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

目录

简介

本文档介绍在虚拟交换系统(VSS)模式下使用Supervisor 2T和双宿主Cisco Catalyst 6800即时接入交换机(FEX)的Cisco Catalyst 6500系列交换机上的分步服务中软件升级(ISSU)过程。

先决条件

要求

本文档没有任何特定的要求。

使用的组件

本文档中的信息基于VSS模式下运行Supervisor引擎2T的Cisco Catalyst 6500系列交换机，该引擎在WS-X6904-40G线卡上连接了双宿主6800IA。

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

升级过程针对Cisco IOS®软件版本15.1(2)SY到版本15.1(2)SY1执行。

以下是ISSU流程之前的统计信息：

- 交换机ID为1的Catalyst 6500机箱处于活动状态，ID为2的交换机处于备用（热）状态。
- 两个机箱在Cisco IOS软件版本15.1(2)SY上都处于打开状态。
- 运行Cisco IOS软件版本15.0(2)EX2的单个6800IA通过双宿连接连接到WS-X6904-40G线卡上的VSS。FEX端口通道号为99,FEX ID为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映像(Cisco IOS软件版本15.1(2)SY1)存在于bootdisk和slavebootdisk中。

```
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）使用以下命令以验证VSS是否已准备好运行升级过程：
   show issu state detailshow redundancyshow module switch all6K1#show issu state detail

```
系统被配置为以交错模式升级。
发现两个管理引擎节点在线。
摘要:系统将以串联模式升级。


            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. 使用**issu loadversion**命令启动升级过程。

在此步骤中，VSS备用机箱将重新启动，使用新映像重新加载，并在SSO冗余模式下初始化为VSS备用机箱，运行新映像。如批量同步成功消息所示，当机箱配置同步时，此**步骤即**完成。加载新映像和VSS备用机箱转换到SSO模式可能需要几秒钟到几分钟。

```
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备用机箱在SSO冗余状态下成功运行新映像，并且VSS备用机箱上的所有线卡都处于启用状态且处于联机状态时，请输入**issu runversion**命令以强制进行切换。升级后的VSS备用机箱将作为运行新映像的新活动机箱接管。以前的活动机箱在SSO模式下重新加载并初始化为新的VSS备用机箱，运行旧映像（在需要中止软件升级并恢复旧映像的情况下）。 如批量同步成功消息所示，当机箱配置同步时，此**步骤即**完成。

   6K1#issu**运行版本**

   此命令将重新加载主用设备。

```
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. 使用issu acceptversion命令可停止回滚计时器。这是必需的，因为如果计时器过期，升级的机箱将重新加载并恢复到以前的软件版本。

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

6. 使用**issu runversion fex all**命令以在FEX(6800IA)上启动映像下载和升级过程。 FEX会触发从Supervisor2T的新软件捆绑包(此处为Cisco IOS软件版本15.2(2)SY1)下载映像。 如果使用FEX堆栈，则主设备负责将图像提取到其成员。TFTP服务器运行于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-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_COMPLETE
```

7. 要继续，请输入**issu commitversion**命令以升级VSS备用机箱并完成ISSU序列。VSS备用机箱将重新启动，使用新映像重新加载，并在运行新映像时初始化为处于SSO冗余状态的VSS备用机箱。如**Bulk sync succeeded**消息所示，当机箱配置同步且新VSS-Standby上的所有线卡都处于启用状态并处于联机状态时，此步骤即完成。

```
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_SUCCEED:
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

要验证升级是否成功，请使用以下命令：

- show issu state detail
- show redundancy
- show module switch all

以下是ISSU进程后的当前状态：

- 交换机ID为2的6500机箱处于活动状态，而ID为1的交换机处于备用（热）状态。 它们现在位于Cisco IOS软件版本15.1(2)SY1上。
- 即时接入客户端(6800IA)现在运行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
```