 of file list.c.

References list_s::size.

Referenced by acc_Thread(), ams_Print(), MC_AgentListFiles(), MC_GetAllAgents(), MC_GetNumAgents(), MC_WaitAgent(), and MC_WaitRetrieveAgent().

7.56.2.10 list_p ListInitialize (void)

Definition at line 34 of file list.c.

References list_s::listhead, list_s::rwlock, rwlock_New(), and list_s::size.

Referenced by agent_Copy(), agent_Initialize(), agent_New(), agent_NewBinary(), agent_task_Copy(), agent_task_New(), df_Initialize(), ListCopy(), and mc_platform_Initialize().

7.56.2.11 int ListInsert (list_p list, void * data, const int index)

Definition at line 249 of file list.c.

7.56.2.12 void* ListPop (list_p list)

Definition at line 104 of file list.c.

References list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by acc_MessageHandlerThread(), acc_Thread(), agent_xml_compose__task(), df_Destroy(), df_ProcessRequest(), df_request_list_Destroy(), interpreter_queue_CreateRetrieve(), ListClearCB(), MC_AclRetrieve(), MC_AclWaitRetrieve(), and mc_platform_Destroy().

7.56.2.13 void ListRDLock (list_p list)

Definition at line 422 of file list.c.

References list_s::rwlock, and rwlock_rdlock().

Referenced by acc_connection_Thread(), acc_Thread(), agent_task_Copy(), ams_ManageAgentList(), ams_Print(), df_Thread(), handler_PRINT_CONNECTLIST(), handler_PRINTLIST_AGENTS(), handler_PRINTLIST_MESSAGE(), MC_AgentListFiles(), MC_AgentRetrieveFile(), MC_AgentVariableRetrieve(), MC_AgentVariableRetrieveInfo(), MC_Barrier(), MC_BarrierInit(), MC_CondBroadcast(), MC_CondReset(), MC_CondSignal(), MC_CondWait(), MC_FindAgentByID(), MC_FindAgentByName(), MC_GetAgents(), MC_GetAllAgents(), MC_GetNumAgents(), MC_MutexLock(), MC_MutexUnlock(), MC_QueueRDLock(), MC_RetrieveAgent(), MC_SemaphorePost(), MC_SemaphoreWait(), MC_WaitAgent(), MC_WaitRetrieveAgent(), and message_queue_SendOutgoing().

7.56.2.14 void ListRDtoWR (list_p list)

Definition at line 456 of file list.c.

References COND_WAIT, rwlock_s::lock, MUTEX_LOCK, rwlock_s::readers, list_s::rwlock, and rwlock_s::writer_cond.

Referenced by acc_Thread(), ams_ManageAgentList(), and message_queue_SendOutgoing().

7.56.2.15 void ListRDUnlock (list_p list)

Definition at line 427 of file list.c.

References list_s::rwlock, and rwlock_rdunlock().

Referenced by acc_connection_Thread(), acc_Thread(), agent_task_Copy(), ams_ManageAgentList(), ams_Print(), df_Thread(), handler_PRINT_CONNECTLIST(), handler_PRINTLIST_AGENTS(), handler_PRINTLIST_MESSAGE(), MC_AgentListFiles(), MC_AgentRetrieveFile(), MC_AgentVariableRetrieve(), MC_AgentVariableRetrieveInfo(), MC_Barrier(), MC_BarrierInit(), MC_CondBroadcast(), MC_CondReset(), MC_CondSignal(), MC_CondWait(), MC_FindAgentByID(), MC_FindAgentByName(), MC_GetAgents(), MC_GetAllAgents(), MC_GetNumAgents(), MC_MutexLock(), MC_MutexUnlock(), MC_QueueRDUnlock(), MC_RetrieveAgent(), MC_SemaphorePost(), MC_SemaphoreWait(), MC_WaitAgent(), MC_WaitRetrieveAgent(), and message_queue_SendOutgoing().

7.56.2.16 void ListRDWait (list_p list)

Definition at line 447 of file list.c.

References COND_WAIT, rwlock_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, rwlock_s::reader_cond, rwlock_s::readers, and list_s::rwlock.

Referenced by acc_Thread(), df_Thread(), and MC_WaitAgent().

7.56.2.17 void* ListSearch (list_p list, const int index)

Definition at line 139 of file list.c.

References list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by agent_task_Copy(), ams_ManageAgentList(), MC_AgentListFiles(), MC_GetAgents(), MC_GetAllAgents(), MC_RetrieveAgent(), MC_WaitRetrieveAgent(), and message_queue_SendOutgoing().

7.56.2.18 void* ListSearchCB (list_p list, const void *key, ListSearchFunc_t cb)

Definition at line 319 of file list.c.

References list_s::listhead, listNode_s::next, listNode_s::node_data, and list_s::size.

Referenced by acc_connection_Thread(), acc_MessageHandlerThread(), MC_AgentRetrieveFile(), MC_AgentVariableRetrieve(), MC_AgentVariableRetrieveInfo(), MC_Barrier(), MC_BarrierInit(), MC_CondBroadcast(), MC_CondReset(), MC_CondSignal(), MC_CondWait(), MC_FindAgentByID(), MC_FindAgentByName(), MC_MutexLock(), MC_MutexUnlock(), MC_SemaphorePost(), MC_SemaphoreWait(), MC_SyncInit(), and syncListAddNode().

7.56.2.19 void ListTerminate (list_p list)

Definition at line 51 of file list.c.

References list_s::listhead, list_s::rwlock, rwlock_Destroy(), and list_s::size.

Referenced by agent_Destroy(), agent_task_Destroy(), df_Destroy(), df_request_list_Destroy(), and mc_platform_Destroy().

7.56.2.20 void ListWait (list_p list)

Definition at line 403 of file list.c.

References list_s::rwlock, and rwlock_rdwait().

7.56.2.21 void ListWRLock (list_p list)

Definition at line 432 of file list.c.

References list_s::rwlock, and rwlock_wrlock().

Referenced by acc_connection_Thread(), acc_MessageHandlerThread(), agent_AddPersistentVariable(), agent_Destroy(), agent_RunChScriptThread(), agent_task_Copy(), agent_task_Destroy(), agent_xml_compose__task(), agent_xml_parse__data(), agent_xml_parse__file(), ams_ManageAgentList(), df_Add(), df_AddRequest(), df_Destroy(), df_ProcessRequest(), df_request_list_Destroy(), handler_FLUSH_AGENTS(), interpreter_queue_CreateRetrieve(), listen_Thread(), MC_AclPost(), MC_AclRetrieve(), MC_AclWaitRetrieve(), MC_AddAgent(), MC_AddStationaryAgent(), MC_AgentAttachFile(), MC_AgentProcessingBegin(), MC_BarrierDelete(), MC_BarrierInit(), MC_DeleteAgent(), MC_DeleteAgentWG(), MC_End(), MC_LoadAgentFromFile(), mc_platform_Destroy(), mc_platform_Initialize(), MC_QueueWRLock(), MC_SaveData_chdl(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessage(), MC_SendAgentMigrationMessageFile(), and MC_SyncInit().

7.56.2.22 void ListWRtoRD (list_p list)

Definition at line 465 of file list.c.

References rwlock_s::lock, MUTEX_UNLOCK, rwlock_s::readers, and list_s::rwlock.

Referenced by ams_ManageAgentList(), and message_queue_SendOutgoing().

7.56.2.23 void ListWRUnlock (list_p list)

Definition at line 437 of file list.c.

References list_s::rwlock, and rwlock_wrunlock().

Referenced by acc_connection_Thread(), acc_MessageHandlerThread(), acc_Thread(), agent_AddPersistentVariable(), agent_Destroy(), agent_RunChScriptThread(), agent_task_Copy(), agent_task_Destroy(), agent_xml_compose__task(), agent_xml_parse__data(), agent_xml_parse__file(), ams_ManageAgentList(), df_Add(), df_AddRequest(), df_Destroy(), df_ProcessRequest(), df_request_list_Destroy(), handler_FLUSH_AGENTS(), interpreter_queue_CreateRetrieve(), listen_Thread(), MC_AclPost(), MC_AclRetrieve(), MC_AclWaitRetrieve(), MC_AddAgent(), MC_AddStationaryAgent(), MC_AgentAttachFile(), MC_AgentProcessingEnd(), MC_BarrierDelete(), MC_BarrierInit(), MC_DeleteAgent(), MC_DeleteAgentWG(), MC_End(), MC_LoadAgentFromFile(), mc_platform_Destroy(), mc_platform_Initialize(), MC_QueueWRUnlock(), MC_SaveData_chdl(), MC_SendAgent(), MC_SendAgentFile(), MC_SendAgentMigrationMessage(), MC_SendAgentMigrationMessageFile(), and MC_SyncInit().

7.56.2.24 void ListWRWait (list_p list)

Definition at line 442 of file list.c.

References COND_WAIT, rwlock_s::lock, rwlock_s::reader_cond, and list_s::rwlock.

Referenced by `acc_MessageHandlerThread()`, and `MC_AclWaitRetrieve()`.

7.57 /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)
- [ChInterp_t](#) * [interpreter_queue_CreateRetrieve](#) ([list_t](#) *queue, [ChOptions_t](#) *interp_options)
- [list_t](#) * [mc_platform_GetQueue](#) ([mc_platform_p](#) platform, [enum](#) [MC_QueueIndex_e](#) index)

7.57.1 Define Documentation

7.57.1.1 `#define` [DEFAULT_HOSTNAME_LENGTH](#) 200

Definition at line 52 of file `mc_platform.c`.

Referenced by `mc_platform_Initialize()`.

7.57.2 Function Documentation

7.57.2.1 `ChInterp_t`* [interpreter_queue_CreateRetrieve](#) (`list_t` * *queue*, `ChOptions_t` * *interp_options*)

Definition at line 346 of file `mc_platform.c`.

References `agent_ChScriptInitVar()`, `ListPop()`, `ListWRLock()`, and `ListWRUnlock()`.

Referenced by `agent_RunChScriptThread()`.

7.57.2.2 `int` [mc_platform_Destroy](#) (`mc_platform_p` *platform*)

Definition at line 250 of file `mc_platform.c`.

References `mc_platform_s::acc`, `acc_Destroy()`, `agent_Destroy()`, `mc_platform_s::agent_queue`, `mc_platform_s::ams`, `ams_Destroy()`, `barrier_node_Destroy()`, `mc_platform_s::barrier_queue`, `mc_platform_s::cmd_prompt`, `cmd_prompt_Destroy()`, `COND_DESTROY`, `connection_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::hostname`, `mc_platform_s::interp_options`, `mc_platform_s::interpreter_queue`, `ListClearCB()`, `ListPop()`, `ListTerminate()`, `ListWRLock()`, `ListWRUnlock()`, `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`, `message_Destroy()`, `mc_platform_s::message_queue`, `MUTEX_DESTROY`, `mc_platform_s::quit_cond`, `mc_platform_s::quit_lock`, `SOCKET_ERROR`, `mc_platform_s::sockfd`, `mc_platform_s::syncList`, and `syncListNodeDestroy()`.

Referenced by `MC_End()`.

7.57.2.3 `list_t* mc_platform_GetQueue (mc_platform_p platform, enum MC_QueueIndex_e index)`

Definition at line 366 of file `mc_platform.c`.

References `mc_platform_s::agent_queue`, `mc_platform_s::barrier_queue`, `mc_platform_s::connection_queue`, `MC_QUEUE_AGENT`, `MC_QUEUE_BARRIER`, `MC_QUEUE_CONNECTION`, `MC_QUEUE_MESSAGE`, `MC_QUEUE_SYNC`, `mc_platform_s::message_queue`, and `mc_platform_s::syncList`.

Referenced by `MC_QueueRDLock()`, `MC_QueueRDUnlock()`, `MC_QueueWRLock()`, and `MC_QueueWRUnlock()`.

7.57.2.4 `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_processing`, `mc_platform_s::agent_queue`, `mc_platform_s::ams`, `ams_Initialize()`, `ams_Start()`, `mc_platform_s::barrier_queue`, `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`, `ListAdd()`, `ListInitialize()`, `ListWRLock()`, `ListWRUnlock()`, `MC_ERR_MEMORY`, `MC_NO_SIGNAL`, `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`, and `agency_s::threads`.

Referenced by `MC_Initialize()`.

7.58 /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)

7.58.1 Function Documentation

7.58.1.1 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](#).

7.58.1.2 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](#).

7.58.1.3 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](#).

7.58.1.4 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](#).

7.58.1.5 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.

7.58.1.6 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.

7.59 /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)
- int [syncListAddNode](#) (struct [syncListNode_s](#) *node, [list_t](#) *list)
- int [syncListNew](#) (int id, [list_t](#) *list)
- int [syncListDelete](#) (int id, [list_t](#) *list)
- [syncListNode_t](#) * [syncListRemove](#) (int id, [list_t](#) *list)
- int [syncListNode_CmpID](#) (int *key, [syncListNode_t](#) *node)

7.59.1 Function Documentation

7.59.1.1 int syncListAddNode (struct syncListNode_s * node, list_t * list)

Definition at line 56 of file sync_list.c.

References [syncListNode_s::id](#), [ListAdd\(\)](#), [ListSearchCB\(\)](#), and [syncListNode_CmpID\(\)](#).

Referenced by [MC_SyncInit\(\)](#), and [syncListNew\(\)](#).

7.59.1.2 int syncListDelete (int id, list_t * list)

Definition at line 83 of file sync_list.c.

References [ListDeleteCB\(\)](#), [MC_ERR_NOT_FOUND](#), [syncListNode_CmpID\(\)](#), and [syncListNodeDestroy\(\)](#).

Referenced by [MC_SyncDelete\(\)](#).

7.59.1.3 int syncListNew (int id, list_t * list)

Definition at line 72 of file sync_list.c.

References [syncListNode_s::id](#), [syncListAddNode\(\)](#), and [syncListNodeInit\(\)](#).

7.59.1.4 int syncListNode_CmpID (int * key, syncListNode_t * node)

Definition at line 101 of file sync_list.c.

References [syncListNode_s::id](#).

Referenced by MC_CondBroadcast(), MC_CondReset(), MC_CondSignal(), MC_CondWait(), MC_MutexLock(), MC_MutexUnlock(), MC_SemaphorePost(), MC_SemaphoreWait(), MC_SyncInit(), syncListAddNode(), syncListDelete(), and syncListRemove().

7.59.1.5 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_platform_Destroy(), and syncListDelete().

7.59.1.6 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().

7.59.1.7 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().

7.59.1.8 syncListNode_t* syncListRemove (int id, list_t * list)

Definition at line 94 of file sync_list.c.

References ListDeleteCB(), and syncListNode_CmpID().

7.60 /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](#)

Typedefs

- typedef struct [syncListNode_s](#) [syncListNode_t](#)
- typedef [syncListNode_t](#) * [syncListNode_p](#)

Functions

- int [syncListNodeInit](#) (struct [syncListNode_s](#) *node)
- int [syncListNodeDestroy](#) (struct [syncListNode_s](#) *node)
- struct [syncListNode_s](#) * [syncListNodeNew](#) (void)
- int [syncListDelete](#) (int id, [list_t](#) *list)
- [syncListNode_t](#) * [syncListRemove](#) (int id, [list_t](#) *list)
- int [syncListAddNode](#) (struct [syncListNode_s](#) *node, [list_t](#) *list)
- int [syncListNew](#) (int id, [list_t](#) *list)
- [syncListNode_t](#) * [syncListGet](#) (int id, [list_t](#) *list)
- int [syncListNode_CmpID](#) (int *key, [syncListNode_t](#) *node)

7.60.1 Typedef Documentation

7.60.1.1 typedef [syncListNode_t](#)* [syncListNode_p](#)

Definition at line 23 of file [sync_list.h](#).

7.60.1.2 typedef struct [syncListNode_s](#) [syncListNode_t](#)

7.60.2 Function Documentation

7.60.2.1 int [syncListAddNode](#) (struct [syncListNode_s](#) * *node*, [list_t](#) * *list*)

Definition at line 56 of file [sync_list.c](#).

References [syncListNode_s::id](#), [ListAdd\(\)](#), [ListSearchCB\(\)](#), and [syncListNode_CmpID\(\)](#).

Referenced by [MC_SyncInit\(\)](#), and [syncListNew\(\)](#).

7.60.2.2 int syncListDelete (int *id*, list_t * *list*)

Definition at line 83 of file sync_list.c.

References ListDeleteCB(), MC_ERR_NOT_FOUND, syncListNode_CmpID(), and syncListNodeDestroy().

Referenced by MC_SyncDelete().

7.60.2.3 syncListNode_t* syncListGet (int *id*, list_t * *list*)**7.60.2.4 int syncListNew (int *id*, list_t * *list*)**

Definition at line 72 of file sync_list.c.

References syncListNode_s::id, syncListAddNode(), and syncListNodeInit().

7.60.2.5 int syncListNode_CmpID (int * *key*, syncListNode_t * *node*)

Definition at line 101 of file sync_list.c.

References syncListNode_s::id.

Referenced by MC_CondBroadcast(), MC_CondReset(), MC_CondSignal(), MC_CondWait(), MC_MutexLock(), MC_MutexUnlock(), MC_SemaphorePost(), MC_SemaphoreWait(), MC_SyncInit(), syncListAddNode(), syncListDelete(), and syncListRemove().

7.60.2.6 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_platform_Destroy(), and syncListDelete().

7.60.2.7 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().

7.60.2.8 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().

7.60.2.9 syncListNode_t* syncListRemove (int *id*, list_t * *list*)

Definition at line 94 of file sync_list.c.

References ListDeleteCB(), and syncListNode_CmpID().

7.61 /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/dynstring.h"
#include "include/mc_platform.h"
#include "include/message.h"
#include "include/mtp_http.h"
#include "include/xml_compose.h"
#include "agent_file_data.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)
- int `message_Print` (`message_t` *message)

7.61.1 Define Documentation

7.61.1.1 #define MSG_THREAD_EXIT()

Value:

```
free(arg); \
    message_Destroy(message); \
    if(myaddrinfo) { \
        freeaddrinfo(myaddrinfo); \
    } \
    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 643 of file message.c.

Referenced by `message_send_Thread()`.

7.61.1.2 #define MSG_THREADS 40

Definition at line 579 of file message.c.

Referenced by `message_Send()`.

7.61.1.3 #define SOCKET_INPUT_SIZE 4096

Definition at line 71 of file message.c.

7.61.2 Function Documentation

7.61.2.1 int auth_rece_send_msg (int sockfd, char * hostname, char * message, char * privkey, char * known_host_filename)

Definition at line 458 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()`.

7.61.2.2 `int http_to_hostport (const char * http_str, char ** host, int * port, char ** target)`

Definition at line 300 of file `message.c`.

References `MC_ERR_PARSE`.

Referenced by `MC_AclSend()`.

7.61.2.3 `message_p message_Copy (message_p src)`

Definition at line 99 of file `message.c`.

7.61.2.4 `int message_Destroy (message_p message)`

Definition at line 416 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::sending_agent_name`, `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_platform_Destroy()`, `MC_SendAgent()`, `MC_SendAgentFile()`, `MC_SendAgentMigrationMessage()`, `MC_SendAgentMigrationMessageFile()`, and `message_InitializeFromConnection()`.

7.61.2.5 `int message_InitializeFromAgent (mc_platform_p mc_platform, message_p message, agent_p agent)`

Definition at line 107 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`.

7.61.2.6 `int message_InitializeFromConnection (mc_platform_p mc_platform, message_p message, connection_p connection)`

Definition at line 209 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`.

7.61.2.7 **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 335 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, mxmLoadString(), mc_platform_s::port, message_s::target, message_s::to_address, message_s::update_name, and message_s::xml_root.

7.61.2.8 **message_p message_New (void)**

Definition at line 74 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::sending_agent_name, 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().

7.61.2.9 **int message_Print (message_t * message)**

Definition at line 956 of file message.c.

References message_s::connect_id, and message_s::message_id.

Referenced by handler_PRINTLIST_MESSAGE().

7.61.2.10 **int message_Send (mc_platform_t * mc_platform, message_p message, char * privatekey)**

Definition at line 580 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().

7.61.2.11 **void* message_send_Thread (void * arg)**

Definition at line 667 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, 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()`.

7.62 /home/dko/Projects/mobilec/src/message_queue.c File Reference

```
#include "config.h"
#include <stdio.h>
#include <stdlib.h>
#include <pthread.h>
#include "include/mc_platform.h"
```

Functions

- void [message_queue_SendOutgoing](#) (struct [mc_platform_s](#) *mc_platform, [list_t](#) *mqueue)

7.62.1 Function Documentation

7.62.1.1 void [message_queue_SendOutgoing](#) (struct [mc_platform_s](#) * *mc_platform*, [list_t](#) * *mqueue*)

Definition at line 56 of file [message_queue.c](#).

References [CHECK_NULL](#), [mc_platform_s::hostname](#), [ListDelete\(\)](#), [ListRDLock\(\)](#), [ListRDtoWR\(\)](#), [ListRDUnlock\(\)](#), [ListSearch\(\)](#), [ListWRtoRD\(\)](#), [message_Send\(\)](#), [mc_platform_s::port](#), and [message_s::to_address](#).

7.63 /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)

7.63.1 Define Documentation

7.63.1.1 #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().

7.63.1.2 #define SAFE_FREE(object)

Value:

```
if(object) free(object); \
    object = NULL
```

7.63.1.3 #define SAFE_FREE(elem)

Value:

```
if(elem) \
    free(elem)
```

Referenced by mtp_http_Destroy(), and mtp_http_ParseHeader().

7.63.2 Function Documentation

7.63.2.1 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().

7.63.2.2 **const char* http_GetToken (const char * *string*, char ** *token*)**

Definition at line 790 of file mtp_http.c.

References `cur`.

Referenced by `http_ParseRequest()`.

7.63.2.3 **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()`.

7.63.2.4 **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()`.

7.63.2.5 **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`.

7.63.2.6 **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()`.

7.63.2.7 `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()`.

7.63.2.8 `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`.

7.63.2.9 `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()`.

7.63.2.10 `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()`.

7.63.2.11 `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()`.

7.63.2.12 `int mtp_http_ParseResponse (struct mtp_http_s * http, const char * string)`

Definition at line 823 of file `mtp_http.c`.

7.63.2.13 `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`, `connection_s::nonce`, and `receive_AES_en_MA()`.

Referenced by `mtp_http_InitializeFromConnection()`.

7.64 /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)

7.64.1 Define Documentation

7.64.1.1 #define HAVE_STRDUP 1

Definition at line 49 of file config.h.

7.64.1.2 #define HAVE_VSNPRINTF 1

Definition at line 42 of file config.h.

7.64.1.3 #define MXML_VERSION "Mini-XML v2.2.2"

Definition at line 35 of file config.h.

Referenced by `write_documentation()`.

7.64.2 Function Documentation

7.64.2.1 char* mxml_strdup (const char *, va_list)

Definition at line 66 of file mxml-string.c.

Referenced by `mxml_error()`, `mxmlNewTextf()`, and `mxmlSetTextf()`.

7.65 /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`

7.65.1 Define Documentation

7.65.1.1 `#define XYSSL_AES_C`

Definition at line 74 of file config.h.

7.65.1.2 `#define XYSSL_ARC4_C`

Definition at line 84 of file config.h.

7.65.1.3 `#define XYSSL_BASE64_C`

Definition at line 92 of file config.h.

7.65.1.4 `#define XYSSL_BIGNUM_C`

Definition at line 103 of file config.h.

7.65.1.5 #define XYSSL_CERTS_C

Definition at line 111 of file config.h.

7.65.1.6 #define XYSSL_DEBUG_C

Definition at line 121 of file config.h.

7.65.1.7 #define XYSSL_DEBUG_MSG

Definition at line 47 of file config.h.

7.65.1.8 #define XYSSL_DES_C

Definition at line 131 of file config.h.

7.65.1.9 #define XYSSL_DHM_C

Definition at line 142 of file config.h.

7.65.1.10 #define XYSSL_GENPRIME

Definition at line 57 of file config.h.

7.65.1.11 #define XYSSL_HAVE_ASM

Definition at line 36 of file config.h.

7.65.1.12 #define XYSSL_HAVEGE_C

Definition at line 150 of file config.h.

7.65.1.13 #define XYSSL_MD5_C

Definition at line 177 of file config.h.

7.65.1.14 #define XYSSL_NET_C

Definition at line 185 of file config.h.

7.65.1.15 #define XYSSL_PADLOCK_C

Definition at line 193 of file config.h.

7.65.1.16 #define XYSSL_RSA_C

Definition at line 204 of file config.h.

7.65.1.17 #define XYSSL_SELF_TEST

Definition at line 52 of file config.h.

7.65.1.18 #define XYSSL_SHA1_C

Definition at line 215 of file config.h.

7.65.1.19 #define XYSSL_SHA2_C

Definition at line 223 of file config.h.

7.65.1.20 #define XYSSL_SHA4_C

Definition at line 231 of file config.h.

7.65.1.21 #define XYSSL_SSL_CLI_C

Definition at line 239 of file config.h.

7.65.1.22 #define XYSSL_SSL_SRV_C

Definition at line 247 of file config.h.

7.65.1.23 #define XYSSL_SSL_TLS_C

Definition at line 256 of file config.h.

7.65.1.24 #define XYSSL_TIMING_C

Definition at line 264 of file config.h.

7.65.1.25 #define XYSSL_X509_PARSE_C

Definition at line 274 of file config.h.

7.65.1.26 #define XYSSL_X509_WRITE_C

Definition at line 282 of file config.h.

7.66 /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)

7.66.1 Function Documentation

7.66.1.1 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__file\(\)](#), [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\(\)](#).

7.66.1.2 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__file\(\)](#), [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\(\)](#).

7.67 /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)

7.67.1 Function Documentation

7.67.1.1 static int default_callback (const char * *name*) [static]

Definition at line 173 of file mxml-entity.c.

7.67.1.2 int mxmlEntityAddCallback (int(*) (const char *name) *cb*)

Definition at line 69 of file mxml-entity.c.

References [callbacks](#), [mxml_error\(\)](#), and [num_callbacks](#).

7.67.1.3 const char* mxmlEntityGetName (int *val*)

Definition at line 95 of file mxml-entity.c.

Referenced by [mxml_write_name\(\)](#), and [mxml_write_string\(\)](#).

7.67.1.4 int mxmlEntityGetValue (const char * *name*)

Definition at line 125 of file mxml-entity.c.

References [callbacks](#), and [num_callbacks](#).

Referenced by [mxml_get_entity\(\)](#).

7.67.1.5 void mxmlEntityRemoveCallback (int(*) (const char *name) *cb*)

Definition at line 144 of file mxml-entity.c.

References [callbacks](#), and [num_callbacks](#).

7.67.2 Variable Documentation

7.67.2.1 `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()`.

7.67.2.2 `int num_callbacks = 1 [static]`

Definition at line 57 of file mxml-entity.c.

Referenced by `mxmlEntityAddCallback()`, `mxmlEntityGetValue()`, and `mxmlEntityRemoveCallback()`.

7.68 /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`

7.68.1 Define Documentation

7.68.1.1 `#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()`.

7.68.1.2 `#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()`.

7.68.1.3 `#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()`.

7.68.1.4 `#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()`.

7.68.2 Typedef Documentation

7.68.2.1 `typedef struct mxml_fdbuf_s mxml_fdbuf_t`

7.68.3 Function Documentation

7.68.3.1 `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()`.

7.68.3.2 `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()`.

7.68.3.3 `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()`.

7.68.3.4 `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()`.

7.68.3.5 `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()`.

7.68.3.6 `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()`.

7.68.3.7 `static int mxml_file_putc (int ch, void * p) [static]`

Definition at line 1201 of file `mxml-file.c`.

Referenced by `mxmlSaveFile()`.

7.68.3.8 `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()`.

7.68.3.9 `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()`.

7.68.3.10 `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()`.

7.68.3.11 `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()`.

7.68.3.12 `static int mxml_string_putc (int ch, void * p) [static]`

Definition at line 2339 of file mxml-file.c.

Referenced by `mxmlSaveString()`.

7.68.3.13 `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()`.

7.68.3.14 `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().

7.68.3.15 `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().

7.68.3.16 `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().

7.68.3.17 `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().

7.68.3.18 `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().

7.68.3.19 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().

7.68.3.20 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().

7.68.3.21 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().

7.68.3.22 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().

7.68.3.23 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().

7.68.3.24 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.

7.68.3.25 void mxmlSetErrorCallback (void(*) (const char *) *cb*)

Definition at line 472 of file mxml-file.c.

References mxml_error_cb.

7.68.4 Variable Documentation**7.68.4.1 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().

7.68.4.2 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().

7.68.4.3 void(* mxml_error_cb)(const char *)

Definition at line 45 of file mxml-private.c.

Referenced by mxml_error(), and mxmlSetErrorCallback().

7.69 /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)

7.69.1 Function Documentation

7.69.1.1 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\(\)](#).

7.69.1.2 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\(\)](#).

7.69.1.3 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\(\)](#).

7.69.1.4 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()`.

7.69.1.5 `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()`.

7.69.1.6 `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()`.

7.69.1.7 `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()`.

7.69.1.8 `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()`.

7.70 /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)`

7.70.1 Function Documentation

7.70.1.1 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()`, and `mxml_node_s::type`.

Referenced by `mxmlNewCustom()`, `mxmlNewElement()`, `mxmlNewInteger()`, `mxmlNewOpaque()`, `mxmlNewReal()`, `mxmlNewText()`, and `mxmlNewTextf()`.

7.70.1.2 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()`.

7.70.1.3 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()`.

7.70.1.4 `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()`, and `mxml_node_s::value`.

Referenced by `mxml_load_data()`.

7.70.1.5 `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`, `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__file()`, `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()`.

7.70.1.6 `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()`, and `mxml_node_s::value`.

Referenced by `main()`, and `mxml_load_data()`.

7.70.1.7 `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`, `mxml_value_u::opaque`, `strdup`, and `mxml_node_s::value`.

Referenced by `main()`, and `mxml_load_data()`.

7.70.1.8 `mxml_node_t* mxmlNewReal (mxml_node_t *parent, double real)`

Definition at line 434 of file `mxml-node.c`.

References `mxml_new()`, `MXML_REAL`, `mxml_value_u::real`, and `mxml_node_s::value`.

Referenced by `main()`, and `mxml_load_data()`.

7.70.1.9 `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`, `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__file()`, `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()`.

7.70.1.10 `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_strdup()`, `MXML_TEXT`, `mxml_text_s::string`, `mxml_value_u::text`, `mxml_node_s::value`, and `mxml_text_s::whitespace`.

7.70.1.11 `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()`.

7.71 /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

7.71.1 Function Documentation

7.71.1.1 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\(\)](#).

7.71.1.2 [mxml_type_t mxml_integer_cb](#) ([mxml_node_t](#) **node*)

Definition at line 99 of file mxml-private.c.

References [MXML_INTEGER](#).

7.71.1.3 [mxml_type_t mxml_opaque_cb](#) ([mxml_node_t](#) **node*)

Definition at line 112 of file mxml-private.c.

References [MXML_OPAQUE](#).

7.71.1.4 [mxml_type_t mxml_real_cb](#) ([mxml_node_t](#) **node*)

Definition at line 125 of file mxml-private.c.

References [MXML_REAL](#).

7.71.2 Variable Documentation

7.71.2.1 `void(* mxml_error_cb)(const char *) = NULL`

Definition at line 45 of file mxml-private.c.

Referenced by `mxml_error()`, and `mxmlSetErrorCallback()`.

7.72 /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)

7.72.1 Function Documentation

7.72.1.1 [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\(\)](#).

7.72.1.2 [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\(\)](#).

7.72.1.3 [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](#).

7.73 /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,...)

7.73.1 Function Documentation

7.73.1.1 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](#).

7.73.1.2 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](#).

7.73.1.3 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](#).

7.73.1.4 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](#).

7.73.1.5 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](#).

7.73.1.6 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.

7.73.1.7 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.

7.74 /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)

7.74.1 Function Documentation

7.74.1.1 char* mxml_strdup (const char * s)

Definition at line 45 of file mxml-string.c.

7.74.1.2 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\(\)](#).

7.74.1.3 int mxml_vsnprintf (char * *buffer*, size_t *bufsize*, const char * *format*, va_list *ap*)

Definition at line 111 of file mxml-string.c.

Referenced by [mxml_strdupf\(\)](#).

7.75 /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)

7.75.1 Define Documentation

7.75.1.1 #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\(\)](#).

7.75.1.2 #define MXML_ADD_BEFORE 0

Definition at line 67 of file mxml.h.

Referenced by [mxmlAdd\(\)](#), [scan_file\(\)](#), and [sort_node\(\)](#).

7.75.1.3 #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\(\)](#).

7.75.1.4 #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\(\)](#).

7.75.1.5 #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()`.

7.75.1.6 **#define MXML_INTEGER_CALLBACK mxml_integer_cb**

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

Referenced by `main()`.

7.75.1.7 **#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()`.

7.75.1.8 **#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()`.

7.75.1.9 **#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()`, `agent_xml_compose__file()`, `main()`, and `scan_file()`.

7.75.1.10 **#define MXML_OPAQUE_CALLBACK mxml_opaque_cb**

Definition at line 50 of file `mxml.h`.

Referenced by `main()`.

7.75.1.11 **#define MXML_REAL_CALLBACK mxml_real_cb**

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

Referenced by `main()`.

7.75.1.12 #define MXML_TAB 8

Definition at line 45 of file mxml.h.

Referenced by mxml_write_ws().

7.75.1.13 #define MXML_TEXT_CALLBACK 0

Definition at line 54 of file mxml.h.

7.75.1.14 #define MXML_WRAP 72

Definition at line 44 of file mxml.h.

Referenced by mxml_write_node().

7.75.1.15 #define MXML_WS_AFTER_CLOSE 3

Definition at line 65 of file mxml.h.

Referenced by mxml_write_node(), whitespace_cb(), and ws_cb().

7.75.1.16 #define MXML_WS_AFTER_OPEN 1

Definition at line 63 of file mxml.h.

Referenced by mxml_write_node(), whitespace_cb(), and ws_cb().

7.75.1.17 #define MXML_WS_BEFORE_CLOSE 2

Definition at line 64 of file mxml.h.

Referenced by mxml_write_node(), whitespace_cb(), and ws_cb().

7.75.1.18 #define MXML_WS_BEFORE_OPEN 0

Definition at line 62 of file mxml.h.

Referenced by mxml_write_node(), whitespace_cb(), and ws_cb().

7.75.2 Typedef Documentation**7.75.2.1 typedef struct mxml_attr_s mxml_attr_t****7.75.2.2 typedef int(* mxml_custom_load_cb_t)(mxml_node_t *, const char *)**

Definition at line 142 of file mxml.h.

7.75.2.3 typedef char*(* mxml_custom_save_cb_t)(mxml_node_t *)

Definition at line 145 of file mxml.h.

7.75.2.4 typedef struct mxml_custom_s mxml_custom_t

7.75.2.5 typedef struct mxml_value_s mxml_element_t

7.75.2.6 typedef struct mxml_index_s mxml_index_t

7.75.2.7 typedef struct mxml_node_s mxml_node_t

7.75.2.8 typedef struct mxml_text_s mxml_text_t

7.75.2.9 typedef enum mxml_type_e mxml_type_t

7.75.2.10 typedef union mxml_value_u mxml_value_t

7.75.3 Enumeration Type Documentation

7.75.3.1 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.

7.75.4 Function Documentation

7.75.4.1 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().

7.75.4.2 mxml_type_t mxml_integer_cb (mxml_node_t * *node*)

Definition at line 99 of file mxml-private.c.

References MXML_INTEGER.

7.75.4.3 mxml_type_t mxml_opaque_cb (mxml_node_t * *node*)

Definition at line 112 of file mxml-private.c.

References MXML_OPAQUE.

7.75.4.4 mxmml_type_t mxmml_real_cb (mxmml_node_t * node)

Definition at line 125 of file mxmml-private.c.

References MXML_REAL.

7.75.4.5 void mxmmlAdd (mxmml_node_t * parent, int where, mxmml_node_t * child, mxmml_node_t * node)

Definition at line 66 of file mxmml-node.c.

References mxmml_node_s::child, mxmml_node_s::last_child, MXML_ADD_AFTER, MXML_ADD_BEFORE, mxmmlRemove(), mxmml_node_s::next, mxmml_node_s::parent, and mxmml_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(), mxmml_new(), scan_file(), and sort_node().

7.75.4.6 void mxmmlDelete (mxmml_node_t * node)

Definition at line 200 of file mxmml-node.c.

References mxmml_value_s::attrs, mxmml_node_s::child, mxmml_value_u::custom, mxmml_custom_s::data, mxmml_custom_s::destroy, mxmml_value_u::element, MXML_CUSTOM, MXML_ELEMENT, MXML_INTEGER, MXML_OPAQUE, MXML_REAL, MXML_TEXT, mxmmlDelete(), mxmmlRemove(), mxmml_attr_s::name, mxmml_value_s::name, mxmml_value_s::num_attrs, mxmml_value_u::opaque, mxmml_text_s::string, mxmml_value_u::text, mxmml_node_s::type, mxmml_attr_s::value, and mxmml_node_s::value.

Referenced by add_variable(), agent_datastate_Destroy(), fipa_envelope_Compose(), fipa_envelope_Parse(), main(), message_Destroy(), mxmml_load_data(), mxmmlDelete(), scan_file(), and sort_node().

7.75.4.7 const char* mxmmlElementGetAttr (mxmml_node_t * node, const char * name)

Definition at line 48 of file mxmml-attr.c.

References mxmml_value_s::attrs, mxmml_value_u::element, MXML_ELEMENT, mxmml_attr_s::name, mxmml_value_s::num_attrs, mxmml_node_s::type, mxmml_attr_s::value, and mxmml_node_s::value.

Referenced by agent_xml_parse__agent_code(), agent_xml_parse__data(), agent_xml_parse__file(), agent_xml_parse__task(), agent_xml_parse__tasks(), fipa_envelope_HandleReceived(), index_compare(), index_find(), message_xml_parse__message(), mxmml_parse_element(), mxmmlFindElement(), mxmmlIndexNew(), scan_file(), sort_node(), type_cb(), and write_documentation().

7.75.4.8 void mxmmlElementSetAttr (mxmml_node_t * node, const char * name, const char * value)

Definition at line 95 of file mxmml-attr.c.

References mxmml_value_s::attrs, mxmml_value_u::element, MXML_ELEMENT, mxmml_error(), mxmml_value_s::name, mxmml_attr_s::name, mxmml_value_s::num_attrs, strdup, mxmml_node_s::type, mxmml_attr_s::value, and mxmml_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__file(), 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().

7.75.4.9 int mxmlEntityAddCallback (int(*) (const char *name) cb)

Definition at line 69 of file mxml-entity.c.

References callbacks, mxml_error(), and num_callbacks.

7.75.4.10 const char* mxmlEntityGetName (int val)

Definition at line 95 of file mxml-entity.c.

Referenced by mxml_write_name(), and mxml_write_string().

7.75.4.11 int mxmlEntityGetValue (const char * name)

Definition at line 125 of file mxml-entity.c.

References callbacks, and num_callbacks.

Referenced by mxml_get_entity().

7.75.4.12 void mxmlEntityRemoveCallback (int(*) (const char *name) cb)

Definition at line 144 of file mxml-entity.c.

References callbacks, and num_callbacks.

7.75.4.13 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().

7.75.4.14 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().

7.75.4.15 mxmxml_node_t* mxmxmlIndexEnum (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 mxmxmlIndexFind().

7.75.4.16 mxmxml_node_t* mxmxmlIndexFind (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(), mxmxmlIndexEnum(), mxml_index_s::nodes, and mxml_index_s::num_nodes.

Referenced by main().

7.75.4.17 mxml_index_t* mxmxmlIndexNew (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(), mxmxmlIndexDelete(), mxml_value_s::name, mxml_index_s::nodes, mxml_index_s::num_nodes, strdup, and mxml_node_s::value.

Referenced by main().

7.75.4.18 mxmxml_node_t* mxmxmlIndexReset (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().

7.75.4.19 mxml_node_t* mxmxmlLoadFd (mxml_node_t * top, int fd, mxml_type_t(*) (mxml_node_t *) cb)**7.75.4.20 mxml_node_t* mxmxmlLoadFile (mxml_node_t * top, FILE * fp, mxml_type_t(*) (mxml_node_t *) cb)****7.75.4.21 mxml_node_t* mxmxmlLoadString (mxml_node_t * top, const char * s, mxml_type_t(*) (mxml_node_t *) cb)****7.75.4.22 mxml_node_t* mxmxmlNewCustom (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(), and mxml_node_s::value.

Referenced by mxml_load_data().

7.75.4.23 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, 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__file(), 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().

7.75.4.24 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(), and mxml_node_s::value.

Referenced by main(), and mxml_load_data().

7.75.4.25 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, mxml_value_u::opaque, strdup, and mxml_node_s::value.

Referenced by main(), and mxml_load_data().

7.75.4.26 mxml_node_t* mxmlNewReal (mxml_node_t * *parent*, double *real*)

Definition at line 434 of file mxml-node.c.

References mxml_new(), MXML_REAL, mxml_value_u::real, and mxml_node_s::value.

Referenced by main(), and mxml_load_data().

7.75.4.27 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, 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__file(), 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().

7.75.4.28 `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`, `mxml_text_s::string`, `mxml_value_u::text`, `mxml_node_s::value`, and `mxml_text_s::whitespace`.

7.75.4.29 `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()`.

7.75.4.30 `char* mxmlSaveAllocString (mxml_node_t * node, const char *(*)(mxml_node_t *, int) cb)`

7.75.4.31 `int mxmlSaveFd (mxml_node_t * node, int fd, const char *(*)(mxml_node_t *, int) cb)`

7.75.4.32 `int mxmlSaveFile (mxml_node_t * node, FILE * fp, const char *(*)(mxml_node_t *, int) cb)`

7.75.4.33 `int mxmlSaveString (mxml_node_t * node, char * buffer, int bufsize, const char *(*)(mxml_node_t *, int) cb)`

7.75.4.34 `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`.

7.75.4.35 `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`.

7.75.4.36 `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`.

7.75.4.37 `void mxmlSetErrorCallback (void(*)(const char *) cb)`

Definition at line 472 of file `mxml-file.c`.

References `mxml_error_cb`.

7.75.4.38 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.

7.75.4.39 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.

7.75.4.40 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.

7.75.4.41 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.

7.75.4.42 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.

7.75.4.43 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().

7.75.4.44 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.

7.76 /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[])

7.76.1 Define Documentation

7.76.1.1 #define STATE_C_COMMENT 2

Definition at line 129 of file `mxmldoc.c`.

Referenced by `scan_file()`.

7.76.1.2 #define STATE_CHARACTER 5

Definition at line 132 of file `mxmldoc.c`.

Referenced by `scan_file()`.

7.76.1.3 #define STATE_CXX_COMMENT 3

Definition at line 130 of file `mxmldoc.c`.

Referenced by `scan_file()`.

7.76.1.4 **#define STATE_IDENTIFIER 6**

Definition at line 133 of file mxmldoc.c.

Referenced by scan_file().

7.76.1.5 **#define STATE_NONE 0**

Definition at line 127 of file mxmldoc.c.

Referenced by scan_file().

7.76.1.6 **#define STATE_PREPROCESSOR 1**

Definition at line 128 of file mxmldoc.c.

Referenced by scan_file().

7.76.1.7 **#define STATE_STRING 4**

Definition at line 131 of file mxmldoc.c.

Referenced by scan_file().

7.76.2 **Function Documentation**

7.76.2.1 **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, mxml_text_s::string, mxml_value_u::text, mxml_node_s::value, and mxml_text_s::whitespace.

Referenced by scan_file().

7.76.2.2 **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().

7.76.2.3 **static void safe_strcpy (char * *dst*, const char * *src*) [static]**

Definition at line 427 of file mxmldoc.c.

Referenced by update_comment().

7.76.2.4 `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`, `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()`.

7.76.2.5 `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()`.

7.76.2.6 `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()`.

7.76.2.7 `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()`.

7.76.2.8 `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()`, `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()`.

7.76.2.9 static void write_string (const char * *s*) [static]

Definition at line 2660 of file mxmldoc.c.

Referenced by write_element().

7.76.2.10 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().

7.77 /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`

7.77.1 Variable Documentation

7.77.1.1 `bar = b`

Definition at line 77 of file class.cxx.

7.77.1.2 `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()`.

7.77.1.3 `foo_c foo`

7.78 /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](#) }

7.78.1 Typedef Documentation

7.78.1.1 typedef enum [foo_enum_e](#) [foo_enum_t](#)

7.78.2 Enumeration Type Documentation

7.78.2.1 enum [foo_enum_e](#)

Enumerator:

[FOO_ONE](#)

[FOO_TWO](#)

[FOO_RED](#)

[FOO_BLUE](#)

Definition at line 1 of file enum.cxx.

7.79 `/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)

7.79.1 Function Documentation

7.79.1.1 `int foo_default_int (int one, int two = 2)`

Definition at line 65 of file `function.cxx`.

7.79.1.2 `int foo_default_string (int one, const char * two = "2")`

Definition at line 45 of file `function.cxx`.

7.79.1.3 `float foo_float_function (int one, const char * two)`

Definition at line 26 of file `function.cxx`.

References `f`.

7.79.1.4 `void foo_void_function (int one, float * two, const char * three)`

Definition at line 6 of file `function.cxx`.

7.80 /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](#)

7.80.1 Typedef Documentation

7.80.1.1 typedef struct [foo_s](#) [foo_t](#)

7.81 /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[])

7.81.1 Function Documentation

7.81.1.1 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](#), [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\(\)](#).

7.81.1.2 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\(\)](#).

7.81.1.3 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](#).

7.82 /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)

7.82.1 Define Documentation

7.82.1.1 #define HAVE_STRDUP 1

Definition at line 49 of file winconfig.h.

7.82.1.2 #define HAVE_VSNPRINTF 1

Definition at line 42 of file winconfig.h.

7.82.1.3 #define MXML_VERSION "Mini-XML v2.2.2"

Definition at line 35 of file winconfig.h.

7.82.1.4 #define strdup mxml_strdup

Definition at line 58 of file winconfig.h.

Referenced by [acc_connection_Thread\(\)](#), [agent_AddPersistentVariable\(\)](#), [agent_file_data_Copy\(\)](#), [agent_file_data_InitializeFromFilename\(\)](#), [agent_file_data_NewWithData\(\)](#), [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_AgentAttachFile(), MC_AgentListFiles(), MC_AgentVariableSave(), MC_ComposeAgentWithWorkgroup(), MC_DeleteAgent(), MC_DeleteAgentWG(), 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().

7.82.1.5 `#define vsnprintf mxml_vsnprintf`

Definition at line 65 of file winconfig.h.

Referenced by debug_fmt().

7.82.2 Function Documentation

7.82.2.1 `char* mxml_strdup (const char *)`

Definition at line 45 of file mxml-string.c.

7.82.2.2 `char* mxml_strdupf (const char *, va_list)`

Definition at line 66 of file mxml-string.c.

References mxml_vsnprintf(), and strdup.

7.82.2.3 `int mxml_vsnprintf (char *, size_t, const char *, va_list)`

Definition at line 111 of file mxml-string.c.

Referenced by mxml_strdupf().

7.83 /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)

7.83.1 Define Documentation

7.83.1.1 #define PACKAGE_STRING "MobileC V2.0.0"

Definition at line 4 of file winconfig.h.

Referenced by mtp_http_InitializeFromConnection().

7.83.1.2 #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().

7.83.1.3 #define strdup(str) _strdup(str)

Definition at line 8 of file winconfig.h.

7.83.1.4 #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().

7.84 /home/dko/Projects/mobilec/src/rwlock.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include "include/rwlock.h"
```

Functions

- [int `rwlock_wrlock` \(`rwlock_t` *`rwlock`\)](#)
- [int `rwlock_wrunlock` \(`rwlock_t` *`rwlock`\)](#)
- [int `rwlock_rdlock` \(`rwlock_t` *`rwlock`\)](#)
- [int `rwlock_rdunlock` \(`rwlock_t` *`rwlock`\)](#)
- [int `rwlock_rdwait` \(`rwlock_t` *`rwlock`\)](#)
- [rwlock_t * `rwlock_New` \(void\)](#)
- [int `rwlock_Destroy` \(`rwlock_t` *`rwlock`\)](#)

7.84.1 Function Documentation

7.84.1.1 int `rwlock_Destroy` (`rwlock_t` * *rwlock*)

Definition at line 61 of file `rwlock.c`.

References `COND_DESTROY`, `rwlock_s::lock`, `MUTEX_DESTROY`, `rwlock_s::reader_cond`, and `rwlock_s::writer_cond`.

Referenced by `ListTerminate()`.

7.84.1.2 rwlock_t* `rwlock_New` (void)

Definition at line 48 of file `rwlock.c`.

References `COND_INIT`, `COND_NEW`, `rwlock_s::lock`, `MUTEX_INIT`, `MUTEX_NEW`, `rwlock_s::reader_cond`, `rwlock_s::readers`, and `rwlock_s::writer_cond`.

Referenced by `ListInitialize()`.

7.84.1.3 int `rwlock_rdlock` (`rwlock_t` * *rwlock*)

Definition at line 21 of file `rwlock.c`.

References `rwlock_s::lock`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, and `rwlock_s::readers`.

Referenced by `ListRDLock()`.

7.84.1.4 int `rwlock_rdunlock` (`rwlock_t` * *rwlock*)

Definition at line 29 of file `rwlock.c`.

References `COND_SIGNAL`, `rwlock_s::lock`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `rwlock_s::readers`, and `rwlock_s::writer_cond`.

Referenced by `ListRDUnlock()`.

7.84.1.5 int rwlock_rdwait (rwlock_t * *rwlock*)

Definition at line 38 of file rwlock.c.

References COND_WAIT, rwlock_s::lock, MUTEX_LOCK, MUTEX_UNLOCK, rwlock_s::reader_cond, and rwlock_s::readers.

Referenced by ListWait().

7.84.1.6 int rwlock_wrlock (rwlock_t * *rwlock*)

Definition at line 5 of file rwlock.c.

References COND_WAIT, rwlock_s::lock, MUTEX_LOCK, rwlock_s::readers, and rwlock_s::writer_cond.

Referenced by ListWRLock().

7.84.1.7 int rwlock_wrunlock (rwlock_t * *rwlock*)

Definition at line 14 of file rwlock.c.

References COND_SIGNAL, rwlock_s::lock, MUTEX_UNLOCK, and rwlock_s::reader_cond.

Referenced by ListWRUnlock().

7.85 /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"
```

7.86 /home/dko/Projects/mobilec/src/security/asm.h File Reference

```
#include "config.h"
#include "../mc_list/list.h"
#include "asm_node.h"
```

7.87 /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"
```

7.88 /home/dko/Projects/mobilec/src/security/asm_message_composer.h File Reference

```
#include <mxml.h>
#include "asm.h"
#include "config.h"
```

7.89 /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"
```


7.90 /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"
```

7.91 /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>
```

7.92 /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"
```

7.93 /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)

7.93.1 Function Documentation

7.93.1.1 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\(\)](#), [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\(\)](#).

7.93.1.2 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\(\)](#).

**7.93.1.3 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().

7.93.1.4 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().

7.93.1.5 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().

7.93.1.6 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().

7.93.1.7 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().

7.93.1.8 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().

7.93.1.9 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().

7.93.1.10 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().

Referenced by rece_de_msg().

7.93.1.11 static int remove_nonce_from_MA (char * *MA_file*) [static]

Definition at line 220 of file interface.c.

Referenced by extract_nonce_from_MA().

7.93.1.12 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().

7.93.1.13 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().

7.93.1.14 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().

7.93.1.15 int send_AES_en_MA (int *sockfd*, int * *my_nonce*, char * *outfile*, char * *pubkey*)

Definition at line 1419 of file interface.c.

References rsa_encryption(), and send.

Referenced by auth_rece_send_msg().

7.93.1.16 `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()`.

7.94 /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)

7.94.1 Define Documentation

7.94.1.1 #define EXPONENT 65537

Definition at line 25 of file interface.h.

Referenced by generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), and main().

7.94.1.2 #define KEY_SIZE 1024

Definition at line 24 of file interface.h.

Referenced by generate_RSA_keys_ciphertext(), generate_RSA_keys_plaintext(), and main().

7.94.1.3 #define MAXDATASIZE 4096

Definition at line 22 of file interface.h.

7.94.1.4 #define MODE_DECRYPT 1

Definition at line 21 of file interface.h.

Referenced by aes_en_de(), and main().

7.94.1.5 #define MODE_ENCRYPT 0

Definition at line 20 of file interface.h.

Referenced by aes_en_de(), and main().

7.94.1.6 #define PATH xyssl-0.9/include/xyssl

Definition at line 9 of file interface.h.

7.94.1.7 #define RSA_DE 1

Definition at line 28 of file interface.h.

Referenced by rsa_decryption().

7.94.1.8 #define RSA_EN 0

Definition at line 27 of file interface.h.

Referenced by rsa_encryption().

7.94.2 Function Documentation

7.94.2.1 **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(), 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().

7.94.2.2 **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().

7.94.2.3 **int generate_encrypt_send_AES_key** (int *sockfd*, int * *nonce*, unsigned char * *key*, char * *publickey*, char * *privkey*)

7.94.2.4 **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().

7.94.2.5 **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().

7.94.2.6 **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().

7.94.2.7 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().

7.94.2.8 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().

7.94.2.9 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().

Referenced by rece_de_msg().

7.94.2.10 int receive_decrypt_AES_key (int *new_fd*, int * *nonce*, unsigned char * *key*, char * *privkey*, char * *publickey*)**7.94.2.11 int receiving_decrypting_MA_RSA (int *new_fd*, char * *privkeyfile*)****7.94.2.12 int receiving_verifying_MA_RSA (int *sockfd*, char * *privkeyfile*)****7.94.2.13 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().

7.94.2.14 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().

7.94.2.15 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().

7.94.2.16 `int send_AES_en_MA (int sockfd, int * nonce, char * outfile, char * peer_pubkey)`

Definition at line 1419 of file `interface.c`.

References `rsa_encryption()`, and `send`.

Referenced by `auth_rece_send_msg()`.

7.95 /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"
```

7.96 /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"
```

7.97 /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.

7.97.1 Detailed Description

Definition in file [aes.h](#).

7.97.2 Define Documentation

7.97.2.1 #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\(\)](#).

7.97.2.2 #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().

7.97.3 Function Documentation

7.97.3.1 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().

7.97.3.2 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().

7.97.3.3 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().

7.97.3.4 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().

7.97.3.5 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().

7.97.3.6 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().

7.98 /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)

7.98.1 Detailed Description

Definition in file [arc4.h](#).

7.98.2 Function Documentation

7.98.2.1 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\(\)](#).

7.98.2.2 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\(\)](#).

7.98.2.3 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().

7.99 /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.

7.99.1 Detailed Description

Definition in file [base64.h](#).

7.99.2 Define Documentation

7.99.2.1 `#define XYSSL_ERR_BASE64_BUFFER_TOO_SMALL -0x0010`

Definition at line 7 of file [base64.h](#).

Referenced by [base64_decode\(\)](#), and [base64_encode\(\)](#).

7.99.2.2 `#define XYSSL_ERR_BASE64_INVALID_CHARACTER -0x0012`

Definition at line 8 of file [base64.h](#).

Referenced by [base64_decode\(\)](#), [x509parse_crt\(\)](#), and [x509parse_key\(\)](#).

7.99.3 Function Documentation

7.99.3.1 `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().

7.99.3.2 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().

7.99.3.3 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().

7.100 /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.

7.100.1 Detailed Description

Definition in file [bignum.h](#).

7.100.2 Define Documentation

7.100.2.1 **#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().

7.100.2.2 **#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().

7.100.2.3 **#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().

7.100.2.4 **#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().

7.100.2.5 **#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().

7.100.2.6 **#define XYSSL_ERR_MPI_INVALID_CHARACTER -0x0006**

Definition at line 11 of file bignum.h.

Referenced by mpi_get_digit().

7.100.2.7 **#define XYSSL_ERR_MPI_NEGATIVE_VALUE -0x000A**

Definition at line 13 of file bignum.h.

Referenced by mpi_sub_abs().

7.100.2.8 **#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()`.

7.100.3 Typedef Documentation

7.100.3.1 `typedef unsigned long long t_dbl`

Definition at line 39 of file `bignum.h`.

7.100.3.2 `typedef unsigned long t_int`

Definition at line 30 of file `bignum.h`.

7.100.4 Function Documentation

7.100.4.1 `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()`.

7.100.4.2 `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()`.

7.100.4.3 `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()`.

7.100.4.4 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()`.

7.100.4.5 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()`.

7.100.4.6 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()`.

7.100.4.7 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()`.

7.100.4.8 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().

7.100.4.9 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().

7.100.4.10 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().

7.100.4.11 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 dh_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().

7.100.4.12 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().

7.100.4.13 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().

7.100.4.14 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()`.

7.100.4.15 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()`.

7.100.4.16 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()`.

7.100.4.17 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()`.

7.100.4.18 int mpi_lsb (mpi * X)

Return the number of least significant bits.

Definition at line 185 of file bignum.c.

References biL, mpi::n, and mpi::p.

Referenced by mpi_is_prime().

7.100.4.19 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().

7.100.4.20 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().

7.100.4.21 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().

7.100.4.22 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()`.

7.100.4.23 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()`.

7.100.4.24 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()`.

7.100.4.25 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().

7.100.4.26 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().

7.100.4.27 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().

7.100.4.28 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, 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().

7.100.4.29 `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()`.

7.100.4.30 `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()`.

7.100.4.31 `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()`.

7.100.4.32 `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()`.

7.100.4.33 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().

7.100.4.34 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().

7.100.4.35 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().

7.100.4.36 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().

7.100.4.37 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().

7.100.4.38 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().

7.100.4.39 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().

7.101 /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](#) }

7.101.1 Detailed Description

Definition in file [bn_mul.h](#).

7.101.2 Define Documentation

7.101.2.1 #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\(\)](#).

7.101.2.2 #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\(\)](#).

7.101.2.3 #define MULADDC_STOP }

Definition at line 676 of file bn_mul.h.

Referenced by mpi_mul_hlp().

7.102 /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](#) []

7.102.1 Detailed Description

Definition in file [certs.h](#).

7.102.2 Variable Documentation

7.102.2.1 char test_ca_cert[]

Definition at line 25 of file [certs.c](#).

Referenced by [main\(\)](#), [ssl_test\(\)](#), and [x509_self_test\(\)](#).

7.102.2.2 char test_ca_key[]

Definition at line 49 of file [certs.c](#).

Referenced by [x509_self_test\(\)](#).

7.102.2.3 char test_ca_pwd[]

Definition at line 81 of file [certs.c](#).

Referenced by [x509_self_test\(\)](#).

7.102.2.4 char test_cli_cert[]

Definition at line 134 of file [certs.c](#).

Referenced by [main\(\)](#), and [x509_self_test\(\)](#).

7.102.2.5 char test_cli_key[]

Definition at line 156 of file [certs.c](#).

Referenced by [main\(\)](#).

7.102.2.6 char test_srv_cert[]

Definition at line 83 of file certs.c.

Referenced by main(), and ssl_test().

7.102.2.7 char test_srv_key[]

Definition at line 105 of file certs.c.

Referenced by main(), and ssl_test().

7.102.2.8 char xyssl_ca_cert[]

Definition at line 185 of file certs.c.

Referenced by main().

7.103 /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)

7.103.1 Detailed Description

Definition in file [debug.h](#).

7.103.2 Define Documentation

7.103.2.1 #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\(\)](#).

7.103.2.2 `#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()`.

7.103.2.3 `#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()`.

7.103.2.4 `#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()`.

7.103.2.5 `#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()`.

7.103.3 Function Documentation

7.103.3.1 `char* debug_fmt (const char *format, ...)`

Definition at line 38 of file debug.c.

References `vsnprintf`.

7.103.3.2 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`.

7.103.3.3 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()`.

7.103.3.4 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()`.

7.103.3.5 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`.

7.103.3.6 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`.

7.104 /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)

7.104.1 Detailed Description

Definition in file [des.h](#).

7.104.2 Define Documentation

7.104.2.1 #define DES_DECRYPT 0

Definition at line 8 of file des.h.

Referenced by [des_self_test\(\)](#), [ssl_decrypt_buf\(\)](#), and [x509_des3_decrypt\(\)](#).

7.104.2.2 #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\(\)](#).

7.104.3 Function Documentation

7.104.3.1 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\(\)](#).

7.104.3.2 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().

7.104.3.3 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().

7.104.3.4 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().

7.104.3.5 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().

7.104.3.6 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().

7.104.3.7 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().

7.104.3.8 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().

7.104.3.9 `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()`.

7.104.3.10 `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()`.

7.104.3.11 `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()`.

7.105 /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.

7.105.1 Detailed Description

Definition in file [dhm.h](#).

7.105.2 Define Documentation

7.105.2.1 `#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()`.

7.105.2.2 `#define XYSSL_ERR_DHM_CALC_SECRET_FAILED -0x04D0`

Definition at line 14 of file dhm.h.

Referenced by `dhm_calc_secret()`.

7.105.2.3 `#define XYSSL_ERR_DHM_MAKE_PARAMS_FAILED -0x04A0`

Definition at line 11 of file dhm.h.

Referenced by `dhm_make_params()`.

7.105.2.4 `#define XYSSL_ERR_DHM_MAKE_PUBLIC_FAILED -0x04C0`

Definition at line 13 of file dhm.h.

Referenced by `dhm_make_public()`.

7.105.2.5 `#define XYSSL_ERR_DHM_READ_PARAMS_FAILED -0x0490`

Definition at line 10 of file dhm.h.

Referenced by `dhm_read_bignum()`.

7.105.2.6 `#define XYSSL_ERR_DHM_READ_PUBLIC_FAILED -0x04B0`

Definition at line 12 of file dhm.h.

Referenced by `dhm_read_public()`.

7.105.3 Function Documentation

7.105.3.1 `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().

7.105.3.2 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().

7.105.3.3 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
x_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().

7.105.3.4 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()*.

7.105.3.5 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()*.

7.105.3.6 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().

7.105.3.7 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.

7.106 /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.

7.106.1 Detailed Description

Definition in file [havege.h](#).

7.106.2 Define Documentation

7.106.2.1 #define COLLECT_SIZE 1024

Definition at line 7 of file [havege.h](#).

Referenced by [havege_fill\(\)](#), and [havege_rand\(\)](#).

7.106.3 Function Documentation

7.106.3.1 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\(\)](#).

7.106.3.2 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().

7.107 /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.

7.107.1 Detailed Description

Definition in file [md2.h](#).

7.107.2 Function Documentation

7.107.2.1 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().

7.107.2.2 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

7.107.2.3 void md2_finish (md2_context * *ctx*, unsigned char *output*[16])

MD2 final digest.

Parameters

ctx MD2 context
output MD2 checksum result

7.107.2.4 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

7.107.2.5 void md2_hmac_finish (md2_context * *ctx*, unsigned char *output*[16])

MD2 HMAC final digest.

Parameters

ctx HMAC context
output MD2 HMAC checksum result

7.107.2.6 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

7.107.2.7 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

7.107.2.8 int md2_self_test (int *verbose*)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Referenced by main().

7.107.2.9 void md2_starts (md2_context * *ctx*)

MD2 context setup.

Parameters

ctx context to be initialized

7.107.2.10 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

7.108 /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.

7.108.1 Detailed Description

Definition in file [md4.h](#).

7.108.2 Function Documentation

7.108.2.1 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().

7.108.2.2 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

7.108.2.3 void md4_finish (md4_context * *ctx*, unsigned char *output*[16])

MD4 final digest.

Parameters

ctx MD4 context
output MD4 checksum result

7.108.2.4 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

7.108.2.5 void md4_hmac_finish (md4_context * *ctx*, unsigned char *output*[16])

MD4 HMAC final digest.

Parameters

ctx HMAC context
output MD4 HMAC checksum result

7.108.2.6 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

7.108.2.7 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

7.108.2.8 int md4_self_test (int *verbose*)

Checkup routine.

Returns

0 if successful, or 1 if the test failed

Referenced by main().

7.108.2.9 void md4_starts (md4_context * *ctx*)

MD4 context setup.

Parameters

ctx context to be initialized

7.108.2.10 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

7.109 /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.

7.109.1 Detailed Description

Definition in file [md5.h](#).

7.109.2 Function Documentation

7.109.2.1 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().

7.109.2.2 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().

7.109.2.3 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().

7.109.2.4 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().

7.109.2.5 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().

7.109.2.6 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().

7.109.2.7 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().

7.109.2.8 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().

7.109.2.9 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().

7.109.2.10 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().

7.110 /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.

7.110.1 Detailed Description

Definition in file [net.h](#).

7.110.2 Define Documentation

7.110.2.1 **#define XYSSL_ERR_NET_ACCEPT_FAILED -0x0F50**

Definition at line 12 of file net.h.

Referenced by net_accept().

7.110.2.2 **#define XYSSL_ERR_NET_BIND_FAILED -0x0F30**

Definition at line 10 of file net.h.

Referenced by net_bind().

7.110.2.3 **#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().

7.110.2.4 **#define XYSSL_ERR_NET_CONNECT_FAILED -0x0F20**

Definition at line 9 of file net.h.

Referenced by net_connect().

7.110.2.5 **#define XYSSL_ERR_NET_LISTEN_FAILED -0x0F40**

Definition at line 11 of file net.h.

Referenced by net_bind().

7.110.2.6 **#define XYSSL_ERR_NET_RECV_FAILED -0x0F60**

Definition at line 13 of file net.h.

Referenced by net_recv().

7.110.2.7 **#define XYSSL_ERR_NET_SEND_FAILED -0x0F70**

Definition at line 14 of file net.h.

Referenced by net_send().

7.110.2.8 **#define XYSSL_ERR_NET_SOCKET_FAILED -0x0F10**

Definition at line 8 of file net.h.

Referenced by net_bind(), and net_connect().

7.110.2.9 `#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()`.

7.110.2.10 `#define XYSSL_ERR_NET_UNKNOWN_HOST -0x0F00`

Definition at line 7 of file net.h.

Referenced by `net_connect()`.

7.110.3 Function Documentation

7.110.3.1 `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 `net_is_blocking()`, `XYSSL_ERR_NET_ACCEPT_FAILED`, and `XYSSL_ERR_NET_TRY_AGAIN`.

Referenced by `main()`, and `ssl_test()`.

7.110.3.2 `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()`.

7.110.3.3 `void net_close (int fd)`

Gracefully shutdown the connection.

Definition at line 338 of file net.c.

Referenced by `main()`, and `ssl_test()`.

7.110.3.4 `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()`.

7.110.3.5 `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()`.

7.110.3.6 `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()`.

7.110.3.7 `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.

7.110.3.8 `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().

7.110.3.9 `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.

7.111 /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)

7.111.1 Detailed Description

Definition in file [openssl.h](#).

7.111.2 Define Documentation

7.111.2.1 #define AES_BLOCK_SIZE 16

Definition at line 16 of file openssl.h.

7.111.2.2 #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.

7.111.2.3 #define AES_KEY aes_context

Definition at line 17 of file openssl.h.

7.111.2.4 #define AES_set_decrypt_key(KEY, KEYSIZE, CTX) aes_setkey_dec((CTX), (KEY), (KEYSIZE))

Definition at line 37 of file openssl.h.

7.111.2.5 #define AES_set_encrypt_key(KEY, KEYSIZE, CTX) aes_setkey_enc((CTX), (KEY), (KEYSIZE))

Definition at line 35 of file openssl.h.

7.111.2.6 #define AES_SIZE 16

Definition at line 15 of file openssl.h.

7.111.2.7 #define d2i_RSAPrivateKey(a, b, c) new rsa_context

Definition at line 102 of file openssl.h.

7.111.2.8 #define ERR_get_error() "ERR_get_error() not supported"

Definition at line 99 of file openssl.h.

7.111.2.9 #define MD5_CTX md5_context

Definition at line 18 of file openssl.h.

7.111.2.10 `#define MD5_Final(OUT, CTX) md5_finish((CTX), (OUT))`

Definition at line 32 of file openssl.h.

7.111.2.11 `#define MD5_Init(CTX) md5_starts((CTX))`

Definition at line 28 of file openssl.h.

7.111.2.12 `#define MD5_Update(CTX, BUF, LEN) md5_update((CTX), (unsigned char *) (BUF), (LEN))`

Definition at line 30 of file openssl.h.

7.111.2.13 `#define RSA_rsa_context`

Definition at line 95 of file openssl.h.

7.111.2.14 `#define RSA_blinding_off(IGNORE)`

Definition at line 100 of file openssl.h.

7.111.2.15 `#define RSA_free(CTX) rsa_free(CTX)`

Definition at line 98 of file openssl.h.

7.111.2.16 `#define RSA_PKCS1_PADDING 1`

Definition at line 96 of file openssl.h.

7.111.2.17 `#define RSA_size(CTX) (CTX)->len`

Definition at line 97 of file openssl.h.

Referenced by RSA_private_encrypt(), and RSA_public_encrypt().

7.111.2.18 `#define SHA1_Final(OUT, CTX) sha1_finish((CTX), (OUT))`

Definition at line 25 of file openssl.h.

7.111.2.19 `#define SHA1_Init(CTX) sha1_starts((CTX))`

Definition at line 21 of file openssl.h.

7.111.2.20 `#define SHA1_Update(CTX, BUF, LEN) sha1_update((CTX), (unsigned char *) (BUF), (LEN))`

Definition at line 23 of file openssl.h.

7.111.2.21 #define SHA_CTX sha1_context

Definition at line 19 of file openssl.h.

7.111.3 Function Documentation**7.111.3.1 int __RSA_Passthrough (void * *output*, void * *input*, int *size*) [inline]**

Definition at line 45 of file openssl.h.

7.111.3.2 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`.

7.111.3.3 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`.

7.111.3.4 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`.

7.111.3.5 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`.

7.111.3.6 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`.

7.112 /home/dko/Projects/mobilec/src/security/xyssl-0.9/include/xyssl/padlock.h File Reference

```
#include "xyssl/aes.h"
```

7.112.1 Detailed Description

Definition in file [padlock.h](#).

7.113 /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.

7.113.1 Detailed Description

Definition in file [rsa.h](#).

7.113.2 Define Documentation

7.113.2.1 #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\(\)](#).

7.113.2.2 #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().

7.113.2.3 #define RSA_CRYPT 2

Definition at line 34 of file rsa.h.

Referenced by rsa_pkcs1_decrypt(), and rsa_pkcs1_encrypt().

7.113.2.4 #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().

7.113.2.5 #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().

7.113.2.6 #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().

7.113.2.7 #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().

7.113.2.8 #define RSA_PKCS_V21 1

Definition at line 31 of file rsa.h.

7.113.2.9 #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().

7.113.2.10 #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().

7.113.2.11 #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().

7.113.2.12 #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().

7.113.2.13 #define RSA_SHA256 6

Definition at line 25 of file rsa.h.

7.113.2.14 #define RSA_SIGN 1

Definition at line 33 of file rsa.h.

Referenced by rsa_pkcs1_sign(), and rsa_pkcs1_verify().

7.113.2.15 #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().

7.113.2.16 #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().

7.113.2.17 #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().

7.113.2.18 #define XYSSL_ERR_RSA_KEY_GEN_FAILED -0x0420

Definition at line 11 of file rsa.h.

Referenced by rsa_gen_key().

7.113.2.19 #define XYSSL_ERR_RSA_PRIVATE_FAILED -0x0450

Definition at line 14 of file rsa.h.

Referenced by rsa_private().

7.113.2.20 #define XYSSL_ERR_RSA_PUBLIC_FAILED -0x0440

Definition at line 13 of file rsa.h.

Referenced by rsa_public().

7.113.2.21 #define XYSSL_ERR_RSA_VERIFY_FAILED -0x0460

Definition at line 15 of file rsa.h.

Referenced by rsa_pkcs1_verify().

7.113.3 Function Documentation**7.113.3.1 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().

7.113.3.2 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()`.

7.113.3.3 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()`.

7.113.3.4 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()`.

7.113.3.5 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()*.

7.113.3.6 **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*, *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()*.

7.113.3.7 **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()`.

7.113.3.8 `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_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()`.

7.113.3.9 `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_MD5, ASN1_HASH_SHA1, buf, 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().

7.113.3.10 `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()`.

7.113.3.11 `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()`.

7.113.3.12 `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()`.

7.114 /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.

7.114.1 Detailed Description

Definition in file [sha1.h](#).

7.114.2 Function Documentation

7.114.2.1 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().

7.114.2.2 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().

7.114.2.3 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().

7.114.2.4 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().

7.114.2.5 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().

7.114.2.6 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().

7.114.2.7 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().

7.114.2.8 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().

7.114.2.9 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().

7.114.2.10 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().

7.115 /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.

7.115.1 Detailed Description

Definition in file [sha2.h](#).

7.115.2 Function Documentation

7.115.2.1 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().

7.115.2.2 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().

7.115.2.3 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().

7.115.2.4 `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().

7.115.2.5 `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().

7.115.2.6 `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().

7.115.2.7 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().

7.115.2.8 int sha2_self_test (int *verbose*)

Checkup 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().

7.115.2.9 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().

7.115.2.10 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().

7.116 /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.

7.116.1 Detailed Description

Definition in file [sha4.h](#).

7.116.2 Define Documentation

7.116.2.1 #define int64 long long

Definition at line 12 of file sha4.h.

Referenced by sha4_finish(), sha4_process(), and sha4_update().

7.116.2.2 #define UL64(x) x##ULL

Definition at line 11 of file sha4.h.

Referenced by sha4_starts().

7.116.3 Function Documentation

7.116.3.1 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().

7.116.3.2 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().

7.116.3.3 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 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().

7.116.3.4 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().

7.116.3.5 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().

7.116.3.6 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().

7.116.3.7 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().

7.116.3.8 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().

7.116.3.9 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().

7.116.3.10 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, 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().

7.117 /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 []`

7.117.1 Detailed Description

Definition in file [ssl.h](#).

7.117.2 Define Documentation

7.117.2.1 **#define SSL_ALERT_CLOSE_NOTIFY 0**

Definition at line 87 of file [ssl.h](#).

Referenced by [ssl_close_notify\(\)](#), and [ssl_read_record\(\)](#).

7.117.2.2 **#define SSL_ALERT_FATAL 2**

Definition at line 89 of file [ssl.h](#).

Referenced by [ssl_read_record\(\)](#).

7.117.2.3 **#define SSL_ALERT_NO_CERTIFICATE 41**

Definition at line 90 of file [ssl.h](#).

Referenced by [ssl_parse_certificate\(\)](#), and [ssl_write_certificate\(\)](#).

7.117.2.4 **#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\(\)](#).

7.117.2.5 **#define SSL_BUFFER_LEN (SSL_MAX_CONTENT_LEN + 512)**

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

Referenced by [ssl_free\(\)](#), and [ssl_init\(\)](#).

7.117.2.6 **#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\(\)](#).

7.117.2.7 **#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\(\)](#).

7.117.2.8 #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().

7.117.2.9 #define SSL_HS_CERTIFICATE 11

Definition at line 95 of file ssl.h.

Referenced by ssl_parse_certificate(), and ssl_write_certificate().

7.117.2.10 #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().

7.117.2.11 #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().

7.117.2.12 #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().

7.117.2.13 #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().

7.117.2.14 #define SSL_HS_FINISHED 20

Definition at line 101 of file ssl.h.

Referenced by ssl_parse_finished(), and ssl_write_finished().

7.117.2.15 #define SSL_HS_HELLO_REQUEST 0

Definition at line 92 of file ssl.h.

7.117.2.16 #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().

7.117.2.17 #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().

7.117.2.18 #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().

7.117.2.19 #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().

7.117.2.20 #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().

7.117.2.21 #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().

7.117.2.22 #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().

7.117.2.23 #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().

7.117.2.24 #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()`.

7.117.2.25 `#define SSL_MINOR_VERSION_2 2`

TLS v1.1

Definition at line 50 of file `ssl.h`.

7.117.2.26 `#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()`.

7.117.2.27 `#define SSL_MSG_APPLICATION_DATA 23`

Definition at line 85 of file `ssl.h`.

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

7.117.2.28 `#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()`.

7.117.2.29 `#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()`.

7.117.2.30 `#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()`.

7.117.2.31 `#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()`.

7.117.2.32 #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().

7.117.2.33 #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().

7.117.2.34 #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().

7.117.2.35 #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().

7.117.2.36 #define SSL_VERIFY_OPTIONAL 1

Definition at line 57 of file ssl.h.

Referenced by main(), and ssl_parse_certificate().

7.117.2.37 #define SSL_VERIFY_REQUIRED 2

Definition at line 58 of file ssl.h.

Referenced by ssl_parse_certificate().

7.117.2.38 #define TLS_EXT_SERVERNAME 0

Definition at line 106 of file ssl.h.

Referenced by ssl_write_client_hello().

7.117.2.39 #define TLS_EXT_SERVERNAME_HOSTNAME 0

Definition at line 107 of file ssl.h.

Referenced by ssl_write_client_hello().

7.117.2.40 #define XYSSL_ERR_SSL_BAD_HS_CERTIFICATE -0xA800

Definition at line 35 of file ssl.h.

Referenced by ssl_parse_certificate().

7.117.2.41 #define XYSSL_ERR_SSL_BAD_HS_CERTIFICATE_REQUEST -0xB000

Definition at line 36 of file ssl.h.

7.117.2.42 #define XYSSL_ERR_SSL_BAD_HS_CERTIFICATE_VERIFY -0xD000

Definition at line 40 of file ssl.h.

Referenced by ssl_parse_certificate_verify().

7.117.2.43 #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().

7.117.2.44 #define XYSSL_ERR_SSL_BAD_HS_CLIENT_HELLO -0x9800

Definition at line 33 of file ssl.h.

Referenced by ssl_parse_client_hello().

7.117.2.45 #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().

7.117.2.46 #define XYSSL_ERR_SSL_BAD_HS_FINISHED -0xE000

Definition at line 42 of file ssl.h.

Referenced by ssl_parse_finished().

7.117.2.47 #define XYSSL_ERR_SSL_BAD_HS_SERVER_HELLO -0xA000

Definition at line 34 of file ssl.h.

Referenced by ssl_parse_server_hello().

7.117.2.48 #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().

7.117.2.49 #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().

7.117.2.50 #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().

7.117.2.51 #define XYSSL_ERR_SSL_CA_CHAIN_REQUIRED -0x7000

Definition at line 28 of file ssl.h.

Referenced by ssl_parse_certificate().

7.117.2.52 #define XYSSL_ERR_SSL_CERTIFICATE_REQUIRED -0x6000

Definition at line 26 of file ssl.h.

Referenced by ssl_write_certificate().

7.117.2.53 #define XYSSL_ERR_SSL_CERTIFICATE_TOO_LARGE -0x5800

Definition at line 25 of file ssl.h.

Referenced by ssl_write_certificate().

7.117.2.54 #define XYSSL_ERR_SSL_FATAL_ALERT_MESSAGE -0x8000

Definition at line 30 of file ssl.h.

Referenced by ssl_read_record().

7.117.2.55 #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().

7.117.2.56 #define XYSSL_ERR_SSL_INVALID_MAC -0x2000

Definition at line 18 of file ssl.h.

Referenced by ssl_decrypt_buf().

7.117.2.57 #define XYSSL_ERR_SSL_INVALID_MODULUS_SIZE -0x3000

Definition at line 20 of file ssl.h.

7.117.2.58 #define XYSSL_ERR_SSL_INVALID_RECORD -0x2800

Definition at line 19 of file ssl.h.

Referenced by ssl_read_record().

7.117.2.59 #define XYSSL_ERR_SSL_NO_CIPHER_CHOSEN -0x4000

Definition at line 22 of file ssl.h.

Referenced by ssl_parse_client_hello().

7.117.2.60 #define XYSSL_ERR_SSL_NO_CLIENT_CERTIFICATE -0x5000

Definition at line 24 of file ssl.h.

Referenced by ssl_parse_certificate().

7.117.2.61 #define XYSSL_ERR_SSL_NO_SESSION_FOUND -0x4800

Definition at line 23 of file ssl.h.

7.117.2.62 #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().

7.117.2.63 #define XYSSL_ERR_SSL_PEER_VERIFY_FAILED -0x8800

Definition at line 31 of file ssl.h.

7.117.2.64 #define XYSSL_ERR_SSL_PRIVATE_KEY_REQUIRED -0x6800

Definition at line 27 of file ssl.h.

Referenced by ssl_write_certificate_verify().

7.117.2.65 #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().

7.117.2.66 #define XYSSL_ERR_SSL_UNKNOWN_CIPHER -0x3800

Definition at line 21 of file ssl.h.

7.117.3 Typedef Documentation

7.117.3.1 typedef struct _ssl_context ssl_context

Definition at line 134 of file ssl.h.

7.117.3.2 typedef struct _ssl_session ssl_session

Definition at line 133 of file ssl.h.

7.117.4 Enumeration Type Documentation

7.117.4.1 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.

7.117.5 Function Documentation

7.117.5.1 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()`.

7.117.5.2 `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()`.

7.117.5.3 `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()`.

7.117.5.4 `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()`.

7.117.5.5 `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()`.

7.117.5.6 `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()`.

7.117.5.7 `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`.

7.117.5.8 `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()`.

7.117.5.9 `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()`.

7.117.5.10 `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()`.

7.117.5.11 `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()`.

7.117.5.12 `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()`.

7.117.5.13 `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()`.

7.117.5.14 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_hhlen`, `_ssl_context::in_msg`, `_ssl_context::in_msglen`, `_ssl_context::in_msgtype`, `_ssl_context::minor_ver`, `_ssl_context::peer_cert`, `_ssl_context::peer_cn`, `SSL_ALERT_NO_CERTIFICATE`, `SSL_ALERT_WARNING`, `SSL_DEBUG_CERT`, `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()`.

7.117.5.15 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()`.

7.117.5.16 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_hhlen`, `_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()`.

7.117.5.17 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()`.

7.117.5.18 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_hlen`, `_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()`.

7.117.5.19 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()`.

7.117.5.20 `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()`.

7.117.5.21 `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()`.

7.117.5.22 `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()`.

7.117.5.23 `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()`.

7.117.5.24 `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()`.

7.117.5.25 `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()`.

7.117.5.26 `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()`.

7.117.5.27 `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()`.

7.117.5.28 `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()`.

7.117.5.29 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().

7.117.5.30 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().

7.117.5.31 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()`.

7.117.5.32 `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()`.

7.117.5.33 `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()`.

7.117.5.34 `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()`.

7.117.5.35 `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()`.

7.117.6 Variable Documentation

7.117.6.1 `int ssl_default_ciphers[]`

Definition at line 1739 of file `ssl_tls.c`.

Referenced by `main()`, and `ssl_test()`.

7.118 /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](#)

7.118.1 Detailed Description

Definition in file [timing.h](#).

7.118.2 Function Documentation

7.118.2.1 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\(\)](#).

7.118.2.2 unsigned long hardclock (void)

Return the CPU cycle counter value.

Definition at line 155 of file timing.c.

References tv_init.

Referenced by main().

7.118.2.3 void m_sleep (int milliseconds)

Sleep for a certain amount of time.

Definition at line 258 of file timing.c.

7.118.2.4 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().

7.118.3 Variable Documentation

7.118.3.1 int alarmed

Definition at line 179 of file timing.c.

Referenced by main().

7.119 /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.

7.119.1 Detailed Description

Definition in file [x509.h](#).

7.119.2 Define Documentation

7.119.2.1 `#define ASN1_BIT_STRING 0x03`

Definition at line 51 of file [x509.h](#).

Referenced by [x509_get_pubkey\(\)](#), and [x509_get_sig\(\)](#).

7.119.2.2 `#define ASN1_BMP_STRING 0x1E`

Definition at line 63 of file [x509.h](#).

Referenced by [x509_get_name\(\)](#).

7.119.2.3 #define ASN1_BOOLEAN 0x01

Definition at line 49 of file x509.h.

Referenced by `asn1_get_bool()`.

7.119.2.4 #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()`.

7.119.2.5 #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()`.

7.119.2.6 #define ASN1_IA5_STRING 0x16

Definition at line 60 of file x509.h.

Referenced by `x509_get_name()`.

7.119.2.7 #define ASN1_INTEGER 0x02

Definition at line 50 of file x509.h.

Referenced by `asn1_get_int()`, `asn1_get_mpi()`, and `x509_get_serial()`.

7.119.2.8 #define ASN1_NULL 0x05

Definition at line 53 of file x509.h.

Referenced by `x509_get_alg()`.

7.119.2.9 #define ASN1_OCTET_STRING 0x04

Definition at line 52 of file x509.h.

Referenced by `x509_get_ext()`.

7.119.2.10 #define ASN1_OID 0x06

Definition at line 54 of file x509.h.

Referenced by `x509_get_alg()`, and `x509_get_name()`.

7.119.2.11 #define ASN1_PRIMITIVE 0x00

Definition at line 64 of file x509.h.

Referenced by x509_get_serial().

7.119.2.12 #define ASN1_PRINTABLE_STRING 0x13

Definition at line 58 of file x509.h.

Referenced by x509_get_name().

7.119.2.13 #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().

7.119.2.14 #define ASN1_SET 0x11

Definition at line 57 of file x509.h.

Referenced by x509_get_name().

7.119.2.15 #define ASN1_T61_STRING 0x14

Definition at line 59 of file x509.h.

Referenced by x509_get_name().

7.119.2.16 #define ASN1_UNIVERSAL_STRING 0x1C

Definition at line 62 of file x509.h.

Referenced by x509_get_name().

7.119.2.17 #define ASN1.UTC_TIME 0x17

Definition at line 61 of file x509.h.

Referenced by x509_get_dates().

7.119.2.18 #define ASN1_UTF8_STRING 0x0C

Definition at line 55 of file x509.h.

Referenced by x509_get_name().

7.119.2.19 #define BADCERT_CN_MISMATCH 4

Definition at line 43 of file x509.h.

Referenced by main(), and x509parse_verify().

7.119.2.20 #define BADCERT_EXPIRED 1

Definition at line 41 of file x509.h.

Referenced by main(), and x509parse_expired().

7.119.2.21 #define BADCERT_NOT_TRUSTED 8

Definition at line 44 of file x509.h.

Referenced by main(), and x509parse_verify().

7.119.2.22 #define BADCERT_REVOKED 2

Definition at line 42 of file x509.h.

Referenced by main().

7.119.2.23 #define OID_CN "\x55\x04\x03"

Definition at line 86 of file x509.h.

Referenced by x509parse_verify().

7.119.2.24 #define OID_PKCS1 "\x2A\x86\x48\x86\xF7\x0D\x01\x01"

Definition at line 87 of file x509.h.

Referenced by x509parse_crt().

7.119.2.25 #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().

7.119.2.26 #define OID_PKCS1_RSA_SHA "\x2A\x86\x48\x86\xF7\x0D\x01\x01\x05"

Definition at line 89 of file x509.h.

7.119.2.27 #define OID_PKCS9 "\x2A\x86\x48\x86\xF7\x0D\x01\x09"

Definition at line 90 of file x509.h.

Referenced by x509parse_dn_gets().

7.119.2.28 #define OID_PKCS9_EMAIL "\x2A\x86\x48\x86\xF7\x0D\x01\x09\x01"

Definition at line 91 of file x509.h.

7.119.2.29 #define OID_X520 "\x55\x04"

Definition at line 85 of file x509.h.

Referenced by x509parse_dn_gets().

7.119.2.30 #define PEM_LINE_LENGTH 72

Definition at line 81 of file x509.h.

7.119.2.31 #define PKCS9_EMAIL 1

Definition at line 77 of file x509.h.

Referenced by x509parse_dn_gets().

7.119.2.32 #define X509_ISSUER 0x01

Definition at line 82 of file x509.h.

7.119.2.33 #define X509_OUTPUT_DER 0x01

Definition at line 79 of file x509.h.

7.119.2.34 #define X509_OUTPUT_PEM 0x02

Definition at line 80 of file x509.h.

7.119.2.35 #define X509_SUBJECT 0x02

Definition at line 83 of file x509.h.

7.119.2.36 #define X520_COMMON_NAME 3

Definition at line 71 of file x509.h.

Referenced by x509parse_dn_gets().

7.119.2.37 #define X520_COUNTRY 6

Definition at line 72 of file x509.h.

Referenced by x509parse_dn_gets().

7.119.2.38 #define X520_LOCALITY 7

Definition at line 73 of file x509.h.

Referenced by x509parse_dn_gets().

7.119.2.39 #define X520_ORG_UNIT 11

Definition at line 76 of file x509.h.

Referenced by x509parse_dn_gets().

7.119.2.40 #define X520_ORGANIZATION 10

Definition at line 75 of file x509.h.

Referenced by x509parse_dn_gets().

7.119.2.41 #define X520_STATE 8

Definition at line 74 of file x509.h.

Referenced by x509parse_dn_gets().

7.119.2.42 #define XYSSL_ERR_ASN1_INVALID_DATA -0x001C

Definition at line 13 of file x509.h.

7.119.2.43 #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().

7.119.2.44 #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().

7.119.2.45 #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().

7.119.2.46 #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().

7.119.2.47 #define XYSSL_ERR_X509_CERT_INVALID_ALG -0x00C0

Definition at line 20 of file x509.h.

Referenced by x509_get_alg().

7.119.2.48 #define XYSSL_ERR_X509_CERT_INVALID_DATE -0x0100

Definition at line 22 of file x509.h.

Referenced by x509_get_dates().

7.119.2.49 #define XYSSL_ERR_X509_CERT_INVALID_EXTENSIONS -0x0160

Definition at line 25 of file x509.h.

Referenced by x509_get_ext().

7.119.2.50 #define XYSSL_ERR_X509_CERT_INVALID_FORMAT -0x0060

Definition at line 17 of file x509.h.

Referenced by x509parse_crt().

7.119.2.51 #define XYSSL_ERR_X509_CERT_INVALID_NAME -0x00E0

Definition at line 21 of file x509.h.

Referenced by x509_get_name().

7.119.2.52 #define XYSSL_ERR_X509_CERT_INVALID_PEM -0x0040

Definition at line 16 of file x509.h.

Referenced by x509parse_crt().

7.119.2.53 #define XYSSL_ERR_X509_CERT_INVALID_PUBKEY -0x0120

Definition at line 23 of file x509.h.

Referenced by x509_get_pubkey().

7.119.2.54 #define XYSSL_ERR_X509_CERT_INVALID_SERIAL -0x00A0

Definition at line 19 of file x509.h.

Referenced by x509_get_serial().

7.119.2.55 #define XYSSL_ERR_X509_CERT_INVALID_SIGNATURE -0x0140

Definition at line 24 of file x509.h.

Referenced by x509_get_sig().

7.119.2.56 #define XYSSL_ERR_X509_CERT_INVALID_VERSION -0x0080

Definition at line 18 of file x509.h.

Referenced by x509_get_version().

7.119.2.57 #define XYSSL_ERR_X509_CERT_SIG_MISMATCH -0x01E0

Definition at line 29 of file x509.h.

Referenced by x509parse_cert().

7.119.2.58 #define XYSSL_ERR_X509_CERT_UNKNOWN_PK_ALG -0x01C0

Definition at line 28 of file x509.h.

Referenced by x509_get_pubkey().

7.119.2.59 #define XYSSL_ERR_X509_CERT_UNKNOWN_SIG_ALG -0x01A0

Definition at line 27 of file x509.h.

Referenced by x509parse_cert().

7.119.2.60 #define XYSSL_ERR_X509_CERT_UNKNOWN_VERSION -0x0180

Definition at line 26 of file x509.h.

Referenced by x509parse_cert().

7.119.2.61 #define XYSSL_ERR_X509_CERT_VERIFY_FAILED -0x0200

Definition at line 30 of file x509.h.

Referenced by x509parse_verify().

7.119.2.62 #define XYSSL_ERR_X509_FEATURE_UNAVAILABLE -0x0020

Definition at line 15 of file x509.h.

Referenced by x509parse_key().

7.119.2.63 #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().

7.119.2.64 #define XYSSL_ERR_X509_KEY_INVALID_FORMAT -0x0260

Definition at line 33 of file x509.h.

Referenced by x509parse_key().

7.119.2.65 #define XYSSL_ERR_X509_KEY_INVALID_PEM -0x0220

Definition at line 31 of file x509.h.

Referenced by x509parse_key().

7.119.2.66 #define XYSSL_ERR_X509_KEY_INVALID_VERSION -0x0240

Definition at line 32 of file x509.h.

Referenced by x509parse_key().

7.119.2.67 #define XYSSL_ERR_X509_KEY_PASSWORD_MISMATCH -0x02E0

Definition at line 37 of file x509.h.

Referenced by x509parse_key().

7.119.2.68 #define XYSSL_ERR_X509_KEY_PASSWORD_REQUIRED -0x02C0

Definition at line 36 of file x509.h.

Referenced by x509parse_key().

7.119.2.69 #define XYSSL_ERR_X509_KEY_UNKNOWN_ENC_ALG -0x02A0

Definition at line 35 of file x509.h.

Referenced by x509parse_key().

7.119.2.70 #define XYSSL_ERR_X509_POINT_ERROR -0x0300

Definition at line 38 of file x509.h.

7.119.2.71 #define XYSSL_ERR_X509_VALUE_TO_LENGTH -0x0320

Definition at line 39 of file x509.h.

7.119.3 Typedef Documentation

7.119.3.1 `typedef struct _x509_buf x509_buf`

7.119.3.2 `typedef struct _x509_cert x509_cert`

7.119.3.3 `typedef struct _x509_name x509_name`

7.119.3.4 `typedef struct _x509_node x509_node`

7.119.3.5 `typedef struct _x509_raw x509_raw`

7.119.3.6 `typedef struct _x509_time x509_time`

7.119.4 Function Documentation

7.119.4.1 `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()`.

7.119.4.2 `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()`.

7.119.4.3 `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()`.

7.119.4.4 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().

7.119.4.5 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().

7.119.4.6 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()`.

7.119.4.7 `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()`.

7.119.4.8 `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()`.

7.119.4.9 `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().

7.119.4.10 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().

7.120 /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]

7.120.1 Define Documentation

7.120.1.1 #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\(\)](#).

7.120.1.2 #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().

7.120.1.3 #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().

7.120.1.4 #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().

7.120.1.5 #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().

7.120.1.6 `#define ROTL8(x) ((x << 8) & 0xFFFFFFFF) | (x >> 24)`

Definition at line 352 of file aes.c.

Referenced by aes_gen_tables().

7.120.1.7 `#define XTIME(x) ((x << 1) ^ ((x & 0x80) ? 0x1B : 0x00))`

Definition at line 353 of file aes.c.

Referenced by aes_gen_tables().

7.120.2 Function Documentation

7.120.2.1 `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().

7.120.2.2 `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()`.

7.120.2.3 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()`.

7.120.2.4 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()`.

7.120.2.5 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()`.

7.120.2.6 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().

7.120.2.7 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().

7.120.3 Variable Documentation**7.120.3.1 int aes_init_done = 0 [static]**

Definition at line 356 of file aes.c.

Referenced by aes_setkey_enc().

7.120.3.2 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().

7.120.3.3 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().

7.120.3.4 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().

7.120.3.5 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().

7.120.3.6 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().

7.120.3.7 `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().

7.120.3.8 `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().

7.120.3.9 `unsigned long FT0[256] [static]`

Definition at line 330 of file aes.c.

Referenced by aes_gen_tables().

7.120.3.10 `unsigned long FT1[256] [static]`

Definition at line 331 of file aes.c.

Referenced by aes_gen_tables().

7.120.3.11 `unsigned long FT2[256] [static]`

Definition at line 332 of file aes.c.

Referenced by aes_gen_tables().

7.120.3.12 unsigned long FT3[256] [static]

Definition at line 333 of file aes.c.

Referenced by aes_gen_tables().

7.120.3.13 unsigned long RCON[10] [static]

Definition at line 347 of file aes.c.

Referenced by aes_gen_tables(), and aes_setkey_enc().

7.120.3.14 unsigned char RSb[256] [static]

Definition at line 338 of file aes.c.

Referenced by aes_crypt_ecb(), and aes_gen_tables().

7.120.3.15 unsigned long RT0[256] [static]

Definition at line 339 of file aes.c.

Referenced by aes_gen_tables(), and aes_setkey_dec().

7.120.3.16 unsigned long RT1[256] [static]

Definition at line 340 of file aes.c.

Referenced by aes_gen_tables(), and aes_setkey_dec().

7.120.3.17 unsigned long RT2[256] [static]

Definition at line 341 of file aes.c.

Referenced by aes_gen_tables(), and aes_setkey_dec().

7.120.3.18 unsigned long RT3[256] [static]

Definition at line 342 of file aes.c.

Referenced by aes_gen_tables(), and aes_setkey_dec().

7.121 /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]

7.121.1 Function Documentation

7.121.1.1 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\(\)](#).

7.121.1.2 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\(\)](#).

7.121.1.3 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().

7.121.2 Variable Documentation**7.121.2.1 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().

7.121.2.2 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().

7.121.2.3 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().

7.122 /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](#) []

7.122.1 Function Documentation

7.122.1.1 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()`.

7.122.1.2 `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()`.

7.122.1.3 `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()`.

7.122.2 Variable Documentation

7.122.2.1 `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, 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().

7.122.2.2 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().

7.122.2.3 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().

7.122.2.4 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().

7.123 /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` []

7.123.1 Define Documentation

7.123.1.1 `#define biH (ciL << 2)`

Definition at line 41 of file bignum.c.

Referenced by `mpi_div_mpi()`, and `mpi_mod_int()`.

7.123.1.2 `#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()`.

7.123.1.3 `#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()`.

7.123.1.4 `#define CHARS_TO_LIMBS(i) (((i) + ciL - 1) / ciL)`

Definition at line 47 of file bignum.c.

Referenced by `mpi_read_binary()`.

7.123.1.5 `#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()`.

7.123.2 Function Documentation

7.123.2.1 `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()`.

7.123.2.2 `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()`.

7.123.2.3 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()`.

7.123.2.4 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()`.

7.123.2.5 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()`.

7.123.2.6 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()`.

7.123.2.7 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()`.

7.123.2.8 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()`.

7.123.2.9 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().

7.123.2.10 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().

7.123.2.11 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().

7.123.2.12 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().

7.123.2.13 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().

7.123.2.14 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().

7.123.2.15 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().

7.123.2.16 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()`.

7.123.2.17 `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()`.

7.123.2.18 `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()`.

7.123.2.19 `int mpi_lsb (mpi * X)`

Return the number of least significant bits.

Definition at line 185 of file `bignum.c`.

References `biL`, `mpi::n`, and `mpi::p`.

Referenced by `mpi_is_prime()`.

7.123.2.20 `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().

7.123.2.21 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().

7.123.2.22 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().

7.123.2.23 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().

7.123.2.24 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().

7.123.2.25 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().

7.123.2.26 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().

7.123.2.27 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().

7.123.2.28 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().

7.123.2.29 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().

7.123.2.30 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().

7.123.2.31 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().

7.123.2.32 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().

7.123.2.33 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, 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().

7.123.2.34 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().

7.123.2.35 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().

7.123.2.36 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().

7.123.2.37 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().

7.123.2.38 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().

7.123.2.39 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().

7.123.2.40 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().

7.123.2.41 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().

7.123.2.42 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().

7.123.2.43 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().

7.123.2.44 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().

7.123.2.45 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().

7.123.2.46 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().

7.123.3 Variable Documentation**7.123.3.1 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().

7.124 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/certs.c File Reference

```
#include "xyssl/config.h"
```

Variables

- char [test_ca_cert](#) []
- char [test_ca_key](#) []
- char [test_ca_pwd](#) [] = "test"
- char [test_srv_cert](#) []
- char [test_srv_key](#) []
- char [test_cli_cert](#) []
- char [test_cli_key](#) []
- char [xyssl_ca_cert](#) []

7.124.1 Variable Documentation

7.124.1.1 char test_ca_cert[]

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"
"jlhEZRNB9el5SL6Jai/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/JYu1H+vkt31lWCy/9mxUnu+anW1DzxPwnjy41x6Mi0BD2qfKBWLjVS+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\(\)](#).

7.124.1.2 char test_ca_key[]

Definition at line 49 of file certs.c.

Referenced by [x509_self_test\(\)](#).

7.124.1.3 char test_ca_pwd[] = "test"

Definition at line 81 of file certs.c.

Referenced by x509_self_test().

7.124.1.4 char test_cli_crt[]

Initial value:

```
"-----BEGIN CERTIFICATE-----\r\n"
"MIIDPTCCAiWgAwIBAgIBATANBgkqhkiG9w0BAQUFADBFMQswCQYDVQQGEwJGUjE0\r\n"
"MAwGA1UEBxMFUGFyaXMxdjAMBGNVBAoTBVh5U1NMMRYwFAYDVQQDEw1YeVNTTCBU\r\n"
"ZXN0IENBMB4XDTA3MDcwNzA1MDEyMFoXDTA4MDcwNjA1MDEyMFowMDELMakGA1UE\r\n"
"BhMCRlIxdjAMBGNVBAoTBVh5U1NMMREwDwYDVQQDEwhKb2UgVXNlcjCCASIdQYJ\r\n"
"KoZiHvcNAQEBBQADggEPADCCAQoCggEBAKZkg8ANl6kGmLGqKc6KUHb9IsZwb2+K\r\n"
"jBw83Qb0KuvPVnu3MzEcXfV0Z83g0PL/z8ob5PKr8HP6bVYzhsD65imcCDEEVPk2\r\n"
"9x0XGTggGjB601Fd8aTShUWE4NLrKw6YNXTXgTndvhHNxXwqmdNVLkmZjj3ZwYUc\r\n"
"eE8eE5jHs8cMDXJLMCwgKIM7Sax220hSHQHKwifvO4/Fdw5G+Suys8PhMX2jDXM\r\n"
"ICFwq8ld+bZGoNUtgpp48FWhAMfJyTEaHh9LC46KkqGSDRIzx7/4cPB6QqrpzJN0o\r\n"
"Kr8kh7vdRDTFDm023D4C5l0Bw/2aC76DhEJpB2bGA4iIszJs+F/PIL8CAwEAAaNN\r\n"
"MEswCQYDVROTBAlwADAdBgNVHQ4EFgQUiWX1IvjrDYgt0zz5Sq16x01k0o4wHwYD\r\n"
"VR0jBBBgwFoAUvO4fm0j6K4PkpH1ew3VykhZMmcwDQYJKoZIhvcNAQEFBQADggEB\r\n"
"AGdqD7VthJmC+oeMUHk2TQX2wZNU+GsC+RLjtlencnky95KnljGvMtCznyLkS5D\r\n"
"faJLKfRlNo8pk5GrDscqgyIuQx5WnHNv4QBZmMsmvDICxzRQaxuPFHbS4aLXldeL\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().

7.124.1.5 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/ZoLvoOEQmkHZSYDiIizMmz4X88gvwIDAQABAoIBAE0nBKAjDVN+j4ax\r\n"
"lDjEwZKqxVkmAUXDBDyDrCjxRoWY2gz7YW1ALUMUbeV0f05v1zVrwbkUKKZeVBx\r\n"
"QA9zRw28H8A6tfvolHgrIcx4dixMh3ePC+DVDJ6zglvKV2ipAwBufKYIrX0r4Io2\r\n"
"ZqUrNg9CeEYNlkHWceaN12rhYwO82pgHxnB1p5pI42pY7lzyLgSddf5n+M5UBOJI\r\n"
"gsNckvbGdv7WQPVFTRDiRgEnCJ3rI8oPSK6MOUWJw3rh2hbKx+ex8NPvEKbzEXiU\r\n"
"p5j1AlbHIWP5sYBbAlYviFtryAV4fyfLcWpfoqa33Oozofjlwoj0Aixz+6rerLjZ\r\n"
"cpTSrAECgYEA2oCcfUo6HH3Lq9oeWhFCOyG3YjZmFrJaJwJHnvroX9/pXHqYKog\r\n"
"TeHcjUJBtFzW0klcetYbZCFqT8v9nf0uPlgaiVGctXf1MSbFXDUFKkYBiFwzdWMT\r\n"
"Ysmvfhf82jMWZ8ecsXTyDR1858R5WPZ52qEsCc5X2un7QENm6FtVT8CgYEAwwKS\r\n"
"zQNzuoJETqZX7AalMk3JM8Fdam+Qm5LNMcbvbkKI8HKMS1VMuqaR0XdAX/imXAx\r\n"
"PlVhSsmoSDbsMpxBEZlptpCen/GcqtITxANTakrBHxqb2aQ5EEu7SgzfHZWse3\r\n"
"vQEYfctFB1PdcZUDzk4/w7WmyivpYtCWoAh1IECgYEA0UYZ+1UJfVpapRj+swMP\r\n"
"DrQbo7i7t71UaFYLNpFX2OPLTWC5txqn1OruTu5VHDqE+5hneDNUUTT3uOg4B2q\r\n"
"mdmmaNjh2M6wz0e0BVfexhNQynqMaqTe32IOM8DFs3L0xaccg7JfVn6P7CeQGOVe\r\n"
"wc96kICw6ZxhtJSqpOGipt8CgYBI/OPw+IXxJK4nNSpe+u4vCYP5mUI9hKEFYCbt\r\n"
"qKwvyAUknn/zgiIQ+z/iSErFMPmlwXjvWi0gL/qPb+Fp4hCLX8u2zNhY08P4Gin\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().

7.124.1.6 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"
"TTBLMAkGA1UdEwQCAAAwHQYDVROBBYEFNkOyCTx64SDdPySGW1/tzD7/WMSMB8G\r\n"
"AlUdIwQYMBaAFZluH5jo+iuD5KR9XsN1cpMx2TJnMA0GCSqGSIb3DQEBBQUAA4IB\r\n"
"AQBelJv5t+suayq5Lo5bJneHjNZfgg8EigDQ7Nqaosv1QZAsh2N34Gg5YdkGyVdg\r\n"
"s32I/K5aaywUbg9qVXQxCM2T95qBqyK56h9yJoZKWQD9H//+zB8kCK/16WvRfv3\r\n"
"VA7eSR19qOFWlHe+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().

7.124.1.7 char test_srv_key[]

Initial value:

```
"-----BEGIN RSA PRIVATE KEY-----\r\n"
"MIIEowIBAAKCAQEAuNDw3Bk4Jh5Lep6Fw35I1bsp04jWAYI7Yi+7gNSnt7V0rWnB\r\n"
"HnEHpPzicWKmK+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+CjPIqIHchlKexUnvdN9++1oEx6AbuZ8T\r\n"
"4avhFYZQP15tZNGsk2LfQlYS/NfbowkCsd0/TVubJBmDGUML/E5MbxjxLz1aNB2M\r\n"
"V59cBNngsgA35CODAUf4xOyoSfZGqG1Rb9qQrv1E6Jz56dG8SsKF3HqnDjxiPOVBN\r\n"
"FBnVJ+ECgYEA29MhAsKMM4XqBUKp6pIMFTgm/s1E5vxiG70vqiL+guvBhhQ7zsl\r\n"
"8UMTNXzOME1NoB/ev9fN0Cjc1Vr46b/x/yDw7wMb96i+vzEN0zu4RHWi3OWpCPbp\r\n"
"qBKEi3hzN8M+BulPX8CDQx3aLRrfxw51J5EuA0NeybngbItgxTi0u6kCgYEA1zr0\r\n"
"6P5YdOhYHTSWD1keD49MApcVuzaHnsHZVAhUqu3Rwiy9LRaJLZfr7fQDb9DYJbZp\r\n"
"sxTRLG6LSAcSR7mw+m+GvNqGt/9pSqbtW+L/VwVWSyF+YYklxZUD3UAAyrDVcDEC\r\n"
"a5S+jad4Csi/1VHt5ulWlckWl1fJvadnSubKNDCcGYA+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().

7.124.1.8 char xyssl_ca_crt[]

Initial value:

```
"-----BEGIN CERTIFICATE-----\r\n"
"MIID4DCCAsigAwIBAgIJAOLw9BMV1jxMMA0GCSqGSIb3DQEBBQUAMFMxCzAJBgNV\r\n"
"BAYTAKZSMQ4wDAYDVQQIEwVQYXJpczEOMAwGA1UEChMFWH1TU0wxJDAiBgNVBAMT\r\n"
"G1h5U1NMIENlcnRpZmljYXRlIEF1dGhvcml0eTAeFw0wNjEwMzEyMjU5MjRaFw0x\r\n"
"NjEwMzEyMjU5MjRaMFmxCzAJBgNVBAYTAKZSMQ4wDAYDVQQIEwVQYXJpczEOMAwG\r\n"
"AlUEChMFWH1TU0wxJDAiBgNVBAMTG1h5U1NMIENlcnRpZmljYXRlIEF1dGhvcml0\r\n"
"eTCCASIwDQYJKoZIhvcNAQEBBQADggEPADCCAQoCggEBAKnprf1RQ7IYPI3FmI/h\r\n"
"f2EJGfaiP+Jt551VZWFrs3A56Nn4KS57zTAKZUA7YGBLwLAznfaphJ7SvENALeZR\r\n"
"/J0c/n9jwMpfXReQL7RVpgg/zlR+t2DUI3DAwigPZiHHCSJSBC73vpMc6uH0eV2d\r\n"
"itqjjUnJG5F8Zg9/gX4UMRAdlwGWqxvs+jc9i0XFKOEzga8+rOn6WvKyBM4e20I\r\n"
"HcO4BPF92d6sm4qLgyR4oXUkBz6NfDwX8ZdTvXuRaK9qMy1327cCT48sis9F6/eK\r\n"
"QAx0VHlqGtTxDYjHJPsmLNejuyUDvsaC8TMCSpFTXpMTUvJdmxsF1LZWmIo5lY5\r\n"
"zh0CAwEAAaOBtjCBszAdBgNVHQ4EFgQUBlVzoNjrkkgPkj8xjuFvVP2E4GswgYMG\r\n"
"AlUdIwR8MHqAFaZVc6DSa5JID5CFMY7hb1T9hOBroVekVTBTMQswCQYDVQQGEwJG\r\n"
"UjEOMAwGA1UECBMFUGFyaXMxDjAMBGNVBAoTBVh5U1NMMSQwIgYDVQQDEtYeVNT\r\n"
"TCBDZXJ0aWZpY2F0ZSBDbXR0b3JpdHmCCQDi8PQTFdY8TDAMBGNVHRMEBTADAQH\r\n"
"MA0GCSqGSIb3DQEBBQUAA4IBAQCgD65b2l5BASFSpVlrcRnLzu/99eWTVAJwJbbD\r\n"
"VhPAQiET0W4U/85EDK7uoFo/SEjyMB/m4T20A8FIDaK7jBPo/1gtbuQjGMR17h+z\r\n"
"F2iGuNh26Td26Uzqclt3oiFtSvDRoZ/9kqkEy7Lrs7FBzOmvfTvrqvAdf7cLMA2D\r\n"
"ri/otDpzPr4XoDnwd4C+4bQC/Gr3Uder4VAeTOJtKdGqfYLVpWPSPVBDuVLUybKi\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().

7.125 /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_crt](#) (ssl_context *ssl, int level, char *file, int line, char *text, x509_cert *crt)

7.125.1 Function Documentation

7.125.1.1 char* debug_fmt (const char *format, ...)

Definition at line 38 of file debug.c.

References vsnprintf.

7.125.1.2 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.

7.125.1.3 void debug_print_crt (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().

7.125.1.4 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_crt().

7.125.1.5 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`.

7.125.1.6 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`.

7.126 /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]

7.126.1 Define Documentation

7.126.1.1 #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\(\)](#).

7.126.1.2 #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().

7.126.1.3 #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().

7.126.1.4 #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().

7.126.1.5 #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().

7.126.1.6 #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().

7.126.2 Function Documentation

7.126.2.1 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().

7.126.2.2 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().

7.126.2.3 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().

7.126.2.4 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().

7.126.2.5 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().

7.126.2.6 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().

7.126.2.7 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()`.

7.126.2.8 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()`.

7.126.2.9 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()`.

7.126.2.10 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().

7.126.2.11 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().

7.126.2.12 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().

7.126.2.13 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().

7.126.2.14 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().

7.126.3 Variable Documentation

7.126.3.1 `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().

7.126.3.2 `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().

7.126.3.3 `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().

7.126.3.4 `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().

7.126.3.5 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().

7.126.3.6 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().

7.126.3.7 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().

7.126.3.8 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().

7.126.3.9 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().

7.126.3.10 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.

7.126.3.11 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.

7.126.3.12 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.

7.126.3.13 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.

7.126.3.14 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.

7.126.3.15 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.

7.126.3.16 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.

7.126.3.17 `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.

7.127 /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.

7.127.1 Define Documentation

7.127.1.1 #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\(\)](#).

7.127.2 Function Documentation

7.127.2.1 `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().

7.127.2.2 `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().

7.127.2.3 `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().

7.127.2.4 **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
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().

7.127.2.5 **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().

7.127.2.6 **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().

7.127.2.7 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().

7.127.2.8 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.

7.128 /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.

7.128.1 Define Documentation

7.128.1.1 #define ONE_ITERATION

Definition at line 60 of file havege.c.

Referenced by [havege_fill\(\)](#).

7.128.1.2 #define SWAP(X, Y) { int *T = X; X = Y; Y = T; }

Definition at line 52 of file havege.c.

7.128.1.3 #define TST1_ENTER if(PTEST & 1) { PTEST ^= 3; PTEST >>= 1;

Definition at line 54 of file havege.c.

7.128.1.4 #define TST1_LEAVE U1++; }

Definition at line 57 of file havege.c.

7.128.1.5 `#define TST2_ENTER if(PTEST & 1) { PTEST ^= 3; PTEST >>= 1;`

Definition at line 55 of file havege.c.

7.128.1.6 `#define TST2_LEAVE U2++; }`

Definition at line 58 of file havege.c.

7.128.2 Function Documentation

7.128.2.1 `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().

7.128.2.2 `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().

7.128.2.3 `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().

7.129 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/md2.c File Reference

```
#include "xyssl/config.h"
```

7.130 /home/dko/Projects/mobilec/src/security/xyssl-0.9/library/md4.c File Reference

```
#include "xyssl/config.h"
```

7.131 /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]

7.131.1 Define Documentation

7.131.1.1 `#define F(x, y, z) (y ^ (x | ~z))`

7.131.1.2 `#define F(x, y, z) (x ^ y ^ z)`

7.131.1.3 `#define F(x, y, z) (y ^ (z & (x ^ y)))`

7.131.1.4 `#define F(x, y, z) (z ^ (x & (y ^ z)))`

Referenced by `sha2_process()`, and `sha4_process()`.

7.131.1.5 `#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`.

7.131.1.6 `#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()`.

7.131.1.7 #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.

7.131.1.8 #define S(x, n) ((x << n) | ((x & 0xFFFFFFFF) >> (32 - n)))**7.131.2 Function Documentation****7.131.2.1 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().

7.131.2.2 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().

7.131.2.3 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().

7.131.2.4 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().

7.131.2.5 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().

7.131.2.6 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().

7.131.2.7 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().

7.131.2.8 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().

7.131.2.9 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().

7.131.2.10 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().

7.131.2.11 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().

7.131.3 Variable Documentation**7.131.3.1 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().

```
7.131.3.2  const int md5_hmac_test_bufllen[7]  [static]
```

Initial value:

$$\{8, 28, 50, 50, 20, 54, 73\}$$

Definition at line 469 of file md5.c.

Referenced by md5_self_test().

7.131.3.3 unsigned char md5_hmac_test_key[71][26] [static]

Initial value:

[illegible]

Definition at line 432 of file md5.c.

Referenced by md5_self_test().

```
7.131.3.4  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().

```
7.131.3.5  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().

7.131.3.6 `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().

7.131.3.7 `unsigned char md5_test_buf[7][81] [static]`

Initial value:

```
{
    { "" },
    { "a" },
    { "abc" },
    { "message digest" },
    { "abcdefghijklmnopqrstuvwxy" },
    { "ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxy0123456789" },
    { "12345678901234567890123456789012345678901234567890123456789012"
      "345678901234567890" }
}
```

Definition at line 394 of file md5.c.

Referenced by md5_self_test().

7.131.3.8 `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().

7.131.3.9 `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().

7.132 /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.

7.132.1 Function Documentation

7.132.1.1 `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 net_is_blocking(), XYSSL_ERR_NET_ACCEPT_FAILED, and XYSSL_ERR_NET_TRY_AGAIN.

Referenced by main(), and ssl_test().

7.132.1.2 `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().

7.132.1.3 `void net_close (int fd)`

Gracefully shutdown the connection.

Definition at line 338 of file net.c.

Referenced by main(), and ssl_test().

7.132.1.4 `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().

7.132.1.5 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().

7.132.1.6 static int net_is_blocking (void) [static]

Definition at line 190 of file net.c.

Referenced by net_accept(), net_recv(), and net_send().

7.132.1.7 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().

7.132.1.8 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().

7.132.1.9 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.

7.132.1.10 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().

7.132.1.11 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.

7.133 /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"
```

7.134 /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.

7.134.1 Define Documentation

7.134.1.1 #define KEY_LEN 128

Definition at line 573 of file `rsa.c`.

Referenced by `rsa_self_test()`.

7.134.1.2 #define PT_LEN 24

Definition at line 620 of file `rsa.c`.

Referenced by `rsa_self_test()`.

7.134.1.3 #define RSA_D

Value:

```
"24BF6185468786FDD303083D25E64EFC" \
    "66CA472BC44D253102F8B4A9D3BFA750" \
    "91386C0077937FE33FA325D28855837" \
    "AE1B484A8A9A45F7EE8C0C634F99E8CD" \
    "DF79C5CE07EE72C7F123142198164234" \
    "CABB724CF78B8173B9F880FC86322407" \
    "AF1FEDFDDE2BEB674CA15F3E81A1521E" \
    "071513A1E85B5DFA031F21ECAE91A34D"
```

Definition at line 586 of file `rsa.c`.

Referenced by `rsa_self_test()`.

7.134.1.4 #define RSA_DP

Value:

```
"C1ACF567564274FB07A0BBAD5D26E298" \
    "3C94D22288ACD763FD8E5600ED4A702D" \
    "F84198A5F06C2E72236AE490C93F07F8" \
    "3CC559CD27BC2D1CA488811730BB5725"
```

Definition at line 605 of file rsa.c.

Referenced by rsa_self_test().

7.134.1.5 #define RSA_DQ

Value:

```
"4959CBF6F8FEF750AEE6977C155579C7" \
    "D8AAEA56749EA28623272E4F7D0592AF" \
    "7C1F1313CAC9471B5C523BFE592F517B" \
    "407A1BD76C164B93DA2D32A383E58357"
```

Definition at line 610 of file rsa.c.

Referenced by rsa_self_test().

7.134.1.6 #define RSA_E "10001"

Definition at line 584 of file rsa.c.

Referenced by rsa_self_test().

7.134.1.7 #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().

7.134.1.8 #define RSA_P

Value:

```
"C36D0EB7FCD285223CFB5AABA5BDA3D8" \
    "2C01CAD19EA484A87EA4377637E75500" \
    "FCB2005C5C7DD6EC4AC023CDA285D796" \
    "C3D9E75E1EFC42488BB4F1D13AC30A57"
```

Definition at line 595 of file rsa.c.

Referenced by rsa_self_test().

7.134.1.9 #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().

7.134.1.10 #define RSA_Q

Value:

```
"C000DF51A7C77AE8D7C7370C1FF55B69" \
"E211C2B9E5DB1ED0BF61D0D9899620F4" \
"910E4168387E3C30AA1E00C339A79508" \
"8452DD96A9A5EA5D9DCA68DA636032AF"
```

Definition at line 600 of file rsa.c.

Referenced by rsa_self_test().

7.134.1.11 #define RSA_QP

Value:

```
"9AE7FBC99546432DF71896FC239EADAE" \
"F38D18D2B2F0E2DD275AA977E2BF4411" \
"F5A3B2A5D33605AEBBCCBA7FEB9F2D2F" \
"A74206CEC169D74BF5A8C50D6F48EA08"
```

Definition at line 615 of file rsa.c.

Referenced by rsa_self_test().

7.134.2 Function Documentation

7.134.2.1 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()`.

7.134.2.2 `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()`.

7.134.2.3 `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()`.

7.134.2.4 `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()`.

7.134.2.5 `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()`.

7.134.2.6 `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`, `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()`.

7.134.2.7 `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()`.

7.134.2.8 `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().

7.134.2.9 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, 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().

7.134.2.10 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()`.

7.134.2.11 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()`.

7.134.2.12 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()`.

7.135 /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]

7.135.1 Define Documentation

7.135.1.1 `#define F(x, y, z) (x ^ y ^ z)`

7.135.1.2 `#define F(x, y, z) ((x & y) | (z & (x | y)))`

7.135.1.3 `#define F(x, y, z) (x ^ y ^ z)`

7.135.1.4 `#define F(x, y, z) (z ^ (x & (y ^ z)))`

7.135.1.5 `#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.

7.135.1.6 `#define K 0xCA62C1D6`

7.135.1.7 `#define K 0x8F1BBCDC`

7.135.1.8 `#define K 0x6ED9EBA1`

7.135.1.9 `#define K 0x5A827999`

Referenced by sha4_process().

7.135.1.10 `#define P(a, b, c, d, e, x)`

Value:

```
{
    e += S(a,5) + F(b,c,d) + K + x; b = S(b,30);
}
```

7.135.1.11 `#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.

7.135.1.12 `#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().

7.135.1.13 `#define S(x, n) ((x << n) | ((x & 0xFFFFFFFF) >> (32 - n)))`

7.135.2 Function Documentation

7.135.2.1 `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().

7.135.2.2 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().

7.135.2.3 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().

7.135.2.4 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().

7.135.2.5 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().

7.135.2.6 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().

7.135.2.7 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().

7.135.2.8 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().

7.135.2.9 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().

7.135.2.10 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().

7.135.2.11 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().

7.135.3 Variable Documentation

7.135.3.1 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().

7.135.3.2 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().

7.135.3.3 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().

7.135.3.4 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().

7.135.3.5 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().

7.135.3.6 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().

7.135.3.7 unsigned char sha1_test_buf[3][57] [static]**Initial value:**

```
{
    { "abc" },
    { "abcdbcdecdefdefgfegefghfghighijhi jkijkljklmklmnlmnomnopnopq" },
    { "" }
}
```

Definition at line 430 of file sha1.c.

Referenced by sha1_self_test().

7.135.3.8 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().

7.135.3.9 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().

7.136 /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]

7.136.1 Define Documentation

7.136.1.1 `#define F0(x, y, z) ((x & y) | (z & (x | y)))`

7.136.1.2 `#define F1(x, y, z) (z ^ (x & (y ^ z)))`

7.136.1.3 `#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.

7.136.1.4 `#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; \
}
```

7.136.1.5 #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.

7.136.1.6 #define R(t)**Value:**

```

(
    W[t] = S1(W[t - 2]) + W[t - 7] + \
           S0(W[t - 15]) + W[t - 16] \
)

```

7.136.1.7 #define ROTR(x, n) (SHR(x,n) | (x << (32 - n)))**7.136.1.8 #define S0(x) (ROTR(x, 7) ^ ROTR(x,18) ^ SHR(x, 3))**

Referenced by sha4_process().

7.136.1.9 #define S1(x) (ROTR(x,17) ^ ROTR(x,19) ^ SHR(x,10))

Referenced by sha4_process(), and tls1_prf().

7.136.1.10 #define S2(x) (ROTR(x, 2) ^ ROTR(x,13) ^ ROTR(x,22))

Referenced by tls1_prf().

7.136.1.11 #define S3(x) (ROTR(x, 6) ^ ROTR(x,11) ^ ROTR(x,25))**7.136.1.12 #define SHR(x, n) ((x & 0xFFFFFFFF) >> n)****7.136.2 Function Documentation****7.136.2.1 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().

7.136.2.2 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().

7.136.2.3 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().

7.136.2.4 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().

7.136.2.5 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().

7.136.2.6 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().

7.136.2.7 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().

7.136.2.8 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().

7.136.2.9 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().

7.136.2.10 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().

7.136.2.11 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().

Definition at line 487 of file sha2.c.

Referenced by sha2_self_test().

7.136.3.4 `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().

7.136.3.5 `const unsigned char sha2_hmac_test_sum[14][32] [static]`

Definition at line 533 of file sha2.c.

Referenced by sha2_self_test().

7.136.3.6 `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().

7.136.3.7 `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().

7.136.3.8 `const int sha2_test_bufllen[3] [static]`

Initial value:

```
{
    3, 56, 1000
}
```

Definition at line 444 of file sha2.c.

Referenced by sha2_self_test().

7.136.3.9 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().

7.137 /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]

7.137.1 Define Documentation

7.137.1.1 `#define F0(x, y, z) ((x & y) | (z & (x | y)))`

7.137.1.2 `#define F1(x, y, z) (z ^ (x & (y ^ z)))`

7.137.1.3 `#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().

7.137.1.4 `#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;
}

```

7.137.1.5 #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().

7.137.1.6 #define ROTR(x, n) (SHR(x,n) | (x << (64 - n)))

7.137.1.7 #define S0(x) (ROTR(x, 1) ^ ROTR(x, 8) ^ SHR(x, 7))

7.137.1.8 #define S1(x) (ROTR(x,19) ^ ROTR(x,61) ^ SHR(x, 6))

7.137.1.9 #define S2(x) (ROTR(x,28) ^ ROTR(x,34) ^ ROTR(x,39))

7.137.1.10 #define S3(x) (ROTR(x,14) ^ ROTR(x,18) ^ ROTR(x,41))

7.137.1.11 #define SHR(x, n) (x >> n)

7.137.2 Function Documentation

7.137.2.1 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().

7.137.2.2 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().

7.137.2.3 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 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().

7.137.2.4 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().

7.137.2.5 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().

7.137.2.6 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().

7.137.2.7 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().

7.137.2.8 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().

7.137.2.9 `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()`.

7.137.2.10 `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()`.

7.137.2.11 `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`, `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()`.

7.137.3 Variable Documentation

7.137.3.1 `const unsigned int64 K[80] [static]`

Definition at line 69 of file sha4.c.

Definition at line 506 of file sha4.c.

Referenced by sha4_self_test().

7.137.3.5 `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().

7.137.3.6 `const unsigned char sha4_hmac_test_sum[14][64] [static]`

Definition at line 552 of file sha4.c.

Referenced by sha4_self_test().

7.137.3.7 `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().

7.137.3.8 `unsigned char sha4_test_buf[3][113] [static]`

Initial value:

```
{
    { "abc" },
    { "abcdefghijklghicdefghijdefghijkefghijklfghijklmghijklmn"
      "hijklmnoijklmnopjklmnopqklmnopqrlmnopqrsmnopqrstnopqrstu" },
    { "" }
}
```

Definition at line 437 of file sha4.c.

Referenced by sha4_self_test().

7.137.3.9 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().

7.137.3.10 const unsigned char sha4_test_sum[6][64] [static]

Definition at line 450 of file sha4.c.

Referenced by sha4_self_test().

7.138 /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)

7.138.1 Function Documentation

7.138.1.1 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()`.

7.138.1.2 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()`.

7.138.1.3 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().

7.138.1.4 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().

7.138.1.5 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().

7.138.1.6 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().

7.138.1.7 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().

7.138.1.8 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().

7.139 /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)

7.139.1 Function Documentation

7.139.1.1 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()`.

7.139.1.2 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().

7.139.1.3 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().

7.139.1.4 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().

7.139.1.5 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().

7.139.1.6 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().

7.139.1.7 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().

7.139.1.8 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().

7.140 /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` []

7.140.1 Function Documentation

7.140.1.1 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()`.

7.140.1.2 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()`.

7.140.1.3 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()`.

7.140.1.4 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().

7.140.1.5 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().

7.140.1.6 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().

7.140.1.7 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().

7.140.1.8 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().

7.140.1.9 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()`.

7.140.1.10 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`.

7.140.1.11 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()`.

7.140.1.12 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()`.

7.140.1.13 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()`.

7.140.1.14 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()`.

7.140.1.15 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()`.

7.140.1.16 `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()`.

7.140.1.17 `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_hhlen`, `_ssl_context::in_msg`, `_ssl_context::in_msglen`, `_ssl_context::in_msgtype`, `_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_crt()`, `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()`.

7.140.1.18 `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()`.

7.140.1.19 `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_hhlen`, `_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()`.

7.140.1.20 `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()`.

7.140.1.21 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_hrlen`, `_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()`.

7.140.1.22 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()`.

7.140.1.23 `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()`.

7.140.1.24 `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()`.

7.140.1.25 `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()`.

7.140.1.26 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()`.

7.140.1.27 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()`.

7.140.1.28 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()`.

7.140.1.29 `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()`.

7.140.1.30 `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()`.

7.140.1.31 `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()`.

7.140.1.32 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().

7.140.1.33 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().

7.140.1.34 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()`.

7.140.1.35 `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()`.

7.140.1.36 `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()`.

7.140.1.37 `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()`.

7.140.1.38 `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()`.

7.140.1.39 `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()`.

7.140.2 Variable Documentation

7.140.2.1 `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()`.

7.141 /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

7.141.1 Function Documentation

7.141.1.1 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()`.

7.141.1.2 unsigned long hardclock (void)

Return the CPU cycle counter value.

Definition at line 155 of file timing.c.

References `tv_init`.

Referenced by `main()`.

7.141.1.3 void m_sleep (int milliseconds)

Sleep for a certain amount of time.

Definition at line 258 of file timing.c.

7.141.1.4 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()`.

7.141.1.5 static void sighandler (int signum) [static]

Definition at line 245 of file timing.c.

Referenced by `set_alarm()`.

7.141.2 Variable Documentation

7.141.2.1 int alarmed = 0

Definition at line 179 of file timing.c.

Referenced by `main()`.

7.141.2.2 int hardclock_init = 0 [static]

Definition at line 152 of file timing.c.

7.141.2.3 struct timeval tv_init [static]

Definition at line 153 of file timing.c.

Referenced by hardclock().

7.142 /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.

7.142.1 Function Documentation

7.142.1.1 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\(\)](#).

7.142.1.2 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\(\)](#).

7.142.1.3 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\(\)](#).

7.142.1.4 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()`.

7.142.1.5 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()`.

7.142.1.6 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()`.

7.142.1.7 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()`.

7.142.1.8 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()`.

7.142.1.9 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().

7.142.1.10 `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().

7.142.1.11 `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().

7.142.1.12 `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().

7.142.1.13 `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().

7.142.1.14 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().

7.142.1.15 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().

7.142.1.16 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().

7.142.1.17 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().

7.142.1.18 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().

7.142.1.19 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()`.

7.142.1.20 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()`.

7.142.1.21 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_crtdfile()`.

7.142.1.22 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().

7.142.1.23 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().

7.142.1.24 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().

7.142.1.25 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().

7.142.1.26 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().

7.142.1.27 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().

7.143 /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[])

7.143.1 Define Documentation

7.143.1.1 #define MODE_DECRYPT 1

Definition at line 42 of file aescript2.c.

7.143.1.2 #define MODE_ENCRYPT 0

Definition at line 41 of file aescript2.c.

7.143.1.3 #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\(\)](#).

7.143.2 Function Documentation

7.143.2.1 `int main (int argc, char * argv[])`

Definition at line 50 of file aesencrypt2.c.

References `aes_crypt_ecb()`, `AES_DECRYPT`, `AES_ENCRYPT`, `aes_setkey_dec()`, `aes_setkey_enc()`, `MODE_DECRYPT`, `MODE_ENCRYPT`, `sha2_finish()`, `sha2_hmac_finish()`, `sha2_hmac_starts()`, `sha2_hmac_update()`, `sha2_starts()`, `sha2_update()`, and `USAGE`.

7.144 /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)

7.144.1 Function Documentation

7.144.1.1 int main (void)

Definition at line 29 of file hello.c.

References [md5\(\)](#).

7.145 /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[])

7.145.1 Function Documentation

7.145.1.1 int main (int *argc*, char * *argv*[])

Definition at line 131 of file md5sum.c.

References [md5_check\(\)](#), and [md5_print\(\)](#).

7.145.1.2 static int md5_check (char * *filename*) [static]

Definition at line 58 of file md5sum.c.

References [buf](#), [f](#), and [md5_wrapper\(\)](#).

Referenced by [main\(\)](#).

7.145.1.3 static int md5_print (char * *filename*) [static]

Definition at line 43 of file md5sum.c.

References [md5_wrapper\(\)](#).

Referenced by [main\(\)](#).

7.145.1.4 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\(\)](#).

7.146 /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[])

7.146.1 Function Documentation

7.146.1.1 int main (int *argc*, char * *argv*[])

Definition at line 131 of file sha1sum.c.

References [sha1_check\(\)](#), and [sha1_print\(\)](#).

7.146.1.2 static int sha1_check (char * *filename*) [static]

Definition at line 58 of file sha1sum.c.

References [buf](#), [f](#), and [sha1_wrapper\(\)](#).

Referenced by [main\(\)](#).

7.146.1.3 static int sha1_print (char * *filename*) [static]

Definition at line 43 of file sha1sum.c.

References [sha1_wrapper\(\)](#).

Referenced by [main\(\)](#).

7.146.1.4 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\(\)](#).

7.147 /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[])

7.147.1 Function Documentation

7.147.1.1 int main (int *argc*, char * *argv*[])

Definition at line 131 of file sha2sum.c.

References [sha2_check\(\)](#), and [sha2_print\(\)](#).

7.147.1.2 static int sha2_check (char * *filename*) [static]

Definition at line 58 of file sha2sum.c.

References [buf](#), [f](#), and [sha2_wrapper\(\)](#).

Referenced by [main\(\)](#).

7.147.1.3 static int sha2_print (char * *filename*) [static]

Definition at line 43 of file sha2sum.c.

References [sha2_wrapper\(\)](#).

Referenced by [main\(\)](#).

7.147.1.4 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\(\)](#).

7.148 /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)`

7.148.1 Define Documentation

7.148.1.1 `#define SERVER_NAME "localhost"`

Definition at line 35 of file `dh_client.c`.

Referenced by `main()`.

7.148.1.2 `#define SERVER_PORT 11999`

Definition at line 36 of file `dh_client.c`.

Referenced by `main()`.

7.148.2 Function Documentation

7.148.2.1 `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()`.

7.149 /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)

7.149.1 Define Documentation

7.149.1.1 #define DH_P_SIZE 1024

Definition at line 35 of file dh_genprime.c.

Referenced by main().

7.149.1.2 #define GENERATOR "4"

Definition at line 36 of file dh_genprime.c.

Referenced by main().

7.149.2 Function Documentation

7.149.2.1 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](#).

7.150 /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)

7.150.1 Define Documentation

7.150.1.1 #define [PLAINTEXT](#) "==Hello there!=="

Definition at line 36 of file dh_server.c.

Referenced by [main\(\)](#).

7.150.1.2 #define [SERVER_PORT](#) 11999

Definition at line 35 of file dh_server.c.

7.150.2 Function Documentation

7.150.2.1 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\(\)](#).

7.151 /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)

7.151.1 Function Documentation

7.151.1.1 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`.

7.152 /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)`

7.152.1 Define Documentation

7.152.1.1 `#define EXPONENT 65537`

Definition at line 33 of file `rsa_genkey.c`.

7.152.1.2 `#define KEY_SIZE 1024`

Definition at line 32 of file `rsa_genkey.c`.

7.152.2 Function Documentation

7.152.2.1 `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`.

7.153 /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[])

7.153.1 Function Documentation

7.153.1.1 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()`.

7.154 /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[])

7.154.1 Function Documentation

7.154.1.1 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()`.

7.155 /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)

7.155.1 Define Documentation

7.155.1.1 #define [DEBUG_LEVEL](#) 0

Definition at line 42 of file ssl_client1.c.

Referenced by [my_debug\(\)](#).

7.155.1.2 #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\(\)](#).

7.155.1.3 #define [SERVER_NAME](#) "xyssl.org"

Definition at line 37 of file ssl_client1.c.

7.155.1.4 #define [SERVER_PORT](#) 443

Definition at line 32 of file ssl_client1.c.

7.155.2 Function Documentation

7.155.2.1 `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`.

7.155.2.2 `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()`.

7.156 /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)`

7.156.1 Define Documentation

7.156.1.1 `#define DEBUG_LEVEL 0`

Definition at line 44 of file `ssl_client2.c`.

7.156.1.2 `#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`.

7.156.1.3 `#define SERVER_NAME "xyssl.org"`

Definition at line 39 of file `ssl_client2.c`.

7.156.1.4 `#define SERVER_PORT 443`

Definition at line 34 of file `ssl_client2.c`.

7.156.2 Function Documentation

7.156.2.1 `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`.

7.156.2.2 `void my_debug (void *ctx, int level, char *str)`

Definition at line 46 of file `ssl_client2.c`.

References `DEBUG_LEVEL`.

7.157 /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](#)

7.157.1 Define Documentation

7.157.1.1 #define [DEBUG_LEVEL](#) 0

Definition at line 75 of file ssl_server.c.

7.157.1.2 #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()`.

7.157.2 Function Documentation

7.157.2.1 `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`.

7.157.2.2 `void my_debug (void * ctx, int level, char * str)`

Definition at line 77 of file `ssl_server.c`.

References `DEBUG_LEVEL`.

7.157.2.3 `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()`.

7.157.2.4 `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()`.

7.157.3 Variable Documentation

7.157.3.1 `ssl_session* cur`

Definition at line 91 of file `ssl_server.c`.

Referenced by `http_GetToken()`, `http_ParseRequest()`, and `x509parse_verify()`.

7.157.3.2 `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().

7.157.3.3 char* my_dhm_G = "4"

Definition at line 58 of file ssl_server.c.

Referenced by main().

7.157.3.4 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().

7.157.3.5 ssl_session * prv

Definition at line 91 of file ssl_server.c.

Referenced by aes_self_test(), and des_self_test().

7.157.3.6 ssl_session* s_list_1st = NULL

Definition at line 90 of file ssl_server.c.

7.158 /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]

7.158.1 Define Documentation

7.158.1.1 #define BUFSIZE 1024

Definition at line 41 of file benchmark.c.

Referenced by [main\(\)](#).

7.158.2 Function Documentation

7.158.2.1 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()`.

7.158.2.2 static int myrand (void * rng_state) [static]

Definition at line 43 of file `benchmark.c`.

Referenced by `main()`.

7.158.3 Variable Documentation

7.158.3.1 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_End()`, `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()`.

7.159 /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[])`

7.159.1 Function Documentation

7.159.1.1 `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()`.

7.160 /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 int [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

7.160.1 Define Documentation

7.160.1.1 **#define COMMAND_BOTH 3**

Definition at line 44 of file `ssl_test.c`.

Referenced by `main()`.

7.160.1.2 **#define COMMAND_READ 1**

Definition at line 42 of file `ssl_test.c`.

Referenced by `main()`, and `ssl_test()`.

7.160.1.3 **#define COMMAND_WRITE 2**

Definition at line 43 of file `ssl_test.c`.

Referenced by `main()`, and `ssl_test()`.

7.160.1.4 **#define DFL_BUFFER_SIZE 1024**

Definition at line 51 of file `ssl_test.c`.

Referenced by `main()`.

7.160.1.5 **#define DFL_COMMAND COMMAND_READ**

Definition at line 50 of file `ssl_test.c`.

Referenced by `main()`.

7.160.1.6 **#define DFL_CONN_TIMEOUT 0**

Definition at line 54 of file `ssl_test.c`.

Referenced by `main()`.

7.160.1.7 **#define DFL_DEBUG_LEVEL 0**

Definition at line 53 of file `ssl_test.c`.

Referenced by `main()`.

7.160.1.8 #define DFL_FORCE_CIPHER 0

Definition at line 58 of file ssl_test.c.

Referenced by main(), and ssl_test().

7.160.1.9 #define DFL_IOMODE IOMODE_BLOCK

Definition at line 47 of file ssl_test.c.

Referenced by main().

7.160.1.10 #define DFL_MAX_BYTES 0

Definition at line 52 of file ssl_test.c.

Referenced by main().

7.160.1.11 #define DFL_MAX_CONNECTIONS 0

Definition at line 55 of file ssl_test.c.

Referenced by main().

7.160.1.12 #define DFL_OPMODE OPMODE_NONE

Definition at line 46 of file ssl_test.c.

Referenced by main().

7.160.1.13 #define DFL_SERVER_NAME "localhost"

Definition at line 48 of file ssl_test.c.

Referenced by main().

7.160.1.14 #define DFL_SERVER_PORT 4433

Definition at line 49 of file ssl_test.c.

Referenced by main().

7.160.1.15 #define DFL_SESSION_LIFETIME 86400

Definition at line 57 of file ssl_test.c.

Referenced by main().

7.160.1.16 #define DFL_SESSION_REUSE 1

Definition at line 56 of file ssl_test.c.

Referenced by main().

7.160.1.17 #define IOMODE_BLOCK 0

Definition at line 39 of file ssl_test.c.

Referenced by main().

7.160.1.18 #define IOMODE_NONBLOCK 1

Definition at line 40 of file ssl_test.c.

Referenced by main(), and ssl_test().

7.160.1.19 #define OPMODE_CLIENT 1

Definition at line 36 of file ssl_test.c.

Referenced by main(), and ssl_test().

7.160.1.20 #define OPMODE_NONE 0

Definition at line 35 of file ssl_test.c.

7.160.1.21 #define OPMODE_SERVER 2

Definition at line 37 of file ssl_test.c.

Referenced by main(), and ssl_test().

7.160.1.22 #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.

7.160.2 Function Documentation

7.160.2.1 unsigned long int lc ppm5 (unsigned long int * state)

Definition at line 96 of file ssl_test.c.

Referenced by ssl_test().

7.160.2.2 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(), USAGE, and usage().

7.160.2.3 void my_debug (void * ctx, int level, char * str)

Definition at line 113 of file ssl_test.c.

7.160.2.4 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_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.

Referenced by main().

7.160.3 Variable Documentation

7.160.3.1 char* dhm_G = "4"

Definition at line 63 of file ssl_test.c.

Referenced by ssl_test().

7.160.3.2 char* dhm_P

Initial value:

```
"E4004C1F94182000103D883A448B3F802CE4B44A83301270002C20D0321CFD00"  
"11CCEF784C26A400F43DFB901BCA7538F2C6B176001CF5A0FD16D2C48B1D0C1C"  
"F6AC8E1DA6BCC3B4E1F96B0564965300FFA1D0B601EB2800F489AA512C4B248C"  
"01F76949A60BB7F00A40B1EAB64BDD48E8A700D60B7F1200FA8E77B0A979DABF"
```

Definition at line 64 of file ssl_test.c.

Referenced by ssl_test().

7.160.3.3 int server_fd = -1

Definition at line 70 of file ssl_test.c.

7.161 /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[])

7.161.1 Function Documentation

7.161.1.1 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\(\)](#).

7.161.1.2 void print_usage ()

Definition at line 11 of file mc_genkey.c.

Referenced by [main\(\)](#).

7.162 /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__file \(agent_p agent, int index, agent_file_data_t *agent_file_data\)](#)
- [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 \(void *data, int index, int *extent, ChType_t type, int dim, int extent_index\)](#)

7.162.1 Function Documentation

7.162.1.1 [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\(\)](#), and [mxmlLoadString\(\)](#).

Referenced by [message_InitializeFromAgent\(\)](#).

7.162.1.2 [mxml_node_t* agent_xml_compose__agent_code \(agent_p agent, int index\)](#)

Definition at line 571 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\(\)](#), and [xml_new_cdata\(\)](#).

Referenced by [agent_xml_compose__tasks\(\)](#).

7.162.1.3 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(), and mxmlNewElement().

Referenced by agent_xml_compose__mobile_agent().

7.162.1.4 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 622 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(), and mxmlNewText().

Referenced by agent_xml_compose__create_row_nodes(), and agent_xml_compose__row().

7.162.1.5 mxml_node_t* agent_xml_compose__data (agent_p agent, int index, interpreter_variable_data_t * interp_variable)

Definition at line 478 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(), and interpreter_variable_data_s::name.

Referenced by agent_xml_compose__task().

7.162.1.6 mxml_node_t* agent_xml_compose__file (agent_p agent, int index, agent_file_data_t * agent_file_data)

Definition at line 552 of file xml_compose.c.

References agent_file_data_s::data, MXML_NO_PARENT, mxmlElementSetAttr(), mxmlNewElement(), mxmlNewText(), and agent_file_data_s::name.

Referenced by agent_xml_compose__task().

7.162.1.7 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(), and mxmlNewElement().

Referenced by agent_xml_compose().

7.162.1.8 mxml_node_t* agent_xml_compose__home (agent_p agent)

Definition at line 253 of file xml_compose.c.

References `agent_s::home`, `mxmlNewElement()`, and `mxmlNewText()`.

Referenced by `agent_xml_compose__agent_data()`.

7.162.1.9 `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()`, and `mxmlNewElement()`.

Referenced by `agent_xml_compose__gaf_message()`.

7.162.1.10 `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()`, and `mxmlNewElement()`.

Referenced by `agent_xml_compose__message()`.

7.162.1.11 `mxml_node_t* agent_xml_compose__name (agent_p agent)`

Definition at line 221 of file `xml_compose.c`.

References `mxmlNewElement()`, `mxmlNewText()`, and `agent_s::name`.

Referenced by `agent_xml_compose__agent_data()`.

7.162.1.12 `mxml_node_t* agent_xml_compose__owner (agent_p agent)`

Definition at line 237 of file `xml_compose.c`.

References `mxmlNewElement()`, `mxmlNewText()`, and `agent_s::owner`.

Referenced by `agent_xml_compose__agent_data()`.

7.162.1.13 `mxml_node_t* agent_xml_compose__row (interpreter_variable_data_t * interp_variable, int index)`

Definition at line 599 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`, and `interpreter_variable_data_s::data_type`.

Referenced by `agent_xml_compose__data()`.

7.162.1.14 `mxml_node_t* agent_xml_compose__task (agent_p agent, int index)`

Definition at line 342 of file `xml_compose.c`.

References `agent_file_data_Destroy()`, `agent_task_s::agent_file_list`, `agent_task_s::agent_return_data`, `agent_task_s::agent_variable_list`, `agent_xml_compose__data()`, `agent_xml_compose__file()`, `buf`, `agent_task_s::code_id`, `agent_s::datastate`, `ListPop()`, `ListWRLock()`, `ListWRUnlock()`, `MXML_ADD_AFTER`, `mxmlAdd()`, `mxmlElementSetAttr()`, `mxmlNewElement()`, `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()`.

7.162.1.15 `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()`, `agent_datastate_s::number_of_tasks`, and `agent_datastate_s::task_progress`.

Referenced by `agent_xml_compose__agent_data()`.

7.162.1.16 `mxml_node_t* agent_xml_compose__wg_code (agent_p agent)`

Definition at line 269 of file `xml_compose.c`.

References `mxmlNewElement()`, `mxmlNewText()`, and `agent_s::wg_code`.

Referenced by `agent_xml_compose__agent_data()`.

7.163 /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)

7.163.1 Function Documentation

7.163.1.1 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()`.

7.163.1.2 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()`.

7.163.1.3 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()`.

7.163.1.4 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().

7.163.1.5 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, and xml_get_child().

7.163.1.6 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().

7.163.1.7 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.

7.163.1.8 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__file(), agent_xml_parse__home(), agent_xml_parse__name(), agent_xml_parse__owner(), agent_xml_parse__sender(), and agent_xml_parse__wg_code().

7.163.1.9 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, and mxmlNewElement().

Referenced by agent_xml_compose__agent_code().

7.164 /home/dko/Projects/mobilec/src/xml_parser.c File Reference

```
#include <mxml.h>
#include <string.h>
#include <stdlib.h>
#include "config.h"
#include "include/agent_file_data.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__file (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)`

7.164.1 Define Documentation

7.164.1.1 `#define _XOPEN_SOURCE 600`

Definition at line 38 of file `xml_parser.c`.

7.164.2 Function Documentation

7.164.2.1 `error_code_t agent_return_xml_parse (agent_p agent)`

Definition at line 973 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`.

7.164.2.2 `error_code_t agent_xml_parse (agent_p agent)`

Definition at line 53 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()`.

7.164.2.3 `error_code_t agent_xml_parse__agent_code (agent_p agent, int index, xml_parser_p xml_parser)`

Definition at line 932 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()`.

7.164.2.4 `error_code_t agent_xml_parse__agent_data (agent_p agent, xml_parser_p xml_parser)`

Definition at line 94 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()`.

7.164.2.5 `error_code_t agent_xml_parse__data (agent_p agent, xml_parser_p xml_parser, int index)`

Definition at line 561 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()`, `ListAdd()`, `ListWRLock()`, `ListWRUnlock()`, `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()`.

7.164.2.6 **error_code_t agent_xml_parse__file (agent_p agent, xml_parser_p xml_parser, int index)**

Definition at line 709 of file xml_parser.c.

References agent_file_data_NewWithData(), agent_task_s::agent_file_list, CHECK_NULL, agent_s::datastate, ListAdd(), ListWRLock(), ListWRUnlock(), MC_ERR_PARSE, MC_SUCCESS, mxmlElementGetAttr(), agent_datastate_s::tasks, and xml_get_text().

Referenced by agent_xml_parse__task().

7.164.2.7 **void agent_xml_parse__fill_row_data (void * data, ChType_t type, int * extent, const mxml_node_t * node, int * index)**

Definition at line 811 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().

7.164.2.8 **error_code_t agent_xml_parse__home (agent_p agent, xml_parser_p xml_parser)**

Definition at line 220 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().

7.164.2.9 **error_code_t agent_xml_parse__mobile_agent (agent_p agent, xml_parser_p xml_parser)**

Definition at line 66 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().

7.164.2.10 **error_code_t agent_xml_parse__name (agent_p agent, xml_parser_p xml_parser)**

Definition at line 167 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().

7.164.2.11 **error_code_t agent_xml_parse__owner (agent_p agent, xml_parser_p xml_parser)**

Definition at line 193 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().

7.164.2.12 error_code_t agent_xml_parse__row (interpreter_variable_data_t * *interp_variable*, xml_parser_p *xml_parser*, int *index*)

Definition at line 744 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().

7.164.2.13 error_code_t agent_xml_parse__sender (agent_p *agent*, xml_parser_p *xml_parser*)

Definition at line 246 of file xml_parser.c.

References CHECK_NULL, MC_SUCCESS, agent_s::sender, and xml_get_text().

Referenced by agent_xml_parse__agent_data().

7.164.2.14 error_code_t agent_xml_parse__task (agent_p *agent*, xml_parser_p *xml_parser*, int *index*)

Definition at line 443 of file xml_parser.c.

References agent_xml_parse__data(), agent_xml_parse__file(), 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().

7.164.2.15 error_code_t agent_xml_parse__tasks (agent_p *agent*, xml_parser_p *xml_parser*)

Definition at line 305 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().

7.164.2.16 error_code_t agent_xml_parse__wg_code (agent_p *agent*, xml_parser_p *xml_parser*)

Definition at line 274 of file xml_parser.c.

References MC_SUCCESS, agent_s::wg_code, and xml_get_text().

Referenced by agent_xml_parse__agent_data().

7.164.2.17 error_code_t message_xml_parse (message_p *message*)

Definition at line 1008 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().

7.164.2.18 error_code_t message_xml_parse__message (message_p *message*, xml_parser_p *xml_parser*)

Definition at line 1063 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().

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