World's Leading Genomic Research Center at Regeneron Accelerates Life Science Research with AMAX Powerful HPC Solution

REGENERON

THE PROBLEM

To blend highly efficient, rapid sequencing technology with the research and clinical efforts, the world's leading genomic research center at Regeneron needed an extremely dynamic computing solution to analyze vast amounts of genome data. Regeneron required a particularly flexible solution that could quickly process the data, and provide high performance shared memory for running demanding technical applications such as Consensus Assessment of Sequence and Variation (CASAVA), a software program that converts raw image data into intensity scores, base calls, quality scored alignments, and additional formats for downstream analysis, to rapidly transform data into biologically relevant information.

THE SOLUTION

When initially considering which cluster system to purchase, Regeneron reviewed a broad range of solutions that were not all capable of providing the extensive computing power required for the company's most demanding genome applications. Regeneron's high-throughput genome analyzer produced up to 8TB of summarized data per week, which equated to 10,000 files. The data needed to be catalogued, archived, and routed to a high performance computing cluster for processing and transformation according to research requirements. Managing the volume of data, consequent workflow and storage were major practical challenges for Regeneron.

After extensive evaluations, Regeneron deployed the AMAX ClusterMax Apex CPU-intensive cluster solution because of its extreme performance and high-density, delivering the best benchmark results in its class. Based on the Intel® Xeon® series processors, the ClusterMax Apex features 1,008 CPU cores, utilizes 8TB system memory, and provides 336TB hot swap storage capacity. It offered Regeneron the performance scalability, density and maximum efficiency its researchers and scientists needed. "Life science research is a key motivator for high performance computing and AMAX's powerful HPC cluster is well suited for scientists and research labs at Regeneron to analyze vast amounts of genome data generated by our next-generation instruments and sequencing applications," said Eric Zheng, Fellow of Bioinformatics Science, Regeneron Pharmaceuticals.

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Regeneron is taking full advantage of the ClusterMax Apex to accelerate applications and shorten computational cycles. By leveraging AMAX's engineering and HPC expertise, Regeneron researchers and scientists can now have access to unprecedented performance and breakthrough power-efficiency to analyze genome data. Regeneron's IT staff was also very impressed with the results and appreciated the systems' straightforward setup and ease of use and deployment. With ClusterMax Apex, Regeneron now has a balance of maximum availability and extreme scalability that lends itself to many different high-end applications, such as CASAVA.

The fundamental goal of the project was to use the processing power to analyze the genetic codes that would help Regeneron to identify new species of organisms. The data will act as a huge information resource for scientists and researchers for years to come. The AMAX ClusterMax Apex CPU-intensive cluster solution empowers Regeneron to focus on their research efforts and not worry about their research infrastructure. Eric Zheng added, "The AMAX performance-driven computing solution enables us to draw a more complete picture of the mechanisms of life."

ABOUT AMAX

Founded in 1979, AMAX is a leading provider of high performance computing and storage 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.

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