PowerVault NX3340 Network Attached Storage System

Installation and Service Manual

Regulatory Model: E39S Series
Regulatory Type: E39S001
June 2021
Rev. A06

DELL EMC

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.

Contents

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NX3340 system product overview

NX3340 system is a 1U Windows Storage Server system that supports up to:

- Two Intel Xeon Processor Scalable Family processors
- Eight 2.5 inch hard drives
- 24 DIMM slots
- Two AC redundant power supply units

NOTE: All instances of SAS, SATA hard drives are referred to as drives in this document, unless specified otherwise.

Topics:

Supported configurations

The NX3340 system supports the following configurations:

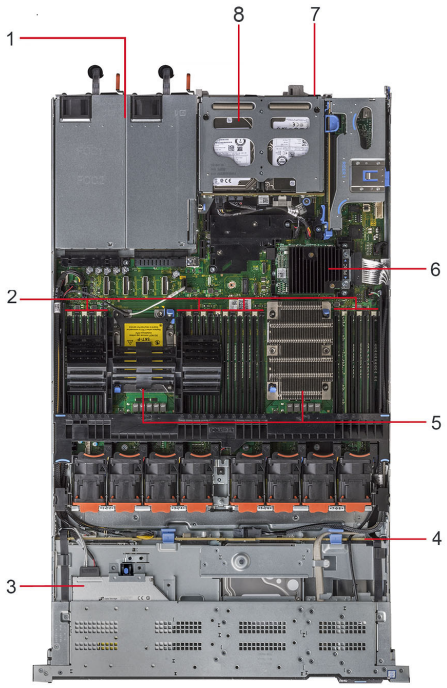

Figure 1. Supported configurations

1. Two AC PSU: 750 W
2. 24 RDIMM @ 3200 MT/s or 2666 MT/s
3. SATA DVD-ROM drive or DVD +/- RW drive
4. Drive backplane (front drives)
5. Two Intel Xeon Processor Scalable Family processors
6. Mini PERC H730P
7. Up to four Network Interface Controller (NIC) ports integrated on the Network Daughter Card (NDC)
8. Two OS drives

Front view of the system

This section describes the features available on the front of the system.

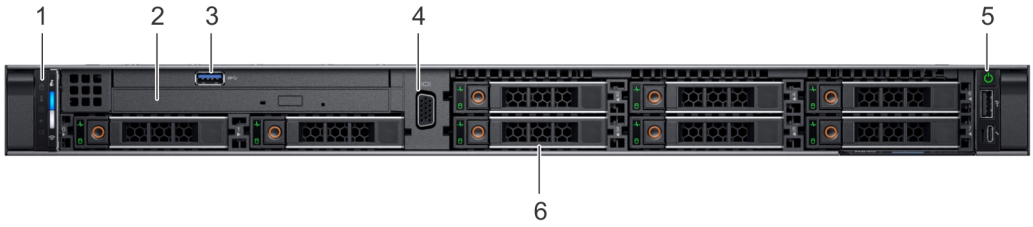

Figure 2. Front view of 8 x 2.5 inch drive system

Item	Ports, panels, and slots	Icon	Description
1	Left control panel	N/A	Contains the system health and system ID, status LED, and the iDRAC Quick Sync 2 (wireless) indicator. • Status LED: Enables you to identify any failed hardware components. There are up to five status LEDs and an overall system health LED (Chassis health and system ID) bar. For more information, see Status LED indicators. • Quick Sync 2 (wireless): Indicates a Quick Sync enabled system. This feature allows management of the system by using mobile devices. This feature aggregates hardware or firmware inventory and various system level diagnostic and error information that can be used in troubleshooting the system. For more information, see the Integrated Dell Remote Access Controller User's Guide at **Dell.com/idracmanuals**.
2	Optical drive	N/A	One optional slim SATA DVD-ROM drive or DVD+/-RW drive. **NOTE:** DVD devices are data only.
3	USB port (optional)		The USB port is USB 3.0 compliant.
4	VGA port		Enables you to connect a display device to the system. For more information, see Technical specifications on page 14.
5	Right control panel	N/A	Contains the power button, USB port, iDRAC Direct microUSB port, and the iDRAC Direct status LED.
6	Drive slots	N/A	Enable you to install drives that are supported on your system. For more information about the supported drives, see Technical specifications on page 14.

Right control panel

The right control panel contains the power switch, a USB port, an iDRAC Direct port and LED.

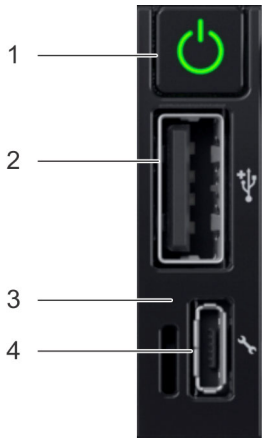

Figure 3. Right control panel view

Item	Indicator or button	Icon	Description
1	Power button		Indicates if the system is turned on or off. Press the power button to manually turn on or off the system. **NOTE:** Press the power button to gracefully shut down an ACPI-compliant operating system.
2	USB port		The USB ports are 4-pin, 2.0-compliant. These ports enable you to connect USB devices to the system.
3	iDRAC Direct LED	N/A	The iDRAC Direct LED indicator lights up to indicate that the iDRAC Direct port is actively connected to a device. For more information, see iDRAC Direct LED indicator codes.
4	iDRAC Direct port (Micro-AB USB)		The iDRAC Direct (Micro-AB USB) port enables you to access the iDRAC Direct (Micro-AB) features. For more information, see the iDRAC User's Guide at **Dell.com/idracmanuals**.

Left control panel

The left control panel contains status indicators, a system health indicator, and the iDRAC Quick Sync 2.0 indicator.

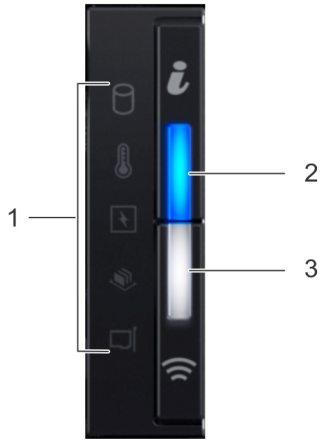

Figure 4. Left control panel

Item	Indicator or button	Icon	Description
1	Status LED indicators	N/A	Indicate the status of the system. For more information, see the Status LED indicators section.
2	System health and system ID indicator		Indicates the system health. For more information, see the System health and system ID indicator codes section.
3	iDRAC Quick Sync 2 wireless indicator		Indicates if the iDRAC Quick Sync 2 wireless option is activated. The Quick Sync 2 feature allows management of the system using mobile devices. This feature aggregates hardware or firmware inventory and various system level diagnostic or error information that can be used in troubleshooting the system. You can access system inventory, Dell Lifecycle Controller logs or system logs, system health status, and also configure iDRAC, BIOS, and networking parameters. You can also launch the virtual Keyboard, Video, and Mouse (KVM) viewer and virtual Kernel based Virtual Machine (KVM), on a supported mobile device. For more information, see the Integrated Dell Remote Access Controller User's Guide at **Dell.com/idracmanuals**.

Back view of the system

This section describes the features available on the back of the system.

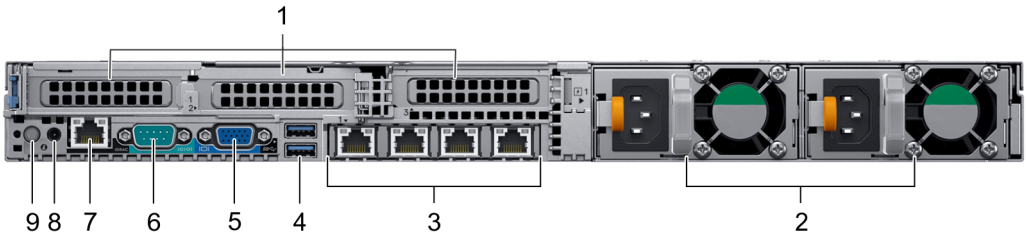

Figure 5. Back view of system with 3 PCIe expansion slots

For more information about port specifications, see Technical specifications on page 14.

Item	Ports, panels, or slots	Icon	Description
1	PCIe expansion card slot(s)	N/A	The expansion slot(s) enable you to connect PCI Express expansion cards. For more information about the expansion cards that are supported on your system, see Expansion card installation guidelines on page 77.
2	Power supply unit (2)	N/A	For more information about the PSUs, see Technical specifications on page 14.
3	NIC port (4)		The NIC ports that are integrated on the network daughter card (NDC) provide network connectivity.
4	USB 3.0 port		The USB ports are 9-pin and 3.0-compliant. These ports enable you to connect USB devices to the system.
5	VGA port		Enables you to connect a display device to the system.
6	Serial port		Enables you to connect a serial device to the system.
7	iDRAC9 Enterprise port		Enables you to remotely access iDRAC. For more information, see the iDRAC User's Guide at **Dell.com/idracmanuals**.
8	CMA power port	N/A	The Cable Management Arm (CMA) power port enables to connect the cable to the CMA.
9	System identification button		The System Identification (ID) button is available on the front and back of the systems. Press the button to identify a system in a rack by turning on the system ID button. You can also use the system ID button to reset iDRAC and to access BIOS using the step through mode.

LCD panel

The LCD panel provides system information, status, and error messages to indicate if the system is functioning correctly or requires attention. The LCD panel can be used to configure or view the system's iDRAC IP address. For more information about error messages, see the *Dell Event and Error Messages Reference Guide* at **Dell.com/openmanagemanuals** > **OpenManage software**.

The LCD panel is available only on the optional LCD bezel. The optional LCD bezel is hot pluggable.

The statuses and conditions of the LCD panel are outlined here:

- The LCD backlight is white during normal operating conditions.
- When the system needs attention, the LCD backlight turns amber, and displays an error code followed by descriptive text.
  NOTE: If the system is connected to a power source and an error is detected, the LCD turns amber regardless of whether the system is turned on or off.
- When the system turns off and there are no errors, LCD enters the standby mode after five minutes of inactivity. Press any button on the LCD to turn it on.
- If the LCD panel stops responding, remove the bezel and reinstall it. If the problem persists, see the Getting help section.
- The LCD backlight remains off if LCD messaging is turned off using the iDRAC utility, the LCD panel, or other tools.

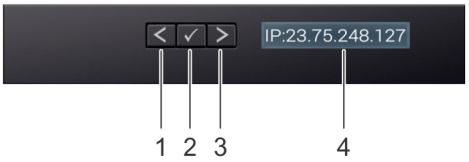

Figure 6. LCD panel features

Item	Button or display	Description
1	Left	Moves the cursor back in one-step increments.
2	Select	Selects the menu item highlighted by the cursor.
3	Right	Moves the cursor forward in one-step increments. During message scrolling: • Press and hold the right button to increase scrolling speed. • Release the button to stop. **NOTE:** The display stops scrolling when the button is released. After 45 seconds of inactivity, the display starts scrolling.
4	LCD display	Displays system information, status, and error messages or iDRAC IP address.

Viewing Home screen

The **Home** screen displays user-configurable information about the system. This screen is displayed during normal system operation when there are no status messages or errors. When the system turns off and there are no errors, LCD enters the standby mode after five minutes of inactivity. Press any button on the LCD to turn it on.

Steps

1. To view the **Home** screen, press one of the three navigation buttons (Select, Left, or Right).
2. To navigate to the **Home** screen from another menu, complete the following steps:
   a. Press and hold the navigation button till the up arrow is displayed.
   b. Navigate to the **Home** icon using the up arrow .
   c. Select the **Home** icon.
   d. On the **Home** screen, press the **Select** button to enter the main menu.

Setup menu

NOTE: When you select an option in the Setup menu, you must confirm the option before proceeding to the next action.

Option	Description
iDRAC	Select **DHCP** or **Static IP** to configure the network mode. If **Static IP** is selected, the available fields are **IP**, **Subnet (Sub)**, and **Gateway (Gtw)**. Select **Setup DNS** to enable DNS and to view domain addresses. Two separate DNS entries are available.
Set error	Select **SEL** to view LCD error messages in a format that matches the IPMI description in the SEL. This enables you to match an LCD message with an SEL entry. Select **Simple** to view LCD error messages in a simplified user-friendly description. For more information about error messages, see the *Event and Error Message Reference Guide for 14th Generation Dell EMC PowerEdge Servers* at **Dell.com/openmanagemanuals** > **OpenManage software**.
Set home	Select the default information to be displayed on the **Home** screen. See View menu on page 12 for the options and option items that can be set as the default on the **Home** screen.

View menu

NOTE: When you select an option in the View menu, you must confirm the option before proceeding to the next action.

Option	Description
iDRAC IP	Displays the **IPv4** or **IPv6** addresses for iDRAC9. Addresses include **DNS** (**Primary** and **Secondary**), **Gateway**, **IP**, and **Subnet** (IPv6 does not have Subnet).
MAC	Displays the MAC addresses for **iDRAC**, **iSCSI**, or **Network** devices.
Name	Displays the name of the **Host**, **Model**, or **User String** for the system.
Number	Displays the **Asset tag** or the **Service tag** for the system.
Power	Displays the power output of the system in BTU/hr or Watts. The display format can be configured in the **Set home** submenu of the **Setup** menu.
Temperature	Displays the temperature of the system in Celsius or Fahrenheit. The display format can be configured in the **Set home** submenu of the **Setup** menu.

Inside the system

NOTE: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell EMC is not covered by your warranty. Read and follow the safety instructions that are shipped with your product.

NOTE: Components that are hot swappable are marked orange and touch points on the components are marked blue.

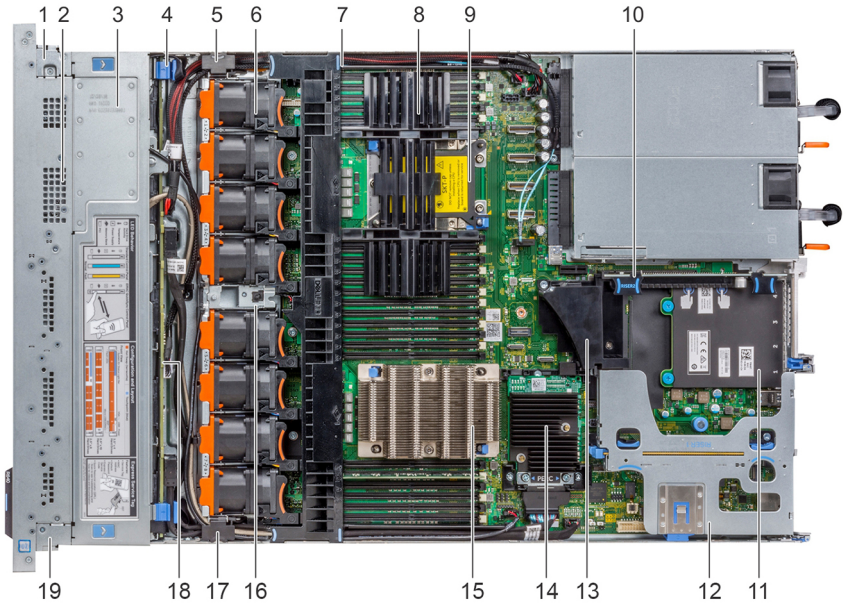

Figure 7. Inside the system - 3 PCIe expansion risers

1. right control panel cable cover
2. hard drive cage
3. backplane cover
4. backplane release latch
5. cabling latch
6. cooling fan (8)
7. air shroud
8. processor and DIMM blank
9. processor 2 slot
10. expansion riser 2 A
11. network daughter card
12. expansion riser 1 A
13. PCIe shroud
14. integrated storage controller card
15. processor 1
16. intrusion switch
17. cabling latch
18. hard drive backplane
19. left control panel cable cover

Locating the Service Tag of your system

You can identify your system using the unique Express Service Code and Service Tag. Pull out the information tag in front of the system to view the Express Service Code and Service Tag. Alternatively, the information may be on a sticker on the chassis of the system. The mini Enterprise Service Tag (EST) is found on the back of the system. This information is used by Dell Technical Support to route calls to the appropriate personnel.

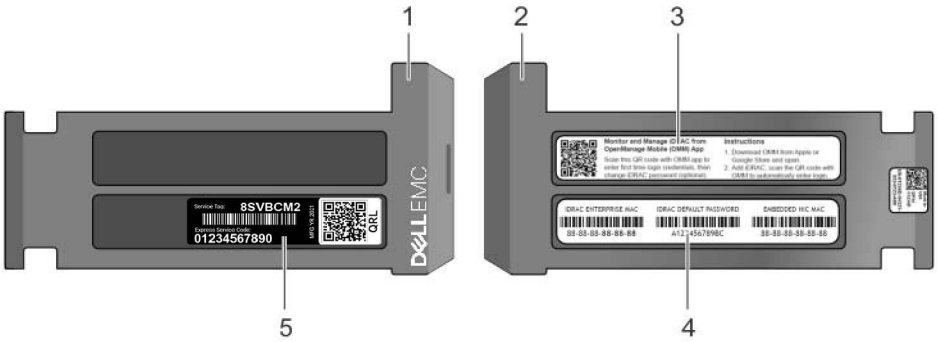

Figure 8. Locating Service Tag of your system

1. Information tag (front view)
2. Information tag (back view)
3. OpenManage Mobile (OMM) label
4. iDRAC MAC address and iDRAC secure password label
5. Service Tag

2

Technical specifications

This section describes the technical and environmental specifications of your system.

Topics:

System dimensions

This section provides details of the dimensions of the NX3340 system.

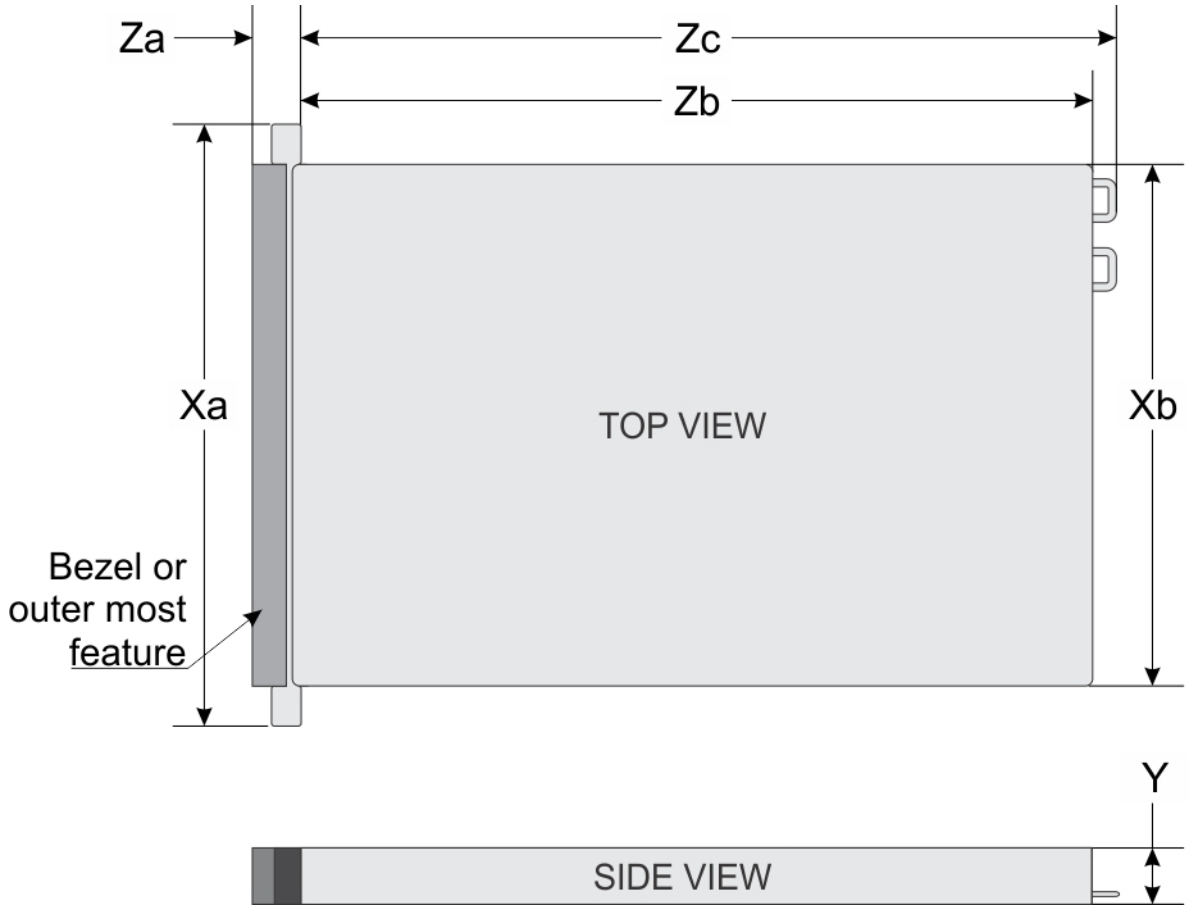

Figure 9. System dimensions

System	Xa	Xb	Y	Za (with bezel)	Za (without bezel)	Zb*	Zc
8 x 2.5 inch	482.0 mm (18.97 inches)	434.0 mm (17.08 inches)	42.8 mm (1.68 inches)	35.84 mm (1.41 inches)	22.0 mm (0.87 inches)	683.05 mm (26.89 inches)	721.91 (28.42 inches)

NOTE: * indicates that Zb goes to the nominal rear wall external surface, where the system board I/O connectors are located.

Chassis weight

The maximum chassis weight is 21.9 kg (48.28 lbs).

Processor specifications

The NX3340 system supports up to two Intel Xeon Processor Scalable Family processors.

PSU specifications

The NX3340 system supports up to two AC power supply units (PSUs).

Table 1. PSU specifications

PSU	Class	Heat dissipation (maximum)	Frequency	Voltage
750 W AC	Platinum	2891 BTU/hr	50/60 Hz	100–240 V AC, autoranging

NOTE: Heat dissipation is calculated using the PSU wattage rating.

NOTE: This system is also designed to connect to the IT power systems with a phase to phase voltage not exceeding 230 V.

System battery specifications

The NX3340 system contains a CR 2032 3.0-V lithium coin cell system battery.

Expansion bus specifications

The NX3340 system supports up to four three PCI express (PCIe) 3.0 expansion cards which are installed on the system board using expansion card risers. This system supports 1A and 2A expansion card risers.

Memory specifications

The NX3340 system supports up to twenty four 288-pins RDIMMS with speed of 3200 MT/s or 2666 MT/s with support for memory optimized operation.

Table 2. Memory specifications

DIMM type	DIMM rank	DIMM capacity	Dual processors	
			Minimum RAM	Maximum RAM
RDIMM	Single rank	8 GB	32 GB	192 GB

Storage controller specifications

The NX3340 system supports:

- Internal storage controller cards: PowerEdge RAID Controller (PERC) H730P Mini.
- External storage controller cards: PERC H840 and 12 GB SAS HBA.
- External storage:
  - Two external enclosures for clustering: 12 Gbp/s MD JBOD - MD1400, MD1420, and SC Series.
  - External Tape: LTO external drive, PV114x, TL1000, TL2000, TL4000, ML6000

Drive specifications

The NX3340 system supports up to eight 2.5" SAS, and SATA hard drives and an optional optical drive.

The system ships with either two or four OS drives. Additional data drives must be ordered separately from the factory.

Ports and connectors specifications

The NX3340 system supports USB ports, NIC ports, VGA ports, and a serial connector.

USB ports

The NX3340 supports both USB 2.0 and USB 3.0-compliant ports.

Location	Type	Quantity
Front panel	USB 2.0-compliant port	One
Front panel	Micro USB 2.0-compliant port for iDRAC Direct	One
Back panel	USB 3.0-compliant port	Two
Internal	USB 3.0-compliant port	One

NOTE: The micro USB 2.0-compliant port on the front panel can only be used as an iDRAC Direct or a management port.

NIC ports

The NX3340 system supports up to four Network Interface Controller (NIC) ports that are integrated on the network daughter card (NDC). The ports are available in the following configurations.

- Four RJ-45 ports that support 10, 100 and 1000 Mbps
- Four RJ-45 ports that support 100 M, 1 G and 10 Gbps
- Four RJ-45 ports, where two ports support maximum of 10 G and the other two ports maximum of 1 G
- Two RJ-45 ports that support up to 1 Gbps and 2 SFP+ ports that support up to 10 Gbps
- Four SFP+ ports that support up to 10 Gbps
- Two SFP28 ports that support up to 25 Gbps

NOTE: You can install up to three PCIe add-on NIC cards.

Serial connector

The NX3340 system supports one serial connector on the back panel. This port is a 9-pin connector, Data Terminal Equipment (DTE), 16550-compliant.

VGA ports

The Video Graphic Array (VGA) port enables you to connect the system to a VGA display.

The NX3340 system supports one 15-pin VGA port on the front and back of the system.

Video specifications

The NX3340 system supports integrated VGA controller with 4 MB SPI capacity.

Table 3. Supported video resolution options

Resolution	Refresh rate (Hz)	Color depth (bits)
640 x 480	60, 70	8, 16, 32
800 x 600	60, 75, 85	8, 16, 32
1024 x 768	60, 75, 85	8, 16, 32
1152 x 864	60, 75, 85	8, 16, 32
1280 x 1024	60, 75	8, 16, 32
1440 x 900	60	8, 16, 32
1920 x 1200	60	8, 16, 32

Environmental specifications

For additional information about environmental measurements for specific system configurations, see dell.com/environmental_datasheets.

Temperature

Operating (Continuous, for altitude less than 950 m or 3117 ft)	10°C to 35°C (50°F to 95°F) with no direct sunlight on the equipment. **NOTE:** Maximum of 205 W, 28 core processor is supported in systems with eight 2.5 inch processor direct attached PCIe SSD drives, and three PCIe slot chassis.

Storage	–40° to 65°C (–40° to 149°F) at a maximum altitude of 12,000 m (39,370 ft)
Fresh Air	For information on fresh air, see Expanded Operating Temperature section.
Maximum temperature gradient (operating and storage)	20°C/h (68°F/h)
Relative humidity	
Operating	10% to 80% (noncondensing) with 29°C (84.2°F) maximum dew point
Storage	5% to 95% (noncondensing) with 33°C (91°F) maximum dew point
Maximum vibration	
Operating	0.26 G_{rms} at 5–350 Hz (all operation orientation)
Storage	1.88 G_{rms} at 10–500 Hz for 15 min (all six sides tested)
Maximum shock	
Operating	Six consecutively executed shock pulses in the positive and negative x, y, and z axes of 40 G for up to 2.3 ms
Storage	Six consecutively executed shock pulses in the positive and negative x, y, and z axes (one pulse on each side of the system) of 71 G for up to 2 ms
Altitude	
Operating	3,048 m (10,000 ft)
Storage	12,000 m (39,370 ft)
Operating temperature de-rating	
Up to 35 °C (95 °F)	Maximum temperature is reduced by 1°C/300 m (33.8°F/984.25 ft) above 950 m (3,117 ft)
35 °C to 40 °C (95 °F to 104 °F)	Maximum temperature is reduced by 1°C/175 m (1°F/574.14 ft) above 950 m (3,117 ft).
40 °C to 45 °C (104 °F to 113 °F)	Maximum temperature is reduced by 1°C/125 m (1°F/410.1 ft) above 950 m (3,117 ft)

Expanded operating temperature

Expanded operating temperature	Specifications
Continuous operation	5°C to 40°C at 5% to 85% RH with 29°C dew point. **NOTE:** Outside the standard operating temperature (10°C to 35°C), the system can operate continuously in temperatures as low as 5°C and as high as 40°C. For temperatures between 35°C to 40°C, de-rate maximum allowable temperature by 1°C per 175 m above 950 m (1°F per 319 ft).
≤ 1% of annual operating hours	–5°C to 45°C at 5% to 90% RH with 29°C dew point. **NOTE:** Outside the standard operating temperature (10°C to 35°C), the system can operate down to –5°C or up to 45°C for a maximum of 1% of its annual operating hours. For temperatures between 40°C and 45°C, de-rate maximum allowable temperature by 1°C per 125 m above 950 m (1°F per 228 ft).

NOTE: When operating in the expanded temperature range, system performance may be impacted.

NOTE: When operating in the expanded temperature range, ambient temperature warnings may be reported on the LCD panel and in the System Event Log.

Expanded operating temperature restrictions

- Do not perform a cold startup below 5°C.
- The operating temperature specified is for a maximum altitude of 3050 m (10,000 ft).
- 150 W/8 core, 165 W/12 core and higher wattage processor [Thermal Design Power (TDP)>165 W] are not supported.
- Redundant power supply unit is required.
- Non-Dell EMC qualified peripheral cards and/or peripheral cards greater than 25 W are not supported.
- PCIe SSD is not supported.
- Tape backup unit is not supported.

Particulate and gaseous contamination specifications

This section defines the limitations that help avoid any equipment damage or failure from particulate and gaseous contamination. If the levels of particulate or gaseous pollution exceed the specified limitations and result in equipment damage or failure, you may need to rectify the environmental conditions. Remediation of environmental conditions is the responsibility of the customer.

Particulate contamination	Specifications
Air filtration	Data center air filtration as defined by ISO Class 8 per ISO 14644-1 with a 95% upper confidence limit. **NOTE:** The ISO Class 8 condition applies to data center environments only. This air filtration requirement does not apply to IT equipment designed to be used outside a data center, in environments such as an office or factory floor. **NOTE:** Air entering the data center must have MERV11 or MERV13 filtration.
Conductive dust	Air must be free of conductive dust, zinc whiskers, or other conductive particles. **NOTE:** This condition applies to data center and non-data center environments.
Corrosive dust	• Air must be free of corrosive dust. • Residual dust present in the air must have a deliquescent point less than 60% relative humidity. **NOTE:** This condition applies to data center and non-data center environments.

Table 4. Gaseous contamination specifications

Gaseous contamination	Specifications
Copper coupon corrosion rate	<300 Å/month per Class G1 as defined by ANSI/ISA71.04-2013.
Silver coupon corrosion rate	<200 Å/month as defined by ANSI/ISA71.04-2013.

NOTE: Maximum corrosive contaminant levels measured at ≤50% relative humidity.

3

Initial system setup and configuration

This section describes how to install your system, configure it using iDRAC, and how to reinstall the NAS operating system.

Topics:

Setting up your system

Follow these procedures to set up the system and configure the iDRAC IP address for system management.

1. Unpack the system.
2. If applicable, install the system into the rack.
3. Connect any peripherals to the system.For more information about installing the system into the rack, see the Setting up your System poster for your system located at www.dell.com/storagemanuals.
4. Connect the system to its electrical outlet.
5. Turn on the system by pressing the power button or by using iDRAC.
6. Turn on the attached peripherals.

iDRAC configuration

The Integrated Dell Remote Access Controller (iDRAC) is designed to make system administrators more productive and improve the overall availability of Dell systems. iDRAC alerts administrators about system issues and enables them to perform remote system management. This reduces the need for physical access to the system.

Options for setting up an iDRAC IP address

To enable communication between your system and iDRAC, you must first configure the network settings based on your network infrastructure.

You can set up the iDRAC IP address using one of the following interfaces:

- iDRAC Settings utility
- Lifecycle Controller
- Dell Deployment Toolkit
- LCD Panel

For more information, see the *Integrated Dell Remote Access Control User's Guide* located at www.dell.com/idracmanuals.

You must use the default iDRAC IP address 192.168.0.120 to configure the initial network settings, including setting up DHCP or a static IP for iDRAC.

NOTE: To access iDRAC, ensure that you connect the ethernet cable to the dedicated NIC port. You can also access iDRAC through the shared LOM mode, if you have opted for a system that has the shared LOM mode enabled.

Log in to iDRAC

You can log in to iDRAC using one of the following:

- an iDRAC local user account
- a Microsoft Active Directory user account

- as a Lightweight Directory Access Protocol (LDAP) user account
- Single sign-on or a Smart Card

Use the iDRAC secure default password available on the system Information tag.

NOTE: You must have iDRAC credentials to log in to iDRAC

For more information, see the *Integrated Dell Remote Access Control User's Guide* located at www.dell.com/idracmanuals.

You can also access iDRAC using RACADM. For more information, see the *RACADM Command Line Interface Reference Guide* located at www.Dell.com/idracmanuals.

Reinstalling the operating system using a DVD

If you are reinstalling the NAS operating system onto new OS drives, you need to partition the new drives. This section describes both how to repartition the new OS drives and how to reinstall the NAS operating system.

CAUTION: Back up the internal disk drives on your system before reinstalling or upgrading the NAS Operating System. The DVD reinstall process formats or deletes the OS disks (virtual disk 0) resulting in loss of any data or installed applications. The DVD reinstall process does not install RASR USB Recovery application.

The standard RAID configuration for the NX3340 system is:

- OS-only – RAID 1 (two HDDs) or RAID 5 (four HDDs)

Refer to your configuration as-shipped from Dell for details about your specific RAID configuration.

Recovering an OS partition

Follow this procedure to recover your OS partition if becomes corrupt.

Prerequisites

- Failed OS drives have been replaced with new, blank HDDs.

CAUTION: Do not remove or delete the original partitions on the data drives or their associated physical drives.

Steps

1. Turn on or restart your system, and press `F2` to boot into **System Setup**.
2. Click **Device Settings**.
3. Click **Integrated RAID Controller 1: Dell PERC <PERC H730P Mini> Configuration Utility**.
4. In the **Configuration Utility** menu, click **Virtual Disk Management**.
5. Verify the following:
   - Your original Data partition or partitions are shown
   - No OS partition is listed
6. Click **Back** without making any changes to the data partitions.
7. In the **Configuration Utility**, click **Create Virtual Disk**.
8. In the **Create Virtual Disk** dialog box, select the **RAID Level** and **Capacity** options.
   - **Select RAID Level** — See the standard RAID configurations above.
   - **Select Physical Disks From** — Unconfigured Capacity.
9. Click **Select Physical Disks**, choose the drives to configure for RAID.
10. Click **Apply Changes**.
11. Wait for the **Success** screen to display **The operation has been performed successfully**, and then click **OK**.
12. Under **Create Virtual Disk Parameters** set the following options and leave remaining options set to their default settings:
    - **Virtual Disk Name** — enter a unique name such as **OS**
    - **Virtual Disk Size** — in GB (currently this partition is 140GB).
    - **Default Initialization** — Fast (for example)
13. Click **Create Virtual Disk**.
14. In the Warning screen, select **Confirm** and click **Yes**.

15. When the message appears that the virtual disk was created successfully, click **OK**.
16. Click **Back** two times to return to the **Configuration Utility** Main Menu.
17. Click **Virtual Disk Management**.
18. Verify that both the newly-created OS partition and the existing data partitions are present.
19. Click **Back** to return to the **Configuration Utility** Main Menu.
20. Click **Controller Management**.
21. For **Select Boot Device** select **OS Partition**.
22. Click **Back** to return to the **Configuration Utility** Main Menu and click **Finish**.
23. Click **Finish** again and reboot the system.
24. During the restart, press `F2` to boot into **System Setup** .
25. On the **System Setup Main Menu**, click **System BIOS**.
26. In the System BIOS options, select **Boot Settings** > **BIOS Boot Settings**.
27. Verify that the Integrated RAID Controller 1: PERC H730P Mini is present and is selected as the Boot Option.
28. Back-out of the BIOS, saving any changes as needed.
29. Restart the system and press **F10=Lifecycle Controller** to proceed to deploying the OS.

Deploying the OS using Dell Lifecycle Controller

Follow this procedure to deploy the OS using Dell Lifecycle Controller.

Prerequisites

- OS drives are installed and have been partitioned.
- External USB DVD ROM is available.
- Windows Storage Server 2016 product key is available. This should be attached to the system cover.

NOTE: When you open the LifeCycle Controller for the first time, the Initial Setup Wizard starts. Before deploying the OS as described below, follow the prompts in the wizard to configure the Lifecycle Controller.

Steps

1. If not completed already, restart the system and press **F10=Lifecycle Controller**.
2. In the left navigation pane, select **OS Deployment**.
   The OS Deployment wizard starts.
3. On the **Select Deployment path** page select **Go directly to OS Deployment** and click **Next**.
4. On the **Select an Operating System** page accept the default settings:
   - **Boot Mode** — BIOS
   - **Secure Boot** — Disabled
   - **Secure Boot Policy** — Standard
   - **Available Operating Systems** — Microsoft Windows Server 2016
5. Click **Next**.
   The system assembles the OS drivers. This process takes less than five minutes.
6. On the **Select Installation Mode** page, select **Manual Install** and click **Next**.
   The **OS Media** page is displayed.
7. Insert the DVD Reinstall media disk for Windows Storage Server 2016 (Workgroup or Standard) into the external drive and click **Next**.
   The system performs an OS media validation and opens the **Reboot the System** page.
8. Verify the selections and click **Finish**.
9. When prompted, press any key to boot to the operating system media.
   The system reboots and starts the operating system installation wizard.
10. On the language selections page select the applicable language and click **Next**.
11. Select **Install Now** and click **Next**.
12. On the product activation page enter your product key and click **Next**.
13. On the license acceptance page select **I accept the license terms** and click **Next**.
14. On the next page select **Custom: Install the newer version of Storage Server only (advanced)**.

15. In the **Where do you want to install Storage Server?** option, select the 140 GB drive that was created in the OS partition recovery steps.

    NOTE: Do **not** select an existing data drive for OS installation. Make sure the drive selected is the new OS drive created for this purpose.

16. In the **OS Target-Drive** option select **Unallocated Space** (the default) and click **Next**.
    The installation begins and takes 60 - 90 minutes to complete. Errors encountered are flagged on the front panel LCD of your device.
17. Finish the installation by completing the initial configuration steps described in the product Installation and Service Guide. Go to dell.com/support to download drivers and OpenManage Server Administrator software as needed.

4

Pre-operating system management applications

You can manage basic settings and features of a system without booting to the operating system by using the system firmware.

Topics:

Options to manage the pre-operating system applications

Your system has the following options to manage the pre-operating system applications:

- System Setup
- Dell Lifecycle Controller
- Boot Manager
- Preboot Execution Environment (PXE)

NOTE: The NX3340 system does not support UEFI mode.

System Setup

By using the **System Setup** screen, you can configure the BIOS settings, iDRAC settings, and device settings of your system.

These settings have already been pre-configured per solution requirements. Contact Dell EMC before you change these settings.

NOTE: Help text for the selected field is displayed in the graphical browser by default. To view the help text in the text browser, press F1.

You can access system setup by using two methods:

- Standard graphical browser—The browser is enabled by default.
- Text browser—The browser is enabled by using Console Redirection.

Viewing System Setup

To view the **System Setup** screen, perform the following steps:

Steps

1. Turn on, or restart your system.
2. Press F2 immediately after you see the following message:

```
F2 = System Setup
```

NOTE: If your operating system begins to load before you press F2, wait for the system to finish booting, and then restart your system and try again.

System Setup details

The **System Setup Main Menu** screen provides the following options.

NOTE: The NX Series systems support only BIOS mode. Do not change the boot mode to UEFI because the system will not load the appliance OS when in UEFI mode.

Option	Description
System BIOS	Enables you to configure BIOS settings.
iDRAC Settings	Enables you to configure the iDRAC settings. The iDRAC settings utility is used to set up and configure the iDRAC parameters. You can enable or disable various iDRAC parameters using the iDRAC settings utility. For more information, see the *Integrated Dell Remote Access Control User's Guide* located at www.dell.com/idracmanuals.
Device Settings	Enables you to configure device settings.

System BIOS

You can use the **System BIOS** screen to edit specific functions such as boot order, system password, setup password, set the SATA RAID mode, and enable or disable USB ports.

Viewing System BIOS

To view the **System BIOS** screen, perform the following steps:

Steps

1. Turn on, or restart your system.
2. Press F2 immediately after you see the following message:

```
F2 = System Setup
```

NOTE: If your operating system begins to load before you press F2, wait for the system to finish booting, and then restart your system and try again.

3. On the **System Setup Main Menu** screen, click **System BIOS**.

System BIOS Settings details

The **System BIOS Settings** screen provides the following options.

NOTE: The NX Series systems support only BIOS mode. Do not change the boot mode to UEFI because the system will not load the appliance OS when in UEFI mode.

Option	Description
System Information	Specifies information about the system such as the system model name, BIOS version, and Service Tag.
Memory Settings	Specifies information and options related to the installed memory.
Processor Settings	Specifies information and options related to the processor such as speed and cache size.

Option	Description
SATA Settings	Specifies options to enable or disable the integrated SATA controller and ports.
Boot Settings	Specifies options to choose the Boot mode and allows you to modify the boot settings.
Network Settings	Specifies options to manage the network settings and boot protocols. Legacy network settings are managed from the **Device Settings** menu.
Integrated Devices	Specifies options to manage integrated device controllers and ports, specifies related features and options.
Serial Communication	Specifies options to manage the serial ports, its related features and options.
System Profile Settings	Specifies options to change the processor power management settings, memory frequency.
System Security	Specifies options to configure the system security settings, such as system password, setup password, and Trusted Platform Module (TPM) security. This option also manages the power button on the system.
Miscellaneous Settings	Specifies options to change the system date and time.

System Information

You can use the **System Information** screen to view system properties such as Service Tag, system model name, and the BIOS version.

Viewing System Information

To view the **System Information** screen, perform the following steps:

Steps

1. Turn on, or restart your system.
2. Press F2 immediately after you see the following message:

```
F2 = System Setup
```

NOTE: If your operating system begins to load before you press F2, wait for the system to finish booting, and then restart your system and try again.

3. On the **System Setup Main Menu** screen, click **System BIOS**.
4. On the **System BIOS** screen, click **System Information**.

System Information details

The **System Information** screen provides the following options.

NOTE: The NX Series systems support only BIOS mode. Do not change the boot mode to UEFI because the system will not load the appliance OS when in UEFI mode.

Option	Description
System Model Name	Specifies the system model name.
System BIOS Version	Specifies the BIOS version installed on the system.
System Management Engine Version	Specifies the current version of the Management Engine firmware.

Option	Description
System Service Tag	Specifies the system Service Tag.
System Manufacturer	Specifies the name of the system manufacturer.
System Manufacturer Contact Information	Specifies the contact information of the system manufacturer.
System CPLD Version	Specifies the current version of the system complex programmable logic device (CPLD) firmware.
UEFI Compliance Version	Specifies the UEFI compliance level of the system firmware.

Memory Settings

You can use the **Memory Settings** screen to view all the memory settings and enable or disable specific memory functions, such as system memory testing and node interleaving.

Viewing Memory Settings

To view the **Memory Settings** screen, perform the following steps:

Steps

1. Turn on, or restart your system.
2. Press F2 immediately after you see the following message:

```
F2 = System Setup
```

NOTE: If your operating system begins to load before you press F2, wait for the system to finish booting, and then restart your system and try again.

3. On the **System Setup Main Menu** screen, click **System BIOS**.
4. On the **System BIOS** screen, click **Memory Settings**.

Memory Settings details

The **Memory Settings** screen provides the following information.

Option	Description
System Memory Size	Specifies the memory size in the system.
System Memory Type	Specifies the type of memory installed in the system.
System Memory Speed	Specifies the system memory speed.
System Memory Voltage	Specifies the system memory voltage.
Video Memory	Specifies the amount of video memory.
System Memory Testing	Specifies whether the system memory tests are run during system boot. Options are **Enabled** and **Disabled**. This option is set to **Disabled** by default.

Option	Description
Memory Operating Mode	Specifies the memory operating mode. The options available are **Optimizer Mode**, **Single Rank Spare Mode**, **Multi Rank Spare Mode**, **Mirror Mode**, and **Dell Fault Resilient Mode**. This option is set to **Optimizer Mode** by default. **NOTE:** The **Memory Operating Mode** option can have different default and available options based on the memory configuration of your system. **NOTE:** The **Dell Fault Resilient Mode** option establishes an area of memory that is fault resilient. This mode can be used by an operating system that supports the feature to load critical applications or enables the operating system kernel to maximize system availability.
Current State of Memory Operating Mode	Specifies the current state of the memory operating mode.
Node Interleaving	Specifies if Non-Uniform Memory Architecture (NUMA) is supported. If this field is set to **Enabled**, memory interleaving is supported if a symmetric memory configuration is installed. If the field is set to **Disabled**, the system supports NUMA (asymmetric) memory configurations. This option is set to **Disabled** by default.
Opportunistic Self-Refresh	Enables or disables opportunistic self-refresh feature. This option is set to **Disabled** by default.

Processor Settings

You can use the **Processor Settings** screen to view the processor settings, and perform specific functions such as enabling virtualization technology, hardware prefetcher, logical processor idling, and opportunistic self-refresh.

Viewing Processor Settings

To view the **Processor Settings** screen, perform the following steps:

Steps

1. Turn on, or restart your system.
2. Press F2 immediately after you see the following message:

```
F2 = System Setup
```

NOTE: If your operating system begins to load before you press F2, wait for the system to finish booting, and then restart your system and try again.

3. On the **System Setup Main Menu** screen, click **System BIOS**.
4. On the **System BIOS** screen, click **Processor Settings**.

Processor Settings details

The **Processor Settings** screen details provides the following options:

Option	Description
Logical Processor	Enables or disables the logical processors and displays the number of logical processors. If this option is set to **Enabled**, the BIOS displays all the logical processors. If this option is set to **Disabled**, the BIOS displays only one logical processor per core. This option is set to **Enabled** by default.
CPU Interconnect Speed	Enables you to govern the frequency of the communication links among the CPUs in the system. **NOTE:** The standard and basic bin processors support lower link frequencies.

Option	Description
	The options available are **Maximum data rate**, **10.4 GT/s**, and **9.6 GT/s**. This option is set to **Maximum data rate** by default. Maximum data rate indicates that the BIOS runs the communication links at the maximum frequency supported by the processors. You can also select specific frequencies that the processors support, which can vary. For best performance, you should select **Maximum data rate**. Any reduction in the communication link frequency affects the performance of non-local memory accesses and cache coherency traffic. In addition, it can slow access to non-local I/O devices from a particular CPU. However, if power saving considerations outweigh performance, you might want to reduce the frequency of the CPU communication links. If you do this, you should localize memory and I/O accesses to the nearest NUMA node to minimize the impact to system performance.
Virtualization Technology	Enables or disables the virtualization technology for the processor. This option is set to **Enabled** by default.
Adjacent Cache Line Prefetch	Optimizes the system for applications that need high utilization of sequential memory access. This option is set to **Enabled** by default. You can disable this option for applications that need high utilization of random memory access.
Hardware Prefetcher	Enables or disables the hardware prefetcher. This option is set to **Enabled** by default.
Software Prefetcher	Enables or disables the software prefetcher. This option is set to **Enabled** by default.
DCU Streamer Prefetcher	Enables or disables the Data Cache Unit (DCU) streamer prefetcher. This option is set to **Enabled** by default.
DCU IP Prefetcher	Enables or disables the Data Cache Unit (DCU) IP prefetcher. This option is set to **Enabled** by default.
Sub NUMA Cluster	Enables or disables the Sub NUMA Cluster. This option is set to **Disabled** by default.
UPI Prefetch	Enables you to get the memory read started early on DDR bus. The Ultra Path Interconnect (UPI) Rx path will spawn the speculative memory read to Integrated Memory Controller (iMC) directly. This option is set to **Enabled** by default.
Logical Processor Idling	Enables you to improve the energy efficiency of a system. It uses the operating system core parking algorithm and parks some of the logical processors in the system which in turn allows the corresponding processor cores to transition into a lower power idle state. This option can only be enabled if the operating system supports it. It is set to **Disabled** by default.
x2APIC Mode	Enables or disables the x2APIC mode. This option is set to **Disabled** by default.
Dell Controlled Turbo	Controls the turbo engagement. Enable this option only when **System Profile** is set to **Disabled**. **NOTE:** Depending on the number of installed CPUs, there might be up to two processor listings.
Number of Cores per Processor	Controls the number of enabled cores in each processor. This option is set to **All** by default.
Processor Core Speed	Specifies the maximum core frequency of the processor.
Processor n	**NOTE:** Depending on the number of CPUs, there might be up to two processors listed. The following settings are displayed for each processor installed in the system:

Option	Description
Family-Model-Stepping	Specifies the family, model, and stepping of the processor as defined by Intel.
Brand	Specifies the brand name.
Level 2 Cache	Specifies the total L2 cache.

Option	Description

Option	Description
Level 3 Cache	Specifies the total L3 cache.
Number of Cores	Specifies the number of cores per processor.

SATA Settings

You can use the **SATA Settings** screen to view the SATA settings of SATA devices and enable SATA and PCIe RAID mode on your system.

NOTE: PowerVault NAS systems do not support HDDs connected to SATA ports or SATA RAID Mode. NAS systems support only the PERC RAID Controller.

Viewing SATA Settings

To view the **SATA Settings** screen, perform the following steps:

Steps

1. Turn on, or restart your system.
2. Press F2 immediately after you see the following message:

```
F2 = System Setup
```

NOTE: If your operating system begins to load before you press F2, wait for the system to finish booting, and then restart your system and try again.

3. On the **System Setup Main Menu** screen, click **System BIOS**.
4. On the **System BIOS** screen, click **SATA Settings**.

SATA Settings details

The **SATA Settings** screen details provides the following options.

Option	Description
Embedded SATA	Enables the embedded SATA option to be set to **Off** , **AHCI**, or **RAID** modes. This option is set to **AHCI Mode** by default.
Security Freeze Lock	Sends **Security Freeze Lock** command to the embedded SATA drives during POST. This option is applicable only for AHCI Mode. This option is set to **Enabled** by default.
Write Cache	Enables or disables the command for the embedded SATA drives during POST. This option is set to **Disabled** by default.
Port n	Sets the drive type of the selected device. For **AHCI Mode** or **RAID Mode**, BIOS support is always enabled.

Option	Description
Model	Specifies the drive model of the selected device.
Drive Type	Specifies the type of drive attached to the SATA port.
Capacity	Specifies the total capacity of the drive. This field is undefined for removable media devices such as optical drives.

Boot Settings

You can use the **Boot Settings** screen to set the boot mode to **BIOS** and to specify the boot order.

Viewing Boot Settings

To view the **Boot Settings** screen, perform the following steps:

Steps

1. Turn on, or restart your system.
2. Press F2 immediately after you see the following message:

```
F2 = System Setup
```

NOTE: If your operating system begins to load before you press F2, wait for the system to finish booting, and then restart your system and try again.

3. On the **System Setup Main Menu** screen, click **System BIOS**.
4. On the **System BIOS** screen, click **Boot Settings**.

Boot Settings details

The **Boot Settings** screen provides the following options.

Option	Description
Boot Mode	Enables you to set the boot mode of the system. **CAUTION: Switching the boot mode may prevent the system from booting if the operating system is not installed in the same boot mode.**
Boot Sequence Retry	Enables or disables the **Boot Sequence Retry** feature. If this option is set to **Enabled** and the system fails to boot, the system re-attempts the boot sequence after 30 seconds. This option is set to **Enabled** by default.
Hard-Disk Failover	Specifies the drive that is booted in the event of a drive failure. The devices are selected in the **Hard-Disk Drive Sequence** on the **Boot Option Setting** menu. When this option is set to **Disabled**, only the first drive in the list is attempted to boot. When this option is set to **Enabled**, all drives are attempted to boot in the order selected in the **Hard-Disk Drive Sequence**. This option is set to **Disabled** by default.
Boot Option Settings	Configures the boot sequence and the boot devices.
BIOS Boot Settings	Enables or disables BIOS boot options. **NOTE:** This option is enabled only if the boot mode is BIOS.

Choosing system boot mode

System Setup enables you to specify one of the following boot modes for installing your operating system:

- BIOS boot mode is the standard BIOS-level boot interface.
- UEFI boot mode is an enhanced 64-bit boot interface.

NOTE: The NX Series systems support only BIOS mode. Do not change the boot mode to UEFI because the system will not load the appliance OS when in UEFI mode.

1. From the **System Setup Main Menu**, click **Boot Settings**, and select **Boot Mode**.
2. After the system boots in the specified boot mode, proceed to install your operating system from that mode.

CAUTION: Switching the boot mode may prevent the system from booting if the operating system is not installed in the same boot mode.

NOTE: Operating systems must be UEFI-compatible to be installed from the UEFI boot mode. DOS and 32-bit operating systems do not support UEFI and can only be installed from the BIOS boot mode.

NOTE: For the latest information about supported operating systems, go to **Dell.com/ossupport**.

System health and system ID indicator codes

The system health and system ID indicator is located on the left control panel of your system.

Figure 10. System health and system ID indicators

System health and system ID indicator code	Condition
Solid blue	Indicates that the system is turned on, system is healthy, and system ID mode is not active. Press the system health and system ID button to switch to system ID mode.
Blinking blue	Indicates that the system ID mode is active. Press the system health and system ID button to switch to system health mode.
Solid amber	Indicates that the system is in fail-safe mode. If the problem persists, see the Getting help section.
Blinking amber	Indicates that the system is experiencing a fault. Check the System Event Log or the LCD panel, if available on the bezel, for specific error messages. For information about the event and error messages generated by the system firmware and agents that monitor system components, go to qrl.dell.com > **Look Up**>**Error Code**, type the error code, and then click **Look it up**.

Changing boot order

About this task

You may have to change the boot order if you want to boot from a USB key or an optical drive. The following instructions may vary if you have selected **BIOS** for **Boot Mode**.

NOTE: The NX Series systems support only BIOS mode. Do not change the boot mode to UEFI because the system will not load the appliance OS when in UEFI mode.

Steps

1. On the **System Setup Main Menu** screen, click **System BIOS** > **Boot Settings** > **UEFI/BIOS Boot Settings** > **UEFI/BIOS Boot Sequence.**.
2. Click **Boot Option Settings** > **BIOS** > **Boot Sequence**.
3. Use the arrow keys to select a boot device, and use the plus (+) and minus (-) sign keys to move the device down or up in the order.
4. Click **Exit**, and then click **Yes** to save the settings on exit.

Integrated Devices

You can use the **Integrated Devices** screen to view and configure the settings of all integrated devices including the video controller, integrated RAID controller, and the USB ports.

Viewing Integrated Devices

To view the **Integrated Devices** screen, perform the following steps:

Steps

1. Turn on, or restart your system.
2. Press F2 immediately after you see the following message:

```
F2 = System Setup
```

NOTE: If your operating system begins to load before you press F2, wait for the system to finish booting, and then restart your system and try again.

3. On the **System Setup Main Menu** screen, click **System BIOS**.
4. On the **System BIOS** screen, click **Integrated Devices**.

Integrated Devices details

The **Integrated Devices** screen contains the following options.

NOTE: The NX Series systems support only BIOS mode. Do not change the boot mode to UEFI because the system will not load the appliance OS when in UEFI mode.

Option	Description
User Accessible USB Ports	Configures the user accessible USB ports. Selecting **Only Back Ports On** disables the front USB ports; selecting **All Ports Off** disables all front and back USB ports; selecting **All Ports Off (Dynamic)All Ports On** disables all front and back USB ports during POST and front ports can be enabled or disabled dynamically by authorized user without resetting the system. The USB keyboard and mouse still function in certain USB ports during the boot process, depending on the selection. After the boot process is complete, the USB ports will be enabled or disabled as per the setting.
Internal USB Port	Enables or disables the internal USB port. This option is set to **On** or **Off**. This option is set to **On** by default.
iDRAC Direct USB Port	The iDRAC Direct USB port is managed by iDRAC exclusively with no host visibility. This option is set to **ON** or **OFF**. When set to **OFF**, iDRAC does not detect any USB devices installed in this managed port. This option is set to **On** by default.
Integrated RAID Controller	Enables or disables the integrated RAID controller. This option is set to **Enabled** by default.
Integrated Network Card 1	Enables or disables the integrated network card (NDC). When set to **Disabled**, the NDC is not available to the operating system (OS). This option is set to **Enable** by default. **NOTE:** If set to **Disabled** (OS), the Integrated NICs might still be available for shared network access by iDRAC.
I/OAT DMA Engine	Enables or disables the I/O Acceleration Technology (I/OAT) option. I/OAT is a set of DMA features designed to accelerate network traffic and lower CPU utilization. Enable only if the hardware and software support the feature.
Embedded Video Controller	Enables or disables the use of Embedded Video Controller as the primary display. When set to **Enabled**, the Embedded Video Controller will be the primary display even if add-in graphic cards are installed. When set to **Disabled**, an add-in graphics card will be used as the primary display. BIOS will output displays to both the primary add-in video and the embedded video during POST and pre-boot environment. The

Option	Description
	embedded video will then be disabled right before the operating system boots. This option is set to **Enabled** by default. **NOTE:** When there are multiple add-in graphic cards installed in the system, the first card discovered during PCI enumeration is selected as the primary video. You might have to re-arrange the cards in the slots in order to control which card is the primary video.
Current State of Embedded Video Controller	Displays the current state of the embedded video controller. The **Current State of Embedded Video Controller** option is a read-only field. If the Embedded Video Controller is the only display capability in the system (that is, no add-in graphics card is installed), then the Embedded Video Controller is automatically used as the primary display even if the **Embedded Video Controller** setting is set to **Enabled**.
SR-IOV Global Enable	Enables or disables the BIOS configuration of Single Root I/O Virtualization (SR-IOV) devices. This option is set to **Disabled** by default.
OS Watchdog Timer	If your system stops responding, this watchdog timer aids in the recovery of your operating system. When this option is set to **Enabled**, the operating system initializes the timer. When this option is set to **Disabled** (the default), the timer does not have any effect on the system.
Memory Mapped I/O above 4 GB	Enables or disables the support for the PCIe devices that require large amount of memory. Enable this option only for 64-bit operating systems. This option is set to **Enabled** by default.
Memory Mapped I/O above Base	When set to **12 TB**, the system maps the MMIO base to 12 TB. Enable this option for an OS that requires 44 bit PCIe addressing. When set to **512 GB**, the system maps the MMIO base to 512 GB, and reduces the maximum support for memory to less than 512 GB. This option is set to **56 TB** by default.
Slot Disablement	Enables or disables the available PCIe slots on your system. The slot disablement feature controls the configuration of the PCIe cards installed in the specified slot. Slots must be disabled only when the installed peripheral card prevents booting into the operating system or causes delays in system startup. If the slot is disabled,the Option ROM drivers are disabled. Only slots that are present on the system will be available for control. • **Slot 1** — Enables or disables the PCIe slot 1. This option is set to **Enabled** by default. • **Slot 2** — Enables or disables or only the boot driver is disabled for the PCIe slot 2. This option is set to **Enabled** by default. • **Slot 3** — Enables or disables or only the boot driver is disabled for the PCIe slot 3. This option is set to **Enabled** by default. • **Slot 4** — Enables or disables or only the boot driver is disabled for the PCIe slot 4. This option is set to **Enabled** by default. • **Slot 5** — Enables or disables or only the boot driver is disabled for the PCIe slot 5. This option is set to **Enabled** by default. • **Slot 6** — Enables or disables or only the boot driver is disabled for the PCIe slot 6. This option is set to **Enabled** by default.
Slot Bifurcation	Allows **Platform Default Bifurcation**, **Auto discovery of Bifurcation** and **Manual bifurcation Control**. The default is set to **Platform Default Bifurcation**. The slot bifurcation field is accessible when set to **Manual bifurcation Control** and is grayed out when set to **Platform Default Bifurcation** or **Auto discovery of Bifurcation**. **NOTE:** Slot Bifurcation options vary depend on the Riser configurations. • **Slot 1 Bifurcation** — X16 or X8 or X4 or X4X4X8 or X8X4X4 Bifurcation • **Slot 3 Bifurcation** — X16 or X8 or X4 or X4X4X8 or X8X4X4 Bifurcation • **Slot 4 Bifurcation** — X16 or X8 or X4 or X4X4X8 or X8X4X4 Bifurcation • **Slot 5 Bifurcation** — X4 or X8 Bifurcation • **Slot 6 Bifurcation** — X8 or X4 Bifurcation

Serial Communication

You can use the **Serial Communication** screen to view the properties of the serial communication port.

Viewing Serial Communication

To view the **Serial Communication** screen, perform the following steps:

Steps

1. Turn on, or restart your system.
2. Press F2 immediately after you see the following message:

```
F2 = System Setup
```

NOTE: If your operating system begins to load before you press F2, wait for the system to finish booting, and then restart your system and try again.

3. On the **System Setup Main Menu** screen, click **System BIOS**.
4. On the **System BIOS** screen, click **Serial Communication**.

Serial Communication details

The **Serial Communication** screen provides the following options.

Option	Description
Serial Communication	Selects serial communication devices (Serial Device 1 and Serial Device 2) in BIOS. BIOS console redirection can also be enabled, and the port address can be specified. This option is set to **Auto** by default.
Serial Port Address	Enables you to set the port address for serial devices. This field sets the serial port address to either COM1 or COM2 (COM1=0x3F8, COM2=0x2F8). This option is set to **Serial Device1=COM2 or Serial Device 2=COM1** by default. **NOTE:** You can use only Serial Device 2 for the Serial Over LAN (SOL) feature. To use console redirection by SOL, configure the same port address for console redirection and the serial device. **NOTE:** Every time the system boots, the BIOS syncs the serial MUX setting saved in iDRAC. The serial MUX setting can independently be changed in iDRAC. Loading the BIOS default settings from within the BIOS setup utility may not always revert the serial MUX setting to the default setting of Serial Device 1.
External Serial Connector	Enables you to associate the External Serial Connector to **Serial Device 1**, **Serial Device 2**, or the **Remote Access Device** by using this option. This option is set to **Serial Device 1** by default. **NOTE:** Only Serial Device 2 can be used for Serial Over LAN (SOL). To use console redirection by SOL, configure the same port address for console redirection and the serial device. **NOTE:** Every time the system boots, the BIOS syncs the serial MUX setting saved in iDRAC. The serial MUX setting can independently be changed in iDRAC. Loading the BIOS default settings from within the BIOS setup utility may not always revert this setting to the default setting of Serial Device 1.
Failsafe Baud Rate	Specifies the failsafe baud rate for console redirection. The BIOS attempts to determine the baud rate automatically. This failsafe baud rate is used only if the attempt fails, and the value is not changed. This option is set to **115200** by default.
Remote Terminal Type	Sets the remote console terminal type. This option is set to **ANSI VT100/VT220** by default.

Option	Description
Redirection After Boot	Enables or disables the BIOS console redirection when the operating system is loaded. This option is set to **Enabled** by default.

System Profile Settings

You can use the **System Profile Settings** screen to enable specific system performance settings such as power management.

Viewing System Profile Settings

To view the **System Profile Settings** screen, perform the following steps:

Steps

1. Turn on, or restart your system.
2. Press F2 immediately after you see the following message:

```
F2 = System Setup
```

NOTE: If your operating system begins to load before you press F2, wait for the system to finish booting, and then restart your system and try again.

3. On the **System Setup Main Menu** screen, click **System BIOS**.
4. On the **System BIOS** screen, click **System Profile Settings**.

System Profile Settings details

The **System Profile Settings** screen provides the following options.

Option	Description
System Profile	Sets the system profile. If you set the System Profile option to a mode other than **Custom**, the BIOS automatically sets the rest of the options. You can only change the rest of the options if the mode is set to **Custom**.This option is set to **Performance Per Watt Optimized (DAPC)** by default. DAPC is Dell Active Power Controller. **NOTE:** All the parameters on the system profile setting screen are available only when the **System Profile** option is set to **Custom**.
CPU Power Management	Sets the CPU power management. This option is set to **System DBPM (DAPC)** by default. DBPM is Demand-Based Power Management.
Memory Frequency	Sets the speed of the system memory. You can select **Maximum Performance**, **Maximum Reliability**, or a specific speed. This option is set to **Maximum Performance** by default.
Turbo Boost	Enables or disables the processor to operate in the turbo boost mode. This option is set to **Enabled** by default.
C1E	Enables or disables the processor to switch to a minimum performance state when it is idle. This option is set to **Enabled** by default.
C States	Enables or disables the processor to operate in all available power states. This option is set to **Enabled** by default.
Write Data CRC	Enables or disables the Write Data CRC. This option is set to **Enabled** by default.
Memory Patrol Scrub	Sets the memory patrol scrub frequency. This option is set to **Standard** by default.
Memory Refresh Rate	Sets the memory refresh rate to either 1x or 2x. This option is set to **1x** by default.
Uncore Frequency	Enables you to select the **Processor Uncore Frequency** option.

Option	Description
	Dynamic mode enables the processor to optimize power resources across the cores and uncore during runtime. The optimization of the uncore frequency to either save power or optimize performance is influenced by the setting of the **Energy Efficiency Policy** option.
Energy Efficient Policy	Enables you to select the **Energy Efficient Policy** option. The CPU uses the setting to manipulate the internal behavior of the processor and determines whether to target higher performance or better power savings. This option is set to **Balanced Performance** by default.
Number of Turbo Boost Enabled Cores for Processor 1	**NOTE:** If there are two processors installed in the system, you will see an entry for **Number of Turbo Boost Enabled Cores for Processor 2**. Controls the number of turbo boost enabled cores for Processor 1. The maximum number of cores is enabled by default.
Monitor/Mwait	Enables the Monitor/Mwait instructions in the processor. This option is set to **Enabled** for all system profiles, except **Custom** by default. **NOTE:** This option can be disabled only if the **C States** option in the **Custom** mode is set to **disabled**. **NOTE:** When **C States** is set to **Enabled** in the **Custom** mode, changing the Monitor/Mwait setting does not impact the system power or performance.
CPU Interconnect Bus Link Power Management	Enables or disables the CPU Interconnect Bus Link Power Management. This option is set to **Enabled** by default.
PCI ASPM L1 Link Power Mnagement	Enables or disables the PCI ASPM L1 Link Power Management. This option is set to **Enabled** by default.

System Security

You can use the **System Security** screen to perform specific functions such as setting the system password, setup password and disabling the power button.

Viewing System Security

To view the **System Security** screen, perform the following steps:

Steps

1. Turn on or restart your system.
2. Press F2 immediately after you see the following message:

```
F2 = System Setup
```

NOTE: If your operating system begins to load before you press F2, wait for the system to finish booting, and then restart your system and try again.

3. On the **System Setup Main Menu** screen, click **System BIOS**.
4. On the **System BIOS** screen, click **System Security**.

System Security Settings details

The **System Security Settings** screen provides the following options.

Option	Description
In-Band Manageability Interface	When set to **Disabled**, this setting will hide the Management Engine's (ME), HECI devices, and the system's IPMI devices from the operating system. This prevents the operating system from changing the ME power capping settings, and blocks access to all in-band management tools. All management should be managed through out-of-band. This option is set to **Enabled** by default. **NOTE:** BIOS update requires HECI devices to be operational and DUP updates require IPMI interface to be operational. This setting needs to be set to **Enabled** to avoid updating errors.
Intel(R) AES-NI	Improves the speed of applications by performing encryption and decryption by using the Advanced Encryption Standard Instruction Set (AES-NI). This option is set to **Enabled** by default.
System Password	Sets the system password. This option is set to **Enabled** by default and is read-only if the password jumper is not installed in the system.
Setup Password	Sets the setup password. This option is read-only if the password jumper is not installed in the system.
Password Status	Locks the system password. This option is set to **Unlocked** by default.
TPM Security	**NOTE:** The TPM menu is available only when the TPM module is installed. Enables you to control the reporting mode of the TPM. The **TPM Security** option is set to **Off** by default. You can only modify the TPM Status TPM Activation, and the Intel SGX fields if the **TPM Status** field is set to either **On with Pre-boot Measurements** or **On without Pre-boot Measurements**. When TPM 1.2 is installed, the **TPM Security** option is set to **Off**, **On with Pre-boot Measurements**, or **On without Pre-boot Measurements**. When TPM 2.0 is installed, the **TPM Security** option is set to **On** or **Off**. This option is set to **Off** by default.
Intel(R) TXT	Enables or disables the Intel Trusted Execution Technology (TXT) option. To enable the **Intel TXT** option, virtualization technology and TPM Security must be enabled with Pre-boot measurements. This option is set to **Off** by default. When TPM 2.0 is installed, **TPM 2 Algorithm** option is available. It enables you to select a hash algorithm from those supported by the TPM (SHA1, SHA256). **TPM 2 Algorithm** option must be set to **SHA256**, to enable TXT.
Power Button	Enables or disables the power button on the front of the system. This option is set to **Enabled** by default.
AC Power Recovery	Sets how the system behaves after AC power is restored to the system. This option is set to **Last** by default.
AC Power Recovery Delay	Sets the time delay for the system to power up after AC power is restored to the system. This option is set to **Immediate** by default.
User Defined Delay (60 s to 240 s)	Sets the **User Defined Delay** option when the **User Defined** option for **AC Power Recovery Delay** is selected.
UEFI Variable Access	**NOTE:** The NX3340 system does not support UEFI mode. This option cannot be used. Provides varying degrees of securing UEFI variables. When set to **Standard** (the default), UEFI variables are accessible in the operating system per the UEFI specification. When set to **Controlled**, selected UEFI variables are protected in the environment and new UEFI boot entries are forced to be at the end of the current boot order.
Secure Boot	Enables Secure Boot, where the BIOS authenticates each pre-boot image by using the certificates in the Secure Boot Policy. Secure Boot is set to **Disabled** by default.
Secure Boot Policy	When Secure Boot policy is set to **Standard**, the BIOS uses the system manufacturer's key and certificates to authenticate pre-boot images. When Secure Boot policy is set to **Custom**, the BIOS uses the user-defined key and certificates. Secure Boot policy is set to **Standard** by default.

Option	Description
Secure Boot Mode	Configures how the BIOS uses the Secure Boot Policy Objects (PK, KEK, db, dbx). If the current mode is set to **Deployed Mode**, the available options are **User Mode** and **Deployed Mode**. If the current mode is set to **User Mode**, the available options are **User Mode**, **Audit Mode**, and **Deployed Mode**. • **User Mode** — In **User Mode**, PK must be installed, and BIOS performs signature verification on programmatic attempts to update policy objects. The BIOS allows unauthenticated programmatic transitions between modes. • **Audit Mode** — In **Audit mode**, PK is not present. The BIOS does not authenticate programmatic updates to the policy objects, and transitions between modes. **Audit Mode** is useful for programmatically determining a working set of policy objects. BIOS performs signature verification on pre-boot images and logs results in the image Execution Information Table, but executes the images whether they pass or fail verification. • **Deployed Mode** — **Deployed Mode** is the most secure mode. In **Deployed Mode**, PK must be installed and the BIOS performs signature verification on programmatic attempts to update policy objects. **Deployed Mode** restricts the programmatic mode transitions.
Secure Boot Policy Summary	Specifies the list of certificates and hashes that secure boot uses to authenticate images.
Secure Boot Custom Policy Settings	Configures the Secure Boot Custom Policy. To enable this option, set the Secure Boot Policy to **Custom** option.

Creating a system and setup password

Prerequisites

Ensure that the password jumper is enabled. The password jumper enables or disables the system password and setup password features. For more information, see the Jumpers and connectors section.

NOTE: If the password jumper setting is disabled, the existing system password and setup password are deleted and you need not provide the system password to boot the system.

Steps

1. To enter System Setup, press F2 immediately after turning on or rebooting your system.
2. On the **System Setup Main Menu** screen, click **System BIOS** > **System Security**.
3. On the **System Security** screen, verify that **Password Status** is set to **Unlocked**.
4. In the **System Password** field, type your system password, and press Enter or Tab.
   A message prompts you to reenter the system password.
5. Reenter the system password, and click **OK**.
6. In the **Setup Password** field, type your setup password and press Enter or Tab.
   A message prompts you to reenter the setup password.
7. Reenter the setup password, and click **OK**.
8. Press Esc to return to the System BIOS screen. Press Esc again.
   A message prompts you to save the changes.
   NOTE: Password protection does not take effect until the system reboots.

Using your system password to secure your system

If you have assigned a setup password, the system accepts your setup password as an alternate system password.

Steps

1. Turn on or reboot your system.
2. Type the system password and press Enter.

Next steps

When **Password Status** is set to **Locked**, type the system password and press Enter when prompted at reboot.

NOTE: If an incorrect system password is typed, the system displays a message and prompts you to reenter your password. You have three attempts to type the correct password. After the third unsuccessful attempt, the system displays an error message that the system has stopped functioning and must be turned off. Even after you turn off and restart the system, the error message is displayed until the correct password is entered.

Deleting or changing system and setup password

Prerequisites

NOTE: You cannot delete or change an existing system or setup password if the **Password Status** is set to **Locked**.

Steps

1. To enter System Setup, press F2 immediately after turning on or restarting your system.
2. On the **System Setup Main Menu** screen, click **System BIOS** > **System Security**.
3. On the **System Security** screen, ensure that **Password Status** is set to **Unlocked**.
4. In the **System Password** field, alter or delete the existing system password, and then press Enter or Tab.
5. In the **Setup Password** field, alter or delete the existing setup password, and then press Enter or Tab.

   If you change the system and setup password, a message prompts you to reenter the new password. If you delete the system and setup password, a message prompts you to confirm the deletion.
6. Press Esc to return to the **System BIOS** screen. Press Esc again, and a message prompts you to save the changes.

Operating with setup password enabled

If **Setup Password** is set to **Enabled**, type the correct setup password before modifying the system setup options.

If you do not type the correct password in three attempts, the system displays the following message:

```
Invalid Password! Number of unsuccessful password attempts: <x> System Halted! Must
power down.
```

Even after you turn off and restart the system, the error message is displayed until the correct password is typed. The following options are exceptions:

- If **System Password** is not set to **Enabled** and is not locked through the **Password Status** option, you can assign a system password. For more information, see the System Security Settings details on page 38 section.
- You cannot disable or change an existing system password.

NOTE: You can use the password status option with the setup password option to protect the system password from unauthorized changes.

Miscellaneous Settings

You can use the **Miscellaneous Settings** screen to perform specific functions such as updating the asset tag and changing the system date and time.

Viewing Miscellaneous Settings

To view the **Miscellaneous Settings** screen, perform the following steps:

Steps

1. Turn on, or restart your system.

2. Press F2 immediately after you see the following message:

```
F2 = System Setup
```

NOTE: If your operating system begins to load before you press F2, wait for the system to finish booting, and then restart your system and try again.

3. On the **System Setup Main Menu** screen, click **System BIOS**.
4. On the **System BIOS** screen, click **Miscellaneous Settings**.

Miscellaneous Settings details

The **Miscellaneous Settings** screen provides the following options.

NOTE: The NX3340 system does not support UEFI mode.

Option	Description
System Time	Enables you to set the time on the system.
System Date	Enables you to set the date on the system.
Asset Tag	Specifies the asset tag and enables you to modify it for security and tracking purposes.
Keyboard NumLock	Enables you to set whether the system boots with the NumLock enabled or disabled. This option is set to **On** by default. **NOTE:** This option does not apply to 84-key keyboards.
F1/F2 Prompt on Error	Enables or disables the F1/F2 prompt on error. This option is set to **Enabled** by default. The F1/F2 prompt also includes keyboard errors.
Load Legacy Video Option ROM	N/A
Dell Wyse P25/P45 BIOS Access	Enables or disables the Dell Wyse P25/P45 BIOS Access. This option is set to **Enabled** by default.
Power Cycle Request	Enables or disables the Power Cycle Request. This option is set to **None** by default.

iDRAC Settings utility

The iDRAC settings utility is an interface to set up and configure the iDRAC parameters. You can enable or disable various iDRAC parameters by using the iDRAC settings utility available with iDRAC Enterprise License.

NOTE: The NX Series systems support only BIOS mode. Do not change the boot mode to UEFI because the system will not load the appliance OS when in UEFI mode.

For more information, see the *Integrated Dell Remote Access Control User's Guide* located at www.dell.com/idracmanuals.

Device Settings

Use **Device Settings** to configure device parameters.

Dell Lifecycle Controller

Dell Lifecycle Controller provides advanced embedded systems management capabilities including system deployment, configuration, update, maintenance, and diagnosis. Lifecycle Controller is delivered as part of the iDRAC solution.

Embedded systems management

The Dell Lifecycle Controller provides advanced embedded systems management throughout the lifecycle of the system. The Dell Lifecycle Controller can be started during the boot sequence and can function independently of the operating system.

NOTE: Certain platform configurations may not support the full set of features provided by the Dell Lifecycle Controller.

For more information about setting up the Dell Lifecycle Controller, configuring hardware and firmware, deploying the operating system, and platform support see the documentation available at the www.dell.com/idracmanuals.

Boot Manager

Use the **Boot Manager** screen to select boot options and diagnostic utilities.

Viewing Boot Manager

To enter Boot Manager:

Steps

1. Turn on or restart your system.
2. Press F11 when you see the following message:

   ```
   F11 = Boot Manager
   ```

   If your operating system begins to load before you press F11, allow the system to complete the booting, and then restart your system and try again.

Boot Manager main menu

Menu item	Description
Continue Normal Boot	The system attempts to boot to devices starting with the first item in the boot order. If the boot attempt fails, the system continues with the next item in the boot order until the boot is successful or no more boot options are found.
One-shot Boot Menu	Enables you to access boot menu, where you can select a one-time boot device to boot from.
Launch System Setup	Enables you to access System Setup.
Launch Lifecycle Controller	Exits the Boot Manager and invokes the Dell Lifecycle Controller program.
System Utilities	Enables you to launch System Utilities menu such as System Diagnostics and UEFI shell. **NOTE:** The NX3340 system does not support UEFI mode.

One-shot BIOS boot menu

Use the **One-shot BIOS boot menu** to select the device from which to boot.

System Utilities

System Utilities contains the following utilities that can be launched:

- Launch Diagnostics
- BIOS Update File Explorer
- Reboot System

PXE boot

You can use the Preboot Execution Environment (PXE) option to boot and configure the networked systems, remotely.

To access the **PXE boot** option, boot the system and then press F12 during POST instead of using standard Boot Sequence from BIOS Setup. It does not pull any menu or allows managing of network devices.

5

Diagnostics and indicators

The following sections contain information about the indicator codes for the NX3340 and instructions for running the Embedded System Diagnostics program.

Topics:

Chassis LEDs

The following pages contain the information about the chassis LEDs.

Status LED indicators

NOTE: The indicators display solid amber if any error occurs.

Table 5. Status LED indicators and descriptions

Icon	Description	Condition	Corrective action
	Drive indicator	The indicator turns solid amber if there is a drive error.	• Check the System Event Log to determine if the drive has an error. • Run the appropriate Online Diagnostics test. Restart the system and run embedded diagnostics (ePSA). • If the drives are configured in a RAID array, restart the system, and enter the host adapter configuration utility program.
	Temperature indicator	The indicator turns solid amber if the system experiences a thermal error (for example, the ambient temperature is out of range or there is a fan failure).	Ensure that none of the following conditions exist: • A cooling fan has been removed or has failed. • Ambient temperature is too high. • External airflow is obstructed. If the problem persists, see the Getting help.
	Electrical indicator	The indicator turns solid amber if the system experiences an electrical error (for example, voltage out of range, or a failed power supply unit (PSU) or voltage regulator).	Check the System Event Log or system messages for the specific issue. If it is due to a problem with the PSU, check the LED on the PSU. Reseat the PSU. If the problem persists, see the Getting help.
	Memory indicator	The indicator turns solid amber if a memory error occurs.	Check the System Event Log or system messages for the location of the failed memory. Reseat the memory module. If the problem persists, see the Getting help.
	PCIe indicator	The indicator turns solid amber if a PCIe card experiences an error.	Restart the system. Update any required drivers for the PCIe card. Reinstall the card. If the problem persists, see the Getting help.

Table 5. Status LED indicators and descriptions (continued)

Icon	Description	Condition	Corrective action
			NOTE: For more information about the supported PCIe cards, see the Expansion card installation guidelines section.

Drive indicator codes

Each drive carrier has an activity LED indicator and a status LED indicator. The indicators provide information about the current status of the drive. The activity LED indicator indicates whether the drive is currently in use or not. The status LED indicator indicates the power condition of the drive.

Figure 11. Drive indicators

1. Drive activity LED indicator
2. Drive status LED indicator
3. Drive capacity label

Drive status indicator code	Condition
Flashes green twice per second	Identifying drive or preparing for removal
Off	Drive ready for removal **NOTE:** The drive status indicator remains off until all drives are initialized after the system is turned on. Drives are not ready for removal during this time.
Flashes green, amber, and then turns off	Predicted drive failure
Flashes amber four times per second	Drive failed
Flashes green slowly	Drive rebuilding
Solid green	Drive online
Flashes green for three seconds, amber for three seconds, and then turns off after six seconds	Rebuild stopped

System health and system ID indicator codes

The system health and system ID indicator is located on the left control panel of your system.

Figure 12. System health and system ID indicators

System health and system ID indicator code	Condition
Solid blue	Indicates that the system is turned on, system is healthy, and system ID mode is not active. Press the system health and system ID button to switch to system ID mode.
Blinking blue	Indicates that the system ID mode is active. Press the system health and system ID button to switch to system health mode.
Solid amber	Indicates that the system is in fail-safe mode. If the problem persists, see the Getting help section.
Blinking amber	Indicates that the system is experiencing a fault. Check the System Event Log or the LCD panel, if available on the bezel, for specific error messages. For information about the event and error messages generated by the system firmware and agents that monitor system components, go to qrl.dell.com > **Look Up**>**Error Code**, type the error code, and then click **Look it up**.

NIC indicator codes

Indicators on each NIC provide information about the activity and link status. The activity LED indicator indicates if data is flowing through the NIC, and the link LED indicator indicates the speed of the connected network.

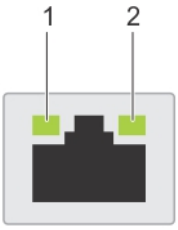

Figure 13. NIC indicator codes

1. link LED indicator
2. activity LED indicator

Status	Condition
Link and activity indicators are off	The NIC is not connected to the network.
Link indicator is green and activity indicator is blinking green	The NIC is connected to a valid network at its maximum port speed and data is being sent or received.

Status	Condition
Link indicator is amber and activity indicator is blinking green	The NIC is connected to a valid network at less than its maximum port speed and data is being sent or received.
Link indicator is green and activity indicator is off	The NIC is connected to a valid network at its maximum port speed and data is not being sent or received.
Link indicator is amber and activity indicator is off	The NIC is connected to a valid network at less than its maximum port speed and data is not being sent or received.
Link indicator is blinking green and activity is off	NIC identify is enabled through the NIC configuration utility.

Power supply unit indicator codes

An illuminated translucent handle on the AC power supply units (PSUs) serves as a status indicator. The indicator shows whether power is present or if a power fault has occurred.

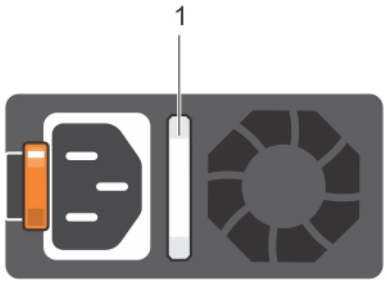

Figure 14. AC PSU status indicator

1. AC PSU status indicator/handle

Power indicator codes	Condition
Green	A valid power source is connected to the PSU and the PSU is operational.
Blinking amber	Indicates a problem with the PSU.
Not illuminated	Power is not connected to the PSU.
Blinking green	When the firmware of the PSU is being updated, the PSU handle blinks green. **CAUTION: Do not disconnect the power cord or unplug the PSU when updating firmware. If firmware update is interrupted, the PSUs do not function.**
Blinking green and turns off	When hot-plugging a PSU, the PSU handle blinks green five times at a rate of 4 Hz and turns off. This indicates a PSU mismatch with respect to efficiency, feature set, health status, or supported voltage. **CAUTION: If two PSUs are installed, both the PSUs must have the same type of label; for example, Extended Power Performance (EPP) label. Mixing PSUs from previous generations of NAS systems is not supported, even if the PSUs have the same power rating. This results in a PSU mismatch condition or failure to turn the system on.** **CAUTION: When correcting a PSU mismatch, replace only the PSU with the blinking indicator. Swapping the PSU to make a matched pair can result in an error condition and unexpected system shutdown. To change from a high output configuration to a low output configuration or vice versa, you must turn off the system.** **CAUTION: AC PSUs support both 240 V and 120 V input voltages with the exception of Titanium PSUs, which support only 240 V. When two identical PSUs receive different input voltages, they can output different wattages, and trigger a mismatch.** **CAUTION: If two PSUs are used, they must be of the same type and have the same maximum output power.**

iDRAC Direct LED indicator codes

The iDRAC Direct LED indicator lights up to indicate that the port is connected and is being used as a part of the iDRAC subsystem.

iDRAC Direct LED indicator is located below the iDRAC Direct port on the right control panel. You can configure iDRAC Direct using a USB to micro USB (type AB) cable, which you can connect to your laptop or tablet. The following table describes iDRAC Direct activity when the iDRAC Direct port is active:

iDRAC Direct LED indicator code	Condition
Solid green for two seconds	Indicates that the laptop or tablet is connected.
Flashing green (on for two seconds and off for two seconds)	Indicates that the laptop or tablet that is connected is recognized.
Turns off	Indicates that the laptop or tablet is unplugged.

iDRAC Quick Sync 2 indicator codes

The iDRAC Quick Sync 2 module is located on the left control panel of your system.

Figure 15. iDRAC Quick Sync 2 indicators

iDRAC Quick Sync 2 indicator code	Condition	Corrective action
Off (default state)	Indicates that the iDRAC Quick Sync 2 feature is turned off. Press the iDRAC Quick Sync 2 button to turn on the iDRAC Quick Sync 2 feature.	If the LED fails to turn on, reseat the left control panel flex cable and check. If the problem persists, see the Getting help section.
Solid white	Indicates that iDRAC Quick Sync 2 is ready to communicate. Press the iDRAC Quick Sync 2 button to turn off.	If the LED fails to turn off, restart the system. If the problem persists, see the Getting help section.
Blinks white rapidly	Indicates data transfer activity.	If the indicator continues to blink indefinitely, see the Getting help section.
Blinks white slowly	Indicates that firmware update is in progress.	If the indicator continues to blink indefinitely, see the Getting help section.
Blinks white five times rapidly and then turns off	Indicates that the iDRAC Quick Sync 2 feature is disabled.	Check if iDRAC Quick Sync 2 feature is configured to be disabled by iDRAC. If the problem persists, see the Getting help section. For more information, see *Integrated Dell Remote Access Controller User's Guide* at **Dell.com/idracmanuals** or *Dell OpenManage Server Administrator User's Guide* at **Dell.com/openmanagemanuals**.
Solid amber	Indicates that the system is in fail-safe mode.	Restart the system. If the problem persists, see the Getting help section.
Blinking amber	Indicates that the iDRAC Quick Sync 2 hardware is not responding properly.	Restart the system. If the problem persists, see the Getting help section.

Dell EMC Embedded System Diagnostics

NOTE: The Dell EMC Embedded System Diagnostics is also known as Enhanced Pre-boot System Assessment (ePSA) diagnostics.

The Embedded System Diagnostics provides a set of options for particular device groups or devices allowing you to:

- Run tests automatically or in an interactive mode
- Repeat tests
- Display or save test results
- Run thorough tests to introduce additional test options to provide extra information about the failed device(s)
- View status messages that inform you if tests are completed successfully
- View error messages that inform you of problems encountered during testing

Running the Embedded System Diagnostics from Boot Manager

Run the Embedded System Diagnostics (ePSA) if your system does not boot.

Steps

1. When the system is booting, press F11.
2. Use the up arrow and down arrow keys to select **System Utilities** > **Launch Diagnostics**.
3. Alternatively, when the system is booting, press F10, select **Hardware Diagnostics** > **Run Hardware Diagnostics**.
   The **ePSA Pre-boot System Assessment** window is displayed, listing all devices detected in the system. The diagnostics starts executing the tests on all the detected devices.

Results

Running the Embedded System Diagnostics from the Dell Lifecycle Controller

Steps

1. As the system boots, press F10.
2. Select **Hardware Diagnostics** → **Run Hardware Diagnostics**.
   The **ePSA Pre-boot System Assessment** window is displayed, listing all devices detected in the system. The diagnostics starts executing the tests on all the detected devices.

System diagnostic controls

Menu	Description
Configuration	Displays the configuration and status information of all detected devices.
Results	Displays the results of all tests that are run.
System health	Provides the current overview of the system performance.
Event log	Displays a time-stamped log of the results of all tests run on the system. This is displayed if at least one event description is recorded.

6

Jumpers and connectors

This section provides specific information about the jumpers. It also provides some basic information about jumpers and switches and describes the connectors on the various boards in the system. Jumpers on the system board help to disable the system and setup passwords. You must know the connectors on the system board to install components and cables correctly.

Topics:

System board jumpers and connectors

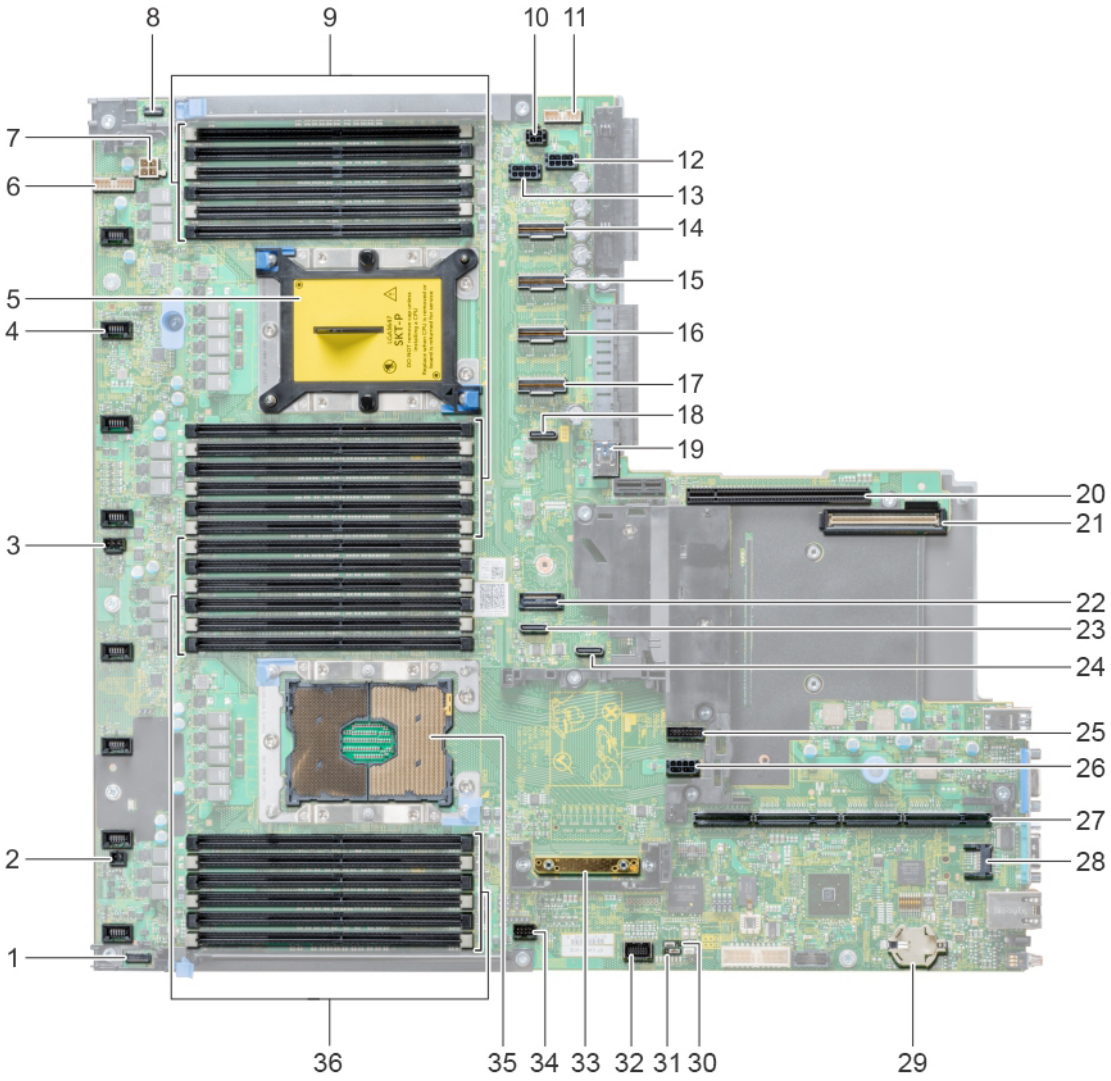

Figure 16. System board jumpers and connectors

Table 6. System board jumpers and connectors

Item	Connector	Description
1.	P_RG1_CP	Right panel connector
2.	J_WS_PWRBTN	Power button connector
3.	J_INTRUSION_DET1	Intrusion switch connector
4.	J_FAN1U_2	Cooling fan connector
5.	CPU2	Processor socket 2
6.	J_BATT_SIG	Battery signal connector
7.	J_BATT_PWR	Battery power connector
8.	CP	Left control panel connector
9.	B6, B12, B5, B11, B4, B10, B7, B1, B8, B2, B9, B3	Memory module sockets
10.	J_ODD	Optical drive connector
11	J_BP_SIG1	Backplane signal connector 1
12	J_BP1	Backplane connector 1
13	J_BP2	Backplane connector 2
14	J_STORAGE_M4	SAS connector 4
15	J_STORAGE_M3	SAS connector 3
16	J_STORAGE_M2	SAS connector 2
17	J_STORAGE_M1	SAS connector 1
18	J_SATA_C	SATA connector
19	J_USB_INT	Internal USB port
20	J_RISER2	Riser 2 connector
21	J_NDC	Network Daughter Card connector
22	J1	SATA connector
23	J_SATA_B	SATA connector
24	J_SATA_A	SATA connector
25	J_BP_SIG0	Backplane signal connector 0
26	J_BPO	Backplane power connector
27	J_R1_SS82_2	Riser 1 connector
28	J_TPM_MODULE1	TPM module connector
29	BATTERY	Battery connector
30	NVRAM_CLR	Clear NVRAM
31	PWRD_EN	Reset BIOS password
32	J_VGA	VGA connector
33	J_STORAGE1	Mini PERC controller connector
34	J_USB_INT1	USB connector
35	CPU1	Processor socket 1
36	A6, A12, A5, A11, A4, A10, A7, A1, A8, A2, A9, A3	Memory module sockets

System board jumper settings

For information on resetting the password jumper to disable a password, see the Disabling forgotten password on page 52 section.

Table 7. System board jumper settings

Jumper	Setting	Description
PWRD_EN		The BIOS password feature is enabled.
		The BIOS password feature is disabled. iDRAC local access is unlocked at next AC power cycle. iDRAC password reset is enabled in F2 iDRAC settings menu.
NVRAM_CLR		The BIOS configuration settings are retained at system boot.
		The BIOS configuration settings are cleared at system boot.

Disabling forgotten password

The software security features of the system include a system password and a setup password. The password jumper enables or disables password features and clears any password(s) currently in use.

Prerequisites

NOTE: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell EMC is not covered by your warranty. Read and follow the safety instructions that are shipped with your product.

Steps

1. Turn off the system, including any attached peripherals, and disconnect the system from the electrical outlet.
2. Remove the system cover.
3. Move the jumper on the system board jumper from pins 2 and 4 to pins 4 and 6.
4. Install the system cover.

   The existing passwords are not disabled (erased) until the system boots with the jumper on pins 4 and 6. However, before you assign a new system and/or setup password, you must move the jumper back to pins 2 and 4.

   NOTE: If you assign a new system and/or setup password with the jumper on pins 4 and 6, the system disables the new password(s) the next time it boots.

5. Reconnect the system to its electrical outlet and turn on the system, including any attached peripherals.
6. Turn off the system, including any attached peripherals, and disconnect the system from the electrical outlet.
7. Remove the system cover.
8. Move the jumper on the system board jumper from pins 4 and 6 to pins 2 and 4.
9. Install the system cover.
10. Reconnect the system to its electrical outlet and turn on the system, including any attached peripherals.
11. Assign a new system and/or setup password.

7

Installing and removing system components

The following sections contain procedures for removing and replacing system components.

Topics:

Safety instructions

NOTE: Whenever you need to lift the system, get others to assist you. To avoid injury, do not attempt to lift the system by yourself.

WARNING: Opening or removing the system cover while the system is powered on may expose you to a risk of electric shock.

CAUTION: Do not operate the system without the cover for a duration exceeding five minutes. Operating the system without the system cover can result in component damage.

CAUTION: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell is not covered by your warranty. Read and follow the safety instructions that are shipped with your product.

CAUTION: To ensure proper operation and cooling, all bays in the system and system fans must be always populated with a component or a blank.

NOTE: It is recommended that you always use an antistatic mat and antistatic strap while working on components inside the system.

Before working inside your system

Prerequisites

Follow the safety guidelines listed in Safety instructions.

Steps

1. Power off the system and all attached peripherals.
2. Disconnect the system from the electrical outlet, and disconnect the peripherals.
3. If applicable, remove the system from the rack.
   For more information, see the *Rail Installation Guide* at www.Dell.com/support.
4. Remove the system cover.

After working inside your system

Prerequisites

Follow the safety guidelines listed in Safety instructions on page 53.

Steps

1. Install the system cover.
2. If applicable, install the system into the rack.
   For more information, see the *Rail Installation Guide* on www.Dell.com/support.
3. Reconnect the peripherals and connect the system to the electrical outlet.
4. Power on the attached peripherals and then power on the system.

Recommended tools

You need the following tools to perform the removal and installation procedures:

- Key to the bezel lock
- Phillips #1 screwdriver
- Phillips #2 screwdriver
- 1/4 inch flat head screwdriver
- Torx #T30 screwdriver
- Wrist grounding strap

Front bezel

The metal bezel mounted on the front of the system displays the system branding. A lock on the bezel protects unauthorized access to the drives.

The bezel is available with an LCD panel that displays system status.

Removing the front bezel

To remove the front bezel:

Prerequisites

Follow the safety guidelines listed in Safety instructions.

Steps

1. Unlock the bezel using the bezel key.
2. Press the release button, and pull the left end of the bezel.
3. Unhook the right end, and remove the bezel.

NOTE: The images shown here are for representation only and the actual configuration of your system may vary.

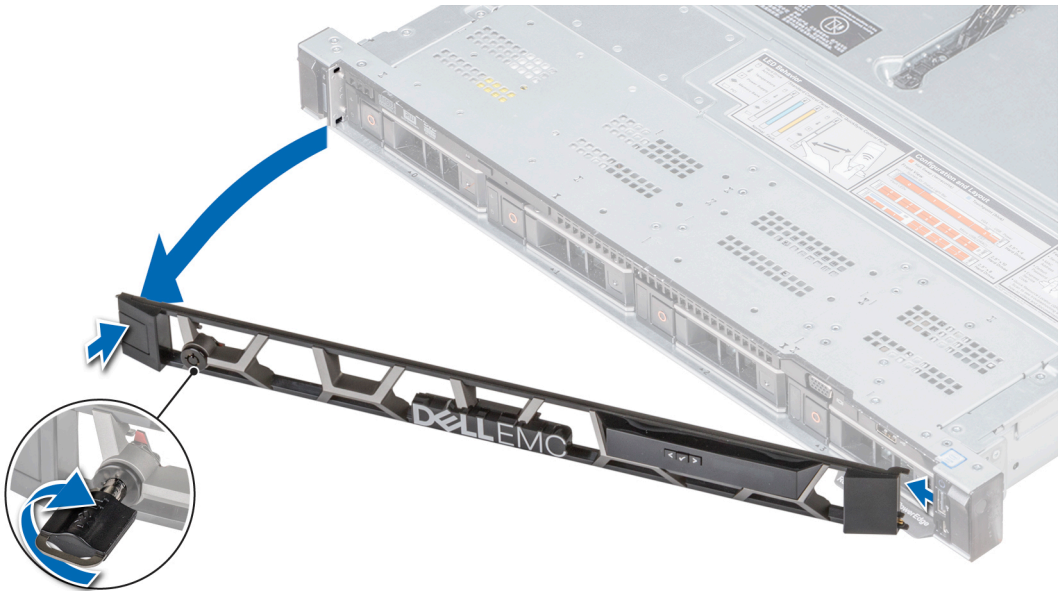

Figure 17. Removing the front bezel

Installing the front bezel

To install the front bezel:

Prerequisites

Follow the safety guidelines listed in Safety instructions.

Steps

1. Locate and remove the bezel key.
2. Align and insert the right end of the bezel onto the system.
3. Press the bezel until the button clicks in place and fit the left end of the bezel onto the system.
4. Lock the bezel using the key.

NOTE: The images shown here are for representation only and the actual configuration of your system may vary.

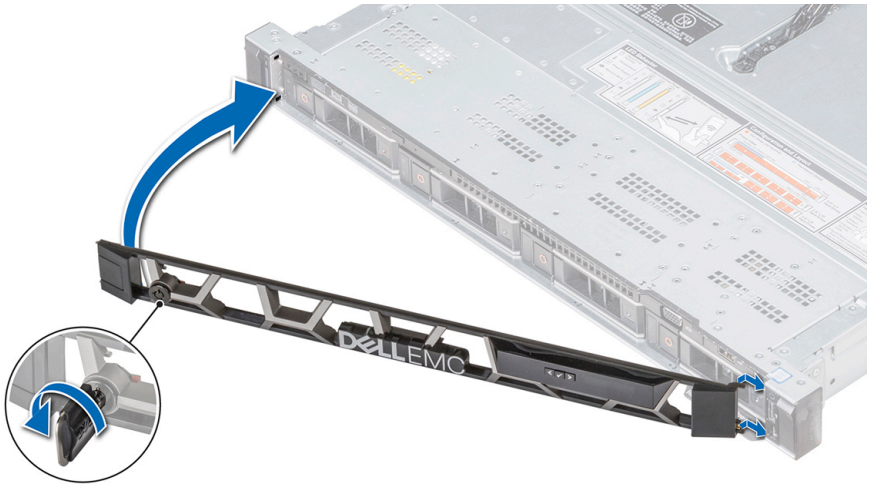

Figure 18. Installing the front bezel

System cover

The system cover provides security for the entire system and also helps in maintaining proper air flow inside the system.

Removing the system cover

Prerequisites

1. Follow the safety guidelines listed in Safety instructions.
2. Turn off the system, including any attached peripherals.
3. Disconnect the system from the electrical outlet and disconnect the peripherals.

Steps

1. Using a 1/4 inch flat head or a Phillips #2 screwdriver, rotate the latch release lock counter clockwise to the unlocked position.
2. Lift the latch till the system cover slides back and the tabs on the system cover disengage from the guide slots on the system.
3. Hold the cover on both sides, and lift the cover away from the system.

NOTE: The images shown here are for representation only and the actual configuration of your system may vary.

Figure 19. Removing the system cover

Installing the system cover

Prerequisites

1. Follow the safety guidelines listed in Safety instructions.
2. Ensure that all internal cables are routed correctly and connected, and no tools or extra parts are left inside the system.

Steps

1. Align the tabs on the system cover with the guide slots on the system.
2. Push the system cover latch down.

   The system cover slides forward, the tabs on the system cover engage with the guide slots on the system and the system cover latch locks into place.
3. Using a 1/4 inch flat head or Phillips #2 screwdriver, rotate the latch release lock clockwise to the locked position.

NOTE: The images shown here are for representation only and the actual configuration of your system may vary.

Figure 20. Installing the system cover

Next steps

1. Reconnect the peripherals and connect the system to the electrical outlet.
2. Turn on the system, including any attached peripherals.

Backplane cover

This section contains information about the removal and installation of the backplane cover.

Removing the backplane cover

Prerequisites

1. Follow the safety guidelines listed in Safety instructions.
2. Follow the procedures in Before working inside your system.

Steps

1. Slide the backplane cover in the direction of the arrows marked on the backplane cover.
2. Lift the backplane cover away from the system.

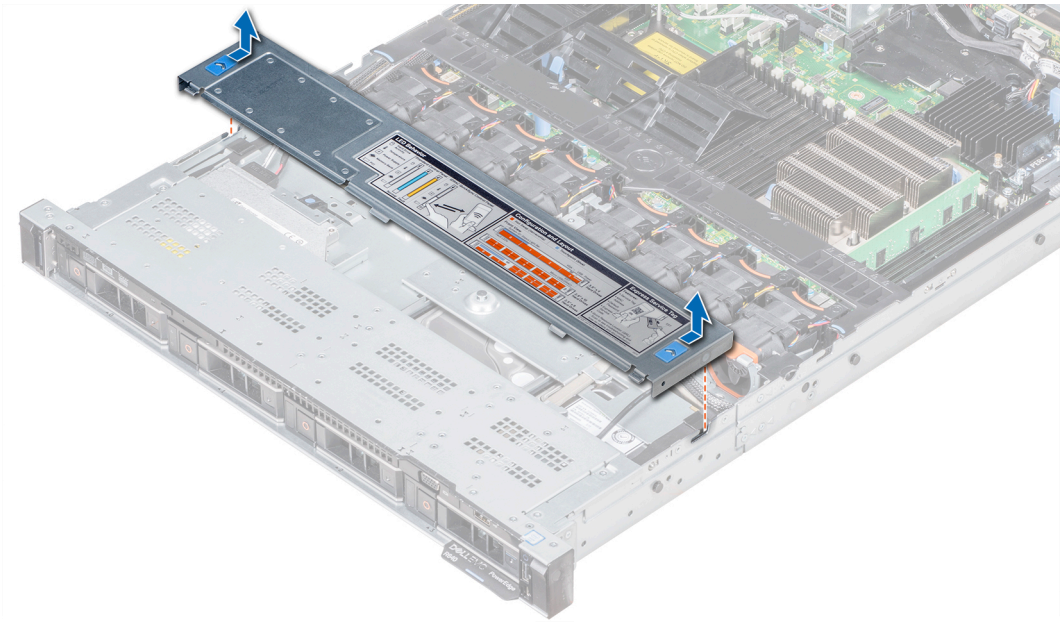

Figure 21. Removing the backplane cover

NOTE: The images shown here are for representation only and the actual configuration of your system may vary.

Installing the backplane cover

Prerequisites

1. Follow the safety guidelines listed in Safety instructions.
2. Follow the procedures in Before working inside your system.

Steps

1. Align the tabs on the backplane cover with the guide slots on the system.
2. Slide the backplane cover toward the front of the system until the cover locks into place.

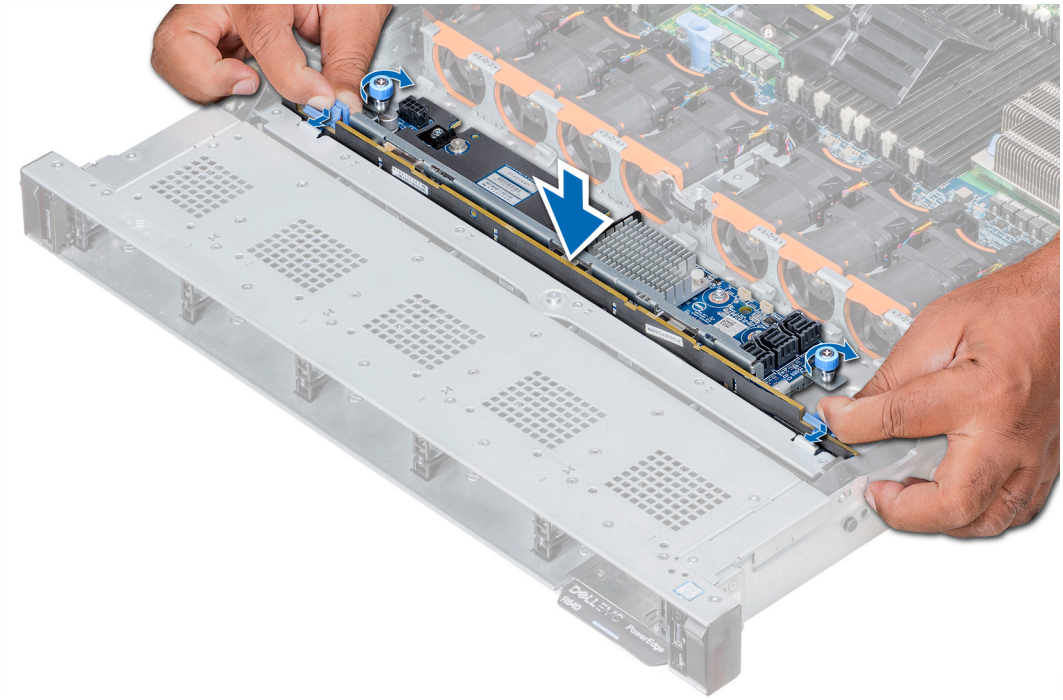

Figure 22. Installing the backplane cover

NOTE: The images shown here are for representation only and the actual configuration of your system may vary.

Next steps

Follow the procedure listed in After working inside your system.

Inside the system

NOTE: Many repairs may only be done by a certified service technician. You should only perform troubleshooting and simple repairs as authorized in your product documentation, or as directed by the online or telephone service and support team. Damage due to servicing that is not authorized by Dell EMC is not covered by your warranty. Read and follow the safety instructions that are shipped with your product.

NOTE: Components that are hot swappable are marked orange and touch points on the components are marked blue.

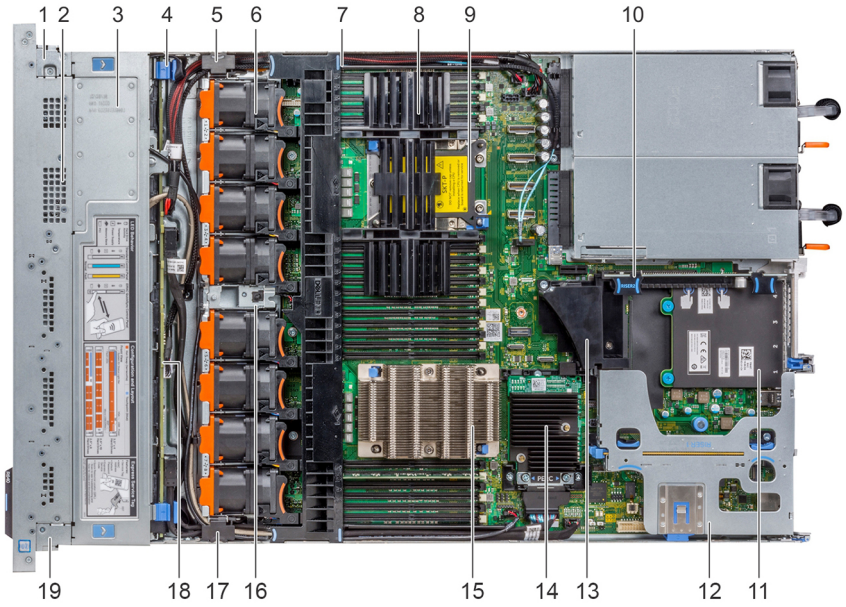

Figure 23. Inside the system - 3 PCIe expansion risers

1. right control panel cable cover
2. hard drive cage
3. backplane cover
4. backplane release latch
5. cabling latch
6. cooling fan (8)
7. air shroud
8. processor and DIMM blank
9. processor 2 slot
10. expansion riser 2 A
11. network daughter card
12. expansion riser 1 A
13. PCIe shroud
14. integrated storage controller card
15. processor 1
16. intrusion switch
17. cabling latch
18. hard drive backplane
19. left control panel cable cover

Air shroud

The air shroud directs airflow across the entire system. It prevents the system from overheating by maintaining uniform airflow inside the system.

Removing the air shroud

Prerequisites

CAUTION: Never operate your system with the air shroud removed. The system may get overheated quickly, resulting in shutdown of the system and loss of data.

1. Follow the safety guidelines listed in Safety instructions.
2. Follow the procedures in Before working inside your system.

Steps

Hold the air shroud at both ends and lift it away from the system.

NOTE: The images shown here are for representation only and the actual configuration of your system may vary.

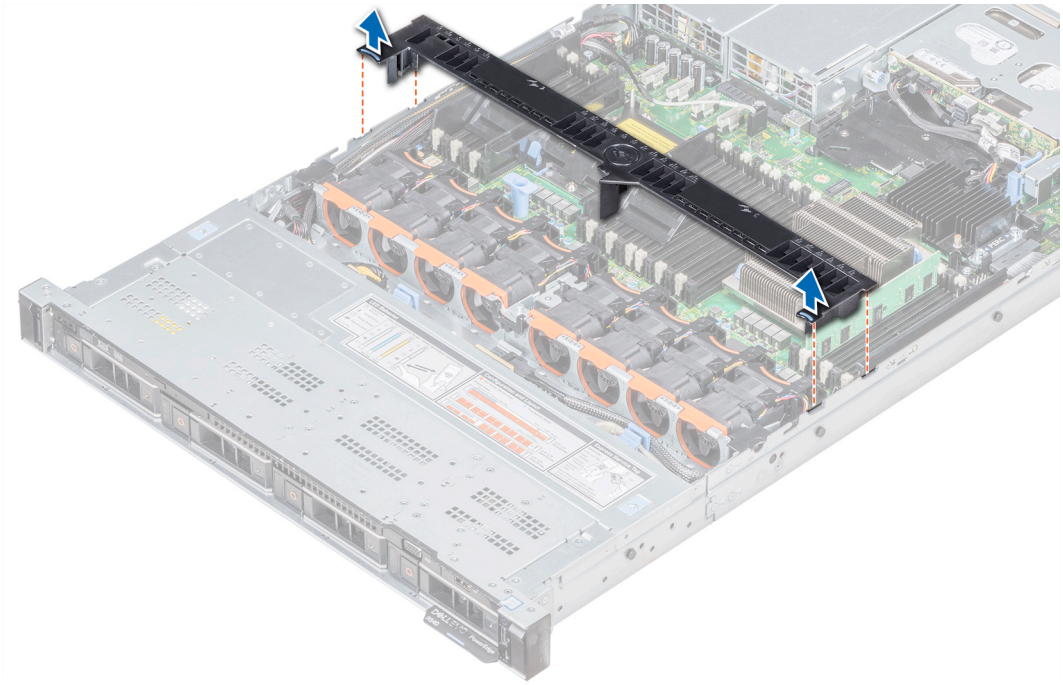

Figure 24. Removing the air shroud

Next steps

If applicable, install the air shroud.

Installing the air shroud

Prerequisites

1. Follow the safety guidelines listed in Safety instructions.
2. If applicable, route the cables inside the system along the system wall and secure the cables by using the cable latch.

Steps

1. Align the tabs on the air shroud with the slots on the system.
2. Lower the air shroud into the system until it is firmly seated.

   When firmly seated, the memory socket numbers marked on the air shroud align with the respective memory sockets.

   NOTE: The images shown here are for representation only and the actual configuration of your system may vary.

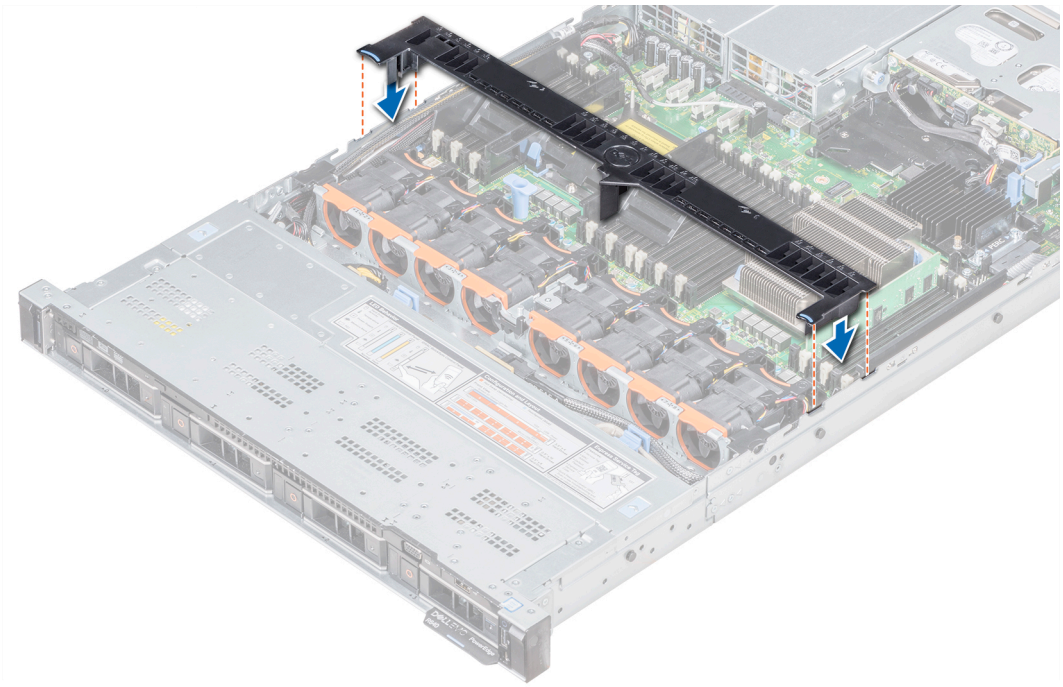

Figure 25. Installing the air shroud

Next steps

Follow the procedure listed in After working in your system.

Cooling fans

The cooling fans are integrated into the system to dissipate the heat generated by the functioning of the system. These fans provide cooling for the processors, expansion cards, and memory modules.

Your system supports up to eight standard cooling fans.

NOTE:

- Mixing of standard cooling fans is not supported.
- Each fan is listed in the systems management software, referenced by the respective fan number. If there is a problem with a particular fan, you can easily identify and replace the proper fan by noting the fan number on the system.

Removing a cooling fan

Prerequisites

NOTE: Opening or removing the system cover when the system is on may expose you to a risk of electric shock. Exercise utmost care while removing or installing cooling fans.

CAUTION: The cooling fans are hot swappable. To maintain proper cooling while the system is on, replace only one fan at a time.

1. Follow the safety guidelines listed in Safety instructions.
2. Remove the air shroud.

Steps

1. Holding the touch points on the cooling fan, lift the fan to disconnect the connector on the fan from the connector on the system board.
2. Lift the fan out of the system.

NOTE: The images shown here are for representation only and the actual configuration of your system may vary.

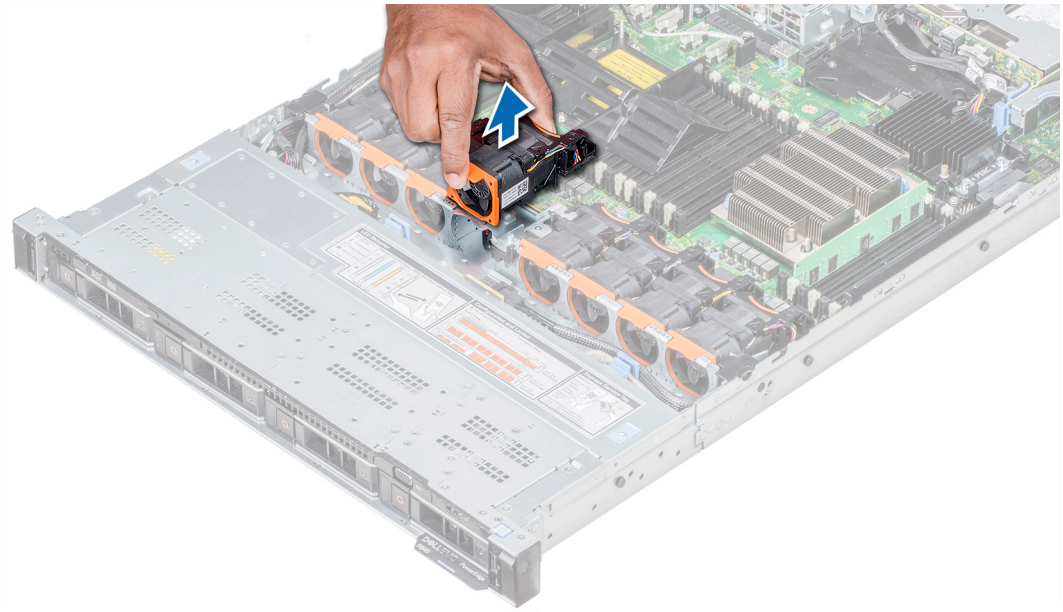

Figure 26. Removing the cooling fan

Next steps

If applicable, install the cooling fan.

Installing a cooling fan

Prerequisites

NOTE: Opening or removing the system cover when the system is on may expose you to a risk of electric shock. Exercise utmost care while removing or installing cooling fans.

CAUTION: The cooling fans are hot swappable. To maintain proper cooling while the system is on, replace only one fan at a time.

Follow the safety guidelines listed in Safety instructions.

Steps

1. Hold the touch points on the cooling fan, align the connector on the cooling fan with the connector on the system board.
2. Push the cooling fan, by pressing the touch point, until the fan is firmly seated on the connector.

NOTE: The images shown here are for representation only and the actual configuration of your system may vary.

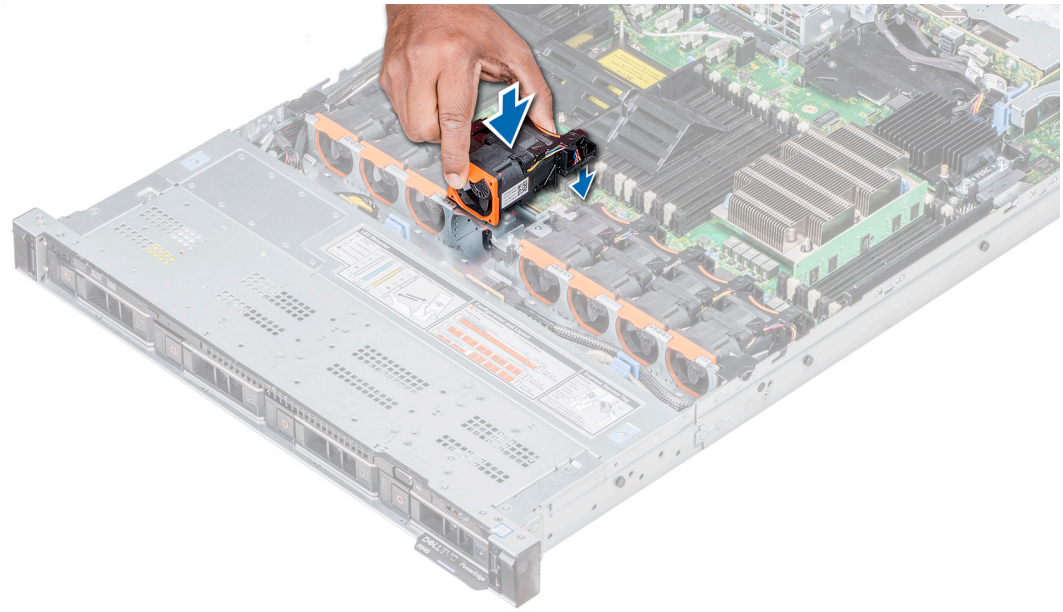

Figure 27. Installing the cooling fan

Next steps

Install the air shroud.

System memory

The system supports DDR4 registered DIMM (RDIMMs) slots. System memory holds the instructions that are executed by the processor.

Memory bus operating frequency is 3200 MT/s or 2666 MT/s depending on the following factors:

- DIMM type (RDIMM)
- Number of DIMM slots populated per channel
- System profile selected (for example, Performance Optimized, or Custom [can be run at high speed or lower])
- Maximum supported DIMM frequency of the processors

NOTE: MT/s indicates DIMM speed in MegaTransfers per second.

Your system contains 24 memory sockets split into two sets of 12 sockets, one set per processor. Each 12-socket set is organized into six channels. In each channel, the release tabs of the first socket are marked white, and the second socket black.

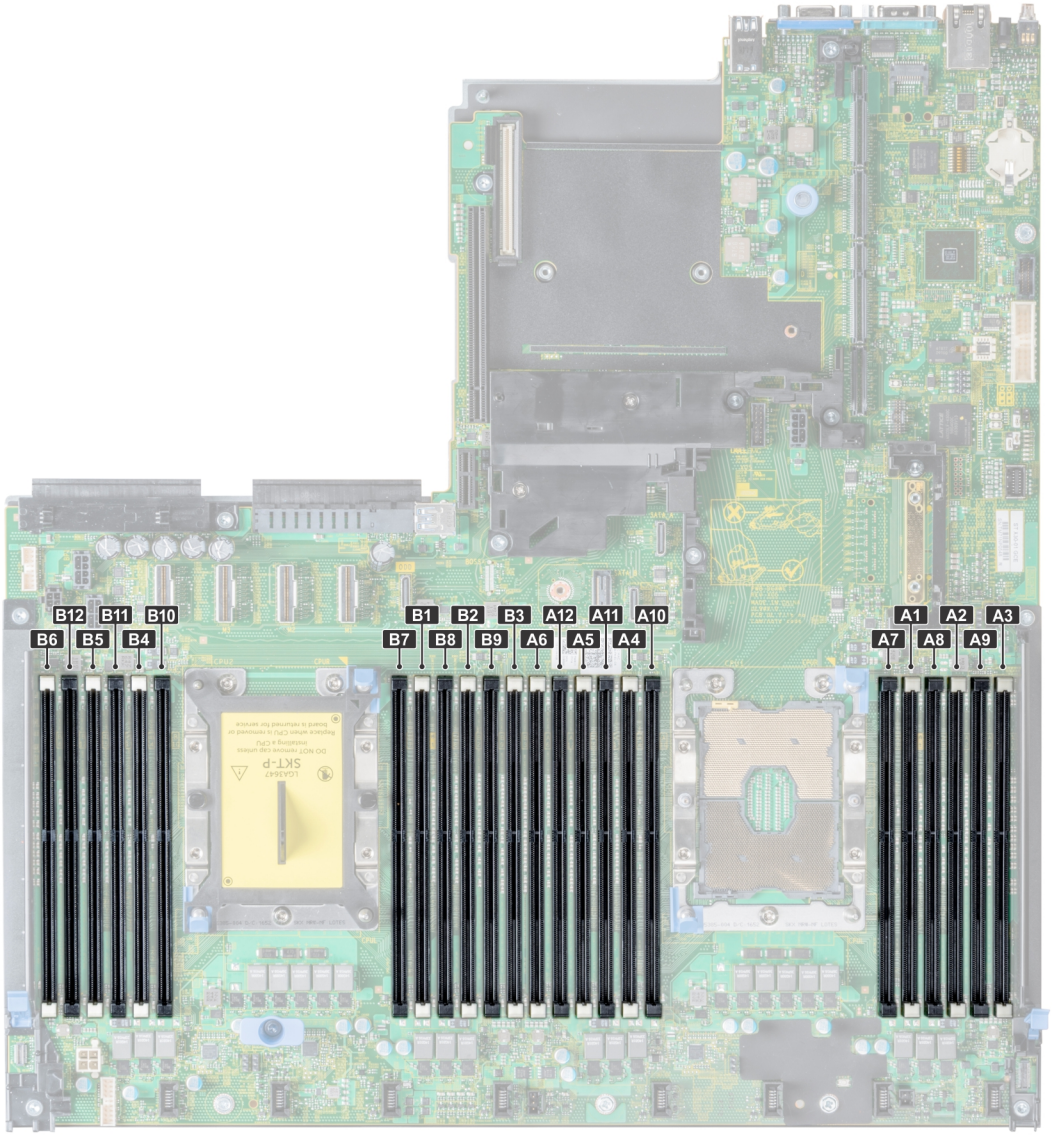

Figure 28. System memory view

Memory channels are organized as follows:

Table 8. Memory channels

Processor	Channel 0	Channel 1	Channel 2	Channel 3	Channel 4	Channel 5
Processor 1	Slots A1 and A7	Slots A2 and A8	Slots A3 and A9	Slots A4 and A10	Slots A5 and A11	Slots A6 and A12
Processor 2	Slots B1 and B7	Slots B2 and B8	Slots B3 and B9	Slots B4 and B10	Slots B5 and B11	Slots B6 and B12

General memory module installation guidelines

To ensure optimal performance of your system, observe the following general guidelines when configuring your system memory. If your system memory configuration does not follow these guidelines, your system might not boot, it might stop responding during memory configuration, or it might operate with reduced memory.

The system supports Flexible Memory Configuration, enabling the system to be configured and run in any valid chipset architectural configuration. The following are the recommended guidelines for installing memory modules:

- All DIMMs must be DDR4.
- x4 and x8 DRAM based memory modules can be mixed.

- Up to two RDIMMs can be populated per channel regardless of rank count.
- A maximum of two different ranked DIMMs can be populated in a channel regardless of rank count.
- If memory modules with different speeds are installed, they will operate at the speed of the slowest installed memory module(s).
- Populate memory module sockets only if a processor is installed.
  - For single-processor systems, sockets A1 to A12 are available.
  - For dual-processor systems, sockets A1 to A12 and sockets B1 to B12 are available.
- Populate all the sockets with white release tabs first, followed by the black release tabs.
- When mixing memory modules with different capacities, populate the sockets with memory modules with the highest capacity first.

  For example, if you want to mix 8 GB and 16 GB memory modules, populate 16 GB memory modules in the sockets with white release tabs and 8 GB memory modules in the sockets with black release tabs.
- Memory modules of different capacities can be mixed provided other memory population rules are followed.

  For example, 8 GB and 16 GB memory modules can be mixed.
- In a dual-processor configuration, the memory configuration for each processor must be identical.

  For example, if you populate socket A1 for processor 1, then populate socket B1 for processor 2, and so on.
- Mixing of more than two memory module capacities in a system is not supported.
- Unbalanced memory configurations will result in a performance loss so always populate memory channels identically with identical DIMMs for best performance.
- Populate six identical memory modules per processor (one DIMM per channel) at a time to maximize performance.
- To ensure proper system cooling, memory module blanks must be installed in memory sockets that are not occupied.

DIMM population update for Performance Optimized mode with quantity of 4 and 8 DIMMs per processor.

- When the DIMM quantity is 4, the population is slot 1, 2, 4, 5.
- When the DIMM quantity is 8, the population is slot 1, 2, 4, 5, 7, 8, 10, 11.

Mode-specific guidelines

The configurations allowed depend on the memory mode selected in the System BIOS.

Table 9. Memory operating modes

Memory Operating Mode	Description
Optimizer Mode	The **Optimizer Mode** if enabled, the DRAM controllers operate independently in the 64-bit mode and provide optimized memory performance.
Mirror Mode	The **Mirror Mode** if enabled, the system maintains two identical copies of data in memory, and the total available system memory is one half of the total installed physical memory. Half of the installed memory is used to mirror the active memory modules. This feature provides maximum reliability and enables the system to continue running even during a catastrophic memory failure by switching over to the mirrored copy. The installation guidelines to enable Mirror Mode require that the memory modules be identical in size, speed, and technology, and they must be populated in sets of 6 per processor.
Single Rank Spare Mode	**Single Rank Spare Mode** allocates one rank per channel as a spare. If excessive correctable errors occur in a rank or channel, while the operating system is running, they are moved to the spare area to prevent errors from causing an uncorrectable failure. Requires two or more ranks to be populated in each channel.
Multi Rank Spare Mode	**Multi Rank Spare Mode** allocates two ranks per channel as a spare. If excessive correctable errors occur in a rank or channel, while the operating system is running, they are moved to the spare area to prevent errors from causing an uncorrectable failure. Requires three or more ranks to be populated in each channel.
	With single rank memory sparing enabled, the system memory available to the operating system is reduced by one rank per channel. For example, in a dual-processor configuration with 24x 16 GB dual-rank memory modules, the available system memory is: 3/4 (ranks/channel) × 24 (memory modules) × 16 GB = 288 GB, and not 24 (memory modules) × 16 GB = 384 GB.

Table 9. Memory operating modes (continued)

Memory Operating Mode	Description
	For multi rank sparing, the multiplier changes to 1/2 (ranks/channel). **NOTE:** To use memory sparing, this feature must be enabled in the BIOS menu of System Setup. **NOTE:** Memory sparing does not offer protection against a multi-bit uncorrectable error.
Dell Fault Resilient Mode	The **Dell Fault Resilient Mode** if enabled, the BIOS creates an area of memory that is fault resilient. This mode can be used by an OS that supports the feature to load critical applications or enables the OS kernel to maximize system availability.

Optimizer Mode

This mode supports Single Device Data Correction (SDDC) only for memory modules that use x4 device width. It does not impose any specific slot population requirements.

- Dual processor: Populate the slots in round robin sequence starting with processor 1.
  NOTE: Processor 1 and processor 2 population should match.

Table 10. Memory population rules

Processor	Configuration	Memory population	Memory population information
Single processor	Optimizer (Independent channel) population order	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	• DIMMs must be populated in the order specified. • Odd number of DIMM population is allowed **NOTE:** Odd number of DIMMs will result in unbalanced memory configurations, which in turn will result in performance loss. It is recommended to populate all memory channels identically with identical DIMMs for best performance. • Optimizer population order is not traditional for 4 and 8 DIMM installations of single processor. ○ For 4 DIMMs: A1, A2, A4, A5 ○ For 8 DIMMs: A1, A2, A4, A5, A7, A8, A10, A11
	Mirror population order	{1, 2, 3, 4, 5, 6} {7, 8, 9, 10, 11, 12}	Mirroring is supported with 6 or 12 DIMMs per processor.
	Single rank sparing population order	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	• DIMMs must be populated in the order specified. • Requires two ranks or more per channel.
	Multi rank sparing population order	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12	• DIMMs must be populated in the order specified. • Requires three ranks or more per channel.
	Fault resilient population order	{1, 2, 3, 4, 5, 6} {7, 8, 9, 10, 11, 12}	Supported with 6 or 12 DIMMs per processor.
Dual processor (Start with processor1. processor1 and processor 2 population should match)	Optimized (Independent channel) population order	A{1}, B{1}, A{2}, B{2}, A{3}, B{3}, A{4}, B{4}, A{5}, B{5}, A{6}, B{6}	Odd number of DIMM population per processor is allowed. **NOTE:** Odd number of DIMMs will result in unbalanced memory configurations, which in turn will result in performance loss. It is recommended to populate all memory

Table 10. Memory population rules (continued)

Processor	Configuration	Memory population	Memory population information
			channels identically with identical DIMMs for best performance. Optimizer population order is not traditional for 8 and 16 DIMMs installations for dual processor. • For 8 DIMMs: A1, A2, A4, A5, B1, B2, B4, B5 • For 16 DIMMs: A1, A2, A4, A5, A7, A8, A10, A11 B1, B2, B4, B5, B7, B8, B10, B11
	Mirroring population order	A{1, 2, 3, 4, 5, 6}, B{1, 2, 3, 4, 5, 6}, A{7, 8, 9, 10, 11, 12}, B{7, 8, 9, 10, 11, 12}	Mirroring is supported with 6 or 12 DIMMs per processor.
	Single rank sparing population order	A{1}, B{1}, A{2}, B{2}, A{3}, B{3}, A{4}, B{4}, A{5}, B{5}, A{6}, B{6}	• DIMMs must be populated in the order specified. • Requires two ranks or more per channel.
	Multi rank sparing population order	A{1}, B{1}, A{2}, B{2}, A{3}, B{3}, A{4}, B{4}, A{5}, B{5}, A{6}, B{6}	• DIMMs must be populated in the order specified. • Requires three ranks or more per channel.
	Fault resilient population order	A{1, 2, 3, 4, 5, 6}, B{1, 2, 3, 4, 5, 6}, A{7, 8, 9, 10, 11, 12}, B{7, 8, 9, 10, 11, 12}	Supported with 6 or 12 DIMMs per processor.

Removing a memory module

Prerequisites

1. Follow the safety guidelines listed in Safety instructions.
2. Follow the procedures in Before working inside your system.
3. If applicable, remove the air shroud.

WARNING: Allow the memory modules to cool after you power off the system. Handle the memory modules by the card edges and avoid touching the components or metallic contacts on the memory module.

CAUTION: To ensure proper system cooling, memory module blanks must be installed in any memory socket that is not occupied. Remove memory module blanks only if you intend to install memory modules in those sockets.

Steps

1. Locate the appropriate memory module socket.

   CAUTION: Handle each memory module only by the card edges, ensuring not to touch the middle of the memory module or metallic contacts.

2. Push the ejectors outward on both ends of the memory module socket to release the memory module from the socket.
3. Lift and remove the memory module from the system.

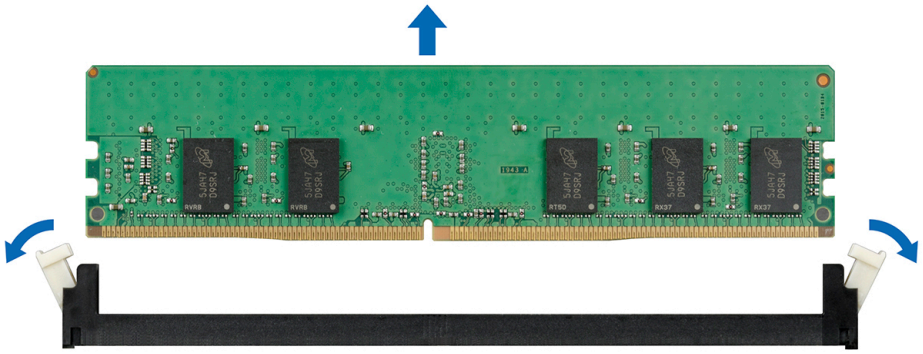

Figure 29. Removing a memory module

Next steps

1. Install the memory module.
2. If you are removing the memory module permanently, install a memory module blank. The procedure to install a memory module blank is similar to that of the memory module.

Installing a memory module

Prerequisites

Follow the safety guidelines listed in Safety instructions.

CAUTION: To ensure proper system cooling in configurations with mid drive tray, memory module blanks must be installed in any memory socket that is not occupied. Remove memory module blanks only if you intend to install memory modules in those sockets.

NOTE: You must follow the thermal restriction while using DIMM blank. For information about thermal restriction, see the Thermal restrictions section.

Steps

1. Locate the appropriate memory module socket.

   CAUTION: Handle each memory module only by the card edges, ensuring not to touch the middle of the memory module or metallic contacts.

   CAUTION: To prevent damage to the memory module or the memory module socket during installation, do not bend or flex the memory module. You must insert both ends of the memory module simultaneously.

2. Open the ejectors on the memory module socket outward to allow the memory module to be inserted into the socket.
3. Align the edge connector of the memory module with the alignment key of the memory module socket, and insert the memory module in the socket.

   CAUTION: Do not apply pressure at the center of the memory module; apply pressure at both ends of the memory module evenly.

   NOTE: The memory module socket has an alignment key that enables you to install the memory module in the socket in only one orientation.

4. Press the memory module with your thumbs until the socket levers firmly click into place.

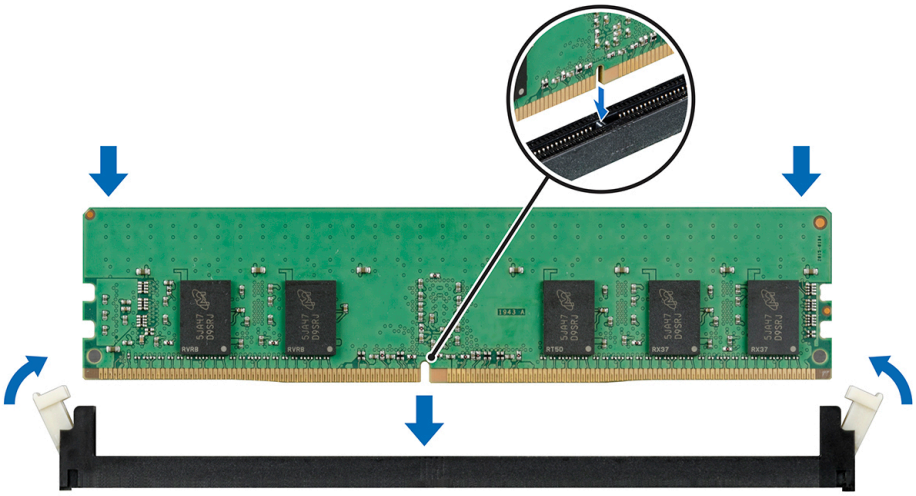

Figure 30. Installing a memory module

Next steps

1. Install the air shroud.
2. If applicable, install the mid drive tray.
3. Follow the procedures in After working inside your system.
4. To verify if the memory module has been installed properly, press F2 and navigate to **System Setup Main Menu > System BIOS > Memory Settings**. In the **Memory Settings** screen, the System Memory Size must reflect the updated capacity of the installed memory.
5. If the value is incorrect, one or more of the memory modules may not be installed properly. Ensure that the memory module is firmly seated in the memory module socket.
6. Run the system memory test in system diagnostics.

Processors and heat sinks

The processor controls memory, peripheral interfaces, and other components of the system. The system can have more than one processor configuration. The heat sink absorbs the heat that is generated by the processor and helps the processor to maintain its optimal temperature level.

Removing a processor and heat sink module

Prerequisites

WARNING: The heat sink may be hot to touch for some time after the system has been turned off. Allow the heat sink to cool before removing it.

1. Follow the safety guidelines listed in Safety instructions.
2. Follow the procedures in Before working inside your system.

Steps

1. Using a Torx #T30 screwdriver, loosen the screws on the heat sink in the order given below:
   a. Loosen the first screw three turns.
   b. Loosen the second screw completely.
   c. Return to the first screw and loosen it completely.

   NOTE: It is normal for the heat sink to slip off the blue retention clips when the screws are partially loosened, continue to loosen the screws.

2. Push both blue retention clips simultaneously and lift the processor and heat sink module (PHM) out of the system.
3. Set the PHM aside with the processor side facing up.

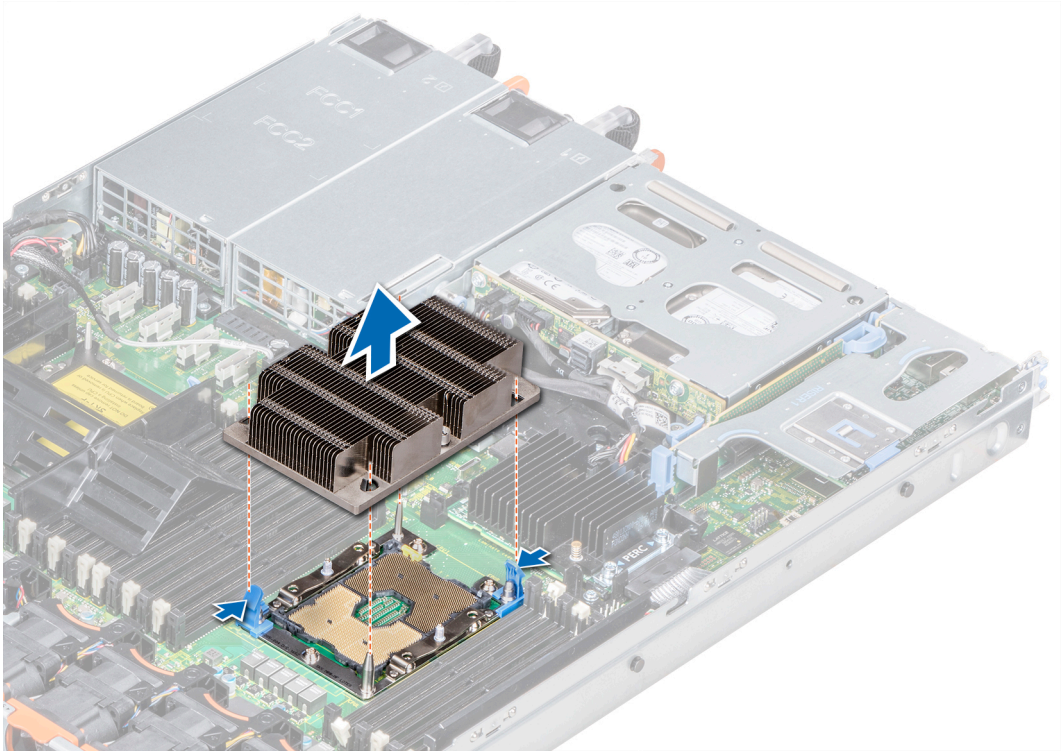

Figure 31. Removing a processor and heat sink module

Next steps

Install the Processor and heat sink module.

Removing the processor from the processor and heat sink module

Prerequisites

NOTE: Only remove the processor from the processor and heat sink module if you are replacing the processor or heat sink. This procedure is not required when replacing a system board.

1. Follow the safety guidelines listed in Safety instructions.
2. Follow the procedures in Before working inside your system.
3. Remove the air shroud.
4. Remove the processor and heat sink module.

Steps

1. Place the heat sink with the processor side facing up.
2. Insert a flat blade screwdriver into the release slot marked with a yellow label. Twist (do not pry) the screwdriver to break the thermal paste seal.
3. Push the retaining clips on the processor bracket to unlock the bracket from the heat sink.

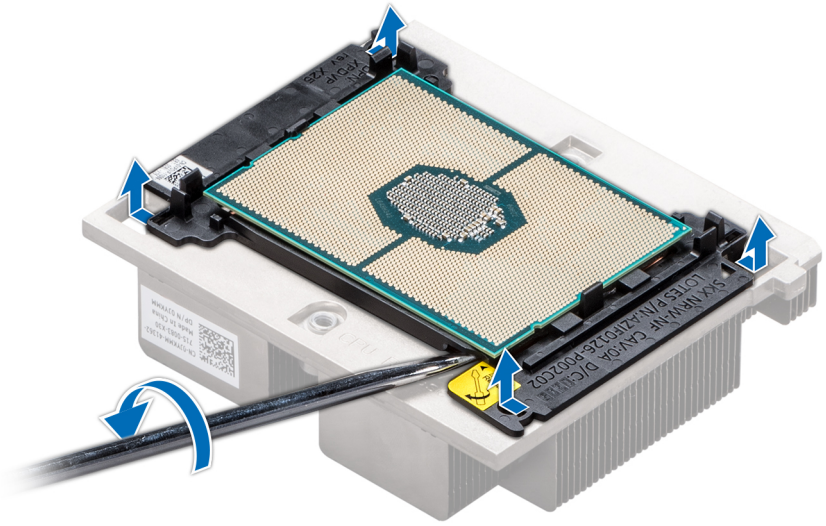

Figure 32. Loosening the processor bracket

4. Lift the bracket and the processor away from the heat sink, and place the processor connector side down on the processor tray.
5. Flex the outer edges of the bracket to release the bracket from the processor.

NOTE: Ensure that the processor and the bracket are placed in the tray after you remove the heat sink.

Figure 33. Removing the processor bracket

Next steps

Install the processor into the processor and heat sink module.

Installing the processor into a processor and heat sink module

Prerequisites

Follow the safety guidelines listed in Safety instructions.

Steps

1. Place the processor in the processor tray.

   NOTE: Ensure that the pin 1 indicator on the processor tray is aligned with the pin 1 indicator on the processor.

2. Flex the outer edges of the bracket around the processor ensuring that the processor is locked into the clips on the bracket.

   NOTE: Ensure that the pin 1 indicator on the bracket is aligned with the pin 1 indicator on the processor before placing the bracket on the processor.

   NOTE: Ensure that the processor and the bracket are placed in the tray before you install the heat sink.

Figure 34. Installing the processor bracket

3. If you are using an existing heat sink, remove the thermal grease from the heat sink by using a clean lint-free cloth.
4. Use the thermal grease syringe included with your processor kit to apply the grease in a quadrilateral design on the top of the processor.

   CAUTION: Applying too much thermal grease can result in excess grease coming in contact with and contaminating the processor socket.

   NOTE: The thermal grease syringe is intended for single use only. Dispose the syringe after you use it.

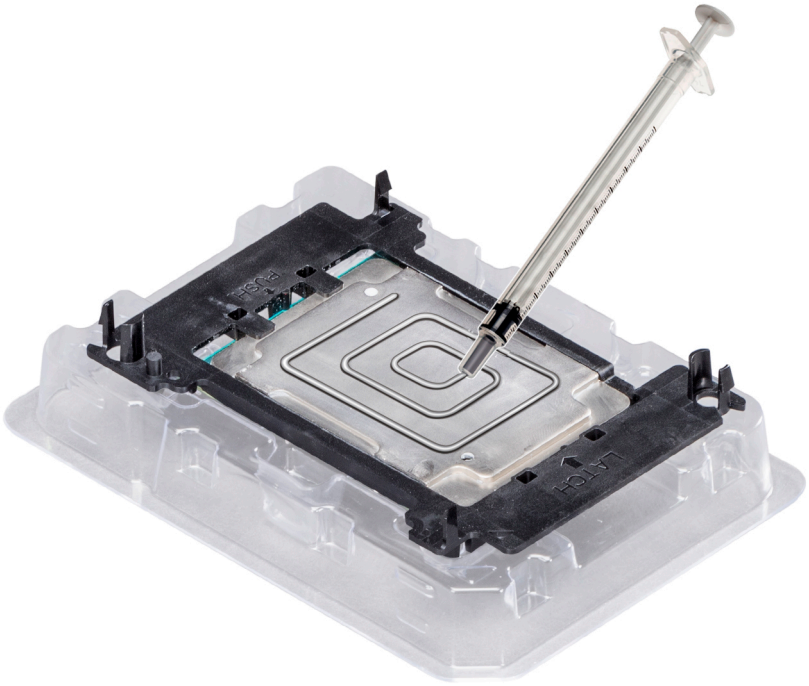

Figure 35. Applying thermal grease on top of the processor

5. Place the heat sink on the processor and push down on the base of the heat sink until the bracket locks onto the heat sink.

NOTE:

- Ensure that the two guide pin holes on the bracket match the guide holes on the heat sink.
- Do not press on the heat sink fins.
- Ensure that the pin 1 indicator on the heat sink is aligned with the pin 1 indicator on the bracket before placing the heat sink onto the processor and bracket.

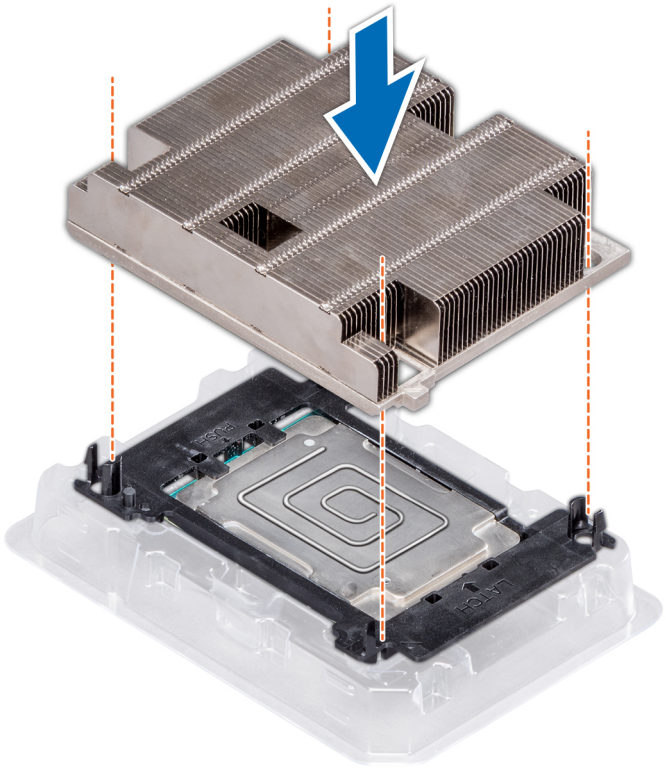

Figure 36. Installing the heat sink onto the processor

Next steps

1. Install the processor and heat sink module.
2. Follow the procedures in After working inside your system.

Installing a processor and heat sink module

Prerequisites

CAUTION: Never remove the heat sink from a processor unless you intend to replace the processor. The heat sink is necessary to maintain proper thermal conditions.

1. Follow the safety guidelines listed in Safety instructions.
2. If installed, remove the processor/DIMM blank and CPU dust cover.

Steps

1. Align the pin 1 indicator of the heat sink to the system board, and then place the processor and heat sink module (PHM) on the processor socket.

   CAUTION: To avoid damaging the fins on the heat sink, do not press down on the heat sink fins.

   NOTE: Ensure that the PHM is held parallel to the system board to prevent damaging the components.

2. Push the blue retention clips inward to enable the heat sink to drop into place.
3. Support the heat sink with one hand, and use a Torx #T30 screwdriver to tighten the screws on the heat sink in the order given below.
   a. Partially tighten the first screw (approximately three turns).
   b. Tighten the second screw completely.
   c. Return to the first screw and tighten it completely.

   If the PHM slips off the blue retention clips when the screws are partially tightened, follow these steps to secure the PHM:

a. Loosen both the heat sink screws completely.
b. Lower the PHM on to the blue retention clips, following the procedure described in step 2.
c. Secure the PHM to the system board, following the replacement instructions listed in step 3.

NOTE: Do not tighten the retention screws to more than 0.13 kgf-m (1.35 N.m or 12 in-lbf).

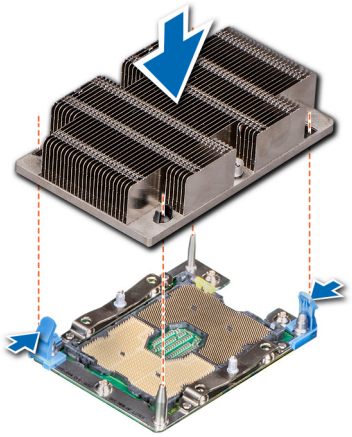

Figure 37. Installing a processor and heat sink module

Next steps

1. Follow the procedures in After working inside your system.

Expansion cards and expansion card risers

An expansion card in the system is an add-on card that can be inserted into an expansion slot on the system board or a slot on a riser card to add enhanced functionality to the system through the expansion bus.

NOTE: A System Event Log (SEL) event is logged if an expansion card riser is not supported or missing. It does not prevent your system from turning on. However, if F1/F2 pause occurs and an error message is displayed.

Expansion bus specifications

The NX3340 system supports PCI express (PCIe) generation 3 expansion cards, which are installed on the system using expansion card risers. This system supports 1A, and 2A expansion card risers.

Expansion card installation guidelines

Depending on your system configuration, the following PCI Express (PCIe) generation 3 expansion cards are supported:

Table 11. Expansion card riser configurations

Expansion card riser	PCIe slots on the riser	Processor connection	Height	Length	Slot width
Riser 1A	Slot 1	Processor 1	Low Profile	Half Length	x16
	Slot 2	Processor 1	Low Profile	Half Length	x16
Riser 2A	Slot 3	Processor 2	Low Profile	Half Length	x16

NOTE: The expansion card slots are not hot-swappable.

The following table provides guidelines for installing expansion cards to ensure proper cooling and mechanical fit. The expansion cards with the highest priority should be installed first using the slot priority indicated. All the other expansion cards should be installed in the card priority and slot priority order.

Table 12. Riser configurations: 1A + 2A

Card type	Slot priority	Form factor
Adapter RAID (Dell design)	1	Low Profile
Infiniband HCA EDR (Mellanox)	1, 2, 3	Low Profile
100G NICs (Mellanox)	1, 2, 3	Low Profile
Omni-Path HFI (Intel)	1, 2, 3	Low Profile
Infiniband HCA FDR (Mellanox)	1, 2, 3	Low Profile
40G NICs (Intel)	1, 2, 3	Low Profile
40G NICs (Mellanox)	1, 2, 3	Low Profile
FC32 HBA (QLogic)	1, 2, 3	Low Profile
FC32 HBA (Emulex)	1, 2, 3	Low Profile
25G NICs (Broadcom)	1, 2, 3	Low Profile
25G NICs (Mellanox)	1, 2, 3	Low Profile
25G NICs (QLogic)	1, 2, 3	Low Profile
FC16 HBA (QLogic)	1, 2, 3	Low Profile
FC16 HBA (Emulex)	1, 2, 3	Low Profile
10Gb NICs (Broadcom)	1, 2, 3	Low Profile
10Gb NICs (Intel)	1, 2, 3	Low Profile
10Gb NICs (Mellanox)	1, 2, 3	Low Profile
10Gb NICs (QLogic)	1, 2, 3	Low Profile
10Gb NICs (Solarflare)	1, 2, 3	Low Profile
FC8 HBA (Emulex)	1, 3	Low Profile
FC8 HBA (QLogic)	1, 2, 3	Low Profile
1Gb NICs (Broadcom)	1, 2, 3	Low Profile
1Gb NICs (Intel)	1, 2, 3	Low Profile
External RAID (Dell design)	1, 2, 3	Low Profile
Non-RAID (Dell design)	1, 3	Low Profile
Integrated RAID (Dell design)	Integrated Slot	NONE
rNDC (Broadcom)	Integrated Slot	NONE
rNDC (Intel)	Integrated Slot	NONE
rNDC (Mellanox)	Integrated Slot	NONE
rNDC (QLogic)	Integrated Slot	NONE

Table 13. Riser configurations:1A

Card type	Slot priority	Form factor
Adapter RAID (Dell design)	1	Low Profile

Table 13. Riser configurations:1A (continued)

Card type	Slot priority	Form factor
Non-RAID (Dell design)	1	Low Profile
Infiniband HCA EDR (Mellanox)	1, 2	Low Profile
100G NICs (Mellanox)	1, 2	Low Profile
Omni-Path HFI (Intel)	1, 2	Low Profile
Infiniband HCA FDR (Mellanox)	1, 2	Low Profile
40G NICs (Intel)	1, 2	Low Profile
40G NICs (Mellanox)	1, 2	Low Profile
FC32 HBA (QLogic)	1, 2	Low Profile
FC32 HBA (Emulex)	1, 2	Low Profile
25G NICs (Broadcom)	1, 2	Low Profile
25G NICs (Mellanox)	1, 2	Low Profile
25G NICs (QLogic)	1, 2	Low Profile
FC16 HBA (QLogic)	1, 2	Low Profile
FC16 HBA (Emulex)	1, 2	Low Profile
10Gb NICs (Broadcom)	1, 2	Low Profile
10Gb NICs (Intel)	1, 2	Low Profile
10Gb NICs (Mellanox)	1, 2	Low Profile
10Gb NICs (QLogic)	1, 2	Low Profile
10Gb NICs (Solarflare)	1, 2	Low Profile
FC8 HBA (Emulex)	1	Low Profile
FC8 HBA (QLogic)	1, 2	Low Profile
1Gb NICs (Broadcom)	1, 2	Low Profile
1Gb NICs (Intel)	1, 2	Low Profile
External RAID (Dell design)	1, 2	Low Profile
Integrated RAID (Dell design)	Integrated Slot	NONE
rNDC (Broadcom)	Integrated Slot	NONE
rNDC (Intel)	Integrated Slot	NONE
rNDC (Mellanox)	Integrated Slot	NONE
rNDC (QLogic)	Integrated Slot	NONE

Removing an expansion card riser

Prerequisites

1. Follow the safety guidelines listed in Safety instructions.
2. Follow the procedures in Before working inside your system.
3. Before removing the expansion card riser 2A, remove the expansion card from the riser, if installed.
4. Disconnect any cables connected to the expansion card.

Steps

Hold the touch points, and lift the expansion card riser, from the riser connector, on the system board.

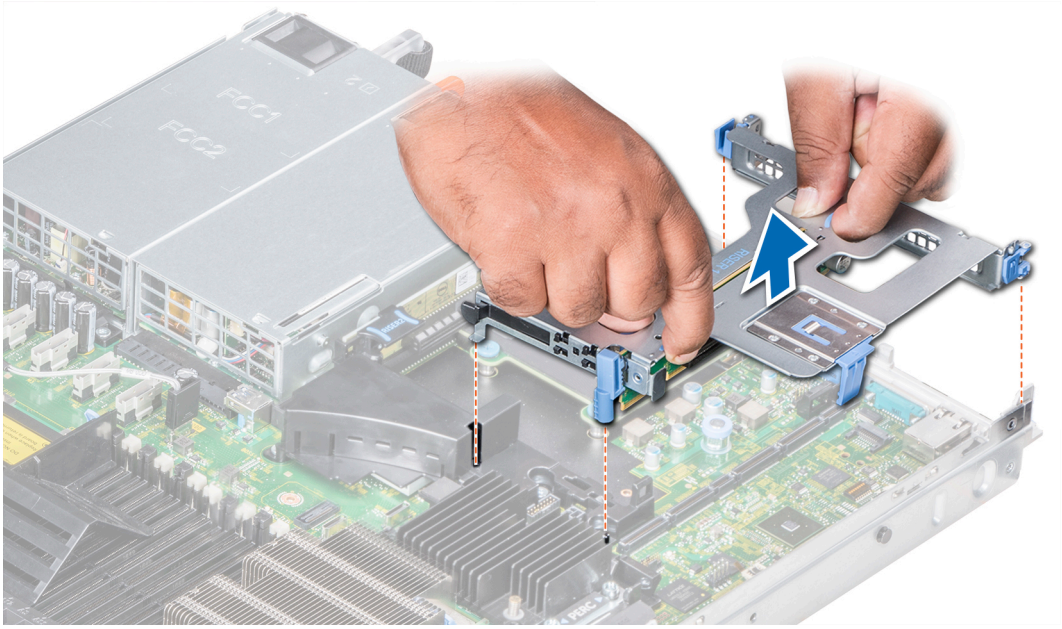

Figure 38. Removing the expansion riser 1A

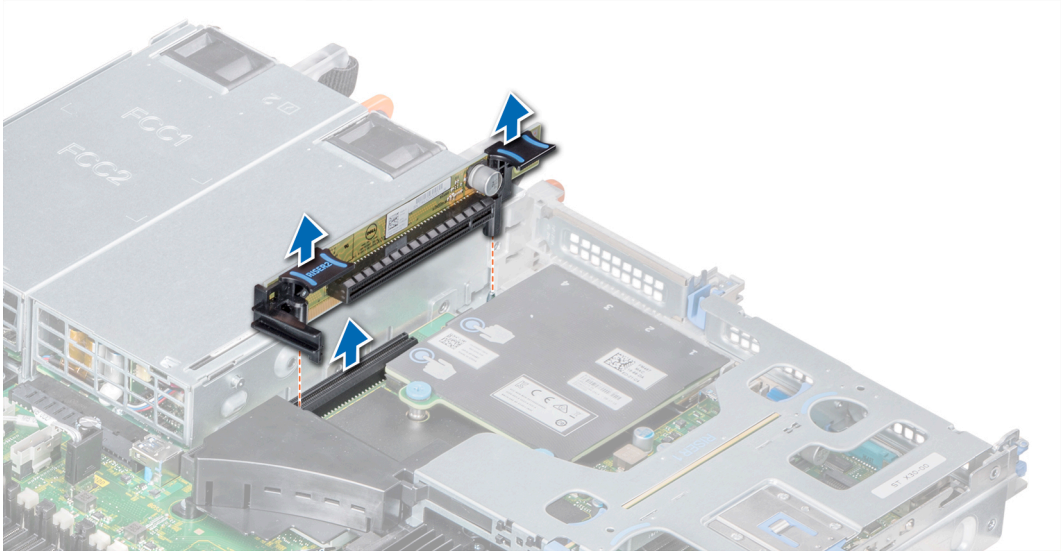

Figure 39. Removing the expansion riser 2A

Next steps

Install the expansion card riser.

Installing an expansion card riser

Prerequisites

1. Follow the safety guidelines listed in Safety instructions.
2. Before installing the expansion card riser 2A, install an expansion card into the riser, if applicable.

Steps

1. If removed, install the expansion cards into the expansion card riser.
2. Hold the touch points, and align the expansion card riser with the connector and the riser guide pin on the system board.
3. Lower the expansion card riser into place until the expansion card riser connector is fully seated in the connector.

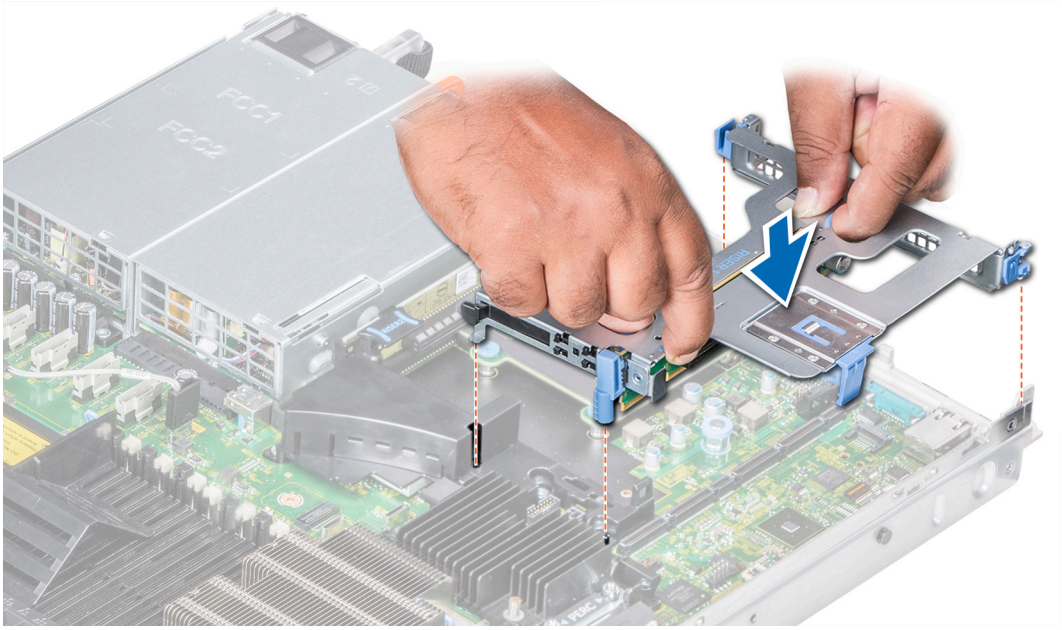

Figure 40. Installing the expansion riser 1A

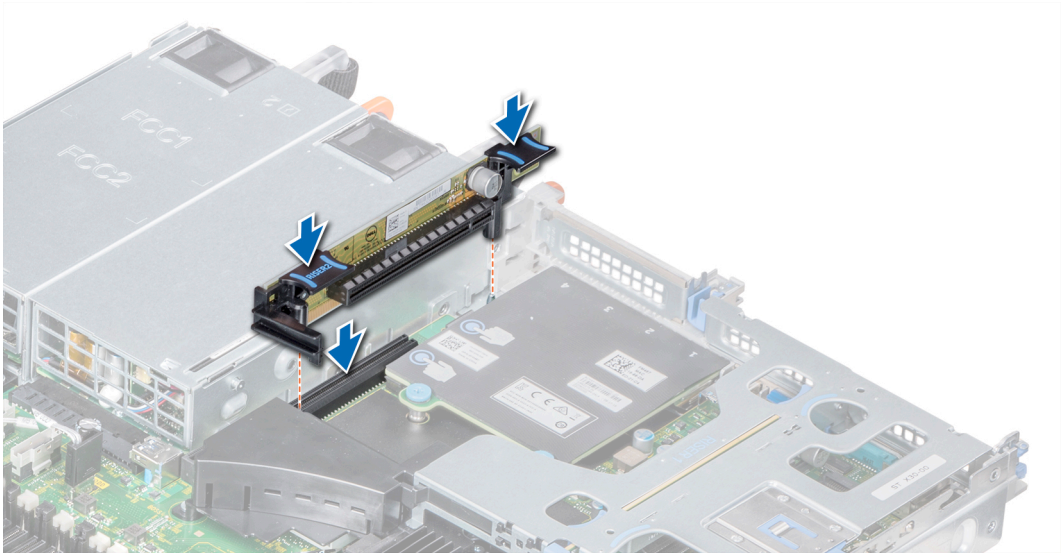

Figure 41. Installing the expansion riser 2A

Next steps

1. Follow the procedures in After working inside your system.
2. Install any device drivers required for the card as described in the documentation for the card.

Removing an expansion card from the expansion card riser

Prerequisites

1. Follow the safety guidelines listed in Safety instructions.

2. Follow the procedures in Before working inside your system.
3. If applicable, disconnect the cables from the expansion card.

NOTE: When removing a card from the riser 1, open the PCIe card holder latch. If applicable, remove the PCIe guide and then remove the expansion card.

Steps

1. If applicable, lift the expansion card latch(es) out of the slot.
2. Hold the expansion card by its edges, and pull the card until the card edge connector disengages from the expansion card connector on the riser.

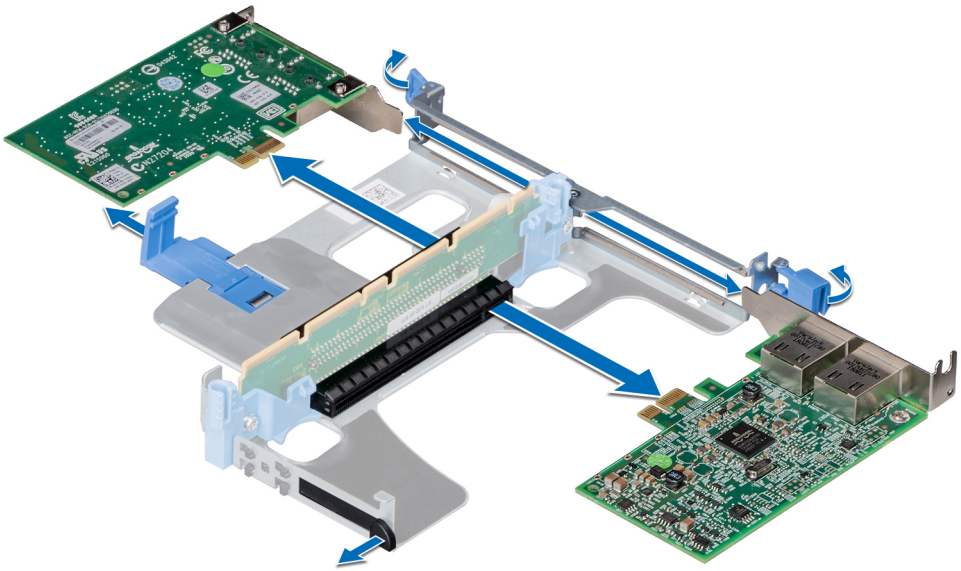

Figure 42. Removing an expansion card from riser 1A

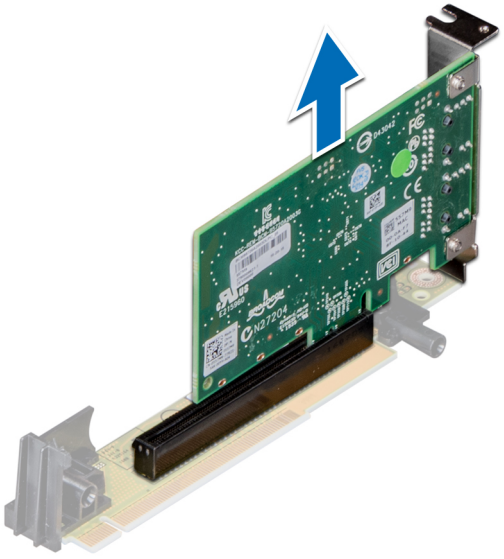

Figure 43. Removing an expansion card from riser 2A

3. If you are removing the card permanently, install a metal filler bracket over the empty expansion slot opening and close the expansion card latch.

NOTE: You must install a filler bracket over an empty expansion card slot to maintain Federal Communications Commission (FCC) certification of the system. The brackets also keep dust and dirt out of the system and aid in proper cooling and airflow inside the system.

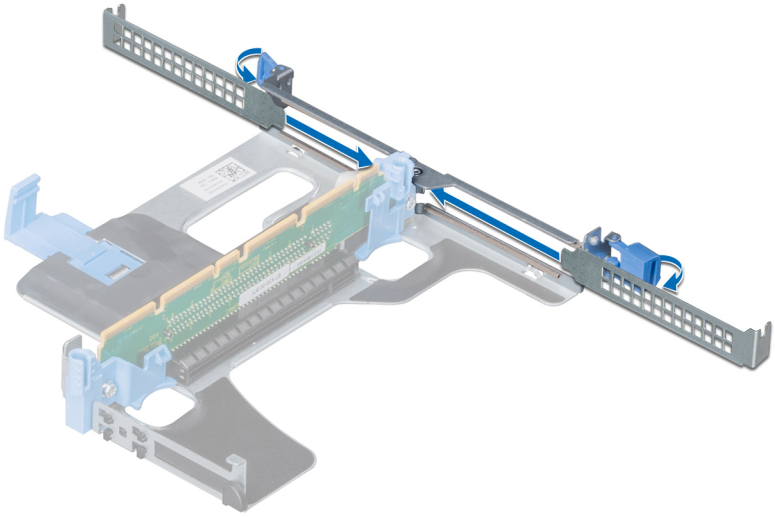

Figure 44. Installing a filler bracket into riser 1A

4. Insert the expansion card latch into the slot to secure the bracket.

Next steps

Install the expansion card into expansion card riser.

Installing an expansion card into expansion card riser

Prerequisites

1. Follow the safety guidelines listed in Safety instructions.
2. Unpack the expansion card and prepare it for installation.

   NOTE: For instructions, see the documentation accompanying the card.

NOTE: When installing a card into the riser 1, open the PCIe card holder latch. If applicable, open the PCIe guide and then install the expansion card.

Steps

1. If applicable, lift the expansion card latch and remove the filler bracket.

   NOTE: Store the filler bracket for future use. Filler brackets must be installed in empty expansion card slots to maintain Federal Communications Commission (FCC) certification of the system. The brackets also keep dust and dirt out of the system and aid in proper cooling and airflow inside the system.

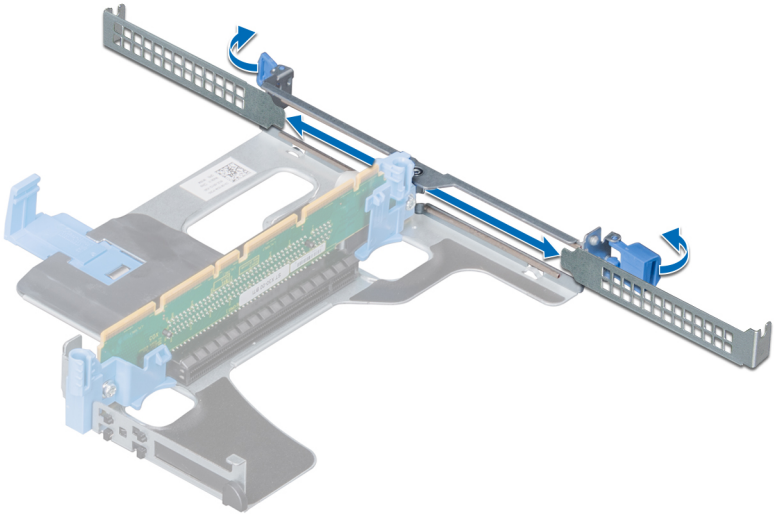

Figure 45. Removing the metal filler bracket on Riser 1A

2. Hold the card by its edges, and align the card edge connector with the expansion card connector on the riser.
3. Insert the card edge connector firmly into the expansion card connector until the card is fully seated.
4. Close the expansion card latch.

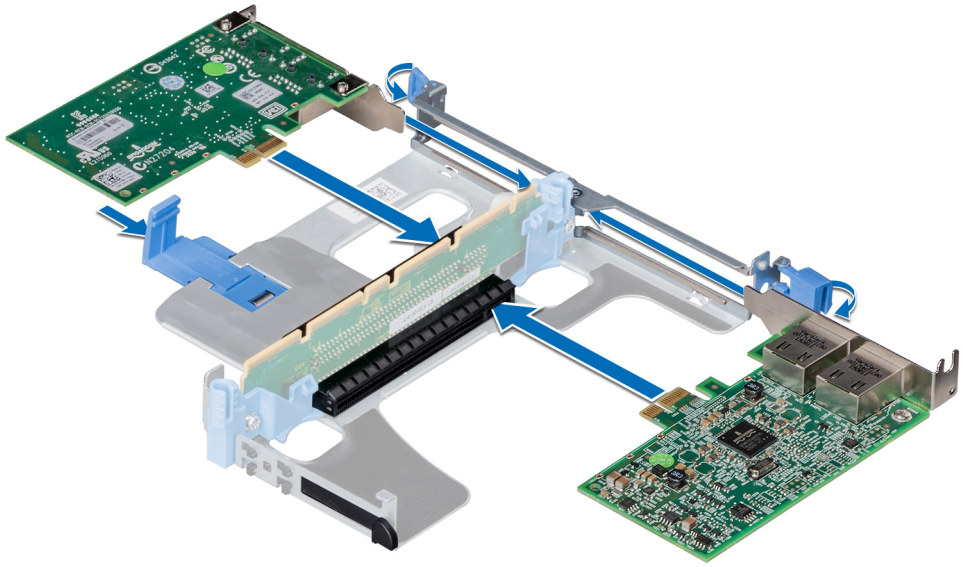

Figure 46. Installing expansion cards into the expansion riser 1A

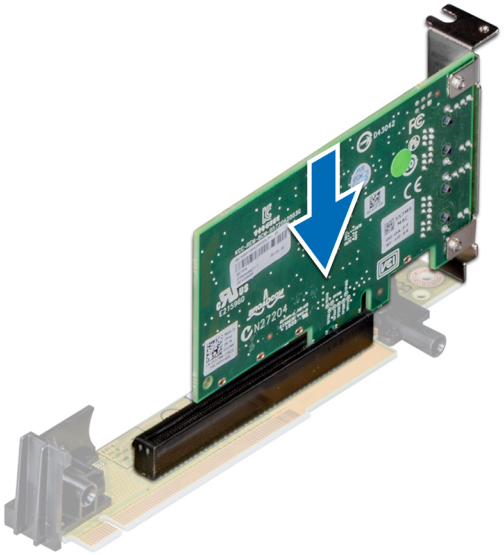

Figure 47. Installing an expansion card into the expansion riser 2A

Next steps

1. After installing a card into the riser 1, close the PCIe card holder latch. If applicable, close the PCIe guide after installing the expansion card.
2. Follow the procedures in After working inside your system.
3. Install any device drivers required for the card as described in the documentation for the card.

Network daughter card

The network daughter card (NDC) is a small, removable mezzanine card, which provides the flexibility of selecting different network connectivity options.

Removing the network daughter card

Prerequisites

1. Follow the safety guidelines listed in Safety instructions.
2. Follow the procedures in Before working inside your system.
3. Remove the expansion card riser 2, depending on the configuration of your system.

Steps

1. Using a Phillips #2 screwdriver, loosen the captive screws that secure the network daughter card (NDC) to the system board.
2. Hold the NDC by the edges on either side of the touch points, and lift to remove it from the connector on the system board.
3. Slide the NDC towards the front of the system until the Ethernet connectors are clear of the slot in the back panel.

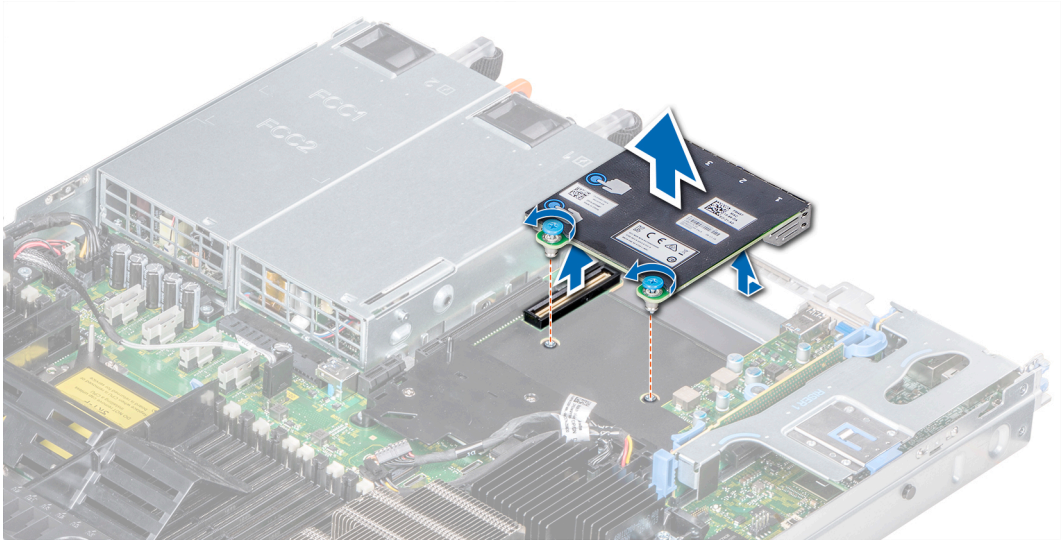

Figure 48. Removing the network daughter card

Next steps

Install the NDC.

Installing the network daughter card

Prerequisites

Follow the safety guidelines listed in Safety instructions.

Steps

1. Orient the NDC so that the Ethernet connectors fit through the slot in the chassis.
2. Align the captive screws at the back-end of the card with the screw holes on the system board.
3. Press the touch points on the card until the card connector is firmly seated on the system board connector.
4. Use a Phillips #2 screwdriver to tighten the captive screws to secure the NDC to the system board.

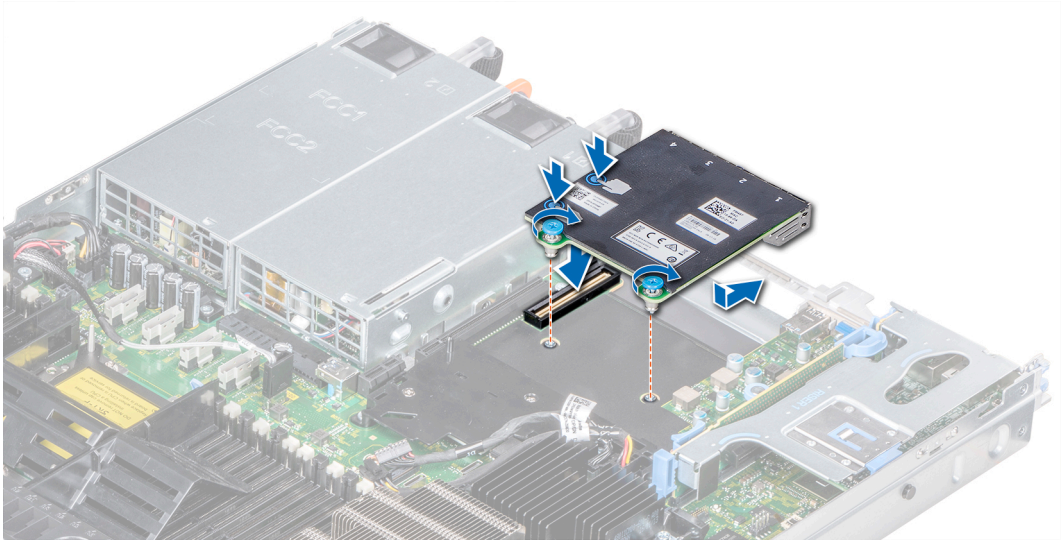

Figure 49. Installing the network daughter card

Next steps

1. Install the expansion card riser 2, depending on the configuration of your system.
2. Follow the procedures in After working inside your system.

Integrated storage controller card

Your system includes a dedicated expansion card slot on the system board for the primary storage controller card. The storage controller card provides the storage subsystem for internal drives of your system. The controller supports SAS and SATA drives and also enables you to set up the drives in RAID configurations as supported by the version of the storage controller.

Removing the integrated storage controller card

Prerequisites

1. Follow the safety guidelines listed in Safety instructions.
2. Follow the procedures in Before working inside your system.
3. Remove the air shroud.

Steps

1. Use the Phillips #2 screwdriver to loosen the screws that secure the integrated storage controller cable to the connector on the system board.
2. Lift the integrated storage controller cable to disconnect it from the connector on the system board.

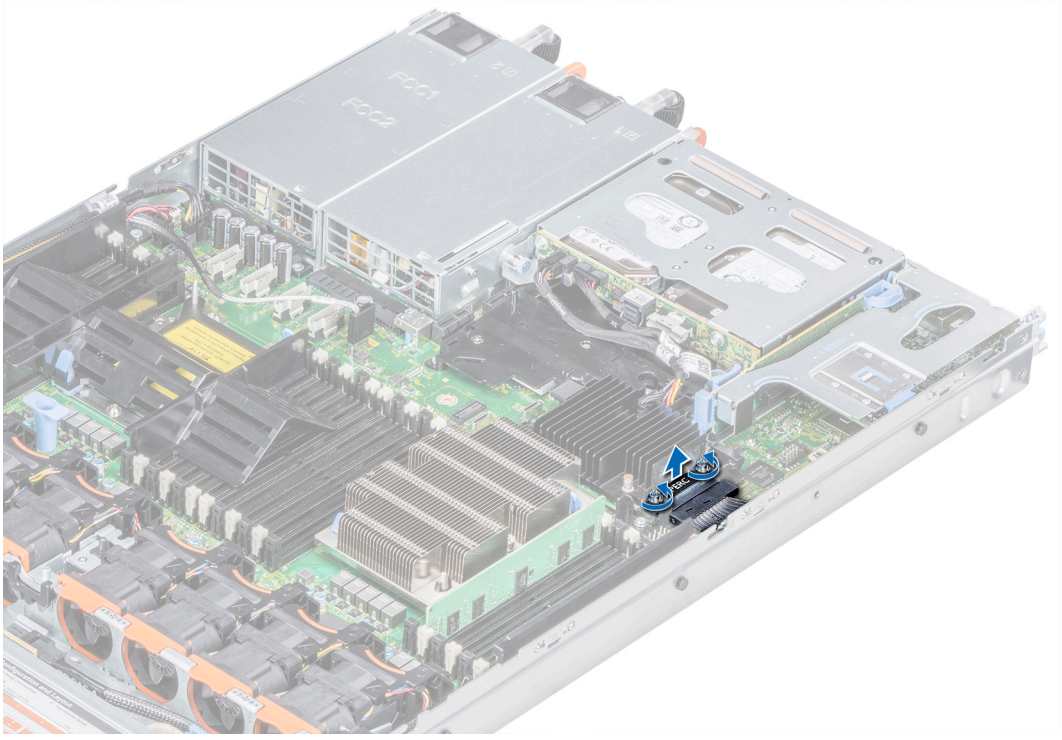

Figure 50. Removing the integrated storage controller cable

3. Lift one end of the card and angle it to disengage the card from the card holder on the system board.
4. Lift the card out of the system.

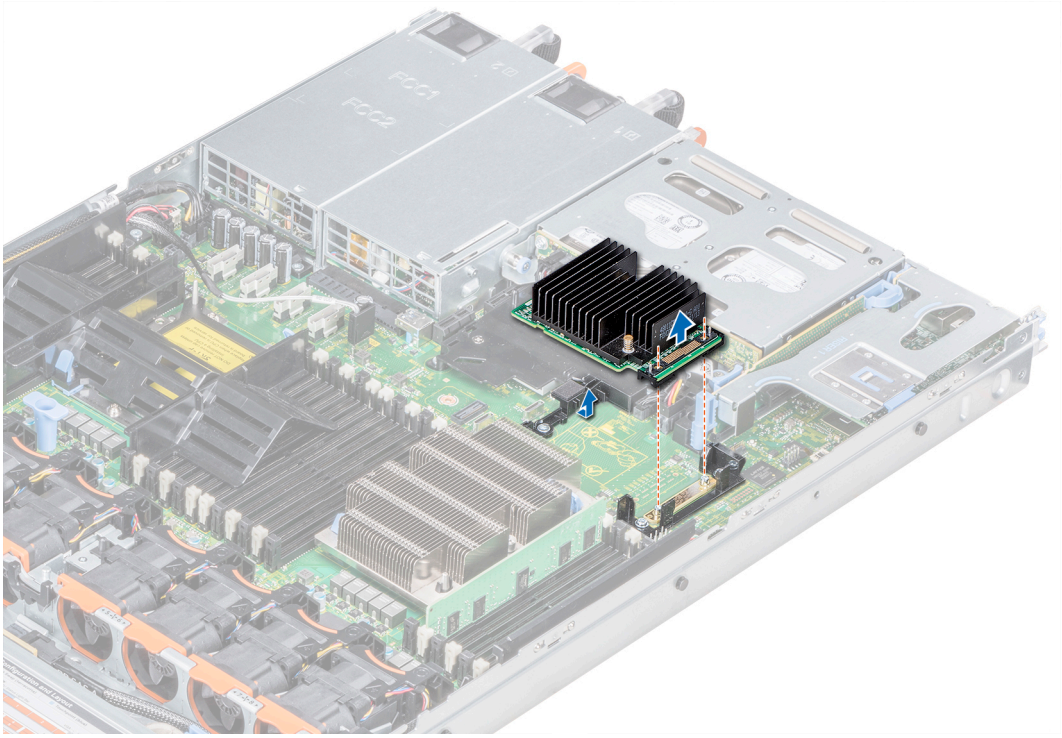

Figure 51. Removing the integrated storage controller card

Next steps

Install the integrated storage controller card.

Installing the integrated storage controller card

Prerequisites

Follow the safety guidelines listed in Safety instructions.

Steps

1. Angle the integrated storage controller card and align the end of the card with the controller card connector on the system board.
2. Lower the connector side of the integrated storage controller card into the integrated storage controller card connector on the system board.

   NOTE: Ensure that the slots on the system board align with the screw holes on the integrated storage controller card connector.

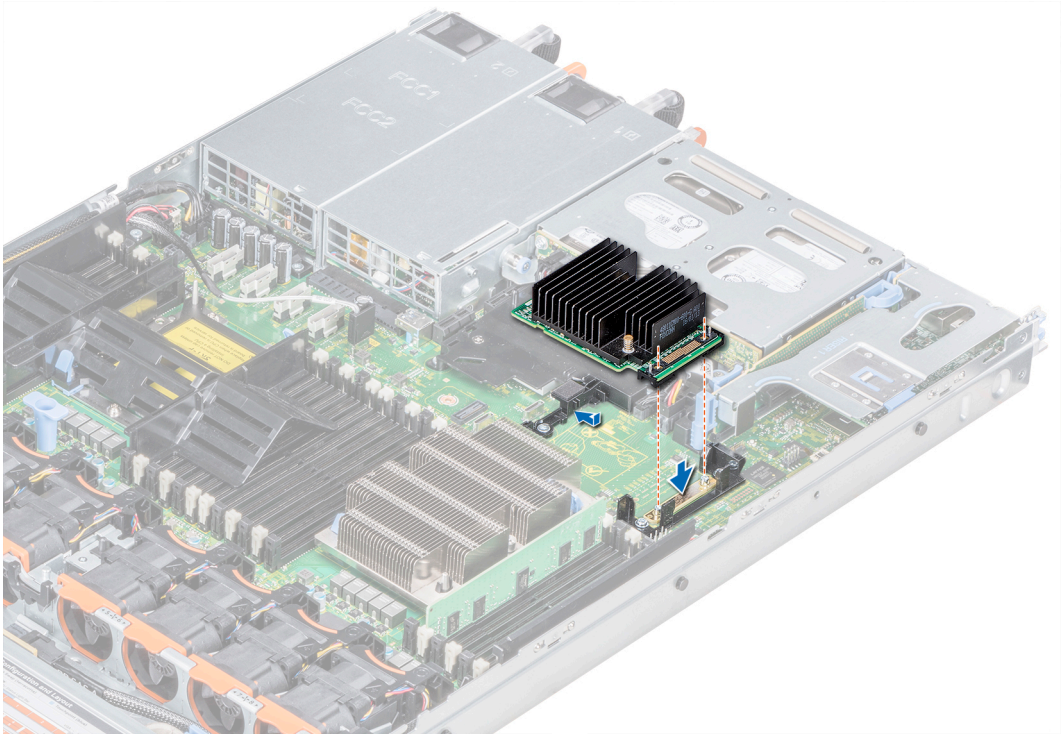

Figure 52. Installing the integrated storage controller card

3. Route the integrated storage controller card cable along the wall of the system.
4. Align the screws on the integrated storage controller card cable with the screw holes on the connector.
5. Use the Phillips #2 screwdriver to tighten the screws to secure the integrated storage controller card cable to the card connector on the system board.

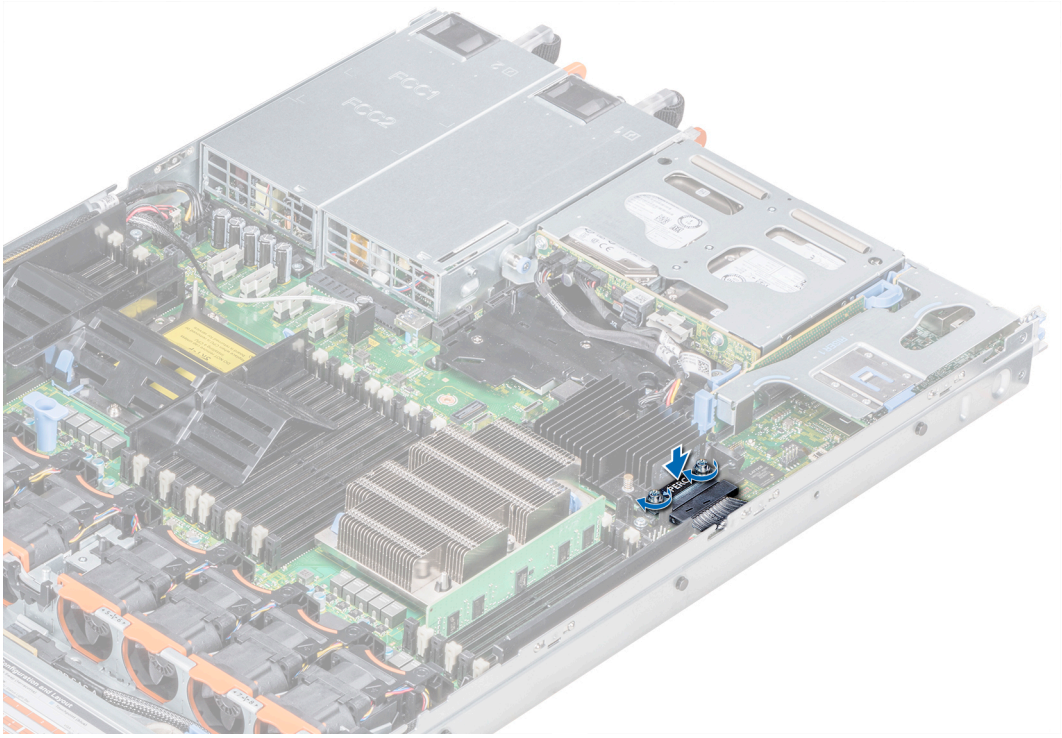

Figure 53. Installing the integrated storage controller card cable

Next steps

1. Install the air shroud.
2. Follow the procedures in After working inside your system.

Hard drives

The NX3340 system supports up to four 2.5 inch, hot swappable SAS, SATA hard drives.

Removing a drive blank

Prerequisites

1. Follow the safety guidelines listed in Safety instructions.
2. If installed, remove the front bezel.

CAUTION: To maintain proper system cooling, drive blanks must be installed in all empty drive slots.

CAUTION: Mixing drive blanks from previous generations of storage systems is not supported.

Steps

Press the release button and slide the drive blank out of the drive slot.

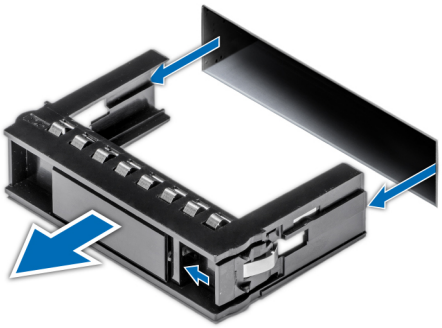

Figure 54. Removing a drive blank

Next steps

1. Install a drive or a drive blank.

Installing a drive blank

Prerequisites

Follow the safety guidelines listed in Safety instructions.

CAUTION: Mixing drive blanks from previous generations of storage systems is not supported.

Steps

Insert the drive blank into the drive slot, and push the blank until the release button clicks into place.

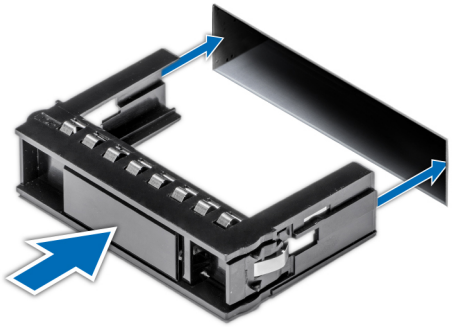

Figure 55. Installing a drive blank

Next steps

If removed, install the front bezel.

Removing a drive carrier

Prerequisites

1. Follow the safety guidelines listed in Safety instructions.
2. If applicable, remove the front bezel.
3. Use the management software to prepare the drive for removal.

   If the drive is online, the green activity or fault indicator flashes while the drive is turning off. When the drive indicators are off, the drive is ready for removal. For more information, see the documentation for the storage controller.

   CAUTION: Before attempting to remove or install a drive while the system is running, see the documentation for the storage controller card to ensure that the host adapter is configured correctly to support drive removal and insertion.

   CAUTION: Mixing drives from previous generations of storage systems is not supported.

   CAUTION: To prevent data loss, ensure that your operating system supports drive installation. See the documentation supplied with your operating system.

Steps

1. Press the release button to open the drive carrier release handle.
2. Hold the handle and slide the drive carrier out of the drive slot.

Figure 56. Removing a drive carrier

Next steps

1. Install a drive carrier.
2. If you are not replacing the drive immediately, insert a drive blank in the empty drive slot to maintain proper system cooling.

Installing a drive carrier

Prerequisites

CAUTION: Before attempting to remove or install a drive while the system is running, see the documentation for the storage controller card to ensure that the host adapter is configured correctly to support drive removal and insertion.

CAUTION: Mixing drives from previous generations of storage systems is not supported.

CAUTION: Combining SAS and SATA drives in the same RAID volume is not supported.

CAUTION: When installing a drive, ensure that the adjacent drives are fully installed. Inserting a drive carrier and attempting to lock its handle next to a partially installed carrier can damage the partially installed carrier's shield spring and make it unusable.

CAUTION: When a replacement hot swappable drive is installed and the system is powered on, the drive automatically begins to rebuild. Ensure that the replacement drive is blank or contains data that you wish to overwrite. Any data on the replacement drive is immediately lost after the drive is installed.

1. Follow the safety guidelines listed in Safety instructions.
2. If applicable, remove the drive blank.

Steps

1. Press the release button on the front of the drive carrier to open the release handle.
2. Insert the drive carrier into the drive slot and slide until the drive connects with the backplane.
3. Close the drive carrier release handle to lock the drive in place.

Figure 57. Installing a drive carrier

Next steps

If applicable, install the front bezel.

Removing the drive from the drive carrier

Prerequisites

CAUTION: Mixing drives from previous generations of storage systems is not supported.

Steps

1. Remove four screws from the side rails on the drive carrier.
2. Lift the drive out of the drive carrier.

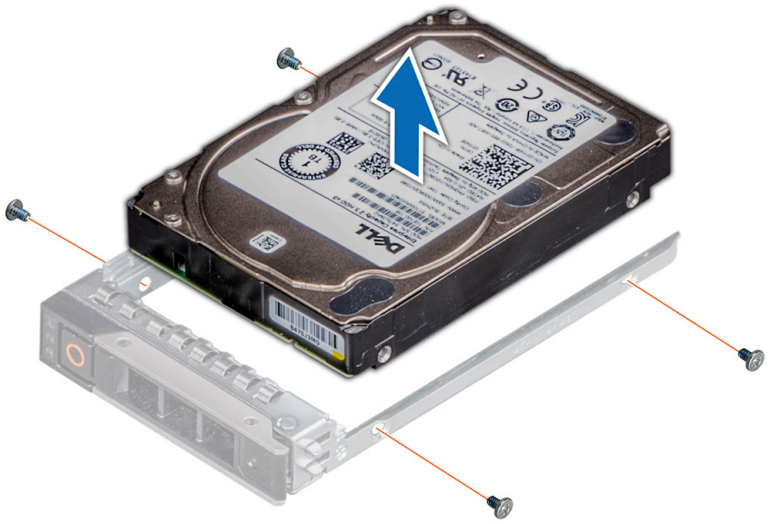

Figure 58. Removing the drive from the drive carrier

Next steps

If applicable, install the drive into the drive carrier.

Installing a drive into the drive carrier

Prerequisites

CAUTION: Mixing drive carriers from other generations of storage systems is not supported.

Steps

1. Insert the drive into the drive carrier with the connector end of the drive towards the back of the carrier.
2. Align the screw holes on the drive with the screws holes on the drive carrier.
   When aligned correctly, the back of the drive is flush with the back of the drive carrier.
3. Secure the drive to the drive carrier with screws.

Figure 59. Installing a drive into the drive carrier

Drive backplane

The drive backplanes supported in NX3340 is 2.5 inch (x8) SAS and SATA.

NOTE: Mixing of 2.5 inch 10K or 15K SAS drives with 2.5 inch 7.2K SATA on the same backplane is not supported. You can mix solid state drives with hard drives on the same backplane.

Removing the drive backplane

Prerequisites

CAUTION: To prevent damage to the drives and backplane, remove the drives from the system before removing the backplane.

CAUTION: Note the number of each drive and temporarily label them before you remove the drive so that you can replace them in the same location.

NOTE: The procedure to remove the backplane is similar for all backplane configurations.

1. Follow the safety guidelines listed in Safety instructions.
2. Follow the procedures in Before working inside your system.
3. Remove the air shroud.
4. Remove the backplane cover.
5. Remove all drives from the hard-drive slots from the front of the system.

6. Disconnect all the cables from the backplane.

Steps

Press the blue release tabs and lift the backplane to disengage the backplane from the hooks on the system.

NOTE: If your backplane has an expander board, then loosen the screws on the expander board before you remove the backplane.

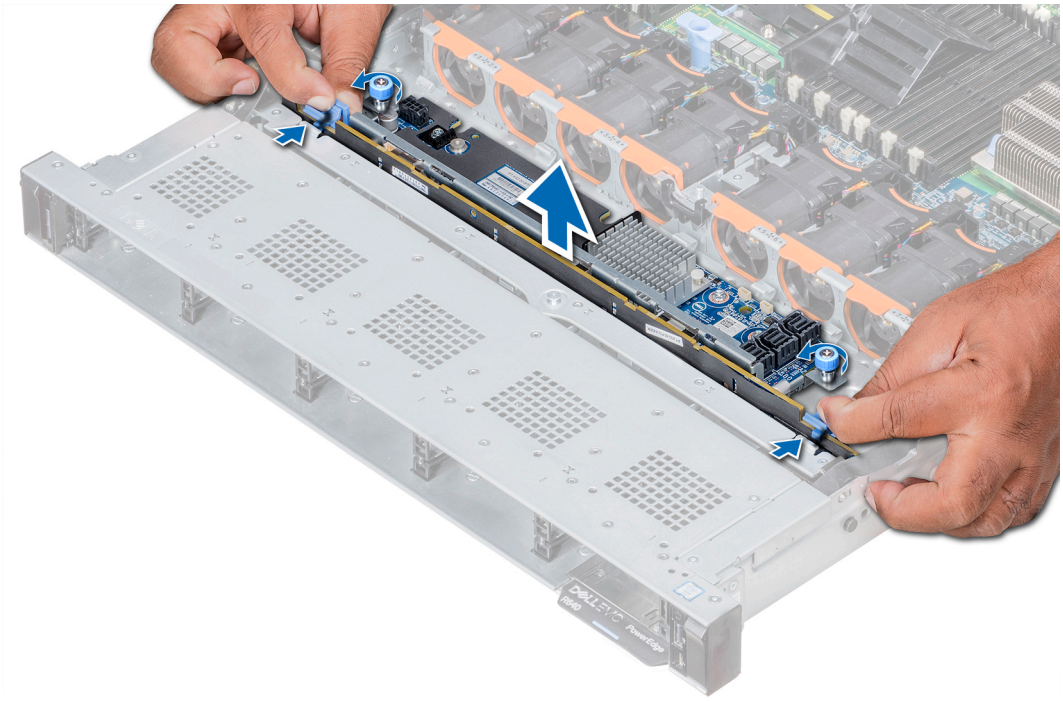

Figure 60. Removing drive backplane

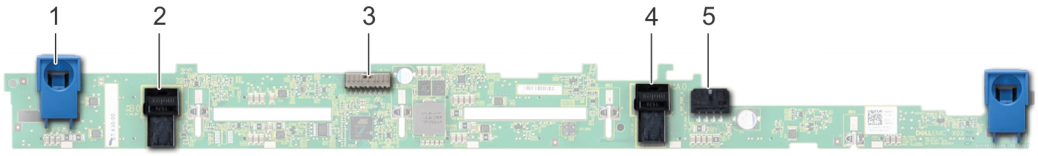

Figure 61. 8 X 2.5 drive backplane

1. release tab (2)
2. SAS cable A connector
3. backplane signal cable connector
4. backplane
5. SAS cable B connector
6. power cable connector

Next steps

Install the drive backplane.

Installing the drive backplane

Prerequisites

Follow the safety guidelines listed in Safety instructions.

NOTE: The procedure to install the backplane is similar for all backplane configurations.

Steps

1. Use the hooks on the system as guides to align the slots on the backplane with the guides on the system.
2. Lower the drive backplane until the blue release tabs snap into place.

NOTE: If you are installing a backplane with an expander board, then tighten the captive screws after installing the backplane.

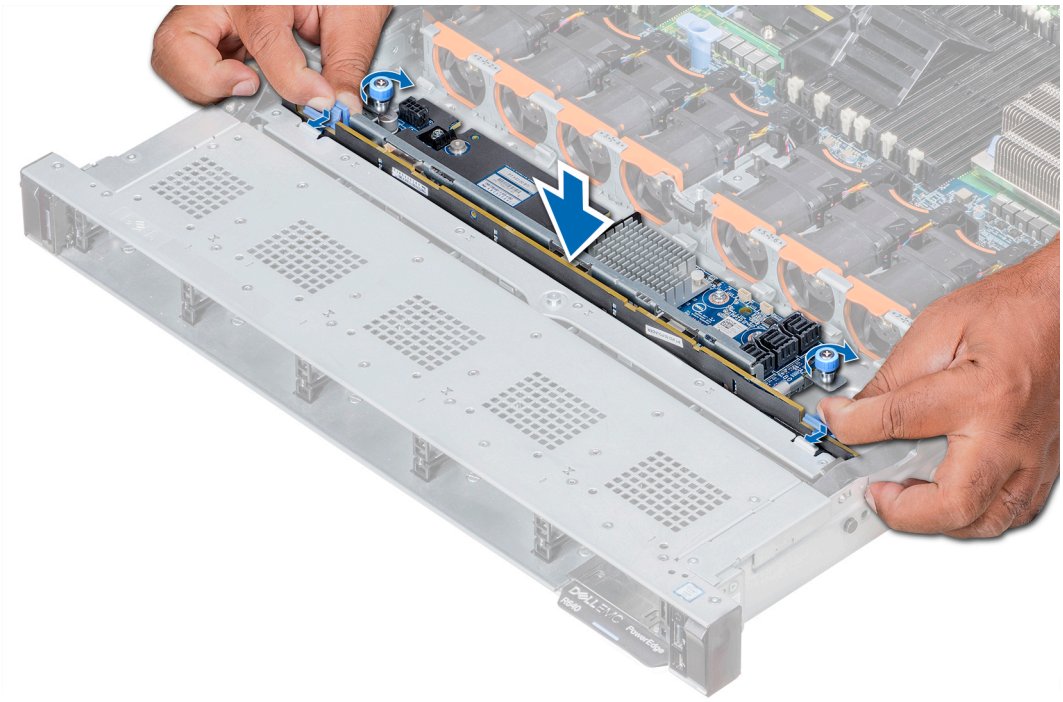

Figure 62. Installing drive backplane

Next steps

1. Connect all the cables to the backplane.
2. Install all the drives.
3. Install the backplane cover.
4. Install the air shroud.
5. Follow the procedures in After working inside your system.

Cable routing

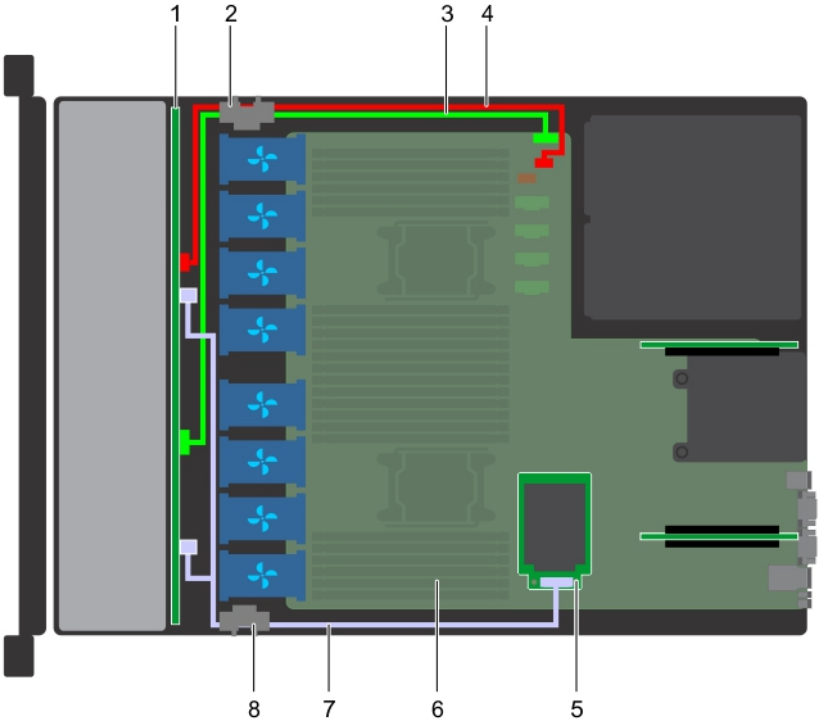

Figure 63. Cable routing - 8 x 2.5 hard drive backplane with mini PERC

1. hard drive backplane
2. cable routing clip
3. backplane signal cable
4. backplane power cable
5. mini PERC card
6. system board
7. SAS cable
8. cable routing clip

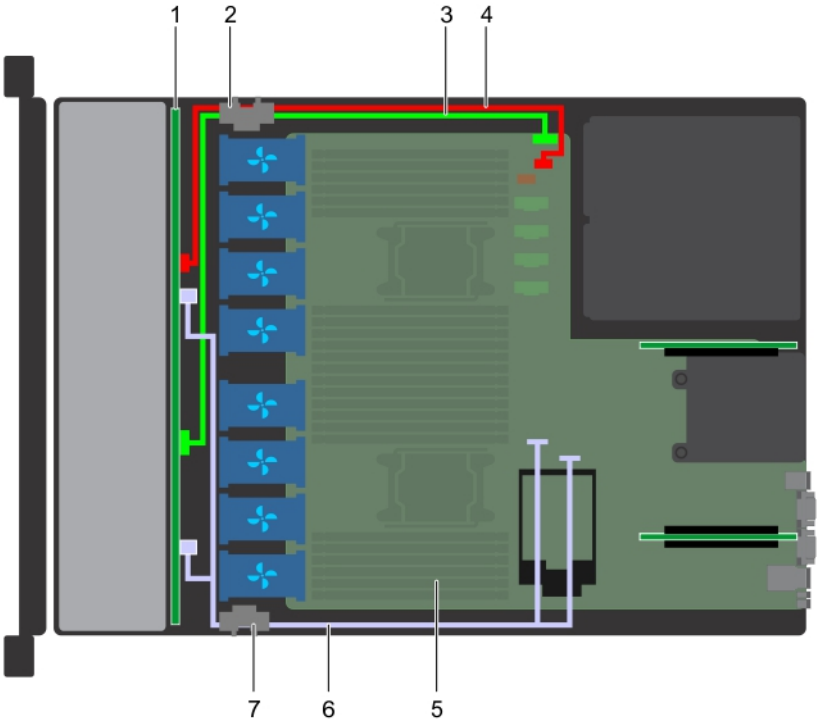

Figure 64. Cable routing - 8 x 2.5 hard drive backplane with onboard SATA

1. hard drive backplane
2. cable routing clip

3. backplane signal cable
4. backplane power cable
5. system board
6. SATA cable
7. cable routing clip

System battery

The system battery is used for low-level system functions such as powering the real-time and date settings of the system.

Replacing the system battery

Prerequisites

WARNING: There is a danger of a new battery exploding if it is incorrectly installed. Replace the battery only with the same or equivalent type recommended by the manufacturer. For more information, see the safety information that shipped with your system.

1. Follow the safety guidelines listed in Safety instructions.
2. Follow the procedures in Before working inside your system.
1. If applicable, disconnect the power or data cables from expansion card(s) in the expansion card riser 1A.
2. Remove the low profile or full height X1 expansion card riser 1A.

Steps

1. Locate the battery socket. For more information, see the Jumpers and connectors section.

   CAUTION: To avoid damage to the battery connector, you must firmly support the connector while installing or removing a battery.

2. Use a plastic scribe to pry out the system battery.

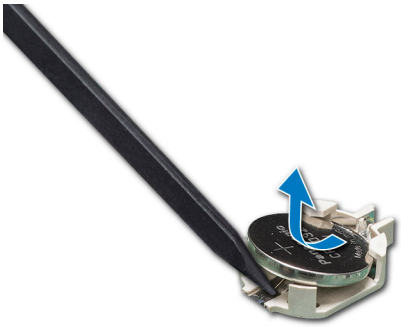

Figure 65. Removing the system battery

3. To install a new system battery, hold the battery with the positive side facing up and slide it under the securing tabs.
4. Press the battery into the connector until it snaps into place.

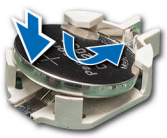

Figure 66. Installing the system battery

Next steps

1. Install the expansion card riser 1A.

2. If applicable, connect the cables to the expansion card(s) in the expansion card riser 1A.
3. Follow the procedures in After working inside your system.
4. While booting, press F2 to enter the System Setup and ensure that the battery is operating properly.
5. Enter the correct time and date in the System Setup **Time** and **Date** fields.
6. Exit the System Setup.

USB module

An additional USB port can be added to the front of the system. Depending on the configuration of your system, you can add either a USB 3.0 or USB 2.0 module. The USB module cable connects to the internal USB port on the system board.

Removing the USB module

Prerequisites

1. Follow the safety guidelines listed in Safety instructions.
2. Follow the procedures in Before working inside your system.
3. Remove the backplane cover.
4. Remove the air shroud.

NOTE: Ensure that you note the routing of the cables as you remove them from the system board. Route these cables properly when you replace them to prevent them from being pinched or crimped.

NOTE: The procedure to remove the USB 3.0 and USB 2.0 modules is similar.

Steps

1. Disconnect the USB cable from the USB connector on the system board. For more information, see the System board jumpers and connectors on page 50 section.
2. Using Phillips #1 screwdriver, remove the screws on the USB module.
3. Slide the module out of the system until it is free of the USB module slot on the front panel.

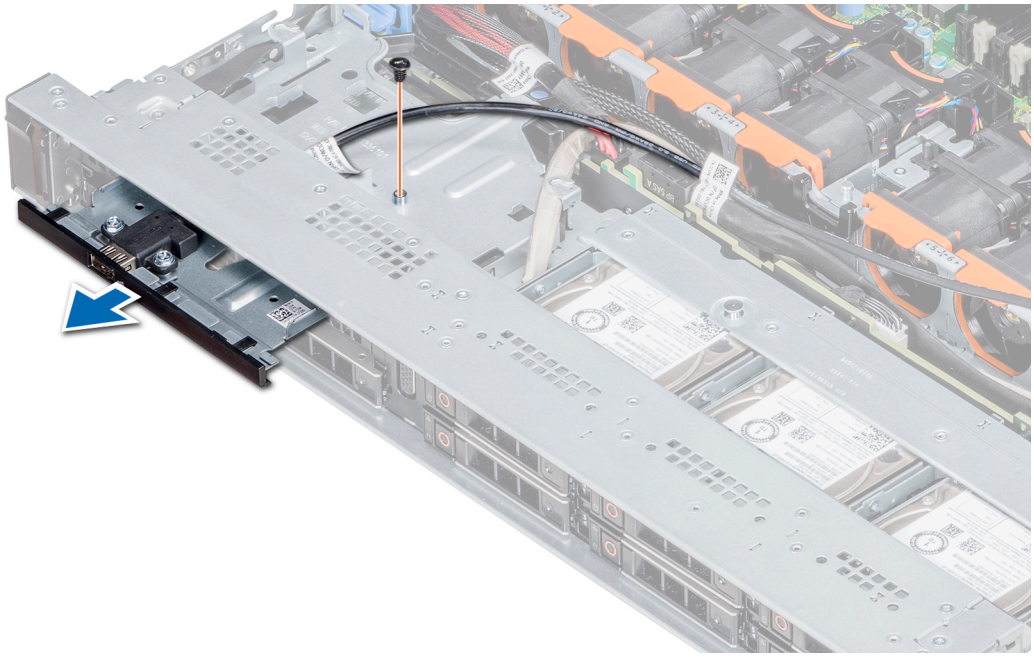

Figure 67. Removing the USB module

Next steps

Install the USB module.

Installing the USB module

Prerequisites

Follow the safety guidelines listed in Safety instructions.

NOTE: The procedure to install the USB 3.0 and USB 2.0 modules is similar.

Steps

1. Route the USB cable on the USB module, through the USB slot on the front panel.
2. Insert the USB module into the slot on the front panel.
3. Align the screw on the module with the screw hole on the system.
4. Use a Phillips #1 screwdriver to tighten the screw and secure the module to the system.
5. Route the USB cable and connect it to the USB connector on the system board. For more information, see System board jumpers and connecters.

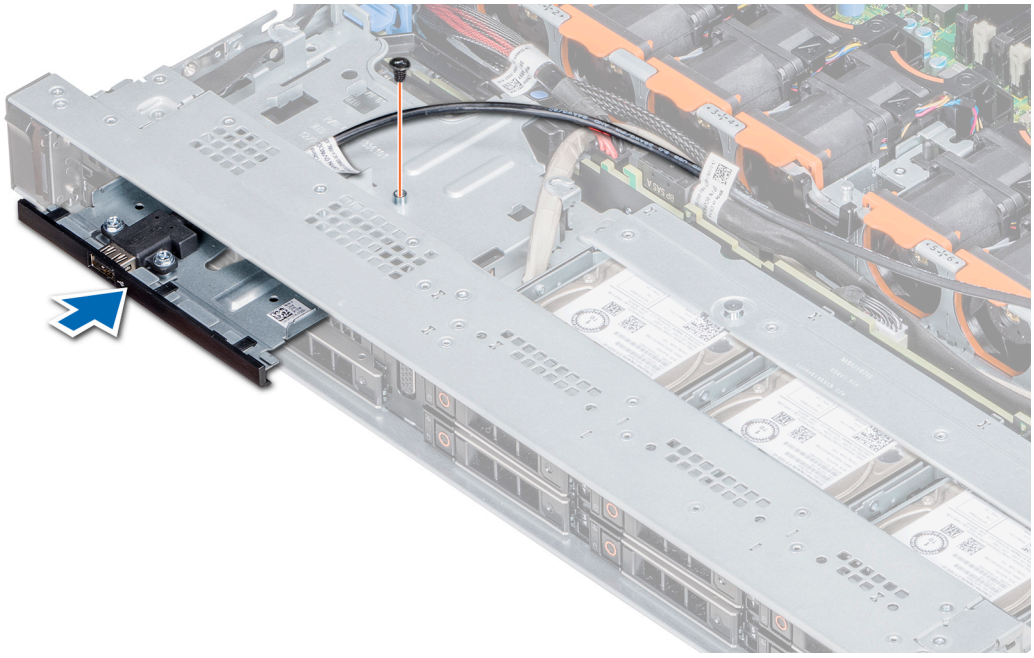

Figure 68. Installing the USB module

Next steps

1. Install the air shroud.
2. Install the backplane cover.
3. Follow the procedures in After working inside your system.

Optional internal USB memory key

An optional USB memory key installed inside your system can be used as a boot device, security key, or mass storage device. To boot from the USB memory key, configure the USB memory key with a boot image and then specify the USB memory key in the boot sequence in System Setup.

An optional USB memory key can be installed in the internal USB 3.0 port and can be used as a boot device, security key or mass storage device.

The internal USB port is on the system board.

NOTE: To locate the internal USB port on the system board, see System board jumpers and connectors.

For configurations that support USB 3.0 module, the USB 3.0 module cable connects to the internal USB port on the system board. In this scenario, the default internal USB port is available under the backplane cover. The position of the default internal USB port may vary depending on the configuration of your system.

Replacing the optional internal USB memory key

Prerequisites

CAUTION: To avoid interference with other components in the system, the maximum permissible dimensions of the USB memory key are 15.9 mm wide x 57.15 mm long x 7.9 mm high.

1. Follow the safety guidelines listed in Safety instructions.
2. Follow the procedures in Before working inside your system.

Steps

1. Locate the USB port or USB memory key on the system board.
   To locate the USB port, see the Optional internal USB memory key section.
2. If installed, remove the USB memory key from the USB port.
3. Insert the replacement USB memory key into the USB port.

Next steps

1. Follow the procedures in After working inside your system.
2. While booting, press F2 to enter **System Setup** and verify that the system detects the USB memory key.

Optical drive—optional

Optical drives retrieve and store data on optical discs such as CD and DVD. Optical drives can be categorized into two basic types: optical disc readers and optical disc writers. This system supports SATA DVD-ROM drive or DVD+/-RW drive.

Removing the optical drive

Prerequisites

1. Follow the safety guidelines listed in Safety instructions.
2. Follow the procedures in Before working inside your system.
3. If applicable remove the front bezel.
4. Disconnect the power and data cables from the connectors on the optical drive.
   NOTE: Ensure that you note the routing of the power and data cable on the side of the system and drive. Route these cables properly when you replace them to prevent them from being pinched or crimped.

Steps

1. Press the release tab to release the optical drive.
2. Slide the optical drive out of the system until it is out of the optical drive slot.
3. If you are not adding a new optical drive, install the optical drive blank. The procedure to install the optical drive blank is the same as the optical drive.

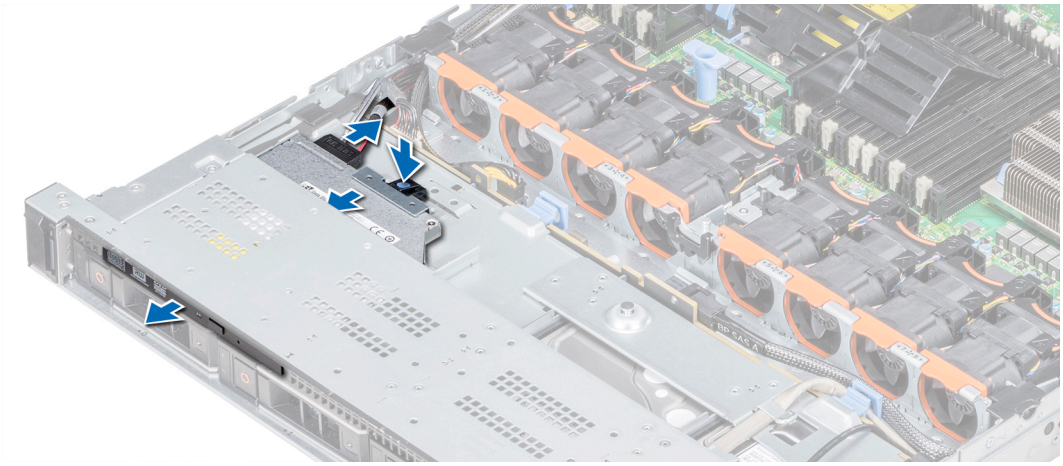

Figure 69. Removing the optical drive

Next steps

Install an optical drive.

Installing the optical drive

Prerequisites

Follow the safety guidelines listed in Safety instructions.

Steps

1. Align the optical drive with the optical drive slot on the front of the system.
2. Slide in the optical drive until the release tab snaps into place.

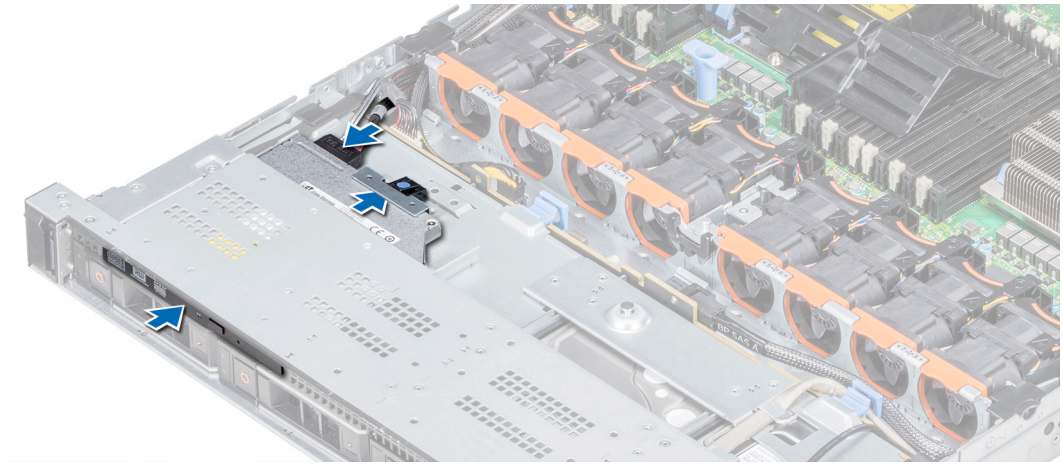

Figure 70. Installing the optical drive

Next steps

1. Connect the power and data cables to the connector on the optical drive and the connector on the system board.
   NOTE: Route the cable properly on the side of the system to prevent it from being pinched or crimped.
2. Follow the procedures in After working inside your system.

Power supply units

The power supply unit (PSU) is an internal hardware component which supplies power to the components in the system.

This system supports two 750 W AC PSUs.

CAUTION: If two PSUs are installed, both the PSUs must have the same type of label. For example, Extended Power Performance (EPP) label. Mixing PSUs from previous generations of storage systems are not supported, even if the PSUs have the same power rating. Mixing PSUs will result in mismatch condition or failure to turn the system on.

NOTE: When two identical PSUs are installed, power supply redundancy (1+1 – with redundancy or 2+0 – without redundancy) is configured in system BIOS. In redundant mode, power is supplied to the system equally from both PSUs when Hot Spare is disabled. When Hot Spare is enabled, one of the PSUs is put into the sleep mode when system utilization is low in order to maximize efficiency.

NOTE: If two PSUs are used, they must be of the same maximum output power.

Hot spare feature

Your system supports the hot spare feature that significantly reduces the power overhead associated with power supply unit (PSU) redundancy.

When the hot spare feature is enabled, one of the redundant PSUs is switched to the sleep state. The active PSU supports 100 percent of the system load, thus operating at higher efficiency. The PSU in the sleep state monitors output voltage of the active PSU. If the output voltage of the active PSU drops, the PSU in the sleep state returns to an active output state.

If having both PSUs active is more efficient than having one PSU in the sleep state, the active PSU can also activate the sleeping PSU.

The default PSU settings are as follows:

- If the load on the active PSU is more than 50 percent of PSU rated power wattage, then the redundant PSU is switched to the active state.
- If the load on the active PSU falls below 20 percent of PSU rated power wattage, then the redundant PSU is switched to the sleep state.

You can configure the hot spare feature by using the iDRAC settings.

For more information, see the *Integrated Dell Remote Access Control User's Guide* located at www.dell.com/idracmanuals.

Removing a power supply unit blank

Prerequisites

Follow the safety guidelines listed in Safety instructions.

Steps

If you are installing a second PSU, remove the PSU blank in the bay by pulling the blank outward.

CAUTION: To ensure proper system cooling, the PSU blank must be installed in the second PSU bay in a non-redundant configuration. Remove the PSU blank only if you are installing a second PSU.

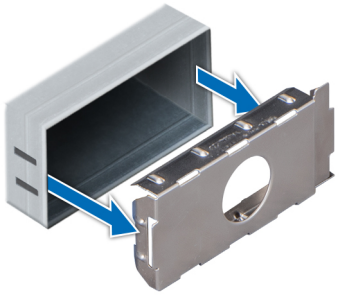

Figure 71. Removing a power supply unit blank

Next steps

Install the PSU blank.

Installing a power supply unit blank

Prerequisites

1. Follow the safety guidelines listed in Safety instructions.
2. Follow the procedures in Before working inside your system.

NOTE: Install the power supply unit (PSU) blank only in the second PSU bay.

Steps

Align the PSU blank with the PSU slot and push it into the PSU slot until it clicks into place.

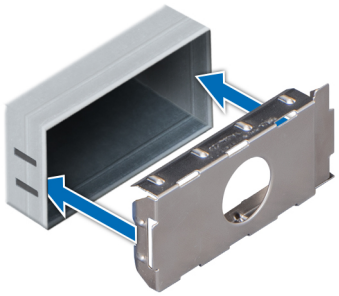

Figure 72. Installing a power supply unit blank

Next steps

Follow the procedure listed in After working in your system.

Removing a power supply unit

Prerequisites

CAUTION: The system needs one power supply unit (PSU) for normal operation. On power-redundant systems, remove and replace only one PSU at a time in a system that is powered on.

1. Follow the safety guidelines listed in Safety instructions.
2. Disconnect the power cable from the power source and from the PSU you intend to remove, and then remove the cable from the strap on the PSU handle.
3. Unlatch and lift the optional cable management arm if it interferes with the PSU removal.

For information about the cable management arm, see the system's rack documentation at **Dell.com/storagemanuals**.

Steps

Press the orange release latch and slide the PSU out of the system by using the PSU handle.

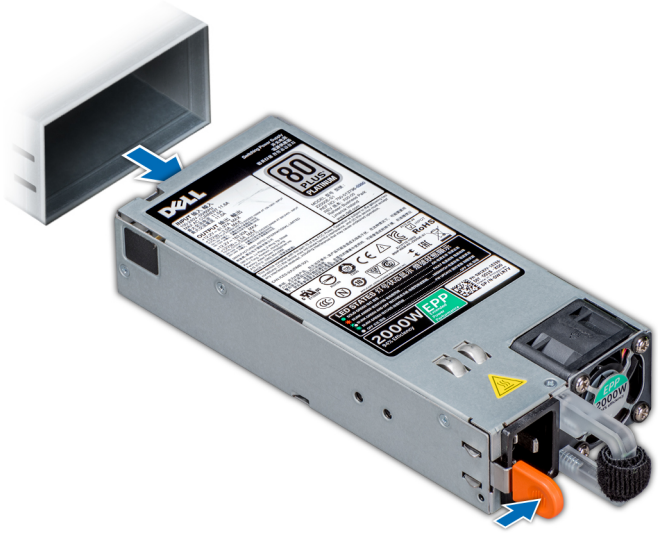

Figure 73. Removing a power supply unit

Next steps

Install the PSU or the PSU blank.

Installing a power supply unit

Prerequisites

1. Follow the safety guidelines listed in Safety instructions.
2. For systems that support redundant PSU, ensure that both the PSUs are of the same type and have the same maximum output power.

   NOTE: The maximum output power (shown in watts) is listed on the PSU label.

Steps

Slide the PSU into the system until the PSU is fully seated and the release latch snaps into place.

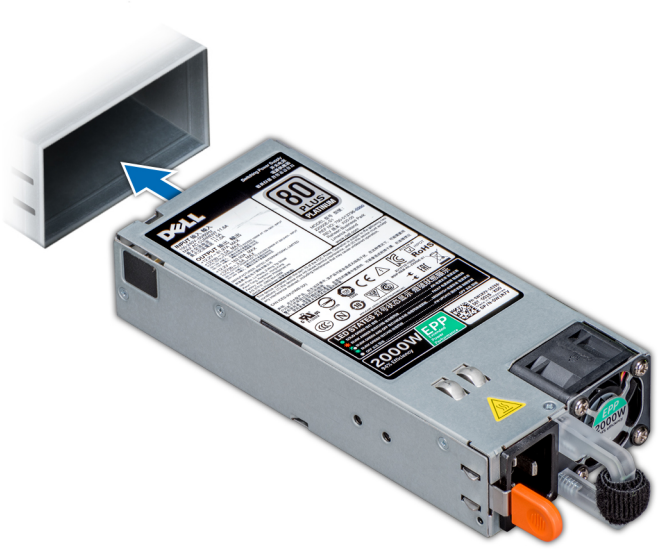

Figure 74. Installing a power supply unit

Next steps

1. If you have unlatched the cable management arm, relatch it. For information about the cable management arm, see the system's rack documentation at **Dell.com/storagemanuals**.
2. Connect the power cable to the PSU, and plug the cable into a power outlet.

CAUTION: When connecting the power cable to the PSU, secure the cable to the PSU with the strap.

NOTE: When installing, hot swapping, or hot adding a new PSU, wait for 15 seconds for the system to recognize the PSU and determine its status. The PSU redundancy may not occur until discovery is complete. Wait until the new PSU is discovered and enabled before you remove the other PSU. The PSU status indicator turns green to signify that the PSU is functioning properly.

System board

A system board (also known as the motherboard) is the main printed circuit board in the system with different connectors used to connect different components or peripherals of the system. A system board provides the electrical connections to the components in the system to communicate.

Removing the system board

Prerequisites

CAUTION: If you are using the Trusted Platform Module (TPM) with an encryption key, you may be prompted to create a recovery key during program or System Setup. Be sure to create and safely store this recovery key. If you replace this system board, you must supply the recovery key when you restart your system or program before you can access the encrypted data on your drives.

CAUTION: Do not attempt to remove the TPM plug-in module from the system board. After the TPM plug-in module is installed, it is cryptographically bound to that specific system board. Any attempt to remove an installed TPM plug-in module breaks the cryptographic binding, and it cannot be re-installed or installed on another system board.

1. Follow the safety guidelines listed in Safety instructions.
2. Follow the procedures in Before working inside your system.
3. Remove the following:

CAUTION: Do not lift the system board by holding a memory module, processor, or other components.

a. Air shroud
b. All expansion card risers
c. Integrated storage controller card
d. USB 3.0 module (if installed)
e. Processors and heat sink modules

CAUTION: To prevent damage to the processor socket when replacing a faulty system board, ensure that you cover the processor socket with the processor dust cover.

f. Memory modules and memory module blanks
g. Network daughter card

Steps

1. Disconnect all cables from the system board.

CAUTION: Take care not to damage the system identification button while removing the system board from the chassis.

2. Holding the post, lift the blue release pin, and slide the system board toward the front of the system to disengage the connectors from the slots on the chassis.
3. Incline the system board at an angle, and lift the system board out of the chassis.

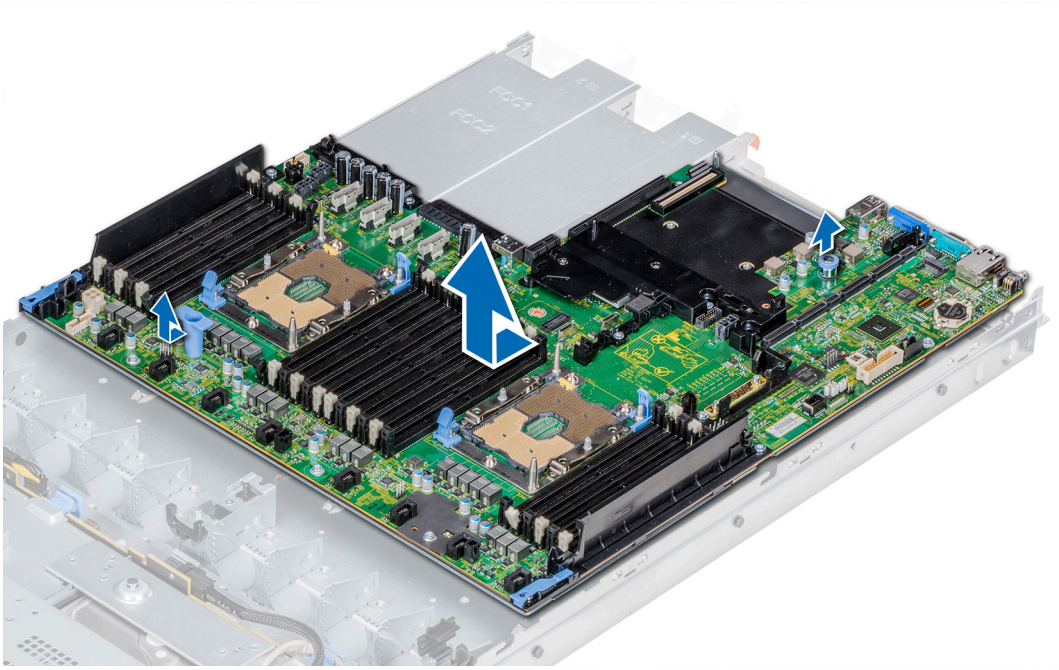

Figure 75. Removing the system board

Next steps

Install the system board.

Installing the system board

Prerequisites

Follow the safety guidelines listed in Safety instructions.

Steps

1. Unpack the new system board assembly.

CAUTION: Do not lift the system board by holding a memory module, processor, or other components.

CAUTION: Take care not to damage the system identification button while placing the system board into the chassis.

2. Holding the system board holder and release pin, insert the system board into the system.
3. Holding the system board holder, push the system board toward the back of the system until the release pin clicks into place.

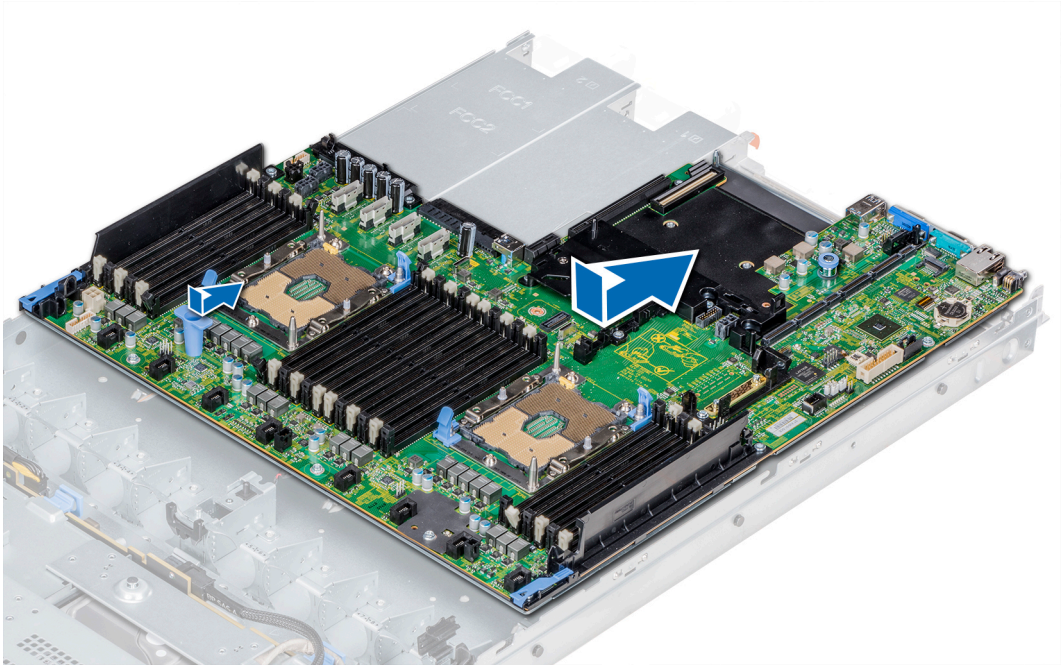

Figure 76. Installing the system board

Next steps

1. Replace the following:
   a. Trusted Platform Module
   b. Integrated storage controller card
   c. USB 3.0 module (if applicable)
   d. All expansion cards and risers
   e. Processors and heat sink modules
   f. Memory modules and memory module blanks
   g. Network daughter card
   h. Air shroud
2. Reconnect all cables to the system board.

   NOTE: Ensure that the cables inside the system are routed along the chassis wall and secured using the cable securing bracket.
3. Follow the procedures in After working inside your system.
4. Ensure that you:
   a. Use the Easy Restore feature to restore the Service Tag. For more information, see Restoring the Service Tag by using the Easy Restore feature.
   b. If the Service Tag is not backed up in the backup flash device, enter the Service Tag manually. For more information, see Restoring the Service Tag by using the Easy Restore feature.
   c. Update the BIOS and iDRAC versions.
   d. Re-enable the Trusted Platform Module (TPM). For more information, see Upgrading the Trusted Platform Module.
5. Import your new or existing iDRAC Enterprise license.

   For more information, see iDRAC User's Guide, at **Dell.com/idracmanuals**.

Entering the system Service Tag using System Setup

If Easy Restore fails to restore the Service Tag, use System Setup to enter the Service Tag.

Steps

1. Turn on the system.
2. Press F2 to enter System Setup.
3. Click **Service Tag Settings**.
4. Enter the Service Tag.

   NOTE: You can enter the Service Tag only when the **Service Tag** field is empty. Ensure that you enter the correct Service Tag. After the Service Tag is entered, it cannot be updated or changed.

5. Click **OK**.
6. Import your new or existing iDRAC Enterprise license.

   For more information, see the *Integrated Dell Remote Access Control User's Guide* located at www.dell.com/idracmanuals.

Restoring the Service Tag using Easy Restore

The easy restore feature allows you to restore your Service Tag, license, Personality module, and the system configuration data after replacing the system board. All data is backed up in a backup flash device automatically. If BIOS detects a new system board, and the service tag in the backup flash device, BIOS prompts the user to restore the backup information.

About this task

NOTE: The NX Series systems support only BIOS mode. Do not change the boot mode to UEFI because the system will not load the appliance OS when in UEFI mode.

Below is a list of options available:

- Restore the service tag, license, and diagnostics information, press **Y**

  NOTE: When the restore process is complete, BIOS prompts to restore the system configuration data.
- To restore the system configuration data, press **Y**.

  NOTE: After the restore process is complete, system reboots.

Trusted Platform Module

Trusted Platform Module (TPM) is a dedicated microprocessor designed to secure hardware by integrating cryptographic keys into devices. Software can use a TPM to authenticate hardware devices. Because each TPM chip has a unique and secret RSA key which is embedded during the manufacture of the TPM, it is capable of performing platform authentication operations.

Upgrading the Trusted Platform Module

Prerequisites

1. Follow the safety guidelines listed in Safety instructions.
2. Follow the procedures in Before working inside your system.

NOTE: The NX3340 system does not support UEFI mode.

CAUTION: If you are using the Trusted Platform Module (TPM) with an encryption key, you may be prompted to create a recovery key during program or System Setup. Work with the customer to create and safely store this recovery key. When replacing this system board, you must supply the recovery key when you restart your system or program before you can access the encrypted data on your hard drives.

CAUTION: After the TPM plug-in module is installed, it is cryptographically bound to that specific system board. Any attempt to remove an installed TPM plug-in module breaks the cryptographic binding, the removed TPM cannot be reinstalled or installed on another system board.

NOTE:

- Ensure that your operating system supports the version of the TPM module being installed.
- Ensure that you download and install the latest BIOS firmware on your system.
- Ensure that the BIOS is configured to enable UEFI boot mode.

Steps

1. Locate the TPM connector on the system board.
2. Press to hold the module down and remove the screw using the security Torx 8-bit shipped with the TPM module.
3. Slide the TPM module out from its connector.
4. Push the plastic rivet away from the TPM connector and rotate it 90° counterclockwise to release it from the system board.
5. Pull the plastic rivet out of its slot on the system board.

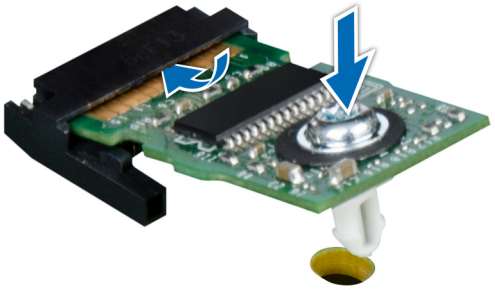

Figure 77. Installing the TPM

Next steps

1. Install the system board.
2. Follow the procedures in After working inside your system.

Initializing the TPM 1.2 for TXT users

Steps

1. While booting your system, press F2 to enter System Setup.
2. On the **System Setup Main Menu** screen, click **System BIOS** > **System Security Settings**.
3. From the **TPM Security** option, select **On with Pre-boot Measurements**.
4. From the **TPM Command** option, select **Activate**.
5. Save the settings.
6. Restart your system.
7. Enter **System Setup** again.
8. On the **System Setup Main Menu** screen, click **System BIOS** > **System Security Settings**.
9. From the **Intel TXT** option, select **On**.

Initializing the TPM 2.0 for TXT users

Steps

1. While booting your system, press F2 to enter System Setup.
2. On the **System Setup Main Menu** screen, click **System BIOS** > **System Security Settings**.
3. From the **TPM Security** option, select **On**.
4. Save the settings.
5. Restart your system.
6. Enter **System Setup** again.
7. On the **System Setup Main Menu** screen, click **System BIOS** > **System Security Settings**.
8. Select the **TPM Advanced Settings** option.
9. From the **TPM2 Algorithm Selection** option, select **SHA256**, then go back to **System Security Settings** screen.
10. On the **System Security Settings** screen, from the **Intel TXT** option, select **On**.
11. Save the settings.
12. Restart your system.

Control panel

The control panel allows you to manually control the inputs to the system.

Your system contains:

- Left control panel: Contains status LEDs, system ID button, and iDRAC Quick Sync 2.
- Right control panel: Contains power button, USB 2.0 port, micro USB for iDRAC Direct, and status LED for iDRAC Direct.

Removing the left control panel

Prerequisites

1. Follow the safety guidelines listed in Safety instructions.
2. Follow the procedures in Before working inside your system.
3. Remove the air shroud.

   NOTE: Ensure that you note the routing of the cables as you remove them from the system board. Route the cables properly when you replace them to prevent the cables from being pinched or crimped.
4. For ease of removal of the left control panel, remove the cooling fan #1 to access the cable latch.

Steps

1. Pull the cable latch, and then disconnect the control panel cable from the system board connector.
2. Use the Phillips #1 screwdriver to remove the screws that secure the cable cover.

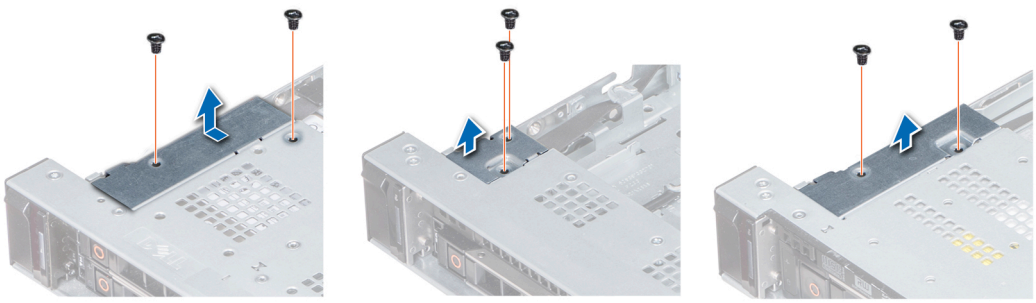

Figure 78. Removing the cable cover

3. Use the Phillips #1 screwdriver to remove the screws that connect the control panel to the system.

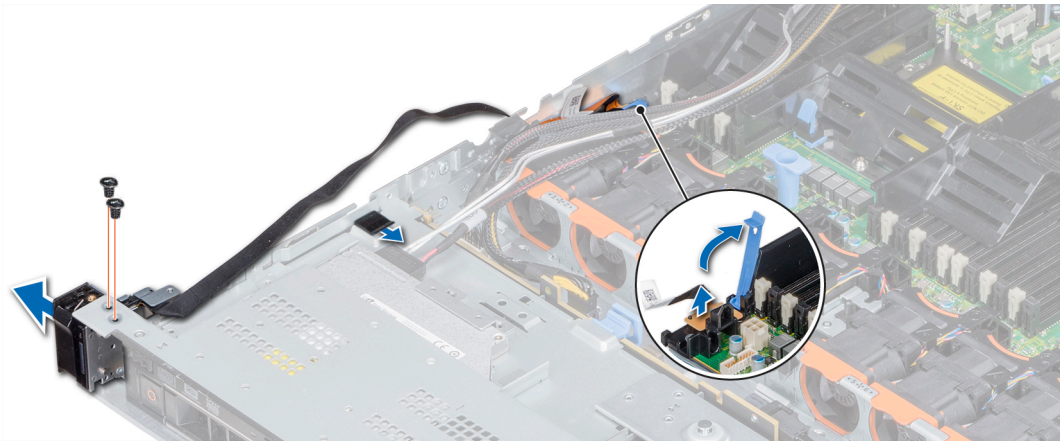

Figure 79. Removing left control panel

4. Hold the control panel by its sides, and then remove the control panel away from the system.

Next steps

Install the left control panel.

Installing the left control panel

Prerequisites

Follow the safety guidelines listed in Safety instructions.

Steps

1. Route the control panel cable through the side wall of the system.
2. Align the left control panel assembly with the control panel slot on the system and attach the control panel assembly to the system.
3. Connect the control panel cable to the system board connector and secure it using cable latch.
4. Use the Phillips #1 screwdriver to install the screws that secure the control panel to the system.

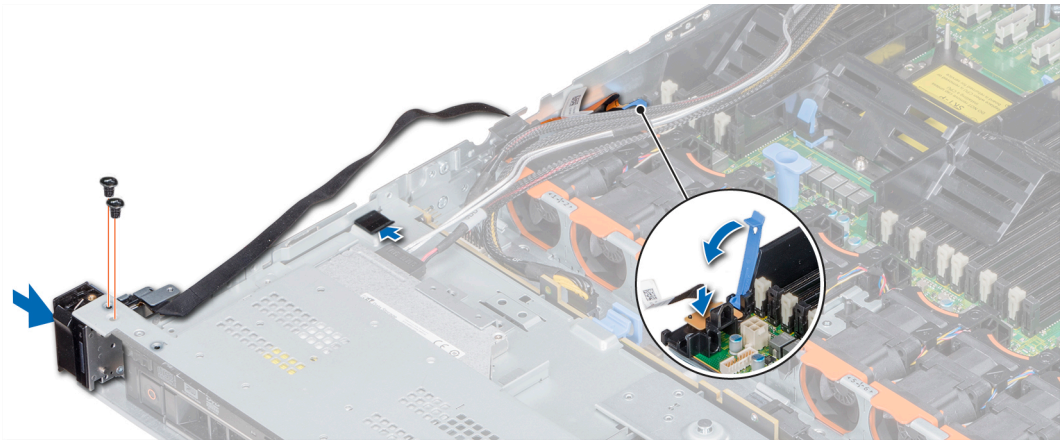

Figure 80. Installing the left control panel

5. Use the Phillips #1 screwdriver to install the screws that secure the cable cover to the system.

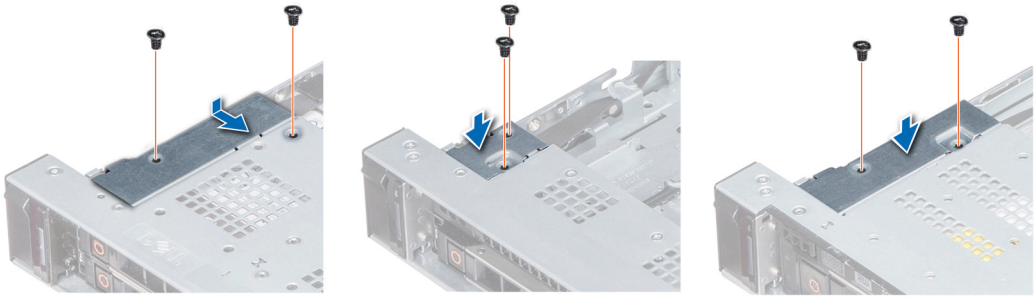

Figure 81. Installing the cable cover

Next steps

1. Install the air shroud.
2. If applicable, install the cooling fan # 1.
3. Follow the procedures in After working inside your system.

Removing the right control panel

Prerequisites

1. Follow the safety guidelines listed in Safety instructions.
2. Follow the procedures in Before working inside your system.
3. For ease of removal of the right control panel, remove the cooling fan #8 to access the cable latch.

NOTE: Ensure that you note the routing of the cables as you remove them from the system board. Route the cables properly when you replace them to prevent the cables from being pinched or crimped.

Steps

1. Lift the cable latch, and disconnect the control panel cable from the connector on the system board.
2. Use the Phillips #1 screwdriver to remove the screws that secure the cable cover to the system.

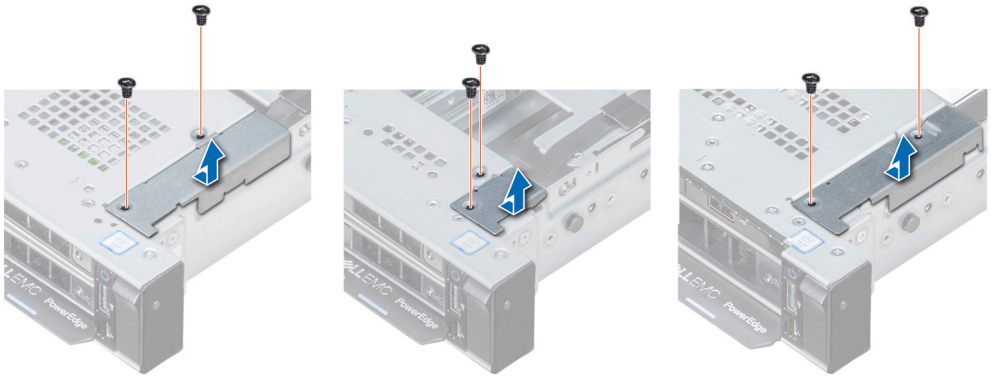

Figure 82. Removing the cable cover

3. Use the Phillips #1 screwdriver to remove the screw that secures the control panel to the system.

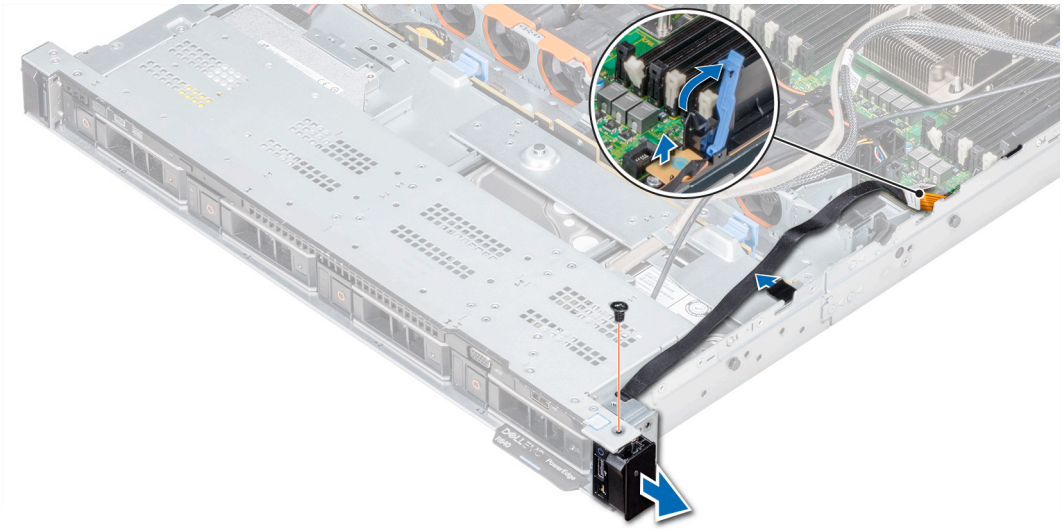

Figure 83. Removing right control panel

4. Hold by the sides, and then remove the right control panel away from the system.

Next steps

Install the right control panel.

Installing the right control panel

Prerequisites

Follow the safety guidelines listed in Safety instructions.

Steps

1. Route the control panel cable through the side wall of the system.
2. Align the right control panel assembly with the control panel slot on the system.
3. Connect the control panel cable to the connector on the system board and lower the cable latch to secure the cable in place.
4. Use the Phillips #1 screwdriver to install the screw that secures the control panel to the system.

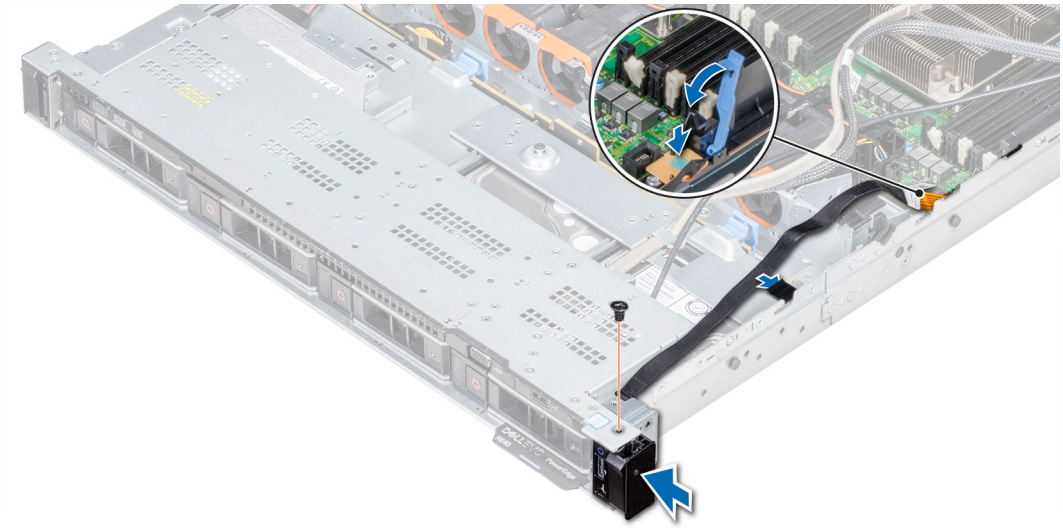

Figure 84. Installing the right control panel

5. Use the Phillips #1 screwdriver to install the screws that secure the cable cover to the system.

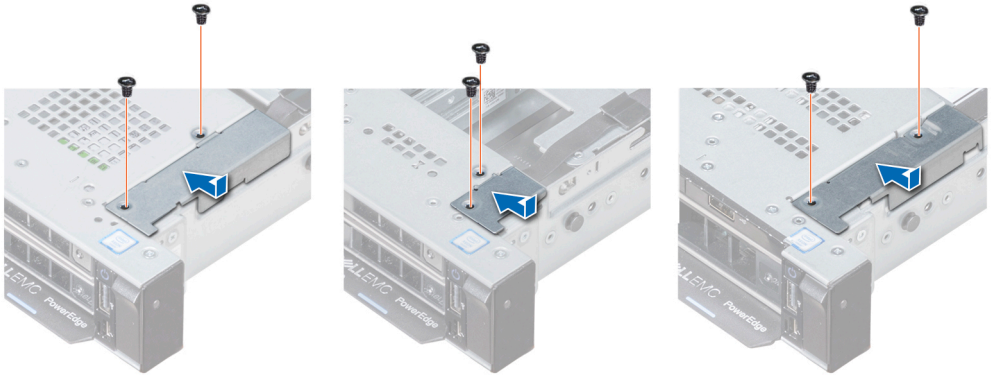

Figure 85. Installing the cable cover

Next steps

1. If applicable, install the cooling fan #8.
2. Follow the procedures in After working inside your system.

8

Getting help

This section provides information about how to contact Dell technical support, how to access information using the system QR code, and documentation resources available from Dell.

Topics:

Contacting Dell EMC

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

Steps

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

Receiving automated support with SupportAssist

Dell EMC SupportAssist is an optional Dell EMC Services offering that automates technical support for your Dell EMC system, storage, and networking devices. By installing and setting up a SupportAssist application in your IT environment, you can receive the following benefits:

- Automated issue detection — SupportAssist monitors your Dell EMC devices and automatically detects hardware issues, both proactively and predictively.
- Automated case creation — When an issue is detected, SupportAssist automatically opens a support case with Dell EMC Technical Support.
- Automated diagnostic collection — SupportAssist automatically collects system state information from your devices and uploads it securely to Dell EMC. This information is used by Dell EMC Technical Support to troubleshoot the issue.
- Proactive contact — A Dell EMC Technical Support agent contacts you about the support case and helps you resolve the issue.

The available benefits vary depending on the Dell EMC Service entitlement purchased for your device. For more information about SupportAssist, go to **Dell.com/SupportAssist**.

Accessing system information using the QRL

You can use the Quick Resource Locator (QRL) to get immediate access to information about your system. The QRL is located on the top of the system cover and provides access to generic information about your system. To find information specific to your system, such as configuration and warranty, access the QR code located on the system Information tag.

Prerequisites

Ensure that your mobile device has a QR code scanner installed.

The QRL includes the following information about your system:

- How-to videos
- Reference materials, including the Installation and Service Manual, LCD diagnostics, and mechanical overview
- A direct link to Dell to contact technical support and sales teams

Steps

1. Go to https://QRL.dell.com and Browse to your specific product or,
2. Use your mobile device to scan the QR code on your system or use the QR code that is shown in the following figure:

Figure 86. QR code for NX3340

Documentation feedback

You can rate the documentation or write your feedback on any of our Dell EMC documentation pages and click **Send Feedback** to send your feedback.

Documentation resources

This section provides information about the documentation resources for your system.

Task	Document	Location
Setting up your system	For information about installing the system into a rack, see the Rack documentation included with your rack solution. . For information about setting up your system, see the *Getting Started Guide* document that is shipped with your system	www.dell.com/storagemanuals
Configuring your system	For information about configuring, managing, updating, and restoring the system, see the *PowerVault Network Attached Storage System using Windows Storage Server 2016 Administrator's Guide*.	www.dell.com/storagemanuals

Task	Document	Location
	For information about the iDRAC features, configuring and logging in to iDRAC, and managing your system remotely, see the Integrated Dell Remote Access Controller User's Guide.	www.dell.com/idracmanuals
	For information about understanding Remote Access Controller Admin (RACADM) subcommands and supported RACADM interfaces, see the RACADM Command Line Reference Guide for iDRAC.	www.dell.com/idracmanuals
	For information about updating drivers and firmware.	www.dell.com/support/drivers
Managing your system	For information about the features of the Dell OpenManage Systems Management, see the Dell OpenManage Systems Management Overview Guide.	www.dell.com/openmanagemanuals>OpenManage Enterprise
	For information about setting up, using, and troubleshooting OpenManage, see the Dell OpenManage Server Administrator User's Guide.	www.dell.com/openmanagemanuals>OpenManage Server Administrator
	For information about installing, using, and troubleshooting Dell OpenManage Enterprise, see the Dell OpenManage Enterprise User's Guide.	www.dell.com/openmanagemanuals>OpenManage Enterprise
	For information about installing and using Dell SupportAssist, see the Dell EMC SupportAssist Enterprise User's Guide.	www.dell.com/serviceabilitytools
	For understanding the features of Dell Lifecycle Controller, see the Dell Lifecycle Controller User's Guide.	www.dell.com/idracmanuals
	For information about enterprise systems management partner programs, see the OpenManage Connections Enterprise Systems Management documents.	www.dell.com/openmanagemanuals
	For information about connections and client systems management, see the OpenManage Connections Client Systems Management documentation.	www.dell.com/dellclientcommandsuitemanuals
Working with the Dell EMC PowerEdge RAID controllers	For information about understanding the features of the Dell PowerEdge RAID controllers (PERC) and deploying the PERC cards, see the Storage controller documentation.	www.dell.com/storagecontrollermanuals
Understanding event and error messages	For information about the event and error messages that are generated by the system firmware and agents that monitor system components, see the Error Code Lookup.	www.dell.com/qrl
Troubleshooting your system	For information about troubleshooting the hardware issues, see the *PowerVault Network Attached Storage Systems using Windows Storage Server 2016 Troubleshooting Guide.*	www.dell.com/storagemanuals