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Enabling Grids for E-sciencE

Installation and configuration of a gLite Resource Broker

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Information Society

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- **What is a Resource Broker ?**
- **How to install it**
- **How to configure**
- **Possible troubles…**

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- **Resource Broker is an alternate for Workload Management System + Logging and Bookkeeping**

- **Accepts and satisfies the requests for job management coming from its clients (UI's)**

- **Requests are specified through JDL files using ClassAd**

- **NS catchs user requests, checking validity through GSI infrastructure**

- **WM, taken a valid request, chooses the most appropriate action to satisfy it.**

- **Its main task is indivuduating the best suitable resources (CE, SE…)**

- **All of these passages are tracked by LB service !**

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- **Services to install**
  - **gLite Workload Management System**
  - **glite Logging & Bookkeeping Server**
- **Installation process is easy !**
- **Start from a fresh install of SLC 3.0.4**
- **JAVA is not included in distribution. Install it separately (>= 1.4.2_06)**
- **Download the service script installer from glite web site (http://glite.web.cern.ch/glite/packages)**

```
[root@gliterb3~] wget \
http://glite.web.cern.ch/glite/packages/R1.1/R20050430/
   installers/glite-wms_installer.sh
[root@gliterb3~] wget \
http://glite.web.cern.ch/glite/packages/R1.1/R20050430/
   installers/glite-lb_installer.sh
```

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- **Execute them as root (possibly on a clean directory)**

```
sh glite-wms_installer.sh

[some minutes later....]

sh glite-lb_installer.sh
```

- **The installer downloads and then install all the needed packages**

- **Put host certificates under** `/etc/grid-security`

- **If you want to support CA's different from the ones distributed by gLite, install them now**

```
wget https:/gilda.ct.infn.it/RPMS/ca_GILDA-0.28-1.386.rpm

 rpm -i ca_GILDA-028-1.i386.rpm
```

- **If everything went ok, configuration can begin…..**

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- **Configuration comes through the execution of pyhton scripts, which takes as input xml files.**
- **So services have to be configured by editing these xml files**
- **Attributes in xml file are well commented and self-explaining**
- **Xml files are provided as templates, under** `/opt/glite/etc/config/templates`
- **Copy templates for glite-global, glite-wms, glite-lb, glite-security-utils,rgma-servicetool and rgma-commons to** `/opt/glite/etc/config`
- **Edit each of them separately**
- **Then we could launch the configurator scripts for WMS and LB**

- **Contains values for attributes used in the whole gLite environment (globus root path, glite root path, java home, host cert location…)**
- **Define correct values for these environment variables checking that they really exists**
- **Typically, is needed to set only JAVA_HOME attribute**
- **Other default values are fine**

```
ls /usr/java
j2sdk1.4.2_08
<JAVA_HOME
 description="Environment variable pointing to the SUN Java
JRE or J2SE package
 for example '/usr/java/j2sdk1.4.2_04/' or '$JAVA_HOME' (if
it is defined as an environment variable)"
 value="/usr/java/j2sdk1.4.2_08"/>
```

- **Here are defined some key values for the WMS daemons**

  glite.user.name : glite [user running glite Services]

  glite.user.group : glite [user group running glite Services]

  pool.account.basename : gildauser [prefix of pool user accounts]

  pool.account.group : gildauser [prefix of group for pool user accounts]

  pool.account.number : 50 [number of pool accounts that will be created]

  information.index.host : grid004.ct.infn.it

  information.index.port : 2170

  R-GMA Server : rgmasrv.ct.infn.it

- **Also, in glite, WMS can work both in push or pull mode**

   Pull mode : waiting notifications from CE's

   wms.Cemon.Port : 5120

   Push mode : query CE's to know their status

   wms.Cemon.Endpoints :

   http://glite-ce.ct.infn.it:8080/ce-monitor/services/cemonitor

- **Set the parameters to correctly build files needed by GSI**
- **Enable glite-mkgridmap cron-job**
- **Enable fetch-crl cron-job**

Edit `/opt/glite/etc/glite-mkgridmap.conf`

- *group ldap://grid-vo.cnaf.infn.it:10389/ou=Testbed-gilda,o=gilda,c=it .gildauser*
- *group vomss://kuiken.nikhef.nl:8443/voms/EGEE .gildauser*

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- **Configuration needs less parameters respect to WMS**
- **Default values are almost fine…**

```
glite.user.name : glite

glite.user.group : glite

rgma.servicetool.name : rgmasrv.ct.infn.it

rgma.servicetool.url.endpoint :
            rgmasrv.ct.infn.it:0/LB/LBServer
```

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- **glite-rgma-servicetool.cfg.xml**

  Define the site name of the publisher node, generally the FQDN of the RB

  `rgma.servicetool.sitename : rgmasrv.ct.infn.it`

- **glite-rgma-common.cfg.xml**

  Define the R-GMA server where to publish infos

  `rgma.server.hostname : rgmasrv.ct.infn.it`

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- **In order to commit configuration, execute**

python /opt/glite/etc/config/script/glite-wms-config.py

python /opt/glite/etc/config/script/glite-lb-config.py

Now your WMS should be capable to accept jobs and to dispatch them to the CE's.

Configuration file produced are /opt/glite/etc/*.conf

Make tests from UI !

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- **Possible problems**

  UI is unable to contact NS :

  possible reason : the user subject is not mapped

  No resources found with `glite-job-list-match`

  possible reason : WMS doesn't find resources

  check in glite_wms.conf that II_Contact, II_Port and Gris_Port are coherent with your II configuration.

  WARNING : Gris_Port could not be set from xml file, it is assumed to be equal to II_Port. So, if they are different, you have to change them from glite_wms.conf

  Many other problems could occur : ask to support !

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