

# Upgrading Your Large Microsoft® SQL Server® Databases?

## Dell Technologies can help you build a VMware vSphere® infrastructure that is ideal for running large SQL Server databases

While many organizations have turned to virtualization to achieve cost-effective hardware utilization, many IT teams continue to run Microsoft® SQL Server® on physical servers, even as their databases continue to grow. In addition, legacy databases running on outdated hardware can pose risks for IT teams because of discontinued technical support and security updates. For example, Microsoft ended support for SQL Server 2008 and SQL Server 2008 R2 in July 2019, and it will be ending support for SQL Server 2012 in 2022.<sup>1</sup>

If your organization is running large databases on older versions of SQL Server and outdated physical hardware, Dell Technologies offers an upgrade path to SQL Server 2019 running on VMware vSphere® and Dell EMC™ PowerEdge™ servers. In addition, Dell EMC™ PowerStore storage systems can provide performance, management, and scalability benefits for virtual SQL Server environments. This path provides simple and cost-effective original equipment manufacturer (OEM) licensing, one-stop technical support for both small and large database deployments, and multi-layer security.

## Scale Your Solution

### Create High-Performance Systems for Any Size SQL Server 2019 Deployment

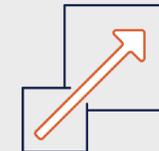
Dell Technologies and VMware have been working together for nearly two decades to provide cost-effective solutions to organizations of all sizes. Combined with its multi-decade partnership with Microsoft, Dell Technologies can provide solutions that meet the needs of any size deployment or workload.

An infrastructure built with Dell EMC PowerEdge servers, Dell EMC PowerStore storage, and VMware software can provide:

- A high-performance environment for large SQL Server databases
- Compute and storage scalability to meet changing business demands
- Hardware-based security that protects virtual machines



High Performance



Scalability



Hardware Security

# Dell EMC™ PowerEdge™ Servers Accelerate Large SQL Server 2019 Databases Running on VMware vSphere

Server databases perform when running on PowerEdge R730xd servers, VMware vSphere 6.7, and SQL Server 2012 versus newer PowerEdge R740xd servers, VMware vSphere 7.0, and SQL Server 2019.

Prowess engineers used HammerDB 3.3, an open-source database load testing and benchmarking tool that measures transaction rates against increasing levels of “users” and “warehouses.” The test included 20 TB and 30 TB databases. Our test showed that SQL Server 2019 with 24 vCPUs and 128 GB of RAM, running on a PowerEdge R740xd server with VMware vSphere 7.0, provided significantly higher database performance than SQL Server 2012 with 16 vCPUs and 128 GB of RAM, running on a PowerEdge R730xd server with VMware vSphere 6.7. Note that the vCPU configurations are the licensed maximums for both SQL Server 2012 and SQL Server 2019.

Number of Users	20 TB TPM Performance Difference	20 TB NOPM Performance Difference	30 TB TPM Performance Difference	30 TB NOPM Performance Difference
SQL Server 2019 on a PowerEdge R740xd with vSphere 7.0 performs:				
50	33.35 percent better	33.30 percent better	39.14 percent better	33.30 percent better
100	39.71 percent better	39.71 percent better	44.22 percent better	39.71 percent better
500	51.73 percent better	51.59 percent better	53.53 percent better	51.59 percent better
1,000	50.65 percent better	50.56 percent better	52.75 percent better	50.56 percent better

## Consolidated Licensing and Support

Dell Technologies offers a high-performance, scalable upgrade path for any size SQL Server deployment running in a VMware vSphere environment, while also providing simplified OEM licensing. When organizations purchase a complete hardware and software solution, Dell Technologies includes simplified software licensing with the purchase. Pricing is competitive for organizations of all sizes, so IT teams only need to purchase the number of licenses they need.

In addition to simplified software licensing, Dell Technologies also provides consolidated support for Microsoft and VMware software running on Dell EMC PowerEdge servers. Organizations have one phone number to call with questions about their hardware and their Microsoft and VMware software, which simplifies hardware and software support considerably.

[Read the full report:](#)

[“Concerned about Deploying Large SQL Server Databases on VMware vSphere?”](#)

<sup>1</sup> End-of-support date according to Microsoft.  
Source: Microsoft“ Search Product and Services Lifecycle Information.”  
<https://support.microsoft.com/en-us/lifecycle/search>

The analysis in this document was done by Prowess Consulting and commissioned by Dell Technologies.

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