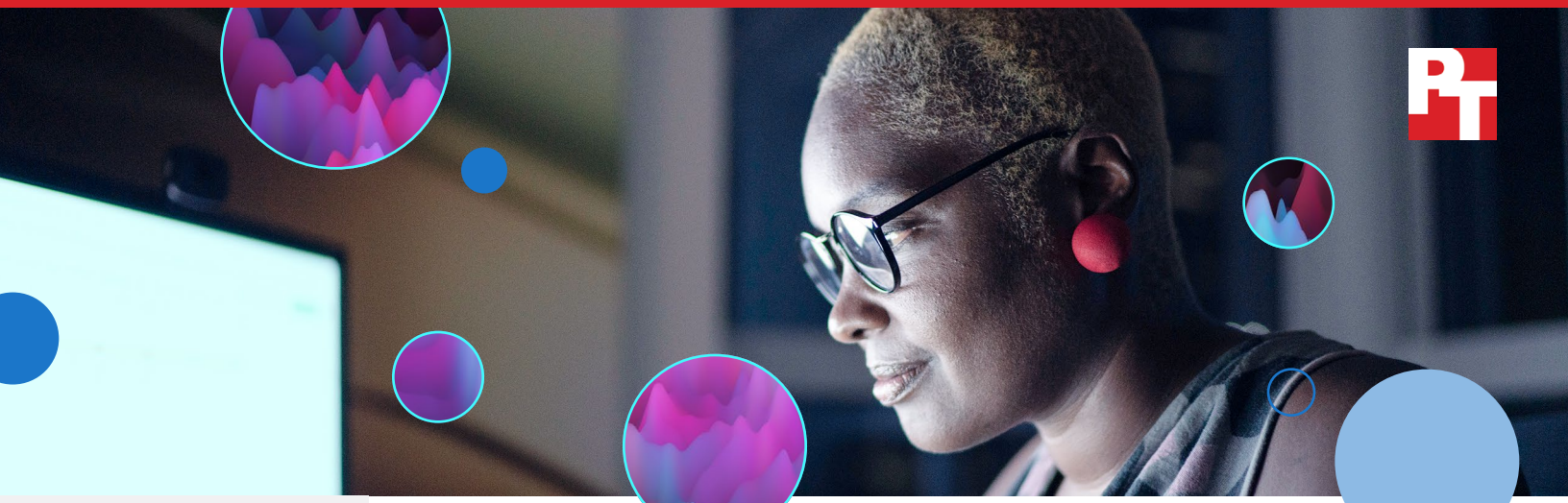


Executive summary

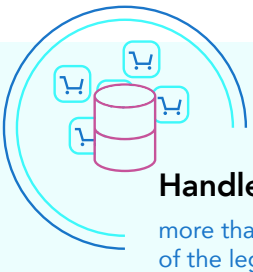
Boost transactional database performance of VMware vSAN clusters by replacing older servers with new Dell EMC PowerEdge R640 servers

Replacing older servers can help you deliver a better customer experience and generate more revenue

As your organization grows, the performance of servers in your data center may not be able to keep up and can even degrade. What the servers in your software-defined storage VMware vSAN™ solution needed to handle after their purchase might not be what they need to handle today or next year. For transactional database workloads in vSAN, diminished ability to meet increasing demand can create obstacles in delivering reliable service quality for users.

Replacing older servers in a vSAN cluster can significantly improve the performance of transactional database workloads they support. This can mean a better user experience, a greater likelihood of meeting service quality demand and workload growth, and ultimately more revenue to help your bottom line.

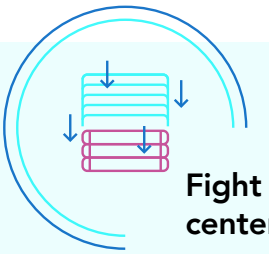
In our data center, we ran online transaction processing (OLTP) workloads from the benchmark tool DVD Store 2 on vSAN clusters of current-generation, previous-generation, and legacy Dell EMC™ PowerEdge™ servers. The current-generation Dell EMC PowerEdge R640 servers powered by 2nd Generation Intel® Xeon® Scalable processors drastically outperformed the previous-generation PowerEdge R630 and legacy PowerEdge R620 servers. In addition, the current-generation PowerEdge R640 cluster did more work in the same amount of space, which means it can help you combat data center sprawl.



Handle more orders

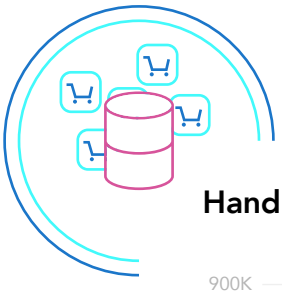
more than **7x** the OPM of the legacy server

more than **2x** the OPM of the previous-generation server



Fight data center sprawl

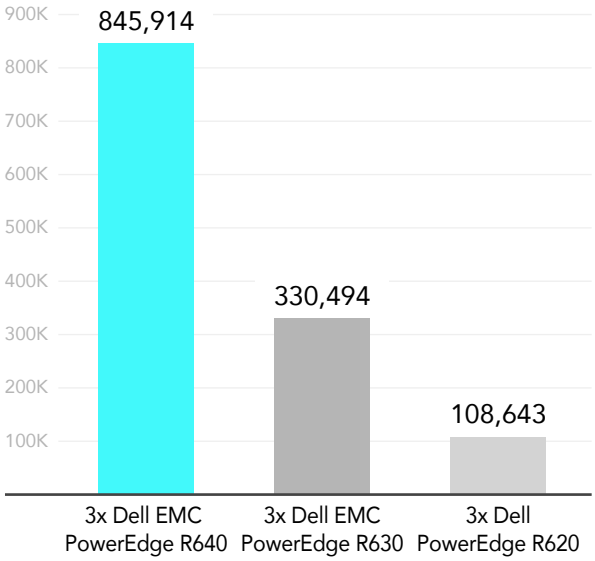
Handle more transactions in 3U of rack space



Handle more orders

Total orders per minute (OPM)

Higher is better



The winning solution at a glance

Dell EMC PowerEdge R640 server

- Dense 1U, two-socket server
- 24 DDR4 DIMM slots
- Up to 76.8 TB of storage
- Offers density and scalability for software-defined storage and high-performance computing[1]

2nd Generation Intel Xeon Scalable processor platform

- Offers multiple levels of performance to match your workloads, including Bronze, Silver, Gold, and Platinum
- Supports Intel Optane™ DC persistent memory,[2] a new memory and storage technology for workload acceleration

Generate more revenue

The VMware vSAN cluster of Dell EMC PowerEdge R640 servers powered by 2nd Generation Intel Xeon Scalable processors delivered more than seven times the orders per minute (OPM) of the legacy PowerEdge R620 vSAN solution and more than twice the OPM of the previous-generation PowerEdge R630 vSAN solution. This level of OPM increase means that a cluster of new PowerEdge R640 servers could replace several older servers and prepare organizations to handle many more ecommerce orders now and in the future.

Reduce data center sprawl

The Dell EMC PowerEdge R640 solution powered by 2nd Generation Intel Xeon Scalable processors occupied the same amount of rack space (3U) as each of the other solutions. Consider this: If you have seven 3U PowerEdge R620 vSAN clusters each handling 108K operations per minute, you could replace them with a single 3U PowerEdge R640 vSAN cluster.

Conclusion

If you replace older Dell EMC PowerEdge R620 and R630 servers in VMware vSAN clusters with current-generation Dell EMC PowerEdge R640 servers powered by 2nd Generation Intel Xeon Scalable processors, you could unlock the transactional database performance potential that meets user demand and boosts revenue. You also can consolidate your older servers with newer ones, which could reduce data center costs such as power, cooling, and licensing.

1 Dell EMC, "PowerEdge R640 Rack Server," accessed September 5, 2019, https://www.dell.com/en-us/work/shop/povw/poweredge-r640.

2 Intel, "2nd Gen Intel Xeon Scalable Processors Brief," accessed September 5, 2019, https://www.intel.com/content/www/us/en/products/docs/processors/xeon/2nd-gen-xeon-scalable-processors-brief.html.

Read the report at http://facts.pt/qnuhaw1

Principled Technologies®

Facts matter.®