

Cisco UCS Diagnostics User Guide for B-Series Servers, Release 2.0

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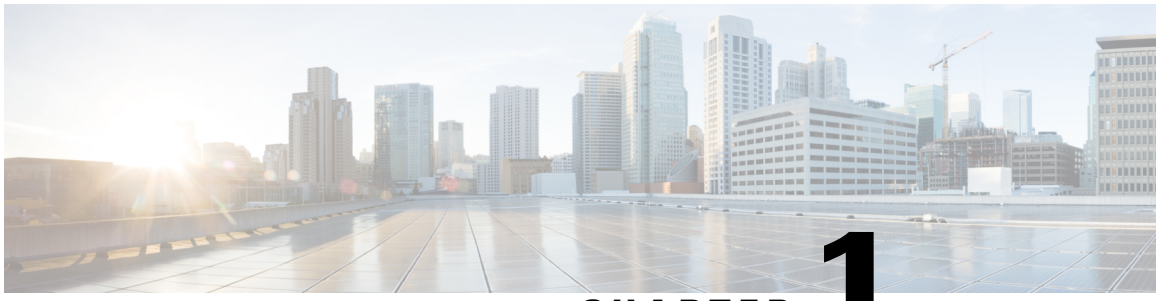


CHAPTER 1

Overview of UCS Blade Server Diagnostics

This chapter contains the following sections:

- Overview of Cisco UCS Manager Diagnostics, page 1
- What is New, page 1
- Supported Servers, page 2

Overview of Cisco UCS Manager Diagnostics

The Cisco UCS Manager diagnostics tool enables you to verify the health of the hardware components on your servers. The diagnostics tool provides a variety of tests to exercise and stress the various hardware subsystems on the servers, such as memory and CPU. You can use the tool to run a sanity check on the state of your servers after you fix or replace a hardware component. You can also use this tool to run comprehensive burn-in tests before you deploy a new server in your production environment.

When a system is new, a default diagnostics policy is created in org scope. This default policy is named default and it cannot be deleted. The user will receive an error message if they try to delete it. The default diagnostic policy is the preferred way to execute the same set of tests across all servers. Any diagnostic policy, including the default can be customized.

The default policy only has one memory test. The default parameters of the memory test can be modified. In addition, the memory test within the default diagnostics policy can be deleted. If it does not have a memory test, the diagnostic policy will not run.

What is New

Cisco UCS Diagnostics for B-Series Blade Servers, Release 2.0 introduces support for UCS B200 M5 and B480 M5 servers. These servers are based on the latest architecture from Intel and powered by the new Intel Xeon Processor Scalable family. The M5 servers offer improved processing performance (up to 28-cores per socket) and faster memory (up to 2666MHz). The servers also bring improved memory, storage and GPU density, including more NVMe options per server, support for more GPUs, and an M.2 option. Cisco UCS Manager extends support for all existing features on the UCS B200 M5 servers unless specifically noted.

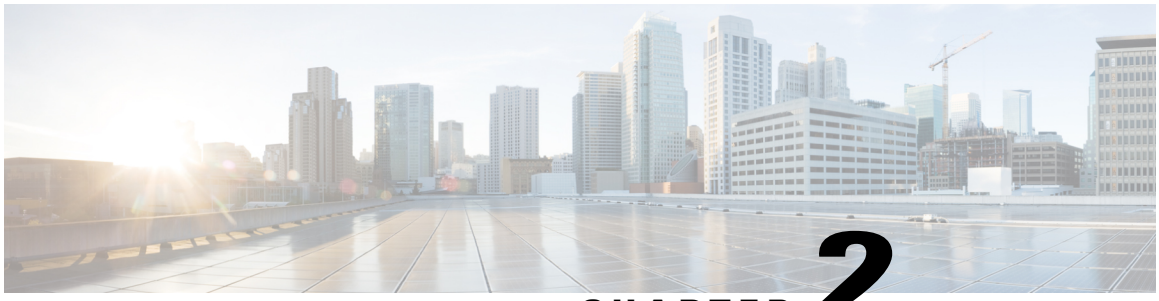
Supported Servers

The following table lists the UCS B-Series Blade Servers that are supported for the UCS Blade Server Diagnostics, Release 2.0.

Table 1: Supported Servers

Component	Recommended Software Version
Servers	
B200 M5 B480 M5	2.0(0.4)
B420 M4 E5-4600 v3 B420 M4 E5-4600 v4	2.0(0.4)
B260 M4 E7-4800 v3 B260 M4 E7-8800 v3 B260 M4 E7-4800 v4 B260 M4 E7-8800 v4	2.0(0.4)
B460 M4 E7-4800 v3 B460 M4 E7-8800 v3 B460 M4 E7-4800 v4 B460 M4 E7-8800 v4	2.0(0.4)
B22 M3	2.0(0.4)
B200 M2	2.0(0.4)
B200 M3	2.0(0.4)
B200 M4 B200 M4 Intel E5-2600 v4	2.0(0.4)
B230 M2	2.0(0.4)
B250 M2	2.0(0.4)
B260 M4	2.0(0.4)
B420 M3	2.0(0.4)
B440 M2	2.0(0.4)

Component	Recommended Software Version
Servers	
B460 M4	2.0(0.4)



CHAPTER 2

Getting Started with Cisco UCS Blade Server Diagnostics

This chapter contains the following sections:

- Obtaining the Cisco UCS Blade Server Diagnostics ISO Image, page 5
- Launching Cisco UCS Blade Server Diagnostics, page 6

Obtaining the Cisco UCS Blade Server Diagnostics ISO Image

Use the following steps to download the Cisco UCS Blade Server Diagnostics ISO image from the Cisco website.

Procedure

Step 1 From your browser, navigate to the following URL: http://www.cisco.com/cisco/software/navigator.html.

Step 2 From the **Downloads Home** table, in the middle column, click **Servers - Unified Computing**.

Step 3 From the right column in the table, click **Cisco UCS B-Series Blade Server Software**.

Step 4 In the Select a Software Type list, choose **Unified Computing System (UCS) Diagnostics.**
The Download Software screen appears listing the release version and the ISO image for the Cisco UCS Blade Server Diagnostics tool.

Step 5 Click **Download** to download the ISO file.

Step 6 Verify the information on the next page, and then click **Proceed With Download**. If prompted, use your cisco.com credentials to log in.

Step 7 Continue through the screens to accept the license agreement and to browse to a location where you want to save the ISO file.

Launching Cisco UCS Blade Server Diagnostics

The Cisco UCS Blade Server Diagnostics tool is a bootable image that is based on a 64-bit Linux kernel. You can load multiple instances of the ISO image on different blades and run the tests on multiple blades at the same time. The diagnostics tool provides both GUI and CLI interfaces for you to view the server inventory, run diagnostic tests, and view log files and test results. You can boot the image by using the Cisco UCS Manager KVM remotely using virtual media.

About KVM Console

You can use Cisco Integrated Management Controller (CIMC) Console to launch the diagnostics tool with virtual media. KVM Console is an interface accessible from CIMC that emulates a direct keyboard, video, and mouse (KVM) connection to the server. KVM Console enables you to connect to the server from a remote location.

KVM Console has the following tabs:

- **KVM—**Displays the diagnostics tool when it is booted.
- **Virtual media—**Maps the following media to a virtual drive:
  - CD/DVD on your computer or your network
  - Disk image files (ISO or IMG files) on your computer or your network
  - USB flash drive on your computer

Using KVM Console

Before You Begin

- Download the Cisco UCS Blade Server Diagnostics ISO image file from cisco.com. For information about how to download the image, see Obtaining the Cisco UCS Blade Server Diagnostics ISO Image, on page 5.
- To access KVM Console for booting the diagnostics tool, make sure that you have a service profile associated with the Cisco UCS Blade Server against which you want to run the tests.

Procedure

Step 1 If you do not have access to the Cisco UCS Manager, perform the following steps. Otherwise skip to step 2.

a) Log into the KVM Manager and choose the service profile that is associated to your Cisco UCS Blade Server.

b) Launch KVM and provide your credentials.

c) Skip to step 5.

Step 2 Log into Cisco UCS Manager and provide your credentials.

Step 3 Choose the **Equipment > Chassis** tab.

Step 4 Choose the Cisco UCS Blade Server.

Step 5 From the **Action** pane, click **KVM Console**.

Step 6 Click the **Virtual Media** tab.
The **Virtual Media** tab appears.

Step 7 Click **Add Image**.

Step 8 Navigate to and choose the ISO file, and click **Open**.

Step 9 In the **Client View** section, check the check box in the **Mapped** column for the ISO file that you added and then wait for the mapping to complete.
KVM Console displays the progress in the **Details** section.

Step 10 Click the **Reset** button from your KVM Console to reboot your server.

Step 11 Press **F6** when the server starts to select a boot device.
The **Boot Selection** menu appears. If you do not see the **KVM mapped DVD** option, modify the **Boot Policy** to loose.

Note Alternately, you can create a boot policy for the service profile. For more information about how to create a boot policy, see the *Configuring Server Boot* section in the *Cisco UCS Manager Server Management Guide, Release 3.2*.

Step 12 Use the arrow keys to choose Cisco Virtual CD/DVD and then press Enter.
The server boots using the Cisco UCS Blade Server Diagnostics image and launches the application in the **KVM** tab.

Exiting Cisco UCS Blade Server Diagnostics

Before You Begin

Before you exit the diagnostics tool, make sure that all your test are completed.

Procedure

Step 1 Remove the .iso disk from the virtual media.

Step 2 Click **Reset** and then click **Yes** to confirm.

Launching an ISO Image Using the USB Drive

Use the following steps to launch an ISO image using the USB drive.

Procedure

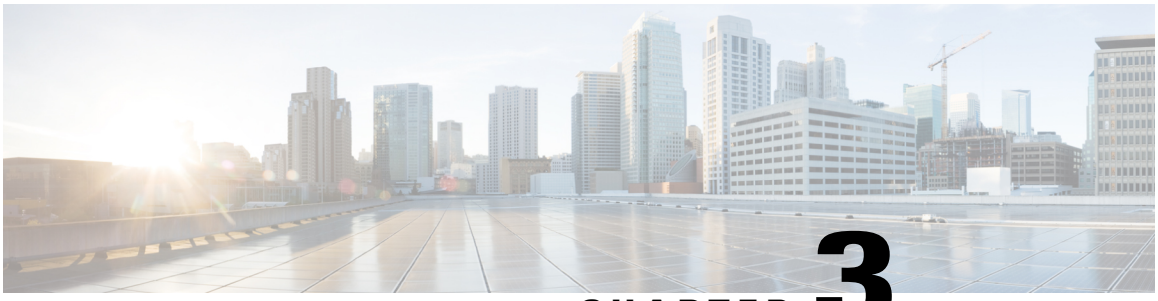
Step 1 Start with a FAT32 formatted USB flash drive.

Step 2 Extract the contents of the diagnostics ISO image into the USB flash drive.

Step 3 Open the flash drive and find the directory MAKE_USB. Navigate to Windows.

Step 4 Right-click makeboot.bat and click Run as Administrator. Follow the instructions on the prompt that comes up.

Your USB flash drive is now bootable with the diagnostic image. If you are updating a pre-existing diagnostic image, only the file kernel needs to be replaced on the flash drive.



CHAPTER 3

Using the Cisco UCS Blade Server Diagnostics User Interface

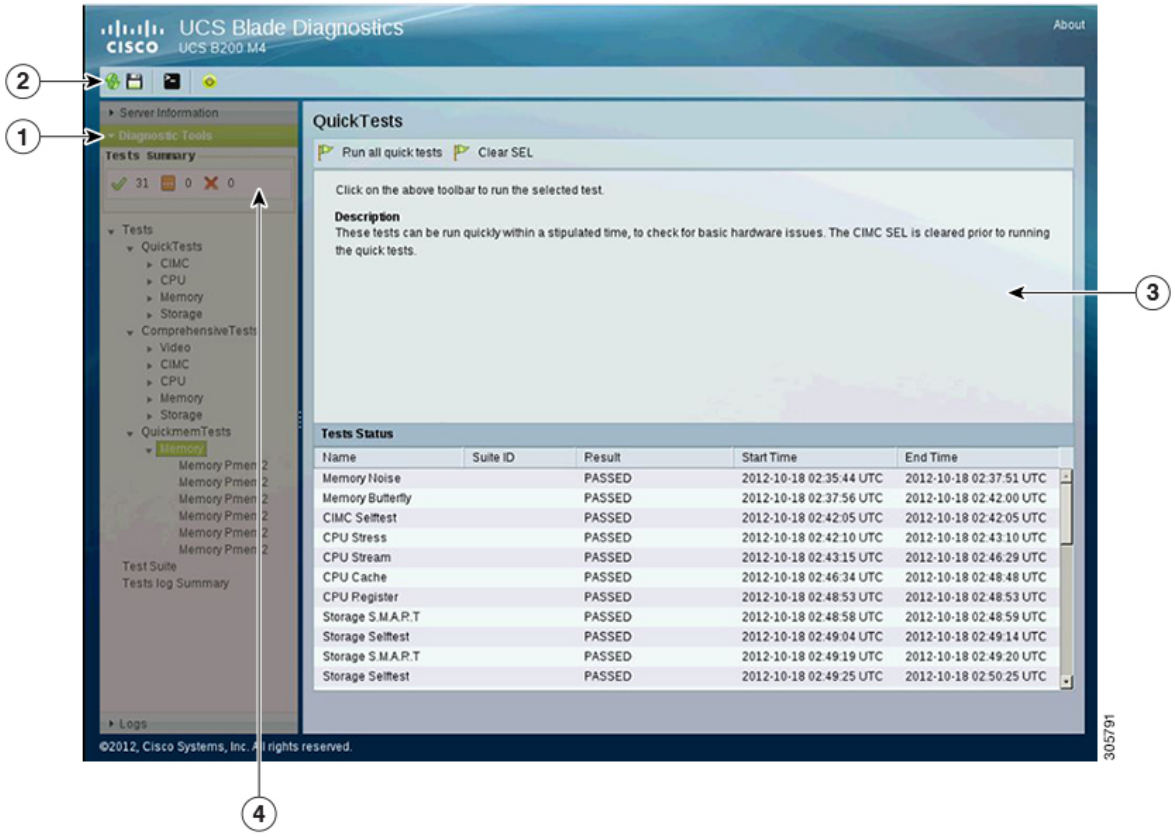
This chapter contains the following sections:

- Understanding the UCS Blade Server Diagnostics Graphical User Interface, page 9

Understanding the UCS Blade Server Diagnostics Graphical User Interface

The following figure explains the UI components of the diagnostics tool.

Figure 1: Cisco UCS Blade Server Diagnostics GUI



1	**Navigation pane**
2	**Toolbar**
3	**Content pane**
4	**Tests Summary panel**

The following table provides the description of each element in the UI.

Table 2: UI Elements

Navigation pane	Displays the options that you can choose, such as **Server Information**, **Diagnostic Tools**, or **Logs**.
Toolbar	Displays the quick icons on the top-left corner of the window. The options displayed are **Save Logs**, **Enter CLI mode**, and **Refresh**.

Content pane	Displays the details about an option that you choose in the **Navigation pane**, for example, the details about a server, information about all the tests within a test suite, or log details. Displays on the right side of the GUI. In the lower part of the **Contents** pane, the tests results are displayed in the **Test Status** area.
Tests Summary panel	Displays a quick summary of all the tests that are completed successfully, tests in queue, and tests that failed. This component is visible only when you choose the **Diagnostic Tools** option in the **Navigation pane**.

The following table describes the elements in the **Navigation pane**.

Table 3: Navigation Options

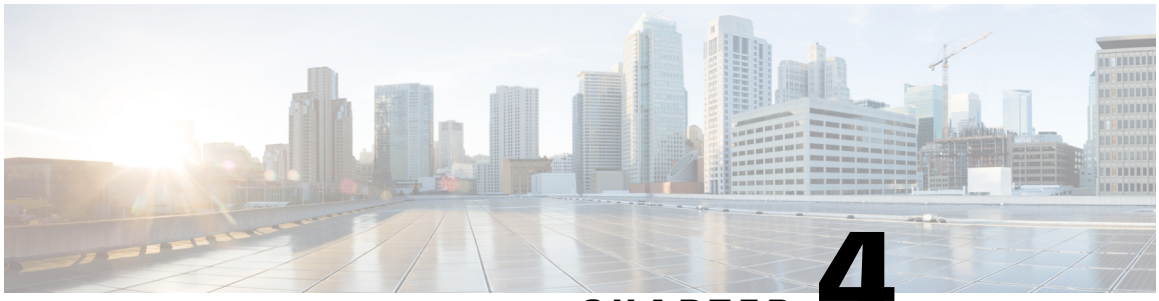
Server Information	Overview	Displays server properties, such as the manufacturer name and product name, and Server Summary, CPU Processors, and CPU Cores.
	Inventory	Displays detailed information about CPUs, Memory, IO, Storage, BIOS, CIMC, and PCI.
	Status	Displays the health of the subsystems on your server such as CPUs, memory, storage, Peripheral Component Interconnect (PCI) devices, BIOS, and CIMC.
	Sensors	Displays current sensor readings, such as memory temperature and error codes (ECC), from Intelligent Platform Management Interface (IPMI). **Note** If the blade server crashes during the stress test and the SEL displays double ECC error after booting up, replace the affected DIMM on the server.
Diagnostic Tools		Enables you to run various types of diagnostic tests to detect server failures. For more information about Diagnostic Tools, see chapter *Diagnostic Tools* of *Cisco UCS Server Configuration Utility, Release 4.0(13) User Guide* at https://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/sw/ucsscu/user/guide/413/Cisco_UCS_SCU_User_Guide_4_13.html.

Logs		Displays the System Log and System Event Log of your server using the links to the following windows: • System Logs • System Event Log For more information about Logs, see chapter *Viewing Logs* of *Cisco UCS Server Configuration Utility, Release 4.0(13) User Guide* at https://www.cisco.com/c/en/us/td/docs/unified_computing/ucs/sw/ucsscu/user/guide/413/Cisco_UCS_SCU_User_Guide_4_13.html.

The following table lists and describes all the icons in the diagnostics tool that you can use to perform specific tasks.

Table 4: Toolbar Buttons

Toolbar Icon	Name	Function
	Save Logs	Saves logs to a USB drive.
	Refresh	Refreshes the content area, if supported.
	Enter CLI mode	Returns to the CLI mode.
	Reboot	Reboot the server.



CHAPTER 4

Using Cisco UCS Blade Server Diagnostics Test Components

This chapter contains the following sections:

- About the Cisco UCS Blade Server Diagnostics Test Components, page 13

About the Cisco UCS Blade Server Diagnostics Test Components

The diagnostics tool provides several options for you to run and review the diagnostics tests for your Cisco UCS Blade Servers. The following table describes the various diagnostics options. The table also outlines the test components by their functions.

Table 5: Diagnostics Test Components and Functions

Diagnostic Test Component	Function
Memtest 86	Runs memory tests when the server is booting up. The components that are tested are multiple CPU caches and memory DIMMs.
Quick Tests	Quickly checks the status of a server or runs sanity checks on the status of individual subsystems of a server. The components that you can test using this option are CIMC, CPU, storage, and memory.
Comprehensive Tests	Runs exhaustive tests on a server or an independent subsystem of a server. Use these tests to stress the subsystems and report errors. You can run comprehensive tests on CIMC, CPU, memory, and video.
Quickmem Tests	Runs diagnostics of your server memory with different patterns, chunk sizes, and loops. Each pmem2 test in Quickmem Test has its own parameters (patterns, chunk size, loops and size of memory).

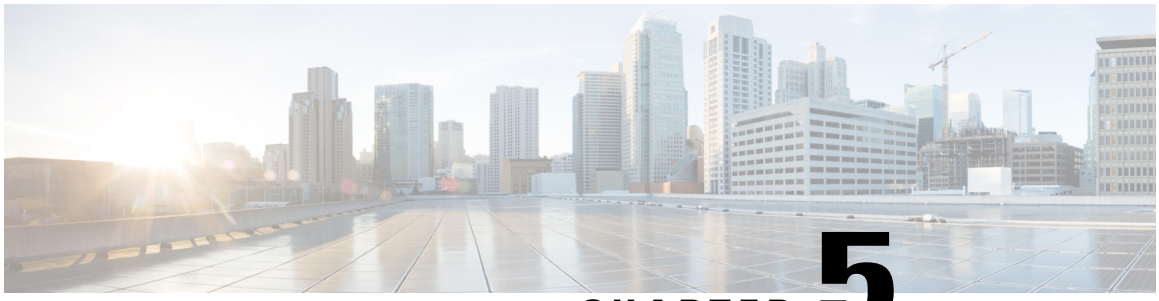
Diagnostic Test Component	Function
Test Suite	Creates a suite of tests using tests from the comprehensive test options to customize per your requirements. You can choose any combination of tests as you like (using a check box).
Tests Log Summary	Displays an error log and analysis of all the tests that you have run. You can use four filters to sort the logs: Name, Test Suite, Status, and Result.

The following table lists the tests by their functional areas.

Table 6: Diagnostics Tests by Functional Area

Functional Area	Test Name	Description
CIMC	CIMC Selftest	Uses the `ipmitool` to verify that CIMC is operating and is able to provide IPMI data.
CPU	CPU Stress	Stress tests the CPUs.
	CPU Stream	Stress tests the CPU using the stream benchmark.
	CPU Cache	Stress tests the cache in-parallel on all processors.
	CPU Register	Tests the CPU register access.
Memory	Memory Noise	Checks the susceptibility of memory cells that are being affected by signal transactions and cell content changes in the memory array.
	Memory Random	Sequentially writes random data to memory, verifies, writes a complement, verifies, and increments seed for the next loop.
	Memory March	For each loop, writes 0, reads 0/writes 1 (up direction), reads 1, writes 0/reads 0 (down direction) .
	Memory Walk	For each loop, walks ones, and then walks zeros (64-bit data).
	Memory Address	Based on the memory range that you selected for the test, writes the 32-bit or 64-bit address for each single-word or double-word memory block for each loop.
	Memory Pattern	Uses an 8-bit pattern, which is a random number and its complement, to detect data sensitive errors. The random number sequence is different with each pass, which increases effectiveness with multiple passes.

Functional Area	Test Name	Description
	Memory Butterfly	For each loop, writes and then verifies the address and address complement in the next address (64-bit data).
	Memory Pmem2	Writes or verifies the various patterns including butterfly, prbs, and killer patterns. It supports DDR3 and DDR4 memory types.
Video	Video Memory Stress **Note** This test is not available in Quick test mode.	Runs stress tests on the video memory. The test stresses the graphics card by drawing different graphical patterns on the screen. This test is available in the GUI mode only.
Storage	Storage S.M.A.R.T	Reports the storage Self-Monitoring Analysis and Reporting Technology (S.M.A.R.T) status.
	Storage Selftest	Runs the storage controller self-test. **Note** This test is available on all servers with MegaRAID controllers. This test is not available for B200M2 and B250M2, because these two servers do not come with MegaRAID controllers.



CHAPTER 5

Viewing Server Information

This chapter contains the following sections:

- About Server Information, page 17
- Viewing Server details, page 17

About Server Information

The **Server Information** section displays the following information about your server:

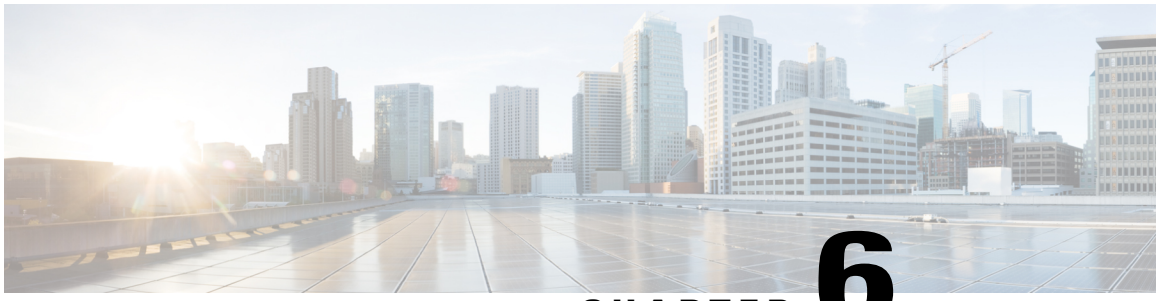
- **Overview—**Displays server properties, such as the manufacturer name and product name, and Server Summary, CPU Processors, and CPU Cores.
- **Inventory—**Displays detailed information about CPUs, Memory, IO, Storage, BIOS, and PCI.
- **Status—**Displays the health of the subsystems on your server such as CPUs, memory, storage, Peripheral Component Interconnect (PCI) devices, BIOS, and CIMC.
- **Sensors—**Displays current sensor readings, such as memory temperature and error codes (ECC), from Intelligent Platform Management Interface (IPMI).

Viewing Server details

Procedure

Step 1 In the **Navigation** pane, expand **Server Information**.

Step 2 Click the option for which you want to display the details in the **Contents** pane.
For example, click **Inventory** to view information about your server's subsystems.



CHAPTER 6

Running Diagnostic Tests Using the GUI

This chapter contains the following sections:

- About Quick Tests, page 19
- Running Quick Tests, page 19
- About Comprehensive Tests, page 20
- Running Comprehensive Tests, page 20
- About Quickmem Tests, page 20
- Running Quickmem Tests, page 21
- About Test Suites, page 21
- Running Tests in a Test Suite, page 21
- Saving Logs to an External USB Drive, page 22

About Quick Tests

Quick tests performs a quick diagnostics of your server components to determine any hardware issues or failures. Depending on the Cisco UCS Server that you are using and the memory available on your server, these tests usually take 20 to 30 minutes to quickly test the overall functionality of your main subsystems.

Running Quick Tests

Procedure

Step 1 In the **Navigation** pane, expand **Diagnostic Tools**.

Step 2 Expand **Tests**.

Step 3 Click **Quick Tests**.

Step 4 In the **Contents** pane, click **Run all Quick Tests**.

Note You can run all quick tests, or expand **Quick Tests** to choose individual options.

Step 5 Click **Tests log Summary** to view all tests that are currently in the queue.
The tests are run in the order as listed in the **Test Suite** table. The results are displayed in the **Test Status** area in the **Contents** pane.

Step 6 To clear the system events log, in the **Contents** pane, click **Clear SEL**.

About Comprehensive Tests

Comprehensive tests can run for several hours or days. These tests run exhaustive burn-in tests on your server, such as stress tests. The tests are designed to test multiple hardware components and find issues that might be caused by multiple components on your server.

Running Comprehensive Tests

You can customize comprehensive tests to diagnose specific conditions based on your requirements.

Procedure

Step 1 In the **Navigation** pane, expand **Diagnostic Tools**.

Step 2 Expand **Tests**.

Step 3 Click **Comprehensive Tests**.

Step 4 In the **Contents** pane, click **Run all comprehensive tests**.

Note You can run all comprehensive tests, or expand **Comprehensive Tests** to choose individual options.

Step 5 Click **Tests log Summary** to view all tests that are currently in the queue.
The test is run in the order as listed in the **Test Suite** table. The results are displayed in the **Test Status** area in the **Contents** pane.

Step 6 To clear the system events log, in the **Contents** pane, click **Clear SEL**.

About Quickmem Tests

Quickmem test performs a quick diagnostics of your server memory with different patterns, chunk sizes, and loops. Each pmem2 test in Quickmem Test has its own parameters (patterns, chunk size, loops, and size of memory).

Running Quickmem Tests

Procedure

Step 1 In the **Navigation** pane, expand **Diagnostic Tools**.

Step 2 Expand **Tests**.

Step 3 Click **Quickmem Tests**.

Step 4 In the **Contents** pane, click **Run all quickmem tests**.

Note You can run all quickmem tests, or expand **Quickmem Tests** to choose individual options.

Step 5 Click **Tests log Summary** to view all tests that are currently in the queue.
The tests are run in the order as listed in the **Test Suite** table. The results are displayed in the **Test Status** area in the **Contents** pane.

Step 6 To clear the system events log, in the **Contents** pane, click **Clear SEL**.

About Test Suites

You can run more than one test at the same time using a test suite. Each test that you select is run consecutively, and the results are displayed in the **Test Status** area in the **Contents** pane.

Running Tests in a Test Suite



Note Running tests in a suite is available from the GUI mode only.

Procedure

Step 1 In the **Navigation** pane, expand **Diagnostic Tools**.

Step 2 Click **Test Suite**.

Step 3 In the **Contents** pane, check the check box for the tests that you want to run in the suite.

Step 4 In the **Contents** pane, click **Run Tests Suite**.
The tests are added to the **Test Suite** queue.

Step 5 In the **Navigation** pane, click **Tests Log Summary** to view the execution status of these tests.

Saving Logs to an External USB Drive

Perform this procedure to save the logs in an external USB drive.

Before You Begin

Ensure that you have a USB drive with adequate space available to save logs.

Procedure

Step 1 Plug the USB drive.

Step 2 From the menu bar choose **Virtual Media** > **Map Removable Disk...**.
Virtual Media - Map Removable Disk window is displayed.

Step 3 Select the USB disk drive from the drop-down list.

Note Ensure that the USB is not open or accessed by any other program on the computer. If the USB is being accessed, it mounts as a read only disk. You cannot save logs in a USB which is in read only mode.

Step 4 Click **Map Device**.

Step 5 From the toolbar click **Save Logs** icon.

Step 6 Click **Yes**
Save window is displayed.

Step 7 Enter the desired file name in **File Name** field.

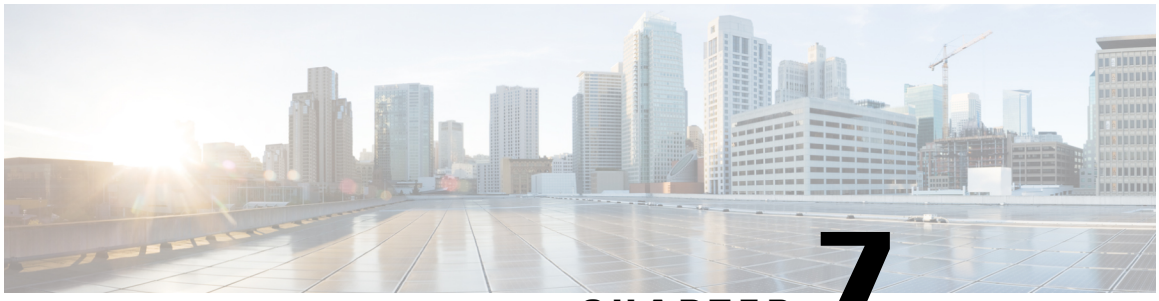
Step 8 Click **Save**.

Step 9 Click **OK**.
The logs are saved as ***.tar.gz** file.

To view the saved file, first unmap the USB drive.

Step 10 From the menu bar choose **Virtual Media** > **Map Removable Disk...**.

Step 11 Click **Yes** to confirm.
You can now access the saved log file in the USB drive.



CHAPTER 7

Running Diagnostics Tests Using the CLI

This chapter contains the following sections:

- About Running Tests Using the CLI, page 23
- Running Tests Using the CLI, page 23
- Saving Logs to an External USB Drive Using the CLI, page 24

About Running Tests Using the CLI

You can run both Comprehensive and Quick tests from the CLI, as well as individual tests. Running tests in a test suite is not available in the CLI.

Running Tests Using the CLI

Before You Begin

To start running CLI commands, choose the **Offline Diagnostic (CLI)** option from the Cisco UCS ME Server Diagnostics splash screen, or click the **Enter CLI mode** button from the GUI mode.

Procedure

	Command or Action	Purpose
Step 1	diag# {**cimc** | **clear** | **comprehensive cpu** | **exit** | **gui** | **memory** | **pci** | **quick** | **reboot** | **saveusb** | **server** | **show** | **smbios**}	Type the help ? after the command to view a list of subcommands. For a detailed list of all tests that are available from the CLI, see CLI Tests and Descriptions, on page 27.

The following example shows how to run a cimc selftest:

```
diag# cimc selftest
```

```
    Running cimc selftest:
    CimcSelfTest passed
diag#
```

Saving Logs to an External USB Drive Using the CLI

Before You Begin

- To start running CLI commands, choose the **Offline Diagnostic (CLI)** option from the Cisco UCS ME Server Diagnostics splash screen, or click the **Enter CLI mode** button from the GUI mode.
- Ensure that you have a USB drive with adequate space available to save logs.

Procedure

Step 1 Plug the USB drive.

Step 2 From the menu bar choose **Virtual Media** > **Map Removable Disk...**.
Virtual Media - Map Removable Disk window is displayed.

Step 3 Select the USB disk drive from the drop-down list.

Note Ensure that the USB is not open or accessed by any other program on the computer. If the USB is being accessed, it mounts as a read only disk. You cannot save logs in a USB which is in read only mode.

Step 4 Click **Map Device**.

Step 5 diag# **saveusb**

Step 6 Press **Enter** to confirm.
The log files are saved in the external USB drive in a folder with timestamp.

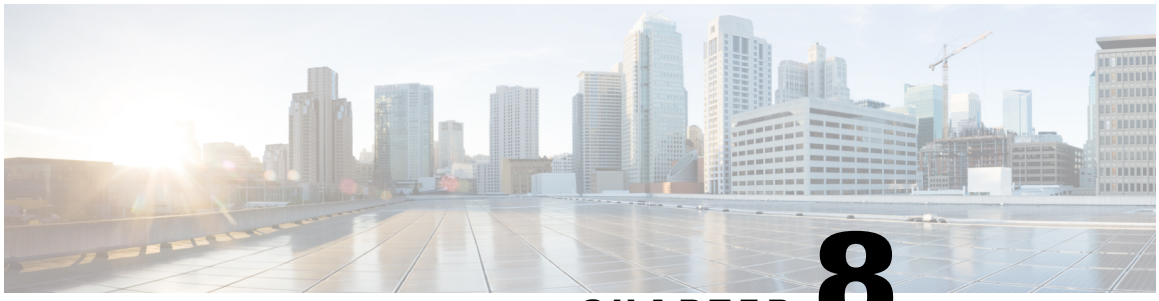
To view the saved files, first unmap the USB drive.

Step 7 From the menu bar choose **Virtual Media** > **Map Removable Disk...**.

Step 8 Click **Yes** to confirm.
You can now access the saved log file in the USB drive.

The following example shows how to save logs:

```
diag# saveusb
     Saving logs to USB drive
Please insert USB drive and then hit return
Getting USB info, may take some time...
Found USB drive: /dev/sdd1
Mouting at: /mnt/ServerDiagsMount/
Log saved  to /mnt/ServerDiagsMount/ServerDiags.Jul_12_12.21_20_08
diag#
```



CHAPTER 8

Viewing Logs

This chapter contains the following sections:

- Viewing System Logs, page 25
- Viewing System Event Logs, page 25

Viewing System Logs

By viewing system logs, you can determine if any error has occurred and take the required corrective action.

The system log file displays events that are logged by the operating system components. These events are often predetermined by the operating system itself. System log files display information about device changes, device drivers, system changes, events, and operations.

Procedure

Step 1 In the **Navigation** pane, expand **Logs**.

Step 2 Click **System Logs**.

Step 3 From the **Filter** drop-down list, choose a filter.

Step 4 Click **Go**.
The system log is displayed.

Viewing System Event Logs

The system event log file displays events that are logged by your server.

Procedure

Step 1 In the **Navigation** pane, click **Logs**.

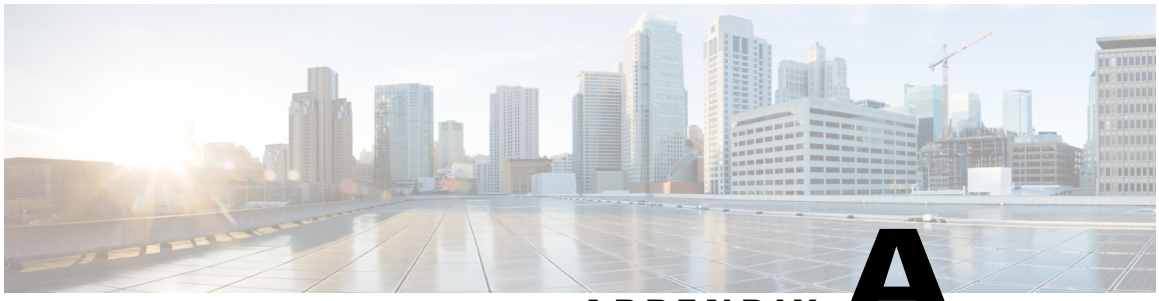
Step 2 Click **System Event Log**.

Step 3 In the **Contents pane** from the **Filter** drop-down list, choose one of the following.

- **Description—**Displays all the system event logs with the specified description and severity.
- **Severity—**Displays only those errors from the logs that are of the specified severity.

Step 4 Click **Go** to view the results.

Step 5 Click **Clear Filter** to clear an existing filter.



APPENDIX A

Command Reference for the CLI

This chapter contains the following topics:

- CLI Tests and Descriptions, page 27
- CLI Additional Commands, page 29

CLI Tests and Descriptions

The following table lists the CLI commands for the corresponding diagnostics tests. The tests are listed by category.

Note Some tests are only available as comprehensive tests.

Category	Test Name	CLI Command	Options
CIMC	Selftest	cimc selftest	[count][duration] • [count]—Number of loops to run; default 2. • [duration]—Number of minutes to run the test; the default is 10.
CPU	Stress	cpu stress	[duration] The duration in minutes. The default is 2.
	Stream	cpu stress	No options are available.
	Temperature	cpu temperature	No options are available.
	Cache	cpu cache	[duration] The duration in minutes. The default is 4.

Category	Test Name	CLI Command	Options
	Register	cpu register	No options are available.
Memory	Noise	memory noise	[loops][size] • [loops—Number of loops to run; default 5 • [size]—Size of memory to test (example: 10 GB, 500 MB); the default is all. You can also run this test in the background.
	Random address	memory random	[loops][size] • [loops]— Number of loops to run; default 1. • [size]—Size of memory to test (example: 10 GB, 500 MB); the default is all. You can also run this test in the background.
	March	memory march	[loops][size] • [loops]—Number of loops to run; default 2. • [size]—Size of memory to test (example: 10 GB, 500 MB); the default is all. You can also run this test in the background.
	Walk	memory walk	[loops][size] • [loops]—Number of loops to run; default 1. • [size]—Size of memory to test (example: 10 GB, 500 MB); the default is all. You can also run this test in the background.
	Address	memory address	[loops][size] • [loops]—Number of loops to run; default 1. • [size]—Size of memory to test (example: 10 GB, 500 MB); the default is all. You can also run this test in the background.

Category	Test Name	CLI Command	Options
	Pattern	memory pattern	[loops][size] • [loops]—Number of loops to run; default 1. • [size]—Size of memory to test (example: 10 GB, 500 MB); the default is all. You can also run this test in the background.
	Butterfly	memory butterfly	[loops][size] • [loops]—Number of loops to run; default 2. • [size]—Size of memory to test (example: 10 GB, 500 MB); the default is all. You can also run this test in the background.
	Pmem2	memory pmem2	[loops][size] [checker][chunk] • [loops]—Number of loops to run; the default is 1. • [size]—Size of memory to test (example: 10 GB, 500 MB); the default is all. • [checker]—checker mode(0=prbs+killer, 1=butterfly, 2=prbs, 3=killer, 4=prbs addr); the default is 0. • [chunk]—chunk size (0=big chunk, 1=5MB chunk); the default is 0.
Storage	Smart	storage smart	No options are available.
	Selftest	selftest	[duration] Duration in minutes; the default is 10.

CLI Additional Commands

The following table lists the additional commands that you can run in the CLI for the diagnostics tool.

Command Name	Definition	CLI Command
Comment	Adds a comment entry into a test script that you create for batch tests.	!
Run CIMC tests	Runs CIMC self-tests.	cimc selftest
Switch to GUI	Returns to the GUI mode.	gui

Command Name	Definition	CLI Command
List devices on PCI	Lists all devices that are available on the PCI bus.	pci
Reboot server	Reboots the server.	reboot
Save logs	Save the logs to the USB drive.	saveusb
Server information	Displays the basic server details, such as CPU, memory, I/O, storage, BIOS, CIMC.	server
BIOS information	Displays the BIOS information.	smbios
Clear logs	Clears the log and the System Event Logs (SEL) log for the diagnostics tool.	clear diaglogs sellogs
Stop	Stops a test that is already running.	stop (example, memory noise stop)
Help	Displays a list of available commands and sub-commands.	?
Scroll window	Scrolls the CLI window down or up.	Right-click the scroll bar to scroll up and left-click the scroll bar to scroll down.