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Information System Troubleshooting Guide

Which BDII version?

This page is about BDII v5 used on EMI.

Troubleshooting Steps

Before attempting to troubleshoot problems with the information system, it is important to have a general overview [↗](#) of the information system, in particular working knowledge of the BDII. Information flows from the *resource level* BDII to the *top level* BDII via the *site level* BDII. For this reason a top down approach for troubleshooting is followed.

Identify the service where the problem is seen.

1. Is the information in the *top level* BDII correct? If yes then there is usually no problem.
2. Is the information is correct in the *site level* BDII but not correct in the *top level* BDII? If yes then the problem is probably with the *top level* BDII.
3. Is the information is correct in the *resource level* BDII but not correct in the *site level* BDII? If yes then the problem is probably with the *site level* BDII.

Identify the component with the problem

1. Is the information correct when the `bdii-update` script is executed with the same user as the BDII uses? If yes the the problem is with the BDII.
2. The problem must be in one of the data sources, investigate each source in the `ldif`, `provider`, `plugins` directory to identify which has the problem.

Investigating the BDII

1. Check the BDII log file for error messages.
2. Change the `BDII_LOG_LEVEL` to `DEBUG` and check the log file.
3. Check the files in the `BDII_VAR_DIR` directory to help locate the problem.

Common Problems

BDII fails to start

For gLite 3.2 on SL5-compatible installations this can happen due to SELinux settings. One recourse could be to switch SELinux off. The following workaround can be used:

```
chcon --changes --reference=/var/lib/ldap/ -R /var/bdii/  
semanage port -a -t ldap_port_t -p tcp 2170
```

Further details here:

- <https://savannah.cern.ch/bugs/index.php?55394> [↗](#)
- https://gus.fzk.de/ws/ticket_info.php?ticket=52930 [↗](#)
- https://gus.fzk.de/ws/ticket_info.php?ticket=53819 [↗](#)

If the BDII fails to start, this could also be an underlying problem with the LDAP database. Try to start the *slapd* server with the default *slapd.conf* file.

```
/usr/sbin/slapd -f /etc/openldap/slapd.conf -d 255
```

If this fails, there is a problem with the LDAP installation. Note that this has been experienced when using virtual machines. To solve this problem online forums related to the LDAP and the OS distribution can be useful.

If the LDAP installation has been verified, the *slapd.conf* file used by the BDII should be tested.

```
/usr/sbin/slapd -f /etc/bdii/bdii(-top)-slapd.conf -d 255
```

If this fails there is could problem with the BDII *slapd.conf* file.

Unable to initialize mutex Error

There were reports about the following error:

```
...
bdb_db_init: Initializing BDB database
bdb(o=grid): unable to initialize mutex: Function not implemented
bdb(o=grid): /opt/bdii/var/2171/___db.001: unable to initialize environment lock: Function not imp
...
```

This issue may be fixed using the FAQ provided by Oracle :

http://www.oracle.com/technology/products/berkeley-db/faq/db_faq.html#12

Entry's missing in the BDII

If invalid LDIF is produced, then the entry will be rejected when it is being inserted in to the LDAP database. Rejected entries will be recorded in the BDII log file when logging is set to WARNING or higher.

Default values shown instead of dynamic values

The dynamic plugin might have a problem or there is a miss-match with the dn's. Check that the dn's produced by the dynamic plug-in are the same as in the static ldif file. The dynamic plugin should be executed with the same user as the BDII uses to spot permission problems. Run the following command to spot any errors

```
su ldap /usr/sbin/bdii-update -c /etc/bdii/bdii.conf > /dev/null
```

BDII started but no response from port 2170

Run `netstat -l` to see if the slapds ports are running on port 2170. These are ports that the LDAP servers are listening on.

```
tcp          0          0 localhost.localdomain:2170  *:*
LISTEN
```

The BDII is overloaded with queries

Due to the critical nature of the information system with respect to the operation of the grid, the BDII should be installed as a stand-alone service to ensure that problems with other services do not affect the BDII. In no circumstances should the BDII be co-hosted with a service which has the potential to generate a high load. If there are too many queries to a BDII and the load is too high, multiple instances of the BDII can be deployed

high a dns load balanced BDII service behind a "round robin" dns alias. Detailed logging for slapd is available by configuring the slapd syslog.

Change the *loglevel* in the slapd.conf to 256

Add in /etc/syslog

```
local4.* /var/log/slapd.log
```

Restart the syslog daemon.

```
service syslog restart
```

Restart the BDII

The log file can be parsed by this script[☞] which will generate a summary

BDB backend dies on memory allocation error

This issue has been seen on a virtual machine with limited memory.

```
slapd -f /opt/bdii/var/2171/bdii-slapd.conf -d 25
```

```
bdb_db_open: dbenv_open(/opt/bdii/var/2171)
bdb_db_open: dbenv_open(/opt/bdii/var/2171/infosys)
bdb(o=infosys): mmap: Cannot allocate memory
bdb(o=infosys): PANIC: Cannot allocate memory
bdb_db_open: dbenv_open failed: DB_RUNRECOVERY: Fatal error, run database recovery (-30978)
backend_startup: bi_db_open(1) failed! (-30978)
slapd shutdown: initiated
====> bdb_cache_release_all
====> bdb_cache_release_all
bdb(o=infosys): DB_ENV->lock_id_free interface requires an environment configured for the locking
slapd shutdown: freeing system resources.
bdb(o=infosys): txn_checkpoint interface requires an environment configured for the transaction s
bdb_db_destroy: txn_checkpoint failed: Invalid argument (22)
```

The solution is to reduce the cache memory allocation specified in */opt/bdii/etc/DB_CONFIG*

```
set_cachesize N_GBytes N_Bytes N_segments
```

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