
GT 5.0.2 GSI C Release Notes

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<titleabbrev>Release Notes</titleabbrev>

1. Component Overview

The Globus Toolkit GSI C component provides APIs and tools for authentication, authorization and certificate management. The authentication API is built using *Public Key* Infrastructure (PKI) technologies, e.g. X.509 Certificates and TLS. In addition to authentication it features a delegation mechanism based upon X.509 *Proxy Certificates*. Authorization support takes the form of a couple of APIs. The first provides a generic authorization API that allows callouts to perform access control based on the client's credentials (i.e. the X.509 certificate chain). The second provides a simple access control list that maps authorized remote entities to local (system) user names. The second mechanism also provides callouts that allow third parties to override the default behavior and is currently used in the Gatekeeper and GridFTP servers. In addition to the above there are various lower level APIs and tools for managing, discovering and querying certificates.

2. Feature summary

Features new in GT 5.0.2

- Support for processing host certificates containing X.509 subjectAltName extensions with dNSName or iPAddress values.

Other Supported Features

- Authentication of user using standard X.509 End Entity and *Proxy Certificates*.
- Delegation using X.509 Proxy Certificates.
- Pluggable authorization based on the client's certificate chain for GridFTP and GRAM2.
- Pluggable authorization for GRAM2 based on the RSL of the job.

Deprecated Features

- None

3. Summary of Changes in GSI

- [RIC-29](#)¹: OpenSSL 1.0.0 Support
- [RIC-63](#)²: Improve GSIC command documentation
- Portability fixes and bug fixes
- Improved documentation for command-line tools

4. Bug Fixes

- [Bug 7032](#)³: globus-openssl-module pollutes openssl nid space causing authentication failures
- [RIC-111](#)⁴: grid-proxy-init -verify fails on openssl 0.9.7l
- [RIC-68](#)⁵: Clarify Documentation of Authorization APIS in gss_assist
- [RIC-62](#)⁶: grid-cert-diagnostics doesn't believe trusted CA certs should sign themselves

5. Known Problems

The following problems and limitations are known to exist for GSI C at the time of the 5.0.2 release:

- [RIC-66](#)⁷: nonportable shebang in globus-update-certificate-dir

5.1. Limitations

- No known limitations exist.

5.2. Outstanding bugs

- [Bug 1239](#)⁸: grid grants access even though local account is locked
- [Bug 1528](#)⁹: Getting CA information during handshake
- [Bug 3521](#)¹⁰: Conditionally disallow grid-mapfile-{add,delete}-entry
- [Bug 3555](#)¹¹: Implement HSPD-12/PIV-II
- [Bug 3781](#)¹²: GSI caching of CRLs causes problems when process lifetime exceeds CRL lifetime

¹ <http://jira.globus.org/browse/RIC-29>

² <http://jira.globus.org/browse/RIC-63>

³ http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=7032

⁴ <http://jira.globus.org/browse/RIC-111>

⁵ <http://jira.globus.org/browse/RIC-68>

⁶ <http://jira.globus.org/browse/RIC-62>

⁷ <http://jira.globus.org/browse/RIC-66>

⁸ http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=1239

⁹ http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=1528

¹⁰ http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=3521

¹¹ http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=3555

¹² http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=3781

- [Bug 4180](#).¹³ Exact syntax of grid-mapfile?
- [Bug 4788](#).¹⁴ [patch] add OCSP check to globus_i_gsi_callback_check_revoked()
- [Bug 5304](#).¹⁵ better commandline option for people who have multiple certs
- [Bug 5768](#).¹⁶ Reconfiguration of Cipher Suite
- [Bug 6384](#).¹⁷ fix leaks and uninitialized memory read in GAA
- [Bug 6385](#).¹⁸ grid-change-passphrase gives obscure error for incorrect passphrase
- [Bug 6614](#).¹⁹ GT Proxy Certificates should use random serial number to prevent predictable certificate contents
- [Bug 6663](#).²⁰ grid-cert-diagnostics doesn't check CRLs
- [Bug 6741](#).²¹ Allow plugins without the flavor extension in the name
- [Bug 6901](#).²² mutal auth in init_context fails for generic service
- [Bug 6964](#).²³ Confusing error message from grid-cert-request
- [Bug 1476](#).²⁴ grid-cert-request directions should be generalized
- [Bug 2983](#).²⁵ Missing TESTS.pl script for globus_authz_test
- [Bug 3062](#).²⁶ Missing TESTS.pl script for gaa_simple_test
- [Bug 3173](#).²⁷ /etc/grid-security/gsi-authz.conf and gsi-gaa.conf are build dependent
- [Bug 5634](#).²⁸ Give file location of gridmap in authz failures
- [Bug 4110](#).²⁹ Need to add an option to grid-cert-request to control key length
- [Bug 5707](#).³⁰ Campaign: Improve C XACML/SAML Engine
- [Bug 6706](#).³¹ gss_export_sec_context and gss_import_sec_context don't generate independent tokens
- [Bug 2589](#).³² Behavior of C and java grid-proxy-init differ, should be unified

¹³ http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=4180

¹⁴ http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=4788

¹⁵ http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=5304

¹⁶ http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=5768

¹⁷ http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=6384

¹⁸ http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=6385

¹⁹ http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=6614

²⁰ http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=6663

²¹ http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=6741

²² http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=6901

²³ http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=6964

²⁴ http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=1476

²⁵ http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=2983

²⁶ http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=3062

²⁷ http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=3173

²⁸ http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=5634

²⁹ http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=4110

³⁰ http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=5707

³¹ http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=6706

³² http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=2589

- [Bug 2969](#).³³ Too relaxed rules on DN comparisons (all versions of GT)

6. Technology dependencies

The GSI C component depends on the following GT components:

- C Common Libraries

The GSI C component depends on the following 3rd party software:

- OpenSSL

7. Tested platforms

Tested platforms for GSI C:

- i386 Linux

8. Backward compatibility summary

Protocol changes in GSI C since GT 5.0.2

- None

API changes since GT 5.0.2

- None

Exception changes since GT 5.0.2

- Not applicable

Schema changes since GT 5.0.2

- Not applicable

9. Associated Standards

Associated standards for GSI C:

- [RFC 3820](#)³⁴ Proxy Certificates
- [RFC 2744](#)³⁵ GSSAPI: C-bindings
- [RFC 2743](#)³⁶ GSSAPI
- [GSSAPI Extensions](#)³⁷

³³ http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=2969

³⁴ <http://www.faqs.org/rfcs/rfc3820.html>

³⁵ <http://www.faqs.org/rfcs/rfc2744.html>

³⁶ <http://www.faqs.org/rfcs/rfc2743.html>

³⁷ <http://www.ggf.org/documents/GWD-I-E/GFD-E.024.pdf>

- [RFC 2246](#)³⁸ TLS

10. For More Information

See [GSI C](#) for more information about this component.

Glossary

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proxy certificate

A short lived certificate issued using a EEC. A proxy certificate typically has the same effective subject as the EEC that issued it and can thus be used in its place. GSI uses proxy certificates for single sign on and delegation of rights to other entities.

For more information about types of proxy certificates and their compatibility in different versions of GT, see <http://dev.globus.org/wiki/Security/ProxyCertTypes>.

public key

The public part of a key pair used for cryptographic operations (e.g. signing, encrypting).

³⁸ <http://www.faqs.org/rfcs/rfc2246.html>