Hoge beschikbaarheid van FTD op Firepower-applicaties configureren

Inhoud

Inleiding

In dit document wordt beschreven hoe u hoge beschikbaarheid (HA) van Firepower Threat Defense (FTD) (Active/Standby failover) configureert en verifieert op de FPR9300.

Voorwaarden

Vereisten

Er zijn geen specifieke vereisten van toepassing op dit document.

Gebruikte componenten

De informatie in dit document is gebaseerd op de volgende software- en hardware-versies:

- 2x Cisco Firepower 9300 security applicatie - FXOS-software 2.0(1.23)
- FTD versie 10.10.1.1 (build 1023)
- Firepower Management Center (FMC) - SW 10.10.1.1 (build 1023)

De informatie in dit document is gebaseerd op de apparaten in een specifieke laboratoriumomgeving. Alle apparaten die in dit document worden beschreven, hadden een opgeschoonde (standaard)configuratie. Als uw netwerk live is, moet u zorgen dat u de potentiële impact van elke opdracht begrijpt.

Opmerking: Op een FPR9300 apparaat met FTD, kunt u alleen inter-chassis HA configureren. De twee eenheden in een HA-configuratie moeten voldoen aan de hier genoemde voorwaarden.

Taak 1. Voorwaarden controleren

Taakvereiste:

Controleer of beide FTD-apparaten voldoen aan de notitievereisten en kunnen worden geconfigureerd als HA-eenheden.

Oplossing:

Stap 1. Maak verbinding met het beheer-IP-adres van de FPR9300 en controleer de hardware van de module.

Controleer de FPR9300-1 hardware.

```
KSEC-FPR9K-1-A# show server inventory
Server Equipped PID Equipped VID Equipped Serial (SN) Slot Status      Ackd Memory (MB) Ackd
Cores
------- ------------ ------------ -------------------- --------------- ---------------- -------
---
1/1     FPR9K-SM-36  V01          FLM19216KK6          Equipped                   262144
36
1/2     FPR9K-SM-36  V01          FLM19206H71          Equipped                   262144
36
1/3     FPR9K-SM-36  V01          FLM19206H7T          Equipped                   262144
36
KSEC-FPR9K-1-A#
```

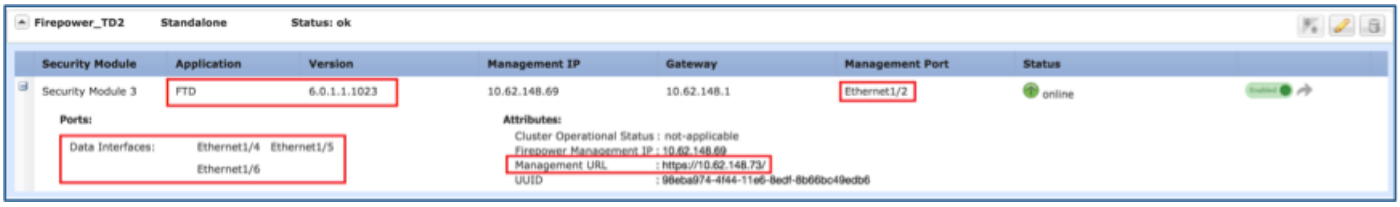
Controleer de FPR9300-2 hardware.

```
KSEC-FPR9K-2-A# show server inventory
Server  Equipped PID Equipped VID Equipped Serial (SN) Slot Status      Ackd Memory (MB) Ackd
Cores
------- ------------ ------------ -------------------- --------------- ---------------- -------
---
1/1     FPR9K-SM-36  V01          FLM19206H9T          Equipped                   262144
36
1/2     FPR9K-SM-36  V01          FLM19216KAX          Equipped                   262144
36
1/3     FPR9K-SM-36  V01          FLM19267A63          Equipped                   262144
36
KSEC-FPR9K-2-A#
```

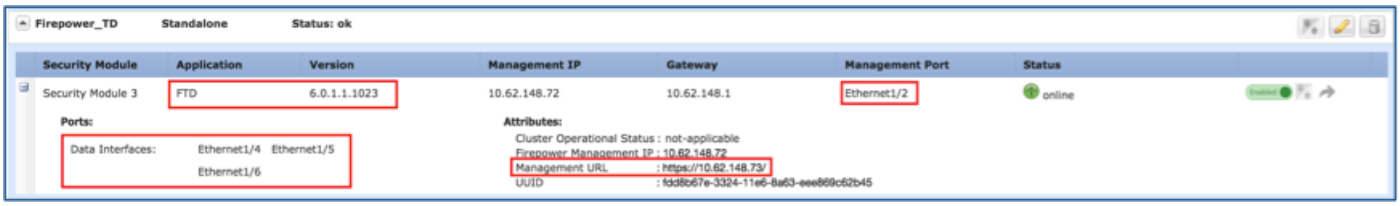
Stap 2. Log in bij de FPR9300-1 Chassis Manager en ga naar Logical Devices (logische apparaten).

Controleer de softwareversie, het aantal en het type interfaces zoals in de afbeeldingen wordt weergegeven.

FPR9300-1



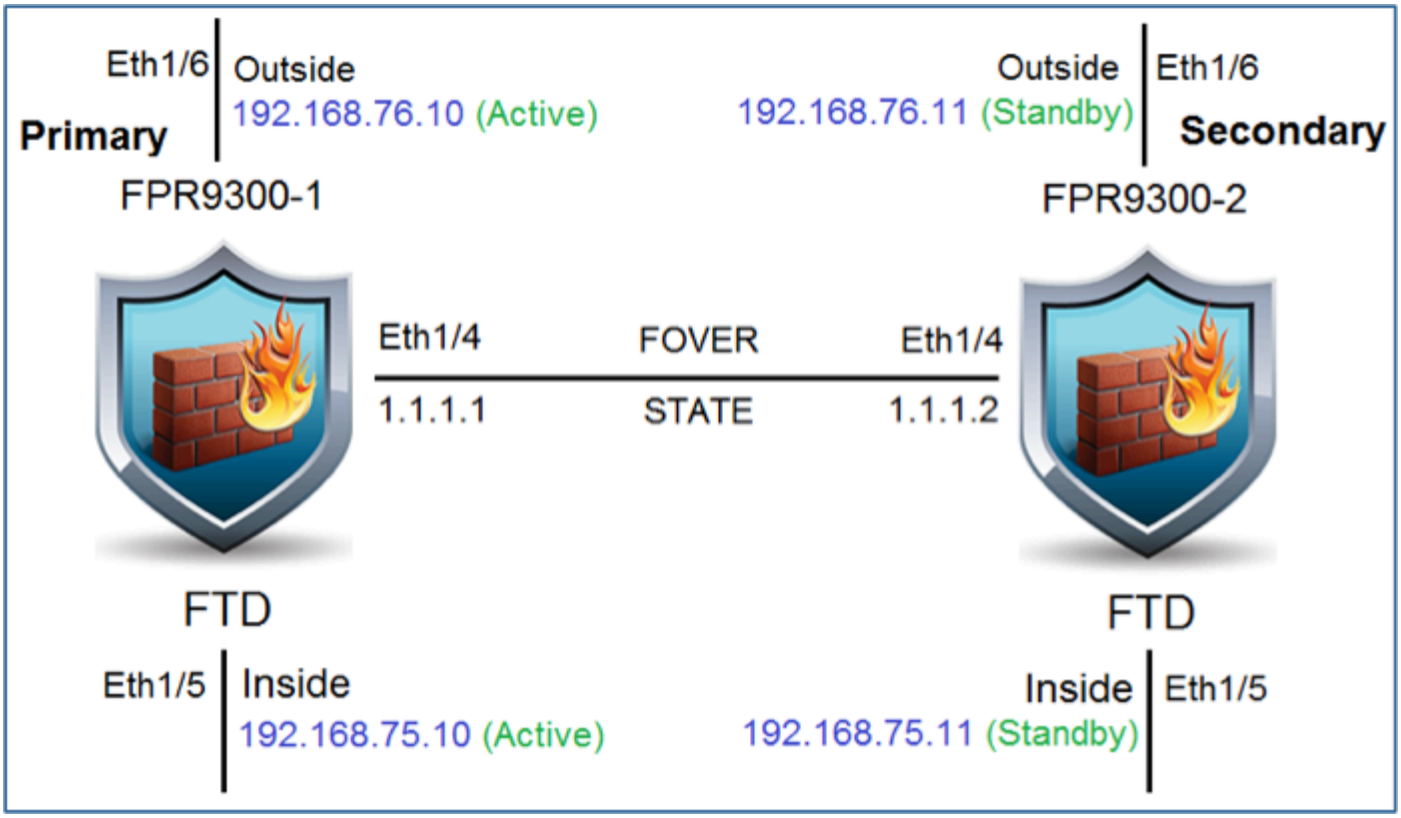
FPR9300-2



Taak 2. FTD HA op FPR9300 configureren

Taakvereiste:

Configureer Active/Standby failover (HA) aan de hand van dit diagram.

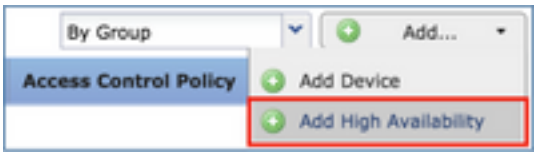


Oplossing:

Beide FTD-apparaten zijn al geregistreerd op het FMC, zoals in de afbeelding is weergegeven.

Stap 1. Om de FTD-failover te configureren gaat u naar **Devices > Device Management** (Apparaten > Apparaatbeheer) en selecteert u **Add High Availability** (Hoge

beschikbaarheid toevoegen), zoals in de afbeelding is weergegeven.



Stap 2. Voer de **Primary Peer** (primaire peer) en de **Secondary Peer** (secundaire peer) in en selecteer **Doorgaan** zoals in de afbeelding is weergegeven.

> **Waarschuwing**: Zorg ervoor dat u de juiste eenheid als **primaire** eenheid selecteert. Alle configuraties op de geselecteerde primaire eenheid worden gerepliceerd naar de geselecteerde secundaire FTD-eenheid. Als gevolg van replicatie kan de huidige configuratie op de secundaire eenheid worden **vervangen**.

Voorwaarden

Om een HA tussen 2 FTD-apparaten te creëren, moet aan deze voorwaarden worden voldaan:

- Hetzelfde model
- Dezelfde versie (dit geldt voor FXOS en voor FTD - (hoofdversie (eerste getal), onderversie (tweede getal) en revisieversie (derde getal) moeten hetzelfde zijn))
- Hetzelfde aantal interfaces
- Hetzelfde type interfaces
- Beide apparaten als deel van dezelfde groep/domein in het VCC
- Identieke NTP-configuratie (Network Time Protocol)
- Zijn volledig geïmplementeerd op het FMC zonder niet-doorgevoerde wijzigingen
- Gebruiken dezelfde firewallmodus: gerouteerd of transparant.
- Dit moet op beide FTD-apparaten en de GUI van het FMC worden gecontroleerd, aangezien de FTD's dezelfde modus kunnen hebben zonder dat dit wordt weerspiegeld door het FMC.
- Heeft geen DHCP/Point-to-Point Protocol over Ethernet (PPPoE) geconfigureerd in een van de interfaces
- Verschillende hostnamen (Fully Qualified Domain Name (FQDN)) voor beide chassis. Om te

controleren of het chassis hostname navigeer naar FTD CLI en voer deze opdracht uit:

```
firepower# show chassis-management-url

https://KSEC-FPR9K-1.cisco.com:443//
```

Opmerking: In FTD-versies recenter dan 6.3, gebruikt u de opdracht **'show chassis detail'**

```
firepower# show chassis detail
Chassis URL              : https://KSEC-FPR4100-1:443//
Chassis IP               : 192.0.2.1
Chassis Serial Number    : JMX12345678
Security Module          : 1
```

Als beide chassis dezelfde naam hebben, verander dan de naam van één chassis met behulp van deze opdrachten:

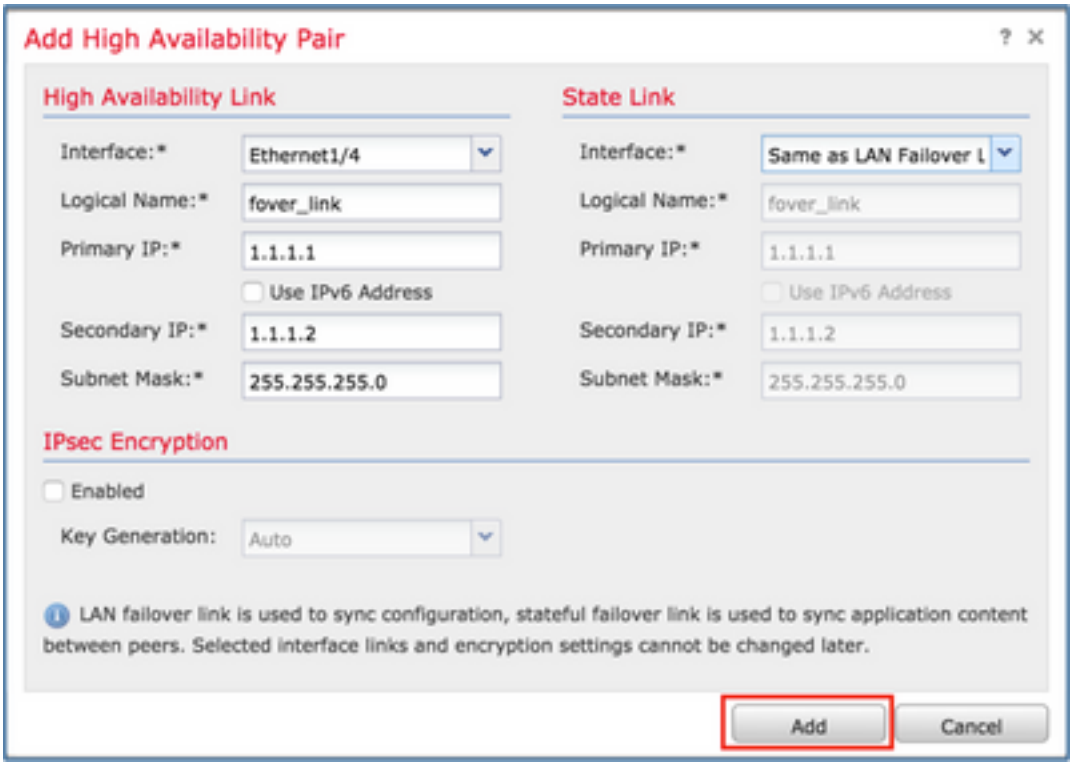
```
KSEC-FPR9K-1-A# scope system
KSEC-FPR9K-1-A /system # set name FPR9K-1new
Warning: System name modification changes FC zone name and redeploys them non-disruptively
KSEC-FPR9K-1-A /system* # commit-buffer
FPR9K-1-A /system # exit
FPR9K-1new-A#
```

Nadat u de chassisnaam heeft gewijzigd, verwijdert u de registratie van FTD van het FMC en voert u de registratie opnieuw uit. Ga daarna door met het maken van het HA-paar.

Stap 3. Configureer de HA en voer de linkinstellingen in.

In uw geval heeft de State Link dezelfde instellingen als de High Availability Link.

Selecteer **Add** (toevoegen) en wacht enkele minuten tot het HA-paar is geïmplementeerd, zoals in de afbeelding is weergegeven.

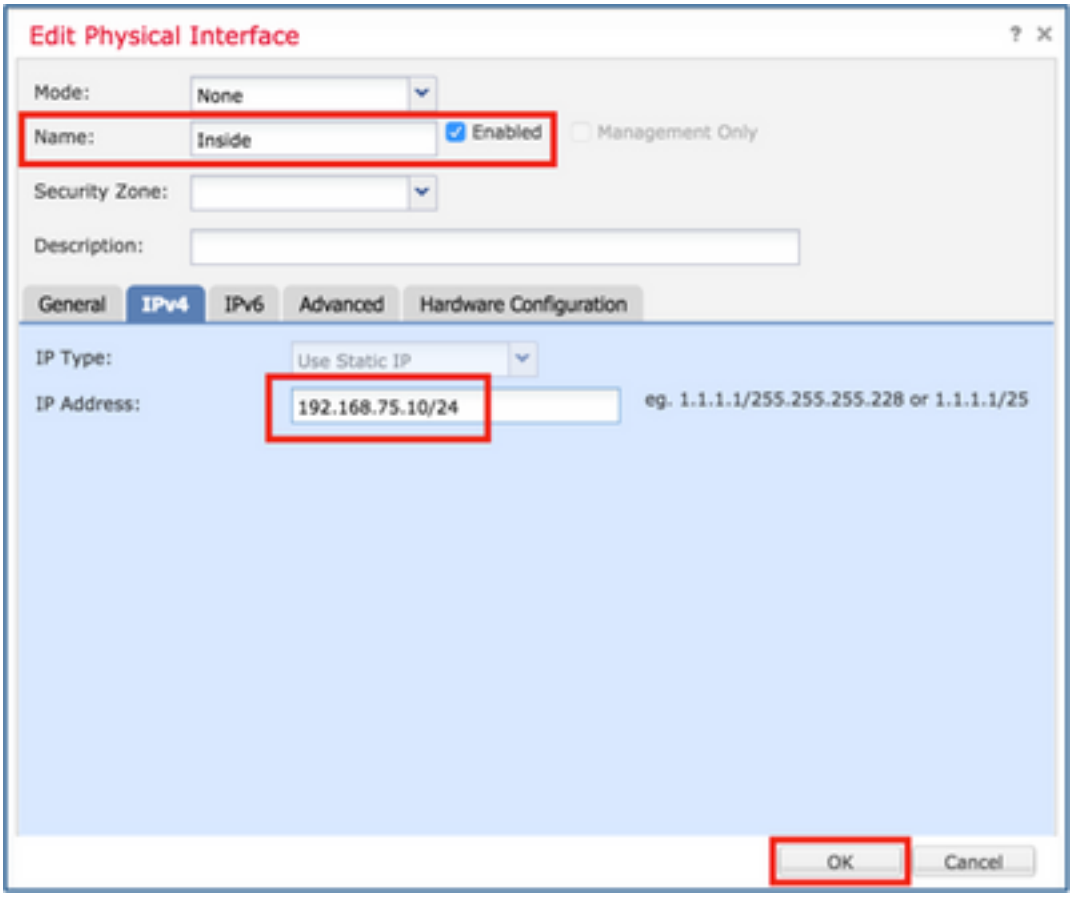


Stap 4. Configureer de data-interfaces (primaire en stand-by-IP-adressen)

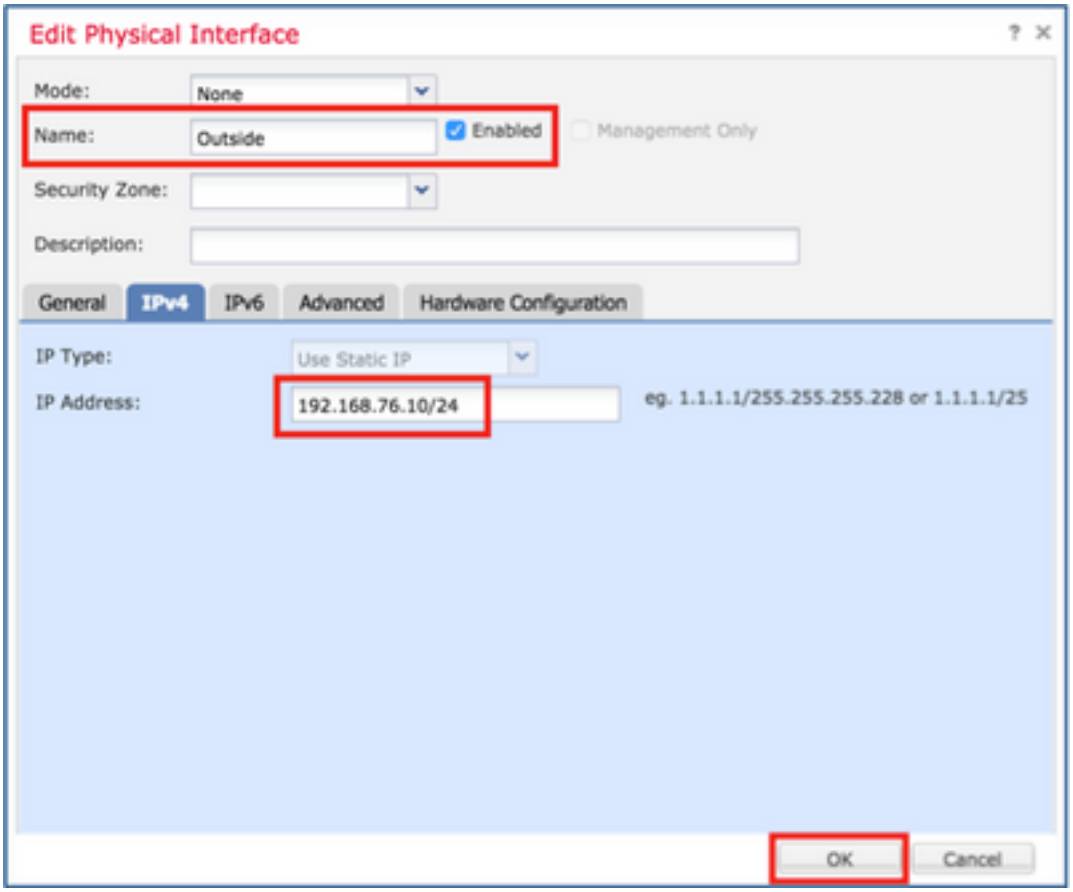
Selecteer vanuit de FMC GUI de optie HA **Edit**, zoals weergegeven in de afbeelding.

Stap 5. Configureer de interface-instellingen, zoals weergegeven in de afbeeldingen.

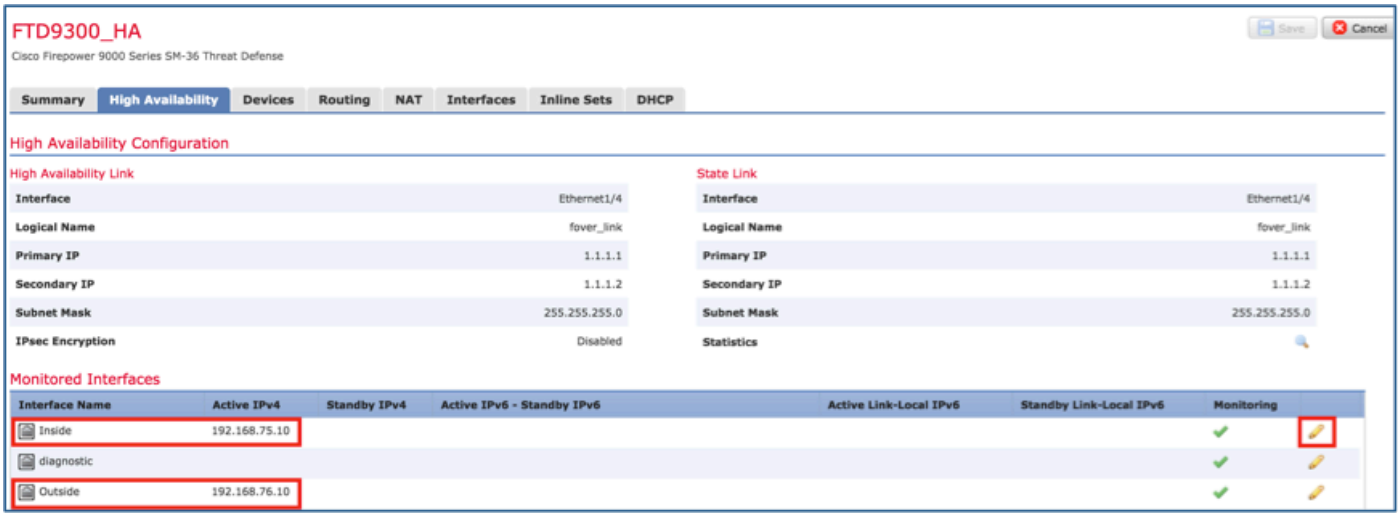
Ethernet 1/5 interface.



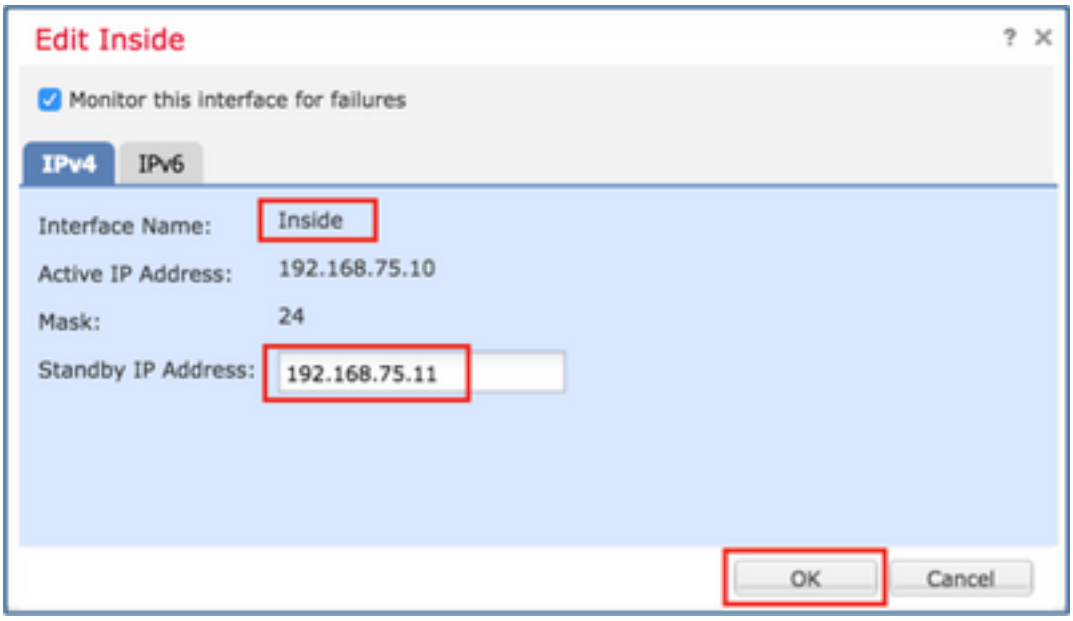
Ethernet 1/6 interface.



Stap 6. Ga naar **High Availability** (hoge beschikbaarheid) en selecteer **Edit** (bewerken) voor de interfacenaam om de stand-by-IP-adressen toe te voegen zoals in de afbeelding is weergegeven.

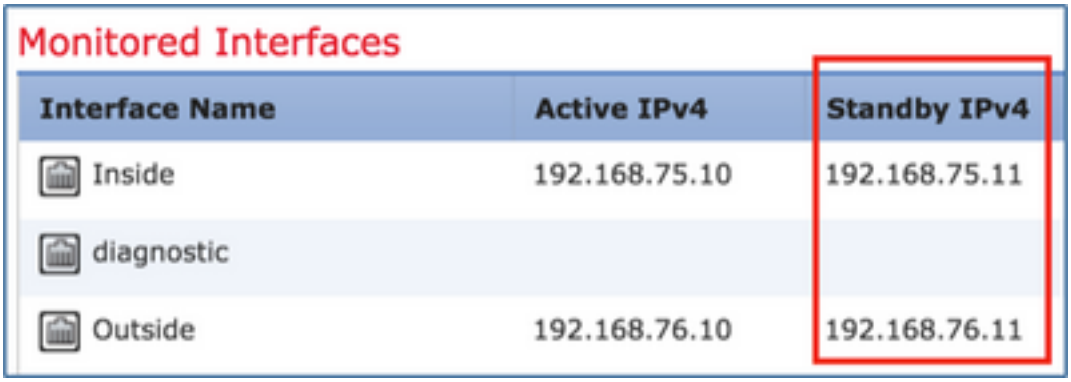


Stap 7. Voor de inside-interface zoals weergegeven in de afbeelding.

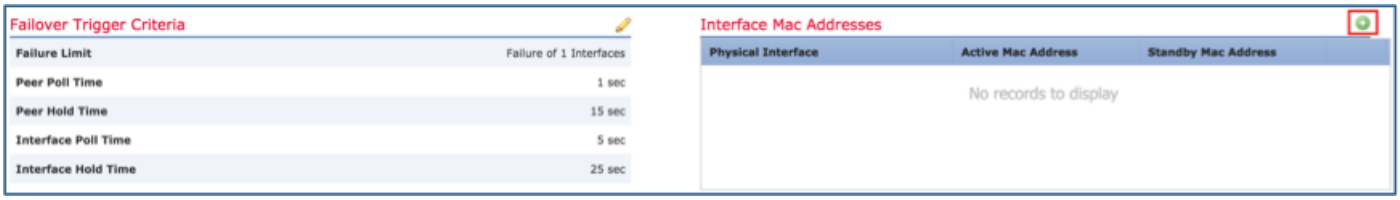


Stap 8. Doe hetzelfde voor de outside-interface.

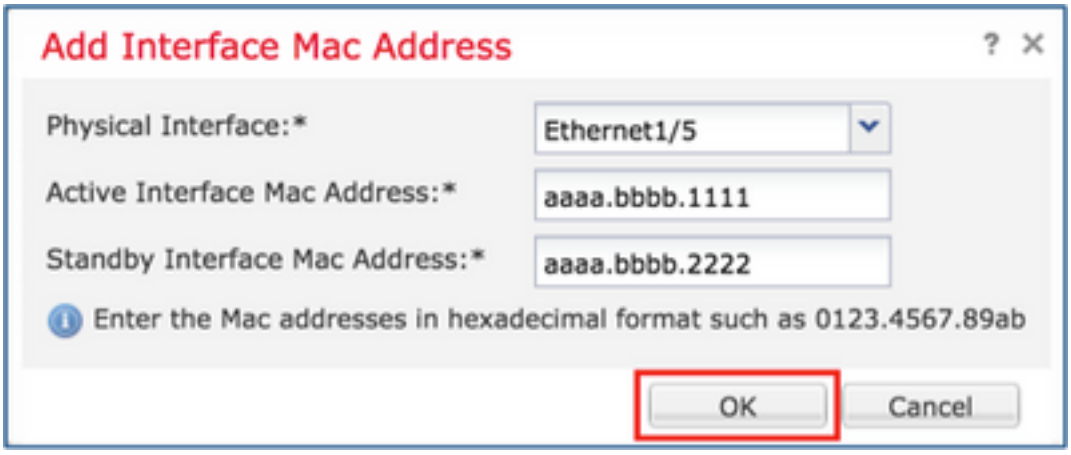
Stap 9. Controleer het resultaat zoals weergegeven in de afbeelding.



Stap 10. Blijf op het tabblad High Availability en configureer virtuele MAC-adressen zoals in de afbeelding is weergegeven.



Stap 11. De afbeelding toont de instellingen voor de inside-interface.



Stap 12. Doe hetzelfde voor de outside-interface.

Stap 13. Controleer het resultaat zoals weergegeven in de afbeelding.

Stap 14. Nadat u de wijzigingen heeft geconfigureerd, selecteert u **Save** (opslaan) en Deploy (implementeren).

Taak 3. FTD HA en licentie verifiëren

Taakvereiste:

Controleer de FTD HA-instellingen en actieve licenties van de FMC GUI en van de FTD CLI.

Oplossing:

Stap 1. Ga naar **Summary** (overzicht) en controleer de HA-instellingen en actieve licenties, zoals weergegeven in de afbeelding.

Stap 2. Voer vanaf de FTD CLISH CLI de volgende opdrachten uit:

```
> show high-availability config
Failover On
Failover unit Primary
Failover LAN Interface: fover_link Ethernet1/4 (up)
Reconnect timeout 0:00:00
Unit Poll frequency 1 seconds, holdtime 15 seconds
Interface Poll frequency 5 seconds, holdtime 25 seconds
Interface Policy 1
Monitored Interfaces 1 of 1041 maximum
MAC Address Move Notification Interval not set
failover replication http
Version: Ours 9.6(1), Mate 9.6(1)
Serial Number: Ours FLM19267A63, Mate FLM19206H7T
Last Failover at: 18:32:38 EEST Jul 21 2016
This host: Primary - Active
Active time: 3505 (sec)
slot 0: UCSB-B200-M3-U hw/sw rev (0.0/9.6(1)) status (Up Sys)
  Interface diagnostic (0.0.0.0): Normal (Waiting)
slot 1: snort rev (1.0)  status (up)
slot 2: diskstatus rev (1.0)  status (up)
Other host: Secondary - Standby Ready
Active time: 172 (sec)
slot 0: UCSB-B200-M3-U hw/sw rev (0.0/9.6(1)) status (Up Sys)
  Interface diagnostic (0.0.0.0): Normal (Waiting)
slot 1: snort rev (1.0)  status (up)
slot 2: diskstatus rev (1.0)  status (up)

Stateful Failover Logical Update Statistics
Link : fover_link Ethernet1/4 (up)
Stateful Obj xmit       xerr       rcv        rerr
General417        0          416        0
sys cmd  416        0          416        0
up time  0          0          0          0
RPC services  0          0          0          0
TCP conn 0          0          0          0
UDP conn 0          0          0          0
ARP tbl  0          0          0          0
Xlate_Timeout  0          0          0          0
IPv6 ND tbl  0          0          0          0
VPN IKEv1 SA 0          0          0          0
VPN IKEv1 P2 0          0          0          0
VPN IKEv2 SA 0          0          0          0
VPN IKEv2 P2 0          0          0          0
VPN CTCP upd 0          0          0          0
VPN SDI upd 0          0          0          0
VPN DHCP upd 0          0          0          0
SIP Session 0          0          0          0
SIP Tx 0          0          0          0
```

```
SIP Pinhole 0          0          0          0
Route Session 0          0          0          0
Router ID 0          0          0          0
User-Identity 1          0          0          0
CTS SGTNAME 0          0          0          0
CTS PAC 0          0          0          0
TrustSec-SXP 0          0          0          0
IPv6 Route 0          0          0          0
STS Table 0          0          0          0

Logical Update Queue Information
  Cur Max Total
Recv Q: 0 10 416
Xmit Q: 0 11 2118

>
```

Stap 3. Doe hetzelfde op het secundaire apparaat.

Stap 4. Voer de opdracht **show failover state** uit vanaf de LINA CLI:

```
firepower# show failover state

               State          Last Failure Reason      Date/Time
This host  -   Primary
               Active         None
Other host -   Secondary
               Standby Ready  Comm Failure             18:32:56 EEST Jul 21 2016

====Configuration State===
Sync Done
====Communication State===
Mac set

firepower#
```

Stap 5. Controleer de configuratie vanaf de primaire eenheid (LINA CLI):

```
firepower# show running-config failover
failover
failover lan unit primary
failover lan interface fover_link Ethernet1/4
failover replication http
failover mac address Ethernet1/5 aaaa.bbbb.1111 aaaa.bbbb.2222
failover mac address Ethernet1/6 aaaa.bbbb.3333 aaaa.bbbb.4444
failover link fover_link Ethernet1/4
failover interface ip fover_link 10.10.1.1 255.255.255.0 standby 10.10.1.2
firepower#

firepower# show running-config interface
!
interface Ethernet1/2
 management-only
 nameif diagnostic
 security-level 0
 no ip address
!
interface Ethernet1/4
 description LAN/STATE Failover Interface
!
interface Ethernet1/5
 nameif Inside
```

```
 security-level 0
 ip address 192.168.75.10 255.255.255.0 standby 192.168.75.11
!
interface Ethernet1/6
 nameif Outside
 security-level 0
 ip address 192.168.76.10 255.255.255.0 standby 192.168.76.11
firepower#
```

Taak 4. Failover-rollen wisselen

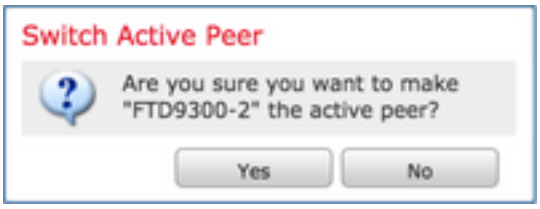
Taakvereiste:

Vanuit het FMC wisselt u de failover-rollen van Primary/Active, Secondary/Standby in Primary/Standby, Secondary/Active

Oplossing:

Stap 1. Selecteer het pictogram, zoals weergegeven in de afbeelding.

Stap 2. Bevestig de actie in het pop-upvenster, zoals weergegeven in de afbeelding.



Stap 3. Controleer het resultaat zoals weergegeven in de afbeelding.

Vanaf de LINA CLI kunt u zien dat de opdracht **no failover active** is uitgevoerd op de Primary/Active (primaire/actieve) eenheid:

```
Jul 22 2016 10:39:26: %ASA-5-111008: User 'enable_15' executed the 'no failover active' command.
Jul 22 2016 10:39:26: %ASA-5-111010: User 'enable_15', running 'N/A' from IP 0.0.0.0, executed
'no failover active'
```

U kunt dit ook verifiëren in de output van de opdracht **show failover history**:

```
firepower# show failover history
==========================================================================
```

```
From State                 To State                   Reason
10:39:26 EEST Jul 22 2016
Active                     Standby Ready              Set by the config command
```

Stap 4. Na de verificatie maakt u de primaire eenheid weer actief.

Taak 5. HA-paar verbreken

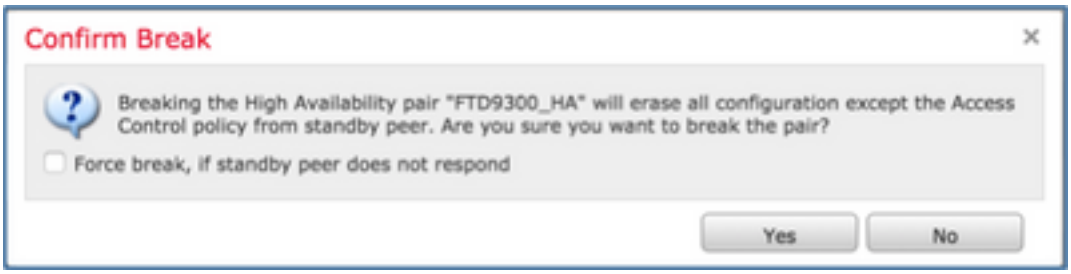
Taakvereiste:

Verbreek het failover-paar vanaf het FMC.

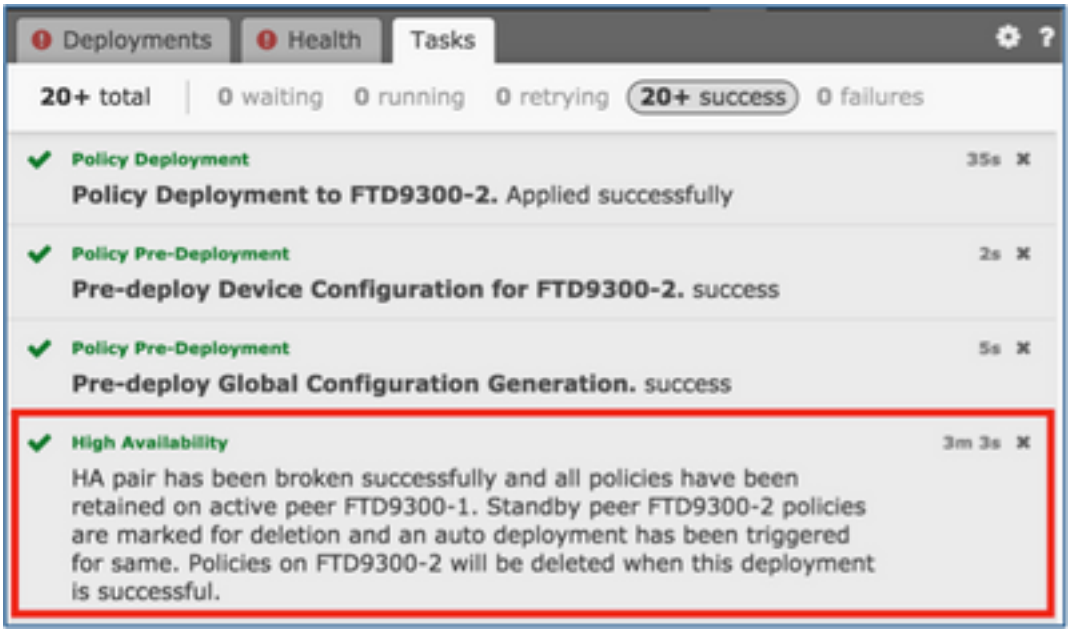
Oplossing:

Stap 1. Selecteer het pictogram, zoals weergegeven in de afbeelding.

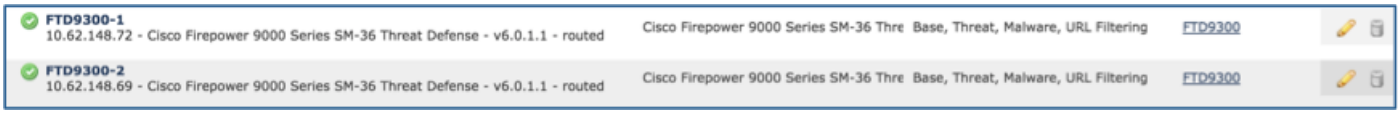
Stap 2. Controleer de melding zoals weergegeven in de afbeelding.



Stap 3. Bekijk de melding, zoals weergegeven in de afbeelding.



Stap 4. Controleer het resultaat in de GUI van het FMC, zoals weergegeven in de afbeelding.



show running-config op de primaire eenheid vóór en na het verbreken van HA:

Voorafgaand aan verbreken van HA

```
firepower# sh run
: Saved
:
: Serial Number: FLM19267A63
: Hardware:   FPR9K-SM-36, 135839 MB RAM, CPU
Xeon E5 series 2294 MHz, 2 CPUs (72 cores)
:
NGFW Version 10.10.1.1
!
hostname firepower
enable password 8Ry2YjIyt7RRXU24 encrypted
names
!
interface Ethernet1/2
management-only
nameif diagnostic
security-level 0
no ip address
!
interface Ethernet1/4
description LAN/STATE Failover Interface
!
interface Ethernet1/5
nameif Inside
security-level 0
ip address 192.168.75.10 255.255.255.0 standby
192.168.75.11
!
interface Ethernet1/6
nameif Outside
security-level 0
ip address 192.168.76.10 255.255.255.0 standby
192.168.76.11
!
ftp mode passive
ngips conn-match vlan-id
access-list CSM_FW_ACL_ remark rule-id 268447744:
ACCESS POLICY: FTD9300 - Mandatory/1
access-list CSM_FW_ACL_ remark rule-id 268447744:
L4 RULE: Allow_ICMP
access-list CSM_FW_ACL_ advanced permit icmp any
any rule-id 268447744 event-log both
access-list CSM_FW_ACL_ remark rule-id 268441600:
ACCESS POLICY: FTD9300 - Default/1
access-list CSM_FW_ACL_ remark rule-id 268441600:
L4 RULE: DEFAULT ACTION RULE
access-list CSM_FW_ACL_ advanced permit ip any
any rule-id 268441600
!
tcp-map UM_STATIC_TCP_MAP
tcp-options range 6 7 allow
tcp-options range 9 255 allow
urgent-flag allow
!
no pager
logging enable
logging timestamp
logging standby
```

Na verbreken van HA

```
firepower# sh run
: Saved
:
: Serial Number: FLM19267A63
: Hardware:   FPR9K-SM-36, 135839 MB RAM, C
Xeon E5 series 2294 MHz, 2 CPUs (72 cores)
:
NGFW Version 10.10.1.1
!
hostname firepower
enable password 8Ry2YjIyt7RRXU24 encrypted
names
!
interface Ethernet1/2
management-only
nameif diagnostic
security-level 0
no ip address
!
interface Ethernet1/4
no nameif
no security-level
no ip address
!
interface Ethernet1/5
nameif Inside
security-level 0
ip address 192.168.75.10 255.255.255.0 standby
192.168.75.11
!
interface Ethernet1/6
nameif Outside
security-level 0
ip address 192.168.76.10 255.255.255.0 standby
192.168.76.11
!
ftp mode passive
ngips conn-match vlan-id
access-list CSM_FW_ACL_ remark rule-id 26844
ACCESS POLICY: FTD9300 - Mandatory/1
access-list CSM_FW_ACL_ remark rule-id 26844
L4 RULE: Allow_ICMP
access-list CSM_FW_ACL_ advanced permit icm
any rule-id 268447744 event-log both
access-list CSM_FW_ACL_ remark rule-id 26844
ACCESS POLICY: FTD9300 - Default/1
access-list CSM_FW_ACL_ remark rule-id 26844
L4 RULE: DEFAULT ACTION RULE
access-list CSM_FW_ACL_ advanced permit ip a
any rule-id 268441600
!
tcp-map UM_STATIC_TCP_MAP
tcp-options range 6 7 allow
tcp-options range 9 255 allow
urgent-flag allow
!
no pager
logging enable
```

logging buffer-size 100000
logging buffered debugging
logging flash-minimum-free 1024
logging flash-maximum-allocation 3076
mtu diagnostic 1500
mtu Inside 1500
mtu Outside 1500
failover
failover lan unit primary
failover lan interface fover_link Ethernet1/4
failover replication http
failover mac address Ethernet1/5 aaaa.bbbb.1111 aaaa.bbbb.2222
failover mac address Ethernet1/6 aaaa.bbbb.3333 aaaa.bbbb.4444
failover link fover_link Ethernet1/4
failover interface ip fover_link 10.10.1.1 255.255.255.0 standby 10.10.1.2
icmp unreachable rate-limit 1 burst-size 1
no asdm history enable
arp timeout 14400
no arp permit-nonconnected
access-group CSM_FW_ACL_ global
timeout xlate 3:00:00
timeout pat-xlate 0:00:30
timeout conn 1:00:00 half-closed 0:10:00 udp 0:02:00 sctp 0:02:00 icmp 0:00:02
timeout sunrpc 0:10:00 h323 0:05:00 h225 1:00:00 mgcp 0:05:00 mgcp-pat 0:05:00
timeout sip 0:30:00 sip_media 0:02:00 sip-invite 0:03:00 sip-disconnect 0:02:00
timeout sip-provisional-media 0:02:00 uauth 0:05:00 absolute
timeout tcp-proxy-reassembly 0:00:30
timeout floating-conn 0:00:00
aaa proxy-limit disable
no snmp-server location
no snmp-server contact
no snmp-server enable traps snmp authentication linkup linkdown coldstart warmstart
crypto ipsec security-association pmtu-aging infinite
crypto ca trustpool policy
telnet timeout 5
ssh stricthostkeycheck
ssh timeout 5
ssh key-exchange group dh-group1-sha1
console timeout 0
dynamic-access-policy-record DfltAccessPolicy
!
class-map inspection_default
match default-inspection-traffic
!
!
policy-map type inspect dns preset_dns_map
parameters
message-length maximum client auto
message-length maximum 512
policy-map type inspect ip-options UM_STATIC_IP_OPTIONS_MAP
parameters
eool action allow
nop action allow
router-alert action allow
policy-map global_policy
class inspection_default
inspect dns preset_dns_map

logging timestamp
logging standby
logging buffer-size 100000
logging buffered debugging
logging flash-minimum-free 1024
logging flash-maximum-allocation 3076
mtu diagnostic 1500
mtu Inside 1500
mtu Outside 1500
no failover
no monitor-interface service-module
icmp unreachable rate-limit 1 burst-size 1
no asdm history enable
arp timeout 14400
no arp permit-nonconnected
access-group CSM_FW_ACL_ global
timeout xlate 3:00:00
timeout pat-xlate 0:00:30
timeout conn 1:00:00 half-closed 0:10:00 udp 0:0
sctp 0:02:00 icmp 0:00:02
timeout sunrpc 0:10:00 h323 0:05:00 h225 1:00:0
mgcp 0:05:00 mgcp-pat 0:05:00
timeout sip 0:30:00 sip_media 0:02:00 sip-invite 0:03:00 sip-disconnect 0:02:00
timeout sip-provisional-media 0:02:00 uauth 0:05
absolute
timeout tcp-proxy-reassembly 0:00:30
timeout floating-conn 0:00:00
aaa proxy-limit disable
no snmp-server location
no snmp-server contact
no snmp-server enable traps snmp authentication linkup linkdown coldstart warmstart
crypto ipsec security-association pmtu-aging infin
crypto ca trustpool policy
telnet timeout 5
ssh stricthostkeycheck
ssh timeout 5
ssh key-exchange group dh-group1-sha1
console timeout 0
dynamic-access-policy-record DfltAccessPolicy
!
class-map inspection_default
match default-inspection-traffic
!
!
policy-map type inspect dns preset_dns_map
parameters
message-length maximum client auto
message-length maximum 512
policy-map type inspect ip-options UM_STATIC_IP_OPTIONS_MAP
parameters
eool action allow
nop action allow
router-alert action allow
policy-map global_policy
class inspection_default
inspect dns preset_dns_map
inspect ftp
inspect h323 h225
inspect h323 ras
inspect rsh
inspect rtsp
inspect sqlnet
inspect skinny
inspect sunrpc

inspect ftp
inspect h323 h225
inspect h323 ras
inspect rsh
inspect rtsp
inspect sqlnet
inspect skinny
inspect sunrpc
inspect xdmcp
inspect sip
inspect netbios
inspect tftp
inspect icmp
inspect icmp error
inspect dcerpc
inspect ip-options UM_STATIC_IP_OPTIONS_MAP
class class-default
set connection advanced-options
UM_STATIC_TCP_MAP
!
service-policy global_policy global
prompt hostname context
call-home
profile CiscoTAC-1
no active
destination address http
https://tools.cisco.com/its/service/oddce/services/DDCEService
destination address email callhome@cisco.com
destination transport-method http
subscribe-to-alert-group diagnostic
subscribe-to-alert-group environment
subscribe-to-alert-group inventory periodic monthly
subscribe-to-alert-group configuration periodic monthly
subscribe-to-alert-group telemetry periodic daily
Cryptochecksum:933c594fc0264082edc0f24bad358031
: end
firepower#

inspect xdmcp
inspect sip
inspect netbios
inspect tftp
inspect icmp
inspect icmp error
inspect dcerpc
inspect ip-options UM_STATIC_IP_OPTIONS_M
class class-default
set connection advanced-options
UM_STATIC_TCP_MAP
!
service-policy global_policy global
prompt hostname context
call-home
profile CiscoTAC-1
no active
destination address http
https://tools.cisco.com/its/service/oddce/services/
EService
destination address email callhome@cisco.com
destination transport-method http
subscribe-to-alert-group diagnostic
subscribe-to-alert-group environment
subscribe-to-alert-group inventory periodic month
subscribe-to-alert-group configuration periodic mo
subscribe-to-alert-group telemetry periodic daily
Cryptochecksum:fb6f5c369dee730b9125650517
9
: end
firepower#

show running-config op de secundaire eenheid vóór en na het verbreken van HA, zoals weergegeven in deze tabel.

Voorafgaand aan verbreken van HA	Na verbreken van HA
firepower# sh run : Saved : : Serial Number: FLM19206H7T : Hardware: FPR9K-SM-36, 135841 MB RAM, CPU Xeon E5 series 2294 MHz, 2 CPUs (72 cores) : NGFW Version 10.10.1.1 ! hostname firepower enable password 8Ry2YjIyt7RRXU24 encrypted names ! interface Ethernet1/2 management-only nameif diagnostic security-level 0 no ip address ! **interface Ethernet1/4** **description LAN/STATE Failover Interface** **!**	firepower# sh run : Saved : : Serial Number: FLM19206H7T : Hardware: FPR9K-SM-36, 135841 MB RAM, C Xeon E5 series 2294 MHz, 2 CPUs (72 cores) : NGFW Version 10.10.1.1 ! hostname firepower enable password 8Ry2YjIyt7RRXU24 encrypted names ! interface Ethernet1/2 management-only nameif diagnostic security-level 0 no ip address ! **interface Ethernet1/4** **shutdown** **no nameif**

interface Ethernet1/5
nameif Inside
security-level 0
ip address 192.168.75.10 255.255.255.0 standby 192.168.75.11
!
interface Ethernet1/6
nameif Outside
security-level 0
ip address 192.168.76.10 255.255.255.0 standby 192.168.76.11
!
ftp mode passive
ngips conn-match vlan-id
access-list CSM_FW_ACL_ remark rule-id 268447744: ACCESS POLICY: FTD9300 - Mandatory/1
access-list CSM_FW_ACL_ remark rule-id 268447744: L4 RULE: Allow_ICMP
access-list CSM_FW_ACL_ advanced permit icmp any any rule-id 268447744 event-log both
access-list CSM_FW_ACL_ remark rule-id 268441600: ACCESS POLICY: FTD9300 - Default/1
access-list CSM_FW_ACL_ remark rule-id 268441600: L4 RULE: DEFAULT ACTION RULE
access-list CSM_FW_ACL_ advanced permit ip any any rule-id 268441600
!
tcp-map UM_STATIC_TCP_MAP
tcp-options range 6 7 allow
tcp-options range 9 255 allow
urgent-flag allow
!
no pager
logging enable
logging timestamp
logging standby
logging buffer-size 100000
logging buffered debugging
logging flash-minimum-free 1024
logging flash-maximum-allocation 3076
mtu diagnostic 1500
mtu Inside 1500
mtu Outside 1500
failover
failover lan unit secondary
failover lan interface fover_link Ethernet1/4
failover replication http
failover mac address Ethernet1/5 aaaa.bbbb.1111 aaaa.bbbb.2222
failover mac address Ethernet1/6 aaaa.bbbb.3333 aaaa.bbbb.4444
failover link fover_link Ethernet1/4
failover interface ip fover_link 10.10.1.1 255.255.255.0 standby 10.10.1.2
icmp unreachable rate-limit 1 burst-size 1
no asdm history enable
arp timeout 14400
no arp permit-nonconnected
access-group CSM_FW_ACL_ global
timeout xlate 3:00:00
timeout pat-xlate 0:00:30
timeout conn 1:00:00 half-closed 0:10:00 udp 0:02:00 sctp 0:02:00 icmp 0:00:02
timeout sunrpc 0:10:00 h323 0:05:00 h225 1:00:00 mgcp 0:05:00 mgcp-pat 0:05:00

no security-level
no ip address
!
interface Ethernet1/5
shutdown
no nameif
no security-level
no ip address
!
interface Ethernet1/6
shutdown
no nameif
no security-level
no ip address
!
ftp mode passive
ngips conn-match vlan-id
access-list CSM_FW_ACL_ remark rule-id 26844
ACCESS POLICY: FTD9300 - Mandatory/1
access-list CSM_FW_ACL_ remark rule-id 26844
L4 RULE: Allow_ICMP
access-list CSM_FW_ACL_ advanced permit icm
any rule-id 268447744 event-log both
access-list CSM_FW_ACL_ remark rule-id 26844
ACCESS POLICY: FTD9300 - Default/1
access-list CSM_FW_ACL_ remark rule-id 26844
L4 RULE: DEFAULT ACTION RULE
access-list CSM_FW_ACL_ advanced permit ip a
any rule-id 268441600
!
tcp-map UM_STATIC_TCP_MAP
tcp-options range 6 7 allow
tcp-options range 9 255 allow
urgent-flag allow
!
no pager
no logging message 106015
no logging message 313001
no logging message 313008
no logging message 106023
no logging message 710003
no logging message 106100
no logging message 302015
no logging message 302014
no logging message 302013
no logging message 302018
no logging message 302017
no logging message 302016
no logging message 302021
no logging message 302020
mtu diagnostic 1500
no failover
no monitor-interface service-module
icmp unreachable rate-limit 1 burst-size 1
no asdm history enable
arp timeout 14400
no arp permit-nonconnected
access-group CSM_FW_ACL_ global
timeout xlate 3:00:00
timeout pat-xlate 0:00:30
timeout conn 1:00:00 half-closed 0:10:00 udp 0:0
sctp 0:02:00 icmp 0:00:02
timeout sunrpc 0:10:00 h323 0:05:00 h225 1:00:0
mgcp 0:05:00 mgcp-pat 0:05:00
timeout sip 0:30:00 sip_media 0:02:00 sip-invite 0:03:00 sip-disconnect 0:02:00

```
timeout sip 0:30:00 sip_media 0:02:00 sip-invite
0:03:00 sip-disconnect 0:02:00
timeout sip-provisional-media 0:02:00 uauth 0:05:00
absolute
timeout tcp-proxy-reassembly 0:00:30
timeout floating-conn 0:00:00
user-identity default-domain LOCAL
aaa proxy-limit disable
no snmp-server location
no snmp-server contact
no snmp-server enable traps snmp authentication
linkup linkdown coldstart warmstart
crypto ipsec security-association pmtu-aging infinite
crypto ca trustpool policy
telnet timeout 5
ssh stricthostkeycheck
ssh timeout 5
ssh key-exchange group dh-group1-sha1
console timeout 0
dynamic-access-policy-record DfltAccessPolicy
!
class-map inspection_default
match default-inspection-traffic
!
!
policy-map type inspect dns preset_dns_map
parameters
message-length maximum client auto
message-length maximum 512
policy-map type inspect ip-options
UM_STATIC_IP_OPTIONS_MAP
parameters
eool action allow
nop action allow
router-alert action allow
policy-map global_policy
class inspection_default
inspect dns preset_dns_map
inspect ftp
inspect h323 h225
inspect h323 ras
inspect rsh
inspect rtsp
inspect sqlnet
inspect skinny
inspect sunrpc
inspect xdmcp
inspect sip
inspect netbios
inspect tftp
inspect icmp
inspect icmp error
inspect dcerpc
inspect ip-options UM_STATIC_IP_OPTIONS_MAP
class class-default
set connection advanced-options
UM_STATIC_TCP_MAP
!
service-policy global_policy global
prompt hostname context
call-home
profile CiscoTAC-1
no active
destination address http
https://tools.cisco.com/its/service/oddce/services/DDCEService
destination address email callhome@cisco.com
```

```
timeout sip-provisional-media 0:02:00 uauth 0:05
absolute
timeout tcp-proxy-reassembly 0:00:30
timeout floating-conn 0:00:00
aaa proxy-limit disable
no snmp-server location
no snmp-server contact
no snmp-server enable traps snmp authentication
linkup linkdown coldstart warmstart
crypto ipsec security-association pmtu-aging infin
crypto ca trustpool policy
telnet timeout 5
ssh stricthostkeycheck
ssh timeout 5
ssh key-exchange group dh-group1-sha1
console timeout 0
dynamic-access-policy-record DfltAccessPolicy
!
class-map inspection_default
match default-inspection-traffic
!
!
policy-map type inspect dns preset_dns_map
parameters
message-length maximum client auto
message-length maximum 512
policy-map type inspect ip-options
UM_STATIC_IP_OPTIONS_MAP
parameters
eool action allow
nop action allow
router-alert action allow
policy-map global_policy
class inspection_default
inspect dns preset_dns_map
inspect ftp
inspect h323 h225
inspect h323 ras
inspect rsh
inspect rtsp
inspect sqlnet
inspect skinny
inspect sunrpc
inspect xdmcp
inspect sip
inspect netbios
inspect tftp
inspect icmp
inspect icmp error
inspect dcerpc
inspect ip-options UM_STATIC_IP_OPTIONS_M
class class-default
set connection advanced-options
UM_STATIC_TCP_MAP
!
service-policy global_policy global
prompt hostname context
call-home
profile CiscoTAC-1
no active
destination address http
https://tools.cisco.com/its/service/oddce/services/
EService
destination address email callhome@cisco.com
destination transport-method http
subscribe-to-alert-group diagnostic
subscribe-to-alert-group environment
```

destination transport-method http
subscribe-to-alert-group diagnostic
subscribe-to-alert-group environment
subscribe-to-alert-group inventory periodic monthly
subscribe-to-alert-group configuration periodic monthly
subscribe-to-alert-group telemetry periodic daily
Cryptochecksum:e648f92dd7ef47ee611f2aaa5c6cbd84
: end
firepower#

subscribe-to-alert-group inventory periodic month
subscribe-to-alert-group configuration periodic mo
subscribe-to-alert-group telemetry periodic daily
Cryptochecksum:08ed87194e9f5cd9149fab3c0e93
: end
firepower#

Belangrijkste punten voor het verbreken van HA:

Primaire eenheid	Secundaire eenheid
Alle failover-configuraties worden verwijderd IP-adressen in stand-by blijven	Alle configuraties worden verwijderd

Stap 5. Nadat deze taak is voltooid, maakt u het HA-paar opnieuw.

Taak 6. HA-paar uitschakelen

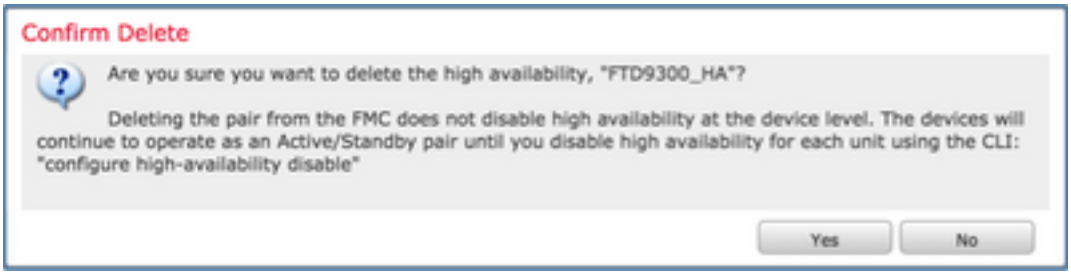
Taakvereiste:

Schakel het failover-paar vanaf het FMC.

Oplossing:

Stap 1. Selecteer het pictogram, zoals weergegeven in de afbeelding.

Stap 2. Controleer de melding en bevestig deze, zoals weergegeven in de afbeelding.



Stap 3. Nadat u de HA heeft verwijderd, wordt de registratie van beide apparaten ongedaan gemaakt (verwijderd) vanaf het FMC.

show running-config resultaat van de LINA CLI is zoals weergegeven in deze tabel:

Primaire eenheid	Secundaire eenheid
firepower# sh run : Saved : : Serial Number: FLM19267A63 : Hardware: FPR9K-SM-36, 135839 MB RAM, CPU Xeon E5 series 2294 MHz, 2 CPUs (72 cores)	firepower# sh run : Saved : : Serial Number: FLM19206H7T : Hardware: FPR9K-SM-36, 135841 MB RAM, C Xeon E5 series 2294 MHz, 2 CPUs (72 cores)

:
NGFW Version 10.10.1.1
!
hostname firepower
enable password 8Ry2YjIyt7RRXU24 encrypted
names
!
interface Ethernet1/2
management-only
nameif diagnostic
security-level 0
no ip address
!
interface Ethernet1/4
description LAN/STATE Failover Interface
!
interface Ethernet1/5
nameif Inside
security-level 0
ip address 192.168.75.10 255.255.255.0 standby 192.168.75.11
!
interface Ethernet1/6
nameif Outside
security-level 0
ip address 192.168.76.10 255.255.255.0 standby 192.168.76.11
!
ftp mode passive
ngips conn-match vlan-id
access-list CSM_FW_ACL_ remark rule-id 268447744: ACCESS POLICY: FTD9300 - Mandatory/1
access-list CSM_FW_ACL_ remark rule-id 268447744: L4 RULE: Allow_ICMP
access-list CSM_FW_ACL_ advanced permit icmp any any rule-id 268447744 event-log both
access-list CSM_FW_ACL_ remark rule-id 268441600: ACCESS POLICY: FTD9300 - Default/1
access-list CSM_FW_ACL_ remark rule-id 268441600: L4 RULE: DEFAULT ACTION RULE
access-list CSM_FW_ACL_ advanced permit ip any any rule-id 268441600
!
tcp-map UM_STATIC_TCP_MAP
tcp-options range 6 7 allow
tcp-options range 9 255 allow
urgent-flag allow
!
no pager
logging enable
logging timestamp
logging standby
logging buffer-size 100000
logging buffered debugging
logging flash-minimum-free 1024
logging flash-maximum-allocation 3076
mtu diagnostic 1500
mtu Inside 1500
mtu Outside 1500
failover
failover lan unit primary
failover lan interface fover_link Ethernet1/4
failover replication http
failover mac address Ethernet1/5 aaaa.bbbb.1111 aaaa.bbbb.2222
failover mac address Ethernet1/6 aaaa.bbbb.3333

:
NGFW Version 10.10.1.1
!
hostname firepower
enable password 8Ry2YjIyt7RRXU24 encrypted
names
!
interface Ethernet1/2
management-only
nameif diagnostic
security-level 0
no ip address
!
interface Ethernet1/4
description LAN/STATE Failover Interface
!
interface Ethernet1/5
nameif Inside
security-level 0
ip address 192.168.75.10 255.255.255.0 standb 192.168.75.11
!
interface Ethernet1/6
nameif Outside
security-level 0
ip address 192.168.76.10 255.255.255.0 standb 192.168.76.11
!
ftp mode passive
ngips conn-match vlan-id
access-list CSM_FW_ACL_ remark rule-id 26844 ACCESS POLICY: FTD9300 - Mandatory/1
access-list CSM_FW_ACL_ remark rule-id 26844 L4 RULE: Allow_ICMP
access-list CSM_FW_ACL_ advanced permit icm any rule-id 268447744 event-log both
access-list CSM_FW_ACL_ remark rule-id 26844 ACCESS POLICY: FTD9300 - Default/1
access-list CSM_FW_ACL_ remark rule-id 26844 L4 RULE: DEFAULT ACTION RULE
access-list CSM_FW_ACL_ advanced permit ip a any rule-id 268441600
!
tcp-map UM_STATIC_TCP_MAP
tcp-options range 6 7 allow
tcp-options range 9 255 allow
urgent-flag allow
!
no pager
logging enable
logging timestamp
logging standby
logging buffer-size 100000
logging buffered debugging
logging flash-minimum-free 1024
logging flash-maximum-allocation 3076
mtu diagnostic 1500
mtu Inside 1500
mtu Outside 1500
failover
failover lan unit secondary
failover lan interface fover_link Ethernet1/4
failover replication http
failover mac address Ethernet1/5 aaaa.bbbb.1 aaaa.bbbb.2222
failover mac address Ethernet1/6 aaaa.bbbb.3

aaaa.bbbb.4444
failover link fover_link Ethernet1/4
failover interface ip fover_link 10.10.1.1
255.255.255.0 standby 10.10.1.2
icmp unreachable rate-limit 1 burst-size 1
no asdm history enable
arp timeout 14400
no arp permit-nonconnected
access-group CSM_FW_ACL_ global
timeout xlate 3:00:00
timeout pat-xlate 0:00:30
timeout conn 1:00:00 half-closed 0:10:00 udp 0:02:00
sctp 0:02:00 icmp 0:00:02
timeout sunrpc 0:10:00 h323 0:05:00 h225 1:00:00
mgcp 0:05:00 mgcp-pat 0:05:00
timeout sip 0:30:00 sip_media 0:02:00 sip-invite
0:03:00 sip-disconnect 0:02:00
timeout sip-provisional-media 0:02:00 uauth 0:05:00
absolute
timeout tcp-proxy-reassembly 0:00:30
timeout floating-conn 0:00:00
aaa proxy-limit disable
no snmp-server location
no snmp-server contact
no snmp-server enable traps snmp authentication
linkup linkdown coldstart warmstart
crypto ipsec security-association pmtu-aging infinite
crypto ca trustpool policy
telnet timeout 5
ssh stricthostkeycheck
ssh timeout 5
ssh key-exchange group dh-group1-sha1
console timeout 0
dynamic-access-policy-record DfltAccessPolicy
!
class-map inspection_default
match default-inspection-traffic
!
!
policy-map type inspect dns preset_dns_map
parameters
message-length maximum client auto
message-length maximum 512
policy-map type inspect ip-options
UM_STATIC_IP_OPTIONS_MAP
parameters
eool action allow
nop action allow
router-alert action allow
policy-map global_policy
class inspection_default
inspect dns preset_dns_map
inspect ftp
inspect h323 h225
inspect h323 ras
inspect rsh
inspect rtsp
inspect sqlnet
inspect skinny
inspect sunrpc
inspect xdmcp
inspect sip
inspect netbios
inspect tftp
inspect icmp
inspect icmp error
inspect dcerpc

aaaa.bbbb.4444
failover link fover_link Ethernet1/4
failover interface ip fover_link 10.10.1.1
255.255.255.0 standby 10.10.1.2
icmp unreachable rate-limit 1 -size 1
no asdm history enable
arp timeout 14400
no arp permit-nonconnected
access-group CSM_FW_ACL_ global
timeout xlate 3:00:00
timeout pat-xlate 0:00:30
timeout conn 1:00:00 half-closed 0:10:00 udp 0:0
sctp 0:02:00 icmp 0:00:02
timeout sunrpc 0:10:00 h323 0:05:00 h225 1:00:0
mgcp 0:05:00 mgcp-pat 0:05:00
timeout sip 0:30:00 sip_media 0:02:00 sip-invite
0:03:00 sip-disconnect 0:02:00
timeout sip-provisional-media 0:02:00 uauth 0:05
absolute
timeout tcp-proxy-reassembly 0:00:30
timeout floating-conn 0:00:00
user-identity default-domain LOCAL
aaa proxy-limit disable
no snmp-server location
no snmp-server contact
no snmp-server enable traps snmp authentication
linkup linkdown coldstart warmstart
crypto ipsec security-association pmtu-aging infin
crypto ca trustpool policy
telnet timeout 5
ssh stricthostkeycheck
ssh timeout 5
ssh key-exchange group dh-group1-sha1
console timeout 0
dynamic-access-policy-record DfltAccessPolicy
!
class-map inspection_default
match default-inspection-traffic
!
!
policy-map type inspect dns preset_dns_map
parameters
message-length maximum client auto
message-length maximum 512
policy-map type inspect ip-options
UM_STATIC_IP_OPTIONS_MAP
parameters
eool action allow
nop action allow
router-alert action allow
policy-map global_policy
class inspection_default
inspect dns preset_dns_map
inspect ftp
inspect h323 h225
inspect h323 ras
inspect rsh
inspect rtsp
inspect sqlnet
inspect skinny
inspect sunrpc
inspect xdmcp
inspect sip
inspect netbios
inspect tftp
inspect icmp
inspect icmp error

inspect ip-options UM_STATIC_IP_OPTIONS_MAP class class-default set connection advanced-options UM_STATIC_TCP_MAP ! service-policy global_policy global prompt hostname context call-home profile CiscoTAC-1 no active destination address http https://tools.cisco.com/its/service/oddce/services/DDCEService destination address email callhome@cisco.com destination transport-method http subscribe-to-alert-group diagnostic subscribe-to-alert-group environment subscribe-to-alert-group inventory periodic monthly subscribe-to-alert-group configuration periodic monthly subscribe-to-alert-group telemetry periodic daily Cryptochecksum:933c594fc0264082edc0f24bad358031 : end firepower#	inspect dcerpc inspect ip-options UM_STATIC_IP_OPTIONS_M class class-default set connection advanced-options UM_STATIC_TCP_MAP ! service-policy global_policy global prompt hostname context call-home profile CiscoTAC-1 no active destination address http https://tools.cisco.com/its/service/oddce/services/ EService destination address email callhome@cisco.com destination transport-method http subscribe-to-alert-group diagnostic subscribe-to-alert-group environment subscribe-to-alert-group inventory periodic month subscribe-to-alert-group configuration periodic mo subscribe-to-alert-group telemetry periodic daily Cryptochecksum:e648f92dd7ef47ee611f2aaa5c6 4 : end firepower#

Stap 4. De registratie van beide FTD-apparaten is ongedaan gemaakt vanaf het FMC:

```
> show managers
No managers configured.
```

Belangrijkste punten om rekening mee te houden voor de optie HA uitschakelen in het FMC:

Primaire eenheid	Secundaire eenheid
Het apparaat wordt uit het FMC verwijderd. Er wordt geen configuratie verwijderd van het FTD-apparaat	Het apparaat wordt uit het FMC verwijderd. Er wordt geen configuratie verwijderd van het FTI apparaat

Stap 5. Voer deze opdracht uit om de failover-configuratie te verwijderen van de FTD-apparaten:

```
> configure high-availability disable
High-availability will be disabled. Do you really want to continue?
Please enter 'YES' or 'NO': yes
Successfully disabled high-availability.
```

Opmerking: U moet de opdracht op beide eenheden uitvoeren

Het resultaat:

Primaire eenheid	Secundaire eenheid
>**show failover** **Failover Off** Failover unit Secondary Failover LAN Interface: not Configured Reconnect timeout 0:00:00 Unit Poll frequency 1 seconds, holdtime 15 seconds Interface Poll frequency 5 seconds, holdtime 25 seconds	>**show failover** **Failover Off (pseudo-Standby)** Failover unit Secondary Failover LAN Interface: FOVER Ethernet1/3.205 Reconnect timeout 0:00:00 Unit Poll frequency 1 seconds, holdtime 15 secon Interface Poll frequency 5 seconds, holdtime 25 seconds

Interface Policy 1
Monitored Interfaces 2 of 1041 maximum
MAC Address Move Notification Interval not set
>

Primair

```
firepower# show run
!
hostname firepower
enable password 8Ry2YjIyt7RRXU24 encrypted
names
arp timeout 14400
no arp permit-nonconnected
arp rate-limit 16384
!
interface GigabitEthernet1/1
 nameif outside
 cts manual
  propagate sgt preserve-untag
  policy static sgt disabled trusted
 security-level 0
ip address 10.1.1.1 255.255.255.0   <-- standby IP
was removed
!
interface GigabitEthernet1/2
 nameif inside
 cts manual
  propagate sgt preserve-untag
  policy static sgt disabled trusted
 security-level 0
ip address 192.168.1.1 255.255.255.0   <-- standby
IP was removed
!
interface GigabitEthernet1/3
 description LAN Failover Interface
!
interface GigabitEthernet1/4
 description STATE Failover Interface
!
interface GigabitEthernet1/5
 shutdown
 no nameif
 no security-level
 no ip address
!
interface GigabitEthernet1/6
 shutdown
 no nameif
 no security-level
 no ip address
!
interface GigabitEthernet1/7
 shutdown
 no nameif
 no security-level
 no ip address
!
interface GigabitEthernet1/8
 shutdown
 no nameif
 no security-level
 no ip address
!
interface Management1/1
 management-only
 nameif diagnostic
 cts manual
```

Interface Policy 1
Monitored Interfaces 0 of 1041 maximum
MAC Address Move Notification Interval not set
failover replication http
>

Secundair

```
firepower# show run
!
hostname firepower
enable password 8Ry2YjIyt7RRXU24 encrypted
names
arp timeout 14400
no arp permit-nonconnected
arp rate-limit 16384
!
interface GigabitEthernet1/1
 shutdown
 no nameif
 no security-level
 no ip address
!
interface GigabitEthernet1/2
 shutdown
 no nameif
 no security-level
 no ip address
!
interface GigabitEthernet1/3
 description LAN Failover Interface
!
interface GigabitEthernet1/4
 description STATE Failover Interface
!
interface GigabitEthernet1/5
 shutdown
 no nameif
 no security-level
 no ip address
!
interface GigabitEthernet1/6
 shutdown
 no nameif
 no security-level
 no ip address
!
interface GigabitEthernet1/7
 shutdown
 no nameif
 no security-level
 no ip address
!
interface GigabitEthernet1/8
 shutdown
 no nameif
 no security-level
 no ip address
!
interface Management1/1
 management-only
 nameif diagnostic
 cts manual
  propagate sgt preserve-untag
  policy static sgt disabled trusted
 security-level 0
 no ip address
!
ftp mode passive
```

```
  propagate sgt preserve-untag
  policy static sgt disabled trusted
 security-level 0
 no ip address
!
ftp mode passive
ngips conn-match vlan-id
access-list CSM_FW_ACL_ remark rule-id 9998:
PREFILTER POLICY: Default Tunnel and Priority
Policy
access-list CSM_FW_ACL_ remark rule-id 9998:
RULE: DEFAULT TUNNEL ACTION RULE
access-list CSM_FW_ACL_ advanced permit ipinip
any any rule-id 9998
access-list CSM_FW_ACL_ advanced permit 41 any
any rule-id 9998
access-list CSM_FW_ACL_ advanced permit gre any
any rule-id 9998
access-list CSM_FW_ACL_ advanced permit udp any
any eq 3544 rule-id 9998
access-list CSM_FW_ACL_ remark rule-id 268435456:
ACCESS POLICY: FTD_HA - Default/1
access-list CSM_FW_ACL_ remark rule-id 268435456:
L4 RULE: DEFAULT ACTION RULE
access-list CSM_FW_ACL_ advanced permit ip any
any rule-id 268435456
!
tcp-map UM_STATIC_TCP_MAP
  tcp-options range 6 7 allow
  tcp-options range 9 18 allow
  tcp-options range 20 255 allow
  tcp-options md5 clear
  urgent-flag allow
!
no pager
logging enable
logging timestamp
logging buffered debugging
logging flash-minimum-free 1024
logging flash-maximum-allocation 3076
no logging message 106015
no logging message 313001
no logging message 313008
no logging message 106023
no logging message 710005
no logging message 710003
no logging message 106100
no logging message 302015
no logging message 302014
no logging message 302013
no logging message 302018
no logging message 302017
no logging message 302016
no logging message 302021
no logging message 302020
mtu outside 1500
mtu inside 1500
mtu diagnostic 1500
no failover
icmp unreachable rate-limit 1 burst-size 1
no asdm history enable
access-group CSM_FW_ACL_ global
timeout xlate 3:00:00
timeout pat-xlate 0:00:30
timeout conn 1:00:00 half-closed 0:10:00 udp 0:02:00
sctp 0:02:00 icmp 0:00:02
```

```
ngips conn-match vlan-id
access-list CSM_FW_ACL_ remark rule-id 9998:
PREFILTER POLICY: Default Tunnel and Priority
Policy
access-list CSM_FW_ACL_ remark rule-id 9998:
RULE: DEFAULT TUNNEL ACTION RULE
access-list CSM_FW_ACL_ advanced permit ipin
any any rule-id 9998
access-list CSM_FW_ACL_ advanced permit 41
any rule-id 9998
access-list CSM_FW_ACL_ advanced permit gre
any rule-id 9998
access-list CSM_FW_ACL_ advanced permit udp
any eq 3544 rule-id 9998
access-list CSM_FW_ACL_ remark rule-id 26843
ACCESS POLICY: FTD_HA - Default/1
access-list CSM_FW_ACL_ remark rule-id 26843
L4 RULE: DEFAULT ACTION RULE
access-list CSM_FW_ACL_ advanced permit ip a
any rule-id 268435456
!
tcp-map UM_STATIC_TCP_MAP
  tcp-options range 6 7 allow
  tcp-options range 9 18 allow
  tcp-options range 20 255 allow
  tcp-options md5 clear
  urgent-flag allow
!
no pager
logging enable
logging timestamp
logging buffered debugging
logging flash-minimum-free 1024
logging flash-maximum-allocation 3076
no logging message 106015
no logging message 313001
no logging message 313008
no logging message 106023
no logging message 710005
no logging message 710003
no logging message 106100
no logging message 302015
no logging message 302014
no logging message 302013
no logging message 302018
no logging message 302017
no logging message 302016
no logging message 302021
no logging message 302020
mtu outside 1500
mtu inside 1500
mtu diagnostic 1500
no failover
failover lan unit secondary
failover lan interface FOVER GigabitEthernet1
failover replication http
failover link STATE GigabitEthernet1/4
failover interface ip FOVER 10.10.1.1 255.255.2
standby 10.10.1.2
failover interface ip STATE 10.10.2.1 255.255.2
standby 10.10.2.2
icmp unreachable rate-limit 1 burst-size 1
no asdm history enable
access-group CSM_FW_ACL_ global
timeout xlate 3:00:00
```

```
timeout sunrpc 0:10:00 h323 0:05:00 h225 1:00:00
mgcp 0:05:00 mgcp-pat 0:05:00
timeout sip 0:30:00 sip_media 0:02:00 sip-invite
0:03:00 sip-disconnect 0:02:00
timeout sip-provisional-media 0:02:00 uauth 0:05:00
absolute
timeout tcp-proxy-reassembly 0:00:30
timeout floating-conn 0:00:00
timeout conn-holddown 0:00:15
aaa proxy-limit disable
snmp-server host outside 192.168.1.100 community
***** version 2c
no snmp-server location
no snmp-server contact
snmp-server community *****
service sw-reset-button
crypto ipsec security-association pmtu-aging infinite
crypto ca trustpool policy
telnet timeout 5
console timeout 0
dynamic-access-policy-record DfltAccessPolicy
!
class-map inspection_default
 match default-inspection-traffic
!
!
policy-map type inspect dns preset_dns_map
 parameters
  message-length maximum client auto
  message-length maximum 512
  no tcp-inspection
policy-map type inspect ip-options
UM_STATIC_IP_OPTIONS_MAP
 parameters
  eool action allow
  nop action allow
  router-alert action allow
policy-map global_policy
 class inspection_default
  inspect dns preset_dns_map
  inspect ftp
  inspect h323 h225
  inspect h323 ras
  inspect rsh
  inspect rtsp
  inspect esmtp
  inspect sqlnet
  inspect skinny
  inspect sunrpc
  inspect xdmcp
  inspect sip
  inspect netbios
  inspect tftp
  inspect icmp
  inspect icmp error
  inspect dcerpc
  inspect ip-options UM_STATIC_IP_OPTIONS_MAP
 class class-default
  set connection advanced-options
UM_STATIC_TCP_MAP
!
service-policy global_policy global
prompt hostname context
call-home
 profile CiscoTAC-1
  no active
  destination address http
```

```
timeout pat-xlate 0:00:30
timeout conn 1:00:00 half-closed 0:10:00 udp 0:0
sctp 0:02:00 icmp 0:00:02
timeout sunrpc 0:10:00 h323 0:05:00 h225 1:00:0
mgcp 0:05:00 mgcp-pat 0:05:00
timeout sip 0:30:00 sip_media 0:02:00 sip-invite
0:03:00 sip-disconnect 0:02:00
timeout sip-provisional-media 0:02:00 uauth 0:05
absolute
timeout tcp-proxy-reassembly 0:00:30
timeout floating-conn 0:00:00
timeout conn-holddown 0:00:15
user-identity default-domain LOCAL
aaa proxy-limit disable
snmp-server host outside 192.168.1.100 commun
***** version 2c
no snmp-server location
no snmp-server contact
snmp-server community *****
service sw-reset-button
crypto ipsec security-association pmtu-aging infin
crypto ca trustpool policy
telnet timeout 5
console timeout 0
dynamic-access-policy-record DfltAccessPolicy
!
class-map inspection_default
 match default-inspection-traffic
!
!
policy-map type inspect dns preset_dns_map
 parameters
  message-length maximum client auto
  message-length maximum 512
  no tcp-inspection
policy-map type inspect ip-options
UM_STATIC_IP_OPTIONS_MAP
 parameters
  eool action allow
  nop action allow
  router-alert action allow
policy-map global_policy
 class inspection_default
  inspect dns preset_dns_map
  inspect ftp
  inspect h323 h225
  inspect h323 ras
  inspect rsh
  inspect rtsp
  inspect esmtp
  inspect sqlnet
  inspect skinny
  inspect sunrpc
  inspect xdmcp
  inspect sip
  inspect netbios
  inspect tftp
  inspect icmp
  inspect icmp error
  inspect dcerpc
  inspect ip-options UM_STATIC_IP_OPTIONS_M
 class class-default
  set connection advanced-options
UM_STATIC_TCP_MAP
!
service-policy global_policy global
prompt hostname context
```

https://tools.cisco.com/its/service/oddce/services/DDCEService
destination address email callhome@cisco.com
destination transport-method http
subscribe-to-alert-group diagnostic
subscribe-to-alert-group environment
subscribe-to-alert-group inventory periodic monthly
subscribe-to-alert-group configuration periodic monthly
subscribe-to-alert-group telemetry periodic daily
Cryptochecksum:768a03e90b9d3539773b9d7af66b3452

call-home
profile CiscoTAC-1
no active
destination address http https://tools.cisco.com/its/service/oddce/services/DDCEService
destination address email callhome@cisco.com
destination transport-method http
subscribe-to-alert-group diagnostic
subscribe-to-alert-group environment
subscribe-to-alert-group inventory periodic mont
subscribe-to-alert-group configuration periodic monthly
subscribe-to-alert-group telemetry periodic daily
Cryptochecksum:ac9b8f401e18491fee653f4cfe0c

Belangrijkste punten om rekening mee te houden voor de optie HA uitschakelen vanaf de FTD CLI:

Primaire eenheid	Secundaire eenheid
Failover-configuratie en stand-by IP-adressen worden verwijderd	• Interface-configuraties worden verwijderd • Het apparaat gaat naar de pseudo-stand-bymodus

Stap 6. Nadat u de taak heeft voltooid, registreert u de apparaten bij het FMC en schakelt u het HA-paar in.

Taak 7. HA opschorten

Taakvereiste:

Schort de HA op vanaf de FTD CLISH CLI

Oplossing:

Stap 1. Voer de opdracht uit op de primaire FTD en bevestig (typ **YES**).

```
> configure high-availability suspend
Please ensure that no deployment operation is in progress before suspending high-availability.
Please enter 'YES' to continue if there is no deployment operation in progress and 'NO' if you
wish to abort: YES
Successfully suspended high-availability.
```

Stap 2. Verifieer de wijzigingen op de primaire eenheid:

```
> show high-availability config
Failover Off
Failover unit Primary
Failover LAN Interface: fover_link Ethernet1/4 (up)
Reconnect timeout 0:00:00
Unit Poll frequency 1 seconds, holdtime 15 seconds
Interface Poll frequency 5 seconds, holdtime 25 seconds
Interface Policy 1
Monitored Interfaces 1 of 1041 maximum
MAC Address Move Notification Interval not set
```

```
failover replication http
```

Stap 3. Het resultaat op de secundaire eenheid:

```
> show high-availability config
Failover Off (pseudo-Standby)
Failover unit Secondary
Failover LAN Interface: fover_link Ethernet1/4 (up)
Reconnect timeout 0:00:00
Unit Poll frequency 1 seconds, holdtime 15 seconds
Interface Poll frequency 5 seconds, holdtime 25 seconds
Interface Policy 1
Monitored Interfaces 1 of 1041 maximum
MAC Address Move Notification Interval not set
failover replication http
```

Stap 4. Hervat HA op de primaire eenheid:

```
> configure high-availability resume
Successfully resumed high-availablity.

> .

No Active mate detected
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
Beginning configuration replication: Sending to mate.
End Configuration Replication to mate

>

> show high-availability config
Failover On
Failover unit Primary
Failover LAN Interface: fover_link Ethernet1/4 (up)
Reconnect timeout 0:00:00
Unit Poll frequency 1 seconds, holdtime 15 seconds
Interface Poll frequency 5 seconds, holdtime 25 seconds
Interface Policy 1
Monitored Interfaces 1 of 1041 maximum
MAC Address Move Notification Interval not set
failover replication http
```

Stap 5. Het resultaat op de secundaire eenheid nadat HA is hervat:

```
> ..

Detected an Active mate
Beginning configuration replication from mate.


WARNING: Failover is enabled but standby IP address is not configured for this interface.
WARNING: Failover is enabled but standby IP address is not configured for this interface.
End configuration replication from mate.

>

> show high-availability config
Failover On
Failover unit Secondary
Failover LAN Interface: fover_link Ethernet1/4 (up)
```

```
Reconnect timeout 0:00:00
Unit Poll frequency 1 seconds, holdtime 15 seconds
Interface Poll frequency 5 seconds, holdtime 25 seconds
Interface Policy 1
Monitored Interfaces 1 of 1041 maximum
MAC Address Move Notification Interval not set
failover replication http
>
```

Veelgestelde vragen (FAQ)

Als de configuratie wordt gerepliceerd, wordt deze dan onmiddellijk opgeslagen (per regel) of wanneer de replicatie is beëindigd?

Aan het einde van de replicatie. Het bewijs bevindt zich aan het einde van de output van de opdracht debug fover sync, waar de config/command-replicatie wordt getoond:

```
cli_xml_server: frep_write_cmd: Cmd: access-list CSM_FW_ACL_ line 1506 remark rule-id 268442578:
L7 RULE: ACP_Rule_500
cli_xml_server: frep_write_cmd: Cmd: access-list CSM_FW_ACL_ line 1507 advanced permit tcp
object-group group_10 eq 48894 object-group group_10 eq 23470 vlan eq 1392 rule-id 268442578
cli_xml_server: frep_write_cmd: Cmd: access-list CSM_FW_ACL_ line 1508 remark rule-id 268442078:
ACCESS POLICY: mzafeiro_500 - Default
cli_xml_server: frep_write_cmd: Cmd: access-list CSM_FW_ACL_ line 1509 remark rule-id 268442078:
L4 RULE: DEFAULT ACTION RULE
...
cli_xml_server: frep_write_cmd: Cmd: no access-list CSM_FW_ACL_ advanced permit tcp object-group
group_2 eq 32881 object-group group_433 eq 39084 vlan eq 1693 rule-id 268442076
cli_xml_server: frep_write_cmd: Cmd: no access-list CSM_FW_ACL_ line 1510 remark rule-id
268442077: ACCESS POLICY: mzafeiro_ACP1500 - Mandatory
cli_xml_server: frep_write_cmd: Cmd: no access-list CSM_FW_ACL_ line 1510 remark rule-id
268442077: L7 RULE: ACP_Rule_1500
cli_xml_server: frep_write_cmd: Cmd: no access-list CSM_FW_ACL_ advanced permit tcp object-group
group_6 eq 8988 object-group group_311 eq 32433 vlan eq 619 rule-id 268442077
cli_xml_server: frep_write_cmd: Cmd: no access-list CSM_FW_ACL_ line 1510 remark rule-id
268440577: ACCESS POLICY: mzafeiro_ACP1500 - Default
cli_xml_server: frep_write_cmd: Cmd: no access-list CSM_FW_ACL_ line 1510 remark rule-id
268440577: L4 RULE: DEFAULT ACTION RULE
cli_xml_server: frep_write_cmd: Cmd: access-list CSM_FW_ACL_ advanced deny ip any any rule-id
268442078 event-log flow-start
cli_xml_server: frep_write_cmd: Cmd: crypto isakmp nat-traversal
cli_xml_server: frep_write_cmd: Cmd: no object-group network group_311
cli_xml_server: frep_write_cmd: Cmd: no object-group network group_433
cli_xml_server: frep_write_cmd: Cmd: no object-group network group_6
cli_xml_server: frep_write_cmd: Cmd: no object-group network group_2
cli_xml_server: frep_write_cmd: Cmd: write memory <--
```

Wat gebeurt er als een eenheid zich in een pseudo-Standby-staat bevindt (failover uitgeschakeld) en u het opnieuw laadt terwijl de andere eenheid failover ingeschakeld is en actief is?

U komt terecht in een **Active/Active**-scenario (hoewel dit technisch gezien Active/Failover-off is). Zodra de eenheid is geactiveerd, wordt de failover uitgeschakeld, maar de eenheid gebruikt dezelfde IP-adressen als de actieve eenheid. Er is dus effectief sprake van de volgende toestand:

- Eenheid-1: Active
- Eenheid-2: failover is uitgeschakeld. De unit gebruikt dezelfde gegevens-IP's als unit-1, maar verschillende MAC-adressen.

Wat gebeurt er met de failover-configuratie als u de failover handmatig uitschakelt ('configure high-availability suspend') en het apparaat vervolgens opnieuw laadt?

Wanneer u de failover uitschakelt, is dit geen permanente wijziging (wordt niet opgeslagen in de startup-config tenzij u dit expliciet doet). U kunt de eenheid op twee manieren opnieuw opstarten/opnieuw laden, en bij de tweede manier moet u extra zorgvuldig te werk gaan:

Situatie 1. Opnieuw opstarten vanaf CLISH

Bij opnieuw opstarten vanaf CLISH wordt er niet om een bevestiging gevraagd. De configuratiewijziging wordt dus niet opgeslagen in startup-config:

```
> configure high-availability suspend
Please ensure that no deployment operation is in progress before suspending high-availability.
Please enter 'YES' to continue if there is no deployment operation in progress and 'NO' if you
wish to abort: YES
Successfully suspended high-availability.
```

Het in bedrijf stellen-configureren heeft de failover uitgeschakeld. In dit geval was de unit stand-by en kwam in de pseudo-stand-by-stand zoals verwacht om een actief/actief scenario te voorkomen:

```
firepower# show failover | include Failover
Failover Off (pseudo-Standby)
Failover unit Secondary
Failover LAN Interface: FOVER Ethernet1/1 (up)
```

Het opstarten-config heeft de failover nog toegelaten:

```
firepower# show startup | include failover
failover
failover lan unit secondary
failover lan interface FOVER Ethernet1/1
failover replication http
failover link FOVER Ethernet1/1
failover interface ip FOVER 192.0.2.1 255.255.255.0 standby 192.0.2.2
failover ipsec pre-shared-key *****
```

Start het apparaat opnieuw op vanaf CLISH (opdracht **reboot**):

```
> reboot
This command will reboot the system.  Continue?
Please enter 'YES' or 'NO': YES

Broadcast message from root@
Threat Defense System: CMD=-stop, CSP-ID=cisco-ftd.6.2.2.81__ftd_001_JMX2119L05CYRIBVX1, FLAG=''
Cisco FTD stopping ...
```

Aangezien failover is ingeschakeld, zal zodra de eenheid actief is, het apparaat naar de onderhandelingsfase voor de failover gaan om te proberen de externe peer te detecteren:

```
User enable_1 logged in to firepower
Logins over the last 1 days: 1.
Failed logins since the last login: 0.
```

```
Type help or '?' for a list of available commands.
firepower> .

        Detected an Active mate
```

Situatie 2. Opnieuw opstarten vanaf LINA CLI
Bij opnieuw opstarten vanuit LINA (opdracht **reload**) wordt om een bevestiging gevraagd. Als u in dit geval [Y] 'ja' kiest, wordt de configuratiewijziging opgeslagen in startup-config:

```
firepower# reload
System config has been modified. Save? [Y]es/[N]o: Y <-- Be careful. This will disable the
failover in the startup-config

Cryptochecksum: 31857237 8658f618 3234be7c 854d583a

8781 bytes copied in 0.940 secs
Proceed with reload? [confirm]
firepower# show startup | include failover
no failover
failover lan unit secondary
failover lan interface FOVER Ethernet1/1
failover replication http
failover link FOVER Ethernet1/1
failover interface ip FOVER 192.0.2.1 255.255.255.0 standby 192.0.2.2
failover ipsec pre-shared-key *****
```

Zodra de eenheid actief is, wordt de failover uitgeschakeld:

```
firepower# show failover | include Fail
Failover Off
Failover unit Secondary
Failover LAN Interface: FOVER Ethernet1/1 (up)
```

> **Opmerking:** Om dit scenario te vermijden zorg ervoor dat wanneer u wordt gevraagd u niet de veranderingen in het opstarten -opstarten -opstarten -configureren.

Gerelateerde informatie

- Alle versies van de Cisco Firepower Management Center-configuratiehandleiding vindt u hier https://www.cisco.com/c/en/us/td/docs/security/firepower/roadmap/firepower-roadmap.html#id_47280

- Alle versies van de FXOS Chassis Manager- en CLI-configuratiehandleidingen vindt u hier https://www.cisco.com/c/en/us/td/docs/security/firepower/fxos/roadmap/fxos-roadmap.html#pgfId-121950

- Cisco Global Technical Assistance Center (TAC) raadt deze visuele handleiding ten zeerste aan voor diepgaande praktische kennis over Cisco Firepower Security Technologies van de volgende generatie:

http://www.ciscopress.com/title/9781587144806

- TechNotes voor alle configuratie en probleemoplossing die betrekking hebben op de Firepower-technologieën

https://www.cisco.com/c/en/us/support/security/defense-center/tsd-products-support-series-home.html

- Technische ondersteuning en documentatie – Cisco Systems

Over deze vertaling

Cisco heeft dit document vertaald via een combinatie van machine- en menselijke technologie om onze gebruikers wereldwijd ondersteuningscontent te bieden in hun eigen taal. Houd er rekening mee dat zelfs de beste machinevertaling niet net zo nauwkeurig is als die van een professionele vertaler. Cisco Systems, Inc. is niet aansprakelijk voor de nauwkeurigheid van deze vertalingen en raadt aan altijd het oorspronkelijke Engelstalige document (link) te raadplegen.