

# T3 DDM in US ATLAS

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# General setup in T3 DDM

- DQ2 SS and LFC are located at BNL.
  - Debugging the transfer and/or registration problem must be done by T3 personnel.
  - Log viewers for DQ2 SS and LFC will be available soon.
- T3 will setup own storage.
  - Currently, all T3s have SRM. But, the requirement of SRM has been dropped due to the complexity of setting up and running SRM services stably.

# T3 without SRM

- Since all ATLAS sites have SRM, the removing SRM from the requirement will have some impact to DDM services.
  - DQ2 SS
    - Since SRM handles “mkdir” in DQ2, DQ2 must call additional command for gridftp sites.
    - Minor change is required.
      - glite-gridftp-mkdir -> edg-gridftp-mkdir
      - edg-gridftp-mkdir supports “--parent” option, simplifying codes.
  - FTS 2.2
    - FTS does not officially support the 3<sup>rd</sup> party transfer to/from gridftp servers. But, since US used to have a lot of gridftp only sites, we know it used to work well.

# Testing GRIDFTP only site

- `edg-gridftp-mkdir -parent`
  - Works fine!
  - `edg-gridftp-mkdir --parents`  
`gsiftp://atifs02.phy.duke.edu//srv/data/srm/atlaslocalgroupdisk/loadtest/test/test1/test2/  
test3/test4`
- FTS transfer to gridftp site
  - Works fine as well.
  - `glite-transfer-submit -s https://fts02.usatlas.bnl.gov:8443/glite-data-transfer-  
fts/services/FileTransfer -t ATLASLOCALGROUPDISK`  
`srm://dcsrm.usatlas.bnl.gov/pnfs/usatlas.bnl.gov/MCDISK/test/hiro/user.Hironorilto.MI  
CH.Load_001.020`  
`gsiftp://atifs02.phy.duke.edu:2811/srv/data/srm/atlaslocalgroupdisk/loadtest/test/test1/  
testgridftp.1`
  - NOTE: the transfer is done as if it was writing to “ATLASLOCALGROUPDISK” space  
token area.
    - Why does Spacetoken without SRM work? Is it because of the static nature of the space  
token in Bestman?
    - Or, Bestman just completely ignores the spacetoken?
  - Additional advantage:
    - Unlike SRM site, there is no need to list the site storage information in FTS information  
system to do FTS transfer.
    - In case where the site is not listed in the FTS information system, it will use “\*” channel of  
other site.

# Testing GRIDFTP only site

- FTS 2.2
  - FTS can not mix gridftp and srm sites in a single transfer request in a channel, it might need some grouping in the channel configuration when a channel is shared.
- LFC
  - LFC does not really care about the replica site. It works fine with any storage.
- LCG clients
  - Works fine as well.
  - `lcg-cp -v -b`  
`gsiftp://atlhs02.phy.duke.edu:2811/srv/data/srm/atlaslocalgroupdisk/loadtest/test/test1/testgridftp.1 file:///home/test.1`

# Can we use only GRDFTP?

- YES.
  - FTS, DQ2 (minor change), LFC and LCG-clients all works fine with gridftp only storage.
  - Need to check with Bestman experts why “spacetoken” works? But, since it does, it makes the setup in ToA to be very consistent. That is that the site name should have corresponding space token information. (The fact that the Bestman ignores it internally is irrelevant!) But, it probably will not work with dCache or other storage types.
    - But, this is really not a problem.

# Any other problem for T3

- Gridftp works great. Can a site has multiple gridftp servers without SRM?
  - Highly against it. Should have one ToA entry per one T3 institution.
- Need to test checksum validation.
- The throughput test shows the great variation in the performance between T3s.
  - I am considering to setup one channel for each T3 instead of one channel for all or groups of T3s.
    - It increases the initial setup time, but it reduces the operation headache for the rest of the time.
    - The current FTS hardware is sufficient to support additional ~40 T3 channels. (BNL FTS uses to have over 100 channels when US was GRIDFTP only mode.)
    - Since channel is not shared, the number of concurrent transfers in each T3 channel will be reduced to protect T1/T2 storages.
      - Slow sites will get 2 or 3 concurrent transfer. The faster one will get 7 at most.
      - Throughput-test will become a bit more complex to adapt to different configuration for each site. But, it is just a test!

# Conclusion

T3 with only GRIDFTP server will work fine with current DDM mechanism, reducing the setup complexity at T3 site.



Great variation in the performance within various T3s requires own FTS channel, increasing the initial setup for FTS admin

