

Brownfield Import of VRFs and Networks

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Overview

The following sections describe the brownfield import use case scenario which will allow you to import existing DCNM fabric configurations, including fabrics that are part of a Multi-Site Domain (MSD), and to stretch those configurations across multiple greenfield or brownfield fabrics from a single location using Multi-Site Orchestrator. The same use case is demonstrated in the *Cisco DCNM VRF and Network Configuration using Multi-Site Orchestrator* video demo.

The examples in this chapter will use two different DCNM controllers where Fabric-1 from the first DCNM is a single fabric, while Fabric-2 and Fabric-3 are part of an MSD and are managed by the second DCNM:

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Dashboard	Fabric Builder	Fabric Builder									
🔆 Topology	Fabric Builder creates a managed and controlled SDN fabric. Select an existing fab add switches using Power On Auto Provisioning (POAP), set the roles of the switch	Fabric Builder creates a managed and controlled SDN fabric. Select an existing fab	pric below or define a new VXLAW fabric, hes and deploy settings to devices.								
log Control 📀	Create Fabric	Creato Fabric									
L° Administration 🧿	Fabrics (2)	Fabrics (5)									
P Applications	default 🔅 🗙 Fabric-1 🔩 🔅 🗙	Classic 4 & X External 4 & X	Fabric-2 🔹 🗘 🗙								
	Type: Nulti-Fahric Domain Type: Suito Fahric Technology: HD Site Group ANN: 6961 Member Fahrics: Fahric-1 Replication Media Nulticest Technology: VDAN Noric	Type: External Technology: Los Classic ARE: 29	Type: Switch Fabric ASM: 65002 Replication Mode: Hulticast Technology: VXLAN Fabric								
		Fabric-3 €¢× MSD ¢×									
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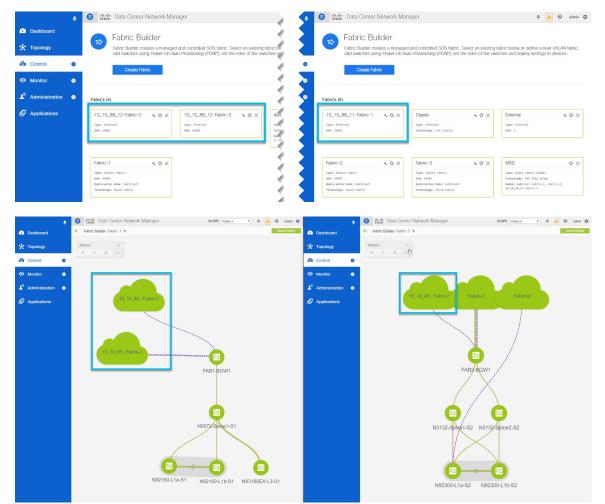
The following sections will detail how to import existing configuration, then stretch it from one fabric to another managed by different DCNMs, as well as how to deploy brand new VRFs and networks.

Prerequisites

Before you can import and manage VRFs and networks from the existing DCNM fabrics in your environment, you must have the following:

- Nexus Dashboard cluster deployed and the Multi-Site Orchestrator application installed, as described in *Cisco Nexus Dashboard Deployment Guide* and *Cisco Multi-Site Orchestrator Deployment Guide*.
- Existing DCNM fabrics on-boarded in the Nexus Dashboard and enabled for management in the Multi-Site Orchestrator GUI, as described in Adding and Deleting Sites.
- Have the inter-site infrastructure configured and deployed, as described in Configuring Infra for Cisco DCNM Sites.

Expanding on the example fabrics show in the "Overview" section above, after you configure the Infra settings for all fabrics, you will see the inter-site connectivity deployed to each DCNM:



Create Schema and Templates for Importing Configuration

This section describes how to create a schema and template where you will import existing and then create new configurations.

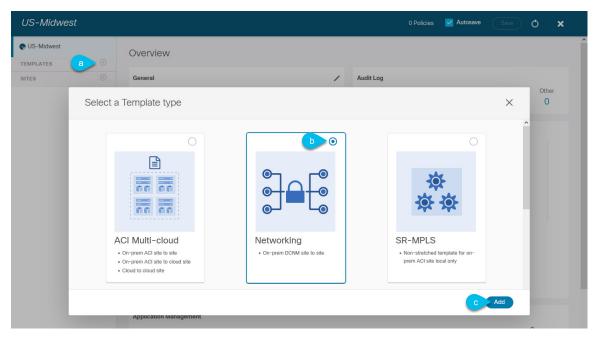
Before you begin

- You must have reviewed and completed the prerequisites described in Prerequisites, on page 2.
- **Step 1** Log in to your Multi-Site Orchestrator GUI.
- **Step 2** Create a new schema.
 - a) From the left navigation pane, choose Application Management > Schemas.
 - b) On the Schemas page, click Add Schema.
 - c) In the schema creation dialog, provide the Name and optional description for the schema.

By default, the new schema is empty, so you need to add one or more templates.

Step 3 Create a template.

We recommend creating two separate templates: one for the VRFs and one for Networks. The following two steps will describe how to create a tempalte.



- a) In the left sidebar under **Templates**, click the + sign to add a new template.
- b) In the Select a Template type window, choose Networking for the template type.
- c) Click **Add** to create the template.
- **Step 4** Provide the name and the tenant for the template.

US-Midwest		0 Policies 🗹 Autosave Save 🔿	×
US-Midwest		T TEMPLATE Template VRF	×
TEMPLATES	Template VRF Version 1 Deploy to sites		
Template VRF Retworking	 renant.	Template Settings Display Name *	^
SITES		Template VRF	
	390 VRFs	Description	
	Networks	Template Type Networking	
		Tenant Settings	^
		Select a Tenant *	
		Select or find an item here	~
		COMMON Common tenant for use with all other tenants	
		dcnm-default-tn Default tenant for DCNM sites	
		infra Infra tenant for use with all other tenants	
		mso-tenant1	

- a) In the right sidebar, specify the **Display Name** for the template.
- b) From the Select a Tenant dropdown, select the dcnm-default-tn tenant.

This tenant is created in MSO by default specifically for defining objects and configurations for DCNM sites

Step 5 Repeat the pervious two steps to create a second template.

In this release, we recommend creating separate templates for VRFs and Networks within each schema and then deploying the VRF templates first, followed by the templates that contain Networks. This way any VRFs required by the networks will be already created when you push Network configuration to the sites.

Similarly, when undeploying multiple networks and VRFs, we recommend undeploying the Networks template first, followed by the VRF templates. This will ensure that when VRFs are undeployed, there will be no conflicts with any existing Networks still using them.

Step 6 In the top right corner of the schema view, click **Save** to save the schema and template.

You must save the schema and template you created before you can import configuration.

Importing Schema Elements From DCNM Sites

This section describes how to import configuration from existing fabrics.

Before you begin

• You must have associated the template with the existing fabrics as described in the previous section.

Step 1 In the main pane click the **Import** button and select the **Site** from which you want to import.

You can import from one fabric at a time, so you will repeat tese steps for each fabric.

Step 2	In the Import from	<site-name></site-name>	window that ope	ens, select one or more	VRFs.
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Import from	m Fabric-2		×
POLICY TYPE			Q,
VRF		CORP-11	
NETWORK	2 out of 4	CORP-1	
		ENG-1	
	a	ENG-11	
		C	Import

a) In the import screen, you can select all or some of the existing objects.

In the example above, we import ENG-11 and CORP-11 networks from Fabric-2 which is part of the MSD.

- **Note** The names of the objects imported into the Multi-Site Orchestrator must be unique across all sites. Importing different objects with duplicate names will cause a schema validation error and the import to fail. If you want to import objects that have the same name, you must first rename them.
- b) Esnure that the Include Relations box is unchecked.

You will import the VRFs separately into the second template.

- c) Click **Import** to import the objects.
- **Step 3** Repeat the steps to import Networks from other fabrics.

If you select the template under the site from which you imported (Fabric-2 in this example), the networks will have switch and port configuration already created as they were imported from that site. However, if you select the template under a different fabric (Fabric-3), where the same networks also exist, the switch configuration will be empty.

To get the interface configuration for the networks we imported, we import the same networks again from the other fabric.

Step 4 Select the second template and repeat previous two steps to import all required VRFs.

As best practice, you will use one of the templates to import the VRF configuration from your sites and the other template to import the Network configuration.

Deploying Template and Making Changes

This section describes how to deploy the imported configuration to the site where it doesn't yet exist.

Before you begin

You must have the configuration imported as described in the previous section.

Step 1 In the left sidebar, select the template you want to deploy.

Following the same example, you can use the DCNM UI to verify that the networks and VRFs you have imported from Fabric-2 and Fabric-3 do not yet exist in Fabric-1.

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	Control	•		Network Name		Network ID	V.	_		Network Name	 Network ID 	VRF Name			
•	Monitor	\mathbf{O}		BLUE_ITF_79		30009	BL	0		CORP-1	900	CORP			
				INSIDE77		30006	BLU			CORP-11	911	CORP			
¢	Administration	$\mathbf{\mathfrak{D}}$		LB80		30008	BLL	0		ENG-1	800	ENG			
				MyNetwork_30000		30000	Bl			ENG-11	811	ENG			
ç	Applications			Outisde88		30007	BLU								
				VLAN12		30001	BLU		L.						
				VLAN13		30002	BL		45						
				VLAN14		30003	BĻ								
				VLAN15		30004	BLU								
				VLAN16		30005	BLL								

Step 2 In the top right of the template edit view, click **Deploy to sites**.

The Deploy to Sites window opens that shows the summary of the objects to be deployed.

Step 3 Click **Deploy** to deploy the template.

Since this is the first time you are deploying this template, the **Deploy to Sites** summary will show the configuration difference that will be deployed to sites.

It may take a few minutes for the configuration to get deployed. After you see a confirmation message in the MSO GUI, you can verify that the configuration was deployed using the DCNM UI:

		₽	θ	cisco Data Cente	er Network Manage	er 🗸	Ŧ	0	cisco Data Cen	ter Network Manage	r
\$	Dashboard		Netwo	rk / VRF Selection	letwork / VRF Deployment			Netwo	rk / VRF Selection	Network / VRF Deployment	
*	Topology		Netw	orks				Netw	orks		Fabric
6	Control	•	+	/ × C 6	Interface Group	5	_	+		Interface Group	
	Control			Network Name	Network ID	V.			Network Name	 Network ID 	VRF Nam
Monitor	Monitor	•		BLUE_ITF_79	30009	в	0		CORP-1	900	CORP
				CORP-11	911				CORP-11	911	CORP
1 0	Administration	⊘		ENG-11	811	EN'	. 🔊		ENG-1	800	ENG
				INSIDE77	30006	BL.		\checkmark	ENG-11	811	ENG
Ģ	Applications			LB80	30008						
				MyNetwork_30000	30000	E.					
				Outisde88	30007	BU					
				VLAN12	30001	BL					
				VLAN13	30002						
				VLAN14	30003	P					
				VLAN15	30004	BL	3				
				VLAN16	30005	BL					

Step 4 Assign switch ports to the new network.

We have verified that the network you imported from Fabric-2 and Fabric-3 was deployed to Fabric-1, we need to assign one or more switch ports to it for Fabric-1.

US-Midwest			2 Policies	🗹 Autosave 🛛 Save 🕁	ହ	Q	×	
US-Midwest				Deployed Name: NW-Mid-West				
TEMPLATES	\oplus	Chicago Version 5	ist Deployed: Oct 22, 2021 07:12 pm	Description N/A				
📀 Template VRF		Template Network Tenant: dcnm-default-tn	st Deployed. Oct 22, 2021 07.12 pm	Network ID (
Template Network				100				
SITES	\oplus	FILTERS		Site Local Properties				^
Fabric-1 (DCNM) 11.5(3a)	^			Tenant Routed Multicast				
♥ Template VRF	\oslash	VRF VRFs						
Template Net	··⊘			Enable L3 Gateway Border				
Fabric -2 (DCNM) 11.5(3a)	^	Networks 🗸		DHCP Loopback ID				
♦ Template VRF	\oslash							
Template Net	\oslash	CORP-11 ENG-11		DHCP Servers				
Oma -3 (DCNM) 11.5(3a)	^			Server Address				
♥ Template VRF	\oslash			+ Add DHCP Server				
♥ Template Net	\oslash							
				Static Ports				
				Add Static Port				

- a) Select the template under Fabric-1.
- b) Select the Network we deployed.
- c) In the right sidebar, click Add Static Ports.

In the Add Static Port window that opens, select the switch and the port to which you want to assign the network's VLAN. Then click Save.

Step 5 Save and redeploy the template with the new configuration changes.

You can once again verify the change by navigating back to the DCNM GUI and refreshing the Networks page. The status of the network will go from NA to In Progress to Deployed.