Substituir um módulo supervisor redundante com falha nos switches Catalyst 6500 Series executando CatOS (Hybrid)

Contents

Introduction

Este documento mostra como substituir um módulo falhado do supervisor redundante nos Catalyst 6500 Series Switches. Este documento explica o procedimento para os módulos do supervisor que são executado no Hybrid OS.

Prerequisites

Requirements

A Cisco recomenda que você tenha conhecimento destes tópicos:

- [Configurando a redundância](#)
- [Configurando NSF com redundância de MSFC SSO](#)

Componentes Utilizados

As informações neste documento são baseadas nestas versões de software e hardware:

- Switch Cisco Catalyst 6500 Series
- Módulo supervisor: WS-SUP32-GE-3B
- SO híbrido:Catalyst OS (CatOS) 8.5(8)MSFC IOS® 12.2(18)SXF7

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Produtos Relacionados

Este documento também pode ser usado com as seguintes versões de hardware e software:

- Supervisor 720 que executa o SO híbrido
- Supervisor 2 que executa o SO híbrido

Conventions

Consulte as [Convenções de Dicas Técnicas da Cisco para obter mais informações sobre convenções de documentos.](#)

Informações de Apoio

Estes são alguns dos pontos importantes relacionados aos módulos supervisores redundantes:

- No mecanismo supervisor em standby, a porta do console está inativa, o status do módulo é mostrado como "standby" e o status das portas de uplink é mostrado normalmente.
- Para permitir que você controle a inicialização de cada mecanismo supervisor separadamente, os registros de configuração não são sincronizados entre os mecanismos de supervisor.
- Se as versões de software dos dois mecanismos de supervisor forem diferentes, ou se a configuração da NVRAM dos dois mecanismos de supervisor for diferente, o mecanismo de supervisor ativo baixará automaticamente sua imagem de software e sua configuração para o mecanismo de supervisor em standby.
- Os mecanismos do supervisor usam duas imagens flash: a imagem de inicialização e a imagem em tempo de execução. O nome do arquivo de imagem de inicialização, especificado na variável de ambiente BOOT, é armazenado na NVRAM. A imagem de tempo de execução é a imagem de inicialização que o monitor ROM usa para inicializar o mecanismo supervisor. Após a inicialização do sistema, a imagem em tempo de execução reside na RAM dinâmica (DRAM).
- Os mecanismos supervisores redundantes devem ser do mesmo tipo com a mesma placa de recurso de modelo. O WS-X6K-SUP1-2GE e o WS-X6K-SUP1A-2GE, ambos sem Placas de Recursos de Política (PFCs - Policy Feature Cards), são compatíveis para redundância. Para mecanismos de supervisão com PFCs, os PFCs devem ser idênticos para redundância (dois PFCs, dois PFC2s, dois PFC3As, dois PFC3Bs ou dois PFC3BXLs).

Procedimento passo a passo para substituir o módulo supervisor

- mesmo sistema operacional híbrido

Esta seção fornece o procedimento passo a passo para substituir o Módulo Supervisor 32 em um Switch Catalyst 6500 Series. Este exemplo usa um Switch Cisco Catalyst 6509, que tem dois módulos de supervisor nos slots 5 e 6. O módulo supervisor no slot 6 falhou. Supõe-se que o módulo supervisor com falha no slot 6 seja removido do chassi. Você pode ver o procedimento para adicionar o novo módulo supervisor ao slot 6.

Se você tiver um switch Cisco Catalyst 6500 Series adicional, poderá conectar o novo supervisor no switch e atualizar ou fazer o downgrade do sistema operacional híbrido para o mesmo nível do supervisor no slot 5 do switch de produção. Se você tiver o mesmo SO híbrido no novo módulo supervisor, não precisará configurar nada no novo módulo supervisor. Quando você adiciona o módulo supervisor ao slot 6, o mecanismo supervisor ativo sincroniza automaticamente a configuração. Esta seção mostra o processo passo a passo e a lista de verificação durante a substituição do supervisor.

Este é o procedimento passo a passo para substituir o Módulo Supervisor 32 em um Switch Catalyst 6500 Series:

1. Adicione o módulo supervisor ao slot 6.Se você tiver uma conexão de console com o supervisor no slot 6, verá esta saída:

   ```
   !--- Supervisor module at slot 6 System Bootstrap, Version 12.2(18r)SX2, RELEASE SOFTWARE
   (fc1) Technical Support: http://www.cisco.com/techsupport Copyright (c) 2004 by cisco
   Systems, Inc. Cat6k-Sup32 platform with 524288 Kbytes of main memory Autoboot executing
   command: "boot bootdisk:cat6000-sup32pfc3k8.8-5-8.bin" Self decompressing the image :
   #########################################
   ######################################################################
   ######################################################################
   ######################################################################
   ######################################################################
   ######################################################################
   ######################################################################
   ######################################################################
   ######################################################################
   ######################################################################
   ######################################################################
   ################################################## [OK] System Power On Diagnostics DRAM
   Size ........................512 MB Testing DRAM .......................Passed Verifying
   Text Segment .............Passed NVRAM Size ........................2048 KB Level2 Cache
   .......................Present Level3 Cache .....................Absent System Power On
   Diagnostics Complete Currently running ROMMON from S (Gold) region Boot image:
   bootdisk:cat6000-sup32pfc3k8.8-5-8.bin Firmware compiled 01-Dec-06 12:57 by integ Build
   [100] This module is now in standby mode.
   Console is disabled for standby supervisor.
   ```

   Esta saída mostra o console do supervisor ativo no slot 5:

   ```
   Access2> (enable)
   Access2> (enable)
   Access2> (enable) 2007 May 22 19:17:48 %SYS-5-MOD_INSERT:Module
   6 has been inserted

   Access2> (enable)
   Access2> (enable)
   Access2> (enable)
   %SYS-5-SUP_MODSBY:Module 6 is in standby mode

   %SYS-5-SUP_IMGSYNC:File synchronization process will start in 120 seconds
   ```

```
%DIAG-6-RUN_MINIMUM:Module 6: Running Minimal Diagnostics...

%DIAG-6-DIAG_OK:Module 6: Passed Online Diagnostics

%SYS-3-TRANSCEIVER_NOTSUPP: Transceiver on port 6/1 is not supported

%SYS-3-TRANSCEIVER_NOTSUPP: Transceiver on port 6/2 is not supported

%SYS-5-PORT_SSUPOK:Ports on standby supervisor (module 6) are up

%SYS-3-MOD_PORTINTFINSYNC:Port Interface in sync for Module 6

%DIAG-6-RUN_MINIMUM:Module 16: Running Minimal Diagnostics...

%DIAG-6-DIAG_OK:Module 16: Passed Online Diagnostics

%SYS-5-MOD_OK:Module 16(WS-F6K-MSFC2A,SAL1018LQ3C) is online

%MGMT-5-SYS_CONFIG_START_MOD_FAIL:Unable to start system configuration
for module 6

%MGMT-5-SYS_CONFIG_START_MOD_FAIL:Unable to start system configuration for
module 16

%SYS-5-SUP_IMGSYNCSTART:Active supervisor is synchronizing bootdisk:
cat6000-sup32pfc3k8.8-5-8.bin

%SYS-5-SUP_IMGSYNCFINISH:Active supervisor has synchronized bootdisk:
cat6000-sup32pfc3k8.8-5-8.bin

Access2> (enable)
```

2. Verifique o status de redundância do supervisor:

```
Access2> (enable) show system highavailability
Highavailability: enabled
Highavailability versioning: disabled
Highavailability Operational-status: ON
Access2> (enable)
```

3. Verifique o status de redundância MSFC:

```
Access2> (enable) session 15
Trying Router-15...
Connected to Router-15.
Escape character is '^]'.

LAB-Router>enable
LAB-Router#show redundancy
Redundant System Information :
------------------------------
        Available system uptime = 10 minutes
Switchovers system experienced = 0
              Standby failures = 0
        Last switchover reason = unsupported

                 Hardware Mode = Duplex
    Configured Redundancy Mode = Stateful SwitchOver - SSO
     Operating Redundancy Mode = Stateful SwitchOver - SSO
              Maintenance Mode = Disabled
                Communications = Up

Current Processor Information :
------------------------------
               Active Location = slot 5
         Current Software state = ACTIVE
```

```
        Uptime in current state = 10 minutes
                Image Version = Cisco Internetwork Operating System Software
IOS (tm) MSFC2A Software (C6MSFC2A-ADVENTERPRISEK9_WAN-M),
Version 12.2(18)SXF7, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2006 by cisco Systems, Inc.
Compiled Thu 23-Nov-06 01:03 by kellythw
                         BOOT =
                  CONFIG_FILE =
                      BOOTLDR =
        Configuration register = 0x2102


Peer Processor Information :
----------------------------
            Standby Location = slot 6
        Current Software state = STANDBY HOT
        Uptime in current state = 2 minutes
                Image Version = Cisco Internetwork Operating System Software
IOS (tm) MSFC2A Software (C6MSFC2A-ADVENTERPRISEK9_WAN-M),
Version 12.2(18)SXF7, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2006 by cisco Systems, Inc.
Compiled Thu 23-Nov-06 01:03 by kellythw
                         BOOT =
                  CONFIG_FILE =
                      BOOTLDR =
        Configuration register = 0x2102



LAB-Router#
```

4. Forçar failover e teste do supervisor:

```
!--- Supervisor in slot 5 Access2> (enable) switch supervisor
This command will force a switch-over to the standby Supervisor module.
Do you want to continue (y/n) [n]? y
2007 May 21 20:40:37 %SYS-5-MOD_RESET:Module 5 reset from Console//
Access2> (enable)
System Bootstrap, Version 12.2(18r)SX2, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 2004 by cisco Systems, Inc.
Cat6k-Sup32 platform with 262144 Kbytes of main memory

Autoboot executing command: "boot bootdisk:cat6000-sup32pfc3k8.8-5-8.bin"
Self decompressing the image : ##########################################
###########################################################################
###########################################################################
###########################################################################
###########################################################################
###########################################################################
###########################################################################
###########################################################################
###########################################################################
###########################################################################
###########################################################################
################################################## [OK]



System Power On Diagnostics
DRAM Size ..........................256 MB
Testing DRAM .......................Passed
Verifying Text Segment .............Passed
NVRAM Size .........................2048 KB
Level2 Cache .......................Present
```

```
Level3 Cache .....................Absent
System Power On Diagnostics Complete


Currently running ROMMON from S (Gold) region
Boot image: bootdisk:cat6000-sup32pfc3k8.8-5-8.bin



Firmware compiled 01-Dec-06 12:57 by integ Build [100]

This module is now in standby mode.
Console is disabled for standby supervisor
```

5. Use o console para se conectar ao Supervisor 6 e verifique a configuração do supervisor e do MSFC.

Procedimento passo a passo para substituir o módulo supervisor - SO híbrido diferente

Esta seção explica o procedimento passo a passo para substituir o Supervisor Module 32 em um Catalyst 6500 Series Switch. Este exemplo usa um Switch Cisco Catalyst 6509 que tem dois módulos de supervisor nos slots 5 e 6. O módulo supervisor no slot 6 falhou. Supõe-se que o módulo supervisor com falha no slot 6 seja removido do chassi. Você pode ver o procedimento para adicionar o novo módulo supervisor ao slot 6.

Se você não tiver uma opção para atualizar o novo SO híbrido do supervisor para a mesma versão do supervisor ativo, poderá executar este procedimento para adicionar o módulo do supervisor e sincronizar o SO híbrido e a configuração do switch. A maior parte do procedimento é automatizado. Este documento mostra o processo passo a passo e a lista de verificação a ser executada durante a substituição do supervisor.

Verifique antes de adicionar o novo módulo Supervisor

Esta seção mostra a saída de show do switch sem o supervisor no slot 6.

- Show module
- show version
- variável de inicialização

1. Mostrar saída do módulo:
```
Access2> (enable) show module
Mod Slot Ports Module-Type              Model              Sub Status
--- ---- ----- ------------------------ ------------------ --- --------
1   1    0     1000BaseX Ethernet                          no  power-down
2   2    48    10/100BaseTX Ethernet    WS-X6248-RJ-45     no  ok
3   3    48    10/100BaseTX Ethernet    WS-X6348-RJ-45     yes ok
4   4    48    10/100BaseTX Ethernet    WS-X6348-RJ-45     yes ok
5   5    9     1000BaseX Supervisor     WS-SUP32-GE-3B     yes ok
15  5    1     Multilayer Switch Feature WS-F6K-MSFC2A     no  ok
7   7    5     Communication Media Mod. WS-SVC-CMM         no  ok
8   8    0     FXS                                         no  power-down
9   9    0     10/100BaseTX Ethernet                       no  power-down

!--- Output suppressed Mod Sub-Type Sub-Model Sub-Serial Sub-Hw Sub-Sw --- ----------------
------- ------------------ ----------- ------ ------ 3 Inline Power Module WS-F6K-VPWR 1.0
1.1(1) 4 Inline Power Module WS-F6K-VPWR 1.0 1.1(1) 5   L3 Switching Engine III WS-F6K-
```

```
PFC3B          SAL1012GREU 2.1
Access2> (enable)
```

2. Mostrar saída da versão:

```
Access2> (enable) show version
WS-C6509 Software, Version NmpSW: 8.5(8)
Copyright (c) 1995-2006 by Cisco Systems
NMP S/W compiled on Dec  1 2006, 23:03:43

System Bootstrap Version: 12.2
System Boot Image File is 'bootdisk:cat6000-sup32pfc3k8.8-5-8.bin'
System Configuration register is 0x2102

Hardware Version: 2.0  Model: WS-C6509  Serial #: SCA034500F5

PS1  Module: WS-CAC-6000W    Serial #: AZS10130G7T

Mod Port Model                 Serial #     Versions
--- ---- ------------------- ----------- -------------------------------------
2   48   WS-X6248-RJ-45        SAD03431007 Hw : 1.1
                                           Fw : 4.2(0.24)VAI78
                                           Sw : 8.5(8)
3   48   WS-X6348-RJ-45        SAD04150A2T Hw : 1.1
                                           Fw : 5.3(1)
                                           Sw : 8.5(8)
         WS-F6K-VPWR                       Hw : 1.0
                                           Sw : 1.1(1)
4   48   WS-X6348-RJ-45        SAD05070CNX Hw : 2.0
                                           Fw : 5.4(2)
                                           Sw : 8.5(8)
         WS-F6K-VPWR                       Hw : 1.0
                                           Sw : 1.1(1)
5   9    WS-SUP32-GE-3B        SAL1010F8KG Hw : 4.2
                                           Fw : 12.2
                                           Fw1: 8.5(8)
                                           Sw : 8.5(8)
                                           Sw1: 8.5(8)
         WS-F6K-PFC3B          SAL1012GREU Hw : 2.1
                                           Sw :
7   5    WS-SVC-CMM            SAD100707YJ Hw : 2.8
                                           Fw : 12.4(7a),
                                           Sw : 12.4(7a),
15  1    WS-F6K-MSFC2A         SAL1012GG1X Hw : 3.0
                                           Fw : 12.2(18)SXF7
                                           Sw : 12.2(18)SXF7


       DRAM                    FLASH                   NVRAM
Module Total   Used    Free    Total   Used    Free    Total Used  Free
------ ------- ------- ------- ------- ------- ------- ----- ----- -----
5      262144K 124421K 137723K 249772K   9796K 239976K 2048K  366K 1682K

Uptime is 0 day, 0 hour, 3 minutes
Access2> (enable)
```

3. Variável de inicialização:

```
!--- Current working directory Access2> (enable) pwd bootdisk !--- Files in the bootdisk
Access2> (enable) dir 2 -rw- 10029260 Dec 13 2006 15:37:08 cat6000-sup32pfc3k8.8-5-8.bin
245735424 bytes available (10031104 bytes used) !--- Boot variable Access2> (enable) show
boot
BOOT variable = bootdisk:cat6000-sup32pfc3k8.8-5-8.bin,1;
CONFIG_FILE variable = bootflash:switch.cfg

Configuration register is 0x2102
ignore-config: disabled
```

```
auto-config: non-recurring, overwrite, sync disabled
ROMMON console baud: 9600
boot: image specified by the boot system commands

Image auto sync is enabled
Image auto sync timer is 120 seconds
Access2> (enable)
```

Adicionar o novo módulo supervisor

O módulo supervisor é inserido no slot 6. A saída do console dos módulos supervisor ativo e standby quando você adiciona o novo módulo supervisor em standby ao switch é mostrada aqui:

1. Insira o novo módulo supervisor no slot 6. Você pode ver esta mensagem de log no módulo supervisor ativo:
   ```
   Access2> (enable) 2007 May 21 20:21:14 %SYS-5-MOD_INSERT:Module 6 has been
   inserted
   ```
   Se você tiver feito o agrupamento no supervisor em standby às 6, poderá ver este processo de inicialização:
   ```
   System Bootstrap, Version 12.2(18r)SX2, RELEASE SOFTWARE (fc1)
   Technical Support: http://www.cisco.com/techsupport
   Copyright (c) 2004 by cisco Systems, Inc.
   Cat6k-Sup32 platform with 524288 Kbytes of main memory

   Autoboot executing command: "boot bootdisk:cat6000-sup32pfc3k8.8-4-5.bin"
   Self decompressing the image : ###########################################
   #########################################################################
   #########################################################################
   #########################################################################
   #########################################################################
   #########################################################################
   #########################################################################
   #########################################################################
   #########################################################################
   #########################################################################
   ################################################################# [OK]


   System Power On Diagnostics
   DRAM Size ........................512 MB
   Testing DRAM .....................Passed
   Verifying Text Segment ...........Passed
   NVRAM Size .......................2048 KB
   Level2 Cache .....................Present
   Level3 Cache .....................Absent
   System Power On Diagnostics Complete

   Currently running ROMMON from S (Gold) region
   Boot image: bootdisk:cat6000-sup32pfc3k8.8-4-5.bin


   Firmware compiled 02-Aug-05 16:08 by integ Build [100]


   This module is now in standby mode.
   Console is disabled for standby supervisor
   ```

2. Você pode verificar o status de redundância do módulo supervisor ativo no slot 5.
   ```
   Access2> (enable) 2007 May 21 20:23:09 %SYS-5-SUP_MODSBY:Module 6 is in standby
   mode
   ```

```
2007 May 21 20:23:11 %SYS-5-SUP_IMGSYNCSTART:Active supervisor is synchronizing
bootdisk:cat6000-sup32pfc3k8.8-5-8.bin

Access2> (enable) show system highavailability
Highavailability: enabled
Highavailability versioning: disabled
Highavailability Operational-status: OFF(standby-supervisor-image-incompatible)
```

O módulo supervisor ativo copia o CatOS no módulo supervisor em standby. Ele também
configura a variável de inicialização do mecanismo supervisor em standby para o novo
CatOS.

```
Access2> (enable)
2007 May 21 20:24:23 %SYS-5-SUP_IMGSYNCFINISH:Active superviso
r has synchronized bootdisk:cat6000-sup32pfc3k8.8-5-8.bin
```

Depois que a imagem do CatOS é copiada para o supervisor em standby, o módulo em
standby 6 é recarregado automaticamente com a nova imagem.

```
This module is now in standby mode.
Console is disabled for standby supervisor

System Bootstrap, Version 12.2(18r)SX2, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 2004 by cisco Systems, Inc.
Cat6k-Sup32 platform with 524288 Kbytes of main memory

Autoboot executing command: "boot bootdisk:RTSYNC_cat6000-sup32pfc3k8.8-5-8.bin"
Self decompressing the image : ###############################################
########################################################################
########################################################################
########################################################################
########################################################################
########################################################################
########################################################################
########################################################################
########################################################################
########################################################################
########################################################################
##################################################### [OK]


System Power On Diagnostics
DRAM Size .........................512 MB
Testing DRAM ......................Passed
Verifying Text Segment ............Passed
NVRAM Size ........................2048 KB
Level2 Cache ......................Present
Level3 Cache ......................Absent
System Power On Diagnostics Complete

Currently running ROMMON from S (Gold) region
Boot image: bootdisk:RTSYNC_cat6000-sup32pfc3k8.8-5-8.bin


Firmware compiled 01-Dec-06 12:57 by integ Build [100]

This module is now in standby mode.
Console is disabled for standby supervisor
```

3. Quando o módulo em standby estiver ativo, você poderá verificar o status da redundância do
módulo supervisor ativo.

```
Access2> (enable) 2007 May 21 20:26:22 %SYS-5-SUP_MODSBY:Module 6 is in standby
mode
2007 May 21 20:26:23 %SYS-5-SUP_IMGSYNC:File synchronization process will start
```

```
in 120 seconds
2007 May 21 20:27:08 %SYS-1-SYS_LCPERR1:Module 16: RP requested reset of peer RP
: MSFC on module 16 will be reset
2007 May 21 20:27:24 %DIAG-6-RUN_MINIMUM:Module 6: Running Minimal Diagnostics..
.
2007 May 21 20:27:24 %DIAG-6-DIAG_OK:Module 6: Passed Online Diagnostics
2007 May 21 20:27:25 %SYS-3-TRANSCEIVER_NOTSUPP: Transceiver on port 6/1 is not
supported
2007 May 21 20:27:25 %SYS-3-TRANSCEIVER_NOTSUPP: Transceiver on port 6/2 is not
supported
2007 May 21 20:27:25 %SYS-5-PORT_SSUPOK:Ports on standby supervisor (module 6) a
re up
2007 May 21 20:27:25 %SYS-3-MOD_PORTINTFINSYNC:Port Interface in sync for Module
 6
2007 May 21 20:28:24 %SYS-5-SUP_IMGSYNCSTART:Active supervisor
 is synchronizing bootdisk:cat6000-sup32pfc3k8.8-5-8.bin
2007 May 21 20:28:25 %SYS-5-SUP_IMGSYNCFINISH:Active supervisor has synchronized
 bootdisk:cat6000-sup32pfc3k8.8-5-8.bin


Access2> (enable)


Access2> (enable) dir
     2   -rw-  10029260    Dec 13 2006 15:37:08 cat6000-sup32pfc3k8.8-5-8.bin


245735424 bytes available (10031104 bytes used)
Access2> (enable) dir 6/
     2   -rw-   9356096    May 11 2006 19:04:09 cat6000-sup32pfc3k8.8-4-5.bin
  2287   -rw-  10029260    May 21 2007 20:24:10 RTSYNC_cat6000-sup32pfc3k8.8-5-
8.bin
```
*!--- You can see the copied CatOS name starts with RTSYNC_* 236900352 bytes available
(19390464 bytes used) Access2> (enable) **show system highavailability**
```
Highavailability: enabled
Highavailability versioning: disabled
Highavailability Operational-status: ON
```

Verifique o módulo Supervisor depois de adicionar o novo módulo Supervisor

Execute estas etapas:

1. Mostrar saída do módulo:
   ```
   Access2> (enable) show module
   Mod Slot Ports Module-Type             Model              Sub Status
   --- ---- ----- ----------------------- ------------------ --- --------
   1   1    0     1000BaseX Ethernet                         no  power-down
   2   2    48    10/100BaseTX Ethernet   WS-X6248-RJ-45     no  ok
   3   3    48    10/100BaseTX Ethernet   WS-X6348-RJ-45     yes ok
   4   4    48    10/100BaseTX Ethernet   WS-X6348-RJ-45     yes ok
   5   5    9     1000BaseX Supervisor    WS-SUP32-GE-3B     yes ok
   15  5    1     Multilayer Switch Feature WS-F6K-MSFC2A    no  ok
   6   6    9     1000BaseX Supervisor    WS-SUP32-GE-3B     yes standby
   7   7    5     Communication Media Mod. WS-SVC-CMM        no  ok
   8   8    0     FXS                                        no  power-down
   9   9    0     10/100BaseTX Ethernet                      no  power-down
   ```
   !--- Output suppressed Mod Sub-Type Sub-Model Sub-Serial Sub-Hw Sub-Sw --- ----------------
   ------- ------------------ ----------- ------ ------ 3 Inline Power Module WS-F6K-VPWR 1.0
   1.1(1) 4 Inline Power Module WS-F6K-VPWR 1.0 1.1(1) **5   L3 Switching Engine III WS-F6K-
   PFC3B   SAL1012GREU 2.1**
   6   L3 Switching Engine III WS-F6K-PFC3B   SAL1017L9WJ 2.1

2. Verifique o histórico de redundância:

```
Access2> (enable) show system redundancy-history
    Maximum entries of switchover history table = 10
    System cold start due to switchover failure = 4
    Standby available time (secs*100)       = 33291

    Redundant History Switchover Table:
```

Verificar o IOS MSFC

O CatOS é copiado automaticamente durante o processo de SYNC. No entanto, o IOS no MSFC não é copiado automaticamente.

1. Verifique o IOS e a redundância do MSFC:

```
!--- 1. Connect to MSFC Access2> (enable) session 15
Trying Router-15...
Connected to Router-15.
Escape character is '^]'.

LAB-Router>enable

 !--- 2. Verify the IOS file in the bootflash LAB-Router#dir
Directory of bootflash:/

    1  -rwx    17966324  Dec 13 2006 15:12:29 +00:00  c6msfc2a-adventerprisek9_w
an-mz.122-18.SXF7.bin

65536000 bytes total (47569548 bytes free)

!--- 3. Show version output LAB-Router#show version
Cisco Internetwork Operating System Software
IOS (tm) MSFC2A Software (C6MSFC2A-ADVENTERPRISEK9_WAN-M), Version 12.2(18)SXF7,
 RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2006 by cisco Systems, Inc.
Compiled Thu 23-Nov-06 01:03 by kellythw
Image text-base: 0x40101040, data-base: 0x42638000

ROM: System Bootstrap, Version 12.2(17r)SX3, RELEASE SOFTWARE (fc1)
BOOTLDR: MSFC2A Software (C6MSFC2A-ADVENTERPRISEK9_WAN-M), Version 12.2(18)SXF7,
 RELEASE SOFTWARE (fc1)

LAB-Router uptime is 26 minutes
System returned to ROM by power-on
System image file is "bootflash:c6msfc2a-adventerprisek9_wan-mz.122-18.SXF7.bin"

 !--- 4. MSFC redundancy status LAB-Router#show redundancy
Redundant System Information :
------------------------------
        Available system uptime = 4 minutes
Switchovers system experienced = 0
              Standby failures = 0
        Last switchover reason = unsupported

                 Hardware Mode = Duplex
    Configured Redundancy Mode = Stateful SwitchOver - SSO
     Operating Redundancy Mode = Route Processor Redundancy
!--- It is running in the RPR mode because the standby MSFC !--- is running different
version of IOS. Maintenance Mode = Disabled Communications = Up Current Processor
Information : ------------------------------ Active Location = slot 5
```

```
            Current Software state = ACTIVE
          Uptime in current state = 4 minutes
                    Image Version = Cisco Internetwork Operating System Software
IOS (tm) MSFC2A Software (C6MSFC2A-ADVENTERPRISEK9_WAN-M),
Version 12.2(18)SXF7, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2006 by cisco Systems, Inc.
Compiled Thu 23-Nov-06 01:03 by kellythw
                             BOOT =
                      CONFIG_FILE =
                          BOOTLDR =
           Configuration register = 0x2102


Peer Processor Information :
----------------------------
                 Standby Location = slot 6
          Current Software state = STANDBY COLD
          Uptime in current state = 2 minutes
                    Image Version = Cisco Internetwork Operating System Software
IOS (tm) MSFC2A Software (C6MSFC2A-IPBASE_WAN-M),
Version 12.2(18)SXF4, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2006 by cisco Systems, Inc.
Compiled Thu 23-Mar-06 14:53 by tinhuang
                             BOOT =
                      CONFIG_FILE =
                          BOOTLDR =
           Configuration register = 0x2102
```
!--- Note that the boot variable is blank. The MSFC boots the !--- first IOS image in the bootflash: LAB-Router# LAB-Router#**exit**
```
Access2> (enable)
```

2. Atualize o IOS no MSFC em standby.Copie a imagem do IOS para o MSFC em standby:

```
LAB-Router#copy c6msfc2a-adventerprisek9_wan-mz.122-18.SXF7.bin slavebootflash:/
Destination filename [c6msfc2a-adventerprisek9_wan-mz.122-18.SXF7.bin]?
Copy in progress...CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
17966324 bytes copied in 44.180 secs (406662 bytes/sec)
LAB-Router#
```

!--- Delete the old IOS image. Because the boot variable is blank !--- and the MSFC boots the first IOS image in the bootflash: LAB-Router#**cd slavebootflash:**

```
LAB-Router#delete c6msfc2a-ipbase_wan-mz.122-18.SXF4.bin
Delete filename [c6msfc2a-ipbase_wan-mz.122-18.SXF4.bin]?
Delete slavebootflash:c6msfc2a-ipbase_wan-mz.122-18.SXF4.bin? [confirm]
LAB-Router#
```

Recarregar o módulo supervisor em standby:

```
LAB-Router#exit

Access2> (enable) reset 6
This command will reset module 6.
Do you want to continue (y/n) [n]? y
2007 May 21 21:14:03 %SYS-5-MOD_RESET:Module 6 reset from Console//
Resetting module 6...


Access2> (enable) show system highavailability
Highavailability: enabled
Highavailability versioning: disabled
Highavailability Operational-status: OFF(standby-supervisor-not-present)
Access2> (enable)
```

```
2007 May 21 21:16:01 %SYS-5-SUP_MODSBY:Module 6 is in standby
mode
2007 May 21 21:16:02 %SYS-5-SUP_IMGSYNC:File synchronization
process will start
in 120 seconds
2007 May 21 21:16:03 %DIAG-6-RUN_MINIMUM:Module 6: Running Minimal
Diagnostics..
.
2007 May 21 21:16:05 %DIAG-6-DIAG_OK:Module 6: Passed Online Diagnostics
2007 May 21 21:16:06 %SYS-3-TRANSCEIVER_NOTSUPP:
Transceiver on port 6/1 is not supported
2007 May 21 21:16:06 %SYS-3-TRANSCEIVER_NOTSUPP:
Transceiver on port 6/2 is not supported
2007 May 21 21:16:06 %SYS-5-PORT_SSUPOK:Ports on standby supervisor
(module 6) are up
2007 May 21 21:16:07 %SYS-3-MOD_PORTINTFINSYNC:Port Interface in
sync for Module
 6
2007 May 21 21:16:49 %SYS-1-SYS_LCPERR1:Module 16: RP requeste
d reset of peer RP: MSFC on module 16 will be reset

Access2> (enable) show system highavailability
Highavailability: enabled
Highavailability versioning: disabled
Highavailability Operational-status: ON
Access2> (enable)
```

3. Verifique o IOS MSFC após a atualização:

```
Access2> (enable) session 15
Trying Router-15...
Connected to Router-15.
Escape character is '^]'.

LAB-Router>enable

LAB-Router#show redundancy
Redundant System Information :
------------------------------
        Available system uptime = 17 minutes
Switchovers system experienced = 0
              Standby failures = 1
        Last switchover reason = unsupported

                  Hardware Mode = Duplex
    Configured Redundancy Mode = Stateful SwitchOver - SSO
     Operating Redundancy Mode = Stateful SwitchOver - SSO
              Maintenance Mode = Disabled
                Communications = Up

Current Processor Information :
-------------------------------
               Active Location = slot 5
        Current Software state = ACTIVE
       Uptime in current state = 17 minutes
                 Image Version = Cisco Internetwork Operating System Software
IOS (tm) MSFC2A Software (C6MSFC2A-ADVENTERPRISEK9_WAN-M),
Version 12.2(18)SXF7, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2006 by cisco Systems, Inc.
Compiled Thu 23-Nov-06 01:03 by kellythw
                          BOOT =
                   CONFIG_FILE =
                       BOOTLDR =
```

```
        Configuration register = 0x2102


Peer Processor Information :
----------------------------
              Standby Location = slot 6
         Current Software state = STANDBY HOT
       Uptime in current state = 0 minutes
                  Image Version = Cisco Internetwork Operating System Software
IOS (tm) MSFC2A Software (C6MSFC2A-ADVENTERPRISEK9_WAN-M),
Version 12.2(18)SXF7, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2006 by cisco Systems, Inc.
Compiled Thu 23-Nov-06 01:03 by kellythw
                          BOOT =
                   CONFIG_FILE =
                       BOOTLDR =
       Configuration register = 0x2102



        LAB-Router#
```

Failover para supervisor em standby e verificar

Agora, você pode fazer failover do módulo supervisor para o módulo supervisor em standby recém-adicionado e testá-lo.

1. Failover do módulo supervisor:

```
Access2> (enable) switch supervisor
This command will force a switch-over to the standby Supervisor module.
Do you want to continue (y/n) [n]? y
2007 May 21 20:40:37 %SYS-5-MOD_RESET:Module 5 reset from Console//
Access2> (enable)
System Bootstrap, Version 12.2(18r)SX2, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 2004 by cisco Systems, Inc.
Cat6k-Sup32 platform with 262144 Kbytes of main memory

Autoboot executing command: "boot bootdisk:cat6000-sup32pfc3k8.8-5-8.bin"
Self decompressing the image : ############################################
#############################################################################
#############################################################################
#############################################################################
#############################################################################
#############################################################################
#############################################################################
#############################################################################
#############################################################################
#############################################################################
#############################################################################
################################################## [OK]



System Power On Diagnostics
DRAM Size .........................256 MB
Testing DRAM ......................Passed
Verifying Text Segment ............Passed
NVRAM Size ........................2048 KB
Level2 Cache ......................Present
Level3 Cache ......................Absent
System Power On Diagnostics Complete

Currently running ROMMON from S (Gold) region
```

```
Boot image: bootdisk:cat6000-sup32pfc3k8.8-5-8.bin


Firmware compiled 01-Dec-06 12:57 by integ Build [100]

This module is now in standby mode.
Console is disabled for standby supervisor
```

2. Use o console para se conectar ao Supervisor 6, que agora é o módulo ativo.Status de redundância:

```
Access2> (enable) show system highavailability
Highavailability: enabled
Highavailability versioning: disabled
Highavailability Operational-status: ON

Access2> (enable) show system redundancy-history
   Maximum entries of switchover history table = 10
   System cold start due to switchover failure = 4
   Standby available time (secs*100)        = 98984

   Redundant History Switchover Table:
      Index: 1
      Previous active supervisor module: 5
      Current active supervisor module : 6
      Switchover reason               : user initiated
      Switchover time                 : Mon May 21 2007, 20:40:37
```

Mostrar versão:

```
Access2> (enable) show version
WS-C6509 Software, Version NmpSW: 8.5(8)
Copyright (c) 1995-2006 by Cisco Systems
NMP S/W compiled on Dec  1 2006, 23:03:43

System Bootstrap Version: 12.2
System Boot Image File is 'bootdisk:RTSYNC_cat6000-sup32pfc3k8.8-5-8.bin'
System Configuration register is 0x2102
```

Variável de inicialização:

```
Access2> (enable) show boot
BOOT variable = bootdisk:RTSYNC_cat6000-sup32pfc3k8.8-5-8.bin,1;bootdisk:cat6000
-sup32pfc3k8.8-4-5.bin,1;
CONFIG_FILE variable = bootdisk:switch.cfg

Configuration register is 0x2102
ignore-config: disabled
auto-config: non-recurring, overwrite, sync disabled
ROMMON console baud: 9600
boot: image specified by the boot system commands

Image auto sync is enabled
Image auto sync timer is 120 seconds
```

Show module:

```
Access2> (enable) show module
Mod Slot Ports Module-Type              Model              Sub Status
--- ---- ----- ------------------------ ------------------ --- --------
1   1          Unknown Card                                    power-down
2   2    48    10/100BaseTX Ethernet    WS-X6248-RJ-45     no  ok
3   3    48    10/100BaseTX Ethernet    WS-X6348-RJ-45     yes ok
4   4    48    10/100BaseTX Ethernet    WS-X6348-RJ-45     yes ok
5   5    9     1000BaseX Supervisor     WS-SUP32-GE-3B     yes standby
6   6    9     1000BaseX Supervisor     WS-SUP32-GE-3B     yes ok
16  6    1     Multilayer Switch Feature WS-F6K-MSFC2A     no  ok
7   7    5     Communication Media Mod. WS-SVC-CMM         no  ok
8   8    0     FXS                                         no  power-down
```

```
9   9           Unknown Card                              power-down
```

6 L3 Switching Engine III WS-F6K-PFC3B   SAL1017L9WJ 2.1
```
Access2> (enable)
```

3. Verifique o MSFC:

```
Access2> (enable) session 16
Trying Router-16...
Connected to Router-16.
Escape character is '^]'.

LAB-Router>enable

LAB-Router#show version
Cisco Internetwork Operating System Software
IOS (tm) MSFC2A Software (C6MSFC2A-ADVENTERPRISEK9_WAN-M),
Version 12.2(18)SXF7, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2006 by cisco Systems, Inc.
Compiled Thu 23-Nov-06 01:03 by kellythw
Image text-base: 0x40101040, data-base: 0x42638000

ROM: System Bootstrap, Version 12.2(17r)SX3, RELEASE SOFTWARE (fc1)
BOOTLDR: MSFC2A Software (C6MSFC2A-ADVENTERPRISEK9_WAN-M), Version 12.2(18)SXF7,
 RELEASE SOFTWARE (fc1)

LAB-Router uptime is 7 minutes
System returned to ROM by Stateful Switchover
System image file is "bootflash:c6msfc2a-adventerprisek9_wan-mz.122-18.SXF7.bin"


This product contains cryptographic features and is subject to United
States and local country laws governing import, export, transfer and
use. Delivery of Cisco cryptographic products does not imply
third-party authority to import, export, distribute or use encryption.
Importers, exporters, distributors and users are responsible for
compliance with U.S. and local country laws. By using this product you
agree to comply with applicable laws and regulations. If you are unable
to comply with U.S. and local laws, return this product immediately.

A summary of U.S. laws governing Cisco cryptographic products may be found at:
http://www.cisco.com/wwl/export/crypto/tool/stqrg.html

If you require further assistance please contact us by sending email to
export@cisco.com.

cisco MSFC2A (R7000) processor (revision MSFC2A) with 458752K/65536K bytes of me
mory.
Processor board ID MSFC2A
R7000 CPU at 300Mhz, Implementation 0x27, Rev 3.3, 256KB L2, 1024KB L3 Cache
Last reset from power-on
SuperLAT software (copyright 1990 by Meridian Technology Corp).
X.25 software, Version 3.0.0.
Bridging software.
TN3270 Emulation software.
29 Virtual Ethernet/IEEE 802.3 interfaces
509K bytes of non-volatile configuration memory.

65536K bytes of Flash internal SIMM (Sector size 512K).
Configuration register is 0x2102
```

Renomear o Catalyst OS

Você pode ver que o nome do CatOS no módulo supervisor substituído começa com RTSYNC. Você pode deixar o sistema em execução como está. Você também pode alterar o nome do arquivo e mantê-lo como um nome padrão, como mostrado aqui:

```
Access2> (enable) rename RTSYNC_cat6000-sup32pfc3k8.8-5-8.bin
cat6000-sup32pfc3k 8.8-5-8.bin
Access2> (enable) dir
    2287   -rw-   10029260    May 21 2007 21:40:01 cat6000-sup32pfc3k8.8-5-8.bin

236900352 bytes available (19390464 bytes used)
Access2> (enable)
```

Depois de renomear o arquivo, altere a variável de inicialização.

```
!--- Verify boot variable Access2> (enable) show boot
BOOT variable = bootdisk:RTSYNC_cat6000-sup32pfc3k8.8-5-8.bin,1;bootdisk:cat6000
-sup32pfc3k8.8-4-5.bin,1;
CONFIG_FILE variable = bootdisk:switch.cfg

Configuration register is 0x2102
ignore-config: disabled
auto-config: non-recurring, overwrite, sync disabled
ROMMON console baud: 9600
boot: image specified by the boot system commands

Image auto sync is enabled
Image auto sync timer is 120 seconds

!--- Clear all the boot variables Access2> (enable) clear boot system all
BOOT variable =
Access2> (enable) 2007 May 21 21:41:56 %SYS-5-SUP_IMGSYNC:File synchronization p
rocess will start in 120 seconds

 !--- Configure the boot variable Access2> (enable) set boot system flash bootdisk:cat6000-
sup32pfc3k8.8-5-8.bin
BOOT variable = bootdisk:cat6000-sup32pfc3k8.8-5-8.bin,1;
Access2> (enable) 2007 May 21 21:42:14 %SYS-5-SUP_IMGSYNC:File synchronization p
rocess will start in 120 seconds

 !--- Verify the boot variable Access2> (enable) show boot
BOOT variable = bootdisk:cat6000-sup32pfc3k8.8-5-8.bin,1;
CONFIG_FILE variable = bootdisk:switch.cfg

Configuration register is 0x2102
ignore-config: disabled
auto-config: non-recurring, overwrite, sync disabled
ROMMON console baud: 9600
boot: image specified by the boot system commands

Image auto sync is enabled
Image auto sync timer is 120 seconds
```

Informações Relacionadas

- Exemplo de configuração de atualização de imagem de software dos Catalyst 6000/6500 Series Switches com Supervisor Engines redundantes

- [Switches Cisco Catalyst 6500 Series - Documentos de suporte](#)
- [Páginas de Suporte de Produtos de LAN](#)
- [Página de suporte da switching de LAN](#)
- [Suporte Técnico e Documentação - Cisco Systems](#)