

Dell EMC™ PowerEdge™ studies

Add next-generation Dell EMC PowerEdge MX servers to your VMware Cloud Foundation infrastructure with ease

We deployed a workload cluster of these servers using the exact same procedure we used to deploy a cluster of 14G PowerEdge MX servers—no new tools or processes were necessary

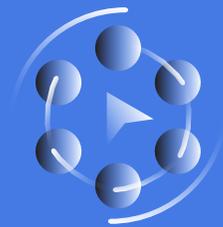
Investing in servers that make use of new technologies can bring performance benefits, but managing this gear sometimes requires administrators to learn new tools and processes. It would be great to deploy new hardware using familiar approaches.

We conducted hands-on testing to explore the experience of deploying two new workload clusters to an existing VMware® Cloud Foundation™ infrastructure. One new cluster had current-generation 14G Dell EMC™ PowerEdge™ MX servers, and the other used newer 15G models. We found that we could carry out this scenario the same way on both generations of servers, with no need for new deployment tools or processes.

In a companion study to this one, we learned that next-generation PowerEdge MX750c servers also offer better Microsoft SQL Server online transaction processing (OLTP) performance than current-generation PowerEdge MX740c servers.¹ If you want to reap those benefits, rest assured that you won't offset them with a steep deployment learning curve for your IT administrators.



Deploy a cluster in as little as 2h and 22m



Same amount of time and number of steps





Improved performance + familiar deployment = a winning solution

When the time comes to expand your data center, purchasing decisions often involve tradeoffs. Having to learn new deployment tools when introducing new servers to your data center has the potential to create headaches for admins. If you knew that new servers could do more work than the ones you're already using—without creating an additional deployment burden for your IT staff—the decision to buy them could become much easier.

We compared the experience an administrator would have when adding two clusters of servers to an existing VMware Cloud Foundation deployment.

- Three next-generation Dell EMC PowerEdge MX servers
- Three current-generation 14G Dell EMC PowerEdge MX servers

We learned that the deployment process for the two generations of servers was identical. When we couple this with the performance advantages of the new-generation Dell EMC PowerEdge MX servers,² selecting these new servers sounds like a very good idea.

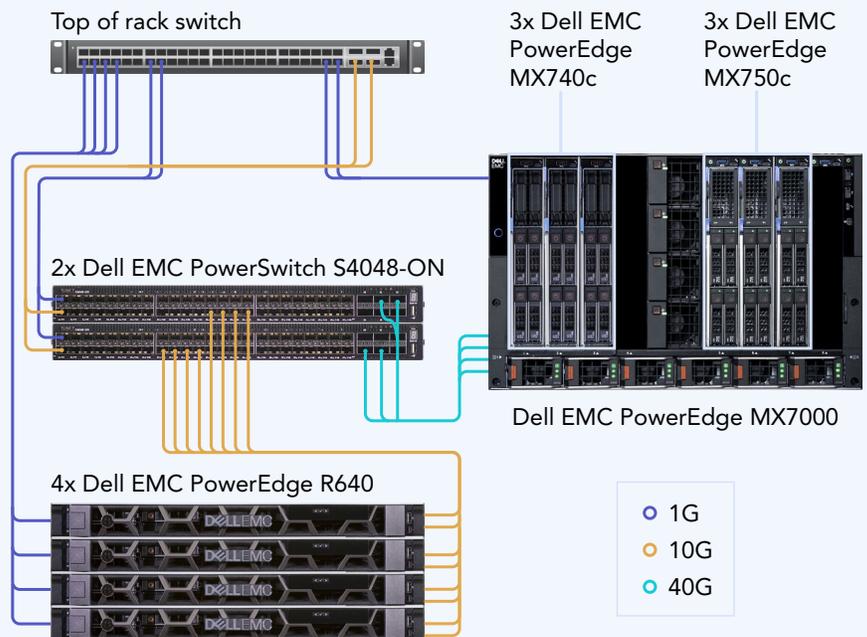


Figure 1: The hardware configuration we used in our testing. Source: Principled Technologies.

About the new-generation Dell EMC PowerEdge MX750c compute sled

The two-socket, single-width Dell EMC PowerEdge MX750c server can drive data-intensive workloads with up to two 3rd Generation Intel Xeon Scalable processors and up to eight memory channels per CPU. According to Dell, the servers' memory options include support for Intel® Optane™ persistent memory 200 series modules and up to 3,200 MT/s DRAM modules. The PowerEdge MX750c servers support PCI Express 4.0, which allows full-speed PCIe Gen4 NVMe drive performance. System administrators can manage the servers with Dell OpenManage systems management software.³ Learn more at www.delltechnologies.com/en-us/servers/modular-infrastructure/poweredge-mx/.



Two generations of servers, one identical deployment process

In Figure 2, we present the steps we took to add the two generations of servers to the existing VMware Cloud Foundation management cluster.



Add a cluster of three new-generation Dell EMC PowerEdge MX servers in less than 2.5 hours

| Steps | Time (hh:mm:ss) |
|--|-----------------|
| 1. Insert first MX750c sled into MX7000 chassis, and configure BIOS, power, iDRAC, and disk controller settings. | 0:04:15 |
| 2. Use OpenManage™ Enterprise web interface to create a template from the MX750c sled, and apply VLAN settings for VMware® Cloud Foundation. | 0:02:50 |
| 3. Insert two remaining MX750c sleds. Once online, deploy the template, specifying the ESXi ISO to mount from a CIFS share during the process. | 0:25:59 |
| 4. Connect to the iDRAC remote consoles for each MX750c sled. Install and configure ESXi, setting management network values, VLANs, enabling command line access, and time services. | 0:19:17 |
| 5. Commission the MX750c workload hosts in VMware SDDC Manager. Create a VI Workload domain using the newly commissioned hosts. | 1:29:00 |
| Total time | 2:21:21 |

Figure 2: Steps and time to add the two generations of servers to the existing VMware Cloud Foundation management cluster. Lower is better. Source: Principled Technologies.

About VMware Cloud Foundation 4.0

An integrated software stack, VMware Cloud Foundation brings together VMware vSphere® for compute virtualization, VMware vSAN™ for storage virtualization, VMware NSX® for vSphere for network virtualization, and VMware vRealize® Suite for cloud management. You can deploy VMware Cloud Foundation on premises as a private cloud, run it as a service within a public cloud, or take a hybrid approach.⁴

According to VMware, “VMware Cloud Foundation 4 brings full-stack integration of the HCI infrastructure layer together with native Kubernetes capabilities built into the stack to provide an automated, turnkey hybrid cloud solution that will help you manage complex Kubernetes environments, deliver a developer experience that greatly reduces risk and increases IT operational efficiency.”⁵



Conclusion

Learning new deployment tools is sometimes an unavoidable necessary cost of upgrading to new hardware technologies. Other times, you can reap the benefits of the latest gear without disrupting your workflow.

In our hands-on testing, we were able to add two clusters to an existing VMware Cloud Foundation deployment—one cluster of previous-generation 14G Dell EMC PowerEdge MX servers and the other with new-generation models—using the exact same procedure for both generations of servers.

This means that companies that are eager to enjoy the performance benefits of new-generation Dell EMC PowerEdge MX servers can do so without worrying about the deployment process incurring any additional burden on IT staff.

- 1 "Reap better SQL Server OLTP performance with new-generation Dell EMC PowerEdge MX servers," April 2021, <http://www.principledtechnologies.com/Dell/PowerEdge-MX-deployment-process-0421.pdf>
- 2 "Reap better SQL Server OLTP performance with new-generation Dell EMC PowerEdge MX servers," April 2021, <http://www.principledtechnologies.com/Dell/PowerEdge-MX-deployment-process-0421.pdf>
- 3 Dell EMC PowerEdge MX, accessed March 22, 2021, <https://www.delltechnologies.com/en-us/servers/modular-infrastructure/poweredge-mx/>.
- 4 "About VMware Cloud Foundation," accessed March 1, 2021, https://docs.vmware.com/en/VMware-Cloud-Foundation/3.0/com.vmware.vcf.ovdeploy.doc_30/GUID-7EBCC024-9604-4064-90A1-4851A78F7641.html.
- 5 "What's New in VMware Cloud Foundation 4," accessed March 1, 2021, <https://blogs.vmware.com/cloud-foundation/2020/03/10/whats-new-in-vmware-cloud-foundation-4/>

Read the science behind this report at <http://facts.pt/gYuEt3v> ►



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