

Handout Unit II – support multiple VOs

Task 1 – Add an additional VO via YAIM (on your HeadNode)

- go back to your HeadNode and edit your site-info.def in order to add VO “Alice”

```
VOS="dteam alice"
```

```
# do not overwrite anything of  
RESET_DCACHE_CONFIGURATION=yes  
RESET_DCACHE_PNFS=no  
RESET_DCACHE_RDBMS=no
```

- rerun YAIM

```
/opt/glite/yaim/bin/yaim -c -s /root/site-info.def \  
-n glite-SE_dcache_admin_postgres
```

- check that the 'dteam' and 'alice' VOs are configured correctly

```
ls -l /pnfs/desy.de/data      # should return the VO directories
```

Task 2 – Install 2 new pools via YAIM (on your PoolNode)

- login to your HeadNode from the UI
- edit your site-info.def in order to specify 2 new pools

```
DCACHE_POOLS="<yourHeadNode>.desy.de:7:/pools/1    \  
<yourHeadNode>.desy.de:7:/pools/2 \  
<yourPoolNode>.desy.de:7:/pools/1 \  
<yourPoolNode>.desy.de:7:/pools/2"
```

- copy your site-info.def from your HeadNode to your PoolNode
(the same site-info.def on all machines!!)

on your HeadNode

```
scp /root/site-info.def <yourAccount>@<YourUINode>:
```

on your UI

```
scp ~/site-info.def root@<YourPoolNode>:
```

- login password-less to your PoolNode from the UI
you'll again find a “naked” SL4, just as in Unit I

- now let's install all necessary RPMS for a pool node (again similar to Unit I)

```
yum clean all
yum install glite-version glite-SE_dcachepool lcg-CA lcg-vomscerts \
glite-yaim-dcache
```

As in Unit I, install additional RPMs to use fallback authorization mechanism
We do not need it to run the pools, but for the SRM (later in Unit V).

```
yum install lcg-expiregridmapdir edg-mkgridmap edg-mkgridmap-conf \
fetch-crl d-cache-lcg
```

- take the default local users and groups

```
cp -r /opt/glite/yaim/examples/* /opt/glite/yaim/etc
```

- run YAIM. It will install nothing but the two new pools, because only there the hostnames match.

```
/opt/glite/yaim/bin/yaim -c -s /root/site-info.def -n glite-SE_dcachepool
```

- check what you got

```
ps -ef |grep start      # should show one pool domain running
```

- make sure that the new pools register themselves with the HeadNode

```
http://<yourHeadNode>:2288/cellInfo
```

Task 3 – migrate a pool from the HeadNode to the PoolNode

- based on dCache book, chapter “The maintenance Module”
(<http://www.dcache.org/manuals/Book/cookbook/cb-maintenance.shtml>)

- login to your HeadNode from the UI

- manually setup the dCacheCopyManager (as part of the maintenance module)

get the batch-file (dCache low-level conf. file, explained in Unit V)

```
wget -O /opt/d-cache/config/maintenance.batch \
http://www.desy.de/~radicke/school/maintenance.batch
```

setup and start the maintenancedomain

```
cd /opt/d-cache/jobs
./initPackage.sh
mkdir /opt/d-cache/config/copytask
./maintenance start
```

- copy the pool using the CopyManager within the maintenance module

login into dCache's admin interface

```
ssh -c blowfish -l admin -p 22223 <yourHeadNode>
(default password: dickerelch)
```

enter the PoolManager, which should have 4 pools registered

```
cd PoolManager
psu ls pool          # list registered pools
```

set the source pool (pool No 2 aka "<YourHeadNode>_2") read only

```
psu set pool <sourcePool> ronly
```

```
psu ls pool -l      # double-check that one pool is read only
```

enter the maintenance module

```
..
cd maintenance
```

```
ls module -l        # list all available modules, copy-module should be listed
```

```
create task copyTask copy-module    # create a new copy task and attach to it
```

```
ls task -l          # list all tasks
```

now start the copying from <sourcePool>=<yourHeadNode>_2 to
<targetPool>=<YourPoolNode>_1

```
load pool <sourcePool>
```

```
ls stat -l          # number of files remaining to be copied
```

```
ls files            # list the files of the source pool
```

```
copyto pools <targetPool>          # copy all of the files from source to target
```

```
ls stat -l          # should show zero files remaining
```

```
..
cd <targetPool>
```

```
rep ls              # all copied files should be listed
```

remove the files from the source pool (freeing space)

```
..
cd <sourcePool>
```

```
rep ls              # should return the files we are going to delete
```

```
rep rmclass dteam:STATIC      # delete all files from a certain storage class

set the source pool back to read-write

..
cd PoolManager
psu set pool <sourcePool> notrdonly
```

Task 4 – Assigning pools to VOs

- login to dCache admin interface and enter the PoolManager

```
cd PoolManager
```

- list current pool groups

```
psu ls pgroup -l
```

The last command should return 3 pool groups: 'default' containing 4 pools, 'dteam' (no pools), 'alice' (no pools as well) and 'ResilientPools' (can be ignored here).

- assign pools to the VOs

```
psu addto pgroup dteam <YourHeadNode>_1
psu addto pgroup dteam <YourPoolNode>_1
```

```
psu addto pgroup alice <YourHeadNode>_2
psu addto pgroup alice <YourPoolNode>_2
```

- remove all 4 pools from the 'default' poolgroup to make them exclusive to the Vos

```
psu removefrom pgroup default <YourHeadNode>_1
psu removefrom pgroup default <YourHeadNode>_2
psu removefrom pgroup default <YourPoolNode>_1
psu removefrom pgroup default <YourPoolNode>_2
```

- make changes permanent (save to /etc/opt-dcache/config/PoolManager.conf)

```
save
```

Task 5 – VO-specific testing of your dCache instance

- from the UI: write some files into your dCache, using both DNs (to be in different Vos).
- Paths with write access

```
for VO dteam:      /pnfs/desy.de/data/dteam
for VO alice:      /pnfs/dest.de/data/alice
```

- writing should fail with one DN and succeed with the other one (for a given path)
- observe your dCache and make sure that files are written into their poolgroup, hence pools are not shared anymore among VOs

Task 6 – Check what the InfoProvider publishes

- setup a missing symbolic link on the HeadNode (bug in YAIM, will be fixed soon)

```
ln -s /opt/d-cache/jobs/infoDynamicSE-plugin-dcache \
/opt/glite/etc/gip/plugin/
```

- do an LDAP query against the dCache BDII

```
ldapsearch -h <YourHeadNode>.desy.de -p 2170 -b "o=grid" -x
```

query LDAP to get the usedSpace/totalSpace per VO

```
ldapsearch -LLL -h <YourHeadNode>.desy.de -p 2170 -b "o=grid" -x \
'(objectClass=GlueSA)' GlueSASpaceAvailableSpace GlueSASpaceUsedSpace
```