使用FDM在FTD上配置雙ISP

目錄

簡介

本文檔介紹如何使用安全防火牆系列的防火牆裝置管理器(FDM)配置雙網際網路服務提供商(ISP)故障切換。

必要條件

需求

思科建議您瞭解以下主題：

- 基本路由
- 防火牆裝置管理器控制面板知識

- 至少有2個網際網路服務提供商連線到安全防火牆。

採用元件

本文中的資訊係根據以下軟體和硬體版本：

·運行7.7.X或更高版本的思科安全防火牆。

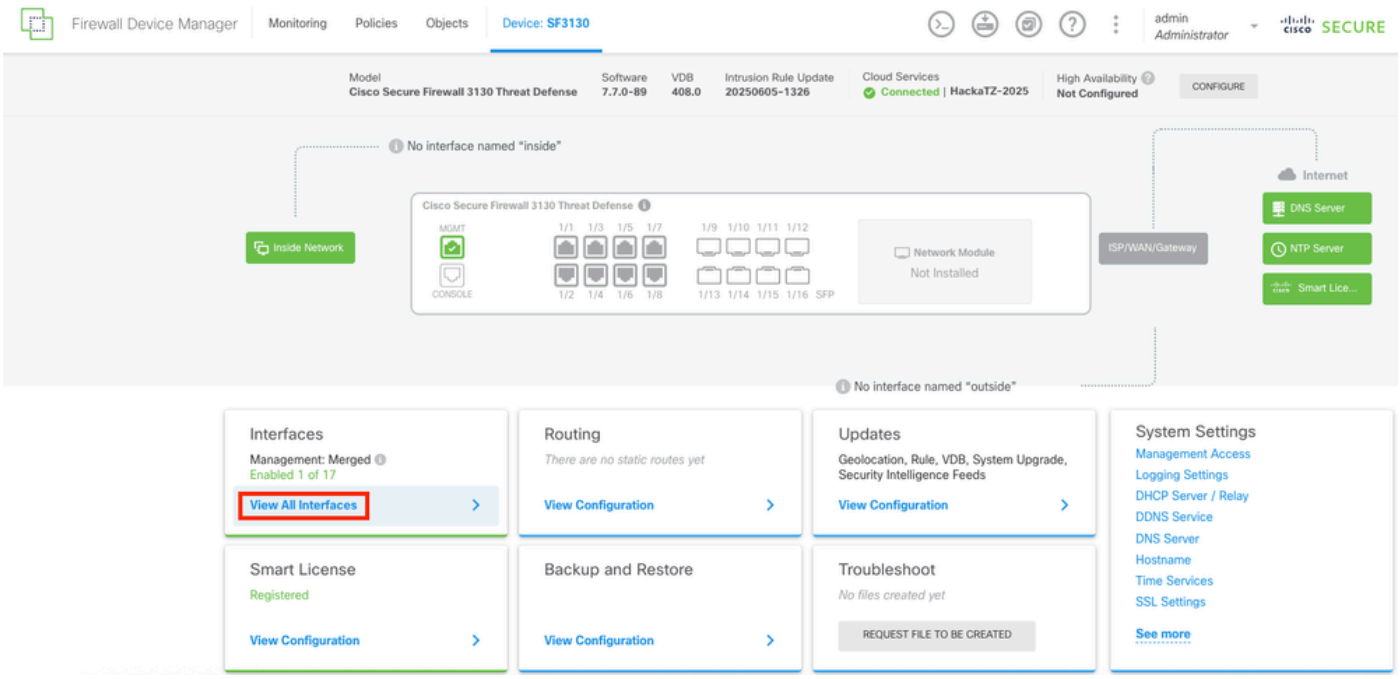
· 7.7.0版本的安全防火牆3130。

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。

設定

步驟 1.

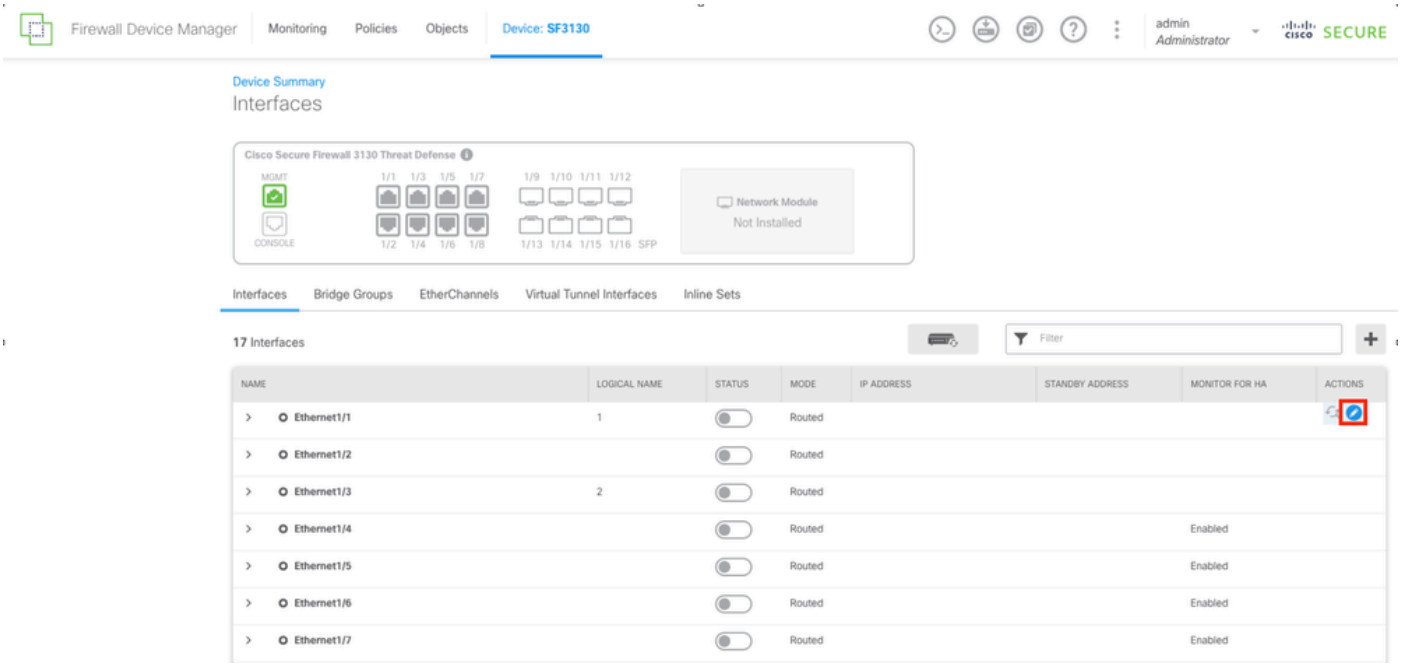
登入到Secure Firewall上的FDM，然後選擇View All Interfaces按鈕導航到Interfaces部分。



FDM主儀表板

步驟 2.

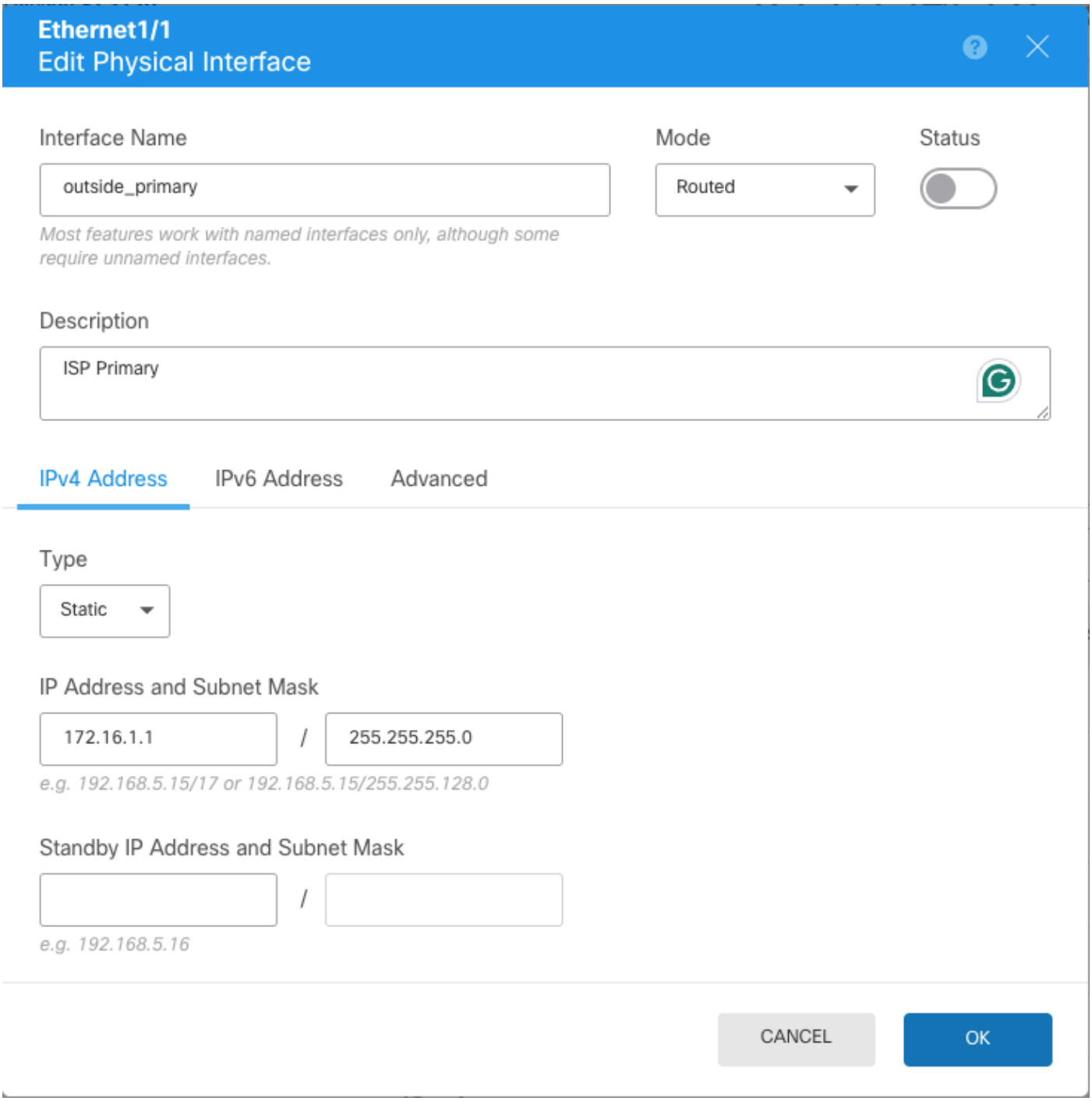
要配置主ISP連線的介面，首先選擇所需的介面。選擇相應的interface按鈕以繼續。在本範例中，使用的介面是Ethernet1/1。



Interfaces頁籤

步驟 3.

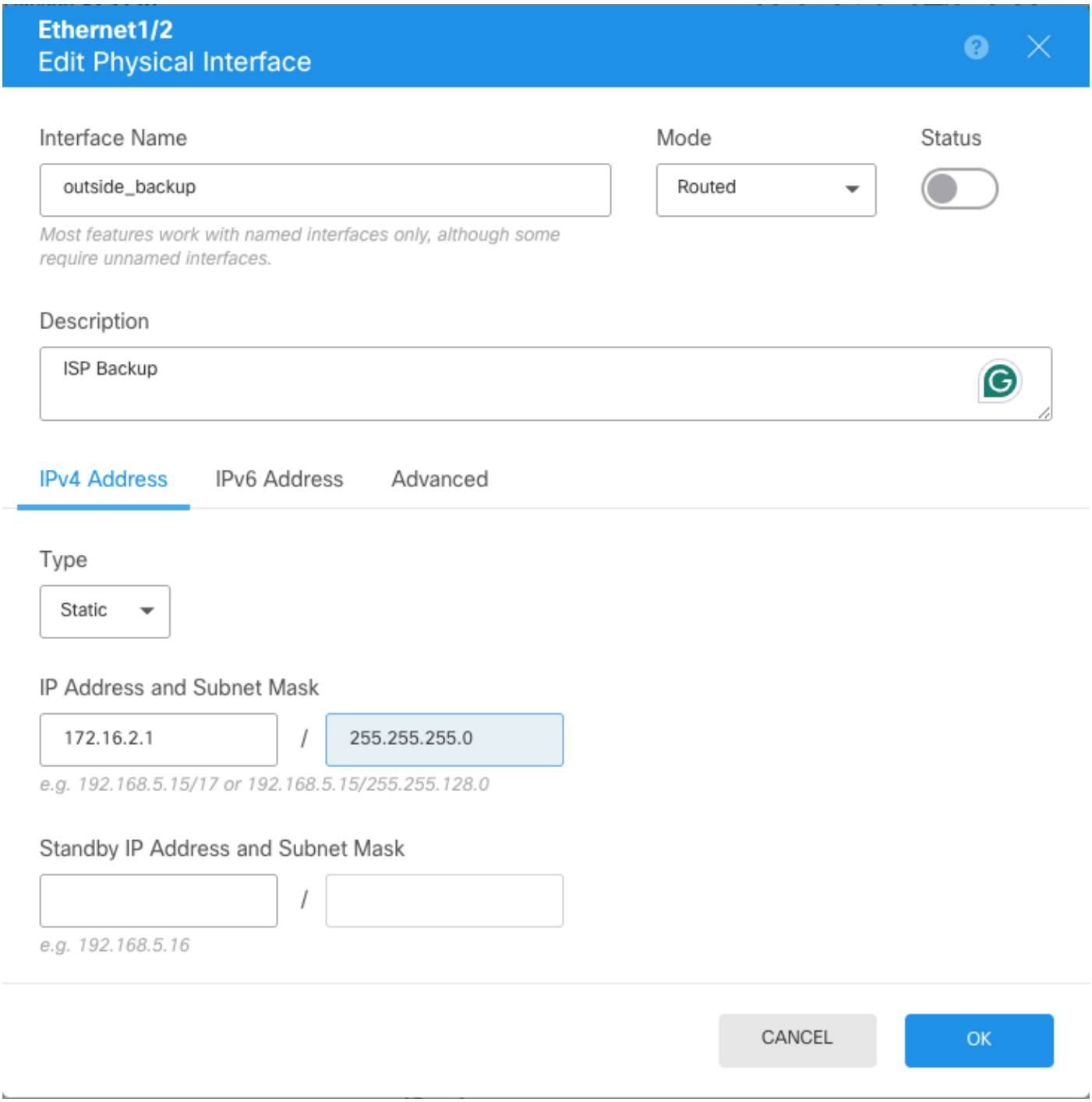
使用適合您的主ISP連線的正確引數配置介面。在本示例中，介面為outside_primary。



主ISP介面的配置

步驟 4.

對輔助ISP介面重複相同的過程。在本範例中，使用介面Ethernet1/2。

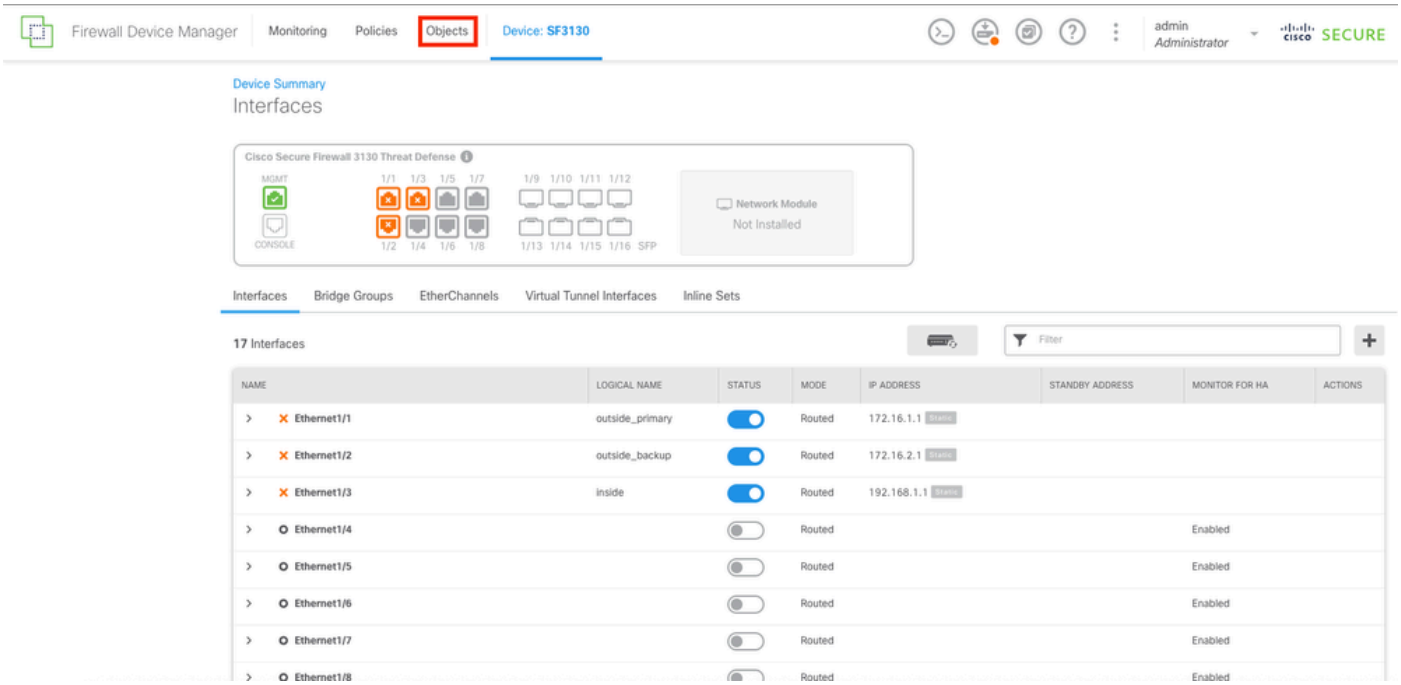


輔助ISP介面的配置

步驟 5.

為ISP配置兩個介面後，下一步是為主介面設定SLA監控器。

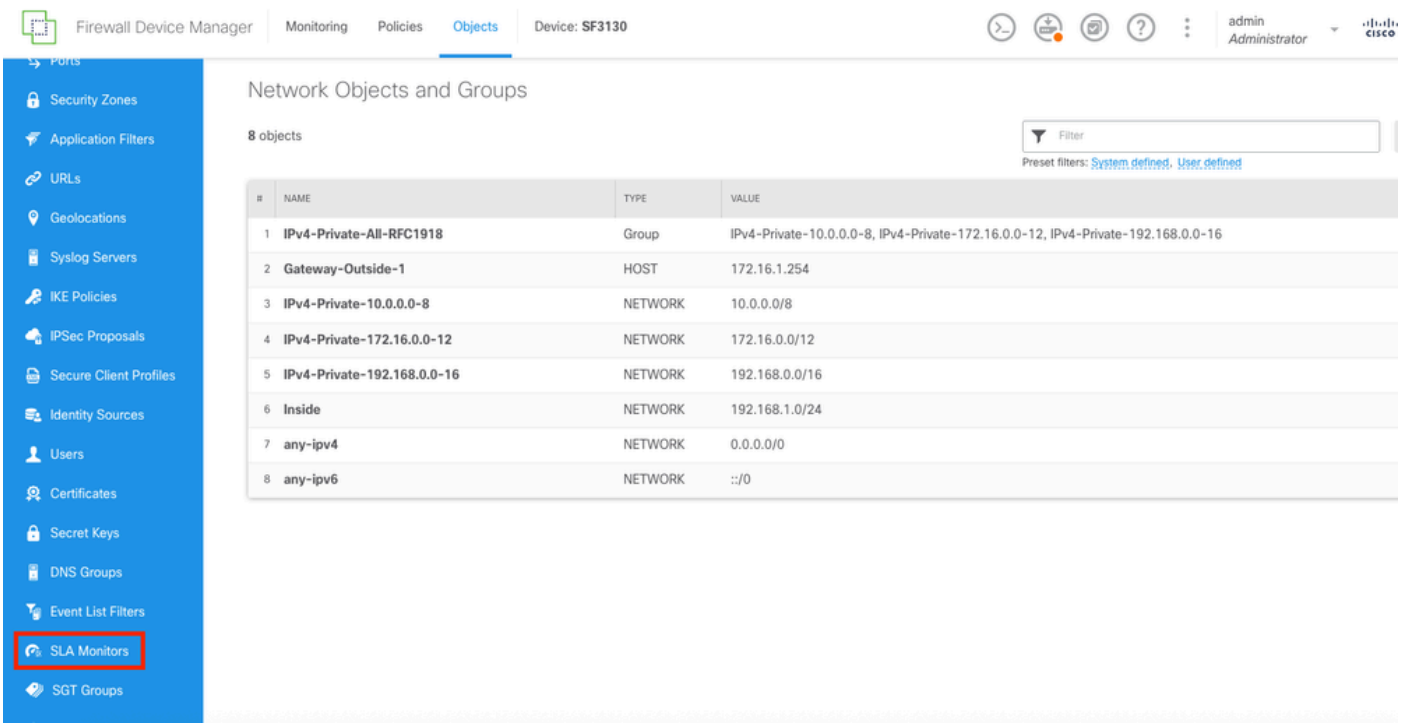
通過選擇位於選單頂部的對象按鈕導航到對象部分。



已配置的介面

步驟 6.

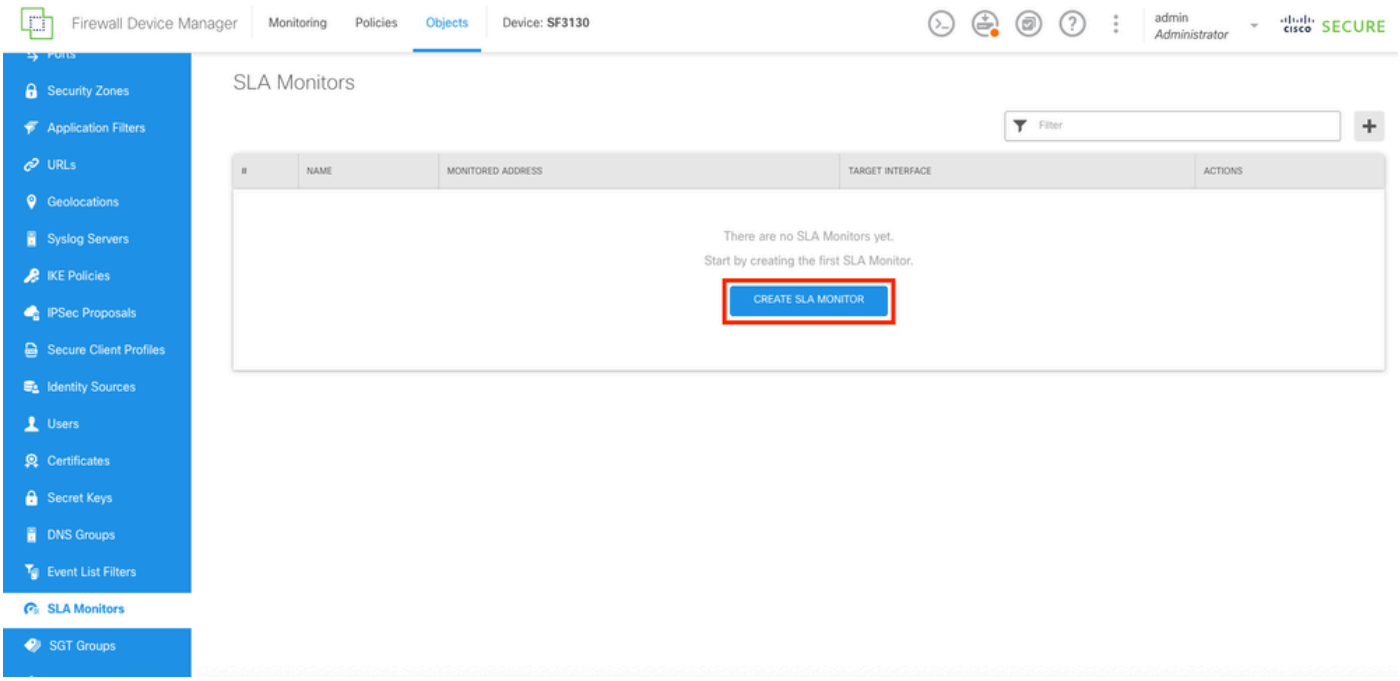
在左側的列中選擇SLA Monitor按鈕。



對象螢幕

步驟 7.

通過選擇Create SLA Monitor按鈕建立新的SLA Monitor。



SLA Monitor部分

步驟 8.

配置主ISP連線的引數。

Add SLA Monitor Object

Name

Outside_Primary_ISP

Description

Monitor for ISP Primary

Monitor Address

Gateway-Outside-1

Target Interface

outside_primary (Ethernet1/1)

IP ICMP ECHO OPTIONS

Following properties have following correlation: Threshold ≤ Timeout ≤ Frequency

Threshold

5000 milliseconds

0 - 2147483647

Timeout

5000 milliseconds

0 - 604800000

Frequency

60000 milliseconds

1000 - 604800000, multiple of 1000

Type of Service

0

0 - 255

Number of Packets

1

0 - 100

Data Size

28 bytes

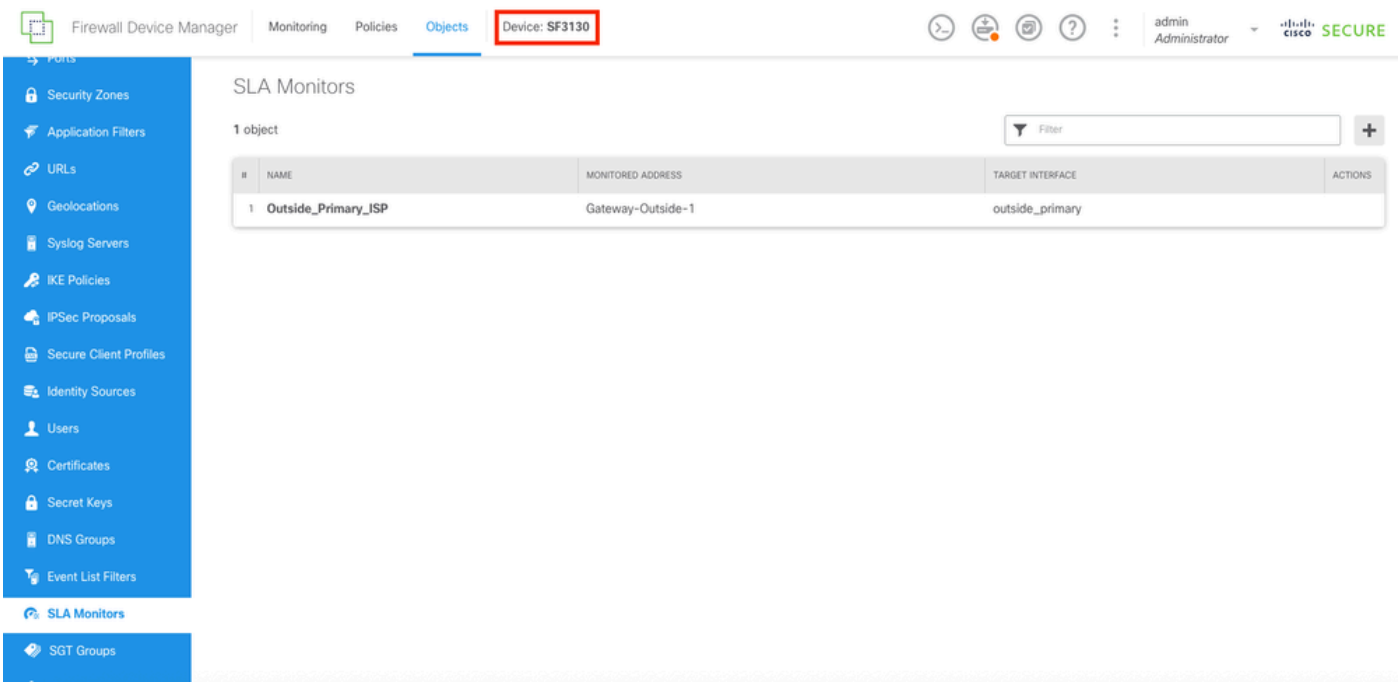
0 - 16384

CANCEL OK

SLA對象建立

步驟 9.

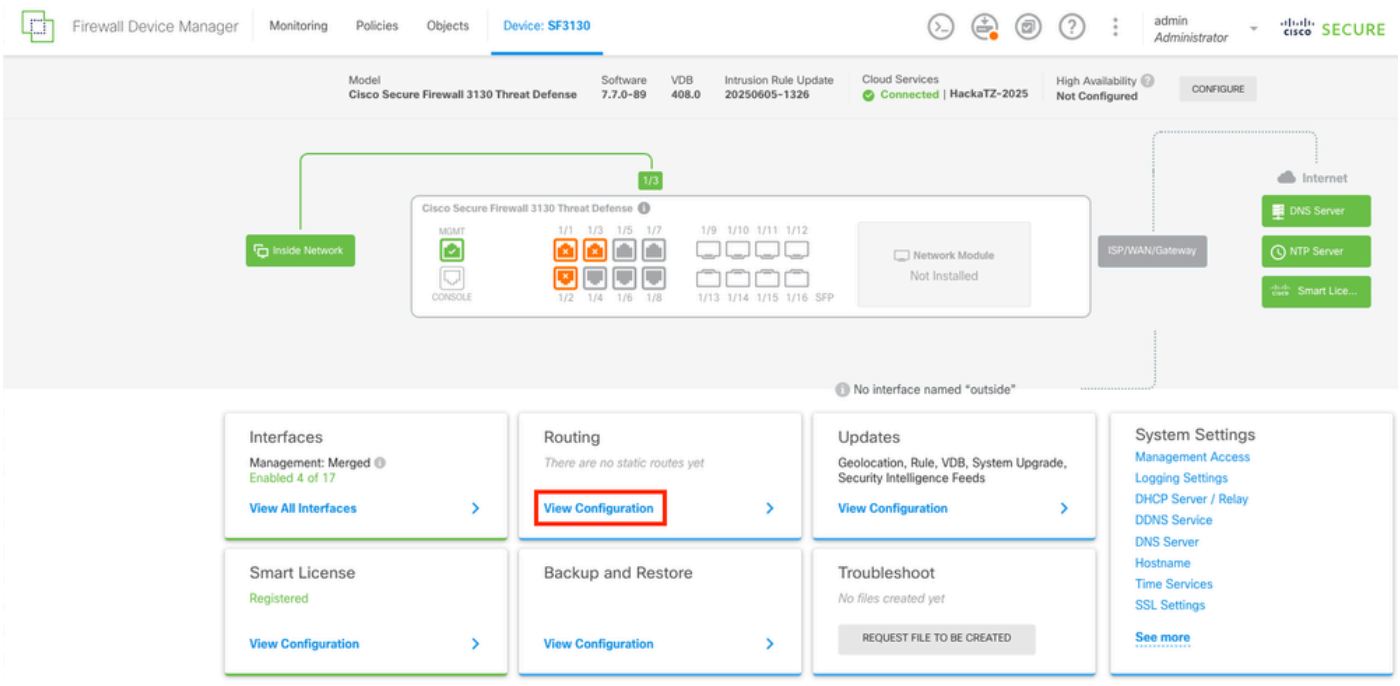
建立對象後，介面的靜態路由必須建立該對象。選擇Device(設備)按鈕，導航到主控制板。



已建立SLA監控器

步驟 10.

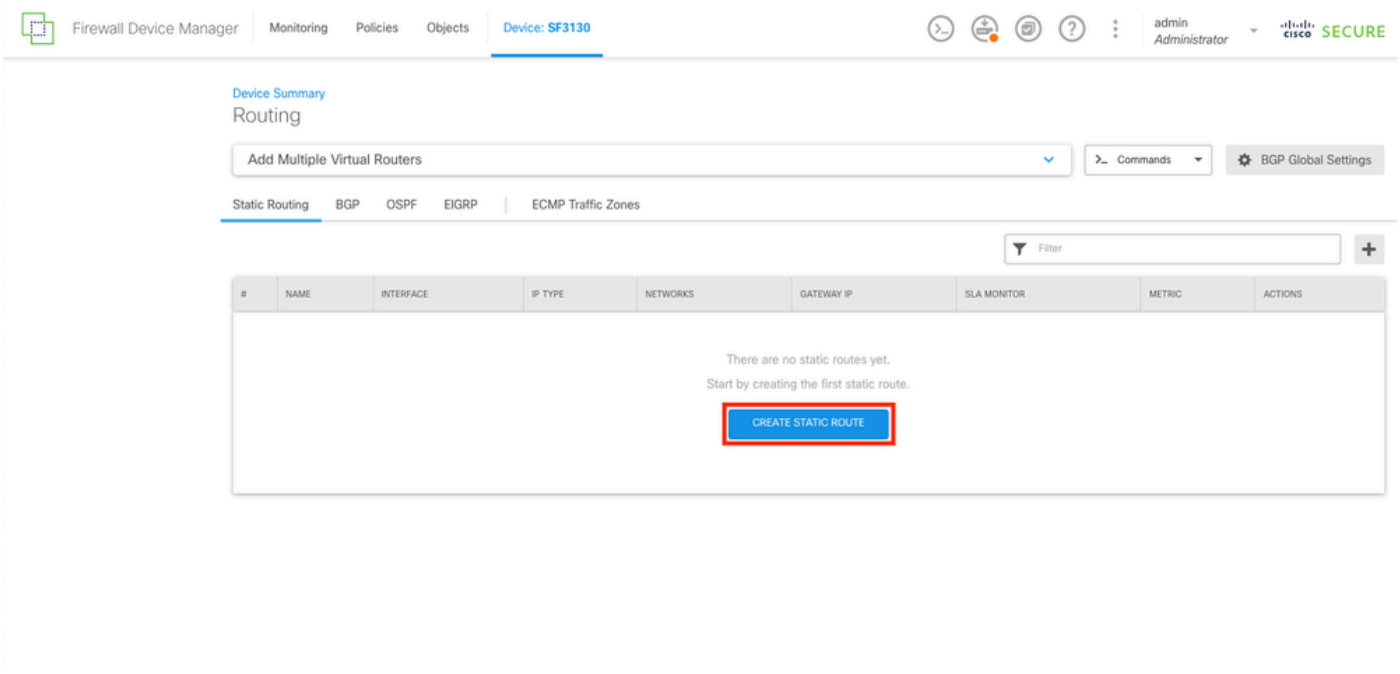
在「路由選擇面板」中選擇View Configuration，即可導航到Routing部分。



主控制面板

步驟 11.

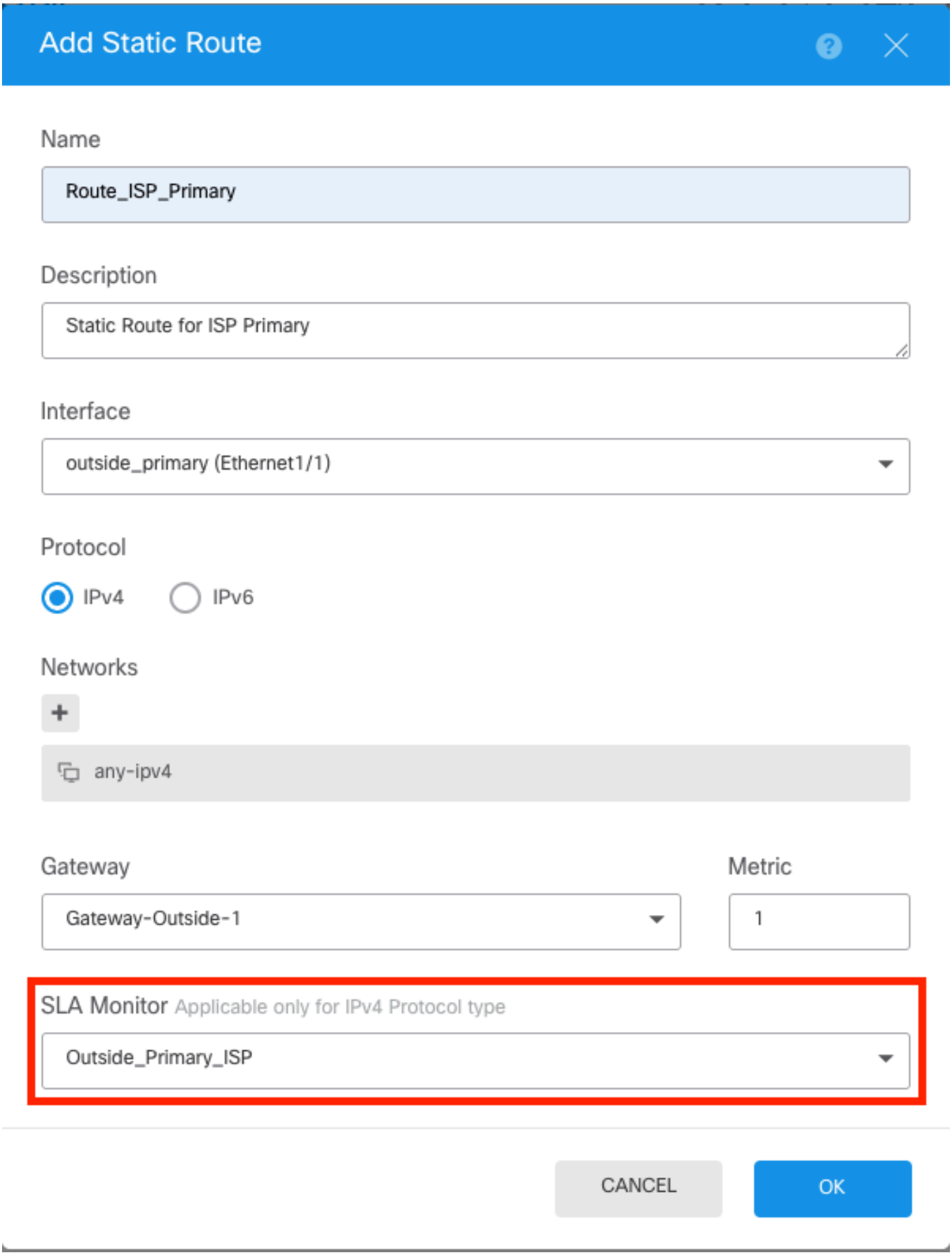
在Static Routing頁籤上，為兩個ISP建立2個預設靜態路由。要建立新的靜態路由，請選擇CREATE STATIC ROUTE按鈕。



靜態路由部分

步驟 12.

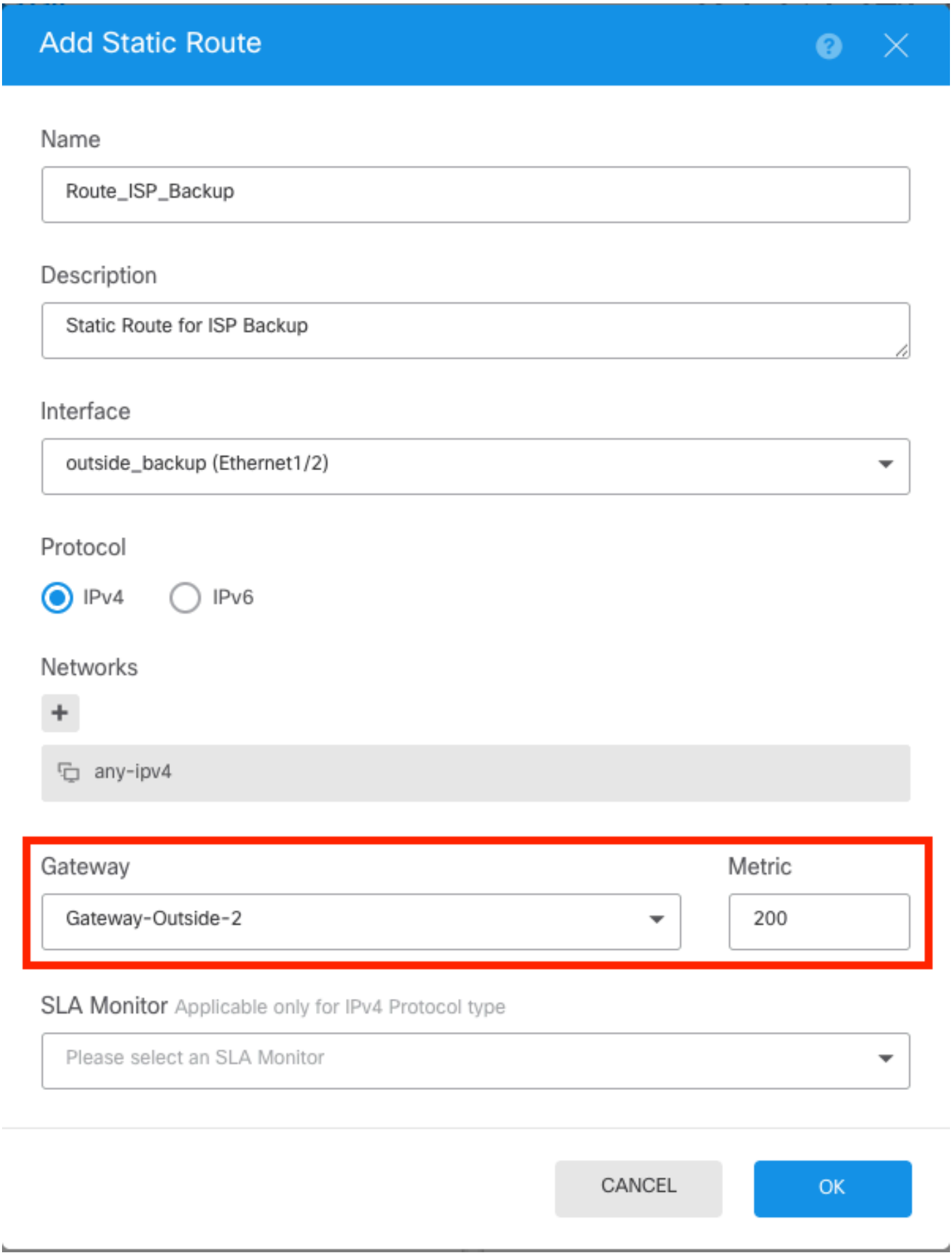
首先，為主要ISP建立Static Route。最後，新增在上一步中建立的SLA監控對象。



主ISP的靜態路由

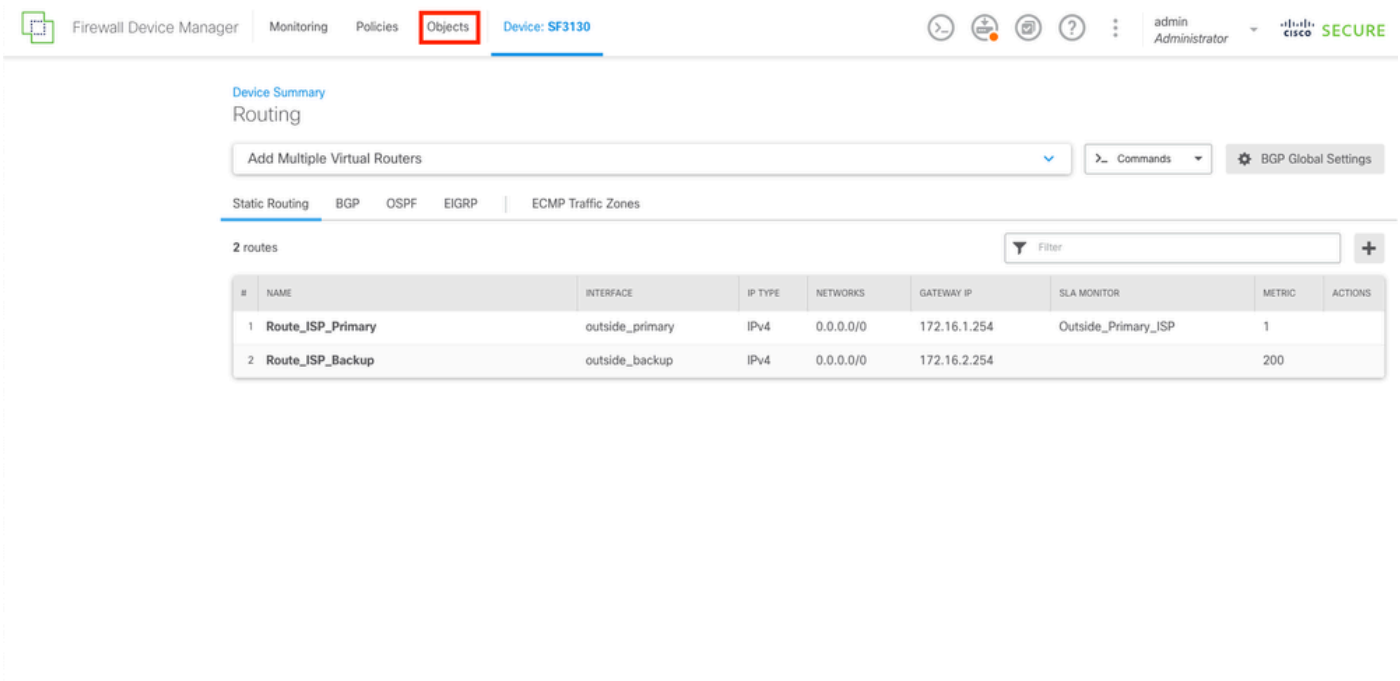
步驟 13.

重複最後一步，為ISP輔助建立預設路由，該路由具有正確的網關和不同的度量。在本例中，它增加到200。



步驟 14.

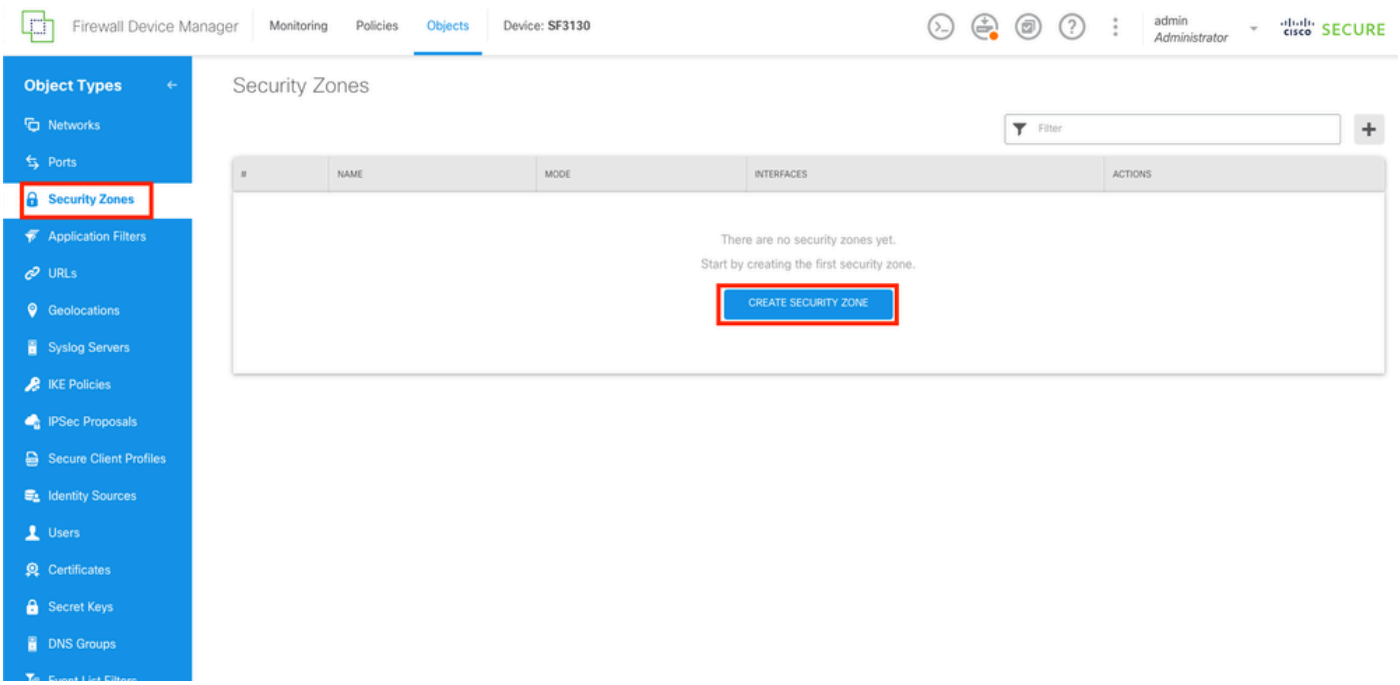
建立兩個靜態路由後，必須建立安全區域。通過選擇頂部的對象按鈕導航到對象部分。



已建立靜態路由

步驟 15.

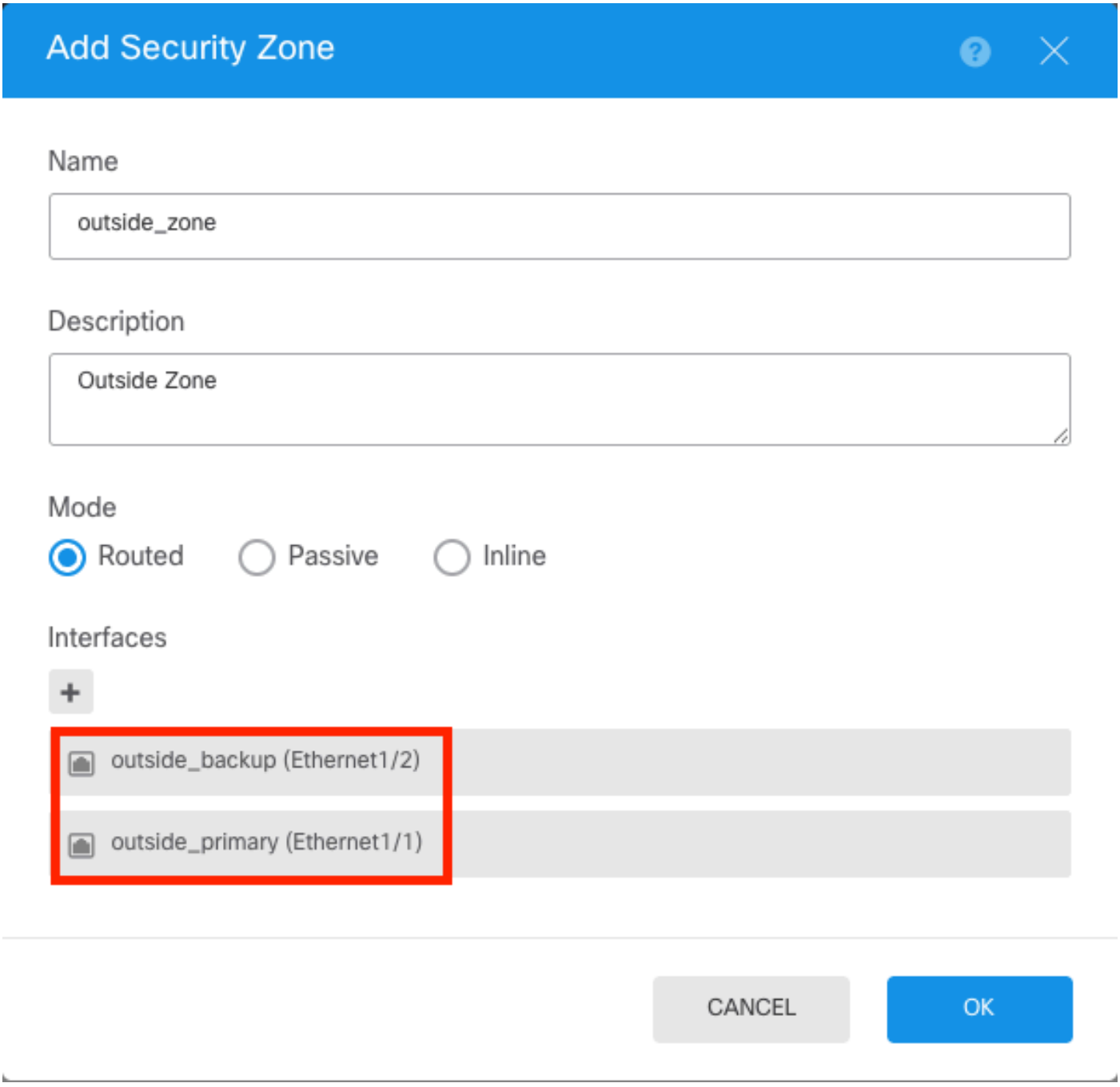
在左側列中選擇Security Zones按鈕，導航到Security Zones部分，然後通過選擇CREATE SECURITY ZONE按鈕建立一個新區域。



安全區域部分

步驟 16.

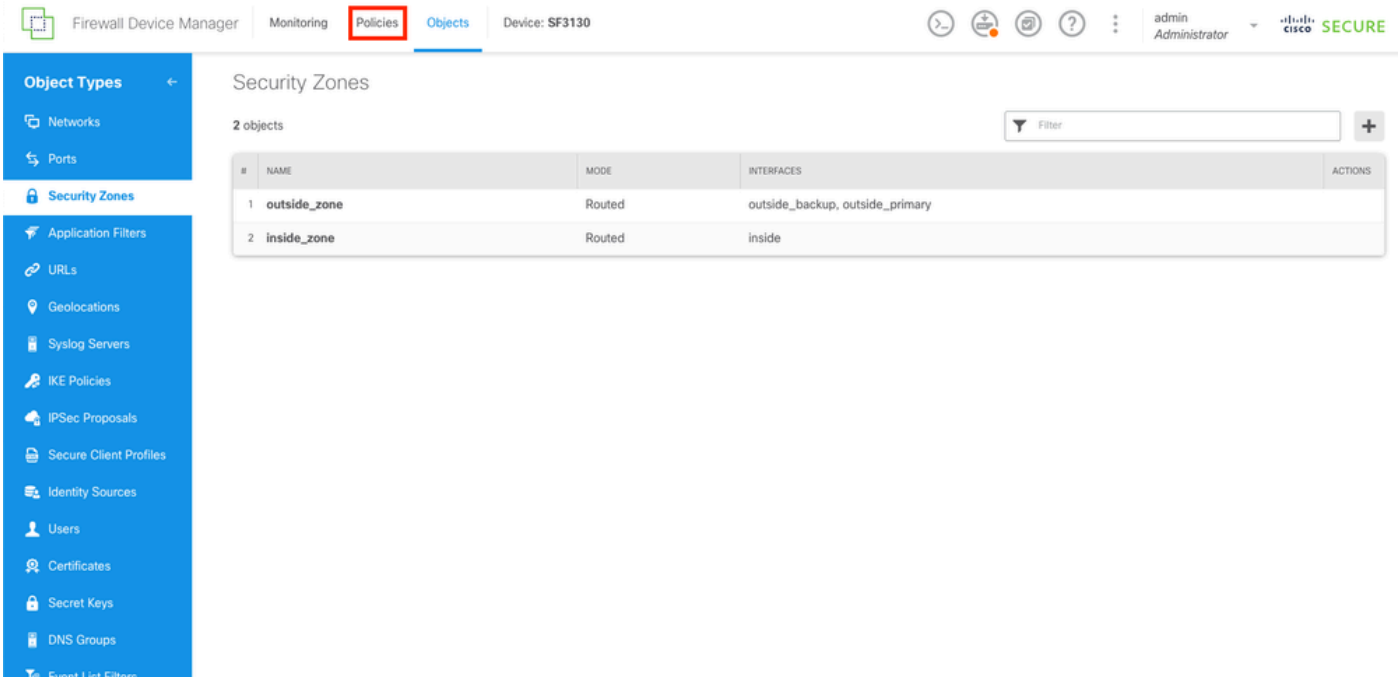
為ISP連線建立兩個外部介面的外部安全區域。



外部安全區域

步驟 17.

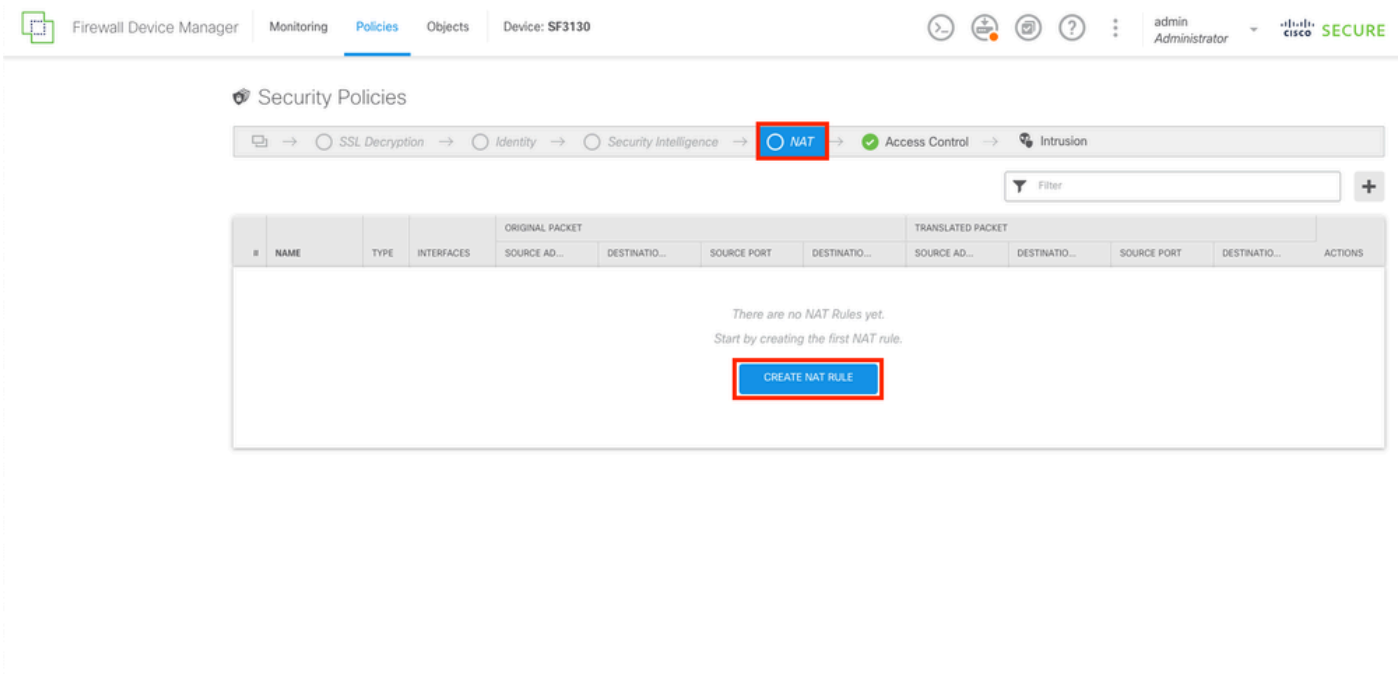
建立安全區域後，必須建立NAT。通過選擇頂部的Policies按鈕導航到Policies部分。



已建立安全區域

步驟 18.

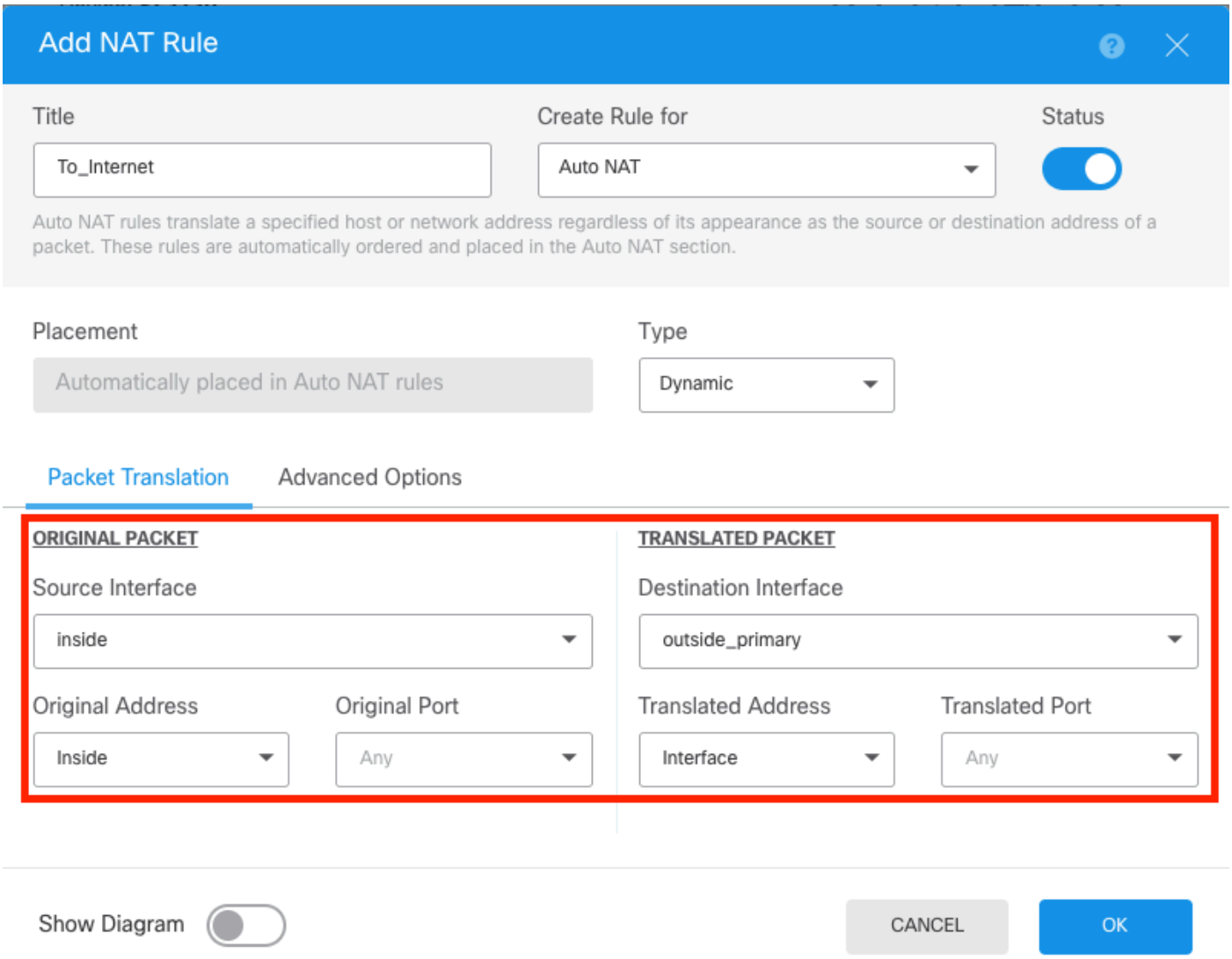
選擇NAT按鈕導航到NAT部分，然後選擇CREATE NAT RULE按鈕建立新規則。



NAT部分

步驟 19.

對於ISP故障切換，配置必須有2條通過外部介面的路由。首先，用於主外部介面與主ISP的連線。

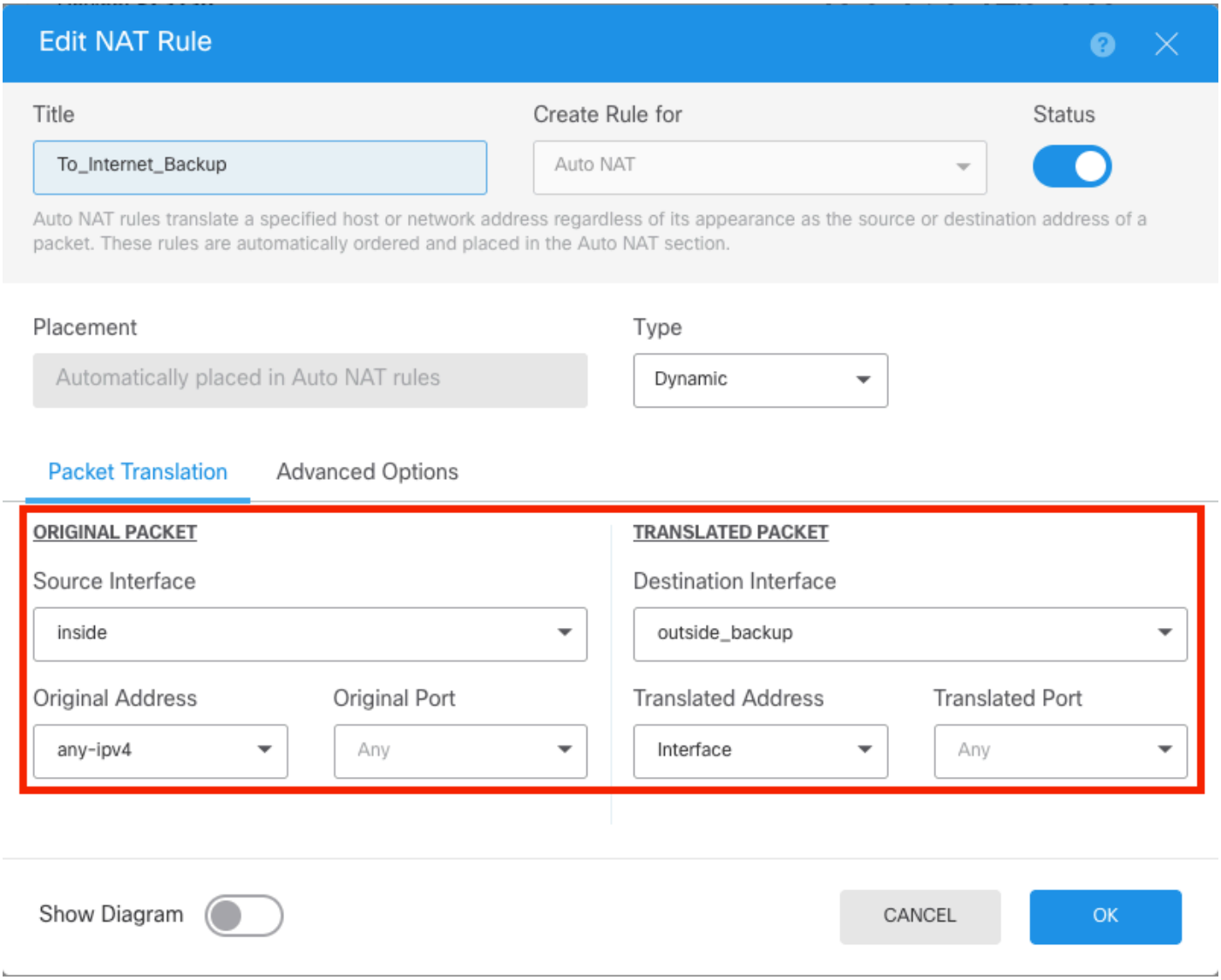


主ISP的NAT

步驟 20.

現在，為輔助ISP連線配置第二個NAT。

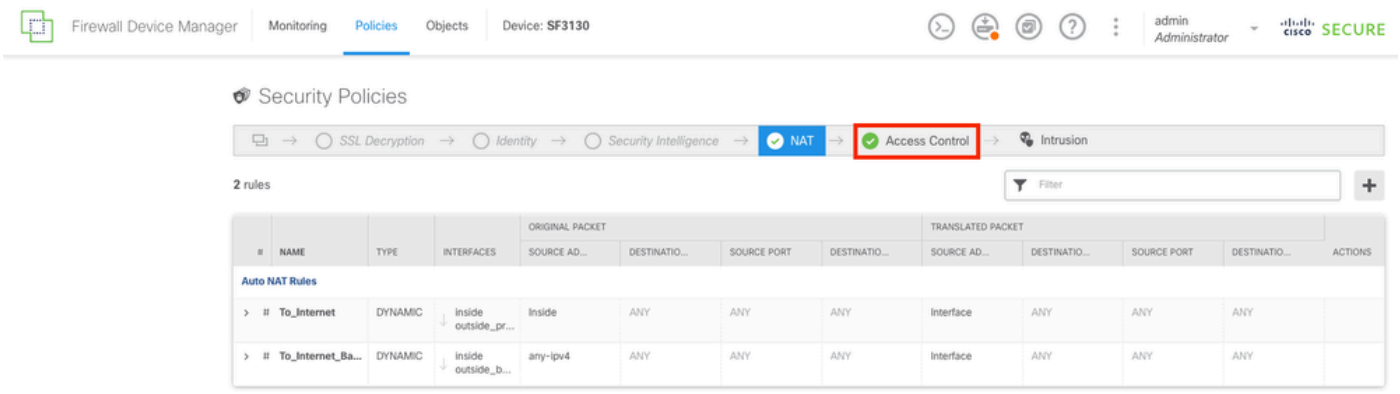
附註：對於原始地址，不能使用同一網路。在本例中，對於輔助ISP，Original Address是object any-ipv4。



輔助ISP的NAT

步驟 21.

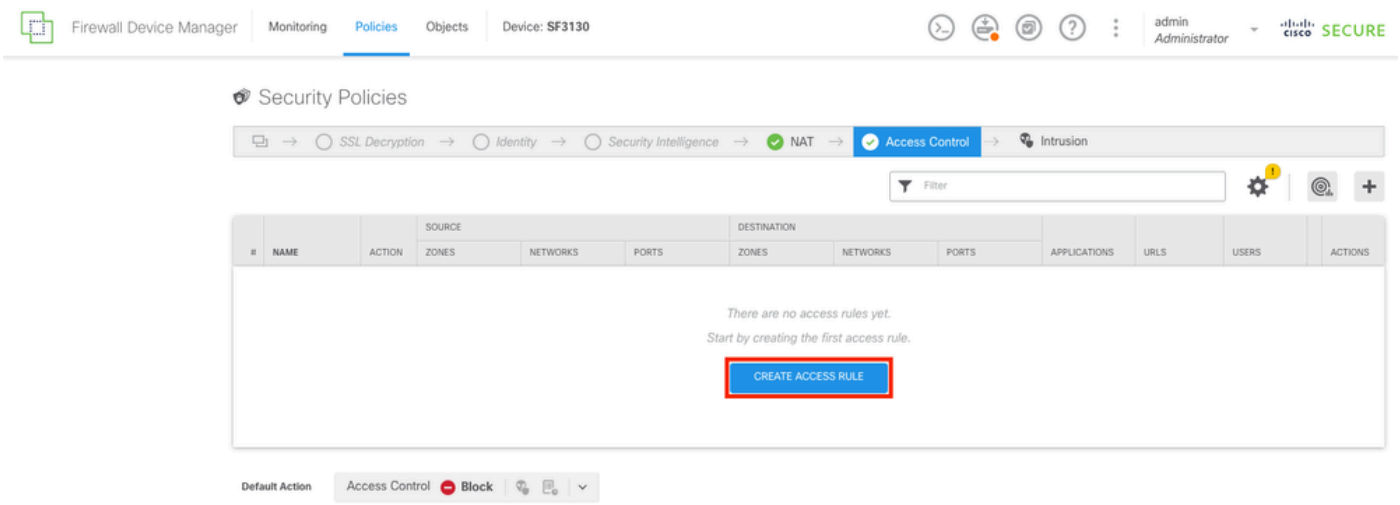
建立兩個NAT規則後，必須建立訪問控制規則以允許出站流量。選擇Access Control按鈕。



已建立NAT規則

步驟 22.

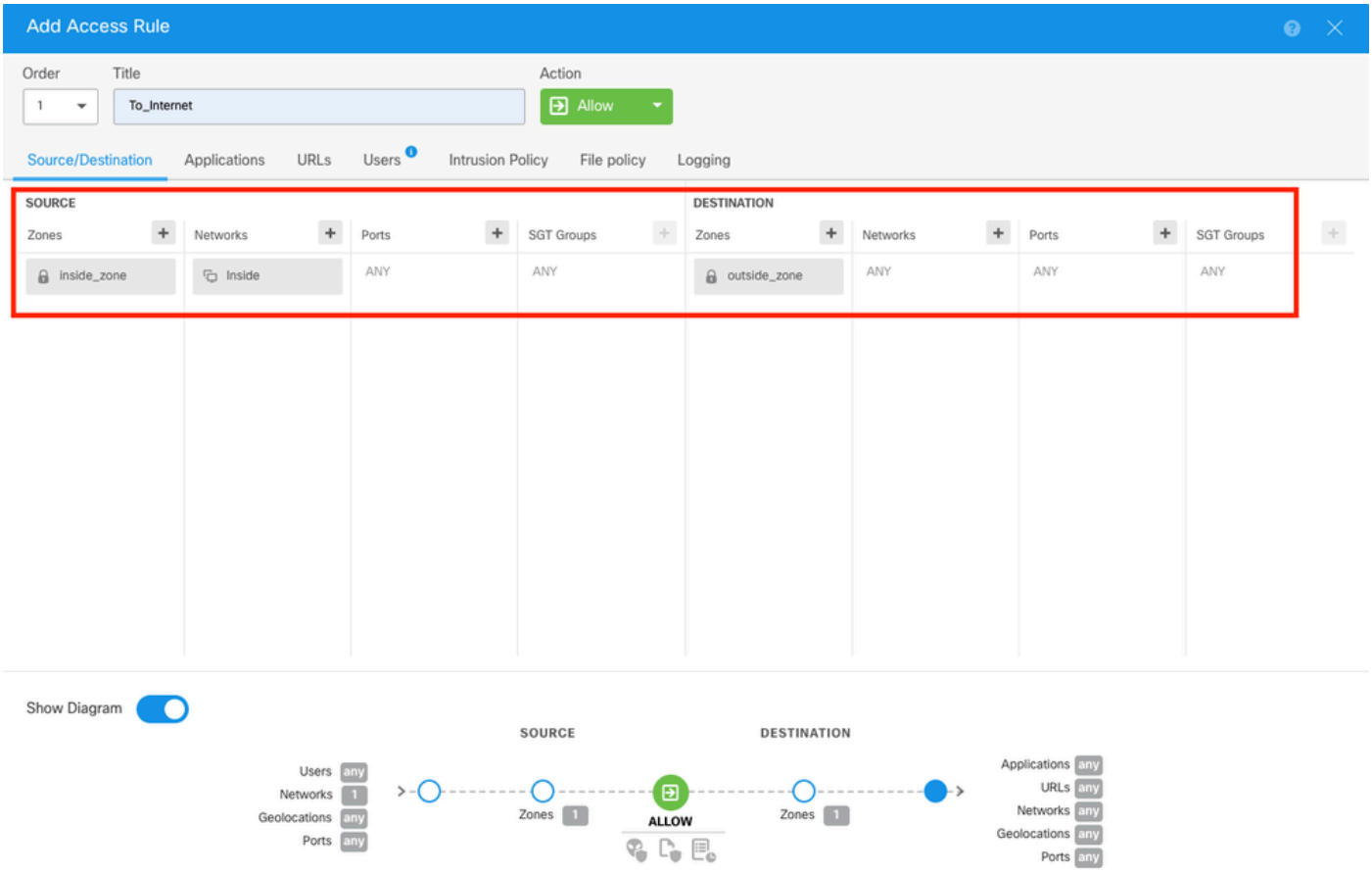
要建立訪問控制規則，請選擇CREATE ACCESS RULE按鈕。



訪問控制部分

步驟 23.

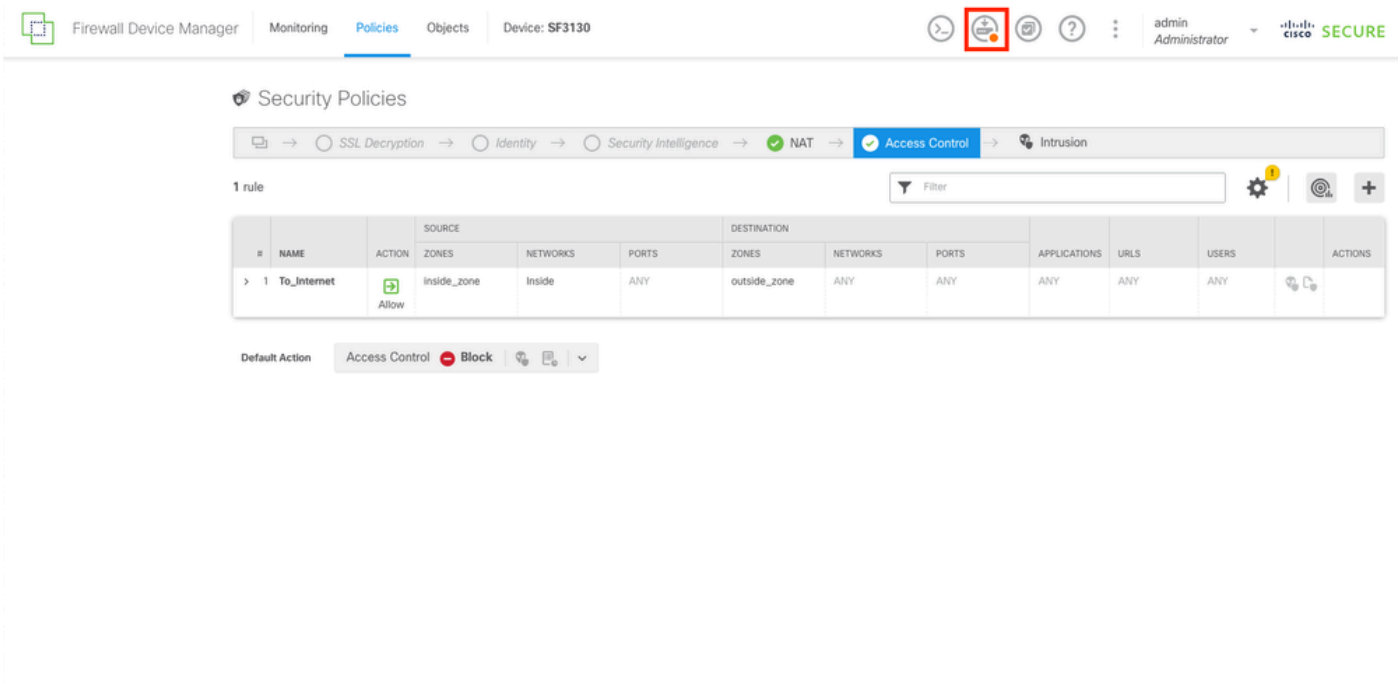
選擇所需的zones和network。



訪問控制規則

步驟 24.

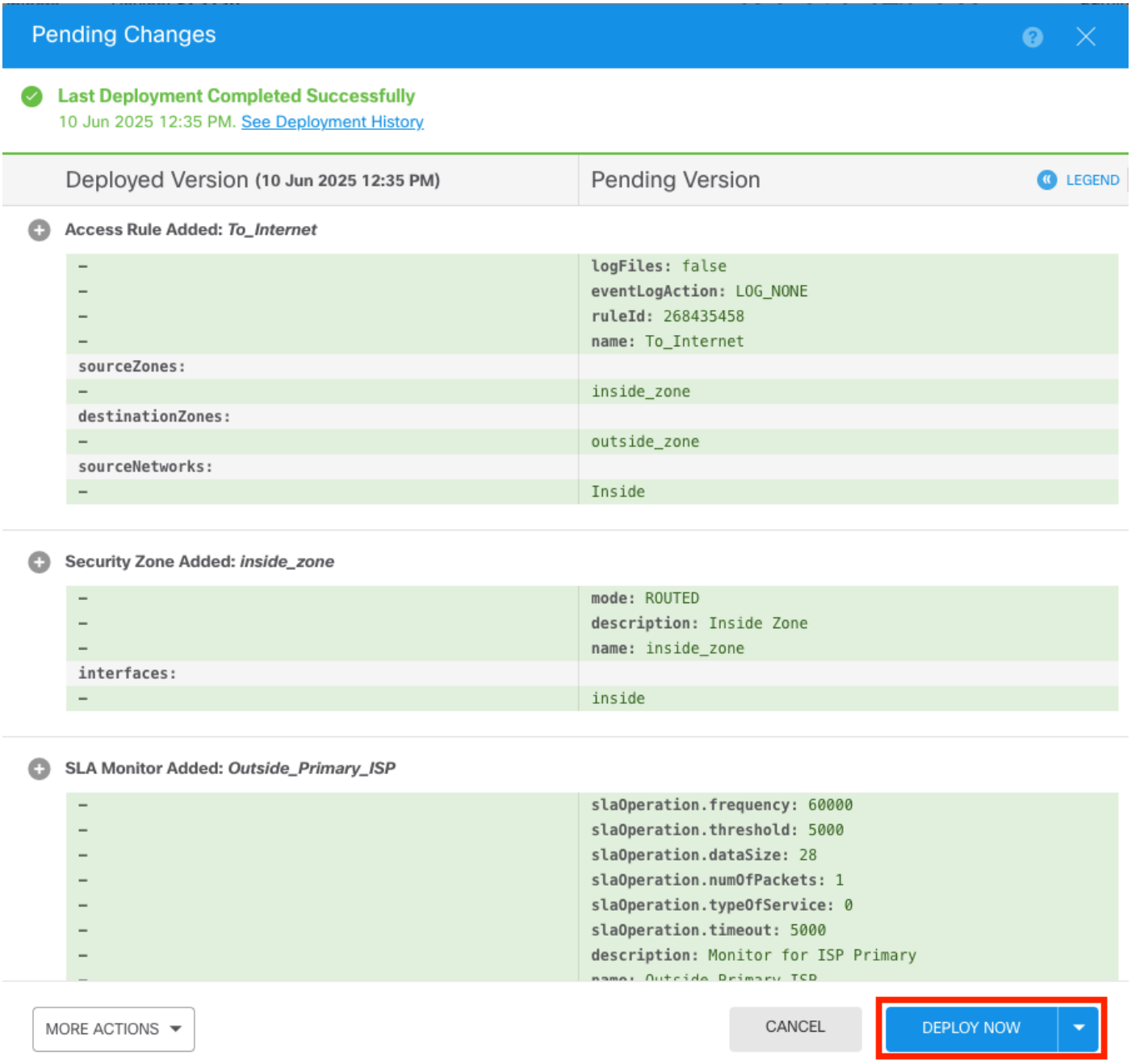
建立訪問控制規則後，通過選擇頂部的Deploy按鈕繼續部署所有更改。



已建立訪問控制規則

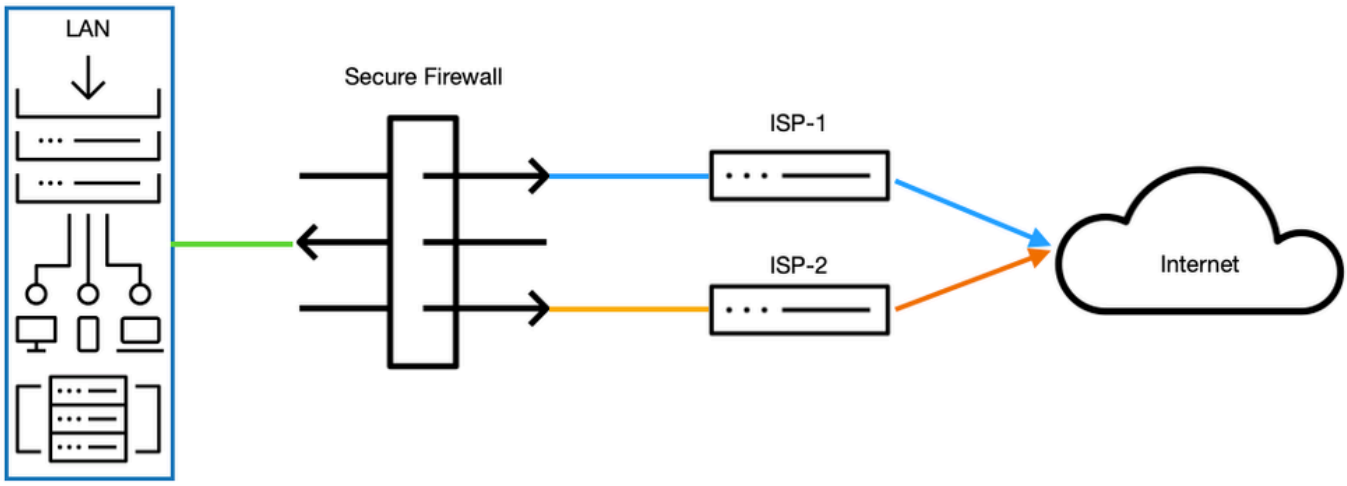
步驟 25.

驗證更改，然後選擇Deploy Now按鈕。



部署驗證

網路圖表



網路圖表

驗證

<#root>

>

system support diagnostic-cli

Attaching to Diagnostic CLI ... Press 'Ctrl+a then d' to detach.
Type help or '?' for a list of available commands.

SF3130#

show ip

System IP Addresses:
Interface Name IP address Subnet mask Method
Ethernet1/1 outside_primary 172.16.1.1 255.255.255.0 manual

------------> THE PRIMARY INTERFACE OF THE ISP IS SET

Ethernet1/2 outside_backup 172.16.2.1 255.255.255.0 manual

------------> THE SECONDARY INTERFACE OF THE ISP IS SET

Ethernet1/3 inside 192.168.1.1 255.255.255.0 manual

SF3130#

show interface ip brief

Interface IP-Address OK? Method Status Protocol
Ethernet1/1 172.16.1.1 YES manual up up

------------------> THE INTERFACE IS UP AND RUNNING

```
Ethernet1/2 172.16.2.1  YES manual   up      up
```

------------------> THE INTERFACE IS UP AND RUNNING

```
Ethernet1/3 192.168.1.1 YES manual   up      up

SF3130#
```

show route

```
Gateway of last resort is 172.16.1.254 to network 0.0.0.0

S* 0.0.0.0 0.0.0.0 [1/0] via 172.16.1.254, outside_primary
```

----> THE DEFAULT ROUTE IS CONNECTED THROUGH THE PRIMARY ISP

```
C  172.16.1.0  255.255.255.0   is directly connected, outside_primary
L  172.16.1.1  255.255.255.255 is directly connected, outside_primary
C  172.16.2.0  255.255.255.0   is directly connected, outside_backup
L  172.16.2.1  255.255.255.255 is directly connected, outside_backup
C  192.168.1.0 255.255.255.0   is directly connected, inside
L  192.168.1.1 255.255.255.255 is directly connected, inside

SF3130#
```

show run route

```
route outside_primary 0.0.0.0 0.0.0.0 172.16.1.254 1 track 1
route outside_backup  0.0.0.0 0.0.0.0 172.16.2.254 200

SF3130#
```

show sla monitor configuration

---> CHECKING THE SLA MONITOR CONFIGURATION

```
SA Agent, Infrastructure Engine-II
Entry number: 539523651
Owner:
Tag:
Type of operation to perform: echo
Target address: 172.16.1.254
Interface: outside_primary
Number of packets: 1
Request size (ARR data portion): 28
Operation timeout (milliseconds): 3000
Type Of Service parameters: 0x0
Verify data: No
Operation frequency (seconds): 3
Next Scheduled Start Time: Start Time already passed
Group Scheduled : FALSE
Life (seconds): Forever
Entry Ageout (seconds): never
Recurring (Starting Everyday): FALSE
Status of entry (SNMP RowStatus): Active
Enhanced History:

SF3130#
```

show sla monitor operational-state

```
Entry number: 739848060
Modification time: 01:24:11.029 UTC Thu Jun 12 2025
Number of Octets Used by this Entry: 1840
Number of operations attempted: 0
Number of operations skipped: 0
Current seconds left in Life: Forever
Operational state of entry: Pending
Last time this entry was reset: Never
Connection loss occurred: FALSE
Timeout occurred: FALSE
```

---------------------------> THE ISP PRIMARY IS IN A HEALTHY STATE

```
Over thresholds occurred: FALSE
Latest RTT (milliseconds) : Unknown
Latest operation return code: Unknown
Latest operation start time: Unknown

AFTERARGBSETHBNDGFSHNDFGSDBFB

SF3130#
```

show interface ip brief

```
Interface   IP-Address  OK? Method Status Protocol
Ethernet1/1 172.16.1.1  YES manual  down   down
```

------------------> THE PRIMARY ISP IS DOWN

```
Ethernet1/2 172.16.2.1  YES manual   up     up
Ethernet1/3 192.168.1.1 YES manual   up     up

SF3130#
```

show route

```
Gateway of last resort is 172.16.2.254 to network 0.0.0.0

S* 0.0.0.0 0.0.0.0 [200/0] via 172.16.2.254, outside_backup
```

---------> AFTER THE ISP PRIMARY FAILS, INSTANTLY THE ISP BACKUP IS FAILOVER AND IS INSTALL IN THE ROUTI

```
C  172.16.2.0 255.255.255.0    is directly connected, outside_backup
L  172.16.2.1 255.255.255.255  is directly connected, outside_backup
C  192.168.1.0 255.255.255.0   is directly connected, inside
L  192.168.1.1 255.255.255.255 is directly connected, inside

SF3130#
```

show sla monitor operational-state

```
Entry number: 739848060
Modification time: 01:24:11.140 UTC Thu Jun 12 2025
Number of Octets Used by this Entry: 1840
Number of operations attempted: 0
Number of operations skipped: 0
Current seconds left in Life: Forever
```

```
Operational state of entry: Pending
Last time this entry was reset: Never
Connection loss occurred: FALSE
Timeout occurred: TRUE
```

----------> AFTER THE DOWNTIME OF THE PRIMARY ISP THE TIMEOUT IS FLAGGED

```
Over thresholds occurred: FALSE
Latest RTT (milliseconds) : Unknown
Latest operation return code: Unknown
Latest operation start time: Unknown

SF3130#
```

show route

```
Gateway of last resort is 172.16.1.254 to network 0.0.0.0

S* 0.0.0.0 0.0.0.0 [1/0] via 172.16.1.254, outside_primary
```

----------> AFTER A FEW SECONDS ONCE THE PRIMARY INTERFACE IS BACK THE DEFAULT ROUTE INSTALLS AGAIN IN

```
C 172.16.1.0 255.255.255.0    is directly connected, outside_primary
L 172.16.1.1 255.255.255.255  is directly connected, outside_primary
C 172.16.2.0 255.255.255.0    is directly connected, outside_backup
L 172.16.2.1 255.255.255.255  is directly connected, outside_backup
C 192.168.1.0 255.255.255.0   is directly connected, inside
L 192.168.1.1 255.255.255.255 is directly connected, inside
```

關於此翻譯

思科已使用電腦和人工技術翻譯本文件，讓全世界的使用者能夠以自己的語言理解支援內容。請注意，即使是最佳機器翻譯，也不如專業譯者翻譯的內容準確。Cisco Systems, Inc. 對這些翻譯的準確度概不負責，並建議一律查看原始英文文件（提供連結）。