



## CHAPTER 11

# Configuring Onboard Failure Logging

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This chapter describes how to configure the onboard failure logging (OBFL) features in Cisco NX-OS.

This chapter includes the following sections:

- [Information About OBFL, page 11-1](#)
- [Licensing Requirements for OBFL, page 11-2](#)
- [Prerequisites for OBFL, page 11-2](#)
- [Configuration Guidelines and Limitations, page 11-2](#)
- [Configuring OBFL, page 11-3](#)
- [Verifying the OBFL Configuration, page 11-4](#)
- [OBFL Example Configuration, page 11-5](#)
- [Default Settings, page 11-5](#)
- [Additional References, page 11-5](#)

## Information About OBFL

This section includes the following topics:

- [OBFL Overview, page 11-1](#)
- [Virtualization Support, page 11-2](#)

## OBFL Overview

Cisco NX-OS provides the ability to log failure data to persistent storage, which you can retrieve and display for analysis at a later time. This onboard failure logging (OBFL) feature stores failure and environmental information in nonvolatile memory on the module. The information will help analyze failed modules.

The data stored by OBFL include the following:

- Time of initial power-on
- Slot number of the module in the chassis
- Initial temperature of the module
- Firmware, BIOS, FPGA, and ASIC versions

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- Serial number of the module
- Stack trace for crashes
- CPU hog information
- Memory leak information
- Software error messages
- Hardware exception logs
- Environmental history
- OBFL-specific history information
- ASIC interrupt and error statistics history
- ASIC register dumps

OBFL stores kernel trace in case Cisco NX-OS crashes.

## Virtualization Support

You must be in the default virtual device context (VDC) to configure and display OBFL information. See the *Cisco Nexus 7000 Series NX-OS Virtual Device Context Configuration Guide, Release 4.0* for more information on VDCs.

## Licensing Requirements for OBFL

The following table shows the licensing requirements for this feature:

Product	License Requirement
NX-OS	OBFL requires no license. Any feature not included in a license package is bundled with the Cisco NX-OS system images and is provided at no extra charge to you. For a complete explanation of the NX-OS licensing scheme, see the <i>Cisco Nexus 7000 Series NX-OS Licensing Guide, Release 4.0</i>

## Prerequisites for OBFL

If you configure VDCs, install the Advanced Services license and enter the desired VDC (see to the *Cisco Nexus 7000 Series NX-OS Virtual Device Context Configuration Guide, Release 4.0*).

You must have network-admin user privileges and be logged into the default VDC.

## Configuration Guidelines and Limitations

OBFL has the following guidelines and limitations:

- OBFL is enabled by default.
- OBFL flash supports a limited number of writes and erases. The more logging you enable, the faster you use up this number of writes and erases.

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**Note**

If you are familiar with the Cisco IOS CLI, be aware that the Cisco NX-OS commands for this feature might differ from the Cisco IOS commands that you would use.

## Configuring OBFL

To configure OBFL, use the following commands in global configuration mode

Command	Purpose
<b>hw-module logging onboard</b>	Enables all OBFL features.
<b>hw-module logging onboard environmental-history</b>	Enables the OBFL environmental history.
<b>hw-module logging onboard error-stats</b>	Enables the OBFL error statistics.
<b>hw-module logging onboard interrupt-stats</b>	Enables the OBFL interrupt statistics.
<b>hw-module logging onboard module <i>slot</i></b>	Enables the OBFL information for a module.
<b>hw-module logging onboard obfl-log</b>	Enables the boot uptime, device version, and OBFL history.
<b>no hw-module logging onboard</b>	Disables all OBFL features.

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## Verifying the OBFL Configuration

Use the `show logging onboard status` command to display the configuration status of OBFL.

```
switch# show logging onboard status
-----
OBFL Status
-----
Switch OBFL Log:                               Enabled

Module: 2 OBFL Log:                             Enabled
cpu-hog                                         Enabled
environmental-history                          Enabled
error-stats                                    Enabled
exception-log                                  Enabled
interrupt-stats                                Enabled
mem-leak                                       Enabled
miscellaneous-error                            Enabled
obfl-log (boot-uptime/device-version/obfl-history) Enabled
register-log                                    Enabled
stack-trace                                    Enabled
system-health                                  Enabled

Module: 6 OBFL Log:                             Enabled
cpu-hog                                         Enabled
environmental-history                          Enabled
error-stats                                    Enabled
exception-log                                  Enabled
interrupt-stats                                Enabled
mem-leak                                       Enabled
miscellaneous-error                            Enabled
obfl-log (boot-uptime/device-version/obfl-history) Enabled
register-log                                    Enabled
stack-trace                                    Enabled
system-health                                  Enabled
temp Error                                     Enabled
```

To display OBFL information stored in flash on a module, use the following commands:

Command	Purpose
<code>show logging onboard boot-uptime</code>	Displays the boot and uptime information.
<code>show logging onboard counter-stats</code>	Displays statistics on all ASIC counters.
<code>show logging onboard device-version</code>	Displays device version information.
<code>show logging onboard endtime</code>	Displays OBFL logs to a specified end time.
<code>show logging onboard environmental-history</code>	Displays environmental history.
<code>show logging onboard error-stats</code>	Displays error statistics.
<code>show logging onboard exception-log</code>	Displays exception log information.
<code>show logging onboard interrupt-stats</code>	Displays interrupt statistics.
<code>show logging onboard kernel-trace</code>	Displays kernel trace information.
<code>show logging onboard module slot</code>	Displays OBFL information for a specific module.
<code>show logging onboard obfl-history</code>	Displays history information.
<code>show logging onboard obfl-logs</code>	Displays log information.

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Command	Purpose
<code>show logging onboard stack-trace</code>	Displays kernel stack trace information.
<code>show logging onboard starttime</code>	Displays OBFL logs from a specified start time.
<code>show logging onboard status</code>	Displays OBFL status information.



**Note**

Use the **clear logging onboard** command to clear the OBFL information for each of the **show** command options listed.

## OBFL Example Configuration

This example shows how to enable OBFL on module 2 for environmental information.

```
conf t
hw-module logging onboard module 2 environmental-history
```

## Default Settings

Table 11-1 lists the default settings for OBFL parameters.

**Table 11-1**      *Default OBFL Parameters*

Parameters	Default
OBFL	All features enabled

## Additional References

For additional information related to implementing OBFL, see the following sections:

- [Related Documents, page 11-6](#)
- [Standards, page 11-6](#)

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## Related Documents

Related Topic	Document Title
OBFL CLI commands	<i>Cisco Nexus 7000 Series NX-OS System Management Configuration Guide, Release 4.0</i>
configuration files	<i>Cisco Nexus 7000 Series NX-OS Fundamentals Configuration Guide, Release 4.0</i>
VDCs	<i>Cisco Nexus 7000 Series NX-OS Virtual Device Context Configuration Guide, Release 4.0</i>

## Standards

Standards	Title
No new or modified standards are supported by this feature, and support for existing standards has not been modified by this feature.	—