Constance Moves In
New PNNL Institutional Computing cluster comes online this month

October 2014 (Richland, Wash.)—As the New Year began at PNNL, Constance, the 300-node computing cluster featuring dual-socket Intel Haswell E5-2670v3 (12-core-per-socket, running at 2.3 GHz) nodes with 64 of memory, an FDR Infiniband network card, and 480 GB local disk storage, moved into its new home in the Computational Sciences Facility via a three-day installation that involved personnel from both PNNL Institutional Computing and Atipa Technologies, the system supplier.

Constance is the smaller (in size) successor to the previous PIC supercomputer, Olympus. PIC Director Tim Carlson noted that Constance will provide higher memory bandwidth and 16 floating point operations per clock cycle, making it faster than Olympus.

"In our assessment for this PIC computing investment, we sought input from our power users, as well as scientists from around the Lab," Carlson explained. "Speed and responsiveness resonated most with users. So, we set out to create a machine that would be a faster, reliable, and resilient resource. Constance will improve flexibility and enhance time-to-solution, which is a premium benefit to PNNL staff and their important projects."

Mike Peterson, PNNL Computing & Networking Services, works on Constance (left) as the cluster is moved into its home at the Computational Sciences Facility. As with Olympus, Constance's nodes (right) will keep their cool using an energy-efficient water-fed cooling system rather than air conditioning.

As part of Constance's move-in, PIC also added storage. The system update will accommodate 5 PB of storage, up from the 3.5 PB previously available.

PIC users receive up to 10 free hours of consulting with experts in areas such as parallel programming, storage, virtual machine technology, and Developer Central software services, among many others. To schedule time on Constance, PNNL staff may submit a brief proposal anytime via an online form at http://unix.pnl.gov/pic_request/. PIC users also need an Integrated Operations System (IOPS) account and an approved allocation. To request a PIC account on IOPS, visit: https://iops.pnl.gov/.

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