

# VOMS C API

## 1.5.0

Generated by Doxygen 1.5.7.1

Tue Oct 20 07:30:49 2009



# Contents

<b>1</b>	<b>Data Structure Index</b>	<b>1</b>
1.1	Data Structures . . . . .	1
<b>2</b>	<b>File Index</b>	<b>3</b>
2.1	File List . . . . .	3
<b>3</b>	<b>Data Structure Documentation</b>	<b>5</b>
3.1	attribute Struct Reference . . . . .	5
3.1.1	Detailed Description . . . . .	5
3.1.2	Field Documentation . . . . .	5
3.1.2.1	name . . . . .	5
3.1.2.2	qualifier . . . . .	5
3.1.2.3	value . . . . .	5
3.2	contactdata Struct Reference . . . . .	6
3.2.1	Detailed Description . . . . .	6
3.2.2	Field Documentation . . . . .	6
3.2.2.1	contact . . . . .	6
3.2.2.2	host . . . . .	6
3.2.2.3	nick . . . . .	6
3.2.2.4	port . . . . .	6
3.2.2.5	reserved . . . . .	6
3.2.2.6	version . . . . .	7
3.2.2.7	vo . . . . .	7
3.3	data Struct Reference . . . . .	8
3.3.1	Detailed Description . . . . .	8
3.3.2	Field Documentation . . . . .	8
3.3.2.1	cap . . . . .	8
3.3.2.2	group . . . . .	8
3.3.2.3	role . . . . .	8

3.4	voms Struct Reference	9
3.4.1	Detailed Description	9
3.4.2	Field Documentation	9
3.4.2.1	ac	9
3.4.2.2	custom	9
3.4.2.3	datalen	9
3.4.2.4	date1	10
3.4.2.5	date2	10
3.4.2.6	fqan	10
3.4.2.7	holder	10
3.4.2.8	serial	10
3.4.2.9	server	10
3.4.2.10	serverca	10
3.4.2.11	siglen	10
3.4.2.12	signature	10
3.4.2.13	std	11
3.4.2.14	type	11
3.4.2.15	uri	11
3.4.2.16	user	11
3.4.2.17	userca	11
3.4.2.18	version	11
3.4.2.19	voname	11
3.5	vomsdata Struct Reference	12
3.5.1	Detailed Description	12
3.5.2	Field Documentation	12
3.5.2.1	cdir	12
3.5.2.2	data	12
3.5.2.3	extra_data	12
3.5.2.4	extralen	12
3.5.2.5	real	12
3.5.2.6	vdir	13
3.5.2.7	volen	13
3.5.2.8	workvo	13
<b>4</b>	<b>File Documentation</b>	<b>15</b>
4.1	voms_apic.h File Reference	15
4.1.1	Define Documentation	17

4.1.1.1	RECURSE_CHAIN	17
4.1.1.2	RECURSE_NONE	17
4.1.1.3	TYPE_CUSTOM	17
4.1.1.4	TYPE_NODATA	17
4.1.1.5	TYPE_STD	18
4.1.1.6	VERIFY_CERTLIST	18
4.1.1.7	VERIFY_DATE	18
4.1.1.8	VERIFY_FULL	18
4.1.1.9	VERIFY_ID	18
4.1.1.10	VERIFY_KEY	18
4.1.1.11	VERIFY_NONE	18
4.1.1.12	VERIFY_NOTARGET	18
4.1.1.13	VERIFY_ORDER	18
4.1.1.14	VERIFY_SIGN	18
4.1.1.15	VERR_COMM	18
4.1.1.16	VERR_DIR	19
4.1.1.17	VERR_EXTRAINFO	19
4.1.1.18	VERR_FORMAT	19
4.1.1.19	VERR_IDCHECK	19
4.1.1.20	VERR_MEM	19
4.1.1.21	VERR_NODATA	19
4.1.1.22	VERR_NOEXT	19
4.1.1.23	VERR_NOIDENT	19
4.1.1.24	VERR_NOINIT	19
4.1.1.25	VERR_NONE	20
4.1.1.26	VERR_NOSOCKET	20
4.1.1.27	VERR_NOTAVAIL	20
4.1.1.28	VERR_ORDER	20
4.1.1.29	VERR_PARAM	20
4.1.1.30	VERR_PARSE	20
4.1.1.31	VERR_SERVER	20
4.1.1.32	VERR_SERVERCODE	20
4.1.1.33	VERR_SIGN	20
4.1.1.34	VERR_TIME	21
4.1.1.35	VERR_TYPE	21
4.1.1.36	VERR_VERIFY	21

4.1.2	Typedef Documentation	21
4.1.2.1	gss_cred_id_t	21
4.1.2.2	gss_ctx_id_t	21
4.1.3	Function Documentation	21
4.1.3.1	getMajorVersionNumber	21
4.1.3.2	getMinorVersionNumber	21
4.1.3.3	getPatchVersionNumber	21
4.1.3.4	VOMS_AddTarget	21
4.1.3.5	VOMS_Contact	22
4.1.3.6	VOMS_ContactRaw	22
4.1.3.7	VOMS_Copy	22
4.1.3.8	VOMS_CopyAll	23
4.1.3.9	VOMS_DefaultData	23
4.1.3.10	VOMS_Delete	23
4.1.3.11	VOMS_DeleteContacts	23
4.1.3.12	VOMS_Destroy	24
4.1.3.13	VOMS_Duplicate	24
4.1.3.14	VOMS_ErrorMessage	24
4.1.3.15	VOMS_Export	24
4.1.3.16	VOMS_FindByAlias	24
4.1.3.17	VOMS_FindByVO	25
4.1.3.18	VOMS_FreeTargets	25
4.1.3.19	VOMS_FreeTargetsList	26
4.1.3.20	VOMS_GetAC	26
4.1.3.21	VOMS_GetAttribute	26
4.1.3.22	VOMS_GetAttributeGrantor	26
4.1.3.23	VOMS_GetAttributesNumber	26
4.1.3.24	VOMS_GetAttributeSourceHandle	26
4.1.3.25	VOMS_GetAttributeSourcesNumber	26
4.1.3.26	VOMS_GetTargetsList	26
4.1.3.27	VOMS_Import	26
4.1.3.28	VOMS_Init	26
4.1.3.29	VOMS_ListTargets	27
4.1.3.30	VOMS_Ordering	27
4.1.3.31	VOMS_ResetOrder	27
4.1.3.32	VOMS_Retrieve	27

---

4.1.3.33	VOMS_RetrieveEXT . . . . .	28
4.1.3.34	VOMS_RetrieveFromCred . . . . .	28
4.1.3.35	VOMS_RetrieveFromCtx . . . . .	28
4.1.3.36	VOMS_RetrieveFromFile . . . . .	29
4.1.3.37	VOMS_RetrieveFromProxy . . . . .	29
4.1.3.38	VOMS_SetLifetime . . . . .	29
4.1.3.39	VOMS_SetTimeout . . . . .	29
4.1.3.40	VOMS_SetVerificationTime . . . . .	29
4.1.3.41	VOMS_SetVerificationType . . . . .	29





# Chapter 1

# Data Structure Index

## 1.1 Data Structures

Here are the data structures with brief descriptions:

<a href="#">attribute</a>	5
<a href="#">contactdata</a>	6
<a href="#">data</a> (User's characteristics: can be repeated )	8
<a href="#">voms</a>	9
<a href="#">vomsdata</a>	12



# Chapter 2

## File Index

### 2.1 File List

Here is a list of all files with brief descriptions:

<a href="#">voms_apic.h</a>	.....	15
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## Chapter 3

# 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 Detailed Description

Definition at line 39 of file voms\_apic.h.

#### 3.1.2 Field Documentation

##### 3.1.2.1 const char\* attribute::name

Definition at line 40 of file voms\_apic.h.

##### 3.1.2.2 const char\* attribute::qualifier

Definition at line 42 of file voms\_apic.h.

##### 3.1.2.3 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 Detailed Description

Definition at line 45 of file voms\_apic.h.

### 3.2.2 Field Documentation

#### 3.2.2.1 char\* contactdata::contact

The subject of the server's certificate

Definition at line 50 of file voms\_apic.h.

#### 3.2.2.2 char\* contactdata::host

The hostname of the server

Definition at line 49 of file voms\_apic.h.

#### 3.2.2.3 char\* contactdata::nick

< You must never allocate directly this structure. Its sizeof() is subject to change without notice. The only supported way to obtain it is via the VOMS\_FindBy\* functions. The alias of the server

Definition at line 48 of file voms\_apic.h.

#### 3.2.2.4 int contactdata::port

The port on which the server is listening

Definition at line 52 of file voms\_apic.h.

#### 3.2.2.5 char\* contactdata::reserved

HANDS OFF!

Definition at line 53 of file voms\_apic.h.

### 3.2.2.6 int contactdata::version

The version of Globus on which this server runs.

Definition at line 54 of file voms\_apic.h.

### 3.2.2.7 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](#)
- struct [data](#) \*\* [std](#)
- char \* [custom](#)
- int [datalen](#)
- int [version](#)
- char \*\* [fqan](#)
- char \* [serial](#)
- AC \* [ac](#)
- X509 \* [holder](#)

### 3.4.1 Detailed Description

Definition at line 65 of file voms\_apic.h.

### 3.4.2 Field Documentation

#### 3.4.2.1 AC\* voms::ac

Definition at line 85 of file voms\_apic.h.

#### 3.4.2.2 char\* voms::custom

The [data](#) returned by an S command

Definition at line 78 of file voms\_apic.h.

#### 3.4.2.3 int voms::datalen

Definition at line 79 of file voms\_apic.h.

**3.4.2.4 char\* voms::date1**

Beginning of validity of the user info

Definition at line 74 of file voms\_apic.h.

**3.4.2.5 char\* voms::date2**

End of validity of the user info

Definition at line 75 of file voms\_apic.h.

**3.4.2.6 char\*\* voms::fqan**

User's attributes in compact format

Definition at line 81 of file voms\_apic.h.

**3.4.2.7 X509\* voms::holder**

Definition at line 86 of file voms\_apic.h.

**3.4.2.8 char\* voms::serial**

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

Definition at line 82 of file voms\_apic.h.

**3.4.2.9 char\* voms::server**

The VOMS server DN, as from its certificate

Definition at line 70 of file voms\_apic.h.

**3.4.2.10 char\* voms::serverca**

The CA which signed the VOMS certificate

Definition at line 71 of file voms\_apic.h.

**3.4.2.11 int voms::siglen**

The length of the VOMS server signature

Definition at line 66 of file voms\_apic.h.

**3.4.2.12 char\* voms::signature**

The VOMS server signature

Definition at line 67 of file voms\_apic.h.

**3.4.2.13 struct data\*\* voms::std** [read]

User's characteristics

Definition at line 77 of file voms\_apic.h.

**3.4.2.14 int voms::type**

The type of [data](#) returned

Definition at line 76 of file voms\_apic.h.

**3.4.2.15 char\* voms::uri**

The URI of the VOMS server

Definition at line 73 of file voms\_apic.h.

**3.4.2.16 char\* voms::user**

The user's DN, as from his certificate

Definition at line 68 of file voms\_apic.h.

**3.4.2.17 char\* voms::userca**

The CA which signed the user's certificate

Definition at line 69 of file voms\_apic.h.

**3.4.2.18 int voms::version**

Definition at line 80 of file voms\_apic.h.

**3.4.2.19 char\* voms::voname**

The name of the VO to which the VOMS belongs

Definition at line 72 of file voms\_apic.h.

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

- [voms\\_apic.h](#)

## 3.5 vomsdata Struct Reference

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

### Data Fields

- char \* [cdir](#)
- char \* [vdir](#)
- struct [voms](#) \*\* [data](#)
- char \* [workvo](#)
- char \* [extra\\_data](#)
- int [volen](#)
- int [extralen](#)
- struct [vomsdata](#) \* [real](#)

### 3.5.1 Detailed Description

Definition at line 129 of file voms\_apic.h.

### 3.5.2 Field Documentation

#### 3.5.2.1 char\* vomsdata::cdir

Definition at line 130 of file voms\_apic.h.

#### 3.5.2.2 struct voms\*\* vomsdata::data [read]

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.

#### 3.5.2.3 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.

#### 3.5.2.4 int vomsdata::extralen

Definition at line 147 of file voms\_apic.h.

#### 3.5.2.5 struct vomsdata\* vomsdata::real [read]

Definition at line 149 of file voms\_apic.h.

**3.5.2.6 char\* vomsdata::vdir**

Definition at line 131 of file voms\_apic.h.

**3.5.2.7 int vomsdata::volen**

Definition at line 146 of file voms\_apic.h.

**3.5.2.8 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

## File Documentation

### 4.1 voms\_apic.h File Reference

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

#### Data Structures

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

- struct [contactdata](#) \*\* [VOMS\\_FindByAlias](#) (struct [vomsdata](#) \*vd, char \*alias, char \*system, char \*user, int \*error)
- struct [contactdata](#) \*\* [VOMS\\_FindByVO](#) (struct [vomsdata](#) \*vd, char \*vo, char \*system, char \*user, int \*error)
- void [VOMS\\_DeleteContacts](#) (struct [contactdata](#) \*\*list)
- struct [vomsdata](#) \* [VOMS\\_Init](#) (char \*voms, char \*cert)
- struct [voms](#) \* [VOMS\\_Copy](#) (struct [voms](#) \*v, int \*error)
- struct [vomsdata](#) \* [VOMS\\_CopyAll](#) (struct [vomsdata](#) \*vd, int \*error)
- void [VOMS\\_Delete](#) (struct [voms](#) \*v)
- int [VOMS\\_AddTarget](#) (struct [vomsdata](#) \*vd, char \*target, int \*error)
- void [VOMS\\_FreeTargets](#) (struct [vomsdata](#) \*vd, int \*error)
- char \* [VOMS\\_ListTargets](#) (struct [vomsdata](#) \*vd, int \*error)
- int [VOMS\\_SetVerificationType](#) (int type, struct [vomsdata](#) \*vd, int \*error)
- int [VOMS\\_SetLifetime](#) (int length, struct [vomsdata](#) \*vd, int \*error)
- void [VOMS\\_Destroy](#) (struct [vomsdata](#) \*vd)
- int [VOMS\\_ResetOrder](#) (struct [vomsdata](#) \*vd, int \*error)
- int [VOMS\\_Ordering](#) (char \*order, struct [vomsdata](#) \*vd, int \*error)
- int [VOMS\\_Contact](#) (char \*hostname, int port, char \*servsubject, char \*command, struct [vomsdata](#) \*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)
- struct [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\\_RetrieveFromCred](#) (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\\_RetrieveFromCtx](#) (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)
- struct [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 Define Documentation

### 4.1.1.1 #define RECURSE\_CHAIN 0

Definition at line 90 of file voms\_apic.h.

### 4.1.1.2 #define RECURSE\_NONE 1

Definition at line 91 of file voms\_apic.h.

### 4.1.1.3 #define TYPE\_CUSTOM 2

result of an S command

Definition at line 62 of file voms\_apic.h.

### 4.1.1.4 #define TYPE\_NODATA 0

no [data](#)

Definition at line 60 of file 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)` [read]

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*)** [read]

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: qualifies the error message.

**Returns:**

NULL (error) or the new [vomsdata](#) structure.

**4.1.3.9 struct voms\* VOMS\_DefaultData (struct vomsdata \* *vd*, int \* *error*)** [read]

Gets the default attributes from a [vomsdata](#) structure.

**Parameters:**

*vd* the [vomsdata](#) structure to analyze

*error* RETURN PARAMETER: Qualifies the error message

**Returns:**

a pointer to the relevant [voms](#) structure. DO NOT modify the fields.

**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*) [read]

#### 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](#)

*buflen* 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*) [read]

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 ~/.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*)** [read]

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 ~/.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

*buflen* 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*, char \* *cert*) [[read](#)]

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 specified 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 vomsdata * 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 vomsdata * 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 vomsdata * 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 vomsdata \* *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 (int *how*, 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 (int *length*, 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 (int *t*, 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, [7](#)
- custom
  - voms, [9](#)
- data, [8](#)
  - cap, [8](#)
  - group, [8](#)
  - role, [8](#)
  - vomsdata, [12](#)
- datalen
  - voms, [9](#)
- date1
  - voms, [9](#)
- date2
  - voms, [10](#)
- 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, 11

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  
    vomldata, 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\_EXTRINFO  
    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\_NOSOCKET  
    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, 7

volen  
    vomldata, 13

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

- type, 11
- 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\_NOSOCKET, 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, 23
  - VOMS\_DefaultData, 23
  - VOMS\_Delete, 23
  - VOMS\_DeleteContacts, 23
  - VOMS\_Destroy, 23
  - VOMS\_Duplicate, 24
  - VOMS\_ErrorMessage, 24
  - VOMS\_Export, 24
  - VOMS\_FindByAlias, 24
  - VOMS\_FindByVO, 25
  - 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, 23
  - 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, 24
  - VOMS\_ErrorMessage
    - voms\_apic.h, 24



VOMS\_Export  
    voms\_apic.h, [24](#)  
VOMS\_FindByAlias  
    voms\_apic.h, [24](#)  
VOMS\_FindByVO  
    voms\_apic.h, [25](#)  
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, [13](#)  
    workvo, [13](#)  
voname  
    voms, [11](#)  
workvo  
    vomsdata, [13](#)