Microsoft Windows Server 2019 for Dell EMC PowerEdge Servers

Release Notes



NOTE: A NOTE indicates important information that helps you make better use of your product.
CAUTION: A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.
WARNING: A WARNING indicates a potential for property damage, personal injury, or death.
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Notes, cautions, and warnings

Contents

1 Release summary	4
Priority and recommendations	4
2 Compatibility	5
iDRAC, BIOS, system firmware, RAID controller driver versions	
Supported Dell EMC system management applications for Microsoft Windows Server 2019	6
Devices with out-of-box driver support	
Drivers with in-box support	7
3 Fixes	8
I/O errors or unresponsive virtual machines	8
Unable to delete a NVDIMM storage pool	8
4 Known issues—To be fixed in future releases	9
Chipset or Broadcom 1 GB out-of-box driver installation on PowerEdge servers will result in BSOD	9
Multiple failures are encountered while installing customized Windows Server 2019 operating system on Gen 1 and Gen 2 VMs	10
5 Installing and upgrading Windows Server 2019	11
Multilingual operating system media for Windows Server 2019	11
Deploy an operating system using multilingual DVD media	
Pre-installed VM	
Using the pre-installed VM	11
Retrieve Integrated Dell Remote Access Controller (iDRAC) IP address	
Installing Microsoft Windows Server 2019 on PowerEdge servers	12
Upgrading from earlier versions of Windows Server to Windows Server 2019	12
6 Resources and support	13
Operating system support matrix for Dell EMC PowerEdge servers	13
Microsoft Windows Server 2019 videos for Dell EMC PowerEdge servers	13
Documentation resources	13
Identifying the series of your Dell EMC PowerEdge servers	15
Download drivers and firmware	16
Documentation feedback	16
7 Contacting Dell EMC	17

Release summary

Microsoft Windows Server 2019 is the follow-on operating system (OS) release to the Windows Server 2016 operating system. Major enhancements in Windows Server 2019 are improvements in security and guest operating systems. Microsoft is targeting cloud and hosting providers specifically with this release.

For details about previous releases, click the following links:

- · Windows Server 2016
- · Windows Server 2012 R2

Topics:

· Priority and recommendations

Priority and recommendations

RECOMMENDED: Dell EMC recommends applying this update during your next scheduled update cycle. The update contains feature enhancements or changes that help keep your system software current and compatible with other system modules (firmware, BIOS, drivers, and software).

Compatibility

Topics:

- · iDRAC, BIOS, system firmware, RAID controller driver versions
- · Supported Dell EMC system management applications for Microsoft Windows Server 2019
- Devices with out-of-box driver support
- Drivers with in-box support

iDRAC, BIOS, system firmware, RAID controller driver versions

For the latest list of Microsoft Windows Server operating systems supported on Dell EMC PowerEdge servers, see www.dell.com/ossupport.

NOTE: PowerEdge servers are represented using a generic naming convention. To identify the range of your server model, see Identifying the series of your Dell EMC PowerEdge servers.

Table 1. Supported platforms, and minimum supported BIOS and iDRAC versions on yx5x PowerEdge servers

Platforms	Essentials	Standard	Datacenter	BIOS version	iDRAC version
C6525	No	Yes	Yes	1.0.1	3.42.42.42
R6515	No	Yes	Yes	1.0.4	3.40.40.40
R6525	No	Yes	Yes	1.0.0	3.42.42.42
R7515	No	Yes	Yes	1.0.4	3.40.40.40
R7525	No	Yes	Yes	1.2.11	4.10.10.10

Table 2. Supported platforms, and minimum supported BIOS and iDRAC versions on yx4x PowerEdge servers

Platforms	Essentials	Standard	Datacenter	BIOS version	iDRAC version
C4140	No	Yes	Yes	1.6.11	3.21.23.23
C6420	No	Yes	Yes	1.6.11	3.21.23.23
FC640	No	Yes	Yes	1.6.11	3.21.23.23
M640	No	Yes	Yes	1.6.11	3.21.23.23
R240	Yes	Yes	No	1.0.1	3.21.23.23
R340	Yes	Yes	No	1.0.1	3.21.23.23
R440	No	Yes	Yes	1.6.11	3.21.23.23
R540	No	Yes	Yes	1.6.11	3.21.23.23
R640	No	Yes	Yes	1.6.11	3.21.23.23
R6415	No	Yes	Yes	1.6.11	3.21.23.23
R740xd	No	Yes	Yes	1.6.11	3.21.23.23
R740xd2	No	Yes	Yes	1.0.4	3.21.23.23
R7415	No	Yes	Yes	1.6.11	3.21.23.23
R7425	No	Yes	Yes	1.6.11	3.21.23.23
R840	No	Yes	Yes	1.6.11	3.21.23.23

Platforms	Essentials	Standard	Datacenter	BIOS version	iDRAC version
R940	No	Yes	Yes	1.6.11	3.21.23.23
R940xa	No	Yes	Yes	1.6.11	3.21.23.23
T140	Yes	Yes	No	1.0.1	3.21.23.23
T340	Yes	Yes	No	1.0.1	3.21.23.23
T440	No	Yes	Yes	1.6.11	3.21.23.23
T640	No	Yes	Yes	1.6.11	3.21.23.23
MX740c	No	Yes	Yes	1.6.11	3.21.23.23
MX840c	No	Yes	Yes	1.6.11	3.21.23.23

Table 3. Supported platforms, and minimum supported BIOS and iDRAC versions on yx3x PowerEdge servers

Platforms	Essentials	Standard	Datacenter	BIOS version	iDRAC version
C4130	No	Yes	Yes	2.8.0	2.61.60.60
C6320	No	Yes	Yes	2.8.0	2.61.60.60
FC430	No	Yes	Yes	2.8.0	2.61.60.60
FC630	No	Yes	Yes	2.8.0	2.61.60.60
FC830	No	Yes	Yes	2.8.0	2.61.60.60
M630	No	Yes	Yes	2.8.0	2.61.60.60
M630p	No	Yes	Yes	2.8.0	2.61.60.60
M830	No	Yes	Yes	2.8.0	2.61.60.60
M830p	No	Yes	Yes	2.8.0	2.61.60.60
R230	Yes	Yes	No	2.5.0	2.61.60.60
R330	Yes	Yes	No	2.5.0	2.61.60.60
R430	No	Yes	Yes	2.8.0	2.61.60.60
R530	No	Yes	Yes	2.8.0	2.61.60.60
R630	No	Yes	Yes	2.8.0	2.61.60.60
R730/R730xd	No	Yes	Yes	2.8.0	2.61.60.60
R830	No	Yes	Yes	1.8.0	2.61.60.60
R930	No	Yes	Yes	2.5.3	2.61.60.60
T130	Yes	Yes	No	2.5.0	2.61.60.60
T330	Yes	Yes	No	2.5.0	2.61.60.60
T430	No	Yes	Yes	2.8.0	2.61.60.60
T630	No	Yes	Yes	2.8.0	2.61.60.60

Supported Dell EMC system management applications for Microsoft Windows Server 2019

Dell OpenManage version 9.2.1 and later supports Microsoft Windows Server 2019. For more information about the installation of Dell OpenManage, see the *OpenManage System Management Installation Guide* at www.dell.com/openmanagemanuals.

Devices with out-of-box driver support

Following are the drivers with out-of-box support for Windows Server 2019:

- · AMD chipset drivers for yx5x PowerEdge servers
- · AMD chipset drivers for yx4x PowerEdge servers
- Intel chipset drivers for yx4x PowerEdge servers
- · Intel chipset drivers for yx3x PowerEdge servers
- · Dell EMC PERC S150 drivers
- · Dell EMC PERC S140 drivers
- Dell EMC PERC S130 drivers
- · Broadcom NetXtreme drivers
- · Emulex network drivers
- · Qlogic network drivers
- · Mellanox network drivers

NOTE: PowerEdge servers are represented using a generic naming convention. To identify the range of your server model, see Identifying the series of your Dell EMC PowerEdge servers.

Drivers with in-box support

Following are the drivers with in-box support for Windows Server 2019:

- · Dell EMC PERC 10 family drivers
- · Dell EMC PERC 9 family drivers
- · Broadcom NetXtreme drivers
- · Emulex network drivers
- · Intel network drivers
- · Qlogic network drivers
- Mellanox network drivers

For more information about drivers without in-box support, see OS and Applications Knowledge Base.

For the latest driver updates, see www.dell.com/support/drivers.

Fixes

I/O errors or unresponsive virtual machines

Description

This issue occurs on Dell EMC hardware that is configured for failover cluster and has attached shared storage hosting multiple virtual machines with Multipath I/O (MPIO) enabled. If you perform multiple removals and installations of the PowerEdge MX5016s storage expander module, or if you remove and install the PowerEdge MX5000s SAS I/O module, I/O errors occur and the virtual machines goes to unresponsive or failed state. This issue may cause the Cluster Shared Volume to go to failed state.

Fix

- Install the latest Service stack updates (SSU) and update the cumulative update from https://support.microsoft.com/en-us/help/4457127 or later.
- 2. Create a registry key, Reg_DWORD, with a value 0×1 in the following registry path on all the cluster nodes: HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Control\StorPort\QoSFlags.
- 3. Restart the nodes to enable the registry key.

Affected systems

- PowerEdge MX7000 chassis with PowerEdge MX740c or PowerEdge MX840c compute nodes and PowerEdge MX5016s storage sleds.
- Any Rx4x or Tx4x PowerEdge server with external storage array attached.

Tracking number

103498

Unable to delete a NVDIMM storage pool

Description A storage pool is created by converting NVDIMMs into storage drives. When you delete the storage pool, the pool

state indicates the status as deleted, but the storage pool reappears after rescanning the drives.

Fix Use the Windows Cumulative Updates KB4490481 available at https://support.microsoft.com/en-us/help/

4490481 or the latest update.

Affected Systems PowerEdge R640, T640, R740, R740XD, R940, R840, R940xa, Mx740c, Mx840c

Tracking number 113286

Known issues—To be fixed in future releases

Topics:

- Chipset or Broadcom 1 GB out-of-box driver installation on PowerEdge servers will result in BSOD
- · Multiple failures are encountered while installing customized Windows Server 2019 operating system on Gen 1 and Gen 2 VMs

Chipset or Broadcom 1 GB out-of-box driver installation on PowerEdge servers will result in BSOD

Description

The Blue Screen of Death (BSOD) with stop error code displays the IRQL NOT LESS OR EQUAL message when you install the chipset driver and/or during installation of Broadcom out-of-box driver in the system. This issue is encountered in one of the following system configurations:

- A Dell EMC yx3x or a yx4x PowerEdge system with x2APIC enabled in the system BIOS, a PCIe device such as a GPU, and running Windows Server 2019, Windows Server 2016, or Windows Server 2012 R2.
- A Dell EMC yx4x PowerEdge system with a Broadcom 1 GB network adapter running Windows Server 2019.

BSOD occurs during the installation of the chipset drivers or Broadcom 1 GbE out-of-box drivers in one the following installation methods:

- · When you install the drivers manually on the PowerEdge server.
 - NOTE: The PowerEdge server boots into the operating system after BSOD, but the drivers are not successfully installed.
- During the installation of the operating system, leveraging the Dell EMC Lifecycle Controller deployment wizard.

Workaround

To recover and successfully update the chipset drivers, perform the following based on your system configuration:

System configuration 1:

If the system has Broadcom 1 GB LAN-on-motherboard (LOM) or Broadcom add-on PCle network card, do the following:

- To disable the integrated network card, go to System BIOS Settings > Integrated Devices > Integrated
 Network Card.
- 2. Select **Disable (OS)**.
- 3. Install the Windows Server operating system, or boot into an existing Windows Server operating system if the operating system is already installed.
- **4.** Install Broadcom out-of-box drivers, and then install the chipset drivers. If prompted, reboot the system.
- 5. Go to **System BIOS Settings** > **Integrated Devices**, enable the **Integrated Network Card**, and boot into the Windows Server operating system.
- NOTE: To troubleshoot BSOD and install the chipset driver or Broadcom out-of-box drivers, you can see Stop error occurs when you update the in-box Broadcom network adapter driver.

System configuration 2:

If the system has a GPU PCIe device, do the following:

- 1. Go to System BIOS > Processor Settings, and disable the x2APIC Mode setting.
- 2. Install the driver:
 - **a.** Boot into Windows Server 2019, Windows Server 2016 or Windows Server 2012 R2, download and install the GPU out-of-box drivers from the GPU vendor website, and restart the system if prompted.

- b. Browse to the location where you downloaded the chipset drivers and double-click the new file.
- c. Read the release information in the dialog box.
- d. Before proceeding, complete the prerequisite tasks mentioned in the dialog box.
- e. Click Install. Follow the remaining prompts to update the drivers.
- After installing the chipset drivers, go to System BIOS > Processor Settings and enable the x2APIC mode.

Affected systems

The systems having one of the following criteria:

- A Dell EMC yx3x or a yx4x PowerEdge system with x2APIC enabled in the system BIOS, a PCIe device such as a GPU, and running Windows Server 2019, Windows Server 2016, or Windows Server 2012 R2.
- · A Dell EMC yx4x PowerEdge system with a Broadcom 1 GB network adapter running Windows Server 2019.

Tracking number

123021, 88882, 92653, 154665, 111848, 106976

Multiple failures are encountered while installing customized Windows Server 2019 operating system on Gen 1 and Gen 2 VMs

Description

If you create a virtual machine with the Dell-provided multilingual operating system media, you may encounter different failures, when you start the operating system installation in the virtual machine. You might encounter this issue when the virtual memory is assigned with less than or equal to 1 GB of memory. You may observe either BSOD with Gen 1 VM or an error message displaying the following:

Insufficient ramdisk with Gen 2 VM

Workaround

Assign a memory of 1.5 GB or greater to the using the Dell-provided multilingual operating system media. For better VM functioning, it is recommend that you assign a maximum memory space.

Affected systems

All systems

Tracking number

148171

Installing and upgrading Windows Server 2019

Topics:

- Multilingual operating system media for Windows Server 2019
- Pre-installed VM
- Installing Microsoft Windows Server 2019 on PowerEdge servers
- Upgrading from earlier versions of Windows Server to Windows Server 2019

Multilingual operating system media for Windows Server 2019

With the Windows Server 2019 release, the PowerEdge servers are shipped with a multilingual operating system interface that provides a list of supported languages. When you power on your system for the first time or reinstall the operating system using Dell EMC provided media, you can select the operating system language of your choice.

Deploy an operating system using multilingual DVD media

To deploy the operating system by using a multilingual DVD media:

- 1. Boot to the operating system media.
- 2. Select the language of your choice from the Language Selection page and follow the instructions.

Simplified Chinese and Traditional Chinese images are provided on separate DVDs.

For detailed step by step installation of Windows Server 2019, see *Microsoft Windows Server 2019 for Dell EMC PowerEdge Servers Installation Guide* at www.dell.com/operatingsystemmanuals.

Pre-installed VM

If you select **Hyper-V role enabled** while ordering a server at www.dell.com/en-us/work/shop/ecat/enterprise-products, you are provided with a pre-installed virtual machine. You can use the virtual machine files available at C: \Dell_OEM\VM on your server along with the Hyper-V Manager to import virtual machines on this system. Under the normal licensing restrictions of Microsoft. For more information about the terms of licensing, see the *End User License Agreement* that is shipped with your product.

The VM available at C:\Dell_OEM\VM allows you to select an operating system language during the setup process. The virtual disk (VD) attached to this VM is dynamically expanding, expandable up to a maximum of 127 GB, and can be converted to a fixed disk. To increase the VD space, create a VD and attach it to the same VM. Before you convert the VD provided by Dell EMC from dynamically expanding to fixed, ensure that you have a minimum of 127 GB of disk space on your server.

Windows Server Datacenter edition has the right to include unlimited number of VM instances. These VMs are activated automatically using Microsoft's Automatic Virtual Machine Activation (AVMA) process. For more information, see *Automatic virtual machine activation* at www.docs.microsoft.com/en-us/windows-server/get-started-19/vm-activation-19.

The Windows Server Standard Edition includes the right to two VM instances. However, extra VM licensing, in increments of two VMs, is available and can be purchased separately.

Using the pre-installed VM

To use the pre-installed VM:

- 1. Go to **Hyper-V Manager** in your operating system.
- 2. Right-click the server in the Hyper-V Manager.
- 3. Select Import Virtual Machine.

4. In the Import Virtual Machine Wizard, go to the path where the virtual machine is created, and open the virtual machine file.

To activate the VM, created by using the **sysprepped VHDx** file, use the virtual product key on the Certificate of Authenticity (COA) sticker that is affixed to the system. If your server is shipped with the data center edition of the operating system, you can auto activate the VM by using Automatic Virtual Machine Activation (AVMA) keys from Microsoft. For more information about how to activate the AVMA keys, see the article, *Automatic Virtual Machine Activation* on www.technet.microsoft.com.

You can perform security updates using standard methods before placing the system into production.

CAUTION: It is recommended that you create a backup of the VM. If there is loss or damage of data, Dell EMC does not provide a replacement file.

Retrieve Integrated Dell Remote Access Controller (iDRAC) IP address

To retrieve the iDRAC IP address, open PowerShell, and run the following command at the CLI:

Get-PCSVDevice | fl IPV4Address

Installing Microsoft Windows Server 2019 on PowerEdge servers

For information about prerequisites, installation, and configuration, see the *Microsoft Windows Server 2019 for Dell EMC PowerEdge Servers Installation Guide* at www.dell.com/operatingsystemmanuals.

Upgrading from earlier versions of Windows Server to Windows Server 2019

Dell EMC does not support in-place upgrade from Windows Server 2012 R2 or Windows Server 2016 to Windows Server 2019.

Resources and support

Operating system support matrix for Dell EMC PowerEdge servers

Windows Server operating systems can be installed only on selected Dell EMC PowerEdge servers. For the list of Dell EMC PowerEdge servers and supported operating systems, see *Microsoft Windows Server Operating System Support* at www.dell.com/ossupport.

Microsoft Windows Server 2019 videos for Dell EMC PowerEdge servers

Table 4. Microsoft Windows Server 2019 videos for Dell EMC PowerEdge servers

Video title	Links
Installing Microsoft Windows 2019 operating system in UEFI mode by using Dell EMC Lifecycle Controller	https://www.youtube.com/watch?v=3uCuQKNIQpY
Manually Installing Microsoft Windows 2019 operating system in UEFI mode	www.youtube.com/watch?v=T7UpmwS5Ba4

Documentation resources

This section provides information about the documentation resources for your server.

Table 5. Additional documentation resources for your server

Task	Document	Location
Setting up your server	For information about installing the server into a rack, see the documentation included with your rack solution that is shipped with your server.	www.dell.com/poweredgemanuals
	For information about turning on the server and the technical specifications of your server, see the quick start or quick setup documentation that shipped with your server.	www.dell.com/poweredgemanuals
Configuring your server	For information about the iDRAC features, configuring and logging in to iDRAC, and managing your server remotely, see the user's guide for your iDRAC version.	www.dell.com/idracmanuals
	For information about installing the operating system, see your operating system documentation.	www.dell.com/operatingsystemmanuals
	For information about understanding remote access controller admin (RACADM)	www.dell.com/idracmanuals

Task	Document	Location
	subcommands and supported RACADM interfaces, see the iDRACx Version x.xx.xx.xx RACADM CLI Guide.	
	For information about updating drivers and firmware, see "Downloading the drivers and firmware" topic in this document.	www.dell.com/support/drivers
Managing your server	For information about server management software offered by Dell EMC, see the Dell EMC OpenManage Systems Management Overview Guide.	www.dell.com/openmanagemanuals
	For information about setting up, using, and troubleshooting OpenManage, see the Dell EMC OpenManage Server Administrator User's Guide.	www.dell.com/openmanagemanuals
	For information about installing, using, and troubleshooting Dell EMC OpenManage Essentials, see the Dell EMC OpenManage Essentials User's Guide.	www.dell.com/openmanagemanuals
	For information about installing and using Dell SupportAssist, see the Dell EMC SupportAssist Enterprise User's Guide.	www.dell.com/serviceabilitytools
	For understanding the features of Dell EMC Lifecycle Controller (LC), see the Lifecycle Controller User's Guide.	www.dell.com/idracmanuals
	For information about partner programs enterprise systems management, see the OpenManage Connections Enterprise Systems Management documents.	www.dell.com/esmmanuals
	For information about viewing inventory, performing configuration, and monitoring tasks, remotely turning on or off servers, and enabling alerts for events on servers and components using the Dell EMC Chassis Management Controller (CMC), see the CMC User's Guide.	www.dell.com/esmmanuals
Working with the Dell EMC PowerEdge RAID controllers	For information about understanding the features of the Dell EMC PowerEdge RAID controllers (PERC) and deploying the PERC cards, see the storage controller documentation.	www.dell.com/storagecontrollermanuals
Understanding event and error messages	For information about checking the event and error messages generated by the system firmware and agents that monitor server components, see the <i>Dell EMC</i>	www.dell.com/openmanagemanuals>OpenManage software

Task	Document	Location
	Event and Error Messages Reference Guide.	
Troubleshooting your system	For information about identifying and troubleshooting the PowerEdge server issues, see the Server Troubleshooting Guide.	www.dell.com/poweredgemanuals

Identifying the series of your Dell EMC PowerEdge servers

The PowerEdge series of servers form Dell EMC are divided into different categories on the basis of their configuration. For easier reference, they are referred to as YX2X, YX3X, YX4X, YX4XX, or YX5XX series of servers. The structure of the naming convention is described below:

The letter Y denotes the alphabets in the server model number. The alphabets denote the form factor of the server. The form factors are described below:

- · Cloud (C)
- Flexible(F)
- · Modular (M or MX)
- · Rack(R)
- Tower(T)

The letter X denotes the numbers in the server model number. The numbers denote multiple items about the server.

- The first digit (denoted by X) denotes the value stream or class of the server.
 - · 1-5—iDRAC basic
 - · 6-9—iDRAC Express
- · The second digit denotes the series of the server. It is retained in the server naming convention and not replaced by the letter X.
 - · 0—series 10
 - · 1—series 11
 - · 2—series 12
 - · 3—series 13
 - 4—series 14
 - · 5—series 15
- The third digit (denoted by X) denotes the number of processor sockets a series of server supports. This is applicable only from series 14 of PowerEdge servers.
 - · 1_one socket server
 - · 2_two socket server
- · The last digit (denoted by X) always denotes the make of the processor as described below:
 - · 0—Intel
 - 5—AMD

Table 6. PowerEdge servers naming convention and examples

YX3X servers	YX4X systems	YX4XX systems	YX5XX
PowerEdge M630	PowerEdge M640	PowerEdge R6415	PowerEdge R6515
PowerEdge M830	PowerEdge R440	PowerEdge R7415	PowerEdge R7515
PowerEdge T130	PowerEdge R540	PowerEdge R7425	PowerEdge R6525

Download drivers and firmware

It is recommended that you download and install the latest BIOS, drivers, and systems management firmware on your system.

Ensure that you clear the web browser cache before downloading the drivers and firmware.

- 1. Go to www.dell.com/support/drivers.
- 2. In the **Drivers & Downloads** section, enter the Service Tag of your system in the **Enter a Dell Service Tag, Dell EMC Product ID, or Model** text box, and then click the right arrow button.
 - NOTE: If you do not have the Service Tag, click Detect PC to allow the system to automatically detect your Service Tag.
- 3. Click Drivers & Downloads.
 - A list of applicable downloads is displayed.
- 4. Download the drivers or firmware to a USB drive, CD, or DVD.

Documentation feedback

You can rate the documentation or write your feedback on any of our Dell EMC documentation pages and click **Send Feedback** to send your feedback.

Contacting Dell EMC

Dell EMC provides several online and telephone-based support and service options. Availability varies by country, region, and product, and some services may not be available in your area.

To contact Dell EMC for sales, technical assistance, or customer service issues, see www.dell.com/contactdell.

If you do not have an active Internet connection, you can find contact information on your purchase invoice, packing slip, bill, or the product catalog.