Ohio Supercomputer Center runs largest scale calculation ever

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The Owens Cluster is the most powerful supercomputer in OSC history. Credit: Ohio Supercomputer Center

The Ohio Supercomputer Center recently displayed the power of its new Owens Cluster by running the single-largest scale calculation in the Center's history.

Scientel IT Corp used 16,800 cores of the Owens Cluster on May 24 to test database software optimized to run on supercomputer systems. The seamless run created 1.25 Terabytes of synthetic data.

Big Data-specialist Scientel developed Gensonix Super DB, a software designed for big data environments that can use thousands of data-processing nodes compared to other database software that use considerably fewer nodes at a time. Scientel CEO Norman Kutemperor said Genosonix Super DB is the only product designed and optimized for supercomputers to take full advantage of high performance computing architecture that helps support big data processing.

"This is a wonderful testimonial of the capabilities of Genoxonix Super DB for Big Data," Kutemperor said. "The robust nature of the OSC Owens Cluster provided the reliability for this large parallel job."

To demonstrate the power of Genosonix Super DB, the Scientel team created a sample weather database application to run using OSC's Owens Cluster. For this rare large run, Scientel used 600 of the system's available 648 compute nodes. The Owens Cluster has additional nodes dedicated to GPU use and data analytics, for a total of 824 nodes on the Dell-built supercomputer. During the run, the Owens Cluster reached a

processing speed of over 86 million data transactions per minute with no errors.

"As the largest run ever completed on OSC's systems, Scientel helped us demonstrate the power of the Owens Cluster," said David Hudak, Ph.D., OSC interim executive director. "Owens regularly delivers a high volume of smaller-scale runs, providing outstanding price performance for OSC's clients. The ability to scale calculations to this size demonstrates another unique capability of Owens not found elsewhere in the state and unmatched by our previous systems."

With satisfactory test results on the software, Scientel will take Genosonix Super DB to the forefront of technology to process large varieties of data and compute intense problems in areas such as cancer research, drug development, traffic analysis, and space exploration. A single application written for Genosonix Super DB can use more than 100,000 cores to handle multiple petabytes of data in real time.

"[The OSC staff] are extremely knowledgeable and very capable of understanding customer requirements, even when jobs are super scaled," Kutemperor said. "Their support and enthusiasm for projects of this nature are outstanding."

Provided by Ohio Supercomputer Center