升級Catalyst 6000/6500系列交換機上的軟體映像

目錄

簡介

本檔案介紹升級Catalyst 6000/6500系列交換器上軟體映像的分步程式。

必要條件

需求

嘗試此組態之前，請確保符合以下要求：

- 驗證記憶體和引導ROM要求。

- 下載有效的軟體映像。

- 在PC上安裝TFTP伺服器。

- 備份當前交換機配置和軟體映像。

採用元件

本文件所述內容不限於特定軟體和硬體版本。

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。如果您的網路運作中，請確保您瞭解任何指令可能造成的影響。

慣例

請參閱思科技術提示慣例以瞭解更多有關文件慣例的資訊。

背景資訊

本檔案介紹在Supervisor上執行Catalyst作業系統(CatOS)、MSM/MSFC上執行Cisco IOS®和Cisco IOS系統軟體的Catalyst 6000/6500系列交換器上升級軟體映像的分步程式。在下列情況下，必須升級軟體映像：

- 您希望在網路中實施新軟體版本中提供的新功能。

- 您想要安裝交換器上目前執行的軟體版本不支援的新線路卡。

- 已知的Bug會影響交換器，且該Bug會在下一個軟體版本中解決。

CatOS 和 Cisco IOS 系統軟體之間的差異

Supervisor上的CatOS和MSFC上的Cisco IOS（混合）：

您可以使用CatOS映像作為系統軟體，以便在Catalyst 6500/6000交換器上執行Supervisor。如果安裝了選用的Multilayer Switch Feature Card (MSFC)，請使用單獨的Cisco IOS映像來執行MSFC。

Supervisor和MSFC上皆使用Cisco IOS（原生）：

您可以使用單一Cisco IOS映像作為系統軟體，以便在Catalyst 6500/6000交換器上執行Supervisor和MSFC。

注意：有關詳細資訊，請參閱[Cisco Catalyst 6500系列交換機](#)。

升級前步驟

檢查記憶體與開機ROM需求

驗證新軟體版本所需的最小DRAM、快閃記憶體和Boot ROM版本數量。檢查您的交換機是否支援這些要求。請參閱[Catalyst 6000/6500系列交換機發行版本註釋](#)以確定新軟體映像的要求。

show version

命令顯示您的交換機上的BootROM版本、所安裝的DRAM和bootflash大小。在運行CatOS的Catalyst 6000/6500交換機上發出show version命令。

<#root>

```
Cat6509> (enable)
```

show version

```
WS-C6509 Software, Version NmpSW: 5.5(5)
Copyright (c) 1995-2000 by Cisco Systems
NMP S/W compiled on Dec 14 2000, 17:05:38
System Bootstrap Version: 5.3(1)
```

!--- This is the boot ROM version that runs on your switch.

```
Hardware Version: 3.0  Model: WS-C6509  Serial #: TBA05131085

Mod Port Model               Serial #     Versions
--- ---- ------------------- -----------  -------------------------------------
1   2    WS-X6K-SUP1A-2GE    SAD05060PU7  Hw : 7.0
                                          Fw : 5.3(1)
                                          Fw1: 5.4(2)
                                          Sw : 5.5(5)
                                          Sw1: 5.5(5)
         WS-F6K-PFC          SAD05060131  Hw : 1.1
4   48   WS-X6348-RJ-45      SAD0509003M  Hw : 2.0
                                          Fw : 5.4(2)
                                          Sw : 5.5(5)
         WS-F6K-VPWR                      Hw : 1.0
15  1    WS-F6K-MSFC         SAD05140AG0  Hw : 1.4
                                          Fw : 12.1(6)E1
                                          Sw : 12.1(6)E1
```

DRAM

FLASH NVRAM

Module	Total	Used	Free	Total	Used	Free	Total	Used	Free
1	65408K	37654K	27754K	16384K	14984K	1400K	512K	255K	257K

!--- This is the amount of DRAM and Flash size installed on the switch.

```
Uptime is 149 days, 1 hour, 20 minutes
Cat6509> (enable)
```

運行Cisco IOS軟體時，請檢查Supervisor和MSFC上的記憶體要求。在運行Cisco IOS軟體的Catalyst 6000/6500交換機上發出show version命令。

<#root>

```
Cat6500#
```

show version

```
Cisco Internetwork Operating System Software
Cisco IOS (tm) c6sup1_rp Software (c6sup1_rp-JSV-M), Version 12.1(8b)E9, EARLY DEPLOYMENT
RELEASE SOFTWARE (fc3)
TAC Support: http://www.cisco.com/tac
Copyright (c) 1986-2002 by cisco Systems, Inc.
Compiled Sun 17-Feb-02 12:01 by eaarmas
Image text-base: 0x60020950, data-base: 0x61608000
```

!--- This is the Boot ROM version that runs on your switch MSFC.

ROM: System Bootstrap, Version 12.0(3)XE, RELEASE SOFTWARE

```
BOOTFLASH: MSFC Software (C6MSFC-BOOT-M), Version 12.1(8b)E9, EARLY DEPLOYMENT
RELEASE SOFTWARE (fc3)

Cat6500 uptime is 7 minutes
System returned to ROM by power-on (SP by reload)
System image file is "sup-bootflash:c6sup11-jsv-mz.121-8b.E9"
```

!--- The DRAM on the MSFC is the sum of these two values.

cisco Catalyst 6000 (R5000) processor with 114688K/16384K bytes of memory.

```
Processor board ID SAD04120BNJ
R5000 CPU at 200Mhz, Implementation 35, Rev 2.1, 512KB L2 Cache
Last reset from power-on
Bridging software.
X.25 software, Version 3.0.0.
SuperLAT software (copyright 1990 by Meridian Technology Corp).
TN3270 Emulation software.
2 Virtual Ethernet/IEEE 802.3  interface(s)
48 FastEthernet/IEEE 802.3 interface(s)
18 Gigabit Ethernet/IEEE 802.3 interface(s)
381K bytes of non-volatile configuration memory.
4096K bytes of packet SRAM memory.
```

!--- This is the bootflash size.

16384K bytes of Flash internal SIMM (Sector size 256K).

```
Configuration register is 0x2102

Cat6500#
```

您還可以在Supervisor模組上發出show version命令。您可以使用 **remote command switch** 命令從路由處理器(RP)提示符執行Supervisor處理器(SP)命令。

<#root>

```
Cat6500#
```

remote command switch show version

```
Cat6500-sp#
Cisco Internetwork Operating System Software
Cisco IOS (tm) c6sup1_sp Software (c6sup1_sp-SPV-M), Version 12.1(8b)E9,
   EARLY DEPLOYMENT RELEASE SOFTWARE (fc3)
TAC Support: http://www.cisco.com/tac
Copyright (c) 1986-2002 by cisco Systems, Inc.
Compiled Sun 17-Feb-02 12:29 by eaarmas
```

Image text-base: 0x60020950, data-base: 0x60648000

!--- This is the boot ROM version that runs on your switch supervisor.

ROM: System Bootstrap, Version 5.3(1)

BOOTFLASH: c6sup1_sp Software (c6sup1_sp-SPV-M), Version 12.1(8b)E9,
   EARLY DEPLOYMENT RELEASE SOFTWARE (fc3)

Switch uptime is 2 minutes
System returned to ROM by reload
System image file is "bootflash:c6sup11-jsv-mz.121-8b.E9"

!--- The DRAM on the Supervisor is the sum of these two values.

cisco 6000 (NMP150) processor with 49152K/16384K bytes of memory.

R4700 CPU at 150Mhz, Implementation 33, Rev 1.0, 512KB L2 Cache
Last reset from power-on
X.25 software, Version 3.0.0.
48 FastEthernet/IEEE 802.3 interface(s)
18 Gigabit Ethernet/IEEE 802.3 interface(s)
381K bytes of non-volatile configuration memory.

!--- This is the external Flash card and internal bootflash size.

24576K bytes of Flash PCMCIA card at slot 0 (Sector size 128K).
16384K bytes of Flash internal SIMM (Sector size 256K).

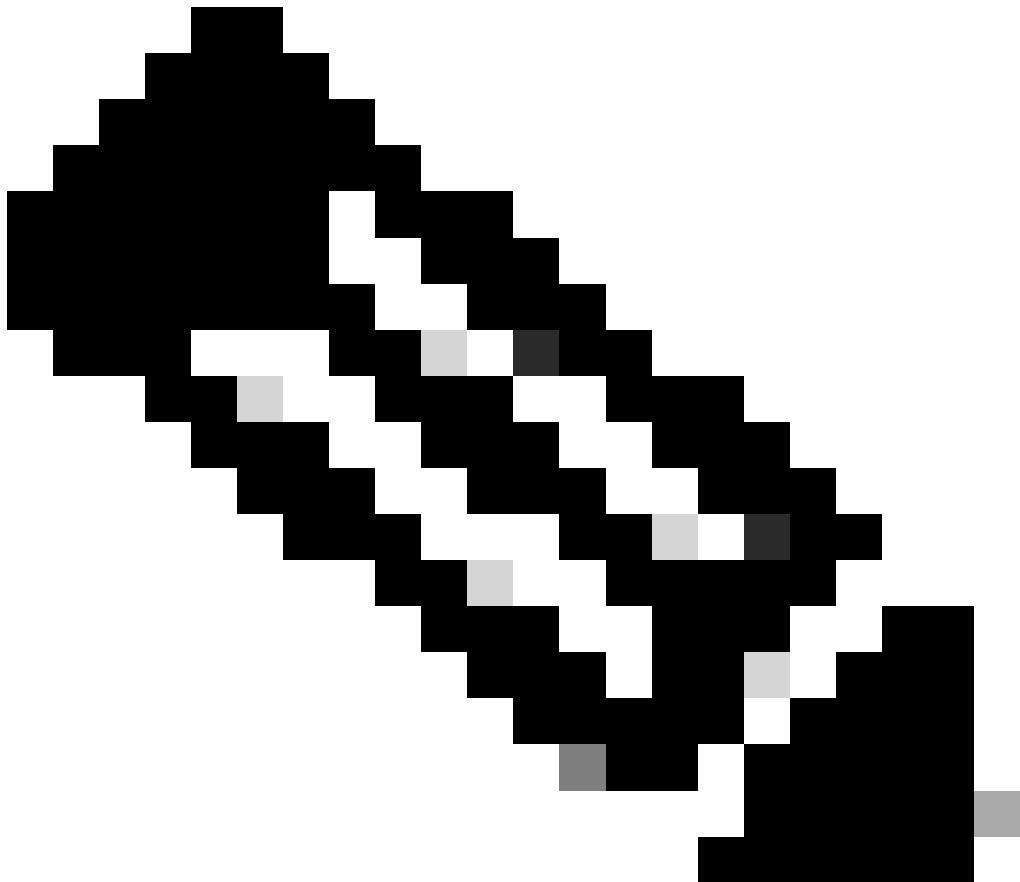Configuration register is 0x2102

Cat6500#

如有必要，Supervisor Boot ROM版本升級即為Boot ROM硬體升級。您可以下載最新的載入程式軟體映像以升級MSFC Bootstrap版本。請參閱以下文檔以升級Supervisor模組上的Boot ROM：

- [Catalyst 6000系列Supervisor引擎I和I A NMP Boot ROM升級安裝說明](#)

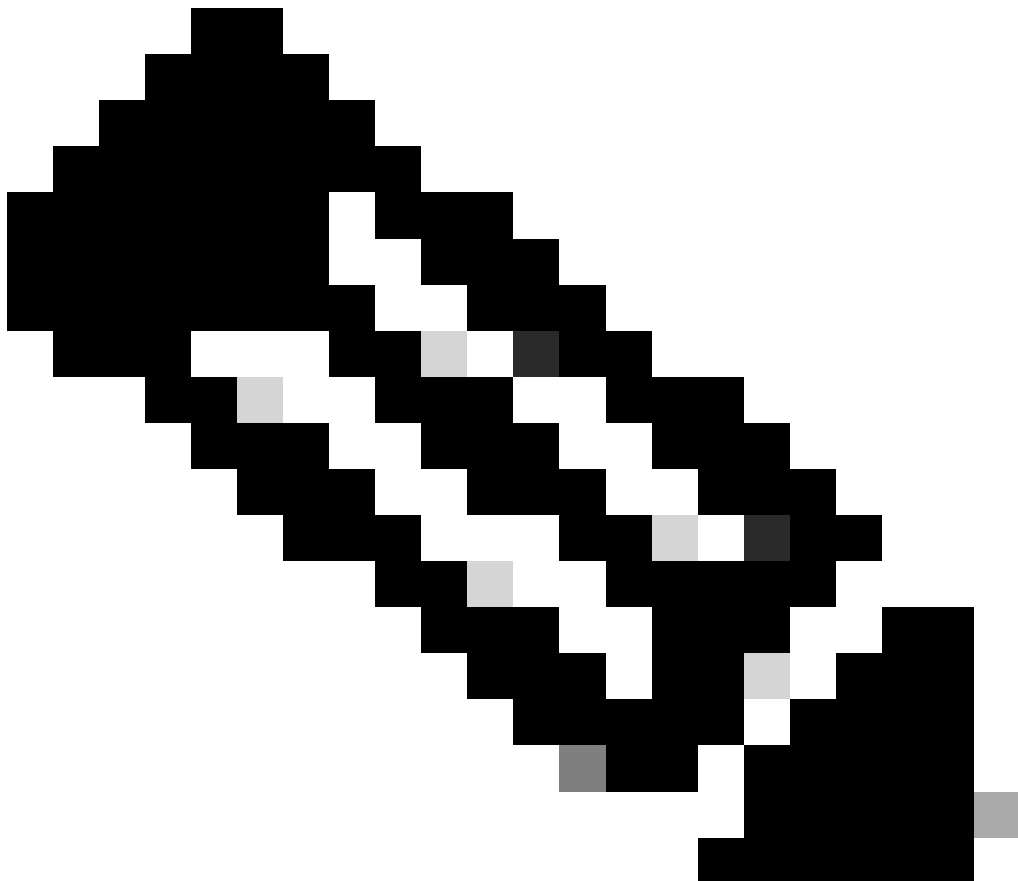- [Catalyst 6000系列Supervisor引擎2 Boot ROM和Bootflash裝置升級安裝說明](#)

註：Supervisor 720當前沒有可用的Boot ROM升級。

下載軟體映像

在實際映像升級之前，將CatOS軟體映像下載到充當TFTP伺服器的PC上。您可以從[Cisco LAN Switching軟體中心](#)下載軟體映象。 有關CatOS和Cisco IOS軟體的詳細資訊，請參閱[CatOS和Cisco IOS系統軟體之間的區別](#)部分。

安裝**TFTP伺服器**

本文檔中的輸出示例使用Cisco TFTP伺服器在運行Microsoft ™ Windows 2000 Professional的PC上的安裝。您可以使用可安裝在任何平台上的任何TFTP伺服器。您不需要使用搭載Windows作業系統的PC。
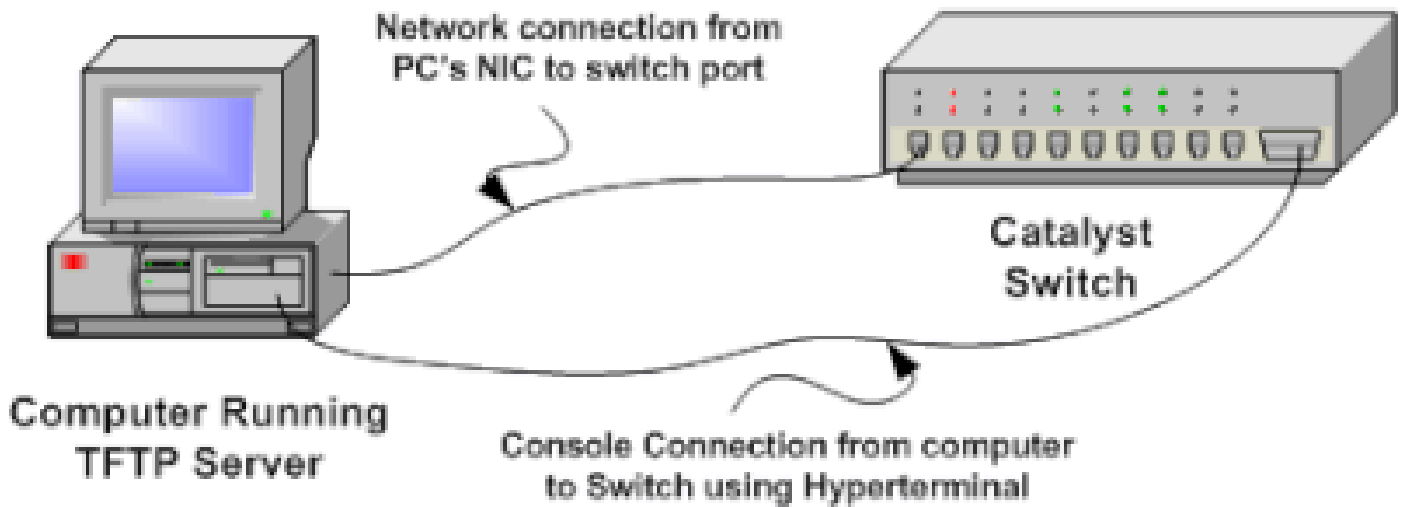
1.

從Internet下載並安裝您用於將CatOS軟體映像複製到交換機的PC上的任何共享軟體TFTP軟體。TFTP伺服器根目錄必須是軟體映像下載到的目錄。您可以將映像下載到TFTP伺服器的預設根目錄，或將根目錄路徑變更為軟體映像所在的目錄。對於Cisco TFTP伺服器，您可以從**View Menu > Options**更改根目錄。
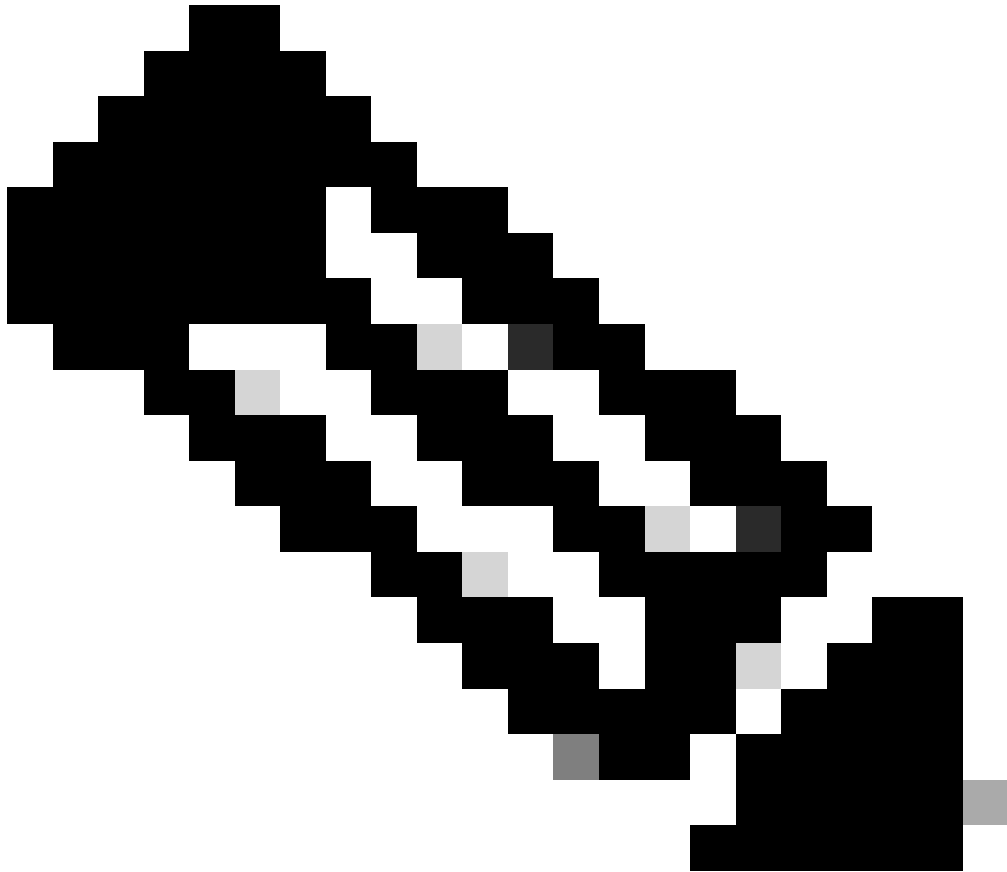
注意：本文檔是在Cisco TFTP伺服器可透過軟體中心下載時編寫的。Cisco不再支援Cisco TFTP伺服器。如果您使用Cisco TFTP伺服器，請停用日誌記錄功能，以防止日誌過多，從而中斷TFTP進程。

要停用登入Cisco TFTP伺服器，請完成以下步驟：

a.

選擇**View Menu > Options**。

b.

清除**Enable Logging**選項。

c.

按一下「OK」（確定）。
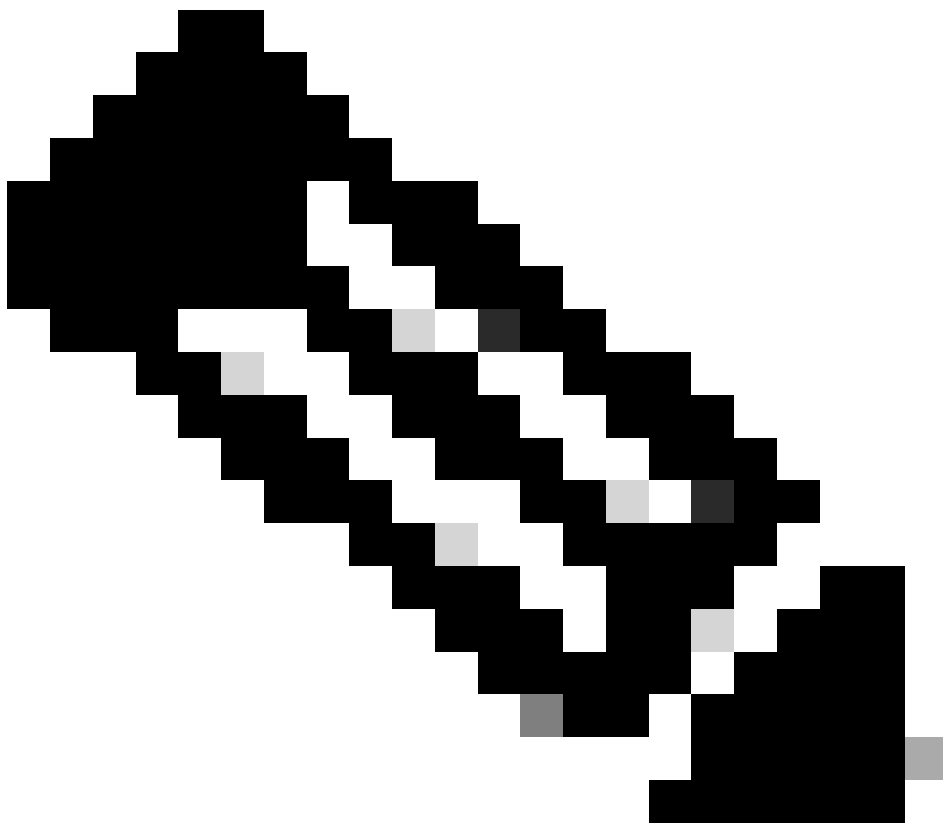
註：請注意，預設情況下啟用日誌記錄。

2.

在交換機控制檯埠和PC之間連線一條控制檯電纜，以訪問交換機命令列介面(CLI)。請參閱<u>將終端連線到Catalyst交換機上的控制檯埠</u>，以透過超級終端訪問CLI。
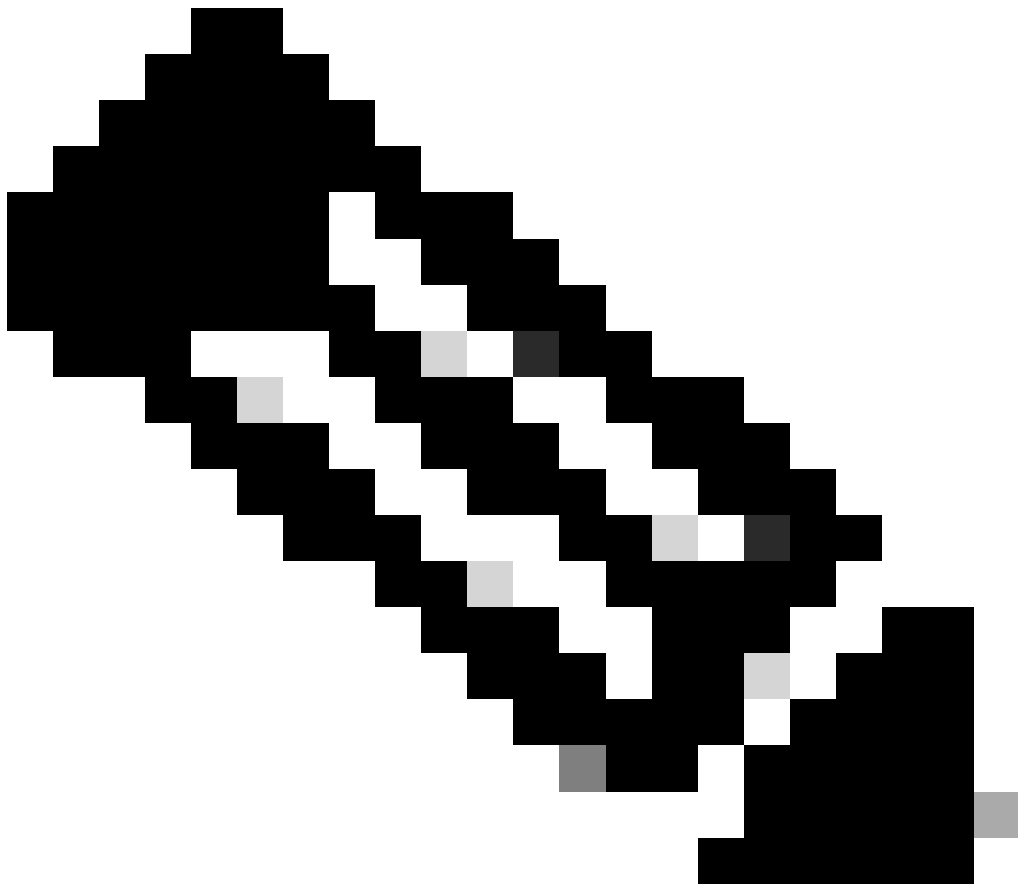
註：您可以透過遠端Telnet訪問升級交換機。但是，交換機在軟體升級期間重新載入時，會失去Telnet連線。當交換機使用新映像載入時，您可以重新建立Telnet會話。但是，為了在出現故障時進行故障排除，您必須具有本地控制檯訪問許可權。思科建議透過控制檯訪問升級交換機。

備份配置和軟體映象

將交換機配置和當前軟體映像備份到運行TFTP伺服器的PC上。如果升級過程因記憶體不足或交換機Bootflash上沒有足夠的空間來支援新映象等原因而失敗，則始終可以使用交換機中現有的相同映象將交換機恢復為正常模式。如果由於任何原因丟失交換機配置，您隨時可以從TFTP伺服器恢復配置。有關如何管理配置檔案和軟體映像的資訊，請參閱[在Catalyst交換機上管理軟體映像和使用配置檔案](#)。

在運行Cisco IOS軟體的Catalyst 6000/6500交換機上，您可以發出copy startup-config tftp或copy startup-config bootflash:命令，以便將配置複製或TFTP伺服器或bootflash備份。如果您對配置進行了修改，請務必發出write memory命令以將當前配置複製到啟動配置中，並執行備份。可發出copy bootflash: tftp 命令將當前軟體映像從bootflash複製到TFTP伺服器。如果要將當前軟體映像從外部快閃記憶體卡複製到TFTP伺服器，可以在Supervisor引擎1或2上使用copy slot0: tftp命令。在Supervisor引擎720上，請使用copy disk0: tftp或copy disk1: tftp命令。
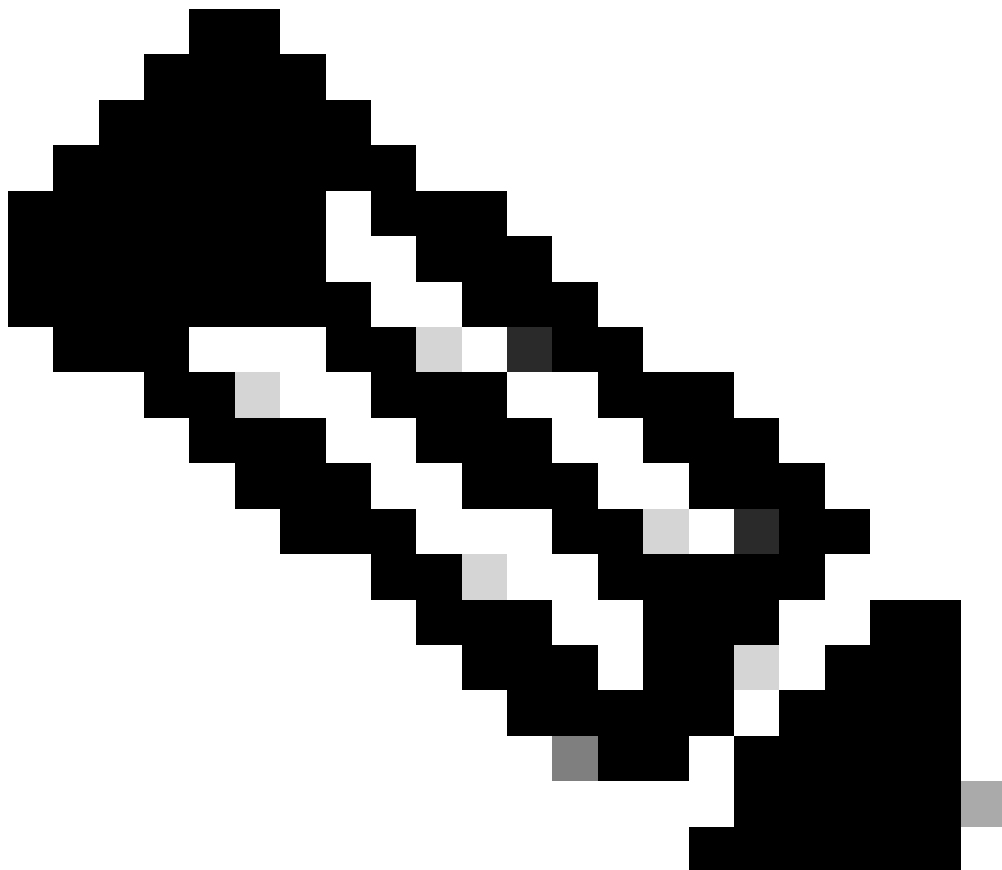
注意： %% Non-volatile configuration memory invalid or not present錯誤消息顯示在複製或備份配置檔案時，交換機是否發現啟動配置檔案為空。請在備份配置檔案前發出write memory或copy run start命令，以避免此錯誤。

運行CatOS軟體的交換機

Supervisor模組上的CatOS

Catalyst 6000/6500交換器Supervisor Engine 1和2支援Personal Computer Memory Card Industry Association (PCMCIA)快閃卡的一個插槽，而Supervisor Engine 720支援2個插槽。如果交換機上安裝了PCMCIA快閃記憶體卡，則可以選擇在bootflash或PCMCIA快閃記憶體卡上複製新的軟體映像。

此程式使用bootflash。如果使用PCMCIA快閃記憶體卡，當使用Supervisor 1或2時，請用slot0:替換所有命令中的bootflash: 單詞，當使用Supervisor 720時請用disk0: / disk1:替換。

1.

確保您檢驗了記憶體/引導ROM要求、PC上的TFTP伺服器以及從交換機控制檯埠訪問交換機控制檯。如果您尚未做好以下設定的準備工作，請參閱檢查記憶體和Boot ROM要求部分。

2.

組態管理IP地址(sc0)並檢查交換機與安裝TFTP伺服器的PC之間的連線。此示例場景將IP地址10.10.10.1用於交換機管理(sc0)，將IP地址10.10.10.2用於TFTP伺服器。

```
<#root>

!--- The management(sc0) IP address is configured on the switch.

Cat6509> (enable)

set interface sc0 1 10.10.10.1 255.255.255.0
```

Interface sc0 vlan set, IP address and netmask set.

!--- Verify the management(sc0) IP address.

Cat6509> (enable)

show interface

sl0: flags=51<UP,POINTOPOINT,RUNNING>
        slip 0.0.0.0 dest 0.0.0.0

!--- The sc0 is set in VLAN1 and
!--- the switch port that connects to the PC is in VLAN1.

sl0: flags=63<UP,BROADCAST,RUNNING>

vlan 1 inet 10.10.10.1 netmask 255.255.255.0 broadcast 10.10.10.255

Cat6509> (enable)

!--- Verify the IP connectivity between
!--- the switch and PC with the TFTP server.

Cat6509> (enable)

ping 10.10.10.2

!!!!!
----10.10.10.2 PING Statistics----
5 packets transmitted, 5 packets received, 0% packet loss
round-trip (ms) min/avg/max = 1/1/1
Cat6509> (enable)

3.

確保bootflash中有足夠的可用空間，以便將新映像從TFTP伺服器複製到bootflash中。您可以在映像所在的PC上檢查新映像的大小。

<#root>

```
Cat6509> (enable)


dir bootflash:


-#- -length- -----date/time------ name
  1  5741220 Aug 15 2002 15:05:35 cat6000-sup2.6-3-6.bin
26240220 bytes available (5741348 bytes used)
Cat6509> (enable)

!--- Note that the new image size is around 10 MB
!--- and the space available on bootflash is around 26MB
!--- which is sufficient. In case of insufficient space
!--- to copy the new image, delete the current image
!--- with the delete command and squeeze the bootflash
!--- with the squeeze command in order to get enough space on bootflash.
```

4.

從TFTP伺服器將新的軟體映像複製到bootflash中，並驗證是否已正確複製映像。檢查新映像的檔案大小是否與Cisco.com上的軟體中心所提及的大小完全匹配。如果存在差異，請檢查映像在傳輸過程中是否損壞。再次下載映像，以確保交換機在重新載入後不會進入ROMMON模式。
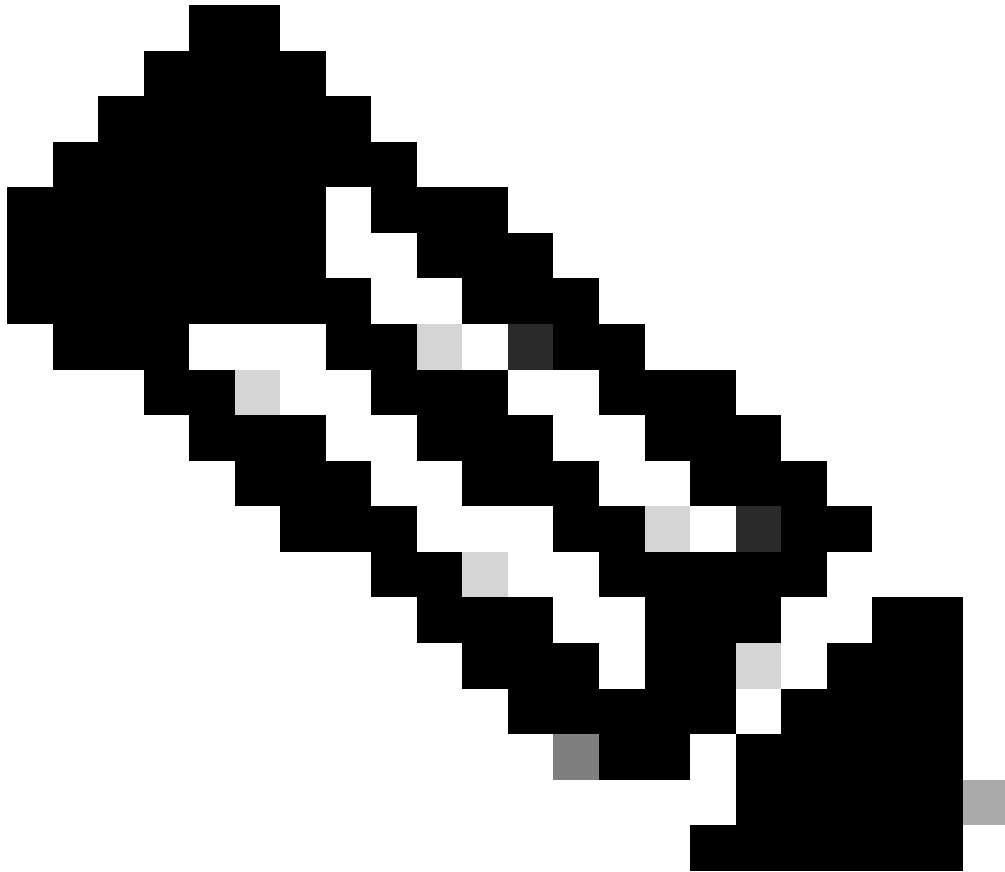
注意：執行Microsoft Windows作業系統的PC顯示檔案大小的方式可能與實際大小不同。按一下右鍵檔名，然後選擇「屬性」以驗證實際檔案大小（以位元組為單位）。

<#root>

```
Cat6509> (enable)


copy tftp bootflash:


IP address or name of remote host []? 10.10.10.2
```

```
Name of file to copy from []? cat6000-sup2cvk8.7-3-2.bin
26240092 bytes available on device bootflash, proceed (y/n) [n]? y
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
CCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCCC
File has been copied successfully.
Cat6509> (enable)
Cat6509> (enable)
```

dir bootflash:

```
-#- -length- -----date/time------ name
  1  5741220 Aug 15 2002 15:05:35 cat6000-sup2.6-3-6.bin
  2 10580536 Oct 08 2002 18:25:56 cat6000-sup2cvk8.7-3-2.bin
15659556 bytes available (16322012 bytes used)
Cat6509> (enable)
```

5.

更改引導變數，以便交換機在重置後使用新的軟體映像啟動。

<#root>

```
Cat6509> (enable)
```

show boot

```
!--- The switch originally boots with this image.

BOOT variable = bootflash:cat6000-sup2.6-3-6.bin,1;
CONFIG_FILE variable =
Configuration register is 0x2102
ignore-config: disabled
auto-config: non-recurring, overwrite, sync disabled
console baud: 9600
boot: image specified by the boot system commands
Cat6509> (enable)

!--- Old boot variable is cleared.

Cat6509> (enable)
```

clear boot system flash bootflash:cat6000-sup2.6-3-6.bin

BOOT variable =

!--- New boot variable is configured.

Cat6509> (enable)

set boot system flash bootflash:cat6000-sup2cvk8.7-3-2.bin

BOOT variable = bootflash:cat6000-sup2cvk8.7-3-2.bin,1;
Cat6509> (enable)

show boot

BOOT variable = bootflash:cat6000-sup2cvk8.7-3-2.bin,1;
CONFIG_FILE variable = slot0:switch.cfg

!--- Make sure the config-register is set to 0x2102 so that the
!--- switch boots with a valid software image. You can change the
!--- config-register with the set boot config-register 0x2102
!--- command. If the boot veriable is not specifed correctly,
!--- your switch can reload in ROMMON mode.

Configuration register is 0x2102

ignore-config: disabled
auto-config: non-recurring, overwrite, sync disabled
console baud: 9600
boot: image specified by the boot system commands
Cat6509> (enable)

6.

重置交換機，以便在重新載入期間，交換機使用新的軟體映像啟動。

<#root>

```
Cat6509> (enable) reset
This command will reset the system.
Do you want to continue (y/n) [n]? y
2002 Oct 08 18:32:02 %SYS-5-SYS_RESET:System reset from Console//
Powering OFF all existing linecards
System Bootstrap, Version 7.1(1)
Copyright (c) 1994-2001 by cisco Systems, Inc.
c6k_sup2 processor with 131072 Kbytes of main memory


!--- The switch boots with the new image.


Autoboot executing command:




"boot bootflash:cat6000-sup2cvk8.7-3-2.bin"




Self decompressing the image : ##################################
####################################################################
####################################################################
####################################################################
####################################################################
####################################################################
####################################################################
[OK]

System Power On Diagnostics
DRAM Size ..........................128 MB
Testing DRAM .......................Passed
Verifying Text Segment .............Passed
NVRAM Size .........................512 KB
Level2 Cache .......................Present
Level3 Cache .......................Present
System Power On Diagnostics Complete
Currently running ROMMON from S (Gold) region
Boot image: bootflash:cat6000-sup2cvk8.7-3-2.bin
Running System Diagnostics from this Supervisor (Module 1)
This may take up to 2 minutes....please wait

2002 Oct 08 18:33:26 %SYS-4-NVLOG:convert_post_SAC_CiscoMIB:Block 0
   converted from version 8 to 11

Cisco Systems Console
Cat6509> (enable)
```

7.

驗證交換機是否載入新的軟體映像。

```
        <#root>


Cat6509> (enable)
```

show version

WS-C6509 Software, Version NmpSW: 7.3(2)

!--- The switch runs CatOS version 7.3(2).

Copyright (c) 1995-2002 by Cisco Systems
NMP S/W compiled on Aug 1 2002, 17:38:15
System Bootstrap Version: 7.1(1)
System Web Interface Version: Engine Version: 5.3.4 ADP Device: Cat6000
   ADP Version: 1.9 ADK: 40
Hardware Version: 2.0 Model: WS-C6509 Serial #: SCA034401HK

PS1 Module: WS-CAC-1300W   Serial #: ACP03470856

```
Mod Port Model              Serial #    Versions
--- ---- ------------------ ----------- ---------------------------------
1   2    WS-X6K-SUP2-2GE    SAL060808K7 Hw : 3.4
                                        Fw : 7.1(1)
                                        Fw1: 6.1(3)
                                        Sw : 7.3(2)
                                        Sw1: 7.3(2)
         WS-F6K-PFC2        SAL060801AG Hw : 3.0
3   48   WS-X6348-RJ-45     SAD04230FB6 Hw : 1.1
                                        Fw : 5.3(1)
                                        Sw : 7.3(2)
5   0    WS-C6500-SFM       SAD043702RP Hw : 1.0
                                        Fw : 6.1(3)
                                        Sw : 7.3(2)
       DRAM                  FLASH                  NVRAM
Module Total   Used    Free    Total   Used    Free    Total Used  Free
------ ------- ------- ------- ------- ------- ------- ----- ----- -----
1      131072K 62774K  68298K  32768K  17476K  15292K  512K  258K  254K
Uptime is 0 day, 0 hour, 1 minute
Cat6509> (enable)
```

Supervisor引擎720

在Supervisor引擎720上，如果您使用PCMCIA快閃記憶體卡，請將此過程的所有命令中的bootflash: 一詞替換為disk0: 或disk1:。

完成以下步驟以升級軟體映像：

1.

驗證您在disk0：中是否有足夠的可用空間，以便將新映像從TFTP伺服器複製到disk0。您可以在託管檔案的PC上檢查新映像的大小。

        <#root>

Cat6509-E (enable)

dir disk0:

    2   -rw- 15057472   Apr 11 2006 07:28:11 cat6000-sup720k8.8-3-3.bin

49205248 bytes available (15060992 bytes used)

!--- Note that the new image size is around 15 MB and space
!--- available on disk0 is around 49 MB, which is sufficient.
!--- In case there is not enough free space to copy the new image,
!--- delete the current image with the delete <drive> <filename> command
.

2.

使用 **delete disk0:cat6000-sup720k8.8-3-3.bin**命令刪除disk0：中的當前映像。然後發出squeeze disk0:命令以從裝置中清除所有已刪除的檔案。此步驟是可選的。

        <#root>

Cat6509-E (enable)

delete disk0:cat6000-sup720k8.8-3-3.bin

```
File disk0:cat6000-sup32pfc3k8.8-4-5.bin will be deleted permanently,
continue (y/n) [n]? y
```

-

從TFTP伺服器將新的軟體映像複製到disk0，並驗證是否已正確複製映像。檢查新映像的檔案大小是否與Cisco.com上的軟體中心所提及的大小完全匹配。如果存在差異，請檢查映像在傳輸過程中是否損壞。再次下載映像，以確保交換機在重新載入後不會進入ROMMON模式。

注意：此過程使用FTP伺服器，在影象傳輸過程中沒有問題。

<#root>
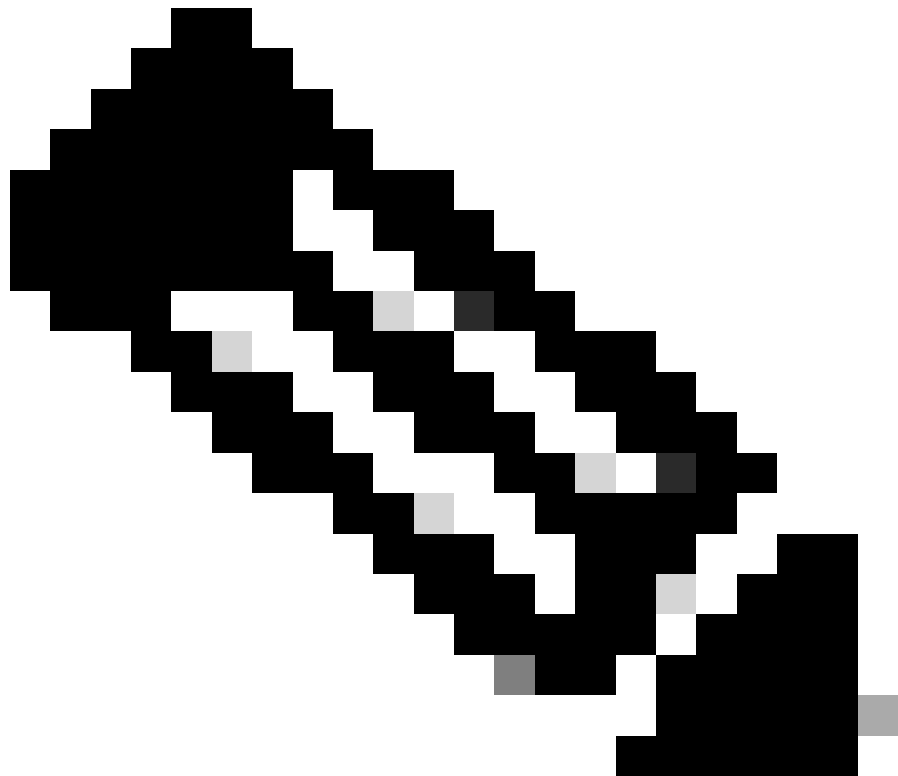
Cat6509-E (enable)

copy ftp disk0:

IP address or name of remote host []? 10.66.64.10
Username for ftp[anonymous]? cisco
Password for User cisco[]:
Name of file to copy from []? cat6000-sup720k8.8-5-3.bin
64266240 bytes available on device disk0, proceed (y/n) [n]? y

Loading cat6000-sup720k8.8-5-3.bin
!!

!!--Output Surpressed--!!
[OK - 17659732 bytes copied in 61.671 secs (286354 bytes/sec)

File disk0:cat6000-sup720k8.8-5-3.bin checksum verified and is Ok.
File has been copied successfully.

-

更改引導變數，以便交換機在重置後使用新的軟體映像啟動。

<#root>

Cat6509-E (enable)

 show boot

BOOT variable =

disk0:cat6000-sup720k8.8-3-3.bin,1;

CONFIG_FILE variable = disk0: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
```

!--- The switch originally boots with the old image.

```
Cat6509-E (enable)
```

clear boot system flash disk0:cat6000-sup720k8.8-3-3.bin

```
BOOT variable =
```

!--- Old boot variable is cleared.

```
Cat6509-E (enable)
```

set boot system flash disk0:cat6000-sup720k8.8-5-3.bin

```
BOOT variable = disk0:cat6000-sup720k8.8-5-3.bin,1;
```

!--- New boot variable is configured.

```
Cat6509-E (enable)
```

 show boot

```
BOOT variable =
```

disk0:cat6000-sup720k8.8-5-3.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

-

重置交換機，以便在重新載入期間，交換機使用新的軟體映像啟動。

<#root>

Cat6509-E (enable)

reset

This command will reset the system.
Do you want to continue (y/n) [n]? y
2006 Apr 11 09:29:07 %SYS-5-SYS_RESET:System reset from Console//
Powering OFF all existing linecards
Cat6509-E (enable)
System Bootstrap, Version 8.1(3)
Copyright (c) 1994-2004 by cisco Systems, Inc.
Cat6k-Sup720/SP processor with 1048576 Kbytes of main memory

Autoboot executing command: "boot disk0:cat6000-sup720k8.8-5-3.bin"
Loading image, please wait ...

Self decompressing the image : ##########
 !--- Output surpressed.

[OK]

System Power On Diagnostics
DRAM Size ....1024 MB
Testing DRAM ....Passed
Verifying Text Segment ....Passed
NVRAM Size ....2048 KB
Level2 Cache ....Present
Level3 Cache ....Present
System Power On Diagnostics Complete

Currently running ROMMON from S (Gold) region
Boot image: disk0:cat6000-sup720k8.8-5-3.bin

Firmware compiled 27-Jan-06 16:09 by integ Build [100]

Running System Diagnostics from this Supervisor (Module 5)
This may take several minutes....please wait

Cisco Systems Console

Cat6509-E (enable)

-

驗證交換機是否載入新的軟體映像。

           <#root>

Cat6509-E (enable)

show version

WS-C6509-E Software, Version NmpSW: 8.5(3)
Copyright (c) 1995-2006 by Cisco Systems
NMP S/W compiled on Jan 28 2006, 17:37:02

System Bootstrap Version: 8.1(3)

System Boot Image File is 'disk0:cat6000-sup720k8.8-5-3.bin'

System Configuration register is 0x2102

Hardware Version: 1.0 Model: WS-C6509-E Serial #: SCA080600KT

PS1 Module: WS-CAC-2500W   Serial #: ART0824E17L

Mod Port Model   Serial #   Versions
--- ---- ------------------- ----------- --------------------------------
5   2   WS-SUP720-3BXL   SAL09148BCH Hw : 4.3
                                         Fw : 8.1(3)
                                         Fw1: 8.5(3)
                                         Sw : 8.5(3)
                                         Sw1: 8.5(3)
         WS-F6K-PFC3BXL   SAL091594QY Hw : 1.6
                                         Sw :
15 1   WS-SUP720   SAL09148NUB Hw : 2.3
                                         Fw : 12.2(17d)SXB11
                                         Sw : 12.2(17d)SXB11

```
        DRAM                          FLASH                    NVRAM
 Module Total    Used    Free    Total   Used    Free    Total Used  Free
 ------ ------- ------- ------- ------- ------- ------- ----- ----- -----
 5      1048576K 205619K 842957K  64000K  14705K  49295K 2048K  262K 1786K

 Uptime is 0 day, 0 hour, 2 minutes
 Cat6509-E (enable)
```

Supervisor引擎32

Supervisor引擎32具有以下功能：

1.

    256 MB bootflash透過內部快閃記憶體裝置（在CLI中稱為「bootdisk」）

2.

    緊湊型快閃記憶體插槽(disk 0)

有關Supervisor功能的詳細資訊，請參閱Catalyst 6500系列軟體版本8.x發行版本註釋。

完成以下步驟以升級軟體映像：

1.

    驗證您在disk0：中是否有足夠的可用空間，以便將新映像從TFTP伺服器複製到disk0。您可以在託管檔案的PC上檢查新映像的大小。

<#root>

Console> (enable)

dir disk0:

    2   -rw- 9356096   Apr 10 2006 17:50:28 cat6000-sup32pfc3k8.8-4-5.bin

245751808 bytes available (9361542 bytes used)

!--- Note that the new image size is around 11 MB and space
!--- available on disk0 is around 53 MB, which is sufficient.
!--- In case there is not enough free space to copy the new image,
!--- delete the current image with the delete command.

2.

使用delete disk0:cat6000-sup32pfc3k8.8-4-5.bin命令刪除disk0：中的當前映像。此步驟是可選的。
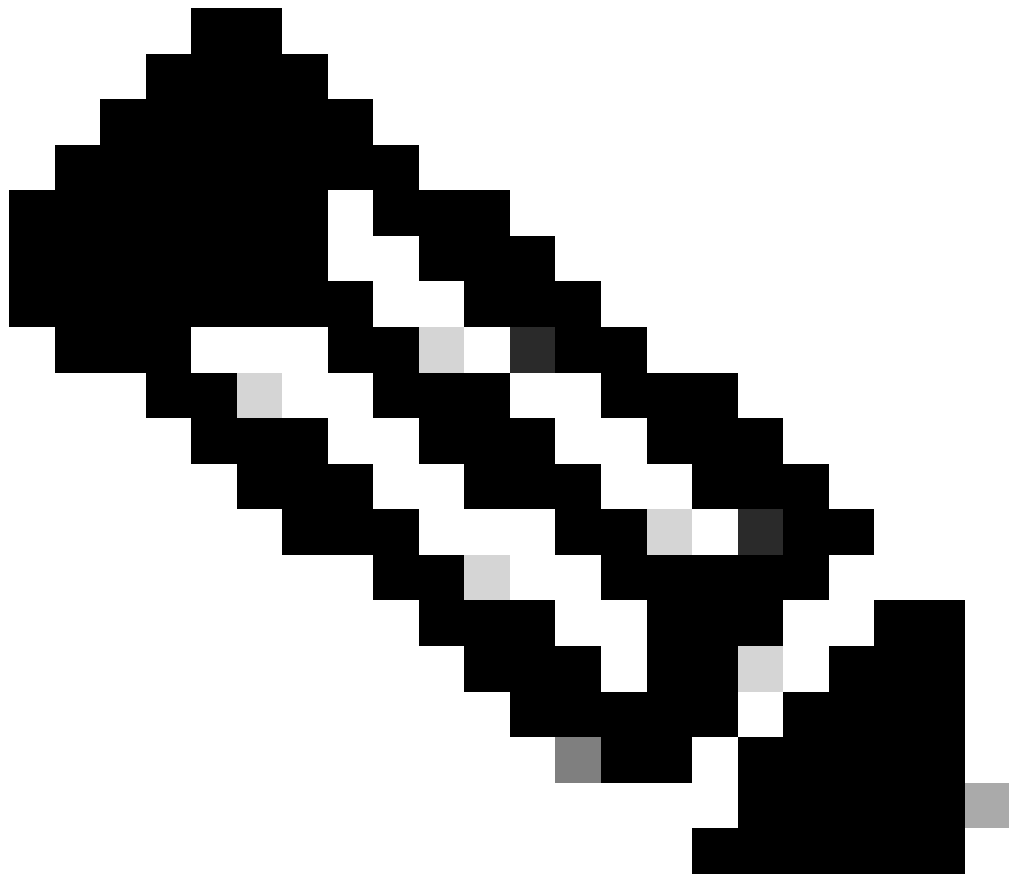
注意：squeeze 命令不適用於Supervisor 32。

<#root>

Console> (enable)

delete disk0:cat6000-sup32pfc3k8.8-4-5.bin

File disk0:cat6000-sup32pfc3k8.8-4-5.bin will be deleted permanently,

```
continue (y/n) [n]? y
```

-

從TFTP伺服器將新的軟體映像複製到disk0,並驗證是否已正確複製映像。檢查新映像的檔案大小是否與Cisco.com上的軟體中心所提及的大小完全匹配。如果存在差異,請檢查映像在傳輸過程中是否損壞。再次下載映像,以確保交換機在重新載入後不會進入ROMMON模式。

注意:此過程使用FTP伺服器,在影象傳輸過程中沒有問題。

<#root>
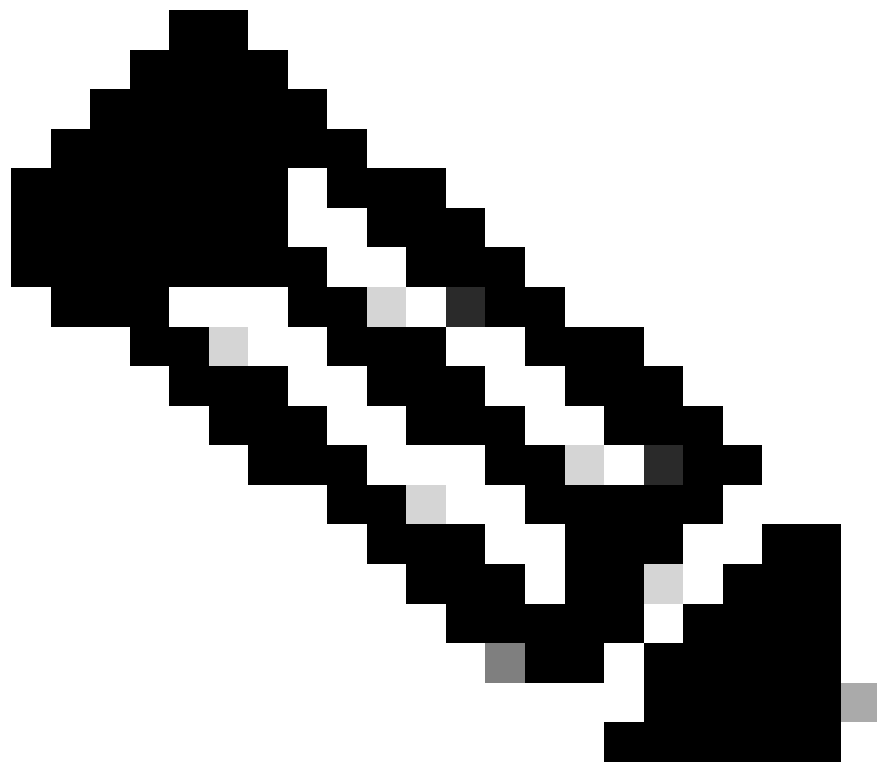
```
Console> (enable)
```

copy ftp disk0:

```
IP address or name of remote host [10.66.64.10]? 10.66.64.10
Username for ftp[anonymous]? cisco
Password for User cisco[]:
Name of file to copy from [cat6000-sup32pfc3k8.8-5-3.bin]?
64258048 bytes available on device disk0, proceed (y/n) [n]? y


Loading cat6000-sup32pfc3k8.8-5-3.bin
!!!!!!
```
!--- Output surpressed.

```
[OK - 10011264 bytes copied in 43.985 secs (227606 bytes/sec)


File disk0:cat6000-sup32pfc3k8.8-5-3.bin checksum verified and is Ok.
File has been copied successfully.
```

•

更改引導變數，以便在重置後使用新的軟體映像啟動交換機。

<#root>

```
Console> (enable)
```

show boot

```
BOOT variable = disk0:cat6000-sup32pfc3k8.8-4-5.bin,1;
CONFIG_FILE variable =

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
```

!--- The switch originally boots with the old image.

Console> (enable)

clear boot system flash disk0:cat6000-sup32pfc3k8.8-4-5.bin

BOOT variable =

!--- Old boot variable is cleared.

Console> (enable)

set boot system flash disk0:cat6000-sup32pfc3k8.8-5-3.bin

BOOT variable = disk0:cat6000-sup32pfc3k8.8-5-3.bin,1;

!--- New boot variable is configured.

Console> (enable)

show boot

BOOT variable = disk0:cat6000-sup32pfc3k8.8-5-3.bin,1;
CONFIG_FILE variable =

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

•

重設交換器，如此一來，重新載入時，交換器就會以新的軟體映像啟動。

<#root>

Console> (enable)

reset

This command will reset the system.
Do you want to continue (y/n) [n]? y
2006 Apr 10 22:12:14 %SYS-5-SYS_RESET:System reset from Console//
Powering OFF all existing linecards
Console> (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 disk0:cat6000-sup32pfc3k8.8-5-3.bin"
Self decompressing the image : ##
 !--- Output surpressed.

[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: disk0:cat6000-sup32pfc3k8.8-5-3.bin

Firmware compiled 27-Jan-06 16:09 by integ Build [100]

Running System Diagnostics from this Supervisor (Module 5)
This may take several minutes....please wait

Cisco Systems Console
Console>

-

驗證交換機是否載入新的軟體映像。

           <#root>

Console> (enable)

```
show version



WS-C6509 Software, Version NmpSW: 8.5(3)
Copyright (c) 1995-2006 by Cisco Systems
NMP S/W compiled on Jan 28 2006, 17:09:40

System Bootstrap Version: 12.2



System Boot Image File is 'disk0:cat6000-sup32pfc3k8.8-5-3.bin'



System Configuration register is 0x2102

Hardware Version: 2.0  Model: WS-C6509  Serial #: SCA044903GE

PS1  Module: WS-CAC-3000W     Serial #: SNI0803AL1X

Mod Port Model               Serial #    Versions
--- ---- ------------------- ----------- ---------------------------------
5   3    WS-SUP32-10GE-3B    SAD092003PK Hw : 1.2
                                         Fw : 12.2
                                         Fw1: 8.5(3)
                                         Sw : 8.5(3)
                                         Sw1: 8.5(3)
         WS-F6K-PFC3B        SAD091607E3 Hw : 2.1
                                         Sw :

        DRAM                    FLASH                   NVRAM
Module Total   Used    Free    Total   Used    Free    Total Used  Free
------ ------- ------- ------- ------- ------- ------- ----- ----- -----
5      262144K 123285K 138859K 249772K  18920K 230852K 2048K  261K 1787K

Uptime is 0 day, 0 hour, 1 minute
```

MSM和MSFC/MSFC2/MSFC3上的Cisco IOS

請參閱升級Catalyst交換機第3層模組上的軟體映像，以獲取升級Multilayer Switch Module (MSM)和Multilayer Switch Feature Card (MSFC)/Multilayer Switch Feature Card 2 (MSFC2)：/Multilayer Switch Feature Card 3 (MSFC3)上的軟體映像的分步過程。

運行Cisco IOS軟體的交換機

1.

確保您檢驗了記憶體/引導ROM要求、PC上的TFTP伺服器以及從交換機控制檯埠訪問交換機控制檯。如果您沒準備好這些設定，請參閱[檢查記憶體和Boot ROM要求](#)部分。
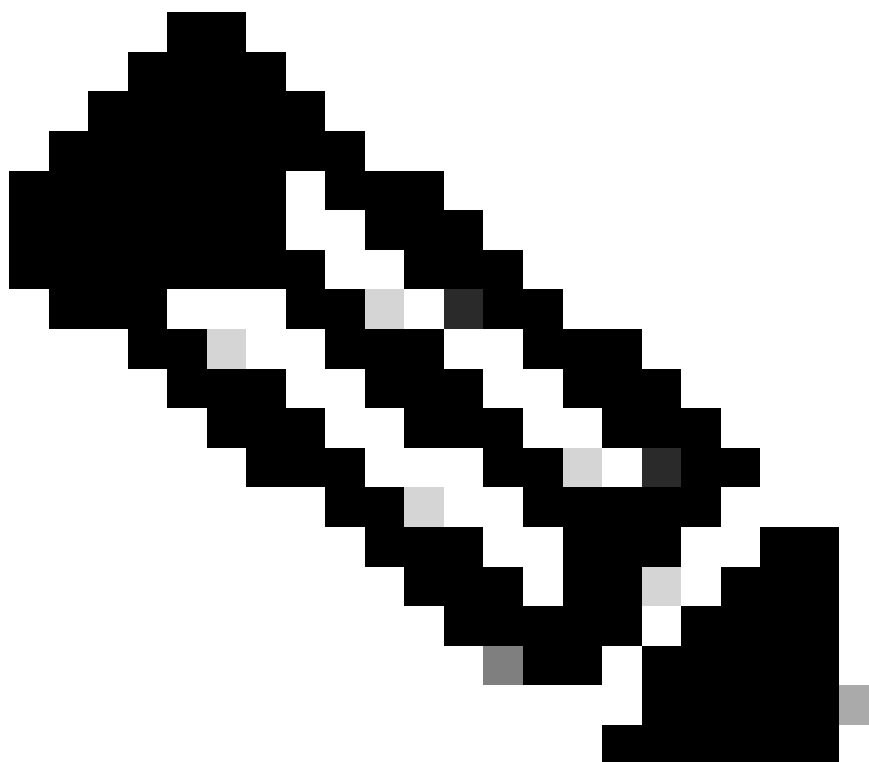
注意：許多TFTP實施無法傳輸16 MB或更大的檔案。在Cisco IOS軟體版本12.1(8a)E和更新版本中，Supervisor引擎II的系統軟體映像大於16 MB。使用FTP或遠端複製通訊協定(RCP)來傳輸16 MB或更大的檔案。有關如何使用FTP或RCP的過程，請參閱載入和維護系統映像和微碼。此過程使用Cisco TFTP伺服器，在映像傳輸期間沒有問題。

2.

組態管理IP地址（VLAN介面），並檢查交換機與安裝TFTP伺服器的PC之間的連通性。此範例使用IP位址10.10.10.1進行交換器管理(int vlan1)，並使用IP位址10.10.10.2作為TFTP伺服器。

<#root>

```
!--- By default, all ports are Layer 3 ports. Port FastEthernet 4/48
!--- is configured to the Layer 2 port, which is connected to the
!--- PC that runs the TFTP server.

Cat6500#

configure terminal

Enter configuration commands, one per line.  End with CNTL/Z.
Cat6500(config)#

interface fa4/48

Cat6500(config-if)#

switchport

Cat6500(config-if)#

switchport mode access

Cat6500(config-if)#

switchport access vlan 1
```

```
Cat6500(config-if)#
```

no shutdown

```
Cat6500(config-if)#
```

exit

!--- Port fa4/48 is configured in VLAN 1. VLAN 1 is the
!--- management VLAN.

```
Cat6500(config)#
```

int vlan 1

```
Cat6500(config-if)#
```

ip address 10.10.10.1 255.255.255.0

```
Cat6500(config-if)#
```

no shutdown

```
Cat6500(config-if)#
```

^Z

```
Cat6500#
00:04:25: %SYS-5-CONFIG_I: Configured from console by console
```

!--- The configuration for interface fa4/48.

Cat6500#

show running-config int fa4/48

Building configuration...

Current configuration : 85 bytes
!
interface FastEthernet4/48
 no ip address
 switchport
 switchport mode access
end
Cat6500#

!--- Make sure that the VLAN 1 and fa4/48 interfaces are up.

Cat6500#

show ip int brief

Interface	IP-Address	OK? Method Status	Protocol
Vlan1	**10.10.10.1**	**YES manual up**	**up**
GigabitEthernet1/1	unassigned	YES unset administratively down	down

-- output skipped --

FastEthernet4/46	unassigned	YES unset administratively down	down
FastEthernet4/47	unassigned	YES unset administratively down	down
FastEthernet4/48	**unassigned**	**YES unset up**	**up**

Cat6500#

!--- IP connectivity with the PC that runs TFTP server is verified.

Cat6500#

```
ping 10.10.10.2
```

```
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.10.10.2, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 1/1/1 ms
Cat6500#
```

3.

Cisco IOS軟體需要兩個軟體映像：

a.

主軟體映像

b.

引導載入程式映像
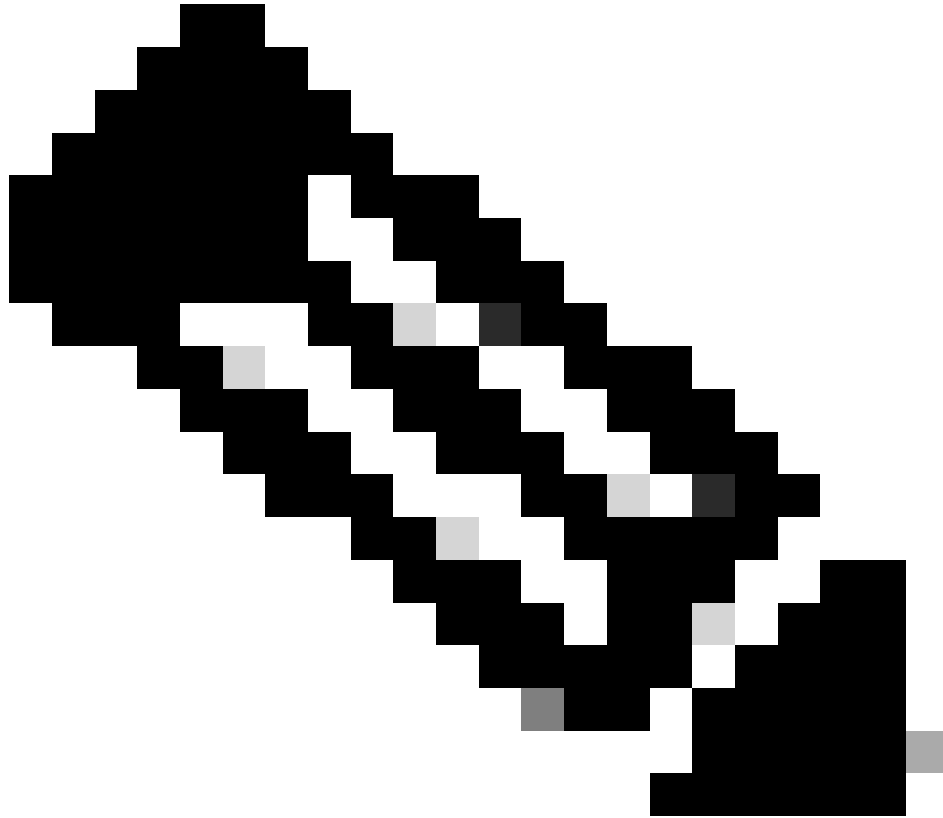
注意：對於MSFC1，引導載入程式映像是必需的，並且必須放在MSFC bootflash中。引導載入程式映像不是MSFC2的必要條件。但是，Cisco建議您使用引導映像，如本過程中所述。引導映像是系統映像的縮小版本，其尺寸要小得多。使用引導映像，您可以在主系統映像損壞或丟失時執行TFTP映像傳輸。如果選擇使用MSFC2引導映像，則必須將其儲存在MSFC bootflash中。

最佳作法是將主軟體映像保留在slot0中，並將開機載入程式映像保留在MSFC bootflash中。驗證在slot0和MSFC bootflash中是否有足夠的可用空間，以便從TFTP伺服器複製新映象。您可以在下載新影像的PC上檢查其大小。Supervisor引擎720使用術語disk0:和 **disk1:**而不是slot0:，因此在本示例中，請將slot0: 替換為disk0:或**disk1:**，這取決於您使用的是哪個磁碟。

<#root>

Cat6500#

dir slot0:

Directory of slot0:/

    1 -rw-   21611516   Mar 01 1993 00:08:04   c6sup22-jsv-mz.121-11b.E4
24772608 bytes total (

3160964 bytes free

)
Cat6500#

!--- The free space on slot0 is around 3 MB. The new image
!--- size is around 22 MB. Delete the current image in order to
!--- make room in slot0.

Cat6500#

delete slot0:c6sup22-jsv-mz.121-11b.E4

Delete filename [c6sup22-jsv-mz.121-11b.E4]?
Delete slot0:c6sup22-jsv-mz.121-11b.E4? [confirm]

Cat6500#

!--- After you delete the image, you cannot use the
!--- free space until you squeeze slot0 to use the free space.

Cat6500#

squeeze slot0:

All deleted files will be removed. Continue? [confirm]
Squeeze operation may take a while. Continue? [confirm]

Squeeze of slot0 complete
Cat6500#
Cat6500#

```
dir bootflash:
```

```
Directory of bootflash:/

    1  -rw-     1734148   Mar 01 1993 21:01:07  c6msfc2-boot-mz.121-11b.E4
15204352 bytes total (
```

13470076 bytes free

```
)
Cat6500#
```

!--- The free space on bootflash is around 13 MB,
!--- and the new boot loader image size is just 1.66 MB.
!--- You do not need to remove the current boot loader image.

•

將新的主軟體映像複製到slot0，並將引導映像從TFTP伺服器複製到bootflash中。驗證是否已正確複製映像。檢查新映像的檔案大小是否與軟體中心的大小匹配。如果不匹配，請檢查映像在傳輸過程中是否損壞。再次下載映像，以確保交換機不會在ROMMON模式下重新載入。

<#root>

```
Cat6500#
```

copy tftp slot0:

```
Address or name of remote host []?
```

10.10.10.2

```
Source filename []?
```

```
c6sup22-jsv-mz.121-12c.E2
```

!--- This is the new main software image.

```
Destination filename [c6sup22-jsv-mz.121-12c.E2]?
Loading c6sup22-jsv-mz.121-12c.E2 from 10.10.10.2 (via Vlan1): !!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
```

!--- Output suppressed.

```
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
[OK - 22338124/44676096 bytes]
22338124 bytes copied in 235.880 secs (95055 bytes/sec)
Cat6500#
```

dir slot0:

```
Directory of slot0:/
```

```
1  -rw-    22338124   Mar 01 1993 00:20:15  c6sup22-jsv-mz.121-12c.E2
```

!--- The new software image is properly copied to slot0.

```
24772608 bytes total (2434356 bytes free)
Cat6500#
```

!--- Copy the boot image in bootflash.

```
Cat6500#
```

copy tftp bootflash:

```
Address or name of remote host [10.10.10.2]?
Source filename [c6sup22-jsv-mz.121-12c.E2]? c6msfc2-boot-mz.121-12c.E2
Destination filename [c6msfc2-boot-mz.121-12c.E2]?
```

```
Loading c6msfc2-boot-mz.121-12c.E2 from 10.10.10.2 (via Vlan1): !!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
[OK - 1744836/3488768 bytes]

1744836 bytes copied in 9.340 secs (193870 bytes/sec)
Cat6500#
```

dir bootflash:

```
Directory of bootflash:/

    1  -rw-      1734148   Mar 01 1993 21:01:07  c6msfc2-boot-mz.121-11b.E4
```

2 -rw-   1744836   Mar 01 1993 00:25:17 c6msfc2-boot-mz.121-12c.E2

!--- The new boot image is properly copied in bootflash.

```
15204352 bytes total (11725112 bytes free)
Cat6500#
```

-

更改引導變數，以便在重新載入後使用新軟體和引導映像引導交換機。可使用**show running-config**或**show bootvar**命令驗證引導變數。

<#root>

```
Cat6500#
```

show running-config

```
Building configuration...

Current configuration : 4193 bytes
!
version 12.1
```

```
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname Cat6500
!
```

!--- These are the old boot variables.

```
boot system flash slot0:c6sup22-jsv-mz.121-11b.E4
boot bootldr bootflash:c6msfc2-boot-mz.121-11b.E4
```

```
!
redundancy
 main-cpu
   auto-sync standard
ip subnet-zero
!
```

!--- Output suppressed.

```
Cat6500#
Cat6500#
Cat6500#
```

configure terminal

```
Enter configuration commands, one per line.  End with CNTL/Z.
```

!--- Remove the old boot variables.

```
Cat6500(config)#
```

no boot system flash slot0:c6sup22-jsv-mz.121-11b.E4

```
Cat6500(config)#
```

no boot bootldr bootflash:c6msfc2-boot-mz.121-11b.E4

!--- Configure the new boot variables.

```
Cat6500(config)#


boot system flash slot0:c6sup22-jsv-mz.121-12c.E2


Cat6500(config)#


boot bootldr bootflash:c6msfc2-boot-mz.121-12c.E2


Cat6500(config)#


^Z


Cat6500#
00:29:00: %SYS-5-CONFIG_I: Configured from console by console
Cat6500#


show running-config



Building configuration...

Current configuration : 4193 bytes
!
version 12.1
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname Cat6500
!

!--- These are the new boot variables.




boot system flash slot0:c6sup22-jsv-mz.121-12c.E2
boot bootldr bootflash:c6msfc2-boot-mz.121-12c.E2
```

```
!
redundancy
 main-cpu
   auto-sync standard
ip subnet-zero
!
```

!--- Output suppressed.

Cat6500#

!--- You can verify the boot variables with the

show bootvar

!--- command as well. Make sure to issue the

write memory

 command before
!--- you verify the changes with this command.

Cat6500#

show bootvar

!--- The boot variables are changed. But, the
!---

 show bootvar command

 output displays the old variable.

```
BOOT variable = slot0:c6sup22-jsv-mz.121-11b.E4,1
CONFIG_FILE variable does not exist
BOOTLDR variable = bootflash:c6msfc2-boot-mz.121-11b.E4
Configuration register is 0x2102
```

Cat6500#

!--- Save the changes with the

write memory

 command.

Cat6500#

write memory

Building configuration...
[OK]
Cat6500#
Cat6500#

show bootvar

!--- These are the new boot variables.

BOOT variable = slot0:c6sup22-jsv-mz.121-12c.E2,1

CONFIG_FILE variable does not exist

BOOTLDR variable = bootflash:c6msfc2-boot-mz.121-12c.E2

!--- Make sure the config-register is set to 0x2102 so that the
!--- switch boots with a valid software image. You can change the
!--- config-register with the

sconfig-register 0x2102

!--- configuration mode command. If the boot veriable
!--- is not specifed correctly, your switch can reload in ROMMON mode.

Cat6500#

•

重新載入交換機，以便交換機在重新引導後使用新的軟體映像啟動。

<#root>

Cat6500#

reload

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

y

Building configuration...
[OK]
Proceed with reload? [confirm]

00:30:27: %SYS-5-RELOAD: Reload requested
00:30:30: %SYS-SP-3-LOGGER_FLUSHING: System pausing to ensure console
   debugging output.

00:30:30: %OIR-SP-6-CONSOLE: Changing console ownership to switch processor

00:30:30: %SYS-SP-3-LOGGER_FLUSHED: System was paused for 00:00:00 to
   ensure console debugging output.

00:30:32: %SYS-SP-3-LOGGER_FLUSHING: System pausing to ensure console
   debugging output.

***
*** --- SHUTDOWN NOW ---
***

00:30:32: %SYS-SP-5-RELOAD: Reload requested

```
00:30:32: %OIR-SP-6-CONSOLE: Changing console ownership to switch processor

00:30:32: %SYS-SP-3-LOGGER_FLUSHED: System was paused for 00:00:00 to
    ensure console debugging output.

System Bootstrap, Version 6.1(2)
Copyright (c) 1994-2000 by cisco Systems, Inc.
c6k_sup2 processor with 131072 Kbytes of main memory


Autoboot executing command: "boot slot0:c6sup22-jsv-mz.121-12c.E2"




!--- The switch is loading the new main software image.


Self decompressing the image : ######################################
#########################################################################
#########################################################################
#########################################################################
#########################################################################
#########################################################################
#########################################################################
#########################################################################
#########################################################################
[OK]

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(c) (1) (ii) of the Rights in Technical Data and Computer
Software clause at DFARS sec. 252.227-7013.

           cisco Systems, Inc.
           170 West Tasman Drive
           San Jose, California 95134-1706

Cisco Internetwork Operating System Software
IOS (tm) c6sup2_sp Software (c6sup2_sp-SPV-M), Version 12.1(12c)E2,
    EARLY DEPLOYMENT RELEASE SOFTWARE (fc1)
TAC Support: http://www.cisco.com/tac
Copyright (c) 1986-2002 by cisco Systems, Inc.
Compiled Fri 23-Aug-02 10:13 by eaarmas
Image text-base: 0x40020980, data-base: 0x407F2000


Start as Primary processor

00:00:02: %SYS-3-LOGGER_FLUSHING: System pausing to ensure console
    debugging output.

00:00:02: %OIR-6-CONSOLE: Changing console ownership to route processor

System Bootstrap, Version 12.1(3r)E2, RELEASE SOFTWARE (fc1)
Copyright (c) 2000 by cisco Systems, Inc.
```

```
Cat6k-MSFC2 platform with 524288 Kbytes of main memory
Download Start
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Download Completed! Booting the image.
Self decompressing the image : ###################################
######################################################################
######################################################################
######################################################################
######################################################################
######################################################################
######################################################################
###############################################
[OK]


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            cisco Systems, Inc.
            170 West Tasman Drive
            San Jose, California 95134-1706


Cisco Internetwork Operating System Software
IOS (tm) c6sup2_rp Software (c6sup2_rp-JSV-M), Version 12.1(12c)E2,
    EARLY DEPLOYMENT RELEASE SOFTWARE (fc1)
TAC Support: http://www.cisco.com/tac
Copyright (c) 1986-2002 by cisco Systems, Inc.
Compiled Fri 23-Aug-02 09:42 by eaarmas
Image text-base: 0x40008980, data-base: 0x41888000


cisco Catalyst 6000 (R7000) processor with 489472K/34816K bytes of memory.
Processor board ID SAD044204RE
R7000 CPU at 300Mhz, Implementation 39, Rev 2.1, 256KB L2, 1024KB L3 Cache
Last reset from power-on
Bridging software.
X.25 software, Version 3.0.0.
SuperLAT software (copyright 1990 by Meridian Technology Corp).
TN3270 Emulation software.
1 Virtual Ethernet/IEEE 802.3  interface(s)
48 FastEthernet/IEEE 802.3 interface(s)
18 Gigabit Ethernet/IEEE 802.3 interface(s)
381K bytes of non-volatile configuration memory.

16384K bytes of Flash internal SIMM (Sector size 512K).


Press RETURN to get started!

00:00:37: RP: Currently running ROMMON from S (Gold) region
00:00:44: %SYS-5-CONFIG_I: Configured from memory by console
00:00:44: %SYS-5-RESTART: System restarted --
Cisco Internetwork Operating System Software
IOS (tm) c6sup2_rp Software (c6sup2_rp-JSV-M), Version 12.1(12c)E2,
    EARLY DEPLOYMENT RELEASE SOFTWARE (fc1)
TAC Support: http://www.cisco.com/tac
```

```
Copyright (c) 1986-2002 by cisco Systems, Inc.
Compiled Fri 23-Aug-02 09:42 by eaarmas
00:00:02: %SYS-3-LOGGER_FLUSHED: System was paused for 00:00:00 to ensure
    console debugging output.


00:00:03: %C6KPWR-4-PSINSERTED: power supply inserted in slot 1.
00:00:03: %C6KPWR-4-PSOK: power supply 1 turned on.
00:00:41: SP: Currently running ROMMON from S (Gold) region
00:00:42: %SYS-SP-5-RESTART: System restarted --
Cisco Internetwork Operating System Software
IOS (tm) c6sup2_sp Software (c6sup2_sp-SPV-M), Version 12.1(12c)E2,
    EARLY DEPLOYMENT RELEASE SOFTWARE (fc1)
TAC Support: http://www.cisco.com/tac
Copyright (c) 1986-2002 by cisco Systems, Inc.
Compiled Fri 23-Aug-02 10:13 by eaarmas
00:00:45: %SNMP-5-COLDSTART: SNMP agent on host Cat6500 is undergoing a
    cold start
00:00:46: %SYS-6-BOOTTIME: Time taken to reboot after reload = -1781 seconds
00:00:46: %SYS-SP-6-BOOTTIME: Time taken to reboot after reload = 730945875
    seconds
00:00:48: %C6KPWR-SP-4-ENABLED: power to module in slot 3 set on
00:00:48: %C6KPWR-SP-4-ENABLED: power to module in slot 4 set on
Cat6500>
Cat6500>
```

-

驗證交換機是否載入新的軟體映像。

<#root>


```
Cat6500>
```


enable


```
Cat6500#
```


show version


```
Cisco Internetwork Operating System Software
```


IOS (tm) c6sup2_rp Software (c6sup2_rp-JSV-M), Version 12.1(12c)E2,
**   EARLY DEPLOYMENT RELEASE SOFTWARE (fc1)**

```
!--- The switch runs the new software release.

TAC Support: http://www.cisco.com/tac
Copyright (c) 1986-2002 by cisco Systems, Inc.
Compiled Fri 23-Aug-02 09:42 by eaarmas
Image text-base: 0x40008980, data-base: 0x41888000

ROM: System Bootstrap, Version 12.1(3r)E2, RELEASE SOFTWARE (fc1)



BOOTLDR: c6sup2_rp Software (c6sup2_rp-JSV-M), Version 12.1(12c)E2,
   EARLY DEPLOYMENT RELEASE SOFTWARE (fc1)



!--- The switch runs the new boot image.

Cat6500 uptime is 1 minute
System returned to ROM by power-on (SP by power-on)
Running default software

cisco Catalyst 6000 (R7000) processor with 489472K/34816K bytes of memory.
Processor board ID SAD044204RE
R7000 CPU at 300Mhz, Implementation 39, Rev 2.1, 256KB L2, 1024KB L3 Cache
Last reset from power-on
Bridging software.
X.25 software, Version 3.0.0.
SuperLAT software (copyright 1990 by Meridian Technology Corp).
TN3270 Emulation software.
1 Virtual Ethernet/IEEE 802.3  interface(s)
48 FastEthernet/IEEE 802.3 interface(s)
18 Gigabit Ethernet/IEEE 802.3 interface(s)
381K bytes of non-volatile configuration memory.

16384K bytes of Flash internal SIMM (Sector size 512K).
Configuration register is 0x2102

Cat6500#
```

Supervisor引擎720

在Supervisor引擎720中，在Cisco IOS軟體版本12.2 SX之後，沒有單獨的映像檔案，例如引導載入程式映像和主IOS映像。Supervisor引擎和MSFC均運行一個捆綁的Cisco IOS映像。

Supervisor引擎720的常見功能：

- 64 MB bootflash裝置或含512 MB CompactFlash卡的CompactFlash配接卡(WS-CF-UPG=)：

    - 所有版本都支援64 MB bootflash裝置(sup-bootflash：)

    - WS-CF-UPG= (sup-bootdisk：)在以下位置受支援：

    - 版本12.2(18)SXE5和更新版本

    - 版本12.2(18)SXF及更新版本

- 2個CompactFlash II型插槽（disk0：和disk1：）

註：由於Supervisor引擎720的一些最新軟體映像大於bootflash裝置，因此建議使用CompactFlash卡。

要升級Supervisor模組上的映像，請完成以下步驟：

1.

您可以檢查下載新影像的大小。Supervisor引擎720使用術語disk0:或 **disk1：**而非 **slot0:**.

```
                <#root>


Cat6509-E#



dir disk0:



Directory of disk0:/

  1  -rw-     41050516    Apr 5 2006 05:39:24 +00:00  s72033-psv-mz.122-17d.SXB11.bin
65536000 bytes total (24485356 bytes free)
Cat6500#


!--- The free space on disk0 is around 24 MB. Delete the current image
!--- in order to make room for the new image in disk0.


Cat6509-E#



delete disk0:s72033-psv-mz.122-17d.SXB11.bin



Delete filename [s72033-psv-mz.122-17d.SXB11.bin]?
Delete disk0:s72033-psv-mz.122-17d.SXB11.bin? [confirm]
```
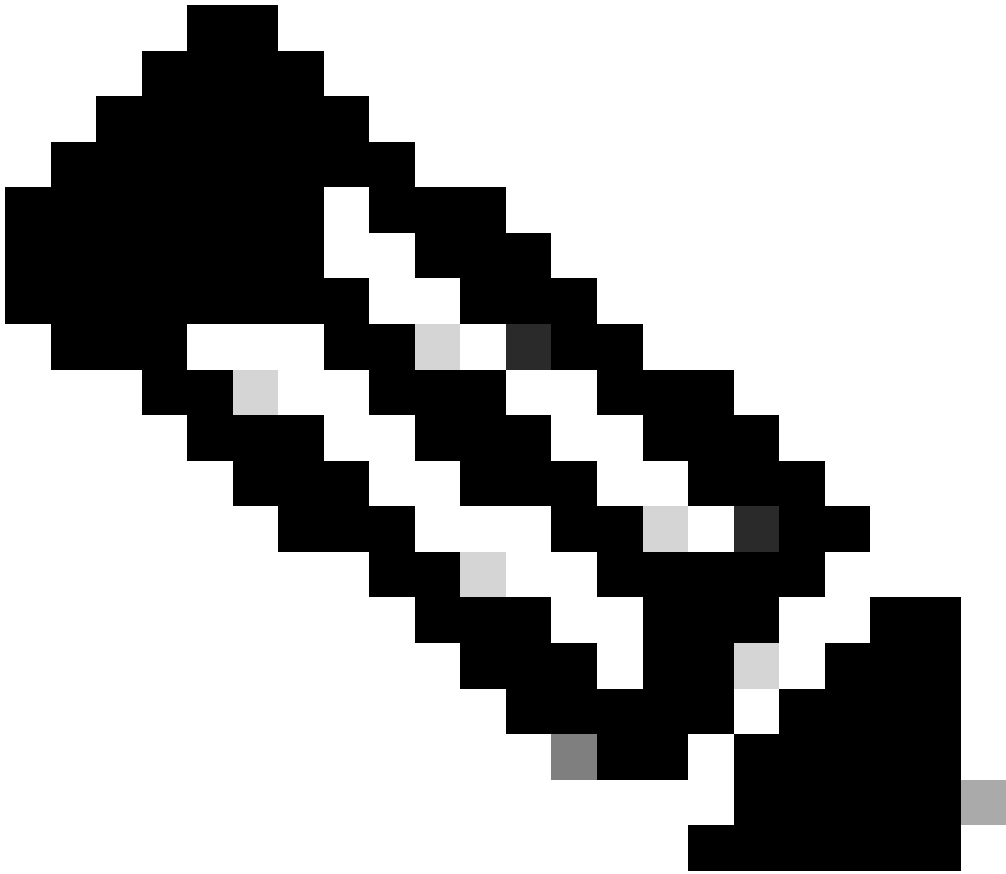
注意：squeeze命令不適用於某些軟體版本。
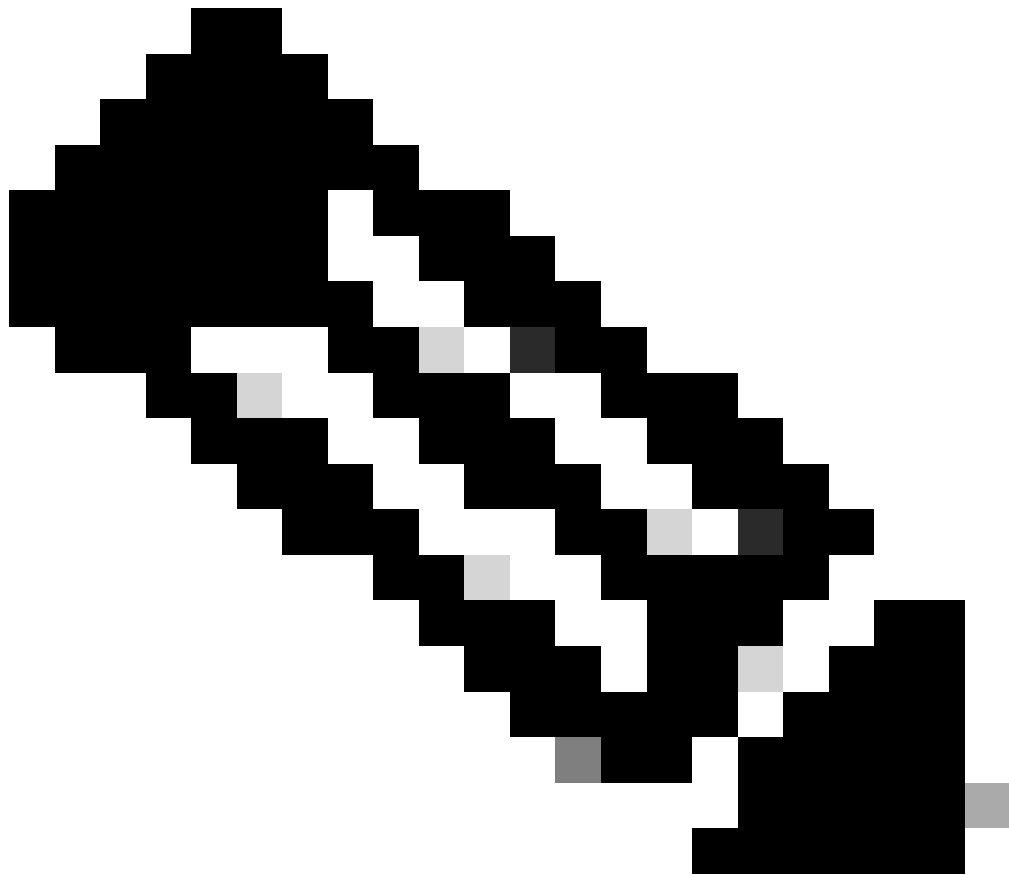
注意：發出以下命令，以檢視是否支援squeeze命令：

<#root>

```
Cat6509-E#
```

squeeze ?

```
  /nolog        Squeeze without squeeze logs
  /quiet        Squeeze without progress update
```

```
bootflash:      Filesystem to be squeezed
sup-bootflash:  Filesystem to be squeezed
```

-

從TFTP伺服器將新的軟體映像複製到disk0。
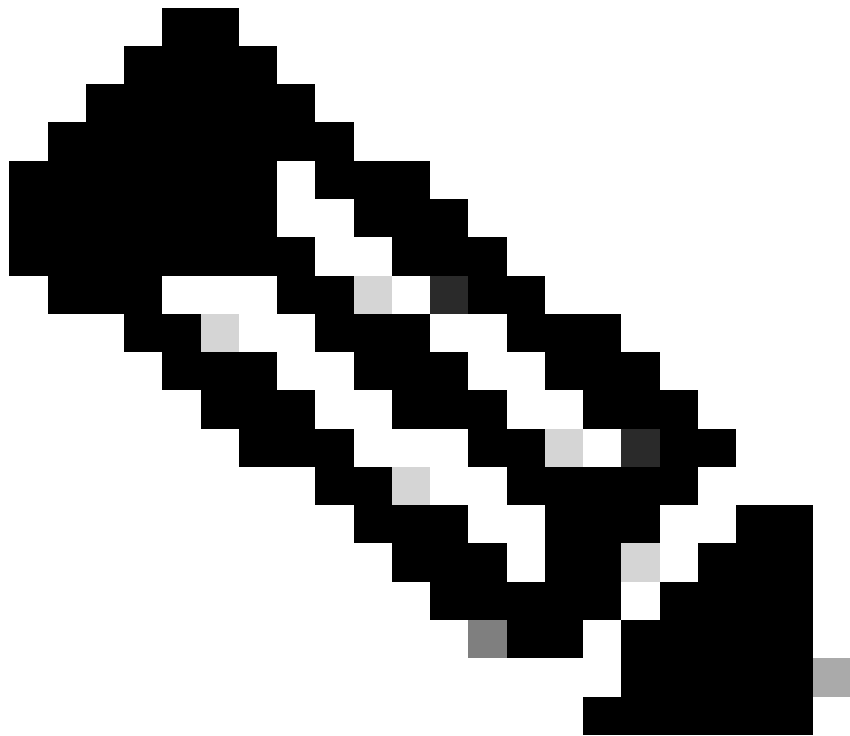
注意：許多TFTP實施無法傳輸16 MB或更大的檔案。Supervisor引擎720的Cisco IOS軟體映像大於16 MB。使用FTP或遠端複製通訊協定(RCP)來傳輸16 MB或更大的檔案。有關使用FTP或RCP的過程，請參閱載入和維護系統映像和微碼。

<#root>

```
Cat6509-E#
```

copy ftp://cisco:cisco@10.66.64.10//tftpboot/s72033-psv-mz.122-18.SXD7.bin disk0:

```
Destination filename [s72033-psv-mz.122-18.SXD7.bin]?
Accessing ftp://cisco:cisco@10.66.64.10//tftpboot/s72033-psv-mz.122-18.SXD7.bin.
..
Loading /tftpboot/s72033-psv-mz.122-18.SXD7.bin !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
```

!--- Output suppressed.

```
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
[OK - 45463592/4096 bytes]
45463592 bytes copied in 139.600 secs (325670 bytes/sec)
```

•

驗證是否已正確複製映像。檢查新映像的檔案大小是否與軟體中心的大小匹配。如果不匹配，則可能在傳輸過程中映像損壞。您需要再次下載映像，以避免交換機在ROMMON模式下重新載入。

<#root>

```
Cat6509-E#
```

dir disk0:

```
Directory of disk0:/

  1  -rw-    45463592   Apr 7 2006 05:45:36 +00:00  s72033-psv-mz.122-18.SXD7.bin

127793152 bytes total (82327552 bytes free)
```

!--- The new software image is properly copied to disk0.

-

更改引導變數，以便交換機在重新載入後使用新的軟體映像啟動。發出**show running-config**或show bootvar命令以便驗證引導變數。

<#root>

Cat6509-E#

show running-config

```
Building configuration...

Current configuration : 1129 bytes
!
version 12.2
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
service counters max age 10
!
hostname Cat6509-E
!
```

boot system disk0:s72033-psv-mz.122-17d.SXB11.bin

```
!
```

!---- Output suppressed.

Cat6509-E#

configure terminal

```
Enter configuration commands, one per line.  End with CNTL/Z.
```

Cat6509-E(config)#

no boot system disk0:s72033-psv-mz.122-17d.SXB11.bin

!--- Removes the old boot variable.

Cat6509-E(config)#

boot system disk0:s72033-psv-mz.122-18.SXD7.bin

!--- Configures the new boot variable.

Cat6509-E#

show running-config

Building configuration...

Current configuration : 1129 bytes
!
version 12.2
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
service counters max age 10
!
hostname Cat6509-E
!

boot system disk0:s72033-psv-mz.122-18.SXD7.bin

!

!--- Output suppressed.

Cat6509-E#

show bootvar

```
BOOT variable = disk0:s72033-psv-mz.122-17d.SXB11.bin,1
CONFIG_FILE variable =
BOOTLDR variable =
Configuration register is 0x2102
```

!--- The boot variables are changed above. But, the
!--- show bootvar command output displays the old variable.

```
Cat6509-E#
```

write memory

```
Building configuration...
[OK]
```

!--- Saves the changes.

```
Cat6509-E#
```

show bootvar

```
BOOT variable = disk0:s72033-psv-mz.122-18.SXD7.bin,1
CONFIG_FILE variable =
BOOTLDR variable =
Configuration register is 0x2102
```

!--- Make sure the config-register is set to 0x2102 so that the
!--- switch boots a valid software image. You can change the
!--- configuration register value if you issue the
!---

config-register 0x2102

!--- configuration mode command. If the boot variable
!--- is not specifed correctly,
!--- switch may reload in ROMMON mode.

•

重新啟動交換機，以便交換機使用新的軟體映像啟動。

<#root>

Cat6509-E#

reload

System configuration has been modified. Save? [yes/no]: y
Building configuration...
[OK]
Proceed with reload? [confirm]

15:57:58: %SYS-5-RELOAD: Reload requested by console. Reload Reason: Reload Comm
and.
15:58:01: %SYS-SP-3-LOGGER_FLUSHING: System pausing to ensure console debugging
output.

15:58:01: %OIR-SP-6-CONSOLE: Changing console ownership to switch processor

15:58:01: %SYS-SP-3-LOGGER_FLUSHED: System was paused for 00:00:00 to ensure con
sole debugging output.

15:58:04: %SYS-SP-3-LOGGER_FLUSHING: System pausing to ensure console debugging
output.

***
*** --- SHUTDOWN NOW ---
***

15:58:04: %SYS-SP-5-RELOAD: Reload requested
15:58:04: %OIR-SP-6-CONSOLE: Changing console ownership to switch processor

15:58:04: %SYS-SP-3-LOGGER_FLUSHED: System was paused for 00:00:00 to ensure con
sole debugging output.

System Bootstrap, Version 8.1(3)
Copyright (c) 1994-2004 by cisco Systems, Inc.
Cat6k-Sup720/SP processor with 1048576 Kbytes of main memory

Autoboot executing command: "boot disk0:s72033-psv-mz.122-18.SXD7.bin"
Loading image, please wait ...
Self decompressing the image : ##
##
##
##
##################### [OK]

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```
Cisco Internetwork Operating System Software
IOS (tm) s72033_sp Software (s72033_sp-PSV-M), Version 12.2(18)SXD7, RELEASE SOF
TWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2005 by cisco Systems, Inc.
Compiled Tue 13-Dec-05 21:47 by kellythw
Image text-base: 0x4002100C, data-base: 0x40FD8000
0:00:04: %SYS-3-LOGGER_FLUSHING: System pausing to ensure console debugging out
put.
00:00:04: %PFREDUN-6-ACTIVE: Initializing as ACTIVE processor
00:00:04: %SYS-3-LOGGER_FLUSHING: System pausing to ensure console debugging out
put.
00:00:04: %SYS-3-LOGGER_FLUSHED: System was paused for 00:00:00 to ensure consol
e debugging output.
00:00:04: %OIR-6-CONSOLE: Changing console ownership to route processor

System Bootstrap, Version 12.2(17r)S2, RELEASE SOFTWARE (fc1)
TAC Support: http://www.cisco.com/tac
Copyright (c) 2004 by cisco Systems, Inc
Download Start
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!
Download Completed! Booting the image.
Self decompressing the image : ###########################################
##############################################################################
######################### [OK]
```

Restricted Rights Legend

```
Cisco Internetwork Operating System Software
IOS (tm) s72033_rp Software (s72033_rp-PSV-M), Version 12.2(18)SXD7, RELEASE SOF
TWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2005 by cisco Systems, Inc.
Compiled Tue 13-Dec-05 22:10 by kellythw
Image text-base: 0x4002100C, data-base: 0x42040000
Cisco WS-C6509-E (R7000) processor (revision 1.0) with 983008K/65536K bytes of m
emory.
```

```
Processor board ID SCA080600KT
SR71000 CPU at 600Mhz, Implementation 0x504, Rev 1.2, 512KB L2 Cache
Last reset from s/w peripheral
X.25 software, Version 3.0.0.
Bridging software.
1 Virtual Ethernet/IEEE 802.3  interface(s)
2 Gigabit Ethernet/IEEE 802.3 interface(s)
1917K bytes of non-volatile configuration memory.
8192K bytes of packet buffer memory.

65536K bytes of Flash internal SIMM (Sector size 512K).

Press RETURN to get started!
00:00:58: curr is 0x0
00:00:58: RP: Currently running ROMMON from S (Gold) region
00:01:18: %SYS-5-CONFIG_I: Configured from memory by console
00:01:19: %SYS-5-RESTART: System restarted --
Cisco Internetwork Operating System Software
IOS (tm) s72033_rp Software (s72033_rp-PSV-M), Version 12.2(18)SXD7, RELEASE SOF
TWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2005 by cisco Systems, Inc.
Compiled Tue 13-Dec-05 22:10 by kellythw
00:01:19: %SYS-6-BOOTTIME: Time taken to reboot after reload =  210 seconds
00:00:04: %SYS-3-LOGGER_FLUSHED: System was paused for 00:00:00 to ensure consol
e debugging output.

00:00:05: %SYS-3-LOGGER_FLUSHED: System was paused for 00:00:00 to ensure consol
e debugging output.

Firmware compiled 18-Apr-05 17:29 by integ Build [100]

00:01:15: SP: SP: Currently running ROMMON from S (Gold) region
00:01:20: %SYS-SP-5-RESTART: System restarted --
Cisco Internetwork Operating System Software
IOS (tm) s72033_sp Software (s72033_sp-PSV-M), Version 12.2(18)SXD7, RELEASE SOF
TWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2005 by cisco Systems, Inc.
Compiled Tue 13-Dec-05 21:47 by kellythw
00:01:21: %OIR-SP-6-INSPS: Power supply inserted in slot 1
00:01:21: %C6KPWR-SP-4-PSOK: power supply 1 turned on.
00:01:26: %FABRIC-SP-5-CLEAR_BLOCK: Clear block option is off for the fabric in
slot 5.
00:01:26: %FABRIC-SP-5-FABRIC_MODULE_ACTIVE: The Switch Fabric Module in slot 5
became active.
00:01:28: %DIAG-SP-6-RUN_MINIMUM: Module 5: Running Minimum Diagnostics...
00:01:39: %DIAG-SP-6-DIAG_OK: Module 5: Passed Online Diagnostics
00:01:40: %OIR-SP-6-INSCARD: Card inserted in slot 5, interfaces are now online

Cat6509-E>
```

enable

-

驗證交換機是否已載入新的軟體映像。

<#root>

Cat6509-E#

show version

Cisco Internetwork Operating System Software
IOS (tm) s72033_rp Software (s72033_rp-PSV-M), Version 12.2(18)SXD7, RELEASE SOF
TWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1986-2005 by cisco Systems, Inc.
Compiled Tue 13-Dec-05 22:10 by kellythw
Image text-base: 0x4002100C, data-base: 0x42040000

ROM: System Bootstrap, Version 12.2(17r)S2, RELEASE SOFTWARE (fc1)
BOOTLDR: s72033_rp Software (s72033_rp-PSV-M), Version 12.2(18)SXD7, RELEASE SOF
TWARE (fc1)

Cat6509-E uptime is 3 minutes
Time since Cat6509-E switched to active is 2 minutes
System returned to ROM by unknown reload cause - suspect boot_data[BOOT_COUNT] 0
x0, BOOT_COUNT 0, BOOTDATA 19 (SP by reload)

System image file is "disk0:s72033-psv-mz.122-18.SXD7.bin"

cisco WS-C6509-E (R7000) processor (revision 1.0) with 983008K/65536K bytes of m
emory.
Processor board ID SCA080600KT
SR71000 CPU at 600Mhz, Implementation 0x504, Rev 1.2, 512KB L2 Cache
Last reset from s/w peripheral
X.25 software, Version 3.0.0.
Bridging software.
1 Virtual Ethernet/IEEE 802.3 interface(s)
2 Gigabit Ethernet/IEEE 802.3 interface(s)
1917K bytes of non-volatile configuration memory.
8192K bytes of packet buffer memory.

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

Cat6509-E#
```

Supervisor引擎32

Supervisor引擎32具有：

- **disk0:** — 一個外部CompactFlash II型插槽（支援CompactFlash II型快閃記憶體PC卡）

- **sup-bootdisk:** — 256 MB內部CompactFlash快閃記憶體（從ROMMON到bootdisk：）

要升級Supervisor模組上的映像，請完成以下步驟：

1.

   您可以檢查下載新影像的大小。Supervisor引擎32使用術語disk0：而不是slot0：

   <#root>

   Cat6509-E#

   dir disk0

```
:
Directory of disk0:/

    1  -rw-    45266372   Apr 4 2006 22:18:40 +00:00  s3223-ipbase_wan-mz.122-18.SXF2.bin

255938560 bytes total (210669568 bytes free)
Cat6509-E#


!--- The free space on disk0 is around 2 MB. Delete the current image
!--- in order to make room for the new image in disk0.


Cat6509-E#



delete disk0:s3223-ipbase_wan-mz.122-18.SXF2.bin



Delete filename [s3223-ipbase_wan-mz.122-18.SXF2.bin]?
Delete disk0:s3223-ipbase_wan-mz.122-18.SXF2.bin? [confirm]
```
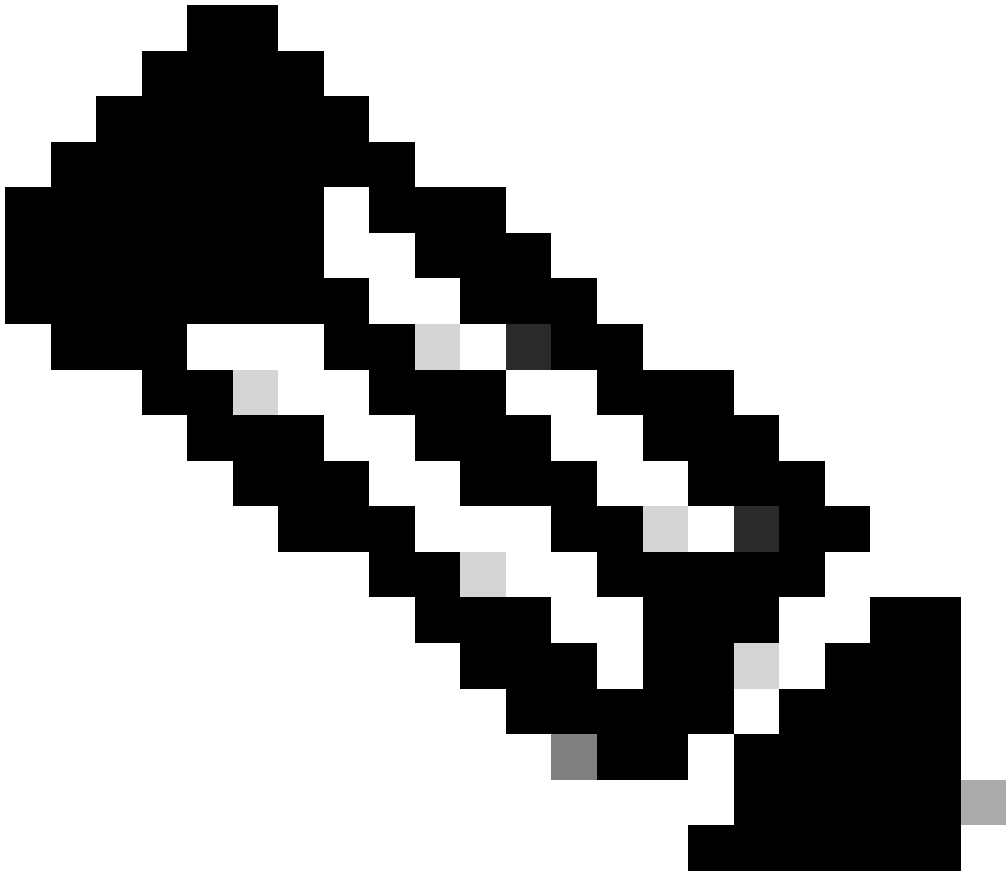
注意：squeeze命令不適用於某些軟體版本。
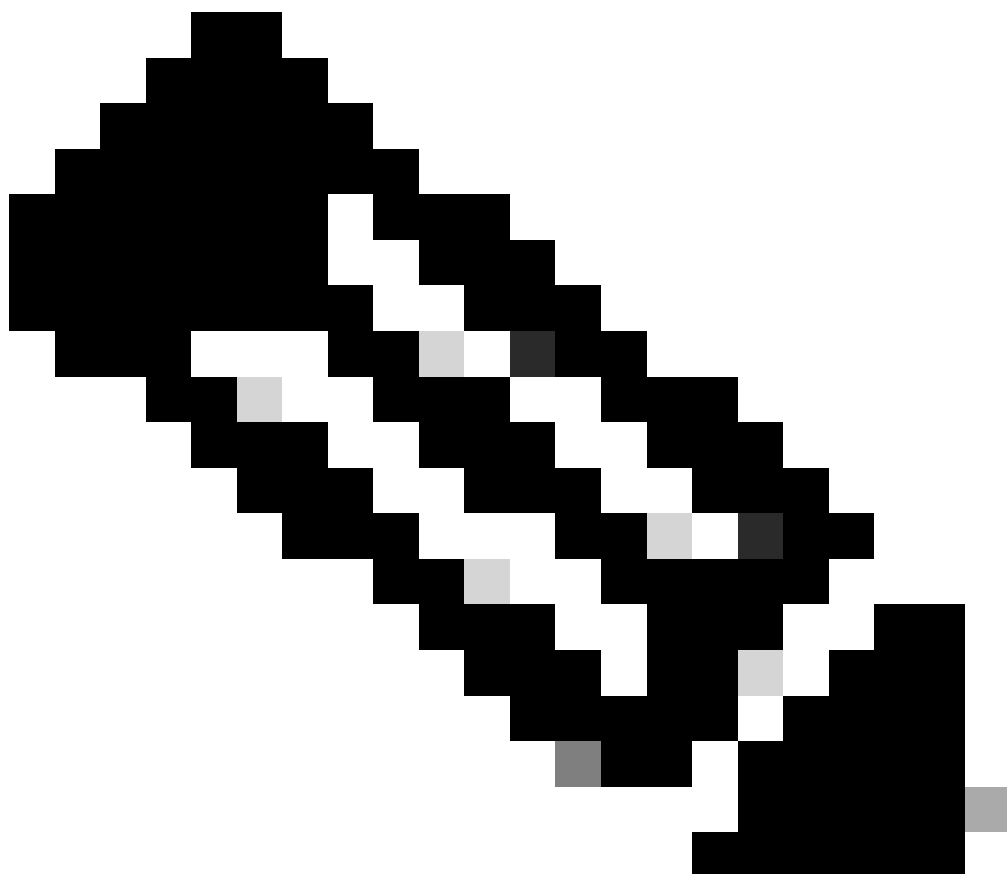
注意：發出以下命令，以檢視是否支援squeeze命令：

<#root>

Cat6509-E#

squeeze ?

```
/nolog     Squeeze without squeeze logs
/quiet     Squeeze without progress update
```

```
bootflash:  Filesystem to be squeezed
```

2.

從TFTP伺服器將新的軟體映像複製到disk0。
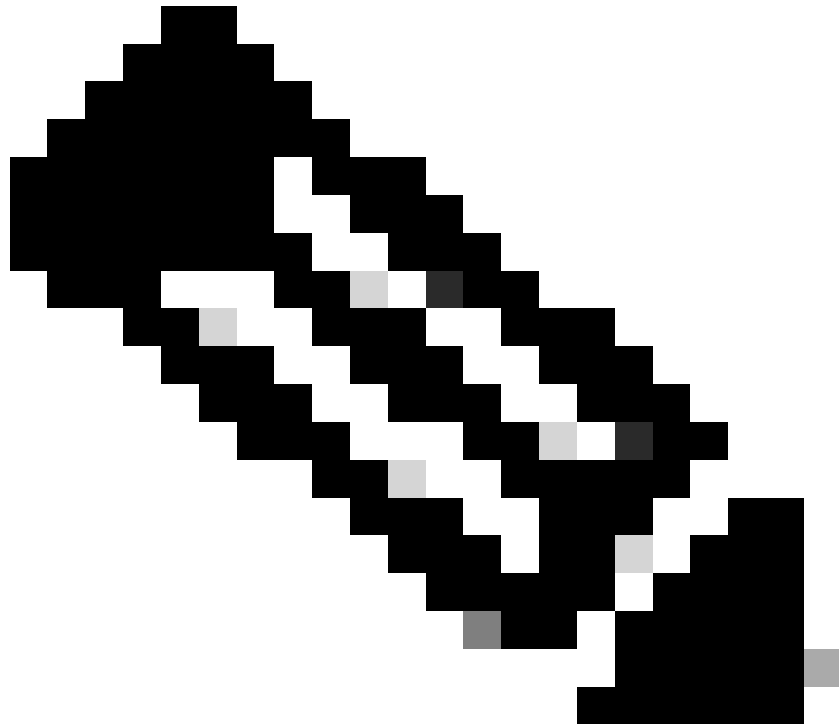
注意：許多TFTP實施無法傳輸16 MB或更大的檔案。Supervisor引擎32的Cisco IOS軟體映像大於16 MB。使用FTP或遠端複製通訊協定(RCP)來傳輸16 MB或更大的檔案。有關如何使用FTP或RCP的過程，請參閱載入和維護系統映像和微碼。

<#root>

```
Cat6509-E#
```

```
copy ftp://cisco:cisco@10.66.64.10//tftpboot/s3223-ipbase_wan-mz.122-18.SXF4.bin disk0:
```

```
Loading /tftpboot/s3223-ipbase_wan-mz.122-18.SXF4.bin !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
```

!--- Output suppressed.

```
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
[OK - 45302724/4096 bytes]
45302724 bytes copied in 159.400 secs (284208 bytes/sec)
```

3.

驗證是否已正確複製映像。檢查新映像的檔案大小是否與軟體中心的大小匹配。如果不匹配，則可能在傳輸過程中映像損壞。您需要再次下載映像，以避免交換機在ROMMON模式下重新載入。

<#root>

```
Cat6509-E#
```

```
dir disk0:
```

```
Directory of disk0:/
```

```
    1  -rw-    45302724   Apr 7 2006 03:56:18 +00:00  s3223-ipbase_wan-mz.122-18.SXF4.bin
```

```
64233472 bytes total (18927616 bytes free)
```

!--- The new software image is properly copied to disk0.

4.

更改引導變數，以便交換機在重新載入後使用新的軟體映像啟動。發出show running-config 或show bootvar命令以便檢查引導變數。

<#root>

Cat6509-E#

show running-config

Building configuration...

Current configuration : 1346 bytes
!
upgrade fpd auto
version 12.2
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
service counters max age 5
!
hostname Cat6509-E
!

boot system disk0:s3223-ipbase_wan-mz.122-18.SXF2.bin

!

!---- Output suppressed.

Cat6509-E#

configure terminal

Enter configuration commands, one per line. End with CNTL/Z.

```
Cat6509-E(config)#
```

no boot system   disk0:s3223-ipbase_wan-mz.122-18.SXF2.bin

!--- Remove the old boot variables.

```
Cat6509-E(config)#
```

boot system   disk0:s3223-ipbase_wan-mz.122-18.SXF4.bin

!--- Configure the new boot variables.

```
Cat6509-E#
```

show running-config

```
Building configuration...

Current configuration : 1129 bytes
!
version 12.2
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
service counters max age 10
!
hostname Cat6509-E
!
```

boot system   disk0:s3223-ipbase_wan-mz.122-18.SXF4.bin

```
!
```

!--- Output suppressed.

```
Cat6509-E#
```

show bootvar

BOOT variable = disk0:s3223-ipbase_wan-mz.122-18.SXF2.bin

```
CONFIG_FILE variable =CONFIG_FILE variable does not exist
BOOTLDR variable =
Configuration register is 0x2102
```

!--- Though the boot variables are previously changed, the
!---

show bootvar

```
 command output displays the old variable.
```

```
Cat6509-E#
```

write memory

```
Building configuration...
[OK]
```

!--- Saves the changes.

```
Cat6509-E#
```

show bootvar

```
BOOT variable = disk0:s3223-ipbase_wan-mz.122-18.SXF4.bin
CONFIG_FILE variable =CONFIG_FILE variable does not exist
BOOTLDR variable =
Configuration register is 0x2102
```

!--- Make sure the config-register is set to 0x2102 so that the
!--- switch boots a valid software image. You can change the

```
!--- configuration register value if you issue the
!--- config-register 0x2102
!--- configuration mode command. If the boot variable
!--- is not specifed correctly,
!--- switch may reload in ROMMON mode.
```

-

重新載入交換機，以便交換機使用新的軟體映像啟動。

<#root>

Cat6509-E#

reload

Proceed with reload? [confirm]

21:51:24: %SYS-5-RELOAD: Reload requested by console. Reload Reason: Reload Command.
21:51:27: %SYS-SP-3-LOGGER_FLUSHING: System pausing to ensure console debugging output.

21:51:27: %OIR-SP-6-CONSOLE: Changing console ownership to switch processor

21:51:27: %SYS-SP-3-LOGGER_FLUSHED: System was paus
21:51:30: %SYS-SP-3-LOGGER_FLUSHING: System pausing to ensure console debugging output.

***
*** --- SHUTDOWN NOW ---
***

21:51:30: %SYS-SP-5-RELOAD: Reload requested
21:51:30: %OIR-SP-6-CONSOLE: Changing console ownership to switch processor

ed for 00:00:00 to ensure console debugging output.

21:51:30: %SYS-SP-3-LOGGER_FLUSHED: System was paused for 00:00:00 to ensure console debugging out

Resetting ....

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 disk0:s3223-ipbase_wan-mz.122-18.SXF4.bin"

Initializing ATA monitor library...

Self extracting the image... [OK]
Self decompressing the image : ########################################################
######################## [OK]

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Software clause at DFARS sec. 252.227-7013.

           cisco Systems, Inc.
           170 West Tasman Drive
           San Jose, California 95134-1706



Cisco Internetwork Operating System Software
IOS (tm) s3223_sp Software (s3223_sp-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 17:25 by tinhuang
Image text-base: 0x4023105C, data-base: 0x4144C000

MAC based EOBC installed

00:00:05: %SYS-3-LOGGER_FLUSHING: System pausing to ensure console debugging output.

00:00:05: %PFREDUN-6-ACTIVE: Initializing as ACTIVE processor

00:00:06: %SYS-SP-3-LOGGER_FLUSHING: System pausing to ensure console debugging output.

00:00:05: %SYS-3-LOGGER_FLUSHED: System was paused for 00:00:00 to ensure console debugging output

00:00:06: %OIR-SP-6-CONSOLE: Changing console ownership to route processor



System Bootstrap, Version 12.2(17r)SX3, RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 2004 by cisco Systems, Inc.
Cat6k-MSFC2A platform with 524288 Kbytes of main memory

Download Start
 !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
 !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
 !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
 !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
 !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
 !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
 !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
 !!!!!!
Download Completed! Booting the image.
Self decompressing the image : ###########################################################
```

```
################################################################################
#################### [OK]

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             cisco Systems, Inc.
             170 West Tasman Drive
             San Jose, California 95134-1706



Cisco Internetwork Operating System Software
IOS (tm) s3223_rp Software (s3223_rp-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 17:28 by tinhuang
Image text-base: 0x40101040, data-base: 0x429E0000

cisco WS-C6509 (R7000) processor (revision 2.0) with 458752K/65536K bytes of memory.
Processor board ID SCA044903GE
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.
1 Virtual Ethernet/IEEE 802.3 interface
1 Gigabit Ethernet/IEEE 802.3 interface
2 Ten Gigabit Ethernet/IEEE 802.3 interfaces
1915K bytes of non-volatile configuration memory.

65536K bytes of Flash internal SIMM (Sector size 512K).


Press RETURN to get started!

00:01:18: %MFIB_CONST_RP-6-REPLICATION_MODE_CHANGE: Replication Mode Change Detected. Current syst
eplication mode is Ingress
00:00:05: %SYS-3-LOGGER_FLUSHED: System was paused for 00:00:00 to ensure console debugging output

00:00:06: %OIR-SP-6-CONSOLE: Changing console ownership to route processor



00:00:06: %SYS-SP-3-LOGGER_FLUSHED: System was paused for 00:00:00 to ensure console debugging out


Firmware compiled 06-Mar-06 22:47 by integ Build [100]


00:01:18: %SYS-SP-5-RESTART: System restarted --
Cisco Internetwork Operating System Software
IOS (tm) s3223_sp Software (s3223_sp-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 17:25 by tinhuang
00:01:18: SP: Currently running ROMMON from S (Gold) region
00:01:18: %SYS-SP-6-BOOTTIME: Time taken to reboot after reload =  225 seconds
00:01:19: %OIR-SP-6-INSPS: Power supply inserted in slot 1
00:01:20: %C6KPWR-SP-4-PSOK: power supply 1 turned on.
00:01:21: %C6KENV-SP-4-FANHIOUTPUT: Version 2 high-output fan-tray is in effect
00:01:24: %DIAG-SP-6-RUN_MINIMUM: Module 5: Running Minimal Diagnostics...
00:01:37: %C6KENV-SP-4-USE_RED_CLOCK: system is using the redundant clock (clock B).
00:01:38: %OIR-SP-6-INSCARD: Card inserted in slot 5, interfaces are now online

Cat6509-E>
```

-

驗證交換機是否已載入新的軟體映像。

<#root>

```
Cat6509-E#
```

show version

```
Cisco Internetwork Operating System Software
IOS (tm) s3223_rp Software (s3223_rp-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 17:28 by tinhuang
Image text-base: 0x40101040, data-base: 0x429E0000
```

ROM: System Bootstrap, Version 12.2(17r)SX3, RELEASE SOFTWARE (fc1)
BOOTLDR: s3223_rp Software (s3223_rp-IPBASE_WAN-M), Version 12.2(18)SXF4, RELEASE SOFTWARE (fc1)

```
Cat6509-E uptime is 28 minutes
Time since Cat6509-E switched to active is 27 minutes
System returned to ROM by power-on (SP by power-on)
```

System image file is "disk0:s3223-ipbase_wan-mz.122-18.SXF4.bin"

```
cisco WS-C6509 (R7000) processor (revision 2.0) with 458752K/65536K bytes of memory.
Processor board ID SCA044903GE
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.
1 Virtual Ethernet/IEEE 802.3 interface
1 Gigabit Ethernet/IEEE 802.3 interface
2 Ten Gigabit Ethernet/IEEE 802.3 interfaces
1915K bytes of non-volatile configuration memory.

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

Cat6509-E#
```

使用冗餘**Supervisor**模組的軟體升級

Catalyst 6000/6500系列交換器允許備援Supervisor Engine在主Supervisor Engine失敗時接管，以便支援抗故障功能。冗餘Supervisor引擎必須與相同型號的功能卡具有相同的型別，以便支援冗餘。安裝兩個Supervisor引擎時，第一個聯機引擎將成為活動模組。第二個Supervisor引擎進入備用模式。所有管理和網路管理功能，例如簡單網路管理協定(SNMP)、命令列介面(CLI)控制欄、Telnet、生成樹協定(STP)、Cisco發現協定(CDP)和VLAN中繼協定(VTP)都在活動Supervisor引擎上處理。在備用Supervisor引擎上，控制欄埠處於非活動狀態。冗餘Supervisor引擎不可交換。切換至備援Supervisor Engine後，系統繼續以相同的組態運作。

不能對具有冗餘Supervisor模組的Catalyst 6000/6500系列交換機使用正常的軟體升級過程。請參閱帶有冗餘Supervisor引擎的Catalyst 6000/6500系列交換機的軟體映像升級配置示例，以便在冗餘模式下升級Catalyst 6000/6500系列交換機。

驗證

目前沒有適用於此組態的驗證程序。

配置故障排除

本節提供的資訊可用於對組態進行疑難排解。

錯誤= -21和-45： Bootflash已滿

當CatOS交換機嘗試將映像複製到Bootflash或squeeze 的Bootflash格式不相容時，發生錯誤。即使bootflash為空，也會出現此錯誤：

<#root>

```
Console> (enable)
```

copy tftp flash

```
error = -21
Can not open destination file bootflash:[x] (file system full),
where 'x' is the image name.
```

<#root>

```
Console> (enable)
```

squeeze bootflash:

```
error = -45
Squeeze device bootflash failed (error reading squeeze log)
```

解決方法是格式化bootflash，然後再次嘗試操作。

<#root>

```
Console> (enable)
```

format bootflash:

軟體升級失敗/交換機處於ROMMON模式

軟體升級可能因為以下原因而失敗:交換器和TFTP伺服器之間的IP連線問題、開機變數設定不正確,或是將軟體映像複製到交換器時發生電源故障。這些問題會導致您的交換機以ROMMON模式啟動。如果交換機處於ROMMON模式,而您在bootflash或PCMCIA快閃記憶體卡上沒有有效映象,則可以使用軟體恢復過程將交換機恢復到正常模式。有關軟體恢復過程,請參閱以下文檔:

- 從開機失敗中復原執行CatOS的Catalyst交換器

- 從損毀的開機載入程式映像復原Catalyst 6500/6000

已知問題:因軟體降級導致交換機配置丟失

執行CatOS的交換器上的軟體降級永遠會導致組態遺失。發出**copy config tftp**命令,以便將配置備份到TFTP伺服器。或者,請發出copy config flash 命令,以便將配置備份到快閃記憶體裝置。

發出**copy tftp config** 或**copy flash config**命令以從TFTP伺服器或快閃記憶體裝置獲取配置檔案,以便在成功降級之後恢復配置。

有關這些命令的命令語法和使用，請參閱[Catalyst 6000命令參考](#)指南。

收到無效或未知裝置slot0錯誤

將映象從TFTP複製到slot0時，會收到以下錯誤消息：

```
Invalid or Unknown device slot0
Failed to copy from tftp to slot0:
```

當您嘗試格式化Flash檔案系統時，會顯示類似以下的錯誤訊息：

```
                <#root>
```

```
SW1 (enable)
```

format slot0:

```
All sectors will be erased, proceed (y/n) [n]? y
Enter volume id (up to 31 characters): test
error = -85
Format device slot0 failed (cannot find flash algorithm)
```

這些錯誤消息表明快閃記憶體系統 slot0: 在裝置上不可用。根據Supervisor引擎和快閃記憶體系統的大小，快閃記憶體裝置使用不同的名稱。如果快閃記憶體檔案大小超過20 MB，則將其視為disk檔案，而不是slot檔案。

為了檢視裝置中的可用檔案系統清單，請使用show file system 命令，並使用適當的快閃記憶體裝置名稱發出copy 或**format** 命令。

收到裝置未包含有效的幻數錯誤

升級後或轉換過程中重新載入Cisco Catalyst 6500系列交換機時，交換機上會顯示「裝置不包含有效的幻數」錯誤消息。

當出現此錯誤消息時，交換機無法載入Cisco IOS軟體映像。此問題是由裝置上的損壞檔案系統引起的，CPU嘗試從該裝置中載入Cisco IOS軟體映像。

此外，當您輸入dir disk0: 或dir slot0: 命令時，未格式化的快閃記憶體PC卡會返回「裝置塊資訊錯誤」或「幻數無效」的錯誤消息。

為了解決此問題，請執行以下步驟：

1.

   轉到ROM monitor (ROMmon)模式。

2.

   使用bootflash手動引導映像。

3.

   檢查slot0中的映像大小是否與從TFTP伺服器下載的映像大小相同。

4.

   如果映像大小相同，format 為slot0或disk0，並使用copy 命令從TFTP伺服器下載新映像。

附註：您無法在單一命令中複製多個檔案。

-

檢查是否已直接從TFTP將映像下載到插槽0，或已下載到ATA卡，然後從ATA卡複製到插槽0。如果映像已直接下載到ATA卡，請在從TFTP伺服器下載映像之前格式化ATA卡。

升級後路由器重新載入

Supervisor上SP的config-register值設定為0x2142。「4」表示忽略系統配置。RP ROMMON的值為0x2102。

由於此設定，最大路由代碼忽略來自非預設最大路由配置的值。忽略後，配置的值與載入的值之間就會出現不匹配，這將導致路由器重新載入。

解決方法是，使用以下命令將SP上的config-register值配置為0x2102：

<#root>

Switch#

configure terminal

Switch(config)#

config-register 0x2102

Switch#

write memory

!--- To save the configuration.

升級後路由器重新載入

配置完成後，檢查RP和SP的config-register值是否相同。值必須是0x2102。

-

  若要檢查RP配置暫存器值，請使用**show boot** 命令。

-

  若要檢查SP配置暫存器值，請使用**remote command switch show version**命令。

相關資訊

- [**升級Catalyst交換器第3層模組上的軟體映像**](#)

- [**從開機失敗中復原執行CatOS的Catalyst交換器**](#)

- [**從損壞或丟失的引導載入程式映像或ROMmon模式中恢復運行本地IOS的Catalyst 6000**](#)

- [**帶有冗餘Supervisor引擎的Catalyst 6000/6500系列交換機的軟體映像升級配置示例**](#)

- [**在Catalyst交換器上管理軟體映像和使用組態檔**](#)

- [**思科技術支援與下載**](#)