

Dell Chassis Management Controller Version 3.30 for PowerEdge VRTX

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.

Chapter 1: Dell Chassis Management Controller for Dell EMC PowerEdge VRTX.....	4
Chapter 2: Platforms Affected.....	5
Chapter 3: License Requirements.....	6
Chapter 4: What is Supported.....	7
Chapter 5: What is new.....	8
Chapter 6: Fixes.....	11
Chapter 7: Important Notes.....	13
Chapter 8: Known Issues.....	14
Flex address disabled after racresetcfg of CMC.....	14
RAID-related operations might take longer to report status.....	14
Error occurs while importing CMC configuration file.....	14
Chassis overview health tab does not display alert.....	14
Server components update page gets corrupt.....	15
Controller failover feature does not work.....	15
Active alert for degraded virtual disk is not displayed.....	15
SPERC information is displayed partially on LCD display.....	15
Unable to view chassis logs from remote RACADM.....	15
Static IPv6 IP address can be assigned to iDRAC blades.....	16
Chapter 9: Limitations.....	17
Chapter 10: PSOC Read Me.....	18
Chapter 11: Installation.....	19
Installation Procedure.....	19
VRTX Update Procedure.....	19
Chapter 12: Accessing documents from Dell Support site.....	21
Chapter 13: Contacting Dell EMC.....	22

Dell Chassis Management Controller for Dell EMC PowerEdge VRTX

The Dell Chassis Management Controller (CMC) Version 3.30 for Dell EMC PowerEdge VRTX is a System Management hardware and software solution for managing the Dell EMC PowerEdge VRTX chassis.

Version

3.30

Release Date

July 2020

Previous Version

3.21

Importance

RECOMMENDED: Dell 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).

Platforms Affected

Dell Chassis Management Controller (CMC) for Dell PowerEdge VRTX is supported on the following systems:
Chassis:

- PowerEdge VRTX

Blades:

- Dell PowerEdge M640
- Dell PowerEdge M630
- Dell PowerEdge M830
- Dell PowerEdge M620
- Dell PowerEdge M820
- Dell PowerEdge M520

IOMs

- Dell PowerEdge VRTX Switch Module R1-2401
- Dell PowerEdge VRTX Switch Module R1-2210
- Dell PowerEdge VRTX 1Gb x8 pass-through module

License Requirements

The CMC supports software licensing to use advanced systems management features. For more information about the license requirements, see the *Dell Chassis Management Controller for Dell VRTX User's Guide* available at the support site.

What is Supported

Supported web browsers for CMC for Dell PowerEdge VRTX

CMC VRTX version 3.30 is supported on the following web browsers:

- Microsoft Internet Explorer 11
- Microsoft EDGE
- Safari version 12.1.2
- Safari version 13.0.4
- Mozilla Firefox 72
- Mozilla Firefox 73
- Google Chrome 79
- Google Chrome 80

Supported Server Modules

- Supported platforms: PowerEdge M640, M630, M520, M620, M820, and M830 servers.
- Mainboard firmware: 2.00 or later (2.20 or later for JBOD support)
- iDRAC7 version: 1.66.56 or later
- iDRAC8 version: 2.05.05 or later (M630 Servers)
- iDRAC9 version: 3.10.10.10 or later (M640 Servers)
- PowerEdge M520 BIOS version: 2.1.3 or later
- PowerEdge M620 BIOS version: 2.2.7 or later
- PowerEdge M820 BIOS version: 2.0.24 or later
- PowerEdge M820 BIOS version: 0.3.35 or later
- PowerEdge M830 BIOS version: 1.1.5 or later

What is new

- Addressing Open Source security vulnerabilities.
- Applying server profiles using racadm command line interface.

Release 3.21

- Enabling force change of password feature to adhere to SB-327 Regulations of California, USA.
- Supporting CLI command to regenerate SSH self-signed key.
- Updated the OpenSSH open-source package to version 7.9p1.
- Updated the OpenSSL open-source package to version 1.0.2r.

Release 3.20

- Changing the iDRAC DNS name from CMC.
- Enabling CLI prompt to display chassis name.
- Support for two new COMMs cards Intel 10Gb NICs -- Dell P/N C4D5P and 4V7G2.

Release 3.10

- Updating the Linux kernel open-source package to version 4.9.31.
- Enabling windows file sharing protocol version SMBv2 and SMBv3.
- Updating the OpenSSH open-source package to version 7.6p1. The minimum key length that is required for SSH is 1024 bits.
- Supporting slot names with a length of 24 characters to identify individual servers.
- Enabling SNMP trap for the TMP8501 alert.
- Extending fabric flex address configuration support in chassis profile .xm1 file.
- Supporting 128-bit session identifiers.
- Federal Information Processing Standards (FIPS) 140-2 cryptography capability. The CMC 3.00 release is FIPS certified version(Certification Number: #2861).
- Firmware and driver refresh of COMMs cards on Dell's 14th generation of PowerEdge servers.

Release 3.0

- Supporting PowerEdge M640 blade server on the PowerEdge VRTX Chassis.
- Updating the physical mapping of TOR switch ports to Dell EMC's 14th generation server ports using LLDP open-source package version 0.7.7.
- Unlocking the foreign SEDs from CMC GUI.
- Collecting CMC dumplogs as part of the server's SupportAssist tab.
 - Integrating ZIP open-source package version 3.0 for SupportAssist.
 - Integrating LSOF open-source package version 4.86 for SupportAssist.
- Monitoring "wear gauge" of SSDs.
- Monitoring CMC Fan sensors PWM using RACADM:
 - getsensorinfo
- Integrating the event filter configurations on chassis profile XML file.
- Updating the OpenSSL open-source package to version 1.0.2K.
- Updating the OpenSSH open-source package to version 7.4p1.
- Updating enterprise OID in the SNMPv3 trap.
- Extending SNMP protocol and custom discovery port configuration in GUI.
- Extending SNMPv3 trap configuration support in WSMAN.

- Configuring CMC using WSMAN for the following SNMPv3 user attributes:
 - userAdminSNMPv3Enable
 - userAdminSNMPv3AuthenticationType
 - userAdminSNMPv3PrivacyType
- Monitoring CMC using WSMAN for the following sensors:
 - Fan sensor speed
 - Temperature sensor for chassis and servers
- Providing racadm commands to initiate/cancel consistency checks of all VDIs:
 - Raid ccheckall
 - Raid cancelcheckall

Release 2.23

- Federal Information Processing Standards (FIPS) certified. Certification Number: #2861. For details, see www.csrc.nist.gov/groups/STM/cmvp/documents/140-1/140val-all.htm#2861

Release 2.22

- Updated the OpenSSL open-source package to version 1.0.2j.

Release 2.20

- Federal Information Processing Standards (FIPS) 140-2 cryptography capability.
- Disabling AC Power Recovery.
- Creating a Virtual Disk without initialization of the virtual disk.
- Pre-enabling of the following features for Self-Encrypting Drives (SEDs):
 - Creating, modifying, and deleting the security key — using key identifier and passphrase
 - Secure erase
 - Encrypting virtual disks
 - Unlocking and importing secure foreign virtual disk configuration using RACADM and WSMAN
- Querying shared storage health using SNMP.
- Enabling sPERC Redundancy and setting up Multiple Assignment Mode using WSMAN.
- Performing racresetcfg from CMC GUI.
- Updating the OpenSSL open-source package to version 1.0.2f.
- Updating the OpenSSH open-source package to version 7.1p1.
- Updating glibc to version 2.23 to address new security vulnerabilities.
- TLS 1.2 and TLS 1.1 by default.
- User configuration option to enable TLS 1.0 using RACADM.
- SNMPv3 configuration only in RACADM.
- Querying the health status of the chassis components using WSMAN.
- Initiating Quick Deploy of blade through RACADM.
- Configuring CMC using WSMAN for the following features:
 - Host Name of Chassis
 - IP Configuration
 - DNS
 - DNS Registration
 - NTP
 - Change Default Password
- Sending alerts when the power state of an IOM changes and when a power ON of IOM fails.
- Populating CMC Device name correctly in the inventory.

Release 2.12

- Quick link to the Dell Tech Center page from the CMC web GUI.

Release 2.10

- Support for PowerEdge M830 Blade server for PowerEdge VRTX Chassis.
- Support for 1100W PSU.
- Pre-enablement support for the Shared External Storage expansion (JBOD support).
- Firmware and driver refresh of COMMs cards on Dell's 13th generation PowerEdge servers.
- Support for Emulex Fibre Channel (FC) 8 HBA adapters.
- Capture and replicate chassis configurations through XML based on the Chassis configuration profile.
- Support for blinking server identification LED using Quick Link.
- Backup or restore through XML based on the chassis configuration profile.
- Create and deploy a library of Boot Identity Profiles (boot from iSCSI/SAN configurations) to enable a quick restore of workload to a spare server.

- Fixed an issue causing internal server error observed while deleting virtual disk.
- Fixed an issue causing FANs are running at 30% PWM across all the interfaces during single-server iDRAC FW update.
- Fixed an issue causing Unable to set ECC value to raid controller using factory command.
- Fixed an issue causing Internal Server Error while checking the chassis logs.
- Fixed an issue causing LCD orientation getting change to Tower mode after firmware downgrade or upgrade.
- Fixed an issue causing discrepancy in IOM health state when there is fabric mismatch error on IOM.
- Fixed an issue causing Last Post Code status for servers in "Boot F1/F2 prompt" state is incomplete in LCD graphics.

Release 3.21

- Fixed an issue causing LCD freeze by implementing watchdog-based recovery mechanism.
- Fixed an issue causing memory leak to improve SNMP performance.
- Fixed an issue causing CMC or chassis to enter failsafe mode due to memory leak.
- Fixed an issue causing CMC becomes unresponsive and loses SSH access.
- Applied Linux kernel patches to address new security vulnerabilities.

Release 3.10

- Fixed an issue causing the static power cap to not be set near chassis lower power bound value.

Release 3.0

- Fixed an issue causing failure of `racresetcfg`, when the six RSA-4096 or four RSA-2048, and two 2048 DSA SSH public keys are uploaded to the CMC.

Release 2.23

- Fixed an issue causing CMC changeover when chassis overall health was updated.

Release 2.20

- Fixed an issue causing flash Media Status showing as "Version mismatch" during changeover or upgrade of the CMC.
- Fixed an issue that caused the Server Profile page to hang when a profile is applied to multiple servers.
- Fixed an issue limiting the speed of bNDC ports on some blades to 1 Gb after initial chassis turn on or blade insertion.

Release 2.12

- Fixed an issue causing failure of RAID10 Virtual Disc (VD) with 8, 12 or 16 drives in creating full VD when the span count 2 is selected.
- Fixed an issue with Server/Host operating system (OS) network flap, which occurs occasionally on Modular platforms for a short duration during CMC initialization.
- Fixed an issue with Server/Host OS network port off, which occurs after CMC is reset on full-height Modular platforms, when the second network daughter card is not installed.
- Fixed an issue causing the CMC Web GUI to become unresponsive while using Active Directory login with WinRM.
- Fixed an issue causing memory full condition when the internal log files are oversized.

Release 2.10

- Fixed an issue with the `getmacaddress -c all` command displaying partial IO Identity values for the Intel Dual Port Network Card 10 GBE.
- Fixed an issue with the `getmacaddress -m server-x -t iscsi` command displaying non-iSCSI MAC addresses after using the iSCSI filter.
- Fixed an issue with flash media features displaying invalid media for active controllers after restoring the chassis.
- Fixed an issue with the external storage expansion where chassis logs and alerts are not generated.

Release 2.04

- Fixed an issue where CMC sometimes does not notify or show storage changes until a chassis powercycle, CMC reset, or failover is performed.
- Fixed an issue where CMC User Interface may become unresponsive while CMC is still accessible through other interfaces such as CLI (SSH, Serial, telnet) and WSMAN.

Release 2.01

- Updated OpenSSL open source package to version 1.0.1j. For more information, refer to OpenSSL Security Advisory [15 Oct 2014] — www.openssl.org/news/secadv_20141015.txt.

Important Notes

- Dell EMC recommends that the CMC or Mainboard firmware is not downgraded below the supported versions that are mentioned in this Release notes, since previous versions of CMC and Mainboard do not support SPERC disable option.
- When the second SPERC is in the disabled mode, if a CMC with firmware version 1.30 or 1.31 is inserted into the chassis, then update the CMC firmware to 1.36 and run the options to disable the PERC again.
- The shared hard disk drives (HDDs) and the PCIe cards are managed by the CMC and are not visible to the operating system in the server modules, until the HDDs and PCIe cards are mapped by using the CMC web interface. For instructions about mapping PCIe cards and managing the Storage subsystem, see the *Chassis Management Controller for PowerEdge VRTX User's Guide* available at dell.com/cmmanuals.
- All the server modules must be turned off before updating the firmware for chassis infrastructure and SPERC. CMC firmware can be updated while the servers are turned on.
- Some advanced features require CMC enterprise license. For more information about the CMC licenses, see the *Chassis Management Controller for PowerEdge VRTX Version User's Guide* available at dell.com/cmmanuals.
- Before updating the Storage component using the web interface, make sure that the cookies in the browser are enabled.
- PERC Storage rebuild may take more time when more number of I/O requests are processed. This may also cause the CMC and the TTY log to be out of sync for a short period.
- In fault-tolerant (Redundant) mode, the controller associated with virtual disks or physical disk drives is the active controller.
- When saving Server Profile under "**Server Overview > Setup > Profiles**", the list of characters that are not supported for the Profile Name include the characters hash(#), comma(.), and question mark(?).
- You may see an impact in the performance of the Graphical User Interface with this release of CMC. The performance impact varies by configuration, GUI page, and system load.
- Microsoft Windows Server 2012, Windows Server 2008 R2, Windows 7 do not support TLS 1.2 and TLS 1.1. Install update below to enable TLS 1.2 and TLS 1.1 as a default secure protocols in WinHTTP in Windows. For details, see the Microsoft knowledge base article 3140245 at support.microsoft.com.
- Supports LDAP authentication with OPEN-DS. OPEN-DS must have DH key larger than 1024 bits.

Known Issues

Topics:

- Flex address disabled after `racresetcfg` of CMC
- RAID-related operations might take longer to report status
- Error occurs while importing CMC configuration file
- Chassis overview health tab does not display alert
- Server components update page gets corrupt
- Controller failover feature does not work
- Active alert for degraded virtual disk is not displayed
- SPERC information is displayed partially on LCD display
- Unable to view chassis logs from remote RACADM
- Static IPv6 IP address can be assigned to iDRAC blades

Flex address disabled after `racresetcfg` of CMC

Description	XWKGY_Intel10G card shows Flex address disabled after <code>racresetcfg</code> of CMC in Network Device page and OS.
Resolution	Virtual reset or physical reset of the server
Versions/Systems affected	All CMC versions including CMC 3.20 for Dell PowerEdge VRTX and PowerEdge servers with iDRAC7 or earlier.

RAID-related operations might take longer to report status

Description	After Shared PERC8 controller update, RAID-related operations may take longer to report status.
Resolution	Wait for the operation status to report.
Versions/Systems affected	CMC version 2.01 or later for Dell PowerEdge VRTX.

Error occurs while importing CMC configuration file

Description	An error occurs while importing CMC configuration file using local or remote RACADM.
Resolution	This issue occurs when IPv6 is enabled or disabled from the configuration file. Enable or disable IPv6 using the command, <code>racadm config -g cfgIPv6LanNetworking -o cfgIPv6Enable 0</code> .
Versions/Systems affected	CMC Version 2.0 or later for Dell PowerEdge VRTX

Chassis overview health tab does not display alert

Description	At times when foreign drives are inserted, the Chassis Overview Health tab does not display the alert, "Foreign Configuration was detected on Physical Disk".
--------------------	--

Resolution	None The alert is not displayed only at times. But, the functionality for foreign configuration is not affected.
Versions/Systems affected	All CMC versions including CMC 3.00 for Dell PowerEdge VRTX

Server components update page gets corrupt

Description	When CMC firmware is downgraded to 1.36 from 2.00 or later while network share is configured, the Server Components Update page gets corrupt.
Resolution	Clear the network configuration before downgrading to 1.36.
Versions/Systems affected	CMC Version 1.36 or earlier for Dell PowerEdge VRTX

Controller failover feature does not work

Description	When pinned cache is present, the controller failover feature does not work.
Resolution	Address the pinned cache before controller failover is enabled.
Versions/Systems affected	All CMC versions including CMC 3.00 for Dell PowerEdge VRTX

Active alert for degraded virtual disk is not displayed

Description	If SPERC controller failover is triggered when the virtual disk (VD) re-build operation is in progress, an active alert for the degraded VD is not displayed on the Chassis Overview page.
Resolution	None An active alert along with the CMC log is generated for degraded VD (VDR8) before the SPERC controller failover is triggered. After the SPERC controller failover occurs, the active alert message for degraded VD on the Chassis Overview page is cleared, but SPERC functionality is not impacted.
Versions/Systems affected	All CMC versions including CMC 3.00 for Dell PowerEdge VRTX

SPERC information is displayed partially on LCD display

Description	SPERC information is displayed partially on LCD display.
Resolution	None SPERC information can be queried using other user interfaces, only partial information is shown on LCD. The functionality for SPERC is not affected.
Versions/Systems affected	CMC Version 3.0 or later for Dell PowerEdge VRTX

Unable to view chassis logs from remote RACADM

Description	Unable to view chassis logs from remote RACADM
--------------------	--

Resolution None
Use firmware RACADM instead, to view the chassis logs.

Versions/Systems affected All CMC versions 3.20 for Dell PowerEdge VRTX using OM 911 and later.

Tracking number 109003

Static IPv6 IP address can be assigned to iDRAC blades

Description Static IPv6 IP address can be assigned to iDRAC blades using RACADM deploy command even when the IPv6 interface of iDRAC is disabled.

Resolution None
There is no functionality loss.

Versions/Systems affected All CMC versions including CMC 3.20 for Dell PowerEdge VRTX

Tracking number 111023

Limitations

Issue 1

Description	In the Microsoft Edge browser, the Boot Identity Profiles page in the CMC GUI is slow when 1500 or more MAC addresses are created from the MAC pool for the Boot Identity profile.
Resolution	Create less than 1500 MAC address in the Microsoft Edge browser. Use other supported browsers for more than 1500 MAC addresses.
Versions/Systems affected	CMC Version 2.20 or later for Dell PowerEdge VRTX

PSOC Read Me

Release Version:13

- Added I2C master module to read temperature sensor as master.
- Allocated space in the DPM for enable/disable temperature sensor reading as master and sensor reading configurations.

Release Version:12

- Defined a bit in the Virtual Status Register for rereading XML data.
- Defined an IOM to CMC Doorbell bit to alert the CMC to reread XML data.

Release Version:11

- Allocated space in the DPM for Port On or Off feature.
- Minor corrections to ID STATUS register description.
- Corrected error in I2C communication with switch CPU introduced in PSOC 0A.

Release Version:10

- Fixed error in handler for CMC side I2C that was causing missed data.
- Added correction for Cypress initialization code to allow for proper soft reset after bootloader reprogramming.

Installation

Prerequisites

Before setting up your CMC environment, download the latest version of CMC firmware for PowerEdge VRTX from the Dell Support Website at support.dell.com/support/. Also, make sure that you have the Dell Systems Management Tools and Documentation DVD that is included with your system.

Topics:

- [Installation Procedure](#)
- [VRTX Update Procedure](#)

Installation Procedure

1. In the CMC web interface, click **Chassis Overview**, and then click **Update**.
2. On the **Firmware Update** page, in the **CMC Firmware** section, select the required components under the **Update Targets** column for the CMC or CMCs (if a standby CMC is present) you want to update, and then click **Apply CMC Update**.
3. In the **Firmware Image** box, type the path to the firmware image file on the management station or shared network, or click **Browse** to browse through to the file location. The default name of the CMC firmware image file is `VRTX_cmc.bin`.
4. Click **Begin Firmware Update**, and then click **Yes**. The **Firmware Update Progress** section displays information about the firmware update status.

For more information, see the *Chassis Management Controller for PowerEdge VRTX User's Guide* available at the support site.

VRTX Update Procedure

Prerequisites

- iDRAC web interface for each server node must be accessible from management station.
- Local or remote access to OS management for each server node
- VRTX chassis CMC web interface must be accessible from management station.
- All server and chassis components must be in a Healthy state with no outstanding issues or alerts. Any issues must be resolved prior to performing updates.

Server Node Updates

Visit support.dell.com and download the latest available Windows DUP versions of the following programmable components for the server node model (M520, M620, M630, M820, or M830) used in the VRTX chassis to be updated:

- BIOS
- iDRAC7/8
- CPLD

Also, download the latest available Shared PERC8 driver for the operating system installed on the server node.

 **NOTE: If the OS is VMWare ESXi, the driver is part of the Dell ESXi image.**

Updating Server Nodes

1. Update the operating system-specific Shared PERC8 driver on all the server nodes. For Windows operating system, see the *Shared PERC8 User's Guide* available at dell.com/support. For VMware, the driver is part of the Dell-customized ESXi image. For more information, see installing async drivers at kb.vmware.com.
2. Update the iDRAC firmware using Windows DUP and the iDRAC web interface for each server node or on all server nodes at once through VRTX CMC web interface if the Enterprise license is in place and the Extended Storage feature is enabled. This update takes several minutes to complete. After the update, the iDRAC web interface is inaccessible for approximately three minutes.
3. Update the CPLD on each server node using the Windows DUP and iDRAC web interface. Make sure to select "Install and Reboot" after uploading the DUP, which forces the server nodes to reboot and perform the CPLD update. After the CPLD update completes a complete server node power cycle occurs. This action results in the iDRAC web interface being inaccessible for approximately three minutes.
4. Update the BIOS on each server node using Windows DUP and the iDRAC web interface. You can also update the BIOS on all server nodes at once through the VRTX CMC web interface—**Server Overview > Update** tab, if the Enterprise license is in place. Make sure to select "Install and Reboot" after uploading the DUP, which forces the server nodes to reboot and perform the BIOS update.

VRTX Chassis Component Updates

Visit dell.com/support and download the latest available versions of the following programmable components for the VRTX chassis to be updated:

- CMC Firmware
- HDD Firmware (Windows DUP)
- Shared PERC8 Firmware (Windows DUP)
- VRTX Chassis Infrastructure Firmware
- VRTX Storage Backplane Expander Firmware (Windows DUP)

NOTE: To perform the following updates, refer to the "Updating VRTX Chassis Components" section:

Updating VRTX Chassis Components

1. Before updating any chassis components, the chassis must be powered on, all server nodes must be powered down, and remain powered down until all chassis component updates are complete.
2. Update the HDD firmware for each of the installed shared storage HDD, using the **Storage -> Update** tab in the CMC web interface.
3. Update the CMC firmware using the **Chassis Overview > Update** tab in the CMC web interface. Make sure to update both CMC controllers in the same operation by selecting both the Active and Standby controller check boxes. After the firmware upload completes, the CMC is rebooted to perform the update resulting in the CMC web interface being inaccessible for several minutes.
4. Update the VRTX chassis infrastructure firmware using the **Chassis Overview > Update** tab in the CMC web interface. This update results in the chassis power cycling automatically and may result in a CMC controller reset as well. As a result, the CMC web interface becomes inaccessible for several minutes.
5. Update the VRTX storage backplane expander firmware using the **Storage > Update** tab in the CMC web interface.
6. Verify that all installed Shared PERC8 controllers are enabled by checking the **Storage > Controllers** tab in the CMC web interface. If the second Shared PERC8 controller is displayed as "Disabled PERC (Integrated 2)", use the CMC command:

```
'racadm raid enableperc:RAID.ChassisIntegrated.2-1'
```

to enable the previously disabled controller before performing Step 7. The VRTX chassis power cycles after the Shared PERC8 enablement command is run.

7. Update the Shared PERC8 controller firmware on all installed controllers using the **Storage > Update** tab in the CMC web interface. Make sure to update both controllers in the **High Availability Dual Shared PERC8** configuration in the same operation.
8. If a Shared PERC8 controller was required to be enabled for update in Step 6 above, you can disable the controller again if required. Use the CMC command **'racadm raid disableperc:Raid.ChassisIntegrated.2-1'**. This command results in a chassis power cycle.

Accessing documents from Dell Support site

Latest Release Notes

To access the latest Release Notes for this version, follow these steps:

1. Go to <https://www.dell.com/cmcmmanuals>.
2. Click the link for this version of CMC.
3. Click **Manuals & documents**.

Using direct links

You can directly access the documents using the following links:

Table 1. Direct links for documents


URL	Product
dell.com/cmcmmanuals	Chassis Management Controller (CMC)
dell.com/idracmanuals	iDRAC and Lifecycle Controller
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/cmcmmanuals>.
2. Click **Browse all products**.
3. In the **All products/Software** section, click **Enterprise Systems Management**.
4. Click **Chassis Management Controllers** and then click the required link.
5. Click **Manuals & documents** To view the document, click the required document link.

Contacting Dell EMC

 **NOTE:** If you do not have an active Internet connection, you can find contact information on your purchase invoice, packing slip, bill, or Dell EMC 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 EMC for sales, technical support, or customer service issues, see <https://www.dell.com/contactdell>.