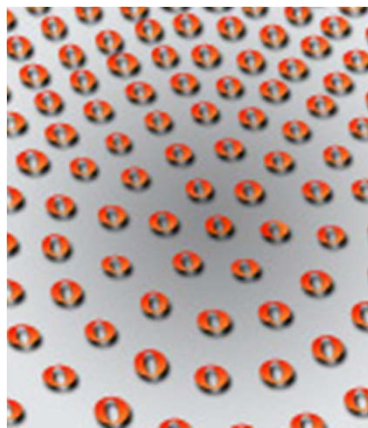




THE UNIVERSITY OF GEORGIA

Research Computing Center

UGA's Research Computing Center



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Partnering with UGA



Presentation Outline

- High-Performance Computing (HPC) Resources
- Grid Resources
- Storage Resources
- Personnel Resources
- Network and Security Services
- Other Data Center Services
- <http://rcc.uga.edu>



Linux HPC Resources

- 1772 cores (2 GB RAM/core)
- 524 cores (4 GB RAM/core)
- 16 cores (8 GB RAM/core – 1 large memory node)
- 40 cores (24 GB RAM/core – 5 x-large memory nodes)
- 32 cores (16 GB RAM/core – 1 xx-large memory node)
- ~ 19 TFlops compute capacity
- 1.73M CPU Hours/month
- \$0.09/CPU Hour (excluding active grant research – assistance grants available through advisory committee)
- Numerous software packages
 - See http://rcc.uga.edu/equipment/subpages/rcluster_software/



Other RCC HPC Resources

- 256 processor AIX cluster
 - 2 GB RAM/processor
 - ~ 1.5 TFlops
 - ~ 187K CPU hours/month (\$0.09/CPU hour)
 - Numerous software packages
 - See http://rcc.uga.edu/equipment/subpages/pcluster_software/
- 16 nVidia GPGPU processors
 - 6 GB RAM/processor
 - ~ 16.4 Tflops
 - Specialized “CUDA” software programming
 - Other GPU software being evaluated



Grid Resources

- UGA member of SURAgrid
 - 29 institutions contributing resources
 - 35 institutions total (6 participating)
 - ~ 33 TFlops compute capacity
 - www.suragrid.org
- SURAgrid joined Open Science Grid (OSG) as a Virtual Organization (VO) on 3/2011
 - National, distributed computing grid for data-intensive research
 - 71 VOs in OSG (mostly high-energy physics)
 - 346 resources (compute, storage, etc.)
 - 11M CPU hours consumed in last 30 days



Storage Resources

- 37 TB of high-performance storage for temporary scratch files and home directories (up to 100 GB/user)
- 275 TB of low-cost archival storage (with backup)
 - Designed for low-throughput, low-I/O archival of research data (no administrative or instructional data)
 - \$10/TB/month (0.5 TB increments, based on quota not usage)
- Network capacity increased to 13 buildings with research facilities



Personnel Resources

- 7 FTE staff in RCC providing following services:
 - Bioinformatics consulting
 - Computational physics consulting
 - HPC consulting
 - HPC administration
 - Grid administration
 - Storage administration
 - Grant preparation (for resources in RCC)
 - IT management



RCC Network and Security Services

- Separate 1Gig links for inter-nodal and storage traffic within RCC
- 10 Gig connection into RCC from main UGA datacenter (soon)
- Additional 1Gig links possible between UGA and external facilities through Southern Crossroads regional network
- Redundant Juniper firewalls to protect RCC resources



Other Data Center Services

- Restricted data center access with cameras
- FM200 fire suppression
- UPS backup
- Emergency generator for IT resources (not HVAC)



Questions?

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