



Contacts:
Maria McLaughlin
Appro International, Inc
(408)888-6661
mmclaughlin@appro.com

NEWS

Japan's University of Tsukuba Selects Appro Xtreme-X Supercomputers for Next Generation High Performance Computing

Cray Technical Services to Provide Local Service and Support

Milpitas, CA -- 1/22/2008 – Appro (<http://www.appro.com>), a leading provider of high-performance enterprise computing systems, announces today it has been awarded a contract for a 95TF Appro Xtreme-X™ Supercomputer for the Center for Computational Sciences at the University of Tsukuba, to be located in the center of Tsukuba Science City. The region is well known for its large concentration of advanced research institutions in various areas of science and technology. The Tsukuba award is a major breakthrough for Appro's supercomputers into the Japanese HPC market.

The University chooses Appro's Xtreme-X3 Supercomputer for its matchless Quad-Rail system interconnect, which provides the lowest-latency and the highest bandwidth performance to meet both capacity and capability computing requirements for Tsukuba's computational scientific research programs. The Appro Xtreme-X3 Supercomputer will be shipped and installed by Appro at the University by the end of May 2008.

Appro will partner with Cray Technical Services and Sumisho Computer Systems (SCS), a major IT trading company in Japan, to deliver the system and service to the Center for Computational Sciences at the University of Tsukuba. As the prime contractor, SCS combined both Appro HPC solutions while Cray Technical Services supplied local service and support, providing technical expertise for the installation and operation of the supercomputer. This agreement was based on a common goal of helping customers reduce complexity in deploying, managing and servicing their commodity High Performance Computing solutions, while lowering their total cost of ownership.

"Cray Technical Services has a distinguished history of successfully delivering large-scale HPC solutions to our government and commercial customers," said Mamoru Nakano, president of Cray Japan. "The University of Tsukuba is dedicated to elevating the international competitiveness of Japanese universities and is quickly becoming a world-class, internationally competitive institute of higher education. We welcome this opportunity to work with Appro to provide local support and service for this significant HPC Solution in Japan."

The Appro Xtreme-X3 will be used principally to provide needed computational support for scientific research and computer science programs covering a wide range of research and education areas, including artificial intelligence, massively parallel computing, and other leading-edge science and technology. The Department promotes researchers capable of analyzing and solving various problems in computer systems and specific research fields, including Information Mathematics and Modeling, Intelligent Software, Software System, Computer Architecture and Media Engineering.

"Appro has stepped into the HPC market limelight by winning contracts for large-scale systems at the U.S. Department of Energy's tri-labs and now at the University of Tsukuba, one of Japan's leading academic research institutions," said Steve Conway, IDC research vice president for HPC. "IDC projects that clusters will continue to be the main growth engines for the HPC market, driving server revenue from \$10 billion dollar in 2006 to more than \$15 billion in 2011."

The Xtreme-X3 supercomputer consists of a total of 674 quad-socket, Quad-Core AMD Opteron™ processor-based compute nodes with 2,696 processors and a total of 10,784 processing cores. As configured, the computer has 95TF of computing capability, but can scale to up to 120TF and still be provisioned and managed as a single unified supercomputing system. The system provides 21.5TB of high performance local memory with a usable aggregate bandwidth of more than 20Terrabytes/s. Each node has a peak capability of almost 150Gigaflops and can support up to 256GB of high bandwidth ECC memory. The Xtreme-X3 provides 16-way SMP nodes enabling the system to host extremely large shared memory problems with outstanding performance. For capability computing, it features a matchless four-rail interconnect fabric configured with four double data rate ConnectX low latency infiniband Fabric host channel adapters from Mellanox technologies. Each Host Channel Adapter is connected to a separate PCI-Express interface to maximize performance while the Infiniband technology balances the high bandwidth and the large number of threads supported by the compute nodes. The interconnect fabric with each connection is capable of operating at a peak rate of 2GB/s in each direction. The measured usable unidirectional node to node performance is greater than 6GB/s.

In addition, the system comes pre-configured with the Appro Cluster Management System that supports multi-channel MPI operation with shared received queues where a single MPI program can send on 1, 2 or 4 channels and receive on any channel. It is designed to manage large numbers of independent physical computers connected together by high speed networks, allowing them to function as a single computing system. This system is configured with 44 management nodes and support nodes to run the Appro Cluster Engine (ACE) software, while supporting a large parallel file storage system from Data Direct Networks.

The Appro Xtreme-X3 will be managed by ACE software providing a complete, remote lights-out management system for the entire system to include the interconnect networks, servers, clusters, resource management and scheduling. It also supports diskless operation with standard Linux distributions and fast boot operations independent of the system size. ACE also supports network load balancing and failover, delivering a total management capability for maximum performance and non-stop operation.

“The Appro Xtreme-X3 Supercomputer ideally matches the University of Tsukuba’s requirements for a high-performance and high availability solution,” said Daniel Kim, CEO of Appro. “With outstanding performance provided by a unique Quad-Rail system interconnect to provide the lowest-latency and the best high bandwidth system performance, the Appro Xtreme-X3 meets both capacity and capability computing requirements for production systems. This represents a significant development in Appro’s continued growth in large-scale cluster deployments with price/performance leadership.”

“Quad-Core AMD Opteron processors offer outstanding scalability, especially in four socket systems. They also deliver the memory performance that is critical to HPC applications, based on the benefits of AMD’s revolutionary Direct Connect Architecture, integrated memory controller and HyperTransport™ technology,” said Patrick Patla, Director of Product Management, Server/Workstation Division, AMD (NYSE: AMD) “The Direct Connect Architecture combined with our new 128-bit floating point unit, in concert with the flexibility and scalability of Appro’s system design, will help the University of Tsukuba continue to produce world-class results in science and computational research.”

About Appro

Appro is a leading developer of innovative workstations, density-managed servers, clusters and supercomputers. Appro is uniquely positioned to support High-Performance Computing markets focusing on medium to large-scale deployments where lowest total cost of ownership is a primary consideration. Appro accelerates technical applications and business results unlocking the value of IT through outstanding price/performance, balanced architecture, open standards and engineering expertise. Appro headquarters is in Milpitas, CA, with an R&D/manufacturing center in Asia and a sales and service office in Houston, TX. To learn more go to <http://www.appro.com>

About Cray Inc.

As a global leader in supercomputing, Cray provides highly advanced supercomputers and world-class services and support to government, industry and academia. Cray technology enables scientists and engineers to achieve remarkable breakthroughs by accelerating performance, improving efficiency and extending the capabilities of their most demanding applications. Cray's [Adaptive Supercomputing vision](#) will result in innovative next-generation products that integrate diverse processing technologies into a unified architecture, allowing customers to surpass today's limitations and meeting the market's continued demand for realized performance. Go to <http://www.cray.com> for more information.

About Sumisho Computer Systems Corporation (SCS)

Sumisho Computer Systems Corporation (SCS), founded in 1969, offers a wide range of system integration services to companies not only in Japan but worldwide. SCS aims to be in the first tier in the IT services industry, focusing on three strategic business domains: the industry-specific application business, which utilizes expert knowledge in each industry to customize system architecture to client needs; the ERP solutions business, which includes proprietary packaged software; and the platform solution business, which concentrates on IT architecture services for the creation of IT systems. More information can be found at www.scs.co.jp/english/index.html

About University of Tsukuba and Center for Computational Sciences

The University of Tsukuba takes an active role in promoting efforts to improve both advanced education and academic research in Japan. In addition, the University supports highly specialized professionals and students with global perspective and advanced technical skills in research fields to include Information Mathematics and Modeling, Intelligent Software, Software System, Computer Architecture, and Media Engineering. The Center for Computational Sciences is a dedicated research center for a wide variety of computational sciences under collaboration with computer science researchers. The center will operate this Supercomputer for a variety of cutting-edge computational sciences to include Computational Particle Physics, Computational Astrophysics, Computational Material Science, Computational Biology, Computational Chemistry and Geo Science as well as more general applications for cluster and grid computing.

To learn more go to <http://www.ccs.tsukuba.ac.jp/>

###

Cray is a registered trademark of Cray Inc. AMD, the AMD Arrow logo, AMD Opteron and combinations thereof, are trademarks of Advanced Micro Devices, Inc. HyperTransport is a licensed trademark of the HyperTransport Technology Consortium.