Responda às perguntas frequentes sobre o Firepower eXtensible Operating System (FXOS)

Contents

Introdução

Este documento descreve as perguntas frequentes relacionadas às plataformas FXOS.

Informações de Apoio

O Firepower eXtensible Operating System (FXOS) é o sistema operacional subjacente nas plataformas Firepower ou Secure Firewall. Dependendo das plataformas, o FXOS é usado para configurar recursos, monitorar o status do chassi e acessar recursos avançados de solução de problemas.

O FXOS no Firepower 4100/9300 e no Firepower 2100 com o software Adaptive Secure Appliance no modo de plataforma permite alterações de configuração, enquanto em outras plataformas, com exceção de recursos específicos, ele é somente leitura.

P. Como gerar show tech a partir do sistema FXOS?

A partir da versão 2.8.x, o fprm foi reprovado. Assim, o FXOS 2.8.x oferece suporte apenas a técnicos de apresentação de chassis e blades.

<#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.
```

- chassi: contém arquivos de log para o chassi, blade, adaptador, Baseboard Management Controller (BMC) e Cisco Integrated Management Controller (CIMC)
- módulo: contém arquivos de log para o blade/módulo onde o dispositivo lógico Adaptive Security Appliance (ASA) ou Firepower Threat Defense (FTD) reside. Isso inclui logs para componentes como appAgent)

Em versões anteriores à 2.8.x, o FXOS fornece três saídas show tech diferentes. O pacote FPRM contém arquivos de log para Management Input/Output (MIO) - o mecanismo supervisor - e o Service Manager

Geralmente, você gera todos os 3 pacotes. Use o detalhe show tech-support <option> para gerar os 3 pacotes de log diferentes para a análise do 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 você não especificar a opção detail, obterá a saída na tela
- A opção detail cria um arquivo tar

Para verificar os nomes de arquivo gerados:

<#root>

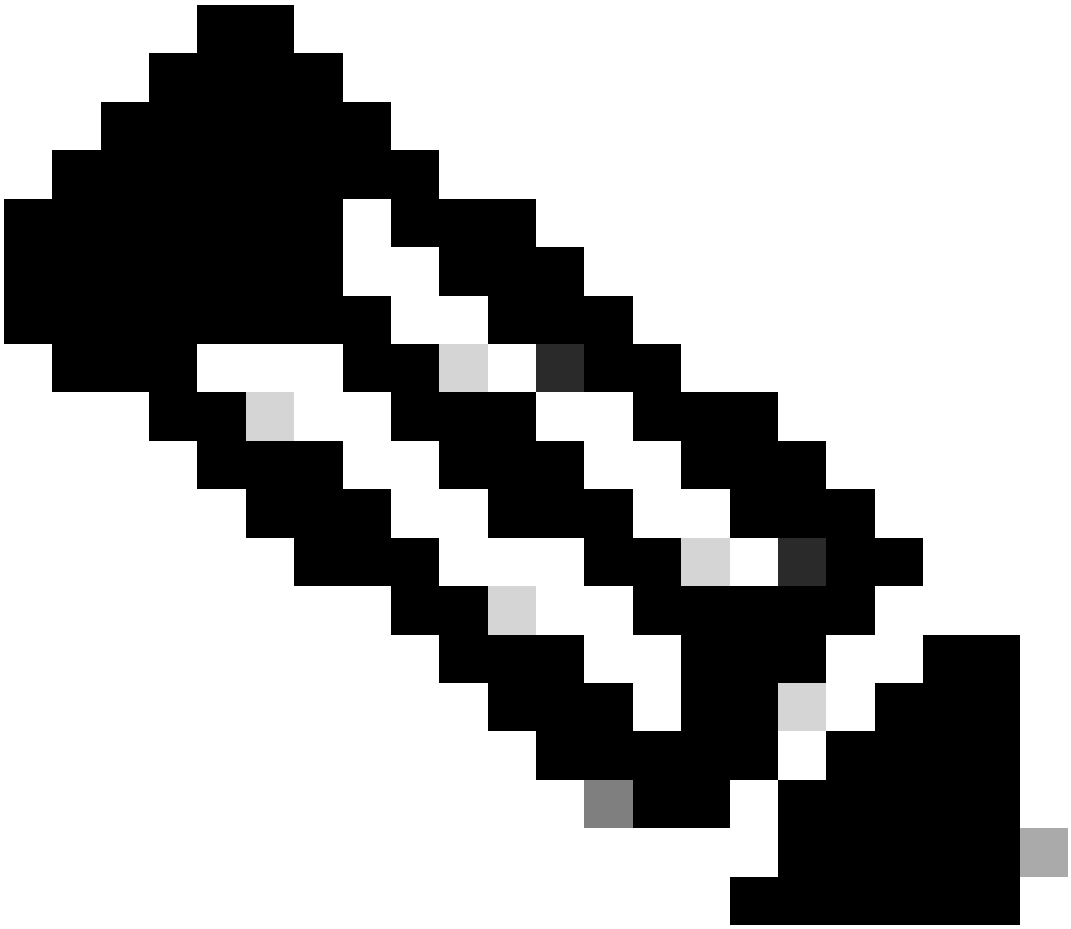
```
FPR4140-A(local-mgmt)#

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
```

Para exportar um pacote da CLI:

<#root>

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

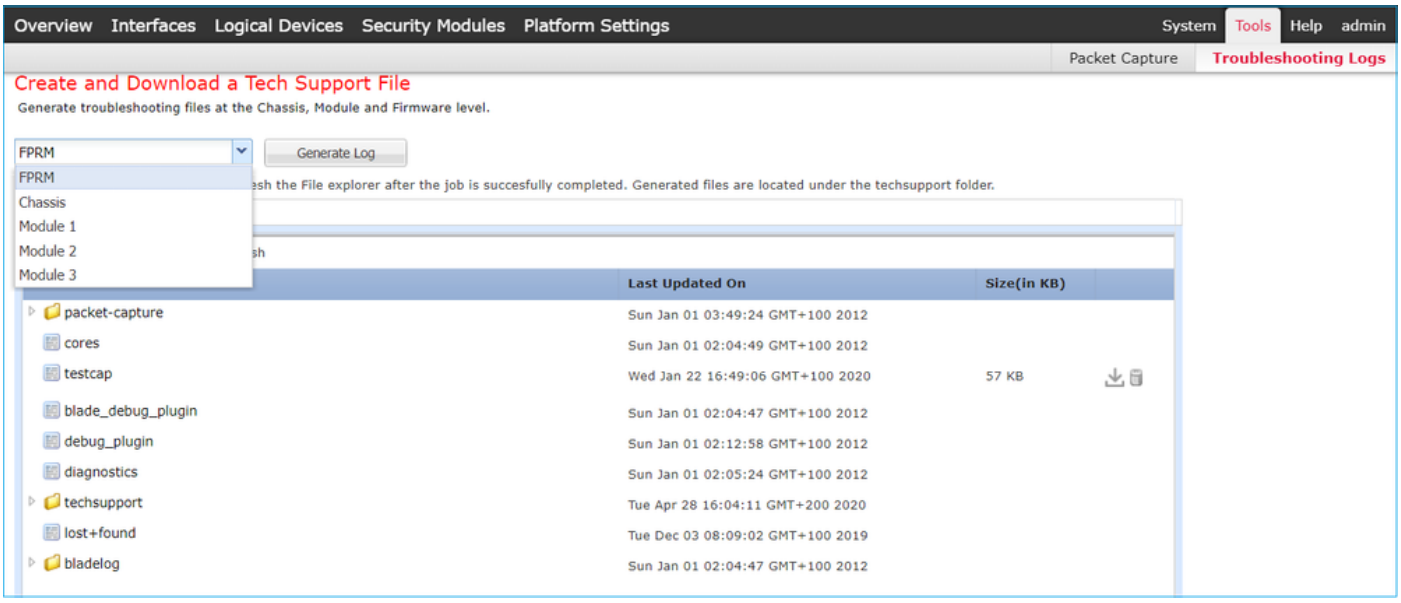
```
copy workspace:///techsupport/20170409172722_FPR4140_FPRM.tar ftp|tftp|scp|sftp://username@192.168.0.1/
```



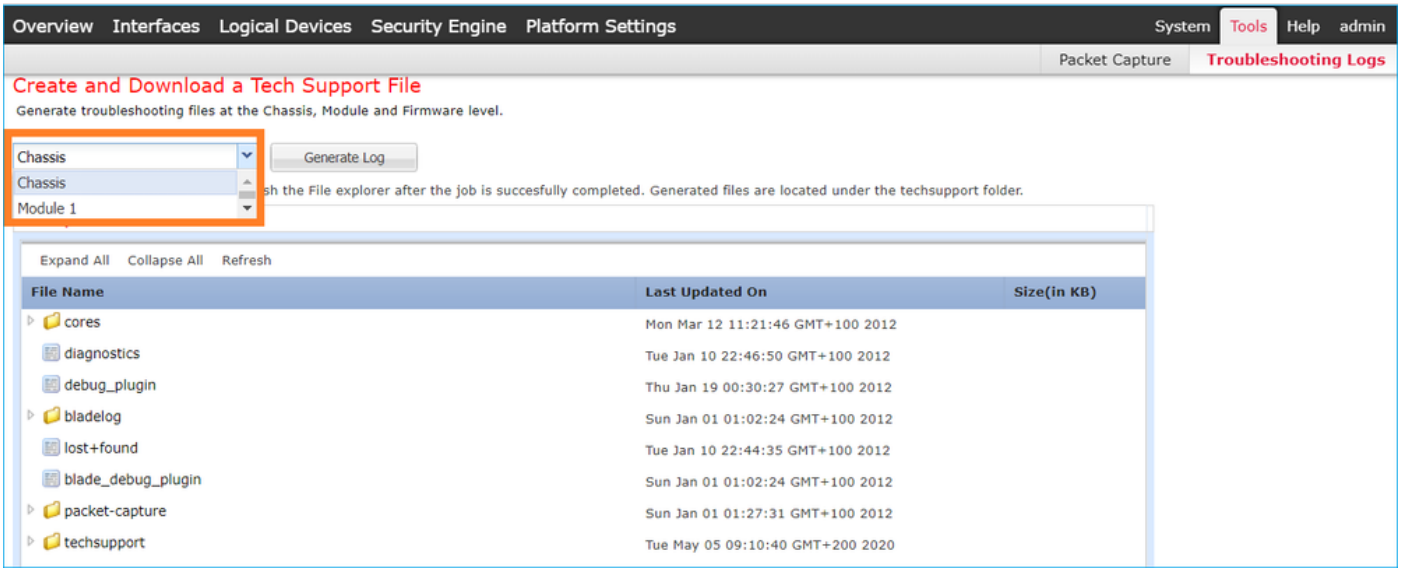
> Observação: além das saídas show tech FXOS, os dispositivos lógicos como ASA e/ou FTD têm seu próprio recurso show tech separado. No caso de várias instâncias (MI), cada instância também tem seu próprio pacote show-tech separado. Finalmente, os show-techs do MI não são suportados no FCM

A partir do FXOS 2.6, a geração e o download do suporte técnico FXOS são disponibilizados pela interface do usuário do Firepower Chassis Manager (FCM) em Ferramentas > Logs de solução de problemas

No FP9300:



No FP41xx:



P. Como verificar e alterar o endereço IP, a máscara de rede e o gateway de gerenciamento do chassi?

Há algumas maneiras de verificar a configuração da interface de gerenciamento:

<#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
```

or

<#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:
```

Para alterar as configurações de 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
```

Sobre a confirmação:

```
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
```

Para obter mais detalhes, verifique:

[Referência de comandos FXOS do Cisco Firepower 4100/9300]

P. Como executar um teste de ping FXOS?

Navegue até o escopo CLI de gerenciamento local e use o 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
```

P. Como verificar o endereço Mac da interface de gerenciamento fora de banda?

Navegue até o escopo CLI de gerenciamento local e use este 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)
```

P. Como verificar se a interface de gerenciamento fora de banda está ativa?

Além de Operável sob o escopo fabric-interconnect a > show, você pode usar este comando:

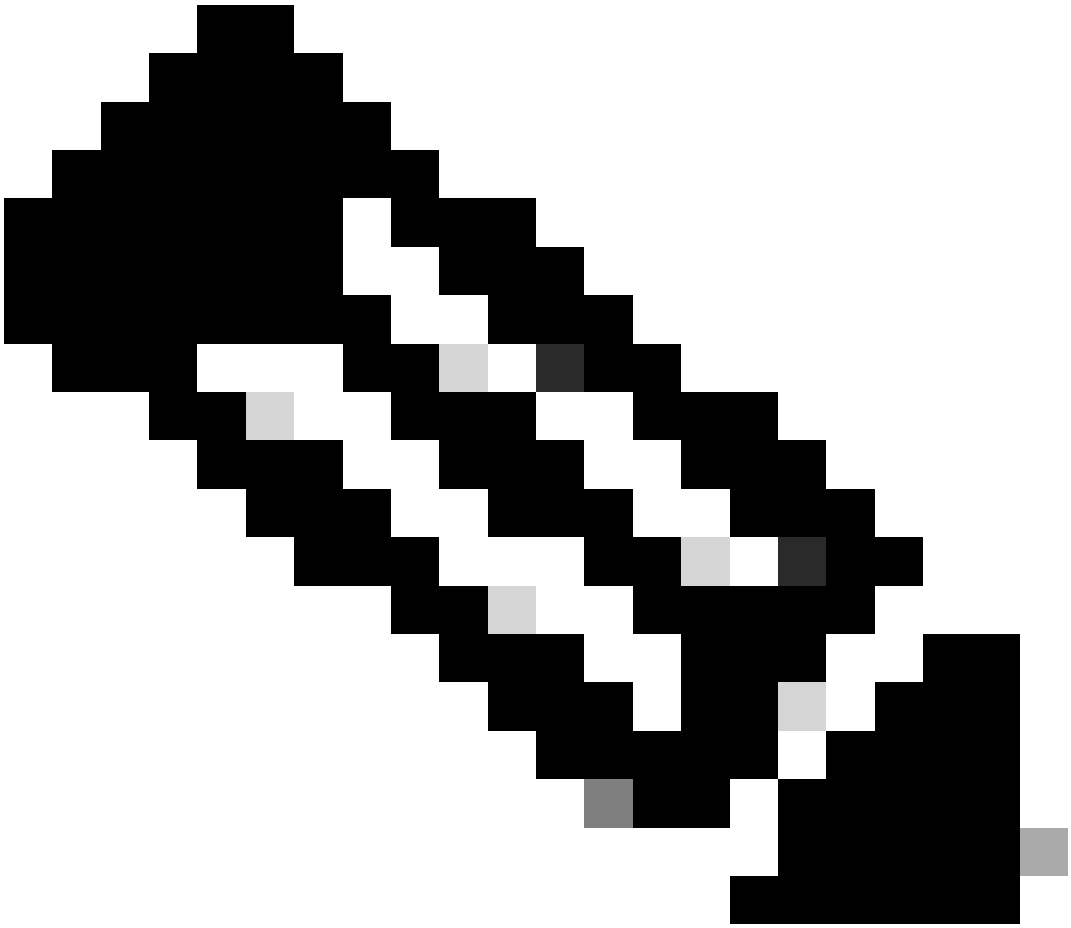
<#root>

```
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)
```

Como alternativa, você pode usar esse comando. A parte Escopo mostra Link UP. Observe que o UP é mostrado na próxima linha:

<#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)
```



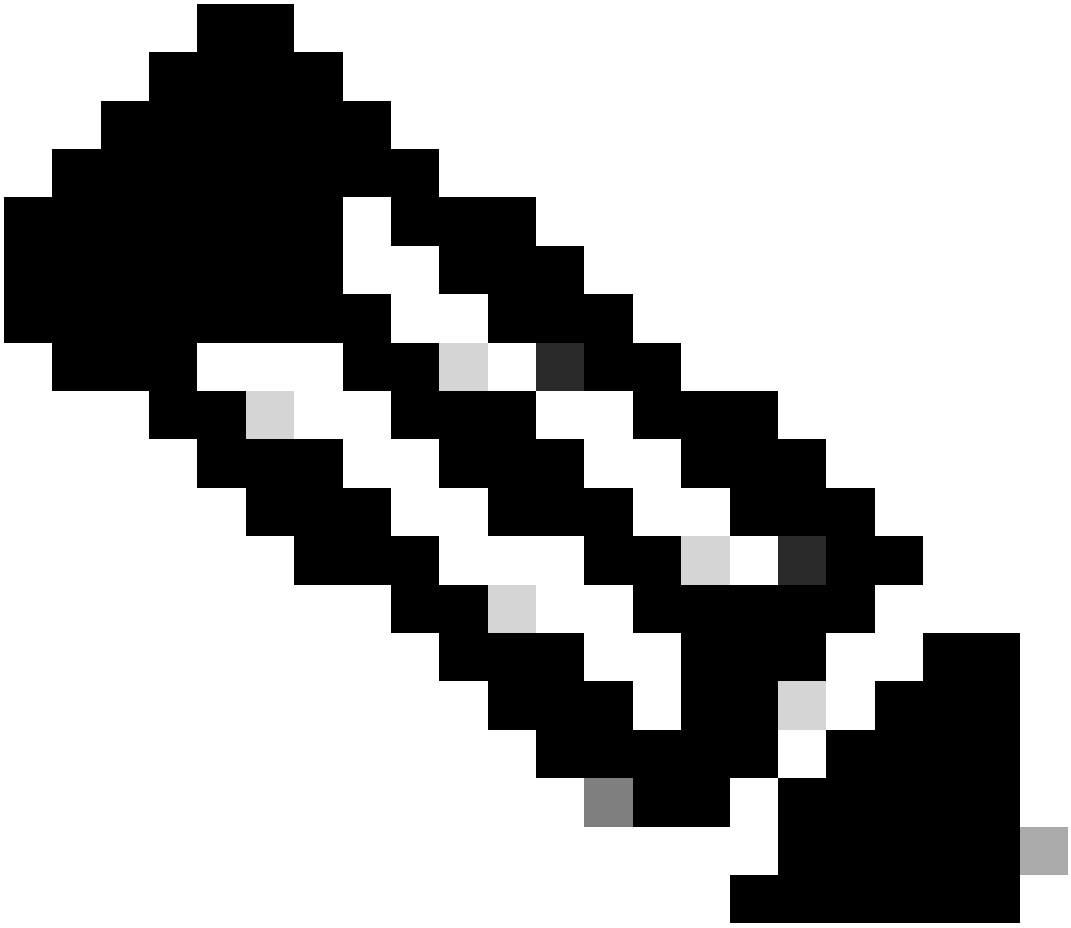
Observação: o estado UP é o status admin da interface. O status permanece UP mesmo se você desconectar o cabo físico ou o módulo SFP. Outro ponto importante é o status RUNNING, que significa que o link está operacional (o protocolo de linha está ativo).

Para desativar o status lógico da interface:

```
<#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)
```

Para ativá-la novamente:

```
<#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)
```



Observação: há um show interface brief e um show interface mgmt 0 no modo fxos que exibem a interface mgmt0 como inativa e Admin inativa, respectivamente. Não use isso como referência de que ele está inoperante.

<#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 você executar um show run interface mgmt0 no modo fxos, a força de desligamento estará sob essa interface. Novamente, não use isso como referência se ele está inoperante:

<#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
```

P. Como verificar a tabela de roteamento FXOS?

O gerenciamento fora de banda depende somente do conjunto de gateways padrão. Portanto, certifique-se de que o gateway padrão escolhido permita a conexão com clientes que necessitam de acesso ao sistema. Há um comando show ip route vrf all em connect fxos, mas ele não é usado para gerenciamento fora de banda.

P. Como verificar a tabela ARP FXOS?

A tabela ARP não está visível na CLI FXOS. Você também pode usar a captura de pacotes no

modo fxos (etanalyzer) para capturar o ARP e/ou verificar o tráfego de/para o gerenciamento.

Este é um exemplo para capturar pacotes ARP. Você pode alterar o filtro de captura para qualquer coisa. Esse filtro é semelhante ao 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)#
```

Além disso, você pode salvar a captura em um arquivo e exportá-la para um servidor 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
```

P. Como verificar eventos de falha de FXOS?

Use o comando show fault:

<#root>

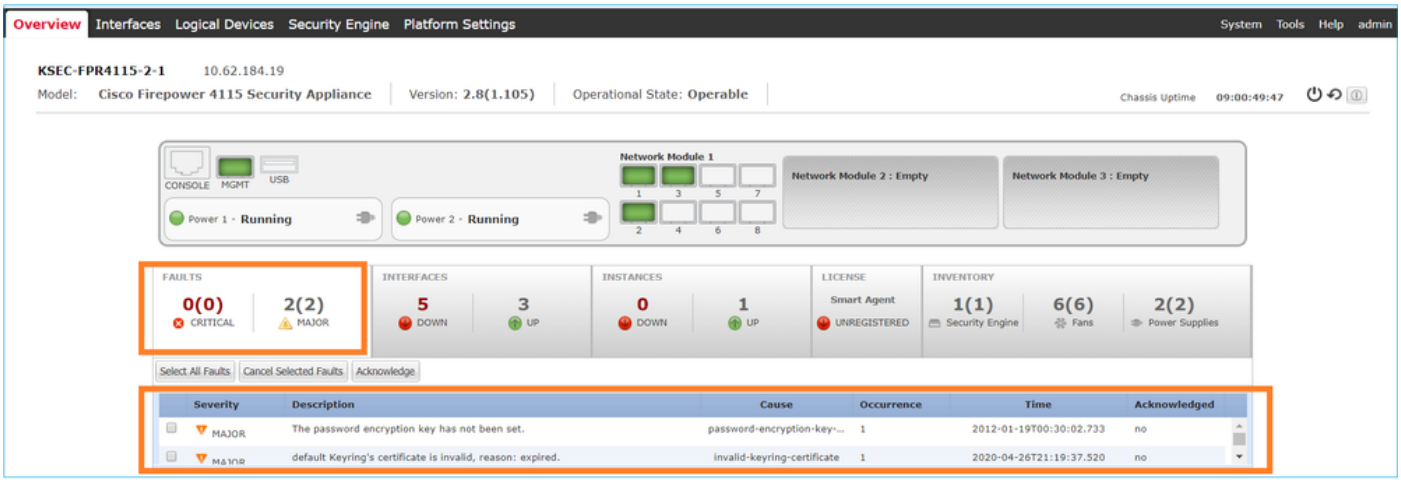
```
FPR4115-2-1#

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
```

Você também pode filtrar as falhas com base na gravidade:

<#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.
```

As mesmas falhas também são visíveis no painel Visão geral da interface do usuário FXOS > FALHAS:



P. Como alterar o nome de host do sistema?

Use o comando set name no escopo do 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#

P. Qual é a "Incompatibilidade de computação" na saída show server status?

Um módulo de segurança recém-instalado deve ser confirmado e reinicializado antes de ser usado. Isso é verdadeiro mesmo quando você substitui uma unidade via 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#
```

A incompatibilidade de computação pode causar este evento de falha:

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

O comando show service-profile status exibe Unassociated como se o módulo não estivesse lá.

Etapas para confirmar pela CLI:

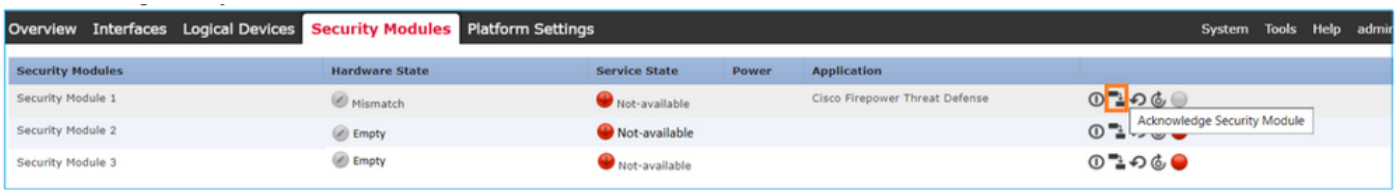
<#root>

scope chassis 1

acknowledge slot <slot#>

commit-buffer

Como alternativa, você pode usar a interface do usuário do Gerenciador de chassis para reconhecer o módulo:



P. Qual é o significado de "incompatibilidade de token" na saída de show slot?

Isso indica que o módulo de segurança ainda não foi reinicializado após ser confirmado:

<#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 #
```

Etapas para reinicializar via CLI:

<#root>

scope ssa
scope slot <#>
reinitialize
commit-buffer

No Firepower 41xx, isso também pode significar que o SSD está ausente ou está com defeito. Verifique se o SSD ainda existe através do comando show inventory storage no servidor de escopo 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
```

P. Como definir fuso horário, NTP e DNS via CLI?

Isso é configurado nas Configurações da plataforma FXOS. Aplique as instruções deste documento: Configurações da plataforma FXOS.

Para verificar as configurações de hora do chassi:

<#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
```

Para verificar o tempo do módulo/blade na CLI de inicialização do módulo, use estes três comandos:

<#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>
```

Para obter mais detalhes sobre verificação e solução de problemas de NTP, consulte este documento: Configurar, verificar e solucionar problemas de configurações de Network Time Protocol (NTP) em dispositivos Firepower FXOS

P. Como configurar o Smart Licensing e o HTTP Proxy?

O Smart Licensing é necessário no chassi FXOS no caso do dispositivo lógico ASA. Consulte este documento para obter mais detalhes: Gerenciamento de licenças para o ASA

Aqui está um exemplo de saída do status da licença:

<#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
```

Ou, em 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
```

P. Como configurar o Syslog via CLI?

Verifique estes documentos:

- Configurar Syslog em dispositivos Firepower FXOS
- Guia de configuração do FXOS: Syslog de configurações de plataforma

P. Como configurar o SNMP em dispositivos Firepower?

Verifique este documento: Configure o SNMP em dispositivos Firepower NGFW

P. Como instalar/substituir um certificado SSL usado pelo gerenciador de chassis?

Este documento pode ajudar: Instalar um certificado confiável para o gerenciador de chassis FXOS

P. Como solucionar problemas de fluxo de tráfego no chassi do FPR9300?

Verifique estes documentos:

- Fase 1 de solução de problemas do caminho de dados do Firepower: entrada de pacotes
- Solução de problemas de caminho de dados do Firepower: Visão geral
- Analisar as capturas do Firepower Firewall para solucionar problemas de rede com eficiência

P. Como visualizar a tabela de endereços Mac do chassi?

Para as plataformas FP41xx e FP93xx, use qualquer um destes comandos:

<#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
```

P. Como visualizar os endereços MAC da interface do chassi?

Use este 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
```

P. Como fazer a recuperação de senha no FXOS Supervisor (MIO)?

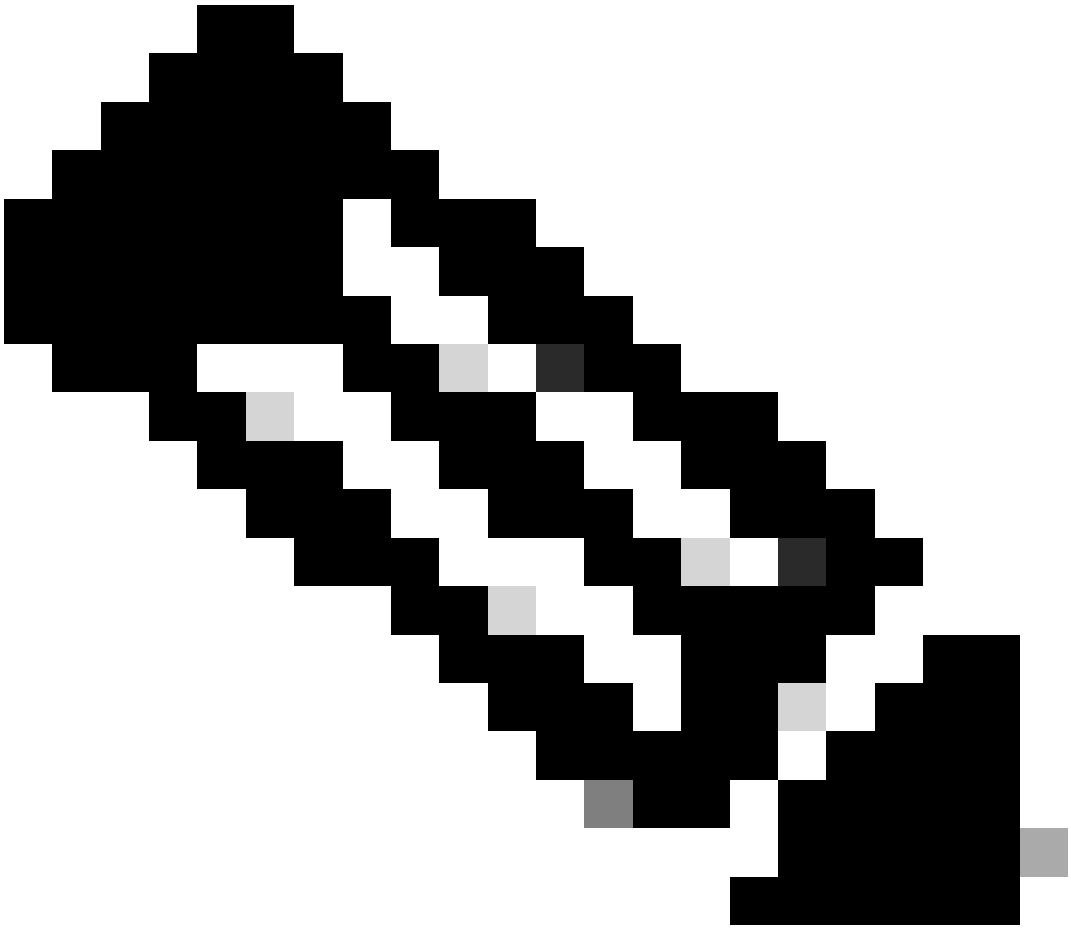
Para procedimentos de recuperação de senha em FP41xx e FP9300, use este documento: [Procedimento de recuperação de senha para dispositivos Firepower 9300/4100 Series]

P. Como fazer a recuperação de senha no dispositivo lógico ASA ou FTD?

Para redefinir a senha do dispositivo lógico, você precisa inicializar o dispositivo novamente. Com o processo de recuperação de desastre do Bootstrap, você pode alterar qualquer um destes itens:

- IP de gerenciamento ASA/FTD - IP, máscara de rede, gateway, IPv6, comprimento do

prefixo
- senha ASA
- Chave de registro de FTD, senha, IP de FMC, Domínios de pesquisa, Modo de firewall, servidores DNS, FQDN
- Pool IP de cluster ASA, máscara de rede, gateway, comprimento do prefixo, IP virtual.

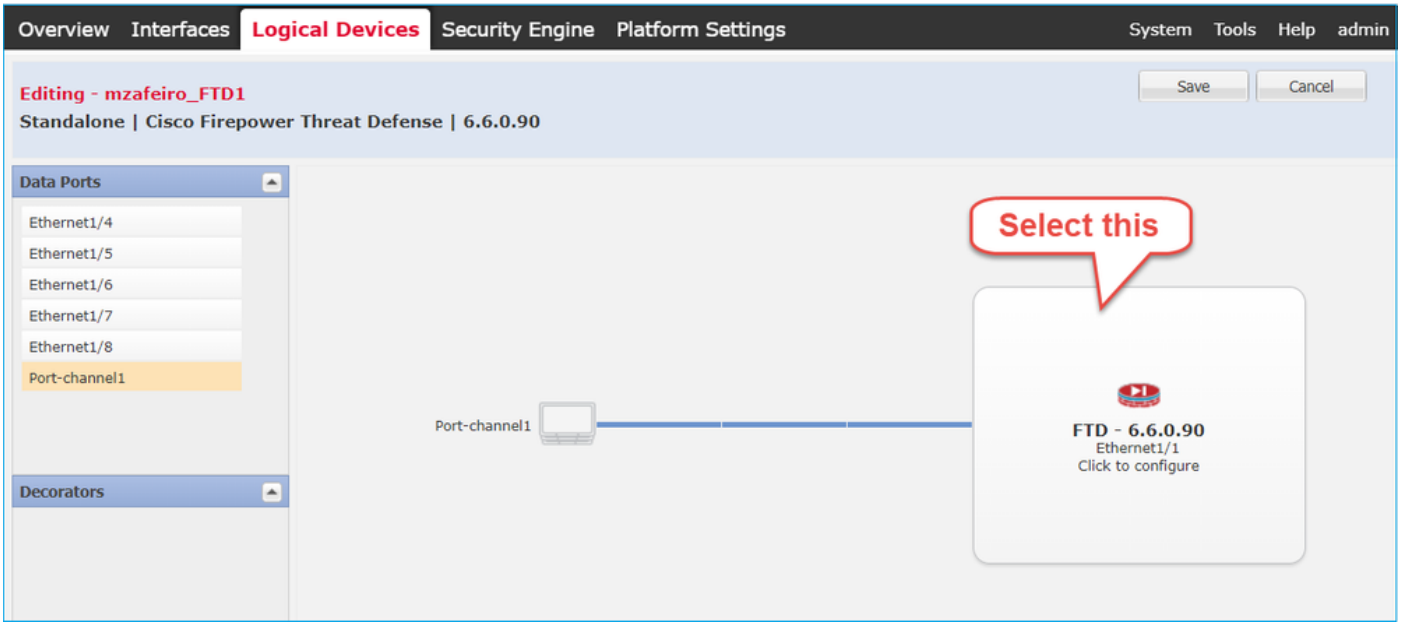


> Observação: o processo de recuperação de bootstrap deve ser executado em uma MW (Maintenance Window, Janela de Manutenção), pois ele requer uma recarga de dispositivo lógico

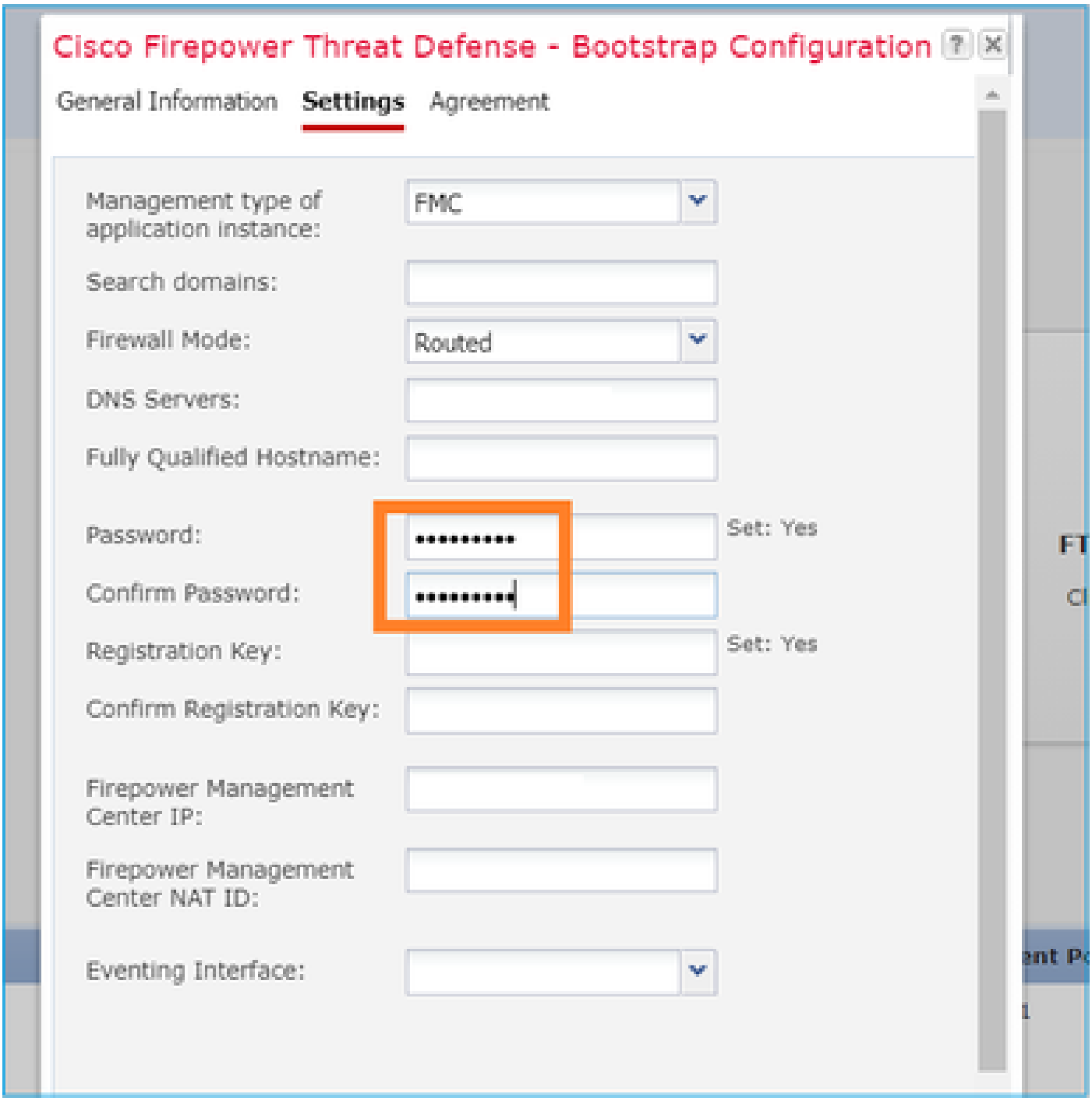
---

Exemplo 1

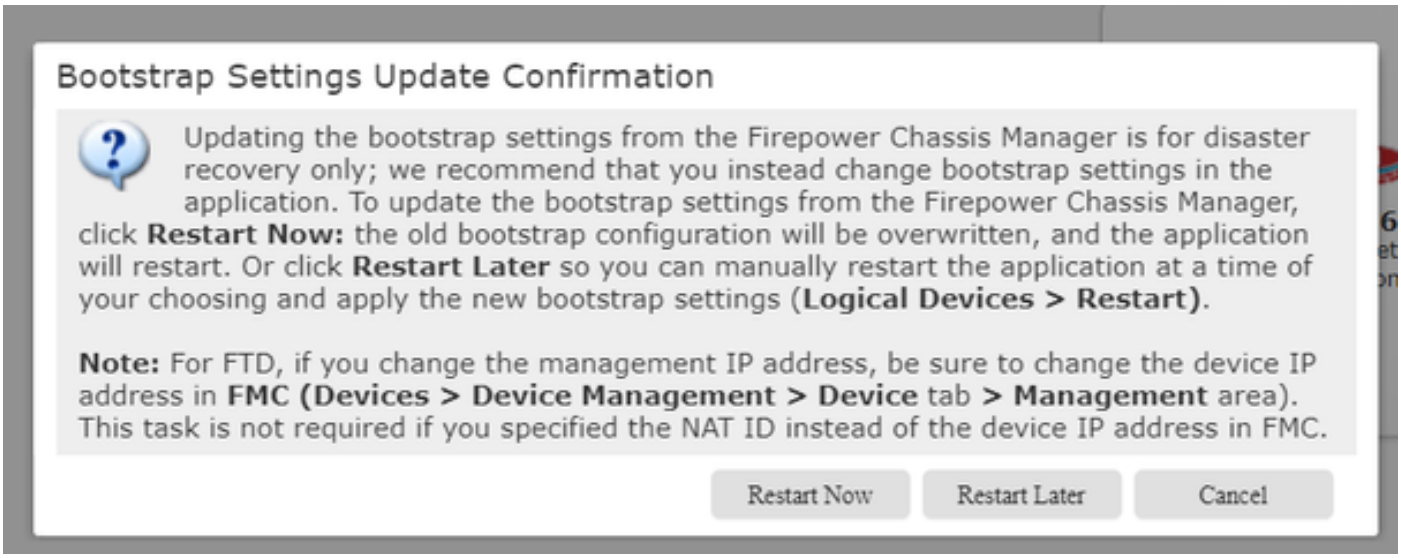
Você pode usar a interface do usuário FXOS para editar as configurações de bootstrap de um dispositivo lógico. Navegue até a guia Dispositivos lógicos, Editar um dispositivo



Defina a senha:



Quando você salvar, esta mensagem será exibida:



Exemplo 2

Este é um exemplo de alteração/recuperação de senha de ativação ASA:

<#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
```

Verifique se o ASA está on-line antes de se conectar a ele e use a nova senha de ativação.

<#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 #
```

P. Como alterar a senha atual de um usuário FXOS (por exemplo, admin)?

Use este procedimento:

<#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 #
```

P. Como fazer downgrade de FXOS?

O downgrade de imagens FXOS não é oficialmente suportado. O único método suportado pela Cisco para fazer o downgrade de uma versão de imagem do FXOS é executar uma recriação completa da imagem do dispositivo. Isso está documentado no caminho de atualização do

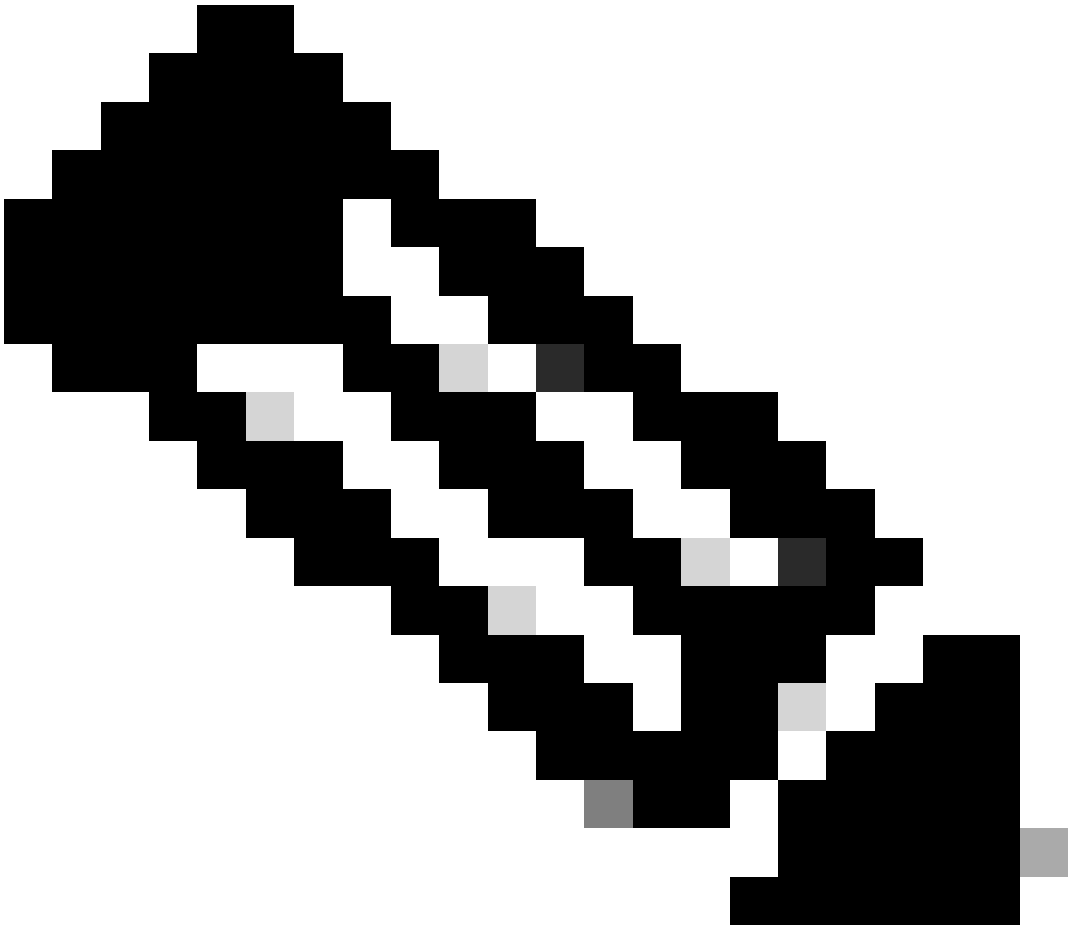
Firepower 4100/9300

P. Como fazer o downgrade/upgrade de um dispositivo lógico ASA?

Para fazer o downgrade/upgrade da versão do ASA via Gerenciador de chassis: Atualizando a versão da imagem para um dispositivo lógico

Para alterar via CLI, use esta seção do guia de configuração: Atualizando a versão da imagem de um dispositivo lógico

---



Observação: assim que você confirmar o buffer na CLI, ele reiniciará o módulo. Da mesma forma, no gerenciador de chassis, quando você pressionar OK, ele reiniciará o módulo. Não há necessidade de reiniciá-lo manualmente.

P. Como verificar o status de atualização FXOS via CLI?

A atualização é concluída quando todos os componentes entram no status Pronto:

<#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
```

Outros comandos úteis

<#root>

```
FP9300 /firmware/auto-install #
show fsm status

FP9300 /firmware/auto-install #
show fsm status expand
```

P. Como recarregar o dispositivo lógico a partir da CLI do FXOS?

A maneira preferível é usar a interface do usuário do FCM. Se, por alguma razão, a interface do usuário não estiver acessível, use estes comandos:

```
<#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
```

P. Como verificar o tempo de atividade do chassi FXOS e o motivo da última recarga?

A verificação do tempo de atividade de FXOS é útil caso haja um traceback de FXOS. Você pode ver o FXOS na interface do usuário (FCM) ou na 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
```

Além disso, para determinar o motivo do último recarregamento, use este 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)
```

Para o tempo de atividade do FPR2100, faça o seguinte:

1. Obtenha o pacote 'show tech-support fprm detail'

2. Extraia o conteúdo do pacote

3. Verifique o arquivo tmp/inventory_manager.xml

Há uma entrada que mostra o tempo de atividade em segundos:

<#root>

tmp/inventory_manager.xml:

<uptime>151</uptime>

P. Como verificar o espaço em disco disponível em FXOS?

Também chamado de 'espaço de trabalho':

<#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
```

Para verificar o espaço livre do flash de inicialização. Observe que esta saída também mostra o tamanho e o uso do espaço de trabalho:

<#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
```

P. Como redefinir a configuração de FXOS para os padrões de fábrica?

Use este comando:

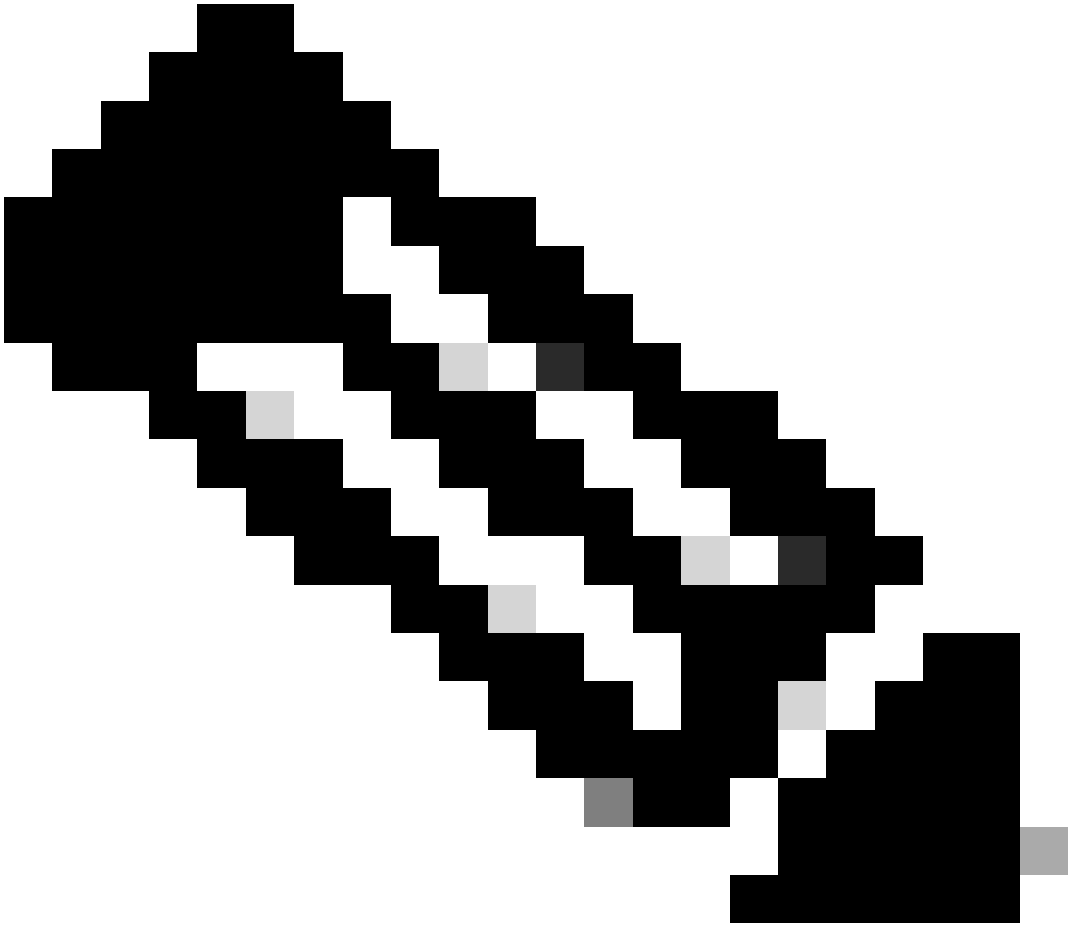
<#root>

FPR9K-1-A#

connect local-mgmt

FPR9K-1-A(local-mgmt)#

erase configuration



Observação: isso reinicializa o sistema e apaga toda a configuração, incluindo o endereço IP de gerenciamento. Portanto, assegure-se de que um console esteja conectado. Quando o sistema for reinicializado, o aplicativo de instalação será executado e você poderá inserir novamente as informações de configuração de gerenciamento.

Exemplo

<#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):
```

P. Como verificar a configuração de bootstrap (interfaces atribuídas, versão etc.) de um dispositivo lógico a partir da CLI FXOS?

<#root>

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

scope ssa

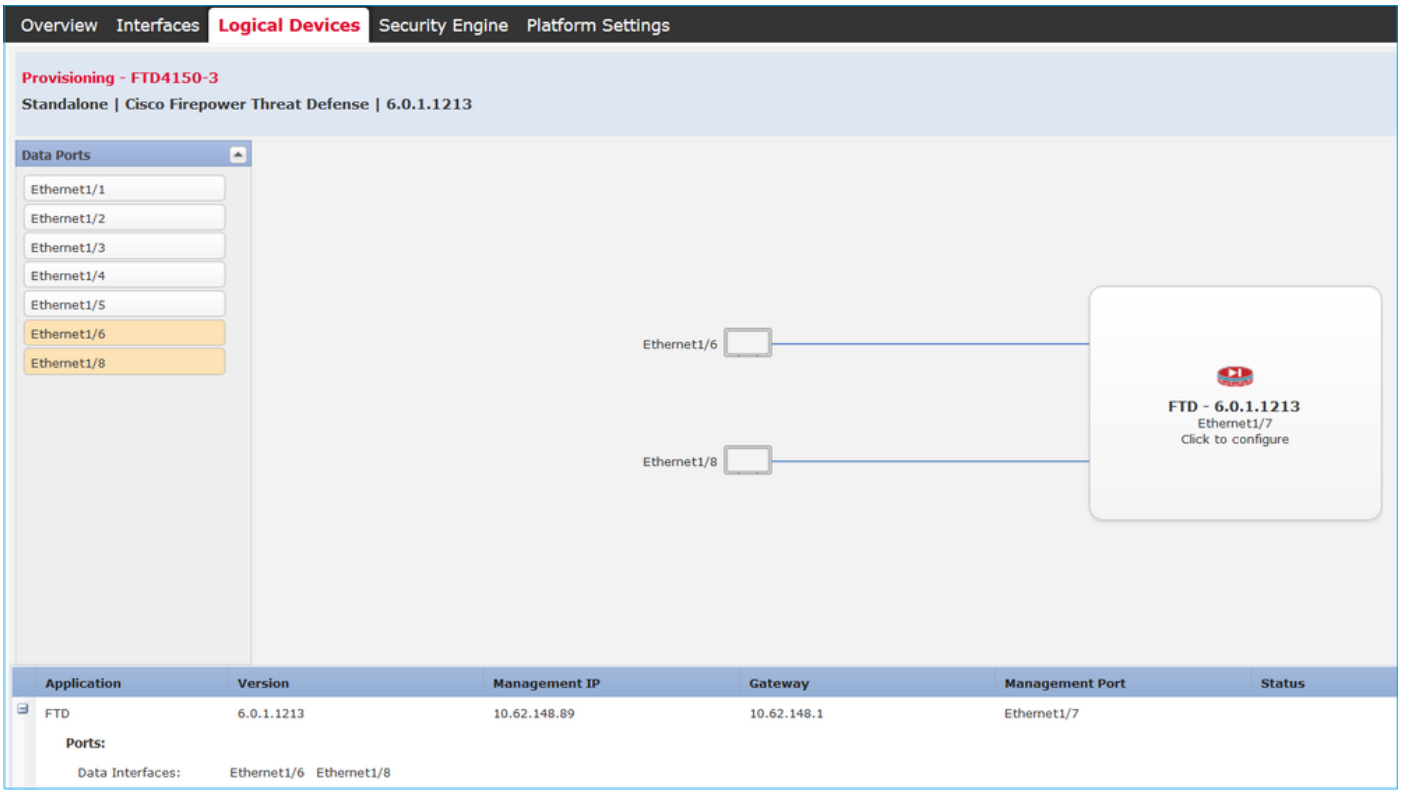
```
FPR4100-3-A /ssa #
```

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
```

Isso equivale a:



Se você quiser ver toda a configuração FXOS, adicione a palavra-chave 'all' (a saída tem várias páginas):

<#root>

FPR4100-3-A /ssa #

show configuration all

P. Como verificar o status (tipo de porta, estado) das interfaces FXOS?

<#root>

FPR4100-3-A#

scope eth-uplink

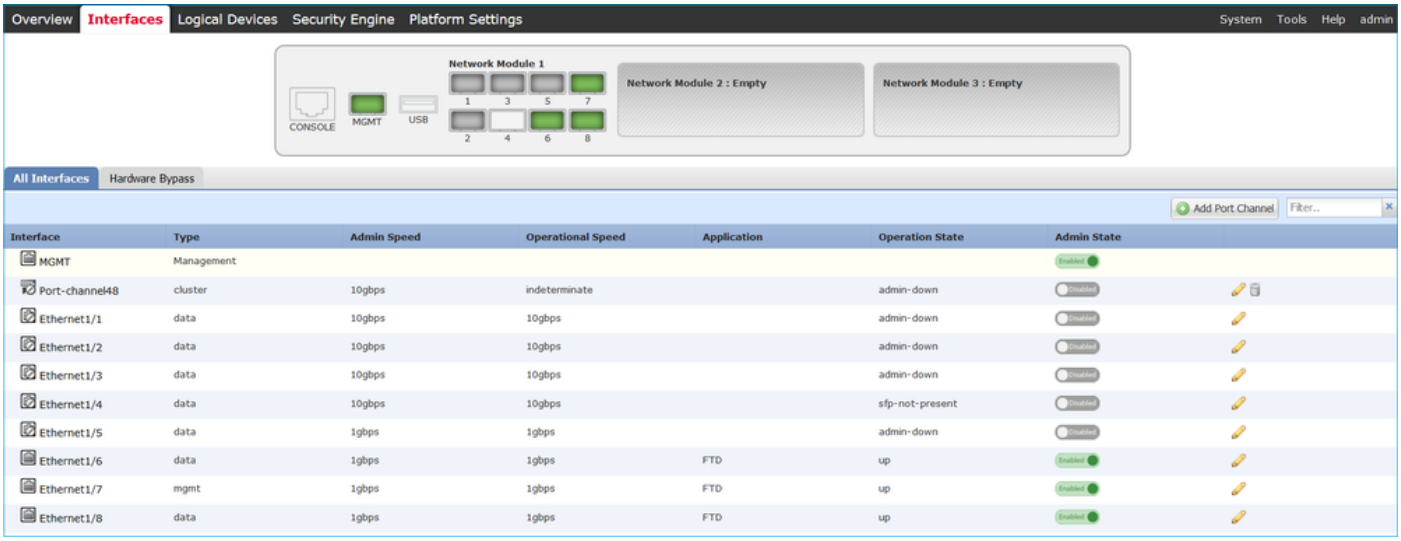
FPR4100-3-A /eth-uplink #

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 #
```

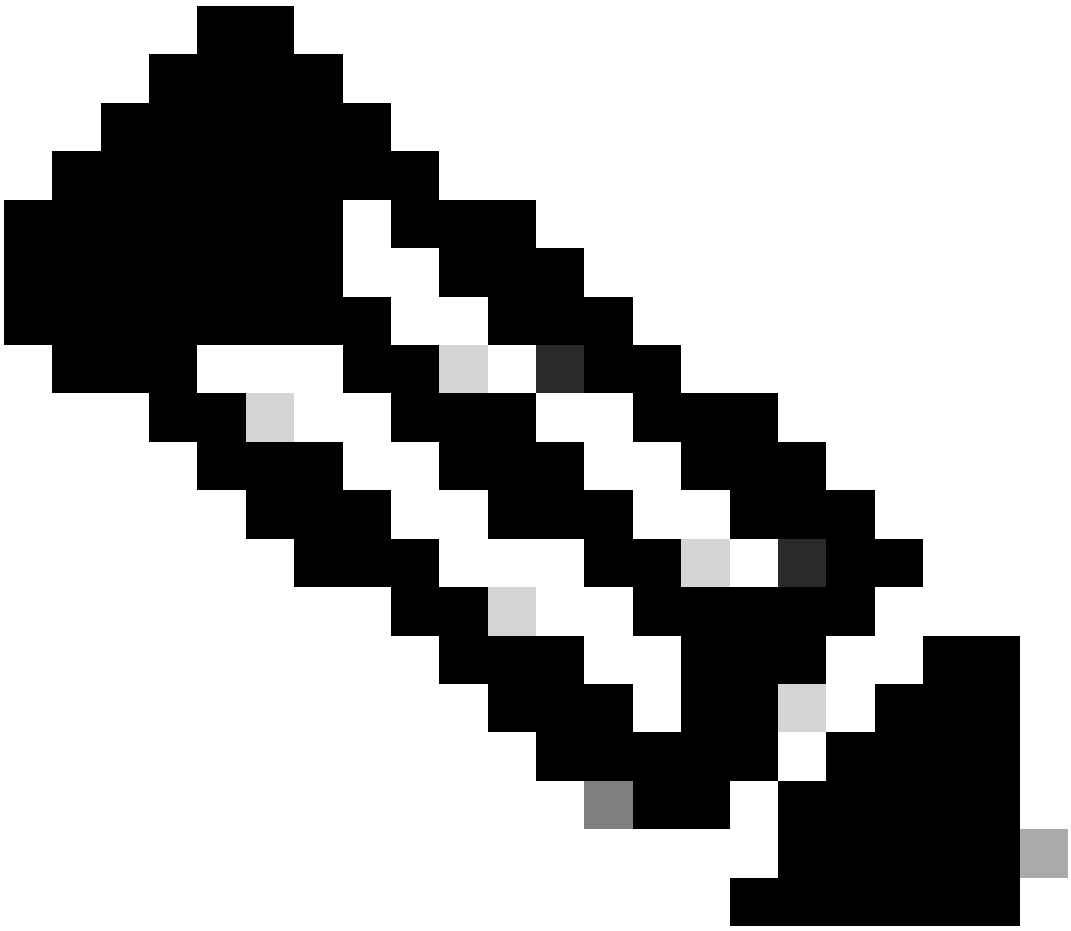
Isso equivale a:



P. Como verificar a utilização da CPU e da memória no chassi?

<#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
```



Observação: o total mostrado na saída pode ser diferente mesmo para 2 dispositivos que pertencem ao mesmo modelo. Especificamente, o total é obtido da saída do comando free que, por sua vez, é obtido do /proc/meminfo.

Para verificar a memória:

<#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:
```

Para verificar a verificação de utilização de memória por processo (RES = Physical Memory):

<#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
...
```

Tip:
1. Colete a saída show process memory
2. Cole a saída em um arquivo em uma máquina Linux (cat > top.log)
3. Classificar o arquivo com base na coluna RES

Mostra os GBytes, os MBytes e assim por diante

<#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
```

P. Como verificar o tipo de transceptor da interface do chassi?

No Firepower 4100/9300, use este 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)#
```

No caso das fibras, a saída é:

<#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
```

No Firepower 1000/2100, use este 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:
```

P. Como verificar as informações do módulo/blade/servidor/netmod (tipo de hardware/PID/SN/memória/núcleos etc.)?

Esse comando mostra a ID do produto (PID) e o número de série (SN) do chassi e dos módulos (netmods)

<#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
```

O FPR4110 tem 2 slots para módulos de rede (2 e 3) e o dispositivo no exemplo tem um netmod FTW instalado no 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
```

Servidor 1/1 = módulo/blade 1

Servidor 1/2 = módulo/blade 2

Servidor 1/3 = módulo/lâmina 3

PIDs do modelo FPR41xx:

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

Você também pode obter outras informações no servidor de escopo <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
```

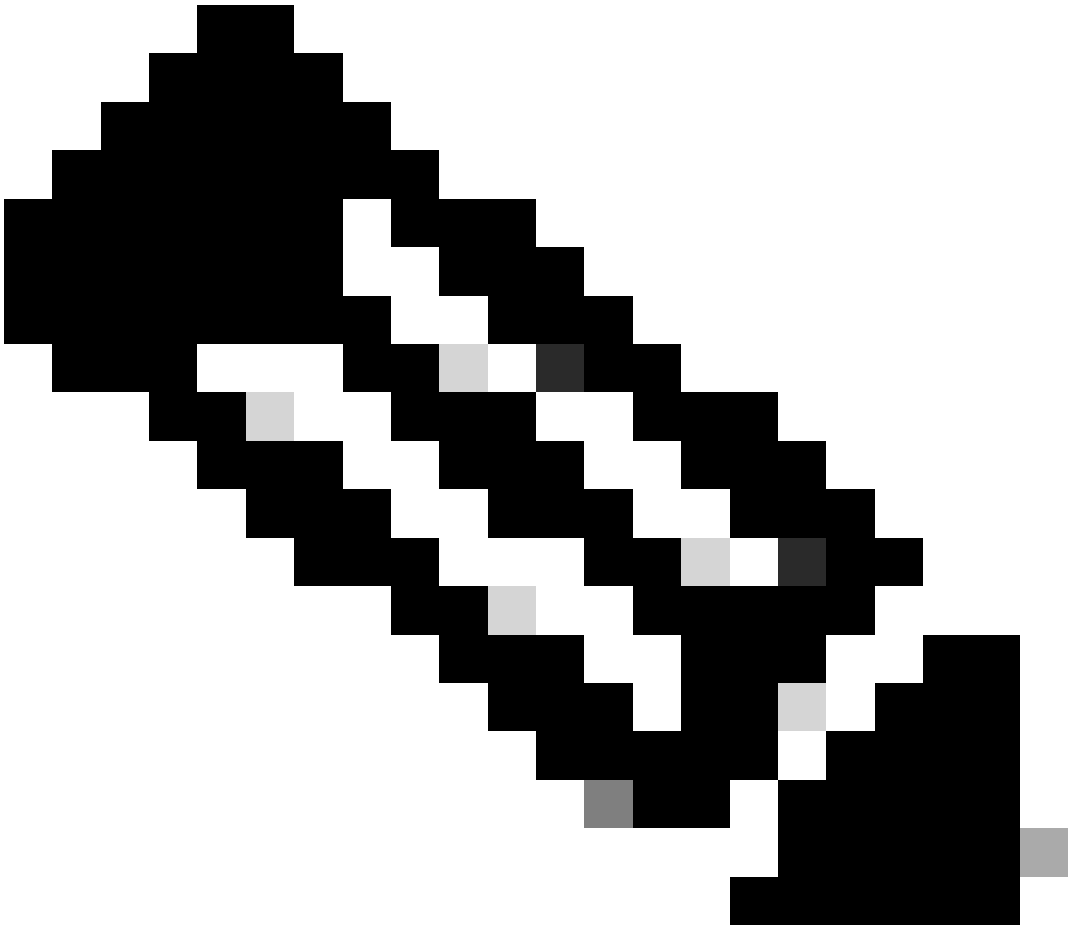
```
FP9300-A /chassis/server #
```

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 #
```

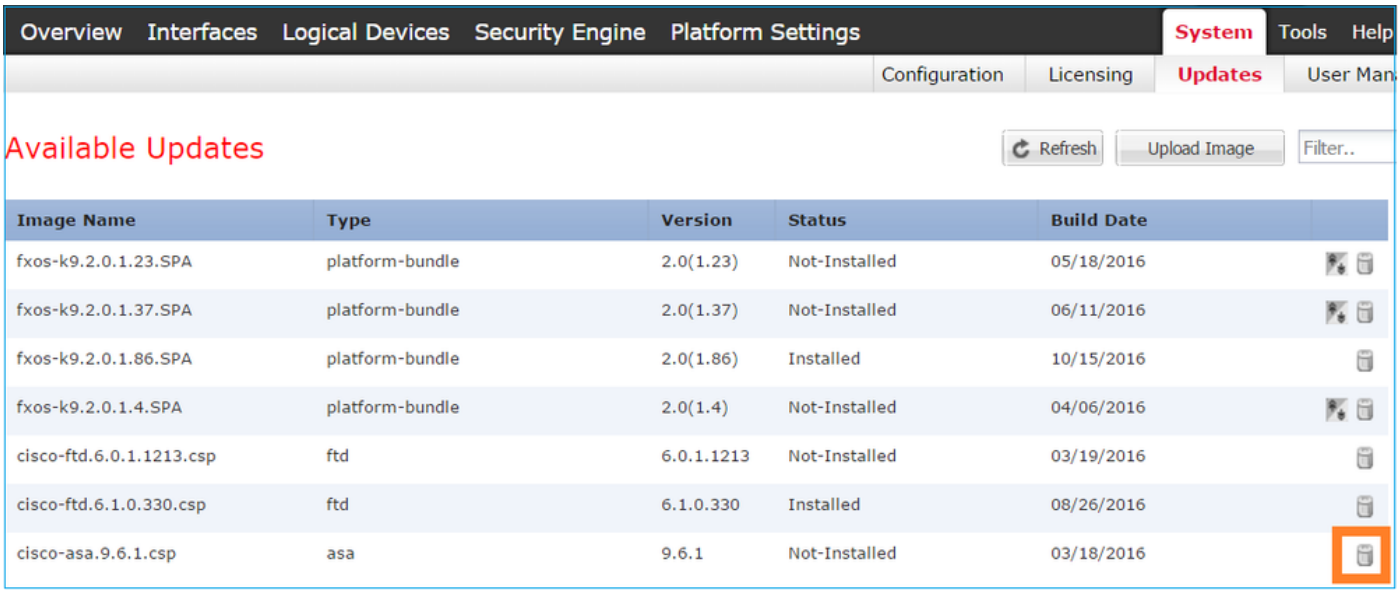


Observação: nas plataformas FP41xx, como não estão usando RAID, o comando show inventory storage exibe o Status do controlador como Desconhecido. A principal razão pela qual eles não são RAID é que o segundo SSD é usado para outras funções como MSP (Malware Storage Pack) em um dispositivo lógico FTD.

P. Como excluir uma imagem ASA ou FTD da GUI e CLI do FXOS?

Na GUI do FCM:

Para excluir da GUI, navegue para Sistema > Atualizações e exclua a imagem:



Da CLI 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
```

P. Como verificar a versão do FXOS na CLI?

Há algumas maneiras de fazer isso.

Caminho 1

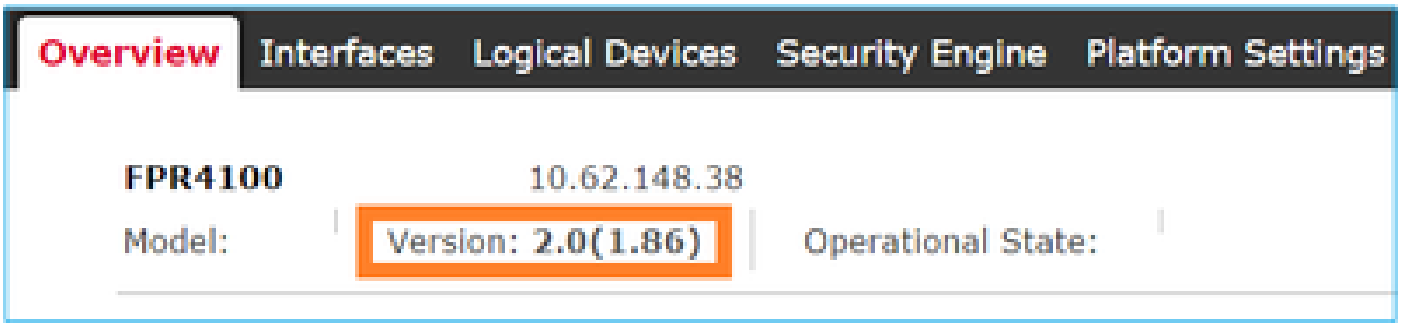
<#root>

```
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:
```

Isso é o mesmo que pode ser visto na GUI do FCM:



Caminho 2

<#root>

```
FP4145-1#
```

show version

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

P. Como verificar o MTU das interfaces em FXOS?

O chassi do Firepower 4100/9300 tem suporte para quadros jumbo habilitados por padrão. Você pode verificar o MTU da interface com este 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
```

Como alternativa, verifique a MTU no shell de comando do 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
```

P. Como verificar os aplicativos instalados?

Na CLI do chassi, use o comando scope ssa e, em seguida, show slot expand detail.

As mesmas informações podem ser encontradas no arquivo sam_techsupportinfo no pacote de chassi show tech.

<#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
```

P. Como verificar a configuração do canal de porta a partir da CLI do FXOS?

Comandos de verificação do canal de porta

Verificação 1

Para verificar quais Port-Channels estão configurados atualmente no chassi:

<#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)
```

Verificação 2

Para verificar os Port-Channels alocados a um dispositivo lógico:

<#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
```

Verificação 3

Para verificar as estatísticas de tráfego do canal de porta por 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%
```

Verificação 4

Para verificar os detalhes de um canal de porta específico:

<#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]
```

Verificação 5

Para verificar o ID de sistema do LACP local:

<#root>

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

```
show lacp system-identifier

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

Verificação 6

Para verificar o ID de sistema do LACP dos dispositivos upstream junto com as flags de status do 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
```

Verificação 7

Para verificar o histórico de eventos do canal de porta:

<#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]
```

Verificação 8

Debug lacp all produz uma saída muito 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
```

Dica

Verifique se você recebe pacotes LACP do peer. Por exemplo, a interface Ethernet1/3 recebe pacotes LACP, mas a Ethernet1/4 não:

```
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
```

Verificação 9

Nesta saída, a interface Ethernet1/4 é membro do canal de porta, mas está no modo Individual

(Suspenso no lado do 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]
```

Verificação 10

Nesta saída, a interface Ethernet1/3 está operacional e é membro do PortChannel1, enquanto a Ethernet1/4, embora seja membro do PortChannel1, está no modo Individual. Observe que a Ethernet1/3 envia (tx) e recebe (rx) pacotes, mas a Ethernet1/4 envia (rx) somente no tx:

<#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 
```

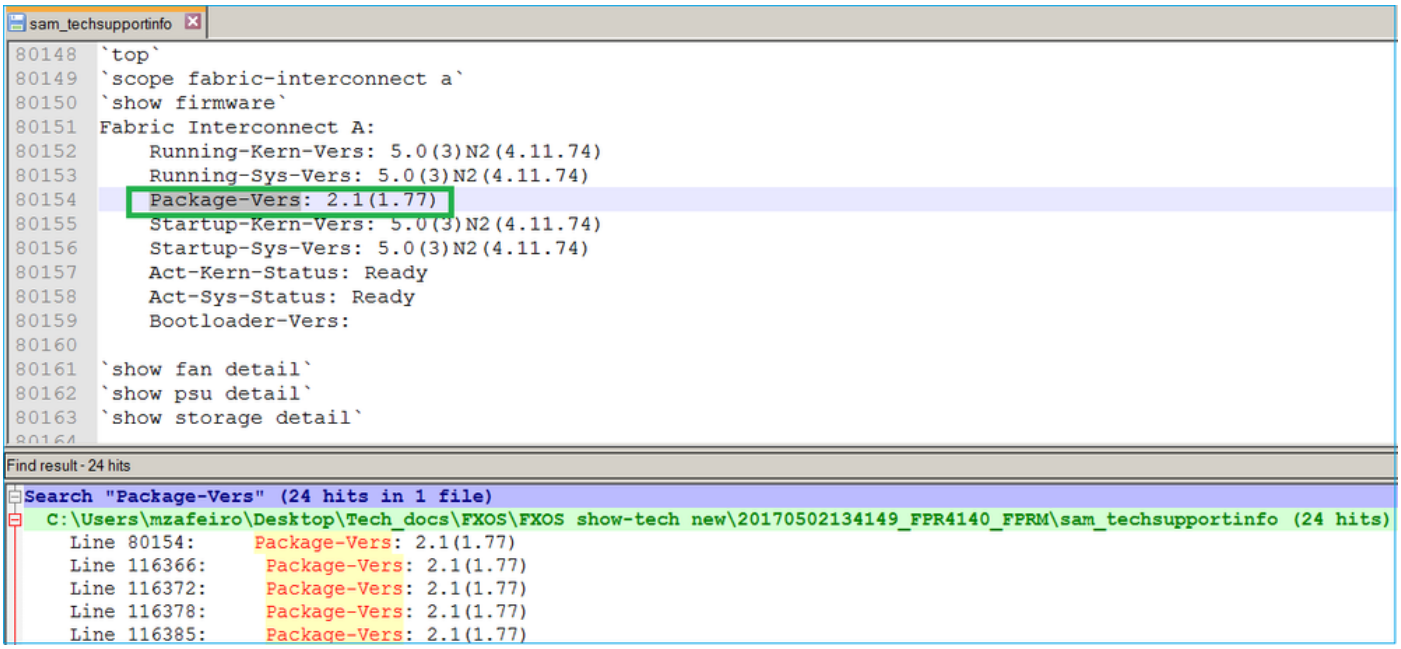
```
2017 Jul 11 11:04:05.983134 lacp: lacp_net_tx_data(247): Ethernet1/4(0x1a003000): Tx LACP PDU len: 110
2017 Jul 11 11:04:06.249929 lacp: lacp_net_process_rx_data(480): Ethernet1/3(0x1a002000): Rx LACP PDU
2017 Jul 11 11:04:06.602815 lacp: lacp_net_tx_data(247): Ethernet1/3(0x1a002000): Tx LACP PDU 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
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
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
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
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
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
```

Para obter informações adicionais, consulte este documento:

P. Como encontrar a versão do pacote FXOS na saída do show Tech?

Caminho 1

No arquivo tar FPRM, extraia o conteúdo do arquivo FPRM_A_TechSupport.tar.gz. Em seguida, abra o arquivo sam_techsupportinfo e procure Package-Verse:



<#root>

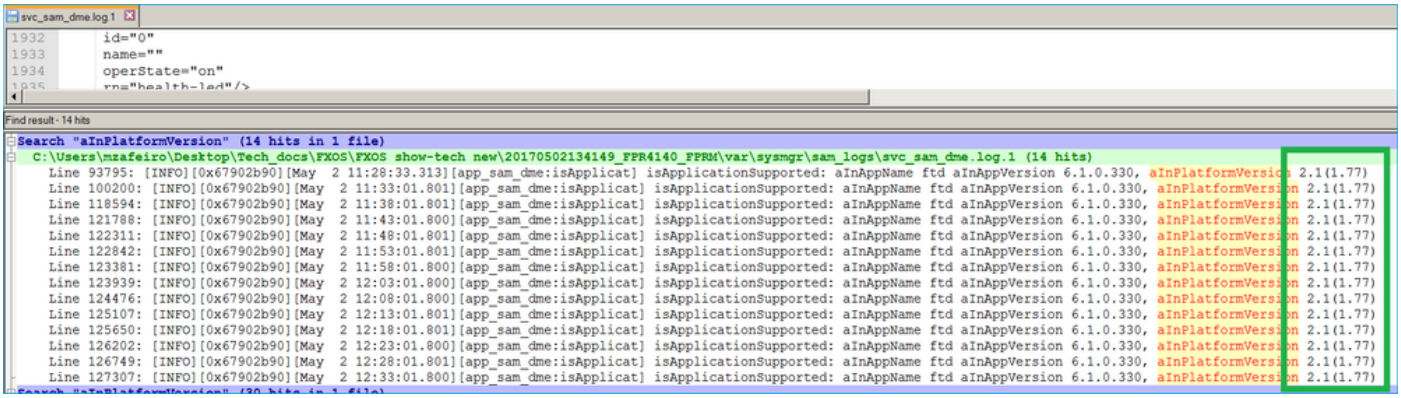
FPR4140-A#

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:
```

Caminho 2

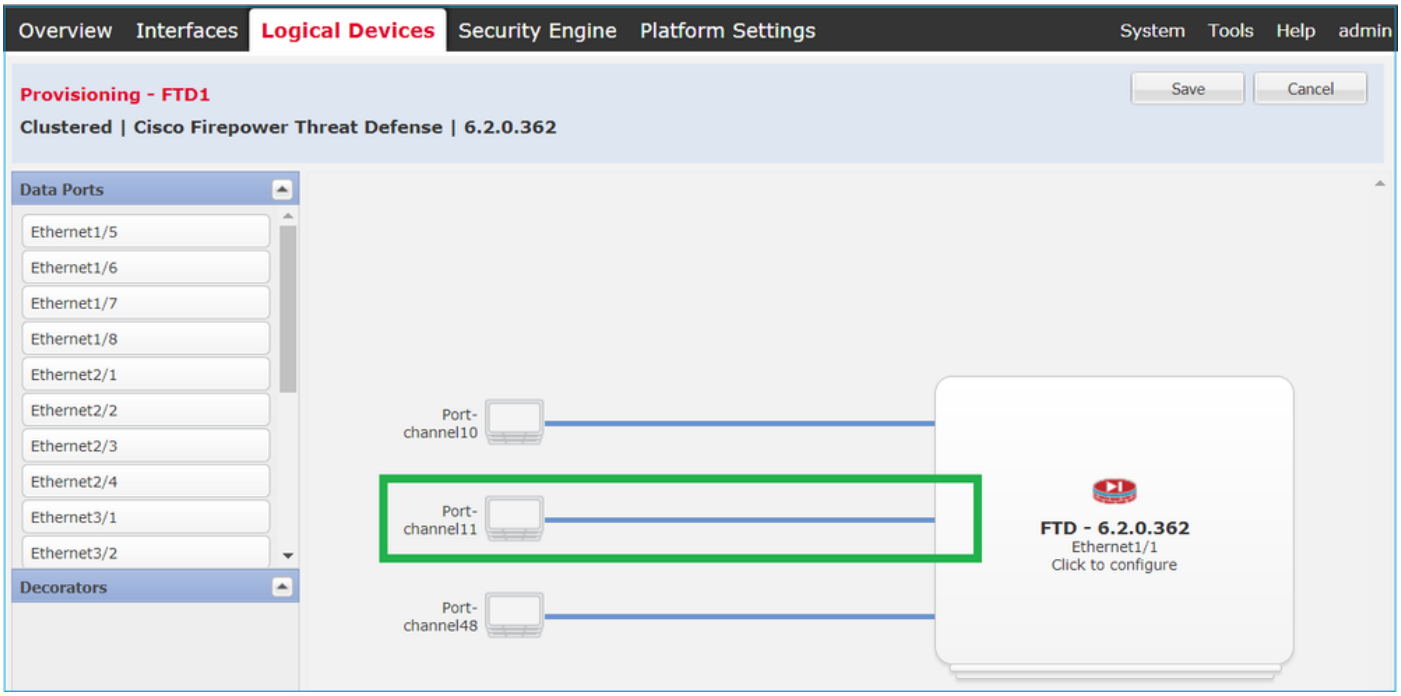
No arquivo tar FRPM, extraia o conteúdo do arquivo FPRM_A_TechSupport.tar.gz. Em seguida, abra o arquivo /var/sysmgr/sam_logs/svc_sam_dme.log e procure uma palavra-chave InPlatformVersion:



P. Como o MIO propaga informações de interface (adição/remoção) para o aplicativo blade (FTD, ASA)?

Ele usa o componente agente de aplicativo MIO.

Por exemplo, quando um novo canal de porta é atribuído ao FTD do MIO:



A depuração do agente de aplicativo do 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>
```

P. Que número de série (SN) deve ser usado no caso de RMA do chassi Firepower?

O chassi do firepower tem vários SNs. O usado para uma solicitação de RMA pode ser obtido destas saídas:

<#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
```

Ou:

<#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

Ou:

<#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

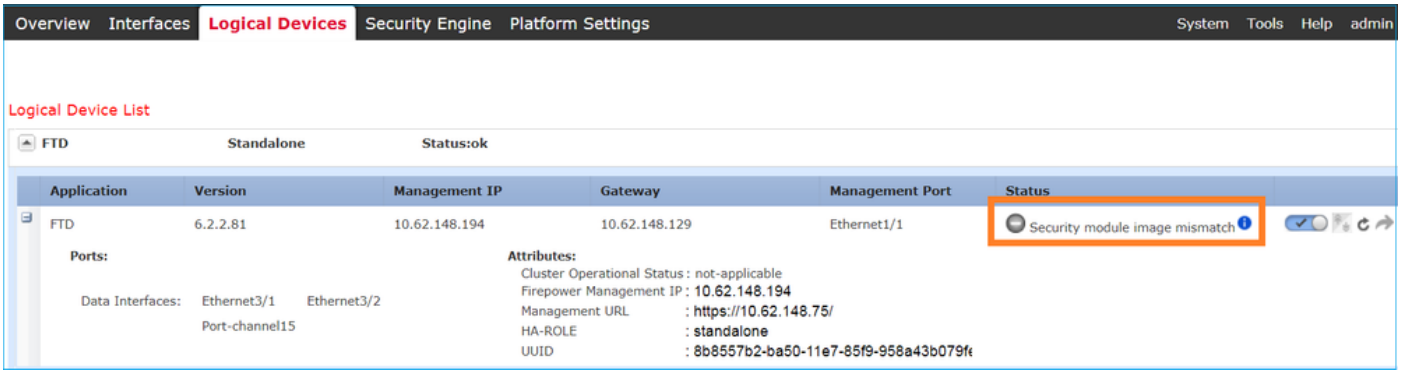
P. Você pode trocar o SSD1 entre 2 chassis FXOS diferentes?

A resposta curta é não. O SSD1 contém a Imagem do aplicativo (por exemplo, FTD ou ASA). Se você tirar o SSD1 do chassi e conectá-lo a um chassi diferente, o módulo não será ativado e os seguintes erros serão exibidos:

F1548 2017-11-08T11:36:40.095 crítico 427280 Troca de blade detectada no slot 1

Severity	Description	Cause	Occurrence	Time	Acknowledged
CRITICAL	Blade swap detected on slot 1	blade-swap	1	2017-11-08T11:36:40.095	no

Incompatibilidade de imagem do módulo de segurança



Disco local 1 ausente no servidor 1/1

MAJOR	Local disk 1 missing on server 1/1	equipment-missing	2	2017-11-08T10:40:43.122	no

P. Como verificar o consumo de energia do chassi?

A partir da versão 2.2.1 do FXOS, você pode usar o 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
```

Para obter informações adicionais, verifique:

Monitorando a integridade do chassi

P. Como verificar a versão do carregador de inicialização?

<#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
```

P. Como atualizar o Bootloader?

Após a instalação do FXOS 2.3.1.58 ou posterior, o sistema pode mostrar que recebe uma falha crítica em seu Security Appliance indicando que é necessário o upgrade do firmware do adaptador:

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

O procedimento de atualização do Bootloader é descrito neste link: https://www.cisco.com/c/en/us/td/docs/security/firepower/fxos/fxos231/release/notes/fxos231_rn.html#pgfl 173826

Se você enfrentar este erro abaixo durante a atualização do carregador de inicialização, você pode tentar usar a opção '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.]
```

P. Como desativar o tempo limite absoluto de SSH?

Isso é útil durante testes de laboratório e solução de problemas. Observe que esse tempo limite absoluto é uma prática recomendada de segurança para ser diferente de zero, portanto, lembre-se se isso for feito temporariamente no ambiente do usuário.

<#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
```

P. Como capturar pacotes LACP destinados ao supervisor do chassi (plano de controle)?

Os pacotes LACP destinados ao supervisor de chassi do Firepower 4100/9300 (plano de controle) são encapsulados dentro da seção de dados de pacotes específicos e podem ser capturados na interface interna inbound-hi usando o comando ethanalyzer. Os bytes da PDU do LACP são incorporados começando dos bytes com valores 01 80 C2 00 00 02 (endereço IEEE 802.3 Slow_Protocols_Multicast) até o final da seção de dados:

<#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 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: b85020040000000000000000000081000000000000040904...
```

O despejo hexadecimal pode ser convertido em PCAP usando ferramentas on-line.

P. Como encontrar informações sobre SSD?

As informações de SSD internas do supervisor do chassi estão disponíveis em todas as versões de FXOS mencionadas na etapa 1, seção Solução alternativa em 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 do mecanismo de segurança (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: JAD260508TZ
            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
```

P. Como configurar capturas de Switch interno (FXOS)?

Consulte o artigo Configurar e verificar as capturas de firewall seguro e do switch interno Firepower.

Referências

- Guia de configuração do gerenciador de chassi do firewall seguro FXOS Cisco Firepower 4100/9300, 2.14(1)
- Guia de configuração de CLI do Cisco Secure FXOS para Firepower 4100/9300, 2.14(1)
- Referência de comandos FXOS do Cisco Firepower 4100/9300
- Configurar e verificar as capturas de firewall seguro e do switch interno Firepower

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