High Throughput Data Program (HTDP) at FNAL
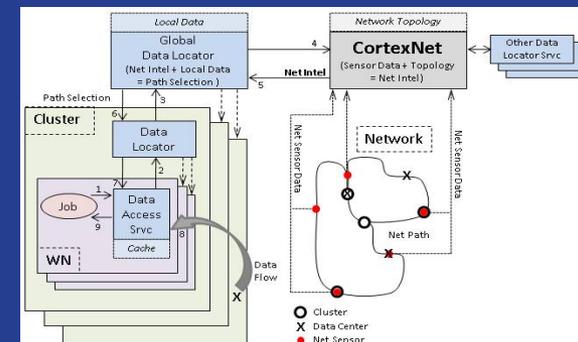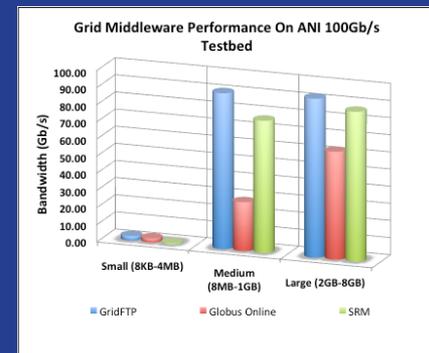
- **Mission**: investigate the impact of and provide solutions for the scientific computing challenges in Big Data for the the Computing Sector at Fermilab and its stakeholders.

- Three major thrusts driving the project
  1. Grid middleware evaluation on 100GE to prepare lab and its stakeholders for the transition (Stakeholders: US-CMS, IF, DES)

  2. **Evolve the Network towards a manageable resource. Participate in OSG Networking activity (Stakeholders: OSG, USCMS)**

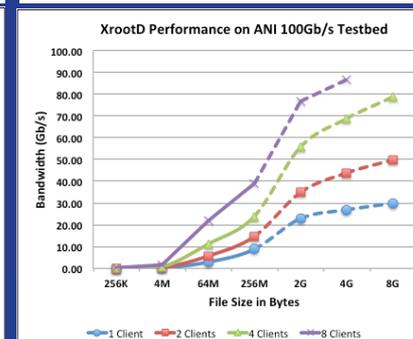 3. Integration of network intelligence with data and job management middleware (Stakeholders: USCMS)
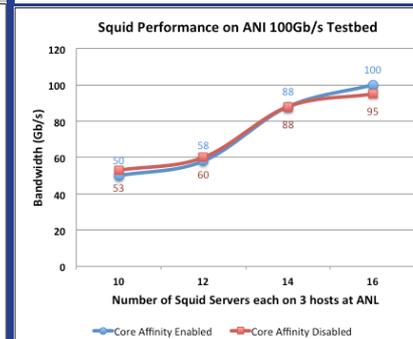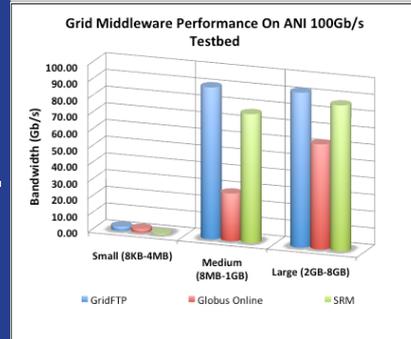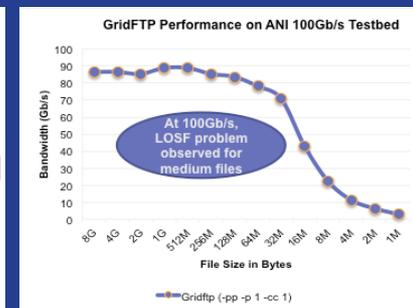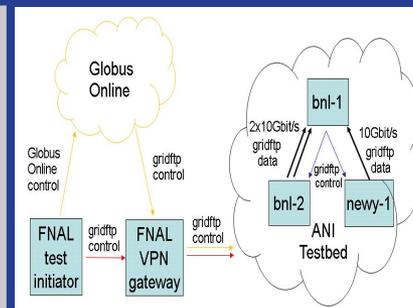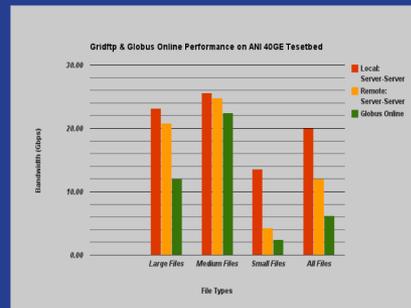
2. Participation in the OSG Networking Activity

- The GCC dept. participates in the OSG networking area with the vision of Network-As-A-Service
  - OSG Networking Dashboard – a repository of network information
    - Secure Information gathering from a PerfSONAR network
    - Integration layer
    - Secure Presentation layer: Information consumption by human and middleware
  - We are ramping up to contribute to the development of the dashboard (internal stakeholder: USCMS)
    - Participation in SubGroups (Gabriele organizer of the User AuthN / AuthZ; Parag of User API and Use Cases).
    - Plan to add GridFTP network data to the repository.
    - Dashboard as source of information for network intelligence

U.S. DEPARTMENT OF ENERGY

Fermilab

1. Goals of 100 GE Program @Fermilab

- End-to-end experiment analysis systems include a deep stack of software layers and services.

- **Need to ensure these are functional and effective at the 100 GE scale.**

  - Determine and tune the configuration to ensure full throughput in and across each layer/service.

  - Measure and determine efficiency of the end-to-end solutions.

  - Monitor, identify and mitigate error conditions.

3. Integration of network intelligence with data management service

- Feed network knowledge to the decisions on data and job placement (e.g. think of replica selection)

- Consumes information from the Dashboard

- Present information in a format that can be easily consumed by data management middleware

- Seeking collaborators to complement funding from external sources (targeting ASCR next)