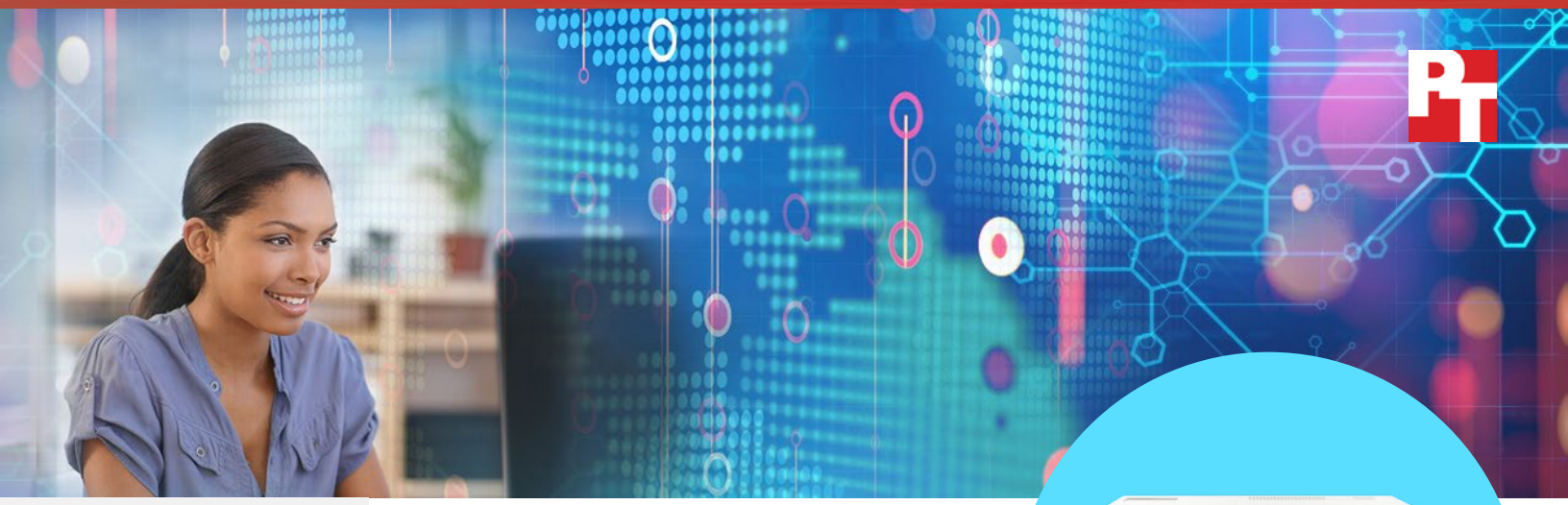


Executive summary

# Support more database users while minimizing datacenter sprawl

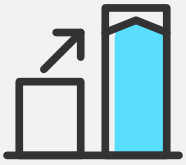
## A Dell EMC software-defined storage solution featuring ScaleIO Ready Nodes outperformed an HPE solution with flash storage

Storage architectures that have dedicated workloads and SANs cannot always provide the scale, elasticity, and flexibility to meet the demands of today's high-performing applications. These complex and siloed environments can be plagued by inefficient and rigid planning, high costs, and longer time to market. A Dell EMC™ software-defined storage solution featuring ScaleIO® Ready Nodes departs from these traditional architectures and can deliver strong performance for multiple database workloads in a space-efficient package.

Compared to a flash storage-based HPE solution of ProLiant DL360 Gen9 server nodes and 3PAR 8450 storage, the Dell EMC software-defined storage solution, featuring ScaleIO, processed more database transactions and scaled a mixed-workload environment without sacrificing performance. The Dell EMC ScaleIO solution also recovered workloads and applications from a simulated hardware failure more quickly than the HPE solution did. This reliability and scalability ensures that your database users can stay active and have a good experience, even with unexpected changes in the datacenter.

**Dell EMC ScaleIO Ready Node solution**

**Process more data**
Up to 1.8X more database operations



**Double the work**
by scaling out resources

**Recover quickly**
with effective fault-tolerant features

## Minimize datacenter sprawl with a smaller solution footprint

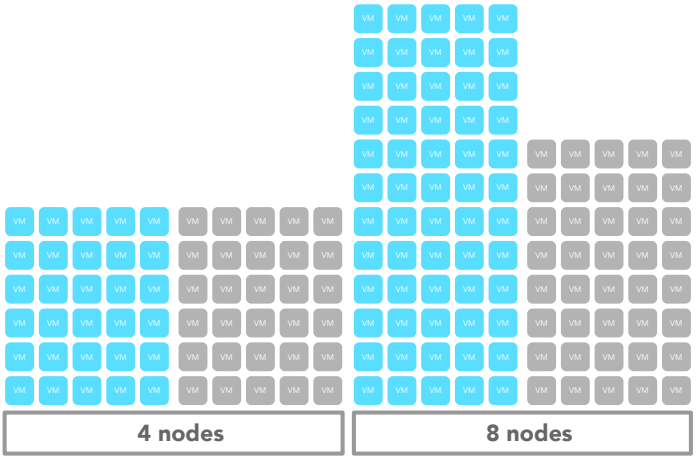
We ran four-node configurations of both solutions in an OLTP-only scenario and in an OLTP and data mart scenario. After scaling out, we ran eight-node configurations in both scenarios. In addition to the database performance and data protection advantages we highlight in the following sections, the four-node Dell EMC ScaleIO solution saved 4U of rack space compared to the HPE solution. The eight-node Dell EMC ScaleIO solution saved 8U of rack space.

## Do more work with your transactional databases.

Processing database transactions to meet user demand requires powerful compute and vast storage resources. The Dell EMC ScaleIO solution handled up to 1.8 times more database orders per minute (OPM) than the HPE solution: 2,798,823 compared to 968,037. Even in the smaller configurations we tested, the Dell EMC ScaleIO solution handled more OPM than the HPE (48 percent more).

## Get more from your workloads when scaling out resources

By abstracting, pooling, and automating storage with ScaleIO, you can eliminate multiple silos of storage arrays and consolidate the capacity and workloads into a simplified software-defined infrastructure.




Dell EMC ScaleIO Ready Node solution VMs

HPE 3PAR solution VMs

The smaller configurations of both solutions supported 30 VMs. We added two 2U storage arrays to the HPE solution, and the larger configuration successfully ran workloads at 40 VMs. When we ran more than 40 VMs however, the larger HPE solution dropped threads and failed to run workloads properly. In comparison, the larger Dell EMC configuration doubled its VM count (30 to 60).

When it ran a combination of workloads, the larger Dell EMC ScaleIO solution handled more than twice the OPM that it supported in the smaller configuration.

## Keep up with customer and employee activity

Today's users have a low threshold for waiting. The eight-node Dell EMC ScaleIO solution delivered faster response times, beating the eight-node HPE solution by up to 87 percent when the solutions ran OLTP and data mart workloads. Those fractions of a second are crucial when processing multiple and concurrent transactions, even if users may not notice a difference in a single transaction.

## Reduce the risk of downtime

There's often no way to know when an event can cause hardware to fail and go offline, putting your applications and data at risk. ScaleIO Ready Nodes offer fault-tolerant features to help protect data while mitigating downtime.

In all four scenarios, the Dell EMC ScaleIO solution maintained near-optimal database performance and experienced no ScaleIO-related storage downtime. During the ScaleIO Ready Node failure test, the hypervisor rebooted the subset of VMs from the failed node onto one of the other seven hosts in the cluster, resulting in a workload interruption lasting less than one minute. In comparison, the HPE solution experienced unexpected workload downtime in two scenarios. When we simulated a 3PAR controller failure in the HPE solution, workloads delivered 28 percent fewer OPM.

**Read the full report at http://facts.pt/6Xddj3 ▶**

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