

# TEXAS A&M ESSENTIALS

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July 2012



“BEYOND THE RESOURCES PROVIDED ON CAMPUS, TEXAS A&M IS A CONTRIBUTING PARTNER IN LONESTAR, A 22,656-CORE CLUSTER, OWNED AND OPERATED BY THE TEXAS ADVANCED COMPUTING CENTER AT THE UNIVERSITY OF TEXAS AT AUSTIN.”

## IT Infrastructure Supports Advanced Research

Texas A&M University’s High Performance Computing (HPC) resources and high-speed networking connectivity enable research of complex phenomena and facilitate moving and sharing data essential for scientific collaboration. Texas A&M’s IT infrastructure supports advanced research across diverse disciplines including chemistry, physics, engineering, geosciences and bioinformatics.

The Texas A&M Supercomputing Facility’s highly skilled HPC analysts operate and provide services on two powerful clusters, Eos and Hydra. Eos is a 3,168-core IBM iDataPlex cluster and Hydra is an 832-core IBM p5 cluster. As well as providing technical assistance through its help desk, short courses and workshops, the facility offers the Advanced Support Program. As programming techniques advance to capitalize on ever-evolving hardware, the skills demanded to efficiently use HPC resources are increasingly beyond those of researchers in individual disciplines. Collaboration with the Supercomputing Facility’s computational analysts delivers intensive help with the necessary specialized technical expertise.

Conducting cutting-edge research with supercomputers and sophisticated scientific instruments involves data sets of ever-increasing size and complexity. Effectively analyzing, managing and sharing these data sets is essential to scientific collaboration. To meet these needs, Texas A&M supports vital data-intensive applications with optimized high-speed networks.

Texas A&M’s campus network provides high performance, reliability and security to meet many needs of faculty, staff and students. For specialized projects, Texas A&M provides a Data-Intensive Network (DIN). Campus resources connected to the DIN include the Supercomputing Facility, other computing clusters, a visualization center and high-end instruments for microscopy imaging and plant genomic analysis. The Texas A&M DIN connects to regional and national education and research network services. These networks connect to universities and laboratories with similar research interests using HPC with large data sets.

Beyond the resources provided on campus, Texas A&M is a contributing partner in Lonestar, a 22,656-core cluster, owned and operated by the Texas Advanced Computing Center at The University of Texas at Austin. This partnership enables the facility to meet anticipated research needs of Texas A&M scholars and promotes collaboration both across Texas and throughout the nation.

As multi-site collaboration becomes more important, the need to move data both on campus and among campuses becomes essential. Texas A&M will continue to anticipate research needs and meet the ever-increasing demand for computing power and network support.

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