Hardware Diagnostic Tool for Check Point Appliances

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Introduction

The Hardware Diagnostic Tool is part of the Check Point appliance line. By checking the appliance’s hardware, the diagnostic tool ensures that the appliance is fully functional and complies with Check Point specifications.

Note - Failure to pass some or all of the Diagnostic tests does not necessarily indicate a failed or substandard appliance. If the appliance fails a test, contact Check Point Support for advice.

Supported Models

As of NGX R65, The following models are supported:

- Power-1 9070 and 5070
- UTM-1 3070, 2070, 1070, 570 and 270
- VSX-1 9095, 9075 and 3075
- Connectra 9072, 3070, and 270
- Smart-1 3074
Starting the Hardware Diagnostic Tool

To start the hardware diagnostic tool, turn on the appliance and wait for the following message to appear on the LCD screen:

```
Starting in 5 seconds
```

Push any button to enter the boot menu:

```
Select: Start normal
```

Using the arrow buttons, navigate to the **HW Diagnostics** option and push Enter.

Using the Hardware Diagnostic Tool

The Hardware Diagnostic Tool runs a:

1. General test
2. Memory test
3. Disk test
4. Network test

Except the network test which requires user interaction, the tests run in consecutive order.

General Test

The General test checks the internal components of the appliance and compares them to a predefined database, ensuring that the appliance complies with Check Point specifications.

```
1/4 General
```

The General test inspects:
- The number of processors
- Processor speed
- The amount of memory
- The size of the hard disk

```
2/4 Memory: 4096M
```

Memory Test

The memory test performs read and write operations to all memory locations, testing the memory components.

During the memory test, the following information displays:
- Memory size in Megabytes
- Percentage of the test completed
- Time elapsed since the start of the test

Disk Test

The disk test checks for unrecoverable bad blocks on all hard disks. If the appliance is equipped with a RAID subsystem, all hard disks are checked. The disk test is nondestructive — no data is written to the disk or erased from it during the test.

During disk test, the following information displays:
- Size of the disk (or RAID virtual disk), in Gigabytes
- Percentage of the test finished
- Elapsed time since the beginning of the test

Network Test

The network test checks all the network ports for connectivity. The test cycles through all the ports one-by-one and checks for:
- A link on the port
- The ability to send and receive network traffic through the port

The test can be performed with a loopback plug, or a regular network cable connected to a switch. Some appliance models are shipped with a loopback plug:

<table>
<thead>
<tr>
<th>Loopback plug</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper RJ-45 loopback plug (supplied with appliance)</td>
<td></td>
</tr>
<tr>
<td>Fiber optic loopback plug for fiber optic ports (supplied with the fiber line card kit)</td>
<td></td>
</tr>
</tbody>
</table>
To perform the network test:

1. Disconnect all ports
2. Connect the appropriate loopback plug to the port number displayed on the LCD screen, for example Lan1:

   ![Loopback Plug](image)

   Within 10 seconds, the port is tested for link state, and traffic is sent and received. Once the port has been successfully tested, the LCD screen displays the name of the next port to be tested.

   **Note** - You can use a regular network cable, connected to a switch. This will test the port’s link status but will not test the port’s ability to send and receive traffic.

   **TIP:** Pressing ESC skips the current port, and tests the next.

### Skipping a Test

To skip a test in progress, push the ESC button while the test is running. The current test stops and the message *100% skipped* is displayed. Push ENTER to start the next test. At the end of the test cycle a *Partial Test* message appears:

![Partial Test](image)

**Note** - During the Network test, the ESC button skips the current port, not the entire test.

### Failed Diagnostic Test

When one of the tests fails, message similar to type blow appears:

![Disk Fail](image)

Push the ENTER button to begin the next test.

### Completing the Test

Once all tests have completed successfully, one of the following messages will appear on the LCD screen:

- When a diagnostic test completes successfully:
  
  ![Test Complete](image)
• When one or more tests fail:

![Image of Hardware Diagnostic Tool interface]

Test is Finished
Appliance Failed
After the test has finished, power down the appliance and, depending on the test results, either:

- Reboot to load the default image
- Contact Check Point Support for an RMA

Logging

Each time the Hardware Diagnostic Tool is run, a log file is created that contains detailed information regarding the tests. Log files are located in $FWDIR/log and are collected automatically through `cpinfo`.