CRAY

Cray Accelerates Energy Insight with NVIDIA® GPU Technology

Cray® CS400™ Cluster Supercomputers

Cray's CS400-AC™ and CS400-LC™ cluster supercomputers get you to the solution faster with reliable high performance computing tailored to your specific needs. Designed to offer the widest possible choice of configurations, the Cray CS400 cluster is a highly scalable and modular platform based on the latest x86 processing, coprocessing and accelerator technologies from Intel and NVIDIA. Industry-standard server nodes and components have been optimized for high performance computing (HPC) and tightly integrated with a comprehensive HPC software stack, creating a unified system that excels at capacity and data-intensive workloads.

Cray® CS-Storm System

Cray's CS-Storm system is a dense, accelerated cluster supercomputer that offers 250 GPU teraflops in a single rack — a space- and power-efficient solution for users who collect and process massive amounts of data from diverse sources such as satellite images, surveillance cameras, financial markets and seismic processing data. The CS-Storm system integrates seamlessly into Cray CS400 systems, enabling a wide range of workloads to be run on a single, easy-to-manage cluster supercomputer.

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Computational Challenges in Energy Research

Energy research depends on high performance computing to tackle computationally intensive applications like seismic imaging and reservoir simulation.

Energy providers need to process and analyze massive amounts of data to reach conclusions that impact safety, project viability, and return on investment. Speed and accuracy matter.

Cray Cluster Supercomputers with NVIDIA® GPU Technology

Cray enables the speedup of oil and gas applications with NVIDIA® Tesla® K40 and K80 GPU accelerators.

Each Cray® CS-Storm cluster server node integrates up to eight GPU accelerators and two Intel® Xeon® processors, delivering up to 1/3 GPU petaflops of compute performance in one 48U rack. The system is available with a comprehensive HPC software stack including tools that are customizable to work with most open-source and commercial compilers, schedulers and libraries.

NVIDIA Tesla K40 and K80 GPU Computing Accelerators

The Tesla K40 and K80 GPU accelerators, based on NVIDIA's Kepler GPU technology, are optimized for the most demanding applications used by customers in the oil and gas industries.

Equipped with 12 GB of memory, the Tesla K40 GPU accelerator can handle the most demanding HPC and big data problem sets.

Engineered to deliver superior application performance, the Tesla K80 is packed with features like dual-GPU design and NVIDIA GPU Boost™ technology. This results in an incredible 5-10x faster performance on real-world applications compared to the latest CPUs.
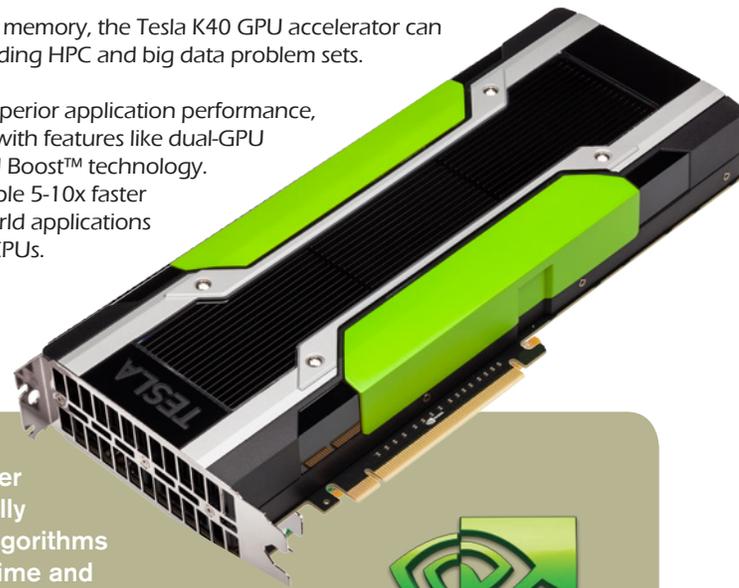
"The oil and gas industry is using ever more computationally intensive seismic algorithms such as Kirchhoff Time and Depth Migration (KTM, and KDM), Wave Equation Migration (WEM), Spectral Inversion, and Reverse Time Migration (RTM) in the search for energy reserves. These applications are seeing significant acceleration using GPUs." —NVIDIA

Get Better Results Faster

The Cray® CS™ cluster supercomputer series with NVIDIA Tesla K40 and K80 GPU computing accelerators can put your seismic processing and reservoir modeling on the fast track, enabling higher levels of performance and faster time to results.