



Penguin Computing to deliver Magma Supercomputer, one of the First Intel Xeon Platinum 9200 Series Processor-based Servers for AI and HPC

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Fremont, CA., – November 18, 2019 – [Penguin Computing, Inc.](#), a leader in high-performance computing (HPC), artificial intelligence (AI), and enterprise data center solutions and services, today announced that it, along with partners Intel and CoolIT, will deliver the Magma Supercomputer to Lawrence Livermore National Laboratory. The Magma system was procured through the Commodity Technology Systems (CTS-1) contract with the National Nuclear Security Administration (NNSA) and is one of the first deployments of Intel Xeon Platinum 9200 series processors with support from CoolIT Systems complete direct liquid cooling and Omni-Path interconnect.

Magma is based on Relion® XE2142eAP compute servers. Magma's 752 compute nodes are each configured with dual Xeon Platinum 9242 processors, with a theoretical peak of over 7 TFLOPs and 293TB of system memory calculating an RPeak of 5.313 PFLOPS. CoolIT Systems provides the complete direct liquid cooling solution for Magma through a blind-mate coldplate loop design which captures +85% of the server heat through CPU, DIMM and VR coldplates, allowing the servers to operate at maximum efficiency. The CoolIT subfloor piping, in-rack manifolds and row-based CHx750 CDUs deliver the required heat exchanging capability and coolant flow to support all racks.

Funded through NNSA's Advanced Simulation & Computing (ASC) program, Magma will support NNSA's Life Extension Program and efforts critical to ensuring the safety, security and reliability of the nation's nuclear weapons in the absence of underground testing.

"The convergence of HPC and AI is here today. We are excited to deliver Magma, an HPC system that is enhanced by artificial intelligence technology," said William Wu, Vice President of Hardware Products at Penguin Computing. "We are seeing artificial intelligence permeate every industry and, specifically in HPC, we can now deliver a converged platform that allows AI to accelerate HPC modeling for our data scientist customers."

"We continue designing new, leading edge solutions with our partners for the DOE NNSA's CTS-1 contract. Magma is another example of a great shared effort resulting in an HPC cluster designed and built to meet new demanding workloads. We anticipate this system to qualify for the November 2019 Top500 HPC list," said Ken Gudenrath, DOE Director at Penguin Computing.

"Penguin Computing is committed to 'Expanding the world's vision of what is possible!' The Magma cluster brings a new level of synergy amongst our clients, partners and Penguin Computing. One of our primary goals with Magma is to bring new mission technologies and capabilities to Livermore National Labs and it's user communities," said Sid Mair, President of Penguin Computing.

"Magma is a major leap forward in HPC and AI convergence that could only be achieved with trusted engineering collaboration between Lawrence Livermore National Lab, Penguin Computing, and Intel," said Phil Harris, VP and GM of Intel's Datacenter Solutions Group. "With up to 96 cores per node, massive memory bandwidth, and integrated AI acceleration with Intel DL Boost technology, the Intel Xeon Platinum 9200 processor will provide a powerful foundation for Lawrence Livermore National Lab to enhance its ability to achieve its mission goals."

"The Commodity Technology System efforts at NNSA represent a very cost-effective way to manage our workload at each of our three laboratories," said Mark Anderson, Director for NNSA's Office of Advanced Simulation and Computing and Institutional Research and Development Programs. "In this model, commodity-based systems take on the bulk of day-to-day computing, leaving the larger advanced technology capability systems available for only the most demanding problems across the Tri-Lab community. This is just an example of the sophisticated approach NNSA is taking to manage demanding workloads in the most efficient manner for the country."

"Magma represents a timely addition to our CTS machines in order to address the significant surge in demand coming from NNSA's major Life Extension Program," said Michel McCoy, LLNL's Advanced Simulation & Computing program director. "It is essential to have available a supply chain that can respond essentially instantly, delivering state-of-the-art technology in just a few months to meet pressing national security needs. We look forward to moving this system into production as fast as possible."

Under the CTS-1 contract, Penguin Computing has delivered more than 22 petaflops of computing capability to support the ASC program at the NNSA Tri-Labs of Lawrence Livermore, Los Alamos and Sandia national laboratories.

For more information about the Relion XE2142eAP server and Intel Xeon Platinum 9200 processors, or to speak with a Penguin Computing representative, please visit us at www.penguincomputing.com.

About Penguin Computing

For 20 years, the Penguin Computing team of artificial intelligence (AI), engineering, and computer science experts has reimagined how startups, Fortune 500, government, and academic organizations solve complex technology challenges and achieve their organizational goals. Penguin Computing is focused on open platforms, including Open Compute Project (OCP) systems. We specialize in innovative on-premise high-performance computing (HPC), bare metal HPC in the cloud, AI, and storage technologies coupled with leading-edge design, implementation, hosting, and managed services including sys-admin and storage-as-a-service, and highly rated customer support. More information at www.penguincomputing.com.

About CoolIT

CoolIT Systems, Inc. is the world leader in energy efficient liquid cooling technology for the Data Center, Server and Desktop markets. CoolIT's Rack DLC platform is a modular, rack-based, advanced cooling solution that allows for dramatic increases in rack densities, component performance, and power efficiencies. The technology can be deployed with any server and in any rack making it a truly flexible solution. For more information about CoolIT Systems and its technology, visit www.coolitsystems.com.

About Lawrence Livermore National Laboratory

Founded in 1952, [Lawrence Livermore National Laboratory](#) provides solutions to our nation's most important national security challenges through innovative science, engineering and technology. Lawrence Livermore National Laboratory is managed by Lawrence Livermore National Security, LLC for the U.S. Department of Energy's National Nuclear Security Administration.

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