# **Configure ACI Multi-Site Deployment**

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## Introduction

This document describes the steps to set up and configure Application Centric Infrastructure (ACI) multi-site fabric.

The ACI Multi-Site feature introduced in Release 3.0 allows you to interconnect separate Cisco ACI Application Policy Infrastructure Controller (APIC) cluster domains (fabrics). Each site represents a different availability zone. This helps to ensure multi-tenant Layer 2 and Layer 3 network connectivity across sites and it also extends the policy domain end-to-end across fabrics. You can create policies in the Multi-Site GUI and push them to all integrated sites or selected sites. Alternatively, you can import tenants and their policies from a single site and deploy them on other sites.

# Prerequisites

### Requirements

Cisco recommends that you:

- Complete the instructions in the <u>Cisco ACI Multi-Site Orchestrator Installation and Upgrade</u> <u>Guide</u> in order to set up the Multi-Site Controller (MSC).
- Ensure ACI fabrics have been fully discovered in two or more sites.
- Ensure the APIC clusters deployed in separate sites have the Out of Band (OOB) management connectivity to the MSC nodes.

### **Components Used**

The information in this document is based on these software and hardware versions:

Site A				
Hardwar	e Device	Logical Name		
N9K-C	9504 w/	spine109		
N9K-X9	732C-EX	opino roo		
N9K-C9 E	3180YC- X	leaf101		
N9K-C9 E	3180YC- X	leaf102		
N9K-C9	372PX-E	leaf103		
APIC-S N	ERVER- 12	apic1		
Site B				
Hardwar	e Device	Logical Name		
N9K-C	9504 w/	spine209		
N9K-X9	732C-EX	0000000		
N9K-C9 E	3180YC- X	leaf201		
N9K-C9 E	3180YC- X	leaf202		
N9K-C9	372PX-E	leaf203		
APIC-S N	ERVER- 12	apic2		
IP Netwo	rk (IPN) NS	K-C93180YC-EX		
Hardw are	Versi	on		
APIC	Version 3	.1(2m)		

MSC	Version: 1.2(2b)
	NXOS: Version
IPIN	7.0(3)I4(8a)

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, ensure that you understand the potential impact of any command.

### **Background Information**

**Note**: The cross-site namespace normalization is performed by the connecting spine switches. This requires 2nd generation or later Cisco Nexus 9000 Series switches with "EX" or "FX" on the end of the product name. Alternatively, Nexus 9364C is supported in ACI Multi-Site Release 1.1(x) and later.

For more details on hardware requirements and compatibility information, see the <u>ACI Multi-Site</u> <u>Hardware Requirements Guide</u>.

## Configure

**Logical Network Diagram** 



#### Configurations

This document mainly focuses on an ACI and MSC side configuration for Multi-Site deployment. IPN switch configuration details are not fully covered. However, a few important configurations from the IPN switch are listed for reference purposes.

#### **IPN Switch Configuration**

These configurations are used in the IPN device connected to the ACI spines.

```
vrf context intersite
  description VRF for Multi-Site lab
feature ospf
router ospf intersite
  vrf intersite
//Towards to Spine109 in Site-A // Tow
interface Ethernet1/49 inter
  speed 100000 spe
  mtu 9216 mtu
  no negotiate auto no mo
  no shutdown no
interface Ethernet1/49.4 inter
  mtu 9150 mtu
```

#### // Towards to Spine209 in Site-B

interface Ethernet1/50
speed 100000
mtu 9216
no negotiate auto
no shutdown

interface Ethernet1/50.4
 mtu 9150

encapsulation dot1q 4
vrf member intersite
ip address 172.16.1.34/27
ip ospf network point-to-point
ip router ospf intersite area 0.0.0.1
no shutdown

encapsulation dotlq 4
vrf member intersite
ip address 172.16.2.34/27
ip ospf network point-to-point
ip router ospf intersite area 0.0.0.1
no shutdown

**Note**: Maximum transmission unit (MTU) of Multiprotocol Border Gateway Protocol (MP-BGP) Ethernet Virtual Private Network (EVPN) control plane communication between spine nodes in different sites - By default, the spine nodes generate 9000-byte packets to exchange endpoint routing information. If that default value is not modified, the Inter Site Network (ISN) must support an MTU size of at least 9100 bytes. In order to tune the default value, modify the corresponding system settings in each APIC domain.

This example uses the default control plane MTU size (9000 bytes) on the spine nodes.

#### **Required Configuration from APIC**

 Configure iBGP AS and Route Reflector for each site from the APIC GUI. Log in the site's APIC and configure internal Border Gateway Protocol (iBGP) Autonomous System Number and Route Reflector Nodes for each site's APIC cluster. Choose APIC GUI > System > System Settings > BGP Route Reflector. This is the default BGP Route Route Reflector Policy which will be used for the fabric pod profile.

	of a Spinion a second				
CISCO APIC System Tenants Fab	ric Virtual Networking L4-	L7 Services Admin	Operations	Apps	admin
QuickStart   Dashboard   Controllers   System Settings					
System Settings () () () () () () () () () () () () ()	BGP Route Reflector	Policy - BGP Rou	te Reflector		
APIC Connectivity Preferences					
BD Enforced Exception List					
Contol Plane MTU	Properties				
Endpoint Controls	Name:	default			
Fabric Wide Setting	Description:	optional			
System Global GIPo					
BGP Route Reflector	Autonomous System Number:	100	-		
COOP Group	Route Reflector Nodes:	←			
Load Balancer		Node ID	Node Name	Description	
Precision Time Protocol		109	spine109		

Configure the fabric pod profile for each site's APIC cluster. Choose **APIC GUI > Fabric > Fabric Policies > Pod Policies > Policy Groups**. Click the default Pod policy group. From the BGP Route Reflector Policy drop-down list, choose **default**.

i c	ISCO APIC System	Tenants Fabric	Virtual Networking L4-L7 Ser	vices Ad	dmin Operat	ions Apps			a	Imin	9	0	2		٢
	Inv	entory   Febric Policies	Access Policies												
P	Olicies	6 0 0	Pod Policy Group - def	ault									Policy	Eaulte	0 (
	Switch Policies     Module Policies		8000			BGP Route Reflector	Policy - I	BGP Route R	eflector				Policy	Faults	C C
	Interface Policies     Pod Policies     Policies     Policies		Properties Name Description	c default c optional		8 👽 🛆 🕦 Properties								Ó	± %
	Date and Time     SIMP		Date Time Policy Resolved Date Time Policy	: default	~ <b>C</b>	Autonomous System Number: Route Reflector Nodes:	100	٢							+
	Management Access     ISIS Policy default     Policy Groups		ISIS Policy Resolved ISIS Policy	default	~ 🗗		Node ID 109	Node Name spine109	Description						
I	default		Resolved COOP Group Policy BGP Route Reflector Policy	r: default r: default r: default	~ @										
	Pod Profile default     default     Gebal Bolicies		Resolved BGP Route Reflector Policy Management Access Policy	: default : default	~ <b>C</b>	External Doute Deflector Moders									
	Monitoring Policies     Troubleshoot Policies		Resolved Management Access Policy SNMP Policy Resolved SNMP Policy	r: default r: default r: default	~ 🗗	Extential Route Reliector Houles.	Node ID	Node Name	Description						+
	Geolocation Policies     MACsec Policies     Marcsec Policies		MACsec Policy Resolved MACsec Policy	r: default	v 🗗				Select Actions to creat	e a new ib	om.				
	> Ings Tenant Quota > DWDM					External Intersite Route Reflector Nodes:	Node ID	Node Name spine109	Description						
										Show	w Usaq	ge	Close		Submit

 Configure spine access policies to include external routed domains for each site from the APIC GUI. Configure the spine access policies for spine uplink to the IPN switch with an Access Entity Profile (AEP) and Layer 3 routed domain (APIC GUI > Fabric > Access Policies). Create the switch profile.

< → C ▲ Not secure	mups://10.6	0.93.10/#C:0	rootlinira	spinenoders, intranoders	,IntraiNodePois					
cisco APIC	System	Tenants	Fabrie	c Virtual Networking	L4-L7 Services	Admin	Operations	Apps		
			abric Policie:	S Access Policies						
Policies		0	10	Profiles - Spine	Profiles					
<ul> <li>Quick Start</li> <li>Switch Policies</li> </ul>	- 2			Create Spine Pr	ofile				<b>8</b> 8	Descrip
> Policies				STEP 1 > Profile				1. Profile 2. Association	IS	
Profiles	3			Specify the profile Iden Name:	spine109					
Spine Profiles	<b>←</b> 4			Description:	optional					
> Overrides				Spine Selectors:	Name	Rio		Policy Group	+	
<ul> <li>Module Policies</li> <li>Interface Policies</li> </ul>					spine109	10	9	Policy cloup		
> Policies										
Profiles										
> Spine Profiles										
S Interface Overrides     Global Policies										
<ul> <li>Monitoring Policies</li> <li>Troubleshoot Policies</li> </ul>										
> 🖬 Pools > 🖬 Physical and External [	Domains							Previous Cancel N	ext	
									_	

Create the Attachable Access Entity Profile (AAEP), Layer 3 Routed domain, and VLAN Pool.

Create Attachable Access Entity Profile 👞	•••
Specify the name, domains and infrastructure encaps	
Name: msite	
Description: optional	
Enable Infrast Create VLAN Pool	
Domains (VM External) To E Specify the Pool identity	<b>W</b> +
Name: msite	
Description: optional	
Allocation Mode: Dynamic Allocation Static Allocation	
Create Ranges	<b>? &gt;</b>
Specify the Encap Block Range	e +
Ap Type: VLAN	
Range: VLAN V 4 - VLAN V 4 Must be v	vlan-4
Allocation Mode: Dynamic Allocation Inherit allocMode from parent Static Allocation	
Role: External or On the wire encapsulations Internal	
	Cancel OK

Create the Spine Access Port Policy Group. From the Attached Entity Profile drop-down list, choose **msite**.

Fabri	c Virtual Net	working	L4-L7 Services	Admin	Operation	ns App	S
abric Policie	es   Access Polic	ies					
E ()	Spine Prof	īle - sp	ine109				
	Create Sp	ine Acc	ess Port Polic	cy Group	)		?⊗
	Specify the Po	licy Group	identity				
		Name: sp	ine109-ipn-port				
	Des	scription: op	tional				
	Link Lev	el Policy: se	lect a value		~		
	CD	P Policy: CE	P-ENABLE	~ <b>d</b>	7		
	MACse	c Policy: se	lect a value	,	~		
	Attached Entit	y Profile: ms	site	~ <b>t</b>	7		
	·						

Create the Spine Interface Profile. Associate the IPN facing spine access port to the interface policy group created in the previous step.

Spine Profile - s	ine109		
Create Spine In	rface Profile	<b>@ &amp;</b>	
Specify the profile Ide	'Y		
Name:	site		
Description:	Create Spine Access Port Selecto	r	<b>?</b> ×
Interface Selectors:	Specify the selector identity		
	Name: spine109-ipn-port		
	Description: towards IPN		
	Interface IDs: 1/32		
	valid values: All or Ranges. Fo 1/13,1/15 or 1/22-1/24	r Example:	
	Interface Policy Group: spine109-ipn-port		

**Note**: As for now, there is no need to configure L3Out of Open Shortest Path First (OSPF) under infra tenant from the APIC GUI. This will be configured via MSC and the configuration pushed to each site later.

3. Configure the external dataplane Tunnel End Point (TEP) per site from the APIC GUI. Choose **APIC GUI > Infra > Policies > Protocol > Fabric Ext Connection Policies**. Then create an intrasite/intersite profile.

$\leftrightarrow$ $\Rightarrow$ C	C A Not Secure   https://10.66.93.16/#bTenants:infra uni/tn-infra fvFabricExtConnPolicies,fvRoutingPolicies,fvPolicies										
altalia cisco	APIC	System	Tenants	Fabri	c V	irtual Networking	L4-L7 Services	Admin	Operations	Apps	
ALL TENAN		Tenant Se	arch: Enter na	me, alias	descr						
Tenan	t infra 🔶		0 =	0	Fabi	ric Ext Connec	ction Policies				
	Networking					Create Intras	site/Intersite F	Profile			?×
	Contracts				ID	Create Fabric Ext	Connection Policy				
~ <b>I</b>	Policies Protocol Protocol BFD BFD BGP BGP BGP EIGRP BIGMP Snoop GMP Interface					Site/Pod Peering Pr Peering T Passw Confirm Passw Pod Connec	ic ID: 1 ame: SiteA ame: SiteA ame: SiteA Ex: extended:as2-nn cofile Type: Full Mesh R vord: tion Profile	4:2:22 4:5:16 oute Reflector			
	> End Point Reter	tion				Pod ID			Dataplane TEP		
	> DHCP	10011				1		~	172.16.1.4/32		
	> IND Interface							Update	Cancel		
	> 📰 ND RA Prefix										
	> 📰 Route Tag										
	> 🔲 L4-L7 Policy Ba	ased Redirect				Cobrig Extern	al Douting Dr				
	> L4-L7 Redirect	Health Groups				Fabric Extern	ial Routing Pr	onie			
	> 📰 Data Plane Poli	cing				Namo			Subnot		+
	Fabric Ext Conr	ection Policies	-			Name			Subliet		
	> HSRP									Cancel	Submit
	and the second second										

4. Repeat the previous steps in order to complete the APIC side configuration for SiteB ACI fabric.

#### **Multi-Site Controller Configuration**

1. Add each site one by one in the MSC GUI. Connect and log in to the MSC GUI.

P.A.		
	alialia cisco	
	ACI Multi-Site™ Version: 1.2(2b)	
	USERNAME	
	PASSWORD	
	DOMAIN	
	LOGIN	
	By using ACI Multi-Site you accept the Terms of Service and Privacy Statement. ©2018 Claco Systems	

Click **ADD SITE** in order to register the sites one-by-one in MSC. You can also see the cluster status in the top right of the window.



Use one of the APIC's IP addresses and assign one **unique site ID** for each site. The valid range is 1-127.

Add Site	Sites		Add Site	
	Site SiteA has been successfully connect	ted. IMPORT TENANTS FROM THIS SITE		
Connection Settings	Site SiteB has been successfully connect	ted. IMPORT TENANTS FROM THIS SITE	Connection Settings	
* NAME	Q		* NAME	
SiteA			SiteB	
LABELS	SITE NAME/LABEL	APIC CONTROLLER URLS	LABELS	
Select or Create a Label.	96 SiteA	https://10.66.93.16	Select or Create a Label.	~
* APIC CONTROLLER URL	97 SiteB	https://10.66.93.17	* APIC CONTROLLER URL	
https://10.66.93.16			https://10.66.93.17	
C APIC CONTROLLER URL			APIC CONTROLLER URL	
* USERNAME			* USERNAME	
admin			admin	
* PASSWORD			PACSWORD	
	•		PASHORS	•
SPECIFY LOGIN DOMAIN FOR SITE			SPECIFY LOGIN DOMAIN FOR SITE	-
* APIC SITE ID			* APIC SITE ID	
			2	

2. Configure the infra policies per site in MSC. Log in to the MSC GUI. Choose **Sites** from the left pane and then click **CONFIGURE INFRA**.

ACI Multi-Site		Cluster Status 3/3
Sites Q		C 🌣 CONFIGURE INFRA
SITE NAME/LABEL	APIC CONTROLLER URLS	ACTIONS
96 SiteA	https://10.66.93.16	
97 SiteB	https://10.66.93.17	Actions v

Configure the Fabric Infra General settings. From the BGP Peering Type drop down list, choose **full-mesh** (full mesh - EBGP /route reflector - IBGP).

Fabric Connectivity	Infra
SETTINGS	Control Plane BGP BGP PEERING TYPE
General Settings	full-mesh 🗸
SITES	KEEPALIVE INTERVAL (SECONDS)
• SiteB ENABLED	HOLD INTERVAL (SECONDS) 180
• SiteA ENABLED	STALE INTERVAL (SECONDS) 300
	GRACEFUL HELPER On
	MAXIMUM AS LIMIT
	BGP TTL BETWEEN PEERS 16

Once it is complete, choose one of the sites from the left pane. Then you will see site information in the middle pane. There are three different configuration levels. You can choose the Site level, the Pod level, or the Spine level. It will allow different settings on the configuration panel (right pane).

Fabric Connective	vity Infra		
SETTINGS		Site level	
General Settings	96 SiteA		Ó
SITES	POD pod-1 •	Pod level	
o SiteA DISABLED	Spine level spine109		
SiteB DISABLED	BGP PEERING ON		

Once you click on the Site area, the site level configurations (Multi-Site Enable (On), Dataplane Multicast TEP, BGP ASN, BGP Community (for example, extended:as2-nn4:2:22) , OSPF Area ID, OSPF Area Type (stub prevent tep pool advertising), External Route Domain, and so on) will display in the right pane. Here, you can configure or modify: Dataplane Multicast TEP (one loopback per site), used for Headend Replication (HREP)Border Gateway Protocol (BGP) Autonomous System (AS) (matching AS from the site configured in APIC)OSPF Area ID, OSPF Area Type, and OSPF Interface Policy (for spine interface towards IPN)External Routed DomainIn most cases, the attribute values would have already been retrieved automatically from APIC to MSC.

Fabric Connectivi	ty Infra	(DEPLOY) Q X
TINGS		8 SITEA SETTINGS @
eral Settings	SiteA	0 1 1 1 0
	⊭oo pod-1 ∘	SITE IS ACI MULTI-SITE ENABLED
		APIC SITE ID
ED	e spine109	1
	BGP PEERING ON	DATA PLANE MULTICAST TEP
50		172.16.1.2
20		BGP AUTONOMOUS SYSTEM NUMBER
		100
		BGP PASSWORD
		OSPF AREA ID
		0.0.0.1
		OSPF AREA TYPE
		regular V
		EXTERNAL ROUTED DOMAIN
		msite

Click the Pod area and go to the POD level specific policies. Enter the Data Plane Unicast TEP.

_	% POD-1
SiteA Pop pod-1 • Pod level configuration	0   4   1   1 DATA PLANE UNICAST TEP  172.16.1.1
spine109	
BGP PEERING ON	

Click the Spine area and go to the spine specific infra settings. For each interface from the spine towards the IPN switch:

Set the IP address and mask BGP Peering - On Control Plane TEP - enter the Router IP address Spine is Route Reflector -On

96 SiteA	Ŏ	98 5	SPINE109	1 1	1
POD pod-1 •		ID	IP ADDRESS/SUBNET	MTU	
© spine 109 BGP PEERING ON		1/32 ADD BGP PEE CONTRO 172.1 SPINE IS	172.16.1.33/27 PORT ING On IL PLANE TEP I.6.1.3 ROUTE REFLECTOR	inherit	Ũ

Repeat these steps for other sites and complete the infra configuration in MSC.Click **DEPLOY**. This will save and push the infra configuration to APICs in both sites.

	DEPLOY Q
_	98 SPINE109
SiteA	0 0 1 0 1 1 0
pop pod-1 •	ID IP ADDRESS/SUBNET MTU
© spine109 BGP PEERING ON	1/32 172.16.1.33/27 inherit © ADD PORT BGP PEERING On
	CONTROL PLANE TEP 172.16.1.3
	SPINE IS ROUTE REFLECTOR

The initial integration between APIC clusters and MSC is complete and ready to use.

You should be able to configure stretched policies for tenants on MSC for different ACI sites.

## Verify

Use this section in order to confirm that your configuration works properly.

 Verify the infra configuration from the APIC GUI on each APIC cluster. Verify the Intrasite/Intersite profile was configured under infra tenant on each APIC cluster.Verify the infra L3Out (intersite), OSPF, and BGP was configured on each APIC cluster (APIC GUI).Log in the site's APIC and verify the Intrasite/Intersite Profile under **Tenant infra> Policies > Protocol > Fabric Ext Connection Policies**. The Intersite profile will look like this when the site is fully configured/managed by MSC.

cisco APIC System Tenants Fabric	: Virtual Networking L4-L7 Services Admin (	Operations Apps	admin Q	0	2		٥
ALL TENANTS   Add Tenant   Tenant Search: Enter name, alias,	descr I common I Infra I mgmt						
Tenant infra	Intrasite/Intersite Profile - Fabric Ext Cor	nnection Policy SiteA			Policy	Faults	Histor
🗸 🧱 Tenant infra							
> Application Profiles						0	± %,
> iiii Networking	Properties						
> Contracts	Fabric ID: 1						
V Policies	Name: SiteA						
V Protocol	Extended.as2-mi4.2.22 Ex: extended.as2-nn4.5:16						
> Route Maps	Site ID: 1						
> 🖬 BFD	Intersite Multicast IP: 172.16.1.2/32						
> 🕅 BGP	Pod Peering Profile						
> 📰 OSPF	Peering Type: Full Mesh Route Reflector						
> EIGRP	Password:						
> 📰 IGMP Snoop	Confirm Password:						
> 📰 IGMP Interface	Pod Connection Profile						
> 🔚 Custom QOS							
> End Point Retention	+ Pod ID	MultiPod Dataolana TEP	Intercite Dataplane TEP				+
> E DHCP							
> Im ND Interface	1	172.10.1.4/32	172.10.1.1/32				
> 📰 ND RA Prefix							
> 🥅 Route Tag							
> 🔚 L4-L7 Policy Based Redirect							
> 🔚 L4-L7 Redirect Health Groups	Site Peering Profile						
> 📰 Data Plane Policing	Peering Type: Full Mesh						
V Fabric Ext Connection Policies	Remote Sites			1			
Fabric Ext Connection Policy SiteA	▲ Site ID	Intersite Dataplane TEP IP	Intersite Multicast IP				
> HSRP	2	172.16.2.1/32	172.16.2.2/32				
> First Hop Security	-						

Choose **APIC GUI > Tenant Infra > Networking > External Routed Networks**. Here the intersite L3Out profile should be created automatically under tenant infra in both sites.

cisco	APIC	System Tena	nts Fabr	ric \	Virtual Networking	L4-L7 Service	es Admin	Operations	Apps			admin	٩	0	0
ALL TENAN	TS   Add Tenant	Tenant Search: E	inter name, alia	is, descr	I common I ir	nfra I mgmt									
Tenan	t infra		0 9 0	L3	8 Outside – in	ntersite								Delinu	Chatta
~ Щ Те	nant infra													Policy	Stats
> 🖿	Application Profiles													Main	Nod
~ 🖿	Networking			6	2 🖸 🛆 🕜										
>	Bridge Domains			Pr	roperties										
>	VRFs				Pro	ovider Label:									
	External Bridged N	etworks				enter names	s separated by comma								
~	External Routed Ne	tworks			Т	arget DSCP: Unspecifi	ed 🗸								
	> 📰 Route Maps/Pro	ofiles			Route Control E	inforcement: 🗌 Import									
	> 📰 Set Rules for Ro	oute Maps				VRF: overlay-1	× 1	ø							
	> 📰 Match Rules for	Route Maps			Re	esolved VRF: infra/overl	ay-1	_							
	🗸 🕝 intersite				External Rou	ited Domain: msite	~	Ø							
	🗸 🔚 Logical Node	e Profiles			Route Profile 1	for Interleak: belect a v	value 🗸								
	✓	9-profile			Route Control For	Dampening:									
	V 🔚 Logica	al Interface Profiles				<ul> <li>Addre</li> </ul>	ss Family Type				Route Dampening Policy				
	> 🛃 int	erface-109-1-32-pro	file							No items have Select Actions to a	been found.				
	> 🔚 Config	gured Nodes									reare a new nem.				
	Vetworks														
1 L	> 🛃 intersitelr	nstP			Eachia RCD/E				-						
	> 🕅 Route Maps,	Profiles			Enable BGP/E		COPF								
>	Dot1Q Tunnels				000	SPF Area ID: 0.0.0.1			J						
> 🗐	Contracts				USPF A	Send re	edistributed LSAs in	nto NSSA area							
~ 🖿	Policies					Origina	te summary LSA								
~	Protocol					Suppre	ess forwarding addr	ess in translated L	SA						
	> Route Maps				OSPF	F Area Type: NSSA a	rea Regular are	a Stub area							
	> BFD				OSPI	F Area Cost: 1	0								
	> BGP				Enable remote leaf wi	ith Multipod: 🔲									
	> 🕅 OSPF														

Also, ensure the L3Out logical node and interface profile configuration is correctly set in VLAN

4.

								Policy	Faul	ts
8 👽 🛆 🕦									Ŏ	
Properties										
Name:	node-109-profile									
Description:	optional									
Alias:										
Target DSCP:	Unspecified ~									
Nodes:										
	<ul> <li>Node ID</li> </ul>	Router ID	Static Routes	3		Loopback Address				
	topology/pod-1/node-109	172.16.1.3								
BGP Infra Peer										
oonneedwidy.	Peer IP Address			Time To Live						
	172.16.2.3			16						
Logical Interface	Profile - interface-1	109-1-32-p	rofile						0	?
							Policy	Faults	Histo	Ŋ
					General	Routed Sub-Interfaces	Route	d Interfaces	S	/1
8 👽 🛆 🕚									Ċ.	+
Properties										
Routed Sub-Inte	rfaces:								+	-
	<ul> <li>Path</li> </ul>	IP Address	Secondary IP	Address MAC Address		MTU (bytes)	Encap		_	
	Pod-1/Node-109/eth1/3	172.16.1.33/27		00:22:BD:F8:19:1	FF	inherit	vlan-4			

2. Verify the OSPF/BGP session from the Spine CLI on each APIC cluster. Verify OSPF is up on spine and gets routes from the IPN (Spine CLI).Verify the BGP session is up to the remote site (Spine CLI).Log in to the Spine CLI, verify the BGP L2VPN EVPN and OSPF is up on each spine. Also verify the node-role for BGP is msite-speaker.

spine109# show ip ospf neighbors vrf overlay-1 OSPF Process ID default VRF overlay-1 Total number of neighbors: 1 
 Neighbor ID
 Pri State
 Up Time Address
 Interface

 172.16.1.34
 1 FULL/ 04:13:07 172.16.1.34
 Eth1/32.32
 172.16.1.34 spine109# spine109# show bgp l2vpn evpn summary vrf overlay-1 BGP summary information for VRF overlay-1, address family L2VPN EVPN BGP router identifier 172.16.1.3, local AS number 100 BGP table version is 235, L2VPN EVPN config peers 1, capable peers 1 0 network entries and 0 paths using 0 bytes of memory BGP attribute entries [0/0], BGP AS path entries [0/0]BGP community entries [0/0], BGP clusterlist entries [0/0] Neighbor V AS MsgRcvd MsgSent TblVer InQ OutQ Up/Down State/PfxRcd 172.16.2.3 4 200 259 259 235 0 0 04:15:39 0 spine109# spine109# vsh -c 'show bgp internal node-role' Node role : : MSITE\_SPEAKER spine209# show ip ospf neighbors vrf overlay-1 OSPF Process ID default VRF overlay-1 Total number of neighbors: 1 Up Time Address Interface 04:20:36 172.16.2.34 Eth1/32.32 Neighbor ID Pri State 172.16.1.34 1 FULL/ spine209# spine209# show bgp l2vpn evpn summary vrf overlay-1

```
BGP summary information for VRF overlay-1, address family L2VPN EVPN
BGP router identifier 172.16.2.3, local AS number 200
BGP table version is 270, L2VPN EVPN config peers 1, capable peers 1
0 network entries and 0 paths using 0 bytes of memory
BGP attribute entries [0/0], BGP AS path entries [0/0]
BGP community entries [0/0], BGP clusterlist entries [0/0]
Neighbor V AS MsgRcvd MsgSent TblVer InQ OutQ Up/Down State/PfxRcd
172.16.1.3 4 100 264 264 270 0 004:20:40 0
spine209#
spine209# spine209# vsh -c 'show bgp internal node-role'
Node role : : : MSITE_SPEAKER
```

3. Verify Overlay-1 interfaces from the Spine CLI on each APIC cluster. Log in to the Spine CLI

to check and verify Overlay-1 interfaces. ETEP (Multipod Dataplane TEP) The Dataplane

Tunnel Endpoint address used to route traffic between multiple Pods within the single ACI

fabric.DCI-UCAST (Intersite Dataplane unicast ETEP (anycast per site))This anycast

dataplane ETEP address is unique per site. It is assigned to all the spines connected to the

IPN/ISN device and used to receive L2/L3 unicast traffic.DCI-MCAST-HREP (Intersite

Dataplane multicast TEP) This any cast ETEP address is assigned to all the spines

connected to the IPN/ISN device and used to receive L2 BUM (Broadcast, Unknown unicast

and Multicast) traffic.MSCP-ETEP (Multi-Site Control-plane ETEP) This is the control plane

ETEP address, which is also known as BGP Router ID on each spine for MP-BGP EVPN. spine109# show ip int vrf overlay-1 <snip> lo17, Interface status: protocol-up/link-up/admin-up, iod: 83, mode: etep IP address: 172.16.1.4, IP subnet: 172.16.1.4/32 IP broadcast address: 255.255.255.255 IP primary address route-preference: 1, tag: 0 lo18, Interface status: protocol-up/link-up/admin-up, iod: 84, mode: dci-ucast IP address: 172.16.1.1, IP subnet: 172.16.1.1/32 IP broadcast address: 255.255.255.255 IP primary address route-preference: 1, tag: 0 lo19, Interface status: protocol-up/link-up/admin-up, iod: 85, mode: dci-mcast-hrep IP address: 172.16.1.2, IP subnet: 172.16.1.2/32 IP broadcast address: 255.255.255.255 IP primary address route-preference: 1, tag: 0 lo20, Interface status: protocol-up/link-up/admin-up, iod: 87, mode: mscp-etep IP address: 172.16.1.3, IP subnet: 172.16.1.3/32 IP broadcast address: 255.255.255.255 IP primary address route-preference: 1, tag: 0 spine209# show ip int vrf overlay-1 <snip> lo13, Interface status: protocol-up/link-up/admin-up, iod: 83, mode: etep IP address: 172.16.2.4, IP subnet: 172.16.2.4/32 IP broadcast address: 255.255.255.255 IP primary address route-preference: 1, tag: 0

lol4, Interface status: protocol-up/link-up/admin-up, iod: 84, mode: dci-ucast
IP address: 172.16.2.1, IP subnet: 172.16.2.1/32
ID busedeest address: 255 255

```
IP broadcast address: 255.255.255.255
```

```
IP primary address route-preference: 1, tag: 0
lo15, Interface status: protocol-up/link-up/admin-up, iod: 85, mode: dci-mcast-hrep
IP address: 172.16.2.2, IP subnet: 172.16.2.2/32
IP broadcast address: 255.255.255
IP primary address route-preference: 1, tag: 0
lo16, Interface status: protocol-up/link-up/admin-up, iod: 87, mode: mscp-etep
IP address: 172.16.2.3, IP subnet: 172.16.2.3/32
IP broadcast address: 255.255.255
IP primary address route-preference: 1, tag: 0
```

At the end, ensure no faults are seen from the MSC. **Troubleshoot** There is currently

no specific troubleshooting information available for this configuration. Related

Information Cisco ACI Multi-Site Architecture White PaperTechnical Support &

**Documentation - Cisco Systems**