Dell Technologies

15th Generation PowerEdge Server Troubleshooting Guide

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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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1

Overview

The *Dell PowerEdge Servers Troubleshooting Guide* provides troubleshooting procedures for issues that are related to Server Operating System, Server Hardware, and Server Management Software. This is generation-specific information, separating problem identification and solution.

The troubleshooting guide is divided into three main sections:

- Quick help - This section provides information about error code matrix, top trending issues, and solutions for the issues.
- Self-help - This section provides information about diagnostics, faq, related videos, server management software issues, and troubleshooting operating system issues.
- Get help - This section provides information about how to contact technical support and prerequisite to be gathered before contacting technical support, for faster issue resolution.

Flowchart represents guided steps on how to troubleshoot an issue if you have an error code or if you find the issue that is listed in the top trending issues.

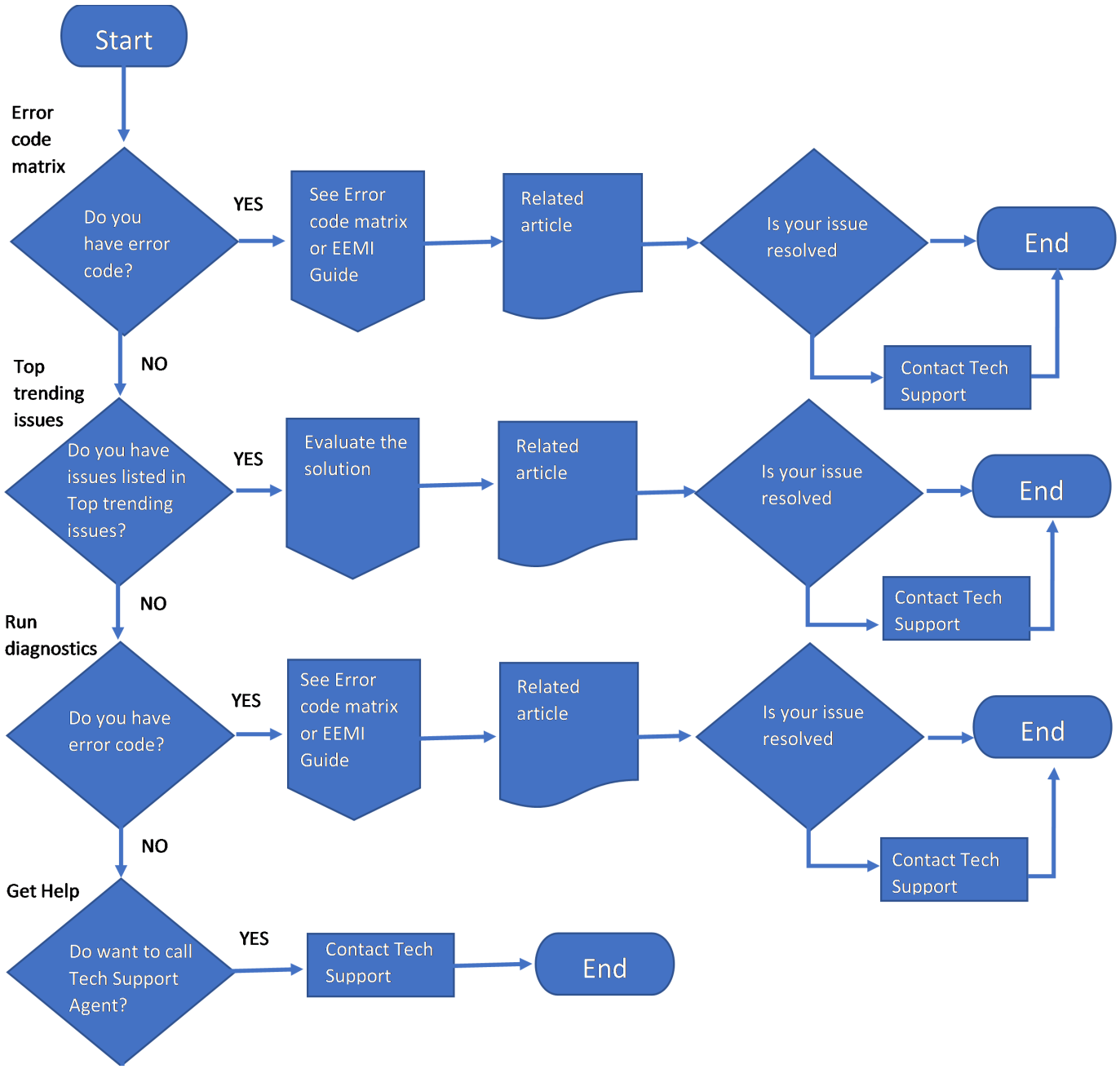


Figure 1. Flowchart

Topics:

- Recommended tools
- Safety instructions
- Documentation resources

Recommended tools

You may need any or combination of the following tools to perform the removal and installation procedures:

- Phillips 1 screwdriver
- Phillips 2 screwdriver
- 5 mm hex nut screwdriver
- Plastic scribe
- 1/4-inch flat blade screwdriver
- Wrist grounding strap connected to the ground
- ESD mat
- Needle-nose pliers

Safety instructions

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

CAUTION: Ensure that two or more people lift the system horizontally from the box and place it on a flat surface, rack lift, or into the rails.

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

WARNING: 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.

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

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

NOTE: While replacing faulty storage controller, FC, or NIC card with the same type of card, after you power on the system; the new card automatically updates to the same firmware and configuration of the faulty one. For updating to the latest firmware and changing the configuration, see the *Lifecycle Controller User's Guide* at iDRAC Manuals.

CAUTION: Do not install GPUs, network cards, or other PCIe devices on your system that are not validated and tested by Dell. Damage caused by unauthorized and invalidated hardware installation will null and void the system warranty.

Documentation resources

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

To view the document that is listed in the documentation resources table:

- From the Dell Technologies support site:
  1. Click the documentation link that is provided in the Location column in the table.
  2. Click the required product or product version.

NOTE: To locate the model number, see the front of your system.

3. On the Product Support page, click **Documentation**.

- Using search engines:
  - Type the name and version of the document in the search box.

Table 1. Additional documentation resources for your system

Task	Document	Location
Setting up your system	For information about setting up your system, see the *Getting Started Guide* document that is shipped with your system.	PowerEdge manuals
Configuring your system	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. For information about understanding Remote Access Controller Admin (RACADM) subcommands and supported RACADM interfaces, see the RACADM CLI Guide for iDRAC. For information about Redfish and its protocol, supported schema, and Redfish Eventing implemented in iDRAC, see the Redfish API Guide. For information about iDRAC property database group and object descriptions, see the Attribute Registry Guide. For information about Intel QuickAssist Technology, see the Integrated Dell Remote Access Controller User's Guide.	PowerEdge manuals
	For information about earlier versions of the iDRAC documents. To identify the version of iDRAC available on your system, on the iDRAC web interface, click **?** > **About**.	idrac manuals
	For information about installing the operating system, see the operating system documentation.	Operating System Manuals
	For information about updating drivers and firmware, see the Methods to download firmware and drivers section in this document.	Drivers
Managing your system	For information about systems management software offered by Dell, see the Dell OpenManage Systems Management Overview Guide.	PowerEdge manuals
	For information about setting up, using, and troubleshooting OpenManage, see the Dell OpenManage Server Administrator User's Guide.	OpenManage Manuals > OpenManage Server Administrator
	For information about installing and using Dell SupportAssist, see the Dell SupportAssist Enterprise User's Guide.	serviceability tools

Table 1. Additional documentation resources for your system (continued)

Task	Document	Location
	For information about partner programs enterprise systems management, see the OpenManage Connections Enterprise Systems Management documents.	OpenManage Manuals
Working with the Dell PowerEdge RAID controllers	For information about understanding the features of the Dell PowerEdge RAID controllers (PERC), Software RAID controllers, or BOSS card and deploying the cards, see the Storage controller documentation.	Storage Controller Manuals
Understanding event and error messages	EEMI guide	QRL
Troubleshooting your system	For information about identifying and troubleshooting the PowerEdge server issues, see the Server Troubleshooting Guide.	PowerEdge manuals

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Quick help 15G

This section covers information on top trending error codes and top trending issues reported for the generation of servers.

Topics:

- Error code matrix
- Top trending issues

Error code matrix

The error code matrix provides information about generic error codes, error messages, and related article if available for different 15th generation of PowerEdge systems.

Table 2. Error code matrix

Error code	Message	Related KB article or link to EEMI guide
HWC8010	The System Configuration Check operation resulted in the following issue: arg1.	Follow the steps listed in the PowerEdge manuals
SWC5012	Unable to power on the host because an SL cable is connected to an unpowered device.	Follow the steps listed in the PowerEdge manuals
PSU0003	The power input for the power supply is lost.	Follow the steps listed in the PowerEdge manuals
RDU0012	Power supply redundancy is lost.	Follow the steps listed in the PowerEdge manuals
SEC0033	The chassis is open while the power is off.	Follow the steps listed in the PowerEdge manuals
VDR7	Virtual Disk on RAID Controller in Slot has failed.	Follow the steps listed in the PowerEdge manuals
PDR1001	Fault detected on drive in disk drive bay.	Follow the steps listed in the PowerEdge manuals
PDR1016	Drive is removed from the disk drive bay.	Follow the steps listed in the PowerEdge manuals
CTL137	The storage controller Integrated RAID Controller is unable to communicate to the BMC because either the storage controller or BMC is not responding to the commands either because of an internal error or the bus is in an error state.	Follow the steps listed in the PowerEdge manuals
PCI1318	A fatal error was detected on a component at bus device function.	Follow the steps listed in the PowerEdge manuals
UEFI0056	A PCIe error has occurred.	Follow the steps listed in the PowerEdge manuals
HWC1001	The NDC is absent.	Follow the steps listed in the PowerEdge manuals
FAN0029	Fan is either removed, incorrectly installed, or not present.	Follow the steps listed in the PowerEdge manuals
SWC0001	Unable to save the network settings.	Follow the steps listed in the PowerEdge manuals

Table 2. Error code matrix (continued)

Error code	Message	Related KB article or link to EEMI guide
SWC0088	Unable to retrieve the iDRAC DHCP IP address.	Follow the steps listed in the PowerEdge manuals
MEM0001	Multi-bit memory errors detected on a memory device at location(s).	Follow the steps listed in the PowerEdge manuals
UEFI0108	One or more memory errors have occurred on the memory slot.	Follow the steps listed in the PowerEdge manuals
UEFI0339	The Dual Inline memory module (DIMM) in the memory slot is disabled because of initialization errors caused by uncorrectable memory errors, invalid configuration, and others.	Follow the steps listed in the PowerEdge manuals
UEFI0058	An uncorrectable Memory Error has occurred because a Dual Inline memory module (DIMM) is not functioning.	Follow the steps listed in the PowerEdge manuals
MEM8000	Correctable memory error logging is disabled for a memory device at location.	Follow the steps listed in the PowerEdge manuals
FAN0001	Fan RPM is less than the lower critical threshold.	Follow the steps listed in the PowerEdge manuals
UEFI0060	Power that is required by the system exceeds the power that is supplied by the Power Supply Units (PSUs).	Follow the steps listed in the PowerEdge manuals
PWR1006	The system halted because system power exceeds capacity.	Follow the steps listed in the PowerEdge manuals
PST0208	System BIOS has halted.	Follow the steps listed in the PowerEdge manuals
UEFI0067	A PCIe link training failure is observed in Slot, and the device link is disabled.	Follow the steps listed in the PowerEdge manuals

If the error codes are not listed in the table, see PowerEdge manuals for more information.

EEMI guide

Messages are divided into three elements:

- **Message**: Indicates the actual message, and probable cause, wherever applicable.
- **Recommended Response Action**: Indicates the remedial tasks to be performed by the user to resolve an issue. Comprehensive information is given about the GUI navigation path (or RACADM and WS-Man commands) that helps is effective and fast resolution.
- **Detailed Description**: Provides more info about the error or event, where appropriate.

Top trending issues

The top trending issues for the 15G server components are listed below.

Table 3. Top trending issues for 15Gen PowerEdge Servers

Issue	Resolution
Dell PowerEdge R750 and R7525 servers that are configured with a rear 4x2.5" hard drive backplane may report fan errors in the system event and lifecycle logs	To troubleshoot, see link
PowerEdge R7515 with NVIDIA T4 GPU Detected Critical Xid Error, and GPU stopped processing	To troubleshoot, see link
PowerEdge R7525 Install OS failed from Intel X710 PXE boot and stuck at get client information screen	To troubleshoot, see link

Table 3. Top trending issues for 15Gen PowerEdge Servers (continued)

Issue	Resolution
PowerEdge R7525: I/O sequential read throughput drops when testing with over 10 SSD drives simultaneously	To troubleshoot, see link
Boot Device Fully Qualified Device Descriptor Name Changes in 15G BIOS UEFI Boot Sequence After BIOS Update	To troubleshoot, see link
PowerEdge: R750 no Boot and have an Error "NvmExpress: NVMe device not ready"	To troubleshoot, see link
R250, R350, T150, T350: First power on need wait for 2-3 minutes, and the Power button LED is off after pressing the power button	To troubleshoot, see link
PowerEdge R350 new deployment can deploy Windows Server 2022 but unable to deploy Windows Server 2019	To troubleshoot, see link

Table 4. Top trending issues for drives

Issue	Resolution
How to troubleshoot a drive failure?	To troubleshoot drive failure, see link.
What is predictive drive failure and how do we detect it?	To know more on predictive drive failure, see link
How to identify and troubleshoot if a drive shows a foreign configuration?	To troubleshoot, see link.
How to troubleshoot failed or degraded virtual disks?	To troubleshoot, see link.

Table 5. Top trending issues for processors

Issue	Resolution
PowerEdge servers processor issue information and troubleshooting techniques?	To troubleshoot, see link.

Table 6. Top trending issues for PERC

Issue	Resolution
How to troubleshoot a foreign drive?	To troubleshoot, see link.
How to troubleshoot and identify a failed drive from a RAID array?	To troubleshoot, see link.
How to create, initialize and troubleshoot PERC Controllers and RAID Arrays?	To troubleshoot, see link.
How to Troubleshoot SMART Errors on a Dell PowerEdge RAID Controller (PERC)?	To troubleshoot, see link.

Table 7. Top trending issues for memory

Issue	Resolution
What is DDR4 Self-healing on Dell PowerEdge Servers with Intel Xeon Scalable Processors	For information about DDR4 Self-healing, see link
14G Intel and 15G Intel/AMD PowerEdge servers: DDR4 memory: managing Correctable error threshold events	For information about DDR4 memory: managing Correctable error threshold events see link
How to resolve issues with errors MEM0701, MEM0702 and MEM0005?	For MEM0701, MEM0702, and MEM0005 errors, see link .
How to troubleshoot correctable memory error on a DIMM?	To troubleshoot, see link.

Table 8. Top trending issues for NIC

Issue	Resolution
How to troubleshoot virtual machine network connection issues (VMware)?	To troubleshoot, see link.

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Self help

This section covers information on frequently asked questions, troubleshooting videos, server management hardware and software issues, and operating system issues.

Topics:

- System diagnostics and indicator codes
- SupportAssist Enterprise
- Secure Connect Gateway
- Frequently asked questions
- Videos
- Troubleshooting hardware issues
- Server management software issues
- Troubleshooting operating system issues

System diagnostics and indicator codes

This section describes the diagnostic indicators on the system front panel that displays the system status during system startup.

Using system diagnostics

If you experience an issue with the system, run the system diagnostics before contacting Dell Technologies for technical assistance. The purpose of running system diagnostics is to test the system hardware without using additional equipment or risking data loss. If you are unable to fix the issue yourself, service and support personnel can use the diagnostics results to help you solve the issue.

Dell Embedded System Diagnostics

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

The Embedded System Diagnostics provide 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 issues encountered during testing

Running the Embedded System Diagnostics from the Dell Lifecycle Controller

Steps

1. When the system is booting, 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 start executing the tests on all the detected devices.

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.

System diagnostic controls

Table 9. 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.

SupportAssist Enterprise

After July 2022, SupportAssist Enterprise 2.x capabilities such as device management, case creation, and alert monitoring will be discontinued. To continue to manage and monitor your devices, you must upgrade to Secure Connect Gateway.

Secure Connect Gateway

Secure Connect Gateway is an enterprise monitoring technology that is delivered as an appliance and a stand-alone application. It monitors your devices and proactively detects issues that may occur. Depending on your service contract, it also automates support request creation for issues that are detected on the monitored devices. Supported products include Dell servers, data storage, chassis, networking, data protection devices, virtual machines, and converged or hyperconverged appliances.

Upgrading from SupportAssist Enterprise to Secure Connect Gateway.

Frequently asked questions

The frequently asked questions (FAQs) for some of the server components are listed below.

Table 10. FAQs for drives

Issue	Resolution
What is Predicted Drive Failure and How to Solve it?	To diagnose the predictive drive failure, see link
How to resolve performance issues with the virtual disks and SSDs?	To identify the issues with your drive, see link.
How to fix Double Faults and Punctures in RAID Arrays?	To fix the issues related to puncture or double faults, see link.
Manual maintenance for RAID and hard drive operations?	The check on the manual maintenance, see link .

Table 10. FAQs for drives (continued)

Issue	Resolution
What do we do when a SMART error occurs on a physical disk that is part of a virtual disk?	To resolve issues when SMART error occurs on a physical disk that is part of a virtual disk, see link .

Table 11. FAQs for processors

Issue	Resolution
How to view error messages in System Event logs?	For more information about SEL, see link .

Table 12. FAQs for PERC

Issue	Resolution
PowerEdge RAID Controller questions?	For PowerEdge RAID Controller questions , see link.
What is preserved cache in PERC?	For information about preserved cache, see link .
How do we manage preserved cache?	For information about how to manage a preserved cache, see link .

Table 13. FAQs for memory

Issue	Resolution
What is DDR4 Self-healing on Dell PowerEdge Servers with Intel Xeon Scalable Processors?	For information about DDR4 self-healing, see link.
Does out-of-date firmware cause memory errors?	Out dated firmware can be a cause for memory errors, for information see link for RAID Controller 9 User's Guide and see link for RAID Controller 10 User's Guide.

Table 14. FAQs for NIC

Issue	Resolution
How to set up NIC teaming on PowerEdge Servers?	For more information, see link.
How to configure the iDRAC9 and the Lifecycle Controller Network IP?	For more information, see link.

Videos

There are videos available for PowerEdge servers that capture removing or installing steps for the components.

To watch remove or install videos, follow the steps that are mentioned below:

1. Go to QRL.
2. Enter your product name in the Search bar and press enter.
3. Click on the product name that is listed in the search result, and watch the video for more information.

Troubleshooting hardware issues

This section helps you troubleshoot hardware issues in your system.

NOTE: If the issue still persists, contact Dell Technologies Technical Support for assistance.

Troubleshooting system startup failure

If you boot the system to the BIOS boot mode after installing an operating system from the UEFI Boot Manager, the system stops responding. To avoid this issue, you must boot to the same boot mode in which you installed the operating system.

For no boot device available issue during system startup refers: No boot device found article.

Troubleshooting the video subsystem

Prerequisites

NOTE: Ensure that the **Local Server Video Enabled** option is selected in the iDRAC Graphical User Interface (GUI), under **Virtual Console**. If this option is not selected, local video is disabled.

NOTE: The VGA ports are not hot-pluggable.

Steps

1. Check the cable connections (power and display) to the monitor.
2. Check the video interface cabling from the system to the monitor.
3. Run the LCD Built-in Self Test (BIST).

Results

If the tests run successfully, the problem is not related to video hardware.

For more information on no video, refer the No Video section in the article.

Next steps

If the tests fail, see the Get help section.

Troubleshooting a USB device

Steps

1. Disconnect the keyboard and/or mouse cables from the system and reconnect them.
2. If the problem persists, connect the keyboard and/or mouse to another USB port on the system.
3. If the problem is resolved, restart the system, enter System Setup, and check if the non-functioning USB ports are enabled.

   NOTE: Older operating systems may not support USB 3.0.

4. Check if USB 3.0 is enabled in System Setup. If enabled, disable it and see if the issue is resolved.
5. In **iDRAC Settings Utility**, ensure that **USB Management Port Mode** is configured as **Automatic** or **Standard OS Use**.
6. If the problem is not resolved, replace the keyboard and/or mouse with a known working keyboard or mouse.

   If the problem is not resolved, proceed to next step to troubleshoot other USB devices that are attached to the system.
7. Turn off all attached USB devices, and disconnect them from the system.
8. Restart the system.
9. If your keyboard is functioning, enter System Setup, verify that all USB ports are enabled on the **Integrated Devices** screen. If your keyboard is not functioning, use remote access to enable or disable the USB options.
10. Check if USB 3.0 is enabled in System Setup. If it is enabled, disable it and restart your system.
11. If the system is not accessible, reset the NVRAM_CLR jumper inside your system and restore the BIOS to the default settings. See the System board jumper setting section.
12. In the **IDRAC Settings Utility**, ensure that **USB Management Port Mode** is configured as **Automatic** or **Standard OS Use**.
13. Reconnect and turn on each USB device one at a time.
14. If a USB device causes the same problem, turn off the device, replace the USB cable with a known good cable, and turn on the device.

Next steps

If all troubleshooting fails, see the Get help section.

For more information, see USB devices not recognized.

Troubleshooting a serial Input Output device

Prerequisites

NOTE: The Serial port is not hot-pluggable.

Steps

1. Turn off the system and any peripheral devices that are connected to the serial port.
2. Swap the serial interface cable with a known working cable, and turn on the system and the serial device.

   If the problem is resolved, replace the interface cable with a known working cable.
3. Turn off the system and the serial device, and swap the serial device with a compatible device.
4. Turn on the system and the serial device.

Next steps

If the problem persists, see the Get help section.

Troubleshooting external connections

Before troubleshooting any external devices, ensure that all external cables are securely attached to the external connectors on your system.

- Compare the technical specification of the system with the external device to check the compatibility.
- Check the external device functionality with some other similar system so that we are sure that the device is working fine.
- Check any other similar external device with this system so that we are sure that the system port is working fine.

For any further queries contact, Contact Technical Support.

Troubleshooting a tape backup unit

Prerequisites

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.

Steps

1. Use a different tape cartridge.
2. Ensure that the device drivers for the tape backup unit are installed and are configured correctly. See your tape drive documentation for more information about device drivers.
3. Reinstall the tape-backup software as instructed in the tape-backup software documentation.
4. Ensure that the interface cable of the tape drive is connected to the external port on the controller card.
5. Perform the following steps to ensure that the controller card is properly installed:
   a. Turn off the system and attached peripherals, and disconnect the system from the electrical outlet.
   b. Remove the system cover.
   c. Reseat the controller card in the expansion card slot.
   d. Install the system cover.
   e. Turn on the system and attached peripherals.
6. Run the appropriate diagnostic test. For more information, see the Using system diagnostics.

Next steps

If you cannot resolve the problem, see the Getting help section.

Troubleshooting a NIC

Prerequisites

NOTE: Network Daughter Card (NDC) slot is not hot-pluggable.

Steps

1. Run the appropriate diagnostic test. For more information, see the system diagnostics section for the available diagnostic tests.
2. Restart the system and check for any system messages pertaining to the NIC controller.
3. Check the appropriate indicator on the NIC connector:
   - If the link indicator does not glow, the cable connected might be disengaged.
   - If the activity indicator does not glow, the network driver files might be damaged or missing. Install or replace the drivers as necessary. For more information, see the NIC documentation.
   - Try another known good network cable.
   - If the problem persists, use another connector on the switch or hub.
4. Ensure that the appropriate drivers are installed and the protocols are bound. For more information, see the NIC documentation or for issue related to network port How to troubleshoot network port access.
5. Enter System Setup and confirm that the NIC ports are enabled on the **Integrated Devices** screen.
6. Ensure that all the NICs, hubs, and switches on the network are set to the same data transmission speed and duplex. For more information, see the documentation for each network device.
7. Ensure that all the NICs and switches on the network are set to the same data transmission speed and duplex. For more information, see the documentation for each network device.
8. Ensure that all network cables are of the proper type and do not exceed the maximum length.

Next steps

If the problem persists, see the Get help section.

For information on NIC teaming, see How to set up NIC teaming on PowerEdge Servers.

Troubleshooting a wet system

Steps

1. Turn off the system and attached peripherals, and disconnect the system from the electrical outlet.
2. Remove the system cover.
3. Remove the following components (if installed) from the system:
   - Power supply unit(s)
   - Optical drive
   - Hard drives
   - Hard drive backplane
   - USB memory key
   - Hard drive tray
   - Cooling shroud
   - Expansion card risers (if installed)
   - Expansion cards
   - Cooling fan assembly (if installed)
   - Cooling fan(s)
   - Memory modules
   - Processor(s) and heat sink(s)
   - Processor and heat sink module
   - System board
   - Mezzanine card
   - Power distribution boards

- Midplanes

4. Let the system dry thoroughly for at least 24 hours.
5. Reinstall the components you removed in step 3 except the expansion cards.
6. Install the system cover.
7. Turn on the system and attached peripherals.

   If the problem persists, see the Getting help section.

8. If the system starts properly, turn off the system, and reinstall all the expansion cards that you removed.
9. Run the appropriate diagnostic test. For more information, see the Using system diagnostics section.

Next steps

If the tests fail, see the Getting help section.

Troubleshooting a damaged system

Steps

1. Turn off the system and attached peripherals, and disconnect the system from the electrical outlet.
2. Remove the system cover.
3. Ensure that the following components are properly installed:
   - cooling shroud
   - expansion card risers (if installed)
   - expansion cards
   - power supply unit(s)
   - cooling fan assembly (if installed)
   - cooling fan(s)
   - processor(s) and heat sink(s)
   - memory modules
   - drive carriers or cage
   - drive backplane
4. Ensure that all cables are properly connected.
5. Install the system cover.
6. Run the appropriate diagnostic test. For more information, see the Using system diagnostics section.

Next steps

If the problem persists, see the Getting help section.

Troubleshooting the system battery

Prerequisites

NOTE: If the system is turned off for long periods of time (for weeks or months), the NVRAM may lose the system configuration information. This situation is caused by a defective battery.

NOTE: Some software may cause the system time to speed up or slow down. If the system seems to operate normally except for the time set in System Setup, the problem may be caused by a software, rather than by a defective battery.

Steps

1. Re-enter the time and date in System Setup.
2. Turn off the system, and disconnect it from the electrical outlet for at least an hour.
3. Reconnect the system to the electrical outlet, and turn on the system.
4. Enter System Setup.

If the date and time displayed in System Setup are not correct, check the System Error Log (SEL) for system battery messages.

Next steps

If the problem persists, see the Getting help section.

Dell cooling problems

The fans are running at a higher speed than expected.

Prerequisites

NOTE: The fan number is referenced by the management software of the system. In the event of a problem with a particular fan, you can easily identify and replace it by noting down the fan numbers on the cooling fan assembly.

About this task

This error can be caused by the following reasons :

- The fan installed is not compatible with the server
- Ambient temperature is higher than the system specific ambient temperature
- External airflow is obstructed
- System cover, cooling shroud, EMI filler panel, memory module blank, or back filler bracket is missing or not installed properly
- The fans are not seated properly
- One or more fans are not functioning
- iDRAC failure on the motherboard

Recommended action

Steps

1. Update the iDRAC firmware and system BIOS to the latest version and clear the system event logs (SEL).

   NOTE: System reboot is required for the BIOS update.

   For more information about updating BIOS and firmware, see your systems documentation at dell.com/support.

2. Ensure that the system chassis is closed and all expansion card slots and bay covers are in place.
3. Check the internal system fans for obstructions and verify that all fans are spinning properly.
4. Reseat or swap any failing fans with a known-good fan, and replace the fan if a known-good fan works. If a known-good fan does not work, replace the system board.

Next steps

If the issue persists, contact Dell Global Technical Support for further assistance.

Troubleshooting cooling fans

Prerequisites

NOTE: The fan number is referenced by the management software of the system. In the event of a problem with a particular fan, you can easily identify and replace it by noting down the fan numbers on the cooling fan assembly.

Steps

1. Remove the system cover (front and back).

   NOTE: Do not operate the system without the system cover. This can result in overheating and cause component damage.

2. Reseat the fan or the fan's power cable.

3. Install the system cover (front and back).
4. Restart the system.

Next steps

If the problem persists, see the Getting help section.

Troubleshooting an internal USB key

Steps

1. Enter System Setup and ensure that the **USB key port** is enabled on the **Integrated Devices** screen.
2. Turn off the system and attached peripherals, and disconnect the system from the electrical outlet.
3. Remove the system cover.
4. Locate the USB key and reseat it.
5. Install the system cover.
6. Turn on the system and attached peripherals, and check if the USB key is functioning.
7. If the problem is not resolved, repeat step 2 and step 3.
8. Insert a known working USB key.
9. Install the system cover.

Next steps

If the problem persists, see the Getting help section.

Troubleshooting system memory

Steps

1. If the system is operational, run the appropriate diagnostic test. See the Using system diagnostics section for the available diagnostic tests.

   If the diagnostic tests indicate a fault, follow the corrective actions provided by the diagnostic tests.

2. If the system is not operational, turn off the system and attached peripherals, and unplug the system from the power source. Wait at least for 10 seconds, and then reconnect the system to the power source.
3. Turn on the system and attached peripherals, and note the messages on the screen.

   If an error message is displayed indicating a fault with a specific memory module, go to step 12.

4. Enter System Setup, and check the system memory setting. Make any changes to the memory settings, if needed.

   If the memory settings match the installed memory but the problem still persists, go to step 12.

5. Turn off the system and attached peripherals, and disconnect the system from the electrical outlet.
6. Remove the system cover or sled from the chassis.
7. Check the memory channels and ensure that they are populated correctly.

   NOTE: See the system event log or system messages for the location of the failed memory module. Reinstall the memory device.

8. Reseat the memory modules in their sockets.
9. Install the system cover.
10. Enter System Setup and check the system memory setting.

    If the problem is not resolved, proceed with step 11.

11. Remove the system cover.
12. If a diagnostic test or error message indicates a specific memory module as faulty, swap or replace the module with a known working memory module.
13. To troubleshoot an unspecified faulty memory module, replace the memory module in the first DIMM socket with a module of the same type and capacity.

If an error message is displayed on the screen, this may indicate a problem with the installed DIMM type(s), incorrect DIMM installation, or defective DIMM(s). Follow the on-screen instructions to resolve the problem.

14. Install the system cover.
15. As the system boots, observe any error message that is displayed and the diagnostic indicators on the front of the system.
16. If the memory problem persists, repeat step 12 through step 15 for each memory module installed.

Next steps

If the problem persists, see the Getting help section.

Troubleshooting no power issues

Steps

1. Swap the AC power cable with a known-good power cable.
   If the system works with a known-good AC power cable, replace the power cable. (optional).
2. Reset the power supply.
   a. Verify that the power source is working properly by connecting a device that draws a similar amount of power.
3. Reseat the SP suitcase into the chassis.
4. Replace the power supply.
   The server does not turn on by using the front the ear node.
5. Ensure the proper power is going to the chassis.
6. Ensure all power supplies are firmly seated, power cables are connected, and both power supplies are operating.
7. Turn on the server by using the power button.

Next steps

If the server is turned on, do the following checks (optional):

- Reseat the power cable from the Interposer Extender to the system board and test.
- Reseat the cables from the mid-plane to the corresponding ear board and test.
- If the server does not turn on by using ear board, replace the ear board, fan controller board, mid-planes, and cables.

Troubleshooting power supply units

Steps

The following sections provide information on troubleshooting power source and power supply units problems.

NOTE: Power Supply Units (PSUs) are hot-pluggable.

Troubleshooting power supply unit problems

Steps

1. Ensure that no loose connections exist.
   For example, loose power cables.
2. Ensure that the power supply unit or handle LED if applicable, indicates that the power supply is working properly.
3. If you have recently upgraded your system, ensure that the power supply unit has enough power to support the new system.
4. If you have a redundant power supply configuration, ensure that both the power supply units are of the same type and wattage.
5. If your system supports Extended Power Performance (EPP), ensure that you use only power supply units with the Extended Power Performance (EPP) label on the back.
6. Reseat the power supply unit.

   NOTE: After installing a power supply unit, allow several seconds for the system to recognize the power supply unit and determine if it is working properly.

If the problem persists, see the Get help section.

Troubleshooting thermal issue

Thermal issues can occur due to malfunctioning ambient temperature sensors, malfunctioning fans, dusty heat sinks, and malfunctioning thermal sensors and so on.

To resolve the thermal issues:

1. Check the LCD and Embedded System Management (ESM) logs for any additional error messages to identify the faulty component.
2. Ensure that airflow to the machine is not blocked. Placing it in an enclosed area or blocking the air vent, can cause it to overheat. If installed in a rack, ensure that the rack cooling system is working normally.
3. Check for the ambient temperature is within acceptable levels.
4. Check the internal system fans for obstructions and ensure that all fans are spinning properly. Swap any failing fans with a known-good fan for testing.
5. Ensure that all the required shrouds and blanks are installed.
6. Check if all the fans are functioning properly, the heat sink is installed correctly, and thermal grease is applied.

Troubleshooting RAID

For information on troubleshooting RAID, see how to troubleshoot RAID, Hard Drive, and PERC.

Troubleshooting expansion cards

Prerequisites

NOTE: When troubleshooting an expansion card, you also have to see the documentation for your operating system and the expansion card.

NOTE: Riser slots are not hot-pluggable.

Steps

1. Run the appropriate diagnostic test. See the Using system diagnostics section.
2. Power off the system and attached peripherals, and disconnect the system from the electrical outlet.
3. Remove the system cover.
4. Ensure that each expansion card is firmly seated in its connector.
5. Install the system cover.
6. Power on the system and attached peripherals.
7. If the problem is not resolved, Power off the system and attached peripherals, and disconnect the system from the electrical outlet.
8. Remove the system cover.
9. Remove all expansion cards installed in the system.
10. Install the system cover.
11. Run the appropriate diagnostic test. See the Using system diagnostics section.

    If the tests fail, see the Getting help section.

12. For each expansion card you removed in step 8, perform the following steps:
    a. Power off the system and attached peripherals, and disconnect the system from the electrical outlet.
    b. Remove the system cover.
    c. Reinstall one of the expansion cards.
    d. Install the system cover.
    e. Run the appropriate diagnostic test. See the Using system diagnostics section.

Next steps

If the problem persists, see the Getting help section.

Troubleshooting an optical drive

Steps

1. Try using a different CD or DVD.
2. If the problem is not resolved, enter System Setup and ensure that the integrated SATA controller and the drive's SATA port are enabled.
3. Run the appropriate diagnostic test.
4. Turn off the system and attached peripherals, and disconnect the system from the electrical outlet.
5. If installed, remove the bezel.
6. Remove the system cover.
7. Ensure that the interface cable is securely connected to the optical drive and to the controller.
8. Ensure that a power cable is properly connected to the drive.
9. Install the system cover.

Next steps

If the problem persists, see the Getting help section.

Troubleshooting a micro SD card

Prerequisites

NOTE: Certain micro SD cards have a physical write-protect power on the card. If the write-protect switch is Powered on, the micro SD card is not writable.

NOTE: IDSDM and vFlash slots are not hot-pluggable.

Steps

1. Enter System Setup, and ensure that the **Internal SD Card Port** is enabled.
2. Power off the system, including any attached peripherals, and disconnect the system from the electrical outlet.
3. Remove the system cover.

   NOTE: When an SD card failure occurs, the internal dual SD module controller notifies the system. On the next restart, the system displayed a message indicating the failure. If redundancy is enabled at the time of SD card failure, a critical alert is logged and chassis health will degrade.

4. Replace the failed micro SD card with a new micro SD card.
5. Install the system cover.
6. Reconnect the system to its electrical outlet and Power on the system, including any attached peripherals.
7. Enter System Setup, and ensure that the **Internal SD Card Port** and **Internal SD Card Redundancy** modes are set to the needed modes.

   Verify that the correct SD slot is set as **Primary SD Card**.

8. Check if the micro SD card is functioning properly.
9. If the **Internal SD Card Redundancy** option is set to **Enabled** at the time of the SD card failure, the system prompts you to perform a rebuild.

   NOTE: The rebuild is always sourced from the primary SD card to the secondary SD card.

Troubleshooting hard drives

For information about troubleshooting hard drives, see how to troubleshoot hard drives.

Troubleshooting a storage controller

For information on troubleshooting a storage controller, see how to troubleshoot storage controllers.

Troubleshooting processor

For information on troubleshooting processor, see how to troubleshoot processors.

Server management software issues

This section helps to manage software issues related to the server management. For more information, see article How to configure the iDRAC & System Management Options on servers.

What are the different types of iDRAC licenses

There are four types of the iDRAC licenses:

- **Basic Management** — Basic Management which was earlier known as BMC, was the default iDRAC version for the 11th generation of the servers ranging between 200–500 series.
- **Express** — iDRAC Express is the standard, default offering that is part of the base configuration for 600 series and above. It does not require license installation, back up, or license management. Express offers embedded tools, console integration, and simplified remote access.
  - **Express for Blades** — For the 12th and 13th generation blade servers, there is a new **Express for Blades** iDRAC version. It offers a single-user virtual console session and virtual media in addition to the standard Express offerings.
- **Enterprise** — The features that are enabled by enterprise license include virtual console, virtual media, and out-of-band performance monitoring, to name a few.
- There are two types of Enterprise licenses, based on the type and the duration.
  - **Evaluation** - This license is for a 30-day trial of certain features. It can be used on any system.

    NOTE: This is not recommended for the production environment.

  - **Perpetual** - This license is valid for the life of the product. It does not expire and never needs to be renewed. It must be bound to only one service tag at a time.
- **Datacenter** - All the features of Enterprise, with the additional features such as extended remote insight into server details, focused on high-end server options, and granular power and thermal management

To know more about iDRAC9 and its features see Support for Integrated Dell Remote Access Controller 9 (iDRAC9)

For more information about the iDRAC licensing feature, see the iDRAC9 user guide.

How to activate a license on iDRAC

You can manage your license by creating your account and access **License Management** portal. It enables you to view your digital licenses, obtain a replacement license, or reassign licenses to different hardware.

To create an account:

- Go to Dell Digital Locker.
- Click **Create an Account**
- Enter the required information and click **Create Account**.
- Click **Sign In**, the end-user license agreement is displayed.

- Review the **Dell Software License Agreement**, and click **Yes, I Agree** button. You are redirected to the **License Management** portal.

To activate the license:

- Log in to the **License Management** portal.
- Click **Activate Licenses** tab.
- To activate the license, navigate to the license and click **Assign License**.

> **NOTE:** All the licenses must be associated with the asset. The **Activate Licenses** tab lists the licenses that must be bound to an asset.

For more information about the iDRAC license import and export, see How to import and export an iDRAC license.

Can I upgrade the iDRAC license from Express to Enterprise or BMC to Express

You can upgrade the iDRAC license from Express to Enterprise or BMC to either Express or Enterprise without having to open the box or install any hardware.

Request for the type of the iDRAC license you require by providing the service tag number of your server. Once you receive the license file in the .xml format, save it in your local drive to replace the license with the existing one.

To upgrade or replace the existing license:

- Log in to the iDRAC web interface.
- On the left navigation pane, click **Overview**, click **Server**, and then click **Licenses**.
- From the **License Options** drop-down list, select **Replace**. Click **Browse** to navigate to the local folder where the license file is saved.
- Select the license file and click **Open**.
- Click **Apply** to upgrade or replace the new license file.

The purchase of a new PowerEdge server with iDRAC8 is the same as it was with iDRAC7. For the 600 series servers and above, all the hardware required for iDRAC Enterprise is on the system board. Not only does this eliminate the possibility of a card unseating during shipping, but it also allows for an upgrade if available. If Enterprise is ordered from Dell at point of sale on 200-500 series servers, the necessary hardware is installed in the factory. This piece of hardware is the Dell Ports card, which sits in a PCIe slot and has the RJ-45 connector for the dedicated NIC and the slot for the vFlash SD card.

For more information on the iDRAC licensing installation, see How to import and export idrac licenses.

How to set up e-mail alerts

You can set up an e-mail alert message which can be sent to one or more e-mail addresses. When iDRAC senses a platform event, such as an environmental warning or a component failure, an alert message is sent to a designated e-mail address.

To configure e-mail alerts, see How to configure Integrated Dell Remote Access Controller (iDRAC) Email Alerts.

System time zone is not synchronized

You can configure the time zone on iDRAC and synchronize the iDRAC time using Network Time Protocol (NTP) instead of BIOS or host system times. You must have configure privilege to configure time zone or NTP settings.

About this task

To configure time zone and NTP using iDRAC web interface:

Steps

1. Go to **Overview** > **iDRAC Settings** > **Properties** > **Settings**.
   The **Time zone and NTP** page is displayed.
2. To configure the time zone, from the **Time Zone** drop-down list, select the required time zone, and then click **Apply**.
3. To configure NTP, enable NTP, enter the NTP server addresses, and then click **Apply**.

For information about the fields, see iDRAC Online Help.

Next steps

To configure time zone and NTP, use the set command with the objects in the **iDRAC.Time** and **iDRAC.NTPConfigGroup** group.

For troubleshooting NTP sync issues, see ECS: NTP does not sync to hardware clock.

How to configure network settings using Lifecycle Controller

About this task

To configure network settings using Lifecycle Controller, perform the below steps:

Steps

1. Launch the Lifecycle Controller.
2. On the left pane, click **Settings**.
3. On the **Settings** pane, click **Network Settings**.
4. From the **NIC Card** drop-down menu, select the NIC port that you want to configure.

   NOTE: You can use select one NIC at a time to communicate with the network.

5. From the **IPV4 Network Settings→ IP Address Source** drop-down menu, select one of the following options:
   - **No Configuration** — indicates that the NIC must not be configured.
   - **DHCP** — indicates that the NIC must be configured using an IP address from a DHCP server. If DHCP is selected, a DHCP IP address is displayed on the **Network Settings** page.
   - **Static IP** — indicates that the NIC must be configured using a static IP. Type the **IP Address Properties— IP Address**, **Subnet Mask**, **Default Gateway**, and **DNS Address**. If you do not have this information, contact your network administrator.
6. From the **IPV6 Network Settings→ IP Address Source** drop-down menu, select one of the following options:
   - **No Configuration** — indicates that the NIC must not be configured.
   - **DHCPv6** — indicates that the NIC must be configured using an IP address from a DHCPv6 server. If DHCPv6 is selected, a DHCPv6 IP address is displayed on the **Network Settings** page.

     NOTE: While configuring DHCP server with IPv6, the configuration fails if you disable forwarding or advertising options.

   - **Static IP** — indicates that the NIC must be configured using a static IP. Type the **IP Address Properties—IP Address**, **Subnet Mask**, **Default Gateway**, and **DNS Address**. If you do not have this information, contact your network administrator.
7. Click **Enabled**, and type the **VLAN ID** and **Priority** under **Lifecycle Controller VLAN Settings**.

   You cannot configure the VLAN settlings of the following NICs:
   - Emulex SeaHawk-2 (FH) PCIe Adapter
   - Emulex SeaHawk-2 (LP) PCIe Adapter
   - Emulex Vindicator-2 rNDC
   - Emulex Sea Stallion-2 Mezzanine Card
   - Emulex Pave Low-2 bNDC
   - Emulex SeaHawk-2 (FH) NIC Only PCIe Adapter
   - Emulex SeaHawk-2 (LP) NIC Only PCIe Adapter
   - Emulex Vindicator-2 NIC Only rNDC
   - Emulex Sea Stallion-2 NIC Only Mezzanine Card
   - Emulex Pave Low-2 NIC Only bNDC
8. Click **Next**.

   NOTE: If the Lifecycle Controller settings are not correctly configured, an error message is displayed.

   NOTE: If you are unable to connect to a network, verify the settings. For information about correct network settings, contact your network administrator.

To configure iDRAC network using Lifecycle Controller, see How to configure the Integrated Dell Remote Access Controller 9 (iDRAC9) with Lifecycle Controller network settings.

Assigning hot spare with OMSA

Assigning And unassigning global hot spare

NOTE: To assign global hot spare drives, ensure that you have installed the latest version of Server Administrator. For more information, see the *Dell OpenManage Software Support Matrix* available on the support site.

A global hot spare is an unused backup disk that is part of the disk group. Hot spares remain in standby mode. When a physical disk that is used in a virtual disk fails, the assigned hot spare is activated to replace the failed physical disk without interrupting the system or requiring your intervention. When a hot spare is activated, it rebuilds the data for all redundant virtual disks that were using the failed physical disk.

You can change the hot spare assignment by unassigning a disk and choosing another disk as needed. You can also assign more than one physical disk as a global hot spare.

NOTE: On PERC S100 and S300 controllers, if there is free space available on the global hot spare, it continues to function as a spare even after replacing a failed physical disk.

Global hot spares must be assigned and unassigned manually. They are not assigned to specific virtual disks. If you want to assign a hot spare to a virtual disk (it replaces any physical disk that fails in the virtual disk), then use the assign and unassign dedicated hot spare.

NOTE: When deleting virtual disks, all assigned global hot spares may be automatically unassigned when the last virtual disk that is associated with the controller is deleted. When the last virtual disk of a disk group is deleted, all assigned dedicated hot spares automatically become global hot spares.

NOTE: For PERC H310, H700, H710, H710P, H800, H810, H330, H730, H730P, H730P MX, H740P, H745P MX, H830, H840, and PERC FD33xD/FD33xS controllers, if any of the drives you selected are in the spun down state, the following message is displayed:

```
The current physical drive is in the spun down state. Executing this task on this
drive takes additional time, because the drive needs to spun up.
```

You should be familiar with the size requirements and other considerations that are associated with hot spares.

For more information, see How to Assign a Hard Drive in Global Hot Spare?.

How do I configure RAID using operating system deployment wizard

You can configure RAID using an operating System deployment wizard on the Dell Lifecycle controller. To configure RAID:

- Launch the Lifecycle Controller.
- In the left pane, click **OS Deployment**.
- On the **OS Deployment** page, click **Deploy OS**.
- On the **Deploy OS** page, click **Configure RAID First**, and then click **Next**.
- The storage controllers available for configuration are displayed in the **RAID Configuration** page.

  NOTE: Make sure that the selected controller is not in a non-RAID mode.

- Select a storage controller. The RAID configuration options are displayed.
- Follow the instruction on the screen, complete the RAID setting tasks, and then click **Finish**.

The RAID configuration is applied to the virtual disks.

To create virtual disks using RAID configuration at the preferred RAID level, see How to create virtual disk.

Foreign driver on physical disk

To import a foreign configuration in the RAID controller, see How to import a “Foreign Configuration” in the RAID Controller using the System Setup Menu.

Importing foreign configurations

NOTE: To make the foreign configuration effective, ensure that you have installed the latest version of Server Administrator. For more information, see the *Dell OpenManage Software Support Matrix* available on the support site.

You can import a foreign configuration only if it contains a virtual disk that is either in a Ready or Degraded state. In other words, all the virtual disk data must be present, but if the virtual disk is using a redundant RAID level, the additional redundant data is not required.

For example, if the foreign configuration contains only one side of a mirror in a RAID 1 virtual disk, then the virtual disk is in a Degraded state and can be imported. On the other hand, if the foreign configuration contains only one physical disk that was originally configured as a RAID 5 using three physical disks, then the RAID 5 virtual disk is in a Failed state and cannot be imported.

In addition to virtual disks, a foreign configuration may consist of a physical disk that was assigned as a hot spare on one controller and then moved to another controller. The Import Foreign Configuration task imports the new physical disk as a hot spare. If the physical disk was set as a dedicated hot spare on the previous controller, but the virtual disk to which the hot spare was assigned is no longer present in the foreign configuration, then the physical disk is imported as a global hot spare.

The Import Foreign Configuration task is only displayed when the controller has detected a foreign configuration. You can also identify whether a physical disk contains a foreign configuration (virtual disk or hot spare) by checking the physical disk state. If the physical disk state is Foreign, then the physical disk contains all or some portion of a virtual disk or has a hot-spare assignment.

Setting the check consistency rate

The Set Check Consistency Rate task changes the amount of system resources dedicated to the check the consistency rate.

The check consistency rate, configurable between 0% and 100%, represents the percentage of the system resources dedicated for running the check consistency task. At 0%, the check consistency has the lowest priority for the controller, takes maximum time to complete, and has the least impact to system performance. A check consistency rate of 0% does not mean that the check consistency is stopped or paused.

At 100%, the check consistency is the highest priority for the controller. The check consistency time is minimized and has the most impact to system performance.

Performing a Consistency Check

The Check Consistency task verifies the accuracy of the redundant (parity) information. This task only applies to redundant virtual disks. When necessary, the Check Consistency task rebuilds the redundant data. If the virtual disk is in a Failed Redundancy state, running a check consistency may be able to return the virtual disk to a Ready state.

Physical disk reported as Foreign

This topic describes the scenarios when a disk that is part of a RAID array may be reported as Foreign.

A physical disk state may be displayed as **Foreign** if:

- The disk is located out of the array for an extended period of time.
- The disk is removed out of the array and reseated.

To include a **Foreign** disk in the volume, you can clear the foreign configuration and reset the controller configuration.

Clearing the foreign configuration

Steps

1. On the iDRAC9 web interface, go to **Configuration** > **Storage Configuration** > **Controller Configuration**.
   The **Controller Configuration** page is displayed.
2. In the **Foreign Configuration** section, from the **Controller** drop-down menu, select the controller for which you want to clear the foreign configuration.
3. From the **Apply Operation Mode** drop-down menu, select when you want to clear the configuration.

   NOTE: Clearing the foreign configuration deletes the virtual disk and erases all the data on the disk.

Resetting storage controller configuration

Steps

1. On the iDRAC9 web interface, go to **Configuration** > **Storage Configuration** > **Controller Configuration**.
   The **Controller Configuration** page is displayed.
2. From the **Actions** menu, select **Reset Configuration** for the desired controller.
3. From the **Apply Operation Mode** menu, select when you want to clear the configuration.
4. Click **Clear**.

Updating BIOS and other firmware on 14th generation PowerEdge servers

BIOS and other firmware can be updated on the PowerEdge servers in different ways.

For more information, see Updating Firmware and Drivers on Dell PowerEdge Servers.

Firmware update failing from Dell's online repositories

Dell PowerEdge server may experience download failures and errors when attempting to acquire server updates using the Lifecycle Controller.

For more information on the iDRAC licensing installation, see lifecycle controller platform updates failing from Dell's online repositories .

Unable to create a partition or locate the partition and unable to install Windows Server

Issue

Unable to create a partition or locate the partition and unable to install Windows Server 2012 with a USB, or DVD or from a network.

Solution

Ensure that the correct virtual drive (VD) partition is set as the first boot device. Install Windows Server by using a USB 2.0 bootable drive.

NOTE: USB 3.0 is not natively supported during the Windows 2012 installation.

NOTE: For the list of supported operating systems, go to supported OS list. > Infrastructure > Servers > PowerEdge.

JAVA support in iDRAC

About this task

For accessing iDRAC and some of its features, you need to install and configure the supported version of Java. The following are some of the key considerations:

Steps

1. Oracle version of Java is supported.
2. Java version 8 or later is required.
3. If you are using Firefox or Internet Explorer, and want to use the Java viewer to access iDRAC, configure the browser to use Java plug-in.

   NOTE: On a 64-bit operating system, both 32-bit and 64-bit JRE versions are supported. On a 32-bit operating system, only the 32-bit JRE version is supported.
4. On Linux, Java is the default plug-in type for accessing the Virtual Console.
5. When the iDRAC firmware is updated, launching Virtual Console with the Java plug-in may fail. Delete the Java cache and then launch the Virtual Console.
6. When using the Virtual Console, if you face issues such as out-of-range errors, synchronization issues, and so on, clear the browser's cache to remove or delete any old versions of the viewer that may be stored on the system, and then try again.

   NOTE: You must have administrator privilege to clear the browser's cache.

   - Using the command prompt, run `javaws-viewer or javaws-uninstall`. The Java Cache viewer is displayed.
   - Delete the items titled iDRAC Virtual Console Client.
7. If SSL encryption is set to 256-bit or higher and 168-bit or higher, the cryptography settings for your virtual machine environment (JVM, IcedTea) may require installing the Unlimited Strength Java Cryptography Extension Policy Files to permit usage of iDRAC plugins such as Virtual Console with this level of encryption. For information about installing the policy files, see the documentation for Java.
8. While launching the Virtual Console using Java plug-in, you may occasionally see a Java compilation error. To resolve this, go to **Java control panel > General > Network Settings** and select **Direct Connection**.

How to specify language and keyboard type

To specify the language and keyboard type using Lifecycle Controller:

- Launch the Lifecycle Controller.
- On the left pane, click **Settings**.
- On the **Settings** pane, click **Language and Keyboard**.
- From the **Language** drop-down menu, select the language.
- From the **Keyboard Type** drop-down menu, select the keyboard type.
- Click **Finish** to save the new settings.

Installing managed system software on Microsoft Windows Server and Microsoft Hyper-V server

The server core installation option of the Microsoft Windows server and Hyper-V server operating system provides a minimal environment for running specific server roles that reduce the maintenance and management requirements and the attack surface for those server roles. A Windows server or Hyper-V server installation installs only a subset of the binaries that are required by the supported server roles. For example, the Explorer shell is not installed as part of a Windows server or Hyper-V server installation. Instead, the default user interface for a Windows server or Hyper-V server installation is the command prompt.

NOTE: On Windows client operating systems, to install the systems management software successfully, log in using an account which belongs to the Administrators group and must run the `setup.exe` using the option **Run as administrator** from the right-click menu.

NOTE: Log in as a built-in **Administrator**, **Domain Administrator**, or user who is a part of **Domain Admins** and **Domain Users** group, to install the systems management software on supported Microsoft Windows operating system. For more information about user privileges, see the corresponding Microsoft Windows operating system Help.

Installing managed system software on Microsoft Windows operating systems

On Microsoft Windows, an autorun utility is displayed when you insert the Dell OpenManage Systems Management Tools and Documentation software. This utility allows you to choose the systems management software you want to install on the system.

If the autorun program does not start automatically, use the autorun program from the DVD root or the setup program in the `SYSMGMT\srvadmin\windows` directory on the Dell OpenManage Systems Management Tools and Documentation software. See the Dell OpenManage Systems Software Support Matrix for a list of operating systems currently supported.

NOTE: Use the Dell OpenManage Systems Management Tools and Documentation software to perform an unattended and scripted silent installation of the managed system software. Install and uninstall the features from the command line.

To find help installing the managed system software on Microsoft windows server, see Dell OpenManage Installation Guide — Microsoft Windows Version 9.1.

To find help installing the managed system software on Microsoft windows Hyper-V server, see Dell OpenManage Installation Guide - Microsoft Windows Version 9.1.

Installing systems management software on VMware ESXi

VMware ESXi is factory-installed on some systems. For a list of these systems, see the latest *Systems Software Support Matrix*.

Server Administrator is available as a .zip file for installing on systems running VMware ESXi. The zip file, `OM-SrvAdmin-Dell-Web-<version>-<bldno>.VIB-ESX<version>i_<bld-revno>.zip`, where <version> is the supported ESXi version.

Download VMware vSphere Command Line Interface (vSphere CLI) from vmware.com and install on the Microsoft Windows or Linux system. Alternately, you can import VMware vSphere Management Assistant (vMA) to the ESXi host.

For more information, see Installing Managed System Software On Supported Linux and VMware ESXi operating systems.

SSD is not detected

About this task

If solid state drive (SSD) is not detected by server operating system, you must update all firmware versions including OpenManage Server Administrator. To update firmware version, do the following:

Steps

1. Download the latest versions of the supported firmware and drivers. For more information downloading the latest firmware, see the **Downloading firmware and drivers** section.
2. Double click the downloaded file, and follow the on-screen instructions to install the latest firmware or drivers.

TRIM or UNMAP and Dell Enterprise SSD drives support

Certain operating systems support the TRIM function, which translates deleted files to the associated LBA (logical block address) on the storage device (SSD). For SATA, the command is referred to as TRIM, for SAS, the command is called UNMAP. The TRIM or UNMAP command notifies the drive that it no longer needs data in certain Logical Block Addresses (LBA) which then free up several NAND pages.

The TRIM or UNMAP command must be supported by the operating system, the drive, and the controller in order to work. The TRIM or UNMAP command could result in higher SSD performance from both the reduced data needed to be rewritten during garbage collection and the higher free space resulting on the drive. Dell enterprise drives which are currently shipped have high

performance and endurance so they do not yet support these commands even if the OS supports them. These features are being investigated for subsequent Dell SSD offerings.

Unable to connect to iDRAC port through a switch

You can use iDRAC through various interfaces and methods. The interfaces include web interface, RACADM, Redfish, and so on. You can connect to iDRAC either locally or remotely.

If you try to connect to iDRAC using the iDRAC port through a switch, you may need to perform additional configuration on the switch to allow the connection to be successful. Alternatively, bypass the switch and connect the system directly to the iDRAC port.

NOTE: For more information on connecting to iDRAC, see the iDRAC manuals at idrac manuals.

Guidance on remote desktop services

A Remote Desktop Services deployment is the infrastructure used to share applications and resources with users. Depending on the experience you want to provide, you can make it as small or complex as you need. Remote Desktop deployments are easily scaled. You can increase and decrease Remote Desktop Web Access, Gateway, Connection Broker and Session Host servers at will. You can use Remote Desktop Connection Broker to distribute workloads. Active Directory based authentication provides a highly secure environment. For more information, see Build and Deploy Remote Desktop Services.

NOTE: Provide the correct Microsoft Windows version while purchasing the license.

Lifecycle Controller is not recognizing USB in UEFI mode

When there are combinations of servers connected, you need to use the same mode for all servers. If USB driver is not recognized on Lifecycle Controller, you can install on BIOS mode and not on UEFI mode.

OpenManage Essentials does not recognize the server

About this task

OpenManage Essentials does not recognize the server. To setup a new discovery range and inventory and enable WMI protocol.

Steps

1. Launch OpenManage Essentials.
2. Navigate to **Manage** > **Discovery and Inventory**.
3. In the left panel, click **Add Discovery Range**.
4. Enter the IP address of the specific client device or the IP range having all the client devices with the subnet mask details.
5. Click **Next**.
6. In the ICMP Configuration page, click **Next**.
7. Protocol Selection

   From Dell Command | Monitor 9.0 onwards, both SNMP and WMI protocols are supported for discovery and inventory. Select the required protocols (only SNMP or only WMI or both SNMP and WMI) and enter the required information.

   It is recommended to use WMI protocol for discovery and inventory. The difference of inventory information fetched using WMI versus SNMP protocol is specified. Fetching of hardware logs is possible only using WMI protocol.

   - For discovery and inventory through SNMP protocol, set the community strings in the SNMP Configuration page.
   - To disable SNMP discovery, uncheck the **Enable SNMP discovery**.
   - For discovery and inventory through WMI protocol, click **Next**, otherwise click **Finish**.
   - In the WMI configuration page, select **Enable WMI discovery**. Provide the WMI credentials of the remote device.
   - Click **Finish**.

NOTE: OpenManage Essentials version 2.5 is the final release. OpenManage Essentials will not support current or future PowerEdge servers and no further product enhancements are added. Dell recommends migration to OpenManage Enterprise for management of your Dell devices. For more information, see Support for OpenManage Essentials.

OpenManage Essentials does not recognize the server

About this task

OpenManage Essentials does not recognize the server. To setup the a new discovery range and inventory and enable WMI protocol.

Steps

1. Launch OpenManage Essentials.
2. Navigate to **Manage** > **Discovery and Inventory**.
3. In the left panel, click **Add Discovery Range**.
4. Enter the IP address of the specific client device or the IP range having all the client devices with the subnet mask details.
5. Click **Next**.
6. In the **ICMP Configuration** page, click **Next**.
7. Protocol Selection

   From Dell Command | Monitor 9.0 onwards, both SNMP and WMI protocols are supported for discovery and inventory. Select the required protocols (only SNMP or only WMI or both SNMP and WMI) and enter the required information.

   It is recommended to use WMI protocol for discovery and inventory. The difference of inventory information fetched using WMI versus SNMP protocol is specified. Fetching of hardware logs is possible only using WMI protocol.

   - For discovery and inventory through SNMP protocol, set the community strings in SNMP Configuration page.
   - To disable SNMP discovery uncheck the **Enable SNMP discovery**.
   - For discovery and inventory through WMI protocol, click **Next**, otherwise click **Finish**.
   - In the **WMI configuration** page, select **Enable WMI discovery**. Provide the WMI credentials of remote device.
   - Click **Finish**.

Troubleshooting operating system issues

This section helps you troubleshoot operating system issues in your system.

NOTE: If the problem persists, contact Dell Technical Support for further assistance.

How to install the operating system on a Dell PowerEdge Server

Issue

Installing the operating system using Lifecycle Controller on a Dell PowerEdge server.

Solution

For detailed guidelines about installing the operating system using Lifecycle Controller, see How to install the operating system on a Dell PowerEdge Server (OS deployment)? .

NOTE: Update all the driver version to the latest version.

Installing and reinstalling Microsoft Windows Server 2016

You can use one of the following methods to install the Microsoft Windows Server 2016 operating system, if you do not have it installed on your server or if you wish to reinstall it:

- Install Windows Server 2016 by using the Dell LifeCycle Controller
- Installing the Operating System using the Windows Server 2016 Media

NOTE: Dell highly recommends that you install the latest hotfixes and security updates from Microsoft on your system by using Windows updates or by downloading the latest updates after installing the operating system.

Locating the VMware and Windows licensing

For information on the location of the licenses on Dell PowerEdge servers, see Microsoft Windows Server Certificate of Authenticity on Dell PowerEdge Servers.

For information on how to register and activate the license, see How to Register and Activate VMware OEM Product Licenses using the Digital Download Locker.

Install Windows Server by using Dell LifeCycle Controller

About this task

To install Microsoft Windows Server 2012 R2 2016 for Standard, Datacenter, Foundation, and the Essentials edition by using the LifeCycle Controller.

NOTE: Microsoft Windows Server 2016 deployment by using LifeCycle Controller on 12th generation of the PowerEdge servers is not supported. Instead select the **Any Other Operating System** option and continue the deployment.

Steps

1. Connect the keyboard, monitor, mouse, and any additional peripherals to your system.
2. Turn on the system and attached peripherals.
3. Press F10 in the POST to start the **System Services**.
   For 12th and 13th generation of the PowerEdge servers, the following message is displayed:

   ```
   Entering Lifecycle Controller
   ```

4. Press F10 in the POST to start the **System Services**.
   For Dell's 11th generation of the PowerEdge servers, the following messages are displayed:

   ```
   Initializing UEFI. Please wait...
   ```

   and

   ```
   Entering System Services...Starting LifeCycle Controller
   ```

   For Dell's 12th generation of the PowerEdge servers, the following message is displayed:

   ```
   Entering Lifecycle Controller
   ```

5. In the **LifeCycle Controller** window, click the appropriate option if you want to configure hardware, diagnostics, or set changes.
   If no changes are required, select **OS Deployment**.
6. In the **Operating System Deployment** window, click **Deploy OS**.
   The **Configure or Skip RAID** window is displayed. If Redundant Array of Independent Disks (RAID) is configured, the window displays the existing RAID configuration details.
7. Select **Go Directly to OS Deployment**.
   If RAID is not yet configured, configure currently or from this screen before proceeding with the installation.
8. Click **Next**.

The **Select Operating System** window is displayed with a list of compatible operating systems.

9. Select Microsoft Windows Server 2012 R2 Microsoft Windows Server 2016, and then click **Next**.

   NOTE: If **Microsoft Windows Server 2012 R2Microsoft Windows Server 2016** is not listed, you need to update the LifeCycle Controller's Drivers for OS Deployment package and then restart the Installation again from Lifecycle controller. select **Any Other Operating System** and click **Next**.

   NOTE: Installation of Microsoft Windows Server 2016 by using Lifecycle Controller is only supported on 13th generation of the PowerEdge servers.

10. Select whether you want to deploy the operating system in UEFI or BIOS mode, and click **Next**.
11. In the **Insert OS Media** window, insert the Windows Server 2012 R2 Windows Server 2016 media, and then click **Next**.
12. On the **Reboot the System** screen, follow the instructions on the screen, and then click **Finish**.
    If a Windows operating system is installed on your system, the following message is displayed:

    ```
    Press any key to boot from the CD/DVD...Press any key to begin the installation
    ```

13. On the **Windows Setup** screen, select the appropriate option for **Language, Time and Currency Format**, and **Keyboard or Input Method**.

    NOTE: This screen is not displayed for the Simplified or Traditional Chinese operating system.

14. Click **Next** to continue.
15. On the **Microsoft Windows Server 2012 R2Microsoft Windows Server 2016** screen, click **Install Now**.

    NOTE: In Windows Server 2016 Essentials edition, on clicking **Install Now**, the **License terms** window is displayed.

    NOTE: In Windows Server 2012 R2 Essentials edition, on clicking **Install Now**, the **License terms** window is displayed.

    The **Operating System Install** screen is displayed.
16. On the **Operating System Install** screen, select the operating system, and then click **Next**.
    The **License terms** window is displayed.
17. Read the license agreement information. If you agree with all the information, select **I accept the license terms** and click **Next**.
18. On the **Which Type of Installation Do You Want** screen, select **Custom: Install Windows only (advanced)**, if it is not selected already.
19. On the **Where do you want to install Windows** screen, specify the partition on which you want to install the operating system.

    To create a partition and begin installation:

    a. Click **New**.
    b. Specify the size of the partition in MB, and click **Apply**. The following message is displayed:

       ```
       Windows might create additional partition for system files
       ```

    c. Click **OK**.

       NOTE: The recommended minimum partition size for the primary partition is 40 GB and for the Essentials Edition is 60 GB. If you are installing extra memory on your system, you may require more primary partition space to accommodate page file and hibernation. During installation, a recommended partition size is displayed on the screen based on the memory size of your system. Follow the instructions on the screen. If you select **Core installation**, you require less hard drive space for the primary partition.

    d. Select the newly created operating system partition, and click **Next**. The **Installing Windows** screen is displayed, and the installation process begins.

    After the operating system is installed, the system reboots. Set the administrator password before you can log in for the first time.
20. On the **Settings** screen, enter the password, confirm the password, and then click **Finish**.
21. To configure your system for Windows Server 2012 R2 Essentials edition:

    a. After reboot, the **Set Up Windows Server 2012 R2 Essentials** page is displayed. Click **Change system date and time settings** to select the date, time, and time zone settings for your server, and then click **Next**.

The **Choose Server Installation Mode** screen is displayed.

b. On the **Choose Server Installation Mode** screen, select the appropriate installation mode, and provide the required data. For a new installation select **Clean install**. Proceed with required inputs to configure your install.

   For detailed steps on configuring your Windows Server 2012 R2 Essentials install, go to Technet.microsoft.com/en-us/sbs/jj159331.aspx.

c. Create the **Administrator user account** and **Standard user account** and complete the installation.

22. To configure your system for Windows Server 2016 Essential Edition:
    a. After reboot, the Windows Server 2016 Essentials dashboard is displayed. Click **Change system date and time settings** to select the date, time, and time zone settings for your server, and then click **Next**.
    The **Company Information** screen is displayed.
    b. On the **Company Information** screen, type the appropriate details for the company name and the server name. Click **Next** to go to the **Create Network Admin account** screen.
    c. Create the network administrator with required account name and password. On the next screen, select **Use recommended settings**, and then click **Next** to complete the configuration.

    The system reboots and configures to essentials.
23. On the **Settings** screen, type the password, confirm the password, and then click **Finish**.
24. The system is locked now, and you can log in to the system by pressing Ctrl+Alt+Delete.
25. After reboot, the system is locked and you can log in to the system by pressing Ctrl+Alt+Delete.
26. Type the administrator password, and then press Enter to log in to the system.

Results

The operating system installation is complete.

Install Windows Server by using operating system media

About this task

To install the Microsoft Windows Server 2012 R2 or 2016 operating system for Standard, Datacenter, Foundation, and the Essentials edition:

Steps

1. Connect a keyboard, monitor, mouse, and any additional peripherals to your system.
2. Turn on your system and any attached peripherals.

   Several BIOS screens are displayed during startup, but do not require any user intervention.

   NOTE: This method of installation is supported in the BIOS and UEFI modes.

3. Insert the Microsoft Windows Server 2012 R2 or 2016 media into the DVD drive.
   The following message is displayed:

   ```
   Loading Files
   ```

   NOTE: If a Windows operating system is installed on your system, the following message is displayed:

   ```
   Press any key to boot from the CD/DVD ... Press any key to begin the installation
   ```

4. After the files are loaded, click the appropriate language that you want to deploy.

   NOTE: This screen is not displayed for the Simplified or Traditional Chinese operating system.

5. On the **Windows Setup** screen, select the appropriate **Language**, **Time & Currency**, and the **Keyboard or Input** values, and then click **Next**.
6. On the Windows Server 2012 R2 or Windows Server 2016 screen, click **Install Now**.

   The **Operating System Install** screen is displayed.

   NOTE: In Windows Server 2012 R2 or 2016 Essentials edition, on clicking **Install Now**, the **License terms** window is displayed.

7. On the **Select the operating system you want to install** screen, select the operating system from the available list, and click **Next**.
   The **license terms** window is displayed.
8. Read through the license agreement information. If you agree with all the information, select **I accept the license terms**, and then click **Next**.
9. On the **Which type of installation do you want** screen, select **Custom: Install Windows only (advanced)** if it is not selected already.
10. On the **Where do you want to install Windows** screen, specify the partition on which you want to install the operating system.

    To create a partition and begin installation:

    a. Click **Drive options (advanced)** > **New**.
    b. Specify the size of the partition in MB, and click **Apply**. The following message is displayed:

    ```
    To ensure that all Windows features work correctly, Windows might create additional
    partition for system files
    ```

    c. Click **OK**.

    NOTE: The recommended minimum partition size for the Primary partition Standard, Datacenter, Foundation Edition is 40 GB and for the Essentials Edition is 60 GB. If you are installing extra memory on your system, you may require more primary partition space to accommodate page file and hibernation. During installation, a recommended partition size is displayed on the screen based on the memory size of your system. Follow the instructions on the screen. If you select **Core installation**, you may require less hard drive space for the Primary partition. For information on drive partitioning see the Partitioning a drive section.

11. Select the newly-created operating system partition, and click **Next**.
    After the operating system is installed, the system reboots. Set the administrator password before you can log in for the first time.

    NOTE: For Windows Server 2012 R2 or 2016 Essentials edition, after the installation is complete you must configure the system before setting the administrator password.

12. To configure your system for Windows Server 2012 R2 Essentials edition:
    a. After reboot, the **Set Up Windows Server 2012 R2 Essentials** page is displayed. Click **Change system date and time settings** to select the date, time, and time zone settings for your server and click **Next**.
    The **Choose server installation mode** page is displayed.
    b. On the **Choose server installation mode** page, select the appropriate installation mode, and provide the required data. For a new installation, select **Clean install**. Proceed with required inputs to configure your install.

    For detailed steps on configuring your Windows Server 2012 R2 Essentials install, see Technet.microsoft.com/en-us/sbs/jj159331.aspx.

    c. Create the **Administrator user account** and **Standard user account** and complete the installation.
13. To configure your system for Windows Server 2016 Essential Edition:
    a. After reboot, the **Windows Server 2016 Essentials** dashboard is displayed. Click **Change system date and time settings** to select the date, time, and time zone settings for your server, and then click **Next**.
    The **Company Information** screen is displayed.
    b. On the **Company Information** screen, type the appropriate details for the company name and the server name. Click **Next** to go to the **Create Network Admin account** screen.
    c. Create the network administrator with required account name and password. On the next screen, select **Use recommended settings**, and then click **Next** to complete the configuration.

    The system reboots and configures to essentials.
14. On the **Settings** screen, type the password, confirm the password, and click **Finish**.
    The system is locked.
15. The system is locked now, and you can log in to the system by pressing Ctrl+Alt+Delete.
16. After reboot, the system is locked and you can log in to the system by pressing Ctrl+Alt+Delete.
17. Type the administrator password, and then press Enter to log in to the system.

Next steps

The operating system installation is complete.

NOTE: After you log in to the system, you can use the **Server Manager Dashboard** to configure and manage different roles and features in the operating system.

Converting evaluation OS version to retail OS version

Issue

Customer is attempting to install Windows using the license key that is provided by Dell however do not have the media at hand. The customer then proceed to use the evaluation version to upgrade, but the version did not match. Errors occurred when inserting the license key.

Corrective actions

To fix the issue:

- For 2016, see Upgrade and conversation options for Windows Server.
- For 2019, see Install, upgrade, or migrate to Windows Server.

Troubleshooting blue screen errors or BSODs

Steps

1. Identify the stop code or the stop message when the system displays the blue screen of death.

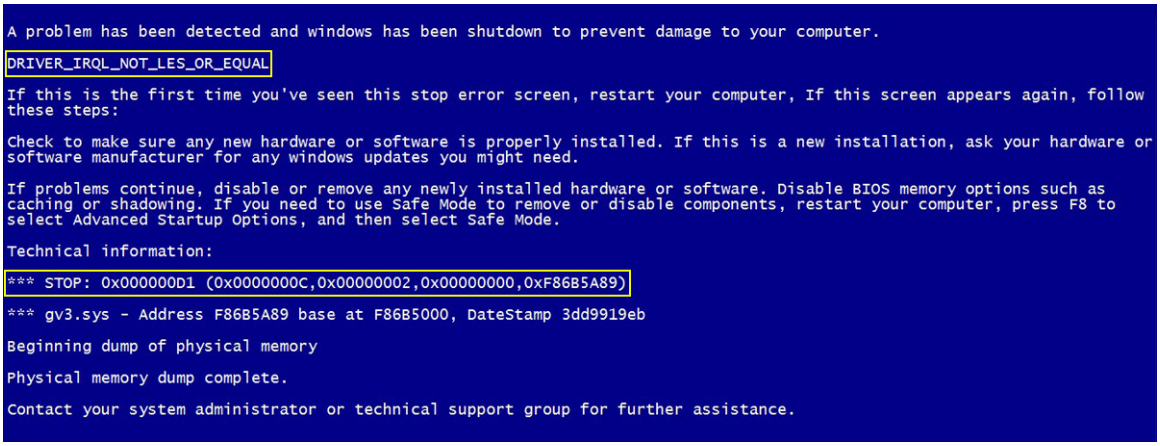


Figure 2. Blue screen of death

2. Run the PSA or ePSA diagnostics. For more information, see EPSA in the Self help section.
3. If the diagnostics pass and the issue persists, identify the stage in which the blue screen error occurs.
4. If the BSOD occurs during the boot process, check for minimum to POST components. For more information, see No POST situation.

   If the issue persists, call Dell Technical Support.
5. If the BSOD occurs during pre-logon, boot into Safe Mode and disable all startup entries. Isolate one startup entry at a time until you find the causing agent.

   NOTE: If you are unable to boot into Safe Mode, call Dell Technical Support.
6. If the issue persists, check for minimum to POST components. For more information, see No POST situation.

   If the issue persists, call Dell Technical Support.
7. If the BSOD occurs intermittently or during post-logon, debug mini crash dump files using WinDbg.

   After debugging, call Dell Technical Support with the mini dump file.

Debugging mini crash dump files using by WinDbg in Windows operating system

Prerequisites

1. Click **Start** > **Control Panel** > **System**.

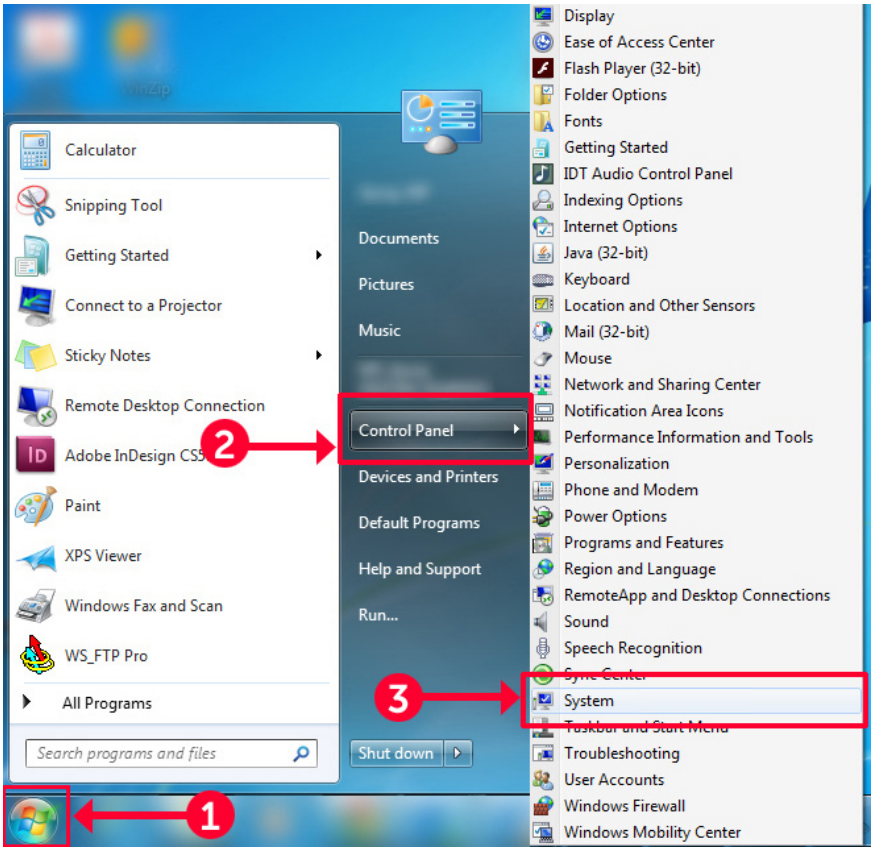


Figure 3. Opening the Systems page

2. In the **System** page, click **Advanced system settings** in the left pane.

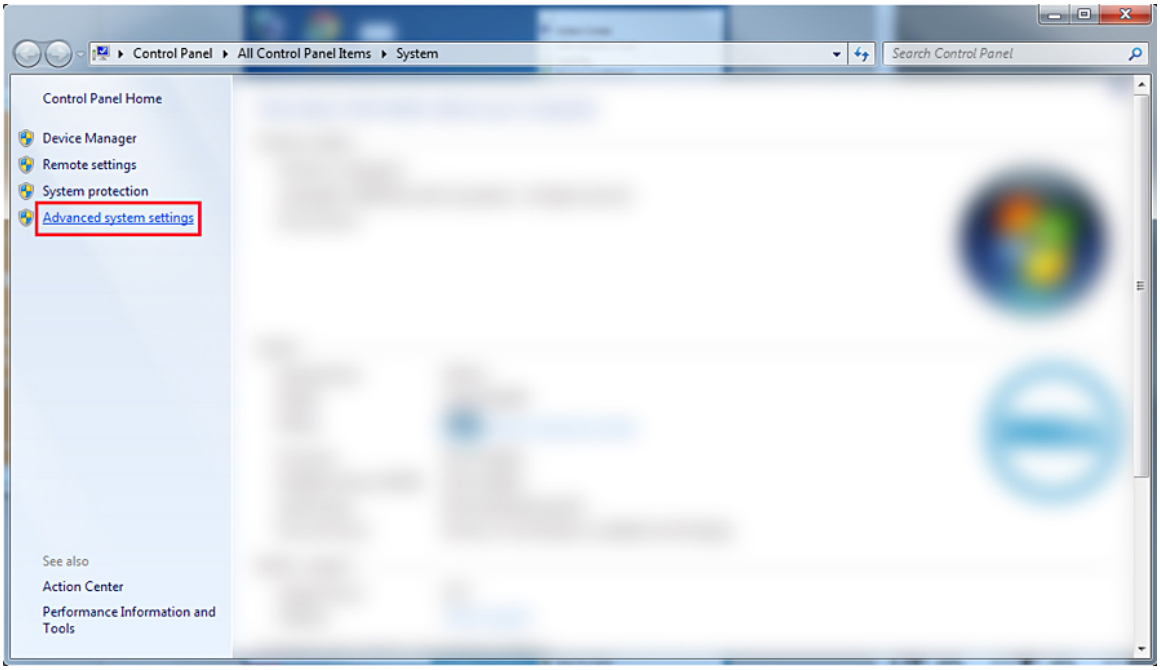


Figure 4. Advanced system settings page

3. In the **System Properties** window, click **Settings** under the **Startup and Recovery** section.

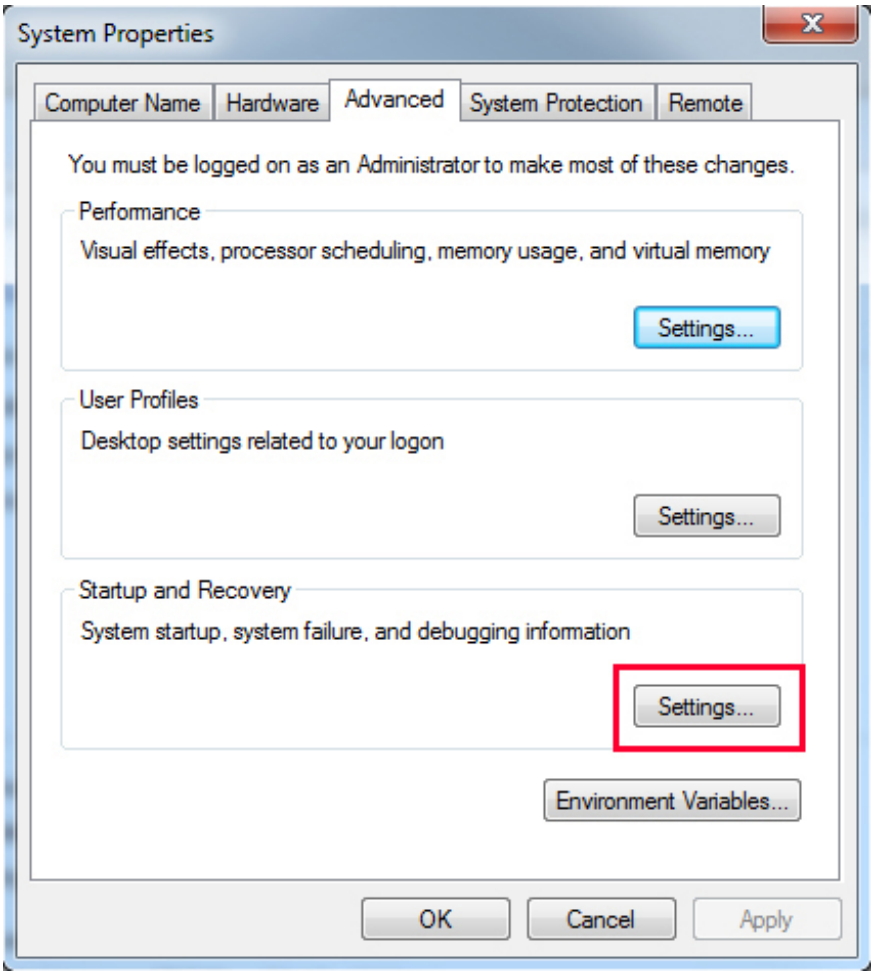


Figure 5. System Properties window

4. In the **Startup and Recovery** window, **System failure** section, do the following:
   a. Select **Write an event to the system log** to ensure that the mini dump file is created in the event of a system failure.

b. Select **Automatically restart** to restart the system after a blue screen of death (BSOD) occurs.

NOTE: For servers, it is recommended that you select the **Automatically restart** option so that the server can function if the error is not critical.

c. Verify that the **Overwrite any existing file** option is not selected. This ensures that a record of failures is maintained if there are repeated occurrences of system failures.

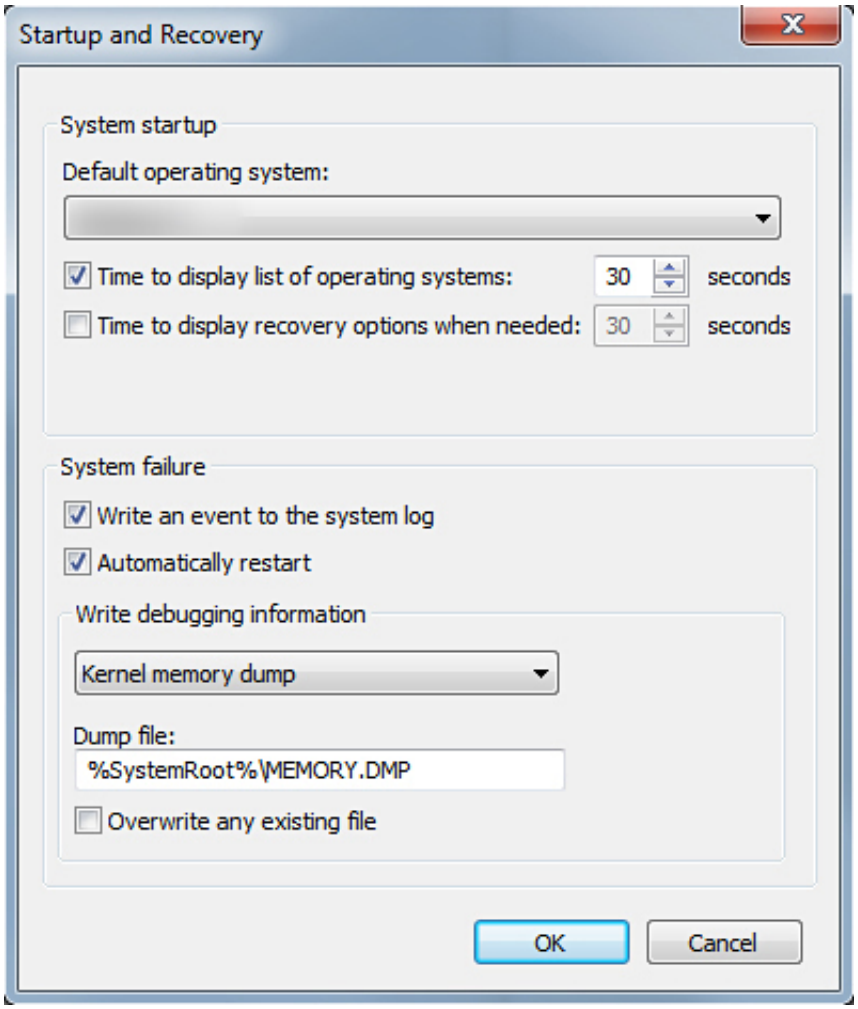


Figure 6. Startup and Recovery window

5. When a BSOD occurs, collect the minidump files by navigating to `C:\windows\minidump`.
6. Download and install the Windows Debugger (WinDbg) tool from `https://msdn.microsoft.com/en-us/windows/hardware/hh852365.aspx`.

Steps

1. Open WinDbg.
2. Click **File** > **Symbol File Path** or press **Ctrl + S** on the keyboard.
3. In the **Symbol Path** field, enter `SRV*<local path>*http://msdl.microsoft.com/download/symbols` where, `<local path>` is the path where you want to download the symbol files.
4. Click **OK**.
5. Click **File** > **Open Crash Dump** or press **Ctrl + D**.
6. Navigate to the folder where the mini dump file is saved.
7. Select the mini dump file and click **OK**.
8. Click **No** when the system prompts to save information for workspace.
   Debugging starts.
9. Click **!analyze –v** to get detailed debugging information.

10. Note down the values for the following parameters:
    a. **DEFAULT_BUCKET_ID**
    b. **MODULE_NAME**
    c. **IMAGE_NAME**
11. Call Dell Technical Support for further assistance.

Troubleshooting a purple screen of death or PSOD

For information on troubleshooting a PSOD, see Troubleshooting a Purple Screen of Death and Interpreting a purple screen of death.

Troubleshooting no boot issues for Windows operating systems

Steps

1. Check the hard drive status in the PERC BIOS. For more information, see PERC BIOS configuration utility.
2. Boot the server in the safe mode.

   NOTE: If the server is a domain controller, boot the server in Directory Services Repair Mode (DSRM).

   If the server boots successfully, the issue is with an installed driver, application, or service. Proceed to Step 4.
3. For Windows Server, you can perform the following recovery options:
   - Use the `bootrec` command to troubleshoot startup issues. For more information, see Troubleshoot startup issues .
   - Use the **chkdsk** tool to determine whether there is a disk problem. For more information, see Chkdsk
   - Use **DiskPart** to verify the status of disk partitions. For more information. see Diskpart.
   - Use the **bcdedit** utility to view or modify the boot configuration database (BCD). For more information, see Bcdedit.

   NOTE: For additional recovery console commands, see How to use the Recovery Console.

   NOTE: For more troubleshooting steps, see How to troubleshoot startup problems in Windows server 2003.
4. From within the safe mode or DSRM, use the **msconfig** utility to disable startup applications and non-Microsoft services on the server.
5. Reboot the server in the normal mode.
6. If the server boots, use the **msconfig** utility to identify the disrupting service or application by enabling services and startup applications one at a time and rebooting the server until the server fails to boot.
7. If the issue persists, use Dell's Linux-based OMSA LiveCD to boot the system and run diagnostic tests to determine whether any hardware is malfunctioning.

   OMSA LiveCD can also be used to recover data from a server whose operating system does not start.

No boot device found error message is displayed

Description—After the server completes the Power On Self-Test (POST) phase, the server is unable to boot a bootable device. This condition is called **No Boot**. Files available in a bootable device—RAID, USB key, DVD, or ISO file—contain instructions to start the operating system. When these files cannot be located, an error message—**No boot device found**—is displayed. You may observe this issue if the virtual disks are not online, due to a hard drive or PowerEdge RAID Controller (PERC) issue.

About this task

Workaround—Perform the following steps:

Steps

1. Check the hard drive status in the PERC BIOS.
   An error message—**No boot device found**—is displayed.
2. Press Ctrl + R during the POST process to open the PERC BIOS Configuration Utility.
3. To check if the hard drive is part of the RAID array, do the following:

a. Press Ctrl + N to navigate to the **PD Mgmt** (Physical Disk Management) screen.
b. Check if any hard drives are offline or missing.

Table 15. Hard drive status

Hard drive status	Description
Offline	Hard drive is not part of the RAID array.
Online	Hard drive is part of the RAID array
Ready	Hard dive is ready to be a part of the RAID array

c. Check that the Virtual Disk is online in an optimal state.

4. Click the **CTRL Mgmt** tab, and select the Virtual Drive where the operating system is installed.
   When the RAID is managing multiple Virtual Drive, it is important to select which Virtual Drive has to be presented when the server tries to boot on the raid controller.
5. If the problem persists, call Dell Technical Support for further assistance.

No POST issues in iDRAC

This section provides details on troubleshooting iDRAC issues.

First Boot Device cannot be set error message is displayed when configuring a boot device during POST.

Description - The error message First Boot Device cannot be set

Either the system BIOS is out-of-date, or the server needs a reboot for the settings to take effect" displays in the POST mode.

Resolution

Allow the server to completely boot to the OS or turn off the server before setting a vFlash partition to the first boot device. This allows the server to boot to the vFlash partition and the error will no longer be seen.

Troubleshooting a No POST situation

Power On Self Test (POST) is a series of diagnostic tests that run automatically when you turn on your system. POST tests the memory, the keyboard and the disk drivers. If the test is successful, the computer boots itself, else the system displays an LED error or an error message in the LCD panel. This situation is called No POST.

Prerequisites

NOTE: When removing or replacing parts, always turn off the server, remove the power cord, and wait for ten seconds for the static flea power to drain. Reconnect the power cord, wait for a minute and turn on the server. This allows time for the Baseboard Management Controller (BMC) to power up. Error messages may not be reported correctly if the static flea power is not fully drained. For more information on removing and installing hardware components, see your system's *Owner's Manual* at PowerEdge manuals.

NOTE: Ensure that you give enough time for the server to POST. Newer systems may take up to three minutes before any video appears during the POST. During this period, a message on the LCD screen is displayed, which indicates that the server is booting.

Steps

1. Check the LCD screen or LED indicators for any error messages.
   EEMI guide.
2. Ensure that the server is turned on by verifying that the power supply LED glows green.
   If the power LED is lit amber, see system health and system id indicator codes topic.
3. Remove all the Electrostatic Discharge (ESD) from the server.

a. Turn off the server.
b. Disconnect all cables from the server including the power cable.
c. Press and hold the power button for 60 seconds to discharge.
d. Reconnect the power and video cable only.
e. Turn on the server.
   If the server fails to POST, proceed to the next step.

4. Disconnect all cables from the server including the power cable.
5. Bring the server to the minimum configuration for the POST.

   NOTE: Minimum to POST configuration is the config that has the minimum components required to complete POST. Typically, the minimum to POST configuration for rack servers is PSU1, CPU1, memory module in A1 slot, and the default riser without expansion cards. For tower servers, the minimum to POST configuration is PSU1, CPU1, and memory module in A1 slot. For modular servers, the minimum to POST configuration is CPU1 and memory module in A1 slot.

6. Reconnect the power and video cable only.
7. Attempt to POST the server.
   a. If the server completes the POST, turn off the server and plug the components one at a time until the defective part is found.
      If you identify the defective part, contact Dell Technical Support with information about the defective part.
   b. If you are unable to identify the defective part, go to the next step.
8. Disconnect the hard drives, optical drives, and tape drives from the server and attempt to POST the server.
   a. If the server completes the POST, plug the hard drives back one at a time until the defective hard drives are found.
      If you identify the defective part, contact Dell Technical Support with information about the defective part.
   b. If you are unable to identify the defective part, go to the next step.
9. Reseat the control panel connector.
10. Ensure that the processors and heat sinks are seated correctly.
11. If the server does not complete the POST, clear the NVRAM using the jumper.
    For more information , see your system's *Owner's manual* at PowerEdge manuals.

Next steps

If the issue still persists, contact Dell Technical Support for assistance. Also for more information see NO POST situation.

Migrating to OneDrive for Business using Dell Migration Suite for SharePoint

About this task

To connect to OneDrive for Business:

Steps

1. Login to a SharePoint Online site in the browser.
2. Click on the OneDrive link in the header at the top of an Office 365 page.
3. Copy the site URL from the browser's address line.
4. Open the application and specify the OneDrive URL in the Connect to SharePoint wizard.

   NOTE: Before connecting the OneDrive site of another user, make sure the OneDrive has been provisioned (i.e. the OneDrive site owner has visited it at least once) and you have administrator permissions granted either by the OneDrive site owner or using the Set-SPOUser commandlet (Set-SPOUser).

Configuration backup and restore procedures

Dell recommends that you back up your VMware ESXi configuration after you complete the initial setup on a routine schedule that fits your data center environment. Backing up your configuration captures the license code (host serial number).

To back up or restore the configuration information, use the VMware vSphere CLI. The vSphere CLI is available in:

- vSphere CLI package — The vSphere CLI package can be installed on either Linux or on Microsoft Windows operating systems.
- vSphere Management Assistant (vMA) — vMA can be deployed on an ESXi host.

Both of this software is available for download from vmware.com. For more information on setting up and running the vSphere CLI, see the VMware vSphere Command-Line Interface Installation and Reference Guide and VMware ESXi Embedded and vCenter Server Setup Guide at vmware.com/support/pubs.

The backup and restore steps are given in this section considering that:

- You have already imported the vSphere CLI to a system other than the one you want to back up or restore.
- You have installed the Windows or Linux management Application Programming Interfaces (APIs).

Backing up the configuration of your ESXi host

About this task

To back up configuration data of a host:

Steps

1. Start the vSphere CLI.
2. Run the `vicfg-cfgbackup` command with the **-s** flag to save the host configuration to the specified backup filename:

```
vicfg-cfgbackup --server< ESXi-host-ip> -- portnumber <port_number> --protocol
<protocol_type> --username root --password root_password [-s <backup-filename>
```

The `-portnumber` and `-protocol` options are optional. If you exclude them, the defaults are port **443** and protocol **HTTPS**.

NOTE: If you do not specify a password in the command line, you are prompted for one when the command executes. For example: `vicfgcfgbackup --server 172.17.13.211 --username root -s backupdate.dat`

NOTE: If your administrative password includes special characters, such as $ or &, you must include a backslash escape character (\) before each special character.

Restoring configuration of your ESXi host

About this task

To restore the configuration data of a host:

NOTE: The backup process does not support restoring to later builds. This requirement can be overridden by using the **–f** option.

Steps

1. Turn off any VM that is running on the host you want to restore.
2. Optionally, restore the host to the ESXi build number used when the backup file was created.
3. Start the vSphere CLI on a host other than the host you want to restore and log in.
4. Run the `vicfg-cfgbackup` command with the **–l** flag to load and restore the backup file to the host.

```
vicfg-cfgbackup --server <ESXi-host-IP> -- portnumber <port_number> --protocol
<protocol_type>-- username <username> --password <password> -l <backup_filename>
```

The **-portnumber** and **-protocol** options are optional. If you exclude them, the defaults are **port 443** and protocol **HTTPS**.

NOTE: If you do not specify a password in the command line, you are prompted for one when the command executes. For example: `vicfgcfgbackup --server 172.17.13.211 --username root -l backupdate.dat`

After a successful restore, the system reboots using the new configuration. For complete instructions on backup and restore commands, see *VMware ESXi Embedded and vCenter Server Setup Guide* at vmware.com/support/pubs.

Linux

FAQs

Why are network ports displayed as unknown in YaST2 network configuration in SUSE Linux Enterprise?

While configuring a bonding interface, the configured bond-slaves are listed as Unknown Network Device. The YaST installer is unable to write the device name in to the ifcfg files. Delete the existing configuration of previously configured network interfaces.

Symptoms

Unable to boot from iSCSI when static IPv6 address is assigned to the initiator

Description

The SUSE Linux Enterprise Server 12 does not boot from iSCSI over IPv6 address after successful installation, when static IPv6 address is assigned to the initiator.

Resolution

Use Dynamic Host Configuration Protocol (DHCP) address for the initiator.

4

Get help

This section covers information on how to gather logs before contacting Technical support and how to contact Dell Technologies.

Topics:

- Gathering logs for troubleshooting on PowerEdge servers
- Contacting Dell Technologies

Gathering logs for troubleshooting on PowerEdge servers

To speed up the support process when faced with an issue, Dell recommends that you gather system logs before contacting Dell Support. When you have logs available to submit to the support agent, they will be able to review them and diagnose the problem immediately, which will mean the quickest possible resolution to your issue.

Table 16. When is which tool useful?

Tools
Secure Connect Gateway on windows and on linux
Gather and read the Server Event Log (SEL) / Hardware-Log using OMSA - OpenManage Server Administrator
Export SupportAssist using iDRAC Integrated Dell Remote Access Controller
Export the PERC Controller Debug Log via the BIOS RAID Controller
CMC Logs Chassis Management Controller
How to Collect CMC Logs Over SSH
Management Module

For more information see : Gathering logs for advanced troubleshooting on PowerEdge servers.

Contacting Dell Technologies

Dell provides online and telephone based support and service options. If you do not have an active internet connection, you can find Dell contact information on your purchase invoice, packing slip, bill or Dell product catalog. The availability of services varies depending on the country and product, and some services may not be available in your area. To contact Dell for sales, technical assistance, or customer service issues follow these steps:

Steps

1. Go to Dell Support.
2. Select your country from the drop-down menu on the lower right corner of the page.
3. For customized support:
   a. Enter the system Service Tag in the **Enter a Service Tag, Serial Number, Service Request, Model, or Keyword** field.
   b. Click **Search**.
   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 Global Technical Support:
a. Click Contact Technical Support.
b. The **Contact Technical Support** page is displayed with details to call, chat, or e-mail the Dell Global Technical Support team.