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Tutorial Cream

EMI2 CREAM CE Installation

Repositories configuraton

- Check OS (check also NTP and logrotate installation and configuration)

```
cat /etc/redhat-release
```

- Check repositories and remove DAG repo if needed

```
cd /etc/yum.repos.d/  
ls -l
```

- Install yum-protectbase

```
yum install yum-protectbase
```

- Configure EPEL

```
wget http://download.fedoraproject.org/pub/epel/5/x86_64/epel-release-5-4.noarch.rpm  
yum install epel-release-5-4.noarch.rpm
```

- Configure EMI repository

```
wget http://emisoft.web.cern.ch/emisoft/dist/EMI/2/sl5/x86_64/base/emi-release-2.0.0-1.  
yum install ./emi-release-2.0.0-1.sl5.noarch.rpm  
rpm --import http://emisoft.web.cern.ch/emisoft/dist/EMI/2/RPM-GPG-KEY-emi  
yum install ./emi-release-2.0.0-1.sl5.noarch.rpm
```

Metapackages installation

```
yum install ca-policy-egi-core  
yum install emi-cream-ce  
yum install emi-torque-utils  
yum install emi-torque-server
```

Enable munge

- Enable munge
 - ◆ Check if munge is installed

```
rpm -qa |grep munge
```

- ◆ Create a munge key

```
/usr/sbin/create-munge-key
```

- ◆ Check ownership and permissions

```
ls -l /etc/munge/munge.key
```

- ◆ Change ownership and/or permissions if needed

```
-r----- 1 root root 1024 Oct  1 17:44 /etc/munge/munge.key
```

- ◆ Check if munge started, start munge if needed and configure boot

```
chown munge:munge /etc/munge/munge.key
service munge status
  munged is stopped
service munge start
  Starting MUNGE:
chkconfig munge on
```

[OK]

- ◆ Distribute the munge key on the other cluster hosts

```
scp /etc/munge/munge.key tutor-wn:/etc/munge/munge.key
```

EMI2 CREAM + Torque Server Configuration

- Documentation:
 - ◆ YAIM 4 guide for sysadmins
 - ◆ site-info.def configuration variables
- Customize configuration files
 - ◆ Configure users, groups and worker node list
 - ◆ Create your own
 - ◆ Copy example files from examples to
 - ◆ Customize users.conf
 - ◆ Customize groups.conf
 - ◆ Fill your wn-list.conf
- Customize your site files
 - ◆ Edit and customize your site-info.def
 - ◆ Edit and customize your services/glite-creamce
 - ◆ Verify the configuration
- Install host certificate and check permissions

```
cp hostkey.pem hostcert.pem /etc/grid-security/
cp hostkey.pem hostcert.pem /etc/grid-security/
```

- Configure

```
/opt/glite/yaim/bin/yaim -c -s /root/siteinfo/site-info.def -n creamCE -n TORQUE_server
```

EMI2 WN Installation

Repositories configuraton

- Check OS

```
cat /etc/redhat-release
```

- Check repositories and remove DAG repo if needed

```
cd /etc/yum.repos.d/  
ls -l
```

- Install yum-protectbase

```
yum install yum-protectbase
```

- Configure EPEL

```
wget http://download.fedoraproject.org/pub/epel/5/x86_64/epel-release-5-4.noarch.rpm  
yum install epel-release-5-4.noarch.rpm
```

- Configure EMI repository

```
wget http://emisoft.web.cern.ch/emisoft/dist/EMI/2/s15/x86_64/base/emi-release-2.0.0-1.s15.noarch.rpm  
yum install ./emi-release-2.0.0-1.s15.noarch.rpm  
rpm --import http://emisoft.web.cern.ch/emisoft/dist/EMI/2/RPM-GPG-KEY-emi  
yum install ./emi-release-2.0.0-1.s15.noarch.rpm
```

Metapackages installation

- Install CA

```
yum install ca-policy-egi-core
```

- Install WN

```
yum install emi-wn
```

- Install batch system

```
yum install emi-torque-client
```

Enable munge

- ♦ Check ownership and permissions

```
ls -l /etc/munge/munge.key
```

- ♦ Change ownership and/or permissions if needed

```
-r----- 1 root root 1024 Oct  1 17:44 /etc/munge/munge.key
```

- ♦ Check if munge started, start munge if needed and configure boot

```
chown munge:munge /etc/munge/munge.key
```

```
service munge status
  munged is stopped
service munge start
  Starting MUNGE:
chkconfig munge on
```

[OK]

EMI2 WN Torque Configuration

- Customize configuration files
 - ◆ Configure users, groups and worker node list
 - ◆ Create your own
 - ◆ Copy example files from examples to
 - ◆ Customize users.conf
 - ◆ Customize groups.conf
 - ◆ Fill your wn-list.conf

- Customize your site files
 - ◆ Edit and customize your site-info.def
 - ◆ Edit and customize your services/glite-creamce
 - ◆ Verify the configuration

- Configure

```
/opt/glite/yaim/bin/yaim -c -s /root/siteinfo/site-info.def -n WN -n TORQUE_client
```

Check torque cluster

- From CE:
 - ◆ Check status of cluster nodes

```
pbsnodes
```

- ◆ Check if batch system works correctly

```
su - <user>
vi/gedit test.sh
#!/bin/bash
sleep 20
qsub -q dteam_q test.sh
qsub -q dteam_q test.sh
```

- To check supported queues:

```
ldapsearch -x -H ldap://<CE_FQDN>:2170 -b mds-vo-name=resource,o=grid
```

- To detect the jobid:

```
qstat -Q
qstat -a
```

- To check the job

```
tracejob <jobid>
```

Direct submission to CREAM CE

- connect to the user interface
- check user certificate

```
ls -al .globus
ls -al .glite
```

- check available queues and batch system

```
ldapsearch -x -H ldap://tutor-cream.cnaf.infn.it:2170 -b mds-vo-name=resource,o=grid
```

- create a user proxy

```
voms-proxy-init -voms dteam
```

- get the test jdl file : test.jdl
- submit the job

```
glite-ce-job-submit -d -r <ce_host_FQDN>:8443/cream-pbs-cert -a test.jdl
```

- check the job status

```
glite-ce-job-status <cream-id>
```

- get the job output

```
glite-ce-job-output <cream-id>
```


EMI2 site_BDII Installation

Repositories configuraton

- Check OS (check also NTP and logrotate installation and configuration)

```
cat /etc/redhat-release
```

- Check repositories and remove DAG repo if needed

```
cd /etc/yum.repos.d/  
ls -l
```

- Install yum-protectbase

```
yum install yum-protectbase
```

- Configure EPEL

```
wget http://download.fedoraproject.org/pub/epel/6/x86_64/epel-release-6-7.noarch.rpm  
yum install epel-release-6-7.noarch.rpm
```

- Configure EMI repository

```
wget http://emisoft.web.cern.ch/emisoft/dist/EMI/2/sl6/x86_64/base/emi-release-2.0.0-1.  
yum install ./emi-release-2.0.0-1.sl6.noarch.rpm  
rpm --import http://emisoft.web.cern.ch/emisoft/dist/EMI/2/RPM-GPG-KEY-emi  
yum install ./emi-release-2.0.0-1.sl6.noarch.rpm
```

Metapackages installation

```
yum install emi-bdii-site
```

EMI2 site_BDII Configuration

- Customize configuration and site files
- Configure using yaim

```
/opt/glite/yaim/bin/yaim -d 6 -c -s <path>/siteinfo/site-info.def -n BDII_site
```

Query BDII

- Test that the BDII is operational

```
ldapsearch -x -h <hostname> -p 2170 -b o=infosys
```

- Test that the BDII is updating

```
ldapsearch -x -h <hostname> -p 2170 -b o=infosys "*" modifyTimestamp
```

- Test that the Glue 1.3 root entry is available

```
ldapsearch -x -h <hostname> -p 2170 -b mds-vo-name=resource,o=grid
```

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- Test that the Glue 2.0 root entry is available

```
ldapsearch -x -h <hostname> -p 2170 -b o=glue
```

- Query local resource (the cream ce)

```
ldapsearch -x -H ldap://tutor-cream.cnaf.infn.it:2170 -b mds-vo-name=resource,o=grid
```

- Query the site-BDII (publishing all resources of your site)

```
ldapsearch -x -H ldap://tutor-bdii.cnaf.infn.it:2170 -b mds-vo-name=igi-tutor00,o=grid
```

- Query a top BDII publishing a set of sites

```
ldapsearch -x -H ldap://gridit-bdii-01.cnaf.infn.it:2170 -b mds-vo-name=local,o=grid
```

Useful files

- siteinfo.cream.tar: siteinfo.cream.tar
- siteinfo.site_bdii.tar: siteinfo.site_bdii.tar
- Test.jdl: Test.jdl
- info_scuola_cnaf.odt: info_scuola_cnaf.odt

-- PaoloVeronesi - 2012-09-20

- Site-info.def.good: Site-info.def.good

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