



RM5 Series value SAS SSD from KIOXIA

The benefits of value SAS and data center NVMe drives with Dell EMC PowerEdge

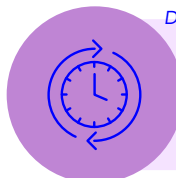
Help your customers discover life after SATA with Dell EMC and KIOXIA



With value SAS and data center NVMe SSDs from KIOXIA, customers can...

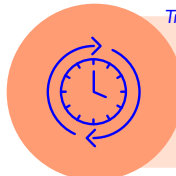
Support more users, enabling their business to expand their customer base and access new revenue sources

Database analytics workload



A Dell EMC™ PowerEdge™ R840 server with data center NVMe SSDs processed **137% more operations per second** than a configuration with SATA SSDs¹

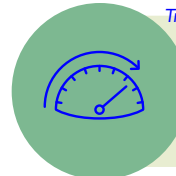
Transactional database workload



A Dell EMC PowerEdge R740xd server with data center NVMe™ SSDs provided up to **115% more transactions per second** than a configuration with SATA SSDs²

Maintain fast response times, helping to keep users happy as well as helping to prevent user drop-off on e-commerce platforms

Transactional database workload



A Dell EMC PowerEdge MX-based VMware vSAN™ cluster with value SAS SSDs responded in **49% less time** than a configuration with SATA SSDs³

Reach important business insights sooner with faster data analysis

Database analytics workload



A Dell EMC PowerEdge R6515 server with data center NVMe SSDs handled queries in **59% less time** than a configuration with SATA SSDs⁴

Get a better return on investment

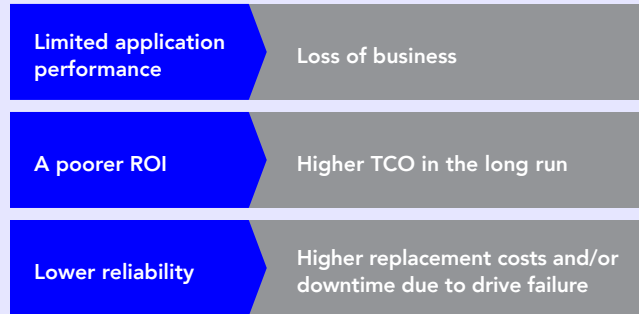
Database analytics workload



In all four studies, configurations using value SAS SSDs and data center NVMe SSDs provided a better performance-per-dollar ratio than the same configuration with SATA SSDs, up to **132%**⁵

SATA: a technology that's reached the end of its roadmap

- SATA SSD transfer speeds haven't increased in 10+ years⁶
- The industry has no plans to increase SATA transfer speeds in the future⁷
- Businesses relying on SATA SSDS could face:



Third-party testing

We tested value SAS and data center NVMe™ SSDs against enterprise SATA SSDs in 4 studies using Dell EMC PowerEdge solutions.

Performance per dollar ratio*				
	Database analytics workloads		Transactional database workloads	
	PowerEdge R840	PowerEdge R6515	PowerEdge R740xd	PowerEdge MX-based VMware vSAN cluster
	OPS per dollar	Cost per iteration	TPS per dollar	OPM per dollar
Value SAS	108% more	46% lower	up to 73% more	45% more
Data center NVMe	132% more	57% lower	up to 109% more	N/A

*in comparison to a configuration with SATA SSDs

Across every configuration and study, the drives from KIOXIA outperformed the enterprise SATA SSDs

- 1 Principled Technologies, "Get better analytics performance for a lower cost with Dell EMC PowerEdge R840 servers and value SAS and data center NVMe SSDs from KIOXIA," accessed October 25, 2019, https://www.dell.com/en-us/collaterals/unauth/analyst-reports/products/servers/pt_report_dell_emc-powerededge-r840-database-analytics.pdf.
- 2 Principled Technologies, "Get significantly better transactional database performance for less from a Dell EMC PowerEdge R740xd server with value SAS and data center NVMe SSDs from KIOXIA," accessed October 26, 2019, https://www.dell.com/en-us/collaterals/unauth/analyst-reports/products/servers/pt_report_dell_emc-powerededge-r740xd-transactional-database.pdf.
- 3 Principled Technologies, "Discover life after SATA with Dell EMC PowerEdge servers equipped with value SAS SSDs from KIOXIA," accessed October 25, 2019, https://www.dell.com/en-us/collaterals/unauth/analyst-reports/products/servers/pt_report_dell_emc-powerededge-mx-transactional-database.pdf.
- 4 Principled Technologies, "Reach important business insights sooner with Dell EMC PowerEdge R6515 servers and value SAS and data center NVMe SSDs from KIOXIA," accessed October 25, 2019, https://www.dell.com/en-us/collaterals/unauth/analyst-reports/products/servers/pt_reports_dell-emc-powerededge-r6515-database-analytics.pdf.
- 5 Principled Technologies, "Get better analytics performance for a lower cost with Dell EMC PowerEdge R840 servers and value SAS and data center NVMe SSDs from KIOXIA," accessed October 25, 2019, https://www.dell.com/en-us/collaterals/unauth/analyst-reports/products/servers/pt_report_dell_emc-powerededge-r840-database-analytics.pdf.
- 6 The Serial ATA International Organization (SATA-IO) last announced a doubling of maximum transfer speeds on SATA (from 3Gp/s to 6Gp/s) in August 2008. "New SATA Spec Will Double Data Transfer Speeds to 6 Gb/s," accessed September 9, 2019, https://sata-io.org/system/files/member-downloads/SATA_6Gb_Phys_PR_Finalv2.pdf.
- 7 SATA-IO, "SATA-IO Frequently Asked Questions," accessed September 9, 2019, <https://sata-io.org/sata-io-frequently-asked-questions>.

Learn more at

- Dell EMC PowerEdge R840: https://www.dell.com/en-us/collaterals/unauth/analyst-reports/products/servers/pt_report_dell_emc-powerededge-r840-database-analytics.pdf
- Dell EMC PowerEdge R740xd: https://www.dell.com/en-us/collaterals/unauth/analyst-reports/products/servers/pt_report_dell_emc-powerededge-r740xd-transactional-database.pdf
- Dell EMC PowerEdge R6515: https://www.dell.com/en-us/collaterals/unauth/analyst-reports/products/servers/pt_reports_dell-emc-powerededge-r6515-database-analytics.pdf
- Dell EMC PowerEdge MX740c: https://www.dell.com/en-us/collaterals/unauth/analyst-reports/products/servers/pt_report_dell-emc-powerededge-mx-transactional-database.pdf

