Configuring Online Diagnostics

This chapter describes how to configure the online diagnostics on the Catalyst 3560 switches.

Note For complete syntax and usage information for the commands used in this chapter, see the switch command reference at this URL:

http://www.cisco.com/en/US/products/hw/switches/ps5528/prod_command_reference_list.html

This chapter consists of these sections:

- Understanding How Online Diagnostics Work, page 48-1
- Running Online Diagnostic Tests, page 48-3

Understanding How Online Diagnostics Work

With online diagnostics, you can test and verify the hardware functionality of the switch while the switch is connected to a live network.

The online diagnostics contain packet switching tests that check different hardware components and verify the data path and the control signals.

The online diagnostics detect problems in these areas:

- Hardware components
- Interfaces (Ethernet ports and so forth)
- Solder joints

Online diagnostics are categorized as on-demand, scheduled, or health-monitoring diagnostics. On-demand diagnostics run from the CLI; scheduled diagnostics run at user-designated intervals or at specified times when the switch is connected to a live network; and health-monitoring runs in the background.

Scheduling Online Diagnostics

You can schedule online diagnostics to run at a designated time of day or on a daily, weekly, or monthly basis for a specific switch. Use the **no** form of this command to remove the scheduling.

Beginning in global configuration mode, use this command to schedule online diagnostics:

Command	Purpose
diagnostic schedule test {*test_id*	*test_id_range*	**all**	**basic**	**non-disruptive**} {**daily** *hh*:*mm*	**on** *mm dd yyyy hh*:*mm*}	**weekly** *day_of_week hh*:*mm*}	Schedule on-demand diagnostic tests for a specific date and time, how many times to run the test (iterations), and what action to take when errors are found.

This example shows how to schedule diagnostic testing on a specific date and time for a specific switch:

```
Switch(config)# diagnostic schedule test 1,2,4-6 on january 3 2006 23:32
```

This example shows how to schedule diagnostic testing to occur weekly at a certain time for a specific switch:

```
Switch(config)# diagnostic schedule test 1,2,4-6 weekly friday 09:23
```

Configuring Health-Monitoring Diagnostics

You can configure health-monitoring diagnostic testing while the switch is connected to a live network. You can configure the execution interval for each health-monitoring test, whether or not to generate a system message upon a test failure, or to enable or disable an individual test. Use the **no** form of this command to disable testing.

Beginning in global configuration mode, use these commands to configure health-monitoring diagnostics:

Command	Purpose
diagnostic monitor interval test {*test_id*	*test_id_range*} *hour:mm:ss milliseconds day*	Configure the health-monitoring interval of the specified tests. By default, monitoring is disabled.
diagnostic monitor syslog	Enable the generation of a syslog message for health-monitoring test failures. By default, syslog is disabled.
diagnostic monitor threshold test {*test_id*	*test_id_range*} **failure count** *count*	Set the failure threshold for monitoring tests. By default, monitoring is disabled.

Use the **no diagnostic monitor interval test** {*test-id* | *test-id-range*} global configuration command to change the interval to the default value or to zero. Use the **no diagnostic monitor syslog** command to disable generation of syslog messages when a health-monitoring test fails. Use the **diagnostic monitor threshold test** {*test_id* | *test_id_range*} **failure count** command to remove the failure threshold.

This example shows how to configure the specified test to run every 2 minutes:

```
Switch(config)# diagnostic monitor interval test 1 00:02:00 0 1
```
This example shows how to set the failure threshold for test monitoring on a switch:

```
Switch(config)# diagnostic monitor threshold test 1 failure count 50
```

This example shows how to enable the generation of a syslog message when any health monitoring test fails:

```
Switch(config)# diagnostic monitor syslog
```

Running Online Diagnostic Tests

After you configure online diagnostics, you can start diagnostic tests or display the test results. You can also see which tests are configured for each switch and what diagnostic tests have already run.

These sections describe how to run online diagnostic tests after they have been configured:

Starting Online Diagnostic Tests

After you configure diagnostic tests to run on the switch or on individual switches, you can use **start** to begin a diagnostic test.

Beginning in global configuration mode, use this command to start an online diagnostic test:

Command	Purpose
diagnostic start test {*test-id*	*test-id-range*	**all**	**basic**	**non-disruptive**}	Start a diagnostic test on a specific switch.

This example shows how to start a diagnostic test on a specific switch:

```
Switch# diagnostic start test 1
Switch#
06:27:50: %DIAG-6-TEST_RUNNING: Running TestPortAsicStackPortLoopback{ID=1} ...
06:27:51: %DIAG-6-TEST_OK: TestPortAsicStackPortLoopback{ID=1} has completed
successfully Switch#
```

Displaying Online Diagnostic Tests and Test Results

You can display the online diagnostic tests that are configured for specific switches and check the results of the tests using the **show** commands.

To display the diagnostic tests that are configured for a switch and the test results, use these privileged EXEC commands:

Table 48-1   show diagnostic Commands

Command	Purpose
show diagnostic content	Display the online diagnostics configured for a switch.
show diagnostic status	Display whether a switch is running a test.
show diagnostic result detail **show diagnostic result test** [*test_id*	*test_id_range*] [**detail**]	Display the online diagnostics test results.
show diagnostic schedule	Display the online diagnostics test schedule.
show diagnostic post	Display the results of POST. (The same as the **show post** command.)

This example shows how to display the online diagnostics that are configured on a switch:

```
Switch# show diagnostic content
Diagnostics test suite attributes:
    B/* - Basic ondemand test / NA
  P/V/* - Per port test / Per device test / NA
  D/N/* - Disruptive test / Non-disruptive test / NA
    S/* - Only applicable to standby unit / NA
    X/* - Not a health monitoring test / NA
    F/* - Fixed monitoring interval test / NA
    E/* - Always enabled monitoring test / NA
    A/I - Monitoring is active / Monitoring is inactive
    R/* - Switch will reload after test list completion / NA
    P/* - will partition stack / NA

                                                   Test Interval    Thre-
ID    Test Name                       attributes  day hh:mm:ss.ms  shold
====  ================================ ============ =============== =====
 1)    TestPortAsicStackPortLoopback    B*N****A**   000 00:01:00.00 n/a
 2)    TestPortAsicLoopback             B*D*X**IR*   not configured  n/a
 3)    TestPortAsicCam                  B*D*X**IR*   not configured  n/a
 4)    TestPortAsicRingLoopback         B*D*X**IR*   not configured  n/a
 5)    TestMicRingLoopback              B*D*X**IR*   not configured  n/a
 6)    TestPortAsicMem                  B*D*X**IR*   not configured  n/a
```

This example shows how to display the online diagnostic results for a switch:

```
Switch# show diagnostic result
Overall diagnostic result: PASS
Test results: (. = Pass, F = Fail, U = Untested)
1) TestPortAsicStackPortLoopback ---> .
2) TestPortAsicLoopback ------------> .
3) TestPortAsicCam -----------------> .
4) TestPortAsicRingLoopback --------> .
5) TestMicRingLoopback -------------> .
6) TestPortAsicMem -----------------> .
```

This example shows how to display the online diagnostic test schedule for a switch:

```
Switch# show diagnostic scheduleCurrent Time = 14:39:49 PST Tue Jul 5 2005
Schedule #1:
To be run daily 12:00
Test ID(s) to be executed: 1.
```