

VOMS C API Reference Manual

1.5.0

Generated by Doxygen 1.3.5

Tue Oct 20 13:27:45 2009

Contents

- 1 VOMS C API Data Structure Index 1
 - 1.1 VOMS C API Data Structures. 1
- 2 VOMS C API File Index 3
 - 2.1 VOMS C API File List 3
- 3 VOMS C API Data Structure Documentation 5
 - 3.1 attribute Struct Reference. 5
 - 3.2 contactdata Struct Reference. 6
 - 3.3 data Struct Reference 8
 - 3.4 voms Struct Reference 9
 - 3.5 vomsdata Struct Reference. 12
- 4 VOMS C API File Documentation 15
 - 4.1 voms_apic.h File Reference 15

Chapter 1

VOMS C API Data Structure Index

1.1 VOMS C API Data Structures

Here are the data structures with brief descriptions:

attribute	5
contactdata	6
data (User's characteristics: can be repeated)	8.
voms	9
vomsdata	12

Chapter 2

VOMS C API File Index

2.1 VOMS C API File List

Here is a list of all files with brief descriptions:

voms_apic.h	15
---------------------------------------	----

Chapter 3

VOMS C API Data Structure Documentation

3.1 attribute Struct Reference

```
#include <voms_apic.h>
```

Data Fields

- const char [name](#)
- const char [value](#)
- const char [qualifier](#)

3.1.1 Field Documentation

3.1.1.1 const char [attribute::name](#)

Definition at line 40 of file voms_apic.h.

3.1.1.2 const char [attribute::qualifier](#)

Definition at line 42 of file voms_apic.h.

3.1.1.3 const char [attribute::value](#)

Definition at line 41 of file voms_apic.h.

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

- [voms_apic.h](#)

3.2 contactdata Struct Reference

```
#include <voms_apic.h>
```

Data Fields

- char [nick](#)
- char [host](#)
- char [contact](#)
- char [vo](#)
- int [port](#)
- char [reserved](#)
- int [version](#)

3.2.1 Field Documentation

3.2.1.1 char [contactdata::contact](#)

The subject of the server's certificate
Definition at line 50 of file voms_apic.h.

3.2.1.2 char [contactdata::host](#)

The hostname of the server
Definition at line 49 of file voms_apic.h.

3.2.1.3 char [contactdata::nick](#)

The alias of the server
Definition at line 48 of file voms_apic.h.

3.2.1.4 int [contactdata::port](#)

The port on which the server is listening
Definition at line 52 of file voms_apic.h.

3.2.1.5 char [contactdata::reserved](#)

HANDS OFF!
Definition at line 53 of file voms_apic.h.

3.2.1.6 int [contactdata::version](#)

The version of Globus on which this server runs.
Definition at line 54 of file voms_apic.h.

3.2.1.7 char [contactdata::vo](#)

The VO served by this server

Definition at line 51 of file voms_apic.h.

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

- [voms_apic.h](#)

3.3 data Struct Reference

User's characteristics: can be repeated.

```
#include <voms_apic.h >
```

Data Fields

- char [group](#)
- char [role](#)
- char [cap](#)

3.3.1 Detailed Description

User's characteristics: can be repeated.

<

Definition at line 33 of file voms_apic.h.

3.3.2 Field Documentation

3.3.2.1 char [data::cap](#)

user's capability

Definition at line 36 of file voms_apic.h.

3.3.2.2 char [data::group](#)

user's group

Definition at line 34 of file voms_apic.h.

3.3.2.3 char [data::role](#)

user's role

Definition at line 35 of file voms_apic.h.

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

- [voms_apic.h](#)

3.4 voms Struct Reference

```
#include <voms_apic.h>
```

Data Fields

- int [siglen](#)
- char [signature](#)
- char [user](#)
- char [userca](#)
- char [server](#)
- char [serverca](#)
- char [voname](#)
- char [uri](#)
- char [date1](#)
- char [date2](#)
- int [type](#)
- [data](#) [std](#)
- char [custom](#)
- int [datalen](#)
- int [version](#)
- char [fqan](#)
- char [serial](#)
- AC [ac](#)
- X509 [holder](#)

3.4.1 Field Documentation

3.4.1.1 AC [voms::ac](#)

Definition at line 85 of file `voms_apic.h`.

3.4.1.2 char [voms::custom](#)

The data returned by an S command

Definition at line 78 of file `voms_apic.h`.

3.4.1.3 int [voms::datalen](#)

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

3.4.1.4 char [voms::date1](#)

Beginning of validity of the user info

Definition at line 74 of file `voms_apic.h`.

3.4.1.5 char [voms::date2](#)

End of validity of the user info

Definition at line 75 of file voms_apic.h.

3.4.1.6 char [voms::fqan](#)

User's attributes in compact format

Definition at line 81 of file voms_apic.h.

3.4.1.7 X509 [voms::holder](#)

Definition at line 86 of file voms_apic.h.

3.4.1.8 char [voms::serial](#)

Serial number. Only significant if coming from AC. Null otherwise

Definition at line 82 of file voms_apic.h.

3.4.1.9 char [voms::server](#)

The VOMS server DN, as from its certificate

Definition at line 70 of file voms_apic.h.

3.4.1.10 char [voms::serverca](#)

The CA which signed the VOMS certificate

Definition at line 71 of file voms_apic.h.

3.4.1.11 int [voms::siglen](#)

The length of the VOMS server signature

Definition at line 66 of file voms_apic.h.

3.4.1.12 char [voms::signature](#)

The VOMS server signature

Definition at line 67 of file voms_apic.h.

3.4.1.13 struct [data](#) [voms::std](#)

User's characteristics

Definition at line 77 of file voms_apic.h.

3.4.1.14 `int voms::type`

The type of data returned

Definition at line 76 of `le voms_apic.h`.

3.4.1.15 `char voms::uri`

The URI of the VOMS server

Definition at line 73 of `le voms_apic.h`.

3.4.1.16 `char voms::user`

The user's DN, as from his certificate

Definition at line 68 of `le voms_apic.h`.

3.4.1.17 `char voms::userca`

The CA which signed the user's certificate

Definition at line 69 of `le voms_apic.h`.

3.4.1.18 `int voms::version`

Definition at line 80 of `le voms_apic.h`.

3.4.1.19 `char voms::voname`

The name of the VO to which the VOMS belongs

Definition at line 72 of `le voms_apic.h`.

The documentation for this struct was generated from the following `le`:

- `voms_apic.h`

3.5 vomsdata Struct Reference

```
#include <voms_apic.h>
```

Data Fields

- char [cdir](#)
- char [vdir](#)
- [voms_data](#)
- char [workvo](#)
- char [extra_data](#)
- int [volen](#)
- int [extralen](#)
- [vomsdata_real](#)

3.5.1 Field Documentation

3.5.1.1 char [vomsdata::cdir](#)

Definition at line 130 of file `voms_apic.h`.

3.5.1.2 struct [voms_data](#) [vomsdata::data](#)

User's info, as in the certificate extension. It may contain data gathered from more than one VOMS server, Definition at line 132 of file `voms_apic.h`.

3.5.1.3 char [vomsdata::extra_data](#)

The data specified by the user with the `-include` switch. Note that this field doesn't contain the result of a request to the VOMS server, but instead data specified by the user. The reason for the introduction of this extension is to let a user include important data into his proxy certificate, like, for example, a kerberos ticket

Definition at line 137 of file `voms_apic.h`.

3.5.1.4 int [vomsdata::extralen](#)

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

3.5.1.5 struct [vomsdata_real](#) [vomsdata::real](#)

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

3.5.1.6 char [vomsdata::vdir](#)

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

3.5.1.7 int [vomsdata::volen](#)

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

3.5.1.8 char [vomsdata::workvo](#)

The value of the -vo option of the voms-proxy-init command

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

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

- [voms_apic.h](#)

Chapter 4

VOMS C API File Documentation

4.1 voms_apic.h File Reference

```
#include <openssl/x509.h>
#include <time.h>
#include "newformat.h"
```

Data Structures

- struct [attribute](#)
- struct [contactdata](#)
- struct [data](#)
 - User's characteristics: can be repeated.
- struct [voms](#)
- struct [vomsdata](#)

Defines

- #define [TYPE_NODATA](#) 0
- #define [TYPE_STD](#) 1
- #define [TYPE_CUSTOM](#) 2
- #define [RECURSE_CHAIN](#) 0
- #define [RECURSE_NONE](#) 1
- #define [VERIFY_FULL](#) 0xffffffff
- #define [VERIFY_NONE](#) 0x00000000
- #define [VERIFY_DATE](#) 0x00000001
- #define [VERIFY_NOTARGET](#) 0x00000002
- #define [VERIFY_KEY](#) 0x00000004
- #define [VERIFY_SIGN](#) 0x00000008
- #define [VERIFY_ORDER](#) 0x00000010
- #define [VERIFY_ID](#) 0x00000020
- #define [VERIFY_CERTLIST](#) 0x00000040
- #define [VERR_NONE](#) 0

Error codes.

- #define [VERR_NOSOCKET](#) 1
- #define [VERR_NOIDENT](#) 2
- #define [VERR_COMM](#) 3
- #define [VERR_PARAM](#) 4
- #define [VERR_NOEXT](#) 5
- #define [VERR_NOINIT](#) 6
- #define [VERR_TIME](#) 7
- #define [VERR_IDCHECK](#) 8
- #define [VERR_EXTRAINFO](#) 9
- #define [VERR_FORMAT](#) 10
- #define [VERR_NODATA](#) 11
- #define [VERR_PARSE](#) 12
- #define [VERR_DIR](#) 13
- #define [VERR_SIGN](#) 14
- #define [VERR_SERVER](#) 15
- #define [VERR_MEM](#) 16
- #define [VERR_VERIFY](#) 17
- #define [VERR_TYPE](#) 18
- #define [VERR_ORDER](#) 19
- #define [VERR_SERVERCODE](#) 20
- #define [VERR_NOTAVAIL](#) 21

Typedefs

- typedef void [gss_cred_id_t](#)
- typedef void [gss_ctx_id_t](#)

Functions

- [contactdata](#) [VOMS_FindByAlias](#)([structvomsdata](#) vd, char alias, char system, char user, int error)
- [contactdata](#) [VOMS_FindByVO](#)([structvomsdata](#) vd, char vo, char system, char user, int error)
- void [VOMS_DeleteContacts](#)([structcontactdata](#) list)
- [vomsdata](#) [VOMS_Init](#)(char voms, char cert)
- [voms](#) [VOMS_Copy](#)([structvoms](#) v, int error)
- [vomsdata](#) [VOMS_CopyAll](#)([structvomsdata](#) vd, int error)
- void [VOMS_Delete](#)([structvoms](#) v)
- int [VOMS_AddTarget](#)([structvomsdata](#) vd, char target, int error)
- void [VOMS_FreeTarget](#)([structvomsdata](#) vd, int error)
- char [VOMS_ListTargets](#)([structvomsdata](#) vd, int error)
- int [VOMS_SetVerificationType](#)(int type, [structvomsdata](#) vd, int error)
- int [VOMS_SetLifetime](#)(int length, [structvomsdata](#) vd, int error)
- void [VOMS_Destroy](#)([structvomsdata](#) vd)
- int [VOMS_ResetOrder](#)([structvomsdata](#) vd, int error)
- int [VOMS_Ordering](#)(char order, [structvomsdata](#) vd, int error)
- int [VOMS_Contact](#)(char hostname, int port, char servsubject, char command, [structvomsdata](#) vd, int error)

- int [VOMS_ContactRaw](#)(char hostname, int port, char servsubject, char command, void data, int datalen, int version, struct [vomsdata](#) vd, int error)
- int [VOMS_Retrieve](#)(X509_cert, STACK_OF(X509)chain, int how, struct [vomsdata](#) vd, int error)
- int [VOMS_Import](#)(char buffer, int buflen, struct [vomsdata](#) vd, int error)
- int [VOMS_Export](#)(char buffer, int buflen, struct [vomsdata](#) vd, int error)
- [voms](#) [VOMS_DefaultData](#)(struct [vomsdata](#) vd, int error)
- char [VOMS_ErrorMessage](#)(struct [vomsdata](#) vd, int error, char buffer, int len)
- int [VOMS_RetrieveEXT](#)(X509_EXTENSION ext, struct [vomsdata](#) vd, int error)
- int [VOMS_RetrieveFromCredential](#)(gss_cred_id_t cred, int how, struct [vomsdata](#) vd, int error)
- int [VOMS_RetrieveFromFile](#)(FILE file, int how, struct [vomsdata](#) vd, int error)
- int [VOMS_RetrieveFromContext](#)(gss_ctx_id_t ctx, int how, struct [vomsdata](#) vd, int error)
- int [VOMS_RetrieveFromProxy](#)(int how, struct [vomsdata](#) vd, int error)
- int [VOMS_GetAttributeSourcesNumber](#)(struct [voms](#) v, struct [vomsdata](#) vd, int error)
- int [VOMS_GetAttributeSourceHandle](#)(struct [voms](#) v, int num, struct [vomsdata](#) vd, int error)
- const char [VOMS_GetAttributeGrantor](#)(struct [voms](#) v, int handle, struct [vomsdata](#) vd, int error)
- int [VOMS_GetAttributesNumber](#)(struct [voms](#) v, int handle, struct [vomsdata](#) vd, int error)
- int [VOMS_GetAttribute](#)(struct [voms](#) v, int handle, int num, struct [attribute](#) at, struct [vomsdata](#) vd, int error)
- [vomsdata](#) [VOMS_Duplicate](#)(struct [vomsdata](#) vd)
- AC [VOMS_GetAC](#)(struct [voms](#) v)
- int [getMajorVersionNumber](#)(void)
- int [getMinorVersionNumber](#)(void)
- int [getPatchVersionNumber](#)(void)
- int [VOMS_SetVerificationTime](#)(time_t verificationtime, struct [vomsdata](#) vd, int error)
- char [VOMS_GetTargetsList](#)(struct [voms](#) v, struct [vomsdata](#) vd, int error)
- void [VOMS_FreeTargetsList](#)(char *)
- int [VOMS_SetTimeout](#)(int t, struct [vomsdata](#) vd, int error)

4.1.1 De ne Documentation

4.1.1.1 #de ne RECURSE_CHAIN 0

De nition at line 90 of le voms_apic.h.

4.1.1.2 #de ne RECURSE_NONE 1

De nition at line 91 of le voms_apic.h.

4.1.1.3 #de ne TYPE_CUSTOM 2

result of an S command

De nition at line 62 of le voms_apic.h.

4.1.1.4 #de ne TYPE_NODATA 0

no data

De nition at line 60 of le voms_apic.h.

4.1.1.5 #define TYPE_STD 1

group, role, capability triplet

Definition at line 61 of file voms_apic.h.

4.1.1.6 #define VERIFY_CERTLIST 0x00000040

Definition at line 101 of file voms_apic.h.

4.1.1.7 #define VERIFY_DATE 0x00000001

Definition at line 95 of file voms_apic.h.

4.1.1.8 #define VERIFY_FULL 0xffffffff

Definition at line 93 of file voms_apic.h.

4.1.1.9 #define VERIFY_ID 0x00000020

Definition at line 100 of file voms_apic.h.

4.1.1.10 #define VERIFY_KEY 0x00000004

Definition at line 97 of file voms_apic.h.

4.1.1.11 #define VERIFY_NONE 0x00000000

Definition at line 94 of file voms_apic.h.

4.1.1.12 #define VERIFY_NOTARGET 0x00000002

Definition at line 96 of file voms_apic.h.

4.1.1.13 #define VERIFY_ORDER 0x00000010

Definition at line 99 of file voms_apic.h.

4.1.1.14 #define VERIFY_SIGN 0x00000008

Definition at line 98 of file voms_apic.h.

4.1.1.15 #define VERR_COMM 3

Server problem

Definition at line 108 of file voms_apic.h.

4.1.1.16 #define VERR_DIR 13

Directory error

Definition at line 119 of file voms_apic.h.

4.1.1.17 #define VERR_EXTRINFO 9

VO name and URI missing

Definition at line 115 of file voms_apic.h.

4.1.1.18 #define VERR_FORMAT 10

Wrong data format

Definition at line 116 of file voms_apic.h.

4.1.1.19 #define VERR_IDCHECK 8

User data in extension different from the real ones

Definition at line 113 of file voms_apic.h.

4.1.1.20 #define VERR_MEM 16

Memory problems

Definition at line 122 of file voms_apic.h.

4.1.1.21 #define VERR_NODATA 11

Empty extension

Definition at line 117 of file voms_apic.h.

4.1.1.22 #define VERR_NOEXT 5

VOMS extension missing

Definition at line 110 of file voms_apic.h.

4.1.1.23 #define VERR_NOIDENT 2

Cannot identify itself (certificate problem)

Definition at line 107 of file voms_apic.h.

4.1.1.24 #define VERR_NOINIT 6

Initialization error

Definition at line 111 of file voms_apic.h.

4.1.1.25 #define VERR_NONE 0

Error codes.

Definition at line 105 of file voms_apic.h.

4.1.1.26 #define VERR_NOSOCKET 1

Socket problem

Definition at line 106 of file voms_apic.h.

4.1.1.27 #define VERR_NOTAVAIL 21

Method not available

Definition at line 127 of file voms_apic.h.

4.1.1.28 #define VERR_ORDER 19

Ordering different than required

Definition at line 125 of file voms_apic.h.

4.1.1.29 #define VERR_PARAM 4

Wrong parameters

Definition at line 109 of file voms_apic.h.

4.1.1.30 #define VERR_PARSE 12

Parse error

Definition at line 118 of file voms_apic.h.

4.1.1.31 #define VERR_SERVER 15

Unidentifiable VOMS server

Definition at line 121 of file voms_apic.h.

4.1.1.32 #define VERR_SERVERCODE 20

Error from the server

Definition at line 126 of file voms_apic.h.

4.1.1.33 #define VERR_SIGN 14

Signature error

Definition at line 120 of file voms_apic.h.

4.1.1.34 #define VERR_TIME 7

Error in time checking

Definition at line 112 of file voms_apic.h.

4.1.1.35 #define VERR_TYPE 18

Returned data of unknown type

Definition at line 124 of file voms_apic.h.

4.1.1.36 #define VERR_VERIFY 17

Generic verification error

Definition at line 123 of file voms_apic.h.

4.1.2 Typedef Documentation

4.1.2.1 typedef void gss_cred_id_t

Definition at line 20 of file voms_apic.h.

4.1.2.2 typedef void gss_ctx_id_t

Definition at line 21 of file voms_apic.h.

4.1.3 Function Documentation

4.1.3.1 int getMajorVersionNumber (void)

4.1.3.2 int getMinorVersionNumber (void)

4.1.3.3 int getPatchVersionNumber (void)

4.1.3.4 int VOMS_AddTarget (struct vomsdata vd, char target, int error)

Adds a target to the AC.

Parameters:

vd The vomsdata structure.

target The target to add. It should be a FQDN.

error RETURN PARAMETER: qualifies the error message.

Returns:

failure (0) or success (> 0)

4.1.3.5 `int VOMS_Contact (char hostname, int port, char servsubject, char command, struct vomsdata vd, int error)`

Contacts a VOMS server to get a certificate

It is the equivalent of the `voms_proxy_init` command, but without the `-include` functionality.

Parameters:

hostname FQDN of the VOMS server

port the port on which the VOMS server is listening

servsubject the subject of the server's certificate

command Command

vd RETURN PARAMETER: contains the data returned by the connection

error RETURN PARAMETER: Qualifies the error message

Returns:

failure (0) or success (< 0)

4.1.3.6 `int VOMS_ContactRaw (char hostname, int port, char servsubject, char command, void data, int datalen, int version, struct vomsdata vd, int error)`

The same as `VOMS_Contact`, except that instead of starting the verification process, the data is returned as is in the

Parameters:

data and

datalen fields.

hostname FQDN of the VOMS server

port the port on which the VOMS server is listening

servsubject the subject of the server's certificate

command the command sent to the server

version is the version number of the data.

vd RETURN PARAMETER: contains the data returned by the connection

error RETURN PARAMETER: Qualifies the error message

Returns:

failure (0) or success (< 0)

4.1.3.7 `struct voms VOMS_Copy (struct voms v, int error)`

Copies a voms structure. N.B: This is the ONLY way to correctly initialize a voms structure as a copy of another voms structure.

Parameters:

v The structure to copy.

error RETURN PARAMETER: qualifies the error message.

Returns:

NULL (error) or the new voms structure.

4.1.3.8 struct `vomsdata` VOMS_CopyAll (struct `vomsdata` vd, int error)

Copies a vomsdata structure. N.B: This is the ONLY way to correctly initialize a vomsdata structure as a copy of another vomsdata structure.

Parameters:

vd The structure to copy.

error RETURN PARAMETER: qualifes the error message.

Returns:

NULL (error) or the new vomsdata structure.

4.1.3.9 struct `voms` VOMS_DefaultData (struct `vomsdata` vd, int error)

Gets the default attributes from a vomsdata structure.

Parameters:

vd the vomsdata structure to analyze

error RETURN PARAMETER: Qualifes the error message

Returns:

a pointer to the relevant voms structure. DO NOT modify the elds.

4.1.3.10 void VOMS_Delete (struct `voms` v)

Deletes a voms structure

Parameters:

v Pointer to the structure to delete.

4.1.3.11 void VOMS_DeleteContacts (struct `contactdata` list)

Frees a contactdata vector.

Parameters:

list The vector to free.

Returns:

NONE

4.1.3.12 void VOMS_Destroy (struct `vomsdata` vd)

Destroys a proper vomsdata structure /param vd The structure to deallocate.

4.1.3.13 struct [vomsdata](#) VOMS_Duplicate (struct [vomsdata](#) vd)

4.1.3.14 char VOMS_ErrorMessage (struct [vomsdata](#) vd, int error, char buffer, int len)

Gets a textual description of the error.

Parameters:

vd The vomsdata structure to analyze

error The error returned by the last function

buffer A pointer to a buffer where the error message will be written. If NULL, then memory is allocated by the function, and will have to be free()ed by the caller.

len The length of the memory pointed to by the buffer parameter.

Returns:

A pointer to the error message.

4.1.3.15 int VOMS_Export (char buffer, int buflen, struct [vomsdata](#) vd, int error)

Converts data into a test format

Parameters:

buffer OUTPUT PARAMETER contains the converted data

bu en OUTPUT PARAMETER contains the length of buffer

vd contains the data to convert

error RETURN PARAMETER Qualifies the error message

Returns:

failure (0) or success (> 0)

4.1.3.16 struct [contactdata](#) VOMS_FindByAlias (struct [vomsdata](#) vd, char alias, char system, char user, int error)

Gets a list of VOMS servers which share an alias.

Parameters:

vd The correctly initialized vomsdata structured.

alias The alias to look for.

system The directory in which to look for the system configuration files. If NULL, defaults to /opt/edc/etc/vomses

user The directory in which to look for the user configuration files. Defaults to \$VOMS_USERCONF if NULL. Again defaults to \$HOME/.edg/vomses if the latter is NULL, or to /opt/edg/vomses as a last resort.

error RETURN PARAMETER: qualifies the error message.

Returns:

NULL, or a NULL-terminated vector of contactdata structures. The only supported way to free this array is via the VOMS_DeleteContacts function. Note also that the order in which the servers are returned is unspecified.

4.1.3.17 struct [contactdata](#) VOMS_FindByVO (struct [vomsdata](#) vd, char vo, char system, char user, int error)

Gets a list of VOMS servers which serve the same VO.

Parameters:

vd The correctly initialized vomsdata structured.

vo The VO to look for.

system The directory in which to look for the system configuration files. If NULL, defaults to /opt/edc/etc/vomses

user The directory in which to look for the user configuration files. Defaults to \$VOMS_USERCONF if NULL. Again defaults to \$HOME/.edg/vomses if the latter is NULL, or to /opt/edg/vomses as a last resort.

error RETURN PARAMETER: qualifies the error message.

Returns:

NULL, or a NULL-terminated vector of contactdata structures. The only supported way to free this array is via the VOMS_DeleteContacts function. Note also that the order in which the servers are returned is unspecified.

4.1.3.18 void VOMS_FreeTargets (struct [vomsdata](#) vd, int error)

Delete the targets from the AC.

Parameters:

vd The vomsdata structure.

error RETURN PARAMETER: qualifies the error message.

- 4.1.3.19 void VOMS_FreeTargetsList (char)
- 4.1.3.20 AC VOMS_GetAC (struct voms v)
- 4.1.3.21 int VOMS_GetAttribute (struct voms v, int handle, int num, struct attribute at, struct vomsdata vd, int error)
- 4.1.3.22 const char VOMS_GetAttributeGrantor (struct voms v, int handle, struct vomsdata vd, int error)
- 4.1.3.23 int VOMS_GetAttributesNumber (struct voms v, int handle, struct vomsdata vd, int error)
- 4.1.3.24 int VOMS_GetAttributeSourceHandle (struct voms v, int num, struct vomsdata vd, int error)
- 4.1.3.25 int VOMS_GetAttributeSourcesNumber (struct voms v, struct vomsdata vd, int error)
- 4.1.3.26 char VOMS_GetTargetsList (struct voms v, struct vomsdata vd, int error)
- 4.1.3.27 int VOMS_Import (char buffer, int buflen, struct vomsdata vd, int error)

Converts data from the format used for inclusion into a certificate to the internal format
The function does verify the data.

Parameters:

- buffer contains the data to be converted
- bu en contains the length of buffer
- vd RETURN PARAMETER: contains the data returned by the connection
- error RETURN PARAMETER: Qualifies the error message

Returns:

- failure (0) or success (> 0)

- 4.1.3.28 struct vomsdata VOMS_Init (char voms_dir, char cert_dir)

Initializes a vomsdata structure for use by the other functions. N.B: This is the ONLY way to correctly initialize a vomsdata structure. It is also forbidden to directly take the sizeof() of this structure.

Parameters:

- voms The directory which contains the certificates of the VOMS servers
- cert The directory which contains the CA certificates

If voms_dir is empty, the value of the environment variable X509_VOMS_DIR is taken

If cert_dir is empty, the value of the environment variable X509_CERT_DIR is taken

Returns:

- NULL for failure, or a pointer to a properly initialized structure.

4.1.3.29 char VOMS_ListTargets (struct [vomsdata](#) vd, int error)

4.1.3.30 int VOMS_Ordering (char order, struct [vomsdata](#) vd, int error)

Further specifies the order of the returned attributes. Please do note that calls are cumulative unless [VOMS_ResetOrder\(\)](#) is called.

Parameters:

order the group:role attribute.

vd RETURN PARAMETER: contains the modified data.

error RETURN PARAMETER: Qualifies the error message

Returns:

failure (0) or success (> 0)

4.1.3.31 int VOMS_ResetOrder (struct [vomsdata](#) vd, int error)

Unsets the return order of the attributes.

Parameters:

vd RETURN PARAMETER: contains the modified data.

error RETURN PARAMETER: Qualifies the error message

Returns:

failure (0) or success (> 0)

4.1.3.32 int VOMS_Retrieve (X509_cert, STACK_OF(X509) chain, int how, struct [vomsdata](#) vd, int error)

Extracts the VOMS extension from an X.509 certificate.

The function doesn't check the validity of the certificates, but it does check the content of the user data.

Parameters:

cert The certificate with the VOMS extensions

chain The chain of the validation certificates (only the intermediate ones)

how Recursion type

vd RETURN PARAMETER: contains the data returned by the connection

error RETURN PARAMETER: Qualifies the error message

Returns:

failure (0) or success (> 0)

4.1.3.33 `int VOMS_RetrieveEXT (X509_EXTENSION ext, struct vomldata vd, int error)`

Gets VOMS information from the given extension

Parameters:

ext The extension to parse.

vd RETURN PARAMETER: contains the data returned by the connection

error RETURN PARAMETER: Qualifies the error message

Returns:

failure (0) or success (≠ 0)

4.1.3.34 `int VOMS_RetrieveFromCred (gss_cred_id_t cred, int how, struct vomldata vd, int error)`

Gets VOMS information from the given globus credential

Parameters:

cred The credential from which to retrieve the certificate.

how Recursion type

vd RETURN PARAMETER: contains the data returned by the connection

error RETURN PARAMETER: Qualifies the error message

Returns:

failure (0) or success (≠ 0)

4.1.3.35 `int VOMS_RetrieveFromCtx (gss_ctx_id_t ctx, int how, struct vomldata vd, int error)`

Gets VOMS information from the given globus context

Parameters:

ctx The context from which to retrieve the certificate.

how Recursion type

vd RETURN PARAMETER: contains the data returned by the connection

error RETURN PARAMETER: Qualifies the error message

Returns:

failure (0) or success (≠ 0)

4.1.3.36 `int VOMS_RetrieveFromFile (FILE file, int how, struct vomldata vd, int error)`

Gets VOMS information from the given globus credential

Parameters:

file The file from which to retrieve the certificate.

how Recursion type

vd RETURN PARAMETER: contains the data returned by the connection
error RETURN PARAMETER: Qualifies the error message

Returns:

failure (0) or success (≠ 0)

4.1.3.37 int VOMS_RetrieveFromProxy (inhow, struct [vomsdata](#) vd, int error)

Gets VOMS information from an existing globus proxy

Parameters:

how Recursion type

vd RETURN PARAMETER: contains the data returned by the connection

error RETURN PARAMETER: Qualifies the error message

Returns:

failure (0) or success (≠ 0)

4.1.3.38 int VOMS_SetLifetime (intlength, struct [vomsdata](#) vd, int error)

Set requested lifetime for [VOMS_Contact\(\)](#) calls.

Parameters:

length Lifetime requested.

vd RETURN PARAMETER: contains the modified data.

error RETURN PARAMETER: Qualifies the error message

Returns:

failure (0) or success (≠ 0)

4.1.3.39 int VOMS_SetTimeout (intt, struct [vomsdata](#) vd, int error)

4.1.3.40 int VOMS_SetVerificationTime (time_t verificationtime, struct [vomsdata](#) vd, int error)

4.1.3.41 int VOMS_SetVerificationType (int type, struct [vomsdata](#) vd, int error)

Index

ac
 voms, [9](#)
attribute, [5](#)
 name, [5](#)
 qualifier, [5](#)
 value, [5](#)

cap
 data, [8](#)
cdir
 vomsdata, [12](#)
contact
 contactdata, [6](#)
contactdata, [6](#)
 contact, [6](#)
 host, [6](#)
 nick, [6](#)
 port, [6](#)
 reserved, [6](#)
 version, [6](#)
 vo, [6](#)
custom
 voms, [9](#)

data, [8](#)
 cap, [8](#)
 group, [8](#)
 role, [8](#)
 vomsdata, [12](#)
datalen
 voms, [9](#)
date1
 voms, [9](#)
date2
 voms, [9](#)

extra_data
 vomsdata, [12](#)
extralen
 vomsdata, [12](#)

fqan
 voms, [10](#)

getMajorVersionNumber
 voms_apic.h, [21](#)

getMinorVersionNumber
 voms_apic.h, [21](#)
getPatchVersionNumber
 voms_apic.h, [21](#)
group
 data, [8](#)
gss_cred_id_t
 voms_apic.h, [21](#)
gss_ctx_id_t
 voms_apic.h, [21](#)

holder
 voms, [10](#)
host
 contactdata, [6](#)

name
 attribute, [5](#)
nick
 contactdata, [6](#)

port
 contactdata, [6](#)

qualifier
 attribute, [5](#)

real
 vomsdata, [12](#)
RECURSE_CHAIN
 voms_apic.h, [17](#)
RECURSE_NONE
 voms_apic.h, [17](#)
reserved
 contactdata, [6](#)
role
 data, [8](#)

serial
 voms, [10](#)
server
 voms, [10](#)
serverca
 voms, [10](#)
siglen
 voms, [10](#)

signature
 voms,10

std
 voms,10

type
 voms,10

TYPE_CUSTOM
 voms_apic.h,17

TYPE_NODATA
 voms_apic.h,17

TYPE_STD
 voms_apic.h,17

uri
 voms,11

user
 voms,11

userca
 voms,11

value
 attribute,5

vdir
 vomsdata,12

VERIFY_CERTLIST
 voms_apic.h,18

VERIFY_DATE
 voms_apic.h,18

VERIFY_FULL
 voms_apic.h,18

VERIFY_ID
 voms_apic.h,18

VERIFY_KEY
 voms_apic.h,18

VERIFY_NONE
 voms_apic.h,18

VERIFY_NOTARGET
 voms_apic.h,18

VERIFY_ORDER
 voms_apic.h,18

VERIFY_SIGN
 voms_apic.h,18

VERR_COMM
 voms_apic.h,18

VERR_DIR
 voms_apic.h,18

VERR_EXTRAINFO
 voms_apic.h,19

VERR_FORMAT
 voms_apic.h,19

VERR_IDCHECK
 voms_apic.h,19

VERR_MEM
 voms_apic.h,19

VERR_NODATA
 voms_apic.h,19

VERR_NOEXT
 voms_apic.h,19

VERR_NOIDENT
 voms_apic.h,19

VERR_NOINIT
 voms_apic.h,19

VERR_NONE
 voms_apic.h,19

VERR_NOCKET
 voms_apic.h,20

VERR_NOTAVAIL
 voms_apic.h,20

VERR_ORDER
 voms_apic.h,20

VERR_PARAM
 voms_apic.h,20

VERR_PARSE
 voms_apic.h,20

VERR_SERVER
 voms_apic.h,20

VERR_SERVERCODE
 voms_apic.h,20

VERR_SIGN
 voms_apic.h,20

VERR_TIME
 voms_apic.h,20

VERR_TYPE
 voms_apic.h,21

VERR_VERIFY
 voms_apic.h,21

version
 contactdata,6
 voms,11

vo
 contactdata,6

volen
 vomsdata,12

voms,9
 ac,9
 custom,9
 datalen,9
 date1,9
 date2,9
 fqan,10
 holder,10
 serial,10
 server,10
 serverca,10
 siglen,10
 signature,10
 std,10

- type, [10](#)
- uri, [11](#)
- user, [11](#)
- userca, [11](#)
- version, [11](#)
- voname, [11](#)
- VOMS_AddTarget
 - voms_apic.h [21](#)
- voms_apic.h, [15](#)
 - getMajorVersionNumber [21](#)
 - getMinorVersionNumber [21](#)
 - getPatchVersionNumber [21](#)
 - gss_cred_id_t [21](#)
 - gss_ctx_id_t [21](#)
 - RECURSE_CHAIN, [17](#)
 - RECURSE_NONE, [17](#)
 - TYPE_CUSTOM, [17](#)
 - TYPE_NODATA, [17](#)
 - TYPE_STD, [17](#)
 - VERIFY_CERTLIST, [18](#)
 - VERIFY_DATE, [18](#)
 - VERIFY_FULL, [18](#)
 - VERIFY_ID, [18](#)
 - VERIFY_KEY, [18](#)
 - VERIFY_NONE, [18](#)
 - VERIFY_NOTARGET, [18](#)
 - VERIFY_ORDER, [18](#)
 - VERIFY_SIGN, [18](#)
 - VERR_COMM, [18](#)
 - VERR_DIR, [18](#)
 - VERR_EXTRAINFO, [19](#)
 - VERR_FORMAT, [19](#)
 - VERR_IDCHECK, [19](#)
 - VERR_MEM, [19](#)
 - VERR_NODATA, [19](#)
 - VERR_NOEXT, [19](#)
 - VERR_NOIDENT, [19](#)
 - VERR_NOINIT, [19](#)
 - VERR_NONE, [19](#)
 - VERR_NOCKET, [20](#)
 - VERR_NOTAVAIL, [20](#)
 - VERR_ORDER, [20](#)
 - VERR_PARAM, [20](#)
 - VERR_PARSE, [20](#)
 - VERR_SERVER, [20](#)
 - VERR_SERVERCODE, [20](#)
 - VERR_SIGN, [20](#)
 - VERR_TIME, [20](#)
 - VERR_TYPE, [21](#)
 - VERR_VERIFY, [21](#)
 - VOMS_AddTarget [21](#)
 - VOMS_Contact [21](#)
 - VOMS_ContactRaw [22](#)
 - VOMS_Copy, [22](#)
 - VOMS_CopyAll, [22](#)
 - VOMS_DefaultData [23](#)
 - VOMS_Delete [23](#)
 - VOMS_DeleteContacts [23](#)
 - VOMS_Destroy [23](#)
 - VOMS_Duplicate [23](#)
 - VOMS_ErrorMessage [24](#)
 - VOMS_Export, [24](#)
 - VOMS_FindByAlias, [24](#)
 - VOMS_FindByVO, [24](#)
 - VOMS_FreeTargets [25](#)
 - VOMS_FreeTargetsList [25](#)
 - VOMS_GetAC, [26](#)
 - VOMS_GetAttribute [26](#)
 - VOMS_GetAttributeGrantor [26](#)
 - VOMS_GetAttributesNumber [26](#)
 - VOMS_GetAttributeSourceHandle [26](#)
 - VOMS_GetAttributeSourcesNumber [26](#)
 - VOMS_GetTargetsList [26](#)
 - VOMS_Import, [26](#)
 - VOMS_Init, [26](#)
 - VOMS_ListTargets [26](#)
 - VOMS_Ordering [27](#)
 - VOMS_ResetOrder [27](#)
 - VOMS_Retrieve [27](#)
 - VOMS_RetrieveEXT [27](#)
 - VOMS_RetrieveFromCred [28](#)
 - VOMS_RetrieveFromCtx [28](#)
 - VOMS_RetrieveFromFile [28](#)
 - VOMS_RetrieveFromProxy [29](#)
 - VOMS_SetLifetime [29](#)
 - VOMS_SetTimeout [29](#)
 - VOMS_SetVerificationTime [29](#)
 - VOMS_SetVerificationType [29](#)
 - VOMS_Contact
 - voms_apic.h [21](#)
 - VOMS_ContactRaw
 - voms_apic.h [22](#)
 - VOMS_Copy
 - voms_apic.h [22](#)
 - VOMS_CopyAll
 - voms_apic.h [22](#)
 - VOMS_DefaultData
 - voms_apic.h [23](#)
 - VOMS_Delete
 - voms_apic.h [23](#)
 - VOMS_DeleteContacts
 - voms_apic.h [23](#)
 - VOMS_Destroy
 - voms_apic.h [23](#)
 - VOMS_Duplicate
 - voms_apic.h [23](#)
 - VOMS_ErrorMessage
 - voms_apic.h [24](#)

VOMS_Export
 voms_apic.h[24](#)
VOMS_FindByAlias
 voms_apic.h[24](#)
VOMS_FindByVO
 voms_apic.h[24](#)
VOMS_FreeTargets
 voms_apic.h[25](#)
VOMS_FreeTargetsList
 voms_apic.h[25](#)
VOMS_GetAC
 voms_apic.h[26](#)
VOMS_GetAttribute
 voms_apic.h[26](#)
VOMS_GetAttributeGrantor
 voms_apic.h[26](#)
VOMS_GetAttributesNumber
 voms_apic.h[26](#)
VOMS_GetAttributeSourceHandle
 voms_apic.h[26](#)
VOMS_GetAttributeSourcesNumber
 voms_apic.h[26](#)
VOMS_GetTargetsList
 voms_apic.h[26](#)
VOMS_Import
 voms_apic.h[26](#)
VOMS_Init
 voms_apic.h[26](#)
VOMS_ListTargets
 voms_apic.h[26](#)
VOMS_Ordering
 voms_apic.h[27](#)
VOMS_ResetOrder
 voms_apic.h[27](#)
VOMS_Retrieve
 voms_apic.h[27](#)
VOMS_RetrieveEXT
 voms_apic.h[27](#)
VOMS_RetrieveFromCred
 voms_apic.h[28](#)
VOMS_RetrieveFromCtx
 voms_apic.h[28](#)
VOMS_RetrieveFromFile
 voms_apic.h[28](#)
VOMS_RetrieveFromProxy
 voms_apic.h[29](#)
VOMS_SetLifetime
 voms_apic.h[29](#)
VOMS_SetTimeout
 voms_apic.h[29](#)
VOMS_SetVerificationTime
 voms_apic.h[29](#)
VOMS_SetVerificationType
 voms_apic.h[29](#)
vomsdata,[12](#)
 cdir, [12](#)
 data, [12](#)
 extra_data, [12](#)
 extralen, [12](#)
 real, [12](#)
 vdir, [12](#)
 volen, [12](#)
 workvo, [13](#)
voname
 voms, [11](#)
workvo
 vomsdata, [13](#)