Configure Disjoint Layer 2 in Intersight Managed Mode Domain

Contents

Introduction
Prerequisites
Requirements
Components Used
Background Information
Disjoint Layer 2 (DL2)
Network Diagram
<u>Configure</u>
Step 1. Create a VLAN Policy that includes all VLANs
Step 2. Create a Ethernet Network Group Policy
Step 3. Create a New Ethernet Network Group Policy for the Virtual NICs (Optional)
Step 4. Create or Modify the Port Policy
Step 5. Assign the VLANPolicy and the Port Policy to the Domain Profile
Step 6. Assign the Ethernet Group Policy to a LAN Connectivity Policy
<u>Verify</u>
Related Information

Introduction

This document describes how to deploy disjoint Layer 2 networks upstream of the Fabric Interconnects while in Intersight Managed Mode.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- Basic understanding of Disjoint Layer 2 networks.
- Basic understanding of how to configure a UCS Domain in Intersight Managed Mode.

Components Used

- Intersight Managed Mode
- 6454 Fabric Interconnect
- 4.2.1g Firmware

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

Disjoint Layer 2 (DL2)

Disjoint layer-2 networks are required if you have two or more Ethernet clouds that never connect, but must be accessed by servers or virtual machines located in the same Cisco UCS domain.

They are also required in a multi-tenant environment if servers or virtual machines for more than one client are located in the same Cisco UCS domain and they need to access the L2 networks for both clients.

Network Diagram



Configure

Step 1. Create a VLAN Policy that includes all VLANs

Note: This includes our Production VLANs called PROD and our Demilitarized Zone VLANs called DMZ that are to be present in the environment.

Select Policy Type						
Filters	♀ Search					
PLATFORM TYPE All UCS Server	Ethernet Network Control Ethernet Network Group Flow Control	 Port SNMP Switch Control 				
 UCS Domain UCS Chassis HyperFlex Cluster 	Link Aggregation	 Syslog System QoS VLAN 				
C Kubernetes Cluster	Network Connectivity NTP	O VSAN				

Create a Name and click Next.

ి గూ	Add a name, description and tag for the policy.	
Organization *		
default	~	
Name * IMM-Domain-vlan	s	
Set Tags		
Description		

Click Add VLANs.

Now when you add the VLAN or VLAN range for the PROD/DMZ network ensure to leave **Auto Allow on Uplinks** unchecked and add a Multicast policy. This ensures that these VLANs can be disjointed and

assigned to specific ports or port channels later.

VLANs should have one Multicast pressure of the state	olicy associated to it		
Configuration			
Name / Prefix * PROD		VLAN IDs * 0 101-999	
Auto Allow On Uplinks O			
Multicast * Selected Policy IMM-Multicast	@ X		
	Add VLA	ANs	
	Add VLA	ANS to the policy	
VLANs should have one Multicast policy	Add VLA Add VLANs y associated to it	ANS to the policy	
VLANs should have one Multicast polic Configuration	Add VLA Add VLANs	ANS to the policy	
 VLANs should have one Multicast polic Configuration Name / Prefix * DMZ 	Add VLA Add VLANs y associated to it	ANS to the policy VLAN IDS * 20-30	<u>o</u>
 ▲ VLANs should have one Multicast policy Configuration Name / Prefix * DMZ ▲ Auto Allow On Uplinks ⊙ 	Add VLA Add VLANs y associated to it	ANS to the policy VLAN IDS * 20-30	<u>o</u>

Once finished click Add to add the VLANs to the VLAN policy and click Create.

Step 2. Create a Ethernet Network Group Policy

This policy is used to assign the group of VLANs to specific Uplinks.

Navigate to **Policies** > **Create Policy** > **Ethernet Network Group**.

The first group of VLANs is for the Production Uplink.

Create a Name and click **Next**.

		Step 1 General Add a name, des	scription and tag for the	policy.	
	Organization *				
	default			~	
	Name *				
	Prod-vlans				
	Set Tags				
	Description				
				<= 1024	
		Step 2 Policy Deta Add policy detai	ails Is		
VLAN Sett	ings				
Allowed VL 101-999	ANS	Ō	Native VLAN 1		<u>) o</u>
					1 - 4093

The second group is for the DMZ Uplink.

		Step 1 Gener Add a na	al me, descri	ption and 1	tag for the	policy.		
	Organization *							
	default					~		
	Name *							
	DMZ-vlans							
	Set Tags							
	Description							
						<= 1024		
	Ę		Step 2 Policy Deta Add policy detail	ails Is				
VLAN S	ettings							
Allowed	VLANs			Native VLAN			A 0	
20-50				<u> </u>			1 - 4093	

Step 3. Create a New Ethernet Network Group Policy for the Virtual NICs (Optional)

This step is optional because the Ethernet Network Group Policies that you have created in Step 2. can also be reused to assign them to the vNICs on a Service Profile.

Note: If the policies are reused then all the VLANs allowed on the Uplink are also allowed on the vNIC. If it is preferred to only allow a subset of VLANs then you need to create a separate policy and allow the preferred VLANs on the vNIC.

Navigate to **Policies** > **Create Policy** > **Ethernet Network Group**.

Create a Name and click Next.

	Step 1 General Add a name, description and tag for the	policy.
Organization * default		×
Name * MGMT-VNIC-167		
Set Tags		
Description		
Description		<u>~</u> <= 1024
Description	Step 2 Policy Details Add policy details	<u>×</u> <= 1024

Create another Ethernet Network Group for the other DMZ VLAN.

	Step 1 General Add a name, description and tag for the policy.	
	Organization *	
	default ~	
	Name *	
	DMZ-VNIC-20	
	Set Tags	
	Description	
	<= 1024	
	Step 2 Policy Details Add policy details	
VLAN Settings		
Allowed VLANs	Native VLAN <u> O 1 </u>	<u>)</u> © 1 - 4093
		1 4050

Step 4. Create or Modify the Port Policy

Create a Port Policy or modify the one that already exists, then assign it to the Ethernet Network Group and to the appropriate Uplinks.

Navigate to the **Policies** tab > **Create Policy** > select **Port** > Create a **Name** > **Next**.

Select the **Port** or **Port-channe**l and click **Configure**.

E Progress		Port Roles Port Channels			
General General Junified Port		Configure Selected Ports Port 15 Clear Selection			
Port Roles					
			• Ethernet Liplinik • Ethernet Liplinik Port Channel Member • Server	Cnconfigured	
			Ethemet	Unconfigured	
			Ethemet	Unconfigured	
				Unconfigured	
			Ethemet	Unconfigured	
				Unconfigured	
				Unconfigured	
			Ethernet	Unconfigured	
				Unconfigured	
				Unconfigured	
			Ethemet	Unconfigured	
	Port Roles			Unconfigured	
			Ethernet	Unconfigured	

Assign the Ethernet Network Group created in Step 2.

Configuration Selected Port Port 15 Role Ethernet Uplink Admin Speed Auto Auto FEC Auto FEC Auto File Flow Control Select Policy 🔹 Link Control Select Policy 🔹		{ ``	Configure Po	rt	
Selected Port Port 15 Role Ethernet Uplink FEC Auto FEC Auto FEC Auto O O FEC Auto O O Component Network Group O Selected Policy DMZ-vlans O X Kink Control Select Policy C X Kink Control Select Policy C X X X X X X X X X X X X	Configuration				
Role Ethernet Uplink Admin Speed Auto × ○ FEC Auto × ○ Ethernet Network Group ○ ③ Selected Policy DMZ-vlans ③ × Flow Control Select Policy ⑤	Selected Port Port 15				
Ethernet Uplink Admin Speed Auto V O Auto Filow Control Select Policy 🗐 Link Control	Role				
Admin Speed FEC Auto \sim O Auto \sim O Ethernet Network Group O Selected Policy DMZ-vlans $\otimes \times$ Flow Control Select Policy \blacksquare Link Control Select Policy \blacksquare	Ethernet Uplink				
Selected Policy DMZ-vlans I X Flow Control Select Policy Select Policy Select Policy Select Policy	Auto Ethernet Network Group ©	<u> </u>	Auto	<u> </u>	
Flow Control Select Policy 🗐 Link Control Select Policy 🗐	Selected Policy DMZ-vlans <	⊚ ×			
Select Policy 🗉 Link Control Select Policy 🗐	low Control				
Link Control					
Select Policy 🗐	Select Policy 🗐				
	Select Policy ⊑ .ink Control				

Repeat the same process for the other Uplink.

∈ Progress			Configure port role through a unified p	es to define the traffic type carried port connection.	
Central Confed Purt Purt Rules		art Roles Port Channels			
		Pert 1	Ethemat	Unconfigured	
			Ethernet	Unconfigured	
			Ethernet	Unconfigured	
			Ethernet	Unconfigured	
				Unconfigured	
			Ethernet	Unconfigured	
				Unconfigured	
				Unconfigured	
			Ethernet	Unconfigured	
			Ethernet	Unconfigured	
				Unconfigured	
			Ethernet	Unconfigured	
				Unconfigured	
			Ethernet	Unconfigured	
			Ethemet	Ethernet Uplink	
	2	Port 16	Ethernet	Ethernet Uplink	*

		c کې کې	onfigure Port			
Configuration						
Selected Port Port 16						
Role						
Ethernet Uplink	~					
Admin Speed		FEC				
Auto	× 0	Auto		× 0		
Ethernet Network Group ① ④ Selected Policy Prod-vlans Flow Control Select Policy ⑤	© X					
Link Control Select Policy						

Step 5. Assign the VLAN Policy and the Port Policy to the Domain Profile

Navigate to **Profiles** > **UCS Domain Profiles** and select the appropriate **Domain Profile.**

Navigate to the **Ports Configuration** section.



Assign the **Port Policy** created in Step 4. to Fabric Interconnect A and B and proceed to the **Summary** section.

	Step 4
(1) General	Create or select a port policy for the fabric interconnect pair.
2 UCS Domain Assignment	
3 VLAN & VSAN Configuration	Configure ports by creating or selecting a policy.
Ports Configuration	Fabric Interconnect A Configured
5 UCS Domain Configuration	Ports Configuration X 🖉 F340-24-21-IMM-1-Ports 👔
6 Summary	Ports Port Channels
	Ethernet Uplink e Ethernet Uplink Port Channel Member e Server Unconfigured

Review the configuration applied to the **Domain Profile** and click **Deploy**.

	Progress			Step 6	,		
9	General			Review the UC configuration of	S domain profile details, resolve errors and deploy the profile.		
9	UCS Domain Assignment						
9	VLAN & VSAN Configurati	ion	General				
4	Ports Configuration		Name	F340-24-21-IMM-1	Status	0 OK	
Ģ	UCS Domain Configuratio	n	Organization	default			
6			Fabric Interconnect ©	Model	Serial	Requires Reboot	
				UCS-FI-6454	FD022110230	No	
				UCS-FI-6454	FD022110232	No	
			Ports Configuration VLAN & VSAN Config	uration UCS Domain Configuration E	irrors / Warnings		
			Fabric Interconnect A				
			VLAN Configuration			IMM-Domain-Vlans 🍈	
			Fabric Interconnect B				
			VLAN Configuration			IMM-Domain-Vlans 👔	
							Deploy

Step 6. Assign the Ethernet Group Policy to a LAN Connectivity Policy

You can use the LAN connectivity policy that already exists or create a new one.

Navigate to **Policies** > **Create Policy** > Select **LAN Connectivity**.

	Select Policy Ty	/pe
Filters	Q Search	
PLATFORM TYPE	Adapter Configuration	LAN Connectivity
	O BIOS	
UCS Server	O Boot Order	🔵 Local User
O UCS Domain	Certificate Management	Network Connectivity
O UCS Chassis	O Device Connector	○ NTP
HyperFlex Cluster	C Ethernet Adapter	Persistent Memory
Kubernetes Cluster	Ethernet Network	O Power
	Ethernet Network Control	SAN Connectivity
	C Ethernet Network Group	◯ SD Card

Enter a Name and click **Next**.

	Step 1 General Add a name, description and tag	for the policy.
Organization *		
default		~
Name *		
IMM-LCP		
Target Platform ① 〇 UCS Server (Star	ndalone) 🧿 UCS Server (FI-Attac	ched)
Set Tags		
Description		<u>.</u>
		<= 1024
		- 1024

Configure the vNICs with the desired settings and include the Ethernet Network group that was created in Step 3. or, you can reuse the group created in Step 2.

⊆ Progress ① General					Step 2 Policy Det Add policy det	tails ^{ails}			
2 Policy Details			Enable Azure Stack Ho	ost QoS 🛈					
		IQN							
	1		None	Pool	Static				
		0 T	his option ensures the	e IQN name is not ass	ociated with the policy	1			
		vNIC Co	nfiguration						
	I		Manual vNICs Plac	cement	Auto vNICs P	lacement			
		0 F	or manual placement	option you need to sp	ecify placement for ea	ach vNIC. Learn more a	at Help Center		
	l	Ad	dd vNIC					Graphic vNICs	Editor
			Na	Slot ID	Switch ID	PCI Link	PCI Order	Failover	
			vnic0	MLOM				Disabled	
			vnic3	MLOM	A	0	3	Disabled	

E Selected Pool IMM-MAC-POUL I X		
Placement		
Slot ID * MLOM	PCI Link © 0	<u>)</u> © 0 - 1
Switch ID * <u>A</u>	<u>v 0</u>	
PCI Order 0	<u>) o</u>	
Consistent Device Naming (CDN)		
Source vNIC Name	<u>~ 0</u>	
Failover		
● Enabled ⊙		
Ethernet Network Group Policy * 🔿		
Selected Policy MGMT-VNIC-167		
Ethernet Network Control Policy *		
Selected Policy IMM-Netcontrol © X		
Ethernet QoS * O		

Slot ID *		PCI Link	
MLOM		0	
Switch ID *			
<u>A</u>	× ©		
PCI Order			
3	<u></u> 0		
Consistent Device Naming (CDN)			
Source			
vNIC Name	~ 0		
Failover			
Enabled 💿			
Ethernet Network Group Policy * 0			

Assign the LAN Connectivity policy to a Service Profile and deploy.

Verify

Use this section to confirm that your configuration works properly.

Once the Domain profile has been deployed you can verify the VLANs are assigned to the appropriate Uplinks

Default (auto allow on all Uplinks) configuration:

```
<#root>
LAB-IMM-B(nx-os)#
show run interface ethernet 1/15
!Command: show running-config interface Ethernet1/15
!Running configuration last done at: Wed Mar 9 20:20:55 2022
!Time: Thu Mar 10 14:28:00 2022
version 9.3(5)I42(1g) Bios:version 05.42
interface Ethernet1/15
  description Uplink
  pinning border
```

```
switchport mode trunk
 switchport trunk allowed
vlan 1,101-999
 no shutdown
LAB-IMM-B(nx-os)#
show run interface ethernet 1/16
!Command: show running-config interface Ethernet1/16
!Running configuration last done at: Wed Mar 9 20:20:55 2022
!Time: Thu Mar 10 14:28:06 2022
version 9.3(5)I42(1g) Bios:version 05.42
interface Ethernet1/16
 description Uplink
 pinning border
 switchport mode trunk
 switchport trunk allowed
vlan 1,101-999
 no shutdown
After the assignment of the DMZ VLANs to port 1/15 and Production Vlans to port 1/16:
```

<#root>

LAB-IMM-B(nx-os)#

show run interface ethernet 1/15

```
!Command: show running-config interface Ethernet1/15
!Running configuration last done at: Thu Mar 10 18:13:38 2022
!Time: Thu Mar 10 18:21:54 2022
version 9.3(5)I42(1g) Bios:version 05.42
interface Ethernet1/15
  description Uplink
  pinning border
  switchport mode trunk
  switchport trunk allowed
```

```
vlan 1,20-30
```

no shutdown

LAB-IMM-B(nx-os)#

```
show run interface ethernet 1/16
```

```
!Command: show running-config interface Ethernet1/16
!Running configuration last done at: Thu Mar 10 18:13:38 2022
!Time: Thu Mar 10 18:21:57 2022
version 9.3(5)I42(1g) Bios:version 05.42
```

interface Ethernet1/16
 description Uplink
 pinning border
 switchport mode trunk
 switchport trunk allowed

vlan 1,101-999

no shutdown

Related Information

- Domain Profiles in Intersight
- Server Policies in Intersight
- Domain Policies in Intersight
- Troubleshoot IMM Network on UCS Domain with API Explorer and NXOS
- <u>Technical Support & Documentation Cisco Systems</u>