



A Dell PowerEdge MX environment using OpenManage Enterprise and OpenManage Enterprise Modular can make life easier for administrators

Compared to a Cisco UCS-X environment using Intersight, the Dell environment streamlined making changes to VLANs and helped avoid interventions during scheduled firmware updates

Decision makers who are equipping their data centers with new servers typically weigh many factors as they choose a platform. While performance and pricing are important, another less obvious consideration is how easy server life cycle management will be. The amount of time that IT staff must spend performing routine server management activities can vary greatly depending on the management tools at their disposal. The right tools can significantly streamline and simplify ongoing management tasks such as updating firmware and making changes to virtual local area networks (VLANs). Tools that automate these processes reduce the likelihood of error and save time, which can free administrators to pursue initiatives that add value to the business.

To explore the differences between the solutions, we configured two test environments: (1) a Dell™ PowerEdge™ MX environment using OpenManage™ Enterprise (OME) and the embedded OpenManage Enterprise Modular (OME-M) and (2) a Cisco® UCS® X-series environment using Intersight. We executed two management scenarios, recording the time and steps necessary to use the tools in each environment and noting any differences in approaches.

In the scenarios we tested, completing networking changes in a Dell PowerEdge MX platform required up to 33 percent fewer steps and up to 40 percent less time than carrying out the same tasks on a Cisco UCS platform. Additionally, administrators can schedule updates with the Dell PowerEdge MX platform in advance, which eliminates the need for them to intervene during overnight maintenance windows. These findings suggest that companies planning to upgrade their older Cisco UCS servers may want to consider instead shifting to Dell PowerEdge MX servers and enjoy time savings and these lower management costs.

* Dell PowerEdge MX environment using OpenManage Enterprise and OpenManage Enterprise Modular compared to a Cisco UCS-X environment using Intersight

Save admin time
Make VLAN changes to the environment in 40% less time*

Reduce the likelihood of error
with 33% fewer steps to make VLAN changes to the environment*

Avoid manual admin intervention during overnight maintenance windows
with the ability to schedule firmware updates

About our testing

We compared a Dell PowerEdge MX chassis environment with Dell OpenManage Enterprise and OpenManage Enterprise Modular against a Cisco UCS X-Series chassis environment with Cisco Intersight. We executed two management scenarios in the Dell PowerEdge MX760c environment and the Cisco environment:

- VLAN updates with a requirement for VLAN tagging after deployment
- Automated firmware updates with no administrator intervention required

Figure 1 shows our test environment. The management tools for the Dell PowerEdge MX environment, OME and OME-M, are located on premises. Intersight, the controller for the Cisco environment, resides in the cloud.

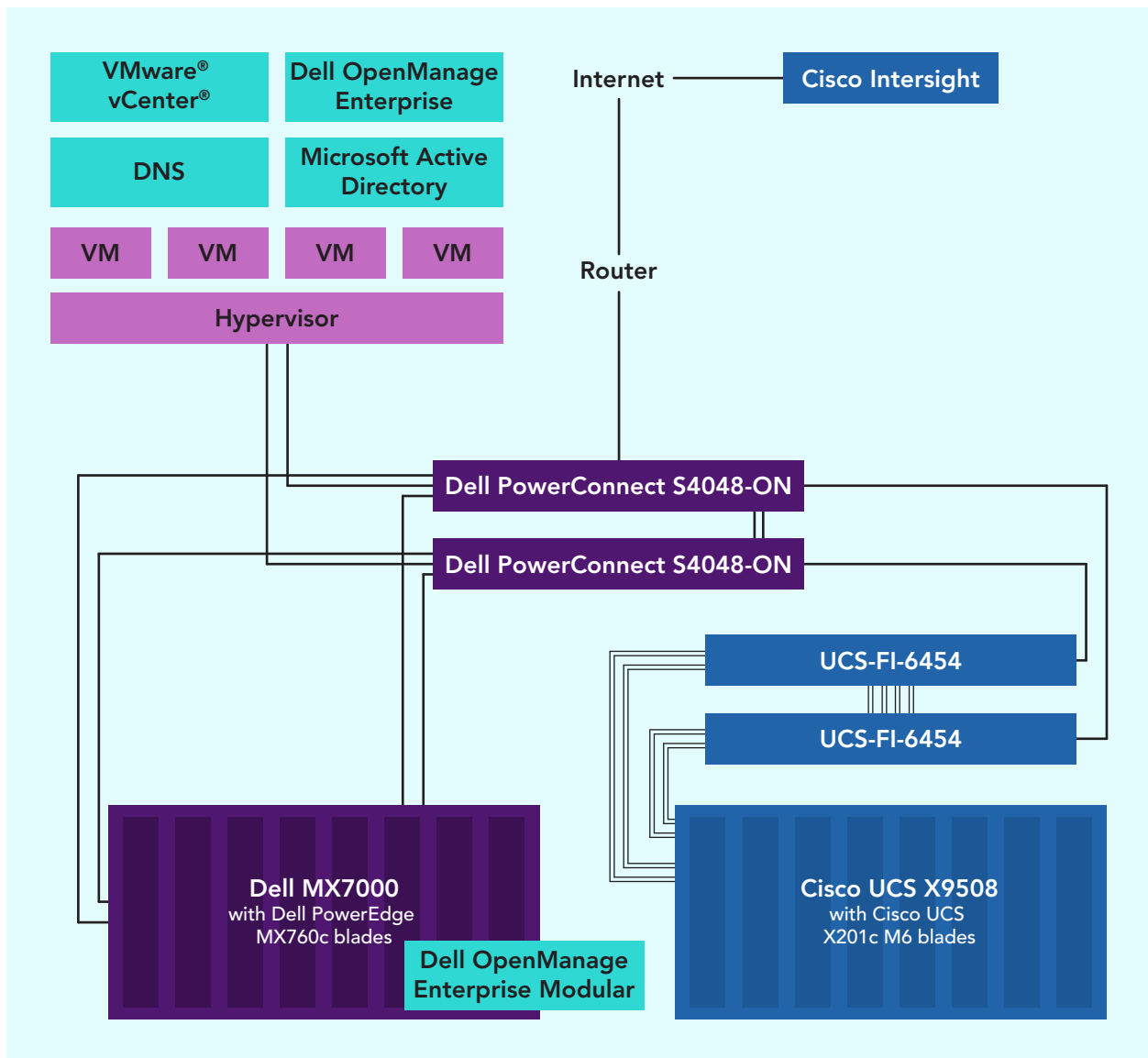


Figure 1: Our test environment. Source: Principled Technologies.

About the Dell PowerEdge MX server platform

Dell calls the PowerEdge MX a “modular, 7U integrated solution designed for enterprise data center density with easy deployment, management, and maximum longevity” and says its no-midplane design and scalable fabric architecture allow it to support new processor technologies and connectivity options.¹

Learn more at <https://www.dell.com/en-us/dt/servers/modular-infrastructure/poweredge-mx/index.htm#tab0=0&tab1=0&accordion0>.

What we learned

Making VLAN changes

We looked at how much time and effort it took to make changes to the network with the addition of VLANs. For the Dell solution, we leveraged the Dell OpenManage Enterprise Modular console, and for the Cisco solution, we used Cisco Intersight.

We found that using OME-M for deploying changes through the fabric manager took 1 minute and 2 seconds less administrator time, and nine fewer steps, than deploying the same changes through Cisco Intersight (see Figures 2 and 3). Additionally, Cisco requires the (non-disruptive) deployment of the VLAN changes twice—once for the domain profile, and again for the individual blades in question. This yielded a 40.25 percent time savings when using the Dell PowerEdge MX chassis. (To see a list of steps we completed in each environment, see the [science behind the report](#).) Carrying out fewer steps means fewer opportunities for error, and spending less time on routine tasks gives administrators more opportunities to innovate.

Hands-on administrative time (mm:ss, lower is better)



Figure 2: Hands-on administrative time (in minutes and seconds) necessary to make VLAN changes. Less time is better. Source: Principled Technologies.

Hands-on administrative steps (lower is better)



Figure 3: Number of hands-on administrative steps necessary to make VLAN changes. Fewer steps are better. Source: Principled Technologies.

About Dell OpenManage Enterprise and OpenManage Enterprise Modular

OpenManage Enterprise is a one-to-many systems management console for the data center. The console offers a modern HTML5 graphical user interface and deploys as a virtual appliance for VMware ESXi™, Microsoft Hyper-V, and Kernel-based Virtual Machine (KVM) environments. OpenManage Enterprise can discover and inventory on IPV4 and IPV6 networks for up to 8,000 devices, including Dell rack servers, Dell tower servers, and Dell blades and chassis.²

Learn more about OpenManage Enterprise at <https://www.dell.com/en-us/lp/dt/open-manage-enterprise>.

OpenManage Enterprise – Modular Edition is an embedded systems management solution for the Dell PowerEdge MX chassis. It delivers the primary abilities of OpenManage Enterprise within the server chassis and can manage servers across several PowerEdge MX chassis. A web/RESTful API interface manages all nodes, including compute and networking.³

Learn more about OpenManage Enterprise – Modular Edition: <https://www.dell.com/en-us/shop/ipovw/openmanage-modular>.

Updating firmware

If you're an IT administrator, you've probably accepted that working in the middle of the night on occasion comes with the territory. However, any management tools that allow you to avoid pulling all-nighters can make your work life much more comfortable.

When we explored the firmware updating process with the Dell solution, we found that we could schedule the update to take place either immediately or at some future date and time of our choosing, and we could select the method by which the reboot would occur. The options for scheduled updates are graceful reboot with forced shutdown, graceful reboot without forced shutdown, or a power cycle, which is a hard reset equivalent to pressing the power button once to shut the server down and a second time to power it back on.⁴ With any of these choices, administrators can schedule updates to occur within an overnight maintenance window, and they would not have to be present or take action unless a server failed to return to service for some reason.

With the Cisco solution, we submitted the firmware update job, and Intersight sent the files to the target servers we had selected. It then performed the update at the next reboot. We could toggle a switch at job submission to force an immediate reboot, but we could not find any timing mechanism specific to the update that would allow us to schedule it for a future time. This means that during an overnight maintenance window, an admin would have to be awake to reboot the servers so the server then applies the update. Also, if an administrator were to submit the package and someone were to reboot the server prior to the maintenance window, cluster members could be subject to inconsistencies.

To summarize the difference between the two environments, in the Dell environment, the updates could be a zero-touch task for admins most of the time; they would be present only in the event of a true incident, and not simply for scheduled maintenance. The Cisco environment, in contrast, requires admins to be present and fully participating every time they wish to update firmware.

To see a list of steps we completed in each environment, see the [science behind the report](#).

Conclusion

We executed two management scenarios in a Dell PowerEdge MX environment with Dell OpenManage Enterprise and OpenManage Enterprise Modular and a Cisco UCS X-Series chassis environment with Cisco Intersight. We learned that the Dell solution's single-part profile modification for performing VLAN updates was quicker and simpler than the Cisco solution's two-part profile deployment, requiring 40 percent less time and two-thirds as many steps. We also compared the firmware updating process on the solutions. Being able to schedule these updates to occur automatically from the online Dell repository offered an advantage over having to manually execute the same tasks from the Cisco Intersight repositories. Namely, administrators do not need to take action during maintenance windows but can instead schedule them ahead of time. Saving time on routine tasks frees administrators to pursue innovation, and being able to avoid middle-of-the-night duties helps companies provide a better work experience for admins. Together, these advantages help make Dell PowerEdge MX servers a good candidate for companies considering upgrading the older Cisco UCS servers in their data centers.

1. Dell, "PowerEdge MX," accessed December 20, 2023, <https://www.dell.com/en-us/dt/servers/modular-infrastructure/powerededge-mx/>.
2. Dell, "OpenManage Enterprise," accessed December 20, 2023, <https://www.dell.com/en-us/work/learn/openmanage-enterprise>.
3. Dell, "OpenManage Enterprise."
4. A fourth option is to select to stage the updates for the next sever reboot, but this is not scheduled.

Read the science behind this report at <https://facts.pt/M2Fws6Q> ►



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