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StoRM Installation & Configuration

Repository Settings

Have a look to the section Repository Settings   of the general documentation and ensure that you have the common repo files.
Before starting the installation procedure remember to clean all yum cache and headers:

```
yum clean all
```

StoRM Prerequisites

Host certificate installation:

Hosts participating to the StoRM-SE (FE, BE and GridFTP hosts) must be configured with X.509 certificates signed by a trusted Certification Authority (CA). Usually the hostcert.pem and hostkey.pem certificates are located in the /etc/grid-security/ directory, and they must have permission 0644 and 0400 respectively:

Check existence

```
[~]# ls -l /etc/grid-security/hostkey.pem
-r-------- 1 root root 887 Mar 1 17:08 /etc/grid-security/hostkey.pem
[~]# ls -l /etc/grid-security/hostcert.pem
-rw-r--r-- 1 root root 1440 Mar 1 17:08 /etc/grid-security/hostcert.pem
```

Check expiration

```
[~]# openssl x509 -in hostcert.pem -noout -dates
```

Change permission: (if needed)

```
[~]# chmod 0400 hostkey.pem
[~]# chmod 0644 hostcert.pem
```

ACL SUPPORT

If you are installing a new StoRM this check must be done, if you are updating your install or your storage has ACL you can step out to this issue. StoRM uses the ACLs on files and directories to implement the security model. Doing so, StoRM uses the native access to the file system. Therefore in order to ensure a proper running, ACLs need to be enabled on the underlying file system (sometime they are enabled by default) and work properly.

Check ACL:

```
[~]# touch test
[~]# setfacl -m u:storm:rw test
```

Note: the storm user used to set the ACL entry must exist.

```
[~]# getfacl test
  # file: test
  # owner: root
  # group: root
  user::rw-
  user:storm:rw-
  group::r--
  mask::rw-
  other::r--

[~]# rm -f test
```

Install ACL (eventually):
If the getfacl and setfacl commands are not available on your host:

```
[~]# yum install acl
```

Enable ACL (if needed):
To enable ACL, you must add the acl property to the relevant file system in your /etc/fstab file. For example:

```
[~]# vi /etc/fstab
  ...
  /dev/hda3             /storage         ext3         defaults, acl           1 2
  ...
```

Then you need to remount the affected partitions as follows:

```
 [~]# mount -o remount /storage
```

This is valid for different file system types (i.e., ext3, xfs, gpfs and others).

EXTENDED ATTRIBUTE SUPPORT

StoRM uses the Extended Attributes (EA) on files to store some metadata related to the file (e.g. the checksum value); therefore in order to ensure a proper running, the EA support needs to be enabled on the underlying file system and work properly. Note: Depending on OS kernel distribution, for Reiser3, ext2 and ext3 file systems, the default kernel configuration should not enable the EA. **Check Extended Attribute Support** :

```
[~]# touch testfile
[~]# setfattr -n user.testea -v test testfile
[~]# getfattr -d testfile
  # file: testfile
  user.testea="test"
[~]# rm -f testfile
```

Install attr (eventually):
If the getfattr and setfattrl commands are not available on your host:

```
[~]# yum install attr
```

Enable EA (if needed):
To set extended attributes, you must add the user_xattr property to the relevant file systems in your /etc/fstab file. For example:

```
[~]# vi /etc/fstab
   ...
   /dev/hda3         /storage       ext3        defaults,acl,user_xattr     1 2
   ...
```

Then you need to remount the affected partitions as follows:

```
[~]# mount -o remount /storage
```

CAs installation:

- Install CAs on ALL profiles:

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

Service installation

- Install the StoRM metapackages, containing all packages needed by these four services. You can install StoRM in one host or in more hosts. The mandatory profiles to install are emi-storm-backend-mp and emi-storm-frontend-mp. The other profiles are optional, have a look to the StoRM documentation System Administrator Guide to determinate if you need also emi-storm-globus-gridftp-mp or emi-storm-gridhttps-mp.

```
yum install emi-storm-backend-mp
yum install emi-storm-frontend-mp
yum install emi-storm-globus-gridftp-mp
yum install emi-storm-gridhttps-mp
```

Service Configuration

To proper configure the StoRM BackEnd and FrontEnd profiles you have to customize the ig-site-indo.def file with you site parameter:

- ig-site-info.def
- ig-users.conf
- ig-groups.conf

YAIM Verification

- Before starting the configuration **PLEASE TEST** that you have defined all the mandatory variables for all the StoRM profiles.

```
 /opt/glite/yaim/bin/yaim -v -s <site-info.def> -n  se_storm_backend -n se_storm_frontend
```

You can find in this documentation: System Administrator Guide all mandatory variables. In the section **GENERAL YAIM VARIABLES**

If no errors are reported with the verification you can proceed to the configuration, otherwise correct them before continuing with the configuration.

YAIM Configuration

Before configure pay attention: if you are installing a new StoRM in a new host go on, if you are updating StoRM to new release follow this documentation Storm Migration before proceeding.

Please use the debug flag (`"-d 6"`) to configure the services in order to have detailed information. For your convenience yo can save all the configuration information in a log file you can look at any time, separated from the `yaimlog` defulat one.

```
/opt/glite/yaim/bin/yaim -c -d 6 -s -n  se_storm_backend -n se_storm_frontend 2>&1 | tee /root/co
```

IMPORTANT NOTE The order of the profile is important and must be : -n se_storm_backend -n se_storm_frontend

Service Testing - Reference Card

After service installation to have a look if all were installed in a proper way, you could have a look to Service StoRM Reference Card . In this page you can found were all the log files are written, what daemons are running after installation and any other useful service information.

-- CristinaAiftimiei - 2011-11-16

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