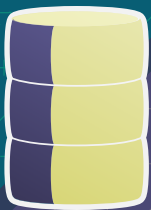**PT**

Executive summary

Up to 80% more orders per minute

Improve employee productivity

Up to 33% more VMs

Get more compute power in less space and help improve asset utilization

Boost database performance in VMware vSAN environments with Toshiba PX05S SAS SSDs and Dell EMC PowerEdge R740xd servers

Process more orders per minute to help drive productivity and improve customer satisfaction

In 2017, e-commerce sales in the US soared by almost 17 percent compared to 2016.[1] As shoppers flock to online retail spaces, how can companies ensure their infrastructure supports expected business growth? A new Dell EMC server infrastructure configured with Toshiba PX05S solid-state drives (SSDs) increased the number of orders processed per minute and delivered faster response times, helping businesses more effectively meet customer demand.

We ran a transactional database workload on a Dell EMC™ PowerEdge™ R740xd cluster using VMware vSAN™ and Toshiba PX05S SAS SSDs, as well as a legacy PowerEdge R730 vSAN cluster configured with hard disk drives (HDDs) and SATA SSDs. The newer solution processed more orders per minute, supported more virtual machines (VMs), and provided lower latency. Read on for a summary of how the new Dell EMC solution using all-flash Toshiba PX05S solid-state storage can improve customers' online experience and help businesses set themselves up for long-term success.
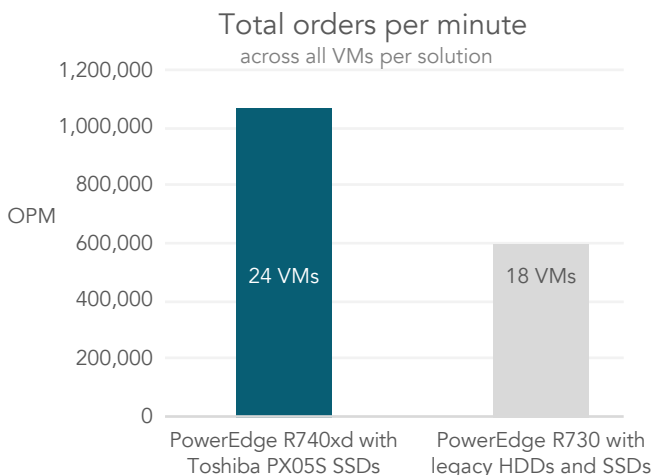
Handle more user activity

When we provisioned each server cluster with 18 VMs running a DVD Store 2 workload, the new solution processed 50 percent more orders per minute than the legacy solution. This result indicates that the Toshiba-Dell EMC solution could process more customer orders, helping drive greater revenues.

Increase flexibility and scalability with more virtual machines

Our testing determined the number of VMs each solution could support while remaining within VMware vSAN capacity sizing guidelines. The PowerEdge R740xd solution with Toshiba PX05S SAS SSDs:

- Supported six more VMs than the legacy solution, a 33 percent increase, and processed 1,067,868 OPM—an 80 percent improvement over the legacy solution
- Processed 30 percent more OPM per VM, meaning that even while the newer solution was hosting six more VMs, it still maintained better transactional database performance for each VM
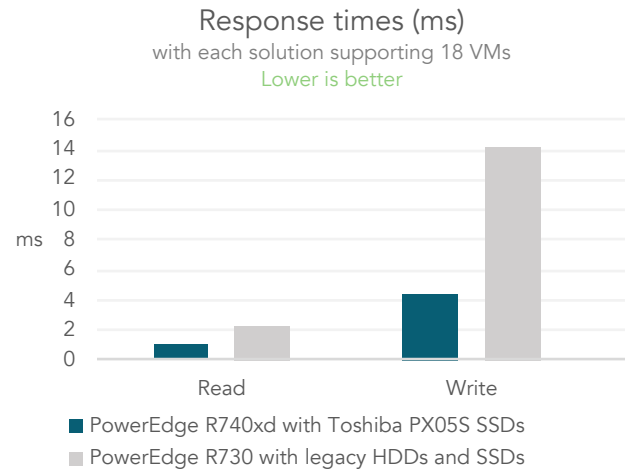
By running more VMs on fewer servers, businesses can shrink their datacenter footprint and save money on operational costs. They can then funnel more money into initiatives that spur business growth.

Total orders per minute
across all VMs per solution

OPM

1,200,000	
1,000,000	
800,000	
600,000	
400,000	
200,000	
0	

24 VMs — PowerEdge R740xd with Toshiba PX05S SSDs

18 VMs — PowerEdge R730 with legacy HDDs and SSDs

1 US Census Bureau, "Quarterly retail e-commerce sales 4th quarter 2017," accessed April 3, 2018, https://census.gov/re-tail/mrts/www/data/pdf/ec_current.pdf

Process orders faster with lower latency

The Toshiba-Dell EMC solution improved storage performance, with up to 68 percent lower write response times and 53 percent lower read response times. For businesses, lower latencies can translate into faster order processing and an improved customer experience.

Response times (ms)
with each solution supporting 18 VMs
Lower is better

ms	Read	Write
16		
14		
12		
10		
8		
6		
4		
2		
0		

■ PowerEdge R740xd with Toshiba PX05S SSDs
■ PowerEdge R730 with legacy HDDs and SSDs

Using Toshiba PX05S SAS SSDs and VMware vSAN, Dell EMC PowerEdge R740xd servers could help businesses support customer growth and set themselves up for long-term success.

To find out more about the Dell EMC and Toshiba partnership, visit http://www.dell.com/toshiba and https://storage.toshiba.com/dell

Learn more at http://facts.pt/YGsAaz ▶

Principled Technologies®

Facts matter.®