



Performing an In Service Software Upgrade

In Service Software Upgrade (ISSU) allows Cisco software to be upgraded or downgraded, at a router level, while the system continues to forward packets. ISSU takes advantage of the Cisco high availability infrastructure--Cisco NSF with SSO and hardware redundancy--and eliminates downtime that is associated with software upgrades or version changes by allowing updates while the system remains in service. Cisco high availability features combine to lower the impact that planned maintenance activities have on network service availability, with the results of less downtime and better access to critical systems.

SSO mode supports configuration synchronization. When images on the active and standby RPs are different, this feature allows the two Route Processors (RPs) to remain synchronized although they may support different sets of commands.

An ISSU-capable router consists of two RPs (active and standby) and one or more line cards. Before initiating the ISSU process, you must copy the Cisco IOS software into the file systems of both RPs.

After you have copied the Cisco IOS software to both file systems, load the new version of Cisco IOS software onto the standby RP.

After switchover, the standby RP takes over as the new active RP.

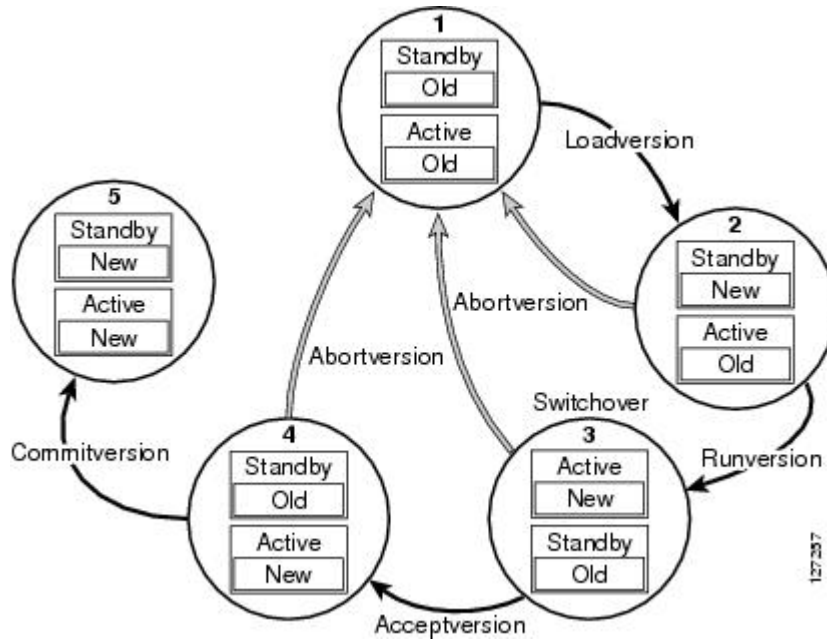
Then, the former active RP, which is now the new standby RP, is loaded with the new software.

The two RPs in a system can be in one of three different states during ISSU:

- Active--One RP is actively forwarding packets with old software. After the ISSU process is performed, the original active RP becomes the standby RP.
- Standby--Perform ISSU on the standby RP, loading it with new software. After the ISSU process is performed, the original standby RP is the new active RP.
- Hot standby--After the original standby RP becomes the new active RP, load the new software image into the new standby RP. Doing so makes the standby RP a hot standby RP.

The following figure shows the ISSU states during the ISSU process.

Figure 1: ISSU States During the ISSU Process



Caution If you downgrade from release 16.10 and later to any previous releases of 16.9 and earlier, irrespective of whether a port-channel with 16 member-link is configured or not, you must configure and save by using the **port-channel max-memlink-per-pc 8** command, before you proceed to perform ISSU (downgrade).