

Catalyst 3850系列交换机升级、管理和恢复技术

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简介

本文描述如何简化Cisco Catalyst 3850系列交换机的升级进程并且提供灾难恢复技术一旦软件或引导失败。升级进程简单，但是能似乎困难，如果没有与Cisco IOS XE软件升级的体验。

[先决条件](#)

[要求](#)

Cisco 建议您了解以下主题：

- [TFTP](#)
- [FTP](#)

[使用的组件](#)

本文档中的信息根据运行Cisco IOS XE版本03.03.00和以上的Cisco Catalyst 3850系列交换机。在本文的示例使用一堆叠解决方案;然而，同样命令在独立交换机可以运行。

本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原始（默认）配置。如果您使用的是真实网络，请确保您已经了解所有命令的潜在影响。

注意：为了下载从Cisco网站的Cisco IOS XE镜像，您必须有与标题名为的凭证的一个有效Cisco在线连接(CCO)帐户。并且，思科不提供一自由TFTP/FTP解决方案，因此您必须安装和配置TFTP/FTP，在您开始前。

安装与套件模式

当您配置Cisco Catalyst 3850系列交换机时，您有两操作模式选择从：**安装和套件**。有两个模式之间的较小差异。欲了解更详细的信息查看配置指南。

Cisco建议**Install模式**在操作时使用，因为允许更多全套功能并且要求少量资源在引导程序。本文提供每个模式简要概述供参考。

注意：当升级从pre-3.6.3或pre-3.7.2软件版本到在Install模式时的3.6.3/3.7.2软件缺陷 [CSCUw82216may](#)导致交换机inoperability由于闪存损坏。此问题在3.6.4或3.7.3被解决因此或以上软件问题看不到，当升级对这些软件版本时。由于此软件缺陷，套件模式为介入被影响的软件版本的升级推荐

安装模式

这是交换机的默认模式。**Install模式**使用名为**packages.conf**的一个包供应文件为了引导交换机。另外，有在闪存的一定数量的**.pkgfiles**。思科建议您不修改这些文件，除非处理由Cisco技术支持中心(TAC)工程师。

套件模式

如果对使用满意传统整体IOS镜像为了引导交换机，则**套件模式**应该熟悉。因为包从套件解压缩并且复制对RAM，**套件模式**比**Install模式**浪费更多的内存。

验证模式

为了验证模式，请输入**show version**命令：

```
3850-stack#show version
```

```
Cisco IOS Software, 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

升级

为了开始升级进程，您在您的活动交换机闪存必须下载从Cisco网站的IOS-XE **.bin**文件和安置它。使用为了复制文件到交换机的进程在本文没有报道。

当您复制.bin文件到单个交换机时，安装进程复制文件到堆叠的其他交换机。一旦文件存在，请输入此命令：

```
3850-stack#
software install file flash:cat3k_caa-universalk9.SPA.03.03.01.SE.150-1.EZ1.bin
switch 1-2
```

注意：有许多选项可用在每命令以后;然而，在本例中基本升级运行。

一旦开始升级进程，交换机推送.bin文件给堆栈成员对等体。

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

在所有成员接收.bin文件后，自动地展开对闪存。

```
[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
```

其次，交换机列表为删除和新增内容被标记对packages.conf指示器文件文件的摘要。

```
[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
```

最后，packages.conf文件更新并且做。

```
[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
```

验证更新过程适当地完成在重新加载。

```
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
```

闪烁清理

残余的文件在从以前版本的闪存保持。如果要整理残余的文件，您能输入软件干净命令而不是文件的一个手工的删除。这清除不再交换机需要为了从每个堆栈成员闪存操作的文件。

注意：此命令也删除使用为了安装新的IOS软件的.bin文件。请记住，一旦解压缩，您不再需要它。

下两个部分提供示例闪存如何出现，在使用前后软件干净命令。

在闪存清理前

```
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)

在闪存清理以后

```
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
```

这是从show flash命令的输出，在闪存清理后：

```
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/aplg2.md5
 8   11591680 Oct 03 2013 05:02:21.0 +00:00 mnt/images/ap.bak/aplg2
 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系列交换机的自动升级功能

当您必须引入一新的交换机到一当前堆叠Catalyst 3850系列交换机的许多方案，例如，当一新的交换机采购为了展开可用的端口数量堆叠的时。为了成功地添加一新的交换机到堆叠，您必须保证同一个软件版本在新的交换机运行。在IOS-XE版本3.3.1之前，保证的唯一方法版本匹配是演出新的交换机在介绍之前到堆叠。

Catalyst 3850系列交换机包括呼叫的功能也许熟悉的*Auto-Upgrade*，如果您的迁移从Catalyst 3750系列平台发生。此功能目标是保证一新加的交换机由有正确IOS-XE版本的堆栈成员自动地设置。然而，注释的一个警告是那在版本3.3.1之前，此功能不工作(参考Cisco Bug ID [CSCui69999](#))。所以，您必须保证您的当前堆叠运行在Install模式的至少版本3.3.1。

注意：默认情况下自动升级禁用并且不是可用的在套件模式。

为了使用自动升级功能，请添加软件自动升级enable命令到当前堆叠的配置。这保证所有新加的堆栈成员自动地升级。

配置

一旦交换机被层叠并且启动，您看到清楚的迹象有在版本的一不匹配，并且新成员不充分地加入堆叠。如果观看SYSLOG作为交换机尝试加入，您注意自动建议功能警告您新加的交换机运行一个不同的软件版本和模式。

注意：对于此示例，新的交换机运行在**套件模式**的IOS-XE版本3.2.2。

```
%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.
```

一旦最近加入的成员充分地启动，您看到不匹配检测：

```
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
```

Enable (event)自动升级功能

在**全局配置模式**，请输入**enable**命令软件的自动升级。这启用其中任一的功能加入堆叠的新的交换机。

```
3850-Stack(config)#software auto-upgrade enable
```

```
3850-Stack(config) #end
```

您必须重新加载仅新加的交换机;全双工堆叠重新加载不是必要的。在这种情况下，新加的交换机是**switch3**，因此**重新加载slot3**命令被输入。

提示：在这些命令提及的**slot**选定在堆叠(**slot 1**的交换机=交换机1)。

```
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)
等待几分钟，当在背景时的交换机重新加载。然后，您看到此：
```

```
%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)
您当前看到从套件的转换到Install模式发生，跟随由重新加载：
```

```
%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)
在重新启动，升级继续后：
```

```
%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)

```

另一重新加载自动地执行。一旦交换机启动，顺利地加入堆叠同正确IOS-XE版本和软件模式。

```

%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

```

验证

请使用显示交换机和show version命令为了验证升级进程适当地完成：

```

3850-Stack#show switch
Switch/Stack Mac Address : 0c27.24cf.ab80 - Local Mac Address
Mac persistency wait time: Indefinite

```

Switch#	Role	Mac Address	Priority	H/W Version	Current 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

```

从3850系列交换机引导失败恢复

有一3850系列交换机引导失败的多个原因，例如一损坏的启动镜像，一个损坏的packages.conf文件或者未命中文件。此部分描述可能的恢复方法。

注意：保证您有两可能的boot模式的知识，请安装并且捆绑，在您继续前。

标准的恢复方法

此部分描述使用为了从一Catalyst 3850系列交换机引导失败恢复的两个标准方法。

USB恢复

3850系列交换机有在使用控制台访问的前面的一个USB端口。此USB端口用闪存驱动器也用于镜像备份和恢复。

如果变得卡住在**交换机**：提示符用损坏的镜像或.conf文件，您能容易地启动到在USB驱动存储的文件或复制从USB的一镜像到内部闪存。完成这些步骤为了从引导失败恢复：

1. 验证闪存驱动器被识别，并且.bin文件存在：

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

2. 启动对USB镜像：

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

注意：此进程引导交换机到**套件模式**。

提示：您能也复制从usbflash0的.bin文件：对flash: 和请指向往内部闪存的引导说明。

破损的文件恢复

有实例，当packages.conf调用在闪存不再存在的文件时。您能手工启动从交换机的一镜像：**及时文件**；然而，在重新加载它再呼叫packages.conf文件并且不能启动。如果这发生，思科建议您备份当前packages.conf文件**并且重命名它或删除它**。此进程是必须，因为下一步发生故障，如果filealready的.conf存在。一旦抽出.bin文件，新的packages.conf文件**创建**。完成这些步骤为了从一个损坏的packages.conf文件恢复：

1. 一旦启动(在**套件模式**)，请验证在flash:的文件

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

2. 复制或重命名当前packages.conf文件：

```
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. 展开套件为了创建一个新的packages.conf文件：

```
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. 验证boot:

```
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. 重新加载交换机 :

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

紧急情况恢复

如果上一个恢复方法发生故障，3850系列交换机有您能使用为了恢复系统的一个天窗方法。您必须有连接到交换机管理端口运行TFTP server的终端。下载从CCO的有效镜像镜像文件并且存储它在TFTP server的根。

很可能交换机是卡住在**交换机：提示**。然而，如果是在引导程序环路，您能使用**Mode按钮**在交换机的前面为了中断周期：拿着按钮大约十秒，并且交换机中断周期并且终止在**交换机：提示**。

完成这些步骤为了执行一紧急情况恢复：

1. 设置交换机IP地址：

```
switch: set IP_ADDR 192.0.2.123/255.255.255.0
```

2. 设置默认网关：

```
switch: set DEFAULT_ROUTER 192.0.2.1
```

3. ping包含TFTP server为了测试连接的终端：

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

4. 验证紧急文件在交换机文件系统存在：

```
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. 运行紧急情况安装功能：

```
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, 0x900000000].
@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@@
@@@@@@@@@@@@@@@@@@@@@@@@@@@@
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.
```