

New HPCMP System at Engineer Research and Development Center's Supercomputing Resource Center to Provide 17 petaFLOPS of Computing Power to Address Data-Intensive Physics, AI, and ML Applications for DoD Users

The Department of Defense (DoD) High Performance Computing Modernization Program (HPCMP) completed its fiscal year 2020 investment in supercomputing capability supporting the DoD science and technology (S&T), test and evaluation (T&E), and acquisition engineering communities. The acquisition consists of a supercomputing system with corresponding hardware and software maintenance services. At 17 petaFLOPS, the new system is the most powerful supercomputer deployed within the HPCMP, and will increase the Program's aggregate supercomputing capability to 100 petaFLOPS. This system significantly enhances the Program's capability to support the Department of Defense's most demanding data-intensive computational challenges, and includes significant capabilities for artificial intelligence, data analytics, and machine learning.

The new supercomputer will be installed at the US Army Engineer Research and Development Center's (ERDC's) DoD Supercomputing Resource Center (DSRC), and will serve users from all of the services and agencies of the Department.

The ERDC DSRC at Vicksburg, MS, will receive the system manufactured and supported by Liquid Computing and containing 48 core Intel XEON (Cascade Lake Advanced Performance) processors integrated with the largest complement of high-performance general-purpose graphical processing units (GPGPUs) the HPCMP has deployed to date. The architecture of the system is as follows:

- A single system of 86,784 Intel XEON "Cascade Lake Advanced Performance" compute cores and 528 NVIDIA Ampere A100 GPGPUs, interconnected with a 200 Gigabit per second InfiniBand network and supported by 391 terabytes of memory, and 4.5 petabytes of usable non-volatile memory express (NVMe)-based solid-state storage.

The system is expected to enter production service in mid fiscal year 2021.

About the DoD High Performance Computing Modernization Program (HPCMP)

The HPCMP provides the Department of Defense supercomputing capabilities, high-speed network communications and computational science expertise that enable DoD scientists and engineers to conduct a wide-range of focused research and development, test and evaluation, and acquisition engineering activities. This partnership puts advanced technology in the hands of US forces more

quickly, less expensively, and with greater certainty of success. Today, the HPCMP provides a comprehensive advanced computing environment for the DoD that includes unique expertise in software development and system design, powerful high-performance computing systems, and a premier wide-area research network. The HPCMP is managed on behalf of the Department of Defense by the US Army Engineer Research and Development Center located in Vicksburg, Mississippi.

For more information, visit our website at: <https://www.hpc.mil>.