Data Transfer Using Globus at the University of Wyoming

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ARCC Overview

Advanced Research Computing Center Overview

- Computational research support to all areas of study on campus
- Multiple compute clusters, Mount Moran is the primary cluster for research: 284 node/4,544 core
- Provide storage services, with plans of adding a Peta-scale storage system
- Partnerships with NCAR-Wyoming Supercomputing Center (NWSC), XSEDE, University of Utah
- Member of Internet 2, Front Range GigaPop

ARCC's Mission

Advanced Research Computing Center Mission

- High performance research computing
  - 3 Top-500 class supercomputers
    - Puts us in an elite class of Universities
- Train researchers on using new computational tools
- Data visualization
  - 1M+ 3D Viz cave
    - used for teaching and development
- Data storage
  - Including Long and short term storage, archival and publication

petaLibrary - What is it?

A new* storage service to address pent up demand by providing a cost-effective and massively scalable end-to-end storage infrastructure utilizing modern technologies to provide high capacity, flexible protection, and easy accessibility with a mid-range level of performance.

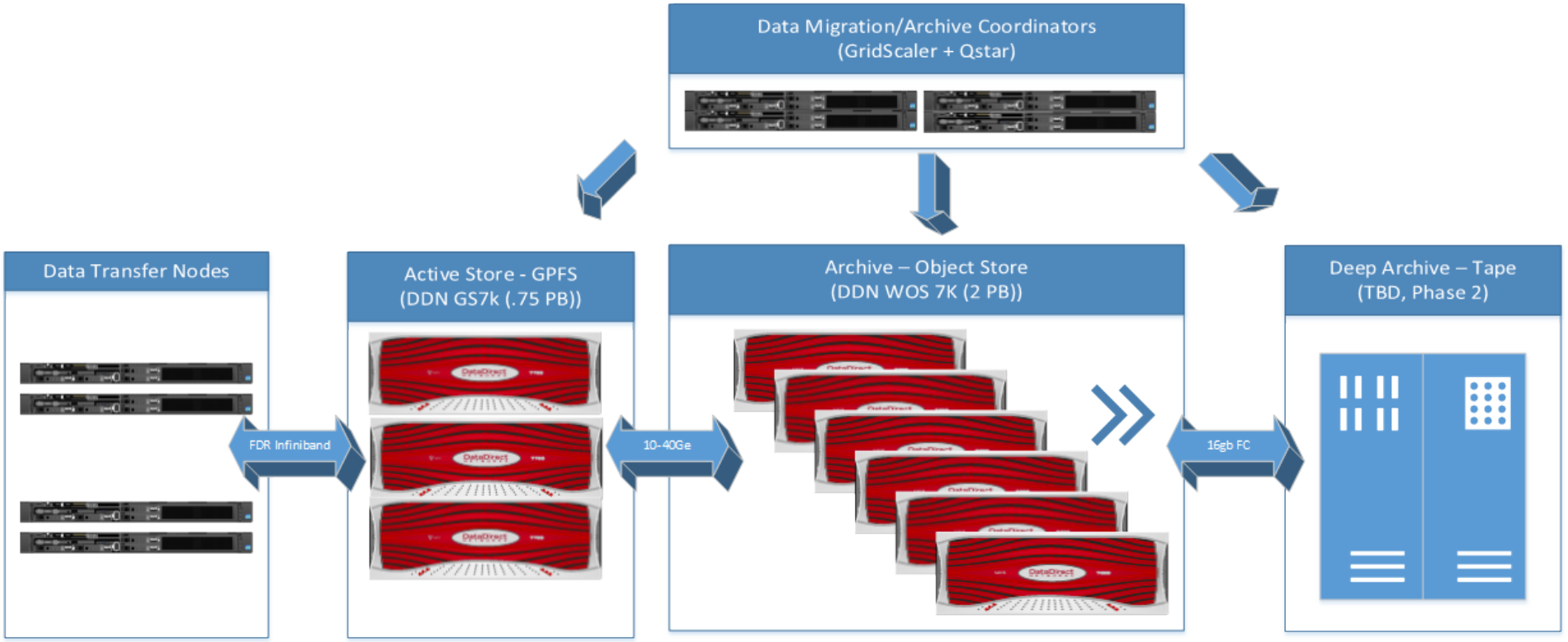
More info: https://arcc.uwyo.edu/guides/petalibrary

WOS CAPACITY APPLIANCE

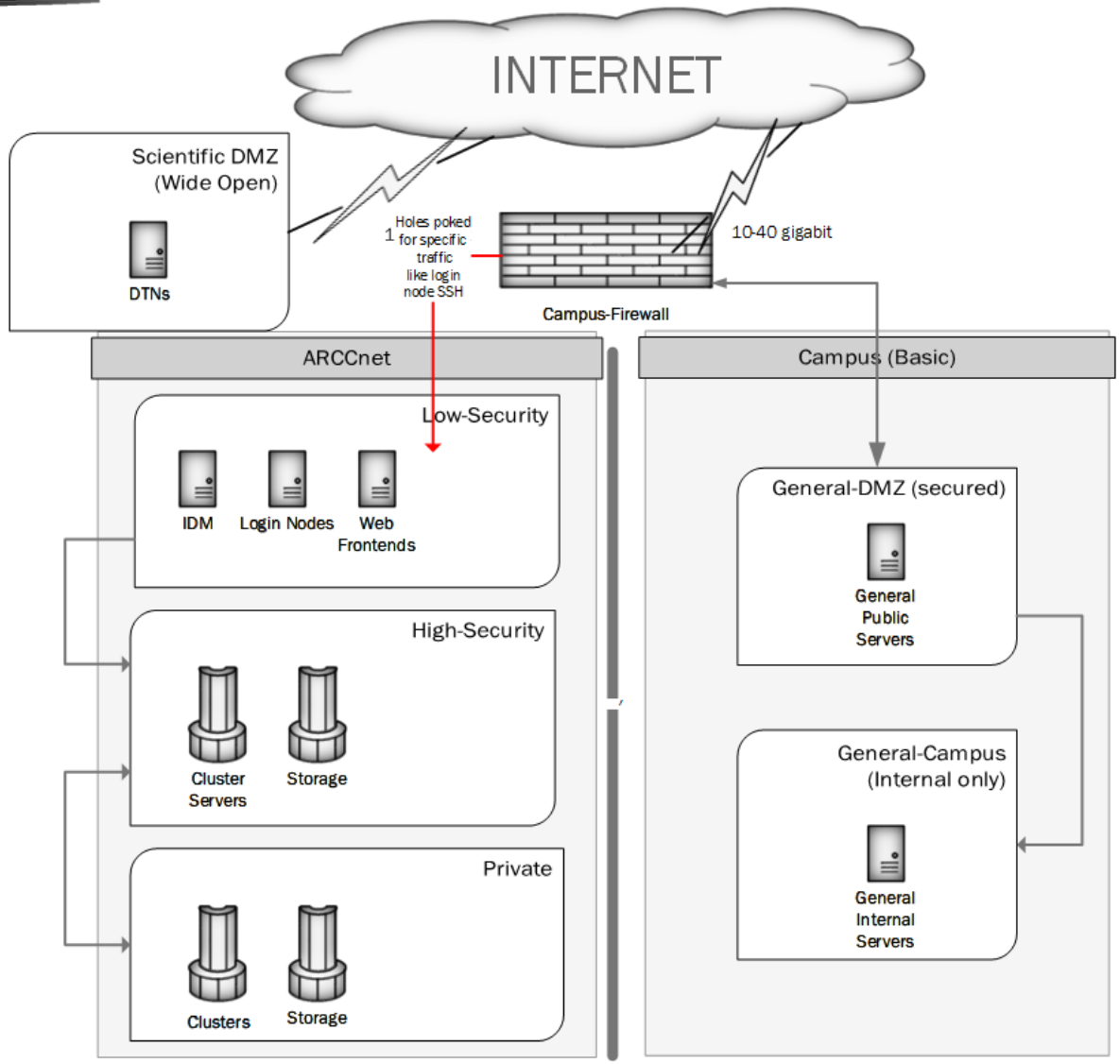
petaLibrary - Use Cases

- Research project data repository
- Collaboration
- Home or user directory for faculty
- Publication of data
- Backups of data
- Data that must be web accessible

Research Data Storage



UW Cyberinfrastructure



Science DMZ

https://arcc.uwyo.edu/guides/uw-science-dmz

The University of Wyoming (UW) Science Network (UWSN) is the campus implementation of the science DMZ principle. The guiding principle behind UWSN is that the campus research community should be able to optimize their access to other research entities, data stores and computing resources specific to the needs of their individual projects. To accomplish this they must overcome barriers of bandwidth constraint, high-latency, or the restrictions of an active security perimeter and be provisioned with the most efficient network possible.

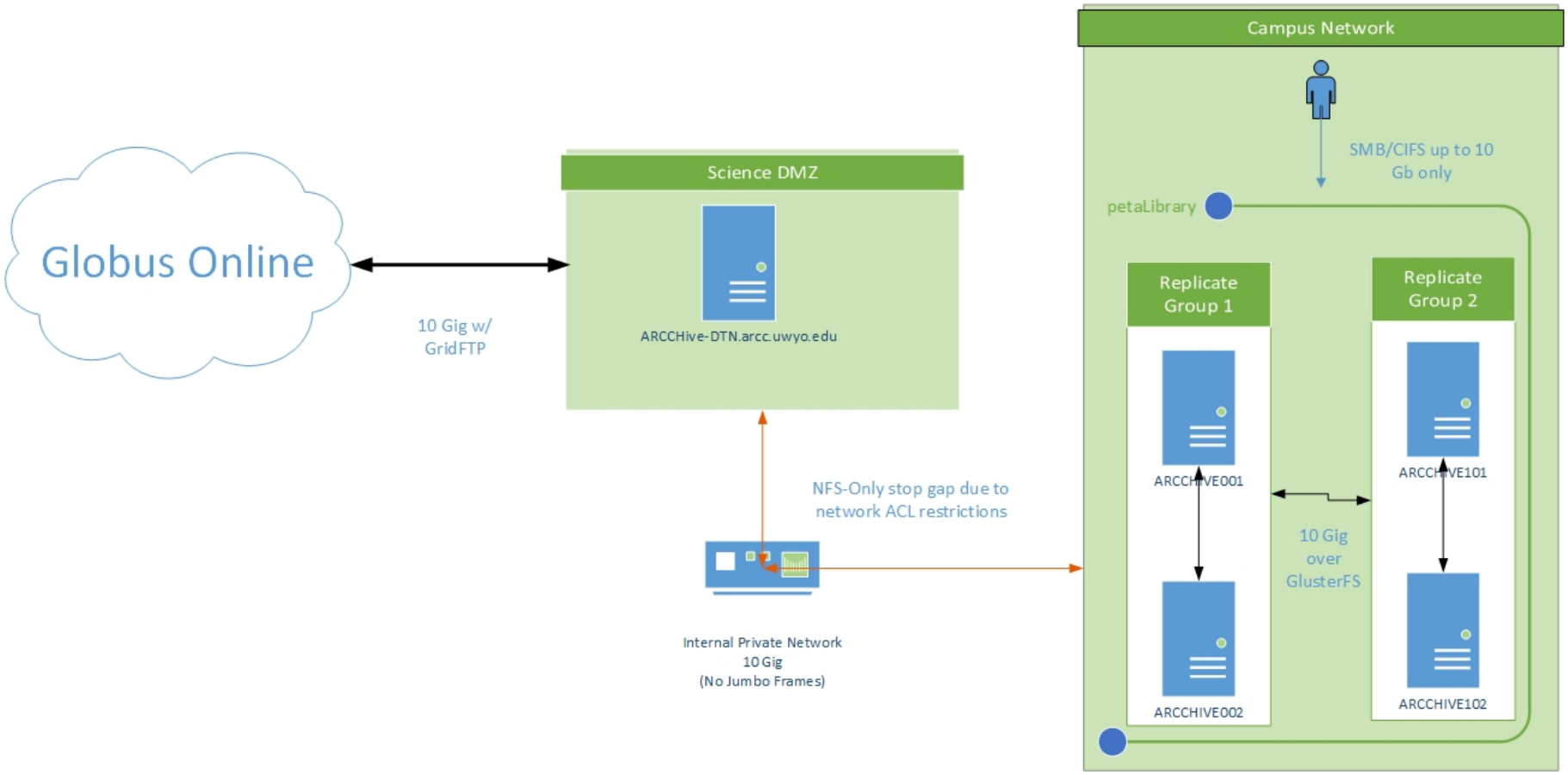
Data Transfer

The Advanced Research Computing Center (ARCC) at the University of Wyoming has developed six data transfer nodes (DTNs) to provide researchers with a means to connect to several research-oriented computational resources.

- These DTNs are equipped with 40 and 100 gigabit line cards with plans to expand all of them to match the Science DMZ's 100 gigabit transfer speeds.

- The primary data transfer tool used by these DTNs is the Globus Online software

UW with Globus



Enabling Collaboration

- In less than a year, the CI-Water project has transferred over 150 TB of data between the University of Wyoming and Utah
- Additional data has been transferred between NWSC and Utah using Globus
- Ease of use of Globus allows CI-Water researchers to focus on their research and not be burdened by the nuances of data transfer
- Tools like Globus make collaborative projects like this more practical

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