維護Catalyst 3850系列交換機

目錄

簡介

本文說明如何升級Cisco Catalyst 3850系列交換器，並提供軟體或開機失敗時的復原技術。

必要條件

需求

思科建議您瞭解以下主題：

- TFTP
- FTP
- Cisco IOS® XE軟件升級體驗

採用元件

本檔案中的資訊是根據執行Cisco IOS XE版本03.03.00及更新版本的Cisco Catalyst 3850系列交換

器。本檔案中的範例使用堆疊式解決方案；但是可在獨立交換器上執行相同的指令。

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。

註：要從思科網站下載Cisco IOS XE映像，您必須擁有具有授權認證的有效Cisco Connection Online(CCO)帳戶。思科不提供免費TFTP/FTP解決方案。開始之前，請安裝和配置TFTP/FTP。

安裝與套件組合模式

Cisco Catalyst 3850系列交換器有兩種作業模式：安裝和套件組合。

這兩種模式之間存在細微差異。有關詳細資訊，請參閱組態設定指南。

思科建議在作業期間使用安裝模式，因為此模式可使用更完整的功能集，且開機時需要的資源較少。本文件簡要概述這兩種模式以供參考。

安裝模式

這是交換器的預設模式。安裝模式使用名為 packages.conf 的套件佈建檔來將交換器開機。此外，快閃記憶體中有許多.pkg檔案。

除非有思科技術援助中心 (TAC) 工程師提供指導，否則思科建議不要修改這些檔案。

套件組合模式

如果您偏好使用傳統的單一Cisco IOS映像來將交換器開機，則可能會熟悉套件組合模式。

套件組合模式耗用的記憶體比安裝模式還多，這是因為需從套件組合中擷取套件並將其複製到 RAM 中。

驗證模式

若要驗證模式，請輸入 **show version** 指令:

```
<#root>

3850-stack#

show version


Cisco IOS Software, Cisco IOS-XE Software, Catalyst L3 Switch Software
 (CAT3K_CAA-UNIVERSALK9-M), Version 03.03.00SE RELEASE SOFTWARE (fc1)

Switch Ports Model              SW Version      SW Image

Mode
```

```
------------------           ----------     ----------            ----
     1 32    WS-C3850-24P    03.03.00SE     cat3k_caa-universalk9
INSTALL

*    2 56    WS-C3850-48T    03.03.00SE     cat3k_caa-universalk9
INSTALL
```

升級

若要開始升級程式，請從思科網站下載Cisco IOS® XE .bin 檔案，然後將其放在作用中交換器的快閃記憶體中。本文件沒有說明將檔案複製到交換器的程序。

將 .bin 檔案複製到單個交換器時，安裝程序會將該檔案複製到堆疊中的其他交換器上。一旦檔案存在，請輸入以下指令：

```
<#root>

3850-stack#

software install file flash:cat3k_caa-universalk9.SPA.03.03.01.SE.150-1.EZ1.bin
 switch 1-2
```

 注意：每個命令後都有許多可用選項；但是本示例中執行的是基本升級。

升級程式開始時，交換器會將.bin 檔案推送到對等堆疊成員。

```
Preparing install operation ...
[2]: Copying software from active switch 1 to switch 2
```

所有成員都收到 .bin 檔案後，系統會自動將其擴展到快閃記憶體。

```
[1 2]: Starting install operation
[1 2]: Expanding bundle flash:
 cat3k_caa-universalk9.SPA.03.03.01.SE.150-1.EZ1.bin
[1 2]: Copying package files
[1 2]: Package files copied
[1 2]: Finished expanding bundle flash:
 cat3k_caa-universalk9.SPA.03.03.01.SE.150-1.EZ1.bin
[1 2]: Verifying and copying expanded package files to flash:
[1 2]: Verified and copied expanded package files to flash:
[1 2]: Starting compatibility checks
[1 2]: Finished compatibility checks
[1 2]: Starting application pre-installation processing
```

```
[1 2]: Finished application pre-installation processing
```

接下來，交換器會將標記為移除和新增的檔案之摘要列在 packages.conf 指標檔案中。

```
[1]: Old files list:
    Removed cat3k_caa-base.SPA.03.03.00SE.pkg
    Removed cat3k_caa-drivers.SPA.03.03.00SE.pkg
    Removed cat3k_caa-infra.SPA.03.03.00SE.pkg
    Removed cat3k_caa-iosd-universalk9.SPA.150-1.EZ.pkg
    Removed cat3k_caa-platform.SPA.03.03.00SE.pkg
    Removed cat3k_caa-wcm.SPA.10.1.100.0.pkg
[2]: Old files list:
    Removed cat3k_caa-base.SPA.03.03.00SE.pkg
    Removed cat3k_caa-drivers.SPA.03.03.00SE.pkg
    Removed cat3k_caa-infra.SPA.03.03.00SE.pkg
    Removed cat3k_caa-iosd-universalk9.SPA.150-1.EZ.pkg
    Removed cat3k_caa-platform.SPA.03.03.00SE.pkg
    Removed cat3k_caa-wcm.SPA.10.1.100.0.pkg
[1]: New files list:
    Added cat3k_caa-base.SPA.03.03.01SE.pkg
    Added cat3k_caa-drivers.SPA.03.03.01SE.pkg
    Added cat3k_caa-infra.SPA.03.03.01SE.pkg
    Added cat3k_caa-iosd-universalk9.SPA.150-1.EZ1.pkg
    Added cat3k_caa-platform.SPA.03.03.01SE.pkg
    Added cat3k_caa-wcm.SPA.10.1.110.0.pkg
[2]: New files list:
    Added cat3k_caa-base.SPA.03.03.01SE.pkg
    Added cat3k_caa-drivers.SPA.03.03.01SE.pkg
    Added cat3k_caa-infra.SPA.03.03.01SE.pkg
    Added cat3k_caa-iosd-universalk9.SPA.150-1.EZ1.pkg
    Added cat3k_caa-platform.SPA.03.03.01SE.pkg
    Added cat3k_caa-wcm.SPA.10.1.110.0.pkg
```

最後更新並認可 packges.conf 檔案。

```
[1 2]: Creating pending provisioning file
[1 2]: Finished installing software.  New software will load on reboot.
[1 2]: Committing provisioning file

[1 2]: Do you want to proceed with reload? [yes/no]: yes
```

驗證重新載入後更新程序是否正確完成。

<#root>

3850-stack#

show ver | i INSTALL

```
     1 32    WS-C3850-24P     03.03.01SE      cat3k_caa-universalk9 INSTALL
*    2 56    WS-C3850-48T     03.03.01SE      cat3k_caa-universalk9 INSTALL
```

快閃記憶體清理

舊版的剩餘檔案仍保留在快閃記憶體中。要清理剩餘檔案，請輸入 **software clean** 命令而不是手動刪除檔案。這會清除交換器不再需要的檔案。

註：此指令也會刪除用於安裝新Cisco IOS軟體的.bin檔案。請務必留意，一旦擷取此檔案，就再也不需要它了。

接下來的兩節將提供範例，說明快閃記憶體如何在 **software clean** 使用指令。

快閃記憶體清理之前

<#root>

```
3850-stack#
```

show flash

```
-#- --length-- ---------date/time------------ ------------------------path-----------------------
  2    2097152 Feb 16 2014 11:38:46.0 +00:00 nvram_config
  4  257016048 Jan 28 2014 17:22:12.0 +00:00 cat3k_caa-universalk9.SPA.03.03.00.SE.150-1.EZ.bin
  5       4096 Jan 28 2014 17:25:50.0 +00:00 mnt
  6       4096 Jan 28 2014 17:25:50.0 +00:00 mnt/images
  7       4096 Jan 28 2014 17:25:52.0 +00:00 mnt/images/ap.bak
  8         40 Oct 03 2013 05:02:21.0 +00:00 mnt/images/ap.bak/ap1g2.md5
  9   11591680 Oct 03 2013 05:02:21.0 +00:00 mnt/images/ap.bak/ap1g2
 10         40 Oct 03 2013 05:02:21.0 +00:00 mnt/images/ap.bak/ap3g1.md5
 11   10444800 Oct 03 2013 05:02:21.0 +00:00 mnt/images/ap.bak/ap3g1
 12         40 Oct 03 2013 05:02:21.0 +00:00 mnt/images/ap.bak/ap3g2.md5
 13   13568000 Oct 03 2013 05:02:21.0 +00:00 mnt/images/ap.bak/ap3g2
 14         40 Oct 03 2013 05:02:21.0 +00:00 mnt/images/ap.bak/c1140.md5
 15   10291200 Oct 03 2013 05:02:21.0 +00:00 mnt/images/ap.bak/c1140
 16         11 Oct 03 2013 05:02:21.0 +00:00 mnt/images/ap.bak/version.info
 17       1214 Jan 28 2014 17:25:10.0 +00:00 packages.conf.00-
 18   79112096 Jan 28 2014 17:25:06.0 +00:00 cat3k_caa-base.SPA.03.03.00SE.pkg
 19    6474428 Jan 28 2014 17:25:06.0 +00:00 cat3k_caa-drivers.SPA.03.03.00SE.pkg
 20   34501468 Jan 28 2014 17:25:06.0 +00:00 cat3k_caa-infra.SPA.03.03.00SE.pkg
 21       1248 Feb 16 2014 11:27:51.0 +00:00 packages.conf
 22   34763952 Jan 28 2014 17:25:06.0 +00:00 cat3k_caa-iosd-universalk9.SPA.150-1.EZ.pkg
 23        796 Feb 19 2014 11:43:13.0 +00:00 vlan.dat
 24   24992476 Jan 28 2014 17:25:06.0 +00:00 cat3k_caa-platform.SPA.03.03.00SE.pkg
 25   77167308 Jan 28 2014 17:25:06.0 +00:00 cat3k_caa-wcm.SPA.10.1.100.0.pkg
 26       1224 Jan 28 2014 16:39:58.0 +00:00 packages.conf.01-
 27       6571 Dec 20 2013 08:56:32.0 +00:00 BLANK_CONFIG.cfg
 28  257193048 Feb 16 2014 11:19:44.0 +00:00 cat3k_caa-universalk9.SPA.03.03.01.SE.150-1.EZ1.bin
 30   79113792 Feb 16 2014 11:27:46.0 +00:00 cat3k_caa-base.SPA.03.03.01SE.pkg
 31   74409080 Jan 28 2014 16:39:54.0 +00:00 cat3k_caa-base.SPA.03.02.01.SE.pkg
 32    2775728 Jan 28 2014 16:39:54.0 +00:00 cat3k_caa-drivers.SPA.03.02.01.SE.pkg
 33    6476476 Feb 16 2014 11:27:46.0 +00:00 cat3k_caa-drivers.SPA.03.03.01SE.pkg
 34   32478052 Jan 28 2014 16:39:54.0 +00:00 cat3k_caa-infra.SPA.03.02.01.SE.pkg
```

```
 35   30389028 Jan 28 2014 16:39:54.0 +00:00 cat3k_caa-iosd-universalk9.SPA.150-1.EX1.pkg
 36   18313952 Jan 28 2014 16:39:54.0 +00:00 cat3k_caa-platform.SPA.03.02.01.SE.pkg
 37   63402700 Jan 28 2014 16:39:54.0 +00:00 cat3k_caa-wcm.SPA.10.0.101.0.pkg
 38   34503664 Feb 16 2014 11:27:46.0 +00:00 cat3k_caa-infra.SPA.03.03.01SE.pkg
 39   34788684 Feb 16 2014 11:27:46.0 +00:00 cat3k_caa-iosd-universalk9.SPA.150-1.EZ1.pkg
 40   25009040 Feb 16 2014 11:27:46.0 +00:00 cat3k_caa-platform.SPA.03.03.01SE.pkg
 41   77296448 Feb 16 2014 11:27:46.0 +00:00 cat3k_caa-wcm.SPA.10.1.110.0.pkg

237428736 bytes available (1302147072 bytes used)
```

快閃記憶體清理之後

```
<#root>

3850-stack#

software clean


Preparing clean operation ...
[1 2]: Cleaning up unnecessary package files
[1 2]: No path specified, will use booted path flash:packages.conf
[1 2]: Cleaning flash:
[1]: Preparing packages list to delete ...
     In use files, will not delete:
       cat3k_caa-base.SPA.03.03.01SE.pkg
       cat3k_caa-drivers.SPA.03.03.01SE.pkg
       cat3k_caa-infra.SPA.03.03.01SE.pkg
       cat3k_caa-iosd-universalk9.SPA.150-1.EZ1.pkg
       cat3k_caa-platform.SPA.03.03.01SE.pkg
       cat3k_caa-wcm.SPA.10.1.110.0.pkg
       packages.conf
[2]: Preparing packages list to delete ...
     In use files, will not delete:
       cat3k_caa-base.SPA.03.03.01SE.pkg
       cat3k_caa-drivers.SPA.03.03.01SE.pkg
       cat3k_caa-infra.SPA.03.03.01SE.pkg
       cat3k_caa-iosd-universalk9.SPA.150-1.EZ1.pkg
       cat3k_caa-platform.SPA.03.03.01SE.pkg
       cat3k_caa-wcm.SPA.10.1.110.0.pkg
       packages.conf
[1]: Files that will be deleted:
    cat3k_caa-base.SPA.03.02.01.SE.pkg
    cat3k_caa-base.SPA.03.03.00SE.pkg
    cat3k_caa-drivers.SPA.03.02.01.SE.pkg
    cat3k_caa-drivers.SPA.03.03.00SE.pkg
    cat3k_caa-infra.SPA.03.02.01.SE.pkg
    cat3k_caa-infra.SPA.03.03.00SE.pkg
    cat3k_caa-iosd-universalk9.SPA.150-1.EX1.pkg
    cat3k_caa-iosd-universalk9.SPA.150-1.EZ.pkg
    cat3k_caa-platform.SPA.03.02.01.SE.pkg
    cat3k_caa-platform.SPA.03.03.00SE.pkg
    cat3k_caa-universalk9.SPA.03.03.00.SE.150-1.EZ.bin
    cat3k_caa-universalk9.SPA.03.03.01.SE.150-1.EZ1.bin
    cat3k_caa-wcm.SPA.10.0.101.0.pkg
    cat3k_caa-wcm.SPA.10.1.100.0.pkg
    packages.conf.00-
    packages.conf.01-
[2]: Files that will be deleted:
```

```
    cat3k_caa-base.SPA.03.02.01.SE.pkg
    cat3k_caa-base.SPA.03.03.00SE.pkg
    cat3k_caa-drivers.SPA.03.02.01.SE.pkg
    cat3k_caa-drivers.SPA.03.03.00SE.pkg
    cat3k_caa-infra.SPA.03.02.01.SE.pkg
    cat3k_caa-infra.SPA.03.03.00SE.pkg
    cat3k_caa-iosd-universalk9.SPA.150-1.EX1.pkg
    cat3k_caa-iosd-universalk9.SPA.150-1.EZ.pkg
    cat3k_caa-platform.SPA.03.02.01.SE.pkg
    cat3k_caa-platform.SPA.03.03.00SE.pkg
    cat3k_caa-universalk9.SPA.03.03.00.SE.150-1.EZ.bin
    cat3k_caa-universalk9.SPA.03.03.01.SE.150-1.EZ1.bin
    cat3k_caa-wcm.SPA.10.0.101.0.pkg
    cat3k_caa-wcm.SPA.10.1.100.0.pkg
    packages.conf.00-
    packages.conf.01-

[1 2]: Do you want to proceed with the deletion? [yes/no]:

yes



[1 2]: Clean up completed
```

以下是 **show flash**指令在快閃記憶體清理之後：

<#root>

```
3850-stack#

show flash


-#- --length-- ---------date/time----------- --------------------path--------------------
  2    2097152 Feb 16 2014 11:38:46.0 +00:00 nvram_config
  4       4096 Jan 28 2014 17:25:50.0 +00:00 mnt
  5       4096 Jan 28 2014 17:25:50.0 +00:00 mnt/images
  6       4096 Jan 28 2014 17:25:52.0 +00:00 mnt/images/ap.bak
  7         40 Oct 03 2013 05:02:21.0 +00:00 mnt/images/ap.bak/ap1g2.md5
  8   11591680 Oct 03 2013 05:02:21.0 +00:00 mnt/images/ap.bak/ap1g2
  9         40 Oct 03 2013 05:02:21.0 +00:00 mnt/images/ap.bak/ap3g1.md5
 10   10444800 Oct 03 2013 05:02:21.0 +00:00 mnt/images/ap.bak/ap3g1
 11         40 Oct 03 2013 05:02:21.0 +00:00 mnt/images/ap.bak/ap3g2.md5
 12   13568000 Oct 03 2013 05:02:21.0 +00:00 mnt/images/ap.bak/ap3g2
 13         40 Oct 03 2013 05:02:21.0 +00:00 mnt/images/ap.bak/c1140.md5
 14   10291200 Oct 03 2013 05:02:21.0 +00:00 mnt/images/ap.bak/c1140
 15         11 Oct 03 2013 05:02:21.0 +00:00 mnt/images/ap.bak/version.info
 16       1248 Feb 16 2014 11:27:51.0 +00:00 packages.conf
 17        796 Feb 19 2014 11:43:13.0 +00:00 vlan.dat
 18       6571 Dec 20 2013 08:56:32.0 +00:00 BLANK_CONFIG.cfg
 20   79113792 Feb 16 2014 11:27:46.0 +00:00 cat3k_caa-base.SPA.03.03.01SE.pkg
 21    6476476 Feb 16 2014 11:27:46.0 +00:00 cat3k_caa-drivers.SPA.03.03.01SE.pkg
 22   34503664 Feb 16 2014 11:27:46.0 +00:00 cat3k_caa-infra.SPA.03.03.01SE.pkg
 23   34788684 Feb 16 2014 11:27:46.0 +00:00 cat3k_caa-iosd-universalk9.SPA.150-1.EZ1.pkg
 24   25009040 Feb 16 2014 11:27:46.0 +00:00 cat3k_caa-platform.SPA.03.03.01SE.pkg
 25   77296448 Feb 16 2014 11:27:46.0 +00:00 cat3k_caa-wcm.SPA.10.1.110.0.pkg

1231515648 bytes available (308060160 bytes used)
```

Catalyst 3850 系列交換器的自動升級功能

購買新交換器以擴充堆疊中可用連線埠的數量時，就會發生將新交換器引入目前Catalyst 3850系列交換器堆疊的一個情況。

若要成功將新交換器新增到堆疊中，必須確保新交換器上執行的軟體版本相同。在Cisco IOS XE 3.3.1版之前，確保版本匹配的唯一方法是在引入堆疊之前暫存新交換機。

Catalyst 3850系列交換器包括自動升級功能。此功能的目標是確保堆疊成員自動使用正確的Cisco IOS XE版本來布建新增的交換器。

注意：自動升級功能預設為停用，且無法在套件組合模式下使用。

若要使用自動升級功能，請新增 **software auto-upgrade enable** 指令到目前堆疊的組態中。這可確保所有新增的堆疊成員均自動升級。

設定

堆疊並開機後，會顯示版本不符的指示，且新成員沒有完全加入堆疊。

要在交換器嘗試加入時檢視系統日誌，請注意自動建議功能會提醒新增的交換器執行不同的軟體版本和模式。

註：在本範例中，新交換器在套件組合模式下執行Cisco IOS XE 3.2.2版。

```
%STACKMGR-1-STACK_LINK_CHANGE: STANDBY: 1 stack-mgr:
 Stack port 2 on switch 1 is up  (3850-Stack-1)
%STACKMGR-1-STACK_LINK_CHANGE: 2 stack-mgr:
 Stack port 1 on switch 2 is up
%STACKMGR-6-SWITCH_ADDED: 2 stack-mgr:
 Switch 3 has been added to the stack.
%STACKMGR-6-SWITCH_ADDED: STANDBY:1 stack-mgr:
 Switch 3 has been added to the stack.  (3850-Stack-1)
%INSTALLER-6-AUTO_ADVISE_SW_INITIATED: 2 installer:
 Auto advise initiated for switch 3
%INSTALLER-6-AUTO_ADVISE_SW: 2 installer:
 Switch 3 running bundled software has been added
%INSTALLER-6-AUTO_ADVISE_SW: 2 installer:
 to the stack that is running installed software.
%INSTALLER-6-AUTO_ADVISE_SW: 2 installer:
 The 'software auto-upgrade' command can be used to
%INSTALLER-6-AUTO_ADVISE_SW: 2 installer:
 convert switch 3 to the installed running mode by
%INSTALLER-6-AUTO_ADVISE_SW: 2 installer:
 installing its running software.
```

新加入的成員完全開機後，系統會顯示不相符的情形：

<#root>

3850-Stack#

show switch

```
Switch/Stack Mac Address : 0c27.24cf.ab80 - Local Mac Address
Mac persistency wait time: Indefinite
                                             H/W   Current
Switch#   Role    Mac Address     Priority Version  State
------------------------------------------------------------
*1       Active   0c27.24cf.ab80     14      B0      Ready
 2       Standby  f41f.c238.a800     13      B0      Ready
 3       Member   b4e9.b0d3.6600     12      0       V-Mismatch
```

啟用自動升級功能

在全域組態模式下，輸入 **software auto-upgrade enable** 指令。此指令會為加入堆疊的所有新交換器啟用該功能。

<#root>

3850-Stack(config)

#

software auto-upgrade enable

3850-Stack(config)

#

end

僅重新載入新增的交換器，無需重新載入整個堆疊。在此案例中，新增的交換器是 switch 3，因此輸入了 reload slot 3 指令。

提示：這些指令中提到的slot會指定堆疊中的交換器(slot 1 = switch 1)。

<#root>

3850-Stack#

reload slot 3

Proceed with reload?

[confirm]

```
%STACKMGR-1-RELOAD_REQUEST: 1 stack-mgr:
 Received reload request for switch 3, reason Reload Slot Command
%STACKMGR-1-STACK_LINK_CHANGE: 1 stack-mgr:
 Stack port 2 on switch 1 is down
%STACKMGR-6-SWITCH_REMOVED: 1 stack-mgr:
 Switch 3 has been removed from the stack.
%STACKMGR-1-STACK_LINK_CHANGE: STANDBY:
 2 stack-mgr:  Stack port 1 on switch 2 is down  (3850-Stack-2)
Starting SWITCH-DELETE sequence, switch 3
SWITCH-DELETE sequence complete, switch 3
%STACKMGR-6-SWITCH_REMOVED: STANDBY:2 stack-mgr:
 Switch 3 has been removed from the stack.  (3850-Stack-2)
Starting SWITCH-DELETE sequence, switch 3 (3850-Stack-2)
SWITCH-DELETE sequence complete, switch 3 (3850-Stack-2)
```

交換器在後台立即重新載入。然後您會看到：

```
%STACKMGR-1-STACK_LINK_CHANGE: 1 stack-mgr:
 Stack port 2 on switch 1 is up
3850-Stack#
%STACKMGR-1-STACK_LINK_CHANGE: STANDBY:2 stack-mgr:
 Stack port 1 on switch 2 is up  (3850-Stack-2)
3850-Stack#
%STACKMGR-6-SWITCH_ADDED: 1 stack-mgr:
 Switch 3 has been added to the stack.
%STACKMGR-6-SWITCH_ADDED: STANDBY:2 stack-mgr:
 Switch 3 has been added to the stack.  (3850-Stack-2)
```

發生從套件組合轉換為安裝模式的過程，緊接著進行一次重新載入：

```
%INSTALLER-6-AUTO_UPGRADE_SW_INITIATED: 1 installer:
 Auto upgrade initiated for switch 3
%INSTALLER-6-AUTO_UPGRADE_SW: 1 installer:
 Converting switch 3 to installed mode by
%INSTALLER-6-AUTO_UPGRADE_SW: 1 installer:
 installing its running software
%INSTALLER-6-AUTO_UPGRADE_SW: 1 installer:
 Setting the boot var on switch 3
%INSTALLER-6-AUTO_UPGRADE_SW: 1 installer:
 Finished installing the running software on switch 3
%INSTALLER-6-AUTO_UPGRADE_SW: 1 installer:
 Reloading switch 3 to boot in installed mode
%STACKMGR-1-RELOAD_REQUEST: 1 stack-mgr:
 Received reload request for switch 3, reason Auto upgrade
%STACKMGR-1-STACK_LINK_CHANGE: 1 stack-mgr:
 Stack port 2 on switch 1 is down
%STACKMGR-6-SWITCH_REMOVED: 1 stack-mgr:
 Switch 3 has been r
3850-Stack#emoved from the stack.
%STACKMGR-1-STACK_LINK_CHANGE: STANDBY:2 stack-mgr:
 Stack port 1 on switch 2 is down  (3850-Stack-2)
Starting SWITCH-DELETE sequence, switch 3
```

```
SWITCH-DELETE sequence complete, switch 3
%STACKMGR-6-SWITCH_REMOVED: STANDBY:2 stack-mgr:
 Switch 3 has been removed from the stack.  (3850-Stack-2)
3850-Stack#
Starting SWITCH-DELETE sequence, switch 3 (3850-Stack-2)
SWITCH-DELETE sequence complete, switch 3 (3850-Stack-2)
```

重新開機後，升級繼續進行：

```
%INSTALLER-6-AUTO_UPGRADE_SW_INITIATED: 1 installer:
 Auto upgrade initiated for switch 3
%INSTALLER-6-AUTO_UPGRADE_SW: 1 installer:
 Searching stack for software to upgrade switch 3
%INSTALLER-6-AUTO_UPGRADE_SW: 1 installer:
 Found donor switch 1 to auto upgrade switch 3
%INSTALLER-6-AUTO_UPGRADE_SW: 1 installer:
 Upgrading switch 3 with software from switch 1
%INSTALLER-6-AUTO_UPGRADE_SW: 1 installer:
 Finished installing software on switch 3
%INSTALLER-6-AUTO_UPGRADE_SW: 1 installer:
 Reloading switch 3 to complete the auto upgrade
%STACKMGR-1-RELOAD_REQUEST: 1 stack-mgr:
 Received reload request for switch 3, reason Auto upgrade
%STACKMGR-1-STACK_LINK_CHANGE: 1 stack-mgr:
 Stack port 2 on switch 1 is down
%STACKMGR-6-SWITCH_REMOVED: 1 stack-mgr:
 Switch 3 has been removed from the stack.
%STACKMGR-1-STACK_LINK_CHANGE: STANDBY:2 stack-mgr:
 Stack port
3850-Stack#t 1 on switch 2 is down  (3850-Stack-2)
Starting SWITCH-DELETE sequence, switch 3
SWITCH-DELETE sequence complete, switch 3
%STACKMGR-6-SWITCH_REMOVED: STANDBY:2 stack-mgr:
 Switch 3 has been removed from the stack.  (3850-Stack-2)
```

系統會自動執行另一次重新載入。交換器啟動後，成功使用正確的Cisco IOS XE版本和軟體模式加入堆疊。

```
%STACKMGR-6-SWITCH_ADDED: 1 stack-mgr:
 Switch 3 has been added to the stack.
%STACKMGR-6-SWITCH_ADDED: STANDBY:2 stack-mgr:
 Switch 3 has been added to the stack.  (3850-Stack-2)
%STACKMGR-6-SWITCH_READY: STANDBY:2 stack-mgr:
 Switch 3 is ready.  (3850-Stack-2)
%STACKMGR-6-SWITCH_READY: 1 stack-mgr:  Switch 3 is ready.
Starting SWITCH-ADD sequence, switch 3
%NGWC_USB_CONSOLE-6-CONFIG_ENABLE: Switch 3:
 Console media-type changed to default
Starting SWITCH-ADD sequence, switch 3 (3850-Stack-2)
SWITCH-ADD sequence complete, switch 3 (3850-Stack-2)
SWITCH-ADD sequence complete, switch 3
```

驗證

使用 show switch 和 show version 指令驗證升級程序是否正確完成：

<#root>

```
3850-Stack#
show switch

Switch/Stack Mac Address : 0c27.24cf.ab80 - Local Mac Address
Mac persistency wait time: Indefinite
                                             H/W   Current
Switch#   Role    Mac Address     Priority Version  State
-----------------------------------------------------------
*1       Active   0c27.24cf.ab80     14     B0      Ready
 2       Standby  f41f.c238.a800     13     B0      Ready
 3       Member   b4e9.b0d3.6600     12     B0      Ready

3850-Stack#
show version

Switch Ports Model          SW Version    SW Image              Mode
------ ----- -----          ----------    ----------            ----
*    1 56    WS-C3850-48P   03.03.01SE    cat3k_caa-universalk9 INSTALL
     2 56    WS-C3850-48P   03.03.01SE    cat3k_caa-universalk9 INSTALL
     3 56    WS-C3850-48P   03.03.01SE    cat3k_caa-universalk9 INSTALL
```

從 3850 系列交換器開機失敗中復原

本節介紹3850系列交換器開機失敗的可能復原方法，例如開機映像損毀、packages.conf 檔案損毀或缺少檔案。

注意：繼續進行之前，請確認您已瞭解兩種可能的開機模式：安裝和套件組合。

標準復原方法

本節介紹兩種標準方法，用於從 Catalyst 3850 系列交換器開機失敗中復原。

USB 復原

3850 系列交換器的前面板上有一個 USB 連接埠，用於主控台存取。此 USB 連接埠還可搭配使用快閃磁碟機以進行映像備份和復原。

如果映像或.conf檔案在switch:提示處停滯，請開機到儲存在USB磁碟機上的檔案，或者將映像從USB複製到內部快閃記憶體中。完成以下步驟，即可從開機失敗中復原：

1. 確認系統是否已識別快閃磁碟機，以及 .bin 檔案是否存在：

```
<#root>

switch:

dir usbflash0:


Directory of usbflash0:/
74  -rw-  223734376  cat3k_caa-universalk9.SPA.03.03.00.SE.150-1.EZ.bin
```

2. 開機到 USB 映像：

```
<#root>

switch:

boot usbflash0:cat3k_caa-universalk9.SPA.03.03.00.SE.150-1.EZ.bin
```

注意：此程式會將交換器開機至套件組合模式。

提示：您還可以將.bin檔案從usbflash0:複製到flash:，並將開機陳述式指向內部快閃記憶體。

損毀檔案復原

某些情況下，packages.conf會呼叫已不存在於快閃記憶體中的檔案。您可以手動從switch: prompt檔案啟動映像；但是重新載入時，它會再次呼叫packages.conf檔案且無法啟動。

如果發生這種情況，思科建議備份目前的packages.conf檔案，並將其重新命名或刪除。此程式是強制性的，因為如果.conf檔案已存在，則下一步會失敗。

擷取.bin檔案後，系統會建立一個新的packages.conf檔案。完成這些步驟，便可從損毀的 packages.conf 檔案中復原：

1. 開機後（在套件組合模式下），確認快閃記憶體中的檔案：

```
<#root>

Switch#

dir flash:


Directory of flash:/
15500  -rwx        1243   Aug 1 2013 07:04:02 +00:00  packages.conf
```

2. 複製或重新命名目前的 packages.conf 檔案：

```
<#root>

Switch#

cp flash:packages.conf flash:packages.conf.badop


Destination filename [packages.conf.bad]?
Copy in progress...C
1243 bytes copied in 0.140 secs (8879 bytes/sec)

Switch#

dir flash:


Directory of flash:/
15500  -rwx        1243   Aug 1 2013 07:04:02 +00:00  packages.conf
15502  -rw-        1243   Aug 1 2013 11:53:51 +00:00  packages.conf.bad
Switch#

del flash:packages.conf


Delete filename [packages.conf]?
Delete flash:/packages.conf? [confirm]
```

3. 展開套件組合，建立新的 packagesonf 檔案：

```
<#root>

Switch#

software expand running switch 1 to flash:


Preparing expand operation ...
[1]: Expanding the running bundle
[1]: Copying package files
[1]: Package files copied
[1]: Finished expanding the running bundle
```

4. 驗證開機：

```
<#root>

Switch#

show boot


---------------------------
```

```
Switch 1
---------------------------
Current Boot Variables:
BOOT variable does not exist

Boot Variables on next reload:
BOOT variable = flash:packages.conf;
Manual Boot = no
Enable Break = no
```

5. 重新載入交換器：

```
<#root>

Switch#

reload


Reload command is being issued on Active unit, this will reload the whole stack
Proceed with reload? [confirm]
```

緊急復原

如果上述復原方法失敗，3850系列交換器提供一種陷阱門方法，可用於將系統復原。必須將終端機連線到執行TFTP伺服器的交換器之管理連線埠。從 CCO 下載有效的映像檔，並將其儲存在 TFTP 伺服器的根目錄中。

交換器可能會停滯在switch:提示處。但是如果您處於開機回圈中，請使用交換器正面的「Mode」按鈕來中斷回圈：按住按鈕大約十秒，交換器就會中斷回圈並停在switch: 提示。

完成以下步驟，即可執行緊急復原：

1. 設定交換器 IP 位址：

```
<#root>

switch:

set IP_ADDR 192.0.2.123/255.255.255.0
```

2. 設定預設閘道：

```
<#root>

switch:

set DEFAULT_ROUTER 192.0.2.1
```

3. 對包含 TFTP 伺服器的終端機執行 Ping 以測試連線：

```
<#root>

switch:

ping 192.0.2.1


ping 192.0.2.1 with 32 bytes of data ...
Host 192.0.2.1 is alive.
```

4. 確認交換器檔案系統中是否存在緊急檔案：

```
<#root>

switch:

dir sda9:


Directory of sda9:/

    2  drwx  1024       .
    2  drwx  1024       ..
   11  -rwx  18958824   cat3k_caa-recovery.bin
36903936 bytes available (20866048 bytes used)
```

5. 執行緊急安裝功能：

```
<#root>

switch:

emergency-install tftp://192.0.2.1/cat3k_caa-universalk9.
 SPA.03.03.00.SE.150-1.EZ.bin


The bootflash will be erased during install operation, continue (y/n)?Y
Starting emergency recovery (tftp://192.0.2.1/cat3k_caa-universalk9.
 SPA.03.02.02.SE.150-1.EX2.bin)...
Reading full image into memory.....................done
Nova Bundle Image
--------------------------------------
Kernel Address    : 0x6042f5d8
Kernel Size       : 0x317ccc/3243212
Initramfs Address : 0x607472a4
Initramfs Size    : 0xdc6546/14443846
Compression Format: .mzip

Bootable image at @ ram:0x6042f5d8
Bootable image segment 0 address range [0x81100000, 0x81b80000]
 is in range [0x80180000, 0x90000000].
```

```
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
 @@@@@@@@@@@@@@@@@@@@
File "sda9:cat3k_caa-recovery.bin" uncompressed and installed,
 entry point: 0x811060f0
Loading Linux kernel with entry point 0x811060f0 ...
Bootloader: Done loading app on core_mask: 0xf

### Launching Linux Kernel (flags = 0x5)

Initiating Emergency Installation of bundle tftp://192.0.2.1/
 cat3k_caa-universalk9.SPA.03.03.00.SE.150-1.EZ.bin

Downloading bundle tftp://192.0.2.1/ cat3k_caa-universalk9.
 SPA.03.03.00.SE.150-1.EZ.bin...

Validating bundle tftp://192.0.2.1/ cat3k_caa-universalk9.
 SPA.03.03.00.SE.150-1.EZ.bin...
Installing bundle tftp://192.0.2.1/ cat3k_caa-universalk9.
 SPA.03.03.00.SE.150-1.EZ.bin...
Verifying bundle tftp://192.0.2.1/ cat3k_caa-universalk9.
 SPA.03.03.00.SE.150-1.EZ.bin...
Package cat3k_caa-base.SPA.03.03.00.SE.pkg is Digitally Signed
Package cat3k_caa-drivers.SPA.03.03.00.SE.pkg is Digitally Signed
Package cat3k_caa-infra.SPA.03.03.00.SE.pkg is Digitally Signed
Package cat3k_caa-iosd-universalk9.SPA.150-1.EX2.pkg is Digitally Signed
Package cat3k_caa-platform.SPA.03.03.00.SE.pkg is Digitally Signed
Package cat3k_caa-wcm.SPA.10.0.111.0.pkg is Digitally Signed
Preparing flash...
Syncing device...
Emergency Install successful... Rebooting
Restarting system.
```

關於此翻譯

思科已使用電腦和人工技術翻譯本文件，讓全世界的使用者能夠以自己的語言理解支援內容。請注意，即使是最佳機器翻譯，也不如專業譯者翻譯的內容準確。Cisco Systems, Inc. 對這些翻譯的準確度概不負責，並建議一律查看原始英文文件（提供連結）。