

# Problem determination and troubleshooting

NE2552E Flex Switch POST error codes, failure modes, and solutions to problems

# Problem determination and troubleshooting overview

**Note:** Before you start any troubleshooting, log into the switch and collect the switch statistics. Run the `stats` command and save the data to a USB flash drive.

## Failure modes

The NE2552E Flex Switch does not have serviceable parts, but has the following failure modes:

1. The switch is not powered on.
2. The power cord or cables are defective or unplugged.
3. The firmware is the incorrect level or the level does not support the port numbering.
4. The QSFP/SFP+ transceiver is not seated properly.
5. The QSFP/SFP+ transceiver is defective or not supported.
6. The software configuration is missing or incorrect.

## Running POST

To ensure that the switch is fully operational, the switch processes a series of tests during power-up or a restart which is also known as POST. These tests may take up to two minutes to complete. The Lenovo Flex System CMM reads the test results and displays them for you. During normal operation, these tests are completed without error, and the green switch Power LED is lit. However, if the switch fails POST, the yellow Error LED on the switch and the system-error LED on the chassis are lit. An event is stored in the event log in the system status panel of the CMM. The specific failure is displayed on the system status I/O module panel of the CMM.

There are two types of POST errors:

- Noncritical
- Critical

A noncritical error applies to one port, and the switch is operational. You can continue to operate the switch; however, you must replace it as soon as possible. When critical errors occur, the switch does not operate.

## POST errors

To view POST results, complete the following steps:

1. Log on to the CMM CLI. If necessary, obtain the IP address of the CMM from your system administrator. The login window opens.
2. Turn off the power to the switch; and then, turn it on again.
3. After POST is completed, the CMM displays the results. Refresh the window to view the POST results. If a critical error occurs, replace the switch. If a noncritical error occurs, see the switch error log for additional details.

The POST error example table on the next page describes the basic critical and noncritical failures. An error code is associated with each failure. Error codes are displayed in the CMM Switch Information window. Be sure to note the applicable error code and corresponding failure. You might have to provide this information when you call for service.

# POST error examples

Diagnostic indicator (in hex)	Failing functional area	Failure criticality
00-7F	Base internal functions	Critical
80-9F	Internal interface errors	Noncritical
A0-AF	External interface errors	Noncritical
B0-FE	Reserved	Noncritical
FF	Switch is good indicator	Operation



## Problem determination and troubleshooting (1 of 3)

The following table lists potential problems that are related to the NE2552E Flex Switch and includes preferred solutions.

Problem	Symptom	Solution
I/O module will not power on	I/O module will not power on	Check the power supply to make sure that there is a proper connection to the power source. Verify the CMM configuration settings. Check the temperature of the switch. If the temperature exceeds the shutdown temperature, it will not power on. Replace the I/O module.
I/O module LEDs are not lit	The I/O module LEDs are not lit. The LEDs are lit for other I/O modules in the same chassis.	Check the I/O module to make sure it is properly inserted to the system. Replace the I/O module if the I/O module does not function normally.
Port link LED is not lit	Port link LED is not lit	<b>Solution 1:</b> Check the port configuration in the firmware (refer to the <i>Command Reference</i> ). If the port is configured with a specific speed or duplex mode, check the other device to make sure that it is set to the same configuration. If the switch port is set to auto-negotiate, make sure that the other device is set to auto-negotiate. <b>Solution 2:</b> Check the cables that connect the port to the other device. Make sure that the cables are connected correctly. Verify that you are using the correct cable type.

## Problem determination and troubleshooting (2 of 3)

Problem	Symptom	Solution
Ethernet network connection missing	Ethernet network connection did not link up	Check the network configuration. Device drivers, firmware and configuration problems cause connection problems.
Chassis midplane unrecognized	I/O module is not recognized	If you cannot configure the Ethernet connections on the chassis midplane between the server node and the switches, check the configuration settings. Then, check the multiple switches and server nodes to verify that they all fail in the same way in the I/O and node bay.
Internal switch port connectivity not recognized	Internal switch port connectivity is down	Check the server-node-to-switch connection. Make sure that the chassis is using VLANs, you must configure the internal switch port to pass the traffic from itself to any other internal or external port.

## Problem determination and troubleshooting (3 of 3)

Problem	Symptom	Solution
External switch port connectivity not recognized	External switch port does not link	<b>Solution 1:</b> Using a proper networking cable, connect two external ports to one another and continue testing on all of the ports. If link comes up, that ports are not having a physical failure. <b>Solution 2:</b> Connect a notebook computer or other host to the switch ports on the chassis. If the notebook computer brings up the link, the ports are not having a physical failure. If the external link does not come up when this test is completed, reset the switch to the default configuration and repeat the test. A failure at this point indicates that the switch is defective and should be replaced.
Cabling causing connectivity problems	Network connectivity problem	Verify that the switch port is configured properly to connect to the chassis, obtain the configuration information for the switch, consult with a network-switch specialist for a solution.

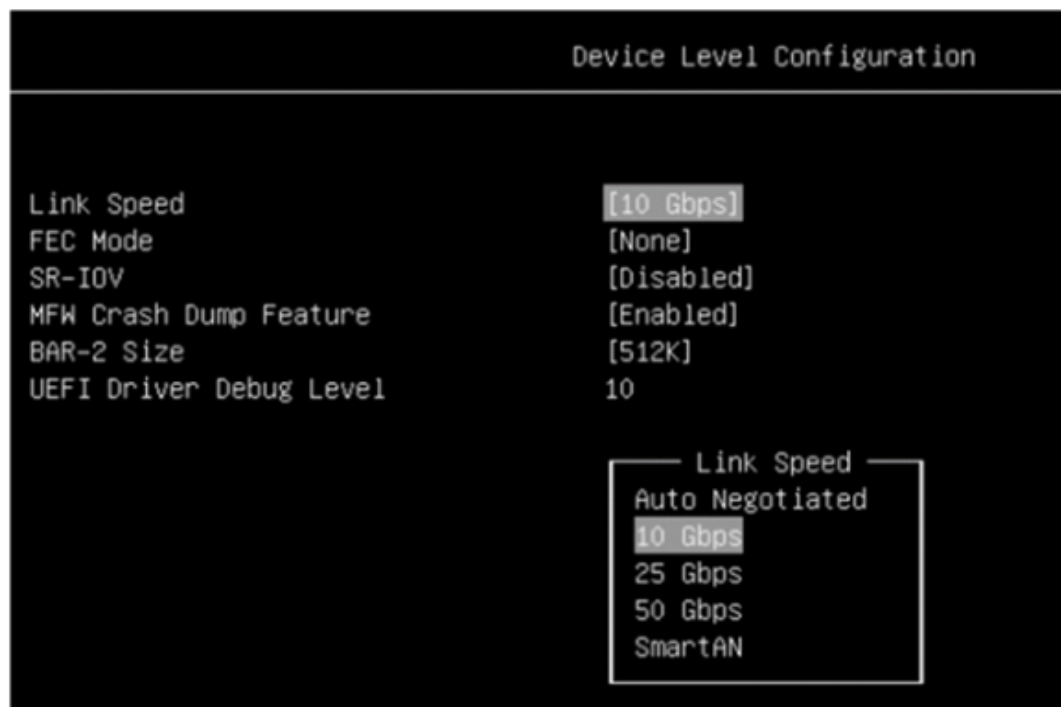


## QLogic Ethernet adapter troubleshooting (1 of 2)

**Problem:** The adapter fails to link up.

**Solution:**

1. Check the adapter HII link speed mode.
2. Check the switch side Ethernet port link speed mode and verify that it is not set to support the 10 Gb flex switch. The Ethernet adapter link speed does not support the 10 Gbps setting.



## QLogic Ethernet adapter troubleshooting (2 of 2)

**Problem:** The adapter HII link speed setting in port 1 will sync to port 2.

**Solution:** Check for the adapter HII link speed mode limitation. This limitation will keep the HII device level setting the same in each port. Refer to the link speed and partitioning mode settings.

**Problem:** The adapter HII causes a change in the partitioning mode and requires a restart.

**Solution:** The adapter has a limitation when the user makes a change to the partitioning mode (Default/NPAR/UFP). The setting must be saved and the server restarted before remaining settings are performed.



## Helpful links

Additional or updated product documents may be available from the Lenovo Web site at <http://support.lenovo.com/>

*Lenovo ThinkSystem NE2552E Flex Switch Product Guide*

[https://lenovopress.com/lp0854-lenovo-thinksystem-ne2552e-flex-switch?utm\\_source=newsletter&utm\\_medium=email&utm\\_campaign=newsletter#chassis-and-adapters](https://lenovopress.com/lp0854-lenovo-thinksystem-ne2552e-flex-switch?utm_source=newsletter&utm_medium=email&utm_campaign=newsletter#chassis-and-adapters)

For more information, refer to the following *Lenovo ThinkSystem NE2552E Flex Switch* product publications that are available from the Flex System information center at

[http://flexsystem.lenovofiles.com/help/topic/com.lenovo.acc.networkdevices.doc/network\\_iomodule.html](http://flexsystem.lenovofiles.com/help/topic/com.lenovo.acc.networkdevices.doc/network_iomodule.html):

- *Lenovo ThinkSystem NE2552E Flex Switch Installation Guide*
- *Lenovo ThinkSystem NE2552E Flex Switch Application Guide*
- *Lenovo ThinkSystem NE2552E Flex Switch Industry Standard CLI (ISCLI) Command Reference*

# Summary

This course enabled you to:

- Provide an overview of the Lenovo ThinkSystem NE2552E Flex Switch
- Describe the ThinkSystem QLogic Ethernet adapter options
- Describe the features and specifications of the switch.
- Explain how to configure the switch.
- Explain how to update the firmware.
- List the removal and replacement steps.
- List the problem determination steps and explain how to troubleshoot the ThinkSystem NE2552E Flex Switch.