

# Catalyst 6500系列交换机与6800IA (FEX)的ISSU升级程序连接

## 目录

[简介](#)

[先决条件](#)

[要求](#)

[使用的组件](#)

[升级 程序](#)

[初始设置](#)

[升级步骤](#)

[验证](#)

## 简介

本文描述在Cisco Catalyst 6500系列交换机的一个逐步In-Service Software Upgrade (ISSU)步骤在与使用的虚拟交换系统(VSS)模式Supervisor 2T用(FEX)附加的双重址的Cisco Catalyst 6800即时访问交换机。

## [先决条件](#)

### [要求](#)

本文档没有任何特定的要求。

### [使用的组件](#)

本文档中的信息根据运行Supervisor引擎2T以在WS-X6904-40G线路卡附加的双重址的6800IA在VSS模式的Cisco Catalyst 6500系列交换机。

本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原始(默认)配置。如果您使用的是真实网络,请确保您已经了解所有命令的潜在影响。

## 升级 程序

## 初始设置

升级程序为对版本15.1(2)SY1的Cisco IOS软件版本15.1(2)SY执行。

这是统计信息，在ISSU进程前：

- 有交换机ID的1 Catalyst 6500机箱是活跃的，并且有ID的2交换机暂挂(热)。
- 两个机箱是UP在Cisco IOS软件版本15.1(2)SY。
- 运行Cisco IOS软件版本15.0(2)EX2的单个6800IA连接对在WS-X6904-40G线路卡的VSS有一双归属连接的。FEX Port-Channel编号是99，并且FEX ID是110。

```
6K1#show mod sw all
```

```
Switch Number:      1      Role:    Virtual Switch Active
-----
Mod Ports Card Type                               Model                               Serial No.
-----
 2     5  Supervisor Engine 2T 10GE w/ CTS (Acti VS-SUP2T-10G          SAL1632K9P2
 3    20  DCEF2T 4 port 40GE / 16 port 10GE     WS-X6904-40G          SAL1741E4ZA

Mod MAC addresses                               Hw   Fw           Sw           Status
-----
 2  c471.fe7c.de96 to c471.fe7c.de9d  1.3  12.2(50r)SYS 15.1(2)SY  Ok
 3  e02f.6d6a.698c to e02f.6d6a.699f  1.0  12.2(50r)SYL 15.1(2)SY  Ok

Mod  Sub-Module                               Model                               Serial           Hw   Status
-----
 2  Policy Feature Card 4                       VS-F6K-PFC4          SAL1637MCQQ     1.2  Ok
 2  CPU Daughterboard                          VS-F6K-MSFC5         SAL1637MKX8     1.4  Ok
 3  Distributed Forwarding Card WS-F6K-DFC4-E       SAL1745FSD6       1.0  Ok

Mod  Online Diag Status
-----
 2  Pass
 3  Pass

Switch Number:      2      Role:    Virtual Switch Standby
-----
Mod Ports Card Type                               Model                               Serial No.
-----
 2     5  Supervisor Engine 2T 10GE w/ CTS (Hot) VS-SUP2T-10G          SAL1650UC8L
 3    20  DCEF2T 4 port 40GE / 16 port 10GE     WS-X6904-40G          SAL17173QD3

Mod MAC addresses                               Hw   Fw           Sw           Status
-----
 2  2c54.2dc4.2f3a to 2c54.2dc4.2f41  1.4  12.2(50r)SYS 15.1(2)SY  Ok
 3  70ca.9b8f.510c to 70ca.9b8f.511f  1.0  12.2(50r)SYL 15.1(2)SY  Ok

Mod  Sub-Module                               Model                               Serial           Hw   Status
-----
 2  Policy Feature Card 4                       VS-F6K-PFC4          SAL1651UG8P     1.2  Ok
 2  CPU Daughterboard                          VS-F6K-MSFC5         SAL1651UEBY     1.5  Ok
 3  Distributed Forwarding Card WS-F6K-DFC4-E       SAL17173QHY       1.2  Ok

Mod  Online Diag Status
-----
 2  Pass
 3  Pass

Switch Number:      110     Role:    FEX
```

```

-----
Mod Ports Card Type                               Model                               Serial No.
-----
 1   48 C6800IA 48GE                               C6800IA-48TD                       FOC1736W1A6

Mod MAC addresses                               Hw   Fw           Sw           Status
-----
 1 c025.5cc2.2d00 to c025.5cc2.2d33 0.0  Unknown     15.0(2)EX2   Ok

Mod Online Diag Status
-----
 1 Pass

```

```

6K1#show switch virtual
Switch mode           : Virtual Switch
Virtual switch domain number : 100
Local switch number   : 1
Local switch operational role: Virtual Switch Active
Peer switch number    : 2
Peer switch operational role : Virtual Switch Standby

```

## 升级步骤

1. 确保新的Cisco IOS镜像(Cisco IOS软件版本15.1(2)SY1)是存在启动盘和slavebootdisk。

```

6K1#dir bootdisk: | in s2t54
 5 -rw- 120035816 Jan 23 2014 22:35:12 +00:00
s2t54-adventerprisek9-mz.SPA.151-2.SY1.bin
 8 -rw- 119792104 Feb 10 2014 19:42:12 +00:00
s2t54-adventerprisek9-mz.SPA.151-2.SY.bin

```

```

6K1#dir slavebootdisk: | in s2t54
 5 -rw- 120035816 Jan 23 2014 22:26:14 +00:00
s2t54-adventerprisek9-mz.SPA.151-2.SY1.bin
 8 -rw- 119792104 Feb 10 2014 19:46:14 +00:00
s2t54-adventerprisek9-mz.SPA.151-2.SY.bin

```

2. (可选)请使用这些命令为了验证VSS是准备好的升级程序：

**显示issu状态详细信息显示冗余show module交换机全部6K1#show issu状态详细信息**

系统在交错排列模式配置升级。  
发现两Supervisor节点联机。  
摘要：系统在模式一前一后将升级。

```

Slot = 1/2
RP State = Active
ISSU State = Init
Boot Variable = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY.bin,12;
Operating Mode = sso
ISSU Sub-State = No Upgrade Operation in Progress
Starting Image = N/A
Target Image = N/A
Current Version = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY.bin

```

Slot = 2/2  
RP State = Standby  
ISSU State = Init  
Boot Variable = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY.bin,12;  
Operating Mode = sso  
ISSU Sub-State = No Upgrade Operation in Progress  
Starting Image = N/A  
Target Image = N/A  
Current Version = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY.bin

This system is Fex-capable

**Fex-ID ISSU Status**

110 FEX\_INIT

6K1#

6K1#show redundancy

Redundant System Information :

-----  
Available system uptime = 36 minutes  
Switchovers system experienced = 0  
Standby failures = 0  
Last switchover reason = none

Hardware Mode = Duplex  
Configured Redundancy Mode = sso  
**Operating Redundancy Mode = sso**  
Maintenance Mode = Disabled  
Communications = Up

Current Processor Information :

-----  
Active Location = slot 1/2  
**Current Software state = ACTIVE**  
Uptime in current state = 36 minutes  
Image Version = Cisco IOS Software, s2t54 Software  
(s2t54-ADVENTERPRISEK9-M),  
Version 15.1(2)SY, RELEASE SOFTWARE (fc4)  
Technical Support: <http://www.cisco.com/techsupport>  
Copyright (c) 1986-2013 by Cisco Systems, Inc.  
Compiled Wed 04-Sep-13 12:37 by prod\_rel\_team  
BOOT = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY.bin,12;  
CONFIG\_FILE =  
BOOTLDR =  
Configuration register = 0x2102

Peer Processor Information :

-----  
Standby Location = slot 2/2  
**Current Software state = STANDBY HOT**  
Uptime in current state = 34 minutes  
Image Version = Cisco IOS Software, s2t54 Software  
(s2t54-ADVENTERPRISEK9-M),  
Version 15.1(2)SY, RELEASE SOFTWARE (fc4)  
Technical Support: <http://www.cisco.com/techsupport>  
Copyright (c) 1986-2013 by Cisco Systems, Inc.  
Compiled Wed 04-Sep-13 12:37 by prod\_rel\_team  
BOOT = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY.bin,12;  
CONFIG\_FILE =

```
BOOTLDR =  
Configuration register = 0x2102
```

### 3. 请使用issu loadversion命令为了开始升级进程。

在此步骤，VSS暂挂机箱重新启动，与新的镜像的重新加载，并且初始化作为在SSO冗余模式的VSS暂挂机箱，运行新的镜像。此步骤完成，当机箱配置同步时，如表示的是由**大批同步成功**的消息。它也许用几秒钟到几分钟新的镜像的能装载和VSS暂挂机箱的能过渡到SSO模式

。

```
6K1#issu loadversion 1/2 bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY1.bin  
2/2 slavebootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY1.bin
```

```
System configuration has been modified. Save? [yes/no]: yes
```

```
Building configuration...
```

```
[OK]
```

```
%issu loadversion initiated successfully, upgrade sequence will begin shortly
```

```
6K1#
```

```
*Feb 11 05:24:40.091: %ISSU_PROCESS-SW1-3-LOADVERSION: Loadversion sequence  
will begin in 60 seconds. Enter 'issu abortversion' to cancel.
```

```
*Feb 11 05:25:10.091: %ISSU_PROCESS-SW1-6-LOADVERSION_INFO: Resetting Standby shortly
```

```
<..output truncated..>
```

```
*Feb 11 05:29:46.075: %VS_GENERIC-SW1-6-VS_HA_HOT_STANDBY_NOTIFY: Standby switch  
is in Hot Standby mode
```

```
*Feb 11 05:29:46.079: %HA_CONFIG_SYNC-SW1-6-BULK_CFGSYNC_SUCCEED: Bulk Sync succeeded
```

```
*Feb 11 05:29:46.079: %RF-SW1-5-RF_TERMINAL_STATE: Terminal state reached for (SSO)
```

```
*Feb 11 05:30:25.091: %ISSU_PROCESS-SW1-3-LOADVERSION: Loadversion has completed.  
Please issue the 'issu runversion' command after all modules come online.
```

```
!
```

```
! Boot variable for standby should point to new Image in "show issu state detail" output.
```

```
6K1#show issu state det
```

```
The system is configured to be upgraded in staggered mode.
```

```
2 supervisor nodes are found to be online.
```

```
Summary: an in-tandem upgrade is in progress.
```

```
Slot = 1/2
```

```
RP State = Active
```

```
ISSU State = Load Version
```

```
Boot Variable = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY.bin,12;
```

```
Operating Mode = sso
```

```
ISSU Sub-State = Load Version Completed
```

```
Starting Image = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY.bin
```

```
Target Image = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY1.bin
```

```
Current Version = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY.bin
```

```
Slot = 2/2
```

```
RP State = Standby
```

```
ISSU State = Load Version
```

```
Boot Variable = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY1.bin,12;
```

```
bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY.bin,12
```

```
Operating Mode = sso
```

```
ISSU Sub-State = Load Version Completed
```

```
Starting Image = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY.bin
Target Image = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY1.bin
Current Version = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY1.bin
```

This system is Fex-capable

Fex-ID ISSU Status

110 FEX\_UPGRADE\_INIT

6K1#show redundancy states

```
my state = 13 -ACTIVE
peer state = 8 -STANDBY HOT
Mode = Duplex
Unit = Secondary
Unit ID = 18
```

```
Redundancy Mode (Operational) = sso
Redundancy Mode (Configured) = sso
Redundancy State = sso
Maintenance Mode = Disabled
Manual Swact = enabled
Communications = Up
```

```
client count = 144
client_notification_TMR = 30000 milliseconds
keep_alive TMR = 9000 milliseconds
keep_alive count = 1
keep_alive threshold = 19
RF debug mask = 0x0
```

4. 当VSS暂挂机箱在SSO冗余状态时成功地运转新的镜像，并且所有在VSS暂挂机箱的线路卡上和联机，请输入**issu runversion**命令为了强加切换。升级的VSS暂挂机箱接管作为新的活动机箱，运行新的镜像。以前活动机箱重新加载和初始化作为在SSO模式的新的VSS暂挂机箱，运行旧镜像(万一软件升级需要中止，并且旧镜像恢复)。此步骤完成，当机箱配置同步时，如表示的是由**大批同步成功**的消息。

6K1#issu runversion

此命令将重新加载活动装置。

```
Proceed ? [confirm]
%issu runversion initiated successfully

*Feb 11 05:35:19.035: %RF-SW1-5-RF_RELOAD: Self reload. Reason: Admin ISSU
runversion CLI
<..output truncated..>

Feb 11 05:35:21.411: %SYS-SW1-5-SWITCHOVER: Switchover requested by Exec.
Reload Reason: Admin ISSU runversion CLI.
Resetting .....

!
!Standby chassis now becomes active. Below logs are from new active switch.
!
```

Initializing as Virtual Switch ACTIVE processor

.  
.

\*Feb 11 05:37:36.107: %PFREDUN-SW2-6-ACTIVE: Standby initializing for SSO mode

\*Feb 11 05:39:56.563: %HA\_CONFIG\_SYNC-SW2-6-BULK\_CFGSYNC\_SUCCEED: Bulk Sync succeeded

\*Feb 11 05:39:56.563: %RF-SW2-5-RF\_TERMINAL\_STATE: Terminal state reached for (SSO)

\*Feb 11 05:39:56.555: %PFREDUN-SW1\_STBY-6-STANDBY: Ready for SSO mode in Default Domain

! Wait till all the modules and Fex Port-channel 99 links come up  
!

\*Feb 11 05:41:28.467: %ISSU\_PROCESS-SW2-6-RUNVERSION\_INFO: Runversion has completed.  
Please issue the 'issu acceptversion' command

Feb 11 05:43:13.034: %LINK-3-UPDOWN: Interface TenGigabitEthernet1/0/2, changed state to up (FEX-110)

Feb 11 05:43:14.033: %LINEPROTO-5-UPDOWN: Line protocol on Interface TenGigabitEthernet1/0/2, changed state to up (FEX-110)

\*Feb 11 05:43:14.491: %SATMGR-SW2-5-FABRIC\_PORT\_UP: SDP up on interface Te1/3/5, connected to FEX 110, uplink 52

\*Feb 11 05:43:14.491: %SATMGR-SW2-5-DUAL\_ACTIVE\_DETECT\_CAPABLE: channel group 99 is now dual-active detection capable

6K1#show issu state

The system is configured to be upgraded in staggered mode.  
2 supervisor nodes are found to be online.  
Summary: an in-tandem upgrade is in progress.

Slot = 2/2

RP State = Active

ISSU State = Run Version

Boot Variable = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY1.bin,12;  
bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY.bin,12

Slot = 1/2

RP State = Standby

ISSU State = Run Version

Boot Variable = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY.bin,12;

This system is Fex-capable

Fex-ID ISSU Status

110 FEX\_UPGRADE\_INIT

6K1#show fex 110 detail

FEX: 110 Description: FEX0110 state: online  
FEX version: 15.0(2)EX2  
Extender Model: C6800IA-48TD, Extender Serial: FOC1736W1A6  
FCP ready: yes  
Image Version Check: enforced  
Fabric Portchannel Ports: 2  
Fabric port for control traffic: Te2/3/5  
Fabric interface state:  
Po99 - Interface Up.  
Te1/3/5 - Interface Up. state: bound  
Te2/3/5 - Interface Up. state: bound

5. 请使用**issu acceptversion**命令为了终止回退计时器。这是必要的，因为，如果计时器超时，升级的机箱重新加载并且恢复对上一个软件版本。

```
6K1#issu acceptversion
% Rollback timer stopped. Please issue the 'issu commitversion' command.
```

6. 请使用**all**命令**issu runversion**的**fex**为了开始图像下载和升级程序在FEX (6800IA)。FEX触发从 Supervisor2T (此处Cisco IOS软件版本15.2(2)SY1)的新的软件套件的图像下载。如果使用 FEX堆叠，主控是负责的提取镜像到其成员。TFTP server运行在192.1.1.1。

```
6K1#issu runversion fex all

% Successfully initiated 'runversion fex' for Fex IDs: 110.
```

```
Use 'show issu state' for more information.
```

```
6K1#show issu state det
The system is configured to be upgraded in staggered mode.
2 supervisor nodes are found to be online.
Summary: an in-tandem upgrade is in progress.

      Slot = 2/2
      RP State = Active
      ISSU State = Run Version
      Boot Variable = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY1.bin,12;bootdisk:
s2t54-adventerprisek9-mz.SPA.151-2.SY.bin,12
      Operating Mode = sso
      ISSU Sub-State = Run Version Completed
      Starting Image = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY.bin
      Target Image = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY1.bin
      Current Version = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY1.bin
```

```
      Slot = 1/2
      RP State = Standby
      ISSU State = Run Version
      Boot Variable = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY.bin,12;
Operating Mode = sso
      ISSU Sub-State = Run Version Completed
      Starting Image = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY.bin
      Target Image = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY1.bin
      Current Version = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY.bin
```

```
This system is Fex-capable
```

```
Fex-ID   ISSU Status

  110    FEX_UPGRADE_IN_PROGRESS
```

```
Following are the logs on from FEX 6800IA console:
```

```
!
```



!192.1.1.1 is the tftp running on FEX controller i.e. VSS active and vlan 1012 is the control vlan associated with fex.

```
!  
FEX-110#  
Loading c6800ia-universalk9-mz.150-2.EX4.bin from 192.1.1.1  
(via Vlan1012): !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!  
[OK - 15493122 bytes]
```

```
examining image...  
extracting info (112 bytes)  
extracting c6800ia-universalk9-mz.150-2.EX4/info (792 bytes)  
extracting info (112 bytes)
```

Stacking Version Number: 1.55

```
System Type:          0x00000000  
Ios Image File Size:  0x00EB5200  
Total Image File Size: 0x00EC6A00  
Minimum Dram required: 0x08000000  
Image Suffix:         universalk9-150-2.EX4  
Image Directory:      c6800ia-universalk9-mz.150-2.EX4  
Image Name:           c6800ia-universalk9-mz.150-2.EX4.bin  
Image Feature:        IP|LAYER_2|SSH|3DES|MIN_DRAM_MEG=128  
FRU Module Version:   No FRU Version Specified
```

```
Old image for switch 1: flash:/c6800ia-universalk9-mz.150-2.EX2  
Old image will be left alone
```

Extracting images from archive into flash...

! The console will be waiting for about 5-10 minutes after the above line.

<output truncated>

New software image installed in flash:/c6800ia-universalk9-mz.150-2.EX4

Following are the logs from the 6500 Active supervisor:

```
*Feb 11 06:00:30.387: %SATMGR-SW2-5-ONLINE: FEX 110 online  
*Feb 11 06:00:30.391: %SATMGR-SW2-5-FEX_MODULE_ONLINE: FEX 110, module 1 online  
*Feb 11 06:00:30.395: %OIR-SW2-6-INSREM: Switch 110 Physical Slot 1 - Module  
Type LINE_CARD inserted  
*Feb 11 06:00:30.951: %SATMGR-SW2-5-FABRIC_PORT_UP: SDP up on interface Te2/3/5,  
connected to FEX 110, uplink 51  
*Feb 11 06:00:30.951: %SATMGR-SW2-5-DUAL_ACTIVE_DETECT_CAPABLE: channel group  
99 is now dual-active detection capable  
*Feb 11 06:01:00.983: %OIR-SW2-6-SP_INSCARD: Card inserted in Switch_number =  
110, physical slot 1, interfaces are now online
```

```
FEX-110#show ver | in image  
System image file is "flash:/c6800ia-universalk9-mz.150-2.EX4/  
c6800ia-universalk9-mz.150-2.EX4.bin"
```

6K1#show issu state det

```
The system is configured to be upgraded in staggered mode.  
2 supervisor nodes are found to be online.  
Summary: an in-tandem upgrade is in progress.
```

```
Slot = 2/2  
RP State = Active  
ISSU State = Run Version
```

```

    Boot Variable = bootdisk:s2t54-adventerprise9-mz.SPA.151-2.SY1.bin,12;
bootdisk:s2t54-adventerprise9-mz.SPA.151-2.SY.bin,12
Operating Mode = sso
ISSU Sub-State = Run Version Completed
Starting Image = bootdisk:s2t54-adventerprise9-mz.SPA.151-2.SY.bin
    Target Image = bootdisk:s2t54-adventerprise9-mz.SPA.151-2.SY1.bin
Current Version = bootdisk:s2t54-adventerprise9-mz.SPA.151-2.SY1.bin

        Slot = 1/2
        RP State = Standby
        ISSU State = Run Version
    Boot Variable = bootdisk:s2t54-adventerprise9-mz.SPA.151-2.SY.bin,12;
Operating Mode = sso
ISSU Sub-State = Run Version Completed
Starting Image = bootdisk:s2t54-adventerprise9-mz.SPA.151-2.SY.bin
    Target Image = bootdisk:s2t54-adventerprise9-mz.SPA.151-2.SY1.bin
Current Version = bootdisk:s2t54-adventerprise9-mz.SPA.151-2.SY.bin

```

This system is Fex-capable

```

Fex-ID    ISSU Status

    110    FEX_UPGRADE_COMPLETE

```

7. 为了继续，输入**issu commitversion**命令升级VSS暂挂机箱和完成ISSU顺序。VSS暂挂机箱重新启动，与新的镜像的重新加载，并且初始化作为VSS暂挂机箱在SSO冗余状态，运行新的镜像。此步骤完成，当机箱配置同步时，如表示的是由**大批同步成功**的消息，并且所有在新的VSS待机的线路卡上和联机。

```

6K1#issu commitversion
%issu commitversion initiated successfully, upgrade sequence will continue shortly

6K1#
*Feb 11 06:05:30.839: %ISSU_PROCESS-SW2-3-COMMITVERSION: issu commitversion;
Commitversion sequence will begin in 60 seconds. Enter 'issu abortversion'
to cancel.
*Feb 11 06:06:00.839: %ISSU_PROCESS-SW2-6-COMMITVERSION_INFO:
Resetting Standby shortly

*Feb 11 06:08:48.571: %PFREDUN-SW2-6-ACTIVE: Standby initializing for SSO mode
*Feb 11 06:09:01.163: %ISSU_PROCESS-SW2-6-COMMITVERSION_INFO: Standby has
come online, wait for terminal state
.
.
*Feb 11 06:10:41.267: %VS_GENERIC-SW2-6-VS_HA_HOT_STANDBY_NOTIFY: Standby switch
is in Hot Standby mode
*Feb 11 06:10:41.271: %HA_CONFIG_SYNC-SW2-6-BULK_CFGSYNC_SUCCEEDED:
Bulk Sync succeeded
*Feb 11 06:10:41.271: %RF-SW2-5-RF_TERMINAL_STATE: Terminal state reached for (SSO)

*Feb 11 06:10:46.403: %ISSU_PROCESS-SW2-6-COMMITVERSION_INFO: Upgrade has completed,
updating boot configuration

!
```

!Boot variable now displays both new and old image in ?show issu state detail? output.

!

6K1#show issu state detail

The system is configured to be upgraded in staggered mode.  
2 supervisor nodes are found to be online.  
Summary: an in-tandem upgrade is in progress.

Slot = 2/2  
RP State = Active  
ISSU State = Commit Version  
**Boot Variable = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY1.bin,12;  
bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY.bin,12**  
Operating Mode = sso  
ISSU Sub-State = Commit Version completed, waiting for system to settle  
Starting Image = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY.bin  
Target Image = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY1.bin  
Current Version = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY1.bin

Slot = 1/2  
RP State = Standby  
ISSU State = Commit Version  
**Boot Variable = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY1.bin,12;  
bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY.bin,12**  
Operating Mode = sso  
ISSU Sub-State = Commit Version completed, waiting for system to settle  
Starting Image = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY.bin  
Target Image = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY1.bin  
Current Version = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY1.bin

This system is Fex-capable

Fex-ID	ISSU Status
110	FEX_UPGRADE_COMPLETE

6K1#show redundancy

Redundant System Information :

-----  
Available system uptime = 1 hour, 28 minutes  
Switchovers system experienced = 1  
Standby failures = 1  
Last switchover reason = user forced

Hardware Mode = Duplex  
**Configured Redundancy Mode = sso**  
**Operating Redundancy Mode = sso**  
Maintenance Mode = Disabled  
Communications = Up

Current Processor Information :

-----  
Active Location = slot 2/2  
**Current Software state = ACTIVE**  
Uptime in current state = 36 minutes  
Image Version = Cisco IOS Software, s2t54 Software  
(s2t54-ADVENTERPRISEK9-M), Version 15.1(2)SY1, RELEASE SOFTWARE (fc4)  
Technical Support: <http://www.cisco.com/techsupport>  
Copyright (c) 1986-2013 by Cisco Systems, Inc.

```

Compiled Thu 28-Nov-13 12:58 by prod_rel_team
                BOOT = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY1.bin,12;
bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY.bin,12
                CONFIG_FILE =
                BOOTLDR =
                Configuration register = 0x2102

Peer Processor Information :
-----
                Standby Location = slot 1/2
                Current Software state = STANDBY HOT
                Uptime in current state = 1 minute
                Image Version = Cisco IOS Software, s2t54 Software (s2t54-ADVENTERPRISEK9-
M),
Version 15.1(2)SY1, RELEASE SOFTWARE (fc4)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2013 by Cisco Systems, Inc.
Compiled Thu 28-Nov-13 12:58 by prod_rel_team
                BOOT = bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY1.bin,12;
bootdisk:s2t54-adventerprisek9-mz.SPA.151-2.SY.bin,12
                CONFIG_FILE =
                BOOTLDR =
                Configuration register = 0x2102

```

## 验证

为了验证升级是成功的，请使用这些命令：

- 显示issu状态详细信息
- 显示冗余
- show module交换机全部

这是当前状态，在ISSU进程后：

- 有交换机ID的2 6500个机箱是活跃的，并且有ID的1交换机暂挂(热)。他们当前在Cisco IOS软件版本15.1(2)SY1。
- 瞬时访问客户端(6800IA)当前运行Cisco IOS软件版本15.0(2)EX4。

```

6K1#show mod swi all
Switch Number:      1   Role:  Virtual Switch Standby
-----
Mod Ports Card Type                               Model                               Serial No.
-----
 2     5  Supervisor Engine 2T 10GE w/ CTS (Hot) VS-SUP2T-10G          SAL1632K9P2
 3    20  DCEF2T 4 port 40GE / 16 port 10GE      WS-X6904-40G          SAL1741E4ZA

Mod MAC addresses                               Hw   Fw           Sw           Status
-----
 2  c471.fe7c.de96 to c471.fe7c.de9d  1.3  12.2(50r)SYS 15.1(2)SY1  Ok
 3  e02f.6d6a.698c to e02f.6d6a.699f  1.0  12.2(50r)SYL 15.1(2)SY1  Ok

Mod  Sub-Module                               Model                               Serial                               Hw   Status
-----
 2  Policy Feature Card 4                       VS-F6K-PFC4                         SAL1637MCQQ                        1.2  Ok
 2  CPU Daughterboard                           VS-F6K-MSFC5                         SAL1637MKX8                        1.4  Ok
 3  Distributed Forwarding Card WS-F6K-DFC4-E  SAL1745FSD6                        1.0  Ok

Mod  Online Diag Status
-----

```

2 Pass  
3 Pass

Switch Number: 2 Role: Virtual Switch Active

Mod	Ports	Card Type	Model	Serial No.
2	5	Supervisor Engine 2T 10GE w/ CTS (Acti	VS-SUP2T-10G	SAL1650UC8L
3	20	DCEF2T 4 port 40GE / 16 port 10GE	WS-X6904-40G	SAL17173QD3

Mod	MAC addresses	Hw	Fw	Sw	Status
2	2c54.2dc4.2f3a to 2c54.2dc4.2f41	1.4	12.2(50r)SYS	15.1(2)SY1	Ok
3	70ca.9b8f.510c to 70ca.9b8f.511f	1.0	12.2(50r)SYL	15.1(2)SY1	Ok

Mod	Sub-Module	Model	Serial	Hw	Status
2	Policy Feature Card 4	VS-F6K-PFC4	SAL1651UG8P	1.2	Ok
2	CPU Daughterboard	VS-F6K-MSFC5	SAL1651UEBY	1.5	Ok
3	Distributed Forwarding Card	WS-F6K-DFC4-E	SAL17173QHY	1.2	Ok

Mod Online Diag Status

2 Pass  
3 Pass

Switch Number: 110 Role: FEX

Mod	Ports	Card Type	Model	Serial No.
1	48	C6800IA 48GE	C6800IA-48TD	FOC1736W1A6

Mod	MAC addresses	Hw	Fw	Sw	Status
1	c025.5cc2.2d00 to c025.5cc2.2d33	0.0	Unknown	15.0(2)EX4	Ok

Mod Online Diag Status

1 Pass

6K1#

6K1#show switch virtual

Switch mode : Virtual Switch  
Virtual switch domain number : 100  
Local switch number : 2  
Local switch operational role: Virtual Switch Active  
Peer switch number : 1  
Peer switch operational role : Virtual Switch Standby