Replace Supervisor Module in Cisco Catalyst 6500 Virtual Switching System 1440

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Introduction

This document provides a step−by−step procedure to replace a bad supervisor in a Cisco Catalyst 6500 Virtual Switching System.

A Virtual Switching System (VSS) consists of two Catalyst 6500 chassis. Each chassis is equipped with a single supervisor engine. If one of the supervisors dies because of a hardware failure, the replacement supervisor that comes with a default configuration does not become a VSS member automatically. This new supervisor initially boots up in standalone mode, and it requires VSS configuration in order to boot in VSS mode.

Prerequisites

Requirements

Ensure that you meet these requirements before you attempt this configuration:

- Copy the valid image from the active VSS supervisor to a compact flash device.
- Copy the active VSS configuration to a compact flash device (can be the same).

Components Used

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

Cisco Catalyst 6500 Virtual Switching System 1440 on Cisco IOS® Software Release 12.2(33)SXH1 or later

The information in this document was created from the devices in a specific lab environment. If your network is live, make sure that you understand the potential impact of any command.

Conventions

Refer to the Cisco Technical Tips Conventions for more information on document conventions.

Configure

In this section, you are presented with the information to configure the features described in this document.

Note: Use the Command Lookup Tool (registered customers only) to obtain more information on the commands used in this section.

The new supervisor requires that you boot with a valid image and configuration. The image can be copied with TFTP or a compact flash device. If the compact flash is not available, the software image and configuration file can be copied with TFTP, as well.

1. Copy the valid image from the active VSS supervisor to a compact flash device.

```
VSS#dir sup-bootdisk:
Directory of sup-bootdisk:/
1 -rwx 117668516 Jan 22 2008 11:53:58 +00:00 s72033-
   ipservices_wan-vz.122-33.SXH1
2 -rwx 33554432 Aug 16 2007 12:40:22 +00:00 sea_log.dat
3 -rwx 7366 Aug 22 2007 20:05:42 +00:00 default-config
```

Note that in VSS mode, the active and standby supervisors run the same version of software image.

```
VSS#copy sup-bootdisk:s72033-ipservices_wan-vz.122-33.SXH1 disk0:
Destination filename [s72033-ipservices_wan-vz.122-33.SXH1]?
Copy in progress...CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
   CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC

!--- Output suppressed.
```
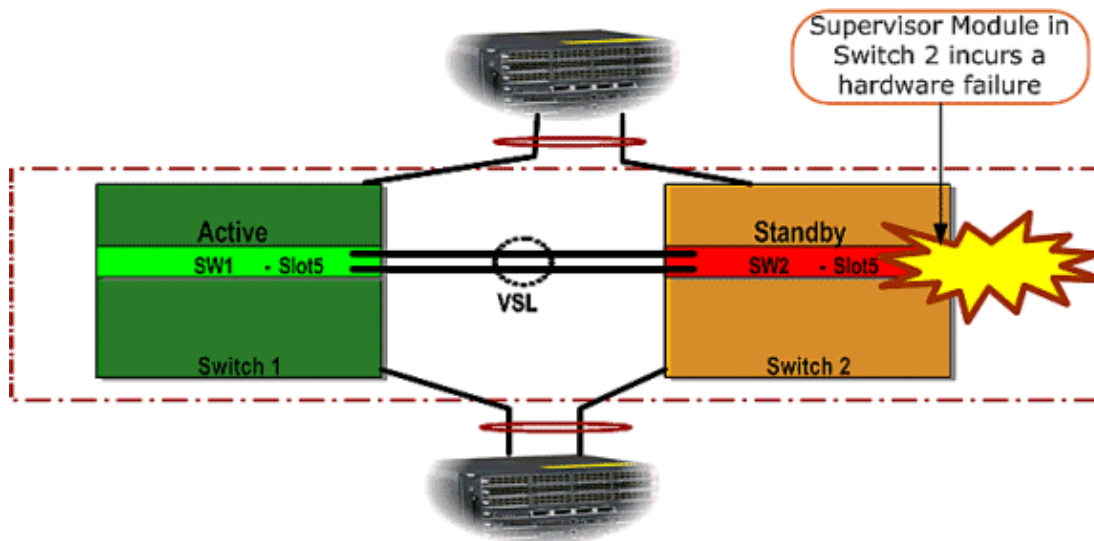
2. Copy the current configuration from the active VSS supervisor to a compact flash device.

```
VSS#copy running-config disk0:
Destination filename [startup-config]? <VSS.cfg>
11196 bytes copied in 0.712 secs (15725 bytes/sec)
```

Network Diagram

This document uses this network setup:

Switch 2 Supervisor Failure

Install and Configure the New Supervisor

Complete these steps to install and configure the new supervisor:

1. Install the new supervisor in the chassis and, in case the supervisor uplinks are used for VSL, connect them physically. Boot the image from the compact flash.
2. Erase the start–up configuration file of the new supervisor. This step is required to ensure that no stale configuration exists in the new supervisor.
3. Copy the software image that was previously copied to the compact flash device to the new supervisor sup–bootdisk:

```
Router#copy disk0:s72033-ipservices_wan-vz.122-33.SXH1 sup-bootdisk:
Destination filename [s72033-ipservices_wan-vz.122-33.SXH1]?
Copy in progress ..CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
117668516 bytes copied in 332.283 secs (354121 bytes/sec)

!--- Output suppressed.


!--- If you choose to download software image from a tftp server,
     connect one of the switch interfaces to the network in order to have connectivi
     to the tftp server. Configure IP address to the management interface; verify
     the connectivity between the switch and the tftp server.


!--- The management IP address should be different from what is
     already assigned to active VSS switch.
!--- Configure management IP address

Router(config)#interface gig 1/3
Router(config-if)#ip address 10.10.10.100 255.255.255.0
Router(config-if)#no shutdown

!--- verify Management interface status and configuration

Router#show interface gig 1/3
GigabitEthernet1/3 is up, line protocol is up (connected)
Hardware is C6k 1000Mb 802.3, address is 0005.dce7.8180
   (bia 0005.dce7.8180)
Internet address is 10.10.10.100/24

!--- Output omitted
```

```
!--- If the TFTP server and switch management interface are not in the same
     layer-3 subnet, add a (default) route.

Router(config)#ip route 0.0.0.0 0.0.0.0 10.10.10.1

!--- verify IP connectivity between switch and TFTP server

Router#ping 10.20.20.200

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.20.20.200, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/4 ms

!---Copy the new software image into supervisor bootflash:

Router#copy tftp: sup-bootdisk:
Address or name of remote host []? 10.20.20.200
Source filename []? s72033-ipservices_wan-vz.122-33.SXH1
Destination filename [s72033-ipservices_wan-vz.122-33.SXH1]?
Copy in progress ..CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC

!--- Output omitted
```

4. Copy the active supervisor configuration, which previously had been saved on the compact flash device, to the new supervisor startup–config configuration file.

```
Router#copy disk0:VSS.cfg startup-config
Destination filename [startup-config]?
11196 bytes copied in 7.460 secs (1501 bytes/sec)
Router#
```

Note: This step is critical because the VSS configuration and any boot variables required to boot the right IOS software image are added.

```
!--- Highlighted VSS configuration commands are critical
     to boot up the supervisor in VSS mode.
!--- Verify VSS configuration in the startup-config file

Router#more nvram:startup-config
!
hostname VSS
boot system flash sup-bootdisk:s72033-ipservices_wan-vz.122-33.SXH1

!--- Switch Virtual domain <id> is configured with respective
     switch priorities

switch virtual domain 1
switch mode virtual

!--- this command gets populated upon converting standalone switch to VSS mode.
     Make sure this command is part the configuration.

switch 1 priority 110
switch 2 priority 100


!--- Verify Virtual Switch Link (VSL) configuration

interface Port-channel1
no switchport
no ip address
switch virtual link 1
```

```
mls qos trust cos
no mls qos channel-consistency
!
interface Port-channel2
no switchport
no ip address
switch virtual link 2
mls qos trust cos
no mls qos channel-consistency

!--- Physical interfaces that are part of VSL

interface TenGigabitEthernet1/1/4
no switchport
no ip address
mls qos trust cos
channel-group 1 mode on

interface TenGigabitEthernet1/1/5
no switchport
no ip address
mls qos trust cos
channel-group 1 mode on

interface TenGigabitEthernet2/1/4
no switchport
no ip address
mls qos trust cos
channel-group 2 mode on

interface TenGigabitEthernet2/1/5
no switchport
no ip address
mls qos trust cos
channel-group 2 mode on
```

5. Configure the VSS Switch_ID that identifies a Catalyst 6500 switch within a Virtual Switching domain. Because VSS can consist of only two switches, you need to choose either 1 or 2 dependent on what values are defined on the active switch. You cannot use any value other than 1 or 2.

```
!--- Verify active Switch_ID on the active switch

Router#switch read switch_num local
Read switch_num from Active rommon is 1

!--- Note that since Switch_ID=1 is used for active switch,
      we would define Switch_ID=2 in the new supervisor.


!--- Configure the Switch_ID on the supervisor.


!--- Below command sets a Switch_ID ROMMON variable.
      It is used during VSS boot up to identify a switch within a VSS domain.
!--- Note that the Switch_ID doesn t dictate the state (active vs. standby) of the s

Router#switch set switch_num 2 local
Set rommon's switch_num to 2

!--- Verify the Switch_ID configuration on the new supervisor.

Router#switch read switch_num local
Read switch_num from Active rommon is 2
```

6. Reload the switch so that, when you reload, the switch boots in VSS mode.

> ⚠️ **Caution:** Do not save your running–config to startup–config at this point. If you do, the startup–config is overwritten with the default configuration, and the switch does not boot in VSS mode.

Example CLI Output:

```
Router# reload
System configuration has been modified. Save? [yes/no]: no
Proceed with reload? [confirm]
00:25:07: %SYS-5-RELOAD: Reload requested by console.
   Reload Reason: Reload Command.
00:26:49: %SYS-SP-3-LOGGER_FLUSHING:
   System pausing to ensure console debugging output.
00:26:49: %OIR-SP-6-CONSOLE:
   Changing console ownership to switch processor


!--- Output omitted
!--- SP booting up, pay attention to the name of the image being loaded by SP

System Bootstrap, Version 8.5(1)
Copyright (c) 1994-2006 by cisco Systems, Inc.
Cat6k-Sup720/SP processor with 1048576 Kbytes of main memory
Autoboot executing command:  boot system flash
   sup-bootflash:s72033-ipservices_wan-vz.122-33.SXH1
Loading image, please wait ...
Initializing ATA monitor library...
Self decompressing the image :
   #######################################
   #######################################
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   Version 12.2(33)SXH1, RELEASE SOFTWARE (fc3)
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Compiled Thu 17-Jan-08 04:38 by prod_rel_team
Image text-base: 0x01020150, data-base: 0x01021000

!--- VSS configuration pre-parsed during bootup

System detected Virtual Switch configuration...
Interface TenGigabitEthernet 2/8/4 is member of Portchannel 2


!--- output omitted

Initializing as Virtual Switch STANDBY processor

!--- VSL module ( supervisor in this scenario)
     brought up and role is resolved as standby
     since there is already a active VSS switch.


00:00:30: %VSL_BRINGUP-6-MODULE_UP:
   VSL module in slot 8 switch 2 brought up
```

```
00:00:57: %VSLP-5-VSL_UP:
   Ready for Role Resolution with Switch=1,
   MAC=0014.1bc6.1c00 over 8/4
00:01:01: %VSLP-5-RRP_ROLE_RESOLVED:
   Role resolved as STANDBY by VSLP
00:01:01: %VSL-5-VSL_CNTRL_LINK: New VSL Control Link 8/4

!--- RP is booting up

System Bootstrap, Version 12.2(17r)SX5, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 2006 by cisco Systems, Inc.
Cat6k-Sup720/RP platform with 1048576 Kbytes of main memory
Download Start
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
    !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!

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    !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
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San Jose, California 95134-1706
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   Version 12.2(33)SXH1, RELEASE SOFTWARE (fc3)
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Compiled Thu 17-Jan-08 04:04 by prod_rel_team
Image text-base: 0x01020150, data-base: 0x01021000

!--- output omitted

Press RETURN to get started!

!--- Look out for  -
       %PFREDUN-SW2_SPSTBY-6-STANDBY: Initializing for SSO mode
     in the active console to make sure stadby is running in SSO mode.
!--- After standby boots up it s console is locked

VSS-sdby>
Standby console disabled
VSS-sdby>
Standby console disabled
```

Note: In order to configure VSS on multiple subnets, standby configuration is not needed on the VSS. Gateway routers should be set up as the VLAN SVI.

Verify

There is currently no verification procedure available for this configuration.

The Output Interpreter Tool (registered customers only) (OIT) supports certain **show** commands. Use the OIT to view an analysis of **show** command output.

Troubleshoot

This section provides information you can use to troubleshoot your configuration.

Software Mismatch Between the Supervisor Engines

If there is a software mismatch between the supervisor engines, the standy supervisor comes up in the RPR redundancy mode (not in the SSO redundancy mode), and the VSS does not fully initialize.

In order to resolve the issue, make sure that the required software is present in the flash of the standy supervisor and the boot statements point to the correct software. Reload the standy supervisor so that it boots with the correct software and joins the VSS.

Related Information

- **Cisco Catalyst 6500 Virtual Switching System 1440**
- **LAN Product Support**
- **LAN Switching Technology Support**
- **Technical Support & Documentation – Cisco Systems**