
Performing Updates on a PowerEdge VRTX System Using CMC 1.0

This Dell Technical White Paper provides information about how to update CMC, Chassis Infrastructure, IOM, and Software Component firmware using the CMC Web Interface and RACADM Interface.

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Introduction

This white paper describes different ways to update the Chassis hardware and the server on Dell PowerEdge VRTX Servers. Customers can use any of the following methods on the basis of their requirements and operating environment.

- Executing updates using the CMC Web Interface
- Executing updates using the RACADM Interface
- Executing updates using the Dell Repository Manager

Recommended Sequence for Applying Firmware Update

When applying firmware updates to your system, it is recommended they be done in the following sequence:

1. CMC firmware should be updated prior to updating any server firmware.
2. If you are using Dell Update Packages (DUP) to perform updates on servers, the firmware should be updated in the following order:
 - Lifecycle Controller
 - BIOS
 - iDRAC

Downloading Updates

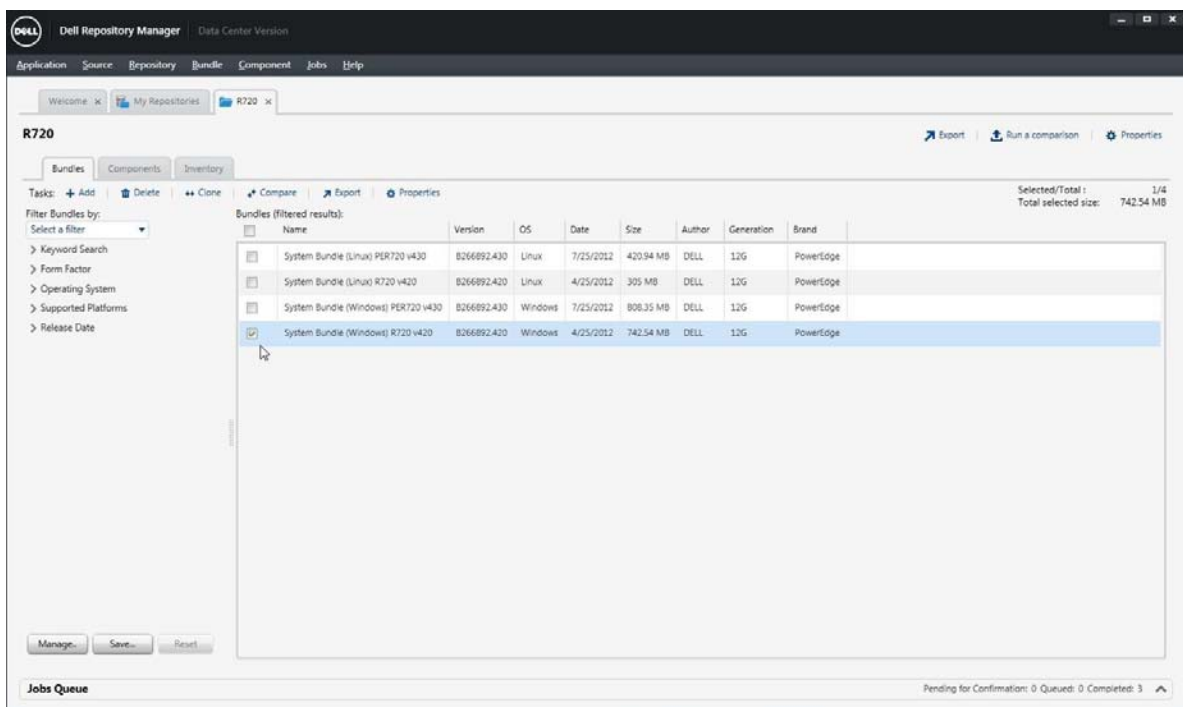
Preferred Method of Downloading Updates Using Dell™ Repository Manager (DRM)

Dell™ Repository Manager (DRM) is an application that helps to manage system updates easily and effectively. DRM is a tool that makes it easy to find multiple updates and download them as a single package. In the latest release of DRM, Dell introduced a new feature to help customers update their local repository, which makes the job of tracking and obtaining the latest updates easier. However, Dell recommends the use of DRM for maintaining an update repository for use with other Dell tools.

Download and install the DRM before performing updates. The tasks involved in updating the local repository with the latest from Dell Online Repository:

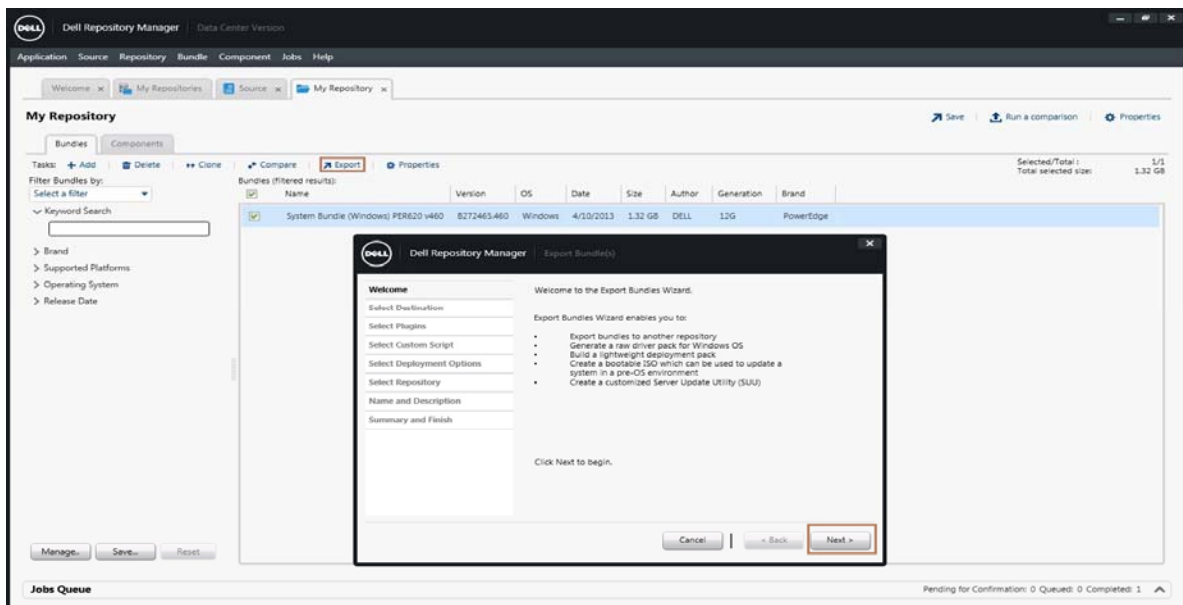
PowerEdge VRTX

1. Select the local repository you want to update.



By default, an existing repository displays the bundles.

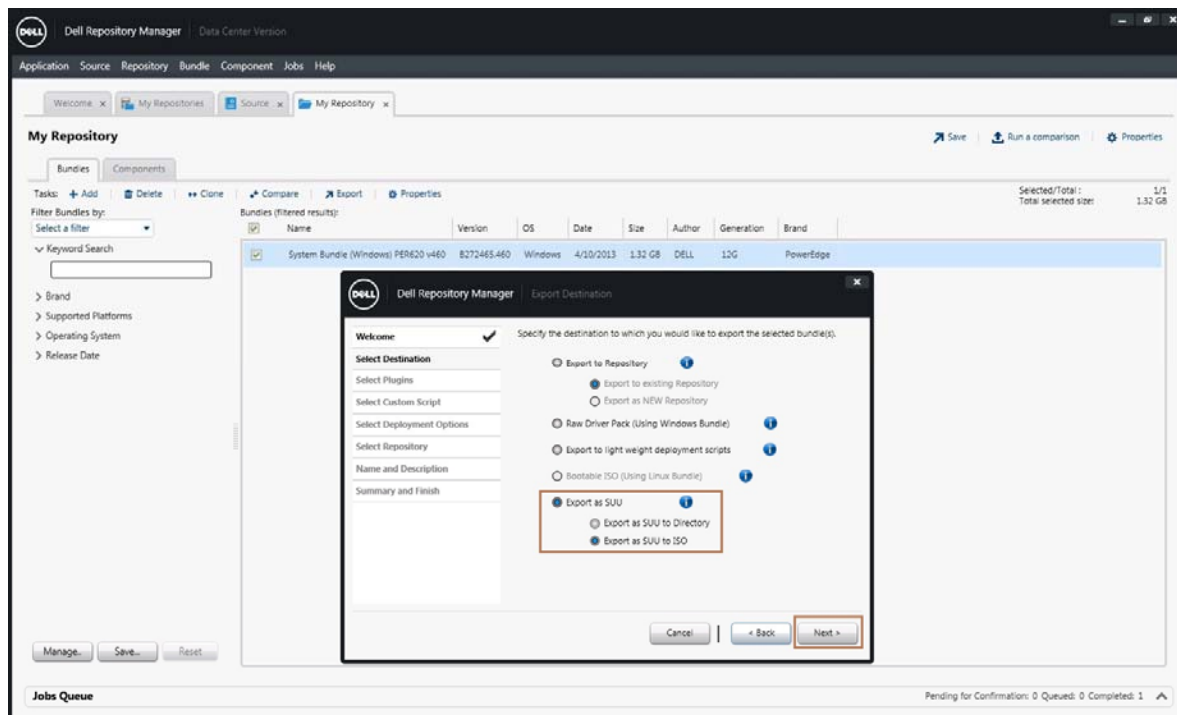
2. Select the corresponding bundle and click Export.
3. In the Export Bundle(s) dialog box, click Next.



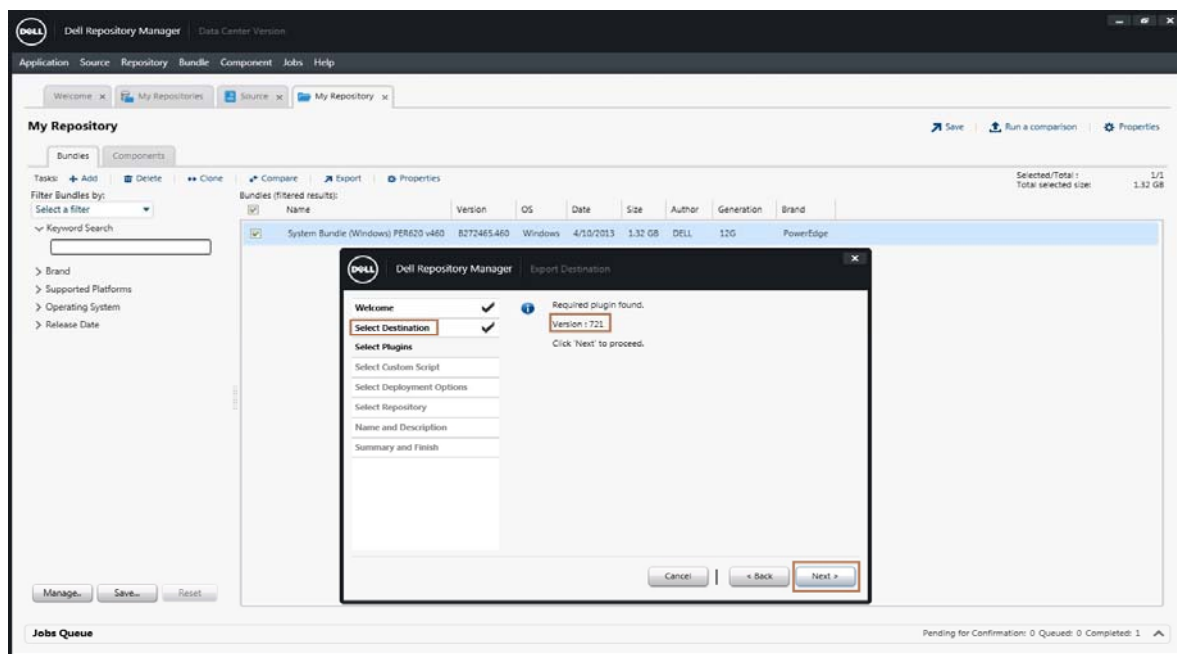
The Export Destination dialog box lists various options.

4. Select the appropriate options and click Next.

Note: In this example, the bundle is being exported as an SUU ISO image.



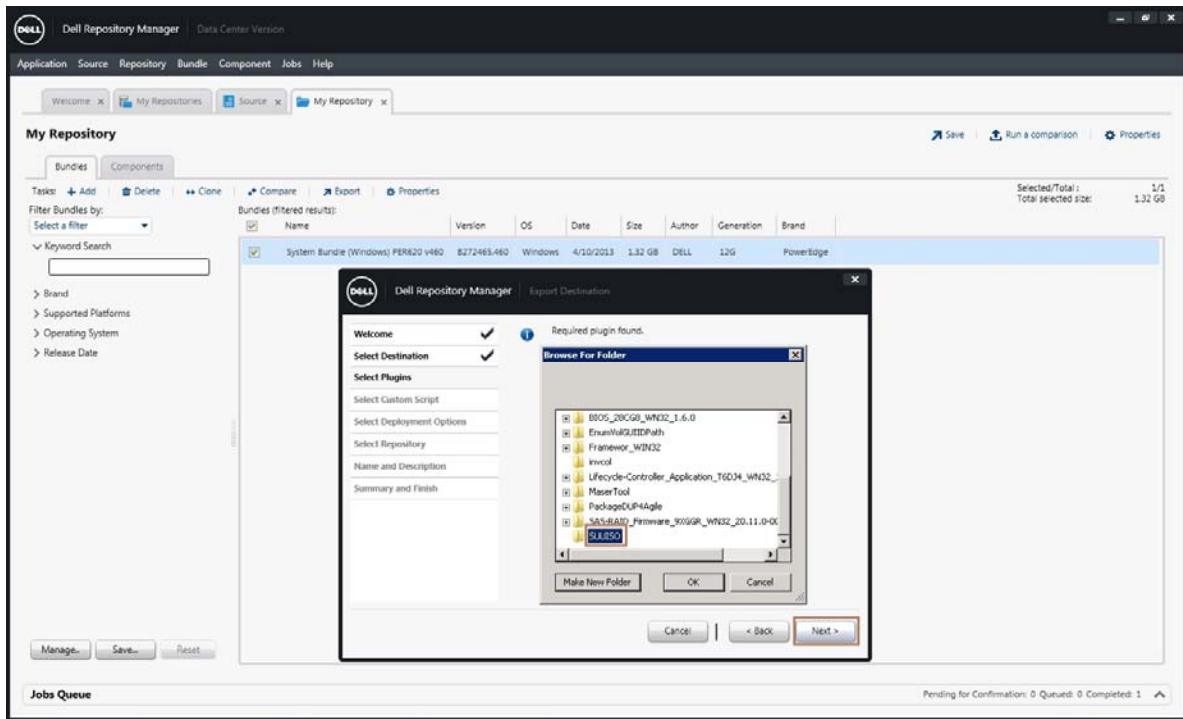
5. The Export Destination wizard verifies whether or not the SUU plug-ins are available. If the SUU is not available, you are asked to download and install the SUU plug-in. Else, the version of plug-in currently used by DRM is displayed. Click Next.



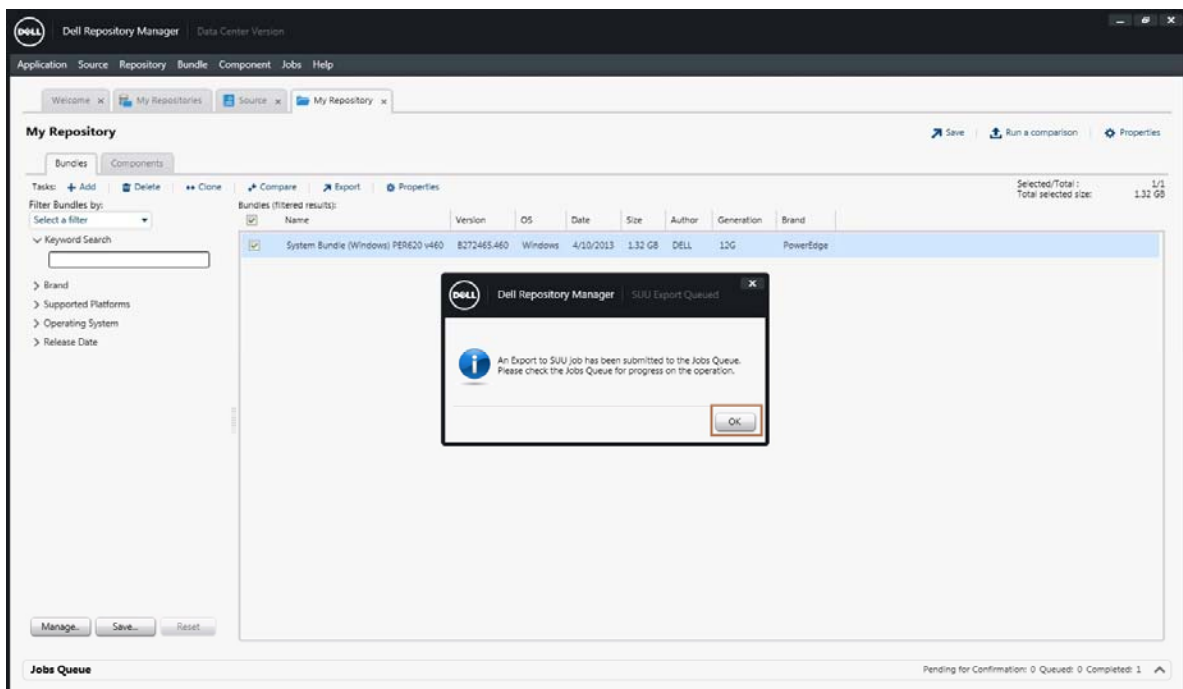
PowerEdge VRTX

6. In the Browse For Folder dialog box, select the destination folder to download the bundle, and then click OK.

Note: In this example, the ISO image will be downloaded in the SUU ISO folder.

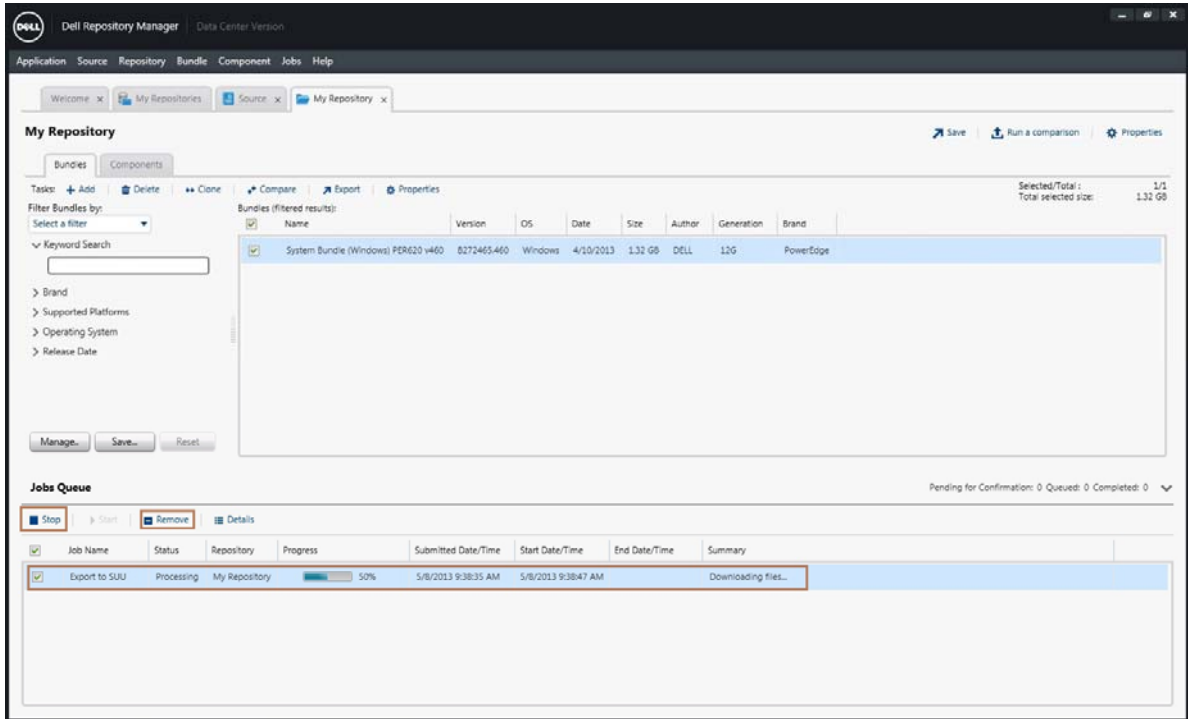


7. The downloaded bundle will be placed in the queue until all firmware(s) are downloaded, click OK.

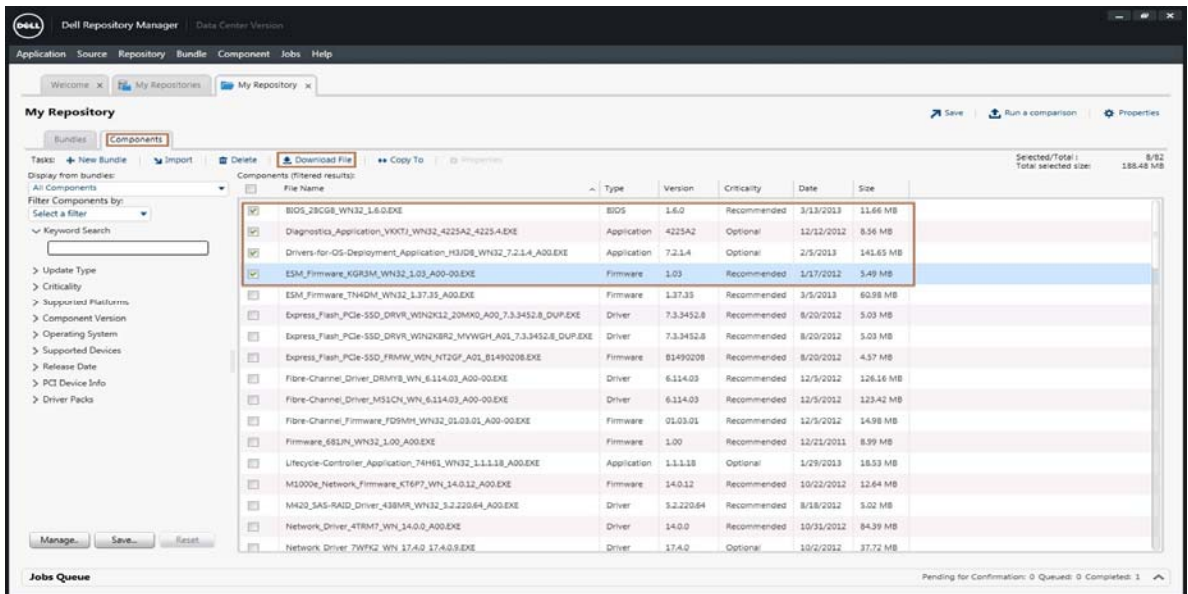


- In the lower-left corner, **Jobs Queue** displays the status of job download operation.

Note: The Jobs Queue tab also allows the job to be stopped or removed from the Job Queue, if required.

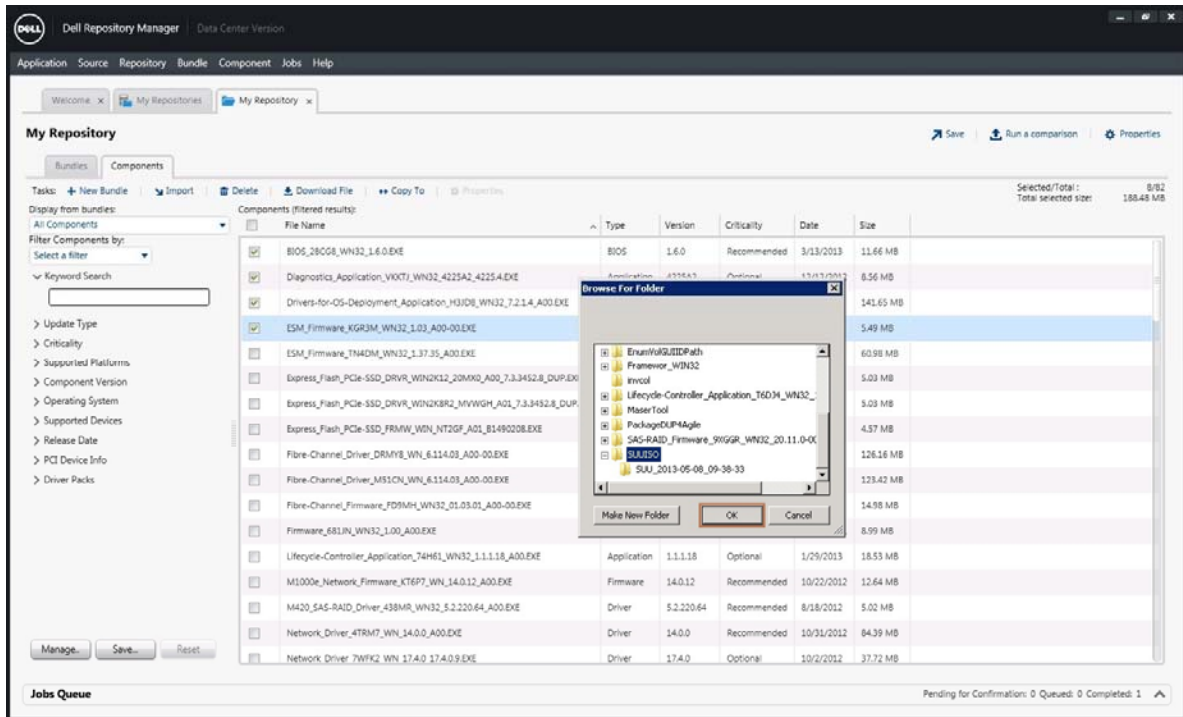


- DUPS that are part of a custom bundle can be downloaded as required from the My Repository tab. To view the DUP(s), go to the **Components** tab where a list of available DUP(s) for the selected bundle is displayed. Select the DUP(s) for download, and then click **Download File**.

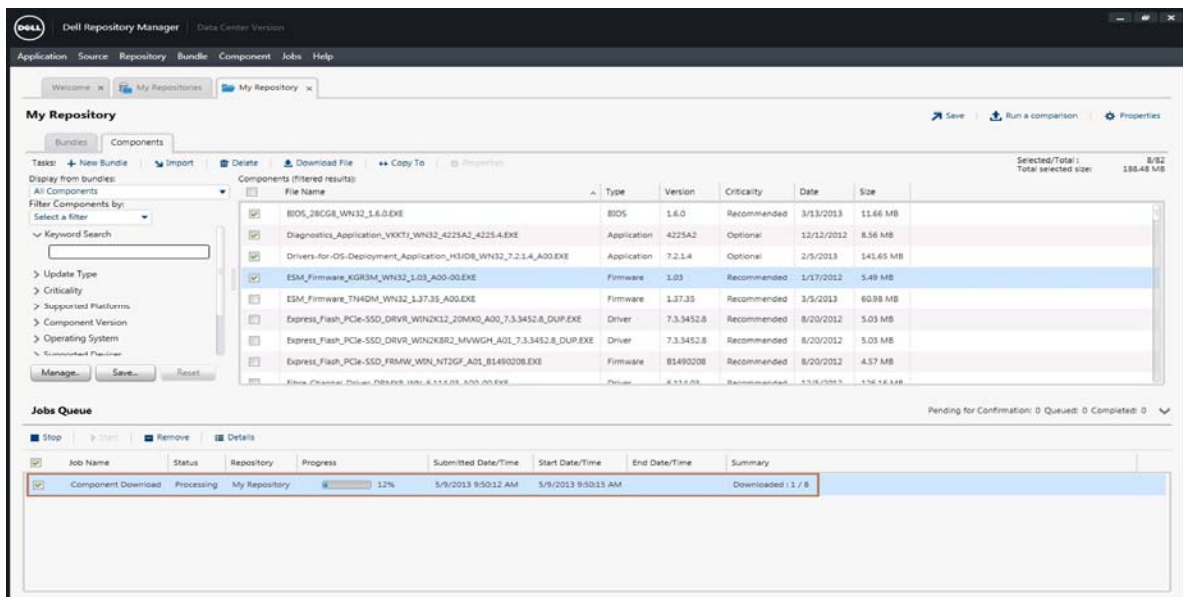


PowerEdge VRTX

10. In the Browse For Folder dialog box, select the directory where you want to store the DUP(s) on the local system, and then click OK.



After the download completes, the server DUP(s) can be updated.



Downloading Firmware

To download the latest version of CMC firmware, Chassis Infrastructure, RAID Controller, iDRAC, or HDD firmware(s) from support.dell.com:

1. Go to www.dell.com/support
2. Choose the product category "Servers, Storage & Networking"
3. Choose the "PowerEdge" server from the list.
4. Select the "PowerEdge VRTX" from the list of Power Edge Servers.
5. Select the Drivers and Download tab. The Dell firmware(s) packages will be listed under various categories.
6. Download the package or Dell Update Package from the list.

Updates Using CMC Web Interface

Viewing Currently Installed Firmware Versions

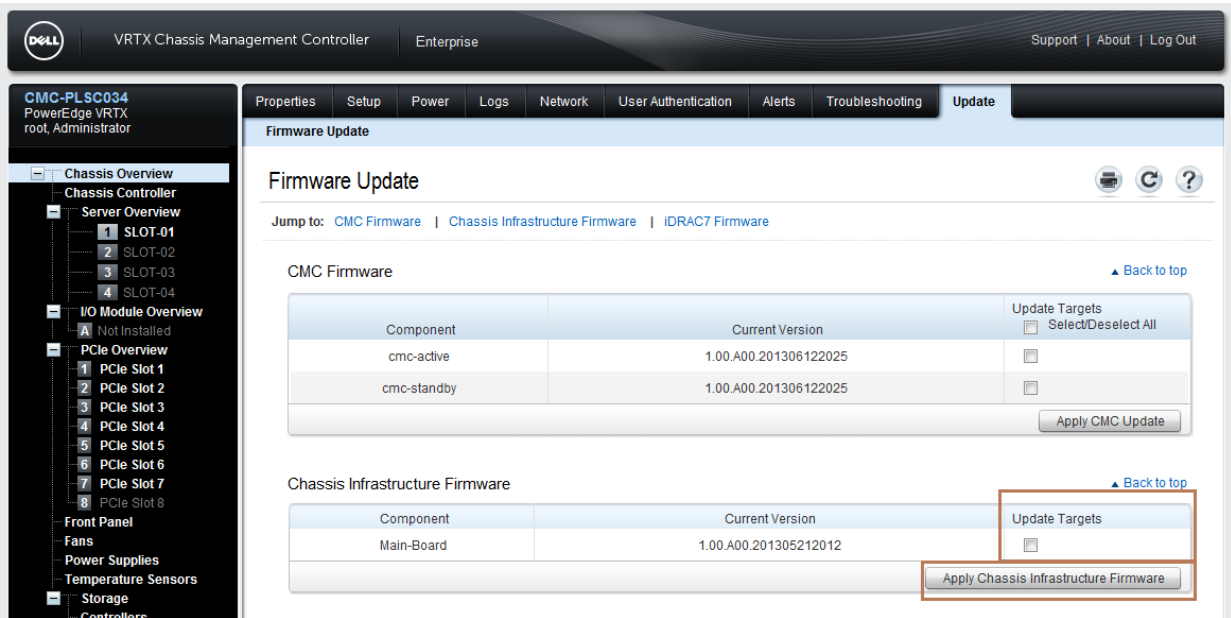
To view the currently installed CMC firmware version, go to:

Chassis Overview → Update → Firmware Update → CMC Firmware.

The screenshot shows the Dell VRTX Chassis Management Controller (CMC) web interface. The top navigation bar includes the Dell logo, "VRTX Chassis Management Controller", "Enterprise", and "Support | About | Log Out". The left sidebar shows a tree view of the system components, including "Group: Krishna", "CMC-PLSC034", "Chassis Controller", "Server Overview", "IO Module Overview", and "PCIe Overview". The main content area is titled "Firmware Update" and contains a table of CMC Firmware components. The table has columns for "Component", "Current Version", and "Update Targets". The "Update Targets" column includes a "Select/Deselect All" checkbox and individual checkboxes for each component. A red box highlights the "Update Targets" section, and another red box highlights the "Apply CMC Update" button.

Component	Current Version	Update Targets
cmc-active	1.00.A00.201306112024	<input type="checkbox"/>
cmc-standby	1.00.A00.201306112024	<input type="checkbox"/>

To view the currently installed Chassis Infrastructure firmware version, go to **Chassis Overview** → **Update** → **Firmware Update** → **Chassis Infrastructure Firmware**.



Updating CMC Firmware

To update the CMC Firmware update, click **Chassis Overview** -> **Update** tab and do the following:

1. Locate the CMC Firmware section and select the options under the **Update Targets** column for the CMC or CMC(s) to update the firmware, and then click **Apply CMC Update**.



2. On the **Firmware Update** page, click the **Browse** button.
3. In the **Choose File to Upload** dialog box, select the firmware image from your local system directory to be used to update the CMC, and then click **Open**.
4. Click the **Begin Firmware Update** button.

Firmware Update



CMC Firmware

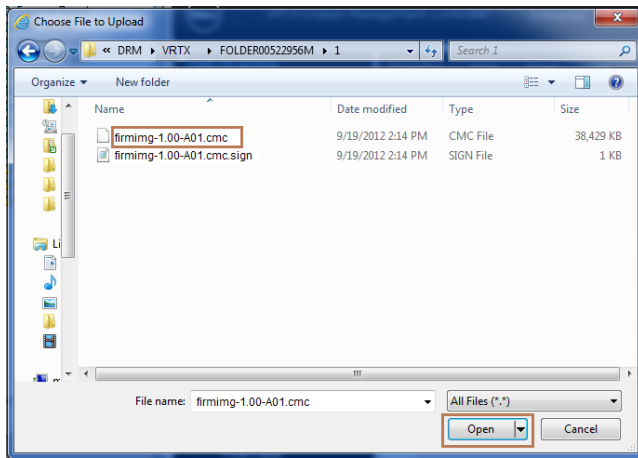
Elapsed Time 00:00

Target Component	Current Firmware Version	Update State
cmc-active	1.00.A00.201306112024	Ready
cmc-standby	1.00.A00.201306112024	Ready

[Back to Component Inventory](#)

Attribute	Value
Firmware Image	<input type="text"/> Browse...

[Begin Firmware Update](#)



- The **Firmware Update Progress** section displays information about a firmware. A status indicator displays on the page while the image file uploads. File transfer time varies on the basis of connection speed. When the internal update process begins, the page automatically refreshes and the Firmware update timer is displayed.

CMC Firmware

Do not navigate away from this page during the file transfer.

Elapsed Time 00:15

Target Component	Current Firmware Version	Update State
cmc-active	1.00.X24.201212051708	Transferring Image File

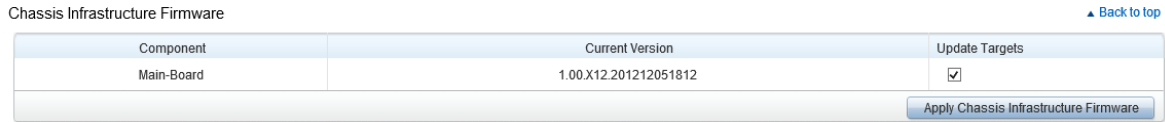
[Cancel File Transfer](#)

Note: For a standby CMC, when the update is complete, the **Update State** field displays **Done**. However, for an active CMC, during the final phases of the firmware update process, the browser session and connection with CMC is lost temporarily as the active CMC is taken offline. After the active CMC has restarted, you must log in again after a few minutes. After CMC resets, the new firmware is displayed on the **Firmware Update** page.

Updating Chassis Infrastructure Firmware

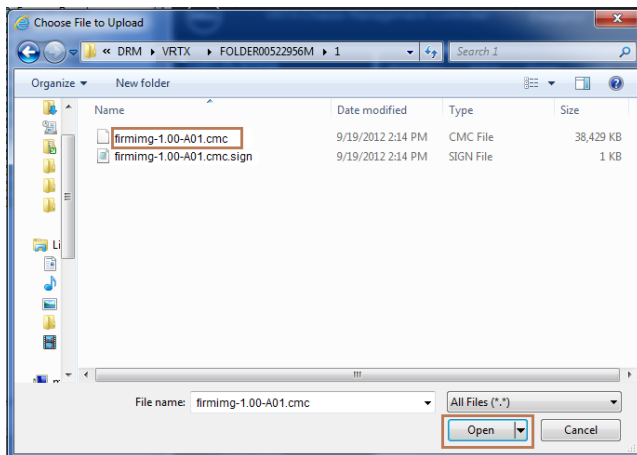
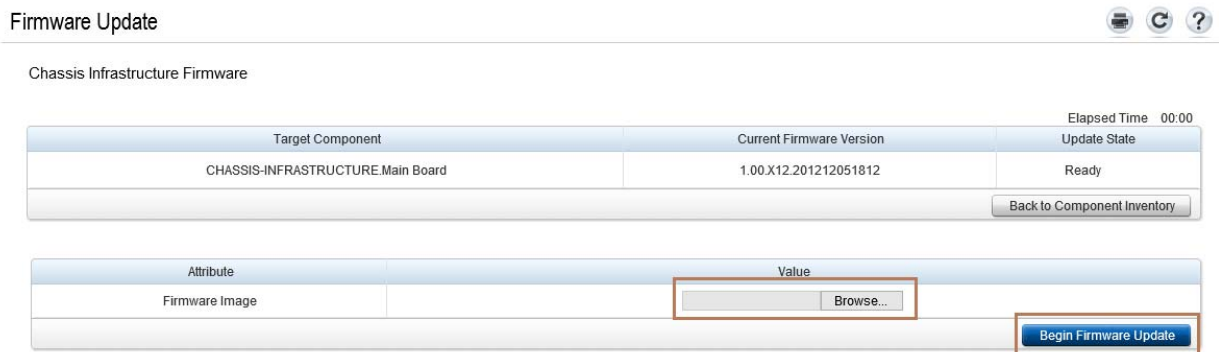
To update the Chassis Infrastructure firmware, go to Chassis Overview → Update and do the following:

1. In the Chassis Infrastructure Firmware section, select the option in the Update Targets column for the Main-Board, and then click Apply Chassis Infrastructure Firmware.



Note: To apply updates for the targets in the Chassis Infrastructure Firmware, the servers must be turned off before starting the update. If the servers are not turned off, the page will redirect to the Chassis Health page to manage and monitor the power states.

2. On the Firmware Update page, under the Chassis Infrastructure Firmware section, click the Browse button.
3. In the Choose File to Upload dialog box, select the firmware image from your local system directory to be used to update the Chassis Infrastructure Firmware, click Open, and then click the Begin Firmware Update button.



- The **Firmware Update Progress** section displays the status of firmware update. A status indicator displays on the page while the image file uploads. File transfer time varies on the basis of connection speed. When the internal update process begins, the page automatically refreshes and the Firmware update timer is displayed.

Chassis Infrastructure Firmware

⚠ Do not navigate away from this page during the file transfer.

Elapsed Time 00:04

Target Component	Current Firmware Version	Update State
CHASSIS-INFRASTRUCTURE.Main Board	1.00.X12.201212051812	Transferring Image File

Cancel File Transfer

You must powercycle the chassis after performing update on Chassis Infrastructure Firmware.

Updating IOM Firmware

IOM Firmware updated is performed using the IOM user interface:

- Copy the `r2401-10052.ros` files to a TFTP server.
- Turn on the VRTX Chassis.
- Make sure that the TFTP server is addressable on the CMC Ethernet segment.
- Configure the ARC-II out-of-band port IP Address so that it is in the same network as the TFTP server.

In this example, TFTP server IP address is 192.168.1.162, and ARC-II OOB is 192.168.1.167/24.

- Connect to CMC using Telnet/SSL by using an Ethernet-based attachment.
- Log in to the CMC and then type `connect switch`, at the login prompt enter the User Name and Password (*default is the CMC user name and password*).

```
login as: root
root@10.36.0.107's password:

Welcome to the VRTX CMC firmware version 1.00

$ connect switch
Connected to remote port.
Escape character is '^\''.

User Name:root
Password:*****

console#
```

3. Run the CMC `getversion` command to verify which firmware version is currently running on the device. The screen shot here shows as example of the output.

```
# getversion
-sh: getversion: not found
# racadm getversion
<Server>      <iDRAC Version>      <Blade Type>      <Gen>      <Updatable>
server-1     1.40.40 (Build 16)   PowerEdge M620    iDRAC7     Y
server-3     1.40.40 (Build 17)   PowerEdge M620    iDRAC7     Y
server-4     1.37.35 (Build 02)   PowerEdge M520    iDRAC7     Y

<Switch>      <Model Name>          <HW Version>      <FW Version>
switch-1     R1-2401 ROBO 1Gb Switch Module    X01             1.0.0.62

<CMC>         <CMC Version>          <Updatable>
cmc-1        1.00.A00.201306122025    Y

<Chassis Infrastructure>      <FW Version>          <FQDD>
Main Board                    1.00.A00.201305121986  System.Chassis.1#Infra
structure.1

<Storage Controller>        <FW Version>          <FQDD>
Shared PERC8                  23.8.2-0005          RAID.ChassisIntegrated
.1-1

<Storage Enclosure>        <FW Version>          <FQDD>
VRTX2.5x25 0:0                1.00                  Enclosure.Internal.0-0
:RAID.ChassisIntegrated.1-1
```

4. Run the CMC `connect switch` command to redirect the console to the switch.

```
# connect switch
connect: acquiring remote port.
Connected to remote port.
Escape character is '^\''.

User Name:root
Password:*****

console#
```

5. Run the switch `show version` command to check the switch firmware version.

```
console# show version
SW version    1.0.0.62 ( date 22-Apr-2013 time 18:22:25 )
Boot version  1.0.0.9 ( date 21-Jan-2013 time 15:19:49 )
HW version    00.00.00
```

6. Run the switch `show ip interface` command to check the current IP address, gateway IP address, and OOB IP address.

```
console#show ip interface

Gateway IP Address      Activity status      Type
-----
10.94.133.1             Active               dhcp

IP Address              I/F                 Type                 Status
-----
10.94.133.110/24       oob                 DHCP                 Valid

console#
```

7. If the switch-configured OOB IP address is not properly configured to reach the TFTP server, change the OOB IP address by running the switch `ip address` commands listed below.

```
console#config
console(config)#interface oob

console(config-oob)#ip address 192.168.1.167 /24 (for static
address)
OR
console(config-oob)#ip address dhcp (for dhcp server)

console(config-if)#exit
console(config)#exit
console#
```

8. Run the switch `copy` command to copy the image from the TFTP server to the switch.

```
console#copy tftp://oob/192.168.1.162/r2401-10052.ros image

01-Oct-2006 17:36:41 %COPY-I-FILECPY: Files Copy - source URL
tftp://192.168.1.162/r2401-10051.ros destination URL flash://image

01-Oct-2006 17:38:23 %COPY-N-TRAP: The copy operation was completed
successfully

Copy: 7098286 bytes copied in 00:01:39 [hh:mm:ss]
```

9. Run the switch `write` command to update the firmware image.

```
console#write
Overwrite file [startup-config].... (Y/N)[N] ?Y
01-Oct-2006 15:25:56 %COPY-I-FILECPY: Files Copy - source URL running-
config destination URL flash://startup-config
01-Oct-2006 15:26:05 %COPY-N-TRAP: The copy operation was completed
successfully
Copy succeeded
console#
```

10. Run the switch `show bootvar` command to verify the new image is selected for the next system start.

```
console#show bootvar
```

Image	Filename	Version	Date	Status
1	image-1	1.0.0.51	13-Feb-2013 17:10:14	Active*
2	image-2	1.0.0.52	20-Feb-2013 18:41:53	Not active

"*" designates that the image was selected for the next boot

11. If the new image is not active as shown earlier, run the switch `boot system` command to make it active.

```
console#boot system image-2
```


12. Run the switch `reload` command to restart the switch to load the new firmware image.

```
console#reload

This command will reset the whole system and disconnect your current
session.

Do you want to continue ? (Y/N)[N] Y

Shutting down ...
Shutting down ...
Resetting local unit
Shutting down ...

*****
*****      SYSTEM RESET      *****
*****

mii4: link is down
mii4: link is up, 100 FDX
```

13. It may take a few minutes for the switch to complete the reset process. To verify whether or not the switch is running the correct firmware image, run the CMC `connect switch` command to attach to the switch.

```
$ connect switch
connect: acquiring remote port.
Connected to remote port.

Escape character is '^\''.

User Name:root
Password:calvin
```

14. Run the switch `show version` command to verify the firmware version.

```
console#show version

SW version    1.0.0.52 ( date  20-Feb-2013 time  17:10:14 )
Boot version  1.0.0.9  ( date  21-Jan-2013 time  15:19:49 )
HW version    00.00.00
```

Updating Server Component Firmware (BIOS, Lifecycle Controller, OS Drivers Pack, iDRAC, RAID Controller, Hard Disk Drive, and Expander)

Updating iDRAC Firmware

1. To update iDRAC Firmware, you can go to the Firmware Update page by clicking any one of the following.
 - a. Chassis Overview → Chassis Controller → Update
 - b. Chassis Overview → Update
 - c. Chassis Overview → I/O Module Overview → Update
 - d. Chassis Overview → Server Overview → Update

After you click the tabs as listed above, the Firmware Update page is displayed. A sample screen shot is given here.

The screenshot shows the 'Firmware Update' page with three sections:

- Firmware Update:** A table with columns 'Component', 'Current Version', and 'Update Targets'. The row for 'cmc-active' shows version '1.00.X34.201302211714' and a checkbox for 'Update Targets'. A button 'Apply CMC Update' is at the bottom right.
- Chassis Infrastructure Firmware:** A table with columns 'Component', 'Current Version', and 'Update Targets'. The row for 'Main-Board' shows version '1.00.X18.201302221715' and a checkbox for 'Update Targets'. A button 'Apply Chassis Infrastructure Firmware' is at the bottom right. A 'Back to top' link is at the top right.
- iDRAC7 Firmware:** A table with columns 'Slot', 'Component', 'Current Version', and 'Update Targets'. It lists two rows: Slot 2 for 'PowerEdge M520 iDRAC7' (version 1.10.10 (Build 20)) and Slot 4 for 'PowerEdge M620 iDRAC7' (version 1.40.40 (Build 06)). Both rows have an 'Update' link in the 'Update Targets' column. A 'Back to top' link is at the top right.

In the iDRAC7 Firmware section, select the corresponding Update Target(s) to update the iDRAC firmware.

After clicking the Update link the Server Component Update page is displayed. However, if you click the tabs as listed in step 4, the Server Component Update page is directly displayed.

2. The Component/Device Update Filter section has an option to filter information about specific components from the available list of components. For example, to list all the available iDRAC component devices, select the iDRAC option under the Component/Device Update Filter section.

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Component/Device Update Filter

BIOS iDRAC Lifecycle Controller 32-Bit Diagnostics OS Driver Pack Network I/F Controller RAID Controller

Component/Device Firmware Inventory

Slot	Name	Model	Component/Device	Current Version	Rollback Version	Job Status	Update
2	SLOT-02	PowerEdge M520	Integrated Dell Remote Access Controller	1.31.30		<input type="checkbox"/>	<input type="checkbox"/>
4		PowerEdge M620	Integrated Dell Remote Access Controller	1.36.35	1.30.00	<input type="checkbox"/>	<input type="checkbox"/>

Reboot Mode: Reboot Now Update

The **Server Component Update** page displays all iDRACs that are available. One or more iDRACs can be selected for update. You can browse through and select a Windows Dell Update Package (DUP).

Note: Windows DUP can be either 64bit or 32bit.

Component/Device Update Filter

BIOS iDRAC Lifecycle Controller 32-Bit Diagnostics OS Driver Pack Network I/F Controller RAID Controller

Component/Device Firmware Inventory

Slot	Name	Model	Component/Device	Current Version	Rollback Version	Job Status	Update
2	SLOT-02	PowerEdge M520	Integrated Dell Remote Access Controller	1.10.10	1.31.00	Failed	<input type="checkbox"/>
4		PowerEdge M620	Integrated Dell Remote Access Controller	1.36.35	1.30.00		<input checked="" type="checkbox"/>

Component/Device: iDRAC

Firmware Image File: IESM_Firmware_44K2D_WN32_1.40.40_X05.EXE Browse...

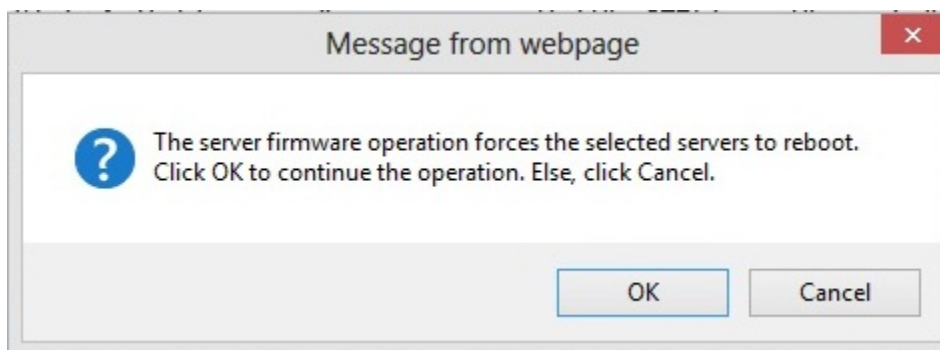
Reboot Mode: Reboot Now On Next Reboot Update

If **Reboot Now** is selected, the update process starts immediately and system is restarted after an update. However, if the **On Next Reboot** option is selected, update process will be started whenever system gets restarted the next time.

After the selection of **Reboot Now**, the following message is displayed.

The server firmware operation forces the selected servers to reboot.

3. Click **OK** to continue the operation. Else, click **Cancel**.



- Click OK to continue the update process. CMC schedules the update task.

Component/Device Update Filter

BIOS iDRAC Lifecycle Controller 32-Bit Diagnostics OS Driver Pack Network I/F Controller RAID Controller

Component/Device Firmware Inventory

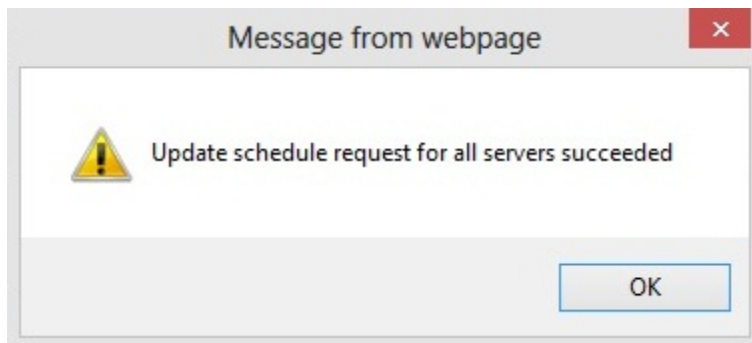
Slot	Name	Model	Component/Device	Current Version	Rollback Version	Job Status	Update
2	SLOT-02	PowerEdge M520	Integrated Dell Remote Access Controller	1.10.10	1.31.00	Failed	<input type="checkbox"/>
4		PowerEdge M620	Integrated Dell Remote Access Controller	1.36.35	1.30.00		<input checked="" type="checkbox"/>

Component/Device: iDRAC
Firmware Image File: d:\rasekhar_g\Desktop\ESM_Firmware_44K2D_W\ Browse...

Do not navigate away from this page until the operation has been scheduled. Reboot Mode: Reboot Now Update

After an update is successfully scheduled, the following message displayed

Update schedule request for all servers succeeded.



The DUP is downloaded and the status in Job Status is shown as Downloading.

Component/Device Update Filter

BIOS iDRAC Lifecycle Controller 32-Bit Diagnostics OS Driver Pack Network I/F Controller RAID Controller

Component/Device Firmware Inventory

Slot	Name	Model	Component/Device	Current Version	Rollback Version	Job Status	Update
2	SLOT-02	PowerEdge M520	Integrated Dell Remote Access Controller	1.10.10	1.31.00	Failed	<input type="checkbox"/>
4		PowerEdge M620	Integrated Dell Remote Access Controller	1.36.35	1.30.00	Downloading	<input checked="" type="checkbox"/>

Component/Device: iDRAC
Firmware Image File: d:\rasekhar_g\Desktop\ESM_Firmware_44K2D_W\ Browse...

Reboot Mode: Reboot Now Update

After downloading, the update task will be scheduled, executed and completed. After completion of the update and restart, the Job Status is indicated as Completed.

PowerEdge VRTX

Component/Device Update Filter

BIOS iDRAC Lifecycle Controller 32-Bit Diagnostics OS Driver Pack Network I/F Controller RAID Controller

Component/Device Firmware Inventory

Slot	Name	Model	Component/Device	Current Version	Rollback Version	Job Status	Update
2	SLOT-02	PowerEdge M520	Integrated Dell Remote Access C	1.10.10	1.31.00	Failed	<input type="checkbox"/>
4		PowerEdge M620	Integrated Dell Remote Access Controller	1.40.40	1.36.00	Completed	<input checked="" type="checkbox"/>
Component/Device				Firmware Image File			
iDRAC				\Desktop\ESM_Firmware_44K2D_WN32_1.40.40 Browse...			
Reboot Mode							Reboot Now <input type="button" value="Update"/>

The Current Version and Rollback Version displays the data in respective columns.

Component/Device Update Filter

BIOS iDRAC Lifecycle Controller 32-Bit Diagnostics OS Driver Pack Network I/F Controller RAID Controller

Component/Device Firmware Inventory

Slot	Name	Model	Component/Device	Current Version	Rollback Version	Job Status	Update
2	SLOT-02	PowerEdge M520	Integrated Dell Remote Access Controller	1.10.10	1.31.00	Failed	<input type="checkbox"/>
4		PowerEdge M620	Integrated Dell Remote Access Controller	1.40.40	1.36.00	Completed	<input checked="" type="checkbox"/>
Component/Device				Firmware Image File			
iDRAC				\Desktop\ESM_Firmware_44K2D_WN32_1.40.40 Browse...			
Reboot Mode							Reboot Now <input type="button" value="Update"/>

Updating RAID Controller Firmware

RAID controller firmware update can be done in two methods:

- Chassis Overview → Server Overview → Update.
- Chassis Overview → Storage → Storage Component Update.

Chassis Overview → Server Overview → Update

1. To update RAID controller firmware, in the Component/Device Update Filter, select the RAID Controller option. A list of RAID controller components that can be updated is displayed. If the Update option is selected, a Browse button is shown, which enables searching for a Dell Update Package (DUP), and then scheduling an update.

Component/Device Update Filter

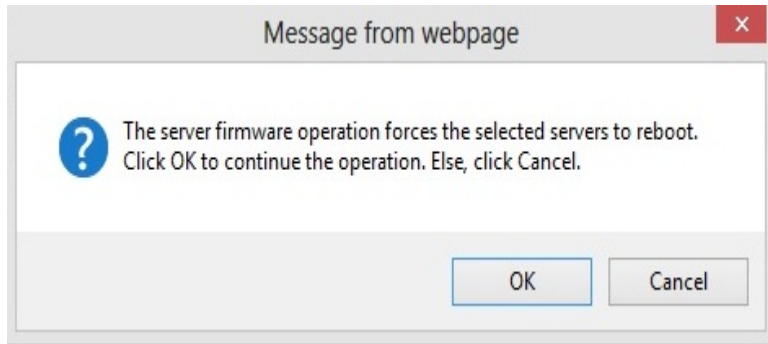
BIOS iDRAC Lifecycle Controller 32-Bit Diagnostics OS Driver Pack Network I/F Controller RAID Controller

Component/Device Firmware Inventory

Slot	Name	Model	Component/Device	Current Version	Rollback Version	Job Status	Update
4		PowerEdge M620	PERC H710 Mini	21.1.0-0007			<input checked="" type="checkbox"/>
Component/Device				Firmware Image File			
RAID Controller				C:\Users\chandrasekhar_g\Desktop\SAS-RAID_F Browse...			
Reboot Mode							Reboot Now <input type="button" value="Update"/>

- The following message is displayed. To schedule an update process, click OK.

The server firmware operation forces the selected servers to reboot. Click OK to continue the operation. Else, click Cancel.



After an update process is scheduled, the job status changes to Scheduled.

Component/Device Update Filter

BIOS iDRAC Lifecycle Controller 32-Bit Diagnostics OS Driver Pack Network I/F Controller RAID Controller

Component/Device Firmware Inventory

Slot	Name	Model	Component/Device	Current Version	Rollback Version	Job Status	Update
4		PowerEdge M620	PERC H710 Mini	21.1.0-0007		Scheduled	<input checked="" type="checkbox"/>

Component/Device Firmware Image File

RAID Controller

Reboot Mode:

The sample screen shot here shows an update process that is in progress.

Component/Device Update Filter

BIOS iDRAC Lifecycle Controller 32-Bit Diagnostics OS Driver Pack Network I/F Controller RAID Controller

Component/Device Firmware Inventory

Slot	Name	Model	Component/Device	Current Version	Rollback Version	Job Status	Update
4		PowerEdge M620	PERC H710 Mini	21.1.0-0007		Running <input type="checkbox"/>	<input type="checkbox"/>

Reboot Mode:

After successful execution of update, current & earlier version numbers are shown accordingly.

Component/Device Update Filter

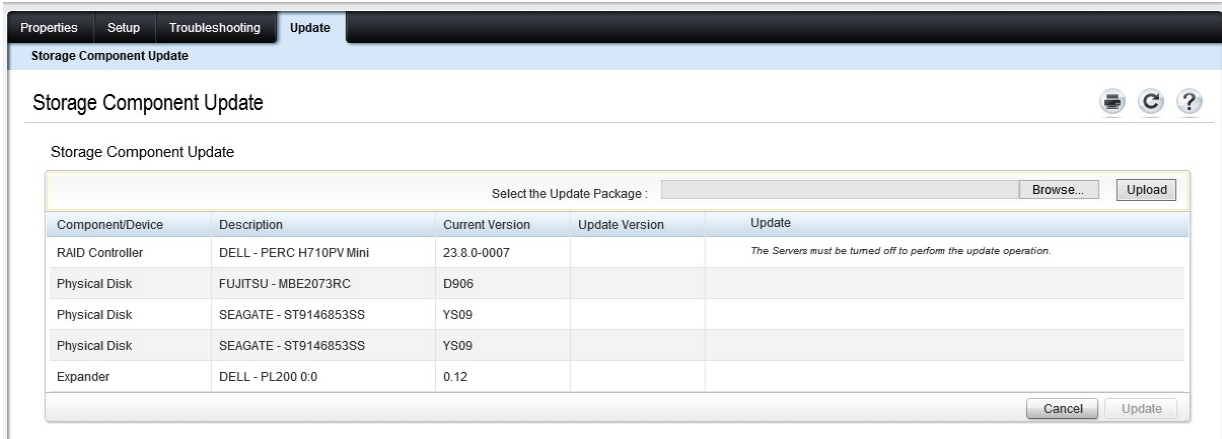
BIOS iDRAC Lifecycle Controller 32-Bit Diagnostics OS Driver Pack Network I/F Controller RAID Controller

Component/Device Firmware Inventory

Slot	Name	Model	Component/Device	Current Version	Rollback Version	Job Status	Update
4		PowerEdge M620	PERC H710 Mini	21.2.0-0007	21.1.0-0007		<input type="checkbox"/>

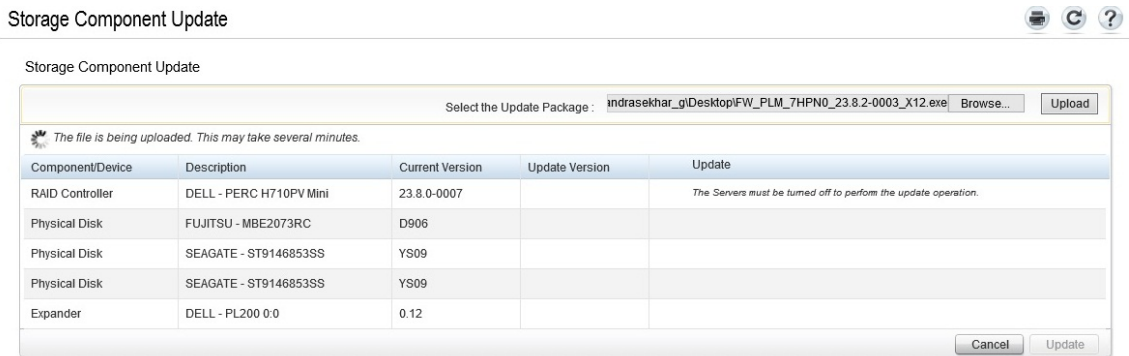
Reboot Mode:

Chassis Overview → Storage → Storage Component Update



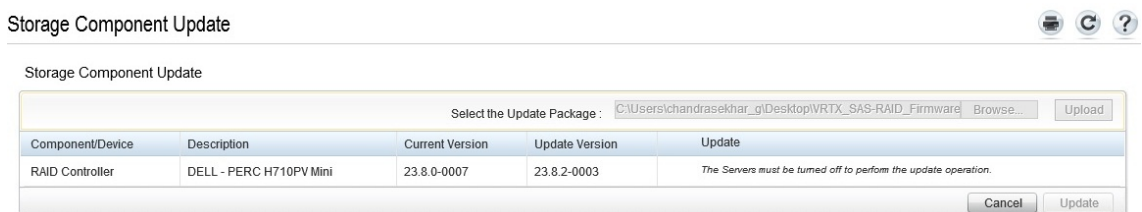
1. To select the required update package, click the **Browse** button, browse through to select the DUP file, and then click **Upload**. The status of uploading is shown by a spinning wheel and the following message.

The file is being uploaded. This may take several minutes.



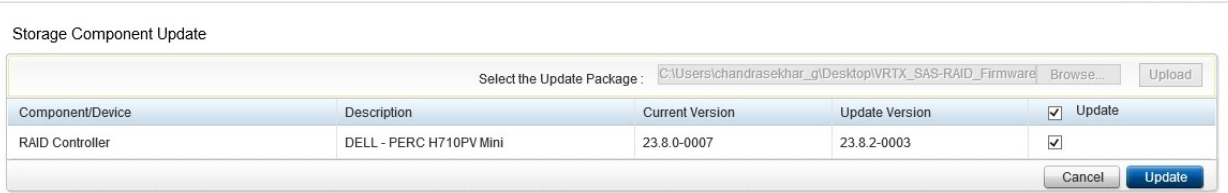
Note: While updating storage components, the corresponding server must be turned off. If a server is not turned off, the following message is displayed.

The servers must be turned off to perform update operation.



If a server is already turned off, upload operation will be successful and the information about current version and update version is displayed. To start the update process, select the **Update** option, and then click the **Update** button.

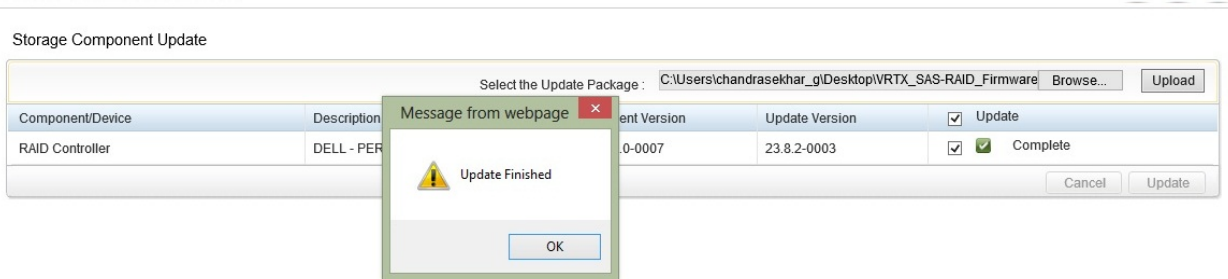
Storage Component Update



After successful completion of an update, the following message is displayed.

Update finished.

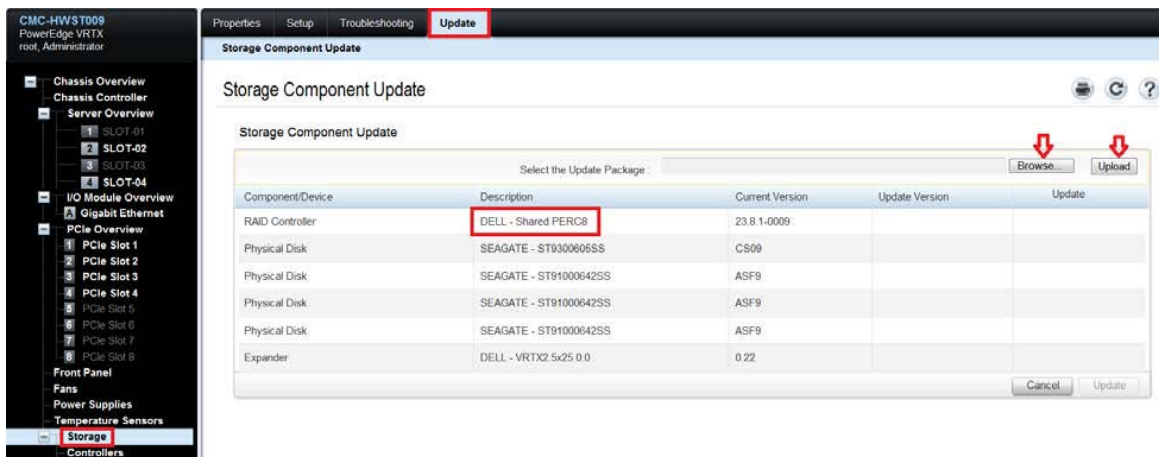
Storage Component Update



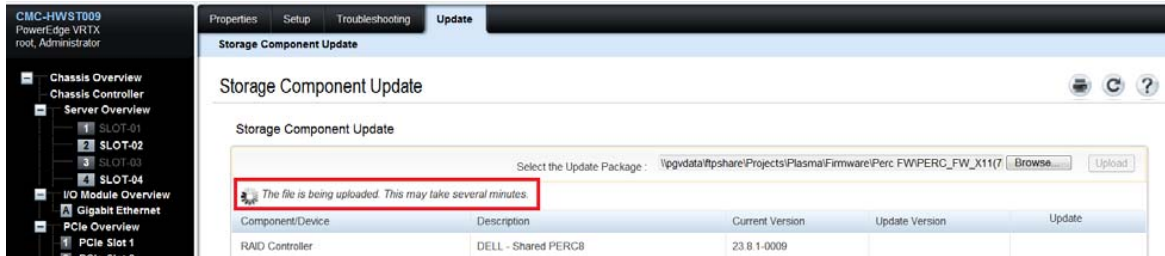
Updating Shared PERC Firmware

Log in to the CMC Web interface. In the left pane, click **Chassis Overview**, click **Storage**, and then click **Update**.

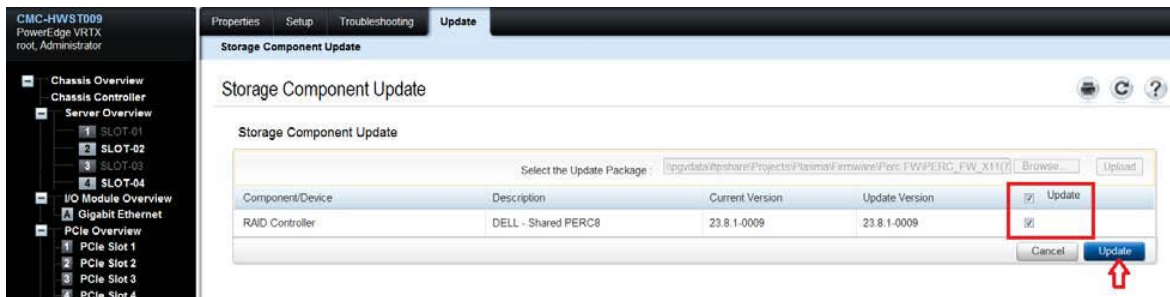
1. On the **Storage Component Update** page, select the RAID controller you want to update, browse through to the firmware image file, click **Browse**, and then click **Upload**.



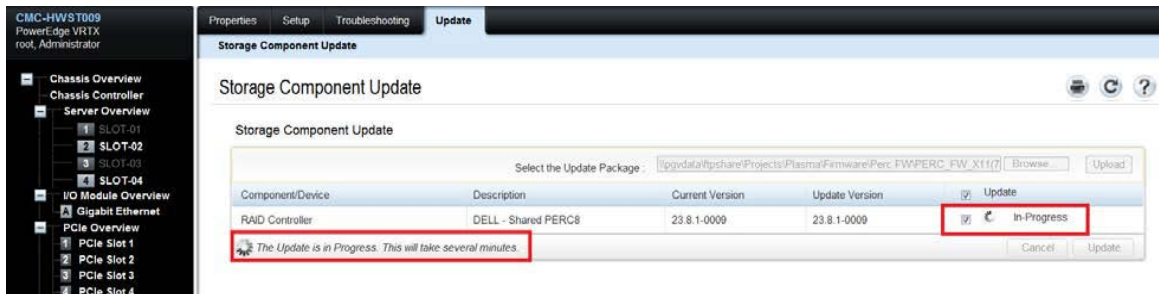
File upload process is started and it takes some time to upload the image file.



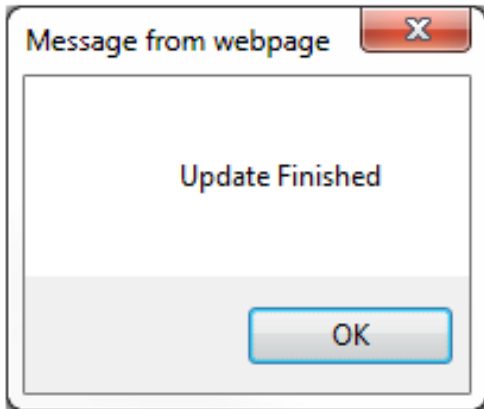
2. Select the Update option, and then click Update.



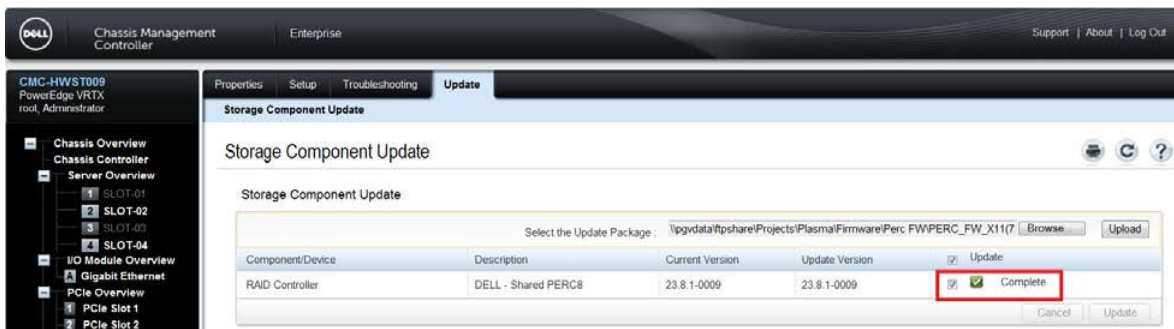
Firmware process is started and it takes some time to complete the update.



After successfully completing the update process, a message is displayed as shown in the screen shot here.



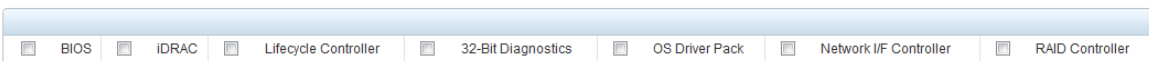
After the firmware of RAID controller is successfully updated, the Update status is indicated as Complete.



Updating Server Component Firmware—BIOS, Lifecycle Controller, OS Drivers Pack, and iDRAC

1. Click Chassis Overview → Server Overview → Update.

Component/Device Update Filter



Component/Device Firmware Inventory

Slot	Name	Model	Component/Device	Current Version	Rollback Version	Job Status	Update
2	SLOT-02	PowerEdge M520	BIOS	1.5.2	1.4.3		<input type="checkbox"/>
			Integrated Dell Remote Access Controller	1.31.30	1.31.00		<input type="checkbox"/>
			Lifecycle Controller	1.1.5.28			<input type="checkbox"/>
			Diagnostics	0			<input type="checkbox"/>
			OS Drivers Pack	0			<input type="checkbox"/>
			System CPLD	1.0.0			<input type="checkbox"/>
			Identity Module	1.00			<input type="checkbox"/>
			Broadcom Gigabit Ethernet BCM5720 - 84:8F:69:FC:E3:8C	7.2.20			<input type="checkbox"/>
			Broadcom Gigabit Ethernet BCM5720 - 84:8F:69:FC:E3:8D	7.2.20			<input type="checkbox"/>
			Broadcom Gigabit Ethernet BCM5720 - 84:8F:69:FC:E3:8E	7.2.20			<input type="checkbox"/>

2. On the Server Component Update, the component inventory of all the servers is displayed and update filter to select particular component firmware to update. Check the component which requires an update.

PowerEdge VRTX

Component/Device Update Filter

BIOS iDRAC Lifecycle Controller 32-Bit Diagnostics OS Driver Pack Network I/F Controller RAID Controller

Component/Device Firmware Inventory

Slot	Name	Model	Component/Device	Current Version	Rollback Version	Job Status	Update
2	SLOT-02	PowerEdge M520	BIOS	1.5.2	1.4.3		<input type="checkbox"/>
4		PowerEdge M620	BIOS	1.4.3		Running	<input type="checkbox"/>

Reboot Mode: Reboot Now

Selecting BIOS gives information about BIOS firmware in all servers such as current version, rollback version, and update status.

Component/Device Update Filter

BIOS iDRAC Lifecycle Controller 32-Bit Diagnostics OS Driver Pack Network I/F Controller RAID Controller

Component/Device Firmware Inventory

Slot	Name	Model	Component/Device	Current Version	Rollback Version	Job Status	Update
2	SLOT-02	PowerEdge M520	BIOS	1.5.2	1.4.3		<input checked="" type="checkbox"/>

Component/Device: BIOS

Firmware Image File:

Reboot Mode: Reboot Now

- After you select the **Update** option, a browse button is displayed to select an update package. Select an update package, and then click the **Update** button. A message is displayed as shown in the screen shot here.

Server Component Update

The server firmware operation forces the selected servers to reboot. Click OK to continue the operation. Else, click Cancel.

Component/Device Update Filter

BIOS iDRAC Lifecycle Controller 32-Bit Diagnostics OS Driver Pack Network I/F Controller RAID Controller

- To continue the update process, click **OK**. The update operation is scheduled.

Component/Device Firmware Inventory

Slot	Name	Model	Component/Device	Current Version	Rollback Version	Job Status	Update
2	SLOT-02	PowerEdge M520	BIOS	1.5.2	1.4.3		<input checked="" type="checkbox"/>

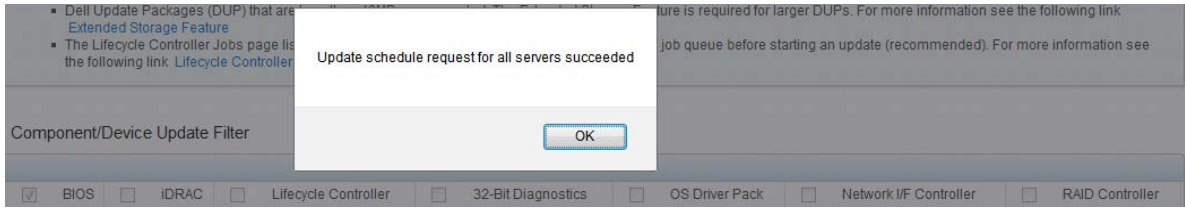
Component/Device: BIOS

Firmware Image File: C:\Users\nikhil_m1\Desktop\white\IM520_BIOS_MWHPI

Do not navigate away from this page until the operation has been scheduled.

Reboot Mode: Reboot Now

After the update operation is scheduled, a message is displayed as shown in the screen shot here.



5. After clicking the OK button, the process will start downloading the update package, which is shown in the Job Status column.

Component/Device Firmware Inventory

Slot	Name	Model	Component/Device	Current Version	Rollback Version	Job Status	Update
2	SLOT-02	PowerEdge M520	BIOS	1.5.2	1.4.3	Downloading	<input checked="" type="checkbox"/>
			Firmware Image File				
			BIOS	C:\Users\nikhil_m1\Desktop\white\M520_BIOS_MWHPI			<input type="button" value="Browse..."/>
						Reboot Mode	<input type="button" value="Reboot Now"/> <input type="button" value="Update"/>

After downloading, the update task will be scheduled, executed and completed. After completion of the update and reboot, the job status is shown as Completed.

Component/Device Firmware Inventory

Slot	Name	Model	Component/Device	Current Version	Rollback Version	Job Status	Update
2	SLOT-02	PowerEdge M520	BIOS	1.5.2	1.4.3	Completed	<input checked="" type="checkbox"/>
			Firmware Image File				
			BIOS				<input type="button" value="Browse..."/>
						Reboot Mode	<input type="button" value="Reboot Now"/> <input type="button" value="Update"/>

Similarly, Lifecycle controller firmware, iDRAC firmware, OS driver pack firmware, 32-bit Diagnostics firmware, RAID controller, and Network I/F controller can be updated.

Updating Firmware Using RACADM Interface

Viewing Currently Installed Firmware Versions

To view the currently installed firmware versions, the `getversion` command is run.

1. Command `racadm getversion` retrieves all module firmware information. For example, `racadm getversion -b` retrieves information about the BIOS of a server.
2. If you want to get information about a specific module, you can use module option. For example, `racadm getversion -m server-1`.

The above command retrieves firmware information of server-1. Here module can be server-*n* (where *n*=1,2,3,4), PERC, HDD, CMC-*n* (*n*=1,2), PERC, and expander.

3. Filter can be used to retrieve information about specific components. Filter option must be used with the `-l` option. For example,

```
racadm getversion -l -m server-1 -m server-2 -f bios
```

retrieves the BIOS-related information of server 1 and server 2

Similarly, `racadm getversion -f idrac` retrieves iDRAC-related information of all the servers.

Updating CMC Firmware and Chassis Infrastructure Firmware

To update the CMC firmware, the `fwupdate` command can be used:

- The `fwupdate` command allows you to update the firmware on the active and standby CMC firmware, chassis infrastructure, iDRAC firmware, and storage components (RAID Controller, Hard Drive and Expander).
- Can update the firmware from FTP and TFTP server by providing an IP address.

To update from FTP server, run the command.

```
racadm fwupdate -f <ftp server ipaddress> <username> <password> -d <path> [-m <module>]
```

Here, `path` is the full path to the firmware image file. If it is not provided, then CMC, by default, searches for in the `C:\ftproot` folder. Module can be one of `cmc-active`, `cmc-standby`, `server-n`, (where `n=1-4`), `iominf-1`, `main-board`, `perc-fqdd`, `expander-fqdd`, and `hdd-fqdd`.

To update from a TFTP server, run the command.

```
racadm fwupdate -g -u -a <tftp server ip address> -d <path> [-m <module>]
```

For example, `racadm fwupdate -g -u -a 10.94.149.100 -d fw_folder -m server-1`

Here, `path` is the full path to the firmware image and module can be one of `cmc-active`, `cmc-standby`, `server-n` (where `n=1 to 4`), `iominf-1`, `main-board`, `perc-fqdd`, `expander-fqdd`, and `hdd-fqdd`.

To see the current status of the firmware update, run the command.

```
racadm fwupdate -s
```

To cancel the update which is being performed,

```
racadm fwupdate -c
```

Updating I/O Module Firmware

To update the CMC I/O Module firmware:

1. Upload the firmware image from the FTP server and start the firmware update.

```
racadm fwupdate -f 192.168.0.100 fred password123 -d firmimg.cmc -m  
cmc-active
```

2. Start I/O Module infrastructure firmware update.

```
racadm fwupdate -u -m iominf-<n>
```

Updating Server Component Firmware (iDRAC, RAID Controller)

To update server component firmware:

1. Copy the payload of iDRAC or RAID Controller in an FTP or TFTP server.
2. To update iDRAC or RAID Controller, update using the TFTP Server.

```
racadm fwupdate -g -u -a <ip_address_of_tftp_server> -d  
<path_to_fw_image>
```

Updating Shared PERC Firmware

To update shared PERC firmware:

1. Copy the payload of Shared PERC Controller in an FTP or TFTP server.
2. To update Shared PERC Controller, update using TFTP Server:

```
racadm fwupdate -g -u -a <ip_address_of_tftp_server> -d <path_to_shared  
PERC_fw_image>
```

```
login as: root  
root@10.94.38.127's password:  
  
Welcome to the CMC firmware version 1.00.X34.201302211714  
  
$ racadm fwupdate -g -u -a 10.94.146.163 -d fw_folder  
Firmware update has been initiated. This update process may take  
several minutes to complete.  
$ █
```

Update using FTP Server.

```
racadm fwupdate -f <ip_address> -d <path>
```

Quick Reference to Update Various Components

The following tabular form shows the quick overview to update for various components both using CMC Web Interface and RACADM command line interface.

Component Firmware	CMC User Interface	RACADM
CMC Firmware	<ol style="list-style-type: none"> 1. Download Modular CMC Chassis package. Image name is firmimg.cmc. 2. Go to the firmware update page by clicking any of the following: <ul style="list-style-type: none"> • Chassis Overview → Update • Chassis Overview → Chassis Controller → Update • Chassis Overview → I/O Module Overview → Update 3. Upload the CMC firmware under the CMC section and begin the firmware update. 	<pre>racadm fwupdate -f <ftp server ipaddress> <username> <password> -d <path> [-m <module>]</pre> <p style="text-align: center;">or</p> <pre>racadm fwupdate -g -u -a <tftp server ip address> -d <path> [-m <module>]</pre>
Chassis Infrastructure firmware	<ol style="list-style-type: none"> 1. Download Chassis Infra Firmware. 2. Go to any of the following pages: <ul style="list-style-type: none"> • Chassis Overview → Update • Chassis Overview → Chassis Controller → Update • Chassis Overview → I/O Module Overview → Update 3. Upload the Chassis Infra firmware under respective section and begin the firmware update. 	Same command as above
IOM Firmware	<ol style="list-style-type: none"> 1. Download IOM Firmware. 2. Go to Chassis Overview → I/O Module Overview → Update 3. Upload the IOM firmware under the respective section and apply for update. 	<pre>racadm fwupdate -u -m iominf-<n></pre>
BIOS	<ol style="list-style-type: none"> 1. Go to any of the following page <ul style="list-style-type: none"> • Chassis Overview → Server Overview → Update • Chassis Overview → Storage → Storage Component Update 2. Select BIOS under Component Update filter 3. Upload BIOS Dell Update Package and begin Update. Image name is "BIOS.exe" 	<pre>racadm fwupdate -g -u -a <ip_address_of_tftp_server> -d <path_to_fw_image></pre> <p style="text-align: center;">or</p> <pre>racadm fwupdate -f <ip_address> -d <path></pre>

Lifecycle Controller	Same as above. Instead of BIOS select the Lifecycle controller filter.	Same command as above
iDRAC	Same as above. Instead of BIOS select the iDRAC filter and upload the <<iDrac.exe>>.	Same command as above
RAID Controller/ Shared PERC	Same as above. Instead of BIOS select the RAID Controller filter and upload the <SAS_Firmware.exe> file.	Same command as above
Expander	Same as above. Instead of BIOS select the Expander filter and upload the <SEP_Firmware.exe>.	Same command as above
Hard Disk Drive	Same as above. Instead of BIOS select the Hard disk filter and upload the <HDDFirmware.exe>.	Same command as above
OS Driver Pack	Same as above. Instead of BIOS select the OS Driver Pack filter and upload the <OSDriverpack.exe>.	Same command as above

Frequently Asked Questions

Q: Can an SUU be used to update VRTX?

A: No. Not all updateable components in Plasma are in DUP format. Therefore, the recommended method to insure that all components are updated properly is either through the CMC or RACADAM.

Q: How to setup a TFTP server for firmware updates?

A: You can download a Windows TFTP server for free, from a variety of sources. It is recommended to use the following:

- SolarWinds
- Tftpd32

Q: Is it possible to update all the components at the same time?

A: Yes, it is possible to update all the components at the same time. Do not check the filter for component update filter and you will see the list of the components which can be updated for the corresponding servers. Choose the list of the servers that you want to update and proceed to update. If you want to update more than one firmware, it is recommended to use mass update instead of one-by-one update.

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