

# Xrootd Demonstrator description, schedule and results

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# Description

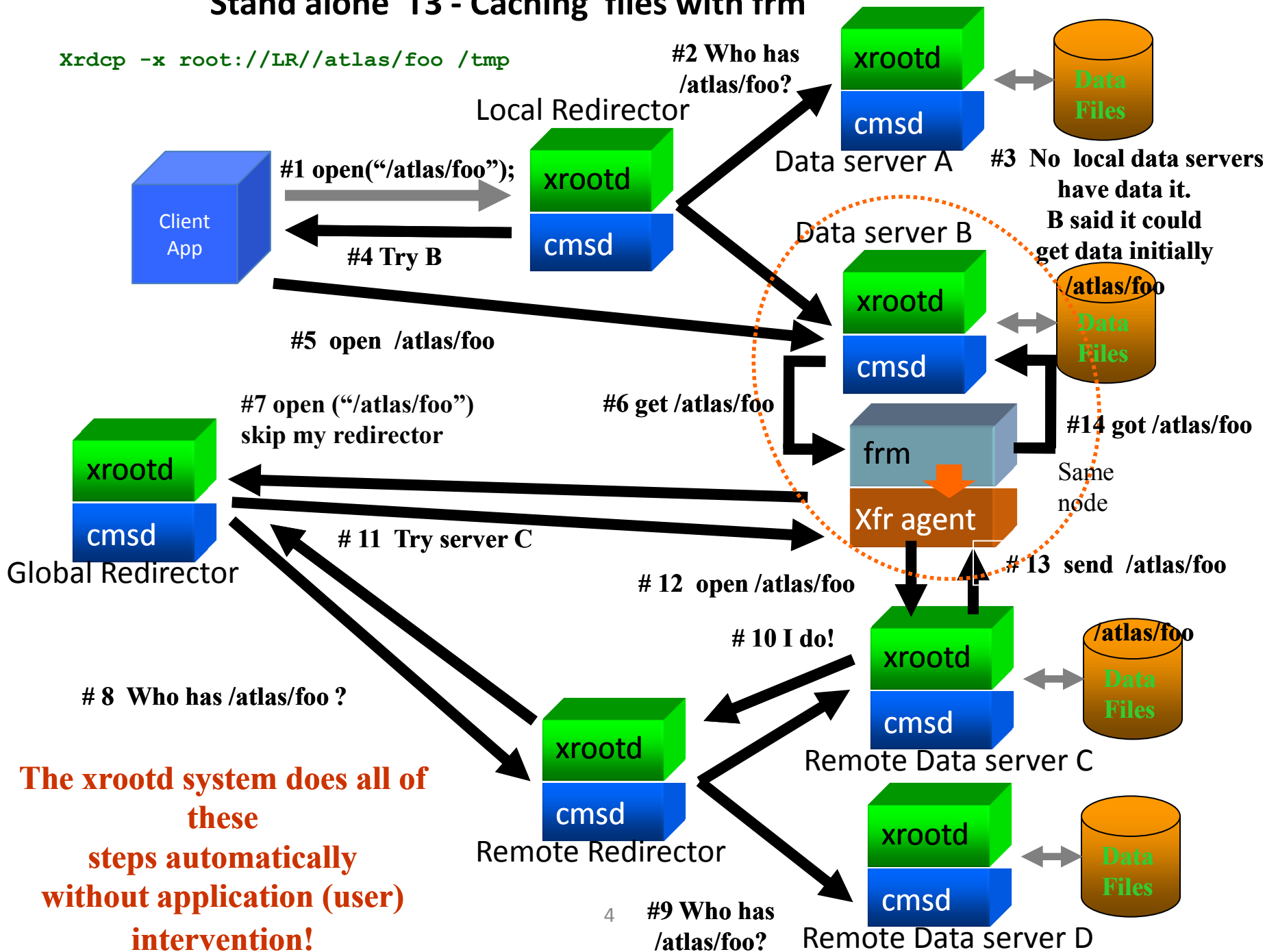
- XRootd makes an excellent data discovery and data transfer system when used with a global name space
- It is used to augment and not replace the existing DDM system
- Tier 1 and Tier 2 sites would act as seeds for the data sources (Read only)
  - See Charles' talk from Monday and next on the technology
- Tier 3 both fetch the data and serve it (sink and source – reducing load between T1/T2 and T3)

# Advantages

- Tier 1 and Tier 2 sites can limit the bandwidth using an existing add-on to Xrootd  
(overloading the system not an issue)
- Tier 3 sites would participate in delivering data to other Tier 3 sites
- Popular data sets would be replicated as required based on usage (similar to PD2P)
- Tier 3 sites co-located with Tier 2 (or Tier 1) sites could use XRootd data servers attached T2 storage for read only access
- CERN based physicists can easily fetch their own ROOT files from their home institute clusters to their local desktop

# Stand alone T3 - Caching files with frm

```
Xrdcp -x root://LR//atlas/foo /tmp
```



## XRootD transfer service pluggin/Status

- Transfer process calls simple shell script to fetch the data
- Currently testing with XRootd copy command `xrdcp` in simple bash script
  - Could use another transfer command if needed
- Proof of principle testing complete
- Able to copy files from Tier 2 sites to Tier 3 sites.

# Open issues

- Proxy service
  - Some sites have data servers on private networks need a Proxy machine route the files and communication
  - Solutions exist; need to test options
- Authentication
  - Users can only read data
  - Write activity triggered by trusted servers
  - Is additional Authentication needed?
    - Lighter weight option - simple shared secret
    - Heavy weight option - X509 is also possible
      - Has performance implications.

# Schedule

- By Friday trigger Tier 3 to Tier 3 transfer
- Within 1 week, test Tier 3 user job trigger data transfer.
- Within 2 weeks, make Charles NtoN libraries available to European Lustre and GPFS sites
- During December test with 3-4 T2's and up to 5 T3 sites (including European sites) limited tests
- January – Mid February – ramp up testing, establish ganglia monitoring (see Andy's talk for Xrootd monitoring)
- Late Jan. – early February – ATLAS evaluation
- 9 Feb – WLGC meeting.

# Conclusions

- Xrootd is a good match for data deliver amongst Tier 3 sites while reducing load on rest of DDM system
- Existence of ATLAS global name space is vital
- Should help us keep on top of users data needs