



Press Release

KIOXIA Demonstrates Flexible Data Placement-Enabled SSD Running RocksDB at 2024 OCP Global Summit

Germany, Düsseldorf, 15 October 2024 – [KIOXIA Europe GmbH](#), a world leader in memory solutions, will be showcasing and demonstrating benefits of a KIOXIA XD Series SSD equipped with Flexible Data Placement (FDP) functionality running the RocksDB database at the 2024 OCP Global Summit, taking place from October 15th to October 17th in San Jose, USA.

The RocksDB database excels in high-performance searches through vast amounts of data and managing history data, and is widely used in generative AI and cloud applications. FDP is a feature defined in the NVM Express Technical Proposal (TP4146) that allows flexible control of data placement within an SSD. By appropriately managing data placement within the SSD, while minimizing changes to host software and device drivers, FDP optimization can enhance performance and extend the lifespan of the SSD.

SSDs follow instructions from host software and device drivers for data storage and erasure. As this process is repeated, data reallocation may occur within the SSD, potentially leading to reduced access speed and unnecessary consumption of flash memory write cycles, especially when data reallocation occurs frequently. Leveraging FDP can help mitigate potential data reallocation, maximizing the performance and lifespan of the SSD.



The demonstration at OCP Global Summit shows FDP functionality in a KIOXIA XD Series Data Center NVMe SSD and a KIOXIA developed plugin (a small program that extends functionality in an application) enabling FDP capability, and tested with RocksDB.

Thorough testing and evaluation have resulted in approximately three times the lifespan improvement and approximately 1.8 times the performance for the RocksDB application in an FDP-enabled system, compared to a traditional system utilizing conventional SSDs and file system^[1].

These achievements will be showcased through a live demonstration at the KIOXIA booth (A7) during the 2024 OCP Global Summit. KIOXIA also plans to release the RocksDB FDP compatibility plugin as an open-source contribution.

KIOXIA remains committed to developing and sharing technologies for effective utilization of SSDs and flash memory, contributing to the efficiency of advanced computing infrastructures and data centers in the future.

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Notes:

1: Performance claim based on testing in a KIOXIA lab environment, as of October 14, 2024.

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About KIOXIA Europe GmbH

KIOXIA Europe GmbH (formerly Toshiba Memory Europe GmbH) is the European-based subsidiary of KIOXIA Corporation, a leading worldwide supplier of flash memory and solid-state drives (SSDs). From the invention of NAND flash memory to today's renowned BiCS FLASH™ 3D flash memory KIOXIA continues to pioneer innovative memory solutions and services that enrich people's lives and expand society's horizons. The company's innovative BiCS FLASH™ 3D flash memory technology is shaping the future of storage in high-density applications, including advanced smartphones, PCs, SSDs, automotive and data centers.

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