

# 升级ASA HA请配对在Firepower设备

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## 简介

在Firepower设备安装的ASA模块的升级程序(FPR4100, FPR9300等), 当高可用性(HA)时配置(A/S或A/A)在FXO配置指南描述。这是相关部分:

### Updating the Image Version for a Logical Device

**Before You Begin**

Download the application image you want to use for the logical device from Cisco.com (see [Downloading Images from Cisco.com](#)) and then upload that image to the FXOS chassis (see [Uploading an Image to the Firepower Security Appliance](#)).

If you are upgrading both the Platform Bundle image and one or more Application images, you must upgrade the Platform Bundle first.

**Note** You cannot directly upgrade a Firepower Threat Defense logical device. To upgrade a Firepower Threat Defense logical device, you must delete the existing device and then create a new one using the updated image.

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**Procedure**

- Step 1** Choose **Logical Devices** to open the Logical Devices page. The Logical Devices page shows a list of configured logical devices on the chassis. If no logical devices have been configured, a message stating so is shown instead.
- Step 2** Click **Update Version** for the logical device that you want to update to open the **Update Image Version** dialog box.
- Step 3** For the **New Version**, choose the software version to which you want to update.
- Step 4** Click **OK**.

本文目标是提供有点升级进程的更多详细概要在HA环境的。

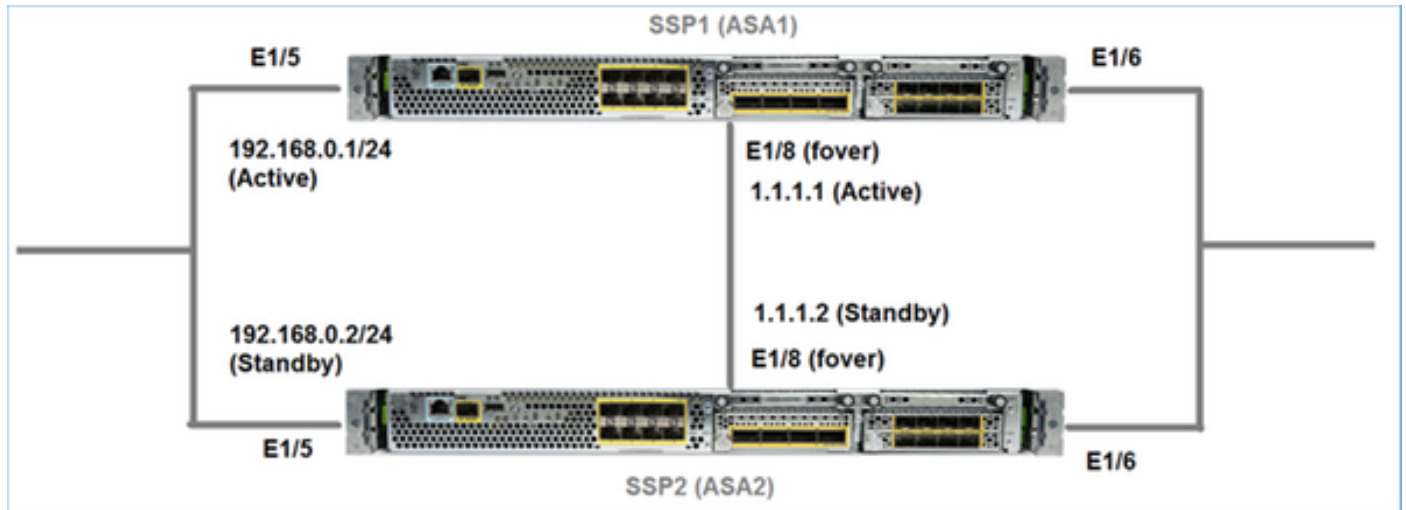
## 使用的组件

- 2个x FP4150运行代码2.0.1-86
- ASA 9.6.2.1 (升级对9.6.2.3)

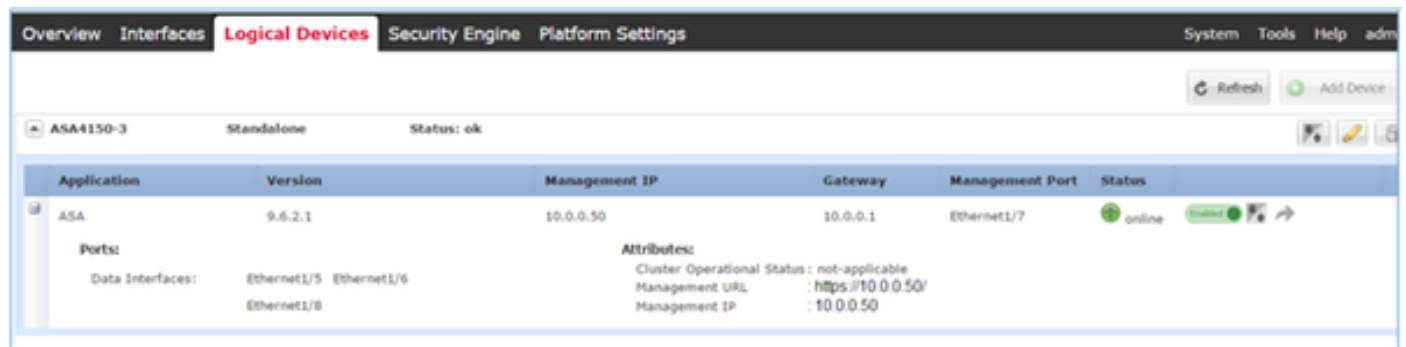
**注意**-本文假设，目标ASA版本是与现有FXO版本兼容，因此FXO在此方案捆绑升级没有必要。

总是请检查FXO兼容性矩阵确认目标ASA版本是否是与FXO镜像兼容。如果不然后FXO首先制作镜像正如FXO版本注释所描述的升级。

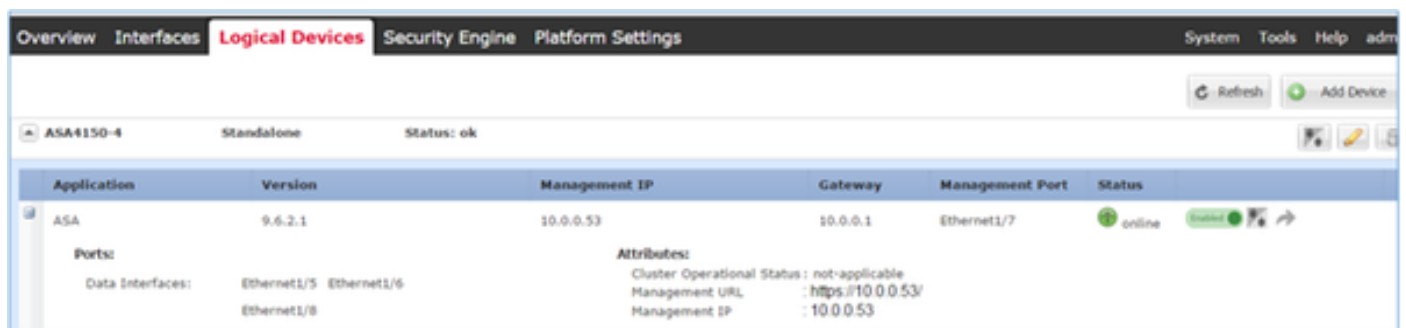
## 拓扑



ASA1，当在Firepower机箱管理器(FCM) UI被看到：



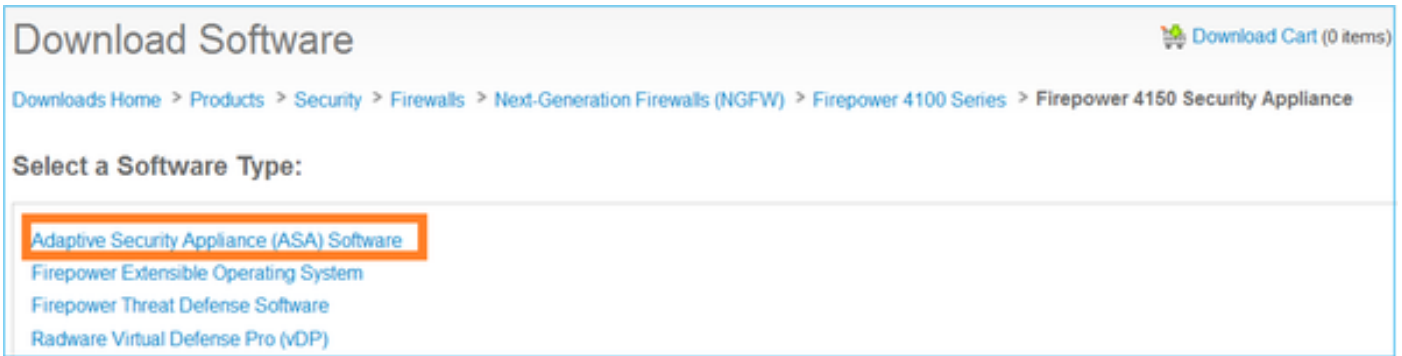
ASA2：



## 先决条件

Step1 - 下载从思科的页的ASA镜像

导航对下载霍姆>产品> Security >防火墙>下一代防火墙(NGFW)并且选择HW平台(即4100 , 9000个等) :

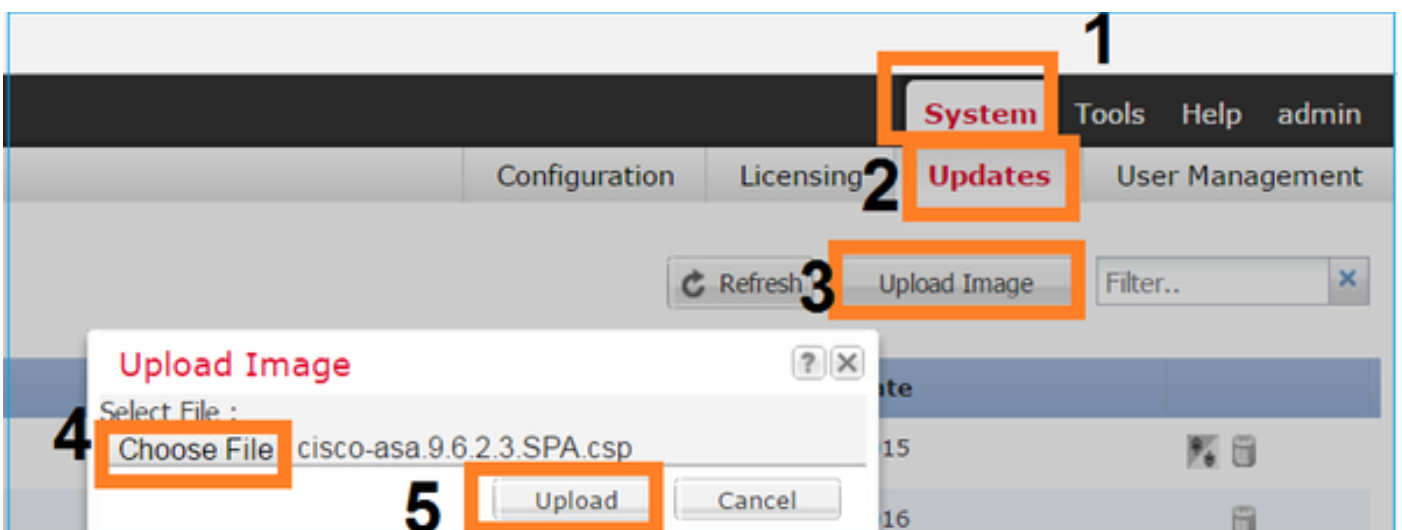


## 步骤2 –上载对Firepower机箱的ASA镜像

上载ASA镜像到Firepower机箱。这可以从Firepower机箱管理器(FCM) UI或FXO CLI执行。

### 方式1 –上载从FCM UI的ASA镜像

导航对系统>更新。点击加载镜像，选择文件名并且点击加载



### 方式2 –上载从FXO CLI的ASA镜像

您能上载从FTP、SCP、SFTP或者TFTP server的镜像。要验证机箱管理接口和远程服务器之间的连接请执行以下 :

```
FPR4100# connect local-mgmt FPR4100(local-mgmt)# ping 10.48.40.70
PING 10.48.40.70 (10.48.40.70) from 10.62.148.88 eth0: 56(84) bytes of data.
64 bytes from 10.48.40.70: icmp_seq=1 ttl=61 time=34.4 ms
64 bytes from 10.48.40.70: icmp_seq=2 ttl=61 time=34.3 ms
64 bytes from 10.48.40.70: icmp_seq=3 ttl=61 time=34.3 ms
```

要转换ASA镜像请导航对以下范围并且请使用‘下载镜像’命令 :

```
FPR4100# scope ssa FPR4100 /ssa # scope app-software FPR4100 /ssa/app-software # download image
ftp://ftp_username@ 10.48.40.70/cisco-asa.9.6.2.3.SPA.csp
Password:
```

监控图像传送进度 :

```
FPR4100 /ssa/app-software # show download-task detail Downloads for Application Software: File Name: cisco-asa.9.6.2.3.SPA.csp Protocol: Ftp Server: 10.48.40.70 Port: 0 Userid: anonymous Path: Downloaded Image Size (KB): 94214 Time stamp: 2016-12-08T10:21:56.775 State: Downloading Transfer Rate (KB/s): 450.784698 Current Task: downloading image cisco-asa.9.6.2.3.SPA.csp from 10.48.40.70 (FSM-STAGE:sam:dme:ApplicationDownloaderDownload:Local)
```

您能也使用以下命令验证成功的转移：

```
FPR4100 /ssa/app-software # show download-task Downloads for Application Software: File Name Protocol Server Port Userid State -----  
-----  
----- cisco-asa.9.6.2.2.SPA.csp Ftp 10.48.40.70 0 anonymous Downloaded
```

关于其他详细信息：

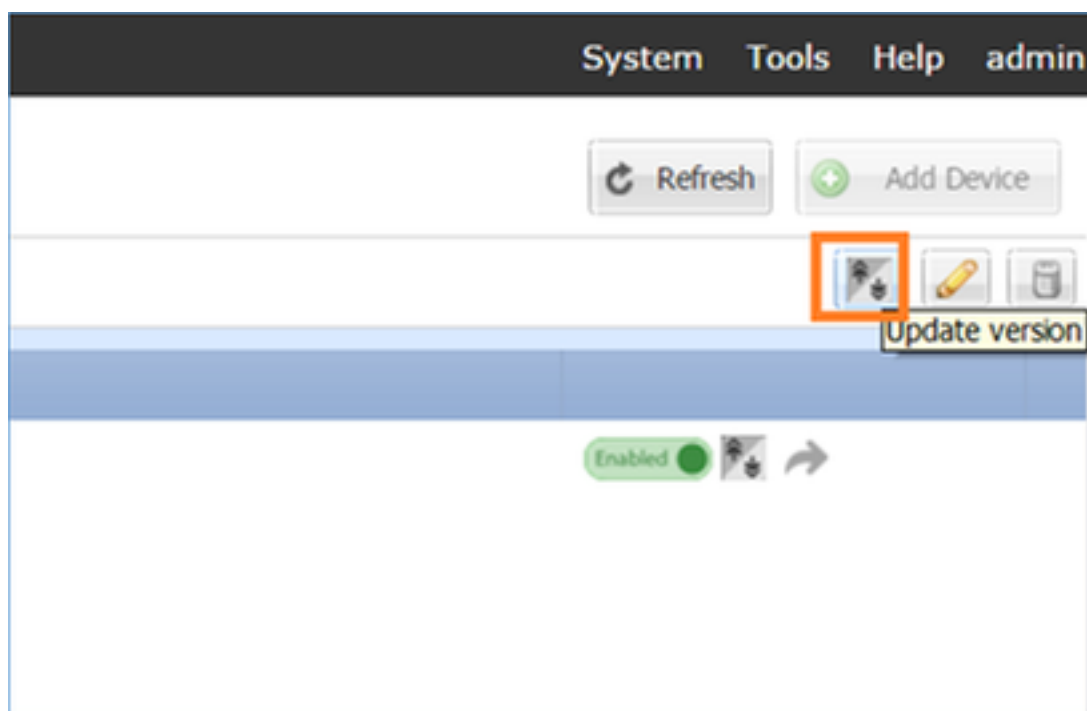
```
FPR4100 /ssa/app-software # show download-task fsm status expand File Name: cisco-asa.9.6.2.3.SPA.csp FSM Status: Affected Object: sys/app-catalogue/dnld-cisco-asa.9.6.2.3.SPA.csp/fsm Current FSM: Download Status: Success Completion Time: 2016-12-08T10:26:52.142 Progress (%) : 100 FSM Stage: Order Stage Name Status Try -----  
-----  
----- --- 1 DownloadLocal Success 1 2 DownloadUnpackLocal  
Success 1
```

镜像在机箱信息库显示：

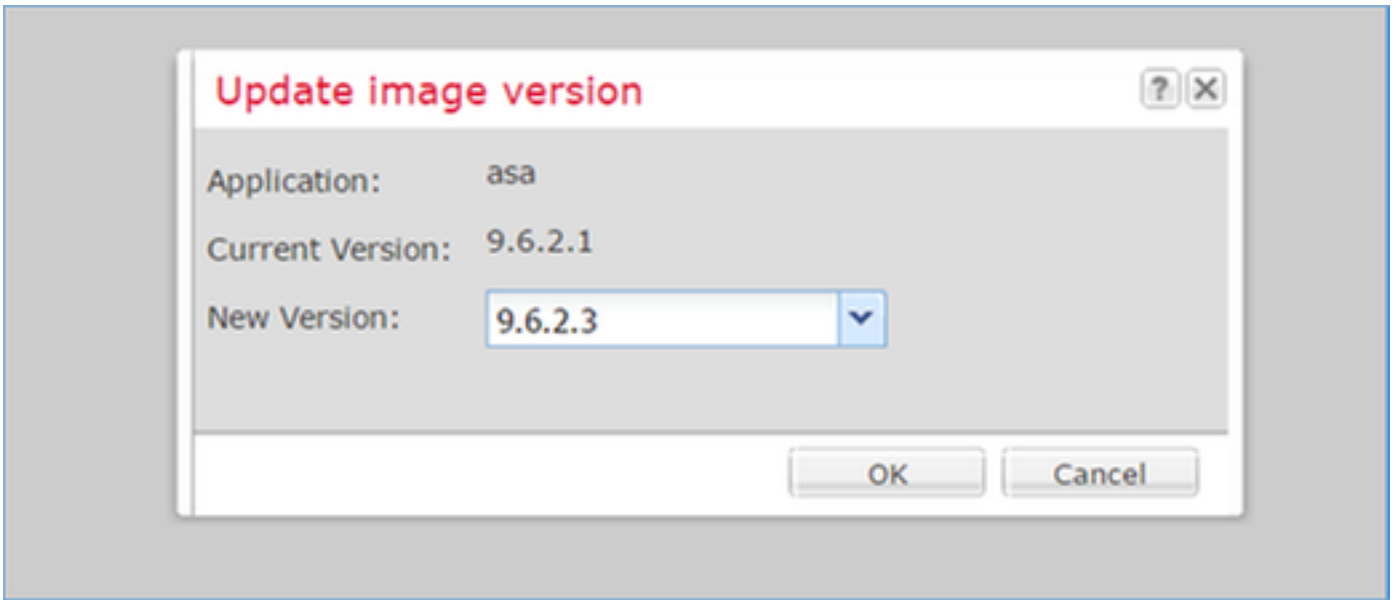
```
FPR4100 /ssa/app-software # exit  
FPR4100 /ssa # show app Application: Name Version Description Author Deploy Type CSP Type Is Default App -----  
-----  
asa 9.6.2.1 N/A cisco Native Application No asa 9.6.2.3 N/A cisco Native Application No
```

## 升级第一个ASA单元

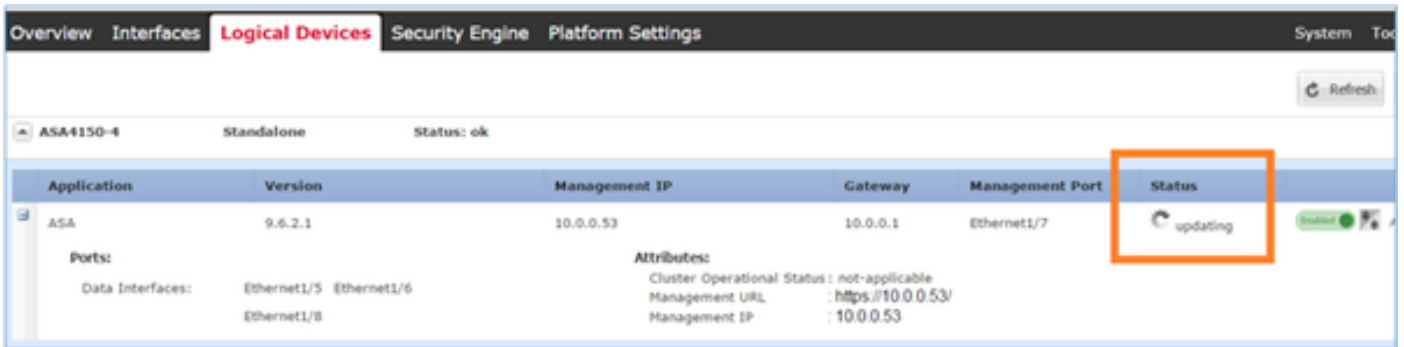
通过单击升级首先待机ASA单元在**更新版本按钮**：



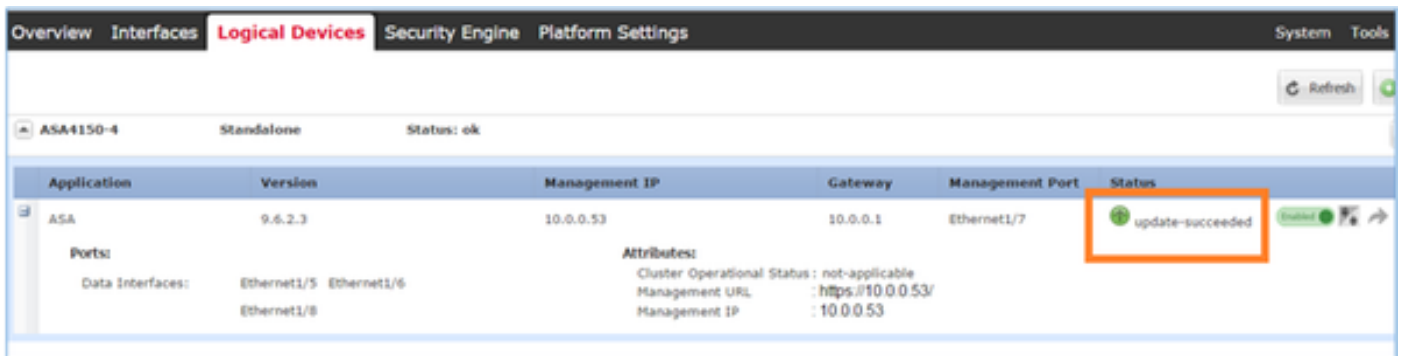
指定新的镜像并且点击OK键开始升级：



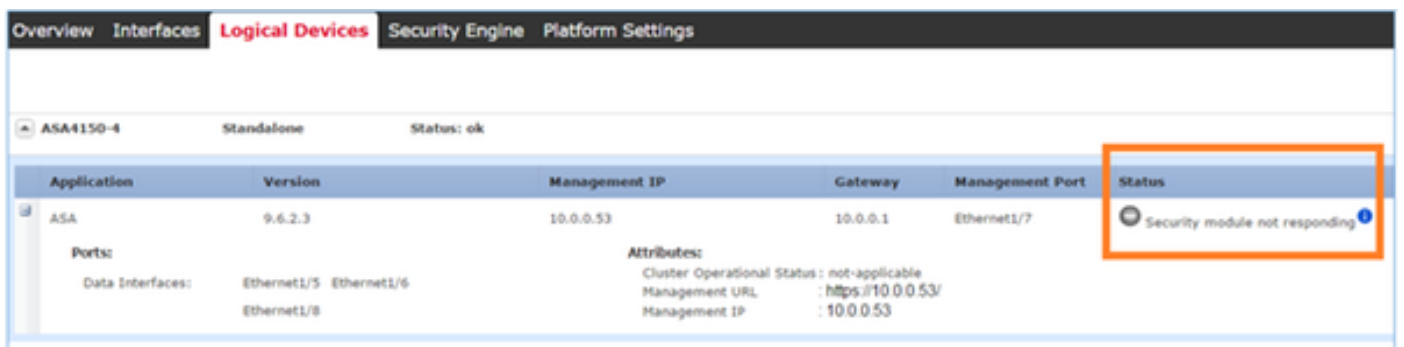
### ASA升级进度，从FCM GUI被看到



在1-2分钟之后FCM UI显示：



当ASA模块重新加载时：



## ASA升级进程，从Firepower机箱CLI被看到

CLI显示逻辑设备(ASA)重新启动。这是整个升级进程，当从模块引导CLI被看到：

```
asa/sec/stby(config)#
[screen is terminating] Disconnected from asa console! Firepower-module1> INIT:
SwitchingStopping OpenBSD Secure Shell server: sshdstopped /usr/sbin/sshd (pid 5738) . Stopping
Advanced Configuration and Power Interface daemon: stopped /usr/sbin/acpid (pid 5742) acpid:
exiting acpid. Stopping system message bus: dbus. Stopping ntpd: stopped process in pidfile
'/var/run/ntp.pid' (pid 6186) done Stopping crond: OK Deconfiguring network interfaces... done.
Sending all processes the TERM signal... SIGKILL_ALL will be delayed for 1 + 5 secs Sending all
processes the KILL signal... Deactivating swap... Unmounting local filesystems... Rebooting... [
1679.605561] Restarting system. Cisco Systems, Inc. Configuring and testing memory.. Cisco
Systems, Inc. Configuring and testing memory.. Configuring platform hardware... Bios Version :
FXOSSM1.1.2.1.3.031420161207 Platform ID : FXOSSM1 Processor(s) Intel(R) Xeon(R) CPU E5-2699 v4
@ 2.20GHz Total Memory = 256 GB Effective Memory = 256 GB Memory Operating Speed 2400 Mh Please
wait, preparing to boot..
.....
..... UEFI Interactive Shell v2.0. UEFI v2.40 (American Megatrends, 0x0005000B). Revision
1.02 Mapping table fs0: Alias(s):HD17a65535a1:;blk1:
PciRoot(0x0)/Pci(0x1F,0x2)/Sata(0x0,0xFFFF,0x0)/HD(1,MBR,0x000EC692,0x800,0xEE6800) blk0:
Alias(s): PciRoot(0x0)/Pci(0x1F,0x2)/Sata(0x0,0xFFFF,0x0) blk2: Alias(s):
PciRoot(0x0)/Pci(0x1F,0x2)/Sata(0x0,0xFFFF,0x0)/HD(2,MBR,0x000EC692,0xEE7000,0x3BA000) blk3:
Alias(s):
PciRoot(0x0)/Pci(0x1F,0x2)/Sata(0x0,0xFFFF,0x0)/HD(3,MBR,0x000EC692,0x12A1000,0x950000) blk4:
Alias(s):
PciRoot(0x0)/Pci(0x1F,0x2)/Sata(0x0,0xFFFF,0x0)/HD(4,MBR,0x000EC692,0x1BF1000,0x2CD20800) blk5:
Alias(s):
PciRoot(0x0)/Pci(0x1F,0x2)/Sata(0x0,0xFFFF,0x0)/HD(4,MBR,0x000EC692,0x1BF1000,0x2CD20800)/HD(1,M
BR,0x00000000,0x1BF1800,0x5D22000) blk6: Alias(s):
PciRoot(0x0)/Pci(0x1F,0x2)/Sata(0x0,0xFFFF,0x0)/HD(4,MBR,0x000EC692,0x1BF1000,0x2CD20800)/HD(2,M
BR,0x00000000,0x7914000,0x26FFD800) To launch ROMMON. CpuFrequency = 2200002 KHz Cisco FXOSSM1
Blade Rommon 1.2.1.3, Mar 14 2016 12:11:29 Platform: SSPXRU INFO: enic_identify: Enabling Cruz
driver... INFO: enic_identify: Cruz driver enabled. INFO: init_spi_interface: HSFS_BERASE_4K.
INFO: enic_init: bar[0].vaddr 0xc6e00000. INFO: enic_init: bar[2].vaddr 0xc6e10000. INFO:
enic_init: eNic port MTU is 1500. INFO: enic_init: eNic bsize 1500 ring size 512. INFO:
enic_init: Waiting for Cruz link... INFO: enic_init: Cruz link detected. INFO: nb_eth_app_init:
MAC address for interface 0: 00 15 a5 01 01 00 INFO: nb_eth_app_init: IP address 127.128.1.254
Start communicating with MIO in blade slot 1... INFO: Allocated 1000 bytes of memory for cmd at
0x78a7d018. INFO: Allocated 1000 bytes of memory for status at 0x76d34918. INFO: Allocated
196608 bytes of memory for key file at 0x76d03018. INFO: Status code 1: 'rommon initialize is
completed'. INFO: tftp_open: '/rommon/status_1.txt'@127.128.254.1 via 127.128.254.1 ! INFO:
nb_tftp_upload: 31 bytes sent. tftpget 0x78a7d018 1000 INFO: tftp_open:
'/rommon/command_1.txt'@127.128.254.1 via 127.128.254.1 Received 154 bytes WARNING:
retrieve_mio_cmd_info: Invalid checksum 0x0. tftpget 0x76d03018 196608 INFO: tftp_open:
'rommon/key_1.bin'@127.128.254.1 via 127.128.254.1 ! Received 131072 bytes INFO: Status code 8:
'rommon succeeds to retrieve key file'. INFO: tftp_open: '/rommon/status_1.txt'@127.128.254.1
via 127.128.254.1 ! INFO: nb_tftp_upload: 31 bytes sent. INFO: Primary keys in flash are up-to-
date. INFO: Backup keys in flash are up-to-date. continue check local image the image file path:
installables/chassis/fxos-lfbff-k8.9.6.2.2.SPA the image file name only: fxos-lfbff-
k8.9.6.2.2.SPA local_image_file: fs0:fxos-lfbff-k8.9.6.2.2.SPA INFO: File 'fs0:fxos-lfbff-
k8.9.6.2.2.SPA' has 104831328 bytes. local_image_file_size 104831328 Found image fs0:fxos-lfbff-
k8.9.6.2.2.SPA in local storage, boot local image. set pboot_image fxos-lfbff-k8.9.6.2.2.SPA
INFO: File 'fs0:fxos-lfbff-k8.9.6.2.2.SPA' has 104831328 bytes. INFO: 'fs0:fxos-lfbff-
k8.9.6.2.2.SPA' has 104831328 bytes INFO: Booting LFBFF image... INFO: Status code 7: 'rommon
about to verify image signature from local disk'. INFO: tftp_open:
'/rommon/status_1.txt'@127.128.254.1 via 127.128.254.1 ! INFO: nb_tftp_upload: 31 bytes sent.
INIT: version 2.88 booting Starting udev Configuring network interfaces... done. Populating dev
cache rw console=ttyS0,38400 loglevel=2 auto kstack=128 reboot=force panic=1
ide_generic.probe_mask=0x1 idel=noprobe pci=nocrs processor.max_cstate=1 iommu=pt
platform=sspxru boot_img=disk0:/fxos-lfbff-k8.9.6.2.2.SPA ciscodmasz=786432 cisonrsvsz=2359296
hugepagesz=1g hugepages=24 ssp_mode=0 No Partitions for HDD2.. Creating partition.. mount:
```

```

special device /dev/sdb1 does not exist rw console=ttyS0,38400 loglevel=2 auto kstack=128
reboot=force panic=1 ide_generic.probe_mask=0x1 ide1=noprobe pci=nocrs processor.max_cstate=1
iommu=pt platform=sspxru boot_img=disk0:/fxos-lfbff-k8.9.6.2.2.SPA ciscodmasz=786432
ciscnrsvsz=2359296 hugepagesz=1g hugepages=24 ssp_mode=0 Create libvirt group Start libvirtd
Service * Starting virtualization library daemon: libvirtd no /usr/bin/dnsmasq found; none
killed 2016-12-07 12:47:24.090+0000: 4373: info : libvirt version: 1.1.2 2016-12-07
12:47:24.090+0000: 4373: warning : virGetHostname:625 : getadd[ ok ]failed for 'ciscoasa': Name
or service not known Disable the default virtual networks Network default destroyed Done with
libvirt initialization rw console=ttyS0,38400 loglevel=2 auto kstack=128 reboot=force panic=1
ide_generic.probe_mask=0x1 ide1=noprobe pci=nocrs processor.max_cstate=1 iommu=pt
platform=sspxru boot_img=disk0:/fxos-lfbff-k8.9.6.2.2.SPA ciscodmasz=786432 ciscnrsvsz=2359296
hugepagesz=1g hugepages=24 ssp_mode=0 ++++++ BOOT CLI FILES COPIED
+++++ rw console=ttyS0,38400 loglevel=2 auto kstack=128 reboot=force
panic=1 ide_generic.probe_mask=0x1 ide1=noprobe pci=nocrs processor.max_cstate=1 iommu=pt
platform=sspxru boot_img=disk0:/fxos-lfbff-k8.9.6.2.2.SPA ciscodmasz=786432 ciscnrsvsz=2359296
hugepagesz=1g hugepages=24 ssp_mode=0 Turbo Boost is UNSUPPORTED on this platform. Configuration
Xml found is /opt/cisco/csp/applications/configs/cspCfg_cisco-
asa.9.6.2.3__asa_001_JAD201200C64A93395.xml INIT: Entering runlevel: 3 rw console=ttyS0,38400
loglevel=2 auto kstack=128 reboot=force panic=1 ide_generic.probe_mask=0x1 ide1=noprobe
pci=nocrs processor.max_cstate=1 iommu=pt platform=sspxru boot_img=disk0:/fxos-lfbff-
k8.9.6.2.2.SPA ciscodmasz=786432 ciscnrsvsz=2359296 hugepagesz=1g hugepages=24 ssp_mode=0
Starting system message bus: dbus. Starting OpenBSD Secure Shell server: sshd generating ssh RSA
key... generating ssh ECDSA key... generating ssh DSA key... done. Starting Advanced
Configuration and Power Interface daemon: acpid. acpid: starting up acpid: 1 rule loaded acpid:
waiting for events: event logging is off Starting ntpd: done Starting crond: OK Cisco Security
Services Platform Type ? for list of commands Firepower-module1> Firepower-module1>show services
status Services currently running: Feature | Instance ID | State | Up Since -----
----- asa | 001_JAD201200C64A93395 | RUNNING | :00:00:20
Firepower-module1>

```

整个程序花费了有点少于5分钟。

您能也使用从机箱CLI的显示APP实例命令验证ASA应用程序有来的‘联机’：

```

FPR4100# scope ssa FPR4100 /ssa # show app-instance Application Name Slot ID Admin State
Operational State Running Version Startup Version Cluster Oper State -----
----- asa 1
Enabled Online 9.6.2.3 9.6.2.3 Not Applicable

```

2个ASA模块互相发现：

```

asa/sec/actNoFailover>
*****WARNING*****WARNING*****WARNING***** Mate version 9.6(2)1
is not identical with ours 9.6(2)3
*****WARNING*****WARNING*****WARNING***** . Detected an Active
mate Beginning configuration replication from mate. End configuration replication from mate.
asa/sec/stby>

```

## 验证

```

FPR4100# connect module 1 console
Telnet escape character is '~'.
Trying 127.5.1.1...
Connected to 127.5.1.1.
Escape character is '~'.

```

CISCO Serial Over LAN:



Close Network Connection to Exit

```
Firepower-module1> connect asa
asa> enable
Password:
```

```
asa/sec/stby# show failover Failover On Failover unit Secondary Failover LAN Interface: fover
Ethernet1/8 (up) Reconnect timeout 0:00:00 Unit Poll frequency 1 seconds, holdtime 15 seconds
Interface Poll frequency 5 seconds, holdtime 25 seconds Interface Policy 1 Monitored Interfaces
2 of 1041 maximum MAC Address Move Notification Interval not set Version: Ours 9.6(2)3, Mate
9.6(2)1 Serial Number: Ours FLM2006EQFW, Mate FLM2006EN9U Last Failover at: 12:48:23 UTC Dec 7
2016 This host: Secondary - Standby Ready Active time: 0 (sec) slot 0: UCSB-B200-M3-U hw/sw rev
(0.0/9.6(2)3) status (Up Sys) Interface INSIDE (192.168.0.2): Normal (Not-Monitored) Interface
OUTSIDE (192.168.1.2): Normal (Monitored) Interface management (0.0.0.0): Normal (Waiting) Other
host: Primary - Active Active time: 10320 (sec) slot 0: UCSB-B200-M3-U hw/sw rev (0.0/9.6(2)1)
status (Up Sys) Interface INSIDE (192.168.0.1): Normal (Not-Monitored) Interface OUTSIDE
(192.168.1.1): Normal (Monitored) Interface management (10.0.0.50): Normal (Waiting)
...
```

一般，这时有需要通过运行一些其它命令确认在2个ASA单元之间的适当的故障切换操作类似：

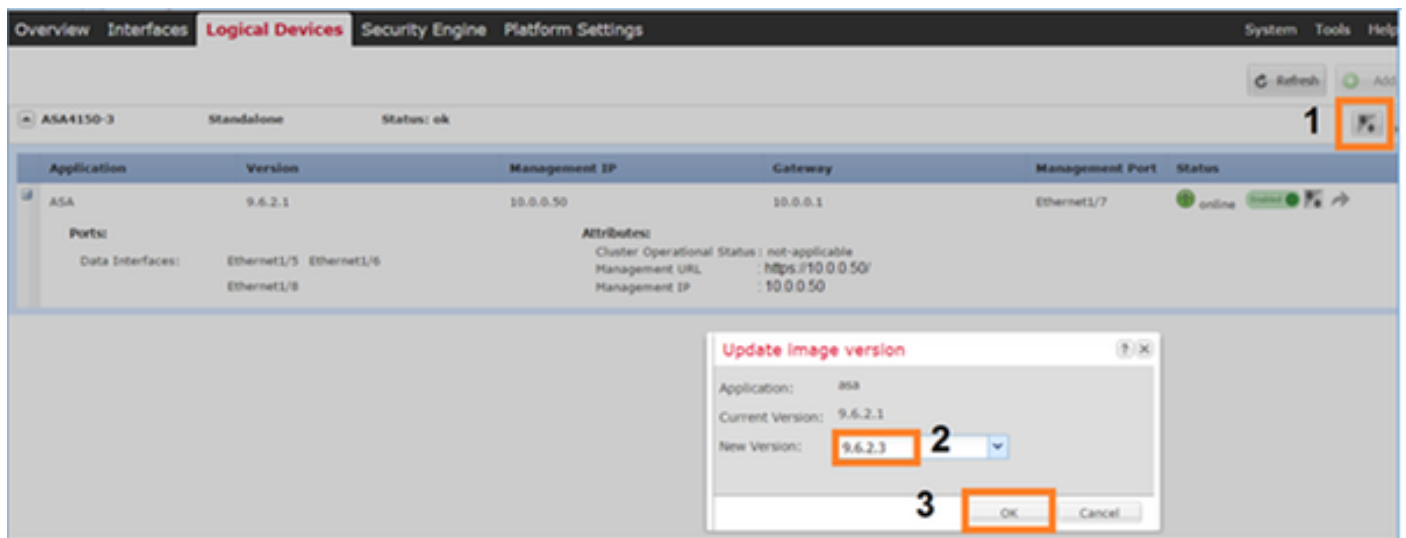
- show conn count
- show xlate计数
- show crypto ipsec sa

## 升级第二个ASA单元

交换故障切换对等体并且升级主要的ASA：

```
asa/sec/stby# failover active Switching to Active asa/sec/act#
```

指定新的镜像并且开始升级：



以后大约5分钟升级完成

## 验证

从机箱CLI请验证ASA应用程序有来的‘联机’：

```
FPR4100# scope ssa FPR4100 /ssa # show app-instance Application Name Slot ID Admin State
Operational State Running Version Startup Version Cluster Oper State -----
-----
----- asa 1
```



Enabled **Online** 9.6.2.3 9.6.2.3 Not Applicable

从ASA模块请验证故障切换操作：

```
asa/pri/stby# show failover Failover On Failover unit Primary Failover LAN Interface: fover
Ethernet1/8 (up) Reconnect timeout 0:00:00 Unit Poll frequency 1 seconds, holdtime 15 seconds
Interface Poll frequency 5 seconds, holdtime 25 seconds Interface Policy 1 Monitored Interfaces
2 of 1041 maximum MAC Address Move Notification Interval not set Version: Ours 9.6(2)3, Mate
9.6(2)3 Serial Number: Ours FLM2006EN9U, Mate FLM2006EQFW Last Failover at: 14:35:37 UTC Dec 7
2016 This host: Primary - Standby Ready Active time: 0 (sec) slot 0: UCSB-B200-M3-U hw/sw rev
(0.0/9.6(2)3) status (Up Sys) Interface INSIDE (192.168.0.2): Normal (Not-Monitored) Interface
OUTSIDE (192.168.1.2): Normal (Waiting) Interface management (0.0.0.0): Normal (Waiting) Other
host: Secondary - Active Active time: 656 (sec) slot 0: UCSB-B200-M3-U hw/sw rev (0.0/9.6(2)3)
status (Up Sys) Interface INSIDE (192.168.0.1): Failed (Not-Monitored) Interface OUTSIDE
(192.168.1.1): Normal (Waiting) Interface management (10.0.0.50): Normal (Waiting) Stateful
Failover Logical Update Statistics Link : fover Ethernet1/8 (up) Stateful Obj xmit xerr rcv rerr
General 7 0 8 0
...
```

这时和在验证适当的HA收敛以后您能交换上一步故障切换有主要的/激活，第二/待机：

```
asa/pri/stby# failover active Switching to Active asa/pri/act#
```

## 相关文档

[FXO配置指南](#)

[FXOS-ASA兼容性指南](#)

[FXO版本注释](#)