

# Troubleshoot ISSU Upgrade Failures on Catalyst 9000 Series Switches

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## Introduction

This document describes how to identify and resolve common issues during ISSU upgrades on Cisco Catalyst 9000 Series Switches.

## Prerequisites

## Requirements

Cisco recommends that you have knowledge of these topics:

- Cisco Catalyst 9000 Series architecture and deployment models
- Software maintenance upgrades (SMU) and ISSU process
- StackWise Virtual and StackWise technologies

## Components Used

The information in this document is based on these software and hardware versions:

- Cisco Catalyst 9400, 9500, and 9600 Series Switches
- Cisco IOS® XE
- Dual supervisor and StackWise Virtual deployments

The information in this document was created from the devices in a specific lab environment. All of the devices used in this

document started with a cleared (default) configuration. If your network is live, ensure that you understand the potential impact of any command.

## Background Information

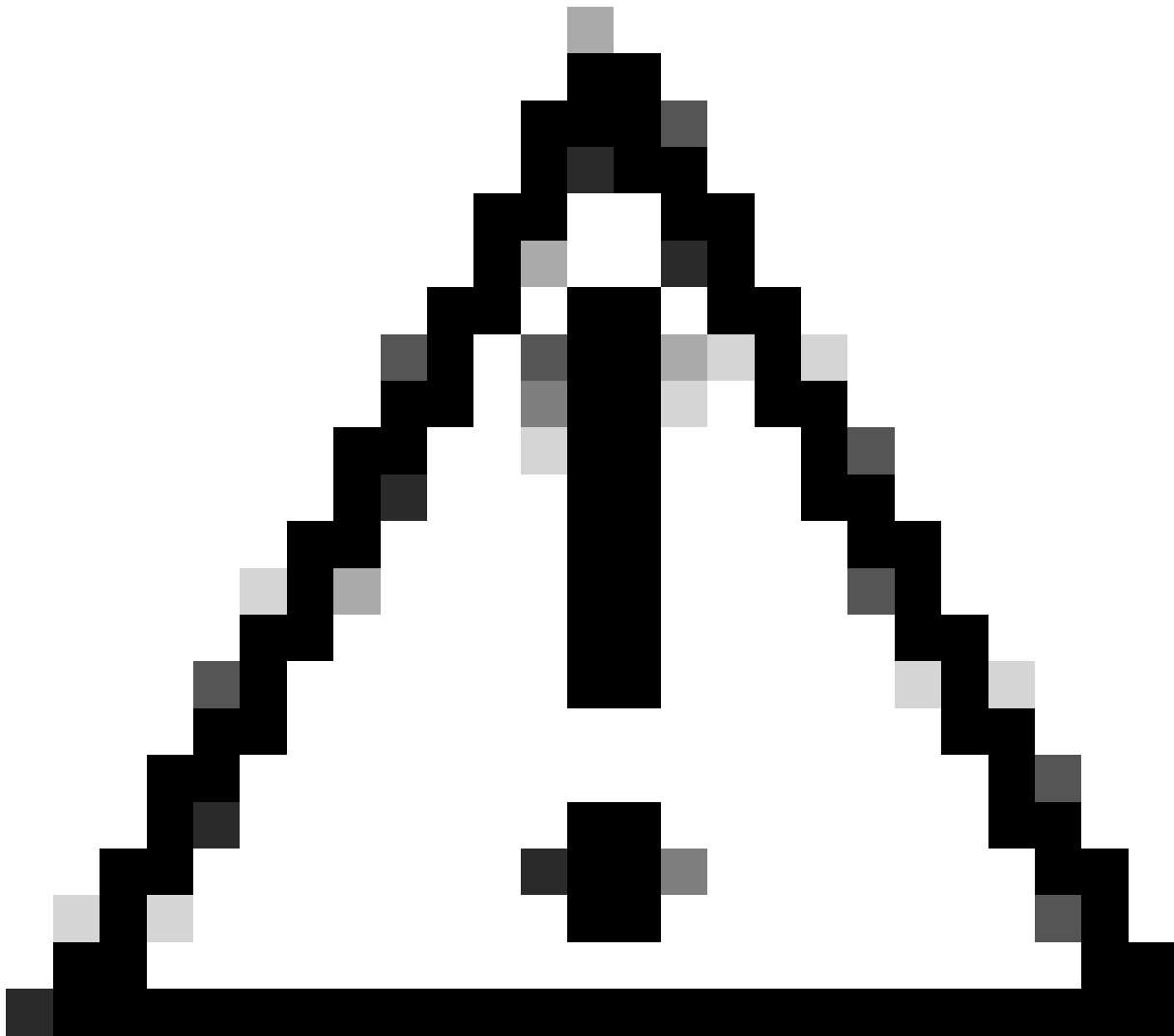
In-Service Software Upgrade (ISSU) allows upgrade of switch software while the network remains operational. Several conditions must exist for ISSU to succeed: the software path must be supported, stack members must run matching versions, and firmware must align. Failure to meet these conditions can interrupt the upgrade or cause network instability.

## Perform Initial Checks Before ISSU Upgrade

Before the ISSU upgrade begins, ensure these checks:

- Confirm that the current and target Cisco IOS XE versions support ISSU.
- Verify that the upgrade path is listed as supported in the [Cisco ISSU Compatibility Matrix](#).
- Verify that all stack members or supervisors run the same software image.
- Ensure that both active and standby supervisors use the same ROMMON versions.
- Confirm the switch operates in install mode (the boot variable must be packages.conf).
- Review memory and flash space availability for the new image.
- Verify the switch is not in a degraded or non-redundant state.
- Validate that no active faults, hardware alarms, or critical logs exist.
- Confirm that no previous ISSU operation is in progress using the command show issu state detail. The output must indicate:

```
switch# show issu state detail
Current ISSU Status: Enabled
Previous ISSU Operation: N/A
<snip>
No ISSU operation is in progress <++++++>
```



**Caution:** If ISSU is already in progress, do not initiate another upgrade.

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Run these commands to assist in validation:

- **show boot system**
- **show issu state detail**
- **show redundancy**
- **show module**

## Troubleshoot Common ISSU Upgrade Failures

### ISSU State Stuck in Progress

Symptom: The command `show issu state detail` shows ISSU is in progress even though the upgrade has not completed or failed explicitly. This condition can block further ISSU attempts and disrupt normal upgrade workflows.

The error message **ISSU in progress** can appear:

FAILED: ISSU in progress; please use `install abort issu` to abort ISSU operation OR `install commit` to commit

Verification: Run `show issu state detail` and look for:

Current ISSU Status: In Progress

Previous ISSU Operation: N/A

If the status remains in progress without change over an extended period, the process is likely stalled.

Root Cause: Unexpected interruption during an earlier ISSU attempt or incompatibility failure.

Solution: Run the `install abort issu` command.

If ISSU is still in progress, perform the next steps:

Run `install remove inactive` command.

```
Switch#install remove inactive
```

```
install_remove: START Thu Jun 12 04:31:54 UTC 2025
```

```
install_remove: Removing IMG
```

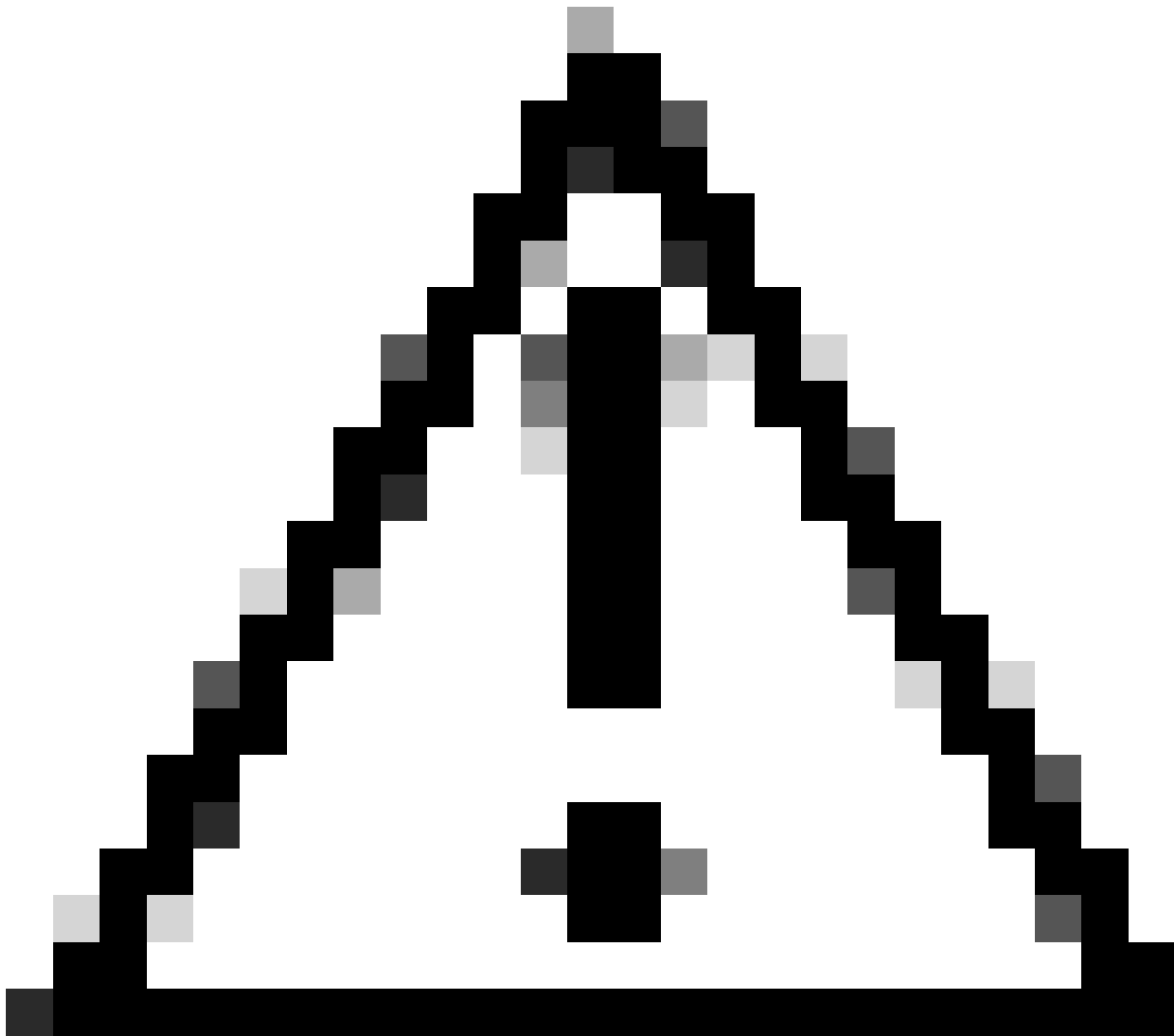
```
Cleaning up unnecessary package files
```

Enable service internal:

```
switch(config)# service internal
```

Clear the current install state:

```
switch#clear install state
```



**Caution:** This command can trigger a reload of the whole switch or stack.

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**Warning:** Never start another ISSU while one remains active. This can lead to software corruption or device instability.

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## Configuration Compatibility Between Releases

Symptom: Certain configurations are not compatible with the new software version and can cause issues during the upgrade. The error message "MCL-Terminating the current ISSU Operation" can appear:

```
ERROR: MCL-Terminating the current ISSU Operation. ISSU Abort operation is initiated
ERROR: Once ISSU abort is done please check full list of mismatched commands via:
ERROR: show redundancy config-sync failures historic mcl
```

Solution: Run the `show redundancy config-sync failures historic mclcommand` and remove the mismatched commands if possible. If the commands cannot be removed, perform a standard upgrade.



**Note:** Verify that no ISSU upgrade is in progress to initiate a new upgrade. Refer to **ISSU State Stuck in Progress** section.

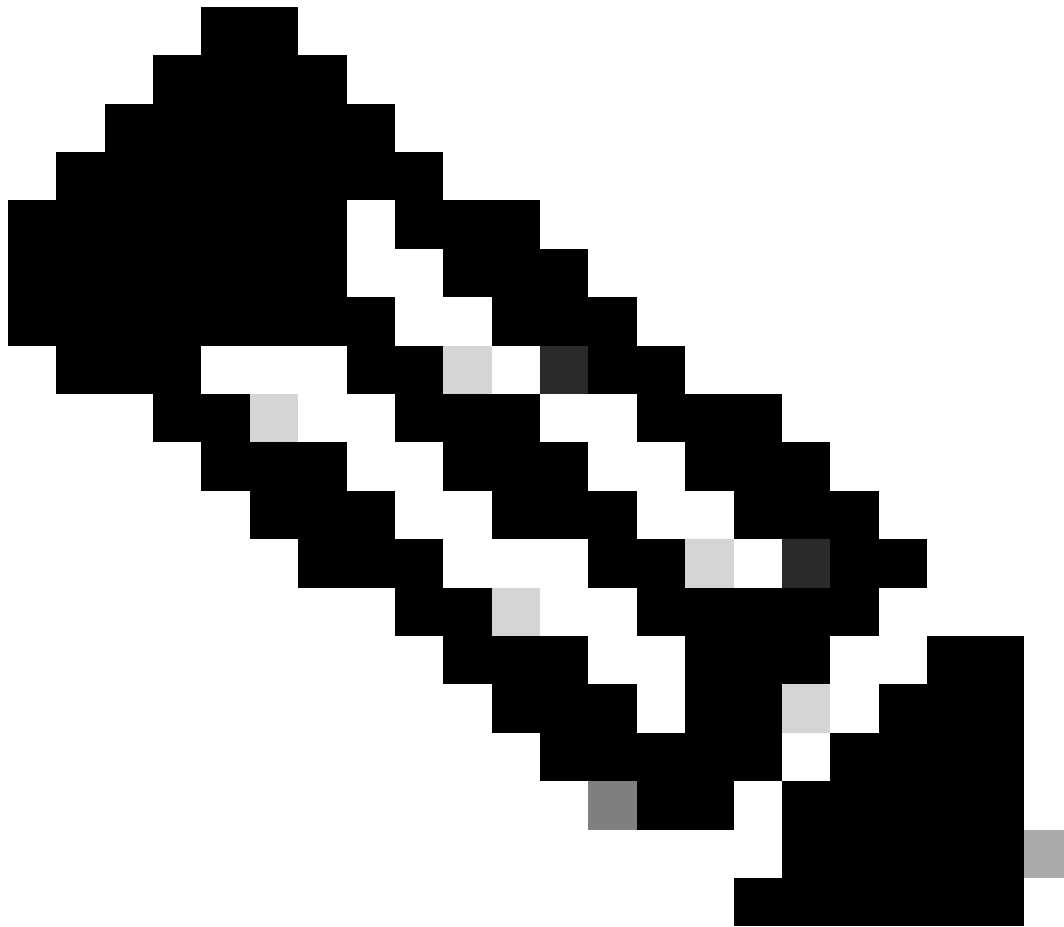
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## Incompatibility Due to ROMMON or Software Version Mismatch

Symptom: ISSU fails to proceed or reverts to non-ISSU reload. This error can appear:

%REDUNDANCY-2-IPC: IOS versions do not match.

- Verification: Compare Cisco ROMMON and Cisco IOS versions using the `show version` command. In dual-SUP systems, confirm that both SUPs use the same firmware and software versions.
- Solution: Upgrade Cisco ROMMON or Cisco IOS to the same version before initiating ISSU.



**Note:** Refer to the platform-specific release notes for ROMMON upgrade steps.

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## Recover from ISSU Partial Upgrade or ROMMON Mode

### Partial Upgrade

- **Verification:** For a partial upgrade, verify no ISSU upgrade is still in progress. If ISSU is still in progress, wait for some minutes until ISSU completes or rolls back.
- **Solution:** Refer to the section **ISSU State Stuck in Progress** if the upgrade does not complete. Then, perform a standard upgrade.

### Switch or Supervisor Enters into ROMMON Mode

- **Verification:** Console to the affected unit and verify status.
- **Solution:** Look for the Cisco IOS.bin file or packages.conf file to recover the switch or supervisor, refer to the [ROMMON Guide](#) for detailed steps to recover the unit.

## Related Information



- [ISSU Compatibility Matrix](#)
- [ISSU Upgrade Guide](#)
- Upgrade Guide for Catalyst 9000 Switches
- [Troubleshoot Common on Catalyst 9000](#)
- [Cisco Technical Support & Downloads](#)