



Executive summary

Support more VMs with large databases and memory footprints by adding Intel Optane DC persistent memory to your Dell EMC PowerEdge R940 server

Databases with large memory footprints can present challenges to organizations looking to upgrade server hardware. The goal is to support as many databases as possible on each new server to make the most of your investment, but memory constraints may force you to add more systems than necessary.

Adding Intel® Optane™ DC persistent memory (DCPMM) to new Dell EMC™ PowerEdge™ R940 servers can increase the number of virtual machines (VMs) with large databases and memory footprints each server can support. In the Principled Technologies data center, we compared the number of virtualized databases with large memory footprints that two new Dell EMC PowerEdge R940 configurations could support: one with Intel Optane DC persistent memory, and one without.

We found that by adding Intel Optane DC persistent memory to the Dell EMC PowerEdge R940, we increased the server memory footprint to support ten more transactional database VMs than the same new server without Intel Optane DCPMMs. Organizations on the market for an upgrade can extend the capabilities of their new Dell EMC PowerEdge R940 servers by adding Intel Optane DC persistent memory to support more VMs per server. This could translate into fewer servers to purchase, store, and manage.

2.6x
the number of
database VMs

The Dell EMC PowerEdge R940 supported 10 more database VMs with Intel Optane DC persistent memory



What is Intel Optane DC persistent memory?

Straddling the line between memory and more traditional storage, Intel Optane DC persistent memory DIMMs are a new memory technology that can accelerate some data-intensive applications. So, is it memory, or is it storage? The answer is both—or either, depending on the strategy that works best for your particular workload. Use Optane in Memory Mode to increase your memory footprint, or choose App Direct Mode, which lets the OS and applications see Intel Optane DIMMs as a separate persistent type of memory.

Why support more database VMs per server?

Users need fast access to databases, but some database workloads are constrained by memory amounts at peak times. This can lead organizations to purchase additional hardware at great expense. In our testing on a Dell EMC PowerEdge R940 server, we found that adding a new storage and memory technology, Intel Optane DC persistent memory, could bridge the performance gap for memory-intensive workloads.



In our data center, a Dell EMC PowerEdge R940 server with Intel Optane DC persistent memory supported 2.6 times the database VMs running memory-intensive workloads compared to the same server without it. By enabling each server to support 10 additional database VMs with Intel Optane DC persistent memory, organizations could make more efficient use of the hardware resources they have and can put off growing their data center unnecessarily.

Number of database VMs each server supported

Higher is better



Read the report at <http://facts.pt/q662z7t>



Facts matter.®

Principled Technologies is a registered trademark of Principled Technologies, Inc. All other product names are the trademarks of their respective owners. For additional information, review the report.