



# Grow your business with HPE ProLiant DL385 Gen10 and Gen10 Plus servers with value SAS and NVMe mainstream drives



KIOXIA NVMe mainstream SSD

With HPE ProLiant DL385 Gen10 servers featuring KIOXIA value SAS or NVMe mainstream SSDs instead of SATA SSDs, customers can...



Support more users, enabling their user base to expand now and in the future

### MongoDB database analytics<sup>1</sup>

Configuration	% more OPS
NVMe mainstream	<b>177%</b>
Value SAS	<b>139%</b>

### Transactional database workload<sup>2</sup>

Configuration	% more TPM
NVMe mainstream	<b>57%</b>
Value SAS	<b>30%</b>

OPS = Operations per second  
TPM = Transactions per minute



Sustain shorter response times, contributing to a positive user experience for database applications

### SQL Server database analytics<sup>3</sup>

Configuration	% less time
NVMe mainstream	<b>86%</b>
Value SAS	<b>30%</b>

Read latency



Make well-informed decisions, identify negative trends, and allocate business resources more quickly

### SQL Server database analytics<sup>4</sup>

Configuration	% less time
NVMe mainstream	<b>45%</b>
Value SAS	<b>25%</b>

Time to complete a 22-query set



Get more bang for their buck

All value SAS and NVMe mainstream SSD configurations we tested provided **more performance per dollar** than the SATA SSDs configurations, for example:

### MongoDB database analytics<sup>5</sup>

Configuration	% more OPS/\$
NVMe mainstream	<b>141%</b>
Value SAS	<b>115%</b>

OPS/\$ = Operations per second per dollar

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

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

- SATA SSD transfer speeds haven't increased in 10+ years<sup>6</sup>
- The industry doesn't plan to increase SATA transfer speeds in the future<sup>7</sup>
- Businesses relying on SATA SSDs could face:

Limited application performance → Loss of business

Lower ROI → Higher TCO in the long run

Lower reliability → Higher replacement costs and risk of downtime due to drive failure

## Determining value

Using performance results from each of our four test scenarios, we calculated cost comparisons between the KIOXIA SSD configurations and the SATA SSD configurations.

KIOXIA SSD values vs SATA SSD values (compared to a configuration with SATA SSDs)				
	Database analytics workloads		Transactional database workload	Read-heavy sequential I/O workload
Configuration	Cost per SQL Server workload iteration*	MongoDB workload operations per second per dollar*	OLTP transactions per minute per dollar*	IOPS per dollar**
Value SAS	<b>22% lower</b>	<b>115% more</b>	<b>14% more</b>	<b>63% more</b>
NVMe mainstream	<b>39% lower</b>	<b>141% more</b>	<b>35% more</b>	<b>3.6X</b>

\*on an HPE ProLiant DL385 Gen10 \*\*on an HPE ProLiant DL385 Gen10 Plus

### Learn more at

SQL Server data analytics study:  
<http://facts.pt/2h8emuf>

OLTP study:  
<http://facts.pt/zjr4zd>

MongoDB data analytics study:  
<http://facts.pt/2zah70y>

Read-heavy sequential I/O study:  
<http://facts.pt/y461pe7>

- Principled Technologies, "Handle more read-intensive data analytics work with an HPE ProLiant DL385 Gen10 server equipped with value SAS and NVMe mainstream SSDs from KIOXIA," accessed September 9, 2021, <https://www.principledtechnologies.com/Kioxia/RM5-Series-value-SAS-and-CD5-NVMe-mainstream-vs-SATA-data-analytics-1019.pdf>.
- Principled Technologies, "Process more transactions and create greater value with HPE ProLiant DL385 Gen10 servers configured with value SAS," accessed September 9, 2021, <https://www.principledtechnologies.com/Kioxia/RM5-Series-value-SAS-CD5-NVMe-mainstream-vs-SATA-OLTP-0120.pdf>.
- Principled Technologies, "Make business decisions faster with value SAS and NVMe mainstream SSDs from KIOXIA," accessed September 9, 2021, <https://www.principledtechnologies.com/Kioxia/RM5-Series-value-SAS-and-CD5-NVMe-mainstream-vs-SATA-decision-support-1019-v2.pdf>.

- "Make business decisions faster with value SAS and NVMe mainstream SSDs from KIOXIA," accessed September 9, 2021.
- "Handle more read-intensive data analytics work with an HPE ProLiant DL385 Gen10 server equipped with value SAS and NVMe mainstream SSDs from KIOXIA," accessed September 9, 2021.
- 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, 2021, [https://sata-io.org/system/files/member-downloads/SATA\\_6Gb\\_Phys\\_PR\\_Finalv2.pdf](https://sata-io.org/system/files/member-downloads/SATA_6Gb_Phys_PR_Finalv2.pdf).
- SATA-IO, "SATA-IO Frequently Asked Questions," accessed September 9, 2021, <https://sata-io.org/sata-io-frequently-asked-questions>.