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Installation and Configuration "Step by Step"

Tag the node with your name in the LCG Node status page

Before you start any procedure on a node you have to inform your colleagues for your intention. This can be done through CERN LCG Node Status page [?](#).

First of all you have to select from the combobox **Cluster** the cluster in which participate your node. In above link is preselected cluster **gLite Cert**. All comboboxes on the first line of CERN LCG Node Status page can be used for different selections of available nodes. So, to get nodes conforming to your conditions stated in comboboxes you have to push button **Send**. After that CERN LCG Node Status page will be updated and will contain only selected nodes.

The next step is to inform that you get administration on certain node. CERN LCG Node Status page displays a table containing for each node a row describing the node. First column **commands** contains three buttons. First button permits you to edit all other six fields. When you push this button a new dialog page is opened. It contains current data of the other six fields. First field contains the node's name - **do not edit it!**. (It will be better to prevent this field from editing.) Second field is a combobox containing names of all persons who have permissions to be administrators - select your name. If your name is not here refer to administrators to update the site. Third field describes LCFG. It corresponds to column **note** and can have values **SERVICE**, **CERT1**, **CERT2**, **CERT3** or **free**. The last means that node is free for installation. (This field can be combobox.) In field **Alias:** (fourth field) you have to put the system version which is installed. Its value can be **gLite 1.3** or **free**. This field contains information about hardware problems in the node. (It will be better to have some standards for this field.) The field **Function:** describes the function of the node in terms of the system described in field **alias**. The last field **Cluster:** is a combobox which describes to which cluster node belongs. Some additional information can be put in the right side edit pane. This information is not visible at CERN LCG Node Status page. You can read information put here by pressing the third button in column **commands**.

Usually, you have to upgrade a node or install from scratch. In these cases you have to update only information about system version and set administrator's name.

To update information about the node you have to press button **Update**. If you don't want to do that - press **Cancel**. Do not use button **Delete** - it deletes information about the node.

Second button in column **commands** will display detailed information about the node.

Before to start any service installation read carefully the section Installation Pre-requisites for it in gLite Installation Guide [?](#).

Install the software via APT

First you have log on the machine. This have to be done with:

```
> ssh -2 -l root lxbXXXX.cern.ch
```

where **xxxx** is the number of your machine.

What problems can you have at this time? Your access to the machine as root user is rejected. It happens because the installation script has not been run since you have been registered as root user on this machine. You will have root access as soon as someone will upgrade or install some service on this node. And this is valid for all nodes, so you have to wait. More precisely, your certificate has not put on the machine. For more details on how to obtain access to machines in the certification testbed.

Check that apt is installed (usually it is):

```
> rpm -qa | grep apt
```

If it is not installed you can do that using Scientific Linux repository:

```
> rpm -ivh  
http://linuxsoft.cern.ch/cern/slc30X/i386/SL/RPMS/apt-0.5.15cnc6-.SL.cern.i386.rpm
```

This is for Pentium/Athlon/Xeon architecture. If your node has different operating system version or architecture check the site:

<http://linuxsoft.cern.ch/>

for corresponding directories.

Next is to edit the apt configuration file:

```
> vi /etc/apt/sources.list.d/glite.list
```

Insert the line you find in:

https://lcg-nodes-status.cern.ch:8282/cgi-bin/nodes-status.cgi?action=edit&host=lxb2040&details=on&cluster_view=g

e.g.

```
rpm http://lxb2040.cern.ch/APT_REP glite/i386/1.4 externals Release1.4 SA1
```

Run apt commands:

```
> apt-get update
```

```
> apt-get upgrade
```

The last command will upgrade the apt and all not-up-to-date packages installed on your system. Then proceed with the module you selected to install:

```
> apt-get install glite-ce-config
```

```
> apt-get install glite-data-metadata-catalog-config
```

```
> apt-get install glite-data-single-catalog-config
```

```
> apt-get install glite-data-single-catalog-oracle-config
```

```
> apt-get install glite-data-transfer-agents-oracle-config
```

```
> apt-get install glite-file-transfer-service-oracle-config
```

```
> apt-get install glite-file-transfer-service-client-config
```

```
> apt-get install glite-file-placement-service-oracle-config
```

```
> apt-get install glite-io-client-config
```

```
> apt-get install glite-io-server-config
```

```
> apt-get install glite-lb-config
```

Install the software via APT

```
> apt-get install glite-rgma-client-config
> apt-get install glite-rgma-gin-config
> apt-get install glite-rgma-server-config
> apt-get install glite-rgma-servicetool-config
> apt-get install glite-security-utils-config
> apt-get install glite-security-voms-config
> apt-get install glite-service-discovery-config
> apt-get install glite-torque-client-config
> apt-get install glite-torque-server-config
> apt-get install glite-ui-config
> apt-get install glite-voms-server-config
> apt-get install glite-wms-config
> apt-get install glite-wn-config
```

APT downloads automatically all required dependencies.

The command:

```
> apt-get check
```

verifies that there are no broken dependencies.

Edit the configuration files

First of all make a copy of configuration files from directory:

```
http://egee-middleware-certification.web.cern.ch/egee-middleware-certification/certification/live
```

Create for them a backup directory (if someone has not yet done that):

```
http://egee-middleware-certification.web.cern.ch/egee-middleware-certification/certification/live
```

In practice, we configure nodes in above mentioned global directory and redirect local node configuration files to that global directory. In the next step we redirect local configuration file to global one. Change to the configuration directory of the node:

```
> cd /opt/glite/etc/config
```

Copy the configuration file `glite-global.cfg.xml` from the templates directory:

```
> cp templates/glite-global.cfg.xml .
```

Change the value attribute of element `site.config.url` to:

```
http://egee-middleware-certification.web.cern.ch/egee-middleware-certification/certification/live
```

As result, you will have:

```
<!-- Site configuration URL-->
<site.config.url
  description="The URL of the Site Configuration file for this node.
  The values defined in the Site Configuration file are applied first
  and are be overridden by values specified in the local configuration
  files. Leave this parameter empty or remove it to use local configuration
  only."
  value="http://egee-middleware-certification.web.cern.ch/egee-middleware-certification/certifica
```

It is a good practice when you edit global configuration files to use your own copies. For example, instead of:

```
http://egee-middleware-certification.web.cern.ch/egee-middleware-certification/certification/live
```

I use:

```
http://egee-middleware-certification.web.cern.ch/egee-middleware-certification/certification/live
```

but this means that all configuration files referenced by that file which you edit have to have copies prefixed by your name. This convention is applied to prevent lost of information during concurrent edit in global configuration files. For example, if you install unique node like RGMA Server, there is no need to create your own copies of configuration files referenced by the node. If it is possible to clash with someone create your own copies of all files referenced by your node which you edit. Your node element has to be configured in `CERT-global-1.3.xml` with `node` element.

So, in global configuration files referenced by your `node` element you have to put values for all attributes which have as value `"changeme"`. In practice, new configuration files are to some extent compatible with old ones, in sense, that some new elements may be added to new configuration files or some changes may occur in new ones. For that use old configuration files adding and/or changing old element attributes. For that purpose carefully read Installation Guide to find out what is new in this version and is there are any change in attribute value meanings.

When you finish configuration files editing check are they XML valid files. Simply open them in XML-enabled browser. This procedure is very important because error detection of configuration scripts is very bad.

Eventually do some service-specific actions

Pre-requisites are:

- Common statement: *These installation instructions are based on the RPMS distribution of gLite. It is also assumed that the target server platform is Red Hat Linux 3.0 or any binary compatible distribution, such as Scientific Linux or CentOS. Whenever a package needed by gLite is not distributed as part of gLite itself, it is assumed it can be found in the list of RPMS of the original OS distribution.*
- Security Settings
- Java JRE/JDK
- BD-II
- Resource Management System
- Oracle Instant Client
- Oracle Database Configuration

Read Installation Pre-requisites section of the service from gLite Installation Guide [for](#) more details.

Run the configuration scripts

Change to directory:

```
> cd /opt/glite/etc/config/scripts
```

All configuration scripts are installed in this directory. The scripts are written in python and follow a naming convention. Each file is called:

```
glite-<service>-config.py
```

where <service> is the name of the service they can configure.

In addition, the same scripts directory contains the gLite Installer library (`gLiteInstallerLib.py`) and a number of helper scripts used to configure various applications required by the gLite services (`globus.py`, `mysql.py`, `tomcat.py`, etc).

The gLite Installer library and the helper scripts are contained in the `glite-config` RPM. All service scripts are contained in the respective `glite-<service>-config` RPM.

All scripts have a number of command line switches to perform different actions. The usage instructions can be printed on screen with the command:

```
> ./glite-<service>-config.py --help
```

The configuration steps for all services and clients, except the User Interface, are executed by running the command:

```
> ./glite-<service>-config.py --configure
```

The services and daemons are started and stopped with:

```
> ./glite-<service>-config.py --start
```

```
> ./glite-<service>-config.py --stop
```

The status of the services and daemons can be verified with:

```
> ./glite-<service>-config.py --status
```

The status switch causes a few status lines to be printed on screen and return 0 if all services are running and 1 if at least one service is not running.

Individual scripts may have additional options.

The User Interface script does not have a `--configure` switch. Running the command

```
> ./glite-ui-config.py
```

by itself configures the user interface and its various clients and tools.

List of all scripts:

- `glite-rgma-server-config.py`
- `glite-rgma-client-config.py`
- `glite-rgma-servicetool-config.py`

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- glite-gin-config.py
- glite-voms-server-config.py
- glite-lb-config.py
- glite-wms-config.py
- glite-torque-server-config.py
- glite-torque-client-config.py
- glite-ce-config.py
- glite-wn-config.py
- glite-data-single-catalog-config.py
- glite-file-transfer-service-oracle-config.py
- glite-file-transfer-service-client-config.py
- glite-data-transfer-agents-oracle-config.py
- glite-file-placement-service-oracle-config.py
- glite-file-placement-service-client-config.py
- glite-data-metadata-catalog-config.py
- glite-io-server-config.py
- glite-io-client-config.py

Read carefully configuration section for the corresponding service from gLite Installation Guide [?](#), because for some services procedure is not simply to run the corresponding script.

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