



CONTACT:
Katie Patterson
Texas Schools Project
katie.patterson@utdallas.edu
972-883-6424

New Computing Environment Increases Researcher Productivity

Richardson, TX (Aug. 26, 2009) – Researchers using education data provided by The University of Texas at Dallas Education Research Center (UTD-ERC) are many times working with hundreds of thousands – and sometimes millions – of observations, or individual pieces of data. Performing complicated statistical analyses on this volume of data can take hours or even days.

Devora Davis, a visiting researcher from CREDO at Stanford University, typically spends 8-16 hours running a procedure to create a data set for analysis. But, because Texas Schools Project, the administrator of the UTD-ERC, recently installed a Cray CX1™ cluster, Devora's job was completed in half the time. She remarked, "I was blown away by its speed!"

Devora was processing data on nearly a million charter school students, looking for demographic matches with traditional public schools where the charter school students had attended previously. "While we're using student data from sixteen states, the Texas data set is the largest we've created so far," she shared. Processing the data set faster on the Cray CX1 system allowed Devora more time to analyze results and draw conclusions.

"There was clearly a need for the Cray here," said Leigh Hausman, Texas Schools Project computer technologist. She continued, "The number of researchers using our data is growing tremendously as is the size of their research jobs. Additionally, we're continuing to receive incredible amounts of data from various state agencies that has to be stored on site. Finally, more of our researchers want to do more complex analysis on larger data sets, which consumes more server resources. Our old server was only marginally sufficient to meet our current needs and certainly would not have been able to meet our needs as we grow. Because of all of these reasons, we moved to a cluster computing environment, which will allow us to expand as needed. By going with the Cray, we were able to immediately impact the time it takes to run a job, which allows researchers to spend less time on data processing and more time on analysis."

To explain how the Cray CX1 cluster is different than a typical computer or even powerful workstation, Leigh uses the following analogy: "A car is like a personal computer – it has enough storage capacity and speed for regular, daily computing activities. At the other end of the spectrum, a high-end supercomputing environment would be a cargo jet. It's capable of hauling much more stuff, but overkill if you can't fill it up or, if you max it out and have to buy a second one, it's going to be very expensive. A cluster computing environment is like a train. You have far greater storage capacity than a car, superior speed, and can add more cars to your train as you need additional storage space. The Cray system is like a high-speed train. While it has the same characteristics of a regular train, it's significantly faster."

Ian Miller, senior vice president of the productivity solutions group and marketing at Cray, shared, "We designed the Cray CX1 line of high performance computing products to give researchers a productive, powerful and easy-to-use cluster system purpose-built for the office environment. The Cray CX1 gives researchers the ability to focus on important research outcomes without having to worry about the computer, and we are honored that Texas Schools Project chose the Cray CX1 system to meet its high performance computing needs."

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