

在FP9300 (機箱內) 上配置FTD集群

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簡介

本文檔介紹如何在FPR9300裝置上配置和驗證集群功能。

注意：本文檔中提供的資訊涵蓋集群的初始安裝/配置。本文檔不適用於部件更換 (退貨審批 — RMA) 過程

必要條件

需求

本文件沒有特定需求。

採用元件

本文中的資訊係根據以下軟體和硬體版本：

- 執行1.1(4.95)的Cisco Firepower 9300安全裝置
- 執行6.0.1的Firepower威脅防禦(FTD) (內部版本1213)
- 運行6.0.1.1的FireSIGHT管理中心(FMC) (內部版本1023)

實驗完成時間：1小時。

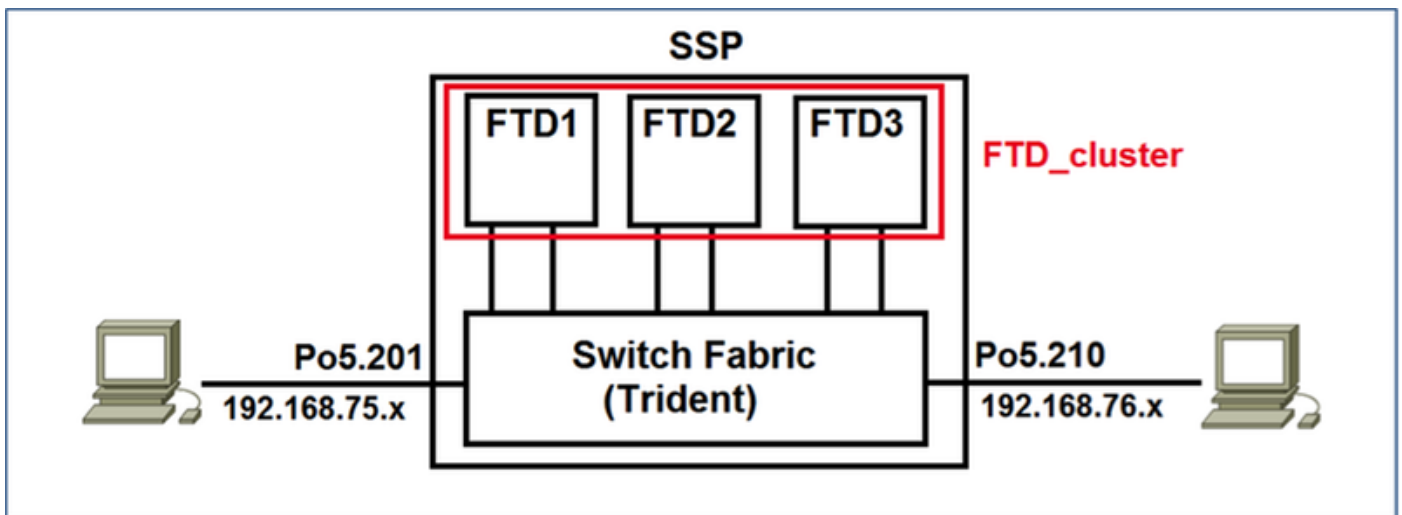
本文中的資訊是根據特定實驗室環境內的裝置所建立。文中使用到的所有裝置皆從已清除（預設）的組態來啟動。如果您的網路運作中，請確保您瞭解任何指令可能造成的影響。

背景資訊

- 在搭載FTD裝置的FPR9300上，您可以在所有支援的版本上設定機箱內集群。
- 6.2引入了機箱間集群。
- 埠通道48建立為集群控制鏈路。對於機箱內集群，此連結利用Firepower 9300背板進行集群通訊。
- 除管理介面外，不支援單個資料介面。
- 管理介面分配給集群中的所有裝置。

設定

網路圖表



任務1.為FTD集群建立必要的介面

工作需求：

建立集群、管理介面和埠通道資料介面。

解決方案：

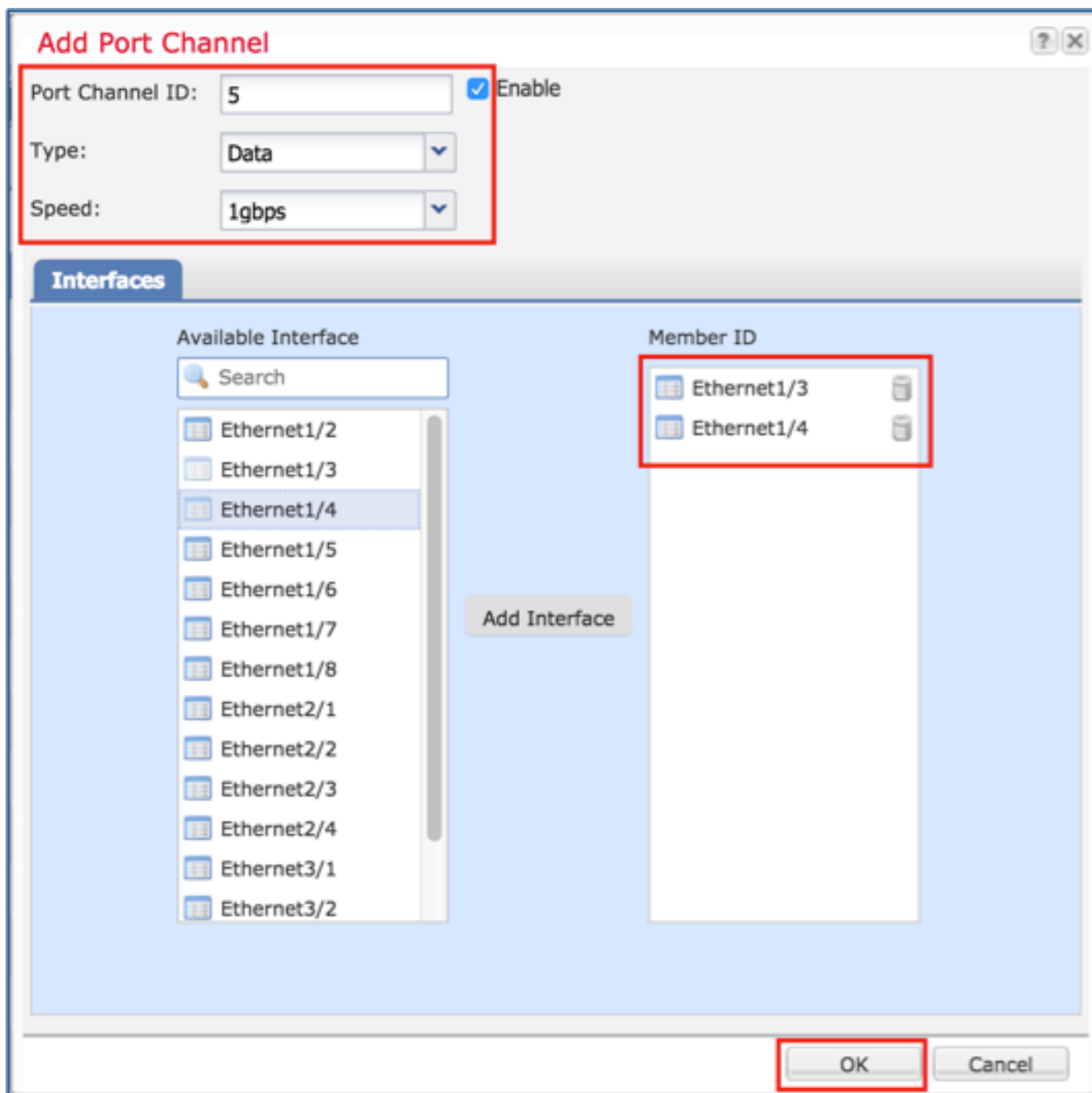
步驟1.建立埠通道資料介面。

要建立新介面，您必須登入到FPR9300 Chassis Manager並導航到**Interfaces**頁籤。

選擇**Add Port Channel**，然後使用以下引數建立新的埠通道介面：

| | |
|-------|--------------------------|
| 埠通道ID | 5 |
| 類型 | 資料 |
| 啟用 | 是 |
| 成員ID | Ethernet1/3、Ethernet 1/4 |

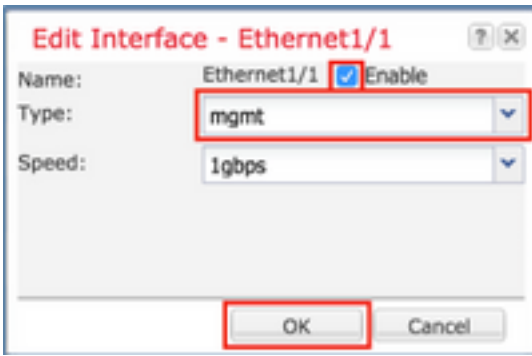
選擇OK以儲存配置，如下圖所示。



步驟2.建立管理介面。

在Interfaces頁籤上，選擇介面，按一下Edit並配置管理型別介面。

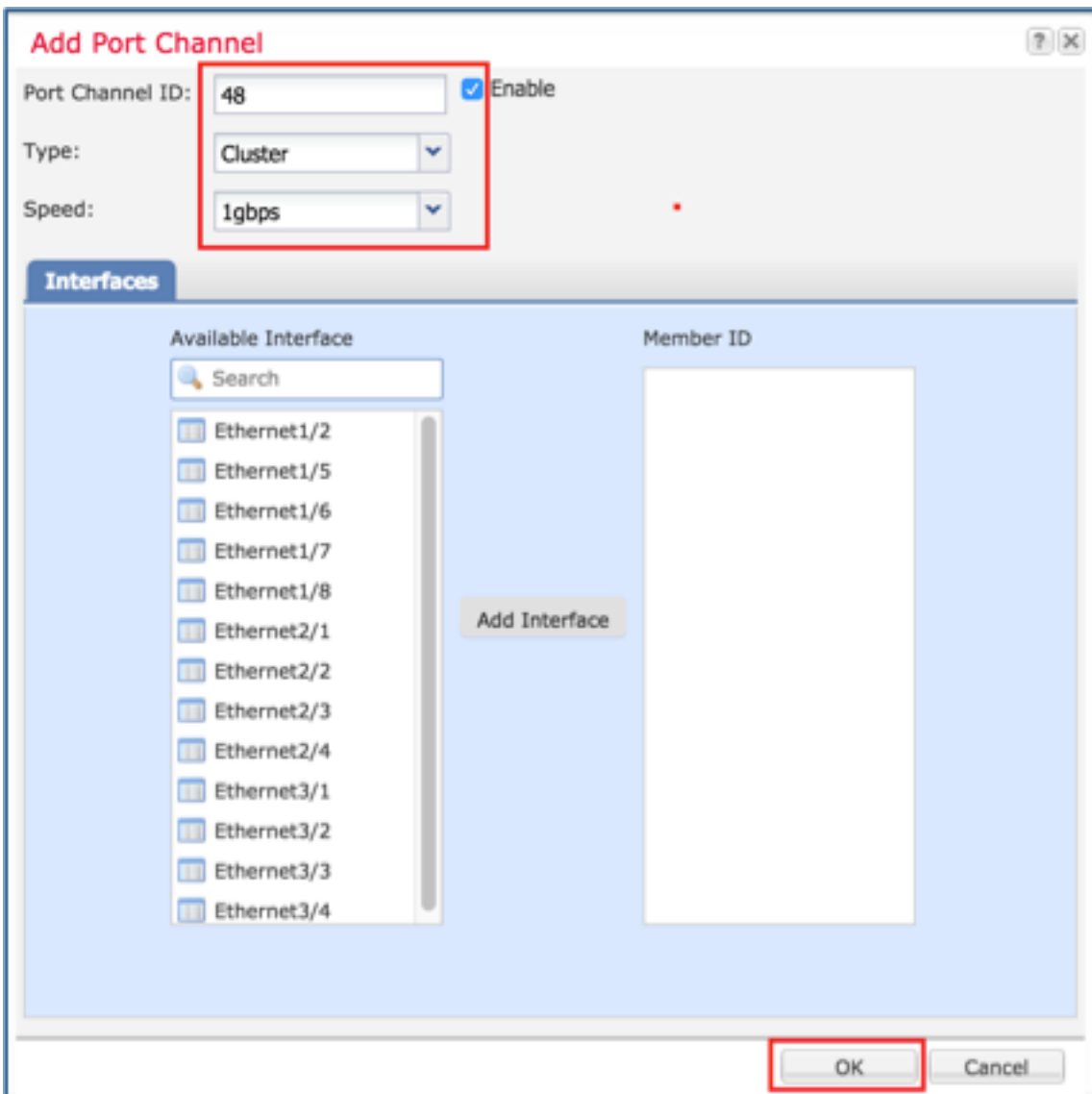
按一下「OK」以儲存組態，如下圖所示。



步驟3.建立集群控制鏈路介面。

按一下「Add Port Channel」按鈕，用這些引數建立一個新的連線埠通道介面，如下圖所示。

| | |
|-------|----|
| 埠通道ID | 48 |
| 類型 | 叢集 |
| 啟用 | 是 |
| 成員ID | - |



任務2.建立FTD集群

工作需求：

建立FTD集群裝置。

解決方案：

步驟1.導覽至Logical Devices，然後按一下Add Device按鈕。

建立FTD集群，如下所示：

| | |
|------|---------------------|
| 裝置名稱 | FTD_cluster |
| 模板 | Cisco Firepower威脅防禦 |
| 映像版本 | 6.0.1.1213 |
| 裝置模式 | 叢集 |

若要新增裝置，請按一下OK，如下圖所示。

Add Device

Device Name: FTD_cluster

Template: Cisco Firepower Threat Defense

Image Version: 6.0.1.1213

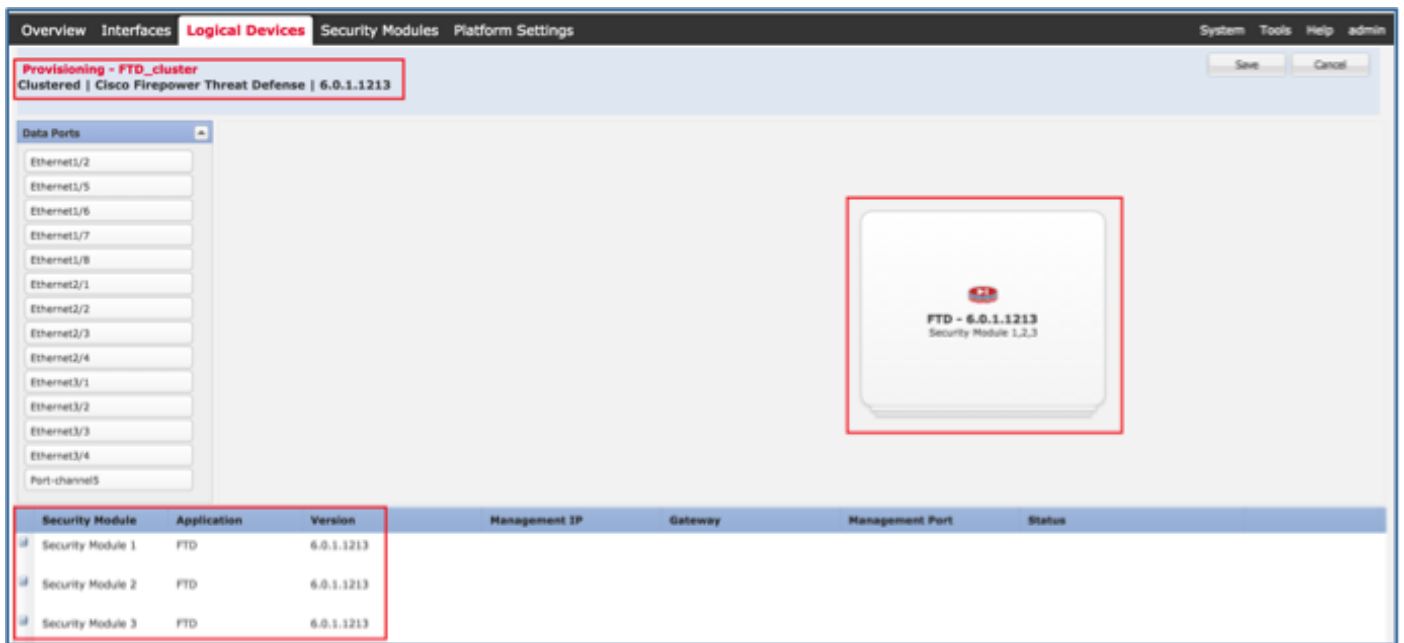
Device Mode: Standalone Cluster

OK Cancel

步驟2.配置和部署FTD集群。

建立FTD裝置後，系統會將您重新導向至Provisioning- device_name視窗。

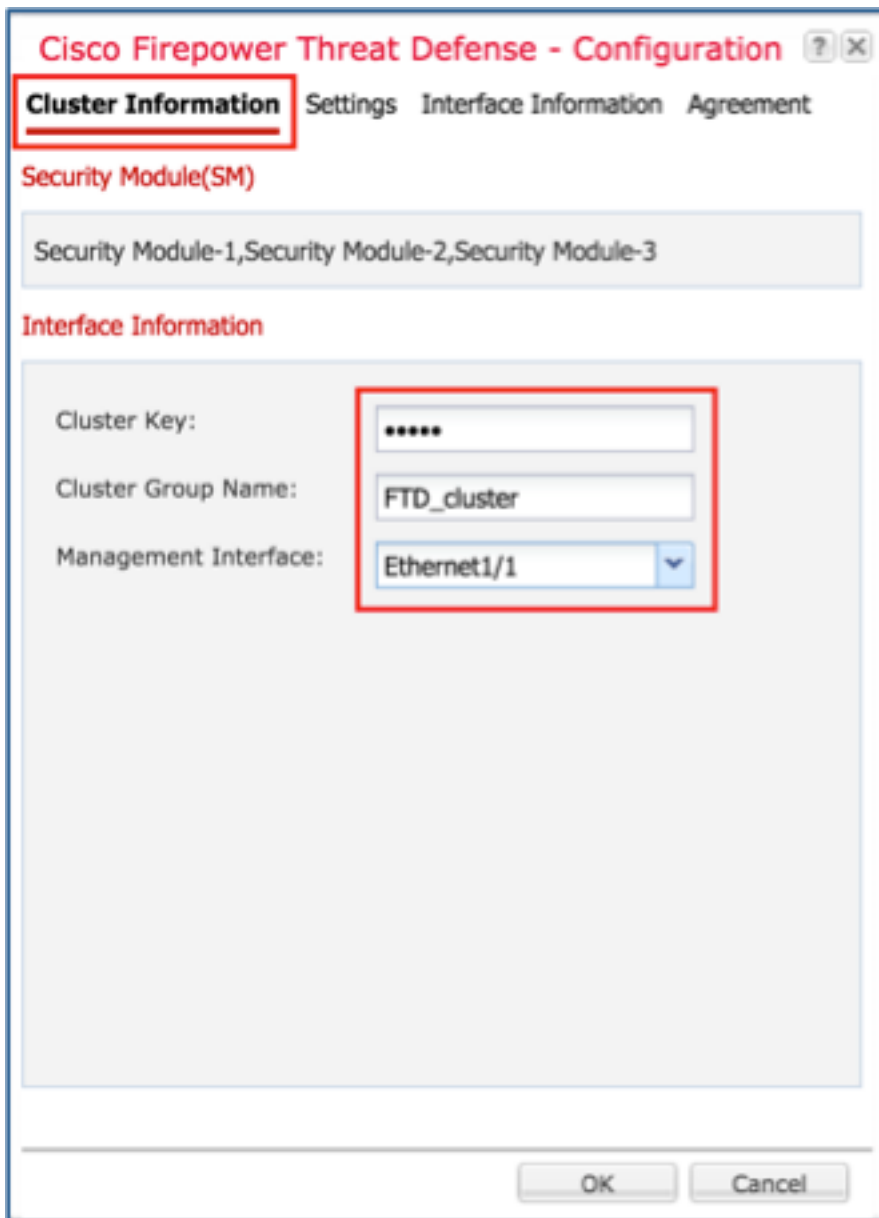
按一下裝置圖示以啟動組態，如下圖所示。



使用以下設定設定FTD Cluster Information索引標籤，如下圖所示。

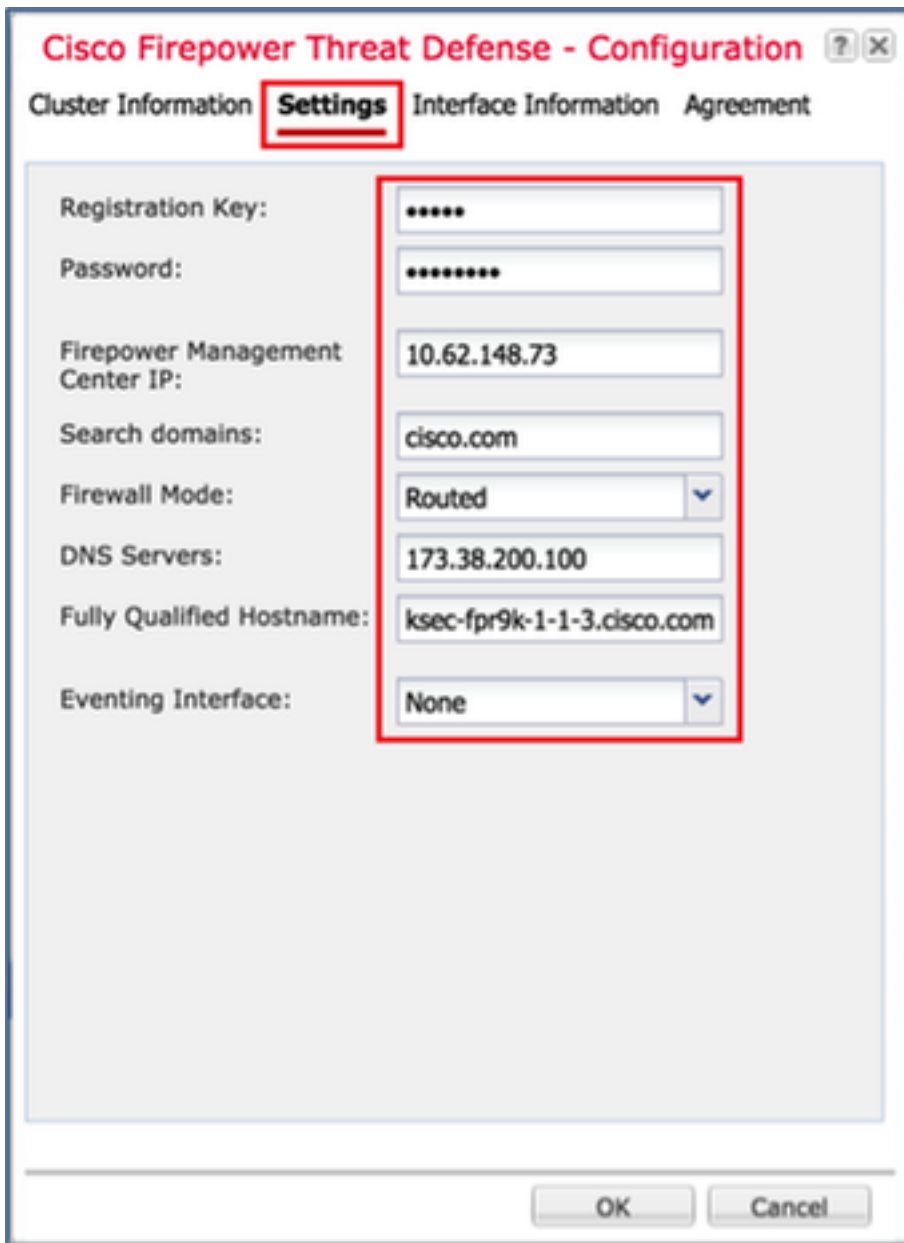
群集金鑰
群集組名稱
管理介面

思科
FTD_cluster
Ethernet1/1



使用以下設定設定FTD **Settings**索引標籤，如下圖所示。

| | |
|-----------------|----------------------------|
| 註冊金鑰 | 思科 |
| 密碼 | Admin123 |
| Firepower管理中心IP | 10.62.148.73 |
| 搜尋域 | cisco.com |
| 防火牆模式 | 循路 |
| DNS伺服器 | 173.38.200.100 |
| 完全限定主機名 | ksec-fpr9k-1-1-3.cisco.com |
| 事件介面 | 無 |



使用這些設定設定FTD Interface Information索引標籤，如下圖所示。

| | |
|--------------|-----------------|
| 地址型別 | 僅限IPv4 |
| 安全模組1 | |
| 管理IP | 10.62.148.67 |
| 網路掩碼 | 255.255.255.128 |
| 閘道 | 10.62.148.1 |
| 安全模組2 | |
| 管理IP | 10.62.148.68 |
| 網路掩碼 | 255.255.255.128 |
| 閘道 | 10.62.148.1 |
| 安全模組3 | |
| 管理IP | 10.62.148.69 |
| 網路掩碼 | 255.255.255.128 |
| 閘道 | 10.62.148.1 |

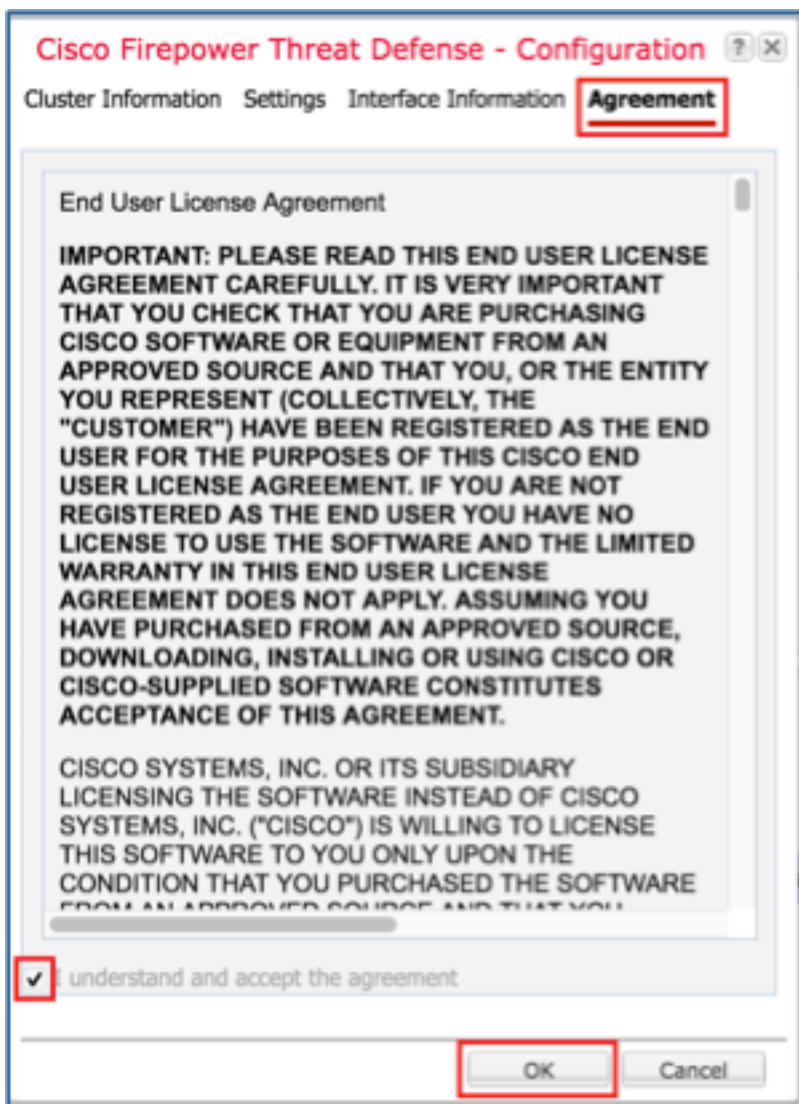
Cisco Firepower Threat Defense - Configuration ? X

Cluster Information Settings **Interface Information** Agreement

| | |
|----------------------------------|-----------------|
| Address Type: | IPv4 only |
| Security Module 1 IPv4 | |
| Management IP: | 10.62.148.67 |
| Network Mask: | 255.255.255.128 |
| Gateway: | 10.62.148.1 |
| Security Module 2 IPv4 | |
| Management IP: | 10.62.148.68 |
| Network Mask: | 255.255.255.128 |
| Gateway: | 10.62.148.1 |
| Security Module 3 IPv4 | |
| Management IP: | 10.62.148.69 |
| Network Mask: | 255.255.255.128 |
| Gateway: | 10.62.148.1 |

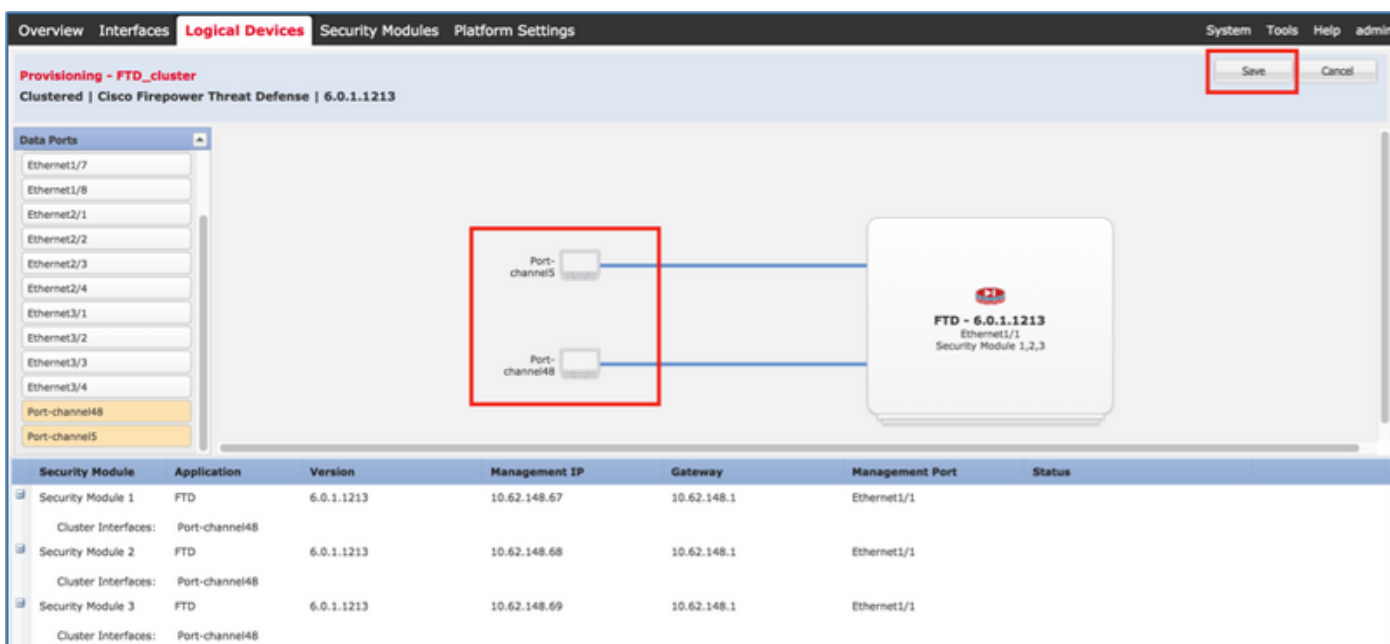
OK Cancel

接受「Agreement」頁籤上的「Agreement」，然後按一下OK，如下圖所示。



步驟3.將資料介面分配給FTD。

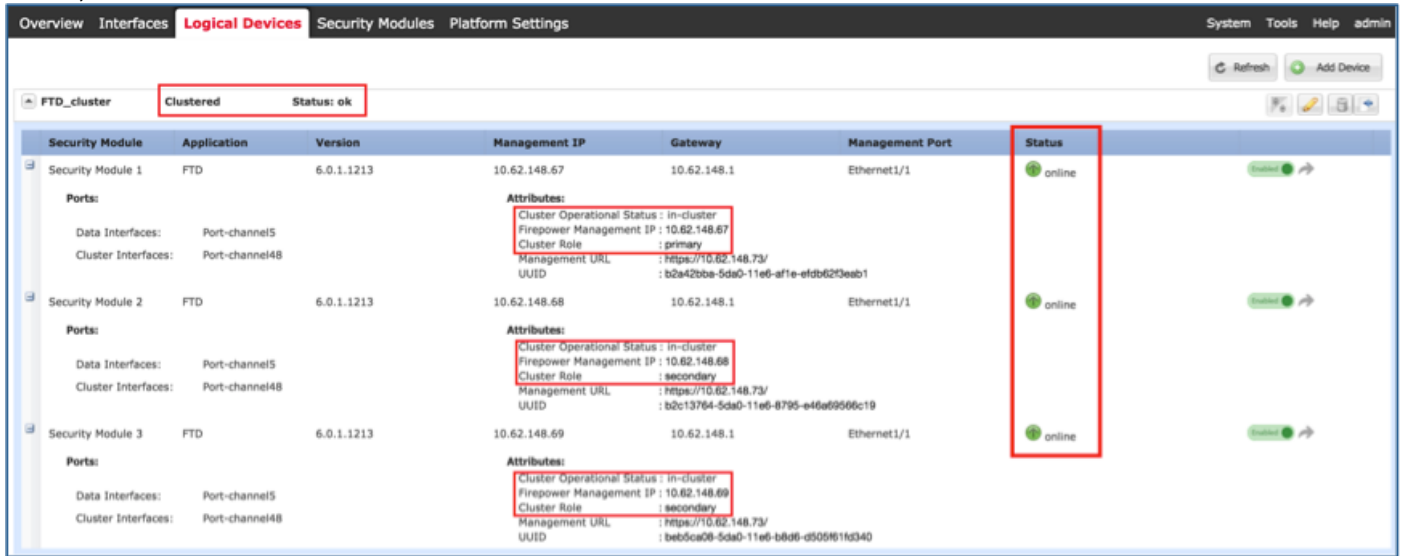
展開「Data Ports (資料埠)」區域，然後點選要分配給FTD的每個介面。完成後，選擇Save以建立FTD集群，如下圖所示。



等待幾分鐘以部署集群，然後進行主裝置選擇。

驗證：

- , 如下圖所示。



- 從FPR9300 CLI

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

```
FPR9K-1-A# scope ssa
```

```
FPR9K-1-A /ssa # show app-instance
```

| Application Name | Slot ID | Admin State | Operational State | Running Version | Startup Version |
|------------------|---------|-------------|-------------------|-----------------|-----------------|
| ftd | 1 | Enabled | Online | 6.0.1.1213 | 6.0.1.1213 |
| In Cluster | | | | | |
| ftd | 2 | Enabled | Online | 6.0.1.1213 | 6.0.1.1213 |
| In Cluster | | | | | |
| ftd | 3 | Enabled | Online | 6.0.1.1213 | 6.0.1.1213 |
| In Cluster | | | | | |

- 在LINA(ASA)CLI上

```
firepower# show cluster info
```

```
Cluster FTD_cluster: On
Interface mode: spanned
This is "unit-1-1" in state MASTER
ID : 0
Version : 9.6(1)
Serial No.: FLM19216KK6
CCL IP : 127.2.1.1
CCL MAC : 0015.c500.016f
Last join : 21:51:03 CEST Aug 8 2016
Last leave: N/A
```

```
Other members in the cluster:
```

```
Unit "unit-1-3" in state SLAVE
ID : 1
Version : 9.6(1)
Serial No.: FLM19206H7T
CCL IP : 127.2.1.3
CCL MAC : 0015.c500.018f
Last join : 21:51:05 CEST Aug 8 2016
Last leave: N/A
Unit "unit-1-2" in state SLAVE
```

ID : 2
Version : 9.6(1)
Serial No.: FLM19206H71
CCL IP : 127.2.1.2
CCL MAC : 0015.c500.019f
Last join : 21:51:30 CEST Aug 8 2016
Last leave: N/A

firepower# **cluster exec show cluster interface-mode**
cluster interface-mode spanned

unit-1-3:*****
cluster interface-mode spanned

unit-1-2:*****
cluster interface-mode spanned
firepower#

firepower# **cluster exec show cluster history**

```
=====
```

| From State | To State | Reason |
|--------------------------|--------------------|--|
| ===== | | |
| 21:49:25 CEST Aug 8 2016 | | |
| DISABLED | DISABLED | Disabled at startup |
| | | |
| 21:50:18 CEST Aug 8 2016 | | |
| DISABLED | ELECTION | Enabled from CLI |
| | | |
| 21:51:03 CEST Aug 8 2016 | | |
| ELECTION | MASTER_POST_CONFIG | Enabled from CLI |
| | | |
| 21:51:03 CEST Aug 8 2016 | | |
| MASTER_POST_CONFIG | MASTER | Master post config done and waiting for ntfy |

```
=====
```

unit-1-3:*****

```
=====
```

| From State | To State | Reason |
|--------------------------|----------|----------------------------------|
| ===== | | |
| 21:49:44 CEST Aug 8 2016 | | |
| DISABLED | DISABLED | Disabled at startup |
| | | |
| 21:50:37 CEST Aug 8 2016 | | |
| DISABLED | ELECTION | Enabled from CLI |
| | | |
| 21:50:37 CEST Aug 8 2016 | | |
| ELECTION | ONCALL | Received cluster control message |
| | | |
| 21:50:41 CEST Aug 8 2016 | | |
| ONCALL | ELECTION | Received cluster control message |
| | | |
| 21:50:41 CEST Aug 8 2016 | | |
| ELECTION | ONCALL | Received cluster control message |
| | | |
| 21:50:46 CEST Aug 8 2016 | | |
| ONCALL | ELECTION | Received cluster control message |
| | | |
| 21:50:46 CEST Aug 8 2016 | | |
| ELECTION | ONCALL | Received cluster control message |

```
=====
```

```

21:50:51 CEST Aug 8 2016
ONCALL          ELECTION          Received cluster control message

21:50:51 CEST Aug 8 2016
ELECTION        ONCALL            Received cluster control message

21:50:56 CEST Aug 8 2016
ONCALL          ELECTION          Received cluster control message

21:50:56 CEST Aug 8 2016
ELECTION        ONCALL            Received cluster control message

21:51:01 CEST Aug 8 2016
ONCALL          ELECTION          Received cluster control message

21:51:01 CEST Aug 8 2016
ELECTION        ONCALL            Received cluster control message

21:51:04 CEST Aug 8 2016
ONCALL          SLAVE_COLD        Received cluster control message

21:51:04 CEST Aug 8 2016
SLAVE_COLD      SLAVE_APP_SYNC    Client progression done

21:51:05 CEST Aug 8 2016
SLAVE_APP_SYNC  SLAVE_CONFIG      Slave application configuration sync done

21:51:17 CEST Aug 8 2016
SLAVE_CONFIG    SLAVE_BULK_SYNC   Configuration replication finished

21:51:29 CEST Aug 8 2016
SLAVE_BULK_SYNC SLAVE              Configuration replication finished

```

=====

unit-1-2:*****

=====

| From State | To State | Reason |
|--------------------------------------|----------|----------------------------------|
| 21:49:24 CEST Aug 8 2016 DISABLED | DISABLED | Disabled at startup |
| 21:50:16 CEST Aug 8 2016 DISABLED | ELECTION | Enabled from CLI |
| 21:50:17 CEST Aug 8 2016 ELECTION | ONCALL | Received cluster control message |
| 21:50:21 CEST Aug 8 2016 ONCALL | ELECTION | Received cluster control message |
| 21:50:21 CEST Aug 8 2016 ELECTION | ONCALL | Received cluster control message |
| 21:50:26 CEST Aug 8 2016 ONCALL | ELECTION | Received cluster control message |
| 21:50:26 CEST Aug 8 2016 ELECTION | ONCALL | Received cluster control message |
| 21:50:31 CEST Aug 8 2016 ONCALL | ELECTION | Received cluster control message |

| | | | | | | |
|----------|------|-------|------|----------|----------|----------------------------------|
| 21:50:31 | CEST | Aug 8 | 2016 | ELECTION | ONCALL | Received cluster control message |
| 21:50:36 | CEST | Aug 8 | 2016 | ONCALL | ELECTION | Received cluster control message |
| 21:50:36 | CEST | Aug 8 | 2016 | ELECTION | ONCALL | Received cluster control message |
| 21:50:41 | CEST | Aug 8 | 2016 | ONCALL | ELECTION | Received cluster control message |
| 21:50:41 | CEST | Aug 8 | 2016 | ELECTION | ONCALL | Received cluster control message |
| 21:50:46 | CEST | Aug 8 | 2016 | ONCALL | ELECTION | Received cluster control message |
| 21:50:46 | CEST | Aug 8 | 2016 | ELECTION | ONCALL | Received cluster control message |
| 21:50:51 | CEST | Aug 8 | 2016 | ONCALL | ELECTION | Received cluster control message |
| 21:50:51 | CEST | Aug 8 | 2016 | ELECTION | ONCALL | Received cluster control message |
| 21:50:56 | CEST | Aug 8 | 2016 | ONCALL | ELECTION | Received cluster control message |
| 21:50:56 | CEST | Aug 8 | 2016 | ELECTION | ONCALL | Received cluster control message |
| 21:51:01 | CEST | Aug 8 | 2016 | ONCALL | ELECTION | Received cluster control message |
| 21:51:01 | CEST | Aug 8 | 2016 | ELECTION | ONCALL | Received cluster control message |
| 21:51:06 | CEST | Aug 8 | 2016 | ONCALL | ELECTION | Received cluster control message |
| 21:51:06 | CEST | Aug 8 | 2016 | ELECTION | ONCALL | Received cluster control message |
| 21:51:12 | CEST | Aug 8 | 2016 | ONCALL | ELECTION | Received cluster control message |
| 21:51:12 | CEST | Aug 8 | 2016 | ELECTION | ONCALL | Received cluster control message |
| 21:51:17 | CEST | Aug 8 | 2016 | ONCALL | ELECTION | Received cluster control message |
| 21:51:17 | CEST | Aug 8 | 2016 | ELECTION | ONCALL | Received cluster control message |
| 21:51:22 | CEST | Aug 8 | 2016 | ONCALL | ELECTION | Received cluster control message |
| 21:51:22 | CEST | Aug 8 | 2016 | ELECTION | ONCALL | Received cluster control message |

```
21:51:27 CEST Aug 8 2016
ONCALL          ELECTION          Received cluster control message

21:51:27 CEST Aug 8 2016
ELECTION        ONCALL            Received cluster control message

21:51:30 CEST Aug 8 2016
ONCALL          SLAVE_COLD          Received cluster control message

21:51:30 CEST Aug 8 2016
SLAVE_COLD      SLAVE_APP_SYNC      Client progression done

21:51:31 CEST Aug 8 2016
SLAVE_APP_SYNC  SLAVE_CONFIG        Slave application configuration sync done

21:51:43 CEST Aug 8 2016
SLAVE_CONFIG    SLAVE_BULK_SYNC     Configuration replication finished

21:51:55 CEST Aug 8 2016
SLAVE_BULK_SYNC SLAVE                Configuration replication finished
```

```
=====
firepower#
```

任務3.向FMC註冊FTD集群

工作需求：

將邏輯裝置新增到FMC，然後將它們分組到集群中。

解決方案：

步驟1.將邏輯裝置新增到FMC。自FMC版本6.3起，您只能註冊一個FTD裝置（建議作為主裝置）。其餘FTD由FMC自動發現。

登入FMC並導覽至**Devices > Device Management**索引標籤，然後按一下**Add Device**。

使用映像中提到的設定新增第一個邏輯裝置。

按一下**Register**開始註冊。

Add Device

Host: 10.62.148.67

Display Name: FTD1

Registration Key: cisco

Group: None

Access Control Policy: FTD9300

Smart Licensing

Malware:

Threat:

URL Filtering:

Advanced

i On version 5.4 devices or earlier, the licensing options will need to be specified from [licensing page](#).

Register Cancel

驗證如下圖所示。

| FTD_cluster Cisco Firepower 9000 Series SM-36 Threat Defense Cluster | | | | | | |
|---|---------------|--------------|--|--|--------------------------------------|---------|
| <input checked="" type="checkbox"/> | FTD1(primary) | 10.62.148.67 | Cisco Firepower 9000 Series SM-36 Threat Defense - v6.0.1 - routed | Cisco Firepower 9000 Series SM-36 Thre | Base, Threat, Malware, URL Filtering | FTD9300 |
| <input checked="" type="checkbox"/> | FTD2 | 10.62.148.68 | Cisco Firepower 9000 Series SM-36 Threat Defense - v6.0.1 - routed | Cisco Firepower 9000 Series SM-36 Thre | Base, Threat, Malware, URL Filtering | FTD9300 |
| <input checked="" type="checkbox"/> | FTD3 | 10.62.148.69 | Cisco Firepower 9000 Series SM-36 Threat Defense - v6.0.1 - routed | Cisco Firepower 9000 Series SM-36 Thre | Base, Threat, Malware, URL Filtering | FTD9300 |

任務4.在FMC上配置埠通道子介面

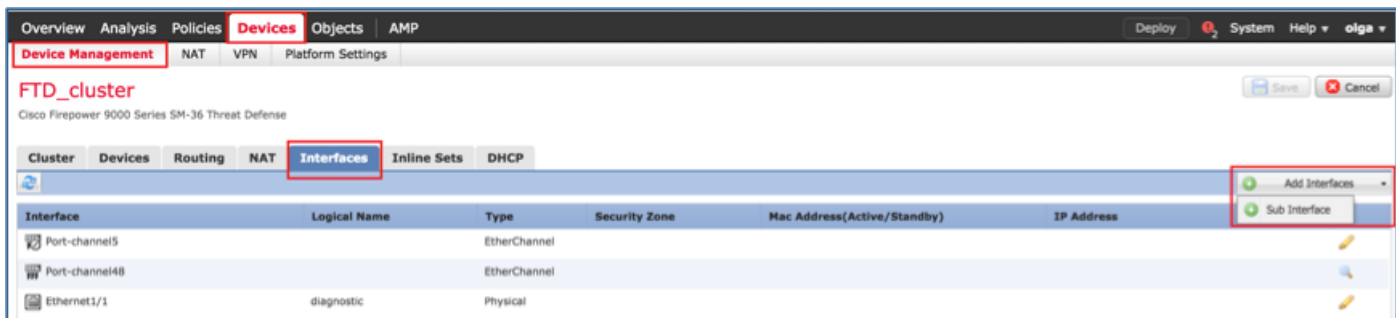
工作需求：

為埠通道資料介面配置子介面。

解決方案：

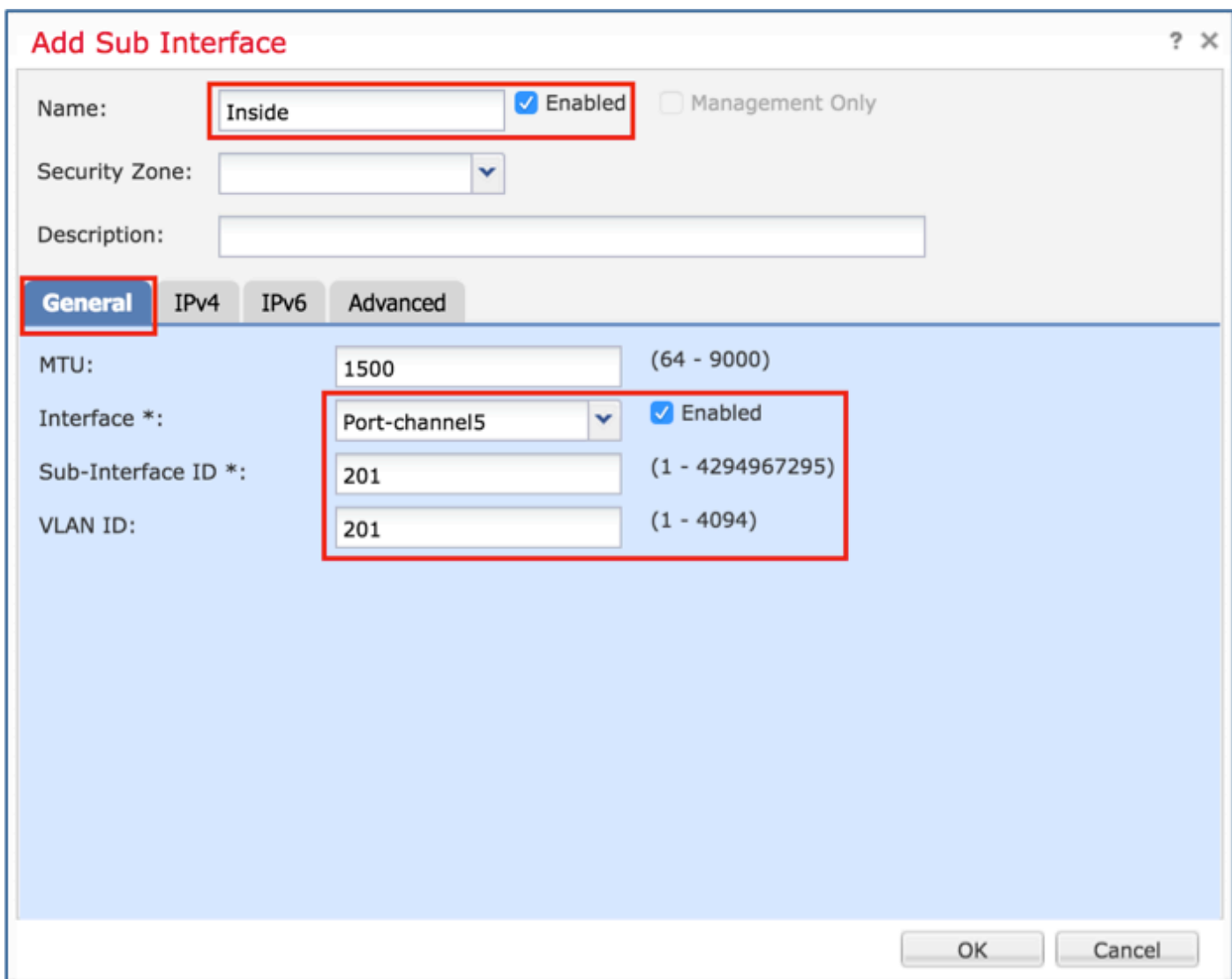
步驟1.在FMC GUI中選擇FTD_cluster Edit按鈕。

導覽至Interfaces索引標籤，然後按一下Add Interfaces> Sub Interface，如下圖所示。



使用這些詳細資訊配置第一個子介面。選擇OK以應用更改，如下圖所示。

| | |
|---------|------------------|
| 名稱 | INSIDE |
| 常規頁籤 | |
| 介面 | Port-channel5 |
| 子介面ID | 201 |
| VLAN ID | 201 |
| IPv4頁籤 | |
| IP型別 | 使用靜態IP |
| IP 位址 | 192.168.75.10/24 |



Add Sub Interface ? X

Name: Enabled Management Only

Security Zone: ▼

Description:

General **IPv4** IPv6 Advanced

IP Type: ▼

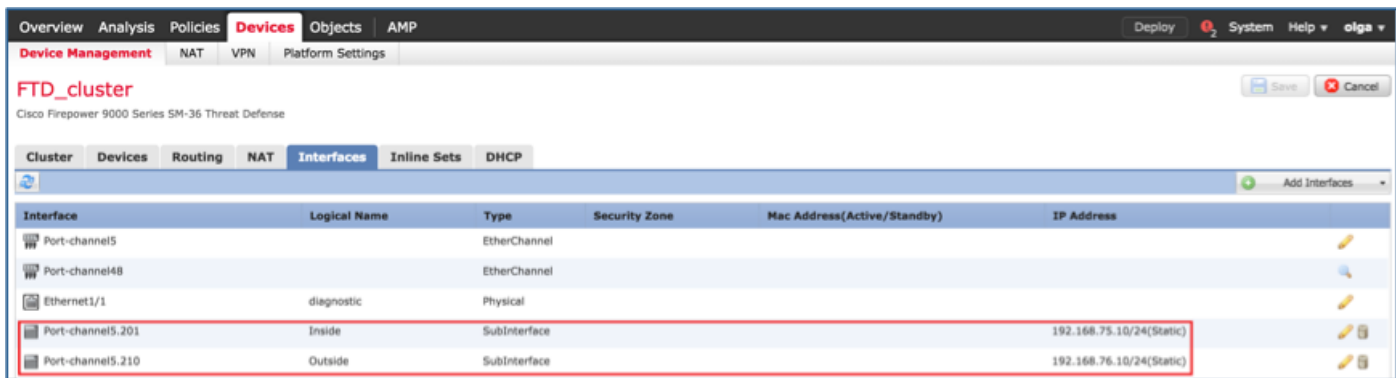
IP Address: eg. 1.1.1.1/255.255.255.228 or 1.1.1.1/25

使用這些詳細資訊配置第二個子介面。

| | |
|---------|------------------|
| 名稱 | OUTSIDE |
| 常規頁籤 | |
| 介面 | Port-channel5 |
| 子介面ID | 210 |
| VLAN ID | 210 |
| IPv4頁籤 | |
| IP型別 | 使用靜態IP |
| IP 位址 | 192.168.76.10/24 |

按一下OK建立子介面。按一下「Save」，然後「Deploy」變更至FTD_cluster，如下圖所示。

驗證：



任務5.檢驗基本連通性

工作需求：

建立捕獲並檢查兩個VM之間的連線。

解決方案：

步驟1.在所有集群裝置上建立捕獲。

導航到主裝置的LINA(ASA)CLI並為內部和外部介面建立捕獲。

```
firepower#
firepower# cluster exec capture capi interface inside match icmp any any
unit-1-1(LOCAL):*****

unit-1-3:*****

unit-1-2:*****
firepower#
firepower# cluster exec capture capo interface outside match icmp any any
unit-1-1(LOCAL):*****

unit-1-3:*****

unit-1-2:*****
firepower#
驗證：
```

```
firepower# cluster exec show capture
unit-1-1(LOCAL):*****
capture capi type raw-data interface Inside [Capturing - 0 bytes]
  match icmp any any
capture capo type raw-data interface Outside [Capturing - 0 bytes]
  match icmp any any

unit-1-3:*****
capture capi type raw-data interface Inside [Capturing - 0 bytes]
  match icmp any any
```

```
capture capo type raw-data interface Outside [Capturing - 0 bytes]
  match icmp any any
```

```
unit-1-2:*****
capture capi type raw-data interface Inside [Capturing - 0 bytes]
  match icmp any any
capture capo type raw-data interface Outside [Capturing - 0 bytes]
  match icmp any any
firepower#
```

步驟2.執行從VM1到VM2的ping測試。

使用4個資料包進行測試。測試後檢查捕獲輸出：

```
firepower# cluster exec show capture
unit-1-1(LOCAL):*****
capture capi type raw-data interface Inside [Capturing - 0 bytes]
  match icmp any any
capture capo type raw-data interface Outside [Capturing - 0 bytes]
  match icmp any any
```

```
unit-1-3:*****
capture capi type raw-data interface Inside [Capturing - 752 bytes]
  match icmp any any
capture capo type raw-data interface Outside [Capturing - 752 bytes]
  match icmp any any
```

```
unit-1-2:*****
capture capi type raw-data interface Inside [Capturing - 0 bytes]
  match icmp any any
capture capo type raw-data interface Outside [Capturing - 0 bytes]
  match icmp any any
firepower#
```

運行命令以檢查特定裝置上的捕獲輸出：

```
firepower# cluster exec unit unit-1-3 show capture capi
```

8 packets captured

```
  1: 12:58:36.162253      802.1Q vlan#201 P0 192.168.75.100 > 192.168.76.100: icmp: echo
request
  2: 12:58:36.162955      802.1Q vlan#201 P0 192.168.76.100 > 192.168.75.100: icmp: echo reply
  3: 12:58:37.173834      802.1Q vlan#201 P0 192.168.75.100 > 192.168.76.100: icmp: echo
request
  4: 12:58:37.174368      802.1Q vlan#201 P0 192.168.76.100 > 192.168.75.100: icmp: echo reply
  5: 12:58:38.187642      802.1Q vlan#201 P0 192.168.75.100 > 192.168.76.100: icmp: echo
request
  6: 12:58:38.188115      802.1Q vlan#201 P0 192.168.76.100 > 192.168.75.100: icmp: echo reply
  7: 12:58:39.201832      802.1Q vlan#201 P0 192.168.75.100 > 192.168.76.100: icmp: echo
request
  8: 12:58:39.202321      802.1Q vlan#201 P0 192.168.76.100 > 192.168.75.100: icmp: echo reply
```

8 packets shown

```
firepower# cluster exec unit unit-1-3 show capture capo
```

8 packets captured

```
  1: 12:58:36.162543      802.1Q vlan#210 P0 192.168.75.100 > 192.168.76.100: icmp: echo
```

```
request
  2: 12:58:36.162894      802.1Q vlan#210 P0 192.168.76.100 > 192.168.75.100: icmp: echo reply
  3: 12:58:37.174002      802.1Q vlan#210 P0 192.168.75.100 > 192.168.76.100: icmp: echo
request
  4: 12:58:37.174307      802.1Q vlan#210 P0 192.168.76.100 > 192.168.75.100: icmp: echo reply
  5: 12:58:38.187764      802.1Q vlan#210 P0 192.168.75.100 > 192.168.76.100: icmp: echo
request
  6: 12:58:38.188085      802.1Q vlan#210 P0 192.168.76.100 > 192.168.75.100: icmp: echo reply
  7: 12:58:39.201954      802.1Q vlan#210 P0 192.168.75.100 > 192.168.76.100: icmp: echo
request
  8: 12:58:39.202290      802.1Q vlan#210 P0 192.168.76.100 > 192.168.75.100: icmp: echo reply
8 packets shown
```

firepower#

完成此任務後，使用下一命令刪除捕獲：

```
firepower# cluster exec no capture capi
```

```
unit-1-1 (LOCAL): *****
```

```
unit-1-3: *****
```

```
unit-1-2: *****
```

```
firepower# cluster exec no capture capo
```

```
unit-1-1 (LOCAL): *****
```

```
unit-1-3: *****
```

```
unit-1-2: *****
```

步驟3.將檔案從VM2下載到VM1。

VM1預配置為FTP伺服器，VM2預配置為FTP客戶端。

使用以下內容建立新捕獲：

```
firepower# cluster exec capture capi interface inside match ip host 192.168.75.100 host
192.168.76.100
```

```
unit-1-1 (LOCAL): *****
```

```
unit-1-3: *****
```

```
unit-1-2: *****
```

```
firepower# cluster exec capture capo interface outside match ip host 192.168.775.100 host
192.168.76.100
```

```
unit-1-1 (LOCAL): *****
```

```
unit-1-3: *****
```

```
unit-1-2: *****
```

使用FTP客戶端將檔案從VM2下載到VM1。

檢查show conn輸出：

```
firepower# cluster exec show conn all
unit-1-1(LOCAL):*****
20 in use, 21 most used
Cluster:
fwd connections: 0 in use, 2 most used
dir connections: 0 in use, 52 most used
centralized connections: 0 in use, 6 most used

TCP Outside 192.168.76.100:49175 Inside 192.168.75.100:21, idle 0:00:32, bytes 665, flags UIOeN
UDP cluster 255.255.255.255:49495 NP Identity Ifc 127.2.1.1:49495, idle 0:00:00, bytes 17858058, flags -
TCP cluster 127.2.1.3:10844 NP Identity Ifc 127.2.1.1:38296, idle 0:00:33, bytes 5496, flags UI
.....
TCP cluster 127.2.1.3:59588 NP Identity Ifc 127.2.1.1:10850, idle 0:00:33, bytes 132, flags UO

unit-1-3:*****
12 in use, 16 most used
Cluster:
fwd connections: 0 in use, 4 most used
dir connections: 1 in use, 10 most used
centralized connections: 0 in use, 0 most used

TCP Outside 192.168.76.100:49175 Inside 192.168.75.100:21, idle 0:00:34, bytes 0, flags y
TCP cluster 127.2.1.1:10851 NP Identity Ifc 127.2.1.3:48493, idle 0:00:52, bytes 224, flags UI
.....
TCP cluster 127.2.1.1:64070 NP Identity Ifc 127.2.1.3:10847, idle 0:00:11, bytes 806, flags UO

unit-1-2:*****
12 in use, 15 most used
Cluster:
fwd connections: 0 in use, 2 most used
dir connections: 0 in use, 3 most used
centralized connections: 0 in use, 0 most used

TCP cluster 127.2.1.1:10851 NP Identity Ifc 127.2.1.2:64136, idle 0:00:53, bytes 224, flags UI
.....
TCP cluster 127.2.1.1:15859 NP Identity Ifc 127.2.1.2:10847, idle 0:00:11, bytes 807, flags UO
```

Show capture output:

```
firepower# cluster exec show cap
unit-1-1(LOCAL):*****
capture capi type raw-data interface Inside [Buffer Full - 523954 bytes]
  match ip host 192.168.75.100 host 192.168.76.100
capture capo type raw-data interface Outside [Buffer Full - 524028 bytes]
  match ip host 192.168.75.100 host 192.168.76.100

unit-1-3:*****
capture capi type raw-data interface Inside [Buffer Full - 524062 bytes]
  match ip host 192.168.75.100 host 192.168.76.100
capture capo type raw-data interface Outside [Buffer Full - 524228 bytes]
  match ip host 192.168.75.100 host 192.168.76.100
```

```

unit-1-2:*****
capture capi type raw-data interface Inside [Capturing - 0 bytes]
  match ip host 192.168.75.100 host 192.168.76.100
capture capo type raw-data interface Outside [Capturing - 0 bytes]
  match ip host 192.168.75.100 host 192.168.76.100

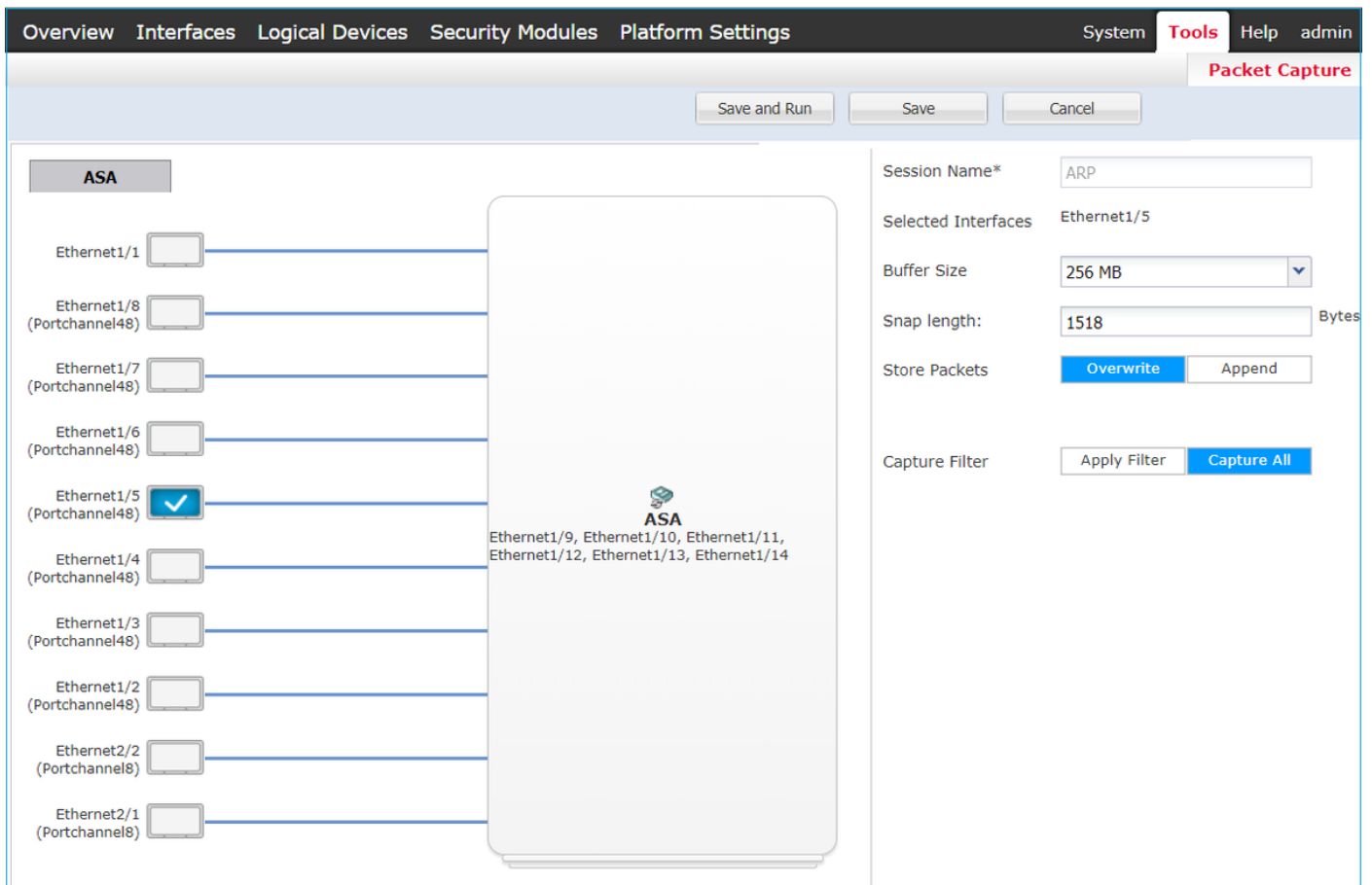
```

從機箱管理器UI捕獲群集

在下面的影象中，您可以看到具有2個埠通道（8和48）的FPR9300上的3單元群集。邏輯裝置是ASA，但在FTD的情況下將採用相同的概念。需要記住的重要一點是，儘管有3個集群單元，但從捕獲的角度來看，只有一個邏輯設備：

The screenshot shows the 'Logical Device List' in the Palo Alto Networks management interface. The interface has a navigation bar with 'Overview', 'Interfaces', 'Logical Devices' (selected), 'Security Modules', and 'Platform Settings'. On the right, there are 'System', 'Tools', 'Help', and 'admin' links. Below the navigation bar, there are 'Refresh' and 'Add Device' buttons. The main content area is titled 'Logical Device List' and shows a table of logical devices. The table has columns for 'Security Module', 'Application', 'Version', 'Management IP', 'Gateway', 'Management Port', and 'Status'. There are three entries, all for 'ASA' applications, version '9.6.2.7', and status 'online'. Each entry has a 'Ports' section and an 'Attributes' section. The first entry is 'Security Module 1' with a 'Cluster Role' of 'master'. The second and third entries are 'Security Module 2' and 'Security Module 3' with 'Cluster Role' of 'slave'. The 'Attributes' section for each entry includes 'Cluster Operational Status: in-cluster', 'Management IP VIRTUAL', 'Cluster Role', 'Management URL', and 'Management IP'.

| Security Module | Application | Version | Management IP | Gateway | Management Port | Status |
|---------------------|----------------|--|---------------|---------|-----------------|--------|
| Security Module 1 | ASA | 9.6.2.7 | 0.0.0.0 | 0.0.0.0 | Ethernet1/1 | online |
| Ports: | | Attributes: | | | | |
| Data Interfaces: | Port-channel8 | Cluster Operational Status: in-cluster | | | | |
| Cluster Interfaces: | Port-channel48 | Management IP VIRTUAL : 10.111.8.206 | | | | |
| | | Cluster Role : master | | | | |
| | | Management URL : https://10.111.8.206/ | | | | |
| | | Management IP : 10.111.8.193 | | | | |
| Security Module 2 | ASA | 9.6.2.7 | 0.0.0.0 | 0.0.0.0 | Ethernet1/1 | online |
| Ports: | | Attributes: | | | | |
| Data Interfaces: | Port-channel8 | Cluster Operational Status: in-cluster | | | | |
| Cluster Interfaces: | Port-channel48 | Management IP VIRTUAL : 10.111.8.206 | | | | |
| | | Cluster Role : slave | | | | |
| | | Management URL : https://10.111.8.206/ | | | | |
| | | Management IP : 10.111.8.189 | | | | |
| Security Module 3 | ASA | 9.6.2.7 | 0.0.0.0 | 0.0.0.0 | Ethernet1/1 | online |
| Ports: | | Attributes: | | | | |
| Data Interfaces: | Port-channel8 | Cluster Operational Status: in-cluster | | | | |
| Cluster Interfaces: | Port-channel48 | Management IP VIRTUAL : 10.111.8.206 | | | | |
| | | Cluster Role : slave | | | | |
| | | Management URL : https://10.111.8.206/ | | | | |
| | | Management IP : 10.111.8.190 | | | | |



任務6.從群集中刪除從屬裝置

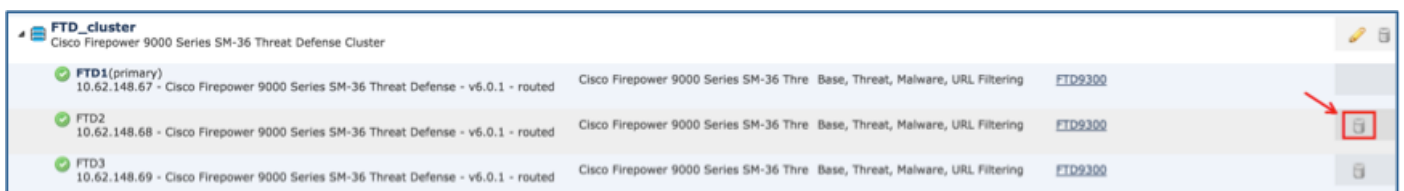
工作需求：

登入到FMC並從群集中刪除從屬裝置。

解決方案：

步驟1.登入FMC並導航至Device > Device Management。

按一下從屬裝置旁邊的垃圾桶圖示，如下圖所示。



此時將顯示確認視窗。選擇Yes進行確認，如下圖所示。



驗證：

- ，如下圖所示。



- 在FXOS CLI上。

```
FPR9K-1-A# scope ssa
```

```
FPR9K-1-A /ssa # show app-instance
```

| Application Name | Slot ID | Admin State | Operational State | Running Version | Startup Version |
|------------------|---------|-------------|-------------------|-----------------|-----------------|
| ftd | 1 | Enabled | Online | 6.0.1.1213 | 6.0.1.1213 |
| In Cluster | | | | | |
| ftd | 2 | Enabled | Online | 6.0.1.1213 | 6.0.1.1213 |
| In Cluster | | | | | |
| ftd | 3 | Enabled | Online | 6.0.1.1213 | 6.0.1.1213 |
| In Cluster | | | | | |

- 在LINA(ASA)CLI上。

```
firepower# show cluster info
```

```
Cluster FTD_cluster: On
```

```
Interface mode: spanned
```

```
This is "unit-1-1" in state MASTER
```

```
ID : 0
```

```
Version : 9.6(1)
```

```
Serial No.: FLM19216KK6
```

```
CCL IP : 127.2.1.1
```

```
CCL MAC : 0015.c500.016f
```

```
Last join : 21:51:03 CEST Aug 8 2016
```

```
Last leave: N/A
```

```
Other members in the cluster:
```

```
Unit "unit-1-3" in state SLAVE
```

```
ID : 1
```

```
Version : 9.6(1)
```

```
Serial No.: FLM19206H7T
```

```
CCL IP : 127.2.1.3
```

```
CCL MAC : 0015.c500.018f
```

```
Last join : 21:51:05 CEST Aug 8 2016
```

```
Last leave: N/A
```

```
Unit "unit-1-2" in state SLAVE
```

```
ID : 2
```

```
Version : 9.6(1)
```

```
Serial No.: FLM19206H71
```

```
CCL IP : 127.2.1.2
```

```
CCL MAC : 0015.c500.019f
```

```
Last join : 21:51:30 CEST Aug 8 2016
```

```
Last leave: N/A
```

```
firepower#
```

附註：裝置已從FMC註銷，但它仍是FPR9300上的群整合員。

驗證

使用本節內容，確認您的組態是否正常運作。

驗證已完成並涵蓋在單個任務中。

疑難排解

目前尚無適用於此組態的具體疑難排解資訊。

相關資訊

- 所有版本的Cisco Firepower Management Center配置指南都可以在以下位置找到：
https://www.cisco.com/c/en/us/td/docs/security/firepower/roadmap/firepower-roadmap.html#id_47280。
- 所有版本的FXOS Chassis Manager和CLI配置指南都可以在以下位置找到：
<https://www.cisco.com/c/en/us/td/docs/security/firepower/fxos/roadmap/fxos-roadmap.html#pgfld-121950>。
- 思科全球技術協助中心(TAC)強烈建議使用以下視覺指南，深入瞭解Cisco Firepower下一代安全技術（包括本文中提到的技術）：
<http://www.ciscopress.com/title/9781587144806>。
- 有關與Firepower技術相關的所有配置和故障排除技術說明。
<https://www.cisco.com/c/en/us/support/security/defense-center/tsd-products-support-series-home.html>。
- [技術支援與文件 - Cisco Systems](#)