Microsoft Windows Server 2016 for Dell PowerEdge Systems

Important Information Guide

Notes, cautions, and warnings

ⓘ **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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Contents

Important information about Microsoft Windows Server 2016

This document provides important information about Microsoft Windows Server 2016 for the Dell PowerEdge systems.

iDRAC, BIOS, system firmware, RAID controller driver versions

The table below lists the Dell's 12th generation of the PowerEdge systems that support the iDRAC version (2.40.40.40) or later:

Table 1. Support for the iDRAC version (2.40.40.40) or later on Dell's 12th generation of Dell's PowerEdge system

Platforms	Essentials	Standard	Datacenter	Supported BIOS Versions
Dell PowerEdge T20	Yes	Yes		A09
Dell PowerEdge R220	Yes	Yes		1.9.0
Dell PowerEdge R320	Yes	Yes		2.4.2
Dell PowerEdge T320	Yes	Yes		2.4.2
Dell PowerEdge R420		Yes	Yes	2.4.2
Dell PowerEdge T420		Yes	Yes	2.4.2
Dell PowerEdge M420		Yes	Yes	2.4.2
Dell PowerEdge R520		Yes	Yes	2.4.2
Dell PowerEdge M520		Yes	Yes	2.4.2
Dell PowerEdge T620		Yes	Yes	2.5.4
Dell PowerEdge R620		Yes	Yes	2.5.4
Dell PowerEdge M620		Yes	Yes	2.5.4
Dell PowerEdge R720		Yes	Yes	2.5.4
Dell PowerEdge R820		Yes	Yes	2.3.4
Dell PowerEdge M820		Yes	Yes	2.3.3
Dell PowerEdge R920		Yes	Yes	1.6.2

The table below lists the Dell's 13th generation of the PowerEdge systems that support the iDRAC version (2.40.40.40) or later:

Table 2. Support for the iDRAC version (2.40.40.40) or later on Dell's 13th generation of Dell's PowerEdge system

Platforms	Essentials	Standard	Datacenter	Supported BIOS Versions
Dell PowerEdge T130	Yes	Yes		1.4.5
Dell PowerEdge R230	Yes	Yes		1.4.5

Platforms	Essentials	Standard	Datacenter	Supported BIOS Versions
Dell PowerEdge R330	Yes	Yes		1.4.5
Dell PowerEdge T330	Yes	Yes		1.4.5
Dell PowerEdge R430		Yes	Yes	2.2.5
Dell PowerEdge T430		Yes	Yes	2.2.5
Dell PowerEdge FC430		Yes	Yes	2.2.5
Dell PowerEdge R530		Yes	Yes	2.2.5
Dell PowerEdge R630		Yes	Yes	2.2.5
Dell PowerEdge T630		Yes	Yes	2.2.5
Dell PowerEdge M630		Yes	Yes	2.2.5
Dell PowerEdge FC630		Yes	Yes	2.2.5
Dell PowerEdge R730		Yes	Yes	2.2.5
Dell PowerEdge R730xd		Yes	Yes	2.2.5
Dell PowerEdge R830		Yes	Yes	1.1.3
Dell PowerEdge M830		Yes	Yes	2.2.5
Dell PowerEdge FC830		Yes	Yes	2.2.5
Dell PowerEdge R930		Yes	Yes	2.1.3
Dell PowerEdge C4130		Yes	Yes	2.2.5
Dell PowerEdge C6320		Yes	Yes	2.2.5

Running Nano Server on the Dell PowerEdge servers

Nano Server is a new headless installation option in Windows Server 2016, and it is available along with Server Core and Server with the Desktop Experience installations modes. Nano Server is available as a separate .WIM file and is not built into the Install.wim file. Nano Server offers many benefits over the Server Core installation option of Windows Server 2016.

Nano Server is refactored for Cloud OS Infrastructure, born in the cloud apps, containers, and does not include many the components that customers typically expect from a Windows Server SKU. Nano Server is based on a zero footprint model, and the base image does not have any of the roles or features installed by default. There are a limited set of roles and features, which can be added to the Nano Server base image. For more information about the Nano server and the packages, go to the Microsoft Nano Server.

The following table lists the Dell PowerEdge server that is capable of running: :

(i) NOTE: For more information about Windows Nano Server, go to Window Server Support.

Dell PowerEdge Servers	Generation	Nano Server
PowerEdge T130	13G	Yes
PowerEdge R230	13G	Yes
PowerEdge R330	13G	Yes
PowerEdge T330	13G	Yes
PowerEdge R430	13G	Yes

Dell PowerEdge Servers	Generation	Nano Server
PowerEdge T430	13G	Yes
PowerEdge FC430	13G	Yes
PowerEdge R530	13G	Yes
PowerEdge R630	13G	Yes
PowerEdge T630	13G	Yes
PowerEdge M630	13G	Yes
PowerEdge FC630	13G	Yes
PowerEdge R730	13G	Yes
PowerEdge R730xd	13G	Yes
PowerEdge R830	13G	Yes
PowerEdge M830	13G	Yes
PowerEdge FC830	13G	Yes
PowerEdge R930	13G	Yes
PowerEdge C4130	13G	Yes
PowerEdge C6320	13G	Yes

Most of the Dell supported hardware and device drivers are inboxed with the in Nano Server. The drivers are part of a separate package named OEM driver package. When building the Nano Server image for a physical server the OEM driver package needs to be added into the Nano Server image. If you do not add this package, then the server cannot boot, displays an error while booting, or prompt for an error check.

Dell Systems Management support for Microsoft Windows Server 2016

Dell OpenManage 8.4 and later supports Microsoft Windows Server 2016. For more information about the installation of the OpenManage, see the *OpenManage System Management Installation Guide* at Dell.com/openmanagemanuals.

Multilingual operating system media for Windows Server 2016

With the Windows Server 2016 release, the Dell systems 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 a Dell provided media, you can select the language of your choice.

With the new multilingual operating system media, you have the flexibility to reinstall the operating system in the language of your choice.

Deploying operating system by using multilingual DVD media

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

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

> (i) NOTE: Simplified Chinese and Traditional Chinese images are provided in separate DVDs.

> (i) NOTE: Dell does not provide the Windows Server 2016 Nano Server image with its Windows Server 2016 Recovery media. To use the Nano server, download the Windows Server 2016 evaluation version from the Microsoft site and use the Nano Server image from it.

Pre-Installed Virtual Machine

If you select **enable hyper-v role** at **Dell.com**, you are provided with a pre-installed virtual machine. You can use the virtual machine files at **C:\Dell_OEM\VM** in your server along with the Hyper-V Manager to import virtual machines on this system, under Microsoft's normal licensing restrictions. For more information on the terms of licensing, see the *End User License Agreement* shipped with your product.

The VM at **C:\Dell_OEM\VM** allows you to select the appropriate language during the setup process. The virtual hard disk attached to this VM is of dynamically expanding type and can be converted to fixed type.

> (i) NOTE: The virtual hard disk (VHD) attached to the VM is of dynamically expanding type which can grow up to a maximum of 127 GB. To increase the virtual disk space, create a new virtual hard disk and attach it to the same VM. To convert the virtual hard disk, provided by Dell, from a dynamically expanding to a fixed disk, ensure that you have a minimum of 127 GB of space in your server before conversion.

To use virtual machine

To use the virtual machine:

1   Go to **Hyper-V Manager** in your operating system.
2   Select and right-click the server in the **Hyper-V Manager**.
3   Select **Import Virtual Machine**.
4   In **Import Virtual Machine Wizard** provide the path of the VM and import it.

   To activate the VM created using the sysprepped the VHDx file, use the virtual product key on the certificate of authenticity (COA) sticker affixed on the system. If your server is shipped with the datacenter edition of the operating system, you can also auto activate the VM by using Automatic Virtual Machine Activation (AVMA) keys from Microsoft. For more information on how to activate the AVMA keys refer to the article Automatic Virtual Machine Activation on **Technet.microsoft.com**.

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

> (i) NOTE: It is recommended that you create a backup of the VM. Dell does not provide a replacement file if there is loss or damage.

Retrieving Integrated Dell Remote Access Controller (iDRAC) IP address

A PowerShell module `DellTools.psm1` is located in the `C:\Dell_OEM\PSModule`. This folder is installed at the factory, to assist with common tasks.

This module includes commands that allow you to access the iDRAC IP address from the operating system.

To retrieve the iDRAC IP Address, type the following command, and press ENTER.

```
Get-iDRACIPAddress
```

This function retrieves the IPv4 values only.

ⓘ **NOTE: This script must be tested with all your applications and supported the Server Core roles before using it in a production environment.**

Operating system support matrix for the Dell PowerEdge systems

Windows Server OS can only be installed on certain Dell PowerEdge systems. For a list of the Dell-supported PowerEdge systems and OS combinations, see the *Operating System Support Matrix for Dell PowerEdge Systems* at Dell.com/ossupport.

Supported Microsoft Windows videos for Dell PowerEdge systems

Table 3. Supported Microsoft Windows videos for Dell PowerEdge systems

Video title	Links
Downloading the driver for Windows from the Dell support site	www.youtube.com/watch?v=r55q4HuyskM
Installing Microsoft Windows 2016 operating system in UEFI mode by using Dell LifeCycle Controller	www.youtube.com/watch?v=JDW_kZdtv9g
Installing Microsoft Windows 2016 operating system in UEFI mode manually	www.youtube.com/watch?v=dtisbtatoVY
Installing Nano server in BIOS mode on Dell's 13th generation of PowerEdge systems	www.youtube.com/watch?v=f5x37DSvAG0
Installing Nano server in UEFI mode on Dell's 13th generation of PowerEdge systems	www.youtube.com/watch?v=5bpE1EmRB5Y

Known Issues

Drivers without inbox support

The following table lists the drivers without inbox support for Windows Server 2016 and Nano Server:

Table 4. Drivers without inbox support

Windows 2016	Nano Server
AMD and NVIDIA Add-On display driver for Dell's 12th generation and 13th generation of PowerEdge systems	Intel Chipset Drivers for Dell's 13th generation of PowerEdge systems
Software RAID PERC S110 and S130	Software RAID PERC S110 and S130
Matrox G200W and G200eR embedded video controllers	Mellanox Network Drivers
BCM57402 NetXtreme-E Dual-port 10 Gb Ethernet (Broadcom)	Matrox G200W and G200eR embedded video controllers
BCM57404 NetXtreme-E Dual-port 10 Gb/25 Gb Ethernet (Broadcom)	BCM57402 NetXtreme-E Dual-port 10 Gb Ethernet (Broadcom)
BCM57406 NetXtreme-E Dual-port 10 GBase-T Ethernet (Broadcom)	BCM57404 NetXtreme-E Dual-port 10 Gb/25 Gb Ethernet (Broadcom)
Emulex Engine (XE) 100 series (Skyhawk)—NIC and FCoE drivers are inbox, only for iSCSI hardware offload out of box drivers are needed	BCM57406 NetXtreme-E Dual-port 10 GBase-T Ethernet (Broadcom)
	Emulex Engine (XE)100 series (Skyhawk)—NIC and FCoE drivers are inbox, only for iSCSI hardware offload out of box drivers are needed

(i) **NOTE: For more information on drivers without inbox support, go to DellTech center.**

(i) **NOTE: For the latest driver updates, go to Dell.com/support/drivers.**

Operating system name is displayed incorrectly

Description: The Special Administration Console (SAC) interface redirects text output from features, like Recovery Console through the out-of-band port. Dell iDRAC is the out-of-band port, which connects to a remote computer running a terminal emulation software (Command prompt, in this scenario). The system with Windows Server 2016 operating system displays the product name as Windows Server 2012 R2 in the SAC interface by issuing `id` command.

Resolution: The fix is available in the 9D Cumulative Update for Microsoft Windows Server 2016. For more information about this update, download the Windows update catalog server details listed at Microsoft Knowledge Base Article 3192366.

Unable to convert Windows Server Core to OS with Desktop Experience

Description: Unlike previous versions of Windows Server, Microsoft Windows Server 2016 does not support the conversion from Windows Server Core to a Server with Desktop Experience and vice versa.

Resolution: To change Server Core to Server with Desktop Experience and vice versa, reinstall the Windows Server 2016 operating system. For more information about installation options for Windows Server 2016, go to Windows Server 2016.

Nano Server does not support the iSCSI or FCoE boot

Description: The current release of Window Server 2016 Nano Server does not support iSCSI or FCOE boot.

Resolution: Booting Nano Server is only supported on a local disk or as a guest operating system on a virtual machine and does not support the iSCSI boot or the FCoE boot. For more information, go to https://technet.microsoft.com/en-us/windows-server-docs/storage/iscsi/iscsi-boot-overview

Unable to boot into Windows Server 2016 if Host Guardian Hyper-V Support or Device Guard is enabled on PERC H330

Description: When you enable **Host Guardian Hyper-V Support** or **Device Guard** on PERC H330, the system does not able to boot in to Windows 2016 operating system. It requires reimaging the operating system or restoring from backup. Although the failure regularly occurs on a virtual disk with RAID 5, it also could occur for other RAID levels with different circumstances, such as a RAID 1 VD in degraded state. All partitions created on the H330 controller may be affected.

Resolution: Do not enable the **Host Guardian Hyper-V Support**, or **Device Guard** feature (via Group Policy). For more information, refer to the Dell Knowledge Base page QNA44045.

When NVMe device is attached to a running VM, the device is not enumerated

Description: When NVMe device is attached to a virtual machine through Discrete Device Assignment (DDA) feature, the NVMe device is not enumerated successfully after it is hot removed and hot plugged.

Resolution: Reattach the NVME device to the Virtual Machine.

Perform the following steps to reattach the NVMe device to the Virtual Machine:

1 Open a Power Shell with admin privileges.
2 After hot plugging the device, run `Get-PnpDevice` to identify the device and get the location path.
3 Remove the VMHost assignable device by running below command:
    `Remove-VMAssignableDevice –locationpath $locationpath –VMName "VM-Name"`

    `$localtionpath` is the location path from the step 2 and VM-Name is the name of the VM, where device was attached.
4 Attach the device back to the VM by running the below command:
    `Add-VMHostAssignableDevice –locationpath $locationpath –VMName "VM-Name"`

Unable to modify or create TPM password, system displays error message

Description: When you want to create or modify the TPM password, you require the TPM owner password.

Resolution: To perform this, first enable the **TPM** option under **BIOS setup**, and reboot to Windows Server 2016. Then, launch the **Windows TPM Software** (tpm.msc), and click **Change Owner Password**, a message is displayed as `Supply your current TPM owner password to change to a new TPM owner password`. Microsoft has made changes to the TPM owner password feature in Windows Server 2016, and it is in line with the Windows 10 client OS TPM feature. For more information, go to Change the TPM owner password.

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Getting help

Topics:

- Contacting Dell
- Documentation resources
- Downloading the drivers and firmware
- Documentation feedback

Contacting Dell

Dell provides several online and telephone based support and service options. If you do not have an active internet connection, you can find contact information about your purchase invoice, packing slip, bill, or Dell product catalog. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical assistance, or customer service issues:

1 Go to Dell.com/support.
2 Select your country from the drop-down menu on the lower right corner of the page.
3 For customized support:
   a Enter your system Service Tag in the **Enter your Service Tag** field.
   b Click **Submit**.
      The support page that lists the various support categories is displayed.
4 For general support:
   a Select your product category.
   b Select your product segment.
   c Select your product.
      The support page that lists the various support categories is displayed.
5 For contact details of Dell Global Technical Support:
   a Click Global Technical Support.
   b The **Contact Technical Support** page is displayed with details to call, chat, or e-mail the Dell Global Technical Support team.

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 theRack documentation included with your rack solution Or the *Getting Started With Your System* document that is shipped with your server.	Dell.com/poweredgemanuals
	For information about turning on the server and the technical specifications of your server, see	Dell.com/poweredgemanuals

Task	Document	Location
	the *Getting Started With Your System* document that is shipped with your server.	
Configuring your server	For information about the iDRAC features, configuring and logging in to iDRAC, and managing your server remotely, see the Integrated Dell Remote Access Controller User's Guide.	Dell.com/idracmanuals
	For information about installing the operating system, see the operating system documentation.	Dell.com/operatingsystemmanuals
	For information about understanding Remote Access Controller Admin (RACADM) subcommands and supported RACADM interfaces, see the RACADM Command Line Reference Guide for iDRAC.	Dell.com/idracmanuals
	For information about updating drivers and firmware, see the Methods to download firmware and drivers section in this document.	Dell.com/support/drivers
Managing your server	For information about servers management software offered by Dell, see the Dell OpenManage Systems Management Overview Guide.	Dell.com/openmanagemanuals
	For information about setting up, using, and troubleshooting OpenManage, see the Dell OpenManage Server Administrator User's Guide.	Dell.com/openmanagemanuals
	For information about installing, using, and troubleshooting Dell OpenManage Essentials, see the Dell OpenManage Essentials User's Guide.	Dell.com/openmanagemanuals
	For information about installing and using Dell System E-Support Tool (DSET), see the Dell System E-Support Tool (DSET) User's Guide.	Dell.com/DSET
	For information about installing and using Active System Manager (ASM), see the Active System Manager User's Guide.	Dell.com/asmdocs
	For understanding the features of Dell Lifecycle Controller (LCC), see the Dell Lifecycle Controller User's Guide.	Dell.com/idracmanuals

Task	Document	Location
	For information about partner programs enterprise systems management, see the OpenManage Connections Enterprise Systems Management documents.	Dell.com/omconnectionsenterprisesystemsmanagement
	For information about connections and client systems management, see the OpenManage Connections Client Systems Management documentation.	Dell.com/dellclientcommandsuitemanuals
	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 Chassis Management Controller (CMC), see the CMC User's Guide.	Dell.com/esmmanuals
Working with the Dell PowerEdge RAID controllers	For information about understanding the features of the Dell PowerEdge RAID controllers (PERC) and deploying the PERC cards, see the Storage controller documentation.	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 Dell Event and Error Messages Reference Guide.	Dell.com/openmanagemanuals > OpenManage software

Downloading the drivers and firmware

Dell recommends 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 Dell.com/support/drivers.
2   In the **Drivers & Downloads** section, type the Service Tag of your system in the **Service Tag or Express Service Code** box, and then click **Submit**.

> ⓘ NOTE: If you do not have the Service Tag, select Detect My Product to allow the system to automatically detect your Service Tag, or in General support, navigate to your product.

3   Click **Drivers & Downloads**.
    The drivers that are applicable to your selection are displayed.
4   Download the drivers to a USB drive, CD, or DVD.

Documentation feedback

Click the **Feedback** link in any of the Dell documentation pages, fill out the form, and click **Submit** to send your feedback.