



Enabling Grids for E-scienceE

YAIM

Giuseppe Platania

INFN Catania

EMBRACE Tutorial

Clermont-Ferrand, 07-13.10.2006

www.eu-egee.org



Information Society



IMPORTANT: YAM and YAIM have a very similar Name but they are two different tools with completely different aims:

- **YAM**: tool to mirror and create apt repositories. It is installed only on your Apt+Kickstart server.
- **YAIM**: set of bash scripts to install and configure the middleware developed by EGEE project.

It provides:

- **gilda_ig_site-info.def**: it includes all Glite options and it has to be customized with all options specific for your site. The same configuration file should be used for all your nodes. Customize it with all the parameters needed for your site.
- **gilda_ig-groups.conf**: it includes all VO groups
- **gilda_ig-users.conf**: it includes all VO users
- **gilda_wn-list.conf**: it has to be customized with the list of your WNs

It provides:

- a set of bash “mini-scripts” (**functions**). Each function configures a specific middleware module. The functions are stored in the directories:

/opt/glite/yaim/functions (glite-yaim functions)

/opt/glite/yaim/functions/local (gilda_ig-yaim functions)

Functions in yaim/functions/local subdirectory override functions with the same name in yaim/functions; The list of which functions have to be run on each node is stored in the file:

/opt/glite/yaim/scripts/gilda_ig-node-info.def

- **gilda_ig_install_node**: it includes all Glite options and it has to be customized with all options specific for your site. The same configuration file should be used for all your nodes. Customize it with all the parameters needed for your site.
- **gilda_ig_configure_node**: it runs all the functions in order to configure the middleware in every grid node
- **gilda_ig_run_function**: it runs a single function

Important parameters to be set are:

- **MY_DOMAIN**= your.domain
- **CE_HOST**= your-ce.\$MY_DOMAIN
- **RB_HOST**= your-rb.\$MY_DOMAIN
- **WMS_HOST**= your-wms.\$MY_DOMAIN
- **PX_HOST**= your-px.\$MY_DOMAIN
- **BDII_HOST**= your-bdii.\$MY_DOMAIN
- **NTP_HOSTS_IP**=“your ntp server“
- **TORQUE_SERVER**=\$CE_HOST

- **INSTALL_SERVER_HOST**= my-akserver.\$MY_DOMAIN
- **OS_REPOSITORY**="rpm http://\$INSTALL_SERVER_HOST\rep/slc306-i386 os updates extras localrpms"
- **LCG_REPOSITORY**="rpm http://\$INSTALL_SERVER_HOST\rep/glite_sl3-i386 3_0_0 3_0_0 externals 3_0_0 updates"
- **IG_REPOSITORY**="rpm http://\$INSTALL_SERVER_HOST\rep/ig_sl3-i386 3_0_0 utils"
- **GILDA_REPOSITORY**="rpm http://\$INSTALL_SERVER_HOST\rep gilda_app-i386 app 3_0_0"

SITE informations:

- **SITE_EMAIL**=grid-prod@ct.infn.it # customize here
- **SITE_NAME**=INFN-CATANIA # customize here
- **SITE_LOC**="Catania, Italy" # customize here
- **SITE_LAT**=37.5 # customize here
- **SITE_LONG**=15.152 # customize here
- **SITE_WEB**="http://grid.ct.infn.it" # customize here
- **SITE_TIER**="GILDA Testbed"
- **SITE_SUPPORT_SITE**="grid-prod@ct.infn.it" # customize here

- **JAVA_LOCATION="/usr/java/j2sdk1.4.2_12"**
- **APEL_DB_PASSWORD="APELDB_PWD"**
- **BATCH_VERSION=torque-1.0.1b**
- **CE_CPU_MODEL=PIII**
- **CE_CPU_VENDOR=intel**
- **CE_CPU_SPEED=1001**
- **CE_OS="Scientific Linux CERN"**
- **CE_OS_RELEASE=3.0.4**
- **CE_OS_VERSION="SLC"**
- **CE_MINPHYSMEM=513**
- **CE_MINVIRTMEM=1025**
- **CE_SMPSIZE=2**
- **CE_SI00=381**
- **CE_SF00=200**
- **CE_OUTBOUNDIP=TRUE**
- **CE_INBOUNDIP=FALSE**
- **CE_RUNTIMEENV="<all TAGS of grid applications supported>"**

- **CLASSIC_HOST**="classic_SE_hostname"
- **CLASSIC_STORAGE_DIR**="/flatfiles/SE00"
- **DPM_HOST**=my-dpm.\$MY_DOMAIN
- **SE_LIST**="\$CLASSIC_HOST \$DPM_HOST"
- **BDII_HTTP_URL**="http://grid018.ct.infn.it/fileadmin/bdi
i/glite-bdii-update.conf"
- **BDII_REGIONS**="CE SE SE1" # list of the services
provided by the site
- **BDII_CE_URL**="ldap://\$CE_HOST:2135/mds-vo-
name=local,o=grid"
- **BDII_SE_URL**="ldap://\$CLASSIC_HOST:2135/mds-vo-
name=local,o=grid"
- **BDII_SE1_URL**="ldap://\$DPM_HOST:2135/mds-vo-
name=local,o=grid"

- **VOS**="gilda trigrud cometa euchina eumed eela"
- **ALL_VOMS_VOS**="gilda trigrud cometa eela euchina eumed"
- **QUEUES**="short long infinite"

For each **grid element** there is a corresponding **metapackage**, a rpm that does not provide any file but requires as dependencies all the packages needed for that kind of node.

For example:

- `rpm -qlp --requires spec/3_0/RPMS/GILDA_ig_CE_torque-3.0.0-4_slc3.noarch.rpm`

`ig_CE_torque >= 3.0.2-0_ig23`

`ca_GILDA >= 1.0-3`

`lcg-voms-vo-gilda >= 1.0-0`

`lcg-voms-vo-trigrid >= 1.0-0`

`lcg-voms-vo-cometa >= 1.0-0`

`lcg-voms-vo-eela >= 1.0-0`

`rpmlib(PayloadFilesHavePrefix) <= 4.0-1`

`rpmlib(CompressedFileNames) <= 3.0.4-1`

(contains no files)

For each **grid element** there is a corresponding keyword that has the same name of the metapackage to install. It runs all functions defined in

/opt/glite/yaim/scripts/gilda_ig-node-info.def:

```
CE_torque_FUNCTIONS="{CE_FUNCTIONS} config_torque_submitter_ssh
    config_torque_server"
```

where **{CE_FUNCTIONS}** is so defined:

```
CE_FUNCTIONS="{BASE1_FUNCTIONS} {BASE2_FUNCTIONS}
config_gip_scheduler_plugin
config_gip_software_plugin
config_fmon_client
config_lcgenv
config_bdii
config_workload_manager_env
config_wm_locallogger
config_apel_pbs
config_nfs_sw_dir_server
config_dgas_ce
config_lcmaps
config_lcas"
```

where $\{\text{BASE1_FUNCTIONS}\}$ $\{\text{BASE2_FUNCTIONS}\}$ are so defined:

BASE1_FUNCTIONS="

config_ntp
config_ldconf
config_sysconfig_edg
config_sysconfig_globus
config_sysconfig_lcg
config_crl
config_rfio"

BASE2_FUNCTIONS="

config_host_certs
config_users
config_edgusers
config_mkgridmap
config_java
config_rgma_client
config_gip
config_globus"

```
/opt/glite/bin/gilda_ig_install_node <your-site-info.def>  
<grid-element>
```

Ex.:

```
/opt/glite/bin/gilda_ig_install_node site-info.def  
GILDA_ig_CE_torque
```

```
/opt/glite/bin/gilda_ig_configure_node <your-site-  
info.def> <grid-element>
```

Ex.:

```
/opt/glite/bin/gilda_ig_configure_node site-info.def  
GILDA_ig_CE_torque
```