

# iDRAC8/7 with Lifecycle Controller Version 2.55.55.50

Release Notes

## 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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# Overview

The Integrated Dell Remote Access Controller (iDRAC) is designed to make server administrators more productive and improve the overall availability of Dell servers.

iDRAC alerts administrators to server issues, helps them perform remote server management, and reduces the need for physical access to the server. Additionally, iDRAC enables administrators to deploy, monitor, manage, configure, update, and troubleshoot Dell EMC servers from any location without using any agents. It accomplishes this regardless of the operating system or hypervisor presence or state.

iDRAC also provides an out-of-band mechanism for configuring the platform, applying firmware updates, saving or restoring a system backup, or deploying an operating system, either by using a GUI or a remote scripting language, such as Redfish or RACADM.

## Version

iDRAC8/7 with Lifecycle Controller 2.55.55.50

## Release date

March 2018

## Previous version

- 2.50.50.50
- 2.45.45.40

## Importance

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

## Platforms affected

- PowerEdge C6320p

# What is supported

## License requirements

- Software licensing has replaced hardware licensing.
- Many features in Lifecycle Controller are licensed. You must install the appropriate license to use these features.

For more information, see the iDRAC 2.50.50.50 User's Guide and the Dell Lifecycle Controller GUI v2.50.50.50 User's Guide available at <http://www.dell.com/idracmanuals>.

## Supported managed server operating systems and hypervisors

### Microsoft Windows

- Server 2012 Foundation Edition
- Server 2012 Essentials Edition
- Server 2012 Standard Edition
- Server 2012 Datacenter Edition
- Server 2012 R2 Foundation Edition
- Server 2012 R2 Essentials Edition
- Server 2012 R2 Standard Edition
- Server 2012 R2 Datacenter Edition
- Server 2012 for Embedded Systems (Base and R2 w/ SP1)
- Server 2016 Essentials Edition
- Server 2016 Standard Edition
- Server 2016 Datacenter Edition
- WinPE 5.0 64-bit
- WinPE 10

### RedHat

- RHEL 6.9
- RHEL 7.4

### SLES

- SLES 11 SP4
- SLES 12 SP2
- SLES 12 SP3

### Ubuntu 16.04.3

### VMware

- ESXi 6.0 U3

- ESXi 6.5 U1
- vSphere 6.0 U3
- vSphere 2016 U1

CentOS 7.4

Citrix XenServer 7.1

## Supported web browsers

- Microsoft Internet Explorer 11
- Microsoft EDGE
- Safari version 8.0.8
- Safari version 9.0.3
- Mozilla Firefox version 53
- Mozilla Firefox version 54
- Google Chrome version 58
- Google Chrome version 59

## Supported version of VMCLI

The supported version of VMCLI is available in OpenManage 9.0.2 release. Go to [dell.com/openmanagemanuals](http://dell.com/openmanagemanuals) and click **Open Manage Software > Dell OpenManage Software Version 9.0.2 > Drivers & downloads**.

## New in this release

### Monitoring and alerting

- Added thermal event-logs in Lifecycle Controller for PowerEdge C6320p.

# Fixes

N/A

## Important notes

- 1 The supported version of VMCLI is available in OpenManage 9.0.2 release. Go to [dell.com/openmanagemanuals](http://dell.com/openmanagemanuals) and click **Open Manage Software > Dell OpenManage Software Version 9.0.2 > Drivers & downloads**.
- 2 If you execute multiple jobs for various components and iDRAC DUP is one of the jobs, ensure that iDRAC job is the last job in the queue. Ensure that all other jobs are either in SCHEDULED or COMPLETED state before you execute the iDRAC job.
- 3 Windows Server 2012, Windows Server 2008 R2, and Windows 7 do not support TLS 1.2 and TLS 1.1. Install the following update to enable TLS 1.2 and TLS 1.1 as a default secure protocols in WinHTTP in Windows:  
<http://support.microsoft.com/kb/3140245/EN-US>
- 4 Supports LDAP authentication with OPEN-DS. OPEN-DS must have DH key larger than 768 bits.
- 5 The drivers exposed by LC are present in a read-only drive labeled OEMDRV and the drive is active for 18 hours. During this period:
  - You cannot install any DUPs.
  - LC cannot invoke CSIOR.

However, if an AC power cycle (cold boot) is performed, the OEMDRV drive is automatically deleted.

- 6 CPLD firmware update has no impact on Trusted Platform Module enablement.
- 7 Depending on the virtual storage device attached through iDRAC, that is, USB drive or CD/DVD .ISO file, LC displays **Virtual Floppy** or **Virtual CD** respectively.
- 8 If Test Network Connection fails for a valid address, try configuring the network settings again. If the issue persists, restart the system and retry the operation.
- 9 When you reset or update the iDRAC, you must reboot LC if it is launched already. If you fail to reboot, LC may behavior unexpectedly.
- 10 After performing a firmware update or rollback operations from LC, the host is rebooted by default. Reboot the host server again to display the updated firmware versions in the Hardware Configuration wizard.
- 11 To record updates in the Lifecycle Log, ensure that the Lifecycle Controller and iDRAC are from the same release.
- 12 If Lifecycle Controller and iDRAC are not from the same release, the Lifecycle Log displays either blank messages or messages with a "~" character.
- 13 Fibre channel NIC cards with two or four ports are displayed as a single port card in Lifecycle Controller. However, all ports are updated when a firmware update is performed.
- 14 The option to enable or disable the disk cache policy for SWRAID controllers is supported only on SWRAID controller driver version 4.1.0-0025 or later.
- 15 ResetKeys under Action in the SecureBoot resource is available only on systems with supported BIOS.
- 16 The SecureBoot navigation link is available under Computer System only if the SecureBoot feature is supported by the BIOS installed on the system.
- 17 Rollback is not supported for CPLD.
- 18 The time taken to complete a Patch operation using Redfish depends on the number of attributes that you are trying to modify.

# Limitations

- If Flex Address is enabled on Chassis Management Controllers (CMC), iDRAC and LC do not display the same MAC addresses. To view the chassis-assigned MAC address, use the iDRAC web interface or the CMC web interface.
- Lifecycle Controller may go into an infinite loop when a network operation is tried with an incorrect NFS share name. Restart Lifecycle Controller and retry the operation with the correct NFS share name details.
- If NPAR is enabled, LC might show unexpected behavior when configuring network settings. Disable NPAR and execute the network setting configurations. To disable the NPAR option, go to **System Setup > Device Setting**.
- The process of retrieving IPv6 address from the DHCP server with VLAN connection takes a few minutes. Wait for a few minutes and check the **Network Settings** page to view the assigned IPv6 address.
- Deployment of Windows Server operating systems (OS) using LC may fail with one of the following message:
  - Windows installation cannot continue because a required driver could not be installed.
  - Product key required.
  - Windows cannot find the software license terms.

This happens when the Windows setup copies the driver to the scratch space (X: drive) and the scratch space becomes full. To resolve this issue, do any of the following:

- Remove all the installed add-on devices before starting the OS installation. After the OS installation is complete, connect the add-on devices and manually install the remaining drivers using Dell Update Packages (DUPs).
- To avoid physically removing the hardware, disable the PCIe slots in the BIOS.
- Increase scratch space size beyond 32 MB using `DISM set-scratchspace` command when creating customized deployment. For more details, see Microsoft's documentation.
- If you enumerate the enclosure view's WSMAN command on a system while one PSU-cable is removed, the primary status of the enclosure view is reported as Healthy instead of Warning.
- After iDRAC reset or firmware update, the ServerPoweredOnTime (a property in RACADM and WS-MAN) may not be populated until the host server is restarted.
- On performing warm boots, occasionally a message is displayed by BIOS indicating that there is a KCS failure (error code UEFI0039). No action required for this error. Rebooting the host restores normal boot behavior.
- Upon execution of `racadm swinventory` or `racadm hwinventory` command via a local RACADM interface, the inventory details are not fetched if all the OS drives (A-Z) are mapped. Unmap an existing OS drive to resolve this issue.
- Using local RACADM proxy, if you configure a CMC user name that consists of a space, the command does not successfully create the user name. Use CMC RACADM, Remote RACADM, or Remote RACADM proxy interface.
- Redfish response contains a HTTP header named Allow, when the HTTP response code is 405. The list may contain PATCH, DELETE, POST, GET, HEAD values, but all of them may not be supported.
- If a requested resource is not present, HTTP response status code may not be always 404.
- Scrolling-down using the mouse does not work in VNC server.
- When a new PCIe SSD drive is hot plugged in an empty drive bay slot, PrepareToRemove or SecureErase features on that drive fail unless the host is rebooted and it completes the CSIOR cycle.
- Sometimes, iDRAC logs the following message to the Lifecycle Controller log: **PWR2262: "The Intel Management Engine has reported an internal system error."** Also, it logs the following message within the next few minutes: **PWR2264: "The Intel Management Engine has reported normal system operation."** No action is required. All Dell PowerEdge systems with iDRAC7 and iDRAC8 are affected.
- Server Configuration Profile (SCP) Import and Preview configuration does not give details about the values that are modified via SCP Redfish. These configuration details are not available via Redfish interface. For configuration details, run the command - "`racadm llog viewconfigresult -j JID_XXXXXXXXXX`".
- When you enumerate DCIM\_NumericSensor using the WS-MAN interface, the SettableThreshold property displays '0', which indicates that the LowerThresholdNonCritical field can be set. However, for performance-statistic sensors, this is not a settable field. For these sensors, you can only set the UpperThresholdNonCritical field, indicated by the value of '1'.

- Sometimes, when using WSMAN, an Internal SSL Error is reported and the WSMAN command fails. If this happens, retry the command.
- Sometimes, SLES 12 OS installation may fail with an error "Please make sure your installation medium is available. Retry?". Retry the installation to resolve the issue.
- The command "racadm eventfilters get -c idrac.alert.all" to view all available event filter configurations using local RACADM may fail. Use either firmware RACADM or remote RACADM to run the command.
- While updating or after you update the OS Collector (OSC) package from 1.1 to 2.1, the version number displayed in the iDRAC interface contains only the number and not the prefix 'OSC\_'.
- LC supports the following characters for username and password:

<b>Alphabets</b>	a-z, A-Z
<b>Numbers</b>	0-9
<b>Special characters</b>	- , _ . .

- If LC is open or running while you are updating iDRAC firmware using a tool other than LC, you may notice unexpected behavior. Use Lifecycle Controller after the firmware is successfully updated.
- If the iDRAC firmware update is interrupted, you may have to wait up to 30 minutes before attempting another firmware update.
- From LC UI, only Windows systems can be deployed by using software RAID controller.
- Firmware update is supported only for LAN on Motherboards (LoM), Network Daughter Cards (NDC), and network adapters from Broadcom, QLogic, and Intel, and some of the QLogic and Emulex fiber channel cards. For the list of supported fiber channel cards, see the LC 2.50.50.50 User's Guide available at [dell.com/idracmanuals](http://dell.com/idracmanuals).
- After the CPLD firmware is updated on modular systems, the firmware update date is displayed as 2000-01-01 on the **View Current Versions** page. The update date and time is displayed according to the time zone configured on the server.
- On some modular systems, after a firmware update, the Lifecycle Log displays the time-stamp as 1999-12-31 instead of the date on which the firmware update was performed
- While viewing the current hardware inventory, some properties related to devices installed in PowerEdge VRTX system are not displayed.
- LC can import and view an iDRAC license but cannot export or delete the iDRAC license. The iDRAC license can be deleted from iDRAC GUI.
- The iSCSI offload attribute can be enabled only on two of the four available ports. If a card, which has this attribute enabled on two of its ports, is replaced with another card that has the attribute enabled on the other two ports, an error occurs. The firmware does not allow the attribute to be set because it is already set on the other two ports.
- Windows operating systems support both the manual and unattended installation features. However, Lifecycle Controller supports the unattended installation feature for Windows and RHEL-7 operating systems only.
- VLAN Configuration is not supported on all vendor FC cards and the following Emulex cards.
  - Emulex OneConnect OCe14102-U1-D 2-port PCIe 10GbE CNA
  - Emulex OneConnect OCm14104-U1-D 4-port 10GbE rNDC CNA
  - Emulex OneConnect OCm14102-U5-D 2-port 10GbE Mezz CNA
  - Emulex OneConnect OCm14102-U4-D 2-port 10GbE bNDC CNA
  - Emulex OneConnect OCe14102-N1-D 2-port PCIe 10GbE NIC
  - Emulex OneConnect OCm14104-N1-D 4-port 10GbE rNDC CNA
  - Emulex OneConnect OCm14102-N5-D 2-port 10GbE Mezz CNA
  - Emulex OneConnect OCm14102-N6-D 2-port 10GbE bNDC CNA
- LC displays two drive names for some CDs or DVDs, such as the ones containing operating systems.
- Network operations such as Update, Export, or Import may take more time than expected. The delay may occur because the source or destination share is not reachable or does not exist, or due to other network issues.
- If the operating system (OS) selected for installation and the OS on the media used are different, LC displays a warning message. However, while installing Windows OS, the warning message appears only when the bit count (x86 or x64) of the OS does not match. For example, if Windows Server 2008 x64 is selected for installation and Windows Server 2008 x86 media is used, the warning is displayed.
- LC does not support OS deployment on Dell Precision Workstation R7920.
- When NPAR is enabled, the port numbers displayed on the LC Network Settings page (**Settings > Network Settings**) do not match the port numbers displayed on the Device Settings page (**System Setup > Advanced Hardware Configuration > Device Settings**).
- Lifecycle Controller supports OS deployment on bootable devices (systems without a RAID controller) in the BIOS mode only.
- In the Spanish help page, the word **encrypted** is incorrectly translated as **scripted** in Step 3 OS deployment.

- Operating system installation might fail if the server has only PCIe NVMe SSD drives and if you have selected BIOS as boot mode. If server has both RAID and non-RAID hard disks (NVMe SSD), it displays the RAID configuration option. However, the non-RAID disks are not displayed on RAID configuration page.
- When you update the firmware on a Broadcom NetXtreme and QLogic BCM57xx and BCM57xxx (previously known as Broadcom NetXtreme ||) adapters, the following issue occurs: After installing the QLogic-specific firmware update package on the BCM57xx or BCM57xxx adapter family, the rollback version is not available if the previously installed firmware was provided by a legacy shared firmware update package. However, if the legacy shared firmware version is available as a rollback version for the Broadcom NetXtreme adapter, then the same version will be available for the QLogic BCM57xx and BCM57xxx adapters.  
The issue occurs because separate firmware update packages are provided for the Broadcom NetXtreme adapters and QLogic BCM57xx and BCM57xxx adapters due to the acquisition of the Broadcom NetXtreme || cards by QLogic. Prior to the acquisition, a common shared firmware update package was provided.
- The following Intel cards do not support firmware rollback and may not display all the ports on the Comparison page while updating the firmware:
  - Intel Ethernet Converged Network Adapter X710 - Quad Port
  - Intel Ethernet Converged Network Adapter X710 - Dual Port
  - Intel Ethernet Converged Network Adapter XL710
  - Intel Ethernet 10G 4P X710/1350 rNDC
  - Intel Ethernet 10G 4P X710 SFP + rNDC
  - Intel Ethernet 10G 4P X710-k bNDC
  - Intel Ethernet 10G 2P X710-k bNDC
  - Intel Ethernet 40G 2P XL710 QSFP + rNDC
  - Intel Gigabit I350-t LOM
- While installing the operating system on 12th generation PowerEdge servers by using LC UI, ensure that the virtual media is attached on the server before BIOS boot.
- On NANO operating system, you cannot install a firmware or driver DUP if it is in .exe format.
- During the RAID Configuration, on the Step 3 of 5: Select Physical Disk page, the scroll bar of Select Physical Pool table is not displayed. To view the scroll bar:
  - Hover your mouse over the right edge of the table.
  - Press Tab until the table is selected.

This issue is observed when you select the RAID level as 0, 5, 6, 10, 50, or 60.
- When virtual media is disabled and you try to launch virtual media through virtual console session using Active-X plug-in, no error message is displayed.

# Known Issues — To be fixed in future releases

## 1 Description

While deploying Windows Server 2008 R2 SP1 from Lifecycle Controller, installation stops with the following error: **There is no disk in the drive. Please insert a disk into drive \Device\Harddisk0\DR0.**

This issue may occur due to any of the following reasons:

- Virtual Media is in the attached state and a media is not mapped.
- Virtual Media is in the auto-attached state and a media is not mapped.
- Virtual Media being presented by the AVCT SIP and Virtual Media from iDRAC in the detached state.
- Drivers for RAID controllers have failed to load on the system.

**NOTE:** The issue does not occur with Virtual Media in the detached state. It also does not occur without the SIP and with Virtual Media in the detached state from iDRAC.

### Resolution

Retry the operation.

**Version/Systems affected:** All systems supported by this release.

Dell tracking: N/A

## 2 Description

Some of the supported components are not displayed on the **Firmware Update > View Current Versions** page.

### Resolution

Restart the system and open View Current Versions page.

**Version/Systems affected:** All systems supported by this release.

Dell tracking: N/A

## 3 Description

If a Mellanox card is present in the system, then under Network Settings, the port number must be displayed as Port 1 and Port 2 because it is a dual port. But, the port number is displayed as Port 1 for both the ports or the port numbers are not displayed.

### Resolution

To distinguish between the port numbers, see the MAC address or the Device Settings. You can access Device Settings in the following methods:

- During Post, press <F2>, and select System Setup.
- On the Lifecycle Controller Home page, click System Setup, and then click Advanced Hardware Configuration.

**Version/Systems affected:** All systems supported by this release.

Dell tracking: N/A

## 4 Description

After you successfully update the firmware of a CPLD on a modular server, and then perform a firmware update operation of a component that requires a system restart (such as BIOS), the server is automatically and repeatedly restarted.

### Resolution

Perform a Power Cycle operation on the server.

**Version/Systems affected:** All systems supported by this release.

Dell tracking: N/A

5 **Description**

On 12<sup>th</sup> generation of PowerEdge servers, while deploying the operating system by selecting the UEFI boot mode, an error message is displayed when you click **Finish**. This error occurs if you try to connect the optical drive or virtual media after you launch Lifecycle Controller.

**Resolution**

Reboot the server and ensure that you connect the optical drive or virtual media before launching Lifecycle Controller.

**Version/Systems affected:** All systems supported by this release.

Dell tracking: N/A

6 **Description**

The PrimayStatus of DIMM's in Hardware Inventory and Wsman output of DCIM\_MemoryView shows as "Unknown" for MCDRAMs.

**Resolution**

Not applicable.

**Version/Systems affected:** PowerEdge C6320p

Dell tracking: 69660

7 **Description**

There is no MCDRAM information displayed in **Individual Memory Details** when the processor embedded memory mode set to **System** and **Hybrid**.

**Resolution**

Not applicable.

**Version/Systems affected:** PowerEdge C6320p

Dell tracking: 69662

8 **Description**

When launching virtual console with Java plugin in RHEL 7.3 management station, the **Start Instant Messaging, Performance and Stats** dialog boxes from **Tools** menu do not have the close button (X).

**Resolution**

Right-click anywhere on the top of windows and click Close (Alt+F4).

**Version/Systems affected:**PowerEdge systems with iDRAC7.

Dell tracking: 69935

9 **Description**

After scheduling an recurring automatic update, if user disables Lifecycle Controller the subsequent scheduled job will be deleted and will log a message as **Jobs deleted as Automatic Update Feature disabled**, even though the automatic update feature is enabled and only Lifecycle Controller is disabled.

**Resolution**

To continue to allow scheduled updates, verify if automatic update feature is enabled and Lifecycle Controller is enabled.

**Version/Systems affected:** All PowerEdge systems with iDRAC7 and iDRAC8.

Dell tracking: 70567

10 **Description**

Upon execution of a RACADM proxy command using local RACADM, the command to create a username in CMC does not allow a successful execution when the username string provided has an empty space character embedded within.

**Resolution**

Use Remote RACADM, CMC firmware RACADM, or CMC GUI.

**Version/Systems affected:**CMC

Dell tracking: 26772

11 **Description**

Upon execution of the RACADM command `racadm eventfilters get -c idrac.alert.all` using local RACADM, the event filter information is not obtained.

**Resolution**

Use Remote RACADM, CMC firmware RACADM, or CMC GUI.

**Version/Systems affected:** All systems with iDRAC7 and iDRAC8.

Dell tracking: 29203

12 **Description**

Unable to view HW and SW Inventory through local RACADM interface, when all the possible VD's are created and mapped to all possible volumes (allowed 24) to HOST windows OS.

**Resolution**

Use Remote RACADM, CMC firmware RACADM, or other iDRAC interfaces (GUI/WSMan).

**Version/Systems affected:** All PowerEdge systems with iDRAC7 and iDRAC8.

Dell tracking: 24244

13 **Description**

Export and import operations from iDRAC web interface and RACADM fail when a CIFS share configured with NTLM V2 is used.

**Resolution**

Use WSMAN or Redfish interfaces for import and export operations to CIFS shares configured with NTLMv2 when the security option selected is **Send NTLMv2 response only. Refuse LM & NTLM.**

**Version/Systems affected:** All PowerEdge systems with iDRAC7 and iDRAC8.

Dell tracking: 72257

14 **Description**

If the iDRAC HTML5 vConsole viewer is launched repeatedly, without any delay between the launches, an error message about dropped network connection may be displayed.

**Resolution**

Re-launch the viewer from the iDRAC web GUI after a few seconds.

**Version/Systems affected:** All PowerEdge systems with iDRAC versions 2.40.xx.xx and 2.5x.xx.xx.

Dell tracking: 71591

15 **Description**

By default, LC GUI and iDRAC interfaces use SMB1 protocol. If SMB1 is disabled on Windows or Samba CIFS shares, all features that use this share fail.

**Resolution**

Enable SMB1 on the system where the share is located. This, however, may lower your system's security and increase vulnerability to viruses.

**Version/Systems affected:** All systems supported by this release.

Dell tracking: SYSMGMT-570

# Installation

## Installation instructions

- From the Windows host operating system (managed node), run the Dell Update Package for Windows and follow the instructions on the update wizard.
- From the Linux host operating system (managed node), run the Dell Update Package for Linux from the shell prompt. Follow the instructions displayed on the console.
- From the management station, remotely update the firmware using the iDRAC web interface:
  - a Extract the firmware image self-extracting file to the management station.
  - b Open the iDRAC web interface using a supported web browser.
  - c Log in as an administrator.
  - d Go to **Overview > iDRAC Settings > Update and Rollback > Update**. The **Firmware Update** page is displayed.
  - e Click **Browse**, select the .d7 firmware image file that you extracted (step 1), or the Dell Update Package (DUP) for Windows, and click **Upload**.
  - f Wait for the upload to complete. After the upload is completed, the **Update Details** section displays the firmware file uploaded to iDRAC and the status.
  - g Select the firmware file and click **Install** or **Install and Reboot**. If it is a DUP, **Install** dynamically changes to **Install and Reboot** and at the same time the **Install Next Reboot** is activated. When you click **Install and Reboot** or **Install Next Reboot**, the message **Updating Job Queue** is displayed.
  - h Click **OK**. The **Job Queue** page is displayed, where you can view and manage the firmware update.

For more information, see the iDRAC User's Guide available at [dell.com/idracmanuals](http://dell.com/idracmanuals).

## Upgrade

N/A

## Uninstallation

N/A

# Lifecycle Controller Remote Services — client tools

Use the OpenWSMAN CLI client tool to send WS-MAN commands to Lifecycle Controller.

## OpenWSMAN CLI

OpenWSMAN CLI is an open source Linux WS-MAN client. OpenWSMAN CLI source code and installation details are available at <http://sourceforge.net/projects/openwsman/files/wsmancli>.

Sample OpenWSMAN CLI Command (Enumeration Operation):

```
wsman enumerate http://schemas.dmtf.org/wbem/wscim/1/cim-schema/2/DCIM_SystemView
-h (idrac ip address) -P 443 -u (idrac user) -p (idrac password) -v -j utf-8
-y basic -R -o -m 256 -N root/dcim -c cert_name.cer -V
```

**NOTE:** Lifecycle Controller uses a self-signed certificate for HTTPS (SSL) communication. Self-signed certificates are not accepted by the OpenWSMAN CLI client and WS-MAN commands do not work without these options: `-c`, `-v`, and `-V`. See the OpenWSMAN CLI Readme for details on these options.

# Accessing documents from Dell Support site

## Using direct links

You can directly access the documents using the following links:

**Table 1. Direct links for documents**

URL	Product
dell.com/idracmanuals	iDRAC and Lifecycle Controller
dell.com/cmcmmanuals	Chassis Management Controller (CMC)
dell.com/openmanagemanuals	Enterprise System Management
dell.com/serviceabilitytools	Serviceability Tools
dell.com/OMConnectionsClient	Client System Management
dell.com/OMConnectionsEnterpriseSystemsManagement	OpenManage Connections Enterprise Systems Management

## Using the product selector

You can also access documents by selecting your product.

- 1 Go to <https://www.dell.com/manuals>.
- 2 In the **Choose from all products** section, click **View products**.
- 3 Click **Software and Security** and then click the required link.
- 4 To view the document, click the required product version.

## Contacting Dell

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

Dell provides several online and telephone-based support and service options. Availability varies by country and product, and some services may not be available in your area. To contact Dell for sales, technical support, or customer service issues, go to <https://www.dell.com/contactdell>.