globus gsi cert utils

8.3

Generated by Doxygen 1.8.0

Sun May 27 2012 15:49:52

Contents

1 Globus GSI Certificate Handling Utilities **1**

2 Module Index **1**

2.1 Modules 1

3 Module Documentation **1**

3.1 Activation 1

3.1.1 Detailed Description 1

3.1.2 Define Documentation 2

3.2 Cert Utils Functions 3

3.2.1 Detailed Description 3

3.2.2 Function Documentation 3

3.3 Cert Utils Constants 4

3.3.1 Typedef Documentation 4

3.3.2 Enumeration Type Documentation 5

1 Globus GSI Certificate Handling Utilities

The Globus GSI Certificate Handling Utilities library. This library contains helper functions for dealing with certificates.

- **Activation** (p. 1)
  - **Cert Utils Functions** (p. 3)
  - **Cert Utils Constants** (p. 4)

2 Module Index

2.1 Modules

Here is a list of all modules:

Activation **1**

Cert Utils Functions **3**

Cert Utils Constants **4**

3 Module Documentation

3.1 Activation

Defines

- #define **GLOBUS_GSI_CERT_UTILS_MODULE**

3.1.1 Detailed Description

Globus GSI Cert Utils uses standard Globus module activation and deactivation. Before any Globus GSI Cert Utils functions are called, the following function must be called:

```
globus_module_activate(GLOBUS_GSI_CERT_UTILS_MODULE)
```

This function returns GLOBUS_SUCCESS if Globus GSI Credential was successfully initialized, and you are therefore allowed to subsequently call Globus GSI Cert Utils functions. Otherwise, an error code is returned, and Globus GSI Cert Utils functions should not be subsequently called. This function may be called multiple times.

To deactivate Globus GSI Cert Utils, the following function must be called:

```
globus_module_deactivate(GLOBUS_GSI_CERT_UTILS_MODULE)
```

This function should be called once for each time Globus GSI Cert Utils was activated.

3.1.2 Define Documentation

3.1.2.1 #define GLOBUS_GSI_CERT_UTILS_MODULE

Module descriptor.

3.2 Cert Utils Functions

Functions

- globus_result_t **globus_gsi_cert_utils_get_eec** (STACK_OF(X509)*cert_chain, X509 **eec)
- globus_result_t **globus_gsi_cert_utils_get_identity_cert** (STACK_OF(X509)*cert_chain, X509 **identity_cert)

3.2.1 Detailed Description

A generic set of utility functions for manipulating OpenSSL objects, such as X509 certificates.

3.2.2 Function Documentation

3.2.2.1 globus_result_t globus_gsi_cert_utils_get_eec (STACK_OF(X509)* *cert_chain,* X509 ** *eec*)

Get the end-entity certificate associated with a certificate chain.

Parameters

cert_chain	Certificate chain to inspect.
eec	Pointer to be set to the EEC value from within the cert chain. Must freed by the caller.

3.2.2.2 globus_result_t globus_gsi_cert_utils_get_identity_cert (STACK_OF(X509)* *cert_chain,* X509 ** *identity_cert*)

Get the identity-providing certificate associated with a certificate chain.

This may be an independent proxy or a end-entity certificate.

Parameters

cert_chain	Certificate chain to inspect.
eec	Pointer to be set to the certificate value from within the cert chain. Must freed by the caller.

3.3 Cert Utils Constants

Typedefs

- typedef enum
  globus_gsi_cert_utils_cert_type_e globus_gsi_cert_utils_cert_type_t

Enumerations

- enum **globus_gsi_cert_utils_error_t** {
  GLOBUS_GSI_CERT_UTILS_ERROR_SUCCESS = 0,
  GLOBUS_GSI_CERT_UTILS_ERROR_GETTING_NAME_ENTRY_OF_SUBJECT = 1,
  GLOBUS_GSI_CERT_UTILS_ERROR_COPYING_SUBJECT = 2,
  GLOBUS_GSI_CERT_UTILS_ERROR_GETTING_CN_ENTRY = 3,
  GLOBUS_GSI_CERT_UTILS_ERROR_ADDING_CN_TO_SUBJECT = 4,
  GLOBUS_GSI_CERT_UTILS_ERROR_OUT_OF_MEMORY = 5,
  GLOBUS_GSI_CERT_UTILS_ERROR_UNEXPECTED_FORMAT = 6,
  GLOBUS_GSI_CERT_UTILS_ERROR_NON_COMPLIANT_PROXY = 7,
  GLOBUS_GSI_CERT_UTILS_ERROR_DETERMINING_CERT_TYPE = 8,
  GLOBUS_GSI_CERT_UTILS_ERROR_LAST = 9 }
- enum **globus_gsi_cert_utils_cert_type_e** {
  GLOBUS_GSI_CERT_UTILS_TYPE_DEFAULT = 0,
  GLOBUS_GSI_CERT_UTILS_TYPE_EEC = (1 << 0),
  GLOBUS_GSI_CERT_UTILS_TYPE_CA = (1 << 1),
  GLOBUS_GSI_CERT_UTILS_TYPE_GSI_2 = (1 << 2),
  GLOBUS_GSI_CERT_UTILS_TYPE_GSI_3 = (1 << 3),
  GLOBUS_GSI_CERT_UTILS_TYPE_RFC = (1 << 4),
  GLOBUS_GSI_CERT_UTILS_TYPE_FORMAT_MASK,
  GLOBUS_GSI_CERT_UTILS_TYPE_IMPERSONATION_PROXY = (1 << 5),
  GLOBUS_GSI_CERT_UTILS_TYPE_LIMITED_PROXY = (1 << 6),
  GLOBUS_GSI_CERT_UTILS_TYPE_RESTRICTED_PROXY = (1 << 7),
  GLOBUS_GSI_CERT_UTILS_TYPE_INDEPENDENT_PROXY = (1 << 8),
  GLOBUS_GSI_CERT_UTILS_TYPE_PROXY_MASK,
  GLOBUS_GSI_CERT_UTILS_TYPE_GSI_3_IMPERSONATION_PROXY,
  GLOBUS_GSI_CERT_UTILS_TYPE_GSI_3_INDEPENDENT_PROXY,
  GLOBUS_GSI_CERT_UTILS_TYPE_GSI_3_LIMITED_PROXY,
  GLOBUS_GSI_CERT_UTILS_TYPE_GSI_3_RESTRICTED_PROXY,
  GLOBUS_GSI_CERT_UTILS_TYPE_GSI_2_PROXY,
  GLOBUS_GSI_CERT_UTILS_TYPE_GSI_2_LIMITED_PROXY,
  GLOBUS_GSI_CERT_UTILS_TYPE_RFC_IMPERSONATION_PROXY,
  GLOBUS_GSI_CERT_UTILS_TYPE_RFC_INDEPENDENT_PROXY,
  GLOBUS_GSI_CERT_UTILS_TYPE_RFC_LIMITED_PROXY,
  GLOBUS_GSI_CERT_UTILS_TYPE_RFC_RESTRICTED_PROXY }

3.3.1 Typedef Documentation

3.3.1.1 typedef enum globus_gsi_cert_utils_cert_type_e globus_gsi_cert_utils_cert_type_t

Certificate Types.

These certificate types are used to describe some properties of a certificate and to specify what type of proxy should be generated in the proxy core code. There are two non-proxy types of certificates understood by Globus: EEC (End-Entity Certificate) and CA (Certificate Authority Certificates), three proxy formats (GSI 2 "legacy" proxies, GSI 3 "Draft" proxies, and RFC 3820-compliant proxies), and four types of proxy (limited, impersonation "full", restricted, and independent). The latter two types are not expressible in the GSI 2 format.

In addition to enumerations for the concrete renderings of certificate format and type combined, there are default, formats-without-types and types-without-formats so that application logic which uses the proxy library can request default proxy formats which are compatible with the issuing certificate.

3.3.2 Enumeration Type Documentation

3.3.2.1 enum globus_gsi_cert_utils_error_t

Cert Utils Error Codes.

Enumerator:

GLOBUS_GSI_CERT_UTILS_ERROR_SUCCESS Success - never used.

GLOBUS_GSI_CERT_UTILS_ERROR_GETTING_NAME_ENTRY_OF_SUBJECT Failed to retreive a subcomponent of the subject.

GLOBUS_GSI_CERT_UTILS_ERROR_COPYING_SUBJECT A error occured while trying to copy a X.509 subject.

GLOBUS_GSI_CERT_UTILS_ERROR_GETTING_CN_ENTRY Failed to retreive a CN subcomponent of the subject.

GLOBUS_GSI_CERT_UTILS_ERROR_ADDING_CN_TO_SUBJECT Failed to add a CN component to a X.509 subject name.

GLOBUS_GSI_CERT_UTILS_ERROR_OUT_OF_MEMORY Out of memory.

GLOBUS_GSI_CERT_UTILS_ERROR_UNEXPECTED_FORMAT Something unexpected happen while converting a string subject to a X509_NAME structure.

GLOBUS_GSI_CERT_UTILS_ERROR_NON_COMPLIANT_PROXY Proxy does not comply with the expected format.

GLOBUS_GSI_CERT_UTILS_ERROR_DETERMINING_CERT_TYPE Couldn't dtermine the certificate type.

GLOBUS_GSI_CERT_UTILS_ERROR_LAST Last marker - never used.

3.3.2.2 enum globus_gsi_cert_utils_cert_type_e

Certificate Types.

These certificate types are used to describe some properties of a certificate and to specify what type of proxy should be generated in the proxy core code. There are two non-proxy types of certificates understood by Globus: EEC (End-Entity Certificate) and CA (Certificate Authority Certificates), three proxy formats (GSI 2 "legacy" proxies, GSI 3 "Draft" proxies, and RFC 3820-compliant proxies), and four types of proxy (limited, impersonation "full", restricted, and independent). The latter two types are not expressible in the GSI 2 format.

In addition to enumerations for the concrete renderings of certificate format and type combined, there are default, formats-without-types and types-without-formats so that application logic which uses the proxy library can request default proxy formats which are compatible with the issuing certificate.

Enumerator:

GLOBUS_GSI_CERT_UTILS_TYPE_DEFAULT Default proxy type.

GLOBUS_GSI_CERT_UTILS_TYPE_EEC A end entity certificate.

GLOBUS_GSI_CERT_UTILS_TYPE_CA A CA certificate.

GLOBUS_GSI_CERT_UTILS_TYPE_GSI_2 Legacy Proxy Format.

GLOBUS_GSI_CERT_UTILS_TYPE_GSI_3 X.509 Proxy Certificate Profile (draft) Proxy Format.

GLOBUS_GSI_CERT_UTILS_TYPE_RFC X.509 Proxy Certificate Profile Compliant Proxy Format.

GLOBUS_GSI_CERT_UTILS_TYPE_FORMAT_MASK Proxy certificate formats mask.

GLOBUS_GSI_CERT_UTILS_TYPE_IMPERSONATION_PROXY Impersonation proxy type.

GLOBUS_GSI_CERT_UTILS_TYPE_LIMITED_PROXY Limited proxy type.

GLOBUS_GSI_CERT_UTILS_TYPE_RESTRICTED_PROXY Restricted proxy type.

GLOBUS_GSI_CERT_UTILS_TYPE_INDEPENDENT_PROXY Independent proxy type.

GLOBUS_GSI_CERT_UTILS_TYPE_PROXY_MASK Proxy types mask.

GLOBUS_GSI_CERT_UTILS_TYPE_GSI_3_IMPERSONATION_PROXY A X.509 Proxy Certificate Profile (pre-RFC) compliant impersonation proxy.

GLOBUS_GSI_CERT_UTILS_TYPE_GSI_3_INDEPENDENT_PROXY A X.509 Proxy Certificate Profile (pre-RFC) compliant independent proxy.

GLOBUS_GSI_CERT_UTILS_TYPE_GSI_3_LIMITED_PROXY A X.509 Proxy Certificate Profile (pre-RFC) compliant limited proxy.

GLOBUS_GSI_CERT_UTILS_TYPE_GSI_3_RESTRICTED_PROXY A X.509 Proxy Certificate Profile (pre-RFC) compliant restricted proxy.

GLOBUS_GSI_CERT_UTILS_TYPE_GSI_2_PROXY A legacy Globus impersonation proxy.

GLOBUS_GSI_CERT_UTILS_TYPE_GSI_2_LIMITED_PROXY A legacy Globus limited impersonation proxy.

GLOBUS_GSI_CERT_UTILS_TYPE_RFC_IMPERSONATION_PROXY A X.509 Proxy Certificate Profile RFC compliant impersonation proxy.

GLOBUS_GSI_CERT_UTILS_TYPE_RFC_INDEPENDENT_PROXY A X.509 Proxy Certificate Profile RFC compliant independent proxy.

GLOBUS_GSI_CERT_UTILS_TYPE_RFC_LIMITED_PROXY A X.509 Proxy Certificate Profile RFC compliant limited proxy.

GLOBUS_GSI_CERT_UTILS_TYPE_RFC_RESTRICTED_PROXY A X.509 Proxy Certificate Profile RFC compliant restricted proxy.

Index

Activation, 1
    GLOBUS_GSI_CERT_UTILS_MODULE, 2

Cert Utils Constants, 4
    GLOBUS_GSI_CERT_UTILS_ERROR_ADDING_CN_TO_SUBJECT, 5
    GLOBUS_GSI_CERT_UTILS_ERROR_COPYING_SUBJECT, 5
    GLOBUS_GSI_CERT_UTILS_ERROR_DETERMINING_CERT_TYPE, 5
    GLOBUS_GSI_CERT_UTILS_ERROR_GETTING_CN_ENTRY, 5
    GLOBUS_GSI_CERT_UTILS_ERROR_GETTING_NAME_ENTRY_OF_SUBJECT, 5
    GLOBUS_GSI_CERT_UTILS_ERROR_LAST, 5
    GLOBUS_GSI_CERT_UTILS_ERROR_NON_COMPLIANT_PROXY, 5
    GLOBUS_GSI_CERT_UTILS_ERROR_OUT_OF_MEMORY, 5
    GLOBUS_GSI_CERT_UTILS_ERROR_SUCCESS, 5
    GLOBUS_GSI_CERT_UTILS_ERROR_UNEXPECTED_FORMAT, 5
    GLOBUS_GSI_CERT_UTILS_TYPE_CA, 5
    GLOBUS_GSI_CERT_UTILS_TYPE_DEFAULT, 5
    GLOBUS_GSI_CERT_UTILS_TYPE_EEC, 5
    GLOBUS_GSI_CERT_UTILS_TYPE_FORMAT_MASK, 5
    GLOBUS_GSI_CERT_UTILS_TYPE_GSI_2, 5
    GLOBUS_GSI_CERT_UTILS_TYPE_GSI_2_LIMITED_PROXY, 6
    GLOBUS_GSI_CERT_UTILS_TYPE_GSI_2_PROXY, 6
    GLOBUS_GSI_CERT_UTILS_TYPE_GSI_3, 5
    GLOBUS_GSI_CERT_UTILS_TYPE_GSI_3_IMPERSONATION_PROXY, 6
    GLOBUS_GSI_CERT_UTILS_TYPE_GSI_3_INDEPENDENT_PROXY, 6
    GLOBUS_GSI_CERT_UTILS_TYPE_GSI_3_LIMITED_PROXY, 6
    GLOBUS_GSI_CERT_UTILS_TYPE_GSI_3_RESTRICTED_PROXY, 6
    GLOBUS_GSI_CERT_UTILS_TYPE_IMPERSONATION_PROXY, 6
    GLOBUS_GSI_CERT_UTILS_TYPE_INDEPENDENT_PROXY, 6
    GLOBUS_GSI_CERT_UTILS_TYPE_LIMITED_PROXY, 6
    GLOBUS_GSI_CERT_UTILS_TYPE_PROXY_MASK, 6
    GLOBUS_GSI_CERT_UTILS_TYPE_RESTRICTED_PROXY, 6
    GLOBUS_GSI_CERT_UTILS_TYPE_RFC, 5
    GLOBUS_GSI_CERT_UTILS_TYPE_RFC_IMPERSONATION_PROXY, 6
    GLOBUS_GSI_CERT_UTILS_TYPE_RFC_INDEPENDENT_PROXY, 6
    GLOBUS_GSI_CERT_UTILS_TYPE_RFC_LIMITED_PROXY, 6
    GLOBUS_GSI_CERT_UTILS_TYPE_RFC_RESTRICTED_PROXY, 6
    globus_gsi_cert_utils_cert_type_e, 5
    globus_gsi_cert_utils_cert_type_t, 4
    globus_gsi_cert_utils_error_t, 5
Cert Utils Functions, 3
    globus_gsi_cert_utils_get_eec, 3
    globus_gsi_cert_utils_get_identity_cert, 3

GLOBUS_GSI_CERT_UTILS_ERROR_ADDING_CN_TO_SUBJECT
    Cert Utils Constants, 5
GLOBUS_GSI_CERT_UTILS_ERROR_COPYING_SUBJECT
    Cert Utils Constants, 5
GLOBUS_GSI_CERT_UTILS_ERROR_DETERMINING_CERT_TYPE
    Cert Utils Constants, 5
GLOBUS_GSI_CERT_UTILS_ERROR_GETTING_CN_ENTRY
    Cert Utils Constants, 5
GLOBUS_GSI_CERT_UTILS_ERROR_GETTING_NAME_ENTRY_OF_SUBJECT
    Cert Utils Constants, 5
GLOBUS_GSI_CERT_UTILS_ERROR_LAST
    Cert Utils Constants, 5
GLOBUS_GSI_CERT_UTILS_ERROR_NON_COMPLIANT_PROXY
    Cert Utils Constants, 5
GLOBUS_GSI_CERT_UTILS_ERROR_OUT_OF_MEMORY
    Cert Utils Constants, 5
GLOBUS_GSI_CERT_UTILS_ERROR_SUCCESS
    Cert Utils Constants, 5
GLOBUS_GSI_CERT_UTILS_ERROR_UNEXPECTED_FORMAT
    Cert Utils Constants, 5
GLOBUS_GSI_CERT_UTILS_MODULE
    Activation, 2
GLOBUS_GSI_CERT_UTILS_TYPE_CA
    Cert Utils Constants, 5
GLOBUS_GSI_CERT_UTILS_TYPE_DEFAULT
    Cert Utils Constants, 5
GLOBUS_GSI_CERT_UTILS_TYPE_EEC
    Cert Utils Constants, 5
GLOBUS_GSI_CERT_UTILS_TYPE_FORMAT_MASK

Cert Utils Constants, 5
GLOBUS_GSI_CERT_UTILS_TYPE_GSI_2
Cert Utils Constants, 5
GLOBUS_GSI_CERT_UTILS_TYPE_GSI_2_LIMITED_PROXY
Cert Utils Constants, 6
GLOBUS_GSI_CERT_UTILS_TYPE_GSI_2_PROXY
Cert Utils Constants, 6
GLOBUS_GSI_CERT_UTILS_TYPE_GSI_3
Cert Utils Constants, 5
GLOBUS_GSI_CERT_UTILS_TYPE_GSI_3_IMPERSONATION_PROXY
Cert Utils Constants, 6
GLOBUS_GSI_CERT_UTILS_TYPE_GSI_3_INDEPENDENT_PROXY
Cert Utils Constants, 6
GLOBUS_GSI_CERT_UTILS_TYPE_GSI_3_LIMITED_PROXY
Cert Utils Constants, 6
GLOBUS_GSI_CERT_UTILS_TYPE_GSI_3_RESTRICTED_PROXY
Cert Utils Constants, 6
GLOBUS_GSI_CERT_UTILS_TYPE_IMPERSONATION_PROXY
Cert Utils Constants, 6
GLOBUS_GSI_CERT_UTILS_TYPE_INDEPENDENT_PROXY
Cert Utils Constants, 6
GLOBUS_GSI_CERT_UTILS_TYPE_LIMITED_PROXY
Cert Utils Constants, 6
GLOBUS_GSI_CERT_UTILS_TYPE_PROXY_MASK
Cert Utils Constants, 6
GLOBUS_GSI_CERT_UTILS_TYPE_RESTRICTED_PROXY
Cert Utils Constants, 6
GLOBUS_GSI_CERT_UTILS_TYPE_RFC
Cert Utils Constants, 5
GLOBUS_GSI_CERT_UTILS_TYPE_RFC_IMPERSONATION_PROXY
Cert Utils Constants, 6
GLOBUS_GSI_CERT_UTILS_TYPE_RFC_INDEPENDENT_PROXY
Cert Utils Constants, 6
GLOBUS_GSI_CERT_UTILS_TYPE_RFC_LIMITED_PROXY
Cert Utils Constants, 6
GLOBUS_GSI_CERT_UTILS_TYPE_RFC_RESTRICTED_PROXY
Cert Utils Constants, 6
globus_gsi_cert_utils_cert_type_e
Cert Utils Constants, 5
globus_gsi_cert_utils_cert_type_t
Cert Utils Constants, 4
globus_gsi_cert_utils_error_t
Cert Utils Constants, 5
globus_gsi_cert_utils_get_eec
Cert Utils Functions, 3
globus_gsi_cert_utils_get_identity_cert
Cert Utils Functions, 3