EUROPEAN MIDDLEWARE INITIATIVE

LOGGING AND BOOKKEEPING – TROUBLESHOOTING GUIDE

Document version:	**1.4.12**
EMI Component Version:	**4.x**
Date:	**March 29, 2013**

CONTENTS

L&B Documentation and versions overview

The Logging and Bookkeeping service (L&B for short) was initially developed in the EU DataGrid project[1] as a part of the Workload Management System (WMS). The development continued in the EGEE, EGEE-II and EGEE-III projects,[2] where L&B became an independent part of the gLite[3] middleware [1], and then in the EMI Project.[4]

The complete L&B Documentation consists of the following parts:

- **L&B User's Guide** – this document. The User's Guide explains how to use the Logging and Bookkeeping (L&B) service from the user's point of view. The service architecture is described thoroughly. Examples on using L&B's event logging commands to log user tags and change job ACLs are given, as well as L&B query and notification use cases.

- **L&B Administrator's Guide** [2]. The Administrator's Guide explains how to administer the Logging and Bookkeeping (L&B) service. Several deployment scenarios are described together with the installation, configuration, running and troubleshooting steps.

- **L&B Developer's Guide** [3]. The Developer's Guide explains how to use the Logging and Bookkeeping (L&B) service API. Logging (producer), querying (consumer) and notification API as well as the Web Services Interface is described in details together with programing examples.

- **L&B Test Plan** [4]. The Test Plan document explains how to test the Logging and Bookkeeping (L&B) service. Two major categories of tests are described: integration tests (include installation, configuration and basic service ping tests) and system tests (basic functionality tests, performance and stress tests, interoperability tests and security tests).

The following versions of L&B service are covered by these documents:

- *L&B version 4.0*: included in the EMI-3 *Monte Bianco* release

- *L&B version 3.2*: included in the EMI-2 *Matterhorn* release

- *L&B version 3.1*: an update for the EMI-1 *Kebnekaise* release

- *L&B version 3.0*: included in the EMI-1 *Kebnekaise* release

- *L&B version 2.1*: replacement for *L&B version 2.0* in gLite 3.2

- *L&B version 2.0*: included in gLite 3.2 release

- *L&B version 1.x*: included in gLite 3.1 release

L&B packages can be obtained from two distinguished sources:

- **gLite releases**: gLite node-type repositories, offering a specific repository for each node type such as *glite-LB*. Only binary RPM packages are available from that source.

---

[1] http://eu-datagrid.web.cern.ch/eu-datagrid/
[2] http://www.eu-egee.org/
[3] http://www.glite.org
[4] http://www.eu-emi.eu/

- **emi releases**: EMI repository[5] or EGI's UMD repository,[6] offering all EMI middleware packages from a single repository. There are RPM packages, both source and binary, the latter relying on EPEL for dependencies. There are also DEB packages (starting with EMI-2) and `tar.gz` archives.

Note: Despite offering the same functionality, binary packages obtained from different repositories differ and switching from one to the other for upgrades may not be altogether straightforward.

Updated information about L&B service (including the L&B service roadmap) is available at the L&B homepage: http://egee.cesnet.cz/en/JRA1/LB

---

[5] http://emisoft.web.cern.ch/emisoft/
[6] http://repository.egi.eu/

1 TROUBLESHOOTING

Please, report usage problems via the GGUS support system at

https://gus.fzk.de/index.html

Apparent software bugs are tracked in Savannah at

https://savannah.cern.ch/bugs/?func=additem&group=jra1mdw

When submitting a L&B specific problem/bug, the following information might be useful:

- version of software used (all `glite-lb-*` packages installed at your site)

- description of the problem, the `jobId`, addresses of all relevant machines (L&B server, ...), environment variables set, etc.

- output from the following commands:

  ```
  glite-wms-job-status <jobId>
  glite-wms-job-logging-info -v 3 <jobID>
  ```

- information on your proxy:

  ```
  voms-proxy-info -debug -all
  ```

  or, if VOMS client is not installed,

  ```
  grid-proxy-info -debug
  ```

- sometimes additional information can be found in the output from the commands

  ```
  glite-lb-job_status <jobId>
  glite-lb-job_log <jobId>
  ```

  that should be available in the `$GLITE_LOCATION/examples` directory,

- appropriate excerpts from the logs on the server side are also highly appreciated, please tell your administrator to look at the Troubleshooting section in LB Administrator's Guide [2] to follow the steps there and provide you the necessary information.

Users are encouradged to send developers all non-bugs comments and questions by email to address egee-jra1@lindir.ics.muni.cz.

2 FAQ—FREQUENTLY ASKED QUESTIONS

2.1 JOB IN STATE 'RUNNING' DESPITE HAVING RECEIVED THE 'DONE' EVENT FROM LRMS

Jobs stay in state *Running* until a *Done* event is received from the workload management system. *Done* events from local resource managers are not enough since the job in question may have been resubmitted in the meantime.

2.2 WMS CANNOT PURGE JOBS OR PERFORM OTHER PRIVILEGED TASKS

In short, WMS has not been given adequate permissions when configuring the L&B server. You need to modify your configuration and restart the server:

2.2.1 FOR *L&B version 3.0.11 or higher*, USING YAIM

Modify your `siteinfo.def`, specifying the DN of your WMS server in YAIM parameter `GLITE_LB_WMS_DN`; for instance:

```
GLITE_LB_WMS_DN=/DC=cz/DC=cesnet-ca/O=CESNET/CN=wms01.cesnet.cz
```

Then rerun YAIM: `/opt/glite/yaim/bin/yaim -c -s site-info.def -n glite-LB`

This will give your WMS exactly the right permissions to carry out all required operations.

2.2.2 FOR ALL VERSIONS OF L&B, USING YAIM

Modify your `siteinfo.def`, specifying the DN of your WMS server in YAIM parameter `GLITE_LB_SUPER_USERS`; for instance:

```
GLITE_LB_SUPER_USERS=/DC=cz/DC=cesnet-ca/O=CESNET/CN=wms01.cesnet.cz
```

Then rerun YAIM: `/opt/glite/yaim/bin/yaim -c -s site-info.def -n glite-LB`

This will give your WMS adequate rights to perform its operations and requests (running purge, querying for statistics, etc.) but it will also grant it additional administrator rights (such as granting job ownership). On newer installations, the method explained in section 2.2.1 is preferable.

2.2.3 FOR *L&B version 2.1 or higher*, WITHOUT YAIM

L&B's authorization settings can be found in file `[/opt/glite]/etc/glite-lb/glite-lb-authz.conf`

Permit actions `PURGE`, `READ_ALL` and `GET_STATISTICS` for your WMS and restart the L&B server. This will lead to results equivalent to 2.2.1. For instance, change the adequate sections in `glite-lb-authz.conf` to:

```
action "READ_ALL" {
        rule permit {
                subject = "/DC=cz/DC=cesnet-ca/O=CESNET/CN=wms01.cesnet.cz"
```

```
        }
}

action "PURGE" {
        rule permit {
                subject = "/DC=cz/DC=cesnet-ca/O=CESNET/CN=wms01.cesnet.cz"
        }
}

action "GET_STATISTICS" {
        rule permit {
                subject = "/DC=cz/DC=cesnet-ca/O=CESNET/CN=wms01.cesnet.cz"
        }
}
```

2.3 L&B Server Throws "Duplicate entry ... for key 1" Errors

The L&B server will occasionally report errors through *syslog* saying,

```
ERROR CONTROL - ... : File exists (Duplicate entry '...' for key 1)
```

These error messages are caused by certain portions of code that take care of storing database records for keys, which may or may not already exist in the database, and do so by trying to insert the record first (hence the key violation) and modify the record if the insert fails. This has the unfortunate side effect of the unsuccessful insert being reported as an ERROR in the logging output.

Unless you are experiencing trouble with the specific data entity[7] referenced in the error message, it is safe to disregard.

---

[7]Usually a *Job ID*

REFERENCES

[1] E. Laure, F. Hemmer, F. Prelz, S. Beco, S. Fisher, M. Livny, L. Guy, M. Barroso, P. Buncic, P. Kunszt, A. Di Meglio, A. Aimar, A. Edlund, D. Groep, F. Pacini, M. Sgaravatto, and O. Mulmo. Middleware for the next generation grid infrastructure. In *Computing in High Energy Physics and Nuclear Physics (CHEP 2004)*, 2004.

[2] A. Křenek et al. L&B Administrator's Guide. http://egee.cesnet.cz/en/JRA1/LB/.

[3] A. Křenek et al. L&B Developer's Guide. http://egee.cesnet.cz/en/JRA1/LB/.

[4] A. Křenek et al. L&B Test Plan. http://egee.cesnet.cz/en/JRA1/LB/.