



A **UT**/ORNL PARTNERSHIP
NATIONAL INSTITUTE FOR COMPUTATIONAL SCIENCES

NICS

Petascale Hardware at NICS

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National Institute for Computational Sciences



- NICS is a collaboration between the University of Tennessee and ORNL
- Awarded the NSF Track 2B (\$65M)
- Phased deployment of Cray XT systems (culminated in 1 PF in October 2009)



Athena: Cray XT4 open for general research in August 2010

- 4,512 Opteron quad-core processors (18,048 cores)
- 18 TB of memory
- 166 teraflops



Cray XT5 system – October 2009

- 16,704 six-core AMD Istanbul processors
- 129 TB memory
- 1,030 teraflops
- 14% (143.7) teraflops expansion in late 2010



Storage infrastructure



- Sun's Lustre-based file system provides a shared, parallel file system linked to Kraken, the Teragrid, and HPSS archives
 - Over 3 petabytes of raw capacity
- HPSS provides archival storage for all systems
 - 15 petabytes of capacity
 - More than 10 million files stored today
 - Doubling stored data every year

HPSS





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