



Keep remote desktop power users productive with Dell EMC PowerEdge R840 servers powered by 2nd Gen Intel Xeon Scalable processors

When the Dell EMC™ PowerEdge™ R840 launched in 2018, we found that companies could “Get more power for your CPU-intensive workloads” with this 2U four-socket rack server.¹ Now, it presents an opportunity for you to support more power users, speed desktop responsiveness, and grow your employee base without worrying about pandemic-induced supply chain problems.

In the Principled Technologies data center, we deployed a VMware Horizon® 8 virtual desktop infrastructure (VDI) environment on a single-node Dell EMC PowerEdge R840 powered by four 2nd Gen Intel® Xeon® Scalable processors and onboard storage. Then, we captured VDI performance using a VMware View Planner workload to assess the performance of the virtual desktop sessions using VMware’s QoS (Quality of Service) metrics.

Within the VMware View Planner benchmark, the workload includes CPU-centric tasks, such as browsing through a PDF file and modifying a Word document, as well as storage-centric tasks such as opening a large document and saving a PowerPoint file.²

We found that the Dell EMC PowerEdge R840 could support up to 230 power user VDI sessions while maintaining acceptable desktop response times.



Support up to

230

VDI power users while maintaining acceptable desktop response times

Proven performance without slowdowns

To determine the maximum number of power users the PowerEdge R840 server could handle without negatively affecting the end-user experience, we set up a VMware Horizon 8 VDI environment with Windows 10 desktops running Microsoft Office 2019. Then we used the VMware View Planner benchmark to generate productivity application-based workload simulations with set acceptable response time thresholds (<1 second for CPU-centric tasks and <6 seconds for storage-centric tasks).

Support up to
230
VDI power users
on a Dell EMC
PowerEdge R840

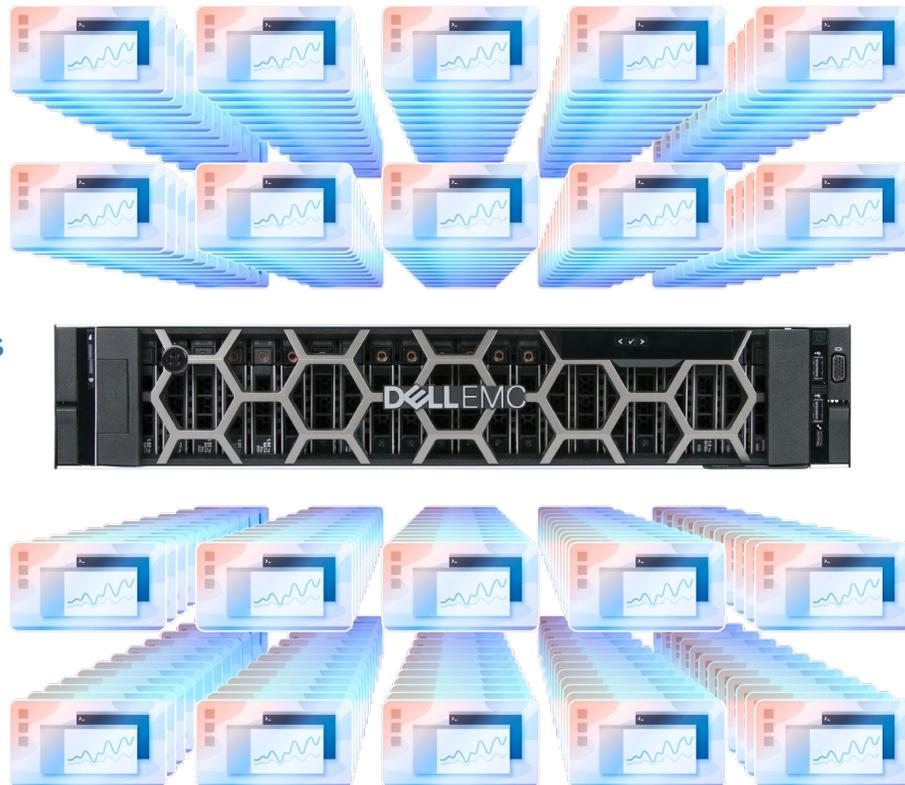


Figure 1: Total power user VDI sessions based on VMware View Planner benchmark results. Source: Principled Technologies.

About the Dell EMC PowerEdge R840

The Dell EMC PowerEdge R840 is not an entry-level server. It holds:

- **Up to four 2nd Gen Intel Xeon Scalable processors**
Boost performance
- **Up to 24 NVMe drives**
Scale capacity and performance
- **Two GPUs for workload acceleration**
Accelerate applications
- **Up to 6 TB of memory**
Handle larger applications

Plus, this 14th generation model is made with cyber-resilient architecture and compatible with the Dell EMC OpenManage™ portfolio.³ Go to the Dell website for up-to-date pricing and availability: <https://www.dell.com>.

Speedy access to applications

If you have hundreds of power users opening and saving Excel documents, watching videos, checking email, and reviewing PDFs simultaneously—this barrage of CPU- and storage-centric activities can bog down lesser servers. This can directly affect productivity as power users struggle to complete tasks. The VMware View Planner benchmark determined that the Dell EMC PowerEdge R840 supported 230 VDI sessions with acceptable response times in both CPU- and storage-centric tasks.

The ability to support many virtual desktop power users while also delivering acceptable session response times means you can keep your workforce productive with fewer servers.



Figure 2: Response times based on VMware View Planner benchmark results. Source: Principled Technologies.

What is a 95th percentile response time?

Because many virtual users were working simultaneously, we focused on a common performance measure: how long 95 percent of the applications running took to respond. This approach provides you with a much more accurate picture of expected response times.⁴

About the VMware View Planner benchmark

According to VMware, “View Planner generates a realistic measure of client and server-side performance for all desktops being measured on the virtual desktop platform.”⁵ The application-centric benchmark records operation completion times in nanoseconds. Overall scores reflect the number of desktops that completed a minimum of 95 percent of the CPU- and I/O-intensive operations under defined thresholds.

To learn more about VMware View Planner, visit <https://www.vmware.com/products/view-planner.html>.



Conclusion

In our hands-on testing, a Dell EMC PowerEdge R840 server, powered by 2nd Gen Intel Xeon Scalable processors, supported 230 virtual desktop users without negatively impacting the power user experience. This can be useful if you have hundreds of power users online at once. Plus, supporting many VDI power users while also delivering acceptable session response times can help keep your workforce productive and your data center footprint small.

1. Principled Technologies, "Get more power for your CPU-intensive workloads," accessed January 31, 2022, https://www.principledtechnologies.com/Dell/PowerEdge_R840_R820_comparison_0618.pdf.
2. VMware, "VMware View Planner Documentation," accessed January 20, 2022, <https://docs.vmware.com/en/VMware-View-Planner/index.html>.
3. Dell EMC, "PowerEdge R840 spec sheet," accessed January 11, 2022, https://i.dell.com/sites/csdocuments/Shared-Content_data-Sheets_Documents/en/poweredge-r840-spec-sheet.pdf.
4. Manage Engine OpManager, "95th Percentile Calculation," accessed January 27, 2022, <https://www.manageengine.com/network-monitoring/faq/95th-percentile-calculation.html>.
5. VMware, "View Planner," accessed January 11, 2022, <https://www.vmware.com/products/view-planner.html>.

Read the science behind this report at <https://facts.pt/1StASRV> ►



Facts matter.®

Principled Technologies is a registered trademark of Principled Technologies, Inc. All other product names are the trademarks of their respective owners. For additional information, review the science behind this report.

This project was commissioned by Dell Technologies.