Executive summary

Manage transactional and data mart loads with superior performance and high availability

The Dell EMC VMAX 250F All Flash storage array supported database workloads better than the HPE 3PAR 8450 storage array

It's not enough to make the transaction process as fast and effortless as possible; the speed of business also demands a backend storage solution that won't bog down when faced with large data mart transfers or let unplanned downtime interfere with business as usual. All-Flash storage arrays from Dell EMC™ and HPE promise to help companies avoid those pitfalls. But how well do they live up to that promise?

We set up and tested solutions from both vendors and found that the Dell EMC VMAX™ 250F All Flash storage array paired with PowerEdge™ servers came out ahead of the HPE 3PAR 8450 storage array backed by ProLiant servers in two key areas:

- The VMAX 250F processed transactional and data mart loading at the same time with minimal impact to wait times or database performance.
- When faced with interruptions in access to local storage, the database host seamlessly redirected all I/O to the remote VMAX 250F via SRDF/Metro with no interruption of service or downtime.

This executive summary shows you how each system can help or hinder data access during backups and unplanned downtime.

Dell EMC VMAX 250F

Latency 1ms or less
keeps wait times unnoticeable

Minimal impact
during data mart load

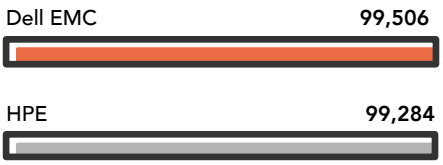
No downtime
with loss of local storage connectivity

Support customers and maintenance situations at the same time

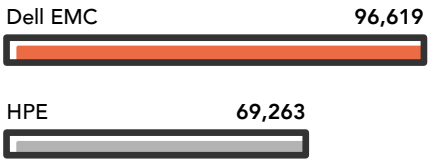
Companies routinely use data marts to gather information from multiple departments in one centralized location. No performance loss during load times means IT doesn't have to wait to do it until it's convenient.

We enabled compression on both arrays and ran the same two Oracle® Database 12c transactional workloads on both solutions. Then, we added a data mart load into the mix using a VM running Microsoft® SQL Server® 2016 pushing data from an external source onto the target array.

Average IOPs before data mart

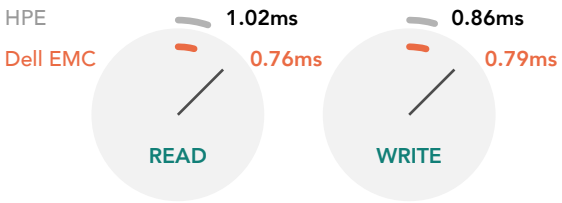


Average IOPs during data mart



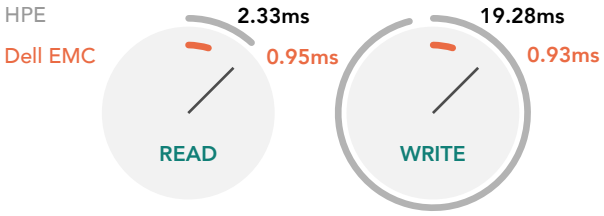
We found when we add a large data write load to the transactional loads already running on the VMAX 250F All Flash storage array, performance on those workloads decreased only slightly, whereas the HPE 3PAR 8450 solution handled 30 percent less IOPS when we added the data mart load.

Average latency before data mart



The average storage latency for both reads and writes on the Dell EMC VMAX 250F solution stayed under a millisecond. Plus, the VMAX solution handled reads and writes much faster then the 3PAR solution during the data mart load—up to 145 percent faster reads and 1,973 percent faster writes. This means data access won't slow down even when you schedule maintenance during peak use hours.

Average latency during data mart



By contrast, storage latency for the HPE 3PAR 8450 solution was higher and the HPE storage array experienced lengthy delays when processing reads and writes at the same time—read latency increased 129 percent while write latency increased 2,133 percent.

Prepare for unexpected downtime with reliable failover protection

For the Dell EMC solution, we used Unisphere for VMAX to set up two VMAX 250F arrays with active-active SRDF/Metro remote replication. For the HPE solution, we set up one 3PAR 8450 array and one 3PAR 8400 array with Remote Copy and Peer Persistence enabled. Then, we deployed one 1.2 TB Oracle instance configured to run an OLTP workload on each system. Once the Oracle instances were up and running, we initiated a lost host connection on the local arrays.

The entire workload on the VMAX 250F solution continued to run with no downtime following the outage. In contrast, the application workload on the 3PAR solution stopped until we restarted the VM. SRDF/Metro is active-active, which ensured consistent data access during our site failure. HPE Peer Persistence is active-passive, so, during our local storage failure, all the paths were inaccessible until the standby paths to the remote array became active or we restored the connection to the local system and failback occurred.

In the end, the Dell EMC VMAX 250F All Flash storage array lived up to its promises better than the HPE 3PAR 8450 storage array did.

To find out more about Dell EMC VMAX All Flash, visit DellEMC.com/VMAX.

Read the full report at http://facts.pt/4jdgXr ▶

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