Support Live Image Version 3.0

User's Guide

DELL EMC

Notes, cautions, and warnings

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

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

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

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1

Overview

Support Live Image (SLI) is a CentOS 7.4 image that packages a collection of utilities and diagnostic tools for PowerEdge servers, PowerEdge C servers, PowerVault storage systems, web-scale converged appliances, and Datacenter Scalable Solutions. It provides an environment to run tools, troubleshoot hardware issues, and gather system configuration information. The results of the diagnostic tests and configuration information are sent manually to the technical support team to identify and resolve an issue.

Support Live Image is primarily used by Dell EMC Service Providers (DSP), and in some cases, by customers when instructed by Dell EMC Technical Support.

If a customer contacts Dell EMC Technical Support for a hardware issue that requires a part replacement, the replacement part is dispatched to the customer through the DSP. After replacing the part, if the DSP finds that the issue is not fixed, the DSP works with technical support to troubleshoot and resolve an issue.

NOTE: For troubleshooting issues with 9th to 11th generation of PowerEdge servers, use Support Live Image version 2.2. For instructions to use Support Live Image version 2.2, see the *Support Live Image version 2.2 User's Guide* at Dell.com/ServiceabilityTools.

Topics:

- What is new in this release
- Supported systems
- Minimum hardware requirements
- Tools available
- Other documents you may need

What is new in this release

Availability of the following tools and utilities:

- Intel Processor Diagnostic Tool version 4.1.0.24
- Dell EMC OpenManage Server Administrator version 9.1.0
- iDRAC9 Evaluation License Tool for Dell EMC's 14th generation of PowerEdge servers
- Dell EMC PowerEdge C System Management Pack version 2014-10-15
- Dell EMC Server Update Utility version 17.12.00
- Dell EMC System Update version 1.5.3
- CentOS 7.4 — iPerf3 version 3.1.7
- OpenSource — Memtest86+ version 5.01

Supported systems

The following are the systems that are supported by Support Live Image version 3.0.

Supported PowerEdge servers

The following are the supported PowerEdge server models based on their generation:

- 14th generation
  - R740
  - R740xd
  - R640
  - R540
  - R440
  - T440
  - T640
  - FC640
  - M640
  - M640p*
  - R940
  - R7415
  - R7425
  - C4140*
  - C6420
- 13th generation
  - T630
  - R430
  - R530
  - T430
  - M630
  - FC630
  - R630
  - R730
  - R730xd
  - R930
  - R830
  - T130
  - R230
  - T330
  - M830
  - R530xd*
  - FC830
  - FC430
  - M830p*
  - M630p*
- 12th generation
  - R220
  - R920
  - R720
  - R720xd

- R620
- R320
- R420
- R520
- R820
- M620
- M420
- M520
- M820
- T620
- T320
- T420
- FM120
- C6220
- C8000*
- C8220*

Supported web-scale converged appliances

The following are the supported web-scale converged appliances:

- XC430
- XC630
- XC730*
- XC6320*
- XC720*

Supported Datacenter Scalable Solutions

The following are the supported Datacenter Scalable Solutions:

- DSS1500
- DSS1510
- DSS2500
- DSS7500*

Supported Dell PowerVault systems

The following are the supported PowerVault systems:

- NX3230
- NX3330

* This system may boot to Support Live Image, but the tools may or may not work as expected.

Minimum hardware requirements

For optimal use or functionality of Support Live Image, the system should have a minimum of 8 GB RAM.

Tools available

The following table lists the diagnostic and configuration tools available on Support Live Image.

Table 1. Tools available on Support Live Image

MS-DOS-Based Tools	Linux-Based Tools	OS-Based Tools
• Memtest86+ version 5.01 • Dell EMC Asset Tag Utility	• Dell EMC OpenManage Server Administrator (OMSA) version 9.1 • Dell EMC Server Update Utility (SUU) version 17.12.00 • iDRAC7 Evaluation License Tool for Dell EMC's 12th generation of PowerEdge servers • iDRAC8 Evaluation License Tool for Dell EMC's 13th generation of PowerEdge servers • iDRAC9 Evaluation License Tool for Dell EMC's 14th generation of PowerEdge servers • Dell EMC PowerEdge C System Management Pack version 2014-10-15 • Intel Processor Diagnostics Tool (IPDT) version 4.1.0.24 • Dell EMC System Update version 1.5.3	• iPerf3 version 3.1.7 • CPU Stress Tool • Hard Disk Stress Tool • Simple Network Management Protocol (SNMP) • Network Manager Utility • Samba Share • NTFS File Support

Other documents you may need

The User's Guide and release notes for OpenManage Server Administrator, OpenManage Server Update Utility, MS-DOS-Based Tools, iDRAC Evaluation License, and PowerEdge C System Management Pack is available in the **User_Guides_and_Release_Notes** folder available on the Support Live Image desktop.

The *Support Live Image Release Notes* available on the SLI desktop provides information on the known issues and limitations of SLI.

In addition to this guide, you can access other guides available at Dell.com/Support/Home. On the **Support** page, click **Software & Security**, and then click **Remote Enterprise Systems Management** or **Serviceability Tools** or **Enterprise System Management**. Click the appropriate product link to access the guides.

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Getting started using Support Live Image

You can run the diagnostic tools available in Support Live Image and gather configuration information, by booting the server to Support Live Image. Before you boot the server to SLI, you may need to create a bootable Support Live Image USB key or DVD.

NOTE: When the system boots to Support Live Image, the automatic boot countdown timer is displayed. To view the boot options menu, you must press any key before the countdown timer reaches 0. If you do not press any key before the countdown timer reaches 0, the Support Live Image automatically boots to the Linux-Based Diagnostic Tools (Dell 12G–14G servers) option.

Topics:

- Downloading Support Live Image
- Creating bootable Support Live Image USB key on systems running Windows
- Creating bootable Support Live Image DVD on systems running Windows
- Starting server by using Support Live Image
- Boot options

Downloading Support Live Image

1. Visit the Support Live Image web page.
   The **Support Live Image** page is displayed.
2. Click **Download Support Live Image**.
3. In the **Available formats** section, under **ISO Image**, click **Download File**.
   The **Use Download Manager?** window is displayed.
4. Select **Use Download Manager** or **Browser Download** option, based on your preference.
   The ISO image is downloaded to a folder on your hard drive.

Creating bootable Support Live Image USB key on systems running Windows

It is recommended that you create the Support Live Image bootable USB key by using **Rufus**. However, you can also use other tools available for creating the bootable USB key.

1. Download and install **Rufus** on your system. You can download **Rufus** from the Rufus website.
2. Connect a USB key with a minimum capacity of 4 GB to an available USB connector on your system.
3. From the **File System** list, select **FAT32**.
4. From the **Partition scheme and target system type** list, select **MBR partition scheme for BIOS or UEFI**.

   NOTE: By default, the Device, Cluster Size, and New volume label values are displayed depending on the size of the USB key.
5. In the **Format Options** section, select the **Create a bootable disk using** option, and browse to select the Support Live Image ISO file.
6. Click **Start**.
   The bootable USB key is created and a confirmation message is displayed.

Creating bootable Support Live Image DVD on systems running Windows

You can use any image-burning tool available for creating a bootable DVD. The following instructions are applicable for creating a bootable DVD by using **ImgBurn**.

1 Download and install **ImgBurn** on your system. You can download **ImgBurn** from the ImgBurn website.
2 Insert a writable DVD with a minimum capacity of 4.7 GB in the optical drive.
3 Click **Start** > **All Programs** > **ImgBurn**, right-click **ImgBurn** and click **Run as administrator**.
The **ImgBurn** window is displayed.
4 Click **Write image file to disc**.
5 In **Source**, click the browse icon.
6 On the **Open** window, browse through to select the Support Live Image ISO file, and then click **Open**.
7 In **Destination**, select the appropriate DVD drive.
8 Click the write icon that is displayed at the bottom of the window.

Starting server by using Support Live Image

NOTE: Booting the server to the Linux-based diagnostic tools may take several minutes.

To run the diagnostic tools and gather configuration information, you must start the server.

You can start the server by using the USB key, DVD, or iDRAC Virtual Media.

1 Perform one of the following:
- Insert the bootable Support Live Image DVD or USB key.
- Mount the Support Live Image ISO file on the iDRAC virtual media.

2 Restart the server.
3 When the `F11` prompt is displayed on the screen, press **F11**.
The **BIOS Boot Manager** screen is displayed.
4 Depending on the device you want to boot to, select one of the following:
- To boot to the DVD, select **Optical Drive** in the menu and then press Enter.
- To boot to the USB key, perform one the following:
  - If you are booting in BIOS mode, perform the following:
    a Select **Hard Drive C:** in the menu.
    b In the boot menu that is displayed, select the appropriate USB port, and then press Enter.
  - If you are booting in UEFI mode, in the boot menu that is displayed, select the appropriate USB port, and then press Enter.
- To boot to the iDRAC Virtual Media, select **Virtual Media** in the menu, and then press Enter.

The server boots to Support Live Image and the welcome screen is displayed with a list of options. For more information, see Boot Options.

5 Press any key before the automatic boot countdown timer reaches zero (0).

NOTE: If you do not press any key before the countdown timer reaches 0, Support Live Image automatically boots to the Linux-Based Diagnostic Tools (Dell 12G–14G servers) option.

Boot options

The following are the available BIOS boot options:

- **Linux-Based Diagnostic Tools (Dell 12G–14G Servers)** — Boots to the Community ENTerprise Operating System (CentOS), an Enterprise-class Linux distribution.
- **DOS-Based Asset Tag Utility (Dell 12G Servers)** — Boots to MS-DOS and allows you to run the Asset tool.
- **DOS-Based Memtest86+ Utility (Dell 12G–14G Servers)** — Boots to MS-DOS and allows you to run the Memtest86+ tool.

The following are the available UEFI boot options:

- **Start SLI**
- **Test this media and start SLI**
- **Troubleshooting**

For more information on the diagnostic tools that you can run in the Linux and MS-DOS environments, see Tools Available.

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Using Linux-based tools and utilities

You can use the Linux-based tools and utilities to run several applications and diagnostic tests.

NOTE: Booting the server to the Linux-based diagnostic tools may take several minutes.

NOTE: You need root privileges to run any service and edit a configuration file.

NOTE: You must manually create network configuration files for NIC teaming.

Topics:

- Setting up SLI environment
- Starting OpenManage Server Administrator version 9.1
- Installing Dell iDRAC7, iDRAC8, or iDRAC9 evaluation license
- Running tools in Dell PowerEdge C system management pack
- Running PECLogs script
- Intel Processor Diagnostic Tool
- Starting OpenManage Server Update Utility
- Installing Dell System Update
- Starting Dell System Update
- Starting iPerf3
- Running the stress tool
- Sharing files by using Samba share service
- Testing network connectivity
- Assigning static IP address and default gateway
- Generating PCI devices list
- Clearing SBE logs
- Accessing and remounting local NTFS file system
- Mounting USB drive
- Copying files to USB drive
- Starting Vim editor
- Starting gedit
- Starting the Hex editor
- Using TightVNC
- Using WinSCP
- Useful commands

Setting up SLI environment

You must setup the SLI environment before you start using Linux-based tools. During this setup, SLI starts OMSA services, configures the iDRAC licenses, and so on.

1 Boot the system by using the **Linux-Based Diagnostic Tools (Dell 12G-14G servers)** option.

The Support Live Image desktop is displayed.

2 Double-click **SLI_Setup** desktop icon.

The terminal emulator is displayed and the basic setup required to use Linux-based tools is complete.

Starting OpenManage Server Administrator version 9.1

Dell EMC OpenManage Server Administrator (OMSA) provides a comprehensive, one-to-one systems management solution in two ways: from an integrated, web browser-based graphical user interface (GUI) and from a command line interface (CLI) through the operating system.

Server Administrator enables system administrators to manage systems locally and remotely on a network. It enables system administrators to focus on managing their entire network by providing comprehensive one-to-one systems management.

1 Boot the system by using the **Linux-Based Diagnostic Tools (Dell 12G-14G servers)** option.

The Support Live Image desktop is displayed.

2 Double-click the **Launch Server Administrator** icon. If you have already added OpenManage Server Administrator to the web browser's security exception, then go to step 6.

A new web browser window is displayed with the following message: `This Connection is Untrusted`.

3 Click **I Understand the Risks**.

A disclaimer is displayed at the bottom of the page.

4 Click **Add Exception**.

The **Add Security Exception** window is displayed.

5 Click **Get Certificate** and then click **Confirm Security Exception**.

The OpenManage Server Administrator login page is displayed.

6 In the **Username** field, type **root**.

7 In the **Password** field, type **dell**.

8 Click **Submit**.

The OMSA dashboard is displayed.

NOTE: When you close OMSA and reopen it again, the Unable to connect message may be displayed. To continue, click Try Again.

NOTE: For more information on using OMSA, see the *Dell OpenManage Server Administrator User's Guide* in the User_Guides_and_Release-Notes folder available on the Support Live Image desktop.

Installing Dell iDRAC7, iDRAC8, or iDRAC9 evaluation license

iDRAC is a systems management hardware and software solution that provides remote management capabilities, crashed system recovery, and power control functions for Dell EMC PowerEdge systems.

The iDRAC7, iDRAC8, or iDRAC9 evaluation license allows you to try and test certain enterprise features for 30 days before you purchase a permanent license. A status icon in the iDRAC graphical user interface (GUI) changes from green color to yellow color five days before the license expires. Customers who require additional time to complete an evaluation can obtain an extension of 30 days by contacting their account representative.

NOTE: Installing the iDRAC7, iDRAC8, or iDRAC9 evaluation license in a production environment is not recommended.

You can install the iDRAC7, iDRAC8, or iDRAC9 evaluation license from the desktop or by using the GNOME terminal. For more information, see:

- Installing iDRAC7, iDRAC8, or iDRAC9 evaluation license by using desktop icon

- Installing iDRAC7, iDRAC8, or iDRAC9 evaluation license by using GNOME terminal

NOTE: For more information on using the iDRAC7, iDRAC8, or iDRAC9 evaluation license, see the *Integrated Dell Remote Access Controller User's Guide* in the User_Guides_and_Release_Notes folder available on the Support Live Image desktop.

NOTE: The iDRAC7 evaluation license is not supported on PowerEdge C servers.

Installing iDRAC7, iDRAC8, or iDRAC9 evaluation license by using the desktop icon

1. Boot the system by using the **Linux-Based Diagnostic Tools (Dell 12G - 14G servers)** option.
   The Support Live Image desktop is displayed.
2. Double-click the **12G_iDRAC7_Demo_License**, **13G_iDRAC8_Demo_License**, or **14G_iDRAC9_Demo_License** icon.
   The following prompt is displayed on the GNOME terminal window: `Do you want to install an enterprise evaluation license that is valid for 30 days [Y/N]?`
3. Press **Y** to install the license.
   The license is imported and a warning message prompting to install a permanent license in 30 days is displayed.
4. At the, `Press ENTER to exit` prompt, press **Enter**.
   The GNOME terminal is closed.

Installing iDRAC7, iDRAC8, or iDRAC9 evaluation license by using the GNOME terminal

1. Boot the system by using the **Linux-Based Diagnostic Tools (Dell 12G–14G servers)** option.
   The CentOS desktop is displayed.
2. Double-click the **gnome-terminal** icon.
   The GNOME terminal window is displayed.
3. At the command prompt, type `su –` and press Enter.
   The `Password` prompt is displayed.
4. Type `dell` and press Enter.
   The root user command prompt is displayed.
5. Type `/usr/iDracEvalLicense/uploadEvalLicense.sh` and press Enter.
   The following prompt is displayed: `Do you want to install an enterprise evaluation license that is valid for 30 days [Y/N]?`
6. Press **Y** to install the license.
   The license is imported and a warning message prompting to install a permanent license in 30 days is displayed.
7. At the `Press ENTER to exit` prompt, press Enter.
   The GNOME terminal is closed.

Running tools in Dell PowerEdge C system management pack

The PowerEdge C line of servers uses a baseboard management controller (BMC) to provide system monitoring and administration, including remote power-on.

Dell EMC provides the following Linux command-line tools to assist managing PowerEdge C servers (all tools work with all PowerEdge C models):

- setupbios
- bmc tool
- LDState
- PECLogs

NOTE: Dell PowerEdge C System Management Pack is supported on 12th generation of PowerEdge C servers only.

Running setupbios

Setupbios is a BIOS configuration tool that provides several methods to setup and replicate BIOS settings on PowerEdge C servers. Setupbios is also used to confirm or change BIOS settings.

1 Boot the PowerEdge C server by using the **Linux-Based Diagnostics Tools (Dell 12G-14G servers)** option.
The CentOS desktop is displayed.
2 Double-click the **gnome-terminal** icon.
The **GNOME terminal** window is displayed.
3 At the command prompt, type **setupbios**.
The list of options is displayed.

The output from setupbios is included in PECLogs report for troubleshooting.

Running bmc-tool

The bmc software application enables you to manage and configure PowerEdge C Baseboard Management Controller by using command line interface (CLI). BMC abstracts some of the complicated IPMI commands and provides simple, Linux-type of interface. It works with all PowerEdge C models and attempts to provide the most-commonly used commands in an easy format.

1 Boot the PowerEdge C server by using the **Linux-Based Diagnostics Tools (Dell 12G-14G servers)** option.
The CentOS desktop is displayed.
2 Double-click the **gnome-terminal** icon.
The **GNOME terminal** window is displayed.
3 At the command prompt, type **bmc**.
The list of options is displayed.

The output from BMC is included in PECLogs report for troubleshooting.

Running LDState

LDState is a PowerEdge-C specific tool that allows you to view the configuration and health of storage adapters' Logical Disks, Physical Disks, and Battery Backups by using MegaCLI and other storage tools.

1 Boot the PowerEdge C server by using the **Linux-Based Diagnostics Tools (Dell 12G-14G servers)** option.
The CentOS desktop is displayed.
2 Double-click the **gnome-terminal** icon.
The **GNOME terminal** window is displayed.
3 At the command prompt, type **ldstate**.
The list of options is displayed.

The output from LDState is included in PECLogs report for troubleshooting.

Running PECLogs script

PECLogs script is a utility that collects configuration and log data from the target server for various chassis hardware, storage, and operating system components on Dell PowerEdge C servers. It uses operating system specific built-in report tools and/or individual operating system commands to collect the operating system logs and configuration.

You can run PECLogs script by using one of the following methods:

- Running PECLogs script by using desktop icon
- Running PECLogs script by using GNOME terminal

Running PECLogs script by using desktop icon

1 Boot the **PowerEdge C** server by using the **Linux-Based Diagnostics Tools (Dell 12G-14G servers)** option.
The CentOS desktop is displayed.
2 Double-click the **PEC-Logs** icon.
The PECLogs script runs and the report is saved in **/var/data** folder.

Running PECLogs script by using GNOME terminal

1 Boot the **PowerEdge C** server by using the **Linux-Based Diagnostics Tools (Dell 12G-14G servers)** option.
The CentOS desktop is displayed.
2 Double-click the **gnome-terminal** icon.
The **GNOME terminal** window is displayed.
3 At the command prompt, type `su –` and press Enter.
The `Password` prompt is displayed.
4 Type `dell` and press Enter.
The **root user** command prompt is displayed.
5 Type `cd /opt/dell/pec/pec-logs/` and press Enter.
6 Type `./pec-logs` and press Enter.
The PECLogs script runs and the output is saved in the **/var/data** folder.

NOTE: The PECLogs script is applicable only for PowerEdge C servers.

Intel Processor Diagnostic Tool

The Intel Processor Diagnostic Tool verifies the functionality of an Intel processor. The diagnostic checks for brand identification, verifies the processor operating frequency, tests specific processor features, and performs a stress test on the processor.

Running Intel Processor Diagnostic Tool by using desktop icon

1 Boot the system by using the **Linux-Based Diagnostics Tools (Dell 12G-14G servers)** option.
The Support Live Image desktop is displayed.
2 Double-click the **IPDT** icon.
The Intel Processor Diagnostic Tool window is displayed.

3 To run the diagnostic tool, click **Start**.
The diagnostic report is generated and the result is displayed.

Starting OpenManage Server Update Utility

OpenManage Server Update Utility (SUU) is a DVD-based application for identifying and applying updates on the system. You can use SUU to update the PowerEdge system or to view updates available for systems supported by SUU.

SUU compares the versions of components currently installed on the system with update components packaged on the Dell PowerEdge Server Update Utility media.

SUU displays a comparison report of the installed versions and provides various options for updating the components.

1 Start the server by using the **Linux-Based Diagnostic Tools (Dell 12G-14G servers)** option.
The Support Live Image desktop is displayed.
2 Mount the Server Update Utility stored in the USB drive, DVD, or virtual console.
3 Right-click the SUU icon on the desktop and select **Open in Terminal**.
4 Type `sudo ./suu –g` and press Enter.
The SUU window is displayed.

Installing Dell System Update

Dell EMC System Update (DSU) is an application used to distribute Dell updates for Linux and Microsoft Windows operating systems. The DSU distributes BIOS, driver, and firmware updates for different servers.

DSU displays a comparison report of the installed versions and provides various options for updating the components.

1 Boot the system by using the **Linux-Based Diagnostic Tools (Dell 12G-14G servers)** option.
The Support Live Image desktop is displayed.
2 Open the terminal emulator.
3 Type **su -** and type the default password.

NOTE: The default password is `dell`.

4 Type **cd /root** and press Enter.
5 Type **./dsu_Install.sh** and press Enter.
Dell EMC System Update is installed on your system.

Starting Dell System Update

1 Boot the system by using the **Linux-Based Diagnostic Tools (Dell 12G-14G servers)** option.
The Support Live Image desktop is displayed.
2 Open the terminal emulator.
3 Type **su -**, and type the default password.

NOTE: The default password is `dell`.

4 Type **dsu**, and press Enter.
The comparison report with various options is displayed.

NOTE: For more information on using DSU, see the *Dell System Update User's Guide* in the User_Guides_and_Release-Notes folder available on the Support Live Image desktop.

Starting iPerf3

iPerf3 is a tool that is used for performing network throughput measurements.

1 Boot the system by using the **Linux-Based Diagnostic Tools (Dell 12G - 14G servers)** option.
The Support Live Image desktop is displayed.
2 Open the terminal emulator.
3 To view the iPerf3 help, type **iPerf3 -h**, and then press Enter.
The help options are displayed.

Running the stress tool

1 Boot the system by using the **Linux-Based Diagnostics Tools (Dell 12G-14G servers)** option.
The Support Live Image desktop is displayed.
2 Double-click **gnome-terminal** icon.
The GNOME terminal window is displayed.
3 Open terminal emulator.
4 Type `sudo stress --cpu <forks> --hdd <pummels> --timeout <seconds> --verbose`, and press Enter.
For example, `sudo stress --cpu 8 --hdd 4 --timeout 30s --verbose`.

If the stress test is successful, the `successful run completed` message is displayed.

Sharing files by using Samba share service

Samba share is used to share the files between systems running Linux and Windows.

1 Start the server by using the **Linux-Based Diagnostic Tools (Dell 12G-14G servers)** option.
The CentOS desktop is displayed. By default, the Samba services running on the **on-boot** and **/var/data** folders are shared.
2 Open the terminal emulator.
3 Type **ifconfig** and press Enter.
The network interface configuration is displayed.
4 Make note of the IP address of the server.
5 Log in to a server running a Windows operating system.
6 Click **Start** > **Run**. In the **Open** box, type the IP address of the server running Support Live Image, and then press Enter.
The Samba shared folder **data** is displayed.

Testing network connectivity

1 On the server, connect the network cable to either the network port that is having issues or to NIC1.
2 Boot the system by using the **Linux-Based Diagnostic Tools (Dell 12G-14G servers)** option.
The CentOS desktop is displayed.
3 Double-click the **gnome-terminal** icon.
The GNOME terminal window is displayed.
4 Open the terminal emulator and perform the following:
- Type `ifconfig` and then press Enter to display the network interface parameters, such as the IP address.
- Type `route` and then press Enter to determine the default gateway.
- Type `ping ip_address –b` and then press Enter to verify if you can ping the default gateway.

Assigning static IP address and default gateway

1 Boot the system by using the **Linux-Based Diagnostics Tools (Dell 12G-14G servers)** option.
The CentOS desktop is displayed.
2 Double-click the **gnome-terminal** icon.
The GNOME terminal window is displayed.
3 At the command prompt, type `su –` and then press Enter.
The `Password` prompt is displayed.
4 Type `dell` and press Enter.
The root user command prompt is displayed.
5 Type `service NetworkManager stop` and press Enter.
6 To assign a static IP, type `ifconfig <eth0> <ip_address> netmask <subnet>` and press Enter.
7 To assign a default gateway, type `route add default gw <ip_address>` and press Enter.
8 Type `service NetworkManager start` and then press Enter.

Generating PCI devices list

1 Boot the system by using the **Linux-Based Diagnostic Tools (Dell 12G–14G servers)** option.
The CentOS desktop is displayed.
2 Double-click the **gnome-terminal** icon.
The GNOME terminal window is displayed.
3 At the command prompt, type `lspci` and press Enter.
The PCI devices list is displayed.
4 To export the PCI devices list to a file, at the command prompt:
- Type `lspci > /var/data/lspci.txt`
- Type `lspci > /mnt/disc/`*`folder_name`*`/lspci.txt` to copy to the local file system after remount, where *`folder_name`* is the folder on the local file system. For instructions to remount, see Accessing And Remounting The Local File System.

Clearing SBE logs

1 Boot the system by using the **Linux-Based Diagnostic Tools (Dell 12G-14G servers)** option.
The CentOS desktop is displayed.
2 Double-click the **gnome-terminal** icon.
The GNOME terminal window is displayed.
3 At the command prompt, type `su –` and press Enter.
The `Password` prompt is displayed.
4 Type `dell` and then press Enter.
The root user command prompt is displayed.
5 Type `dcicfg command=clearmemfailures`, and then press Enter.

Accessing and remounting local NTFS file system

Boot the system by using the **Linux-Based Diagnostic Tools (Dell 12G-14G servers)** option.

The Support Live Image desktop is displayed and the NTFS files are available.

Mounting USB drive

NOTE: If the USB drive is using the NTFS file system, ensure that you perform the steps in Accessing and remounting local NTFS file system.

1. Boot the system by using the **Linux-Based Diagnostics Tools (Dell 12G-14G servers)** option.
   The CentOS desktop is displayed.
2. Double-click the **gnome-terminal** icon.
   The GNOME terminal window is displayed.
3. At the command prompt, type `su –` and press Enter.
   The `Password` prompt is displayed.
4. Type `dell` and press Enter.
   The root user command prompt is displayed.
5. Type `mount` and press Enter.
   The available storage devices are listed. The USB drive is listed as `type vfat (ro)`. For example, the USB drive may be listed as `/dev/sda1 on /mnt/disc/sda1 type vfat (ro)`.
6. Type `mount -o remount,rw /dev/<device_name>`, where *<device_name>* is the name of the USB device.

Copying files to USB drive

1. Boot the system by using the **Linux-Based Diagnostics Tools (Dell 12G-14G servers)** option.
   The CentOS desktop is displayed.
2. Double-click the **gnome-terminal** icon.
   The GNOME terminal window is displayed.
3. At the command prompt, type `sudo nautilus` and press Enter.
   The Nautilus browser is displayed.
4. Under **Places**, click **File System**.
5. In the right pane, navigate to the **/var/data** folder, and locate the file you want to copy.
6. Right-click the file you want to copy and then select **Copy**.
7. Under **Places**, click **File System**.
8. In the right pane, navigate to the **/mnt/disc/** folder and open the folder that corresponds to the mounted USB drive.
9. Right-click and select **Paste**.

Starting Vim editor

Vim Editor is a text editing tool used to open the *.txt* files.

1. Boot the system by using the **Linux-Based Diagnostics Tools (Dell 12G-14G servers)** option.
   The CentOS desktop is displayed.
2. Double-click the **gnome-terminal** icon.
   The GNOME terminal window is displayed.
3. At the command prompt, type `vim file_name`, where *file_name* is the name of the file.
   The vim editor is displayed.
4. To insert text, type `i`.
5. Type the required information.
6. To exit the insert mode, press Esc.
7. To save the file, type `:wq`.

The file is saved in the current folder.

Starting gedit

gedit is a GUI–based text editing tool.

1 Boot the system by using the **Linux-Based Diagnostic Tools (Dell 12G-14G servers)** option.
The CentOS desktop is displayed.
2 Click **Applications** > **Accessories** > **Text Editor.**
The **gedit** window is displayed.

Starting the Hex editor

Hex Editor is a GUI-based text editing tool.

1 Boot the system by using the **Linux-Based Diagnostic Tools (Dell 12G-14G servers)** option.
The CentOS desktop is displayed.
2 Click **Applications** > **Programming** > **Hex Editor.**
The **GHex** window is displayed.

Using TightVNC

Ensure that TightVNC is installed on the local system (Dell EMC Technical Support) and that the remote system is booted to CentOS. You can establish a remote desktop session by using TightVNC. After a remote connection is established, you can copy and paste the configuration files from the remote system to a local system at Dell Technical Support.

1 Launch TightVNC on the local system.
The **New TightVNC Connection** window is displayed.
2 In the **TightVNC server** box, type the IP address of the remote system.
3 In the **User name** field, type `root`.
4 In the **Password** field, type `dell`.
5 Click **Connect**.
The desktop of the remote system is displayed.

Using WinSCP

WinSCP is a Windows-based tool. You can securely transfer files between a local Windows and a remote Linux (Support Live Image) system using WinSCP. You can use WinSCP to securely transfer the configuration reports to Dell EMC Technical Support. WinSCP is available for download at **winscp.net**.

1 Ensure that WinSCP is installed on the local Windows system (Dell EMC Technical Support) and that the remote system is booted to Support Live Image.
2 Launch WinSCP on the local system.
The **WinSCP Login** window is displayed.
3 In the **Host name** box, type the IP address of the remote system.
4 In the **User name** field, type `root`.
5 In the **Password** field, type `dell`.
6 Click **Login**.
The WinSCP window is displayed with the directory structure of the local and remote systems. You can securely drag files between the local and remote system.

Useful commands

This section provides the Linux commands you can use to start, stop, or restart OMSA and the network service. At the terminal command prompt, type the commands listed in the following tables to perform the required functions.

NOTE: You can run these commands using the root privileges.

Table 2. OMSA service commands

Command	Description
`srvadmin-services.sh start`	Start the OMSA service.
`srvadmin-services.sh stop`	Stop the OMSA service.
`srvadmin-services.sh restart`	Restart the OMSA service.
`srvadmin-services.sh status`	Status of the OMSA service.

Table 3. Network service commands

Command	Description
`service network start`	Start the network service.
`service network stop`	Stop the network service.
`service network restart`	Restart the network service.

4

Using the MS-DOS-based tools

You can use the MS-DOS-based tools to test the memory and assign the Asset Tag of a system.

Topics:

- Running memory test
- Setting Asset Tag

Running memory test

Memtest86+ is used to find memory errors by using advanced algorithms that are effective at detecting memory errors. Memtest86+ tests all available memory.

When Memtest86+ starts, it displays details about the system configuration and then begins the test. The test continues to run until the program execution is interrupted.

Memtest86+ executes a series of numbered test sections to check for errors. The time required to check for all errors varies depending on CPU speed, memory speed, and memory size. If memory errors are detected, they are displayed on the screen. The default error reporting mode displays a detailed summary of all errors.

1 Boot the system by using the **DOS-Based Memtest86+ Utility (Dell 12G-14G servers)** option.
Memtest86+ runs automatically.

2 To view the configuration command menu, press **C**.
The following options are displayed in the configuration command menu:
   - **(1) Test Selection**
   - **(2) Address Range**
   - **(3) Error Report Mode**
   - **(4) Core Selection**
   - **(5) Refresh Screen**
   - **(6) Display DMI Data**
   - **(7) Display SPD Data**
   - **(0) Continue**

   The following options are available while MemTest86+ runs:

   - ESC — Press ESC to exit Memtest86+ and restart the system
   - C — Press C to view the configuration menu
   - SP — Press spacebar to stop the scrolling of error messages.
   - CR — Press Enter to enable the scrolling of error messages.

Setting Asset Tag

1 Boot the system by using the **DOS-Based Diagnostic Tools (Dell 12G servers)** option.

The `Customer Diagnostic Menu Ver 1.6` is displayed.

2 At the `Enter option or letter` prompt, press **4**.

The MS-DOS prompt is displayed.

3 Type `c:`, and press Enter.

The working drive changes to **c:**.

4 Type `CD Util`, and press Enter.

The working directory changes to **c:\Util**.

5 To change the Asset Tag, type `asset` *`new_asset_tag`* where *`new_asset_tag`* is the Asset Tag that you want to assign to the system.

6 At the confirmation prompt, press **y**.