

NEXTGenIO Prototype

NEXTGenIO Prototype Delivered

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The NEXTGenIO project is now into the final straight. After a successful project review in December, production and testing of the NEXTGenIO prototype was completed at Fujitsu. The integrated and validated NEXTGenIO Prototype Hardware was delivered to EPCC in March, to be made available to all project partners for final software porting, tests and performance measurements.



The NEXTGenIO prototype system is presented to the EC project officer and reviewers at Fujitsu

Based on the NEXTGenIO hardware architecture that was created earlier in the project, Fujitsu has developed the NEXTGenIO system motherboard and system-ware, using Intel's Optane™ Data Centre Persistent Memory Modules (DCPMM). A 4-node demonstration cluster based on the new motherboard was already available at Fujitsu for project partners to port and test their middleware and application software.

Live demonstrations of NEXTGenIO cluster hardware and software were performed during the project review and the first impressive I/O performance achievements demonstrated successful milestones in the development of this new, scalable, high-performance computing platform, which has been designed to address the challenge of delivering scalable I/O performance to applications at the Exascale.

The review team and project partners had the opportunity to inspect the final production of the NEXTGenIO prototype system at Fujitsu during the review. Each of the prototype's 34 compute nodes is equipped with two Intel Xeon "Cascade Lake" CPUs

and 3TB of DCPMM, and includes a software stack to seamlessly support I/O and memory intensive workloads. Compute and management nodes as well as network components are integrated within two system racks.

In early March, the NEXTGenIO prototype system was delivered to the EPCC Advanced Computing Facility (ACF) just outside Edinburgh. Over the following two weeks, a joint team of Fujitsu and EPCC ACF staff finished the cluster hardware and software installation and configuration. Over the course of several training sessions, the Fujitsu team passed on their expertise in cluster management software, operating tools and hardware maintenance to the EPCC ACF team. Finally, with a comprehensive set of tests for individual cluster nodes, interconnects and network switches, full cluster functionality and HPL performance, the handover of the NEXTGenIO prototype to EPCC was completed successfully.

The system is now in the final phase of middleware and application porting, testing and integration before entering into production during the summer.



The NEXTGenIO prototype system, newly installed at EPCC's Advanced Computing Facility

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EC project officer, reviewers and NEXTGenIO project partners at the project review at Fujitsu



EC project officer, reviewers and project partners in front of the NEXTGenIO prototype system at Fujitsu

Full view of the NEXTGenIO prototype system