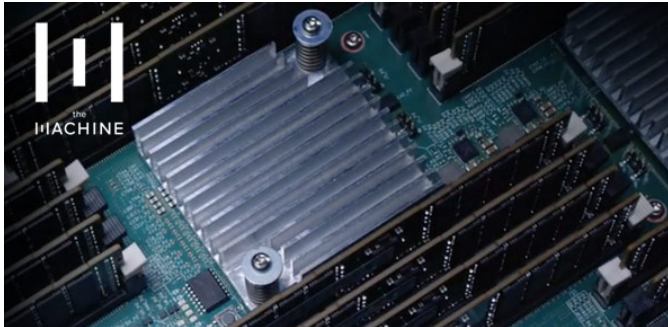## HPE Demonstrates Memory-Driven Computing

Written by Marco Attard
02 December 2016

HPE makes a major step in the long-running The Machine program with a first demonstration of a proof-of-concept prototype running the concept behind the project, memory-driven computing.

The Machine brings together a number of advanced technologies. As well as memory-driven computing it also includes photonics and a new fabric able to handle vast amounts of data. The aforementioned prototype involves compute nodes sharing a pool of fast and permanent Fabric-Attached Memory, operational photonics-based data links and a custom Linux-based OS running on a customised SoC.

According to the company, simulations of the prototype has it improve execution speeds of a variety of workloads by a magnitude of 8000 times, and it hopes to achieve similar results on the actual hardware once it equips the prototype with more nodes and memory. After all, the ultimate aim of The Machine is to bring about nothing less than exascale computing.

"We have achieved a major milestone with The Machine research project-- one of the largest and most complex research projects in our company's history," HPE says. "With this prototype, we have demonstrated the potential of Memory-Driven Computing and also opened the door to immediate innovation. Our customers and the industry as a whole can expect to benefit from these advancements as we continue our pursuit of game-changing technologies."

Interestingly the memory-driven computing is designed to be "incredibly" scalable, being usable on anything from IoT devices to hyperscale hardware handling data intensive workloads.

Components resulting from The Machine project are already hitting the market-- non-volatile memory (NVM) is available in ProLiant DL360 and DL380 Gen9 under the Persistent Memory name, photonics and fabric-attached memory are being developed by the Gen-Z Consortium

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and a collaboration with Hortonworks/Spark is devloping software for memory-driven computing.

Go [HPE Demonstrates World's First Memory-Driven Computing Architecture](#)

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