HPE inches closer towards realising its long-running The Machine program as it shows a prototype of the memory-driven computer-- an ARM-powered monster featuring 160TB of memory spread across 40 physical nodes.



First announced back in 2014, The Machine brings together a number of advanced technologies. The aforementioned 160TB of memory and nodes are interconnected using a new fabric protocol, while a custom Linux-based OS runs on ThunderX2, the 2nd generation Cavium dual socket-capable ARMv8-A system on a chip. Also included are photonics/optical communication links (including the new X1 photonics module) and software tools able to handle the large amount of persistent memory.

However, The Machine as it currently stands lacks one futuristic piece of technology-- memristors,the combined memory/storage technology. HPE announced memristor technology as co-development with Western Digital back in 2008, but it was delayed multiple times.

Once actually finished, The Machine will carry no less than 4096 yottabytes of memory, enough to hold all the data currently stored in the world, for 250000 times. It also promises to be powerful enough to process "every digital health record of every person on earth; every piece of data from Facebook; every trip of Google's autonomous vehicles; and every data set from space exploration all at the same time." Or so HPE claims, at any rate.

"The secrets to the next great scientific breakthrough, industry-changing innovation, or life-altering technology hide in plain sight behind the mountains of data we create every day," HPE CEO Meg Whitman says. "To realise this promise, we can't rely on the technologies of the past, we need a computer built for the Big Data era."

Go HPE CEO Meg Whitman on the Value of a Moonshot

Go The Machine

Go HPE Demonstrates Memory-Driven Computing