#### IU Lustre WAN Update



Stephen C. Simms Manager, Data Capacitor Project ssimms@indiana.edu

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#### The Data Capacitor Project

NSF Funded 535 Terabytes Lustre storage 14.5 GB/s aggregate write Short term storage





#### **Data Capacitor**

- 12 pairs Dell PowerEdge 2950
  - 2 x 3.0 GHz Dual Core Xeon
  - Myrinet 10G Ethernet
  - Dual port Qlogic 2432 HBA (4 x FC)
  - 2.6 Kernel (RHEL 4)
- 6 DDN S2A9550 Controllers
  - Over 2.4 GB/sec measured throughput each
  - 535 Terabytes of spinning SATA disk

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# The Challenge: Five Applications Simultaneously

- Acquisition and Visualization
  - Live Instrument Data
    - Chemistry
  - Rare Archival Material
    - Humanities
- Acquisition, Analysis, and Visualization
  - Trace Data
    - Computer Science
  - Simulation Data
    - Life Science
    - High Energy Physics

#### The Network



## **Bandwidth Challenge Configuration**



#### **Challenge Results**



🛨 indiana: Incoming 🛛 + indiana: Outgoing

# Root Squash / UID Mapping

Lightweight

Not everyone needs / wants kerberos

Only MDS code changed

Lookup table for

NID (range) UIDmds UIDremote

Pluggable module

Other schemes possible

#### LEAD Workflow for WxChallenge at IU



## Digitization of "Sarvamoola Granthas"

Sarvamoola Granthas – original manuscript



## Digitization of "Sarvamoola Granthas"

Post processed images of palm leaves



Sample images of the palm leaf of *Sarvamoola granthas*. Final image after contrast enhancement

#### Visualizing Trace Data with Vampir Server

		Vampir - Timeline			
	1h:00m:36	1h:00m:37 1h:00m:38			
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IO Event System					

#### WIYN Telescope at Kitt Peak



# IU's Lustre WAN service

- New Dedicated system of 360 TB
- For research collaboration
- Mounted in IU's astronomy department
- Mounted on Quarry cluster
  - All nodes in early May
- Mounted on Big Red's test nodes
- Working with NCSA to further support LEAD
- Looking for collaborators
  - ssimms@indiana.edu
  - dc-team-l@indiana.edu

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## Thank you!



#### Questions?

#### http://datacapacitor.iu.edu