

# 配置Nexus控制面板协调器将终端从一个DC迁移到另一个DC

## 目录

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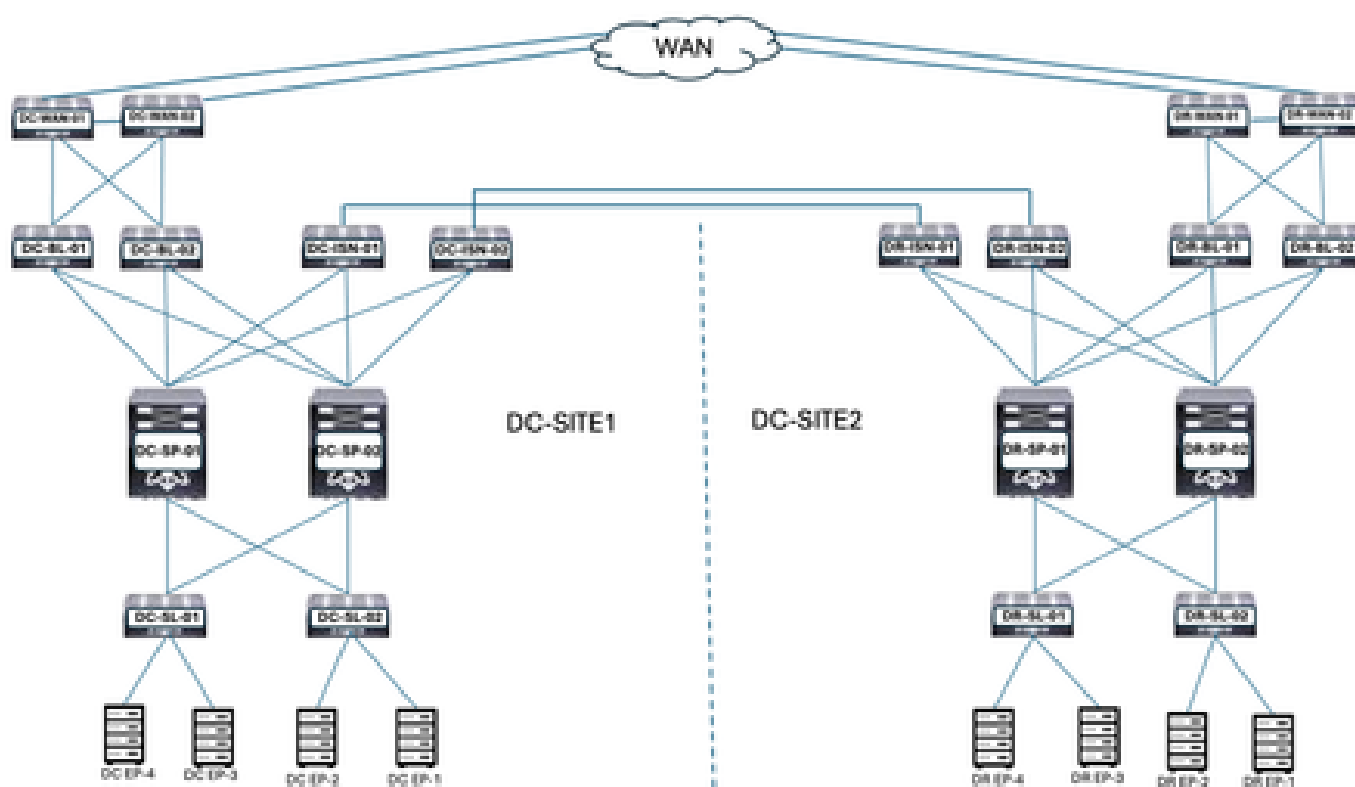
## 简介

本文档介绍将终端从一个数据中心迁移到另一个数据中心所需的设计和配置更改。

## 物理拓扑

图1显示了两个数据中心的互连。

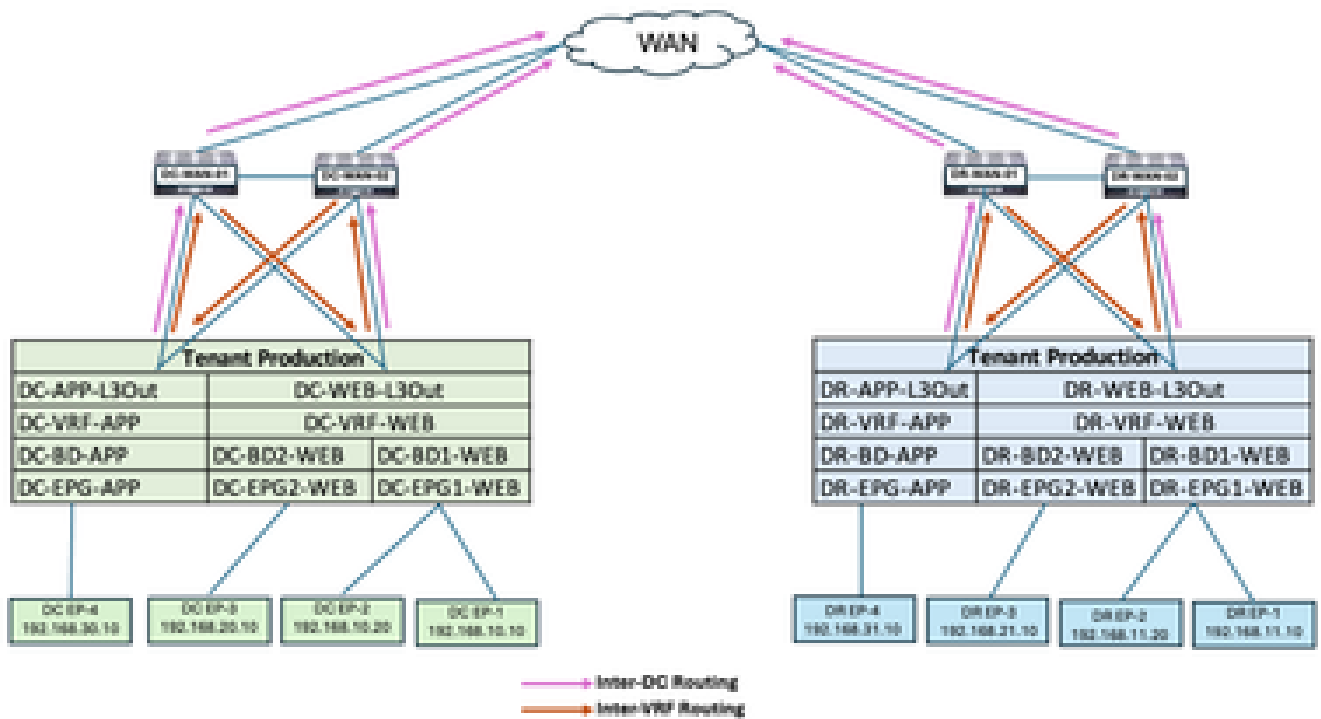
图 1：物理拓扑



DC和DR位置具有以应用为中心的基础设施(ACI)。DC和DR位置包含WAN交换机、边界枝叶、主干、站点间网络设备(ISN)、服务器枝叶和连接的终端。

## 逻辑拓扑

图 2：逻辑拓扑



两个站点中配置的逻辑对象：

- 租户生产在DC和DR站点配置。
- DC-VRF-WEB和DC-VRF-APP配置在DC-SITE1中。DR-VRF-WEB和DR-VRF-APP配置在DR-SITE2中。
- 每个VRF在指向WAN交换机的边界枝叶上配置有本地L3Outs。在指向WAN交换机的边界枝叶上配置默认路由。
- WAN交换机配置了用于VRF间和DC间通信的静态路由。
- 两个数据中心都配置了本地BD和EPG。DC有DC-BD1-WEB/DC-EPG1-WEB、DC-BD2-WEB/DC-EPG2-WEB和DC-BD-APP/DC-EPG-APP。DR有DR-BD1-WEB/DR-EPG1-WEB、DR-BD2-WEB和DR-BD-APP DR-EPG-APP
- 存在在WEB和APP EPG中连接的终端。
- DC-SITE1和DR-SITE2已添加到Nexus Dashboard Orchestrator。

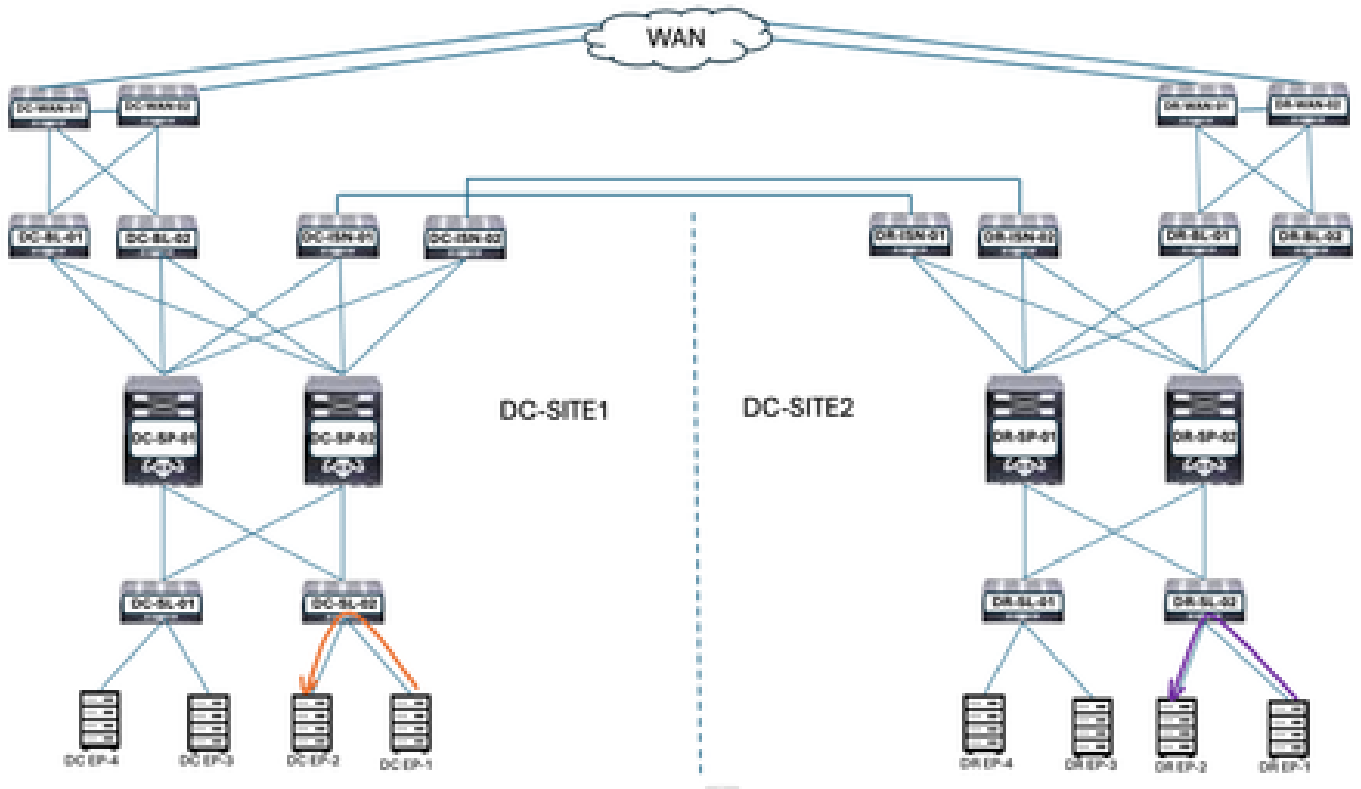
## 终端迁移前的流量

数据中心中有多种类型的流量：

- EPG内流量
- EPG间流量
- VRF间流量
- DC间流量

## EPG内流量

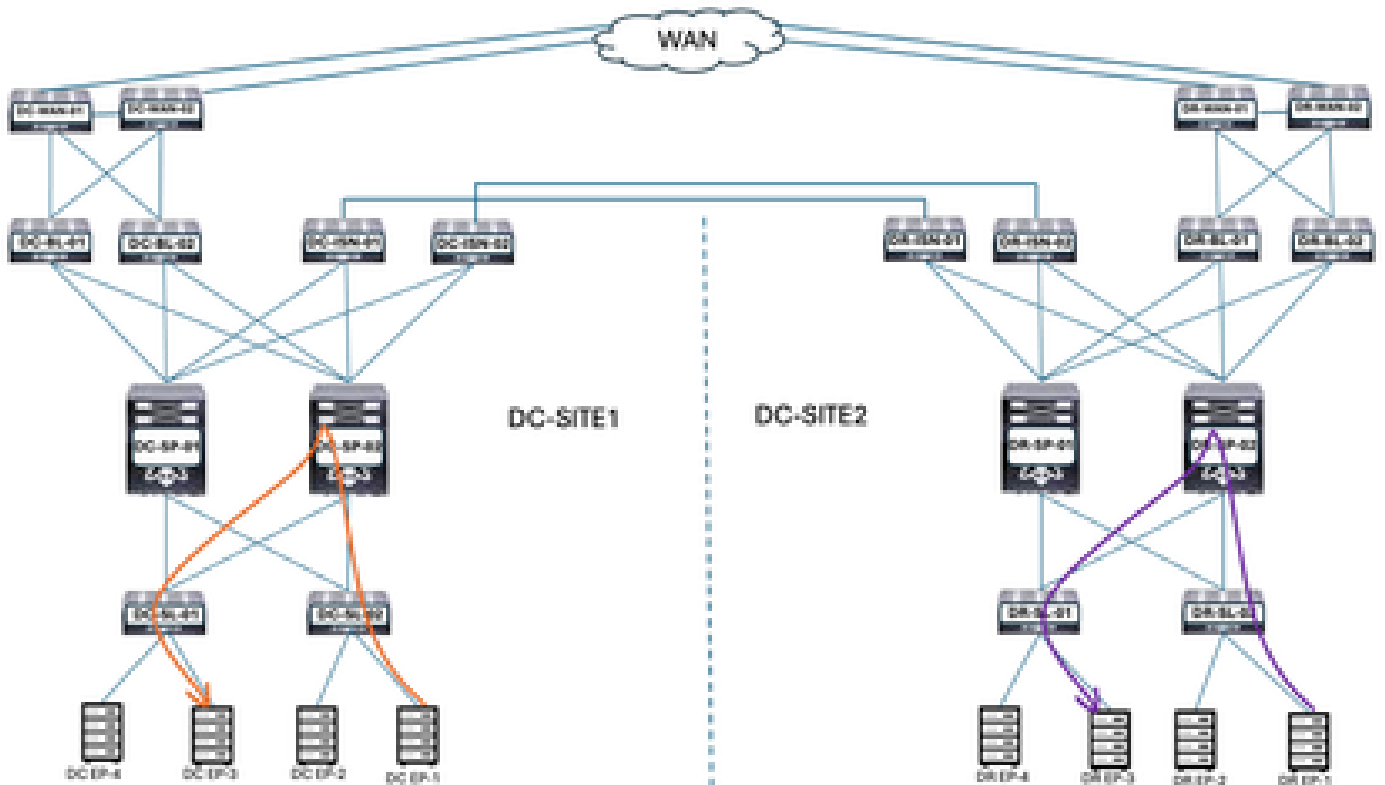
图 3：EPG内流量



DC-EP-1和DC-EP-2之间的通信是EPG内通信，因为两个终端都属于DC-EPG1-WEB。DR-EP-1和DR-EP-2之间的通信是EPG内通信，因为两个终端都属于DR-EPG1-WEB。

### EPG间流量

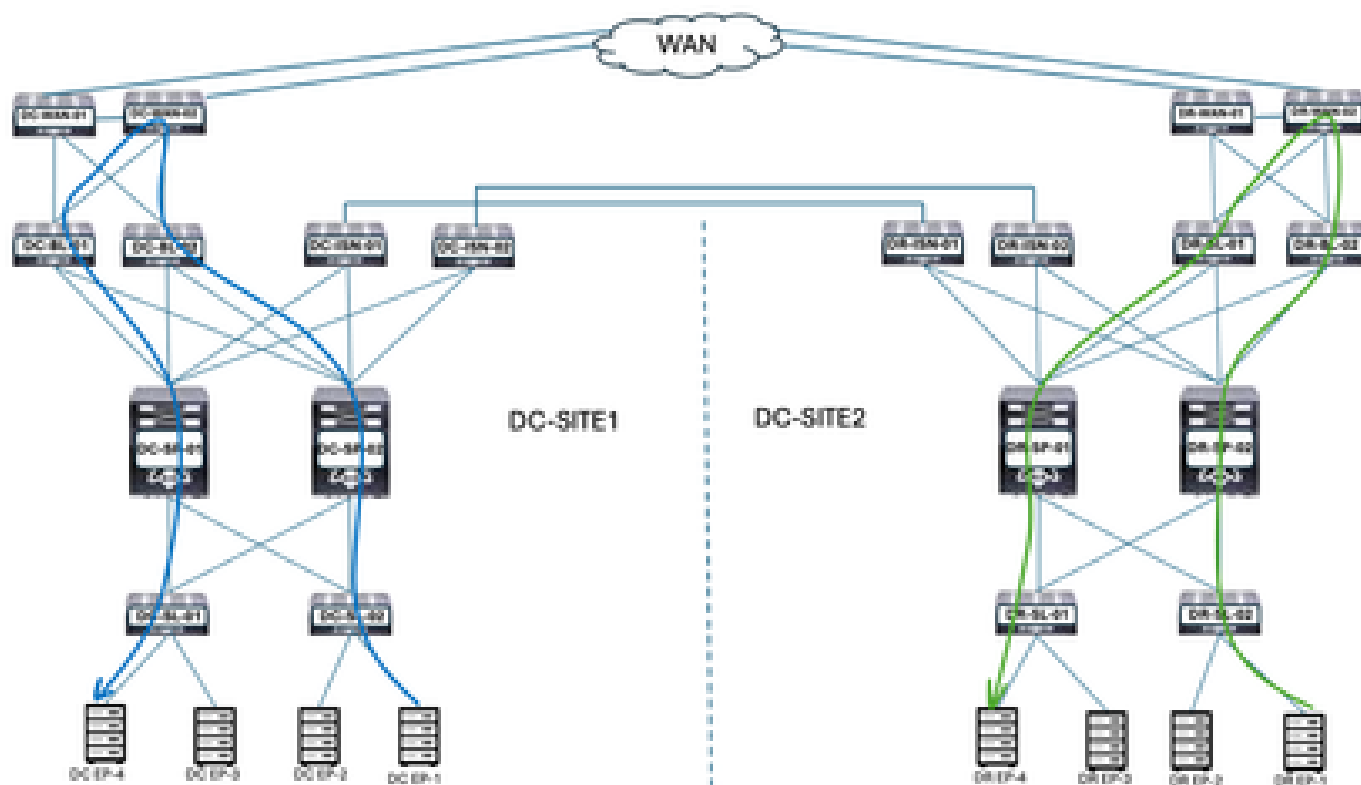
图 4：EPG间流量



DC-EP-1和DC-EP-3分别是DC-EPG1-WEB和DC-EPG2-WEB的一部分，这两个终端之间的通信是EPG间流量。DR-EP-1和DR-EP-3分别是DR-EPG1-WEB和DR-EPG2-WEB的一部分，这两个终端之间的通信是EPG间流量。

## VRF间流量

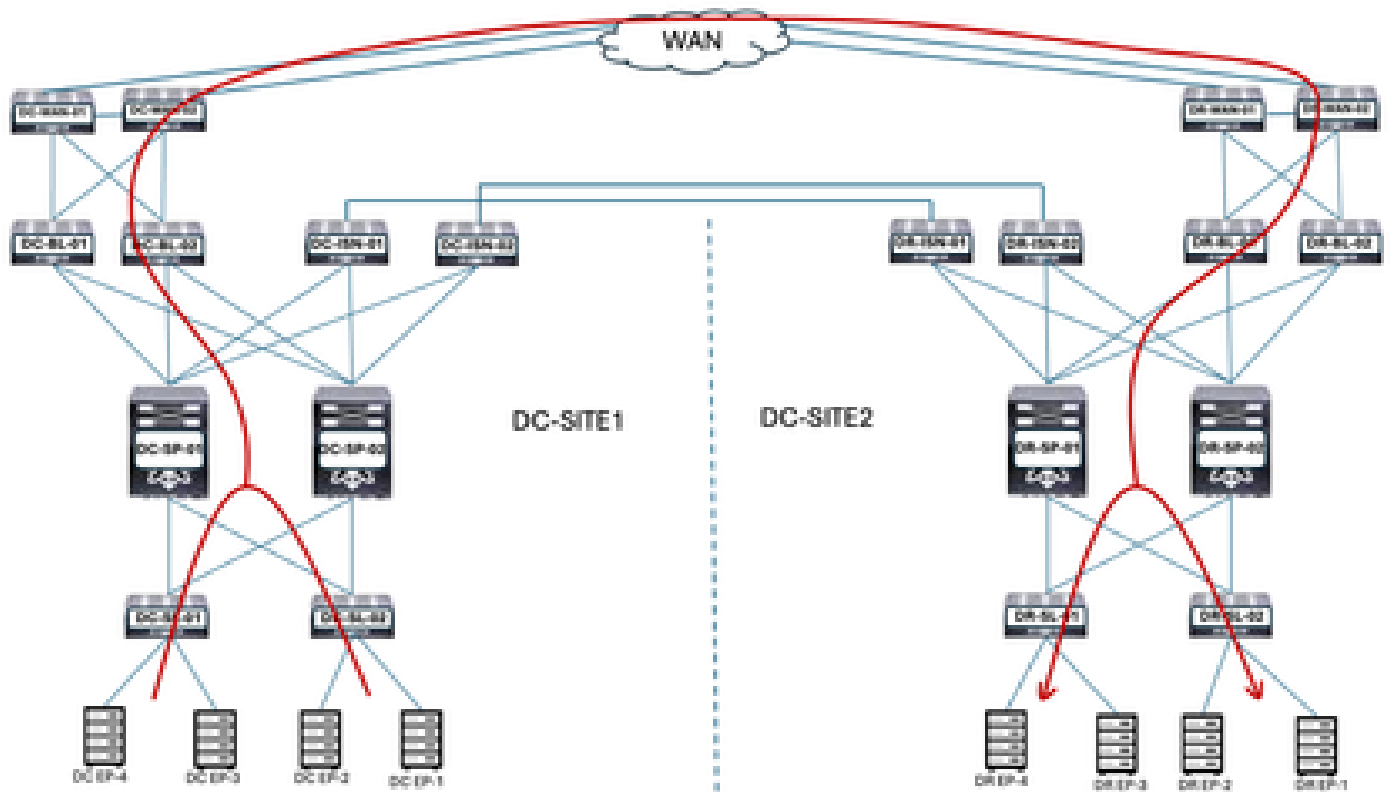
图 5 : VRF间流量



DC边界枝叶交换机将流量转发到DC WAN交换机，以实现任何VRF间通信。DC WAN交换机用于VRF间通信。DC-EP-1/EP-2(VRF WEB)通过WAN交换机与DC-EP-4(VRF APP)通信。DR边界枝叶交换机将流量转发到DR WAN交换机，以便进行VRF间通信。DR WAN交换机用于VRF间通信。DR-EP-1/EP-2(VRF WEB)通过WAN交换机与DR-P-4(VRF APP)通信。

## DC间流量

图 6 : DC间流量



DC终端和DR终端之间的通信转发到边界枝叶。边界枝叶将流量转发到WAN交换机。WAN交换机用于DC间通信。

## 迁移计划

Nexus Dashboard Orchestrator用于在两个站点之间创建多站点，跨站点和终端的EPG/BD从DC-SITE1迁移到DR-SITE2,

### 方案1创建

通过Nexus Dashboard Orchestrator创建的方案1。

图 7：租户模板 — 添加架构

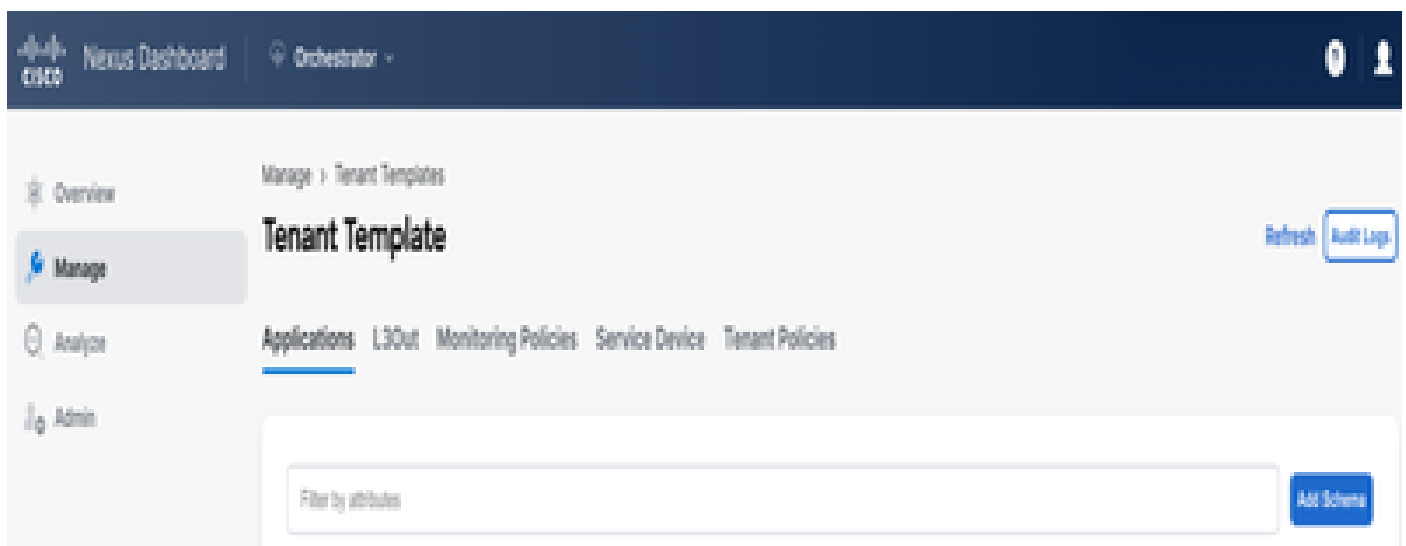
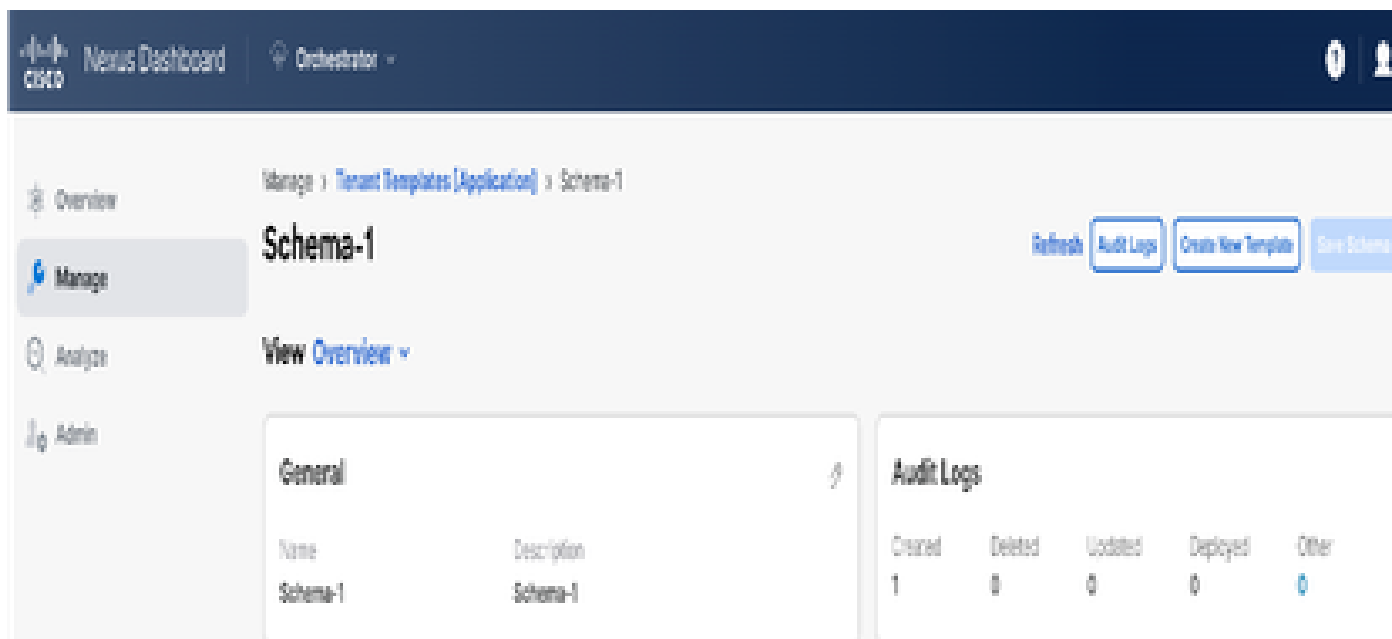


图 8：添加架构名称



## 模板 — VRF — 合同 — 扩展创建

在架构1中创建了Template-VRF-Contract-Longed。DC-SITE1和DR-SITE2将属于此模板，租户生产将与同一模板关联。这是拉伸的模板。VRF和合同必须作为单独模板的一部分，因为这些对象在其他BD/EPG之间共享。此模板用于将DC-SITE1 VRF和合同延伸到DR-SITE2。

图 9：添加应用模板 — 选择ACI多云

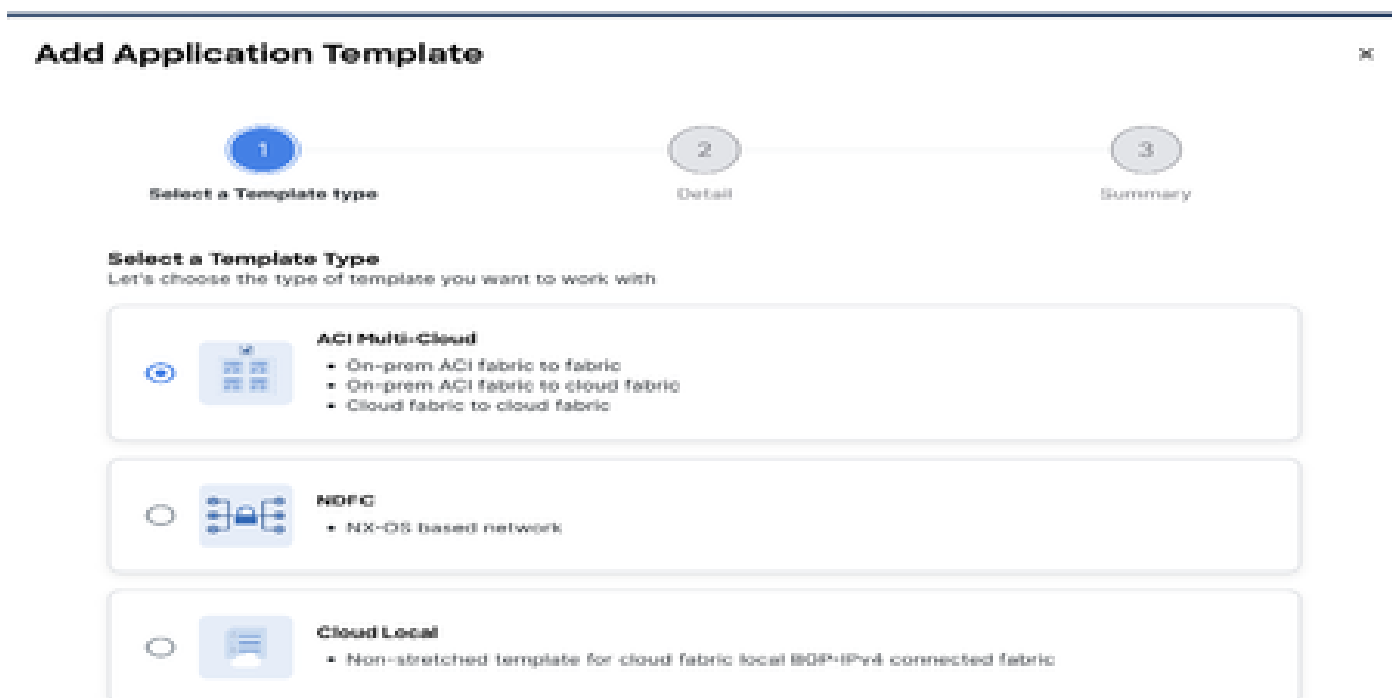


图 10：添加模板名称Template-WEB-VRF-Contract-Longed，选择租户生产

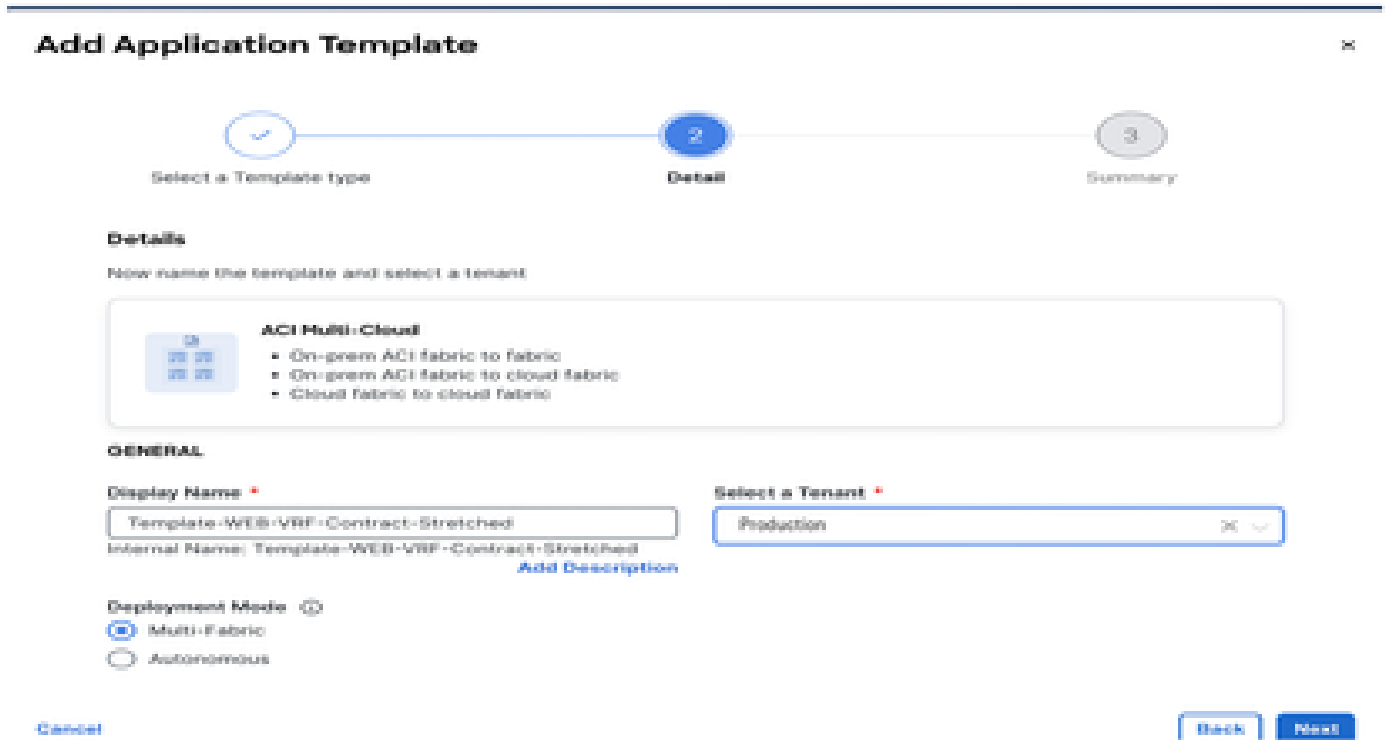


图 11：模板 — WEB-VRF — 合同 — 扩展详细信息



导入Template-VRF-Contract-Longed中的VRF-Contract

从DC-SITE1导入DC-VRF-WEB和DC-VRF-WEB-Contract。为EPG间通信和EPG到L3Out通信创建合同。

图 12：点击Import并选择DC-SITE1

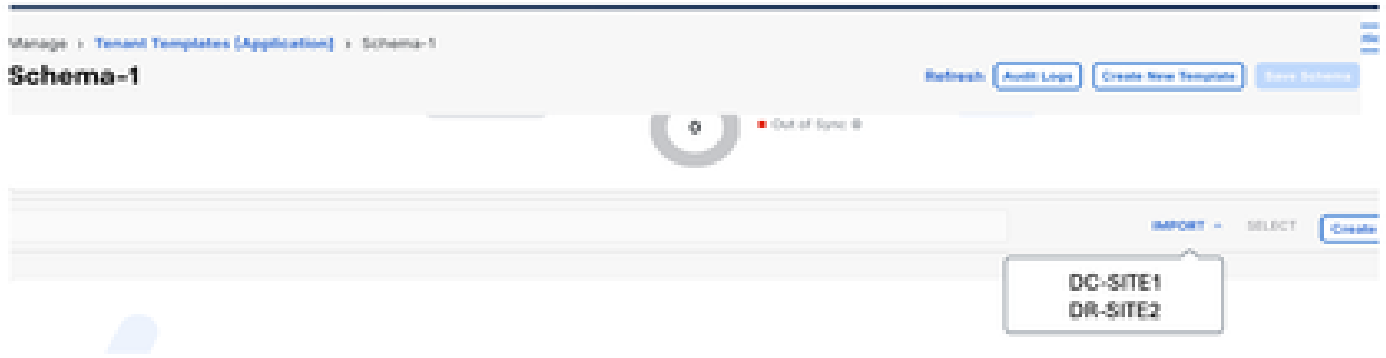


图 13 : 从DC-SITE1中选择合同

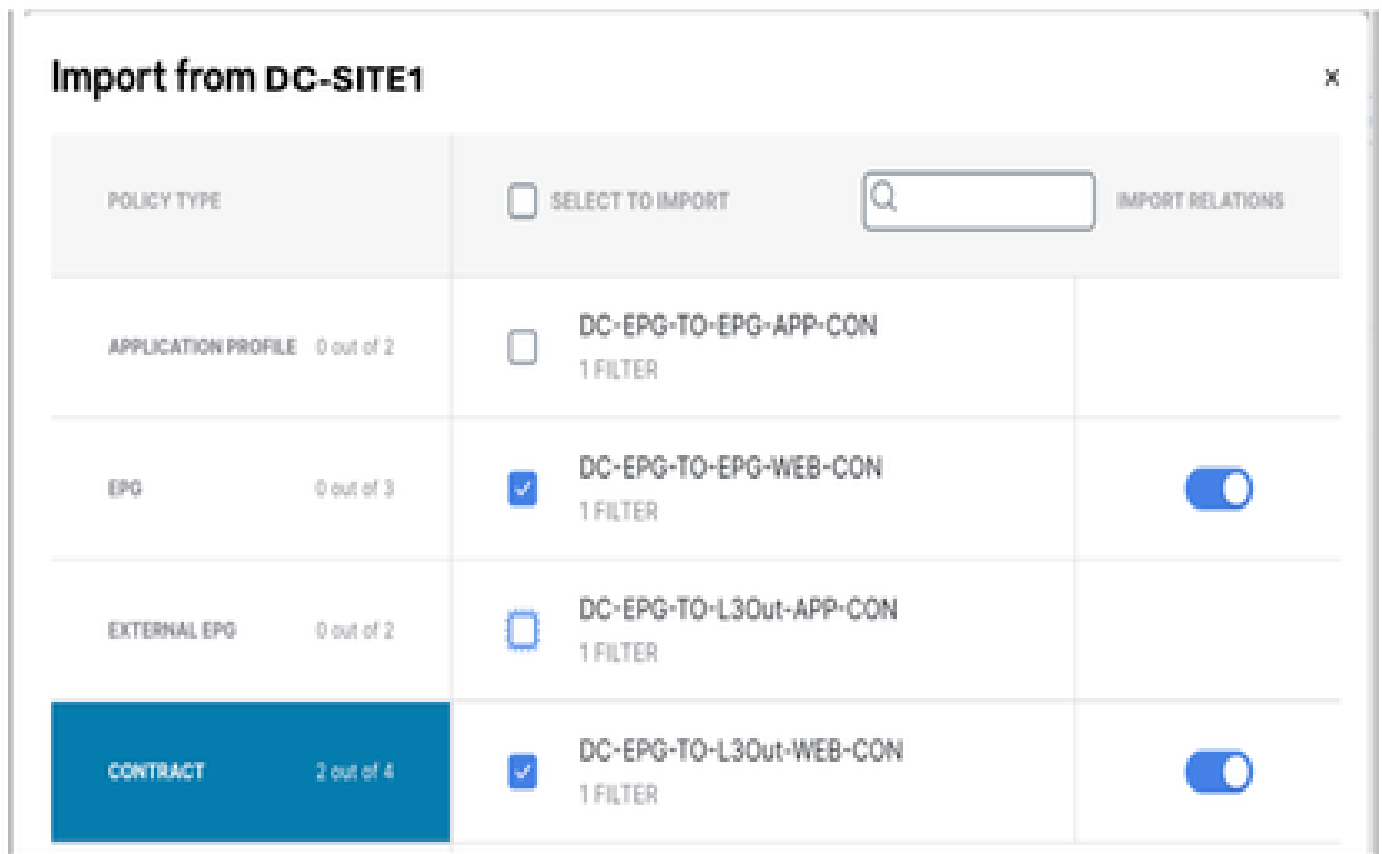


图 14 : 从DC-SITE1中选择过滤器



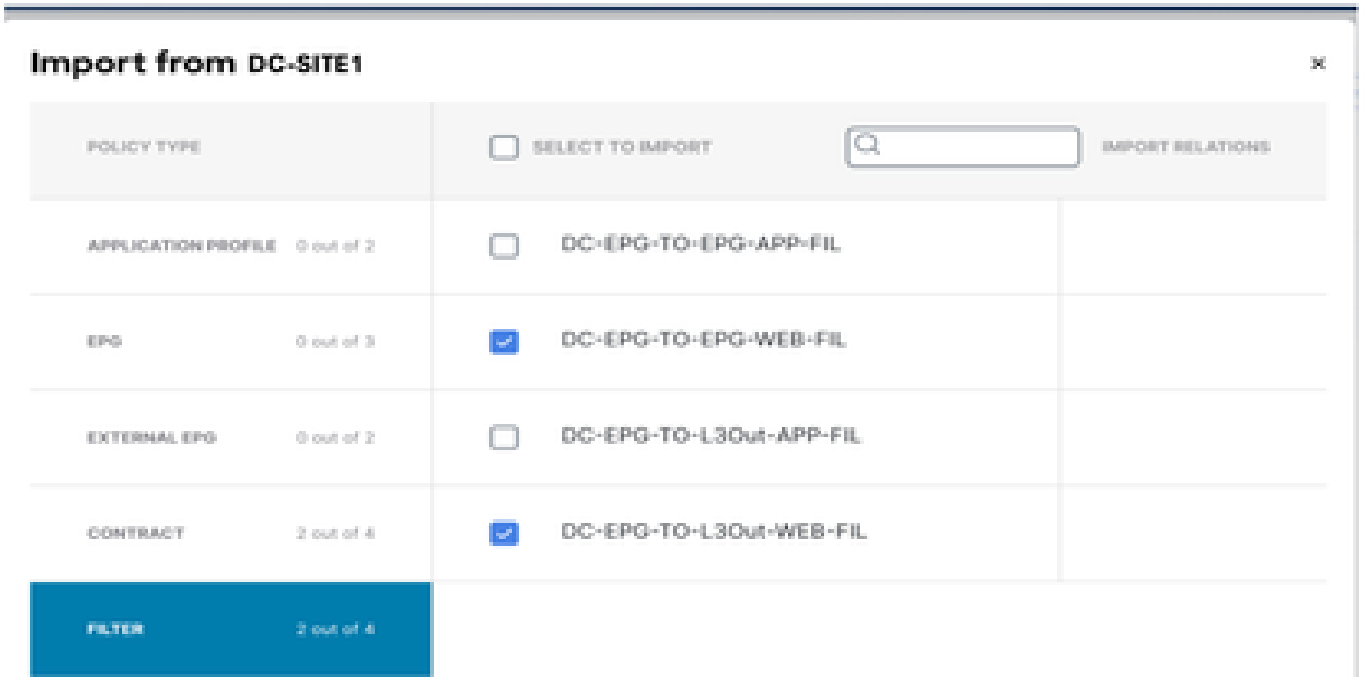


图 15 : 从DC-SITE1中选择VRF

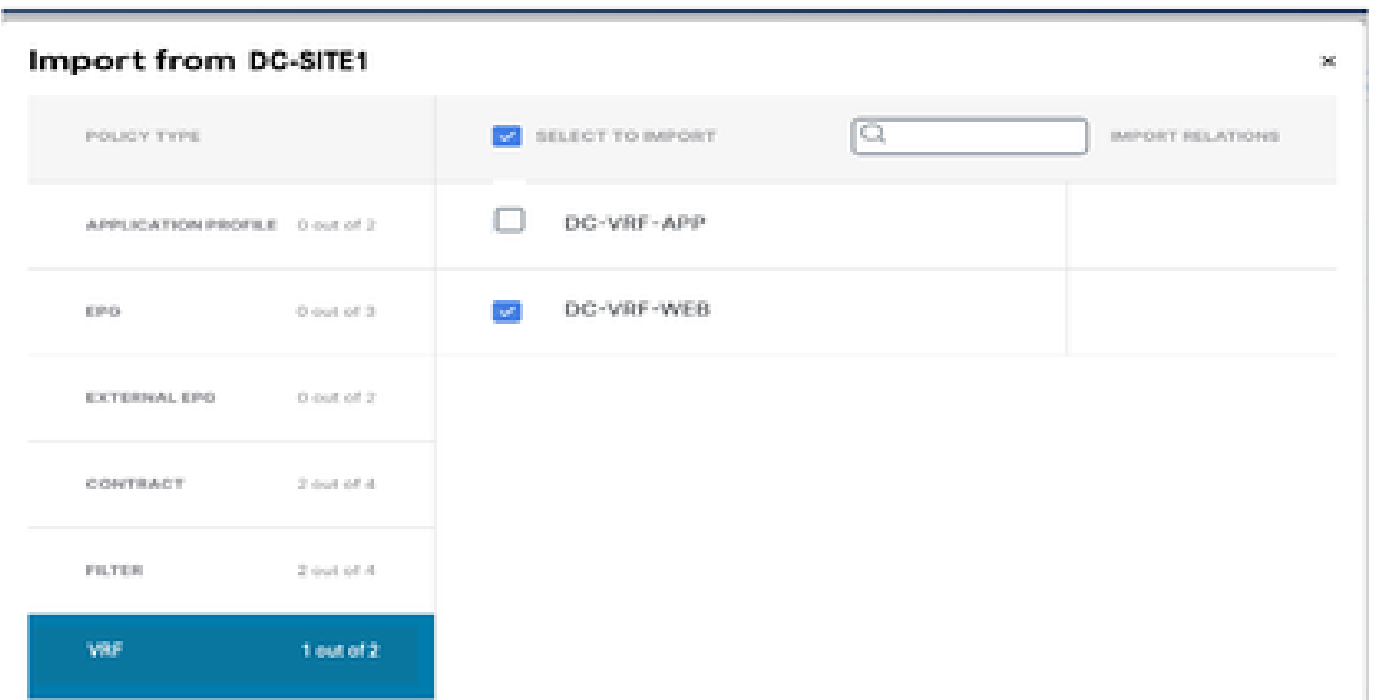
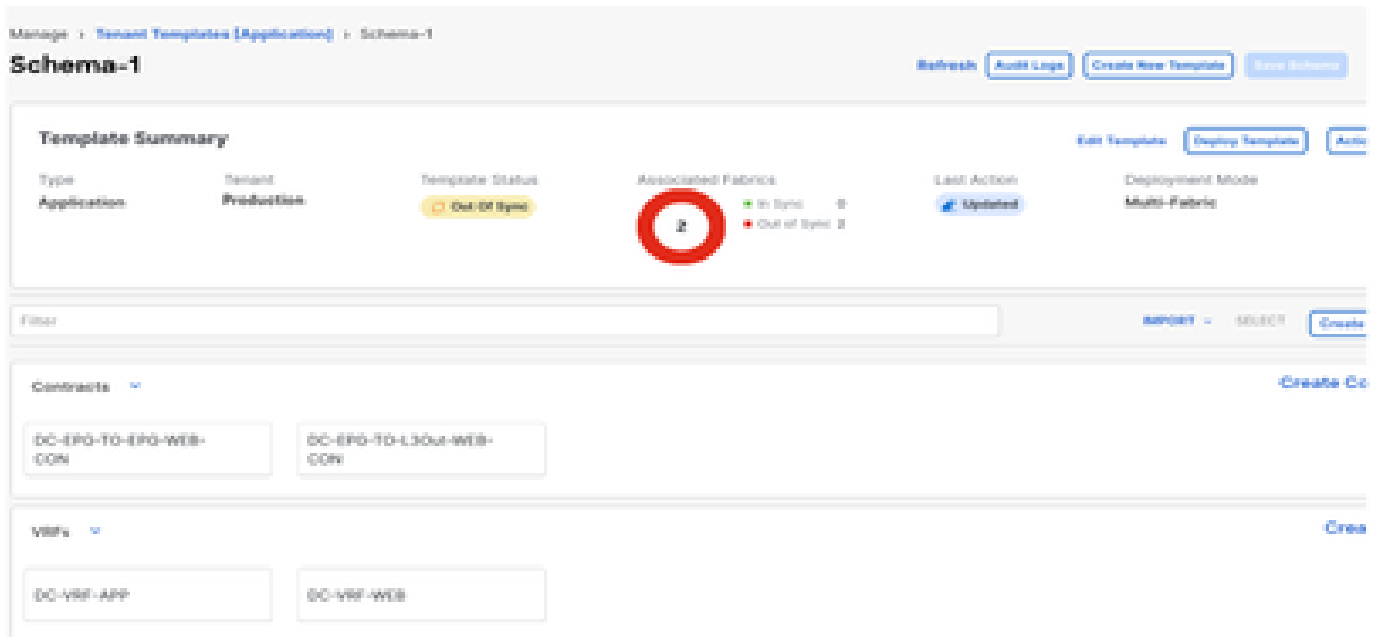


图 16 : 模板 — WEB-VRF — 合同 — 使用VRF和合同信息扩展



部署模板 — VRF — 合同 — 延长

点击Deploy Template-VRF-Contract-Longed并选择DC-SITE1和DR-SITE2

图17:向模板 — VRF — 合同 — 拉伸添加交换矩阵



图 18 : 部署外部同步模板

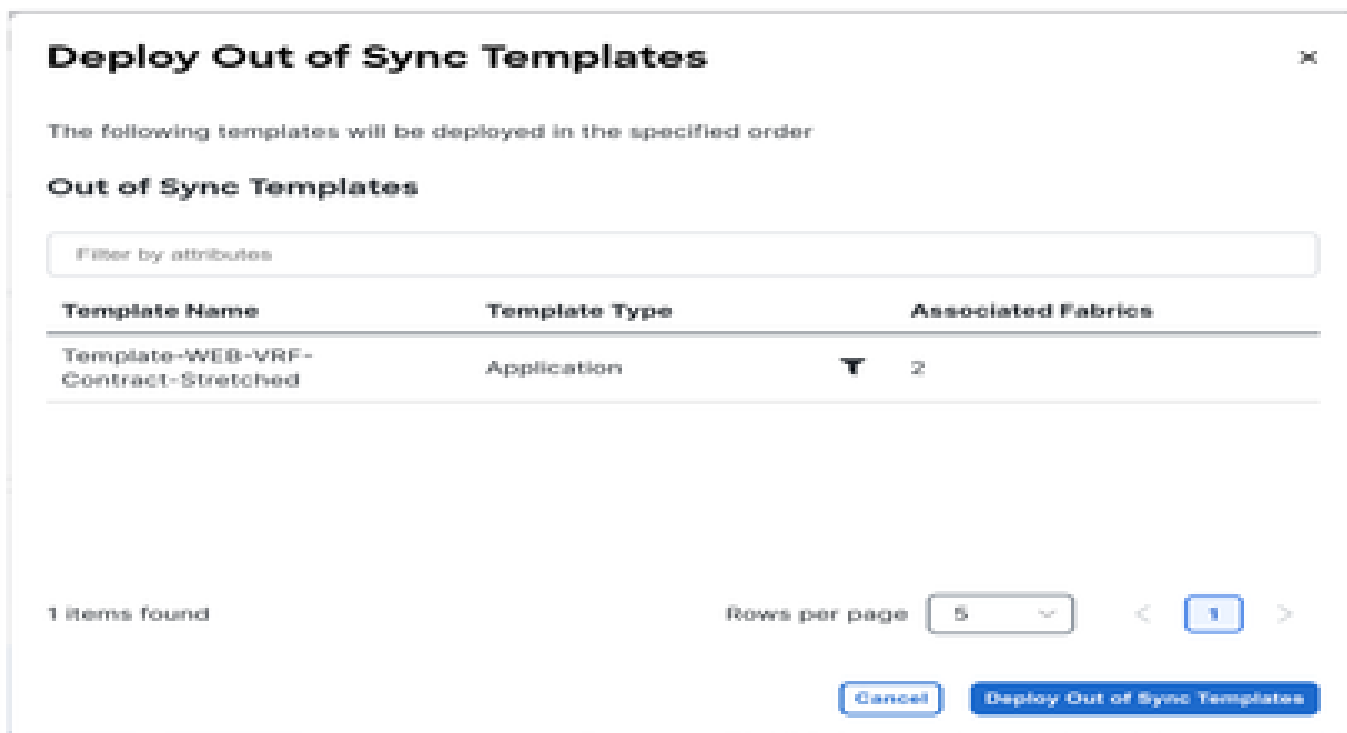


图 19 : 已完成部署

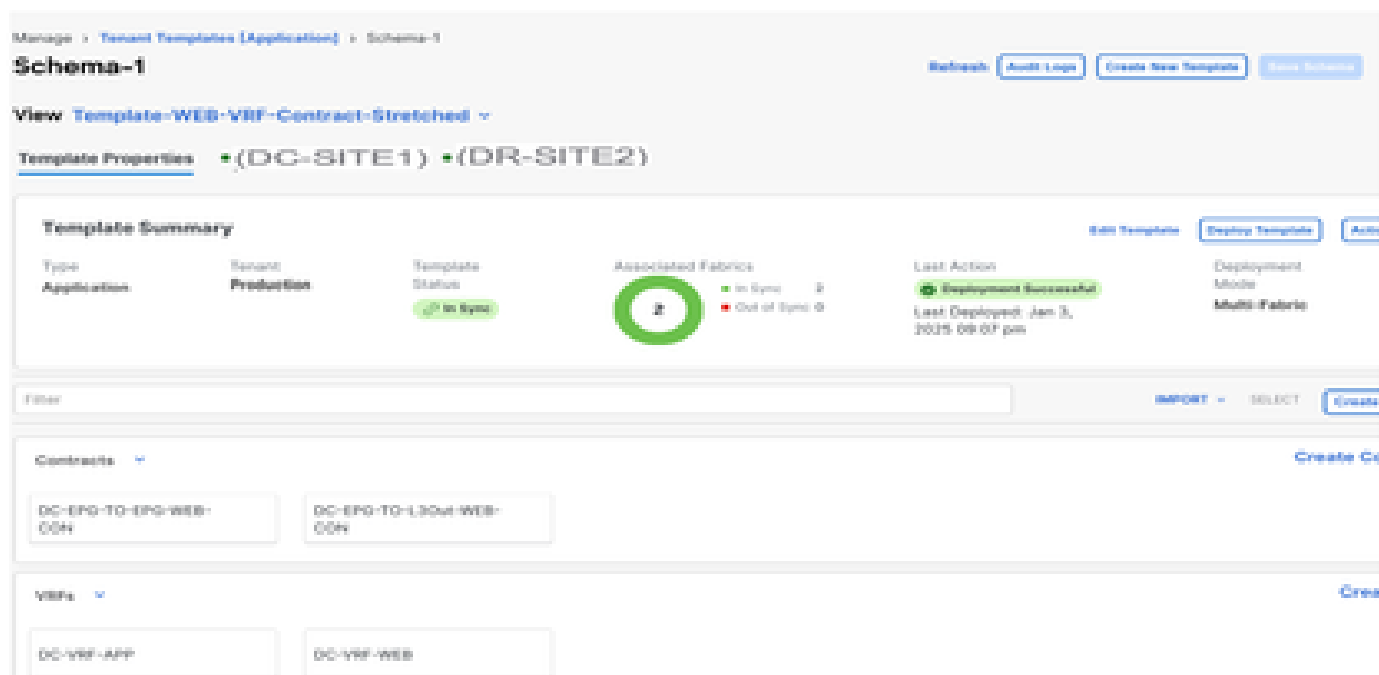
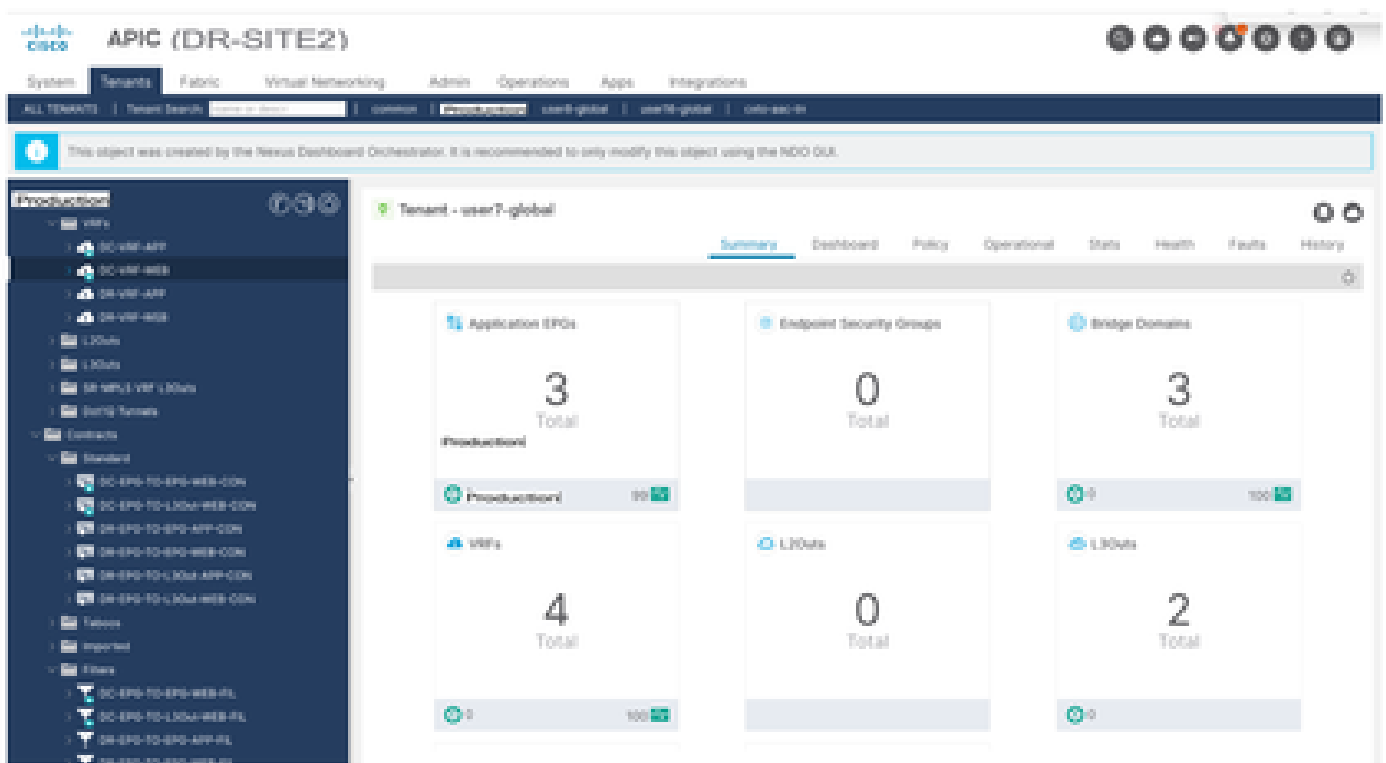
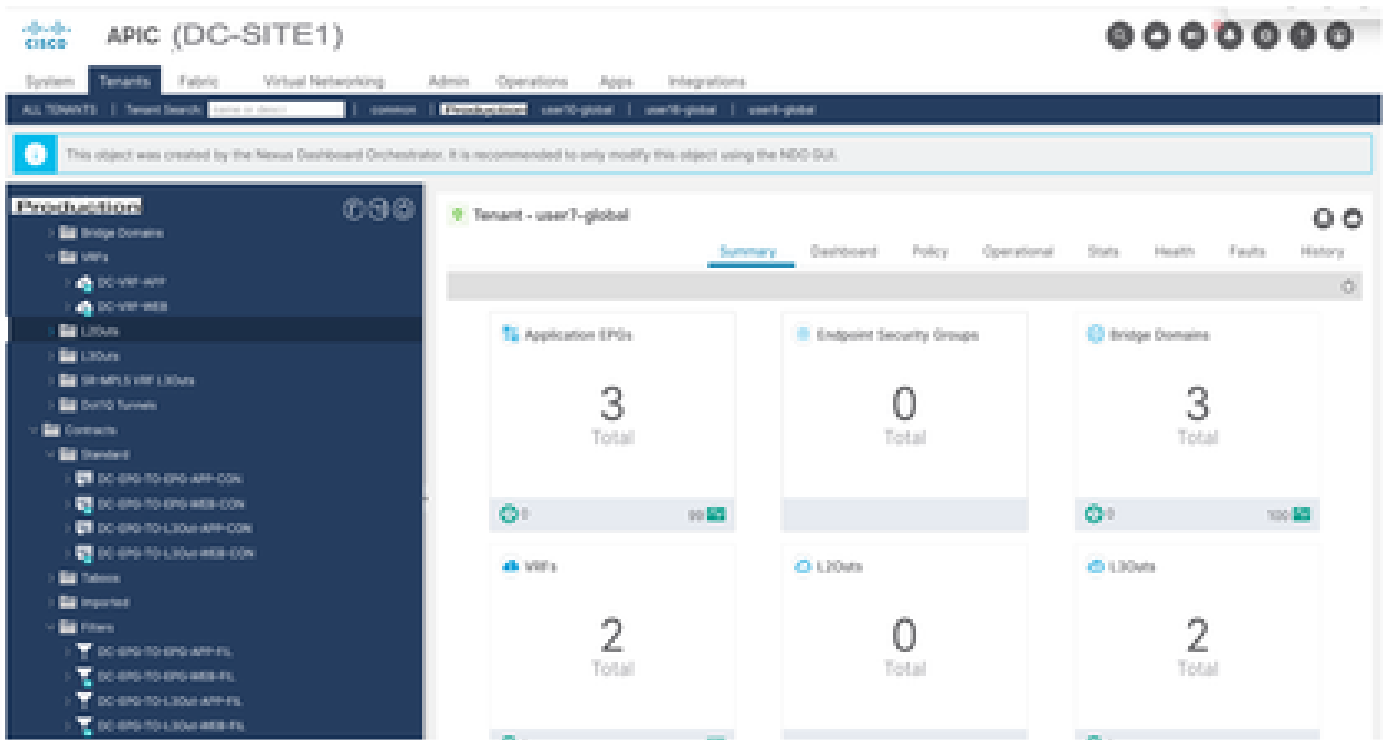


图 20 : 验证两个站点上部署的VRF和合同



## 模板 — EPG1-BD1 — 拉伸创建

在架构1中创建了Template-EPG1-BD1-Streted。DC-SITE1和DR-SITE2已添加到与同一模板关联的模板和租户 — Production。这是拉伸的模板。此模板用于将DC-EPG1-WEB和DC-BD1-WEB拉伸到DR-SITE2。

图 21：添加应用模板 — 选择ACI多云

## Add Application Template

⌵

1 Select a Template type      2 Detail      3 Summary

**Select a Template Type**  
Let's choose the type of template you want to work with

- ACI Multi-Cloud**
  - On-prem ACI fabric to fabric
  - On-prem ACI fabric to cloud fabric
  - Cloud fabric to cloud fabric
- NDPC**
  - NX-OS based network
- Cloud Local**
  - Non-stretched template for cloud fabric local BGP+IPv4 connected fabric

图 22 : 添加模板名称Template-EPG1-BD1-Proved , 选择租户生产

## Add Application Template

⌵

1 Select a Template type      2 Detail      3 Summary

**Details**  
Now name the template and select a tenant

- ACI Multi-Cloud**
  - On-prem ACI fabric to fabric
  - On-prem ACI fabric to cloud fabric
  - Cloud fabric to cloud fabric

**GENERAL**

**Display Name \***  
Template-EPG1-BD1-Stretched  
Internal Name: Template-EPG1-BD1-Stretched [Add Description](#)

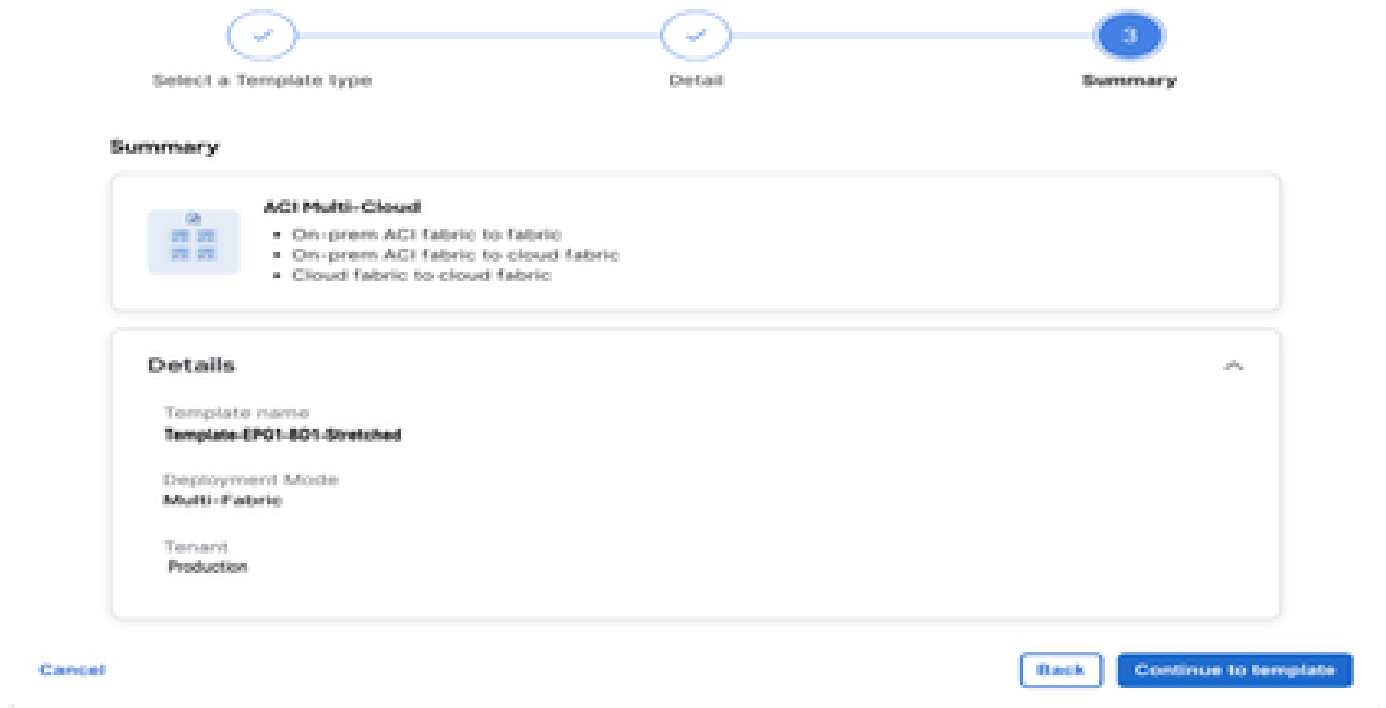
**Select a Tenant \***  
Production

**Deployment Mode**

Multi-Fabric  
 Autonomous

[Cancel](#) [Back](#) [Next](#)

图 23 : Template-EPG1-BD1-Tended Details



在Template-EPG1-BD1-Tended中导入EPG1-BD1

从DC-SITE1导入DC-EPG1-WEB和DC-BD1-WEB。

图 24 : 点击Import并选择DC-SITE1

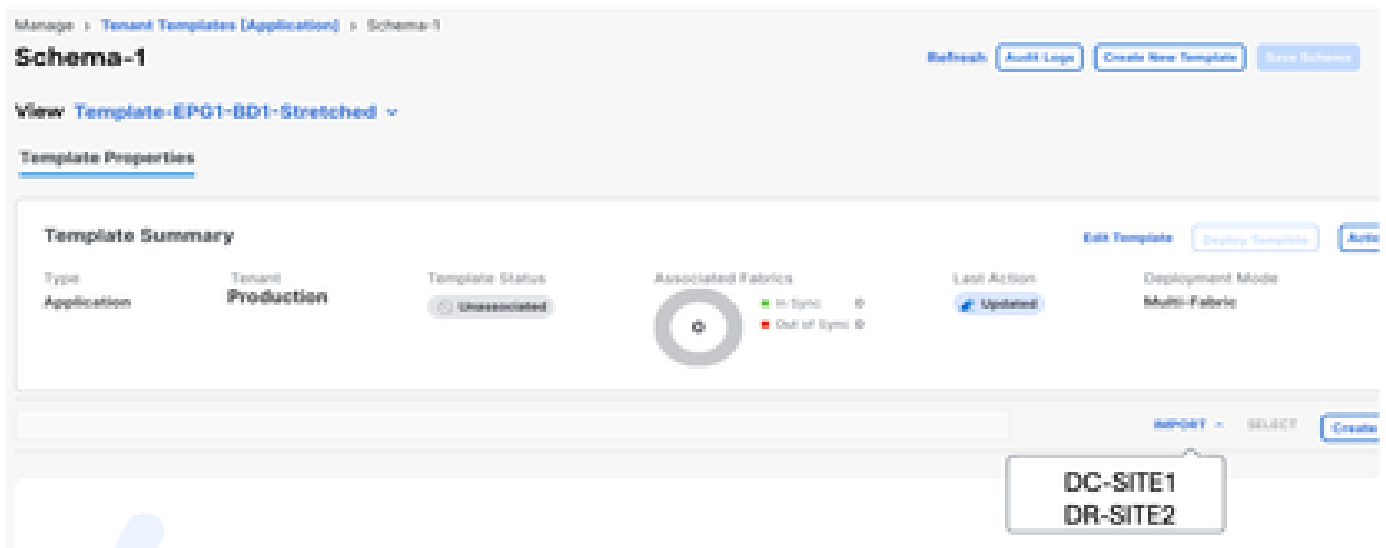


图25 : 从DC-SITE1中选择DC-EPG1-WEB

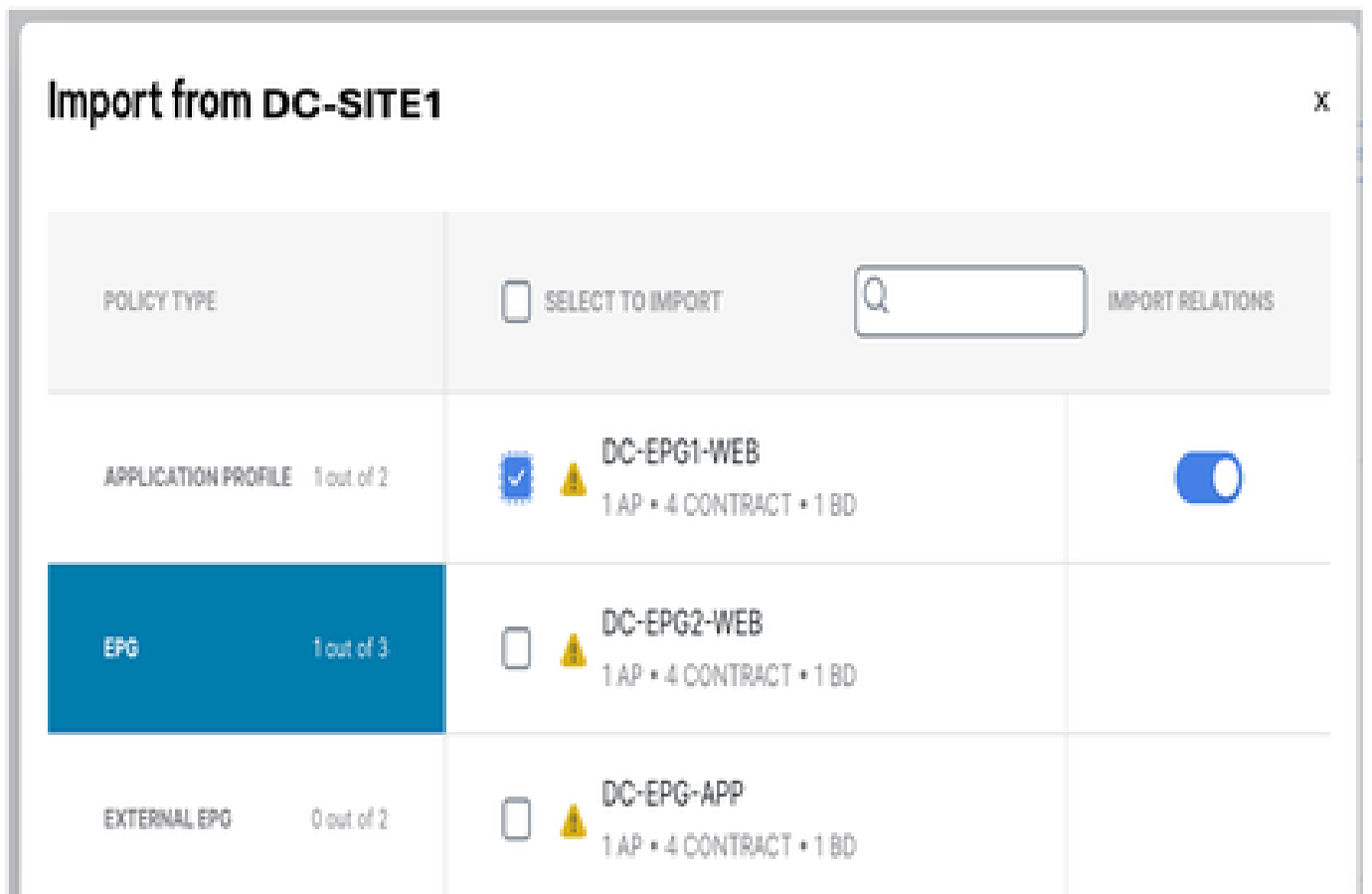
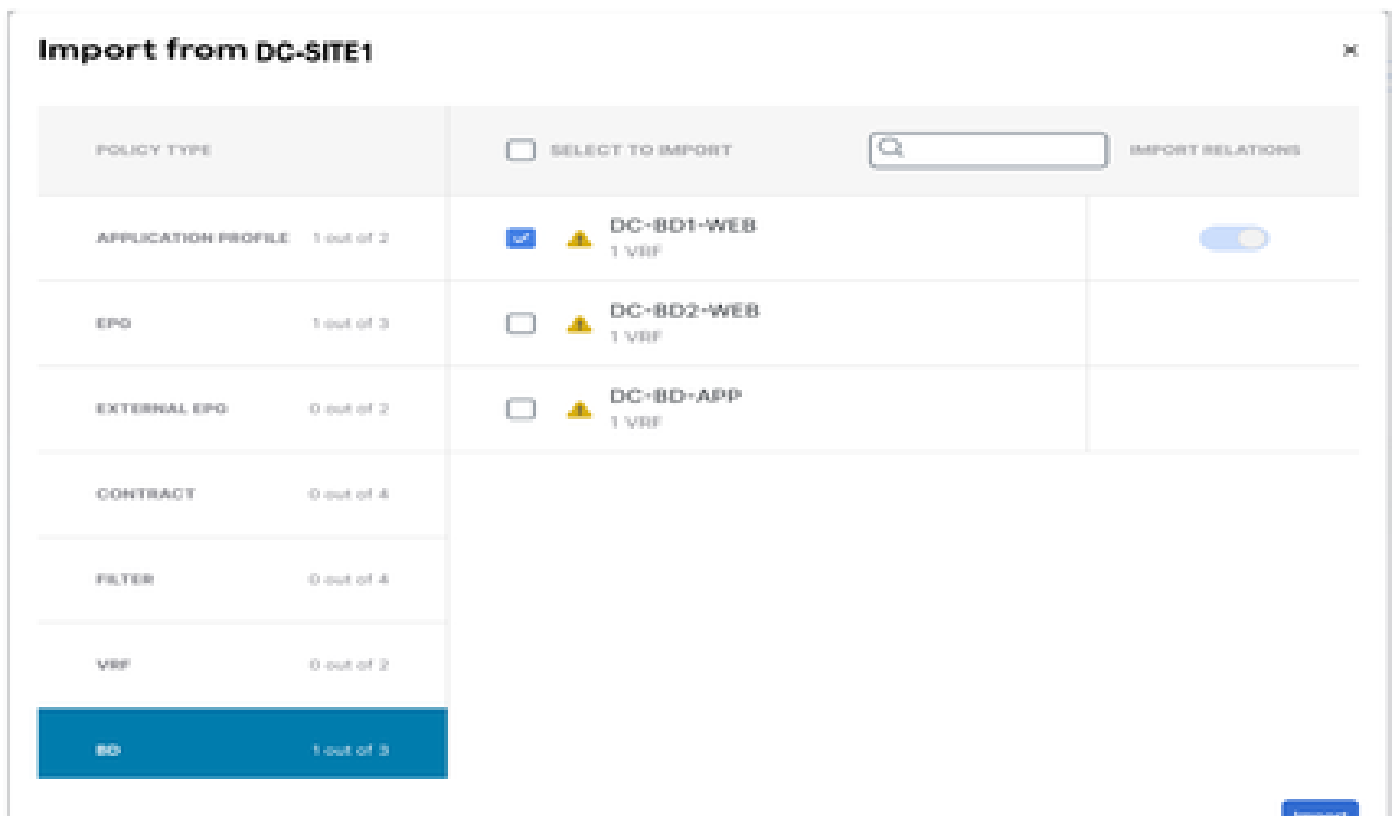


图26 : 从DC-SITE1中选择DC-BD1-WEB



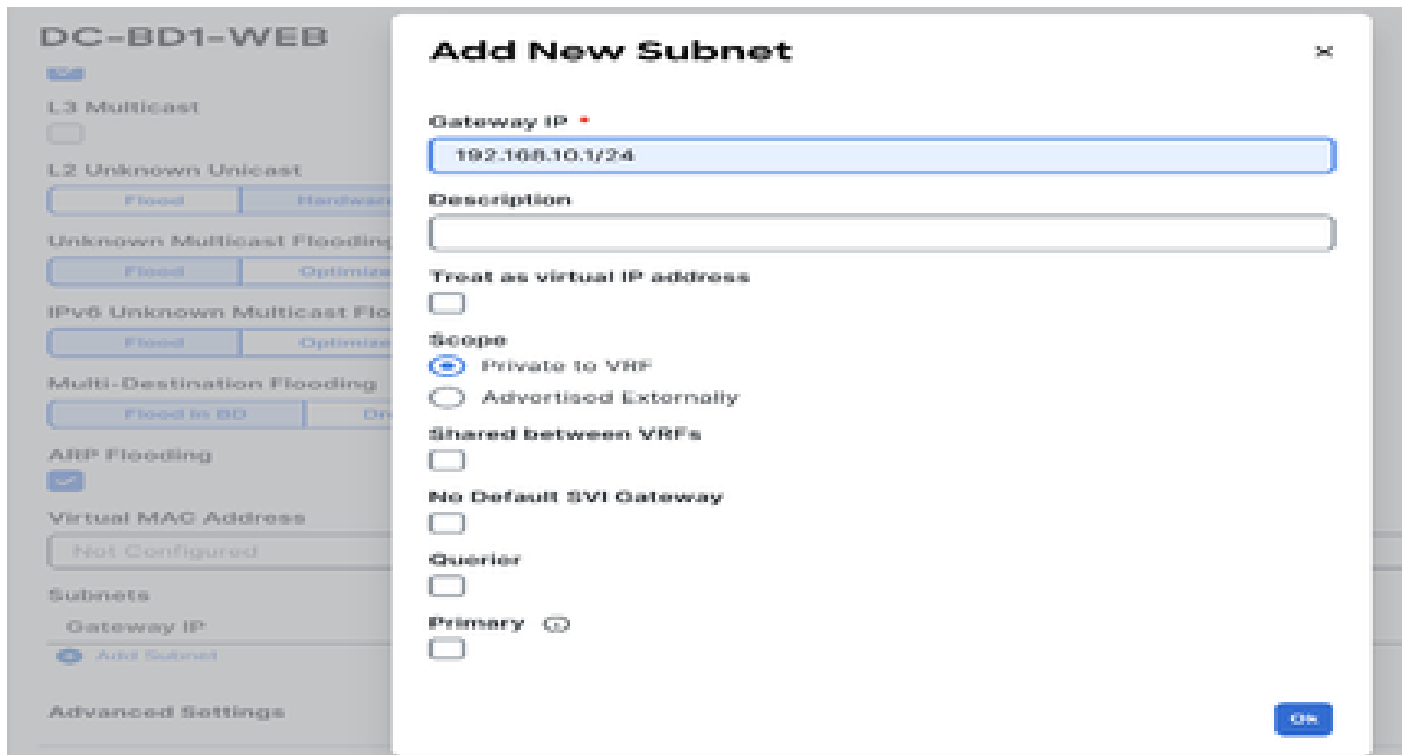
## 更改Template-EPG1-BD1-Longed中的BD设置

在DC-BD1-WEB设置中启用L2 Stretch并添加网关IP地址。此模板用于跨站点和在DC-SITE1和DR-SITE2中配置的任播网关延伸BD。

图 27：在DC-BD1-WEB中选择L2 Stretch



图 28：添加网关IP/子网





点击Deploy Template-EPG1-BD1-Loaded并选择DC-SITE1和DR-SITE2

图29:将交换矩阵添加到Template-EPG1-BD1-Extended



图 30 : 部署外部同步模板

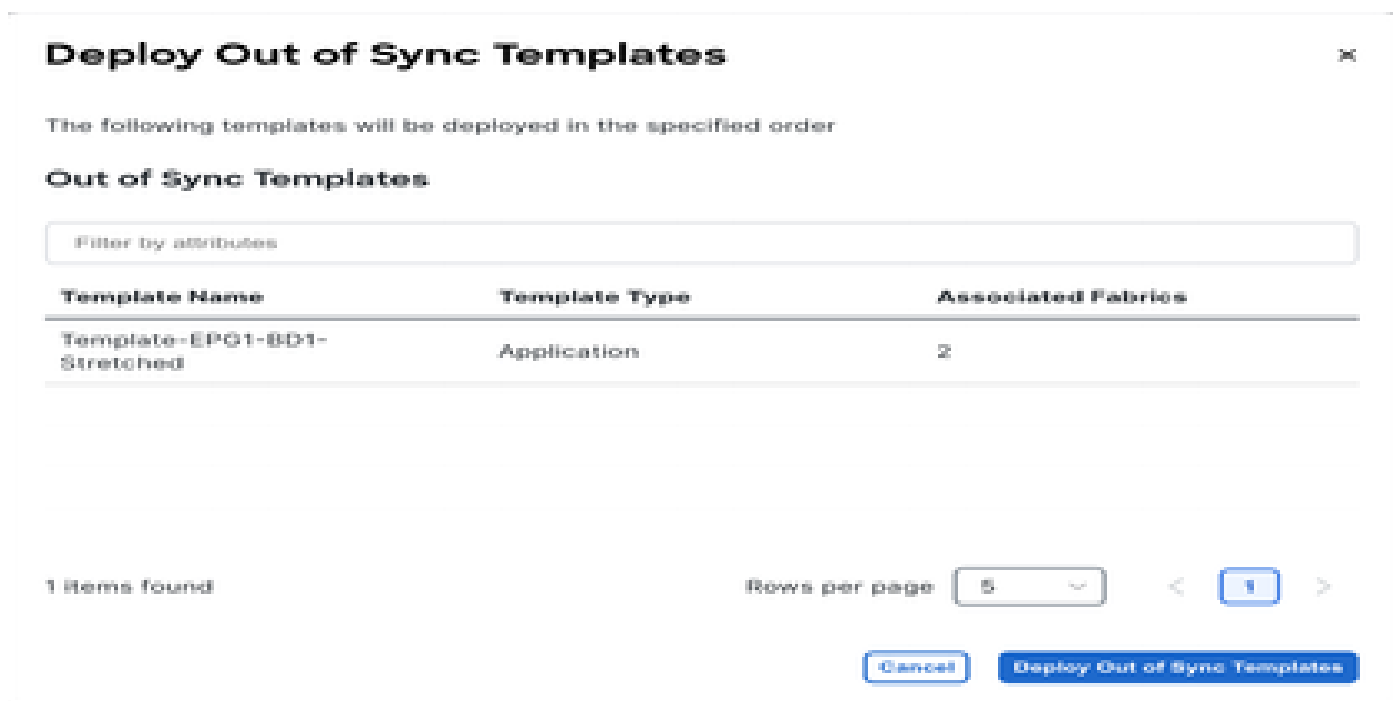
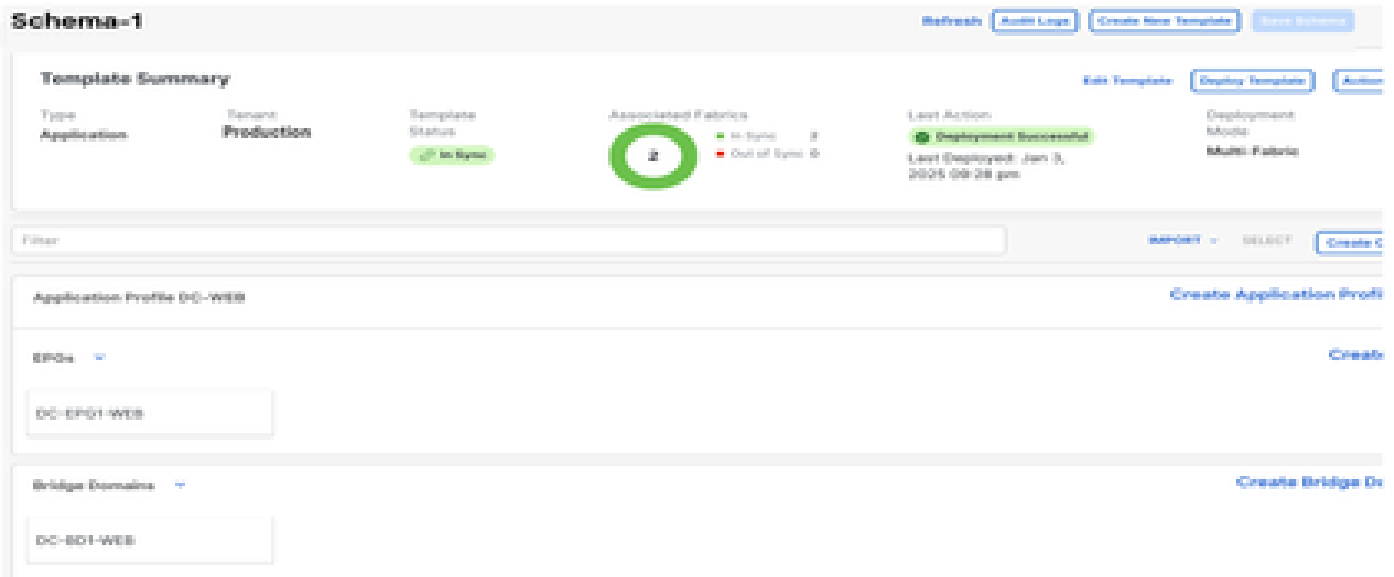


图 31 : 已完成部署



将DC-EP-1从DC-SITE1迁移到DR-SITE2

在DC-EPG1-WEB的DR-SITE2中配置静态绑定并关联DR-SITE2物理域。将DC-EP-1从DC-SITE1迁移到DR-SITE2。

图 32 : DC-SITE1当前学习的DC-EP-1

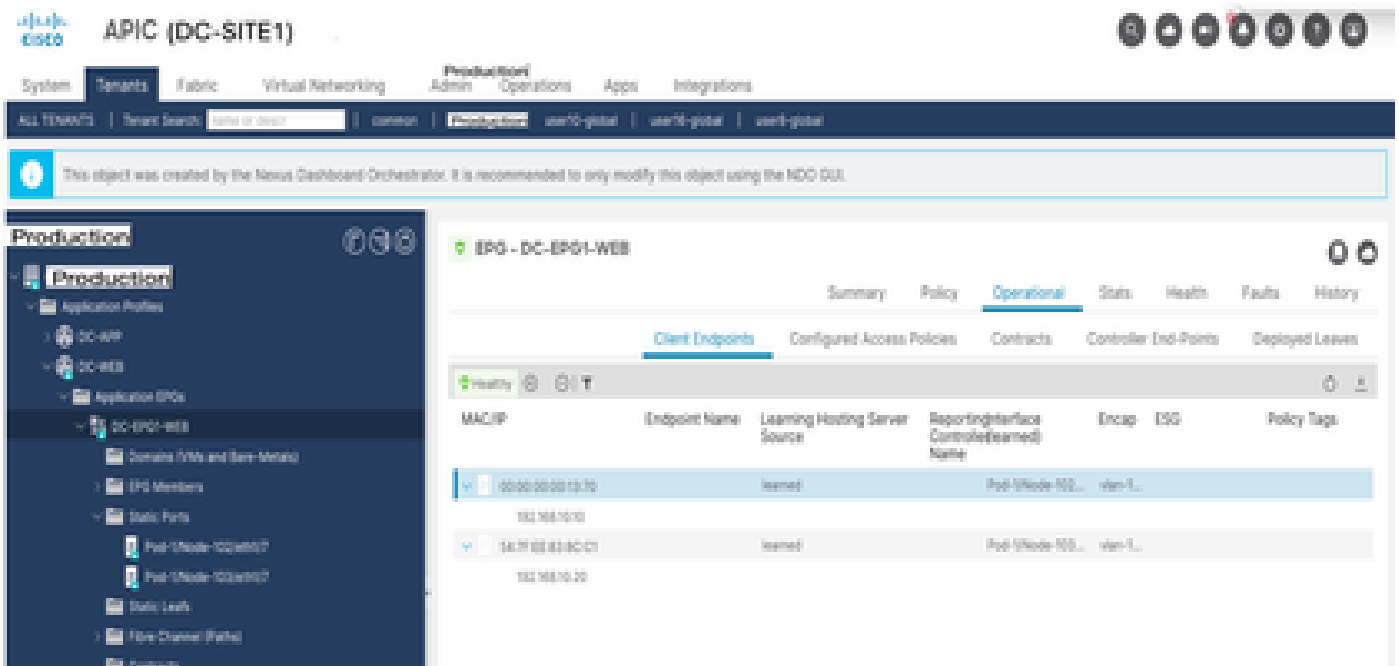


图 33 : 从DC-SITE1删除的DC-EP-1

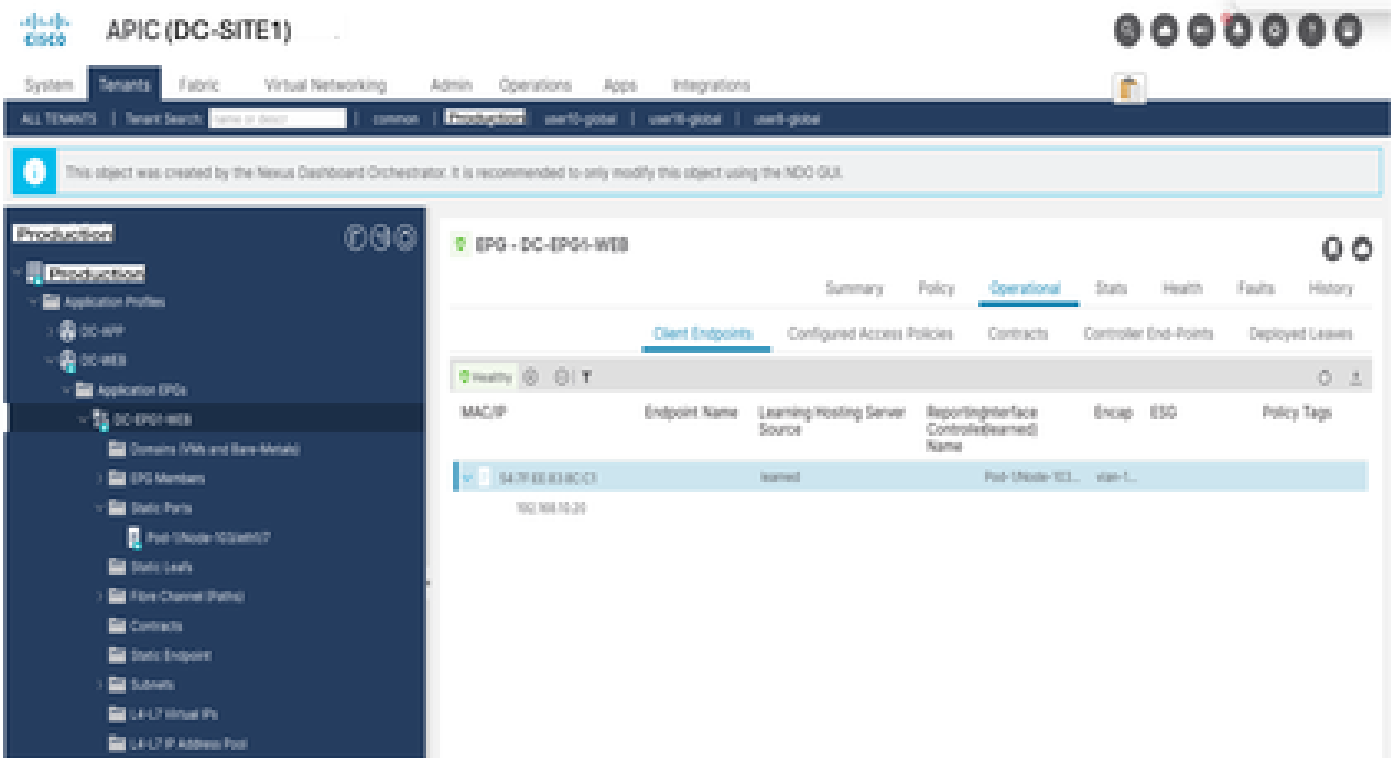


图 34：在DR-SITE2中添加物理域

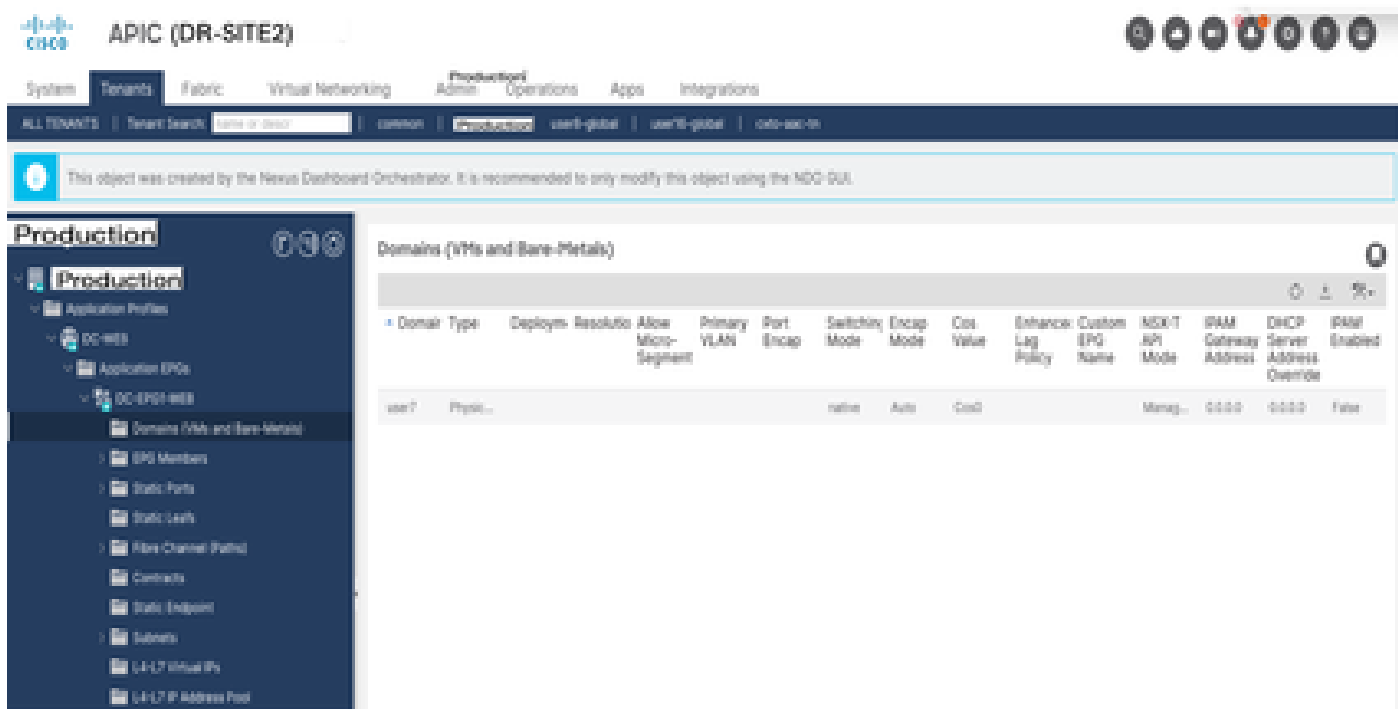


图 35：在DR-SITE2中添加静态绑定

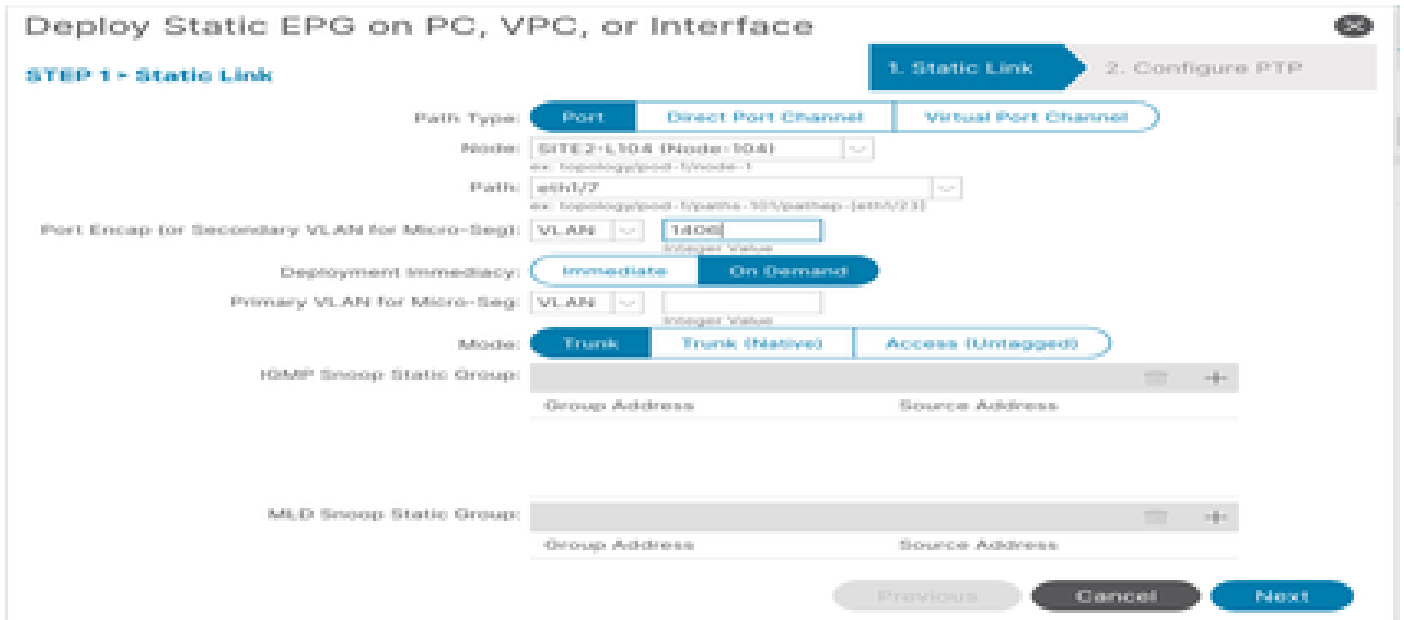
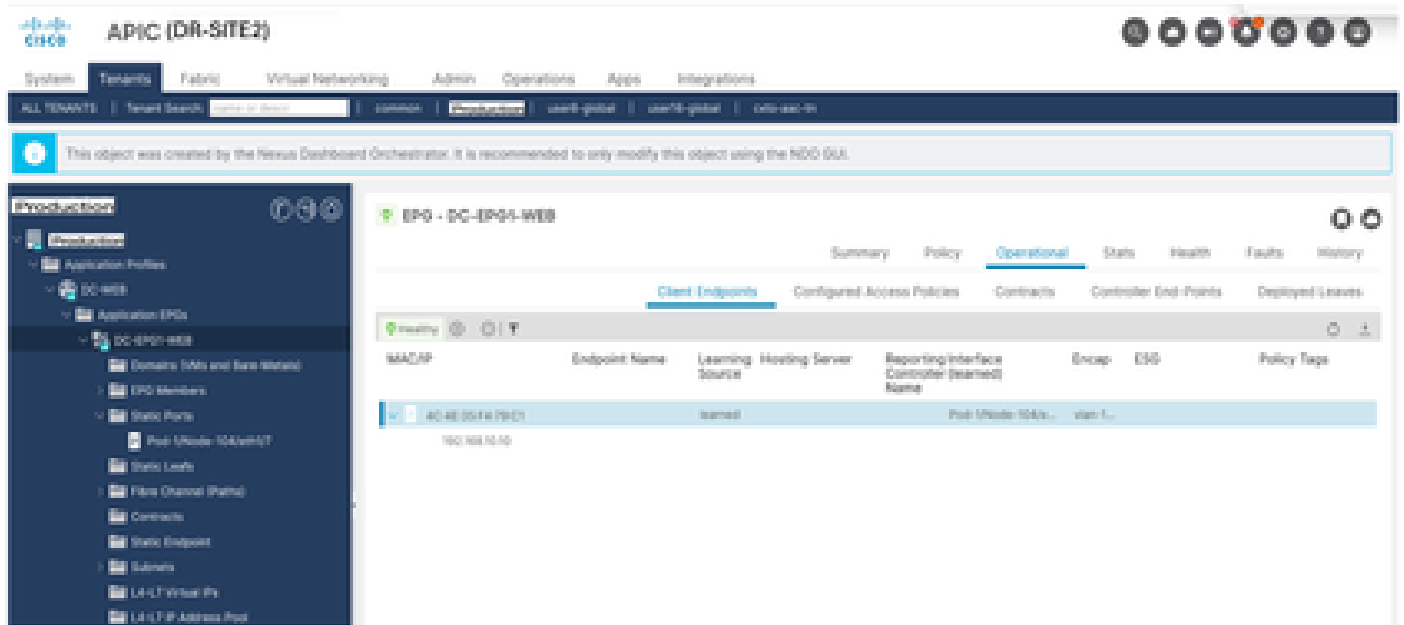


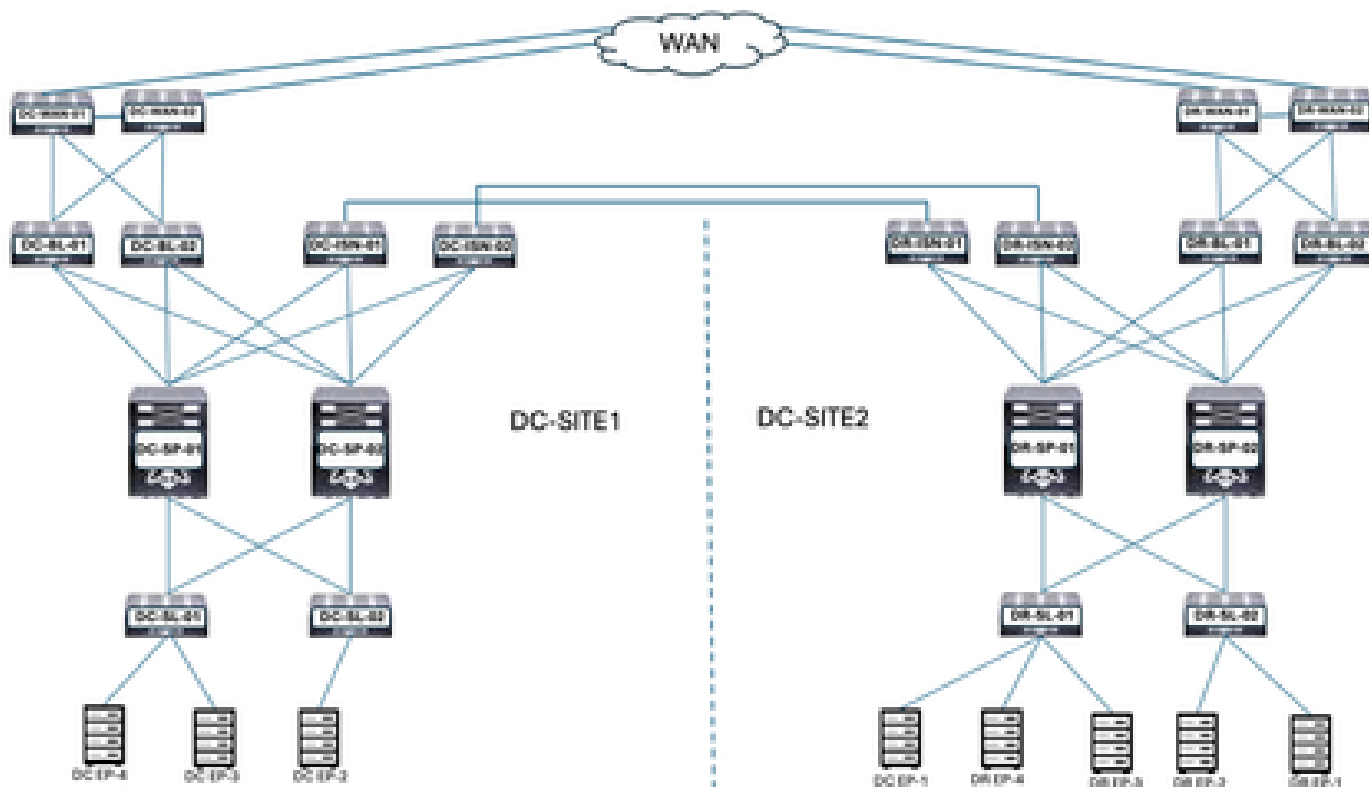
图 36：在DR-SITE2中学习的DC-EP-1



DC-EP-1迁移后的物理设计

DC-EP-1已连接到DR-SITE2服务器枝叶。

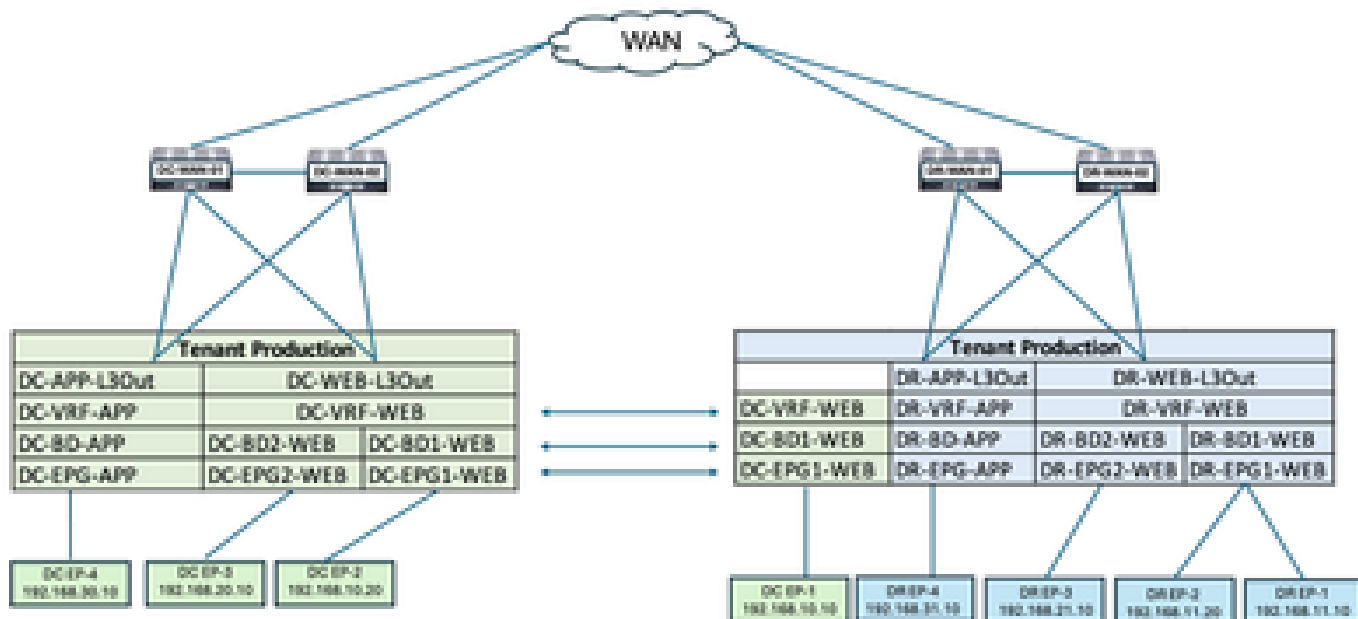
图 37：DC-EP-1迁移后的物理设计



DC-EP-1迁移后的逻辑设计

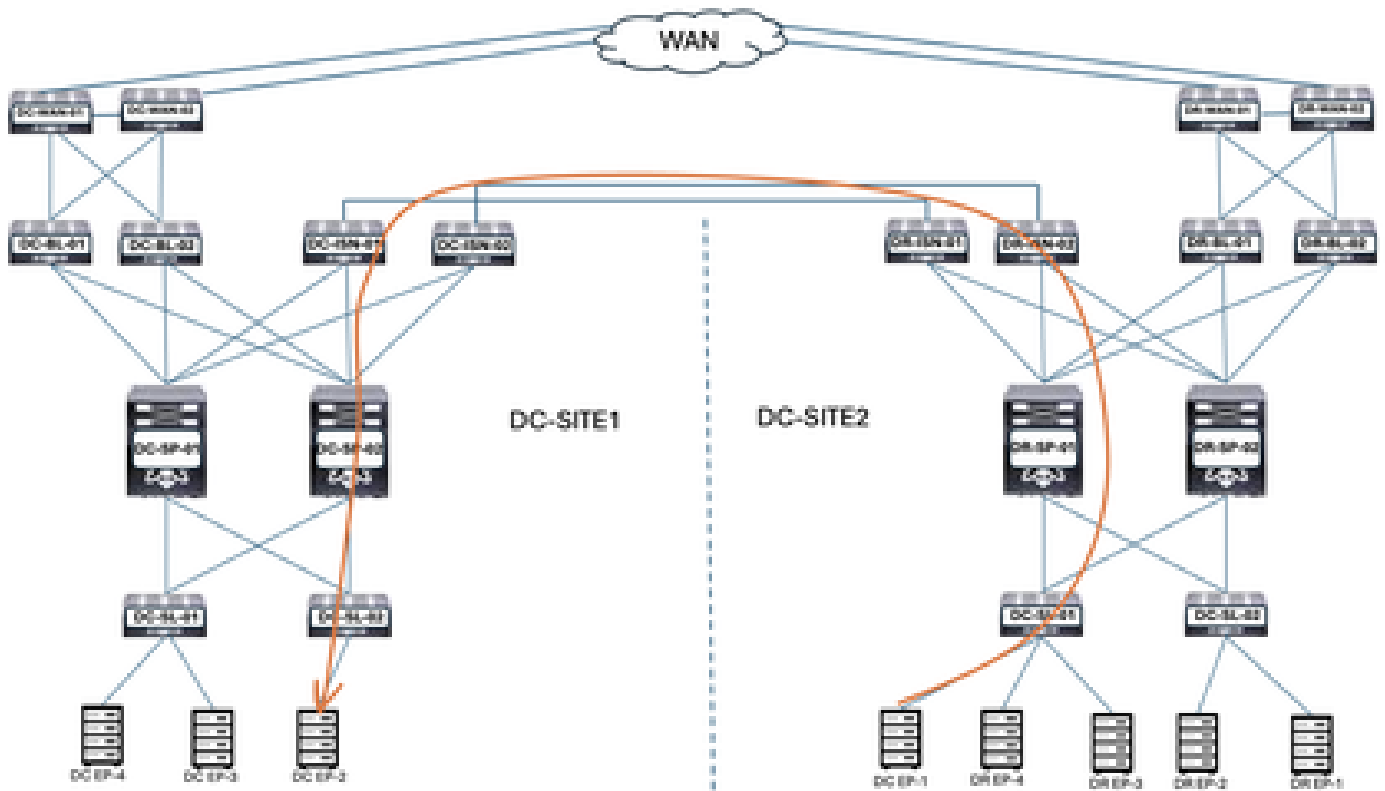
DC-EP-1已连接到DR-SITE2服务器枝叶。DC-EPG1-WEB、DC-BD1-WEB和DC-VRF-WEB在DC-SITE1和DR-SITE2之间延伸。

图 38 : DC-EP-1迁移后的逻辑设计



DC-EP-1迁移后的EPG内流量

图 39 : DC-EP-1迁移后的EPG内流量



DC-EP-1和DC-EP-2之间的通信是EPG内部通信，因为两个终端都属于DC-EPG1-WEB。此通信通过DC ISN进行，通过DR ISN多站点/重叠链路。

DC-EP-1和DC-EP-2之间的ping响应

图 40 : DC-EP-1和DC-EP-2之间的ping响应

```
# ping 192.168.10.20 source 192.168.10.10 vrf site-1
PING 192.168.10.20 (192.168.10.20) from 192.168.10.10: 56 data bytes
64 bytes from 192.168.10.20: icmp_seq=0 ttl=254 time=2.592 ms
64 bytes from 192.168.10.20: icmp_seq=1 ttl=254 time=1.931 ms
64 bytes from 192.168.10.20: icmp_seq=2 ttl=254 time=1.89 ms
64 bytes from 192.168.10.20: icmp_seq=3 ttl=254 time=2.063 ms
64 bytes from 192.168.10.20: icmp_seq=4 ttl=254 time=1.989 ms

--- 192.168.10.20 ping statistics ---
5 packets transmitted, 5 packets received, 0.00% packet loss
round-trip min/avg/max = 1.89/2.092/2.592 ms
```

从主干路由表

从DR-SP-01/DR-SP-02的DC-EP-1学习到DC-SP-01/DC-SP-02。

图 41 : 从主干路由表

DC-EP-1是在DC-SITE1-SP-01中从DR-SITE2-SP-01获取的

```
DC-SITE1-SP-01# show bgp l2vpn evpn vrf overlay-1

Route Distinguisher: 1:49985577
*->e[2]:[0]:[0]:[48]:[4c4e.35f4.79c1]:[0]:[0.0.0.0]/216
      172.16.0.13                                0 65002 1
*->e[2]:[0]:[0]:[48]:[4c4e.35f4.79c1]:[32]:[192.168.10.10]/272
      172.16.0.13                                0 65002 1
```

DR-SITE2-SP-01重叠单播TEP IP

```
DR-SITE2-SP-01# show ip int vrf overlay-1

lo5, Interface status: protocol-up/link-up/admin-up, iod: 86, mode: dci-ucast
IP address: 172.16.0.13, IP subnet: 172.16.0.13/32
IP broadcast address: 255.255.255.255
IP primary address route-preference: 0, tag: 0
```

### Template-EPG2-BD2-Site1创建

一旦DC-EPG2-WEB和DC-BD2-WEB成为Nexus控制面板协调器的一部分，DC-EP-1和DC-EP-3之间就会发生EPG间通信。

在架构1中创建了Template-EPG2-BD2-Site1。DC-SITE1已添加到与同一模板关联的模板和租户 — Production。这是特定于站点的模板。此模板用于导入Template-EPG2-BD2-Site1，用于DC-EP-1和DC-EP-3之间的通信。

DC-EP-1和DC-EP-3通信要求DC-EPG2-BD2必须是Nexus控制面板协调器的一部分。

图 42 : DC-EP-1和DC-EP-3无法通信

```
# ping 192.168.20.10 source 192.168.10.10 vrf site-1
PING 192.168.20.10 (192.168.20.10) from 192.168.10.10: 56 data bytes
Request 0 timed out
Request 1 timed out
Request 2 timed out
Request 3 timed out
Request 4 timed out

--- 192.168.20.10 ping statistics ---
5 packets transmitted, 0 packets received, 100.00% packet loss
```

图 43 : 添加应用模板 — 选择ACI多云

## Add Application Template

X

1 Select a Template type      2 Detail      3 Summary

**Select a Template Type**  
Let's choose the type of template you want to work with

- ACI Multi-Cloud**
  - On-prem ACI fabric to fabric
  - On-prem ACI fabric to cloud fabric
  - Cloud fabric to cloud fabric
- NDPC**
  - ND-OS based network
- Cloud Local**
  - Non-stretched template for cloud fabric local BGP/IPv4 connected fabric

图 44：添加模板名称Template-EPG2-BD2-Site1，选择租户生产

## Add Application Template

X

1 Select a Template type      2 Detail      3 Summary

**Details**  
Now name the template and select a tenant

- ACI Multi-Cloud**
  - On-prem ACI fabric to fabric
  - On-prem ACI fabric to cloud fabric
  - Cloud fabric to cloud fabric

**GENERAL**

**Display Name \***  
Template-EPG2-BD2-Site1  
Internal Name: Template-EPG2-BD2-Site1 [Add Description](#)

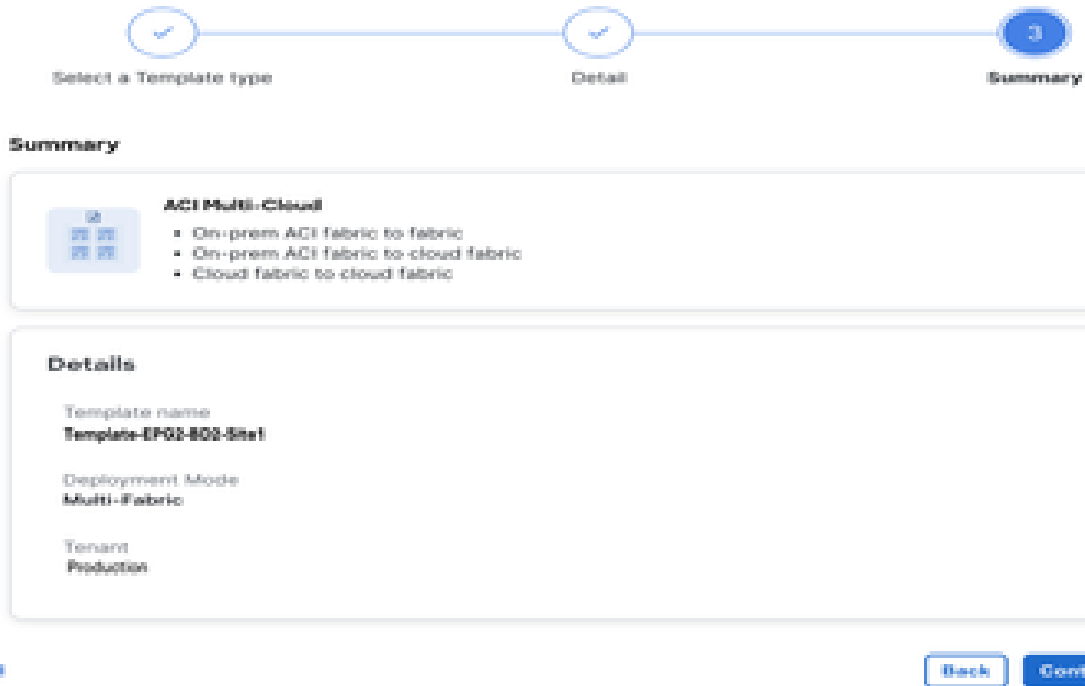
**Select a Tenant \***  
Production

**Deployment Mode** ⓘ  
 Multi-Fabric  
 Autonomous

[Cancel](#) [Back](#) [Next](#)

图 45：Template-EPG2-BD2-Site1详细信息





在Template-EPG2-BD2-Site1中导入EPG2-BD2

从DC-SITE1导入DC-EPG2-WEB和DC-BD2-WEB。

图 46：点击Import并选择DC-SITE1

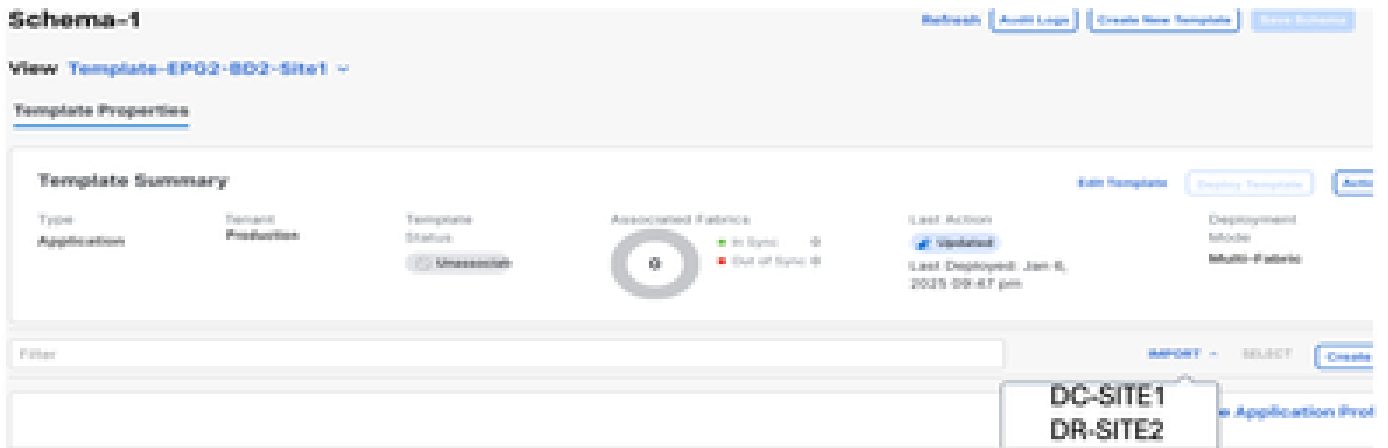


图47：从DC-SITE1中选择DC-EPG2-WEB

## Import from DC-SITE1

POLICY TYPE	<input type="checkbox"/> SELECT TO IMPORT	<input type="text"/>	IMPORT RELATIONS
APPLICATION PROFILE 1 out of 2	<input type="checkbox"/>	DC-EPG1-WEB 1 AP • 4 CONTRACT • 1 BD	
<b>EPG 1 out of 3</b>	<input checked="" type="checkbox"/>	DC-EPG2-WEB 1 AP • 4 CONTRACT • 1 BD	<input checked="" type="checkbox"/>
EXTERNAL EPG 0 out of 2	<input type="checkbox"/>	DC-EPG-APP 1 AP • 4 CONTRACT • 1 BD	

图48：从DC-SITE1中选择DC-BD2-WEB

## Import from DC-SITE1

POLICY TYPE	<input type="checkbox"/> SELECT TO IMPORT	<input type="text"/>	IMPORT RELATIONS
APPLICATION PROFILE 1 out of 2	<input type="checkbox"/>	DC-BD1-WEB 1 VRF	
EPG 1 out of 3	<input checked="" type="checkbox"/>	DC-BD2-WEB 1 VRF	<input checked="" type="checkbox"/>
EXTERNAL EPG 0 out of 2	<input type="checkbox"/>	DC-BD-APP 1 VRF	
CONTRACT 0 out of 4			
FILTER 0 out of 4			
VRF 0 out of 2			
<b>BD 1 out of 3</b>			

Import

图 49：导入与DC-EPG2-WEB关联的合同



## 部署模板 — EPG2-BD2-Site1

点击Deploy Template-EPG2-BD2-Site1并选择DC-SITE1

图50:将交换矩阵添加到模板 — EPG2-BD2-Site1

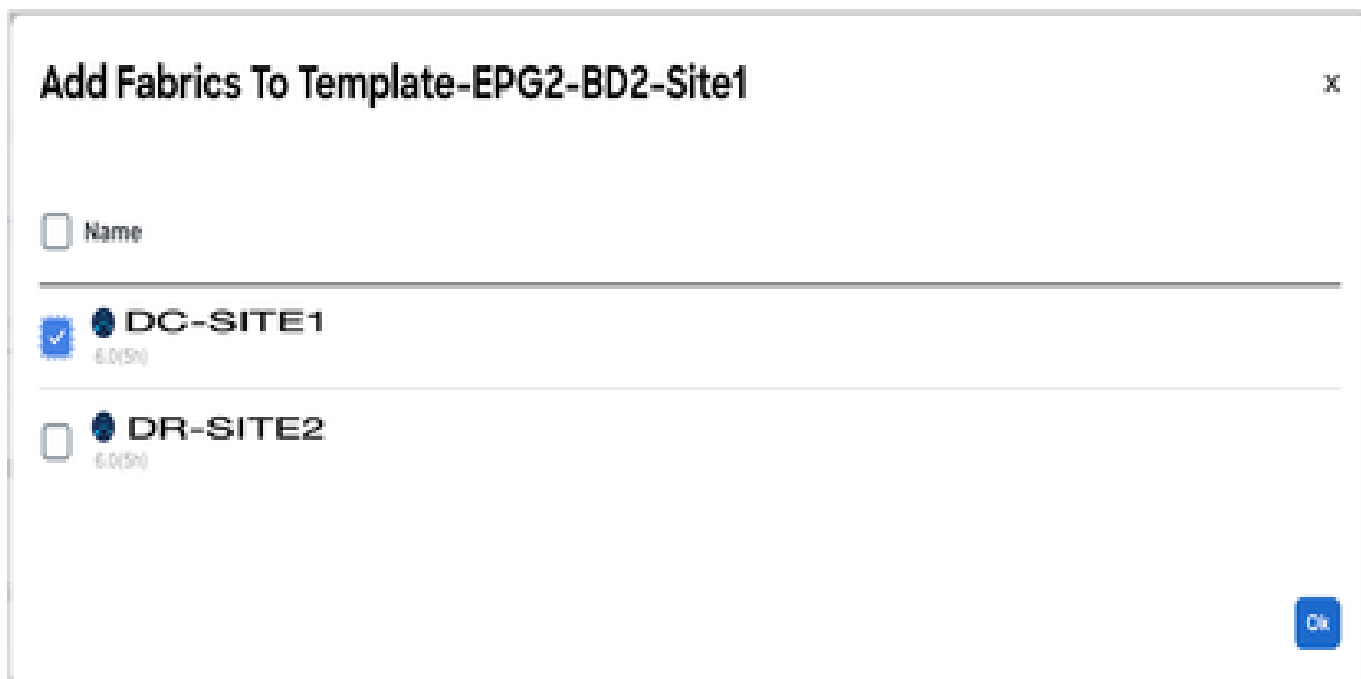


图 51 : 部署外部同步模板

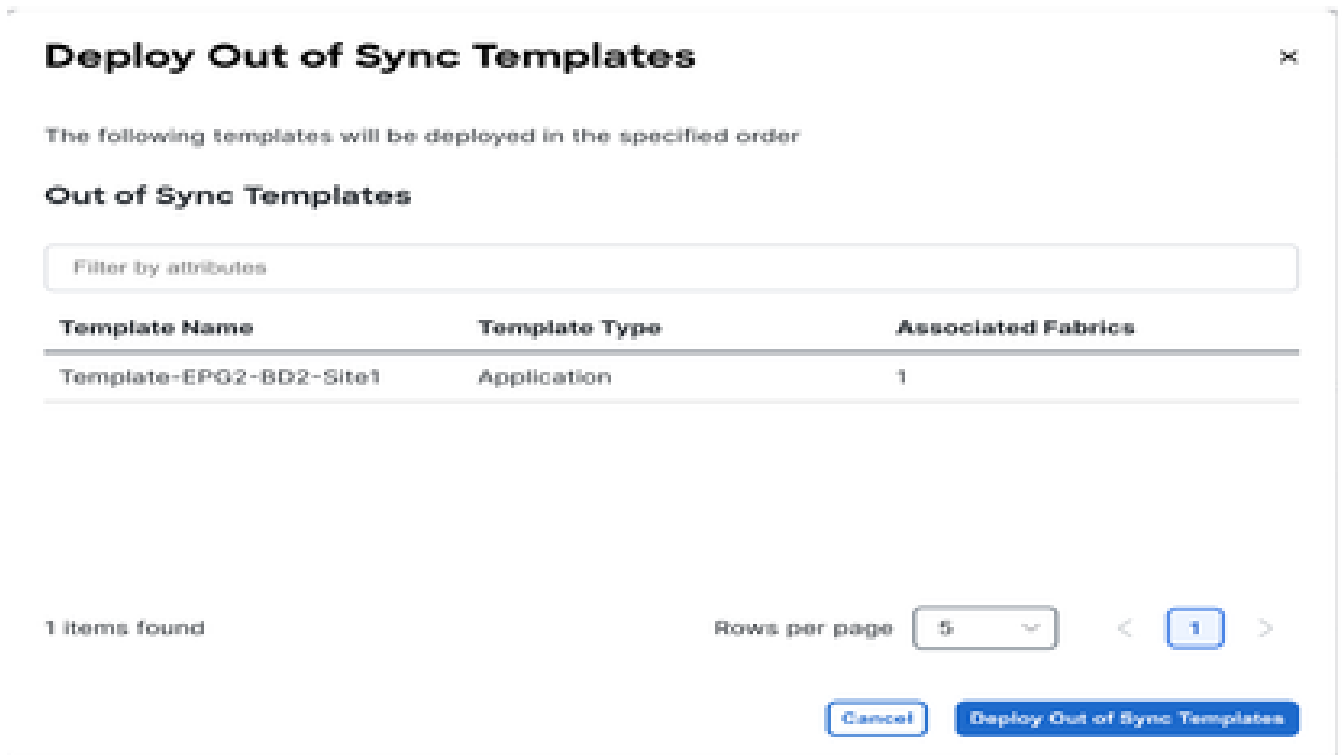


图 52 : 已完成部署

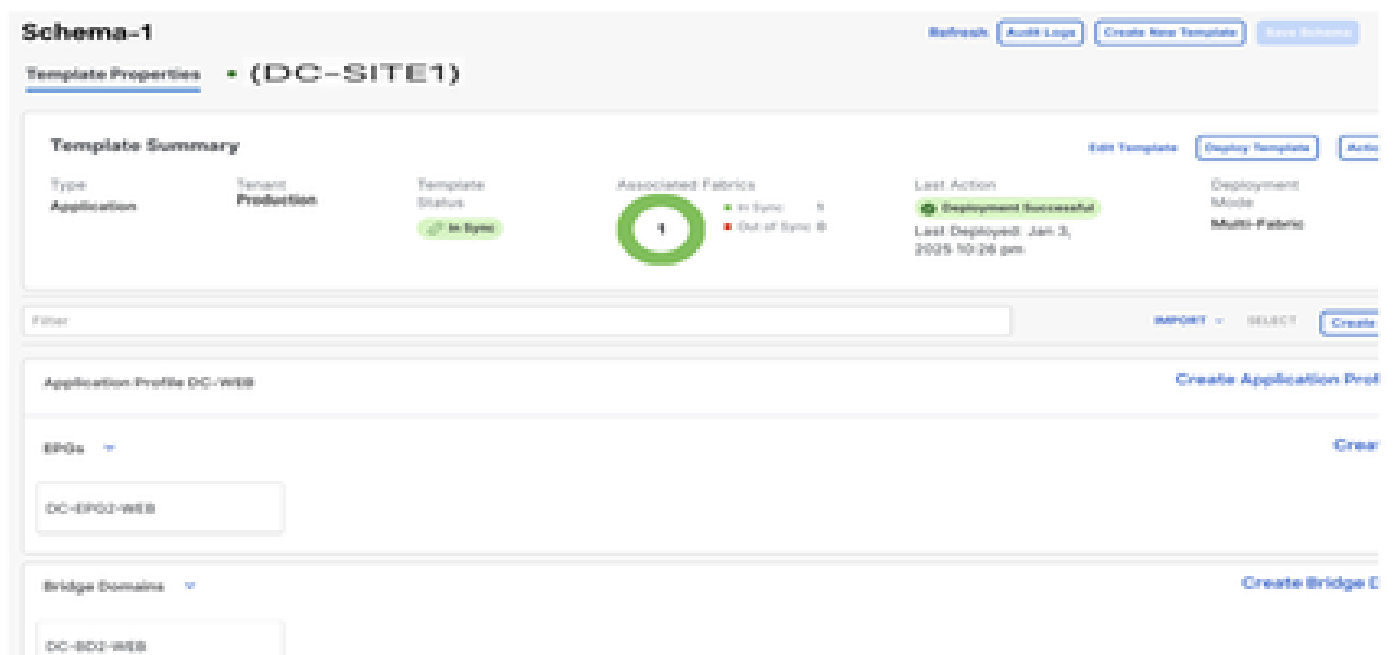
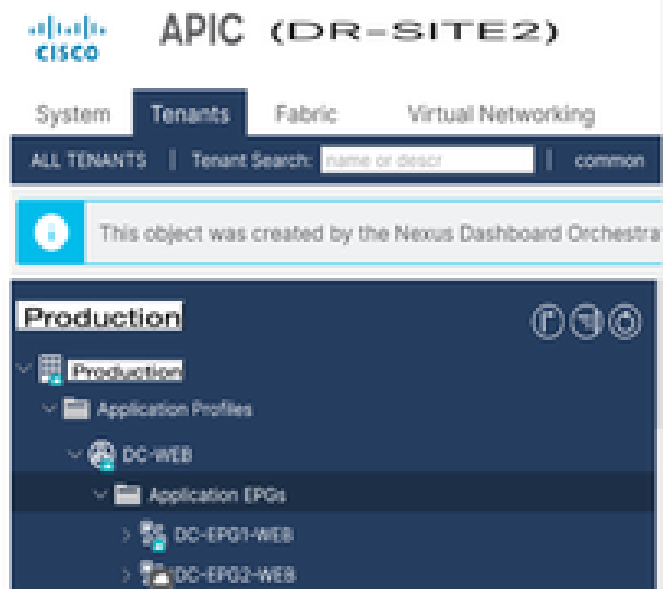
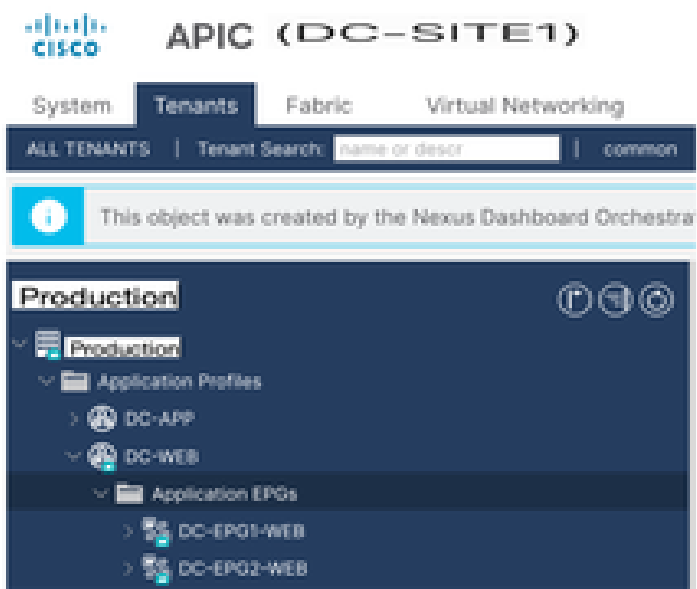


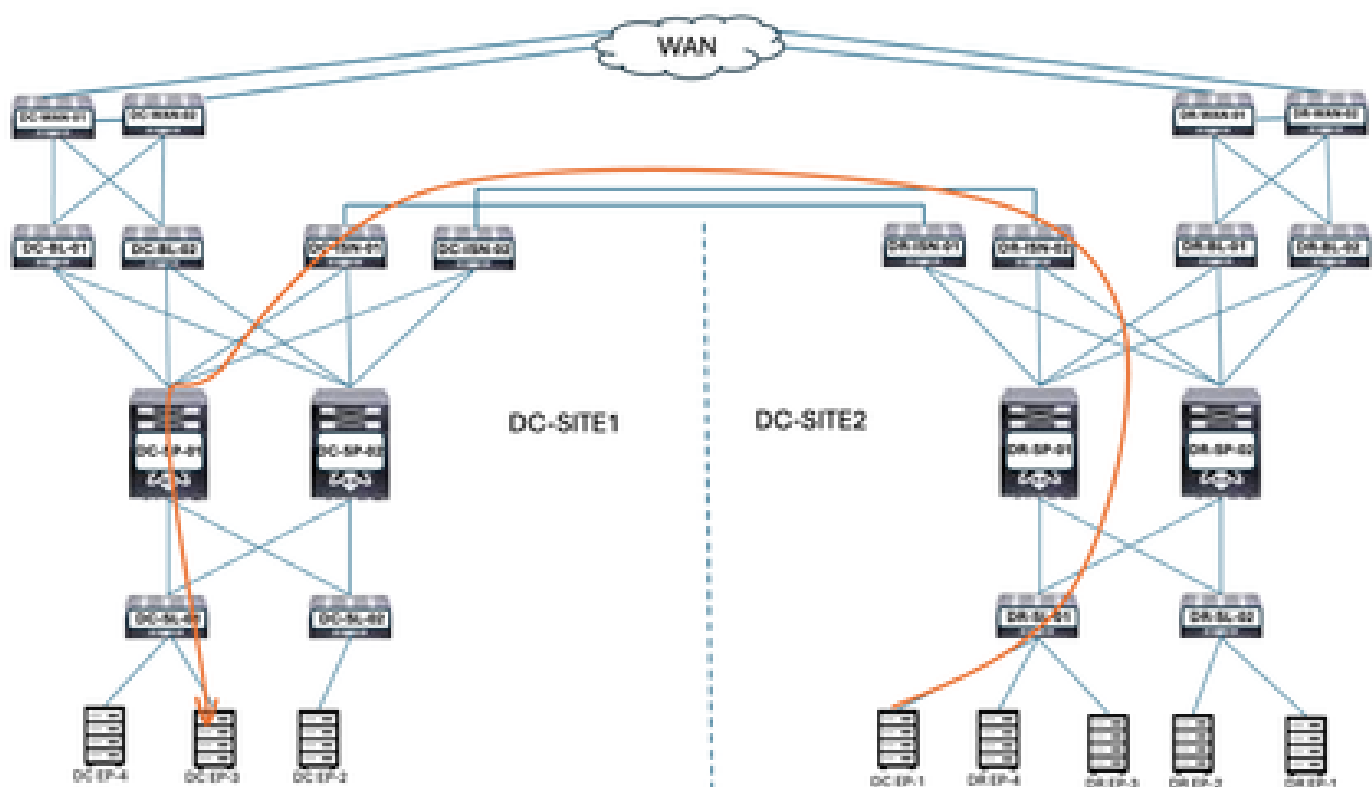
图 53 : DC-EPG2-WEB部署在两个站点

在DR-SITE2中创建的DC-EPG2-WEB的影子EPG



### EP-1迁移后的EPG间流量

图 54 : EP-1迁移后的EPG间流量



DC-EP-1和DC-EP-3之间的通信是EPG间通信，因为两个终端分别属于DC-EPG1-WEB和DC-EPG2-WEB。此通信通过DC ISN进行，以进行DR ISN多站点/重叠链路。

### DC-EP-1和DC-EP-3之间的ping响应

图 55 : DC-EP-1和DC-EP-3之间的ping响应

```
# ping 192.168.20.10 source 192.168.10.10 vrf site-1
PING 192.168.20.10 (192.168.20.10) from 192.168.10.10: 56 data bytes
64 bytes from 192.168.20.10: icmp_seq=0 ttl=252 time=1.498 ms
64 bytes from 192.168.20.10: icmp_seq=1 ttl=252 time=1.255 ms
64 bytes from 192.168.20.10: icmp_seq=2 ttl=252 time=1.129 ms
64 bytes from 192.168.20.10: icmp_seq=3 ttl=252 time=1.084 ms
64 bytes from 192.168.20.10: icmp_seq=4 ttl=252 time=1.537 ms

--- 192.168.20.10 ping statistics ---
5 packets transmitted, 5 packets received, 0.00% packet loss
round-trip min/avg/max = 1.084/1.3/1.537 ms
```

## Template-WEB-L3Out-Site1创建

在架构1内创建了Template-Web-L3Out-Site1。DC-SITE1已添加到模板，并与同一模板关联的租户生产。这是特定于站点的模板。此模板用于DC-EP-1 VRF间和DC间通信。

图 56 : 添加应用模板 — 选择ACI多云

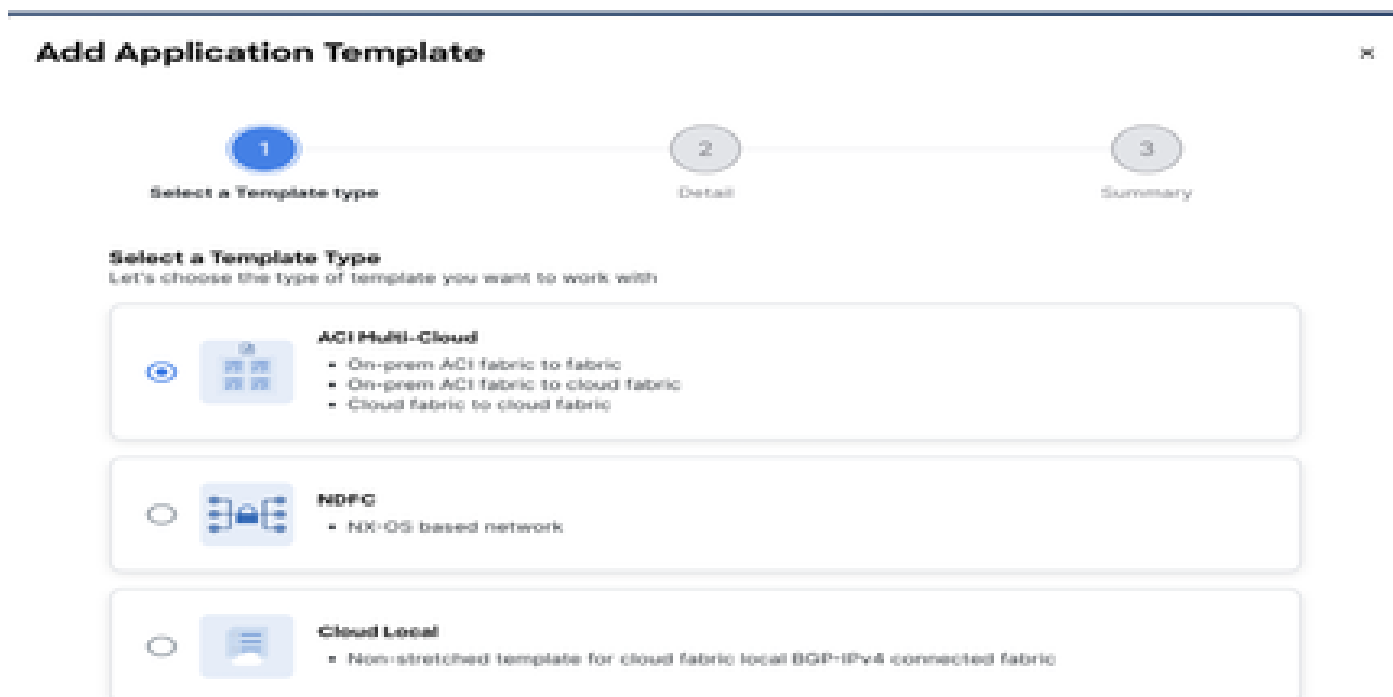


Figure 57: 添加模板名称Template-WEB-L3Out-Site1，选择租户生产

## Add Application Template

1 Select a Template type 2 **Detail** 3 Summary

**Details**

Now name the template and select a tenant

**ACI Multi-Cloud**

- On-prem ACI fabric to fabric
- On-prem ACI fabric to cloud fabric
- Cloud fabric to cloud fabric

**GENERAL**

**Display Name**

**Select a Tenant**

Internal Name: Template-WEB-L3Out-Site1 [Add Description](#)

**Deployment Mode**

Multi-Fabric

Autonomous

[Cancel](#) [Back](#) [Next](#)

Figure 58:Template-WEB-L3Out-Site1详细信息

## Add Application Template

1 Select a Template type 2 Detail 3 **Summary**

**Summary**

**ACI Multi-Cloud**

- On-prem ACI fabric to fabric
- On-prem ACI fabric to cloud fabric
- Cloud fabric to cloud fabric

**Details**

Template name  
**Template-WEB-L3Out-Site1**

Deployment Mode  
**Multi-Fabric**

Tenant  
**Production**

[Cancel](#) [Back](#) [Continue to template](#)

在Template-WEB-L3Out-Site1中导入外部EPG和L3Out

在Template-WEB-L3Out-Site1中导入外部EPG和L3Out

图 59：点击Import并选择DC-SITE1

# Schema-1

Refresh Audit Logs Create New Template Save Schema

## Template Properties

### Template Summary

Edit Template Deploy Template Act

Type: Application    Tenant: Production    Template Status: Unassociated    Associated Fabrics: 0 (0 In Sync, 0 Out of Sync)    Last Action: Updated    Deployment Mode: Multi-Fabric

IMPORT SELECT Create

DC-SITE1  
DR-SITE2

图60:从DC-SITE1选择EXT-APP-EPG

## Import from DC-SITE1

X

POLICY TYPE	SELECT TO IMPORT	IMPORT RELATIONS
APPLICATION PROFILE 0 out of 2	<input type="checkbox"/> EXT-APP-EPG ⚠ DC-APP-L3OUT 2 CONTRACT • 1 VRF • 1 L3OUT	
EPG 0 out of 3	<input checked="" type="checkbox"/> EXT-WEB-EPG ⚠ DC-WEB-L3OUT 2 CONTRACT • 1 VRF • 1 L3OUT	<input checked="" type="checkbox"/>
EXTERNAL EPG 1 out of 2		



Figure 61 : 从DC-SITE1中选择DC-APP-L3Out

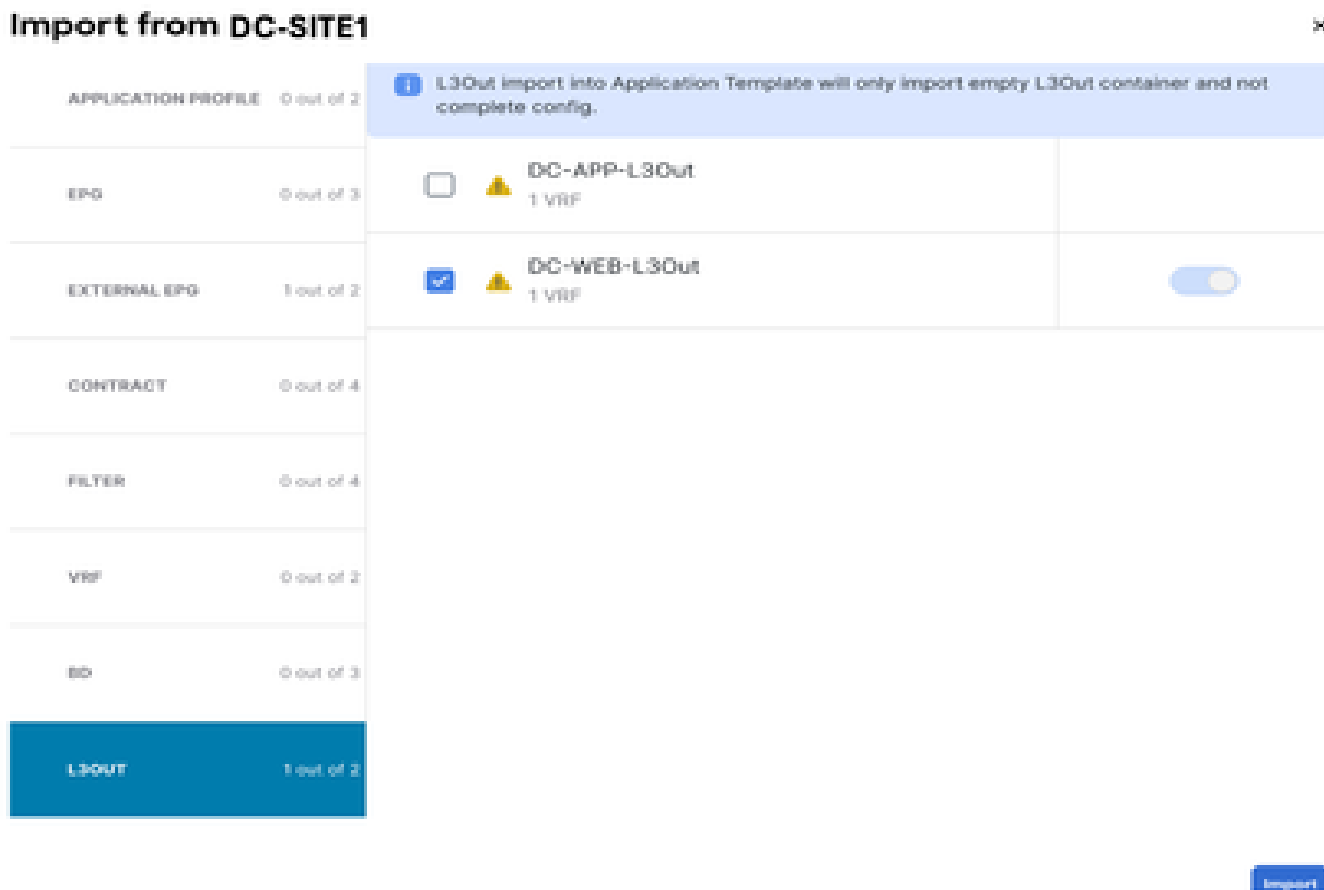
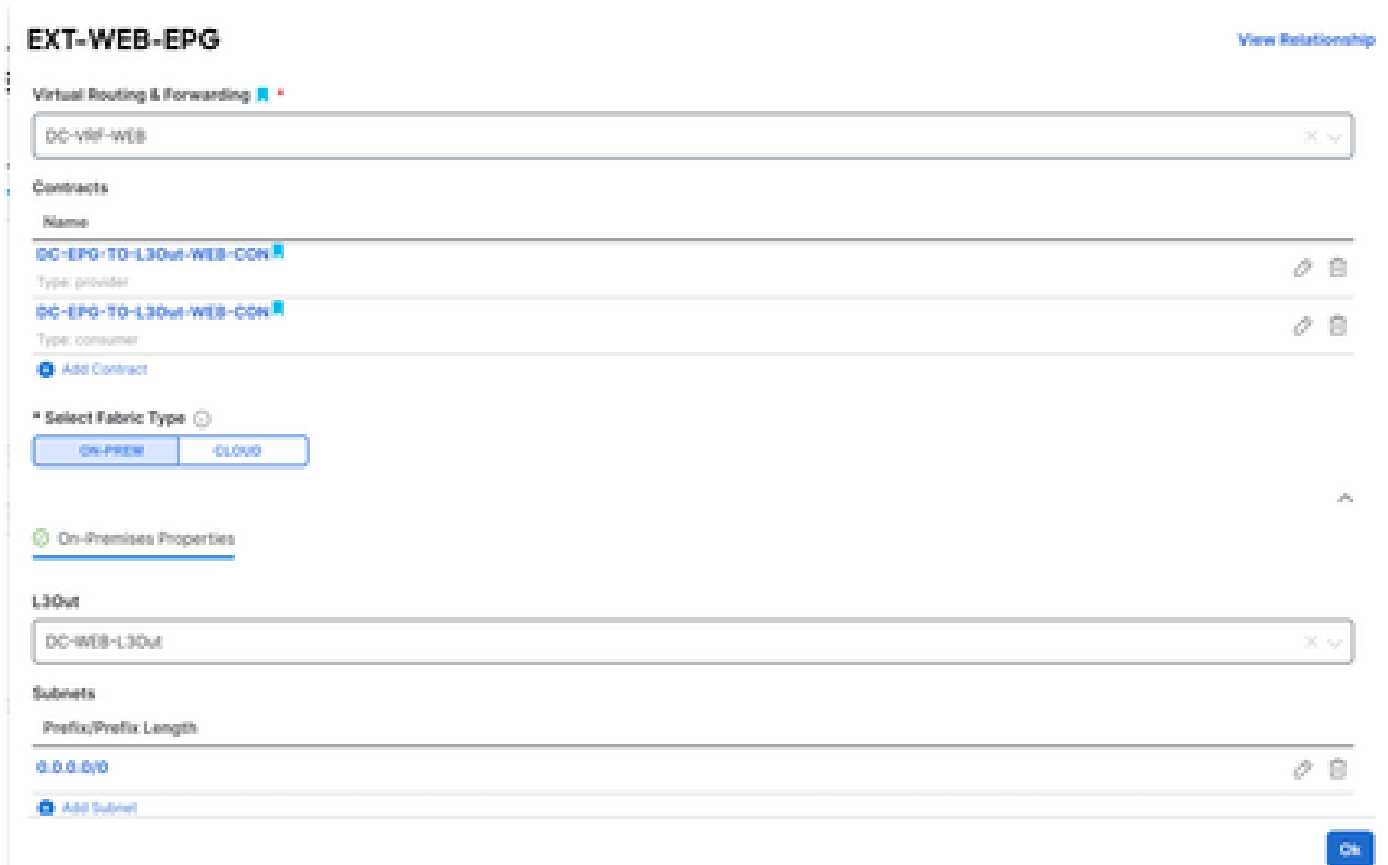


Figure 62: 导入与EXT-WEB-EPG关联的合同

在DR-SITE2中创建的EXT-WEB-EPG与应用的DC合同的阴影。



## 部署模板 — WEB-L3Out-Site1

点击Deploy Template-WEB-L3Out-Site1并选择DC-SITE1

Figure 63: 将交换矩阵添加到Template-WEB-L3Out-Site1



图64:部署同步模板

## Deploy Out of Sync Templates

The following templates will be deployed in the specified order

### Out of Sync Templates

Filter by attributes

Template Name	Template Type	Associated Fabrics
Template-WEB-L3Out-Site1	Application	1

1 items found

Rows per page: 5

Cancel Deploy Out of Sync Templates

Figure 65:已完成部署

### Schema-1

Refresh Audit Logs Create New Template View Schema

View Template-WEB-L3Out-Site1

Template Properties COX-ARJC-LAB-SITE1

#### Template Summary

Type Application	Tenant Production	Template Status <span>In Sync</span>	Associated Fabrics <span>1</span>	Last Action <span>Deployment Successful</span>	Deployment Mode Multi-Fabric
---------------------	----------------------	---	--------------------------------------	---	---------------------------------

Last Deployed: Jan 3, 2025 11:15 pm

Filter IMPORT - SELECT Create

#### External EPGs

EXT-WEB-EPG Create External

#### L3Outs

DC-WEB-L3Out Create

检验DC-VRF-WEB的DR服务器枝叶中的路由

DC-VRF-WEB的DR服务器枝叶中安装的静态路由。

图 66 : 检验DC-VRF-WEB的DR服务器枝叶中的路由

```

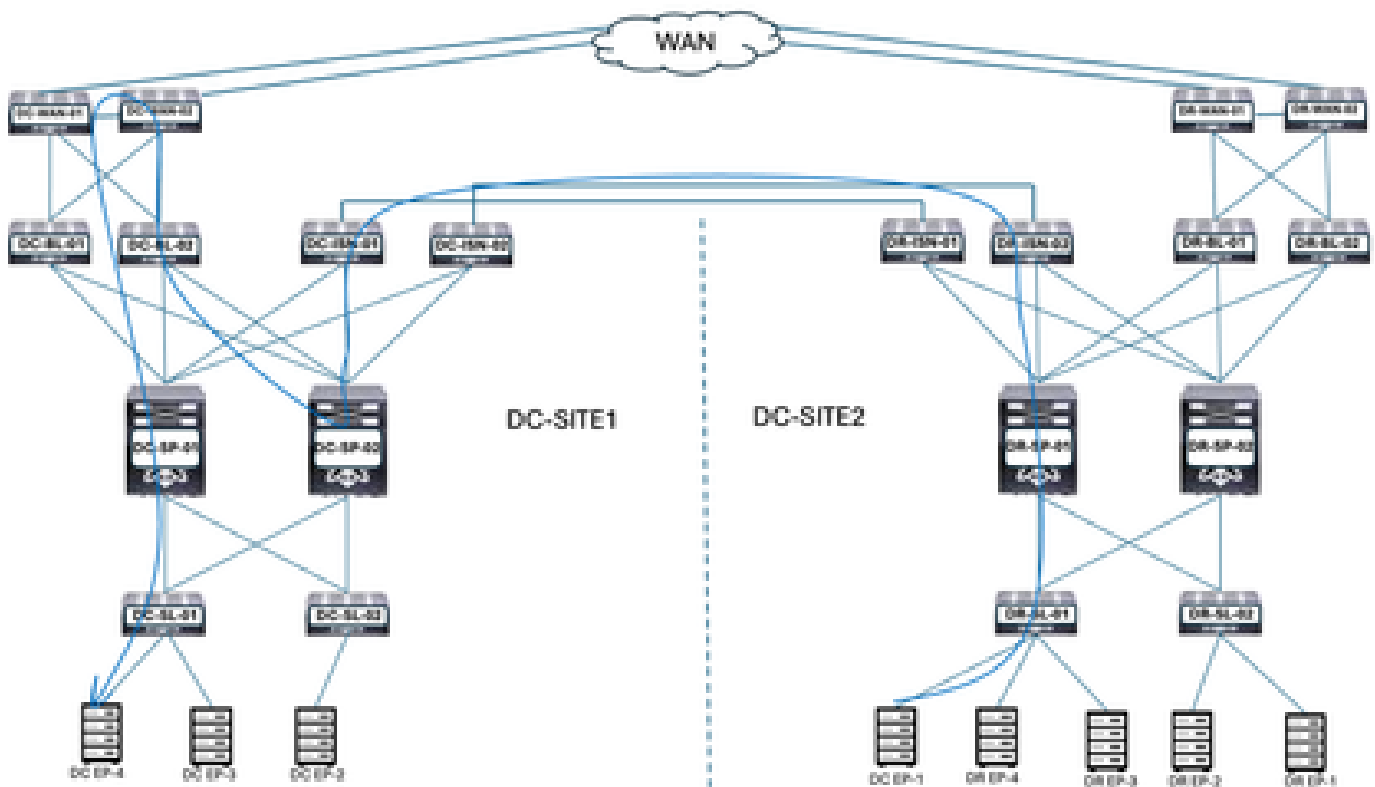
DR-SL-01# show ip route vrf Production:DC-VRF-WEB
IP Route Table for VRF "Production:DC-VRF-WEB"
'*' denotes best ucast next-hop
 '**' denotes best mcast next-hop
 '[x/y]' denotes [preference/metric]
 '%<string>' in via output denotes VRF <string>

0.0.0.0/0, ubest/mbest: 1/0
  *via 172.16.1.232%overlay-1, [200/0], 00:04:41, bgp-65002, internal, tag 65001, rvid: vxlan-2883589

```

### DC-EP-1迁移后的VRF间流量

图 67 : DC-EP-1迁移后的VRF间流量



DC-EP-1使用DC-WEB-L3Out与DC-EP-4通信。流量从DR-ISN流到DC-ISN多站点链路，从DC-ISN流到DC-SP-01/DC-SP-02以及从DC-SP流到DC-BL。DC-BL-01/DC-BL-02将流量转发到DC-WAN交换机以进行VRF间路由。

### DC-EP-1和DC-EP-4之间的ping响应

图 68 : DC-EP-1和DC-EP-4之间的ping响应

```

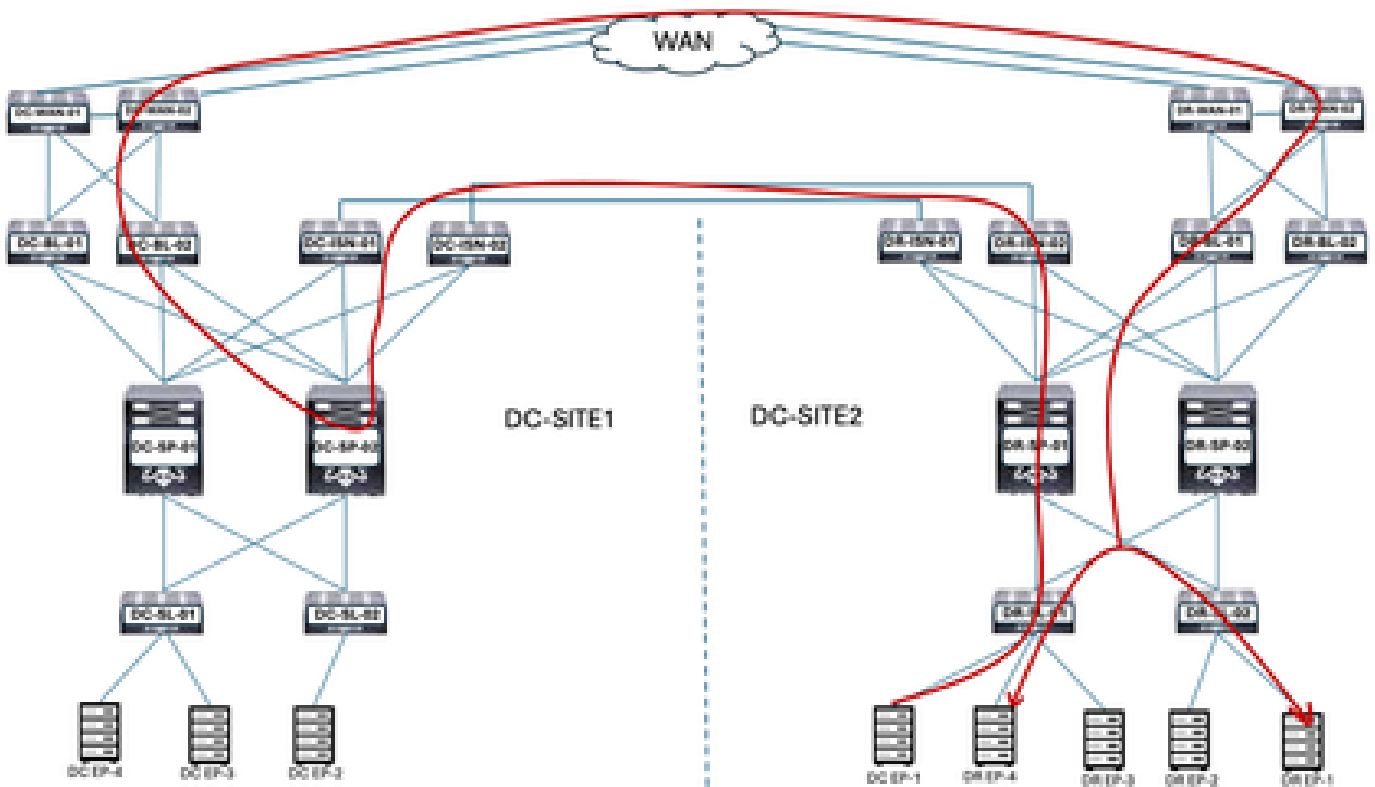
# ping 192.168.30.10 source 192.168.10.10 vrf site-1
PING 192.168.30.10 (192.168.30.10) from 192.168.10.10: 56 data bytes
64 bytes from 192.168.30.10: icmp_seq=0 ttl=249 time=1.781 ms
64 bytes from 192.168.30.10: icmp_seq=1 ttl=249 time=2.617 ms
64 bytes from 192.168.30.10: icmp_seq=2 ttl=249 time=1.288 ms
64 bytes from 192.168.30.10: icmp_seq=3 ttl=249 time=1.116 ms
64 bytes from 192.168.30.10: icmp_seq=4 ttl=249 time=1.135 ms

--- 192.168.30.10 ping statistics ---
5 packets transmitted, 5 packets received, 0.00% packet loss
round-trip min/avg/max = 1.116/1.587/2.617 ms
SITE2-EP1#

```

### DC-EP-1迁移后的DC间流量

图 69 : DC-EP-1迁移后的DC间流量



DC-EP-1使用DC-WEB-L3Out与DR终端通信。流量从DR-ISP流向DC-ISP多站点链路、DC-ISP流向DC-SP-01/DC-SP-02流向DC-SP流向DC-BL。DC-BL-01/DC-BL-02将流量转发到DR终端的DC-WAN交换机。

### DC-EP-1和DR-EP之间的ping响应

图 70 : DC-EP-1和DR-EP之间的ping响应

```

SITE2-EP1# ping 192.168.11.10 source 192.168.10.10 vrf site-1
PING 192.168.11.10 (192.168.11.10) from 192.168.10.10: 56 data bytes
Request # timed out
64 bytes from 192.168.11.10: icmp_seq=1 ttl=249 time=2.245 ms
64 bytes from 192.168.11.10: icmp_seq=2 ttl=249 time=1.893 ms
64 bytes from 192.168.11.10: icmp_seq=3 ttl=249 time=1.725 ms
64 bytes from 192.168.11.10: icmp_seq=4 ttl=249 time=1.991 ms

--- 192.168.11.10 ping statistics ---
5 packets transmitted, 4 packets received, 20.00% packet loss
round-trip min/avg/max = 1.725/1.908/2.245 ms
SITE2-EP1#
SITE2-EP1#
SITE2-EP1# ping 192.168.11.20 source 192.168.10.10 vrf site-1
PING 192.168.11.20 (192.168.11.20) from 192.168.10.10: 56 data bytes
Request # timed out
64 bytes from 192.168.11.20: icmp_seq=1 ttl=249 time=1.714 ms
64 bytes from 192.168.11.20: icmp_seq=2 ttl=249 time=1.693 ms
64 bytes from 192.168.11.20: icmp_seq=3 ttl=249 time=1.245 ms
64 bytes from 192.168.11.20: icmp_seq=4 ttl=249 time=1.292 ms

--- 192.168.11.20 ping statistics ---
5 packets transmitted, 4 packets received, 20.00% packet loss
round-trip min/avg/max = 1.493/1.313/1.714 ms
SITE2-EP1#
SITE2-EP1#
SITE2-EP1# ping 192.168.21.10 source 192.168.10.10 vrf site-1
PING 192.168.21.10 (192.168.21.10) from 192.168.10.10: 56 data bytes
64 bytes from 192.168.21.10: icmp_seq=0 ttl=249 time=1.554 ms
64 bytes from 192.168.21.10: icmp_seq=1 ttl=249 time=1.163 ms
64 bytes from 192.168.21.10: icmp_seq=2 ttl=249 time=1.178 ms
64 bytes from 192.168.21.10: icmp_seq=3 ttl=249 time=1.255 ms
64 bytes from 192.168.21.10: icmp_seq=4 ttl=249 time=1.261 ms

--- 192.168.21.10 ping statistics ---
5 packets transmitted, 5 packets received, 0.00% packet loss
round-trip min/avg/max = 1.163/1.262/1.554 ms
SITE2-EP1#
SITE2-EP1#
SITE2-EP1# ping 192.168.31.10 source 192.168.10.10 vrf site-1
PING 192.168.31.10 (192.168.31.10) from 192.168.10.10: 56 data bytes
64 bytes from 192.168.31.10: icmp_seq=0 ttl=249 time=1.51 ms
64 bytes from 192.168.31.10: icmp_seq=1 ttl=249 time=1.31 ms
64 bytes from 192.168.31.10: icmp_seq=2 ttl=249 time=1.263 ms
64 bytes from 192.168.31.10: icmp_seq=3 ttl=249 time=1.278 ms
64 bytes from 192.168.31.10: icmp_seq=4 ttl=249 time=1.247 ms

--- 192.168.31.10 ping statistics ---
5 packets transmitted, 5 packets received, 0.00% packet loss
round-trip min/avg/max = 1.247/1.321/1.51 ms

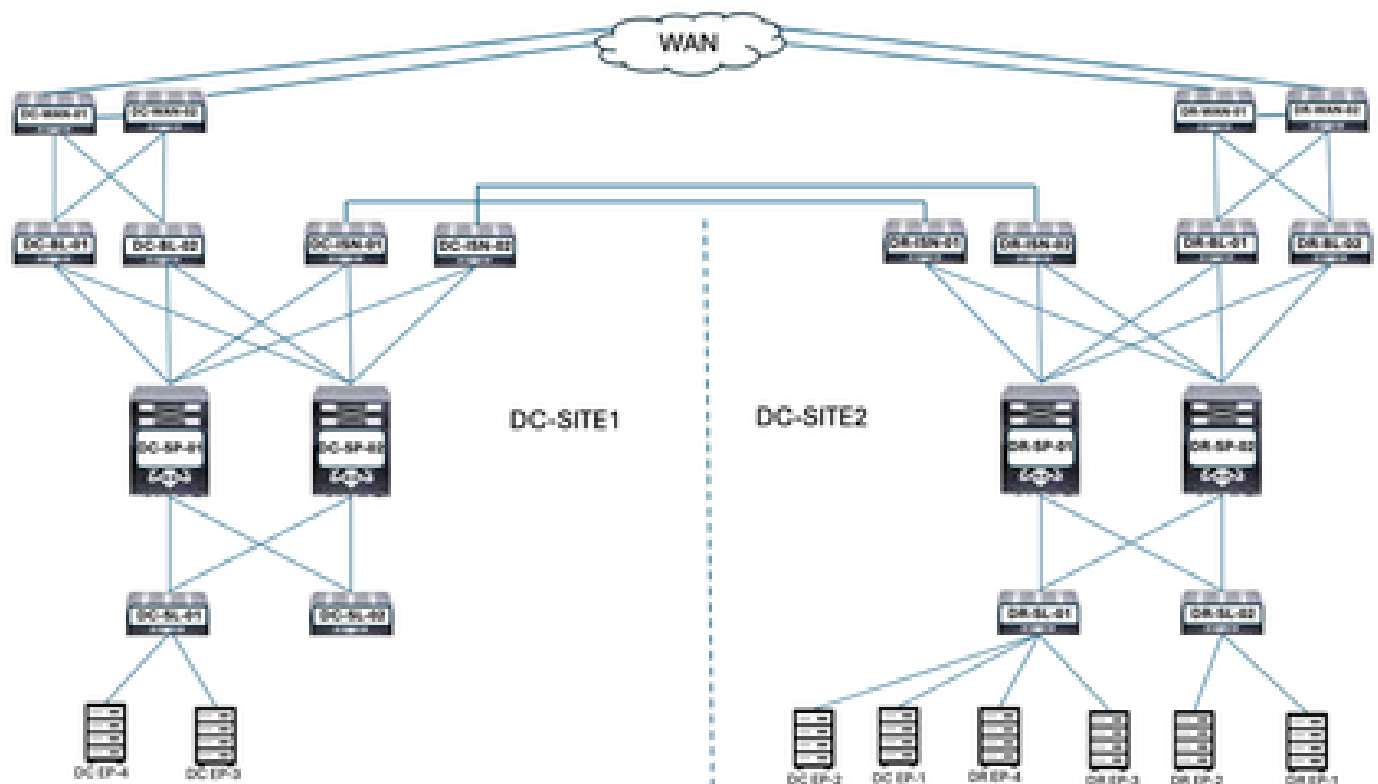
```

## 迁移剩余终端

### 剩余终端迁移后的物理设计

将剩余终端从DC迁移到DR DC-EPG1-WEB后，物理图发生了相应更改。

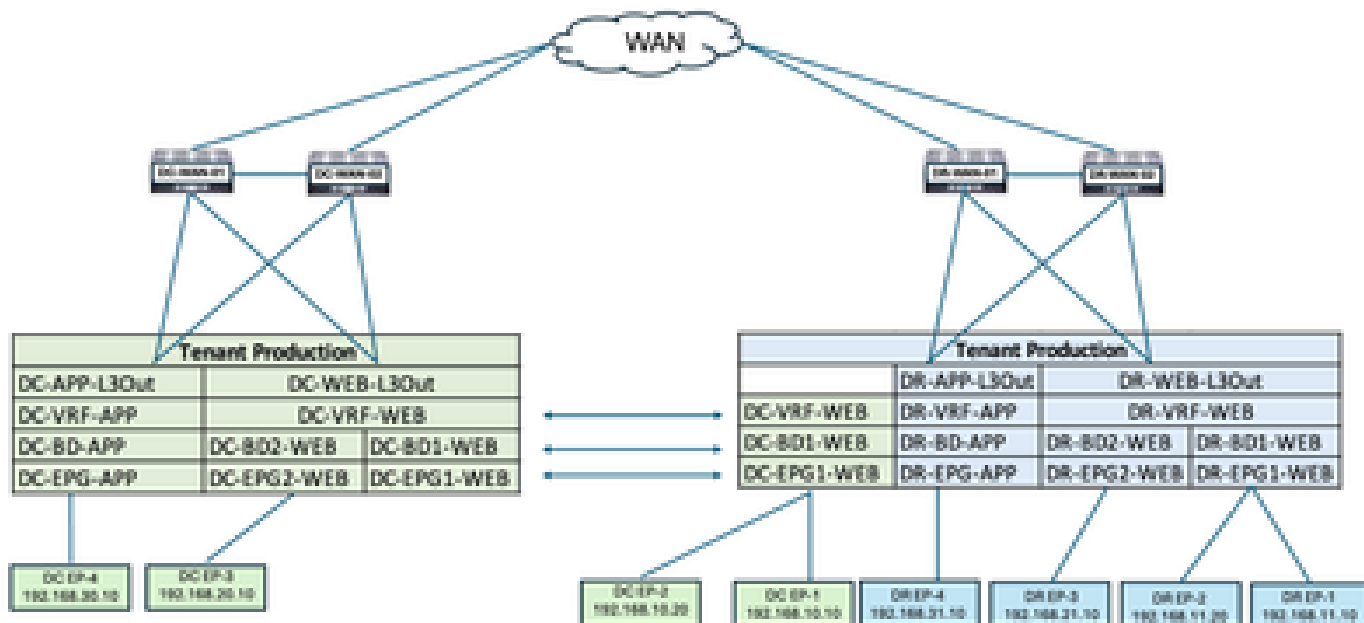
图 71：所有终端从DC迁移到DR后的物理设计



## 剩余终端迁移后的逻辑设计

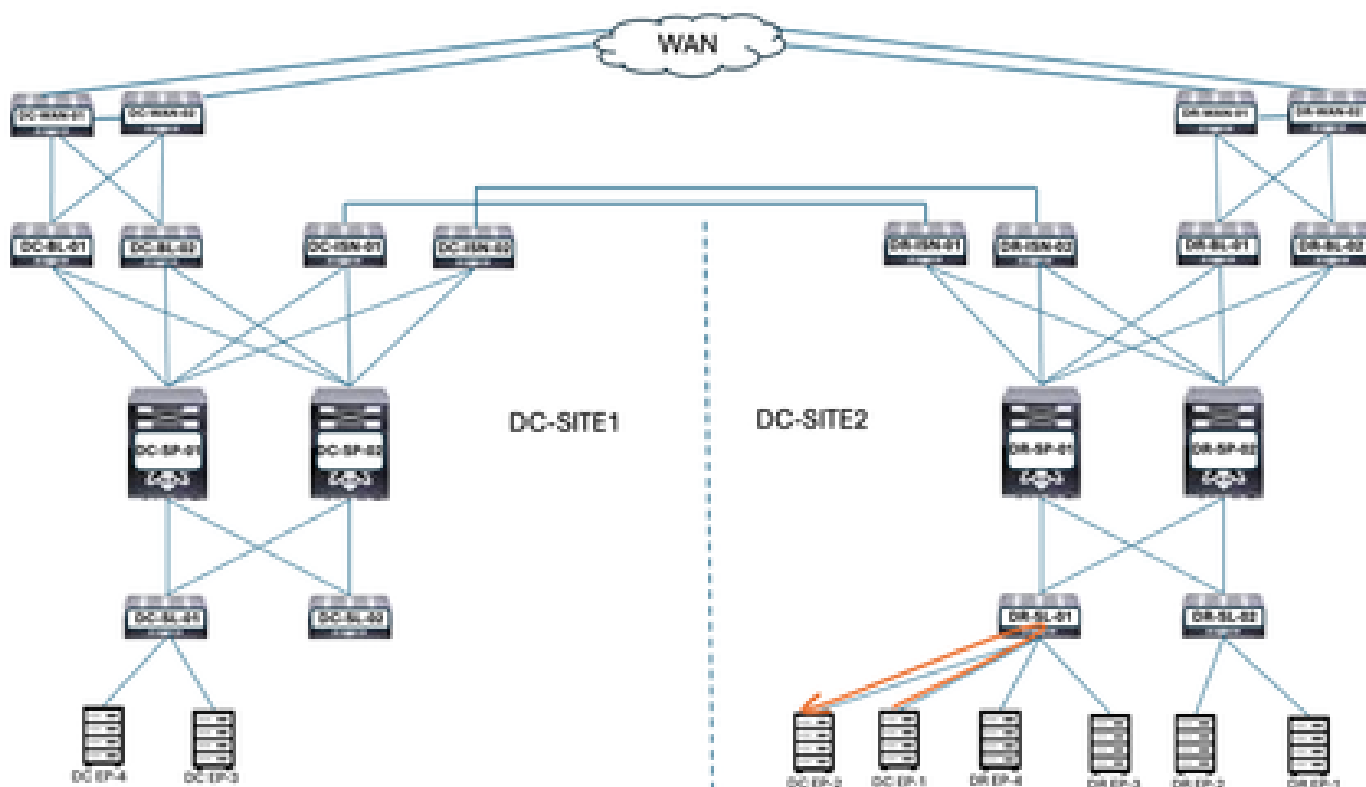
DC-EPG1-WEB、DC-BD1-WEB和DC-VRF-WEB已在DC和DR站点之间展开。DC剩余终端从DC迁移到DR站点。

图 72：恢复终端迁移后的逻辑设计



## 剩余终端迁移后的EPG内流量

图 73：剩余终端迁移后的EPG内流量



DC-EP-1和DC-EP-2之间的通信是EPG内部通信，因为两个终端都属于DC-EPG1-WEB。此通信直接在DR站点内发生。

EPG间、VRF间和DC间流量流仍然类似于DC-EP-1迁移。

## 从DC站点取消部署模板 — EPG1-BD1-Stretched

所有终端都从DC迁移到DC-EPG1-WEB的DR站点。DC站点中不需要DC-EPG1-WEB和DC-BD1-WEB。从DC站点取消部署Template-EPG1-BD1-Loaded，这将从站点1删除EPG和BD。

图 74：点击取消部署模板(Undeploy Template)

The screenshot displays the 'Schema-1' configuration page. At the top right, there are buttons for 'Refresh', 'Audit Logs', 'Create New Template', and 'Save Schema'. Below this, the 'View Template-EPG1-BD1-Stretched' section is active. Under 'Template Properties', 'DC-SITE1' and 'DR-SITE2' are listed. The 'Template Summary' section contains the following information:

Type	Tenant	Template Status	Associated Fabrics	Last Action
Application	Production	In Sync	2 In Sync, 0 Out of Sync	Deployment

The 'Last Action' section shows 'Last Deployed: 2025-05-07 pm'. A dropdown menu is open, listing actions such as 'Add/Remove Fabrics', 'Disassociate Fabric', 'Clone Template', 'Undeploy Template', 'Delete Template', 'View Deployed Configuration', 'View Deployment Dependencies', 'View Deployment Plan', 'Reconcile Configuration Drifts', 'View Version History', 'Roll Back Version', and 'Tag'. The 'Undeploy Template' option is highlighted.

图 75：选择DC-SITE1并点击undeploy



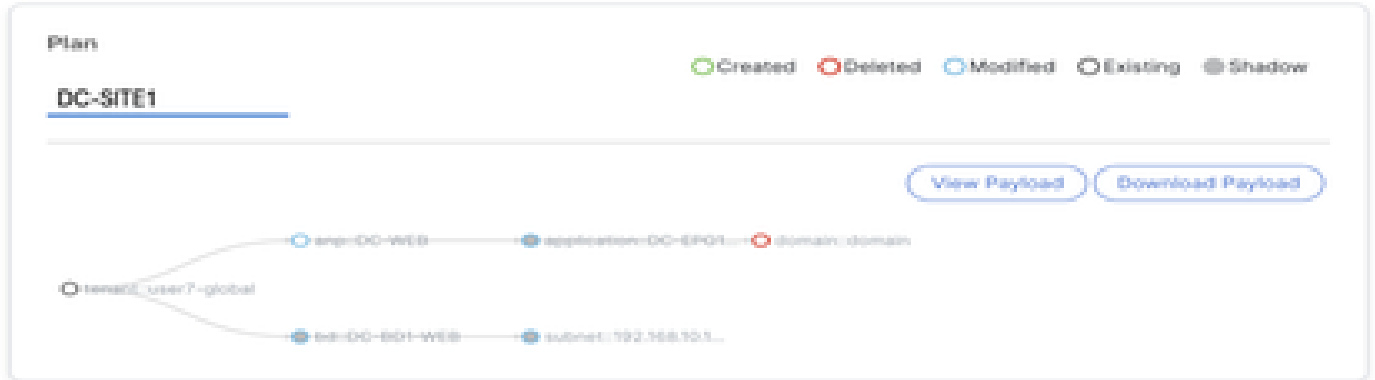
## Undeploy Template-EPG1-BD1-Stretched

34

⚠ Undeploying this template will permanently remove applied policies from selected fabric. Review and take measure to prevent any functionality loss.

Fabric

DC-SITE1



Undeploy

从DC站点取消关联模板 — EPG1-BD1-Streted

此步骤将Template-EPG1-BD-Stretched从DC站点分离。

图 76：点击取消关联模板(Disassociate Template)

Schema-1

Refresh Audit Logs Create New Template View Schema

View Template-EPG1-BD1-Stretched

Template Properties DC-SITE1 DR-SITE2

Template Summary

Type: Application Tenant: Production Template Status: Out of Sync Associated Fabric: 1 in Sync 0 Out of Sync 0 Last Action: Undeployed Last Deployed: 2025-05-11 pm

Filter

Application Profile DC-WEB

EPGs DC-EPG1-WEB

Bridge Domains Create Bridge E

Add/Remove Fabric Disassociate Fabric Clone Template Undeploy Template Delete Template View Deployed Configuration View Deployment Dependencies View Deployment Plan Reconcile Configuration Drifts View Version History Roll Back Version Tag

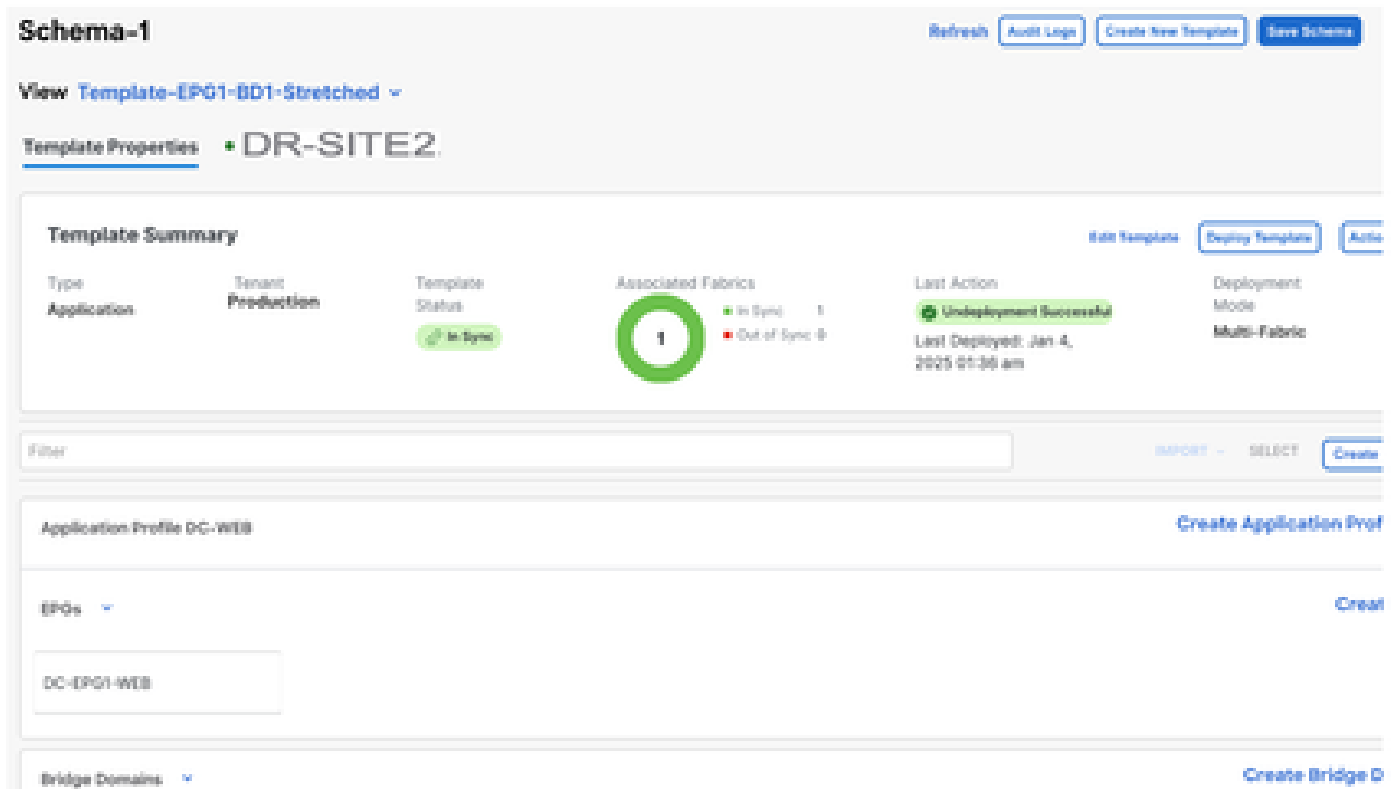
图 77：取消选中DC-SITE1

## Add Fabrics To Template-EPG1-BD1-Stretched

34



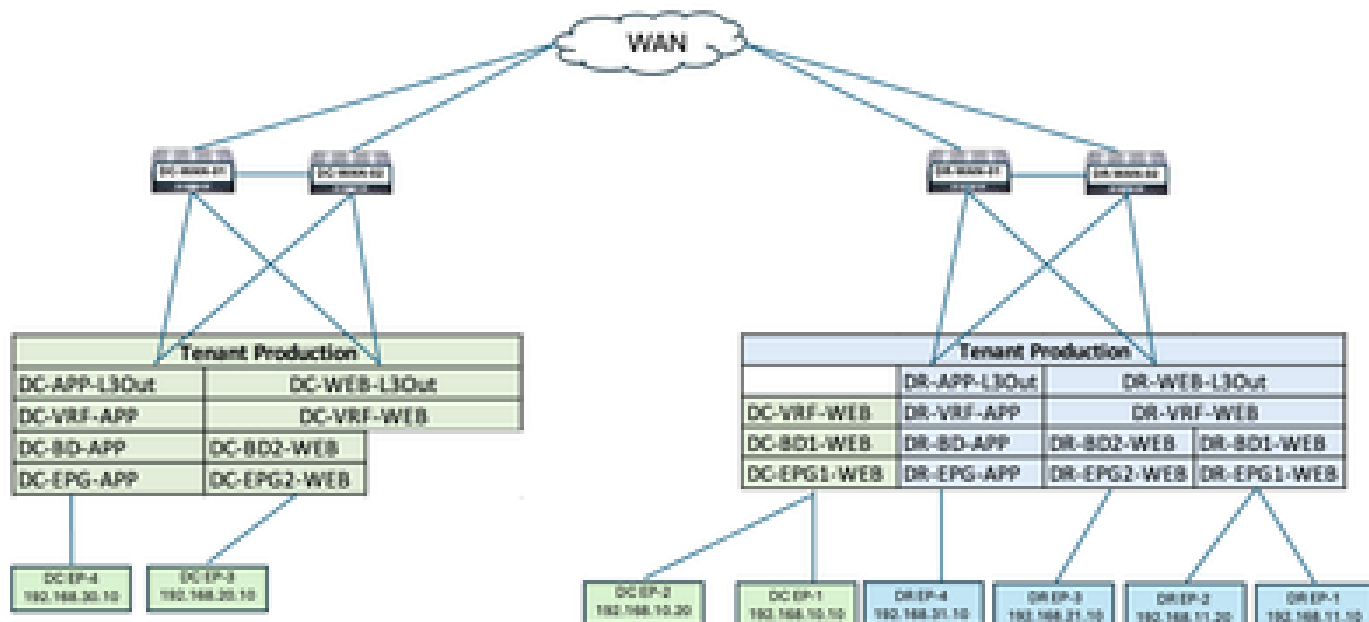
图 78 : DC-SITE2 Template-EPG1-BD1-Longed的一部分



从DC取消部署Template-EPG1-BD1-Loaded后的逻辑设计

取消部署模板后，DC-EPG1-WEB和DC-BD1-WEB不是DC站点的一部分。

图 79 : 取消部署模板后的逻辑设计



## Template-VRF-Contract-Site2创建

在架构1中创建了Template-VRF-Contract-Site2。DR-SITE2已添加到与同一模板关联的模板和租户 — Production。这是特定于站点的模板。此模板用于将DC-EPG1-WEB和DC-BD1-WEB的DR站点的VRF和合同关联。

图80:添加应用模板 — 选择ACI多云

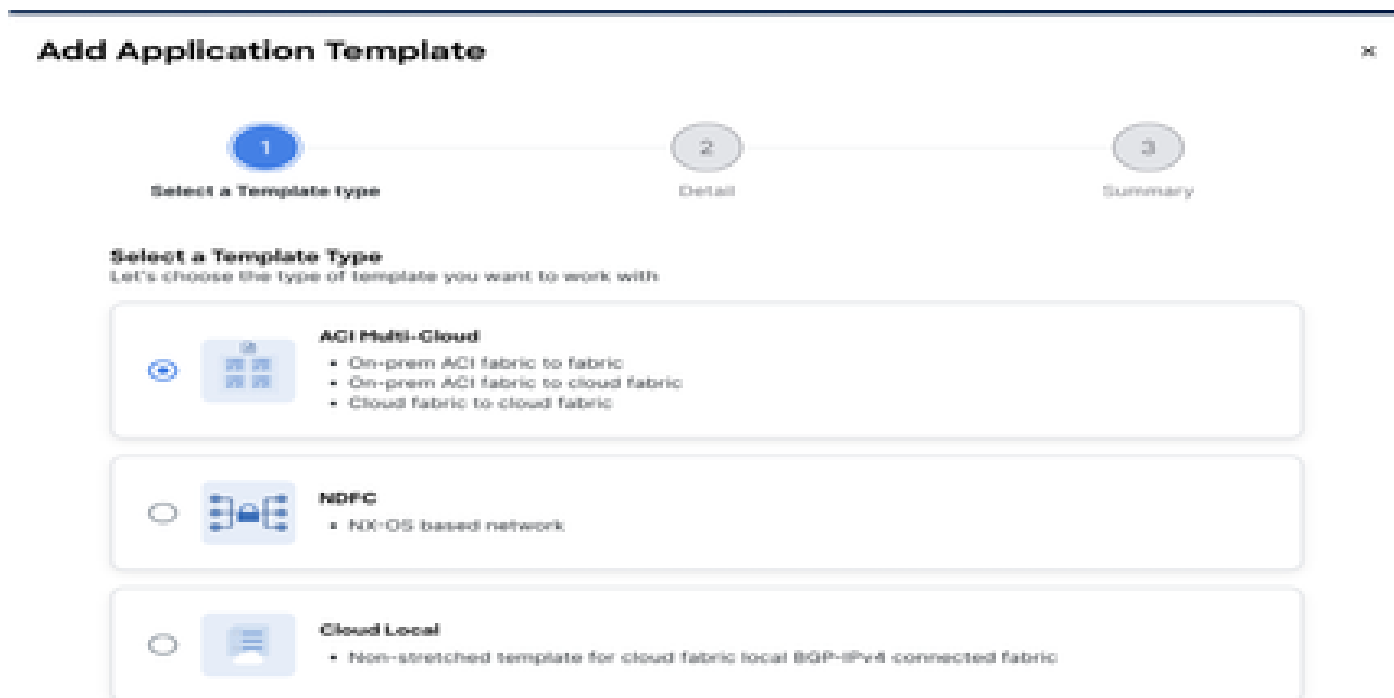


Figure 81:添加模板名称Template-VRF-Contract-Site2，选择租户生产

## Add Application Template ✕

1 Select a Template type      2 **Detail**      3 Summary

### Details

Now name the template and select a tenant

#### ACI Multi-Cloud

- On-prem ACI fabric to fabric
- On-prem ACI fabric to cloud fabric
- Cloud fabric to cloud fabric

#### GENERAL

**Display Name \***

Internal Name: Template-VRF-Contract-Site2.

[Add Description](#)

**Select a Tenant \***

✕ ▾

**Deployment Mode** ⓘ

Multi-Fabric

Autonomous


[Cancel](#)[Back](#) [Next](#)

Figure 82: Template-VRF-Contract-Site2 详细信息

# Add Application Template



## Summary

 **ACI Multi-Cloud**

- On-prem ACI fabric to fabric
- On-prem ACI fabric to cloud fabric
- Cloud fabric to cloud fabric

### Details

Template name  
**Template-VRF-Contract-Site2**

Deployment Mode  
**Multi-Fabric**

Tenant  
**Production**

[Cancel](#)

[Back](#)

[Continue to template](#)

在Template-VRF-Contract-Site2中导入VRF-Contract  
从DR-SITE2导入DR-VRF-WEB和DR-VRF-WEB合同。

图83:单击“导入”并选择DR-SITE2

**Schema-1** Refresh Audit Logs Create New Template Save Schema

View **Template-VRF-Contract-Site2** ▾

Template Properties

---

**Template Summary** Edit Template Deploy Template Actions

Type Application	Tenant Production	Template Status <span>Unassociated</span>	Associated Fabrics <div style="display: flex; align-items: center;"> <div style="border: 2px solid gray; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin-right: 10px;">0</div> <div> <span style="color: green;">■</span> In Sync 0  <span style="color: red;">■</span> Out of Sync 0         </div> </div>	Last Action <span>Updated</span>	Deployment Mode Multi-Fabric
---------------------	----------------------	--	---	-------------------------------------	---------------------------------

---

IMPORT ▾ SELECT Create Or

DC-SITE1  
 DR-SITE2

Figure 84:从DR-SITE2中选择合同

**Import from DC-SITE1** ✕

FAULT TYPE		
APPLICATION PROFILE 0 out of 3	<input type="checkbox"/> <span style="color: orange;">▲</span> DC-EPG-TO-EPG-WEB-CON 1 FILTER	
EPG 0 out of 4	<input type="checkbox"/> <span style="color: orange;">▲</span> DC-EPG-TO-L3Out-WEB-CON 1 FILTER	
EXTERNAL EPG 0 out of 4	<input type="checkbox"/> DR-EPG-TO-EPG-APP-CON 1 FILTER	
<b>CONTRACT 2 out of 6</b>	<input checked="" type="checkbox"/> DR-EPG-TO-EPG-WEB-CON 1 FILTER	<input checked="" type="checkbox"/>
FILTER 2 out of 6	<input type="checkbox"/> DR-EPG-TO-L3Out-APP-CON 1 FILTER	
VRF 0 out of 4	<input checked="" type="checkbox"/> DR-EPG-TO-L3Out-WEB-CON 1 FILTER	<input checked="" type="checkbox"/>
ED 0 out of 4		
L3OUT 0 out of 4		

Import

Figure 85:选择Filter from DR-SITE2

## Import from DC-SITE1

X

APPLICATION PROFILE	0 out of 3	<input type="checkbox"/>	DC-EPG-TO-EPG-WEB-FIL	
EPG	0 out of 4	<input type="checkbox"/>	DC-EPG-TO-L3Out-WEB-FIL	
EXTERNAL EPG	0 out of 4	<input type="checkbox"/>	DR-EPG-TO-EPG-APP-FIL	
CONTRACT	2 out of 6	<input checked="" type="checkbox"/>	DR-EPG-TO-EPG-WEB-FIL	
<b>FILTER</b>	2 out of 6	<input type="checkbox"/>	DR-EPG-TO-L3Out-APP-FIL	
VRF	0 out of 4	<input checked="" type="checkbox"/>	DR-EPG-TO-L3Out-WEB-FIL	
BD	0 out of 4			
L3OUT	0 out of 4			

Import

Figure 86:从DR-SITE2中选择VRF

# Import from DC-SITE1

✕

APPLICATION PROFILE	0 out of 3	<input type="checkbox"/>	DC-VRF-APP
EPG	0 out of 4	<input type="checkbox"/>	DC-VRF-WEB
EXTERNAL EPG	0 out of 4	<input type="checkbox"/>	DR-VRF-APP
CONTRACT	2 out of 6	<input checked="" type="checkbox"/>	DR-VRF-WEB
FILTER	2 out of 6		
<b>VRF</b>	<b>1 out of 4</b>		
BD	0 out of 4		
L3OUT	0 out of 4		

[Import](#)

图 87：包含VRF/合同信息的模板 — WEB-VRF-Contract-Site2

### Schema-1

Refresh Audit Logs Create New Template Save Schema

1 Out of Sync 1

Filter

IMPORT SELECT Create

Contracts Create Co

DR-EPG-TO-EPG-WEB-CON DR-EPG-TO-L3Out-WEB-CON

VRFs Crea

DR-VRF-WEB

Filters Crea

DR-EPG-TO-EPG-WEB-FIL DR-EPG-TO-L3Out-WEB-FIL



部署Template-VRF-Contract-Site2

点击Deploy Template-VRF-Contract-Site2并选择DR-SITE2

图88:将交换矩阵添加到Template-VRF-Contract-Site2

## Add Fabrics To Template-VRF-Site2

Name

● DC-SITE1  
6.0(5h)

● DR-SITE2  
6.0(5h)

Figure 89:部署外部同步模板

## Deploy Out of Sync Templates

The following templates will be deployed in the specified order

### Out of Sync Templates

Filter by attributes

Template Name	Template Type	Associated Fabrics
Template-VRF-Contract-Site2	Application	1

1 items found

Rows per page

5

<

1

>

Cancel

Deploy Out of Sync Templates

Figure 90:已完成部署

**Schema-1** Refresh Audit Logs Create New Template Save Schema

Type	Tenant	Template	Associated Fabrics	Last Action	Deployment
Application	Production	Status <span>In Sync</span>	1 In Sync 0 Out of Sync	<span>Deployment Successful</span> Last Deployed: Jan 4, 2025 01:57 am	Mode <b>Multi-Fabric</b>

Filter REPORT SELECT Create

**Contracts** Create Co

DR-EPG-TO-EPG-WEB-CON DR-EPG-TO-L3Out-WEB-CON

**VRFs** Crea

DR-VRF-WEB

**Filters** Creab

DR-EPG-TO-EPG-WEB-FIL DR-EPG-TO-L3Out-WEB-FIL

将DR-VRF-WEB关联到DC-BD1-WEB

从之前创建的Template-EPG1-BD1-Loaded将DR-VRF-WEB关联到DC-BD1-WEB。DC-BD1-WEB是DR-SITE2的一部分。

图 91 : 点击Template-EPG1-BD1-Longed

**Schema-1** Refresh Audit Logs Create New Template Save Schema

**View** Template-EPG1-BD1-Stretched

**Template Properties** DR-SITE2

**Template Summary** Edit Template Deploy Template Actio

Type	Tenant	Template	Associated Fabrics	Last Action	Deployment
Application	Production	Status <span>In Sync</span>	1 In Sync 0 Out of Sync	<span>Deployment Successful</span> Last Deployed: Jan 4, 2025 01:36 am	Mode <b>Multi-Fabric</b>

Filter REPORT SELECT Create

**Application Profile DC-WEB** Create Application Prof

**EPGs** Creat

DC-EPG-WEB

**Bridge Domains** Create Bridge D

图 92：将DR-VRF-WEB关联到DC-BD1-WEB

**DC-BD1-WEB** [View Relationship](#)

Annotations

Key	Value
-----	-------

[Create Annotations](#)

Properties [View Relationship](#)

[On-Premises Properties](#)

Virtual Routing & Forwarding [View Relationship](#)

DR-VRF-WEB [View Relationship](#)

L3 Stretch

Intersite BUM Traffic Allow

Optimize WAN Bandwidth

Unicast Routing

L3 Multicast

[OK](#)

## 将DR-Contracts应用于DC-EPG1-WEB

将DR-Contract应用于DC-EPG1-WEB，DC-EPG1-WEB使用DR合同从DC-EPG1-WEB进行通信，用于DC间、VRF间和EPG间。DC-EPG1-WEB是DR-SITE2的一部分

图 93：从DC-EPG1-WEB删除DC-Contracts

**DC-EPG1-WEB** [View Relationship](#)

Common Properties [View Relationship](#)

Display Name [View Relationship](#)

DC-EPG1-WEB

Deployed Name: DC-EPG1-WEB

Description

Annotations

Key	Value
-----	-------

[Create Annotations](#)

Contracts

Name	Type	Actions
<a href="#">DC-EPG-TG-L3Out-WEB-COM</a>	provider	<a href="#">Edit</a> <a href="#">Delete</a>
<a href="#">DC-EPG-TG-EPG-WEB-COM</a>	provider	<a href="#">Edit</a> <a href="#">Delete</a>
<a href="#">DC-EPG-TG-L3Out-WEB-COM</a>	consumer	<a href="#">Edit</a> <a href="#">Delete</a>
<a href="#">DC-EPG-TG-EPG-WEB-COM</a>	consumer	<a href="#">Edit</a> <a href="#">Delete</a>

[Add Contracts](#)

图 94：在DC-EPG1-WEB中添加DR-Contracts

**DC-EPG1-WEB** [View Relationship](#)

Display Name:   
 Deployed Name: DC-EPG1-WEB

Description:

Annotations

Key	Value
<a href="#">+ Create Annotations</a>	

Contracts

Name	Type	Actions
<a href="#">DR-EPG-TD-EPG-WEB-COM</a>	consumer	<a href="#">edit</a> <a href="#">delete</a>
<a href="#">DR-EPG-TD-EPG-WEB-COM</a>	provider	<a href="#">edit</a> <a href="#">delete</a>
<a href="#">DR-EPG-TD-L3Out-WEB-COM</a>	consumer	<a href="#">edit</a> <a href="#">delete</a>
<a href="#">DR-EPG-TD-L3Out-WEB-COM</a>	provider	<a href="#">edit</a> <a href="#">delete</a>

[+ Add Contract](#)

EPG Type

Application  Service

[OK](#)

Figure 95:模板 — EPG1-BD1 — 延伸信息

**Schema-1** [Refresh](#) [Audit Logs](#) [Create New Template](#) [Save Schema](#)

Template Properties: **DR-SITE2**

Template Summary

Type: Application	Tenant: Production	Template Status: <span style="background-color: yellow;">Out of Sync</span>	Associated Fabrics: <span style="border: 2px solid red; border-radius: 50%; padding: 5px;">1</span> <span style="color: green;">In Sync: 0</span> <span style="color: red;">Out of Sync: 0</span>	Last Action: <span style="background-color: #007bff; color: white;">Updated</span> Last Deployed: Jan 4, 2021 01:52 am	Deployment Mode: Multi-Fabric
-------------------	--------------------	---	---	---	-------------------------------

[Edit Template](#) [Deploy Template](#) [Actions](#)

Filter:  [IMPORT](#) [SELECT](#) [Create](#)

Application Profile DC-WEB [Create Application Profile](#)

EPGs:  [Create](#)

Bridge Domains:  [Create Bridge Do](#)

Figure 96：部署外部同步模板

# Deploy Out of Sync Templates

x

The following templates will be deployed in the specified order

## Out of Sync Templates

Filter by attributes

Template Name	Template Type	Associated Fabrics
Template-EPG1-BD1-Stretched	Application	1

1 items found

Rows per page

5

<

1

>

Cancel

Deploy Out of Sync Templates

Figure 97:已完成部署

### Schema-1

Refresh Audit Logs Create New Template Edit Template Deploy Template Auto

**Template Summary**

Type Application	Tenant Production	Template Status In Sync	Associated Fabrics 1	Last Action Deployment Successful Last Deployed: Jan 4, 2025 02:02 am	Deployment Mode Multi-Fabric
---------------------	----------------------	----------------------------	-------------------------	---	---------------------------------

Filter EXPORT SELECT Create

Application Profile DC-WEB Create Application Prof

EPOs Create

DC-EPO1-WEB

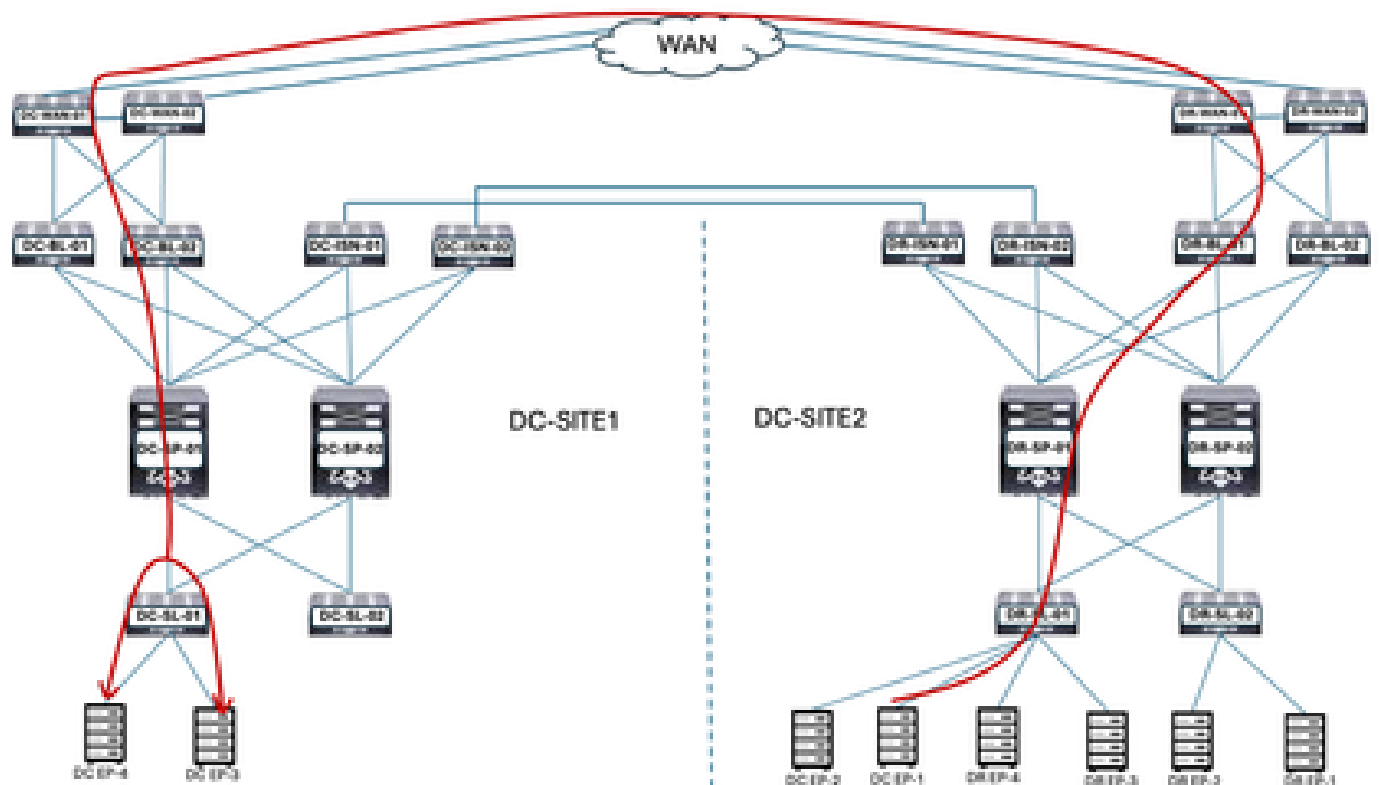
Bridge Domains Create Bridge E

DC-BD1-WEB

## DC-Endpoint-1流量

DC-Endpoint-1开始使用DR-L3Out-WEB与DC端点进行通信。此通信需要更改WAN交换机上的路由。

图 98 : DC-Endpoint-1流量



## DC-EP-1和DC/DR-EP之间的ping响应

图 99 : DC-EP-1和DC-EP-2之间的ping响应

```
:/ # ping 192.168.30.10 source 192.168.10.10 vrf site-1
PING 192.168.30.10 (192.168.30.10) from 192.168.10.10: 56 data bytes
64 bytes from 192.168.30.10: icmp_seq=0 ttl=249 time=2.406 ms
64 bytes from 192.168.30.10: icmp_seq=1 ttl=249 time=1.85 ms
64 bytes from 192.168.30.10: icmp_seq=2 ttl=249 time=1.863 ms
64 bytes from 192.168.30.10: icmp_seq=3 ttl=249 time=1.88 ms
64 bytes from 192.168.30.10: icmp_seq=4 ttl=249 time=0.987 ms

--- 192.168.30.10 ping statistics ---
5 packets transmitted, 5 packets received, 0.00% packet loss
round-trip min/avg/max = 0.987/1.317/2.406 ms
SITE2-EPI#
SITE2-EPI# ping 192.168.11.10 source 192.168.10.10 vrf site-1
PING 192.168.11.10 (192.168.11.10) from 192.168.10.10: 56 data bytes
Request 0 timed out
64 bytes from 192.168.11.10: icmp_seq=1 ttl=252 time=1.439 ms
64 bytes from 192.168.11.10: icmp_seq=2 ttl=252 time=0.993 ms
64 bytes from 192.168.11.10: icmp_seq=3 ttl=252 time=1.615 ms
64 bytes from 192.168.11.10: icmp_seq=4 ttl=252 time=1.187 ms

--- 192.168.11.10 ping statistics ---
5 packets transmitted, 4 packets received, 20.00% packet loss
round-trip min/avg/max = 0.993/1.208/1.615 ms
SITE2-EPI#
SITE2-EPI# ping 192.168.21.10 source 192.168.10.10 vrf site-1
PING 192.168.21.10 (192.168.21.10) from 192.168.10.10: 56 data bytes
64 bytes from 192.168.21.10: icmp_seq=0 ttl=252 time=1.491 ms
64 bytes from 192.168.21.10: icmp_seq=1 ttl=252 time=1.593 ms
64 bytes from 192.168.21.10: icmp_seq=2 ttl=252 time=1.816 ms
64 bytes from 192.168.21.10: icmp_seq=3 ttl=252 time=1.81 ms
64 bytes from 192.168.21.10: icmp_seq=4 ttl=252 time=1.848 ms

--- 192.168.21.10 ping statistics ---
5 packets transmitted, 5 packets received, 0.00% packet loss
round-trip min/avg/max = 1.81/1.231/1.593 ms
SITE2-EPI# ping 192.168.31.10 source 192.168.10.10 vrf site-1
PING 192.168.31.10 (192.168.31.10) from 192.168.10.10: 56 data bytes
64 bytes from 192.168.31.10: icmp_seq=0 ttl=249 time=1.353 ms
64 bytes from 192.168.31.10: icmp_seq=1 ttl=249 time=1.129 ms
64 bytes from 192.168.31.10: icmp_seq=2 ttl=249 time=1.814 ms
64 bytes from 192.168.31.10: icmp_seq=3 ttl=249 time=1.485 ms
64 bytes from 192.168.31.10: icmp_seq=4 ttl=249 time=1.347 ms

--- 192.168.31.10 ping statistics ---
5 packets transmitted, 5 packets received, 0.00% packet loss
round-trip min/avg/max = 1.814/1.265/1.485 ms
#####
```

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