

Data Distribution Goals

- 100% replication of raw nd280 data at T1 (RAL, TRIUMF)
- 100% replication of processed data at T1
- (Some metric of cpu x disk)% replication across T2 sites
- Similar for MC

Resources

- nd280Computing contains the (PYTHON) tools for data distribution (and production)
- Separate from Yoshi's KEK scripts
- File Transfer Service favoured over standard glite copy and register tools

Caveats

- Data from KEK may go to either of the TI sites at any given time
- FTS does not register data to LFC
- The presence of data on SEs that aren't registered in LFC is commonplace

Implementation

- Replication and Registration two separate, parallel processes
- Both should be fully automated
- Each have particular/peculiar constraints

Replication: key issues

- Intermittently, FTS doesn't seem to be able to get credentials from myproxy server (investigation still underway)
- nd280Computing set up to send one submission/file - multiple files/submission now implemented
- Need to think carefully about use of channels and streams (1 way, RAL-centric)

Registration: key issues

- Inefficient - lcg-ls/srmls effectively banned from automated scripts - therefore must query whole LFC and check piecewise against individual SEs
- Time consuming - Ideally aim to have TI sites sync'd within < 24hrs - needs multiple parallel jobs

Online monitoring

- GSTAT <http://gstat-prod.cern.ch/gstat/vo/t2k.org/>
- FTS logs http://www.hep.shef.ac.uk/people/perkin/t2k_logs
- FTS monitoring
http://lcgwww.gridpp.rl.ac.uk/cgi-bin/fts-mon/fts-mon.pl?q=transfers_count&p=12hours&v=t2k.org&c=All&s=All&r=All&i=&.submit=Submit+Query

Status update

- Managing TI synchronisation with cron
 - 1x daily FTS synchronisation
 - 4x daily file registration
- Scripts use `cron` to generate daily credentials from `myproxy` certificate
- TI sync. within 24hrs going okay
- Daily removal of failed FTS transfers

Status update

- Increased RALCLG2-VICTORIALCG2 file limit from 5 to 10 (one way)
- No capability to prioritise one FTS channel over another (only files within a channel)
- Started T2 distribution:
 - 100% raw @ Lyon, Imperial, QMUL, Liverpool, Sheffield

Status update

- Transfers from KEK currently directed to QMUL
- In principal not a problem
- No QMUL-TRIUMF FTS channel, so there's a bit of a delay
- Scripts died over the weekend, transfers resumed today

T1 replication report

Generating T1 File Replication Report for Mon Feb 28 17:01:07 2011

```
lfn:/grid/t2k.org/nd280/raw/ND280/ND280/00007000_00007999/  
srm-t2k.gridpp.rl.ac.uk           : 5288/5588 replicas  
t2ksrm.nd280.org                   : 5233/5588 replicas
```

It took 3757.61303496 seconds to generate this report.

All site replication report

Generating ALL File Replication Report for Sun Feb 27 06:01:23 2011

```
lfn:/grid/t2k.org/nd280/raw/ND280/ND280//00003000_00003999
ccsrm02.in2p3.fr           : 1233/1234 replicas
gfe02.grid.hep.ph.ic.ac.uk : 1234/1234 replicas
hepgrid11.ph.liv.ac.uk    : 1233/1234 replicas
lcgse0.shef.ac.uk        : 1230/1234 replicas
se03.esc.qmul.ac.uk       : 1229/1234 replicas
srm-t2k.gridpp.rl.ac.uk   : 1234/1234 replicas
t2ksrm.nd280.org          : 1234/1234 replicas
```

```
lfn:/grid/t2k.org/nd280/raw/ND280/ND280//00004000_00004999
ccsrm02.in2p3.fr           : 4788/4788 replicas
gfe02.grid.hep.ph.ic.ac.uk : 2370/4788 replicas
hepgrid11.ph.liv.ac.uk    : 1023/4788 replicas
lcgse0.shef.ac.uk        : 1933/4788 replicas
se03.esc.qmul.ac.uk       : 4788/4788 replicas
srm-t2k.gridpp.rl.ac.uk   : 4788/4788 replicas
t2ksrm.nd280.org          : 4788/4788 replicas
```

```
lfn:/grid/t2k.org/nd280/raw/ND280/ND280//00005000_00005999
ccsrm02.in2p3.fr           : 1887/1888 replicas
gfe02.grid.hep.ph.ic.ac.uk : 1888/1888 replicas
hepgrid11.ph.liv.ac.uk    : 1888/1888 replicas
lcgse0.shef.ac.uk        : 1886/1888 replicas
se03.esc.qmul.ac.uk       : 1898/1888 replicas
srm-t2k.gridpp.rl.ac.uk   : 1888/1888 replicas
t2ksrm.nd280.org          : 1888/1888 replicas
```

```
lfn:/grid/t2k.org/nd280/raw/ND280/ND280//00006000_00006999
ccsrm02.in2p3.fr           : 3174/5451 replicas
gfe02.grid.hep.ph.ic.ac.uk : 3086/5451 replicas
se03.esc.qmul.ac.uk       : 1107/5451 replicas
srm-t2k.gridpp.rl.ac.uk   : 5444/5451 replicas
t2ksrm.nd280.org          : 5241/5451 replicas
```

Coming up...

- RDP4
- Enhanced reporting
- WMS/CREAM?
- Available disk space?