



# High Performance Research Computing

## A Dedicated Resource for Research and Discovery

Since 1989, the High Performance Research Computing (HPRC) group has been a dedicated resource for research and discovery at Texas A&M University. HPRC supports more than 1,800 users, including more than 450 faculty members. Computing resources are used for cutting-edge, collaborative, and transformative research including, but not limited to, materials development, quantum optimization, and climate prediction. HPRC promotes emerging computing technology to researchers and assists them in using it for research and discovery.

## Accessing HPRC Hardware, Software, and Training Resources

New users can apply for accounts and service units on the facilities at [hprc.tamu.edu](http://hprc.tamu.edu). The website offers training and documentation for HPRC systems and software. HPRC also provides a broad range of regularly scheduled classroom training sessions and workshops for our users and as inclusions in regular undergraduate and graduate classes that have a technical and scientific computing focus.

## Resources

### Terra

The 304-node heterogeneous Intel Broadwell cluster from Lenovo with an Omni-Path Architecture (OPA) interconnect and 48 NVIDIA K80 dual-GPU accelerators is HPRC's newest cluster.

### Ada

The 874-node hybrid cluster from IBM/Lenovo with Intel Ivy Bridge processors and a Mellanox FDR-10 Infiniband interconnect is HPRC's main cluster. Ada includes 68 NVIDIA K20 GPUs supporting applications already ported to GPUs, and 24 Intel Xeon Phi 5110P co-processors supporting applications benefiting from Knights Corner Phi cards. Ada also includes four 2TB memory nodes and eleven 1TB memory nodes for jobs requiring large amounts of memory.

### Curie

50-node IBM Power7+ cluster with a 10Gb Ethernet interconnect. Each node has two IBM 64-bit 8-core POWER7+ processors and 256 GB of memory. Curie's filesystems and batch scheduler are shared with the Ada cluster.

### Lonestar

The latest in a series of Lonestar clusters hosted at TACC, Lonestar 5 is comprised of 1252 Cray XC40 nodes. Jointly funded by The University of Texas System, Texas A&M University, and Texas Tech University, it provides additional resources to Texas A&M researchers. Allocation requests are made through the HPRC request page.

### Work Stations

The HPRC Lab Workstations serve as a point of access for our clusters and some software. A limited suite of software is installed on the workstations for use in a graphical environment. Access to the HPRC Lab workstations is available to all our active users, but you must contact our helpdesk to request access.

## Visit HPRC on the College Station Campus

114A Henderson Hall  
222 Jones St. (Behind the ILSB)

## Advanced Support Program (ASP)

HPRC provides technical assistance to research teams across campus that goes beyond general consulting. HPRC offers collaborations in research projects with a large computational component. Under the ASP, one or more HPRC analysts will contribute expertise and experience in several areas of high performance computing. Our collaborative contributions include:

- porting applications to our clusters,
- analyzing and optimizing code performance,
- developing parallel code from serial versions and analyzing performance,
- optimizing serial and parallel I/O code performance,
- optimal use of mathematical libraries,
- code development and design, and
- improving workflow automation in scientific processes.

## Contact HPRC anytime at

979.845.0219  
[help@hprc.tamu.edu](mailto:help@hprc.tamu.edu)

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