The science behind the report:

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

This document describes what we tested, how we tested, and what we found. To learn how these facts translate into real-world benefits, read the report A Dell PowerEdge MX environment using OpenManage Enterprise and OpenManage Enterprise Modular can make life easier for administrators.

We concluded our hands-on testing on December 12, 2023. During testing, we determined the appropriate hardware and software configurations and applied updates as they became available. The results in this report reflect configurations that we finalized on December 12, 2023 or earlier. Unavoidably, these configurations may not represent the latest versions available when this report appears.

Our results

To learn more about how we have calculated the wins in this report, go to http://facts.pt/calculating-and-highlighting-wins. Unless we state otherwise, we have followed the rules and principles we outline in that document.

Table 1: Results of our testing. Less time and fewer steps are better.

Use case	Dell solution	Cisco solution	Percentage difference
Making changes to VLAN			
Admin time (mm:ss)	01:32	02:34	40.25%
Admin steps	18	27	33.33%
Admin intervention required	No	Yes	-
Reboot required	No	No	-
Updating firmware			
Available options	Scheduled or manual	Staged for next reboot, with option of performing immediate reboot	-

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

January 2024

System configuration information

Table 2: Detailed information on the server enclosure we used in our tests.

Server enclosure configuration information	Dell™ PowerEdge™ MX7000
Number of management modules	2
Management module firmware revision	2.10.00
First type of I/O module	
Vendor and model number	Dell MX9116n Fabric Engine
I/O module firmware revision	10.5.5.4.29
Number of modules	2
Occupied bay(s)	A1, A2
Power supplies	
Vendor and model number	Dell
Number of power supplies	6
Wattage of each (W)	3,000
Cooling fans	
Vendor	Dell
Number of fans	9

Table 3: Detailed information on the server we tested.

Server configuration information	Dell PowerEdge MX760c
BIOS name and version	Dell 1.6.6
Non-default BIOS settings	Intel Turbo Boost enabled, Virtualization enabled
Operating system name and version/build number	VMware® ESXi™, 8.0.2, 23380479
Date of last OS updates/patches applied	12/12/2023
Power management policy	Performance
Processor	
Number of processors	2
Vendor and model	Intel® Xeon® Gold 6430
Core count (per processor)	32
Core frequency (GHz)	1.9

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

January 2024 | 2

Server configuration information	Dell PowerEdge MX760c
Memory module(s)	
Total memory in system (GB)	512
Number of memory modules	8
Vendor and model	Hynix® HMCG94AEBRA109N
Size (GB)	64
Type	PC4-25600R (DDR5-4800)
Speed (MHz)	4,800
Speed running in the server (MHz)	4,800
Network adapter	
Vendor and model	Broadcom® Adv Quad 25Gb Ethernet
Number and type of ports	4x 25GbE
Driver version	Dell FW 22.61.10.77

Table 4: Detailed information on the server enclosure we used in our tests.

Server enclosure configuration information	Cisco® UCS® X9508
Number of management modules	2x UCS-FI-6454
Management module firmware revision	4.3(2.230117)
NX-OS version	9.3(5)I43(2a)
First type of I/O module	
Vendor and model number	Cisco UCSX-I-9108-25G
I/O module firmware revision	4.3(2a)
Number of modules	2
Power supplies	
Vendor and model number	Cisco UCSX-PSU-2800AC
Number of power supplies	6
Wattage of each (W)	2,800
Cooling fans	
Vendor and model number	Cisco UCSX-9508-FAN
Number of fans	4

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

January 2024 | 3

Table 5: Detailed information on the server we tested.

Server configuration information	Cisco UCS X201c M6
BIOS name and version	Cisco X210M6.4.3.2c.0.0726232000
Non-default BIOS settings	Intel Turbo Boost enabled, Virtualization enabled
Operating system name and version/build number	VMware ESXi, 8.0.2, 22380479
Date of last OS updates/patches applied	12/12/2023
Power management policy	Performance
Processor	
Number of processors	2
Vendor and model	Intel Xeon Gold 6330
Core count (per processor)	28
Core frequency (GHz)	2.00
Memory module(s)	
Total memory in system (GB)	256
Number of memory modules	4
Vendor and model	Cisco UCSX-MR-X64G2RW (Samsung®)
Size (GB)	64
Type	PC4-25600R (DDR4-3200)
Speed (MHz)	3,200
Speed running in the server (MHz)	3,200
Network adapter	
Vendor and model	UCSX-V4-Q25GML
Number and type of ports	4x 25GbE
Driver version	Cisco FW 5.3(2.40)

Table 6: Detailed information on the network switches we used in our tests.

Network switch configuration information	2x Dell PowerConnect S4048-ON
Switch software revision	OS 9.9(0.0P4)
Number and type of ports	48x SFP+ 10GbE, 6x QSFP 40GbE
Number and type of ports used in test	11x SFP+ 10GbE, 5x QSFP 40 GbE
Non-default settings used	Jumbo frames enabled, LACP LAGs

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

January 2024 | 4

How we tested

Adding a VLAN on the Dell PowerEdge MX

1. Log into OpenManage Enterprise Modular (OME-M).
2. Click Configuration → VLANs.
3. Click Define.
4. Provide the following information, and click Finish:

   a. Name
   b. Description
   c. VLAN ID
   d. Network Type

5. Click Devices → Fabric.
6. Click the name of the fabric you want to edit.
7. Check the box next to the uplink set you want to modify, and click Edit.
8. Confirm, and click Next.
9. Scroll down, and check the box beside the network you just created. Click Finish. The link will update.
10. On the left side of the page, click Servers, and click Edit Networks.
11. Select a reference server, and click Next.
12. Click the tagged network menu for the intended network adapter.
13. Check the box beside the VLAN you want to add. Click the >> button, and click Finish.
14. Repeat for other adapters as needed. Once you have modified all target adapters, click Next.
15. To make changes to additional servers, click Add.
16. Check the boxes next to the additional servers you want to modify, and click Add.
17. Click Finish.
18. To confirm, click Yes. To view the progress, click go to Jobs. OMEM applies the VLAN changes with no downtime or reboots to the server(s).

Adding a VLAN on the Cisco UCS-X

1. Log into Cisco® Intersight®.
2. From the top menu bar pull-down menu, select Infrastructure Service.
3. From the left menu, select Profiles.
4. Click UCS Domain Profiles.
5. Click the name of the Domain Profile deployed to your fabric interconnects.
6. Under the Policy, click VLAN & VSAN Configuration.
7. Beside the policy selected for VLAN Configuration, click the pencil icon.
8. Click Next.
9. Click Add VLANs.
10. Enter the following information, make the following selections, and click Add:

    a. Prefix (we used VLAN)
    b. VLAN IDs (we used 1500)
    c. Toggle Auto Allow on Uplinks to OFF
    d. Select the policy to use for Multicast Policy

11. Click Save.
12. In the left menu, select Profiles.
13. In the UCS Domain Profiles section, locate the entry marked with Status as "Not Deployed Changes." On the far right, click the ellipses, and select Deploy.
14. Click Deploy.
15. When the Status is marked as OK, from the left menu, select Templates.
16. Click the name of the template you used to originally deploy your cluster servers.
17. Beside the name of the LAN Connectivity policy, click the eye icon. On the right scrolling panel, scroll down, and click the Ethernet Network Group policy.
18. Click Actions → Edit.
19. Click Next.
20. In the Allowed VLANs section, insert your new VLAN into the comma-separated list. Click Save.

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

January 2024 | 5

21. In the left menu, click Profiles.
22. Check the boxes for your profiles marked inconsistent, and click the ellipses at the bottom of the list. Select Deploy.
23. On the confirmation pop-up panel, click Deploy.

Updating firmware on the Dell solution

1. Log into OpenManage Enterprise.
2. In the Configuration menu, select Firmware/Driver Compliance.
3. Check the box beside the Baseline assigned to your devices, and click Check Compliance.
4. Upon completion, click View report.
5. Check the boxes next to the servers you want to update, and click Make Compliant.
6. Choose from the following options:

    • Select the schedule to Update Now
    • Select the schedule to Update Later

If you choose Update Later, you'll be able to set the date and time during which the updates will occur.

7. Choose the server options for this job.
8. Choose from the following options:

    • Select Reboot the server immediately
    • Select Stage for next server reboot

If you select Reboot server immediately, a pull-down menu will let you choose from the following: Graceful Reboot with Forced Shutdown, Graceful Reboot without Forced Shutdown, or Power Cycle.

9. Reset iDRAC. This resets the iDRAC to a pristine condition prior to updating.
10. Clear Job Queue. This clears any other pending jobs prior to updating.
11. Click Update.
12. To confirm, click Yes.

Updating firmware on the Cisco solution

1. Log into Intersight.
2. In the Infrastructure Services area, click Servers.
3. Check the boxes next to the servers you want to update, click the ellipses at the bottom of the list, and select Upgrade Firmware.
4. Confirm you selected the correct servers, and click Next.
5. From the firmware versions listed on Intersight, select the version of firmware you want to install. Click Next.
6. Click Upgrade.
7. When a message appears indicating the firmware will install on the next boot, toggle the switch on this panel to force an immediate upgrade. Click Upgrade.

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

January 2024 | 6

Read the report at https://facts.pt/JL6p13H ▶

This project was commissioned by Dell Technologies.

PT Principled Technologies®

Facts matter.®

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

January 2024 | 7