



# Diagnostic Tests

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## Diagnostic Tests Overview

Diagnostics is a standalone utility that runs on the E-Series Server or NCE independent of the operating system or applications running on the server. If you experience problems with the E-Series Server or NCE, you can use diagnostics tests to run a preliminary check and isolate the problem. Diagnostic tests can be executed on the server CPU, memory, and block devices. Block devices include hard drive, USB drive, and SD cards.

If the diagnostic tests pass successfully, it indicates that there is no problem with the server CPU, memory, or block devices. The problem could be with some other hardware component or with the software configuration. Open a service request with Cisco Technical Assistance Center (TAC) at: <http://www.cisco.com/cisco/web/support/index.html> to isolate the problem.

If the diagnostic tests fail, open a service request with Cisco TAC for further assistance.



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**Caution**

Diagnostic tests are non-destructive, but if there is a power or equipment failure when the tests are running, there is a possibility that the disk data might get corrupted. We highly recommend that you backup the data before running these tests.

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### Basic Workflow for Executing Diagnostic Tests

- 1 Backup data.
- 2 The diagnostics image is pre-installed on the E-Series Server or NCE at the time of purchase. You can also choose to download the most current diagnostics image from a specified FTP or HTTP server onto the CIMC internal repository.
- 3 Mount the diagnostics image onto the HDD virtual drive of a USB controller.

- 4 Set the boot order to make the Internal EFI Shell as the first boot device.
- 5 Reboot the server.

**Note**

- For E-Series Servers and SM E-Series NCE—On server reboot, the EFI Shell displays.
- For EHWIC E-Series NCE and NIM E-Series NCE—On server reboot, the AMIDdiag EFI Shell displays.

- 6 Run diagnostic tests from the EFI Shell or the AMIDdiag EFI Shell as appropriate.
- 7 Reset the virtual media boot order to its original setting.

## Mapping the Diagnostics Image to the Host

### Before You Begin

- Backup data.
- Log in to CIMC as a user with admin privileges.
- The diagnostics image is pre-installed on the E-Series Server at the time of purchase. You can also choose to download the most current diagnostics image from a specified FTP or HTTP server onto the CIMC internal repository. See [Obtaining Software from Cisco Systems](#).

**Note**

If you start an image update while an update is already in process, both updates will fail.

### Procedure

- Step 1** In the **Navigation** pane, click the **Server** menu.
- Step 2** On the **Server** tab, click **Host Image Mapping**.
- Step 3** From the **Host Image Mapping** page, click **Add Image**.  
The **Download Image** dialog box opens. Complete the following fields:

Name	Description
Download Image From drop-down list	<p>The type of remote server on which the image is located. This can be one of the following:</p> <ul style="list-style-type: none"> <li>• <b>FTP</b></li> <li>• <b>HTTP</b></li> </ul> <p><b>Note</b> Depending on the remote server that you select, the fields that display change.</p>

Name	Description
<b>FTP or HTTP Server IP Address</b> field	The IP address of the remote FTP or HTTP server.
<b>FTP or HTTP File Path</b> field	<p>The path and filename of the remote FTP or HTTP server.</p> <p>The path and filename can contain up to 80 characters.</p> <ul style="list-style-type: none"> <li>• If you are installing a host image, that image must have .iso or .img as the file extension.</li> <li>• If you are installing a diagnostics image, that image must have .diag as the file extension.</li> </ul>
<b>Username</b> field	<p>The username of the remote server.</p> <p>The username can contain 1 to 20 characters.</p> <p><b>Note</b> If the username is not configured, enter <b>anonymous</b> for the username and any character(s) for the password.</p>
<b>Password</b> field	<p>The password for the username.</p> <p>The password can contain 1 to 20 characters.</p> <p><b>Note</b> If the username is not configured, enter <b>anonymous</b> for the username and any character(s) for the password.</p>

**Step 4** Click **Download**.

The **Host Image Mapping** page opens. You can view the status of the image download in the **Host Image Mapping Status** area. After the image is downloaded and processed successfully, refresh the page. After the page refreshes, the new image displays in the **Image Information** area.

**Step 5** From the **Image Information** area, select the image to map, and then click **Map Selected Image**.

The image is mapped and mounted on the virtual drive of a USB controller.

**Step 6** Set the boot order to make **EFI Shell** as the first boot device.

To set the boot order, see [Configuring the Server Boot Order Using the CIMC GUI](#).

**Step 7** Reboot the server.

The EFI Shell appears.

**What to Do Next**

Run diagnostic tests.

# Running Diagnostic Tests—E-Series Servers and SM E-Series NCE

From the EFI shell, use the following procedure to run diagnostic tests on the E-Series Servers and the SM E-Series NCE.

## Before You Begin

- Back up data. All tests are non-destructive, but if there is power or equipment failure when the tests are running, there is a possibility that the disk data might get corrupted. We highly recommend that you back up data before executing these tests.
- Use the CIMC CLI or the CIMC GUI to download and map the diagnostics image onto the HDD virtual drive of the USB controller.
- Reboot the server. The EFI shell displays.

## Procedure

	Command or Action	Purpose
<b>Step 1</b>	Shell > <b>dir</b> <i>virtual-media-drive-name:</i>	Displays all the file packages that exist in the specified virtual media drive. The drive name starts with fs0 and can be fs0, fs1, fs2, and so on.  <b>Note</b> Make sure that you add a colon after the virtual media drive name. For example, <b>dir fs1:</b>
<b>Step 2</b>	Shell > <i>virtual-media-drive-name:</i>	Enters the virtual media drive in which the diagnostic file is located.
<b>Step 3</b>	Virtual Media Drive :\> <b>cp</b> <i>package-file-name dsh.pkg</i>	Copies the package file for which you are running diagnostics into the diagnostics shell package file.
<b>Step 4</b>	Virtual Media Drive :\> <b>dsh</b>	Enters the Diagnostics Shell. At the confirmation prompt, answer <b>y</b> .
<b>Step 5</b>	Server: SRV > <b>run all</b>	Executes all available diagnostic tests and displays the progress and status of the tests. Diagnostic tests are run on the server CPU, memory, and block devices. Block devices include hard drive, USB drive, and SD cards.  To execute a specific diagnostic test on the server, use the <b>run test-name</b> command where <i>test-name</i> can be one of the following: <ul style="list-style-type: none"> <li>• <b>cpux64</b>—CPU diagnostic test.</li> <li>• <b>diskx64</b>—Block devices diagnostic test. Block devices include hard drive, USB drive, and SD cards.</li> <li>• <b>memoryx64</b>—Memory diagnostic test.</li> </ul> <b>Note</b> Diagnostic tests can run for approximately 10 minutes.

	Command or Action	Purpose
<b>Step 6</b>	(Optional) Server: SRV > <b>results</b>	Displays a summary of the diagnostic test with <b>Passed</b> or <b>Failed</b> test status.  <b>Note</b> The summary report indicates the number of tests that failed and passed. It does not provide information about which tests failed or passed. To determine which tests failed and passed, see the output of the <b>run all</b> command.
<b>Step 7</b>	(Optional) Server: SRV > <b>show</b>	Displays a list of global parameters and diagnostic test modules that were administered on the server.
<b>Step 8</b>	Server: SRV > <b>exit</b>	Exits from Diagnostic Shell.
<b>Step 9</b>	Open a service request with Cisco TAC.	If the diagnostic tests pass successfully, it indicates that there is no problem with the server CPU, memory, or block devices. The problem could be with some other hardware component or with the software configuration. Open a service request with Cisco TAC to isolate the problem.  If the diagnostic tests fail, open a service request with Cisco TAC for further assistance.

This example runs all diagnostic tests:

```
Shell > dir fs1:
 06/27/12 07:48p           1,435,424  Dsh.efi
 06/27/12 08:03p           10,036   dsh-e140d.pkg
 06/25/12 06:00p           10,140   dsh-e140s.pkg
 06/27/12 08:04p           10,042   dsh-e160d.pkg
    4 File(s)    1,465,642 bytes

Shell > fs1:
fs1:\> cp dsh-e140d.pkg dsh.pkg
copying fs0:\OBD\dsh-e140d.pkg -> fs0:\OBD\dsh.pkg
- [ok]
fs1:\> dsh
Diagnostics is a standalone utility that runs on the server module independent
of the operating system or applications running on the module.All tests are
non-destructive, but there is a possibility of disk data corruption during
power or equipment failure when the tests are in progress. Therefore, before
executing these tests, we highly recommend that you backup the data.

For questions or concerns with this utility, please open a Service Request
with Cisco TAC at http://www.cisco.com/cisco/web/support/index.html

(Y)es to continue test. (N)o to exit(y/n): Y
Cisco Diagnostics Shell 1.03(0.3) Thu 06/28/-16:35:08.95-canis-diag@cisco.com
UCS-E140D-M1/K9:SRV>

Server: SRV > run all
Server: SRV > results
Test Name      : all
Test Status    : Passed
Failed/Run History : 0/17
Start Time     : 06/27/12 14:38:19
End Time       : 06/27/12 14:43:36
Diag Version   : 1.03(0.3) Mon 04/02/-17:07:57.19-canis-diag@cisco.com
Board S/N      : FOC160724BY
```

```
Server: SRV > show
Server: SRV > exit
```

### What to Do Next

Reset the virtual media boot order to its original setting.

## Running Diagnostic Tests—EHWIC E-Series NCE and NIM E-Series NCE

Diagnostic tests are run on the server CPU, memory, and block devices. Block devices include SSD drive and USB drive.

### Before You Begin

- Back up data. All tests are non-destructive, but if there is power or equipment failure when the tests are running, there is a possibility that the disk data might get corrupted. We highly recommend that you back up data before executing these tests.
- Delete previous versions of AMIDIAG\_OBD.log files if any.
- Use the CIMC CLI or the CIMC GUI to download and map the diagnostics image onto the HDD virtual drive of the USB controller.
- Launch the KVM console.
- Reboot the server. The AMIDIag EFI Shell displays in the KVM console:

```
Found AMI DIAG on fs0:
Diagnostics is a standalone utility that runs on the server module independent
of the operating system or applications running on the module. All tests are
non-destructive, but there is a possibility of disk data corruption during
power or equipment failure when the tests are in progress. Therefore, before
executing these tests, we highly recommend that you backup the data.
```

```
For questions or concerns with this utility, please open a Service Request
with Cisco TAC at http://www.cisco.com/cisco/web/support/index.html
```

```
Enter 'q' to quit, any other key to continue:
```

```
fs0:\>
```

### Procedure

	Command or Action	Purpose
<b>Step 1</b>	From the AMIDIag EFI Shell, press any key (except q) to run the diagnostic tests.	Executes all available diagnostic tests and displays the progress. After the tests are completed, the <b>Pass</b> or <b>Fail</b> test status displays.  <b>Note</b> Diagnostic tests can run for approximately 10 minutes.
<b>Step 2</b>	(Optional) fs0:\> <b>type AMIDIAG_OBD.log</b>	Displays the Onboard Diag log files with details.

	<b>Command or Action</b>	<b>Purpose</b>
<b>Step 3</b>	Server: fs0:\> <b>exit</b>	Exits from AMIDiag EFI Shell.
<b>Step 4</b>	Open a service request with Cisco TAC.	If the diagnostic tests pass successfully, it indicates that there is no problem with the server CPU, memory, or block devices. The problem could be with some other hardware component or with the software configuration. Open a service request with Cisco TAC to isolate the problem.  If the diagnostic tests fail, open a service request with Cisco TAC for further assistance.

### **What to Do Next**

Reset the virtual media boot order to its original setting.

