

FAXbox Technicals

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- What is FAXbox?
 - A dead-simple XRootD server for analysis job outputs.
 - Built on Ceph, a fast, scalable, distributed filesystem.
 - Integrated into ATLAS Connect.
- Who is it for?
 - ATLAS Connect users and Tier 3 users with no dedicated storage

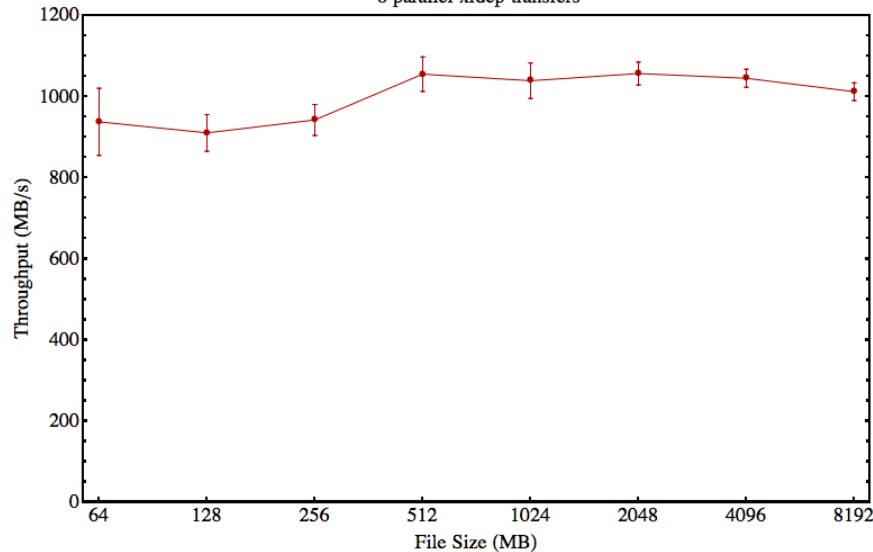
- (2) Dell R510s
 - (2) Xeon 5660 CPUs
 - 128 GB of RAM
 - 10 Gb NICs
 - (4) MD1200 shelves with 4 TB disks
- ~420 TB of raw disk, with about ~210 TB usable.
- Single XRootD door

Is it performant?

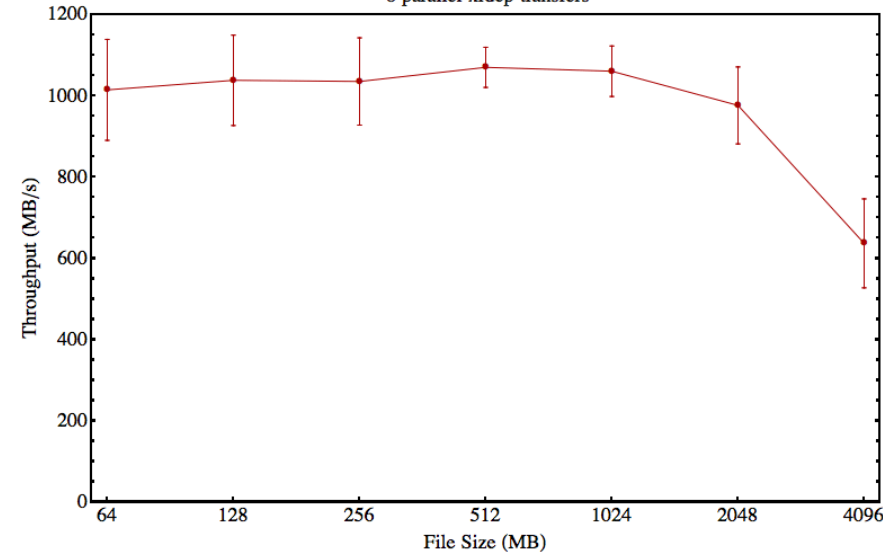


- Performance nearly saturates single 10Gb line
- Benchmarks from October.
 - We've made optimizations since then, expect write performance for large files to have increased

XRootD read performance over CephFS
8 parallel xrdcp transfers



XRootD write performance over CephFS
8 parallel xrdcp transfers



OK, so how do I use it?



- Get yourself an ATLAS Connect account
- SSH to login.usatlas.org, and setup XRootD from CVMFS

```
[lincolnb@login ~]$ export ATLAS_LOCAL_ROOT_BASE=/cvmfs/atlas.cern.ch/repo/ATLASLocalRootBase
[lincolnb@login ~]$ source ${ATLAS_LOCAL_ROOT_BASE}/user/atlasLocalSetup.sh
[lincolnb@login ~]$ localSetupXRootD
```

- Once that's done, you're ready to go!

```
[lincolnb@login ~]$ xrdcp -fv output.8g root://faxbox.usatlas.org://user/lincolnb/output.8g
[xrootd] Total 8192.00 MB      |=====| 100.00 % [116.6 MB/s]
```

- Basically the same same process for your jobs.

What's next for FAXbox?



- Hardware upgrades! More performance.
 - We think we can get more performance out of Ceph with 20Gb bonds on the network.
 - Additional servers could boost the performance too.
 - More XRootD doors?
- Ceph updates! Three big updates we're looking forward to:
 - Filesystem ACLs
 - Quotas
 - Erasure encoding → More storage bang for the buck!

What's next for FAXbox?



- Automatically authenticated access from ATLAS Connect
 - X.509 certificate authority runs on ATLAS Connect
 - Jobs submitted from ATLAS Connect have an X.509 proxy injected on user's behalf.
 - XRootD on FAXbox has gridmap file (or GUMS) configured to allow access from ATLAS Connect DNs.
 - Designed to be **completely transparent** to end-users.

What's next for FAXbox?



- X.509 Authentication (Grid Certs)
 - Add your X.509 certificate on the ATLAS Connect website
- Group quota management
 - PIs or designated managers can manage quotas for working groups.
- Web statistics
 - See group usage statistics from the web.

A screenshot of a web-based dialog box titled "Add X.509 Certificate". It contains a text input field for "Alias", a larger text area for "X.509 Certificate (PEM Encoded)", and two buttons at the bottom: "Add X509 Certificate" and "Close".

Add X.509 Certificate

Alias

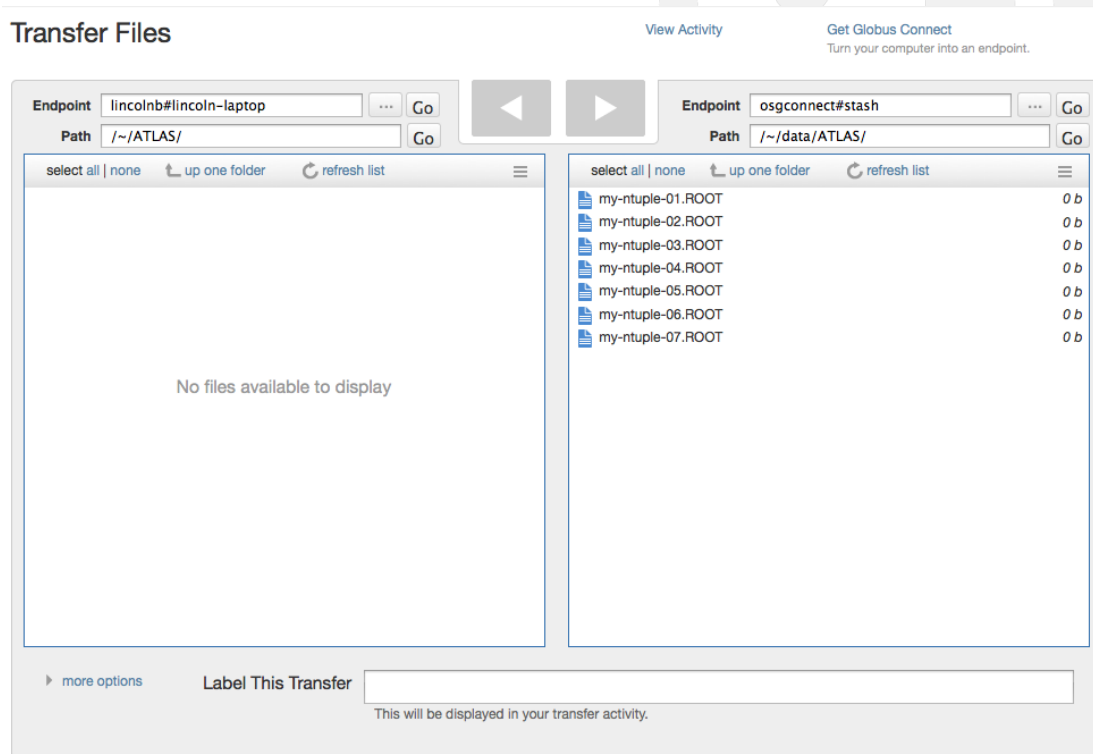
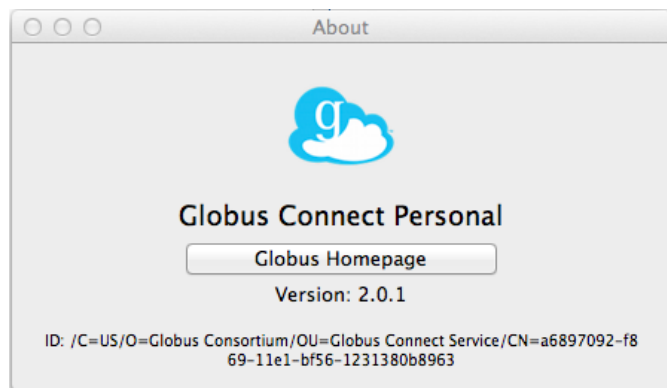
X.509 Certificate (PEM Encoded)

Add X509 Certificate Close

What's next for FAXbox?



- Globus Endpoint
 - Access your data from your laptop through the Connect portal.



Questions?

