

Dell EMC VxRail™ E560, E560F, and E560N

Installation and Service Manual

Notes, cautions, and warnings

 **NOTE:** A NOTE indicates important information that helps you make better use of your product.

 **CAUTION:** A CAUTION indicates either potential damage to hardware or loss of data and tells you how to avoid the problem.

 **WARNING:** A WARNING indicates a potential for property damage, personal injury, or death.

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Revision history

Date	Revision	Description of change
October 21, 2021	1	Initial wide release.

Introduction

The VxRail E560, E560F, and E560N Installation and Service Manual provides an overview about the system, diagnostic tools, and guidelines describing high-level operations.

The target audience for this document includes customers, field personnel, and partners who want to operate and maintain a VxRail E560, E560F, and E560N. This document is designed for people familiar with:

- Dell EMC systems and software
- VMware virtualization products
- Data center appliances and infrastructure

For the most up-to-date list of VxRail documentation, see the [VxRail Documentation Quick Reference List](#).

Topics:

- [Support](#)
- [Locating your appliance serial number](#)

Support

Create an Online Support account to get access to support and product resources for your VxRail system.

If you already have an account, register your VxRail appliance to access the available resources.

For convenience, you can link your Online Support account with VxRail Manager and access support resources without having to log in separately.

 **NOTE:** If you plan to set up Secure Remote Services, your Online Support account must be linked to VxRail Manager under the same party ID or the deployment will fail. Your appliance must also be in an installed state in the Install Base.

Registering for online support

Create an Online Support account to access support resources.

After you register, you can:

- Register your system
- Obtain product license files and software updates
- Download VxRail product documentation
- Access SolVe Online for VxRail, or download the SolVe Desktop application for hardware replacement and upgrade procedures
- Browse the VxRail community and support information
- Link your support account for access to resources from within VxRail Manager

1. Point your Web browser to <http://www.dell.com/support>.
2. Click **Sign In** and select **Create an account**.
3. Fill in your first name, last name, email address, and preferred password.
4. Select whether you would like to subscribe to email updates.
5. Click **Create an Account**.

Support will send you a confirmation email, typically within 48 hours.

Where to go for support resources

Access support resources for your VxRail system by doing any of the following:

- In the vSphere Client, select **VxRail** from the menu and use the **Support** functions on the **VxRail Dashboard**.
- Point your Web browser to <https://www.dell.com/support>.

Use SolVe Online for VxRail procedures

Step-by-step instructions for procedures such as replacing hardware or performing system administrative tasks are available through SolVe Online and the SolVe Desktop application.

You must have an online support account to use SolVe Online. Go to [SolVe Online for VxRail](#) to access SolVe. For more information about SolVe for VxRail, see [KB 000022572](#).

To avoid potential data loss, see the VxRail procedures in SolVe Online or the SolVe Desktop application before performing any hardware replacement or upgrade activity.

 **CAUTION:** Potential data loss may occur if SolVe Online is not used to perform hardware replacements or upgrades.

Locating your appliance serial number

To get support for your appliance, use the VxRail appliance serial number, also called the Product Serial Number Tag (PSNT). The PSNT is a 14-digit number used to identify your appliance to Dell EMC support.

 **NOTE:** Only use the VxRail appliance serial number to contact Customer Support. Sometimes, you may need to supply the 7-digit Service Tag number.

There are two identification tags on your appliance:

- The VxRail appliance serial number—You can find the serial number in **VxRail Manager**, or printed on the information tag.
- The Service Tag — You can find the Service Tag printed on the physical appliance.

Looking up your VxRail appliance serial number in VxRail Manager

Follow these steps to look up your VxRail appliance serial number in VxRail Manager.

1. On the main page of the vSphere Client click **Hosts and Clusters** in the left navigation bar.
2. Select your VxRail cluster.
3. Select the **Monitor** tab.
4. Select **VxRail > Physical View** from the inner left navigation bar.
5. Observe the VxRail appliance serial number, listed under each appliance ID.
The serial number is also called the "PSNT".

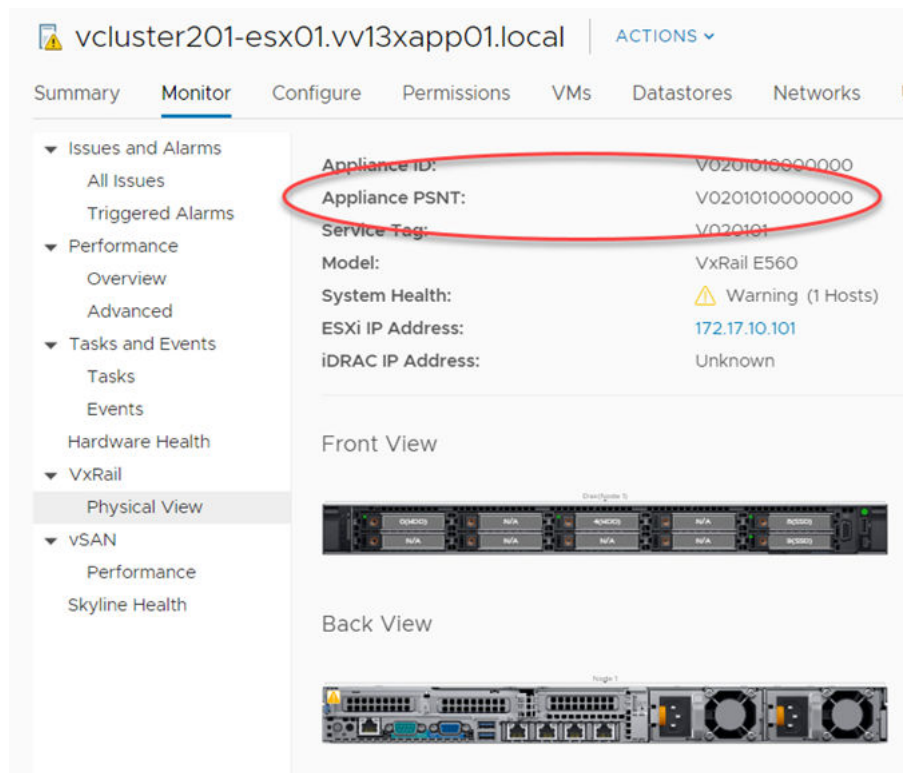


Figure 1. VxRail appliance serial number (PSNT)

Locating the serial number and service tag number on your appliance

You can identify your VxRail appliance using the unique serial number, service tag number, or express service code located on the information tag of your appliance. The information tag is located at the front of your appliance. See the System Overview for the location.

The information tag contains the following:

- Product serial number tag (PSNT), which provides the 14-digit VxRail serial number
- Service tag

To view the PSNT and other labels, pull out the information tag in the front of the appliance. Alternatively, information may be on a sticker on the chassis of the appliance.

The mini Enterprise Service Tag (EST) is found on the back of the appliance. This information is used by Dell to route support calls to the appropriate personnel.

Overview

The VxRail E560 Series is a hyperconverged infrastructure that supports:

- Up to two Intel Xeon Processor Scalable Family processors
- 10 x 2.5 inch hard drives or solid state drives (SSDs)
- 24 DIMM slots
- Two AC or DC redundant power supply units

NOTE: The appliance supports only internal, hot swappable hard drives.

NOTE: In this document, HDD generically refers to both HDD and SSD.

Topics:

- [Front view of the system](#)
- [Back view of the system](#)
- [Drive indicator codes](#)
- [NIC indicator codes](#)
- [Power supply unit indicator codes](#)
- [iDRAC Direct LED indicator codes](#)

Front view of the system

You can access the components such as power button, NMI button, system identification tag, appliance identification button, and USB ports from the front of the system. The diagnostic LEDs are prominently located on the front panel. The hot swappable hard drives are accessible from the front panel.

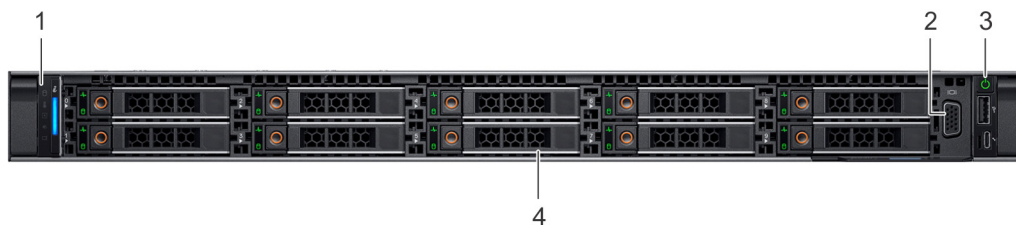


Figure 2. Front view of 10 x 2.5 inch hard drive chassis

Item	Ports, panels, and slots	Icon	Description
1	Left control panel	N/A	Contains the system health and appliance ID, status LED. • Status LED: Enables you to identify any failed hardware components. There are up to five status LEDs and an overall appliance health LED (Chassis health and system ID) bar. For more information, see the Status LED indicators section.
2	VGA port		Enables you to connect a display device to the system. For more information, see the <i>Dell EMC VxRail™ E560, E560F, and E560N Technical Specifications</i> .
3	Right control panel	N/A	Contains the power button, USB port, iDRAC Direct micro-USB, and the iDRAC Direct status LED.

Item	Ports, panels, and slots	Icon	Description
4	Drive slots	N/A	Enable you to install drives that are supported on your system. For more information about drives, see the <i>Dell EMC VxRail™ E560, E560F, and E560N Technical Specifications</i> .

Left control panel view

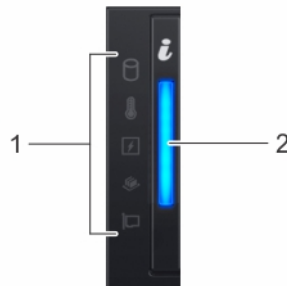


Figure 3. Left control panel view

Table 1. Left control panel features

Item	Indicator	Icon	Description
1	Status LED indicators	N/A	Indicate the status of the appliance. For more information, see the Status LED indicators section.
2	appliance health and appliance ID indicator		Indicates the appliance health. For more information, see the appliance health and appliance ID indicator codes section.

Status LED indicators

 **NOTE:** The status LED indicators are always off and only turns on to a solid amber if any error occurs.

Table 2. 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 appliance and run embedded diagnostics (ePSA). - If the drives are configured in a RAID array, restart the appliance, and enter the host adapter configuration utility program.
	Temperature indicator	The indicator turns solid amber if the appliance 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. - Appliance cover, air shroud, memory module blank, or back filler bracket is removed. - Ambient temperature is too high. - External airflow is obstructed. If the problem persists, see the Support section.
	Electrical indicator	The indicator turns solid amber if the appliance experiences an electrical error (for example, voltage out of range, or a failed	Check the System Event Log or appliance 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 Support section.

Table 2. Status LED indicators and descriptions (continued)

Icon	Description	Condition	Corrective action
		power supply unit (PSU) or voltage regulator).	
	Memory indicator	The indicator turns solid amber if a memory error occurs.	Check the System Event Log or appliance messages for the location of the failed memory. Reseat the memory module. If the problem persists, see the Support section.
	PCIe indicator	The indicator turns solid amber if a PCIe card experiences an error.	Restart the appliance. Update any required drivers for the PCIe card. Reinstall the card. If the problem persists, see the Support section. NOTE: For more information about the supported PCIe cards, see the Expansion card installation guidelines section.

Appliance health and appliance ID indicator codes

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

**Figure 4. Appliance health and appliance ID indicators****Table 3. Appliance health and appliance ID indicator codes**

Appliance health and appliance ID indicator code	Condition
Solid blue	Indicates that the appliance is turned on, appliance is healthy, and appliance ID mode is not active. Press the appliance health and appliance ID button to switch to appliance ID mode.
Blinking blue	Indicates that the appliance ID mode is active. Press the appliance health and appliance ID button to switch to appliance health mode.
Solid amber	Indicates that the appliance is in fail-safe mode. If the problem persists, see the Support section.
Blinking amber	Indicates that the appliance is experiencing a fault. Check the Appliance Event Log or the LCD panel, if available on the bezel, for specific error message. For more information about error messages, see the <i>Dell Event and Error Messages Reference Guide</i> at Dell.com/openmanagemanuals > OpenManage software .

Right control panel view



Figure 5. Right control panel view

Table 4. Right control panel features

Item	Indicator, button, or connector	Icon	Description
1	Power button		Indicates if the appliance is turned on or off. Press the power button to manually turn on or off the appliance. NOTE: Press the power button to gracefully shut down an ACPI-compliant operating system.
2	USB port (2)		The USB ports are 4-pin, 2.0-compliant. These ports enable you to connect USB devices to the appliance.
3	iDRAC Direct port		The iDRAC Direct port is micro USB 2.0-compliant. This port enables you to access the iDRAC Direct features. For more information, see the iDRAC User's Guide at Dell.com/idracmanuals .
4	iDRAC Direct LED	N/A	The iDRAC Direct LED indicator lights up to indicate that the iDRAC Direct port is connected. For more information, see the iDRAC Direct LED indicator codes section.
5	VGA port		Enables you to connect a display device to the appliance. For more information, see the <i>Dell EMC VxRail Appliance on PowerEdge Servers E560, E560F, and E560N Technical Specifications</i> section.

Back view of the system

You can access the components such as system identification button, power supply sockets, cable management arm connectors, iDRAC storage media, NIC ports, and USB ports from the back of the system. Most of the expansion card ports can be accessed from the back panel. The hot swappable power supply units are accessible from the back panel.

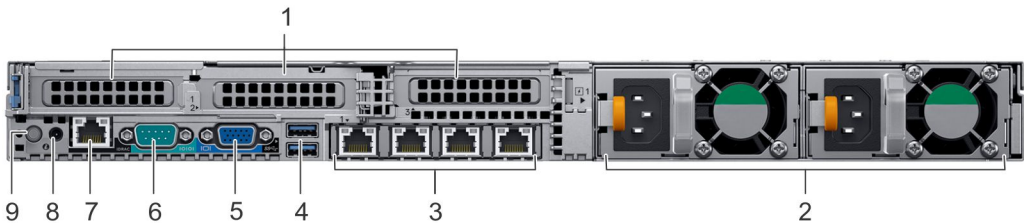


Figure 6. Back view of the chassis with 3 PCIe expansion slots

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 on the expansion cards that are supported on your system, see the <i>Dell EMC VxRail™ E560, E560F, and E560N Technical Specifications</i> .
2	Power supply unit (2)	N/A	For more information about the PSU configurations, see the <i>Dell EMC VxRail™ E560, E560F, and E560N Technical Specifications</i> .
3	NIC port (4)		The NIC ports that are integrated on the network daughter card (NDC) provide network connectivity. For more information about the supported configurations, see the Technical specifications section.
4	USB 3.0 (2)		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. For more information, see the <i>Dell EMC VxRail™ E560, E560F, and E560N Technical Specifications</i> .
6	Serial port		Enables you to connect a serial device to the system. For more information, see the <i>Dell EMC VxRail™ E560, E560F, and E560N Technical Specifications</i> .
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 you to connect to the CMA.
9	System identification button		The system Identification (ID) button is available on the front and back of the system. 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.

Drive indicator codes

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

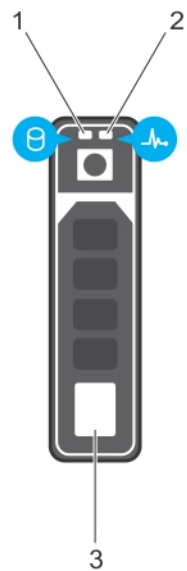


Figure 7. Drive indicators

- 1. drive activity LED indicator
- 2. drive status LED indicator
- 3. drive

Table 5. Drive indicator codes

Drive status indicator code	Condition
Flashes green twice per second	Identifying drive or preparing for removal.
Off	Drive ready for removal. i NOTE: The drive status indicator remains off until all drives are initialized after the appliance 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.
Solid green	Drive online.

NIC indicator codes

The NIC on the back panel has an indicator that provides information about the network activity and link status. The activity LED indicates whether the NIC is currently connected or not. The link LED indicates the speed of the connected network.

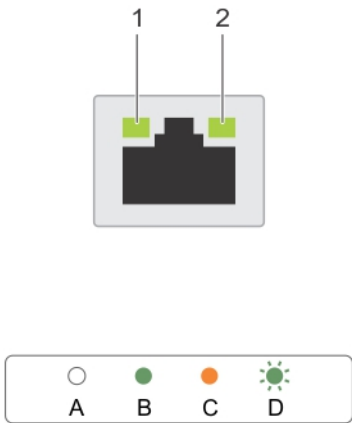


Figure 8. NIC indicators

- 1. link indicator
- 2. activity indicator

Table 6. NIC indicators

Convention	Status	Condition
A	Link and activity indicators are off	The NIC is not connected to the network.
B	Link indicator is green	The NIC is connected to a valid network at its maximum port speed (1 Gbps or 10 Gbps).
C	Link indicator is amber	The NIC is connected to a valid network at less than its maximum port speed.
D	Activity indicator is flashing green	Network data is being sent or received.

Power supply unit indicator codes

AC power supply units (PSUs) have an illuminated translucent handle that serves as an indicator and DC PSUs have an LED that serves as an indicator. The indicator shows whether power is present or a power fault has occurred.



Figure 9. AC PSU status indicator

1. AC PSU status indicator/handle

Table 7. AC PSU status indicators

Convention	Power indicator pattern	Condition
A	Green	A valid power source is connected to the PSU and the PSU is operational.
B	Flashing green	When the firmware of the PSU is being updated, the PSU handle flashes green.
C	Flashing green and turns off	When hot-adding a PSU, the PSU handle flashes green five times at 4 Hz rate and turns off. This indicates a PSU mismatch with respect to efficiency, feature set, health status, and supported voltage. NOTE: Ensure that both the PSUs are of the same capacity. CAUTION: For AC PSUs, use only PSUs with the Extended Power Performance (EPP) label on the back.
D	Flashing amber	Indicates a problem with the PSU. CAUTION: When correcting a PSU mismatch, replace only the PSU with the flashing indicator. Swapping the PSU to make a matched pair can result in an error condition and unexpected appliance shutdown. To change from a high output configuration to a low output configuration or vice versa, you must turn off the appliance. CAUTION: AC PSUs support both 220 V and 110 V input voltages. 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. CAUTION: Combining AC and DC PSUs is not supported and triggers a mismatch.
E	Not lit	Power is not connected.

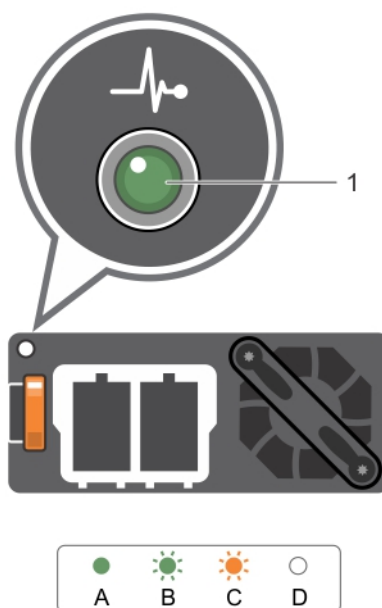


Figure 10. DC PSU status indicator

1. DC PSU status indicator

Table 8. DC PSU status indicators

Convention	Power indicator pattern	Condition
A	Green	A valid power source is connected to the PSU and that the PSU is operational.
B	Flashing green	When hot-adding a PSU, the PSU indicator flashes green. This indicates that there is a PSU mismatch with respect to efficiency, feature set, health status, and supported voltage. Ensure that both the PSUs are of the same capacity.
C	Flashing amber	Indicates a problem with the PSU. ⚠ CAUTION: When correcting a PSU mismatch, replace only the PSU with the flashing indicator. Swapping the PSU to make a matched pair can result in an error condition and unexpected appliance shutdown. To change from a High Output configuration to a Low Output configuration or vice versa, you must turn off the appliance. ⚠ CAUTION: If two PSU are used, they must be of the same type and have the same maximum output power. ⚠ CAUTION: Combining AC and DC PSU is not supported and triggers a mismatch.
D	Not lit	Power is not connected.

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.

NOTE: The iDRAC Direct LED indicator does not turn on when the USB port is used in the USB mode.



Figure 11. iDRAC Direct LED indicator

1. iDRAC Direct status indicator

The following table describes iDRAC Direct activity when configuring iDRAC Direct by using the management port (USB XML Import).

Table 9. iDRAC Direct LED indicators

Convention	iDRAC Direct LED indicator pattern	Condition
A	Green	Turns green for a minimum of two seconds to indicate the start and end of a file transfer.
B	Flashing green	Indicates file transfer or any operation tasks.
C	Green and turns off	Indicates that the file transfer is complete.
D	Not lit	Indicates that the USB is ready to be removed or that a task is complete.

The following table describes iDRAC Direct activity when configuring iDRAC Direct by using your laptop and cable (Laptop Connect):

Table 10. iDRAC Direct LED indicator patterns

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

Initial setup and configuration

To install and configure your new VxRail, you can purchase deployment services, or choose the VxRail self-deploy (no installation services) option.

If you purchased deployment services for your VxRail, do not rack the VxRail or connect power. Contact your Dell account team or reseller to arrange for deployment by Dell certified technicians.

If you chose the VxRail self-deploy option, go to www.dell.com/installvxrail for deployment instructions and guidance.

Extensive network experience, understanding of VxRail infrastructure planning, and deployment knowledge are required for self-deployment.

 NOTE:

- If you are uncertain you can complete the end-to-end deployment process, contact your sales representative for Dell Technologies Services.
- If you are unable to complete the deployment, contact your sales representative for Dell Technologies Services.

 **CAUTION:** During the VxRail deployment process, an iDRAC account that is named vxadmin or PTAdmin is created. This account provides hardware information to the VxRail Manager and is required for the VxRail Manager and the cluster to function properly. Ensure that you do not modify or delete this account.

Pre-operating system management applications

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

If you purchased deployment services for your VxRail, do not rack the VxRail or connect power. Contact your Dell account team or reseller to arrange for deployment by Dell certified technicians.

If you chose the VxRail self-deploy option, go to www.dell.com/installvxrail for deployment instructions and guidance.

Extensive network experience, understanding of VxRail infrastructure planning, and deployment knowledge are required for self-deployment.

NOTE:

- If you are uncertain you can complete the end-to-end deployment process, contact your sales representative for Dell Technologies Services.
- If you are unable to complete the deployment, contact your sales representative for Dell Technologies Services.

 **CAUTION:** Dell EMC has optimized your VxRail. It is not recommended to change any of these settings.

Topics:

- [Options to manage the pre-operating system applications](#)
- [iDRAC configuration](#)

Options to manage the pre-operating system applications

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

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

 **NOTE:** Dell EMC has optimized your appliance and it is not recommended to change any of these settings.

iDRAC configuration

The Integrated Dell Remote Access Controller (iDRAC) is designed to make appliance administrators more productive and improve the overall availability of Dell EMC appliances. iDRAC alerts administrators to appliance issues, helps them perform remote appliance management, and reduces the need for physical access to the appliance.

Log in to iDRAC

You can log in to iDRAC as:

- iDRAC user
- Microsoft Active Directory user
- Lightweight Directory Access Protocol (LDAP) user

If you have opted for secure default access to iDRAC, the iDRAC secure default password is available on the back of the appliance Information tag. If you have not opted for secure default access to iDRAC, then the default user name and password are `root` and `calvin`. You can also log in by using Single Sign-On or Smart Card.

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

 **NOTE:** Ensure that you change the default user name and password after setting up the iDRAC IP address.

The iDRAC IP address is pre-configured for DHCP. This can be changed to a static IP address by logging into iDRAC.

 **NOTE:**

- To access iDRAC, connect the network cable to the Ethernet connector 1 on the system board.
- Ensure that you change the default user name and password after setting up the iDRAC IP address.

Replacing and adding hardware

You can add or replace hardware components on your VxRail appliance such as hard disk drives (HDDs), solid state drives (SSDs), power supplies, and so on.

See the table in the [Supported hardware components](#) section to know the components that you, as a customer can replace. In addition to these components, there are some hardware components that require you to contact the Customer Support to arrange for repair or replacement.

NOTE: Before you proceed with the replacement, go to SolVe and generate the replacement procedure of the component that you want to replace. For more information about how to use SolVe, see [Using SolVe Online for VxRail procedures](#).

Topics:

- [Use SolVe Online for VxRail procedures](#)
- [Supported hardware components](#)
- [System memory](#)
- [Expansion cards and expansion card riser](#)

Use SolVe Online for VxRail procedures

Step-by-step instructions for procedures such as replacing hardware or performing system administrative tasks are available through SolVe Online and the SolVe Desktop application.

You must have an online support account to use SolVe Online. Go to [SolVe Online for VxRail](#) to access SolVe. For more information about SolVe for VxRail, see [KB 000022572](#).

To avoid potential data loss, see the VxRail procedures in SolVe Online or the SolVe Desktop application before performing any hardware replacement or upgrade activity.

CAUTION: Potential data loss may occur if SolVe Online is not used to perform hardware replacements or upgrades.

Supported hardware components

Following table describes the supported hardware components for VxRail E560 Series appliances.

Table 11. Supported hardware components

Hardware component	Customer Replaceable Unit (CRU)	Field Replaceable Unit (FRU)
System Memory	Yes	Yes
Hard Drive	Yes	Yes
Solid State Drive (SAS/SATA)	Yes	Yes
Solid State Drive (NVMe)	Yes	Yes
PCIe Network Interface Cards	Yes	Yes
Micro SDHC Card	Yes	Yes
Power Supply Unit	Yes	Yes
Processors	No	Yes
System Motherboard	No	Yes
Host Bus Adapter (HBA330)	No	Yes

Table 11. Supported hardware components (continued)

Hardware component	Customer Replaceable Unit (CRU)	Field Replaceable Unit (FRU)
BOSS controller card and M.2 SATA disk	No	Yes
Network Daughter Card (NDC)	No	Yes

 **NOTE:** The preceding table provides a non-exhaustive list of FRUs that reflects the common top-level assembly parts.

System memory

The VxRail E560 Series supports DDR4 registered DIMMs (RDIMMs) and load reduced DIMMs (LRDIMMs). Memory holds the instructions that are executed by the processor.

 **CAUTION:** To avoid data loss, ensure that you refer to the procedures in the SolVe Desktop application before performing any memory or expansion card replacement or upgrade procedures.

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

Memory bus operating frequency can be 2933 MT/s, 2666 MT/s, 2400 MT/s, or 2133 MT/s depending on the following factors:

- DIMM type (RDIMM or LRDIMM)
- Number of DIMMs populated per channel
- System profile selected (for example, Performance Optimized, Custom, or Dense Configuration Optimized)
- Maximum supported DIMM frequency of the processors

Your appliance 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 are marked black.

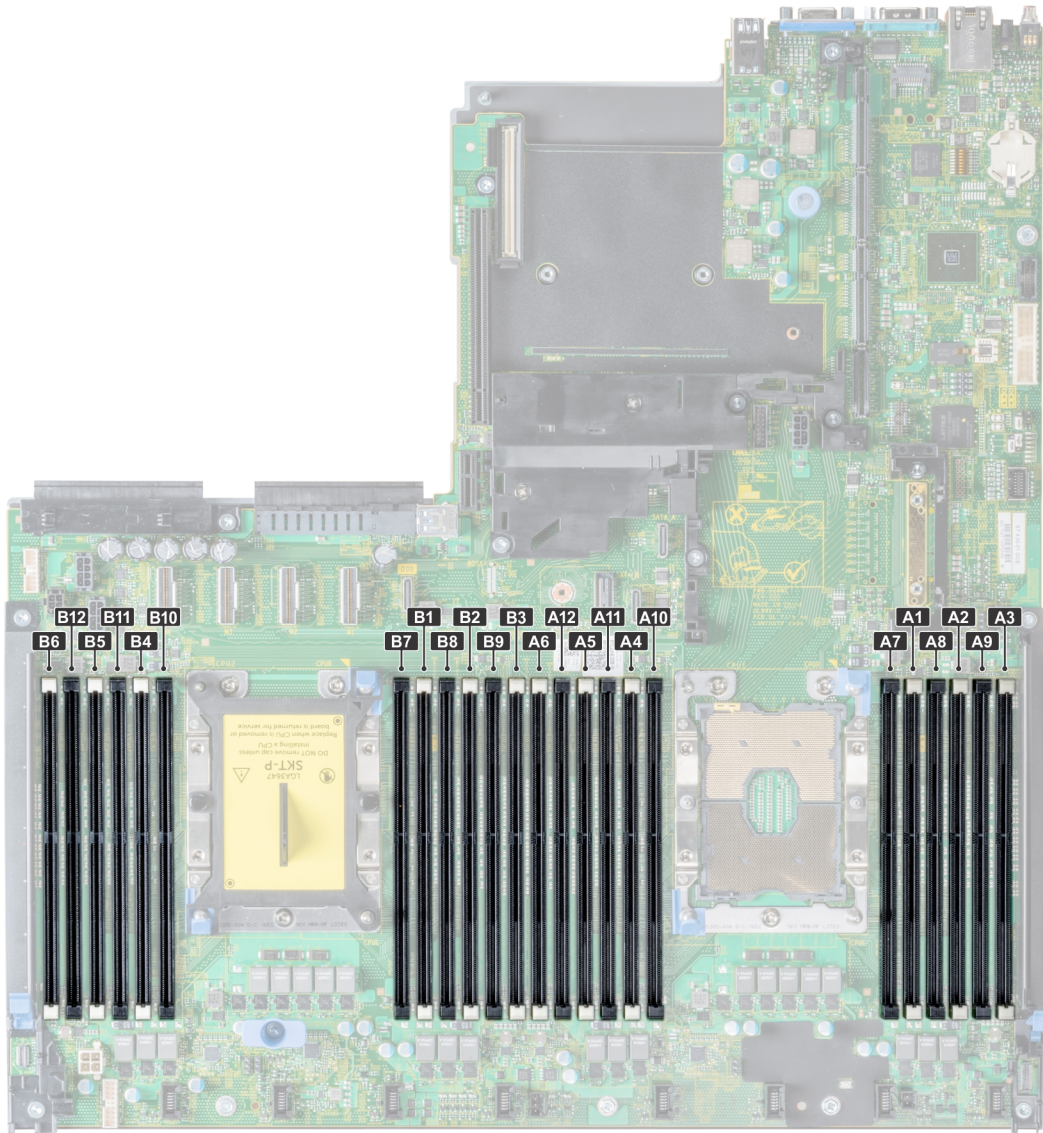


Figure 12. Memory socket locations

Memory channels are organized as follows:

Table 12. Memory channels

Processor	Chan 0	Chan 1	Chan 2	Chan 3	Chan 4	Chan 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, follow the general guidelines when configuring your system memory. If your system's memory configurations fail to observe these guidelines, your system might not boot, stop responding during memory configuration, or operate with reduced memory.

NOTE: Memory configurations that fail to observe these guidelines can prevent your appliance from booting, stop responding during memory configuration, or operating with reduced memory.

The following are the recommended guidelines for installing memory modules:

- RDIMMs and LRDIMMs must not be mixed.
- If memory modules with different speeds are installed, they will operate at the speed of the slowest installed memory module(s) or slower depending on appliance DIMM configuration.
- Populate memory module sockets only if a processor is installed. For single-processor appliance, sockets A1 to A12 are available. For dual-processor appliance, sockets A1 to A12 and sockets B1 to B12 are available.
- Populate all the sockets with white release tabs first, and then the black release tabs.
- In a dual-processor configuration, the memory configuration for each processor should be identical. For example, if you populate socket A1 for processor 1, then populate socket B1 for processor 2, and so on.
- VxRail appliances require that you populate six memory modules per processor for single processor configurations and twelve memory modules per processor for dual-processor configurations (one DIMM per channel) at a time to maximize performance.

Expansion cards and expansion card riser

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

NOTE: To avoid data loss, ensure that you refer to the procedures in the SolVe Desktop application before performing any memory or expansion card replacement or upgrade procedures.

NOTE: A System Event Log (SEL) event is logged if an expansion card riser is unsupported or missing. It does not prevent your appliance from turning on and no BIOS POST message or F1/F2 pause is displayed.

Expansion card installation guidelines

Your appliance supports PCI Express Generation 3 expansion cards.

Table 13. 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

The following table provides guidelines for expansion cards priority to ensure proper cooling and mechanical fit.

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 14. Riser configurations: 1A + 2A (E560/E560F - 2 CPU)

Card type	Slot priority (Systems shipped before December 10, 2019)	Slot priority (Systems shipped on or after December 10, 2019)	Form factor
HWRAID BOSS	1	2	Low Profile
PCIe Devices (NIC, GPU and FC HBA)	2, 3	1, 3	Low Profile
HBA330 Mini	Integrated Slot	Integrated Slot	N/A
rNDC	Integrated Slot	Integrated Slot	N/A

Table 15. Riser configurations: 1A + 2A (E560N All NVMe)

Card type	Slot priority	Form factor
HWRAID BOSS	2	Low Profile
PCIe Devices (NIC, GPU and FC HBA)	3	Low Profile
HBA330 Mini	Integrated Slot	N/A
rNDC	Integrated Slot	N/A

 **NOTE:** For the 1A + 2A E560N All NVMe riser configuration, slot 1 is dedicated to the PCIe bridge card.

Table 16. Riser configurations: 1A (E560/E560F - 1 CPU)

Card type	Slot priority (Systems shipped before December 10, 2019)	Slot priority (Systems shipped on or after December 10, 2019)	Form factor
HWRAID BOSS	1	2	Low Profile
PCIe Devices (NIC, GPU and FC HBA)	2	1	Low Profile
HBA330 Mini	Integrated Slot	Integrated Slot	N/A
rNDC	Integrated Slot	Integrated Slot	N/A