Newer Dell EMC™ PowerEdge™ Servers Significantly Increase Microsoft® SQL Server® Performance

SQL Server Performance Is Key for Business Success

In today's highly competitive environment, businesses expect more from their infrastructure. For IT decision makers facing these challenges, the question is often whether to stretch more life out of existing hardware or to expend capital dollars today in return for levels of performance, utilization, and consolidation that help the business in the short term and reduce total cost of ownership (TCO) in the long term.
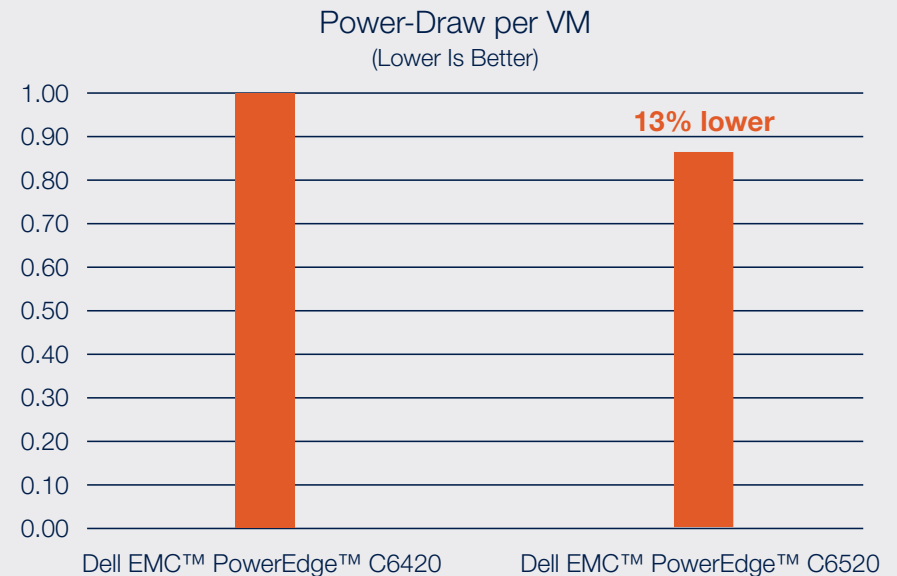
Newer Dell EMC™ PowerEdge™ C6520 servers include several significant upgrades ranging from compute to memory to storage, compared to older-generation servers. But are those upgrades enough to warrant a server refresh?

Beyond being able to run more virtual machines (VMs) per server cluster, testing conducted by Prowess Consulting uncovered that virtualized instances of Microsoft® SQL Server® databases running on latest-generation PowerEdge C6520 servers with KIOXIA enterprise Serial Attached SCSI® solid-state drive (SSD) storage also enjoyed significant performance and efficiency advantages over SQL Server VMs running on older PowerEdge C6420 servers.

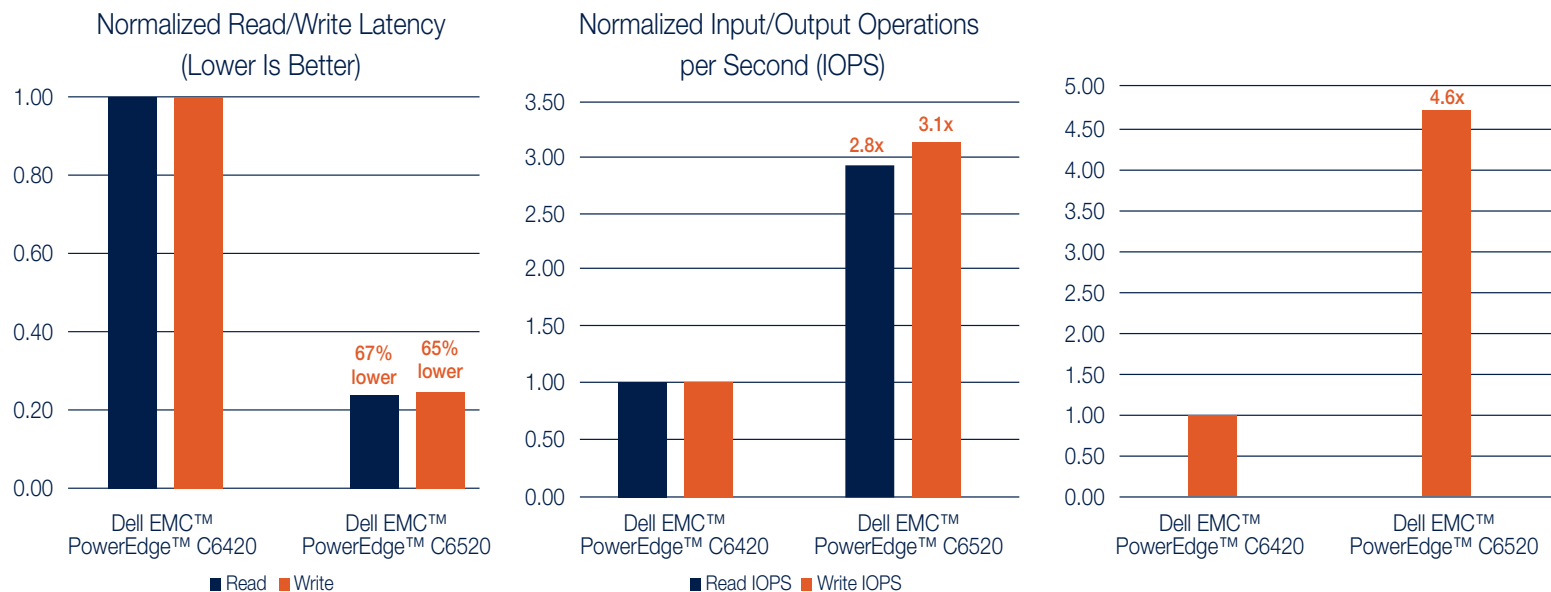| Up to **2.2x** VMs[1]	Up to **67%** lower latency[1]	Up to **3.1x** input/output operations per second (IOPS)[1]	Up to **4.6x** new orders per minute (NOPM)[1]	Up to **13%** less power consumed per VM[1]

Increased Efficiency

In addition to providing higher performance, Dell EMC™ PowerEdge™ C6520 servers consumed 13 percent less power on a per-VM basis than older PowerEdge C6420 servers.[1]

Power-Draw per VM
(Lower Is Better)

Bar chart comparing Power-Draw per VM. Dell EMC™ PowerEdge™ C6420 is near 1.00. Dell EMC™ PowerEdge™ C6520 is **13% lower**. Y-axis scale from 0.00 to 1.00.

Dell EMC™ PowerEdge™ C6420   Dell EMC™ PowerEdge™ C6520

Higher Performance

Our testing used the HammerDB benchmarking tool to compare latency, IOPS, and NOPM between a PowerEdge C6420 platform and a PowerEdge C6520 platform. Both servers were configured with identical RAID settings and high-availability (HA) settings on four-node clusters, and each was provisioned to full capacity with 50 GB VMs. Testing showed up to 67 percent lower latency, 3.1x IOPS, and 4.6x NOPM on the newer PowerEdge C6520 with KIOXIA enterprise SAS SSD storage than on the older PowerEdge C6420.[1]

Normalized Read/Write Latency (Lower Is Better)

Normalized Input/Output Operations per Second (IOPS)

Dell Technologies Management and Services

The Dell EMC PowerEdge C6520 server is designed to deliver high performance for critical workloads. Powered by 3rd Generation Intel® Xeon® Scalable processors, the PowerEdge C6520 server is a dual-socket/2U rack server with support for eight channels of memory per CPU and up to 16 DDR4 DIMMs at 3,200 megatransfers per second (MT/s) speeds. In addition, the PowerEdge C6520 supports PCIe® 4.0 and up to 24 KIOXIA PM6 Series enterprise SAS SSDs.

Learn More

Get the full story by reading our paper, **"Newer Dell EMC™ PowerEdge™ Servers Significantly Increase Microsoft® SQL Server® Performance."**

[1] Based on head-to-head comparisons of a Dell EMC™ PowerEdge™ C6520 server versus a PowerEdge C6420 server.

DELLTechnologies