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# Notes about Installation and Configuration of a Top BDII

- These notes are provided by site admins on a best effort base as a contribution to the IGI communities and **MUST** not be considered as a substitute of the Official IGI documentation .
- This document is addressed to site administrators responsible for middleware installation and configuration.
- The goal of this page is to provide some hints and examples on how to install and configure an IGI Top BDII based on EMI/UMD middleware.

**NB:** The TOP-BDII service is a **CORE** service, it should not be installed at Resource Center level. The official endpoint provided by IGI is `egee-bdii.cnaf.infn.it` and **MUST** be used by all Resource Centers and Services part of the IGI infrastructure. If you want to provide an official instances which will be added to the IGI endpoint, please contact `igi-noc@lists.italiangrid.it`

## References

1. About IGI - Italian Grid infrastructure
2. About IGI Release
3. IGI Official Installation and Configuration guide
4. Troubleshooting Guide for Operational Errors on EGI Sites
5. Grid Administration FAQs page

**Recommendations** ▾ **Recommendations** ▾

## Recommendations

- The service needs at least two cores, 4 GB RAM, 10 GB disk space. A full virtualized machine based on KVM has been used in the following notes.

## Service Installation

**O.S. and Repos** ▾ **O.S. and Repos** ▾

### O.S. and Repos

- Starts from a fresh installation of Scientific Linux 5.x (x86\_64).

```
# cat /etc/redhat-release
Scientific Linux SL release 5.7 (Boron)
```

- Install the additional repositories: EPEL, Certification Authority, EMI

```
# cd /etc/yum.repos.d/
# rpm -ivh http://mirror.switch.ch/ftp/mirror/epel//5/x86_64/epel-release-5-4.noarch.rpm
# wget http://repo-pd.italiangrid.it/mrepo/repos/egi-trustanchors.repo
# rpm -ivh http://repo-pd.italiangrid.it/mrepo/EMI/1/sl5/x86_64/updates/emi-release-1.0.1-1.sl5.n
# yum install yum-priorities yum-protectbase
```

- Be sure that SELINUX is disabled (or permissive). Details on how to disable SELINUX are here :

```
# getenforce
Disabled
```

- Check the repos list (`sl-*.repo` are the repos of the O.S. and they should be present by default).

```
# ls /etc/yum.repos.d/
emil-base.repo emil-updates.repo epel-testing.repo emil-third-party.repo
sl-contrib.repo sl-fastbugs.repo sl-security.repo sl-testing.repo sl-debuginfo.repo sl.repo sl-
egi-trustanchors.repo
epel.repo
```

## Update host and perform the installation of package(s) ▾ Update host and perform the installation of package(s) ▾

### Update host and perform the installation of package(s)

```
# yum clean all
Loaded plugins: downloadonly, kernel-module, priorities, protect-packages, protectbase, security,
Cleaning up Everything

# yum install ca-policy-egi-core emi-bdii-top
Loaded plugins: downloadonly, kernel-module, priorities, protect-packages, protectbase, security,
EGI-trustanchors
EGI-trustanchors/primary
EGI-trustanchors
EMI-1-base
EMI-1-base/primary_db
EMI-1-third-party
EMI-1-third-party/primary_db
EMI-1-updates
EMI-1-updates/primary_db
epel
epel/primary_db
sl-base
sl-base/primary
sl-base
sl-security
sl-security/primary_db
234 packages excluded due to repository priority protections
0 packages excluded due to repository protections
Reading version lock configuration
Setting up Install Process
Package ca-policy-egi-core-1.42-1.noarch already installed and latest version
Resolving Dependencies
--> Running transaction check
---> Package emi-bdii-top.x86_64 0:1.0.0-1.sl5 set to be updated
--> Processing Dependency: openldap2.4-servers for package: emi-bdii-top
--> Processing Dependency: bdii-config-top for package: emi-bdii-top
--> Processing Dependency: glite-yaim-bdii for package: emi-bdii-top
--> Processing Dependency: glite-info-update-endpoints for package: emi-bdii-top
--> Processing Dependency: bdii for package: emi-bdii-top
--> Processing Dependency: glue-schema for package: emi-bdii-top
--> Processing Dependency: glite-info-provider-service for package: emi-bdii-top
--> Processing Dependency: glite-yaim-core for package: emi-bdii-top
--> Processing Dependency: glite-info-provider-ldap for package: emi-bdii-top
--> Processing Dependency: glite-info-plugin-fcr for package: emi-bdii-top
--> Running transaction check
---> Package bdii.noarch 0:5.2.5-2.el5 set to be updated
--> Processing Dependency: openldap-servers for package: bdii
--> Processing Dependency: expect for package: bdii
--> Processing Dependency: openldap-clients for package: bdii
---> Package bdii-config-top.noarch 0:1.0.4-1.el5 set to be updated
---> Package glite-info-plugin-fcr.noarch 0:2.0.2-1.sl5 set to be updated
---> Package glite-info-provider-ldap.noarch 0:1.4.1-1.el5 set to be updated
--> Processing Dependency: perl(LWP::Simple) for package: glite-info-provider-ldap
---> Package glite-info-provider-service.noarch 0:1.7.0-1.el5 set to be updated
---> Package glite-info-update-endpoints.noarch 0:2.0.7-1.el5 set to be updated
---> Package glite-yaim-bdii.noarch 0:4.3.4-1.el5 set to be updated
---> Package glite-yaim-core.noarch 0:5.0.2-1.sl5 set to be updated
---> Package glue-schema.noarch 0:2.0.8-1.el5 set to be updated
---> Package openldap2.4-servers.x86_64 0:2.4.22-1.el5 set to be updated
--> Processing Dependency: lib64ldap2.4_2 = 2.4.22-1.el5 for package: openldap2.4-servers
```

## NotesAboutInstallationAndConfigurationOfATopBDII < SiteAdminCorner < TWiki

```

--> Processing Dependency: cyrus-sasl = 2.1.22 for package: openldap2.4-servers
--> Processing Dependency: openldap2.4-extra-schemas >= 1.3-7 for package: openldap2.4-servers
--> Processing Dependency: openldap2.4-extra-schemas >= 1.3-7 for package: openldap2.4-servers
--> Processing Dependency: libltdl.so.3() (64bit) for package: openldap2.4-servers
--> Processing Dependency: libldap_r-2.4.so.2() (64bit) for package: openldap2.4-servers
--> Processing Dependency: liblber-2.4.so.2() (64bit) for package: openldap2.4-servers
--> Processing Dependency: libodbc.so.1() (64bit) for package: openldap2.4-servers
--> Running transaction check
---> Package cyrus-sasl.x86_64 0:2.1.22-5.el5_4.3 set to be updated
---> Package expect.x86_64 0:5.43.0-5.1 set to be updated
---> Package lib64ldap2.4_2.x86_64 0:2.4.22-1.el5 set to be updated
--> Processing Dependency: openldap2.4 >= 2.1.25-4mdk for package: lib64ldap2.4_2
---> Package libtool-ltdl.x86_64 0:1.5.22-7.el5_4 set to be updated
---> Package openldap-clients.x86_64 0:2.3.43-12.el5_6.7 set to be updated
---> Package openldap-servers.x86_64 0:2.3.43-12.el5_6.7 set to be updated
EGI-trustanchors/filelists
EMI-1-base/filelists_db
EMI-1-third-party/filelists_db
EMI-1-updates/filelists_db
cnaf-local/filelists
epel/filelists_db
lemon-sl5-i386/filelists
sl-base/filelists
sl-security/filelists_db
---> Package openldap2.4-extra-schemas.noarch 0:1.3-10.el5 set to be updated
---> Package perl-libwww-perl.noarch 0:5.805-1.1.1 set to be updated
--> Processing Dependency: perl-HTML-Parser >= 3.33 for package: perl-libwww-perl
--> Processing Dependency: perl(URI::URL) for package: perl-libwww-perl
--> Processing Dependency: perl(URI) for package: perl-libwww-perl
--> Processing Dependency: perl(HTML::Entities) for package: perl-libwww-perl
--> Processing Dependency: perl(Compress::Zlib) for package: perl-libwww-perl
--> Processing Dependency: perl(URI::Escape) for package: perl-libwww-perl
--> Processing Dependency: perl(URI::Heuristic) for package: perl-libwww-perl
---> Package unixODBC.x86_64 0:2.2.11-7.1 set to be updated
--> Running transaction check
---> Package openldap2.4.x86_64 0:2.4.22-1.el5 set to be updated
---> Package perl-Compress-Zlib.x86_64 0:1.42-1.fc6 set to be updated
---> Package perl-HTML-Parser.x86_64 0:3.55-1.fc6 set to be updated
--> Processing Dependency: perl-HTML-Tagset >= 3.03 for package: perl-HTML-Parser
--> Processing Dependency: perl(HTML::Tagset) for package: perl-HTML-Parser
---> Package perl-URI.noarch 0:1.35-3 set to be updated
--> Running transaction check
---> Package perl-HTML-Tagset.noarch 0:3.10-2.1.1 set to be updated
--> Finished Dependency Resolution
Beginning Kernel Module Plugin
Finished Kernel Module Plugin

```

Dependencies Resolved

```

=====
Package                                                    Arch
=====
Installing:
emi-bdii-top                                              x86_64
Installing for dependencies:
bdii                                                       noarch
bdii-config-top                                          noarch
cyrus-sasl                                                x86_64
expect                                                    x86_64
glite-info-plugin-fcr                                     noarch
glite-info-provider-ldap                                 noarch
glite-info-provider-service                             noarch
glite-info-update-endpoints                             noarch
glite-yaim-bdii                                          noarch
glite-yaim-core                                          noarch
glue-schema                                              noarch
lib64ldap2.4_2                                           x86_64

```

Update host and perform the installation of package(s)

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libtool-ltdl	x86_64
openldap-clients	x86_64
openldap-servers	x86_64
openldap2.4	x86_64
openldap2.4-extra-schemas	noarch
openldap2.4-servers	x86_64
perl-Compress-Zlib	x86_64
perl-HTML-Parser	x86_64
perl-HTML-Tagset	noarch
perl-URI	noarch
perl-libwww-perl	noarch
unixODBC	x86_64

### Transaction Summary

```
=====
Install      25 Package(s)
Upgrade      0 Package(s)
```

```
Total download size: 8.0 M
Is this ok [y/N]: y
```

### Downloading Packages:

```
(1/25): emi-bdii-top-1.0.0-1.s15.x86_64.rpm
(2/25): glite-info-plugin-fcr-2.0.2-1.s15.noarch.rpm
(3/25): bdii-config-top-1.0.4-1.el5.noarch.rpm
(4/25): glite-info-update-endpoints-2.0.7-1.el5.noarch.rpm
(5/25): glite-info-provider-ldap-1.4.1-1.el5.noarch.rpm
(6/25): glite-yaim-bdii-4.3.4-1.el5.noarch.rpm
(7/25): perl-HTML-Tagset-3.10-2.1.1.noarch.rpm
(8/25): bdii-5.2.5-2.el5.noarch.rpm
(9/25): glue-schema-2.0.8-1.el5.noarch.rpm
(10/25): libtool-ltdl-1.5.22-7.el5_4.x86_64.rpm
(11/25): openldap2.4-2.4.22-1.el5.x86_64.rpm
(12/25): openldap2.4-extra-schemas-1.3-10.el5.noarch.rpm
(13/25): perl-Compress-Zlib-1.42-1.fc6.x86_64.rpm
(14/25): glite-info-provider-service-1.7.0-1.el5.noarch.rpm
(15/25): perl-HTML-Parser-3.55-1.fc6.x86_64.rpm
(16/25): perl-URI-1.35-3.noarch.rpm
(17/25): glite-yaim-core-5.0.2-1.s15.noarch.rpm
(18/25): expect-5.43.0-5.1.x86_64.rpm
(19/25): openldap-clients-2.3.43-12.el5_6.7.x86_64.rpm
(20/25): lib64ldap2.4_2-2.4.22-1.el5.x86_64.rpm
(21/25): perl-libwww-perl-5.805-1.1.1.noarch.rpm
(22/25): unixODBC-2.2.11-7.1.x86_64.rpm
(23/25): cyrus-sasl-2.1.22-5.el5_4.3.x86_64.rpm
(24/25): openldap2.4-servers-2.4.22-1.el5.x86_64.rpm
(25/25): openldap-servers-2.3.43-12.el5_6.7.x86_64.rpm
```

### Total

```
warning: rpmts_HdrFromFdno: Header V3 DSA signature: NOKEY, key ID df9e12ef
EMI-1-updates/gpgkey
```

```
Importing GPG key 0xDF9E12EF "Doina Cristina Aiftimiei (EMI Release Manager) <aiftim@pd.infn.it>"
```

```
Is this ok [y/N]: y
```

```
Running rpm_check_debug
```

```
Running Transaction Test
```

```
Finished Transaction Test
```

```
Transaction Test Succeeded
```

```
Running Transaction
```

```
Installing      : libtool-ltdl
Installing      : openldap-servers
Installing      : glite-info-update-endpoints
Installing      : glite-info-provider-service
Installing      : glue-schema
Installing      : expect
Installing      : openldap-clients
Installing      : perl-Compress-Zlib
Installing      : cyrus-sasl
```

Update host and perform the installation of package(s)

```

Installing      : unixODBC
Installing      : bdii
Installing      : glite-yaim-bdii
Installing      : glite-yaim-core
Installing      : glite-info-plugin-fcr
Installing      : perl-HTML-Tagset
Installing      : perl-HTML-Parser
Installing      : perl-URI
Installing      : perl-libwww-perl
Installing      : glite-info-provider-ldap
Installing      : lib64ldap2.4_2
Installing      : openldap2.4
Installing      : openldap2.4-extra-schemas
useradd: user ldap exists
Adding user ldap to group ldap
Installing      : openldap2.4-servers
Generating self-signed certificate...
To generate a self-signed certificate, you can use the utility
/usr/share/openldap2.4/gencert.sh...
Installing      : bdii-config-top
Installing      : emi-bdii-top

```

```

Installed:
  emi-bdii-top.x86_64 0:1.0.0-1.s15

```

```

Dependency Installed:
  bdii.noarch 0:5.2.5-2.e15          bdii-config-top.noarch 0:1.0.4-1.e15
  glite-info-provider-ldap.noarch 0:1.4.1-1.e15 glite-info-provider-service.noarch 0:1.7.0-1.e15
  glue-schema.noarch 0:2.0.8-1.e15   lib64ldap2.4_2.x86_64 0:2.4.22-1.e15
  openldap2.4.x86_64 0:2.4.22-1.e15  openldap2.4-extra-schemas.noarch 0:1.3-10.e15
  perl-HTML-Tagset.noarch 0:3.10-2.1.1 perl-URI.noarch 0:1.35-3

```

Complete!

## Service configuration

[site-info.def](#) ▢ [site-info.def](#) ▾

### site-info.def

The configuration file for this service is really basic:

```

# cat site-info.def
#####
# Site configuration variables #
#####
SITE_NAME=INFN-CNAF
SITE_EMAIL="grid-operations@lists.cnaf.infn.it"
SITE_LAT=44.4948
SITE_LONG=11.3417

#####
# BDII configuration variables #
#####

# Hostname of the top level BDII
BDII_HOST=top-bdii01.cnaf.infn.it
#The cache period for LDAP records that disappeared from the BDII's input;
#by default it should be zero, but due to a bug affecting some versions of EMI-1 node types, the
BDII_DELETE_DELAY=0

```

[yaim check](#) ▢ [yaim check](#) ▾

**yaim check**

```
# chmod -R 600 /root/siteinfo

# /opt/glite/yaim/bin/yaim -v -s /root/siteinfo/site-info.def -n BDII_top
INFO: Using site configuration file: /root/siteinfo/site-info.def
INFO:
#####

.          /'-. ' )
.   yA,-"-,( ,m,:/ ) .oo.   oo   o   ooo o.   .oo
.   /          .-Y a  a Y-.   8. .8'   8'8.   8   8b  d'8
.   /          ~ ~ /          8'   .8oo88.   8   8  8'  8
.   (_/          '===='       8   .8'   8.   8   8  Y  8
.   Y,-''-,Yy,-.,/          o8o  o8o   o88o  o8o  o8o   o8o
.   I_)_) I_)_)

current working directory: /root/siteinfo
site-info.def date: Nov 25 17:01 /root/siteinfo/site-info.def
yaim command: -v -s /root/siteinfo/site-info.def -n BDII_top
log file: /opt/glite/yaim/bin/./log/yaimlog
Fri Nov 25 17:07:57 CET 2011 : /opt/glite/yaim/bin/yaim

Installed YAIM versions:
glite-yaim-bdii 4.3.4-1
glite-yaim-core 5.0.2-1

#####
INFO: The default location of the grid-env.(c)sh files will be: /usr/libexec
INFO: Sourcing the utilities in /opt/glite/yaim/functions/utils
INFO: Detecting environment
INFO: Executing function: config_info_service_bdii_top_check
INFO: Executing function: config_bdii_5.2_check
INFO: Checking is done.
INFO: All the necessary variables to configure BDII_top are defined in your configuration file
INFO: Please, bear in mind that YAIM only guarantees the definition of variables
INFO: controlled in the _check functions.
INFO: YAIM terminated succesfully.
```

**Know Issue and Workaround**  **Know Issue and Workaround** **Know Issue and Workaround**

Missing /etc/bdii/gip/glite-info-site-defaults.conf, GGUS

- **Workaround:** Check if the file exists and it's contents. If it's missing do (replace INFN-CNAF with your SITE-NAME):
  - ◆ mkdir /etc/bdii/gip/
  - ◆ echo "SITE\_NAME=INFN-CNAF" > /etc/bdii/gip/glite-info-site-defaults.conf

Check also the permission of the directory /opt/glite/var/cache/gip if it is not ldap:ldap change it:

- chown -R ldap:ldap /opt/glite/var/cache/gip/

**yaim config**  **yaim config** 

**yaim config**

Please use the debug flag ( "-d 6") to configure the services in order to have detailed information. For your convenience you can save all the configuration information in a log file you can look at any time, separated from the yaimlog default one.

```
# /opt/glite/yaim/bin/yaim -c -d 6 -s /root/siteinfo/site-info.def -n BDII_top
DEBUG: Checking siteinfo dir is not world readable
DEBUG: Checking site-info.def is syntactically correct
DEBUG: Sourcing /opt/glite/yaim/bin/./defaults/site-info.pre
DEBUG: Sourcing /opt/glite/yaim/bin/./defaults/emi-bdii_top.pre
INFO: Using site configuration file: /root/siteinfo/site-info.def
DEBUG: Sourcing site-info.def file: /root/siteinfo/site-info.def
DEBUG: Sourcing /opt/glite/yaim/bin/./defaults/site-info.post
DEBUG: Sourcing /opt/glite/yaim/bin/./defaults/mapping
INFO:
#####

.          /'.-. ')
.   yA,-"-,( ,m,:/ ) .oo.      oo      o      ooo o.      .oo
.   /          .-Y a  a Y-.      8. .8'      8'8.      8      8b  d'8
.   /          ~ ~ /          8'      .8oo88.      8      8  8'  8
.   (_/          '===='          8      .8'      8.      8      8  Y  8
.   Y,-''-,Yy,-.,/          o8o  o8o      o88o  o8o  o8o      o8o
.   I_))_) I_))_)

current working directory: /root/siteinfo
site-info.def date: Nov 25 17:01 /root/siteinfo/site-info.def
yaim command: -c -d 6 -s /root/siteinfo/site-info.def -n BDII_top
log file: /opt/glite/yaim/bin/./log/yaimlog
Fri Nov 25 17:12:30 CET 2011 : /opt/glite/yaim/bin/yaim

Installed YAIM versions:
glite-yaim-bdii 4.3.4-1
glite-yaim-core 5.0.2-1

#####
INFO: The default location of the grid-env.(c)sh files will be: /usr/libexec
INFO: Sourcing the utilities in /opt/glite/yaim/functions/utills
INFO: Detecting environment
DEBUG: Detect platform: OS flavour detected is: emi
DEBUG: Detected architecture is 64BIT
DEBUG: Detect platform: OS type detected: sl5
DEBUG: Resulted NODE_TYPE_LIST is : BDII_top
DEBUG: Setting environment variable GRID_ENV_LOCATION, to value "/usr/libexec".
DEBUG: Unset environment variable GRID_ENV_LOCATION.
DEBUG: Setting environment variable LCG_LOCATION, to value "/usr".
DEBUG: Unset environment variable LCG_LOCATION.
DEBUG: Setting environment variable GLITE_LOCATION, to value "/usr".
DEBUG: Unset environment variable GLITE_LOCATION.
DEBUG: Setting environment variable GLITE_LOCATION_VAR, to value "/var".
DEBUG: Unset environment variable GLITE_LOCATION_VAR.
DEBUG: Appending value "/bin" to environment variable PATH.
DEBUG: Deleting value "/bin" from environment variable PATH.
DEBUG: Appending value "/opt/glite/share/man" to environment variable MANPATH.
DEBUG: Deleting value "/opt/glite/share/man" from environment variable MANPATH.
DEBUG: Sourcing node definition file: /opt/glite/yaim/bin/./node-info.d/glite-bdii_top
INFO: Executing function: config_info_service_bdii_top_check
INFO: Executing function: config_bdii_5.2_check
INFO: Executing function: config_info_service_bdii_top_setenv
DEBUG: This function currently doesn't set any environment variables.
INFO: Executing function: config_info_service_bdii_top
DEBUG: Skipping function: config_bdii_5.2_setenv because it is not defined
INFO: Executing function: config_bdii_5.2
mount: mount point /var/run/bdii/db does not exist
```



```
Stopping BDII: BDII already stopped
Starting BDII slapd: [ OK ]
Starting BDII update process: [ OK ]
    INFO: Configuration Complete. [ OK ]
    INFO: YAIM terminated succesfully.
```

## Service checks

The service could takes ~10 minutes to publish all the informations. From a User Interfaces, try the following commands (replace top-bdii01.cnaf.infn.it with your top-bdii hostname):

- `telnet top-bdii01.cnaf.infn.it 2170`. The port 2170 must be opened.
- `lcg-infosites --is top-bdii01.cnaf.infn.it --vo ops ce| wc -l` should return a number at least grater than 500
- check freshness: the information published must be updated. Downolad `check_bdii_entries` and execute it like in the example:

```
./check_bdii_entries -H top-bdii01.cnaf.infn.it -t 60 -b Mds-Vo-Name=local,O=Grid -p 2170
OK: freshness=276s, entries=1 |freshness=276s;entries=1
```

## Revisions

Date	Comment
2012-03-09	BDII_DELETE_DELAY variable added. by default it should be zero, but due to a bug affecting some versions of EMI-1 node types, the admin may need to define it explicitly
2011-11-28	installation notes completed - BDII top v. 1.0.0

-- PaoloVeronesi - 2011-11-25

This topic: SiteAdminCorner > NotesAboutInstallationAndConfigurationOfATopBDII

Topic revision: r8 - 2012-03-09 - PaoloVeronesi



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