Reduce Oracle Database In-Memory Analytics Solution Cost Using HPE Persistent Memory with DRAM-Like Performance

Comparison of HPE Persistent Memory vs. DRAM analytical query completion time of In-Memory Column Store for Oracle Database 18c

Executive summary

Database analytical compute platforms often need multi-terabyte (TB) memory capacity for Oracle In-Memory (IM) analytics workloads. Sometimes this requires a server with more compute capacity than necessary, and the overall solution cost can be staggering. HPE Persistent Memory, available in 128, 256, and 512 GB capacities and featuring Intel® Optane™ DC Persistent Memory, supports a cost-effective alternative. Hewlett Packard Enterprise conducted a performance comparison that demonstrated the capabilities of a two-socket (2S) HPE Synergy 480 Gen10 Compute Module with an In-Memory Column Store based on HPE Persistent Memory versus a four-socket (4S) HPE Synergy 660 Gen10 Compute Module with DRAM for In-Memory Column Store.¹

Results

Advantage with HPE Persistent Memory. The use of HPE Persistent Memory allows for a larger capacity memory configuration in a 2S server, providing the opportunity to utilize a 2S server where otherwise a 4S system would be needed due to memory requirements.

Performance comparison. The HPE Persistent Memory configuration with two sockets achieved similar performance and reduced cost compared to the DRAM configuration with four sockets.

Customer value with Hewlett Packard Enterprise

Powerful enterprise technology. HPE Persistent Memory, available in 128, 256, and 512 GB kits, approaches the speed of traditional DRAM, having high capacity and ongoing data safety.

HPE Synergy 660 Gen10 Compute Module. The 4S, full-height compute module is ideal for demanding, enterprise data-intensive workloads.

HPE Synergy 480 Gen10 Compute Module. The 2S, half-height compute module delivers efficiency and flexibility to support demanding workloads.

Synergy Compute Modules are designed to create a pool of flexible compute capacity within a composable infrastructure and have the power to support demanding Oracle Database workloads.

Bottom line

The results showcase a high-performance, lower-cost HPE solution using HPE Persistent Memory with Memory Mode for an Oracle Database 18c In-Memory OLAP workload. HPE performance engineering solutions are poised to accelerate customer success.

¹ HPE internal lab testing.