Rispondere alle domande frequenti su Firepower eXtensible Operating System (FXOS)

Sommario

Introduzione

Questo documento descrive le domande frequenti relative alle piattaforme FXOS.

Premesse

Firepower eXtensible Operating System (FXOS) è il sistema operativo sottostante su piattaforme Firepower o Secure Firewall. A seconda delle piattaforme, FXOS viene usato per configurare le funzionalità, monitorare lo stato dello chassis e accedere alle funzionalità avanzate di risoluzione dei problemi.

FXOS su Firepower 4100/9300 e Firepower 2100 con il software Adaptive Secure Appliance in modalità piattaforma consentono modifiche alla configurazione, mentre in altre piattaforme, ad eccezione di funzioni specifiche, è di sola lettura.

D. Come generare Show Tech dal sistema FXOS?

A partire dalla versione 2.8.x, il modulo è deprecato. Pertanto FXOS 2.8.x supporta solo i tecnici

show per chassis e blade.

<#root>

```
KSEC-FPR4115-2-1(local-mgmt)#

show tech-support fprm detail

WARNING: show tech-support fprm detail command is deprecated.
Please use show tech-support chassis 1 detail command instead.
```

- chassis: contiene i file di registro per chassis, blade, adattatore, BMC (Baseboard Management Controller) e CIMC (Cisco Integrated Management Controller)
- modulo: contiene i file di log per il blade/modulo in cui risiede l'appliance ASA (Adaptive Security Appliance) o l'FTD (Firepower Threat Defense) del dispositivo logico. Sono inclusi i log per componenti quali appAgent)

Nelle versioni precedenti alla 2.8.x, FXOS offre tre diverse uscite per show tech. Il bundle FPRM contiene i file di log per i moduli di input/output di gestione (MIO), il Supervisor Engine, e Service Manager.

In genere, vengono generati tutti e tre i pacchetti. Utilizzare il dettaglio show tech-support <option> per generare i tre diversi pacchetti di log per l'analisi TAC:

<#root>

```
FPR4140-A# connect local-mgmt
FPR4140-A(local-mgmt)#

show tech-support fprm detail

FPR4140-A(local-mgmt)#

show tech-support chassis 1 detail

FPR4140-A(local-mgmt)#

show tech-support module 1 detail
```

- Se non si specifica l'opzione detail, l'output viene visualizzato sullo schermo
- L'opzione Corpo (Detail) consente di creare un file tar

Per controllare i nomi file generati:

<#root>

```
FPR4140-A(local-mgmt)#

dir techsupport/
```

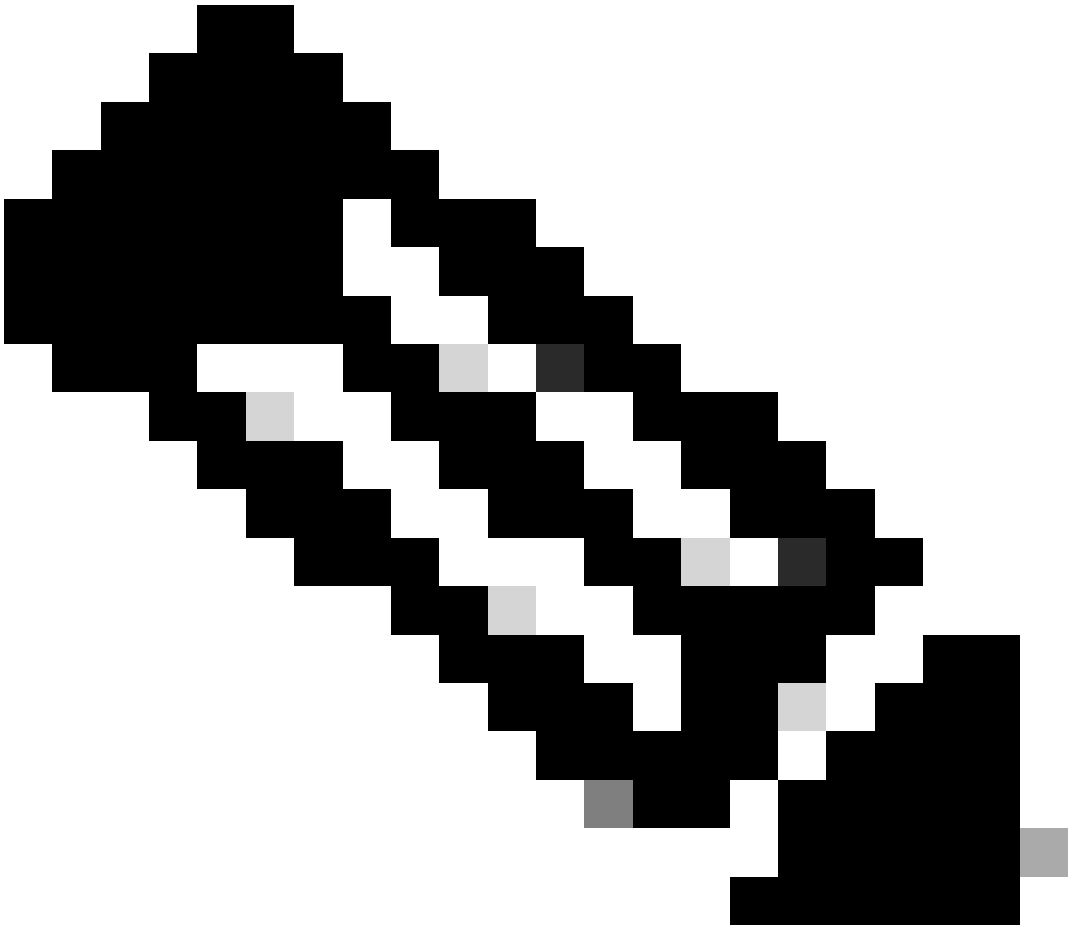
```
1 15595520 Apr 09 17:29:10 2017 20170409172722_FPR4140_FPRM.tar
1   962560 Apr 09 17:32:20 2017 20170409172916_FPR4140_BC1_all.tar
1  7014400 Apr 09 18:06:25 2017 Firepower-Module1_04_09_2017_18_05_59.tar
```

Per esportare un bundle dalla CLI:

<#root>

```
FPR4140-A(local-mgmt)#
```

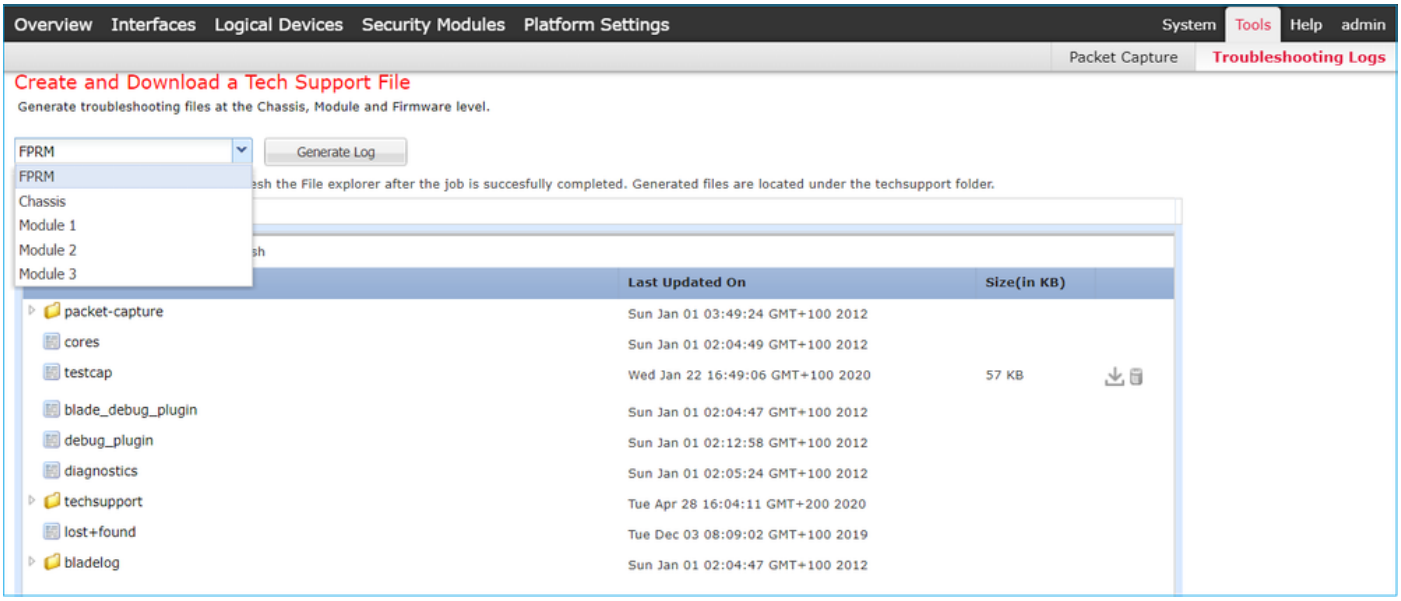
copy workspace:///techsupport/20170409172722_FPR4140_FPRM.tar ftp|tftp|scp|sftp://username@192.168.0.1/



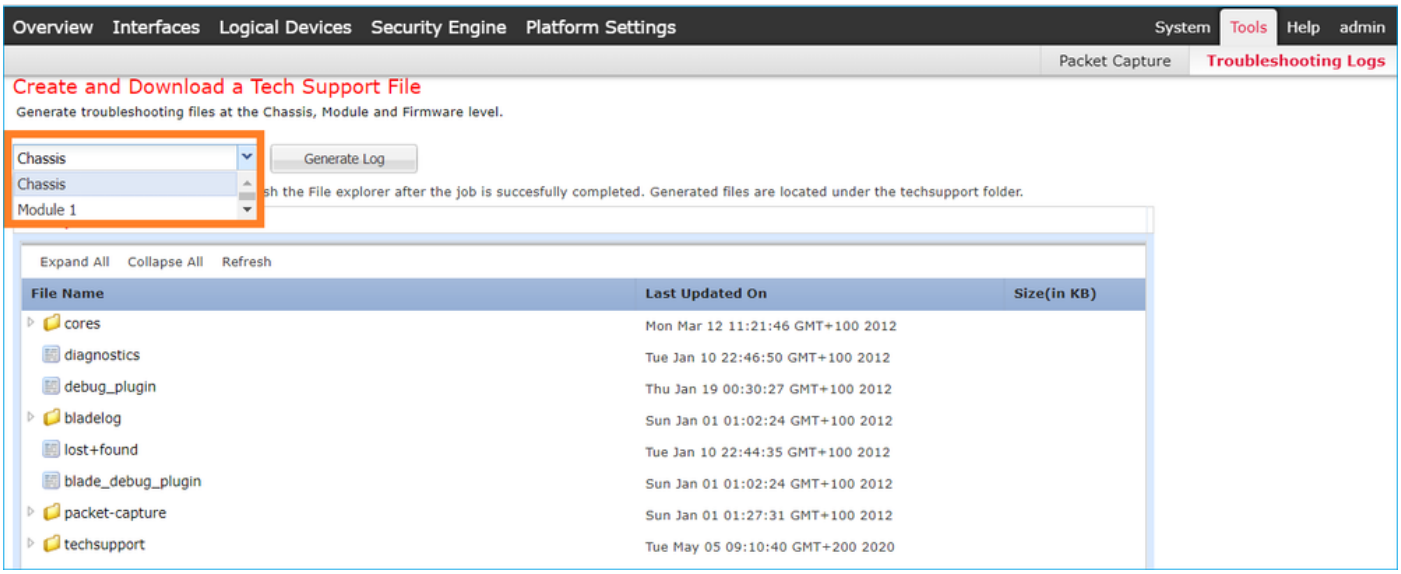
Nota: oltre a mostrare gli output tecnici del sistema FXOS, i dispositivi logici come ASA e/o FTD hanno le loro capacità tecniche di visualizzazione separate. Nel caso di Multi-Instance (MI), ogni istanza dispone anche di un proprio bundle show-tech separato. Infine, gli show-tech MI non sono supportati in FCM

A partire da FXOS 2.6, la generazione e il download del supporto tecnico FXOS sono resi disponibili dall'interfaccia utente di Firepower Chassis Manager (FCM) in Strumenti > Log per la risoluzione dei problemi

FP9300:



Su FP41xx:



D. Come verificare e modificare l'indirizzo IP di gestione dello chassis, la maschera di rete e il gateway?

È possibile verificare la configurazione dell'interfaccia di gestione in diversi modi:

<#root>

```
FPR4115-2-1#
```

show fabric-interconnect

```
Fabric Interconnect:
    ID   OOB IP Addr     OOB Gateway     OOB Netmask     OOB IPv6 Address OOB IPv6 Gateway Prefix Operal
    ---- --------------- --------------- --------------- ---------------- ---------------- ------ -----
    A    10.62.184.19    10.62.184.1     255.255.255.0   ::               ::               64     Operal
```

o

<#root>

```
FPR4115-2-1#
```

scope fabric-interconnect a

```
FPR4115-2-1 /fabric-interconnect #
```

show

```
Fabric Interconnect:
    ID   OOB IP Addr     OOB Gateway     OOB Netmask     OOB IPv6 Address OOB IPv6 Gateway Prefix Operal
    ---- --------------- --------------- --------------- ---------------- ---------------- ------ -----
    A    10.62.184.19    10.62.184.1     255.255.255.0   ::               ::               64     Operal
FPR4115-2-1 /fabric-interconnect #
```

show detail

```
Fabric Interconnect:
    ID: A
    Product Name: Cisco FPR-4115-SUP
    PID: FPR-4115-SUP
    VID: V01
    Vendor: Cisco Systems, Inc.
    Serial (SN): JAD12345NY6
    HW Revision: 0
    Total Memory (MB): 8074
    OOB IP Addr: 10.62.184.19
    OOB Gateway: 10.62.184.1
    OOB Netmask: 255.255.255.0
    OOB IPv6 Address: ::
    OOB IPv6 Gateway: ::
    Prefix: 64
    Operability: Operable
    Thermal Status: Ok
    Ingress VLAN Group Entry Count (Current/Max): 0/500
    Switch Forwarding Path Entry Count (Current/Max): 14/1021
    Current Task 1:
    Current Task 2:
    Current Task 3:
```

Per modificare le impostazioni IP:

<#root>

```
FPR4115-2-1#

scope fabric-interconnect a

FPR4115-2-1 /fabric-interconnect #

set out-of-band

  gw       Gw
  ip       Ip
  netmask  Netmask
KSEC-FPR4115-2-1 /fabric-interconnect #

set out-of-band ip 10.62.184.19 netmask 255.255.255.0 gw 10.62.184.1

KSEC-FPR4115-2-1 /fabric-interconnect* #

commit-buffer
```

Informazioni sul commit:

```
FPR4115-2-1 /fabric-interconnect # commit-buffer verify-only    ! verify the change for error
FPR4115-2-1 /fabric-interconnect # commit-buffer                ! commit the change
FPR4115-2-1 /fabric-interconnect # discard-buffer               ! cancel the change
```

Per maggiori dettagli, consultare:

Guida di riferimento ai comandi di Cisco Firepower 4100/9300 FXOS

D. Come eseguire un test ping FXOS?

Passare all'ambito della CLI local-mgmt e usare il comando ping:

<#root>

```
FPR4115-2-1#

connect local-mgmt

FPR4115-2-1(local-mgmt)#

ping 10.62.184.1

PING 10.62.184.1 (10.62.184.1) from 10.62.184.19 eth0: 56(84) bytes of data.
64 bytes from 10.62.184.1: icmp_seq=1 ttl=255 time=0.602 ms
64 bytes from 10.62.184.1: icmp_seq=2 ttl=255 time=0.591 ms
64 bytes from 10.62.184.1: icmp_seq=3 ttl=255 time=0.545 ms
64 bytes from 10.62.184.1: icmp_seq=4 ttl=255 time=0.552 ms
```

D. Come verificare l'indirizzo Mac dell'interfaccia di gestione fuori banda?

Passare all'ambito CLI local-mgmt e utilizzare questo comando:

<#root>

```
FPR4115-2-1#

connect local-mgmt

FPR4115-2-1(local-mgmt)#

show mgmt-ip-debug | begin eth0

eth0      Link encap:Ethernet  HWaddr 78:bc:1a:e7:a4:11
          inet addr:10.62.184.19  Bcast:10.62.184.255  Mask:255.255.255.0
          inet6 addr: fe80::7abc:1aff:fee7:a411/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:3420589 errors:0 dropped:0 overruns:0 frame:0
          TX packets:2551231 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:419362704 (399.9 MiB)  TX bytes:1530147643 (1.4 GiB)
```

D. Come verificare se l'interfaccia di gestione fuori banda è attiva?

Oltre a Operabile in ambito fabric-interconnect a **>** show, è possibile utilizzare questo comando:

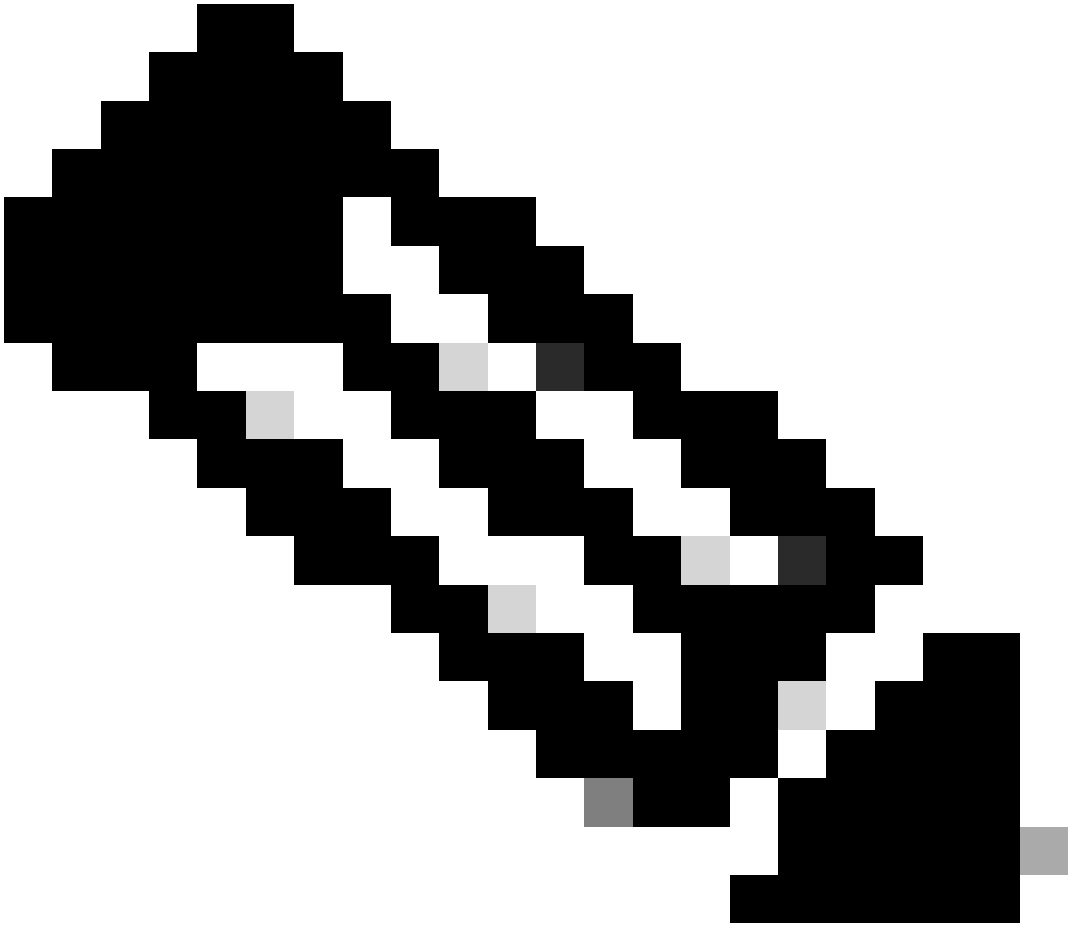
<#root>

```
FPR4115-2-1#

connect local-mgmt

FPR4115-2-1(local-mgmt)#

show mgmt-port

eth0      Link encap:Ethernet  HWaddr 78:bc:1a:e7:a4:11
          inet addr:10.62.184.19  Bcast:10.62.184.255  Mask:255.255.255.0
          inet6 addr: fe80::7abc:1aff:fee7:a411/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:3422158 errors:0 dropped:0 overruns:0 frame:0
          TX packets:2552019 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:419611452 (400.1 MiB)  TX bytes:1530247862 (1.4 GiB)
```

In alternativa, è possibile utilizzare questo comando. La parte Scope mostra Link UP (Collega UP). Si noti che la freccia SU è visualizzata nella riga successiva:

<#root>

```
FPR4115-2-1#

connect local-mgmt

FPR4115-2-1(local-mgmt)#

show mgmt-ip-debug | begin eth0

eth0      Link encap:Ethernet  HWaddr 78:bc:1a:e7:a4:11
          inet addr:10.62.184.19  Bcast:10.62.184.255  Mask:255.255.255.0
          inet6 addr: fe80::7abc:1aff:fee7:a411/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:3420589 errors:0 dropped:0 overruns:0 frame:0
          TX packets:2551231 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:419362704 (399.9 MiB)  TX bytes:1530147643 (1.4 GiB)
```



Nota: lo stato UP è lo stato admin dell'interfaccia. Lo stato rimane ATTIVO anche se si scollega il cavo fisico o il modulo SFP. Un altro punto importante è lo stato RUNNING, che indica che il collegamento è operativo (il protocollo di linea è attivo).

Per ridurre lo stato logico dell'interfaccia:

<#root>

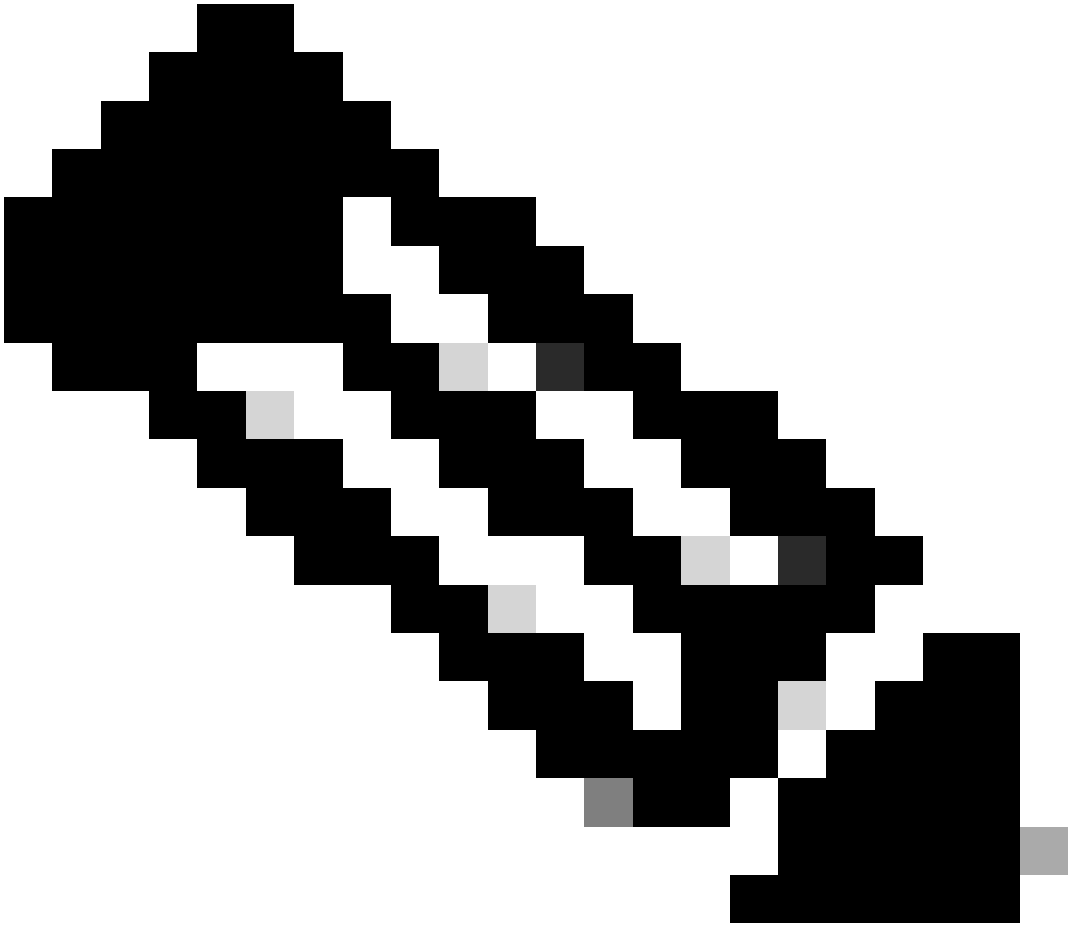
```
FPR4100-3-A(local-mgmt)#

mgmt-port shut

FPR4100-3-A(local-mgmt)#

show mgmt-ip-debug ifconfig | b eth0

eth0      Link encap:Ethernet  HWaddr 58:97:BD:B9:76:EB
          inet addr:10.62.148.88  Bcast:10.62.148.127  Mask:255.255.255.128
          BROADCAST MULTICAST  MTU:1500  Metric:1
          RX packets:3685870 errors:0 dropped:0 overruns:0 frame:0
          TX packets:7068372 errors:0 dropped:0 overruns:0 carrier:0
```

```
          collisions:0 txqueuelen:1000
          RX bytes:295216623 (281.5 MiB)  TX bytes:1049391193 (1000.7 MiB)
```

Per rilanciarlo:

<#root>

```
FPR4100-3-A(local-mgmt)#

mgmt-port no-shut

FPR4100-3-A(local-mgmt)#

show mgmt-ip-debug ifconfig | b eth0

eth0      Link encap:Ethernet  HWaddr 58:97:BD:B9:76:EB
          inet addr:10.62.148.88  Bcast:10.62.148.127  Mask:255.255.255.128
          inet6 addr: fe80::5a97:bdff:feb9:76eb/64 Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:3685885 errors:0 dropped:0 overruns:0 frame:0
          TX packets:7068374 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:295218130 (281.5 MiB)  TX bytes:1049391353 (1000.7 MiB)
```



Nota: in modalità fxos sono disponibili le funzioni show interface brief e show interface mgmt 0, che consentono di visualizzare l'interfaccia mgmt0 rispettivamente come inattiva e come amministratore inattivo. Non utilizzare questa opzione come riferimento per indicare che è inattiva.

<#root>

```
FPR-4110-A#
connect fxos
FPR-4110-A(fxos)#
show interface brief | include mgmt0
mgmt0  --           down   172.16.171.83                          --       1500
FPR-4110-A(fxos)#
show interface mgmt 0
mgmt0 is down (Administratively down)
```

```
  Hardware: GigabitEthernet, address: 5897.bdb9.212d (bia 5897.bdb9.212d)
  Internet Address is 172.16.171.83/24
  MTU 1500 bytes, BW 1000000 Kbit, DLY 10 usec
  reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA
  auto-duplex, auto-speed
  EtherType is 0x0000
  1 minute input rate 3080 bits/sec 2 packets/sec
  1 minute output rate 0 bits/sec 0 packets/sec
  Rx
    977 unicast packets 12571 multicast packets 5229 broadcast packets
    18777 input packets 2333662 bytes
  Tx
    0 unicast packets 0 multicast packets 0 broadcast packets
    0 output packets 0 bytes
```

Se si esegue un comando show run interface mgmt0 in modalità fxos, la forza di arresto si trova in tale interfaccia. Anche in questo caso, non utilizzare questa opzione come riferimento che indichi che è inattiva:

<#root>

```
FPR4115-2-1(fxos)#

show run interface mgmt0


!Command:

show running-config interface mgmt0

!Time: Tue May  5 14:19:42 2020

version 5.0(3)N2(4.81)

interface mgmt0
  shutdown force
  ip address 10.62.184.19/24
```

D. Come controllare la tabella di routing FXOS?

La gestione fuori banda dipende solo dal set di gateway predefinito. Pertanto, assicurarsi che il gateway predefinito scelto consenta la connessione ai client che richiedono l'accesso al sistema. In connect fax è disponibile il comando show ip route vrf all, ma non viene utilizzato per la gestione fuori banda.

D. Come controllare la tabella FXOS ARP?

La tabella ARP non è visibile dalla CLI di FXOS. È inoltre possibile utilizzare l'acquisizione dei pacchetti in modalità fax (etanalyzer) per acquisire ARP e/o controllare il traffico da/verso la gestione.

Questo è un esempio di acquisizione di pacchetti ARP. È possibile modificare il filtro di acquisizione in qualsiasi elemento. Questo filtro è simile al filtro tcpdump:

```
<#root>

fp9300-A#

connect fxos



fp9300-A(fxos)#

ethanalyzer local interface mgmt capture-filter arp


Capturing on eth0
2016-10-14 18:04:57.551221 00:50:56:85:be:44 -> ff:ff:ff:ff:ff:ff ARP Who has 172.16.171.240? Tell 172.
2016-10-14 18:04:57.935562 00:12:80:85:a5:49 -> ff:ff:ff:ff:ff:ff ARP Who has 172.16.171.112? Tell 172.
2016-10-14 18:04:58.167029 00:50:56:85:78:4e -> ff:ff:ff:ff:ff:ff ARP Who has 172.16.171.205? Tell 172.
2016-10-14 18:04:59.156000 00:50:56:9f:b1:43 -> ff:ff:ff:ff:ff:ff ARP Who has 172.16.171.1? Tell 172.16
2016-10-14 18:04:59.165701 00:50:56:9f:b1:43 -> ff:ff:ff:ff:ff:ff ARP Who has 172.16.171.1? Tell 172.16
2016-10-14 18:04:59.166925 00:50:56:85:78:4e -> ff:ff:ff:ff:ff:ff ARP Who has 172.16.171.205? Tell 172.
2016-10-14 18:04:59.268168 00:50:56:9f:b1:43 -> ff:ff:ff:ff:ff:ff ARP Who has 172.16.171.151? Tell 0.0.
2016-10-14 18:05:00.150217 00:50:56:85:78:4e -> ff:ff:ff:ff:ff:ff ARP Who has 172.16.171.204? Tell 172.
2016-10-14 18:05:00.268369 00:50:56:9f:b1:43 -> ff:ff:ff:ff:ff:ff ARP Who has 172.16.171.151? Tell 0.0.
2016-10-14 18:05:01.150243 00:50:56:85:78:4e -> ff:ff:ff:ff:ff:ff ARP Who has 172.16.171.204? Tell 172.
10 packets captured
Program exited with status 0.
fp9300-A(fxos)#
```

È inoltre possibile salvare l'acquisizione in un file e quindi esportarla in un server remoto:

```
<#root>

FPR4140-A#

connect fxos

FPR4140-A(fxos)#

ethanalyzer local interface mgmt capture-filter arp limit-captured-frames 0 write workspace:///ARP.pcap

FPR4140-A#

connect local-mgmt

FPR4140-A(local-mgmt)#

dir

1 23075 Jan 12 13:13:18 2020 ARP.pcap
FPR4140-A(local-mgmt)#
```

```
copy  workspace:///ARP.pcap ftp://anonymous@10.48.40.70/ARP.pcap
```

D. Come controllare gli eventi di errore FXOS?

Utilizzare il comando show fault:

<#root>

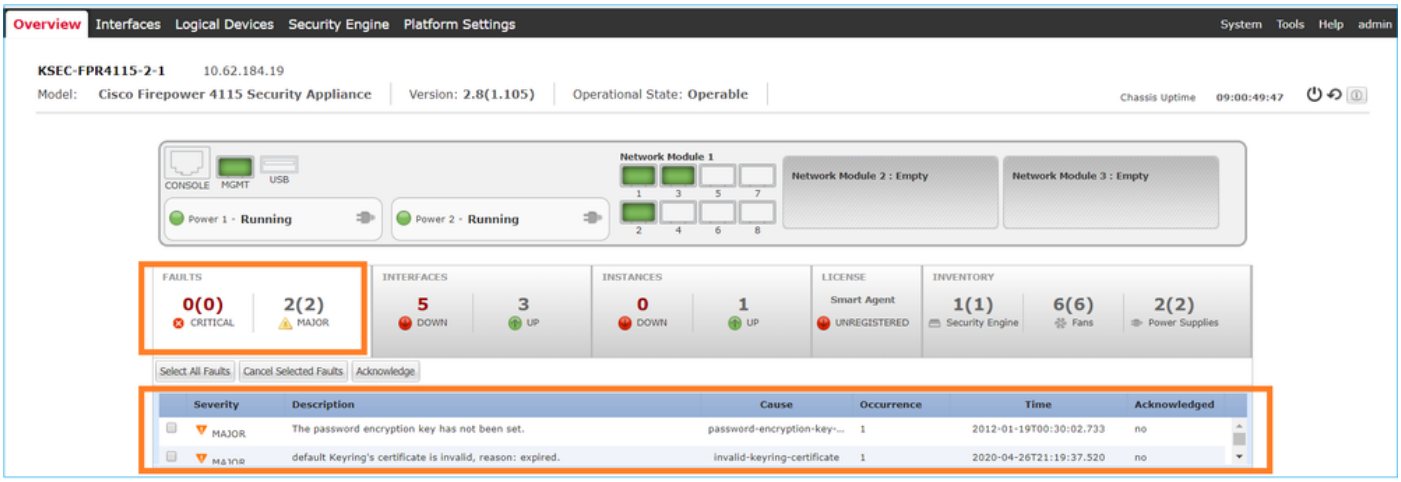
```
FPR4115-2-1#

show fault

Severity  Code     Last Transition Time     ID       Description
--------- -------- ----------------------- -------- -----------
Major     F0909    2020-04-26T21:19:37.520    554924 default Keyring's certificate is invalid, reason:
Major     F1769    2012-01-19T00:30:02.733    323268 The password encryption key has not been set.
Minor     F1437    2012-01-19T00:30:02.732     32358 Config backup may be outdated
```

È inoltre possibile filtrare gli errori in base alla gravità:

<#root>

```
FPR4115-2-1#

show fault ?

  0-18446744073709551615  ID
  <CR>
  >                       Redirect it to a file
  >>                      Redirect it to a file in append mode
  cause                   Cause
  detail                  Detail
  severity                Severity
  suppressed              Fault Suppressed
  |                       Pipe command output to filter


FPR4115-2-1#

show fault severity major

Severity  Code     Last Transition Time     ID       Description
--------- -------- ----------------------- -------- -----------
Major     F0909    2020-04-26T21:19:37.520    554924 default Keyring's certificate is invalid, reason:
Major     F1769    2012-01-19T00:30:02.733    323268 The password encryption key has not been set.
```

Gli stessi errori sono visibili anche dal pannello di controllo FXOS UI Overview > FAULTS:



D. Come modificare il nome host del sistema?

Il comando set name viene utilizzato nell'ambito del sistema:

<#root>

```
KSEC-FPR4115-2-1#
scope system
KSEC-FPR4115-2-1 /system #
set name new-name
Warning: System name modification changes FC zone name and redeploys them non-disruptively
KSEC-FPR4115-2-1 /system* #
commit-buffer
KSEC-FPR4115-2-1 /system #
exit
new-name#
```

D. Cos'è la "mancata corrispondenza del calcolo" nella visualizzazione dello stato del server Output?

Per utilizzare un modulo di protezione appena installato, è necessario prima riconoscerlo e reinizializzarlo. Ciò è vero anche quando si sostituisce un'unità tramite RMA.

<#root>

```
FPR9300#
show server status
```

```
Server  Slot Status                      Overall Status        Discovery
------- --------------------------------- -------------------- ---------
1/1     Mismatch                          Compute Mismatch      Complete
1/2     Equipped                          Ok                    Complete
1/3     Empty
FPR9300#
```

La mancata corrispondenza del calcolo può causare questo evento di errore:

```
Service profile ssp-sprof-1 configuration failed due to compute-unavailable,insufficient-resources
```

Il comando show service-profile status visualizza Unassociated (Non associato) come se il modulo non fosse presente.

Passaggi da confermare dalla CLI:

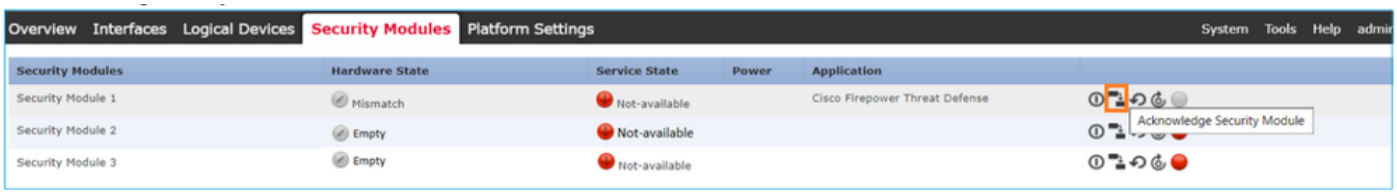
<#root>

scope chassis 1

acknowledge slot <slot#>

commit-buffer

In alternativa, utilizzare l'interfaccia utente di Gestione chassis per riconoscere il modulo:



D. Qual è il significato di "Token Mismatch" in show slot Output?

Ciò indica che il modulo di sicurezza non è stato ancora reinizializzato dopo essere stato riconosciuto:

<#root>

```
FPR9300#
scope ssa
FPR9300 /ssa #
show slot

Slot:
    Slot ID    Log Level Admin State  Operational State
    ---------- --------- ------------ -----------------
    1          Info      Ok           Token Mismatch
    2          Info      Ok           Online
    3          Info      Ok           Not Available
FPR9300 /ssa #
```

Passi da reinizializzare tramite CLI:

<#root>

```
scope ssa
scope slot <#>
reinitialize
commit-buffer
```

Su Firepower 41xx, ciò può anche significare che l'SSD è mancante o è difettosa. Verificare se l'unità SSD esiste ancora tramite il comando show inventory storage in scope server 1/1:

<#root>

```
FPR4140-A#
scope ssa

FPR4140-A /ssa #
show slot 1

Slot:
    Slot ID    Log Level Admin State  Oper State
    ---------- --------- ------------ ----------
    1          Info      Ok           Token Mismatch

FPR4140-A /ssa #
show fault severity critical

Severity  Code     Last Transition Time     ID       Description
--------- -------- ----------------------- -------- -----------
Critical  F1548    2018-03-11T01:22:59.916     38768 Blade swap detected on slot 1
```

```
FPR4140-A /ssa #
```

scope server 1/1

```
FPR4140-A /chassis/server #
```

show inventory storage

```
Server 1/1:
    Name:
    User Label:
    Equipped PID: FPR4K-SM-36
    Equipped VID: V01
    Equipped Serial (SN): FLM12345KL6
    Slot Status: Equipped
    Acknowledged Product Name: Cisco Firepower 4100 Series Extreme Performance Security Engine
    Acknowledged PID: FPR4K-SM-36
    Acknowledged VID: V00
    Acknowledged Serial (SN): FLM12345KL6
    Acknowledged Memory (MB): 262144
    Acknowledged Effective Memory (MB): 262144
    Acknowledged Cores: 36
    Acknowledged Adapters: 2
    Motherboard:
        Product Name: Cisco Firepower 4100 Series Extreme Performance Security Engine
        PID: FPR4K-SM-36
        VID: V01
        Vendor: Cisco Systems Inc
        Serial (SN): FLM12345KL6
        HW Revision: 0

        RAID Controller 1:
            Type: SATA
            Vendor: Cisco Systems Inc
            Model: CHORLEYWOOD
            Serial: FLM12345KL6
            HW Revision:
            PCI Addr: 00:31.2
            Raid Support:
            OOB Interface Supported: No
            Rebuild Rate: N/A
            Controller Status: Unknown

            Local Disk 1:
                Vendor:
                Model:
                Serial:
                HW Rev: 0
                Operability: N/A
                Presence: Missing
                Size (MB): Unknown
                Drive State: Unknown
                Power State: Unknown
                Link Speed: Unknown
                Device Type: Unspecified

            Local Disk Config Definition:
                Mode: No RAID
                Description:
                Protect Configuration: No
```

D. Come impostare Timezone, NTP e DNS tramite CLI?

Questa è configurata in Impostazioni piattaforma FXOS. Applicare le istruzioni di questo documento: FXOS Platform Settings.

Per verificare le impostazioni di tempo dello chassis:

<#root>

```
KSEC-FPR4115-2-1#
```

show clock

```
Tue May  5 21:30:55 CEST 2020
KSEC-FPR4115-2-1#
```

show ntp

```
    NTP Overall Time-Sync Status: Time Synchronized
```

Per verificare il tempo di modulo/blade dalla CLI di avvio del modulo, utilizzare questi 3 comandi:

<#root>

```
Firepower-module1>
```

show ntp peerstatus

```
     remote           local      st poll reach  delay   offset    disp
==============================================================================
*203.0.113.126   203.0.113.1      2   64  377 0.00006  0.000018 0.02789

remote 203.0.113.126, local 203.0.113.1
hmode client, pmode mode#255, stratum 2, precision -20
leap 00, refid [192.0.2.1], rootdistance 0.19519, rootdispersion 0.17641
ppoll 6, hpoll 6, keyid 0, version 4, association 43834
reach 377, unreach 0, flash 0x0000, boffset 0.00006, ttl/mode 0
timer 0s, flags system_peer, config, bclient, prefer, burst
reference time:      dbef8823.8066c43a  Mon, Dec  5 2016  8:30:59.501
originate timestamp: 00000000.00000000  Mon, Jan  1 1900  2:00:00.000
receive timestamp:   dbefb27d.f914589d  Mon, Dec  5 2016 11:31:41.972
transmit timestamp:  dbefb27d.f914589d  Mon, Dec  5 2016 11:31:41.972
filter delay:  0.00008  0.00006  0.00008  0.00009
               0.00008  0.00008  0.00008  0.00009
filter offset: 0.000028 0.000018 0.000034 0.000036
               0.000033 0.000036 0.000034 0.000041
filter order:  1        2        6        0
               4        5        3        7
offset 0.000018, delay 0.00006, error bound 0.02789, filter error 0.00412
```

```
Firepower-module1>
```

show ntp association

```
     remote           refid      st t when poll reach   delay   offset  jitter
==============================================================================
*203.0.113.126   192.0.2.1     2 u   37   64  377    0.062    0.018   0.017


ind assid status  conf reach auth condition  last_event cnt
===========================================================
  1 43834  961d   yes   yes  none  sys.peer              1

associd=43834 status=961d conf, reach, sel_sys.peer, 1 event, popcorn,
srcadr=203.0.113.126, srcport=123, dstadr=203.0.113.1, dstport=123,
leap=00, stratum=2, precision=-20, rootdelay=195.190, rootdisp=176.407,
refid=192.0.2.1,
reftime=dbef8823.8066c43a  Mon, Dec  5 2016  8:30:59.501,
rec=dbefb27d.f91541fc  Mon, Dec  5 2016 11:31:41.972, reach=377,
unreach=0, hmode=3, pmode=4, hpoll=6, ppoll=6, headway=22, flash=00 ok,
keyid=0, offset=0.018, delay=0.062, dispersion=0.778, jitter=0.017,
xleave=0.011,
filtdelay=     0.08    0.06    0.08    0.10    0.08    0.09    0.08    0.10,
filtoffset=    0.03    0.02    0.03    0.04    0.03    0.04    0.03    0.04,
filtdisp=      0.00    0.03    1.04    1.07    2.06    2.09    3.09    3.12


Firepower-module1>
```

show ntp sysinfo

```
associd=0 status=0618 leap_none, sync_ntp, 1 event, no_sys_peer,
version="ntpd 4.2.6p5@1.2349-o Fri Oct  7 17:08:03 UTC 2016 (2)",
processor="x86_64", system="Linux/3.10.62-ltsi-WR6.0.0.27_standard",
leap=00, stratum=3, precision=-23, rootdelay=195.271, rootdisp=276.641,
refid=203.0.113.126,
reftime=dbefb238.f914779b  Mon, Dec  5 2016 11:30:32.972,
clock=dbefb2a7.575931d7  Mon, Dec  5 2016 11:32:23.341, peer=43834, tc=6,
mintc=3, offset=0.035, frequency=25.476, sys_jitter=0.003,
clk_jitter=0.015, clk_wander=0.011

system peer:          203.0.113.126
system peer mode:     client
leap indicator:       00
stratum:              3
precision:            -23
root distance:        0.19527 s
root dispersion:      0.27663 s
reference ID:         [203.0.113.126]
reference time:       dbefb238.f914779b  Mon, Dec  5 2016 11:30:32.972
system flags:         auth monitor ntp kernel stats
jitter:               0.000000 s
stability:            0.000 ppm
broadcastdelay:       0.000000 s
authdelay:            0.000000 s

time since restart:     1630112
time since reset:       1630112
packets received:       157339
packets processed:      48340
current version:        48346
previous version:       0
declined:               0
```

```
access denied:          0
bad length or format:   0
bad authentication:     0
rate exceeded:          0
Firepower-module1>
```

Per ulteriori informazioni sulla verifica NTP e la risoluzione dei problemi, consultare questo documento: Configurazione, verifica e risoluzione dei problemi delle impostazioni del Network Time Protocol (NTP) sugli accessori Firepower FXOS

D. Come configurare Smart Licensing e il proxy HTTP?

Nel caso di un dispositivo logico ASA, è necessario usare una licenza Smart sullo chassis FXOS. Per ulteriori informazioni, consultare il documento: Gestione delle licenze per l'appliance ASA

Di seguito è riportato un esempio di output dello stato della licenza:

<#root>

```
FPR4115-2-1#
scope license
FPR4115-2-1 /license #
show license all

Smart Licensing Status
======================

Smart Licensing is ENABLED

Registration:
  Status: REGISTERED
  Smart Account: BU Production Test
  Virtual Account: TAC-BETA
  Export-Controlled Functionality: Not Allowed
  Initial Registration: SUCCEEDED on Dec 15 14:41:55 2015 PST
  Last Renewal Attempt: SUCCEEDED on Dec 23 09:26:05 2015 PST
  Next Renewal Attempt: Jun 21 07:00:21 2016 PST
  Registration Expires: Dec 23 06:54:19 2016 PST

License Authorization:
  Status: AUTHORIZED on Apr 07 15:44:26 2016 PST
  Last Communication Attempt: SUCCEEDED on Apr 07 15:44:26 2016 PST
  Next Communication Attempt: May 07 15:44:25 2016 PST
  Communication Deadline: Jul 06 15:38:24 2016 PST

License Usage
=============
```

```
No licenses in use

Product Information
===================
UDI: PID:FPR9K-SUP,SN:JAD123456AB

Agent Version
=============
Smart Agent for Licensing: 1.4.1_rel/31
```

o in alternativa:

<#root>

```
fp9300-A#
connect local-mgmt

fp9300-A(local-mgmt)#
show license all

Smart Licensing Status
======================

Smart Licensing is ENABLED

Registration:
  Status: REGISTERED
  Smart Account: Cisco Internal
  Virtual Account: Escalations
  Export-Controlled Functionality: Allowed
  Initial Registration: SUCCEEDED on Feb 10 18:55:08 2016 CST
  Last Renewal Attempt: SUCCEEDED on Oct 09 15:07:25 2016 CST
  Next Renewal Attempt: Apr 07 15:16:32 2017 CST
  Registration Expires: Oct 09 15:10:31 2017 CST

License Authorization:
  Status: AUTHORIZED on Sep 20 07:29:06 2016 CST
  Last Communication Attempt: SUCCESS on Sep 20 07:29:06 2016 CST
  Next Communication Attempt: None  Communication Deadline: None
Licensing HA configuration error:
    No Reservation Ha config error

License Usage
=============

No licenses in use

Product Information
===================
UDI: PID:FPR9K-SUP,SN:JAD190800VU

Agent Version
```

```
=============
Smart Agent for Licensing: 1.6.7_rel/95
```

D. Come configurare Syslog tramite CLI?

Controlla questi documenti:

- Configurazione di Syslog su appliance Firepower FXOS
- Guida alla configurazione di FXOS: syslog delle impostazioni della piattaforma

D. Come configurare il protocollo SNMP sugli appliance Firepower?

Controllare questo documento: Configure SNMP on Firepower NGFW Appliance

D. Come installare/sostituire un certificato SSL utilizzato da Chassis Manager?

Questo documento può aiutare: Installare un certificato attendibile per FXOS Chassis Manager

D. Come risolvere i problemi relativi al traffico attraverso lo chassis FPR9300?

Controlla questi documenti:

- Fase 1 di risoluzione dei problemi del percorso dei dati di Firepower: ingresso dei pacchetti
- Risoluzione dei problemi relativi al percorso dei dati di Firepower: panoramica
- Analisi delle acquisizioni di Firepower Firewall per la risoluzione efficace dei problemi di rete

D. Come visualizzare la tabella degli indirizzi Mac dello chassis?

Per le piattaforme FP41xx e FP93xx, utilizzare uno dei seguenti comandi:

<#root>

```
FPR4115-2-1#
connect fxos
FPR4115-2-1(fxos)#
 show l2-table
Ingress      MAC            Vlan Class VlanGrp   Status  Dst
```

```
Eth1/1       78bc.1ae7.a45e  101  1     0         present 1
Veth776      78bc.1ae7.a45e  101  1     0         present 1
Po1          0100.5e00.0005  1001 1     0         present 1
Po1          0100.5e00.0006  1001 1     0         present 1
Po1          78bc.1ae7.a44e  1001 1     0         present 1
Po1          ffff.ffff.ffff  1001 63    0         present 1

FPR4115-2-1(fxos)#

show mac address-table

Legend:
        * - primary entry, G - Gateway MAC, (R) - Routed MAC, O - Overlay MAC
        age - seconds since first seen,+ - primary entry using vPC Peer-Link
   VLAN     MAC Address      Type      age     Secure NTFY   Ports/SWID.SSID.LID
---------+-----------------+--------+---------+------+----+------------------
* 1001     0100.5e00.0005    static    0          F    F  Eth1/1
* 1001     0100.5e00.0006    static    0          F    F  Eth1/1
* 1001     78bc.1ae7.a44e    static    0          F    F  Eth1/1
* 1001     ffff.ffff.ffff    static    0          F    F  Eth1/1
* 101      78bc.1ae7.a45e    static    0          F    F  Eth1/1
* 101      78bc.1ae7.a46f    static    0          F    F  Veth776
* 4047     0015.a501.0100    static    0          F    F  Veth864
* 4047     0015.a501.0101    static    0          F    F  Veth1015
* 4043     78bc.1ae7.b000    static    0          F    F  Eth1/10
* 4043     78bc.1ae7.b00c    static    0          F    F  Eth1/9
* 1        0015.a500.001f    static    0          F    F  Veth887
* 1        0015.a500.002f    static    0          F    F  Veth1018
* 1        0015.a500.01bf    static    0          F    F  Veth905
* 1        0015.a500.01ef    static    0          F    F  Veth1019
```

D. Come visualizzare gli indirizzi MAC dell'interfaccia dello chassis?

Utilizzare questo comando:

<#root>

```
FPR4115-2-1#

connect fxos

FPR4115-2-1(fxos)#

show interface mac-address


--------------------------------------------------------------------------------
Interface                   Mac-Address     Burn-in Mac-Address
--------------------------------------------------------------------------------
Ethernet1/1                 78bc.1ae7.a417  78bc.1ae7.a418
Ethernet1/2                 78bc.1ae7.a417  78bc.1ae7.a419
Ethernet1/3                 78bc.1ae7.a417  78bc.1ae7.a41a
Ethernet1/4                 78bc.1ae7.a417  78bc.1ae7.a41b
Ethernet1/5                 78bc.1ae7.a417  78bc.1ae7.a41c
```

```
Ethernet1/6                78bc.1ae7.a417  78bc.1ae7.a41d
Ethernet1/7                78bc.1ae7.a417  78bc.1ae7.a41e
Ethernet1/8                78bc.1ae7.a417  78bc.1ae7.a41f
Ethernet1/9                78bc.1ae7.a417  78bc.1ae7.a420
Ethernet1/10               78bc.1ae7.a417  78bc.1ae7.a421
Ethernet1/11               78bc.1ae7.a417  78bc.1ae7.a422
Ethernet1/12               78bc.1ae7.a417  78bc.1ae7.a423
port-channel1              78bc.1ae7.a417  78bc.1ae7.a41a
port-channel48             78bc.1ae7.a417  0000.0000.0000
mgmt0                      78bc.1ae7.a411  78bc.1ae7.a411
Vethernet690               78bc.1ae7.a417  78bc.1ae7.a417
Vethernet691               78bc.1ae7.a417  78bc.1ae7.a417
Vethernet692               78bc.1ae7.a417  78bc.1ae7.a417
Vethernet693               78bc.1ae7.a417  78bc.1ae7.a417
Vethernet694               78bc.1ae7.a417  78bc.1ae7.a417
Vethernet695               78bc.1ae7.a417  78bc.1ae7.a417
Vethernet696               78bc.1ae7.a417  78bc.1ae7.a417
Vethernet697               78bc.1ae7.a417  78bc.1ae7.a417
Vethernet698               78bc.1ae7.a417  78bc.1ae7.a417
Vethernet699               78bc.1ae7.a417  78bc.1ae7.a417
Vethernet700               78bc.1ae7.a417  78bc.1ae7.a417
Vethernet774               78bc.1ae7.a417  78bc.1ae7.a417
Vethernet775               78bc.1ae7.a417  78bc.1ae7.a417
Vethernet776               78bc.1ae7.a417  78bc.1ae7.a417
Vethernet777               78bc.1ae7.a417  78bc.1ae7.a417
Vethernet778               78bc.1ae7.a417  78bc.1ae7.a417
Vethernet779               78bc.1ae7.a417  78bc.1ae7.a417
Vethernet861               78bc.1ae7.a417  78bc.1ae7.a417
Vethernet862               78bc.1ae7.a417  78bc.1ae7.a417
Vethernet863               78bc.1ae7.a417  78bc.1ae7.a417
Vethernet864               78bc.1ae7.a417  78bc.1ae7.a417
Vethernet887               78bc.1ae7.a417  78bc.1ae7.a417
Vethernet905               78bc.1ae7.a417  78bc.1ae7.a417
Vethernet906               78bc.1ae7.a417  78bc.1ae7.a417
Vethernet1015              78bc.1ae7.a417  78bc.1ae7.a417
Vethernet1018              78bc.1ae7.a417  78bc.1ae7.a417
Vethernet1019              78bc.1ae7.a417  78bc.1ae7.a417
Vethernet1020              78bc.1ae7.a417  78bc.1ae7.a417
Vethernet1021              78bc.1ae7.a417  78bc.1ae7.a417
```

D. Come eseguire il recupero della password su FXOS Supervisor (MIO)?

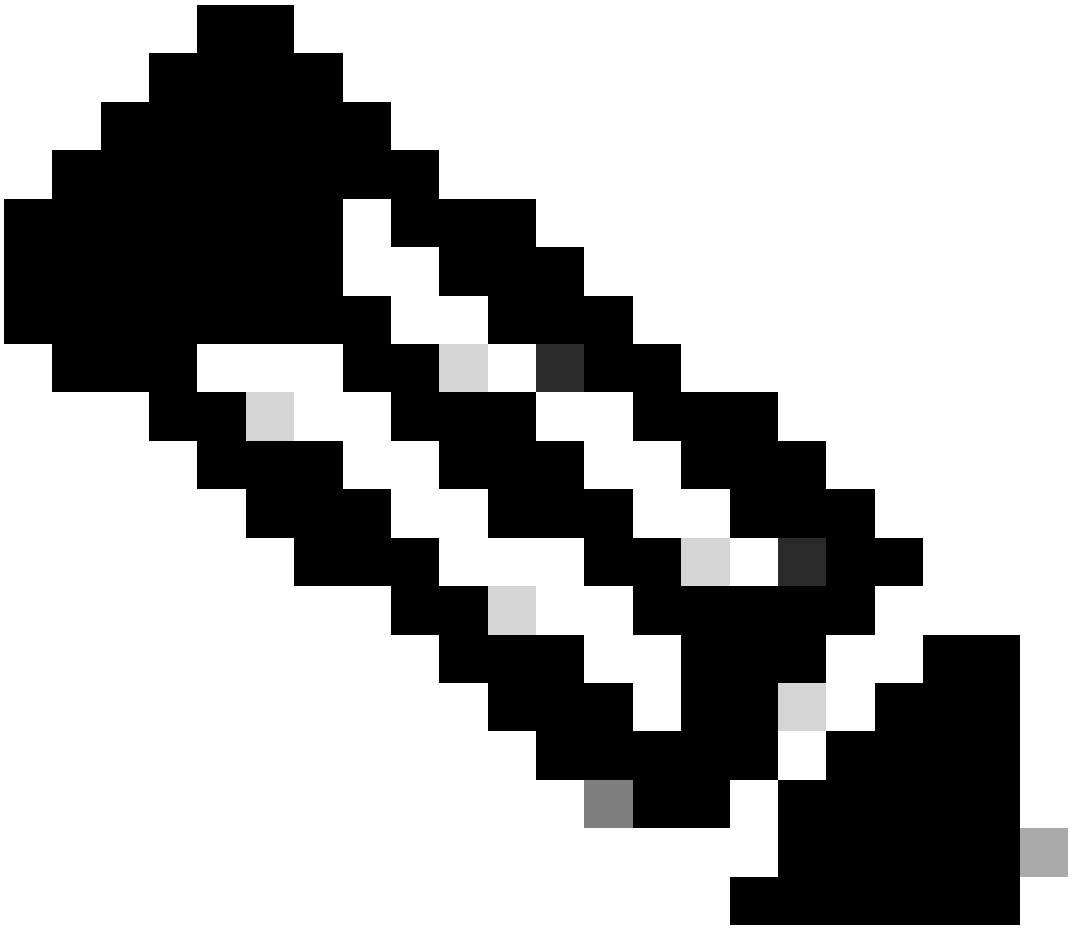
Per le procedure di recupero della password su FP41xx e FP9300, utilizzare questo documento: [Procedura di recupero della password per gli accessori Firepower serie 9300/4100]

D. Come eseguire il recupero della password su un'appliance ASA o su un dispositivo logico FTD?

Per reimpostare la password della periferica logica, è necessario riavviare la periferica. Il processo di disaster recovery del bootstrap consente di modificare i seguenti elementi:

- Gestione ASA/FTD IP - IP, netmask, gateway, IPv6, lunghezza prefisso

- Password ASA
- Chiave di registrazione FTD, password, IP FMC, domini di ricerca, modalità firewall, server DNS, FQDN
- Pool IP cluster ASA, netmask, gateway, lunghezza prefisso, IP virtuale.

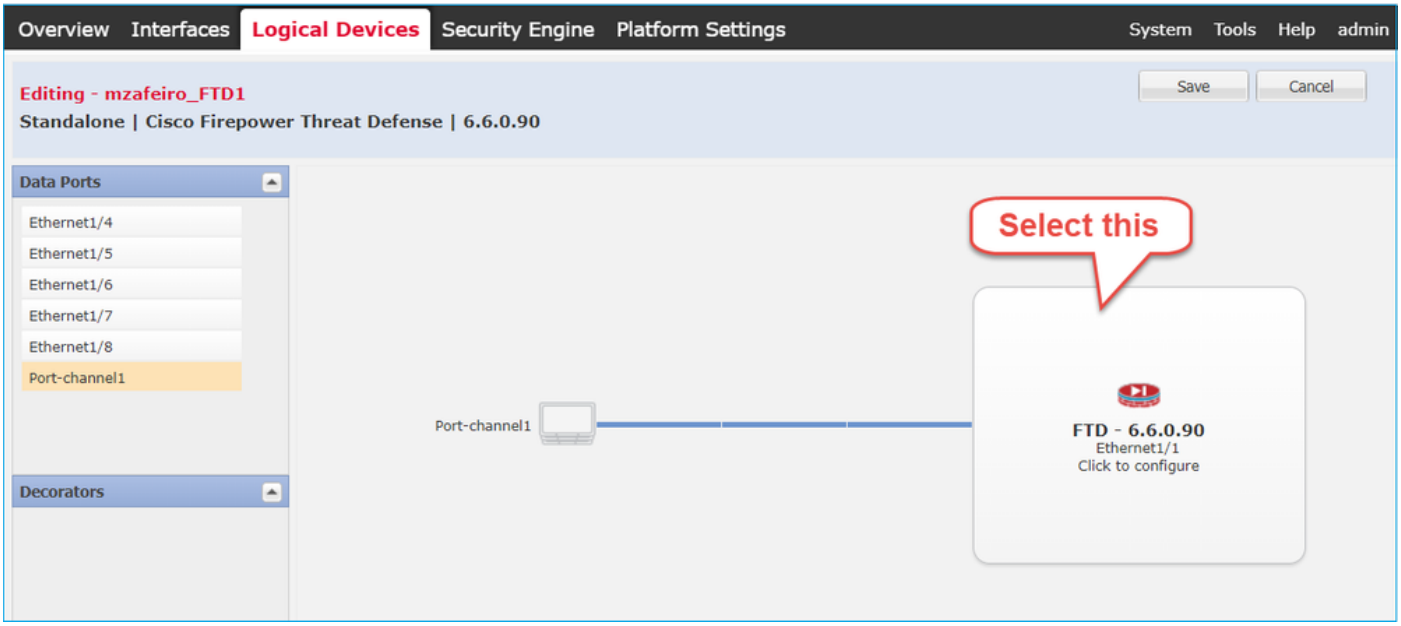


Nota: il processo di recupero del bootstrap deve essere eseguito in una finestra di manutenzione (MW) perché richiede un ricaricamento del dispositivo logico

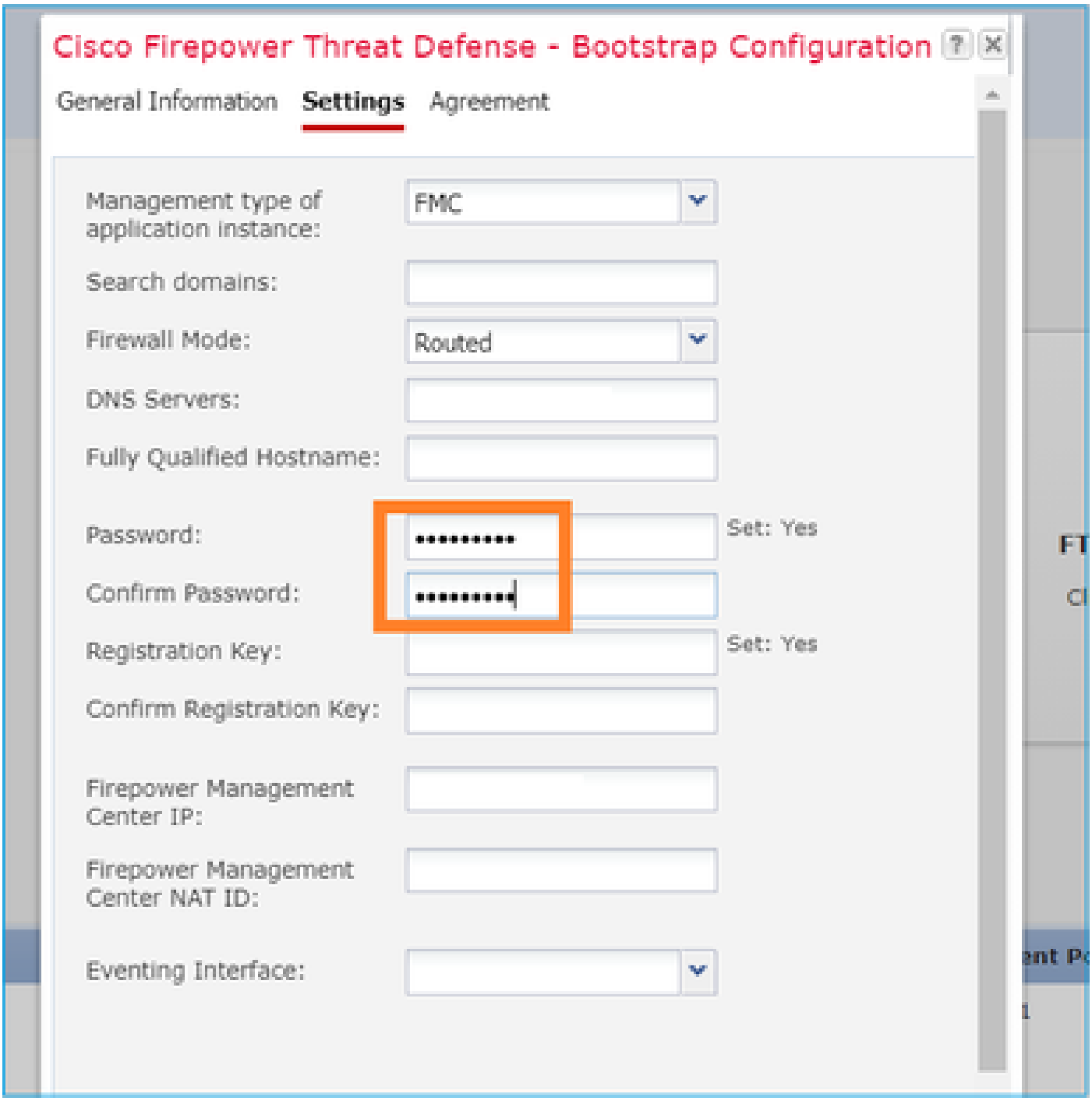
---

Esempio 1

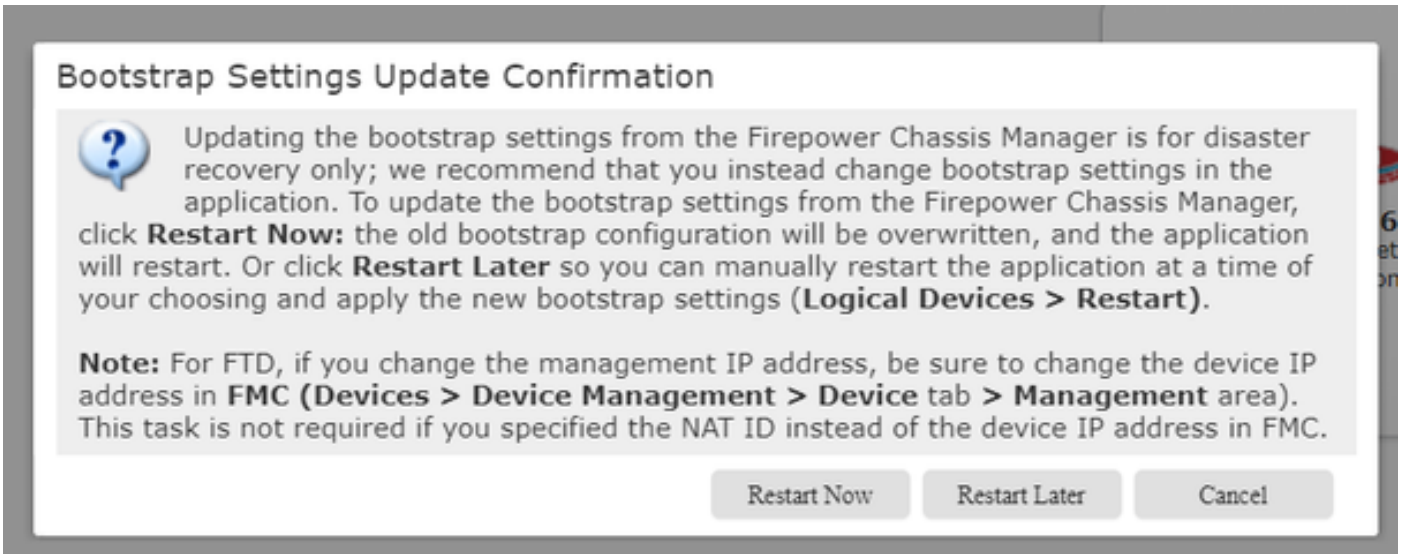
È possibile utilizzare l'interfaccia utente di FXOS per modificare le impostazioni di bootstrap di un dispositivo logico. Passare alla scheda Dispositivi logici, Modificare un dispositivo



Impostare la password:



Dopo il salvataggio viene visualizzato questo messaggio:



Esempio 2

Questo è un esempio di abilitazione ASA per la modifica/il recupero della password:

<#root>

```
FP4110-A#
scope ssa

FP4110-A /ssa #
show logical-device


Logical Device:
    Name       Description Slot ID    Mode       Oper State                Templa
    ---------- ----------- ---------- ---------- ------------------------- ------
    asa                    1          Standalone Ok                        asa

FP4110-A /ssa #
scope logical-device asa

FP4110-A /ssa/logical-device #
scope mgmt-bootstrap asa

FP4110-A /ssa/logical-device/mgmt-bootstrap #
show config

 enter mgmt-bootstrap asa
     create bootstrap-key-secret PASSWORD
 !       set value
     exit
     enter ipv4 1 default
         set gateway 172.16.171.1
         set ip 172.16.171.226 mask 255.255.255.0
```

```
     exit
 exit

FP4110-A /ssa/logical-device/mgmt-bootstrap #
enter bootstrap-key-secret PASSWORD

FP4110-A /ssa/logical-device/mgmt-bootstrap/bootstrap-key-secret #
set value

Value:   <enter new enable password in here>
Warning: Bootstrap changes are not automatically applied to app-instances. To apply the changes, please

FP4110-A /ssa/logical-device/mgmt-bootstrap/bootstrap-key-secret* #
commit-buffer

FP4110-A /ssa/logical-device/mgmt-bootstrap/bootstrap-key-secret #
top

FP4110-A#
scope ssa

FP4110-A /ssa #
scope slot 1

FP4110-A /ssa/slot #
scope app-instance asa

FP4110-A /ssa/slot/app-instance #
clear-mgmt-bootstrap

Warning: Clears the application management bootstrap. Application needs to be restarted for this action
FP4110-A /ssa/slot/app-instance* #
commit-buffer

FP4110-A /ssa/slot/app-instance #
restart

FP4110-A /ssa/slot/app-instance* #
commit-buffer
```

Prima di connettersi, verificare che l'ASA sia online e usare la nuova password di abilitazione.

<#root>

```
FP4110-A /ssa/slot/app-instance #
```

show

```
Application Instance:
    App Name   Admin State Oper State       Running Version Startup Version Profile Name Cluster State
    ---------- ----------- ---------------- --------------- --------------- ------------ --------------
    asa        Enabled     Online           9.9.1.76        9.9.1.76                     Not Applicable
FP4110-A /ssa/slot/app-instance #
```

D. Come modificare la password corrente di un utente FXOS (ad esempio admin)?

Utilizzare la procedura seguente:

<#root>

```
FP4110-1-A#
```

scope security

```
FP4110-1-A /security #
```

show local-user

```
User Name       First Name      Last name
--------------- --------------- ---------
admin
FP4110-1-A /security #
```

enter local-user admin

```
FP4110-1-A /security/local-user #
```

set password

```
Enter a password:
Confirm the password:
FP4110-1-A /security/local-user* #
```

commit-buffer

```
FP4110-1-A /security/local-user #
```

D. Come declassare FXOS?

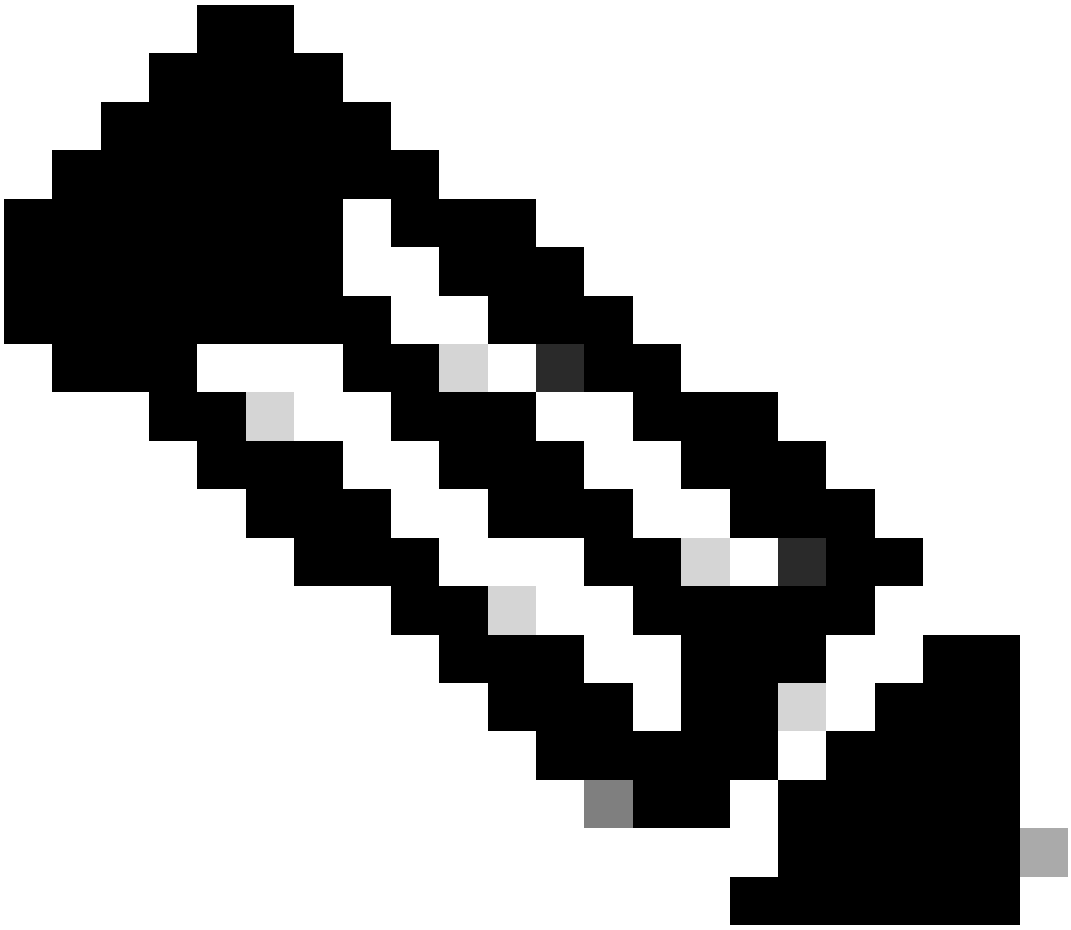
Il downgrade delle immagini FXOS non è ufficialmente supportato. L'unico metodo supportato da Cisco per effettuare il downgrade di una versione di FXOS è quello di eseguire una re-immagine completa del dispositivo. Questa condizione è documentata nel percorso di aggiornamento di

[Firepower 4100/9300]

D. Come effettuare il downgrade/aggiornamento di un dispositivo logico ASA?

Per effettuare il downgrade/upgrade della versione ASA con Chassis Manager: aggiornamento della versione dell'immagine per un dispositivo logico

Per modificare tramite CLI, utilizzare questa sezione della guida alla configurazione: Updating the Image Version for a Logical Device (Aggiornamento della versione dell'immagine per un dispositivo logico)



Nota: non appena si esegue il commit-buffer sulla CLI, il modulo viene riavviato. Analogamente, su chassis manager, dopo aver premuto ok, il modulo viene riavviato. Non è necessario riavviarlo manualmente.

D. Come controllare lo stato di aggiornamento di FXOS tramite CLI?

L'aggiornamento viene completato quando tutti i componenti diventano pronti:

<#root>

```
FP9300#
```

scope system

```
FP9300 /system #
```

show firmware monitor

```
FPRM:
    Package-Vers: 2.0(1.37)
    Upgrade-Status: Ready

Fabric Interconnect A:
    Package-Vers: 2.0(1.23)
    Upgrade-Status: Upgrading

Chassis 1:
    Server 1:
        Package-Vers: 2.0(1.23)
        Upgrade-Status: Ready
    Server 2:
        Package-Vers: 2.0(1.23)
        Upgrade-Status: Upgrading
```

Altri comandi utili

<#root>

```
FP9300 /firmware/auto-install #
```

show fsm status

```
FP9300 /firmware/auto-install #
```

show fsm status expand

D. Come ricaricare il dispositivo logico dalla CLI di FXOS?

È preferibile utilizzare l'interfaccia utente di FCM. Se per qualsiasi motivo l'interfaccia utente non è accessibile, utilizzare i seguenti comandi:

<#root>

#

scope chassis 1

/chassis #

scope server 1/1

/chassis/server #

reset ?

  hard-reset-immediate Perform an immediate hard reset

  hard-reset-wait   Wait for the completion of any pending management oper

/chassis/server #

commit-buffer

D. Come controllare il tempo di attività dello chassis FXOS e il motivo dell'ultimo caricamento?

Il controllo del tempo di attività di FXOS è utile nel caso in cui sia presente un traceback FXOS. FXOS può essere visualizzato dall'interfaccia utente (FCM) o dalla CLI:

<#root>

FPR9K-1-A#

connect fxos

FPR9K-1-A(fxos)#

show system uptime

```
System start time: Sun Sep 25 09:57:19 2016
System uptime: 28 days, 9 hours, 38 minutes, 14 seconds
Kernel uptime: 28 days, 9 hours, 38 minutes, 41 seconds
Active supervisor uptime: 28 days, 9 hours, 38 minutes, 14 seconds
```

Inoltre, per determinare il motivo dell'ultimo ricaricamento, usare questo comando:

<#root>

```
FPR9K-1-A(fxos)#
```

show system reset-reason

```
----- reset reason for Supervisor-module 1 (from Supervisor in slot 1) ---
1) At 212883 usecs after Fri Oct 21 22:34:35 2016
 Reason: Kernel Panic
 Service:
 Version: 5.0(3)N2(3.02)

2) At 106690 usecs after Thu May 26 16:07:38 2016
 Reason: Reset Requested by CLI command reload
 Service:
 Version: 5.0(3)N2(3.02)
```

Per il tempo di attività di FPR2100, eseguire le operazioni seguenti:

1. Acquista il pacchetto 'show tech-support-fprm detail'

2. Estrarre il contenuto del fascio

3. Controllare il file tmp/inventory_manager.xml

Esiste una voce che mostra il tempo di attività in secondi:

<#root>

tmp/inventory_manager.xml:

<uptime>151</uptime>

D. Come controllare lo spazio disponibile su disco in FXOS?

Denominato anche 'workspace':

<#root>

```
FPR9K-1-A#
```

connect local-mgmt

```
FPR9K-1-A(local-mgmt)#
```

dir

```
1       29 Sep 25 09:56:22 2016 blade_debug_plugin
1       19 Sep 25 09:56:22 2016 bladelog
1       16 Aug 05 15:41:05 2015 cores
1  2841476 Apr 26 14:13:12 2016 d
2     4096 Dec 01 10:09:11 2015 debug_plugin/
1       31 Aug 05 15:41:05 2015 diagnostics
1  2842049 Feb 23 03:26:38 2016 dp
1 18053120 Feb 23 11:10:19 2016 fpr9k-1-0-sam_logs_all.tar
1 18176000 Feb 23 11:10:43 2016 fpr9k-1-1-sam_logs_all.tar
1 19302400 Feb 23 11:11:07 2016 fpr9k-1-2-sam_logs_all.tar
1 16312320 Feb 23 11:06:53 2016 fpr9k-1-3-sam_logs_all.tar
1  2841476 Feb 22 18:47:00 2016 fxos-dplug.5.0.3.N2.3.13.67g.gSSA
2     4096 Aug 05 15:38:58 2015 lost+found/
1       25 Dec 01 11:11:50 2015 packet-capture
1 18493440 Feb 23 10:44:51 2016 sam_logs_all.tar
2     4096 Sep 14 11:23:11 2016 techsupport/

Usage for workspace://
4032679936 bytes total
324337664 bytes used
3503489024 bytes free
```

<#root>

```
FPR9K-1-A(local-mgmt)#
```

dir volatile:/

```
1 66 Oct 27 08:17:48 2016 xmlout_5816

Usage for volatile://
251658240 bytes total
4096 bytes used
251654144 bytes free
```

Per controllare lo spazio libero sul flash di avvio. Si noti che questo output mostra anche le dimensioni e l'utilizzo del workspace:

<#root>

```
FPR9K-1-A#
```

scope fabric-interconnect a

```
FPR9K-1-A /fabric-interconnect #
```

show storage

```
Storage on local flash drive of fabric interconnect:
    Partition        Size (MBytes)    Used Percentage
    ---------------- ---------------- ---------------
    bootflash        106490           9
    opt              3870             2
```

```
spare           5767            1
usbdrive        Nothing         Empty
workspace       3845            9
```

D. Come ripristinare la configurazione di FXOS ai valori predefiniti?

Utilizzare questo comando:

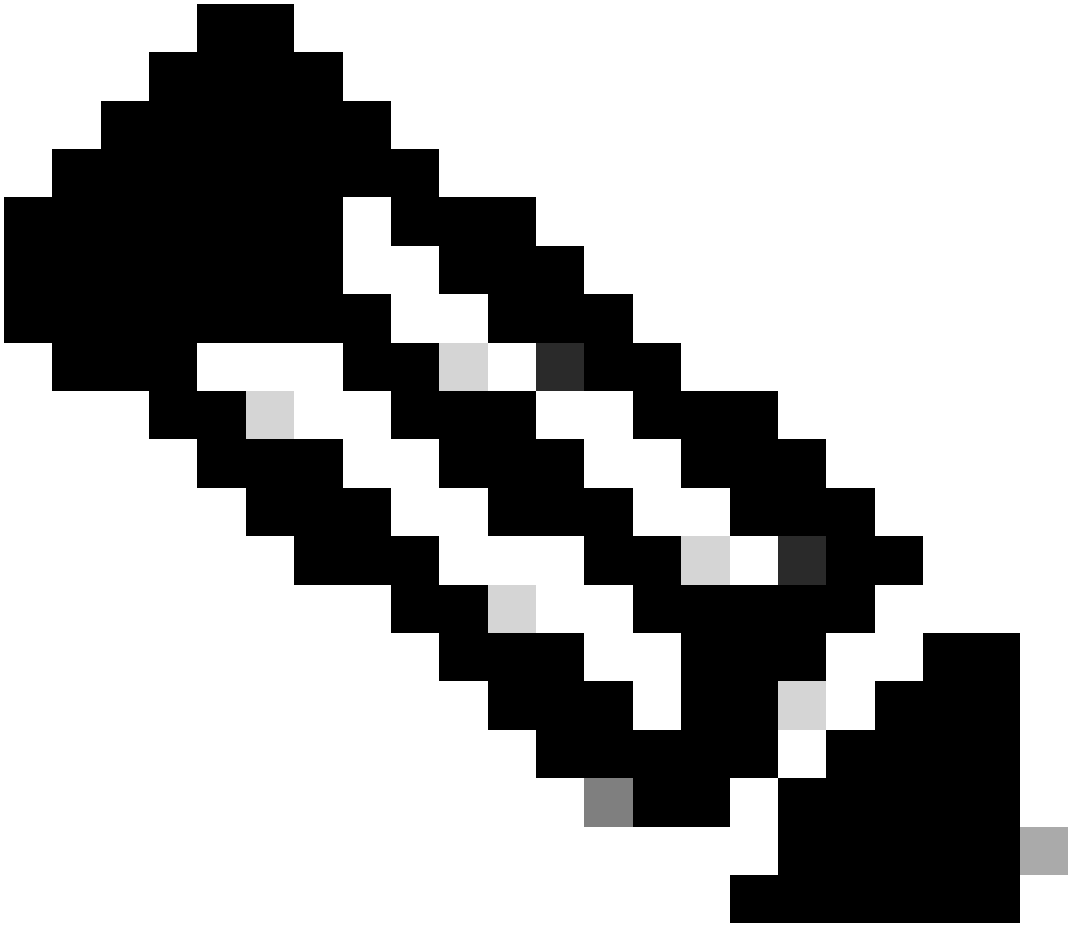
<#root>

FPR9K-1-A#

connect local-mgmt

FPR9K-1-A(local-mgmt)#

erase configuration



Nota: il sistema viene riavviato e l'intera configurazione, incluso l'indirizzo IP di gestione, viene cancellata. Accertarsi quindi che la console sia connessa. Una volta riavviato il sistema, viene eseguita l'applicazione di configurazione ed è possibile immettere nuovamente le informazioni di configurazione della gestione.

Esempio

<#root>

```
FPR9K-1#
connect local-mgmt
FPR9K-1(local-mgmt)#
erase configuration
All configurations are erased and system must reboot. Are you sure? (yes/no):
yes
```

```
Removing all the configuration. Please wait....
/bin/rm: cannot remove directory `/bootflash/sysdebug//tftpd_logs': Device or resource busy
sudo: cannot get working directory
sudo: cannot get working directory
Configurations are cleaned up. Rebooting....
...
System is coming up ... Please wait ...
System is coming up ... Please wait ...
2016 Oct 28 06:31:00  %$ VDC-1 %$ %USER-0-SYSTEM_MSG: Starting bcm_attach - bcm_usd
System is coming up ... Please wait ...
2016 Oct 28 06:31:06  %$ VDC-1 %$ %USER-0-SYSTEM_MSG: Finished bcm_attach... - bcm_usd
2016 Oct 28 06:31:07  %$ VDC-1 %$ %USER-0-SYSTEM_MSG: Enabling Filter on CPU port  - bcm_usd
System is coming up ... Please wait ...
2016 Oct 28 06:31:11 switch %$ VDC-1 %$ %VDC_MGR-2-VDC_ONLINE: vdc 1 has come online
System is coming up ... Please wait ...
nohup: appending output to `nohup.out'
           ---- Basic System Configuration Dialog ----
  This setup utility guides you through the basic configuration of
  the system. Only minimal configuration including IP connectivity to
  the Fabric interconnect and its clustering mode is performed through these steps.
  Type Ctrl-C at any time to abort configuration and reboot system.
  To back track or make modifications to already entered values,
  complete input till end of section and answer no when prompted
  to apply configuration.
  You have chosen to setup a new Security Appliance. Continue? (y/n):
```

D. Come controllare la configurazione bootstrap (interfacce assegnate, versione, ecc.) di un dispositivo logico dalla CLI di FXOS?

<#root>

```
FPR4100-3-A#
```

scope ssa

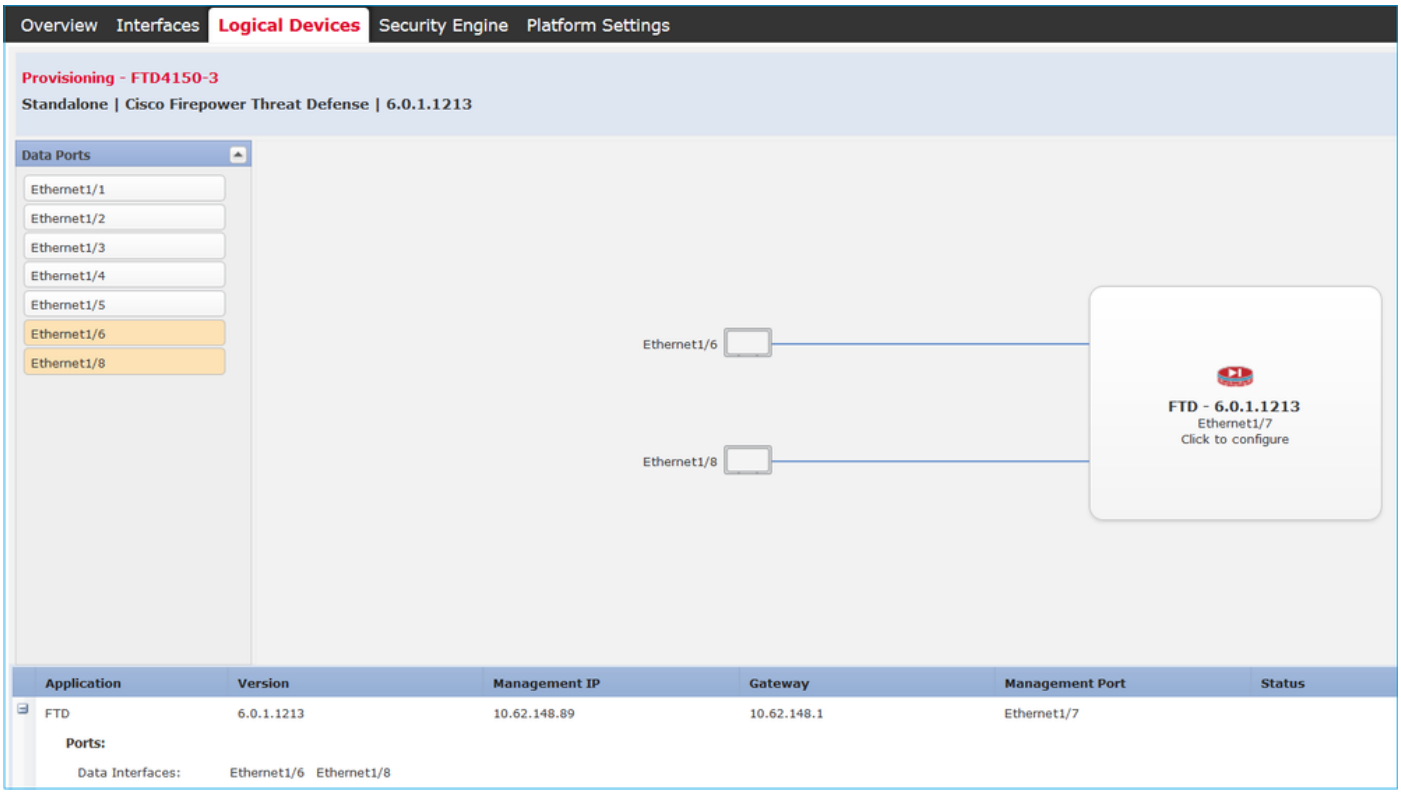
```
FPR4100-3-A /ssa #
```

show configuration

```
 scope ssa
     enter logical-device FTD4150-3 ftd 1 standalone
         enter external-port-link Ethernet16_ftd Ethernet1/6 ftd
             set decorator ""
             set description ""
             set port-name Ethernet1/6
         exit
         enter external-port-link Ethernet17_ftd Ethernet1/7 ftd
             set decorator ""
             set description ""
             set port-name Ethernet1/7
         exit
```

```
        enter external-port-link Ethernet18_ftd Ethernet1/8 ftd
            set decorator ""
            set description ""
            set port-name Ethernet1/8
        exit
        enter mgmt-bootstrap ftd
            enter bootstrap-key DNS_SERVERS
                set value 192.0.2.100
            exit
            enter bootstrap-key FIREPOWER_MANAGER_IP
                set value 10.62.148.57
            exit
            enter bootstrap-key FIREWALL_MODE
                set value routed
            exit
            enter bootstrap-key FQDN
                set value FTD4150-3.lab.com
            exit
            enter bootstrap-key SEARCH_DOMAINS
                set value lab.com
            exit
            enter bootstrap-key-secret PASSWORD
!               set value
            exit
            enter bootstrap-key-secret REGISTRATION_KEY
!               set value
            exit
            enter ipv4 1 firepower
                set gateway 10.62.148.1
                set ip 10.62.148.89 mask 255.255.255.128
            exit
        exit
        set description ""
        set res-profile-name ""
    exit
    scope slot 1
        enter app-instance ftd
            enable
            set startup-version 6.0.1.1213
        exit
        set log-level info
    exit
    scope app asa 9.12.4.12
        set-default
    exit
    scope app ftd 6.0.1.1213
        accept-license-agreement
        set-default
    exit
exit
```

Equivale a:



Per visualizzare la configurazione FXOS completa, aggiungere la parola chiave 'all' (l'output è composto da diverse pagine):

<#root>

```
FPR4100-3-A /ssa #
```

show configuration all

D. Come controllare lo stato (tipo di porta, stato) delle interfacce FXOS?

<#root>

```
FPR4100-3-A#
```

scope eth-uplink

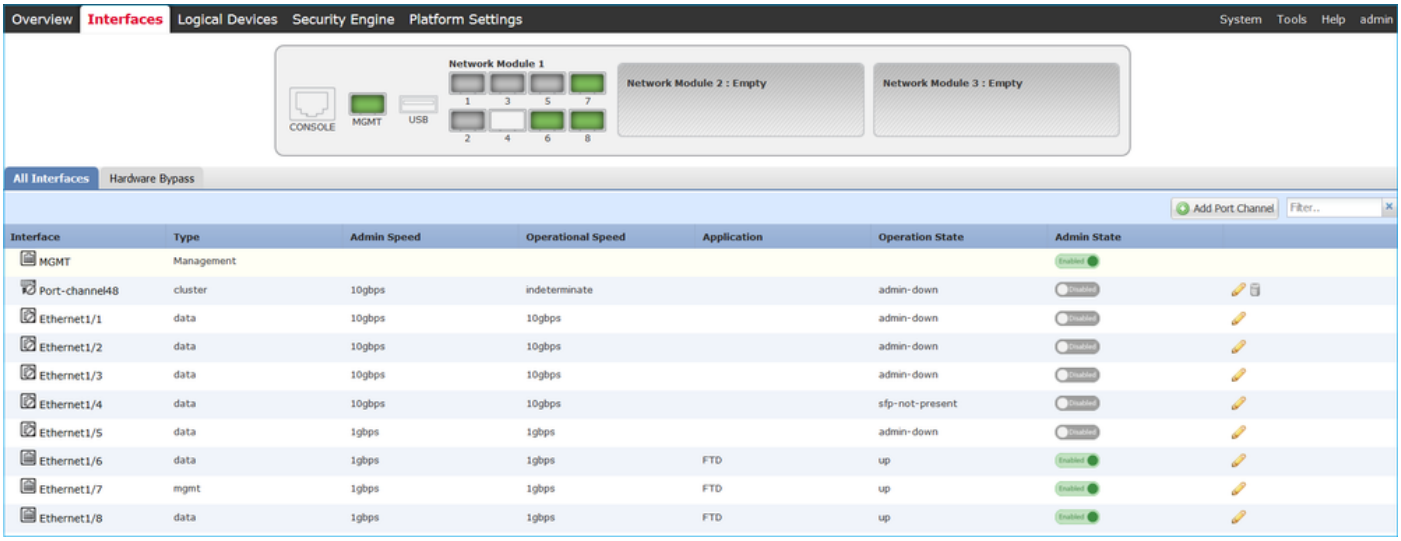
```
FPR4100-3-A /eth-uplink #
```

scope fabric a

```
FPR4100-3-A /eth-uplink/fabric #
```

```
show interface

Interface:
    Port Name       Port Type          Admin State Oper State       State Reason
    --------------- ------------------ ----------- ---------------- ------------
    Ethernet1/1     Data               Disabled    Admin Down       Administratively down
    Ethernet1/2     Data               Disabled    Admin Down       Administratively down
    Ethernet1/3     Data               Disabled    Admin Down       Administratively down
    Ethernet1/4     Data               Disabled    Sfp Not Present  Unknown
    Ethernet1/5     Data               Disabled    Admin Down       Administratively down
    Ethernet1/6     Data               Enabled     Up
    Ethernet1/7     Mgmt               Enabled     Up
    Ethernet1/8     Data               Enabled     Up
FPR4100-3-A /eth-uplink/fabric #
```

Equivale a:

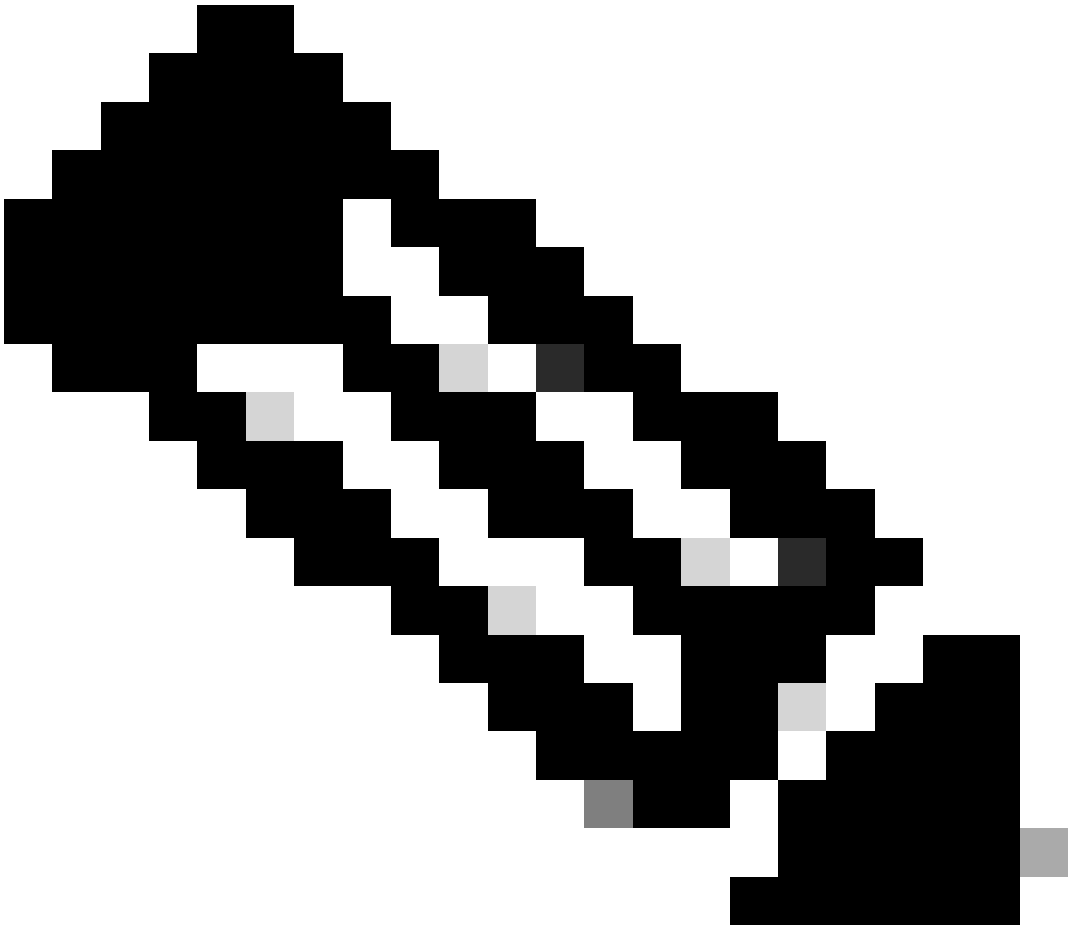


D. Come controllare l'utilizzo della CPU e della memoria sullo chassis?

<#root>

```
FPR9K-2-A#

connect fxos

FPR9K-2-A(fxos)#

show system resources

Load average:   1 minute: 1.60   5 minutes: 1.30   15 minutes: 1.15
Processes    :   967 total, 1 running
CPU states   :   1.8% user,   1.1% kernel,   97.1% idle
```

```
Memory usage:   16326336K total,   4359740K used,   11966596K free
```



> Nota: il totale mostrato nell'output può essere diverso anche per 2 dispositivi che appartengono allo stesso modello. In particolare, il totale è preso dall'output del comando free che a sua volta è preso da /proc/meminfo.

Per controllare la memoria:

<#root>

```
FPR4100-8-A /fabric-interconnect #
```

show detail

```
Fabric Interconnect:
    ID: A
    Product Name: Cisco FPR-4140-SUP
```

```
    PID: FPR-4140-SUP
    VID: V02
    Vendor: Cisco Systems, Inc.
    Serial (SN): FLM12345KL6
    HW Revision: 0
    Total Memory (MB): 8074
    OOB IP Addr: 10.62.148.196
    OOB Gateway: 10.62.148.129
    OOB Netmask: 255.255.255.128
    OOB IPv6 Address: ::
    OOB IPv6 Gateway: ::
    Prefix: 64
    Operability: Operable
    Thermal Status: Ok
    Current Task 1:
    Current Task 2:
    Current Task 3:
```

Per verificare il controllo dell'utilizzo della memoria per processo (RES = Memoria fisica):

<#root>

```
FPR4100-2-A-A#

connect local-mgmt

FPR4100-2-A-A(local-mgmt)#

show processes

Cpu(s):  8.0%us,  4.2%sy,  3.9%ni, 83.8%id,  0.0%wa,  0.0%hi,  0.1%si,  0.0%st
Mem:   8267648k total,  3866552k used,  4401096k free,      288k buffers
Swap:        0k total,        0k used,        0k free,  1870528k cached

  PID USER      PR  NI  VIRT  RES  SHR S %CPU %MEM    TIME+  COMMAND
 5024 root      -2   0  354m 114m  34m R   43  1.4   7976:51 /isan/bin/bcm_usd
 1096 root      20   0 10352 3992 3332 S    0  0.0   0:00.28 sshd: admin@pts/1
 1140 root      20   0  117m  78m  53m S    0  1.0   0:00.42 /isan/bin/ucssh --ucs-mgmt -p admin
 1856 root      20   0  2404  632  512 S    0  0.0   2:29.32 /nuova/bin/cmcmon -f /etc/cmcmon.conf
 1859 root      20   0 23804 1932 1532 S    0  0.0   1427:47 dmserver -F
 1860 root      20   0  2244  472  404 S    0  0.0   0:00.01 /sbin/hotplug2 --persistent --set-rules-fi
 1861 root      20   0 57116  10m 6552 S    0  0.1   7:28.76 /isan/sbin/sysmgr -V
 1864 root      20   0 14044 4136 1072 S    0  0.1   1:06.19 rsyslogd -c3 -i/var/run/rsyslogd.pid
 4909 root      20   0  3568 1100  876 S    0  0.0   0:00.48 /isan/sbin/xinetd -syslog local7 -loop 250
 4911 root      20   0 58232  12m 6152 S    0  0.2  18:39.24 /isan/sbin/syslogd -d -n -m 0 -r
 4912 root      20   0 20076 3532 2368 S    0  0.0   0:00.02 /isan/bin/sdwrapd
 4913 root      21   1  2756  300  192 S    0  0.0   0:00.04 /usr/sbin/in.tftpd -l -c -s /bootflash
 4914 root      20   0 58312  17m 8724 S    0  0.2  13:45.34 /isan/bin/pfm
 4937 root      20   0  2208  332  272 S    0  0.0   0:00.01 /sbin/klogd -2 -x -c 1
 4939 root      20   0 26692 4656 3620 S    0  0.1   0:24.01 /isan/bin/vshd
...
```

Suggerimento:
1. Raccogliere l'output del comando show process memory
2. Incollare l'output in un file su un computer Linux (cat > top.log)
3. Ordinare il file in base alla colonna RES

Vengono mostrati i GByte, i MByte e così via

<#root>

```
mzafeiro@MZAFEIRO-JA2YS:$

cat top.log | sort -V -k 6

 1954 root      20   0 1645m 1.6g 1372 S  0.0 20.7 793:32.99 dmserver
 7556 root      20   0  207m 9.8m 6184 S  0.0  0.1  73:52.25 udld
 5563 root      20   0  333m 9.8m 7032 S  0.0  0.1   5:08.65 cdpd
 5523 root      20   0  327m 103m  28m S  0.0  1.3   0:12.38 afm
24040 daemon    23   3  592m 115m  33m S  0.0  1.5  74:56.57 httpd
 5329 root      -2   0  384m 132m  29m S  9.4  1.7  27130:09 bcm_usd
 5317 root      20   0  401m 150m  35m S  0.0  1.9  33:19.05 fwm
 5625 root      24   4  450m 179m  35m S  0.0  2.3 275:38.25 svc_sam_statsAG
 5614 root      23   3  495m 247m  54m S  0.0  3.2 355:59.95 svc_sam_dme
21688 root      20   0  2672 1080  880 S  0.0  0.0   3:15.29 ntpd
 8819 root      35  15  2408 1084  748 R  5.6  0.0   0:00.06 top
```

D. Come controllare il tipo di ricetrasmettitore dell'interfaccia dello chassis?

In Firepower 4100/9300 utilizzare questo comando:

<#root>

```
FPR9K-2-A#

connect fxos

FPR9K-2-A(fxos)#

show interface e1/3 transceiver details

Ethernet1/3
    transceiver is present
    type is 1000base-T
    name is CISCO-METHODE
    part number is SP7041-R
    revision is
    serial number is FLM12345KL6
    nominal bitrate is 1300 MBit/sec
    Link length supported for copper is 100 m
    cisco id is --
    cisco extended id number is 4

DOM is not supported

FPR9K-2-A(fxos)#
```

Nel caso della fibra ottica, l'output è il seguente:

<#root>

```
FPR4100-1-A(fxos)#
```

show interface e1/1 transceiver details

```
Ethernet1/1
    transceiver is present
    type is 10Gbase-SR
    name is CISCO-JDSU
    part number is PLRXPL-SC-S43-CS
    revision is 1
    serial number is FLM12345KL6
    nominal bitrate is 10300 MBit/sec
    Link length supported for 50/125um OM2 fiber is 82 m
    Link length supported for 62.5/125um fiber is 26 m
    Link length supported for 50/125um OM3 fiber is 300 m
    cisco id is --
    cisco extended id number is 4

    Calibration info not available
```

In Firepower 1000/2100 utilizzare questo comando:

<#root>

```
FPR2100#
```

scope fabric-interconnect

```
FPR2100 /fabric-interconnect #
```

show inventory expand detail | egrep ignore-case "Port|Xcvr"

```
...
        Slot 1 Port 13:
            Xcvr: 10 Gbase SR
            Xcvr Model: PLRXPL-SC-S43-C
            Xcvr Vendor: Cisco Systems, Inc.
            Xcvr Serial: ABCD1234
        Slot 1 Port 14:
            Xcvr: 10 Gbase SR
            Xcvr Model: PLRXPL-SC-S43-C
            Xcvr Vendor: Cisco Systems, Inc.
            Xcvr Serial: VWXY1234
        Slot 1 Port 15:
            Xcvr: Non Present
            Xcvr Model:
            Xcvr Vendor:
            Xcvr Serial:
        Slot 1 Port 16:
            Xcvr: Non Present
            Xcvr Model:
            Xcvr Vendor:
```

```
            Xcvr Serial:
```

D. Come controllare le informazioni su modulo/blade/server/netmod (tipo hardware/PID/SN/memoria/core, ecc.)?

Questo comando mostra l'ID prodotto (PID) e il numero di serie (SN) dello chassis e dei moduli (netmod)

<#root>

```
FP4110-7-A#
```

connect fxos

```
FP4110-7-A(fxos)#
```

show inventory

```
NAME: "Chassis", DESCR: "Firepower 41xx Security Appliance"
PID: FPR-4110-SUP      , VID: V02 , SN: FLM12345KL6  <--- Chassis SN

NAME: "Module 1", DESCR: "Firepower 41xx Supervisor"
PID: FPR-4110-SUP      , VID: V02 , SN: FLM12345KL6  <--- Embedded module on FPR4100

NAME: "Module 3", DESCR: "Firepower 6x10G FTW SFP+ SR NM"
PID: FPR-NM-6X10SR-F   , VID: V00 , SN: FLM12345KL6  <--- FTW Netmode SN
```

FPR4110 ha 2 slot per i moduli di rete (2 e 3) e il dispositivo nell'esempio ha un FTW netmod installato nello slot 3.

<#root>

```
FPR9K-1-A#
```

scope chassis 1

```
FPR9K-1-A /chassis #
```

show inventory server

```
Chassis 1:
    Servers:
        Server 1/1:
            Equipped Product Name: Cisco Firepower 9000 Series High Performance Security Module
            Equipped PID: FPR9K-SM-36
            Equipped VID: V01
            Equipped Serial (SN): FLM12345KL6
```

```
        Slot Status: Equipped
        Acknowledged Product Name: Cisco Firepower 9000 Series High Performance Security Module
        Acknowledged PID: FPR9K-SM-36
        Acknowledged VID: V01
        Acknowledged Serial (SN): FLM12345KL6
        Acknowledged Memory (MB): 262144
        Acknowledged Effective Memory (MB): 262144
        Acknowledged Cores: 36
        Acknowledged Adapters: 2

    Server 1/2:
        Equipped Product Name: Cisco Firepower 9000 Series High Performance Security Module
        Equipped PID: FPR9K-SM-36
        Equipped VID: V01
        Equipped Serial (SN): FLM12345KL6
        Slot Status: Equipped
        Acknowledged Product Name: Cisco Firepower 9000 Series High Performance Security Module
        Acknowledged PID: FPR9K-SM-36
        Acknowledged VID: V01
        Acknowledged Serial (SN): FLM12345KL6
        Acknowledged Memory (MB): 262144
        Acknowledged Effective Memory (MB): 262144
        Acknowledged Cores: 36
        Acknowledged Adapters: 2

    Server 1/3:
        Equipped Product Name: Cisco Firepower 9000 Series High Performance Security Module
        Equipped PID: FPR9K-SM-36
        Equipped VID: V01
        Equipped Serial (SN): FLM12345KL6
        Slot Status: Equipped
        Acknowledged Product Name: Cisco Firepower 9000 Series High Performance Security Module
        Acknowledged PID: FPR9K-SM-36
        Acknowledged VID: V01
        Acknowledged Serial (SN): FLM12345KL6
        Acknowledged Memory (MB): 262144
        Acknowledged Effective Memory (MB): 262144
        Acknowledged Cores: 36
        Acknowledged Adapters: 2
```

Server1/1 = modulo/blade 1

Server1/2 = modulo/blade 2

Server1/3 = modulo/blade 3

PID modello FPR41xx:

- FPR4K-SM-12 = FPR4110
- FPR4K-SM-24 = FPR4120
- FPR4K-SM-36 = FPR4140
- FPR4K-SM-4 = FPR4150
- FPR4K-SM-24S = FPR4115
- FPR4K-SM-32S = FPR4125
- FPR4K-SM-44S = FPR4145

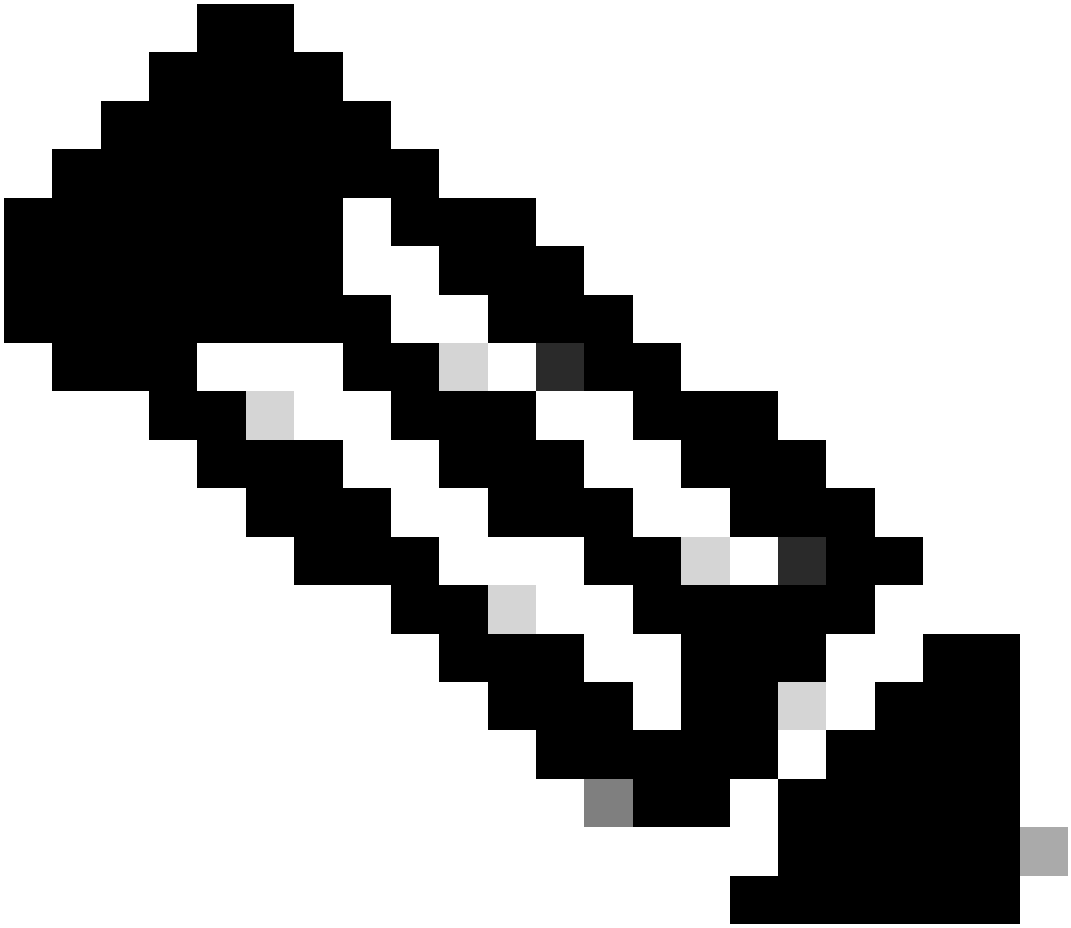
È inoltre possibile ottenere altre informazioni nell'ambito del server <chassis-id/blade-id>:

<#root>

```
FP9300-A#
scope server 1/1

FP9300-A /chassis/server #
show inventory

  <CR>
  >         Redirect it to a file
  >>        Redirect it to a file in append mode
  adapter   Adapter
  bios      Bios
  board     Board
  cpu       Cpu
  detail    Detail
  expand    Expand
  memory    Memory
  mgmt      Mgmt
  storage   Storage
  |         Pipe command output to filter

FP9300-A /chassis/server #
show inventory storage

Server 1/1:
    Name:
    User Label:
    Equipped PID: FPR9K-SM-36
    Equipped VID: V01
    Equipped Serial (SN): FLM12345PBD
    Slot Status: Equipped
    Acknowledged Product Name: Cisco Firepower 9000 Series High Performance Security Module
    Acknowledged PID: FPR9K-SM-36
    Acknowledged VID: 01
    Acknowledged Serial (SN): FLM67890PBD
    Acknowledged Memory (MB): 262144
    Acknowledged Effective Memory (MB): 262144
    Acknowledged Cores: 36
    Acknowledged Adapters: 2
    Motherboard:
        Product Name: Cisco Firepower 9000 Series High Performance Security Module
        PID: FPR9K-SM-36
        VID: V01
        Vendor: Cisco Systems Inc
        Serial (SN): FLM12345KL6
        HW Revision: 0

        RAID Controller 1:
            Type: SAS
            Vendor: Cisco Systems Inc
            Model: UCSB-MRAID12G
            Serial: FLM12345KL6
```

```
HW Revision: C0
PCI Addr: 01:00.0
Raid Support: RAID0, RAID1
OOB Interface Supported: Yes
Rebuild Rate: 30
Controller Status: Optimal

Local Disk 1:
    Product Name:
    PID:
    VID:
    Vendor: TOSHIBA
    Model: PX02SMF080
    Vendor Description:
    Serial: FLM12345KL6
    HW Rev: 0
    Block Size: 512
    Blocks: 1560545280
    Operability: Operable
    Oper Qualifier Reason: N/A
    Presence: Equipped
    Size (MB): 761985
    Drive State: Online
    Power State: Active
    Link Speed: 12 Gbps
    Device Type: SSD

Local Disk 2:
    Product Name:
    PID:
    VID:
    Vendor: TOSHIBA
    Model: PX02SMF080
    Vendor Description:
    Serial: FLM12345KL6
    HW Rev: 0
    Block Size: 512
    Blocks: 1560545280
    Operability: Operable
    Oper Qualifier Reason: N/A
    Presence: Equipped
    Size (MB): 761985
    Drive State: Online
    Power State: Active
    Link Speed: 12 Gbps
    Device Type: SSD

Local Disk Config Definition:
    Mode: RAID 1 Mirrored
    Description:
    Protect Configuration: Yes

Virtual Drive 0:
    Type: RAID 1 Mirrored
    Block Size: 512
    Blocks: 1560545280
    Operability: Operable
    Presence: Equipped
    Size (MB): 761985
    Lifecycle: Allocated
    Drive State: Optimal
    Strip Size (KB): 64
```

```
                Access Policy: Read Write
                Read Policy: Normal
                Configured Write Cache Policy: Write Through
                Actual Write Cache Policy: Write Through
                IO Policy: Direct
                Drive Cache: No Change
                Bootable: True
FP9300-A /chassis/server #
```



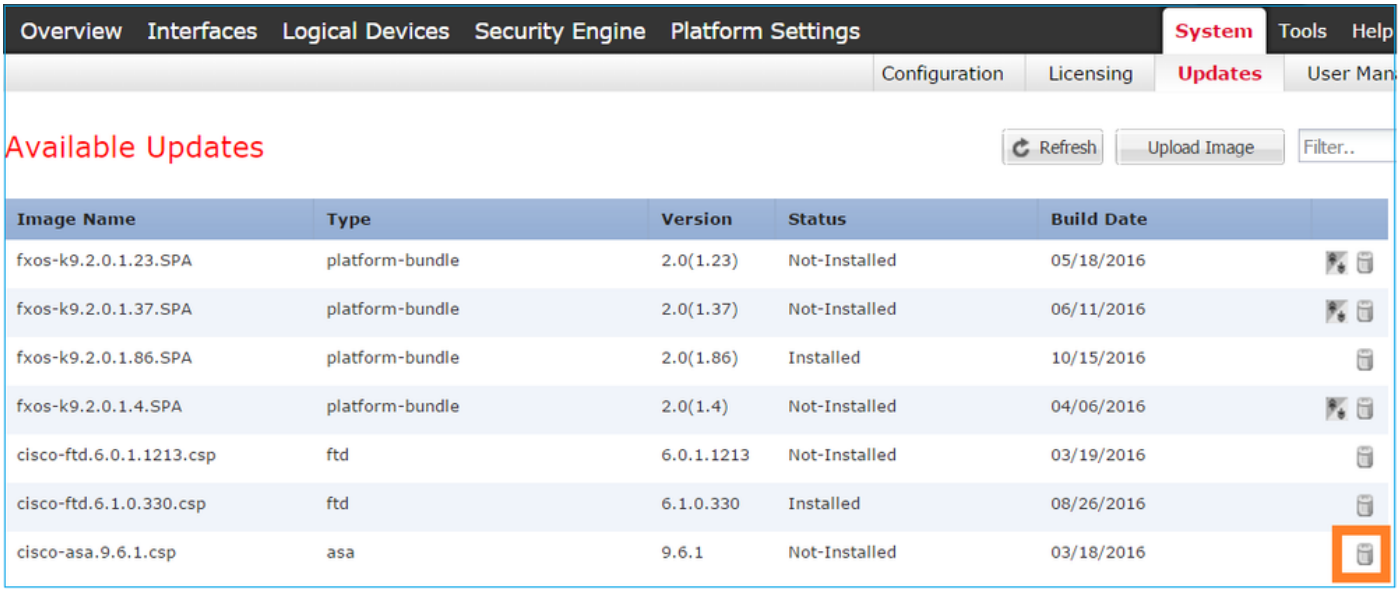
Nota: sulle piattaforme FP41xx, poiché non utilizzano RAID, il comando show inventory storage visualizza lo stato del controller come Sconosciuto. Il motivo principale per cui non sono RAID è che il secondo SSD viene utilizzato per altre funzioni come MSP (Malware Storage Pack) su un dispositivo logico FTD.

D. Come eliminare un'immagine ASA o FTD dalla GUI e dalla

CLI di FXOS?

Dalla GUI di FCM:

Per eliminare dalla GUI, selezionare System > Updates (Sistema > Aggiornamenti) ed eliminare l'immagine:



Dalla CLI di FXOS

<#root>

```
FPR4100#
```

scope ssa

```
FPR4100 /ssa #
```

show app

```
Application:
    Name    Version    Description Author     Deploy Type CSP Type    Is Default App
    ------ ---------- ----------- ---------- ----------- ----------- --------------
    asa     9.6.1      N/A         cisco      Native      Application Yes
    ftd     6.0.1.1213 N/A         cisco      Native      Application No
    ftd     6.1.0.330  N/A         cisco      Native      Application Yes
FPR4100 /ssa #
```

delete app asa 9.6.1

```
FPR4100 /ssa* #
```

commit

```
FPR4100 /ssa #
```

show app

```
Application:
    Name       Version    Description Author     Deploy Type CSP Type    Is Default App
    ---------- ---------- ----------- ---------- ----------- ----------- --------------
    ftd        6.0.1.1213 N/A         cisco      Native      Application No
    ftd        6.1.0.330  N/A         cisco      Native      Application Yes
```

D. Come controllare la versione FXOS dalla CLI?

Ci sono alcuni modi per farlo.

Modo 1

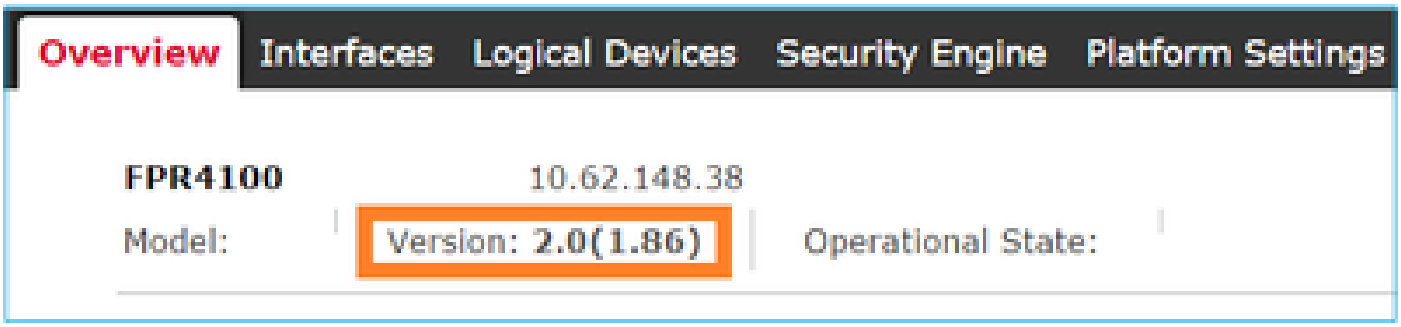
<#root>

```
FPR4100#
```

show fabric-interconnect firmware

```
Fabric Interconnect A:
    Running-Kern-Vers: 5.0(3)N2(4.01.65)
    Running-Sys-Vers: 5.0(3)N2(4.01.65)
    Package-Vers: 2.0(1.86)
    Startup-Kern-Vers: 5.0(3)N2(4.01.65)
    Startup-Sys-Vers: 5.0(3)N2(4.01.65)
    Act-Kern-Status: Ready
    Act-Sys-Status: Ready
    Bootloader-Vers:
```

Questo è lo stesso che si può vedere dalla GUI di FCM:



Modo 2

<#root>

```
FP4145-1#
```

show version

```
    Version: 2.6(1.192)
```

```
    Startup-Vers: 2.6(1.192)
```

D. Come verificare l'MTU delle interfacce su FXOS?

Per impostazione predefinita, lo chassis Firepower 4100/9300 supporta i frame jumbo. È possibile controllare l'MTU dell'interfaccia con questo comando:

<#root>

```
FPR9K-1-A#
```

connect fxos

```
FPR9K-1-A(fxos)# show hardware internal bcm-usd info phy-info all
+-----------------+-------------------------------------------------------------+
| port phy info                                                                 |
+-----------------+-------------------------------------------------------------+
          front-port :   1           asic-port : 125      sfp installed : yes
              enable : ena               speed :  1G            autoneg :  on
           interface : (10)XFI           duplex: half          linkscan : sw
            pause_tx : 0x0            pause_rx : 0x0
```

max frame : 9216

```
        local_advert : 0x20       remote_advert : 0x420    port_40g_enable : 0
        local_fault : 0x1       remote_fault : 0x0
       xcvr sfp type : (1)PHY_SFP_1G_COPPER
TSC4 registers:
        txfir(0xc252):0x0000      txdrv(0xc017):0x0000      lane(0x9003):0x1b1b
Asic 56846 Registers
     signal_detect(1.0x81d0):0x0000      link_status(1.0x81d1):0x0000
       rx_link_state(1.0x0):0x0000      pcs_rx_tx_fault(1.0x0008):0x0000
       pcs_block_status_0x20(1.0x20) :0x0000
       pcs_block_status_0x21(1.0x021) : 0x0000
        transmitter_reg(1.0x8000):0x0000      micro_ver(1.0x81f0):0x0000
```

In alternativa, controllare l'MTU nella shell dei comandi fxos:

<#root>

```
KSEC-FPR4112-4#
```

connect fxos

```
<output is skipped>
```

```
KSEC-FPR4112-4(fxos)#
```

show interface ethernet 1/1

```
Ethernet1/1 is up
 Dedicated Interface
  Hardware: 1000/10000 Ethernet, address: 14a2.a02f.07c0 (bia 14a2.a02f.07c0)
  Description: U: Uplink


MTU 9216 bytes

, BW 1000000 Kbit, DLY 10 usec
```

D. Come controllare le applicazioni installate?

Dalla CLI dello chassis, usare il comando scope ssa, quindi visualizzare i dettagli di espansione dello slot.

Le stesse informazioni si trovano sul file sam_techsupportinfo all'interno dello chassis show tech bundle.

<#root>

```
`scope ssa`
`show slot expand detail`


Slot:
    Slot ID: 1
    Log Level: Info
    Admin State: Ok
    Operational State: Online
    Disk State: Ok
    Clear Log Data: Available

    Application Instance:
        Application Name: asa
        Admin State: Enabled
        Operational State: Online
        Running Version: 9.6.2
        Startup Version: 9.6.2
        Hotfixes:
        Externally Upgraded: No
        Cluster Oper State: Not Applicable
        Current Job Type: Start
        Current Job Progress: 100
        Current Job State: Succeeded
        Clear Log Data: Available
        Error Msg:
        Current Task:

        App Attribute:
            App Attribute Key: mgmt-ip
            Value: 0.0.0.0

            App Attribute Key: mgmt-url
            Value: https://0.0.0.0/

        Heartbeat:
            Last Received Time: 2017-03-15T10:25:02.220
```

```
        Heartbeat Interval: 1
        Max Number of Missed heartbeats Permitted: 3

    Resource:
        Allocated Core NR: 46
        Allocated RAM (KB): 233968896
        Allocated Data Disk (KB): 20971528
        Allocated Binary Disk (KB): 174964
        Allocated Secondary Disk (KB): 0

Heartbeat:
    Last Received Time: 2017-03-15T10:25:00.447
    Heartbeat Interval: 5
    Max Number of Missed heartbeats Permitted: 3

Monitor:
    OS Version: 9.6(1.150)
    CPU Total Load 1 min Avg: 48.110001
    CPU Total Load 5 min Avg: 48.110001
    CPU Total Load 15 min Avg: 48.110001
    Memory Total (KB): 264377600
    Memory Free (KB): 236835112
    Memory Used (KB): 27542488
    Memory App Total (KB): 233968896
    Disk File System Count: 5
    Blade Uptime: up 1 day,  6:56
    Last Updated Timestamp: 2017-03-15T10:24:10.306

    Disk File System:
        File System: /dev/sda1
        Mount Point: /mnt/boot
        Disk Total (KB): 7796848
        Disk Free (KB): 7694456
        Disk Used (KB): 102392

        File System: /dev/sda2
        Mount Point: /opt/cisco/config
        Disk Total (KB): 1923084
        Disk Free (KB): 1734420
        Disk Used (KB): 90976

        File System: /dev/sda3
        Mount Point: /opt/cisco/platform/logs
        Disk Total (KB): 4805760
        Disk Free (KB): 4412604
        Disk Used (KB): 149036

        File System: /dev/sda5
        Mount Point: /var/data/cores
        Disk Total (KB): 48061320
        Disk Free (KB): 43713008
        Disk Used (KB): 1906892

        File System: /dev/sda6
        Mount Point: /opt/cisco/csp
        Disk Total (KB): 716442836
        Disk Free (KB): 714947696
        Disk Used (KB): 1495140
```

D. Come verificare la configurazione del canale della porta dalla CLI di FXOS?

Comandi di verifica del canale della porta

Controllo 1

Per verificare quali porte-canali sono attualmente configurati sullo chassis:

<#root>

```
FPR9K-1-A#
```

connect fxos

```
FPR9K-1-A(fxos)# show port-channel summary
Flags:  D - Down        P - Up in port-channel (members)
        I - Individual  H - Hot-standby (LACP only)
        s - Suspended   r - Module-removed
        S - Switched    R - Routed
        U - Up (port-channel)
        M - Not in use. Min-links not met
--------------------------------------------------------------------------------
Group Port-       Type     Protocol  Member Ports
      Channel
--------------------------------------------------------------------------------
11    Po11(SU)    Eth      LACP      Eth1/4(P)    Eth1/5(P)
15    Po15(SD)    Eth      LACP      Eth1/6(D)
48    Po48(SU)    Eth      LACP      Eth1/2(P)    Eth1/3(P)
```

Controllo 2

Per verificare i canali porta allocati a una periferica logica:

<#root>

```
FPR9K-1-A#
```

scope ssa

```
FPR9K-1-A /ssa #
```

show configuration

```
 scope ssa
     enter logical-device ftd_682021968 ftd "1,2,3" clustered
         enter cluster-bootstrap
             set chassis-id 1
             set ipv4 gateway 0.0.0.0
             set ipv4 pool 0.0.0.0 0.0.0.0
             set ipv6 gateway ::
             set ipv6 pool :: ::
             set virtual ipv4 0.0.0.0 mask 0.0.0.0
```

```
            set virtual ipv6 :: prefix-length ""
 !          set key
            set mode spanned-etherchannel
            set name 682021968
            set site-id 0
        exit
        enter external-port-link Ethernet11_ftd Ethernet1/1 ftd
            set decorator ""
            set description ""
            set port-name Ethernet1/1
        exit
        enter external-port-link PC11_ftd Port-channel11 ftd
            set decorator ""
            set description ""
            set port-name Port-channel11
        exit
        enter external-port-link PC48_ftd Port-channel48 ftd
            set decorator ""
            set description ""
            set port-name Port-channel48
        exit
```

Controllo 3

Per controllare le statistiche del traffico del canale porta per porta:

<#root>

```
FPR9K-1-A(fxos)#

show port-channel traffic interface port-channel 11

ChanId      Port Rx-Ucst Tx-Ucst Rx-Mcst Tx-Mcst Rx-Bcst Tx-Bcst
------ --------- ------- ------- ------- ------- ------- -------
    11    Eth1/4  62.91%    0.0%  58.90%  49.99% 100.00%    0.0%
    11    Eth1/5  37.08%    0.0%  41.09%  50.00%    0.0%    0.0%
```

Controllo 4

Per controllare i dettagli di un canale porta specifico:

<#root>

```
FPR9K-1-A(fxos)#

show port-channel database interface port-channel 11

port-channel11
    Last membership update is successful
    2 ports in total, 2 ports up
    First operational port is Ethernet1/4
    Age of the port-channel is 0d:20h:26m:27s
    Time since last bundle is 0d:18h:29m:07s
    Last bundled member is Ethernet1/5
    Ports:   Ethernet1/4     [active ] [up] *
```

```
            Ethernet1/5     [active ] [up]
```

Controllo 5

Per controllare l'ID sistema LACP locale:

<#root>

```
FPR9K-1-A(fxos)#

show lacp system-identifier

32768,b0-aa-77-2f-81-bb
```

Controllo 6

Per controllare l'ID sistema LACP dei dispositivi a monte e i flag di stato LACP:

<#root>

```
FPR9K-1-A(fxos)#

show lacp neighbor

Flags:  S - Device is sending Slow LACPDUs F - Device is sending Fast LACPDUs
        A - Device is in Active mode       P - Device is in Passive mode
port-channel11 neighbors
Partner's information
            Partner               Partner                     Partner
Port        System ID             Port Number     Age         Flags
Eth1/4      32768,4-62-73-d2-65-0  0x118           66828       FA

            LACP Partner          Partner                     Partner
            Port Priority         Oper Key                    Port State
            32768                 0xb                         0x3d

Partner's information
            Partner               Partner                     Partner
Port        System ID             Port Number     Age         Flags
Eth1/5      32768,4-62-73-d2-65-0  0x119           66826       FA

            LACP Partner          Partner                     Partner
            Port Priority         Oper Key                    Port State
            32768                 0xb                         0x3d
```

Controllo 7

Per controllare la cronologia degli eventi Port-Channel:

<#root>

```
FPR9K-1-A(fxos)#
```

show port-channel internal event-history all

```
Low Priority Pending queue: len(0), max len(1) [Thu Apr  6 11:07:48 2017]
High Priority Pending queue: len(0), max len(16) [Thu Apr  6 11:07:48 2017]
PCM Control Block info:
pcm_max_channels        : 4096
pcm_max_channel_in_use  : 48
pc count                : 3
hif-pc count            : 0
Max PC Cnt              : 104
Load-defer timeout      : 120
==================================================
PORT CHANNELS:
2LvPC PO in system : 0

port-channel11
channel       : 11
bundle        : 65535
ifindex       : 0x1600000a
admin mode    : active
oper mode     : active
fop ifindex   : 0x1a003000
nports     : 2
active     : 2
pre cfg    : 0
ltl        : 0x0 (0)
lif        : 0x0
iod        : 0x78 (120)
global id  : 3
flag       : 0
lock count : 0
num. of SIs: 0
ac mbrs    : 0 0
lacp graceful conv disable   : 0
lacp suspend indiv disable   : 1
pc min-links                 : 1
pc max-bundle                : 16
pc max active members        : 32
pc is-suspend-minlinks       : 0
port load defer enable       : 0
lacp fast-select-hot-standby disable   : 0
ethpm bundle lock count : 0
bundle res global id    : 2
Members:
Ethernet1/4 [bundle_no = 0]
Ethernet1/5 [bundle_no = 0]
port-channel external lock:
Lock Info: resource [eth-port-channel 11]
  type[0] p_gwrap[(nil)]
      FREE @ 246108 usecs after Wed Apr  5 14:18:10 2017
  type[1] p_gwrap[(nil)]
      FREE @ 436471 usecs after Wed Apr  5 16:15:30 2017
  type[2] p_gwrap[(nil)]
      FREE @ 436367 usecs after Wed Apr  5 16:15:30 2017
0x1600000a
internal (ethpm bundle) lock:
Lock Info: resource [eth-port-channel 11]
  type[0] p_gwrap[(nil)]
      FREE @ 246083 usecs after Wed Apr  5 14:18:10 2017
  type[1] p_gwrap[(nil)]
      FREE @ 610546 usecs after Wed Apr  5 16:19:04 2017
```

```
  type[2] p_gwrap[(nil)]
      FREE @ 610437 usecs after Wed Apr  5 16:19:04 2017
0x1600000a


>>>>FSM: <eth-port-channel 11> has 194 logged transitions<<<<<

1) FSM:<eth-port-channel 11> Transition at 557291 usecs after Wed Apr  5 16:04:27 2017
    Previous state: [PCM_PC_ST_WAIT_REL_RESRC]
    Triggered event: [PCM_PC_EV_REL_RESRC_DONE]
    Next state: [PCM_PC_ST_INIT]

2) FSM:<eth-port-channel 11> Transition at 49036 usecs after Wed Apr  5 16:07:18 2017
    Previous state: [PCM_PC_ST_INIT]
    Triggered event: [PCM_PC_EV_L2_CREATE]
    Next state: [PCM_PC_ST_WAIT_CREATE]

3) FSM:<eth-port-channel 11> Transition at 49053 usecs after Wed Apr  5 16:07:18 2017
    Previous state: [PCM_PC_ST_WAIT_CREATE]
    Triggered event: [PCM_PC_EV_L2_CREATED]
    Next state: [PCM_PC_ST_CREATED]
```

Controllo 8

Debug lacp all genera un output molto grande:

<#root>

```
FPR9K-1-A(fxos)#

debug lacp all


2017 Jul 11 10:42:23.854160 lacp: lacp_pkt_parse_pdu(569): lacp_pkt_parse_pdu: got packet from actorport
2017 Jul 11 10:42:23.854177 lacp: lacp_pkt_compute_port_params(1163): Ethernet1/3(0x1a002000): pa aggre
2017 Jul 11 10:42:23.854190 lacp: lacp_pkt_compute_port_params(1170): p_el=(8000, 2-0-0-0-0-1, 136, 800
2017 Jul 11 10:42:23.854198 lacp: lacp_pkt_compute_port_params(1172): p_el_pkt=(8000, 2-0-0-0-0-1, 136,
2017 Jul 11 10:42:23.854207 lacp: lacp_utils_get_obj_type_from_ifidx(390): lacp_utils_get_obj_type_from_
2017 Jul 11 10:42:23.854218 lacp: Malloc in fu_fsm_event_new@../utils/fsmutils/fsm.c[5317]-ty[1]0x9bf71
2017 Jul 11 10:42:23.854228 lacp: lacp_utils_cr_fsm_event(572): Called from lacp_utils_create_fsm_event_
2017 Jul 11 10:42:23.854237 lacp: Malloc in fu_fsm_event_pair_new@../utils/fsmutils/fsm.c[5327]-ty[2]0x
2017 Jul 11 10:42:23.854248 lacp: fu_fsm_execute_all: match_msg_id(0), log_already_open(0)
2017 Jul 11 10:42:23.854257 lacp: Malloc in fu_fsm_event_new@../utils/fsmutils/fsm.c[5317]-ty[1]0x9bf71
2017 Jul 11 10:42:23.854268 lacp: fu_fsm_execute: (Ethernet1/3)
2017 Jul 11 10:42:23.854275 lacp:     current state [LACP_ST_PORT_MEMBER_COLLECTING_AND_DISTRIBUTING_ENA
2017 Jul 11 10:42:23.854283 lacp:     current event [LACP_EV_PARTNER_PDU_IN_SYNC_COLLECT_ENABLED_DISTRI
2017 Jul 11 10:42:23.854291 lacp:     next state    [FSM_ST_NO_CHANGE]
2017 Jul 11 10:42:23.854304 lacp: lacp_proto_get_state(969): IF Ethernet1/3(0x1a002000): end PartnerEnd
2017 Jul 11 10:42:23.854314 lacp: lacp_proto_record_pdu(2266): Recording PDU for LACP pkt on IF Etherne
2017 Jul 11 10:42:23.854325 lacp: lacp_proto_set_state(900): IF Ethernet1/3(0x1a002000): Set end ActorE
2017 Jul 11 10:42:23.854335 lacp: lacp_proto_get_state(969): IF Ethernet1/3(0x1a002000): end PartnerEnd
2017 Jul 11 10:42:23.854344 lacp: lacp_proto_update_ntt(2211): updateNTT called for IF Ethernet1/3(0x1a
2017 Jul 11 10:42:23.854355 lacp: lacp_proto_get_state(969): IF Ethernet1/3(0x1a002000): end ActorEnd(1
2017 Jul 11 10:42:23.854362 lacp: lacp_timer_start_w_chgd_time(681): lacp_timer_start_w_chgd_time: star
2017 Jul 11 10:42:23.854377 lacp: lacp_timer_start(637): Timer Started: Timer_Arg ([rid type IF-Rid: if
2017 Jul 11 10:42:23.854386 lacp: lacp_timer_start(638): Timer period=15 seconds
2017 Jul 11 10:42:23.854396 lacp: Free ptr in fu_fsm_execute@../utils/fsmutils/fsm.c[1091] for addr 0x9
2017 Jul 11 10:42:23.854408 lacp: fu_fsm_execute_all: done processing event LACP_EV_PARTNER_PDU_IN_SYNC
2017 Jul 11 10:42:23.854419 lacp: fu_mts_drop ref 0x9bf7320 opc 90117
```

```
2017 Jul 11 10:42:23.854434 lacp: fu_fsm_execute_all: MTS_OPC_NET_L2_RX_DATA_HDR(msg_id 2623696) droppe
2017 Jul 11 10:42:23.854445 lacp: fu_fsm_engine_post_event_processing
2017 Jul 11 10:42:23.854453 lacp:  end of while in fu_fsm_engine
2017 Jul 11 10:42:23.854461 lacp: fu_handle_process_hot_plugin_msg: Entered the function line 143
2017 Jul 11 10:42:23.854468 lacp: begin fu_fsm_engine: line[2357]
2017 Jul 11 10:42:24.361501 lacp: lacp_pkt_encode_pdu_helper(770): lacp_pkt_encode_pdu_helper: pkt_len=
2017 Jul 11 10:42:24.361530 lacp: lacp_pkt_encode_pdu_helper(797): lacp_pkt_encode_pdu_helper: if_idx=E
2017 Jul 11 10:42:24.361542 lacp: lacp_debug_wrapper_tl(1718): Executing [mcecm_api_is_pc_mcec]
2017 Jul 11 10:42:24.361551 lacp: lacp_debug_wrapper_tl(1718): input: if_index = [0x16000000]
2017 Jul 11 10:42:24.361559 lacp: lacp_debug_wrapper_tl(1718): Executing [mcecm_cache_is_pc_mcec]
2017 Jul 11 10:42:24.361568 lacp: lacp_debug_wrapper_tl(1718): output:0
2017 Jul 11 10:42:24.361589 lacp: lacp_pkt_encode_pdu_helper(842): 0x1a002000: Set short_timeout to per
2017 Jul 11 10:42:24.361599 lacp: lacp_pkt_encode_pdu_helper(879): lacp_pkt_encode_pdu_helper: actor-po
2017 Jul 11 10:42:24.361612 lacp: lacp_pkt_encode_pdu_helper(906): lacp_pkt_encode_pdu_helper: if_idx=E
2017 Jul 11 10:42:24.361624 lacp: lacp_pkt_encode_pdu_helper(910): lacp_pkt_encode_pdu_helper: if_idx=E
2017 Jul 11 10:42:24.361636 lacp: lacp_net_tx_data(206): lacp_net_tx_data: Sending buffer with length 1
2017 Jul 11 10:42:24.361648 lacp: lacp_net_tx_data(215): 01 01 01 14 ffff
2017 Jul 11 10:42:24.361658 lacp: lacp_net_tx_data(215): ffff
2017 Jul 11 10:42:24.361668 lacp: lacp_net_tx_data(215): 00 00 00 02 14 ffff
2017 Jul 11 10:42:24.361678 lacp: lacp_net_tx_data(215): ffff
2017 Jul 11 10:42:24.361689 lacp: lacp_net_tx_data(215): 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 0
2017 Jul 11 10:42:24.361700 lacp: lacp_net_tx_data(215): 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 0
2017 Jul 11 10:42:24.361710 lacp: lacp_net_tx_data(215): 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 0
2017 Jul 11 10:42:24.361721 lacp: lacp_net_tx_data(247): Ethernet1/3(0x1a002000): Tx LACP PDU len: 110 
2017 Jul 11 10:42:24.361753 lacp: lacp_proto_get_state(969): IF Ethernet1/3(0x1a002000): end PartnerEnd
2017 Jul 11 10:42:24.361764 lacp: lacp_proto_restart_tx_timer(1802): lacp_proto_restart_tx_timer: got e
2017 Jul 11 10:42:24.361773 lacp: lacp_proto_restart_tx_timer(1825): lacp_proto_restart_tx_timer: flag 
2017 Jul 11 10:42:24.361782 lacp: lacp_timer_start_w_chgd_time(681): lacp_timer_start_w_chgd_time: star
2017 Jul 11 10:42:24.361798 lacp: lacp_timer_start(637): Timer Started: Timer_Arg ([rid type IF-Rid: if
2017 Jul 11 10:42:24.361807 lacp: lacp_timer_start(638): Timer period=1 seconds
2017 Jul 11 10:42:24.361820 lacp: lacp_pkt_encode_pdu_helper(770): lacp_pkt_encode_pdu_helper: pkt_len=
2017 Jul 11 10:42:24.361833 lacp: lacp_pkt_encode_pdu_helper(797): lacp_pkt_encode_pdu_helper: if_idx=E
2017 Jul 11 10:42:24.361841 lacp: lacp_debug_wrapper_tl(1718): Executing [mcecm_api_is_pc_mcec]
2017 Jul 11 10:42:24.361849 lacp: lacp_debug_wrapper_tl(1718): input: if_index = [0x16000000]
2017 Jul 11 10:42:24.361857 lacp: lacp_debug_wrapper_tl(1718): Executing [mcecm_cache_is_pc_mcec]
2017 Jul 11 10:42:24.361865 lacp: lacp_debug_wrapper_tl(1718): output:0
2017 Jul 11 10:42:24.361879 lacp: lacp_pkt_encode_pdu_helper(842): 0x1a003000: Set short_timeout to per
2017 Jul 11 10:42:24.361888 lacp: lacp_pkt_encode_pdu_helper(879): lacp_pkt_encode_pdu_helper: actor-po
2017 Jul 11 10:42:24.361899 lacp: lacp_pkt_encode_pdu_helper(906): lacp_pkt_encode_pdu_helper: if_idx=E
2017 Jul 11 10:42:24.361910 lacp: lacp_pkt_encode_pdu_helper(910): lacp_pkt_encode_pdu_helper: if_idx=E
2017 Jul 11 10:42:24.361920 lacp: lacp_net_tx_data(206): lacp_net_tx_data: Sending buffer with length 1
2017 Jul 11 10:42:24.361930 lacp: lacp_net_tx_data(215): 01 01 01 14 ffff
2017 Jul 11 10:42:24.361940 lacp: lacp_net_tx_data(215): ffff
2017 Jul 11 10:42:24.361950 lacp: lacp_net_tx_data(215): 00 00 00 02 14 00 00 00 00 00 00 00 00 00 00 0
2017 Jul 11 10:42:24.361960 lacp: lacp_net_tx_data(215): 00 00 00 00 00 00 03 10 00 00 00 00 00 00 00 0
2017 Jul 11 10:42:24.361971 lacp: lacp_net_tx_data(215): 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 0
2017 Jul 11 10:42:24.361981 lacp: lacp_net_tx_data(215): 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 0
2017 Jul 11 10:42:24.361991 lacp: lacp_net_tx_data(215): 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 0
2017 Jul 11 10:42:24.362001 lacp: lacp_net_tx_data(247): Ethernet1/4(0x1a003000): Tx LACP PDU len: 110 
2017 Jul 11 10:42:24.362022 lacp: lacp_proto_get_state(969): IF Ethernet1/4(0x1a003000): end PartnerEnd
2017 Jul 11 10:42:24.362032 lacp: lacp_proto_restart_tx_timer(1802): lacp_proto_restart_tx_timer: got e
2017 Jul 11 10:42:24.362042 lacp: lacp_proto_restart_tx_timer(1825): lacp_proto_restart_tx_timer: flag 
2017 Jul 11 10:42:24.362050 lacp: lacp_timer_start_w_chgd_time(681): lacp_timer_start_w_chgd_time: star
2017 Jul 11 10:42:24.362062 lacp: lacp_timer_start(637): Timer Started: Timer_Arg ([rid type IF-Rid: if
```

Suggerimento

Verificare se si ricevono pacchetti LACP dal peer. Ad esempio, l'interfaccia Ethernet1/3 riceve pacchetti LACP, ma Ethernet1/4 no:

```
2017 Jul 11 10:42:25.641920 lacp: lacp_net_get_pkt_info(746): Packet received on phy_if_idx Ethernet1/3
2017 Jul 11 10:42:25.641937 lacp: lacp_net_process_rx_data(480): Ethernet1/3(0x1a002000): Rx LACP PDU l
```

Controllo 9

In questo output, l'interfaccia Ethernet1/4 è un membro di Port-Channel, ma è in modalità individuale (sospesa sul lato switch):

<#root>

```
ciscofcm01-A(fxos)#

show lacp internal event-history interface ethernet 1/4



>>>>FSM: <Ethernet1/4> has 549 logged transitions<<<<<

1) FSM:<Ethernet1/4> Transition at 385779 usecs after Wed Jul  5 13:13:03 2017
    Previous state: [LACP_ST_PORT_IS_DOWN_OR_LACP_IS_DISABLED]
    Triggered event: [LACP_EV_CLNUP_PHASE_II]
    Next state: [LACP_ST_PORT_IS_DOWN_OR_LACP_IS_DISABLED]

2) FSM:<Ethernet1/4> Transition at 955546 usecs after Wed Jul  5 13:13:03 2017
    Previous state: [LACP_ST_PORT_IS_DOWN_OR_LACP_IS_DISABLED]
    Triggered event: [LACP_EV_LACP_ENABLED_AND_PORT_UP]
    Next state: [LACP_ST_DETACHED_LAG_NOT_DETERMINED]

3) FSM:<Ethernet1/4> Transition at 962224 usecs after Wed Jul  5 13:13:10 2017
    Previous state: [LACP_ST_DETACHED_LAG_NOT_DETERMINED]
    Triggered event: [LACP_EV_RECEIVE_PARTNER_PDU_TIMED_OUT]
    Next state: [FSM_ST_NO_CHANGE]

4) FSM:<Ethernet1/4> Transition at 963838 usecs after Wed Jul  5 13:13:13 2017
    Previous state: [LACP_ST_DETACHED_LAG_NOT_DETERMINED]
    Triggered event: [LACP_EV_RECEIVE_PARTNER_PDU_TIMED_OUT]
    Next state: [FSM_ST_NO_CHANGE]

5) FSM:<Ethernet1/4> Transition at 964002 usecs after Wed Jul  5 13:13:13 2017
    Previous state: [LACP_ST_DETACHED_LAG_NOT_DETERMINED]
    Triggered event: [LACP_EV_RECEIVE_PARTNER_PDU_TIMED_OUT_II_INDIVIDUAL]
    Next state: [LACP_ST_INDIVIDUAL_OR_DEFAULT]

6) FSM:<Ethernet1/4> Transition at 735923 usecs after Wed Jul  5 13:13:36 2017
    Previous state: [LACP_ST_INDIVIDUAL_OR_DEFAULT]
    Triggered event: [LACP_EV_UNGRACEFUL_DOWN]
    Next state: [LACP_ST_PORT_IS_DOWN_OR_LACP_IS_DISABLED]
```

Controllo 10

In questo output, l'interfaccia Ethernet1/3 è operativa e membro di PortChannel1, mentre Ethernet1/4, sebbene sia membro di PortChannel1, è in modalità individuale. Si noti che Ethernet1/3 invia (tx) e riceve (rx) pacchetti, ma Ethernet1/4 non invia (rx) alcun pacchetto:

<#root>

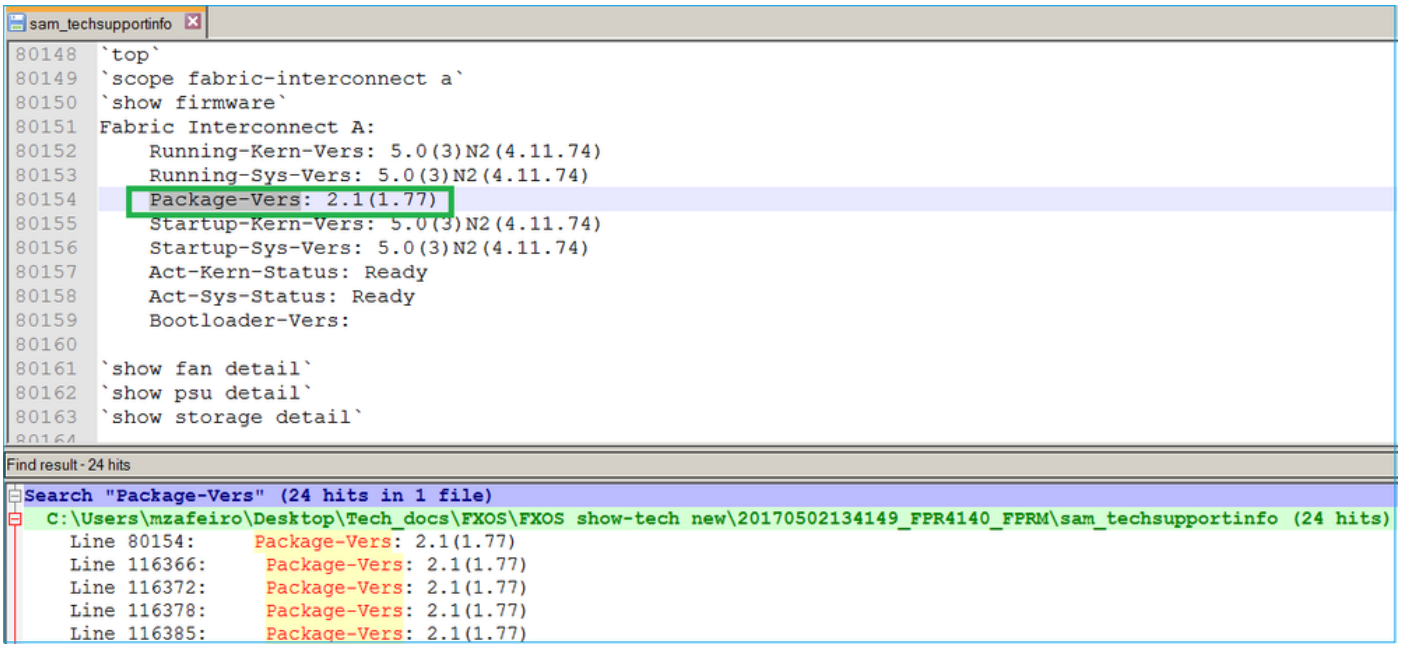
```
ciscofcm01-A(fxos)#

debug lacp pkt

ciscofcm01-A(fxos)# 2017 Jul 11 11:04:05.278736 lacp: lacp_net_process_rx_data(480): Ethernet1/3(0x1a00
2017 Jul 11 11:04:05.602855 lacp: lacp_net_tx_data(247): Ethernet1/3(0x1a002000): Tx LACP PDU len: 110 
2017 Jul 11 11:04:05.983134 lacp: lacp_net_tx_data(247): Ethernet1/4(0x1a003000): Tx LACP PDU len: 110 
2017 Jul 11 11:04:06.249929 lacp: lacp_net_process_rx_data(480): Ethernet1/3(0x1a002000): Rx LACP PDU l
2017 Jul 11 11:04:06.602815 lacp: lacp_net_tx_data(247): Ethernet1/3(0x1a002000): Tx LACP PDU len: 110 
2017 Jul 11 11:04:06.992812 lacp: lacp_net_tx_data(247): Ethernet1/4(0x1a003000): Tx LACP PDU len: 110 
2017 Jul 11 11:04:07.163780 lacp: lacp_net_process_rx_data(480): Ethernet1/3(0x1a002000): Rx LACP PDU l
2017 Jul 11 11:04:07.602814 lacp: lacp_net_tx_data(247): Ethernet1/3(0x1a002000): Tx LACP PDU len: 110 
2017 Jul 11 11:04:08.002817 lacp: lacp_net_tx_data(247): Ethernet1/4(0x1a003000): Tx LACP PDU len: 110 
2017 Jul 11 11:04:08.102006 lacp: lacp_net_process_rx_data(480): Ethernet1/3(0x1a002000): Rx LACP PDU l
2017 Jul 11 11:04:08.612810 lacp: lacp_net_tx_data(247): Ethernet1/3(0x1a002000): Tx LACP PDU len: 110 
2017 Jul 11 11:04:09.002811 lacp: lacp_net_tx_data(247): Ethernet1/4(0x1a003000): Tx LACP PDU len: 110 
2017 Jul 11 11:04:09.091937 lacp: lacp_net_process_rx_data(480): Ethernet1/3(0x1a002000): Rx LACP PDU l
2017 Jul 11 11:04:09.622810 lacp: lacp_net_tx_data(247): Ethernet1/3(0x1a002000): Tx LACP PDU len: 110 
2017 Jul 11 11:04:10.002807 lacp: lacp_net_tx_data(247): Ethernet1/4(0x1a003000): Tx LACP PDU len: 110 
2017 Jul 11 11:04:10.004411 lacp: lacp_net_process_rx_data(480): Ethernet1/3(0x1a002000): Rx LACP PDU l
2017 Jul 11 11:04:10.632806 lacp: lacp_net_tx_data(247): Ethernet1/3(0x1a002000): Tx LACP PDU len: 110 
2017 Jul 11 11:04:10.854094 lacp: lacp_net_process_rx_data(480): Ethernet1/3(0x1a002000): Rx LACP PDU l
2017 Jul 11 11:04:11.002789 lacp: lacp_net_tx_data(247): Ethernet1/4(0x1a003000): Tx LACP PDU len: 110 
2017 Jul 11 11:04:11.642807 lacp: lacp_net_tx_data(247): Ethernet1/3(0x1a002000): Tx LACP PDU len: 110 
2017 Jul 11 11:04:11.714199 lacp: lacp_net_process_rx_data(480): Ethernet1/3(0x1a002000): Rx LACP PDU l
```

Per ulteriori informazioni, consultare questo documento:

D. Come trovare la versione del bundle FXOS da Show Tech Output?

Modo 1

Nel file tar FPRM, estrarre il contenuto del file FPRM_A_TechSupport.tar.gz. Quindi, aprire il file sam_techsupportinfo e cercare Package-Verse:



<#root>

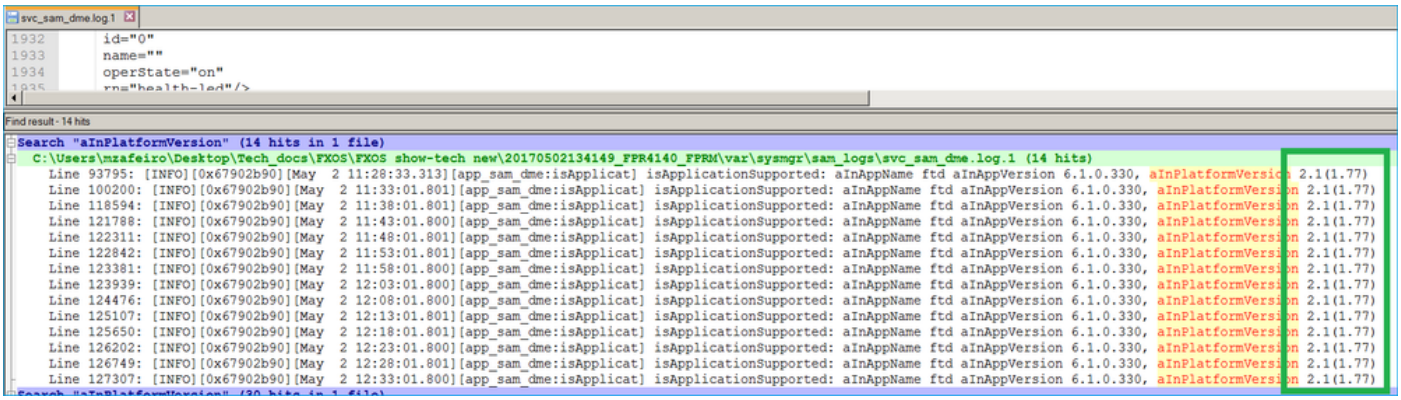
FPR4140-A#

show fabric-interconnect firmware

```
Fabric Interconnect A:
    Running-Kern-Vers: 5.0(3)N2(4.11.74)
    Running-Sys-Vers: 5.0(3)N2(4.11.74)
    Package-Vers: 2.1(1.77)
    Startup-Kern-Vers: 5.0(3)N2(4.11.74)
    Startup-Sys-Vers: 5.0(3)N2(4.11.74)
    Act-Kern-Status: Ready
    Act-Sys-Status: Ready
    Bootloader-Vers:
```

Modo 2

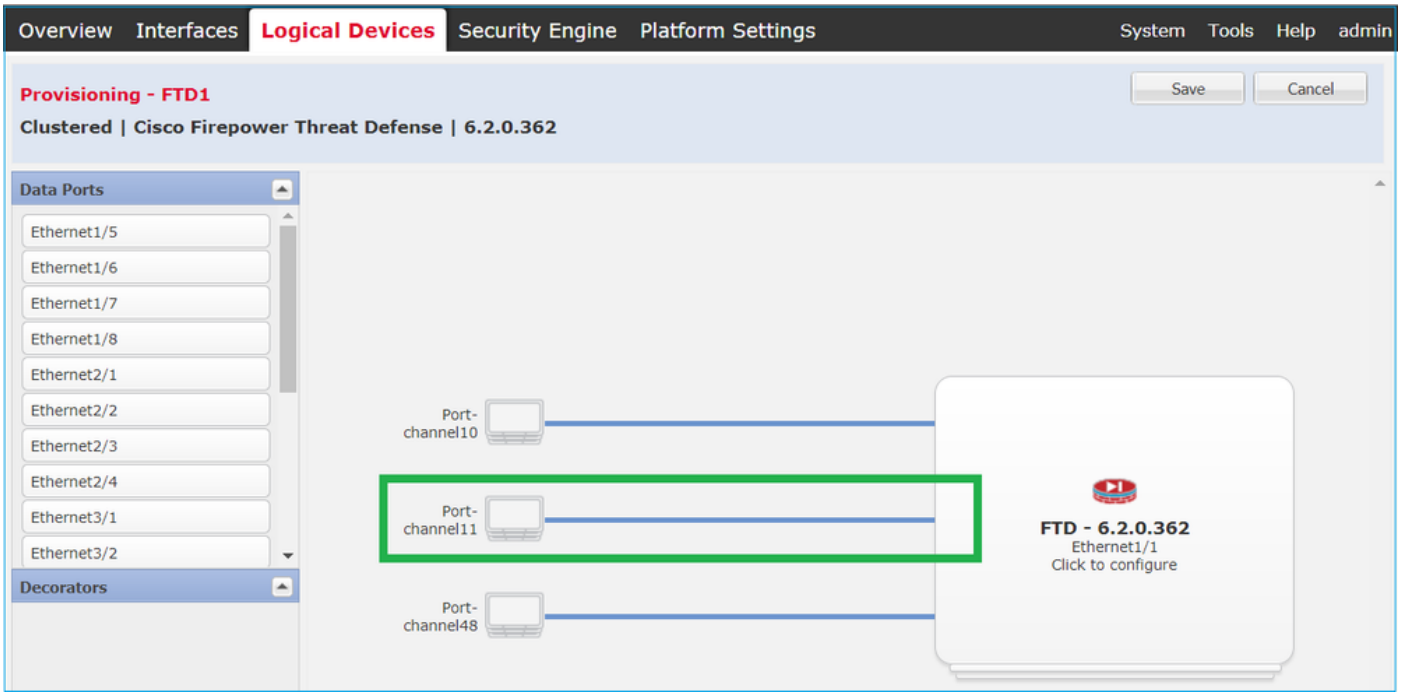
Nel file Tar FRPM, estrarre il contenuto del file FPRM_A_TechSupport.tar.gz. Aprire quindi il file /var/sysmgr/sam_logs/svc_sam_dme.log e cercare la parola chiave aInPlatformVersion:



D. In che modo MIO propaga le informazioni dell'interfaccia (aggiunta/rimozione) all'applicazione blade (FTD, ASA)?

Utilizza il componente agente app MIO.

Ad esempio, quando un nuovo Port-Channel viene assegnato all'FTD da MIO:



Il debug dell'agente app FTD mostra:

<#root>

```
firepower#
```

debug app-agent 255

```
appagent : part 0 : ftd_001_JAD19500BAB0Z690F2.interfaceMapping.update
appagent : part 1 : ssp-xml:3
appagent : part 2 : 7
appagent : part 3 : appAG
appagent : part 4 : <interfaceMappingConfigUpdateRequest><interfaceMapping action="insert"><externalPor
<bladeVNIC>22</bladeVNIC></internalPort></interfaceMapping></interfaceMappingConfigUpdateRequest>
appagent : Process the request message
appagent : It is an update request command
appagent : Invoke request msg handler for cmd interfaceMapping.update
appagent : Processing InterfaceMapping Update Message
appagent : Creating Interface Mapping Structure.
appagent : Processing the tag externalPort.
appagent : ================================
appagent : PortName=Port-channel11
appagent : ftw capability=0
appagent : no available ftw peers
appagent : cleaning external_port_ftw_peers_t
appagent : Sending Response message for Interface Mapping update Message
appagent : Send response message to appAG
```

```
appagent : resp_msg->cmdName =appAG.interfaceMapping.update
appagent : resp_msg->content_version =ssp-xml:3
appagent : resp_msg->msgId =7
appagent : resp_msg->statuscode =100
appagent : resp_msg->data =<interfaceMappingConfigUpdateResponse>
  <response>
    <code>100</code>
    <message>Request success</message>
  </response>
</interfaceMappingConfigUpdateResponse>
appagent : part 0 : ftd_001_JAD19500BAB0Z690F2.interfaceStatus.update
appagent : part 1 : ssp-xml:3
appagent : part 2 : 8
appagent : part 3 : appAG
appagent : part 4 : <interfaceStatusUpdateRequest><interface><interfaceName>Port-channel11</interfaceNa
appagent : Process the request message
appagent : It is an update request command
appagent : Invoke request msg handler for cmd interfaceStatus.update
appagent : Processing Interface Status Update Request.
appagent : The Fxos version is 2.1.1 or newer
appagent : Parsing interface status update request message for FXOS > 211
appagent : Parsing Interface Status Req.
appagent : Interface Status Successfully Updated.
appagent : Sending Response for Interface Status Update Request
appagent : Send response message to appAG
appagent : resp_msg->cmdName =appAG.interfaceStatus.update
appagent : resp_msg->content_version =ssp-xml:3
appagent : resp_msg->msgId =8
appagent : resp_msg->statuscode =100
appagent : resp_msg->data =<interfaceStatusUpdateResponse>
  <response>
    <code>100</code>
    <message>Request success</message>
  </response>
</interfaceStatusUpdateResponse>
```

D. Quale numero di serie (SN) deve essere utilizzato nel caso di RMA dello chassis Firepower?

Lo chassis firepower ha più SN. Quella utilizzata per una richiesta RMA può essere presa da questi output:

<#root>

```
FP4120-5-A#

scope chassis 1

FP4120-5-A /chassis # show inventory
Chassis    PID             Vendor            Serial (SN) HW Revision
---------- --------------- ----------------- ----------- -----------
         1 FPR-4120-K9     Cisco Systems Inc FLM12345KL6 0
```

O:

<#root>

```
FP4120-5-A#

connect local-mgmt

FP4120-5-A(local-mgmt)#

show license all


Smart Licensing Status
======================

Smart Licensing is ENABLED

Registration:
  Status: UNREGISTERED
  Export-Controlled Functionality: Not Allowed

License Authorization:
  Status: No Licenses in Use

License Usage
=============

No licenses in use

Product Information
===================

UDI: PID:FPR-4120-SUP,SN:JAD19500BAB
```

O:

<#root>

```
FP4120-5-A#

scope license

FP4120-5-A /license #

show license all


Smart Licensing Status
======================

Smart Licensing is ENABLED

Registration:
  Status: UNREGISTERED
  Export-Controlled Functionality: Not Allowed

License Authorization:
  Status: No Licenses in Use
```

```
License Usage
==============

No licenses in use

Product Information
===================
```

UDI: PID:FPR-4120-SUP,SN:JAD19500BAB

D. È possibile sostituire SSD1 tra due diversi chassis FXOS?

La risposta breve è no. SSD1 contiene l'immagine dell'applicazione (ad esempio FTD o ASA). Se si estrae la SSD1 dallo chassis e la si collega a un altro chassis, il modulo non si accende e vengono visualizzati questi errori:

Critico F1548 2017-11-08T11:36:40.095 427280 Lo swap dei blade è stato rilevato sullo slot 1

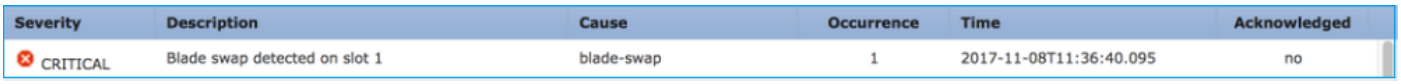
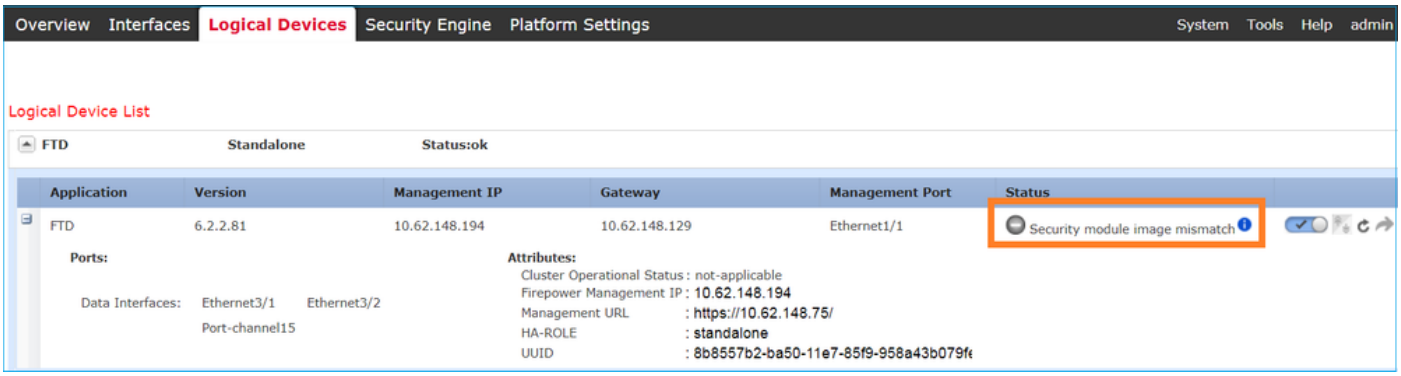
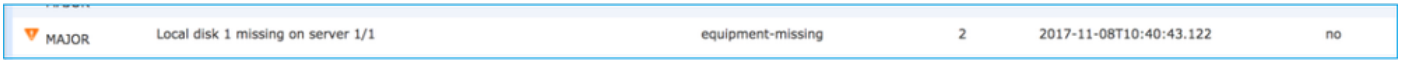


Immagine del modulo di sicurezza non corrispondente



Disco locale 1 mancante sul server 1/1



D. In che modo viene controllato il consumo energetico dello chassis?

A partire dalla versione FXOS 2.2.1, è possibile usare il comando show environment summary:

<#root>

```
FPR4100-1 /chassis #
```

show environment summary

```
Chassis INFO :
    Total Power Consumption: 440.000000
    Inlet Temperature (C): 21.000000
    CPU Temperature (C): 39.000000
    Last updated Time: 2018-07-01T09:39:55.157

    PSU 1:
        Type: AC
        Input Feed Status: Ok
        12v Output Status: Ok
        Overall Status: Operable
    PSU 2:
        Type: AC
        Input Feed Status: N/A
        12v Output Status: N/A
        Overall Status: Removed

    FAN 1
        Fan Speed RPM (RPM): 12110
        Speed Status: Ok
        Overall Status: Operable
    FAN 2
        Fan Speed RPM (RPM): 12110
        Speed Status: Ok
        Overall Status: Operable
    FAN 3
        Fan Speed RPM (RPM): 12100
        Speed Status: Ok
        Overall Status: Operable
```

Per ulteriori informazioni, controllare:

Monitoraggio dello stato dello chassis

D. Come controllare la versione del bootloader?

<#root>

```
FPR-4110-7-A#
```

scope chassis 1

```
FPR-4110-7-A /chassis #
```

scope server 1

```
FPR-4110-7-A /chassis/server #
```

scope adapter 1

```
FPR-4110-7-A /chassis/server/adapter #
```

show version detail

```
Adapter 1:
 Running-Vers: 5.3(1.91)
 Package-Vers: 2.3(1.88)
 Update-Status: Ready
 Activate-Status: Ready
 Bootloader-Update-Status: Ready
 Startup-Vers: 5.3(1.91)
 Backup-Vers: 5.3(1.48)
 Bootloader-Vers: MF-111-234949
```

D. Come aggiornare il bootloader?

Dopo l'installazione di FXOS 2.3.1.58 o versione successiva, il sistema potrebbe ricevere un errore critico sull'appliance di sicurezza che indica che è necessario aggiornare il firmware dell'adattatore:

```
Critical F1715 2017-05-11T11:43:33.121 339561 Adapter 1 on Security Module 1 requires a critical firmwa
```

La procedura di aggiornamento del bootloader è descritta in questo link: https://www.cisco.com/c/en/us/td/docs/security/firepower/fxos/fxos231/release/notes/fxos231_rn.html#pgfl 173826

Se si verifica questo errore durante l'aggiornamento del bootloader, è possibile provare a utilizzare l'opzione 'force'.

<#root>

```
FPR-4110-7-A#
```

scope chassis 1

```
FPR-4110-7-A /chassis #
```

scope server 1

```
FPR-4110-7-A /chassis/server #
```

scope adapter 1/1/1

```
FPR-4110-7-A /chassis/server/adapter #
```

show image

```
Name Type Version
------------------------------------------- -------------------- -------
fxos-m83-8p40-cruzboot.4.0.1.62.bin Adapter Boot 4.0(1.62)
fxos-m83-8p40-vic.4.0.1.51.bin Adapter 4.0(1.51)
fxos-m83-8p40-vic.5.3.1.2.bin Adapter 5.3(1.2)
```

```
fxos-m83-8p40-vic.5.3.1.48.bin Adapter 5.3(1.48)
fxos-m83-8p40-vic.5.3.1.91.bin Adapter 5.3(1.91)
FPR-4110-7-A /chassis/server/adapter #
```

update boot-loader 4.0(1.62)

```
Warning: Please DO NOT reboot blade or chassis during uprgade, otherwise, it may cause adapter UNUSABLE
After upgrade completed, blade must be power cycled automatically
FPR-4110-7-A /chassis/server/adapter* #
```

commit-buffer

```
Error: Update failed: [This adaptor is not applicable for boot-loader upgrade.]
```

D. Come disabilitare il timeout SSH assoluto?

Ciò è utile durante i test di laboratorio e la risoluzione dei problemi. Tenere presente che questo timeout assoluto è una procedura consigliata per la sicurezza diversa da zero, quindi prestare attenzione se viene eseguito temporaneamente nell'ambiente utente.

<#root>

```
FPR-4115-A#
```

scope security

```
FPR-4115-A /security #
```

scope default-auth

```
FPR-4115-A /security/default-auth #
```

show detail

```
Default authentication:
Admin Realm: Local
Operational Realm: Local
Web session refresh period(in secs): 600
Idle Session timeout(in secs) for web, ssh, telnet sessions: 3600
```

Absolute Session timeout(in secs) for web, ssh, telnet sessions: 3600

```
Serial Console Idle Session timeout(in secs): 3600
Serial Console Absolute Session timeout(in secs): 3600
Admin Authentication server group:
Operational Authentication server group:
Use of 2nd factor: No
```

```
FPR-4115-A /security/default-auth #
```

set absolute-session-timeout 0

```
FPR-4115-A /security/default-auth* #
commit-buffer

FPR-4115-A /security/default-auth #
show detail

Default authentication:
Admin Realm: Local
Operational Realm: Local
Web session refresh period(in secs): 600
Idle Session timeout(in secs) for web, ssh, telnet sessions: 3600
Absolute Session timeout(in secs) for web, ssh, telnet sessions: 0

Serial Console Idle Session timeout(in secs): 3600
Serial Console Absolute Session timeout(in secs): 3600
Admin Authentication server group:
Operational Authentication server group:
Use of 2nd factor: No
```

D. Come catturare i pacchetti LACP destinati al Supervisor dello chassis (Control-Plane)?

I pacchetti LACP destinati al supervisore dello chassis (control-plane) di Firepower 4100/9300 sono incapsulati nella sezione dati di pacchetti specifici e possono essere acquisiti sull'interfaccia interna inbound-hi con il comando ethanalyzer. I byte PDU LACP vengono incorporati a partire dai byte con valori 01 80 C2 00 00 02 (indirizzo Slow_Protocols_Multicast IEEE 802.3) fino alla fine della sezione dei dati:

```
<#root>
firepower#
connect fxos

...
firepower(fxos)#
ethanalyzer local interface inbound-hi limit-captured-frames 10000 limit-frame-size 9000 detail

Capturing on 'eth4'

Frame 1: 188 bytes on wire (1504 bits), 188 bytes captured (1504 bits) on interface 0
    Interface id: 0 (eth4)
        Interface name: eth4
    Encapsulation type: Ethernet (1)
    Arrival Time: Dec  5, 2023 09:16:06.736180828 UTC
    [Time shift for this packet: 0.000000000 seconds]
    Epoch Time: 1701767766.736180828 seconds
    [Time delta from previous captured frame: 0.000000000 seconds]
    [Time delta from previous displayed frame: 0.000000000 seconds]
```

```
    [Time since reference or first frame: 0.000000000 seconds]
    Frame Number: 1
    Frame Length: 188 bytes (1504 bits)
    Capture Length: 188 bytes (1504 bits)
    [Frame is marked: False]
    [Frame is ignored: False]
    [Protocols in frame: eth:ethertype:vlan:ethertype:data]
Ethernet II, Src: 02:10:18:a3:4f:f5 (02:10:18:a3:4f:f5), Dst: 58:97:bd:b9:36:4e (58:97:bd:b9:36:4e)
    Destination: 58:97:bd:b9:36:4e (58:97:bd:b9:36:4e)
        Address: 58:97:bd:b9:36:4e (58:97:bd:b9:36:4e)
        .... ..0. .... .... .... .... = LG bit: Globally unique address (factory default)
        .... ...0 .... .... .... .... = IG bit: Individual address (unicast)
    Source: 02:10:18:a3:4f:f5 (02:10:18:a3:4f:f5)
        Address: 02:10:18:a3:4f:f5 (02:10:18:a3:4f:f5)
        .... ..1. .... .... .... .... = LG bit: Locally administered address (this is NOT the factory d
        .... ...0 .... .... .... .... = IG bit: Individual address (unicast)
    Type: 802.1Q Virtual LAN (0x8100)
802.1Q Virtual LAN, PRI: 0, DEI: 0, ID: 4048
000. .... .... .... = Priority: Best Effort (default) (0)
    ...0 .... .... .... = DEI: Ineligible
    .... 1111 1101 0000 = ID: 4048
    Type: Unknown (0xde08)

Data (170 bytes)
0000  b8 50 20 04 00 00 00 00 00 00 00 00 00 81 00   .P ..............
0010  00 00 00 00 00 04 09 04 cd 00 00 00 00 00 00 00   ................
0020  00 00 00 00 00 00 00 00 00 00 00 00 00 00

01 80   ................


0030

c2 00 00 02 58 97 bd b9 36 51 88 09 01 01 01 14   ....X...6Q......


0040

80 00 58 97 bd b9 36 4d 00 28 80 00 00 44 3f 00   ..X...6M.(...D?.


0050

00 00 02 14 80 00 00 17 df d6 ec 00 00 33 80 00   .............3..


0060

02 2c 3d 00 00 00 03 10 00 00 00 00 00 00 00 00   .,=.............


0070

00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ................


0080

00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ................


0090

00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00   ................
```

```
00a0

00 00 00 00 00 00 00 00 00 00

        ..........
    Data: b85020040000000000000000000810000000000000040904...
```

Il dump esadecimale può essere convertito in PCAP utilizzando gli strumenti in linea.

D. Come trovare le informazioni SSD?

Le informazioni sulle unità SSD interne del supervisore dello chassis sono disponibili in tutte le versioni FXOS indicate nel passaggio 1, sezione Soluzione/soluzione in FN72077:

<#root>

```
KSEC-FPR4112-4 #

scope chassis 1


KSEC-FPR4112-4 /chassis #

show sup version detail


SUP FIRMWARE:
    ROMMON:
        Running-Vers: 1.0.15
        Package-Vers: 1.0.18
        Activate-Status: Ready
        Upgrade Status: SUCCESS
    FPGA:
        Running-Vers: 2.00
        Package-Vers: 1.0.18
        Activate-Status: Ready
    SSD:


 Running-Vers: MU03



Model: Micron_M500IT_MTFDDAT128MBD
```

SSD Security Engine (blade):

<#root>

```
KSEC-FPR4112-4#

show server storage detail
```

```
Server 1/1:
<output skipped>
        RAID Controller 1:
            Type: SATA
            Vendor: Cisco Systems Inc
            Model: FPR4K-PT-01
            Serial: JAD2605O8TZ
            HW Revision:
            PCI Addr: 00:31.2
            Raid Support:
            OOB Interface Supported: No
            Rebuild Rate: N/A
            Controller Status: Unknown


Local Disk 1:



Vendor: INTEL


                Model: SSDSC2KG48


                Serial: PHYG109603PA480BGN


                HW Rev: 0
                Operability: Operable


                Presence: Equipped


                Size (MB): 400000


                Drive State: Online


                Power State: Active


                Link Speed: 6 Gbps

Device Type: SSD



Local Disk 2:



  Vendor: INTEL
```

```
                Model: SSDSC2KG96

                Serial: PHYG143301JG960CGN

                HW Rev: 0
                Operability: Operable

                Presence: Equipped

  Size (MB): 800000

                Drive State: Online

                Power State: Active

                Link Speed: 6 Gbps


Device Type: SSD


            Local Disk Config Definition:
                Mode: No RAID
                Description:
                Protect Configuration: No
```

D. Come configurare le acquisizioni dello switch interno (FXOS)?

Fare riferimento all'articolo Configure and Verify Secure Firewall and Firepower Internal Switch Capture (Configurazione e verifica della protezione del firewall e degli switch interni Firepower).

Riferimenti

- Guida alla configurazione di Cisco Firepower 4100/9300 FXOS Secure Firewall Chassis Manager, 2.14(1)
- Guida alla configurazione di CLI di Cisco Secure FXOS per Firepower 4100/9300, 2.14(1)
- Guida di riferimento ai comandi di Cisco Firepower 4100/9300 FXOS
- Configurazione e verifica delle acquisizioni dello switch interno Secure Firewall e Firepower

Informazioni su questa traduzione

Cisco ha tradotto questo documento utilizzando una combinazione di tecnologie automatiche e umane per offrire ai nostri utenti in tutto il mondo contenuti di supporto nella propria lingua. Si noti che anche la migliore traduzione automatica non sarà mai accurata come quella fornita da un traduttore professionista. Cisco Systems, Inc. non si assume alcuna responsabilità per l’accuratezza di queste traduzioni e consiglia di consultare sempre il documento originale in inglese (disponibile al link fornito).