Nominated Company: Sandisk

Nomination Title: The Final Latency Frontier in storage

What are your product's / solution's key distinguishing features and/or USP?

The ULLtraDIMM is a product borne from a partnership between SanDisk and Diablo Technologies, which harnessed specialist knowledge from each party to create a brand new tier of ultra-low latency storage. The end result is a combination of SanDisk's extensive flash storage experience and Diablo's expertise of the memory bus.

ULLtraDIMM brings flash as close to the CPU as possible, by connecting it directly to the processor memory bus and utilising the existing DDR3 interface. The DIMM form factor allows the ULLtraDIMM to be used in any existing memory slot on the motherboard, enabling it to be deployed in any server or blade system found in enterprises today. Capacity and performance can be scaled linearly with each additional module that is added, making it increasingly more powerful and capable of handling large data sets.

Achieving less than 5 microsecond write latency, making it the lowest latency flash storage device in the world, the ULLtraDIMM reaches 150K random read and 65K random write IOPS. Combining multiple ULLtraDIMMs in a single server scales performance linearly, unprecedented in storage technology, outperforming all previous flash storage devices, including PCIe-based drives. In fact, with each additional ULLtraDIMM added to a system, the latency remains the same but I/O performance increases linearly without affecting latency – whether you are deploying one, two, or 10 ULLtraDIMM units.

SanDisk's Guardian Technology Platform allows for the ULLtraDIMM to leverage the lowest-cost 1xnm MLC flash available on the market while meeting the endurance needs of today's write intensive and mixed-workload applications. The device is specified up to 10 Drive Writes Per Day for up to five years.

The ULLtraDIMM comes in capacities of 200GB and 400GB, increasing linearly as more ULLtraDIMMs are added to the system.

What tangible impact has your product/solution had on the market and your customers?

The ULLtraDIMM will have considerable effect on several customers, ensuring that processes can become quicker and more efficient when handling large set of data in a fast environment. Potential applications include database and cloud, virtualisation, blade servers, HCP and big data analytics. Another noticeable industry is financial services, which will benefit from the speed of the ULLtraDIMM by enabling faster, more regular updates to trading information, meaning a significant potential profit-gain for users.

What are the major differentiators between your product/solution and those of your primary competitors?

The ULLtraDIMM is an entirely new frontier of ultra-low latency storage, which means that it currently has no directly comparable competitors in market. Utilising DDR3 protocol to communicate directly to flash storage devices has never been done before. Diablo's Memory Channel Storage™

Technology coupled with SanDisk's Guardian Technology has allowed this technology to truly work at the lowest cost and highest endurance.

Why nominee should win

- SanDisk and Diablo Technologies have created a whole new tier of storage with this innovative product
- SanDisk's Guardian Technology provides endurance at the lowest total cost of ownership
- This technology potentially gives ULLtraDIMM flash products a significant data access speed advantage
- The DIMM form factor allows the ULLtraDIMM to be used in any existing memory slot on the motherboard, enabling it to be deployed in any server or blade system found in enterprises today