

Route Leaking Use Case

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About the Route Leaking Use Case

This route leaking use case uses separate templates for each site, which contains VRF and network definitions for the on-premises site, whereas for cloud sites these templates only contain the VRF definition. Unlike the stretched VRF (intra-VRF) use case described in Stretched VRF Use Case, which does not require any configurations for exchanging prefixes between the sites because the same VRF is stretched to all sites, you must configure VRF leaking for this use case because each site uses a different VRF.

To propagate the prefixes between the sites (on-premises as well as cloud sites), you must explicitly configure route leaking on the respective templates associated with the sites.

Figure 1:



As shown in the figure above, each site has a separate associated template, which contains VRF/network definitions specific to that site only. On-Prem Template is associated to the NDFC managed on-premises site, whereas AWS Template and Azure Template are associated to the AWS and Azure cloud sites, respectively. Inter-VRF route leaking is configured explicitly between different VRFs to allow communication between the sites.

Configure the Necessary Templates

Use the procedures in the following sections to configure the templates that you will need for the route leaking use case.

Configure the On-Premises Site Template

In this section, you will configure the On-Prem Template that will be associated to the NDFC managed on-premises site.

Step 1 In NDO, navigate to Application Management > Schemas and click Add Schema.

Step 2 Provide the schema name and click **Add**.

For this use case, we will name the new schema VRF Route Leaking Schema.

Figure 2:

≡ cisco Nexus Dashboard . Crchestrator ∨						Feedback 👤 🌘
Untitled Schema						DOD Objects Save Scheme 🎨 🗙
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Sites Type	General Name * VRF Route LeakingBohama Description		X Sync 0 t of Sync 5			
Application Management + Sopharties Profiles (b) + Desense LPDis (b) + Contents (b)	• vors (0) • II • Nervens (0)	ndge Dominis (0)	+ Filteria (0)			

You are returned to the Overview page for the new VRF Route Leaking Schema schema.

- Step 3 Under the VRF Route Leaking Schema schema, click Add New Template.
- **Step 4** Choose the NDFC template.
- **Step 5** Enter a name in the **Display Name** field to create an NDFC-type template (for example, On-Prem Template).
- **Step 6** Select the dcnm-default-tn tenant in the **Select a Tenant** field to map the template to that tenant.

Figure 3:

≡ ^{••[]••[]•} . Nexus Dashboard Orchestrator ~			Feedback 👤 🤨
VRF Route Leaking Schema			4/1000 Objects のたえ 🗙
View On-Prem Template \bigvee_{k}	Add New Template	On-Prem Template	×
On-Prem Template Version 8 Applied to 1 stress Terrant: dcnm-default-in	Last Deployed: Dec 3, 2022 12:53 pm Deploy to sites	Template Settings Display Name* On-Prem Template Declared Name	~
Template Properties V	Actions ~	Description	
Fiter	IMPORT - SELECT 🔮 CREATE OBJECT -	Template Type NDFC	
VRFs ~		Tenant Settings Display name dcnm-default-tn	^
via		Name dcnm-default-tn Description Default tenant for NDFC sites	
💿 Networks \vee			
net10			

- **Step 7** Under **Template Properties**, click **Create Object** and choose **VRF** to create a VRF that will be used with the NDFC managed on-premises site.
 - **Note** If you have an on-premises VRF already created that you want to use instead of creating a new VRF, under **Template Properties**, click **Import**, then import the already-created VRF.

Currently, support is only available for importing VRFs and networks from on-premises sites.

Step 8 Enter a name in the **Display Name** field for this VRF (for example, v10).

Figure 4:

≡ ^{•1]•1]•} . Nexus Dashboard . ◆ Orchestrator ~	Feedback 🛓 9
VRF Route Leaking Schema	1/1000 Object Save Schema () 🗙
View On-Prem Template ~	Add New Template VIRF VI0 X
On-Prem Template On-Prem Template On -Oddut-tin	0 0 0 0 0 0 0 0 0 0 0 0 0 0
Template Properties V	Actions To SELECT + Create Coject
VRFs ~	Add VIEF NDFC Properties
	VRF Profile *
	Default_VRF_Universal X V
	Default_VRF_Extension_Universal X >>
	Loopback Routing Tag 12345
	Redistribute Direct Route Map
	FABRIC-RMAP-REDIST-SUBNET
	Disable RT Auto-Generate
	Import ()
	Select.

Step 9 Under **Template Properties**, click **Create Object** and choose **Network** to create a network.

Note If you have a network already created that you want to use instead of creating a new network, under **Template Properties**, click **Import**, then import the already-created network.

Step 10 Enter a name in the **Display Name** field for the network (for example, net10).

Step 11In the Virtual Routing & Forwarding field, choose the v10 VRF to map the net10 network to that VRF.Figure 5:

≡ diodin Nexus Dashboard Orchestrator ~	Feedback 🔔
VRF Route Leaking Schema	2/1000 Objects Scheme th X
View On-Prem Template ~	Add New Templeth net10
On-Prem Template Terunt: domi-oefault-in	Intermediation Network Network of entries in contains 0 0 0 0 Common Properties
Template Properties ~ Filter	Actions Description
VRPs V	Add vier NDFC Properties A
	Add Network Add Network Add Network
netto	Image: state of the s
	Network Extension Profile * Default. Network. Extension. Universal X v
	VLAND
	VLAN Name
	* Gateway IP
	S Add Subnet

Step 12In the Gateway IP field, click Add Subnet and provide the gateway IP address, then click Add.Figure 6:

≡ diutin cisco Nexus Dashboard . Orchestrator ∨			Fee	obick 上 💿
VRF Route Leaking Schema				<i>53</i> ×
View On-Prem Template ~	Associatud Sites Associatud Sites Associatud Sites Associatud Sites	Add New Template	Network natio elessicaleon sciences o Common Properties	© ×
Template Properties ~		Actions	Display Name net10 Depays Name Description	
VMrs ~ V10	Add Subnet × Gateway IP Type 1722/610/1/24 primary ✓ 111 Add Gateway IP	Add VR#	NDFC Properties	
Networks ret()		Add Network		
			Default_Network_Universal Network Extension Profile * Default_Network_Extension_Universal	
			* Gateway IP Add Sebnet Suppress ARP	

The gateway IP address is now displayed in the Gateway IP field.

Figure 7:

≡ cisco Nexus Dashboard . Crchestrator ~		Feedback 1 3
VRF Route Leaking Schema		2/1000 Objects Save Schema
View On-Prem Template \vee	Add New Template	Network
On-Prem Template Treast: occm-disfault in	Associated Sites • In Sym. 0 • Out of Sym. 0 • Out of Sym. 0	O O Common Properties Display Name*
Template Properties ~ Fitter	Actions	Deployed Name: Description
VRPs V	Add VRF	NDFC Properties
vio	Add Network	Layer2 Only Virtual Routing & Forwarding *
net10		v10 × ~ Network Profile * Default,Network,Universal × ~
		Network Extension Profile * Default_Network_Extension_Universal X V
		VLAN ID VLAN Name
		* Gateway IP 172.16.10.1/24
		Type: reimary Add Subnet

- **Step 13** Define other optional parameters for this network, if necessary.
- **Step 14** In the **Template Properties** area, click **Actions** > **Sites Association**.

Figure 8:

≡ cisco Nexus Dashboard A Orchestrator ∨			Feedback 💄
VRF Route Leaking Schema		2 / 1000 Objects Save	Schema でえ X
View On-Prem Template ~ [Add New Template	Network	•® >
On-Prem Template		UISED IN CLINESHT SCHEMA UISED BY OT	erschemas
Tenant: dom-default-in		Display Name* net10	5
emplate Properties ~	Actions	Deployed Name: Description	
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VRFs ~	Cone temp	Network ID ()	
v10		Layer2 Only	
🔕 Networks 😕	Add Network	Virtual Routing & Forwarding * v10	×~
netl0		Network Profile * Default. Network. Universal	
		Network Extension Profile *	
		Default_Network_Extension_Universal	
		VLAN Name	
		* Gateway IP	
		172.16.10.1/24 Type: primary	/1
		Add Subnet	

Step 15 Associate this template only to the on-premises site (the sydney site in this example use case), then click Ok.

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Figure 9:

≡ ditulio cisco Nexus Dashboard oref	sestrator v				Feedback	10
VRF Route Leaking Schema					4 / 1000 Objects - のたえ	×
View On-Prem Template ~	Associated Sites	Add New Template	0	Template On-Prem Template		×
On-Prem Template Version 8 Applied to 1 sites Tenant: dcnm-defauit-th	Add Sites To On-Prem Template	Tart Planlovoit Pur 1, 2022/12/62 nm	×	e Settings Jame* n Template		
Template Properties \vee	Name			vame: on		
				Туре		
VRFs V	© Sydney 12.1.2.275			ettings ame fault-tn		
			Ok	fault-tn		
Networks						
net10						

- **Step 16** Click **Template Properties** and select the on-premises site (the sydney site in this example use case), then select the v10 VRF.
- Step 17 In the right pane, click Add Static Leaf.

Figure 10:

≘ dirdh Nexus Dashboard the contestrator ∞	Feedback 💄
VRF Route Leaking Schema	2/1000 Objects Save Schema th X
View On-Prem Template >	Add New Template VRF
Sydney Sydney Automa function	critical major minor warring
Tenant: done-defaut-in Sydney on or start VRFs V V Fiter VRFs V	Image: Constraint of the second se
Pretto	Node/Switch ndfs-spin1 VLAVE NA
	ndri-teat1 - ndric-teat2 ✓ 章 \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\

The Add Static Leaf window appears.

Step 18 In the **Leaf** field, select the leaf/border/border gateway device where this VRF is to be deployed and click **Ok**.

In this example, you need to deploy the VRF on the leaf nodes (where the endpoints part of the network mapped to the VRF will be connected) and on the BGW spine node to be able to extend the Layer 3 connectivity for the VRF towards the cloud sites.

Step 19 To attach the network to the leaf switches, click the net10 network, then click **Add Static Port** to add the ports where you want to deploy this network.

The Add Static Port window appears.

- Step 20 In the Add Static Port window, click Add Path.
- The Add Static Port window appears.
- **Step 21** In the **Leaf** field, select the device where you want to deploy this network.
- **Step 22** (Optional) Enter the necessary information in the VLAN field.
- **Step 23** In the **Ports** field, select the ports where you want to deploy this network.
 - Click Save.

Step 24

Figure 11:

≡ cisco Nexus Dashboard Orchestrator					Feedback 💄
VRF Route Leaking Schema			2/1	000 Objects	ve Schemar (L) >
View On-Prem Template ~		Acted New Template	Network		
Sydney	Associated Sites Mayne 0		eritical major	minor	- warning
Tenant: dcnm-default-tn	Add Static Port	×	Common Properties		
Sydney © Gard Spec 1 V	Path Leaf	VLAN Ports	net10 Deployed Name Description N/A		
VRFs V	ndfc-leaf1 - ndfc-leaf2 VLAN 2310 Ports	×	N/A Site Local Properties Tenant Routed Multicast		
Networks		Cancel			
		Submit	DHCP Servers Server Address		
			Stabe Ports Path Leaf VLAN	Ports	
			Add Stelle Port		

You are returned to the Add Static Port window.

Step 25 In the Add Static Port window, click Submit.

Figure 12:

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VRF Route Leaking Schema						2 / 1000 Objects	Seve Scheme 🕄 🗙
View On-Prem Template ~					Network		×
Sydney On-Prem Template	Associated				eritical ma	jai minor	warning
Sydney @ dearthar . V	Add Static Port Path Leaf ndfc-leaf1 - ndfc-leaf2	VLAN 2310	Ports vPC40 vPC51 vPC52	×	Common Properties Display Name * halt0 Discloyed Name Discolution N/A Network (D O N/A Site Local Properties Tenent Routed Multic		
Networks V	Add Path			Submit			
					Add DirCP Server Static Ports Path Leaf Add Static Port	VLAN Ports	

You are returned to the on-premises template window.

Figure 13:

≡ disco Nexus Dashboard Orchestrator ~	Feedback 👗 🔘
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View On-Prem Template ~	Add New Templath net10 ×
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Tenant: dom-default-in Sydney • dor of time:	Common Properties Castery Name * net10 Ceptype Name: Depayer Name: Description NA Network ID O
VBFs V	NIA Site Local Properties Tenant Routed Multicast Enable L3 Gateway Border
Networks ~	DHCP Loopback ID DHCP Servers
	Server Address Add DRCP Server Static Parts
	Path Leaf VLAN Ports
	vPCS1 kat2 vPCS2 kat2 MideAt/~
	C Add Static Port

- **Step 26** Click the arrow next to the on-premises site, and from the drop-down menu, select **Template Properties**.
- Step 27 Click Deploy to Sites.

Figure 14:

≡ diste Nexus Dashboard . ★ Orchestrator ~	Feedback 上 🕻
VRF Route Leaking Schema	2/1000 Objects Save Schema () 🗙
View On-Prem Template ~ Add New Template	On-Prem Template X
On-Prem Template Operation Oper	Template Settings Display Name* On-Pren Template Description Description
Fiter Minorit - SLLCT + Create Object	Template Type NDFC
VRFs Add VRF V10	Tenant Settings ^ Select a Tenant *
Networks Add Network net10	

- **Step 28** Deploy On-Prem Template to the sites.
 - Click **Deployment Plan** for additional verification.

Click on the on-premises site to see the deployment plan for that specific site.

Figure 15:

≡ ^{•1 •1 •} Nexus Dashboard . Orchestrator		Feedback 🛓 🗨
VRF Route Leaking Schema		2/1000 Objects
		Template X
Deployment Plan General Information		×
Template On-Prem Template	Schema VRF Route Leaking Schema	Tenant dcrm-default-tn
Plan		
Sydney		Created Obeleted Modified Existing Shadow
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() nd	c-spine1	
© v10	c-leaf1 ~ ndfc-leaf2	
O depm-default-to		
• 17:	16.10.1/24 ••• VPC49	
@ net10 @ nd	c-leaft~ndfc-leaf2+@ vPC51	
O vit	vPC52	

- Click **Deploy** to have NDO push the configurations to NDFC. This pushes the NDO configurations to NDFC.
- **Step 29** In NDFC, verify that the VRF was deployed successfully.

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Figure 16:

Ŧ	Fabric Controller		
Â	Dashboard	💿 Data Center / 🙆 default / 💽 V	/RFs (2) / 💿 v10
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-	Virtual Management V	Operation Configuration	
	Settings ~	Hierarchical	B
£	Operations V	 In-Sync Pending In Progress Out-of-Sync NA Multi-select 0 selected 	CBK3-Fab2

What to do next

Follow the procedures provided in Configure the Azure Site Template, on page 11.

Configure the Azure Site Template

In this section, you will configure the Azure Template that will be associated to the Azure site.

Before you begin

Follow the procedures provided in Configure the On-Premises Site Template, on page 3.

- Step 1 Under the VRF Route Leaking Schema schema, click Add New Template.
- **Step 2** Choose the NDFC template.
- **Step 3** Enter a name in the **Display Name** field to create an NDFC-type template for the Azure site (for example, Azure Template).
- Step 4 Select the dcnm-default-tn tenant in the Select a Tenant field to map the template to that tenant.

Figure 17:

≡ dibala cisco Nexus Dashboard .★ Orchestrator ~			Feedback	•
VRF Route Leaking Schema			4/1000 Objects の代え	×
View Azure Template ~	Add New Template Save	Template Azure Template		×
Azure Template Version 17 Applied to 1 state: Temant: dcom-default-in	Last Deployed: Dec 4, 2022 09:40 pm Deploy to sites	Template Settings Display Name* Azure Template		ĵ
Template Properties \lor	Actions <	Deployed Name: Description		
Filter	IMPORT SELECT 😌 CREATE OBJECT	Template Type NDFC		
vers v azure10	Add VRF	Tenant Settings Display name dcnn-default-tn Name dcnn-default-tn Description Default tenant for NDFC sites		^

Step 5 Under **Template Properties**, click **Create Object** and choose **VRF** to create a VRF that will be used with the Azure site.

Figure 18:

RF Route Leaking Schema ew Azure Template Azure Template tense: dome delade in Plate Properties Let's create an object Click "Create Object" on template properties to create an object	Feedback 👤 🔮
ew Azure Template Azure Template Massociated Sites Azure Template mplate Properties Marrie State Marrie State M	3 / 1000 Objects Save Schema の たみ 🗙
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Let's create an object Click "Create Object" on template properties to create an object	Jate Type
Let's create an object Click "Create Object" on template properties to create an object	nt Settings

Step 6 Enter a name in the **Display Name** field for this VRF (for example, azure10).

Figure 19:

≡ "Ituli" Nexus Dashboard Orchestrator ↔			Feedback 💄
VRF Route Leaking Schema			4/1000 Objects Save Schema 🛈 🏌 🗙
View Azure Template ~		Add New Template	VRF ×
Azure Template Tenant: dcnm-default-tn	Associated Sites In Sync 0 Out of Sync 0	Dyplay to altern	0 0000 BY OTHER SCHEMA
Tourist Description	0		Display Name* () azure10 Residued Name
Filter		Actions ~	Description
VRFs v		Add VRF	NDFC Properties
azure10			VRF Profile *
			VRF Extension Profile * Default VRF Extension Universal
			Loopback Routing Tag 12345
			Redistribute Direct Route Map FABRIC-RMAP-REDIST-SUBNET
			Disable RT Auto-Generate
			Select

Step 7 In the **Template Properties** area, click **Actions** > **Sites Association**.

Figure 20:

E cisco Nexus Dashboard * Orchestrator		Feedback .
VRF Route Leaking Schema		4/1000 Objects Save Schema の た
View Azure Template ~		Add New Template 22/07/07
Tenant: donm-default-tn	Associated Sites In Symc 0 Out of Symc 0	Common Properties Display Name*
Template Properties ~		Excert 10 Deployed Name Description Description
F 11.001		Sites Association
VRFs ~		VRF ID 🕥
azure10		VRF Profile *
		Default_VRF_Universal ×
		VRF Extension Profile *
		Default_VRF_Extension_Universal ×
		Loopback Routing Tag
		12345
		Redistribute Direct Route Map
		Disable RT Auto-Generate
		Select

Step 8 Associate this template only to the Azure site, then click **Ok**.

Figure 21:

≡ disco Nexus Dashboard . Crchestra	tor v.			sedback
VRF Route Leaking Schema			4 / 1000 Objects Save Schem) ()
View Azure Template \sim		Add New Template	VRF azure10	
Azure Template Appled to 1 sites Tenant: dcrim-default-tri	Associated Sites * Bype * Bype * Bype * Bype	Depicy to also	Common Properties Display Hamp*	
Template Properties ~	Add Sites To Azure Template	×	azure 10. Deployed Hame: Description	
VRFs V	Name		NDFC Properties	
	Azure Softeer Sydney: Softeer		VRF Profile * Default_VRF_Universal	
			VRF Extension Profile * Default_VRF_Extension_Universal	
			Loopbeck Routing Tag 12345 Redistribute Direct Route Map	
			FABRIC-RMAP-REDIST-SUBNET Disable RT-Auto-Generate	

- Step 9Click the azure10 VRF, then click Add Region to create the VNet in a selected region.
The Add Cloud Region CIDRs window appears.
- **Step 10** In the **Region** field, choose the region where you want to create the VNet.
- Step 11 In the CIDR field, click Add CIDRs and define a CIDR block for the VNet.
- **Step 12** Click **Add Subnet** to create the subnets, then click **Save**.

Figure 22:

cisco Nexus Dashboard 🔔 Orchestrator 🗸			Feedback
Route Leaking Schema			4/1000 Objects Save Schema 🔊 🕄
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ect Associated VRF			
Parent Vid- Hosted Vid-			
o subnets bnet Name Private Link Labels Availability Zone			
110/24	X		
Add Subnet			
Cancel	ve		

Step 13 Check the box under the **VNet Peering** field, then select the hub network that was created on the Cisco Cloud Network Controller for Azure.

Figure 23:

≡ cisco Nexus Dashboard Orchest	rator ~				Feedback 🛓 🕻
VRF Route Leaking Schema					4/1000 Objects Save Schoma 🕥 th 🗙
Unable to get template Template2 from schema 63	cf87d0c15e5a21ab89985f by name		×	VRF azore10	×
Add Cloud Region CIDRs					×
Region *					
eastus					XV
Container Overlay					
CIDRs					
CIDR	Туре	VRF			
90.1.0.0/16	Primary	azure10			
Add CIDRs					
VPN Gateway Router					
VNet peering					
Hub Network					
Default					X 🗸

Step 14 Click Ok.

You are returned to the Azure template window.

Step 15 Click the arrow next to the Azure site, and from the drop-down menu, select **Template Properties**.

Step 16 Click Deploy to Sites.

- **Step 17** Deploy Azure Template to the sites.
 - Click Deployment Plan for additional verification.

Click on the Azure site to see the deployment plan for that specific site.

Figure 24:

≡ ^{et]tu]tu} Nexus Dashboard .				eedback 💄 📀
VRF Route Leaking Schema				× €7 ⊙
View Azure Template ~			Template Azure Template	
	Associated Sites		Template Settings	~
Deployment Plan				×
General Information © Tempate Azure Template	Schema VRF Route Leaking Schema	Tenant dcnm-default-tn		
Plan			Oreated Obeleted Modified OExisting	Shadow
O route-target as2-m4/23456-155_ O dome-default-tn O azure10 O route-target as2-m4/23456-311_			(Vew	Payload

• Click **Deploy** to have NDO push the configurations to NDFC.

To verify that the configurations were pushed out correctly, connect to the Cloud Network Controller deployed on Azure and navigate to **Cloud Resources** > **Virtual Networks**, then click the azure10 VNet and use the information in the Overview page for additional verifications:

Figure 25:

Wirtual Network azure10			Actions 🗸 🗖 🔿 🔿 – 🗙
Overview Topology Cloud Resources Application	Management Event Analytics	Subnets for CIDR Block 90.1.0.0/16	¥ 90.1.2.0/24
General Account dema-default-tn Region eastus	Settings Cloud Access Privilege Inherited (Routing & Security) Cloud Context Profile azure 10-eastus CIDRs CIDR Block Range	c c	Cloud Access Privilege Inherited (Routing & Security) Cloud CIDR*s Subnet 90.1.2.0/24 Name -
I O 2 Ingers Boders Between Security Groups I O O Applements Security Vitrael Machines Enginitis	90.1.0.0/16 y Cloud Provider ID		Route Table Settings A Name azure 10-egress Oper State configured Claud Decider ID
Application Management 0 0 1 Application Involves 0 1 USD's 0 1 VOTy D Service Craphs			Direction egress Entries Destination Address * Next Hop

Note that there is no destination address configured at this point in the process, so the Azure site cannot talk to any other site yet at this point in the process. This destination address configuration will be pushed out after you have completed the route leaking procedure.

What to do next

Follow the procedures provided in Configure the AWS Site Template, on page 16.

Configure the AWS Site Template

In this section, you will configure the AWS Template that will be associated to the AWS site.

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Before you begin

Follow the procedures provided in Configure the Azure Site Template, on page 11.

Step 1	Und	er the VRF	Route	Leaking	Schema SC	hema,	click Ad	d Nev	v Template.	
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Step 2 Choose the NDFC template.

__ . . .

- Step 3 Enter a name in the Display Name field to create an NDFC-type template for the AWS site (for example, AWS Template).
- Step 4 Select the dcnm-default-tn tenant in the Select a Tenant field to map the template to that tenant.

Figure 26:

alialis	
	Feedback 上 🕐
VRF Route Leaking Schema	4/1000 Objects の代え 🗙
View AWS Template ~	Add New Template Earc AWS Template XWS Template
Aws Template Version 13 Applied to 1 sites Tenant: dorm-default-tn	Last Deployed: Dec 4, 2022 0940 pm Deploy to sales Disploy to sales AWS Template
Template Properties V	Actions ~ Description
Filter	MPORT SELECT CREATE OBJECT NOFC
wws10 vRFs ∼	Tenant Settings A
*	Description Default tenant for NDFC sites

Step 5 Under **Template Properties**, click **Create Object** and choose **VRF** to create a VRF that will be used with the AWS site.

Step 6 Enter a name in the **Display Name** field for this VRF (for example, aws10).

Figure 27:

≡ dhulin cisco Nexus Dashboard . Orchestrator ~	Feedback 上 9
VRF Route Leaking Schema	4/1000 Objects 3071 🗙
View AWS Template ~	Add New Template Store
AWS Template Version 13 Applied to 1 sites Tenant: dcnm-default-tn	Last Deployed: Dec 4, 2022 09-40 pm Copploy to sites Common Properties Common Prope
Template Properties ~	Actions
♥ VRFs ∨	NDFC Properties
aws10	VRF Profile * Default_VRF_Universal X v
	VRF Extension Profile * Default_VRF_Extension_Universal X
	Loopback Routing Tag
	Redistribute Direct Route Map FABRIC-RMAP-REDIST-SUBNET

- **Step 7** In the **Template Properties** area, click **Actions** > **Sites Association**.
- **Step 8** Associate this template only to the AWS site, then click **Ok**.

Figure 28:

≡ disco Nexus Dashboard . Orchestr	stor ~			Feedback 💄
VRF Route Leaking Schema			3 / 1000 Objects Save	Schema 🛈 🗘 🗙
View AWS Template \sim		Add New Template	VRF aws10	×
AWS Template Tenant: down-default-th	Associated Sites * 0.5mc * 0.5mc * 0.5mc * 0.5mc		Common Properties Display Name*	
Template Properties ~	Add Sites To AWS Template	×	ave 10 Desktyde Name: Description	
VRFs ~	Name		NDFC Properties	
	Axre Sative Sydney 12.12.275		VRF Profile * Default_VRF_Universal VRF Extension Perifie *	
		•	Default_VRF_Extension_Universal	
			Redistribute Direct Route Map FABRIC-RMAP-REDIST-SUBNET	

- Step 9 Click the arrow next to Template Properties, and from the drop-down menu, select the AWS cloud site.
- Step 10Click the aws10 VRF, then click Add Region to create the VPC in a selected region.
The Add Cloud Region CIDRs window appears.
- **Step 11** In the **Region** field, choose the region where you want to create the VPC.
- **Step 12** In the **CIDR** field, click **Add CIDRs** and define a CIDR block for the VPC.
- Step 13Click Add Subnet to create the subnets and map them to the availability zones, then click Save.Figure 29:

cisco Nexus Dashboard . Orchestrator			Feedback
F Route Leaking Schema			3/1000 Objects Save Schema) 🕢 🤃
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dd Cloud Region CIDRs			
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s-west-2			××
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Rs			
R	Туре	VRF	
UR Type () () Primary) Secondary Id Subnets Name Private Link Labels Availability Zor 2,220.10/24 us-west 2a	• ~ X		
3.220.2.0/24 US-West-25	~ ×		
<u>a</u>	noil		

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Step 14 Check the box under the **Hub Network** field, then select the hub network that was created on the Cisco Cloud Network Controller for AWS.

This allows the Cisco Cloud Network Controller to attach the subnets onto the transit gateway, which builds the connectivity from those subnets to the transit gateway, where the transit gateway already has the connectivity to the Cisco Catalyst 8000Vs in the cloud.

Step 15 In the **Subnets** field, map the subnets that will be used for the transit gateway.

It is best practice to have a dedicated subnet that will be used for the transit gateway.

Figure 30:

≡ disco Nexus Dashboard Ord	hestrator ~		Feedback 🛓 🕑
VRF Route Leaking Schema			3 / 1000 Objects Save Scheme 🕢 🏷 🗙
			VRF
Add Cloud Region CIDRs			×
Region *			
us-west-2			×v
Container Overlay			
CIDR	Type	VRF	
10.220.0.0/16	Primary	aws10	/=
Add CIDRs			
VPN Gateway Router			
To change the selected Hub Network, uncheck to the selected Hub Network.	he Hub Network option and deploy the template first. Then re-enable the option	on, select the new Hub Network, and redeploy the template.	
Hub Network			
hub-1 - infra			× .•
Subnets 10.220.10/24 × 10.220.2.0/24 ×			× ~

Step 16 Click Ok.

You are returned to the AWS template window.

- **Step 17** Click the arrow next to the AWS site, and from the drop-down menu, select **Template Properties**.
- Step 18 Click Deploy to Sites.

Figure 31:

≡ alter∯e Nexus Dashboard ★ Orchestrator ⇒	Feedback 上 🤊
VRF Route Leaking Schema	3 / 1000 Objects Save Schema 🕢 tl 🗙
View AWS Template ~	AWS Template X
AWS Template Appendix to the second	Template Settings Display Name* Display Name* Display Name* Display Name* Display Name Displa
Filter ButFORT - SELECT + Create Object	Template Type NDFC
Vers · Ad	IVRF Tenant Settings Select a Tenant *
Of even	idom-default-in X o

Step 19 Deploy AWS Template to the sites.

• Click Deployment Plan for additional verification.

Click on the AWS site to see the deployment plan for that specific site.

Figure 32:

cisco Nexus Dashboard A Orchestrator V				Feedback 💄 💿
Route Leaking Schema				ets Decision () X
v AWS Template ~			Template AWS Template	×
	Associated Sites		Template Settings	~
eployment Plan				×
neral information				
Template WS Template	 Schema VRF Route Leaking Schema 	Tenant dcnm-default-tn		
n				
ws			Ocreated Obeleted OModified	OExisting Shadow
				View Payload
O route-target.as2-m4-23458:158. O donm-default-tn O aws10 O route-target.as2-m4-23458:318.				
	vectors Dashboard vectors Dashboard		Vexus Dashboard Ordeestater 	Interference

• Click Deploy to have NDO push the configurations to NDFC.

To verify that the configurations were pushed out correctly, connect to the Cloud Network Controller deployed on AWS and navigate to **Cloud Resources** > **VPCs**, then click the aws10 VPC and use the information in the Overview page for additional verifications:

Figure 33:

leo VPC aws10			Actions 🗸 📕 🛋 🔿 — 🗙
Overview Topology Cloud Resources Application Manage	ment Event Analytics	Subnets for CIDR Block 10.210.0.0/16	×
General Account docum-default-th Region us-west-2 Cloud Resources 1 4 0 Unter Audulty Zones	Settings Cloud Access Phylege Inherited (Roding Only) Cloud Provider ID CIDRs CIDRs CIDR Block Range F 10.210.0.0/16 y	10 210 1 0/24	Note: Store: 21:03.0724 Setting: Could Access Privilege Inherited (Rouling Orly) Cloud Clour's Subret 10:2101.0724 Name - Route Table Settings
1 0 Dependence Jesticianto Management 0 1 O 0 1 Application Management 0 0 Application Management 0 0 O 0 1 O 0 0 O 0 0 O 0 0 O 0 0 O 0 0 O 0 0 O 0 0 O 0 0 O 0 0 O 0 0			Name awa10 agess Oper State configured Coud Provider ID Direction egress Entries Destination Address * Next Hop 10.210.0.0/16 [County] local

Note that there is a destination address configured at this point in the process for AWS, but this shows only that this AWS site can talk to itself; the AWS site cannot talk to any other site yet at this point in the process. The necessary destination address configuration that will allow the AWS site to talk to another site will be pushed out after you have completed the route leaking procedure.

What to do next

Configure route leaking using the procedures provided in Configure Route Leaking, on page 21.

Configure Route Leaking

Use the procedures in the following sections to configure the route leaking use case.

Configure Route Leak from Azure VRF to NDFC VRF

In this section, you will configure the route leak from the Azure VRF (azure10) to the NDFC VRF (v10).

Before you begin

Configure the necessary templates using the procedures provided in Configure the Necessary Templates, on page 3.

- **Step 1** Click the Azure Template that you configured earlier in these procedures and the dcnm-default-tn tenant.
- **Step 2** Click the azure10 VRF that you configured earlier in these procedures.
- **Step 3** In the right pane, click **Add Leak Route**.

Figure 34:

≡ ^{el tullu} cisco Nexus Dashboard					Feedback 上 💿
VRF Route Leaking Schema			4 /	1000 Objects	X <i>(j</i> @ eeeb
View Azure Template ~		Add New Template	VRF azure10		×
Azure Version 3	I Sites In Sync 0	Last Deployed: Jan 24, 2023 07:17 pm	 critical major	- minor	- warning
Adder impact and the default to	Out of anyoe 1	(hepera b) solo	Template Properties Display Name * azure10 Description NA VRF ID		^
			eastus CIDR: 90.10.076 Add Region Leak Routes		/ 1
			Target VRF v10 Internal VRF Insute Leaking Schema > On Template > donm-default-tn	Routes	/ =
			aws10 Internal VBF Route Leaking Schema > AW Template > done-default-to	s 90.1.1.0/24	/ =

The Add Leak Routes window appears.

Step 4 In the Add Leak Routes window, click Select a Target VRF.

Figure 35:

≡ "liulu Nexus Dashboard	strator ~			
VRF Route Leaking Schema				4 / 1000 Objects
View Azure Template ~		(Add New Template)	VRF azure10	
Azure Version 1 Azure Temptate	Associated Sites		- maj	or minor
	U		Template Properties Display Name *	
Azure • Instant ~		Actions 🕤	azure10 Deployed Name: azure10	
VRFs ~	Add Leak Routes	×		
	Target VRF		Site Local Properties	
	Select a Target VRF >		Context Profiles Region	
		•	eastus CIDR: 9010.0/18	
			Add Region	
			Leak Routes Target VRF	Routes
			Add Leak Route	

The Select a Target VRF window appears.

Step 5 In the Select a Target VRF page, select the NDFC VRF (v10) that you want to leak routes to, then click Select.

Figure 36:

Figure 37:

/RF Route Leaking Schema					
View Azure Template ~			VRF azure10		
Azure Version 1 Azura Templane Templane	Associated Sites	Lass Deployed: Jan 24, 2023 06:33 pm	+ critical		
zure • = tres	Select a Target VRF	×	Template Propi Display Name * azure10	erties	
	Q Search a Target VRF	v10	Deployed Name, a: Description N/A		
VRFs	stretched-vrf Internal Stretched Schema > Stretched Template	Name v10	VRF ID (0) 155847		
	VRF Route Leaking Schema > On-Prem Template	General Tenant	Site Local Prop Context Profiles	erties	
	aws10 Internal VRF Route Leaking Schema > AWS Template	dcnm-default-tn Description	Region		
	azure10 Internal VRF Route Leaking Schema > Azure Template	VRF Route Leaking Schema - On-Prem Template - dcnm-default-t	n CIDR: 901.0.0/12		
		Setting Site Associations	Leak Romes		
		Select	Add Leak Rou		

You are returned to the Add Leak Routes window.

- **Step 6** In the Add Leak Routes window, click Add Subnet IP, then add the Azure cloud subnets that you want to propagate to the on-premises site.
 - **Note** The **Add Subnet IP** option allows leaking of only selective subnets. Alternatively, you can use the **All Subnet IPs** option instead in the case where all the prefixes need to be leaked into a destination VRF.

VRF Route Leaking Schema				
View Azure Template ~		Add New Template	VRF azure10	
Azure Version 1 Azure Template Azure Template	Associated Sites Associated Sites Associated Sites Associated Sites Associated Sites		major	
Azure • more ·	Add Leak Routes	×	Template Properties Display Name 1 azura10 Description N/A VRF ID () 155847 Site Local Properties	
	IP Address 90.1.0/24 Add Saturet IP	× (b)	Region easilos CORR SOLICONA Add Region Leak Rourtes Target VRF	R

For this use case, you will use the 90.1.1.0/24 subnet.

Step 7 Click Ok.

You are returned to the Azure Template page, where you can see the configuration for this route leak from the Azure VRF to the NDFC VRF.

What to do next

Follow the procedures provided in Configure Route Leak from Azure VRF to AWS VRF, on page 24.

Configure Route Leak from Azure VRF to AWS VRF

In this section, you will configure the route leak from the Azure VRF (azure10) to the AWS VRF (aws10).

For these procedures, you will be going through the exact same procedures that you performed in Configure Route Leak from Azure VRF to NDFC VRF, on page 21, except in these procedures, you will be selecting a different target VRF (the AWS target VRF in these procedures).

Before you begin

Follow the procedures provided in Configure Route Leak from Azure VRF to NDFC VRF, on page 21.

 Step 1
 In the Select a Target VRF page, select the AWS VRF (aws10) that you want to leak routes to, then click Select.

 Figure 38:

≡ cisco Nexus Dashboard Orchestrator					Feedback 💄 🔮
VRF Route Leaking Schema				1000 Objects Save S	chema 💿 🗘 🗙
View Azure Template ~			VRF azure10		
Azure senson 1 Azure Template	Associated Sires • n Dyns 1 • ox of Sync 0		 critical ypagor		
Teniant: donm-default-to	Select a Target VRF	×	Template Properties Display Name *		
Azure • size · ·	Q. Search a Target VRF	aws10			
VRFs ~	stretched-vrf Internal Stretched Schema > Stretched Template	Name aws10			
Fazure 10	VRF Route Leaking Schema > On-Prem Template wws10 internal	Ceneral A	Site Local Properties Context Profiles Region		
	VRF Route Leaking Schema > AWS Template azure10 Internal VRF Route Leaking Schema > Azure Template	Description VRF Route Leaking Schema - AWS Template - dcnm-default-tn	eastus deve sociolité		× 8
		Setting Site Associations	Litalk Routilis Target VRF	Routes	
		Select			/ =
			Add Leak Route		

You are returned to the Add Leak Routes window.

Step 2 In the Add Leak Routes window, add the subnets that you want to propagate to the AWS cloud.

For this use case, you will use the 90.1.1.0/24 subnet. Therefore, you will click the dropdown menu and choose the 90.1.1.0/24 subnet.

Figure 39:

RF Route Leaking Schema				00 Objects Save S	ichema 🛈 tì 🗙
iew Azure Template 🖂			VRF azure10		
Azure senson 1 Azure Tempiate	Associated Sites Sign 1 Out of Sing 0		mejor	minor	warning
zure • n tree v	Add Leak Routes Target VRF aws10 × Routes to Target VRF ()	×	Template Properties Display Name * azure10 Deskyed Name: anxet0 Description N/A VRF.ID (0) 155847		
azure10	Type O Subnet IP All Subnet IPs IP Address		Site Local Properties Context Profiles Region		
	00.13.0/24		eastus calie: octoodrie Add Region Litak Routes Target VRF	Routes	
			Internal undefined > dene-		× 1

Step 3 Click Ok.

You are returned to the Azure Template page, where you can see the configuration for this route leak from the Azure VRF to the AWS VRF, as well as the route leak from the Azure VRF to the NDFC VRF that you configured in the previous set of steps.

Step 4 Click the arrow next to the Azure site, and from the drop-down menu, select Template Properties.

Step 5 Click Deploy to sites.

Figure 40:

≡ ^{ciloulo} Nexus Dashboard ★ Orchestrator ∨	Feedback
VRF Route Leaking Schema	4/1000 Objects Sive common 🏵 🕄
View On-Prem Template ~	Add New Template
	NDFC Properties
On-Prem Template Version 1 Cast Deployed	d: Jan 24, 2023 06:25 pm 153412
Appled to 1 sites	VRF Profile *
	Default_VRF_Universal ×
Template Properties ~	VRF Extension Profile *
- compared a very second	Default_VRF_Extension_Universal ×
Filter BUPORT - SELECT	Create Object Loopback Routing Tag
	12345
VRFs \vee	Add VRF Redistribute Direct Route Map
	FABRIC-RMAP-REDIST-SUBNET
V10	Disable RT Auto-Generate
	Import ()
🕥 Networks 🖂	Add Network Select
	Export 🕥
netl0	Select
connected	Import EVPN ()
	Select
	Export EVPN ()
	Select
	Leak Routes 🛈
	Target VRF Routes
	Add Leak Route
	External Pretixes () Subnet
	Add Potentia
	Vou External Pretix

The **Deploy to sites** window appears, showing where the template will be deployed.

- **Step 6** Click **Deployment Plan** for additional verification, then click on a site to see the deployment plan for that specific site.
- **Step 7** Click **Deploy** to have NDO push the configurations to the site specific controllers.

Figure 41:

≡ dialju cisco Nexus Dashboard . Crehestrator ∨		Feedback 上 🥐
VRF Route Leaking Schema		4/1000 Objects のたえ 🗙
View Azure Template ~	Add New Template Save	mplate
Deploy to sites		×
The current template has a dependency on 2 other templates. Please make sure all these templates are successfully deployed in the o	der to have a successfull deployment.Show Details	
Modifications		View Version History Deployment Plan
<table-cell> + Created 🧭 🗹 Modified 🗹 👕 Deleted 🧭 🖉 Config Drift</table-cell>		
Object Type Name Azure State VRF azure10 Modified		
		Deploy

What to do next

Follow the procedures provided in Configure Route Leak from AWS VRF to NDFC VRF, on page 26.

Configure Route Leak from AWS VRF to NDFC VRF

In this section, you will configure the route leak from the AWS VRF (aws10) to the NDFC VRF (v10).

Before you begin

Follow the procedures provided in Configure Route Leak from Azure VRF to AWS VRF, on page 24.

- **Step 1** Click the AWS Template that you configured earlier in these procedures and the dcnm-default-tn tenant.
- **Step 2** Click the aws10 VRF that you configured earlier in these procedures.
- **Step 3** In the right pane, click **Add Leak Route**.

Figure 42:

≡ ^{elfulfu} cisco Nexus Dashboard Orchestrator ~				Feedback 💄 📀
VRF Route Leaking Schema		4 / 10	00 Objects	× £3 ⊙
View AWS Template ~	Add New Template	VRF aws10		×
AWS Version 1 AWS Tenciate AWS Tenciate AWS Tenciate	Last Deployed: Jan 24, 2023 06:30 pm	major	- minor	- warning
Ternant: dome-default-tn AWS 0 dot of type	Action	Template Properties Display Name * aws10 Desloyed Name: avs10 Description N/A VIRF ID () 158134		^
Persto		Site Local Properties Context Profiles Region		^
		us-west-2 CIDR: 10.220.0.0/16		/ =
		Add Region Leak Routes Target VRF Add Leak Route	Routes	

The Add Leak Routes window appears.

- Step 4In the Add Leak Routes window, click Select a Target VRF.The Select a Target VRF window appears.
- **Step 5** In the Select a Target VRF window, select the NDFC VRF (v10) that you want to leak routes to, then click Select. You are returned to the Add Leak Routes window.
- **Step 6** In the Add Leak Routes window, click Add Subnet IP, then add the AWS cloud subnets that you want to propagate to the on-premises site.
 - **Note** The **Add Subnet IP** option allows leaking of only selective subnets. Alternatively, you can use the **All Subnet IPs** option instead in the case where all the prefixes need to be leaked into a destination VRF.

Figure 43:

≡ cisco Nexus Dashboard . Crchestrator						Feedback 1
VRF Route Leaking Schema				4/100	0 Objects	× 19 ©
View AWS Template ~		Add New Template	VRF aws10			×
AWS Version 1	Associated Sites	Last Deployed: Jan 24, 2023 08:00 pm	- critical	- major	- minor	- erarning
Tenari com-detail-in AWS: encotive: V Filte: VRfs: - Exest0	Add Leak Routes Target VRF v10 × Routes to Target VRF () Type () Subset IP All Subset IPs IP Address 10.2020.0/24	× 🗈	Template Prop Display Name 1 aversio Description N/A VRP: ID O 158134 Site Local Prop Context Profile Region us-west-2	verties verties s		^
	10.220/20/26		CKR 152200		Routes	

For this use case, you will use the following subnets:

- 10.220.1.0/24
- 10.220.2.0/24

Step 7 Click Ok.

You are returned to the AWS Template page, where you can see the configuration for this route leak from the AWS VRF to the NDFC VRF.

What to do next

Follow the procedures provided in Configure Route Leak from AWS VRF to Azure VRF, on page 28.

Configure Route Leak from AWS VRF to Azure VRF

In this section, you will configure the route leak from the AWS VRF (aws10) to the Azure VRF (azure10).

For these procedures, you will be going through the exact same procedures that you performed in Configure Route Leak from AWS VRF to NDFC VRF, on page 26, except in these procedures, you will be selecting a different target VRF (the Azure target VRF in these procedures).

Before you begin

Follow the procedures provided in Configure Route Leak from AWS VRF to NDFC VRF, on page 26.

Step 1 In the Select a Target VRF page, select the Azure VRF (azure10) that you want to leak routes to, then click Select. You are returned to the Add Leak Routes window.

Step 2 In the Add Leak Routes window, add the subnets that you want to propagate to the Azure cloud.

For this use case, you will use the following subnets:

- 10.220.1.0/24
- 10.220.2.0/24

Therefore, you will click the dropdown menu and choose those subnets.

Figure 44:

cisco Nexus Dashboard Orchestrat	97 V				Feedback 1
VRF Route Leaking Schema				000 Objects	thomas 🕘 🤃 🗙
View AWS Template ~		Add New Template	VRF aws10		
AWS Version 1	Associated Sites in Sync 0		- critical		- warning
Treat: John debail in AWS Constant V Film Vers V Familie	Add Leak Routes	×	Template Properties Display Name * and D Dupoted finite: secto Discription NA VAF: ID (O) 158134 Site Local Properties Context Profiles Region		
	10.220.30/24 • Add Subret IP		us-west-2 care to zoodn/te Add Region		71
		۹	Target VRF Internal southfread + southfread + denominations	Routes 10.220.1.0/24 10.220.2.0/24	/ 3
			Add Leak Route		

Step 3 Click Ok.

You are returned to the AWS Template page, where you can see the configuration for this route leak from the AWS VRF to the Azure VRF, as well as the route leak from the AWS VRF to the NDFC VRF that you configured in the previous set of steps.

Figure 45:

≡ ^{•(t+ t+} cisco Nexus Dashboard . Orchestrator ∨					Feedback
VRF Route Leaking Schema				/ 1000 Objects Save	ichema 🛈 🗘 🗙
View AWS Template ~		Add New Template	VRF aws10		>
AWS Version 2	Associated Sites	Last Deployed: Jan 24, 2023 07:17 pm		r minor	- warning
Visite and a set of the set of th		Landa a secondaria de la constante de la consta	Template Properties Display Name * aws10 Description N/A VRF ID () 158134 Site Local Properties Contest Profiles		~
			Region us-west-2 CIDR: 10.220.0.0/16		1
			Leak Routes Target VRF	Routes	
			v10 Internal VRF Route Leaking Schema > 0 Template > doren-default-tn	10.220.1.0/24 In Press 10.220.2.0/24	/1
			azure10 Internal VIIF Boute Leaking Schema > A	10.220.1.0/24 10.220.2.0/24	/1

Step 4 Click the arrow next to the AWS site, and from the drop-down menu, select Template Properties.

Step 5 Click Deploy to sites.

The Deploy to sites window appears, showing where the template will be deployed.

Step 6 Click **Deployment Plan** for additional verification, then click on a site to see the deployment plan for that specific site.

Step 7 Click **Deploy** to have NDO push the configurations to the site specific controllers (NDFC and Cloud Network Controller).

What to do next

Follow the procedures provided in Configure Route Leak from NDFC VRF to AWS VRF, on page 30.

Configure Route Leak from NDFC VRF to AWS VRF

In this section, you will configure the route leak from the NDFC VRF (v10) to the AWS VRF (aws10).

Before you begin

Follow the procedures provided in Configure Route Leak from AWS VRF to Azure VRF, on page 28.

- **Step 1** Click the On-Prem Template that you configured earlier in these procedures and the dcnm-default-tn tenant.
- **Step 2** Click the v10 VRF that you configured earlier in these procedures.
- **Step 3** In the right pane, click **Add Leak Route**.

Figure 46:

≡ eisco Nexus Dashboard . ★ Orchestrator ~	Feedback 🛓
VRF Route Leaking Schema	4/1000 Objects Save Schema の たよ 🗙
View On-Prem Template ~	ew Template VRF Profile *
On-Prem Template Venion 1 Associated Sites Last Deployer. Jan 74, 202 1	Default_VRF_Universal X <> VRF_Extension Profile * Default_VRF_Extension_Universal X <>
Template Properties V	Actions Redistribute Direct Route Map Redistribute Direct Route Map Redistribute Direct Route Map
Filter Morent - Solid - One Cover	Disable RT Auto-Generate Disable RT Auto-Generate Import ©
	Select V
Networks Net	Import KVN Select. V Expert EVN Select. V
	Leak Routes ③ Target VRF Routes
	aws10 Internal 2 * * Will Reune Leaking Scheme > AWS 172.16.10.0/24 Template > down-default-on
	azuret0 hitemal WF hous tasking televises - Xazar Trensfus - Xazar - Admart m Add Lank Route External Profiless ()

The Add Leak Routes window appears.

- Step 4 In the Add Leak Routes window, click Select a Target VRF. The Select a Target VRF window appears.
- Step 5 In the Select a Target VRF window, select the AWS cloud site VRF (aws10) that you want to leak routes to, then click Select.

You are returned to the Add Leak Routes window.

- **Step 6** In the Add Leak Routes window, click Add Subnet IP, then add the AWS cloud subnets that you want to propagate to the on-premises site.
 - **Note** The **Add Subnet IP** option allows leaking of only selective subnets. Alternatively, you can use the **All Subnet IPs** option instead in the case where all the prefixes need to be leaked into a destination VRF.

For this use case, you will use the 172.16.10.0/24 subnet.

Figure 47:

ew On-Prem Template ·	RF Route Leaking Schema			4 / 3000 Objects	0 ()
Concent to the transmission of the transmi	/iew On-Prem Template 🗠			NDFC Properties	
mplate Properties Add Leak Routes x Target VDF setiol × Notes to Target VDF Default, VDF, Ook Notes to Target VDF setiol × Notes to Target VDF Default, VDF, Ook Default, VDF, Ook Notes to Target VDF States to Target VDF States to Target VDF Default, VDF, Ook Default	On-Prem Template Version 1 Applied to 3 afters Tenant: down-default-to	Accordated Sites Accordated Sites Accordated Sites Conditioned	cast Deployed, Jan 24, 2022 (6:25 pm		
Target VBF ansition :: ABs ABs ABs ABs Target VBF	emplate Properties ~	Add Leak Routes	×	Default_VRF_Universal VRF-Extension Profile *	
Image: Series in a solution of the solution of		Target VRF aws10 × Routes to Target VRF ()		Default_VRF_Extension_Universal Loopback Pouring Tag 12345	
Networks ·· P Address P Address P Addre	VRPs	Type () Subnet IP All Subnet IPs		Redistribute Direct Route Map FABRIC-RMAP-REDIST-SUBNET	
		IP Address 172:16:10:0/24	× a		
ante data ante d	Networks	Add Sebort IP			
Ediori Di NO Concentrativa di Antonio Persona Persona Persona Persona Persona di Editoria di Persona Persona di Antonio Pe	convected -				
Leal Renders () Torget VB* Roudes Activation Roudes External Pathese ()					
Add Last Rouge External Periodes ()				Leak Routes Target VRF Routes	
				Add Leak Route External Prefixes	

Step 7 Click Ok.

You are returned to the On-Prem Template page, where you can see the configuration for this route leak from the NDFC VRF to the AWS VRF.

What to do next

Follow the procedures provided in Configure Route Leak from NDFC VRF to Azure VRF, on page 31.

Configure Route Leak from NDFC VRF to Azure VRF

In this section, you will configure the route leak from the NDFC VRF (v10) to the Azure VRF (azure10).

For these procedures, you will be going through the exact same procedures that you performed in Configure Route Leak from NDFC VRF to AWS VRF, on page 30, except in these procedures, you will be selecting a different target VRF (the Azure target VRF in these procedures).

Before you begin

Follow the procedures provided in Configure Route Leak from NDFC VRF to AWS VRF, on page 30.

- Step 1In the Select a Target VRF window, select the Azure VRF (azure10) that you want to leak routes to, then click Select.
You are returned to the Add Leak Routes window.
- **Step 2** In the Add Leak Routes window, add the subnets that you want to propagate to the Azure cloud.

For this use case, you will use the 172.16.10.0/24 subnet. Therefore, you will click the dropdown menu and choose the 172.16.10.0/24 subnet.

Figure 48:

≡ cisco Nexus Dashboard .* Orchestrate				Feedback 💄 🤇
VRF Route Leaking Schema			4 / 1000 Objects Save Sch	× 63 @ ••
View On-Prem Template ~	Associated Sites	Add New Template	NDFC Properties VRF ID () 1931/2	
Template Properties ~	Add Leak Routes	×	Default_VRF_Universal VRF Extension Profile *	
	Target VRF azure10 ≫ Routes to Target VRF ①		Default_VRF_Extension_Universal Loopback Routing Tag 12345	
VRPs ~	Type O Submet IP All Submet IPs		Redistribute Direct Route Map FABRIC-RMAP-REDIST-SUBNET	
	IP Address 172.16.10.0/24	× 1		
net10	Add Subnet IP			
			aws10 Internal We Summary Aws 172.16.10.0/24 Temples and methods in	/ 1
			O Add Leak Route	

Step 3 Click Ok.

You are returned to the On-Prem Template page, where you can see the configuration for this route leak from the NDFC VRF to the AZURE VRF, as well as the route leak from the NDFC VRF to the AWS VRF that you configured in the previous set of steps.

Step 4 Click the arrow next to the on-premises site, and from the drop-down menu, select **Template Properties**.

Step 5 Click Deploy to sites.

Figure 49:

≡ disco Nexus Dashboard . Crohestrator ~	Feedback
VRF Route Leaking Schema	4 / 1000 Objects Save Schema 🖸 t 🕽 🗙
View On-Prem Template ~	Add New Templan Add New Templan USD Bookins *
On-Prem Template Version 1	Last Deployed: Jan 24, 2023 04:25 pm VRF Extension Profile *
Applied to 1 sites Tenant: dom-default-in	Deploy to sitio Default_VRF_Extension_Universal X ~ Loopback Routing Tag X
Template Properties ~	Actions T2345 Redistribute Direct Route Map FactorsT-SUBJECT FACTOR FACTORST-SUBJECT
	Blable RT Auto-Generate
v10	Export ()
Networks ~	Select
net10 corrected	Select
	Leak Routes O Target VIP Routes
	aves10 Internal VIII from Laboration a zarge 1723.6130.0/24 Translate advanced and as a second as a se
	azure10 Internat V 🛣 Vitr Roma Lassing General x Alami 172.4610.0/24 Tamigia a science data tri
	Add Leak Route External Prefixes ()

The **Deploy to sites** window appears, showing where the template will be deployed.

Step 6 Click **Deployment Plan** for additional verification, then click on a site to see the deployment plan for that specific site.

Figure 50:

≡ ^{•1 •1 •} Nexus Dashboard . Orchestrator ∨				Feedback 🛓 💿
VRF Route Leaking Schema			4 / 1000 Objects	X if ©
View On-Prem Template 🗸			Om-Prem Template	
	Associated Sites		Template Settings	~
Deployment Plan				×
General Information © Tangate On-Prem Tenplate	Schema VRF Route Leaking Schema	Tenant dcnm-default-tn		
Plan Sydney			Oreated ODeleted Modified OExisting	Shadow
O down-default-tn O to the target sai2-mit 234563306 O down-default-tn O to the target sai2-mit 23456352			G	lew Payload
				_

Step 7 Click **Deploy** to have NDO push the configurations to the site specific controllers (NDFC and Cloud Network Controller).

What to do next

Verify that the configurations were deployed successfully using the procedures provided in Verify the Configurations, on page 33.

Verify the Configurations

In this section, you will verify that the configurations were deployed successfully. Note that for each of these verification steps, the exact command that would be used specifically for the configurations in this use case are shown. Replace the appropriate variables in each command based on your configuration.

Before you begin

Follow the procedures provided in Configure Route Leak from NDFC VRF to Azure VRF, on page 31.

Step 1 Verify the configurations in NDO.

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Step 2 Enter **sh ip route vrf v10** on the on-premises Border Gateway Spine device:

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The routing table on the on-premises leaf switch shows that the reachable subnets are:

- AWS: 10.220.0.0/16
- Azure: 10.220.0.0/16
- **Step 3** Connect to the Cloud Network Controller deployed on AWS and navigate to **Application Management** > **VRFs**, and verify that you can see the Azure and NDFC VRFs.

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Step 4 Remaining in the Cloud Network Controller deployed on AWS, perform a verification on the route table view.

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Step 5 In the AWS console, perform a verification on the route table view.

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Step 6 Connect to the Cloud Network Controller deployed on Azure and navigate to **Application Management** > **VRFs**, and confirm that you can see the AWS and NDFC VRFs:

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Step 7 Remaining in the Cloud Network Controller deployed on Azure, navigate to **Cloud Resources** > **Virtual Networks**, then click the azure10 VNet and use the information in the Overview page for additional verifications.

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Step 8 In the Azure console, perform additional verifications.

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