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Supercomputing in the cloud gains momentum

In a flagging economy, companies are slowly turning to on-demand services to get high-performance compute cycles without having to pay for high-end hardware.

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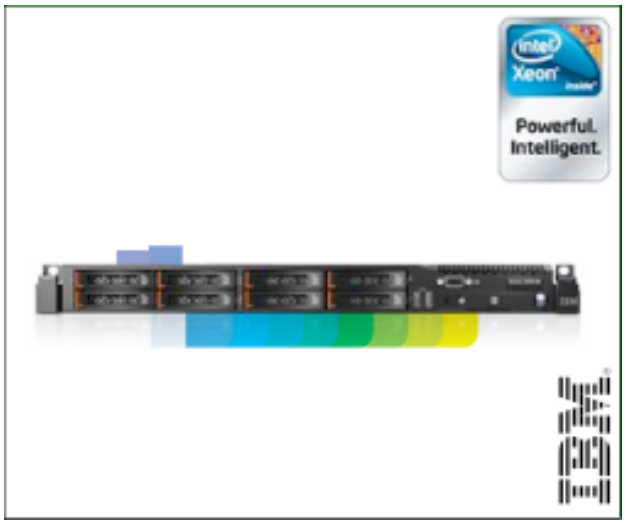
August 9, 2010 (Computerworld)

An economy that continues to stagnate could prove a boon to an increasing number of providers of on-demand supercomputing capacity.

The market for such services has so far grown slowly, said Charles King, an analyst at Pund-IT Inc. "But a weak, rocky economy makes on-demand services a lot more affordable than purchasing and maintaining a dedicated supercomputing cluster," he added.



Dan Olds, an analyst at Gabriel Consulting Group Inc., said on-demand supercomputer services can prove particularly useful to smaller businesses that need powerful processing but can't afford to buy high-performance computing systems.

More than 25 such businesses nationwide have directly participated in the Ohio Supercomputer Center's (OSC) Blue Collar Computing initiative, which sells supercomputing services to companies that have never used such high-end hardware. More than 250 additional companies have also used the services by accessing them through OSC partners, like the Edison Welding Institute (EWI), said Ashok Krishnamurthy, interim co-director of the Columbus, Ohio-based center.

EWI, a nonprofit industry organization, offers members access to E-Weld Predictor, a Web portal that lets users access the OSC's 1,650-node IBM supercomputer cluster, dubbed "Glenn," for tasks like simulating complex welds, Krishnamurthy said. "This simulates a whole bunch of prototypes, [cutting] the time it takes to create a welding process from six months to two weeks," he said. Typical workstations couldn't handle all of the calculations that are involved in such processes, he added.

The OSC supercomputer runs AMD Opteron multicore processors and IBM cell processors; it has a peak performance of more than 75 TFLOPS, according to OSC.

Woodward Governor Co., a maker of jet engine parts, signed a contract with a consulting firm this spring to gain access to supercomputers housed at IBM's Computing on Demand facility in Poughkeepsie, N.Y.

The contract follows Woodward's yearlong participation in a project funded by the Defense Advanced Research Projects Agency that was designed to show how small manufacturers can use high-performance computing technology to significantly speed industrial design and modeling projects.

During the pilot project, which was overseen by the University of Southern California Information Sciences Institute, Woodward used cloud-based supercomputing cycles to run complex software that quickly created and evaluated designs that could be incorporated into the production cycle without delay. The company estimated that the speedier process could lead to a savings of about $500,000 annually.

In addition to IBM, other companies that offer on-demand supercomputing include Silicon Graphics International Corp., which in February launched a service called Cyclone. And Hewlett-Packard Co., Intel Corp., Yahoo Inc. and others are in the process of testing a new public cloud dubbed Open Cirrus.

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This version of this article was originally published in Computerworld*'s print edition. It was adapted from an earlier version that first appeared on* Computerworld.com.