使用FDM在FTD上配置双ISP

目录

简介

本文档介绍如何使用安全防火墙系列的防火墙设备管理器(FDM)配置双Internet服务提供商(ISP)故障切换。

先决条件

要求

Cisco 建议您了解以下主题：

- 基本路由
- Firewall Device Manager控制面板知识
- 至少有两个Internet服务提供商连接到安全防火墙。

使用的组件

本文档中的信息基于以下软件和硬件版本：

·运行7.7.X版本或更高版本的Cisco Secure Firewall。

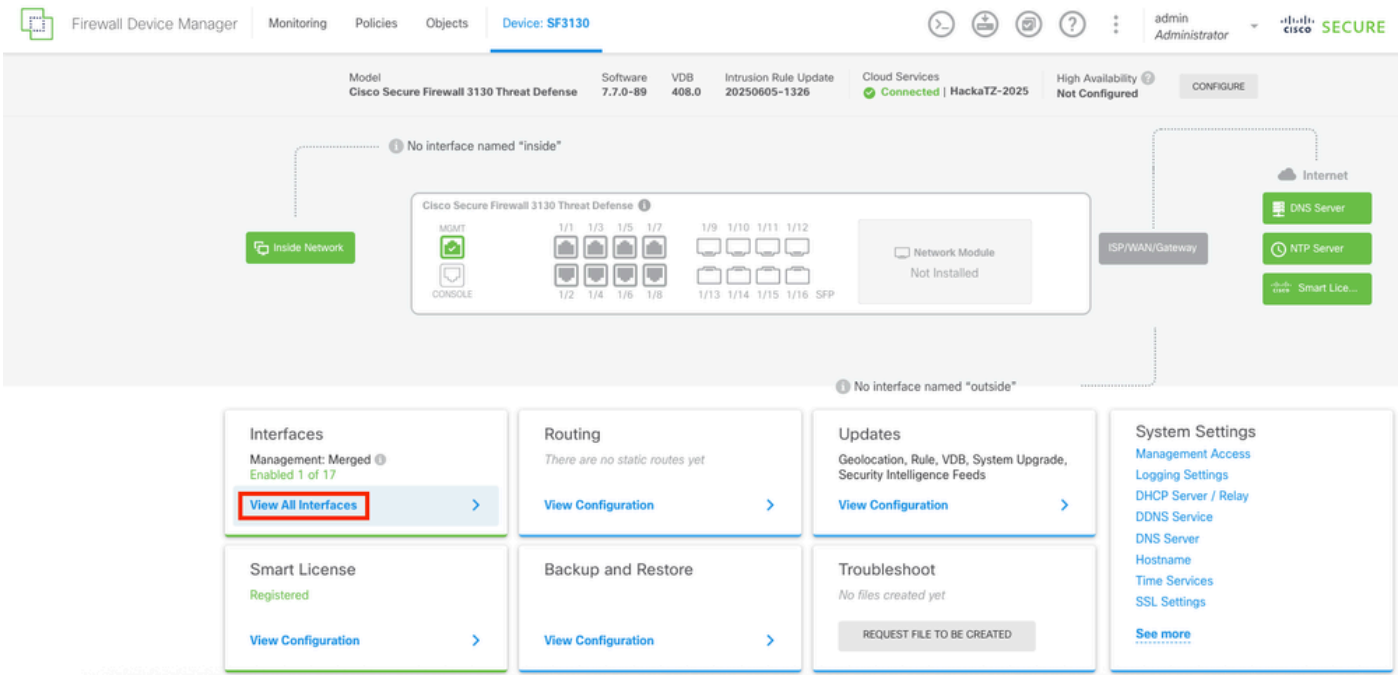
· Secure Firewall 3130（7.7.0版本）。

本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原始（默认）配置。如果您的网络处于活动状态，请确保您了解所有命令的潜在影响。

配置

步骤1:

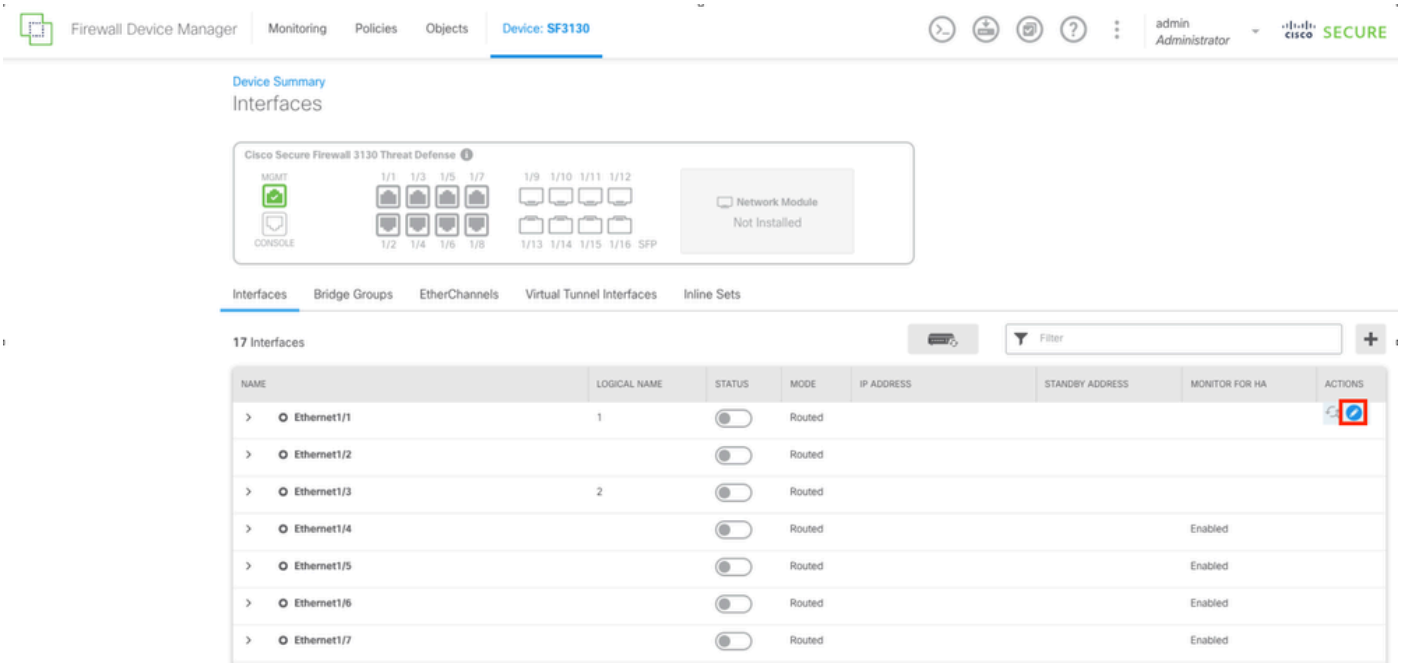
在安全防火墙上登录FDM，然后选择View All Interfaces按钮导航到interfaces部分。



FDM主仪表板

Step 2.

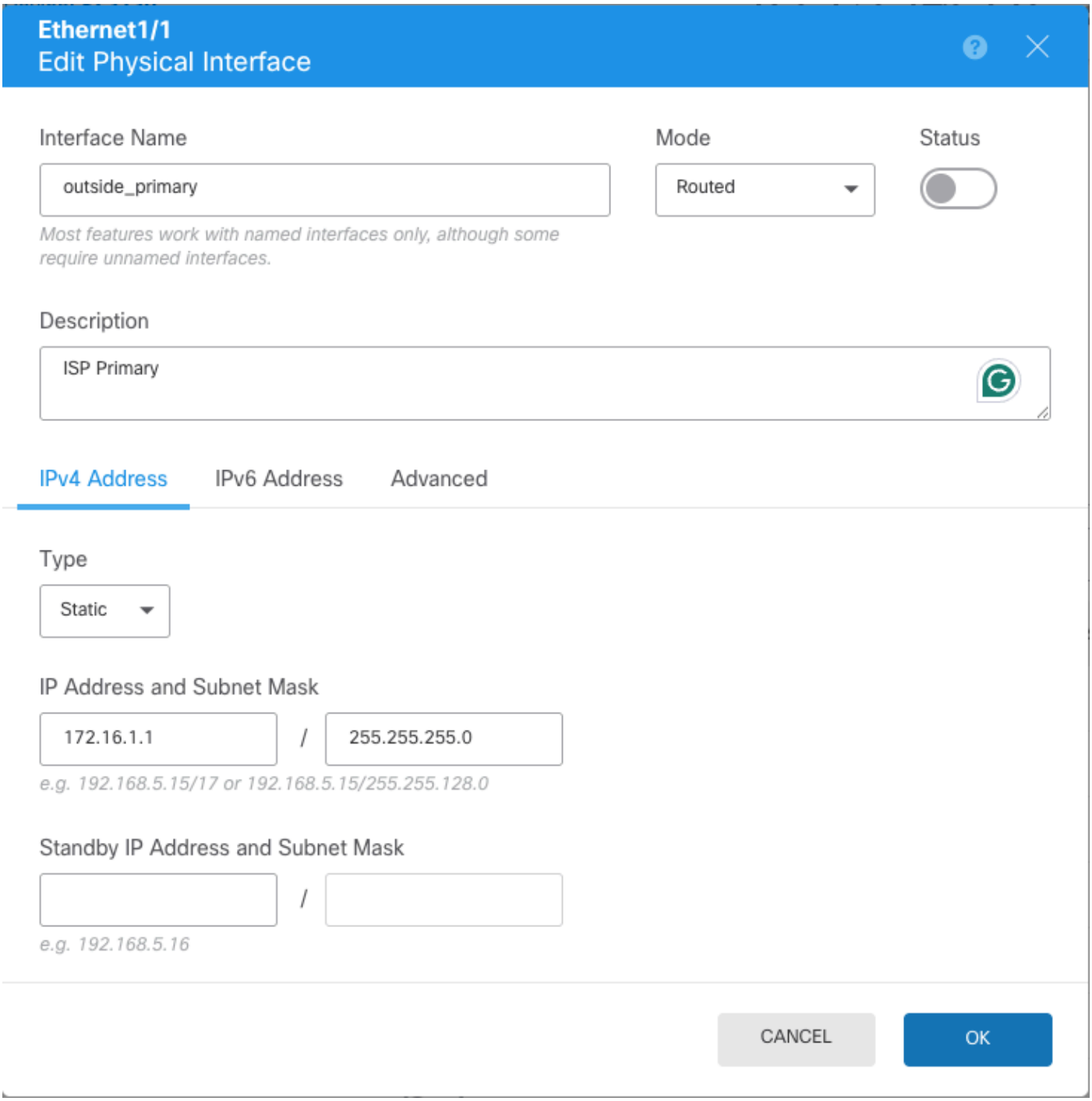
要配置主ISP连接的接口，首先选择所需的接口。选择相应的interface按钮以继续。在本示例中，使用的接口是Ethernet1/1。



Interfaces选项卡

第 3 步：

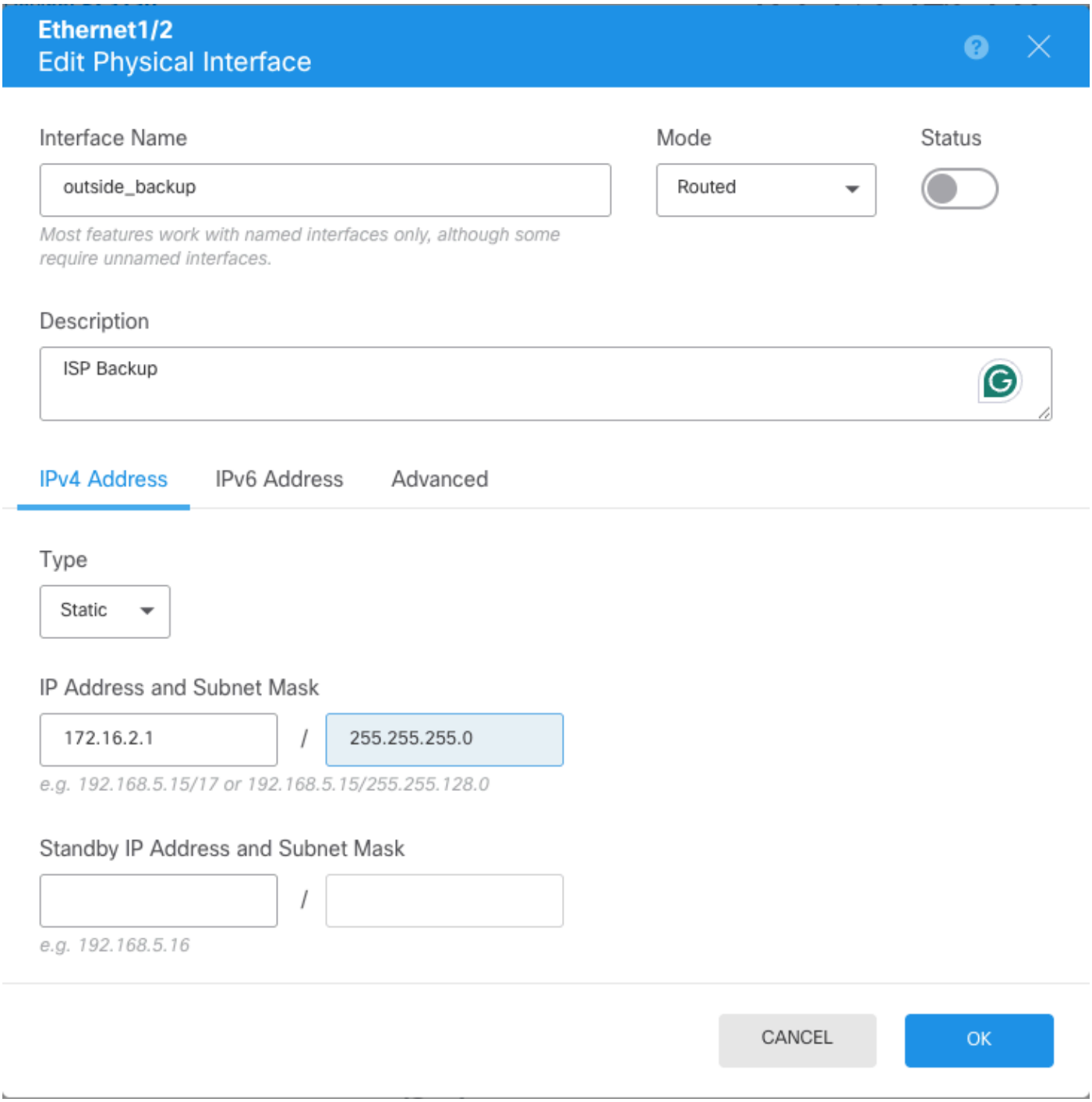
使用适合您的主ISP连接的正确参数配置接口。在本示例中，接口为outside_primary。



主ISP接口的配置

第 4 步：

对辅助ISP接口重复相同的过程。在本示例中，使用接口Ethernet1/2。

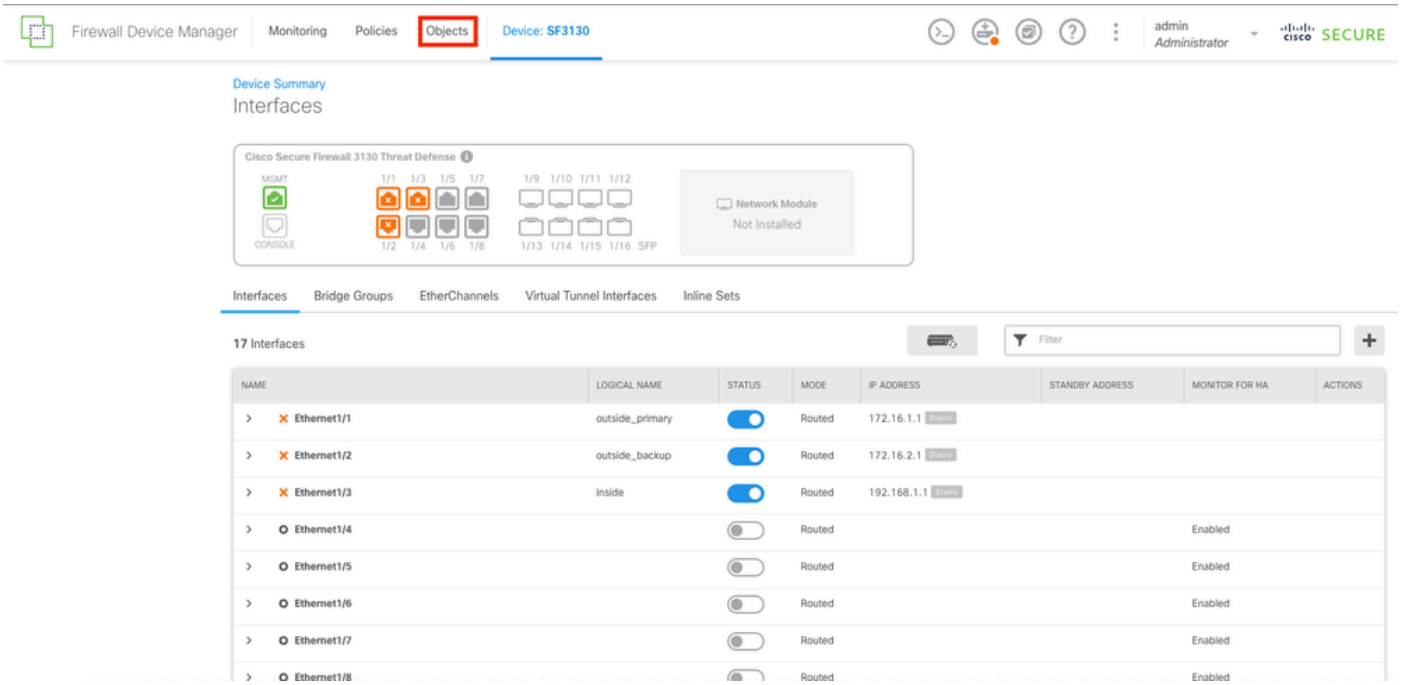


配置辅助ISP接口

第 5 步：

为ISP配置两个接口后，下一步是为主接口设置SLA监控器。

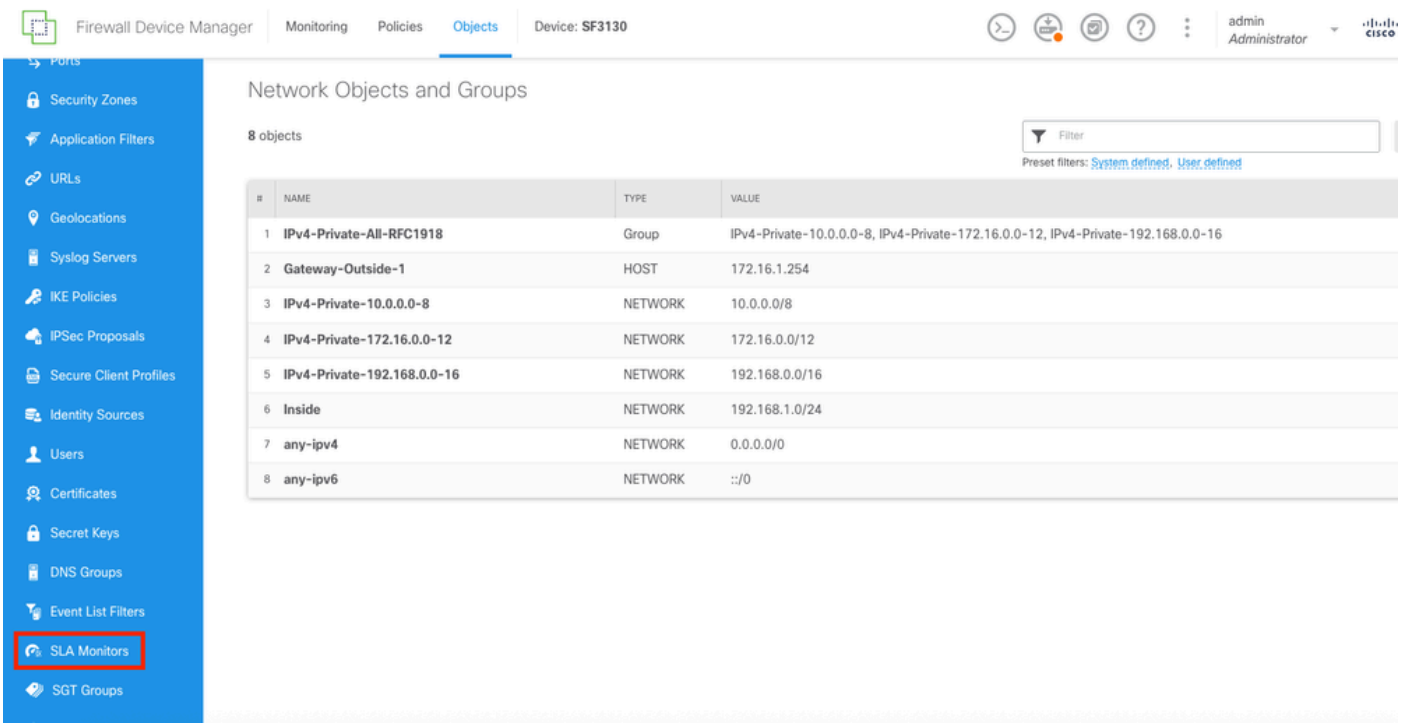
通过选择位于菜单顶部的对象按钮导航到对象部分。



配置的接口

第六步：

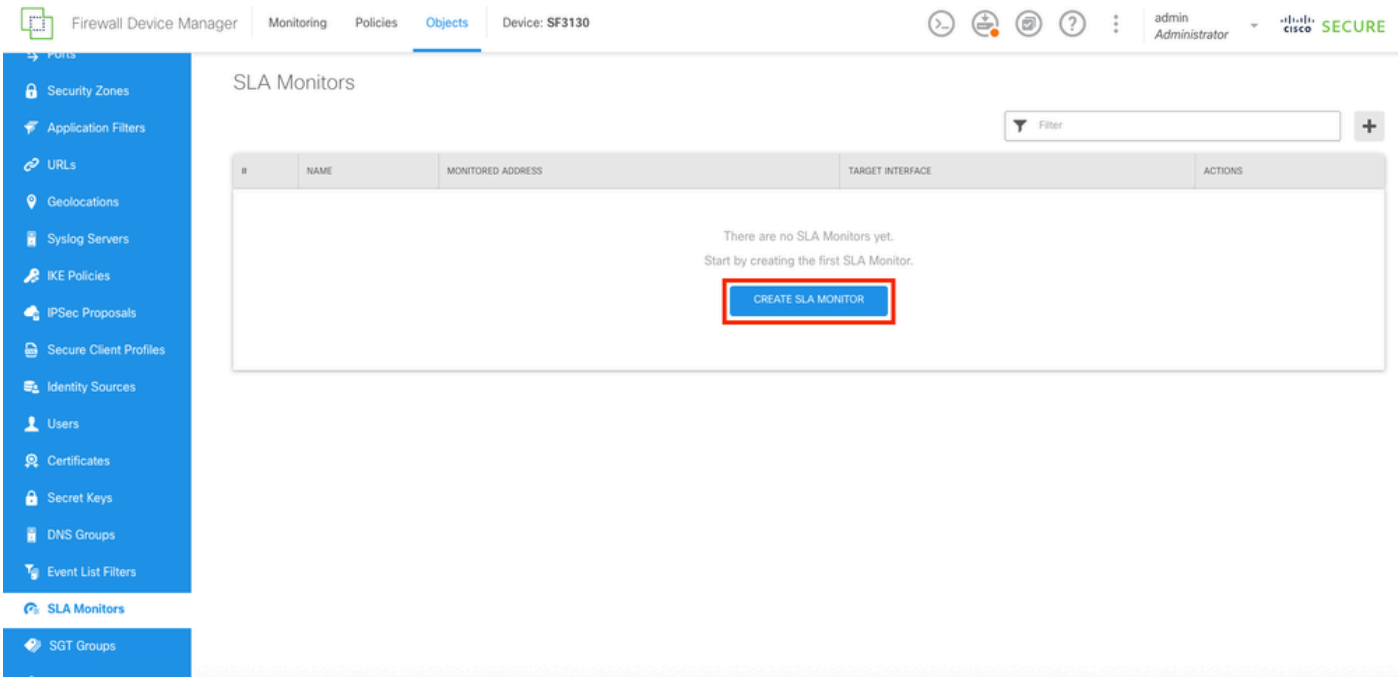
在左侧列中选择SLA Monitors按钮。



Objects屏幕

第 7 步：

通过选择Create SLA Monitor按钮创建新的SLA监控器。



SLA Monitor部分

步骤 8

配置主ISP连接的参数。

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

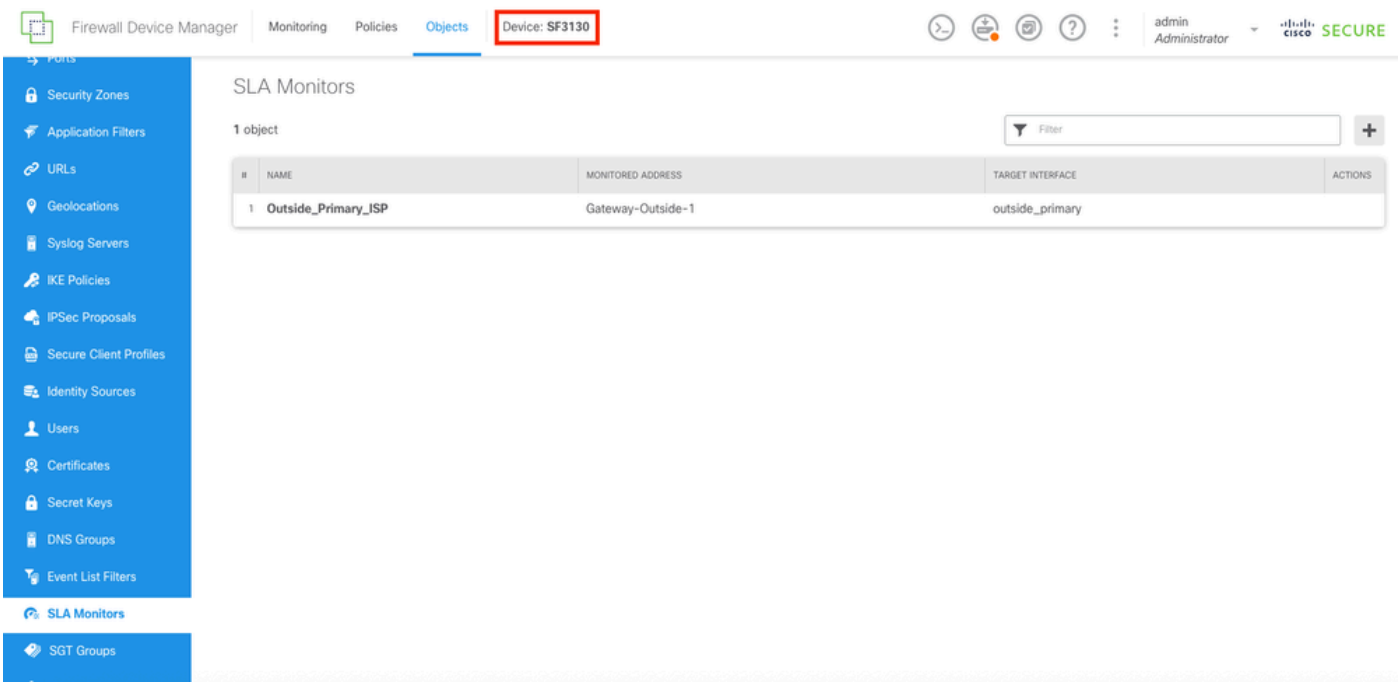
0 - 16384

CANCEL OK

SLA对象创建

步骤 9

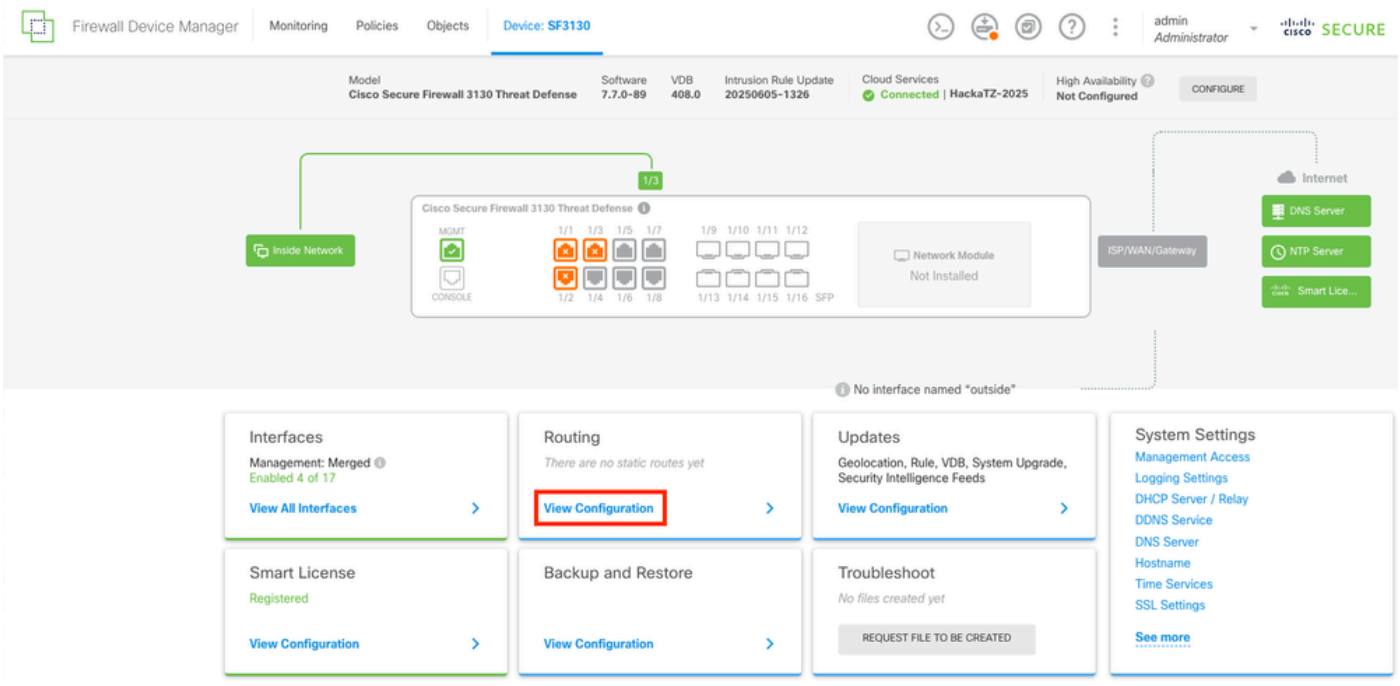
创建对象后，必须创建接口的静态路由。选择Device(设备)按钮导航到主控制面板。



已创建SLA监控

步骤 10

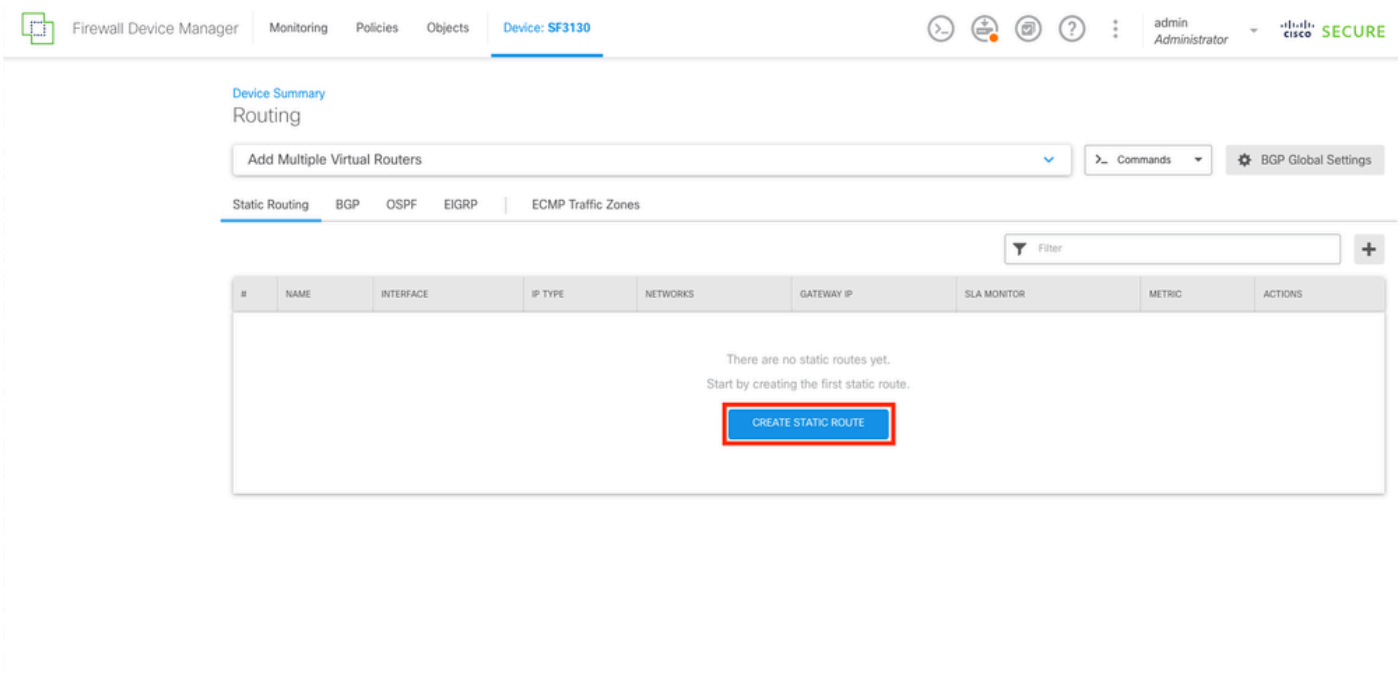
选择Routing Panel中的View Configuration，导航到Routing Section。



主控制面板

步骤 11

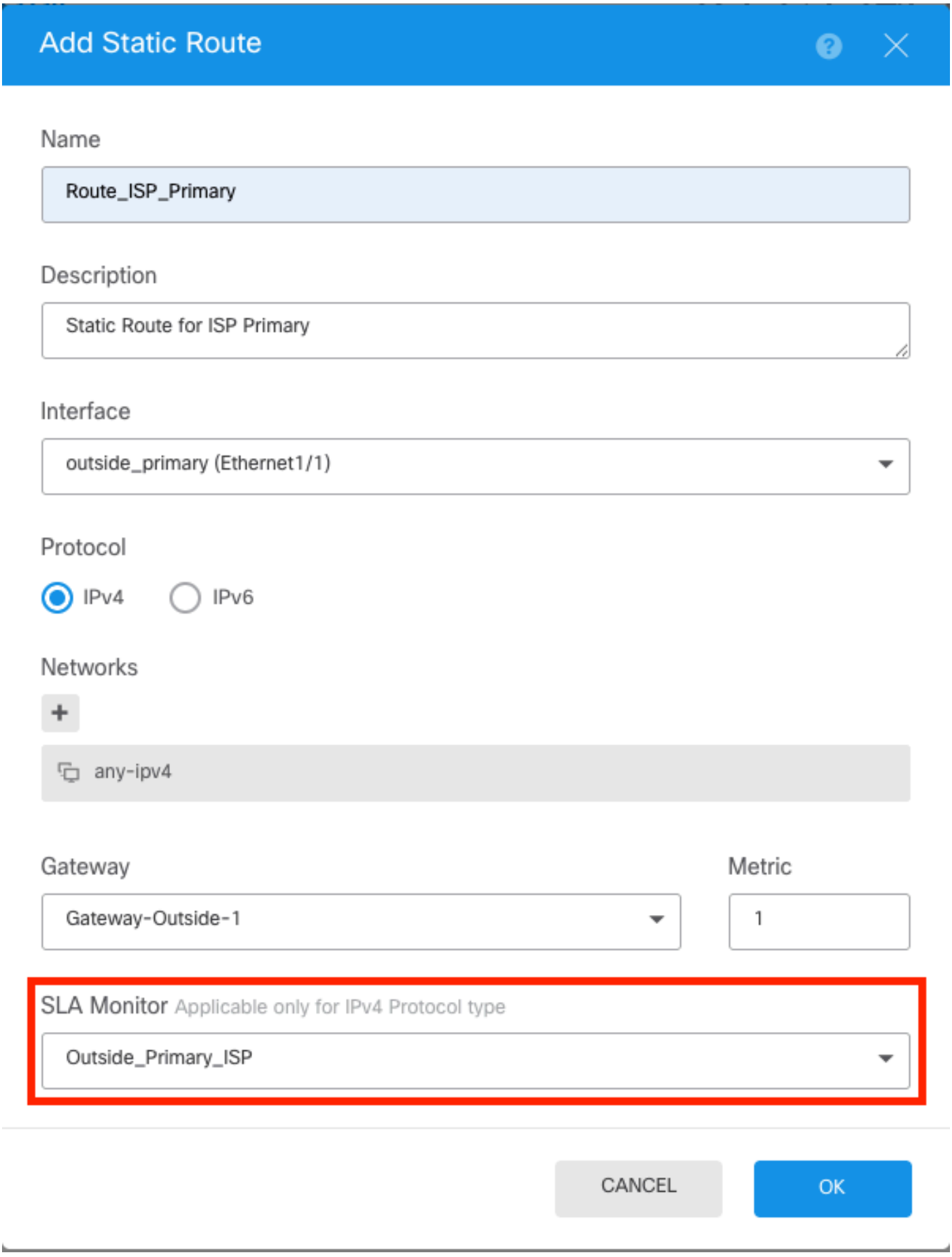
在Static Routing（静态路由）选项卡上，为两个ISP创建2条默认静态路由。要创建新的静态路由，请选择CREATE STATIC ROUTE按钮。



Static Routing部分

步骤 12

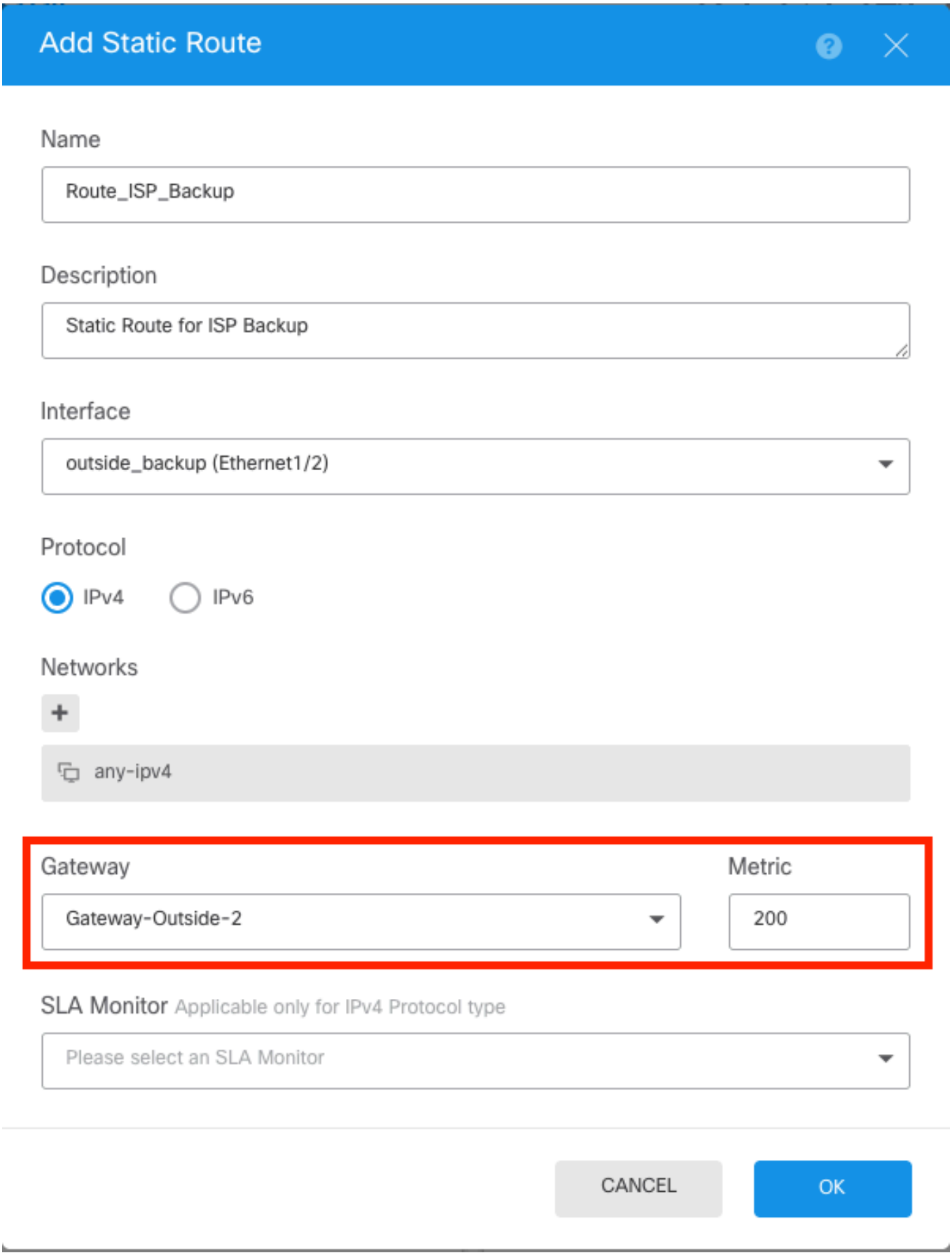
首先，为主ISP创建静态路由。最后，添加在上一步中创建的SLA监控器对象。



主ISP的静态路由

步骤 13

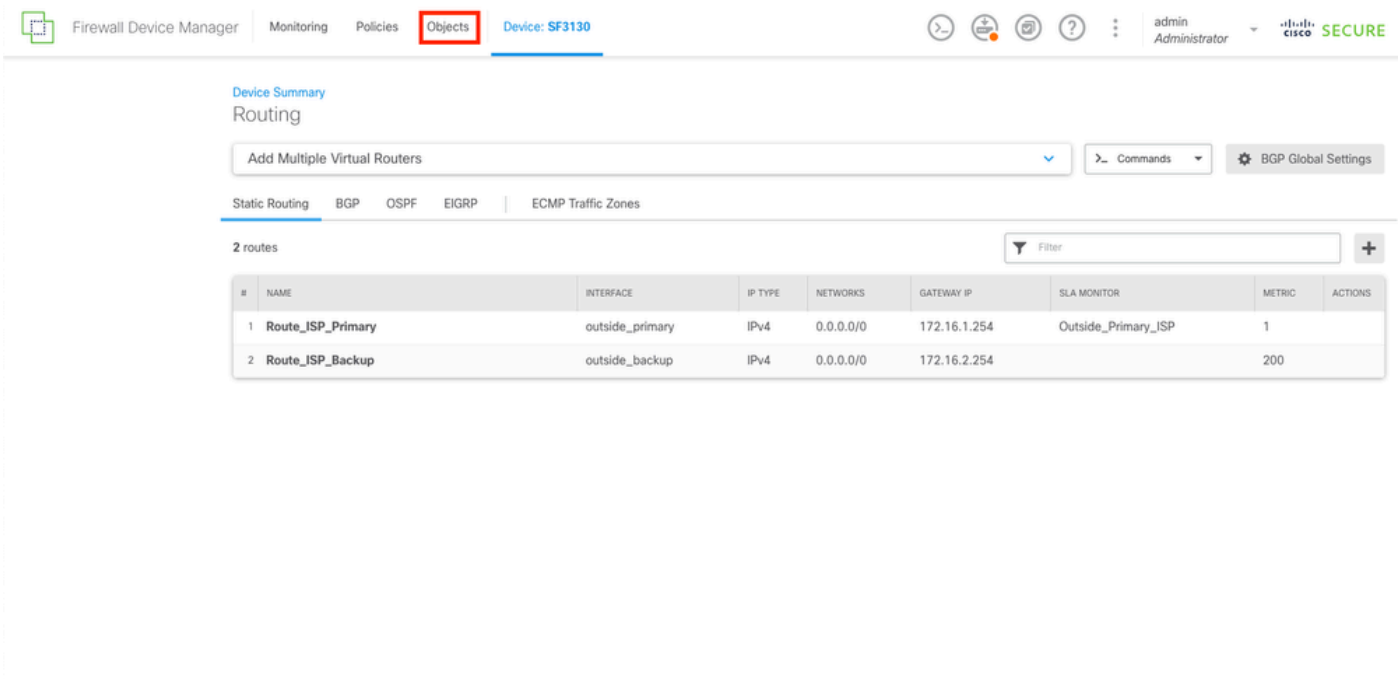
重复最后一步，为ISP辅助创建一条默认路由，该路由具有适当的网关和不同的度量。在本例中，它增加到200。



辅助ISP的静态路由

步骤 14

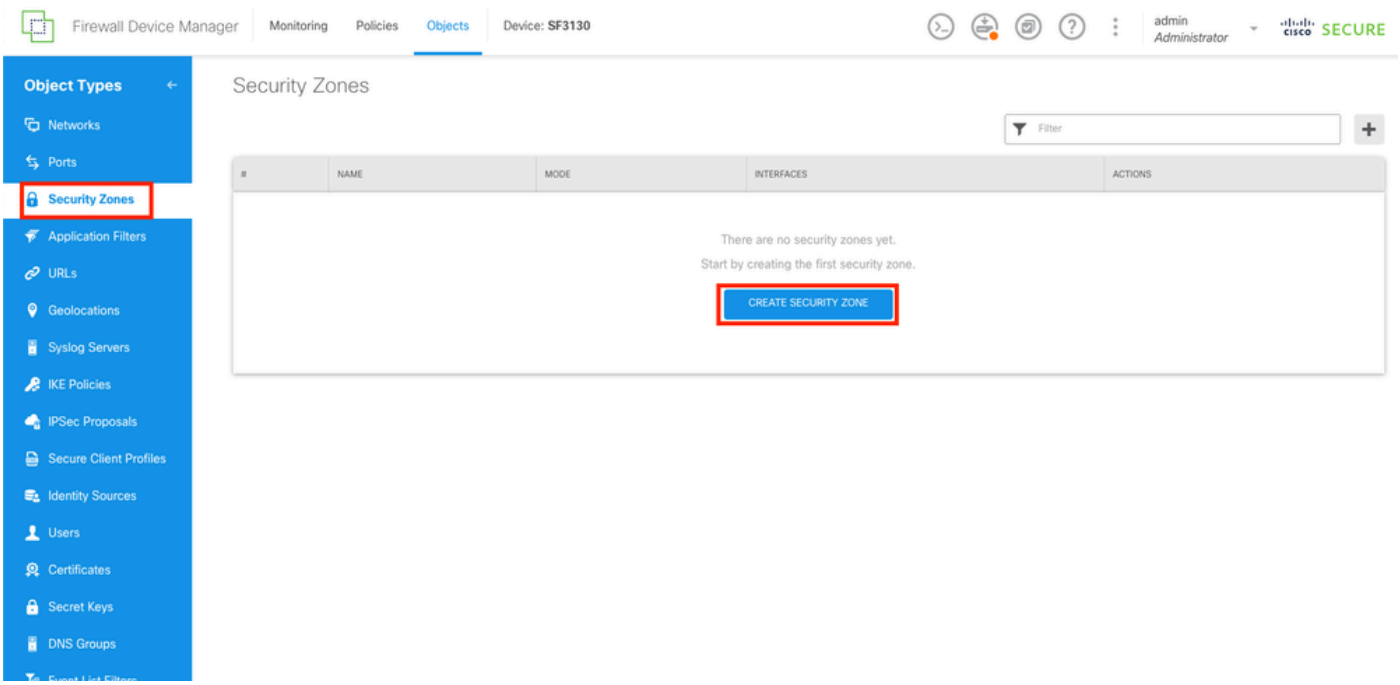
创建两个静态路由后，必须创建安全区域。通过选择顶部的对象按钮导航到对象部分。



创建的静态路由

步骤 15

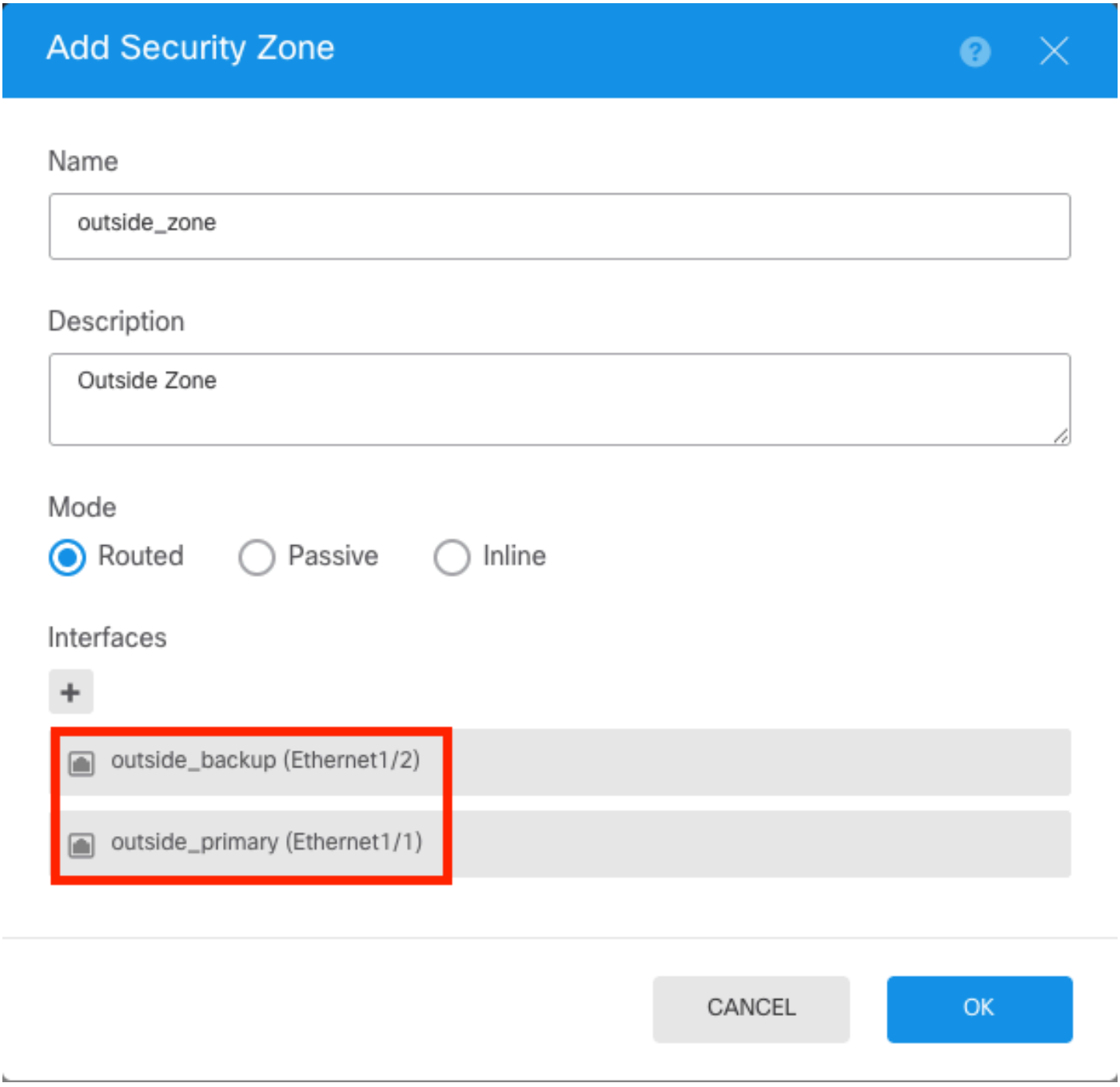
在Security Zones按钮的左列中选择Security Zones按钮，导航到Security Zones部分，然后通过选择CREATE SECURITY ZONE按钮创建一个新区域。



Security Zones部分

步骤 16

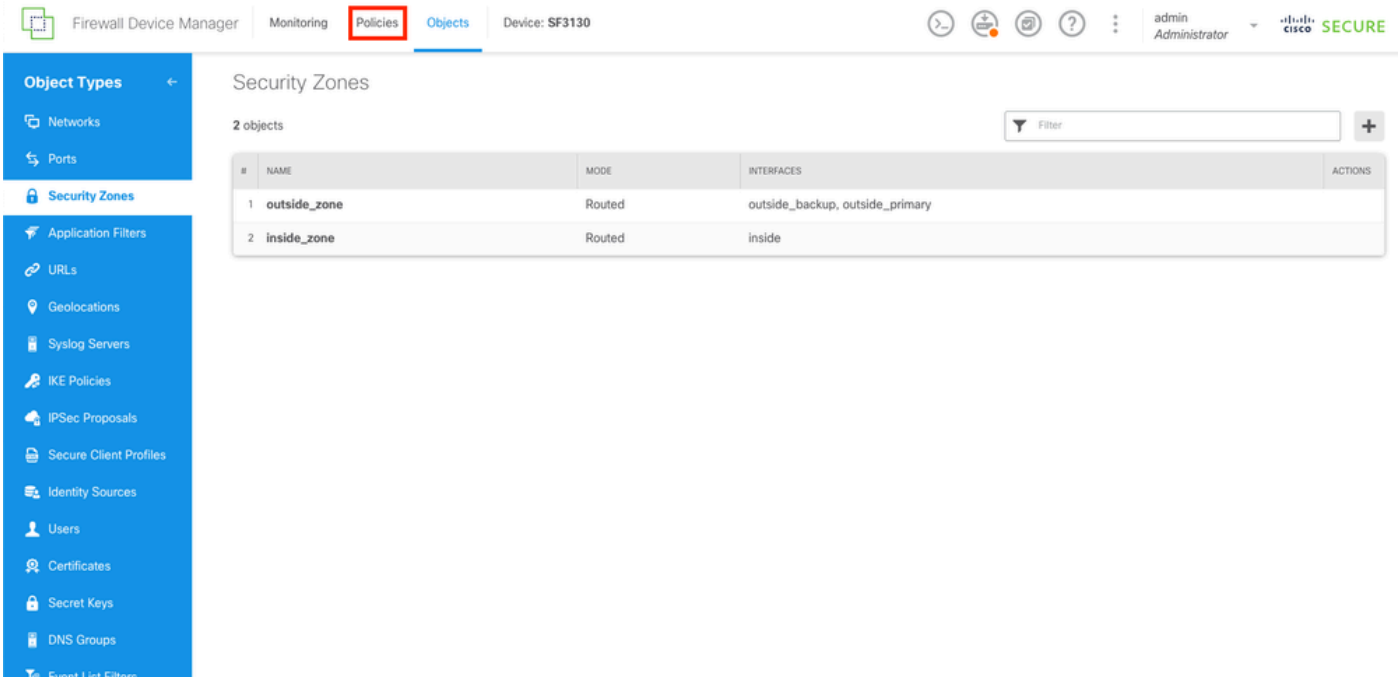
为ISP连接创建Outside Security Zone和两个外部接口。



外部安全区域

步骤 17

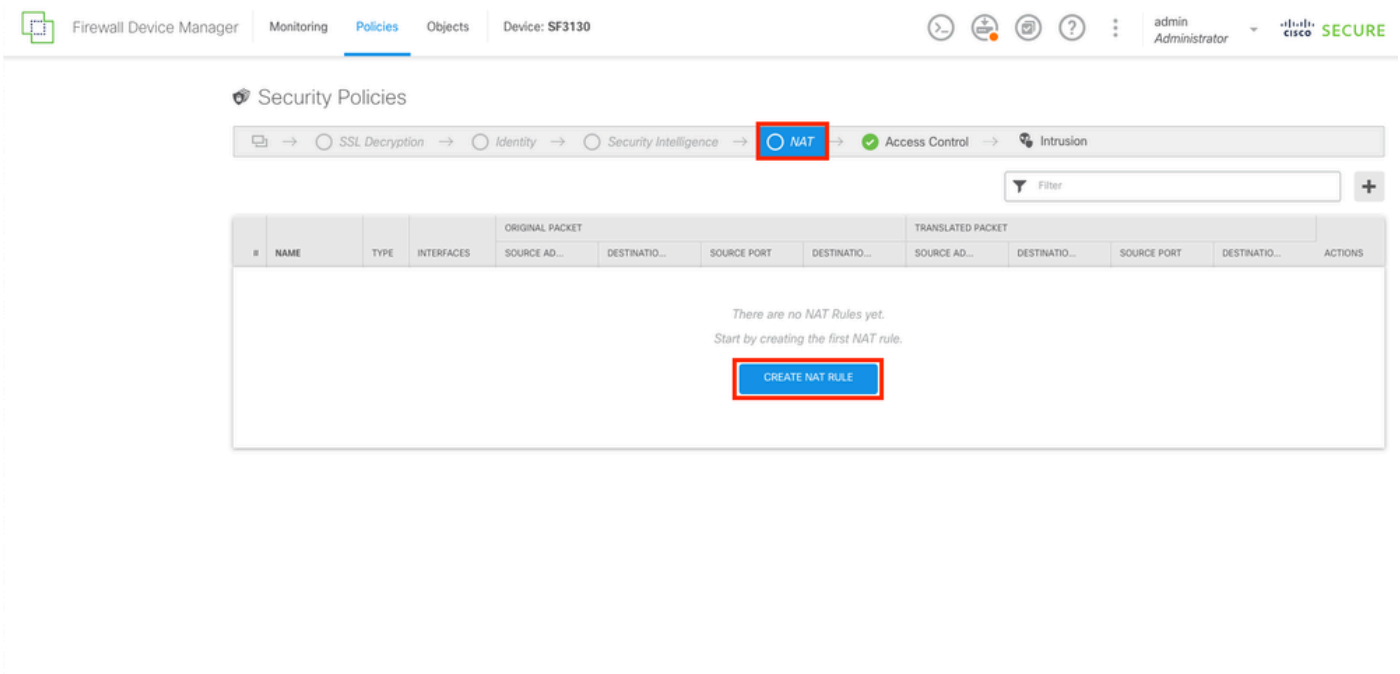
创建安全区域后，必须创建NAT。选择顶部的Policies按钮导航到Policies部分。



已创建安全区域

第 18 步：

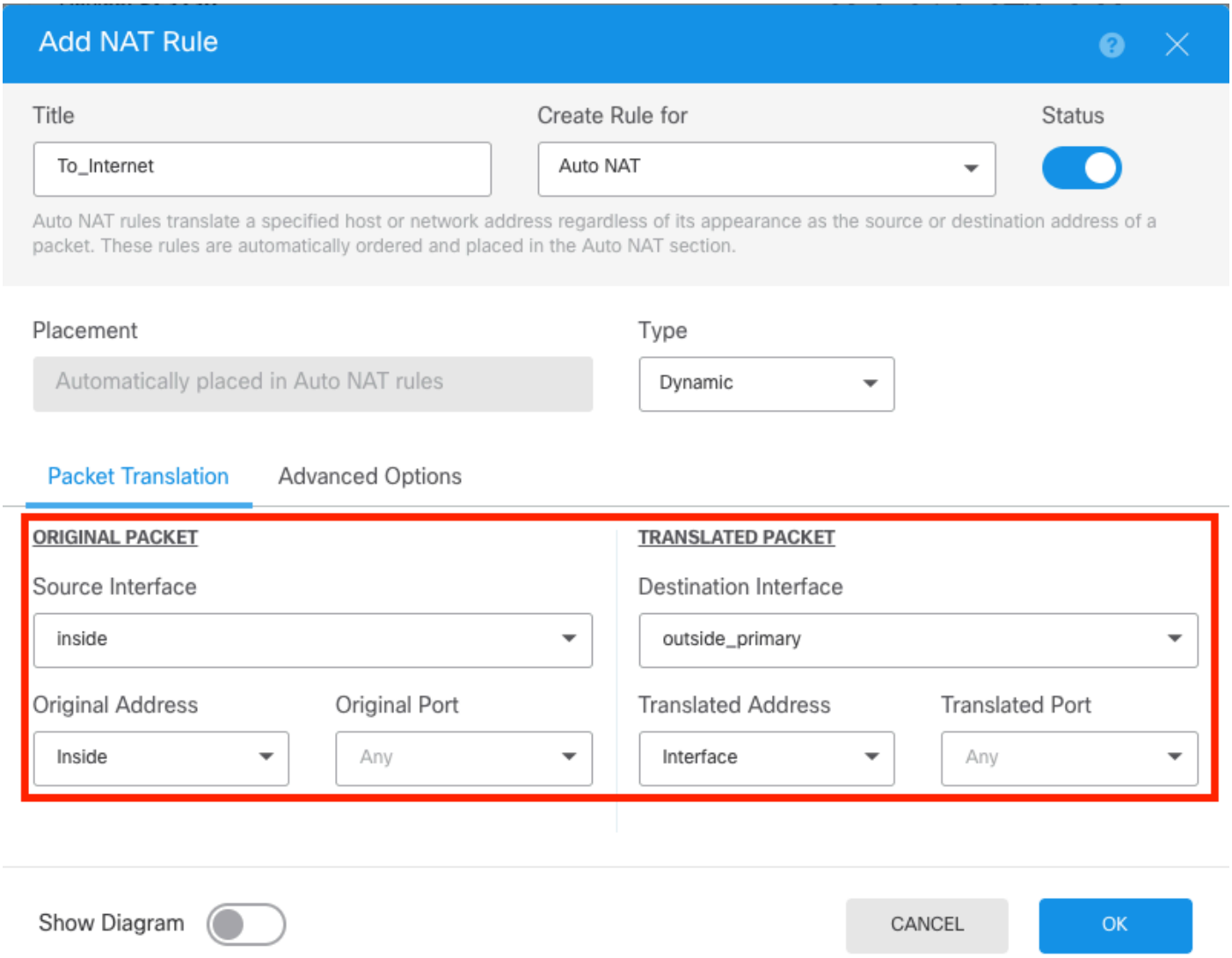
选择NAT按钮导航到NAT部分，然后选择CREATE NAT RULE按钮创建新规则。



NAT部分

第 19 步：

对于ISP故障切换，配置必须有2条通过外部接口的路由。首先，用于主外部接口与主ISP的连接。

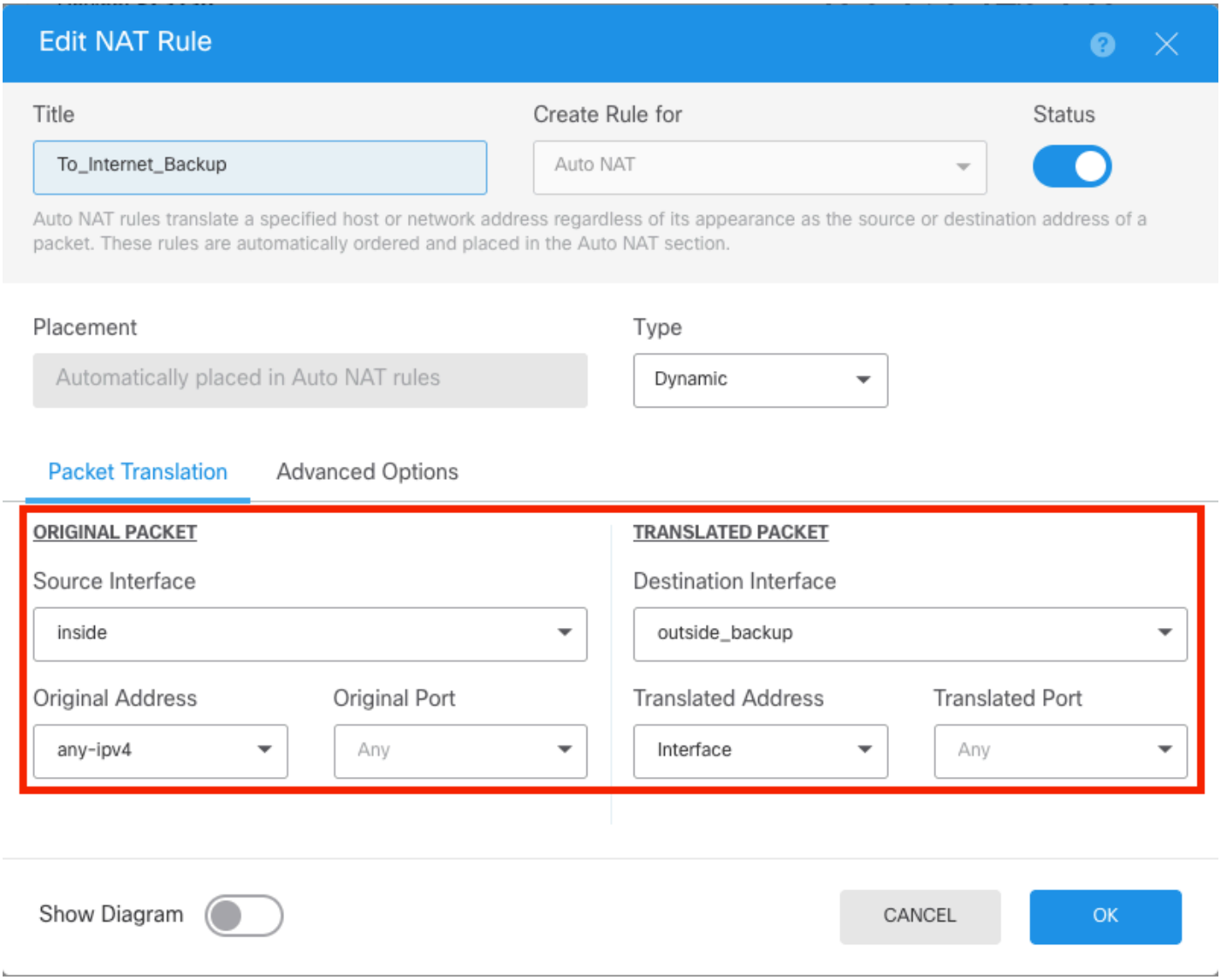


主ISP的NAT

第 20 步：

现在，为辅助ISP连接配置第二个NAT。

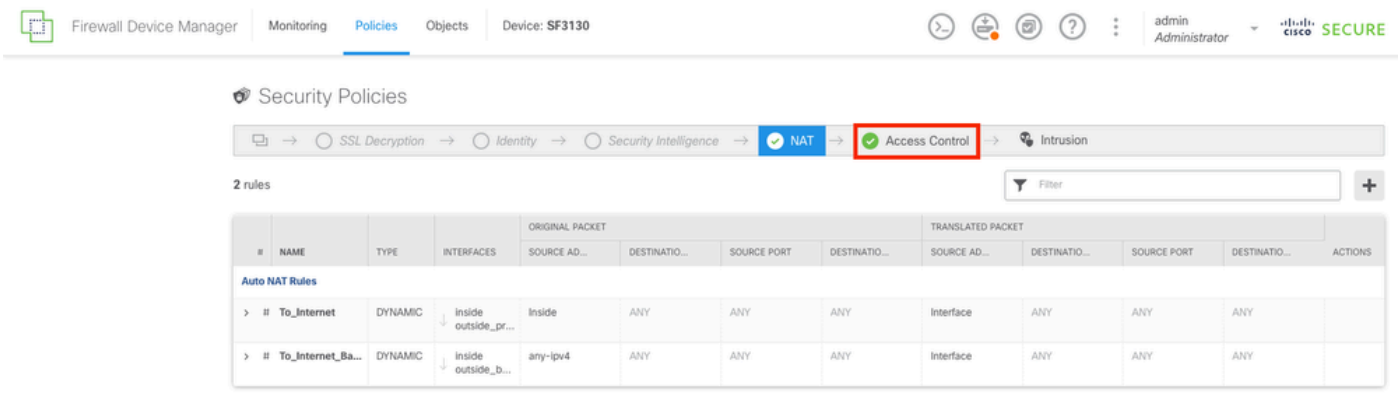
注意：对于原始地址，不能使用同一网络。在本例中，对于辅助ISP，Original Address是对象any-ipv4。



辅助ISP的NAT

第 21 步：

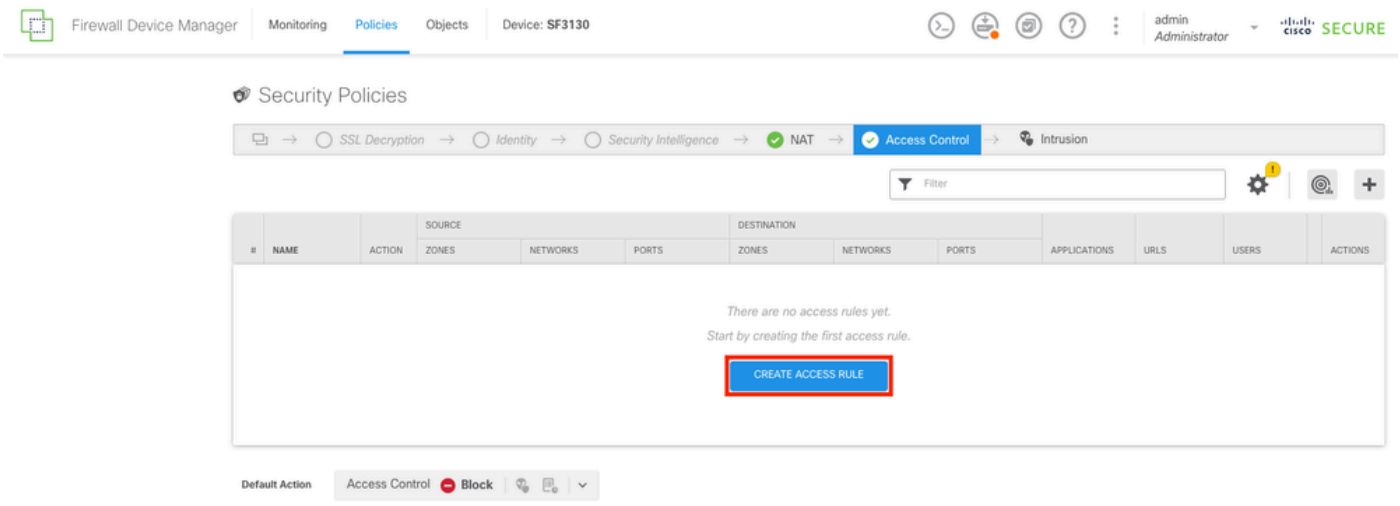
创建两个NAT规则后，必须建立访问控制规则以允许出站流量。选择Access Control按钮。



已创建NAT规则

第 22 步：

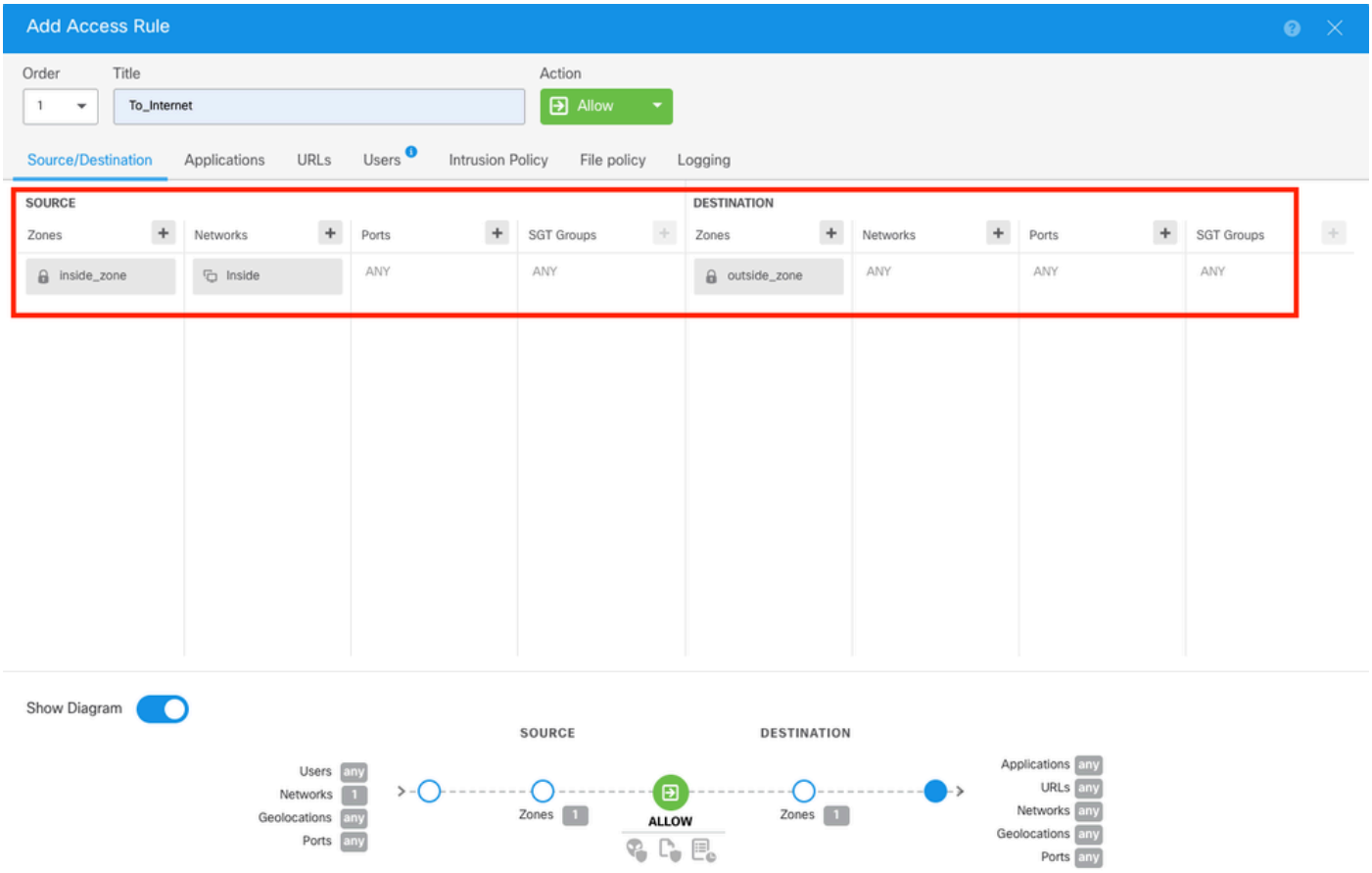
要创建访问控制规则，请选择CREATE ACCESS RULE按钮。



访问控制部分

第 23 步：

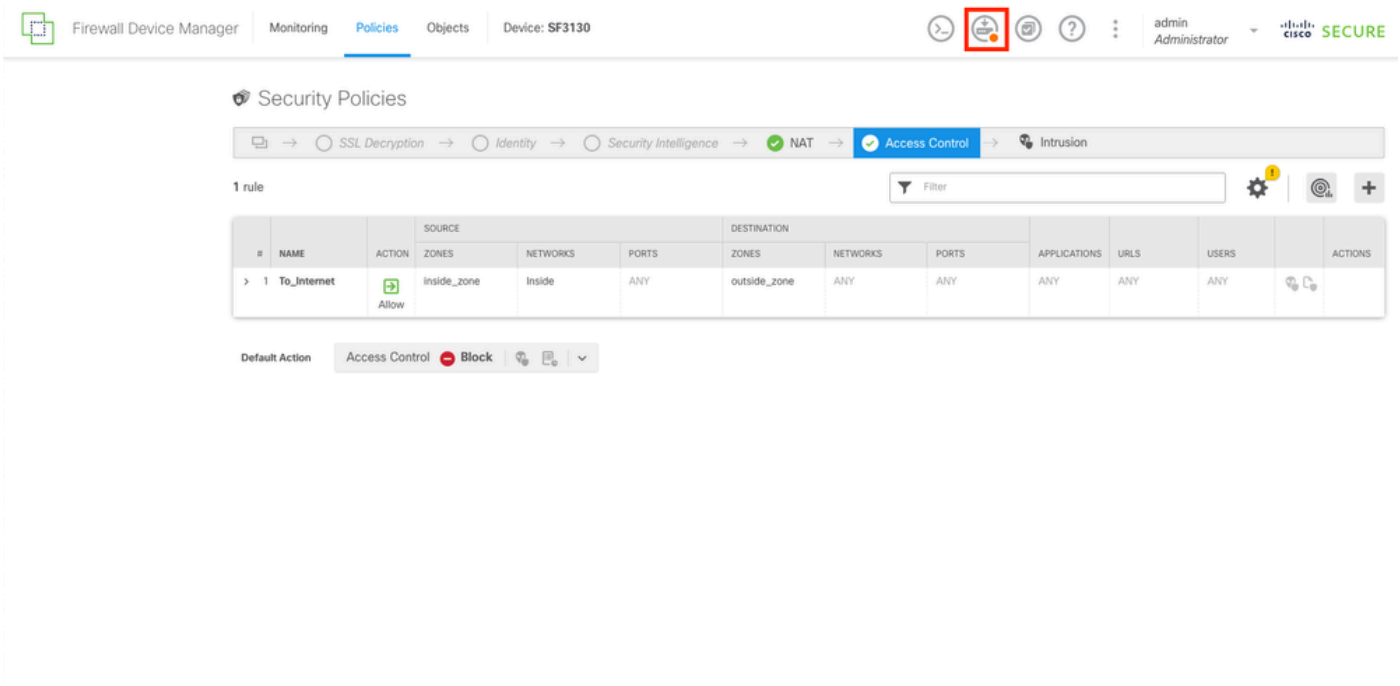
选择区域和网络。



访问控制规则

第 24 步：

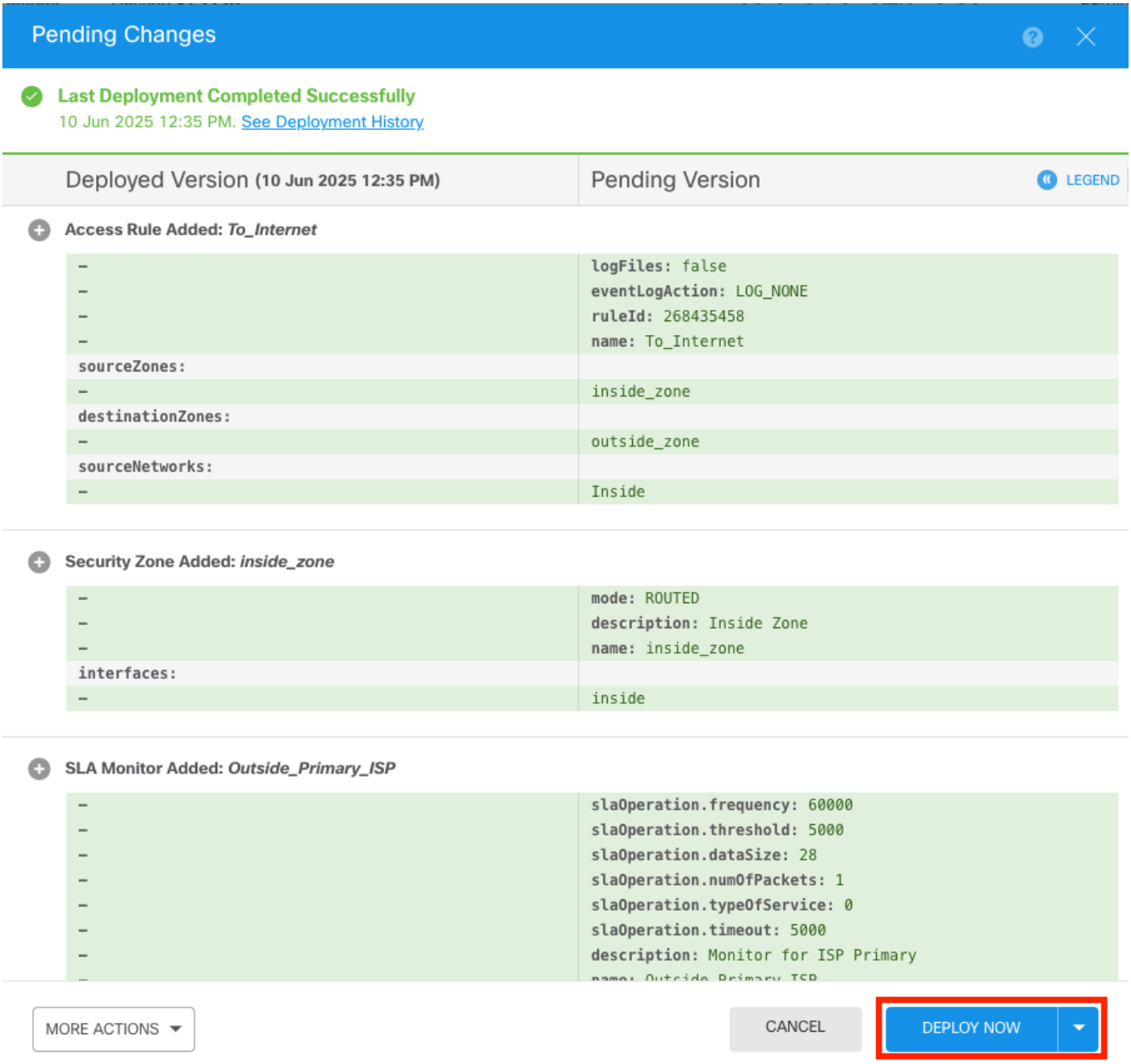
创建访问控制规则后，通过选择顶部的Deploy按钮继续部署所有更改。



已创建访问控制规则

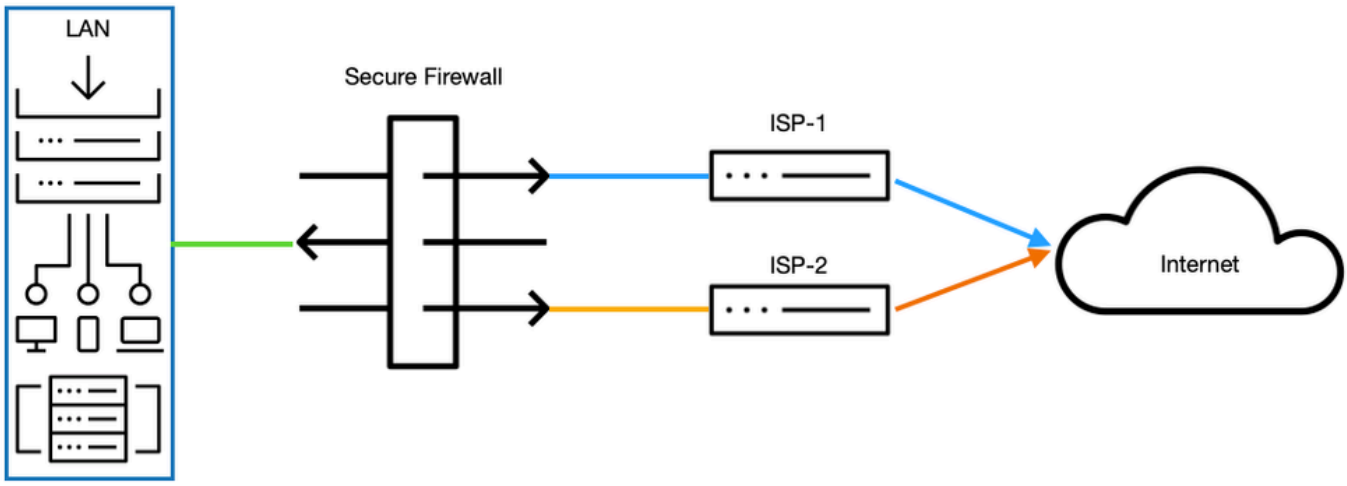
第 25 步：

验证更改，然后选择Deploy Now按钮。



部署验证

网络图



网络图

验证

<#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
```

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