



HPE Persistent Memory

Unique technology provides fast, high capacity, cost-effective memory, and storage

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Q. What is the new HPE Persistent Memory offering?

A. For data-intensive workloads where latency and capacity are key considerations, HPE ProLiant, HPE Synergy, and HPE Apollo Gen10 servers will soon offer HPE Persistent Memory in 128, 256, and 512 GB kits featuring Intel® Optane™ DC persistent memory. This new HPE Persistent Memory offering is an innovative, new class of memory that approaches the speed of traditional DRAM with the persistence of storage, ensuring large capacity, high performance, and ongoing data safety even in the event of an interruption in power. This could occur due to an unexpected power loss, system crash, or normal system shutdown.

Q. When will the new HPE Persistent Memory offering be available?

A. Availability of HPE Persistent Memory will vary based on platform through 2019.

Q. Which workloads benefit most from HPE Persistent Memory?

A. This technology will transform critical data workloads—from virtualization and storage to high-performance computing and in-memory analytics.

Q. How is the new HPE Persistent Memory offering different from previous versions of HPE Persistent Memory?

A. HPE has been the leader in persistent memory technology since 2015, when it launched NVDIMM-Ns for its HPE ProLiant Gen9 and Gen10 platforms. The new HPE Persistent Memory offering, which uses 3D XPoint memory media and a DDR-T protocol rather than the previously used DRAM/Flash media and DDR protocol, is the next step in the evolution of persistent memory.

Q. Are HPE Persistent Memory NVDIMM-Ns compatible with the new HPE Persistent Memory offering?

A. HPE's legacy persistent memory option is supported only on first-generation Intel® Xeon® Scalable processors, while the new HPE Persistent Memory offering is supported only on second-generation Intel Xeon Scalable processors.

Q. How is HPE Persistent Memory different from Intel Optane DC Persistent Memory?

A. As it does with all of the products it sources, HPE has extensively tested and augmented Intel®'s persistent memory technology to create a unique solution that is differentiated from the competition and completely compatible with our servers. HPE has added unique features in a number of areas, including security, reliability, manageability, and performance.

Q. What does HPE Persistent Memory require in order to run on HPE servers?

A. Customers must have a Cascade Lake Platinum or Gold processor (or one Silver [4215] processor).

Q. Is HPE Persistent Memory running the DDR4 protocol?

A. HPE Persistent Memory is running the DDRT protocol, which is transactional. A transactional protocol allows the processor to make multiple requests and receive responses at a later time.

Q. Will the use of HPE Persistent Memory affect the use of memory reliability, availability, and serviceability (RAS) features?

A. Yes, some RAS features will be disabled with the use of HPE Persistent Memory. This can affect performance, as memory errors while the server is in memory mode may make system crashes occur more frequently.

Q. The second generation of Intel Xeon Scalable processors support speeds up to 2933 MT/s. Does HPE Persistent Memory match that speed?

A. Customers using HPE Persistent Memory will see their maximum processor speeds drop to 2666 MT/S on two DIMM-per-channel configurations.

Q. Can HPE Persistent Memory operate without DRAM?

A. No, HPE Persistent Memory must be paired with DRAM in both memory mode and app direct mode.

Q. What are the features of the two modes?

A. HPE Persistent Memory is the first persistent memory product that offers two different operating modes—memory mode and app direct mode.

In memory mode, DRAM acts as a cache for the most frequently accessed data, while HPE Persistent Memory provides large memory capacity. Virtualized database deployments and Big Data analytics applications are great candidates for memory mode.

In app direct mode, operations that require the lowest latency and don't need permanent data storage can be executed on DRAM, while data that needs to be made persistent can be routed to HPE Persistent Memory. This mode is great for in-memory databases, in-memory analytics frameworks, and ultrafast storage applications.



Frequently asked questions

Q. What are the limitations of memory mode?

A. When running in memory mode, customers must also integrate DRAM (in specific ratios to HPE Persistent Memory). However, the DRAM installed will not count toward the total memory capacity count. To gain the benefits of memory mode, users should have a minimum threshold of 256 GB in their server. Finally, in order to ensure persistence, HPE Persistent Memory should be not configured in memory mode.

Q. What are the limitations of app direct mode?

A. This mode requires software changes, and downloading the latest versions and refreshes can be time-consuming. It also requires application enablement, otherwise, it will operate in storage over app direct mode, which is a subset mode that uses traditional storage interfaces to enable the use of unmodified applications and file systems.

Q. Does HPE Persistent Memory match the performance of DRAM?

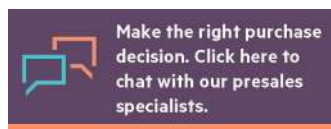
A. Although HPE Persistent Memory offers very good performance at a reasonable price point, it does not match the performance of DRAM.

Q. Where can I find more detailed information regarding platform compatibility and qualification testing HPE Persistent Memory?

A. Contact your HPE representative for more detailed information relating to HPE Persistent Memory.

Learn more at

hpe.com/info/persistentmemory



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