



INTEL® OPTANE™ PERSISTENT MEMORY 100 SERIES FOR HPE DELIVERS UP TO 8.4X IMPROVED PERFORMANCE AND 3.1X BETTER PERFORMANCE/PRICE!

Using Big Data Analytics workload with SparkSQL configured with Intel Optane PMem 100 series for HPE in App Direct Mode on the HPE ProLiant DL380 Gen10



Key takeaways



HPE ProLiant DL380 Gen10 with Intel Optane PMem 100 series for HPE

- Configured with HDDs: 8.4x improved performance and 8.3x better performance/price
- Configured with SSDs: 3.1x improved performance and 3.1x better performance/price

HPE ProLiant DL380 Gen10 server configurations

HDD storage without Intel Optane PMem 100 for HPE:

2 HPE ProLiant DL380 Gen10 with Intel Xeon 8280 processors 2.70 GHz (2 cores per socket, 28 sockets); 768 GB DRAM (24 x 32 GB DDR4); 8 HDD drives; Optimized Analytics Package (OAP) for Spark Platform Github; 610 GB DRAM-based OAP cache; Hadoop/YARN; SparkSQL; Oracle JDK 1.8.0_161

SSD storage without Intel Optane PMem 100 for HPE:

2 HPE ProLiant DL380 Gen10 with Intel Xeon 8280 processors 2.70 GHz (2 cores per socket, 28 sockets); 768 GB DRAM (24 x 32 GB DDR4); 8 SSD drives; Optimized Analytics Package (OAP) for Spark Platform Github; 610 GB DRAM-based OAP cache; Hadoop/YARN; SparkSQL; Oracle JDK 1.8.0_161

SSD storage with Intel Optane PMem 100 series for HPE as a cache: 2 HPE ProLiant DL380 Gen10 with Intel Xeon 8280 processors 2.70 GHz (2 cores per socket, 28 sockets); 192 GB (12 x 16 GB DDR4); 1 TB (8 x 128 GB) Intel Optane PMem 100 series for HPE; 8 SSD drives; OAP for Spark platform Github: 1 TB DCPMM-based OAP cache; Hadoop/YARN; SparkSQL; Oracle JDK 1.8.0_161

¹ HPE internal lab testing

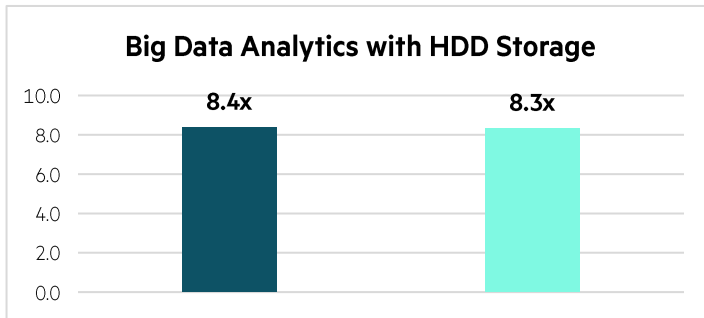
² Based on pricing as of June 12, 2019

EXECUTIVE SUMMARY

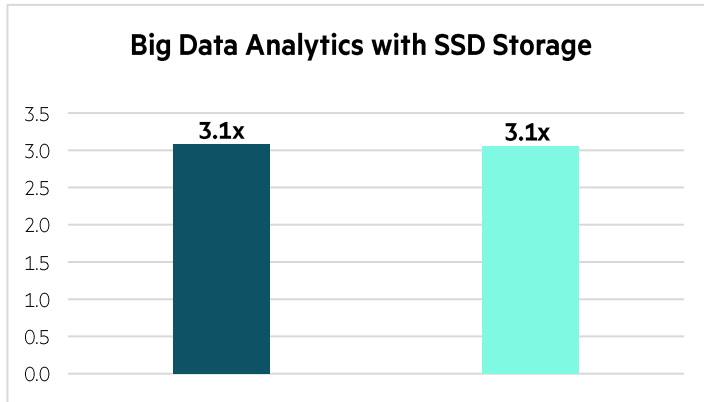
The need for better performance and faster business outcomes for big data-centric computing workloads continues to challenge today's data center infrastructure. Intel Optane PMem 100 series for HPE delivers the right capacity for the right application.



HPE conducted Big Data Analytics benchmarks with and without Intel Optane PMem 100 series for HPE, using both HDD and SSD storage with a scale factor of 2000 GB¹ on the [HPE ProLiant DL380 Gen10 Server](#). The Intel Optane PMem 100 for HPE, used in App Direct mode, operated as a data cache to hold all data stored on HDD or SSD storage devices. Once the data was completely loaded into the persistent memory cache, analytics processing time decreased significantly. Results showed an excellent 8.4x improved performance and 8.3x better performance/price for the HDD data storage. In addition with SSD data storage, the same workload shows 3.1x increased performance and 3.1x better performance/price.²



FIGURES 1 and 2. Performance and performance/price gains for Big Data Analytics for HDD and for SSD storage workloads with Intel Optane PMem 100 for HPE when compared to HDD and SSD storage workloads without Intel Optane PMem 100 series for HPE.



Performance ratio with Intel Optane PMem 100 series for HPE Performance/Price ratio with Intel Optane PMem 100 series for HPE

CUSTOMER VALUE WITH HPE

Innovative technology. Intel Optane PMem 100 series for HPE provides fast, high-capacity, cost-effective memory and storage to transform big data analytics workload possibilities — enabling data to be stored, moved, and processed at unprecedented speed with improving TCO.

HPE ProLiant DL380 Gen10. The server is adaptable for diverse workloads and environments. The secure 2P, 2U HPE ProLiant DL380 Gen10 delivers world-class performance with the right balance of expandability and scalability. The rack server is designed for supreme versatility and resiliency while being backed by a comprehensive warranty.

Partnership. HPE partnered with Intel for this comparison.

BOTTOM LINE

Intel Optane PMem 100 series for HPE delivers resilient technology, scalable efficiency, and breakthrough performance as evidenced in these Big Data Analytics performance benchmarks. These results deliver proof points that showcase HPE innovative technology.

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