ISSU and High Availability

This chapter describes the Cisco NX-OS in-service software upgrades (ISSU) and includes the following sections:

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About ISSU

In a Cisco Nexus 9000 Series chassis with dual supervisors, you can use the in-service software upgrade (ISSU) feature to upgrade the system software while the system continues to forward traffic. An ISSU uses the existing features of nonstop forwarding (NSF) with stateful switchover (SSO) to perform the software upgrade with no system downtime.

An ISSU is initiated through the command-line interface (CLI) by an administrator. When initiated, an ISSU updates (as needed) the following components on the system:

- Supervisor BIOS and nx-os image
- Module BIOS and image

In a redundant system with two supervisors, one of the supervisors is active while the other operates in standby mode. During an ISSU, the new software is loaded onto the standby supervisor while the active supervisor continues to operate using the old software. As part of the upgrade, a switchover occurs between the active and standby supervisors, and the standby supervisor becomes active and begins running the new software. After the switchover, the new software is loaded onto the (formerly active) standby supervisor.

Note The ISSU feature is not supported on any Nexus 9504, 9508, or 9516 chassis with N9K-C95xx-FM-Ex, N9K-C950x-FM-R, or N9K-C95xx-FM-G fabric modules inserted in the chassis. Software upgrades with this hardware combination are disruptive and require the switch to reload. Non-disruptive ISSU is not supported.

Note For more information on ISSU, including the list of supported platforms, see the Cisco Nexus 9000 Series NX-OS Software Upgrade and Downgrade Guide.

Guidelines and Limitations

An ISSU has the following limitations and restrictions:

- Do not change any configuration settings or network connections during the upgrade. Any changes in the network settings may cause a disruptive upgrade.
- Configuration mode is blocked during the ISSU to prevent any changes.
- Only disruptive downgrades are supported. Non-disruptive downgrades are not supported.

For more information about compatible upgrades and downgrades, see the Cisco Nexus 9000 Series NX-OS Release Notes. For more information about ISSU and the list of platforms for which it is supported, see the Cisco Nexus 9000 Series NX-OS Software Upgrade and Downgrade Guide.

How an ISSU Works

On a Cisco Nexus 9000 Series chassis with two supervisors, the ISSU process follows these steps:

1. Begins when the administrator uses the **install all** command.
2. Verifies the location and integrity of the new software image file.
3. Verifies the operational status and the current software versions of both supervisors and all switching modules to ensure that the system is capable of an ISSU.
4. Loads the new software image to the standby supervisor and brings it up to the HA ready state.
5. Forces a supervisor switchover.
6. Loads the new software image to the (formerly active) standby supervisor and brings it up to the HA ready state.
7. Performs a nondisruptive upgrade of each switching module.

During the upgrade process, the system presents detailed status information on the console, requesting administrator confirmation at key steps.

Determining ISSU Compatibility

An ISSU may be disruptive if you have configured features that are not supported on the new software image. To determine ISSU compatibility, use the **show incompatibility-all nxos bootflash:***filename* command.

Additional References for ISSU and High Availability

This section describes additional information related to ISSU and high availability.

Related Documents

Related Topic	Document Title
ISSU configuration	Cisco Nexus 9000 Series NX-OS Software Upgrade and I Guide

MIBs

MIBs	MIBs Link
MIBs related to ISSU and high availability	For more information about MIBs and to download MIBs f MIBs link, refer to Cisco Nexus 7000 Series and 9000 Se MIB Quick Reference.