

Enterprise Solid-State Storage System With PCI Express Claimed as World's Fastest

Micron Technology announced a new portfolio of PCI Express (PCIe) solid-state storage systems, the RealSSD P320h solid-state drive (SSD) series. This new RealSSD P320h series delivers extreme performance and endurance demanded by data-intensive enterprise applications including cloud computing, high-performance computing, data analytics, business intelligence, and video on demand. These new forms of data storing, accessing and sharing are quickly challenging the typical enterprise storage model of spinning disks, presenting great opportunity for PCIe SSDs.

"Micron is defining a whole new category of enterprise-class storage with our P320h PCIe solid-state storage systems," said Gary Gentry, general manager, enterprise division, Micron's NAND solutions group.

"The P320h provides customers with the most compelling performance solution in the industry."

The P320h system uses Micron's proven 34-nanometer (nm) single-level cell (SLC) NAND flash memory technology, which provides two different user capacities: 350 gigabyte (GB) and 700GB. From the NAND silicon to the controller to the complete system solution, the P320h SSD is designed and developed by Micron.

For performance, the P320h series reaches a new standard among current PCIe systems, more than doubling the sequential read and write speeds compared to the nearest competitor--achieving up to 3GBs of sustained data throughput per second. In terms of input/output operations per second (IOPS), a common method used in the enterprise market for benchmarking relative performance, the P320h series reaches a maximum of 750,000 IOPS read and 341,000 IOPS write speeds.

A tremendous amount of data is read and accessed from cloud computing applications such as YouTube, Facebook and Netflix. According to IDC, the amount of digital content created and replicated throughout 2010 reached 1.2 zettabytes.¹ For fast access to this information, an extremely fast backend infrastructure is required, especially from the storage system. A P320h drive (working in a cloud media streaming application) could serve data fast enough to feed 1,500 simultaneous individual HD video streams.²

Other applications that benefit from high-performance PCIe SSDs include Web servers and online transaction processing databases. The high random performance of the P320h system is equivalent to the amount of IOPS an Exchange server would need to support more than 1.5 million Outlook users.³ Additionally, for a traditional transactional database, such as an online bank operation transferring funds from one type of account to another, the P320h can achieve the same throughput as nearly 5,000 hard drives.⁴ For more details on the performance advantages of

Micron's P320h systems, visit www.micron.com/ssd/pcie.

The P320h features Micron's proprietary redundant array of independent NAND (RAIN) management technology that is designed to ensure enterprise-class data protection by replicating data across the NAND flash memory channels. The P320h drive also provides enterprise-class levels of endurance with the 700GB drive able to write 28 terabytes of data every day for five years.

The first products in Micron's P320h series will be available in a full height, half-length form factor, measuring 111.15mm wide x 167.65mm long x 14.47mm thick. Micron has additional PCIe form factors under development, which we plan to introduce later this year. Micron is now delivering early samples of the P320h, with mass production expected to begin in the third quarter.

1 According to an IDC white paper "The Digital Universe Decade -- Are You Ready?" sponsored by EMC Corporation

2 Using today's standard rates for video on demand streams (compressed MPEG2 video at 16Mb/s per stream). The P320h reaches 3GB/s sequential reads or 3,000 Mb/s sequential reads.

3 Assuming Outlook Mail servers running Exchange Server 2007 require 0.32 IOPS per "Heavy" user, 750k read IOPS provides enough bandwidth to support 2,343,750 users (750,000/.32); 341k write IOPS equates to 1,065,635 (341,000/.32). According data on the Microsoft Exchange Server TechCenter, <http://technet.microsoft.com/en-us/library/bb738147%28EXCHG.80%29.aspx>

4 These numbers are based on standard 15k SAS HDD specs of 153 IOPS per drive. (750,000/153 = 4901.96)

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