



China University of Petroleum Achieves Immense Performance Gain with AMAX GPGPU Platforms

THE PROBLEM

While advancements in computing have solved many computational scientific problems, the ability of computing to keep up with the rapid changes in the scientific and engineering fields is constantly challenged. Scholars, instructors, researchers and students working in the oil and gas field are constantly trying to solve new high-computing challenges.

THE CHALLENGE

Compute power is the backbone at China University of Petroleum. As an important scientific research base for petroleum and petrochemical industries, the University strives to push the boundaries of scientific knowledge. The University is well known for its academic prowess and offers comprehensive courses in Chemical Technology, Mineral Resource Prospecting and Exploration, and Oil and Gas Well Engineering. However, the immense processing loads, complex scientific computations, constant data transfer and overall calculations required by the various engineering departments eventually overwhelmed the University's

existing IBM x86 CPU-based systems, and they were not fast enough to calculate the ever-increasing amount of data. Since a new high-performance cluster solution was required, it gave China University of Petroleum an opportunity to expand the types of systems that it uses to include multi-node GPGPU clusters and GPGPU workstations.

THE SOLUTION

China University of Petroleum is taking advantage of the latest advances to accelerate applications and shorten computational cycles. By applying AMAX's high-performance computing (HPC) expertise, researchers and scientists can now have access to high-performance computing at the cost of traditional high-end computing. Based on AMAX's 31 years of cluster design expertise and Tesla 20-series GPU technology to fully maximize performance and power efficiency to keep costs low, AMAX's ClusterMax GPU cluster platform and ServMax GPU workstations were chosen by China University of Petroleum to replace its existing systems. Optimized using best-of-breed components within validated supercomputing configurations, AMAX's GPU



It is critical that China University of Petroleum has access to industry-leading computing resources, and AMAX allows our researchers to address the most computationally-challenging problems in science.

Professor Zhang,
Manager of Geo-resources and Information, China University of Petroleum



platforms take full advantage of Tesla GPUs combined with Intel Xeon-based servers to deliver eight times the performance of x86 CPU-based solutions for a wide range of graphics and compute intensive applications, including oil and gas exploration, seismic exploration, visualization, and life sciences. Comparing to traditional x86 CPU-based HPC clusters, AMAX's ClusterMax GPU clusters use less space and consume less energy, meaning lower total cost of ownership in the long run.

The University also chose AMAX's powerful ServMax GPU workstations for its space-savings and high performance. Using the ServMax workstations with GPUs resulted in significantly faster performance than the alternative 32-node systems; the University's IT staff was very impressed with the results. The IT staff also appreciated the systems' straightforward setup and ease of use in addition to its flexibility for use in office environments.



Our University takes advantage of the latest advances in computing power with AMAX GPU supercomputing platforms, offering researchers and scientists high-performance computing without the high-end cost.

Professor Zhang,
China University of Petroleum

The added AMAX GPU computing power greatly shortened the University's processing time required for calculating research calculation data, which reduced the University's processing time for research data by one-third in comparison to previous performance. As a result, AMAX's industry-leading GPU cluster solutions allowed China University of Petroleum to fully utilize its IT infrastructure, optimize its supercomputing power and expedite the research process to achieve faster, tangible results.

ABOUT AMAX

Founded in 1979, AMAX is the leading provider of high performance computing and comprehensive appliance manufacturing solutions. The company applies a unique combination of engineering expertise with an open standards-based approach to dramatically increase IT infrastructure ROI for a broad range of customers. Global organizations, including some of the world's best-known brands, use AMAX offerings to solve complex computing challenges, meet product development demands, integrate virtualization applications, reduce energy consumption, and stay competitive. AMAX is proud to be ISO 9001 Certified and China Compulsory Certified. The company headquarters is in Fremont, CA with offices in Richardson, TX, Taipei, Taiwan, and Suzhou and Shanghai China. For more information on products and services, go to <http://www.amax.com>.