



ISSU - HSRP

The HSRP - ISSU feature enables support for ISSU in HSRP.

The In Service Software Upgrade (ISSU) process allows Cisco IOS software to be updated or otherwise modified while packet forwarding continues. In most networks, planned software upgrades are a significant cause of downtime. ISSU allows Cisco IOS software to be modified while packet forwarding continues, which increases network availability and reduces downtime caused by planned software upgrades. This document provides information about ISSU concepts and describes the steps taken to perform ISSU in a system.

Configuration Information

Configuration information is included in the *Cisco IOS In Service Software Upgrade Process* document, at the following URL:

http://www.cisco.com/univercd/cc/td/doc/product/software/ios122sb/newft/122sb28/sb_issu.htm

The following sections provide information about this feature:

- Information About Performing ISSU
- How to Perform the ISSU Process

For more information about support for this feature on Cisco Catalyst 4500 series switches, see the *Configuring the Cisco IOS In Service Software Upgrade Process* section of the *Catalyst 4500 Series Switch Cisco IOS Software Configuration Guide*, Release 12.2(31)SGA.

New or Modified Commands

The following commands are new or modified for this feature:

- **configure issu set rollback timer**
- **issu abortversion**
- **issu acceptversion**
- **issu commitversion**
- **issu loadversion**
- **issu runversion**

- `show issu comp-matrix`
- `show issu state`
- `show redundancy`

configure issu set rollback timer

To configure the rollback timer value, use the **configure issu set rollback timer** command in global configuration mode.

configure issu set rollback timer *seconds*

Syntax Description	<i>seconds</i>	The rollback timer value, in seconds. The valid timer value range is from 0 to 7200 seconds (two hours). A value of 0 seconds disables the rollback timer.
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Defaults	Rollback timer value is 45 minutes.
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Command Modes	Global configuration
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Command History	Release	Modification
	12.2(28)SB	This command was introduced.
	12.2(31)SGA	This command was integrated into Cisco IOS Release 12.2(31)SGA.

Usage Guidelines	Use the configure issue set rollback timer command to configure the rollback timer value. Note that you can enable this command only when the Route Processors (RPs) are in the init state.
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Examples	The following example sets the rollback timer value to 3600 seconds, or 1 hour: <pre>configure issu set rollback timer 3600</pre>
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Related Commands	Command	Description
	issu acceptversion	Halts the rollback timer and ensures the new Cisco IOS software image is not automatically aborted during the ISSU process.
	show issu rollback timer	Displays the current setting of the ISSU rollback timer.

issu abortversion

To cancel the In Service Software Upgrade (ISSU) upgrade or downgrade process in progress and restore the router to its state before the process had started, use the **issu abortversion** command in user EXEC or privileged EXEC mode.

issu abortversion *slot image*

Syntax Description

<i>slot</i>	The specified slot on the networking device. Refer to your hardware documentation for information on the number of slots on your networking device.
<i>image</i>	The new image to be loaded into the standby .

Defaults

This command is disabled by default.

Command Modes

User EXEC
Privileged EXEC

Command History

Release	Modification
12.2(28)SB	This command was introduced.
12.2(31)SGA	This command was integrated into Cisco IOS Release 12.2(31)SGA.

Usage Guidelines

The **issu abortversion** command allows the user to stop the ISSU process at any time before the user commits to completing the process by issuing the **issu commitversion** command. Before any action is taken, a check is performed to ensure that both RPs are either in the run version (RV) or load version (LV) state.

When the **issu abortversion** command is issued before the **issu runversion** command, the standby RP is reset and reloaded. When the **issu abortversion** command is issued after the **issu runversion** command, the network switches to the former Cisco IOS software version.

Examples

In the following example, the **issu abortversion** command resets and reloads the standby RP:

```
Router# issu abortversion a stby-disk0:c10k2-p11-mz.2.20040830
```

Related Commands

Command	Description
issu acceptversion	Halts the rollback timer and ensures the new Cisco IOS software image is not automatically aborted during the ISSU process.
issu commitversion	Allows the new Cisco IOS software image to be loaded into the standby RP.
issu loadversion	Starts the ISSU process.

Command	Description
issu runversion	Forces a switchover of the active to the standby processor and causes the newly active processor to run the new image.
show issu state	Displays the state and current version of the during the ISSU process.

issu acceptversion

To halt the rollback timer and ensure the new Cisco IOS software image is not automatically aborted during the In Service Software Upgrade (ISSU) process, use the **issu acceptversion** command in user EXEC or privileged EXEC mode.

issu acceptversion { *active slot-number* | **active slot-name** *slot-name* }

Syntax Description

<i>active slot-number</i>	The specified active slot on your networking device. Refer to your hardware documentation for information on the number of slots on your networking device.
active slot-name <i>slot-name</i>	Identifies a specific slot name.

Defaults

45 minutes from the time the **issu runversion** command is issued to the time the **issu acceptversion** is issued.

Command Modes

User EXEC
Privileged EXEC

Command History

Release	Modification
12.2(28)SB	This command was introduced.
12.2(31)SGA	This command was integrated into Cisco IOS Release 12.2(31)SGA.

Usage Guidelines

Use the **issu acceptversion** command to ensure that the active Route Processor (RP) is running the new image, that the standby RP is running the old image, and that both RPs are in the run version (RV) state. If the **issu acceptversion** command is not issued within 45 minutes from the time the **issu runversion** command is issued, the new active RP is assumed to be unreachable, and the entire ISSU process is automatically rolled back to the previous version of the software. The rollback timer starts immediately after the user issues the **issu runversion** command.

If the rollback timer is set for a short period of time, such as 1 minute, and the standby RP is not yet in a hot standby state, you then have 15 1-minute extensions during which the router will wait for the standby state to become hot standby state. However, if the standby state becomes hot standby state within the 15-minute extension, the router will abort the ISSU process because the 1-minute rollback timer has expired. Therefore, it is not recommended to set the rollback timer shorter than the time required for the standby state to become hot standby state.

If the rollback timer is set to a long period of time, such as the default of 45 minutes, and the standby RP goes into the hot standby state in 7 minutes, you have 38 minutes (45 minus 7) to roll back if necessary.

Use the **configure issu set rollback timer** to configure the 45-minute default value on the rollback timer.

Examples

The following example halts the rollback timer and allows the ISSU process to continue:

```
Router# issu acceptversion b disk0:c10k2-p11-mz.2.20040830
```

Related Commands

Command	Description
configure issu set rollback timer	Configures the rollback timer value.
issu abortversion	Cancels the ISSU upgrade or downgrade process in progress and restores the router to its state before the process had started.
issu commitversion	Allows the new Cisco IOS software image to be loaded into the standby RP.
issu loadversion	Starts the ISSU process.
issu runversion	Forces a switchover of the active to the standby processor and causes the newly active processor to run the new image.
show issu state	Displays the state and current version of the RPs during the ISSU process.

issu commitversion

To allow the new Cisco IOS software image to be loaded into the standby RP, use the **issu commitversion** command in user EXEC or privileged EXEC mode.

issu commitversion *slot active-image*

Syntax Description

<i>slot</i>	The specified slot on the networking device. Refer to your hardware documentation for information on the number of slots on your networking device.
<i>active-image</i>	The new image to be loaded into the active networking device.

Defaults

This command is disabled by default.

Command Modes

User EXEC
Privileged EXEC

Command History

Release	Modification
12.2(28)SB	This command was introduced.
12.2(31)SGA	This command was integrated into Cisco IOS Release 12.2(31)SGA.

Usage Guidelines

The **issu commitversion** command verifies that the standby Route Processor (RP) has the new Cisco IOS software image in its file system and that both RPs are in the run version (RV) state. If these conditions are met, then the following actions take place:

- The standby RP is reset and booted with the new version of Cisco IOS software.
- If both images are compatible, the standby RP moves into the stateful switchover (SSO) mode and is fully stateful for all clients and applications with which the standby RP is compatible.
- If both images are not compatible, the standby RP moves into Route Processor Redundancy Plus (RPR+) mode or RPR mode.
- If all conditions are correct, the RPs are moved into final state, which is the same as initial state.

Issuing the **issu commitversion** command completes the In Service Software Upgrade (ISSU) process. This process cannot be stopped or reverted to its original state without starting a new ISSU process.

Issuing the **issu commitversion** command at this stage is equivalent to entering both the **issu acceptversion** and the **issu commitversion** commands. Use the **issu commitversion** command if you do not intend to run in the current state for a period of time and are satisfied with the new software version.

Examples

The following example causes the standby RP to be reset and reloaded with the new Cisco IOS software version:

```
Router# issu commitversion a stby-disk0:c10k2-p11-mz.2.20040830
```


Related Commands	Command	Description
	issu abortversion	Cancels the ISSU upgrade or downgrade process in progress and restores the router to its state before the process had started.
	issu acceptversion	Halts the rollback timer and ensures the new Cisco IOS software image is not automatically aborted during the ISSU process.
	issu loadversion	Starts the ISSU process.
	issu runversion	Forces a switchover of the active to the standby processor and causes the newly active processor to run the new image.
	show issu state	Displays the state and current version of the RPs during the ISSU process.

issu loadversion

To start the In Service Software Upgrade (ISSU) process, use the **issu loadversion** command in user EXEC or privileged EXEC mode.

issu loadversion *active-slot active-image standby-slot standby-image* [**force**]

Syntax Description		
	<i>active-slot</i>	The active slot on the networking device.
	<i>active-image</i>	The active image on the networking device.
	<i>standby-slot</i>	The standby slot on the networking device.
	<i>standby-image</i>	The new image to be loaded into the standby networking device.
	force	(Optional) Used to override the automatic rollback when the new Cisco IOS software version is detected to be incompatible, which is the case when as user intends to perform a fast software upgrade (FSU) in Route Processor Redundancy (RPR) mode.

Defaults This command is disabled by default.

Command Modes User EXEC
Privileged EXEC

Command History	Release	Modification
	12.2(28)SB	This command was introduced.
	12.2(31)SGA	This command was integrated into Cisco IOS Release 12.2(31)SGA.

Usage Guidelines Enabling the **issu loadversion** command causes the standby Route Processor (RP) to be reset and booted with the new Cisco IOS software image specified by the command. If both the active and standby RP images are ISSU-capable, ISSU-compatible, and have no configuration mismatches, then the standby RP moves into stateful switchover (SSO) mode, and both RPs move into the load version (LV) state.

It may take several seconds after the **issu loadversion** command is entered for Cisco IOS software to load into the standby RP and the standby RP to transition to SSO mode.

Examples The following example initiates the ISSU process by loading the active image into the active RP slot and loading the standby image into the standby RP slot:

```
Router# issu loadversion a disk0:c10k2-p11-mz.2.20040830 b  
stby-disk0:c10k2-p11-mz.2.20040830
```

Related Commands	Command	Description
	issu abortversion	Cancels the ISSU upgrade or downgrade process in progress and restores the router to its state before the process had started.
	issu acceptversion	Halts the rollback timer and ensures the new Cisco IOS software image is not automatically aborted during the ISSU process.
	issu commitversion	Allows the new Cisco IOS software image to be loaded into the standby RP.
	issu runversion	Forces a switchover of the active to the standby processor and causes the newly active processor to run the new image.
	show issu state	Displays the state and current version of the RPs during the ISSU process.

issu runversion

To force a switchover from the active Route Processor (RP) to the standby RP and cause the newly active RP to run the new image specified in the **issu loadversion** command, use the **issu runversion** command in user EXEC or privileged EXEC mode.

issu runversion *slot image*

Syntax Description

<i>slot</i>	The specified slot on the networking device. Refer to your hardware documentation for information on the number of slots on your networking device.
<i>image</i>	The new image to be loaded into the standby RP.

Defaults

This command is disabled by default.

Command Modes

User EXEC
Privileged EXEC

Command History

Release	Modification
12.2(28)SB	This command was introduced.
12.2(31)SGA	This command was integrated into Cisco IOS Release 12.2(31)SGA.

Usage Guidelines

When a user enables the **issu runversion** command, a switchover is performed, and the standby RP is booted with the old image version following the reset caused by the switchover. As soon as the standby RP moves into the standby state, the rollback timer is started.

Examples

In the following example, the **issu runversion** command is used to switch to the redundant RP with the new Cisco IOS software image:

```
Router# issu runversion b stby-disk0:c10k2-p11-mz.2.20040830
```

Related Commands

Command	Description
issu abortversion	Cancels the ISSU upgrade or downgrade process in progress and restores the router to its state before the process had started.
issu acceptversion	Halts the rollback timer and ensures the new Cisco IOS software image is not automatically aborted during the ISSU process.
issu commitversion	Commits the new Cisco IOS software image in the file system of the standby RP and ensures that both the active and standby RPs are in the RV state.
issu loadversion	Starts the ISSU process.
show issu state	Displays the state and current version of the RPs during the ISSU process.

show issu comp-matrix

To display information regarding the In Service Software Upgrade (ISSU) compatibility matrix, use the **show issu comp-matrix** command in user EXEC or privileged EXEC mode.

```
show issu comp-matrix { negotiated | stored }
```

Syntax Description	negotiated	Displays negotiated matrix information.
	stored	Displays stored matrix information.

Command Modes	User EXEC Privileged EXEC
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Command History	Release	Modification
	12.2(28)SB	This command was introduced.
	12.2(31)SGA	This command was integrated into Cisco IOS Release 12.2(31)SGA.

Usage Guidelines

Before attempting an ISSU, you should know the compatibility level between the Cisco IOS software versions on the active and the standby Route Processors (RPs). ISSU will not work if the two versions are incompatible. Use the **show issu comp-matrix** command with the **negotiated** keyword to display information on the negotiation of the compatibility matrix data between two software versions on a given system.

Compatibility matrix data is stored with each Cisco IOS software image that supports the ISSU capability. Use the **show issu comp-matrix** command with the **stored** keyword to display stored compatibility matrix information.

Examples

The following example displays stored compatibility matrix information:

```
Router# show issu comp-matrix stored
```

show redundancy

To display current or historical status and related information on planned or logged handovers, use the **show redundancy** command in user EXEC or privileged EXEC mode.

Privileged EXEC Mode

```
show redundancy [clients | counters | debug-log | handover | history | switchover history |
states | inter-device]
```

User EXEC Mode

```
show redundancy {clients | counters | history | states | switchover}
```

Syntax Description		
clients		Displays the redundancy-aware client-application list.
counters		Displays redundancy-related operational measurements.
debug-log		(Optional) Displays up to 256 redundancy-related debug entries.
handover		(Optional) Displays details of any pending scheduled handover.
history		Displays past status and related information about logged handovers. This is the only keyword supported on the Cisco AS5800.
switchover history		Displays redundancy switchover history.
states		Displays redundancy-related states: disabled, initialization, standby, active (various substates for the latter two).
switchover		Displays the switchover counts, the uptime since active, and the total system uptime.
inter-device		(Optional) Displays redundancy interdevice operational state and statistics.

Command Modes

User EXEC
Privileged EXEC

Command History

Release	Modification
11.3(6)AA	This command was introduced in privileged EXEC mode.
12.2(8)T	This command was integrated into Cisco IOS Release 12.2(8)T. Support for the Cisco AS5800 and Cisco AS5850 is not included in this release.
12.2(8)MC2	This command was introduced in user EXEC mode.
12.2(11)T	The privileged EXEC mode form of this command was implemented on the Cisco AS5800 and Cisco AS5850.
12.2(14)SX	The user EXEC mode form of this command was introduced on the Supervisor Engine 720.
12.2(18)S	This command was introduced on Cisco 7304 routers running Cisco IOS Release 12.2S.
12.2(20)S	The states , counters , clients , history , and switchover history keywords were added.

Release	Modification
12.2(17d)SXB	Support for the user EXEC mode form of this command was extended to the Supervisor Engine 2.
12.3(8)T	The inter-device keyword was added to the privileged EXEC form of the command.
12.3(11)T	The user EXEC form of this command was integrated into Cisco IOS Release 12.3(11)T.
12.2(28)SB	This command was integrated into Cisco IOS Release 12.2(28)SB.
12.2(33)SRA	This command was integrated into Cisco IOS Release 12.2(33)SRA.
12.2(31)SGA	This command was integrated into Cisco IOS Release 12.2(31)SGA.

Usage Guidelines

Cisco AS5800

Use this command from the router-shelf console to determine when failover is enabled. Use this command with the **history** keyword to log failover events.

Cisco AS5850

To use this command, the router must have two route-switch-controller (RSC) cards installed and must be connected to one of them.

Examples

The following example shows how to display information about the RF client:

```
Router# show redundancy clients

clientID = 0      clientSeq = 0      RF_INTERNAL_MSG
clientID = 25     clientSeq = 130   CHKPT RF
clientID = 5026   clientSeq = 130   CHKPT RF
clientID = 5029   clientSeq = 135   Redundancy Mode RF
clientID = 5006   clientSeq = 170   RFS client
clientID = 6      clientSeq = 180   Const OIR Client
clientID = 7      clientSeq = 190   PF Client
clientID = 5008   clientSeq = 190   PF Client
clientID = 28     clientSeq = 330   Const Startup Config
clientID = 29     clientSeq = 340   Const IDPROM Client
clientID = 65000  clientSeq = 65000 RF_LAST_CLIENT
```

The output displays the following information:

- clientID displays the client's ID number.
- clientSeq displays the client's notification sequence number.
- Current RF state.

The following example shows how to display information about the RF counters:

```
Router# show redundancy counters

Redundancy Facility OMs
  comm link up = 0
  comm link down down = 0

  invalid client tx = 0
  null tx by client = 0
  tx failures = 0
  tx msg length invalid = 0
```

```

    client not rxing msgs = 0
rx peer msg routing errors = 0
    null peer msg rx = 0
    errored peer msg rx = 0

    buffers tx = 0
tx buffers unavailable = 0
    buffers rx = 0
    buffer release errors = 0

duplicate client registers = 0
failed to register client = 0
    Invalid client syncs = 0

```

The following example shows information about the RF history:

```
Router# show redundancy history
```

```

00:00:00 client added: RF_INTERNAL_MSG(0) seq=0
00:00:00 client added: RF_LAST_CLIENT(65000) seq=65000
00:00:02 client added: Const Startup Config Sync Clie(28) seq=330
00:00:02 client added: CHKPT RF(25) seq=130
00:00:02 client added: PF Client(7) seq=190
00:00:02 client added: Const OIR Client(6) seq=180
00:00:02 client added: Const IDPROM Client(29) seq=340
00:00:02 *my state = INITIALIZATION(2) *peer state = DISABLED(1)
00:00:02 RF_PROG_INITIALIZATION(100) RF_INTERNAL_MSG(0) op=0 rc=11
00:00:02 RF_PROG_INITIALIZATION(100) CHKPT RF(25) op=0 rc=11
00:00:02 RF_PROG_INITIALIZATION(100) Const OIR Client(6) op=0 rc=11
00:00:02 RF_PROG_INITIALIZATION(100) PF Client(7) op=0 rc=11

```

The following example shows information about the RF state:

```
Router# show redundancy states
```

```

    my state = 13 -ACTIVE
    peer state = 1 -DISABLED
        Mode = Simplex
        Unit = Primary
        Unit ID = 1

Redundancy Mode (Operational) = Route Processor Redundancy
Redundancy Mode (Configured) = Route Processor Redundancy
    Split Mode = Disabled
    Manual Swact = Disabled Reason: Simplex mode
    Communications = Down Reason: Simplex mode

    client count = 11
    client_notification_TMR = 30000 milliseconds
        keep_alive TMR = 4000 milliseconds
        keep_alive count = 0
        keep_alive threshold = 7
        RF debug mask = 0x0

```

If you enter the **show redundancy states** command with stateful switchover (SSO) configured, the Redundancy Mode (Operational) and the Redundancy Mode (Configured) fields display stateful switchover.

The following example shows how to display the switchover counts, the uptime since active, and the total system uptime:

```
Router> show redundancy switchover
```



```

Switchovers this system has experienced      : 1
Uptime since this supervisor switched to active : 1 minute
Total system uptime from reload              : 2 hours, 47 minutes

```

Cisco AS5850 Example

The following is sample output from the **show redundancy handover** and **show redundancy states** commands on a Cisco AS5850:

```
Router# show redundancy handover
```

```

No busyout period specified
Handover pending at 23:00:00 PDT Wed May 9 2001

```

```
Router# show redundancy states
```

```

my state = 14 -ACTIVE_EXTRALOAD
peer state = 4 -STANDBY COLD
Mode = Duplex
Unit = Preferred Primary
Unit ID = 6
Redundancy Mode = Handover-split: If one RSC fails, the peer RSC will take over the
feature boards
Maintenance Mode = Disabled
Manual Swact = Disabled Reason: Progression in progress
Communications = Up
client count = 3
client_notification_TMR = 30000 milliseconds
keep_alive TMR = 4000 milliseconds
keep_alive count = 1
keep_alive threshold = 7
RF debug mask = 0x0

```

Cisco AS5800 Example

The following is sample output from the **show redundancy** command on a Cisco AS5800:

```
Router# show redundancy
```

```

DSC in slot 12:
Hub is in 'active' state.
Clock is in 'active' state.
DSC in slot 13:
Hub is in 'backup' state.
Clock is in 'backup' state.

```

Cisco AS5800 with History Example

The following is sample output from the **show redundancy history** command on a Cisco AS5800:

```
Router# show redundancy history
```

```

DSC Redundancy Status Change History:

981130 18:56 Slot 12 DSC: Hub, becoming active - RS instruction
981130 19:03 Slot 12 DSC: Hub, becoming active - D13 order

```

Cisco AS5800 Router Shelves as Failover Pair Example

The following is sample output from two Cisco AS5800 router shelves configured as a failover pair. The active router shelf is initially RouterA. The **show redundancy history** and **show redundancy** commands have been issued. The **show redundancy** command shows that failover is enabled, shows the configured group number, and shows that this router shelf is the active one of the pair. Compare this output with that from the backup router shelf (RouterB) that follows.

**Note**

When RouterA is reloaded, thereby forcing a failover, new entries are shown on RouterB when a **show redundancy history** command is issued after failover has occurred.

Log from the First Router (RouterA)

```
RouterA# show redundancy history
```

```
DSC Redundancy Status Change History:
```

```
010215 18:17 Slot -1 DSC:Failover configured -> ACTIVE role by default.
010215 18:18 Slot -1 DSC:Failover -> BACKUP role.
010215 18:18 Slot 12 DSC:Failover -> ACTIVE role.
010215 18:18 Slot 12 DSC:Hub, becoming active - arb timeout
```

```
RouterA# show redundancy
```

```
failover mode enabled, failover group = 32
Currently ACTIVE role.
DSC in slot 12:
Hub is in 'active' state.
Clock is in 'active' state.
No connection to slot 13
```

```
RouterA# reload
```

```
Proceed with reload? [confirm] y
*Feb 15 20:19:11.059:%SYS-5-RELOAD:Reload requested
System Bootstrap, Version xxx
Copyright xxx by cisco Systems, Inc.
C7200 processor with 131072 Kbytes of main memory
```

Log from the Second Router (RouterB)

```
RouterB# show redundancy
```

```
failover mode enabled, failover group = 32
Currently BACKUP role.
No connection to slot 12
DSC in slot 13:
Hub is in 'backup' state.
Clock is in 'backup' state.
```

```
*Feb 16 03:24:53.931:%DSC_REDUNDANCY-3-BICLINK:Switching to DSC 13
*Feb 16 03:24:53.931:%DSC_REDUNDANCY-3-BICLINK:Failover:changing to active mode
*Feb 16 03:24:54.931:%DIAL13-3-MSG:
02:32:06:%DSC_REDUNDANCY-3-EVENT:Redundancy event:LINK_FAIL from other DSC
*Feb 16 03:24:55.491:%OIR-6-INSCARD:Card inserted in slot 12, interfaces administratively
shut down
*Feb 16 03:24:58.455:%DIAL13-3-MSG:
02:32:09:%DSC_REDUNDANCY-3-EVENT:Redundancy event:LINK_FAIL from other DSC
*Feb 16 03:25:04.939:%DIAL13-0-MSG:
```

```
RouterB# show redundancy
```

```
failover mode enabled, failover group = 32
Currently ACTIVE role.
No connection to slot 12
DSC in slot 13:
Hub is in 'active' state.
Clock is in 'backup' state.
```

```
RouterB# show redundancy history
```

DSC Redundancy Status Change History:

```
010216 03:09 Slot -1 DSC:Failover configured -> BACKUP role.
010216 03:24 Slot 13 DSC:Failover -> ACTIVE role.
010216 03:24 Slot 13 DSC:Hub, becoming active - D12 linkfail
010216 03:24 Slot 13 DSC:Hub, becoming active - D12 linkfail
```

```
*Feb 16 03:26:14.079:%DSIPPF-5-DS_HELLO:DSIP Hello from shelf 47 slot 1 Succeeded
*Feb 16 03:26:14.255:%DSIPPF-5-DS_HELLO:DSIP Hello from shelf 47 slot 3 Succeeded
*Feb 16 03:26:14.979:%DSIPPF-5-DS_HELLO:DSIP Hello from shelf 47 slot 10 Succeeded
```

Privileged EXEC Mode Example

The following is sample output generated by this command in privileged EXEC mode on router platforms that support no keywords for the privileged EXEC mode form of the command:

RouterB# **show redundancy**

MWR1900 is the Active Router
Previous States with most recent at bottom

```
INITL_INITL      Dec 31 19:00:00.000
LISTN_INITL      Feb 28 19:00:15.568
LISTN_LISTN      Feb 28 19:00:15.568
SPEAK_LISTN      Feb 28 19:00:18.568
SPEAK_SPEAK      Feb 28 19:00:18.568
STDBY_SPEAK      Mar 19 08:54:26.191
ACTIV_SPEAK      Mar 19 08:54:26.191
ACTIV_STDBY      Mar 19 08:54:26.191
ACTIV_ACTIV      Mar 19 08:54:26.191
INITL_ACTIV      Mar 19 08:56:22.700
INITL_INITL      Mar 19 08:56:22.700
INITL_LISTN      Mar 19 08:56:28.544
LISTN_LISTN      Mar 19 08:56:28.652
LISTN_SPEAK      Mar 19 08:56:31.544
SPEAK_SPEAK      Mar 19 08:56:31.652
SPEAK_STDBY      Mar 19 08:56:34.544
SPEAK_ACTIV      Mar 19 08:56:34.544
STDBY_ACTIV      Mar 19 08:56:34.652
ACTIV_ACTIV      Mar 19 08:56:34.652
INITL_ACTIV      Mar 19 10:20:41.455
INITL_INITL      Mar 19 10:20:41.455
INITL_LISTN      Mar 19 10:20:49.243
LISTN_LISTN      Mar 19 10:20:49.299
LISTN_SPEAK      Mar 19 10:20:52.244
SPEAK_SPEAK      Mar 19 10:20:52.300
SPEAK_STDBY      Mar 19 10:20:55.244
STDBY_STDBY      Mar 19 10:20:55.300
ACTIV_STDBY      Mar 19 10:21:01.692
ACTIV_ACTIV      Mar 19 10:21:01.692
```

Related Commands

Command	Description
debug redundancy	Displays information used for troubleshooting dual (redundant) router shelves (Cisco AS5800) or RSCs (Cisco AS5850).
hw-module	Enables the router shelf to stop a DSC or to restart a stopped DSC.
mode	Sets the redundancy mode.
mode y-cable	Invokes y-cable mode.
redundancy	Enters redundancy configuration mode.

Command	Description
redundancy force-switchover	Forces a switchover from the active to the standby supervisor engine.
show chassis	Displays, for a router with two RSCs, information about mode (handover-split or classic-split), RSC configuration, and slot ownership.
show standby	Displays the standby configuration.
standalone	Specifies whether the MWR 1941-DC router is used in a redundant or standalone configuration.
standby	Sets HSRP attributes.

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