

protoDUNE data management emulation

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Goal is to emulate components of protoDUNE data management path:

- DAQ buffer
- DAQ buffer interface
- "EOS" - not really EOS, but using same/similar protocol
- "Castor" - not really Castor, but using same/similar protocol
- SAM - development or test system
- FTS-1 and FTS-2 for data transfers

xrootd components:

- OSG Twiki has good documentation (followed below):
 - <https://twiki.grid.iu.edu/bin/view/Documentation/Release3/InstallXrootd>
- xrootd is in the xrootd-server RPM
- xrdcp is in the xrootd-client RPM

Establishing these on FermiCloud

- FermiCloud VM instantiation, general
 - Following instructions on <https://cdcvs.fnal.gov/redmine/projects/fcl/wiki>
- Specifically have created:
 - fermicloud392.fnal.gov
 - Both fuess and fuess/root are in root .k5login
 - Comes with host keys in /etc/grid-security/hostcert.pem and hostkey.pem
 - which are symlinks to the secure FermiCloud repository /etc/cloud-security directory
 - with modifications:
 - Copied /etc/yum.repos.d/osg-el6.repo from my SL6.6 VM
 - ◆ This is the [osg] repo enabled within
 - yum --nogpgcheck install osg-release
 - yum install xrootd-server
 - ◆ gives version 4.3.0-1
 - ◆ note that this:
 - ◇ creates an xrootd user ID
 - ◇ creates default /etc/sysconfig/xrootd
 - ▶ Edit this to uncomment only the standalone version
 - yum install xrootd-client
 - ◆ gives version 4.3.0-1
 - **May need to install CA certs**
 - service xrootd start
 - ◆ writes to /var/log/xrootd/xrootd.log
 - run a test of the install:

```
[root@fermicloud392 ~]# xrdcp hktemp.log root://localhost:1094//tmp/first_test
[80B/80B][100%][=====][80B/s]
```
 - also able to now copy from my local VM (don't know how this authenticates!)

```
[root@SLF66-64 ~]# xrdcp junk root://fermicloud392.fnal.gov:1094//tmp/junk2
[1.419kB/1.419kB][100%][=====][1.419kB/s]
```