WMS + LB Installation

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gLite

Lightweight Middleware for Grid Computing

Information Society

Enabling Grids for E-sciencE

- **What is a Resource Broker ?**

- **How to install it**

- **How to configure**

- **Possible troubles…**

- **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 !**

Installing WMS + LB

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- **Start from a fresh install of SLC 3.0.4**

- **Installation via**
  - Installer script (http://glite.web.cern.ch/glite/packages)
  - APT http://glite.web.cern.ch/glite/packages/APT.asp

- **Installation will install all dependencies, including**
  - other necessary gLite modules
  - external dependencies

- **JAVA is not included in distribution. Install it separately (>= 1.4.2_06)**
  http://java.sun.com/j2se/1.4.2/download.html

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- **Request host certificates for WMS.**
  - https://gilda.ct.infn.it/CA/mgt/restricted/srvreq.php

- **Install host certificate (hostcert.pem and hostkey.pem) in /etc/grid-certificates.**
  - *chmod 644 hostcert.pem*
  - *chmod 400 hostkey.pem*

- **If planning to use certificates released by unsupported EGEE CA's, be sure that their public key and CRLs (usually distributed with an rpm) are installed.**
  - **The CRL of the VO GILDA are available from**

  https://gilda.ct.infn.it/RPMS/ca_GILDA-0.28.1.i386.rpm

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1. **Verify if apt is present:**
   - **rpm -qa | grep apt**
   - **Install apt if necessary:**
     - **rpm -ivh** http://linuxsoft.cern.ch/cern/slc30X/i386/SL/RPMS/apt-0.5.15cnc6-8.SL.cern.i386.rpm

2. **Add gLite apt repository:**
   - Put one this line in a file (e.g. glite.list) inside the /etc/apt/sources.list.d directory (R 1.3)
   - `rpm http://glitesoft.cern.ch/EGEE/gLite/APT/R1.3/ rhel30 externals Release1.3 updates`
   - `apt-get update`
   - `apt-get upgrade`

3. **Install WMS+LB:**
   - `apt-get install glite-wms-config`
   - `apt-get install glite-lb-config`

See http://glite.web.cern.ch/glite/packages/APT.asp

- **If the installation is performed successfully, the following components are installed:**

    - *gLite in /opt/glite*

    - *Condor in /opt/condor-x.y.x (where x.y.z is the current condor version)*

    - *Globus in /opt/globus*

    - *MySQL in /usr/bin/mysql*

- **Configuration files**
  - **XML format**
  - **templates provided in /opt/glite/etc/config/templates**
- **Hierarchy of configuration file**
  - **Global configuration file**
  - **service specific configuration files**
- **Parameter groups**
  - **User parameters ('changeme')**
  - **Advanced parameters**
  - **System parameters**

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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 file to /opt/glite/etc/config**

- **Edit each of them separately**

- **Then we could launch the configurator scripts for WMS and LB**

eGee

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<JAVA_HOME description="Environment variable pointing to the SUN Java JRE or J2SE package for example '/usr/java/j2re1.4.2_08/' or '$JAVA_HOME' (if it is defined as an environment variable)" value="/usr/java/j2sdk1.4.2_08"/>

Check your java package installed.

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- **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 : **xxxx** [prefix of pool user accounts]

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

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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**

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```
<voms.voname description="The names of the VOs
    that this WMS node can serve">
    <value>gilda</value>
    <value>gildav</value>
</voms.voname>


<voms.vomsnode description="The full hostname of
    the VOMS server responsible for each VO. Even if
    the same server is reponsible for more than one
    VO, there must be exactly one entry for each VO
    listed in the 'voms.voname' parameter.">
    <value></value>
    <value>cert-voms-01.cnaf.infn.it</value>
</voms.vomsnode>
```

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

  Pull mode : waiting notifications from CE's

  wms.Cemon.Port : 5120

- **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 .gilda


group vomss://kuiken.nikhef.nl:8443/voms/gildav?/gildav
   .gildav
```

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- **Configuration needs less parameters respect to WMS**

<rgma.servicetool.service_type

description="The service type. This should be uniquely defined for each service type. The recommended format is the service namespace in reversed domain name format [Type: 'string']" value="org.glite.lb.lbserver"/>

<rgma.servicetool.name

description="Name of the service. This should be globally unique. [Example:HOSTANME_LB_LocalLogger] " value="${HOSTNAME}_${rgma.servicetool.service_type}"/>

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<rgma.servicetool.status_script

description="Script to run when determining the service status. This script should return an exit code of 0 to indicate the service is OK, other values should indicate an error. The first line of the standard output should be a brief message describing the service status (e.g. 'Accepting connections') Example: ${GLITE_LOCATION}/etc/init.d/glite-lb-bkserverd status [Type: 'string']"
value="${GLITE_LOCATION}/etc/init.d/glite-lb-bkserverd status"/>

- **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
  ```

- **Install the GILDA's VOMS server host certificates** *gildav-cert-voms-01.cnaf.infn.it.pem* **in the directory** **/etc/grid-security/vomsdir**

- **Edit the /opt/glite/etc/vomses file as follow:**

  "gildav" "cert-voms-01.cnaf.infn.it" "15008" "/C=IT/O=INFN/OU=Host/L=CNAF/CN=cert-voms-01.cnaf.infn.it" "gildav"

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

```
python /opt/glite/etc/config/script/glite-lb-
  config.py --configure
python /opt/glite/etc/config/script/glite-lb-
  config.py --start
```

```
python /opt/glite/etc/config/script/glite-wms-
  config.py --configure
python /opt/glite/etc/config/script/glite-wms-
  config.py --start
```

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

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- **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.

  Many other problems could occur : ask to support !