

SRM2.2 deployment workshop - DPM tutorial session

Greig Cowan and Sophie Lemaitre

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1 Logging on

Use an ssh client on your laptop to log on to your DPM machine.

- Username: `labuser`
- Hostname: `lab-XX.nesc.ed.ac.uk`
- Password: `fruit48BAT`
- Root access via sudo: `sudo bash`

2 SRM2.2 configuration

The developers will talk through the necessary commands that must be issued to configure SRM2.2 spaces.

2.1 Useful links

- <https://twiki.cern.ch/twiki/bin/view/LCG/DpmAdminGuide>

3 Client tools

If you want to test out your SRM2.2 configuration you will find the latest (not even in production!) versions of the `lcg-*` and `srm*` client tools available. Be aware that the `lcg-*` commands come from EGEE and provided by the `lcg.util` package which depends on GFAL (Grid File Access Library). The `srm*` clients are written in Java by FNAL developers. They are distributed as part of dCache.

```
$ rpm -qa|grep lcg_util
lcg_util-1.6.3-1.slc4
$ rpm -qa|grep GFAL
GFAL-client-1.10.4-1.slc4
$ rpm -qa|grep dcache-client
dcache-client-1.8.0-0
```

Older versions of `lcg.util`/`GFAL` always required a lookup of the BDII in order to work out which storage element (SE) endpoint to use. The latest version of the client tools have a option (`-b`) which switches off the calls to the BDII. Will try both methods in the examples below. The BDII in use is defined by:

```
$ echo $LCG_GFAL_INFOSYS
wn3.epcc.ed.ac.uk:2170
```

The `srm*` tools never interact with the BDII or LFC.

3.1 Using the client tools

Before running the clients you should switch to the `labuser` account.

- `$ su - labuser`

- `$ grid-proxy-init`
- Password: SRMWorkshop

4 Examples

4.1 srmPing

Make sure that the SRM endpoint is up and responding by using the `srmPing` client. Remember that the DPM SRM2.2 endpoint is listening (by default) on port 8446. It is possible to change the default port by modifying the contents of the file `/etc/shift.conf`.

```
$ srmPing -2 -debug srm://lab-XX.nesc.ed.ac.uk:8446
```

If the ping is successful (i.e. the SRM responds) and the `-debug=true` option is not used then there is no output and the client exits with code 0. The version of the DPM is also returned.

4.2 srmLs

In SRM2.2 there is a method which can be used to list the contents of directories in the namespace.

4.2.1 lcg-* client with BDII

```
$ lcg-ls -D srmv2 -v --vo dteam file:/etc/group
srm://lab-XX.nesc.ed.ac.uk:8446/dpm/nesc.ed.ac.uk/home/dteam/
```

4.2.2 lcg-* client without BDII

In this case, it is necessary to specify the full endpoint, which includes the `/srm/managerv2?SFN=` string and the `-D` option which defines the type of the destination SRM.

```
$ lcg-ls -D srmv2 -b -v
srm://lab-XX.nesc.ed.ac.uk:8446/srm/managerv2?SFN=/dpm
```

4.2.3 srm* client

```
$ srmLs srm://lab-XX.nesc.ed.ac.uk:8446/dpm/nesc.ed.ac.uk/home/dteam
```

4.3 srmPut

We can copy a file into the system in the following way:

4.3.1 lcg-* client with BDII

```
$ lcg-cp -D srmv2 -v --vo dteam file:/etc/group
srm://lab-XX.nesc.ed.ac.uk:8446/dpm/nesc.ed.ac.uk/home/dteam/'date +%s'
```

4.3.2 lcg-* client without BDII

```
$ lcg-cp -D srmv2 -b -v --vo dteam file:/etc/group
-d srm://lab-XX.nesc.ed.ac.uk:8446/srm/managerv2?SFN=/dpm/nesc.ed.ac.uk/home/dteam/'date +%s'
```

4.3.3 srmcp client

```
$ srmcp -2 -debug file:///etc/group
srm://lab-XX.nesc.ed.ac.uk:8446/dpm/nesc.ed.ac.uk/home/dteam/'date +%s'
```

4.4 srmGet

4.5 srmCopy

srmCopy is not supported by the lcg-* client tools. Rather, to copy a file from one SRM to another it performs a third party copy.

4.6 dCache

For dCache SRM endpoints, note that the SRM1 and SRM2.2 services are accessed via the same port: 8443. You do not have to worry about this if you are using the lcg-* clients and they are accessing the BDII (since the relevant port information should be contained in there).

Remember that the dCache namespace is typically structured like this:

```
/pnfs/domain/data/voName/
```

However, this is not always the case. Again, this information is published by the SE into the information system. If the lcg-* client performs a BDII lookup, then it will obtain the correct path.

5 Conclusion

So you can now all configure DPM SRM2.2 space management and perform space reservation. Congratulations! Note that we will put this material online, probably somewhere in the GridPP wiki or DPM section of the LCG twiki. We will let you know when this happens.