



dCache SRM V2.2 Hands On Session

Edinburgh, November 2007



Goals

- Learn about dCache SRM 2.2 Configuration
 - configure Link Groups
 - Create LinkGroupVOAuthorization file
 - Activate SRM Space Manager
 - Configure default Access Latency and Retention Policy
 - System Wide defaults
 - Path Specific defaults
 - Reserve Spaces
 - Write Files in the Spaces

PPS System Configuration

- Use PPS Systems Requirements as a basis
- Atlas System

- VO Requirements
 - /atlas/Role=production
 - /atlas/soft-valid/Role=production
 - **dteam001/Role=***
- Space Tokens with Descriptions:
 - TAPE for the CUSTODIAL-NEARLINE storage class
 - DISK for the REPLICA-ONLINE storage class
- **Paths**
 - /pnfs/nesc.ed.ac.uk/data/dteam/atlas/tape for Tape
 - /pnfs/nesc.ed.ac.uk/data/dteam/atlas/disk for Disk

Source: <https://twiki.cern.ch/twiki/bin/view/LCG/GSSDATLASPPS>

- LHCb

- VO Requirements
 - /lhcb/lcgprod
 - **dteam001/Role=***
- Space Tokens
 - LHCb_RAW and LHCb_RDST for the CUSTODIAL-NEARLINE storage class

Source: <https://twiki.cern.ch/twiki/bin/view/LCG/GSSDLHCBPPS>

PoolManager.conf pools and links

```
psu create pool lab-22_1
psu create pool lab-22_2
```

```
psu create pgroup dteam-disk
psu addto pgroup dteam-disk lab-22_1
psu create pgroup dteam-tape
psu addto pgroup dteam-tape lab-22_2
```

```
psu create link dteam-link-disk world-net dteam-groups
psu set link dteam-link-disk -readpref=20 -writepref=20
    -cachepref=20
psu add link dteam-link-disk dteam-disk
```

```
psu create link dteam-link-tape world-net dteam-groups
psu set link dteam-link-tape -readpref=20 -writepref=20
    -cachepref=20
psu add link dteam-link-tape dteam-tape
```

PoolManager.conf link groups

```
psu create linkGroup dteam-tape-link-group
psu addto linkGroup dteam-tape-link-group dteam-tape-link
psu set linkGroup custodialAllowed dteam-tape-link-group true
psu set linkGroup outputAllowed dteam-tape-link-group false
psu set linkGroup replicaAllowed dteam-tape-link-group false
psu set linkGroup onlineAllowed dteam-tape-link-group false
psu set linkGroup nearlineAllowed dteam-tape-link-group true
```

```
psu create linkGroup dteam-disk-link-group
psu addto linkGroup dteam-disk-link-group dteam-disk-link
psu set linkGroup custodialAllowed dteam-disk-link-group false
psu set linkGroup outputAllowed dteam-disk-link-group true
psu set linkGroup replicaAllowed dteam-disk-link-group true
psu set linkGroup onlineAllowed dteam-disk-link-group true
psu set linkGroup nearlineAllowed dteam-disk-link-group false
```

Reload PoolManager.conf

```
root@lab-22# ssh admin@localhost -c  
blowfish -p 22223  
admin@localhost's password: dickerelech
```

```
dCache Admin (VII) (user=admin)
```

```
(local) admin > cd PoolManager  
(PoolManager) admin > reload -yes  
#you can try  
(PoolManager) admin > psu ls -l link  
(PoolManager) admin > psu ls -l linkGroup
```

dCacheSetup

```
srmSpaceManagerEnabled=yes
```

```
srmImplicitSpaceManagerEnabled=yes
```

```
SpaceManagerDefaultRetentionPolicy=CUSTODIAL
```

```
SpaceManagerDefaultAccessLatency=NEARLINE
```

```
SpaceManagerLinkGroupAuthorizationFileName=  
= /opt/d-cache/etc/LinkGroupAuthorization.conf
```

LinkGroupAuthorization.conf

```
root@lab-22# cat /opt/d-  
cache/etc/LinkGroupAuthorization.conf
```

```
LinkGroup dteam-tape-link-group  
/atlas/Role=production  
/atlas/soft-valid/Role=production  
dteam001/Role=*
```

```
LinkGroup dteam-disk-link-group  
/lhcb/lcgprod  
dteam001/Role=*
```


Restart dCache, SRM

```
root@lab-22# /opt/d-cache/bin/dcachel-core stop
root@lab-22# /opt/d-cache/bin/dcachel-core start
root@lab-22# su - labuser
labuser@lab-22$ grid-proxy-init
labuser@lab-22$ srmping -2 -debug srm://lab-
22.nesc.ed.ac.uk:8443/pnfs/nesc.ed.ac.uk
labuser@lab-22$ ssh localhost -l admin -c
blowfish -p 22223
(local) admin > cd SrmSpaceManager
```

LinkGroups in SrmSpaceManager

```
(SrmSpaceManager) admin > ls
```

```
Reservations:
```

```
total number of reservations: 0
```

```
total number of bytes reserved: 0
```

```
LinkGroups:
```

```
0 Name:dteam-disk-link-group FreeSpace:2147483648  
VOs:{/lhcb/lcgprod:}{dteam001:*} onlineAllowed:true  
nearlineAllowed:true replicaAllowed:true  
onlineAllowed:true custodialAllowed:false  
UpdateTime:1194888073861
```

```
1 Name:dteam-tape-link-group FreeSpace:2147483648  
VOs:{/atlas:production}{/atlas/soft-  
valid:production}{dteam001:*} onlineAllowed:false  
nearlineAllowed:true replicaAllowed:false  
onlineAllowed:false custodialAllowed:true  
UpdateTime:1194888073861
```

```
total number of linkGroups: 2
```

```
total number of bytes reservable: 4294967296
```

```
last time all link groups were updated: 1194888073861
```

```
(SrmSpaceManager) admin >
```

Reserve Space

```
labuser@lab-22$ srm-reserve-space -space_desc=TAPE  
-retention_policy=CUSTODIAL -  
access_latency=NEARLINE -desired_size=1000 -  
guaranteed_size=1000 -lifetime=-1 srm://lab-  
22.nesc.ed.ac.uk:8443/
```

Space token =2

```
labuser@lab-22$ srm-get-space-metadata srm://lab-  
22.nesc.ed.ac.uk:8443/ 2
```

Space Reservation with token=2

```
owner:VoGroup=dteam001 VoRole=  
totalSize:1000  
guaranteedSize:1000  
unusedSize:1000  
lifetimeAssigned:-1  
lifetimeLeft:-1  
accessLatency:NEARLINE  
retentionPolicy:CUSTODIAL
```

```
labuser@lab-22$
```

Use Space

```
labuser@lab-22$ srmcp -debug=true -space_token=2  
file:///etc/group srm:///lab-  
22.nesc.ed.ac.uk:8443/pnfs/nesc.ed.ac.uk/data/dteam/testspace
```

```
labuser@lab-22$ srmls -l srm:///lab-  
22.nesc.ed.ac.uk:8443/pnfs/nesc.ed.ac.uk/data/dteam/testspace
```

```
2505 /pnfs/nesc.ed.ac.uk/data/dteam/testspace
```

```
storage type:PERMANENT
```

```
retention policy:CUSTODIAL
```

```
access latency:NEARLINE
```

```
...
```

Dir Based defaults

```
root@lab-22# cd /pnfs/nesc.ed.ac.uk/data/dteam/
root@lab-22# ls -ld ../dteam
drwxrwxr-x  1 dteam001 dteam 512 Nov 12 17:33
  ../dteam/
root@lab-22# mkdir custodial
root@lab-22# mkdir replica
root@lab-22# chown dteam001:dteam custodial
root@lab-22# chown dteam001:dteam replica
root@lab-22# cd replica/
root@lab-22# echo "ONLINE" >
  ". (tag) (AccessLatency) "
root@lab-22# echo "REPLICA" >
  ". (tag) (RetentionPolicy) "
```

Store File in the new dir

```
root@lab-22# su - labuser
labuser@lab-22$ srmcp file:///etc/group
srm://lab-
22.nesc.ed.ac.uk:8443/pnfs/nesc.ed.ac.uk/data/dt
eam/replica/test-dir-defaults
labuser@lab-22$ srmls -l srm://lab-
22.nesc.ed.ac.uk:8443/pnfs/nesc.ed.ac.uk/data/dt
eam/replica/test-dir-defaults
2505
/pnfs/nesc.ed.ac.uk/data/dteam/replica/test-dir-
defaults
storage type:PERMANENT
retention policy:REPLICA
access latency:ONLINE
locality:ONLINE
```