Support more VDI users with a Dell EMC PowerEdge R7515 server powered by an AMD EPYC 75F3 processor

Compared to the same server with a 2nd Gen AMD EPYC processor

Organizations face many decisions when they're ready to upgrade their data center hardware to support virtual desktop infrastructure (VDI) users. With both older and newer hardware on the market, you don't want to sacrifice performance or price. When it comes to Dell EMC™ PowerEdge™ R7515 servers, organizations could benefit from the latest AMD EPYC™ processors.

In the Principled Technologies data center, we tested with a VMware Horizon® 8 environment on a Dell EMC PowerEdge R7515 server powered by a 3rd Gen AMD EPYC 75F3 processor, and then configured the same server with a 2nd Gen AMD EPYC 7542 processor. We found that the Dell EMC PowerEdge R7515 server configuration powered by the AMD EPYC 75F3 processor could support up to 20 percent more VDI users than with the 2nd Gen AMD EPYC 7542 processor. We also compared the hardware and support price for both configurations and found that of each VDI user could cost 11 percent less for the Dell EMC PowerEdge R7515 server with the AMD EPYC 75F3 processor. Investing in a Dell EMC PowerEdge R7515 server equipped with this 3rd Gen AMD EPYC processor, organizations could see greater value potential by supporting more users, which could help their server purchase last longer before the next upgrade.

Support up to
20% more VDI users*

Get a better value with a
11% lower cost per VDI user*†

**vs. the same server with the AMD EPYC 7542 processor* *†Based on total hardware cost with 3 years of Dell ProSupport and next day on-site service*

How we tested

In hands-on testing, we compared the following server configurations:

- A Dell EMC PowerEdge R7515 server powered by a 3rd Gen AMD EPYC 75F3 processor. As of March 1, 2021, the list price of this hardware with 3 years of ProSupport and next day on-site service was $54,362.80.[1]
- A Dell EMC PowerEdge R7515 server powered by a 2nd Gen AMD EPYC 7542 processor. As of March 1, 2021, the list price of this hardware with 3 years of ProSupport and next day on-site service was $50,792.80.[2]

Both configurations featured one 3.2TB PCIe 4.0 NVMe™ SSD in a non-RAID configuration, 1 TB of PC4-3200 RAM, and a dual-port 1GbE network adapter. We used VMware Horizon 8 to create a VDI environment where we could generate a pool of dedicated Instant clones. To measure how many users each configuration could support, we used the Login VSI 4.1 benchmark's Knowledge Worker workload to simulate VDI users. For more details about our configurations and testing methodologies, see the science behind the report.

We used the above hardware pricing data and the VDI performance of both solutions to calculate the cost of each VDI user and demonstrate the value of getting better performance with the higher-priced server configuration.

About AMD EPYC 75F3 processors

These 32-core processors use AMD Infinity Architecture and are part of the AMD EPYC 7003 Series. The latest offering from AMD, 3rd Gen EPYC processors offer increased I/O with "up to 32MB L3 cache per core," 7nm x86 technology, and new security features like Secure Encrypted Virtualization - Secure Nested Paging (SEV-SNP) and Encrypted State (SEV-ES).[3] AMD positions the EPYC 75F3 model as being well suited for high frequency use cases such as VM density, virtualization, and VDI.[4]

Learn more at https://www.amd.com/en/processors/epyc-7003-series.

Expand your VDI capabilities

Compared to the server with the 2nd Gen AMD EPYC processor, the Dell EMC PowerEdge R7515 server with the 3rd Gen AMD EPYC processor supported 20 percent more VDI users—indicating that an organization could support more of their VDI users with the same Dell EMC PowerEdge R7515 server (Figure 1).

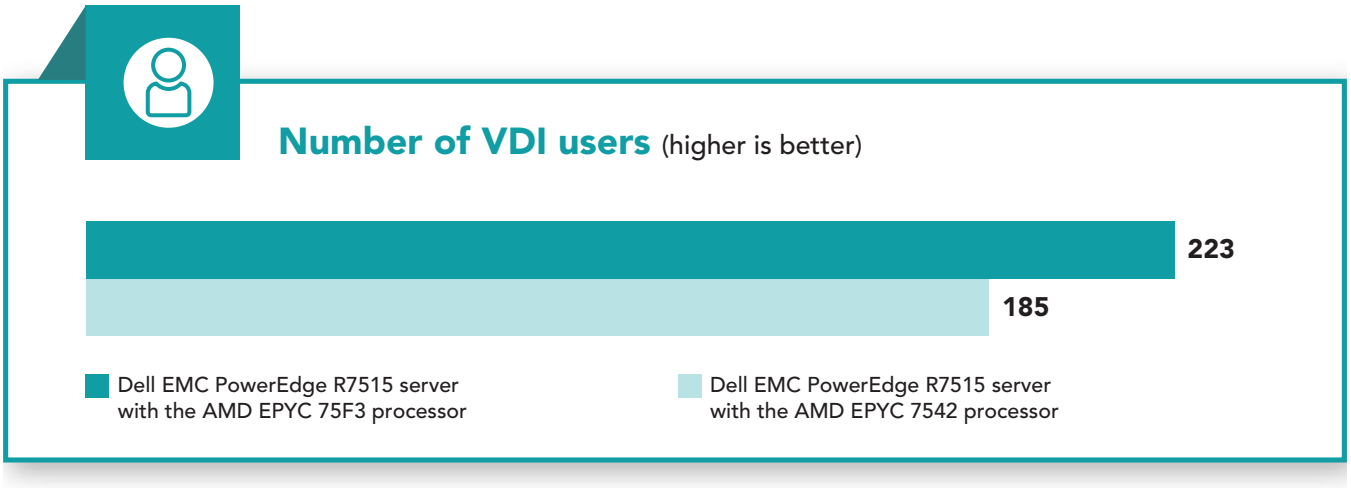


Figure 1: Number of VDI users supported by each configuration we tested. Higher is better.
Source: Principled Technologies.

About the Dell EMC PowerEdge R7515

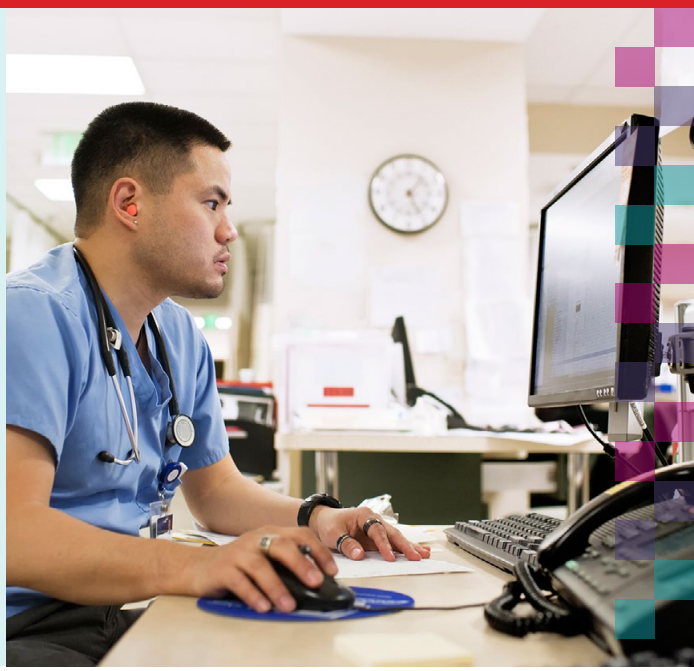
According to Dell Technologies, these servers offer the following high-level specifications:

- Up to 64 high performance AMD 3rd Gen cores
- PCIe Gen4 for high throughput connectivity
- Support for up to 24 SAS/SATA/NVMe drives
- High core count to support VM density
- Multi-die architecture for "low latency and floating-point performance for big data and containers"[5]

Learn more at https://www.dell.com/en-us/work/shop/povw/poweredge-r7515.

Real-world benefits for healthcare

Whether it's for keeping patient information secure, expanding telehealth services, or supporting easy access for providers, organizations like hospitals and healthcare systems know the value of VDI. If your organization is looking to upgrade to meet the demands of virtual support or mobilizing your workforce, consider Dell EMC PowerEdge R7515 servers powered by the latest-gen AMD EPYC 75F3 processors. With this solution, you could support up to 20 percent more employees than the 2nd Gen AMD EPYC solution we tested, enabling you to continue providing quality care for your patients while making efficient use of your data center.



Achieve a lower cost for each VDI user

We took the hardware plus support cost for each solution and divided this amount by the number of VDI users that each supported. For the Dell EMC PowerEdge R7515 configuration with the AMD EPYC 7542 processor, we divided $50,792.80 by 185 users, which came to $274.56 per VDI user. We did the same for the Dell EMC configuration with the AMD EPYC 75F3 processor, dividing $54,362.80 by 223 users, and finding that the per-user cost was $243.78—an 11 percent difference (Figure 2). Note that we are comparing hardware plus support costs alone, and this analysis does not include the price of software.

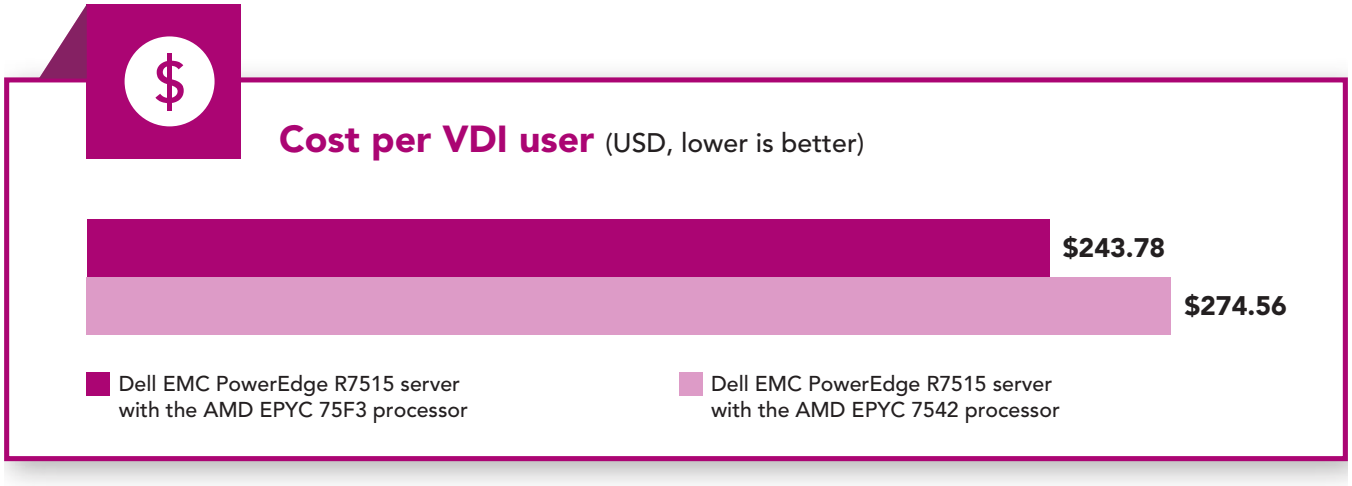


Figure 2: Cost of each VDI user based on the hardware and support cost of each solution. Lower is better. Source: Principled Technologies.

Conclusion

Using a VMware Horizon 8 environment, we tested a Dell EMC PowerEdge R7515 server powered by an AMD EPYC 75F3 processor, and then tested the same server with an AMD EPYC 7542 processor. We found that the solution with the 3rd Gen AMD EPYC 75F3 processor supported 20 percent more VDI users than the same server with the 2nd Gen AMD EPYC 7542 processor. When we calculated the cost of each solution's hardware and support in light of this performance, we found that the AMD EPYC 75F3 processor-powered Dell EMC PowerEdge R7515 server's per-user cost was 11 percent lower.

By upgrading to Dell EMC PowerEdge R7515 servers powered by AMD EPYC 75F3 processors, organizations using VDI could support more users with fewer servers and save on the cost to support those users.

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1 We received an itemized Dell EMC PowerEdge R7515 list price quote from Dell Technologies with the AMD EPYC 7542 processor. To calculate the price of the newer solution, we removed the cost of the AMD EPYC 7542 processor and added the pre-release list price for the AMD EPYC 75F3 processor we received from Dell Technologies.

2 We received an itemized Dell EMC PowerEdge R7515 list price quote from Dell Technologies with the AMD EPYC 7542 processor.

3 "AMD EPYC 7003 Series Processors," accessed March 15, 2021, https://www.amd.com/en/processors/epyc-7003-series.

4 "AMD EPYC 75F3," accessed March 15, 2021, https://www.amd.com/en/products/cpu/amd-epyc-75f3.

5 "PowerEdge R7515 Rack Server," accessed November 13, 2020, https://www.dell.com/en-us/work/shop/povw/poweredge-r7515.

Read the science behind this report at http://facts.pt/a6zaGF0 ▶

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