Upgrade to Dell EMC PowerEdge R940 servers with VMware vSphere 7.0 and gain greater OLTP performance
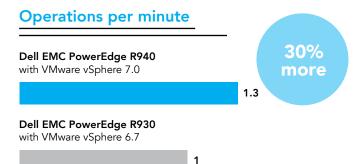
This newer solution processed more operations per minute than a previous-generation Dell EMC PowerEdge R930 with VMware vSphere 6.7

We used Oracle® Database 19c and the benchmark DVD Store 3 to test online transactional processing (OLTP) performance on two solutions:

- A Dell EMC™ PowerEdge™ R940 with the latest edition of VMware vSphere® 7.0 and Intel® Xeon® Platinum 8260 processors
- A previous-generation Dell EMC PowerEdge R930 with VMware vSphere 6.7 and Intel Xeon E7-8890 v3 processors

We normalized the results.

Boost transactional database performance

Operations per minute

Dell EMC PowerEdge R940
with VMware vSphere 7.0

1.3

Dell EMC PowerEdge R930
with VMware vSphere 6.7

1

30% more

Take advantage of new hardware and software features

The Dell EMC PowerEdge R940 server configuration we tested costs approximately US$98,556.00. We obtained this pricing information through a third-party reseller on November 12, 2020. The quote included the server hardware, VMware vSphere 7.0, Dell ProSupport, and Next Business Day Onsite Service (the VMware software and Dell support services were for three years). Note that the RAM in the quotes we received was for 3,200 MT/s, but we tested with 2,666 MT/s of RAM. Below is a table comparing the platform configuration capabilities of the Dell EMC PowerEdge R930 and R940. By upgrading from the Dell EMC PowerEdge R930 platform to the R940 platform, organizations could get up to 16 percent more cores per processor, up to 28 percent more DDR4 memory, and 30 percent more PCIe capacity.

Feature	Dell EMC PowerEdge R930[1]	Dell EMC PowerEdge R940[2]	Difference with Dell EMC PowerEdge R940
Processors	Up to four Intel Xeon E7-8800 v4 and E7-4800 v4 processors	Up to four 2nd Generation Intel Xeon Scalable processors	Newer Intel Xeon processors
Cores	Up to 24 per processor	Up to 28 per processor	Up to 16% more cores per processor
Memory	Up to 12 TB of DDR4 memory	Up to 15.36 TB of memory in 48 DIMMS	Up to 28% more DDR4 memory
PCIe capacity	10 PCIe 3.0 slots	13 PCIe Gen. 3 slots	30% more PCIe capacity

How the latest VMware vSphere 7.0 features could scale with your Dell EMC environment...

VMware vSphere 7.0 provides new features that further support both small and large virtualized environments, such as vSphere Lifecycle Manager (vLCM), improved Distributed Resource Scheduler (DRS), and improved VM template management.[3, 4, 5] In addition to these features, Dell EMC offers OMIVV and Dell EMC add-ons, which can help organizations support Dell EMC PowerEdge environments of varying sizes. We did not test these features, and gathered the information cited here from publicly available sources.[6, 7]

...and integrate with OpenManage Integration for VMware vCenter

In an August 2020 study, we set up a cluster of previous- and current-generation Dell EMC PowerEdge servers. We carried out updates and compatibility verification tasks manually as well as using VMware vSphere 7.0 features such as vSphere Lifecycle Manager with Quick Boot and the Dell OpenManage Integration for VMware vCenter (OMIVV). Using these tools allowed our admins to update the hypervisor 34 times faster, complete hypervisor and firmware updates 68 times faster, and conduct hardware compatibility checks 7 times faster than with a manual approach alone.[8]

Learn more at *http://facts.pt/szO7jA6*

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5. Nigel Hickey, "vSphere 7 – Content Library," accessed 10/302020, https://blogs.vmware.com/vsphere/2020/04/vsphere-7-content-library.html.
6. Dell Technologies, "OpenManage Integration for VMware vCenter," accessed 10/28/2020, https://www.dell.com/support/article/en-us/sln311238/openmanage-integration-for-vmware-vcenter?lang=en.
7. Dell Technologies, "VMware vSphere Life Cycle Manager (vLCM) and Dell EMC integration," accessed 10/28/2020, https://downloads.dell.com/manuals/all-products/esuprt_software_int/esuprt_software_virtualization_solutions/vmware-esxi-7x_white-papers3_en-us.pdf.
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