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KIOXIA Introduces New PCIe 5.0 SSDs for Enterprise and Data Center Infrastructures

New KIOXIA CD8P Series Single-Ported NVMe Drives Optimized for Performance, Latency and Quality of Service in E3.S, 2.5-Inch Form Factors

SAN JOSE, Calif., August 7, 2023 – KIOXIA America, Inc. today announced the addition of the KIOXIA CD8P Series to its lineup of data center-class solid state drives (SSDs). KIOXIA CD8P drives are well-suited to general purpose server and cloud environments that can take advantage of PCIe® 5.0 (32 gigatransfers/s x4) performance. These data center applications can generate complex mixed workloads spread across large scale virtualized systems. The new drives are available in capacities up to 30.72 terabytes[i] (TB) and in both Enterprise and Data Center Standard Form Factor (EDSFF) E3.S and 2.5-inch (U.2) form factors.

Optimized for the performance, latency, reduced power and thermal requirements of data center environments where power and cooling efficiency is critical, the KIOXIA CD8P Series provides the predictability and consistency needed for a seamless user experience. According to Jeff Janukowicz, Research Vice President, IDC, "Growth in NVMe™ SSDs continues with PCIe capacity shipments in servers and storage systems expected to grow at a 40% CAGR between 2022 and 2027. The new CD8P Series SSDs gives these customers the range of performance, capacity, and security choices essential for meeting the storage requirements of next-generation digital enterprise and data center infrastructure."

KIOXIA CD8P drives realize an approximately 60% to 80% increase in sequential read performance when compared to previous generation PCIe 4.0 SSDs*, including:

- Random read[ii] performance up to 2,000K IOPS and random write[ii] performance up to 400K IOPS
- Low and consistent 99.999th percentile latency of under 250us in standard random read workloads[iii], and under 1.8ms in standard OLTP-style mixed workloads[iv]

The new 5th generation data center drives are based on the KIOXIA BiCS FLASH™ 3D flash memory triple-level cell (TLC) technology, and utilize an in-house developed controller. KIOXIA CD8P Series SSDs are compliant with PCIe 5.0 and NVMe 2.0 specifications as well as the NVMe Management Interface (NVMe-MI™) v1.1d, and support Open Compute Project (OCP) Datacenter NVMe SSD specification (not all requirements).

“We are proud to introduce our latest data center PCIe 5.0 NVMe SSD, for general-purpose server and cloud applications,” said Neville Ichhaporia, senior vice president and general manager of the SSD business unit, KIOXIA America, Inc. “The CD8P Series is ready for next-gen PCIe 5.0 servers, delivering a great combination of high performance with low latency in both E3.S and 2.5-inch form factors.”

Additional features include:

- Full data reliability with end-to-end data protection, power loss protection and flash die failure recovery
- Available SED models support TCG Opal and Ruby SSCs[vi]

KIOXIA CD8P Series drives are now sampling to select customers. For more information, please visit www.kioxia.com and follow the company on Twitter and LinkedIn®.

About KIOXIA America, Inc.

KIOXIA America, Inc. is the U.S.-based subsidiary of KIOXIA Corporation, a leading worldwide supplier of flash memory and solid-state drives (SSDs). From the invention of flash memory to today’s breakthrough BiCS FLASH™ 3D technology, KIOXIA continues to pioneer innovative memory, SSD and software solutions that enrich people's lives and expand society's horizons.

The company's innovative 3D flash memory technology, BiCS FLASH, is shaping the future of storage in high-density applications, including advanced smartphones, PCs, SSDs, automotive, and data centers. For more information, please visit KIOXIA.com.

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Notes:

Definition of capacity: KIOXIA Corporation defines a megabyte (MB) as 1,000,000 bytes, a gigabyte (GB) as 1,000,000,000 bytes and a terabyte (TB) as 1,000,000,000,000 bytes. A computer operating system, however, reports storage capacity using powers of 2 for the definition of 1GB = 2^30 bytes = 1,073,741,824 bytes and 1TB = 2^40 bytes = 1,099,511,627,776 bytes and therefore shows less storage capacity. Available storage capacity (including examples of various media files) will vary based on file size, formatting, settings, software and operating system, and/or pre-installed software applications, or media content. Actual formatted capacity may vary.

Read and write speed may vary depending on the host device, read and write conditions, and file size.

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Performance specifications provided in this article is subject to change without any prior notice.

Other company names, product names and service names may be trademarks of third-party companies.

[i] 30.72 TB capacity for 2.5-inch only
[ii] 4KiB block size, 4KiB aligned, 100% random
[iii] 4KiB block size, 4KiB aligned, QD = 32, 100% random, 100% read for 3,200 GB to 7,680 GB capacity
[iv] 4KiB block size, 4KiB aligned, QD = 32, 100% random, 70% read
[v] Not all features OCP Datacenter NVMe SSD specification are supported
[vi] Self-encrypting Drive (SED) - supports TCG Opal and Ruby SSCs. excluding a few unsupported features of TCG Opal SSC. Security optional models are not available in all countries due to export and local regulations.
* Performance gains depend on the capacity and endurance (DWPD) of the SSD.