

在運行CatOS的Catalyst 6500系列交換機中更換故障冗餘管理模組（混合）

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簡介

本文顯示如何在Catalyst 6500系列交換器上取代發生故障的備援監督器模組。本檔案介紹在混合作業系統中執行的管理引擎模組的程式。

必要條件

需求

思科建議您瞭解以下主題：

- [配置冗餘](#)
- [使用SSO MSFC冗餘配置NSF](#)

採用元件

本文中的資訊係根據以下軟體和硬體版本：

- Cisco Catalyst 6500系列交換器

- Supervisor模組：WS-SUP32-GE-3B
- 混合作業系統：Catalyst OS(CatOS)8.5(8)MSFC IOS® 12.2(18)SXF7

本文中的資訊是根據特定實驗室環境內的裝置所建立。文中使用到的所有裝置皆從已清除（預設）的組態來啟動。如果您的網路正在作用，請確保您已瞭解任何指令可能造成的影響。

相關產品

本文件也適用於以下硬體和軟體版本：

- 運行混合作業系統的管理引擎720
- 運行混合作業系統的管理引擎2

慣例

如需文件慣例的詳細資訊，請參閱[思科技術提示慣例](#)。

背景資訊

以下是有關備援監督器模組的一些重要事項：

- 在備用supervisor engine上，控制檯埠處於非活動狀態，模組狀態顯示為「備用」，上行鏈路埠的狀態正常顯示。
- 為了允許您單獨控制每個Supervisor引擎的啟動，配置暫存器不會在Supervisor引擎之間同步。
- 如果兩個Supervisor引擎的軟體版本不同，或者兩個Supervisor引擎的NVRAM配置不同，則活動Supervisor引擎會自動將其軟體映像和配置下載到備用Supervisor引擎。
- Supervisor引擎使用兩個快閃記憶體映像：啟動映像和運行時映像。在BOOT環境變數中指定的啟動映像檔名儲存在NVRAM中。運行時映像是ROM監控器用來啟動Supervisor引擎的啟動映像。系統啟動後，運行時映像儲存在動態RAM(DRAM)中。
- 冗餘Supervisor引擎的型別必須與同一型號功能卡相同。WS-X6K-SUP1-2GE和WS-X6K-SUP1A-2GE均未使用策略功能卡(PFC)，它們可相容冗餘。對於具有PFC的Supervisor引擎，PFC必須相同，才能實現冗餘（兩個PFC、兩個PFC2、兩個PFC3As、兩個PFC3B或兩個PFC3BXL）。

更換Supervisor模組的逐步程式 — 同一混合作業系統

本節提供在Catalyst 6500系列交換器中取代Supervisor模組32的逐步程式。此示例使用Cisco Catalyst 6509交換機，該交換機在插槽5和6中有兩個管理引擎模組。插槽6中的管理引擎模組出現故障。假設插槽6中的故障管理引擎模組已從機箱中移除。您可以看到將新Supervisor模組新增到插槽6中的過程。

如果您有額外的Cisco Catalyst 6500系列交換器，您可以在交換器上連線新的Supervisor，並將混合作業系統升級或降級到與生產交換器插槽5中的Supervisor相同的層級。如果新Supervisor模組中有相同的混合OS，則無需在新Supervisor模組上配置任何內容。將Supervisor模組新增到插槽6中時，活動Supervisor引擎會自動同步配置。此部分顯示了更換主管過程中的逐步流程和核對表。

以下是更換Catalyst 6500系列交換器中的Supervisor模組32的逐步程式：

1. 將管理引擎模組新增到插槽6。如果您在插槽6與Supervisor有控制檯連線，應看到以下輸出：

cat6000-sup32pfc3k8.8-5-8.bin

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

Access2> (enable)

2. 驗證Supervisor冗餘狀態：

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

3. 驗證MSFC冗餘狀態：

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 =

增Supervisor模組並同步混合OS和交換機配置。大部分程式是自動的。本文檔顯示了更換主管期間要執行的逐步流程和核對表。

[在新增新的Supervisor模組之前進行驗證](#)

本節顯示插槽6中沒有Supervisor的交換機的show輸出。

- 顯示模組
- 顯示版本
- 引導變數

1. Show module output:

```
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) 5 L3 Switching Engine III WS-F6K-  
PFC3B SAL1012GREU 2.1
```

```
Access2> (enable)
```

2. 顯示版本輸出：

```
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

[OK]

System Power On Diagnostics

DRAM Size512 MB
Testing DRAMPassed
Verifying Text SegmentPassed
NVRAM Size2048 KB
Level2 CachePresent
Level3 CacheAbsent
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. 備用模組啟動後，您可以從活動管理引擎模組驗證冗餘狀態。

```
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) are up
2007 May 21 20:27:25 %SYS-3-MOD_PORTINTFINISYNC: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**

請執行以下步驟：

1. Show module output:

```
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 ---
-----
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. 驗證備援歷史記錄：

```
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:
```

驗證MSFC IOS

CatOS將在SYNC過程中自動複製。但是，MSFC上的IOS不會自動複製。

1. 驗證MSFC的IOS和冗餘：

```
!--- 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. 升級備用MSFC上的IOS。將IOS映像複製到備用MSFC:

```
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...CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
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#
```

重新載入待命Supervisor模組 :

```
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. 升級後驗證MSFC IOS:

```
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#

故障轉移至備用管理引擎和驗證

現在，您可以將Supervisor模組故障切換到新增的備用Supervisor模組並進行測試。

1. 故障轉移Supervisor模組：

```

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. 通過控制檯連線到Supervisor 6上，後者現在是活動模組。冗餘狀態：

```
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
```

顯示版本:

```
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
```

啟動變數：

```
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

顯示模組：

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

!--- 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**
Access2> (enable)

3. 驗證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 memory.

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

重新命名Catalyst OS

您可以看到，被替換的Supervisor模組中的CatOS名稱以RTSYNC開頭。您可以讓系統保持原樣運行。您還可以更改檔名並將其保留為標準名稱，如下所示：

```
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)
```

重新命名檔案後，必須更改引導變數。

```
!--- 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 process 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

[相關資訊](#)

- [含備援Supervisor Engine的Catalyst 6000/6500系列交換器軟體映像升級組態範例](#)
- [Cisco Catalyst 6500系列交換器 — 支援檔案](#)
- [LAN 產品支援頁面](#)
- [LAN 交換支援頁面](#)
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