

# Mobile-C

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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 .





## **Chapter 2**

# **Installing LibMC.NET**

Installing LibMC.NET is straightforward but involves several steps.

## 2.1 Requirements

In order to use LibMC.NET you will need the following:

- Ch version 6.0.0 or greater from <http://www.softintegration.com/>.
- Embedded Ch version 6.0.0 or greater, also from <http://www.softintegration.com/>.
- Mobile-C 1.10.0 or greater. See Section [Downloading Mobile-C](#) for instructions on how to obtain Mobile-C.
- Visual Studio 2005 or later. Express versions of Visual Studio can be found at <http://www.microsoft.com/express/>.

## 2.2 Downloading Mobile-C

First, you must obtain a version of the Mobile-C source code. If you are reading this, chances are you have already completed this step. If you have not already downloaded the source code, it can be done in one of three ways:

- Download a supported release of Mobile-C. Visit [the Mobile-C website](#) for more information on supported releases.
- Download the latest source (unsupported) from [Sourceforge](#). This will give you the most current version of Mobile-C, but not necessarily the most stable version.
- Check out the latest source code from the SVN repository. This requires that you have a subversion client installed. More information can be found at [this location](#).

## 2.3 Building the Mobile-C Libraries

Once you have obtained the Mobile-C source, please see the Mobile-C User's Guide for information on compiling Mobile-C under Windows. Currently, only the Visual Studio .NET 2005 project is supported for LibMC.NET. Section 2.3 of the User's Guide describes how to compile Mobile-C into a static library. For LibMC.NET, at least one of two configurations are required: the "Debug\_DLL" or "Release\_DLL" versions. To build either one, select the appropriate configuration (this replaces step 3 in the User's Guide, Section 2.3.1) and build the solution (step 4). Alternatively, you may select "Batch Build" from the "Build" menu and build all four possible configurations.

## 2.4 Install the Mobile-C Libraries

After building the Mobile-C DLL files, the project will automatically copy the files to the system directory. By default, the files are copied to C:/Windows/System32/. If your system is configured differently or you wish to change the installation directory, right-click on the mc\_lib\_win32 project in the Solution Explorer and select "Properties." In the mc\_lib\_win32 Property Pages treeview, select "Configuration Properties," then "Build Events," and finally "Post-Build Event." You can then change the "Command Line" field to copy the files to the directory of your choice. If you change the installation directory, be sure that your

chosen directory is in the system path and that you remove any other versions of the files. You will also need to execute a "Rebuild" on the project to ensure the files are copied to the new location.

## **2.5 Build LibMC.NET**

Once you have built the Mobile-C DLL files, you can build LibMC.NET. Open the LibMC.NET solution file located in the directory you installed or checked out Mobile-C to at src/win32/LibMC.NET/LibMC.Net.sln. From the "Build" menu, select "Rebuild Solution." You may want to build both the "Debug" and "Release" versions, or perform a batch build as described previously.



## **Chapter 3**

# **Getting Started**

LibMC.NET is very easy to use. The demo programs provided with the download are a good place to start. Please see the Examples section for more information.

### 3.1 Build the Demo Programs

The LibMC.NET demo program solution is located in the directory you installed or checked out Mobile-C to at `demos/win32/LibMC.NET/LibMCDemos.sln`. As before, select "Rebuild Solution" from the "Build" menu. Note that the demo program solution contains the LibMC.NET project as well. You may also build LibMC.NET from within the demo program solution.

By default, the LibMCGui demo is selected in the demo program solution. You may run this program by selecting the "Debug" menu then "Start Debugging" or by pressing F5. Other demo programs can be started by right-clicking the project in the Solution Explorer and selecting "Debug" then "Start new instance." The demo programs have their own documentation as well. See the README file in `src/win32/LibMC.NET` or `demos/win32/LibMC.NET` for information on how to build the demo program documentation.

## **Chapter 4**

# **Using LibMC.NET**

This section explains how to use the LibMC.NET class library in your .NET project. Currently, it only describes the process for using the library in a C# console or GUI application. Other languages, such as VB and managed C++, will require similar actions.

## 4.1 Create a Project

First, create the type of project you would like to use from the Visual Studio "Start Page" or the "File" menu. Select the name and location of the project as you would any other project. Second, add a reference to the configuration of LibMC.NET you would like to use. For debugging purposes, the "Debug" configuration is probably best. To add the reference, right click the "References" item in the Solution Explorer for the project you just created. Select the "Browse" tab and navigate to the output directory of the LibMC.NET project. The directory is located at `src/win32/LibMC.NET/bin/Configuration/` in the Mobile-C source directory, where Configuration is either "Debug" or "Release." Select the DLL file and click "Ok." The References item in the Solution Explorer should now list "LibMC." Be sure to save the solution at this point.

## 4.2 Using LibMC.NET Classes and Functions

As with any other namespace, you must add the declaration "using LibMC;" to any file you want to have access to the class libraries. Once you have added the using statement, you can declare objects from the library as you normally would declare any other objects. See the example programs for more details.

## 4.3 Other Options

You may want to enable one or more features in your project that can help you use LibMC.NET or debug problems. If you add any XML files to your project, you probably will want to set their properties in the project to copy the files to the output directory. This is done by selecting the file in the Solution Explorer, opening its properties, and setting two fields:

- Set the "Build Action" field to "Content" if it is not already set. This will make the file part of the project should you decide to publish or package it.
- Set the "Copy to output directory" to "Copy if newer" or "Copy always." This will copy the file when you build the project.

There is also one important note regarding XML files in Visual Studio. *Do not create XML files from within Visual Studio.* The Visual Studio XML file template contains a few leading characters that specify the encoding of the file. They are hidden and you will not be able to change them. These characters are not currently supported by Mobile-C and will crash a receiving agency.

To open the project properties, right-click the project in the Solution Explorer and select "Properties." In the "Debug" pane, you may wish to set an alternate working directory for the project if you want easy access to XML files outside of the project. This is useful for debugging, but may result in errors finding files if you package the project or create an installer. In general, it is best to specify all files with full paths because the Mobile-C library loads from a different location than the project. If you would like to be able to debug the Mobile-C library, you should select the "Enable unmanaged code debugging" check box. This will allow you to more easily see any errors that may occur in the unmanaged library, though hopefully none will.



## **Chapter 5**

# **Common Operations**

This section contains examples of commonly used operations for three main [LibMC](#) classes:

- [MCAgency](#) The mobile agent agency.
- [MCAgent](#) Mobile agents.
- [MCAclMessage](#) Agent communication language messages.

For complete programs and more detailed examples, see the Examples section.

## 5.1 MCAgency

Examples of commonly used MCAgency operations:

Declare an agency as a member of a class:

```
public static MCAgency Agency = new MCAgency();
```

Set the agency's port:

```
int temp = 5051;
Agency.Port = temp;
```

Start an agency:

```
int temp;
temp = Agency.Initialize();
if (temp != 0)
    Console.WriteLine("Initialize: " + temp.ToString());
```

Pause and resume an agency:

```
Agency.HaltAgency();
Agency.ResumeAgency();
```

Turn off the command prompt thread:

```
temp = Agency.SetThreadOff(MCAgency.MC_ThreadIndex_e.MC_THREAD_CP);
if (temp != 0)
    Console.WriteLine("SetThreadOff: " + temp.ToString());
```

Load an agent into a local agency:

```
String filename = "agent.xml";
try
{
    Agency.LoadAgentMigrationMessageFile(filename);
}
catch (Exception ex)
{
    Console.WriteLine("Error loading file: " + ex.Message);
}
```

Ideally, the file name should be specified absolutely.

Send an agent to a remote agency:

```
String filename = "agent.xml";
String ip = "192.168.23.93";
int port = 5051;
try
{
    Agency.SendAgentMigrationMessageFile(filename, ip, port);
}
catch (Exception ex)
{
    Console.WriteLine("Error sending file: " + ex.Message);
}
```

Find an agent by name:

```
MCAgent agent;
try
{
    agent = Agency.FindAgentByName("persistent1");
}
catch (Exception e)
{
    Console.WriteLine("Exception: " + e.Message);
}
```

Wait for an agent to arrive:

```
MCAgent agent;
Agency.ResetSignal();
try
{
    agent = Agency.WaitRetrieveAgent();
}
catch (Exception e)
{
    Console.WriteLine("Exception: " + e.Message);
}
```

Wait indefinitely while an agency runs:

```
Agency.MainLoop();
```

## 5.2 MCAgent

Examples of commonly used MCAgent operations: Find an agent by name (assumes an MCAgency named Agency):

```
MCAgent agent;
try
{
    agent = Agency.FindAgentByName("persistent1");
}
catch (Exception e)
{
    Console.WriteLine("Exception: " + e.Message);
}
```

Terminate an agent

```
int temp;
try
{
    temp = agent.TerminateAgent();
    Console.WriteLine("TerminateAgent() returned " +
        temp.ToString() + ".");
}
catch (Exception e)
{
    Console.WriteLine("Exception: " + e.Message);
}
```

Print information about an agent:

```
Console.WriteLine(agent.ToString());
Console.WriteLine(agent.GetAgentXMLString());
Console.WriteLine(agent.RetrieveAgentCode());
```

## 5.3 MCAclMessage

Examples of commonly used MCAclMessage operations:

Create a new, blank ACL message:

```
MCAclMessage tmp = new MCAclMessage();
tmp.New();
```

Set the performative field:

```
tmp.SetPerformative(MCAclMessage.MC_FipaPerformative_e.FIPA_INFORM);
```

Set the sender:

```
tmp.SetSender("agency", "http://" + host + ":" +
    localport.ToString() + "/acc");
```

Add an alternate reply-to field:

```
tmp.AddReplyTo("mobagent2", "http://" + host + ":" +
    localport.ToString() + "/acc");
```

Add a receiver to the message:

```
tmp.AddReceiver("mobagent1", "http://" + host + ":" +
    localport.ToString() + "/acc");
```

Set the content of the message:

```
tmp.SetContent("This is content. Yay!");
```

Finally, send and destroy the message:

```
Agency.AclSend(tmp);
tmp.Destroy();
```

Note that messages contain a pointer to allocated unmanaged memory and need to be disposed of after they are used. The agency creates a copy of the message when it is sent, and therefore the MCAclMessage object is no longer needed.

## **Chapter 6**

### **Todo List**

Global **LibMC::MCAgency::SteerControl()** Test MC\_SteerControl, MC\_Steer.

Global **LibMC::MCAgency::Steer(IntPtr funcptr, IntPtr arg)** Implement MC\_Steer

Global **LibMC::MCAgency::RegisterService(MCAgent agent, int agentID, String agentName, String[] serviceNames, i**  
Test MC\_RegisterService and MC\_SearchForService.

Global **LibMC::MCAgency::SearchForService(String searchString, IntPtr agentNames, IntPtr serviceNames, IntPtr ag**  
Implement SearchForService

Global **LibMC::MCAgent::GetAgentExecEngine()** Wrap MC\_GetAgentExecEngine with an object  
for the void\* pointer return type (Ch interpreter).

Global **LibMC::MCAgent::GetAgentReturnData(int task\_num, IntPtr data, IntPtr dim, IntPtr extent)**  
Implement GetAgentReturnData

## **Chapter 7**

### **Bug List**

Global **LibMC::MCAgency::Steer**(IntPtr funcptr, IntPtr arg) MC\_Steer is not yet implemented.

Global **LibMC::MCAgency::SearchForService**(String searchString, IntPtr agentNames, IntPtr serviceNames, IntPtr agentNames) MC\_SearchForService is not yet implemented.



# Chapter 8

## Namespace Index

### 8.1 Namespace List

Here is a list of all namespaces with brief descriptions:

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# Chapter 9

## Data Structure Index

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# Chapter 11

## Namespace Documentation

### 11.1 LibMC Namespace Reference

Namespace for the .NET wrapper for Mobile-C.

#### Data Structures

- class [MCAclMessage](#)  
*Encapsulates ACL messages in the Mobile-C library.*
- class [MCAgency](#)  
*Wrapper class for [MCAgency\\_t](#) structure.*
- class [InvalidAgencyException](#)  
*Exception class for use with null agency pointers.*
- class [MCAgent](#)  
*Wrapper class for [MCAgent\\_t](#) structure.*
- class [InvalidAgentException](#)  
*Exception class for use with null agent pointers.*

#### Namespaces

- namespace [Properties](#)  
*Namespace for the .NET wrapper properties class.*

#### 11.1.1 Detailed Description

Namespace for the .NET wrapper for Mobile-C.

[LibMC](#) encapsulates the Mobile-C DLL for windows in an .NET class library. .NET programs can access the library to create agencies, connect to agencies, interact with agents, etc.

## 11.2 LibMC::Properties Namespace Reference

Namespace for the .NET wrapper properties class.

### Data Structures

- class [Settings](#)

### 11.2.1 Detailed Description

Namespace for the .NET wrapper properties class.

Any user or global properties that should preserved from session to session can be added here through the designer. There are currently no properties in use.

# Chapter 12

## Data Structure Documentation

### 12.1 `_ssl_context` Struct Reference

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

#### Data Fields

- `int state`
- `int major_ver`
- `int minor_ver`
- `int max_major_ver`
- `int max_minor_ver`
- `int(* f_rng)(void *)`
- `void(* f_dbg)(void *, int, char *)`
- `int(* f_recv)(void *, unsigned char *, int)`
- `int(* f_send)(void *, unsigned char *, int)`
- `void * p_rng`
- `void * p_dbg`
- `void * p_recv`
- `void * p_send`
- `int resume`
- `int timeout`
- `ssl_session * session`
- `int(* s_get)(ssl_context *)`
- `int(* s_set)(ssl_context *)`
- `unsigned char * in_ctr`
- `unsigned char * in_hdr`
- `unsigned char * in_msg`
- `unsigned char * in_offt`
- `int in_msgtype`
- `int in_msglen`
- `int in_left`
- `int in_hrlen`
- `int nb_zero`
- `unsigned char * out_ctr`

- unsigned char \* [out\\_hdr](#)
- unsigned char \* [out\\_msg](#)
- int [out\\_msgtype](#)
- int [out\\_msglen](#)
- int [out\\_left](#)
- [rsa\\_context](#) \* [rsa\\_key](#)
- [x509\\_cert](#) \* [own\\_cert](#)
- [x509\\_cert](#) \* [ca\\_chain](#)
- [x509\\_cert](#) \* [peer\\_cert](#)
- char \* [peer\\_cn](#)
- int [endpoint](#)
- int [authmode](#)
- int [client\\_auth](#)
- int [verify\\_result](#)
- [dhm\\_context](#) [dhm\\_ctx](#)
- [md5\\_context](#) [fin\\_md5](#)
- [sha1\\_context](#) [fin\\_sha1](#)
- int [do\\_crypt](#)
- int \* [ciphers](#)
- int [pmslen](#)
- int [keylen](#)
- int [minlen](#)
- int [ivlen](#)
- int [maclen](#)
- unsigned char [randbytes](#) [64]
- unsigned char [premaster](#) [256]
- unsigned char [iv\\_enc](#) [16]
- unsigned char [iv\\_dec](#) [16]
- unsigned char [mac\\_enc](#) [32]
- unsigned char [mac\\_dec](#) [32]
- unsigned long [ctx\\_enc](#) [128]
- unsigned long [ctx\\_dec](#) [128]
- unsigned char \* [hostname](#)
- unsigned long [hostname\\_len](#)

### 12.1.1 Detailed Description

Definition at line 149 of file [ssl.h](#).

### 12.1.2 Field Documentation

#### 12.1.2.1 int [\\_ssl\\_context::state](#)

SSL handshake: current state

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

**12.1.2.2 `int _ssl_context::major_ver`**

equal to `SSL_MAJOR_VERSION_3`

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

**12.1.2.3 `int _ssl_context::minor_ver`**

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

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

**12.1.2.4 `int _ssl_context::max_major_ver`**

max. major version from client

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

**12.1.2.5 `int _ssl_context::max_minor_ver`**

max. minor version from client

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

**12.1.2.6 `int(* _ssl_context::f_rng)(void *)`****12.1.2.7 `void(* _ssl_context::f_dbg)(void *, int, char *)`****12.1.2.8 `int(* _ssl_context::f_recv)(void *, unsigned char *, int)`****12.1.2.9 `int(* _ssl_context::f_send)(void *, unsigned char *, int)`****12.1.2.10 `void* _ssl_context::p_rng`**

context for the RNG function

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

**12.1.2.11 `void* _ssl_context::p_dbg`**

context for the debug function

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

**12.1.2.12 `void* _ssl_context::p_recv`**

context for reading operations

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

**12.1.2.13 void\* \_ssl\_context::p\_send**

context for writing operations

Definition at line 173 of file ssl.h.

**12.1.2.14 int \_ssl\_context::resume**

session resuming flag

Definition at line 178 of file ssl.h.

Referenced by my\_get\_session().

**12.1.2.15 int \_ssl\_context::timeout**

sess. expiration time

Definition at line 179 of file ssl.h.

Referenced by my\_get\_session(), and my\_set\_session().

**12.1.2.16 ssl\_session\* \_ssl\_context::session**

current session data

Definition at line 180 of file ssl.h.

Referenced by my\_get\_session(), and my\_set\_session().

**12.1.2.17 int(\* \_ssl\_context::s\_get)(ssl\_context \*)**

(server) get callback

**12.1.2.18 int(\* \_ssl\_context::s\_set)(ssl\_context \*)**

(server) set callback

**12.1.2.19 unsigned char\* \_ssl\_context::in\_ctr**

64-bit incoming message counter

Definition at line 187 of file ssl.h.

**12.1.2.20 unsigned char\* \_ssl\_context::in\_hdr**

5-byte record header (in\_ctr+8)

Definition at line 188 of file ssl.h.

**12.1.2.21 `unsigned char* _ssl_context::in_msg`**

the message contents (`in_hdr+5`)

Definition at line 189 of file `ssl.h`.

**12.1.2.22 `unsigned char* _ssl_context::in_offt`**

read offset in application data

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

**12.1.2.23 `int _ssl_context::in_msgtype`**

record header: message type

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

**12.1.2.24 `int _ssl_context::in_msglen`**

record header: message length

Definition at line 193 of file `ssl.h`.

**12.1.2.25 `int _ssl_context::in_left`**

amount of data read so far

Definition at line 194 of file `ssl.h`.

**12.1.2.26 `int _ssl_context::in_hslen`**

current handshake message length

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

**12.1.2.27 `int _ssl_context::nb_zero`**

# of 0-length encrypted messages

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

**12.1.2.28 `unsigned char* _ssl_context::out_ctr`**

64-bit outgoing message counter

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

**12.1.2.29 `unsigned char* _ssl_context::out_hdr`**

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

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

**12.1.2.30 unsigned char\* \_ssl\_context::out\_msg**

the message contents (out\_hdr+5)

Definition at line 204 of file ssl.h.

**12.1.2.31 int \_ssl\_context::out\_msgtype**

record header: message type

Definition at line 206 of file ssl.h.

**12.1.2.32 int \_ssl\_context::out\_msglen**

record header: message length

Definition at line 207 of file ssl.h.

**12.1.2.33 int \_ssl\_context::out\_left**

amount of data not yet written

Definition at line 208 of file ssl.h.

**12.1.2.34 rsa\_context\* \_ssl\_context::rsa\_key**

own RSA private key

Definition at line 213 of file ssl.h.

**12.1.2.35 x509\_cert\* \_ssl\_context::own\_cert**

own X.509 certificate

Definition at line 214 of file ssl.h.

**12.1.2.36 x509\_cert\* \_ssl\_context::ca\_chain**

own trusted CA chain

Definition at line 215 of file ssl.h.

**12.1.2.37 x509\_cert\* \_ssl\_context::peer\_cert**

peer X.509 cert chain

Definition at line 216 of file ssl.h.

Referenced by main().



**12.1.2.38** `char* _ssl_context::peer_cn`

expected peer CN

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

**12.1.2.39** `int _ssl_context::endpoint`

0: client, 1: server

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

**12.1.2.40** `int _ssl_context::authmode`

verification mode

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

**12.1.2.41** `int _ssl_context::client_auth`

flag for client auth.

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

**12.1.2.42** `int _ssl_context::verify_result`

verification result

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

**12.1.2.43** `dhm_context _ssl_context::dhm_ctx`

DHM key exchange

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

**12.1.2.44** `md5_context _ssl_context::fin_md5`

Finished MD5 checksum

Definition at line 228 of file `ssl.h`.

**12.1.2.45** `sha1_context _ssl_context::fin_sha1`

Finished SHA-1 checksum

Definition at line 229 of file `ssl.h`.

**12.1.2.46** `int _ssl_context::do_crypt`

en(de)cryption flag

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

**12.1.2.47 int\* \_ssl\_context::ciphers**

allowed ciphersuites

Definition at line 232 of file ssl.h.

**12.1.2.48 int \_ssl\_context::pmslen**

premaster length

Definition at line 233 of file ssl.h.

**12.1.2.49 int \_ssl\_context::keylen**

symmetric key length

Definition at line 234 of file ssl.h.

**12.1.2.50 int \_ssl\_context::minlen**

min. ciphertext length

Definition at line 235 of file ssl.h.

**12.1.2.51 int \_ssl\_context::ivlen**

IV length

Definition at line 236 of file ssl.h.

**12.1.2.52 int \_ssl\_context::maclen**

MAC length

Definition at line 237 of file ssl.h.

**12.1.2.53 unsigned char \_ssl\_context::randbytes[64]**

random bytes

Definition at line 239 of file ssl.h.

**12.1.2.54 unsigned char \_ssl\_context::premaster[256]**

premaster secret

Definition at line 240 of file ssl.h.

**12.1.2.55 unsigned char \_ssl\_context::iv\_enc[16]**

IV (encryption)

Definition at line 242 of file ssl.h.

**12.1.2.56 unsigned char `_ssl_context::iv_dec`[16]**

IV (decryption)

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

**12.1.2.57 unsigned char `_ssl_context::mac_enc`[32]**

MAC (encryption)

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

**12.1.2.58 unsigned char `_ssl_context::mac_dec`[32]**

MAC (decryption)

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

**12.1.2.59 unsigned long `_ssl_context::ctx_enc`[128]**

encryption context

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

**12.1.2.60 unsigned long `_ssl_context::ctx_dec`[128]**

decryption context

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

**12.1.2.61 unsigned char\* `_ssl_context::hostname`**

Definition at line 254 of file `ssl.h`.

**12.1.2.62 unsigned long `_ssl_context::hostname_len`**

Definition at line 255 of file `ssl.h`.

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

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

## 12.2 `_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`

### 12.2.1 Detailed Description

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

### 12.2.2 Field Documentation

#### 12.2.2.1 `time_t _ssl_session::start`

starting time

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

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

#### 12.2.2.2 `int _ssl_session::cipher`

chosen cipher

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

Referenced by `my_get_session()`.

#### 12.2.2.3 `int _ssl_session::length`

session id length

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

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

#### 12.2.2.4 `unsigned char _ssl_session::id[32]`

session identifier

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

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

**12.2.2.5 `unsigned char _ssl_session::master[48]`**

the master secret

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

Referenced by `my_get_session()`.

**12.2.2.6 `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()`.

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

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

## 12.3 `_x509_buf` Struct Reference

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

### Data Fields

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

### 12.3.1 Detailed Description

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

### 12.3.2 Field Documentation

#### 12.3.2.1 `int _x509_buf::tag`

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

#### 12.3.2.2 `int _x509_buf::len`

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

#### 12.3.2.3 `unsigned char* _x509_buf::p`

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

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

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

## 12.4 \_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](#)

### 12.4.1 Detailed Description

Definition at line 119 of file x509.h.

### 12.4.2 Field Documentation

#### 12.4.2.1 x509\_buf\_x509\_cert::raw

Definition at line 121 of file x509.h.

#### 12.4.2.2 x509\_buf\_x509\_cert::tbs

Definition at line 122 of file x509.h.

#### 12.4.2.3 int\_x509\_cert::version

Definition at line 124 of file x509.h.

**12.4.2.4 x509\_buf\_x509\_cert::serial**

Definition at line 125 of file x509.h.

**12.4.2.5 x509\_buf\_x509\_cert::sig\_oid1**

Definition at line 126 of file x509.h.

**12.4.2.6 x509\_buf\_x509\_cert::issuer\_raw**

Definition at line 128 of file x509.h.

**12.4.2.7 x509\_buf\_x509\_cert::subject\_raw**

Definition at line 129 of file x509.h.

**12.4.2.8 x509\_name\_x509\_cert::issuer**

Definition at line 131 of file x509.h.

**12.4.2.9 x509\_name\_x509\_cert::subject**

Definition at line 132 of file x509.h.

**12.4.2.10 x509\_time\_x509\_cert::valid\_from**

Definition at line 134 of file x509.h.

**12.4.2.11 x509\_time\_x509\_cert::valid\_to**

Definition at line 135 of file x509.h.

**12.4.2.12 x509\_buf\_x509\_cert::pk\_oid**

Definition at line 137 of file x509.h.

**12.4.2.13 rsa\_context\_x509\_cert::rsa**

Definition at line 138 of file x509.h.

**12.4.2.14 x509\_buf\_x509\_cert::issuer\_id**

Definition at line 140 of file x509.h.



**12.4.2.15 x509\_buf\_x509\_cert::subject\_id**

Definition at line 141 of file x509.h.

**12.4.2.16 x509\_buf\_x509\_cert::v3\_ext**

Definition at line 142 of file x509.h.

**12.4.2.17 int\_x509\_cert::ca\_istrue**

Definition at line 144 of file x509.h.

**12.4.2.18 int\_x509\_cert::max\_pathlen**

Definition at line 145 of file x509.h.

**12.4.2.19 x509\_buf\_x509\_cert::sig\_oid2**

Definition at line 147 of file x509.h.

**12.4.2.20 x509\_buf\_x509\_cert::sig**

Definition at line 148 of file x509.h.

**12.4.2.21 struct\_x509\_cert\*\_x509\_cert::next** [read]

Definition at line 150 of file x509.h.

Referenced by main(), and ssl\_test().

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

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

## 12.5 `_x509_name` Struct Reference

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

### Data Fields

- [x509\\_buf oid](#)
- [x509\\_buf val](#)
- [struct `\_x509\_name` \\* next](#)

### 12.5.1 Detailed Description

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

### 12.5.2 Field Documentation

#### 12.5.2.1 `x509_buf _x509_name::oid`

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

#### 12.5.2.2 `x509_buf _x509_name::val`

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

#### 12.5.2.3 `struct _x509_name* _x509_name::next` [read]

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

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

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

## 12.6 `_x509_node` Struct Reference

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

### Data Fields

- unsigned char \* [data](#)
- unsigned char \* [p](#)
- unsigned char \* [end](#)
- size\_t [len](#)

### 12.6.1 Detailed Description

Definition at line 157 of file `x509.h`.

### 12.6.2 Field Documentation

#### 12.6.2.1 unsigned char\* `_x509_node::data`

Definition at line 159 of file `x509.h`.

#### 12.6.2.2 unsigned char\* `_x509_node::p`

Definition at line 160 of file `x509.h`.

#### 12.6.2.3 unsigned char\* `_x509_node::end`

Definition at line 161 of file `x509.h`.

#### 12.6.2.4 size\_t `_x509_node::len`

Definition at line 163 of file `x509.h`.

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

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

## 12.7 `_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](#)

### 12.7.1 Detailed Description

Definition at line 167 of file x509.h.

### 12.7.2 Field Documentation

#### 12.7.2.1 `x509_node _x509_raw::raw`

Definition at line 169 of file x509.h.

#### 12.7.2.2 `x509_node _x509_raw::tbs`

Definition at line 170 of file x509.h.

#### 12.7.2.3 `x509_node _x509_raw::version`

Definition at line 172 of file x509.h.

#### 12.7.2.4 `x509_node _x509_raw::serial`

Definition at line 173 of file x509.h.

#### 12.7.2.5 `x509_node _x509_raw::tbs_signalg`

Definition at line 174 of file x509.h.

#### 12.7.2.6 `x509_node _x509_raw::issuer`

Definition at line 175 of file x509.h.

**12.7.2.7 `x509_node_x509_raw::validity`**

Definition at line 176 of file `x509.h`.

**12.7.2.8 `x509_node_x509_raw::subject`**

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

**12.7.2.9 `x509_node_x509_raw::subpubkey`**

Definition at line 178 of file `x509.h`.

**12.7.2.10 `x509_node_x509_raw::signalg`**

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

**12.7.2.11 `x509_node_x509_raw::sign`**

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

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

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

## 12.8 `_x509_time` Struct Reference

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

### Data Fields

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

#### 12.8.1 Detailed Description

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

#### 12.8.2 Field Documentation

##### 12.8.2.1 `int _x509_time::year`

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

##### 12.8.2.2 `int _x509_time::mon`

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

##### 12.8.2.3 `int _x509_time::day`

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

##### 12.8.2.4 `int _x509_time::hour`

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

##### 12.8.2.5 `int _x509_time::min`

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

##### 12.8.2.6 `int _x509_time::sec`

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

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

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

## 12.9 aes\_context Struct Reference

AES context structure.

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

### Data Fields

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

### 12.9.1 Detailed Description

AES context structure.

Definition at line 13 of file aes.h.

### 12.9.2 Field Documentation

#### 12.9.2.1 `int aes_context::nr`

number of rounds

Definition at line 15 of file aes.h.

#### 12.9.2.2 `unsigned long* aes_context::rk`

AES round keys

Definition at line 16 of file aes.h.

#### 12.9.2.3 `unsigned long aes_context::buf[68]`

unaligned data

Definition at line 17 of file aes.h.

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

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

## 12.10 agency\_s Struct Reference

The agency handle.

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

### Data Fields

- [int client](#)
- [int server](#)
- [char \\* hostName](#)
- [char \\* filename](#)
- [int portno](#)
- [int portnoc](#)
- [struct mc\\_platform\\_s \\* mc\\_platform](#)
- [int default\\_agentstatus](#)
- [int threads](#)
- [int enable\\_security](#)
- [int stack\\_size](#) [MC\_THREAD\_ALL]
- [error\\_code\\_t last\\_error](#)

### 12.10.1 Detailed Description

The agency handle.

Definition at line 215 of file libmc.h.

### 12.10.2 Field Documentation

#### 12.10.2.1 int agency\_s::client

Definition at line 216 of file libmc.h.

Referenced by MC\_Initialize().

#### 12.10.2.2 int agency\_s::server

Definition at line 217 of file libmc.h.

Referenced by MC\_Initialize().

#### 12.10.2.3 char\* agency\_s::hostName

Local Hostname

Definition at line 218 of file libmc.h.

Referenced by MC\_End(), and MC\_Initialize().

#### 12.10.2.4 char\* agency\_s::filename

Definition at line 219 of file libmc.h.



### 12.10.2.5 int agency\_s::portno

Local port number

Definition at line 220 of file libmc.h.

Referenced by MC\_Initialize(), and mc\_platform\_Initialize().

### 12.10.2.6 int agency\_s::portnoc

Definition at line 221 of file libmc.h.

### 12.10.2.7 struct mc\_platform\_s\* agency\_s::mc\_platform [read]

Local MobileC Platform

Definition at line 222 of file libmc.h.

Referenced by MC\_AclSend\_chdl(), MC\_AddAgent(), MC\_AddAgent\_chdl(), MC\_Barrier(), MC\_Barrier\_chdl(), MC\_BarrierDelete(), MC\_BarrierDelete\_chdl(), MC\_BarrierInit(), MC\_BarrierInit\_chdl(), MC\_ChInitializeOptions(), MC\_CondBroadcast(), MC\_CondBroadcast\_chdl(), MC\_CondReset(), MC\_CondReset\_chdl(), MC\_CondSignal(), MC\_CondSignal\_chdl(), MC\_CondWait(), MC\_CondWait\_chdl(), MC\_DeregisterService(), MC\_DeregisterService\_chdl(), MC\_End(), MC\_End\_chdl(), MC\_FindAgentByID(), MC\_FindAgentByID\_chdl(), MC\_FindAgentByName(), MC\_FindAgentByName\_chdl(), MC\_GetAllAgents(), MC\_HaltAgency(), MC\_HaltAgency\_chdl(), MC\_Initialize(), MC\_LoadAgentFromFile(), MC\_MainLoop(), MC\_MutexLock(), MC\_MutexLock\_chdl(), MC\_MutexUnlock(), MC\_MutexUnlock\_chdl(), MC\_RegisterService(), MC\_RegisterService\_chdl(), MC\_ResetSignal(), MC\_ResumeAgency(), MC\_ResumeAgency\_chdl(), MC\_RetrieveAgent(), MC\_RetrieveAgent\_chdl(), MC\_SearchForService(), MC\_SearchForService\_chdl(), MC\_SemaphorePost(), MC\_SemaphorePost\_chdl(), MC\_SemaphoreWait(), MC\_SemaphoreWait\_chdl(), MC\_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().

### 12.10.2.8 int agency\_s::default\_agentstatus

Agency default agent status

Definition at line 223 of file libmc.h.

Referenced by MC\_Initialize(), and mc\_platform\_Initialize().

### 12.10.2.9 int agency\_s::threads

flag which determines which threads to start

Definition at line 224 of file libmc.h.

Referenced by MC\_End(), MC\_Initialize(), and mc\_platform\_Initialize().

**12.10.2.10 int agency\_s::enable\_security**

Security flag

Definition at line 225 of file libmc.h.

Referenced by MC\_Initialize(), and mc\_platform\_Initialize().

**12.10.2.11 int agency\_s::stack\_size[MC\_THREAD\_ALL]**

Definition at line 226 of file libmc.h.

Referenced by MC\_Initialize(), and mc\_platform\_Initialize().

**12.10.2.12 error\_code\_t agency\_s::last\_error**

Definition at line 227 of file libmc.h.

Referenced by mc\_platform\_Initialize().

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

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

## 12.11 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](#)

### 12.11.1 Detailed Description

Definition at line 41 of file agent\_datastate.h.

### 12.11.2 Field Documentation

#### 12.11.2.1 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(), and MC\_ComposeAgent().

#### 12.11.2.2 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(), and MC\_ComposeAgent().

#### 12.11.2.3 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\_ComposeAgent(), MC\_PrintAgentCode(), and MC\_RetrieveAgentCode().

#### 12.11.2.4 agent\_task\_p\* agent\_datastate\_s::tasks

Definition at line 48 of file agent\_datastate.h.

Referenced by `agent_AddPersistentVariable()`, `agent_datastate_Copy()`, `agent_datastate_Destroy()`, `agent_datastate_New()`, `agent_xml_compose__task()`, `agent_xml_parse__agent_code()`, `agent_xml_parse__data()`, `agent_xml_parse__task()`, `agent_xml_parse__tasks()`, `interpreter_variable_data_InitializeFromAgent()`, `MC_AgentVariableRetrieve()`, `MC_AgentVariableSave()`, `MC_ComposeAgent()`, `MC_GetAgentReturnData()`, `MC_SaveData_chdl()`, and `message_InitializeFromAgent()`.

#### 12.11.2.5 `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()`.

#### 12.11.2.6 `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()`.

#### 12.11.2.7 `int agent_datastate_s::task_progress`

Definition at line 55 of file `agent_datastate.h`.

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

#### 12.11.2.8 `int agent_datastate_s::return_data`

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

Referenced by `agent_datastate_Copy()`, and `agent_datastate_New()`.

#### 12.11.2.9 `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_ComposeAgent()`, `MC_GetAgentNumTasks()`, `MC_GetAgentReturnData()`, `MC_PrintAgentCode()`, and `message_InitializeFromAgent()`.

#### 12.11.2.10 `int agent_datastate_s::persistent`

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

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

**12.11.2.11 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().

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

- [/home/dko/projects/mobilec/trunk/src/include/agent\\_datastate.h](#)

## 12.12 agent\_mailbox\_s Struct Reference

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

### Data Fields

- struct mail\_queue\_s \* [mail\\_queue](#)

### 12.12.1 Detailed Description

Definition at line 8 of file agent\_mailbox.h.

### 12.12.2 Field Documentation

#### 12.12.2.1 struct mail\_queue\_s\* agent\_mailbox\_s::mail\_queue [read]

Definition at line 10 of file agent\_mailbox.h.

Referenced by agent\_mailbox\_Copy(), agent\_mailbox\_Destroy(), agent\_mailbox\_New(), agent\_mailbox\_Post(), agent\_mailbox\_Retrieve(), and agent\_mailbox\_WaitRetrieve().

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

- /home/dko/projects/mobilec/trunk/src/include/[agent\\_mailbox.h](#)

## 12.13 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](#)
- int [orphan](#)
- agent\_datastate\_p [datastate](#)
- enum [MC\\_AgentType\\_e](#) [agent\\_type](#)
- enum [MC\\_AgentStatus\\_e](#) [agent\\_status](#)
- int [return\\_data](#)
- ChInterp\_t [agent\\_interp](#)
- MUTEX\_T \* [run\\_lock](#)
- int [agent\\_thread\\_id](#)
- THREAD\_T \* [agent\\_thread](#)
- agent\_mailbox\_p [mailbox](#)
- int [agent\\_pipe\\_active](#)
- int [agent\\_ready\\_to\\_send](#)
- int [agent\\_pipe\\_ready\\_to\\_read](#)
- int [agent\\_script\\_ready](#)
- int [agent\\_persistent](#)
- struct [mc\\_platform\\_s](#) \* [mc\\_platform](#)
- MUTEX\_T \* [lock](#)

### 12.13.1 Detailed Description

Definition at line 48 of file agent.h.

### 12.13.2 Field Documentation

#### 12.13.2.1 u\_long agent\_s::id

Definition at line 51 of file agent.h.

Referenced by [agent\\_Copy\(\)](#), [agent\\_Initialize\(\)](#), [agent\\_RunChScriptThread\(\)](#), [ams\\_Print\(\)](#), [AP\\_QUEUE\\_STD\\_DEFN\\_TEMPLATE\(\)](#), [MC\\_GetAgentID\(\)](#), and [MC\\_RegisterService\(\)](#).

**12.13.2.2 char\* agent\_s::name**

Definition at line 52 of file agent.h.

Referenced by acc\_MessageHandlerThread(), agent\_AddPersistentVariable(), agent\_Copy(), agent\_Destroy(), agent\_RunChScriptThread(), agent\_xml\_compose\_\_name(), agent\_xml\_parse\_\_name(), AP\_QUEUE\_STD\_DEFN\_TEMPLATE(), MC\_ComposeAgent(), MC\_GetAgentName(), and MC\_RegisterService().

**12.13.2.3 u\_long agent\_s::connect\_id**

Definition at line 53 of file agent.h.

Referenced by ams\_Print().

**12.13.2.4 time\_t agent\_s::arrival\_time**

Definition at line 55 of file agent.h.

Referenced by agent\_Copy(), agent\_Initialize(), and MC\_GetAgentArrivalTime().

**12.13.2.5 char\* agent\_s::owner**

Definition at line 60 of file agent.h.

Referenced by agent\_Copy(), agent\_Destroy(), agent\_xml\_compose\_\_owner(), agent\_xml\_parse\_\_owner(), and MC\_ComposeAgent().

**12.13.2.6 char\* agent\_s::home**

Definition at line 61 of file agent.h.

Referenced by agent\_Copy(), agent\_Destroy(), agent\_Initialize(), agent\_xml\_compose\_\_home(), agent\_xml\_parse\_\_home(), MC\_ComposeAgent(), and message\_InitializeFromAgent().

**12.13.2.7 char\* agent\_s::sender**

Definition at line 62 of file agent.h.

Referenced by agent\_Destroy(), agent\_Initialize(), and agent\_xml\_parse\_\_sender().

**12.13.2.8 int agent\_s::home\_port**

Definition at line 63 of file agent.h.

Referenced by agent\_Copy().

**12.13.2.9 int agent\_s::orphan**

Definition at line 65 of file agent.h.

Referenced by agent\_Copy(), agent\_Initialize(), ams\_ManageAgentList(), MC\_ComposeAgent(), and MC\_SetAgentStatus().



**12.13.2.10 agent\_datastate\_p agent\_s::datastate**

Definition at line 69 of file agent.h.

Referenced by acc\_MessageHandlerThread(), agent\_AddPersistentVariable(), agent\_Copy(), agent\_Destroy(), agent\_Initialize(), agent\_return\_xml\_parse(), agent\_RunChScriptThread(), agent\_xml\_compose\_\_agent\_code(), agent\_xml\_compose\_\_task(), agent\_xml\_compose\_\_tasks(), agent\_xml\_parse(), agent\_xml\_parse\_\_agent\_code(), agent\_xml\_parse\_\_data(), agent\_xml\_parse\_\_task(), agent\_xml\_parse\_\_tasks(), interpreter\_variable\_data\_InitializeFromAgent(), MC\_AgentVariableRetrieve(), MC\_AgentVariableSave(), MC\_ComposeAgent(), MC\_GetAgentNumTasks(), MC\_GetAgentReturnData(), MC\_GetAgentXMLString(), MC\_PrintAgentCode(), MC\_RetrieveAgentCode(), MC\_SaveData\_chdl(), and message\_InitializeFromAgent().

**12.13.2.11 enum MC\_AgentType\_e agent\_s::agent\_type**

Definition at line 70 of file agent.h.

Referenced by agent\_Copy(), agent\_Initialize(), agent\_xml\_compose\_\_message(), MC\_ComposeAgent(), and MC\_GetAgentType().

**12.13.2.12 enum MC\_AgentStatus\_e agent\_s::agent\_status**

Definition at line 71 of file agent.h.

Referenced by acc\_MessageHandlerThread(), agent\_Copy(), agent\_Destroy(), agent\_Initialize(), agent\_RunChScript(), ams\_ManageAgentList(), ams\_Print(), MC\_ComposeAgent(), MC\_GetAgentStatus(), MC\_RetrieveAgent(), MC\_SendAgentMigrationMessageFile(), and MC\_SetAgentStatus().

**12.13.2.13 int agent\_s::return\_data**

Definition at line 73 of file agent.h.

Referenced by agent\_Copy().

**12.13.2.14 ChInterp\_t agent\_s::agent\_interp**

Definition at line 76 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(), and MC\_TerminateAgent().

**12.13.2.15 MUTEX\_T\* agent\_s::run\_lock**

Definition at line 79 of file agent.h.

Referenced by agent\_Copy(), agent\_Destroy(), agent\_Initialize(), agent\_New(), interpreter\_variable\_data\_Initialize(), MC\_CallAgentFunc(), MC\_CallAgentFuncArg(), MC\_CallAgentFuncV(), and MC\_CallAgentFuncVar().

**12.13.2.16 int agent\_s::agent\_thread\_id**

Definition at line 82 of file agent.h.

Referenced by agent\_Initialize().

**12.13.2.17 THREAD\_T\* agent\_s::agent\_thread**

Definition at line 86 of file agent.h.

Referenced by agent\_Copy(), agent\_Destroy(), agent\_Initialize(), and agent\_RunChScript().

**12.13.2.18 agent\_mailbox\_p agent\_s::mailbox**

Definition at line 89 of file agent.h.

Referenced by acc\_Thread(), agent\_Destroy(), agent\_Initialize(), MC\_AclPost(), MC\_AclRetrieve(), and MC\_AclWaitRetrieve().

**12.13.2.19 int agent\_s::agent\_pipe\_active**

Definition at line 92 of file agent.h.

Referenced by agent\_Initialize().

**12.13.2.20 int agent\_s::agent\_ready\_to\_send**

Definition at line 93 of file agent.h.

Referenced by agent\_Initialize().

**12.13.2.21 int agent\_s::agent\_pipe\_ready\_to\_read**

Definition at line 94 of file agent.h.

Referenced by agent\_Initialize().

**12.13.2.22 int agent\_s::agent\_script\_ready**

Definition at line 95 of file agent.h.

Referenced by agent\_Initialize().

**12.13.2.23 int agent\_s::agent\_persistent**

Definition at line 96 of file agent.h.

Referenced by agent\_Copy().

**12.13.2.24 struct mc\_platform\_s\* agent\_s::mc\_platform [read]**

Definition at line 98 of file agent.h.

Referenced by agent\_Initialize(), agent\_RunChScript(), agent\_RunChScriptThread(), MC\_AddAgent(), and MC\_SetAgentStatus().

#### 12.13.2.25 MUTEX\_T\* agent\_s::lock

Definition at line 100 of file agent.h.

Referenced by acc\_MessageHandlerThread(), agent\_Copy(), agent\_Destroy(), agent\_Initialize(), agent\_New(), ams\_ManageAgentList(), MC\_GetAgentName(), MC\_GetAgentStatus(), MC\_PrintAgentCode(), MC\_RetrieveAgentCode(), and MC\_SetAgentStatus().

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

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

## 12.14 agent\_task\_s Struct Reference

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

### Data Fields

- [int task\\_completed](#)
- [int number\\_of\\_elements](#)
- [int size\\_of\\_element\\_array](#)
- [int persistent](#)
- [int init\\_agent\\_status](#)
- [char \\* var\\_name](#)
- [char \\* server\\_name](#)
- [char \\* code\\_id](#)
- [interpreter\\_variable\\_data\\_t \\* agent\\_return\\_data](#)
- [struct agent\\_variable\\_list\\_s \\* agent\\_variable\\_list](#)
- [char \\*\\* saved\\_variables](#)
- [int num\\_saved\\_variables](#)

### 12.14.1 Detailed Description

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

### 12.14.2 Field Documentation

#### 12.14.2.1 int agent\_task\_s::task\_completed

Definition at line 43 of file `agent_task.h`.

Referenced by `agent_task_Copy()`, `agent_xml_compose__task()`, and `agent_xml_parse__task()`.

#### 12.14.2.2 int agent\_task\_s::number\_of\_elements

Definition at line 44 of file `agent_task.h`.

Referenced by `agent_task_Copy()`.

#### 12.14.2.3 int agent\_task\_s::size\_of\_element\_array

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

Referenced by `agent_task_Copy()`.

#### 12.14.2.4 int agent\_task\_s::persistent

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

Referenced by `agent_task_Copy()`, `agent_xml_compose__task()`, `agent_xml_parse__data()`, and `agent_xml_parse__task()`.

**12.14.2.5 int agent\_task\_s::init\_agent\_status**

Definition at line 47 of file agent\_task.h.

Referenced by agent\_task\_Copy().

**12.14.2.6 char\* agent\_task\_s::var\_name**

Definition at line 49 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(), and MC\_ComposeAgent().

**12.14.2.7 char\* agent\_task\_s::server\_name**

Definition at line 50 of file agent\_task.h.

Referenced by agent\_task\_Copy(), agent\_task\_Destroy(), agent\_xml\_compose\_\_task(), agent\_xml\_parse\_\_task(), MC\_ComposeAgent(), and message\_InitializeFromAgent().

**12.14.2.8 char\* agent\_task\_s::code\_id**

Definition at line 51 of file agent\_task.h.

Referenced by agent\_task\_Copy(), agent\_task\_Destroy(), agent\_xml\_compose\_\_task(), agent\_xml\_parse\_\_agent\_code(), and agent\_xml\_parse\_\_task().

**12.14.2.9 interpreter\_variable\_data\_t\* agent\_task\_s::agent\_return\_data**

Definition at line 54 of file agent\_task.h.

Referenced by agent\_task\_Copy(), agent\_task\_Destroy(), agent\_xml\_compose\_\_task(), agent\_xml\_parse\_\_data(), and MC\_GetAgentReturnData().

**12.14.2.10 struct agent\_variable\_list\_s\* agent\_task\_s::agent\_variable\_list** [read]

Definition at line 55 of file agent\_task.h.

Referenced by agent\_AddPersistentVariable(), agent\_task\_Destroy(), agent\_task\_New(), agent\_xml\_compose\_\_task(), agent\_xml\_parse\_\_data(), MC\_AgentVariableRetrieve(), and MC\_SaveData\_chdl().

**12.14.2.11 char\*\* agent\_task\_s::saved\_variables**

Definition at line 56 of file agent\_task.h.

Referenced by agent\_task\_Destroy(), agent\_task\_New(), and MC\_AgentVariableSave().

**12.14.2.12 int agent\_task\_s::num\_saved\_variables**

Definition at line 57 of file agent\_task.h.

Referenced by agent\_task\_New(), and MC\_AgentVariableSave().

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

- [/home/dko/projects/mobilec/trunk/src/include/agent\\_task.h](/home/dko/projects/mobilec/trunk/src/include/agent_task.h)

## 12.15 arc4\_context Struct Reference

ARC4 context structure.

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

### Data Fields

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

### 12.15.1 Detailed Description

ARC4 context structure.

Definition at line 10 of file arc4.h.

### 12.15.2 Field Documentation

#### 12.15.2.1 `int arc4_context::x`

permutation index

Definition at line 12 of file arc4.h.

#### 12.15.2.2 `int arc4_context::y`

permutation index

Definition at line 13 of file arc4.h.

#### 12.15.2.3 `unsigned char arc4_context::m[256]`

permutation table

Definition at line 14 of file arc4.h.

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

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

## 12.16 barrier\_node\_s Struct Reference

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

### Data Fields

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

### 12.16.1 Detailed Description

Definition at line 42 of file barrier.h.

### 12.16.2 Field Documentation

#### 12.16.2.1 `MUTEX_T* barrier_node_s::lock`

Definition at line 43 of file barrier.h.

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

#### 12.16.2.2 `COND_T* barrier_node_s::cond`

Definition at line 44 of file barrier.h.

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

#### 12.16.2.3 `int barrier_node_s::id`

Definition at line 45 of file barrier.h.

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

#### 12.16.2.4 `int barrier_node_s::num_registered`

Definition at line 46 of file barrier.h.

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

#### 12.16.2.5 `int barrier_node_s::num_waiting`

Definition at line 47 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/trunk/src/include/barrier.h`



## 12.17 barrier\_queue\_s Struct Reference

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

### Data Fields

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

### 12.17.1 Detailed Description

Definition at line 51 of file barrier.h.

### 12.17.2 Field Documentation

#### 12.17.2.1 `RWLOCK_T* barrier_queue_s::lock`

Definition at line 52 of file barrier.h.

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

#### 12.17.2.2 `list_p barrier_queue_s::list`

Definition at line 54 of file barrier.h.

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

#### 12.17.2.3 `int barrier_queue_s::size`

Definition at line 55 of file barrier.h.

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

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

- `/home/dko/projects/mobilec/trunk/src/include/barrier.h`

## 12.18 cmd\_prompt\_s Struct Reference

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

### Data Fields

- THREAD\_T [thread](#)

### 12.18.1 Detailed Description

Definition at line 41 of file cmd\_prompt.h.

### 12.18.2 Field Documentation

#### 12.18.2.1 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/trunk/src/include/[cmd\\_prompt.h](#)

## 12.19 `command_s` Struct Reference

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

### Data Fields

- [int index](#)
- [int num\\_args](#)
- [char \\*\\* args](#)

### 12.19.1 Detailed Description

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

### 12.19.2 Field Documentation

#### 12.19.2.1 `int command_s::index`

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

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

#### 12.19.2.2 `int command_s::num_args`

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

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

#### 12.19.2.3 `char** command_s::args`

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

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

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

- `/home/dko/projects/mobilec/trunk/src/include/cmd_prompt.h`

## 12.20 connection\_s Struct Reference

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

### Data Fields

- [int connect\\_id](#)
- [char \\* remote\\_hostname](#)
- [struct sockaddr\\_in addr](#)
- [u\\_long clientfd](#)
- [u\\_long serverfd](#)

### 12.20.1 Detailed Description

Definition at line 46 of file connection.h.

### 12.20.2 Field Documentation

#### 12.20.2.1 int connection\_s::connect\_id

Definition at line 49 of file connection.h.

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

#### 12.20.2.2 char\* connection\_s::remote\_hostname

Definition at line 52 of file connection.h.

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

#### 12.20.2.3 struct sockaddr\_in connection\_s::addr [read]

Definition at line 54 of file connection.h.

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

#### 12.20.2.4 u\_long connection\_s::clientfd

Definition at line 57 of file connection.h.

Referenced by `connection_Copy()`, `connection_Destroy()`, `message_InitializeFromConnection()`, and `mtp_http_InitializeFromConnection()`.

#### 12.20.2.5 u\_long connection\_s::serverfd

Definition at line 58 of file connection.h.

Referenced by `connection_Copy()`.

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

- [/home/dko/projects/mobilec/trunk/src/include/connection.h](#)

## 12.21 des3\_context Struct Reference

Triple-DES context structure.

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

### Data Fields

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

### 12.21.1 Detailed Description

Triple-DES context structure.

Definition at line 23 of file des.h.

### 12.21.2 Field Documentation

#### 12.21.2.1 int des3\_context::mode

encrypt/decrypt

Definition at line 25 of file des.h.

#### 12.21.2.2 unsigned long des3\_context::sk[96]

3DES subkeys

Definition at line 26 of file des.h.

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

- [/home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/include/xyssl/des.h](#)

## 12.22 des\_context Struct Reference

DES context structure.

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

### Data Fields

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

### 12.22.1 Detailed Description

DES context structure.

Definition at line 13 of file des.h.

### 12.22.2 Field Documentation

#### 12.22.2.1 int des\_context::mode

encrypt/decrypt

Definition at line 15 of file des.h.

#### 12.22.2.2 unsigned long des\_context::sk[32]

DES subkeys

Definition at line 16 of file des.h.

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

- [/home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/include/xyssl/des.h](#)

## 12.23 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](#)

### 12.23.1 Detailed Description

Definition at line 16 of file dhm.h.

### 12.23.2 Field Documentation

#### 12.23.2.1 int dhm\_context::len

size(P) in chars

Definition at line 18 of file dhm.h.

Referenced by main().

#### 12.23.2.2 mpi dhm\_context::P

prime modulus

Definition at line 19 of file dhm.h.

Referenced by main().

#### 12.23.2.3 mpi dhm\_context::G

generator

Definition at line 20 of file dhm.h.

Referenced by main().

#### 12.23.2.4 mpi dhm\_context::X

secret value

Definition at line 21 of file dhm.h.



**12.23.2.5 mpi dhm\_context::GX**

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

Definition at line 22 of file dhm.h.

**12.23.2.6 mpi dhm\_context::GY**

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

Definition at line 23 of file dhm.h.

**12.23.2.7 mpi dhm\_context::K**

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

Definition at line 24 of file dhm.h.

**12.23.2.8 mpi dhm\_context::RP**

cached  $R^2 \bmod P$

Definition at line 25 of file dhm.h.

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

- [/home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/include/xyssl/dhm.h](#)

## 12.24 dynstring\_s Struct Reference

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

### Data Fields

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

### 12.24.1 Detailed Description

Definition at line 9 of file dynstring.h.

### 12.24.2 Field Documentation

#### 12.24.2.1 int dynstring\_s::len

Definition at line 10 of file dynstring.h.

Referenced by `dynstring_Append()`, `dynstring_New()`, and `mtp_http_CreateMessage()`.

#### 12.24.2.2 int dynstring\_s::size

Definition at line 11 of file dynstring.h.

Referenced by `dynstring_Append()`, and `dynstring_New()`.

#### 12.24.2.3 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()`, and `mtp_http_CreateMessage()`.

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

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

## 12.25 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](#)

### 12.25.1 Detailed Description

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

### 12.25.2 Field Documentation

#### 12.25.2.1 struct `fipa_url_s`\* `fipa_acl_envelope_Received_s::received_by` [read]

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

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

#### 12.25.2.2 struct `fipa_url_s`\* `fipa_acl_envelope_Received_s::received_from` [read]

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

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

#### 12.25.2.3 struct `fipa_DateTime_s`\* `fipa_acl_envelope_Received_s::received_date` [read]

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

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

#### 12.25.2.4 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_acl_envelope_HandleReceived()`.

#### 12.25.2.5 struct `fipa_url_s`\* `fipa_acl_envelope_Received_s::received_via` [read]

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

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

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

- [/home/dko/projects/mobilec/trunk/src/include/fipa\\_acl\\_envelope.h](#)

## 12.26 fipa\_acl\_envelope\_s Struct Reference

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

### Data Fields

- [int num\\_params](#)
- [struct fipa\\_acl\\_Param\\_s \\*\\* params](#)

### 12.26.1 Detailed Description

Definition at line 40 of file [fipa\\_acl\\_envelope.h](#).

### 12.26.2 Field Documentation

#### 12.26.2.1 [int fipa\\_acl\\_envelope\\_s::num\\_params](#)

Definition at line 42 of file [fipa\\_acl\\_envelope.h](#).

Referenced by [acc\\_Thread\(\)](#), [fipa\\_acl\\_envelope\\_Copy\(\)](#), [fipa\\_acl\\_envelope\\_Destroy\(\)](#), and [fipa\\_envelope\\_HandleParams\(\)](#).

#### 12.26.2.2 [struct fipa\\_acl\\_Param\\_s\\*\\* fipa\\_acl\\_envelope\\_s::params](#) [read]

Definition at line 43 of file [fipa\\_acl\\_envelope.h](#).

Referenced by [acc\\_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/trunk/src/include/fipa\\_acl\\_envelope.h](#)

## 12.27 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
- struct [fipa\\_word\\_s](#) \* 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

### 12.27.1 Detailed Description

Definition at line 83 of file [fipa\\_acl.h](#).

### 12.27.2 Field Documentation

#### 12.27.2.1 enum [fipa\\_performative\\_e](#) [fipa\\_acl\\_message\\_s::performative](#)

Definition at line 85 of file [fipa\\_acl.h](#).

Referenced by [fipa\\_acl\\_Compose\(\)](#), [fipa\\_acl\\_message\\_Copy\(\)](#), [fipa\\_acl\\_Parse\(\)](#), [MC\\_AclSetPerformative\(\)](#), and [MC\\_AclSetPerformative\\_chdl\(\)](#).

#### 12.27.2.2 struct [fipa\\_agent\\_identifier\\_s](#)\* [fipa\\_acl\\_message\\_s::sender](#) [read]

Definition at line 87 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\(\)](#), and [MC\\_AclSetSender\(\)](#).

#### 12.27.2.3 struct [fipa\\_agent\\_identifier\\_set\\_s](#)\* [fipa\\_acl\\_message\\_s::receiver](#) [read]

Definition at line 89 of file [fipa\\_acl.h](#).

Referenced by [AP\\_QUEUE\\_STD\\_DEFN\\_TEMPLATE\(\)](#), [fipa\\_acl\\_Compose\(\)](#), [fipa\\_acl\\_message\\_Copy\(\)](#), [fipa\\_acl\\_message\\_Destroy\(\)](#), [fipa\\_envelope\\_Compose\\_\\_intended\\_receiver\(\)](#), [fipa\\_envelope\\_Compose\\_\\_to\(\)](#), [fipa\\_message\\_parameter\\_Parse\(\)](#), [fipa\\_Reply\(\)](#), [MC\\_AclAddReceiver\(\)](#), and [MC\\_AclSend\(\)](#).

**12.27.2.4 int fipa\_acl\_message\_s::receiver\_num**

Definition at line 90 of file fipa\_acl.h.

Referenced by MC\_AclAddReceiver().

**12.27.2.5 struct fipa\_agent\_identifier\_set\_s\* fipa\_acl\_message\_s::reply\_to [read]**

Definition at line 92 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().

**12.27.2.6 struct fipa\_string\_s\* fipa\_acl\_message\_s::content [read]**

Definition at line 95 of file fipa\_acl.h.

Referenced by fipa\_acl\_Compose(), fipa\_acl\_message\_Copy(), fipa\_acl\_message\_Destroy(), fipa\_message\_parameter\_Parse(), MC\_AclSetContent(), and MC\_AclSetContent\_chdl().

**12.27.2.7 struct fipa\_expression\_s\* fipa\_acl\_message\_s::language [read]**

Definition at line 97 of file fipa\_acl.h.

Referenced by fipa\_acl\_Compose(), fipa\_acl\_message\_Copy(), fipa\_acl\_message\_Destroy(), and fipa\_message\_parameter\_Parse().

**12.27.2.8 struct fipa\_expression\_s\* fipa\_acl\_message\_s::encoding [read]**

Definition at line 99 of file fipa\_acl.h.

Referenced by fipa\_acl\_Compose(), fipa\_acl\_message\_Copy(), fipa\_acl\_message\_Destroy(), and fipa\_message\_parameter\_Parse().

**12.27.2.9 struct fipa\_expression\_s\* fipa\_acl\_message\_s::ontology [read]**

Definition at line 101 of file fipa\_acl.h.

Referenced by fipa\_acl\_Compose(), fipa\_acl\_message\_Copy(), fipa\_acl\_message\_Destroy(), and fipa\_message\_parameter\_Parse().

**12.27.2.10 struct fipa\_word\_s\* fipa\_acl\_message\_s::protocol [read]**

Definition at line 103 of file fipa\_acl.h.

Referenced by fipa\_acl\_Compose(), fipa\_acl\_message\_Copy(), fipa\_acl\_message\_Destroy(), and fipa\_message\_parameter\_Parse().

**12.27.2.11 struct fipa\_expression\_s\* fipa\_acl\_message\_s::conversation\_id [read]**

Definition at line 105 of file fipa\_acl.h.

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

#### **12.27.2.12** `struct fipa_expression_s* fipa_acl_message_s::reply_with` [read]

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

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

#### **12.27.2.13** `struct fipa_expression_s* fipa_acl_message_s::in_reply_to` [read]

Definition at line 109 of file `fipa_acl.h`.

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

#### **12.27.2.14** `struct fipa_DateTime_s* fipa_acl_message_s::reply_by` [read]

Definition at line 111 of file `fipa_acl.h`.

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

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

- [/home/dko/projects/mobilec/trunk/src/include/fipa\\_acl.h](#)



## 12.28 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

### 12.28.1 Detailed Description

Definition at line 22 of file `fipa_acl_envelope.h`.

### 12.28.2 Field Documentation

#### 12.28.2.1 struct `fipa_agent_identifier_set_s`\* `fipa_acl_Param_s::to` [read]

Definition at line 24 of file `fipa_acl_envelope.h`.

Referenced by `acc_Thread()`, `fipa_acl_Param_Copy()`, `fipa_acl_Param_Destroy()`, and `fipa_envelope_HandleTo()`.

#### 12.28.2.2 struct `fipa_agent_identifier_s`\* `fipa_acl_Param_s::from` [read]

Definition at line 25 of file `fipa_acl_envelope.h`.

Referenced by `fipa_acl_Param_Copy()`, `fipa_acl_Param_Destroy()`, and `fipa_envelope_HandleFrom()`.

#### 12.28.2.3 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()`.

#### 12.28.2.4 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()`.

#### 12.28.2.5 `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()`.

#### 12.28.2.6 `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()`.

#### 12.28.2.7 `struct fipa_DateTime_s* fipa_acl_Param_s::date` [read]

Definition at line 30 of file `fipa_acl_envelope.h`.

Referenced by `fipa_acl_Param_Copy()`, `fipa_acl_Param_Destroy()`, and `fipa_envelope_HandleDate()`.

#### 12.28.2.8 `struct fipa_agent_identifier_set_s* fipa_acl_Param_s::intended_receiver` [read]

Definition at line 31 of file `fipa_acl_envelope.h`.

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

#### 12.28.2.9 `struct fipa_acl_envelope_Received_s* fipa_acl_Param_s::received` [read]

Definition at line 32 of file `fipa_acl_envelope.h`.

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

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

- `/home/dko/projects/mobilec/trunk/src/include/fipa_acl_envelope.h`

## 12.29 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](#)

### 12.29.1 Detailed Description

Definition at line 157 of file [fipa\\_acl.h](#).

### 12.29.2 Field Documentation

#### 12.29.2.1 char\* fipa\_agent\_identifier\_s::name

Definition at line 159 of file [fipa\\_acl.h](#).

Referenced by [acc\\_Thread\(\)](#), [AP\\_QUEUE\\_STD\\_DEFN\\_TEMPLATE\(\)](#), [fipa\\_agent\\_identifier\\_Compose\(\)](#), [fipa\\_agent\\_identifier\\_Copy\(\)](#), [fipa\\_agent\\_identifier\\_Destroy\(\)](#), [fipa\\_envelope\\_Compose\\_\\_from\(\)](#), [fipa\\_envelope\\_Compose\\_\\_intended\\_receiver\(\)](#), [fipa\\_envelope\\_Compose\\_\\_to\(\)](#), [MC\\_AclAddReceiver\(\)](#), [MC\\_AclAddReplyTo\(\)](#), [MC\\_AclSend\(\)](#), and [MC\\_AclSetSender\(\)](#).

#### 12.29.2.2 struct fipa\_url\_sequence\_s\* fipa\_agent\_identifier\_s::addresses [read]

Definition at line 160 of file [fipa\\_acl.h](#).

Referenced by [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\\_AclSend\(\)](#), and [MC\\_AclSetSender\(\)](#).

#### 12.29.2.3 struct fipa\_agent\_identifier\_set\_s\* fipa\_agent\_identifier\_s::resolvers [read]

Definition at line 161 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/trunk/src/include/fipa\\_acl.h](#)

## 12.30 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](#)

### 12.30.1 Detailed Description

Definition at line 143 of file [fipa\\_acl.h](#).

### 12.30.2 Field Documentation

#### 12.30.2.1 int fipa\_agent\_identifier\_set\_s::num

Definition at line 145 of file [fipa\\_acl.h](#).

Referenced by [acc\\_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\(\)](#).

#### 12.30.2.2 int fipa\_agent\_identifier\_set\_s::retain\_order

Definition at line 146 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\(\)](#).

#### 12.30.2.3 struct fipa\_agent\_identifier\_s\*\* fipa\_agent\_identifier\_set\_s::fipa\_agent\_identifiers [read]

Definition at line 147 of file [fipa\\_acl.h](#).

Referenced by [acc\\_Thread\(\)](#), [AP\\_QUEUE\\_STD\\_DEFN\\_TEMPLATE\(\)](#), [fipa\\_agent\\_identifier\\_set\\_Compose\(\)](#), [fipa\\_agent\\_identifier\\_set\\_Copy\(\)](#), [fipa\\_agent\\_identifier\\_set\\_Destroy\(\)](#), [fipa\\_envelope\\_Compose\\_\\_intended\\_receiver\(\)](#), [fipa\\_envelope\\_Compose\\_\\_to\(\)](#), [fipa\\_envelope\\_HandleIntendedReceiver\(\)](#), [fipa\\_envelope\\_HandleTo\(\)](#), [fipa\\_envelope\\_ParseResolvers\(\)](#), [fipa\\_Reply\(\)](#), [MC\\_AclAddReceiver\(\)](#), [MC\\_AclAddReplyTo\(\)](#), and [MC\\_AclSend\(\)](#).

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

- [/home/dko/projects/mobilec/trunk/src/include/fipa\\_acl.h](#)

## 12.31 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](#)

### 12.31.1 Detailed Description

Definition at line 211 of file fipa\_acl.h.

### 12.31.2 Field Documentation

#### 12.31.2.1 int fipa\_DateTime\_s::year

Definition at line 213 of file fipa\_acl.h.

Referenced by fipa\_DateTime\_Compose().

#### 12.31.2.2 int fipa\_DateTime\_s::month

Definition at line 214 of file fipa\_acl.h.

Referenced by fipa\_DateTime\_Compose().

#### 12.31.2.3 int fipa\_DateTime\_s::day

Definition at line 215 of file fipa\_acl.h.

Referenced by fipa\_DateTime\_Compose().

#### 12.31.2.4 int fipa\_DateTime\_s::hour

Definition at line 216 of file fipa\_acl.h.

Referenced by fipa\_DateTime\_Compose().

#### 12.31.2.5 int fipa\_DateTime\_s::minute

Definition at line 217 of file fipa\_acl.h.

Referenced by fipa\_DateTime\_Compose().

**12.31.2.6 int fipa\_DateTime\_s::second**

Definition at line 218 of file fipa\_acl.h.

Referenced by fipa\_DateTime\_Compose().

**12.31.2.7 int fipa\_DateTime\_s::millisecond**

Definition at line 219 of file fipa\_acl.h.

Referenced by fipa\_DateTime\_Compose().

**12.31.2.8 char fipa\_DateTime\_s::sign**

Definition at line 220 of file fipa\_acl.h.

Referenced by fipa\_DateTime\_Compose(), and fipa\_datetime\_Parse().

**12.31.2.9 int fipa\_DateTime\_s::is\_utc**

Definition at line 221 of file fipa\_acl.h.

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

- [/home/dko/projects/mobilec/trunk/src/include/fipa\\_acl.h](#)

## 12.32 fipa\_expression\_s Struct Reference

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

### Data Fields

- enum [fipa\\_expression\\_type\\_e](#) type
- union [fipa\\_expression\\_s::content\\_u](#) content

### Data Structures

- union [content\\_u](#)

#### 12.32.1 Detailed Description

Definition at line 170 of file [fipa\\_acl.h](#).

#### 12.32.2 Field Documentation

##### 12.32.2.1 enum [fipa\\_expression\\_type\\_e](#) [fipa\\_expression\\_s::type](#)

Definition at line 172 of file [fipa\\_acl.h](#).

Referenced by [fipa\\_expression\\_Compose\(\)](#), [fipa\\_expression\\_Copy\(\)](#), [fipa\\_expression\\_Destroy\(\)](#), and [fipa\\_expression\\_Parse\(\)](#).

##### 12.32.2.2 union [fipa\\_expression\\_s::content\\_u](#) [fipa\\_expression\\_s::content](#)

Referenced by [fipa\\_expression\\_Compose\(\)](#), [fipa\\_expression\\_Copy\(\)](#), and [fipa\\_expression\\_Destroy\(\)](#).

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

- [/home/dko/projects/mobilec/trunk/src/include/fipa\\_acl.h](#)

## 12.33 `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`

### 12.33.1 Detailed Description

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

### 12.33.2 Field Documentation

#### 12.33.2.1 `struct fipa_word_s* fipa_expression_s::content_u::word` [read]

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

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

#### 12.33.2.2 `struct fipa_string_s* fipa_expression_s::content_u::string` [read]

Definition at line 176 of file `fipa_acl.h`.

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

#### 12.33.2.3 `struct fipa_number_s* fipa_expression_s::content_u::number` [read]

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

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

#### 12.33.2.4 `struct fipa_DateTime_s* fipa_expression_s::content_u::datetime` [read]

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

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

#### 12.33.2.5 `struct fipa_expression_s** fipa_expression_s::content_u::expression` [read]

Definition at line 179 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/trunk/src/include/fipa_acl.h`



## 12.34 fipa\_message\_string\_s Struct Reference

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

### Data Fields

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

### 12.34.1 Detailed Description

Definition at line 120 of file fipa\_acl.h.

### 12.34.2 Field Documentation

#### 12.34.2.1 char\* fipa\_message\_string\_s::message

Definition at line 122 of file fipa\_acl.h.

Referenced by `acc_Thread()`, `fipa_envelope_HandleDate()`, `fipa_envelope_HandleReceived()`, `fipa_message_string_Copy()`, and `fipa_message_string_Destroy()`.

#### 12.34.2.2 char\* fipa\_message\_string\_s::parse

Definition at line 123 of file fipa\_acl.h.

Referenced by `acc_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/trunk/src/include/fipa_acl.h`

## 12.35 fipa\_number\_s Struct Reference

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

### Data Fields

- char \* [str](#)

### 12.35.1 Detailed Description

Definition at line 241 of file fipa\_acl.h.

### 12.35.2 Field Documentation

#### 12.35.2.1 char\* fipa\_number\_s::str

Definition at line 243 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/trunk/src/include/fipa\\_acl.h](#)

## 12.36 fipa\_string\_s Struct Reference

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

### Data Fields

- char \* [content](#)

### 12.36.1 Detailed Description

Definition at line 200 of file fipa\_acl.h.

### 12.36.2 Field Documentation

#### 12.36.2.1 char\* fipa\_string\_s::content

Definition at line 202 of file fipa\_acl.h.

Referenced by fipa\_string\_Compose(), fipa\_string\_Copy(), fipa\_string\_Destroy(), fipa\_string\_Parse(), and MC\_AclSetContent().

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

- [/home/dko/projects/mobilec/trunk/src/include/fipa\\_acl.h](#)

## 12.37 fipa\_url\_s Struct Reference

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

### Data Fields

- char \* [str](#)

### 12.37.1 Detailed Description

Definition at line 230 of file fipa\_acl.h.

### 12.37.2 Field Documentation

#### 12.37.2.1 char\* fipa\_url\_s::str

Definition at line 232 of file fipa\_acl.h.

Referenced by `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_AclSend()`, and `MC_AclSetSender()`.

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

- `/home/dko/projects/mobilec/trunk/src/include/fipa\_acl.h`

## 12.38 fipa\_url\_sequence\_s Struct Reference

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

### Data Fields

- [int num](#)
- struct [fipa\\_url\\_s](#) \*\* [urls](#)

### 12.38.1 Detailed Description

Definition at line 131 of file [fipa\\_acl.h](#).

### 12.38.2 Field Documentation

#### 12.38.2.1 int fipa\_url\_sequence\_s::num

Definition at line 133 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\(\)](#).

#### 12.38.2.2 struct fipa\_url\_s\*\* fipa\_url\_sequence\_s::urls [read]

Definition at line 134 of file [fipa\\_acl.h](#).

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

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

- [/home/dko/projects/mobilec/trunk/src/include/fipa\\_acl.h](#)

## 12.39 fipa\_word\_s Struct Reference

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

### Data Fields

- char \* [content](#)

### 12.39.1 Detailed Description

Definition at line 189 of file fipa\_acl.h.

### 12.39.2 Field Documentation

#### 12.39.2.1 char\* fipa\_word\_s::content

Definition at line 191 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\_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/trunk/src/include/fipa\\_acl.h](#)

## 12.40 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](#)

#### 12.40.1 Detailed Description

Definition at line 1 of file class.cxx.

#### 12.40.2 Constructor & Destructor Documentation

##### 12.40.2.1 foo\_c::foo\_c (float *f*, int *b*)

##### 12.40.2.2 foo\_c::~~foo\_c ()

Definition at line 81 of file class.cxx.

#### 12.40.3 Member Function Documentation

##### 12.40.3.1 int foo\_c::get\_bar () [inline]

Definition at line 13 of file class.cxx.

References [bar](#).

**12.40.3.2 float foo\_c::get\_foo () [inline]**

Definition at line 20 of file class.cxx.

References foo.

**12.40.3.3 void foo\_c::set\_bar (int *b*) [inline]**

Definition at line 27 of file class.cxx.

References bar.

**12.40.3.4 void foo\_c::set\_foo (float *f*) [inline]**

Definition at line 34 of file class.cxx.

References foo.

**12.40.3.5 void foo\_c::set\_foobar (float *f*, int *b* = 0) [inline]**

Definition at line 41 of file class.cxx.

References bar, and foo.

**12.40.3.6 int foo\_c::get\_global () [inline, protected]**

Definition at line 54 of file class.cxx.

References global.

**12.40.3.7 int foo\_c::get\_barfoo () [inline]**

Definition at line 67 of file class.cxx.

References barfoo.

**12.40.4 Field Documentation****12.40.4.1 float foo\_c::foo [private]**

Definition at line 3 of file class.cxx.

Referenced by get\_foo(), set\_foo(), and set\_foobar().

**12.40.4.2 int foo\_c::bar [private]**

Definition at line 4 of file class.cxx.

Referenced by get\_bar(), set\_bar(), and set\_foobar().



**12.40.4.3 int foo\_c::global** [static, protected]

Definition at line 50 of file class.cxx.

Referenced by get\_global().

**12.40.4.4 int foo\_c::barfoo** [private]

Definition at line 61 of file class.cxx.

Referenced by get\_barfoo().

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

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

## 12.41 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](#)

#### 12.41.1 Detailed Description

Definition at line 1 of file struct.cxx.

#### 12.41.2 Constructor & Destructor Documentation

##### 12.41.2.1 foo\_s::foo\_s (float *f*, int *b*)

Definition at line 39 of file struct.cxx.

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

##### 12.41.2.2 foo\_s::~~foo\_s ()

Definition at line 46 of file struct.cxx.

#### 12.41.3 Member Function Documentation

##### 12.41.3.1 int foo\_s::get\_bar () [inline]

Definition at line 11 of file struct.cxx.

References [bar](#).

##### 12.41.3.2 float foo\_s::get\_foo () [inline]

Definition at line 18 of file struct.cxx.

References [foo](#).

**12.41.3.3 void foo\_s::set\_bar (int *b*)** [inline]

Definition at line 25 of file struct.cxx.

References bar.

**12.41.3.4 void foo\_s::set\_foo (float *f*)** [inline]

Definition at line 32 of file struct.cxx.

References foo.

**12.41.4 Field Documentation****12.41.4.1 float foo\_s::foo**

Definition at line 3 of file struct.cxx.

Referenced by foo\_s(), get\_foo(), and set\_foo().

**12.41.4.2 int foo\_s::bar**

Definition at line 4 of file struct.cxx.

Referenced by foo\_s(), get\_bar(), and set\_bar().

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

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

## 12.42 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]

### 12.42.1 Detailed Description

HAVEGE state structure.

Definition at line 12 of file havege.h.

### 12.42.2 Field Documentation

#### 12.42.2.1 int havege\_state::PT1

Definition at line 14 of file havege.h.

#### 12.42.2.2 int havege\_state::PT2

Definition at line 14 of file havege.h.

#### 12.42.2.3 int havege\_state::offset[2]

Definition at line 14 of file havege.h.

#### 12.42.2.4 int havege\_state::pool[COLLECT\_SIZE]

Definition at line 15 of file havege.h.

#### 12.42.2.5 int havege\_state::WALK[8192]

Definition at line 16 of file havege.h.

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

- [/home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/include/xyssl/havege.h](#)

## 12.43 host\_id\_s Struct Reference

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

### Data Fields

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

### 12.43.1 Detailed Description

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

### 12.43.2 Field Documentation

#### 12.43.2.1 char\* host\_id\_s::hostname

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

#### 12.43.2.2 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/trunk/src/include/host\_id.h`

## 12.44 hr\_time Struct Reference

timer structure

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

### Data Fields

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

### 12.44.1 Detailed Description

timer structure

Definition at line 10 of file timing.h.

### 12.44.2 Field Documentation

#### 12.44.2.1 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/trunk/src/security/xyssl-0.9/include/xyssl/timing.h](#)

## 12.45 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](#)

### 12.45.1 Detailed Description

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

### 12.45.2 Field Documentation

#### 12.45.2.1 char\* interpreter\_variable\_data\_s::name

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

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

#### 12.45.2.2 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()`.

#### 12.45.2.3 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_GetAgentReturnData()`, and `MC_SaveData_chdl()`.

#### 12.45.2.4 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(), and MC\_GetAgentReturnData().

#### 12.45.2.5 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(), and MC\_GetAgentReturnData().

#### 12.45.2.6 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\_AgentVariableRetrieve(), and MC\_SaveData\_chdl().

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

- /home/dko/projects/mobilec/trunk/src/include/[interpreter\\_variable\\_data.h](#)



## 12.46 LibMC::InvalidAgencyException Class Reference

Exception class for use with null agency pointers.

### Public Member Functions

- [InvalidAgencyException](#) ()  
*Null agency pointer exception constructor.*
- [InvalidAgencyException](#) (String exc)  
*Null agency pointer exception constructor.*

### Private Attributes

- const String [msg](#) = "Private agency pointer not valid."

#### 12.46.1 Detailed Description

Exception class for use with null agency pointers.

This class provides a way to inform the program that an agency was created or accessed that had an invalid internal pointer.

Definition at line 1074 of file MCAgency.cs.

#### 12.46.2 Constructor & Destructor Documentation

##### 12.46.2.1 LibMC::InvalidAgencyException::InvalidAgencyException () [inline]

Null agency pointer exception constructor.

Constructor for the exception class. This exception simply defines a recognizable exception class and sets the exception message appropriately.

Definition at line 1085 of file MCAgency.cs.

##### 12.46.2.2 LibMC::InvalidAgencyException::InvalidAgencyException (String exc) [inline]

Null agency pointer exception constructor.

Constructor for the exception class. Allows the use of a custom error message.

Definition at line 1097 of file MCAgency.cs.

#### 12.46.3 Field Documentation

##### 12.46.3.1 const String LibMC::InvalidAgencyException::msg = "Private agency pointer not valid." [private]

Definition at line 1076 of file MCAgency.cs.

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

- </home/dko/projects/mobilec/trunk/src/win32/LibMC.net/LibMC/MCAgency.cs>

## 12.47 LibMC::InvalidAgentException Class Reference

Exception class for use with null agent pointers.

### Public Member Functions

- [InvalidAgentException \(\)](#)  
*Null agent pointer exception constructor.*
- [InvalidAgentException \(String exc\)](#)  
*Null agent pointer exception constructor.*

### Private Attributes

- `const String msg = "Private agent pointer not valid."`

#### 12.47.1 Detailed Description

Exception class for use with null agent pointers.

This class provides a way to inform the program that an agent was created or accessed that had an invalid internal pointer.

Definition at line 569 of file MCAgent.cs.

#### 12.47.2 Constructor & Destructor Documentation

##### 12.47.2.1 LibMC::InvalidAgentException::InvalidAgentException () `[inline]`

Null agent pointer exception constructor.

Constructor for the exception class. This exception simply defines a recognizable exception class and sets the exception message appropriately.

Definition at line 580 of file MCAgent.cs.

##### 12.47.2.2 LibMC::InvalidAgentException::InvalidAgentException (String exc) `[inline]`

Null agent pointer exception constructor.

Constructor for the exception class. Allows the use of a custom error message.

Definition at line 591 of file MCAgent.cs.

#### 12.47.3 Field Documentation

##### 12.47.3.1 `const String LibMC::InvalidAgentException::msg = "Private agent pointer not valid."` `[private]`

Definition at line 571 of file MCAgent.cs.

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

- </home/dko/projects/mobilec/trunk/src/win32/LibMC.net/LibMC/MCAgent.cs>

## 12.48 list\_s Struct Reference

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

### Data Fields

- [listNode\\_p listhead](#)
- [int size](#)

### 12.48.1 Detailed Description

Definition at line 41 of file list.h.

### 12.48.2 Field Documentation

#### 12.48.2.1 listNode\_p list\_s::listhead

Definition at line 43 of file list.h.

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

#### 12.48.2.2 int list\_s::size

Definition at line 44 of file list.h.

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

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

- `/home/dko/projects/mobilec/trunk/src/mc_list/list.h`

## 12.49 listNode\_s Struct Reference

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

### Data Fields

- DATA [node\\_data](#)
- struct [listNode\\_s](#) \* [next](#)

### 12.49.1 Detailed Description

Definition at line 32 of file list.h.

### 12.49.2 Field Documentation

#### 12.49.2.1 DATA listNode\_s::node\_data

Definition at line 34 of file list.h.

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

#### 12.49.2.2 struct listNode\_s\* listNode\_s::next [read]

Definition at line 35 of file list.h.

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

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

- `/home/dko/projects/mobilec/trunk/src/mc_list/list.h`

## 12.50 mc\_platform\_s Struct Reference

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

### Data Fields

- `int` `err`
- `char *` `hostname`
- `unsigned short` `port`
- `message_queue_p` `asm_message_queue`
- `message_queue_p` `message_queue`
- `agent_queue_p` `agent_queue`
- `connection_queue_p` `connection_queue`
- `df_p` `df`
- `ams_p` `ams`
- `acc_p` `acc`
- `cmd_prompt_p` `cmd_prompt`
- `syncList_p` `syncList`
- `barrier_queue_p` `barrier_queue`
- `listen_thread_arg_p` `listen_thread_arg`
- `listen_thread_arg_p` `client_thread_arg`
- `int` `default_agentstatus`
- `int` `stack_size` [MC\_THREAD\_ALL]
- `ChOptions_t *` `interp_options`
- `COND_T *` `MC_signal_cond`
- `COND_T *` `MC_sync_cond`
- `MUTEX_T *` `MC_signal_lock`
- `MUTEX_T *` `MC_sync_lock`
- `enum` `MC_Signal_e` `MC_signal`
- `enum` `MC_SteerCommand_e` `MC_steer_command`
- `MUTEX_T *` `MC_steer_lock`
- `COND_T *` `MC_steer_cond`
- `int` `giant`
- `MUTEX_T *` `giant_lock`
- `COND_T *` `giant_cond`
- `int` `quit`
- `MUTEX_T *` `quit_lock`
- `int` `sockfd`

### 12.50.1 Detailed Description

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

### 12.50.2 Field Documentation

#### 12.50.2.1 `int mc_platform_s::err`

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

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

### 12.50.2.2 char\* mc\_platform\_s::hostname

Definition at line 58 of file mc\_platform.h.

Referenced by fipa\_envelope\_Compose\_\_from(), mc\_platform\_Initialize(), message\_InitializeFromAgent(), message\_InitializeFromString(), and message\_queue\_SendOutgoing().

### 12.50.2.3 unsigned short mc\_platform\_s::port

Definition at line 59 of file mc\_platform.h.

Referenced by fipa\_envelope\_Compose\_\_from(), listen\_Thread(), mc\_platform\_Initialize(), message\_InitializeFromAgent(), message\_InitializeFromString(), and message\_queue\_SendOutgoing().

### 12.50.2.4 message\_queue\_p mc\_platform\_s::asm\_message\_queue

Definition at line 62 of file mc\_platform.h.

Referenced by acc\_MessageHandlerThread(), acc\_Thread(), mc\_platform\_Destroy(), and mc\_platform\_Initialize().

### 12.50.2.5 message\_queue\_p mc\_platform\_s::message\_queue

Definition at line 66 of file mc\_platform.h.

Referenced by acc\_MessageHandlerThread(), acc\_Thread(), handler\_PRINTLIST\_MESSAGE(), MC\_End(), MC\_LoadAgentFromFile(), mc\_platform\_Destroy(), mc\_platform\_Initialize(), and MC\_SendAgentMigrationMessage().

### 12.50.2.6 agent\_queue\_p mc\_platform\_s::agent\_queue

Definition at line 67 of file mc\_platform.h.

Referenced by acc\_MessageHandlerThread(), acc\_Thread(), handler\_PRINTLIST\_AGENTS(), MC\_AddAgent(), MC\_FindAgentByID(), MC\_FindAgentByName(), MC\_GetAllAgents(), mc\_platform\_Destroy(), mc\_platform\_Initialize(), MC\_RetrieveAgent(), MC\_SendAgentMigrationMessageFile(), MC\_WaitAgent(), and MC\_WaitRetrieveAgent().

### 12.50.2.7 connection\_queue\_p mc\_platform\_s::connection\_queue

Definition at line 68 of file mc\_platform.h.

Referenced by acc\_Thread(), handler\_PRINT\_CONNECTLIST(), listen\_Thread(), MC\_End(), mc\_platform\_Destroy(), and mc\_platform\_Initialize().

### 12.50.2.8 df\_p mc\_platform\_s::df

Definition at line 70 of file mc\_platform.h.

Referenced by df\_ProcessRequest(), df\_Start(), df\_Thread(), MC\_DeregisterService(), MC\_End(), mc\_platform\_Destroy(), mc\_platform\_Initialize(), MC\_RegisterService(), MC\_SearchForService(), request\_handler\_DEREGISTER(), request\_handler\_REGISTER(), and request\_handler\_SEARCH().



**12.50.2.9   ams\_p mc\_platform\_s::ams**

Definition at line 71 of file mc\_platform.h.

Referenced by acc\_MessageHandlerThread(), agent\_RunChScriptThread(), ams\_Start(), ams\_Thread(), MC\_AddAgent(), MC\_End(), MC\_MainLoop(), mc\_platform\_Destroy(), mc\_platform\_Initialize(), MC\_SendAgentMigrationMessageFile(), and MC\_SetAgentStatus().

**12.50.2.10   acc\_p mc\_platform\_s::acc**

Definition at line 72 of file mc\_platform.h.

Referenced by acc\_Start(), listen\_Thread(), MC\_End(), mc\_platform\_Destroy(), and mc\_platform\_Initialize().

**12.50.2.11   cmd\_prompt\_p mc\_platform\_s::cmd\_prompt**

Definition at line 73 of file mc\_platform.h.

Referenced by cmd\_prompt\_Start(), MC\_End(), mc\_platform\_Destroy(), and mc\_platform\_Initialize().

**12.50.2.12   syncList\_p mc\_platform\_s::syncList**

Definition at line 78 of file mc\_platform.h.

Referenced by MC\_CondBroadcast(), MC\_CondReset(), MC\_CondSignal(), MC\_CondWait(), MC\_MutexLock(), MC\_MutexUnlock(), mc\_platform\_Initialize(), MC\_SemaphorePost(), MC\_SemaphoreWait(), MC\_SyncDelete(), and MC\_SyncInit().

**12.50.2.13   barrier\_queue\_p mc\_platform\_s::barrier\_queue**

Definition at line 79 of file mc\_platform.h.

Referenced by MC\_Barrier(), MC\_BarrierDelete(), MC\_BarrierInit(), mc\_platform\_Destroy(), and mc\_platform\_Initialize().

**12.50.2.14   listen\_thread\_arg\_p mc\_platform\_s::listen\_thread\_arg**

Definition at line 81 of file mc\_platform.h.

**12.50.2.15   listen\_thread\_arg\_p mc\_platform\_s::client\_thread\_arg**

Definition at line 82 of file mc\_platform.h.

**12.50.2.16   int mc\_platform\_s::default\_agentstatus**

Definition at line 84 of file mc\_platform.h.

Referenced by agent\_Initialize(), mc\_platform\_Initialize(), and MC\_SetDefaultAgentStatus().

**12.50.2.17 int mc\_platform\_s::stack\_size[MC\_THREAD\_ALL]**

Definition at line 86 of file mc\_platform.h.

Referenced by acc\_Start(), agent\_RunChScript(), ams\_Start(), cmd\_prompt\_Start(), df\_Start(), and mc\_platform\_Initialize().

**12.50.2.18 ChOptions\_t\* mc\_platform\_s::interp\_options**

Definition at line 88 of file mc\_platform.h.

Referenced by agent\_RunChScriptThread(), MC\_ChInitializeOptions(), mc\_platform\_Destroy(), and mc\_platform\_Initialize().

**12.50.2.19 COND\_T\* mc\_platform\_s::MC\_signal\_cond**

Definition at line 91 of file mc\_platform.h.

Referenced by acc\_MessageHandlerThread(), acc\_Thread(), agent\_RunChScriptThread(), mc\_platform\_Destroy(), mc\_platform\_Initialize(), and MC\_WaitSignal().

**12.50.2.20 COND\_T\* mc\_platform\_s::MC\_sync\_cond**

Definition at line 92 of file mc\_platform.h.

Referenced by mc\_platform\_Destroy(), and mc\_platform\_Initialize().

**12.50.2.21 MUTEX\_T\* mc\_platform\_s::MC\_signal\_lock**

Definition at line 93 of file mc\_platform.h.

Referenced by acc\_MessageHandlerThread(), acc\_Thread(), agent\_RunChScriptThread(), mc\_platform\_Destroy(), mc\_platform\_Initialize(), and MC\_WaitSignal().

**12.50.2.22 MUTEX\_T\* mc\_platform\_s::MC\_sync\_lock**

Definition at line 94 of file mc\_platform.h.

Referenced by mc\_platform\_Destroy(), and mc\_platform\_Initialize().

**12.50.2.23 enum MC\_Signal\_e mc\_platform\_s::MC\_signal**

Definition at line 95 of file mc\_platform.h.

Referenced by acc\_MessageHandlerThread(), acc\_Thread(), agent\_RunChScriptThread(), mc\_platform\_Initialize(), MC\_ResetSignal(), and MC\_WaitSignal().

**12.50.2.24 enum MC\_SteerCommand\_e mc\_platform\_s::MC\_steer\_command**

Definition at line 98 of file mc\_platform.h.

Referenced by MC\_SendSteerCommand(), MC\_Steer(), and MC\_SteerControl().

**12.50.2.25 MUTEX\_T\* mc\_platform\_s::MC\_steer\_lock**

Definition at line 99 of file mc\_platform.h.

Referenced by mc\_platform\_Destroy(), mc\_platform\_Initialize(), MC\_SendSteerCommand(), MC\_Steer(), and MC\_SteerControl().

**12.50.2.26 COND\_T\* mc\_platform\_s::MC\_steer\_cond**

Definition at line 100 of file mc\_platform.h.

Referenced by mc\_platform\_Destroy(), mc\_platform\_Initialize(), MC\_SendSteerCommand(), and MC\_SteerControl().

**12.50.2.27 int mc\_platform\_s::giant**

Definition at line 104 of file mc\_platform.h.

Referenced by acc\_MessageHandlerThread(), acc\_Thread(), MC\_GetAllAgents(), MC\_HaltAgency(), mc\_platform\_Initialize(), MC\_ResetSignal(), MC\_ResumeAgency(), and MC\_WaitSignal().

**12.50.2.28 MUTEX\_T\* mc\_platform\_s::giant\_lock**

Definition at line 105 of file mc\_platform.h.

Referenced by acc\_MessageHandlerThread(), acc\_Thread(), MC\_GetAllAgents(), MC\_HaltAgency(), mc\_platform\_Destroy(), mc\_platform\_Initialize(), MC\_ResetSignal(), MC\_ResumeAgency(), and MC\_WaitSignal().

**12.50.2.29 COND\_T\* mc\_platform\_s::giant\_cond**

Definition at line 106 of file mc\_platform.h.

Referenced by acc\_MessageHandlerThread(), acc\_Thread(), mc\_platform\_Destroy(), mc\_platform\_Initialize(), and MC\_ResetSignal().

**12.50.2.30 int mc\_platform\_s::quit**

Definition at line 108 of file mc\_platform.h.

Referenced by acc\_MessageHandlerThread(), acc\_Thread(), ams\_Thread(), df\_Thread(), MC\_End(), and mc\_platform\_Initialize().

**12.50.2.31 MUTEX\_T\* mc\_platform\_s::quit\_lock**

Definition at line 109 of file mc\_platform.h.

Referenced by acc\_MessageHandlerThread(), acc\_Thread(), ams\_Thread(), df\_Thread(), MC\_End(), mc\_platform\_Destroy(), and mc\_platform\_Initialize().

**12.50.2.32 int mc\_platform\_s::sockfd**

Definition at line 110 of file mc\_platform.h.

Referenced by listen\_Thread(), and mc\_platform\_Destroy().

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

- /home/dko/projects/mobilec/trunk/src/include/[mc\\_platform.h](#)

## 12.51 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](#)

### 12.51.1 Detailed Description

Definition at line 39 of file mc\_rwlock.h.

### 12.51.2 Field Documentation

#### 12.51.2.1 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().

#### 12.51.2.2 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().

#### 12.51.2.3 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().

#### 12.51.2.4 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().

#### 12.51.2.5 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().

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

- [/home/dko/projects/mobilec/trunk/src/include/mc\\_rwlock.h](#)

## 12.52 LibMC::MCAclMessage Class Reference

Encapsulates ACL messages in the Mobile-C library.

### Public Types

- enum [MC\\_FipaPerformative\\_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](#) }

*Enum for describing the type of an ACL message.*

### Public Member Functions

- [MCAclMessage](#) ()  
*Default constructor.*
- void [New](#) ()  
*Creates a new, blank ACL message.*
- [MCAclMessage Reply](#) ([MCAclMessage](#) acl\_message)  
*Creates an ACL message that is a response to the argument.*
- int [SetPerformative](#) ([MC\\_FipaPerformative\\_e](#) performative)  
*Sets the performative field of the message.*
- int [SetSender](#) (String name, String address)  
*Sets the sender field of the message.*
- int [AddReceiver](#) (String name, String address)  
*Adds a receiver to the list of receivers.*
- int [AddReplyTo](#) (String name, String address)  
*Adds a "reply-to" field to the message.*
- int [SetContent](#) (String content)  
*Sets the content field of the message.*
- int [Destroy](#) ()  
*Destroys a message.*

## Properties

- internal IntPtr [AclMsg](#) [get, set]

## Private Member Functions

- internal [MCAclMessage](#) (IntPtr msg)

## Private Attributes

- IntPtr [aclmsg\\_p](#)

### 12.52.1 Detailed Description

Encapsulates ACL messages in the Mobile-C library.

This class contains a pointer to an ACL message in the Mobile-C library. Functions are provided to send the message, set its various fields, and destroy the message.

Definition at line 72 of file MCAclMessage.cs.

### 12.52.2 Member Enumeration Documentation

#### 12.52.2.1 enum LibMC::MCAclMessage::MC\_FipaPerformative\_e

Enum for describing the type of an ACL message.

#### Note:

This enum is pulled directly from the Mobile-C library.

#### Enumerator:

- FIPA\_ERROR*** Fipa performative enum value
- FIPA\_ZERO*** Fipa performative enum value
- FIPA\_ACCEPT\_PROPOSAL*** Fipa performative enum value
- FIPA\_AGREE*** Fipa performative enum value
- FIPA\_CANCEL*** Fipa performative enum value
- FIPA\_CALL\_FOR\_PROPOSAL*** Fipa performative enum value
- FIPA\_CONFIRM*** Fipa performative enum value
- FIPA\_DISCONFIRM*** Fipa performative enum value
- FIPA\_FAILURE*** Fipa performative enum value
- FIPA\_INFORM*** Fipa performative enum value
- FIPA\_INFORM\_IF*** Fipa performative enum value
- FIPA\_INFORM\_REF*** Fipa performative enum value
- FIPA\_NOT\_UNDERSTOOD*** Fipa performative enum value
- FIPA\_PROPOGATE*** Fipa performative enum value
- FIPA\_PROPOSE*** Fipa performative enum value



*FIPA\_PROXY* Fipa performative enum value  
*FIPA\_QUERY\_IF* Fipa performative enum value  
*FIPA\_QUERY\_REF* Fipa performative enum value  
*FIPA\_REFUSE* Fipa performative enum value  
*FIPA\_REJECT\_PROPOSAL* Fipa performative enum value  
*FIPA\_REQUEST* Fipa performative enum value  
*FIPA\_REQUEST\_WHEN* Fipa performative enum value  
*FIPA\_REQUEST\_WHENEVER* Fipa performative enum value  
*FIPA\_SUBSCRIBE* Fipa performative enum value

Definition at line 79 of file MCAclMessage.cs.

### 12.52.3 Constructor & Destructor Documentation

#### 12.52.3.1 LibMC::MCAclMessage::MCAclMessage () [inline]

Default constructor.

Creates an empty ACL message object.

Definition at line 114 of file MCAclMessage.cs.

References `aclmsg_p`.

Referenced by `Reply()`.

#### 12.52.3.2 internal LibMC::MCAclMessage::MCAclMessage (IntPtr msg) [inline, private]

Definition at line 120 of file MCAclMessage.cs.

References `AclMsg`.

### 12.52.4 Member Function Documentation

#### 12.52.4.1 void LibMC::MCAclMessage::New () [inline]

Creates a new, blank ACL message.

Creates a new ACL message. The message is blank but valid.

Definition at line 153 of file MCAclMessage.cs.

References `AclMsg`.

#### 12.52.4.2 MCAclMessage LibMC::MCAclMessage::Reply (MCAclMessage acl\_message) [inline]

Creates an ACL message that is a response to the argument.

Creates an ACL message to respond to the argument.

**Parameters:**

*acl\_message* The message from which to create the reply.

**Returns:**

A new ACL message that is a response to the argument or an empty message if there is an error.

Definition at line 167 of file MCAclMessage.cs.

References AclMsg, and MCAclMessage().

#### 12.52.4.3 `int LibMC::MCAclMessage::SetPerformative (MC_FipaPerformative_e performative)` `[inline]`

Sets the performative field of the message.

Sets the performative field of the message.

**Parameters:**

*performative* The fipa\_performative\_e enum describing the message.

**Returns:**

The return value of the underlying MC\_AclSetPerformative function.

**Note:**

The message must be a valid message or this function will fail.

Definition at line 186 of file MCAclMessage.cs.

References AclMsg.

#### 12.52.4.4 `int LibMC::MCAclMessage::SetSender (String name, String address)` `[inline]`

Sets the sender field of the message.

Sets the performative field of the message.

**Parameters:**

*name* The name of the sending entity.

*address* The address of the sending entity.

**Returns:**

The return value of the underlying MC\_AclSetSender function.

**Note:**

The message must be a valid message or this function will fail.

Definition at line 202 of file MCAclMessage.cs.

References AclMsg.

**12.52.4.5 int LibMC::MCAclMessage::AddReceiver (String *name*, String *address*) [inline]**

Adds a receiver to the list of receivers.

Adds a receiver to the list of receivers for the message.

**Parameters:**

*name* The name of the receiver.

*address* The address of the receiver.

**Returns:**

The return value of the underlying MC\_AclAddReceiver function.

**Note:**

The message must be a valid message or this function will fail.

Definition at line 218 of file MCAclMessage.cs.

References AclMsg.

**12.52.4.6 int LibMC::MCAclMessage::AddReplyTo (String *name*, String *address*) [inline]**

Adds a "reply-to" field to the message.

Adds a "reply-to" field to the message. The reply-to field overrides the sender field when creating a reply.

**Parameters:**

*name* The name of the receiver.

*address* The address of the receiver.

**Returns:**

The return value of the underlying MC\_AclAddAddReplyTo function.

**Note:**

The message must be a valid message or this function will fail.

Definition at line 235 of file MCAclMessage.cs.

References AclMsg.

**12.52.4.7 int LibMC::MCAclMessage::SetContent (String *content*) [inline]**

Sets the content field of the message.

Sets the content field of the message.

**Parameters:**

*content* The string to copy to the content field.

**Returns:**

The return value of the underlying MC\_AclSetContent function.

**Note:**

The message must be a valid message or this function will fail.

Definition at line 250 of file MCAclMessage.cs.

References AclMsg.

**12.52.4.8 int LibMC::MCAclMessage::Destroy () [inline]**

Destroys a message.

This function destroys a message in the Mobile-C library. It releases the underlying memory and must be called when the message is no longer needed.

**Returns:**

The return value of the underlying MC\_AclDestroy function.

**Note:**

The message must be a valid message or this function will fail. In addition, messages are not automatically destroyed by the garbage collector. Use care when creating messages and ensure they are properly destroyed.

Definition at line 269 of file MCAclMessage.cs.

References AclMsg, and aclmsg\_p.

**12.52.5 Field Documentation****12.52.5.1 IntPtr LibMC::MCAclMessage::aclmsg\_p [private]**

Definition at line 105 of file MCAclMessage.cs.

Referenced by Destroy(), and MCAclMessage().

**12.52.6 Property Documentation****12.52.6.1 internal IntPtr LibMC::MCAclMessage::AclMsg [get, set, private]**

Definition at line 129 of file MCAclMessage.cs.

Referenced by LibMC::MCAgent::AclPost(), LibMC::MCAgency::AclSend(), AddReceiver(), AddReplyTo(), Destroy(), MCAclMessage(), New(), Reply(), SetContent(), SetPerformative(), and SetSender().

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

- /home/dko/projects/mobilec/trunk/src/win32/LibMC.net/LibMC/[MCAclMessage.cs](#)

## 12.53 LibMC::MCAgency Class Reference

Wrapper class for [MCAgency\\_t](#) structure.

### Public Types

- enum [MCAgencyState](#) {  
    [NoState](#) = -1, [Initialized](#) = 0, [Running](#), [Halted](#),  
    [Ended](#) }  
    *Enum for describing the state of the agency.*
- enum [ChShellType](#) { [CH\\_REGULARCH](#) = 0, [CH\\_SAFECH](#) = 1 }  
    *Ch shell type.*
- enum [MC\\_ThreadIndex\\_e](#) {  
    [MC\\_THREAD\\_DF](#) = 0, [MC\\_THREAD\\_AMS](#), [MC\\_THREAD\\_ACC](#), [MC\\_THREAD\\_CP](#),  
    [MC\\_THREAD\\_AGENT](#), [MC\\_THREAD\\_ALL](#) }  
    *Enum for describing the different threads that Mobile-C uses.*
- 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.*

### Public Member Functions

- [MCAgency](#) ()  
    *Default constructor.*
- [int Initialize](#) ()  
    *Starts the agency.*
- [int End](#) ()  
    *Stops and destroys the agency.*
- [int ChInitializeOptions](#) ([ChShellType](#) shellType, String home)  
    *Initializes Ch [options](#) for the agency.*
- [int SetThreadsAllOn](#) ()
- [int SetThreadsAllOff](#) ()  
    *Sets all threads for the agency to "off".*
- [int SetThreadOn](#) ([MC\\_ThreadIndex\\_e](#) index)

*Sets an individual thread for the agency to "on."*

- [int SetThreadOff](#) ([MC\\_ThreadIndex\\_e](#) index)  
*Sets an individual thread for the agency to "off."*
- [int HaltAgency](#) ()  
*Temporarily halts the agency.*
- [int ResumeAgency](#) ()  
*Resumes a halted agency.*
- [int SetDefaultAgentStatus](#) ([MCAgent.MC\\_AgentStatus\\_e](#) status)  
*Sets the default state of an agent in the agency.*
- [MCAgent WaitRetrieveAgent](#) ()  
*Waits for an agent to arrive and returns the agent.*
- [int WaitAgent](#) ()  
*Waits for an agent to arrive.*
- [int SendAgentMigrationMessageFile](#) (String filename, String hostname, [int](#) port)  
*Sends an agent migration message file to an agency.*
- [int LoadAgentMigrationMessageFile](#) (String filename)  
*Load an agent migration message.*
- [int SendAgentMigrationMessage](#) (String message, String hostname, [int](#) port)  
*Sends an agent migration message to an agency.*
- [int CondBroadcast](#) ([int](#) id)  
*Broadcast a condition signal.*
- [int CondSignal](#) ([int](#) id)  
*Signal a condition.*
- [int CondReset](#) ([int](#) id)  
*Reset a condition signal.*
- [int CondWait](#) ([int](#) id)  
*Wait for a condition signal.*
- [int MutexLock](#) ([int](#) id)  
*Lock a mutex.*
- [int MutexUnlock](#) ([int](#) id)  
*Unlock a mutex.*
- [int SemaphorePost](#) ([int](#) id)  
*Posts a semaphore.*

- [int SemaphoreWait \(int id\)](#)  
*Wait for a semaphore to be posted.*
- [int ResetSignal \(\)](#)  
*Reset an agency signal.*
- [int SyncDelete \(int id\)](#)  
*Delete a synchronization variable.*
- [int SyncInit \(int id\)](#)  
*Create a new synchronization variable.*
- [int WaitSignal \(MC\\_Signal\\_esignals\)](#)  
*Wait for agency signals.*
- [int BarrierDelete \(int id\)](#)  
*Delete a barrier object.*
- [int BarrierInit \(int id, int num\\_procs\)](#)  
*Create a new barrier.*
- [MC\\_SteerCommand\\_e SteerControl \(\)](#)  
*Steering control function.*
- [int Steer \(IntPtr funcptr, IntPtr arg\)](#)  
*Steering control function.*
- [int RegisterService \(MCAgent agent, int agentID, String agentName, String\[\] serviceNames, int numServices\)](#)  
*Registers services in the agency.*
- [int SearchForService \(String searchString, IntPtr agentNames, IntPtr serviceNames, IntPtr agentIDs, IntPtr numResults\)](#)  
*Searches for services in the agency.*
- [int AddAgent \(MCAgent agent\)](#)  
*Add an agent to the agency.*
- [MCAgent FindAgentByName \(String name\)](#)  
*Finds an agent by its name.*
- [MCAgent FindAgentByID \(int id\)](#)  
*Find an agent by its ID.*
- [MCAgent RetrieveAgent \(\)](#)  
*Retrieve an agent from the agency.*
- [int AclSend \(MCAclMessage acl\\_message\)](#)  
*Send an ACL message to the agency.*

- [int MainLoop \(\)](#)

*Makes the agency wait indefinitely.*

## Properties

- [IntPtr Agency](#) [get, set]
- [int Port](#) [get, set]

*Accessor for the port number of the agency.*

- [MCAgencyState State](#) [get]

*Accessor for the agency state.*

## Private Member Functions

- static [IntPtr \\_MC\\_Initialize](#) (int port, ref [MCAgencyOptions\\_t](#) options)
- static [int \\_MC\\_End](#) (IntPtr agency)
- static [int \\_MC\\_ChInitializeOptions](#) (IntPtr agency, [ChOptions\\_t](#) options)
- static [int \\_MC\\_InitializeAgencyOptions](#) (ref [MCAgencyOptions\\_t](#) options)
- static [int \\_MC\\_SetThreadsAllOn](#) (ref [MCAgencyOptions\\_t](#) options)
- static [int \\_MC\\_SetThreadsAllOff](#) (ref [MCAgencyOptions\\_t](#) options)
- static [int \\_MC\\_SetThreadOn](#) (ref [MCAgencyOptions\\_t](#) options, [MC\\_ThreadIndex\\_e](#) index)
- static [int \\_MC\\_SetThreadOff](#) (ref [MCAgencyOptions\\_t](#) options, [MC\\_ThreadIndex\\_e](#) index)
- static [int \\_MC\\_HaltAgency](#) (IntPtr agency)
- static [int \\_MC\\_ResumeAgency](#) (IntPtr agency)
- static [int \\_MC\\_SetDefaultAgentStatus](#) (IntPtr agency, [MCAgent.MC\\_AgentStatus\\_e](#) status)
- static [IntPtr \\_MC\\_WaitRetrieveAgent](#) (IntPtr agency)
- static [int \\_MC\\_WaitAgent](#) (IntPtr agency)
- static [int \\_MC\\_MainLoop](#) (IntPtr agency)
- static [int \\_MC\\_SendAgentMigrationMessageFile](#) (IntPtr agency, String filename, String hostname, [int](#) port)
- static [int \\_MC\\_SendAgentMigrationMessage](#) (IntPtr agency, String message, String hostname, [int](#) port)
- static [int \\_MC\\_CondBroadcast](#) (IntPtr agency, [int](#) id)
- static [int \\_MC\\_CondSignal](#) (IntPtr agency, [int](#) id)
- static [int \\_MC\\_CondReset](#) (IntPtr agency, [int](#) id)
- static [int \\_MC\\_CondWait](#) (IntPtr agency, [int](#) id)
- static [int \\_MC\\_MutexLock](#) (IntPtr agency, [int](#) id)
- static [int \\_MC\\_MutexUnlock](#) (IntPtr agency, [int](#) id)
- static [int \\_MC\\_SemaphorePost](#) (IntPtr agency, [int](#) id)
- static [int \\_MC\\_SemaphoreWait](#) (IntPtr agency, [int](#) id)
- static [int \\_MC\\_ResetSignal](#) (IntPtr agency)
- static [int \\_MC\\_SyncDelete](#) (IntPtr agency, [int](#) id)
- static [int \\_MC\\_SyncInit](#) (IntPtr agency, [int](#) id)
- static [int \\_MC\\_WaitSignal](#) (IntPtr agency, [int](#) signals)
- static [int \\_MC\\_BarrierDelete](#) (IntPtr agency, [int](#) id)
- static [int \\_MC\\_BarrierInit](#) (IntPtr agency, [int](#) id, [int](#) num\_procs)
- static [MC\\_SteerCommand\\_e \\_MC\\_SteerControl](#) ()



- static [int \\_MC\\_Steer](#) (IntPtr agency, IntPtr funcptr, IntPtr arg)
- static [int \\_MC\\_RegisterService](#) (IntPtr agency, IntPtr agent, [int](#) agentID, String agentName, String[ ] serviceNames, [int](#) numServices)
- static [int \\_MC\\_SearchForService](#) (IntPtr agency, String searchString, IntPtr agentNames, IntPtr serviceNames, IntPtr agentIDs, IntPtr numResults)
- static [int \\_MC\\_AddAgent](#) (IntPtr agency, IntPtr agent)
- static internal [int \\_MC\\_DeleteAgent](#) (IntPtr agent)
- static IntPtr [\\_MC\\_FindAgentByName](#) (IntPtr agency, String name)
- static IntPtr [\\_MC\\_FindAgentByID](#) (IntPtr agency, [int](#) ID)
- static IntPtr [\\_MC\\_RetrieveAgent](#) (IntPtr agency)
- static internal [int \\_MC\\_GetAgentID](#) (IntPtr agent)
- static internal String [\\_MC\\_GetAgentName](#) (IntPtr agent)
- static internal [int \\_MC\\_GetAgentNumTasks](#) (IntPtr agent)
- static internal [MCAgent.MC\\_AgentStatus\\_e \\_MC\\_GetAgentStatus](#) (IntPtr agent)
- static internal [MCAgent.MC\\_AgentType\\_e \\_MC\\_GetAgentType](#) (IntPtr agent)
- static internal String [\\_MC\\_GetAgentXMLString](#) (IntPtr agent)
- static internal [int \\_MC\\_PrintAgentCode](#) (IntPtr agent)
- static internal String [\\_MC\\_RetrieveAgentCode](#) (IntPtr agent)
- static internal [int \\_MC\\_SetAgentStatus](#) (IntPtr agent, [MCAgent.MC\\_AgentStatus\\_e](#) status)
- static internal [int \\_MC\\_TerminateAgent](#) (IntPtr agent)
- static internal [int \\_MC\\_CallAgentFunc](#) (IntPtr agent, String funcName, IntPtr returnVal, IntPtr varg)
- static internal IntPtr [\\_MC\\_GetAgentExecEngine](#) (IntPtr agent)
- static internal [int \\_MC\\_GetAgentReturnData](#) (IntPtr agent, [int](#) task\_num, IntPtr data, IntPtr dim, IntPtr extent)
- static internal IntPtr [\\_MC\\_AclNew](#) ()
- static internal [int \\_MC\\_AclPost](#) (IntPtr agent, IntPtr message)
- static internal IntPtr [\\_MC\\_AclReply](#) (IntPtr acl\_message)
- static internal IntPtr [\\_MC\\_AclRetrieve](#) (IntPtr agent)
- static internal [int \\_MC\\_AclSend](#) (IntPtr agency, IntPtr acl\_message)
- static internal IntPtr [\\_MC\\_AclWaitRetrieve](#) (IntPtr agent)
- static internal [int \\_MC\\_AclSetPerformative](#) (IntPtr acl, [MCAclMessage.MC\\_FipaPerformative\\_e](#) performative)
- static internal [int \\_MC\\_AclSetSender](#) (IntPtr acl, String name, String address)
- static internal [int \\_MC\\_AclAddReceiver](#) (IntPtr acl, String name, String address)
- static internal [int \\_MC\\_AclAddReplyTo](#) (IntPtr acl, String name, String address)
- static internal [int \\_MC\\_AclSetContent](#) (IntPtr acl, String content)
- static internal [int \\_MC\\_AclDestroy](#) (IntPtr acl)

## Private Attributes

- IntPtr [agency\\_p](#) = IntPtr.Zero
- [MCAgencyOptions\\_t](#) options
- [int](#) port = -1
- [MCAgencyState](#) state = MCAgencyState.NoState
- const String mcdll

## Data Structures

- struct [ChOptions\\_t](#)

*ChOptions structures.*

- struct [MCAgency\\_t](#)
- struct [MCAgencyOptions\\_t](#)

### 12.53.1 Detailed Description

Wrapper class for [MCAgency\\_t](#) structure.

This class provides an interface to the Mobile-C agency. Member functions for the class are generally overloaded versions of the respective functions in the Mobile-C library. The class maintains a pointer to the Mobile-C agency in unmanaged memory. The pointer is not accessible by the user.

Definition at line 341 of file MCAgency.cs.

### 12.53.2 Member Enumeration Documentation

#### 12.53.2.1 enum LibMC::MCAgency::MCAgencyState

Enum for describing the state of the agency.

This enum is used to determine whether or not certain actions should be permitted, such as halting, resuming, and ending an agency

##### Enumerator:

- NoState** Default, uninitialized state
- Initialized** Agency initialized, but not started
- Running** Agency is running
- Halted** Agency has been stopped (can be resumed)
- Ended** Agency is stopped (destroyed)

Definition at line 349 of file MCAgency.cs.

#### 12.53.2.2 enum LibMC::MCAgency::ChShellType

Ch shell type.

Used to set the shell type for the Ch interpreter.

##### Enumerator:

- CH\_REGULARCH** Default, regular shell
- CH\_SAFECH** Safe shell

Definition at line 363 of file MCAgency.cs.

### 12.53.2.3 enum LibMC::MCAgency::MC\_ThreadIndex\_e

Enum for describing the different threads that Mobile-C uses.

These enums can be used to turn threads on and off before an agency is initialized.

**Note:**

This enum is pulled directly from the Mobile-C library.

**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 79 of file MCEExports.cs.

### 12.53.2.4 enum LibMC::MCAgency::MC\_SteerCommand\_e

Available commands for MC\_Steer.

**Note:**

This enum is pulled directly from the Mobile-C library.

**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 94 of file MCEExports.cs.

### 12.53.2.5 enum LibMC::MCAgency::MC\_Signal\_e

MobileC system signals.

Each signal is activated after the corresponding action. i.e. The 'MC\_RECV\_MESSAGE' signal is activated after a message is received.

**Note:**

This enum is pulled directly from the Mobile-C library.

**See also:**

[MC\\_WaitSignal\(\)](#), [MC\\_ResetSignal\(\)](#)

**Enumerator:**

*MC\_NO\_SIGNAL*  
*MC\_RECV\_CONNECTION*  
*MC\_RECV\_MESSAGE*  
*MC\_RECV\_AGENT*  
*MC\_RECV\_RETURN*  
*MC\_EXEC\_AGENT*  
*MC\_ALL\_SIGNALS*

Definition at line 112 of file MCEExports.cs.

### 12.53.3 Constructor & Destructor Documentation

#### 12.53.3.1 LibMC::MCAgency::MCAgency () [inline]

Default constructor.

The default constructor for the [MCAgency](#) class. It creates a new agency, default [options](#) for the agency, and initializes the agency. It does not start the agency.

Definition at line 381 of file MCAgency.cs.

References [\\_MC\\_InitializeAgencyOptions\(\)](#), and [state](#).

### 12.53.4 Member Function Documentation

#### 12.53.4.1 int LibMC::MCAgency::Initialize () [inline]

Starts the agency.

Starts the agency and sets the agency state.

**Returns:**

0 on success, -1 on failure.

**Note:**

The agency port and any other [options](#) must be set before calling this function.

Definition at line 459 of file MCAgency.cs.

References [Agency](#), [port](#), and [state](#).

#### 12.53.4.2 int LibMC::MCAgency::End () [inline]

Stops and destroys the agency.

Stops the agency and sets the agency state appropriately.

**Returns:**

The return value of the underlying [MC\\_End](#) function.

**Note:**

This call will fail if the underlying Mobile-C agency is not in the correct state.

Definition at line 481 of file MCAgency.cs.

References Agency, and state.

**12.53.4.3 int LibMC::MCAgency::ChInitializeOptions (ChShellType *shellType*, String *home*)**  
[inline]

Initializes Ch [options](#) for the agency.

Can be used to set the home directory and shell mode for the Ch interpreter.

**Parameters:**

*shellType* The type of shell Ch should use: CH\_REGULARARCH or CH\_SAFECH.

*home* The home directory Ch should use.

**Returns:**

The return value of the underlying MC\_ChInitializeOptions function.

**Note:**

This function must be called before the agency is started.

Definition at line 499 of file MCAgency.cs.

References \_MC\_ChInitializeOptions(), Agency, LibMC::MCAgency::ChOptions\_t::chhome, int, and LibMC::MCAgency::ChOptions\_t::shelltype.

**12.53.4.4 int LibMC::MCAgency::SetThreadsAllOn ()** [inline]

Definition at line 516 of file MCAgency.cs.

References \_MC\_SetThreadsAllOn().

**12.53.4.5 int LibMC::MCAgency::SetThreadsAllOff ()** [inline]

Sets all threads for the agency to "off".

Sets all threads for the agency to "off." Not recommended for use.

**Returns:**

The return value of the underlying MC\_SetThreadsAllOff function.

**Note:**

This function must be called before the agency is started.

Definition at line 530 of file MCAgency.cs.

References \_MC\_SetThreadsAllOff().

**12.53.4.6 int LibMC::MCAgency::SetThreadOn (MC\_ThreadIndex\_e *index*) [inline]**

Sets an individual thread for the agency to "on".

Threads are on by default. If they have been turned off, this function turns them on again.

**Parameters:**

*index* The enum that identifies the thread to be turned on.

**Returns:**

The return value of the underlying MC\_SetThreadOn function.

**Note:**

This function must be called before the agency is started.

Definition at line 546 of file MCAgency.cs.

References \_MC\_SetThreadOn().

**12.53.4.7 int LibMC::MCAgency::SetThreadOff (MC\_ThreadIndex\_e *index*) [inline]**

Sets an individual thread for the agency to "off".

Most commonly used to turn the command prompt thread off.

**Parameters:**

*index* The enum that identifies the thread to be turned off.

**Returns:**

The return value of the underlying MC\_SetThreadOff function.

**Note:**

This function must be called before the agency is started.

Definition at line 561 of file MCAgency.cs.

References \_MC\_SetThreadOff().

**12.53.4.8 int LibMC::MCAgency::HaltAgency () [inline]**

Temporarily halts the agency.

Halts the agency until it is resumed or ended.

**Returns:**

The return value of the underlying MC\_HaltAgency function.

**Note:**

The underlying Mobile-C agency must be in the correct state to call this function or it will fail.

Definition at line 576 of file MCAgency.cs.

References \_MC\_HaltAgency(), Agency, and state.

**12.53.4.9 int LibMC::MCAgency::ResumeAgency () [inline]**

Resumes a halted agency.

Resumes a halted agency. Cannot be used on ended agencies.

**Returns:**

The return value of the underlying MC\_ResumeAgency function.

**Note:**

The underlying Mobile-C agency must be in the correct state to call this function or it will fail.

Definition at line 593 of file MCAgency.cs.

References \_MC\_ResumeAgency(), Agency, and state.

**12.53.4.10 int LibMC::MCAgency::SetDefaultAgentStatus (MCAgent.MC\_AgentStatus\_e status) [inline]**

Sets the default state of an agent in the agency.

Can be used to set the default status of agents, but most agents managed their state on their own.

**Parameters:**

*status* The enum that identifies the desired agent state.

**Returns:**

The return value of the underlying MC\_SetDefaultAgentStatus function.

Definition at line 609 of file MCAgency.cs.

References \_MC\_SetDefaultAgentStatus(), and Agency.

**12.53.4.11 MCAgent LibMC::MCAgency::WaitRetrieveAgent () [inline]**

Waits for an agent to arrive and returns the agent.

Waits for an agent to arrive in the agency, then returns that agent. The agent is not allowed to execute.

**Returns:**

The agent that was retrieved or an empty agent if it fails.

Definition at line 622 of file MCAgency.cs.

References \_MC\_WaitRetrieveAgent(), and Agency.

**12.53.4.12 int LibMC::MCAgency::WaitAgent () [inline]**

Waits for an agent to arrive.

Waits for an agent to arrive in the agency. The agent is allowed to execute normally.

**Returns:**

The return value of the underlying MC\_WaitAgent function.

Definition at line 639 of file MCAgency.cs.

References \_MC\_WaitAgent(), and Agency.

**12.53.4.13 int LibMC::MCAgency::SendAgentMigrationMessageFile (String filename, String hostname, int port) [inline]**

Sends an agent migration message file to an agency.

Sends the specified XML file to another agency (local or remote).

**Parameters:**

*filename* The name of the file to send (fully qualified).

*hostname* The URL, IP address, or other identifier for the agency host.

*port* The port to send to.

**Returns:**

The return value of the underlying MC\_SendAgentMigrationMessageFile function.

Definition at line 658 of file MCAgency.cs.

References Agency.

**12.53.4.14 int LibMC::MCAgency::LoadAgentMigrationMessageFile (String filename) [inline]**

Load an agent migration message.

Loads the specified XML file to this agency automatically. There is no need to specify a port or agency location.

**Parameters:**

*filename* The name of the file to send (fully qualified).

**Returns:**

The return value of the underlying MC\_SendAgentMigrationMessageFile function.

Definition at line 672 of file MCAgency.cs.

References Agency, and Port.

**12.53.4.15 int LibMC::MCAgency::SendAgentMigrationMessage (String message, String hostname, int port) [inline]**

Sends an agent migration message to an agency.

Sends an agent migration message to another agency (local or remote).



**Parameters:**

*message* The agent migration message.  
*hostname* The URL, IP address, or other identifier for the agency host.  
*port* The port to send to.

**Returns:**

The return value of the underlying MC\_SendAgentMigrationMessageFile function.

Definition at line 687 of file MCAgency.cs.

References `_MC_SendAgentMigrationMessage()`, and `Agency`.

**12.53.4.16 int LibMC::MCAgency::CondBroadcast (int *id*) [inline]**

Broadcast a condition signal.

Broadcasts a signal in the agency. The parameter "id" is the ID of the agency sync variable created with [SyncInit\(\)](#).

**Parameters:**

*id* The ID number of the condition to signal.

**Returns:**

The return value of the underlying MC\_CondBroadcast function.

Definition at line 705 of file MCAgency.cs.

References `_MC_CondBroadcast()`, and `Agency`.

**12.53.4.17 int LibMC::MCAgency::CondSignal (int *id*) [inline]**

Signal a condition.

Signals a condition in the agency. The parameter "id" is the ID of the agency sync variable to signal that was created with [SyncInit\(\)](#).

**Parameters:**

*id* The ID number of the condition to signal.

**Returns:**

The return value of the underlying MC\_CondSignal function.

Definition at line 719 of file MCAgency.cs.

References `_MC_CondSignal()`, and `Agency`.

**12.53.4.18 int LibMC::MCAgency::CondReset (int *id*) [inline]**

Reset a condition signal.

Resets a signal in the agency. The parameter "id" is the ID of the agency sync variable created with [SyncInit\(\)](#). This function must be called after a condition is received in order to clear it.

**Parameters:**

*id* The ID number of the condition to reset.

**Returns:**

The return value of the underlying MC\_CondReset function.

Definition at line 734 of file MCAgency.cs.

References \_MC\_CondReset(), and Agency.

**12.53.4.19 int LibMC::MCAgency::CondWait (int *id*) [inline]**

Wait for a condition signal.

Waits for a condition signal in the agency. The parameter "id" is the ID of the agency sync variable created with [SyncInit\(\)](#). This function blocks until the signal is received.

**Parameters:**

*id* The ID number of the condition to wait for.

**Returns:**

The return value of the underlying MC\_CondWait function.

Definition at line 749 of file MCAgency.cs.

References \_MC\_CondWait(), and Agency.

**12.53.4.20 int LibMC::MCAgency::MutexLock (int *id*) [inline]**

Lock a mutex.

Locks a mutex in the agency. The parameter "id" is the ID of the agency sync variable created with [SyncInit\(\)](#). This function blocks until the mutex is locked.

**Parameters:**

*id* The ID number of the mutex to lock.

**Returns:**

The return value of the underlying MC\_MutexLock function.

Definition at line 764 of file MCAgency.cs.

References \_MC\_MutexLock(), and Agency.

**12.53.4.21 int LibMC::MCAgency::MutexUnlock (int *id*) [inline]**

Unlock a mutex.

Locks a mutex in the agency. The parameter "id" is the ID of the agency sync variable created with [SyncInit\(\)](#).

**Parameters:**

*id* The ID number of the mutex to unlock.

**Returns:**

The return value of the underlying MC\_MutexUnlock function.

Definition at line 778 of file MCAgency.cs.

References `_MC_MutexUnlock()`, and `Agency`.

**12.53.4.22 int LibMC::MCAgency::SemaphorePost (int *id*) [inline]**

Posts a semaphore.

Posts a semaphore in the agency. The parameter "id" is the ID of the agency sync variable created with [SyncInit\(\)](#).

**Parameters:**

*id* The ID number of the semaphore to post.

**Returns:**

The return value of the underlying MC\_SemaphorePost function.

Definition at line 792 of file MCAgency.cs.

References `_MC_SemaphorePost()`, and `Agency`.

**12.53.4.23 int LibMC::MCAgency::SemaphoreWait (int *id*) [inline]**

Wait for a semaphore to be posted.

Wait for a semaphore in the agency to be posted. The parameter "id" is the ID of the agency sync variable created with [SyncInit\(\)](#). This function blocks until the semaphore is posted.

**Parameters:**

*id* The ID number of the semaphore to wait for.

**Returns:**

The return value of the underlying MC\_SemaphoreWait function.

Definition at line 807 of file MCAgency.cs.

References `_MC_SemaphoreWait()`, and `Agency`.

**12.53.4.24 int LibMC::MCAgency::ResetSignal () [inline]**

Reset an agency signal.

Resets a signal in the agency. The parameter "id" is the ID of the agency sync variable created with [SyncInit\(\)](#).

**Returns:**

The return value of the underlying MC\_ResetSignal function.

Definition at line 820 of file MCAgency.cs.

References \_MC\_ResetSignal(), and Agency.

**12.53.4.25 int LibMC::MCAgency::SyncDelete (int *id*) [inline]**

Delete a synchronization variable.

Deletes a synchronization variable in the agency. The parameter "id" is the ID of the agency sync variable created with [SyncInit\(\)](#).

**Parameters:**

*id* The ID number of the variable to delete.

**Returns:**

The return value of the underlying MC\_SyncDelete function.

Definition at line 834 of file MCAgency.cs.

References \_MC\_SyncDelete(), and Agency.

**12.53.4.26 int LibMC::MCAgency::SyncInit (int *id*) [inline]**

Create a new synchronization variable.

Creates a new synchronization variable in the agency. The parameter "id" is desired ID of the variable. A random ID is returned if "id" is already in use.

**Parameters:**

*id* The ID number of the condition to signal.

**Returns:**

The return value of the underlying MC\_CondBroadcast function- either a random ID or the desired ID if the desired ID is already in use.

Definition at line 850 of file MCAgency.cs.

References \_MC\_SyncInit(), and Agency.

**12.53.4.27 int LibMC::MCAgency::WaitSignal (MC\_Signal\_e *signals*) [inline]**

Wait for agency signals.

Waits for signals to occur in the agency.

**Parameters:**

*signals* The ID number of the condition to signal.

**Returns:**

The return value of the underlying MC\_WaitSignal function.

Definition at line 863 of file MCAgency.cs.

References `_MC_WaitSignal()`, and `Agency`.

**12.53.4.28 int LibMC::MCAgency::BarrierDelete (int *id*) [inline]**

Delete a barrier object.

Deletes a barrier object from the agency. The parameter "id" is the ID of the agency sync variable created with [BarrierInit\(\)](#).

**Parameters:**

*id* The ID number of the barrier to delete.

**Returns:**

The return value of the underlying MC\_BarrierDelete function.

Definition at line 877 of file MCAgency.cs.

References `_MC_BarrierDelete()`, and `Agency`.

**12.53.4.29 int LibMC::MCAgency::BarrierInit (int *id*, int *num\_procs*) [inline]**

Create a new barrier.

Creates a new barrier object in the agency.

**Parameters:**

*id* The ID number of the condition to signal.

*num\_procs* the number of process to block (?)

**Returns:**

The return value of the underlying MC\_BarrierInit function.

Definition at line 891 of file MCAgency.cs.

References `_MC_BarrierInit()`, and `Agency`.

**12.53.4.30 MC\_SteerCommand\_e LibMC::MCAgency::SteerControl () [inline]**

Steering control function.

Really not sure.

**Returns:**

The return value of the underlying MC\_SteerControl function.

**Todo**

Test MC\_SteerControl, MC\_Steer.

Definition at line 909 of file MCAgency.cs.

References \_MC\_SteerControl().

**12.53.4.31 int LibMC::MCAgency::Steer (IntPtr funcptr, IntPtr arg) [inline]**

Steering control function.

Really not sure.

**Parameters:**

*funcptr* Pointer to the steering function

*arg* Argument to function

**Returns:**

The return value of the underlying \_MC\_Steer function.

**Note:**

This function does nothing but throw an exception right now.

**Bug**

MC\_Steer is not yet implemented.

**Todo**

Implement MC\_Steer

Definition at line 927 of file MCAgency.cs.

**12.53.4.32 int LibMC::MCAgency::RegisterService (MCAgent agent, int agentID, String agentName, String[] serviceNames, int numServices) [inline]**

Registers services in the agency.

Registers services provided by agents with the agency. Not really useful in binary space.

**Parameters:**

*agent* The agent providing the services.

*agentID* The agent ID number.

*agentName* The agent name.

*serviceNames* An array of service names.

*numServices* The number of services provided.

**Returns:**

The return value of the underlying MC\_RegisterService function.

**Todo**

Test MC\_RegisterService and MC\_SearchForService.

Definition at line 952 of file MCAgency.cs.

References MC\_RegisterService(), Agency, and LibMC::MCAgent::Agent.

**12.53.4.33 int LibMC::MCAgency::SearchForService (String *searchString*, IntPtr *agentNames*, IntPtr *serviceNames*, IntPtr *agentIDs*, IntPtr *numResults*) [inline]**

Searches for services in the agency.

Searches for services provided by agents with the agency. Not really useful in binary space.

**Parameters:**

*searchString* The agent providing the services.

*agentNames* The agent ID number.

*serviceNames* The agent name.

*agentIDs* An array of service names.

*numResults* The number of services provided.

**Returns:**

The return value of the underlying MC\_SearchForService function.

**Note:**

This function does nothing but throw an exception right now.

**Bug**

MC\_SearchForService is not yet implemented.

**Todo**

Implement SearchForService

Definition at line 975 of file MCAgency.cs.

**12.53.4.34 int LibMC::MCAgency::AddAgent (MCAgent *agent*) [inline]**

Add an agent to the agency.

Adds an agent to the agency.

**Parameters:**

*agent* The agent to add.

**Returns:**

The return value of the underlying MC\_AddAgent function.

Definition at line 993 of file MCAgency.cs.

References MC\_AddAgent(), Agency, and LibMC::MCAgent::Agent.

**12.53.4.35 MCAgent LibMC::MCAgency::FindAgentByName (String *name*) [inline]**

Finds an agent by its name.

Finds an agent in the agency by its name.

**Parameters:**

*name* The name of the agent to search for.

**Returns:**

The return value of the underlying MC\_FindAgentByName function.

Definition at line 1006 of file MCAgency.cs.

References \_MC\_FindAgentByName(), and Agency.

**12.53.4.36 MCAgent LibMC::MCAgency::FindAgentByID (int *id*) [inline]**

Find an agent by its ID.

Finds an agent in the agency by its ID number.

**Parameters:**

*id* The ID number of the condition to signal.

**Returns:**

The return value of the underlying MC\_FindAgentByID function.

Definition at line 1019 of file MCAgency.cs.

References \_MC\_FindAgentByID(), and Agency.

**12.53.4.37 MCAgent LibMC::MCAgency::RetrieveAgent () [inline]**

Retrieve an agent from the agency.

Really not sure.

**Returns:**

The return value of the underlying MC\_CondBroadcast function.

Definition at line 1031 of file MCAgency.cs.

References \_MC\_RetrieveAgent(), and Agency.

**12.53.4.38 int LibMC::MCAgency::AclSend (MAclMessage *acl\_message*) [inline]**

Send an ACL message to the agency.

Sends an ACL message to the agency. The message is delivered appropriately.



**Parameters:**

*acl\_message* The message to send.

**Returns:**

The return value of the underlying MC\_CondBroadcast function.

Definition at line 1048 of file MCAgency.cs.

References LibMC::MCAclMessage::AclMsg, and Agency.

**12.53.4.39 int LibMC::MCAgency::MainLoop () [inline]**

Makes the agency wait indefinitely.

Makes the agency wait indefinitely until it receives a "quit" command or is otherwise terminated.

**Returns:**

The return value of the underlying MC\_MainLoop function.

Definition at line 1061 of file MCAgency.cs.

References \_MC\_MainLoop(), and Agency.

**12.53.4.40 static IntPtr LibMC::MCAgency::\_MC\_Initialize (int port, ref MCAgencyOptions\_t options) [private]****12.53.4.41 static int LibMC::MCAgency::\_MC\_End (IntPtr agency) [private]****12.53.4.42 static int LibMC::MCAgency::\_MC\_ChInitializeOptions (IntPtr agency, ChOptions\_t options) [private]**

Referenced by ChInitializeOptions().

**12.53.4.43 static int LibMC::MCAgency::\_MC\_InitializeAgencyOptions (ref MCAgencyOptions\_t options) [private]**

Referenced by MCAgency().

**12.53.4.44 static int LibMC::MCAgency::\_MC\_SetThreadsAllOn (ref MCAgencyOptions\_t options) [private]**

Referenced by SetThreadsAllOn().

**12.53.4.45 static int LibMC::MCAgency::\_MC\_SetThreadsAllOff (ref MCAgencyOptions\_t options) [private]**

Referenced by SetThreadsAllOff().

**12.53.4.46** `static int LibMC::MCAgency::_MC_SetThreadOn (ref MCAgencyOptions_t options, MC_ThreadIndex_e index)` [private]

Referenced by SetThreadOn().

**12.53.4.47** `static int LibMC::MCAgency::_MC_SetThreadOff (ref MCAgencyOptions_t options, MC_ThreadIndex_e index)` [private]

Referenced by SetThreadOff().

**12.53.4.48** `static int LibMC::MCAgency::_MC_HaltAgency (IntPtr agency)` [private]

Referenced by HaltAgency().

**12.53.4.49** `static int LibMC::MCAgency::_MC_ResumeAgency (IntPtr agency)` [private]

Referenced by ResumeAgency().

**12.53.4.50** `static int LibMC::MCAgency::_MC_SetDefaultAgentStatus (IntPtr agency, MCAgent.MC_AgentStatus_e status)` [private]

Referenced by SetDefaultAgentStatus().

**12.53.4.51** `static IntPtr LibMC::MCAgency::_MC_WaitRetrieveAgent (IntPtr agency)` [private]

Referenced by WaitRetrieveAgent().

**12.53.4.52** `static int LibMC::MCAgency::_MC_WaitAgent (IntPtr agency)` [private]

Referenced by WaitAgent().

**12.53.4.53** `static int LibMC::MCAgency::_MC_MainLoop (IntPtr agency)` [private]

Referenced by MainLoop().

**12.53.4.54** `static int LibMC::MCAgency::_MC_SendAgentMigrationMessageFile (IntPtr agency, String filename, String hostname, int port)` [private]

**12.53.4.55** `static int LibMC::MCAgency::_MC_SendAgentMigrationMessage (IntPtr agency, String message, String hostname, int port)` [private]

Referenced by SendAgentMigrationMessage().

**12.53.4.56** `static int LibMC::MCAgency::_MC_CondBroadcast (IntPtr agency, int id)` [private]

Referenced by CondBroadcast().

**12.53.4.57** `static int LibMC::MCAgency::_MC_CondSignal (IntPtr agency, int id)` [private]

Referenced by CondSignal().

**12.53.4.58** `static int LibMC::MCAgency::_MC_CondReset (IntPtr agency, int id)` [private]

Referenced by CondReset().

**12.53.4.59** `static int LibMC::MCAgency::_MC_CondWait (IntPtr agency, int id)` [private]

Referenced by CondWait().

**12.53.4.60** `static int LibMC::MCAgency::_MC_MutexLock (IntPtr agency, int id)` [private]

Referenced by MutexLock().

**12.53.4.61** `static int LibMC::MCAgency::_MC_MutexUnlock (IntPtr agency, int id)`  
[private]

Referenced by MutexUnlock().

**12.53.4.62** `static int LibMC::MCAgency::_MC_SemaphorePost (IntPtr agency, int id)`  
[private]

Referenced by SemaphorePost().

**12.53.4.63** `static int LibMC::MCAgency::_MC_SemaphoreWait (IntPtr agency, int id)`  
[private]

Referenced by SemaphoreWait().

**12.53.4.64** `static int LibMC::MCAgency::_MC_ResetSignal (IntPtr agency)` [private]

Referenced by ResetSignal().

**12.53.4.65** `static int LibMC::MCAgency::_MC_SyncDelete (IntPtr agency, int id)` [private]

Referenced by SyncDelete().

**12.53.4.66** `static int LibMC::MCAgency::_MC_SyncInit (IntPtr agency, int id)` [private]

Referenced by SyncInit().

**12.53.4.67** `static int LibMC::MCAgency::_MC_WaitSignal (IntPtr agency, int signals)`  
[private]

Referenced by WaitSignal().

**12.53.4.68** `static int LibMC::MCAgency::_MC_BarrierDelete (IntPtr agency, int id)`  
[private]

Referenced by BarrierDelete().

**12.53.4.69** `static int LibMC::MCAgency::_MC_BarrierInit (IntPtr agency, int id, int num_procs)`  
[private]

Referenced by BarrierInit().

**12.53.4.70** `static MC_SteerCommand_e LibMC::MCAgency::_MC_SteerControl ()`  
[private]

Referenced by SteerControl().

**12.53.4.71** `static int LibMC::MCAgency::_MC_Steer (IntPtr agency, IntPtr funcptr, IntPtr arg)`  
[private]

**12.53.4.72** `static int LibMC::MCAgency::_MC_RegisterService (IntPtr agency, IntPtr agent, int agentID, String agentName, String[] serviceNames, int numServices)` [private]

Referenced by RegisterService().

**12.53.4.73** `static int LibMC::MCAgency::_MC_SearchForService (IntPtr agency, String searchString, IntPtr agentNames, IntPtr serviceNames, IntPtr agentIDs, IntPtr numResults)` [private]

**12.53.4.74** `static int LibMC::MCAgency::_MC_AddAgent (IntPtr agency, IntPtr agent)`  
[private]

Referenced by AddAgent().

**12.53.4.75** `static internal int LibMC::MCAgency::_MC_DeleteAgent (IntPtr agent)` [private]

**12.53.4.76** `static IntPtr LibMC::MCAgency::_MC_FindAgentByName (IntPtr agency, String name)` [private]

Referenced by FindAgentByName().

**12.53.4.77** `static IntPtr LibMC::MCAgency::_MC_FindAgentByID (IntPtr agency, int ID)`  
[private]

Referenced by FindAgentByID().

**12.53.4.78** `static IntPtr LibMC::MCAgency::_MC_RetrieveAgent (IntPtr agency)` [private]

Referenced by RetrieveAgent().



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- 12.53.4.79 **static internal int LibMC::MCAgency::\_MC\_GetAgentID (IntPtr *agent*)** [private]
  - 12.53.4.80 **static internal String LibMC::MCAgency::\_MC\_GetAgentName (IntPtr *agent*)**  
[private]
  - 12.53.4.81 **static internal int LibMC::MCAgency::\_MC\_GetAgentNumTasks (IntPtr *agent*)**  
[private]
  - 12.53.4.82 **static internal MCAgent.MC\_AgentStatus\_e LibMC::MCAgency::\_MC\_-  
GetAgentStatus (IntPtr *agent*)** [private]
  - 12.53.4.83 **static internal MCAgent.MC\_AgentType\_e LibMC::MCAgency::\_MC\_GetAgentType  
(IntPtr *agent*)** [private]
  - 12.53.4.84 **static internal String LibMC::MCAgency::\_MC\_GetAgentXMLString (IntPtr *agent*)**  
[private]
  - 12.53.4.85 **static internal int LibMC::MCAgency::\_MC\_PrintAgentCode (IntPtr *agent*)**  
[private]
  - 12.53.4.86 **static internal String LibMC::MCAgency::\_MC\_RetrieveAgentCode (IntPtr *agent*)**  
[private]
  - 12.53.4.87 **static internal int LibMC::MCAgency::\_MC\_SetAgentStatus (IntPtr *agent*,  
MCAgent.MC\_AgentStatus\_e *status*)** [private]
  - 12.53.4.88 **static internal int LibMC::MCAgency::\_MC\_TerminateAgent (IntPtr *agent*)**  
[private]
  - 12.53.4.89 **static internal int LibMC::MCAgency::\_MC\_CallAgentFunc (IntPtr *agent*, String  
*funcName*, IntPtr *returnVal*, IntPtr *varg*)** [private]
  - 12.53.4.90 **static internal IntPtr LibMC::MCAgency::\_MC\_GetAgentExecEngine (IntPtr *agent*)**  
[private]
  - 12.53.4.91 **static internal int LibMC::MCAgency::\_MC\_GetAgentReturnData (IntPtr *agent*, int  
*task\_num*, IntPtr *data*, IntPtr *dim*, IntPtr *extent*)** [private]
  - 12.53.4.92 **static internal IntPtr LibMC::MCAgency::\_MC\_AclNew ()** [private]
  - 12.53.4.93 **static internal int LibMC::MCAgency::\_MC\_AclPost (IntPtr *agent*, IntPtr *message*)**  
[private]
  - 12.53.4.94 **static internal IntPtr LibMC::MCAgency::\_MC\_AclReply (IntPtr *acl\_message*)**  
[private]
  - 12.53.4.95 **static internal IntPtr LibMC::MCAgency::\_MC\_AclRetrieve (IntPtr *agent*)**  
[private]
  - 12.53.4.96 **static internal int LibMC::MCAgency::\_MC\_AclSend (IntPtr *agency*, IntPtr  
*acl\_message*)** [private]
  - 12.53.4.97 **static internal IntPtr LibMC::MCAgency::\_MC\_AclWaitRetrieve (IntPtr *agent*)**  
[private]
- 
- 12.53.4.98 **static internal int LibMC::MCAgency::\_MC\_AclSetPerformative (IntPtr *acl*,  
MCAclMessage.MC\_FipaPerformative\_e *performative*)** [private]
  - 12.53.4.99 **static internal int LibMC::MCAgency::\_MC\_AclSetSender (IntPtr *acl*, String *name*,  
String *address*)** [private]

**12.53.5.2 MCAgencyOptions\_t LibMC::MCAgency::options** [private]

Definition at line 370 of file MCAgency.cs.

**12.53.5.3 int LibMC::MCAgency::port = -1** [private]

Definition at line 371 of file MCAgency.cs.

Referenced by Initialize().

**12.53.5.4 MCAgencyState LibMC::MCAgency::state = MCAgencyState.NoState** [private]

Definition at line 372 of file MCAgency.cs.

Referenced by End(), HaltAgency(), Initialize(), MCAgency(), and ResumeAgency().

**12.53.5.5 const String LibMC::MCAgency::mcdll** [private]

**Initial value:**

```
"libmc.dll"
```

Definition at line 15 of file MCExports.cs.

**12.53.6 Property Documentation****12.53.6.1 IntPtr LibMC::MCAgency::Agency** [get, set, private]

Definition at line 389 of file MCAgency.cs.

Referenced by AclSend(), AddAgent(), BarrierDelete(), BarrierInit(), ChInitializeOptions(), CondBroadcast(), CondReset(), CondSignal(), CondWait(), End(), FindAgentByID(), FindAgentByName(), HaltAgency(), Initialize(), LoadAgentMigrationMessageFile(), MainLoop(), MutexLock(), MutexUnlock(), RegisterService(), ResetSignal(), ResumeAgency(), RetrieveAgent(), SemaphorePost(), SemaphoreWait(), SendAgentMigrationMessage(), SendAgentMigrationMessageFile(), SetDefaultAgentStatus(), SyncDelete(), SyncInit(), WaitAgent(), WaitRetrieveAgent(), and WaitSignal().

**12.53.6.2 int LibMC::MCAgency::Port** [get, set]

Accessor for the port number of the agency.

Allows the user to set the agency port or get the port number while it is running.

**Note:**

The port must be set before the agency is started. Once the agency is started, the port cannot be changed.

Definition at line 418 of file MCAgency.cs.

Referenced by LoadAgentMigrationMessageFile().

**12.53.6.3 MCAgencyState LibMC::MCAgency::State** [get]

Accessor for the agency state.

Allows the user to query the state of the agency.

**Note:**

The state cannot be set by the user. It is controlled internally.

Definition at line 438 of file MCAgency.cs.

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

- [/home/dko/projects/mobilec/trunk/src/win32/LibMC.net/LibMC/MCAgency.cs](#)
- [/home/dko/projects/mobilec/trunk/src/win32/LibMC.net/LibMC/MCExports.cs](#)



## 12.54 LibMC::MCAgency::ChOptions\_t Struct Reference

ChOptions structures.

### Data Fields

- [int shelltype](#)
- [String chhome](#)

### 12.54.1 Detailed Description

ChOptions structures.

Allows the user to set the shell type and the home directory.

#### Note:

This struct is pulled directly from the Mobile-C library.

Definition at line 61 of file MCEExports.cs.

### 12.54.2 Field Documentation

#### 12.54.2.1 int LibMC::MCAgency::ChOptions\_t::shelltype

shell type: CH\_REGULARCH or CH\_SAFECH

Definition at line 63 of file MCEExports.cs.

Referenced by LibMC::MCAgency::ChInitializeOptions().

#### 12.54.2.2 String LibMC::MCAgency::ChOptions\_t::chhome

Embedded Ch home directory. if NULL, use Ch home directory for standard/professional edition as Embedded Ch home directory

Definition at line 66 of file MCEExports.cs.

Referenced by LibMC::MCAgency::ChInitializeOptions().

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

- [/home/dko/projects/mobilec/trunk/src/win32/LibMC.net/LibMC/MCEExports.cs](#)

## 12.55 LibMC::MCAgency::MCAgency\_t Struct Reference

### Data Fields

- [int client](#)
- [int server](#)
- [String hostName](#)
- [String filename](#)
- [int portno](#)
- [int portnoc](#)
- [IntPtr mc\\_platform](#)
- [int default\\_agentstatus](#)
- [int threads](#)
- [int enable\\_security](#)
- [int\[ \] stack\\_size](#)
- [int last\\_error](#)

### 12.55.1 Detailed Description

Definition at line 23 of file MCExports.cs.

### 12.55.2 Field Documentation

#### 12.55.2.1 int LibMC::MCAgency::MCAgency\_t::client

Definition at line 25 of file MCExports.cs.

#### 12.55.2.2 int LibMC::MCAgency::MCAgency\_t::server

Definition at line 26 of file MCExports.cs.

#### 12.55.2.3 String LibMC::MCAgency::MCAgency\_t::hostName

Local Hostname

Definition at line 27 of file MCExports.cs.

#### 12.55.2.4 String LibMC::MCAgency::MCAgency\_t::filename

Definition at line 28 of file MCExports.cs.

#### 12.55.2.5 int LibMC::MCAgency::MCAgency\_t::portno

Local port number

Definition at line 29 of file MCExports.cs.

**12.55.2.6 int LibMC::MCAgency::MCAgency\_t::portnoc**

Definition at line 30 of file MCEExports.cs.

**12.55.2.7 IntPtr LibMC::MCAgency::MCAgency\_t::mc\_platform**

Local MobileC Platform

Definition at line 31 of file MCEExports.cs.

**12.55.2.8 int LibMC::MCAgency::MCAgency\_t::default\_agentstatus**

Agency default agent status

Definition at line 32 of file MCEExports.cs.

**12.55.2.9 int LibMC::MCAgency::MCAgency\_t::threads**

flag which determines which threads to start

Definition at line 33 of file MCEExports.cs.

**12.55.2.10 int LibMC::MCAgency::MCAgency\_t::enable\_security**

Security flag

Definition at line 34 of file MCEExports.cs.

**12.55.2.11 int [ ] LibMC::MCAgency::MCAgency\_t::stack\_size**

Definition at line 37 of file MCEExports.cs.

**12.55.2.12 int LibMC::MCAgency::MCAgency\_t::last\_error**

Definition at line 38 of file MCEExports.cs.

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

- [/home/dko/projects/mobilec/trunk/src/win32/LibMC.net/LibMC/MCEExports.cs](#)

## 12.56 LibMC::MCAgency::MCAgencyOptions\_t Struct Reference

### Data Fields

- [int threads](#)
- [int default\\_agent\\_status](#)
- [int modified](#)
- [int enable\\_security](#)
- [int\[ \] stack\\_size](#)

### 12.56.1 Detailed Description

Definition at line 42 of file MCEExports.cs.

### 12.56.2 Field Documentation

#### 12.56.2.1 int LibMC::MCAgency::MCAgencyOptions\_t::threads

Threads to start

Definition at line 44 of file MCEExports.cs.

#### 12.56.2.2 int LibMC::MCAgency::MCAgencyOptions\_t::default\_agent\_status

Default agent status

Definition at line 45 of file MCEExports.cs.

#### 12.56.2.3 int LibMC::MCAgency::MCAgencyOptions\_t::modified

unused

Definition at line 46 of file MCEExports.cs.

#### 12.56.2.4 int LibMC::MCAgency::MCAgencyOptions\_t::enable\_security

security enable flag

Definition at line 47 of file MCEExports.cs.

#### 12.56.2.5 int [ ] LibMC::MCAgency::MCAgencyOptions\_t::stack\_size

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

Definition at line 50 of file MCEExports.cs.

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

- [/home/dko/projects/mobilec/trunk/src/win32/LibMC.net/LibMC/MCEExports.cs](#)

## 12.57 MCAgencyOptions\_s Struct Reference

User modifiable agency [options](#).

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

### Data Fields

- [int threads](#)
- [int default\\_agent\\_status](#)
- [int modified](#)
- [int enable\\_security](#)
- [int stack\\_size](#) [MC\_THREAD\_ALL]

### 12.57.1 Detailed Description

User modifiable agency [options](#).

Definition at line 235 of file libmc.h.

### 12.57.2 Field Documentation

#### 12.57.2.1 int MCAgencyOptions\_s::threads

Threads to start

Definition at line 236 of file libmc.h.

Referenced by MC\_Initialize(), MC\_InitializeAgencyOptions(), MC\_SetThreadOff(), MC\_SetThreadOn(), MC\_SetThreadsAllOff(), and MC\_SetThreadsAllOn().

#### 12.57.2.2 int MCAgencyOptions\_s::default\_agent\_status

Default agent status

Definition at line 237 of file libmc.h.

Referenced by MC\_Initialize(), and MC\_InitializeAgencyOptions().

#### 12.57.2.3 int MCAgencyOptions\_s::modified

unused

Definition at line 238 of file libmc.h.

Referenced by MC\_InitializeAgencyOptions().

#### 12.57.2.4 int MCAgencyOptions\_s::enable\_security

security enable flag

Definition at line 239 of file libmc.h.

Referenced by MC\_Initialize(), and MC\_InitializeAgencyOptions().

**12.57.2.5 int MCAgencyOptions\_s::stack\_size[MC\_THREAD\_ALL]**

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

Definition at line 242 of file libmc.h.

Referenced by MC\_Initialize(), and MC\_InitializeAgencyOptions().

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

- </home/dko/projects/mobilec/trunk/src/include/libmc.h>

## 12.58 LibMC::MCAgent Class Reference

Wrapper class for MCAgent\_t structure.

### Public Types

- enum [MC\\_AgentType\\_e](#) { [MC\\_NONE](#) = -1, [MC\\_REMOTE\\_AGENT](#) = 0, [MC\\_LOCAL\\_AGENT](#), [MC\\_RETURN\\_AGENT](#) }  
*Enum for describing the type of an 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](#) }  
*Enum for describing the status of an agent.*

### Public Member Functions

- [MCAgent](#) ()  
*Default constructor.*
- override string [ToString](#) ()  
*Display the agent's fields.*
- int [DeleteAgent](#) ()  
*Deletes an agent.*
- String [GetAgentXMLString](#) ()  
*Gets the agent's XML string.*
- int [PrintAgentCode](#) ()  
*Gets the agent's C code string.*
- String [RetrieveAgentCode](#) ()  
*Gets the agent's C code string.*
- int [TerminateAgent](#) ()  
*Terminates an agent.*
- int [AclPost](#) ([MCAclMessage](#) message)  
*Posts an ACL message to the agent.*
- [MCAclMessage](#) [AclRetrieve](#) ()  
*Retrieve an ACL message from the agent.*
- [MCAclMessage](#) [AclWaitRetrieve](#) ()  
*Wait for and retrieve an ACL message from the agent.*

- [int CallAgentFunc](#) (String funcName, IntPtr retval, IntPtr varg)  
*Calls a function in an agent script.*
- [int CallAgentFunc](#) (String funcName, ref object retval, ref object varg)  
*Calls a function in an agent script.*
- IntPtr [GetAgentExecEngine](#) ()  
*Gets an agent's Ch interpreter.*
- [int GetAgentReturnData](#) (int task\_num, IntPtr data, IntPtr dim, IntPtr extent)  
*Calls a function in an agent script.*

## Static Public Member Functions

- static implicit [operator IntPtr](#) ([MCAgent](#) agent)
- static implicit [operator MCAgent](#) (IntPtr ip)

## Properties

- internal IntPtr [Agent](#) [get, set]
- [int AgentID](#) [get]  
*Gets the agent's ID number.*
- String [AgentName](#) [get]  
*Gets the agent's name.*
- [int AgentNumTasks](#) [get]  
*Gets the agent's number of tasks.*
- [MC\\_AgentStatus\\_e AgentStatus](#) [get, set]  
*Gets or sets the agent's status.*
- [MC\\_AgentType\\_e AgentType](#) [get]  
*Gets the agent's type.*
- bool [Valid](#) [get]  
*Checks whether the agent is valid.*

## Private Member Functions

- internal [MCAgent](#) (IntPtr ip)
- void [GetAgentFields](#) ()



## Private Attributes

- IntPtr [agent\\_p](#)
- String [name](#) = ""
- int [id](#) = -1
- int [numTasks](#) = -1
- [MC\\_AgentStatus\\_e status](#) = MC\_AgentStatus\_e.MC\_NO\_STATUS
- [MC\\_AgentType\\_e type](#) = MC\_AgentType\_e.MC\_NONE

### 12.58.1 Detailed Description

Wrapper class for MCAgent\_t structure.

This class provides an interface to the Mobile-C agent structure. Member functions for the class are generally overloaded versions of the respective functions in the Mobile-C library. The class maintains a pointer to a Mobile-C agent in unmanaged memory. The pointer is not accessible by the user.

Definition at line 61 of file MCAgent.cs.

### 12.58.2 Member Enumeration Documentation

#### 12.58.2.1 enum LibMC::MCAgent::MC\_AgentType\_e

Enum for describing the type of an agent.

**Note:**

This enum is pulled directly from the Mobile-C library.

**Enumerator:**

*MC\_NONE* Default value to describe uninitialized agent.

*MC\_REMOTE\_AGENT* A remote agent.

*MC\_LOCAL\_AGENT* A local agent.

*MC\_RETURN\_AGENT* A returning agent.

Definition at line 75 of file MCAgent.cs.

#### 12.58.2.2 enum LibMC::MCAgent::MC\_AgentStatus\_e

Enum for describing the status of an agent.

**Note:**

This enum is pulled directly from the Mobile-C library.

**Enumerator:**

*MC\_NO\_STATUS* Default value for uninitialized agent

*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 88 of file MCAgent.cs.

## 12.58.3 Constructor & Destructor Documentation

### 12.58.3.1 LibMC::MCAgent::MCAgent () [inline]

Default constructor.

Creates an empty agent.

Definition at line 104 of file MCAgent.cs.

Referenced by operator MCAgent().

### 12.58.3.2 internal LibMC::MCAgent::MCAgent (IntPtr ip) [inline, private]

Definition at line 110 of file MCAgent.cs.

References Agent.

## 12.58.4 Member Function Documentation

### 12.58.4.1 override string LibMC::MCAgent::ToString () [inline]

Display the agent's fields.

Formats and returns a string with all of the agent's properties.

#### Returns:

A string containing a formatted representation of the agent's properties.

#### Note:

The agency port and any other [options](#) must be set before calling this function.

Definition at line 126 of file MCAgent.cs.

References AgentID, AgentName, AgentNumTasks, AgentStatus, and AgentType.

### 12.58.4.2 void LibMC::MCAgent::GetAgentFields () [inline, private]

Definition at line 163 of file MCAgent.cs.

References Agent, name, numTasks, status, and type.

### 12.58.4.3 static implicit LibMC::MCAgent::operator IntPtr (MCAgent agent) [inline, static]

Definition at line 300 of file MCAgent.cs.

**12.58.4.4 static implicit LibMC::MCAgent::operator MCAgent (IntPtr ip)** [inline, static]

Definition at line 305 of file MCAgent.cs.

References MCAgent().

**12.58.4.5 int LibMC::MCAgent::DeleteAgent ()** [inline]

Deletes an agent.

Deletes an agent from the agency.

**Returns:**

The return value of the underlying MC\_DeleteAgent function call.

Definition at line 322 of file MCAgent.cs.

References Agent.

**12.58.4.6 String LibMC::MCAgent::GetAgentXMLString ()** [inline]

Gets the agent's XML string.

Returns the full XML string associated with the agent.

**Returns:**

The return value of the underlying MC\_GetAgentXMLString function call.

Definition at line 335 of file MCAgent.cs.

References Agent.

**12.58.4.7 int LibMC::MCAgent::PrintAgentCode ()** [inline]

Gets the agent's C code string.

Prints the C code associated with the agent to stdout.

**Returns:**

The return value of the underlying MC\_PrintAgentCode function call.

Definition at line 348 of file MCAgent.cs.

References Agent.

**12.58.4.8 String LibMC::MCAgent::RetrieveAgentCode ()** [inline]

Gets the agent's C code string.

Returns the C code associated with the agent.

**Returns:**

A string containing the agent's C code.

Definition at line 360 of file MCAgent.cs.

References Agent.

**12.58.4.9 int LibMC::MCAgent::TerminateAgent () [inline]**

Terminates an agent.

Terminates an agent regardless of the agent's state.

**Returns:**

The return value of the underlying MC\_TerminateAgent function call.

Definition at line 373 of file MCAgent.cs.

References Agent.

**12.58.4.10 int LibMC::MCAgent::AclPost (MCAclMessage *message*) [inline]**

Posts an ACL message to the agent.

Delivers an ACL message to the agent.

**Parameters:**

*message* The ACL message object to deliver.

**Returns:**

The return value of the underlying MC\_AclPost function call.

**Note:**

The message must be a valid message or this function call will fail.

Definition at line 398 of file MCAgent.cs.

References LibMC::MCAclMessage::AclMsg, and Agent.

**12.58.4.11 MCAclMessage LibMC::MCAgent::AclRetrieve () [inline]**

Retrieve an ACL message from the agent.

Retrieves an ACL message from the agent if one is available.

**Returns:**

The ACL message or a blank ACL message if one was not available.

**Note:**

The message must be a valid message or this function call will fail.

Definition at line 414 of file MCAgent.cs.

References Agent.

**12.58.4.12 MCAclMessage LibMC::MCAgent::AclWaitRetrieve ()** [inline]

Wait for and retrieve an ACL message from the agent.

Retrieves an ACL message from the agent when one becomes available.

**Returns:**

The ACL message or a blank ACL message if the call fails.

**Note:**

This function call blocks.

Definition at line 433 of file MCAgent.cs.

References Agent.

**12.58.4.13 int LibMC::MCAgent::CallAgentFunc (String *funcName*, IntPtr *retval*, IntPtr *varg*)**  
[inline]

Calls a function in an agent script.

Calls a function in an agent's script file. This function requires manual marshaling by the user.

**Parameters:**

*funcName* The name of the function to call

*retval* A pointer to memory for the return value

*varg* A pointer to the argument for the function

**Returns:**

The return value of the underlying MC\_CallAgentFunc function call.

**Note:**

BE VERY CAREFUL! You must marshal your arguments! If possible, use the other CallAgentFunc that handles marshaling automatically.

**See also:**

Overloaded [CallAgentFunc](#), LibMCConsole example

Definition at line 459 of file MCAgent.cs.

References Agent.

Referenced by CallAgentFunc().

**12.58.4.14 int LibMC::MCAgent::CallAgentFunc (String *funcName*, ref object *retval*, ref object *varg*)** [inline]

Calls a function in an agent script.

Calls a function in an agent's script file. This function requires boxing of parameters, but no marshaling.

**Parameters:**

*funcName* The name of the function to call  
*retval* A boxed object to hold the return value  
*varg* The boxed argument to the agent function

**Returns:**

The return value of the underlying MC\_CallAgentFunc function call.

**Note:**

This function handles marshaling of the argument and return value. The memory provided to the agent function for both *retval* and *varg* is not preserved after this function call! If the memory is to be kept by the agent, use the manually marshaled version of this function. Also note that even though structures can be marshaled automatically, in this function, the type of the structure is unknown and therefore it must be handled manually, even though the marshaling is transparent to the user.

**See also:**

Overloaded [CallAgentFunc](#), LibMCConsole example

Definition at line 489 of file MCAgent.cs.

References CallAgentFunc().

**12.58.4.15 IntPtr LibMC::MCAgent::GetAgentExecEngine () [inline]**

Gets an agent's Ch interpreter.

Gets a pointer to the agent's Ch interpreter. Will be improved shortly.

**Returns:**

A pointer to the Ch interpreter.

**Note:**

Nothing in the LibMC.NET library can make use of the Ch interpreter yet.

**Todo**

Wrap MC\_GetAgentExecEngine with an object for the void\* pointer return type (Ch interpreter).

Definition at line 534 of file MCAgent.cs.

References Agent.

**12.58.4.16 int LibMC::MCAgent::GetAgentReturnData (int task\_num, IntPtr data, IntPtr dim, IntPtr extent) [inline]**

Calls a function in an agent script.

Calls a function in an agent's script file. This function requires manual marshaling by the user.

**Parameters:**

*task\_num* Task number to get data from

*data* A pointer to memory for the data  
*dim* A pointer to hold the dimensions of the data  
*extent* A pointer to hold the dimensions of the data

**Returns:**

The return value of the underlying MC\_GetAgentReturnData function call.

**Note:**

This function does nothing but throw an exception right now.

**Todo**

Implement GetAgentReturnData

Definition at line 555 of file MCAgent.cs.

### 12.58.5 Field Documentation

#### 12.58.5.1 IntPtr LibMC::MCAgent::agent\_p [private]

Definition at line 63 of file MCAgent.cs.

#### 12.58.5.2 String LibMC::MCAgent::name = "" [private]

Definition at line 64 of file MCAgent.cs.

Referenced by GetAgentFields().

#### 12.58.5.3 int LibMC::MCAgent::id = -1 [private]

Definition at line 65 of file MCAgent.cs.

#### 12.58.5.4 int LibMC::MCAgent::numTasks = -1 [private]

Definition at line 66 of file MCAgent.cs.

Referenced by GetAgentFields().

#### 12.58.5.5 MC\_AgentStatus\_e LibMC::MCAgent::status = MC\_AgentStatus\_e.MC\_NO\_STATUS [private]

Definition at line 67 of file MCAgent.cs.

Referenced by GetAgentFields().

#### 12.58.5.6 MC\_AgentType\_e LibMC::MCAgent::type = MC\_AgentType\_e.MC\_NONE [private]

Definition at line 68 of file MCAgent.cs.

Referenced by GetAgentFields().

## 12.58.6 Property Documentation

### 12.58.6.1 `internal IntPtr LibMC::MCAgent::Agent` [get, set, private]

Definition at line 143 of file MCAgent.cs.

Referenced by `AclPost()`, `AclRetrieve()`, `AclWaitRetrieve()`, `LibMC::MCAgency::AddAgent()`, `CallAgentFunc()`, `DeleteAgent()`, `GetAgentExecEngine()`, `GetAgentFields()`, `GetAgentXMLString()`, `MCAgent()`, `PrintAgentCode()`, `LibMC::MCAgency::RegisterService()`, `RetrieveAgentCode()`, and `TerminateAgent()`.

### 12.58.6.2 `int LibMC::MCAgent::AgentID` [get]

Gets the agent's ID number.

Gets the agent's ID number as assigned by Mobile-C if the agent is a valid agent.

#### Returns:

The agent's ID number or -1 for an empty agent.

Definition at line 181 of file MCAgent.cs.

Referenced by `ToString()`.

### 12.58.6.3 `String LibMC::MCAgent::AgentName` [get]

Gets the agent's name.

Gets the agent's name as assigned by Mobile-C or the agent script if the agent is a valid agent.

#### Returns:

The agent's name or an empty string for an empty agent.

Definition at line 201 of file MCAgent.cs.

Referenced by `ToString()`.

### 12.58.6.4 `int LibMC::MCAgent::AgentNumTasks` [get]

Gets the agent's number of tasks.

Gets the agent's ID number of tasks if the agent is a valid agent.

#### Returns:

The agent's ID number of tasks or -1 for an empty agent.

Definition at line 220 of file MCAgent.cs.

Referenced by `ToString()`.

### 12.58.6.5 `MC_AgentStatus_e LibMC::MCAgent::AgentStatus` [get, set]

Gets or sets the agent's status.



Gets or sets the agent's status. When setting the status, the status is double-checked after setting it and may not be set depending on the state of the agent and the agency.

**Returns:**

The agent's status or MC\_NO\_STATUS for an empty agent.

Definition at line 242 of file MCAgent.cs.

Referenced by ToString().

**12.58.6.6 MC\_AgentType\_e LibMC::MCAgent::AgentType** [get]

Gets the agent's type.

Gets the agent's type.

**Returns:**

The agent's type or MC\_NONE for an empty agent.

Definition at line 264 of file MCAgent.cs.

Referenced by ToString().

**12.58.6.7 bool LibMC::MCAgent::Valid** [get]

Checks whether the agent is valid.

Checks the internal agent pointer to see if it is non-zero.

**Returns:**

True if the pointer is valid, false otherwise

Definition at line 286 of file MCAgent.cs.

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

- /home/dko/projects/mobilec/trunk/src/win32/LibMC.net/LibMC/MCAgent.cs

## 12.59 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](#)

### 12.59.1 Detailed Description

MD2 context structure.

Definition at line 10 of file md2.h.

### 12.59.2 Field Documentation

#### 12.59.2.1 unsigned char md2\_context::cksum[16]

checksum of the data block

Definition at line 12 of file md2.h.

#### 12.59.2.2 unsigned char md2\_context::state[48]

intermediate digest state

Definition at line 13 of file md2.h.

#### 12.59.2.3 unsigned char md2\_context::buffer[16]

data block being processed

Definition at line 14 of file md2.h.

#### 12.59.2.4 unsigned char md2\_context::ipad[64]

HMAC: inner padding

Definition at line 16 of file md2.h.

#### 12.59.2.5 unsigned char md2\_context::opad[64]

HMAC: outer padding

Definition at line 17 of file md2.h.

**12.59.2.6 int md2\_context::left**

amount of data in buffer

Definition at line 18 of file md2.h.

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

- [/home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/include/xyssl/md2.h](#)

## 12.60 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]

### 12.60.1 Detailed Description

MD4 context structure.

Definition at line 10 of file md4.h.

### 12.60.2 Field Documentation

#### 12.60.2.1 unsigned long md4\_context::total[2]

number of bytes processed

Definition at line 12 of file md4.h.

#### 12.60.2.2 unsigned long md4\_context::state[4]

intermediate digest state

Definition at line 13 of file md4.h.

#### 12.60.2.3 unsigned char md4\_context::buffer[64]

data block being processed

Definition at line 14 of file md4.h.

#### 12.60.2.4 unsigned char md4\_context::ipad[64]

HMAC: inner padding

Definition at line 16 of file md4.h.

#### 12.60.2.5 unsigned char md4\_context::opad[64]

HMAC: outer padding

Definition at line 17 of file md4.h.

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

- [/home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/include/xyssl/md4.h](#)

## 12.61 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]

### 12.61.1 Detailed Description

MD5 context structure.

Definition at line 10 of file md5.h.

### 12.61.2 Field Documentation

#### 12.61.2.1 unsigned long md5\_context::total[2]

number of bytes processed

Definition at line 12 of file md5.h.

#### 12.61.2.2 unsigned long md5\_context::state[4]

intermediate digest state

Definition at line 13 of file md5.h.

#### 12.61.2.3 unsigned char md5\_context::buffer[64]

data block being processed

Definition at line 14 of file md5.h.

#### 12.61.2.4 unsigned char md5\_context::ipad[64]

HMAC: inner padding

Definition at line 16 of file md5.h.

#### 12.61.2.5 unsigned char md5\_context::opad[64]

HMAC: outer padding

Definition at line 17 of file md5.h.

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

- [/home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/include/xyssl/md5.h](#)

## 12.62 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](#)

### 12.62.1 Detailed Description

Definition at line 73 of file message.h.

### 12.62.2 Field Documentation

#### 12.62.2.1 struct sockaddr\_in\* message\_s::addr [read]

Definition at line 75 of file message.h.

Referenced by [message\\_Destroy\(\)](#), [message\\_InitializeFromAgent\(\)](#), [message\\_InitializeFromConnection\(\)](#), [message\\_InitializeFromString\(\)](#), [message\\_New\(\)](#), and [message\\_xml\\_parse\\_\\_message\(\)](#).

#### 12.62.2.2 int message\_s::connect\_id

Definition at line 78 of file message.h.

Referenced by [message\\_InitializeFromConnection\(\)](#), [message\\_InitializeFromString\(\)](#), and [message\\_New\(\)](#).

#### 12.62.2.3 int message\_s::message\_id

Definition at line 79 of file message.h.

Referenced by [AP\\_QUEUE\\_SEARCH\\_TEMPLATE\(\)](#), [message\\_InitializeFromAgent\(\)](#), [message\\_InitializeFromConnection\(\)](#), [message\\_InitializeFromString\(\)](#), and [message\\_New\(\)](#).



#### 12.62.2.4 int message\_s::isHTTP

Definition at line 82 of file message.h.

Referenced by message\_New(), mtp\_http\_ComposeMessage(), and mtp\_http\_CreateMessage().

#### 12.62.2.5 enum message\_type\_e message\_s::message\_type

Definition at line 85 of file message.h.

Referenced by acc\_MessageHandlerThread(), acc\_Thread(), agent\_Initialize(), MC\_AclSend(), message\_InitializeFromAgent(), message\_InitializeFromString(), message\_New(), and message\_xml\_parse\_\_message().

#### 12.62.2.6 enum http\_performative\_e message\_s::http\_type

Definition at line 86 of file message.h.

Referenced by message\_New().

#### 12.62.2.7 mxml\_node\_t\* message\_s::xml\_root

Definition at line 88 of file message.h.

Referenced by acc\_Thread(), agent\_Initialize(), MC\_LoadAgentFromFile(), message\_Destroy(), message\_InitializeFromAgent(), message\_InitializeFromConnection(), message\_InitializeFromString(), message\_New(), and message\_xml\_parse().

#### 12.62.2.8 mxml\_node\_t\* message\_s::xml\_payload

Definition at line 89 of file message.h.

Referenced by agent\_Initialize(), MC\_LoadAgentFromFile(), message\_New(), and message\_xml\_parse\_\_message().

#### 12.62.2.9 char\* message\_s::message\_body

Definition at line 92 of file message.h.

Referenced by acc\_Thread(), message\_Destroy(), message\_InitializeFromAgent(), message\_InitializeFromConnection(), message\_InitializeFromString(), message\_New(), message\_Send(), mtp\_http\_ComposeMessage(), and mtp\_http\_CreateMessage().

#### 12.62.2.10 char\* message\_s::update\_name

Definition at line 94 of file message.h.

Referenced by message\_Destroy(), message\_InitializeFromAgent(), message\_InitializeFromString(), and message\_New().

**12.62.2.11 int message\_s::update\_num**

Definition at line 95 of file message.h.

Referenced by message\_New().

**12.62.2.12 char\* message\_s::from\_address**

Definition at line 97 of file message.h.

Referenced by acc\_MessageHandlerThread(), AP\_QUEUE\_SEARCH\_TEMPLATE(), message\_Destroy(), message\_InitializeFromAgent(), message\_InitializeFromConnection(), message\_InitializeFromString(), message\_New(), and message\_xml\_parse\_\_message().

**12.62.2.13 char\* message\_s::to\_address**

Definition at line 98 of file message.h.

Referenced by acc\_MessageHandlerThread(), AP\_QUEUE\_SEARCH\_TEMPLATE(), MC\_LoadAgentFromFile(), message\_Destroy(), message\_InitializeFromAgent(), message\_InitializeFromConnection(), message\_InitializeFromString(), message\_New(), message\_queue\_SendOutgoing(), message\_Send(), mtp\_http\_ComposeMessage(), and mtp\_http\_CreateMessage().

**12.62.2.14 char\* message\_s::target**

Definition at line 100 of file message.h.

Referenced by MC\_AclSend(), message\_Destroy(), message\_InitializeFromAgent(), message\_InitializeFromConnection(), message\_InitializeFromString(), message\_New(), and mtp\_http\_ComposeMessage().

**12.62.2.15 int message\_s::agent\_xml\_flag**

Definition at line 107 of file message.h.

Referenced by agent\_Initialize(), message\_Destroy(), message\_InitializeFromAgent(), and message\_New().

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

- /home/dko/projects/mobilec/trunk/src/include/[message.h](#)

## 12.63 mpi Struct Reference

MPI structure.

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

### Data Fields

- [int s](#)
- [int n](#)
- [t\\_int \\* p](#)

### 12.63.1 Detailed Description

MPI structure.

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

### 12.63.2 Field Documentation

#### 12.63.2.1 `int mpi::s`

integer sign

Definition at line 50 of file `bignum.h`.

#### 12.63.2.2 `int mpi::n`

total # of limbs

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

#### 12.63.2.3 `t_int* mpi::p`

pointer to limbs

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

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

- </home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/include/xyssl/bignum.h>

## 12.64 mtp\_http\_content\_s Struct Reference

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

### Data Fields

- char \* [content\\_type](#)
- void \* [data](#)

### 12.64.1 Detailed Description

Definition at line 106 of file mtp\_http.h.

### 12.64.2 Field Documentation

#### 12.64.2.1 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().

#### 12.64.2.2 void\* mtp\_http\_content\_s::data

Definition at line 109 of file mtp\_http.h.

Referenced by acc\_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/trunk/src/include/[mtp\\_http.h](#)

## 12.65 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](#)

### 12.65.1 Detailed Description

Definition at line 112 of file [mtp\\_http.h](#).

### 12.65.2 Field Documentation

#### 12.65.2.1 enum [http\\_status\\_code\\_e](#) [mtp\\_http\\_s::http\\_status\\_code](#)

Definition at line 114 of file [mtp\\_http.h](#).

#### 12.65.2.2 enum [http\\_performative\\_e](#) [mtp\\_http\\_s::http\\_performative](#)

Definition at line 115 of file [mtp\\_http.h](#).

Referenced by [acc\\_Thread\(\)](#), [http\\_ParseRequest\(\)](#), and [mtp\\_http\\_Parse\(\)](#).

#### 12.65.2.3 char\* [mtp\\_http\\_s::http\\_version](#)

Definition at line 116 of file [mtp\\_http.h](#).

Referenced by [mtp\\_http\\_Destroy\(\)](#).

**12.65.2.4 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().

**12.65.2.5 char\* mtp\_http\_s::return\_code**

Definition at line 118 of file mtp\_http.h.

Referenced by mtp\_http\_Destroy().

**12.65.2.6 char\* mtp\_http\_s::target**

Definition at line 119 of file mtp\_http.h.

Referenced by acc\_Thread(), http\_ParseRequest(), MC\_AclSend(), mtp\_http\_CreateMessage(), and mtp\_http\_Destroy().

**12.65.2.7 char\* mtp\_http\_s::date**

Definition at line 121 of file mtp\_http.h.

Referenced by mtp\_http\_Destroy().

**12.65.2.8 char\* mtp\_http\_s::server**

Definition at line 122 of file mtp\_http.h.

Referenced by mtp\_http\_Destroy().

**12.65.2.9 char\* mtp\_http\_s::accept\_ranges**

Definition at line 123 of file mtp\_http.h.

Referenced by mtp\_http\_Destroy().

**12.65.2.10 char\* mtp\_http\_s::content\_length**

Definition at line 124 of file mtp\_http.h.

Referenced by mtp\_http\_Destroy(), and mtp\_http\_InitializeFromConnection().

**12.65.2.11 char\* mtp\_http\_s::connection**

Definition at line 125 of file mtp\_http.h.

Referenced by mtp\_http\_Destroy().

**12.65.2.12 char\* mtp\_http\_s::content\_type**

Definition at line 126 of file mtp\_http.h.

Referenced by mtp\_http\_Destroy(), and mtp\_http\_Parse().

#### 12.65.2.13 char\* mtp\_http\_s::user\_agent

Definition at line 127 of file mtp\_http.h.

Referenced by mtp\_http\_Destroy().

#### 12.65.2.14 char\* mtp\_http\_s::cache\_control

Definition at line 129 of file mtp\_http.h.

#### 12.65.2.15 char\* mtp\_http\_s::mime\_version

Definition at line 130 of file mtp\_http.h.

#### 12.65.2.16 int mtp\_http\_s::response\_code

Definition at line 133 of file mtp\_http.h.

Referenced by http\_ParseRequest().

#### 12.65.2.17 char\* mtp\_http\_s::response\_string

Definition at line 134 of file mtp\_http.h.

Referenced by http\_ParseRequest(), and mtp\_http\_Destroy().

#### 12.65.2.18 int mtp\_http\_s::message\_parts

Definition at line 138 of file mtp\_http.h.

Referenced by acc\_Thread(), MC\_AclSend(), mtp\_http\_CreateMessage(), mtp\_http\_Destroy(), and mtp\_http\_Parse().

#### 12.65.2.19 char\* mtp\_http\_s::boundary

Definition at line 139 of file mtp\_http.h.

Referenced by mtp\_http\_Destroy(), and mtp\_http\_Parse().

#### 12.65.2.20 struct mtp\_http\_content\_s\* mtp\_http\_s::content [read]

Definition at line 140 of file mtp\_http.h.

Referenced by acc\_Thread(), MC\_AclSend(), mtp\_http\_CreateMessage(), mtp\_http\_Destroy(), mtp\_http\_New(), and mtp\_http\_Parse().

**12.65.2.21 int mtp\_http\_s::header\_length**

Definition at line 143 of file mtp\_http.h.

Referenced by mtp\_http\_InitializeFromConnection(), and mtp\_http\_ParseHeader().

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

- [/home/dko/projects/mobilec/trunk/src/include/mtp\\_http.h](#)



## 12.66 mxml\_attr\_s Struct Reference

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

### Data Fields

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

### 12.66.1 Detailed Description

Definition at line 86 of file mxml.h.

### 12.66.2 Field Documentation

#### 12.66.2.1 char\* mxml\_attr\_s::name

Definition at line 88 of file mxml.h.

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

#### 12.66.2.2 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/trunk/src/mxml-2.2.2/mxml.h`

## 12.67 mxml\_custom\_s Struct Reference

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

### Data Fields

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

### 12.67.1 Detailed Description

Definition at line 105 of file mxml.h.

### 12.67.2 Field Documentation

#### 12.67.2.1 void\* mxml\_custom\_s::data

Definition at line 107 of file mxml.h.

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

#### 12.67.2.2 void(\* mxml\_custom\_s::destroy)(void \*)

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

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

- /home/dko/projects/mobilec/trunk/src/mxml-2.2.2/[mxml.h](#)

## 12.68 mxml\_fdbuf\_s Struct Reference

### Data Fields

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

### 12.68.1 Detailed Description

Definition at line 83 of file mxml-file.c.

### 12.68.2 Field Documentation

#### 12.68.2.1 int mxml\_fdbuf\_s::fd

Definition at line 85 of file mxml-file.c.

Referenced by [mxml\\_fd\\_read\(\)](#), [mxml\\_fd\\_write\(\)](#), [mxxmlLoadFd\(\)](#), and [mxxmlSaveFd\(\)](#).

#### 12.68.2.2 unsigned char\* mxml\_fdbuf\_s::current

Definition at line 86 of file mxml-file.c.

Referenced by [mxml\\_fd\\_getc\(\)](#), [mxml\\_fd\\_putc\(\)](#), [mxml\\_fd\\_read\(\)](#), [mxml\\_fd\\_write\(\)](#), [mxxmlLoadFd\(\)](#), and [mxxmlSaveFd\(\)](#).

#### 12.68.2.3 unsigned char \* mxml\_fdbuf\_s::end

Definition at line 86 of file mxml-file.c.

Referenced by [mxml\\_fd\\_getc\(\)](#), [mxml\\_fd\\_putc\(\)](#), [mxml\\_fd\\_read\(\)](#), [mxxmlLoadFd\(\)](#), and [mxxmlSaveFd\(\)](#).

#### 12.68.2.4 unsigned char mxml\_fdbuf\_s::buffer[8192]

Definition at line 86 of file mxml-file.c.

Referenced by [mxml\\_fd\\_read\(\)](#), [mxml\\_fd\\_write\(\)](#), [mxxmlLoadFd\(\)](#), and [mxxmlSaveFd\(\)](#).

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

- [/home/dko/projects/mobilec/trunk/src/mxml-2.2.2/mxml-file.c](#)

## 12.69 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](#)

### 12.69.1 Detailed Description

Definition at line 133 of file `mxml.h`.

### 12.69.2 Field Documentation

#### 12.69.2.1 char\* mxml\_index\_s::attr

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

Referenced by `index_compare()`, `index_find()`, `mxmlIndexDelete()`, `mxmlIndexFind()`, and `mxmlIndexNew()`.

#### 12.69.2.2 int mxml\_index\_s::num\_nodes

Definition at line 136 of file `mxml.h`.

Referenced by `main()`, `mxmlIndexEnum()`, `mxmlIndexFind()`, `mxmlIndexNew()`, and `mxmlIndexReset()`.

#### 12.69.2.3 int mxml\_index\_s::alloc\_nodes

Definition at line 137 of file `mxml.h`.

Referenced by `mxmlIndexDelete()`, and `mxmlIndexNew()`.

#### 12.69.2.4 int mxml\_index\_s::cur\_node

Definition at line 138 of file `mxml.h`.

Referenced by `mxmlIndexEnum()`, `mxmlIndexFind()`, and `mxmlIndexReset()`.

#### 12.69.2.5 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()`.

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

- </home/dko/projects/mobilec/trunk/src/mxml-2.2.2/mxml.h>

## 12.70 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

### 12.70.1 Detailed Description

Definition at line 122 of file [mxml.h](#).

### 12.70.2 Field Documentation

#### 12.70.2.1 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\(\)](#).

#### 12.70.2.2 struct mxml\_node\_s\* mxml\_node\_s::next [read]

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\(\)](#).

#### 12.70.2.3 struct mxml\_node\_s\* mxml\_node\_s::prev [read]

Definition at line 126 of file [mxml.h](#).

Referenced by [mxml\\_write\\_node\(\)](#), [mxmlAdd\(\)](#), [mxmlRemove\(\)](#), and [mxmlWalkPrev\(\)](#).

#### 12.70.2.4 struct mxml\_node\_s\* mxml\_node\_s::parent [read]

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\(\)](#).

**12.70.2.5 struct mxml\_node\_s\* mxml\_node\_s::child** [read]

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().

**12.70.2.6 struct mxml\_node\_s\* mxml\_node\_s::last\_child** [read]

Definition at line 129 of file mxml.h.

Referenced by add\_variable(), main(), mxmlAdd(), mxmlRemove(), mxmlWalkPrev(), and scan\_file().

**12.70.2.7 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/trunk/src/mxml-2.2.2/[mxml.h](#)

## 12.71 mxml\_text\_s Struct Reference

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

### Data Fields

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

### 12.71.1 Detailed Description

Definition at line 99 of file mxml.h.

### 12.71.2 Field Documentation

#### 12.71.2.1 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()`.

#### 12.71.2.2 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()`.

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

- [/home/dko/projects/mobilec/trunk/src/mxml-2.2.2/mxml.h](#)



## 12.72 mxml\_value\_s Struct Reference

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

### Data Fields

- `char * name`
- `int num_attrs`
- `mxml_attr_t * attrs`

### 12.72.1 Detailed Description

Definition at line 92 of file mxml.h.

### 12.72.2 Field Documentation

#### 12.72.2.1 `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()`.

#### 12.72.2.2 `int mxml_value_s::num_attrs`

Definition at line 95 of file mxml.h.

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

#### 12.72.2.3 `mxml_attr_t* mxml_value_s::attrs`

Definition at line 96 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/trunk/src/mxml-2.2.2/mxml.h`

## 12.73 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

### 12.73.1 Detailed Description

Definition at line 112 of file mxml.h.

### 12.73.2 Field Documentation

#### 12.73.2.1 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\(\)](#).

#### 12.73.2.2 int mxml\_value\_u::integer

Definition at line 115 of file mxml.h.

Referenced by [main\(\)](#), [mxml\\_write\\_node\(\)](#), [mxmlNewInteger\(\)](#), and [mxmlSetInteger\(\)](#).

#### 12.73.2.3 char\* mxml\_value\_u::opaque

Definition at line 116 of file mxml.h.

Referenced by [main\(\)](#), [mxml\\_write\\_node\(\)](#), [mxmlDelete\(\)](#), [mxmlNewOpaque\(\)](#), and [mxmlSetOpaque\(\)](#).

#### 12.73.2.4 double mxml\_value\_u::real

Definition at line 117 of file mxml.h.

Referenced by [main\(\)](#), [mxml\\_write\\_node\(\)](#), [mxmlNewReal\(\)](#), and [mxmlSetReal\(\)](#).

#### 12.73.2.5 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()`.

#### 12.73.2.6 mxml\_custom\_t mxml\_value\_u::custom

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

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

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

- `/home/dko/projects/mobilec/trunk/src/mxml-2.2.2/mxml.h`

## 12.74 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]

### 12.74.1 Detailed Description

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

### 12.74.2 Field Documentation

#### 12.74.2.1 `int options::opmode`

Definition at line 77 of file `ssl_test.c`.

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

#### 12.74.2.2 `int options::iomode`

Definition at line 78 of file `ssl_test.c`.

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

#### 12.74.2.3 `char* options::server_name`

Definition at line 79 of file `ssl_test.c`.

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

#### 12.74.2.4 `int options::server_port`

Definition at line 80 of file `ssl_test.c`.

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

**12.74.2.5 int options::command**

Definition at line 81 of file ssl\_test.c.

Referenced by main(), and ssl\_test().

**12.74.2.6 int options::buffer\_size**

Definition at line 82 of file ssl\_test.c.

Referenced by main(), and ssl\_test().

**12.74.2.7 int options::max\_bytes**

Definition at line 83 of file ssl\_test.c.

Referenced by main(), and ssl\_test().

**12.74.2.8 int options::debug\_level**

Definition at line 84 of file ssl\_test.c.

Referenced by main().

**12.74.2.9 int options::conn\_timeout**

Definition at line 85 of file ssl\_test.c.

Referenced by main(), and ssl\_test().

**12.74.2.10 int options::max\_connections**

Definition at line 86 of file ssl\_test.c.

Referenced by main().

**12.74.2.11 int options::session\_reuse**

Definition at line 87 of file ssl\_test.c.

Referenced by main(), and ssl\_test().

**12.74.2.12 int options::session\_lifetime**

Definition at line 88 of file ssl\_test.c.

Referenced by main(), and ssl\_test().

**12.74.2.13 int options::force\_cipher[2]**

Definition at line 89 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/trunk/src/security/xyssl-0.9/programs/test/ssl\\_test.c](#)

## 12.75 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](#)

### 12.75.1 Detailed Description

RSA context structure.

Definition at line 56 of file rsa.h.

### 12.75.2 Field Documentation

#### 12.75.2.1 int rsa\_context::ver

always 0

Definition at line 58 of file rsa.h.

#### 12.75.2.2 int rsa\_context::len

size(N) in chars

Definition at line 59 of file rsa.h.

Referenced by `d2i_RSA_PUBKEY()`, and `main()`.

**12.75.2.3 mpi rsa\_context::N**

public modulus

Definition at line 61 of file rsa.h.

Referenced by d2i\_RSA\_PUBKEY(), and main().

**12.75.2.4 mpi rsa\_context::E**

public exponent

Definition at line 62 of file rsa.h.

Referenced by d2i\_RSA\_PUBKEY(), and main().

**12.75.2.5 mpi rsa\_context::D**

private exponent

Definition at line 64 of file rsa.h.

Referenced by main().

**12.75.2.6 mpi rsa\_context::P**

1st prime factor

Definition at line 65 of file rsa.h.

Referenced by main().

**12.75.2.7 mpi rsa\_context::Q**

2nd prime factor

Definition at line 66 of file rsa.h.

Referenced by main().

**12.75.2.8 mpi rsa\_context::DP**

$D \% (P - 1)$

Definition at line 67 of file rsa.h.

Referenced by main().

**12.75.2.9 mpi rsa\_context::DQ**

$D \% (Q - 1)$

Definition at line 68 of file rsa.h.

Referenced by main().



**12.75.2.10 mpi rsa\_context::QP**

$1 / (Q \% P)$

Definition at line 69 of file rsa.h.

Referenced by main().

**12.75.2.11 mpi rsa\_context::RN**

cached  $R^2 \bmod N$

Definition at line 71 of file rsa.h.

**12.75.2.12 mpi rsa\_context::RP**

cached  $R^2 \bmod P$

Definition at line 72 of file rsa.h.

**12.75.2.13 mpi rsa\_context::RQ**

cached  $R^2 \bmod Q$

Definition at line 73 of file rsa.h.

**12.75.2.14 int rsa\_context::padding**

1.5 or OAEP/PSS

Definition at line 75 of file rsa.h.

**12.75.2.15 int rsa\_context::hash\_id**

hash identifier

Definition at line 76 of file rsa.h.

**12.75.2.16 int(\* rsa\_context::f\_rng)(void \*)**

RNG function

**12.75.2.17 void\* rsa\_context::p\_rng**

RNG parameter

Definition at line 78 of file rsa.h.

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

- /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/include/xyssl/[rsa.h](#)

## 12.76 LibMC::Properties::Settings Class Reference

### Public Member Functions

- [Settings](#) ()

### Properties

- static [Settings Default](#) [get]

### Private Member Functions

- void [SettingChangingEventHandler](#) (object sender, System.Configuration.SettingChangingEventArgs e)
- void [SettingsSavingEventHandler](#) (object sender, System.ComponentModel.CancelEventArgs e)

### Static Private Attributes

- static [Settings defaultInstance](#) = (([Settings](#))(global::System.Configuration.ApplicationSettingsBase.Synchronized(new [Settings](#)())))

#### 12.76.1 Detailed Description

Definition at line 16 of file Settings.Designer.cs.

#### 12.76.2 Constructor & Destructor Documentation

##### 12.76.2.1 LibMC::Properties::Settings::Settings () [inline]

Definition at line 19 of file Settings.cs.

#### 12.76.3 Member Function Documentation

##### 12.76.3.1 void LibMC::Properties::Settings::SettingChangingEventHandler (object sender, System.Configuration.SettingChangingEventArgs e) [inline, private]

Definition at line 28 of file Settings.cs.

##### 12.76.3.2 void LibMC::Properties::Settings::SettingsSavingEventHandler (object sender, System.ComponentModel.CancelEventArgs e) [inline, private]

Definition at line 32 of file Settings.cs.

## 12.76.4 Field Documentation

**12.76.4.1 Settings LibMC::Properties::Settings::defaultInstance =**  
**((Settings)(global::System.Configuration.ApplicationSettingsBase.Synchronized(new**  
**Settings())))** [static, private]

Definition at line 18 of file Settings.Designer.cs.

## 12.76.5 Property Documentation

**12.76.5.1 Settings LibMC::Properties::Settings::Default** [static, get]

Definition at line 20 of file Settings.Designer.cs.

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

- /home/dko/projects/mobilec/trunk/src/win32/LibMC.net/LibMC/Properties/[Settings.Designer.cs](#)
- /home/dko/projects/mobilec/trunk/src/win32/LibMC.net/LibMC/[Settings.cs](#)

## 12.77 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]

### 12.77.1 Detailed Description

SHA-1 context structure.

Definition at line 10 of file sha1.h.

### 12.77.2 Field Documentation

#### 12.77.2.1 unsigned long sha1\_context::total[2]

number of bytes processed

Definition at line 12 of file sha1.h.

#### 12.77.2.2 unsigned long sha1\_context::state[5]

intermediate digest state

Definition at line 13 of file sha1.h.

#### 12.77.2.3 unsigned char sha1\_context::buffer[64]

data block being processed

Definition at line 14 of file sha1.h.

#### 12.77.2.4 unsigned char sha1\_context::ipad[64]

HMAC: inner padding

Definition at line 16 of file sha1.h.

#### 12.77.2.5 unsigned char sha1\_context::opad[64]

HMAC: outer padding

Definition at line 17 of file sha1.h.

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

- [/home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/include/xyssl/sha1.h](#)

## 12.78 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](#)

### 12.78.1 Detailed Description

SHA-256 context structure.

Definition at line 10 of file sha2.h.

### 12.78.2 Field Documentation

#### 12.78.2.1 unsigned long sha2\_context::total[2]

number of bytes processed

Definition at line 12 of file sha2.h.

#### 12.78.2.2 unsigned long sha2\_context::state[8]

intermediate digest state

Definition at line 13 of file sha2.h.

#### 12.78.2.3 unsigned char sha2\_context::buffer[64]

data block being processed

Definition at line 14 of file sha2.h.

#### 12.78.2.4 unsigned char sha2\_context::ipad[64]

HMAC: inner padding

Definition at line 16 of file sha2.h.

#### 12.78.2.5 unsigned char sha2\_context::opad[64]

HMAC: outer padding

Definition at line 17 of file sha2.h.

**12.78.2.6 int sha2\_context::is224**

0 => SHA-256, else SHA-224

Definition at line 18 of file sha2.h.

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

- [/home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/include/xyssl/sha2.h](#)

## 12.79 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

### 12.79.1 Detailed Description

SHA-512 context structure.

Definition at line 18 of file sha4.h.

### 12.79.2 Field Documentation

#### 12.79.2.1 unsigned int64 sha4\_context::total[2]

number of bytes processed

Definition at line 20 of file sha4.h.

#### 12.79.2.2 unsigned int64 sha4\_context::state[8]

intermediate digest state

Definition at line 21 of file sha4.h.

#### 12.79.2.3 unsigned char sha4\_context::buffer[128]

data block being processed

Definition at line 22 of file sha4.h.

#### 12.79.2.4 unsigned char sha4\_context::ipad[128]

HMAC: inner padding

Definition at line 24 of file sha4.h.

#### 12.79.2.5 unsigned char sha4\_context::opad[128]

HMAC: outer padding

Definition at line 25 of file sha4.h.



**12.79.2.6 int sha4\_context::is384**

0 => SHA-512, else SHA-384

Definition at line 26 of file sha4.h.

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

- [/home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/include/xyssl/sha4.h](#)

## 12.80 syncList\_s Struct Reference

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

### Data Fields

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

### 12.80.1 Detailed Description

Definition at line 26 of file `sync_list.h`.

### 12.80.2 Field Documentation

#### 12.80.2.1 `RWLOCK_T* syncList_s::lock`

Definition at line 27 of file `sync_list.h`.

Referenced by `syncListAddNode()`, `syncListDelete()`, `syncListFind()`, `syncListInit()`, and `syncListRemove()`.

#### 12.80.2.2 `MUTEX_T* syncList_s::giant_lock`

Definition at line 28 of file `sync_list.h`.

Referenced by `MC_SyncDelete()`, and `MC_SyncInit()`.

#### 12.80.2.3 `list_p syncList_s::list`

Definition at line 30 of file `sync_list.h`.

Referenced by `syncListAddNode()`, `syncListDelete()`, `syncListFind()`, and `syncListRemove()`.

#### 12.80.2.4 `int syncList_s::size`

Definition at line 31 of file `sync_list.h`.

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

- `/home/dko/projects/mobilec/trunk/src/mc_sync/sync_list.h`

## 12.81 syncListNode\_s Struct Reference

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

### Data Fields

- `MUTEX_T * lock`
- `COND_T * cond`
- `SEMAPHORE_T * sem`
- `int id`
- `int signalled`

### 12.81.1 Detailed Description

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

### 12.81.2 Field Documentation

#### 12.81.2.1 `MUTEX_T* syncListNode_s::lock`

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

Referenced by `MC_CondBroadcast()`, `MC_CondReset()`, `MC_CondSignal()`, `MC_CondWait()`, `MC_MutexLock()`, `MC_MutexUnlock()`, `MC_SyncDelete()`, `syncListNodeDestroy()`, `syncListNodeInit()`, and `syncListNodeNew()`.

#### 12.81.2.2 `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()`.

#### 12.81.2.3 `SEMAPHORE_T* syncListNode_s::sem`

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

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

#### 12.81.2.4 `int syncListNode_s::id`

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

Referenced by `MC_SyncInit()`, `syncListAddNode()`, `syncListDelete()`, and `syncListRemove()`.

#### 12.81.2.5 `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/trunk/src/mc\\_sync/sync\\_list.h](/home/dko/projects/mobilec/trunk/src/mc_sync/sync_list.h)

# Chapter 13

## File Documentation

### 13.1 /home/dko/projects/mobilec/trunk/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 <stdlib.h>
#include "include/acc.h"
#include "include/connection.h"
#include "include/data_structures.h"
#include "include/macros.h"
#include "include/mc_error.h"
#include "include/mc_platform.h"
#include "include/message.h"
#include "include/mtp_http.h"
#include "include/xml_parser.h"
#include "include/fipa_acl_envelope.h"
```

#### Defines

- #define [BACKLOG](#) 10

## 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_Start` (`mc_platform_p mc_platform`)
- `void * listen_Thread` (`void *arg`)

### 13.1.1 Define Documentation

#### 13.1.1.1 #define BACKLOG 10

Definition at line 63 of file `acc.c`.

Referenced by `listen_Thread()`.

### 13.1.2 Function Documentation

#### 13.1.2.1 int acc\_Destroy (acc\_p acc)

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

References `MC_SUCCESS`.

Referenced by `mc_platform_Destroy()`.

#### 13.1.2.2 acc\_p acc\_Initialize (struct mc\_platform\_s \* mc\_platform)

Definition at line 66 of file `acc.c`.

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

Referenced by `mc_platform_Initialize()`.

#### 13.1.2.3 void\* acc\_MessageHandlerThread (void \* arg)

Definition at line 94 of file `acc.c`.

References `agent_Initialize()`, `mc_platform_s::agent_queue`, `agent_s::agent_status`, `AGENT_UPDATE`, `mc_platform_s::ams`, `mc_platform_s::asm_message_queue`, `CANCEL`, `COND_BROADCAST`, `COND_SIGNAL`, `COND_WAIT`, `agent_s::datastate`, `ENCRYPTED_DATA`, `ENCRYPTION_INITIALIZE`, `FIPA_ACL`, `message_s::from_address`, `mc_platform_s::giant`, `mc_platform_s::giant_cond`, `mc_platform_s::giant_lock`, `agent_s::lock`, `MC_AGENT_NEUTRAL`, `mc_platform`, `MC_RECV_AGENT`, `MC_RECV_MESSAGE`, `MC_RECV_RETURN`, `mc_platform_s::MC_signal`, `mc_platform_s::MC_signal_cond`, `mc_platform_s::MC_signal_lock`, `message_Destroy()`, `mc_platform_s::message_queue`, `message_Send()`, `message_s::message_type`, `MOBILE_AGENT`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `N_UNDRSTD`, `agent_s::name`, `agent_datastate_s::persistent`, `QUER_IF`, `QUER_REF`, `mc_platform_s::quit`, `mc_platform_s::quit_lock`, `RELAY`, `REQUEST`, `REQUEST_ENCRYPTION_INITIALIZE`, `RETURN_MSG`, `SUBSCRIBE`, `message_s::to_address`, and `WARN`.

Referenced by `acc_Start()`.

#### 13.1.2.4 void acc\_Start (mc\_platform\_p mc\_platform)

Definition at line 542 of file acc.c.

References mc\_platform\_s::acc, acc\_MessageHandlerThread(), acc\_Thread(), listen\_Thread(), MC\_THREAD\_ACC, mc\_platform\_s::stack\_size, and THREAD\_CREATE.

Referenced by mc\_platform\_Initialize().

#### 13.1.2.5 void\* acc\_Thread (void \* arg)

Definition at line 329 of file acc.c.

References agent\_mailbox\_Post(), mc\_platform\_s::agent\_queue, AGENT\_UPDATE, mc\_platform\_s::asm\_message\_queue, CANCEL, COND\_BROADCAST, COND\_WAIT, connection\_Destroy(), mc\_platform\_s::connection\_queue, mtp\_http\_s::content, mtp\_http\_content\_s::data, ENCRYPTED\_DATA, ENCRYPTION\_INITIALIZE, 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(), mc\_platform\_s::giant, mc\_platform\_s::giant\_cond, mc\_platform\_s::giant\_lock, mtp\_http\_s::http\_performative, HTTP\_POST, HTTP\_PUT, agent\_s::mailbox, mc\_platform, MC\_RECV\_CONNECTION, mc\_platform\_s::MC\_signal, mc\_platform\_s::MC\_signal\_cond, mc\_platform\_s::MC\_signal\_lock, 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(), MUTEX\_LOCK, MUTEX\_UNLOCK, MXML\_NO\_CALLBACK, mxxmlLoadString(), N\_UNDRSTD, fipa\_agent\_identifier\_s::name, fipa\_agent\_identifier\_set\_s::num, fipa\_acl\_envelope\_s::num\_params, fipa\_acl\_envelope\_s::params, fipa\_message\_string\_s::parse, QUER\_IF, QUER\_REF, mc\_platform\_s::quit, mc\_platform\_s::quit\_lock, RELAY, REQUEST, REQUEST\_ENCRYPTION\_INITIALIZE, RETURN\_MSG, SUBSCRIBE, mtp\_http\_s::target, fipa\_acl\_Param\_s::to, WARN, and message\_s::xml\_root.

Referenced by acc\_Start().

#### 13.1.2.6 void\* listen\_Thread (void \* arg)

Definition at line 586 of file acc.c.

References mc\_platform\_s::acc, BACKLOG, CHECK\_NULL, COND\_BROADCAST, mc\_platform\_s::connection\_queue, mc\_platform, MUTEX\_LOCK, MUTEX\_UNLOCK, mc\_platform\_s::port, and mc\_platform\_s::sockfd.

Referenced by acc\_Start().

## 13.2 /home/dko/projects/mobilec/trunk/src/agent.c File Reference

```
#include <unistd.h>
#include <embedch.h>
#include "include/libmc.h"
#include "include/agent.h"
#include "include/mc_platform.h"
#include "include/message.h"
#include "include/agent_lib.h"
#include "include/interpreter_variable_data.h"
#include "include/xml_parser.h"
```

### Functions

- [int agent\\_AddPersistentVariable](#) ([agent\\_p](#) agent, [int](#) task\_num, const char \*var\_name)
- [agent\\_p agent\\_Copy](#) (const [agent\\_p](#) agent)
- [agent\\_p agent\\_New](#) (void)
- [agent\\_p agent\\_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\\_RunChScriptThread](#) (void \*ChAgent)

### 13.2.1 Function Documentation

#### 13.2.1.1 int agent\_AddPersistentVariable (agent\_p agent, int task\_num, const char \* var\_name)

Definition at line 49 of file agent.c.

References [agent\\_s::agent\\_interp](#), [agent\\_task\\_s::agent\\_variable\\_list](#), [interpreter\\_variable\\_data\\_s::array\\_dim](#), [interpreter\\_variable\\_data\\_s::array\\_extent](#), [CH\\_DATATYPE\\_SIZE](#), [CHECK\\_NULL](#), [interpreter\\_variable\\_data\\_s::data](#), [interpreter\\_variable\\_data\\_s::data\\_type](#), [agent\\_s::datastate](#), [MC\\_ERR](#), [agent\\_s::name](#), [interpreter\\_variable\\_data\\_s::name](#), [interpreter\\_variable\\_data\\_s::size](#), [size](#), [agent\\_datastate\\_s::task\\_progress](#), and [agent\\_datastate\\_s::tasks](#).

#### 13.2.1.2 agent\_p agent\_Copy (const agent\_p agent)

Definition at line 131 of file agent.c.

References [agent\\_datastate\\_Copy\(\)](#), [agent\\_s::agent\\_interp](#), [agent\\_s::agent\\_persistent](#), [agent\\_s::agent\\_status](#), [agent\\_s::agent\\_thread](#), [agent\\_s::agent\\_type](#), [agent\\_s::arrival\\_time](#), [agent\\_s::datastate](#), [agent\\_s::home](#), [agent\\_s::home\\_port](#), [agent\\_s::id](#), [agent\\_s::lock](#), [MUTEX\\_INIT](#), [MUTEX\\_LOCK](#), [MUTEX\\_T](#), [agent\\_s::name](#), [agent\\_s::orphan](#), [agent\\_s::owner](#), [agent\\_s::return\\_data](#), and [agent\\_s::run\\_lock](#).

Referenced by [MC\\_CopyAgent\(\)](#).

#### 13.2.1.3 int agent\_Destroy (agent\_p agent)

Definition at line 326 of file agent.c.



References `agent_datastate_Destroy()`, `agent_s::agent_interp`, `agent_mailbox_Destroy()`, `agent_s::agent_status`, `agent_s::agent_thread`, `agent_s::datastate`, `agent_s::home`, `agent_s::lock`, `agent_s::mailbox`, `MC_AGENT_NEUTRAL`, `MC_SUCCESS`, `MUTEX_DESTROY`, `MUTEX_LOCK`, `agent_s::name`, `agent_s::owner`, `agent_s::run_lock`, and `agent_s::sender`.

Referenced by `agent_Initialize()`.

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

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

References `agent_datastate_New()`, `agent_Destroy()`, `agent_mailbox_New()`, `agent_s::agent_pipe_active`, `agent_s::agent_pipe_ready_to_read`, `agent_s::agent_ready_to_send`, `agent_s::agent_script_ready`, `agent_s::agent_status`, `agent_s::agent_thread`, `agent_s::agent_thread_id`, `agent_s::agent_type`, `message_s::agent_xml_flag`, `agent_xml_parse()`, `agent_s::arrival_time`, `agent_s::datastate`, `mc_platform_s::default_agentstatus`, `mc_platform_s::err`, `agent_s::home`, `agent_s::id`, `agent_s::lock`, `agent_s::mailbox`, `MC_ERR_PARSE`, `agent_s::mc_platform`, `MC_REMOTE_AGENT`, `MC_RETURN_AGENT`, `MC_WAIT_CH`, `message_s::message_type`, `MOBILE_AGENT`, `MUTEX_DESTROY`, `MUTEX_INIT`, `MUTEX_T`, `agent_s::orphan`, `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()`, and `MC_SendAgentMigrationMessageFile()`.

#### 13.2.1.5 `agent_p agent_New (void)`

Definition at line 193 of file `agent.c`.

References `agent_s::lock`, `MUTEX_INIT`, `MUTEX_NEW`, and `agent_s::run_lock`.

Referenced by `MC_ComposeAgent()`.

#### 13.2.1.6 `void agent_RunChScript (agent_p agent, mc_platform_p mc_platform)`

Definition at line 363 of file `agent.c`.

References `agent_RunChScriptThread()`, `agent_s::agent_status`, `agent_s::agent_thread`, `MC_AGENT_ACTIVE`, `agent_s::mc_platform`, `MC_THREAD_AGENT`, `mc_platform_s::stack_size`, `THREAD_CREATE`, and `THREAD_T`.

Referenced by `ams_ManageAgentList()`.

#### 13.2.1.7 `void* agent_RunChScriptThread (void * ChAgent)`

Definition at line 405 of file `agent.c`.

References `agent_s::agent_interp`, `mc_platform_s::ams`, `COND_SIGNAL`, `agent_s::datastate`, `agent_s::id`, `mc_platform_s::interp_options`, `interpreter_variable_data_Destroy()`, `interpreter_variable_data_Initialize()`, `interpreter_variable_data_InitializeFromAgent()`, `MC_AclAddReceiver_chdl()`, `MC_AclAddReplyTo_chdl()`, `MC_AclDestroy_chdl()`, `MC_AclNew_chdl()`, `MC_AclPost_chdl()`, `MC_AclReply_chdl()`, `MC_AclRetrieve_chdl()`, `MC_AclSend_chdl()`, `MC_AclSetContent_chdl()`, `MC_AclSetPerformative_chdl()`, `MC_AclSetSender_chdl()`, `MC_AclWaitRetrieve_chdl()`, `MC_AddAgent_chdl()`, `MC_AGENT_NEUTRAL`, `MC_AgentVariableRetrieve_chdl()`, `MC_AgentVariableSave_chdl()`, `MC_Barrier_chdl()`, `MC_BarrierDelete_chdl()`, `MC_BarrierInit_chdl()`, `MC_CallAgentFunc_chdl()`,

MC\_ComposeAgent\_chdl(), MC\_CondBroadcast\_chdl(), MC\_CondReset\_chdl(), MC\_CondSignal\_chdl(), MC\_CondWait\_chdl(), MC\_DeleteAgent\_chdl(), MC\_DeregisterService\_chdl(), MC\_DestroyServiceSearchResult\_chdl(), MC\_End\_chdl(), MC\_EXEC\_AGENT, 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\_MutexLock\_chdl(), MC\_MutexUnlock\_chdl(), agent\_s::mc\_platform, mc\_platform, MC\_PrintAgentCode\_chdl(), MC\_RegisterService\_chdl(), MC\_ResumeAgency\_chdl(), MC\_RetrieveAgent\_chdl(), MC\_RetrieveAgentCode\_chdl(), MC\_RETURN\_AGENT, 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\_platform\_s::MC\_signal, mc\_platform\_s::MC\_signal\_cond, mc\_platform\_s::MC\_signal\_lock, MC\_SyncDelete\_chdl(), MC\_SyncInit\_chdl(), MC\_TerminateAgent\_chdl(), MC\_WAIT\_FINISHED, MC\_WAIT\_MESSGSEND, MUTEX\_LOCK, MUTEX\_UNLOCK, agent\_s::name, SIGNAL, and agent\_datastate\_s::task\_progress.

Referenced by agent\_RunChScript().

## 13.3 /home/dko/projects/mobilec/trunk/src/agent\_datastate.c File Reference

```
#include <mxml.h>
#include "include/agent_datastate.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)

#### 13.3.1 Function Documentation

##### 13.3.1.1 [agent\\_datastate\\_p agent\\_datastate\\_Copy](#) (const [agent\\_datastate\\_p](#) datastate)

Definition at line 41 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()`.

##### 13.3.1.2 [int agent\\_datastate\\_Destroy](#) ([agent\\_datastate\\_p](#) agent\_datastate)

Definition at line 129 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()`.

##### 13.3.1.3 [agent\\_datastate\\_p agent\\_datastate\\_New](#) (void)

Definition at line 109 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::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_ComposeAgent()`.

## 13.4 /home/dko/projects/mobilec/trunk/src/agent\_mailbox.c File Reference

```
#include "include/data_structures.h"
```

### Functions

- [agent\\_mailbox\\_p agent\\_mailbox\\_New](#) (void)
- [agent\\_mailbox\\_p agent\\_mailbox\\_Copy](#) (agent\_mailbox\_p src)
- [int agent\\_mailbox\\_Destroy](#) (agent\_mailbox\_t \*mailbox)
- [int agent\\_mailbox\\_Post](#) (agent\_mailbox\_p mailbox, fipa\_acl\_message\_t \*message)
- [fipa\\_acl\\_message\\_t \\* agent\\_mailbox\\_Retrieve](#) (agent\_mailbox\_p mailbox)
- [fipa\\_acl\\_message\\_t \\* agent\\_mailbox\\_WaitRetrieve](#) (agent\_mailbox\_p mailbox)

### 13.4.1 Function Documentation

#### 13.4.1.1 agent\_mailbox\_p agent\_mailbox\_Copy (agent\_mailbox\_p src)

Definition at line 15 of file agent\_mailbox.c.

References agent\_mailbox\_New(), and agent\_mailbox\_s::mail\_queue.

#### 13.4.1.2 int agent\_mailbox\_Destroy (agent\_mailbox\_t \* mailbox)

Definition at line 23 of file agent\_mailbox.c.

References agent\_mailbox\_s::mail\_queue.

Referenced by agent\_Destroy().

#### 13.4.1.3 agent\_mailbox\_p agent\_mailbox\_New (void)

Definition at line 6 of file agent\_mailbox.c.

References agent\_mailbox\_s::mail\_queue.

Referenced by agent\_Initialize(), and agent\_mailbox\_Copy().

#### 13.4.1.4 int agent\_mailbox\_Post (agent\_mailbox\_p mailbox, fipa\_acl\_message\_t \* message)

Definition at line 32 of file agent\_mailbox.c.

References agent\_mailbox\_s::mail\_queue.

Referenced by acc\_Thread(), and MC\_AclPost().

#### 13.4.1.5 fipa\_acl\_message\_t\* agent\_mailbox\_Retrieve (agent\_mailbox\_p mailbox)

Definition at line 38 of file agent\_mailbox.c.

References agent\_mailbox\_s::mail\_queue.

Referenced by agent\_mailbox\_WaitRetrieve(), and MC\_AclRetrieve().

**13.4.1.6 fipa\_acl\_message\_t\* agent\_mailbox\_WaitRetrieve (agent\_mailbox\_p *mailbox*)**

Definition at line 43 of file agent\_mailbox.c.

References agent\_mailbox\_Retrieve(), COND\_WAIT, agent\_mailbox\_s::mail\_queue, MUTEX\_LOCK, and MUTEX\_UNLOCK.

Referenced by MC\_AclWaitRetrieve().

## 13.5 /home/dko/projects/mobilec/trunk/src/agent\_return\_data.c File Reference

```
#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)

### 13.5.1 Function Documentation

#### 13.5.1.1 [interpreter\\_variable\\_data\\_p interpreter\\_variable\\_data\\_Copy](#) (interpreter\_variable\_data\_p src)

Definition at line 229 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](#), and [interpreter\\_variable\\_data\\_s::size](#).

#### 13.5.1.2 [int interpreter\\_variable\\_data\\_Destroy](#) (interpreter\_variable\_data\_p agent\_variable\_data)

Definition at line 210 of file agent\_return\_data.c.

References [interpreter\\_variable\\_data\\_s::array\\_extent](#), [interpreter\\_variable\\_data\\_s::data](#), [MC\\_SUCCESS](#), and [interpreter\\_variable\\_data\\_s::name](#).

Referenced by [agent\\_RunChScriptThread\(\)](#), and [agent\\_task\\_Destroy\(\)](#).

#### 13.5.1.3 [interpreter\\_variable\\_data\\_p interpreter\\_variable\\_data\\_Initialize](#) (agent\_p agent, const char \* varname)

Definition at line 139 of file agent\_return\_data.c.

References [agent\\_s::agent\\_interp](#), [interpreter\\_variable\\_data\\_s::array\\_dim](#), [interpreter\\_variable\\_data\\_s::array\\_extent](#), [CH\\_DATATYPE\\_SIZE](#), [CHECK\\_NULL](#), [interpreter\\_variable\\_data\\_s::data](#), [interpreter\\_variable\\_data\\_s::data\\_type](#), [MUTEX\\_LOCK](#), [MUTEX\\_UNLOCK](#), [interpreter\\_variable\\_data\\_s::name](#), [agent\\_s::run\\_lock](#), [interpreter\\_variable\\_data\\_s::size](#), and [size](#).

Referenced by [agent\\_RunChScriptThread\(\)](#).

#### 13.5.1.4 [interpreter\\_variable\\_data\\_p interpreter\\_variable\\_data\\_InitializeFromAgent](#) (agent\_p agent)

Definition at line 55 of file agent\_return\_data.c.

References agent\_s::agent\_interp, interpreter\_variable\_data\_s::array\_dim, interpreter\_variable\_data\_s::array\_extent, CH\_DATATYPE\_SIZE, CHECK\_NULL, interpreter\_variable\_data\_s::data, interpreter\_variable\_data\_s::data\_type, agent\_s::datastate, interpreter\_variable\_data\_s::name, interpreter\_variable\_data\_s::size, size, agent\_datastate\_s::task\_progress, agent\_datastate\_s::tasks, and agent\_task\_s::var\_name.

Referenced by agent\_RunChScriptThread().

#### 13.5.1.5 interpreter\_variable\_data\_p interpreter\_variable\_data\_New (void)

Definition at line 40 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().

## 13.6 /home/dko/projects/mobilec/trunk/src/agent\_task.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include "include/agent_task.h"
#include "include/mc_error.h"
```

### Functions

- [agent\\_task\\_p agent\\_task\\_New](#) (void)
- [agent\\_task\\_p agent\\_task\\_Copy](#) ([agent\\_task\\_p](#) task)
- [int agent\\_task\\_Destroy](#) ([agent\\_task\\_p](#) agent\_task)

#### 13.6.1 Function Documentation

##### 13.6.1.1 [agent\\_task\\_p agent\\_task\\_Copy](#) ([agent\\_task\\_p](#) task)

Definition at line 60 of file `agent_task.c`.

References `agent_task_s::agent_return_data`, `agent_task_s::code_id`, `agent_task_s::init_agent_status`, `agent_task_s::number_of_elements`, `agent_task_s::persistent`, `agent_task_s::server_name`, `agent_task_s::size_of_element_array`, `agent_task_s::task_completed`, and `agent_task_s::var_name`.

Referenced by `agent_datastate_Copy()`.

##### 13.6.1.2 [int agent\\_task\\_Destroy](#) ([agent\\_task\\_p](#) agent\_task)

Definition at line 102 of file `agent_task.c`.

References `agent_task_s::agent_return_data`, `agent_task_s::agent_variable_list`, `agent_task_s::code_id`, `interpreter_variable_data_Destroy()`, `MC_SUCCESS`, `agent_task_s::saved_variables`, `agent_task_s::server_name`, and `agent_task_s::var_name`.

Referenced by `agent_datastate_Destroy()`.

##### 13.6.1.3 [agent\\_task\\_p agent\\_task\\_New](#) (void)

Definition at line 42 of file `agent_task.c`.

References `agent_task_s::agent_variable_list`, `agent_task_s::num_saved_variables`, and `agent_task_s::saved_variables`.

Referenced by `agent_xml_parse__tasks()`, and `MC_ComposeAgent()`.



## 13.7 /home/dko/projects/mobilec/trunk/src/ams.c File Reference

```
#include "include/ams.h"
#include "include/agent.h"
#include "include/data_structures.h"
#include "include/mc_platform.h"
```

### Functions

- [int ams\\_Destroy](#) (ams\_p ams)
- [ams\\_p ams\\_Initialize](#) (mc\_platform\_p mc\_platform)
- [void ams\\_Print](#) (ams\_p ams)
- [int ams\\_ManageAgentList](#) (ams\_p ams)
- [void ams\\_Start](#) (mc\_platform\_p mc\_platform)
- [void \\* ams\\_Thread](#) (void \*arg)

### 13.7.1 Function Documentation

#### 13.7.1.1 int ams\_Destroy (ams\_p ams)

Definition at line 41 of file ams.c.

References COND\_DESTROY, MC\_SUCCESS, and MUTEX\_DESTROY.

Referenced by mc\_platform\_Destroy().

#### 13.7.1.2 ams\_p ams\_Initialize (mc\_platform\_p mc\_platform)

Definition at line 52 of file ams.c.

References CHECK\_NULL, COND\_INIT, COND\_T, MUTEX\_INIT, and MUTEX\_T.

Referenced by mc\_platform\_Initialize().

#### 13.7.1.3 int ams\_ManageAgentList (ams\_p ams)

Definition at line 111 of file ams.c.

References [agent\\_RunChScript\(\)](#), [agent\\_s::agent\\_status](#), [ListSearch\(\)](#), [agent\\_s::lock](#), MC\_AGENT\_ACTIVE, MC\_AGENT\_NEUTRAL, MC\_WAIT\_CH, MC\_WAIT\_FINISHED, MC\_WAIT\_MESSGSEND, [message\\_Destroy\(\)](#), [message\\_InitializeFromAgent\(\)](#), [message\\_New\(\)](#), MUTEX\_LOCK, MUTEX\_UNLOCK, and [agent\\_s::orphan](#).

Referenced by [ams\\_Thread\(\)](#).

#### 13.7.1.4 void ams\_Print (ams\_p ams)

Definition at line 79 of file ams.c.

References [agent\\_s::agent\\_status](#), [agent\\_s::connect\\_id](#), [agent\\_s::id](#), [ListSearch\(\)](#), MUTEX\_LOCK, and MUTEX\_UNLOCK.

**13.7.1.5 void ams\_Start (mc\_platform\_p *mc\_platform*)**

Definition at line 195 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()`.

**13.7.1.6 void\* ams\_Thread (void \* *arg*)**

Definition at line 226 of file ams.c.

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

Referenced by `ams_Start()`.

## 13.8 /home/dko/projects/mobilec/trunk/src/barrier.c File Reference

```
#include "include/barrier.h"
#include "include/mc_error.h"
```

### Functions

- [barrier\\_node\\_p barrier\\_node\\_Initialize](#) ([int id](#), [int num\\_registered](#))
- [int barrier\\_node\\_Destroy](#) ([barrier\\_node\\_p node](#))
- [int barrier\\_queue\\_Add](#) ([barrier\\_queue\\_p list](#), [barrier\\_node\\_p node](#))
- [int barrier\\_queue\\_Delete](#) ([int id](#), [barrier\\_queue\\_p list](#))
- [int barrier\\_queue\\_Destroy](#) ([barrier\\_queue\\_p queue](#))
- [barrier\\_node\\_p barrier\\_queue\\_Get](#) ([barrier\\_queue\\_p list](#), [int id](#))
- [barrier\\_queue\\_p barrier\\_queue\\_New](#) ([void](#))
- [barrier\\_node\\_p barrier\\_queue\\_Pop](#) ([barrier\\_queue\\_p queue](#))

### 13.8.1 Function Documentation

#### 13.8.1.1 [int barrier\\_node\\_Destroy](#) ([barrier\\_node\\_p node](#))

Definition at line 65 of file barrier.c.

References [barrier\\_node\\_s::cond](#), [COND\\_DESTROY](#), [barrier\\_node\\_s::lock](#), [MC\\_SUCCESS](#), and [MUTEX\\_DESTROY](#).

Referenced by [barrier\\_queue\\_Delete\(\)](#), and [barrier\\_queue\\_Destroy\(\)](#).

#### 13.8.1.2 [barrier\\_node\\_p barrier\\_node\\_Initialize](#) ([int id](#), [int num\\_registered](#))

Definition at line 40 of file barrier.c.

References [CHECK\\_NULL](#), [barrier\\_node\\_s::cond](#), [COND\\_INIT](#), [COND\\_T](#), [barrier\\_node\\_s::id](#), [barrier\\_node\\_s::lock](#), [MUTEX\\_INIT](#), [MUTEX\\_T](#), [node](#), [barrier\\_node\\_s::num\\_registered](#), and [barrier\\_node\\_s::num\\_waiting](#).

Referenced by [MC\\_BarrierInit\(\)](#).

#### 13.8.1.3 [int barrier\\_queue\\_Add](#) ([barrier\\_queue\\_p list](#), [barrier\\_node\\_p node](#))

Definition at line 82 of file barrier.c.

References [DATA](#), [barrier\\_node\\_s::id](#), [barrier\\_queue\\_s::list](#), [ListAdd\(\)](#), [list\\_s::listhead](#), [barrier\\_queue\\_s::lock](#), [MC\\_SUCCESS](#), [MC\\_WARN\\_DUPLICATE](#), [listNode\\_s::next](#), [listNode\\_s::node\\_data](#), [RWLOCK\\_WRLock](#), [RWLOCK\\_WRunlock](#), and [barrier\\_queue\\_s::size](#).

Referenced by [MC\\_BarrierInit\(\)](#).

#### 13.8.1.4 [int barrier\\_queue\\_Delete](#) ([int id](#), [barrier\\_queue\\_p list](#))

Definition at line 106 of file barrier.c.

References `barrier_node_Destroy()`, `barrier_node_s::id`, `barrier_queue_s::list`, `ListDelete()`, `ListSearch()`, `barrier_queue_s::lock`, `MC_ERR_NOT_FOUND`, `MC_SUCCESS`, `RWLOCK_WRLOCK`, `RWLOCK_WRUNLOCK`, `barrier_queue_s::size`, and `list_s::size`.

Referenced by `MC_BarrierDelete()`.

#### 13.8.1.5 `int barrier_queue_Destroy (barrier_queue_p queue)`

Definition at line 126 of file `barrier.c`.

References `barrier_node_Destroy()`, `barrier_queue_Pop()`, `barrier_queue_s::list`, `ListTerminate()`, `barrier_queue_s::lock`, `MC_SUCCESS`, `node`, and `RWLOCK_DESTROY`.

Referenced by `mc_platform_Destroy()`.

#### 13.8.1.6 `barrier_node_p barrier_queue_Get (barrier_queue_p list, int id)`

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

References `barrier_queue_s::list`, `list_s::listhead`, `barrier_queue_s::lock`, `listNode_s::next`, `listNode_s::node_data`, `RWLOCK_RDLOCK`, and `RWLOCK_RDUNLOCK`.

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

#### 13.8.1.7 `barrier_queue_p barrier_queue_New (void)`

Definition at line 157 of file `barrier.c`.

References `CHECK_NULL`, `barrier_queue_s::list`, `ListInitialize()`, `barrier_queue_s::lock`, `RWLOCK_INIT`, and `RWLOCK_T`.

Referenced by `mc_platform_Initialize()`.

#### 13.8.1.8 `barrier_node_p barrier_queue_Pop (barrier_queue_p queue)`

Definition at line 171 of file `barrier.c`.

References `barrier_queue_s::list`, `ListPop()`, and `node`.

Referenced by `barrier_queue_Destroy()`.

## 13.9 /home/dko/projects/mobilec/trunk/src/cmd\_prompt.c File Reference

```
#include <stdio.h>
#include <unistd.h>
#include <stdlib.h>
#include <string.h>
#include "include/cmd_prompt.h"
#include "include/commands.h"
#include "config.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 \(void \\*arg, mc\\_platform\\_p global\)](#)

### 13.9.1 Function Documentation

#### 13.9.1.1 [int cmd\\_prompt\\_Destroy \(cmd\\_prompt\\_p \*cmd\\_prompt\*\)](#)

Definition at line 63 of file cmd\_prompt.c.

References [MC\\_SUCCESS](#).

Referenced by [mc\\_platform\\_Destroy\(\)](#).

#### 13.9.1.2 [cmd\\_prompt\\_p cmd\\_prompt\\_Initialize \(mc\\_platform\\_p \*mc\\_platform\*\)](#)

Definition at line 55 of file cmd\_prompt.c.

Referenced by [mc\\_platform\\_Initialize\(\)](#).

**13.9.1.3 void cmd\_prompt\_Start (mc\_platform\_p mc\_platform)**

Definition at line 70 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().

**13.9.1.4 void\* cmd\_prompt\_Thread (void \* arg)**

Definition at line 102 of file cmd\_prompt.c.

References command\_s::args, buf, dealloc\_command(), exec\_command(), command\_s::index, mc\_platform, command\_s::num\_args, process\_command(), and split\_string().

Referenced by cmd\_prompt\_Start().

**13.9.1.5 int dealloc\_command (command\_t \* cmd)**

Definition at line 231 of file cmd\_prompt.c.

References command\_s::args, and command\_s::num\_args.

Referenced by cmd\_prompt\_Thread().

**13.9.1.6 int exec\_command (command\_t cmd, mc\_platform\_p global)**

Definition at line 215 of file cmd\_prompt.c.

References command\_s::args, cmd\_handlers, command\_s::index, and command\_s::num\_args.

Referenced by cmd\_prompt\_Thread().

**13.9.1.7 int handler\_HELP (void \* arg, mc\_platform\_p global)**

Definition at line 253 of file cmd\_prompt.c.

References command\_s::args, command\_cmds, command\_descriptions, and command\_s::num\_args.

**13.9.1.8 int handler\_PRINT\_CONNECTLIST (void \* arg, mc\_platform\_p global)**

Definition at line 306 of file cmd\_prompt.c.

References mc\_platform\_s::connection\_queue.

**13.9.1.9 int handler\_PRINTLIST\_AGENTS (void \* arg, mc\_platform\_p global)**

Definition at line 318 of file cmd\_prompt.c.

References mc\_platform\_s::agent\_queue.

**13.9.1.10 int handler\_PRINTLIST\_MESSAGE (void \* arg, mc\_platform\_p global)**

Definition at line 312 of file cmd\_prompt.c.

References mc\_platform\_s::message\_queue.

#### 13.9.1.11 int handler\_QUIT (void \* *arg*, mc\_platform\_p *global*)

Definition at line 246 of file cmd\_prompt.c.

References mc\_platform\_Destroy().

#### 13.9.1.12 int handler\_SEND (void \* *arg*, mc\_platform\_p *global*)

Definition at line 291 of file cmd\_prompt.c.

References command\_s::args, command\_descriptions, MC\_SendAgentMigrationMessageFile(), and command\_s::num\_args.

#### 13.9.1.13 int process\_command (command\_t \* *cmd*)

Definition at line 197 of file cmd\_prompt.c.

References command\_s::args, command\_cmds, command\_s::index, and command\_s::num\_args.

Referenced by cmd\_prompt\_Thread().

#### 13.9.1.14 int split\_string (char \*\*\* *args*, const char \* *buf*)

Definition at line 149 of file cmd\_prompt.c.

References int.

Referenced by cmd\_prompt\_Thread().

## 13.10 /home/dko/projects/mobilec/trunk/src/connection.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include "include/connection.h"
#include "include/mc_error.h"
```

### Functions

- [int connection\\_Destroy](#) ([connection\\_p](#) connection)
- [connection\\_p connection\\_New](#) (void)
- [connection\\_p connection\\_Copy](#) ([connection\\_p](#) connection)

### 13.10.1 Function Documentation

#### 13.10.1.1 [connection\\_p connection\\_Copy](#) ([connection\\_p](#) *connection*)

Definition at line 73 of file connection.c.

References [connection\\_s::addr](#), [connection\\_s::clientfd](#), [connection\\_s::connect\\_id](#), [connection\\_New\(\)](#), [connection\\_s::remote\\_hostname](#), and [connection\\_s::serverfd](#).

#### 13.10.1.2 [int connection\\_Destroy](#) ([connection\\_p](#) *connection*)

Definition at line 42 of file connection.c.

References [connection\\_s::clientfd](#), [MC\\_SUCCESS](#), and [connection\\_s::remote\\_hostname](#).

Referenced by [acc\\_Thread\(\)](#).

#### 13.10.1.3 [connection\\_p connection\\_New](#) (void)

Definition at line 62 of file connection.c.

Referenced by [connection\\_Copy\(\)](#).



## 13.11 /home/dko/projects/mobilec/trunk/src/data\_structures.c File Reference

```
#include "include/ap_queue_template.h"
#include "include/data_structures.h"
#include "include/interpreter_variable_data.h"
#include "include/agent.h"
```

### Functions

- [AP\\_QUEUE\\_SEARCH\\_TEMPLATE](#) (AP\_QUEUE\_REMOVE\_TEMPLATE(connection\_queue, [Search](#), AP\_QUEUE\_REMOVE\_TEMPLATE(connection, AP\_QUEUE\_REMOVE\_TEMPLATE(int, (node → connect\_id==key)))
- [AP\\_QUEUE\\_SEARCH\\_TEMPLATE](#) (AP\_QUEUE\_REMOVE\_TEMPLATE(agent\_variable\_list, AP\_QUEUE\_REMOVE\_TEMPLATE([Search](#), AP\_QUEUE\_REMOVE\_TEMPLATE(interpreter\_variable\_data, char \*, (!strcmp(node → name, key))))
- [AP\\_QUEUE\\_STD\\_DEFN\\_TEMPLATE](#) (AP\_QUEUE\_SEARCH\_TEMPLATE(agent\_queue, AP\_QUEUE\_SEARCH\_TEMPLATE(agent)
- [AP\\_QUEUE\\_STD\\_DEFN\\_TEMPLATE](#) (fipa\_acl\_message\_p mail\_queue\_SearchReceivers(mail\_queue\_p mail\_queue, fipa\_acl\_message)

### 13.11.1 Function Documentation

**13.11.1.1** [AP\\_QUEUE\\_SEARCH\\_TEMPLATE](#) (AP\_QUEUE\_REMOVE\_TEMPLATE(*agent\_variable\_list*, AP\_QUEUE\_REMOVE\_TEMPLATE(*Search*, AP\_QUEUE\_REMOVE\_TEMPLATE(*interpreter\_variable\_data*, char \*, (!strcmp(*node* → *name*, *key*))))

Definition at line 79 of file data\_structures.c.

References `message_s::from_address`, `ListSearch()`, `message_s::message_id`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `node`, and `message_s::to_address`.

**13.11.1.2** [AP\\_QUEUE\\_SEARCH\\_TEMPLATE](#) (AP\_QUEUE\_REMOVE\_TEMPLATE(*connection\_queue*, *Search*, AP\_QUEUE\_REMOVE\_TEMPLATE(*connection*, AP\_QUEUE\_REMOVE\_TEMPLATE(*int*, (*node* → *connect\_id*==*key*)))

Definition at line 40 of file data\_structures.c.

References `connection_s::connect_id`, `ListSearch()`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `node`, and `connection_s::remote_hostname`.

**13.11.1.3** [AP\\_QUEUE\\_STD\\_DEFN\\_TEMPLATE](#) (fipa\_acl\_message\_p mail\_queue\_SearchReceivers( mail\_queue\_p *mail\_queue*, fipa\_acl\_message)

Definition at line 193 of file data\_structures.c.

References `fipa_agent_identifier_set_s::fipa_agent_identifiers`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `fipa_agent_identifier_s::name`, `listNode_s::next`, `node`, `listNode_s::node_data`, and `fipa_acl_message_s::receiver`.

#### 13.11.1.4 AP\_QUEUE\_STD\_DEFN\_TEMPLATE (AP\_QUEUE\_SEARCH\_TEMPLATE( *agent\_queue*, AP\_QUEUE\_SEARCH\_TEMPLATE(*agent*))

Definition at line 140 of file data\_structures.c.

References `agent_s::id`, `ListSearch()`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `agent_s::name`, and `node`.

## 13.12 /home/dko/projects/mobilec/trunk/src/df.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <unistd.h>
#include "include/mc_platform.h"
#include "include/df.h"
#include "include/df_request.x.h"
```

### Defines

- #define [REQUEST](#)(name, string, description)

### Functions

- [int df\\_Add](#) (struct df\_s \*df, struct df\_node\_s \*[node](#))
- [int df\\_AddRequest](#) (struct df\_s \*df, struct df\_request\_list\_node\_s \*[node](#))
- [int df\\_Destroy](#) (df\_p df)
- [df\\_p df\\_Initialize](#) ([mc\\_platform\\_p](#) [mc\\_platform](#))
- [int df\\_ProcessRequest](#) (struct [mc\\_platform\\_s](#) \*global)
- [int df\\_SearchForService](#) (df\_p df, const char \*searchstring, char \*\*\*agent\_names, char \*\*\*service\_names, int \*\*agent\_ids, int \*num\_entries)
- [void df\\_Start](#) ([mc\\_platform\\_p](#) [mc\\_platform](#))
- [int df\\_request\\_list\\_node\\_Destroy](#) (df\_request\_list\_node\_p [node](#))
- [df\\_request\\_list\\_node\\_p df\\_request\\_list\\_node\\_New](#) (void)
- [int df\\_request\\_list\\_Destroy](#) (df\_request\_list\_p df\_request\_list)
- [df\\_request\\_list\\_p df\\_request\\_list\\_New](#) (void)
- [df\\_request\\_list\\_node\\_p df\\_request\\_list\\_Pop](#) (df\_request\_list\_p requests)
- [df\\_request\\_search\\_p df\\_request\\_search\\_New](#) (void)
- [int df\\_request\\_search\\_Destroy](#) (df\_request\_search\_p [node](#))
- [int df\\_node\\_Destroy](#) (df\_node\_p df\_node)
- [void \\* df\\_Thread](#) (void \*arg)
- [int request\\_handler\\_REGISTER](#) (struct [mc\\_platform\\_s](#) \*global, void \*data)
- [int request\\_handler\\_SEARCH](#) (struct [mc\\_platform\\_s](#) \*global, void \*data)
- [int request\\_handler\\_SUBSCRIBE](#) (struct [mc\\_platform\\_s](#) \*global, void \*data)
- [int request\\_handler\\_DEREGISTER](#) (struct [mc\\_platform\\_s](#) \*global, void \*data)

### 13.12.1 Define Documentation

#### 13.12.1.1 #define REQUEST(name, string, description)

##### Value:

```
if ( !strcmp(request->command, string ) ) { \
    return_code = MC_SUCCESS; \
    handler_code = request_handler_##name( \
        global, \
        request->data ); \
    request_code = REQUEST_##name; \
} else
```

Referenced by `acc_MessageHandlerThread()`, and `acc_Thread()`.

## 13.12.2 Function Documentation

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

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

References `ListAdd()`, `MC_SUCCESS`, and `SIGNAL`.

Referenced by `request_handler_REGISTER()`.

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

Definition at line 63 of file `df.c`.

References `ListAdd()`, and `SIGNAL`.

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

### 13.12.2.3 `int df_Destroy (df_p df)`

Definition at line 80 of file `df.c`.

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

Referenced by `mc_platform_Destroy()`.

### 13.12.2.4 `df_p df_Initialize (mc_platform_p mc_platform)`

Definition at line 98 of file `df.c`.

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

Referenced by `mc_platform_Initialize()`.

### 13.12.2.5 `int df_node_Destroy (df_node_p df_node)`

Definition at line 409 of file `df.c`.

References `MC_SUCCESS`, and `MUTEX_LOCK`.

Referenced by `df_Destroy()`.

### 13.12.2.6 `int df_ProcessRequest (struct mc_platform_s * global)`

Definition at line 129 of file `df.c`.

References `mc_platform_s::df`, `df_request_list_Pop()`, `MC_ERR_EMPTY`, and `MC_ERR_INVALID`.

Referenced by `df_Thread()`.

**13.12.2.7 int df\_request\_list\_Destroy (df\_request\_list\_p df\_request\_list)**

Definition at line 318 of file df.c.

References df\_request\_list\_node\_Destroy(), ListPop(), ListTerminate(), MC\_SUCCESS, and node.

Referenced by df\_Destroy().

**13.12.2.8 df\_request\_list\_p df\_request\_list\_New (void)**

Definition at line 340 of file df.c.

References CHECK\_NULL, COND\_INIT, COND\_T, ListInitialize(), MUTEX\_INIT, and MUTEX\_T.

Referenced by df\_Initialize().

**13.12.2.9 int df\_request\_list\_node\_Destroy (df\_request\_list\_node\_p node)**

Definition at line 289 of file df.c.

References COND\_DESTROY, MC\_SUCCESS, and MUTEX\_DESTROY.

Referenced by df\_request\_list\_Destroy(), and MC\_SearchForService().

**13.12.2.10 df\_request\_list\_node\_p df\_request\_list\_node\_New (void)**

Definition at line 300 of file df.c.

References CHECK\_NULL, COND\_INIT, COND\_T, MUTEX\_INIT, MUTEX\_T, and node.

Referenced by MC\_DeregisterService(), MC\_RegisterService(), and MC\_SearchForService().

**13.12.2.11 df\_request\_list\_node\_p df\_request\_list\_Pop (df\_request\_list\_p requests)**

Definition at line 365 of file df.c.

References ListPop(), MUTEX\_LOCK, MUTEX\_UNLOCK, and node.

Referenced by df\_ProcessRequest().

**13.12.2.12 int df\_request\_search\_Destroy (df\_request\_search\_p node)**

Definition at line 396 of file df.c.

References COND\_DESTROY, MC\_SUCCESS, and MUTEX\_DESTROY.

Referenced by MC\_SearchForService().

**13.12.2.13 df\_request\_search\_p df\_request\_search\_New (void)**

Definition at line 381 of file df.c.

References CHECK\_NULL, COND\_INIT, COND\_T, MUTEX\_INIT, MUTEX\_T, and search.

Referenced by MC\_SearchForService().

**13.12.2.14 int df\_SearchForService (df\_p df, const char \* searchstring, char \*\*\* agent\_names, char \*\*\* service\_names, int \*\* agent\_ids, int \* num\_entries)**

Definition at line 173 of file df.c.

References MC\_ERR\_NOT\_FOUND, MC\_SUCCESS, MUTEX\_LOCK, MUTEX\_UNLOCK, listNode\_s::next, and listNode\_s::node\_data.

Referenced by request\_handler\_SEARCH().

**13.12.2.15 void df\_Start (mc\_platform\_p mc\_platform)**

Definition at line 258 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().

**13.12.2.16 void\* df\_Thread (void \* arg)**

Definition at line 423 of file df.c.

References COND\_BROADCAST, COND\_WAIT, mc\_platform\_s::df, df\_ProcessRequest(), MC\_SUCCESS, MUTEX\_LOCK, MUTEX\_UNLOCK, mc\_platform\_s::quit, and mc\_platform\_s::quit\_lock.

Referenced by df\_Start().

**13.12.2.17 int request\_handler\_DEREGISTER (struct mc\_platform\_s \* global, void \* data)**

Definition at line 517 of file df.c.

References mc\_platform\_s::df, MC\_SUCCESS, MUTEX\_LOCK, MUTEX\_UNLOCK, listNode\_s::next, node, and listNode\_s::node\_data.

**13.12.2.18 int request\_handler\_REGISTER (struct mc\_platform\_s \* global, void \* data)**

Definition at line 487 of file df.c.

References mc\_platform\_s::df, and df\_Add().

**13.12.2.19 int request\_handler\_SEARCH (struct mc\_platform\_s \* global, void \* data)**

Definition at line 493 of file df.c.

References mc\_platform\_s::df, df\_SearchForService(), MC\_SUCCESS, search, and SIGNAL.

**13.12.2.20 int request\_handler\_SUBSCRIBE (struct mc\_platform\_s \* global, void \* data)**

Definition at line 512 of file df.c.

## 13.13 /home/dko/projects/mobilec/trunk/src/dynstring.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include "include/dynstring.h"
```

### Functions

- [dynstring\\_t \\* dynstring\\_New](#) (void)
- [int dynstring\\_Append](#) (dynstring\_t \*msg, char \*str)
- [int dynstring\\_Destroy](#) (dynstring\_t \*dynstring)

### 13.13.1 Function Documentation

#### 13.13.1.1 int dynstring\_Append (dynstring\_t \*msg, char \*str)

Definition at line 24 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\_string\_Compose(), fipa\_url\_Compose(), fipa\_url\_sequence\_Compose(), fipa\_word\_Compose(), mtp\_http\_CreateMessage(), and mtp\_http\_InitializeFromConnection().

#### 13.13.1.2 int dynstring\_Destroy (dynstring\_t \*dynstring)

Definition at line 49 of file dynstring.c.

References dynstring\_s::message.

Referenced by fipa\_envelope\_Compose\_\_from(), MC\_AclSend(), mtp\_http\_CreateMessage(), and mtp\_http\_InitializeFromConnection().

#### 13.13.1.3 dynstring\_t\* dynstring\_New (void)

Definition at line 8 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(), mtp\_http\_CreateMessage(), and mtp\_http\_InitializeFromConnection().

## 13.14 /home/dko/projects/mobilec/trunk/src/fipa\_acl.c File Reference

```
#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\\_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\\_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 \(struct fipa\\_acl\\_message\\_s \\*acl\)](#)

### 13.14.1 Define Documentation

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

Definition at line 48 of file `fipa_acl.c`.

Referenced by `fipa_expression_Destroy()`.

### 13.14.2 Function Documentation

#### 13.14.2.1 int fipa\_acl\_Compose (dynstring\_t \*\*msg, fipa\_acl\_message\_t \*acl)

Definition at line 1185 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_string_Compose()`, `fipa_word_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()`.

#### 13.14.2.2 `fipa_acl_message_t* fipa_acl_message_Copy (fipa_acl_message_t * src)`

Definition at line 81 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_word_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`.

#### 13.14.2.3 `int fipa_acl_message_Destroy (fipa_acl_message_t * message)`

Definition at line 60 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_word_Destroy()`, `fipa_acl_message_s::in_reply_to`, `fipa_acl_message_s::language`, `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 `acc_Thread()`, and `MC_AclDestroy()`.

#### 13.14.2.4 `fipa_acl_message_t* fipa_acl_message_New (void)`

Definition at line 52 of file `fipa_acl.c`.

Referenced by `acc_Thread()`, `fipa_acl_message_Copy()`, `fipa_Reply()`, and `MC_AclNew()`.

#### 13.14.2.5 `int fipa_acl_Parse (fipa_acl_message_p acl, fipa_message_string_p message)`

Definition at line 458 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_Thread()`.

#### 13.14.2.6 `int fipa_agent_identifier_Compose (dynstring_t * msg, fipa_agent_identifier_t * id)`

Definition at line 1355 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()`.

#### 13.14.2.7 `fipa_agent_identifier_t*` `fipa_agent_identifier_Copy` (`fipa_agent_identifier_t * src`)

Definition at line 229 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`, and `fipa_agent_identifier_s::resolvers`.

Referenced by `fipa_acl_message_Copy()`, `fipa_acl_Param_Copy()`, `fipa_agent_identifier_set_Copy()`, and `fipa_Reply()`.

#### 13.14.2.8 `int` `fipa_agent_identifier_Destroy` (`fipa_agent_identifier_t * id`)

Definition at line 217 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()`.

#### 13.14.2.9 `fipa_agent_identifier_t*` `fipa_agent_identifier_New` (`void`)

Definition at line 209 of file `fipa_acl.c`.

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

#### 13.14.2.10 `int` `fipa_agent_identifier_Parse` (`fipa_agent_identifier_p * aid`, `fipa_message_string_p message`)

Definition at line 985 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()`.

#### 13.14.2.11 `int` `fipa_agent_identifier_set_Compose` (`dynstring_t * msg`, `fipa_agent_identifier_set_t * ids`)

Definition at line 1342 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()`.

### 13.14.2.12 **fipa\_agent\_identifier\_set\_t\* fipa\_agent\_identifier\_set\_Copy (fipa\_agent\_identifier\_set\_t \* *src*)**

Definition at line 188 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().

### 13.14.2.13 **int fipa\_agent\_identifier\_set\_Destroy (fipa\_agent\_identifier\_set\_t \* *idset*)**

Definition at line 176 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().

### 13.14.2.14 **fipa\_agent\_identifier\_set\_t\* fipa\_agent\_identifier\_set\_New (void)**

Definition at line 168 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().

### 13.14.2.15 **int fipa\_agent\_identifier\_set\_Parse (fipa\_agent\_identifier\_set\_p \* *agent\_ids*, fipa\_message\_string\_p *message*)**

Definition at line 1144 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().

### 13.14.2.16 **int fipa\_CheckNextToken (const fipa\_message\_string\_p *message*, const char \* *token*)**

Definition at line 647 of file fipa\_acl.c.

References fipa\_message\_string\_s::parse.

Referenced by fipa\_expression\_Parse().

### 13.14.2.17 **int fipa\_DateTime\_Compose (dynstring\_t \* *msg*, fipa\_DateTime\_t \* *date*)**

Definition at line 1428 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().

**13.14.2.18 fipa\_DateTime\_t\* fipa\_DateTime\_Copy (fipa\_DateTime\_t \* src)**

Definition at line 392 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().

**13.14.2.19 int fipa\_DateTime\_Destroy (fipa\_DateTime\_t \* dt)**

Definition at line 385 of file fipa\_acl.c.

Referenced by fipa\_acl\_envelope\_Received\_Destroy(), fipa\_acl\_message\_Destroy(), fipa\_acl\_Param\_Destroy(), and fipa\_expression\_Destroy().

**13.14.2.20 fipa\_DateTime\_t\* fipa\_DateTime\_New (void)**

Definition at line 377 of file fipa\_acl.c.

Referenced by fipa\_DateTime\_Copy().

**13.14.2.21 int fipa\_datetime\_Parse (fipa\_DateTime\_p \* datetime, fipa\_message\_string\_p message)**

Definition at line 802 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().

**13.14.2.22 int fipa\_expression\_Compose (dynstring\_t \* msg, fipa\_expression\_t \* expr)**

Definition at line 1381 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().

**13.14.2.23 fipa\_expression\_t\* fipa\_expression\_Copy (fipa\_expression\_t \* src)**

Definition at line 280 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()`, and `fipa_expression_Copy()`.

#### 13.14.2.24 `int fipa_expression_Destroy (fipa_expression_t * expr)`

Definition at line 249 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()`.

#### 13.14.2.25 `fipa_expression_t* fipa_expression_New (void)`

Definition at line 241 of file `fipa_acl.c`.

Referenced by `fipa_expression_Copy()`.

#### 13.14.2.26 `int fipa_expression_Parse (fipa_expression_t ** expression, fipa_message_string_p message)`

Definition at line 666 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()`.

#### 13.14.2.27 `int fipa_GetAtom (fipa_message_string_p message, char expected_atom)`

Definition at line 582 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()`.

#### 13.14.2.28 `int fipa_GetNextWord (char ** word, const fipa_message_string_p message)`

Definition at line 717 of file `fipa_acl.c`.

References `ERR`, `MC_SUCCESS`, and `fipa_message_string_s::parse`.

#### 13.14.2.29 `int fipa_GetWholeToken (char ** word, fipa_message_string_p message)`

Definition at line 765 of file `fipa_acl.c`.

References `MC_SUCCESS`, and `fipa_message_string_s::parse`.

Referenced by `fipa_datetime_Parse()`.

**13.14.2.30 int fipa\_message\_parameter\_Parse (fipa\_acl\_message\_p *acl*, fipa\_message\_string\_p *message*)**

Definition at line 478 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\_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().

**13.14.2.31 fipa\_message\_string\_t\* fipa\_message\_string\_Copy (fipa\_message\_string\_t \* *src*)**

Definition at line 122 of file fipa\_acl.c.

References fipa\_message\_string\_s::message, and fipa\_message\_string\_s::parse.

**13.14.2.32 int fipa\_message\_string\_Destroy (fipa\_message\_string\_t \* *message*)**

Definition at line 112 of file fipa\_acl.c.

References fipa\_message\_string\_s::message.

Referenced by acc\_Thread().

**13.14.2.33 fipa\_message\_string\_t\* fipa\_message\_string\_New (void)**

Definition at line 104 of file fipa\_acl.c.

Referenced by acc\_Thread().

**13.14.2.34 int fipa\_message\_type\_Parse (enum fipa\_performative\_e \* *performative*, fipa\_message\_string\_p *message*)**

Definition at line 520 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().

**13.14.2.35 int fipa\_number\_Compose (dynstring\_t \* *msg*, fipa\_number\_t \* *number*)**

Definition at line 1456 of file fipa\_acl.c.

References dynstring\_Append(), and fipa\_number\_s::str.

Referenced by `fipa_expression_Compose()`.

### 13.14.2.36 `fipa_number_t* fipa_number_Copy (fipa_number_t * src)`

Definition at line 448 of file `fipa_acl.c`.

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

Referenced by `fipa_expression_Copy()`.

### 13.14.2.37 `int fipa_number_Destroy (fipa_number_t * number)`

Definition at line 438 of file `fipa_acl.c`.

References `fipa_number_s::str`.

Referenced by `fipa_expression_Destroy()`.

### 13.14.2.38 `fipa_number_t* fipa_number_New (void)`

Definition at line 430 of file `fipa_acl.c`.

Referenced by `fipa_number_Copy()`.

### 13.14.2.39 `int fipa_performative_Compose (dynstring_t * msg, enum fipa_performative_e performative)`

Definition at line 1254 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()`.

### 13.14.2.40 `struct fipa_acl_message_s* fipa_Reply (struct fipa_acl_message_s * acl) [read]`

Definition at line 1464 of file `fipa_acl.c`.

References `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_agent_identifier_set_s::num`, `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()`.

### 13.14.2.41 `int fipa_string_Compose (dynstring_t * msg, fipa_string_t * string)`

Definition at line 1419 of file `fipa_acl.c`.

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



Referenced by fipa\_acl\_Compose(), and fipa\_expression\_Compose().

#### 13.14.2.42 fipa\_string\_t\* fipa\_string\_Copy (fipa\_string\_t \* *src*)

Definition at line 367 of file fipa\_acl.c.

References fipa\_string\_s::content, and fipa\_string\_New().

Referenced by fipa\_acl\_message\_Copy(), and fipa\_expression\_Copy().

#### 13.14.2.43 int fipa\_string\_Destroy (fipa\_string\_t \* *str*)

Definition at line 357 of file fipa\_acl.c.

References fipa\_string\_s::content.

Referenced by fipa\_acl\_message\_Destroy(), fipa\_expression\_Destroy(), and MC\_AclSetContent().

#### 13.14.2.44 fipa\_string\_t\* fipa\_string\_New (void)

Definition at line 349 of file fipa\_acl.c.

Referenced by fipa\_string\_Copy(), and MC\_AclSetContent().

#### 13.14.2.45 int fipa\_string\_Parse (fipa\_string\_p \* *fipa\_string*, fipa\_message\_string\_p *message*)

Definition at line 940 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().

#### 13.14.2.46 int fipa\_url\_Compose (dynstring\_t \* *msg*, fipa\_url\_t \* *url*)

Definition at line 1448 of file fipa\_acl.c.

References dynstring\_Append(), and fipa\_url\_s::str.

Referenced by fipa\_url\_sequence\_Compose().

#### 13.14.2.47 fipa\_url\_t\* fipa\_url\_Copy (fipa\_url\_t \* *src*)

Definition at line 420 of file fipa\_acl.c.

References fipa\_url\_New(), and fipa\_url\_s::str.

Referenced by fipa\_acl\_envelope\_Received\_Copy(), and fipa\_url\_sequence\_Copy().

#### 13.14.2.48 int fipa\_url\_Destroy (fipa\_url\_t \* *url*)

Definition at line 410 of file fipa\_acl.c.

References fipa\_url\_s::str.

Referenced by fipa\_acl\_envelope\_Received\_Destroy(), and fipa\_url\_sequence\_Destroy().

**13.14.2.49 fipa\_url\_t\* fipa\_url\_New (void)**

Definition at line 402 of file fipa\_acl.c.

Referenced by fipa\_envelope\_HandleReceived(), fipa\_envelope\_ParseAddresses(), fipa\_url\_Copy(), MC\_AclAddReceiver(), MC\_AclAddReplyTo(), and MC\_AclSetSender().

**13.14.2.50 int fipa\_url\_Parse (fipa\_url\_p \* url, fipa\_message\_string\_p message)**

Definition at line 1124 of file fipa\_acl.c.

References fipa\_word\_s::content, fipa\_word\_Destroy(), and fipa\_word\_Parse().

Referenced by fipa\_url\_sequence\_Parse().

**13.14.2.51 int fipa\_url\_sequence\_Compose (dynstring\_t \* msg, fipa\_url\_sequence\_t \* urls)**

Definition at line 1329 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().

**13.14.2.52 fipa\_url\_sequence\_t\* fipa\_url\_sequence\_Copy (fipa\_url\_sequence\_t \* src)**

Definition at line 152 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().

**13.14.2.53 int fipa\_url\_sequence\_Destroy (fipa\_url\_sequence\_t \* sequence)**

Definition at line 140 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().

**13.14.2.54 fipa\_url\_sequence\_t\* fipa\_url\_sequence\_New (void)**

Definition at line 132 of file fipa\_acl.c.

Referenced by fipa\_url\_sequence\_Copy(), fipa\_url\_sequence\_Parse(), MC\_AclAddReceiver(), MC\_AclAddReplyTo(), and MC\_AclSetSender().

**13.14.2.55 int fipa\_url\_sequence\_Parse (fipa\_url\_sequence\_p \* urls, fipa\_message\_string\_p message)**

Definition at line 1092 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()`.

#### 13.14.2.56 `int fipa_word_Compose (dynstring_t * msg, fipa_word_t * word)`

Definition at line 1411 of file `fipa_acl.c`.

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

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

#### 13.14.2.57 `fipa_word_t* fipa_word_Copy (fipa_word_t * src)`

Definition at line 339 of file `fipa_acl.c`.

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

Referenced by `fipa_acl_message_Copy()`, and `fipa_expression_Copy()`.

#### 13.14.2.58 `int fipa_word_Destroy (fipa_word_t * word)`

Definition at line 329 of file `fipa_acl.c`.

References `fipa_word_s::content`.

Referenced by `fipa_acl_message_Destroy()`, `fipa_agent_identifier_Parse()`, `fipa_expression_Destroy()`, `fipa_message_parameter_Parse()`, `fipa_message_type_Parse()`, `fipa_url_Parse()`, and `fipa_url_sequence_Parse()`.

#### 13.14.2.59 `fipa_word_t* fipa_word_New (void)`

Definition at line 321 of file `fipa_acl.c`.

Referenced by `fipa_word_Copy()`.

#### 13.14.2.60 `int fipa_word_Parse (fipa_word_t ** word, fipa_message_string_p message)`

Definition at line 605 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_url_Parse()`, and `fipa_url_sequence_Parse()`.

## 13.15 /home/dko/projects/mobilec/trunk/src/fipa\_envelope.c File Reference

```
#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)

## 13.15.1 Function Documentation

### 13.15.1.1 `fipa_acl_envelope_t* fipa_acl_envelope_Copy` (`fipa_acl_envelope_t` \* *envelope*)

Definition at line 145 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`.

### 13.15.1.2 `int fipa_acl_envelope_Destroy` (`fipa_acl_envelope_t` \* *envelope*)

Definition at line 132 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_Thread()`.

### 13.15.1.3 `fipa_acl_envelope_t* fipa_acl_envelope_New` (`void`)

Definition at line 124 of file `fipa_envelope.c`.

Referenced by `acc_Thread()`, and `fipa_acl_envelope_Copy()`.

### 13.15.1.4 `fipa_acl_envelope_Received_t* fipa_acl_envelope_Received_Copy` (`fipa_acl_envelope_Received_t` \* *received*)

Definition at line 64 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`, and `fipa_acl_envelope_Received_s::received_via`.

Referenced by `fipa_acl_Param_Copy()`.

### 13.15.1.5 `int fipa_acl_envelope_Received_Destroy` (`fipa_acl_envelope_Received_t` \* *received*)

Definition at line 52 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()`.

### 13.15.1.6 `fipa_acl_envelope_Received_t* fipa_acl_envelope_Received_New (void)`

Definition at line 43 of file `fipa_envelope.c`.

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

### 13.15.1.7 `fipa_acl_Param_t* fipa_acl_Param_Copy (fipa_acl_Param_t * param)`

Definition at line 105 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`, and `fipa_acl_Param_s::to`.

Referenced by `fipa_acl_envelope_Copy()`.

### 13.15.1.8 `int fipa_acl_Param_Destroy (fipa_acl_Param_t * param)`

Definition at line 88 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()`.

### 13.15.1.9 `fipa_acl_Param_t* fipa_acl_Param_New (void)`

Definition at line 80 of file `fipa_envelope.c`.

Referenced by `fipa_acl_Param_Copy()`, and `fipa_envelope_HandleTo()`.

### 13.15.1.10 `char* fipa_envelope_Compose (fipa_acl_message_t * fipa_acl)`

Definition at line 864 of file `fipa_envelope.c`.

References `fipa_envelope_Compose__envelope()`, `MXML_ADD_AFTER`, `MXML_ADD_TO_PARENT`, `MXML_NO_CALLBACK`, `mxmlAdd()`, `mxmlDelete()`, `mxmlLoadString()`, `mxmlSaveAllocString()`, and `node`.

Referenced by `MC_AclSend()`.

**13.15.1.11 mxml\_node\_t\* fipa\_envelope\_Compose\_\_acl\_representation (fipa\_acl\_message\_t \* *fipa\_acl*)**

Definition at line 1081 of file fipa\_envelope.c.

References mxmlNewElement(), mxmlNewText(), and node.

Referenced by fipa\_envelope\_Compose\_\_params().

**13.15.1.12 mxml\_node\_t\* fipa\_envelope\_Compose\_\_date (fipa\_acl\_message\_t \* *fipa\_acl*)**

Definition at line 1109 of file fipa\_envelope.c.

References buf, mxmlNewElement(), mxmlNewText(), and node.

Referenced by fipa\_envelope\_Compose\_\_params().

**13.15.1.13 mxml\_node\_t\* fipa\_envelope\_Compose\_\_envelope (fipa\_acl\_message\_t \* *fipa\_acl*)**

Definition at line 889 of file fipa\_envelope.c.

References fipa\_envelope\_Compose\_\_params(), MXML\_ADD\_AFTER, MXML\_ADD\_TO\_PARENT, mxmlAdd(), mxmlNewElement(), and node.

Referenced by fipa\_envelope\_Compose().

**13.15.1.14 mxml\_node\_t\* fipa\_envelope\_Compose\_\_from (fipa\_acl\_message\_t \* *fipa\_acl*)**

Definition at line 1016 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, and fipa\_acl\_message\_s::sender.

Referenced by fipa\_envelope\_Compose\_\_params().

**13.15.1.15 mxml\_node\_t\* fipa\_envelope\_Compose\_\_intended\_receiver (fipa\_acl\_message\_t \* *fipa\_acl*)**

Definition at line 1138 of file fipa\_envelope.c.

References fipa\_agent\_identifier\_s::addresses, fipa\_agent\_identifier\_set\_s::fipa\_agent\_identifiers, mxmlNewElement(), mxmlNewText(), fipa\_agent\_identifier\_s::name, node, fipa\_url\_sequence\_s::num, fipa\_acl\_message\_s::receiver, fipa\_url\_s::str, and fipa\_url\_sequence\_s::urls.

Referenced by fipa\_envelope\_Compose\_\_params().

**13.15.1.16 mxml\_node\_t\* fipa\_envelope\_Compose\_\_params (fipa\_acl\_message\_t \* *fipa\_acl*)**

Definition at line 909 of file fipa\_envelope.c.

References fipa\_envelope\_Compose\_\_acl\_representation(), fipa\_envelope\_Compose\_\_date(), fipa\_envelope\_Compose\_\_from(), fipa\_envelope\_Compose\_\_intended\_receiver(), fipa\_envelope\_Compose\_\_payload\_encoding(), fipa\_envelope\_Compose\_\_to(), MXML\_ADD\_AFTER, MXML\_ADD\_TO\_PARENT, mxmlAdd(), mxmlElementSetAttr(), mxmlNewElement(), and node.

Referenced by `fipa_envelope_Compose__envelope()`.

#### **13.15.1.17 `mxml_node_t* fipa_envelope_Compose__payload_encoding (fipa_acl_message_t * fipa_acl)`**

Definition at line 1095 of file `fipa_envelope.c`.

References `mxmlNewElement()`, `mxmlNewText()`, and `node`.

Referenced by `fipa_envelope_Compose__params()`.

#### **13.15.1.18 `mxml_node_t* fipa_envelope_Compose__to (fipa_acl_message_t * fipa_acl)`**

Definition at line 970 of file `fipa_envelope.c`.

References `fipa_agent_identifier_s::addresses`, `fipa_agent_identifier_set_s::fipa_agent_identifiers`, `mxmlNewElement()`, `mxmlNewText()`, `fipa_agent_identifier_s::name`, `node`, `fipa_url_sequence_s::num`, `fipa_agent_identifier_set_s::num`, `fipa_acl_message_s::receiver`, `fipa_url_s::str`, and `fipa_url_sequence_s::urls`.

Referenced by `fipa_envelope_Compose__params()`.

#### **13.15.1.19 `int fipa_envelope_HandleAclRepresentation (struct fipa_acl_envelope_s * envelope, mxml_node_t * param_node, int cur_param)`**

Definition at line 376 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()`.

#### **13.15.1.20 `int fipa_envelope_HandleComments (struct fipa_acl_envelope_s * envelope, mxml_node_t * param_node, int cur_param)`**

Definition at line 352 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()`.

#### **13.15.1.21 `int fipa_envelope_HandleDate (struct fipa_acl_envelope_s * envelope, mxml_node_t * param_node, int cur_param)`**

Definition at line 447 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()`.



**13.15.1.22 int fipa\_envelope\_HandleEnvelope (struct fipa\_acl\_envelope\_s \* *envelope*, mxml\_node\_t \* *node*)**

Definition at line 173 of file fipa\_envelope.c.

References fipa\_envelope\_HandleParams(), MC\_ERR\_PARSE, MXML\_DESCEND\_FIRST, and mxmlFindElement().

Referenced by fipa\_envelope\_Parse().

**13.15.1.23 int fipa\_envelope\_HandleFrom (struct fipa\_acl\_envelope\_s \* *envelope*, mxml\_node\_t \* *param\_node*, int *cur\_param*)**

Definition at line 323 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().

**13.15.1.24 int fipa\_envelope\_HandleIntendedReceiver (struct fipa\_acl\_envelope\_s \* *envelope*, mxml\_node\_t \* *param\_node*, int *cur\_param*)**

Definition at line 477 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().

**13.15.1.25 int fipa\_envelope\_HandleParams (struct fipa\_acl\_envelope\_s \* *envelope*, mxml\_node\_t \* *node*)**

Definition at line 193 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().

**13.15.1.26 int fipa\_envelope\_HandlePayloadEncoding (struct fipa\_acl\_envelope\_s \* *envelope*, mxml\_node\_t \* *param\_node*, int *cur\_param*)**

Definition at line 423 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().

### 13.15.1.27 **int fipa\_envelope\_HandlePayloadLength** (struct fipa\_acl\_envelope\_s \* *envelope*, mxml\_node\_t \* *param\_node*, int *cur\_param*)

Definition at line 400 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().

### 13.15.1.28 **int fipa\_envelope\_HandleReceived** (struct fipa\_acl\_envelope\_s \* *envelope*, mxml\_node\_t \* *param\_node*, int *cur\_param*)

Definition at line 555 of file fipa\_envelope.c.

References fipa\_acl\_envelope\_Received\_New(), fipa\_datetime\_Parse(), fipa\_url\_New(), MC\_ERR\_PARSE, fipa\_message\_string\_s::message, MXML\_DESCEND\_FIRST, mxmlElementGetAttr(), mxmlFindElement(), node, fipa\_acl\_envelope\_s::params, fipa\_message\_string\_s::parse, fipa\_acl\_Param\_s::received, fipa\_acl\_envelope\_Received\_s::received\_by, fipa\_acl\_envelope\_Received\_s::received\_date, fipa\_acl\_envelope\_Received\_s::received\_from, fipa\_acl\_envelope\_Received\_s::received\_id, fipa\_acl\_envelope\_Received\_s::received\_via, and fipa\_url\_s::str.

Referenced by fipa\_envelope\_HandleParams().

### 13.15.1.29 **int fipa\_envelope\_HandleTo** (struct fipa\_acl\_envelope\_s \* *envelope*, mxml\_node\_t \* *param\_node*, int *cur\_param*)

Definition at line 245 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().

### 13.15.1.30 **int fipa\_envelope\_Parse** (struct fipa\_acl\_envelope\_s \* *envelope*, const char \* *message*)

Definition at line 160 of file fipa\_envelope.c.

References fipa\_envelope\_HandleEnvelope(), MXML\_NO\_CALLBACK, mxmlDelete(), and mxmlLoadString().

Referenced by acc\_Thread().

### 13.15.1.31 **int fipa\_envelope\_ParseAddresses** (struct fipa\_agent\_identifier\_s \* *aid*, mxml\_node\_t \* *addresses\_node*)

Definition at line 732 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().

**13.15.1.32** `int fipa_envelope_ParseAgentIdentifier (struct fipa_agent_identifier_s ** aid,  
mxml_node_t * agent_identifier_node)`

Definition at line 682 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().

**13.15.1.33** `int fipa_envelope_ParseResolvers (struct fipa_agent_identifier_s * aid, mxml_node_t *  
resolvers_node)`

Definition at line 799 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().

## 13.16 /home/dko/projects/mobilec/trunk/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](#); [int](#) [waiting](#); [MUTEX\\_T](#) \*[waiting\\_lock](#); [COND\\_T](#) \*[waiting\\_cond](#);) **STRUCT**([listen\\_thread\\_arg](#)
- [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](#) \* [listen\\_Thread](#) ([void](#) \*[arg](#))

### Variables

- [u\\_long](#) [port](#)
- struct [sockaddr\\_in](#) \* [addr](#)
- unsigned long [int](#) [client\\_fd](#)
- unsigned long [int](#) [server\\_fd](#)

### 13.16.1 Function Documentation

#### 13.16.1.1 [int](#) [acc\\_Destroy](#) ([acc\\_p](#) [acc](#))

Definition at line 82 of file [acc.c](#).

References [MC\\_SUCCESS](#).

Referenced by [mc\\_platform\\_Destroy\(\)](#).

#### 13.16.1.2 [acc\\_p](#) [acc\\_Initialize](#) (struct [mc\\_platform\\_s](#) \* [mc\\_platform](#))

Definition at line 66 of file [acc.c](#).

References [COND\\_INIT](#), [COND\\_T](#), [MUTEX\\_INIT](#), and [MUTEX\\_T](#).

Referenced by [mc\\_platform\\_Initialize\(\)](#).

#### 13.16.1.3 [void](#)\* [acc\\_MessageHandlerThread](#) ([void](#) \* [arg](#))

Definition at line 94 of file [acc.c](#).

References `agent_Initialize()`, `mc_platform_s::agent_queue`, `agent_s::agent_status`, `AGENT_UPDATE`, `mc_platform_s::ams`, `mc_platform_s::asm_message_queue`, `CANCEL`, `COND_BROADCAST`, `COND_SIGNAL`, `COND_WAIT`, `agent_s::datastate`, `ENCRYPTED_DATA`, `ENCRYPTION_INITIALIZE`, `FIPA_ACL`, `message_s::from_address`, `mc_platform_s::giant`, `mc_platform_s::giant_cond`, `mc_platform_s::giant_lock`, `agent_s::lock`, `MC_AGENT_NEUTRAL`, `mc_platform`, `MC_RECV_AGENT`, `MC_RECV_MESSAGE`, `MC_RECV_RETURN`, `mc_platform_s::MC_signal`, `mc_platform_s::MC_signal_cond`, `mc_platform_s::MC_signal_lock`, `message_Destroy()`, `mc_platform_s::message_queue`, `message_Send()`, `message_s::message_type`, `MOBILE_AGENT`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `N_UNDRSTD`, `agent_s::name`, `agent_datastate_s::persistent`, `QUER_IF`, `QUER_REF`, `mc_platform_s::quit`, `mc_platform_s::quit_lock`, `RELAY`, `REQUEST`, `REQUEST_ENCRYPTION_INITIALIZE`, `RETURN_MSG`, `SUBSCRIBE`, `message_s::to_address`, and `WARN`.

Referenced by `acc_Start()`.

#### 13.16.1.4 `void acc_Start (struct mc_platform_s * mc_platform)`

#### 13.16.1.5 `void* acc_Thread (void * arg)`

Definition at line 329 of file `acc.c`.

References `agent_mailbox_Post()`, `mc_platform_s::agent_queue`, `AGENT_UPDATE`, `mc_platform_s::asm_message_queue`, `CANCEL`, `COND_BROADCAST`, `COND_WAIT`, `connection_Destroy()`, `mc_platform_s::connection_queue`, `mtp_http_s::content`, `mtp_http_content_s::data`, `ENCRYPTED_DATA`, `ENCRYPTION_INITIALIZE`, `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()`, `mc_platform_s::giant`, `mc_platform_s::giant_cond`, `mc_platform_s::giant_lock`, `mtp_http_s::http_performative`, `HTTP_POST`, `HTTP_PUT`, `agent_s::mailbox`, `mc_platform`, `MC_RECV_CONNECTION`, `mc_platform_s::MC_signal`, `mc_platform_s::MC_signal_cond`, `mc_platform_s::MC_signal_lock`, `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()`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `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`, `QUER_IF`, `QUER_REF`, `mc_platform_s::quit`, `mc_platform_s::quit_lock`, `RELAY`, `REQUEST`, `REQUEST_ENCRYPTION_INITIALIZE`, `RETURN_MSG`, `SUBSCRIBE`, `mtp_http_s::target`, `fipa_acl_Param_s::to`, `WARN`, and `message_s::xml_root`.

Referenced by `acc_Start()`.

#### 13.16.1.6 `void* listen_Thread (void * arg)`

Definition at line 586 of file `acc.c`.

References `mc_platform_s::acc`, `BACKLOG`, `CHECK_NULL`, `COND_BROADCAST`, `mc_platform_s::connection_queue`, `mc_platform`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `mc_platform_s::port`, and `mc_platform_s::sockfd`.

Referenced by `acc_Start()`.

**13.16.1.7** **STRUCT** (acc, struct mc\_platform\_s \*mc\_platform;THREAD\_T thread;THREAD\_T message\_handler\_thread;THREAD\_T listen\_thread;int waiting;MUTEX\_T \*waiting\_lock;COND\_T \*waiting\_cond;)

## **13.16.2 Variable Documentation**

### **13.16.2.1 struct sockaddr\_in\* addr**

Definition at line 64 of file acc.h.

### **13.16.2.2 unsigned long int client\_fd**

Definition at line 65 of file acc.h.

Referenced by main(), and ssl\_test().

### **13.16.2.3 u\_long port**

Definition at line 63 of file acc.h.

Referenced by MC\_AclSend(), MC\_SendAgentMigrationMessage\_chdl(), MC\_SendAgentMigrationMessageFile\_chdl(), message\_Send(), and message\_xml\_parse\_\_message().

### **13.16.2.4 unsigned long int server\_fd**

Definition at line 66 of file acc.h.

Referenced by main(), and ssl\_test().

## 13.17 /home/dko/projects/mobilec/trunk/src/include/agent.h File Reference

```
#include "agent_datastate.h"
#include "agent_task.h"
#include "libmc.h"
#include "message.h"
#include "macros.h"
#include "data_structures.h"
#include "agent_mailbox.h"
```

### Data Structures

- struct [agent\\_s](#)

### Functions

- [int agent\\_AddPersistentVariable](#) ([agent\\_p](#) agent, [int](#) task\_num, const char \*var\_name)
- [agent\\_p agent\\_New](#) (void)
- [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)

### 13.17.1 Function Documentation

#### 13.17.1.1 [int agent\\_AddPersistentVariable](#) ([agent\\_p](#) agent, [int](#) task\_num, const char \* var\_name)

Definition at line 49 of file agent.c.

References [agent\\_s::agent\\_interp](#), [agent\\_task\\_s::agent\\_variable\\_list](#), [interpreter\\_variable\\_data\\_s::array\\_dim](#), [interpreter\\_variable\\_data\\_s::array\\_extent](#), [CH\\_DATATYPE\\_SIZE](#), [CHECK\\_NULL](#), [interpreter\\_variable\\_data\\_s::data](#), [interpreter\\_variable\\_data\\_s::data\\_type](#), [agent\\_s::datastate](#), [MC\\_ERR](#), [agent\\_s::name](#), [interpreter\\_variable\\_data\\_s::name](#), [interpreter\\_variable\\_data\\_s::size](#), [size](#), [agent\\_datastate\\_s::task\\_progress](#), and [agent\\_datastate\\_s::tasks](#).

#### 13.17.1.2 [agent\\_p agent\\_Copy](#) (const [agent\\_p](#) agent)

Definition at line 131 of file agent.c.

References [agent\\_datastate\\_Copy\(\)](#), [agent\\_s::agent\\_interp](#), [agent\\_s::agent\\_persistent](#), [agent\\_s::agent\\_status](#), [agent\\_s::agent\\_thread](#), [agent\\_s::agent\\_type](#), [agent\\_s::arrival\\_time](#), [agent\\_s::datastate](#), [agent\\_s::home](#), [agent\\_s::home\\_port](#), [agent\\_s::id](#), [agent\\_s::lock](#), [MUTEX\\_INIT](#), [MUTEX\\_LOCK](#), [MUTEX\\_T](#), [agent\\_s::name](#), [agent\\_s::orphan](#), [agent\\_s::owner](#), [agent\\_s::return\\_data](#), and [agent\\_s::run\\_lock](#).

Referenced by [MC\\_CopyAgent\(\)](#).

### 13.17.1.3 `int agent_Destroy (agent_p agent)`

Definition at line 326 of file agent.c.

References `agent_datastate_Destroy()`, `agent_s::agent_interp`, `agent_mailbox_Destroy()`, `agent_s::agent_status`, `agent_s::agent_thread`, `agent_s::datastate`, `agent_s::home`, `agent_s::lock`, `agent_s::mailbox`, `MC_AGENT_NEUTRAL`, `MC_SUCCESS`, `MUTEX_DESTROY`, `MUTEX_LOCK`, `agent_s::name`, `agent_s::owner`, `agent_s::run_lock`, and `agent_s::sender`.

Referenced by `agent_Initialize()`.

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

Definition at line 216 of file agent.c.

References `agent_datastate_New()`, `agent_Destroy()`, `agent_mailbox_New()`, `agent_s::agent_pipe_active`, `agent_s::agent_pipe_ready_to_read`, `agent_s::agent_ready_to_send`, `agent_s::agent_script_ready`, `agent_s::agent_status`, `agent_s::agent_thread`, `agent_s::agent_thread_id`, `agent_s::agent_type`, `message_s::agent_xml_flag`, `agent_xml_parse()`, `agent_s::arrival_time`, `agent_s::datastate`, `mc_platform_s::default_agentstatus`, `mc_platform_s::err`, `agent_s::home`, `agent_s::id`, `agent_s::lock`, `agent_s::mailbox`, `MC_ERR_PARSE`, `agent_s::mc_platform`, `MC_REMOTE_AGENT`, `MC_RETURN_AGENT`, `MC_WAIT_CH`, `message_s::message_type`, `MOBILE_AGENT`, `MUTEX_DESTROY`, `MUTEX_INIT`, `MUTEX_T`, `agent_s::orphan`, `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()`, and `MC_SendAgentMigrationMessageFile()`.

### 13.17.1.5 `agent_p agent_New (void)`

Definition at line 193 of file agent.c.

References `agent_s::lock`, `MUTEX_INIT`, `MUTEX_NEW`, and `agent_s::run_lock`.

Referenced by `MC_ComposeAgent()`.

### 13.17.1.6 `void agent_RunChScript (MCAgent_t agent, struct mc_platform_s * global)`

### 13.17.1.7 `void* agent_RunChScriptThread (void * agent)`

Definition at line 405 of file agent.c.

References `agent_s::agent_interp`, `mc_platform_s::ams`, `COND_SIGNAL`, `agent_s::datastate`, `agent_s::id`, `mc_platform_s::interp_options`, `interpreter_variable_data_Destroy()`, `interpreter_variable_data_Initialize()`, `interpreter_variable_data_InitializeFromAgent()`, `MC_AclAddReceiver_chdl()`, `MC_AclAddReplyTo_chdl()`, `MC_AclDestroy_chdl()`, `MC_AclNew_chdl()`, `MC_AclPost_chdl()`, `MC_AclReply_chdl()`, `MC_AclRetrieve_chdl()`, `MC_AclSend_chdl()`, `MC_AclSetContent_chdl()`, `MC_AclSetPerformative_chdl()`, `MC_AclSetSender_chdl()`, `MC_AclWaitRetrieve_chdl()`, `MC_AddAgent_chdl()`, `MC_AGENT_NEUTRAL`, `MC_AgentVariableRetrieve_chdl()`, `MC_AgentVariableSave_chdl()`, `MC_Barrier_chdl()`, `MC_BarrierDelete_chdl()`, `MC_BarrierInit_chdl()`, `MC_CallAgentFunc_chdl()`, `MC_ComposeAgent_chdl()`, `MC_CondBroadcast_chdl()`, `MC_CondReset_chdl()`, `MC_CondSignal_chdl()`, `MC_CondWait_chdl()`, `MC_DeleteAgent_chdl()`, `MC_DeregisterService_chdl()`, `MC_DestroyServiceSearchResult_chdl()`, `MC_End_chdl()`, `MC_EXEC_AGENT`, `MC_FindAgentByID_chdl()`, `MC_FindAgentByName_chdl()`, `MC_GetAgentID_chdl()`, and `MC_GetAgentName_chdl()`.



MC\_GetAgentStatus\_chdl(), MC\_GetAgentXMLString\_chdl(), MC\_GetTimeOfDay\_chdl(), MC\_HaltAgency\_chdl(), MC\_MutexLock\_chdl(), MC\_MutexUnlock\_chdl(), agent\_s::mc\_platform, mc\_platform, MC\_PrintAgentCode\_chdl(), MC\_RegisterService\_chdl(), MC\_ResumeAgency\_chdl(), MC\_RetrieveAgent\_chdl(), MC\_RetrieveAgentCode\_chdl(), MC\_RETURN\_AGENT, 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\_platform\_s::MC\_signal, mc\_platform\_s::MC\_signal\_cond, mc\_platform\_s::MC\_signal\_lock, MC\_SyncDelete\_chdl(), MC\_SyncInit\_chdl(), MC\_TerminateAgent\_chdl(), MC\_WAIT\_FINISHED, MC\_WAIT\_MESSGSEND, MUTEX\_LOCK, MUTEX\_UNLOCK, agent\_s::name, SIGNAL, and agent\_datastate\_s::task\_progress.

Referenced by agent\_RunChScript().

## 13.18 /home/dko/projects/mobilec/trunk/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*)

#### 13.18.1 Typedef Documentation

##### 13.18.1.1 typedef [agent\\_datastate\\_t](#)\* [agent\\_datastate\\_p](#)

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

##### 13.18.1.2 typedef struct [agent\\_datastate\\_s](#) [agent\\_datastate\\_t](#)

#### 13.18.2 Function Documentation

##### 13.18.2.1 [agent\\_datastate\\_p](#) [agent\\_datastate\\_Copy](#) (const [agent\\_datastate\\_p](#) *datastate*)

Definition at line 41 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\(\)](#).

##### 13.18.2.2 int [agent\\_datastate\\_Destroy](#) ([agent\\_datastate\\_p](#) *agent\_datastate*)

Definition at line 129 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().

### 13.18.2.3 agent\_datastate\_p agent\_datastate\_New (void)

Definition at line 109 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::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\_ComposeAgent().

## 13.19 /home/dko/projects/mobilec/trunk/src/include/agent\_lib.h File Reference

### Functions

- EXPORTCH [int MC\\_AclDestroy\\_chdl](#) (void \*varg)
- EXPORTCH void \* [MC\\_AclNew\\_chdl](#) (void \*varg)
- EXPORTCH void \* [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 void \* [MC\\_AclSetPerformative\\_chdl](#) (void \*varg)
- EXPORTCH void \* [MC\\_AclSetSender\\_chdl](#) (void \*varg)
- EXPORTCH void \* [MC\\_AclAddReceiver\\_chdl](#) (void \*varg)
- EXPORTCH void \* [MC\\_AclAddReplyTo\\_chdl](#) (void \*varg)
- EXPORTCH void \* [MC\\_AclSetContent\\_chdl](#) (void \*varg)
- EXPORTCH [int MC\\_AddAgent\\_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 [int MC\\_ComposeAgent\\_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\\_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\\_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 char \* [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\\_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)

### 13.19.1 Function Documentation

#### 13.19.1.1 EXPORTCH void\* MC\_AclAddReceiver\_chdl (void \* *varg*)

Definition at line 1906 of file libmc.c.

References [MC\\_AclAddReceiver\(\)](#).

Referenced by [agent\\_RunChScriptThread\(\)](#).

#### 13.19.1.2 EXPORTCH void\* MC\_AclAddReplyTo\_chdl (void \* *varg*)

Definition at line 1926 of file libmc.c.

References [MC\\_AclAddReplyTo\(\)](#).

Referenced by [agent\\_RunChScriptThread\(\)](#).

#### 13.19.1.3 EXPORTCH int MC\_AclDestroy\_chdl (void \* *varg*)

Definition at line 1753 of file libmc.c.

References [MC\\_AclDestroy\(\)](#).

Referenced by [agent\\_RunChScriptThread\(\)](#).

#### 13.19.1.4 EXPORTCH void\* MC\_AclNew\_chdl (void \* *varg*)

Definition at line 1768 of file libmc.c.

References [MC\\_AclNew\(\)](#).

Referenced by [agent\\_RunChScriptThread\(\)](#).

#### 13.19.1.5 EXPORTCH void\* MC\_AclPost\_chdl (void \* *varg*)

Definition at line 1776 of file libmc.c.

References [MC\\_AclPost\(\)](#).

Referenced by [agent\\_RunChScriptThread\(\)](#).

**13.19.1.6 EXPORTCH void\* MC\_AclReply\_chdl (void \* *varg*)**

Definition at line 1794 of file libmc.c.

References MC\_AclReply().

Referenced by agent\_RunChScriptThread().

**13.19.1.7 EXPORTCH void\* MC\_AclRetrieve\_chdl (void \* *varg*)**

Definition at line 1810 of file libmc.c.

References MC\_AclRetrieve().

Referenced by agent\_RunChScriptThread().

**13.19.1.8 EXPORTCH int MC\_AclSend\_chdl (void \* *varg*)**

Definition at line 1826 of file libmc.c.

References CHECK\_NULL, MC\_AclSend(), and agency\_s::mc\_platform.

Referenced by agent\_RunChScriptThread().

**13.19.1.9 EXPORTCH void\* MC\_AclSetContent\_chdl (void \* *varg*)**

Definition at line 1946 of file libmc.c.

References fipa\_acl\_message\_s::content, and MC\_AclSetContent().

Referenced by agent\_RunChScriptThread().

**13.19.1.10 EXPORTCH void\* MC\_AclSetPerformative\_chdl (void \* *varg*)**

Definition at line 1868 of file libmc.c.

References MC\_AclSetPerformative(), and fipa\_acl\_message\_s::performative.

Referenced by agent\_RunChScriptThread().

**13.19.1.11 EXPORTCH void\* MC\_AclSetSender\_chdl (void \* *varg*)**

Definition at line 1886 of file libmc.c.

References MC\_AclSetSender().

Referenced by agent\_RunChScriptThread().

**13.19.1.12 EXPORTCH void\* MC\_AclWaitRetrieve\_chdl (void \* *varg*)**

Definition at line 1850 of file libmc.c.

References MC\_AclWaitRetrieve().

Referenced by agent\_RunChScriptThread().

**13.19.1.13 EXPORTCH int MC\_AddAgent\_chdl (void \* *varg*)**

Definition at line 1966 of file libmc.c.

References CHECK\_NULL, MC\_AddAgent(), and agency\_s::mc\_platform.

Referenced by agent\_RunChScriptThread().

**13.19.1.14 EXPORTCH const void\* MC\_AgentVariableRetrieve\_chdl (void \* *varg*)**

Definition at line 1990 of file libmc.c.

References MC\_AgentVariableRetrieve().

Referenced by agent\_RunChScriptThread().

**13.19.1.15 EXPORTCH int MC\_AgentVariableSave\_chdl (void \* *varg*)**

Definition at line 2014 of file libmc.c.

References MC\_AgentVariableSave().

Referenced by agent\_RunChScriptThread().

**13.19.1.16 EXPORTCH int MC\_Barrier\_chdl (void \* *varg*)**

Definition at line 2066 of file libmc.c.

References CHECK\_NULL, MC\_Barrier(), and agency\_s::mc\_platform.

Referenced by agent\_RunChScriptThread().

**13.19.1.17 EXPORTCH int MC\_BarrierDelete\_chdl (void \* *varg*)**

Definition at line 2089 of file libmc.c.

References CHECK\_NULL, MC\_BarrierDelete(), and agency\_s::mc\_platform.

Referenced by agent\_RunChScriptThread().

**13.19.1.18 EXPORTCH int MC\_BarrierInit\_chdl (void \* *varg*)**

Definition at line 2112 of file libmc.c.

References CHECK\_NULL, MC\_BarrierInit(), and agency\_s::mc\_platform.

Referenced by agent\_RunChScriptThread().

**13.19.1.19 EXPORTCH int MC\_CallAgentFunc\_chdl (void \* *varg*)**

Definition at line 2036 of file libmc.c.

References MC\_CallAgentFuncVar().

Referenced by agent\_RunChScriptThread().

**13.19.1.20 EXPORTCH int MC\_ComposeAgent\_chdl (void \* *varg*)**

Definition at line 2160 of file libmc.c.

References MC\_ComposeAgent().

Referenced by agent\_RunChScriptThread().

**13.19.1.21 EXPORTCH int MC\_CondBroadcast\_chdl (void \* *varg*)**

Definition at line 2137 of file libmc.c.

References CHECK\_NULL, MC\_CondBroadcast(), and agency\_s::mc\_platform.

Referenced by agent\_RunChScriptThread().

**13.19.1.22 EXPORTCH int MC\_CondReset\_chdl (void \* *varg*)**

Definition at line 2223 of file libmc.c.

References CHECK\_NULL, MC\_CondReset(), and agency\_s::mc\_platform.

Referenced by agent\_RunChScriptThread().

**13.19.1.23 EXPORTCH int MC\_CondSignal\_chdl (void \* *varg*)**

Definition at line 2200 of file libmc.c.

References CHECK\_NULL, MC\_CondSignal(), and agency\_s::mc\_platform.

Referenced by agent\_RunChScriptThread().

**13.19.1.24 EXPORTCH int MC\_CondWait\_chdl (void \* *varg*)**

Definition at line 2246 of file libmc.c.

References CHECK\_NULL, MC\_CondWait(), and agency\_s::mc\_platform.

Referenced by agent\_RunChScriptThread().

**13.19.1.25 EXPORTCH int MC\_DeleteAgent\_chdl (void \* *varg*)**

Definition at line 2268 of file libmc.c.

References MC\_DeleteAgent().

Referenced by agent\_RunChScriptThread().

**13.19.1.26 EXPORTCH int MC\_DeregisterService\_chdl (void \* *varg*)**

Definition at line 2310 of file libmc.c.

References CHECK\_NULL, MC\_DeregisterService(), and agency\_s::mc\_platform.

Referenced by agent\_RunChScriptThread().



**13.19.1.27 EXPORTCH int MC\_DestroyServiceSearchResult\_chdl (void \* *varg*)**

Definition at line 2283 of file libmc.c.

References MC\_DestroyServiceSearchResult().

Referenced by agent\_RunChScriptThread().

**13.19.1.28 EXPORTCH int MC\_End\_chdl (void \* *varg*)**

Definition at line 2337 of file libmc.c.

References CHECK\_NULL, MC\_End(), and agency\_s::mc\_platform.

Referenced by agent\_RunChScriptThread().

**13.19.1.29 EXPORTCH MCAgent\_t MC\_FindAgentByID\_chdl (void \* *varg*)**

Definition at line 2354 of file libmc.c.

References CHECK\_NULL, MC\_FindAgentByID(), and agency\_s::mc\_platform.

Referenced by agent\_RunChScriptThread().

**13.19.1.30 EXPORTCH MCAgent\_t MC\_FindAgentByName\_chdl (void \* *varg*)**

Definition at line 2377 of file libmc.c.

References CHECK\_NULL, MC\_FindAgentByName(), and agency\_s::mc\_platform.

Referenced by agent\_RunChScriptThread().

**13.19.1.31 EXPORTCH int MC\_GetAgentID\_chdl (void \* *varg*)**

Definition at line 2424 of file libmc.c.

References MC\_GetAgentID().

Referenced by agent\_RunChScriptThread().

**13.19.1.32 EXPORTCH char\* MC\_GetAgentName\_chdl (void \* *varg*)**

Definition at line 2440 of file libmc.c.

References MC\_GetAgentName().

Referenced by agent\_RunChScriptThread().

**13.19.1.33 EXPORTCH int MC\_GetAgentNumTasks\_chdl (void \* *varg*)**

Definition at line 2456 of file libmc.c.

References MC\_GetAgentNumTasks().

**13.19.1.34 EXPORTCH int MC\_GetAgentStatus\_chdl (void \* *varg*)**

Definition at line 2472 of file libmc.c.

References MC\_GetAgentStatus().

Referenced by agent\_RunChScriptThread().

**13.19.1.35 EXPORTCH char\* MC\_GetAgentXMLString\_chdl (void \* *varg*)**

Definition at line 2488 of file libmc.c.

References MC\_GetAgentXMLString().

Referenced by agent\_RunChScriptThread().

**13.19.1.36 EXPORTCH int MC\_GetTimeOfDay\_chdl (void \* *varg*)**

Definition at line 2504 of file libmc.c.

Referenced by agent\_RunChScriptThread().

**13.19.1.37 EXPORTCH int MC\_HaltAgency\_chdl (void \* *varg*)**

Definition at line 2519 of file libmc.c.

References CHECK\_NULL, MC\_HaltAgency(), and agency\_s::mc\_platform.

Referenced by agent\_RunChScriptThread().

**13.19.1.38 EXPORTCH int MC\_MutexLock\_chdl (void \* *varg*)**

Definition at line 2537 of file libmc.c.

References CHECK\_NULL, MC\_MutexLock(), and agency\_s::mc\_platform.

Referenced by agent\_RunChScriptThread().

**13.19.1.39 EXPORTCH int MC\_MutexUnlock\_chdl (void \* *varg*)**

Definition at line 2561 of file libmc.c.

References CHECK\_NULL, MC\_MutexUnlock(), and agency\_s::mc\_platform.

Referenced by agent\_RunChScriptThread().

**13.19.1.40 EXPORTCH int MC\_PrintAgentCode\_chdl (void \* *varg*)**

Definition at line 2585 of file libmc.c.

References MC\_PrintAgentCode().

Referenced by agent\_RunChScriptThread().

**13.19.1.41 EXPORTCH int MC\_RegisterService\_chdl (void \* *varg*)**

Definition at line 2601 of file libmc.c.

References CHECK\_NULL, agency\_s::mc\_platform, and MC\_RegisterService().

Referenced by agent\_RunChScriptThread().

**13.19.1.42 EXPORTCH int MC\_ResumeAgency\_chdl (void \* *varg*)**

Definition at line 2638 of file libmc.c.

References CHECK\_NULL, agency\_s::mc\_platform, and MC\_ResumeAgency().

Referenced by agent\_RunChScriptThread().

**13.19.1.43 EXPORTCH MCAgent\_t MC\_RetrieveAgent\_chdl (void \* *varg*)**

Definition at line 2656 of file libmc.c.

References CHECK\_NULL, agency\_s::mc\_platform, and MC\_RetrieveAgent().

Referenced by agent\_RunChScriptThread().

**13.19.1.44 EXPORTCH char\* MC\_RetrieveAgentCode\_chdl (void \* *varg*)**

Definition at line 2673 of file libmc.c.

References MC\_RetrieveAgentCode().

Referenced by agent\_RunChScriptThread().

**13.19.1.45 EXPORTCH int MC\_SaveData\_chdl (void \* *varg*)**

Definition at line 2689 of file libmc.c.

References agent\_task\_s::agent\_variable\_list, interpreter\_variable\_data\_s::data, interpreter\_variable\_data\_s::data\_type, agent\_s::datastate, interpreter\_variable\_data\_New(), interpreter\_variable\_data\_s::name, interpreter\_variable\_data\_s::size, size, agent\_datastate\_s::task\_progress, and agent\_datastate\_s::tasks.

Referenced by agent\_RunChScriptThread().

**13.19.1.46 EXPORTCH char\* MC\_SearchForService\_chdl (void \* *varg*)**

Definition at line 2724 of file libmc.c.

References CHECK\_NULL, agency\_s::mc\_platform, and MC\_SearchForService().

Referenced by agent\_RunChScriptThread().

**13.19.1.47 EXPORTCH int MC\_SemaphorePost\_chdl (void \* *varg*)**

Definition at line 2765 of file libmc.c.

References CHECK\_NULL, agency\_s::mc\_platform, and MC\_SemaphorePost().

Referenced by agent\_RunChScriptThread().

**13.19.1.48 EXPORTCH int MC\_SemaphoreWait\_chdl (void \* *varg*)**

Definition at line 2789 of file libmc.c.

References CHECK\_NULL, agency\_s::mc\_platform, and MC\_SemaphoreWait().

Referenced by agent\_RunChScriptThread().

**13.19.1.49 EXPORTCH int MC\_SendAgentMigrationMessage\_chdl (void \* *varg*)**

Definition at line 2813 of file libmc.c.

References CHECK\_NULL, agency\_s::mc\_platform, MC\_SendAgentMigrationMessage(), and port.

Referenced by agent\_RunChScriptThread().

**13.19.1.50 EXPORTCH int MC\_SendAgentMigrationMessageFile\_chdl (void \* *varg*)**

Definition at line 2838 of file libmc.c.

References MC\_SendAgentMigrationMessageFile(), and port.

Referenced by agent\_RunChScriptThread().

**13.19.1.51 EXPORTCH int MC\_SendSteerCommand\_chdl (void \* *varg*)**

Definition at line 2858 of file libmc.c.

References CHECK\_NULL, agency\_s::mc\_platform, and MC\_SendSteerCommand().

Referenced by agent\_RunChScriptThread().

**13.19.1.52 EXPORTCH int MC\_SetAgentStatus\_chdl (void \* *varg*)**

Definition at line 2881 of file libmc.c.

References MC\_SetAgentStatus().

Referenced by agent\_RunChScriptThread().

**13.19.1.53 EXPORTCH int MC\_SetDefaultAgentStatus\_chdl (void \* *varg*)**

Definition at line 2899 of file libmc.c.

References CHECK\_NULL, agency\_s::mc\_platform, and MC\_SetDefaultAgentStatus().

Referenced by agent\_RunChScriptThread().

**13.19.1.54 EXPORTCH int MC\_SyncDelete\_chdl (void \* *varg*)**

Definition at line 2922 of file libmc.c.

References CHECK\_NULL, agency\_s::mc\_platform, and MC\_SyncDelete().

Referenced by agent\_RunChScriptThread().

**13.19.1.55 EXPORTCH int MC\_SyncInit\_chdl (void \* *varg*)**

Definition at line 2945 of file libmc.c.

References CHECK\_NULL, agency\_s::mc\_platform, and MC\_SyncInit().

Referenced by agent\_RunChScriptThread().

**13.19.1.56 EXPORTCH int MC\_TerminateAgent\_chdl (void \* *varg*)**

Definition at line 2969 of file libmc.c.

References MC\_TerminateAgent().

Referenced by agent\_RunChScriptThread().

## 13.20 /home/dko/projects/mobilec/trunk/src/include/agent\_mailbox.h File Reference

### Data Structures

- struct [agent\\_mailbox\\_s](#)

### Typedefs

- typedef struct [agent\\_mailbox\\_s](#) [agent\\_mailbox\\_t](#)
- typedef [agent\\_mailbox\\_t](#) \* [agent\\_mailbox\\_p](#)

### Functions

- [agent\\_mailbox\\_p](#) [agent\\_mailbox\\_New](#) (void)
- [agent\\_mailbox\\_p](#) [agent\\_mailbox\\_Copy](#) ([agent\\_mailbox\\_p](#) src)
- int [agent\\_mailbox\\_Destroy](#) ([agent\\_mailbox\\_t](#) \*mailbox)
- int [agent\\_mailbox\\_Post](#) ([agent\\_mailbox\\_p](#) mailbox, [fipa\\_acl\\_message\\_t](#) \*message)
- [fipa\\_acl\\_message\\_t](#) \* [agent\\_mailbox\\_Retrieve](#) ([agent\\_mailbox\\_p](#) mailbox)
- [fipa\\_acl\\_message\\_t](#) \* [agent\\_mailbox\\_WaitRetrieve](#) ([agent\\_mailbox\\_p](#) mailbox)

### 13.20.1 Typedef Documentation

#### 13.20.1.1 typedef [agent\\_mailbox\\_t](#)\* [agent\\_mailbox\\_p](#)

Definition at line 12 of file [agent\\_mailbox.h](#).

#### 13.20.1.2 typedef struct [agent\\_mailbox\\_s](#) [agent\\_mailbox\\_t](#)

### 13.20.2 Function Documentation

#### 13.20.2.1 [agent\\_mailbox\\_p](#) [agent\\_mailbox\\_Copy](#) ([agent\\_mailbox\\_p](#) src)

Definition at line 15 of file [agent\\_mailbox.c](#).

References [agent\\_mailbox\\_New\(\)](#), and [agent\\_mailbox\\_s::mail\\_queue](#).

#### 13.20.2.2 int [agent\\_mailbox\\_Destroy](#) ([agent\\_mailbox\\_t](#) \* mailbox)

Definition at line 23 of file [agent\\_mailbox.c](#).

References [agent\\_mailbox\\_s::mail\\_queue](#).

Referenced by [agent\\_Destroy\(\)](#).

#### 13.20.2.3 [agent\\_mailbox\\_p](#) [agent\\_mailbox\\_New](#) (void)

Definition at line 6 of file [agent\\_mailbox.c](#).

References [agent\\_mailbox\\_s::mail\\_queue](#).

Referenced by agent\_Initialize(), and agent\_mailbox\_Copy().

#### 13.20.2.4 int agent\_mailbox\_Post (agent\_mailbox\_p *mailbox*, fipa\_acl\_message\_t \* *message*)

Definition at line 32 of file agent\_mailbox.c.

References agent\_mailbox\_s::mail\_queue.

Referenced by acc\_Thread(), and MC\_AclPost().

#### 13.20.2.5 fipa\_acl\_message\_t\* agent\_mailbox\_Retrieve (agent\_mailbox\_p *mailbox*)

Definition at line 38 of file agent\_mailbox.c.

References agent\_mailbox\_s::mail\_queue.

Referenced by agent\_mailbox\_WaitRetrieve(), and MC\_AclRetrieve().

#### 13.20.2.6 fipa\_acl\_message\_t\* agent\_mailbox\_WaitRetrieve (agent\_mailbox\_p *mailbox*)

Definition at line 43 of file agent\_mailbox.c.

References agent\_mailbox\_Retrieve(), COND\_WAIT, agent\_mailbox\_s::mail\_queue, MUTEX\_LOCK, and MUTEX\_UNLOCK.

Referenced by MC\_AclWaitRetrieve().

## 13.21 /home/dko/projects/mobilec/trunk/src/include/agent\_task.h File Reference

```
#include "interpreter_variable_data.h"
#include "data_structures.h"
```

### Data Structures

- struct [agent\\_task\\_s](#)

### Typedefs

- typedef struct [agent\\_task\\_s](#) [agent\\_task\\_t](#)
- typedef [agent\\_task\\_t](#) \* [agent\\_task\\_p](#)

### Functions

- [agent\\_task\\_p](#) [agent\\_task\\_New](#) (void)
- [agent\\_task\\_p](#) [agent\\_task\\_Copy](#) ([agent\\_task\\_p](#) task)
- int [agent\\_task\\_Destroy](#) ([agent\\_task\\_p](#) agent\_task)

#### 13.21.1 Typedef Documentation

##### 13.21.1.1 typedef [agent\\_task\\_t](#)\* [agent\\_task\\_p](#)

Definition at line 61 of file [agent\\_task.h](#).

##### 13.21.1.2 typedef struct [agent\\_task\\_s](#) [agent\\_task\\_t](#)

#### 13.21.2 Function Documentation

##### 13.21.2.1 [agent\\_task\\_p](#) [agent\\_task\\_Copy](#) ([agent\\_task\\_p](#) task)

Definition at line 60 of file [agent\\_task.c](#).

References [agent\\_task\\_s::agent\\_return\\_data](#), [agent\\_task\\_s::code\\_id](#), [agent\\_task\\_s::init\\_agent\\_status](#), [agent\\_task\\_s::number\\_of\\_elements](#), [agent\\_task\\_s::persistent](#), [agent\\_task\\_s::server\\_name](#), [agent\\_task\\_s::size\\_of\\_element\\_array](#), [agent\\_task\\_s::task\\_completed](#), and [agent\\_task\\_s::var\\_name](#).

Referenced by [agent\\_datastate\\_Copy](#)().

##### 13.21.2.2 int [agent\\_task\\_Destroy](#) ([agent\\_task\\_p](#) agent\_task)

Definition at line 102 of file [agent\\_task.c](#).

References [agent\\_task\\_s::agent\\_return\\_data](#), [agent\\_task\\_s::agent\\_variable\\_list](#), [agent\\_task\\_s::code\\_id](#), [interpreter\\_variable\\_data\\_Destroy](#)(), [MC\\_SUCCESS](#), [agent\\_task\\_s::saved\\_variables](#), [agent\\_task\\_s::server\\_name](#), and [agent\\_task\\_s::var\\_name](#).

Referenced by [agent\\_datastate\\_Destroy](#)().



### 13.21.2.3 agent\_task\_p agent\_task\_New (void)

Definition at line 42 of file agent\_task.c.

References agent\_task\_s::agent\_variable\_list, agent\_task\_s::num\_saved\_variables, and agent\_task\_s::saved\_variables.

Referenced by agent\_xml\_parse\_\_tasks(), and MC\_ComposeAgent().

## 13.22 /home/dko/projects/mobilec/trunk/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)

### 13.22.1 Function Documentation

#### 13.22.1.1 int [ams\\_Destroy](#) (ams\_p *ams*)

Definition at line 41 of file [ams.c](#).

References [COND\\_DESTROY](#), [MC\\_SUCCESS](#), and [MUTEX\\_DESTROY](#).

Referenced by [mc\\_platform\\_Destroy\(\)](#).

#### 13.22.1.2 int [ams\\_ManageAgentList](#) (ams\_p *ams*)

Definition at line 111 of file [ams.c](#).

References [agent\\_RunChScript\(\)](#), [agent\\_s::agent\\_status](#), [ListSearch\(\)](#), [agent\\_s::lock](#), [MC\\_AGENT\\_ACTIVE](#), [MC\\_AGENT\\_NEUTRAL](#), [MC\\_WAIT\\_CH](#), [MC\\_WAIT\\_FINISHED](#), [MC\\_WAIT\\_MESSGSEND](#), [message\\_Destroy\(\)](#), [message\\_InitializeFromAgent\(\)](#), [message\\_New\(\)](#), [MUTEX\\_LOCK](#), [MUTEX\\_UNLOCK](#), and [agent\\_s::orphan](#).

Referenced by [ams\\_Thread\(\)](#).

#### 13.22.1.3 void [ams\\_Print](#) (ams\_p *ams*)

Definition at line 79 of file [ams.c](#).

References [agent\\_s::agent\\_status](#), [agent\\_s::connect\\_id](#), [agent\\_s::id](#), [ListSearch\(\)](#), [MUTEX\\_LOCK](#), and [MUTEX\\_UNLOCK](#).

#### 13.22.1.4 int [ams\\_RemoveFinishedAgents](#) (ams\_p *ams*)

#### 13.22.1.5 void [ams\\_Start](#) (struct [mc\\_platform\\_s](#) \**mc\_platform*)

#### 13.22.1.6 void\* [ams\\_Thread](#) (void \**arg*)

Definition at line 226 of file [ams.c](#).

References mc\_platform\_s::ams, ams\_ManageAgentList(), COND\_BROADCAST, COND\_WAIT, mc\_platform, MUTEX\_LOCK, MUTEX\_UNLOCK, mc\_platform\_s::quit, and mc\_platform\_s::quit\_lock.

Referenced by ams\_Start().

**13.22.1.7** **STRUCT** (ams, struct mc\_platform\_s \*mc\_platform;MUTEX\_T \*runflag\_lock;COND\_T \*runflag\_cond;int run;int waiting;MUTEX\_T \*waiting\_lock;COND\_T \*waiting\_cond;THREAD\_T thread;)

## 13.23 /home/dko/projects/mobilec/trunk/src/include/ap\_queue\_template.h File Reference

```
#include "macros.h"
#include "mc_error.h"
```

### Defines

- `#define AP_QUEUE_DECL_TEMPLATE(name, node_type)`
- `#define AP_QUEUE_GENERIC_DECL_TEMPLATE(name, func_name, return_type, search_type) return_type name##_##_func_name(name##_p name, const search_type key);`
- `#define AP_QUEUE_STD_DEFN_TEMPLATE(name, node_type)`
- `#define AP_QUEUE_SEARCH_TEMPLATE(name, func_name, node_type, search_type, search_expression)`
- `#define AP_QUEUE_REMOVE_TEMPLATE(name, func_name, node_type, search_type, search_expression)`

### 13.23.1 Define Documentation

#### 13.23.1.1 `#define AP_QUEUE_DECL_TEMPLATE(name, node_type)`

##### Value:

```
typedef struct name##_s \
{ \
    int size; \
    list_p list; \
    MUTEX_T* lock; \
    COND_T* cond; \
} name##_t; \
\
typedef name##_t* name##_p; \
\
name##_p name##_New( void ); \
int name##_Destroy( name##_p name ); \
int name##_Add( name##_p name, struct node_type##_s* node ); \
name##_p name##_Copy( name##_p name ); \
struct node_type##_s* name##_Pop( name##_p name ); \
struct node_type##_s* name##_SearchIndex( name##_p name, int index ); \
int name##_RemoveIndex( name##_p name, int index );
```

Definition at line 40 of file ap\_queue\_template.h.

#### 13.23.1.2 `#define AP_QUEUE_GENERIC_DECL_TEMPLATE(name, func_name, return_type, search_type) return_type name##_##_func_name(name##_p name, const search_type key);`

Definition at line 59 of file ap\_queue\_template.h.

#### 13.23.1.3 `#define AP_QUEUE_REMOVE_TEMPLATE(name, func_name, node_type, search_type, search_expression)`

##### Value:

```

int name##_##_func_name( name##_p name, const search_type key ) \
{ \
    int err_code = MC_ERR_NOT_FOUND; \
    struct listNode_s* parsenode; \
    struct node_type##_s* node; \
    node = NULL; \
    \
    MUTEX_LOCK(name->lock); \
    if (name->list->listhead == NULL) { \
        MUTEX_UNLOCK(name->lock); \
        return MC_ERR_NOT_FOUND; \
    } \
    for( \
        parsenode = (listNode_t*)name->list->listhead; \
        parsenode->next != NULL; \
        parsenode = (listNode_t*)parsenode->next \
    ) \
    { \
        node = (node_type##_t*)parsenode->node_data; \
        if (search_expression) { \
            break; \
            err_code = MC_SUCCESS; \
        } \
    } \
    \
    MUTEX_UNLOCK(name->lock); \
    return err_code; \
}

```

Definition at line 203 of file ap\_queue\_template.h.

#### 13.23.1.4 #define AP\_QUEUE\_SEARCH\_TEMPLATE(name, func\_name, node\_type, search\_type, search\_expression)

##### Value:

```

struct node_type##_s* name##_##_func_name( name##_p name, const search_type key ) \
{ \
    listNode_t* parsenode; \
    struct node_type##_s* node; \
    struct node_type##_s* ret = NULL; \
    node = NULL; \
    \
    MUTEX_LOCK(name->lock); \
    if (name->list->listhead == NULL) { \
        MUTEX_UNLOCK(name->lock); \
        return NULL; \
    } \
    for( \
        parsenode = (listNode_t*)name->list->listhead; \
        parsenode != NULL; \
        parsenode = (listNode_t*)parsenode->next \
    ) \
    { \
        node = (node_type##_t*)parsenode->node_data; \
        if (search_expression){ \
            ret = node; \
            break; \
        } \
    } \
    \
    MUTEX_UNLOCK(name->lock); \
    return ret; \
}

```

Definition at line 173 of file ap\_queue\_template.h.

**13.23.1.5 #define AP\_QUEUE\_STD\_DEFN\_TEMPLATE(name, node\_type)**

Definition at line 62 of file ap\_queue\_template.h.

## 13.24 /home/dko/projects/mobilec/trunk/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\\_queue\\_Add](#) ([barrier\\_queue\\_p](#) list, [barrier\\_node\\_p](#) node)
- int [barrier\\_queue\\_Delete](#) (int id, [barrier\\_queue\\_p](#) list)
- int [barrier\\_queue\\_Destroy](#) ([barrier\\_queue\\_p](#) queue)
- [barrier\\_node\\_p](#) [barrier\\_queue\\_Get](#) ([barrier\\_queue\\_p](#) list, int id)
- [barrier\\_queue\\_p](#) [barrier\\_queue\\_New](#) (void)
- [barrier\\_node\\_p](#) [barrier\\_queue\\_Pop](#) ([barrier\\_queue\\_p](#) queue)

#### 13.24.1 Typedef Documentation

##### 13.24.1.1 typedef [barrier\\_node\\_t](#)\* [barrier\\_node\\_p](#)

Definition at line 49 of file barrier.h.

##### 13.24.1.2 typedef struct [barrier\\_node\\_s](#) [barrier\\_node\\_t](#)

##### 13.24.1.3 typedef [barrier\\_queue\\_t](#)\* [barrier\\_queue\\_p](#)

Definition at line 57 of file barrier.h.

#### 13.24.1.4 typedef struct barrier\_queue\_s barrier\_queue\_t

### 13.24.2 Function Documentation

#### 13.24.2.1 int barrier\_node\_Destroy (barrier\_node\_p node)

Definition at line 65 of file barrier.c.

References barrier\_node\_s::cond, COND\_DESTROY, barrier\_node\_s::lock, MC\_SUCCESS, and MUTEX\_DESTROY.

Referenced by barrier\_queue\_Delete(), and barrier\_queue\_Destroy().

#### 13.24.2.2 barrier\_node\_p barrier\_node\_Initialize (int id, int num\_registered)

Definition at line 40 of file barrier.c.

References CHECK\_NULL, barrier\_node\_s::cond, COND\_INIT, COND\_T, barrier\_node\_s::id, barrier\_node\_s::lock, MUTEX\_INIT, MUTEX\_T, node, barrier\_node\_s::num\_registered, and barrier\_node\_s::num\_waiting.

Referenced by MC\_BarrierInit().

#### 13.24.2.3 int barrier\_queue\_Add (barrier\_queue\_p list, barrier\_node\_p node)

Definition at line 82 of file barrier.c.

References DATA, barrier\_node\_s::id, barrier\_queue\_s::list, ListAdd(), list\_s::listhead, barrier\_queue\_s::lock, MC\_SUCCESS, MC\_WARN\_DUPLICATE, listNode\_s::next, listNode\_s::node\_data, RWLOCK\_WRLock, RWLOCK\_WRunLock, and barrier\_queue\_s::size.

Referenced by MC\_BarrierInit().

#### 13.24.2.4 int barrier\_queue\_Delete (int id, barrier\_queue\_p list)

Definition at line 106 of file barrier.c.

References barrier\_node\_Destroy(), barrier\_node\_s::id, barrier\_queue\_s::list, ListDelete(), ListSearch(), barrier\_queue\_s::lock, MC\_ERR\_NOT\_FOUND, MC\_SUCCESS, RWLOCK\_WRLock, RWLOCK\_WRunLock, barrier\_queue\_s::size, and list\_s::size.

Referenced by MC\_BarrierDelete().

#### 13.24.2.5 int barrier\_queue\_Destroy (barrier\_queue\_p queue)

Definition at line 126 of file barrier.c.

References barrier\_node\_Destroy(), barrier\_queue\_Pop(), barrier\_queue\_s::list, ListTerminate(), barrier\_queue\_s::lock, MC\_SUCCESS, node, and RWLOCK\_DESTROY.

Referenced by mc\_platform\_Destroy().

#### 13.24.2.6 barrier\_node\_p barrier\_queue\_Get (barrier\_queue\_p list, int id)

Definition at line 140 of file barrier.c.



References `barrier_queue_s::list`, `list_s::listhead`, `barrier_queue_s::lock`, `listNode_s::next`, `listNode_s::node_data`, `RWLOCK_RDLOCK`, and `RWLOCK_RDUNLOCK`.

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

#### 13.24.2.7 `barrier_queue_p barrier_queue_New (void)`

Definition at line 157 of file `barrier.c`.

References `CHECK_NULL`, `barrier_queue_s::list`, `ListInitialize()`, `barrier_queue_s::lock`, `RWLOCK_INIT`, and `RWLOCK_T`.

Referenced by `mc_platform_Initialize()`.

#### 13.24.2.8 `barrier_node_p barrier_queue_Pop (barrier_queue_p queue)`

Definition at line 171 of file `barrier.c`.

References `barrier_queue_s::list`, `ListPop()`, and `node`.

Referenced by `barrier_queue_Destroy()`.

## 13.25 /home/dko/projects/mobilec/trunk/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)

#### 13.25.1 Define Documentation

##### 13.25.1.1 `#define` [CMDLINE\\_SIZE](#) 80

Definition at line 37 of file [cmd\\_prompt.h](#).

#### 13.25.2 Typedef Documentation

##### 13.25.2.1 typedef [cmd\\_prompt\\_t](#)\* [cmd\\_prompt\\_p](#)

Definition at line 44 of file [cmd\\_prompt.h](#).

**13.25.2.2** `typedef struct cmd_prompt_s cmd_prompt_t`

**13.25.2.3** `typedef command_t* command_p`

Definition at line 51 of file cmd\_prompt.h.

**13.25.2.4** `typedef struct command_s command_t`

### 13.25.3 Function Documentation

**13.25.3.1** `int cmd_prompt_Destroy (cmd_prompt_p cmd_prompt)`

Definition at line 63 of file cmd\_prompt.c.

References MC\_SUCCESS.

Referenced by mc\_platform\_Destroy().

**13.25.3.2** `cmd_prompt_p cmd_prompt_Initialize (struct mc_platform_s * mc_platform)`

**13.25.3.3** `void cmd_prompt_Start (struct mc_platform_s * mc_platform)`

**13.25.3.4** `void* cmd_prompt_Thread (void * arg)`

Definition at line 102 of file cmd\_prompt.c.

References command\_s::args, buf, dealloc\_command(), exec\_command(), command\_s::index, mc\_platform, command\_s::num\_args, process\_command(), and split\_string().

Referenced by cmd\_prompt\_Start().

**13.25.3.5** `int dealloc_command (command_t * cmd)`

Definition at line 231 of file cmd\_prompt.c.

References command\_s::args, and command\_s::num\_args.

Referenced by cmd\_prompt\_Thread().

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

**13.25.3.7** `int process_command (command_t * cmd)`

Definition at line 197 of file cmd\_prompt.c.

References command\_s::args, command\_cmds, command\_s::index, and command\_s::num\_args.

Referenced by cmd\_prompt\_Thread().

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

Definition at line 149 of file cmd\_prompt.c.

References int.

Referenced by `cmd_prompt_Thread()`.

## 13.26 /home/dko/projects/mobilec/trunk/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](#) { [COMMAND](#) }

### Variables

- [cmd\\_handler\\_t](#) [cmd\\_handlers](#) []
- char \* [command\\_descriptions](#) []
- char \* [command\\_cmds](#) []

#### 13.26.1 Define Documentation

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

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

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

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

##### 13.26.1.3 #define [COMMAND](#)(name, cmd, description) &handler\_##name ,

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

##### 13.26.1.4 #define [COMMAND](#)(name, cmd, description) [COMMAND\\_##name](#) ,

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

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

Definition at line 41 of file commands.h.

## 13.26.2 Typedef Documentation

### 13.26.2.1 `typedef int(* cmd_handler_t)(void *, mc_platform_p global)`

Definition at line 45 of file commands.h.

## 13.26.3 Enumeration Type Documentation

### 13.26.3.1 `enum command_indices_e`

Enumerator:

*COMMAND*

Definition at line 47 of file commands.h.

## 13.26.4 Variable Documentation

### 13.26.4.1 `cmd_handler_t cmd_handlers[]`

Initial value:

```
{
#define COMMAND(name, cmd, description)

COMMAND(QUIT, "quit",
        "This command ends the MobileC application.")
COMMAND(HELP, "help",
        "This command displays help for any command. Usage is:\n \
        \"help <command>\"")
COMMAND(SEND, "send",
        "This command sends a client to a host. Usage is: \n \
        \"send <filename> <target host> <target port>\" \n \
        e.g. \"send test1.xml iel.ucdavis.edu 5155\"")
COMMAND(PRINT_CONNECTLIST,
        "print_connectlist",
        "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,
        "printlist_agents",
        "This command prints all the agents on the system which are still\n\
        on the agent list.\n")

        NULL
}
```

Definition at line 54 of file commands.h.

Referenced by `exec_command()`.

### 13.26.4.2 char\* command\_cmds[ ]

**Initial value:**

```
{
#define COMMAND(name, cmd, description)

COMMAND(QUIT, "quit",
        "This command ends the MobileC application.")
COMMAND(HELP, "help",
        "This command displays help for any command. Usage is:\n \
        \"help <command>\"")
COMMAND(SEND, "send",
        "This command sends a client to a host. Usage is: \n \
        \"send <filename> <target host> <target port>\" \n \
        e.g. \"send test1.xml iel.ucdavis.edu 5155\"")
COMMAND(PRINT_CONNECTLIST,
        "print_connectlist",
        "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,
        "printlist_agents",
        "This command prints all the agents on the system which are still\n\
        on the agent list.\n")

        NULL
}
```

Definition at line 68 of file commands.h.

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

### 13.26.4.3 char\* command\_descriptions[ ]

**Initial value:**

```
{
#define COMMAND(name, cmd, description)

COMMAND(QUIT, "quit",
        "This command ends the MobileC application.")
COMMAND(HELP, "help",
        "This command displays help for any command. Usage is:\n \
        \"help <command>\"")
COMMAND(SEND, "send",
        "This command sends a client to a host. Usage is: \n \
        \"send <filename> <target host> <target port>\" \n \
        e.g. \"send test1.xml iel.ucdavis.edu 5155\"")
```

```
COMMAND (PRINT_CONNECTLIST,
        "print_connectlist",
        "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,
        "printlist_agents",
        "This command prints all the agents on the system which are still\n\
on the agent list.\n")

        NULL
}
```

Definition at line 61 of file commands.h.

Referenced by handler\_HELP(), and handler\_SEND().



## 13.27 /home/dko/projects/mobilec/trunk/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 a client 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

### 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 a client to a host Usage [print\\_connectlist](#)
- This command displays [help](#) for any command Usage This command sends a client to a host Usage This command prints the list entries in the connectList [printlist\\_agents](#)

### 13.27.1 Function Documentation

- 13.27.1.1 This command displays help for any command Usage This command sends a client 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

- 13.27.1.2 [COMMAND](#) (QUIT, "quit", "This command ends the MobileC application.")**

### 13.27.2 Variable Documentation

#### 13.27.2.1 [help](#)

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

- 13.27.2.2 This command displays help for any command Usage This command sends a client to a host Usage [is](#)**

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

- 13.27.2.3 This command displays help for any command Usage This command sends a client to a host Usage [print\\_connectlist](#)**

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

**13.27.2.4 This command displays help for any command Usage This command sends a client to a host Usage This command prints the list entries in the connectList printlist\_agents**

Definition at line 55 of file commands.x.h.

**13.27.2.5 This command displays help for any command Usage send**

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

Referenced by message\_Send(), and mtp\_http\_InitializeFromConnection().

## 13.28 /home/dko/projects/mobilec/trunk/src/include/connection.h File Reference

```
#include <sys/types.h>
#include <netinet/in.h>
```

### Data Structures

- struct [connection\\_s](#)

### Typedefs

- typedef struct [connection\\_s](#) [connection\\_t](#)
- typedef [connection\\_t](#) \* [connection\\_p](#)

### Functions

- [connection\\_p](#) [connection\\_New](#) (void)
- int [connection\\_Destroy](#) ([connection\\_p](#) connection)
- [connection\\_p](#) [connection\\_Copy](#) ([connection\\_p](#) connection)
- void [connection\\_Close](#) ([connection\\_p](#) connection)
- void [connection\\_SetHosts](#) ([connection\\_p](#) connection, char \*remote\_host, char \*local\_host)
- int [connection\\_CreateMessage](#) ([connection\\_p](#) connection)
- int [connection\\_SendtoConnection](#) ([connection\\_p](#) connection, char \*send\_buffer)
- int [connection\\_RecvFromConnection](#) ([connection\\_p](#) connection, struct [mc\\_platform\\_s](#) \*global)

### 13.28.1 Typedef Documentation

#### 13.28.1.1 typedef [connection\\_t](#)\* [connection\\_p](#)

Definition at line 60 of file [connection.h](#).

#### 13.28.1.2 typedef struct [connection\\_s](#) [connection\\_t](#)

### 13.28.2 Function Documentation

#### 13.28.2.1 void [connection\\_Close](#) ([connection\\_p](#) *connection*)

#### 13.28.2.2 [connection\\_p](#) [connection\\_Copy](#) ([connection\\_p](#) *connection*)

Definition at line 73 of file [connection.c](#).

References [connection\\_s::addr](#), [connection\\_s::clientfd](#), [connection\\_s::connect\\_id](#), [connection\\_New\(\)](#), [connection\\_s::remote\\_hostname](#), and [connection\\_s::serverfd](#).

**13.28.2.3 int connection\_CreateMessage (connection\_p *connection*)****13.28.2.4 int connection\_Destroy (connection\_p *connection*)**

Definition at line 42 of file connection.c.

References connection\_s::clientfd, MC\_SUCCESS, and connection\_s::remote\_hostname.

Referenced by acc\_Thread().

**13.28.2.5 connection\_p connection\_New (void)**

Definition at line 62 of file connection.c.

Referenced by connection\_Copy().

**13.28.2.6 int connection\_RecvFromConnection (connection\_p *connection*, struct mc\_platform\_s \* *global*)****13.28.2.7 int connection\_SendtoConnection (connection\_p *connection*, char \* *send\_buffer*)****13.28.2.8 void connection\_SetHosts (connection\_p *connection*, char \* *remote\_host*, char \* *local\_host*)**

## 13.29 /home/dko/projects/mobilec/trunk/src/include/data\_structures.h File Reference

```
#include "ap_queue_template.h"
#include "../mc_list/list.h"
#include "connection.h"
#include "fipa_acl.h"
#include "agent_mailbox.h"
#include "message.h"
#include "interpreter_variable_data.h"
```

### Functions

- [AP\\_QUEUE\\_DECL\\_TEMPLATE](#) (connection\_queue, connection) [AP\\_QUEUE\\_GENERIC\\_DECL\\_TEMPLATE](#)(connection\_queue
- [connection\\_t](#) [int](#) [AP\\_QUEUE\\_GENERIC\\_DECL\\_TEMPLATE](#) (connection\_queue, [Remove](#), [int](#), [int](#)) [int](#) [connection\\_queue\\_Print](#)(connection\_queue\_p clist)
- [AP\\_QUEUE\\_DECL\\_TEMPLATE](#) (message\_queue, message) [int](#) [message\\_queue\\_Print](#)(message\_queue\_p queue)
- [AP\\_QUEUE\\_DECL\\_TEMPLATE](#) (agent\_queue, agent) [AP\\_QUEUE\\_GENERIC\\_DECL\\_TEMPLATE](#)(agent\_queue
- [struct](#) [agent\\_s](#) [int](#) [int](#) [AP\\_QUEUE\\_GENERIC\\_DECL\\_TEMPLATE](#) (agent\_queue, [SearchName](#), [struct](#) [agent\\_s](#) \*, [char](#) \*) [AP\\_QUEUE\\_GENERIC\\_DECL\\_TEMPLATE](#)(agent\_queue
- [struct](#) [agent\\_s](#) [int](#) [int](#) [AP\\_QUEUE\\_GENERIC\\_DECL\\_TEMPLATE](#) (agent\_queue, [RemoveName](#), [int](#), [char](#) \*) [int](#) [agent\\_queue\\_Print](#)(agent\_queue\_p queue)
- [AP\\_QUEUE\\_DECL\\_TEMPLATE](#) (agent\_variable\_list, interpreter\_variable\_data) [AP\\_QUEUE\\_GENERIC\\_DECL\\_TEMPLATE](#)(agent\_variable\_list
- [interpreter\\_variable\\_data\\_t](#) [char](#) \* [AP\\_QUEUE\\_GENERIC\\_DECL\\_TEMPLATE](#) (agent\_variable\_list, [Remove](#), [int](#), [char](#) \*) [AP\\_QUEUE\\_DECL\\_TEMPLATE](#)(mail\_queue
- [interpreter\\_variable\\_data\\_t](#) [char](#) \*fipa\_acl\_message [AP\\_QUEUE\\_GENERIC\\_DECL\\_TEMPLATE](#) (mail\_queue, [SearchReceivers](#), [fipa\\_acl\\_message\\_p](#), [char](#) \*) [AP\\_QUEUE\\_GENERIC\\_DECL\\_TEMPLATE](#)(mail\_queue
- [interpreter\\_variable\\_data\\_t](#) [char](#) \*fipa\_acl\_message [char](#) \* [AP\\_QUEUE\\_DECL\\_TEMPLATE](#) (mailbox\_queue, agent\_mailbox) [AP\\_QUEUE\\_GENERIC\\_DECL\\_TEMPLATE](#)(mailbox\_queue
- [interpreter\\_variable\\_data\\_t](#) [char](#) \*fipa\_acl\_message [char](#) [char](#) \* [AP\\_QUEUE\\_GENERIC\\_DECL\\_TEMPLATE](#) (mailbox\_queue, [SearchID](#), [agent\\_mailbox\\_p](#), [int](#)) [AP\\_QUEUE\\_GENERIC\\_DECL\\_TEMPLATE](#)(mailbox\_queue

### Variables

- [Search](#)
- [struct](#) [agent\\_s](#) [int](#) [Remove](#)
- [struct](#) [agent\\_s](#) [int](#) [int](#)
- [interpreter\\_variable\\_data\\_t](#) [char](#) \*fipa\_acl\_message [RemoveName](#)
- [interpreter\\_variable\\_data\\_t](#) [char](#) \*fipa\_acl\_message [char](#) \* [SearchName](#)
- [interpreter\\_variable\\_data\\_t](#) [char](#) \*fipa\_acl\_message [char](#) [agent\\_mailbox\\_p](#)
- [interpreter\\_variable\\_data\\_t](#) [char](#) \*fipa\_acl\_message [char](#) [char](#) \* [RemoveID](#)

### 13.29.1 Function Documentation

13.29.1.1 `interpreter_variable_data_t char* fipa_acl_message char*`  
`AP_QUEUE_DECL_TEMPLATE (mailbox_queue, agent_mailbox)`

#### Type Constraints

13.29.1.2 `AP_QUEUE_DECL_TEMPLATE (agent_variable_list, interpreter_variable_data)`

13.29.1.3 `AP_QUEUE_DECL_TEMPLATE (agent_queue, agent)`

13.29.1.4 `AP_QUEUE_DECL_TEMPLATE (message_queue, message)`

13.29.1.5 `AP_QUEUE_DECL_TEMPLATE (connection_queue, connection)`

13.29.1.6 `interpreter_variable_data_t char* fipa_acl_message char char*`  
`AP_QUEUE_GENERIC_DECL_TEMPLATE (mailbox_queue, SearchID,`  
`agent_mailbox_p, int)`

#### Type Constraints

13.29.1.7 `interpreter_variable_data_t char* fipa_acl_message AP_QUEUE_GENERIC-`  
`DECL_TEMPLATE (mail_queue, SearchReceivers, fipa_acl_message_p, char`  
`*)`

13.29.1.8 `interpreter_variable_data_t char* AP_QUEUE_GENERIC_DECL_TEMPLATE`  
`(agent_variable_list, Remove, int, char *)`

#### Type Constraints

13.29.1.9 `struct agent_s int int AP_QUEUE_GENERIC_DECL_TEMPLATE (agent_queue,`  
`RemoveName, int, char *)`

#### Type Constraints

13.29.1.10 `struct agent_s int AP_QUEUE_GENERIC_DECL_TEMPLATE (agent_queue,`  
`SearchName, struct agent_s *, char *)` `[read]`

#### Type Constraints

**13.29.1.11** `connection_t` `int` `AP_QUEUE_GENERIC_DECL_TEMPLATE` (`connection_queue`, `Remove`, `int`, `int`)

#### Type Constraints

### 13.29.2 Variable Documentation

**13.29.2.1** `interpreter_variable_data_t` `char*` `fipa_acl_message` `char` `agent_mailbox_p`

Definition at line 162 of file `data_structures.h`.

**13.29.2.2** `interpreter_variable_data_t` `char` `*fipa_acl_message` `char` `char` `int`

Definition at line 101 of file `data_structures.h`.

Referenced by `LibMC::MCAgency::ChInitializeOptions()`, `default_callback()`, `main()`, and `split_string()`.

**13.29.2.3** `struct` `agent_s` `int` `Remove`

Definition at line 101 of file `data_structures.h`.

**13.29.2.4** `interpreter_variable_data_t` `char*` `fipa_acl_message` `char` `char*` `RemoveID`

Definition at line 176 of file `data_structures.h`.

**13.29.2.5** `interpreter_variable_data_t` `char*` `fipa_acl_message` `RemoveName`

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

**13.29.2.6** `Search`

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

**13.29.2.7** `interpreter_variable_data_t` `char*` `fipa_acl_message` `char*` `SearchName`

Definition at line 162 of file `data_structures.h`.

## 13.30 /home/dko/projects/mobilec/trunk/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](#) { [REQUEST](#) }
- enum [service\\_types\\_e](#) {  
[ZERO](#), [MISC](#), [INSERT](#), [SOME](#),  
[TYPES](#), [HERE](#) }

### Functions

- [STRUCT](#) (df\_request\_list\_node, [MUTEX\\_T](#) \*[lock](#); [COND\\_T](#) \*[cond](#); const char \*command; void \*data; [int](#) data\_size;) [STRUCT](#)(df\_request\_list
- [STRUCT](#) (df\_search\_results, char \*\*agent\_names; char \*\*service\_names; [int](#) \*agent\_ids; [int](#) num\_results;) [STRUCT](#)(df\_request\_search
- [STRUCT](#) (df\_node, [MUTEX\\_T](#) \*[lock](#); [int](#) agent\_id; char \*agent\_name; [int](#) num\_services; char \*\*service\_names; enum [service\\_types\\_e](#) service\_types;) [STRUCT](#)(df
- [STRUCT](#) (df\_deregister, [int](#) agent\_id; char \*service\_name;) [int](#) df\_Add(struct df\_s \*df
- [int](#) df\_AddRequest (struct df\_s \*df, struct df\_request\_list\_node\_s \*[node](#))
- [int](#) df\_Destroy (df\_p df)
- df\_p df\_Initialize (struct [mc\\_platform\\_s](#) \*[mc\\_platform](#))
- [int](#) df\_ProcessRequest (struct [mc\\_platform\\_s](#) \*global)
- [int](#) df\_SearchForService (df\_p df, const char \*searchstring, char \*\*\*agent\_names, char \*\*\*service\_names, [int](#) \*\*agent\_ids, [int](#) \*num\_entries)
- void df\_Start (struct [mc\\_platform\\_s](#) \*[mc\\_platform](#))
- [int](#) df\_node\_Destroy (df\_node\_p df\_node)
- [int](#) df\_request\_list\_node\_Destroy (df\_request\_list\_node\_p [node](#))
- df\_request\_list\_node\_p df\_request\_list\_node\_New (void)
- [int](#) df\_request\_list\_Destroy (df\_request\_list\_p df\_request\_list)
- df\_request\_list\_p df\_request\_list\_New (void)
- df\_request\_list\_node\_p df\_request\_list\_Pop (df\_request\_list\_p requests)
- df\_request\_search\_p df\_request\_search\_New (void)
- [int](#) df\_request\_search\_Destroy (df\_request\_search\_p [node](#))
- void \* df\_Thread (void \*arg)



## Variables

- MUTEX\_T \* [lock](#)
- COND\_T \* [cond](#)
- [int](#) [size](#)
- [list\\_p](#) [request\\_list](#)
- [char](#) \* [search\\_string](#)
- [df\\_search\\_results\\_p](#) [search\\_results](#)
- [struct mc\\_platform\\_s](#) \* [mc\\_platform](#)
- [list\\_p](#) [service\\_list](#)
- [int](#) [num\\_entries](#)
- [int](#) [waiting](#)
- MUTEX\_T \* [waiting\\_lock](#)
- COND\_T \* [waiting\\_cond](#)
- [THREAD\\_T](#) [thread](#)
- [struct df\\_node\\_s](#) \* [node](#)

### 13.30.1 Define Documentation

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

Definition at line 193 of file df.h.

**13.30.1.2** `#define REQUEST(name, string, description) REQUEST_##name,`

Definition at line 193 of file df.h.

### 13.30.2 Enumeration Type Documentation

**13.30.2.1** `enum df_request_list_index_e`

Enumerator:

*REQUEST*

Definition at line 46 of file df.h.

**13.30.2.2** `enum service_types_e`

Enumerator:

*ZERO*

*MISC*

*INSERT*

*SOME*

*TYPES*

*HERE*

Definition at line 53 of file df.h.

### 13.30.3 Function Documentation

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

Definition at line 63 of file df.c.

References ListAdd(), and SIGNAL.

Referenced by MC\_DeregisterService(), MC\_RegisterService(), and MC\_SearchForService().

#### 13.30.3.2 `int df_Destroy (df_p df)`

Definition at line 80 of file df.c.

References COND\_DESTROY, df\_node\_Destroy(), df\_request\_list\_Destroy(), ListPop(), ListTerminate(), MC\_SUCCESS, MUTEX\_DESTROY, and MUTEX\_LOCK.

Referenced by mc\_platform\_Destroy().

#### 13.30.3.3 `df_p df_Initialize (struct mc_platform_s * mc_platform)`

#### 13.30.3.4 `int df_node_Destroy (df_node_p df_node)`

Definition at line 409 of file df.c.

References MC\_SUCCESS, and MUTEX\_LOCK.

Referenced by df\_Destroy().

#### 13.30.3.5 `int df_ProcessRequest (struct mc_platform_s * global)`

Definition at line 129 of file df.c.

References mc\_platform\_s::df, df\_request\_list\_Pop(), MC\_ERR\_EMPTY, and MC\_ERR\_INVALID.

Referenced by df\_Thread().

#### 13.30.3.6 `int df_request_list_Destroy (df_request_list_p df_request_list)`

Definition at line 318 of file df.c.

References df\_request\_list\_node\_Destroy(), ListPop(), ListTerminate(), MC\_SUCCESS, and node.

Referenced by df\_Destroy().

#### 13.30.3.7 `df_request_list_p df_request_list_New (void)`

Definition at line 340 of file df.c.

References CHECK\_NULL, COND\_INIT, COND\_T, ListInitialize(), MUTEX\_INIT, and MUTEX\_T.

Referenced by df\_Initialize().

#### 13.30.3.8 `int df_request_list_node_Destroy (df_request_list_node_p node)`

Definition at line 289 of file df.c.

References COND\_DESTROY, MC\_SUCCESS, and MUTEX\_DESTROY.

Referenced by df\_request\_list\_Destroy(), and MC\_SearchForService().

### 13.30.3.9 df\_request\_list\_node\_p df\_request\_list\_node\_New (void)

Definition at line 300 of file df.c.

References CHECK\_NULL, COND\_INIT, COND\_T, MUTEX\_INIT, MUTEX\_T, and node.

Referenced by MC\_DeregisterService(), MC\_RegisterService(), and MC\_SearchForService().

### 13.30.3.10 df\_request\_list\_node\_p df\_request\_list\_Pop (df\_request\_list\_p requests)

Definition at line 365 of file df.c.

References ListPop(), MUTEX\_LOCK, MUTEX\_UNLOCK, and node.

Referenced by df\_ProcessRequest().

### 13.30.3.11 int df\_request\_search\_Destroy (df\_request\_search\_p node)

Definition at line 396 of file df.c.

References COND\_DESTROY, MC\_SUCCESS, and MUTEX\_DESTROY.

Referenced by MC\_SearchForService().

### 13.30.3.12 df\_request\_search\_p df\_request\_search\_New (void)

Definition at line 381 of file df.c.

References CHECK\_NULL, COND\_INIT, COND\_T, MUTEX\_INIT, MUTEX\_T, and search.

Referenced by MC\_SearchForService().

### 13.30.3.13 int df\_SearchForService (df\_p df, const char \* searchstring, char \*\*\* agent\_names, char \*\*\* service\_names, int \*\* agent\_ids, int \* num\_entries)

Definition at line 173 of file df.c.

References MC\_ERR\_NOT\_FOUND, MC\_SUCCESS, MUTEX\_LOCK, MUTEX\_UNLOCK, listNode\_s::next, and listNode\_s::node\_data.

Referenced by request\_handler\_SEARCH().

### 13.30.3.14 void df\_Start (struct mc\_platform\_s \* mc\_platform)

### 13.30.3.15 void\* df\_Thread (void \* arg)

Definition at line 423 of file df.c.

References COND\_BROADCAST, COND\_WAIT, mc\_platform\_s::df, df\_ProcessRequest(), MC\_SUCCESS, MUTEX\_LOCK, MUTEX\_UNLOCK, mc\_platform\_s::quit, and mc\_platform\_s::quit\_lock.

Referenced by df\_Start().

**13.30.3.16** **STRUCT** (df\_deregister, int agent\_id;char \*service\_name;)

**13.30.3.17** **STRUCT** (df\_node, MUTEX\_T \*lock;int agent\_id;char \*agent\_name;int num\_services;char \*\*service\_names;enum service\_types\_e service\_types;)

**13.30.3.18** **STRUCT** (df\_search\_results, char \*\*agent\_names;char \*\*service\_names;int \*agent\_ids;int num\_results;)

**13.30.3.19** **STRUCT** (df\_request\_list\_node, MUTEX\_T \*lock;COND\_T \*cond;const char \*command;void \*data;int data\_size;)

## 13.30.4 Variable Documentation

### 13.30.4.1 COND\_T \* cond

Definition at line 74 of file df.h.

### 13.30.4.2 MUTEX\_T \* lock

Definition at line 73 of file df.h.

### 13.30.4.3 struct mc\_platform\_s\* mc\_platform

Definition at line 107 of file df.h.

Referenced by acc\_MessageHandlerThread(), acc\_Thread(), agent\_RunChScriptThread(), ams\_Thread(), cmd\_prompt\_Thread(), listen\_Thread(), mc\_platform\_Initialize(), and MC\_WaitAgent().

### 13.30.4.4 struct df\_node\_s\* node

Definition at line 129 of file df.h.

Referenced by add\_variable(), agent\_xml\_compose(), agent\_xml\_compose\_\_agent\_code(), agent\_xml\_compose\_\_agent\_data(), agent\_xml\_compose\_\_create\_row\_nodes(), agent\_xml\_compose\_\_data(), agent\_xml\_compose\_\_gaf\_message(), agent\_xml\_compose\_\_home(), agent\_xml\_compose\_\_message(), agent\_xml\_compose\_\_mobile\_agent(), agent\_xml\_compose\_\_name(), agent\_xml\_compose\_\_owner(), agent\_xml\_compose\_\_row(), agent\_xml\_compose\_\_task(), agent\_xml\_compose\_\_tasks(), AP\_QUEUE\_SEARCH\_TEMPLATE(), AP\_QUEUE\_STD\_DEFN\_TEMPLATE(), barrier\_node\_Initialize(), barrier\_queue\_Destroy(), barrier\_queue\_Pop(), df\_request\_list\_Destroy(), df\_request\_list\_node\_New(), df\_request\_list\_Pop(), fipa\_envelope\_Compose(), fipa\_envelope\_Compose\_\_acl\_representation(), fipa\_envelope\_Compose\_\_date(), fipa\_envelope\_Compose\_\_envelope(), fipa\_envelope\_Compose\_\_intended\_receiver(), fipa\_envelope\_Compose\_\_params(), fipa\_envelope\_Compose\_\_payload\_encoding(), fipa\_envelope\_Compose\_\_to(), fipa\_envelope\_HandleReceived(), main(), MC\_Barrier(), MC\_BarrierInit(), MC\_SyncInit(), mxml\_new(), mxmlNewCustom(), mxmlNewElement(), mxmlNewInteger(), mxmlNewOpaque(), mxmlNewReal(), mxmlNewText(), mxmlNewTextf(), request\_handler\_DEREGISTER(), scan\_file(), syncListNew(), write\_element(), xml\_get\_deep\_child(), and xml\_new\_cdata().

### 13.30.4.5 int num\_entries

Definition at line 113 of file df.h.

**13.30.4.6 df\_request\_list\_p request\_list**

Definition at line 76 of file df.h.

**13.30.4.7 df\_search\_results\_p search\_results**

Definition at line 91 of file df.h.

**13.30.4.8 char\* search\_string**

Definition at line 90 of file df.h.

**13.30.4.9 list\_p service\_list**

Definition at line 110 of file df.h.

**13.30.4.10 int size**

Definition at line 75 of file df.h.

Referenced by agent\_AddPersistentVariable(), agent\_xml\_compose\_\_create\_row\_nodes(), interpreter\_variable\_data\_Initialize(), interpreter\_variable\_data\_InitializeFromAgent(), MC\_GetAgentReturnData(), MC\_SaveData\_chdl(), MC\_WaitAgent(), and mxml\_vsnprintf().

**13.30.4.11 THREAD\_T thread**

Definition at line 117 of file df.h.

**13.30.4.12 int waiting**

Definition at line 114 of file df.h.

**13.30.4.13 COND\_T\* waiting\_cond**

Definition at line 116 of file df.h.

**13.30.4.14 MUTEX\_T\* waiting\_lock**

Definition at line 115 of file df.h.

## 13.31 /home/dko/projects/mobilec/trunk/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](#)

### 13.31.1 Function Documentation

**13.31.1.1 Register services with the directory facilitator [REQUEST](#) (DEREGISTER, "deregister", "Deregisters mobile agent services from a directory facilitator.")**

#### Type Constraints

**13.31.1.2 [REQUEST](#) (SUBSCRIBE, "subscribe", "Subscribe to a directory facilitator")**

### 13.31.2 Variable Documentation

#### 13.31.2.1 [register](#)

Definition at line 43 of file df\_request.x.h.

#### 13.31.2.2 Register services with the directory facilitator [search](#)

Definition at line 54 of file df\_request.x.h.

Referenced by [df\\_request\\_search\\_New\(\)](#), [MC\\_SearchForService\(\)](#), and [request\\_handler\\_SEARCH\(\)](#).

## 13.32 /home/dko/projects/mobilec/trunk/src/include/dynstring.h File Reference

### Data Structures

- struct [dynstring\\_s](#)

### Defines

- #define [COMPOSE\\_BLOCKSIZE](#) 1024

### Typedefs

- typedef struct [dynstring\\_s](#) [dynstring\\_t](#)
- typedef [dynstring\\_t](#) \* [dynstring\\_p](#)

### Functions

- [dynstring\\_t](#) \* [dynstring\\_New](#) (void)
- [int](#) [dynstring\\_Append](#) ([dynstring\\_t](#) \*msg, char \*str)
- [int](#) [dynstring\\_Destroy](#) ([dynstring\\_t](#) \*dynstring)

#### 13.32.1 Define Documentation

##### 13.32.1.1 #define COMPOSE\_BLOCKSIZE 1024

Definition at line 8 of file [dynstring.h](#).

Referenced by [dynstring\\_Append\(\)](#), and [dynstring\\_New\(\)](#).

#### 13.32.2 Typedef Documentation

##### 13.32.2.1 typedef [dynstring\\_t](#)\* [dynstring\\_p](#)

Definition at line 14 of file [dynstring.h](#).

##### 13.32.2.2 typedef struct [dynstring\\_s](#) [dynstring\\_t](#)

#### 13.32.3 Function Documentation

##### 13.32.3.1 [int](#) [dynstring\\_Append](#) ([dynstring\\_t](#) \*msg, char \*str)

Definition at line 24 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\_string\_Compose(), fipa\_url\_Compose(), fipa\_url\_sequence\_Compose(), fipa\_word\_Compose(), mtp\_http\_CreateMessage(), and mtp\_http\_InitializeFromConnection().

### 13.32.3.2 int dynstring\_Destroy (dynstring\_t \* *dynstring*)

Definition at line 49 of file dynstring.c.

References dynstring\_s::message.

Referenced by fipa\_envelope\_Compose\_\_from(), MC\_AclSend(), mtp\_http\_CreateMessage(), and mtp\_http\_InitializeFromConnection().

### 13.32.3.3 dynstring\_t\* dynstring\_New (void)

Definition at line 8 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(), mtp\_http\_CreateMessage(), and mtp\_http\_InitializeFromConnection().



## 13.33 /home/dko/projects/mobilec/trunk/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_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)`
- `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\\_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)

### 13.33.1 Typedef Documentation

#### 13.33.1.1 typedef fipa\_acl\_message\_t\* fipa\_acl\_message\_p

Definition at line 113 of file fipa\_acl.h.

#### 13.33.1.2 typedef struct fipa\_acl\_message\_s fipa\_acl\_message\_t

#### 13.33.1.3 typedef fipa\_agent\_identifier\_t\* fipa\_agent\_identifier\_p

Definition at line 163 of file fipa\_acl.h.

**13.33.1.4 typedef fipa\_agent\_identifier\_set\_t\* fipa\_agent\_identifier\_set\_p**

Definition at line 149 of file fipa\_acl.h.

**13.33.1.5 typedef struct fipa\_agent\_identifier\_set\_s fipa\_agent\_identifier\_set\_t****13.33.1.6 typedef struct fipa\_agent\_identifier\_s fipa\_agent\_identifier\_t****13.33.1.7 typedef fipa\_DateTime\_t\* fipa\_DateTime\_p**

Definition at line 223 of file fipa\_acl.h.

**13.33.1.8 typedef struct fipa\_DateTime\_s fipa\_DateTime\_t****13.33.1.9 typedef fipa\_expression\_t\* fipa\_expression\_p**

Definition at line 182 of file fipa\_acl.h.

**13.33.1.10 typedef struct fipa\_expression\_s fipa\_expression\_t****13.33.1.11 typedef enum fipa\_expression\_type\_e fipa\_expression\_type\_t****13.33.1.12 typedef fipa\_message\_string\_t\* fipa\_message\_string\_p**

Definition at line 125 of file fipa\_acl.h.

**13.33.1.13 typedef struct fipa\_message\_string\_s fipa\_message\_string\_t****13.33.1.14 typedef fipa\_number\_t\* fipa\_number\_p**

Definition at line 245 of file fipa\_acl.h.

**13.33.1.15 typedef struct fipa\_number\_s fipa\_number\_t****13.33.1.16 typedef fipa\_string\_t\* fipa\_string\_p**

Definition at line 204 of file fipa\_acl.h.

**13.33.1.17 typedef struct fipa\_string\_s fipa\_string\_t****13.33.1.18 typedef fipa\_url\_t\* fipa\_url\_p**

Definition at line 234 of file fipa\_acl.h.

**13.33.1.19 typedef fipa\_url\_sequence\_t\* fipa\_url\_sequence\_p**

Definition at line 136 of file fipa\_acl.h.

**13.33.1.20** typedef struct fipa\_url\_sequence\_s fipa\_url\_sequence\_t

**13.33.1.21** typedef struct fipa\_url\_s fipa\_url\_t

**13.33.1.22** typedef fipa\_word\_t\* fipa\_word\_p

Definition at line 193 of file fipa\_acl.h.

**13.33.1.23** typedef struct fipa\_word\_s fipa\_word\_t

## 13.33.2 Enumeration Type Documentation

**13.33.2.1** enum fipa\_expression\_type\_e

Enumerator:

*FIPA\_EXPR\_ZERO*

*FIPA\_EXPR\_WORD*

*FIPA\_EXPR\_STRING*

*FIPA\_EXPR\_NUMBER*

*FIPA\_EXPR\_DATETIME*

*FIPA\_EXPR\_EXPRESSION*

Definition at line 72 of file fipa\_acl.h.

**13.33.2.2** enum fipa\_performative\_e

Enumerator:

*FIPA\_ERROR*

*FIPA\_ZERO*

*FIPA\_ACCEPT\_PROPOSAL*

*FIPA\_AGREE*

*FIPA\_CANCEL*

*FIPA\_CALL\_FOR\_PROPOSAL*

*FIPA\_CONFIRM*

*FIPA\_DISCONFIRM*

*FIPA\_FAILURE*

*FIPA\_INFORM*

*FIPA\_INFORM\_IF*

*FIPA\_INFORM\_REF*

*FIPA\_NOT\_UNDERSTOOD*

*FIPA\_PROPOGATE*

*FIPA\_PROPOSE*

*FIPA\_PROXY*

*FIPA\_QUERY\_IF*

*FIPA\_QUERY\_REF*  
*FIPA\_REFUSE*  
*FIPA\_REJECT\_PROPOSAL*  
*FIPA\_REQUEST*  
*FIPA\_REQUEST\_WHEN*  
*FIPA\_REQUEST\_WHENEVER*  
*FIPA\_SUBSCRIBE*  
*FIPA\_ERROR*  
*FIPA\_ZERO*  
*FIPA\_ACCEPT\_PROPOSAL*  
*FIPA\_AGREE*  
*FIPA\_CANCEL*  
*FIPA\_CALL\_FOR\_PROPOSAL*  
*FIPA\_CONFIRM*  
*FIPA\_DISCONFIRM*  
*FIPA\_FAILURE*  
*FIPA\_INFORM*  
*FIPA\_INFORM\_IF*  
*FIPA\_INFORM\_REF*  
*FIPA\_NOT\_UNDERSTOOD*  
*FIPA\_PROPOGATE*  
*FIPA\_PROPOSE*  
*FIPA\_PROXY*  
*FIPA\_QUERY\_IF*  
*FIPA\_QUERY\_REF*  
*FIPA\_REFUSE*  
*FIPA\_REJECT\_PROPOSAL*  
*FIPA\_REQUEST*  
*FIPA\_REQUEST\_WHEN*  
*FIPA\_REQUEST\_WHENEVER*  
*FIPA\_SUBSCRIBE*

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

### 13.33.3 Function Documentation

#### 13.33.3.1 `int fipa_acl_Compose (dynstring_t ** msg, fipa_acl_message_t * acl)`

Definition at line 1185 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_string_Compose()`, `fipa_word_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()`.

**13.33.3.2 fipa\_acl\_message\_t\* fipa\_acl\_message\_Copy (fipa\_acl\_message\_t \* src)**

Definition at line 81 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\_word\_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.

**13.33.3.3 int fipa\_acl\_message\_Destroy (fipa\_acl\_message\_t \* message)**

Definition at line 60 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\_word\_Destroy(), fipa\_acl\_message\_s::in\_reply\_to, fipa\_acl\_message\_s::language, 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 acc\_Thread(), and MC\_AclDestroy().

**13.33.3.4 fipa\_acl\_message\_t\* fipa\_acl\_message\_New (void)**

Definition at line 52 of file fipa\_acl.c.

Referenced by acc\_Thread(), fipa\_acl\_message\_Copy(), fipa\_Reply(), and MC\_AclNew().

**13.33.3.5 int fipa\_acl\_Parse (struct fipa\_acl\_message\_s \* acl, fipa\_message\_string\_p message)****13.33.3.6 int fipa\_agent\_identifier\_Compose (dynstring\_t \* msg, fipa\_agent\_identifier\_t \* id)**

Definition at line 1355 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().

**13.33.3.7 fipa\_agent\_identifier\_t\* fipa\_agent\_identifier\_Copy (fipa\_agent\_identifier\_t \* src)**

Definition at line 229 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, and fipa\_agent\_identifier\_s::resolvers.

Referenced by fipa\_acl\_message\_Copy(), fipa\_acl\_Param\_Copy(), fipa\_agent\_identifier\_set\_Copy(), and fipa\_Reply().

**13.33.3.8 int fipa\_agent\_identifier\_Destroy (fipa\_agent\_identifier\_t \* id)**

Definition at line 217 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().

**13.33.3.9 fipa\_agent\_identifier\_t\* fipa\_agent\_identifier\_New (void)**

Definition at line 209 of file fipa\_acl.c.

Referenced by fipa\_agent\_identifier\_Copy(), fipa\_envelope\_ParseAgentIdentifier(), MC\_AclAddReceiver(), MC\_AclAddReplyTo(), and MC\_AclSetSender().

**13.33.3.10 int fipa\_agent\_identifier\_Parse (fipa\_agent\_identifier\_p \* aid, fipa\_message\_string\_p message)**

Definition at line 985 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().

**13.33.3.11 int fipa\_agent\_identifier\_set\_Compose (dynstring\_t \* msg, fipa\_agent\_identifier\_set\_t \* ids)**

Definition at line 1342 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().

**13.33.3.12 fipa\_agent\_identifier\_set\_t\* fipa\_agent\_identifier\_set\_Copy (fipa\_agent\_identifier\_set\_t \* src)**

Definition at line 188 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().

**13.33.3.13 int fipa\_agent\_identifier\_set\_Destroy (fipa\_agent\_identifier\_set\_t \* idset)**

Definition at line 176 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()`.

#### 13.33.3.14 `fipa_agent_identifier_set_t* fipa_agent_identifier_set_New (void)`

Definition at line 168 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()`.

#### 13.33.3.15 `int fipa_agent_identifier_set_Parse (fipa_agent_identifier_set_p * agent_ids, fipa_message_string_p message)`

Definition at line 1144 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()`.

#### 13.33.3.16 `int fipa_CheckNextToken (const fipa_message_string_p message, const char * token)`

Definition at line 647 of file `fipa_acl.c`.

References `fipa_message_string_s::parse`.

Referenced by `fipa_expression_Parse()`.

#### 13.33.3.17 `int fipa_DateTime_Compose (dynstring_t * msg, fipa_DateTime_t * date)`

Definition at line 1428 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()`.

#### 13.33.3.18 `fipa_DateTime_t* fipa_DateTime_Copy (fipa_DateTime_t * src)`

Definition at line 392 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()`.

#### 13.33.3.19 `int fipa_DateTime_Destroy (fipa_DateTime_t * dt)`

Definition at line 385 of file `fipa_acl.c`.

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

**13.33.3.20 fipa\_DateTime\_t\* fipa\_DateTime\_New (void)**

Definition at line 377 of file fipa\_acl.c.

Referenced by fipa\_DateTime\_Copy().

**13.33.3.21 int fipa\_datetime\_Parse (fipa\_DateTime\_p \* *datetime*, fipa\_message\_string\_p *message*)**

Definition at line 802 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().

**13.33.3.22 int fipa\_expression\_Compose (dynstring\_t \* *msg*, fipa\_expression\_t \* *expr*)**

Definition at line 1381 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().

**13.33.3.23 fipa\_expression\_t\* fipa\_expression\_Copy (fipa\_expression\_t \* *src*)**

Definition at line 280 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(), and fipa\_expression\_Copy().

**13.33.3.24 int fipa\_expression\_Destroy (fipa\_expression\_t \* *expr*)**

Definition at line 249 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().

**13.33.3.25 fipa\_expression\_t\* fipa\_expression\_New (void)**

Definition at line 241 of file fipa\_acl.c.

Referenced by fipa\_expression\_Copy().

**13.33.3.26 int fipa\_expression\_Parse (fipa\_expression\_t \*\* *expression*, fipa\_message\_string\_p *message*)**

Definition at line 666 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().

**13.33.3.27 int fipa\_GetAtom (fipa\_message\_string\_p *message*, char *expected\_atom*)**

Definition at line 582 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().

**13.33.3.28 int fipa\_GetNextWord (char \*\* *word*, const fipa\_message\_string\_p *message*)**

Definition at line 717 of file fipa\_acl.c.

References ERR, MC\_SUCCESS, and fipa\_message\_string\_s::parse.

**13.33.3.29 int fipa\_GetWholeToken (char \*\* *word*, const fipa\_message\_string\_p *message*)**

Definition at line 765 of file fipa\_acl.c.

References MC\_SUCCESS, and fipa\_message\_string\_s::parse.

Referenced by fipa\_datetime\_Parse().

**13.33.3.30 int fipa\_message\_parameter\_Parse (struct fipa\_acl\_message\_s \* *acl*, fipa\_message\_string\_p *message*)****13.33.3.31 fipa\_message\_string\_t\* fipa\_message\_string\_Copy (fipa\_message\_string\_t \* *src*)**

Definition at line 122 of file fipa\_acl.c.

References fipa\_message\_string\_s::message, and fipa\_message\_string\_s::parse.

**13.33.3.32 int fipa\_message\_string\_Destroy (fipa\_message\_string\_t \* *message*)**

Definition at line 112 of file fipa\_acl.c.

References fipa\_message\_string\_s::message.

Referenced by `acc_Thread()`.

#### 13.33.3.33 `fipa_message_string_t* fipa_message_string_New (void)`

Definition at line 104 of file `fipa_acl.c`.

Referenced by `acc_Thread()`.

#### 13.33.3.34 `int fipa_message_type_Parse (enum fipa_performative_e * performative, fipa_message_string_p message)`

Definition at line 520 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()`.

#### 13.33.3.35 `int fipa_number_Compose (dynstring_t * msg, fipa_number_t * number)`

Definition at line 1456 of file `fipa_acl.c`.

References `dynstring_Append()`, and `fipa_number_s::str`.

Referenced by `fipa_expression_Compose()`.

#### 13.33.3.36 `fipa_number_t* fipa_number_Copy (fipa_number_t * src)`

Definition at line 448 of file `fipa_acl.c`.

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

Referenced by `fipa_expression_Copy()`.

#### 13.33.3.37 `int fipa_number_Destroy (fipa_number_t * number)`

Definition at line 438 of file `fipa_acl.c`.

References `fipa_number_s::str`.

Referenced by `fipa_expression_Destroy()`.

#### 13.33.3.38 `fipa_number_t* fipa_number_New (void)`

Definition at line 430 of file `fipa_acl.c`.

Referenced by `fipa_number_Copy()`.

**13.33.3.39 int fipa\_performative\_Compose (dynstring\_t \* msg, enum fipa\_performative\_e performative)**

Definition at line 1254 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().

**13.33.3.40 struct fipa\_acl\_message\_s\* fipa\_Reply (struct fipa\_acl\_message\_s \* acl) [read]**

Definition at line 1464 of file fipa\_acl.c.

References 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\_agent\_identifier\_set\_s::num, 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().

**13.33.3.41 int fipa\_string\_Compose (dynstring\_t \* msg, fipa\_string\_t \* string)**

Definition at line 1419 of file fipa\_acl.c.

References fipa\_string\_s::content, and dynstring\_Append().

Referenced by fipa\_acl\_Compose(), and fipa\_expression\_Compose().

**13.33.3.42 fipa\_string\_t\* fipa\_string\_Copy (fipa\_string\_t \* src)**

Definition at line 367 of file fipa\_acl.c.

References fipa\_string\_s::content, and fipa\_string\_New().

Referenced by fipa\_acl\_message\_Copy(), and fipa\_expression\_Copy().

**13.33.3.43 int fipa\_string\_Destroy (fipa\_string\_t \* str)**

Definition at line 357 of file fipa\_acl.c.

References fipa\_string\_s::content.

Referenced by fipa\_acl\_message\_Destroy(), fipa\_expression\_Destroy(), and MC\_AclSetContent().

**13.33.3.44 fipa\_string\_t\* fipa\_string\_New (void)**

Definition at line 349 of file fipa\_acl.c.

Referenced by fipa\_string\_Copy(), and MC\_AclSetContent().

**13.33.3.45 int fipa\_string\_Parse (fipa\_string\_p \* *fipa\_string*, fipa\_message\_string\_p *message*)**

Definition at line 940 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().

**13.33.3.46 int fipa\_url\_Compose (dynstring\_t \* *msg*, fipa\_url\_t \* *url*)**

Definition at line 1448 of file fipa\_acl.c.

References dynstring\_Append(), and fipa\_url\_s::str.

Referenced by fipa\_url\_sequence\_Compose().

**13.33.3.47 fipa\_url\_t\* fipa\_url\_Copy (fipa\_url\_t \* *src*)**

Definition at line 420 of file fipa\_acl.c.

References fipa\_url\_New(), and fipa\_url\_s::str.

Referenced by fipa\_acl\_envelope\_Received\_Copy(), and fipa\_url\_sequence\_Copy().

**13.33.3.48 int fipa\_url\_Destroy (fipa\_url\_t \* *url*)**

Definition at line 410 of file fipa\_acl.c.

References fipa\_url\_s::str.

Referenced by fipa\_acl\_envelope\_Received\_Destroy(), and fipa\_url\_sequence\_Destroy().

**13.33.3.49 fipa\_url\_t\* fipa\_url\_New (void)**

Definition at line 402 of file fipa\_acl.c.

Referenced by fipa\_envelope\_HandleReceived(), fipa\_envelope\_ParseAddresses(), fipa\_url\_Copy(), MC\_AclAddReceiver(), MC\_AclAddReplyTo(), and MC\_AclSetSender().

**13.33.3.50 int fipa\_url\_Parse (fipa\_url\_p \* *url*, fipa\_message\_string\_p *message*)**

Definition at line 1124 of file fipa\_acl.c.

References fipa\_word\_s::content, fipa\_word\_Destroy(), and fipa\_word\_Parse().

Referenced by fipa\_url\_sequence\_Parse().

**13.33.3.51 int fipa\_url\_sequence\_Compose (dynstring\_t \* *msg*, fipa\_url\_sequence\_t \* *urls*)**

Definition at line 1329 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().

**13.33.3.52 fipa\_url\_sequence\_t\* fipa\_url\_sequence\_Copy (fipa\_url\_sequence\_t \* src)**

Definition at line 152 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().

**13.33.3.53 int fipa\_url\_sequence\_Destroy (fipa\_url\_sequence\_t \* sequence)**

Definition at line 140 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().

**13.33.3.54 fipa\_url\_sequence\_t\* fipa\_url\_sequence\_New (void)**

Definition at line 132 of file fipa\_acl.c.

Referenced by fipa\_url\_sequence\_Copy(), fipa\_url\_sequence\_Parse(), MC\_AclAddReceiver(), MC\_AclAddReplyTo(), and MC\_AclSetSender().

**13.33.3.55 int fipa\_url\_sequence\_Parse (fipa\_url\_sequence\_p \* urls, fipa\_message\_string\_p message)**

Definition at line 1092 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().

**13.33.3.56 int fipa\_word\_Compose (dynstring\_t \* msg, fipa\_word\_t \* word)**

Definition at line 1411 of file fipa\_acl.c.

References fipa\_word\_s::content, and dynstring\_Append().

Referenced by fipa\_acl\_Compose(), and fipa\_expression\_Compose().

**13.33.3.57 fipa\_word\_t\* fipa\_word\_Copy (fipa\_word\_t \* src)**

Definition at line 339 of file fipa\_acl.c.

References fipa\_word\_s::content, and fipa\_word\_New().

Referenced by fipa\_acl\_message\_Copy(), and fipa\_expression\_Copy().

**13.33.3.58 int fipa\_word\_Destroy (fipa\_word\_t \* word)**

Definition at line 329 of file fipa\_acl.c.

References fipa\_word\_s::content.

Referenced by `fipa_acl_message_Destroy()`, `fipa_agent_identifier_Parse()`, `fipa_expression_Destroy()`, `fipa_message_parameter_Parse()`, `fipa_message_type_Parse()`, `fipa_url_Parse()`, and `fipa_url_sequence_Parse()`.

#### **13.33.3.59** `fipa_word_t*` `fipa_word_New` (`void`)

Definition at line 321 of file `fipa_acl.c`.

Referenced by `fipa_word_Copy()`.

#### **13.33.3.60** `int` `fipa_word_Parse` (`fipa_word_t**` *word*, `fipa_message_string_p` *message*)

Definition at line 605 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_url_Parse()`, and `fipa_url_sequence_Parse()`.



## 13.34 /home/dko/projects/mobilec/trunk/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)

### 13.34.1 Typedef Documentation

#### 13.34.1.1 `typedef fipa_acl_envelope_t* fipa_acl_envelope_p`

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

#### 13.34.1.2 `typedef struct fipa_acl_envelope_Received_s fipa_acl_envelope_Received_t`

#### 13.34.1.3 `typedef struct fipa_acl_envelope_s fipa_acl_envelope_t`

#### 13.34.1.4 `typedef struct fipa_acl_Param_s fipa_acl_Param_t`

### 13.34.2 Function Documentation

#### 13.34.2.1 `fipa_acl_envelope_t* fipa_acl_envelope_Copy (fipa_acl_envelope_t * envelope)`

Definition at line 145 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`.

#### 13.34.2.2 `int fipa_acl_envelope_Destroy (fipa_acl_envelope_t * envelope)`

Definition at line 132 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_Thread()`.

### 13.34.2.3 fipa\_acl\_envelope\_t\* fipa\_acl\_envelope\_New (void)

Definition at line 124 of file fipa\_envelope.c.

Referenced by acc\_Thread(), and fipa\_acl\_envelope\_Copy().

### 13.34.2.4 fipa\_acl\_envelope\_Received\_t\* fipa\_acl\_envelope\_Received\_Copy (fipa\_acl\_envelope\_Received\_t \* *received*)

Definition at line 64 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, and fipa\_acl\_envelope\_Received\_s::received\_via.

Referenced by fipa\_acl\_Param\_Copy().

### 13.34.2.5 int fipa\_acl\_envelope\_Received\_Destroy (fipa\_acl\_envelope\_Received\_t \* *received*)

Definition at line 52 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().

### 13.34.2.6 fipa\_acl\_envelope\_Received\_t\* fipa\_acl\_envelope\_Received\_New (void)

Definition at line 43 of file fipa\_envelope.c.

Referenced by fipa\_acl\_envelope\_Received\_Copy(), and fipa\_envelope\_HandleReceived().

### 13.34.2.7 fipa\_acl\_Param\_t\* fipa\_acl\_Param\_Copy (fipa\_acl\_Param\_t \* *param*)

Definition at line 105 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, and fipa\_acl\_Param\_s::to.

Referenced by fipa\_acl\_envelope\_Copy().

### 13.34.2.8 int fipa\_acl\_Param\_Destroy (fipa\_acl\_Param\_t \* *param*)

Definition at line 88 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()`.

#### 13.34.2.9 `fipa_acl_Param_t* fipa_acl_Param_New (void)`

Definition at line 80 of file `fipa_envelope.c`.

Referenced by `fipa_acl_Param_Copy()`, and `fipa_envelope_HandleTo()`.

#### 13.34.2.10 `char* fipa_envelope_Compose (fipa_acl_message_t * fipa_acl)`

Definition at line 864 of file `fipa_envelope.c`.

References `fipa_envelope_Compose__envelope()`, `MXML_ADD_AFTER`, `MXML_ADD_TO_PARENT`, `MXML_NO_CALLBACK`, `mxmAdd()`, `mxmDelete()`, `mxmLoadString()`, `mxmSaveAllocString()`, and `node`.

Referenced by `MC_AclSend()`.

#### 13.34.2.11 `mxml_node_t* fipa_envelope_Compose__acl_representation (fipa_acl_message_t * fipa_acl)`

Definition at line 1081 of file `fipa_envelope.c`.

References `mxmNewElement()`, `mxmNewText()`, and `node`.

Referenced by `fipa_envelope_Compose__params()`.

#### 13.34.2.12 `mxml_node_t* fipa_envelope_Compose__date (fipa_acl_message_t * fipa_acl)`

Definition at line 1109 of file `fipa_envelope.c`.

References `buf`, `mxmNewElement()`, `mxmNewText()`, and `node`.

Referenced by `fipa_envelope_Compose__params()`.

#### 13.34.2.13 `mxml_node_t* fipa_envelope_Compose__envelope (fipa_acl_message_t * fipa_acl)`

Definition at line 889 of file `fipa_envelope.c`.

References `fipa_envelope_Compose__params()`, `MXML_ADD_AFTER`, `MXML_ADD_TO_PARENT`, `mxmAdd()`, `mxmNewElement()`, and `node`.

Referenced by `fipa_envelope_Compose()`.

#### 13.34.2.14 `mxml_node_t* fipa_envelope_Compose__from (fipa_acl_message_t * fipa_acl)`

Definition at line 1016 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`, `mxmNewElement()`, `mxmNewText()`, `fipa_agent_identifier_s::name`, `fipa_url_sequence_s::num`, `mc_platform_s::port`, and `fipa_acl_message_s::sender`.

Referenced by `fipa_envelope_Compose__params()`.

**13.34.2.15 mxml\_node\_t\* fipa\_envelope\_Compose\_\_intended\_receiver (fipa\_acl\_message\_t \* *fipa\_acl*)**

Definition at line 1138 of file fipa\_envelope.c.

References fipa\_agent\_identifier\_s::addresses, fipa\_agent\_identifier\_set\_s::fipa\_agent\_identifiers, mxml-NewElement(), mxmlNewText(), fipa\_agent\_identifier\_s::name, node, fipa\_url\_sequence\_s::num, fipa\_acl\_message\_s::receiver, fipa\_url\_s::str, and fipa\_url\_sequence\_s::urls.

Referenced by fipa\_envelope\_Compose\_\_params().

**13.34.2.16 mxml\_node\_t\* fipa\_envelope\_Compose\_\_params (fipa\_acl\_message\_t \* *fipa\_acl*)**

Definition at line 909 of file fipa\_envelope.c.

References fipa\_envelope\_Compose\_\_acl\_representation(), fipa\_envelope\_Compose\_\_date(), fipa\_envelope\_Compose\_\_from(), fipa\_envelope\_Compose\_\_intended\_receiver(), fipa\_envelope\_Compose\_\_payload\_encoding(), fipa\_envelope\_Compose\_\_to(), MXML\_ADD\_AFTER, MXML\_ADD\_TO\_PARENT, mxmlAdd(), mxmlElementSetAttr(), mxmlNewElement(), and node.

Referenced by fipa\_envelope\_Compose\_\_envelope().

**13.34.2.17 mxml\_node\_t\* fipa\_envelope\_Compose\_\_payload\_encoding (fipa\_acl\_message\_t \* *fipa\_acl*)**

Definition at line 1095 of file fipa\_envelope.c.

References mxmlNewElement(), mxmlNewText(), and node.

Referenced by fipa\_envelope\_Compose\_\_params().

**13.34.2.18 mxml\_node\_t\* fipa\_envelope\_Compose\_\_to (fipa\_acl\_message\_t \* *fipa\_acl*)**

Definition at line 970 of file fipa\_envelope.c.

References fipa\_agent\_identifier\_s::addresses, fipa\_agent\_identifier\_set\_s::fipa\_agent\_identifiers, mxml-NewElement(), mxmlNewText(), fipa\_agent\_identifier\_s::name, node, fipa\_url\_sequence\_s::num, fipa\_agent\_identifier\_set\_s::num, fipa\_acl\_message\_s::receiver, fipa\_url\_s::str, and fipa\_url\_sequence\_s::urls.

Referenced by fipa\_envelope\_Compose\_\_params().

**13.34.2.19 int fipa\_envelope\_HandleAclRepresentation (struct fipa\_acl\_envelope\_s \* *envelope*, mxml\_node\_t \* *param\_node*, int *cur\_param*)**

Definition at line 376 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().

**13.34.2.20 int fipa\_envelope\_HandleComments (struct fipa\_acl\_envelope\_s \* *envelope*, mxml\_node\_t \* *param\_node*, int *cur\_param*)**

Definition at line 352 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().

**13.34.2.21 int fipa\_envelope\_HandleDate (struct fipa\_acl\_envelope\_s \* *envelope*, mxml\_node\_t \* *param\_node*, int *cur\_param*)**

Definition at line 447 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().

**13.34.2.22 int fipa\_envelope\_HandleEnvelope (struct fipa\_acl\_envelope\_s \* *envelope*, mxml\_node\_t \* *node*)**

Definition at line 173 of file fipa\_envelope.c.

References fipa\_envelope\_HandleParams(), MC\_ERR\_PARSE, MXML\_DESCEND\_FIRST, and mxmlFindElement().

Referenced by fipa\_envelope\_Parse().

**13.34.2.23 int fipa\_envelope\_HandleFrom (struct fipa\_acl\_envelope\_s \* *envelope*, mxml\_node\_t \* *param\_node*, int *cur\_param*)**

Definition at line 323 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().

**13.34.2.24 int fipa\_envelope\_HandleIntendedReceiver (struct fipa\_acl\_envelope\_s \* *envelope*, mxml\_node\_t \* *param\_node*, int *cur\_param*)**

Definition at line 477 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().

**13.34.2.25 int fipa\_envelope\_HandleParams (struct fipa\_acl\_envelope\_s \* *envelope*, mxml\_node\_t \* *node*)**

Definition at line 193 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().

**13.34.2.26 int fipa\_envelope\_HandlePayloadEncoding (struct fipa\_acl\_envelope\_s \* *envelope*, mxml\_node\_t \* *param\_node*, int *cur\_param*)**

Definition at line 423 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().

**13.34.2.27 int fipa\_envelope\_HandlePayloadLength (struct fipa\_acl\_envelope\_s \* *envelope*, mxml\_node\_t \* *param\_node*, int *cur\_param*)**

Definition at line 400 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().

**13.34.2.28 int fipa\_envelope\_HandleReceived (struct fipa\_acl\_envelope\_s \* *envelope*, mxml\_node\_t \* *param\_node*, int *cur\_param*)**

Definition at line 555 of file fipa\_envelope.c.

References fipa\_acl\_envelope\_Received\_New(), fipa\_datetime\_Parse(), fipa\_url\_New(), MC\_ERR\_PARSE, fipa\_message\_string\_s::message, MXML\_DESCEND\_FIRST, mxmlElementGetAttr(), mxmlFindElement(), node, fipa\_acl\_envelope\_s::params, fipa\_message\_string\_s::parse, fipa\_acl\_Param\_s::received, fipa\_acl\_envelope\_Received\_s::received\_by, fipa\_acl\_envelope\_Received\_s::received\_date, fipa\_acl\_envelope\_Received\_s::received\_from, fipa\_acl\_envelope\_Received\_s::received\_id, fipa\_acl\_envelope\_Received\_s::received\_via, and fipa\_url\_s::str.

Referenced by fipa\_envelope\_HandleParams().

**13.34.2.29 int fipa\_envelope\_HandleTo (struct fipa\_acl\_envelope\_s \* *envelope*, mxml\_node\_t \* *param\_node*, int *cur\_param*)**

Definition at line 245 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().

#### **13.34.2.30 int fipa\_envelope\_Parse (struct fipa\_acl\_envelope\_s \* *envelope*, const char \* *message*)**

Definition at line 160 of file fipa\_envelope.c.

References fipa\_envelope\_HandleEnvelope(), MXML\_NO\_CALLBACK, mxmlDelete(), and mxmlLoadString().

Referenced by acc\_Thread().

#### **13.34.2.31 int fipa\_envelope\_ParseAddresses (struct fipa\_agent\_identifier\_s \* *aid*, mxml\_node\_t \* *addresses\_node*)**

Definition at line 732 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().

#### **13.34.2.32 int fipa\_envelope\_ParseAgentIdentifier (struct fipa\_agent\_identifier\_s \*\* *aid*, mxml\_node\_t \* *agent\_identifier\_node*)**

Definition at line 682 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().

#### **13.34.2.33 int fipa\_envelope\_ParseResolvers (struct fipa\_agent\_identifier\_s \* *aid*, mxml\_node\_t \* *resolvers\_node*)**

Definition at line 799 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().



## 13.35 /home/dko/projects/mobilec/trunk/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)

#### 13.35.1 Typedef Documentation

##### 13.35.1.1 typedef [host\\_id\\_t](#)\* [host\\_id\\_p](#)

Definition at line 43 of file [host\\_id.h](#).

##### 13.35.1.2 typedef struct [host\\_id\\_s](#) [host\\_id\\_t](#)

#### 13.35.2 Function Documentation

##### 13.35.2.1 [int](#) [host\\_id\\_Compare](#) ([host\\_id\\_p](#) *host1*, [host\\_id\\_p](#) *host2*)

##### 13.35.2.2 void [host\\_id\\_Destroy](#) ([host\\_id\\_p](#) *host\_id*)

##### 13.35.2.3 [host\\_id\\_p](#) [host\\_id\\_Initialize](#) (const char \* *hostname*, [int](#) *port*)

## 13.36 /home/dko/projects/mobilec/trunk/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)

### 13.36.1 Typedef Documentation

#### 13.36.1.1 typedef [interpreter\\_variable\\_data\\_t](#)\* [interpreter\\_variable\\_data\\_p](#)

Definition at line 51 of file [interpreter\\_variable\\_data.h](#).

#### 13.36.1.2 typedef struct [interpreter\\_variable\\_data\\_s](#) [interpreter\\_variable\\_data\\_t](#)

Definition at line 50 of file [interpreter\\_variable\\_data.h](#).

### 13.36.2 Function Documentation

#### 13.36.2.1 [interpreter\\_variable\\_data\\_p](#) [interpreter\\_variable\\_data\\_Copy](#) ([interpreter\\_variable\\_data\\_p](#) src)

Definition at line 229 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](#), and [interpreter\\_variable\\_data\\_s::size](#).

**13.36.2.2 int interpreter\_variable\_data\_Destroy (interpreter\_variable\_data\_p agent\_return\_data)**

Definition at line 210 of file agent\_return\_data.c.

References interpreter\_variable\_data\_s::array\_extent, interpreter\_variable\_data\_s::data, MC\_SUCCESS, and interpreter\_variable\_data\_s::name.

Referenced by agent\_RunChScriptThread(), and agent\_task\_Destroy().

**13.36.2.3 interpreter\_variable\_data\_p interpreter\_variable\_data\_Initialize (struct agent\_s \* agent, const char \* varname)**

**13.36.2.4 interpreter\_variable\_data\_p interpreter\_variable\_data\_InitializeFromAgent (struct agent\_s \* agent)**

**13.36.2.5 interpreter\_variable\_data\_p interpreter\_variable\_data\_New (void)**

Definition at line 40 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().

## 13.37 /home/dko/projects/mobilec/trunk/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.*

### Defines

- #define [EXPORTMC](#)
- #define [MC\\_Wait](#)(arg1) MC\_MainLoop(arg1)

### Typedefs

- typedef enum [error\\_code\\_e](#) [error\\_code\\_t](#)
- typedef enum [MC\\_SteerCommand\\_e](#) [MC\\_SteerCommand\\_t](#)  
*Available commands for MC\_Steer.*
- typedef struct [agency\\_s](#) [agency\\_t](#)  
*The agency handle.*
- typedef [agency\\_t](#) \* [agency\\_p](#)
- typedef [agency\\_p](#) [MCAgency\\_t](#)
- typedef struct [MCAgencyOptions\\_s](#) [MCAgencyOptions\\_t](#)  
*User modifiable agency options.*
- typedef struct [agent\\_s](#) [agent\\_t](#)
- typedef [agent\\_t](#) \* [MCAgent\\_t](#)
- typedef [agent\\_t](#) \* [agent\\_p](#)

### Enumerations

- enum [error\\_code\\_e](#) {  
    [MC\\_SUCCESS](#) = 0, [MC\\_ERR](#), [MC\\_ERR\\_CONNECT](#), [MC\\_ERR\\_PARSE](#),  
    [MC\\_ERR\\_EMPTY](#), [MC\\_ERR\\_INVALID](#), [MC\\_ERR\\_INVALID\\_ARGS](#), [MC\\_ERR\\_NOT\\_FOUND](#),  
    [MC\\_ERR\\_MEMORY](#), [MC\\_ERR\\_SEND](#), [MC\\_WARN\\_DUPLICATE](#), [MC\\_SUCCESS](#) = 0,  
    [ERR](#), [MC\\_ERR\\_CONNECT](#), [MC\\_ERR\\_PARSE](#), [MC\\_ERR\\_EMPTY](#),  
}

MC\_ERR\_INVALID, MC\_ERR\_INVALID\_ARGS, MC\_ERR\_NOT\_FOUND, MC\_ERR\_MEMORY,

MC\_ERR\_SEND, MC\_WARN\_DUPLICATE }

- enum MC\_ThreadIndex\_e {

MC\_THREAD\_DF = 0, MC\_THREAD\_AMS, MC\_THREAD\_ACC, MC\_THREAD\_CP,  
MC\_THREAD\_AGENT, MC\_THREAD\_ALL }

*MobileC Module indices.*

- enum MC\_SteerCommand\_e { MC\_RUN = 0, MC\_SUSPEND, MC\_RESTART, MC\_STOP }

*Available commands for MC\_Steer.*

- enum MC\_Signal\_e {

MC\_NO\_SIGNAL = 0x00, MC\_RECV\_CONNECTION = 0x01, MC\_RECV\_MESSAGE = 0x02,  
MC\_RECV\_AGENT = 0x04,

MC\_RECV\_RETURN = 0x08, MC\_EXEC\_AGENT = 0x10, MC\_ALL\_SIGNALS = 0x20 }

*MobileC system signals.*

- enum MC\_AgentType\_e { MC\_NONE = -1, MC\_REMOTE\_AGENT = 0, MC\_LOCAL\_AGENT,  
MC\_RETURN\_AGENT }

- enum MC\_AgentStatus\_e {

MC\_NO\_STATUS = -1, MC\_WAIT\_CH = 0, MC\_WAIT\_MESSGSEND, MC\_AGENT\_ACTIVE,  
MC\_AGENT\_NEUTRAL, MC\_AGENT\_SUSPENDED, MC\_WAIT\_FINISHED }

*An agent's current execution state.*

- enum fipa\_performative\_e {

FIPA\_ERROR = -1, FIPA\_ZERO, FIPA\_ACCEPT\_PROPOSAL, FIPA\_AGREE,  
FIPA\_CANCEL, FIPA\_CALL\_FOR\_PROPOSAL, FIPA\_CONFIRM, FIPA\_DISCONFIRM,  
FIPA\_FAILURE, FIPA\_INFORM, FIPA\_INFORM\_IF, FIPA\_INFORM\_REF,  
FIPA\_NOT\_UNDERSTOOD, FIPA\_PROPOGATE, FIPA\_PROPOSE, FIPA\_PROXY,  
FIPA\_QUERY\_IF, FIPA\_QUERY\_REF, FIPA\_REFUSE, FIPA\_REJECT\_PROPOSAL,  
FIPA\_REQUEST, FIPA\_REQUEST\_WHEN, FIPA\_REQUEST\_WHENEVER, FIPA\_-  
SUBSCRIBE,

FIPA\_ERROR = -1, FIPA\_ZERO, FIPA\_ACCEPT\_PROPOSAL, FIPA\_AGREE,  
FIPA\_CANCEL, FIPA\_CALL\_FOR\_PROPOSAL, FIPA\_CONFIRM, FIPA\_DISCONFIRM,  
FIPA\_FAILURE, FIPA\_INFORM, FIPA\_INFORM\_IF, FIPA\_INFORM\_REF,  
FIPA\_NOT\_UNDERSTOOD, FIPA\_PROPOGATE, FIPA\_PROPOSE, FIPA\_PROXY,  
FIPA\_QUERY\_IF, FIPA\_QUERY\_REF, FIPA\_REFUSE, FIPA\_REJECT\_PROPOSAL,  
FIPA\_REQUEST, FIPA\_REQUEST\_WHEN, FIPA\_REQUEST\_WHENEVER, FIPA\_-  
SUBSCRIBE }

## Functions

- EXPORTMC int MC\_AclDestroy (struct fipa\_acl\_message\_s \*message)

*Destroy a FIPA ACL message.*

- EXPORTMC struct [fipa\\_acl\\_message\\_s](#) \* [MC\\_AclNew](#) (void)  
*Allocate a new ACL Message.*
- EXPORTMC int [MC\\_AclPost](#) ([MCAgent\\_t](#) agent, struct [fipa\\_acl\\_message\\_s](#) \*message)  
*Post ACL message to agent.*
- EXPORTMC struct [fipa\\_acl\\_message\\_s](#) \* [MC\\_AclReply](#) (struct [fipa\\_acl\\_message\\_s](#) \*acl\_message)  
*Reply to an ACL message.*
- EXPORTMC struct [fipa\\_acl\\_message\\_s](#) \* [MC\\_AclRetrieve](#) ([MCAgent\\_t](#) agent)  
*Retrieve an ACL message.*
- EXPORTMC int [MC\\_AclSend](#) ([MCAgency\\_t](#) attr, struct [fipa\\_acl\\_message\\_s](#) \*acl)  
*Send a composed ACL Message.*
- EXPORTMC struct [fipa\\_acl\\_message\\_s](#) \* [MC\\_AclWaitRetrieve](#) ([MCAgent\\_t](#) agent)  
*Wait for and retrieve an ACL message.*
- EXPORTMC 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'.*
- const void \* [MC\\_AgentVariableRetrieve](#) ([MCAgent\\_t](#) agent, const char \*var\_name, int task\_num)  
*Retrieve a pointer to a previously saved variable.*
- int [MC\\_AgentVariableSave](#) ([MCAgent\\_t](#) agent, const char \*var\_name)  
*Mark an agent variable for saving.*
- EXPORTMC int [MC\\_BarrierDelete](#) ([MCAgency\\_t](#) attr, int id)  
*Find and delete an initialized MobileC Barrier.*
- EXPORTMC int [MC\\_BarrierInit](#) ([MCAgency\\_t](#) attr, int id, int num\_procs)  
*Initialize a MobileC Barrier.*
- EXPORTMC int [MC\\_ChInitializeOptions](#) ([MCAgency\\_t](#) attr, [ChOptions\\_t](#) \*options)  
*Use custom ChOptions\_t type for internal Ch interpreter.*
- EXPORTMC int [MC\\_CallAgentFunc](#) ([MCAgent\\_t](#) agent, const char \*funcName, void \*returnVal, int numArgs,...)  
*Calls a function defined in an agent.*

- EXPORTMC [int MC\\_CallAgentFuncArg](#) ([MCAgent\\_t](#) agent, const char \*funcName, void \*returnVal, void \*arg)  
*Calls a function defined in an agent.*
- EXPORTMC [int MC\\_CallAgentFuncV](#) ([MCAgent\\_t](#) agent, const char \*funcName, void \*returnVal, va\_list ap)  
*Calls a function defined in an agent.*
- EXPORTMC [int MC\\_CallAgentFuncVar](#) ([MCAgent\\_t](#) agent, const char \*funcName, void \*returnVal, ChVaList\_t arglist)
- [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 [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\\_End](#) ([MCAgency\\_t](#) attr)  
*End an agency.*
- [int MC\\_DestroyServiceSearchResult](#) (char \*\*agentName, char \*\*serviceName, [int](#) \*agentID, [int](#) numResult)  
*Free memory allocated by a Service Search operation.*
- EXPORTMC [MCAgent\\_t MC\\_FindAgentByName](#) ([MCAgency\\_t](#) attr, const char \*name)  
*Find an agent by its name.*
- EXPORTMC [MCAgent\\_t MC\\_FindAgentByID](#) ([MCAgency\\_t](#) attr, [int](#) ID)  
*Find an agent by its id.*
- EXPORTMC void \* [MC\\_GetAgentExecEngine](#) ([MCAgent\\_t](#) agent)  
*Retrieve an agent's Ch interpreter.*
- EXPORTMC [int MC\\_GetAgentID](#) ([MCAgent\\_t](#) agent)  
*Retrieve an agent's id.*

- EXPORTMC char \* [MC\\_GetAgentName](#) ([MCAgent\\_t](#) agent)
- EXPORTMC int [MC\\_GetAgentNumTasks](#) ([MCAgent\\_t](#) agent)  
*Retrive the number of tasks an agent has.*
- EXPORTMC int [MC\\_GetAgentReturnData](#) ([MCAgent\\_t](#) agent, int task\_num, void \*\*data, int \*dim, int \*\*extent)  
*Get an agent's return data.*
- EXPORTMC int [MC\\_GetAgentStatus](#) ([MCAgent\\_t](#) agent)  
*Get an agent's current status.*
- EXPORTMC enum [MC\\_AgentType\\_e](#) [MC\\_GetAgentType](#) ([MCAgent\\_t](#) agent)  
*Get an agent's type.*
- EXPORTMC char \* [MC\\_GetAgentXMLString](#) ([MCAgent\\_t](#) agent)  
*Get an agent's xml string.*
- EXPORTMC int [MC\\_HaltAgency](#) ([MCAgency\\_t](#) agency)  
*Halt an agency: Do not process new entries in queues.*
- EXPORTMC [MCAgency\\_t](#) [MC\\_Initialize](#) (int port, [MCAgencyOptions\\_t](#) \*options)  
*Initialize and start a MobileC agency.*
- EXPORTMC int [MC\\_InitializeAgencyOptions](#) (struct [MCAgencyOptions\\_s](#) \*options)  
*Initialize MobileC options.*
- EXPORTMC int [MC\\_MainLoop](#) ([MCAgency\\_t](#) attr)  
*Wait indefinitely.*
- EXPORTMC int [MC\\_LoadAgentFromFile](#) ([MCAgency\\_t](#) attr, const char \*filename)  
*Load an agent from a file into an agency.*
- EXPORTMC int [MC\\_MutexLock](#) ([MCAgency\\_t](#) attr, int id)  
*Locks a MobileC synchronization variable as a mutex.*
- EXPORTMC int [MC\\_MutexUnlock](#) ([MCAgency\\_t](#) attr, int id)
- EXPORTMC int [MC\\_RegisterService](#) ([MCAgency\\_t](#) agency, [MCAgent\\_t](#) agent, int agentID, const char \*agentName, char \*\*serviceNames, int numServices)  
*Register a new service with the Directory Facilitator.*
- EXPORTMC int [MC\\_ResumeAgency](#) ([MCAgency\\_t](#) agency)  
*Resumes a halted agency.*
- EXPORTMC [MCAgent\\_t](#) [MC\\_RetrieveAgent](#) ([MCAgency\\_t](#) attr)  
*Retrieves the oldest agent from an agency.*
- EXPORTMC int [MC\\_SemaphorePost](#) ([MCAgency\\_t](#) attr, int id)  
*Post to a MobileC synchronization variable semaphore.*



- EXPORTMC [int MC\\_SemaphoreWait](#) ([MCAgency\\_t](#) attr, [int](#) id)  
*Decreases a MobileC synchronization variable semaphore count by one.*
- EXPORTMC [int MC\\_SetDefaultAgentStatus](#) ([MCAgency\\_t](#) agency, enum [MC\\_AgentStatus\\_e](#) status)  
*Sets default incoming agent status.*
- EXPORTMC [int MC\\_SetThreadOn](#) ([MCAgencyOptions\\_t](#) \*options, enum [MC\\_ThreadIndex\\_e](#) index)  
*Sets a MobileC thread to "on" status.*
- EXPORTMC [int MC\\_SetThreadsAllOn](#) ([MCAgencyOptions\\_t](#) \*options)  
*Set all Mobile-C threads on.*
- EXPORTMC [int MC\\_SetThreadOff](#) ([MCAgencyOptions\\_t](#) \*options, enum [MC\\_ThreadIndex\\_e](#) index)  
*Sets a MobileC thread to "off" status.*
- EXPORTMC [int MC\\_SetThreadsAllOff](#) ([MCAgencyOptions\\_t](#) \*options)  
*Set all MobileC threads to 'off' status.*
- EXPORTMC [int MC\\_PrintAgentCode](#) ([MCAgent\\_t](#) agent)  
*Prints an agents code to stdout.*
- EXPORTMC [char \\* MC\\_RetrieveAgentCode](#) ([MCAgent\\_t](#) agent)  
*Retrieves an agent's Ch code.*
- EXPORTMC [int MC\\_ResetSignal](#) ([MCAgency\\_t](#) attr)  
*Reset a MobileC signal.*
- EXPORTMC [int MC\\_SearchForService](#) ([MCAgency\\_t](#) attr, const [char](#) \*searchString, [char](#) \*\*\*agentNames, [char](#) \*\*\*serviceNames, [int](#) \*\*agentIDs, [int](#) \*numResults)  
*Search the directory facilitator for a service.*
- EXPORTMC [int MC\\_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, [int](#) 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\\_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.*

### 13.37.1 Detailed Description

MobileC api header file.

Definition in file [libmc.h](#).

### 13.37.2 Define Documentation

#### 13.37.2.1 `#define EXPORTMC`

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

#### 13.37.2.2 `#define MC_Wait(arg1) MC_MainLoop(arg1)`

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

### 13.37.3 Typedef Documentation

#### 13.37.3.1 `typedef agency_t* agency_p`

Definition at line 229 of file [libmc.h](#).

#### 13.37.3.2 `typedef struct agency_s agency_t`

The agency handle.

#### 13.37.3.3 `typedef agent_t* agent_p`

Definition at line 249 of file [libmc.h](#).

#### 13.37.3.4 typedef struct agent\_s agent\_t

Definition at line 247 of file libmc.h.

#### 13.37.3.5 typedef enum error\_code\_e error\_code\_t

#### 13.37.3.6 typedef enum MC\_SteerCommand\_e MC\_SteerCommand\_t

Available commands for MC\_Steer.

#### 13.37.3.7 typedef agency\_p MCAgency\_t

Definition at line 230 of file libmc.h.

#### 13.37.3.8 typedef struct MCAgencyOptions\_s MCAgencyOptions\_t

User modifiable agency [options](#).

#### 13.37.3.9 typedef agent\_t\* MCAgent\_t

Definition at line 248 of file libmc.h.

### 13.37.4 Enumeration Type Documentation

#### 13.37.4.1 enum error\_code\_e

Enumerator:

*MC\_SUCCESS*  
*MC\_ERR*  
*MC\_ERR\_CONNECT*  
*MC\_ERR\_PARSE*  
*MC\_ERR\_EMPTY*  
*MC\_ERR\_INVALID*  
*MC\_ERR\_INVALID\_ARGS*  
*MC\_ERR\_NOT\_FOUND*  
*MC\_ERR\_MEMORY*  
*MC\_ERR\_SEND*  
*MC\_WARN\_DUPLICATE*  
*MC\_SUCCESS*  
*ERR*  
*MC\_ERR\_CONNECT*  
*MC\_ERR\_PARSE*  
*MC\_ERR\_EMPTY*  
*MC\_ERR\_INVALID*

*MC\_ERR\_INVALID\_ARGS*  
*MC\_ERR\_NOT\_FOUND*  
*MC\_ERR\_MEMORY*  
*MC\_ERR\_SEND*  
*MC\_WARN\_DUPLICATE*

Definition at line 157 of file libmc.h.

#### 13.37.4.2 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 271 of file libmc.h.

#### 13.37.4.3 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 257 of file libmc.h.

#### 13.37.4.4 enum MC\_AgentType\_e

**Enumerator:**

*MC\_NONE*  
*MC\_REMOTE\_AGENT*  
*MC\_LOCAL\_AGENT*  
*MC\_RETURN\_AGENT*

Definition at line 252 of file libmc.h.

### 13.37.4.5 enum MC\_Signal\_e

MobileC system signals.

**Note:**

Each signal is activated after the corresponding action. i.e. The 'MC\_RECV\_MESSAGE' signal is activated after a message is received.

**See also:**

[MC\\_WaitSignal\(\)](#), [MC\\_ResetSignal](#)

**Enumerator:**

*MC\_NO\_SIGNAL* No signal has been received  
*MC\_RECV\_CONNECTION* A Connection has been received  
*MC\_RECV\_MESSAGE* A Message has been received from a connection  
*MC\_RECV\_AGENT* An normal agent has been parsed from a message  
*MC\_RECV\_RETURN* A return agent has been parsed from a message  
*MC\_EXEC\_AGENT* A normal agent has been executed.  
*MC\_ALL\_SIGNALS* Catch any of the above signals

Definition at line 202 of file libmc.h.

### 13.37.4.6 enum MC\_SteerCommand\_e

Available commands for MC\_Steer.

**Enumerator:**

*MC\_RUN* Continue the algorithm  
*MC\_SUSPEND* Suspend/pause the algorithm  
*MC\_RESTART* Restart the algorithm from the beginning  
*MC\_STOP* Stop the algorithm

Definition at line 187 of file libmc.h.

### 13.37.4.7 enum MC\_ThreadIndex\_e

MobileC Module indices.

**Enumerator:**

*MC\_THREAD\_DF* Directory Facilitator  
*MC\_THREAD\_AMS* Agent Managment system  
*MC\_THREAD\_ACC* Agency communications  
*MC\_THREAD\_CP* Command Prompt  
*MC\_THREAD\_AGENT* Agent threads  
*MC\_THREAD\_ALL*

Definition at line 175 of file libmc.h.

## 13.37.5 Function Documentation

### 13.37.5.1 EXPORTMC int MC\_AclAddReceiver (struct fipa\_acl\_message\_s \* *acl*, const char \* *name*, const char \* *address*)

Definition at line 229 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, and fipa\_url\_sequence\_s::urls.

Referenced by MC\_AclAddReceiver\_chdl().

### 13.37.5.2 EXPORTMC int MC\_AclAddReplyTo (struct fipa\_acl\_message\_s \* *acl*, const char \* *name*, const char \* *address*)

Definition at line 265 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, and fipa\_url\_sequence\_s::urls.

Referenced by MC\_AclAddReplyTo\_chdl().

### 13.37.5.3 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 72 of file libmc.c.

References fipa\_acl\_message\_Destroy().

Referenced by MC\_AclDestroy\_chdl().

### 13.37.5.4 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 78 of file libmc.c.

References fipa\_acl\_message\_New().

Referenced by MC\_AclNew\_chdl().

### 13.37.5.5 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 83 of file libmc.c.

References agent\_mailbox\_Post(), and agent\_s::mailbox.

Referenced by MC\_AclPost\_chdl(), and MC\_AclSend().

### 13.37.5.6 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 89 of file libmc.c.

References fipa\_Reply().

Referenced by MC\_AclReply\_chdl().

### 13.37.5.7 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 95 of file libmc.c.

References agent\_mailbox\_Retrieve(), and agent\_s::mailbox.

Referenced by MC\_AclRetrieve\_chdl().



**13.37.5.8 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 101 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\_agent\_identifier\_set\_s::fipa\_agent\_identifiers, fipa\_envelope\_Compose(), mtp\_http\_s::host, http\_to\_hostport(), MC\_AclPost(), MC\_FindAgentByName(), dynstring\_s::message, message\_Destroy(), 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, fipa\_acl\_message\_s::receiver, fipa\_url\_s::str, mtp\_http\_s::target, message\_s::target, and fipa\_url\_sequence\_s::urls.

Referenced by MC\_AclSend\_chdl().

**13.37.5.9 EXPORTMC int MC\_AclSetContent (struct fipa\_acl\_message\_s \* *acl*, const char \* *content*)**

Definition at line 300 of file libmc.c.

References fipa\_string\_s::content, fipa\_acl\_message\_s::content, fipa\_string\_Destroy(), and fipa\_string\_New().

Referenced by MC\_AclSetContent\_chdl().

**13.37.5.10 EXPORTMC int MC\_AclSetPerformative (struct fipa\_acl\_message\_s \* *acl*, enum fipa\_performative\_e *performative*)**

Definition at line 198 of file libmc.c.

References fipa\_acl\_message\_s::performative.

Referenced by MC\_AclSetPerformative\_chdl().

**13.37.5.11 EXPORTMC int MC\_AclSetSender (struct fipa\_acl\_message\_s \* *acl*, const char \* *name*, const char \* *address*)**

Definition at line 206 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, and fipa\_url\_sequence\_s::urls.

Referenced by MC\_AclSetSender\_chdl().

### 13.37.5.12 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 191 of file libmc.c.

References agent\_mailbox\_WaitRetrieve(), and agent\_s::mailbox.

Referenced by MC\_AclWaitRetrieve\_chdl().

### 13.37.5.13 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 317 of file libmc.c.

References mc\_platform\_s::agent\_queue, mc\_platform\_s::ams, COND\_SIGNAL, agency\_s::mc\_platform, agent\_s::mc\_platform, MUTEX\_LOCK, and MUTEX\_UNLOCK.

Referenced by MC\_AddAgent\_chdl().

### 13.37.5.14 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.

## 13.37.6 Examples

The following example demonstrates usage of [MC\\_AgentVariableRetrieve\(\)](#) from agent space.

Definition at line 330 of file libmc.c.

References `agent_task_s::agent_variable_list`, `interpreter_variable_data_s::data`, `agent_s::datastate`, `agent_datastate_s::task_progress`, and `agent_datastate_s::tasks`.

Referenced by `MC_AgentVariableRetrieve_chdl()`.

### 13.37.6.1 `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`

## 13.37.7 Examples

See `agent_saved_variables_example/test1.xml` for an example of usage of this api function.

## 13.37.8 Examples

The following example demonstrates usage of [MC\\_AgentVariableSave\(\)](#) from agent space.

Definition at line 348 of file libmc.c.

References `agent_s::datastate`, `MC_ERR_MEMORY`, `agent_task_s::num_saved_variables`, `agent_task_s::saved_variables`, `agent_datastate_s::task_progress`, and `agent_datastate_s::tasks`.

Referenced by `MC_AgentVariableSave_chdl()`.

### 13.37.8.1 `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 409 of file libmc.c.

References mc\_platform\_s::barrier\_queue, barrier\_queue\_Delete(), and agency\_s::mc\_platform.

Referenced by MC\_BarrierDelete\_chdl().

### 13.37.8.2 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.

## 13.37.9 Examples

The following example demonstrates an agent which sets up an MC\_Barrier.

Definition at line 395 of file libmc.c.

References barrier\_node\_Initialize(), mc\_platform\_s::barrier\_queue, barrier\_queue\_Add(), barrier\_queue\_Get(), MC\_ERR, agency\_s::mc\_platform, MC\_SUCCESS, and node.

Referenced by MC\_BarrierInit\_chdl().

### 13.37.9.1 EXPORTMC int MC\_CallAgentFunc (MCAgent\_t *agent*, const char \**funcName*, void \**returnVal*, int *numArgs*, ...)

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

### 13.37.10 Example

Definition at line 415 of file libmc.c.

References agent\_s::agent\_interp, MUTEX\_LOCK, MUTEX\_UNLOCK, and agent\_s::run\_lock.

**13.37.10.1** **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

### 13.37.11 Example

Definition at line 436 of file libmc.c.

References agent\_s::agent\_interp, MUTEX\_LOCK, MUTEX\_UNLOCK, and agent\_s::run\_lock.

**13.37.11.1** **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 455 of file libmc.c.

References agent\_s::agent\_interp, MUTEX\_LOCK, MUTEX\_UNLOCK, and agent\_s::run\_lock.

### 13.37.11.2 EXPORTMC int MC\_CallAgentFuncVar (MCAgent\_t agent, const char \* funcName, void \* returnVal, ChVaList\_t arglist)

Definition at line 475 of file libmc.c.

References agent\_s::agent\_interp, MUTEX\_LOCK, MUTEX\_UNLOCK, and agent\_s::run\_lock.

Referenced by MC\_CallAgentFunc\_chdl().

### 13.37.11.3 EXPORTMC int MC\_ChInitializeOptions (MCAgency\_t attr, ChOptions\_t \* options)

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

Definition at line 495 of file libmc.c.

References mc\_platform\_s::interp\_options, and agency\_s::mc\_platform.

### 13.37.11.4 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 513 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\_datastate\_s::persistent, agent\_task\_s::server\_name, agent\_datastate\_s::tasks, and agent\_task\_s::var\_name.

Referenced by MC\_ComposeAgent\_chdl().

### 13.37.11.5 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 583 of file libmc.c.

References [syncListNode\\_s::cond](#), [COND\\_BROADCAST](#), [syncListNode\\_s::lock](#), [MC\\_ERR\\_NOT\\_FOUND](#), [agency\\_s::mc\\_platform](#), [MUTEX\\_LOCK](#), [MUTEX\\_UNLOCK](#), [syncListNode\\_s::signalled](#), [mc\\_platform\\_s::syncList](#), and [syncListFind\(\)](#).

Referenced by [MC\\_CondBroadcast\\_chdl\(\)](#).

### 13.37.11.6 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 635 of file libmc.c.

References [syncListNode\\_s::lock](#), [MC\\_ERR\\_NOT\\_FOUND](#), [agency\\_s::mc\\_platform](#), [MUTEX\\_LOCK](#), [MUTEX\\_UNLOCK](#), [syncListNode\\_s::signalled](#), [mc\\_platform\\_s::syncList](#), and [syncListFind\(\)](#).

Referenced by [MC\\_CondReset\\_chdl\(\)](#).

### 13.37.11.7 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

### 13.37.12 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 598 of file libmc.c.

References syncListNode\_s::cond, COND\_SIGNAL, syncListNode\_s::lock, MC\_ERR\_NOT\_FOUND, agency\_s::mc\_platform, MUTEX\_LOCK, MUTEX\_UNLOCK, syncListNode\_s::signalled, mc\_platform\_s::syncList, and syncListFind().

Referenced by MC\_CondSignal\_chdl().

#### 13.37.12.1 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

### 13.37.13 Example

The following example demonstrates the agent-space version of this function.

Definition at line 613 of file libmc.c.

References syncListNode\_s::cond, COND\_WAIT, syncListNode\_s::lock, MC\_ERR\_NOT\_FOUND, agency\_s::mc\_platform, MUTEX\_LOCK, MUTEX\_UNLOCK, syncListNode\_s::signalled, mc\_platform\_s::syncList, and syncListFind().

Referenced by MC\_CondWait\_chdl().



**13.37.13.1 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 653 of file libmc.c.

References agent\_Copy(), and MC\_SUCCESS.

**13.37.13.2 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 660 of file libmc.c.

References CHECK\_NULL, MC\_ERR\_INVALID, MC\_SetAgentStatus(), MC\_SUCCESS, MC\_TerminateAgent(), and MC\_WAIT\_FINISHED.

Referenced by MC\_DeleteAgent\_chdl().

**13.37.13.3 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 674 of file libmc.c.

Referenced by MC\_DestroyServiceSearchResult\_chdl().

### 13.37.13.4 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

### 13.37.14 Example

Definition at line 723 of file libmc.c.

References mc\_platform\_s::acc, mc\_platform\_s::ams, mc\_platform\_s::cmd\_prompt, COND\_SIGNAL, mc\_platform\_s::connection\_queue, mc\_platform\_s::df, GET\_THREAD\_MODE, agency\_s::hostName, agency\_s::mc\_platform, mc\_platform\_Destroy(), MC\_THREAD\_ACC, MC\_THREAD\_AMS, MC\_THREAD\_CP, MC\_THREAD\_DF, mc\_platform\_s::message\_queue, MUTEX\_LOCK, MUTEX\_UNLOCK, mc\_platform\_s::quit, mc\_platform\_s::quit\_lock, cmd\_prompt\_s::thread, THREAD\_CANCEL, THREAD\_JOIN, and agency\_s::threads.

Referenced by MC\_End\_chdl().

### 13.37.14.1 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 790 of file libmc.c.

References mc\_platform\_s::agent\_queue, and agency\_s::mc\_platform.

Referenced by MC\_FindAgentByID\_chdl().

### 13.37.14.2 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

**13.37.15 Example**

Definition at line 777 of file libmc.c.

References mc\_platform\_s::agent\_queue, and agency\_s::mc\_platform.

Referenced by MC\_AclSend(), and MC\_FindAgentByName\_chdl().

**13.37.15.1 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 844 of file libmc.c.

References agent\_s::agent\_interp.

**13.37.15.2 EXPORTMC int MC\_GetAgentID (MCAgent\_t agent)**

Retrieve an agent's id.

Definition at line 850 of file libmc.c.

References agent\_s::id.

Referenced by MC\_GetAgentID\_chdl().

**13.37.15.3 EXPORTMC char\* MC\_GetAgentName (MCAgent\_t agent)**

Definition at line 858 of file libmc.c.

References agent\_s::lock, MUTEX\_LOCK, MUTEX\_UNLOCK, and agent\_s::name.

Referenced by MC\_GetAgentName\_chdl().

**13.37.15.4 EXPORTMC int MC\_GetAgentNumTasks (MCAgent\_t agent)**

Retrive the number of tasks an agent has.

**13.37.16 Example**

Definition at line 939 of file libmc.c.

References agent\_s::datastate, and agent\_datastate\_s::number\_of\_tasks.

Referenced by MC\_GetAgentNumTasks\_chdl().

### 13.37.16.1 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.

### 13.37.17 Example

This file demonstrates the retrieval of agent return data from an agent

This is the agent which gets the data

Definition at line 876 of file libmc.c.

References agent\_task\_s::agent\_return\_data, interpreter\_variable\_data\_s::array\_dim, interpreter\_variable\_data\_s::array\_extent, CH\_DATATYPE\_SIZE, interpreter\_variable\_data\_s::data\_type, agent\_s::datastate, agent\_datastate\_s::number\_of\_tasks, size, and agent\_datastate\_s::tasks.

### 13.37.17.1 EXPORTMC int MC\_GetAgentStatus (MCAgent\_t agent)

Get an agent's current status.

#### Returns:

returns type 'enum MC\_AgentStatus\_e'

Definition at line 822 of file libmc.c.

References agent\_s::agent\_status, agent\_s::lock, MUTEX\_LOCK, and MUTEX\_UNLOCK.

Referenced by MC\_GetAgentStatus\_chdl().

**13.37.17.2 EXPORTMC enum MC\_AgentType\_e MC\_GetAgentType (MCAgent\_t *agent*)**

Get an agent's type.

**Returns:**

returns type 'enum MC\_AgentType\_e'

Definition at line 945 of file libmc.c.

References agent\_s::agent\_type.

**13.37.17.3 EXPORTMC char\* MC\_GetAgentXMLString (MCAgent\_t *agent*)**

Get an agent's xml string.

**Returns:**

a malloc'd character string containing the agent's xml code

Definition at line 832 of file libmc.c.

References agent\_s::datastate, mxmlSaveAllocString(), and agent\_datastate\_s::xml\_agent\_root.

Referenced by MC\_GetAgentXMLString\_chdl().

**13.37.17.4 EXPORTMC int MC\_HaltAgency (MCAgency\_t *agency*)**

Halt an agency: Do not process new entries in queues.

**Parameters:**

*agency* A handle to a running MobileC agency.

**Returns:**

0 on success, non-zero on failure.

Definition at line 991 of file libmc.c.

References mc\_platform\_s::giant, mc\_platform\_s::giant\_lock, agency\_s::mc\_platform, MUTEX\_LOCK, and MUTEX\_UNLOCK.

Referenced by MC\_GetAllAgents(), and MC\_HaltAgency\_chdl().

**13.37.17.5 EXPORTMC MCAgency\_t MC\_Initialize (int *port*, MCAgencyOptions\_t \* *options*)**

Initialize and start a MobileC agency.

**Parameters:**

*port* the TCP port the agency should bind to

*options* initialized MobileC [options](#) or NULL for default [options](#)

**Returns:**

a handle to a running MobileC agency or NULL on failure

### 13.37.18 Example

Definition at line 1000 of file libmc.c.

References CHECK\_NULL, agency\_s::client, MCAgencyOptions\_s::default\_agent\_status, agency\_s::default\_agentstatus, MCAgencyOptions\_s::enable\_security, agency\_s::enable\_security, HOST\_NAME\_MAX, agency\_s::hostName, MC\_InitializeAgencyOptions(), agency\_s::mc\_platform, mc\_platform\_Initialize(), MC\_THREAD\_ALL, agency\_s::portno, agency\_s::server, MCAgencyOptions\_s::stack\_size, agency\_s::stack\_size, MCAgencyOptions\_s::threads, and agency\_s::threads.

#### 13.37.18.1 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.

### 13.37.19 Example

Definition at line 1055 of file libmc.c.

References MCAgencyOptions\_s::default\_agent\_status, MCAgencyOptions\_s::enable\_security, MC\_THREAD\_ALL, MC\_WAIT\_CH, MCAgencyOptions\_s::modified, MCAgencyOptions\_s::stack\_size, and MCAgencyOptions\_s::threads.

Referenced by MC\_Initialize().

#### 13.37.19.1 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 1072 of file libmc.c.

References buf, agency\_s::mc\_platform, message\_Destroy(), message\_InitializeFromString(), message\_New(), mc\_platform\_s::message\_queue, MXML\_DESCEND, mxmlFindElement(), mxmlLoadString(), message\_s::to\_address, message\_s::xml\_payload, and message\_s::xml\_root.

### 13.37.19.2 EXPORTMC int MC\_MainLoop (MCAgency\_t *attr*)

Wait indefinitely.

**Note:**

This function is intended to block the calling thread forever.

Definition at line 1687 of file libmc.c.

References mc\_platform\_s::ams, and agency\_s::mc\_platform.

### 13.37.19.3 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

### 13.37.20 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 1142 of file libmc.c.

References syncListNode\_s::lock, agency\_s::mc\_platform, MUTEX\_LOCK, mc\_platform\_s::syncList, and syncListFind().

Referenced by MC\_MutexLock\_chdl().

#### 13.37.20.1 EXPORTMC int MC\_MutexUnlock (MCAgency\_t *attr*, int *id*)

Definition at line 1154 of file libmc.c.

References syncListNode\_s::lock, agency\_s::mc\_platform, MUTEX\_UNLOCK, mc\_platform\_s::syncList, and syncListFind().

Referenced by MC\_MutexUnlock\_chdl().

#### 13.37.20.2 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 1166 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()`.

**13.37.20.3 EXPORTMC int MC\_RegisterService (MCAgency\_t *agency*, MCAgent\_t *agent*, int *agentID*, const char \* *agentName*, char \*\* *serviceNames*, int *numServices*)**

Register a new service with the Directory Facilitator.

**Parameters:**

*agency* a MobileC agency handle

*agent* (OPTIONAL: See note) a MobileC agent

*agentID* (OPTIONAL: See note) a MobileC agent id

*agentName* (OPTIONAL: See note) a MobileC agent name

*serviceNames* an array of character strings of service names

*numServices* the number of services described in 'serviceNames'

**Returns:**

0 on success, `error_code_t` type on failure

**Note:**

Three of the input arguments are optional. The function expects as input the arguments 'agent XOR (agentID AND agentName)'.

**13.37.21 Example**

Definition at line 1182 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()`.

**13.37.21.1 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 1314 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.

### 13.37.21.2 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 1261 of file libmc.c.

References mc\_platform\_s::giant, mc\_platform\_s::giant\_lock, agency\_s::mc\_platform, MUTEX\_LOCK, and MUTEX\_UNLOCK.

Referenced by MC\_GetAllAgents(), and MC\_ResumeAgency\_chdl().

### 13.37.21.3 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 1270 of file libmc.c.

References mc\_platform\_s::agent\_queue, agent\_s::agent\_status, ListSearch(), MC\_AGENT\_NEUTRAL, agency\_s::mc\_platform, MUTEX\_LOCK, and MUTEX\_UNLOCK.

Referenced by MC\_RetrieveAgent\_chdl().

### 13.37.21.4 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 1298 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().

### 13.37.21.5 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

### 13.37.22 Example

Definition at line 1325 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().

#### 13.37.22.1 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

### 13.37.23 Example

Definition at line 1375 of file libmc.c.

References agency\_s::mc\_platform, syncListNode\_s::sem, SEMAPHORE\_POST, mc\_platform\_s::syncList, and syncListFind().

Referenced by MC\_SemaphorePost\_chdl().

### 13.37.23.1 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.

### 13.37.24 Example

Definition at line 1387 of file libmc.c.

References `agency_s::mc_platform`, `syncListNode_s::sem`, `SEMAPHORE_WAIT`, `mc_platform_s::syncList`, and `syncListFind()`.

Referenced by `MC_SemaphoreWait_chdl()`.

### 13.37.24.1 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 1409 of file libmc.c.

References `MC_ERR`, `agency_s::mc_platform`, `message_Destroy()`, `message_InitializeFromString()`, `message_New()`, and `mc_platform_s::message_queue`.

Referenced by `MC_SendAgentMigrationMessage_chdl()`.

### 13.37.24.2 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 1440 of file libmc.c.

References agent\_Initialize(), mc\_platform\_s::agent\_queue, agent\_s::agent\_status, mc\_platform\_s::ams, buf, COND\_BROADCAST, agency\_s::mc\_platform, MC\_WAIT\_MESSGSEND, message\_Destroy(), message\_InitializeFromString(), message\_New(), MUTEX\_LOCK, and MUTEX\_UNLOCK.

Referenced by handler\_SEND(), and MC\_SendAgentMigrationMessageFile\_chdl().

**13.37.24.3 EXPORTMC int MC\_SetAgentStatus (MCAgent\_t agent, int 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 1518 of file libmc.c.

References agent\_s::agent\_status, mc\_platform\_s::ams, COND\_SIGNAL, agent\_s::lock, agent\_s::mc\_platform, MUTEX\_LOCK, MUTEX\_UNLOCK, and agent\_s::orphan.

Referenced by MC\_DeleteAgent(), and MC\_SetAgentStatus\_chdl().

**13.37.24.4 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 1533 of file libmc.c.

References mc\_platform\_s::default\_agentstatus, and agency\_s::mc\_platform.

Referenced by MC\_SetDefaultAgentStatus\_chdl().

**13.37.24.5 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 1560 of file libmc.c.

References SET\_THREAD\_OFF, and MCAgencyOptions\_s::threads.

**13.37.24.6 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 1543 of file libmc.c.

References SET\_THREAD\_ON, and MCAgencyOptions\_s::threads.

**13.37.24.7 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 1567 of file libmc.c.

References MC\_THREAD\_ALL, SET\_THREAD\_OFF, and MCAgencyOptions\_s::threads.

### 13.37.24.8 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 1550 of file libmc.c.

References MC\_THREAD\_ALL, SET\_THREAD\_ON, and MCAgencyOptions\_s::threads.

### 13.37.24.9 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.

## 13.37.25 Example

Definition at line 1577 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.

### 13.37.25.1 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 1596 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.

**13.37.25.2 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 1612 of file libmc.c.

References syncList\_s::giant\_lock, syncListNode\_s::lock, MC\_ERR\_NOT\_FOUND, agency\_s::mc\_platform, MUTEX\_LOCK, MUTEX\_UNLOCK, mc\_platform\_s::syncList, syncListFind(), syncListNodeDestroy(), and syncListRemove().

Referenced by MC\_SyncDelete\_chdl().

**13.37.25.3 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 1642 of file libmc.c.

References `syncList_s::giant_lock`, `syncListNode_s::id`, `agency_s::mc_platform`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `node`, `mc_platform_s::syncList`, `syncListAddNode()`, `syncListFind()`, and `syncListNodeNew()`.

Referenced by `MC_SyncInit_chdl()`.

#### 13.37.25.4 EXPORTMC int MC\_TerminateAgent (MCAgent\_t agent)

Halt a running agent.

##### Returns:

0 on success, `error_code_t` on failure

Definition at line 1667 of file `libmc.c`.

References `agent_s::agent_interp`.

Referenced by `MC_DeleteAgent()`, and `MC_TerminateAgent_chdl()`.

#### 13.37.25.5 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 1694 of file `libmc.c`.

References `mc_platform_s::agent_queue`, `COND_WAIT`, `mc_platform`, `agency_s::mc_platform`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, and `size`.

#### 13.37.25.6 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 1714 of file `libmc.c`.

References `mc_platform_s::agent_queue`, `ListSearch()`, `agency_s::mc_platform`, `MC_RECV_AGENT`, `MC_WaitSignal()`, `MUTEX_LOCK`, and `MUTEX_UNLOCK`.



### 13.37.25.7 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.

### 13.37.26 Example

Definition at line 1732 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().

## 13.38 /home/dko/projects/mobilec/trunk/src/include/macros.h File Reference

```
#include <pthread.h>
#include <semaphore.h>
#include "config.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 [PTHREAD\\_STACK\\_SIZE](#) 131072
- #define [THREAD\\_T](#) pthread\_t
- #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 [MUTEX\\_T](#) pthread\_mutex\_t
- #define [MUTEX\\_INIT](#)(mutex) pthread\_mutex\_init(mutex, NULL)
- #define [MUTEX\\_DESTROY](#)(mutex) pthread\_mutex\_destroy(mutex)
- #define [MUTEX\\_LOCK](#)(mutex)
- #define [MUTEX\\_UNLOCK](#)(mutex) pthread\_mutex\_unlock( mutex )
- #define [MUTEX\\_NEW](#)(mutex)
- #define [COND\\_T](#) pthread\_cond\_t
- #define [COND\\_INIT](#)(cond) pthread\_cond\_init(cond, NULL)
- #define [COND\\_DESTROY](#)(cond) pthread\_cond\_destroy(cond)
- #define [COND\\_WAIT](#)(cond, mutex) pthread\_cond\_wait(cond, mutex )
- #define [COND\\_SLEEP](#)(cond, mutex, test)
- #define [COND\\_RESET](#)(cond, mutex) pthread\_mutex\_unlock( mutex );
- #define [COND\\_SLEEP\\_ACTION](#)(cond, mutex, action)
- #define [SIGNAL](#)(cond, mutex, action)
- #define [COND\\_BROADCAST](#)(cond) pthread\_cond\_broadcast( cond )
- #define [COND\\_SIGNAL](#)(cond) pthread\_cond\_signal( cond )
- #define [SEMAPHORE\\_T](#) sem\_t
- #define [SEMAPHORE\\_INIT](#)(sem) sem\_init(sem, 0, 0)
- #define [SEMAPHORE\\_DESTROY](#)(sem) sem\_destroy(sem)
- #define [SEMAPHORE\\_WAIT](#)(sem) sem\_wait(sem)
- #define [SEMAPHORE\\_POST](#)(sem) sem\_post(sem)
- #define [RWLOCK\\_T](#) mc\_rwlock\_t
- #define [RWLOCK\\_INIT](#)(rwlock) mc\_rwlock\_init(rwlock)
- #define [RWLOCK\\_DESTROY](#)(rwlock) mc\_rwlock\_destroy(rwlock)
- #define [RWLOCK\\_RDLOCK](#)(rwlock) mc\_rwlock\_rdlock(rwlock)
- #define [RWLOCK\\_RDUNLOCK](#)(rwlock) mc\_rwlock\_rdunlock(rwlock)
- #define [RWLOCK\\_WRLOCK](#)(rwlock) mc\_rwlock\_wrlock(rwlock)
- #define [RWLOCK\\_WRUNLOCK](#)(rwlock) mc\_rwlock\_wrunlock(rwlock)
- #define [WAKE\\_QUEUE](#)(queue, action)
- #define [SLEEP\\_QUEUE](#)(queue)

- #define [SLEEP\\_RESET](#)(queue) pthread\_mutex\_unlock( queue → thread\_mutex )
- #define [CHECK\\_NULL](#)(var, action)
- #define [WARN](#)(message)
- #define [CH\\_DATATYPE\\_SIZE](#)(type, size)
- #define [CH\\_DATATYPE\\_STRING](#)(type, string)
- #define [CH\\_DATATYPE\\_VALUE\\_STRING](#)(type, string, p)
- #define [CH\\_STRING\\_DATATYPE](#)(string, type)
- #define [CH\\_DATATYPE\\_STR\\_TO\\_VAL](#)(type, string, val)

### 13.38.1 Define Documentation

#### 13.38.1.1 #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 460 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(), and MC\_GetAgentReturnData().

#### 13.38.1.2 #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); /*FIXME*/ \
break; \
case CH_FLOATTYPE: \
        *(float*)val = strtod(string, NULL); \
break; \
case CH_DOUBLETYPE: \
        *(double*)val = strtod(string, NULL); \
break; \
default: \
        fprintf(stderr, \
                "Unsupported data type: %d %s:%d\n", \
                type, __FILE__, __LINE__ ); \
}

```

Definition at line 574 of file macros.h.

Referenced by agent\_xml\_parse\_\_data().

### 13.38.1.3 #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_DOUBLETYPE:
        strcpy(string, "double");
break;
    default:
        fprintf(stderr,
                "Unsupported data type: %d %s:%d\n",
                type, __FILE__, __LINE__ );
}

```

Definition at line 491 of file macros.h.

Referenced by agent\_xml\_compose\_\_data().

### 13.38.1.4 #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 523 of file macros.h.

Referenced by agent\_xml\_compose\_\_create\_row\_nodes(), and agent\_xml\_compose\_\_data().

#### 13.38.1.5 #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 552 of file macros.h.

Referenced by agent\_xml\_parse\_\_data().

#### 13.38.1.6 #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 443 of file macros.h.

Referenced by agent\_AddPersistentVariable(), agent\_datastate\_New(), agent\_xml\_parse\_\_home(), agent\_xml\_parse\_\_name(), agent\_xml\_parse\_\_owner(), agent\_xml\_parse\_\_sender(), agent\_xml\_parse\_\_task(), ams\_Initialize(), barrier\_node\_Initialize(), barrier\_queue\_New(), df\_request\_list\_New(), df\_request\_list\_node\_New(), df\_request\_search\_New(), fipa\_agent\_identifier\_Parse(), fipa\_word\_Parse(), http\_ParseExpression(), interpreter\_variable\_data\_Initialize(), interpreter\_variable\_data\_InitializeFromAgent(), interpreter\_variable\_data\_New(), listen\_Thread(), 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\_DeregisterService\_chdl(), MC\_End\_chdl(), MC\_FindAgentByID\_chdl(), MC\_FindAgentByName\_chdl(), MC\_HaltAgency\_chdl(), MC\_Initialize(), 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(), message\_xml\_parse\_\_message(), mtp\_http\_InitializeFromConnection(), mtp\_http\_New(), syncListNodeInit(), syncListNodeNew(), xml\_get\_cdata(), xml\_get\_text(), and xml\_new\_cdata().

### 13.38.1.7 #define COND\_BROADCAST(cond) pthread\_cond\_broadcast( cond )

Definition at line 206 of file macros.h.

Referenced by acc\_MessageHandlerThread(), acc\_Thread(), ams\_Thread(), df\_Thread(), listen\_Thread(), MC\_Barrier(), MC\_CondBroadcast(), MC\_SendAgentMigrationMessageFile(), and MC\_SendSteerCommand().

### 13.38.1.8 #define COND\_DESTROY(cond) pthread\_cond\_destroy(cond)

Definition at line 182 of file macros.h.

Referenced by ams\_Destroy(), barrier\_node\_Destroy(), df\_Destroy(), df\_request\_list\_node\_Destroy(), df\_request\_search\_Destroy(), mc\_platform\_Destroy(), mc\_rwlock\_destroy(), and syncListNodeDestroy().

### 13.38.1.9 #define COND\_INIT(cond) pthread\_cond\_init(cond, NULL)

Definition at line 179 of file macros.h.

Referenced by acc\_Initialize(), ams\_Initialize(), barrier\_node\_Initialize(), df\_Initialize(), df\_request\_list\_New(), df\_request\_list\_node\_New(), df\_request\_search\_New(), mc\_platform\_Initialize(), mc\_rwlock\_init(), syncListNodeInit(), and syncListNodeNew().

**13.38.1.10 #define COND\_RESET(cond, mutex) pthread\_mutex\_unlock( mutex );**

Definition at line 194 of file macros.h.

**13.38.1.11 #define COND\_SIGNAL(cond) pthread\_cond\_signal( cond )**

Definition at line 208 of file macros.h.

Referenced by acc\_MessageHandlerThread(), agent\_RunChScriptThread(), MC\_AddAgent(), MC\_CondSignal(), MC\_End(), MC\_ResetSignal(), mc\_rwlock\_rdunlock(), mc\_rwlock\_wrunlock(), and MC\_SetAgentStatus().

**13.38.1.12 #define COND\_SLEEP(cond, mutex, test)**

**Value:**

```
if (pthread_mutex_lock( mutex )) \
printf("pthread lock error: %s:%d\n", __FILE__, __LINE__); \
if (!test) { \
    pthread_cond_wait( cond, mutex ); \
}
```

Definition at line 188 of file macros.h.

**13.38.1.13 #define COND\_SLEEP\_ACTION(cond, mutex, action)**

**Value:**

```
if (pthread_mutex_lock( mutex )) \
printf("pthread lock error: %s:%d\n", __FILE__, __LINE__); \
action; \
pthread_cond_wait( cond, mutex );
```

Definition at line 196 of file macros.h.

Referenced by MC\_SearchForService().

**13.38.1.14 #define COND\_T pthread\_cond\_t**

Definition at line 177 of file macros.h.

Referenced by acc\_Initialize(), ams\_Initialize(), barrier\_node\_Initialize(), df\_Initialize(), df\_request\_list\_New(), df\_request\_list\_node\_New(), df\_request\_search\_New(), mc\_platform\_Initialize(), mc\_rwlock\_init(), syncListNodeInit(), and syncListNodeNew().

**13.38.1.15 #define COND\_WAIT(cond, mutex) pthread\_cond\_wait(cond, mutex )**

Definition at line 185 of file macros.h.

Referenced by acc\_MessageHandlerThread(), acc\_Thread(), agent\_mailbox\_WaitRetrieve(), ams\_Thread(), df\_Thread(), MC\_Barrier(), MC\_CondWait(), mc\_platform\_Initialize(), mc\_rwlock\_rdlock(), mc\_rwlock\_wrlock(), MC\_SteerControl(), MC\_WaitAgent(), and MC\_WaitSignal().

**13.38.1.16 #define GET\_THREAD\_MODE(a, b) ( (a & (1<<b)) / (1<<b) )**

Definition at line 111 of file macros.h.

Referenced by MC\_End(), and mc\_platform\_Initialize().

**13.38.1.17 #define MUTEX\_DESTROY(mutex) pthread\_mutex\_destroy(mutex)**

Definition at line 160 of file macros.h.

Referenced by agent\_Destroy(), agent\_Initialize(), ams\_Destroy(), barrier\_node\_Destroy(), df\_Destroy(), df\_request\_list\_node\_Destroy(), df\_request\_search\_Destroy(), mc\_platform\_Destroy(), mc\_rwlock\_destroy(), and syncListNodeDestroy().

**13.38.1.18 #define MUTEX\_INIT(mutex) pthread\_mutex\_init(mutex, NULL)**

Definition at line 157 of file macros.h.

Referenced by acc\_Initialize(), agent\_Copy(), agent\_Initialize(), agent\_New(), ams\_Initialize(), barrier\_node\_Initialize(), df\_Initialize(), df\_request\_list\_New(), df\_request\_list\_node\_New(), df\_request\_search\_New(), mc\_platform\_Initialize(), MC\_RegisterService(), mc\_rwlock\_init(), syncListInit(), syncListNodeInit(), and syncListNodeNew().

**13.38.1.19 #define MUTEX\_LOCK(mutex)****Value:**

```
if (pthread_mutex_lock( mutex )) \
    fprintf(stderr, "pthread lock error: %s:%d\n", __FILE__, __LINE__)
```

Definition at line 163 of file macros.h.

Referenced by acc\_MessageHandlerThread(), acc\_Thread(), agent\_Copy(), agent\_Destroy(), agent\_mailbox\_WaitRetrieve(), agent\_RunChScriptThread(), ams\_ManageAgentList(), ams\_Print(), ams\_Thread(), AP\_QUEUE\_SEARCH\_TEMPLATE(), AP\_QUEUE\_STD\_DEFN\_TEMPLATE(), df\_Destroy(), df\_node\_Destroy(), df\_request\_list\_Pop(), df\_SearchForService(), df\_Thread(), interpreter\_variable\_data\_Initialize(), listen\_Thread(), MC\_AddAgent(), MC\_Barrier(), MC\_CallAgentFunc(), MC\_CallAgentFuncArg(), MC\_CallAgentFuncV(), MC\_CallAgentFuncVar(), MC\_CondBroadcast(), MC\_CondReset(), MC\_CondSignal(), MC\_CondWait(), MC\_End(), MC\_GetAgentName(), MC\_GetAgentStatus(), MC\_GetAllAgents(), MC\_HaltAgency(), MC\_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\_SendAgentMigrationMessageFile(), MC\_SendSteerCommand(), MC\_SetAgentStatus(), MC\_Steer(), MC\_SteerControl(), MC\_SyncDelete(), MC\_SyncInit(), MC\_WaitAgent(), MC\_WaitRetrieveAgent(), MC\_WaitSignal(), message\_queue\_SendOutgoing(), and request\_handler\_DEREGISTER().

**13.38.1.20 #define MUTEX\_NEW(mutex)****Value:**

```
mutex = (pthread_mutex_t*)malloc(sizeof(pthread_mutex_t)); \
    if (mutex == NULL) \
        fprintf(stderr, "Memory Error. %s:%d\n", __FILE__, __LINE__); \
```



Definition at line 168 of file macros.h.

Referenced by agent\_New().

#### 13.38.1.21 **#define MUTEX\_T pthread\_mutex\_t**

Definition at line 155 of file macros.h.

Referenced by acc\_Initialize(), agent\_Copy(), agent\_Initialize(), ams\_Initialize(), barrier\_node\_Initialize(), df\_Initialize(), df\_request\_list\_New(), df\_request\_list\_node\_New(), df\_request\_search\_New(), mc\_platform\_Initialize(), MC\_RegisterService(), mc\_rwlock\_init(), syncListInit(), syncListNodeInit(), and syncListNodeNew().

#### 13.38.1.22 **#define MUTEX\_UNLOCK(mutex) pthread\_mutex\_unlock( mutex )**

Definition at line 166 of file macros.h.

Referenced by acc\_MessageHandlerThread(), acc\_Thread(), agent\_mailbox\_WaitRetrieve(), agent\_RunChScriptThread(), ams\_ManageAgentList(), ams\_Print(), ams\_Thread(), AP\_QUEUE\_SEARCH\_TEMPLATE(), AP\_QUEUE\_STD\_DEFN\_TEMPLATE(), df\_request\_list\_Pop(), df\_SearchForService(), df\_Thread(), interpreter\_variable\_data\_Initialize(), listen\_Thread(), MC\_AddAgent(), MC\_Barrier(), MC\_CallAgentFunc(), MC\_CallAgentFuncArg(), MC\_CallAgentFuncV(), MC\_CallAgentFuncVar(), MC\_CondBroadcast(), MC\_CondReset(), MC\_CondSignal(), MC\_CondWait(), MC\_End(), MC\_GetAgentName(), MC\_GetAgentStatus(), MC\_GetAllAgents(), MC\_HaltAgency(), MC\_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\_SendAgentMigrationMessageFile(), MC\_SendSteerCommand(), MC\_SetAgentStatus(), MC\_Steer(), MC\_SteerControl(), MC\_SyncDelete(), MC\_SyncInit(), MC\_WaitAgent(), MC\_WaitRetrieveAgent(), MC\_WaitSignal(), message\_queue\_SendOutgoing(), and request\_handler\_DEREGISTER().

#### 13.38.1.23 **#define PTHREAD\_STACK\_SIZE 131072**

Definition at line 134 of file macros.h.

#### 13.38.1.24 **#define RWLOCK\_DESTROY(rwlock) mc\_rwlock\_destroy(rwlock)**

Definition at line 250 of file macros.h.

Referenced by barrier\_queue\_Destroy().

#### 13.38.1.25 **#define RWLOCK\_INIT(rwlock) mc\_rwlock\_init(rwlock)**

Definition at line 242 of file macros.h.

Referenced by barrier\_queue\_New(), and syncListInit().

#### 13.38.1.26 **#define RWLOCK\_RDLOCK(rwlock) mc\_rwlock\_rdlock(rwlock)**

Definition at line 268 of file macros.h.

Referenced by barrier\_queue\_Get(), and syncListFind().

**13.38.1.27 #define RWLOCK\_RDUNLOCK(rwlock) mc\_rwlock\_rdunlock(rwlock)**

Definition at line 270 of file macros.h.

Referenced by barrier\_queue\_Get(), and syncListFind().

**13.38.1.28 #define RWLOCK\_T mc\_rwlock\_t**

Definition at line 235 of file macros.h.

Referenced by barrier\_queue\_New(), and syncListInit().

**13.38.1.29 #define RWLOCK\_WRLOCK(rwlock) mc\_rwlock\_wrlock(rwlock)**

Definition at line 272 of file macros.h.

Referenced by barrier\_queue\_Add(), barrier\_queue\_Delete(), syncListAddNode(), syncListDelete(), and syncListRemove().

**13.38.1.30 #define RWLOCK\_WRUNLOCK(rwlock) mc\_rwlock\_wrunlock(rwlock)**

Definition at line 274 of file macros.h.

Referenced by barrier\_queue\_Add(), barrier\_queue\_Delete(), syncListAddNode(), syncListDelete(), and syncListRemove().

**13.38.1.31 #define SEMAPHORE\_DESTROY(sem) sem\_destroy(sem)**

Definition at line 220 of file macros.h.

Referenced by syncListNodeDestroy().

**13.38.1.32 #define SEMAPHORE\_INIT(sem) sem\_init(sem, 0, 0)**

Definition at line 217 of file macros.h.

Referenced by syncListNodeInit(), and syncListNodeNew().

**13.38.1.33 #define SEMAPHORE\_POST(sem) sem\_post(sem)**

Definition at line 225 of file macros.h.

Referenced by MC\_SemaphorePost().

**13.38.1.34 #define SEMAPHORE\_T sem\_t**

Definition at line 215 of file macros.h.

Referenced by syncListNodeInit(), and syncListNodeNew().

**13.38.1.35 #define SEMAPHORE\_WAIT(sem) sem\_wait(sem)**

Definition at line 223 of file macros.h.

Referenced by MC\_SemaphoreWait().

**13.38.1.36 #define SET\_THREAD\_OFF(a, b) a = (a & ~(1<<b)))**

Definition at line 115 of file macros.h.

Referenced by MC\_SetThreadOff(), and MC\_SetThreadsAllOff().

**13.38.1.37 #define SET\_THREAD\_ON(a, b) a = (a | (1<<b))**

Definition at line 114 of file macros.h.

Referenced by MC\_SetThreadOn(), and MC\_SetThreadsAllOn().

**13.38.1.38 #define SIGNAL(cond, mutex, action)****Value:**

```
pthread_mutex_lock( mutex ); \
action; \
pthread_cond_signal( cond ); \
pthread_mutex_unlock( mutex )
```

Definition at line 201 of file macros.h.

Referenced by agent\_RunChScriptThread(), df\_Add(), df\_AddRequest(), and request\_handler\_SEARCH().

**13.38.1.39 #define SLEEP\_QUEUE(queue)****Value:**

```
if (pthread_mutex_lock( queue->thread_mutex )) \
printf("pthread lock error: %s:%d\n", __FILE__, __LINE__); \
pthread_cond_wait( queue->touched_signal, queue->thread_mutex )
```

Definition at line 288 of file macros.h.

**13.38.1.40 #define SLEEP\_RESET(queue) pthread\_mutex\_unlock( queue → thread\_mutex )**

Definition at line 292 of file macros.h.

**13.38.1.41 #define STRUCT(name, members)****Value:**

```
typedef struct name##_s { \
    members \
} name##_t; \
typedef name##_t* name##_p;
```

Definition at line 119 of file macros.h.

#### 13.38.1.42 **#define THREAD\_CANCEL(thread\_handle) pthread\_cancel( thread\_handle )**

Definition at line 144 of file macros.h.

Referenced by MC\_End().

#### 13.38.1.43 **#define THREAD\_CREATE(thread\_handle, function, arg)**

**Value:**

```
pthread_create( \
    thread_handle, \
    &attr, \
    function, \
    (void*) arg \
)
```

Definition at line 136 of file macros.h.

Referenced by acc\_Start(), agent\_RunChScript(), ams\_Start(), cmd\_prompt\_Start(), and df\_Start().

#### 13.38.1.44 **#define THREAD\_JOIN(thread\_handle) pthread\_join( thread\_handle, NULL )**

Definition at line 147 of file macros.h.

Referenced by MC\_End().

#### 13.38.1.45 **#define THREAD\_T pthread\_t**

Definition at line 135 of file macros.h.

Referenced by agent\_RunChScript().

#### 13.38.1.46 **#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 282 of file macros.h.

#### 13.38.1.47 **#define WARN(message)**

**Value:**

```
fprintf(stderr, "WARNING: "); \
    fprintf(stderr, message ); \
    fprintf(stderr, " %s:%d\n", __FILE__, __LINE__ )
```

Definition at line 450 of file macros.h.

Referenced by `acc_MessageHandlerThread()`, `acc_Thread()`, and `message_InitializeFromAgent()`.

## 13.39 /home/dko/projects/mobilec/trunk/src/include/mc\_error.h File Reference

### Typedefs

- typedef enum [error\\_code\\_e](#) [error\\_code\\_t](#)

### Enumerations

- enum [error\\_code\\_e](#) {  
[MC\\_SUCCESS](#) = 0, [MC\\_ERR](#), [MC\\_ERR\\_CONNECT](#), [MC\\_ERR\\_PARSE](#),  
[MC\\_ERR\\_EMPTY](#), [MC\\_ERR\\_INVALID](#), [MC\\_ERR\\_INVALID\\_ARGS](#), [MC\\_ERR\\_NOT\\_FOUND](#),  
[MC\\_ERR\\_MEMORY](#), [MC\\_ERR\\_SEND](#), [MC\\_WARN\\_DUPLICATE](#), [MC\\_SUCCESS](#) = 0,  
[ERR](#), [MC\\_ERR\\_CONNECT](#), [MC\\_ERR\\_PARSE](#), [MC\\_ERR\\_EMPTY](#),  
[MC\\_ERR\\_INVALID](#), [MC\\_ERR\\_INVALID\\_ARGS](#), [MC\\_ERR\\_NOT\\_FOUND](#), [MC\\_ERR\\_MEMORY](#),  
[MC\\_ERR\\_SEND](#), [MC\\_WARN\\_DUPLICATE](#) }

#### 13.39.1 Typedef Documentation

##### 13.39.1.1 typedef enum [error\\_code\\_e](#) [error\\_code\\_t](#)

#### 13.39.2 Enumeration Type Documentation

##### 13.39.2.1 enum [error\\_code\\_e](#)

Enumerator:

```
MC_SUCCESS
MC_ERR
MC_ERR_CONNECT
MC_ERR_PARSE
MC_ERR_EMPTY
MC_ERR_INVALID
MC_ERR_INVALID_ARGS
MC_ERR_NOT_FOUND
MC_ERR_MEMORY
MC_ERR_SEND
MC_WARN_DUPLICATE
MC_SUCCESS
ERR
MC_ERR_CONNECT
MC_ERR_PARSE
MC_ERR_EMPTY
```

*MC\_ERR\_INVALID*  
*MC\_ERR\_INVALID\_ARGS*  
*MC\_ERR\_NOT\_FOUND*  
*MC\_ERR\_MEMORY*  
*MC\_ERR\_SEND*  
*MC\_WARN\_DUPLICATE*

Definition at line 41 of file mc\_error.h.

## 13.40 /home/dko/projects/mobilec/trunk/src/include/mc\_platform.h

### File Reference

```
#include "acc.h"
#include "ams.h"
#include "barrier.h"
#include "cmd_prompt.h"
#include "config.h"
#include "connection.h"
#include "data_structures.h"
#include "df.h"
#include "libmc.h"
#include "../mc_sync/sync_list.h"
#include "../security/asm.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)
- [int](#) [mc\\_platform\\_Destroy](#) ([mc\\_platform\\_p](#) mc\_platform)

#### 13.40.1 Typedef Documentation

##### 13.40.1.1 typedef [mc\\_platform\\_t](#)\* [mc\\_platform\\_p](#)

Definition at line 113 of file [mc\\_platform.h](#).

##### 13.40.1.2 typedef struct [mc\\_platform\\_s](#) [mc\\_platform\\_t](#)

Definition at line 112 of file [mc\\_platform.h](#).

#### 13.40.2 Function Documentation

##### 13.40.2.1 [int](#) [mc\\_platform\\_Destroy](#) ([mc\\_platform\\_p](#) *mc\_platform*)

Definition at line 235 of file [mc\\_platform.c](#).



References `mc_platform_s::acc`, `acc_Destroy()`, `mc_platform_s::agent_queue`, `mc_platform_s::ams`, `ams_Destroy()`, `mc_platform_s::asm_message_queue`, `mc_platform_s::barrier_queue`, `barrier_queue_Destroy()`, `mc_platform_s::cmd_prompt`, `cmd_prompt_Destroy()`, `COND_DESTROY`, `mc_platform_s::connection_queue`, `mc_platform_s::df`, `df_Destroy()`, `mc_platform_s::giant_cond`, `mc_platform_s::giant_lock`, `mc_platform_s::interp_options`, `mc_platform_s::MC_signal_cond`, `mc_platform_s::MC_signal_lock`, `mc_platform_s::MC_steer_cond`, `mc_platform_s::MC_steer_lock`, `MC_SUCCESS`, `mc_platform_s::MC_sync_cond`, `mc_platform_s::MC_sync_lock`, `mc_platform_s::message_queue`, `MUTEX_DESTROY`, `mc_platform_s::quit_lock`, and `mc_platform_s::sockfd`.

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

### 13.40.2.2 `mc_platform_p mc_platform_Initialize (MCAgency_t agency)`

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

References `mc_platform_s::acc`, `acc_Initialize()`, `acc_Start()`, `mc_platform_s::agent_queue`, `mc_platform_s::ams`, `ams_Initialize()`, `ams_Start()`, `mc_platform_s::asm_message_queue`, `mc_platform_s::barrier_queue`, `barrier_queue_New()`, `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()`, `agency_s::enable_security`, `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`, `mc_platform_s::interp_options`, `agency_s::last_error`, `MC_ERR_MEMORY`, `MC_NO_SIGNAL`, `mc_platform`, `mc_platform_s::MC_signal`, `mc_platform_s::MC_signal_cond`, `mc_platform_s::MC_signal_lock`, `mc_platform_s::MC_steer_cond`, `mc_platform_s::MC_steer_lock`, `mc_platform_s::MC_sync_cond`, `mc_platform_s::MC_sync_lock`, `MC_THREAD_ACC`, `MC_THREAD_ALL`, `MC_THREAD_AMS`, `MC_THREAD_CP`, `MC_THREAD_DF`, `mc_platform_s::message_queue`, `MUTEX_INIT`, `MUTEX_LOCK`, `MUTEX_T`, `MUTEX_UNLOCK`, `mc_platform_s::port`, `agency_s::portno`, `mc_platform_s::quit`, `mc_platform_s::quit_lock`, `agency_s::stack_size`, `mc_platform_s::stack_size`, `mc_platform_s::syncList`, `syncListInit()`, and `agency_s::threads`.

Referenced by `MC_Initialize()`.

## 13.41 /home/dko/projects/mobilec/trunk/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*)

#### 13.41.1 Typedef Documentation

##### 13.41.1.1 typedef [mc\\_rwlock\\_t](#)\* [mc\\_rwlock\\_p](#)

Definition at line 46 of file [mc\\_rwlock.h](#).

##### 13.41.1.2 typedef struct [mc\\_rwlock\\_s](#) [mc\\_rwlock\\_t](#)

#### 13.41.2 Function Documentation

##### 13.41.2.1 [int mc\\_rwlock\\_destroy](#) ([mc\\_rwlock\\_p](#) *rwlock*)

Definition at line 61 of file [mc\\_rwlock.c](#).

References [mc\\_rwlock\\_s::cond](#), [COND\\_DESTROY](#), [mc\\_rwlock\\_s::lock](#), and [MUTEX\\_DESTROY](#).

##### 13.41.2.2 [int mc\\_rwlock\\_init](#) ([mc\\_rwlock\\_p](#) *rwlock*)

Definition at line 41 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](#).

**13.41.2.3 int mc\_rwlock\_rdlock (mc\_rwlock\_p *rwlock*)**

Definition at line 74 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.

**13.41.2.4 int mc\_rwlock\_rdunlock (mc\_rwlock\_p *rwlock*)**

Definition at line 89 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.

**13.41.2.5 int mc\_rwlock\_wrlock (mc\_rwlock\_p *rwlock*)**

Definition at line 102 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.

**13.41.2.6 int mc\_rwlock\_wrunlock (mc\_rwlock\_p *rwlock*)**

Definition at line 121 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.

## 13.42 /home/dko/projects/mobilec/trunk/src/include/message.h File Reference

```
#include "config.h"
#include "mtp_http.h"
#include <mxml.h>
#include <netinet/in.h>
```

### Data Structures

- struct [message\\_s](#)

### Typedefs

- typedef enum [message\\_type\\_e](#) [message\\_type\\_t](#)
- typedef struct [message\\_s](#) [message\\_t](#)
- typedef [message\\_t](#) \* [message\\_p](#)

### 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 }

### 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 [message\\_Send](#) ([message\\_p](#) message)
- int [http\\_to\\_hostport](#) (const char \*http\_str, char \*\*host, int \*port, char \*\*target)

#### 13.42.1 Typedef Documentation

##### 13.42.1.1 typedef [message\\_t](#)\* [message\\_p](#)

Definition at line 109 of file [message.h](#).

**13.42.1.2** typedef struct message\_s message\_t

**13.42.1.3** typedef enum message\_type\_e message\_type\_t

## 13.42.2 Enumeration Type Documentation

**13.42.2.1** 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*

Definition at line 48 of file message.h.

## 13.42.3 Function Documentation

**13.42.3.1** int http\_to\_hostport (const char \* *http\_str*, char \*\* *host*, int \* *port*, char \*\* *target*)

Definition at line 506 of file message.c.

References MC\_ERR\_PARSE.

Referenced by MC\_AclSend().

**13.42.3.2** message\_p message\_Copy (message\_p *src*)

Definition at line 310 of file message.c.

**13.42.3.3** int message\_Destroy (message\_p *message*)

Definition at line 617 of file message.c.

References message\_s::addr, message\_s::agent\_xml\_flag, message\_s::from\_address, MC\_SUCCESS, message\_s::message\_body, mxmDelete(), message\_s::target, message\_s::to\_address, message\_s::update\_name, and message\_s::xml\_root.

Referenced by `acc_MessageHandlerThread()`, `acc_Thread()`, `ams_ManageAgentList()`, `MC_AclSend()`, `MC_LoadAgentFromFile()`, `MC_SendAgentMigrationMessage()`, `MC_SendAgentMigrationMessageFile()`, `message_InitializeFromConnection()`, `message_InitializeFromString()`, and `message_queue_SendOutgoing()`.

#### 13.42.3.4 `int message_InitializeFromAgent (struct mc_platform_s * mc_platform, message_p message, struct agent_s * agent)`

Referenced by `ams_ManageAgentList()`.

#### 13.42.3.5 `int message_InitializeFromConnection (struct mc_platform_s * mc_platform, message_p message, struct connection_s * connection)`

#### 13.42.3.6 `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_SendAgentMigrationMessage()`, and `MC_SendAgentMigrationMessageFile()`.

#### 13.42.3.7 `message_p message_New (void)`

Definition at line 286 of file `message.c`.

References `message_s::addr`, `message_s::agent_xml_flag`, `CHECK_NULL`, `message_s::connect_id`, `message_s::from_address`, `message_s::http_type`, `message_s::isHTTP`, `message_s::message_body`, `message_s::message_id`, `message_s::message_type`, `message_s::target`, `message_s::to_address`, `message_s::update_name`, `message_s::update_num`, `message_s::xml_payload`, and `message_s::xml_root`.

Referenced by `acc_Thread()`, `ams_ManageAgentList()`, `MC_LoadAgentFromFile()`, `MC_SendAgentMigrationMessage()`, `MC_SendAgentMigrationMessageFile()`, and `mtp_http_CreateMessage()`.

#### 13.42.3.8 `int message_Send (message_p message)`

Definition at line 655 of file `message.c`.

References `CHECK_NULL`, `MC_ERR`, `MC_ERR_CONNECT`, `MC_ERR_SEND`, `message_s::message_body`, `mtp_http_ComposeMessage()`, `mtp_http_Destroy()`, `mtp_http_New()`, `mtp_http_Parse()`, `port`, `send`, `SOCKET_INPUT_SIZE`, `strtok_r`, and `message_s::to_address`.

Referenced by `acc_MessageHandlerThread()`, `MC_AclSend()`, and `message_queue_SendOutgoing()`.

## 13.43 /home/dko/projects/mobilec/trunk/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)`
- `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)`

### 13.43.1 Define Documentation

#### 13.43.1.1 `#define SOCKET_INPUT_SIZE 4096`

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

Referenced by `message_InitializeFromConnection()`, `message_Send()`, and `mtp_http_InitializeFromConnection()`.

### 13.43.2 Typedef Documentation

#### 13.43.2.1 `typedef struct mtp_http_content_s mtp_http_content_t`

#### 13.43.2.2 `typedef mtp_http_t* mtp_http_p`

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

#### 13.43.2.3 `typedef struct mtp_http_s mtp_http_t`

### 13.43.3 Enumeration Type Documentation

#### 13.43.3.1 `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.

### 13.43.3.2 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.

### 13.43.4 Function Documentation

#### 13.43.4.1 `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 225 of file mtp\_http.c.

Referenced by mtp\_http\_Parse(), and mtp\_http\_ParseHeader().

#### 13.43.4.2 `const char* http_GetToken (const char * string, char ** token)`

Definition at line 664 of file mtp\_http.c.

References cur.

Referenced by http\_ParseRequest().

#### 13.43.4.3 `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 284 of file mtp\_http.c.

References CHECK\_NULL, MC\_ERR\_PARSE, and MC\_SUCCESS.

Referenced by mtp\_http\_Parse(), and mtp\_http\_ParseHeader().

**13.43.4.4 const char\* http\_ParseRequest (mtp\_http\_p *http*, const char \* *string*)**

Definition at line 575 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().

**13.43.4.5 int mtp\_http\_ComposeMessage (struct message\_s \* *message*)**

Referenced by message\_Send().

**13.43.4.6 struct message\_s\* mtp\_http\_CreateMessage (mtp\_http\_t \* *mtp\_http*, char \* *hostname*, int *port*) [read]**

Definition at line 749 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().

**13.43.4.7 int mtp\_http\_Destroy (mtp\_http\_p *http*)**

Definition at line 53 of file mtp\_http.c.

References mtp\_http\_s::accept\_ranges, mtp\_http\_s::boundary, 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::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\_Thread(), MC\_AclSend(), message\_Send(), and mtp\_http\_InitializeFromConnection().

**13.43.4.8 int mtp\_http\_InitializeFromConnection (struct mtp\_http\_s \* *http*, struct connection\_s \* *connection*)**

Referenced by acc\_Thread().

#### 13.43.4.9 `mtp_http_p mtp_http_New (void)`

Definition at line 86 of file `mtp_http.c`.

References `CHECK_NULL`, and `mtp_http_s::content`.

Referenced by `acc_Thread()`, `MC_AclSend()`, `message_Send()`, and `mtp_http_InitializeFromConnection()`.

#### 13.43.4.10 `int mtp_http_Parse (struct mtp_http_s * http, const char * string)`

Definition at line 426 of file `mtp_http.c`.

References `mtp_http_s::boundary`, `mtp_http_s::content`, `mtp_http_content_s::content_type`, `mtp_http_s::content_type`, `mtp_http_content_s::data`, `http_GetExpression()`, `http_ParseExpression()`, `mtp_http_s::http_performative`, `HTTP_POST`, `HTTP_PUT`, `HTTP_RESPONSE`, `MC_SUCCESS`, `mtp_http_s::message_parts`, and `mtp_http_ParseHeader()`.

Referenced by `message_Send()`, and `mtp_http_InitializeFromConnection()`.

#### 13.43.4.11 `const char* mtp_http_ParseHeader (struct mtp_http_s * http, const char * string)`

Definition at line 343 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()`.

## 13.44 /home/dko/projects/mobilec/trunk/src/include/xml\_compose.h File Reference

```
#include "agent.h"
```

### Functions

- [mxml\\_node\\_t \\* agent\\_xml\\_compose \(agent\\_p agent\)](#)
- [mxml\\_node\\_t \\* agent\\_xml\\_compose\\_\\_gaf\\_message \(agent\\_p agent\)](#)
- [mxml\\_node\\_t \\* agent\\_xml\\_compose\\_\\_message \(agent\\_p agent\)](#)
- [mxml\\_node\\_t \\* agent\\_xml\\_compose\\_\\_mobile\\_agent \(agent\\_p agent\)](#)
- [mxml\\_node\\_t \\* agent\\_xml\\_compose\\_\\_agent\\_data \(agent\\_p agent\)](#)
- [mxml\\_node\\_t \\* agent\\_xml\\_compose\\_\\_name \(agent\\_p agent\)](#)
- [mxml\\_node\\_t \\* agent\\_xml\\_compose\\_\\_owner \(agent\\_p agent\)](#)
- [mxml\\_node\\_t \\* agent\\_xml\\_compose\\_\\_home \(agent\\_p agent\)](#)
- [mxml\\_node\\_t \\* agent\\_xml\\_compose\\_\\_tasks \(agent\\_p agent\)](#)
- [mxml\\_node\\_t \\* agent\\_xml\\_compose\\_\\_task \(agent\\_p agent, int index\)](#)
- [mxml\\_node\\_t \\* agent\\_xml\\_compose\\_\\_data \(agent\\_p agent, int index, interpreter\\_variable\\_data\\_t \\*interp\\_variable\)](#)
- [mxml\\_node\\_t \\* agent\\_xml\\_compose\\_\\_agent\\_code \(agent\\_p agent, int index\)](#)
- [mxml\\_node\\_t \\* agent\\_xml\\_compose\\_\\_row \(interpreter\\_variable\\_data\\_t \\*interp\\_variable, int index\)](#)
- [mxml\\_node\\_t \\* agent\\_xml\\_compose\\_\\_create\\_row\\_nodes \(void \\*data, int index, int \\*extent, ChType\\_t type, int dim, int extent\\_index\)](#)

### 13.44.1 Function Documentation

#### 13.44.1.1 mxml\_node\_t\* agent\_xml\_compose (agent\_p agent)

Definition at line 41 of file `xml_compose.c`.

References `agent_xml_compose__gaf_message()`, `MXML_ADD_AFTER`, `MXML_ADD_TO_PARENT`, `MXML_NO_CALLBACK`, `mxmlAdd()`, `mxmlLoadString()`, and `node`.

Referenced by `message_InitializeFromAgent()`.

#### 13.44.1.2 mxml\_node\_t\* agent\_xml\_compose\_\_agent\_code (agent\_p agent, int index)

Definition at line 501 of file `xml_compose.c`.

References `agent_datastate_s::agent_code_ids`, `agent_datastate_s::agent_codes`, `agent_s::datastate`, `MXML_NO_PARENT`, `mxmlElementSetAttr()`, `mxmlNewElement()`, `node`, and `xml_new_cdata()`.

Referenced by `agent_xml_compose__tasks()`.

#### 13.44.1.3 mxml\_node\_t\* agent\_xml\_compose\_\_agent\_data (agent\_p agent)

Definition at line 145 of file `xml_compose.c`.

References `agent_xml_compose__home()`, `agent_xml_compose__name()`, `agent_xml_compose__owner()`, `agent_xml_compose__tasks()`, `MXML_ADD_AFTER`, `mxmlAdd()`, `mxmlNewElement()`, and `node`.

Referenced by `agent_xml_compose__mobile_agent()`.

#### 13.44.1.4 **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 552 of file xml\_compose.c.

References agent\_xml\_compose\_\_create\_row\_nodes(), buf, CH\_DATATYPE\_SIZE, CH\_DATATYPE\_VALUE\_STRING, MXML\_ADD\_AFTER, MXML\_ADD\_TO\_PARENT, MXML\_NO\_PARENT, mxmlAdd(), mxmlElementSetAttr(), mxmlNewElement(), mxmlNewText(), node, and size.

Referenced by agent\_xml\_compose\_\_create\_row\_nodes(), and agent\_xml\_compose\_\_row().

#### 13.44.1.5 **mxml\_node\_t\* agent\_xml\_compose\_\_data** (agent\_p *agent*, int *index*, interpreter\_variable\_data\_t \* *interp\_variable*)

Definition at line 427 of file xml\_compose.c.

References agent\_xml\_compose\_\_row(), interpreter\_variable\_data\_s::array\_dim, buf, CH\_DATATYPE\_STRING, CH\_DATATYPE\_VALUE\_STRING, interpreter\_variable\_data\_s::data, interpreter\_variable\_data\_s::data\_type, MXML\_ADD\_AFTER, mxmlAdd(), mxmlElementSetAttr(), mxmlNewElement(), interpreter\_variable\_data\_s::name, and node.

Referenced by agent\_xml\_compose\_\_task().

#### 13.44.1.6 **mxml\_node\_t\* agent\_xml\_compose\_\_gaf\_message** (agent\_p *agent*)

Definition at line 61 of file xml\_compose.c.

References agent\_xml\_compose\_\_message(), MXML\_ADD\_AFTER, mxmlAdd(), mxmlNewElement(), and node.

Referenced by agent\_xml\_compose().

#### 13.44.1.7 **mxml\_node\_t\* agent\_xml\_compose\_\_home** (agent\_p *agent*)

Definition at line 237 of file xml\_compose.c.

References agent\_s::home, mxmlNewElement(), mxmlNewText(), and node.

Referenced by agent\_xml\_compose\_\_agent\_data().

#### 13.44.1.8 **mxml\_node\_t\* agent\_xml\_compose\_\_message** (agent\_p *agent*)

Definition at line 80 of file xml\_compose.c.

References agent\_s::agent\_type, agent\_xml\_compose\_\_mobile\_agent(), MC\_LOCAL\_AGENT, MC\_REMOTE\_AGENT, MC\_RETURN\_AGENT, MXML\_ADD\_AFTER, mxmlAdd(), mxmlElementSetAttr(), mxmlNewElement(), and node.

Referenced by agent\_xml\_compose\_\_gaf\_message().

#### 13.44.1.9 **mxml\_node\_t\* agent\_xml\_compose\_\_mobile\_agent** (agent\_p *agent*)

Definition at line 124 of file xml\_compose.c.

References agent\_xml\_compose\_\_agent\_data(), MXML\_ADD\_AFTER, mxmlAdd(), mxmlNewElement(), and node.

Referenced by `agent_xml_compose__message()`.

#### 13.44.1.10 `mxml_node_t* agent_xml_compose__name (agent_p agent)`

Definition at line 205 of file `xml_compose.c`.

References `mxmlNewElement()`, `mxmlNewText()`, `agent_s::name`, and `node`.

Referenced by `agent_xml_compose__agent_data()`.

#### 13.44.1.11 `mxml_node_t* agent_xml_compose__owner (agent_p agent)`

Definition at line 221 of file `xml_compose.c`.

References `mxmlNewElement()`, `mxmlNewText()`, `node`, and `agent_s::owner`.

Referenced by `agent_xml_compose__agent_data()`.

#### 13.44.1.12 `mxml_node_t* agent_xml_compose__row (interpreter_variable_data_t * interp_variable, int index)`

Definition at line 529 of file `xml_compose.c`.

References `agent_xml_compose__create_row_nodes()`, `interpreter_variable_data_s::array_dim`, `interpreter_variable_data_s::array_extent`, `interpreter_variable_data_s::data`, `interpreter_variable_data_s::data_type`, and `node`.

Referenced by `agent_xml_compose__data()`.

#### 13.44.1.13 `mxml_node_t* agent_xml_compose__task (agent_p agent, int index)`

Definition at line 310 of file `xml_compose.c`.

References `agent_task_s::agent_return_data`, `agent_task_s::agent_variable_list`, `agent_xml_compose__data()`, `buf`, `agent_task_s::code_id`, `agent_s::datastate`, `MXML_ADD_AFTER`, `mxmlAdd()`, `mxmlElementSetAttr()`, `mxmlNewElement()`, `node`, `agent_task_s::persistent`, `agent_datastate_s::persistent`, `agent_task_s::server_name`, `agent_task_s::task_completed`, `agent_datastate_s::tasks`, and `agent_task_s::var_name`.

Referenced by `agent_xml_compose__tasks()`.

#### 13.44.1.14 `mxml_node_t* agent_xml_compose__tasks (agent_p agent)`

Definition at line 253 of file `xml_compose.c`.

References `agent_xml_compose__agent_code()`, `agent_xml_compose__task()`, `buf`, `agent_s::datastate`, `MXML_ADD_AFTER`, `mxmlAdd()`, `mxmlElementSetAttr()`, `mxmlNewElement()`, `node`, `agent_datastate_s::number_of_tasks`, and `agent_datastate_s::task_progress`.

Referenced by `agent_xml_compose__agent_data()`.

## 13.45 /home/dko/projects/mobilec/trunk/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*)
- const 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*)

#### 13.45.1 Function Documentation

##### 13.45.1.1 const char \* whitespace\_cb (mxml\_node\_t \* *node*, int *where*)

Definition at line 571 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\(\)](#).

##### 13.45.1.2 mxml\_node\_t\* xml\_find\_sibling (const mxml\_node\_t \* *node*, const char \* *sibling\_name*)

Definition at line 49 of file xml\_helper.c.

References [MXML\\_NO\\_DESCEND](#), [mxmlFindElement\(\)](#), [mxml\\_node\\_s::parent](#), and [xml\\_get\\_element\\_name\(\)](#).

##### 13.45.1.3 char\* xml\_get\_cdata (const mxml\_node\_t \* *node*)

Definition at line 71 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\(\)](#).

##### 13.45.1.4 mxml\_node\_t\* xml\_get\_child (const mxml\_node\_t \* *node*, const char \* *child\_name*, int *descend*)

Definition at line 104 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()`.

#### 13.45.1.5 `mxml_node_t* xml_get_deep_child (const mxml_node_t * parent, const char ** child_path)`

Definition at line 123 of file `xml_helper.c`.

References `MXML_NO_DESCEND`, `node`, and `xml_get_child()`.

#### 13.45.1.6 `const char* xml_get_element_name (const mxml_node_t * node)`

Definition at line 217 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()`.

#### 13.45.1.7 `mxml_node_t* xml_get_next_element (const mxml_node_t * node)`

Definition at line 137 of file `xml_helper.c`.

References `MXML_ELEMENT`, `mxml_node_s::next`, and `mxml_node_s::type`.

#### 13.45.1.8 `char* xml_get_text (const mxml_node_t * node)`

Definition at line 155 of file `xml_helper.c`.

References `CHECK_NULL`, `mxml_node_s::child`, `mxml_value_u::element`, `MXML_ELEMENT`, `MXML_TEXT`, `mxml_value_s::name`, `mxml_node_s::next`, `mxml_text_s::string`, `mxml_value_u::text`, `mxml_node_s::type`, `mxml_node_s::value`, and `xml_get_cdata()`.

Referenced by `agent_xml_parse__agent_code()`, `agent_xml_parse__home()`, `agent_xml_parse__name()`, `agent_xml_parse__owner()`, and `agent_xml_parse__sender()`.

#### 13.45.1.9 `mxml_node_t* xml_new_cdata (mxml_node_t * parent, const char * text)`

Definition at line 230 of file `xml_helper.c`.

References `CHECK_NULL`, `mxmlNewElement()`, and `node`.

Referenced by `agent_xml_compose__agent_code()`.

## 13.46 /home/dko/projects/mobilec/trunk/src/include/xml\_parser.h File Reference

```
#include <mxml.h>
#include "macros.h"
#include "agent.h"
```

### Functions

- **STRUCT** (xml\_parser, const [mxml\\_node\\_t](#) \*root; const [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\\_\\_tasks](#) ([agent\\_p](#) agent, [xml\\_parser\\_p](#) xml\_parser)
- [error\\_code\\_t agent\\_xml\\_parse\\_\\_task](#) ([agent\\_p](#) agent, [xml\\_parser\\_p](#) xml\_parser, [int](#) index)
- [error\\_code\\_t agent\\_xml\\_parse\\_\\_data](#) ([agent\\_p](#) agent, [xml\\_parser\\_p](#) xml\_parser, [int](#) index)
- [error\\_code\\_t agent\\_xml\\_parse\\_\\_row](#) ([interpreter\\_variable\\_data\\_t](#) \*interp\_variable, [xml\\_parser\\_p](#) xml\_parser, [int](#) index)
- void [agent\\_xml\\_parse\\_\\_fill\\_row\\_data](#) (void \*data, [ChType\\_t](#) type, [int](#) \*extent, const [mxml\\_node\\_t](#) \*node, [int](#) \*index)
- [error\\_code\\_t agent\\_xml\\_parse\\_\\_agent\\_code](#) ([agent\\_p](#) agent, [int](#) index, [xml\\_parser\\_p](#) xml\_parser)
- [error\\_code\\_t message\\_xml\\_parse](#) ([message\\_p](#) message)
- [error\\_code\\_t message\\_xml\\_parse\\_\\_message](#) ([message\\_p](#) message, [xml\\_parser\\_p](#) xml\_parser)

### 13.46.1 Function Documentation

#### 13.46.1.1 [error\\_code\\_t agent\\_xml\\_parse](#) ([agent\\_p](#) agent)

Definition at line 52 of file [xml\\_parser.c](#).

References [agent\\_xml\\_parse\\_\\_mobile\\_agent\(\)](#), [agent\\_s::datastate](#), [MC\\_SUCCESS](#), and [agent\\_datastate\\_s::xml\\_agent\\_root](#).

Referenced by [agent\\_initialize\(\)](#).

#### 13.46.1.2 [error\\_code\\_t agent\\_xml\\_parse\\_\\_agent\\_code](#) ([agent\\_p](#) agent, [int](#) index, [xml\\_parser\\_p](#) xml\_parser)

Definition at line 836 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\(\)](#).

**13.46.1.3 error\_code\_t agent\_xml\_parse\_\_agent\_data (agent\_p agent, xml\_parser\_p xml\_parser)**

Definition at line 93 of file xml\_parser.c.

References agent\_xml\_parse\_\_home(), agent\_xml\_parse\_\_name(), agent\_xml\_parse\_\_owner(), agent\_xml\_parse\_\_sender(), agent\_xml\_parse\_\_tasks(), MC\_ERR\_PARSE, MC\_SUCCESS, and xml\_get\_child().

Referenced by agent\_xml\_parse\_\_mobile\_agent().

**13.46.1.4 error\_code\_t agent\_xml\_parse\_\_data (agent\_p agent, xml\_parser\_p xml\_parser, int index)**

Definition at line 507 of file xml\_parser.c.

References agent\_task\_s::agent\_return\_data, agent\_task\_s::agent\_variable\_list, agent\_xml\_parse\_\_row(), interpreter\_variable\_data\_s::array\_dim, CH\_DATATYPE\_SIZE, CH\_DATATYPE\_STR\_TO\_VAL, CH\_STRING\_DATATYPE, interpreter\_variable\_data\_s::data, interpreter\_variable\_data\_s::data\_type, agent\_s::datastate, interpreter\_variable\_data\_New(), MC\_ERR\_PARSE, MC\_SUCCESS, mxmlElementGetAttr(), interpreter\_variable\_data\_s::name, mxml\_node\_s::parent, agent\_task\_s::persistent, agent\_datastate\_s::tasks, xml\_get\_child(), and xml\_get\_element\_name().

Referenced by agent\_xml\_parse\_\_task().

**13.46.1.5 void agent\_xml\_parse\_\_fill\_row\_data (void \* data, ChType\_t type, int \* extent, const mxml\_node\_t \* node, int \* index)**

Definition at line 717 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().

**13.46.1.6 error\_code\_t agent\_xml\_parse\_\_home (agent\_p agent, xml\_parser\_p xml\_parser)**

Definition at line 210 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().

**13.46.1.7 error\_code\_t agent\_xml\_parse\_\_mobile\_agent (agent\_p agent, xml\_parser\_p xml\_parser)**

Definition at line 65 of file xml\_parser.c.

References agent\_xml\_parse\_\_agent\_data(), MC\_ERR\_PARSE, xml\_get\_child(), and xml\_get\_element\_name().

Referenced by agent\_xml\_parse().

**13.46.1.8 error\_code\_t agent\_xml\_parse\_\_name (agent\_p agent, xml\_parser\_p xml\_parser)**

Definition at line 157 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().

**13.46.1.9 error\_code\_t agent\_xml\_parse\_\_owner (agent\_p agent, xml\_parser\_p xml\_parser)**

Definition at line 183 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().

**13.46.1.10 error\_code\_t agent\_xml\_parse\_\_row (interpreter\_variable\_data\_t \* interp\_variable, xml\_parser\_p xml\_parser, int index)**

Definition at line 653 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().

**13.46.1.11 error\_code\_t agent\_xml\_parse\_\_sender (agent\_p agent, xml\_parser\_p xml\_parser)**

Definition at line 236 of file xml\_parser.c.

References CHECK\_NULL, MC\_SUCCESS, agent\_s::sender, and xml\_get\_text().

Referenced by agent\_xml\_parse\_\_agent\_data().

**13.46.1.12 error\_code\_t agent\_xml\_parse\_\_task (agent\_p agent, xml\_parser\_p xml\_parser, int index)**

Definition at line 402 of file xml\_parser.c.

References agent\_xml\_parse\_\_data(), CHECK\_NULL, agent\_task\_s::code\_id, agent\_s::datastate, MC\_ERR\_PARSE, MC\_SUCCESS, MXML\_DESCEND\_FIRST, MXML\_NO\_DESCEND, mxmlElementGetAttr(), mxmlFindElement(), agent\_task\_s::persistent, agent\_task\_s::server\_name, agent\_task\_s::task\_completed, agent\_datastate\_s::tasks, and agent\_task\_s::var\_name.

Referenced by agent\_xml\_parse\_\_tasks().

**13.46.1.13 error\_code\_t agent\_xml\_parse\_\_tasks (agent\_p agent, xml\_parser\_p xml\_parser)**

Definition at line 264 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().

#### 13.46.1.14 error\_code\_t message\_xml\_parse (message\_p message)

Definition at line 912 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\_Thread(), message\_InitializeFromConnection(), and message\_InitializeFromString().

#### 13.46.1.15 error\_code\_t message\_xml\_parse\_\_message (message\_p message, xml\_parser\_p xml\_parser)

Definition at line 967 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().

#### 13.46.1.16 STRUCT (xml\_parser, const mxml\_node\_t \*root;const mxml\_node\_t \*node;)

## 13.47 /home/dko/projects/mobilec/trunk/src/libmc.c File Reference

```
#include <unistd.h>
#include <pthread.h>
#include <embedch.h>
#include <sys/types.h>
#include <sys/stat.h>
#include <sys/time.h>
#include "include/libmc.h"
#include "include/macros.h"
#include "include/mc_platform.h"
#include "include/message.h"
#include "include/data_structures.h"
#include "include/fipa_acl_envelope.h"
#include "include/fipa_acl.h"
#include "include/agent.h"
#include "include/agent_task.h"
```

### Defines

- #define [HOST\\_NAME\\_MAX](#) 255

### Functions

- [int MC\\_AclDestroy](#) (struct [fipa\\_acl\\_message\\_s](#) \*message)  
*Destroy a FIPA ACL message.*
- EXPORTMC [fipa\\_acl\\_message\\_t](#) \* [MC\\_AclNew](#) (void)  
*Allocate a new ACL Message.*
- EXPORTMC [int MC\\_AclPost](#) ([MCAgent\\_t](#) agent, struct [fipa\\_acl\\_message\\_s](#) \*message)  
*Post ACL message to agent.*
- EXPORTMC [fipa\\_acl\\_message\\_t](#) \* [MC\\_AclReply](#) ([fipa\\_acl\\_message\\_t](#) \*acl\_message)  
*Reply to an ACL message.*
- EXPORTMC [fipa\\_acl\\_message\\_t](#) \* [MC\\_AclRetrieve](#) ([MCAgent\\_t](#) agent)  
*Retrieve an ACL message.*
- EXPORTMC [int MC\\_AclSend](#) ([MCAgency\\_t](#) attr, [fipa\\_acl\\_message\\_t](#) \*acl)  
*Send a composed ACL Message.*
- EXPORTMC [fipa\\_acl\\_message\\_t](#) \* [MC\\_AclWaitRetrieve](#) ([MCAgent\\_t](#) agent)  
*Wait for and retrieve an ACL message.*

- `int MC_AclSetPerformative (fipa_acl_message_t *acl, enum fipa_performative_e performative)`
- `int MC_AclSetSender (fipa_acl_message_t *acl, const char *name, const char *address)`
- `int MC_AclAddReceiver (fipa_acl_message_t *acl, const char *name, const char *address)`
- `int MC_AclAddReplyTo (fipa_acl_message_t *acl, const char *name, const char *address)`
- `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'.*
- `const void * MC_AgentVariableRetrieve (MCAgent_t agent, const char *var_name, int task_num)`  
*Retrieve a pointer to a previously saved variable.*
- `int MC_AgentVariableSave (MCAgent_t agent, const char *var_name)`  
*Mark an agent variable for saving.*
- `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,...)`  
*Calls a function defined in an agent.*
- `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 int MC_ChInitializeOptions (MCAgency_t attr, ChOptions_t *options)`  
*Use custom ChOptions\_t type for internal Ch interpreter.*
- `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 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.*
- [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.*
- [int MC\\_DestroyServiceSearchResult](#) (char \*\*agentName, char \*\*serviceName, [int](#) \*agentID, [int](#) numResult)  
*Free memory allocated by a Service Search operation.*
- [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.*
- [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.*
- [int MC\\_GetAllAgents](#) ([MCAgency\\_t](#) attr, [MCAgent\\_t](#) \*\*agents, [int](#) \*num\_agents)



- EXPORTMC [int MC\\_HaltAgency](#) ([MCAgency\\_t](#) attr)  
*Halt an agency: Do not process new entries in queues.*
- EXPORTMC [MCAgency\\_t MC\\_Initialize](#) ([int](#) port, [MCAgencyOptions\\_t](#) \*options)  
*Initialize and start a MobileC agency.*
- EXPORTMC [int MC\\_InitializeAgencyOptions](#) ([struct MCAgencyOptions\\_s](#) \*options)  
*Initialize MobileC options.*
- EXPORTMC [int MC\\_LoadAgentFromFile](#) ([MCAgency\\_t](#) attr, [const char](#) \*filename)  
*Load an agent from a file into an agency.*
- EXPORTMC [int MC\\_MutexLock](#) ([MCAgency\\_t](#) attr, [int](#) id)  
*Locks a MobileC synchronization variable as a mutex.*
- EXPORTMC [int MC\\_MutexUnlock](#) ([MCAgency\\_t](#) attr, [int](#) id)
- EXPORTMC [int MC\\_PrintAgentCode](#) ([MCAgent\\_t](#) agent)  
*Prints an agents code to stdout.*
- EXPORTMC [int MC\\_RegisterService](#) ([MCAgency\\_t](#) agency, [MCAgent\\_t](#) agent, [int](#) agentID, [const char](#) \*agentName, [char](#) \*\*serviceNames, [int](#) numServices)  
*Register a new service with the Directory Facilitator.*
- EXPORTMC [int MC\\_ResumeAgency](#) ([MCAgency\\_t](#) attr)  
*Resumes a halted agency.*
- EXPORTMC [MCAgent\\_t MC\\_RetrieveAgent](#) ([MCAgency\\_t](#) attr)  
*Retrieves the oldest agent from an agency.*
- EXPORTMC [char](#) \* [MC\\_RetrieveAgentCode](#) ([MCAgent\\_t](#) agent)  
*Retrieves an agent's Ch code.*
- EXPORTMC [int MC\\_ResetSignal](#) ([MCAgency\\_t](#) attr)  
*Reset a MobileC signal.*
- EXPORTMC [int MC\\_SearchForService](#) ([MCAgency\\_t](#) attr, [const char](#) \*searchString, [char](#) \*\*\*agentNames, [char](#) \*\*\*serviceNames, [int](#) \*\*agentIDs, [int](#) \*numResults)  
*Search the directory facilitator for a service.*
- EXPORTMC [int MC\\_SemaphorePost](#) ([MCAgency\\_t](#) attr, [int](#) id)  
*Post to a MobileC synchronization variable semaphore.*
- EXPORTMC [int MC\\_SemaphoreWait](#) ([MCAgency\\_t](#) attr, [int](#) id)  
*Decreases a MobileC synchronization variable semaphore count by one.*
- [int MC\\_SendCh](#) ([MCAgency\\_t](#) attr, [const char](#) \*filename, [const char](#) \*remotehost, [int](#) port)
- 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)
- [int MC\\_SetAgentStatus](#) (MCAgent\_t agent, [int status](#))  
*Set an agent's status.*
- [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.*
- [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.*

- [int MC\\_AclDestroy\\_chdl](#) (void \*varg)
- [void \\* MC\\_AclNew\\_chdl](#) (void \*varg)
- [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\\_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 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 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\\_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\\_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 MCAgent\\_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)

## Variables

- [mc\\_platform\\_p g\\_mc\\_platform](#)

### 13.47.1 Define Documentation

#### 13.47.1.1 #define HOST\_NAME\_MAX 255

Definition at line 61 of file libmc.c.

Referenced by MC\_Initialize().

### 13.47.2 Function Documentation

#### 13.47.2.1 int MC\_AclAddReceiver (fipa\_acl\_message\_t \* *acl*, const char \* *name*, const char \* *address*)

Definition at line 229 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](#), and [fipa\\_url\\_sequence\\_s::urls](#).

Referenced by MC\_AclAddReceiver\_chdl().

#### 13.47.2.2 EXPORTCH int MC\_AclAddReceiver\_chdl (void \* *varg*)

Definition at line 1906 of file libmc.c.

References [MC\\_AclAddReceiver\(\)](#).

Referenced by [agent\\_RunChScriptThread\(\)](#).

#### 13.47.2.3 int MC\_AclAddReplyTo (fipa\_acl\_message\_t \* *acl*, const char \* *name*, const char \* *address*)

Definition at line 265 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, and fipa\_url\_sequence\_s::urls.

Referenced by MC\_AclAddReplyTo\_chdl().

#### 13.47.2.4 EXPORTCH int MC\_AclAddReplyTo\_chdl (void \* *varg*)

Definition at line 1926 of file libmc.c.

References MC\_AclAddReplyTo().

Referenced by agent\_RunChScriptThread().

#### 13.47.2.5 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 72 of file libmc.c.

References fipa\_acl\_message\_Destroy().

Referenced by MC\_AclDestroy\_chdl().

#### 13.47.2.6 int MC\_AclDestroy\_chdl (void \* *varg*)

Definition at line 1753 of file libmc.c.

References MC\_AclDestroy().

Referenced by agent\_RunChScriptThread().

#### 13.47.2.7 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 78 of file libmc.c.

References fipa\_acl\_message\_New().

Referenced by MC\_AclNew\_chdl().

**13.47.2.8 void\* MC\_AclNew\_chdl (void \* *varg*)**

Definition at line 1768 of file libmc.c.

References MC\_AclNew().

Referenced by agent\_RunChScriptThread().

**13.47.2.9 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 83 of file libmc.c.

References agent\_mailbox\_Post(), and agent\_s::mailbox.

Referenced by MC\_AclPost\_chdl(), and MC\_AclSend().

**13.47.2.10 int MC\_AclPost\_chdl (void \* *varg*)**

Definition at line 1776 of file libmc.c.

References MC\_AclPost().

Referenced by agent\_RunChScriptThread().

**13.47.2.11 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 89 of file libmc.c.

References fipa\_Reply().

Referenced by MC\_AclReply\_chdl().

**13.47.2.12 EXPORTCH void\* MC\_AclReply\_chdl (void \* *varg*)**

Definition at line 1794 of file libmc.c.

References MC\_AclReply().

Referenced by agent\_RunChScriptThread().

**13.47.2.13 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 95 of file libmc.c.

References agent\_mailbox\_Retrieve(), and agent\_s::mailbox.

Referenced by MC\_AclRetrieve\_chdl().

**13.47.2.14 EXPORTCH void\* MC\_AclRetrieve\_chdl (void \* *varg*)**

Definition at line 1810 of file libmc.c.

References MC\_AclRetrieve().

Referenced by agent\_RunChScriptThread().

**13.47.2.15 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 101 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\_agent\_identifier\_set\_s::fipa\_agent\_identifiers, fipa\_envelope\_Compose(), mtp\_http\_s::host, http\_to\_hostport(), MC\_AclPost(), MC\_FindAgentByName(), dynstring\_s::message, message\_Destroy(), 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, fipa\_acl\_message\_s::receiver, fipa\_url\_s::str, mtp\_http\_s::target, message\_s::target, and fipa\_url\_sequence\_s::urls.

Referenced by MC\_AclSend\_chdl().

**13.47.2.16 EXPORTCH int MC\_AclSend\_chdl (void \* *varg*)**

Definition at line 1826 of file libmc.c.

References CHECK\_NULL, MC\_AclSend(), and agency\_s::mc\_platform.

Referenced by agent\_RunChScriptThread().

**13.47.2.17 int MC\_AclSetContent (fipa\_acl\_message\_t \* *acl*, const char \* *content*)**

Definition at line 300 of file libmc.c.

References fipa\_string\_s::content, fipa\_acl\_message\_s::content, fipa\_string\_Destroy(), and fipa\_string\_New().

Referenced by MC\_AclSetContent\_chdl().

**13.47.2.18 EXPORTCH int MC\_AclSetContent\_chdl (void \* *varg*)**

Definition at line 1946 of file libmc.c.

References fipa\_acl\_message\_s::content, and MC\_AclSetContent().

Referenced by agent\_RunChScriptThread().

**13.47.2.19 int MC\_AclSetPerformative (fipa\_acl\_message\_t \* *acl*, enum fipa\_performative\_e *performative*)**

Definition at line 198 of file libmc.c.

References fipa\_acl\_message\_s::performative.

Referenced by MC\_AclSetPerformative\_chdl().

**13.47.2.20 EXPORTCH int MC\_AclSetPerformative\_chdl (void \* *varg*)**

Definition at line 1868 of file libmc.c.

References MC\_AclSetPerformative(), and fipa\_acl\_message\_s::performative.

Referenced by agent\_RunChScriptThread().

**13.47.2.21 int MC\_AclSetSender (fipa\_acl\_message\_t \* *acl*, const char \* *name*, const char \* *address*)**

Definition at line 206 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, and fipa\_url\_sequence\_s::urls.

Referenced by MC\_AclSetSender\_chdl().

**13.47.2.22 EXPORTCH int MC\_AclSetSender\_chdl (void \* *varg*)**

Definition at line 1886 of file libmc.c.



References MC\_AclSetSender().

Referenced by agent\_RunChScriptThread().

#### 13.47.2.23 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 191 of file libmc.c.

References agent\_mailbox\_WaitRetrieve(), and agent\_s::mailbox.

Referenced by MC\_AclWaitRetrieve\_chdl().

#### 13.47.2.24 EXPORTCH void\* MC\_AclWaitRetrieve\_chdl (void \* *varg*)

Definition at line 1850 of file libmc.c.

References MC\_AclWaitRetrieve().

Referenced by agent\_RunChScriptThread().

#### 13.47.2.25 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 317 of file libmc.c.

References mc\_platform\_s::agent\_queue, mc\_platform\_s::ams, COND\_SIGNAL, agency\_s::mc\_platform, agent\_s::mc\_platform, MUTEX\_LOCK, and MUTEX\_UNLOCK.

Referenced by MC\_AddAgent\_chdl().

#### 13.47.2.26 EXPORTCH int MC\_AddAgent\_chdl (void \* *varg*)

Definition at line 1966 of file libmc.c.

References CHECK\_NULL, MC\_AddAgent(), and agency\_s::mc\_platform.

Referenced by agent\_RunChScriptThread().

### 13.47.2.27 `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.

## 13.47.3 Examples

The following example demonstrates usage of [MC\\_AgentVariableRetrieve\(\)](#) from agent space.

Definition at line 330 of file libmc.c.

References `agent_task_s::agent_variable_list`, `interpreter_variable_data_s::data`, `agent_s::datastate`, `agent_datastate_s::task_progress`, and `agent_datastate_s::tasks`.

Referenced by `MC_AgentVariableRetrieve_chdl()`.

### 13.47.3.1 `EXPORTCH const void* MC_AgentVariableRetrieve_chdl (void * varg)`

Definition at line 1990 of file libmc.c.

References `MC_AgentVariableRetrieve()`.

Referenced by `agent_RunChScriptThread()`.

### 13.47.3.2 `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`

### 13.47.4 Examples

See `agent_saved_variables_example/test1.xml` for an example of usage of this api function.

### 13.47.5 Examples

The following example demonstrates usage of `MC_AgentVariableSave()` from agent space.

Definition at line 348 of file `libmc.c`.

References `agent_s::datastate`, `MC_ERR_MEMORY`, `agent_task_s::num_saved_variables`, `agent_task_s::saved_variables`, `agent_datastate_s::task_progress`, and `agent_datastate_s::tasks`.

Referenced by `MC_AgentVariableSave_chdl()`.

#### 13.47.5.1 EXPORTCH int MC\_AgentVariableSave\_chdl (void \* *varg*)

Definition at line 2014 of file `libmc.c`.

References `MC_AgentVariableSave()`.

Referenced by `agent_RunChScriptThread()`.

#### 13.47.5.2 int MC\_Barrier (MCAgency\_t *attr*, int *id*)

Definition at line 369 of file `libmc.c`.

References `mc_platform_s::barrier_queue`, `barrier_queue_Get()`, `barrier_node_s::cond`, `COND_BROADCAST`, `COND_WAIT`, `barrier_node_s::lock`, `MC_ERR_NOT_FOUND`, `agency_s::mc_platform`, `MC_SUCCESS`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `node`, `barrier_node_s::num_registered`, and `barrier_node_s::num_waiting`.

Referenced by `MC_Barrier_chdl()`.

#### 13.47.5.3 EXPORTCH int MC\_Barrier\_chdl (void \* *varg*)

Definition at line 2066 of file `libmc.c`.

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

Referenced by `agent_RunChScriptThread()`.

#### 13.47.5.4 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 409 of file libmc.c.

References mc\_platform\_s::barrier\_queue, barrier\_queue\_Delete(), and agency\_s::mc\_platform.

Referenced by MC\_BarrierDelete\_chdl().

#### 13.47.5.5 EXPORTCH int MC\_BarrierDelete\_chdl (void \* *varg*)

Definition at line 2089 of file libmc.c.

References CHECK\_NULL, MC\_BarrierDelete(), and agency\_s::mc\_platform.

Referenced by agent\_RunChScriptThread().

#### 13.47.5.6 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.

#### 13.47.6 Examples

The following example demonstrates an agent which sets up an MC\_Barrier.

Definition at line 395 of file libmc.c.

References barrier\_node\_Initialize(), mc\_platform\_s::barrier\_queue, barrier\_queue\_Add(), barrier\_queue\_Get(), MC\_ERR, agency\_s::mc\_platform, MC\_SUCCESS, and node.

Referenced by MC\_BarrierInit\_chdl().

##### 13.47.6.1 EXPORTCH int MC\_BarrierInit\_chdl (void \* *varg*)

Definition at line 2112 of file libmc.c.

References CHECK\_NULL, MC\_BarrierInit(), and agency\_s::mc\_platform.

Referenced by agent\_RunChScriptThread().

##### 13.47.6.2 EXPORTMC int MC\_CallAgentFunc (MCAgent\_t *agent*, const char \* *funcName*, void \* *returnVal*, int *numArgs*, ...)

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

### 13.47.7 Example

Definition at line 415 of file libmc.c.

References agent\_s::agent\_interp, MUTEX\_LOCK, MUTEX\_UNLOCK, and agent\_s::run\_lock.

#### 13.47.7.1 EXPORTCH int MC\_CallAgentFunc\_chdl (void \* *varg*)

Definition at line 2036 of file libmc.c.

References MC\_CallAgentFuncVar().

Referenced by agent\_RunChScriptThread().

#### 13.47.7.2 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

### 13.47.8 Example

Definition at line 436 of file libmc.c.

References agent\_s::agent\_interp, MUTEX\_LOCK, MUTEX\_UNLOCK, and agent\_s::run\_lock.

### 13.47.8.1 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 455 of file libmc.c.

References agent\_s::agent\_interp, MUTEX\_LOCK, MUTEX\_UNLOCK, and agent\_s::run\_lock.

### 13.47.8.2 EXPORTMC int MC\_CallAgentFuncVar (MCAgent\_t *agent*, const char \* *funcName*, void \* *returnVal*, ChVaList\_t *varg*)

Definition at line 475 of file libmc.c.

References agent\_s::agent\_interp, MUTEX\_LOCK, MUTEX\_UNLOCK, and agent\_s::run\_lock.

Referenced by MC\_CallAgentFunc\_chdl().

### 13.47.8.3 EXPORTMC int MC\_ChInitializeOptions (MCAgency\_t *attr*, ChOptions\_t \* *options*)

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

Definition at line 495 of file libmc.c.

References mc\_platform\_s::interp\_options, and agency\_s::mc\_platform.

### 13.47.8.4 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 513 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_datastate_s::persistent`, `agent_task_s::server_name`, `agent_datastate_s::tasks`, and `agent_task_s::var_name`.

Referenced by `MC_ComposeAgent_chdl()`.

#### 13.47.8.5 EXPORTCH MCAgent\_t MC\_ComposeAgent\_chdl (void \* varg)

Definition at line 2160 of file `libmc.c`.

References `MC_ComposeAgent()`.

Referenced by `agent_RunChScriptThread()`.

#### 13.47.8.6 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 583 of file `libmc.c`.

References `syncListNode_s::cond`, `COND_BROADCAST`, `syncListNode_s::lock`, `MC_ERR_NOT_FOUND`, `agency_s::mc_platform`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `syncListNode_s::signalled`, `mc_platform_s::syncList`, and `syncListFind()`.

Referenced by `MC_CondBroadcast_chdl()`.

**13.47.8.7 EXPORTCH int MC\_CondBroadcast\_chdl (void \* *varg*)**

Definition at line 2137 of file libmc.c.

References CHECK\_NULL, MC\_CondBroadcast(), and agency\_s::mc\_platform.

Referenced by agent\_RunChScriptThread().

**13.47.8.8 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 635 of file libmc.c.

References syncListNode\_s::lock, MC\_ERR\_NOT\_FOUND, agency\_s::mc\_platform, MUTEX\_LOCK, MUTEX\_UNLOCK, syncListNode\_s::signalled, mc\_platform\_s::syncList, and syncListFind().

Referenced by MC\_CondReset\_chdl().

**13.47.8.9 EXPORTCH int MC\_CondReset\_chdl (void \* *varg*)**

Definition at line 2223 of file libmc.c.

References CHECK\_NULL, MC\_CondReset(), and agency\_s::mc\_platform.

Referenced by agent\_RunChScriptThread().

**13.47.8.10 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



### 13.47.9 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 598 of file libmc.c.

References syncListNode\_s::cond, COND\_SIGNAL, syncListNode\_s::lock, MC\_ERR\_NOT\_FOUND, agency\_s::mc\_platform, MUTEX\_LOCK, MUTEX\_UNLOCK, syncListNode\_s::signalled, mc\_platform\_s::syncList, and syncListFind().

Referenced by MC\_CondSignal\_chdl().

#### 13.47.9.1 EXPORTCH int MC\_CondSignal\_chdl (void \* *varg*)

Definition at line 2200 of file libmc.c.

References CHECK\_NULL, MC\_CondSignal(), and agency\_s::mc\_platform.

Referenced by agent\_RunChScriptThread().

#### 13.47.9.2 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

### 13.47.10 Example

The following example demonstrates the agent-space version of this function.

Definition at line 613 of file libmc.c.

References syncListNode\_s::cond, COND\_WAIT, syncListNode\_s::lock, MC\_ERR\_NOT\_FOUND, agency\_s::mc\_platform, MUTEX\_LOCK, MUTEX\_UNLOCK, syncListNode\_s::signalled, mc\_platform\_s::syncList, and syncListFind().

Referenced by MC\_CondWait\_chdl().

**13.47.10.1 EXPORTCH int MC\_CondWait\_chdl (void \* *varg*)**

Definition at line 2246 of file libmc.c.

References CHECK\_NULL, MC\_CondWait(), and agency\_s::mc\_platform.

Referenced by agent\_RunChScriptThread().

**13.47.10.2 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 653 of file libmc.c.

References agent\_Copy(), and MC\_SUCCESS.

**13.47.10.3 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 660 of file libmc.c.

References CHECK\_NULL, MC\_ERR\_INVALID, MC\_SetAgentStatus(), MC\_SUCCESS, MC\_TerminateAgent(), and MC\_WAIT\_FINISHED.

Referenced by MC\_DeleteAgent\_chdl().

**13.47.10.4 EXPORTCH int MC\_DeleteAgent\_chdl (void \* *varg*)**

Definition at line 2268 of file libmc.c.

References MC\_DeleteAgent().

Referenced by agent\_RunChScriptThread().

**13.47.10.5 int MC\_DeregisterService (MCAgency\_t *agency*, int *agentID*, const char \* *serviceName*)**

Definition at line 694 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()`.

#### 13.47.10.6 EXPORTCH int MC\_DeregisterService\_chdl (void \* *varg*)

Definition at line 2310 of file `libmc.c`.

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

Referenced by `agent_RunChScriptThread()`.

#### 13.47.10.7 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 674 of file `libmc.c`.

Referenced by `MC_DestroyServiceSearchResult_chdl()`.

#### 13.47.10.8 EXPORTCH int MC\_DestroyServiceSearchResult\_chdl (void \* *varg*)

Definition at line 2283 of file `libmc.c`.

References `MC_DestroyServiceSearchResult()`.

Referenced by `agent_RunChScriptThread()`.

#### 13.47.10.9 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

### 13.47.11 Example

Definition at line 723 of file libmc.c.

References mc\_platform\_s::acc, mc\_platform\_s::ams, mc\_platform\_s::cmd\_prompt, COND\_SIGNAL, mc\_platform\_s::connection\_queue, mc\_platform\_s::df, GET\_THREAD\_MODE, agency\_s::hostName, agency\_s::mc\_platform, mc\_platform\_Destroy(), MC\_THREAD\_ACC, MC\_THREAD\_AMS, MC\_THREAD\_CP, MC\_THREAD\_DF, mc\_platform\_s::message\_queue, MUTEX\_LOCK, MUTEX\_UNLOCK, mc\_platform\_s::quit, mc\_platform\_s::quit\_lock, cmd\_prompt\_s::thread, THREAD\_CANCEL, THREAD\_JOIN, and agency\_s::threads.

Referenced by MC\_End\_chdl().

#### 13.47.11.1 EXPORTCH int MC\_End\_chdl (void \* *varg*)

Definition at line 2337 of file libmc.c.

References CHECK\_NULL, MC\_End(), and agency\_s::mc\_platform.

Referenced by agent\_RunChScriptThread().

#### 13.47.11.2 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 790 of file libmc.c.

References mc\_platform\_s::agent\_queue, and agency\_s::mc\_platform.

Referenced by MC\_FindAgentByID\_chdl().

#### 13.47.11.3 EXPORTCH MCAgent\_t MC\_FindAgentByID\_chdl (void \* *varg*)

Definition at line 2354 of file libmc.c.

References CHECK\_NULL, MC\_FindAgentByID(), and agency\_s::mc\_platform.

Referenced by agent\_RunChScriptThread().

#### 13.47.11.4 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

**13.47.12 Example**

Definition at line 777 of file libmc.c.

References mc\_platform\_s::agent\_queue, and agency\_s::mc\_platform.

Referenced by MC\_AclSend(), and MC\_FindAgentByName\_chdl().

**13.47.12.1 EXPORTCH MCAgent\_t MC\_FindAgentByName\_chdl (void \* varg)**

Definition at line 2377 of file libmc.c.

References CHECK\_NULL, MC\_FindAgentByName(), and agency\_s::mc\_platform.

Referenced by agent\_RunChScriptThread().

**13.47.12.2 time\_t MC\_GetAgentArrivalTime (MCAgent\_t agent)**

Definition at line 807 of file libmc.c.

References agent\_s::arrival\_time.

Referenced by MC\_GetAgentArrivalTime\_chdl().

**13.47.12.3 EXPORTCH time\_t MC\_GetAgentArrivalTime\_chdl (void \* varg)**

Definition at line 2404 of file libmc.c.

References MC\_GetAgentArrivalTime().

**13.47.12.4 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 844 of file libmc.c.

References agent\_s::agent\_interp.

**13.47.12.5 EXPORTMC int MC\_GetAgentID (MCAgent\_t *agent*)**

Retrieve an agent's id.

Definition at line 850 of file libmc.c.

References agent\_s::id.

Referenced by MC\_GetAgentID\_chdl().

**13.47.12.6 EXPORTCH int MC\_GetAgentID\_chdl (void \* *varg*)**

Definition at line 2424 of file libmc.c.

References MC\_GetAgentID().

Referenced by agent\_RunChScriptThread().

**13.47.12.7 EXPORTMC char\* MC\_GetAgentName (MCAgent\_t *agent*)**

Definition at line 858 of file libmc.c.

References agent\_s::lock, MUTEX\_LOCK, MUTEX\_UNLOCK, and agent\_s::name.

Referenced by MC\_GetAgentName\_chdl().

**13.47.12.8 EXPORTCH char\* MC\_GetAgentName\_chdl (void \* *varg*)**

Definition at line 2440 of file libmc.c.

References MC\_GetAgentName().

Referenced by agent\_RunChScriptThread().

**13.47.12.9 EXPORTMC int MC\_GetAgentNumTasks (MCAgent\_t *agent*)**

Retrive the number of tasks an agent has.

**13.47.13 Example**

Definition at line 939 of file libmc.c.

References agent\_s::datastate, and agent\_datastate\_s::number\_of\_tasks.

Referenced by MC\_GetAgentNumTasks\_chdl().

**13.47.13.1 EXPORTCH int MC\_GetAgentNumTasks\_chdl (void \* *varg*)**

Definition at line 2456 of file libmc.c.

References MC\_GetAgentNumTasks().

**13.47.13.2 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.

**13.47.14 Example**

This file demonstrates the retrieval of agent return data from an agent

This is the agent which gets the data

Definition at line 876 of file libmc.c.

References agent\_task\_s::agent\_return\_data, interpreter\_variable\_data\_s::array\_dim, interpreter\_variable\_data\_s::array\_extent, CH\_DATATYPE\_SIZE, interpreter\_variable\_data\_s::data\_type, agent\_s::datastate, agent\_datastate\_s::number\_of\_tasks, size, and agent\_datastate\_s::tasks.

**13.47.14.1 EXPORTMC int MC\_GetAgentStatus (MCAgent\_t *agent*)**

Get an agent's current status.

**Returns:**

returns type 'enum MC\_AgentStatus\_e'

Definition at line 822 of file libmc.c.

References agent\_s::agent\_status, agent\_s::lock, MUTEX\_LOCK, and MUTEX\_UNLOCK.

Referenced by MC\_GetAgentStatus\_chdl().

**13.47.14.2 EXPORTCH int MC\_GetAgentStatus\_chdl (void \* *varg*)**

Definition at line 2472 of file libmc.c.

References MC\_GetAgentStatus().

Referenced by agent\_RunChScriptThread().

**13.47.14.3 EXPORTMC enum MC\_AgentType\_e MC\_GetAgentType (MCAgent\_t *agent*)**

Get an agent's type.

**Returns:**

returns type 'enum MC\_AgentType\_e'

Definition at line 945 of file libmc.c.

References agent\_s::agent\_type.

**13.47.14.4 EXPORTMC char\* MC\_GetAgentXMLString (MCAgent\_t *agent*)**

Get an agent's xml string.

**Returns:**

a malloc'd character string containing the agent's xml code

Definition at line 832 of file libmc.c.

References agent\_s::datastate, mxmlSaveAllocString(), and agent\_datastate\_s::xml\_agent\_root.

Referenced by MC\_GetAgentXMLString\_chdl().

**13.47.14.5 EXPORTCH char\* MC\_GetAgentXMLString\_chdl (void \* *varg*)**

Definition at line 2488 of file libmc.c.

References MC\_GetAgentXMLString().

Referenced by agent\_RunChScriptThread().

**13.47.14.6 int MC\_GetAllAgents (MCAgency\_t *attr*, MCAgent\_t \*\* *agents*, int \* *num\_agents*)**

Definition at line 955 of file libmc.c.

References mc\_platform\_s::agent\_queue, mc\_platform\_s::giant, mc\_platform\_s::giant\_lock, MC\_HaltAgency(), agency\_s::mc\_platform, MC\_ResumeAgency(), MUTEX\_LOCK, and MUTEX\_UNLOCK.

**13.47.14.7 EXPORTCH int MC\_GetTimeOfDay\_chdl (void \* *varg*)**

Definition at line 2504 of file libmc.c.

Referenced by agent\_RunChScriptThread().

**13.47.14.8 EXPORTMC int MC\_HaltAgency (MCAgency\_t *agency*)**

Halt an agency: Do not process new entries in queues.

**Parameters:**

*agency* A handle to a running MobileC agency.



**Returns:**

0 on success, non-zero on failure.

Definition at line 991 of file libmc.c.

References mc\_platform\_s::giant, mc\_platform\_s::giant\_lock, agency\_s::mc\_platform, MUTEX\_LOCK, and MUTEX\_UNLOCK.

Referenced by MC\_GetAllAgents(), and MC\_HaltAgency\_chdl().

**13.47.14.9 EXPORTCH int MC\_HaltAgency\_chdl (void \* *varg*)**

Definition at line 2519 of file libmc.c.

References CHECK\_NULL, MC\_HaltAgency(), and agency\_s::mc\_platform.

Referenced by agent\_RunChScriptThread().

**13.47.14.10 EXPORTMC MCAgency\_t MC\_Initialize (int *port*, MCAgencyOptions\_t \* *options*)**

Initialize and start a MobileC agency.

**Parameters:**

*port* the TCP port the agency should bind to

*options* initialized MobileC [options](#) or NULL for default [options](#)

**Returns:**

a handle to a running MobileC agency or NULL on failure

**13.47.15 Example**

Definition at line 1000 of file libmc.c.

References CHECK\_NULL, agency\_s::client, MCAgencyOptions\_s::default\_agent\_status, agency\_s::default\_agentstatus, MCAgencyOptions\_s::enable\_security, agency\_s::enable\_security, HOST\_NAME\_MAX, agency\_s::hostName, MC\_InitializeAgencyOptions(), agency\_s::mc\_platform, mc\_platform\_Initialize(), MC\_THREAD\_ALL, agency\_s::portno, agency\_s::server, MCAgencyOptions\_s::stack\_size, agency\_s::stack\_size, MCAgencyOptions\_s::threads, and agency\_s::threads.

**13.47.15.1 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.

**13.47.16 Example**

Definition at line 1055 of file libmc.c.

References MCAgencyOptions\_s::default\_agent\_status, MCAgencyOptions\_s::enable\_security, MC\_THREAD\_ALL, MC\_WAIT\_CH, MCAgencyOptions\_s::modified, MCAgencyOptions\_s::stack\_size, and MCAgencyOptions\_s::threads.

Referenced by MC\_Initialize().

**13.47.16.1 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 1072 of file libmc.c.

References buf, agency\_s::mc\_platform, message\_Destroy(), message\_InitializeFromString(), message\_New(), mc\_platform\_s::message\_queue, MXML\_DESCEND, mxmlFindElement(), mxmlLoadString(), message\_s::to\_address, message\_s::xml\_payload, and message\_s::xml\_root.

**13.47.16.2 int MC\_MainLoop (MCAgency\_t attr)**

Wait indefinitely.

**Note:**

This function is intended to block the calling thread forever.

Definition at line 1687 of file libmc.c.

References mc\_platform\_s::ams, and agency\_s::mc\_platform.

**13.47.16.3 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

**13.47.17 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 1142 of file libmc.c.

References `syncListNode_s::lock`, `agency_s::mc_platform`, `MUTEX_LOCK`, `mc_platform_s::syncList`, and `syncListFind()`.

Referenced by `MC_MutexLock_chdl()`.

**13.47.17.1 EXPORTCH int MC\_MutexLock\_chdl (void \* *varg*)**

Definition at line 2537 of file libmc.c.

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

Referenced by `agent_RunChScriptThread()`.

**13.47.17.2 EXPORTMC int MC\_MutexUnlock (MCAgency\_t *attr*, int *id*)**

Definition at line 1154 of file libmc.c.

References `syncListNode_s::lock`, `agency_s::mc_platform`, `MUTEX_UNLOCK`, `mc_platform_s::syncList`, and `syncListFind()`.

Referenced by `MC_MutexUnlock_chdl()`.

**13.47.17.3 EXPORTCH int MC\_MutexUnlock\_chdl (void \* *varg*)**

Definition at line 2561 of file libmc.c.

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

Referenced by `agent_RunChScriptThread()`.

**13.47.17.4 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 1166 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().

#### 13.47.17.5 EXPORTCH int MC\_PrintAgentCode\_chdl (void \* *varg*)

Definition at line 2585 of file libmc.c.

References MC\_PrintAgentCode().

Referenced by agent\_RunChScriptThread().

#### 13.47.17.6 EXPORTMC int MC\_RegisterService (MCAgency\_t *agency*, MCAgent\_t *agent*, int *agentID*, const char \* *agentName*, char \*\* *serviceNames*, int *numServices*)

Register a new service with the Directory Facilitator.

##### Parameters:

*agency* a MobileC agency handle  
*agent* (OPTIONAL: See note) a MobileC agent  
*agentID* (OPTIONAL: See note) a MobileC agent id  
*agentName* (OPTIONAL: See note) a MobileC agent name  
*serviceNames* an array of character strings of service names  
*numServices* the number of services described in 'serviceNames'

##### Returns:

0 on success, error\_code\_t type on failure

##### Note:

Three of the input arguments are optional. The function expects as input the arguments 'agent XOR (agentID AND agentName)'.

#### 13.47.18 Example

Definition at line 1182 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().

#### 13.47.18.1 EXPORTCH int MC\_RegisterService\_chdl (void \* *varg*)

Definition at line 2601 of file libmc.c.

References CHECK\_NULL, agency\_s::mc\_platform, and MC\_RegisterService().

Referenced by agent\_RunChScriptThread().

### 13.47.18.2 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 1314 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.

### 13.47.18.3 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 1261 of file libmc.c.

References mc\_platform\_s::giant, mc\_platform\_s::giant\_lock, agency\_s::mc\_platform, MUTEX\_LOCK, and MUTEX\_UNLOCK.

Referenced by MC\_GetAllAgents(), and MC\_ResumeAgency\_chdl().

### 13.47.18.4 EXPORTCH int MC\_ResumeAgency\_chdl (void \* varg)

Definition at line 2638 of file libmc.c.

References CHECK\_NULL, agency\_s::mc\_platform, and MC\_ResumeAgency().

Referenced by agent\_RunChScriptThread().

### 13.47.18.5 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 1270 of file libmc.c.

References mc\_platform\_s::agent\_queue, agent\_s::agent\_status, ListSearch(), MC\_AGENT\_NEUTRAL, agency\_s::mc\_platform, MUTEX\_LOCK, and MUTEX\_UNLOCK.

Referenced by MC\_RetrieveAgent\_chdl().

**13.47.18.6 EXPORTCH MC\_Agent\_t MC\_RetrieveAgent\_chdl (void \* *varg*)**

Definition at line 2656 of file libmc.c.

References CHECK\_NULL, agency\_s::mc\_platform, and MC\_RetrieveAgent().

Referenced by agent\_RunChScriptThread().

**13.47.18.7 EXPORTMC char\* MC\_RetrieveAgentCode (MC\_Agent\_t *agent*)**

Retrieves an agent's Ch code.

**Returns:**

a malloc'd character string on success, NULL on failure

Definition at line 1298 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().

**13.47.18.8 EXPORTCH char\* MC\_RetrieveAgentCode\_chdl (void \* *varg*)**

Definition at line 2673 of file libmc.c.

References MC\_RetrieveAgentCode().

Referenced by agent\_RunChScriptThread().

**13.47.18.9 EXPORTCH int MC\_SaveData\_chdl (void \* *varg*)**

Definition at line 2689 of file libmc.c.

References agent\_task\_s::agent\_variable\_list, interpreter\_variable\_data\_s::data, interpreter\_variable\_data\_s::data\_type, agent\_s::datastate, interpreter\_variable\_data\_New(), interpreter\_variable\_data\_s::name, interpreter\_variable\_data\_s::size, size, agent\_datastate\_s::task\_progress, and agent\_datastate\_s::tasks.

Referenced by agent\_RunChScriptThread().

**13.47.18.10 EXPORTMC int MC\_SearchForService (MC\_Agency\_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

### 13.47.19 Example

Definition at line 1325 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().

#### 13.47.19.1 EXPORTCH int MC\_SearchForService\_chdl (void \* *varg*)

Definition at line 2724 of file libmc.c.

References CHECK\_NULL, agency\_s::mc\_platform, and MC\_SearchForService().

Referenced by agent\_RunChScriptThread().

#### 13.47.19.2 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

### 13.47.20 Example

Definition at line 1375 of file libmc.c.

References agency\_s::mc\_platform, syncListNode\_s::sem, SEMAPHORE\_POST, mc\_platform\_s::syncList, and syncListFind().

Referenced by MC\_SemaphorePost\_chdl().

#### 13.47.20.1 EXPORTCH int MC\_SemaphorePost\_chdl (void \* *varg*)

Definition at line 2765 of file libmc.c.

References CHECK\_NULL, agency\_s::mc\_platform, and MC\_SemaphorePost().

Referenced by agent\_RunChScriptThread().

### 13.47.20.2 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.

### 13.47.21 Example

Definition at line 1387 of file libmc.c.

References agency\_s::mc\_platform, syncListNode\_s::sem, SEMAPHORE\_WAIT, mc\_platform\_s::syncList, and syncListFind().

Referenced by MC\_SemaphoreWait\_chdl().

#### 13.47.21.1 EXPORTCH int MC\_SemaphoreWait\_chdl (void \* *varg*)

Definition at line 2789 of file libmc.c.

References CHECK\_NULL, agency\_s::mc\_platform, and MC\_SemaphoreWait().

Referenced by agent\_RunChScriptThread().

#### 13.47.21.2 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 1409 of file libmc.c.

References MC\_ERR, agency\_s::mc\_platform, message\_Destroy(), message\_InitializeFromString(), message\_New(), and mc\_platform\_s::message\_queue.

Referenced by MC\_SendAgentMigrationMessage\_chdl().



**13.47.21.3 EXPORTCH int MC\_SendAgentMigrationMessage\_chdl (void \* *varg*)**

Definition at line 2813 of file libmc.c.

References CHECK\_NULL, agency\_s::mc\_platform, MC\_SendAgentMigrationMessage(), and port.

Referenced by agent\_RunChScriptThread().

**13.47.21.4 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 1440 of file libmc.c.

References agent\_Initialize(), mc\_platform\_s::agent\_queue, agent\_s::agent\_status, mc\_platform\_s::ams, buf, COND\_BROADCAST, agency\_s::mc\_platform, MC\_WAIT\_MESSGSEND, message\_Destroy(), message\_InitializeFromString(), message\_New(), MUTEX\_LOCK, and MUTEX\_UNLOCK.

Referenced by handler\_SEND(), and MC\_SendAgentMigrationMessageFile\_chdl().

**13.47.21.5 EXPORTCH int MC\_SendAgentMigrationMessageFile\_chdl (void \* *varg*)**

Definition at line 2838 of file libmc.c.

References MC\_SendAgentMigrationMessageFile(), and port.

Referenced by agent\_RunChScriptThread().

**13.47.21.6 int MC\_SendCh (MCAgency\_t *attr*, const char \* *filename*, const char \* *remotehost*, int *port*)**

Definition at line 1399 of file libmc.c.

**13.47.21.7 EXPORTMC int MC\_SendSteerCommand (MCAgency\_t *attr*, enum MC\_SteerCommand\_e *cmd*)**

Definition at line 1508 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().

**13.47.21.8 EXPORTCH int MC\_SendSteerCommand\_chdl (void \* *varg*)**

Definition at line 2858 of file libmc.c.

References CHECK\_NULL, agency\_s::mc\_platform, and MC\_SendSteerCommand().

Referenced by agent\_RunChScriptThread().

### 13.47.21.9 int MC\_SetAgentStatus (MCAgent\_t *agent*, int *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 1518 of file libmc.c.

References agent\_s::agent\_status, mc\_platform\_s::ams, COND\_SIGNAL, agent\_s::lock, agent\_s::mc\_platform, MUTEX\_LOCK, MUTEX\_UNLOCK, and agent\_s::orphan.

Referenced by MC\_DeleteAgent(), and MC\_SetAgentStatus\_chdl().

### 13.47.21.10 EXPORTCH int MC\_SetAgentStatus\_chdl (void \* *varg*)

Definition at line 2881 of file libmc.c.

References MC\_SetAgentStatus().

Referenced by agent\_RunChScriptThread().

### 13.47.21.11 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 1533 of file libmc.c.

References mc\_platform\_s::default\_agentstatus, and agency\_s::mc\_platform.

Referenced by MC\_SetDefaultAgentStatus\_chdl().

**13.47.21.12 EXPORTCH int MC\_SetDefaultAgentStatus\_chdl (void \* *varg*)**

Definition at line 2899 of file libmc.c.

References CHECK\_NULL, agency\_s::mc\_platform, and MC\_SetDefaultAgentStatus().

Referenced by agent\_RunChScriptThread().

**13.47.21.13 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 1560 of file libmc.c.

References SET\_THREAD\_OFF, and MCAgencyOptions\_s::threads.

**13.47.21.14 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 1543 of file libmc.c.

References SET\_THREAD\_ON, and MCAgencyOptions\_s::threads.

**13.47.21.15 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 1567 of file libmc.c.

References MC\_THREAD\_ALL, SET\_THREAD\_OFF, and MCAgencyOptions\_s::threads.

**13.47.21.16 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 1550 of file libmc.c.

References MC\_THREAD\_ALL, SET\_THREAD\_ON, and MCAgencyOptions\_s::threads.

**13.47.21.17 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.

**13.47.22 Example**

Definition at line 1577 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.

### 13.47.22.1 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 1596 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.

### 13.47.22.2 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 1612 of file libmc.c.

References syncList\_s::giant\_lock, syncListNode\_s::lock, MC\_ERR\_NOT\_FOUND, agency\_s::mc\_platform, MUTEX\_LOCK, MUTEX\_UNLOCK, mc\_platform\_s::syncList, syncListFind(), syncListNodeDestroy(), and syncListRemove().

Referenced by MC\_SyncDelete\_chdl().

### 13.47.22.3 EXPORTCH int MC\_SyncDelete\_chdl (void \* varg)

Definition at line 2922 of file libmc.c.

References CHECK\_NULL, agency\_s::mc\_platform, and MC\_SyncDelete().

Referenced by agent\_RunChScriptThread().

### 13.47.22.4 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 1642 of file libmc.c.

References `syncList_s::giant_lock`, `syncListNode_s::id`, `agency_s::mc_platform`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, `node`, `mc_platform_s::syncList`, `syncListAddNode()`, `syncListFind()`, and `syncListNodeNew()`.

Referenced by `MC_SyncInit_chdl()`.

**13.47.22.5 EXPORTCH int MC\_SyncInit\_chdl (void \* *varg*)**

Definition at line 2945 of file libmc.c.

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

Referenced by `agent_RunChScriptThread()`.

**13.47.22.6 EXPORTMC int MC\_TerminateAgent (MCAgent\_t *agent*)**

Halt a running agent.

**Returns:**

0 on success, `error_code_t` on failure

Definition at line 1667 of file libmc.c.

References `agent_s::agent_interp`.

Referenced by `MC_DeleteAgent()`, and `MC_TerminateAgent_chdl()`.

**13.47.22.7 EXPORTCH int MC\_TerminateAgent\_chdl (void \* *varg*)**

Definition at line 2969 of file libmc.c.

References `MC_TerminateAgent()`.

Referenced by `agent_RunChScriptThread()`.

### 13.47.22.8 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 1694 of file libmc.c.

References `mc_platform_s::agent_queue`, `COND_WAIT`, `mc_platform`, `agency_s::mc_platform`, `MUTEX_LOCK`, `MUTEX_UNLOCK`, and `size`.

### 13.47.22.9 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 1714 of file libmc.c.

References `mc_platform_s::agent_queue`, `ListSearch()`, `agency_s::mc_platform`, `MC_RECV_AGENT`, `MC_WaitSignal()`, `MUTEX_LOCK`, and `MUTEX_UNLOCK`.

### 13.47.22.10 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.

## 13.47.23 Example

Definition at line 1732 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().

## **13.47.24 Variable Documentation**

### **13.47.24.1 mc\_platform\_p g\_mc\_platform**

Definition at line 65 of file libmc.c.

Referenced by fipa\_envelope\_Compose\_\_from().



## 13.48 /home/dko/projects/mobilec/trunk/src/mc\_list/list.c File Reference

```
#include "list.h"
#include <stdio.h>
#include <stdlib.h>
```

### Functions

- [list\\_p ListInitialize](#) (void)
- void [ListTerminate](#) ([list\\_p](#) list)
- [int list\\_pGetSize](#) ([list\\_p](#) list)
- DATA [ListGetHead](#) ([list\\_p](#) list)
- DATA [ListPop](#) ([list\\_p](#) list)
- DATA [ListSearch](#) ([list\\_p](#) list, const [int](#) index)
- [int ListAdd](#) ([list\\_p](#) list, DATA data)
- [int ListInsert](#) ([list\\_p](#) list, DATA data, const [int](#) index)
- DATA [ListDelete](#) ([list\\_p](#) list, const [int](#) index)

### 13.48.1 Function Documentation

#### 13.48.1.1 [int list\\_pGetSize](#) ([list\\_p](#) *list*)

Definition at line 73 of file list.c.

References [list\\_s::size](#).

#### 13.48.1.2 [int ListAdd](#) ([list\\_p](#) *list*, DATA *data*)

Definition at line 161 of file list.c.

References [list\\_s::listhead](#), [listNode\\_s::next](#), [listNode\\_s::node\\_data](#), and [list\\_s::size](#).

Referenced by [barrier\\_queue\\_Add\(\)](#), [df\\_Add\(\)](#), [df\\_AddRequest\(\)](#), and [syncListAddNode\(\)](#).

#### 13.48.1.3 [DATA ListDelete](#) ([list\\_p](#) *list*, const [int](#) *index*)

Definition at line 216 of file list.c.

References [DATA](#), [list\\_s::listhead](#), [listNode\\_s::next](#), [listNode\\_s::node\\_data](#), and [list\\_s::size](#).

Referenced by [barrier\\_queue\\_Delete\(\)](#), [syncListDelete\(\)](#), and [syncListRemove\(\)](#).

#### 13.48.1.4 [DATA ListGetHead](#) ([list\\_p](#) *list*)

Definition at line 79 of file list.c.

References [list\\_s::listhead](#), and [listNode\\_s::node\\_data](#).

**13.48.1.5 list\_p ListInitialize (void)**

Definition at line 33 of file list.c.

References list\_s::listhead, and list\_s::size.

Referenced by barrier\_queue\_New(), df\_Initialize(), df\_request\_list\_New(), and syncListInit().

**13.48.1.6 int ListInsert (list\_p list, DATA data, const int index)**

Definition at line 203 of file list.c.

**13.48.1.7 DATA ListPop (list\_p list)**

Definition at line 89 of file list.c.

References DATA, list\_s::listhead, listNode\_s::next, listNode\_s::node\_data, and list\_s::size.

Referenced by barrier\_queue\_Pop(), df\_Destroy(), df\_request\_list\_Destroy(), and df\_request\_list\_Pop().

**13.48.1.8 DATA ListSearch (list\_p list, const int index)**

Definition at line 124 of file list.c.

References list\_s::listhead, listNode\_s::next, listNode\_s::node\_data, and list\_s::size.

Referenced by ams\_ManageAgentList(), ams\_Print(), AP\_QUEUE\_SEARCH\_TEMPLATE(), AP\_QUEUE\_STD\_DEFN\_TEMPLATE(), barrier\_queue\_Delete(), MC\_RetrieveAgent(), MC\_WaitRetrieveAgent(), message\_queue\_SendOutgoing(), syncListDelete(), and syncListRemove().

**13.48.1.9 void ListTerminate (list\_p list)**

Definition at line 49 of file list.c.

References list\_s::listhead, and list\_s::size.

Referenced by barrier\_queue\_Destroy(), df\_Destroy(), and df\_request\_list\_Destroy().

## 13.49 /home/dko/projects/mobilec/trunk/src/mc\_list/list.h File Reference

```
#include <stdio.h>
#include <stdlib.h>
```

### Data Structures

- struct [listNode\\_s](#)
- struct [list\\_s](#)

### Defines

- #define [DATA](#) void\*
- #define [QUEUE\\_TEMPLATE](#)(name, node\_type, search\_type, search\_var\_name)

### Typedefs

- typedef struct [listNode\\_s](#) [listNode\\_t](#)
- typedef [listNode\\_t](#) \* [listNode\\_p](#)
- typedef struct [list\\_s](#) [list\\_t](#)
- typedef [list\\_t](#) \* [list\\_p](#)

### Functions

- [list\\_p](#) [ListInitialize](#) (void)
- void [ListTerminate](#) ([list\\_p](#) list)
- int [ListGetSize](#) ([list\\_p](#) list)
- int [ListAdd](#) ([list\\_p](#) list, DATA data)
- int [ListInsert](#) ([list\\_p](#) list, DATA data, const int index)
- DATA [ListGetHead](#) ([list\\_p](#) list)
- DATA [ListPop](#) ([list\\_p](#) list)
- DATA [ListSearch](#) ([list\\_p](#) list, const int index)
- DATA [ListDelete](#) ([list\\_p](#) list, const int index)

#### 13.49.1 Define Documentation

##### 13.49.1.1 #define DATA void\*

Definition at line 30 of file list.h.

Referenced by [barrier\\_queue\\_Add\(\)](#), [ListDelete\(\)](#), [ListPop\(\)](#), and [syncListAddNode\(\)](#).

##### 13.49.1.2 #define QUEUE\_TEMPLATE(name, node\_type, search\_type, search\_var\_name)

Definition at line 68 of file list.h.

## 13.49.2 Typedef Documentation

### 13.49.2.1 typedef list\_t\* list\_p

Definition at line 49 of file list.h.

### 13.49.2.2 typedef struct list\_s list\_t

### 13.49.2.3 typedef listNode\_t\* listNode\_p

Definition at line 39 of file list.h.

### 13.49.2.4 typedef struct listNode\_s listNode\_t

## 13.49.3 Function Documentation

### 13.49.3.1 int ListAdd (list\_p *list*, DATA *data*)

Definition at line 161 of file list.c.

References list\_s::listhead, listNode\_s::next, listNode\_s::node\_data, and list\_s::size.

Referenced by barrier\_queue\_Add(), df\_Add(), df\_AddRequest(), and syncListAddNode().

### 13.49.3.2 DATA ListDelete (list\_p *list*, const int *index*)

Definition at line 216 of file list.c.

References DATA, list\_s::listhead, listNode\_s::next, listNode\_s::node\_data, and list\_s::size.

Referenced by barrier\_queue\_Delete(), syncListDelete(), and syncListRemove().

### 13.49.3.3 DATA ListGetHead (list\_p *list*)

Definition at line 79 of file list.c.

References list\_s::listhead, and listNode\_s::node\_data.

### 13.49.3.4 int ListGetSize (list\_p *list*)

### 13.49.3.5 list\_p ListInitialize (void)

Definition at line 33 of file list.c.

References list\_s::listhead, and list\_s::size.

Referenced by barrier\_queue\_New(), df\_Initialize(), df\_request\_list\_New(), and syncListInit().

### 13.49.3.6 int ListInsert (list\_p *list*, DATA *data*, const int *index*)

Definition at line 203 of file list.c.

### 13.49.3.7 DATA ListPop (*list\_p list*)

Definition at line 89 of file list.c.

References DATA, list\_s::listhead, listNode\_s::next, listNode\_s::node\_data, and list\_s::size.

Referenced by barrier\_queue\_Pop(), df\_Destroy(), df\_request\_list\_Destroy(), and df\_request\_list\_Pop().

### 13.49.3.8 DATA ListSearch (*list\_p list*, *const int index*)

Definition at line 124 of file list.c.

References list\_s::listhead, listNode\_s::next, listNode\_s::node\_data, and list\_s::size.

Referenced by ams\_ManageAgentList(), ams\_Print(), AP\_QUEUE\_SEARCH\_TEMPLATE(), AP\_QUEUE\_STD\_DEFN\_TEMPLATE(), barrier\_queue\_Delete(), MC\_RetrieveAgent(), MC\_WaitRetrieveAgent(), message\_queue\_SendOutgoing(), syncListDelete(), and syncListRemove().

### 13.49.3.9 void ListTerminate (*list\_p list*)

Definition at line 49 of file list.c.

References list\_s::listhead, and list\_s::size.

Referenced by barrier\_queue\_Destroy(), df\_Destroy(), and df\_request\_list\_Destroy().

## 13.50 /home/dko/projects/mobilec/trunk/src/mc\_platform.c File Reference

```
#include <unistd.h>
#include <sys/socket.h>
#include <netdb.h>
#include <netinet/in.h>
#include <arpa/inet.h>
#include "include/acc.h"
#include "include/mc_platform.h"
```

### Defines

- #define [DEFAULT\\_HOSTNAME\\_LENGTH](#) 200

### Functions

- [mc\\_platform\\_p mc\\_platform\\_Initialize](#) ([MCAgency\\_t](#) agency)
- [int mc\\_platform\\_Destroy](#) ([mc\\_platform\\_p](#) platform)

#### 13.50.1 Define Documentation

##### 13.50.1.1 #define [DEFAULT\\_HOSTNAME\\_LENGTH](#) 200

Definition at line 45 of file mc\_platform.c.

Referenced by [mc\\_platform\\_Initialize\(\)](#).

#### 13.50.2 Function Documentation

##### 13.50.2.1 [int mc\\_platform\\_Destroy](#) ([mc\\_platform\\_p](#) *platform*)

Definition at line 235 of file mc\_platform.c.

References [mc\\_platform\\_s::acc](#), [acc\\_Destroy\(\)](#), [mc\\_platform\\_s::agent\\_queue](#), [mc\\_platform\\_s::ams](#), [ams\\_Destroy\(\)](#), [mc\\_platform\\_s::asm\\_message\\_queue](#), [mc\\_platform\\_s::barrier\\_queue](#), [barrier\\_queue\\_Destroy\(\)](#), [mc\\_platform\\_s::cmd\\_prompt](#), [cmd\\_prompt\\_Destroy\(\)](#), [COND\\_DESTROY](#), [mc\\_platform\\_s::connection\\_queue](#), [mc\\_platform\\_s::df](#), [df\\_Destroy\(\)](#), [mc\\_platform\\_s::giant\\_cond](#), [mc\\_platform\\_s::giant\\_lock](#), [mc\\_platform\\_s::interp\\_options](#), [mc\\_platform\\_s::MC\\_signal\\_cond](#), [mc\\_platform\\_s::MC\\_signal\\_lock](#), [mc\\_platform\\_s::MC\\_steer\\_cond](#), [mc\\_platform\\_s::MC\\_steer\\_lock](#), [MC\\_SUCCESS](#), [mc\\_platform\\_s::MC\\_sync\\_cond](#), [mc\\_platform\\_s::MC\\_sync\\_lock](#), [mc\\_platform\\_s::message\\_queue](#), [MUTEX\\_DESTROY](#), [mc\\_platform\\_s::quit\\_lock](#), and [mc\\_platform\\_s::sockfd](#).

Referenced by [handler\\_QUIT\(\)](#), and [MC\\_End\(\)](#).

##### 13.50.2.2 [mc\\_platform\\_p mc\\_platform\\_Initialize](#) ([MCAgency\\_t](#) *agency*)

Definition at line 47 of file mc\_platform.c.

References `mc_platform_s::acc`, `acc_Initialize()`, `acc_Start()`, `mc_platform_s::agent_queue`, `mc_platform_s::ams`, `ams_Initialize()`, `ams_Start()`, `mc_platform_s::asm_message_queue`, `mc_platform_s::barrier_queue`, `barrier_queue_New()`, `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()`, `agency_s::enable_security`, `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`, `mc_platform_s::interp_options`, `agency_s::last_error`, `MC_ERR_MEMORY`, `MC_NO_SIGNAL`, `mc_platform`, `mc_platform_s::MC_signal`, `mc_platform_s::MC_signal_cond`, `mc_platform_s::MC_signal_lock`, `mc_platform_s::MC_steer_cond`, `mc_platform_s::MC_steer_lock`, `mc_platform_s::MC_sync_cond`, `mc_platform_s::MC_sync_lock`, `MC_THREAD_ACC`, `MC_THREAD_ALL`, `MC_THREAD_AMS`, `MC_THREAD_CP`, `MC_THREAD_DF`, `mc_platform_s::message_queue`, `MUTEX_INIT`, `MUTEX_LOCK`, `MUTEX_T`, `MUTEX_UNLOCK`, `mc_platform_s::port`, `agency_s::portno`, `mc_platform_s::quit`, `mc_platform_s::quit_lock`, `agency_s::stack_size`, `mc_platform_s::stack_size`, `mc_platform_s::syncList`, `syncListInit()`, and `agency_s::threads`.

Referenced by `MC_Initialize()`.

## 13.51 /home/dko/projects/mobilec/trunk/src/mc\_rwlock.c File Reference

```
#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 \(mc\\_rwlock\\_p rwlock\)](#)

### 13.51.1 Function Documentation

#### 13.51.1.1 int mc\_rwlock\_destroy (mc\_rwlock\_p *rwlock*)

Definition at line 61 of file mc\_rwlock.c.

References `mc_rwlock_s::cond`, `COND_DESTROY`, `mc_rwlock_s::lock`, and `MUTEX_DESTROY`.

#### 13.51.1.2 int mc\_rwlock\_init (mc\_rwlock\_p *rwlock*)

Definition at line 41 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`.

#### 13.51.1.3 int mc\_rwlock\_rdlock (mc\_rwlock\_p *rwlock*)

Definition at line 74 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`.

#### 13.51.1.4 int mc\_rwlock\_rdunlock (mc\_rwlock\_p *rwlock*)

Definition at line 89 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`.



**13.51.1.5 int mc\_rwlock\_wrlock (mc\_rwlock\_p *rwlock*)**

Definition at line 102 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.

**13.51.1.6 int mc\_rwlock\_wrunlock (mc\_rwlock\_p *rwlock*)**

Definition at line 121 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.

## 13.52 /home/dko/projects/mobilec/trunk/src/mc\_sync/sync\_list.c File Reference

```
#include <pthread.h>
#include "sync_list.h"
#include "../mc_list/list.h"
#include "../include/mc_error.h"
```

### Functions

- [int syncListNodeInit](#) (struct [syncListNode\\_s](#) \**node*)
- [struct syncListNode\\_s \\* syncListNodeNew](#) (void)
- [int syncListNodeDestroy](#) (struct [syncListNode\\_s](#) \**node*)
- [syncListNode\\_t \\* syncListFind](#) (int *id*, struct [syncList\\_s](#) \**list*)
- [struct syncList\\_s \\* syncListInit](#) (void)
- [int syncListAddNode](#) (struct [syncListNode\\_s](#) \**node*, struct [syncList\\_s](#) \**list*)
- [int syncListNew](#) (int *id*, struct [syncList\\_s](#) \**list*)
- [int syncListDelete](#) (int *id*, struct [syncList\\_s](#) \**list*)
- [syncListNode\\_t \\* syncListRemove](#) (int *id*, struct [syncList\\_s](#) \**list*)

### 13.52.1 Function Documentation

#### 13.52.1.1 [int syncListAddNode](#) (struct [syncListNode\\_s](#) \* *node*, struct [syncList\\_s](#) \* *list*)

Definition at line 86 of file [sync\\_list.c](#).

References [DATA](#), [syncListNode\\_s::id](#), [syncList\\_s::list](#), [ListAdd\(\)](#), [list\\_s::listhead](#), [syncList\\_s::lock](#), [listNode\\_s::next](#), [listNode\\_s::node\\_data](#), [RWLOCK\\_WRLock](#), and [RWLOCK\\_WRunlock](#).

Referenced by [MC\\_SyncInit\(\)](#), and [syncListNew\(\)](#).

#### 13.52.1.2 [int syncListDelete](#) (int *id*, struct [syncList\\_s](#) \* *list*)

Definition at line 115 of file [sync\\_list.c](#).

References [syncListNode\\_s::id](#), [syncList\\_s::list](#), [ListDelete\(\)](#), [ListSearch\(\)](#), [syncList\\_s::lock](#), [MC\\_ERR\\_NOT\\_FOUND](#), [RWLOCK\\_WRLock](#), [RWLOCK\\_WRunlock](#), [list\\_s::size](#), and [syncListNodeDestroy\(\)](#).

#### 13.52.1.3 [syncListNode\\_t\\* syncListFind](#) (int *id*, struct [syncList\\_s](#) \* *list*)

Definition at line 56 of file [sync\\_list.c](#).

References [syncList\\_s::list](#), [list\\_s::listhead](#), [syncList\\_s::lock](#), [listNode\\_s::next](#), [listNode\\_s::node\\_data](#), [RWLOCK\\_RDlock](#), and [RWLOCK\\_RDunlock](#).

Referenced by [MC\\_CondBroadcast\(\)](#), [MC\\_CondReset\(\)](#), [MC\\_CondSignal\(\)](#), [MC\\_CondWait\(\)](#), [MC\\_MutexLock\(\)](#), [MC\\_MutexUnlock\(\)](#), [MC\\_SemaphorePost\(\)](#), [MC\\_SemaphoreWait\(\)](#), [MC\\_SyncDelete\(\)](#), and [MC\\_SyncInit\(\)](#).

**13.52.1.4 struct syncList\_s\* syncListInit (void) [read]**

Definition at line 72 of file sync\_list.c.

References ListInitialize(), syncList\_s::lock, MUTEX\_INIT, MUTEX\_T, RWLOCK\_INIT, and RWLOCK\_T.

Referenced by mc\_platform\_Initialize().

**13.52.1.5 int syncListNew (int id, struct syncList\_s \* list)**

Definition at line 105 of file sync\_list.c.

References node, syncListAddNode(), and syncListNodeInit().

**13.52.1.6 int syncListNodeDestroy (struct syncListNode\_s \* node)**

Definition at line 44 of file sync\_list.c.

References syncListNode\_s::cond, COND\_DESTROY, syncListNode\_s::lock, MUTEX\_DESTROY, syncListNode\_s::sem, and SEMAPHORE\_DESTROY.

Referenced by MC\_SyncDelete(), and syncListDelete().

**13.52.1.7 int syncListNodeInit (struct syncListNode\_s \* node)**

Definition at line 11 of file sync\_list.c.

References CHECK\_NULL, syncListNode\_s::cond, COND\_INIT, COND\_T, syncListNode\_s::lock, MUTEX\_INIT, MUTEX\_T, syncListNode\_s::sem, SEMAPHORE\_INIT, and SEMAPHORE\_T.

Referenced by syncListNew().

**13.52.1.8 struct syncListNode\_s\* syncListNodeNew (void) [read]**

Definition at line 26 of file sync\_list.c.

References CHECK\_NULL, syncListNode\_s::cond, COND\_INIT, COND\_T, syncListNode\_s::lock, MUTEX\_INIT, MUTEX\_T, syncListNode\_s::sem, SEMAPHORE\_INIT, SEMAPHORE\_T, and syncListNode\_s::signalled.

Referenced by MC\_SyncInit().

**13.52.1.9 syncListNode\_t\* syncListRemove (int id, struct syncList\_s \* list)**

Definition at line 132 of file sync\_list.c.

References syncListNode\_s::id, syncList\_s::list, ListDelete(), ListSearch(), syncList\_s::lock, RWLOCK\_WRLock, RWLOCK\_WRunLock, and list\_s::size.

Referenced by MC\_SyncDelete().

## 13.53 /home/dko/projects/mobilec/trunk/src/mc\_sync/sync\_list.h File Reference

```
#include "../include/macros.h"
#include "../mc_list/list.h"
#include "../include/mc_rwlock.h"
```

### Data Structures

- struct [syncListNode\\_s](#)
- struct [syncList\\_s](#)

### Typedefs

- typedef struct [syncListNode\\_s](#) [syncListNode\\_t](#)
- typedef [syncListNode\\_t](#) \* [syncListNode\\_p](#)
- typedef struct [syncList\\_s](#) [syncList\\_t](#)
- typedef [syncList\\_t](#) \* [syncList\\_p](#)

### Functions

- [int syncListNodeInit](#) (struct [syncListNode\\_s](#) \*[node](#))
- [int syncListNodeDestroy](#) (struct [syncListNode\\_s](#) \*[node](#))
- [syncListNode\\_t](#) \* [syncListFind](#) (int [id](#), struct [syncList\\_s](#) \*[list](#))
- struct [syncListNode\\_s](#) \* [syncListNodeNew](#) (void)
- [int syncListDelete](#) (int [id](#), struct [syncList\\_s](#) \*[list](#))
- [syncListNode\\_t](#) \* [syncListRemove](#) (int [id](#), struct [syncList\\_s](#) \*[list](#))
- struct [syncList\\_s](#) \* [syncListInit](#) (void)
- [int syncListAddNode](#) (struct [syncListNode\\_s](#) \*[node](#), struct [syncList\\_s](#) \*[list](#))
- [int syncListNew](#) (int [id](#), struct [syncList\\_s](#) \*[list](#))
- [syncListNode\\_t](#) \* [syncListGet](#) (int [id](#), struct [syncList\\_s](#) \*[list](#))

#### 13.53.1 Typedef Documentation

##### 13.53.1.1 typedef [syncList\\_t](#)\* [syncList\\_p](#)

Definition at line 33 of file [sync\\_list.h](#).

##### 13.53.1.2 typedef struct [syncList\\_s](#) [syncList\\_t](#)

##### 13.53.1.3 typedef [syncListNode\\_t](#)\* [syncListNode\\_p](#)

Definition at line 23 of file [sync\\_list.h](#).

**13.53.1.4 typedef struct syncListNode\_s syncListNode\_t****13.53.2 Function Documentation****13.53.2.1 int syncListAddNode (struct syncListNode\_s \* *node*, struct syncList\_s \* *list*)**

Definition at line 86 of file sync\_list.c.

References DATA, syncListNode\_s::id, syncList\_s::list, ListAdd(), list\_s::listhead, syncList\_s::lock, listNode\_s::next, listNode\_s::node\_data, RWLOCK\_WRLock, and RWLOCK\_WRunLock.

Referenced by MC\_SyncInit(), and syncListNew().

**13.53.2.2 int syncListDelete (int *id*, struct syncList\_s \* *list*)**

Definition at line 115 of file sync\_list.c.

References syncListNode\_s::id, syncList\_s::list, ListDelete(), ListSearch(), syncList\_s::lock, MC\_ERR\_NOT\_FOUND, RWLOCK\_WRLock, RWLOCK\_WRunLock, list\_s::size, and syncListNodeDestroy().

**13.53.2.3 syncListNode\_t\* syncListFind (int *id*, struct syncList\_s \* *list*)**

Definition at line 56 of file sync\_list.c.

References syncList\_s::list, list\_s::listhead, syncList\_s::lock, listNode\_s::next, listNode\_s::node\_data, RWLOCK\_RDLOCK, and RWLOCK\_RDUnLock.

Referenced by MC\_CondBroadcast(), MC\_CondReset(), MC\_CondSignal(), MC\_CondWait(), MC\_MutexLock(), MC\_MutexUnlock(), MC\_SemaphorePost(), MC\_SemaphoreWait(), MC\_SyncDelete(), and MC\_SyncInit().

**13.53.2.4 syncListNode\_t\* syncListGet (int *id*, struct syncList\_s \* *list*)****13.53.2.5 struct syncList\_s\* syncListInit (void) [read]**

Definition at line 72 of file sync\_list.c.

References ListInitialize(), syncList\_s::lock, MUTEX\_INIT, MUTEX\_T, RWLOCK\_INIT, and RWLOCK\_T.

Referenced by mc\_platform\_Initialize().

**13.53.2.6 int syncListNew (int *id*, struct syncList\_s \* *list*)**

Definition at line 105 of file sync\_list.c.

References node, syncListAddNode(), and syncListNodeInit().

**13.53.2.7 int syncListNodeDestroy (struct syncListNode\_s \* *node*)**

Definition at line 44 of file sync\_list.c.

References syncListNode\_s::cond, COND\_DESTROY, syncListNode\_s::lock, MUTEX\_DESTROY, syncListNode\_s::sem, and SEMAPHORE\_DESTROY.

Referenced by MC\_SyncDelete(), and syncListDelete().

#### **13.53.2.8 int syncListNodeInit (struct syncListNode\_s \* *node*)**

Definition at line 11 of file sync\_list.c.

References CHECK\_NULL, syncListNode\_s::cond, COND\_INIT, COND\_T, syncListNode\_s::lock, MUTEX\_INIT, MUTEX\_T, syncListNode\_s::sem, SEMAPHORE\_INIT, and SEMAPHORE\_T.

Referenced by syncListNew().

#### **13.53.2.9 struct syncListNode\_s\* syncListNodeNew (void) [read]**

Definition at line 26 of file sync\_list.c.

References CHECK\_NULL, syncListNode\_s::cond, COND\_INIT, COND\_T, syncListNode\_s::lock, MUTEX\_INIT, MUTEX\_T, syncListNode\_s::sem, SEMAPHORE\_INIT, SEMAPHORE\_T, and syncListNode\_s::signalled.

Referenced by MC\_SyncInit().

#### **13.53.2.10 syncListNode\_t\* syncListRemove (int *id*, struct syncList\_s \* *list*)**

Definition at line 132 of file sync\_list.c.

References syncListNode\_s::id, syncList\_s::list, ListDelete(), ListSearch(), syncList\_s::lock, RWLOCK\_WRLOCK, RWLOCK\_WRUNLOCK, and list\_s::size.

Referenced by MC\_SyncDelete().

## 13.54 /home/dko/projects/mobilec/trunk/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 <mxml.h>
#include "include/libmc.h"
#include "include/agent.h"
#include "include/mc_platform.h"
#include "include/message.h"
#include "include/mtp_http.h"
#include "include/xml_compose.h"
#include "include/xml_helper.h"
#include "include/xml_parser.h"
#include "security/asm_node.h"
```

### Defines

- `#define SOCKET_INPUT_SIZE 4096`

### 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 message_Send (message_p message)`

### 13.54.1 Define Documentation

#### 13.54.1.1 `#define SOCKET_INPUT_SIZE 4096`

Definition at line 58 of file `message.c`.

### 13.54.2 Function Documentation

#### 13.54.2.1 `int http_to_hostport (const char * http_str, char ** host, int * port, char ** target)`

Definition at line 506 of file `message.c`.

References `MC_ERR_PARSE`.

Referenced by `MC_AclSend()`.

#### 13.54.2.2 `message_p message_Copy (message_p src)`

Definition at line 310 of file `message.c`.

#### 13.54.2.3 `int message_Destroy (message_p message)`

Definition at line 617 of file `message.c`.

References `message_s::addr`, `message_s::agent_xml_flag`, `message_s::from_address`, `MC_SUCCESS`, `message_s::message_body`, `mxmlDelete()`, `message_s::target`, `message_s::to_address`, `message_s::update_name`, and `message_s::xml_root`.

Referenced by `acc_MessageHandlerThread()`, `acc_Thread()`, `ams_ManageAgentList()`, `MC_AclSend()`, `MC_LoadAgentFromFile()`, `MC_SendAgentMigrationMessage()`, `MC_SendAgentMigrationMessageFile()`, `message_InitializeFromConnection()`, `message_InitializeFromString()`, and `message_queue_SendOutgoing()`.

#### 13.54.2.4 `int message_InitializeFromAgent (mc_platform_p mc_platform, message_p message, agent_p agent)`

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

References `message_s::addr`, `agent_xml_compose()`, `message_s::agent_xml_flag`, `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_datastate_s::number_of_tasks`, `mc_platform_s::port`, `agent_task_s::server_name`, `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`.

#### 13.54.2.5 `int message_InitializeFromConnection (mc_platform_p mc_platform, message_p message, connection_p connection)`

Definition at line 417 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\_INPUT\_SIZE, message\_s::target, message\_s::to\_address, and message\_s::xml\_root.

#### 13.54.2.6 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 541 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\_Destroy(), message\_s::message\_id, message\_s::message\_type, message\_xml\_parse(), MOBILE\_AGENT, MXML\_NO\_CALLBACK, mxmlLoadString(), mc\_platform\_s::port, message\_s::target, message\_s::to\_address, message\_s::update\_name, and message\_s::xml\_root.

#### 13.54.2.7 message\_p message\_New (void)

Definition at line 286 of file message.c.

References message\_s::addr, message\_s::agent\_xml\_flag, CHECK\_NULL, message\_s::connect\_id, message\_s::from\_address, message\_s::http\_type, message\_s::isHTTP, message\_s::message\_body, message\_s::message\_id, message\_s::message\_type, message\_s::target, message\_s::to\_address, message\_s::update\_name, message\_s::update\_num, message\_s::xml\_payload, and message\_s::xml\_root.

Referenced by acc\_Thread(), ams\_ManageAgentList(), MC\_LoadAgentFromFile(), MC\_SendAgentMigrationMessage(), MC\_SendAgentMigrationMessageFile(), and mtp\_http\_CreateMessage().

#### 13.54.2.8 int message\_Send (message\_p message)

Definition at line 655 of file message.c.

References CHECK\_NULL, MC\_ERR, MC\_ERR\_CONNECT, MC\_ERR\_SEND, message\_s::message\_body, mtp\_http\_ComposeMessage(), mtp\_http\_Destroy(), mtp\_http\_New(), mtp\_http\_Parse(), port, send, SOCKET\_INPUT\_SIZE, strtok\_r, and message\_s::to\_address.

Referenced by acc\_MessageHandlerThread(), MC\_AclSend(), and message\_queue\_SendOutgoing().

## 13.55 /home/dko/projects/mobilec/trunk/src/message\_queue.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <pthread.h>
#include "include/data_structures.h"
#include "include/mc_platform.h"
```

### Functions

- void [message\\_queue\\_SendOutgoing](#) (struct [mc\\_platform\\_s](#) \*[mc\\_platform](#), [message\\_queue\\_p](#) [mqueue](#))

### 13.55.1 Function Documentation

**13.55.1.1** void [message\\_queue\\_SendOutgoing](#) (struct [mc\\_platform\\_s](#) \* [mc\\_platform](#), [message\\_queue\\_p](#) [mqueue](#))

Definition at line 52 of file [message\\_queue.c](#).

References [CHECK\\_NULL](#), [mc\\_platform\\_s::hostname](#), [ListSearch\(\)](#), [message\\_Destroy\(\)](#), [message\\_Send\(\)](#), [MUTEX\\_LOCK](#), [MUTEX\\_UNLOCK](#), [mc\\_platform\\_s::port](#), and [message\\_s::to\\_address](#).

## 13.56 /home/dko/projects/mobilec/trunk/src/mtp\_http.c File Reference

```
#include <stdio.h>
#include <stdlib.h>
#include <string.h>
#include <time.h>
#include <unistd.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 mtp\\_http\\_InitializeFromConnection](#) ([mtp\\_http\\_p](#) http, [connection\\_p](#) connection)
- 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)

## 13.56.1 Define Documentation

### 13.56.1.1 #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().

### 13.56.1.2 #define SAFE\_FREE(object)

**Value:**

```
if(object) free(object); \
object = NULL
```

### 13.56.1.3 #define SAFE\_FREE(elem)

**Value:**

```
if(elem) \
    free(elem)
```

Referenced by mtp\_http\_Destroy(), and mtp\_http\_ParseHeader().

## 13.56.2 Function Documentation

### 13.56.2.1 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 225 of file mtp\_http.c.

Referenced by mtp\_http\_Parse(), and mtp\_http\_ParseHeader().

**13.56.2.2 const char\* http\_GetToken (const char \* *string*, char \*\* *token*)**

Definition at line 664 of file mtp\_http.c.

References `cur`.

Referenced by `http_ParseRequest()`.

**13.56.2.3 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 284 of file mtp\_http.c.

References `CHECK_NULL`, `MC_ERR_PARSE`, and `MC_SUCCESS`.

Referenced by `mtp_http_Parse()`, and `mtp_http_ParseHeader()`.

**13.56.2.4 const char\* http\_ParseRequest (mtp\_http\_p *http*, const char \* *string*)**

Definition at line 575 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()`.

**13.56.2.5 int mtp\_http\_ComposeMessage (message\_p *message*)**

Definition at line 703 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`.

**13.56.2.6 struct message\_s\* mtp\_http\_CreateMessage (mtp\_http\_t \* *mtp\_http*, char \* *hostname*, int *port*) [read]**

Definition at line 749 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()`.

### 13.56.2.7 `int mtp_http_Destroy (mtp_http_p http)`

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

References `mtp_http_s::accept_ranges`, `mtp_http_s::boundary`, `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::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_Thread()`, `MC_AclSend()`, `message_Send()`, and `mtp_http_InitializeFromConnection()`.

### 13.56.2.8 `int mtp_http_InitializeFromConnection (mtp_http_p http, connection_p connection)`

Definition at line 98 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`, `MC_ERR_CONNECT`, `mtp_http_Destroy()`, `mtp_http_New()`, `mtp_http_Parse()`, `mtp_http_ParseHeader()`, `send`, and `SOCKET_INPUT_SIZE`.

### 13.56.2.9 `mtp_http_p mtp_http_New (void)`

Definition at line 86 of file `mtp_http.c`.

References `CHECK_NULL`, and `mtp_http_s::content`.

Referenced by `acc_Thread()`, `MC_AclSend()`, `message_Send()`, and `mtp_http_InitializeFromConnection()`.

### 13.56.2.10 `int mtp_http_Parse (struct mtp_http_s * http, const char * string)`

Definition at line 426 of file `mtp_http.c`.

References `mtp_http_s::boundary`, `mtp_http_s::content`, `mtp_http_content_s::content_type`, `mtp_http_s::content_type`, `mtp_http_content_s::data`, `http_GetExpression()`, `http_ParseExpression()`, `mtp_http_s::http_performative`, `HTTP_POST`, `HTTP_PUT`, `HTTP_RESPONSE`, `MC_SUCCESS`, `mtp_http_s::message_parts`, and `mtp_http_ParseHeader()`.

Referenced by `message_Send()`, and `mtp_http_InitializeFromConnection()`.

### 13.56.2.11 `const char* mtp_http_ParseHeader (struct mtp_http_s * http, const char * string)`

Definition at line 343 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().

#### 13.56.2.12 int mtp\_http\_ParseResponse (struct mtp\_http\_s \* *http*, const char \* *string*)

Definition at line 697 of file mtp\_http.c.

## 13.57 /home/dko/projects/mobilec/trunk/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)

#### 13.57.1 Define Documentation

##### 13.57.1.1 #define HAVE\_STRDUP 1

Definition at line 49 of file config.h.

##### 13.57.1.2 #define HAVE\_VSNPRINTF 1

Definition at line 42 of file config.h.

##### 13.57.1.3 #define MXML\_VERSION "Mini-XML v2.2.2"

Definition at line 35 of file config.h.

Referenced by write\_documentation().

#### 13.57.2 Function Documentation

##### 13.57.2.1 char\* mxml\_strdup (const char \*, va\_list)

Definition at line 62 of file mxml-string.c.

Referenced by mxml\_error(), mxmlNewTextf(), and mxmlSetTextf().



## 13.58 /home/dko/projects/mobilec/trunk/src/mxml-2.2.2/vcnet/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 v2.0"
- #define [HAVE\\_STRDUP](#) 1
- #define [vsnprintf](#) mxml\_vsnprintf

### Functions

- char \* [mxml\\_strdup](#) (const char \*, va\_list)
- int [mxml\\_vsnprintf](#) (char \*, size\_t, const char \*, va\_list)

#### 13.58.1 Define Documentation

##### 13.58.1.1 #define HAVE\_STRDUP 1

Definition at line 51 of file config.h.

##### 13.58.1.2 #define MXML\_VERSION "Mini-XML v2.0"

Definition at line 37 of file config.h.

##### 13.58.1.3 #define vsnprintf mxml\_vsnprintf

Definition at line 67 of file config.h.

#### 13.58.2 Function Documentation

##### 13.58.2.1 char\* mxml\_strdup (const char \*, va\_list)

Definition at line 62 of file mxml-string.c.

##### 13.58.2.2 int mxml\_vsnprintf (char \*, size\_t, const char \*, va\_list)

Definition at line 107 of file mxml-string.c.

## 13.59 /home/dko/projects/mobilec/trunk/src/mxml-2.2.2/vcnet2005/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 v2.0"
- #define [HAVE\\_STRDUP](#) 1
- #define [vsnprintf](#) mxml\_vsnprintf

### Functions

- char \* [mxml\\_strdup](#) (const char \*, va\_list)
- int [mxml\\_vsnprintf](#) (char \*, size\_t, const char \*, va\_list)

#### 13.59.1 Define Documentation

##### 13.59.1.1 #define HAVE\_STRDUP 1

Definition at line 51 of file config.h.

##### 13.59.1.2 #define MXML\_VERSION "Mini-XML v2.0"

Definition at line 37 of file config.h.

##### 13.59.1.3 #define vsnprintf mxml\_vsnprintf

Definition at line 67 of file config.h.

#### 13.59.2 Function Documentation

##### 13.59.2.1 char\* mxml\_strdup (const char \*, va\_list)

Definition at line 62 of file mxml-string.c.

References [mxml\\_vsnprintf\(\)](#).

##### 13.59.2.2 int mxml\_vsnprintf (char \*, size\_t, const char \*, va\_list)

Definition at line 107 of file mxml-string.c.

References size.

Referenced by mxml\_strdup().

## 13.60 /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/include/xyssl/config.h File Reference

### Defines

- `#define _CRT_SECURE_NO_DEPRECATED 1`
- `#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`

### 13.60.1 Define Documentation

#### 13.60.1.1 `#define _CRT_SECURE_NO_DEPRECATED 1`

Definition at line 12 of file config.h.

#### 13.60.1.2 `#define XYSSL_AES_C`

Definition at line 74 of file config.h.

#### 13.60.1.3 `#define XYSSL_ARC4_C`

Definition at line 84 of file config.h.

**13.60.1.4 #define XYSSL\_BASE64\_C**

Definition at line 92 of file config.h.

**13.60.1.5 #define XYSSL\_BIGNUM\_C**

Definition at line 103 of file config.h.

**13.60.1.6 #define XYSSL\_CERTS\_C**

Definition at line 111 of file config.h.

**13.60.1.7 #define XYSSL\_DEBUG\_C**

Definition at line 121 of file config.h.

**13.60.1.8 #define XYSSL\_DEBUG\_MSG**

Definition at line 47 of file config.h.

**13.60.1.9 #define XYSSL\_DES\_C**

Definition at line 131 of file config.h.

**13.60.1.10 #define XYSSL\_DHM\_C**

Definition at line 142 of file config.h.

**13.60.1.11 #define XYSSL\_GENPRIME**

Definition at line 57 of file config.h.

**13.60.1.12 #define XYSSL\_HAVE\_ASM**

Definition at line 36 of file config.h.

**13.60.1.13 #define XYSSL\_HAVEGE\_C**

Definition at line 150 of file config.h.

**13.60.1.14 #define XYSSL\_MD5\_C**

Definition at line 177 of file config.h.

**13.60.1.15 #define XYSSL\_NET\_C**

Definition at line 185 of file config.h.

**13.60.1.16 #define XYSSL\_PADLOCK\_C**

Definition at line 193 of file config.h.

**13.60.1.17 #define XYSSL\_RSA\_C**

Definition at line 204 of file config.h.

**13.60.1.18 #define XYSSL\_SELF\_TEST**

Definition at line 52 of file config.h.

**13.60.1.19 #define XYSSL\_SHA1\_C**

Definition at line 215 of file config.h.

**13.60.1.20 #define XYSSL\_SHA2\_C**

Definition at line 223 of file config.h.

**13.60.1.21 #define XYSSL\_SHA4\_C**

Definition at line 231 of file config.h.

**13.60.1.22 #define XYSSL\_SSL\_CLI\_C**

Definition at line 239 of file config.h.

**13.60.1.23 #define XYSSL\_SSL\_SRV\_C**

Definition at line 247 of file config.h.

**13.60.1.24 #define XYSSL\_SSL\_TLS\_C**

Definition at line 256 of file config.h.

**13.60.1.25 #define XYSSL\_TIMING\_C**

Definition at line 264 of file config.h.

**13.60.1.26   #define XYSSL\_X509\_PARSE\_C**

Definition at line 274 of file config.h.

**13.60.1.27   #define XYSSL\_X509\_WRITE\_C**

Definition at line 282 of file config.h.

## 13.61 /home/dko/projects/mobilec/trunk/src/mxml-2.2.2/mxml-attr.c File Reference

```
#include "config.h"
#include "mxml.h"
```

### Functions

- const char \* [mxmlElementGetAttr](#) (mxml\_node\_t \*node, const char \*name)
- void [mxmlElementSetAttr](#) (mxml\_node\_t \*node, const char \*name, const char \*value)

### 13.61.1 Function Documentation

#### 13.61.1.1 const char\* mxmlElementGetAttr (mxml\_node\_t \* node, const char \* name)

Definition at line 43 of file mxml-attr.c.

References [mxml\\_value\\_s::attrs](#), [mxml\\_value\\_u::element](#), [MXML\\_ELEMENT](#), [mxml\\_attr\\_s::name](#), [mxml\\_value\\_s::num\\_attrs](#), [mxml\\_node\\_s::type](#), [mxml\\_attr\\_s::value](#), and [mxml\\_node\\_s::value](#).

Referenced by [agent\\_xml\\_parse\\_\\_agent\\_code\(\)](#), [agent\\_xml\\_parse\\_\\_data\(\)](#), [agent\\_xml\\_parse\\_\\_task\(\)](#), [agent\\_xml\\_parse\\_\\_tasks\(\)](#), [fipa\\_envelope\\_HandleReceived\(\)](#), [index\\_compare\(\)](#), [index\\_find\(\)](#), [message\\_xml\\_parse\\_\\_message\(\)](#), [mxml\\_parse\\_element\(\)](#), [mxmlFindElement\(\)](#), [mxmlIndexNew\(\)](#), [scan\\_file\(\)](#), [sort\\_node\(\)](#), [type\\_cb\(\)](#), and [write\\_documentation\(\)](#).

#### 13.61.1.2 void mxmlElementSetAttr (mxml\_node\_t \* node, const char \* name, const char \* value)

Definition at line 90 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](#), [mxml\\_node\\_s::type](#), [mxml\\_attr\\_s::value](#), and [mxml\\_node\\_s::value](#).

Referenced by [add\\_variable\(\)](#), [agent\\_xml\\_compose\\_\\_agent\\_code\(\)](#), [agent\\_xml\\_compose\\_\\_create\\_row\\_nodes\(\)](#), [agent\\_xml\\_compose\\_\\_data\(\)](#), [agent\\_xml\\_compose\\_\\_message\(\)](#), [agent\\_xml\\_compose\\_\\_task\(\)](#), [agent\\_xml\\_compose\\_\\_tasks\(\)](#), [fipa\\_envelope\\_Compose\\_\\_params\(\)](#), [main\(\)](#), [mxml\\_parse\\_element\(\)](#), [scan\\_file\(\)](#), [sort\\_node\(\)](#), and [update\\_comment\(\)](#).



## 13.62 /home/dko/projects/mobilec/trunk/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)

#### 13.62.1 Function Documentation

##### 13.62.1.1 static int default\_callback (const char \* *name*) [static]

Definition at line 169 of file mxml-entity.c.

References [int](#).

##### 13.62.1.2 int mxmlEntityAddCallback (int(\*) (const char \*name) *cb*)

Definition at line 65 of file mxml-entity.c.

References [callbacks](#), [mxml\\_error\(\)](#), and [num\\_callbacks](#).

##### 13.62.1.3 const char\* mxmlEntityGetName (int *val*)

Definition at line 91 of file mxml-entity.c.

Referenced by [mxml\\_write\\_name\(\)](#), and [mxml\\_write\\_string\(\)](#).

##### 13.62.1.4 int mxmlEntityGetValue (const char \* *name*)

Definition at line 121 of file mxml-entity.c.

References [callbacks](#), and [num\\_callbacks](#).

Referenced by [mxml\\_get\\_entity\(\)](#).

**13.62.1.5 void mxmlEntityRemoveCallback (int(\*) (const char \*name) cb)**

Definition at line 140 of file mxml-entity.c.

References `callbacks`, and `num_callbacks`.

**13.62.2 Variable Documentation****13.62.2.1 int(\* callbacks[100])(const char \*name) [static]**

**Initial value:**

```
{
    default_callback
}
```

Referenced by `mxmlEntityAddCallback()`, `mxmlEntityGetValue()`, and `mxmlEntityRemoveCallback()`.

**13.62.2.2 int num\_callbacks = 1 [static]**

Definition at line 53 of file mxml-entity.c.

Referenced by `mxmlEntityAddCallback()`, `mxmlEntityGetValue()`, and `mxmlEntityRemoveCallback()`.

## 13.63 /home/dko/projects/mobilec/trunk/src/mxml-2.2.2/mxml-file.c File Reference

```
#include "config.h"
#include "mxml.h"
#include <unistd.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`

### 13.63.1 Define Documentation

#### 13.63.1.1 #define ENCODE\_UTF16BE 1

Definition at line 68 of file `mxml-file.c`.

Referenced by `mxml_fd_getc()`, `mxml_file_getc()`, and `mxml_string_getc()`.

#### 13.63.1.2 #define ENCODE\_UTF16LE 2

Definition at line 69 of file `mxml-file.c`.

Referenced by `mxml_fd_getc()`, `mxml_file_getc()`, and `mxml_string_getc()`.

#### 13.63.1.3 #define ENCODE\_UTF8 0

Definition at line 67 of file `mxml-file.c`.

Referenced by `mxml_fd_getc()`, `mxml_file_getc()`, `mxml_load_data()`, and `mxml_string_getc()`.

#### 13.63.1.4 #define mxml\_bad\_char(ch) ((ch) < ' ' && (ch) != '\n' && (ch) != '\r' && (ch) != '\t')

Definition at line 76 of file `mxml-file.c`.

Referenced by `mxml_fd_getc()`, `mxml_file_getc()`, `mxml_get_entity()`, and `mxml_string_getc()`.

### 13.63.2 Typedef Documentation

#### 13.63.2.1 typedef struct mxml\_fdbuf\_s mxml\_fdbuf\_t

### 13.63.3 Function Documentation

#### 13.63.3.1 static int mxml\_add\_char (int *ch*, char \*\**ptr*, char \*\**buffer*, int \**bufsize*) [static]

Definition at line 483 of file `mxml-file.c`.

References `mxml_error()`.

Referenced by `mxml_load_data()`, and `mxml_parse_element()`.

### 13.63.3.2 `static int mxml_fd_getc (void *p, int *encoding)` [static]

Definition at line 563 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()`.

### 13.63.3.3 `static int mxml_fd_putc (int ch, void *p)` [static]

Definition at line 850 of file `mxml-file.c`.

References `buf`, `mxml_fdbuf_s::current`, `mxml_fdbuf_s::end`, and `mxml_fd_write()`.

Referenced by `mxmlSaveFd()`.

### 13.63.3.4 `static int mxml_fd_read (mxml_fdbuf_t *buf)` [static]

Definition at line 919 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()`.

### 13.63.3.5 `static int mxml_fd_write (mxml_fdbuf_t *buf)` [static]

Definition at line 958 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()`.

### 13.63.3.6 `static int mxml_file_getc (void *p, int *encoding)` [static]

Definition at line 1001 of file `mxml-file.c`.

References `ENCODE_UTF16BE`, `ENCODE_UTF16LE`, `ENCODE_UTF8`, `mxml_bad_char`, and `mxml_error()`.

Referenced by `mxmlLoadFile()`.

### 13.63.3.7 `static int mxml_file_putc (int ch, void *p)` [static]

Definition at line 1200 of file `mxml-file.c`.

Referenced by `mxmlSaveFile()`.

**13.63.3.8** `static int mxml_get_entity (mxml_node_t * parent, void * p, int * encoding, int(*) (void *, int *) getc_cb)` [static]

Definition at line 1255 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().

**13.63.3.9** `static mxml_node_t * mxml_load_data (mxml_node_t * top, void * p, mxml_type_t(*) (mxml_node_t *) cb, int(*) (void *, int *) getc_cb)` [static]

Definition at line 1316 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().

**13.63.3.10** `static int mxml_parse_element (mxml_node_t * node, void * p, int * encoding, int(*) (void *, int *) getc_cb)` [static]

Definition at line 1840 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().

**13.63.3.11** `static int mxml_string_getc (void * p, int * encoding)` [static]

Definition at line 2102 of file mxml-file.c.

References ENCODE\_UTF16BE, ENCODE\_UTF16LE, ENCODE\_UTF8, mxml\_bad\_char, and mxml\_error().

Referenced by mxmlLoadString().

**13.63.3.12** `static int mxml_string_putc (int ch, void * p)` [static]

Definition at line 2338 of file mxml-file.c.

Referenced by mxmlSaveString().

**13.63.3.13** `static int mxml_write_name (const char * s, void * p, int(*) (int, void *) putc_cb)` [static]

Definition at line 2412 of file mxml-file.c.

References mxmlEntityGetName().

Referenced by mxml\_write\_node().

**13.63.3.14** `static int mxml_write_node (mxml_node_t * node, void * p, const char  
 *(*)(mxml_node_t *, int) cb, int col, int(*)(int, void *) putc_cb)` `[static]`

Definition at line 2487 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()`.

**13.63.3.15** `static int mxml_write_string (const char * s, void * p, int(*)(int, void *) putc_cb)`  
`[static]`

Definition at line 2768 of file mxml-file.c.

References `mxmlEntityGetName()`.

Referenced by `mxml_write_node()`.

**13.63.3.16** `static int mxml_write_ws (mxml_node_t * node, void * p, const char *(*)(mxml_node_t  
 *, int) cb, int ws, int col, int(*)(int, void *) putc_cb)` `[static]`

Definition at line 2808 of file mxml-file.c.

References `MXML_TAB`.

Referenced by `mxml_write_node()`.

**13.63.3.17** `mxml_node_t* mxmlLoadFd (mxml_node_t * top, int fd,  
 mxml_type_t(*)(mxml_node_t *node) cb)`

Definition at line 159 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()`.

**13.63.3.18** `mxml_node_t* mxmlLoadFile (mxml_node_t * top, FILE * fp,  
 mxml_type_t(*)(mxml_node_t *node) cb)`

Definition at line 199 of file mxml-file.c.

References `mxml_file_getc()`, and `mxml_load_data()`.

Referenced by `main()`.

### 13.63.3.19 **mxmload\_string** (mxmload\_string\_t \* *top*, const char \* *s*, mxml\_type\_t(\*) (mxml\_node\_t \* *node*) *cb*)

Definition at line 228 of file mxml-file.c.

References mxml\_load\_data(), and mxml\_string\_getc().

Referenced by acc\_Thread(), agent\_xml\_compose(), fipa\_envelope\_Compose(), fipa\_envelope\_Parse(), main(), MC\_LoadAgentFromFile(), message\_InitializeFromConnection(), and message\_InitializeFromString().

### 13.63.3.20 **char\* mxmlsave\_alloc\_string** (mxml\_node\_t \* *node*, const char \*(\*) (mxml\_node\_t \* *node*, int *ws*) *cb*)

Definition at line 258 of file mxml-file.c.

References mxmlsave\_string().

Referenced by fipa\_envelope\_Compose(), MC\_GetAgentXMLString(), and message\_InitializeFromAgent().

### 13.63.3.21 **int mxmlsave\_fd** (mxml\_node\_t \* *node*, int *fd*, const char \*(\*) (mxml\_node\_t \* *node*, int *ws*) *cb*)

Definition at line 315 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().

### 13.63.3.22 **int mxmlsave\_file** (mxml\_node\_t \* *node*, FILE \* *fp*, const char \*(\*) (mxml\_node\_t \* *node*, int *ws*) *cb*)

Definition at line 362 of file mxml-file.c.

References mxml\_file\_putc(), and mxml\_write\_node().

Referenced by main().

### 13.63.3.23 **int mxmlsave\_string** (mxml\_node\_t \* *node*, char \* *buffer*, int *bufsize*, const char \*(\*) (mxml\_node\_t \* *node*, int *ws*) *cb*)

Definition at line 404 of file mxml-file.c.

References mxml\_string\_putc(), and mxml\_write\_node().

Referenced by main(), and mxmlsave\_alloc\_string().

### 13.63.3.24 **void mxmlset\_custom\_handlers** (mxml\_custom\_load\_cb\_t *load*, mxml\_custom\_save\_cb\_t *save*)

Definition at line 456 of file mxml-file.c.

References mxml\_custom\_load\_cb, and mxml\_custom\_save\_cb.



**13.63.3.25 void mxmlSetErrorCallback (void(\*) (const char \*) cb)**

Definition at line 471 of file mxml-file.c.

References mxml\_error\_cb.

**13.63.4 Variable Documentation****13.63.4.1 mxml\_custom\_load\_cb\_t mxml\_custom\_load\_cb = NULL [static]**

Definition at line 103 of file mxml-file.c.

Referenced by mxml\_load\_data(), and mxmlSetCustomHandlers().

**13.63.4.2 mxml\_custom\_save\_cb\_t mxml\_custom\_save\_cb = NULL [static]**

Definition at line 104 of file mxml-file.c.

Referenced by mxml\_write\_node(), and mxmlSetCustomHandlers().

**13.63.4.3 void(\* mxml\_error\_cb)(const char \*)**

Referenced by mxml\_error(), and mxmlSetErrorCallback().

## 13.64 /home/dko/projects/mobilec/trunk/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)

### 13.64.1 Function Documentation

**13.64.1.1** static int [index\\_compare](#) ([mxml\\_index\\_t](#) \* *ind*, [mxml\\_node\\_t](#) \* *first*, [mxml\\_node\\_t](#) \* *second*) [static]

Definition at line 494 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\(\)](#).

**13.64.1.2** static int [index\\_find](#) ([mxml\\_index\\_t](#) \* *ind*, const char \* *element*, const char \* *value*, [mxml\\_node\\_t](#) \* *node*) [static]

Definition at line 533 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\(\)](#).

**13.64.1.3** static void [index\\_sort](#) ([mxml\\_index\\_t](#) \* *ind*, int *left*, int *right*) [static]

Definition at line 576 of file mxml-index.c.

References [index\\_compare\(\)](#), and [mxml\\_index\\_s::nodes](#).

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

**13.64.1.4** void [mxmlIndexDelete](#) ([mxml\\_index\\_t](#) \* *ind*)

Definition at line 58 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()`.

#### 13.64.1.5 `mxml_node_t* mxmlIndexEnum (mxml_index_t * ind)`

Definition at line 88 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()`.

#### 13.64.1.6 `mxml_node_t* mxmlIndexFind (mxml_index_t * ind, const char * element, const char * value)`

Definition at line 118 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()`.

#### 13.64.1.7 `mxml_index_t* mxmlIndexNew (mxml_node_t * node, const char * element, const char * attr)`

Definition at line 301 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`, and `mxml_node_s::value`.

Referenced by `main()`.

#### 13.64.1.8 `mxml_node_t* mxmlIndexReset (mxml_index_t * ind)`

Definition at line 459 of file `mxml-index.c`.

References `mxml_index_s::cur_node`, `mxml_index_s::nodes`, and `mxml_index_s::num_nodes`.

Referenced by `main()`.

## 13.65 /home/dko/projects/mobilec/trunk/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)`

### 13.65.1 Function Documentation

**13.65.1.1** `static mxml_node_t * mxml_new (mxml_node_t * parent, mxml_type_t type)`  
[static]

Definition at line 617 of file mxml-node.c.

References MXML\_ADD\_AFTER, MXML\_ADD\_TO\_PARENT, mxmlAdd(), node, and mxml\_node\_s::type.

Referenced by mxmlNewCustom(), mxmlNewElement(), mxmlNewInteger(), mxmlNewOpaque(), mxmlNewReal(), mxmlNewText(), and mxmlNewTextf().

**13.65.1.2** `void mxmlAdd (mxml_node_t * parent, int where, mxml_node_t * child, mxml_node_t * node)`

Definition at line 62 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().

**13.65.1.3** `void mxmlDelete (mxml_node_t * node)`

Definition at line 196 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()`.

#### 13.65.1.4 `mxml_node_t*` `mxmlNewCustom` (`mxml_node_t` \* *parent*, `void` \* *data*, `void`(\*)(`void` \*) *destroy*)

Definition at line 287 of file `mxml-node.c`.

References `mxml_value_u::custom`, `mxml_custom_s::data`, `mxml_custom_s::destroy`, `MXML_CUSTOM`, `mxml_new()`, `node`, and `mxml_node_s::value`.

Referenced by `mxml_load_data()`.

#### 13.65.1.5 `mxml_node_t*` `mxmlNewElement` (`mxml_node_t` \* *parent*, `const char` \* *name*)

Definition at line 323 of file `mxml-node.c`.

References `mxml_value_u::element`, `MXML_ELEMENT`, `mxml_new()`, `mxml_value_s::name`, `node`, and `mxml_node_s::value`.

Referenced by `add_variable()`, `agent_xml_compose__agent_code()`, `agent_xml_compose__agent_data()`, `agent_xml_compose__create_row_nodes()`, `agent_xml_compose__data()`, `agent_xml_compose__gaf_message()`, `agent_xml_compose__home()`, `agent_xml_compose__message()`, `agent_xml_compose__mobile_agent()`, `agent_xml_compose__name()`, `agent_xml_compose__owner()`, `agent_xml_compose__task()`, `agent_xml_compose__tasks()`, `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()`.

#### 13.65.1.6 `mxml_node_t*` `mxmlNewInteger` (`mxml_node_t` \* *parent*, `int` *integer*)

Definition at line 361 of file `mxml-node.c`.

References `mxml_value_u::integer`, `MXML_INTEGER`, `mxml_new()`, `node`, and `mxml_node_s::value`.

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

#### 13.65.1.7 `mxml_node_t*` `mxmlNewOpaque` (`mxml_node_t` \* *parent*, `const char` \* *opaque*)

Definition at line 392 of file `mxml-node.c`.

References `mxml_new()`, `MXML_OPAQUE`, `node`, `mxml_value_u::opaque`, and `mxml_node_s::value`.

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

#### 13.65.1.8 `mxml_node_t*` `mxmlNewReal` (`mxml_node_t` \* *parent*, `double` *real*)

Definition at line 430 of file `mxml-node.c`.

References `mxml_new()`, `MXML_REAL`, `node`, `mxml_value_u::real`, and `mxml_node_s::value`.

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

#### **13.65.1.9 `mxml_node_t*` `mxmlNewText` (`mxml_node_t` \* *parent*, `int` *whitespace*, `const char` \* *string*)**

Definition at line 462 of file `mxml-node.c`.

References `mxml_new()`, `MXML_TEXT`, `node`, `mxml_text_s::string`, `mxml_value_u::text`, `mxml_node_s::value`, and `mxml_text_s::whitespace`.

Referenced by `agent_xml_compose__create_row_nodes()`, `agent_xml_compose__home()`, `agent_xml_compose__name()`, `agent_xml_compose__owner()`, `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()`.

#### **13.65.1.10 `mxml_node_t*` `mxmlNewTextf` (`mxml_node_t` \* *parent*, `int` *whitespace*, `const char` \* *format*, ...)**

Definition at line 506 of file `mxml-node.c`.

References `mxml_new()`, `mxml_strdupf()`, `MXML_TEXT`, `node`, `mxml_text_s::string`, `mxml_value_u::text`, `mxml_node_s::value`, and `mxml_text_s::whitespace`.

#### **13.65.1.11 `void` `mxmlRemove` (`mxml_node_t` \* *node*)**

Definition at line 553 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()`.

## 13.66 /home/dko/projects/mobilec/trunk/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

### 13.66.1 Function Documentation

#### 13.66.1.1 void [mxml\\_error](#) (const char \**format*, ...)

Definition at line 49 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\(\)](#).

#### 13.66.1.2 [mxml\\_type\\_t mxml\\_integer\\_cb](#) ([mxml\\_node\\_t](#) \**node*)

Definition at line 95 of file mxml-private.c.

References [MXML\\_INTEGER](#).

#### 13.66.1.3 [mxml\\_type\\_t mxml\\_opaque\\_cb](#) ([mxml\\_node\\_t](#) \**node*)

Definition at line 108 of file mxml-private.c.

References [MXML\\_OPAQUE](#).

#### 13.66.1.4 [mxml\\_type\\_t mxml\\_real\\_cb](#) ([mxml\\_node\\_t](#) \**node*)

Definition at line 121 of file mxml-private.c.

References [MXML\\_REAL](#).

## 13.66.2 Variable Documentation

### 13.66.2.1 `void(* mxml_error_cb)(const char *) = NULL`

Referenced by `mxml_error()`, and `mxmlSetErrorCallback()`.



## 13.67 /home/dko/projects/mobilec/trunk/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](#))

### 13.67.1 Function Documentation

#### 13.67.1.1 [mxml\\_node\\_t \\* mxmlFindElement](#) ([mxml\\_node\\_t \\* node](#), [mxml\\_node\\_t \\* top](#), [const char \\* name](#), [const char \\* attr](#), [const char \\* value](#), [int descend](#))

Definition at line 51 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()`.

#### 13.67.1.2 [mxml\\_node\\_t \\* mxmlWalkNext](#) ([mxml\\_node\\_t \\* node](#), [mxml\\_node\\_t \\* top](#), [int descend](#))

Definition at line 133 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()`.

#### 13.67.1.3 [mxml\\_node\\_t \\* mxmlWalkPrev](#) ([mxml\\_node\\_t \\* node](#), [mxml\\_node\\_t \\* top](#), [int descend](#))

Definition at line 169 of file `mxml-search.c`.

References `mxml_node_s::last_child`, `mxml_node_s::parent`, and `mxml_node_s::prev`.

## 13.68 /home/dko/projects/mobilec/trunk/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*,...)

### 13.68.1 Function Documentation

#### 13.68.1.1 [int mxmlSetCustom](#) ([mxml\\_node\\_t](#) \* *node*, void \* *data*, void(\*) (void \*) *destroy*)

Definition at line 46 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](#).

#### 13.68.1.2 [int mxmlSetElement](#) ([mxml\\_node\\_t](#) \* *node*, const char \* *name*)

Definition at line 79 of file mxml-set.c.

References [mxml\\_value\\_u::element](#), [MXML\\_ELEMENT](#), [mxml\\_value\\_s::name](#), [mxml\\_node\\_s::type](#), and [mxml\\_node\\_s::value](#).

#### 13.68.1.3 [int mxmlSetInteger](#) ([mxml\\_node\\_t](#) \* *node*, [int](#) *integer*)

Definition at line 109 of file mxml-set.c.

References [mxml\\_value\\_u::integer](#), [MXML\\_INTEGER](#), [mxml\\_node\\_s::type](#), and [mxml\\_node\\_s::value](#).

#### 13.68.1.4 [int mxmlSetOpaque](#) ([mxml\\_node\\_t](#) \* *node*, const char \* *opaque*)

Definition at line 136 of file mxml-set.c.

References [MXML\\_OPAQUE](#), [mxml\\_value\\_u::opaque](#), [mxml\\_node\\_s::type](#), and [mxml\\_node\\_s::value](#).

#### 13.68.1.5 [int mxmlSetReal](#) ([mxml\\_node\\_t](#) \* *node*, double *real*)

Definition at line 166 of file mxml-set.c.

References [MXML\\_REAL](#), [mxml\\_value\\_u::real](#), [mxml\\_node\\_s::type](#), and [mxml\\_node\\_s::value](#).

**13.68.1.6 int mxmlSetText (mxml\_node\_t \* *node*, int *whitespace*, const char \* *string*)**

Definition at line 193 of file mxml-set.c.

References MXML\_TEXT, mxml\_text\_s::string, mxml\_value\_u::text, mxml\_node\_s::type, mxml\_node\_s::value, and mxml\_text\_s::whitespace.

**13.68.1.7 int mxmlSetTextf (mxml\_node\_t \* *node*, int *whitespace*, const char \* *format*, ...)**

Definition at line 225 of file mxml-set.c.

References mxml\_strdup(), MXML\_TEXT, mxml\_text\_s::string, mxml\_value\_u::text, mxml\_node\_s::type, mxml\_node\_s::value, and mxml\_text\_s::whitespace.

## 13.69 /home/dko/projects/mobilec/trunk/src/mxml-2.2.2/mxml-string.c File Reference

```
#include "config.h"
```

### Functions

- char \* [mxml\\_strdup](#) (const char \*format, va\_list ap)
- int [mxml\\_vsnprintf](#) (char \*buffer, size\_t bufsiz, const char \*format, va\_list ap)

### 13.69.1 Function Documentation

#### 13.69.1.1 char\* mxml\_strdup (const char \**format*, va\_list *ap*)

Definition at line 62 of file mxml-string.c.

References [mxml\\_vsnprintf](#)().

Referenced by [mxml\\_error](#)(), [mxmlNewTextf](#)(), and [mxmlSetTextf](#)().

#### 13.69.1.2 int mxml\_vsnprintf (char \**buffer*, size\_t *bufsize*, const char \**format*, va\_list *ap*)

Definition at line 107 of file mxml-string.c.

References [size](#).

Referenced by [mxml\\_strdup](#)().

## 13.70 /home/dko/projects/mobilec/trunk/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)

## 13.70.1 Define Documentation

### 13.70.1.1 #define MXML\_ADD\_AFTER 1

Definition at line 68 of file mxml.h.

Referenced by `add_variable()`, `agent_xml_compose()`, `agent_xml_compose__agent_data()`, `agent_xml_compose__create_row_nodes()`, `agent_xml_compose__data()`, `agent_xml_compose__gaf_message()`, `agent_xml_compose__message()`, `agent_xml_compose__mobile_agent()`, `agent_xml_compose__task()`, `agent_xml_compose__tasks()`, `fipa_envelope_Compose()`, `fipa_envelope_Compose__envelope()`, `fipa_envelope_Compose__params()`, `mxml_new()`, `mxmlAdd()`, `scan_file()`, and `sort_node()`.

### 13.70.1.2 #define MXML\_ADD\_BEFORE 0

Definition at line 67 of file mxml.h.

Referenced by `mxmlAdd()`, `scan_file()`, and `sort_node()`.

### 13.70.1.3 #define MXML\_ADD\_TO\_PARENT NULL

Definition at line 69 of file mxml.h.

Referenced by `add_variable()`, `agent_xml_compose()`, `agent_xml_compose__create_row_nodes()`, `fipa_envelope_Compose()`, `fipa_envelope_Compose__envelope()`, `fipa_envelope_Compose__params()`, `mxml_new()`, `scan_file()`, and `sort_node()`.

### 13.70.1.4 #define MXML\_DESCEND 1

Definition at line 58 of file mxml.h.

Referenced by `agent_xml_parse__tasks()`, `main()`, `MC_LoadAgentFromFile()`, `message_xml_parse()`, `mxmlFindElement()`, `mxmlIndexNew()`, and `write_element()`.

### 13.70.1.5 #define MXML\_DESCEND\_FIRST -1

Definition at line 60 of file mxml.h.

Referenced by `agent_xml_parse__fill_row_data()`, `agent_xml_parse__task()`, `agent_xml_parse__tasks()`, `fipa_envelope_HandleAclRepresentation()`, `fipa_envelope_HandleComments()`, `fipa_envelope_HandleDate()`, `fipa_envelope_HandleEnvelope()`, `fipa_envelope_HandleFrom()`, `fipa_envelope_HandleIntendedReceiver()`, `fipa_envelope_HandleParams()`, `fipa_envelope_HandlePayloadEncoding()`, `fipa_envelope_HandlePayloadLength()`, `fipa_envelope_HandleReceived()`, `fipa_envelope_HandleTo()`, `fipa_envelope_ParseAddresses()`, `fipa_envelope_ParseAgentIdentifier()`, `fipa_envelope_ParseResolvers()`, `scan_file()`, `sort_node()`, and `write_documentation()`.

#### 13.70.1.6 **#define MXML\_INTEGER\_CALLBACK mxml\_integer\_cb**

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

Referenced by `main()`.

#### 13.70.1.7 **#define MXML\_NO\_CALLBACK 0**

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

Referenced by `acc_Thread()`, `agent_xml_compose()`, `fipa_envelope_Compose()`, `fipa_envelope_Parse()`, `main()`, `message_InitializeFromAgent()`, `message_InitializeFromConnection()`, and `message_InitializeFromString()`.

#### 13.70.1.8 **#define MXML\_NO\_DESCEND 0**

Definition at line 59 of file `mxml.h`.

Referenced by `agent_xml_parse__task()`, `agent_xml_parse__tasks()`, `fipa_envelope_HandleIntendedReceiver()`, `fipa_envelope_HandleTo()`, `fipa_envelope_ParseAddresses()`, `fipa_envelope_ParseResolvers()`, `main()`, `message_xml_parse()`, `write_documentation()`, `write_element()`, `xml_find_sibling()`, and `xml_get_deep_child()`.

#### 13.70.1.9 **#define MXML\_NO\_PARENT 0**

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

Referenced by `agent_xml_compose__agent_code()`, `agent_xml_compose__create_row_nodes()`, `main()`, and `scan_file()`.

#### 13.70.1.10 **#define MXML\_OPAQUE\_CALLBACK mxml\_opaque\_cb**

Definition at line 50 of file `mxml.h`.

Referenced by `main()`.

#### 13.70.1.11 **#define MXML\_REAL\_CALLBACK mxml\_real\_cb**

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

Referenced by `main()`.



**13.70.1.12 #define MXML\_TAB 8**

Definition at line 45 of file mxml.h.

Referenced by mxml\_write\_ws().

**13.70.1.13 #define MXML\_TEXT\_CALLBACK 0**

Definition at line 54 of file mxml.h.

**13.70.1.14 #define MXML\_WRAP 72**

Definition at line 44 of file mxml.h.

Referenced by mxml\_write\_node().

**13.70.1.15 #define MXML\_WS\_AFTER\_CLOSE 3**

Definition at line 65 of file mxml.h.

Referenced by mxml\_write\_node(), whitespace\_cb(), and ws\_cb().

**13.70.1.16 #define MXML\_WS\_AFTER\_OPEN 1**

Definition at line 63 of file mxml.h.

Referenced by mxml\_write\_node(), whitespace\_cb(), and ws\_cb().

**13.70.1.17 #define MXML\_WS\_BEFORE\_CLOSE 2**

Definition at line 64 of file mxml.h.

Referenced by mxml\_write\_node(), whitespace\_cb(), and ws\_cb().

**13.70.1.18 #define MXML\_WS\_BEFORE\_OPEN 0**

Definition at line 62 of file mxml.h.

Referenced by mxml\_write\_node(), whitespace\_cb(), and ws\_cb().

**13.70.2 Typedef Documentation****13.70.2.1 typedef struct mxml\_attr\_s mxml\_attr\_t****13.70.2.2 typedef int(\* mxml\_custom\_load\_cb\_t)(mxml\_node\_t \*, const char \*)**

Definition at line 142 of file mxml.h.

**13.70.2.3 typedef char\*(\* mxml\_custom\_save\_cb\_t)(mxml\_node\_t \*)**

Definition at line 145 of file mxml.h.

**13.70.2.4** typedef struct mxml\_custom\_s mxml\_custom\_t

**13.70.2.5** typedef struct mxml\_value\_s mxml\_element\_t

**13.70.2.6** typedef struct mxml\_index\_s mxml\_index\_t

**13.70.2.7** typedef struct mxml\_node\_s mxml\_node\_t

**13.70.2.8** typedef struct mxml\_text\_s mxml\_text\_t

**13.70.2.9** typedef enum mxml\_type\_e mxml\_type\_t

**13.70.2.10** typedef union mxml\_value\_u mxml\_value\_t

### 13.70.3 Enumeration Type Documentation

**13.70.3.1** enum mxml\_type\_e

Enumerator:

*MXML\_ELEMENT*

*MXML\_INTEGER*

*MXML\_OPAQUE*

*MXML\_REAL*

*MXML\_TEXT*

*MXML\_CUSTOM*

Definition at line 76 of file mxml.h.

### 13.70.4 Function Documentation

**13.70.4.1** void mxml\_error (const char \**format*, ...)

Definition at line 49 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().

**13.70.4.2** mxml\_type\_t mxml\_integer\_cb (mxml\_node\_t \**node*)

Definition at line 95 of file mxml-private.c.

References MXML\_INTEGER.

**13.70.4.3** mxml\_type\_t mxml\_opaque\_cb (mxml\_node\_t \**node*)

Definition at line 108 of file mxml-private.c.

References MXML\_OPAQUE.

**13.70.4.4 mxml\_type\_t mxml\_real\_cb (mxml\_node\_t \* node)**

Definition at line 121 of file mxml-private.c.

References MXML\_REAL.

**13.70.4.5 void mxmlAdd (mxml\_node\_t \* parent, int where, mxml\_node\_t \* child, mxml\_node\_t \* node)**

Definition at line 62 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().

**13.70.4.6 void mxmlDelete (mxml\_node\_t \* node)**

Definition at line 196 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().

**13.70.4.7 const char\* mxmlElementGetAttr (mxml\_node\_t \* node, const char \* name)**

Definition at line 43 of file mxml-attr.c.

References mxml\_value\_s::attrs, mxml\_value\_u::element, MXML\_ELEMENT, mxml\_attr\_s::name, mxml\_value\_s::num\_attrs, mxml\_node\_s::type, mxml\_attr\_s::value, and mxml\_node\_s::value.

Referenced by agent\_xml\_parse\_\_agent\_code(), agent\_xml\_parse\_\_data(), agent\_xml\_parse\_\_task(), agent\_xml\_parse\_\_tasks(), fipa\_envelope\_HandleReceived(), index\_compare(), index\_find(), message\_xml\_parse\_\_message(), mxml\_parse\_element(), mxmlFindElement(), mxmlIndexNew(), scan\_file(), sort\_node(), type\_cb(), and write\_documentation().

**13.70.4.8 void mxmlElementSetAttr (mxml\_node\_t \* node, const char \* name, const char \* value)**

Definition at line 90 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, mxml\_node\_s::type, mxml\_attr\_s::value, and mxml\_node\_s::value.

Referenced by add\_variable(), agent\_xml\_compose\_\_agent\_code(), agent\_xml\_compose\_\_create\_row\_nodes(), agent\_xml\_compose\_\_data(), agent\_xml\_compose\_\_message(), agent\_xml\_compose\_\_task(),

agent\_xml\_compose\_\_tasks(), fipa\_envelope\_Compose\_\_params(), main(), mxml\_parse\_element(), scan\_file(), sort\_node(), and update\_comment().

#### 13.70.4.9 int mxmlEntityAddCallback (int\*)(const char \*name) cb)

Definition at line 65 of file mxml-entity.c.

References callbacks, mxml\_error(), and num\_callbacks.

#### 13.70.4.10 const char\* mxmlEntityGetName (int val)

Definition at line 91 of file mxml-entity.c.

Referenced by mxml\_write\_name(), and mxml\_write\_string().

#### 13.70.4.11 int mxmlEntityGetValue (const char \* name)

Definition at line 121 of file mxml-entity.c.

References callbacks, and num\_callbacks.

Referenced by mxml\_get\_entity().

#### 13.70.4.12 void mxmlEntityRemoveCallback (int\*)(const char \*name) cb)

Definition at line 140 of file mxml-entity.c.

References callbacks, and num\_callbacks.

#### 13.70.4.13 mxml\_node\_t\* mxmlFindElement (mxml\_node\_t \* node, mxml\_node\_t \* top, const char \* name, const char \* attr, const char \* value, int descend)

Definition at line 51 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().

#### 13.70.4.14 void mxmlIndexDelete (mxml\_index\_t \* ind)

Definition at line 58 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().

**13.70.4.15 mxml\_node\_t\* mxmlIndexEnum (mxml\_index\_t \* *ind*)**

Definition at line 88 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().

**13.70.4.16 mxml\_node\_t\* mxmlIndexFind (mxml\_index\_t \* *ind*, const char \* *element*, const char \* *value*)**

Definition at line 118 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().

**13.70.4.17 mxml\_index\_t\* mxmlIndexNew (mxml\_node\_t \* *node*, const char \* *element*, const char \* *attr*)**

Definition at line 301 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, and mxml\_node\_s::value.

Referenced by main().

**13.70.4.18 mxml\_node\_t\* mxmlIndexReset (mxml\_index\_t \* *ind*)**

Definition at line 459 of file mxml-index.c.

References mxml\_index\_s::cur\_node, mxml\_index\_s::nodes, and mxml\_index\_s::num\_nodes.

Referenced by main().

**13.70.4.19 mxml\_node\_t\* mxmlLoadFd (mxml\_node\_t \* *top*, int *fd*, mxml\_type\_t(\*) (mxml\_node\_t \*) *cb*)****13.70.4.20 mxml\_node\_t\* mxmlLoadFile (mxml\_node\_t \* *top*, FILE \* *fp*, mxml\_type\_t(\*) (mxml\_node\_t \*) *cb*)****13.70.4.21 mxml\_node\_t\* mxmlLoadString (mxml\_node\_t \* *top*, const char \* *s*, mxml\_type\_t(\*) (mxml\_node\_t \*) *cb*)****13.70.4.22 mxml\_node\_t\* mxmlNewCustom (mxml\_node\_t \* *parent*, void \* *data*, void(\*) (void \*) *destroy*)**

Definition at line 287 of file mxml-node.c.

References mxml\_value\_u::custom, mxml\_custom\_s::data, mxml\_custom\_s::destroy, MXML\_CUSTOM, mxml\_new(), node, and mxml\_node\_s::value.

Referenced by mxml\_load\_data().

**13.70.4.23 mxmxml\_node\_t\* mxmxmlNewElement (mxmxml\_node\_t \* *parent*, const char \* *name*)**

Definition at line 323 of file mxmxml-node.c.

References mxmxml\_value\_u::element, MXMXML\_ELEMENT, mxmxml\_new(), mxmxml\_value\_s::name, node, and mxmxml\_node\_s::value.

Referenced by add\_variable(), agent\_xml\_compose\_\_agent\_code(), agent\_xml\_compose\_\_agent\_data(), agent\_xml\_compose\_\_create\_row\_nodes(), agent\_xml\_compose\_\_data(), agent\_xml\_compose\_\_gaf\_message(), agent\_xml\_compose\_\_home(), agent\_xml\_compose\_\_message(), agent\_xml\_compose\_\_mobile\_agent(), agent\_xml\_compose\_\_name(), agent\_xml\_compose\_\_owner(), agent\_xml\_compose\_\_task(), agent\_xml\_compose\_\_tasks(), 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(), mxmxml\_load\_data(), scan\_file(), and xml\_new\_cdata().

**13.70.4.24 mxmxml\_node\_t\* mxmxmlNewInteger (mxmxml\_node\_t \* *parent*, int *integer*)**

Definition at line 361 of file mxmxml-node.c.

References mxmxml\_value\_u::integer, MXMXML\_INTEGER, mxmxml\_new(), node, and mxmxml\_node\_s::value.

Referenced by main(), and mxmxml\_load\_data().

**13.70.4.25 mxmxml\_node\_t\* mxmxmlNewOpaque (mxmxml\_node\_t \* *parent*, const char \* *opaque*)**

Definition at line 392 of file mxmxml-node.c.

References mxmxml\_new(), MXMXML\_OPAQUE, node, mxmxml\_value\_u::opaque, and mxmxml\_node\_s::value.

Referenced by main(), and mxmxml\_load\_data().

**13.70.4.26 mxmxml\_node\_t\* mxmxmlNewReal (mxmxml\_node\_t \* *parent*, double *real*)**

Definition at line 430 of file mxmxml-node.c.

References mxmxml\_new(), MXMXML\_REAL, node, mxmxml\_value\_u::real, and mxmxml\_node\_s::value.

Referenced by main(), and mxmxml\_load\_data().

**13.70.4.27 mxmxml\_node\_t\* mxmxmlNewText (mxmxml\_node\_t \* *parent*, int *whitespace*, const char \* *string*)**

Definition at line 462 of file mxmxml-node.c.

References mxmxml\_new(), MXMXML\_TEXT, node, mxmxml\_text\_s::string, mxmxml\_value\_u::text, mxmxml\_node\_s::value, and mxmxml\_text\_s::whitespace.

Referenced by agent\_xml\_compose\_\_create\_row\_nodes(), agent\_xml\_compose\_\_home(), agent\_xml\_compose\_\_name(), agent\_xml\_compose\_\_owner(), 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(), mxmxml\_load\_data(), and scan\_file().

**13.70.4.28** `mxml_node_t* mxmlNewTextf (mxml_node_t * parent, int whitespace, const char * format, ...)`

Definition at line 506 of file mxml-node.c.

References `mxml_new()`, `mxml_strdupf()`, `MXML_TEXT`, `node`, `mxml_text_s::string`, `mxml_value_u::text`, `mxml_node_s::value`, and `mxml_text_s::whitespace`.

**13.70.4.29** `void mxmlRemove (mxml_node_t * node)`

Definition at line 553 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()`.

**13.70.4.30** `char* mxmlSaveAllocString (mxml_node_t * node, const char *(*)(mxml_node_t *, int) cb)`**13.70.4.31** `int mxmlSaveFd (mxml_node_t * node, int fd, const char *(*)(mxml_node_t *, int) cb)`**13.70.4.32** `int mxmlSaveFile (mxml_node_t * node, FILE * fp, const char *(*)(mxml_node_t *, int) cb)`**13.70.4.33** `int mxmlSaveString (mxml_node_t * node, char * buffer, int bufsize, const char *(*)(mxml_node_t *, int) cb)`**13.70.4.34** `int mxmlSetCustom (mxml_node_t * node, void * data, void (*)(void *) destroy)`

Definition at line 46 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`.

**13.70.4.35** `void mxmlSetCustomHandlers (mxml_custom_load_cb_t load, mxml_custom_save_cb_t save)`

Definition at line 456 of file mxml-file.c.

References `mxml_custom_load_cb`, and `mxml_custom_save_cb`.

**13.70.4.36** `int mxmlSetElement (mxml_node_t * node, const char * name)`

Definition at line 79 of file mxml-set.c.

References `mxml_value_u::element`, `MXML_ELEMENT`, `mxml_value_s::name`, `mxml_node_s::type`, and `mxml_node_s::value`.

**13.70.4.37** `void mxmlSetErrorCallback (void (*)(const char *) cb)`

Definition at line 471 of file mxml-file.c.

References `mxml_error_cb`.

**13.70.4.38 int mxmlSetInteger (mxml\_node\_t \* *node*, int *integer*)**

Definition at line 109 of file mxml-set.c.

References mxml\_value\_u::integer, MXML\_INTEGER, mxml\_node\_s::type, and mxml\_node\_s::value.

**13.70.4.39 int mxmlSetOpaque (mxml\_node\_t \* *node*, const char \* *opaque*)**

Definition at line 136 of file mxml-set.c.

References MXML\_OPAQUE, mxml\_value\_u::opaque, mxml\_node\_s::type, and mxml\_node\_s::value.

**13.70.4.40 int mxmlSetReal (mxml\_node\_t \* *node*, double *real*)**

Definition at line 166 of file mxml-set.c.

References MXML\_REAL, mxml\_value\_u::real, mxml\_node\_s::type, and mxml\_node\_s::value.

**13.70.4.41 int mxmlSetText (mxml\_node\_t \* *node*, int *whitespace*, const char \* *string*)**

Definition at line 193 of file mxml-set.c.

References MXML\_TEXT, mxml\_text\_s::string, mxml\_value\_u::text, mxml\_node\_s::type, mxml\_node\_s::value, and mxml\_text\_s::whitespace.

**13.70.4.42 int mxmlSetTextf (mxml\_node\_t \* *node*, int *whitespace*, const char \* *format*, ...)**

Definition at line 225 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.

**13.70.4.43 mxml\_node\_t\* mxmlWalkNext (mxml\_node\_t \* *node*, mxml\_node\_t \* *top*, int *descend*)**

Definition at line 133 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().

**13.70.4.44 mxml\_node\_t\* mxmlWalkPrev (mxml\_node\_t \* *node*, mxml\_node\_t \* *top*, int *descend*)**

Definition at line 169 of file mxml-search.c.

References mxml\_node\_s::last\_child, mxml\_node\_s::parent, and mxml\_node\_s::prev.



## 13.71 /home/dko/projects/mobilec/trunk/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[ ])

#### 13.71.1 Define Documentation

##### 13.71.1.1 #define STATE\_C\_COMMENT 2

Definition at line 125 of file `mxmldoc.c`.

Referenced by `scan_file()`.

##### 13.71.1.2 #define STATE\_CHARACTER 5

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

Referenced by `scan_file()`.

##### 13.71.1.3 #define STATE\_CXX\_COMMENT 3

Definition at line 126 of file `mxmldoc.c`.

Referenced by `scan_file()`.

#### 13.71.1.4 **#define STATE\_IDENTIFIER 6**

Definition at line 129 of file mxmldoc.c.

Referenced by scan\_file().

#### 13.71.1.5 **#define STATE\_NONE 0**

Definition at line 123 of file mxmldoc.c.

Referenced by scan\_file().

#### 13.71.1.6 **#define STATE\_PREPROCESSOR 1**

Definition at line 124 of file mxmldoc.c.

Referenced by scan\_file().

#### 13.71.1.7 **#define STATE\_STRING 4**

Definition at line 127 of file mxmldoc.c.

Referenced by scan\_file().

### 13.71.2 **Function Documentation**

#### 13.71.2.1 **static mxml\_node\_t \* add\_variable (mxml\_node\_t \* parent, const char \* name, mxml\_node\_t \* type) [static]**

Definition at line 309 of file mxmldoc.c.

References mxml\_node\_s::child, mxml\_node\_s::last\_child, MXML\_ADD\_AFTER, MXML\_ADD\_TO\_PARENT, mxmlAdd(), mxmlDelete(), mxmlElementSetAttr(), mxmlNewElement(), mxml\_node\_s::next, node, mxml\_text\_s::string, mxml\_value\_u::text, mxml\_node\_s::value, and mxml\_text\_s::whitespace.

Referenced by scan\_file().

#### 13.71.2.2 **int main (int argc, char \* argv[])**

Definition at line 155 of file mxmldoc.c.

References MXML\_DESCEND, MXML\_NO\_CALLBACK, mxmlDelete(), mxmlElementSetAttr(), mxmlFindElement(), mxmlLoadFile(), mxmlNewElement(), mxmlSaveFile(), scan\_file(), write\_documentation(), and ws\_cb().

#### 13.71.2.3 **static void safe\_strcpy (char \* dst, const char \* src) [static]**

Definition at line 423 of file mxmldoc.c.

Referenced by update\_comment().

**13.71.2.4 static int scan\_file (const char \**filename*, FILE \**fp*, mxml\_node\_t \**doc*)** [static]

Definition at line 438 of file mxmldoc.c.

References add\_variable(), mxml\_node\_s::child, mxml\_value\_u::element, mxml\_node\_s::last\_child, MXML\_ADD\_AFTER, MXML\_ADD\_BEFORE, MXML\_ADD\_TO\_PARENT, MXML\_DESCEND\_FIRST, MXML\_NO\_PARENT, mxmlAdd(), mxmlDelete(), mxmlElementGetAttr(), mxmlElementSetAttr(), mxmlFindElement(), mxmlNewElement(), mxmlNewText(), mxml\_value\_s::name, mxml\_node\_s::next, node, sort\_node(), STATE\_C\_COMMENT, STATE\_CHARACTER, STATE\_CXX\_COMMENT, STATE\_IDENTIFIER, STATE\_NONE, STATE\_PREPROCESSOR, STATE\_STRING, mxml\_text\_s::string, mxml\_value\_u::text, update\_comment(), mxml\_node\_s::value, and mxml\_text\_s::whitespace.

Referenced by main().

**13.71.2.5 static void sort\_node (mxml\_node\_t \**tree*, mxml\_node\_t \**func*)** [static]

Definition at line 1613 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().

**13.71.2.6 static void update\_comment (mxml\_node\_t \**parent*, mxml\_node\_t \**comment*)**  
[static]

Definition at line 1701 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().

**13.71.2.7 static void write\_documentation (mxml\_node\_t \**doc*)** [static]

Definition at line 1801 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().

**13.71.2.8 static void write\_element (mxml\_node\_t \**doc*, mxml\_node\_t \**element*)** [static]

Definition at line 2611 of file mxmldoc.c.

References mxml\_node\_s::child, MXML\_DESCEND, MXML\_NO\_DESCEND, MXML\_TEXT, mxmlFindElement(), mxmlWalkNext(), node, mxml\_text\_s::string, mxml\_value\_u::text, mxml\_node\_s::type, mxml\_node\_s::value, mxml\_text\_s::whitespace, and write\_string().

Referenced by write\_documentation().

**13.71.2.9 static void write\_string (const char \* *s*)** [static]

Definition at line 2656 of file mxmldoc.c.

Referenced by write\_element().

**13.71.2.10 static const char \* ws\_cb (mxml\_node\_t \* *node*, int *where*)** [static]

Definition at line 2714 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().

## 13.72 /home/dko/projects/mobilec/trunk/src/mxml-2.2.2/test/class.cxx File Reference

### Data Structures

- class `foo_c`

### Variables

- `foo_c f`
- `foo_c foo`
- `bar = b`

### 13.72.1 Variable Documentation

#### 13.72.1.1 `bar = b`

Definition at line 77 of file class.cxx.

#### 13.72.1.2 `foo_c f`

Referenced by `foo_float_function()`, `main()`, `md5_check()`, `sha1_check()`, and `sha2_check()`.

#### 13.72.1.3 `foo_c foo`

## 13.73 /home/dko/projects/mobilec/trunk/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](#) }

#### 13.73.1 Typedef Documentation

13.73.1.1 typedef enum [foo\\_enum\\_e](#) [foo\\_enum\\_t](#)

#### 13.73.2 Enumeration Type Documentation

13.73.2.1 enum [foo\\_enum\\_e](#)

Enumerator:

*FOO\_ONE*  
*FOO\_TWO*  
*FOO\_RED*  
*FOO\_BLUE*

Definition at line 1 of file enum.cxx.

## 13.74 /home/dko/projects/mobilec/trunk/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)

### 13.74.1 Function Documentation

#### 13.74.1.1 int `foo_default_int` (`int` *one*, `int` *two* = 2)

Definition at line 65 of file `function.cxx`.

#### 13.74.1.2 int `foo_default_string` (`int` *one*, `const char` \* *two* = "2")

Definition at line 45 of file `function.cxx`.

#### 13.74.1.3 float `foo_float_function` (`int` *one*, `const char` \* *two*)

Definition at line 26 of file `function.cxx`.

References `f`.

#### 13.74.1.4 void `foo_void_function` (`int` *one*, `float` \* *two*, `const char` \* *three*)

Definition at line 6 of file `function.cxx`.

## 13.75 /home/dko/projects/mobilec/trunk/src/mxml- 2.2.2/test/struct.cxx File Reference

### Data Structures

- struct [foo\\_s](#)

### Typedefs

- typedef struct [foo\\_s](#) [foo\\_t](#)

### 13.75.1 Typedef Documentation

#### 13.75.1.1 typedef struct foo\_s foo\_t



## 13.76 /home/dko/projects/mobilec/trunk/src/mxml-2.2.2/testmxml.c File Reference

```
#include "config.h"
#include "mxml.h"
#include <unistd.h>
#include <fcntl.h>
```

### Defines

- `#define O_BINARY 0`

### 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[ ])`

#### 13.76.1 Define Documentation

##### 13.76.1.1 `#define O_BINARY 0`

Definition at line 42 of file testmxml.c.

Referenced by `main()`.

#### 13.76.2 Function Documentation

##### 13.76.2.1 `int main (int argc, char *argv[ ])`

Definition at line 59 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_NO_OPAQUE`, `MXML_OPAQUE_CALLBACK`, `MXML_REAL`, `MXML_REAL_CALLBACK`, `MXML_TEXT`, `mxmlDelete()`, `mxmlFindElement()`, `mxmlIndexDelete()`, `mxmlIndexEnum()`, `mxmlIndexFind()`, `mxmlIndexNew()`, `mxmlIndexReset()`, `mxmlLoadFd()`, `mxmlLoadFile()`, `mxmlLoadString()`, `mxmlNewElement()`, `mxmlNewInteger()`, `mxmlNewOpaque()`, `mxmlNewReal()`, `mxmlNewText()`, `mxmlSaveFd()`, `mxmlSaveFile()`, `mxmlSaveString()`, `mxml_value_s::name`, `mxml_node_s::next`, `node`, `mxml_index_s::num_nodes`, `O_BINARY`, `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()`.

##### 13.76.2.2 `mxml_type_t type_cb (mxml_node_t *node)`

Definition at line 542 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()`.

### **13.76.2.3** `const char* whitespace_cb (mxml_node_t * node, int where)`

Definition at line 249 of file `xml_helper.c`.

References `MXML_WS_AFTER_CLOSE`, and `MXML_WS_BEFORE_OPEN`.

## 13.77 /home/dko/projects/mobilec/trunk/src/security/asm.c File Reference

```
#include "../include/mc_platform.h"
#include "../include/message.h"
#include "asm.h"
#include "asm_message_composer.h"
#include "config.h"
#include "mc_dh.h"
```

## 13.78 /home/dko/projects/mobilec/trunk/src/security/asm.h      **File Reference**

```
#include "config.h"
#include "../include/ap_queue_template.h"
#include "../include/data_structures.h"
#include "../mc_list/list.h"
#include "asm_node.h"
```

## **13.79 /home/dko/projects/mobilec/trunk/src/security/asm\_message\_composer.c File Reference**

```
#include "asm_message_composer.h"  
#include "config.h"  
#include "../include/mc_platform.h"
```

## **13.80    /home/dko/projects/mobilec/trunk/src/security/asm\_- message\_composer.h File Reference**

```
#include <mxml.h>
#include "asm.h"
#include "config.h"
```

## 13.81 /home/dko/projects/mobilec/trunk/src/security/asm\_message\_parser.c File Reference

```
#include "asm_message_parser.h"  
#include "../include/xml_helper.h"  
#include "config.h"
```

## 13.82 /home/dko/projects/mobilec/trunk/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"
```



## 13.83 /home/dko/projects/mobilec/trunk/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 "xyssl-0.9/include/xyssl/bignum.h"
```

## 13.84 /home/dko/projects/mobilec/trunk/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 "xyssl-0.9/include/xyssl/rsa.h"
#include "xyssl-0.9/include/xyssl/aes.h"
#include "config.h"
```

## 13.85 /home/dko/projects/mobilec/trunk/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"
```

## 13.86 /home/dko/projects/mobilec/trunk/src/security/mc\_dh.h File Reference

```
#include "xyssl-0.9/include/xyssl/rsa.h"  
#include "asm_node.h"  
#include "config.h"
```

## 13.87 /home/dko/projects/mobilec/trunk/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.*

### 13.87.1 Detailed Description

Definition in file [aes.h](#).

### 13.87.2 Define Documentation

#### 13.87.2.1 #define AES\_DECRYPT 0

Definition at line 8 of file [aes.h](#).

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

### 13.87.2.2 #define AES\_ENCRYPT 1

Definition at line 7 of file aes.h.

Referenced by main().

## 13.87.3 Function Documentation

### 13.87.3.1 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

Referenced by main().

### 13.87.3.2 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

### 13.87.3.3 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

Referenced by main().

#### **13.87.3.4 int aes\_self\_test (int *verbose*)**

Checkup routine.

##### **Returns:**

0 if successful, or 1 if the test failed

Referenced by main().

#### **13.87.3.5 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

Referenced by main().

#### **13.87.3.6 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

Referenced by main().

## 13.88 /home/dko/projects/mobilec/trunk/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)

### 13.88.1 Detailed Description

Definition in file [arc4.h](#).

### 13.88.2 Function Documentation

#### 13.88.2.1 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

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

#### 13.88.2.2 int [arc4\\_self\\_test](#) (int verbose)

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

#### 13.88.2.3 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

Referenced by main().

## 13.89 /home/dko/projects/mobilec/trunk/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.*

### 13.89.1 Detailed Description

Definition in file [base64.h](#).

### 13.89.2 Define Documentation

#### 13.89.2.1 `#define XYSSL_ERR_BASE64_BUFFER_TOO_SMALL -0x0010`

Definition at line 7 of file base64.h.

#### 13.89.2.2 `#define XYSSL_ERR_BASE64_INVALID_CHARACTER -0x0012`

Definition at line 8 of file base64.h.

### 13.89.3 Function Documentation

#### 13.89.3.1 `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

**13.89.3.2 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

**13.89.3.3 int base64\_self\_test (int verbose)**

Checkup routine.

**Returns:**

0 if successful, or 1 if the test failed

Referenced by main().

## 13.90 /home/dko/projects/mobilec/trunk/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_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.*

### 13.90.1 Detailed Description

Definition in file [bignum.h](#).

## 13.90.2 Define Documentation

### 13.90.2.1 `#define MPI_CHK(f) if( ( ret = f ) != 0 ) goto cleanup`

Definition at line 17 of file bignum.h.

### 13.90.2.2 `#define XYSSL_ERR_MPI_BAD_INPUT_DATA -0x0004`

Definition at line 10 of file bignum.h.

### 13.90.2.3 `#define XYSSL_ERR_MPI_BUFFER_TOO_SMALL -0x0008`

Definition at line 12 of file bignum.h.

### 13.90.2.4 `#define XYSSL_ERR_MPI_DIVISION_BY_ZERO -0x000C`

Definition at line 14 of file bignum.h.

### 13.90.2.5 `#define XYSSL_ERR_MPI_FILE_IO_ERROR -0x0002`

Definition at line 9 of file bignum.h.

### 13.90.2.6 `#define XYSSL_ERR_MPI_INVALID_CHARACTER -0x0006`

Definition at line 11 of file bignum.h.

### 13.90.2.7 `#define XYSSL_ERR_MPI_NEGATIVE_VALUE -0x000A`

Definition at line 13 of file bignum.h.

### 13.90.2.8 `#define XYSSL_ERR_MPI_NOT_ACCEPTABLE -0x000E`

Definition at line 15 of file bignum.h.

## 13.90.3 Typedef Documentation

### 13.90.3.1 `typedef unsigned long long t_dbl`

Definition at line 39 of file bignum.h.

### 13.90.3.2 `typedef unsigned long t_int`

Definition at line 30 of file bignum.h.

### 13.90.4 Function Documentation

#### 13.90.4.1 `int mpi_add_abs (mpi * X, mpi * A, mpi * B)`

Unsigned addition:  $X = |A| + |B|$ .

**Returns:**

0 if successful, 1 if memory allocation failed

#### 13.90.4.2 `int mpi_add_int (mpi * X, mpi * A, int b)`

Signed addition:  $X = A + b$ .

**Returns:**

0 if successful, 1 if memory allocation failed

#### 13.90.4.3 `int mpi_add_mpi (mpi * X, mpi * A, mpi * B)`

Signed addition:  $X = A + B$ .

**Returns:**

0 if successful, 1 if memory allocation failed

#### 13.90.4.4 `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  $|Y|$

#### 13.90.4.5 `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

#### 13.90.4.6 `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



#### 13.90.4.7 int mpi\_copy (mpi \* X, mpi \* Y)

Copy the contents of Y into X.

**Returns:**

0 if successful, 1 if memory allocation failed

#### 13.90.4.8 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.

Referenced by main().

#### 13.90.4.9 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.

#### 13.90.4.10 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.

Referenced by main().

#### 13.90.4.11 void mpi\_free (mpi \* X, ...)

Unallocate one or more [mpi](#).

Referenced by main().

**13.90.4.12** `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

**13.90.4.13** `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  $< 3$

Referenced by `main()`.

**13.90.4.14** `int mpi_grow (mpi * X, int nblimbs)`

Enlarge to the specified number of limbs.

**Returns:**

0 if successful, 1 if memory allocation failed

**13.90.4.15** `void mpi_init (mpi * X, ...)`

Initialize one or more [mpi](#).

Referenced by `main()`.

**13.90.4.16** `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*

Referenced by `main()`.

**13.90.4.17 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

Referenced by main().

**13.90.4.18 int mpi\_lsb (mpi \* X)**

Return the number of least significant bits.

**13.90.4.19 int mpi\_lset (mpi \* X, int z)**

Set value from integer.

**Returns:**

0 if successful, 1 if memory allocation failed

**13.90.4.20 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  $b == 0$

**13.90.4.21 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  $B == 0$

**13.90.4.22 int mpi\_msb (mpi \* X)**

Return the number of most significant bits.

Referenced by d2i\_RSA\_PUBKEY(), and main().

**13.90.4.23 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

**13.90.4.24 int mpi\_mul\_mpi (mpi \* *X*, mpi \* *A*, mpi \* *B*)**

Baseline multiplication:  $X = A * B$ .

**Returns:**

0 if successful, 1 if memory allocation failed

Referenced by main().

**13.90.4.25 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

Referenced by d2i\_RSA\_PUBKEY().

**13.90.4.26 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

Referenced by main().

**13.90.4.27 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

Referenced by main().

**13.90.4.28 int mpi\_self\_test (int *verbose*)**

Checkup routine.

**Returns:**

0 if successful, or 1 if the test failed

Referenced by main().

**13.90.4.29 int mpi\_shift\_l (mpi \* *X*, int *count*)**

Left-shift:  $X \ll= \text{count}$ .

**Returns:**

0 if successful, 1 if memory allocation failed

**13.90.4.30 int mpi\_shift\_r (mpi \* *X*, int *count*)**

Right-shift:  $X \gg= \text{count}$ .

**Returns:**

0 if successful, 1 if memory allocation failed

**13.90.4.31 int mpi\_size (mpi \* *X*)**

Return the total size in bytes.

**13.90.4.32 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

**13.90.4.33 int mpi\_sub\_int (mpi \* *X*, mpi \* *A*, int *b*)**

Signed subtraction:  $X = A - b$ .

**Returns:**

0 if successful, 1 if memory allocation failed

Referenced by main().

**13.90.4.34** `int mpi_sub_mpi (mpi * X, mpi * A, mpi * B)`

Signed subtraction:  $X = A - B$ .

**Returns:**

0 if successful, 1 if memory allocation failed

**13.90.4.35** `void mpi_swap (mpi * X, mpi * Y)`

Swap the contents of *X* and *Y*.

**13.90.4.36** `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*.

**13.90.4.37** `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.

Referenced by `main()`.

#### 13.90.4.38 `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*.

## 13.91 /home/dko/projects/mobilec/trunk/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](#) }

### 13.91.1 Detailed Description

Definition in file [bn\\_mul.h](#).

### 13.91.2 Define Documentation

#### 13.91.2.1 #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](#).

#### 13.91.2.2 #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](#).

#### 13.91.2.3 #define MULADDC\_STOP }

Definition at line 676 of file [bn\\_mul.h](#).



## 13.92 /home/dko/projects/mobilec/trunk/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](#) [ ]

### 13.92.1 Detailed Description

Definition in file [certs.h](#).

### 13.92.2 Variable Documentation

#### 13.92.2.1 char test\_ca\_cert[ ]

Referenced by [main\(\)](#), and [ssl\\_test\(\)](#).

#### 13.92.2.2 char test\_ca\_key[ ]

#### 13.92.2.3 char test\_ca\_pwd[ ]

#### 13.92.2.4 char test\_cli\_cert[ ]

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

#### 13.92.2.5 char test\_cli\_key[ ]

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

#### 13.92.2.6 char test\_srv\_cert[ ]

Referenced by [main\(\)](#), and [ssl\\_test\(\)](#).

#### 13.92.2.7 char test\_srv\_key[ ]

Referenced by [main\(\)](#), and [ssl\\_test\(\)](#).

#### 13.92.2.8 char xyssl\_ca\_cert[ ]

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

## 13.93 /home/dko/projects/mobilec/trunk/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) do { } while( 0 )
- #define [SSL\\_DEBUG\\_RET](#)(level, text, ret) do { } while( 0 )
- #define [SSL\\_DEBUG\\_BUF](#)(level, text, [buf](#), len) do { } while( 0 )
- #define [SSL\\_DEBUG\\_MPI](#)(level, text, X) do { } while( 0 )
- #define [SSL\\_DEBUG\\_CRT](#)(level, text, crt) do { } while( 0 )

### 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)

### 13.93.1 Detailed Description

Definition in file [debug.h](#).

### 13.93.2 Define Documentation

#### 13.93.2.1 #define [SSL\\_DEBUG\\_BUF](#)(level, text, [buf](#), len) do { } while( 0 )

Definition at line 31 of file [debug.h](#).

#### 13.93.2.2 #define [SSL\\_DEBUG\\_CRT](#)(level, text, crt) do { } while( 0 )

Definition at line 33 of file [debug.h](#).

#### 13.93.2.3 #define [SSL\\_DEBUG\\_MPI](#)(level, text, X) do { } while( 0 )

Definition at line 32 of file [debug.h](#).

#### 13.93.2.4 #define [SSL\\_DEBUG\\_MSG](#)(level, args) do { } while( 0 )

Definition at line 29 of file [debug.h](#).

**13.93.2.5** `#define SSL_DEBUG_RET(level, text, ret) do { } while( 0 )`

Definition at line 30 of file debug.h.

### 13.93.3 Function Documentation

**13.93.3.1** `char* debug_fmt (const char * format, ...)`

**13.93.3.2** `void debug_print_buf (ssl_context * ssl, int level, char * file, int line, char * text, unsigned char * buf, int len)`

**13.93.3.3** `void debug_print_cert (ssl_context * ssl, int level, char * file, int line, char * text, x509_cert * cert)`

**13.93.3.4** `void debug_print_mpi (ssl_context * ssl, int level, char * file, int line, char * text, mpi * X)`

**13.93.3.5** `void debug_print_msg (ssl_context * ssl, int level, char * file, int line, char * text)`

**13.93.3.6** `void debug_print_ret (ssl_context * ssl, int level, char * file, int line, char * text, int ret)`

## 13.94 /home/dko/projects/mobilec/trunk/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)

### 13.94.1 Detailed Description

Definition in file [des.h](#).

### 13.94.2 Define Documentation

#### 13.94.2.1 #define DES\_DECRYPT 0

Definition at line 8 of file des.h.

#### 13.94.2.2 #define DES\_ENCRYPT 1

Definition at line 7 of file des.h.

Referenced by `main()`.

### 13.94.3 Function Documentation

#### 13.94.3.1 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

Referenced by `main()`.

#### 13.94.3.2 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

**13.94.3.3 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

**13.94.3.4 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

**13.94.3.5 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

**13.94.3.6 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

Referenced by main().

**13.94.3.7 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

Referenced by main().

#### 13.94.3.8 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

#### 13.94.3.9 int des\_self\_test (int verbose)

Referenced by main().

#### 13.94.3.10 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

#### 13.94.3.11 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

Referenced by main().

## 13.95 /home/dko/projects/mobilec/trunk/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.*

### 13.95.1 Detailed Description

Definition in file [dhm.h](#).



## 13.95.2 Define Documentation

### 13.95.2.1 `#define XYSSL_ERR_DHM_BAD_INPUT_DATA -0x0480`

Definition at line 9 of file dhm.h.

### 13.95.2.2 `#define XYSSL_ERR_DHM_CALC_SECRET_FAILED -0x04D0`

Definition at line 14 of file dhm.h.

### 13.95.2.3 `#define XYSSL_ERR_DHM_MAKE_PARAMS_FAILED -0x04A0`

Definition at line 11 of file dhm.h.

### 13.95.2.4 `#define XYSSL_ERR_DHM_MAKE_PUBLIC_FAILED -0x04C0`

Definition at line 13 of file dhm.h.

### 13.95.2.5 `#define XYSSL_ERR_DHM_READ_PARAMS_FAILED -0x0490`

Definition at line 10 of file dhm.h.

### 13.95.2.6 `#define XYSSL_ERR_DHM_READ_PUBLIC_FAILED -0x04B0`

Definition at line 12 of file dhm.h.

## 13.95.3 Function Documentation

### 13.95.3.1 `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

Referenced by `main()`.

### 13.95.3.2 `void dhm_free (dhm_context * ctx)`

Referenced by `main()`.

### 13.95.3.3 `int dhm_make_params (dhm_context * ctx, int s_size, unsigned char * output, int * olen, int(*) (void *) f_rng, void * p_rng)`

Setup and write the ServerKeyExchange parameters.

#### Parameters:

*ctx* DHM context  
*s\_size* private value size in bits  
*output* destination buffer  
*olen* number of chars written  
*f\_rng* RNG function  
*p\_rng* RNG parameter

#### Note:

This function assumes that *ctx*->P and *ctx*->G have already been properly set (for example using `mpi_read_string` or `mpi_read_binary`).

#### Returns:

0 if successful, or an XYSSL\_ERR\_DHM\_XXX error code

Referenced by `main()`.

### 13.95.3.4 `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  
*s\_size* private value size in bits  
*output* destination buffer  
*olen* must be equal to *ctx*->P.len  
*f\_rng* RNG function  
*p\_rng* RNG parameter

#### Returns:

0 if successful, or an XYSSL\_ERR\_DHM\_XXX error code

Referenced by `main()`.

### 13.95.3.5 `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

Referenced by main().

**13.95.3.6 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

Referenced by main().

**13.95.3.7 int dhm\_self\_test (int *verbose*)**

Checkup routine.

**Returns:**

0 if successful, or 1 if the test failed

## 13.96 /home/dko/projects/mobilec/trunk/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.*

### 13.96.1 Detailed Description

Definition in file [havege.h](#).

### 13.96.2 Define Documentation

#### 13.96.2.1 #define COLLECT\_SIZE 1024

Definition at line 7 of file [havege.h](#).

### 13.96.3 Function Documentation

#### 13.96.3.1 void havege\_init (havege\_state \* hs)

HAVEGE initialization.

#### Parameters:

*hs* HAVEGE state to be initialized

Referenced by [main\(\)](#), and [ssl\\_test\(\)](#).

### **13.96.3.2 int havege\_rand (void \* *p\_rng*)**

HAVEGE rand function.

#### **Parameters:**

*rng\_st* points to an HAVEGE state

#### **Returns:**

A random int

Referenced by main(), and ssl\_test().

## 13.97 /home/dko/projects/mobilec/trunk/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.*

### 13.97.1 Detailed Description

Definition in file [md2.h](#).

## 13.97.2 Function Documentation

### 13.97.2.1 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

### 13.97.2.2 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

### 13.97.2.3 void md2\_finish (md2\_context \* *ctx*, unsigned char *output*[16])

MD2 final digest.

**Parameters:**

*ctx* MD2 context  
*output* MD2 checksum result

### 13.97.2.4 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

**13.97.2.5 void md2\_hmac\_finish (md2\_context \* *ctx*, unsigned char *output*[16])**

MD2 HMAC final digest.

**Parameters:**

*ctx* HMAC context  
*output* MD2 HMAC checksum result

**13.97.2.6 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

**13.97.2.7 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

**13.97.2.8 int md2\_self\_test (int *verbose*)**

Checkup routine.

**Returns:**

0 if successful, or 1 if the test failed

Referenced by main().

**13.97.2.9 void md2\_starts (md2\_context \* *ctx*)**

MD2 context setup.

**Parameters:**

*ctx* context to be initialized



**13.97.2.10 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

## 13.98 /home/dko/projects/mobilec/trunk/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.*

### 13.98.1 Detailed Description

Definition in file [md4.h](#).

## 13.98.2 Function Documentation

### 13.98.2.1 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().

### 13.98.2.2 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

### 13.98.2.3 void md4\_finish (md4\_context \* *ctx*, unsigned char *output*[16])

MD4 final digest.

**Parameters:**

*ctx* MD4 context  
*output* MD4 checksum result

### 13.98.2.4 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

**13.98.2.5 void md4\_hmac\_finish (md4\_context \* *ctx*, unsigned char *output*[16])**

MD4 HMAC final digest.

**Parameters:**

*ctx* HMAC context  
*output* MD4 HMAC checksum result

**13.98.2.6 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

**13.98.2.7 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

**13.98.2.8 int md4\_self\_test (int *verbose*)**

Checkup routine.

**Returns:**

0 if successful, or 1 if the test failed

Referenced by main().

**13.98.2.9 void md4\_starts (md4\_context \* *ctx*)**

MD4 context setup.

**Parameters:**

*ctx* context to be initialized

**13.98.2.10 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

## 13.99 /home/dko/projects/mobilec/trunk/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.*

### 13.99.1 Detailed Description

Definition in file [md5.h](#).

## 13.99.2 Function Documentation

### 13.99.2.1 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

Referenced by main().

### 13.99.2.2 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

Referenced by md5\_wrapper().

### 13.99.2.3 void md5\_finish (md5\_context \* *ctx*, unsigned char *output*[16])

MD5 final digest.

**Parameters:**

*ctx* MD5 context  
*output* MD5 checksum result

### 13.99.2.4 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

**13.99.2.5 void md5\_hmac\_finish (md5\_context \* *ctx*, unsigned char *output*[16])**

MD5 HMAC final digest.

**Parameters:**

*ctx* HMAC context  
*output* MD5 HMAC checksum result

**13.99.2.6 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

**13.99.2.7 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

**13.99.2.8 int md5\_self\_test (int *verbose*)**

Checkup routine.

**Returns:**

0 if successful, or 1 if the test failed

Referenced by main().

**13.99.2.9 void md5\_starts (md5\_context \* *ctx*)**

MD5 context setup.

**Parameters:**

*ctx* context to be initialized



**13.99.2.10 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

## 13.100 /home/dko/projects/mobilec/trunk/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.*

### 13.100.1 Detailed Description

Definition in file [net.h](#).

## **13.100.2 Define Documentation**

### **13.100.2.1 #define XYSSL\_ERR\_NET\_ACCEPT\_FAILED -0x0F50**

Definition at line 12 of file net.h.

### **13.100.2.2 #define XYSSL\_ERR\_NET\_BIND\_FAILED -0x0F30**

Definition at line 10 of file net.h.

### **13.100.2.3 #define XYSSL\_ERR\_NET\_CONN\_RESET -0x0F80**

Definition at line 15 of file net.h.

Referenced by main(), and ssl\_test().

### **13.100.2.4 #define XYSSL\_ERR\_NET\_CONNECT\_FAILED -0x0F20**

Definition at line 9 of file net.h.

### **13.100.2.5 #define XYSSL\_ERR\_NET\_LISTEN\_FAILED -0x0F40**

Definition at line 11 of file net.h.

### **13.100.2.6 #define XYSSL\_ERR\_NET\_RECV\_FAILED -0x0F60**

Definition at line 13 of file net.h.

### **13.100.2.7 #define XYSSL\_ERR\_NET\_SEND\_FAILED -0x0F70**

Definition at line 14 of file net.h.

### **13.100.2.8 #define XYSSL\_ERR\_NET\_SOCKET\_FAILED -0x0F10**

Definition at line 8 of file net.h.

### **13.100.2.9 #define XYSSL\_ERR\_NET\_TRY\_AGAIN -0x0F90**

Definition at line 16 of file net.h.

Referenced by main(), and ssl\_test().

### **13.100.2.10 #define XYSSL\_ERR\_NET\_UNKNOWN\_HOST -0x0F00**

Definition at line 7 of file net.h.

### 13.100.3 Function Documentation

#### 13.100.3.1 `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.

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

#### 13.100.3.2 `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

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

#### 13.100.3.3 `void net_close (int fd)`

Gracefully shutdown the connection.

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

#### 13.100.3.4 `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

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

#### 13.100.3.5 `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.

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

**13.100.3.6 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.

Referenced by main(), and ssl\_test().

**13.100.3.7 int net\_set\_block (int *fd*)**

Set the socket blocking.

**Returns:**

0 if successful, or a non-zero error code

**13.100.3.8 int net\_set\_nonblock (int *fd*)**

Set the socket non-blocking.

**Returns:**

0 if successful, or a non-zero error code

Referenced by ssl\_test().

**13.100.3.9 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).

## 13.101 /home/dko/projects/mobilec/trunk/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](#))

## 13.101.1 Detailed Description

Definition in file [openssl.h](#).

## 13.101.2 Define Documentation

### 13.101.2.1 #define AES\_BLOCK\_SIZE 16

Definition at line 16 of file openssl.h.

### 13.101.2.2 #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.

### 13.101.2.3 #define AES\_KEY aes\_context

Definition at line 17 of file openssl.h.

### 13.101.2.4 #define AES\_set\_decrypt\_key(KEY, KEYSIZE, CTX) aes\_setkey\_dec( (CTX), (KEY), (KEYSIZE) )

Definition at line 37 of file openssl.h.

### 13.101.2.5 #define AES\_set\_encrypt\_key(KEY, KEYSIZE, CTX) aes\_setkey\_enc( (CTX), (KEY), (KEYSIZE) )

Definition at line 35 of file openssl.h.

### 13.101.2.6 #define AES\_SIZE 16

Definition at line 15 of file openssl.h.

### 13.101.2.7 #define d2i\_RSAPrivateKey(a, b, c) new rsa\_context

Definition at line 102 of file openssl.h.

### 13.101.2.8 #define ERR\_get\_error() "ERR\_get\_error() not supported"

Definition at line 99 of file openssl.h.

### 13.101.2.9 #define MD5\_CTX md5\_context

Definition at line 18 of file openssl.h.

**13.101.2.10** **#define MD5\_Final(OUT, CTX) md5\_finish( (CTX), (OUT) )**

Definition at line 32 of file openssl.h.

**13.101.2.11** **#define MD5\_Init(CTX) md5\_starts( (CTX) )**

Definition at line 28 of file openssl.h.

**13.101.2.12** **#define MD5\_Update(CTX, BUF, LEN) md5\_update( (CTX), (unsigned char \*) (BUF), (LEN) )**

Definition at line 30 of file openssl.h.

**13.101.2.13** **#define RSA\_rsa\_context**

Definition at line 95 of file openssl.h.

**13.101.2.14** **#define RSA\_blinding\_off(IGNORE)**

Definition at line 100 of file openssl.h.

**13.101.2.15** **#define RSA\_free(CTX) rsa\_free( CTX )**

Definition at line 98 of file openssl.h.

**13.101.2.16** **#define RSA\_PKCS1\_PADDING 1**

Definition at line 96 of file openssl.h.

**13.101.2.17** **#define RSA\_size(CTX) (CTX) → len**

Definition at line 97 of file openssl.h.

Referenced by RSA\_private\_encrypt(), and RSA\_public\_encrypt().

**13.101.2.18** **#define SHA1\_Final(OUT, CTX) sha1\_finish( (CTX), (OUT) )**

Definition at line 25 of file openssl.h.

**13.101.2.19** **#define SHA1\_Init(CTX) sha1\_starts( (CTX) )**

Definition at line 21 of file openssl.h.

**13.101.2.20** **#define SHA1\_Update(CTX, BUF, LEN) sha1\_update( (CTX), (unsigned char \*) (BUF), (LEN) )**

Definition at line 23 of file openssl.h.



### 13.101.2.21 `#define SHA_CTX sha1_context`

Definition at line 19 of file openssl.h.

## 13.101.3 Function Documentation

### 13.101.3.1 `int __RSA_Passthrough (void * output, void * input, int size)` [inline]

Definition at line 45 of file openssl.h.

### 13.101.3.2 `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`.

### 13.101.3.3 `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`.

### 13.101.3.4 `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`.

### 13.101.3.5 `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`.

### 13.101.3.6 `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`.

## 13.102    /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/include/xyssl/padlock.h File Reference

```
#include "xyssl/aes.h"
```

### 13.102.1   Detailed Description

Definition in file [padlock.h](#).

## 13.103 /home/dko/projects/mobilec/trunk/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.*

### 13.103.1 Detailed Description

Definition in file [rsa.h](#).

### 13.103.2 Define Documentation

#### 13.103.2.1 #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](#).

#### 13.103.2.2 #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.

#### **13.103.2.3 #define RSA\_CRYPT 2**

Definition at line 34 of file rsa.h.

#### **13.103.2.4 #define RSA\_MD2 2**

Definition at line 21 of file rsa.h.

#### **13.103.2.5 #define RSA\_MD4 3**

Definition at line 22 of file rsa.h.

#### **13.103.2.6 #define RSA\_MD5 4**

Definition at line 23 of file rsa.h.

#### **13.103.2.7 #define RSA\_PKCS\_V15 0**

Definition at line 30 of file rsa.h.

Referenced by main().

#### **13.103.2.8 #define RSA\_PKCS\_V21 1**

Definition at line 31 of file rsa.h.

#### **13.103.2.9 #define RSA\_PRIVATE 1**

Definition at line 28 of file rsa.h.

Referenced by main(), RSA\_private\_decrypt(), and RSA\_private\_encrypt().

#### **13.103.2.10 #define RSA\_PUBLIC 0**

Definition at line 27 of file rsa.h.

Referenced by main(), RSA\_public\_decrypt(), and RSA\_public\_encrypt().

#### **13.103.2.11 #define RSA\_RAW 0**

Definition at line 20 of file rsa.h.

**13.103.2.12 #define RSA\_SHA1 5**

Definition at line 24 of file rsa.h.

Referenced by main().

**13.103.2.13 #define RSA\_SHA256 6**

Definition at line 25 of file rsa.h.

**13.103.2.14 #define RSA\_SIGN 1**

Definition at line 33 of file rsa.h.

**13.103.2.15 #define XYSSL\_ERR\_RSA\_BAD\_INPUT\_DATA -0x0400**

Definition at line 9 of file rsa.h.

**13.103.2.16 #define XYSSL\_ERR\_RSA\_INVALID\_PADDING -0x0410**

Definition at line 10 of file rsa.h.

**13.103.2.17 #define XYSSL\_ERR\_RSA\_KEY\_CHECK\_FAILED -0x0430**

Definition at line 12 of file rsa.h.

**13.103.2.18 #define XYSSL\_ERR\_RSA\_KEY\_GEN\_FAILED -0x0420**

Definition at line 11 of file rsa.h.

**13.103.2.19 #define XYSSL\_ERR\_RSA\_PRIVATE\_FAILED -0x0450**

Definition at line 14 of file rsa.h.

**13.103.2.20 #define XYSSL\_ERR\_RSA\_PUBLIC\_FAILED -0x0440**

Definition at line 13 of file rsa.h.

**13.103.2.21 #define XYSSL\_ERR\_RSA\_VERIFY\_FAILED -0x0460**

Definition at line 15 of file rsa.h.

**13.103.3 Function Documentation****13.103.3.1 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

**13.103.3.2 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

**13.103.3.3 void rsa\_free (rsa\_context \* ctx)**

Free the components of an RSA key.

Referenced by main(), and ssl\_test().

**13.103.3.4 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

Referenced by main().

**13.103.3.5 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.

Referenced by `main()`.

**13.103.3.6** `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).

Referenced by `RSA_private_decrypt()`, and `RSA_public_decrypt()`.

**13.103.3.7** `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).

Referenced by `RSA_private_encrypt()`, and `RSA_public_encrypt()`.

**13.103.3.8** `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).

Referenced by `main()`.

**13.103.3.9** `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).

Referenced by `main()`.

**13.103.3.10 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).

Referenced by main().

**13.103.3.11 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).

Referenced by main().

**13.103.3.12 int rsa\_self\_test (int *verbose*)**

Checkup routine.

**Returns:**

0 if successful, or 1 if the test failed

Referenced by main().

## 13.104 /home/dko/projects/mobilec/trunk/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.*

### 13.104.1 Detailed Description

Definition in file [sha1.h](#).

### 13.104.2 Function Documentation

#### 13.104.2.1 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

Referenced by main().

#### 13.104.2.2 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

Referenced by main(), and sha1\_wrapper().

#### 13.104.2.3 void sha1\_finish (sha1\_context \* *ctx*, unsigned char *output*[20])

SHA-1 final digest.

**Parameters:**

*ctx* SHA-1 context  
*output* SHA-1 checksum result

#### 13.104.2.4 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

#### 13.104.2.5 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

#### 13.104.2.6 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

#### 13.104.2.7 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

#### 13.104.2.8 int sha1\_self\_test (int *verbose*)

Checkup routine.

##### Returns:

0 if successful, or 1 if the test failed

Referenced by main().

#### 13.104.2.9 void sha1\_starts (sha1\_context \* *ctx*)

SHA-1 context setup.

##### Parameters:

*ctx* context to be initialized

**13.104.2.10** 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

## 13.105 /home/dko/projects/mobilec/trunk/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.*

### 13.105.1 Detailed Description

Definition in file [sha2.h](#).

### 13.105.2 Function Documentation

#### 13.105.2.1 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

Referenced by main().

#### 13.105.2.2 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

Referenced by sha2\_wrapper().

#### 13.105.2.3 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

Referenced by main().

#### 13.105.2.4 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

#### 13.105.2.5 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

Referenced by main().

#### 13.105.2.6 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

Referenced by main().

#### 13.105.2.7 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

Referenced by main().

#### 13.105.2.8 int sha2\_self\_test (int *verbose*)

Checkup routine.

##### Returns:

0 if successful, or 1 if the test failed

Referenced by main().

**13.105.2.9 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

Referenced by main().

**13.105.2.10 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

Referenced by main().

## 13.106 /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/include/xyssl/sha4.h File Reference

### Data Structures

- struct [sha4\\_context](#)  
*SHA-512 context structure.*

### Defines

- #define [ULL64](#)(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.*

### 13.106.1 Detailed Description

Definition in file [sha4.h](#).

### 13.106.2 Define Documentation

#### 13.106.2.1 `#define int64 long long`

Definition at line 12 of file sha4.h.

#### 13.106.2.2 `#define UL64(x) x##ULL`

Definition at line 11 of file sha4.h.

### 13.106.3 Function Documentation

#### 13.106.3.1 `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

#### 13.106.3.2 `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

#### 13.106.3.3 `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

**13.106.3.4** 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

**13.106.3.5** 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

**13.106.3.6** 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

**13.106.3.7** 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

**13.106.3.8 int sha4\_self\_test (int *verbose*)**

Checkup routine.

**Returns:**

0 if successful, or 1 if the test failed

Referenced by main().

**13.106.3.9 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

**13.106.3.10 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

## 13.107 /home/dko/projects/mobilec/trunk/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 []`

## **13.107.1 Detailed Description**

Definition in file [ssl.h](#).

## **13.107.2 Define Documentation**

### **13.107.2.1 #define SSL\_ALERT\_CLOSE\_NOTIFY 0**

Definition at line 87 of file [ssl.h](#).

### **13.107.2.2 #define SSL\_ALERT\_FATAL 2**

Definition at line 89 of file [ssl.h](#).

### **13.107.2.3 #define SSL\_ALERT\_NO\_CERTIFICATE 41**

Definition at line 90 of file [ssl.h](#).

### **13.107.2.4 #define SSL\_ALERT\_WARNING 1**

Definition at line 88 of file [ssl.h](#).

### **13.107.2.5 #define SSL\_BUFFER\_LEN (SSL\_MAX\_CONTENT\_LEN + 512)**

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

### **13.107.2.6 #define SSL\_COMPRESS\_NULL 0**

Definition at line 54 of file [ssl.h](#).

### **13.107.2.7 #define SSL\_EDH\_RSA\_AES\_256\_SHA 57**

Definition at line 77 of file [ssl.h](#).

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

### **13.107.2.8 #define SSL\_EDH\_RSA\_DES\_168\_SHA 22**

Definition at line 74 of file [ssl.h](#).

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

### **13.107.2.9 #define SSL\_HS\_CERTIFICATE 11**

Definition at line 95 of file [ssl.h](#).

**13.107.2.10 #define SSL\_HS\_CERTIFICATE\_REQUEST 13**

Definition at line 97 of file ssl.h.

**13.107.2.11 #define SSL\_HS\_CERTIFICATE\_VERIFY 15**

Definition at line 99 of file ssl.h.

**13.107.2.12 #define SSL\_HS\_CLIENT\_HELLO 1**

Definition at line 93 of file ssl.h.

**13.107.2.13 #define SSL\_HS\_CLIENT\_KEY\_EXCHANGE 16**

Definition at line 100 of file ssl.h.

**13.107.2.14 #define SSL\_HS\_FINISHED 20**

Definition at line 101 of file ssl.h.

**13.107.2.15 #define SSL\_HS\_HELLO\_REQUEST 0**

Definition at line 92 of file ssl.h.

**13.107.2.16 #define SSL\_HS\_SERVER\_HELLO 2**

Definition at line 94 of file ssl.h.

**13.107.2.17 #define SSL\_HS\_SERVER\_HELLO\_DONE 14**

Definition at line 98 of file ssl.h.

**13.107.2.18 #define SSL\_HS\_SERVER\_KEY\_EXCHANGE 12**

Definition at line 96 of file ssl.h.

**13.107.2.19 #define SSL\_IS\_CLIENT 0**

Definition at line 52 of file ssl.h.

Referenced by main(), and ssl\_test().

**13.107.2.20 #define SSL\_IS\_SERVER 1**

Definition at line 53 of file ssl.h.

Referenced by main(), and ssl\_test().

**13.107.2.21 #define SSL\_MAJOR\_VERSION\_3 3**

Definition at line 47 of file ssl.h.

**13.107.2.22 #define SSL\_MAX\_CONTENT\_LEN 16384**

Definition at line 60 of file ssl.h.

**13.107.2.23 #define SSL\_MINOR\_VERSION\_0 0**

SSL v3.0

Definition at line 48 of file ssl.h.

**13.107.2.24 #define SSL\_MINOR\_VERSION\_1 1**

TLS v1.0

Definition at line 49 of file ssl.h.

**13.107.2.25 #define SSL\_MINOR\_VERSION\_2 2**

TLS v1.1

Definition at line 50 of file ssl.h.

**13.107.2.26 #define SSL\_MSG\_ALERT 21**

Definition at line 83 of file ssl.h.

**13.107.2.27 #define SSL\_MSG\_APPLICATION\_DATA 23**

Definition at line 85 of file ssl.h.

**13.107.2.28 #define SSL\_MSG\_CHANGE\_CIPHER\_SPEC 20**

Definition at line 82 of file ssl.h.

**13.107.2.29 #define SSL\_MSG\_HANDSHAKE 22**

Definition at line 84 of file ssl.h.

**13.107.2.30 #define SSL\_RSA\_AES\_128\_SHA 47**

Definition at line 75 of file ssl.h.

Referenced by main().

**13.107.2.31 #define SSL\_RSA\_AES\_256\_SHA 53**

Definition at line 76 of file ssl.h.

Referenced by main().

**13.107.2.32 #define SSL\_RSA\_DES\_168\_SHA 10**

Definition at line 73 of file ssl.h.

Referenced by main().

**13.107.2.33 #define SSL\_RSA\_RC4\_128\_MD5 4**

Definition at line 71 of file ssl.h.

Referenced by main().

**13.107.2.34 #define SSL\_RSA\_RC4\_128\_SHA 5**

Definition at line 72 of file ssl.h.

Referenced by main().

**13.107.2.35 #define SSL\_VERIFY\_NONE 0**

Definition at line 56 of file ssl.h.

Referenced by main(), and ssl\_test().

**13.107.2.36 #define SSL\_VERIFY\_OPTIONAL 1**

Definition at line 57 of file ssl.h.

Referenced by main().

**13.107.2.37 #define SSL\_VERIFY\_REQUIRED 2**

Definition at line 58 of file ssl.h.

**13.107.2.38 #define TLS\_EXT\_SERVERNAME 0**

Definition at line 106 of file ssl.h.

**13.107.2.39 #define TLS\_EXT\_SERVERNAME\_HOSTNAME 0**

Definition at line 107 of file ssl.h.

**13.107.2.40 #define XYSSL\_ERR\_SSL\_BAD\_HS\_CERTIFICATE -0xA800**

Definition at line 35 of file ssl.h.

**13.107.2.41 #define XYSSL\_ERR\_SSL\_BAD\_HS\_CERTIFICATE\_REQUEST -0xB000**

Definition at line 36 of file ssl.h.

**13.107.2.42 #define XYSSL\_ERR\_SSL\_BAD\_HS\_CERTIFICATE\_VERIFY -0xD000**

Definition at line 40 of file ssl.h.

**13.107.2.43 #define XYSSL\_ERR\_SSL\_BAD\_HS\_CHANGE\_CIPHER\_SPEC -0xD800**

Definition at line 41 of file ssl.h.

**13.107.2.44 #define XYSSL\_ERR\_SSL\_BAD\_HS\_CLIENT\_HELLO -0x9800**

Definition at line 33 of file ssl.h.

**13.107.2.45 #define XYSSL\_ERR\_SSL\_BAD\_HS\_CLIENT\_KEY\_EXCHANGE -0xC800**

Definition at line 39 of file ssl.h.

**13.107.2.46 #define XYSSL\_ERR\_SSL\_BAD\_HS\_FINISHED -0xE000**

Definition at line 42 of file ssl.h.

**13.107.2.47 #define XYSSL\_ERR\_SSL\_BAD\_HS\_SERVER\_HELLO -0xA000**

Definition at line 34 of file ssl.h.

**13.107.2.48 #define XYSSL\_ERR\_SSL\_BAD\_HS\_SERVER\_HELLO\_DONE -0xC000**

Definition at line 38 of file ssl.h.

**13.107.2.49 #define XYSSL\_ERR\_SSL\_BAD\_HS\_SERVER\_KEY\_EXCHANGE -0xB800**

Definition at line 37 of file ssl.h.

**13.107.2.50 #define XYSSL\_ERR\_SSL\_BAD\_INPUT\_DATA -0x1800**

Definition at line 17 of file ssl.h.

**13.107.2.51 #define XYSSL\_ERR\_SSL\_CA\_CHAIN\_REQUIRED -0x7000**

Definition at line 28 of file ssl.h.

**13.107.2.52 #define XYSSL\_ERR\_SSL\_CERTIFICATE\_REQUIRED -0x6000**

Definition at line 26 of file ssl.h.

**13.107.2.53 #define XYSSL\_ERR\_SSL\_CERTIFICATE\_TOO\_LARGE -0x5800**

Definition at line 25 of file ssl.h.

**13.107.2.54 #define XYSSL\_ERR\_SSL\_FATAL\_ALERT\_MESSAGE -0x8000**

Definition at line 30 of file ssl.h.

**13.107.2.55 #define XYSSL\_ERR\_SSL\_FEATURE\_UNAVAILABLE -0x1000**

Definition at line 16 of file ssl.h.

**13.107.2.56 #define XYSSL\_ERR\_SSL\_INVALID\_MAC -0x2000**

Definition at line 18 of file ssl.h.

**13.107.2.57 #define XYSSL\_ERR\_SSL\_INVALID\_MODULUS\_SIZE -0x3000**

Definition at line 20 of file ssl.h.

**13.107.2.58 #define XYSSL\_ERR\_SSL\_INVALID\_RECORD -0x2800**

Definition at line 19 of file ssl.h.

**13.107.2.59 #define XYSSL\_ERR\_SSL\_NO\_CIPHER\_CHOSEN -0x4000**

Definition at line 22 of file ssl.h.

**13.107.2.60 #define XYSSL\_ERR\_SSL\_NO\_CLIENT\_CERTIFICATE -0x5000**

Definition at line 24 of file ssl.h.

**13.107.2.61 #define XYSSL\_ERR\_SSL\_NO\_SESSION\_FOUND -0x4800**

Definition at line 23 of file ssl.h.

**13.107.2.62 #define XYSSL\_ERR\_SSL\_PEER\_CLOSE\_NOTIFY -0x9000**

Definition at line 32 of file ssl.h.

Referenced by main(), and ssl\_test().



**13.107.2.63 #define XYSSL\_ERR\_SSL\_PEER\_VERIFY\_FAILED -0x8800**

Definition at line 31 of file ssl.h.

**13.107.2.64 #define XYSSL\_ERR\_SSL\_PRIVATE\_KEY\_REQUIRED -0x6800**

Definition at line 27 of file ssl.h.

**13.107.2.65 #define XYSSL\_ERR\_SSL\_UNEXPECTED\_MESSAGE -0x7800**

Definition at line 29 of file ssl.h.

**13.107.2.66 #define XYSSL\_ERR\_SSL\_UNKNOWN\_CIPHER -0x3800**

Definition at line 21 of file ssl.h.

### **13.107.3 Typedef Documentation**

**13.107.3.1 typedef struct \_ssl\_context ssl\_context**

Definition at line 134 of file ssl.h.

**13.107.3.2 typedef struct \_ssl\_session ssl\_session**

Definition at line 133 of file ssl.h.

### **13.107.4 Enumeration Type Documentation**

**13.107.4.1 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.

### 13.107.5 Function Documentation

**13.107.5.1** void ssl\_calc\_verify (ssl\_context \* *ssl*, unsigned char *hash*[36])

**13.107.5.2** int ssl\_close\_notify (ssl\_context \* *ssl*)

Notify the peer that the connection is being closed.

Referenced by main(), and ssl\_test().

**13.107.5.3** int ssl\_derive\_keys (ssl\_context \* *ssl*)

**13.107.5.4** int ssl\_fetch\_input (ssl\_context \* *ssl*, int *nb\_want*)

**13.107.5.5** int ssl\_flush\_output (ssl\_context \* *ssl*)

**13.107.5.6** void ssl\_free (ssl\_context \* *ssl*)

Free an SSL context.

Referenced by main(), and ssl\_test().

**13.107.5.7** 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

**13.107.5.8** 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

Referenced by main().

**13.107.5.9 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

Referenced by main().

**13.107.5.10 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.

Referenced by main().

**13.107.5.11 int ssl\_handshake\_client (ssl\_context \* ssl)**

**13.107.5.12 int ssl\_handshake\_server (ssl\_context \* ssl)**

**13.107.5.13 int ssl\_init (ssl\_context \* ssl)**

Initialize an SSL context.

**Parameters:**

*ssl* SSL context

**Returns:**

0 if successful, or 1 if memory allocation failed

Referenced by main(), and ssl\_test().

**13.107.5.14 int ssl\_parse\_certificate (ssl\_context \* ssl)**

**13.107.5.15 int ssl\_parse\_change\_cipher\_spec (ssl\_context \* ssl)**

**13.107.5.16 int ssl\_parse\_finished (ssl\_context \* ssl)**

**13.107.5.17 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.

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

**13.107.5.18** `int ssl_read_record (ssl_context * ssl)`

**13.107.5.19** `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.

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

**13.107.5.20** `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

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

**13.107.5.21** `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

Referenced by main(), and ssl\_test().

**13.107.5.22 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

Referenced by main(), and ssl\_test().

**13.107.5.23 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

Referenced by main(), and ssl\_test().

**13.107.5.24 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

Referenced by main(), and ssl\_test().

**13.107.5.25 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

Referenced by main(), and ssl\_test().

**13.107.5.26 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

Referenced by main().

**13.107.5.27 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

Referenced by main(), and ssl\_test().

**13.107.5.28 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

Referenced by main(), and ssl\_test().

**13.107.5.29**    `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

Referenced by main().

**13.107.5.30**    `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

Referenced by main(), and ssl\_test().

**13.107.5.31**    `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.

Referenced by main(), and ssl\_test().

**13.107.5.32**   `int ssl_write_certificate (ssl_context * ssl)`

**13.107.5.33**   `int ssl_write_change_cipher_spec (ssl_context * ssl)`

**13.107.5.34**   `int ssl_write_finished (ssl_context * ssl)`

**13.107.5.35**   `int ssl_write_record (ssl_context * ssl)`

## **13.107.6   Variable Documentation**

**13.107.6.1**   `int ssl_default_ciphers[ ]`

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



## 13.108 /home/dko/projects/mobilec/trunk/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](#)

### 13.108.1 Detailed Description

Definition in file [timing.h](#).

### 13.108.2 Function Documentation

#### 13.108.2.1 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

Referenced by [ssl\\_test\(\)](#).

#### 13.108.2.2 unsigned long [hardclock](#) (void)

Return the CPU cycle counter value.

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

**13.108.2.3 void m\_sleep (int *milliseconds*)**

Sleep for a certain amount of time.

**13.108.2.4 void set\_alarm (int *seconds*)**

Setup an alarm clock.

**Parameters:**

*seconds* delay before the "alarmed" flag is set

Referenced by main().

**13.108.3 Variable Documentation****13.108.3.1 int alarmed**

Referenced by main().

## 13.109 /home/dko/projects/mobilec/trunk/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.*

### 13.109.1 Detailed Description

Definition in file `x509.h`.

### 13.109.2 Define Documentation

#### 13.109.2.1 `#define ASN1_BIT_STRING 0x03`

Definition at line 51 of file `x509.h`.

#### 13.109.2.2 `#define ASN1_BMP_STRING 0x1E`

Definition at line 63 of file `x509.h`.

**13.109.2.3 #define ASN1\_BOOLEAN 0x01**

Definition at line 49 of file x509.h.

**13.109.2.4 #define ASN1\_CONSTRUCTED 0x20**

Definition at line 65 of file x509.h.

**13.109.2.5 #define ASN1\_CONTEXT\_SPECIFIC 0x80**

Definition at line 66 of file x509.h.

**13.109.2.6 #define ASN1\_IA5\_STRING 0x16**

Definition at line 60 of file x509.h.

**13.109.2.7 #define ASN1\_INTEGER 0x02**

Definition at line 50 of file x509.h.

**13.109.2.8 #define ASN1\_NULL 0x05**

Definition at line 53 of file x509.h.

**13.109.2.9 #define ASN1\_OCTET\_STRING 0x04**

Definition at line 52 of file x509.h.

**13.109.2.10 #define ASN1\_OID 0x06**

Definition at line 54 of file x509.h.

**13.109.2.11 #define ASN1\_PRIMITIVE 0x00**

Definition at line 64 of file x509.h.

**13.109.2.12 #define ASN1\_PRINTABLE\_STRING 0x13**

Definition at line 58 of file x509.h.

**13.109.2.13 #define ASN1\_SEQUENCE 0x10**

Definition at line 56 of file x509.h.

**13.109.2.14 #define ASN1\_SET 0x11**

Definition at line 57 of file x509.h.

**13.109.2.15 #define ASN1\_T61\_STRING 0x14**

Definition at line 59 of file x509.h.

**13.109.2.16 #define ASN1\_UNIVERSAL\_STRING 0x1C**

Definition at line 62 of file x509.h.

**13.109.2.17 #define ASN1\_UTC\_TIME 0x17**

Definition at line 61 of file x509.h.

**13.109.2.18 #define ASN1\_UTF8\_STRING 0x0C**

Definition at line 55 of file x509.h.

**13.109.2.19 #define BADCERT\_CN\_MISMATCH 4**

Definition at line 43 of file x509.h.

Referenced by main().

**13.109.2.20 #define BADCERT\_EXPIRED 1**

Definition at line 41 of file x509.h.

Referenced by main().

**13.109.2.21 #define BADCERT\_NOT\_TRUSTED 8**

Definition at line 44 of file x509.h.

Referenced by main().

**13.109.2.22 #define BADCERT\_REVOKED 2**

Definition at line 42 of file x509.h.

Referenced by main().

**13.109.2.23 #define OID\_CN ""\x55\x04\x03"**

Definition at line 86 of file x509.h.

**13.109.2.24    #define OID\_PKCS1 "\x2A\x86\x48\x86\xF7\x0D\x01\x01"**

Definition at line 87 of file x509.h.

**13.109.2.25    #define OID\_PKCS1\_RSA "\x2A\x86\x48\x86\xF7\x0D\x01\x01\x01"**

Definition at line 88 of file x509.h.

**13.109.2.26    #define OID\_PKCS1\_RSA\_SHA "\x2A\x86\x48\x86\xF7\x0D\x01\x01\x05"**

Definition at line 89 of file x509.h.

**13.109.2.27    #define OID\_PKCS9 "\x2A\x86\x48\x86\xF7\x0D\x01\x09"**

Definition at line 90 of file x509.h.

**13.109.2.28    #define OID\_PKCS9\_EMAIL "\x2A\x86\x48\x86\xF7\x0D\x01\x09\x01"**

Definition at line 91 of file x509.h.

**13.109.2.29    #define OID\_X520 "\x55\x04"**

Definition at line 85 of file x509.h.

**13.109.2.30    #define PEM\_LINE\_LENGTH 72**

Definition at line 81 of file x509.h.

**13.109.2.31    #define PKCS9\_EMAIL 1**

Definition at line 77 of file x509.h.

**13.109.2.32    #define X509\_ISSUER 0x01**

Definition at line 82 of file x509.h.

**13.109.2.33    #define X509\_OUTPUT\_DER 0x01**

Definition at line 79 of file x509.h.

**13.109.2.34    #define X509\_OUTPUT\_PEM 0x02**

Definition at line 80 of file x509.h.



**13.109.2.35 #define X509\_SUBJECT 0x02**

Definition at line 83 of file x509.h.

**13.109.2.36 #define X520\_COMMON\_NAME 3**

Definition at line 71 of file x509.h.

**13.109.2.37 #define X520\_COUNTRY 6**

Definition at line 72 of file x509.h.

**13.109.2.38 #define X520\_LOCALITY 7**

Definition at line 73 of file x509.h.

**13.109.2.39 #define X520\_ORG\_UNIT 11**

Definition at line 76 of file x509.h.

**13.109.2.40 #define X520\_ORGANIZATION 10**

Definition at line 75 of file x509.h.

**13.109.2.41 #define X520\_STATE 8**

Definition at line 74 of file x509.h.

**13.109.2.42 #define XYSSL\_ERR\_ASN1\_INVALID\_DATA -0x001C**

Definition at line 13 of file x509.h.

**13.109.2.43 #define XYSSL\_ERR\_ASN1\_INVALID\_LENGTH -0x0018**

Definition at line 11 of file x509.h.

**13.109.2.44 #define XYSSL\_ERR\_ASN1\_LENGTH\_MISMATCH -0x001A**

Definition at line 12 of file x509.h.

**13.109.2.45 #define XYSSL\_ERR\_ASN1\_OUT\_OF\_DATA -0x0014**

Definition at line 9 of file x509.h.

**13.109.2.46 #define XYSSL\_ERR\_ASN1\_UNEXPECTED\_TAG -0x0016**

Definition at line 10 of file x509.h.

**13.109.2.47 #define XYSSL\_ERR\_X509\_CERT\_INVALID\_ALG -0x00C0**

Definition at line 20 of file x509.h.

**13.109.2.48 #define XYSSL\_ERR\_X509\_CERT\_INVALID\_DATE -0x0100**

Definition at line 22 of file x509.h.

**13.109.2.49 #define XYSSL\_ERR\_X509\_CERT\_INVALID\_EXTENSIONS -0x0160**

Definition at line 25 of file x509.h.

**13.109.2.50 #define XYSSL\_ERR\_X509\_CERT\_INVALID\_FORMAT -0x0060**

Definition at line 17 of file x509.h.

**13.109.2.51 #define XYSSL\_ERR\_X509\_CERT\_INVALID\_NAME -0x00E0**

Definition at line 21 of file x509.h.

**13.109.2.52 #define XYSSL\_ERR\_X509\_CERT\_INVALID\_PEM -0x0040**

Definition at line 16 of file x509.h.

**13.109.2.53 #define XYSSL\_ERR\_X509\_CERT\_INVALID\_PUBKEY -0x0120**

Definition at line 23 of file x509.h.

**13.109.2.54 #define XYSSL\_ERR\_X509\_CERT\_INVALID\_SERIAL -0x00A0**

Definition at line 19 of file x509.h.

**13.109.2.55 #define XYSSL\_ERR\_X509\_CERT\_INVALID\_SIGNATURE -0x0140**

Definition at line 24 of file x509.h.

**13.109.2.56 #define XYSSL\_ERR\_X509\_CERT\_INVALID\_VERSION -0x0080**

Definition at line 18 of file x509.h.

**13.109.2.57 #define XYSSL\_ERR\_X509\_CERT\_SIG\_MISMATCH -0x01E0**

Definition at line 29 of file x509.h.

**13.109.2.58 #define XYSSL\_ERR\_X509\_CERT\_UNKNOWN\_PK\_ALG -0x01C0**

Definition at line 28 of file x509.h.

**13.109.2.59 #define XYSSL\_ERR\_X509\_CERT\_UNKNOWN\_SIG\_ALG -0x01A0**

Definition at line 27 of file x509.h.

**13.109.2.60 #define XYSSL\_ERR\_X509\_CERT\_UNKNOWN\_VERSION -0x0180**

Definition at line 26 of file x509.h.

**13.109.2.61 #define XYSSL\_ERR\_X509\_CERT\_VERIFY\_FAILED -0x0200**

Definition at line 30 of file x509.h.

**13.109.2.62 #define XYSSL\_ERR\_X509\_FEATURE\_UNAVAILABLE -0x0020**

Definition at line 15 of file x509.h.

**13.109.2.63 #define XYSSL\_ERR\_X509\_KEY\_INVALID\_ENC\_IV -0x0280**

Definition at line 34 of file x509.h.

**13.109.2.64 #define XYSSL\_ERR\_X509\_KEY\_INVALID\_FORMAT -0x0260**

Definition at line 33 of file x509.h.

**13.109.2.65 #define XYSSL\_ERR\_X509\_KEY\_INVALID\_PEM -0x0220**

Definition at line 31 of file x509.h.

**13.109.2.66 #define XYSSL\_ERR\_X509\_KEY\_INVALID\_VERSION -0x0240**

Definition at line 32 of file x509.h.

**13.109.2.67 #define XYSSL\_ERR\_X509\_KEY\_PASSWORD\_MISMATCH -0x02E0**

Definition at line 37 of file x509.h.

**13.109.2.68 #define XYSSL\_ERR\_X509\_KEY\_PASSWORD\_REQUIRED -0x02C0**

Definition at line 36 of file x509.h.

**13.109.2.69 #define XYSSL\_ERR\_X509\_KEY\_UNKNOWN\_ENC\_ALG -0x02A0**

Definition at line 35 of file x509.h.

**13.109.2.70 #define XYSSL\_ERR\_X509\_POINT\_ERROR -0x0300**

Definition at line 38 of file x509.h.

**13.109.2.71 #define XYSSL\_ERR\_X509\_VALUE\_TO\_LENGTH -0x0320**

Definition at line 39 of file x509.h.

**13.109.3 Typedef Documentation****13.109.3.1 typedef struct \_x509\_buf x509\_buf****13.109.3.2 typedef struct \_x509\_cert x509\_cert****13.109.3.3 typedef struct \_x509\_name x509\_name****13.109.3.4 typedef struct \_x509\_node x509\_node****13.109.3.5 typedef struct \_x509\_raw x509\_raw****13.109.3.6 typedef struct \_x509\_time x509\_time****13.109.4 Function Documentation****13.109.4.1 void x509\_free (x509\_cert \* *crt*)**

Unallocate all certificate data.

Referenced by main(), and ssl\_test().

**13.109.4.2 int x509\_self\_test (int *verbose*)**

Checkup routine.

**Returns:**

0 if successful, or 1 if the test failed

Referenced by main().

#### 13.109.4.3 `char* x509parse_cert_info (char * prefix, x509_cert * crt)`

Returns an informational string about the certificate.

Referenced by `main()`.

#### 13.109.4.4 `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

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

#### 13.109.4.5 `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

#### 13.109.4.6 `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.

#### 13.109.4.7 `int x509parse_expired (x509_cert * crt)`

Return 0 if the certificate is still valid, or `BADCERT_EXPIRED`.

#### 13.109.4.8 `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

Referenced by main(), and ssl\_test().

**13.109.4.9 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

**13.109.4.10 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

## 13.110 /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/library/aes.c File Reference

```
#include "xyssl/config.h"
```

### **13.111    /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/library/arc4.c File Reference**

```
#include "xyssl/config.h"
```



## 13.112 /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/library/base64.c File Reference

```
#include "xyssl/config.h"
```

### **13.113    /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/library/bignum.c File Reference**

```
#include "xyssl/config.h"
```

## 13.114 /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/library/certs.c File Reference

```
#include "xyssl/config.h"
```

### **13.115    /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/library/debug.c File Reference**

```
#include "xyssl/config.h"
```

## 13.116 /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/library/des.c File Reference

```
#include "xyssl/config.h"
```

### **13.117    /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/library/dhm.c File Reference**

```
#include "xyssl/config.h"
```

## 13.118 /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/library/havege.c File Reference

```
#include <string.h>
#include <time.h>
#include "xyssl/config.h"
```

### **13.119    /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/library/md2.c File Reference**

```
#include "xyssl/config.h"
```



## 13.120 /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/library/md4.c File Reference

```
#include "xyssl/config.h"
```

### **13.121    /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/library/md5.c File Reference**

```
#include "xyssl/config.h"
```

## 13.122 /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/library/net.c File Reference

```
#include "xyssl/config.h"
```

### **13.123    /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/library/padlock.c File Reference**

```
#include "xyssl/config.h"
```

## 13.124 /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/library/rsa.c File Reference

```
#include "xyssl/config.h"
```

### **13.125    /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/library/sha1.c File Reference**

```
#include "xyssl/config.h"
```

## 13.126 /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/library/sha2.c File Reference

```
#include "xyssl/config.h"
```

### **13.127    /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/library/sha4.c File Reference**

```
#include "xyssl/config.h"
```



## 13.128 /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/library/ssl\_cli.c File Reference

```
#include "xyssl/config.h"
```

### **13.129    /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/library/ssl\_srv.c File Reference**

```
#include "xyssl/config.h"
```

## 13.130 /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/library/ssl\_tls.c File Reference

```
#include "xyssl/config.h"
```

### **13.131    /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/library/timing.c File Reference**

```
#include "xyssl/config.h"
```

## **13.132   /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/library/x509parse.c File Reference**

```
#include "xyssl/config.h"
```

### 13.133 /home/dko/projects/mobilec/trunk/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 _CRT_SECURE_NO_DEPRECATED 1`
- `#define MODE_ENCRYPT 0`
- `#define MODE_DECRYPT 1`
- `#define USAGE`

#### Functions

- `int main (int argc, char *argv[])`

#### 13.133.1 Define Documentation

##### 13.133.1.1 `#define _CRT_SECURE_NO_DEPRECATED 1`

Definition at line 22 of file aescript2.c.

##### 13.133.1.2 `#define MODE_DECRYPT 1`

Definition at line 42 of file aescript2.c.

Referenced by `main()`.

##### 13.133.1.3 `#define MODE_ENCRYPT 0`

Definition at line 41 of file aescript2.c.

Referenced by `main()`.

##### 13.133.1.4 `#define USAGE`

**Value:**

```
"\n aescrypt2 <mode> <input filename> <output filename> <key>\n" \  
"\n  <mode>: 0 = encrypt, 1 = decrypt\n" \  
"\n  example: aescrypt2 0 file file.aes hex:E76B2413958B00E193\n" \  
"\n"
```

Definition at line 44 of file aescrypt2.c.

Referenced by main().

## **13.133.2 Function Documentation**

### **13.133.2.1 int main (int *argc*, char \* *argv*[])**

Definition at line 50 of file aescrypt2.c.

References aes\_crypt\_ecb(), AES\_DECRYPT, AES\_ENCRYPT, aes\_setkey\_dec(), aes\_setkey\_enc(), int, MODE\_DECRYPT, MODE\_ENCRYPT, sha2\_finish(), sha2\_hmac\_finish(), sha2\_hmac\_starts(), sha2\_hmac\_update(), sha2\_starts(), sha2\_update(), and USAGE.

## 13.134 /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/programs/hash/hello.c File Reference

```
#include <stdio.h>
#include "xyssl/md5.h"
```

### Defines

- `#define \_CRT\_SECURE\_NO\_DEPRECATED 1`

### Functions

- `int main (void)`

#### 13.134.1 Define Documentation

##### 13.134.1.1 `#define \_CRT\_SECURE\_NO\_DEPRECATED 1`

Definition at line 22 of file hello.c.

#### 13.134.2 Function Documentation

##### 13.134.2.1 `int main (void)`

Definition at line 29 of file hello.c.

References `md5()`.



## 13.135 /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/programs/hash/md5sum.c File Reference

```
#include <string.h>
#include <stdio.h>
#include "xyssl/md5.h"
```

### Defines

- `#define \_CRT\_SECURE\_NO\_DEPRECATED 1`

### 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[ ])

#### 13.135.1 Define Documentation

##### 13.135.1.1 `#define \_CRT\_SECURE\_NO\_DEPRECATED 1`

Definition at line 22 of file md5sum.c.

#### 13.135.2 Function Documentation

##### 13.135.2.1 `int main` (int *argc*, char \* *argv*[ ])

Definition at line 131 of file md5sum.c.

References `md5\_check\(\)`, and `md5\_print\(\)`.

##### 13.135.2.2 `static int md5\_check` (char \* *filename*) [static]

Definition at line 58 of file md5sum.c.

References `buf`, `f`, and `md5\_wrapper\(\)`.

Referenced by `main\(\)`.

##### 13.135.2.3 `static int md5\_print` (char \* *filename*) [static]

Definition at line 43 of file md5sum.c.

References `md5\_wrapper\(\)`.

Referenced by `main\(\)`.

**13.135.2.4** `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()`.

## 13.136 /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/programs/hash/sha1sum.c File Reference

```
#include <string.h>
#include <stdio.h>
#include "xyssl/sha1.h"
```

### Defines

- `#define \_CRT\_SECURE\_NO\_DEPRECATED 1`

### 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[])

#### 13.136.1 Define Documentation

##### 13.136.1.1 `#define \_CRT\_SECURE\_NO\_DEPRECATED 1`

Definition at line 22 of file sha1sum.c.

#### 13.136.2 Function Documentation

##### 13.136.2.1 `int main` (int *argc*, char \* *argv*[])

Definition at line 131 of file sha1sum.c.

References `sha1_check()`, and `sha1_print()`.

##### 13.136.2.2 `static int sha1\_check` (char \* *filename*) [static]

Definition at line 58 of file sha1sum.c.

References `buf`, `f`, and `sha1_wrapper()`.

Referenced by `main()`.

##### 13.136.2.3 `static int sha1\_print` (char \* *filename*) [static]

Definition at line 43 of file sha1sum.c.

References `sha1_wrapper()`.

Referenced by `main()`.

**13.136.2.4** `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().

## 13.137 /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/programs/hash/sha2sum.c File Reference

```
#include <string.h>
#include <stdio.h>
#include "xyssl/sha2.h"
```

### Defines

- `#define \_CRT\_SECURE\_NO\_DEPRECATED 1`

### 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[ ])

#### 13.137.1 Define Documentation

##### 13.137.1.1 `#define \_CRT\_SECURE\_NO\_DEPRECATED 1`

Definition at line 22 of file sha2sum.c.

#### 13.137.2 Function Documentation

##### 13.137.2.1 `int main` (int *argc*, char \* *argv*[ ])

Definition at line 131 of file sha2sum.c.

References `sha2\_check`(), and `sha2\_print`().

##### 13.137.2.2 `static int sha2\_check` (char \* *filename*) `[static]`

Definition at line 58 of file sha2sum.c.

References `buf`, `f`, and `sha2\_wrapper`().

Referenced by `main`().

##### 13.137.2.3 `static int sha2\_print` (char \* *filename*) `[static]`

Definition at line 43 of file sha2sum.c.

References `sha2\_wrapper`().

Referenced by `main`().

**13.137.2.4** `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().

## 13.138 /home/dko/projects/mobilec/trunk/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 \_CRT\_SECURE\_NO\_DEPRECATED 1`
- `#define SERVER\_NAME "localhost"`
- `#define SERVER\_PORT 11999`

### Functions

- `int main (void)`

#### 13.138.1 Define Documentation

##### 13.138.1.1 `#define \_CRT\_SECURE\_NO\_DEPRECATED 1`

Definition at line 22 of file dh\_client.c.

##### 13.138.1.2 `#define SERVER\_NAME "localhost"`

Definition at line 35 of file dh\_client.c.

Referenced by `main()`.

##### 13.138.1.3 `#define SERVER\_PORT 11999`

Definition at line 36 of file dh\_client.c.

Referenced by `main()`.

#### 13.138.2 Function Documentation

##### 13.138.2.1 `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()`.



## 13.139 /home/dko/projects/mobilec/trunk/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 _CRT_SECURE_NO_DEPRECATED` 1
- `#define DH_P_SIZE` 1024
- `#define GENERATOR` "4"

### Functions

- `int main` (void)

#### 13.139.1 Define Documentation

##### 13.139.1.1 `#define _CRT_SECURE_NO_DEPRECATED` 1

Definition at line 22 of file dh\_genprime.c.

##### 13.139.1.2 `#define DH_P_SIZE` 1024

Definition at line 35 of file dh\_genprime.c.

Referenced by main().

##### 13.139.1.3 `#define GENERATOR` "4"

Definition at line 36 of file dh\_genprime.c.

Referenced by main().

#### 13.139.2 Function Documentation

##### 13.139.2.1 `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(), and mpi\_write\_file().

## 13.140 /home/dko/projects/mobilec/trunk/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 _CRT_SECURE_NO_DEPRECATED 1`
- `#define SERVER_PORT 11999`
- `#define PLAINTEXT "==Hello there!=="`

### Functions

- `int main (void)`

#### 13.140.1 Define Documentation

##### 13.140.1.1 `#define _CRT_SECURE_NO_DEPRECATED 1`

Definition at line 22 of file dh\_server.c.

##### 13.140.1.2 `#define PLAINTEXT "==Hello there!=="`

Definition at line 36 of file dh\_server.c.

Referenced by main().

##### 13.140.1.3 `#define SERVER_PORT 11999`

Definition at line 35 of file dh\_server.c.

#### 13.140.2 Function Documentation

##### 13.140.2.1 `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().

## 13.141 /home/dko/projects/mobilec/trunk/src/security/xyssl-0.9/programs/pkey/mpi\_demo.c File Reference

```
#include <stdio.h>
#include "xyssl/bignum.h"
```

### Defines

- `#define \_CRT\_SECURE\_NO\_DEPRECATED 1`

### Functions

- `int main (void)`

#### 13.141.1 Define Documentation

##### 13.141.1.1 `#define \_CRT\_SECURE\_NO\_DEPRECATED 1`

Definition at line 22 of file `mpi_demo.c`.

#### 13.141.2 Function Documentation

##### 13.141.2.1 `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()`, and `mpi_write_file()`.

## 13.142 /home/dko/projects/mobilec/trunk/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 \_CRT\_SECURE\_NO\_DEPRECATED 1`
- `#define KEY\_SIZE 1024`
- `#define EXPONENT 65537`

### Functions

- `int main (void)`

#### 13.142.1 Define Documentation

##### 13.142.1.1 `#define \_CRT\_SECURE\_NO\_DEPRECATED 1`

Definition at line 22 of file `rsa_genkey.c`.

##### 13.142.1.2 `#define EXPONENT 65537`

Definition at line 33 of file `rsa_genkey.c`.

Referenced by `main()`.

##### 13.142.1.3 `#define KEY\_SIZE 1024`

Definition at line 32 of file `rsa_genkey.c`.

Referenced by `main()`.

#### 13.142.2 Function Documentation

##### 13.142.2.1 `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`.

## 13.143 /home/dko/projects/mobilec/trunk/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"
```

### Defines

- `#define \_CRT\_SECURE\_NO\_DEPRECATED 1`

### Functions

- `int main (int argc, char *argv[ ])`

#### 13.143.1 Define Documentation

##### 13.143.1.1 `#define _CRT_SECURE_NO_DEPRECATED 1`

Definition at line 22 of file `rsa_sign.c`.

#### 13.143.2 Function Documentation

##### 13.143.2.1 `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()`.

## 13.144 /home/dko/projects/mobilec/trunk/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"
```

### Defines

- `#define \_CRT\_SECURE\_NO\_DEPRECATED 1`

### Functions

- `int main (int argc, char \*argv\[\])`

#### 13.144.1 Define Documentation

##### 13.144.1.1 `#define \_CRT\_SECURE\_NO\_DEPRECATED 1`

Definition at line 22 of file `rsa_verify.c`.

#### 13.144.2 Function Documentation

##### 13.144.2.1 `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()`.

## 13.145 /home/dko/projects/mobilec/trunk/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 _CRT_SECURE_NO_DEPRECATED 1`
- `#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)`

#### 13.145.1 Define Documentation

##### 13.145.1.1 `#define _CRT_SECURE_NO_DEPRECATED 1`

Definition at line 22 of file `ssl_client1.c`.

##### 13.145.1.2 `#define DEBUG_LEVEL 0`

Definition at line 42 of file `ssl_client1.c`.

Referenced by `my_debug()`.

##### 13.145.1.3 `#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()`.

##### 13.145.1.4 `#define SERVER_NAME "xyssl.org"`

Definition at line 37 of file `ssl_client1.c`.



### 13.145.1.5 `#define SERVER_PORT 443`

Definition at line 32 of file `ssl_client1.c`.

## 13.145.2 Function Documentation

### 13.145.2.1 `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`.

### 13.145.2.2 `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()`.

## 13.146 /home/dko/projects/mobilec/trunk/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 \_CRT\_SECURE\_NO\_DEPRECATED 1`
- `#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)

### 13.146.1 Define Documentation

#### 13.146.1.1 `#define \_CRT\_SECURE\_NO\_DEPRECATED 1`

Definition at line 22 of file `ssl_client2.c`.

#### 13.146.1.2 `#define DEBUG\_LEVEL 0`

Definition at line 44 of file `ssl_client2.c`.

#### 13.146.1.3 `#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`.

#### 13.146.1.4 `#define SERVER\_NAME "xyssl.org"`

Definition at line 39 of file `ssl_client2.c`.

### 13.146.1.5 `#define SERVER_PORT 443`

Definition at line 34 of file `ssl_client2.c`.

## 13.146.2 Function Documentation

### 13.146.2.1 `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`.

### 13.146.2.2 `void my_debug (void * ctx, int level, char * str)`

Definition at line 46 of file `ssl_client2.c`.

References `DEBUG_LEVEL`.

## 13.147 /home/dko/projects/mobilec/trunk/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 \_CRT\_SECURE\_NO\_DEPRECATED 1`
- `#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`

### 13.147.1 Define Documentation

#### 13.147.1.1 `#define \_CRT\_SECURE\_NO\_DEPRECATED 1`

Definition at line 22 of file `ssl_server.c`.

#### 13.147.1.2 `#define DEBUG\_LEVEL 0`

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

### 13.147.1.3 #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().

## 13.147.2 Function Documentation

### 13.147.2.1 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.

### 13.147.2.2 void my\_debug (void \* ctx, int level, char \* str)

Definition at line 77 of file ssl\_server.c.

References DEBUG\_LEVEL.

### 13.147.2.3 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().

### 13.147.2.4 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().

### 13.147.3 Variable Documentation

#### 13.147.3.1 `ssl_session* cur`

Definition at line 91 of file `ssl_server.c`.

Referenced by `http_GetToken()`, and `http_ParseRequest()`.

#### 13.147.3.2 `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()`.

#### 13.147.3.3 `char* my_dhm_G = "4"`

Definition at line 58 of file `ssl_server.c`.

Referenced by `main()`.

#### 13.147.3.4 `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()`.

#### 13.147.3.5 `ssl_session * prv`

Definition at line 91 of file `ssl_server.c`.

**13.147.3.6** `ssl_session* s_list_1st = NULL`

Definition at line 90 of file ssl\_server.c.

## 13.148 /home/dko/projects/mobilec/trunk/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 \_CRT\_SECURE\_NO\_DEPRECATED 1`
- `#define BUFSIZE 1024`

### Functions

- static `int myrand (void *rng_state)`
- `int main (void)`

### Variables

- unsigned char `buf [BUFSIZE]`

### 13.148.1 Define Documentation

#### 13.148.1.1 `#define \_CRT\_SECURE\_NO\_DEPRECATED 1`

Definition at line 22 of file benchmark.c.

#### 13.148.1.2 `#define BUFSIZE 1024`

Definition at line 41 of file benchmark.c.

Referenced by `main()`.



## 13.148.2 Function Documentation

### 13.148.2.1 `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()`.

### 13.148.2.2 `static int myrand (void *rng_state) [static]`

Definition at line 43 of file benchmark.c.

Referenced by `main()`.

## 13.148.3 Variable Documentation

### 13.148.3.1 `unsigned char buf[BUFSIZE]`

Definition at line 51 of file benchmark.c.

Referenced by `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()`, `cmd_prompt_Thread()`, `fipa_DateTime_Compose()`, `fipa_datetime_Parse()`, `fipa_envelope_Compose__date()`, `fipa_envelope_Compose__from()`, `fipa_envelope_HandleParams()`, `main()`, `MC_LoadAgentFromFile()`, `MC_RetrieveAgentCode()`, `MC_SendAgentMigrationMessageFile()`, `md5_check()`, `message_xml_parse__message()`, `mtp_http_ComposeMessage()`, `mtp_http_CreateMessage()`, `mxml_fd_getc()`, `mxml_fd_putc()`, `mxmlLoadFd()`, `mxmlSaveFd()`, `sha1_check()`, `sha2_check()`, and `xml_get_cdata()`.

## 13.149 /home/dko/projects/mobilec/trunk/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"
```

### Defines

- `#define \_CRT\_SECURE\_NO\_DEPRECATED 1`

### Functions

- `int main (int argc, char *argv[])`

#### 13.149.1 Define Documentation

##### 13.149.1.1 `#define \_CRT\_SECURE\_NO\_DEPRECATED 1`

Definition at line 22 of file selftest.c.

#### 13.149.2 Function Documentation

##### 13.149.2.1 `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()`.

## 13.150 /home/dko/projects/mobilec/trunk/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 [\\_CRT\\_SECURE\\_NO\\_DEPRECATED](#) 1
- #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

### 13.150.1 Define Documentation

#### 13.150.1.1 `#define _CRT_SECURE_NO_DEPRECATED 1`

Definition at line 22 of file `ssl_test.c`.

#### 13.150.1.2 `#define COMMAND_BOTH 3`

Definition at line 44 of file `ssl_test.c`.

Referenced by `main()`.

#### 13.150.1.3 `#define COMMAND_READ 1`

Definition at line 42 of file `ssl_test.c`.

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

#### 13.150.1.4 `#define COMMAND_WRITE 2`

Definition at line 43 of file `ssl_test.c`.

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

#### 13.150.1.5 `#define DFL_BUFFER_SIZE 1024`

Definition at line 51 of file `ssl_test.c`.

Referenced by `main()`.

#### 13.150.1.6 `#define DFL_COMMAND COMMAND_READ`

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

Referenced by `main()`.

**13.150.1.7 #define DFL\_CONN\_TIMEOUT 0**

Definition at line 54 of file ssl\_test.c.

Referenced by main().

**13.150.1.8 #define DFL\_DEBUG\_LEVEL 0**

Definition at line 53 of file ssl\_test.c.

Referenced by main().

**13.150.1.9 #define DFL\_FORCE\_CIPHER 0**

Definition at line 58 of file ssl\_test.c.

Referenced by main(), and ssl\_test().

**13.150.1.10 #define DFL\_IOMODE IOMODE\_BLOCK**

Definition at line 47 of file ssl\_test.c.

Referenced by main().

**13.150.1.11 #define DFL\_MAX\_BYTES 0**

Definition at line 52 of file ssl\_test.c.

Referenced by main().

**13.150.1.12 #define DFL\_MAX\_CONNECTIONS 0**

Definition at line 55 of file ssl\_test.c.

Referenced by main().

**13.150.1.13 #define DFL\_OPMODE OPMODE\_NONE**

Definition at line 46 of file ssl\_test.c.

Referenced by main().

**13.150.1.14 #define DFL\_SERVER\_NAME "localhost"**

Definition at line 48 of file ssl\_test.c.

Referenced by main().

**13.150.1.15 #define DFL\_SERVER\_PORT 4433**

Definition at line 49 of file ssl\_test.c.

Referenced by main().

**13.150.1.16 #define DFL\_SESSION\_LIFETIME 86400**

Definition at line 57 of file ssl\_test.c.

Referenced by main().

**13.150.1.17 #define DFL\_SESSION\_REUSE 1**

Definition at line 56 of file ssl\_test.c.

Referenced by main().

**13.150.1.18 #define IOMODE\_BLOCK 0**

Definition at line 39 of file ssl\_test.c.

Referenced by main().

**13.150.1.19 #define IOMODE\_NONBLOCK 1**

Definition at line 40 of file ssl\_test.c.

Referenced by main(), and ssl\_test().

**13.150.1.20 #define OPMODE\_CLIENT 1**

Definition at line 36 of file ssl\_test.c.

Referenced by main(), and ssl\_test().

**13.150.1.21 #define OPMODE\_NONE 0**

Definition at line 35 of file ssl\_test.c.

**13.150.1.22 #define OPMODE\_SERVER 2**

Definition at line 37 of file ssl\_test.c.

Referenced by main(), and ssl\_test().

**13.150.1.23 #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\n"

```

Definition at line 372 of file ssl\_test.c.

## 13.150.2 Function Documentation

### 13.150.2.1 unsigned long int lcppm5 (unsigned long int \* *state*)

Definition at line 96 of file ssl\_test.c.

Referenced by ssl\_test().

### 13.150.2.2 int main (int *argc*, char \* *argv*[])

Definition at line 394 of file ssl\_test.c.

References options::buffer\_size, options::command, COMMAND\_BOTH, COMMAND\_READ, COMMAND\_WRITE, options::conn\_timeout, options::debug\_level, DFL\_BUFFER\_SIZE, DFL\_COMMAND, DFL\_CONN\_TIMEOUT, DFL\_DEBUG\_LEVEL, DFL\_FORCE\_CIPHER, DFL\_IOMODE, DFL\_MAX\_BYTES, DFL\_MAX\_CONNECTIONS, DFL\_OPMODE, DFL\_SERVER\_NAME, DFL\_SERVER\_PORT, DFL\_SESSION\_LIFETIME, DFL\_SESSION\_REUSE, options::force\_cipher, options::iomode, IOMODE\_BLOCK, IOMODE\_NONBLOCK, options::max\_bytes, options::max\_connections, options::opmode, OPMODE\_CLIENT, OPMODE\_SERVER, options::server\_name, options::server\_port, options::session\_lifetime, options::session\_reuse, SSL\_EDH\_RSA\_AES\_256\_SHA, SSL\_EDH\_RSA\_DES\_168\_SHA, SSL\_RSA\_AES\_128\_SHA, SSL\_RSA\_AES\_256\_SHA, SSL\_RSA\_DES\_168\_SHA, SSL\_RSA\_RC4\_128\_MD5, SSL\_RSA\_RC4\_128\_SHA, ssl\_test(), and USAGE.

### 13.150.2.3 void my\_debug (void \* *ctx*, int *level*, char \* *str*)

Definition at line 113 of file ssl\_test.c.

### 13.150.2.4 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, lcppm5(), 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().

### 13.150.3 Variable Documentation

#### 13.150.3.1 char\* dhm\_G = "4"

Definition at line 63 of file ssl\_test.c.

Referenced by ssl\_test().

#### 13.150.3.2 char\* dhm\_P

**Initial value:**

```
"E4004C1F94182000103D883A448B3F802CE4B44A83301270002C20D0321CFD00"  
"11CCEF784C26A400F43DFB901BCA7538F2C6B176001CF5A0FD16D2C48B1D0C1C"  
"F6AC8E1DA6BCC3B4E1F96B0564965300FFA1D0B601EB2800F489AA512C4B248C"  
"01F76949A60BB7F00A40B1EAB64BDD48E8A700D60B7F1200FA8E77B0A979DABF"
```

Definition at line 64 of file ssl\_test.c.

Referenced by ssl\_test().

#### 13.150.3.3 int server\_fd = -1

Definition at line 70 of file ssl\_test.c.



## 13.151 /home/dko/projects/mobilec/trunk/src/win32/LibMC.net/LibMC/MCAclM File Reference

### Namespaces

- namespace [LibMC](#)

### Data Structures

- class [LibMC::MCAclMessage](#)  
*Encapsulates ACL messages in the Mobile-C library.*

#### 13.151.1 Detailed Description

Defines the MCAclMessage object and its member functions.

Definition in file [MCAclMessage.cs](#).

## 13.152 /home/dko/projects/mobilec/trunk/src/win32/LibMC.net/LibMC/MCAgen File Reference

### Namespaces

- namespace [LibMC](#)

### Data Structures

- class [LibMC::MCAgency](#)  
*Wrapper class for [MCAgency\\_t](#) structure.*
- class [LibMC::InvalidAgencyException](#)  
*Exception class for use with null agency pointers.*

### 13.152.1 Detailed Description

Defines the MCAgency object and its member functions.

Definition in file [MCAgency.cs](#).

## 13.153 /home/dko/projects/mobilec/trunk/src/win32/LibMC.net/LibMC/MCAgent.cs File Reference

### Namespaces

- namespace [LibMC](#)

### Data Structures

- class [LibMC::MCAgent](#)  
*Wrapper class for MCAgent\_t structure.*
- class [LibMC::InvalidAgentException](#)  
*Exception class for use with null agent pointers.*

### 13.153.1 Detailed Description

Defines the MCAgent object and its member functions.

Definition in file [MCAgent.cs](#).

## 13.154 /home/dko/projects/mobilec/trunk/src/win32/LibMC.net/LibMC/MCExport File Reference

### Namespaces

- namespace [LibMC](#)

### Data Structures

- class [LibMC::MCAgency](#)  
*Wrapper class for [MCAgency\\_t](#) structure.*
- struct [LibMC::MCAgency::MCAgency\\_t](#)
- struct [LibMC::MCAgency::MCAgencyOptions\\_t](#)
- struct [LibMC::MCAgency::ChOptions\\_t](#)  
*ChOptions structures.*

### 13.154.1 Detailed Description

Imports functions, structs, and enums from the Mobile-C library.

Definition in file [MCExports.cs](#).

## 13.155 /home/dko/projects/mobilec/trunk/src/win32/LibMC.net/LibMC/Properties/AssemblyInfo.cs File Reference

## 13.156 /home/dko/projects/mobilec/trunk/src/win32/LibMC.net/LibMC/Properties File Reference

### Namespaces

- namespace [LibMC::Properties](#)

### Data Structures

- class [LibMC::Properties::Settings](#)

## 13.157 /home/dko/projects/mobilec/trunk/src/win32/LibMC.net/LibMC/Settings.cs File Reference

### Namespaces

- namespace [LibMC::Properties](#)

### Data Structures

- class [LibMC::Properties::Settings](#)

## 13.158 /home/dko/projects/mobilec/trunk/src/winconfig.h File Reference

### Defines

- #define [PACKAGE\\_STRING](#) "MobileC V1.10.0"
- #define [PACKAGE\\_VERSION](#) "1.10.0"
- #define [strtok\\_r](#)(buf, delim, save\_ptr) strtok( buf, delim )

### 13.158.1 Define Documentation

#### 13.158.1.1 #define PACKAGE\_STRING "MobileC V1.10.0"

Definition at line 4 of file winconfig.h.

#### 13.158.1.2 #define PACKAGE\_VERSION "1.10.0"

Definition at line 5 of file winconfig.h.

Referenced by mtp\_http\_ComposeMessage(), and mtp\_http\_CreateMessage().

#### 13.158.1.3 #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(), and message\_xml\_parse\_\_message().



## 13.159 /home/dko/projects/mobilec/trunk/src/xml\_compose.c File Reference

```
#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\\_\\_tasks \(agent\\_p agent\)](#)
- [mxml\\_node\\_t \\* agent\\_xml\\_compose\\_\\_task \(agent\\_p agent, int index\)](#)
- [mxml\\_node\\_t \\* agent\\_xml\\_compose\\_\\_data \(agent\\_p agent, int index, interpreter\\_variable\\_data\\_t \\*interp\\_variable\)](#)
- [mxml\\_node\\_t \\* agent\\_xml\\_compose\\_\\_agent\\_code \(agent\\_p agent, int index\)](#)
- [mxml\\_node\\_t \\* agent\\_xml\\_compose\\_\\_row \(interpreter\\_variable\\_data\\_t \\*interp\\_variable, int index\)](#)
- [mxml\\_node\\_t \\* agent\\_xml\\_compose\\_\\_create\\_row\\_nodes \(void \\*data, int index, int \\*extent, ChType\\_t type, int dim, int extent\\_index\)](#)

### 13.159.1 Function Documentation

#### 13.159.1.1 [mxml\\_node\\_t\\* agent\\_xml\\_compose \(agent\\_p agent\)](#)

Definition at line 41 of file `xml_compose.c`.

References `agent_xml_compose__gaf_message()`, `MXML_ADD_AFTER`, `MXML_ADD_TO_PARENT`, `MXML_NO_CALLBACK`, `mxmlAdd()`, `mxmlLoadString()`, and `node`.

Referenced by `message_InitializeFromAgent()`.

#### 13.159.1.2 [mxml\\_node\\_t\\* agent\\_xml\\_compose\\_\\_agent\\_code \(agent\\_p agent, int index\)](#)

Definition at line 501 of file `xml_compose.c`.

References `agent_datastate_s::agent_code_ids`, `agent_datastate_s::agent_codes`, `agent_s::datastate`, `MXML_NO_PARENT`, `mxmlElementSetAttr()`, `mxmlNewElement()`, `node`, and `xml_new_cdata()`.

Referenced by `agent_xml_compose__tasks()`.

**13.159.1.3 mxml\_node\_t\* agent\_xml\_compose\_\_agent\_data (agent\_p agent)**

Definition at line 145 of file xml\_compose.c.

References agent\_xml\_compose\_\_home(), agent\_xml\_compose\_\_name(), agent\_xml\_compose\_\_owner(), agent\_xml\_compose\_\_tasks(), MXML\_ADD\_AFTER, mxmlAdd(), mxmlNewElement(), and node.

Referenced by agent\_xml\_compose\_\_mobile\_agent().

**13.159.1.4 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 552 of file xml\_compose.c.

References agent\_xml\_compose\_\_create\_row\_nodes(), buf, CH\_DATATYPE\_SIZE, CH\_DATATYPE\_VALUE\_STRING, MXML\_ADD\_AFTER, MXML\_ADD\_TO\_PARENT, MXML\_NO\_PARENT, mxmlAdd(), mxmlElementSetAttr(), mxmlNewElement(), mxmlNewText(), node, and size.

Referenced by agent\_xml\_compose\_\_create\_row\_nodes(), and agent\_xml\_compose\_\_row().

**13.159.1.5 mxml\_node\_t\* agent\_xml\_compose\_\_data (agent\_p agent, int index, interpreter\_variable\_data\_t \* interp\_variable)**

Definition at line 427 of file xml\_compose.c.

References agent\_xml\_compose\_\_row(), interpreter\_variable\_data\_s::array\_dim, buf, CH\_DATATYPE\_STRING, CH\_DATATYPE\_VALUE\_STRING, interpreter\_variable\_data\_s::data, interpreter\_variable\_data\_s::data\_type, MXML\_ADD\_AFTER, mxmlAdd(), mxmlElementSetAttr(), mxmlNewElement(), interpreter\_variable\_data\_s::name, and node.

Referenced by agent\_xml\_compose\_\_task().

**13.159.1.6 mxml\_node\_t\* agent\_xml\_compose\_\_gaf\_message (agent\_p agent)**

Definition at line 61 of file xml\_compose.c.

References agent\_xml\_compose\_\_message(), MXML\_ADD\_AFTER, mxmlAdd(), mxmlNewElement(), and node.

Referenced by agent\_xml\_compose().

**13.159.1.7 mxml\_node\_t\* agent\_xml\_compose\_\_home (agent\_p agent)**

Definition at line 237 of file xml\_compose.c.

References agent\_s::home, mxmlNewElement(), mxmlNewText(), and node.

Referenced by agent\_xml\_compose\_\_agent\_data().

**13.159.1.8 mxml\_node\_t\* agent\_xml\_compose\_\_message (agent\_p agent)**

Definition at line 80 of file xml\_compose.c.

References `agent_s::agent_type`, `agent_xml_compose__mobile_agent()`, `MC_LOCAL_AGENT`, `MC_REMOTE_AGENT`, `MC_RETURN_AGENT`, `MXML_ADD_AFTER`, `mxmlAdd()`, `mxmlElementSetAttr()`, `mxmlNewElement()`, and `node`.

Referenced by `agent_xml_compose__gaf_message()`.

#### 13.159.1.9 `mxml_node_t* agent_xml_compose__mobile_agent (agent_p agent)`

Definition at line 124 of file `xml_compose.c`.

References `agent_xml_compose__agent_data()`, `MXML_ADD_AFTER`, `mxmlAdd()`, `mxmlNewElement()`, and `node`.

Referenced by `agent_xml_compose__message()`.

#### 13.159.1.10 `mxml_node_t* agent_xml_compose__name (agent_p agent)`

Definition at line 205 of file `xml_compose.c`.

References `mxmlNewElement()`, `mxmlNewText()`, `agent_s::name`, and `node`.

Referenced by `agent_xml_compose__agent_data()`.

#### 13.159.1.11 `mxml_node_t* agent_xml_compose__owner (agent_p agent)`

Definition at line 221 of file `xml_compose.c`.

References `mxmlNewElement()`, `mxmlNewText()`, `node`, and `agent_s::owner`.

Referenced by `agent_xml_compose__agent_data()`.

#### 13.159.1.12 `mxml_node_t* agent_xml_compose__row (interpreter_variable_data_t * interp_variable, int index)`

Definition at line 529 of file `xml_compose.c`.

References `agent_xml_compose__create_row_nodes()`, `interpreter_variable_data_s::array_dim`, `interpreter_variable_data_s::array_extent`, `interpreter_variable_data_s::data`, `interpreter_variable_data_s::data_type`, and `node`.

Referenced by `agent_xml_compose__data()`.

#### 13.159.1.13 `mxml_node_t* agent_xml_compose__task (agent_p agent, int index)`

Definition at line 310 of file `xml_compose.c`.

References `agent_task_s::agent_return_data`, `agent_task_s::agent_variable_list`, `agent_xml_compose__data()`, `buf`, `agent_task_s::code_id`, `agent_s::datastate`, `MXML_ADD_AFTER`, `mxmlAdd()`, `mxmlElementSetAttr()`, `mxmlNewElement()`, `node`, `agent_task_s::persistent`, `agent_datastate_s::persistent`, `agent_task_s::server_name`, `agent_task_s::task_completed`, `agent_datastate_s::tasks`, and `agent_task_s::var_name`.

Referenced by `agent_xml_compose__tasks()`.

**13.159.1.14   mxml\_node\_t\* agent\_xml\_compose\_\_tasks (agent\_p *agent*)**

Definition at line 253 of file xml\_compose.c.

References agent\_xml\_compose\_\_agent\_code(), agent\_xml\_compose\_\_task(), buf, agent\_s::datastate, MXML\_ADD\_AFTER, mxmlAdd(), mxmlElementSetAttr(), mxmlNewElement(), node, agent\_datastate\_s::number\_of\_tasks, and agent\_datastate\_s::task\_progress.

Referenced by agent\_xml\_compose\_\_agent\_data().

## 13.160 /home/dko/projects/mobilec/trunk/src/xml\_helper.c File Reference

```
#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`)
- const 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)

### 13.160.1 Function Documentation

#### 13.160.1.1 const char\* whitespace\_cb (mxml\_node\_t \* node, int where)

Definition at line 249 of file `xml_helper.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()`.

#### 13.160.1.2 mxml\_node\_t\* xml\_find\_sibling (const mxml\_node\_t \* node, const char \* sibling\_name)

Definition at line 49 of file `xml_helper.c`.

References `MXML_NO_DESCEND`, `mxmlFindElement()`, `mxml_node_s::parent`, and `xml_get_element_name()`.

#### 13.160.1.3 char\* xml\_get\_cdata (const mxml\_node\_t \* node)

Definition at line 71 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()`.

**13.160.1.4   mxml\_node\_t\* xml\_get\_child (const mxml\_node\_t \* *node*, const char \* *child\_name*, int *descend*)**

Definition at line 104 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().

**13.160.1.5   mxml\_node\_t\* xml\_get\_deep\_child (const mxml\_node\_t \* *parent*, const char \*\* *child\_path*)**

Definition at line 123 of file xml\_helper.c.

References MXML\_NO\_DESCEND, node, and xml\_get\_child().

**13.160.1.6   const char\* xml\_get\_element\_name (const mxml\_node\_t \* *node*)**

Definition at line 217 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().

**13.160.1.7   mxml\_node\_t\* xml\_get\_next\_element (const mxml\_node\_t \* *node*)**

Definition at line 137 of file xml\_helper.c.

References MXML\_ELEMENT, mxml\_node\_s::next, and mxml\_node\_s::type.

**13.160.1.8   char\* xml\_get\_text (const mxml\_node\_t \* *node*)**

Definition at line 155 of file xml\_helper.c.

References CHECK\_NULL, mxml\_node\_s::child, mxml\_value\_u::element, MXML\_ELEMENT, MXML\_TEXT, mxml\_value\_s::name, mxml\_node\_s::next, mxml\_text\_s::string, mxml\_value\_u::text, mxml\_node\_s::type, mxml\_node\_s::value, and xml\_get\_cdata().

Referenced by agent\_xml\_parse\_\_agent\_code(), agent\_xml\_parse\_\_home(), agent\_xml\_parse\_\_name(), agent\_xml\_parse\_\_owner(), and agent\_xml\_parse\_\_sender().

**13.160.1.9   mxml\_node\_t\* xml\_new\_cdata (mxml\_node\_t \* *parent*, const char \* *text*)**

Definition at line 230 of file xml\_helper.c.

References CHECK\_NULL, mxmlNewElement(), and node.

Referenced by agent\_xml\_compose\_\_agent\_code().

## 13.161 /home/dko/projects/mobilec/trunk/src/xml\_parser.c File Reference

```
#include <mxml.h>
#include <string.h>
#include <stdlib.h>
#include "config.h"
#include "include/interpreter_variable_data.h"
#include "include/message.h"
#include "include/xml_parser.h"
#include "include/xml_helper.h"
```

### Defines

- `#define \_XOPEN\_SOURCE 600`

### Functions

- `error\_code\_t agent\_xml\_parse (agent\_p agent)`
- `error\_code\_t agent\_xml\_parse\_\_mobile\_agent (agent\_p agent, xml\_parser\_p xml_parser)`
- `error\_code\_t agent\_xml\_parse\_\_agent\_data (agent\_p agent, xml\_parser\_p xml_parser)`
- `error\_code\_t agent\_xml\_parse\_\_name (agent\_p agent, xml\_parser\_p xml_parser)`
- `error\_code\_t agent\_xml\_parse\_\_owner (agent\_p agent, xml\_parser\_p xml_parser)`
- `error\_code\_t agent\_xml\_parse\_\_home (agent\_p agent, xml\_parser\_p xml_parser)`
- `error\_code\_t agent\_xml\_parse\_\_sender (agent\_p agent, xml\_parser\_p xml_parser)`
- `error\_code\_t agent\_xml\_parse\_\_tasks (agent\_p agent, xml\_parser\_p xml_parser)`
- `error\_code\_t agent\_xml\_parse\_\_task (agent\_p agent, xml\_parser\_p xml_parser, int index)`
- `error\_code\_t agent\_xml\_parse\_\_data (agent\_p agent, xml\_parser\_p xml_parser, int index)`
- `error\_code\_t agent\_xml\_parse\_\_row (interpreter\_variable\_data\_t *interp_variable, xml\_parser\_p xml_parser, int index)`
- `void agent\_xml\_parse\_\_fill\_row\_data (void *data, ChType\_t type, int *extent, const mxml\_node\_t *node, int *index)`
- `error\_code\_t agent\_xml\_parse\_\_agent\_code (agent\_p agent, int index, xml\_parser\_p xml_parser)`
- `error\_code\_t agent\_return\_xml\_parse (agent\_p agent)`
- `error\_code\_t message\_xml\_parse (message\_p message)`
- `error\_code\_t message\_xml\_parse\_\_message (message\_p message, xml\_parser\_p xml_parser)`

### 13.161.1 Define Documentation

#### 13.161.1.1 `#define \_XOPEN\_SOURCE 600`

Definition at line 38 of file `xml_parser.c`.

## 13.161.2 Function Documentation

### 13.161.2.1 `error_code_t agent_return_xml_parse (agent_p agent)`

Definition at line 877 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`.

### 13.161.2.2 `error_code_t agent_xml_parse (agent_p agent)`

Definition at line 52 of file `xml_parser.c`.

References `agent_xml_parse__mobile_agent()`, `agent_s::datastate`, `MC_SUCCESS`, and `agent_datastate_s::xml_agent_root`.

Referenced by `agent_initialize()`.

### 13.161.2.3 `error_code_t agent_xml_parse__agent_code (agent_p agent, int index, xml_parser_p xml_parser)`

Definition at line 836 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()`.

### 13.161.2.4 `error_code_t agent_xml_parse__agent_data (agent_p agent, xml_parser_p xml_parser)`

Definition at line 93 of file `xml_parser.c`.

References `agent_xml_parse__home()`, `agent_xml_parse__name()`, `agent_xml_parse__owner()`, `agent_xml_parse__sender()`, `agent_xml_parse__tasks()`, `MC_ERR_PARSE`, `MC_SUCCESS`, and `xml_get_child()`.

Referenced by `agent_xml_parse__mobile_agent()`.

### 13.161.2.5 `error_code_t agent_xml_parse__data (agent_p agent, xml_parser_p xml_parser, int index)`

Definition at line 507 of file `xml_parser.c`.

References `agent_task_s::agent_return_data`, `agent_task_s::agent_variable_list`, `agent_xml_parse__row()`, `interpreter_variable_data_s::array_dim`, `CH_DATATYPE_SIZE`, `CH_DATATYPE_STR_TO_VAL`, `CH_STRING_DATATYPE`, `interpreter_variable_data_s::data`, `interpreter_variable_data_s::data_type`, `agent_s::datastate`, `interpreter_variable_data_New()`, `MC_ERR_PARSE`, `MC_SUCCESS`, `mxmlElementGetAttr()`, `interpreter_variable_data_s::name`, `mxml_node_s::parent`, `agent_task_s::persistent`, `agent_datastate_s::tasks`, `xml_get_child()`, and `xml_get_element_name()`.

Referenced by `agent_xml_parse__task()`.



**13.161.2.6 void agent\_xml\_parse\_\_fill\_row\_data (void \* *data*, ChType\_t *type*, int \* *extent*, const mxml\_node\_t \* *node*, int \* *index*)**

Definition at line 717 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().

**13.161.2.7 error\_code\_t agent\_xml\_parse\_\_home (agent\_p *agent*, xml\_parser\_p *xml\_parser*)**

Definition at line 210 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().

**13.161.2.8 error\_code\_t agent\_xml\_parse\_\_mobile\_agent (agent\_p *agent*, xml\_parser\_p *xml\_parser*)**

Definition at line 65 of file xml\_parser.c.

References agent\_xml\_parse\_\_agent\_data(), MC\_ERR\_PARSE, xml\_get\_child(), and xml\_get\_element\_name().

Referenced by agent\_xml\_parse().

**13.161.2.9 error\_code\_t agent\_xml\_parse\_\_name (agent\_p *agent*, xml\_parser\_p *xml\_parser*)**

Definition at line 157 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().

**13.161.2.10 error\_code\_t agent\_xml\_parse\_\_owner (agent\_p *agent*, xml\_parser\_p *xml\_parser*)**

Definition at line 183 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().

**13.161.2.11 error\_code\_t agent\_xml\_parse\_\_row (interpreter\_variable\_data\_t \* *interp\_variable*, xml\_parser\_p *xml\_parser*, int *index*)**

Definition at line 653 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().

**13.161.2.12 error\_code\_t agent\_xml\_parse\_\_sender (agent\_p agent, xml\_parser\_p xml\_parser)**

Definition at line 236 of file xml\_parser.c.

References CHECK\_NULL, MC\_SUCCESS, agent\_s::sender, and xml\_get\_text().

Referenced by agent\_xml\_parse\_\_agent\_data().

**13.161.2.13 error\_code\_t agent\_xml\_parse\_\_task (agent\_p agent, xml\_parser\_p xml\_parser, int index)**

Definition at line 402 of file xml\_parser.c.

References agent\_xml\_parse\_\_data(), CHECK\_NULL, agent\_task\_s::code\_id, agent\_s::datastate, MC\_ERR\_PARSE, MC\_SUCCESS, MXML\_DESCEND\_FIRST, MXML\_NO\_DESCEND, mxmlElementGetAttr(), mxmlFindElement(), agent\_task\_s::persistent, agent\_task\_s::server\_name, agent\_task\_s::task\_completed, agent\_datastate\_s::tasks, and agent\_task\_s::var\_name.

Referenced by agent\_xml\_parse\_\_tasks().

**13.161.2.14 error\_code\_t agent\_xml\_parse\_\_tasks (agent\_p agent, xml\_parser\_p xml\_parser)**

Definition at line 264 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().

**13.161.2.15 error\_code\_t message\_xml\_parse (message\_p message)**

Definition at line 912 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\_Thread(), message\_InitializeFromConnection(), and message\_InitializeFromString().

**13.161.2.16 error\_code\_t message\_xml\_parse\_\_message (message\_p message, xml\_parser\_p xml\_parser)**

Definition at line 967 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().

## **Chapter 14**

# **Example Documentation**

### **14.1 cs2ch/cs2chfunc.c**

C library example that allows agents to call CLI functions.

## 14.2 LibMCCConsole/Program.cs

Basic Mobile-C console demo program

## **14.3 LibMCCppEx/LibMCCppEx.cpp**

Demonstrates using LibMC.NET from a VC++ program.

## 14.4 LibMCFipaTest/Program.cs

Mobile-C FIPA ACL message demo program.

## 14.5 LibMCGui/Form1.cs

Basic Mobile-C Windows Forms demo program

## 14.6 LibMCInterop/Program.cs

Demonstrates interfacing with a .dl file and calling agent functions.



## 14.7 LibMCMiscTest/Program.cs

Demonstrates miscellaneous Mobile-C functions.

## 14.8 LibMCVbEx/Form1.vb

Demonstrates using LibMC.NET from a VB program.

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