Configure and Verify Cloud OnRamp for Multicloud - AWS

Contents

Introduction

This document describes how to configure and verify Cisco SD-WAN Cloud OnRamp for Multicloud integration with Amazon Web Services (AWS).

Prerequisites

Ensure you have these:

- AWS cloud account details.
- Subscription to AWS marketplace.

- Cisco SD-WAN Manager must have two available Catalyst 8000V OTP tokens to create the Cloud Gateways in its certificates tab.

Requirements

Cisco recommends that you have knowledge of these topics:

- Cisco Software-defined Wide Area Network (SD-WAN)
- AWS

Components Used

This document is based on these software and hardware versions:

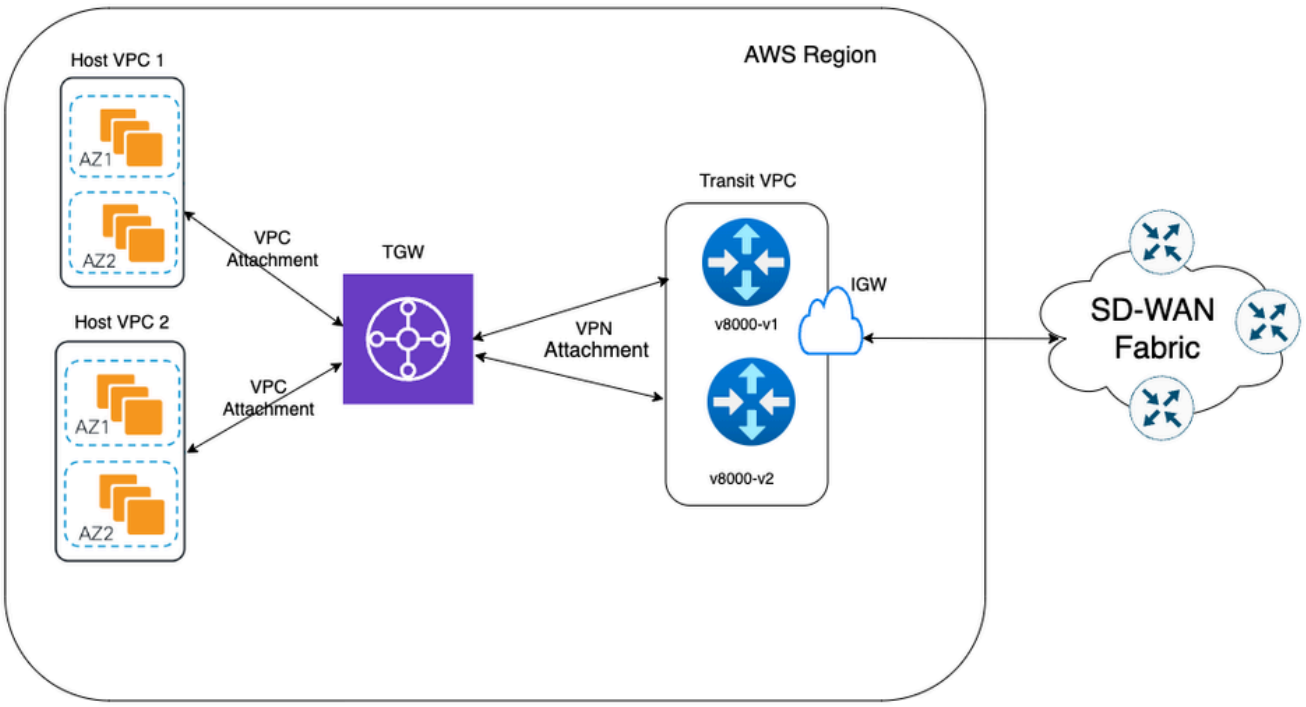
- Cisco Catalyst SD-WAN Manager version 20.9.4.1
- Cisco Catalyst SD-WAN Controller version 20.9.4

- Cisco Edge Router version 17.9.04a

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.

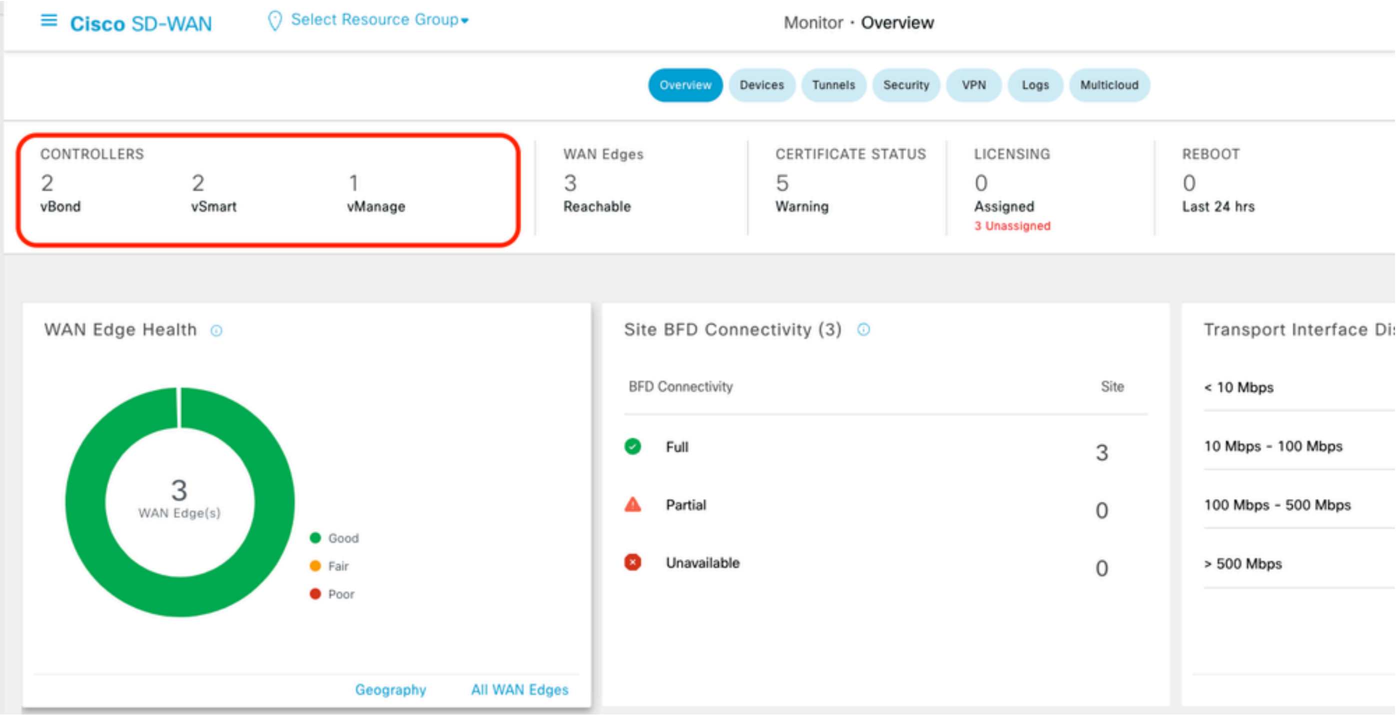
Configure

Network Diagram



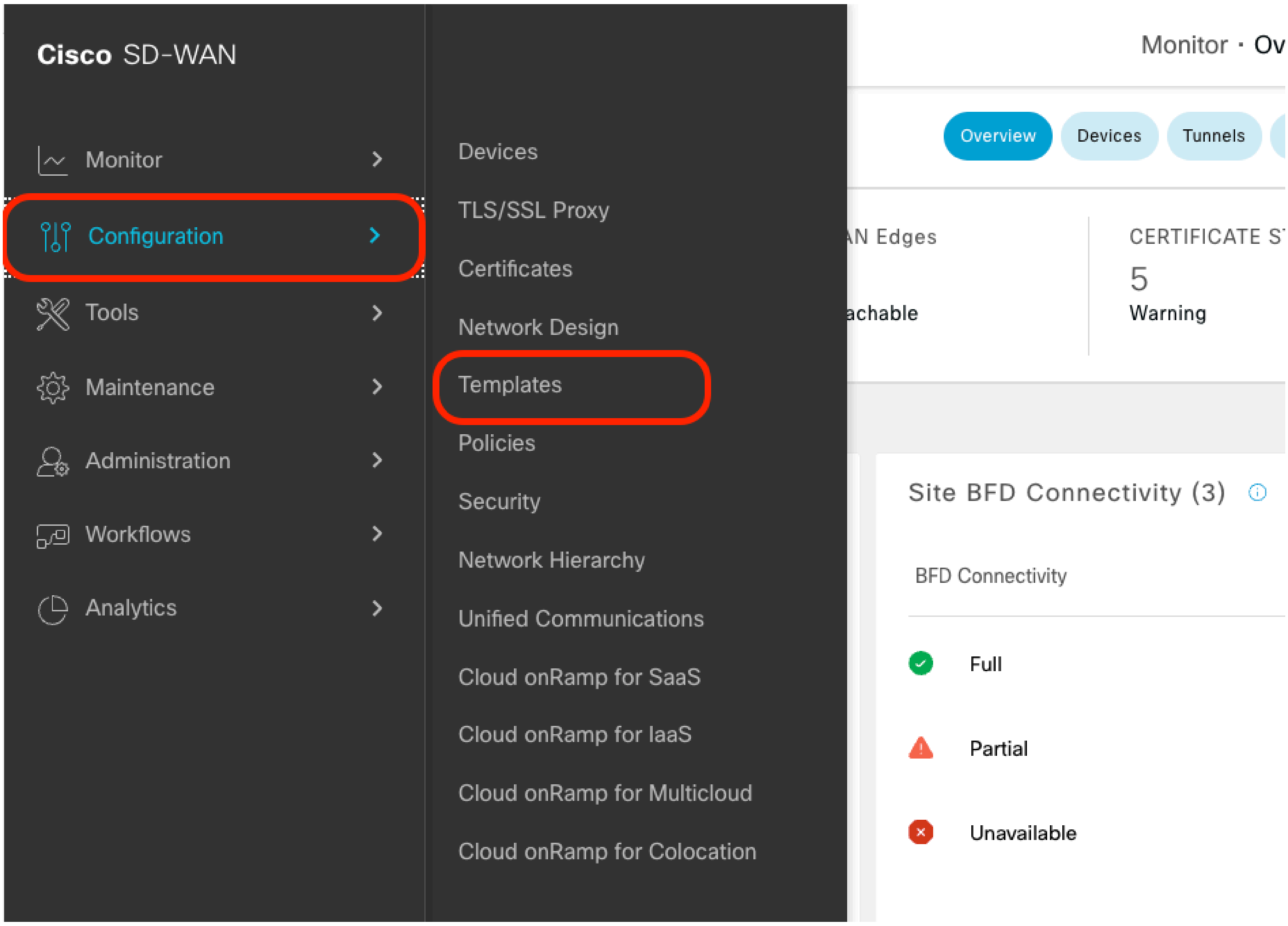
Configurations

Log into Catalyst SD-WAN Manager GUI and verify that all the controllers are up.

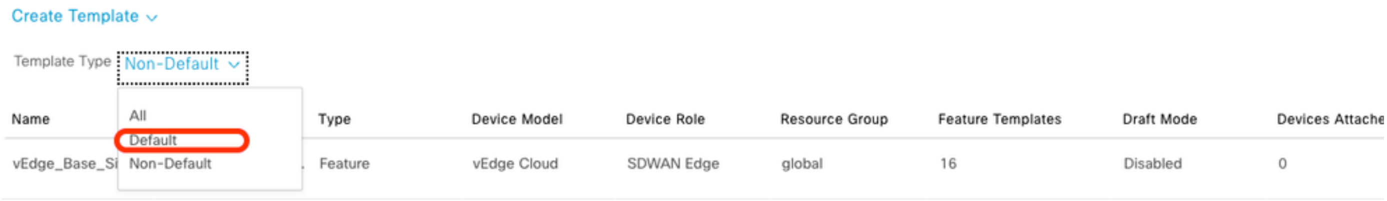


Step 1. Attach the AWS Device Template to Two C8000v Devices

On the Cisco SD-WAN Manager menu, navigate to **Configuration** > **Templates**.

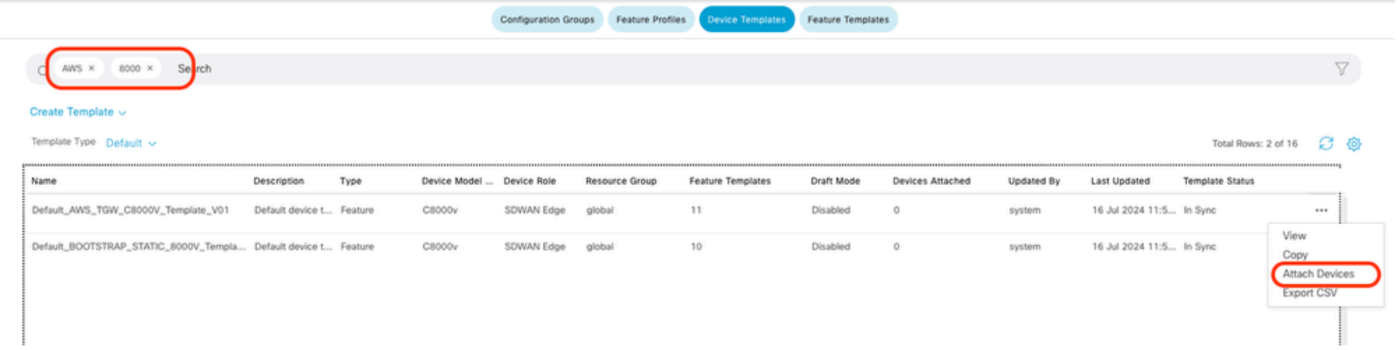


Click **Device Templates** > **From Template**. Type drop-down menu and select **Default**.



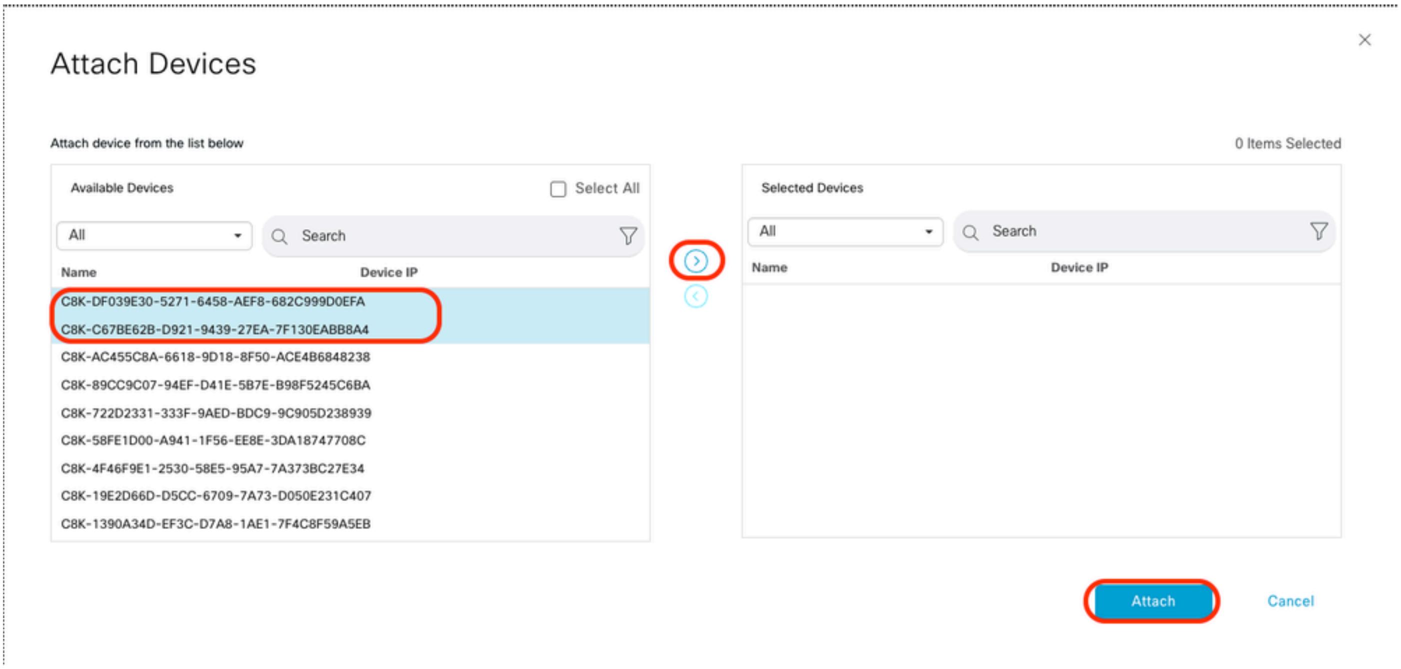
Name	Type	Device Model	Device Role	Resource Group	Feature Templates	Draft Mode	Devices Attache
vEdge_Base_Si	Feature	vEdge Cloud	SDWAN Edge	global	16	Disabled	0

In the search bar, type **AWS** and **C8000v**. Then, click the **3 dots (...)** next to the **Default_AWS_TGW_C8000V_Template_V01** template. On the drop-down menu select **Attach Devices**.



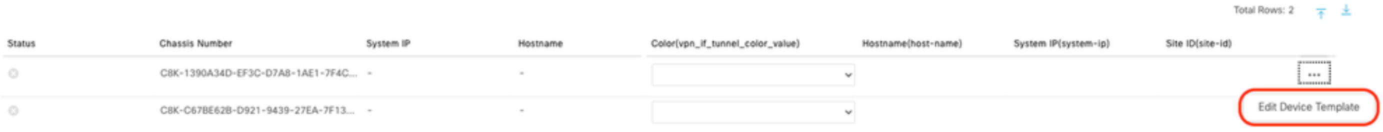
Name	Description	Type	Device Model ...	Device Role	Resource Group	Feature Templates	Draft Mode	Devices Attached	Updated By	Last Updated	Template Status
Default_AWS_TGW_C8000V_Template_V01	Default device t...	Feature	C8000v	SDWAN Edge	global	11	Disabled	0	system	16 Jul 2024 11:5...	In Sync
Default_BOOTSTRAP_STATIC_8000V_Templa...	Default device t...	Feature	C8000v	SDWAN Edge	global	10	Disabled	0	system	16 Jul 2024 11:5...	In Sync

Select two of the C8000v devices. Click the **right-pointing** arrow and then click **Attach**.



Name	Device IP
C8K-DF039E30-5271-6458-AEF8-682C999D0EFA	
C8K-C67BE62B-D921-9439-27EA-7F130EABB8A4	
C8K-AC455C8A-6618-9D18-8F50-ACE4B6848238	
C8K-89CC9C07-94EF-D41E-5B7E-B98F5245C6BA	
C8K-722D2331-333F-9AED-BDC9-9C905D238939	
C8K-58FE1D00-A941-1F56-EE8E-3DA18747708C	
C8K-4F46F9E1-2530-58E5-95A7-7A373BC27E34	
C8K-19E2D66D-D5CC-6709-7A73-D050E231C407	
C8K-1390A34D-EF3C-D7A8-1AE1-7F4C8F59A5EB	

Click **3 dots (...)** on the devices and navigate to **Edit Device Template**.



Status	Chassis Number	System IP	Hostname	Color(vpn_if_tunnel_color_value)	Hostname(host-name)	System IP(system-ip)	Site ID(site-id)
	C8K-1390A34D-EF3C-D7A8-1AE1-7F4C...	-	-				
	C8K-C67BE62B-D921-9439-27EA-7F13...	-	-				

Click the drop-down menu and select **Color**, enter **Hostname**, **System IP**, **Site ID**. After entering these details, click **Update.**

Enter the values for each individual device, then click **Update.**

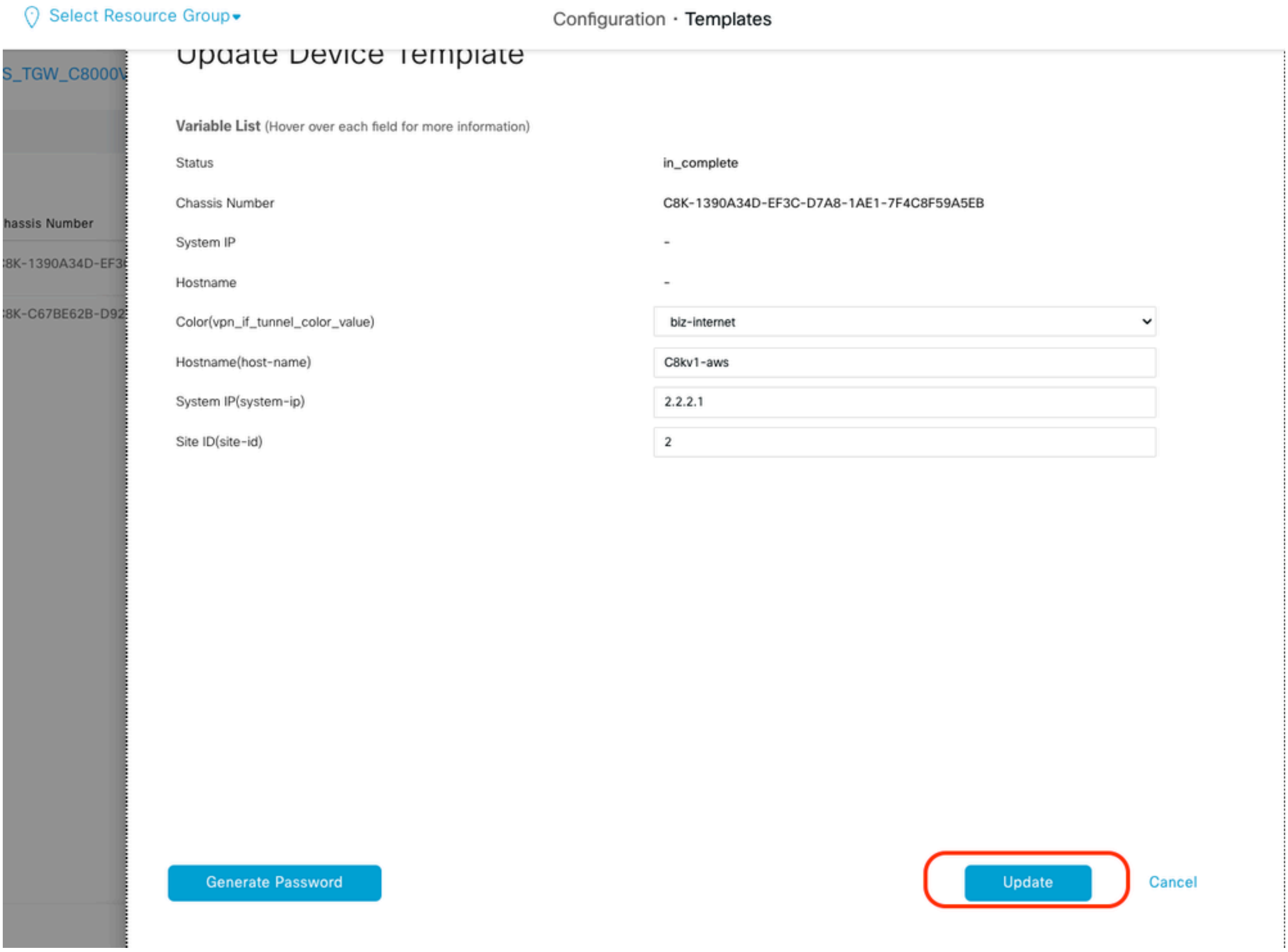
Example:

<#root>

```
On

**Device 1**


Color: Select biz-internet from Dropdown
Hostname: C8kv1-aws
System IP: 10.2.2.1
Site: ID 2
```

<#root>

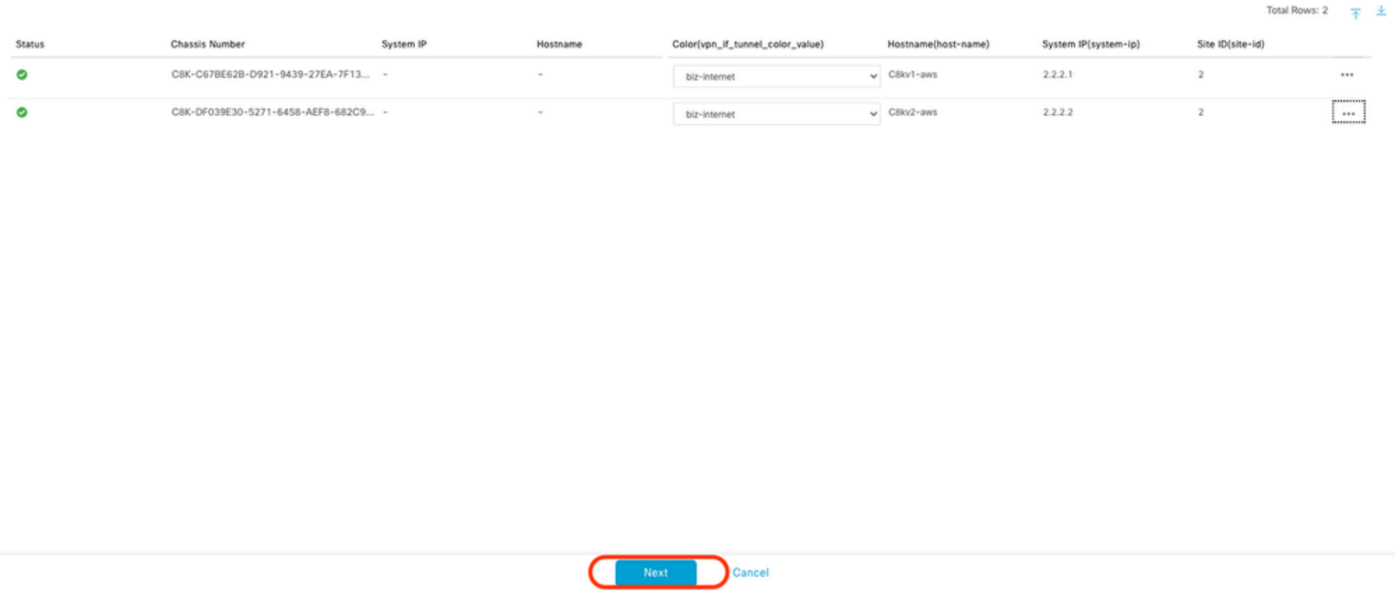
```
On

**Device 2**


Color: biz-internet Color: biz-internet
Hostname: C8kv2-aws
System IP: 10.2.2.2
Site: ID 2
```



Variable List (Hover over each field for more information)

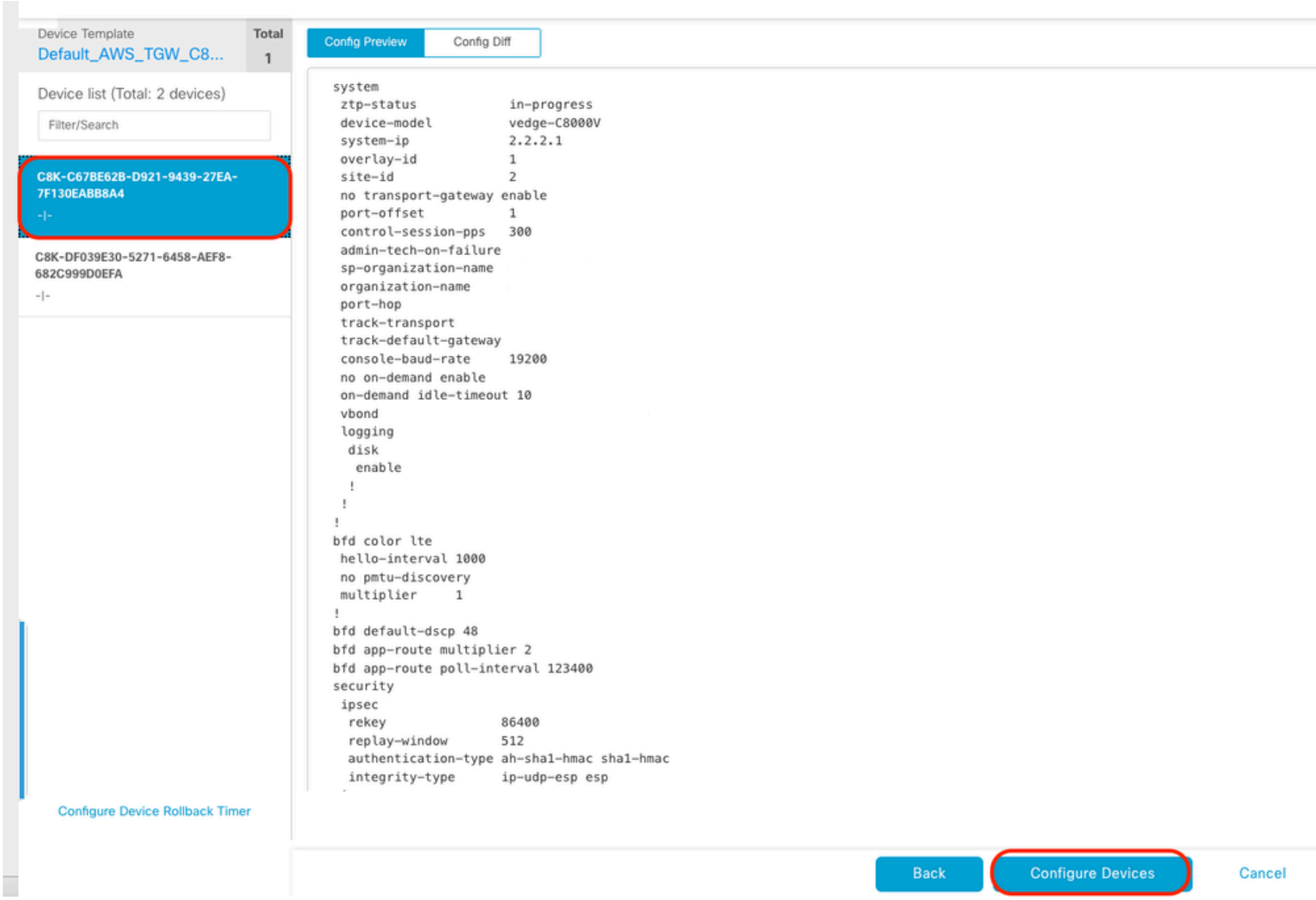
Status	in_complete
Chassis Number	C8K-1390A34D-EF3C-D7A8-1AE1-7F4C8F59A5EB
System IP	-
Hostname	-
Color(vpn_if_tunnel_color_value)	biz-internet
Hostname(host-name)	C8kv1-aws
System IP(system-ip)	2.2.2.1
Site ID(site-id)	2

When you have finished with both devices, click **Next**.



Status	Chassis Number	System IP	Hostname	Color(vpn_if_tunnel_color_value)	Hostname(host-name)	System IP(system-ip)	Site ID(site-id)	
✓	C8K-C67BE62B-D921-9439-27EA-7F13...	-	-	biz-internet	C8kv1-aws	2.2.2.1	2	•••
✓	C8K-DF039E30-5271-6458-AEF8-682C9...	-	-	biz-internet	C8kv2-aws	2.2.2.2	2	•••

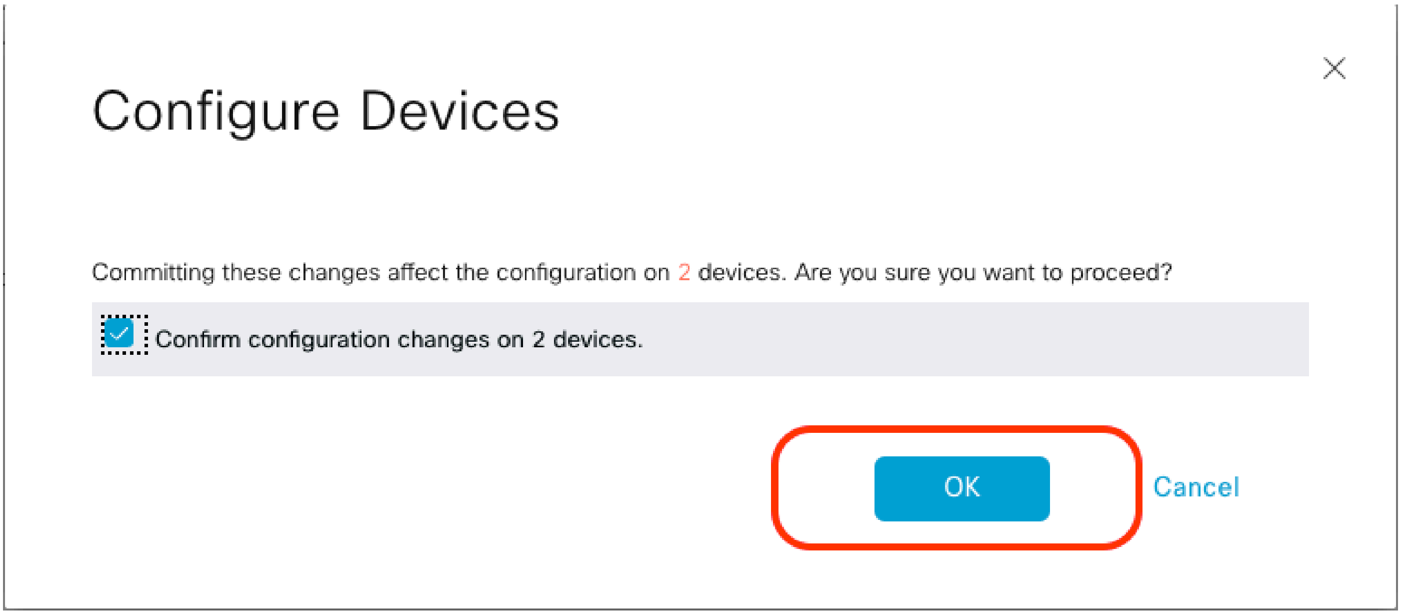
Click one of the devices, and make sure the config is correct. Click **Configure Devices**.



Device Template
Default_AWS_TGW_C8...
Total
1
Device list (Total: 2 devices)
Filter/Search
C8K-C67BE62B-D921-9439-27EA-7F130EABB8A4
-|-
C8K-DF039E30-5271-6458-AEF8-682C999D0EFA
-|-
Configure Device Rollback Timer
Config Preview
Config Diff
Back
Configure Devices
Cancel

```
system
 ztp-status            in-progress
 device-model          vedge-C8000V
 system-ip             2.2.2.1
 overlay-id            1
 site-id               2
 no transport-gateway enable
 port-offset           1
 control-session-pps   300
 admin-tech-on-failure
 sp-organization-name
 organization-name
 port-hop
 track-transport
 track-default-gateway
 console-baud-rate     19200
 no on-demand enable
 on-demand idle-timeout 10
 vbond
 logging
  disk
   enable
  !
 !
!
bfd color lte
 hello-interval 1000
 no pmtu-discovery
 multiplier     1
!
bfd default-dscp 48
bfd app-route multiplier 2
bfd app-route poll-interval 123400
security
 ipsec
  rekey               86400
  replay-window       512
  authentication-type ah-sha1-hmac sha1-hmac
  integrity-type      ip-udp-esp esp
```

In the pop-up window, click the check box for **Confirm configuration changes on 2 devices**, and then click **OK.**

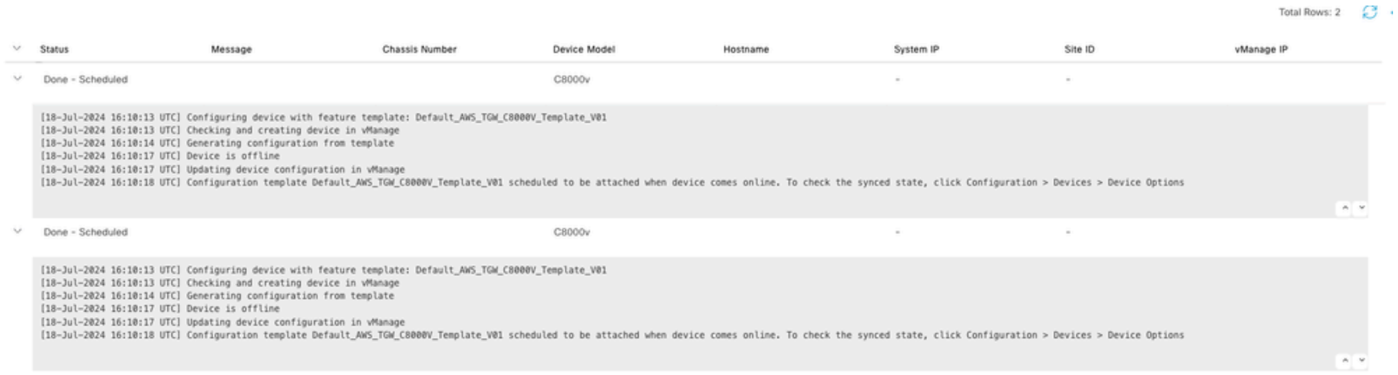


Configure Devices

Committing these changes affect the configuration on 2 devices. Are you sure you want to proceed?

☑ Confirm configuration changes on 2 devices.

Confirm that the templates have been scheduled to be attached to the devices.



Total Rows: 2

Status	Message	Chassis Number	Device Model	Hostname	System IP	Site ID	vManage IP
Done - Scheduled			C8000v		-	-	

```
[18-Jul-2024 16:10:13 UTC] Configuring device with feature template: Default_AWS_TGW_C8000V_Template_V01
[18-Jul-2024 16:10:13 UTC] Checking and creating device in vManage
[18-Jul-2024 16:10:14 UTC] Generating configuration from template
[18-Jul-2024 16:10:17 UTC] Device is offline
[18-Jul-2024 16:10:17 UTC] Updating device configuration in vManage
[18-Jul-2024 16:10:18 UTC] Configuration template Default_AWS_TGW_C8000V_Template_V01 scheduled to be attached when device comes online. To check the synced state, click Configuration > Devices > Device Options
```

Status	Message	Chassis Number	Device Model	Hostname	System IP	Site ID	vManage IP
Done - Scheduled			C8000v		-	-	

```
[18-Jul-2024 16:10:13 UTC] Configuring device with feature template: Default_AWS_TGW_C8000V_Template_V01
[18-Jul-2024 16:10:13 UTC] Checking and creating device in vManage
[18-Jul-2024 16:10:14 UTC] Generating configuration from template
[18-Jul-2024 16:10:17 UTC] Device is offline
[18-Jul-2024 16:10:17 UTC] Updating device configuration in vManage
[18-Jul-2024 16:10:18 UTC] Configuration template Default_AWS_TGW_C8000V_Template_V01 scheduled to be attached when device comes online. To check the synced state, click Configuration > Devices > Device Options
```

Step 2. Configure SD-WAN Integration to AWS

You can configure and manage Cloud onRamp for multicloud environments through the Cisco Catalyst SD-WAN Manager.

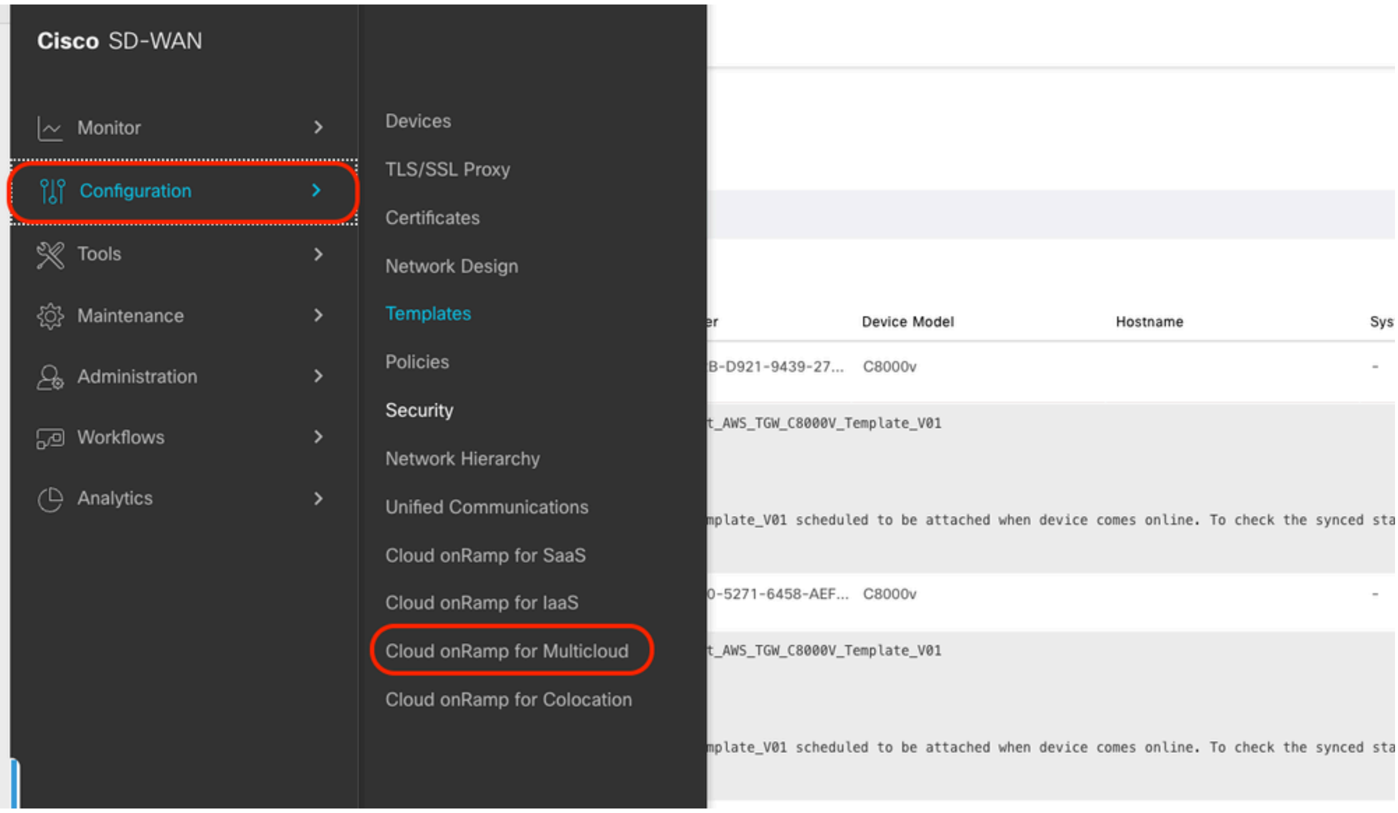
A configuration wizard in Cisco Catalyst SD-WAN Manager automates the bring-up of the transit gateway to your public cloud account and automates the connections between public-cloud applications and the users of those applications at branches in the overlay network. This feature works with AWS virtual private clouds (VPCs) on Cisco cloud routers.

A transit gateway is a network transit hub that you can use to interconnect your VPC and on-premises networks. You can attach a VPC, or a VPN connection to a transit gateway. It acts as a virtual router for traffic flowing between your VPC and VPN connections.

Cloud OnRamp for Multicloud supports integration with multiple AWS accounts.

Create AWS Cloud Account

Navigate to **Configuration > Cloud onRamp for Multicloud**.



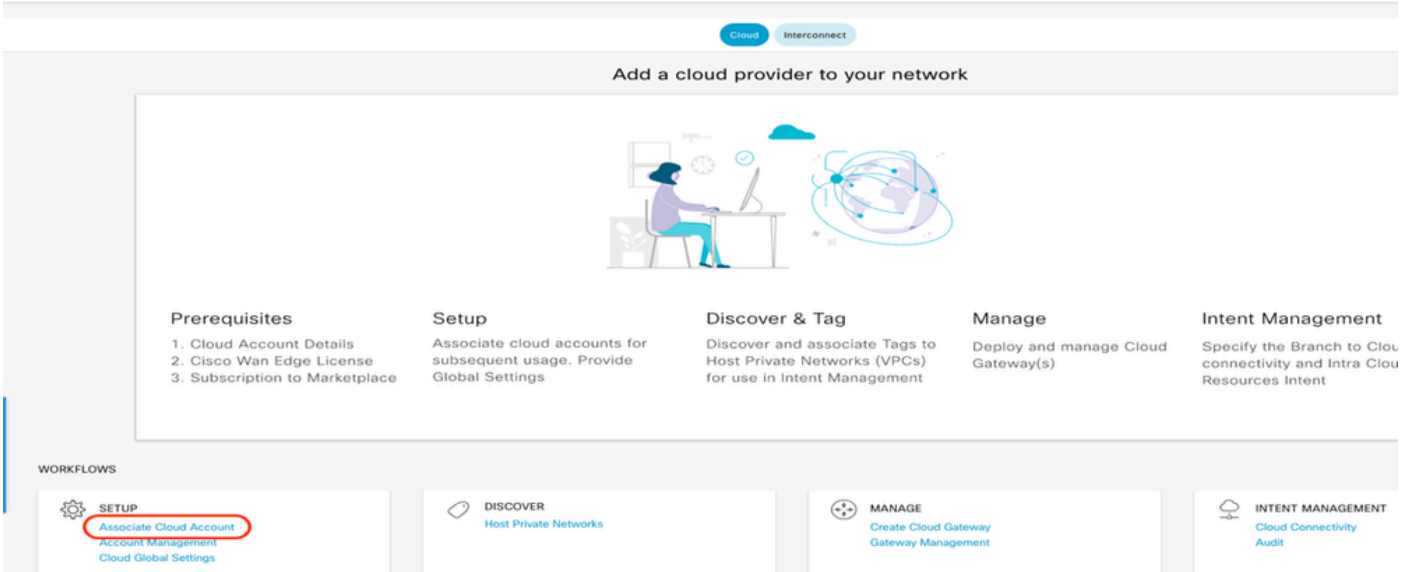
er	Device Model	Hostname	Sys
B-D921-9439-27...	C8000v		-

```
t_AWS_TGW_C8000V_Template_V01
mplate_V01 scheduled to be attached when device comes online. To check the synced sta
```

er	Device Model	Hostname	Sys
0-5271-6458-AEF...	C8000v		-

```
t_AWS_TGW_C8000V_Template_V01
mplate_V01 scheduled to be attached when device comes online. To check the synced sta
```

Click **Associate Cloud Account** in the **Workflows** > **Setup**.



Add a cloud provider to your network

Prerequisites
1. Cloud Account Details
2. Cisco Wan Edge License
3. Subscription to Marketplace

Setup
Associate cloud accounts for subsequent usage. Provide Global Settings

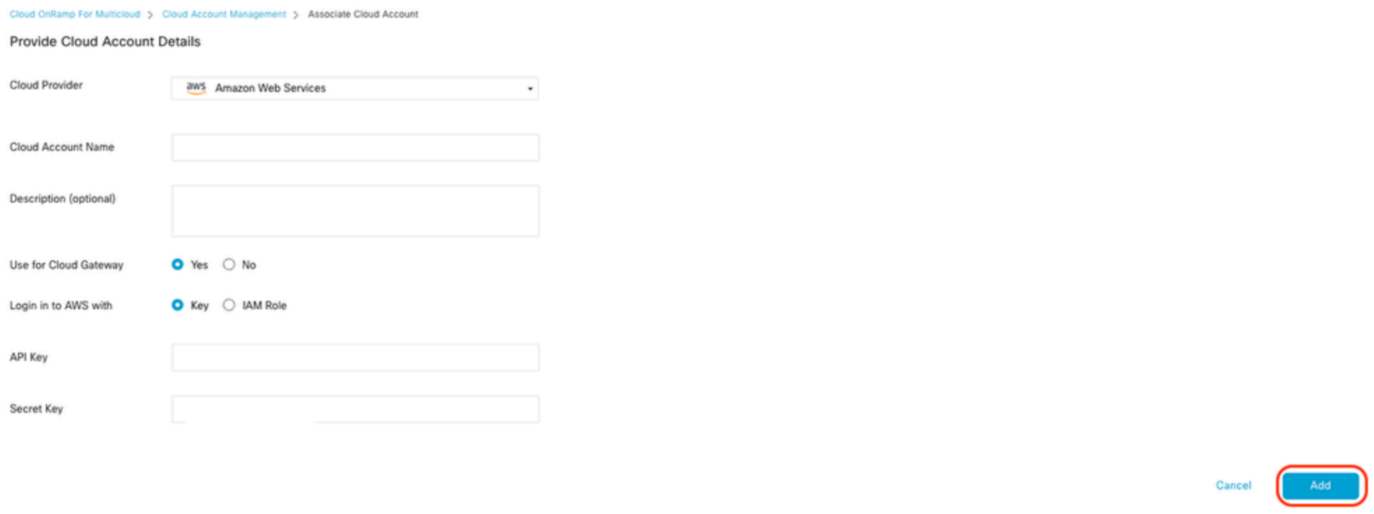
Discover & Tag
Discover and associate Tags to Host Private Networks (VPCs) for use in Intent Management

Manage
Deploy and manage Cloud Gateway(s)

Intent Management
Specify the Branch to Clou connectivity and Intra Clou Resources Intent

- In the **Cloud Provider field**, choose **Amazon Web Services** from the drop-down list.
- Enter the account name in the **Cloud Account Name** field.
- Choose **Yes** for creating Cloud Gateway.
- Choose the authentication model you want to use in the field **Log in into AWS With**.
    - Key
    - IAM Role

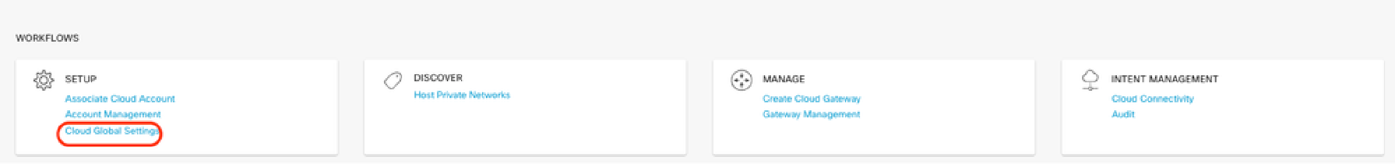
If you choose the Key model, then provide **API Key** and **Secret Key** in the respective fields.


Cloud OnRamp For Multicloud > Cloud Account Management > Associate Cloud Account

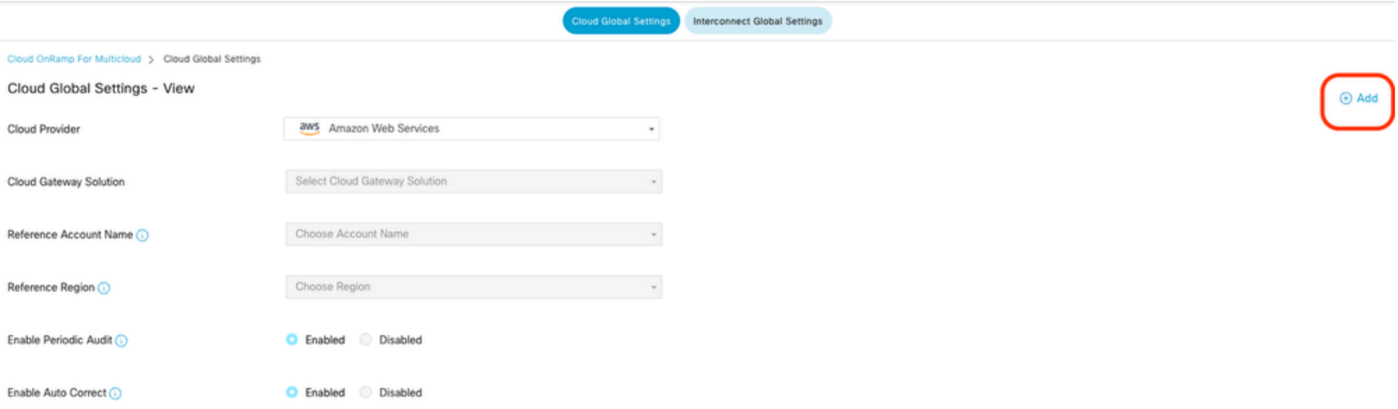
Provide Cloud Account Details

Cloud Provider	Amazon Web Services
Cloud Account Name	
Description (optional)	
Use for Cloud Gateway	● Yes ○ No
Login in to AWS with	● Key ○ IAM Role
API Key	
Secret Key	

Configure Cloud Global Settings. Click **Workflows** > **Setup** > **Cloud Global Settings**.



Click **Add**, click the drop-down menu on **Cloud Gateway Solution**, and then select **Transit Gateway – VPN Base (using TVPC)**.



Cloud Global Settings | Interconnect Global Settings

Cloud OnRamp For Multicloud > Cloud Global Settings

Cloud Global Settings - View

⊕ Add

Cloud Provider: aws Amazon Web Services

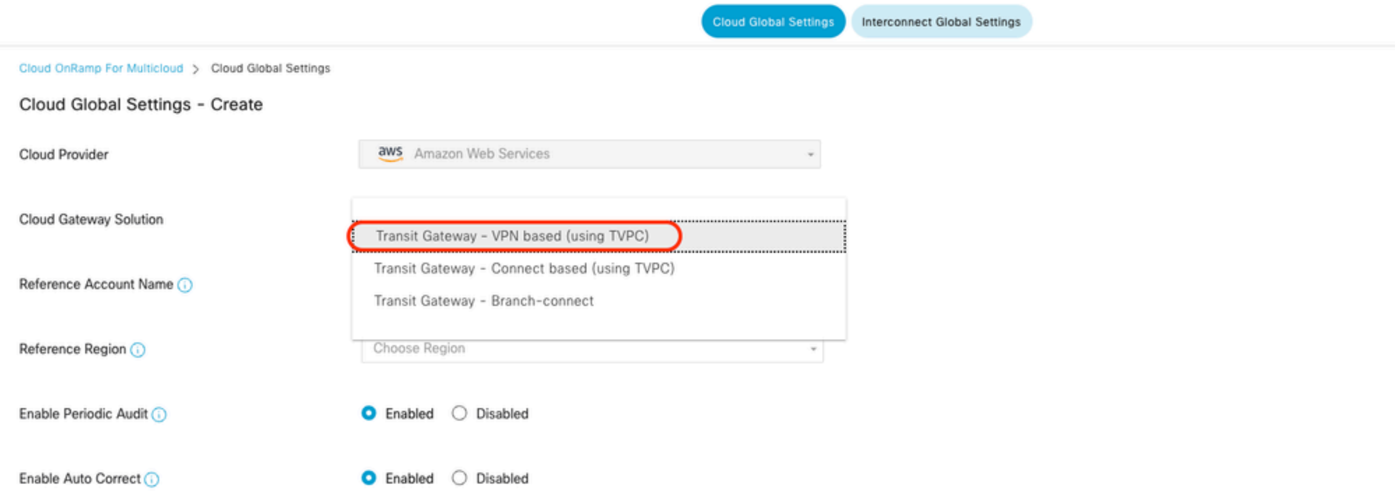
Cloud Gateway Solution: Select Cloud Gateway Solution

Reference Account Name ⓘ: Choose Account Name

Reference Region ⓘ: Choose Region

Enable Periodic Audit ⓘ: ● Enabled ○ Disabled

Enable Auto Correct ⓘ: ● Enabled ○ Disabled



Cloud Global Settings | Interconnect Global Settings

Cloud OnRamp For Multicloud > Cloud Global Settings

Cloud Global Settings - Create

Cloud Provider: aws Amazon Web Services

Cloud Gateway Solution:
- Transit Gateway - VPN based (using TVPC)
- Transit Gateway - Connect based (using TVPC)
- Transit Gateway - Branch-connect

Reference Account Name ⓘ

Reference Region ⓘ: Choose Region

Enable Periodic Audit ⓘ: ● Enabled ○ Disabled

Enable Auto Correct ⓘ: ● Enabled ○ Disabled

- Click the drop-menu for **Reference Account Name** and select the account.
- Click the drop-menu for **Reference Region** and select any region from the drop-menu.

- In theSoftware Imagefield:

  a. Click**BYOL**to use a bring your own license software image or **PAYG**to use a pay as you go software image.

  b. From the drop-down list, select a **software image**.

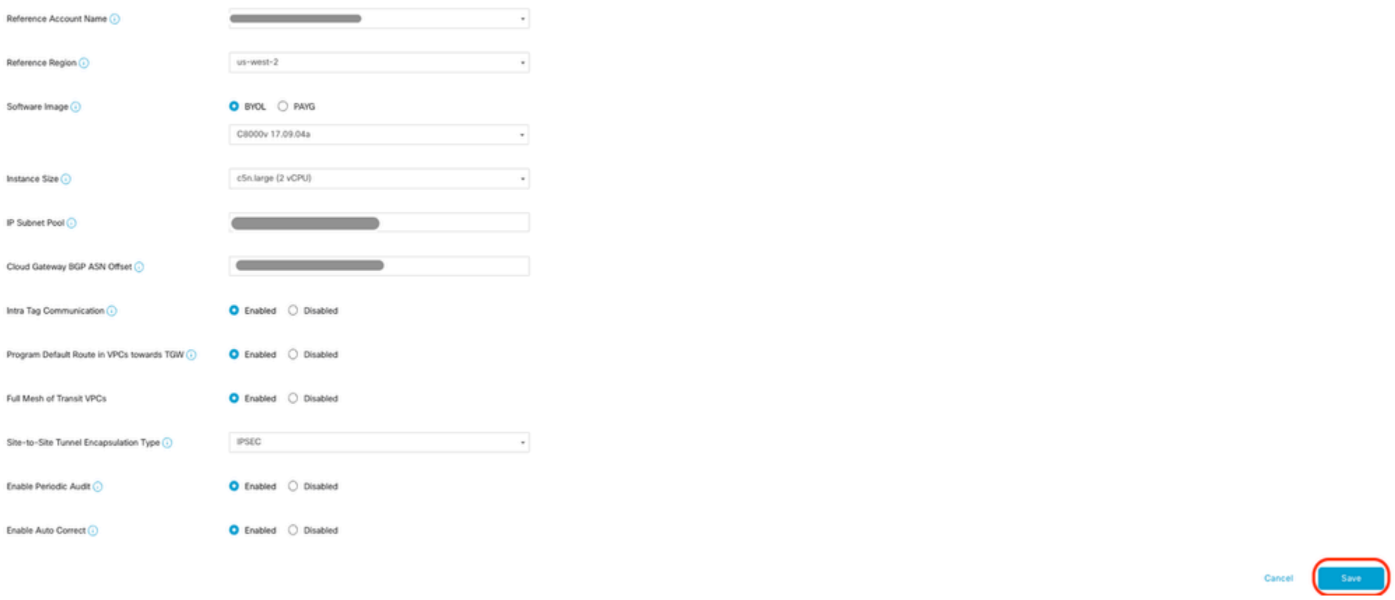
- Click the **Instance Size** drop-down menu and then select the size **C5n.large(2 CPU)** for the instances that are running in Transit VPC.
- Enter the **IP subnet pool x.x.x.x/24**.

Note: You cannot modify the pool when a few cloud gateways are already making use of pool. Overlapping of subnets is not allowed.

- Enter the **Cloud Gateway BGP ASN Offset 68520**.

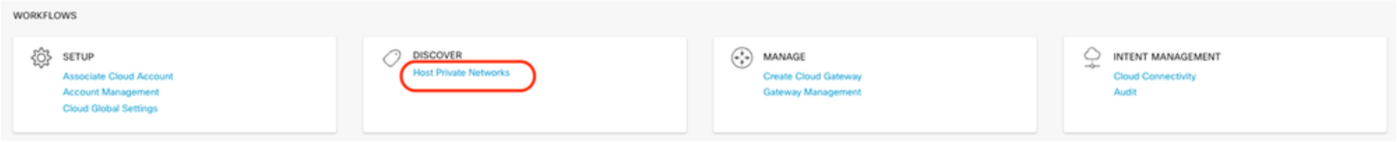
Note: Acceptable start offset range is 64520 to 65500. It must be a multiple of 10.

- Click **Site-to-Site Tunnel Encapsulation**. Type drop-down menu, and then select **IPSEC**.
- The rest of radio buttons you keep as default which is enabled.



Reference Account Name ⓘ	[redacted] ▾
Reference Region ⓘ	us-west-2 ▾
Software Image ⓘ	● BYOL ○ PAYG C8000v 17.09.04a ▾
Instance Size ⓘ	c5n.large (2 vCPU) ▾
IP Subnet Pool ⓘ	[redacted]
Cloud Gateway BGP ASN Offset ⓘ	[redacted]
Intra Tag Communication ⓘ	● Enabled ○ Disabled
Program Default Route in VPCs towards TGW ⓘ	● Enabled ○ Disabled
Full Mesh of Transit VPCs	● Enabled ○ Disabled
Site-to-Site Tunnel Encapsulation Type ⓘ	IPSEC ▾
Enable Periodic Audit ⓘ	● Enabled ○ Disabled
Enable Auto Correct ⓘ	● Enabled ○ Disabled

Next, you need to configure host VPCs by going back to the Cloud OnRamp For Multicloud main dashboard, under the **Discover** click **Host Private Networks**.



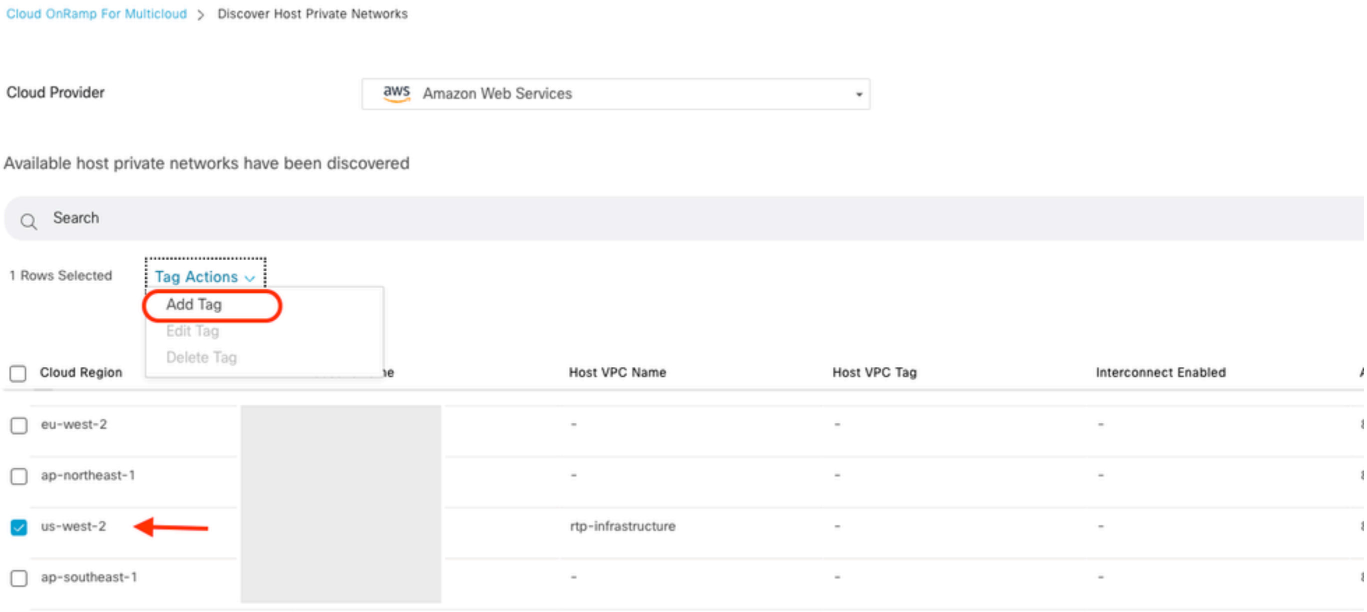
- Select the **host VPC** or **VPCs** that be attached to the Transit Gateway.
- Click the**Region**drop-down list to select the VPCs based on particular region.
- Click the**Tag Actions**to perform the actions:

  Add Tag - group the selected VPCs and tag them together.

  Edit Tag- migrate the selected VPCs from one tag to another.

  Delete Tag- remove the tag for the selected VPCs.

A number of host VPCs can be grouped under a tag. All VPCs under the same tag are considered a singular unit. A tag ensures connectivity and is essential to view the VPCs in**Intent Management.**



Cloud OnRamp For Multicloud > Discover Host Private Networks

Cloud Provider: aws Amazon Web Services

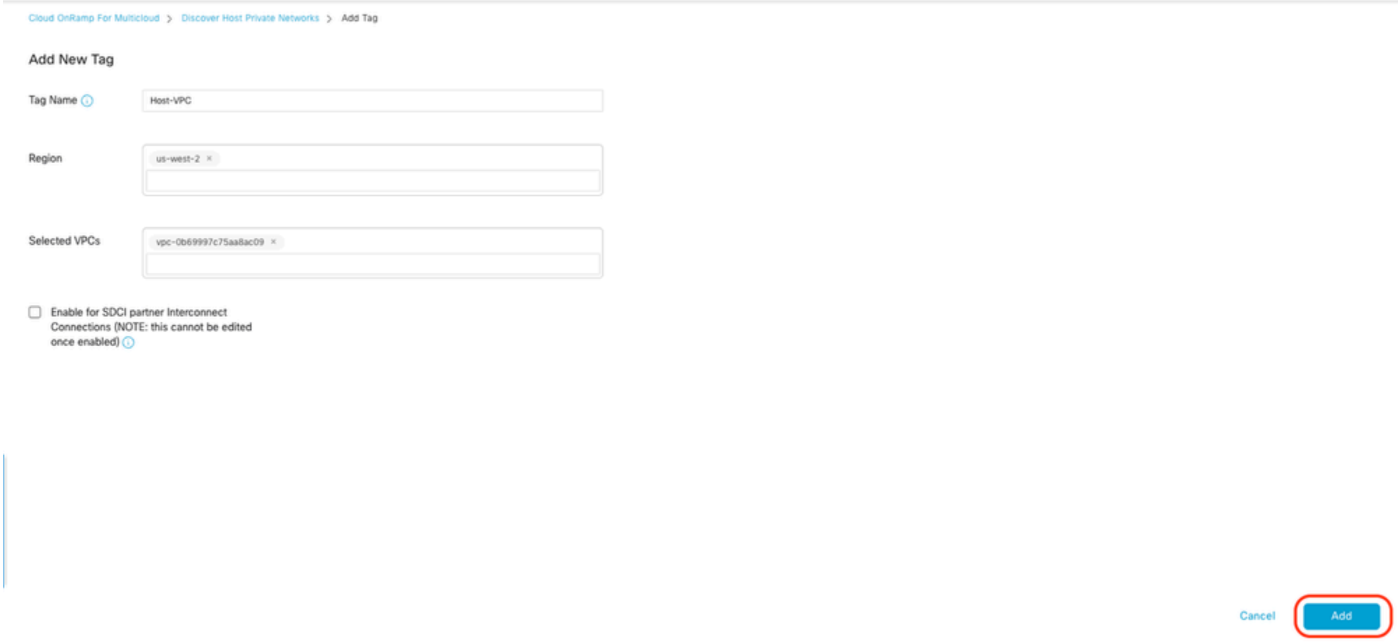
Available host private networks have been discovered

Search

1 Rows Selected

	Cloud Region	…ne	Host VPC Name	Host VPC Tag	Interconnect Enabled
☐	eu-west-2		-	-	-
☐	ap-northeast-1		-	-	-
☑	us-west-2		rtp-infrastructure	-	-
☐	ap-southeast-1		-	-	-

Enter a **Tag Name** (the tag name can be anything), and then click **Add**.



Cloud OnRamp For Multicloud > Discover Host Private Networks > Add Tag

Add New Tag

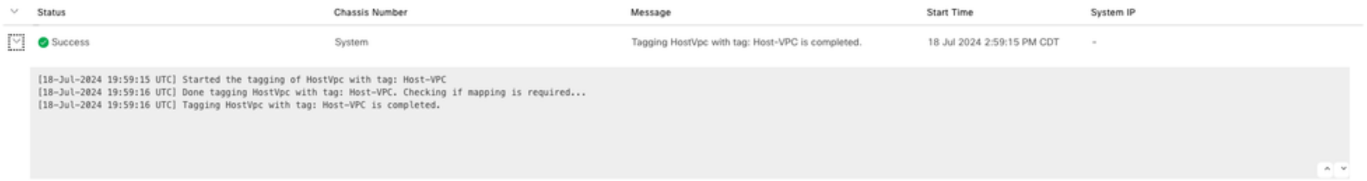
Tag Name Host-VPC

Region: us-west-2 ×

Selected VPCs: vpc-0b69997c75aa8ac09 ×

☐ Enable for SDCI partner Interconnect Connections (NOTE: this cannot be edited once enabled)

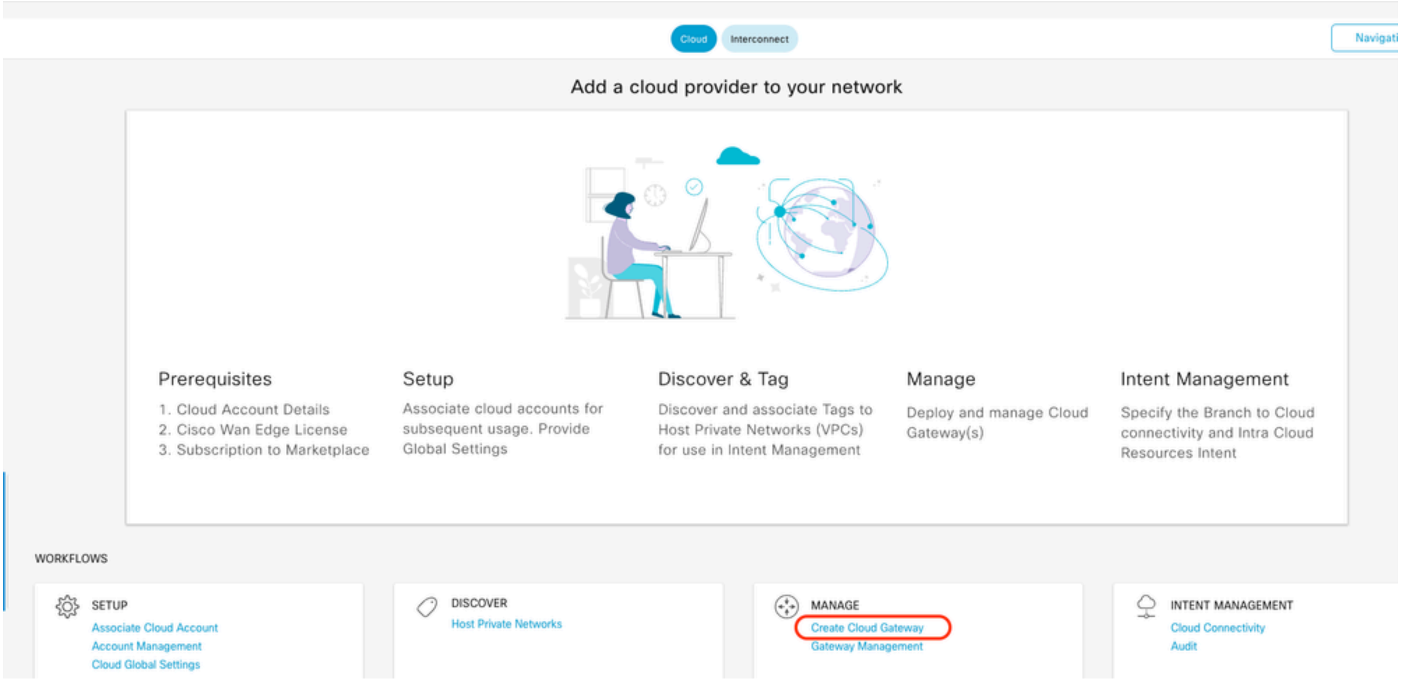
VPC tagging completed successfully.



Status	Chassis Number	Message	Start Time	System IP
Success	System	Tagging HostVpc with tag: Host-VPC is completed.	18 Jul 2024 2:59:15 PM CDT	-

```
[18-Jul-2024 19:59:15 UTC] Started the tagging of HostVpc with tag: Host-VPC
[18-Jul-2024 19:59:16 UTC] Done tagging HostVpc with tag: Host-VPC. Checking if mapping is required...
[18-Jul-2024 19:59:16 UTC] Tagging HostVpc with tag: Host-VPC is completed.
```

Return to Cloud onRamp for Multicloud and under the **MANAGE**, click **Create Cloud Gateway**.



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Associate cloud accounts for subsequent usage. Provide Global Settings

Discover & Tag

Discover and associate Tags to Host Private Networks (VPCs) for use in Intent Management

Manage

Deploy and manage Cloud Gateway(s)

Intent Management

Specify the Branch to Cloud connectivity and Intra Cloud Resources Intent

WORKFLOWS

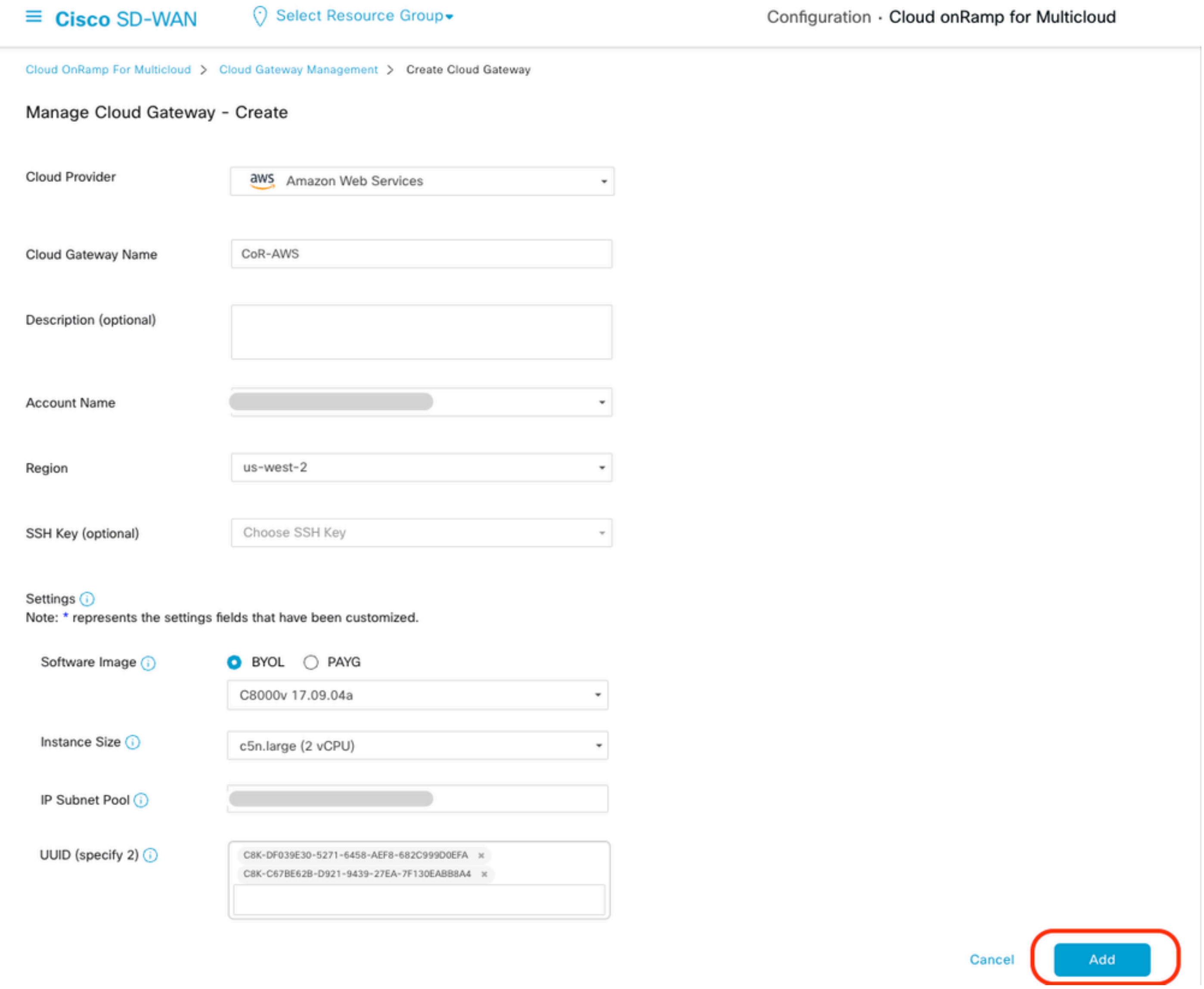
SETUP
Associate Cloud Account
Account Management
Cloud Global Settings

DISCOVER
Host Private Networks

MANAGE
Create Cloud Gateway
Gateway Management

INTENT MANAGEMENT
Cloud Connectivity
Audit

- Click the drop-down menu for **Cloud Provider** and select **AWS**.
- Enter a **Cloud Gateway Name**.
- Click the **Account Name** drop-down menu, it has the account information that was previously filled.
- Click the **Region** drop-down menu and select the **region** where the host VPCs were tagged.
- Software image, Instance Size, and IP Subnet pool are auto populated from the previously filled Global Cloud Gateway.
- Click the **UUID** drop-down. The two UUIDs for the C8000v that were previously attached in the device template are displayed. Select them, and then click **Add**.



≡ Cisco SD-WAN
Select Resource Group ▾
Configuration · Cloud onRamp for Multicloud
Cloud OnRamp For Multicloud > Cloud Gateway Management > Create Cloud Gateway

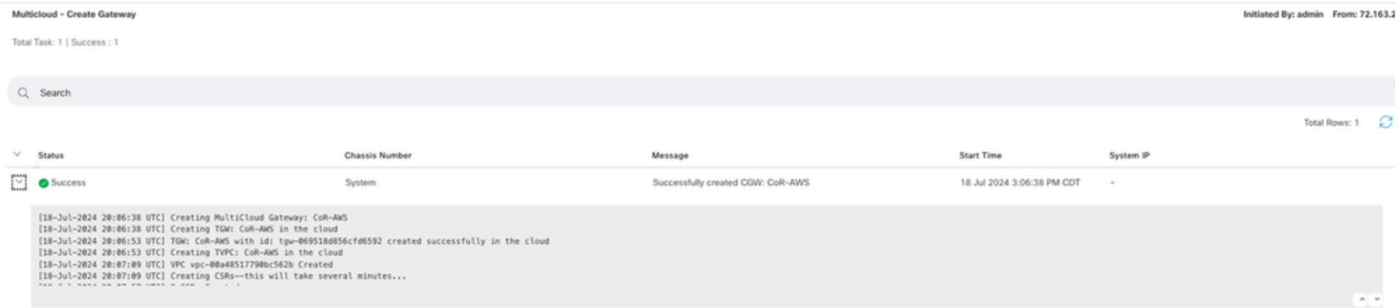
Manage Cloud Gateway - Create

Cloud Provider	aws Amazon Web Services ▾
Cloud Gateway Name	CoR-AWS
Description (optional)	
Account Name	[redacted] ▾
Region	us-west-2 ▾
SSH Key (optional)	Choose SSH Key ▾

Settings ⓘ
Note: * represents the settings fields that have been customized.

Software Image ⓘ	● BYOL ○ PAYG C8000v 17.09.04a ▾
Instance Size ⓘ	c5n.large (2 vCPU) ▾
IP Subnet Pool ⓘ	[redacted]
UUID (specify 2) ⓘ	C8K-DF039E30-5271-6458-AEF8-682C999D0EFA × C8K-C67BE62B-D921-9439-27EA-7F130EABB8A4 ×

Now Cloud Gateways start creating and then wait untill deployment of the of the Cloud Gateway is success.



Multicloud - Create Gateway

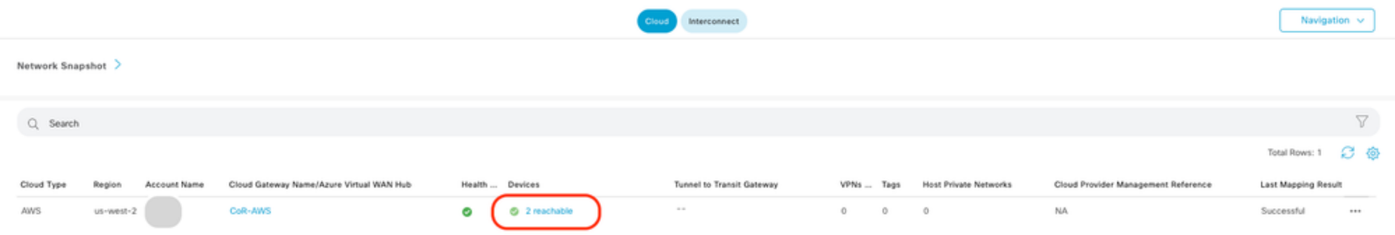
Initiated By: admin From: 72.163.2

Total Task: 1 | Success : 1

Status	Chassis Number	Message	Start Time	System IP
● Success	System	Successfully created CGW: CoR-AWS	18 Jul 2024 3:06:38 PM CDT	-

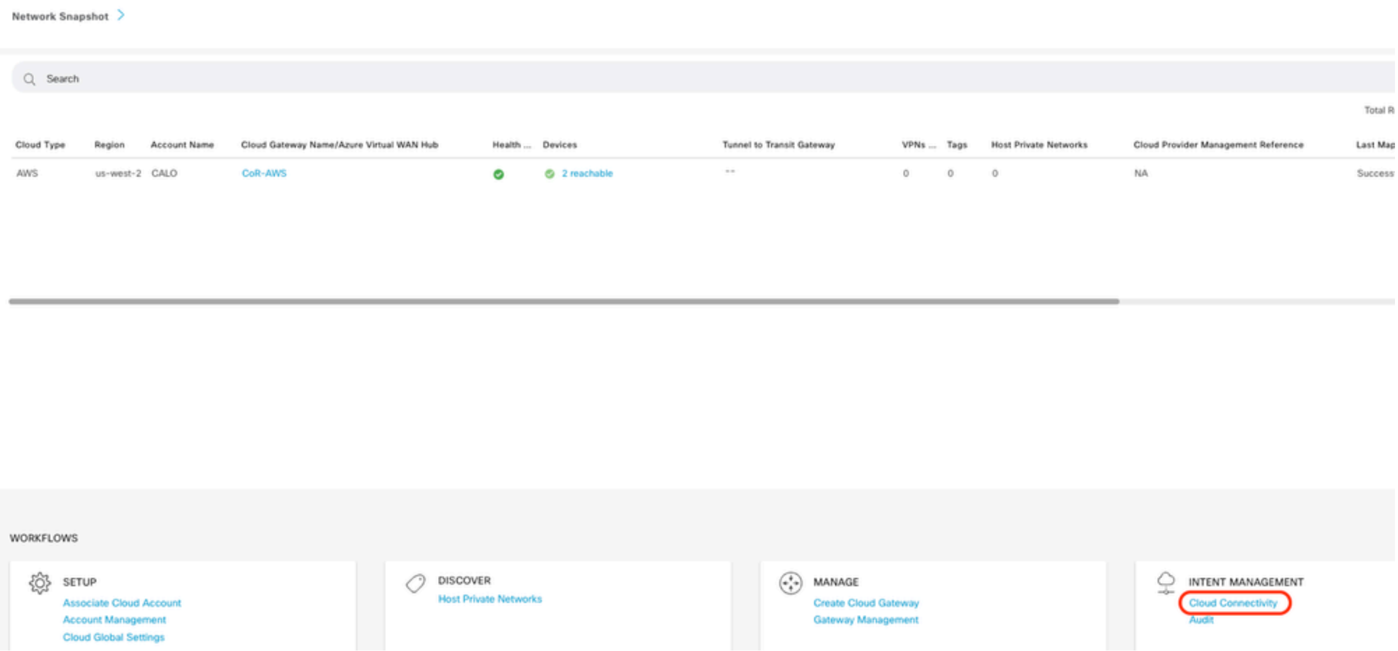
```
[18-Jul-2024 20:06:38 UTC] Creating MultiCloud Gateway: CoR-AWS
[18-Jul-2024 20:06:38 UTC] Creating TGW: CoR-AWS in the cloud
[18-Jul-2024 20:06:53 UTC] TGW: CoR-AWS with id: tgw-069518d856cfd6592 created successfully in the cloud
[18-Jul-2024 20:06:53 UTC] Creating TVPC: CoR-AWS in the cloud
[18-Jul-2024 20:07:09 UTC] VPC vpc-00a48517790bc562b Created
[18-Jul-2024 20:07:09 UTC] Creating CSRs--this will take several minutes...
```

Note: WAN Edges takes a few minutes before they are reachable after the process is completed.



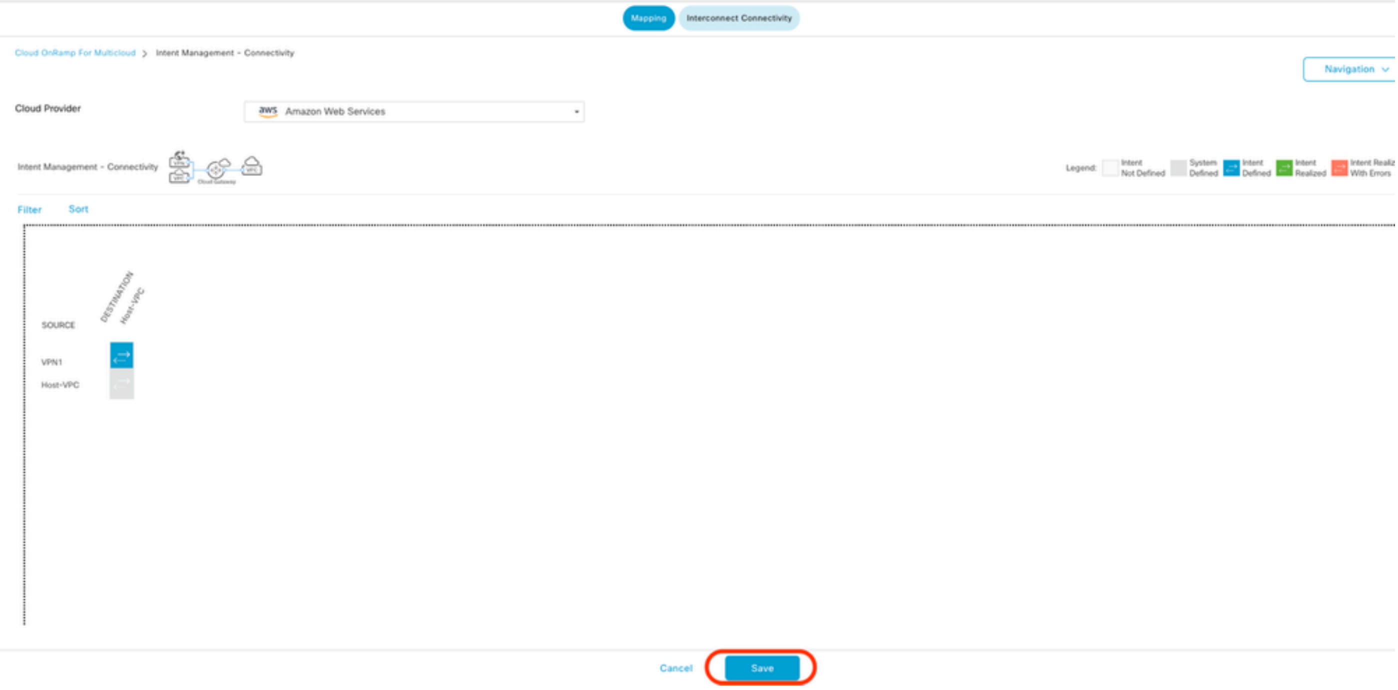
Cloud Type	Region	Account Name	Cloud Gateway Name/Azure Virtual WAN Hub	Health ...	Devices	Tunnel to Transit Gateway	VPNs ...	Tags	Host Private Networks	Cloud Provider Management Reference	Last Mapping Result	
AWS	us-west-2	[redacted]	CoR-AWS	●	2 reachable	--	0	0	0	NA	Successful	•••

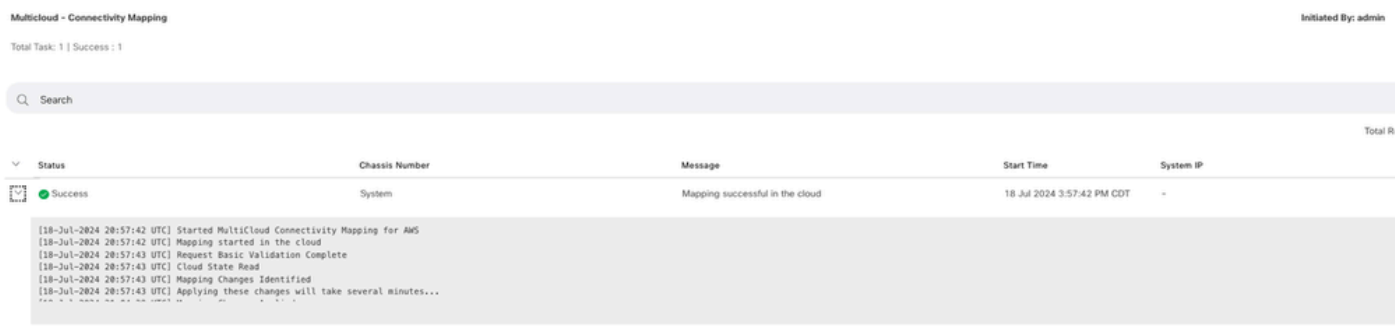
Two C8000v devices deployed in AWS are reachable. Now, click **Cloud Connectivity**.



Cloud Type	Region	Account Name	Cloud Gateway Name/Azure Virtual WAN Hub	Health ...	Devices	Tunnel to Transit Gateway	VPNs ...	Tags	Host Private Networks	Cloud Provider Management Reference	Last Map
AWS	us-west-2	CALO	CoR-AWS	✓	✓ 2 reachable	--	0	0	0	NA	Success

Click **Edit** to do VPN mapping and select **VPN 1**, then click **Save**.



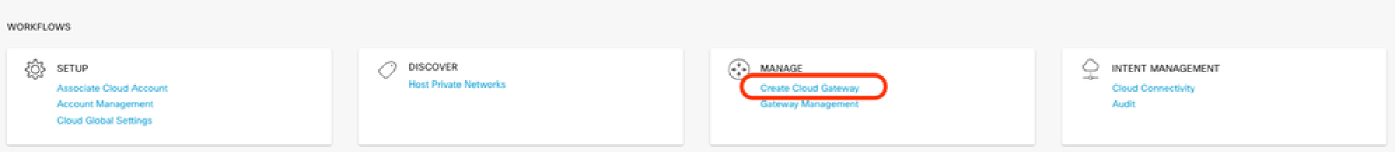

Multicloud - Connectivity Mapping
Initiated By: admin
Total Task: 1 | Success : 1
Search
Total R

Status	Chassis Number	Message	Start Time	System IP
Success	System	Mapping successful in the cloud	18 Jul 2024 3:57:42 PM CDT	-

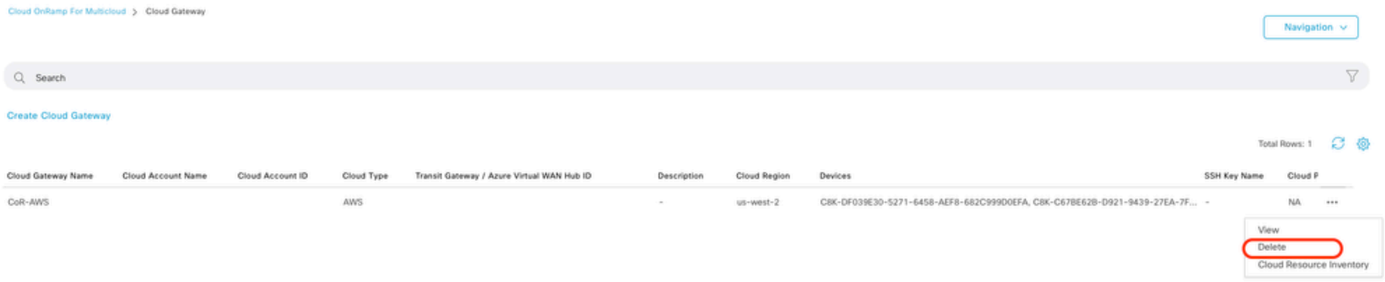
```
[18-Jul-2024 20:57:42 UTC] Started MultiCloud Connectivity Mapping for AWS
[18-Jul-2024 20:57:42 UTC] Mapping started in the cloud
[18-Jul-2024 20:57:43 UTC] Request Basic Validation Complete
[18-Jul-2024 20:57:43 UTC] Cloud State Read
[18-Jul-2024 20:57:43 UTC] Mapping Changes Identified
[18-Jul-2024 20:57:43 UTC] Applying these changes will take several minutes...
```

Step 3. How to Remove Cloud Gateway

To delete the Cloud Gateway, under the **Manage**, select **Gateway Management**.



Then, click the **3 dots (...)** on the desired cloud gateway and click **Delete**.



Cloud Gateway Name	Cloud Account Name	Cloud Account ID	Cloud Type	Transit Gateway / Azure Virtual WAN Hub ID	Description	Cloud Region	Devices	SSH Key Name	Cloud F
CoR-AWS			AWS		-	us-west-2	C8K-DF039E30-5271-6458-AEF8-682C999D0EFA, C8K-C67BE62B-D921-9439-27EA-7F...	-	NA

Verify

This section describes the outcomes for verification purposes.

After mapping, verify that the VPN 1 service VPN (VRF) is present on both two C8000v in AWS.

<#root>

```
C8kv1-aws#show ip vrf
  Name                                 Default RD            Interfaces

 1                                      1:1                   Tu100001



                                                               Tu100002


  65528                                <not set>              Lo65528
  65529                                <not set>              Lo65529
  Mgmt-intf                            1:512                     Gi1

C8kv2-aws#show ip vrf
  Name                                 Default RD            Interfaces


1                                     1:1                   Tu100001



                                                             Tu100002


  65528                                <not set>             Lo65528
  65529                                <not set>             Lo65529
  Mgmt-intf                            1:512                     Gi1
```

You can also see the OMP routes learned from the on-premises branch router, as well as the BGP routes from the host VPCs.

```
C8kv1-aws#show ip route vrf 1
Routing Table: 1

Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, m - OMP
       n - NAT, Ni - NAT inside, No - NAT outside, Nd - NAT DIA
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       H - NHRP, G - NHRP registered, g - NHRP registration summary
       o - ODR, P - periodic downloaded static route, l - LISP
       a - application route
       + - replicated route, % - next hop override, p - overrides from PfR
       & - replicated local route overrides by connected

Gateway of last resort is not set

      10.0.0.0/8 is variably subnetted, 4 subnets, 2 masks
m        10.1.50.64/26 [251/0] via 10.1.1.231, 02:55:52, Sdwan-system-intf
B        10.2.0.0/16 [20/100] via 169.254.0.17, 02:55:22
                     [20/100] via 169.254.0.13, 02:55:22
m        10.2.112.192/26 [251/0] via 10.1.1.221, 02:55:52, Sdwan-system-intf
m        10.2.193.0/26 [251/0] via 10.1.1.101, 02:55:52, Sdwan-system-intf
      169.254.0.0/16 is variably subnetted, 4 subnets, 2 masks
C        169.254.0.12/30 is directly connected, Tunnel100001
L        169.254.0.14/32 is directly connected, Tunnel100001
C        169.254.0.16/30 is directly connected, Tunnel100002
L        169.254.0.18/32 is directly connected, Tunnel100002
B     172.31.0.0/16 [20/100] via 169.254.0.17, 02:55:22
                    [20/100] via 169.254.0.13, 02:55:22

C8kv2-aws#show ip route vrf 1
Routing Table: 1
Codes: L - local, C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2, m - OMP
       n - NAT, Ni - NAT inside, No - NAT outside, Nd - NAT DIA
       i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
       ia - IS-IS inter area, * - candidate default, U - per-user static route
       H - NHRP, G - NHRP registered, g - NHRP registration summary
       o - ODR, P - periodic downloaded static route, l - LISP
       a - application route
       + - replicated route, % - next hop override, p - overrides from PfR
       & - replicated local route overrides by connected

Gateway of last resort is not set
      10.0.0.0/8 is variably subnetted, 4 subnets, 2 masks
m        10.1.50.64/26 [251/0] via 10.1.1.231, 02:57:17, Sdwan-system-intf
B        10.2.0.0/16 [20/100] via 169.254.0.9, 02:57:08
                    [20/100] via 169.254.0.5, 02:57:08
m        10.2.112.192/26 [251/0] via 10.1.1.221, 02:57:17, Sdwan-system-intf
m        10.2.193.0/26 [251/0] via 10.1.1.101, 02:57:17, Sdwan-system-intf
      169.254.0.0/16 is variably subnetted, 4 subnets, 2 masks
C        169.254.0.4/30 is directly connected, Tunnel100001
L        169.254.0.6/32 is directly connected, Tunnel100001
```

```
C        169.254.0.8/30 is directly connected, Tunnel100002
L        169.254.0.10/32 is directly connected, Tunnel100002
B     172.31.0.0/16 [20/100] via 169.254.0.9, 02:57:08
                    [20/100] via 169.254.0.5, 02:57:08
```

Related Information

SD-WAN Cloud OnRamp Configuration Guide

Technical Support & Documentation - Cisco Systems