



# 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 the 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, FTPS, HTTP, or HTTPS 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

|               | Command or Action   | Purpose   |
|---------------|---|---|
| <b>Step 1</b> | Server# <b>scope remote-install</b>   | Enters the remote install command mode.   |
| <b>Step 2</b> | Server /remote-install #<br><b>download-image</b> {ftp   ftps   http   https} <i>server-ip-address path /filename</i><br>[ <i>username username password password</i> ] | Downloads the image from the specified remote server onto the CIMC internal repository. The diagnostics image must have .diag as the file extension. The remote server can be a FTP, FTPS, HTTP, or HTTPS server. If the remote server requires user authentication, you must add the username and password of the remote server.<br><br><b>Note</b> If the image file exceeds the size limit, an error message is displayed. |
| <b>Step 3</b> | (Optional) Server /remote-install #<br><b>show detail</b>   | Displays the status of the diagnostics image download.  |

|               | Command or Action   | Purpose  |
|---------------|---|--|
| <b>Step 4</b> | Server /remote-install #<br><b>map-diagnostics</b>        | Mounts the image on the HDD virtual drive of the USB controller. |
| <b>Step 5</b> | (Optional) Server /remote-install #<br><b>show detail</b> | Displays the status of the diagnostics image mapping.            |

This example maps a diagnostics image:

```
Server# scope remote-install
Server /remote-install # download-image ftp 10.20.34.56 pub/diagnostics-image.diag
---
Server /remote-install # show detail
Host Image Info:
  Name: DiagnosticsImage.diag
  Size: 6626848
  Last Modified Time: Fri, 12 Aug 2011 21:13:27 GMT
  Host Image Status: Download Successful!!
Server /remote-install # map-diagnostics
---
status: ok
---
Server /remote-install # show detail
Host Image Info:
  Name: DiagnosticsImage.diag
  Size: 6626848
  Last Modified Time: Fri, 12 Aug 2011 21:13:27 GMT
  Host Image Status: Image mapped successfully!!
```

### What to Do Next

- 1 Set the boot order to make **EFI Shell** as the first boot device.
- 2 Reboot the server. The EFI Shell appears.
- 3 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><br><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.<br><br><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 ><br><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><br><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 :><br><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.<br><br>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. |
| <b>Step 6</b> | (Optional) Server: SRV ><br><b>results</b>                           | Displays a summary of the diagnostic test with <b>Passed</b> or <b>Failed</b> test status.<br><br><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 ><br><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.   |

|  | Command or Action | Purpose   |
|--|-------------------|---|
|  |                   | 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.<br><br><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>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.<br><br>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.