1. Component Overview

The Replica Location Service (RLS) is a server that provides for the registration and lookup of replica information. Within the RLS, there are two types of services, a catalog service and an index service.

2. Feature summary

Features New in GT 5.0.0

• None since GT 4.2.1.

Other Supported Features

• Comprehensive C library for replica registration, replica lookup, replica attributes, index queries, and administrative tasks.

• Command line (globus-rls-cli) tool for client operations on catalogs and indexes.

• Command line (globus-rls-admin) tool for administrative tasks.

Deprecated Features

• None

3. Summary of Changes in RLS

• Streamlined startup for RLS.

When the RLS server was started, initialization previously took anywhere from several seconds to minutes, depending on the number of entries in the RLS database. During this time, users could not issue queries to the RLS database.
The streamlined startup feature allows users to issue read-only queries to the RLS, during initialization. This is achieved by creating Bloom filters during the initialization, in a separate thread, and disallowing queries that update the database, so as not to interfere with the Bloom filter creation.

- Improved support for 64-bit operating systems and better compliance with ODBC specifications.
- Backward compatible with GT 4 RLS protocols, APIs, command-line interfaces, and databases.

4. Bug Fixes

- **Bug 4512**: rls query returns incomplete result on 64bit system
- **Bug 6144**: LIGO: Streamlined RLS startup
- **Bug 6593**: Some fixes for the globus-rls-client package
- **Bug 6594**: Some fixes for the globus-rls-server package
- **Bug 6595**: Some fixes for the globus-rls-server-setup package
- **Bug 6596**: The 250 character limit for lfn's is too small
- **Bug 6750**: Format warnings in rls client
- **Bug 6864**: Compile warning in server/conf.c -- cast from pointer to integer of different
- **Bug 6865**: Modification of DB attribute fails when new value same as current value
- **Bug 6887**: RLS Server has bad logit format in get/set configuration
- **Bug 6888**: Uninitialized logtype causes get_configuration results to be truncated by client

5. Known Problems

The following problems and limitations are known to exist for RLS at the time of the 5.0.0 release:

5.1. Limitations

- **Threading/Libc Problems**: set `LD_ASSUME_KERNEL=2.2.5` in your environment and see Section 2. “Debian” for more information.

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1 http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=4512
2 http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=6144
3 http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=6593
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11 http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=6888
5.2. Outstanding bugs

- **Threading/Libc Problems:** set `LD_ASSUME_KERNEL=2.2.5` in your environment and see Platform Notes for more information.

- **Bug 3656:** ACLs cannot be modified dynamically

- **Bug 4141:** `regexcall` in auth.c's auth_getperms

- **Bug 4142:** `globus-rls-admin -s` always indicates RLI does not exist

- **Bug 6085:** RLS server crash with GLOBUSTHREAD: `pthread_mutex_lock()` failed

- **Bug 6239:** Wildcard queries with underscores don't work with SQLite

- **Bug 6322:** RLS crash on a Sparc/Solaris 10 box (possible duplicate of bug 6356)

- **Bug 6356:** RLS crash on x86/Solaris 10 box (patch available)

- **Bug 6662:** Unable to install `globus_database_sqliteodbc` on 64-bits ppc (Suse 10) platform

6. Technology dependencies

RLS depends on the following GT components:

- `globus_core`

- `globus_common`

- `globus_io`

- `globus_gssapi_gsi`

- `globus_usage`

RLS depends on the following 3rd party software:

- RDBMS: SQLite*, MySQL, PostgreSQL, or Oracle

- ODBC manager: iODBC, unixODBC

- ODBC driver: SQLite-ODBC*, MyODBC, psqlODBC, or Oracle

* The RLS comes installed with and configured to use these components.

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12 http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=3656
13 http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=4141
14 http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=4142
15 http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=6085
16 http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=6239
17 http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=6322
18 http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=6356
19 http://bugzilla.globus.org/bugzilla/show_bug.cgi?id=6662
7. Tested platforms
Tested platforms for RLS include Debian Lenny on AMD64, and CentOS 5.3 on AMD64.

8. Backward compatibility summary
Protocol changes since GT 4.2.x
• None
API changes since GT 4.2.x
• None
Exception changes since GT 4.2.x
• None
Schema changes since GT 4.2.x
• None

9. Associated Standards
Associated standards for RLS:
• The RLS is implemented as a conventional service and, as such, does not conform to the WSRF or other WS set of specifications.

10. For More Information
See Replica Location Service (RLS) for more information about this component.

Glossary