

Sun and The University of Texas Power Up One-of-a-Kind Supercomputer

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Texas Advanced Computing Center goes live with Maverick, a unique high performance grid-based computer to provide remote 3D graphics and data intense compute resources for global weather prediction and homeland security

The Texas Advanced Computing Center (TACC) at the University of Texas at Austin and [Sun Microsystems, Inc.](#) today announced that Maverick, a new UltraSPARC(R)-based [supercomputer](#) with 3D visualization capability would go live on the National Science Foundation's TeraGrid to provide compute power, storage resources and visualization to researchers, scientists and engineers across the country. Built to accelerate large-scale data analysis and remote terascale visualization for time-critical problems like weather prediction, Maverick's unique configuration makes it one-of-a-kind in the world.

The product of a year-long collaboration in design and configuration, Maverick combines Sun's innovative server, storage, software and networking strengths with TACC's leading visualization expertise.

"We expect Maverick's powerful capabilities for scientific visualization,

supported by TACC's expert visualization staff, to enable the UT Austin and national research communities to analyze the vast amounts of data being computed on terascale computing systems and rapidly solve the most challenging problems," said Dr. Jay Boisseau, director, TACC.

Maverick combines highly sophisticated visualization technology with a high-bandwidth next generation network to tackle some of the nation's most pressing concerns, including Emergency Response Management and Flood Modeling (specifically for the state of Texas); Global Weather Prediction; Earthquake Engineering; and Homeland Security including biohazard research.

At the Mid-American Geospatial Information Center (MAGIC), at UT Austin's Center for Space Research, research associate and primary investigator, Dr. Gordon Wells and his team engage in a daily struggle to convert large-scale streams of data into timely information on approaching storms for state and federal emergency management agencies, regional and local governments, academic institutions, TV and radio broadcasters, and the public.

Maverick will be able to predict inundation patterns for specific hurricane and storm tracks, enabling rapid planning and changes in evacuation routes and shelter locations. "What is best about this project," Wells says, "is that it holds the promise of moving quickly from an academic study into an operational mode--in which the loss of life and property caused by storm surge and flash floods could be greatly diminished."

Adds Dr. Kelly Gaither, associate director of TACC and leader of TACC's Scientific Visualization group, "Maverick is a unique research tool for computational science because it combines a very large number of processors with high-end visualization capabilities and massive shared memory. This will enable researchers to use the same system for both

high-end simulations and data analyses, reducing the time for researchers to solve important problems."

The technical underpinning of the Maverick system reflects Sun's ability to develop the high-performance infrastructure needed to enable new sets of complex applications to be developed and shared across the network. Centered around a Sun Fire E25K server powered by 64 UltraSPARC IV, Chip Multithreading (CMT) processors running the Solaris Operating System, the system includes 128 processor cores and 512 Gigabytes of shared memory on 16 systems boards as well as terabytes of storage accessible through 8 dual gigabit fiber channel storage cards. Multiple ports of 10 Gigabit Ethernet adapters will provide the high performance networking required for these applications.

"Collaborating with leading, innovative organizations like TACC to develop state-of-the-art solutions that can later be deployed in more general compute environments is at the heart of what Sun does," said David Yen, executive vice president, scalable systems group, Sun Microsystems. "Our server, software, storage and networking technology and expertise are well suited to the data intensive problems of large scale computation, data access, grid computing and visualization that will define next-generation applications."

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