

在ACI中配置带内管理

简介

本文档介绍以应用为中心的基础设施(ACI)中的带内(INB)管理的配置。

先决条件

要求

Cisco 建议您了解以下主题：

- * 了解ACI访问策略
- * 了解ACI合同
- * 了解L3out外部网络实例配置文件（外部EPG）配置

在ACI中配置INB之前需要完成交换矩阵发现。

使用的组件

本文档中的信息基于以下软件和硬件版本：

- 应用策略基础设施控制器 (APIC)
- 浏览器
- 运行5.2 (8e)的ACI

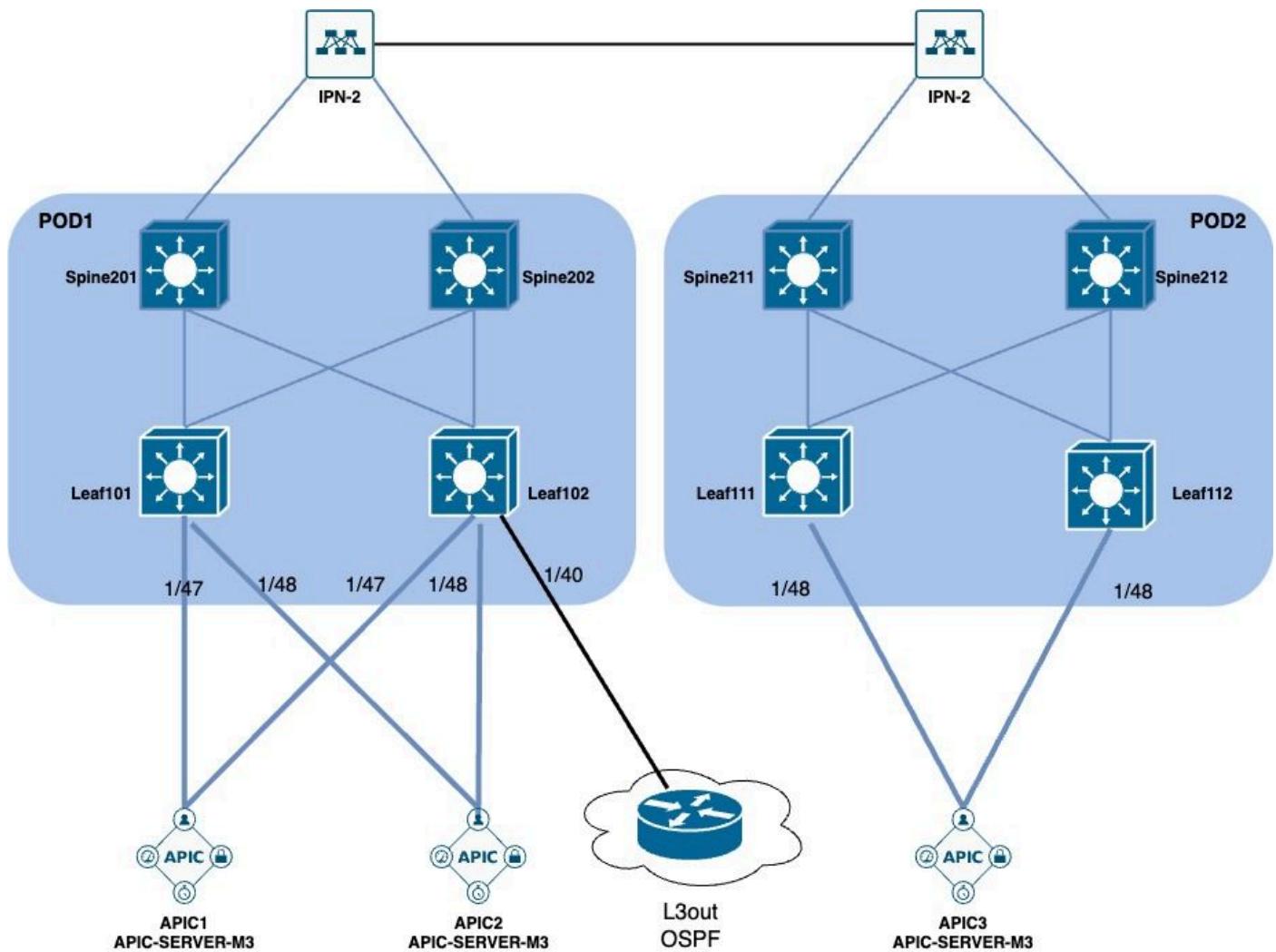
本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原始（默认）配置。如果您的网络处于活动状态，请确保您了解所有命令的潜在影响。

配置

配置分为三个主要步骤：

1. 在连接枝叶和APIC的端口上配置INB的VLAN
2. 在管理租户中关联INB EPG并将INB地址分配给所有设备。
3. 通过L3out或租户VRF泄漏INB地址。

网络图



1. 配置枝叶接口中的INB VLAN

1.1. 创建VLAN池

导航到APIC Web GUI路径；Fabric > Access Policies > Pools > VLAN。

[System](#)[Tenants](#)[Fabric](#)[Virtual Networking](#)[Inventory](#)[Fabric Policies](#)[Access Policies](#)

Policies

► Quick Start

☰ Interface Configuration

☰ Switch Configuration

> ☑ Switches

> ☑ Modules

> ☑ Interfaces

> ☑ Policies

> ☑ Physical and External Domains

✓ ☑ Pools

> ☑ VLAN

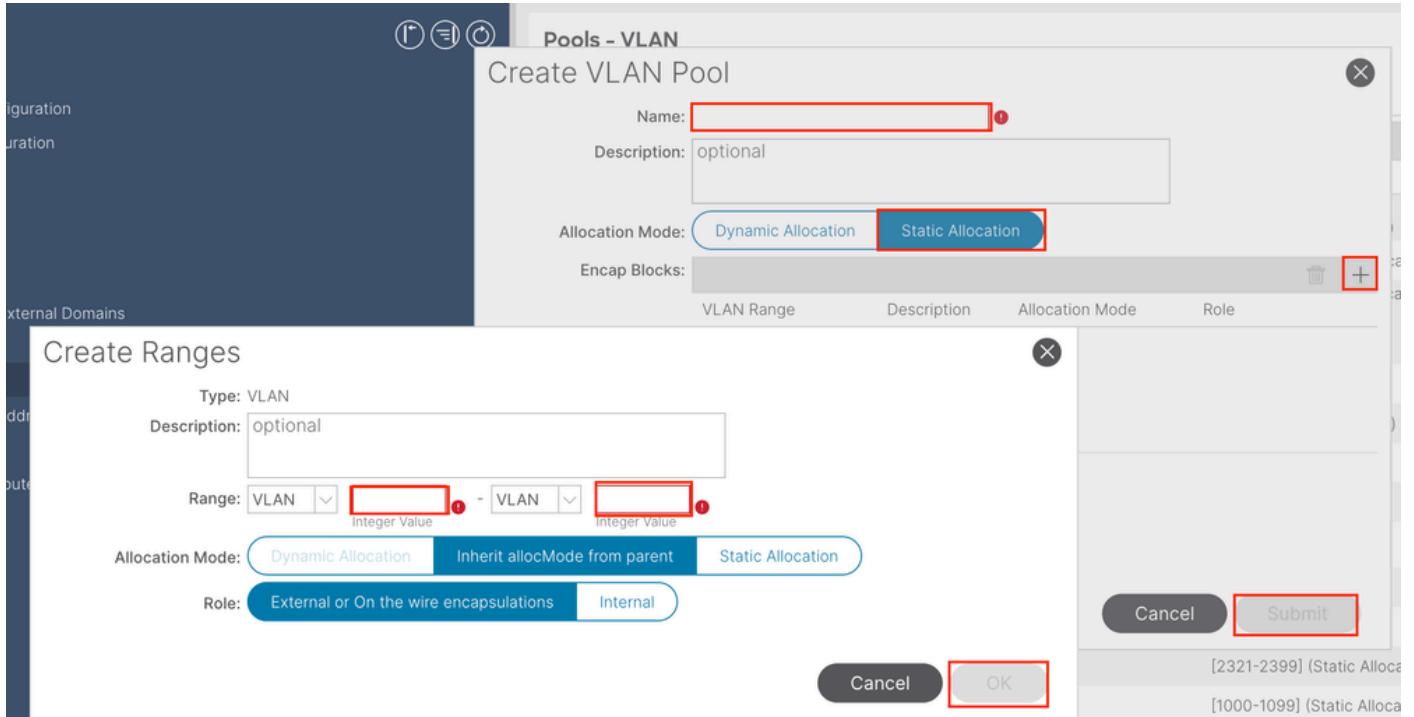
Create VLAN Pool

> ☑ Multicast Addr

> ☑ VSAN

> ☑ VSAN Attributes

> ☑ VXLAN



Name - VLAN池的名称。此名称可以是1到64个字母数字字符。

Description - VLAN池的说明。说明可以是0到128个字母数字字符。

分配模式-对于INB，此VLAN池的分配方法必须为**static**。

Encap Blocks —分配的VLAN池的范围。

范围- VLAN池的开始VLAN ID和结束VLAN ID。起始ID必须小于或等于结束ID。

1.2. 创建物理域

导航到APIC Web GUI路径；Fabric > Access Policies > Physical and External Domains > Physical Domains。

[System](#)[Tenants](#)[Fabric](#)[Virtual Network](#)[Inventory](#)[Fabric Policies](#)[Access Policies](#)

Policies



► Quick Start

Interface Configuration

Switch Configuration

> Switches

> Modules

> Interfaces

> Policies

▽ Physical and External Domains

> External Bridged Domains

> Fibre Channel Domains

> L3 Domains

> Physical Domains

> Pools

Create Physical Domain

Create Physical Domain



Name: *

Associated Attachable Entity Profile: *

VLAN Pool: *

Security Domains:		
Select	Name	Description

Cancel

Submit

名称- 物理域的名称。此名称可以是1到64个字母数字字符。

VLAN Pool —选择步骤1.1中创建的VLAN池。

1.3. 创建可附加访问实体配置文件

导航到APIC Web GUI路径 ; Fabric > Access Policies > Policies > Global > Attachable Access Entity Profile。

[System](#)[Tenants](#)[Fabric](#)[Virtual Network](#)[Inventory](#)[Fabric Policies](#)[Access Policies](#)

Policies

[Quick Start](#)[Interface Configuration](#)[Switch Configuration](#)[Switches](#)[Modules](#)[Interfaces](#)[Policies](#)[Switch](#)[Interface](#)[Global](#)[PTP User Profile](#)[DHCP Relay](#)[Attachable Access Entity Profiles](#)[Create Attachable Access Entity Profile](#)[Error Dis.](#)[MCP Instance Policy default](#)[QOS Class](#)[Monitoring](#)[Troubleshooting](#)

Create Attachable Access Entity Profile



STEP 1 > Profile

1. Profile

Name:

Description: optional

Enable Infrastructure VLAN:

Association to Interfaces:

Domains (VMM, Physical or External) To Be Associated
To Interfaces:



▲ Domain Profile

Encapsulation

select an option

Update

Cancel

EPG DEPLOYMENT (All Selected EPGs will be deployed on all the interfaces associated.)



Application EPGs

Encap

Primary Encap

Mode

Previous

Cancel

Finish

名称- 可附加访问授权配置文件的名称。此名称可以是1到64个字母数字字符。

Association to Interfaces -取消选中。在最后一步中，在第1.6步中手动分配到枝叶接口。

要与接口关联的域 (VMM、 物理或外部) -选择在步骤1.2中创建的物理域。

1.4. 创建枝叶接入端口策略组

导航到APIC Web GUI路径；Fabric > Access Policies > Interfaces > Leaf Interfaces > Policy Groups > Leaf Access Port Policy Group。

[System](#)[Tenants](#)[Fabric](#)[Virtual Network](#)[Inventory](#)[Fabric Policies](#)[Access Policies](#)

Policies

[Quick Start](#)[Interface Configuration](#)[Switch Configuration](#)[Switches](#)[Modules](#)[Interfaces](#)[Leaf Interfaces](#)[Profiles](#)[Policy Groups](#)[Leaf Acc](#)[Create Leaf Access Port Policy Group](#)[PC Interface](#)[VPC Interface](#)[PC/VPC Override](#)[Leaf Breakout Port Group](#)[FC Interface](#)[FC PC Interface](#)[Overrides](#)[Spine Interfaces](#)

Create Leaf Access Port Policy Group



Name: <input type="text"/>	Description: optional
Attached Entity Profile: <input type="text"/> select an option	Link Level Policy: <input type="text"/> select a value
CDP Policy: <input type="text"/> select a value	LLDP Policy: <input type="text"/> system-lldp-enabled

Advanced Settings

802.1x Port Authentication: <input type="text"/> select a value	MCP: <input type="text"/> select a value
Transceiver policy: <input type="text"/> select a value	Monitoring Policy: <input type="text"/> select a value
CoPP Policy: <input type="text"/> select a value	PoE Interface: <input type="text"/> select a value
DWDM: <input type="text"/> select a value	Port Security: <input type="text"/> select a value
Egress Data Plane Policing: <input type="text"/> select a value	Priority Flow Control: <input type="text"/> select a value
Fibre Channel Interface: <input type="text"/> select a value	Slow Drain: <input type="text"/> select a value
Ingress Data Plane Policing: <input type="text"/> select a value	Storm Control Interface: <input type="text"/> select a value
L2 Interface: <input type="text"/> select a value	STP Interface Policy: <input type="text"/> select a value
Link Flap Policy: <input type="text"/> select a value	SyncE Interface Policy: <input type="text"/> select a value
Link Level Flow Control Policy: <input type="text"/> select a value	
MACsec: <input type="text"/> select a value	

NetFlow Monitor Policies:

NetFlow IP Filter Type

NetFlow Monitor Policy



Cancel

Submit

名称-枝叶接入端口策略组的名称。此名称可以是1到64个字母数字字符。

附加实体配置文件-选择在步骤1.3中创建的附加实体配置文件。

链路层发现协议(LLDP)策略-必须选择启用策略。

1.5. 创建枝叶接入端口策略组

导航到APIC Web GUI路径：Fabric > Access Policies > Interfaces > Leaf Interfaces > Profiles。

[System](#)[Tenants](#)[Fabric](#)[Virtual Network](#)[Inventory](#)[Fabric Policies](#)[Access Policies](#)

Policies

[Quick Start](#)[Interface Configuration](#)[Switch Configuration](#)[Switches](#)[Modules](#)[Interfaces](#)[Leaf Interfaces](#)[Profiles](#)

Create Leaf Interface Profile

[Policy Groups](#)

Create FEX Profile

[Overrides](#)[Spine Interfaces](#)[Policies](#)[Physical and External Domains](#)[Pools](#)

Leaf Interfaces - Profiles

Create Leaf Interface Profile

Name: ⓘ

Description: optional

Interface Selectors:

Create Access Port Selector

Name: ⓘ

Description: optional

Interface IDs: ⓘ
valid values: All or Ranges. For Example: 1/13, 1/15 or 2/22-2/24, 2/16-3/16, or 1/21-23/1-4, 1/24/1-2

Connected To Fex:

Interface Policy Group:

名称-枝叶接口配置文件的名称。此名称可以是1到64个字母数字字符。

接口选择器-创建接口和接口策略之间的对应关系。

名称-接入端口选择器的名称。此名称可以是1到64个字母数字字符。

接口ID -接口ID与APIC互连。在文档拓扑中，此接口ID为1/47或1/48。

接口策略组-选择在步骤1.4中创建的附加实体配置文件。



注意：在本文档的拓扑中，将三个APIC连接到枝叶的接口不同。
由于APIC 3未连接到Eth1/47接口，因此无法创建1/47-1/48的接口ID。
需要为Eth1/47和Eth1/48创建单独的接口配置文件。

1.6.将接口配置文件应用于枝叶

导航到APIC Web GUI路径；Fabric > Access Policies > Switches > Leaf Switches > Profiles。

[System](#)[Tenants](#)[Fabric](#)[Virtual Network](#)[Inventory](#)[Fabric Policies](#)[Access Policies](#)

Policies

[Quick Start](#)[Interface Configuration](#)[Switch Configuration](#)[Switches](#)[Leaf Switches](#)[Profiles](#)[Create Leaf Profile](#)[Policy Groups](#)[Overrides](#)[Spine Switches](#)[Modules](#)[Interfaces](#)[Policies](#)[Physical and External Domains](#)[Pools](#)

Create Leaf Profile

STEP 1 > Profile

1. Profile

2. Associations

Name:	Leaf-APIC-48	
Description:	optional	
Leaf Selectors:	Delete +	
Name	Blocks	Policy Group
APIC-48	101-102,111-112	select an option
Update Cancel		

Previous Next

名称-枝叶配置文件的名称。此名称可以是1到64个字母数字字符。

枝叶选择器-选择将接口配置推送至的枝叶ID。

名称-枝叶组的名称。

块-选择交换机节点ID。

Create Leaf Profile

STEP 2 > Associations

1. Profile

2. Associations

Interface Selector Profiles:

Select	Name	Description
<input type="checkbox"/>	system-port-profile-node-102	
<input type="checkbox"/>	system-port-profile-node-111	
<input type="checkbox"/>	system-port-profile-node-112	
<input type="checkbox"/>	test	
<input checked="" type="checkbox"/>	Leaf-48	

Module Selector Profiles:

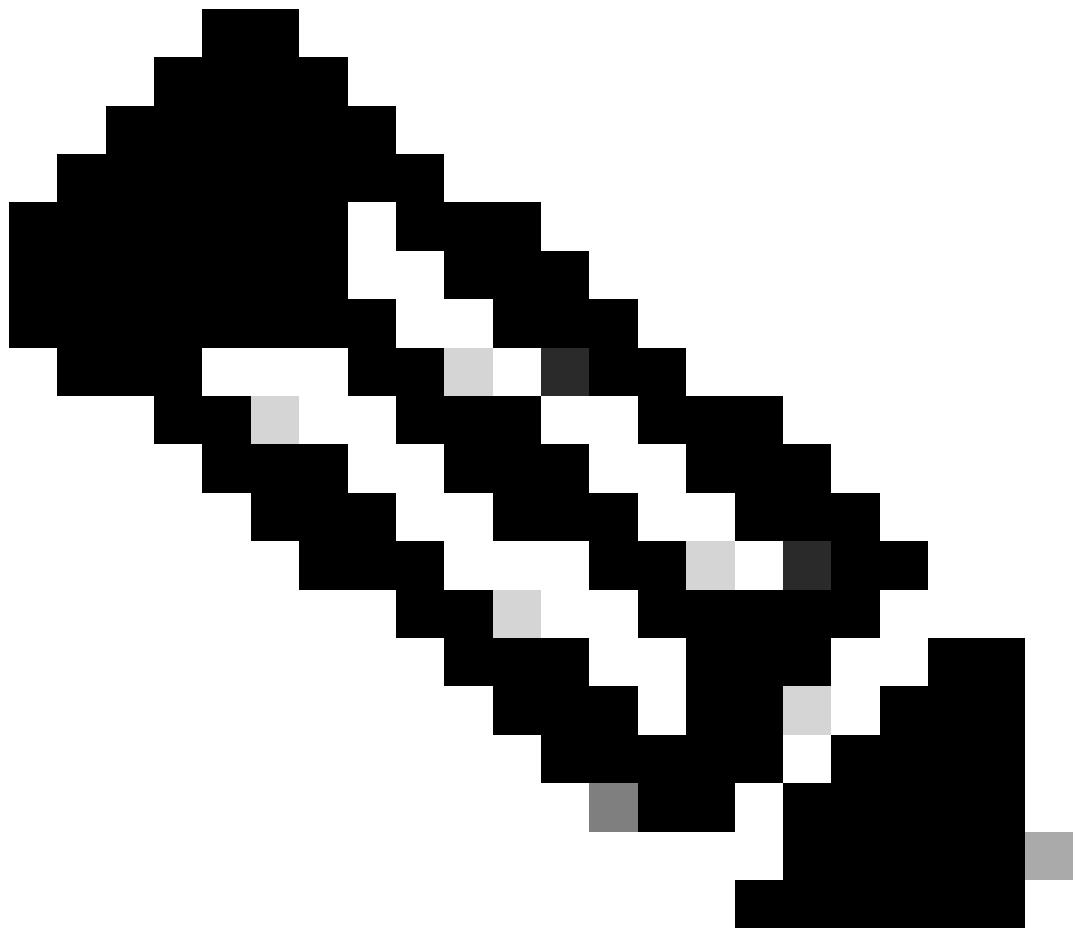
Select	Name	Description

Previous

Cancel

Finish

Interface Selector Profiles — 选择在步骤1.5中创建的附加实体配置文件。



注意：在本文档的示例中，必须配置两个交换机配置文件。

第一种是选择枝叶101-102和枝叶111-112，并将接口配置文件分配给Eth1/48。

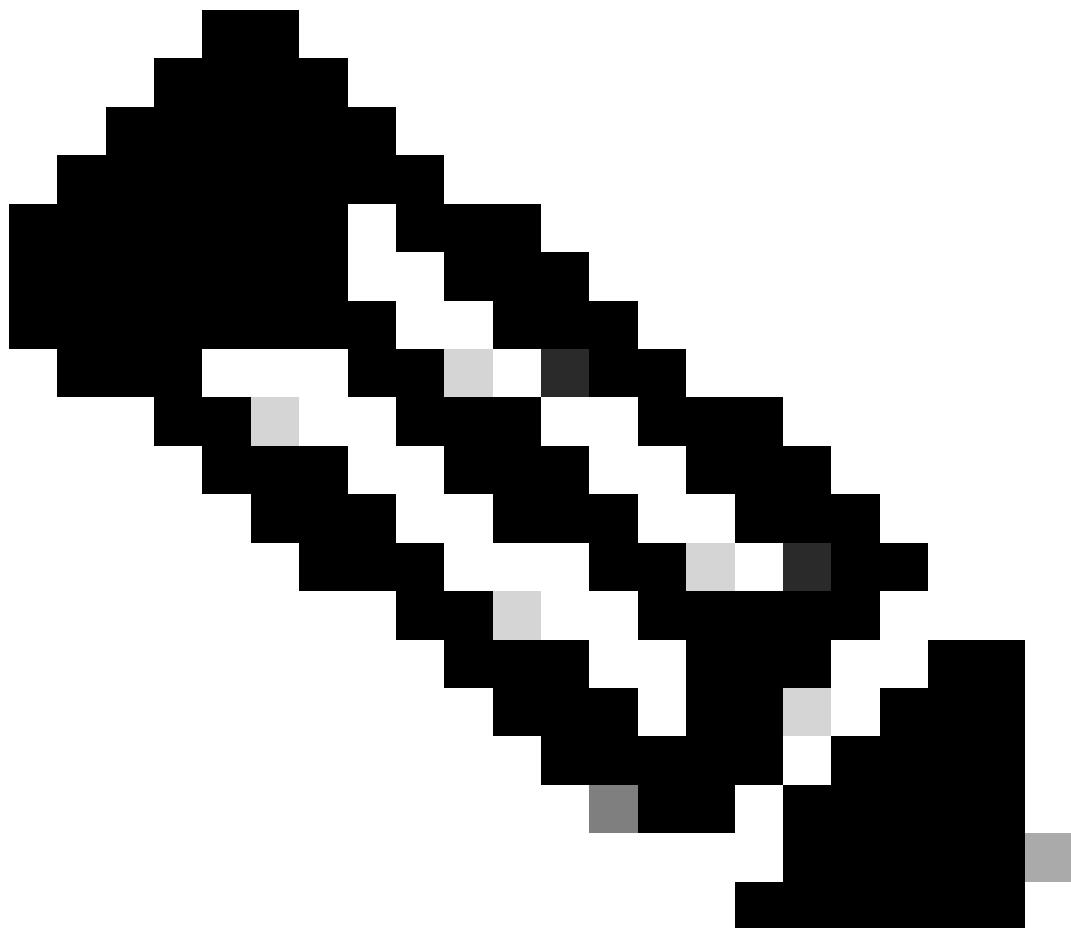
第二个是选择枝叶111-112并将接口配置文件分配给Eth1/47。

有关访问策略的更多故障排除详细信息，请参阅[ACI访问策略故障排除](#)。

2. 在管理租户中分配INB地址

2.1. 创建网桥域(BD) INB子网

导航到APIC Web GUI路径；Tenants > mgmt > Networking > Bridge Domains > inb。



注意：本文档使用默认BD和默认VRF。

您还可以创建新的VRF和BD以执行类似的配置。

System **Tenants** Fabric Virtual Networking Admin Operations Apps Integrations

ALL TENANTS | Add Tenant | Tenant Search: name or desc | common | **mgmt** | guangxil | guangxil2 | infra

mgmt

Quick Start **mgmt**

- > Application Profiles
- > **Networking**
- > **Bridge Domains**
- > **inb**
- > VRFs
- > L2Outs
- > L3Outs
- > SR-MPLS VRF L3Outs
- > Dot1Q Tunnels
- > Contracts
- > Policies
- > Services
- > Security
- > Node Management EPGs
- > External Management Network Instance Pr...
- > Node Management Addresses
- > Managed Node Connectivity Groups
- > IP Address Pools

Bridge Domain - inb

Summary **Policy** Operational Stats Health Faults History Policy Viewer

General **L3 Configurations** Advanced/Troubleshooting

Properties It is recommended to disable Unicast Routing when no subnets are configured.

Unicast Routing: Operational Value for Unicast Routing: true

Custom MAC Address: 00:22:BD:F8:19:FF
Virtual MAC Address: Not Configured

Subnets:

Gateway Address	Description	Scope	Primary IP Address	Virtual IP	Subnet Control	Matching Tag Selector

No items have been found.
Select Actions to create a new item.

EP Move Detection Mode: GARP based detection
Associated L3 Outs:

L3 Out
L3 Out

Show Usage Reset **Submit**

Create Subnet

Gateway IP: **192.168.6.254/24**

Treat as virtual IP address:

Make this IP address primary:

Scope: Advertised Externally Shared between VRFs

Description: optional

Subnet Control: No Default SVI Gateway Querier IP

IP Data-plane Learning: **Disabled** **Enabled**

L3 Out for Route Profile: select a value

ND RA Prefix Policy: select a value

Policy Tags: Click to add a new tag

Cancel **Submit**

Gateway IP - The INB subnet gateway.

Scope - Choose according to the route leakage method you use. Here choose to use L3out, and then click **Advertised Externally**.

2.2.创建INB EPG

导航到APIC Web GUI路径；Tenants > mgmt > Node Management EPGs。

[System](#)[Tenants](#)[Fabric](#)[Virtual N](#)

ALL TENANTS

Add Tenant

Tenant Search:

mgmt

Quick Start

mgmt

- > Application Profiles
- > Networking
- > Contracts
- > Policies
- > Services
- Security

Node Management EPGs

- Create Out-of-Band Management EPG
- > Existing EPGs Create In-Band Management EPG
- > Node Management Addresses
- > Managed Node Connectivity Group
- > IP Address Pools

Node

Name

Type

default

Create In-Band Management EPG



Name:

Annotations: Click to add a new annotation

Encap:
e.g., vlan-1

Bridge Domain:

Static Routes:

IP Address	
------------	---

Cancel Submit

名称- INB EPG的名称。

封装-选择在步骤1.1中创建的VLAN池中的VLAN。

网桥域-选择在步骤2.1中创建的BD。

2.3.为设备分配静态INB IP地址

导航到APIC Web GUI路径；Tenants > mgmt > Node Management Addresses > Static Node Management Addresses。

[System](#)[Tenants](#)[Fabric](#)[Virtual Networkir](#)

ALL TENANTS

Add Tenant

Tenant Search:

name or d

mgmt

C► Quick Start

▼ mgmt

> Application Profiles

> Networking

> Contracts

> Policies

> Services

Security

> Node Management EPGs

> External Management Network Instance Profiles

▼ Node Management Addresses

default

Static Node Management Addresses

> Managed [Create Static Node Management Addresses](#)

> IP Address Pools

Create Static Node Management Addresses



Node Range: -

From

To

Config: Out-Of-Band Addresses

In-Band Addresses

In-Band IP Addresses

In-Band Management EPG:

In-Band IPV4 Address:
address/mask

In-Band IPV4 Gateway:

In-Band IPV6 Address:
address/mask

In-Band IPV6 Gateway:

Cancel

Submit

节点范围-要分配给INB地址的节点ID。 分配的INB地址随节点ID依次增加。

配置-选择带内地址。

带内管理EPG -选择在步骤2.2中创建的EPG。

带内IPV4地址-第一个分配的INB地址。

带内IPV4网关-将其配置为步骤2.1中添加的子网的地址。

ALL TENANTS

Add Tenant

Tenant Search: name or descr

common

mgmt

mgmt

Quick Start

mgmt

> Application Profiles

> Networking

> Contracts

> Policies

> Services

Security

> Node Management EPGs

> External Management Network Instance Pr...

> Node Management Addresses

default

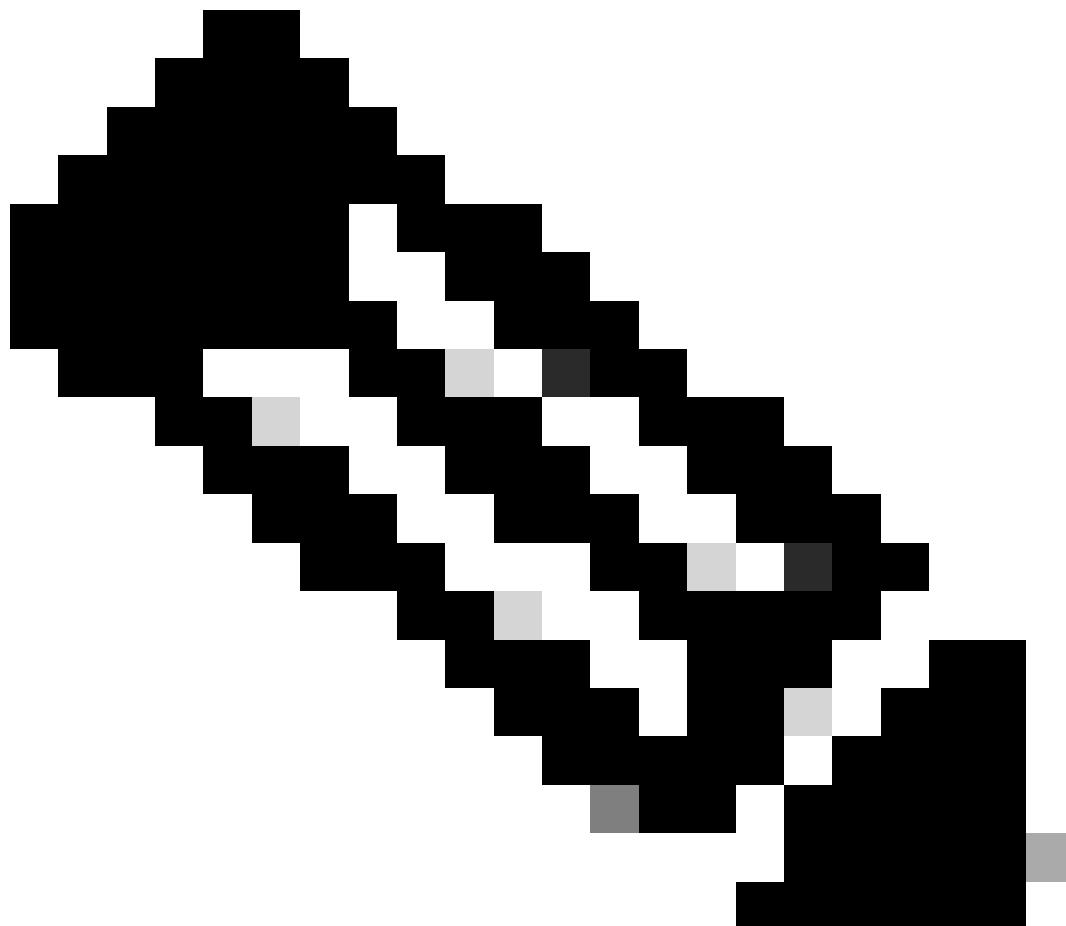
Static Node Management Addresses

> Managed Node Connectivity Groups

> IP Address Pools

Static Node Management Addresses

Node ID	Name	Type	EPG	IPV4 Address	IPV4 Gateway
pod-2/node-3	f6apic3	In-Band	default	192.168.6.3/24	192.168.6.254
pod-1/node-1	f6apic1	In-Band	default	192.168.6.1/24	192.168.6.254
pod-1/node-2	f6apic2	In-Band	default	192.168.6.2/24	192.168.6.254
pod-1/node-101	f6leaf101	In-Band	default	192.168.6.101/24	192.168.6.254
pod-1/node-102	f6leaf102	In-Band	default	192.168.6.102/24	192.168.6.254
pod-2/node-112	f6leaf112	In-Band	default	192.168.6.112/24	192.168.6.254
pod-2/node-111	f6leaf111	In-Band	default	192.168.6.111/24	192.168.6.254
pod-1/node-202	f6spine202	In-Band	default	192.168.6.202/24	192.168.6.254
pod-1/node-201	f6spine201	In-Band	default	192.168.6.201/24	192.168.6.254
pod-2/node-212	f6spine212	In-Band	default	192.168.6.212/24	192.168.6.254
pod-2/node-211	f6spine211	In-Band	default	192.168.6.211/24	192.168.6.254



注意：完成步骤2.3.中的配置后，所有枝叶和APIC均可通过INB通信。

3. 泄漏INB地址

您可以通过任何路由泄漏方法将INB子网共享给其他网络。INB EPG可视为特殊EPG。配置路由泄漏时，与普通EPG没有区别。

本文档仅将L3out配置为示例。

3.1. 在管理租户中创建L3out

[System](#)[Tenants](#)[Fabric](#)[Virtual Networkir](#)

ALL TENANTS

Add Tenant

Tenant Search:

name or de

mgmt

Quick Start

mgmt

Application Profiles

Networking

Bridge Domains

VRFs

L2Outs

L3Outs

Create L3Out

SR-MPLS VRF L3Outs

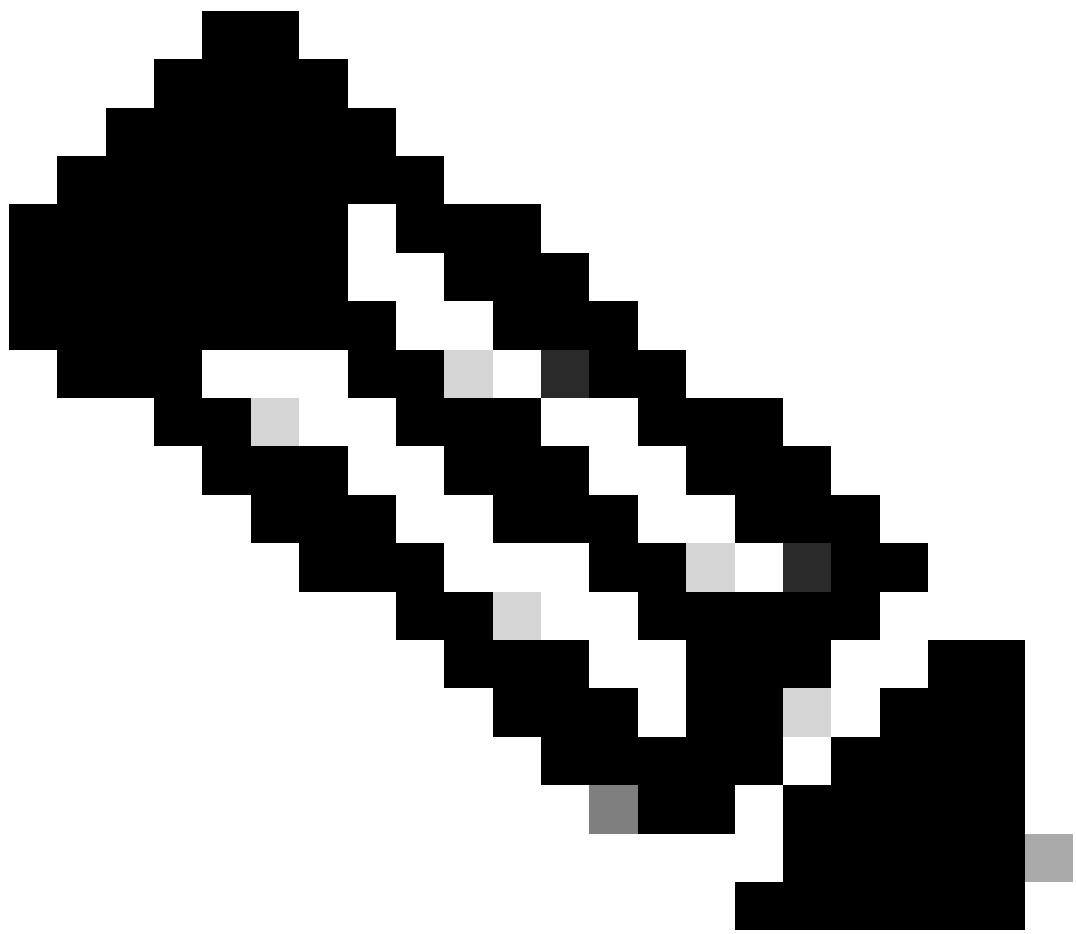
Dot1Q Tunnels

Contracts

Policies

Services

在本示例中，物理接口用于运行简单开放最短路径优先(OSPF)协议的路由器。



注意：如果要了解有关L3out的更多详细信息，请参阅L3out白皮书；[ACI交换矩阵L3Out白皮书](#)。

Create L3Out



1. Identity

2. Nodes And Interfaces

3. Protocols

4. External EPG



Identity

A Layer 3 Outside (L3Out) network configuration defines how the ACI fabric connects to external layer 3 networks. The L3Out supports connecting to external networks using static routing and dynamic routing protocols (BGP, OSPF, and EIGRP).

Prerequisites:

- Configure an L3 Domain and Fabric Access Policies for interfaces used in the L3Out (AAEP, VLAN pool, Interface selectors).
- Configure a BGP Route Reflector Policy for the fabric infra MP-BGP.

The screenshot shows the 'Identity' configuration page. It includes fields for Name (INB-L3out), VRF (inb), L3 Domain (F6_inb), and a checkbox for Use for GOLF. On the right, there are sections for OSPF Area ID (0), OSPF Area Type (Regular area selected), and OSPF Area Cost (1). Protocol checkboxes are shown for BGP, EIGRP, and OSPF, with OSPF checked. Control checkboxes include Send redistributed LSAs into NSSA area, Originate summary LSA, and Suppress forwarding address in translated LSA. Buttons at the bottom include Previous, Cancel, and Next (highlighted with a red box).

名称- INB L3out的名称。

VRF -选择L3out路由所在的VRF。在本文档中，使用最简单的配置，并选择管理租户中的VRF INB。

L3域-根据实际情况创建和选择。有关L3域的详细信息，请参阅L3out白皮书。

OSPF -在本示例中，L3out运行OSPF协议。根据实际情况选择动态路由协议或使用静态路由。

Create L3Out

Nodes and Interfaces

The L3Out configuration consists of node profiles and interface profiles. An L3Out can span across multiple nodes in the fabric. All nodes used by the L3Out can be included in a single node profile and is required for nodes that are part of a VPC pair. Interface profiles can include multiple interfaces. When configuring dual stack interfaces a separate interface profile is required for the IPv4 and IPv6 configuration, that is automatically taken care of by this wizard.

Use Defaults:

Interface Types

Layer 3:	Routed	Routed Sub	SVI	Floating SVI
Layer 2:	Port	Direct Port Channel		

Nodes

Node ID	Router ID	Loopback Address
f2leaf102 (Node-102)	192.168.1.6	192.168.1.6 Leave empty to not configure any Loopback
Interface	IP Address	MTU (bytes)
eth1/40	192.168.2.1/24 address/mask	1500

Buttons

- Previous
- Cancel
- Next

根据网络规划配置接口。

Create L3Out

Protocol Associations

OSPF

Node ID: 102	Hide Policy <input type="checkbox"/>
Interface	Policy:
1/40	OSPF_P2P

Buttons

- Previous
- Cancel
- Next

对于OSPF，默认网络类型为广播。此示例将网络类型更改为点对点。

Create L3Out

External EPG

The L3Out Network or External EPG is used for traffic classification, contract associations, and route control policies. Classification is matching external networks to this EPG for applying contracts. Route control policies are used for filtering dynamic routes exchanged between the ACI fabric and external devices, and leaked into other VRFs in the fabric.

Name: all-subnet-epg

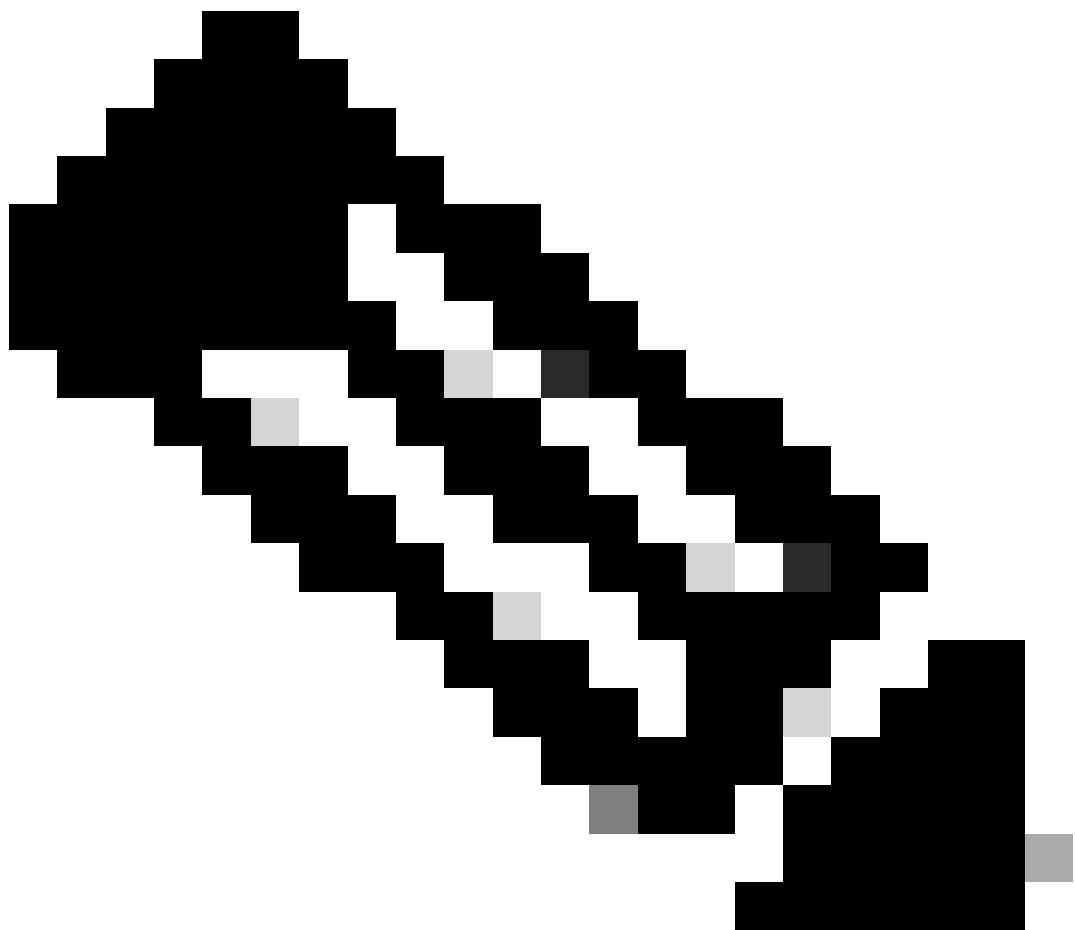
Provided Contract: ▼

Consumed Contract: ▼

Default EPG for all external networks:

Previous Cancel Finish

在本示例中，只有一个L3out和一个EPG，可以使用默认的所有外部网络的默认EPG选项。



注意：如果同一VRF中有多个L3out EPG，请仔细配置此选项。有关详细信息，请参阅L3out白皮书。

配置路由器后，OSPF邻居状态可更改为FULL。

```
admin-Infra# show lldp neighbors Capability codes: (R) Router, (B) Bridge, (T) Telephone, (C) DOCSIS Ca
```

如果需要对L3out进行故障排除，请参阅[对ACI外部转发进行故障排除](#)。

3.2.关联BD到L3out

导航到APIC Web GUI路径；Tenants > mgmt > Networking > Bridge Domains > inb。

The screenshot shows the APIC Web GUI interface. On the left, the navigation pane is open under the 'mgmt' tab, with 'Tenants' selected. Under 'Tenants', 'mgmt' is also selected. In the 'Networking' section, 'Bridge Domains' is expanded, and 'inb' is selected. The main panel displays the 'Bridge Domain - inb' configuration. The 'Policy' tab is selected, and the 'L3 Configurations' sub-tab is also selected. In the 'Associated L3 Outs' section, 'INB-L3out' is listed. The 'Submit' button at the bottom right is highlighted with a red box.

关联的L3out -选择在步骤3.1中创建的mgmt L3out的名称。

3.3.创建合同

导航到APIC Web GUI路径；Tenants > mgmt > Contracts > Standard。

[System](#)[Tenants](#)[Fabric](#)[Virtual Networki](#)

ALL TENANTS

Add Tenant

Tenant Search: name or c

mgmt

[Quick Start](#)[mgmt](#)[Application Profiles](#)[Networking](#)[Contracts](#)[Standard](#)[Create Contract](#)[Taboos](#)[Export Contract](#)[Imported](#)[Filters](#)[Out-Of-Band Contracts](#)[Policies](#)

Create Contract



Name:	ALL
Alias:	
Scope:	VRF
QoS Class:	Unspecified
Target DSCP:	Unspecified
Description:	optional

Annotations: Click to add a new annotation

Subjects:

Name	Description
ALL	

Cancel

Submit

Create Contract Subject

Alias:	<input type="text"/>
Description:	<input type="text"/> optional
Target DSCP:	Unspecified
Apply Both Directions:	<input checked="" type="checkbox"/>
Reverse Filter Ports:	<input checked="" type="checkbox"/>
Wan SLA Policy:	<input type="text"/> select an option

Filter Chain

L4-L7 Service Graph:	<input type="text"/> select an option
QoS Priority:	<input type="text"/>

Filters

Name	Directives	Action	Priority
common/any		Permit	default level

Update Cancel

Cancel OK

在本例中，合同允许所有流量。如果您需要有关合同的更多详细信息，请参阅合同白皮书；[思科ACI合同指南白皮书](#)。

3.4. 将合同应用于INB EPG

导航到APIC Web GUI路径；Tenants > mgmt > Node Management EPGs > In-Band EPG - default。

System Tenants Fabric Virtual Networking Admin Operations Apps Integrations

ALL TENANTS | Add Tenant | Tenant Search: name or descr | common | mgmt | guangxil | guangxil2 | infra

mgmt

- mgmt
 - > Application Profiles
 - > Networking
 - > Contracts
 - > Policies
 - > Services
 - > Security
- Node Management EPGs
 - In-Band EPG - default
 - Out-of-Band EPG - default
- > External Management Network Instance Profiles
- > Node Management Addresses
- > Managed Node Connectivity Groups
- > IP Address Pools

In-Band EPG - default

Policy Stats Health Faults History

Policy Operational

Properties

Bridge Domain:	inb												
Resolved Bridge Domain:	inb												
Provided Contracts:	<table border="1"> <thead> <tr> <th>Name</th> <th>Tenant</th> <th>Type</th> <th>QoS Class</th> <th>Match Type</th> <th>State</th> </tr> </thead> <tbody> <tr> <td>mgmt/ALL</td> <td></td> <td></td> <td>Unspecified</td> <td>AtLeastOne</td> <td>unformed</td> </tr> </tbody> </table>	Name	Tenant	Type	QoS Class	Match Type	State	mgmt/ALL			Unspecified	AtLeastOne	unformed
Name	Tenant	Type	QoS Class	Match Type	State								
mgmt/ALL			Unspecified	AtLeastOne	unformed								
Update Cancel													
Consumed Contracts:	<table border="1"> <thead> <tr> <th>Name</th> <th>Tenant</th> <th>Type</th> <th>QoS Class</th> <th>State</th> </tr> </thead> <tbody> <tr> <td>mgmt/ALL</td> <td></td> <td></td> <td>Unspecified</td> <td>unformed</td> </tr> </tbody> </table>	Name	Tenant	Type	QoS Class	State	mgmt/ALL			Unspecified	unformed		
Name	Tenant	Type	QoS Class	State									
mgmt/ALL			Unspecified	unformed									
Update Cancel													
Contract Interfaces:													

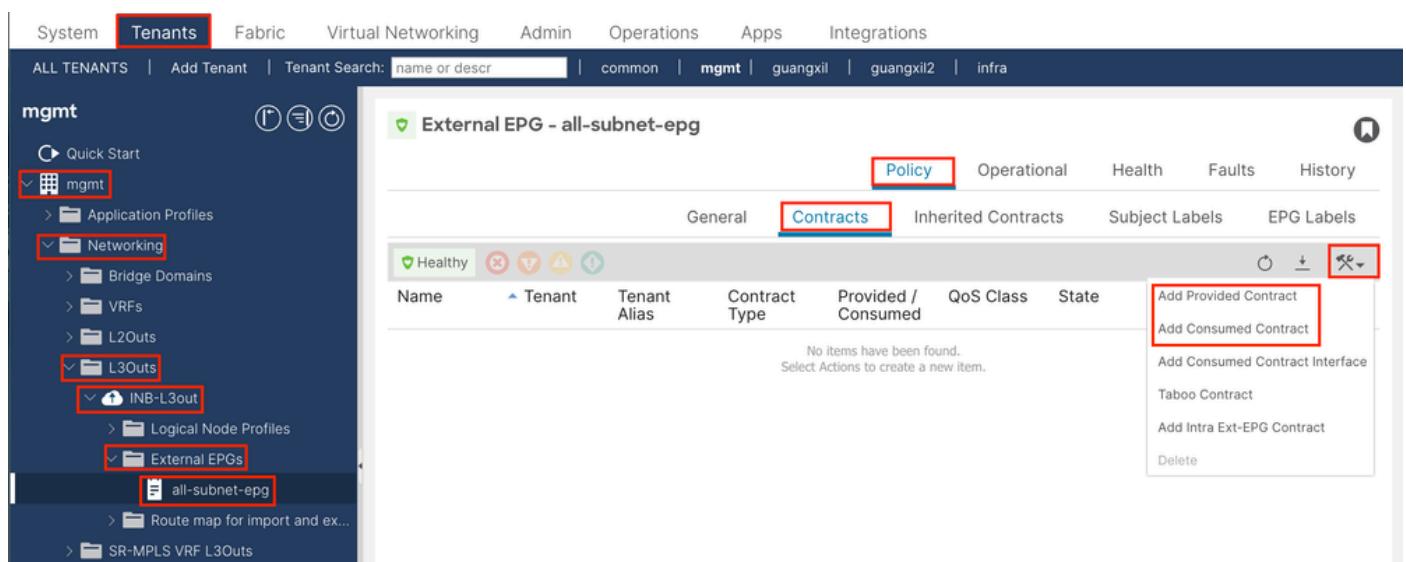
Show Usage Reset Submit

提供的合同-选择在步骤3.3中创建的合同。

已使用合同-选择在步骤3.3中创建的合同。

3.5. 将合同应用到L3out EPG

导航到APIC Web GUI路径：Tenants > mgmt > Networking > L3Outs > INB-L3out > External EPGs > all-subnet-epg。

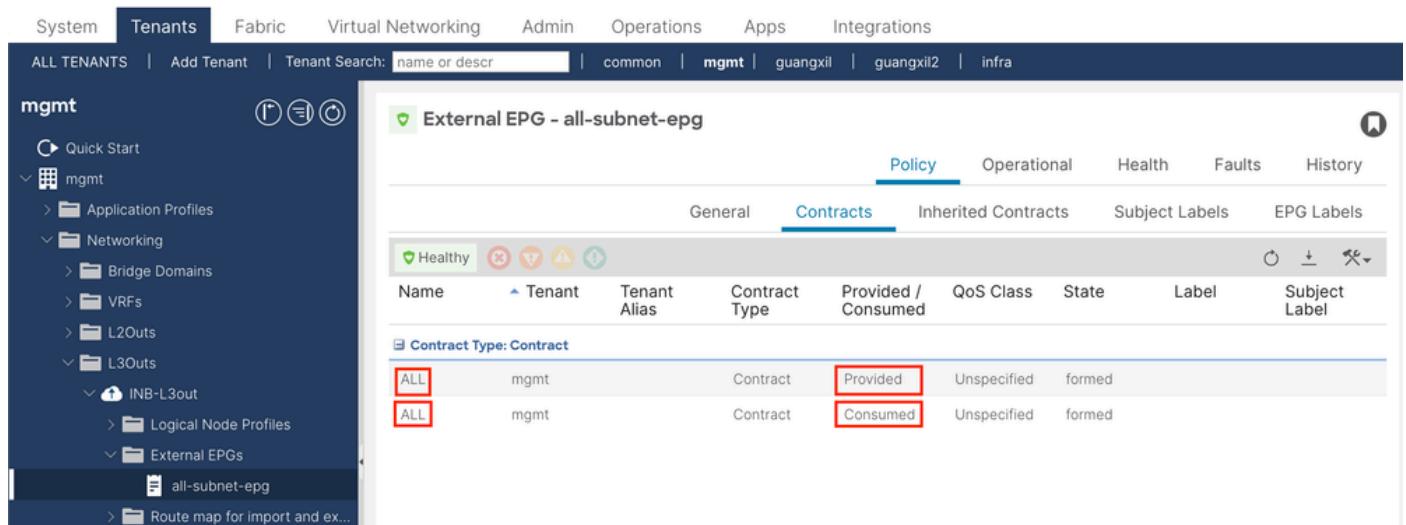


The screenshot shows the APIC Web GUI interface. The top navigation bar includes System, Tenants (selected), Fabric, Virtual Networking, Admin, Operations, Apps, and Integrations. Below the navigation bar, there's a search bar for 'Tenant Search' and a breadcrumb path: ALL TENANTS > Add Tenant > mgmt > common > mgmt > guangxil > guangxil2 > infra. On the left, a sidebar under the 'mgmt' section shows 'Quick Start' and a tree structure: Application Profiles, Networking (selected), Bridge Domains, VRFs, L2Outs, L3Outs (selected), INB-L3out (selected), Logical Node Profiles, External EPGs (selected), all-subnet-epg (selected), and SR-MPLS VRF L3Outs. The main content area is titled 'External EPG - all-subnet-epg' and has tabs for Policy, Operational, Health, Faults, and History. The 'Contracts' tab is currently active. Below the tabs is a status indicator 'Healthy'. The main table lists columns: Name, Tenant, Tenant Alias, Contract Type, Provided / Consumed, QoS Class, and State. A message in the center of the table says 'No items have been found. Select Actions to create a new item.' To the right of the table is a context menu with options: Add Provided Contract (highlighted with a red box), Add Consumed Contract, Add Consumed Contract Interface, Taboo Contract, Add Intra Ext-EPG Contract, and Delete.

添加提供的合同-在步骤3.3中创建的合同。

添加已使用的合同-在步骤3.3中创建的合同。

应用之后，您可在“Provided and Consumed”（提供和使用）中查看合同。

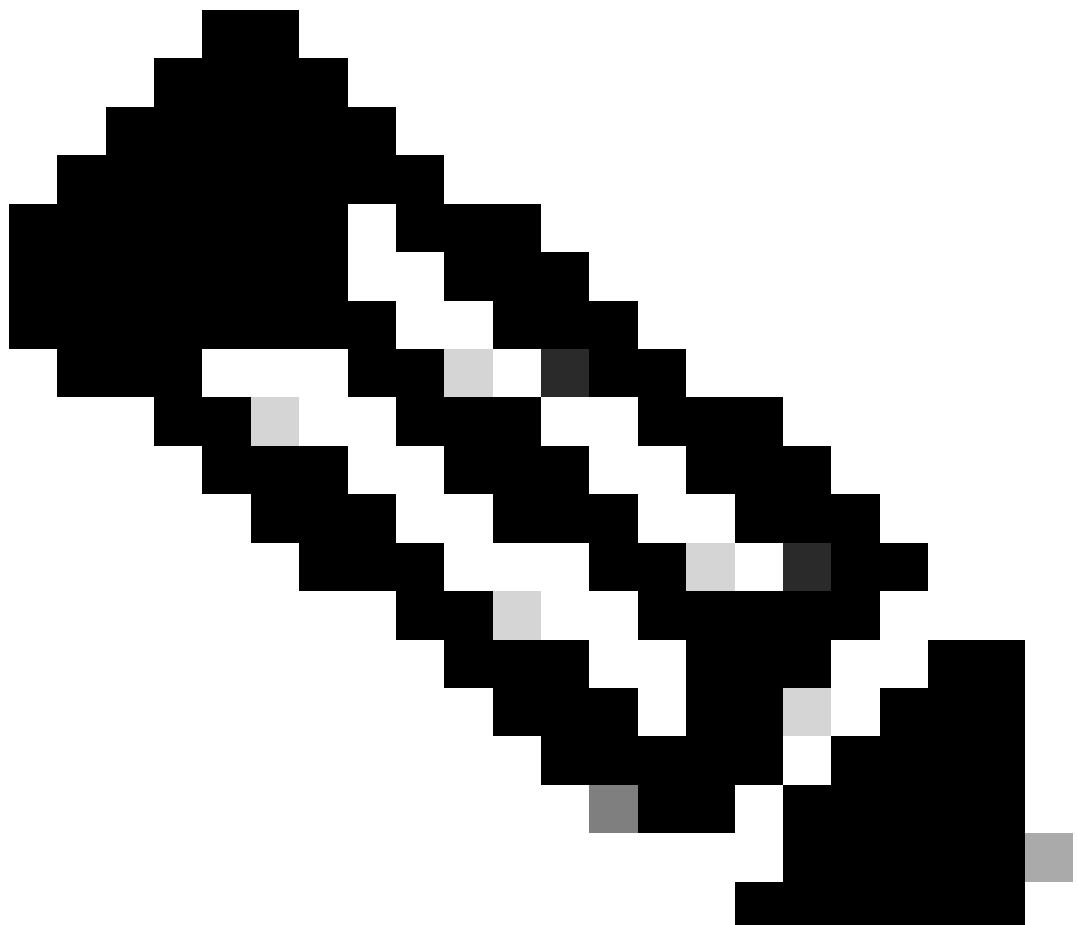


The screenshot shows the APIC Web GUI interface after applying contracts. The 'Contracts' tab is still selected. The main table now displays two rows under 'Contract Type: Contract': one row for 'ALL' (mgmt) with 'Provided' status and 'Unspecified' state, and another row for 'ALL' (mgmt) with 'Consumed' status and 'Unspecified' state. The columns in the table are Name, Tenant, Tenant Alias, Contract Type, Provided / Consumed, QoS Class, State, Label, and Subject Label.

验证

您可以在外部路由器中看到INB路由。

```
admin-Infra# show ip route vrf aci-inb IP Route Table for VRF "aci-inb" '*' denotes best ucast next-hop
```



注意：如果您的ACI版本是旧版本，主干节点不会响应带内ping，因为它们使用环回接口进行连接，而环回接口不响应地址解析协议(ARP)。

设置带内管理后，思科APIC始终会为来自思科APIC(如TACACS)的任何流量优先选择带内。

对于专门向OOB地址发送请求的主机，仍可访问OOB。

故障排除

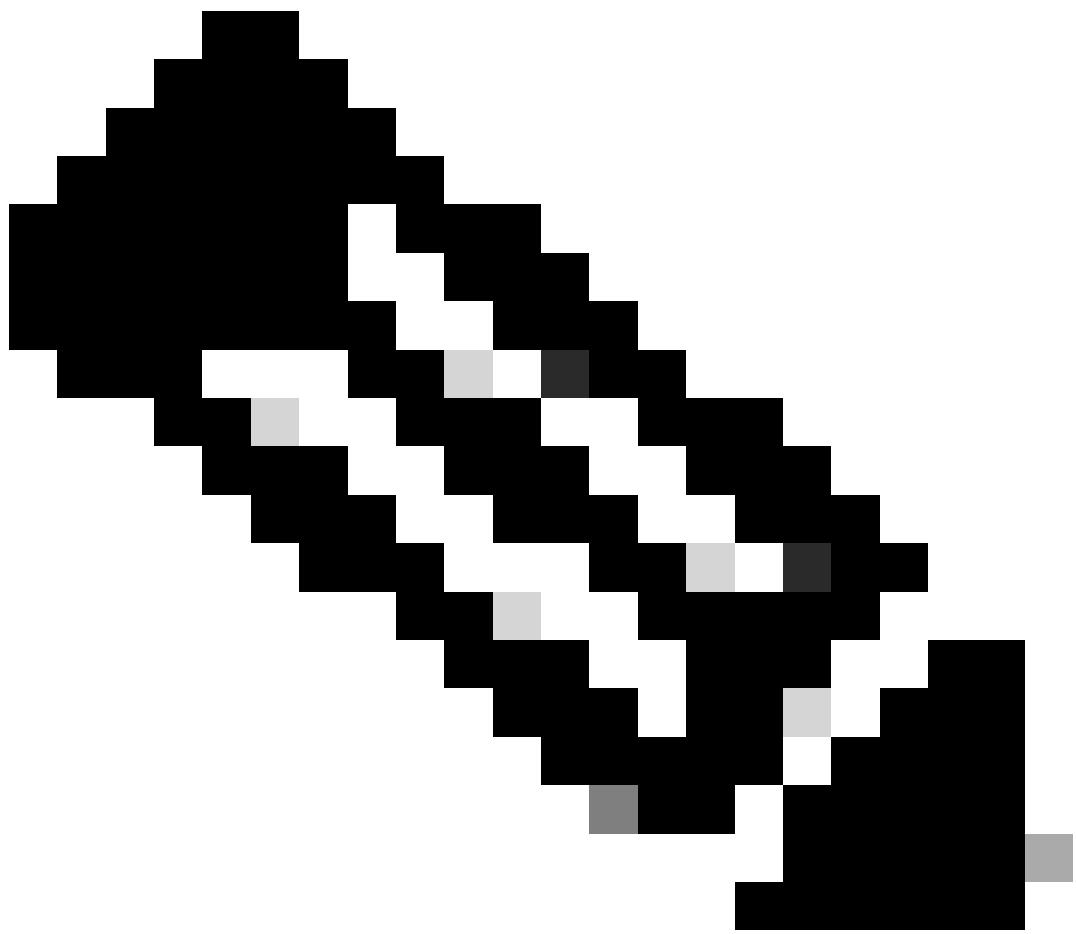
首先，您必须检查INB是否存在任何故障。

在交换机上：

```
f6leaf102# show vrf mgmt:inb VRF-Name VRF-ID State Reason mgmt:inb 27 Up -- f6leaf102# f6leaf102# show
```

在APIC上：

```
f6apic1# ifconfig bond0.10: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1496 inet 192.168.6.1 netmask
```



注意：此**Enforce Domain Validation**功能检查EPG使用的VLAN/域和接口配置。如果未启用，枝叶交换机将在推送配置时忽略域检查。

启用此功能后，便无法将其禁用。建议启用此选项以避免配置不完整。

The screenshot shows the 'System Settings' page with the 'Fabric-Wide Settings' option selected. The right panel displays the 'Fabric-Wide Settings Policy' configuration. A red box highlights the 'Enforce Domain Validation' checkbox, which is checked. Other visible options include 'Disable Remote EP Learning', 'Enforce Subnet Check', 'Enforce EPG VLAN Validation', 'Spine Oflex Client Authentication', 'Leaf Oflex Client Authentication', 'Spine SSL Oflex', 'Leaf SSL Oflex', 'SSL Oflex Versions' (with TLSv1, TLSv1.1, and TLSv1.2), 'Reallocate Gipo', and 'Restrict Infra VLAN Traffic'. A note at the top states: 'This object was created by an unknown orchestrator. It is recommended to only modify this object using the appropriate orchestrator.'

目录

[简介](#)

[先决条件](#)

[要求](#)

[使用的组件](#)

[配置](#)

[网络图](#)

[1. 配置枝叶接口中的INB VLAN](#)

[1.1.创建VLAN池](#)

[1.2.创建物理域](#)

[1.3.创建可附加访问实体配置文件](#)

[1.4.创建枝叶接入端口策略组](#)

[1.5.创建枝叶接入端口策略组](#)

[1.6.将接口配置文件应用于枝叶](#)

[2.在管理租户中分配INB地址](#)

[2.1.创建网桥域\(BD\) INB子网](#)

[2.2.创建INB EPG](#)

[2.3.为设备分配静态INB IP地址](#)

[3.泄漏INB地址](#)

[3.1.在管理租户中创建L3out](#)

[3.2.关联BD到L3out](#)

[3.3.创建合同](#)

[3.4. 将合同应用于INB EPG](#)

[3.5. 将合同应用到L3out EPG](#)

[验证](#)

[故障排除](#)

[相关信息](#)

您可以随时联系思科TAC获得进一步的故障排除帮助。

相关信息

- [用于硬件流遥测导出的思科ACI带内管理配置](#)
- [排除ACI外部转发故障](#)
- [排除ACI L3Out - 子网0.0.0.0/0和系统PcTag_15故障](#)
- [排除ACI中的意外路由泄漏故障](#)
- [排除ACI访问策略故障](#)
- [ACI交换矩阵L3Out白皮书](#)
- [思科ACI合同指南白皮书](#)

- [思科技术支持和下载](#)

关于此翻译

思科采用人工翻译与机器翻译相结合的方式将此文档翻译成不同语言，希望全球的用户都能通过各自的语言得到支持性的内容。

请注意：即使是最好的机器翻译，其准确度也不及专业翻译人员的水平。

Cisco Systems, Inc. 对于翻译的准确性不承担任何责任，并建议您总是参考英文原始文档（已提供链接）。