

Microsoft Windows Server 2022 for Dell PowerEdge Servers Release Notes

Current Release Version: Microsoft Windows Server 2022

Previous Release Version: Microsoft Windows Server 2019

Release Type: Patch (P)

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Revision History


Table 1. Document revision history

Document revision	Date	Description
A00	September 2021	Initial release

Product Description

Microsoft Windows Server 2022 is the follow-on operating system (operating system) release to the Windows Server 2019 operating system. Microsoft starting from Windows server 2016 has continued its heavy focus on cloud and hosting providers. Also, understanding the scope and opportunities in the field of Hyper-Converged Infrastructures, it has planned enhancements for Storage Spaces Direct, Software Defined Networking, and Secured Server Core in Windows Server 2022.

For more information about minimum hardware requirements for Windows Server 2022, see [Hardware requirements for Windows Server](#).

 **NOTE:** On Dell factory systems running Windows Server 2022, TPM 2.0 and Secure Boot are enabled from yx5x PowerEdge servers and later.

Compatibility

iDRAC, BIOS, system firmware, RAID controller driver versions

Table 2. Minimum supported BIOS and iDRAC version on Dell PowerEdge servers

Platforms	Essentials	Standard	Datacenter	Supported iDRAC version	Supported BIOS version
PowerEdge C6620	N/A	✓	✓	5.10.25.00	1.0.1

Table 2. Minimum supported BIOS and iDRAC version on Dell PowerEdge servers (continued)

Platforms	Essentials	Standard	Datacenter	Supported iDRAC version	Supported BIOS version
PowerEdge R660	N/A	✓	✓	6.10.05.00	1.0.1
PowerEdge R760	N/A	✓	✓	6.10.05.00	1.0.1
PowerEdge MX760c	N/A	✓	✓	6.10.05.00	1.0.1
PowerEdge R6615	✓	✓	✓	6.10.05.00	1.1.2
PowerEdge R7615	✓	✓	✓	6.10.05.00	1.1.2
PowerEdge R6625	N/A	✓	✓	6.10.05.00	1.1.2
PowerEdge R7625	N/A	✓	✓	6.10.05.00	1.1.2
PowerEdge C4140	N/A	✓	✓	5.00.10.00	2.12.2
PowerEdge C6420	N/A	✓	✓	5.00.10.00	2.12.2
PowerEdge C6520	N/A	✓	✓	5.00.10.00	1.3.8
PowerEdge C6525	N/A	✓	✓	5.00.10.00	2.3.6
PowerEdge FC640	N/A	✓	✓	5.00.10.00	2.12.2
PowerEdge M640	N/A	✓	✓	5.00.10.00	2.12.2
PowerEdge M640p	N/A	✓	✓	5.00.10.00	2.12.2
PowerEdge MX740c	N/A	✓	✓	5.00.10.00	2.12.2
PowerEdge MX750c	N/A	✓	✓	5.00.10.00	1.3.8
PowerEdge MX840c	N/A	✓	✓	5.00.10.00	2.12.2
PowerEdge R440	N/A	✓	✓	5.00.10.00	2.12.2
PowerEdge R450	N/A	✓	✓	5.00.10.00	1.3.8
PowerEdge R540	N/A	✓	✓	5.00.10.00	2.12.2
PowerEdge R550	N/A	✓	✓	5.00.10.00	1.3.8
PowerEdge R640	N/A	✓	✓	5.00.10.00	2.12.2
PowerEdge R6415	N/A	✓	✓	5.00.10.00	1.17.0
PowerEdge R650	N/A	✓	✓	5.00.10.00	1.3.8
PowerEdge R650xs	N/A	✓	✓	5.00.10.00	1.3.8
PowerEdge R6515	✓	✓	✓	5.00.10.00	2.3.6

Table 2. Minimum supported BIOS and iDRAC version on Dell PowerEdge servers (continued)

Platforms	Essentials	Standard	Datacenter	Supported iDRAC version	Supported BIOS version
PowerEdge R6525	N/A	✓	✓	5.00.10.00	2.3.6
PowerEdge R740	N/A	✓	✓	5.00.10.00	2.12.2
PowerEdge R740xd	N/A	✓	✓	5.00.10.00	2.12.2
PowerEdge R740xd2	N/A	✓	✓	5.00.10.00	2.12.2
PowerEdge R7415	N/A	✓	✓	5.00.10.00	1.17.0
PowerEdge R7425	N/A	✓	✓	5.00.10.00	1.17.0
PowerEdge R750	N/A	✓	✓	5.00.10.00	1.3.8
PowerEdge R750xa	N/A	✓	✓	5.00.10.00	1.3.8
PowerEdge R750xs	N/A	✓	✓	5.00.10.00	1.3.8
PowerEdge R250	✓	✓	N/A	5.00.15.00	1.0.1
PowerEdge R350	✓	✓	N/A	5.00.15.00	1.0.1
PowerEdge T150	✓	✓	N/A	5.00.15.00	1.0.1
PowerEdge T350	✓	✓	N/A	5.00.15.00	1.0.1
PowerEdge T550	N/A	✓	✓	4.40.55.00	1.3.8
PowerEdge R7515	✓	✓	✓	5.00.10.00	2.3.6
PowerEdge R7525	N/A	✓	✓	5.00.10.00	2.3.6
PowerEdge R840	N/A	✓	✓	5.00.10.00	2.12.2
PowerEdge R940	N/A	✓	✓	5.00.10.00	2.12.2
PowerEdge R940xa	N/A	✓	✓	5.00.10.00	2.12.2
PowerEdge T440	N/A	✓	✓	5.00.10.00	2.12.2
PowerEdge T640	N/A	✓	✓	5.00.10.00	2.12.2
PowerEdge R240	✓	✓	N/A	6.10.30.00	2.12.2
PowerEdge R340	✓	✓	N/A	6.10.30.00	2.12.2
PowerEdge T140	✓	✓	N/A	6.10.30.00	2.12.2
PowerEdge T340	✓	✓	N/A	6.10.30.00	2.12.2
PowerEdge XE2420	N/A	✓	✓	5.00.10.00	2.12.3

Table 2. Minimum supported BIOS and iDRAC version on Dell PowerEdge servers (continued)

Platforms	Essentials	Standard	Datacenter	Supported iDRAC version	Supported BIOS version
PowerEdge XE7420	N/A	✓	✓	5.00.10.00	2.12.3
PowerEdge XE7440	N/A	✓	✓	5.00.10.00	2.12.3
PowerEdge XE8545	N/A	✓	✓	5.00.10.00	2.12.3
PowerEdge XR11	N/A	✓	✓	5.00.10.00	1.3.8
PowerEdge XR12	N/A	✓	✓	5.00.10.00	1.3.8

Supported Dell system management applications for Microsoft Windows Server 2022

Dell OpenManage version 10.2 and later supports Microsoft Windows Server 2022. For more information about the installation of Dell OpenManage, see the *OpenManage System Management Installation Guide* at <https://www.dell.com/openmanagemanuals>.

Supported Dell drivers for Microsoft Windows Server 2022

For more information about the drivers for peripherals supported for Microsoft Windows Server 2022, see [Microsoft Windows Server 2022 Driver Support for Dell PowerEdge Servers](#).

i **NOTE:** For Network adapters carrying the inbox driver, only basic network connectivity is guaranteed. Usage of advanced network features may lead to unforeseen observations or issues. For instance, in Windows Server 2022 a yellow bang is observed in the corresponding device when the virtual MAC is assigned to the Intel X710 Mezzanine card (using in-box driver). Such issues can be mitigated by updating the drivers with the latest driver update available at www.dell.com/support/drivers.

New in this release

The following are the new features of Microsoft Windows Server 2022:

Compute

- VM Storage Resiliency
- Rolling Cluster Upgrades
- VM Versioning and Servicing
- Secure boot for Linux
- vRSS for Linux
- Virtualized Persistent Memory for VHD+ Containers
- Persistent Data volumes for Cluster shared volumes
- AMD Nested Virtualization

Security

- Secure core Server
- Improvement of CFG (XFG)
- Security Enhancement for ROP (Return Oriented Programming) with Shadow Stack (CET)

Networking

SDN Investments

- Scalable network controller for physical and virtual networks
- Enhanced interoperability with support for VXLAN and OVSDB
- Deployment and management using system center
- Standardized REST API to connect management pane and controller pane

Cloud Scale Fundamentals

- Converged Fabric - RDMA + NVGRE on same card
- RDMA - interface teaming, and RDMA in VMs
- Optimal silicon offload utilization: Checksum offloads, LSO, RSC, RSS, VMQ, SR-IOV, NVGRE, Routable RDMA, VXLAN, and Packet Direct Integration
- Enhanced QoS and Enhanced certification requirements (all features on and Cloud Ready AQ)
- Support for HW QOS

Network Function Virtualization

- Software Load balancer
- Distributed Firewall
- VPN/Site-Site Gateway
- Service Chaining using third-party VNFs
- Hyper-V best host for Linux network appliances
- Docker Routing Mesh
- Docker Support

Storage

ReFS

- In-line media corruption detection and correction

NVMe

- NVMe drive LED management
- NVMe FW update without reset
- NVMe Sanitize Operation
- NVMe Persistent Event Log support

Storage Spaces Direct

- Space Repair improvements (Faster and Granular Resynchronization)
- Maximum supported size of storage pool extended from 4 PB to 16 PB

Storage Replica Improvements

- Auto Sites
- Auto pool
- Health Check
- Cluster Perf History

Known issues

Table 3. Known issues


Issue ID	Functional area	Description	Workaround
240007	Persistent memory (Storage class memory)	When persistent memory is corrupted or reaches the end of life, the HealthStatus of the PmemDisk (Get-PmemDisk) will not change to Unhealthy even though the PmemPhysicalDevice OperationalStatus (Get-PmemPhysicalDevice) shows HardwareError and HealthStatus shows Unhealthy .  NOTE: It is recommended not to use such Pmem disks for active workloads.	N/A

Table 3. Known issues (continued)

Issue ID	Functional area	Description	Workaround
146403	Storage	While hot plug of directly attached NVMe drives, U.2 NVMe drive slots stops responding to hot plugging. NVMe drives may not enumerate inside the operating system, eventually U.2 NVMe drive slots does not work.	To start functioning, perform system reset (through iDRAC or operating system) for U.2 NVMe slots.
244445	Non-Volatile Memory Express (NVMe) Storage	<p>Users may observe a slight deviation in the Non-Volatile Memory Express (NVMe) disk capacity when interrogated by Windows Management Instrumentation command-line (WMIC).</p> <p>Example: For a 1.6 TB drive when queried by wmic disk drive, list brief capacity value obtained through wmic (bytes) is 1,600,321,314,816.</p> <p>Actual capacity Value (bytes) is 1,600,318,702,080.</p> <p>i NOTE: Conversion of the NVMe disk capacity to Megabytes (MB) might result in slight deviations depending upon the size of NVMe disk used.</p> <p>i NOTE: Wmic uses the Win32_DiskDrive class and the size of the disk drive is calculated by multiplying the total number of cylinders, tracks in each cylinder, sectors in each track, and bytes in each sector. This is not applicable for SSD or NVMe.</p>	Use PowerShell Command <code>Get-PhysicalDisk Format-list friendly name, size</code> which provides the correct capacity in bytes.

Installing and upgrading Windows Server 2022

Multilingual operating system media for Windows Server 2022

With the Windows Server 2022 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 provided media, you can select the operating system language of your choice.

Deploy an operating system using multilingual DVD media or Dell Digital Locker

To deploy the operating system by using a multilingual DVD media or using the recovery image from Dell Digital Locker:

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 2022, see *Microsoft Windows Server 2022 for Dell PowerEdge Servers Installation Guide* at <https://www.dell.com/operatingsystemmanuals>.


Preinstalled 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 preinstalled virtual machine. You can use the virtual machine files available at C:\De11_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:\De11_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 from dynamically expanding to fix, 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 can be activated using Microsoft Automatic Virtual Machine Activation (AVMA) process. For more information about how to activate the VMs, see [Automatic Virtual Machine Activation in Windows Server](#).

 **NOTE:** AVMA requires Windows Server Datacenter edition with the Hyper-V host role installed.

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 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 also activate the VM by using Automatic Virtual Machine Activation (AVMA) keys from Microsoft. For more information about how to activate the AVMA keys, see [Automatic Virtual Machine Activation in Windows Server](#).

You can perform security updates using standard methods before placing the system into production. For more information, see [Update Windows 10](#).

 **CAUTION:** It is recommended that you create a backup of the VM. If there is loss or damage of data, Dell 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
```

Resources and support

Operating system support matrix for Dell PowerEdge servers

Windows Server operating system can be installed only on selected Dell PowerEdge servers. For the list of Dell PowerEdge servers and supported operating systems, see Microsoft Server operating systems supported on specific PowerEdge models at [Dell.com/ossupport](#).

Documentation and video resources

Table 4. Additional documentation and video resources for your server

Task	Description	Location
Setting up your server	For information about installing the server into a rack, see the Rack documentation included with your rack solution or the	https://www.dell.com/poweredgemanuals

Table 4. Additional documentation and video resources for your server (continued)

Task	Description	Location
	<p><i>Getting Started</i> document that is shipped with your server.</p> <p>For information about turning on the server and the technical specifications of your server, see the <i>Getting Started</i> document that is shipped with your server.</p>	<p>https://www.dell.com/poweredgemanuals</p>
Configuring your server	For information about the iDRAC features, configuring and logging in to iDRAC, and managing your server remotely, see the <i>Integrated Dell Remote Access Controller User's Guide</i> .	https://www.dell.com/idracmanuals
	For information about installing the operating system, see the operating system documentation.	https://www.dell.com/operatingsystemmanuals
	For information about understanding Remote Access Controller Admin (RACADM) subcommands and supported RACADM interfaces, see the <i>RACADM Command Line Reference Guide for iDRAC</i> .	https://www.dell.com/idracmanuals
	For information about updating drivers and firmware, see the Download drivers and firmware section in this document.	www.dell.com/support/drivers
Managing your server	For information about server management software offered by Dell, see the <i>Dell OpenManage Systems Management Overview Guide</i> .	https://www.dell.com/openmanagemanuals
	For information about setting up, using, and troubleshooting OpenManage, see the <i>Dell OpenManage Server Administrator User's Guide</i> .	https://www.dell.com/openmanagemanuals
	For information about installing, using, and troubleshooting Dell OpenManage Essentials, see the <i>Dell OpenManage Essentials User's Guide</i> .	https://www.dell.com/openmanagemanuals
	For information about installing and using Dell System E-Support Tool (DSET), see the <i>Dell System E-Support Tool (DSET) User's Guide</i> .	https://www.dell.com/supportassist
	For understanding the features of Dell Lifecycle Controller (LCC), see the <i>Dell Lifecycle Controller User's Guide</i> .	https://www.dell.com/idracmanuals
	For information about partner programs enterprise	https://www.dell.com/OMConnectionsEnterpriseSystemsManagement

Table 4. Additional documentation and video resources for your server (continued)

Task	Description	Location
	systems management, see the <i>OpenManage Connections Enterprise Systems Management</i> documents	
	For information about connections and client systems management, see the <i>OpenManage Connections Client Systems Management</i> documentation.	https://www.dell.com/omconnectionsclient
	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.	https://www.dell.com/cmcmmanuals
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.	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 Event and Error Messages Reference Guide</i> .	https://www.dell.com/openmanagemanuals

Identifying the series of your Dell PowerEdge servers

The PowerEdge series of servers from Dell are divided into different categories based on their configuration. They are referred as YX2X, YX3X, YX4X, YX4XX, or YX5XX series of servers. The structure of the naming convention is described below. The letter Y denotes the character in the server model number. The character denotes the form factor of the server. The form factors are listed below:

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

The letter X denotes the numbers in the server model number. The number denotes multiple characteristics about the server. They are listed as follows:

- The first digit (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 does not replace the letter X.
 - 0—series 10
 - 1—series 11
 - 2—series 12

- 3—series 13
- 4—series 14
- 5—series 15
- The last digit (X) always denotes the make of the processor as described below:
 - 0-Intel
 - 5-AMD

NOTE: For servers that use an AMD processor, the model number is made up of four digits instead of three. The third digit (X) denotes the number of processor sockets that the series of server supports.

- 1—one socket server
- 2—two socket server

Table 5. PowerEdge servers naming convention and examples

YX4X systems	YX5X systems	YX4XX systems	YX5XX
PowerEdge M640	PowerEdge R250	PowerEdge R6415	PowerEdge R6515
PowerEdge R440	PowerEdge R750	PowerEdge R7415	PowerEdge R7515
PowerEdge R540	PowerEdge T550	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 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.

Contacting Dell Technologies

Dell Technologies 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 for sales, technical support, or customer service issues, see <https://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.

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.