Aggiornamento di una coppia ASA HA su appliance Firepower

Sommario

Introduzione

In questo documento viene descritta la procedura di aggiornamento di una coppia di appliance ASA (Adaptive Security Appliance) ad alta disponibilità installate su appliance hardware firepower.

Prerequisiti

Requisiti

Cisco raccomanda la conoscenza dei seguenti argomenti:

- Gestione ASA
- Failover ASA

Componenti usati

Le informazioni fornite in questo documento si basano sulle seguenti versioni software e hardware:

- 2 FP4150 con codice operativo 2.0.1-86
- ASA 9.6.2.1 (aggiornato alla versione 9.6.2.3)

Le informazioni discusse in questo documento fanno riferimento a dispositivi usati in uno specifico ambiente di emulazione. Su tutti i dispositivi menzionati nel documento la configurazione è stata ripristinata ai valori predefiniti. Se la rete è operativa, valutare attentamente eventuali

conseguenze derivanti dall'uso dei comandi.

Premesse

La procedura di aggiornamento di un modulo ASA installato su appliance Firepower (FPR4100, FPR9300 e così via) quando è configurato HA (Active/Standby o Active/Active) è descritta nella Guida alla configurazione di Firepower eXtensible Operating System (FXOS). La parte pertinente è la seguente:

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.

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.

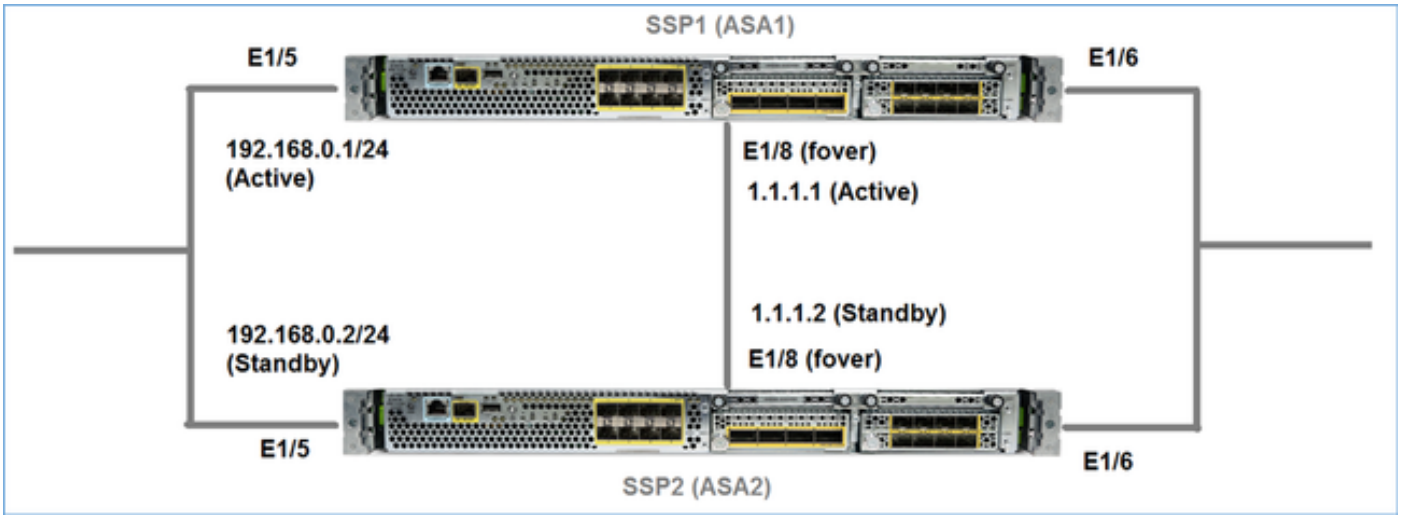
Step 4 Click **OK**.

L'obiettivo di questo documento è fornire una panoramica più dettagliata del processo di aggiornamento in un ambiente HA.

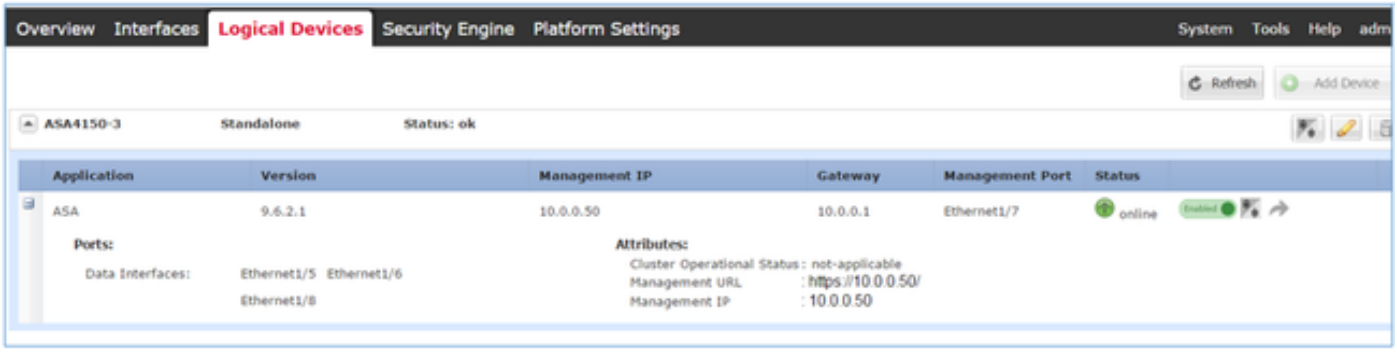
> **Nota:** Il documento presume che la versione ASA di destinazione sia compatibile con la versione FXOS esistente, quindi in questo scenario non è necessario aggiornare il bundle FXOS. Controllare sempre la matrice di compatibilità FXOS per verificare se la versione ASA di destinazione è compatibile con l'immagine FXOS. In caso contrario, aggiornare prima le immagini FXOS come descritto nelle note sulla versione di FXOS.

Configurazione

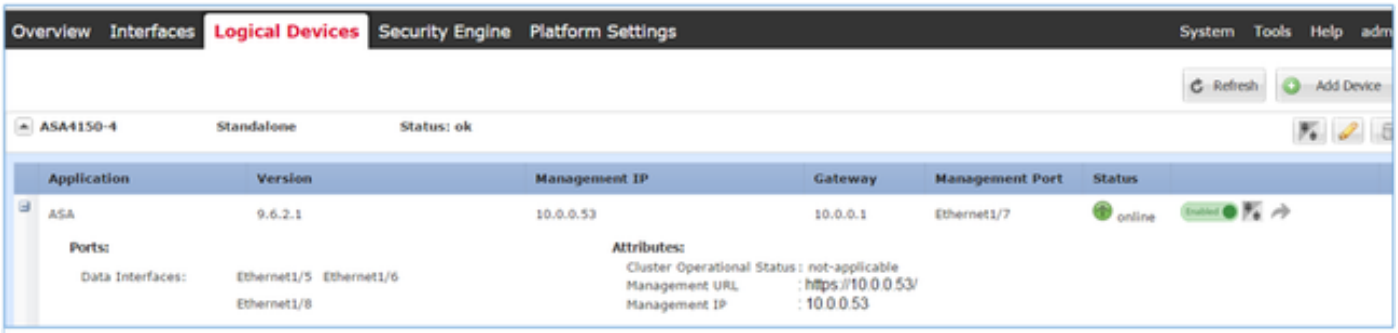
Esempio di rete



ASA1 come appare nell'interfaccia utente di Firepower Chassis Manager (FCM):

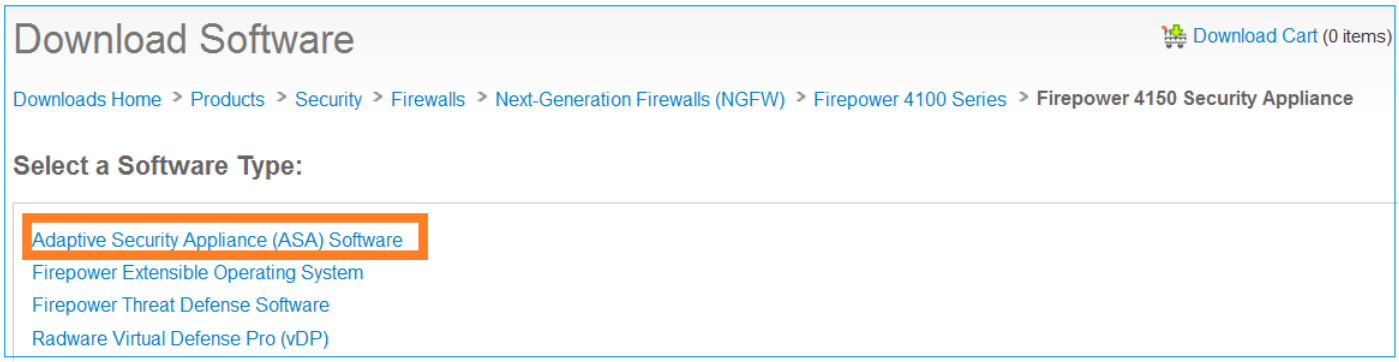


ASA2:



Attività 1. Download delle immagini ASA dalle pagine di download del software Cisco

Selezionare **Downloads Home > Products > Security > Firewall > Next-Generation Firewall (NGFW)** e selezionare la piattaforma hardware (ad esempio 4100, 9000 e così via) come mostrato nell'immagine.

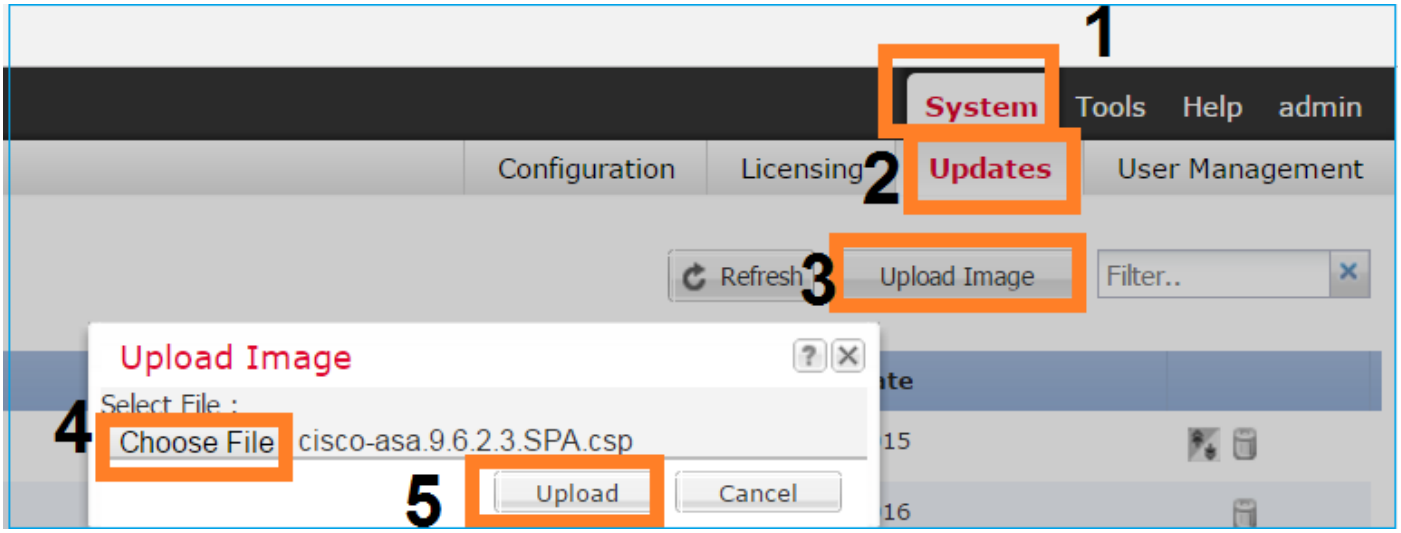


Attività 2. Caricare le immagini ASA in Firepower Chassis Manager

Caricare le immagini ASA sullo chassis Firepower. A tale scopo, è possibile usare l'interfaccia utente di Firepower Chassis Manager (FCM) o l'interfaccia della riga di comando (CLI) di FXOS.

Metodo 1. Caricare le immagini ASA dall'interfaccia utente di FCM.

Selezionare **Sistema > Aggiornamenti. Selezionare Upload Image**, specificare il nome del file e selezionare **Upload:**



Metodo 2. Caricare le immagini ASA dalla CLI di FXOS.

Èpossibile caricare l'immagine da un server FTP, SCP, SFTP o TFTP. Per verificare la connettività tra l'interfaccia di gestione dello chassis e il server remoto, attenersi alla seguente procedura:

```
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
```

Per trasferire l'immagine ASA, accedere a questo ambito ed eseguire il comando **download image**:

```
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:
```

Per monitorare lo stato del trasferimento dell'immagine, eseguire il comando **show download-task detail**:

```
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)
```

Èinoltre possibile utilizzare questo comando per verificare la riuscita del trasferimento:

```
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
```

Per ulteriori dettagli:

```
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
```

L'immagine ASA viene visualizzata nel repository dello chassis:

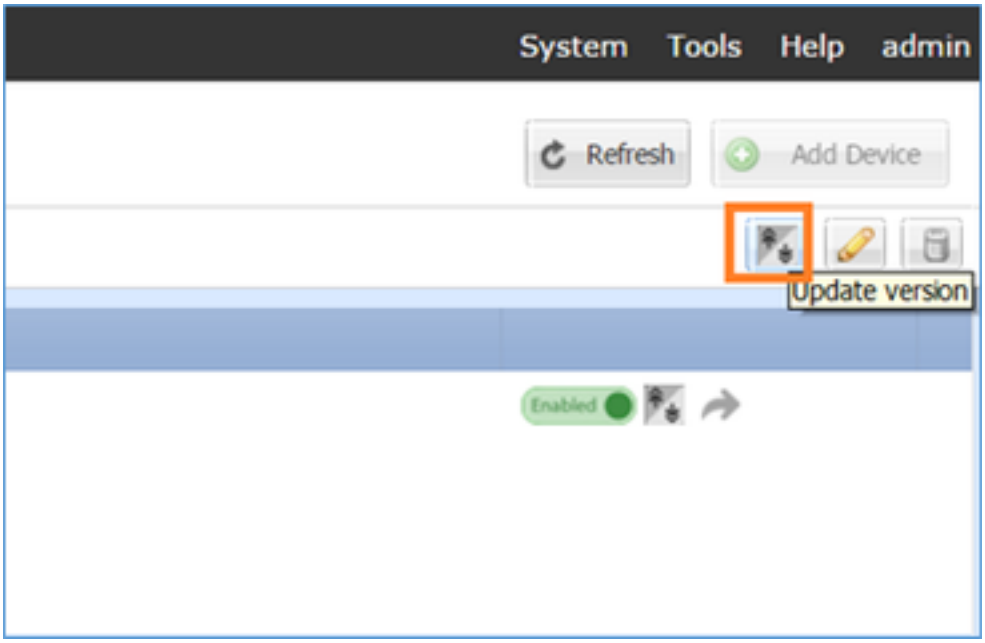
```
FPR4100 /ssa/app-software # exit
FPR4100 /ssa # show app

Application:
    Name       Version    Description Author     Deploy Type CSP Type    Is Default App
    ---------- ---------- ----------- ---------- ----------- ----------- --------------
```

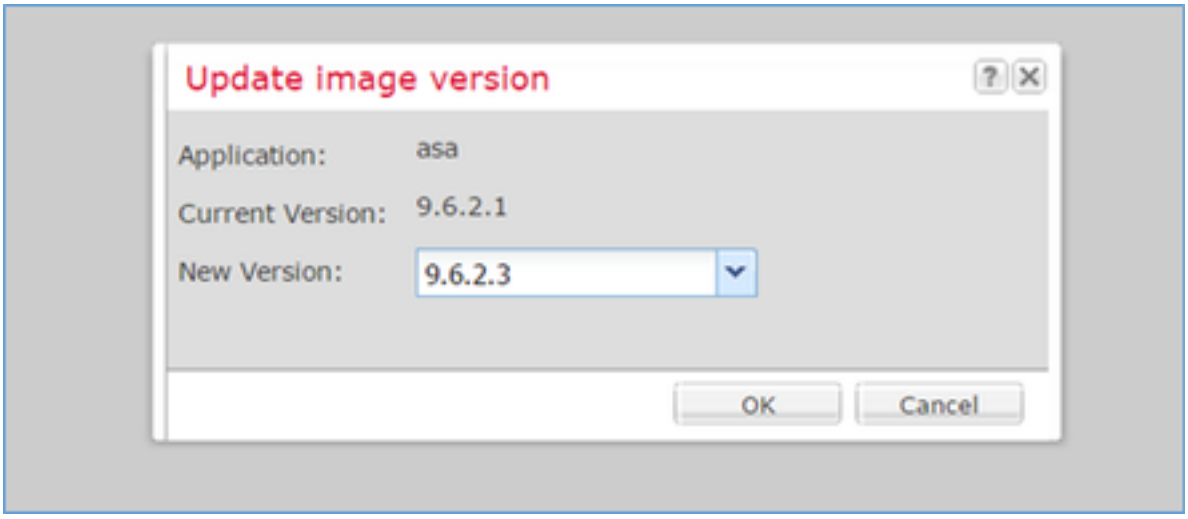
```
asa          9.6.2.1     N/A          cisco       Native       Application No
asa          9.6.2.3     N/A          cisco       Native       Application No
```

Attività 3. Aggiornamento della prima unità ASA

Aggiornare prima l'unità ASA in standby, come mostrato nell'immagine:

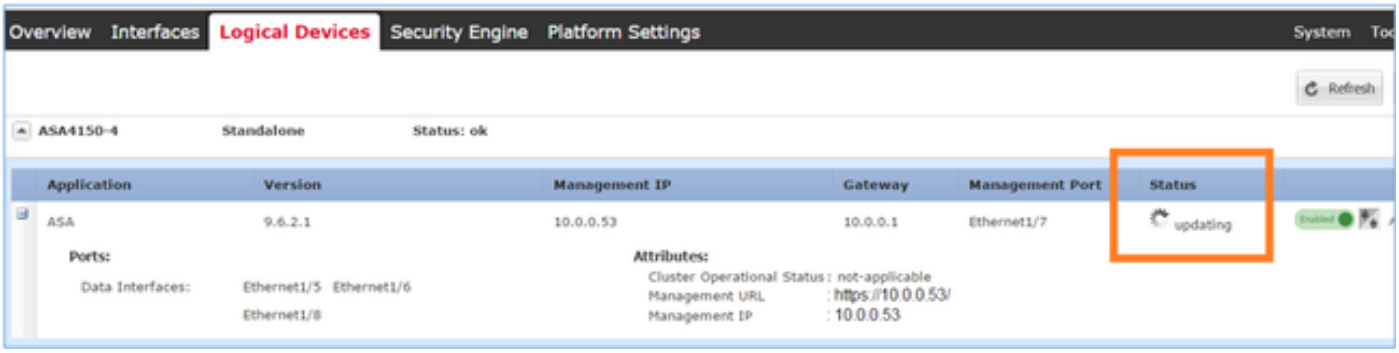


Specificare la nuova immagine e selezionare **OK** per avviare l'aggiornamento:

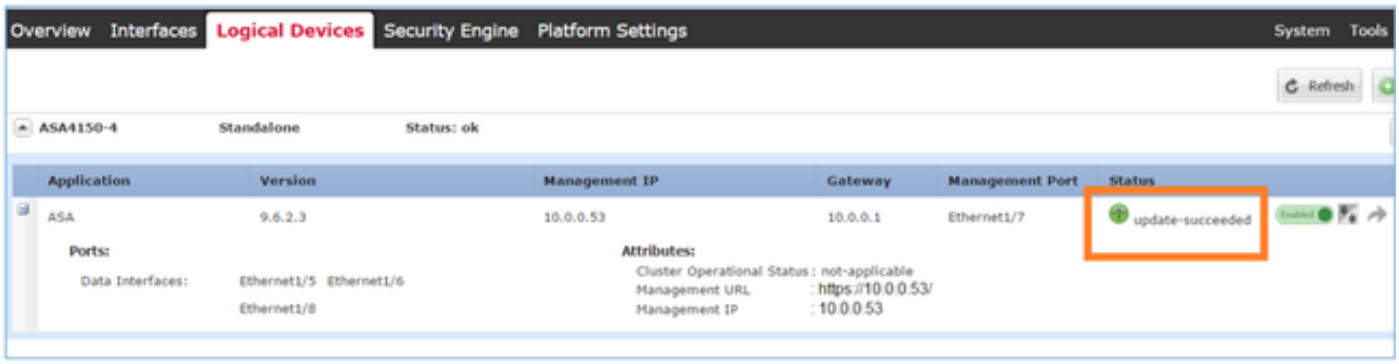


Verifica

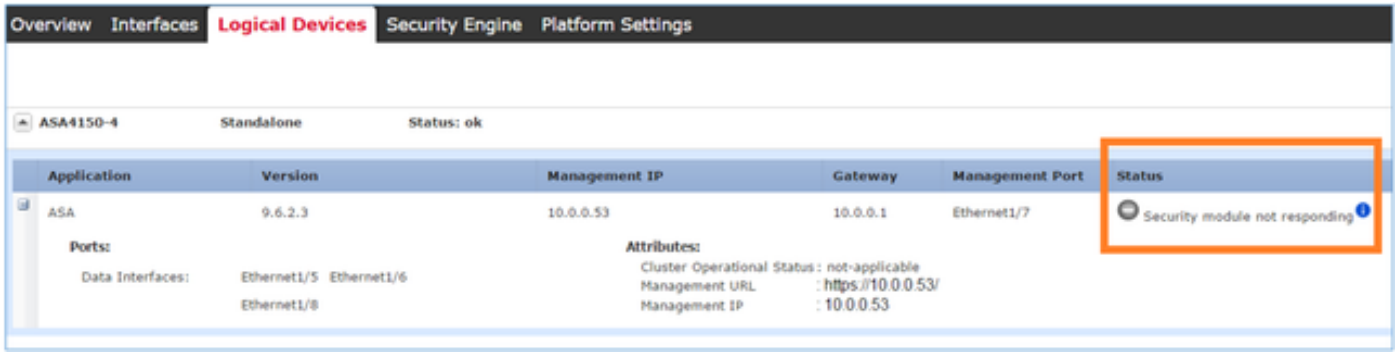
Stato dell'aggiornamento dell'ASA dalla GUI di FCM:



Dopo 1-2 minuti l'interfaccia utente di FCM visualizza:



Il modulo ASA viene ricaricato:



Processo di aggiornamento dell'ASA dalla CLI dello chassis Firepower.

La CLI mostra che il dispositivo logico (ASA) viene riavviato. L'intero processo di aggiornamento dalla CLI di avvio del modulo in questo output:

```
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 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 cisconrsvsz=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 cisconrsvsz=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 cisconrsvsz=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 cisconrsvsz=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 cisconrsvsz=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>
```

L'intera procedura richiede circa 5 minuti.

Èpossibile anche usare il comando **show app-instance** dalla CLI dello chassis per verificare che l'applicazione ASA sia **online**:

```
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 Applicabl
```

I moduli ASA si scoprono a vicenda:

```
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>
```

Verifica

```
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)
...
```

Per verificare che il failover sia corretto tra le unità ASA, eseguire questi comandi:

- mostra conteggio conn
- mostra conteggio xlate
- show crypto ipsec sa

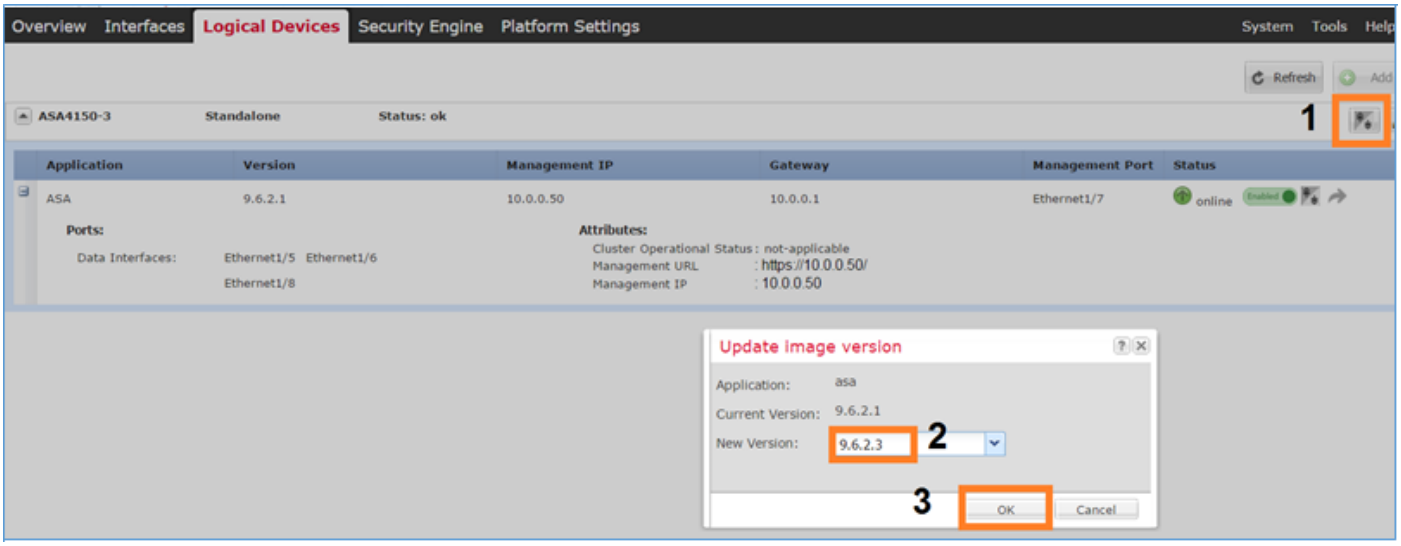
Attività 4. Aggiornamento della seconda unità ASA

Cambiare i peer di failover e aggiornare l'appliance ASA primaria:

```
asa/sec/stby# failover active
```

```
        Switching to Active
asa/sec/act#
```

Specificare la nuova immagine e avviare l'aggiornamento:



Dopo 5 minuti, l'aggiornamento termina.

Verifica

Dalla CLI dello chassis, verificare che l'applicazione ASA sia **online**:

```
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
```

Dal modulo ASA verificare l'operazione di failover:

```
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
...
```

Ripristinare il failover per avere Primary/Active, Secondary/Standby:

```
asa/pri/stby# failover active

        Switching to Active
asa/pri/act#
```

Risoluzione dei problemi

Al momento non sono disponibili informazioni specifiche per la risoluzione dei problemi di questa configurazione.

Informazioni correlate

- Guida alla configurazione di FXOS
- Guida alla compatibilità FXOS-ASA
- Note sulla release di FXOS
- Documentazione e supporto tecnico – Cisco Systems