

NSF TRACK 2D XHPC



KEENELAND






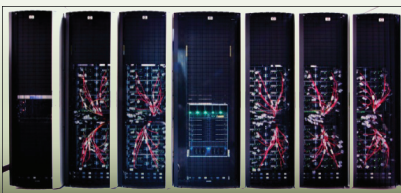

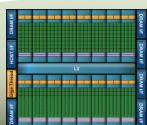






AN NSF-FUNDED PARTNERSHIP TO ENABLE LARGE-SCALE COMPUTATIONAL SCIENCE ON HETEROGENEOUS ARCHITECTURES

The overarching goal of the Keeneland project is the creation of two heterogeneous, HPC systems that will expand the range of research projects that scientists and engineers can tackle, including computational biology, combustion, materials science, and massive visual analytics. The platforms will be developed and deployed in two phases. This system's innovations in performance and power will be achieved through heterogeneous processing based on widely-available NVIDIA graphics processing units (GPUs). The project brings together leading expertise and technology resources from Georgia Tech's College of Computing, Oak Ridge National Laboratory (ORNL), University of Tennessee, National Institute for Computational Sciences, HP and NVIDIA.

INITIAL DELIVERY SYSTEM

Procured and installed in Oct 2010

201 TFLOPS in 7 racks (90 sq ft incl service area)

| | | | | | |
|---|--|---|--|---|--|
| Xeon 5660 | M2070 | ProLiant SL390s G7 (2CPUs, 3GPUs) | S6500 Chassis (4 Nodes) | Rack (6 Chassis) | Keeneland System (7 Racks) |
|  |  |  |  |  |  |
|  |  |  |  |  | |
| 67 GFLOPS | 515 GFLOPS | 1679 GFLOPS 24/18 GB | 6.7 TFLOPS | 40.3 TFLOPS | 201.5 TFLOPS |
| | |  |  Full PCIe X16 bandwidth to all GPUs |  | 12000-Series Director Switch |
| <i>Integrated with NICS Datacenter GPFS and TG</i> | | | | | |

KEENELAND PARTNERS

| | | | | | |
|---|---|---|--|---|---|
|  |  |  |  |  |  |
| Project management Acquisition and alternatives assessment System software and development tools Education, Outreach, Training | Operations and TG/XD Integration User and Application Support Operational Infrastructure Education, Outreach, Training | Applications Facilities Education, Outreach, Training | Scientific Libraries Education, Outreach, Training | Tesla Applications optimizations Training | HPC Host System System integration Training |

FOR FURTHER INFORMATION

 <http://keeneland.gatech.edu/>

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