



IP VPN On-Demand User Guide

Ordering and Disconnecting Services

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LUMEN[®]

Purpose of This Document

This document provides detailed technical guidance on configuring and deploying Lumen Network-as-a-Service IP VPN On-Demand to Amazon Web Services (AWS), Microsoft Azure, Google Cloud, and Oracle Cloud Infrastructure (OCI).

The document outlines prerequisites and step-by-step configuration procedures for deploying and decommissioning connections.

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Lumen Network-as-a-Service IP VPN On-Demand to AWS Direct Connect

Creating an **AWS Direct Connect (DX) hosted connection** involves coordination between Lumen, AWS, and the end customer.

What is a Hosted Connection?

A **Hosted Connection** is a type of AWS Direct Connect connection provisioned by a partner who owns the physical Network-to-Network (NNI) infrastructure (e.g., port) and allocates bandwidth to customers on demand. It is different from a **Dedicated Connection**, where Lumen would provision a physical port and dedicated third-party cross-connect (3PXC) and a single customer would own the usage of the entire physical connection.

All Network-as-a-Service IP VPN On-Demand connections to AWS Direct Connect are Hosted Connections.

Customer Self-Assessment Questions

1. About Your Use Case

- What will you use this connection for (e.g., cloud storage, data transfer, hybrid workloads)?
- Do your applications require low latency or guaranteed uptime?
- Will your connection needs change frequently?

2. Bandwidth Planning

- What is the peak and average bandwidth you need?

3. Redundancy & Resiliency

- Do you need a backup path in case of a failure?
- Do you want to connect to multiple AWS regions or Availability Zones?
- Will you need dual connections for high availability?

4. AWS Connectivity Setup

- Which AWS region(s) and VPC(s) do you need to reach?

- Do you want to connect to multiple VPCs via a Transit Gateway?
- Do you already have a Direct Connect Gateway (DXGW) set up?

5. VIF Type Selection

- Will you need a Private VIF, Transit VIF, or Public VIF?

Note: *Public VIFs are not currently supported with IP VPN On-Demand*

6. IP Addressing & Routing

- Do you have your IP address ranges ready?
- Are your IP addresses overlapping with any AWS environments?

Key Considerations

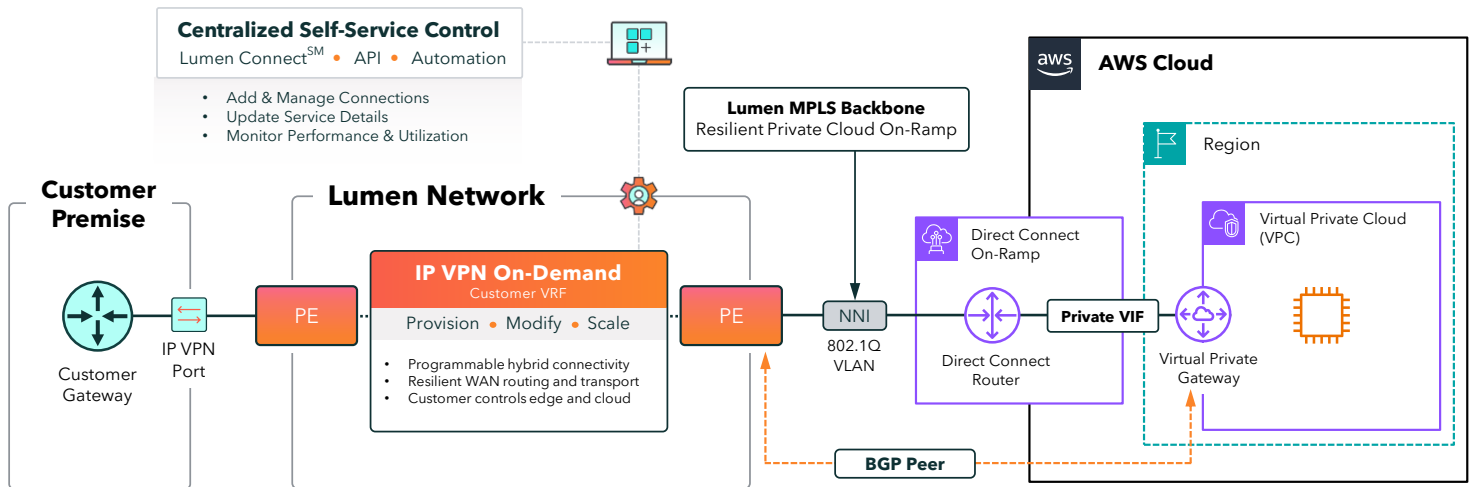
- Hosted connections cannot be resized; deleting and recreating is required for changes.
- AWS SLA applies only when redundant connections are used in separate locations.
- Lumen recommends you create a redundant connection to qualify for better SLAs.

[Learn more about AWS Direct Connect SLAs](#)

[Learn more about AWS resiliency options](#)

Deploying Lumen Network-as-a-Service IP VPN On-Demand to a Private VIF with Virtual Private Gateway

Virtual Private Gateway peering with connectivity to a single VPC



Hybrid Connectivity Responsibility Model:

Customer Edge Configuration	Lumen IP VPN On-Demand Connectivity with Self-Service Control	Customer Configuration of BGP (Lumen ↔ AWS)	Customer AWS Cloud Network Configuration
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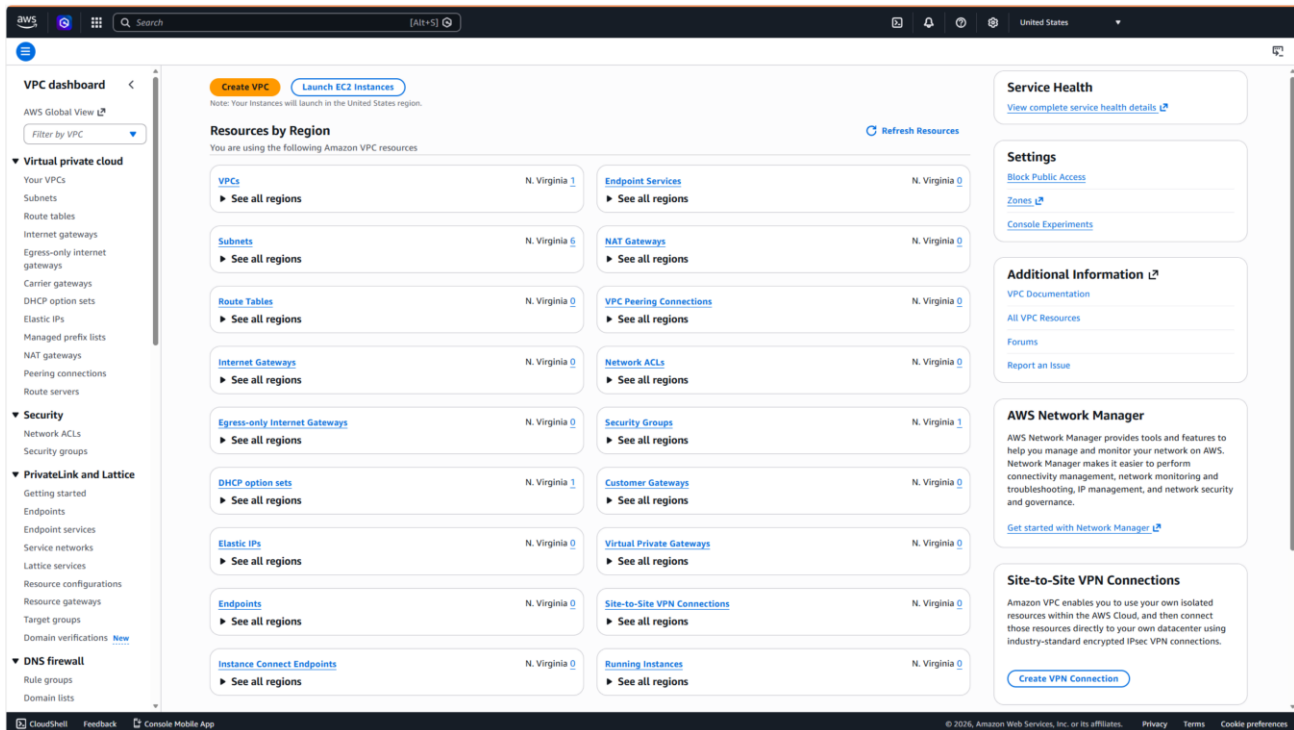
Getting Started Checklist

1. **Lumen ConnectSM Access** - Confirm you have access to Lumen ConnectSM and are entitled for the **Fabric & On-Demand Services** functionality.
2. **AWS Account Number** - Ensure you have the correct **12-digit AWS Account ID** that you intend to connect with.
3. **AWS Console Access** - Verify that you have the necessary **login credentials and permissions** to access the AWS Management Console for the target account.

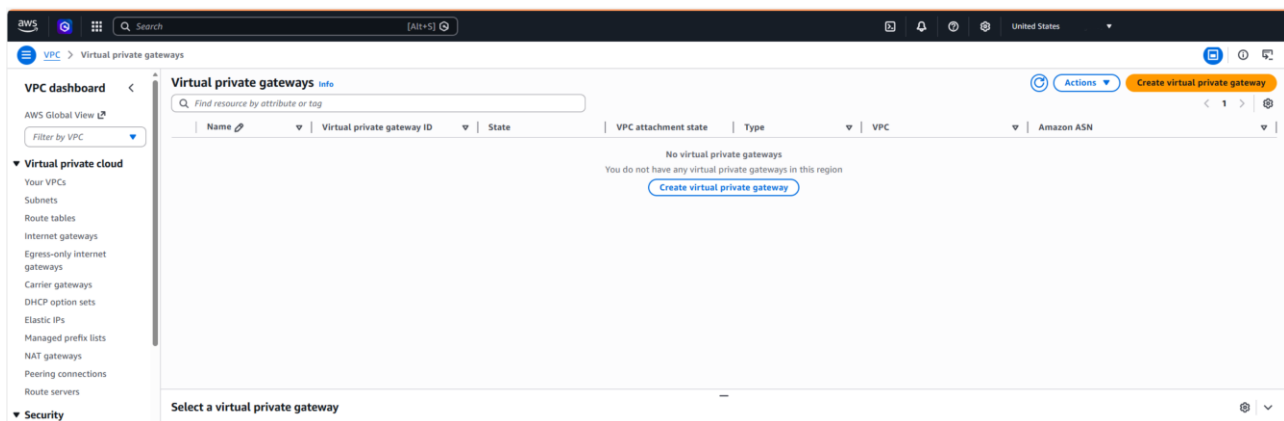
Step 1: Prepare the AWS connection

To prepare the connection in AWS:

1. Sign in to the [AWS Console](#).
2. If you do not already have a virtual private gateway open the VPC Dashboard
 1. All Services > VPC
 2. Click Virtual Private Gateways



3. Click Create virtual private gateway



4. Complete the connection details
 1. Name tag - optional - input an option name
 2. Autonomous System Number (ASN)
 - a. Amazon default ASN (common choice)
 - b. Custom ASN (if you modify the ASN, make note as you will need it when creating the IP VPN On-Demand Connection)
5. Click Create virtual private gateway

The screenshot shows the AWS Management Console interface for creating a virtual private gateway. The page title is "Create virtual private gateway" and it includes a sub-header "Details". Under "Name tag - optional", there is a text input field containing "Lumen-Test". Below this, the "Autonomous System Number (ASN)" section has two radio buttons: "Amazon default ASN" (which is selected) and "Custom ASN". The "Tags - optional" section shows a table with one tag: Key "Name" and Value "Lumen-Test". At the bottom right, there is a yellow "Create virtual private gateway" button and a blue "Cancel" button.

6. Copy your AWS Account ID. You will paste this into Lumen ConnectSM when creating the On-Demand connection.

Step 2: Add the connection in Lumen ConnectSM

To add the IP VPN On-Demand connection:

1. [Sign in to Lumen ConnectSM](#). (Get help retrieving your username/password.)

The screenshot displays the Lumen Connect dashboard interface. At the top, there is a navigation bar with the Lumen logo and user information. A sidebar on the left contains menu items like Dashboard, Alerts & Notifications, Services, Monitoring & Reports, Billing, Admin, Support, Lumen Connect Help, and Contact Lumen. The main content area is titled 'Dashboard' and features a 'Core Capabilities' section with various service management tools and a grid of key metrics such as Pay Balance Due (\$0.00), Active Repair Tickets (0), Open Orders (11), and Network Visibility Status (7 Down, 19 Up). Below this is an 'On-Demand Services Overview' section with a map titled 'Services by Location' showing port availability across the United States. The map includes a search bar for 'Port Availability' and a legend for Port, Connection, Cluster, and Port Location Availability. A 'Contact a Specialist' button is located at the bottom of the map area.

- Using the left menu click **Services**, then click **Add Services**.

The screenshot shows the Lumen Connect interface. On the left is a navigation menu with 'Services' selected. The main area is titled 'Add Services' and contains a 'Self-Serve' section. Under 'Networking', there are six service cards, each with a '+ Add' button and a 'View Pricing' link. The services listed are: Internet On-Demand Connection, IP VPN On-Demand Connection, Ethernet On-Demand Connection, Network-as-a-Service (NaaS) Port, Dedicated Internet Access (DIA), and Wavelength. Below this are 'Edge Cloud' and 'Cybersecurity' sections, each with a '+ Add' button. At the bottom, there is a 'Help' button and a note: 'Work with Lumen to find and add a service. Some services require professional assistance. Contact a Lumen specialist to find additional services by calling 888-836-5226 or clicking Help to chat.'

- Click **+ Add** for IP VPN On-Demand.
- From the **Customer ID** and **Billing Account Number** lists, select the customer number and billing account number you want to add IP VPN On-Demand to.

Lumen ConnectSM fills in the VRF inventory based on the customer ID and billing account number you selected.

5. In the **Service Nickname** field, type a name for the connection you're creating. (Be sure to use something memorable. This name will appear on your invoice.)
6. In the **From Location (Select Your VRF)** section, select or create a VRF for the other end of your connection.
 - Select the VRF to use for the other end of your connection. Click **View Details** for a VRF to view the VRF's routes.
 - Click **Create New**, then type a description for the new VRF in the **New VRF Description** field. Lumen ConnectSM will create the VRF and activate your VPN service once you create your connection.

The screenshot shows the 'Add IP VPN On-Demand Connection' form in the Lumen Connect interface. The form is titled 'Add IP VPN On-Demand Connection' and is divided into four steps: 1. Select Locations & Providers, 2. Select Bandwidth & Price, 3. Select Additional Settings, and 4. Review & Submit Order. Step 1 is currently active and contains several fields: 'Customer ID' (SUNDAY UAT 1 (1-T8BD)), 'Billing Account Number' (ACC-00000001), 'Service Nickname' (Lumen-AWS-Connection-1), 'From Location (Select Your VRF)' (Use Existing VRF / Create New), 'New VRF Description' (00/VPXX/UAT-VRF-01TEST), 'Cloud Provider' (AWS), 'AWS Account ID', and 'Cloud Provider On Ramp' (-Select-). There are 'Cancel' and 'Continue' buttons at the bottom right of the form.

7. From the **Cloud Provider** list, select AWS.
8. Fill in the information for the AWS connection:
 - a) In the **AWS Account ID** field, type your AWS account ID.
 - b) From the **Cloud Provider On-Ramp** list, select an On-Ramp.
9. Click **CONTINUE**.

- Use the **Billing Method** buttons to select whether you want monthly or hourly billing for the connection, then select the bandwidth for the connection. Bandwidth options are determined by the destination (to location). (You can't change the bandwidth once you create the connection. If you need to choose a different bandwidth after creating the connection, disconnect the connection and create a new one.)

LUMEN Lumen Connect Enterprise ID: 12345678

< Add Services

Add IP VPN On-Demand Connection Help

1. Select Locations & Providers VRF: 00/VPXX/UAT-VRF-01TEST Cloud Provider: AWS Change

2. Select Bandwidth & Price

Billing Method ⓘ

Monthly Hourly

Bandwidth	Monthly
<input type="radio"/> 50 Mbps	\$100.00
<input type="radio"/> 100 Mbps	\$200.00
<input type="radio"/> 200 Mbps	\$400.00
<input type="radio"/> 300 Mbps	\$600.00
<input type="radio"/> 400 Mbps	\$800.00
<input type="radio"/> 500 Mbps	\$1000.00
<input type="radio"/> 1 Gbps	\$1200.00
<input type="radio"/> 2 Gbps	\$2400.00
<input type="radio"/> 5 Gbps	\$6000.00
<input type="radio"/> 10 Gbps	\$12000.00
<input type="radio"/> 25 Gbps	\$30000.00

Monthly - Billing begins once connection is active. Customer will be billed MRC(s) with pro-ration occurring at both the beginning and end of the connection rounded up to the nearest full day.

Cancel Previous Continue

3. Select Additional Settings

4. Review & Submit Order

11. Click **CONTINUE**.

12. In the **Select Additional Settings** section, fill in the additional details for the connection:

- In the **AS Number on AWS** field, type the autonomous system number from Amazon (ranges from 64512 to 65534 or 4200000000 to 4294967294) used when creating the Direct Connect gateway.
- Select whether this is a primary or backup connection.
 - Primary will set the local-pref to 750
 - Backup will set the local-pref to 700
- In the **IPv4 Routing Option** field, select the radio button for the routing option you want to use for the connection. [Learn more about routing options for an IP VPN connection](#)
- Use the buttons to select whether you want to advertise default routes.

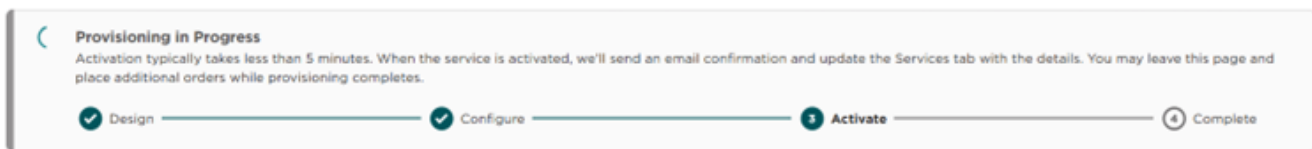
The screenshot displays the 'Add IP VPN On-Demand Connection' configuration interface in the Lumen Connect portal. The interface is divided into several sections:

- 1. Select Locations & Providers:** Shows VRF: 60VPXXUAT-VRF-01TEST and Cloud Provider: AWS. A 'Change' button is available.
- 2. Select Bandwidth & Price:** Shows 1 Gbps / mo. A 'Change' button is available.
- 3. Select Additional Settings:**
 - Provider Service:** Set to 'Private'.
 - AS Number on AWS:** Field contains '64512'.
 - Primary/Backup:** Radio buttons for 'Primary' and 'Backup'.
 - IPv4 Routing Option:** Three radio buttons:
 - Aggregate and advertise my RFC 1918 routes:** Selected. Description: 'Ideal for cloud service providers (CSPs) with restrictive BGP prefix limits like AWS and Google and if most of your prefixes are RFC 1918. Lumen automatically aggregates network prefixes according to RFC 1918 standards to reduce the number of prefixes sent to the CSP. Lumen only advertises network RFC 1918 prefixes: 10.0.0.0/8, 172.16.0.0/12, and 192.168.0.0/16. Note: Aggregates are NOT injected into your routing tables.'
 - Advertise all routes except those specified:** Description: 'Allows you to control which routes are advertised to the CSP. Check with your CSP to verify any BGP maximum prefix limits before selecting this option, as it could cause issues with your connection.'
 - Deny all routes except those specified:** Description: 'Optimal for CSPs with maximum prefix limits that require reducing advertised prefixes and your prefixes don't fall under RFC 1918 ranges.'
 - Advertise Default Routes for IPv4:** Radio buttons for 'Yes' and 'No'.

At the bottom of the configuration area, there are 'Cancel', 'Previous', and 'Continue' buttons. Below the configuration area, a section for '4. Review & Submit Order' is partially visible.

13. Click **CONTINUE**.
14. Review the order information and correct any missing or invalid selections, then click **SUBMIT ORDER**.

Lumen ConnectSM creates the request for connection, places it in *Pending Activation* status, and routes you to the Services tab so you can monitor the status of the connection. To see status updates, click [↻](#). Once Lumen assigns the permanent VRF (within five minutes), the connection changes to *Active* status.



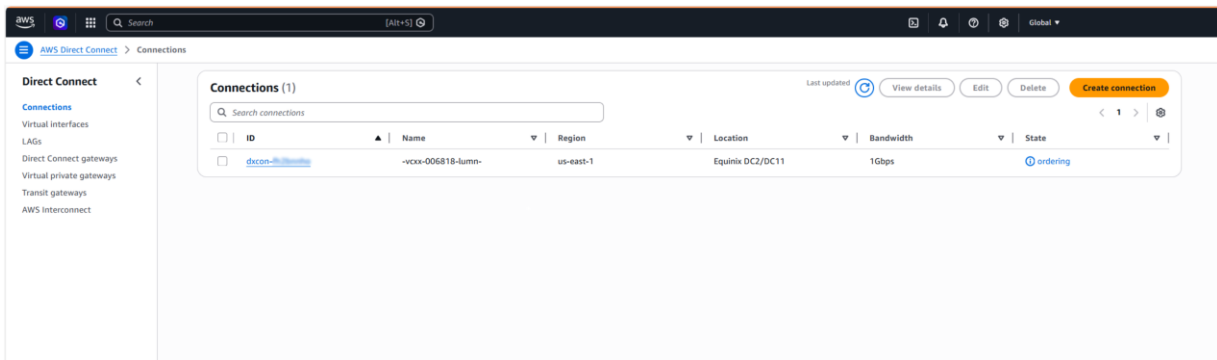
15. If you want to add High Resiliency for this connection, repeat steps 2-12 using the same VRF and a different AWS on-ramp location.

[Learn more about AWS resiliency options](#)

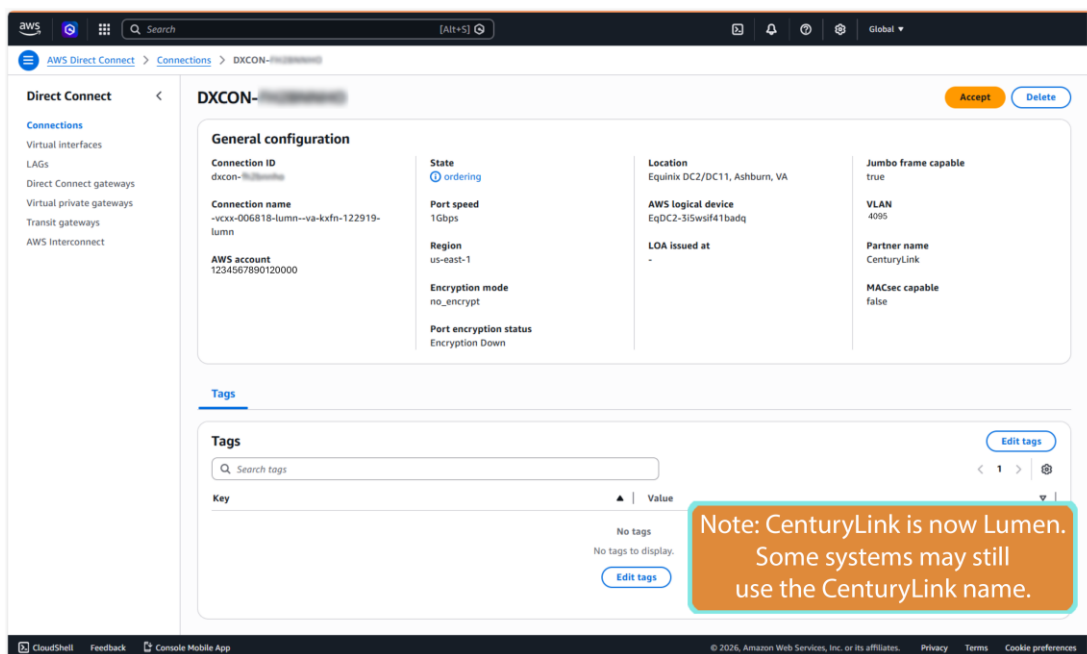
Step 3: Complete the AWS connection

To complete the connection in AWS:

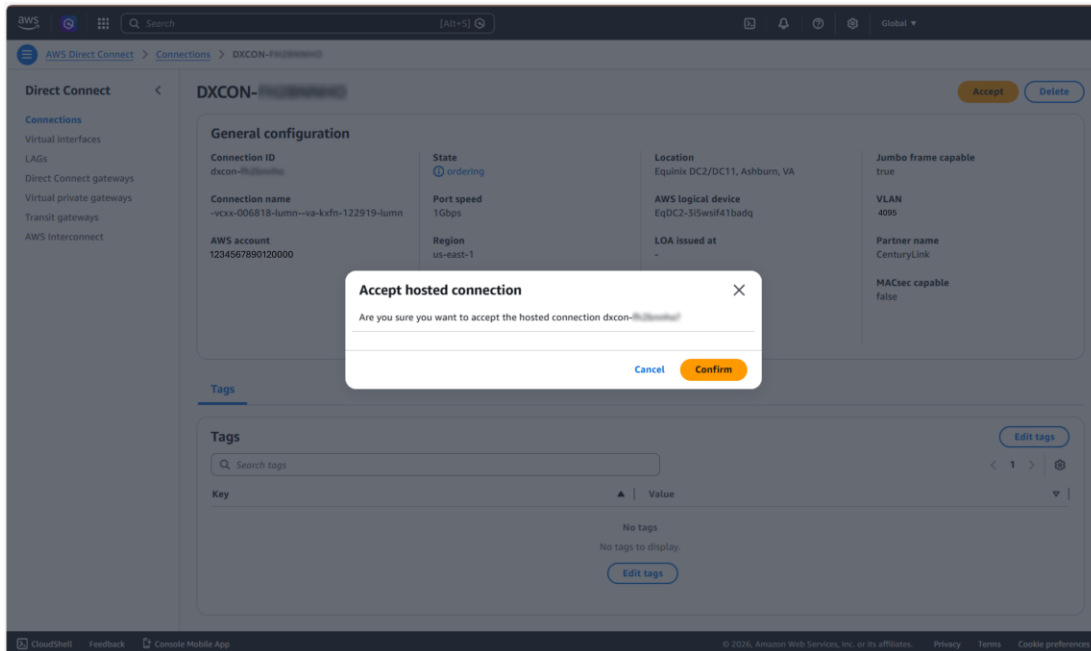
1. Go to the [AWS Management Console](#) and sign in.
2. Navigate to the the Direct Connect Console
 - AWS Console > Services > Direct Connect
3. Select the ID of the connection in the **State** showing **ordering**



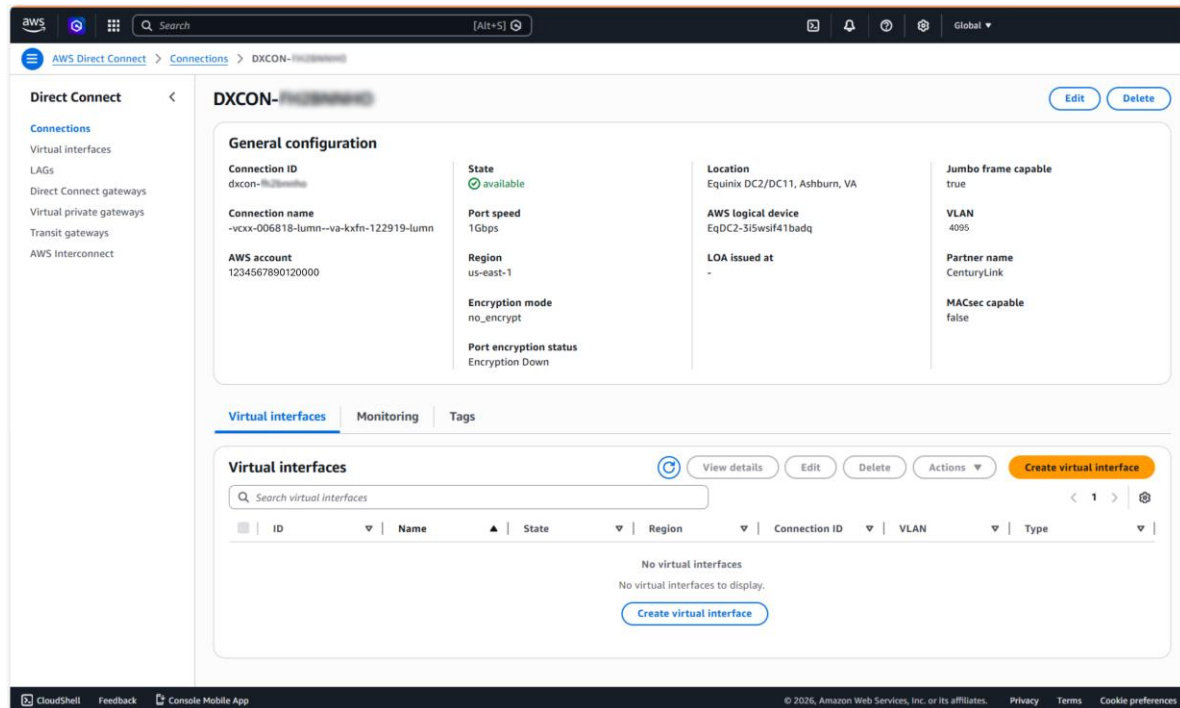
4. Click **Accept**



5. A pop-up will ask you to confirm a second time. Click **Confirm**



6. Once the connection State is **available**, Click **Create virtual interface**



-
7. Complete the connection details (you will need to expand Additional settings)
 - Virtual interface type - select Private
 - Virtual interface name - name the interface
 - Connection - select the connection that was just accepted
 - Virtual interface owner
 - My AWS Account if connecting to your own VPC
 - Another AWS Account if sharing with a 3rd Party Partner/Vendor
 - Gateway Type - Virtual Private Gateway
 - Virtual Local Area Network (VLAN) - do not change
 - BGP ASN - 3549
 - Your router peer IP - Lumen Router Peer IP from Lumen ConnectSM
 - Amazon router peer IP - Cloud Provider Router Peer IP from Lumen ConnectSM
 - BGP authentication key - BGP Auth Key from Lumen ConnectSM

 8. Click **Create virtual interface**

Create virtual interface

You can create a private virtual interface to connect to your VPC. Or, you can create a public virtual interface to connect to AWS services that aren't in a VPC, such as Amazon S3 and Glacier. For private virtual interfaces, you need one private virtual interface for each VPC to connect to from the AWS Direct Connect connection, or you can use an AWS Direct Connect gateway. [Learn more](#)

Virtual interface type

Type

- Private**
A private virtual interface should be used to access an Amazon VPC using private IP addresses.
- Public**
A public virtual interface can access all AWS public services using public IP addresses.
- Transit**
A transit virtual interface is a VLAN that transports traffic from a Direct Connect gateway to one or more transit gateways.

Private virtual interface settings

Virtual interface name
A name to help you identify the new virtual interface.
Lumen-Private-VIF-Test
Name must contain no more than 100 characters. Valid characters are a-z, 0-9, and hyphens (-).

Connection
The physical connection on which the new virtual interface will be provisioned.
vcxx-006818-lumn--va-kxfn-122919-lumn

Virtual interface owner
The account that will own the virtual interface.
 My AWS account
 Another AWS account

Gateway type
Gateway type for this virtual interface.
 Direct Connect Gateway - recommended
Allows connections to multiple VPCs and Regions.
 Virtual Private Gateway
Allows connections to a single VPC in the same Region.

Virtual private gateway
A virtual private gateway attached to a VPC you wish to connect to.
Lumen-Test

Virtual Local Area Network (VLAN)
The Virtual Local Area Network number for the new virtual interface.
2299
Valid ranges are 1 - 4094

BGP ASN
The Border Gateway Protocol (BGP) Autonomous System Number (ASN) of your on-premises router for the new virtual interface.
3549
Valid ranges are 1 - 4294967294.

Additional settings

Address family - optional
Determines whether the virtual interface is created with an IPv4 or IPv6 peering.
 IPv4
 IPv6

Your router peer IP - optional
The BGP peer IP configured on your endpoint.
198.51.100.1/30

Amazon router peer IP - optional
The BGP peer IP configured on the AWS endpoint.
198.51.100.2/30

BGP authentication key - optional
The password that will be used to authenticate the BGP session.
BGP-AUTH-KEY-000000000000

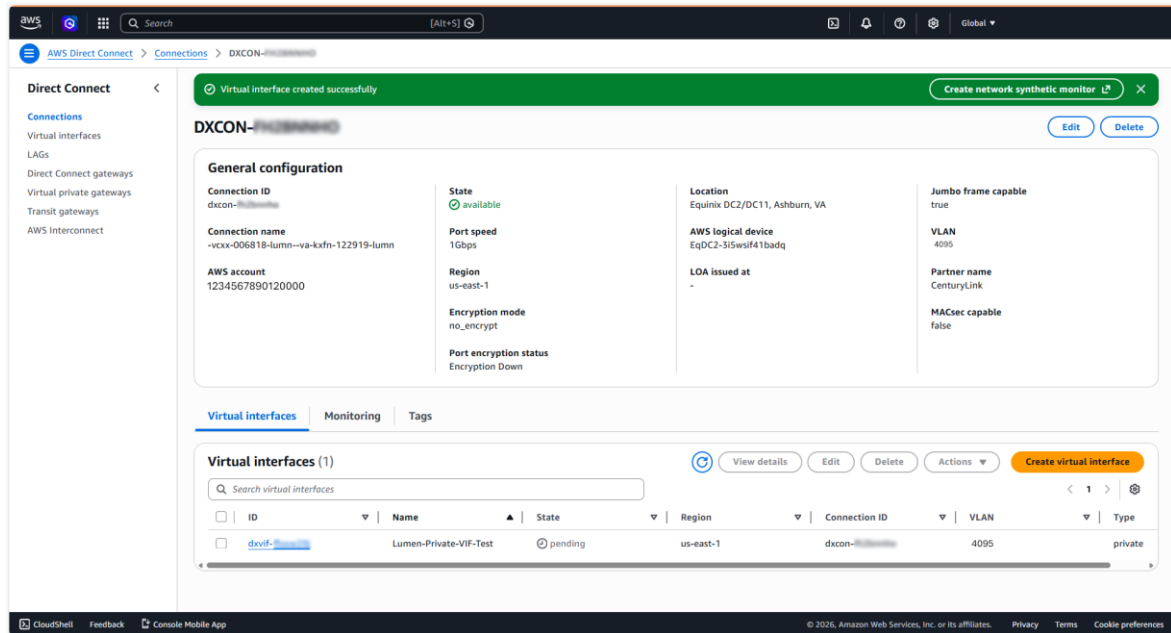
Jumbo MTU (MTU size 9001) - optional
Allow MTU size of 9001 on virtual interface.
 Enabled

Enable SiteLink - optional
Enable direct connectivity between Direct Connect points of presence. Subject to additional charges. [Learn more](#)
 Enabled

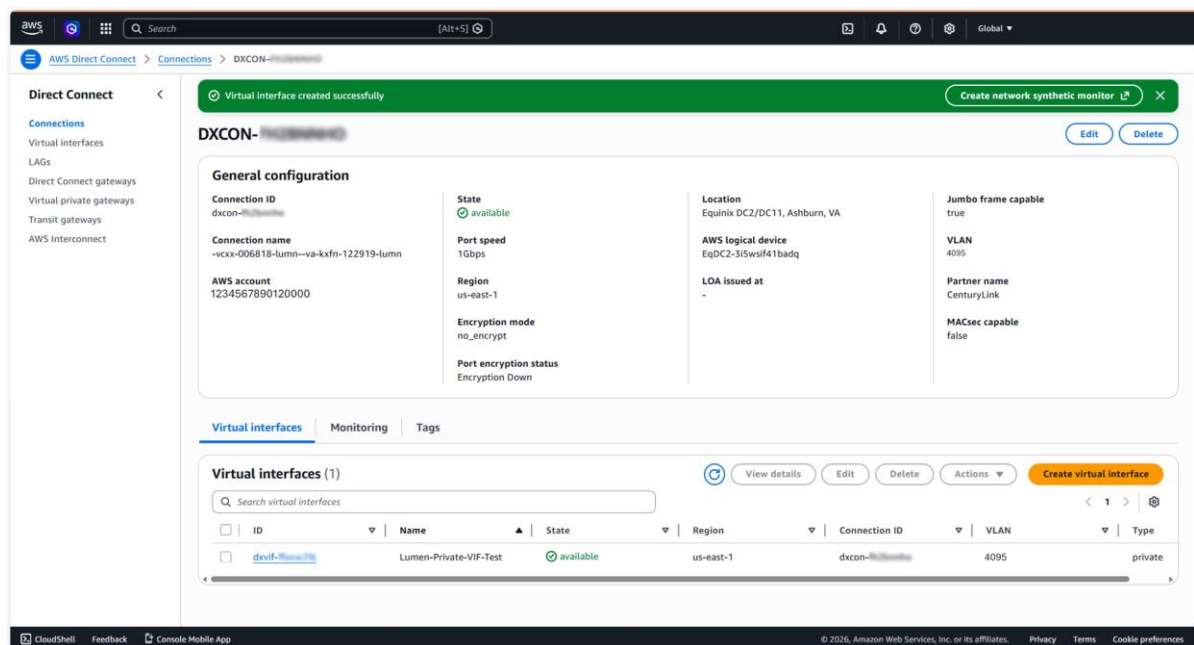
Tags
Specified tags to help identify a AWS Direct Connect resource.
No tags associated with the resource
[Add tag](#)

[Cancel](#) [Create virtual interface](#)

- A new window will be shown and a message will display **Virtual interface create successfully**. The connection **State** will show as **pending**.



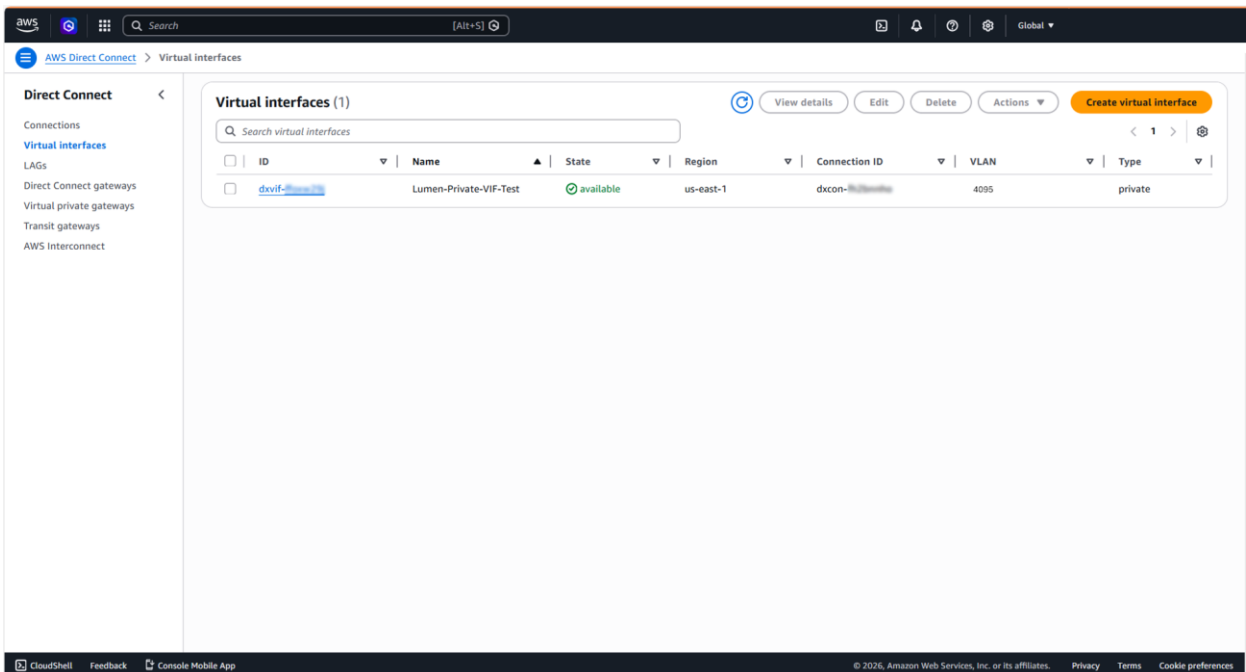
- After a few minutes, the connection **State** will show as **available** meaning the BGP peer between Lumen and AWS is now active.



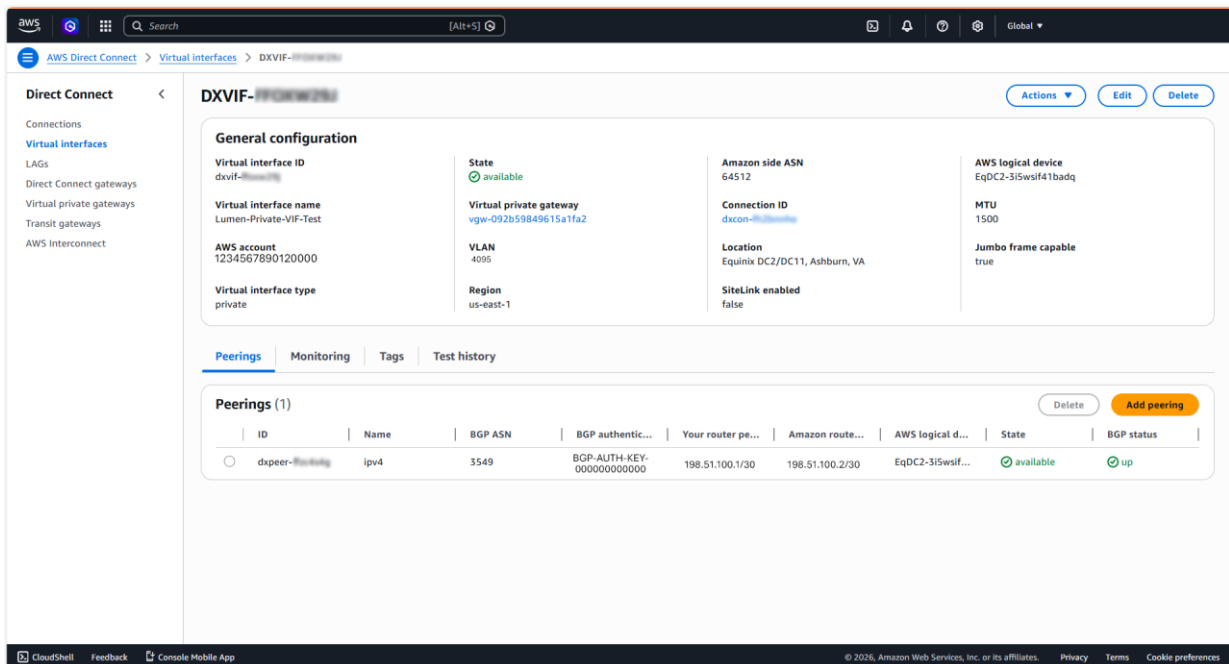
Note: For detailed guidance on configuring your AWS networking, refer to the [AWS Direct Connect Documentation](#). If you'd like personalized support, please contact your Lumen Account Team to explore our professional services for AWS management.

Disconnect Lumen Network-as-a-Service IP VPN On-Demand to a Private VIF with Virtual Private Gateway

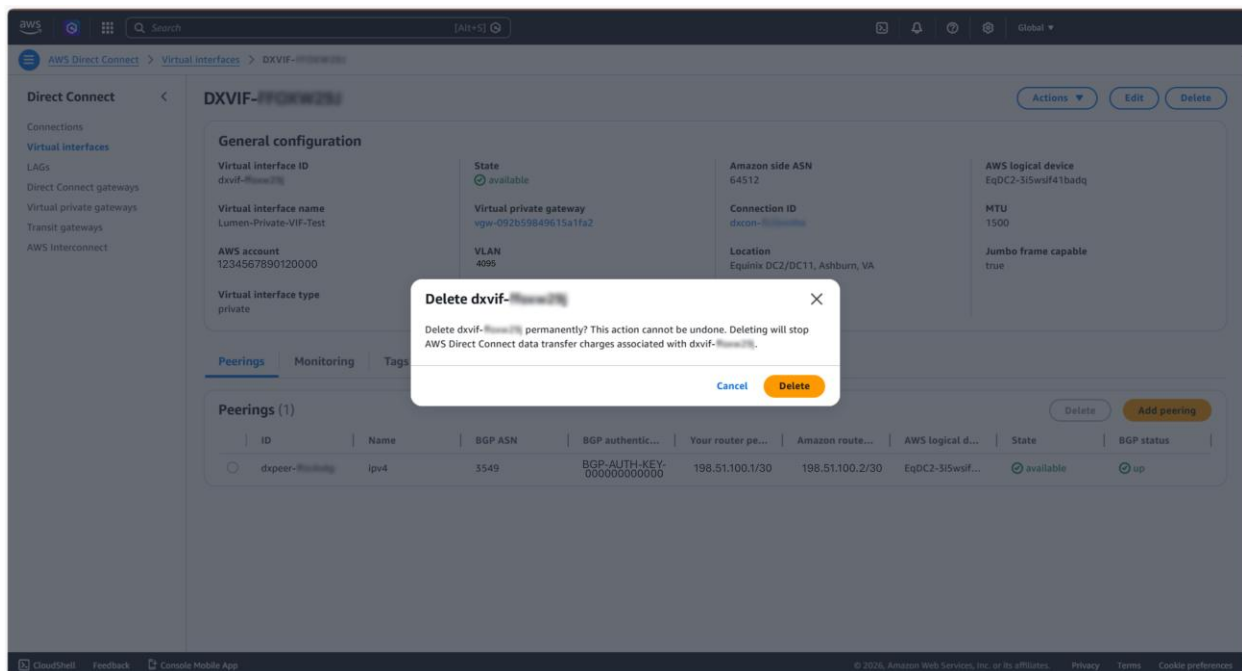
1. Sign in to the [AWS Console](#).
2. Navigate to AWS Direct Connect > Virtual Interfaces
3. Select the Virtual Interface associated with the IP VPN On-Demand service that is being disconnected.



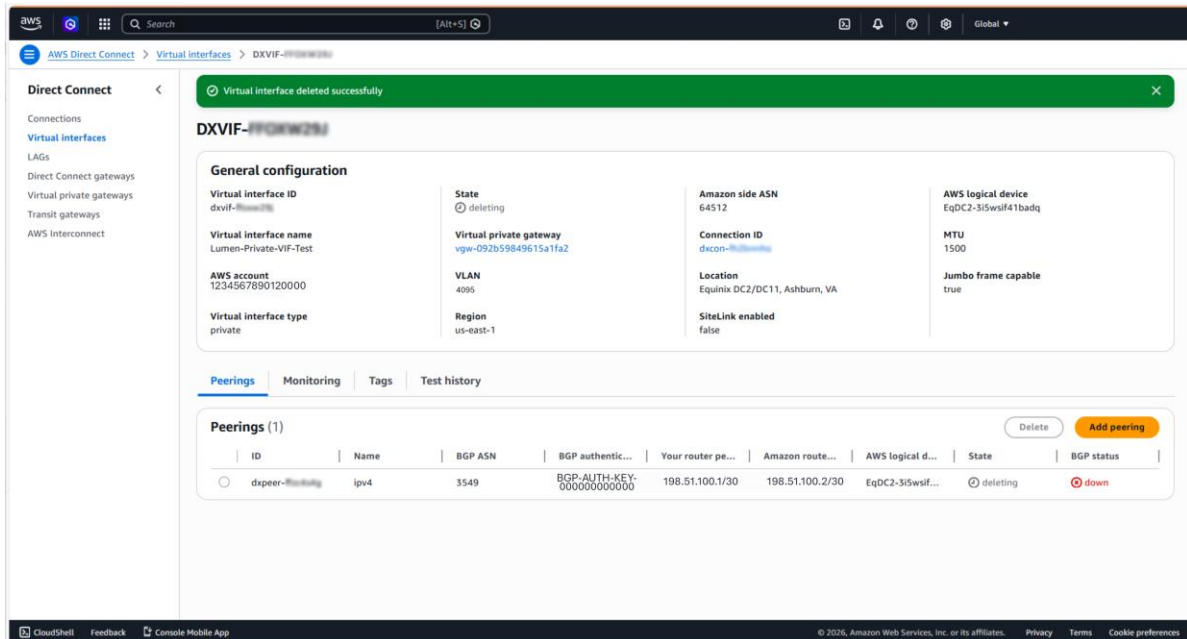
4. In the upper right-hand corner, click **Delete**



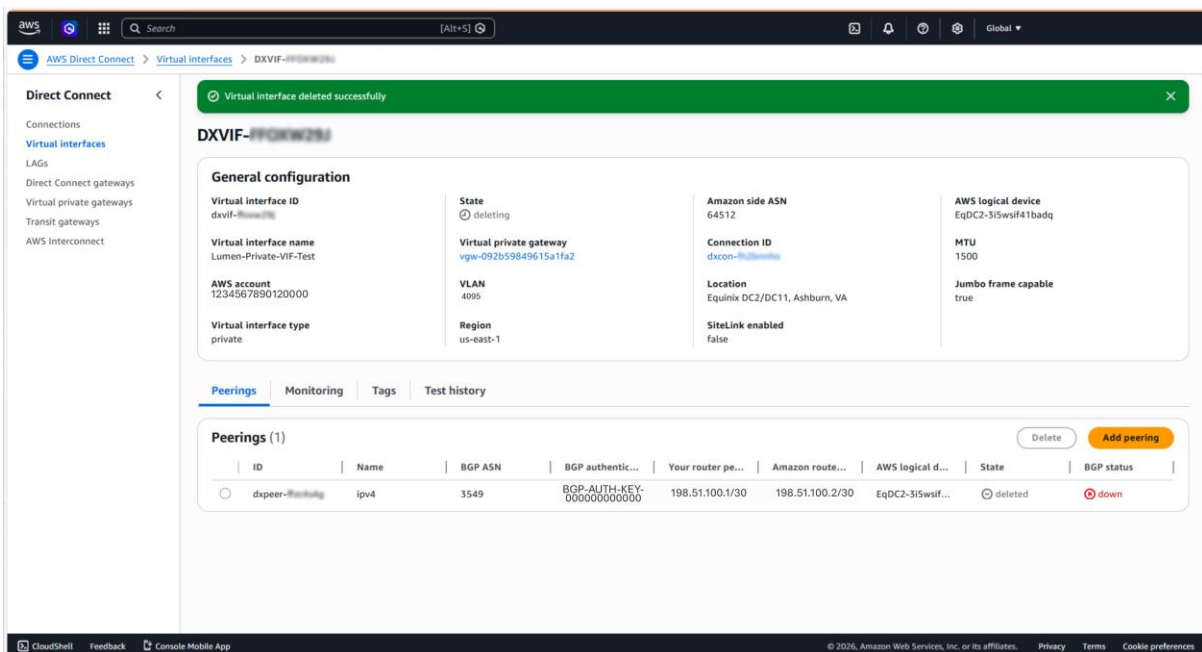
5. A pop-up will appear asking to confirm. Click **Delete** again.



- A new window will be shown, and a message will display **Virtual interface deleted successfully**. The connection **State** will show as **deleting**.



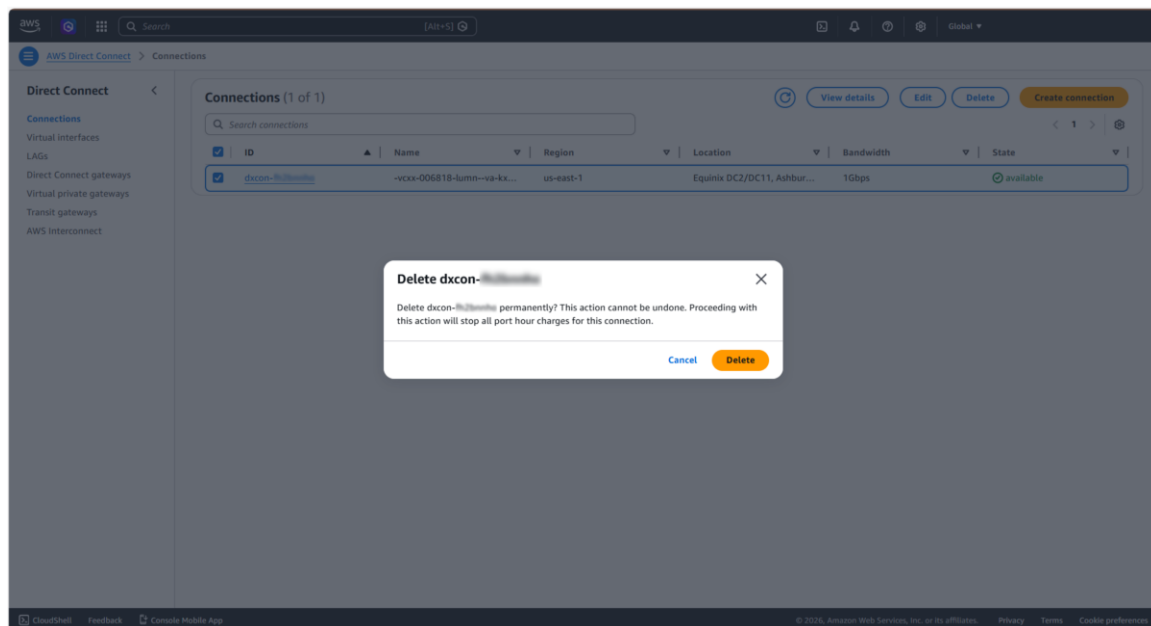
- After a few minutes, the message will display **Virtual Interface deleted successfully** and the connection **State** will show as **deleted**.



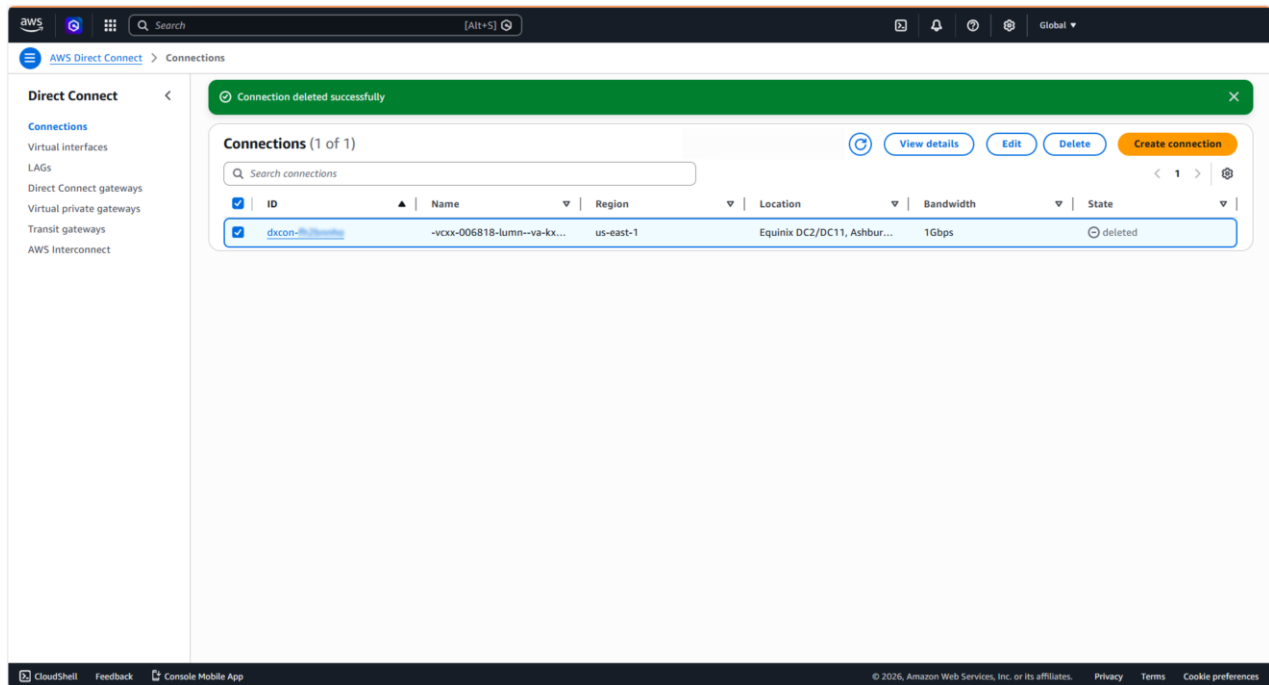
- Navigate back to Direct Connect > Connections, select the box next to the Connection ID associated with the IP VPN On-Demand service that is being disconnected, and click Delete in the upper right-hand corner.



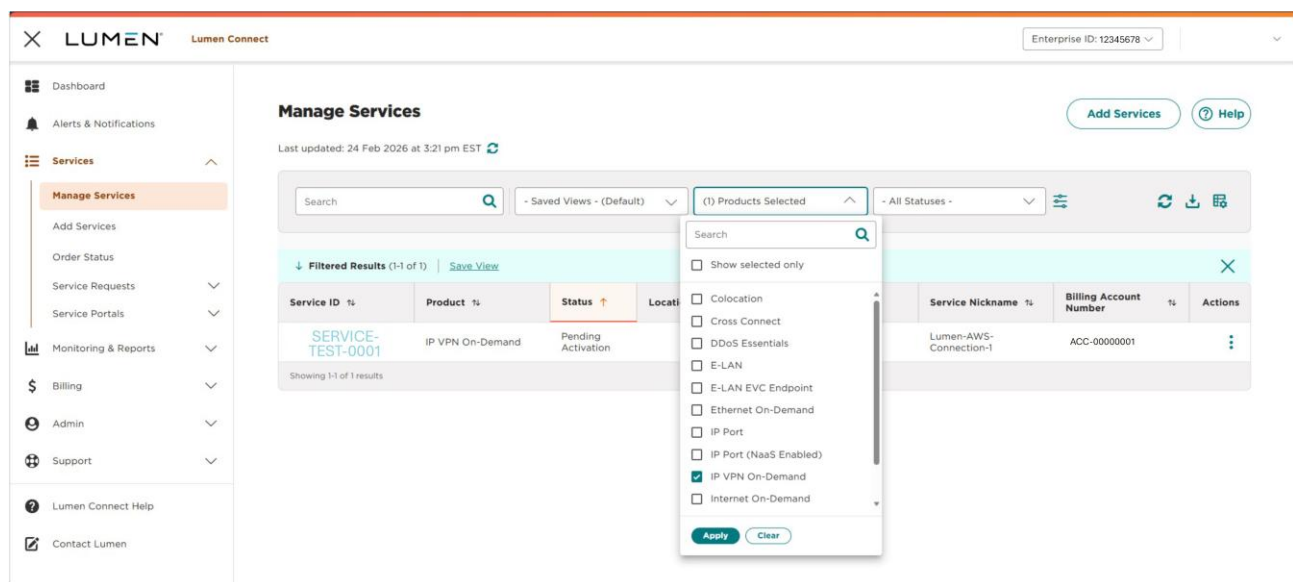
- A pop-up will appear asking to confirm. Click **Delete** again.



10. A message will show **Connection deleted successfully** and the connection **State** will show **deleted**.



11. Within Lumen ConnectSM you can now select the **Manage Services, filter by Product, select IP VPN on-Demand** to locate the Service ID of the connection you want to disconnect.



12. Select the Service ID of the connection you want to disconnect and click **Disconnect**

13. Check the box to confirm the change and click **Confirm Disconnect**

14. A pop-up will display **Disconnect Accepted - Successful Disconnect Request**. You may now click **CLOSE**.

Disconnect Accepted ✕

✔ **Successful Disconnect Request**

Once the disconnect is completed, service details will be emailed to you.

Confirmation Details

Order & Billing Information

Service ID	SERVICE-TEST-0001
Service Nickname	Lumen-AWS-Connection-1
Approved By	Matthew Alford

[Close](#)

15. Once complete, the **Summary** page will show the **Status** as **Disconnected**.

✕ LUMEN Lumen Connect
Enterprise ID: 12345678

- Dashboard
- Alerts & Notifications
- Services
 - Manage Services
 - Add Services
 - Order Status
 - Service Requests
 - Service Portals
- Monitoring & Reports
- Billing
- Admin
- Support
- Lumen Connect Help
- Contact Lumen

< Manage Services
IP VPN Service Details SERVICE-TEST-0001
Help

Summary

Product IP VPN	Status Disconnected	Service Nickname Lumen-AWS-Connection-1	Creator Matthew Alford
Billing Account ACC-00000001	Customer Account 1234567890120000	Billing Type Monthly	Billing Price \$100.00
Bandwidth 1 Gbps	Start Date 2026/02/24 19:41 GMT	End Date 2026/02/24 20:25 GMT	

Repair Ticket
Disconnect
Update Nickname
Manage Service

From Location

VRF Description
Lumen-AWS-VRF-1

VRF Name
00/VPX/UA/VRH-01-TEST

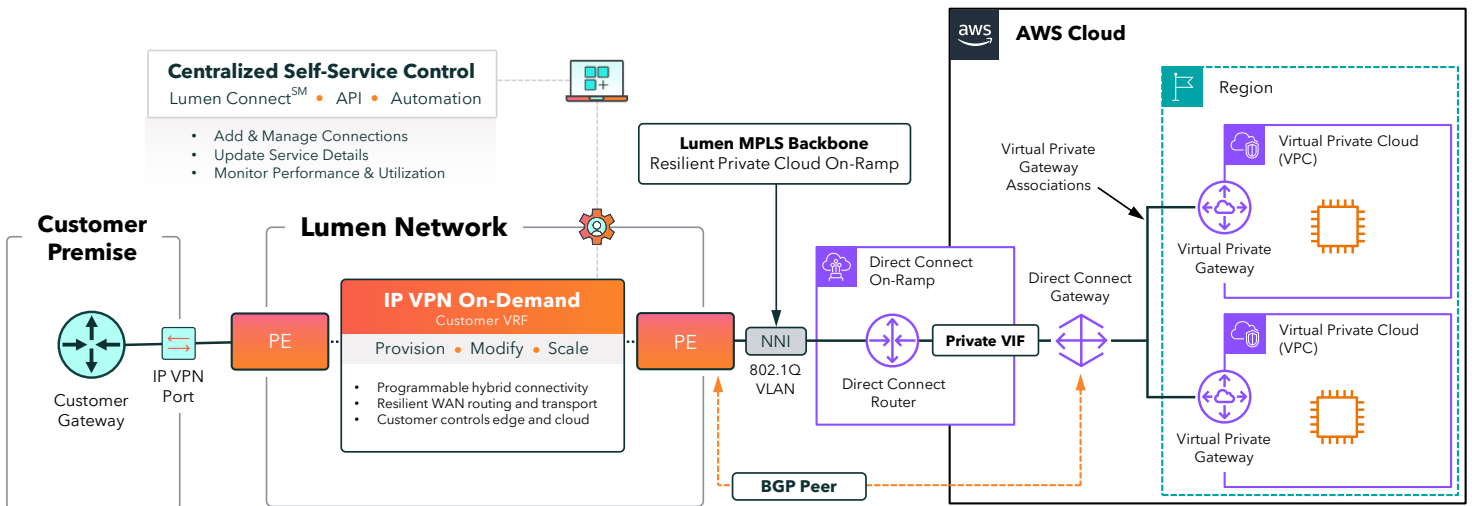
Service Id
SERVICE-TEST-0001

To Location

Provider
AWS

NNI On-Ramp
us-east-1 - US East (N. Virginia) - Ashburn 100G

Deploying Lumen Network-as-a-Service IP VPN On-Demand to a Private VIF with Direct Connect Gateway



Hybrid Connectivity Responsibility Model:



Direct Connect Gateway peering with connectivity to multiple VPCs

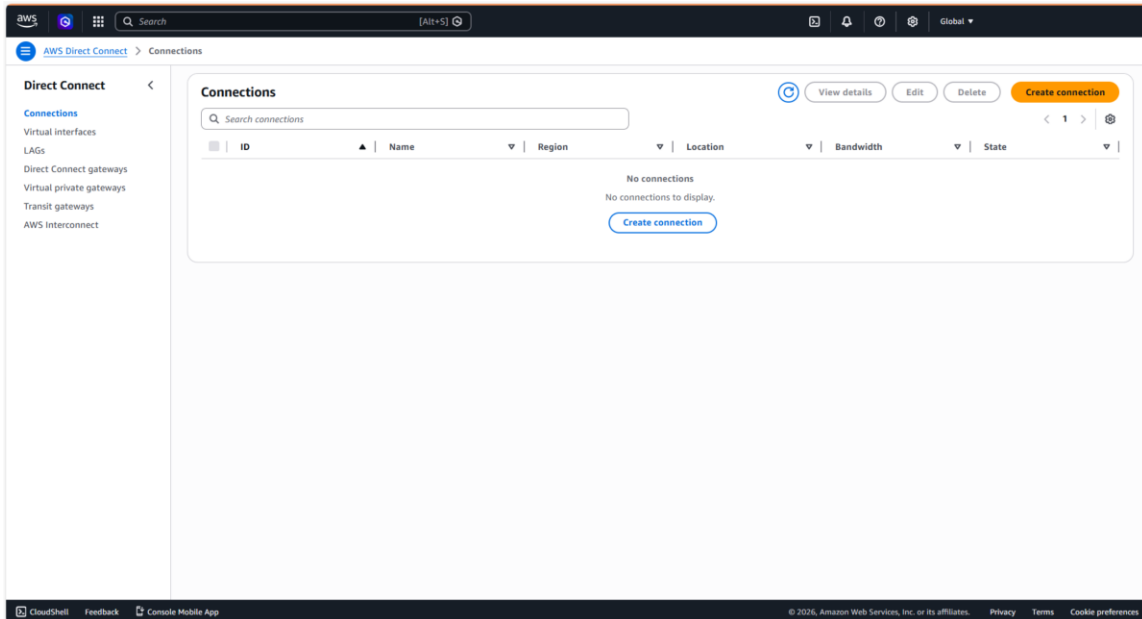
Getting Started Checklist

- Lumen ConnectSM Access** - Confirm you have access to Lumen ConnectSM and are entitled for the **Fabric & On-Demand Services** functionality.
- AWS Account Number** - Ensure you have the correct **12-digit AWS Account ID** that you intend to connect with.
- AWS Console Access** - Verify that you have the necessary **login credentials and permissions** to access the AWS Management Console for the target account.

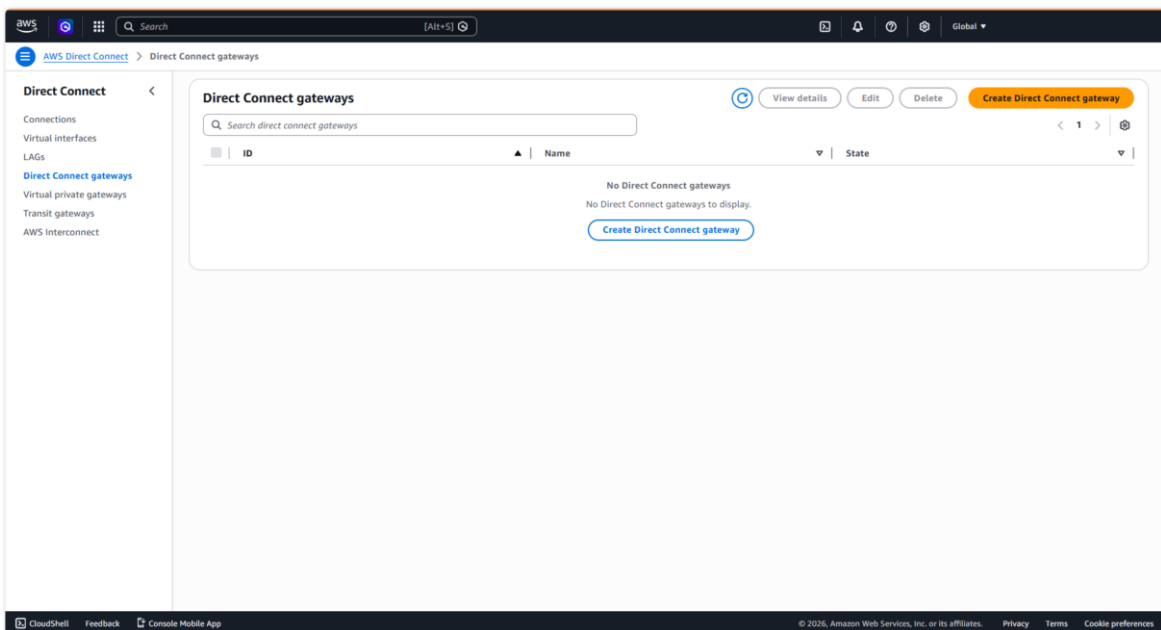
Step 1: Prepare the AWS connection

To prepare the connection in AWS:

1. Sign in to the [AWS Console](#).
2. If you do not already have a **Direct Connect Gateway** open the **Direct Connect Dashboard**
3. All Services > Networking & Content Delivery > Direct Connect
4. On the left-hand side select **Direct Connect gateways**



5. Click **Create Direct Connect gateway**



6. Complete the **Direct Connect gateway settings**

- **Name**
- **Amazon-side ASN**
 1. Custom ASN (if you modify the ASN, make note as you will need it when creating the IP VPN On-Demand Connection)

The screenshot shows the AWS Direct Connect console page for creating a Direct Connect gateway. The page title is "Create Direct Connect gateway" and it includes a brief description: "A Direct Connect gateway allows you to use your Direct Connect connections to access your VPCs in remote AWS Regions. Learn more".

The "Direct Connect gateway settings" section contains two input fields:

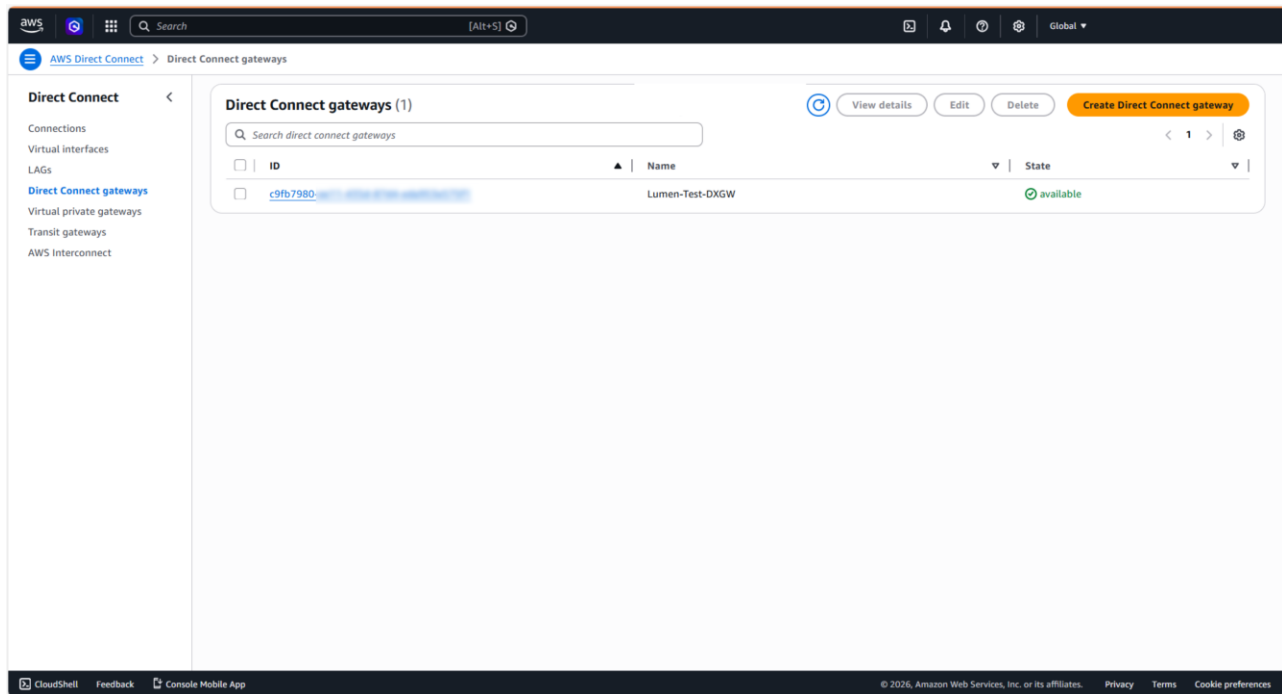
- Name:** A name to help you identify the new Direct Connect gateway. The input field contains "Lumen-Test-DXGW". A note below the field states: "Name must contain no more than 100 characters. Valid characters are a-z, 0-9, and hyphens (-)."
- Amazon-side ASN:** The Autonomous System Number (ASN) for the new Direct Connect gateway. The input field contains "64512". A note below the field states: "Valid ranges are 64512 - 65534 and 4200000000 - 4294967294."

The "Tags" section is titled "Tags" and includes the text "Specified tags to help identify a AWS Direct Connect resource." and "No tags associated with the resource". There is an "Add tag" button.

At the bottom right of the settings area, there are two buttons: "Cancel" and "Create Direct Connect gateway".

7. Click **Create Direct Connect gateway**

8. The **Direct Connect gateways** window will be shown, with the new Direct Connect gateway state as available.



9. Copy your AWS Account ID. You will paste this into Lumen ConnectSM when creating the On-Demand connection.

Step 2: Add the connection in Lumen ConnectSM

To add the IP VPN On-Demand connection:

1. [Sign in to Lumen ConnectSM](#). ([Get help retrieving your username/password.](#))

The screenshot displays the Lumen Connect dashboard. At the top, there's a navigation bar with the Lumen logo and user information (Enterprise ID: 12345678). A left sidebar contains menu items: Dashboard, Alerts & Notifications, Services, Monitoring & Reports, Billing, Admin, Support, Lumen Connect Help, and Contact Lumen. The main content area is titled 'Dashboard' and features a 'Core Capabilities' section with various service management tools and a grid of key metrics: Pay Balance Due (\$0.00), Active Repair Tickets (0), Open Orders (11), Change Requests (0), Disconnect Requests (0), Network Visibility Status (7 Down, 19 Up), Potential Repair Tickets (0), and Security Change Requests (0). Below this is the 'On-Demand Services Overview' section, which includes a map of the United States showing 'Services by Location'. The map has a search bar for 'Port Availability' and filters for 'Available Port Locations', 'Active Services', and 'Connections'. A legend at the bottom of the map identifies symbols for Port, Connection, Cluster, and Port Location Availability. A 'Contact a Specialist' button is located at the bottom right of the map area.

2. Using the left menu click **Services**, then click **Add Services**.

Add Services

Add these services using the Lumen digital experience. If you prefer sales assistance, click the Help button at the bottom of this page.

Self-Serve

Networking

- Internet On-Demand Connection**
Rapidly deploy dedicated internet access. [Learn More](#) [+ Add](#) [View Pricing](#)
- IP VPN On-Demand Connection**
Create real-time layer-3 network connections between your IP VPN endpoints and cloud service providers. [Learn More](#) [+ Add](#) [View Pricing](#)
- Ethernet On-Demand Connection**
Add real-time layer-2 network connections between your locations and partner interconnects or virtual cross connects. [Learn More](#) [+ Add](#) [View Pricing](#)
- Network-as-a-Service (NaaS) Port**
Order a port to add On-Demand services. [Learn More](#) [+ Add](#)
- Dedicated Internet Access (DIA)**
High-performance, dedicated internet for enterprise apps and needs. [Learn More](#) [+ Add](#)
- Wavelength**
Handle up to 400 Gbps with fewer elements for max speed, scalability, etc. [Learn More](#) [+ Add](#)

Edge Cloud

- Secure Access Service Edge (SASE)**
Lumen SASE Solutions integrate SD-WAN and cloud network security functions. [Learn More](#) [+ Add](#)

Cybersecurity

- DDoS Hyper**
Self-serve DDoS protection for critical web assets activated in minutes. [Learn More](#) [+ Add](#)

I don't see what I need

Work with Lumen to find and add a service.
Some services require professional assistance. Contact a Lumen specialist to find additional services by calling 888-836-5226 or clicking Help to chat. [Help](#)

3. Click **+ Add** for IP VPN On-Demand.
4. From the **Customer ID** and **Billing Account Number** lists, select the customer number and billing account number you want to add IP VPN On-Demand to.

Lumen ConnectSM fills in the VRF inventory based on the customer ID and billing account number you selected.

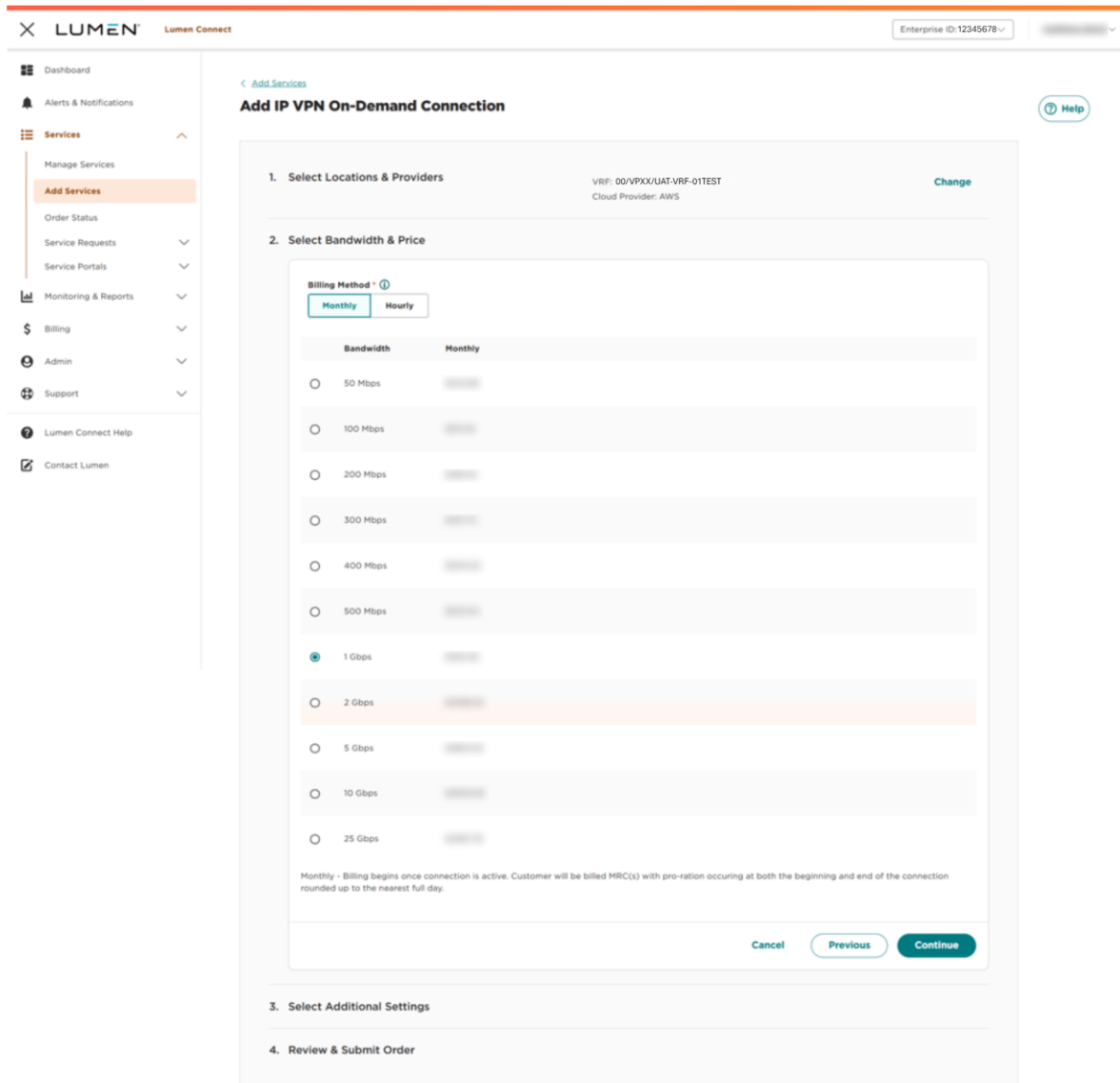
5. In the **Service Nickname** field, type a name for the connection you're creating. (Be sure to use something memorable. This name will appear on your invoice.)

6. In the **From Location (Select Your VRF)** section, select or create a VRF for the other end of your connection.
 - Select the VRF to use for the other end of your connection. Click **View Details** for a VRF to view the VRF's routes.
 - Click **Create New**, then type a description for the new VRF in the **New VRF Description** field. Lumen ConnectSM will create the VRF and activate your VPN service once you create your connection.

The screenshot shows the 'Add IP VPN On-Demand Connection' form in the Lumen Connect interface. The form is titled 'Add IP VPN On-Demand Connection' and is part of the 'Add Services' process. The form is divided into four steps: 1. Select Locations & Providers (current), 2. Select Bandwidth & Price, 3. Select Additional Settings, and 4. Review & Submit Order. The form fields include: Customer ID (SUNDAY UAT 1 (1T8BD)), Billing Account Number (ACC-0000001), Service Nickname (Lumen-AWS-Connection-1), From Location (Select Your VRF) with 'Use Existing VRF' and 'Create New' buttons, New VRF Description (00/VPXX/UAT-VRF-01TEST), Cloud Provider (AWS), AWS Account ID, and Cloud Provider On Ramp (-Select-). There are 'Cancel' and 'Continue' buttons at the bottom right of the form.

7. From the **Cloud Provider** list, select AWS.
8. Fill in the information for the AWS connection:
 1. In the **AWS Account ID** field, type your AWS account ID.
 2. From the **Cloud Provider On-Ramp** list, select an On-Ramp.
9. Click **CONTINUE**.

10. Use the **Billing Method** buttons to select whether you want monthly or hourly billing for the connection, then select the bandwidth for the connection. Bandwidth options are determined by the destination (to location). (You can't change the bandwidth once you create the connection. If you need to choose a different bandwidth after creating the connection, disconnect the connection and create a new one.)



11. Click **CONTINUE**.


12. In the **Select Additional Settings** section, fill in the additional details for the connection:

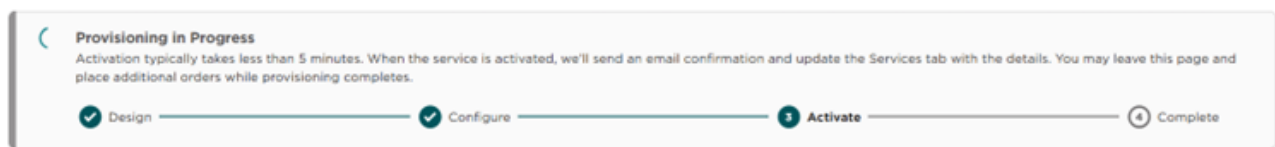
- In the **AS Number on AWS** field, type the autonomous system number from Amazon (ranges from 64512 to 65534 or 4200000000 to 4294967294) used when creating the Direct Connect gateway.
- Select whether this is a primary or backup connection.
 - Primary will set the local-pref to 750
 - Backup will set the local-pref to 700
- In the **IPv4 Routing Option** field, select the radio button for the routing option you want to use for the connection. [Learn more about routing options for an IP VPN connection](#)
- Use the buttons to select whether you want to advertise default routes.

The screenshot shows the Lumen Connect interface for configuring an IP VPN On-Demand Connection. The page is titled "Add IP VPN On-Demand Connection" and includes a sidebar with navigation options like Dashboard, Alerts & Notifications, Services, and Billing. The main content area is divided into four steps:

- 1. Select Locations & Providers:** Shows VRF: 00VPXX/UA1-VRF-01TEST and Cloud Provider: AWS. A "Change" button is visible.
- 2. Select Bandwidth & Price:** Shows 1 Gbps / mo. A "Change" button is visible.
- 3. Select Additional Settings:**
 - Provider Service:** Set to Private.
 - AS Number on AWS:** Set to 64512.
 - Primary/Backup:** Radio buttons for Primary (selected) and Backup.
 - IPv4 Routing Option:** Three radio button options:
 - Aggregate and advertise my RFC 1918 routes:** Selected. Description: Ideal for cloud service providers (CSPs) with restrictive BGP prefix limits like AWS and Google and if most of your prefixes are RFC 1918. Lumen automatically aggregates network prefixes according to RFC 1918 standards to reduce the number of prefixes sent to the CSP. Lumen only advertises network RFC 1918 prefixes: 10.0.0.0/8, 172.16.0.0/12, and 192.168.0.0/16. Note: Aggregates are NOT injected into your routing tables.
 - Advertise all routes except those specified:** Unselected. Description: Allows you to control which routes are advertised to the CSP. Check with your CSP to verify any BGP maximum prefix limits before selecting this option, as it could cause issues with your connection.
 - Deny all routes except those specified:** Unselected. Description: Optimal for CSPs with maximum prefix limits that require reducing advertised prefixes and your prefixes don't fall under RFC 1918 ranges.
 - Advertise Default Routes for IPv4:** Radio buttons for Yes and No (selected).
- 4. Review & Submit Order:** Includes "Cancel", "Previous", and "Continue" buttons.

13. Click **CONTINUE**.
14. Review the order information and correct any missing or invalid selections, then click **SUBMIT ORDER**.

Lumen ConnectSM creates the request for connection, places it in *Pending Activation* status, and routes you to the Services tab so you can monitor the status of the connection. To see status updates, click . Once Lumen assigns the permanent VRF (within five minutes), the connection changes to *Active* status.



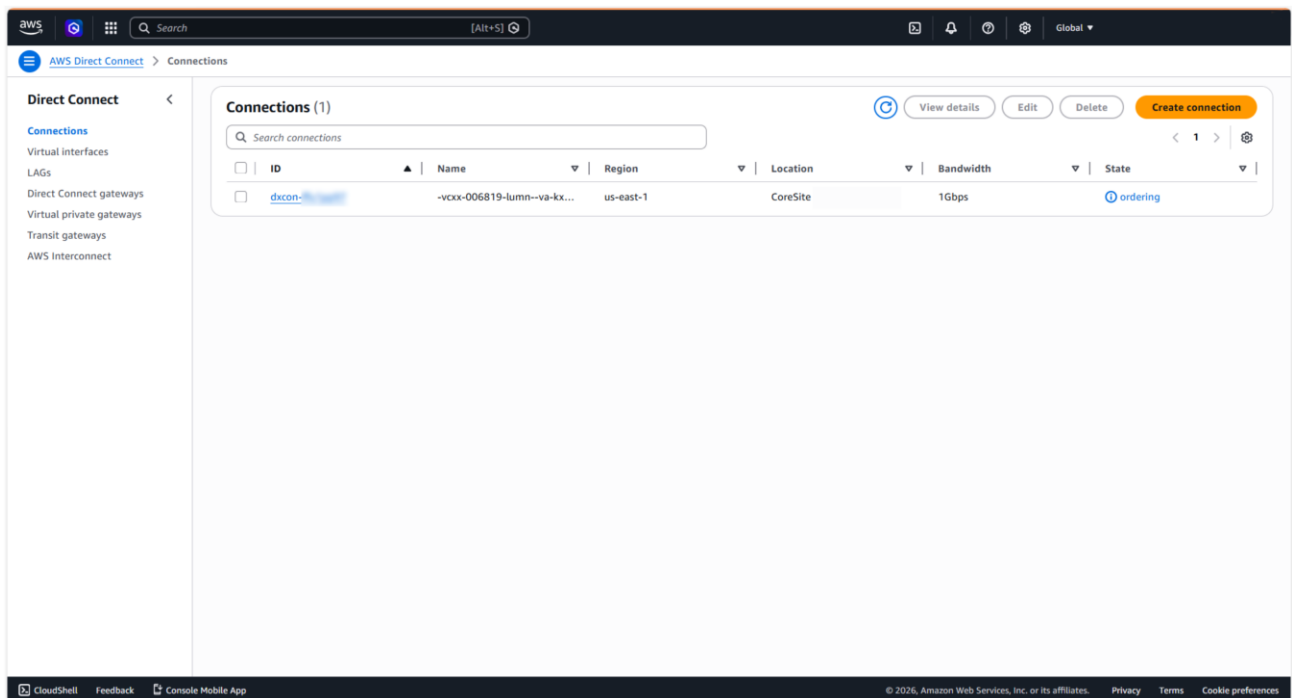
15. If you want to add High Resiliency for this connection, repeat steps 2-12 using the same VRF and a different AWS on-ramp location.

[Learn more about AWS resiliency options](#)

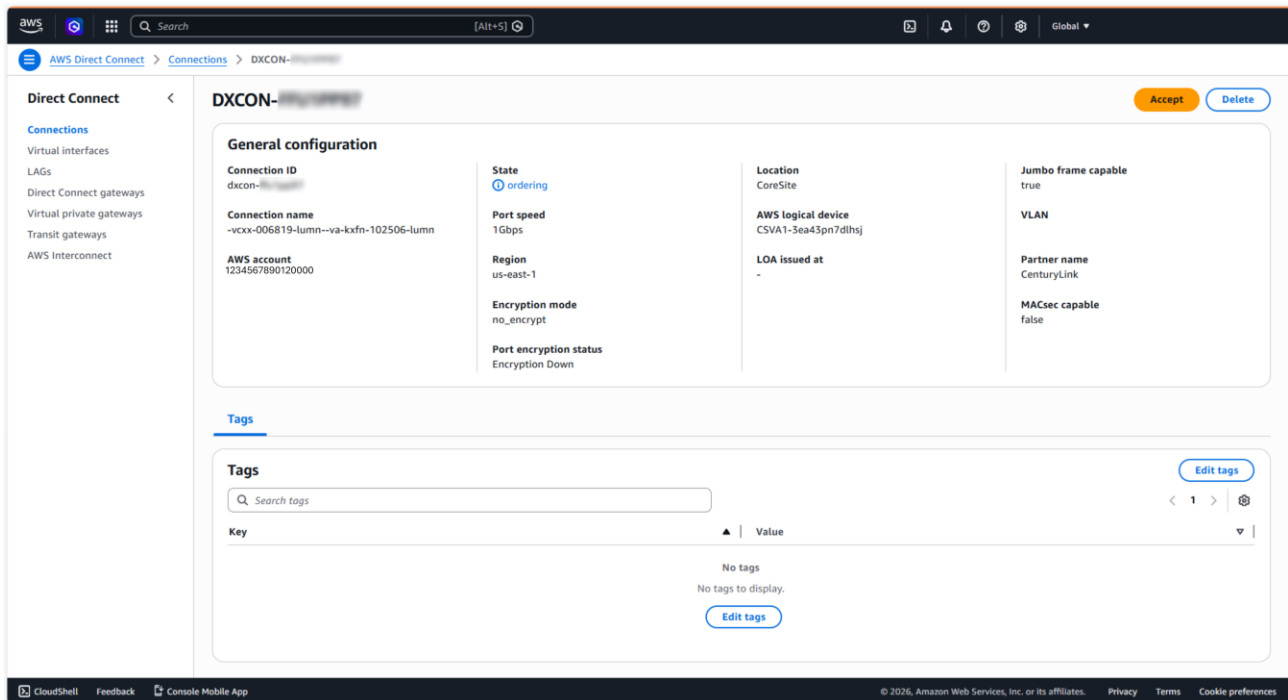
Step 3: Complete the AWS connection

To complete the connection in AWS:

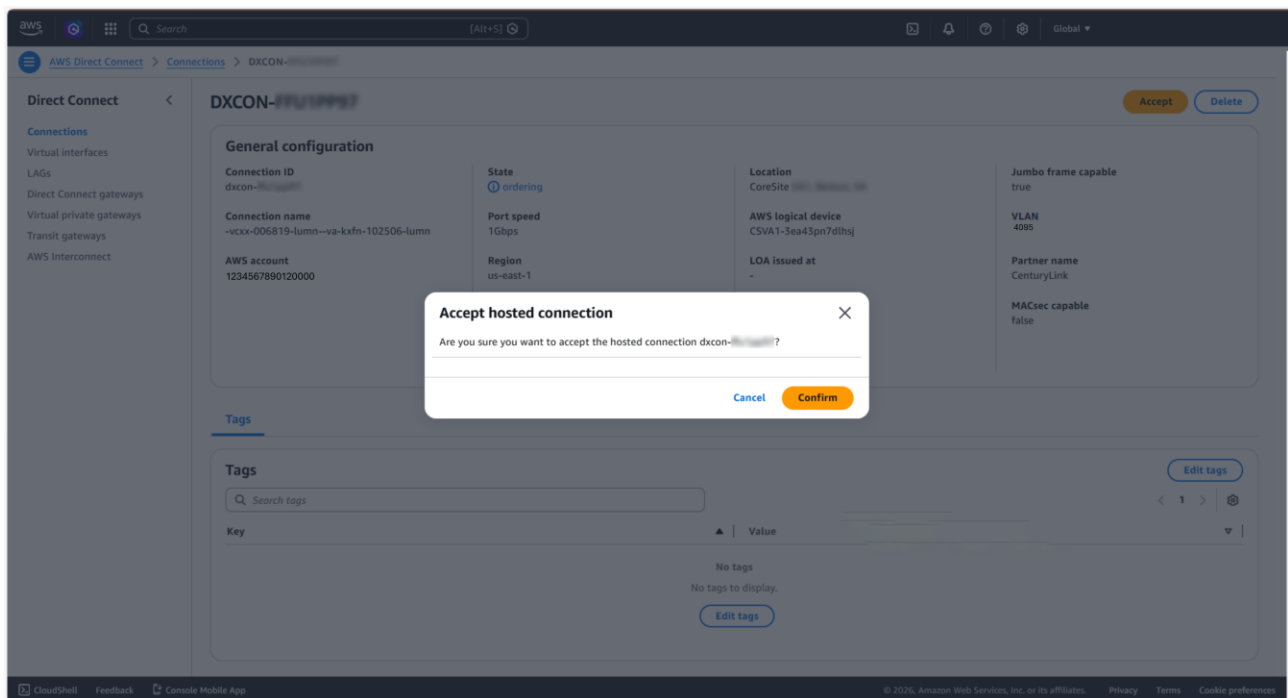
1. Go to the [AWS Management Console](#) and sign in.
2. Navigate to the Direct Connect Console
 - AWS Console > Services > Networking & Content Delivery > Direct Connect
3. Select the ID of the connection in the **State** showing **ordering**



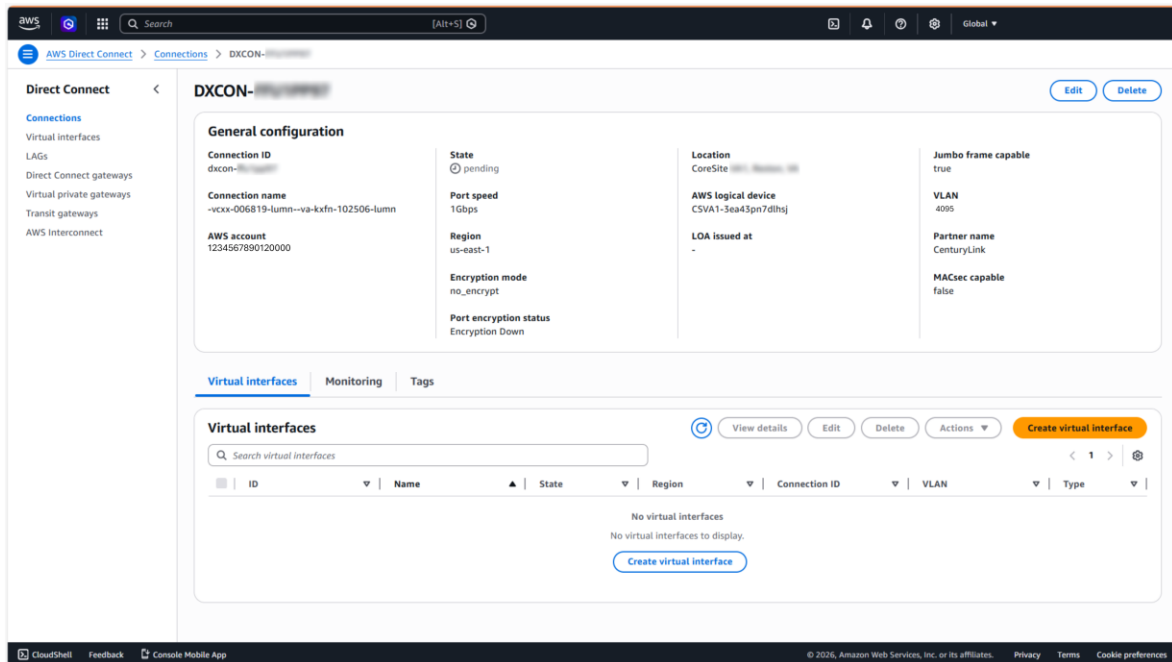
4. Click **Accept**



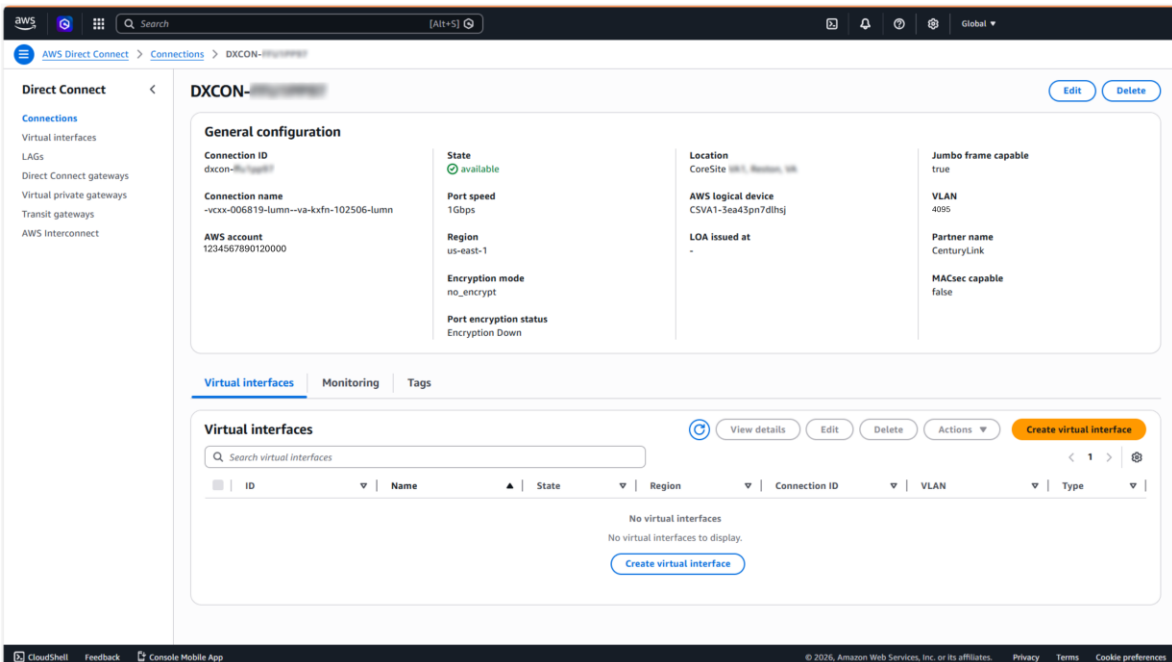
5. A pop-up will ask you to confirm a second time. Click **Confirm**



6. The connection **State** will show **pending**.



7. After a few minutes the connection state will show **available**. Click **Create virtual interface**



-
8. Complete the connection details (you will need to expand Additional settings)
 - Virtual interface type - select Private
 - Virtual interface name - name the interface
 - Connection - select the connection that was just accepted
 - Virtual interface owner
 - My AWS Account if connecting to your own VPC
 - Another AWS Account if sharing with a 3rd Party Partner/Vendor
 - Gateway Type - Direct Connect Gateway
 - Direct Connect gateway - the name of the Direct Connect Gateway being used with the connection
 - Virtual Local Area Network (VLAN) - do not change
 - BGP ASN - 3549
 - Your router peer IP - Lumen Router Peer IP from Lumen ConnectSM
 - Amazon router peer IP - Cloud Provider Router Peer IP from Lumen ConnectSM
 - BGP authentication key - BGP Auth Key from Lumen ConnectSM

 9. Click **Create virtual interface**

aws [Search] [AM+5] Global

AWS Direct Connect > Virtual interfaces > Create

Create virtual interface

You can create a private virtual interface to connect to your VPC. Or, you can create a public virtual interface to connect to AWS services that aren't in a VPC, such as Amazon S3 and Glacier. For private virtual interfaces, you need one private virtual interface for each VPC to connect to from the AWS Direct Connect connection, or you can use a AWS Direct Connect gateway. [Learn more](#)

Virtual interface type

Type

Private
A private virtual interface should be used to access an Amazon VPC using private IP addresses.

Public
A public virtual interface can access all AWS public services using public IP addresses.

Transit
A transit virtual interface is a VLAN that transports traffic from a Direct Connect gateway to one or more transit gateways.

Private virtual interface settings

Virtual interface name
A name to help you identify the new virtual interface.
Lumen-Private-VIF-Test-1
Name must contain no more than 100 characters. Valid characters are a-z, 0-9, and hyphens (-).

Connection
The physical connection on which the new virtual interface will be provisioned.
-vcxx-006819-lumn--va-kxfn-102506-lumn

Virtual interface owner
The account that will own the virtual interface.
 My AWS account
 Another AWS account

Gateway type
Gateway type for this virtual interface.
 Direct Connect Gateway - recommended
Allows connections to multiple VPCs and Regions.
 Virtual Private Gateway
Allows connections to a single VPC in the same Region.

Direct Connect gateway
The Direct Connect gateway to which the new virtual interface will be attached.
Lumen-Test-DXGW

Virtual Local Area Network (VLAN)
The Virtual Local Area Network number for the new virtual interface.
4095
Valid ranges are 1 - 4094

BGP ASN
The Border Gateway Protocol (BGP) Autonomous System Number (ASN) of your on-premises router for the new virtual interface.
3549
Valid ranges are 1 - 4294967294.

Additional settings

Address family - optional
Determines whether the virtual interface is created with an IPv4 or IPv6 peering.
 IPv4
 IPv6

Your router peer ip - optional
The BGP peer IP configured on your endpoint.
198.51.100.2/30

Amazon router peer IP - optional
The BGP peer IP configured on the AWS endpoint.
198.51.100.1/30

BGP authentication key - optional
The password that will be used to authenticate the BGP session.
BGP-AUTH-KEY-000000000000

Jumbo MTU (MTU size 9001) - optional
Allow MTU size of 9001 on virtual interface.
 Enabled

Enable SiteLink - optional
Enable direct connectivity between Direct Connect points of presence. Subject to additional charges. [Learn more](#)
 Enabled

Tags
Specified tags to help identify a AWS Direct Connect resource.
No tags associated with the resource
[Add tag](#)

[Cancel](#) [Create virtual interface](#)

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10. A new window will be shown and a message will display **Virtual interface created successfully**. The connection **State** of the VIF will show as **pending**.

The screenshot displays the AWS Direct Connect console interface. At the top, a green notification banner reads "Virtual interface created successfully". Below this, the "General configuration" section for a connection (DXCON-...) is shown. The configuration includes:

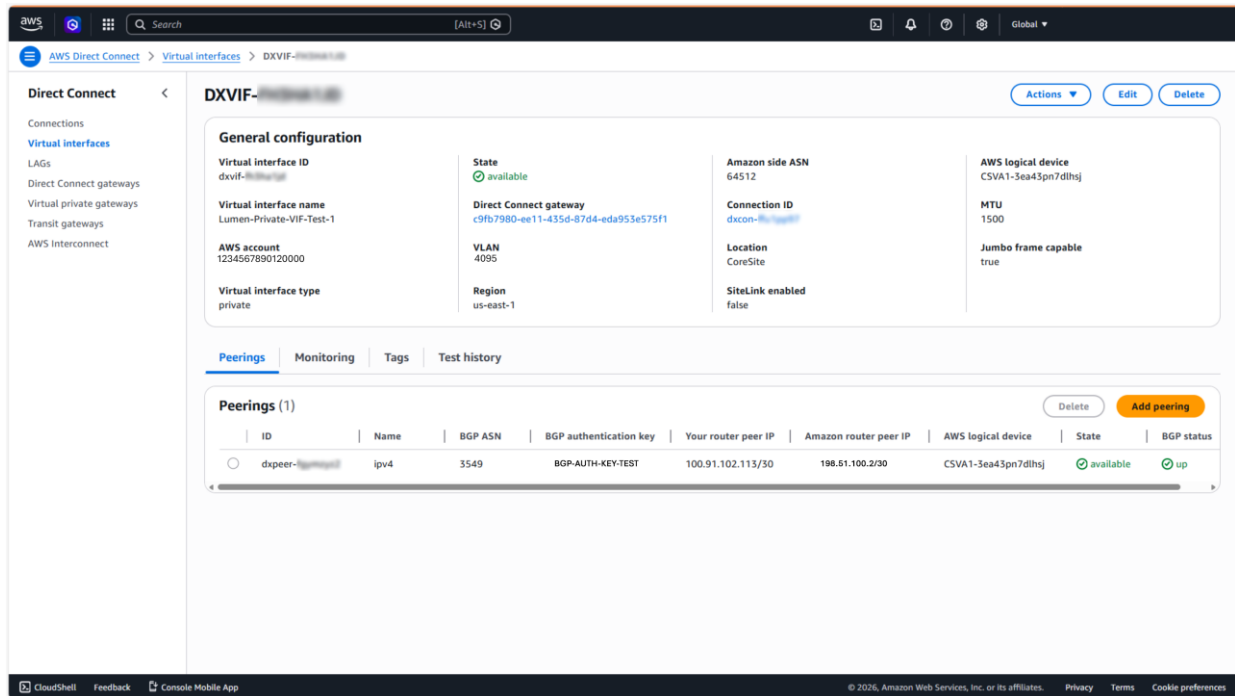
- Connection ID: dxcon-...
- Connection name: -vcxx-006819-lumn--va-kxfr-102506-lumn
- AWS account: 1234567890120000
- State: available
- Port speed: 1Gbps
- Region: us-east-1
- Encryption mode: no_encrypt
- Port encryption status: Encryption Down
- Location: CoreSite
- AWS logical device: CSVA1-3ea45pm7dhsj
- LOA issued at: -
- Jumbo frame capable: true
- VLAN: 4095
- Partner name: CenturyLink
- MACsec capable: false

Below the configuration, the "Virtual interfaces" tab is active, showing a table with one entry:

ID	Name	State	Region	Connection ID	VLAN	Type
dxvif-...	Lumen-Private-VIF-Test-1	pending	us-east-1	dxcon-...	4095	private

11. After a few minutes, the connection **State** will show as **available** and the BGP status will show as up.

Note: This can take a few minutes and the BGP status may show down for some period of time.

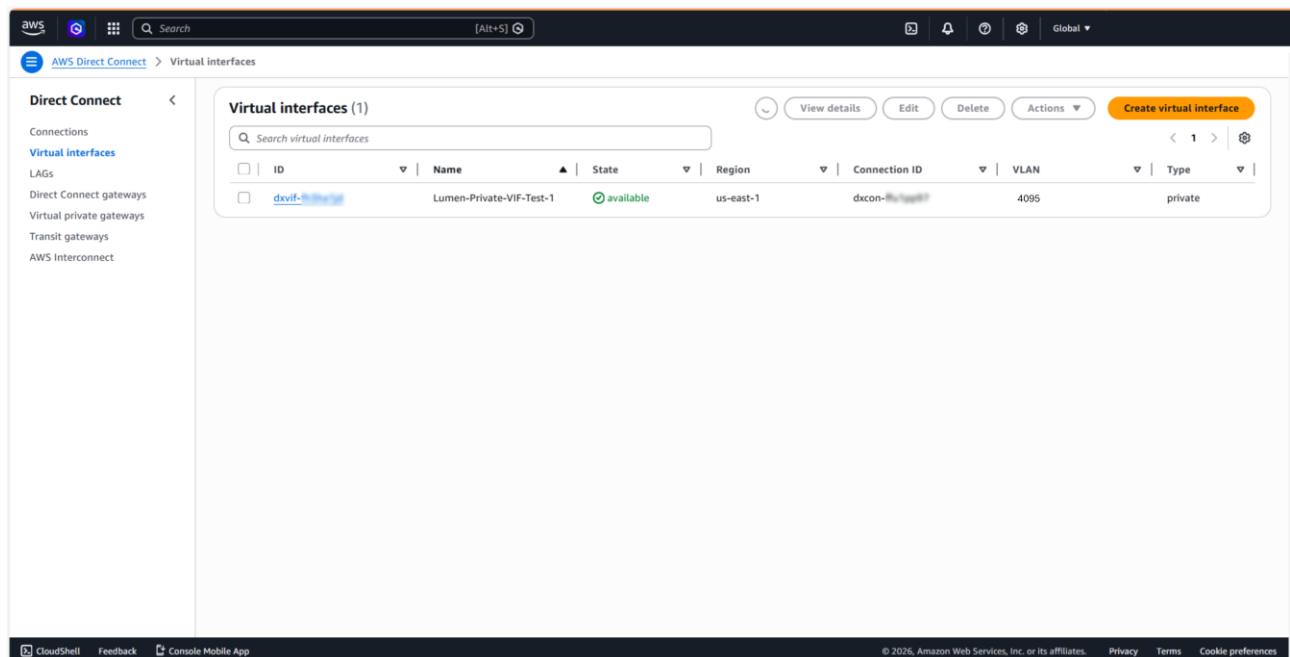


12. Continue AWS Network configuration.

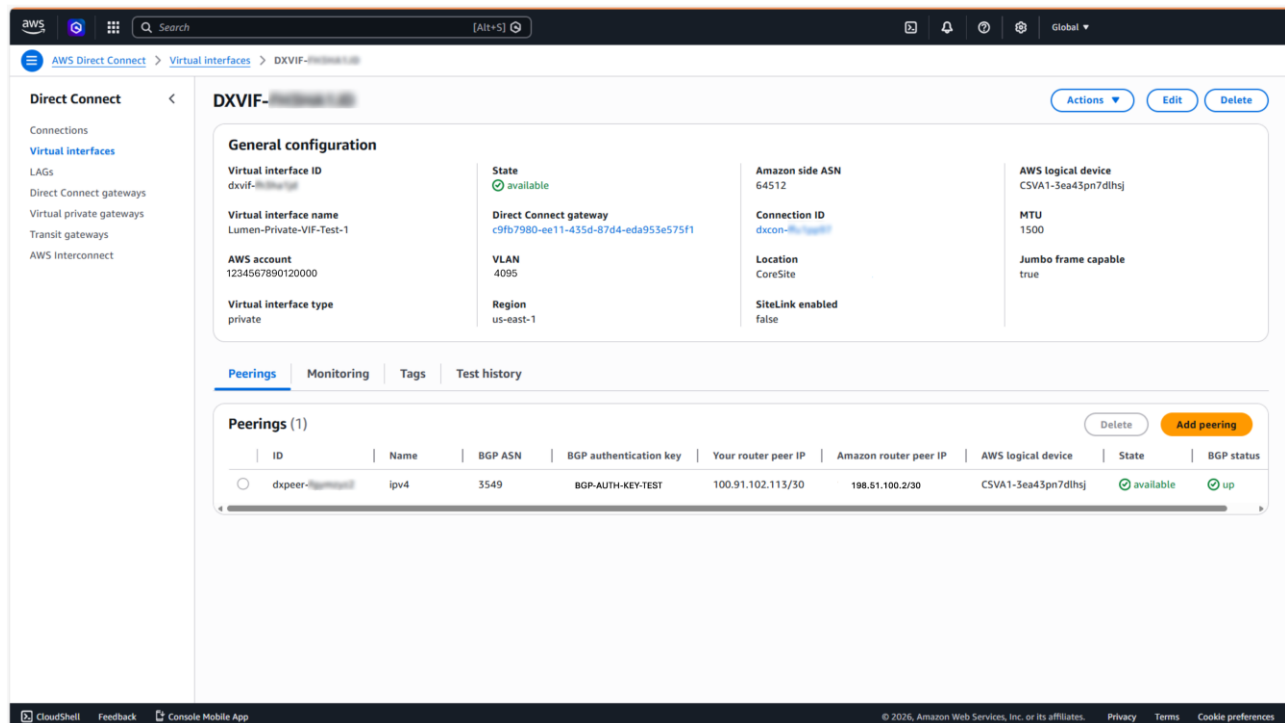
Note: For detailed guidance on configuring your AWS networking, refer to the [AWS Direct Connect Documentation](#). If you'd like personalized support, please contact your Lumen Account Team to explore our professional services for AWS management.

Disconnect Lumen Network-as-a-Service IP VPN On-Demand to a Private VIF with Direct Connect Gateway

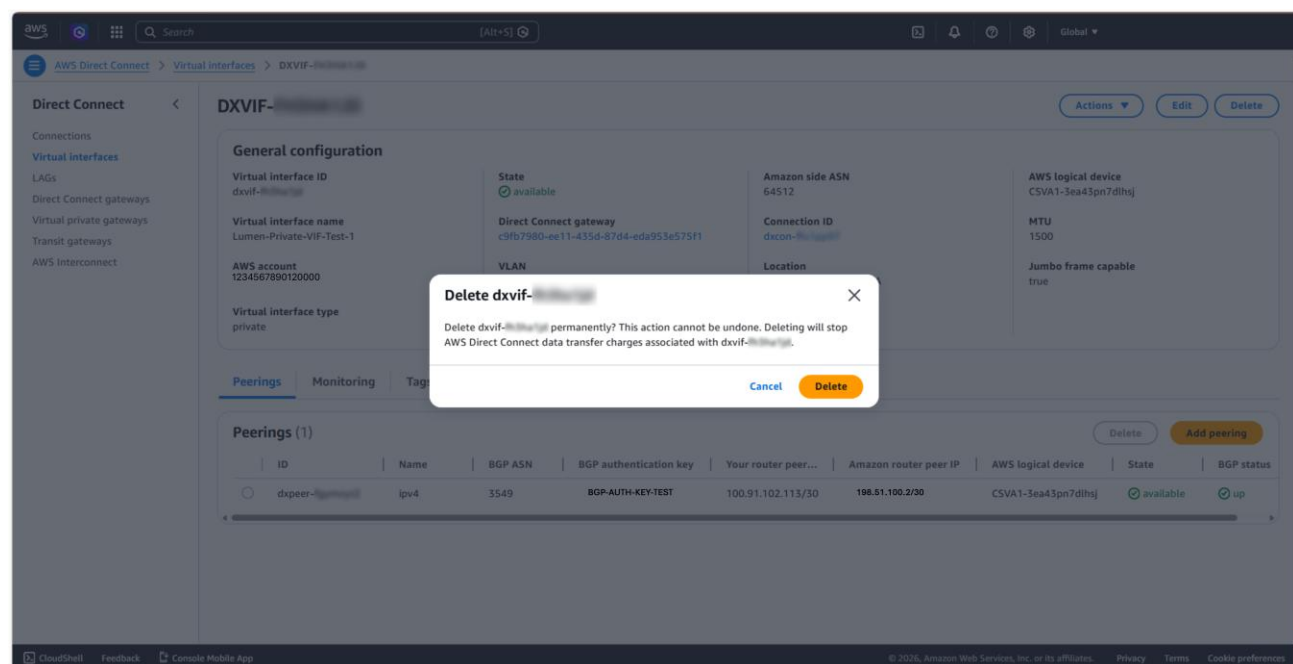
1. Sign in to the [AWS Console](#).
2. Navigate to **AWS Direct Connect > Virtual Interfaces**
3. Select the Virtual Interface associated with the IP VPN On-Demand service that is being disconnected.



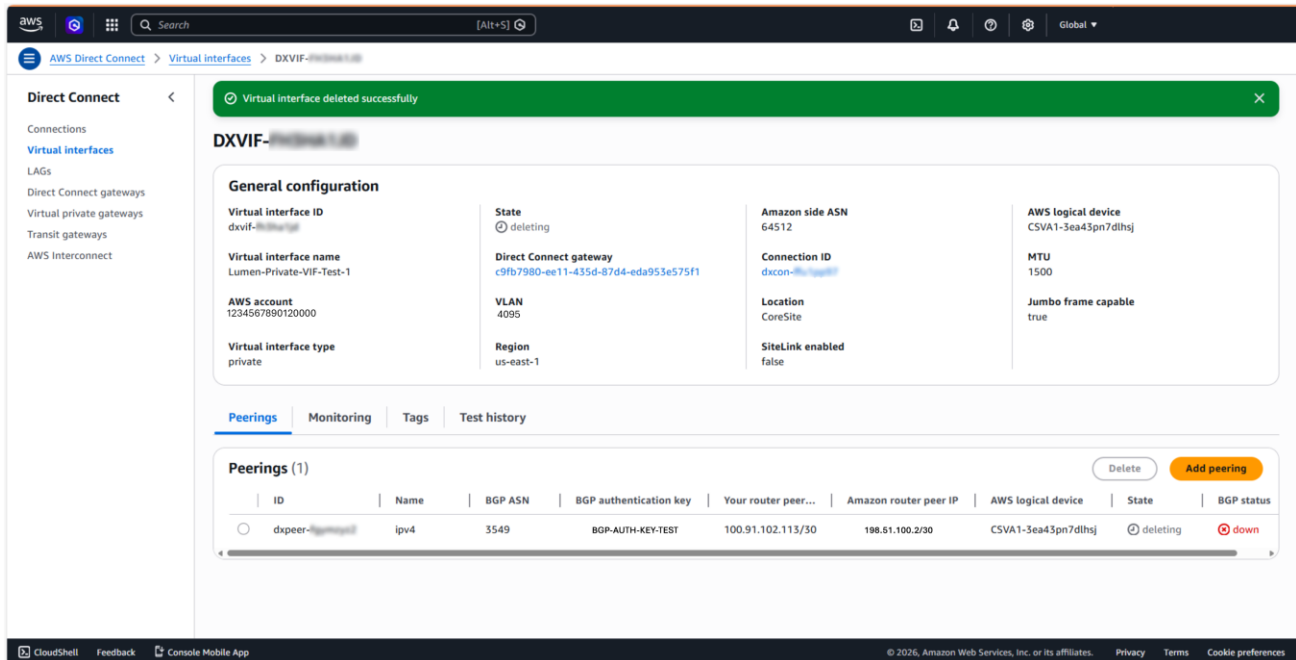
4. In the upper right-hand corner, click **Delete**



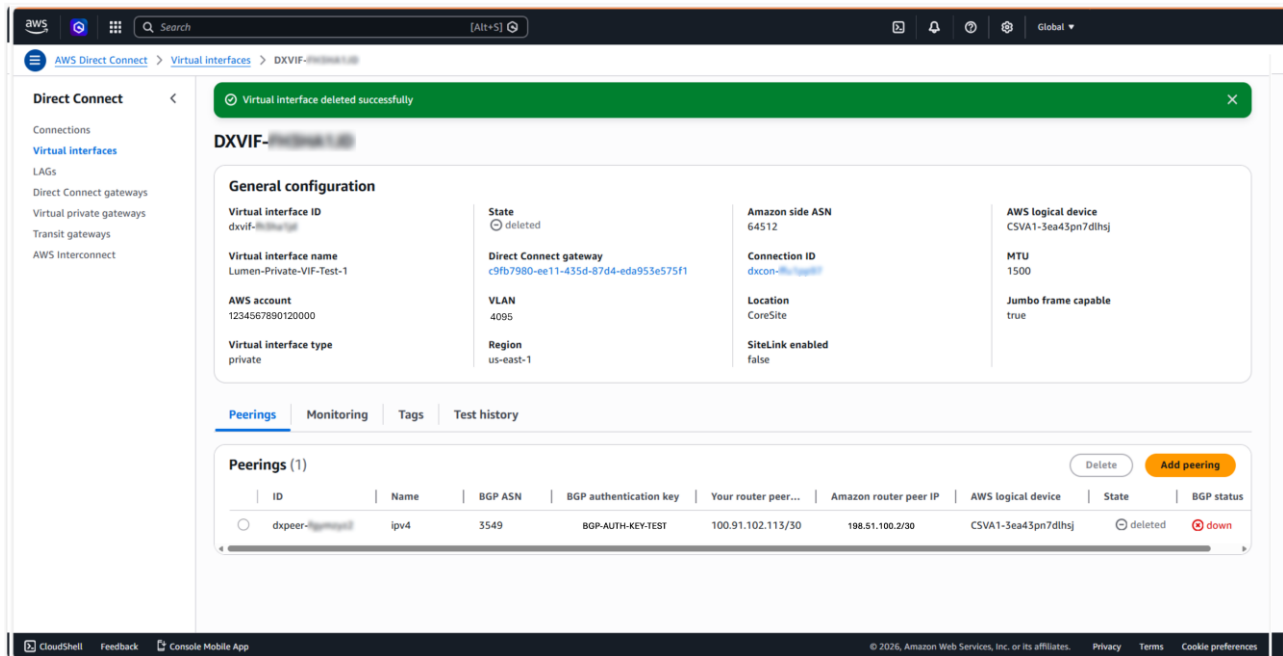
5. A pop-up will appear asking to confirm. Click **Delete** again.



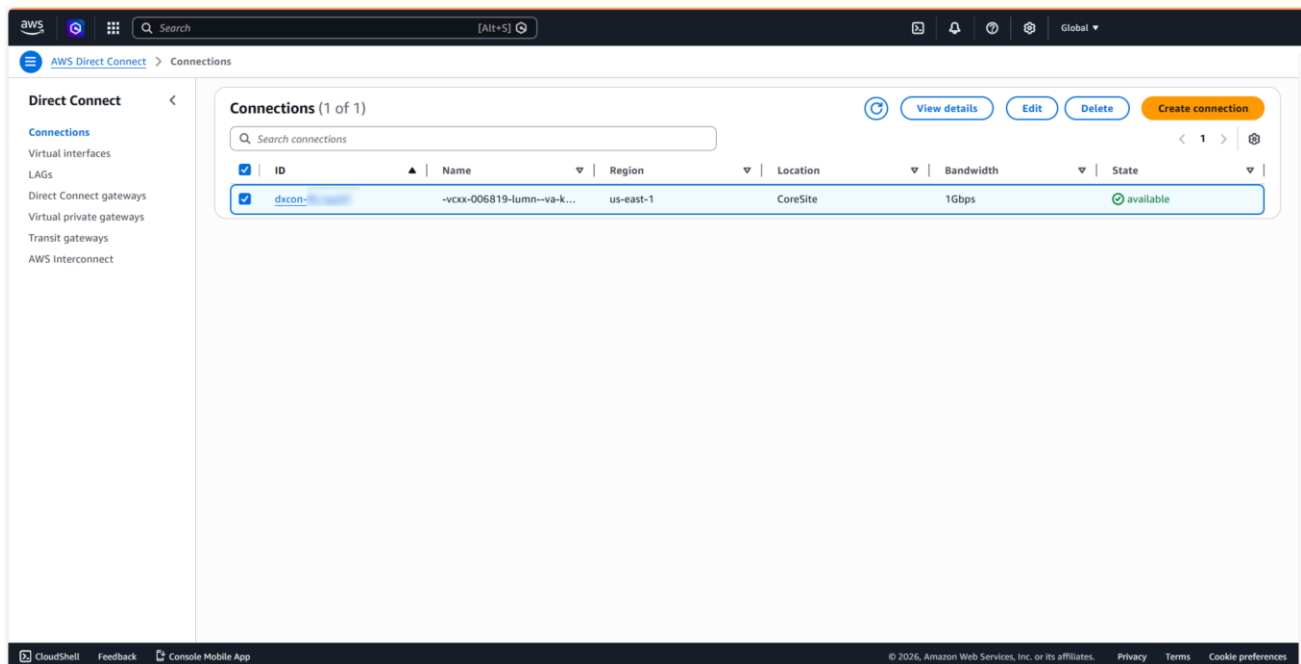
- A new window will be shown, and a message will display **Virtual interface deleted successfully**. The connection **State** will show as **deleting**.



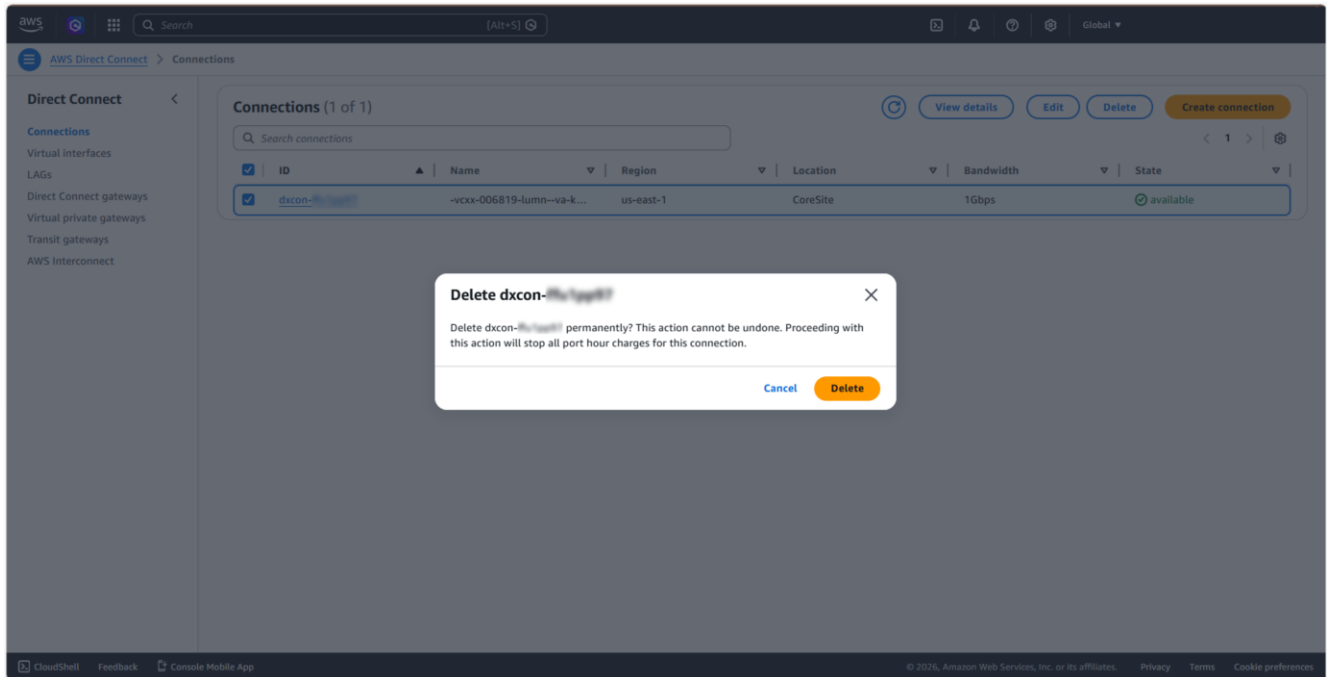
- After a few minutes, the message will display **Virtual Interface deleted successfully** and the connection **State** will show as **deleted**.



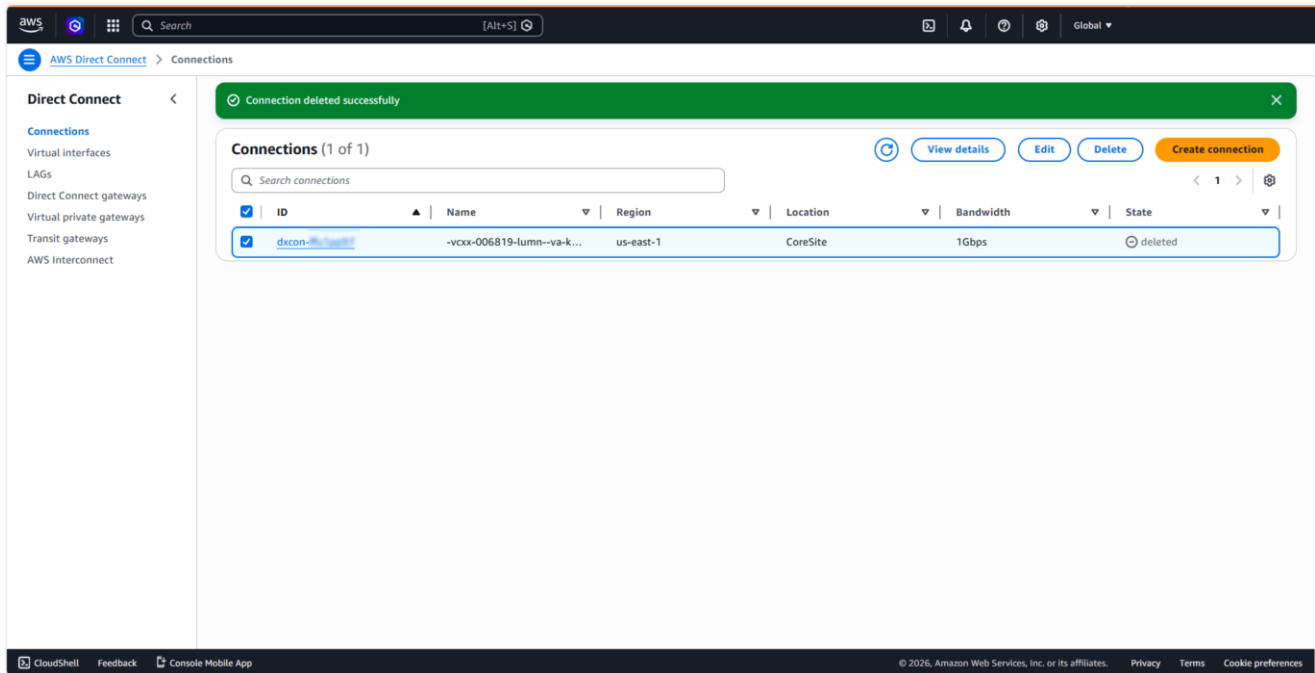
8. Navigate back to **Direct Connect > Connections**, select the box next to the Connection ID associated with the IP VPN On-Demand service that is being disconnected, and click **Delete** in the upper right-hand corner.



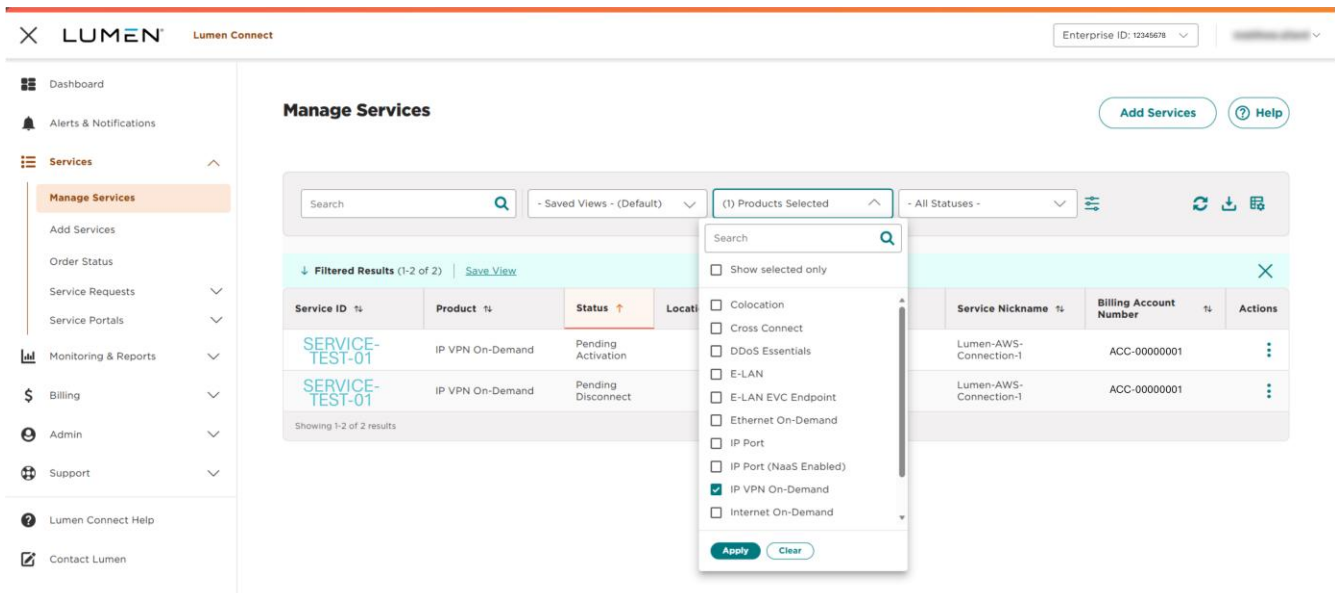
9. A pop-up will appear asking to confirm. Click **Delete** again.



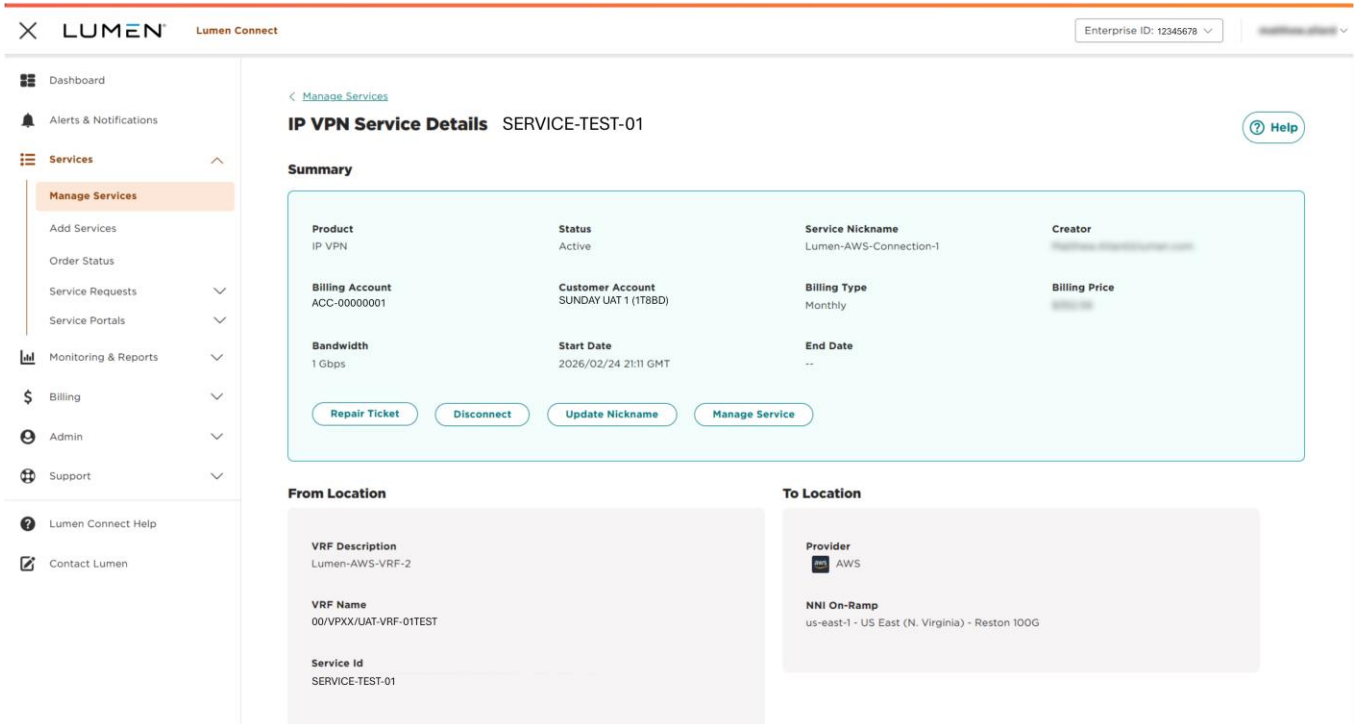
10. A message will show **Connection deleted successfully** and the connection **State** will show **deleted**.



11. Within Lumen ConnectSM you can now select the **Manage Services, filter by Product, select IP VPN on-Demand** to locate the Service ID of the connection you want to disconnect.



12. Select the Service ID of the connection you want to disconnect and click **Disconnect**.



IP VPN Service Details SERVICE-TEST-01

Summary

Product IP VPN	Status Active	Service Nickname Lumen-AWS-Connection-1	Creator [Redacted]
Billing Account ACC-0000001	Customer Account SUNDAY UAT 1 (1T8BD)	Billing Type Monthly	Billing Price [Redacted]
Bandwidth 1 Gbps	Start Date 2026/02/24 21:11 GMT	End Date --	

[Repair Ticket](#) [Disconnect](#) [Update Nickname](#) [Manage Service](#)

From Location

VRF Description
Lumen-AWS-VRF-2

VRF Name
00/VPXX/UAT-VRF-01TEST

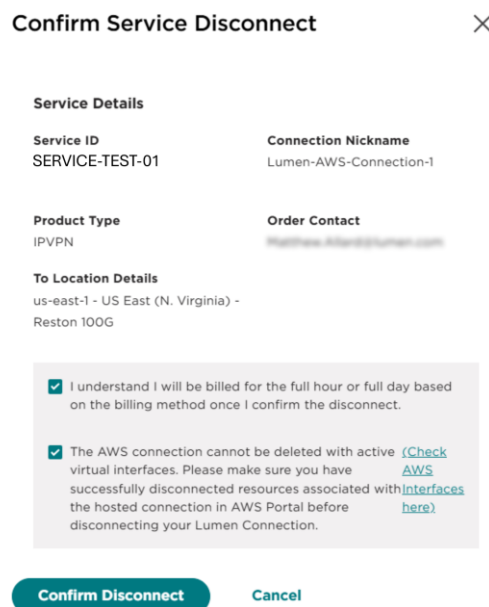
Service Id
SERVICE-TEST-01

To Location

Provider
AWS

NNI On-Ramp
us-east-1 - US East (N. Virginia) - Reston 100G

13. Check the box to confirm the change and click **Confirm Disconnect**



Confirm Service Disconnect

Service Details

Service ID
SERVICE-TEST-01

Connection Nickname
Lumen-AWS-Connection-1

Product Type
IPVPN

Order Contact
[Redacted]

To Location Details
us-east-1 - US East (N. Virginia) - Reston 100G

I understand I will be billed for the full hour or full day based on the billing method once I confirm the disconnect.

The AWS connection cannot be deleted with active [\(Check AWS virtual interfaces\)](#). Please make sure you have successfully disconnected resources associated with [interfaces](#) the hosted connection in AWS Portal before [disconnecting your Lumen Connection](#).

[Confirm Disconnect](#) [Cancel](#)

14. A pop-up will display **Disconnect Accepted - Successful Disconnect Request**. You may now click **CLOSE**.

Disconnect Accepted ✕

✔ **Successful Disconnect Request**

Once the disconnect is completed, service details will be emailed to you.

Confirmation Details

Order & Billing Information

Service ID	SERVICE-TEST-01
Service Nickname	Lumen-AWS-Connection-1
Approved By	Matthew Allard

[Close](#)

15. Once complete, the **Summary** page will show the **Status** as **Disconnected**.

LUMEN Lumen Connect
Enterprise ID: 12345678

- Dashboard
- Alerts & Notifications
- Services
 - Manage Services
 - Add Services
 - Order Status
 - Service Requests
 - Service Portals
- Monitoring & Reports
- Billing
- Admin
- Support
- Lumen Connect Help
- Contact Lumen

< Manage Services
Help

IP VPN Service Details

Summary

Product	IP VPN	Status	Disconnected
Service Nickname	Lumen-AWS-Connection-1	Creator	
Billing Account	ACC-00000001	Customer Account	SUNDAY UAT 1 (1T8BD)
Billing Type	Monthly	Billing Price	
Bandwidth	1 Gbps	Start Date	2026/02/24 21:11 GMT
		End Date	2026/02/24 21:41 GMT

Repair Ticket
Disconnect
Update Nickname
Manage Service

From Location

VRF Description
Lumen-AWS-VRF-2

VRF Name
00/VPXX/UAT-VRF-01TEST

Service Id
SERVICE-TEST-01

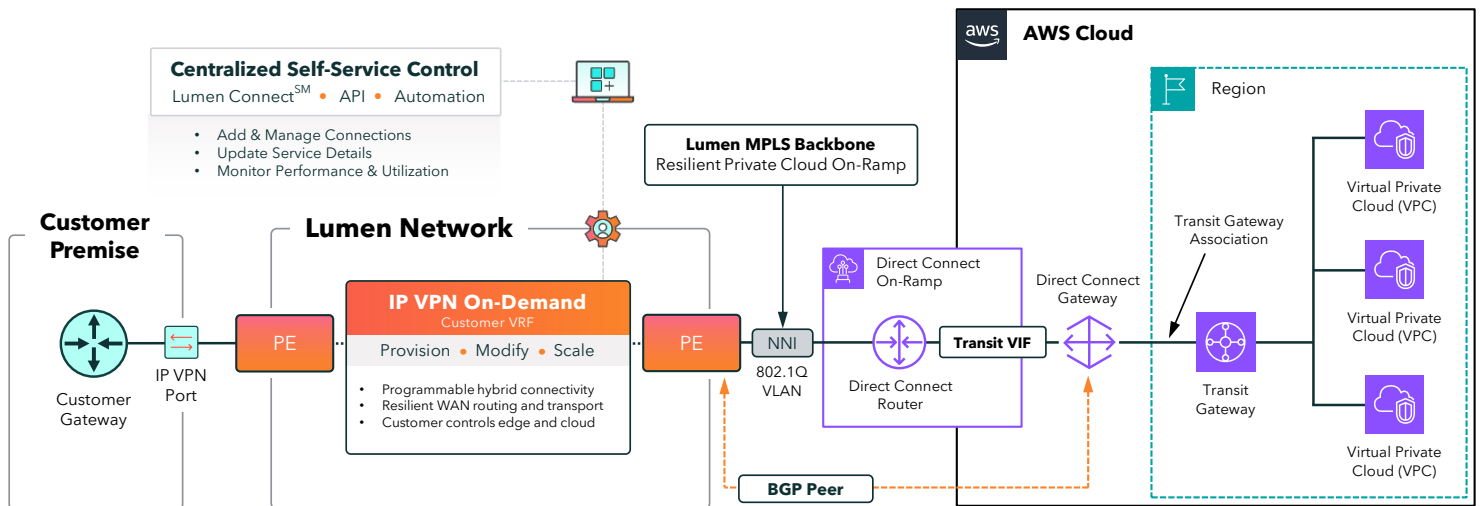
To Location

Provider
AWS

NNI On-Ramp
us-east-1 - US East (N. Virginia) - Reston 100G

Deploying Lumen Network-as-a-Service IP VPN On-Demand to a Transit VIF with Direct Connect Gateway

Direct Connect Gateway peering, transit gateway, and connectivity to multiple VPCs



Hybrid Connectivity Responsibility Model:

Customer Edge Configuration	Lumen IP VPN On-Demand Connectivity with Self-Service Control	Customer Configuration of BGP (Lumen ↔ AWS)	Customer AWS Cloud Network Configuration
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Getting Started Checklist

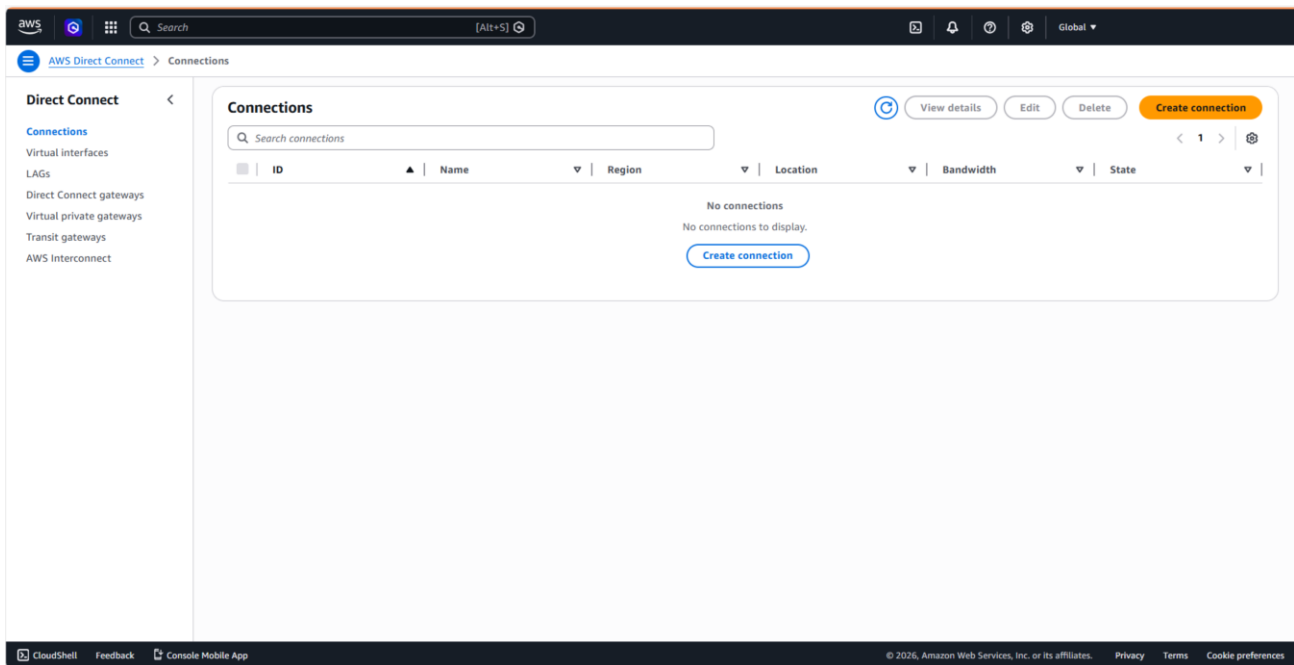
1. **Lumen ConnectSM Access** - Confirm you have access to Lumen ConnectSM and are entitled for the **Fabric & On-Demand Services** functionality.
2. **AWS Account Number** - Ensure you have the correct **12-digit AWS Account ID** that you intend to connect with.
3. **AWS Console Access** - Verify that you have the necessary **login credentials and permissions** to access the AWS Management Console for the target account.

Step 1: Prepare the AWS connection

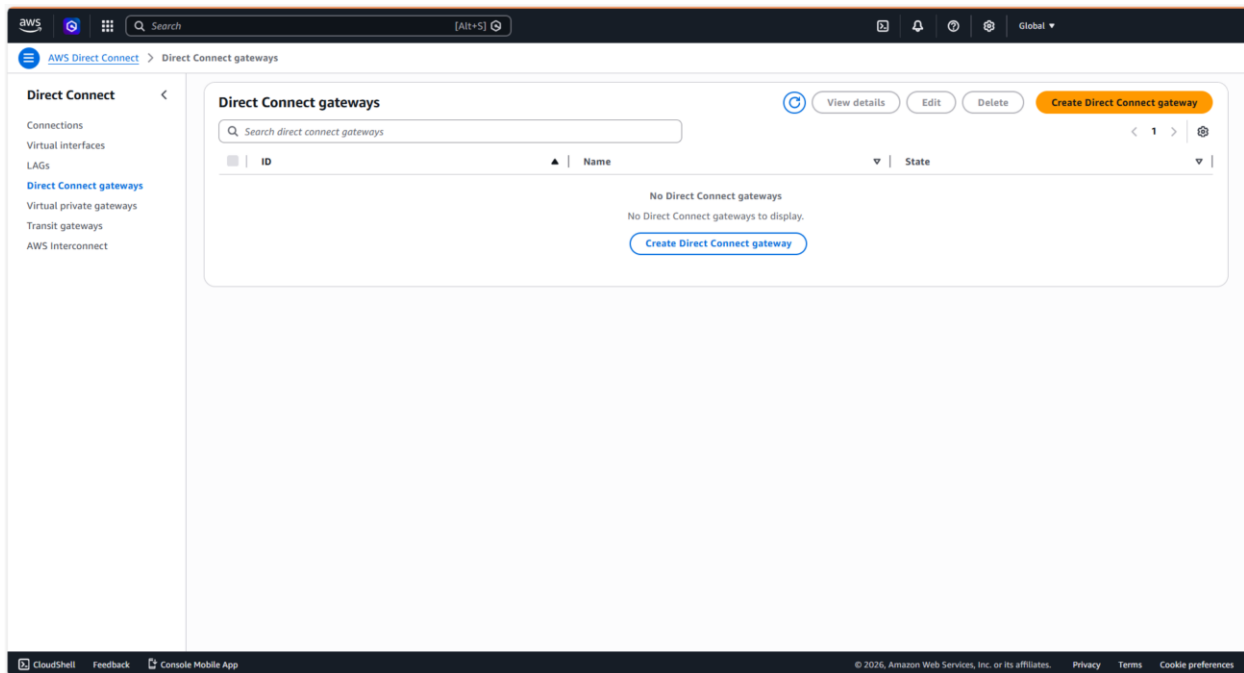
To prepare the connection in AWS:

1. Sign in to the [AWS Console](#).

2. If you do not already have a **Direct Connect Gateway** open the **Direct Connect Dashboard**
3. All Services > Networking & Content Delivery > Direct Connect
4. On the left-hand side select **Direct Connect gateways**



5. Click **Create Direct Connect gateway**

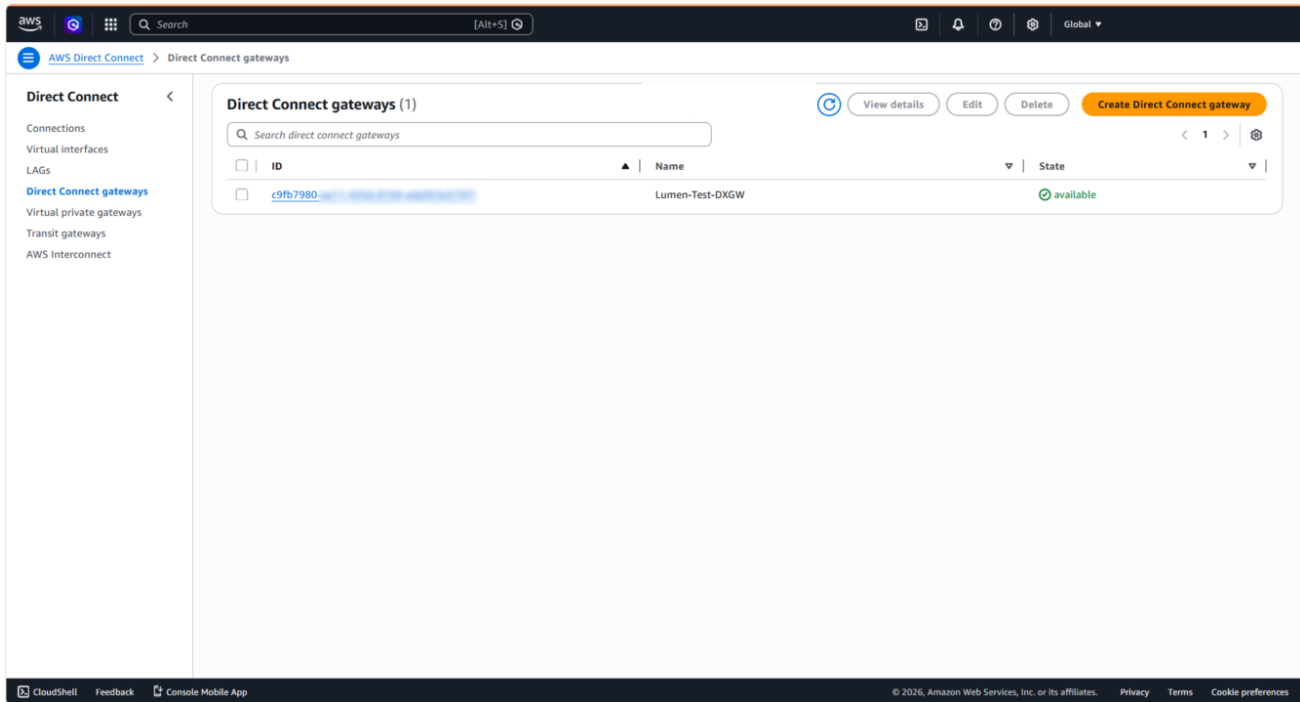


6. Complete the **Direct Connect gateway settings**

- **Name**
- **Amazon-side ASN**
 - Custom ASN (if you modify the ASN, make note as you will need it when creating the IP VPN On-Demand Connection)

The screenshot shows the AWS console interface for creating a Direct Connect gateway. The breadcrumb navigation is 'AWS Direct Connect > Direct Connect gateways > Create'. The main heading is 'Create Direct Connect gateway'. Below this, there is a description: 'A Direct Connect gateway allows you to use your Direct Connect connections to access your VPCs in remote AWS Regions. [Learn more](#)'. The 'Direct Connect gateway settings' section contains two input fields: 'Name' with the value 'Lumen-Test-DXGW' and 'Amazon-side ASN' with the value '64512'. The 'Tags' section is currently empty with an 'Add tag' button. At the bottom right, there are 'Cancel' and 'Create Direct Connect gateway' buttons.

7. Click **Create Direct Connect gateway**
8. A new window will be shown and a message will display **Direct Connect gateway created successfully**.



9. Copy your AWS Account ID. You will paste this into Lumen ConnectSM when creating the On-Demand connection.

Step 2: Add the connection in Lumen ConnectSM

To add the IP VPN On-Demand connection:

1. [Sign in to Lumen ConnectSM](#). (Get help retrieving your username/password.)

The screenshot displays the Lumen Connect dashboard interface. At the top, the LUMEN logo and 'Lumen Connect' are visible on the left, and the Enterprise ID '12345678' is on the right. The main content area is titled 'Dashboard' and features a 'Core Capabilities' section with various metrics: Pay Balance Due (\$0.00), Active Repair Tickets (0), Open Orders (11), Change Requests (0), Disconnect Requests (0), Network Visibility Status (7 Down, 19 Up), Potential Repair Tickets (0), and Security Change Requests (0). Below this is the 'On-Demand Services Overview' section, which includes a 'Services by Location' map of the United States. The map shows port availability zones and clusters, with a search bar at the top and a legend at the bottom. A 'Contact a Specialist' button is located at the bottom right of the map area.

2. Using the left menu click **Services**, then click **Add Services**.

The screenshot displays the Lumen Connect 'Add Services' interface. On the left is a navigation sidebar with categories like Dashboard, Alerts & Notifications, Services, Billing, Admin, and Support. The main area is titled 'Add Services' and includes a 'Self-Serve' section. Under the 'Networking' category, several service cards are visible, each with a '+ Add' button and a 'View Pricing' link. The cards include: Internet On-Demand Connection, IP VPN On-Demand Connection, Ethernet On-Demand Connection, Network-as-a-Service (NaaS) Port, Dedicated Internet Access (DIA), and Wavelength. Below Networking are sections for Edge Cloud (Secure Access Service Edge (SASE)) and Cybersecurity (DDoS Hyper), also featuring '+ Add' buttons. A final section titled 'I don't see what I need' provides a 'Help' button for further assistance.

3. Click **+ Add** for IP VPN On-Demand.

4. From the **Customer ID** and **Billing Account Number** lists, select the customer number and billing account number you want to add IP VPN On-Demand to.

Lumen ConnectSM fills in the VRF inventory based on the customer ID and billing account number you selected.

5. In the **Service Nickname** field, type a name for the connection you're creating. (Be sure to use something memorable. This name will appear on your invoice.)

6. In the **From Location (Select Your VRF)** section, select or create a VRF for the other end of your connection.
 - Select the VRF to use for the other end of your connection. Click **View Details** for a VRF to view the VRF's routes.
 - Click **Create New**, then type a description for the new VRF in the **New VRF Description** field. Lumen ConnectSM will create the VRF and activate your VPN service once you create your connection.

The screenshot shows the 'Add IP VPN On-Demand Connection' form in the Lumen Connect interface. The form is titled 'Add IP VPN On-Demand Connection' and is divided into four steps: 1. Select Locations & Providers, 2. Select Bandwidth & Price, 3. Select Additional Settings, and 4. Review & Submit Order. Step 1 is currently active and contains several input fields: 'Customer ID' (SUNDAY UAT 1 (1T8BD)), 'Billing Account Number' (ACC-00000001), 'Service Nickname' (Lumen-AWS-VRF-3), 'From Location (Select Your VRF)' (with 'Use Existing VRF' and 'Create New' buttons), 'New VRF Description' (00/VPXX/UAT-VRF-01TEST), 'Cloud Provider' (AWS), 'AWS Account ID' (empty), and 'Cloud Provider On Ramp' (-Select-). A 'Cancel' button and a 'Continue' button are at the bottom right of the form.

7. From the **Cloud Provider** list, select AWS.
8. Fill in the information for the AWS connection:
 - In the **AWS Account ID** field, type your AWS account ID.
 - From the **Cloud Provider On-Ramp** list, select an On-Ramp.

9. Click **CONTINUE**.
10. Use the **Billing Method** buttons to select whether you want monthly or hourly billing for the connection, then select the bandwidth for the connection. Bandwidth options are determined by the destination (to location). (You can't change the bandwidth once you create the connection. If you need to choose a different bandwidth after creating the connection, disconnect the connection and create a new one.)

1. Select Locations & Providers VRF: 00/VPXX/UAT-VRF-01TEST [Change](#)
Cloud Provider: AWS

2. Select Bandwidth & Price

Billing Method: Monthly Hourly

Bandwidth	Monthly
<input type="radio"/> 50 Mbps	...
<input type="radio"/> 100 Mbps	...
<input type="radio"/> 200 Mbps	...
<input type="radio"/> 300 Mbps	...
<input type="radio"/> 400 Mbps	...
<input type="radio"/> 500 Mbps	...
<input checked="" type="radio"/> 1 Gbps	...
<input type="radio"/> 2 Gbps	...
<input type="radio"/> 5 Gbps	...
<input type="radio"/> 10 Gbps	...
<input type="radio"/> 25 Gbps	...

Monthly - Billing begins once connection is active. Customer will be billed MRC(s) with pro-rata occurring at both the beginning and end of the connection rounded up to the nearest full day.

[Cancel](#) [Previous](#) [Continue](#)

3. Select Additional Settings

4. Review & Submit Order

11. Click **CONTINUE**.
12. In the **Select Additional Settings** section, fill in the additional details for the connection:

- In the **AS Number on AWS** field, type the autonomous system number from Amazon (ranges from 64512 to 65534 or 4200000000 to 4294967294) used when creating the Direct Connect gateway.
- Select whether this is a primary or backup connection.
 - Primary will set the local-pref to 750
 - Backup will set the local-pref to 700
- In the **IPv4 Routing Option** field, select the radio button for the routing option you want to use for the connection. [Learn more about routing options for an IP VPN connection](#)
- Use the buttons to select whether you want to advertise default routes.

LUMEN Lumen Connect Enterprise ID: 12345678

Add IP VPN On-Demand Connection

1. Select Locations & Providers VRF: 00/VPXX/UAT-VRF-01TEST Cloud Provider: AWS [Change](#)

2. Select Bandwidth & Price 1 Gbps / mo [Change](#)

3. Select Additional Settings

Provider Service * Private AS Number on AWS * 64512

Primary/Backup * Primary Backup

IPv4 Routing Option * [What is this?](#)

Aggregate and advertise my RFC 1918 routes
 Ideal for cloud service providers (CSPs) with restrictive BGP prefix limits like AWS and Google and if most of your prefixes are RFC 1918.
 More Details ^
 Lumen automatically aggregates network prefixes according to RFC 1918 standards to reduce the number of prefixes sent to the CSP.
 Lumen only advertises network RFC 1918 prefixes: 10.0.0.0/8, 172.16.0.0/12, and 192.168.0.0/16.
 Note: Aggregates are NOT injected into your routing tables.

Advertise all routes except those specified
 Allows you to control which routes are advertised to the CSP. Check with your CSP to verify any BGP maximum prefix limits before selecting this option, as it could cause issues with your connection.
 More Details ^

Deny all routes except those specified
 Optimal for CSPs with maximum prefix limits that require reducing advertised prefixes and your prefixes don't fall under RFC 1918 ranges.
 More Details ^


Advertise Default Routes for IPv4 * Yes No

[Cancel](#) [Previous](#) [Continue](#)

4. Review & Submit Order

13. Click **CONTINUE**.

14. Review the order information and correct any missing or invalid selections, then click **SUBMIT ORDER**.

Lumen ConnectSM creates the request for connection, places it in **Pending Activation** status, and routes you to the Services tab so you can monitor the status of the connection. To see status updates, click . Once Lumen assigns the permanent VRF (within five minutes), the connection changes to **Active status**.

Provisioning in Progress

Activation typically takes less than 5 minutes. When the service is activated, we'll send an email confirmation and update the Services tab with the details. You may leave this page and place additional orders while provisioning completes.

✓ Design ————— ✓ Configure ————— **3** Activate ————— ④ Complete

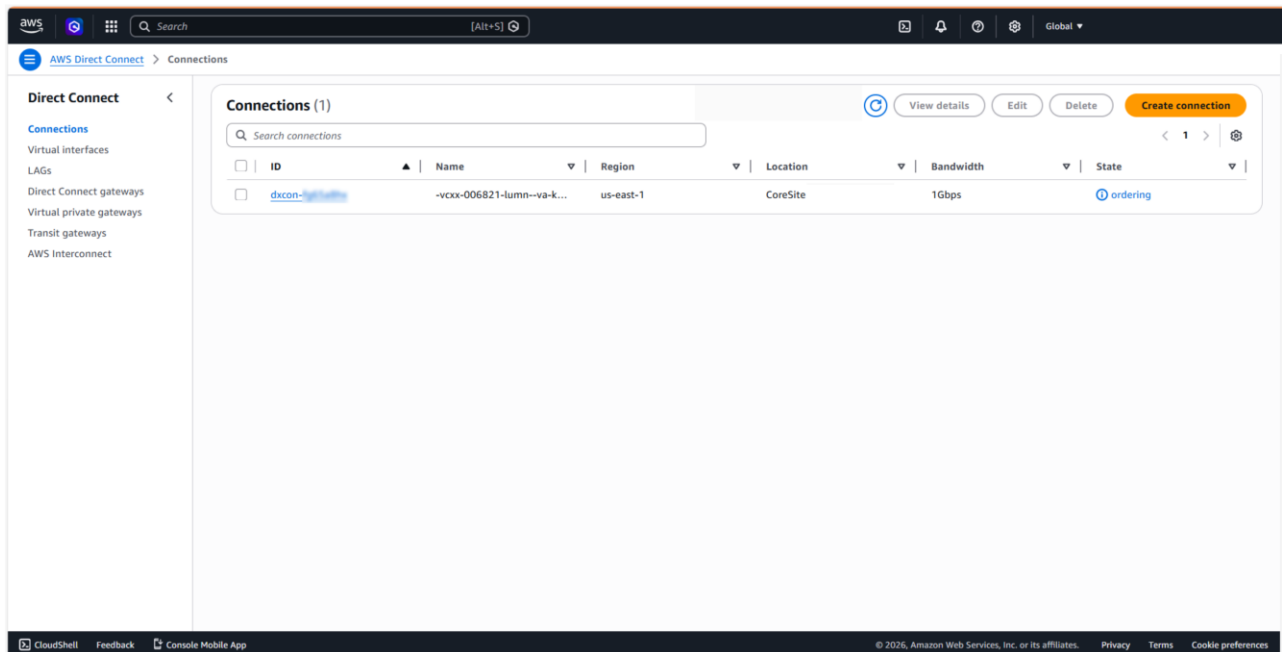
15. If you want to add High Resiliency for this connection, repeat steps 2-12 using the same VRF and a different AWS on-ramp location.

[Learn more about AWS resiliency options](#)

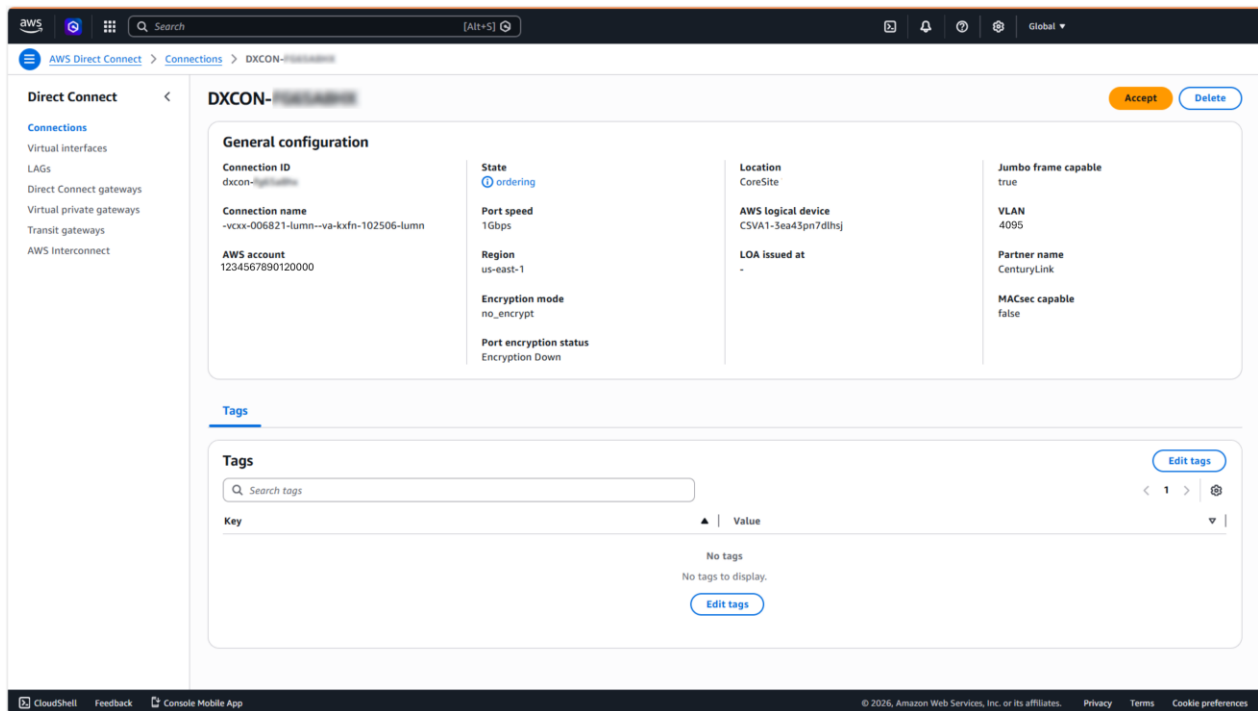
Step 3: Complete the AWS connection

To complete the connection in AWS:

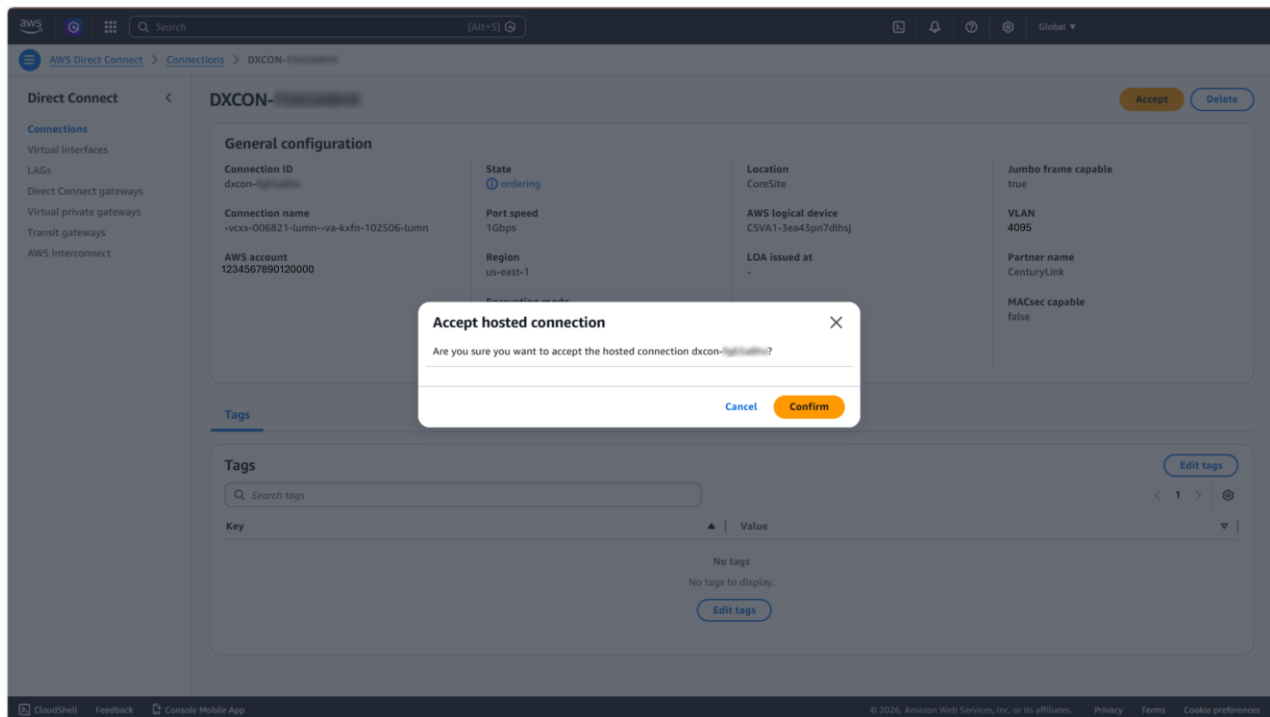
1. Go to the [AWS Management Console](#) and sign in.
2. Navigate to the Direct Connect Console
 - AWS Console > Services > Networking & Content Delivery > Direct Connect
3. Select the ID of the connection in the **State** showing **ordering**



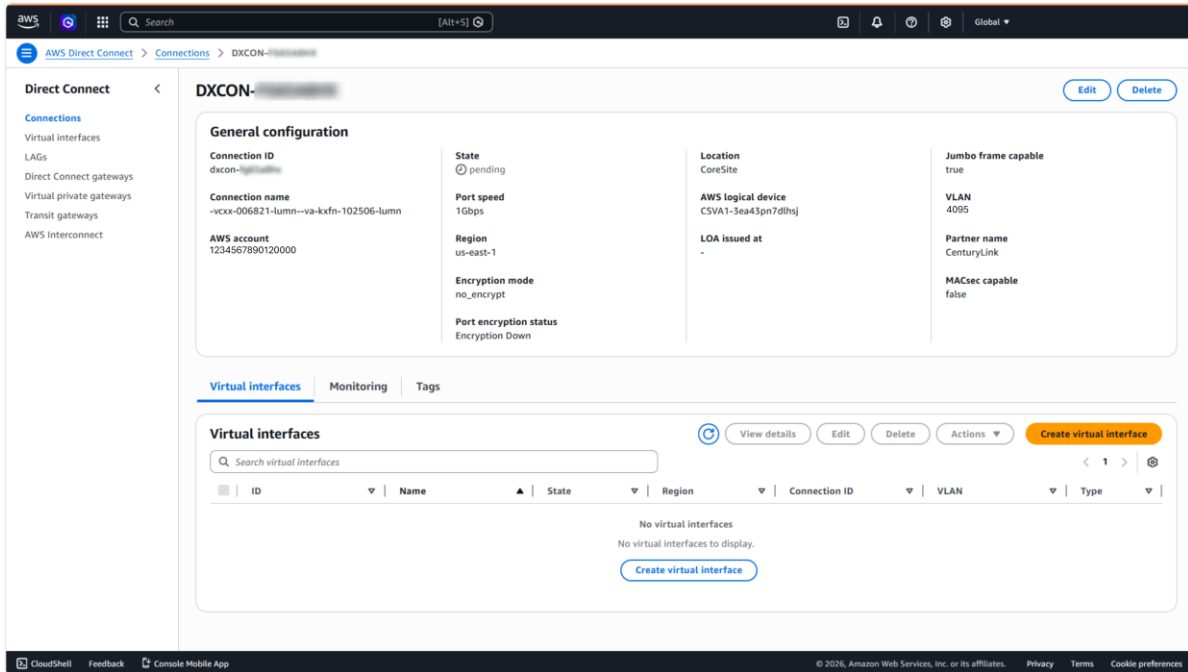
4. Click **Accept**



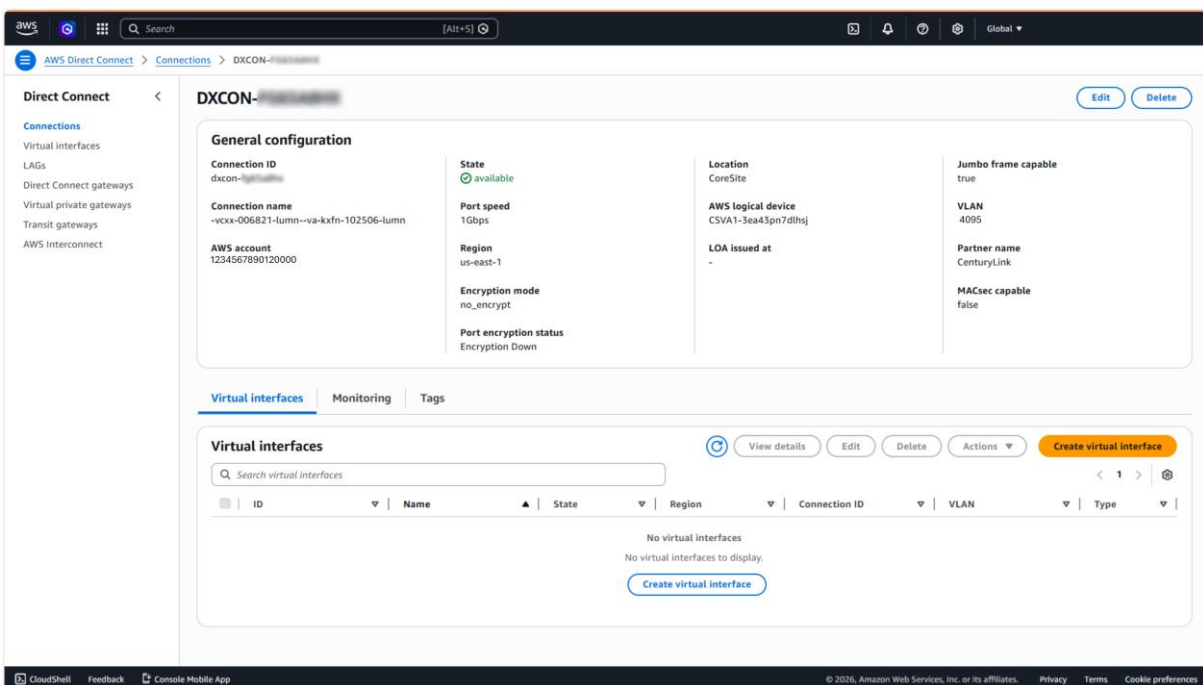
5. A pop-up will ask you to confirm a second time. Click **Confirm**



6. The connection **State** will show **pending**.



7. After a few minutes the connection state will show **available**. Click **Create virtual interface**



-
8. Complete the connection details (you will need to expand Additional settings)
 - Virtual interface type - select Transit
 - Virtual interface name - name the interface
 - Connection - select the connection that was just accepted
 - Virtual interface owner
 - My AWS Account if connecting to your own VPC
 - Another AWS Account if sharing with a 3rd Party Partner/Vendor
 - Gateway Type - Direct Connect Gateway
 - Direct Connect gateway - the name of the Direct Connect Gateway being used with the connection
 - Virtual Local Area Network (VLAN) - do not change (if blank, this is the VLAN ID of the connection in Lumen ConnectSM)
 - BGP ASN - 3549
 - Your router peer IP - Lumen Router Peer IP from Lumen ConnectSM
 - Amazon router peer IP - Cloud Provider Router Peer IP from Lumen ConnectSM
 - BGP authentication key - BGP Auth Key from Lumen ConnectSM

 9. Click **Create virtual interface**

AWS
Global ▾

AWS Direct Connect > Virtual interfaces > Create

Create virtual interface

You can create a private virtual interface to connect to your VPC. Or, you can create a public virtual interface to connect to AWS services that aren't in a VPC, such as Amazon S3 and Glacier. For private virtual interfaces, you need one private virtual interface for each VPC to connect to from the AWS Direct Connect connection, or you can use an AWS Direct Connect gateway. [Learn more](#)

Virtual interface type

Type

Private
A private virtual interface should be used to access an Amazon VPC using private IP addresses.

Public
A public virtual interface can access all AWS public services using public IP addresses.

Transit
A transit virtual interface is a VLAN that transports traffic from a Direct Connect gateway to one or more transit gateways.

Transit virtual interface settings

Virtual interface name
A name to help you identify the new virtual interface.

Name must contain no more than 100 characters. Valid characters are a-z, 0-9, and hyphens (-).

Connection
The physical connection on which the new virtual interface will be provisioned.

Virtual interface owner
The account that will own the virtual interface.

 My AWS account
 Another AWS account

Direct Connect gateway
The Direct Connect gateway to which the new virtual interface will be attached.

Virtual Local Area Network (VLAN)
The Virtual Local Area Network number for the new virtual interface.

Valid ranges are 1 - 4094

BGP ASN
The Border Gateway Protocol (BGP) Autonomous System Number (ASN) of your on-premises router for the new virtual interface.

Valid ranges are 1 - 4294967294.

Additional settings

Address family - optional
Determines whether the virtual interface is created with an IPv4 or IPv6 peering.

 IPv4
 IPv6

Your router peer ip - optional
The BGP peer IP configured on your endpoint.

Amazon router peer IP - optional
The BGP peer IP configured on the AWS endpoint.

BGP authentication key - optional
The password that will be used to authenticate the BGP session.

Jumbo MTU (MTU size 8500) - optional
Allow MTU size of 8500 on virtual interface.

 Enabled

Enable SiteLink - optional
Enable direct connectivity between Direct Connect points of presence. Subject to additional charges. [Learn more](#)

 Enabled

Tags
Specified tags to help identify a AWS Direct Connect resource.
 No tags associated with the resource

CloudShell Feedback Console Mobile App
© 2026, Amazon Web Services, Inc. or its affiliates. Privacy Terms Cookie preferences

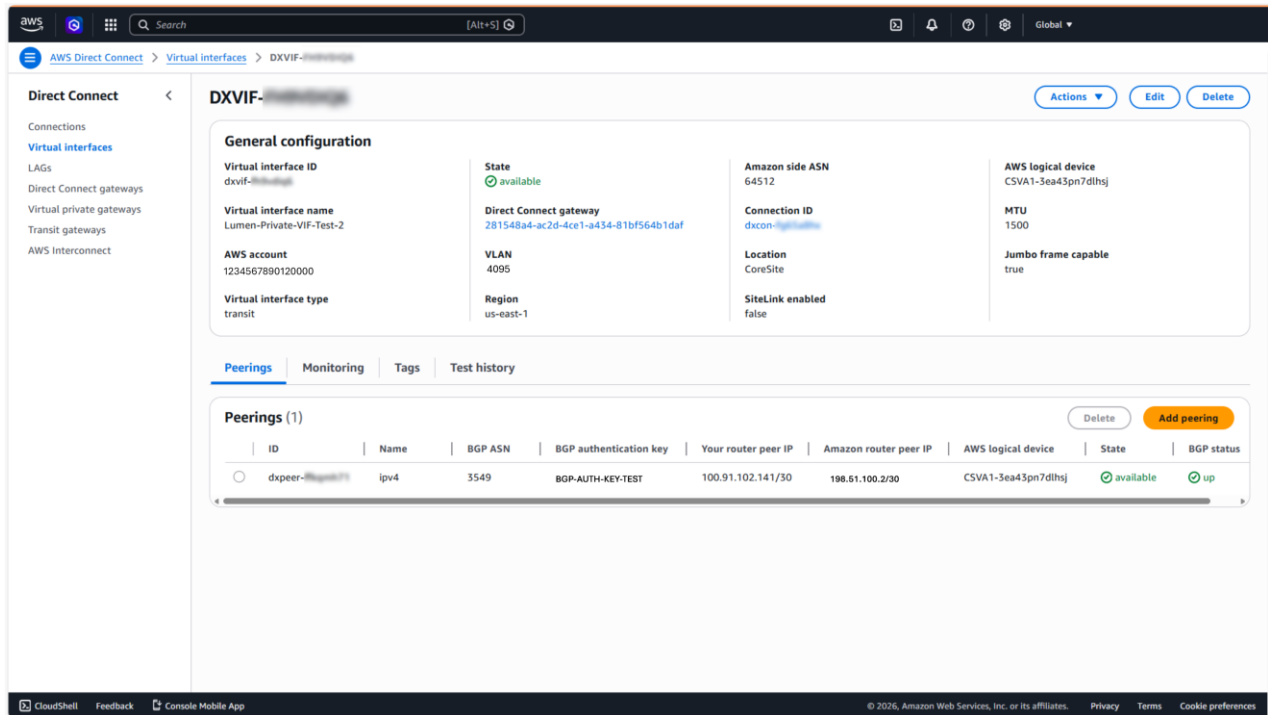
10. A new window will be shown and a message will display **Virtual interface created successfully**. The connection **State** of the VIF will show as **pending**.

The screenshot shows the AWS Direct Connect console. A green notification banner at the top indicates "Virtual interface created successfully". Below this, the configuration details for a Direct Connect connection (DXCON-...) are shown. The "State" is "available" with a green checkmark. The "Virtual interfaces" section shows a table with one entry:

ID	Name	State	Region	Connection ID	VLAN	Type
dxvif-...	Lumen-Private-VIF-Test-2	pending	us-east-1	dxcon-...	4095	transit

11. After a few minutes, the connection **State** will show as **available** and the **BGP status** will show as **up**.

Note: This can take a few minutes and the BGP status may show **down** for some period of time.

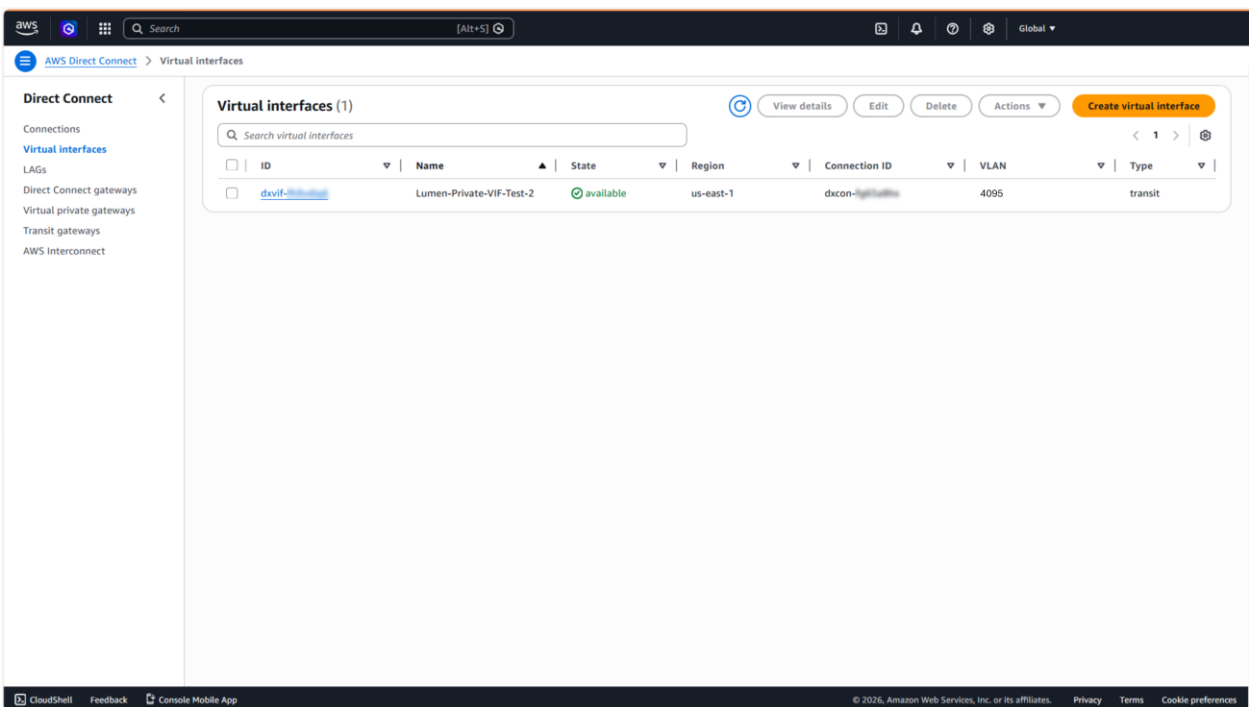


12. Continue AWS Network configuration.

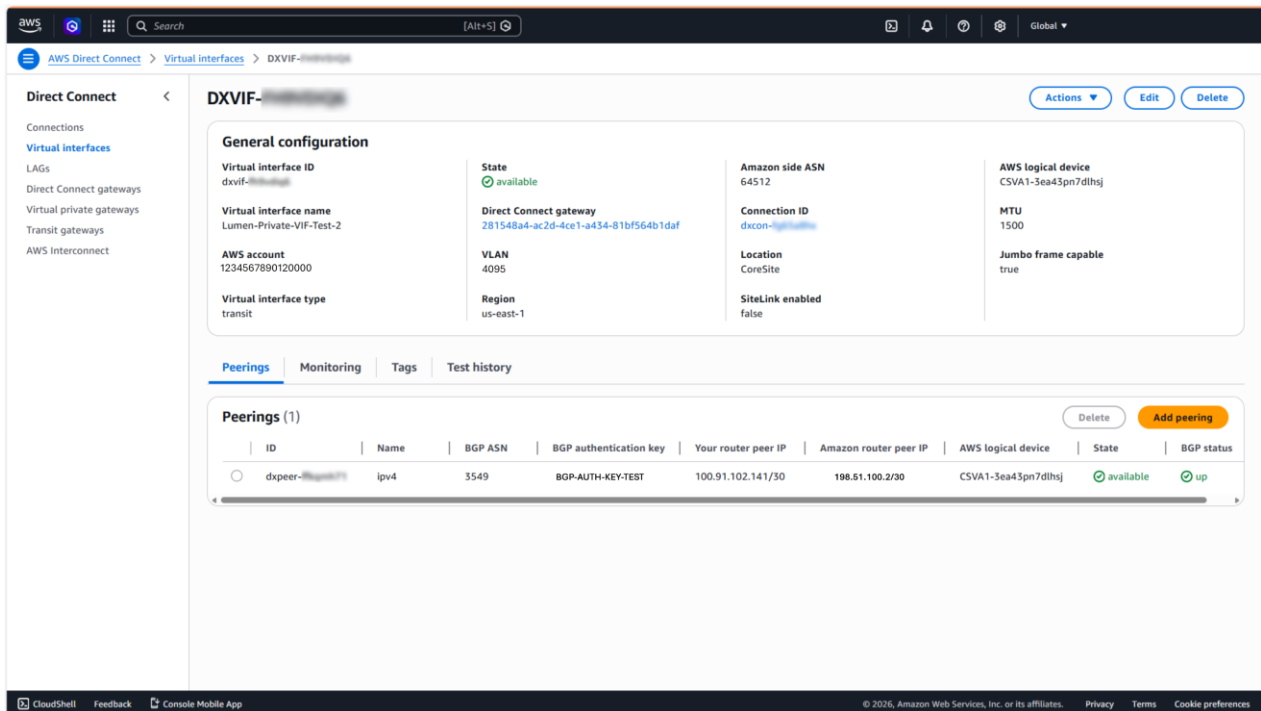
Note: For detailed guidance on configuring your AWS networking, refer to the [AWS Direct Connect Documentation](#). If you'd like personalized support, please contact your Lumen Account Team to explore our professional services for AWS management.

Disconnect Lumen Network-as-a-Service IP VPN On-Demand to a Transit VIF with Direct Connect Gateway

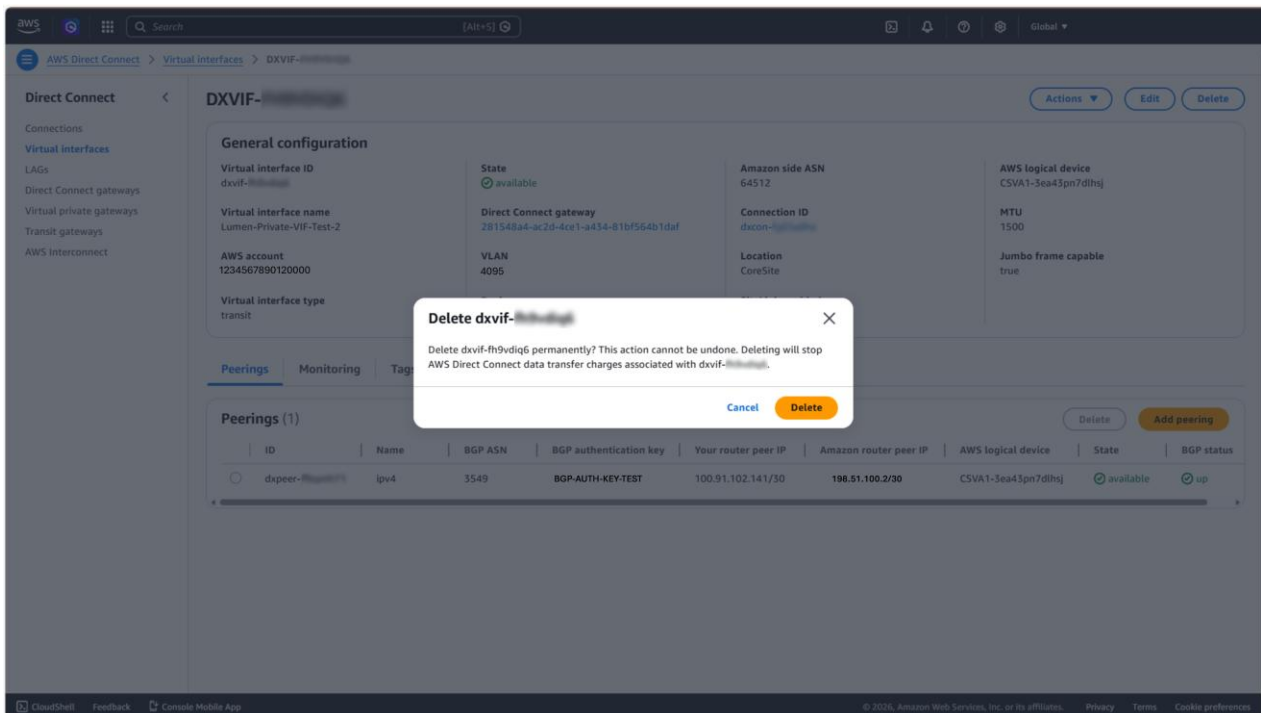
1. Sign in to the [AWS Console](#).
2. Navigate to AWS Direct Connect > Virtual Interfaces
3. Select the Virtual Interface associated with the IP VPN On-Demand service that is being disconnected.



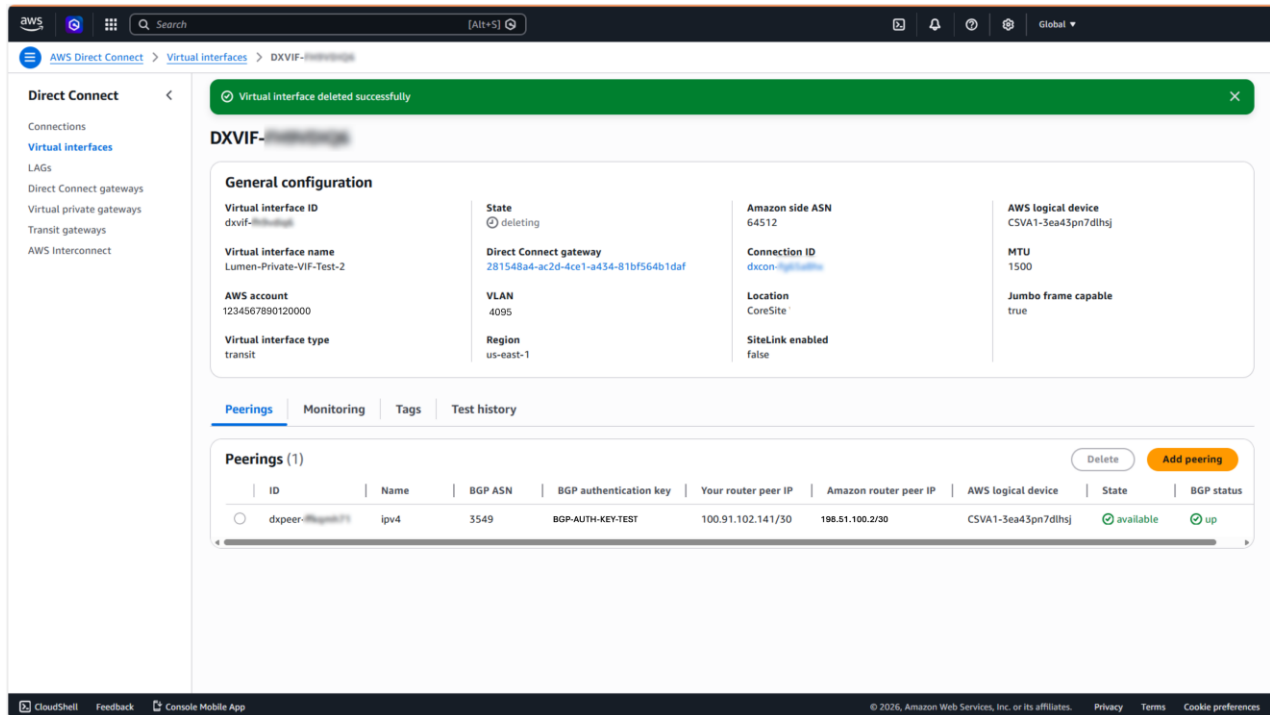
4. In the upper right-hand corner, click **Delete**



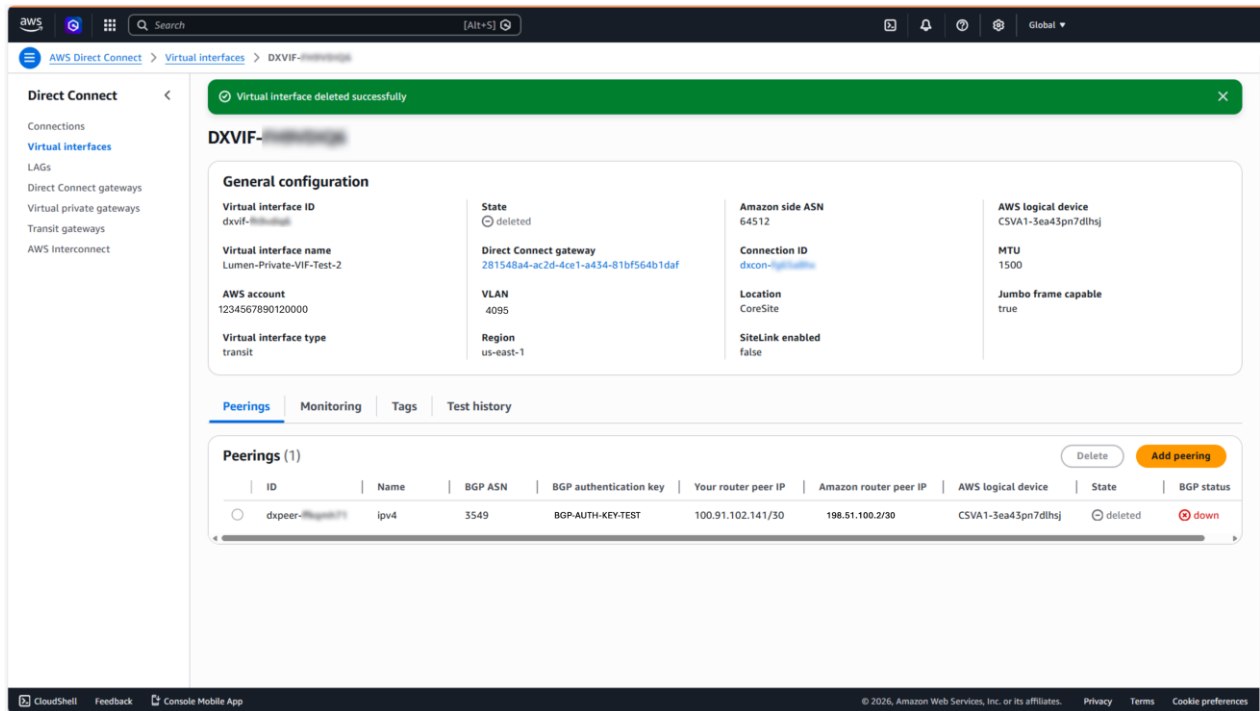
5. A pop-up will appear asking to confirm. Click **Delete** again.



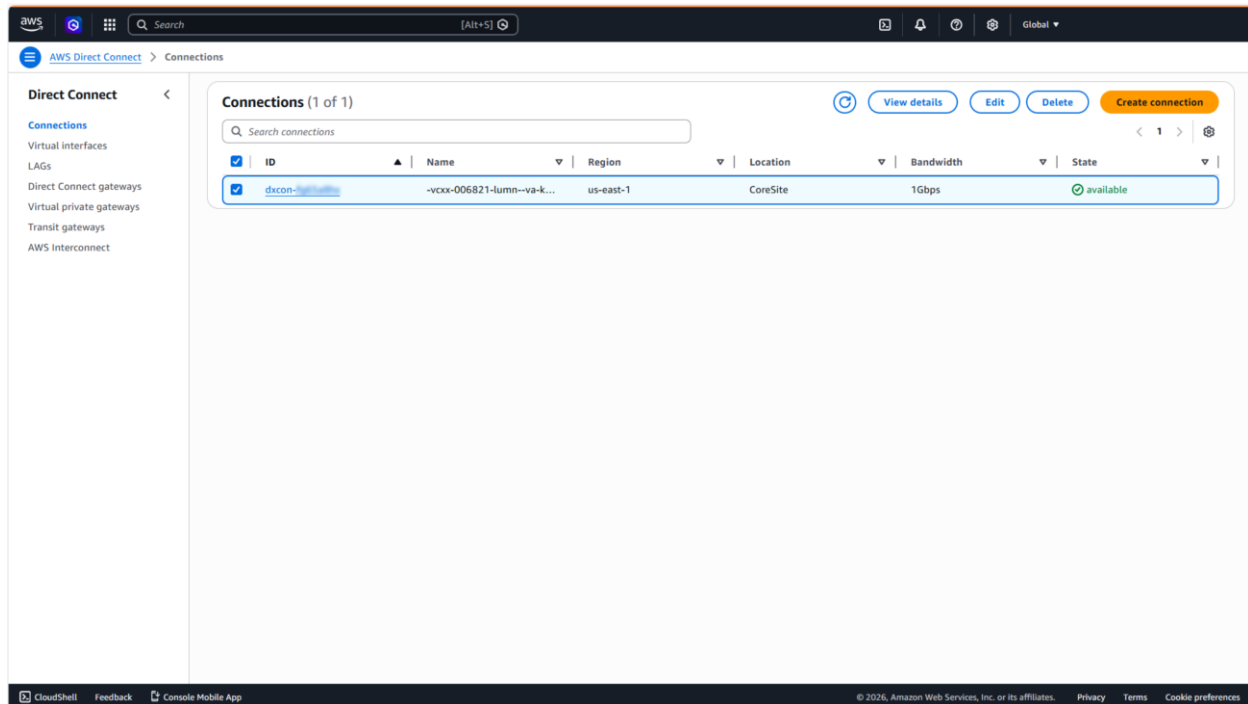
- A new window will be shown, and a message will display **Virtual interface deleted successfully**. The connection **State** will show as **deleting**.



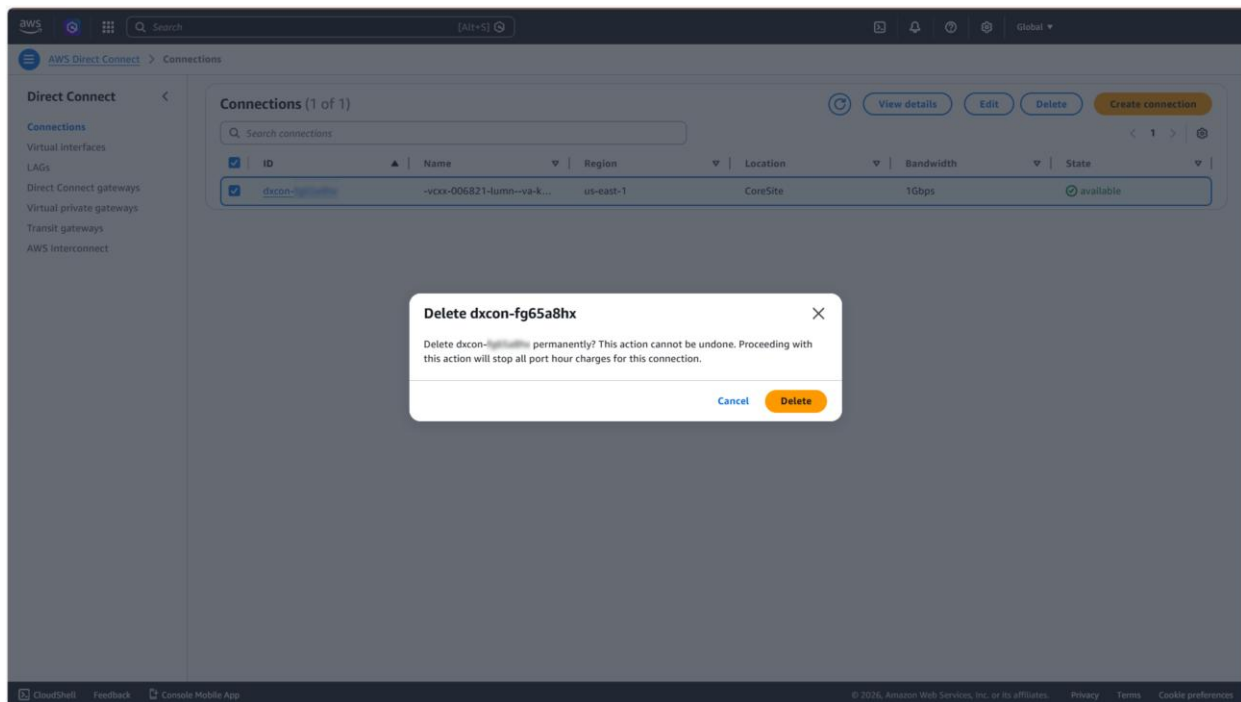
- After a few minutes, the message will display **Virtual Interface deleted successfully** and the connection **State** will show as **deleted**.



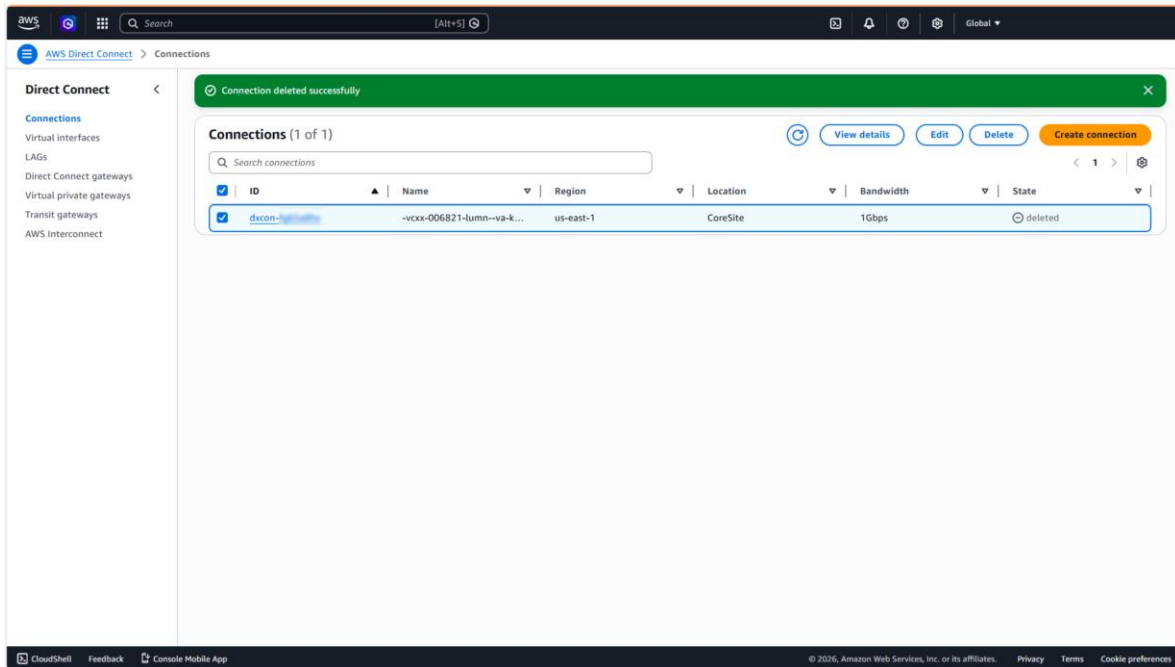
- Navigate back to **Direct Connect > Connections**, select the box next to the Connection ID associated with the IP VPN On-Demand service that is being disconnected, and click **Delete** in the upper right-hand corner.



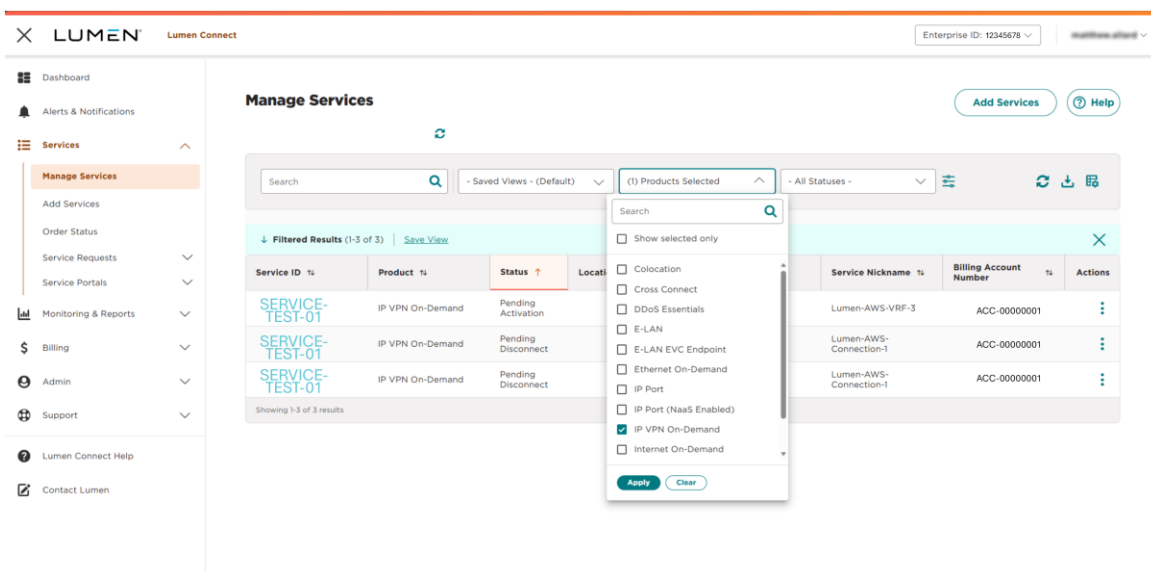
9. A pop-up will appear asking to confirm. Click **Delete** again.



10. A message will show **Connection deleted successfully** and the connection **State** will show **deleted**.



11. Within Lumen ConnectSM you can now select the **Manage Services, filter by Product, select IP VPN on-Demand** to locate the Service ID of the connection you want to disconnect.




12. Select the Service ID of the connection you want to disconnect and click **Disconnect**

13. Check the box to confirm the change and click **Confirm Disconnect**

14. A pop-up will display **Disconnect Accepted - Successful Disconnect Request**. You may now click **CLOSE**.

Disconnect Accepted ×

 **Successful Disconnect Request**
Once the disconnect is completed, service details will be emailed to you.

Confirmation Details

Order & Billing Information

Service ID	SERVICE-TEST-01
Service Nickname	Lumen-AWS-VRF-3
Approved By	[REDACTED]

[Close](#)

Lumen Network-as-a-Service IP VPN On-Demand to Microsoft Azure

Creating a **Microsoft Azure ExpressRoute connection** involves coordination between Lumen, Microsoft Azure, and the end customer.

What is an ExpressRoute Connection?

An **ExpressRoute Connection** is a type of Microsoft Azure connection provisioned by a partner who owns the physical Network-to-Network (NNI) infrastructure (e.g., port) and allocates bandwidth to customers on demand. It is different than **ExpressRoute Direct**, where Lumen would provision a physical port and dedicated third-party cross-connect (3PXC) and a single customer would own the usage of the entire physical connection.

All Network-as-a-Service IP VPN On-Demand connections to Microsoft Azure are ExpressRoute Connections.

Customer Self-Assessment Questions

1. About Your Use Case

- What will you use this connection for (e.g., cloud storage, data transfer, hybrid workloads)?
- Do your applications require low latency or guaranteed uptime?
- Will your connection needs change frequently?

2. Bandwidth Planning

- What is the peak and average bandwidth you need?

3. Redundancy & Resiliency

- Do you need a backup path in case of a failure?
- Do you want to connect to multiple Azure regions or Availability Zones?

4. Microsoft Azure Connectivity Setup

- Which Microsoft Azure region(s) and VNET(s) do you need to reach?

- Do you want to connect to multiple VNETs?

5. ExpressRoute Type Selection

- Will you need Private Peering, Microsoft Peering, or both?

Note: *Microsoft Peering is not currently supported with IP VPN On-Demand*

6. IP Addressing & Routing

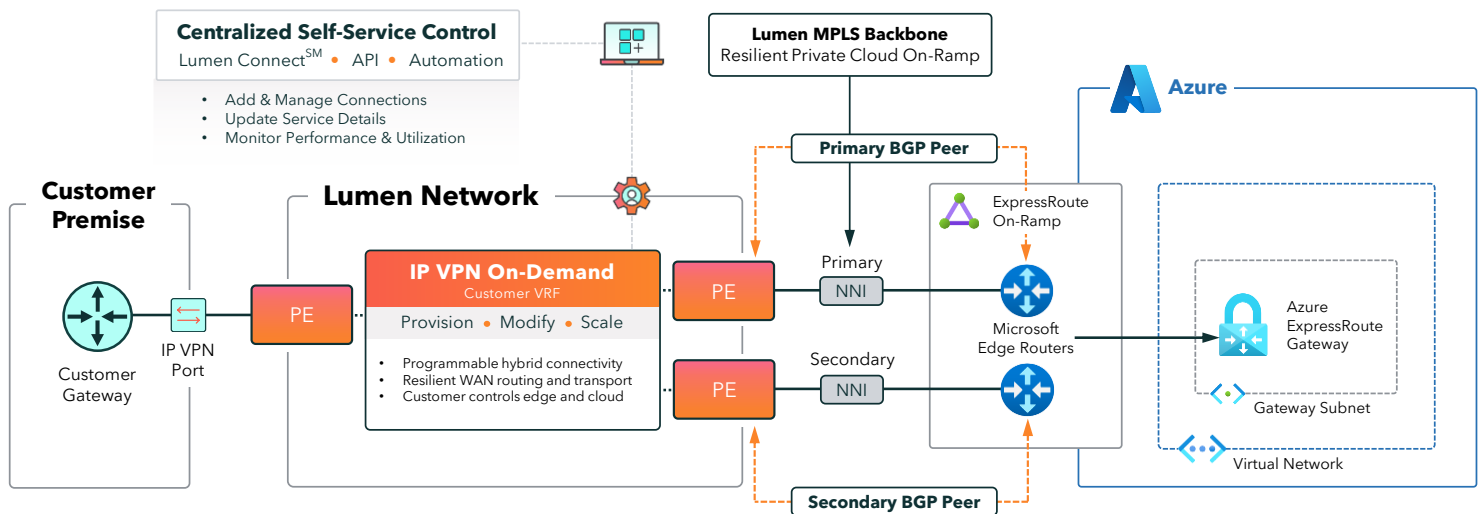
- Do you have your IP address ranges ready?
- Are your IP addresses overlapping with any Microsoft Azure environments?

Key Considerations

- ExpressRoute connections can be increased but not decreased; decreasing logical port size requires deleting and recreating to implement changes.
- Microsoft Azure ExpressRoute SLA applies only when redundant connections are used in separate locations.
 - [Learn more about ExpressRoute](#)
 - [Learn more about Designing for high availability with Azure ExpressRoute](#)
 - [Learn More about ExpressRoute resiliency](#)

Deploying Lumen Network-as-a-Service IP VPN On-Demand to Microsoft Azure ExpressRoute

Microsoft Edge Router peering with connectivity to ExpressRoute Gateway



Hybrid Connectivity Responsibility Model:

Customer Edge Configuration	Lumen IP VPN On-Demand Connectivity with Self-Service Control	Customer Azure Cloud Network Configuration
-----------------------------	---	--

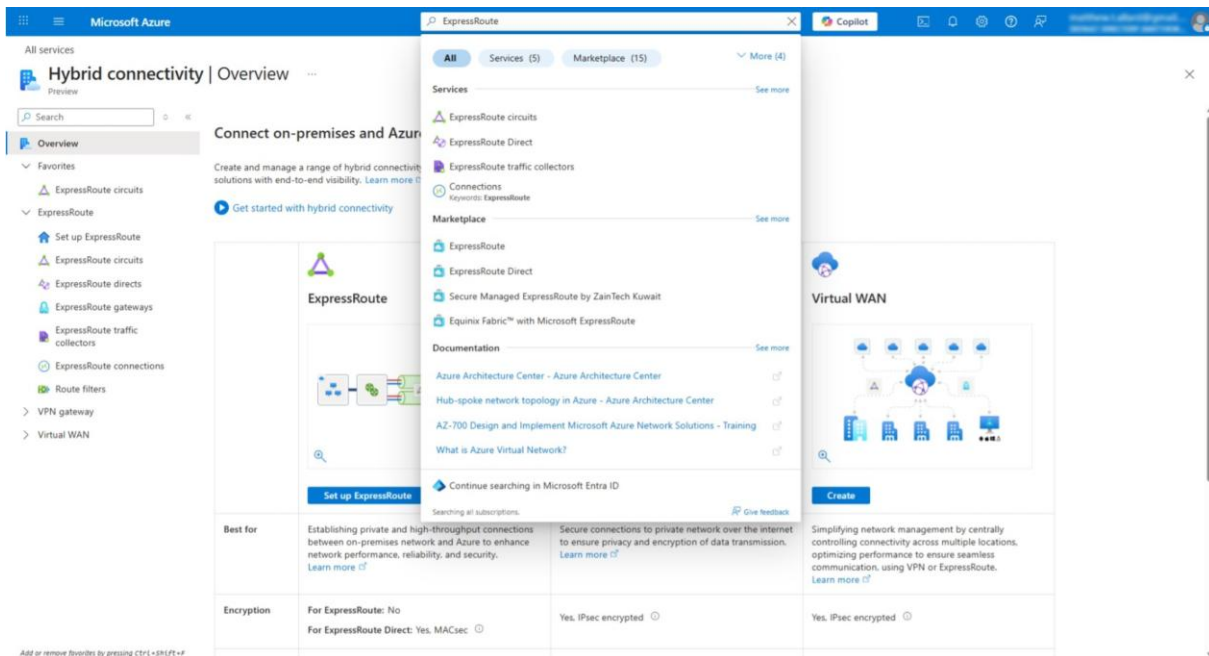
Getting Started Checklist

1. **Lumen ConnectSM Access** - Confirm you have access to Lumen ConnectSM and are entitled for the **Fabric & On-Demand Services** functionality.
2. **Microsoft Azure ExpressRoute Portal Access** - Verify that you have the necessary **login credentials and permissions** to access the Microsoft Azure environment for the target account.

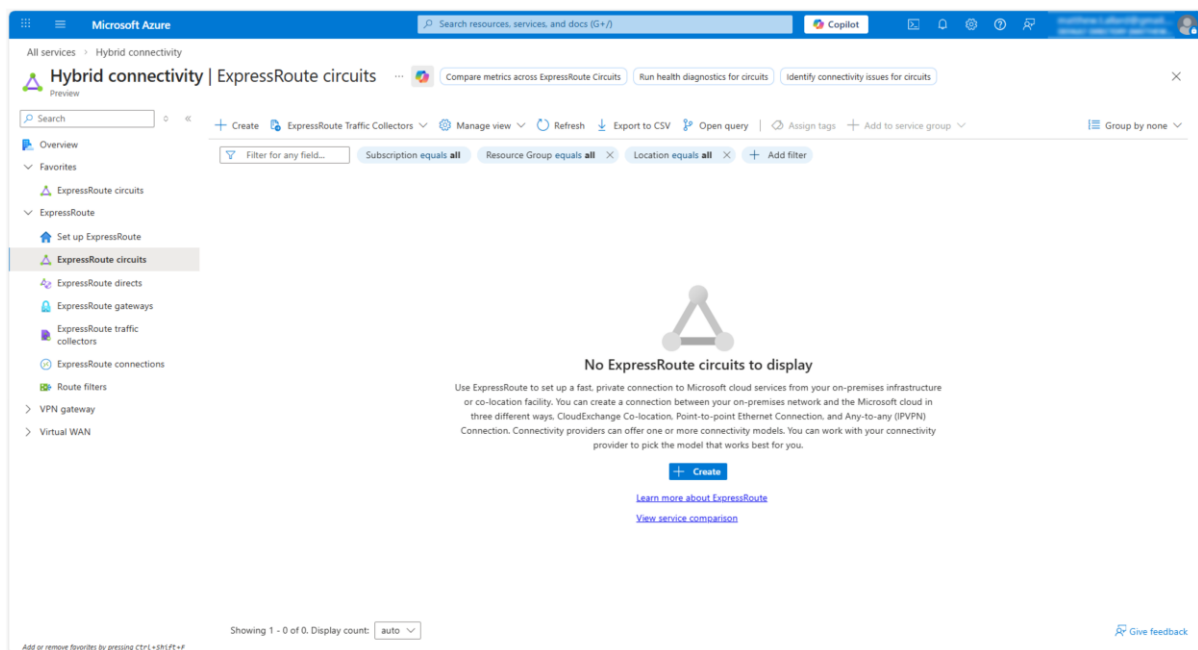
Step 1: Create the Microsoft Azure ExpressRoute Service Key

To create a Microsoft Azure ExpressRoute Service Key in the Azure portal:

1. Sign in to the [Microsoft Azure portal](#) and navigate to ExpressRoute circuits by searching for ExpressRoute.



2. Click **Create** to create an ExpressRoute circuit



3. Complete the connection details

- Subscription
- Resource group
- Resiliency (*This example utilizes Standard Resiliency*) Connection
 - Standard and Maximum are supported by NaaS
- Region
- Circuit Name
- Port Type: Provider (Direct is ExpressRoute Direct and not utilized with NaaS)
- Peering Location
- Provider: CenturyLink Cloud Connect
- Bandwidth
- SKU
- Billing Model

4. Click **Review + create**

Microsoft Azure | Search resources, services, and docs (G+/)

Home > Hybrid connectivity | ExpressRoute circuits

Create ExpressRoute

Configuration | Monitoring | Tags | Review + create

Use Azure ExpressRoute to create private connections between Azure datacenters and infrastructure on your premises or in a colocation environment. Establish connections to Azure at an ExpressRoute location, such as an Exchange provider facility, or directly connect to Azure from your existing WAN network, such as a multiprotocol label switching (MPLS) VPN, provided by a network service provider. [Learn more about Express Route circuits](#)

Project Details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription *

Resource group * [Create new](#)

Resiliency

- Maximum Resiliency (Recommended): Resiliency across two or more distinct edge locations each with redundant physical links
- High Resiliency: Metro model offering resiliency across distinct edge locations each with single physical link
- Standard Resiliency: Physical link redundancy within one edge location only

! Does not protect against location-wide outages. Suitable for non-critical / non-production workloads.

Circuit Details

Region *

Circuit name *

Port type Provider Direct

Peering location *

Provider *

Bandwidth *

SKU Local Standard Premium

Billing model Metered Unlimited

[Review + create](#) [Previous](#) [Next: Monitoring >](#) [Download a template for automation](#) [Give feedback](#)

5. Click **Create**

Microsoft Azure

Home > Hybrid connectivity | ExpressRoute circuits

Create ExpressRoute

Validation passed

Configuration Monitoring Tags **Review + create**

On-premises network

Customers / Partners Edge

Link 1

Microsoft Enterprise Edge 1

Link 2

Microsoft Enterprise Edge 2

Microsoft

ExpressRoute Circuit
Washington DC - CenturyLink Cloud Connect

Configuration

Subscription: 00000-SUBSCRIPTION-TEST-01

Resource Group: Lumen-Azure-Connectivity

Resiliency: Standard Resiliency: Physical link redundancy within one edge location only

Circuit Details

Region: East US

Circuit name: Lumen-ExpressRoute-Circuit-1

Port type: Provider

Peering location: Washington DC

Provider: CenturyLink Cloud Connect

Bandwidth: 1Gbps

SKU: Standard

Billing model: Metered

Tags

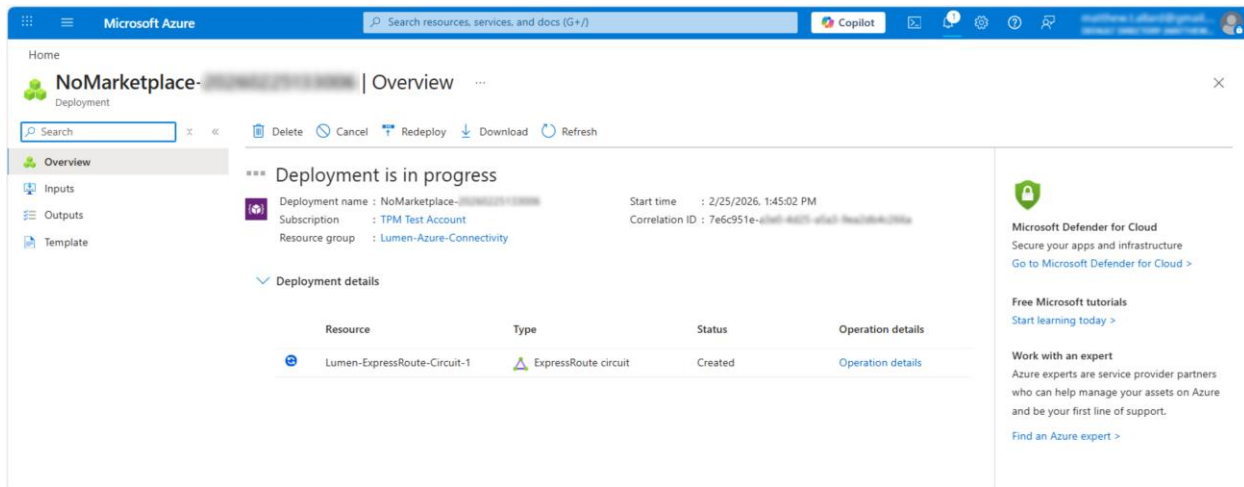
None

Monitoring

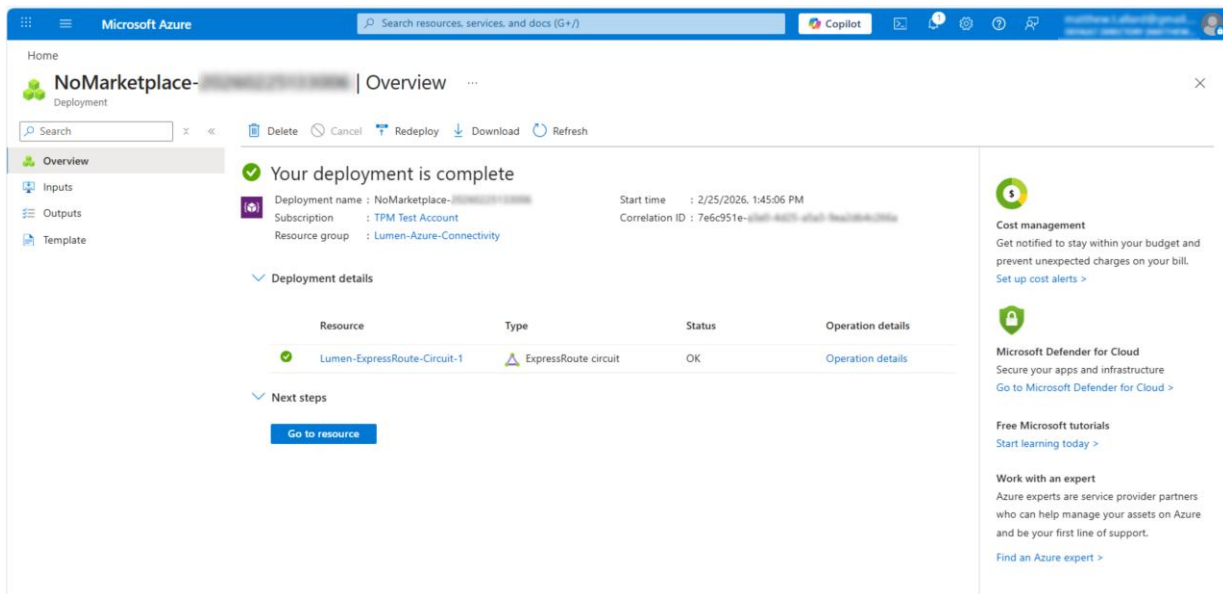
Alert rules for Circuit1: Off

Create Previous Next Download a template for automation Give feedback

6. A new window will be shown and a message will display **Deployment is in progress**



7. Once complete, a message will display **Your deployment is complete**. Expand Deployment details and click the resource name

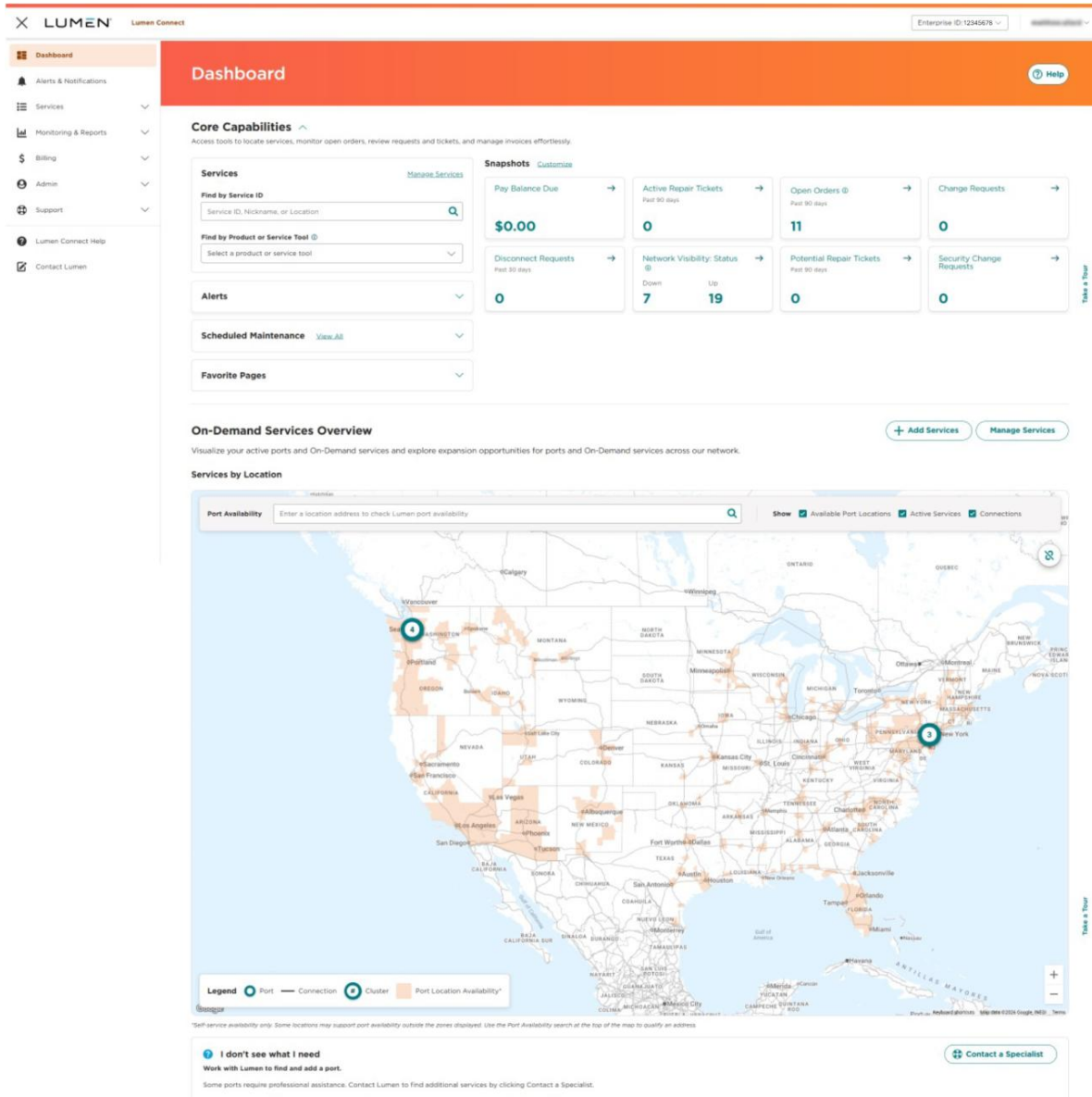


8. Copy the Service Key to be utilized in Lumen ConnectSM

Step 2: Add the connection in Lumen ConnectSM

To add the IP VPN On-Demand connection:

1. [Sign in to Lumen ConnectSM](#). ([Get help retrieving your username/password.](#))



2. Using the left menu click **Services**, then click **Add Services**.

Add Services

Add these services using the Lumen digital experience. If you prefer sales assistance, click the Help button at the bottom of this page.

Self-Serve

Networking

- Internet On-Demand Connection**
Rapidly deploy dedicated internet access.
[Learn More](#) [+ Add](#) [View Pricing](#)
- IP VPN On-Demand Connection**
Create real-time layer-3 network connections between your IP VPN endpoints and cloud service providers.
[Learn More](#) [+ Add](#) [View Pricing](#)
- Ethernet On-Demand Connection**
Add real-time layer-2 network connections between your locations and partner interconnects or virtual cross connects.
[Learn More](#) [+ Add](#) [View Pricing](#)
- Network-as-a-Service (NaaS) Port**
Order a port to add On-Demand services.
[Learn More](#) [+ Add](#)
- Dedicated Internet Access (DIA)**
High-performance, dedicated internet for enterprise apps and needs.
[Learn More](#) [+ Add](#)
- Wavelength**
Handle up to 400 Gbps with fewer elements for max speed, scalability, etc.
[Learn More](#) [+ Add](#)

Edge Cloud

- Secure Access Service Edge (SASE)**
Lumen® SASE Solutions integrate SD-WAN and cloud network security functions.
[Learn More](#) [+ Add](#)

Cybersecurity

- DDoS Hyper**
Self-serve DDoS protection for critical web assets activated in minutes.
[Learn More](#) [+ Add](#)

? I don't see what I need

Work with Lumen to find and add a service.
Some services require professional assistance. Contact a Lumen specialist to find additional services by calling 888-836-5226 or clicking [Help to chat](#). [Help](#)

- Click **+ Add** for IP VPN On-Demand.
- From the **Customer ID** and **Billing Account Number** lists, select the customer number and billing account number you want to add IP VPN On-Demand to.

Lumen ConnectSM fills in the VRF inventory based on the customer ID and billing account number you selected.

- In the **Service Nickname** field, type a name for the connection you're creating. (Be sure to use something memorable. This name will appear on your invoice.)

6. In the **From Location (Select Your VRF)** section, select or create a VRF for the other end of your connection.
 - o Select the VRF to use for the other end of your connection. Click **View Details** for a VRF to view the VRF's routes.
 - o Click **Create New**, then type a description for the new VRF in the **New VRF Description** field. Lumen ConnectSM will create the VRF and activate your VPN service once you create your connection.

The screenshot shows the Lumen Connect interface for adding a new IP VPN on-demand connection. The form is titled "Add IP VPN On-Demand Connection" and is part of the "Add Services" section. The form is divided into four steps: 1. Select Locations & Providers, 2. Select Bandwidth & Price, 3. Select Additional Settings, and 4. Review & Submit Order. The first step, "1. Select Locations & Providers", contains the following fields and options:

- Customer ID ***: SUNDAY UAT 1 (T8BD)
- Billing Account Number ***: ACC-00000001
- Service Nickname ***: Lumen-Azure-VRF-1
- From Location (Select Your VRF) ***: Use Existing VRF (button) or Create New (button)
- New VRF Description ***: 00/VPXX/UAT-VRF-01TEST
- Cloud Provider ***: Azure
- ExpressRoute Service Key ***: (empty field)
- Cloud Provider On Ramp ***: -Select-

At the bottom right of the form, there are "Cancel" and "Continue" buttons.

7. From the **Cloud Provider** list, select **Azure**.
8. In the **ExpressRoute Service Key** field, type or copy and paste your ExpressRoute service key provided by Microsoft. (**Note:** You can only use a service key that isn't provisioned and has no peerings.)

Once you fill in the ExpressRoute service key, Lumen ConnectSM retrieves connection information from Microsoft and fills in the on ramp information.

9. Click **CONTINUE**.

10. Use the **Billing Method** buttons to select whether you want monthly or hourly billing for the connection, then select the bandwidth for the connection. Bandwidth options are determined by the destination (to location). (You can't change the bandwidth once you create the connection. If you need to choose a different bandwidth after creating the connection, disconnect the connection and create a new one.)

The screenshot shows the Lumen Connect web interface for adding a new IP VPN on-demand connection. The page is titled "Add IP VPN On-Demand Connection" and is part of the "Add Services" section. The interface is divided into four main steps:

- 1. Select Locations & Providers**: This step is currently active. It shows a VRF ID of "00/VPXX/UAT-VRF-01TEST" and a "Cloud Provider: Azure". A "Change" button is visible to the right.
- 2. Select Bandwidth & Price**: This step is the focus of the current view. It includes a "Billing Method" dropdown with "Monthly" and "Hourly" options. Below this is a table of bandwidth options, each with a radio button and a "Monthly" price field.

Bandwidth	Monthly
<input type="radio"/> 50 Mbps	\$100.00
<input type="radio"/> 100 Mbps	\$200.00
<input type="radio"/> 200 Mbps	\$400.00
<input type="radio"/> 500 Mbps	\$1000.00
<input checked="" type="radio"/> 1 Gbps	\$2000.00

Monthly - Billing begins once connection is active. Customer will be billed MRC(s) with pro-ration occurring at both the beginning and end of the connection rounded up to the nearest full day.
- 3. Select Additional Settings**: This step is currently hidden.
- 4. Review & Submit Order**: This step is currently hidden.

At the bottom of the form, there are three buttons: "Cancel", "Previous", and "Continue".

11. Click **CONTINUE**.

12. In the **Select Additional Settings** section, fill in the additional details for the connection. (Lumen ConnectSM automatically makes the connection private and sets 12076 as the AS number for Azure.)


- a. Select whether this is a primary or backup connection.
 - Primary will set the local-pref to 750
 - Backup will set the local-pref to 700
- b. In the **IPv4 Routing Option** field, select the radio button for the routing option you want to use for the connection. [Learn more about routing options for an IP VPN connection](#)
- c. Use the buttons to select whether you want to advertise default routes (for both IPv4 and IPv6 if you selected both Internet Protocol versions).

13. Click **CONTINUE**.

14. Review the order information and correct any missing or invalid selections, then click **SUBMIT ORDER**.

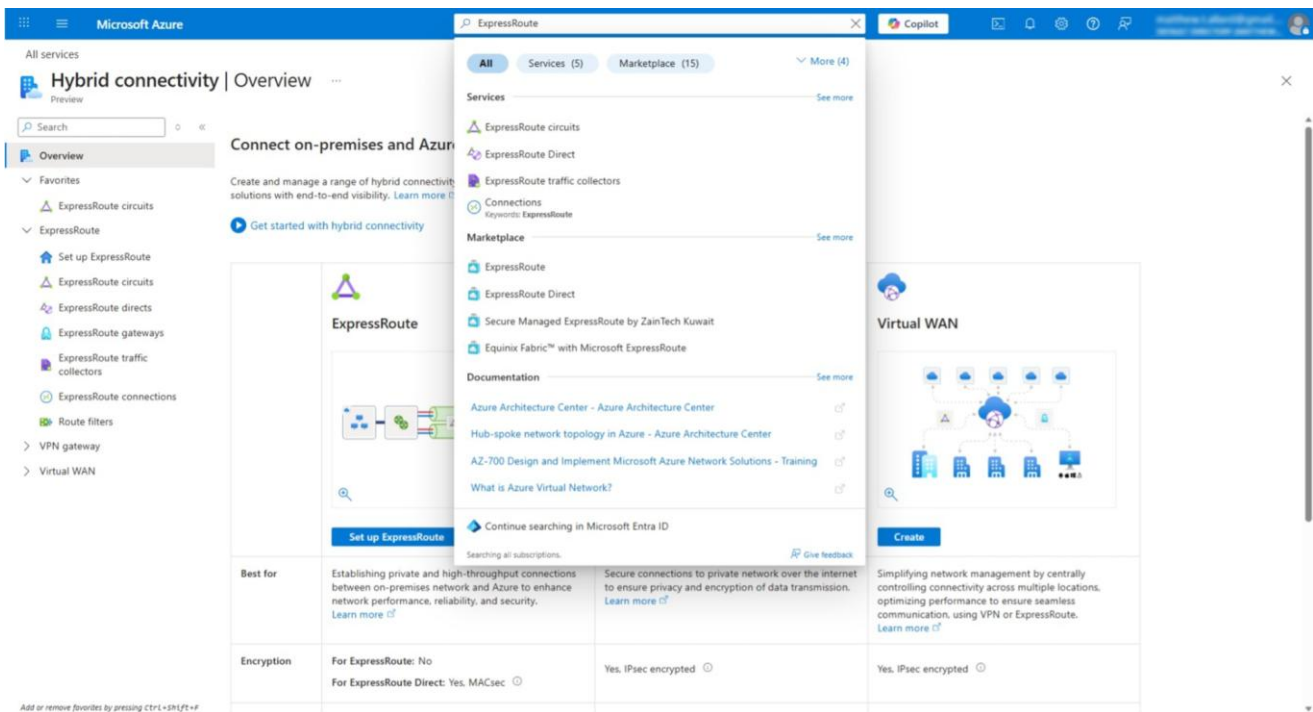
Provisioning in Progress
 Activation typically takes less than 5 minutes. When the service is activated, we'll send an email confirmation and update the Services tab with the details. You may leave this page and place additional orders while provisioning completes.

Design —————
 Configure —————
 3 Activate —————
 4 Complete

Lumen ConnectSM creates the request for connection, places it in *Pending Activation* status, and routes you to the Services tab so you can monitor the status of the connection. To see status updates, click . Once Lumen assigns the permanent VRF (within five minutes), the connection changes to *Active* status.

Step 3: Finish provisioning the ExpressRoute circuit with Azure

1. Sign in to the [Microsoft Azure portal](#) and navigate to ExpressRoute circuits by searching for ExpressRoute.



2. Expand the ExpressRoute resource group

Name	Circuit status	Provider status	Provider	Peering location	Resource Group	Subscription
Lumen-ExpressRoute-Circuit-1	Enabled	Provisioned	CenturyLink Cloud Connect	Washington DC	Lumen-Azure-Connectivity	TPM Test Account
Lumen-ExpressRoute-Circuit-2	Enabled	Provisioned	CenturyLink Cloud Connect	Seattle	Lumen-Azure-Connectivity	TPM Test Account

3. You will see the following values

1. Circuit status: **Enabled**
2. Settings / Peerings:
 - Azure Private: **Provisioned**
 - **Primary Subnet**
 - **Secondary Subnet**

Essentials

- Resource group (move): [Lumen-Azure-Connectivity](#)
- Circuit status: Enabled
- Location: East US
- Subscription (move): [TPM_Test_Account](#)
- Subscription ID: 00000-SUBSCRIPTION-TEST-01
- Tags (edit): [Add tags](#)

Provider: CenturyLink Cloud Connect
 Provider Status: Provisioned
 Peering location: Washington DC
 Bandwidth: 1000 Mbps
 Service key: EXR-KEY-TEST 00000000-0000-0000

Peering and Global Reach

Type	Status	Primary subnet	Secondary subnet	Last modified by
Azure private	Provisioned	One subnet configured	One subnet configured	Customer
	Enabled	100.91.102.148/30	100.91.102.152/30	
Azure public	Not provisioned	-	-	-
Microsoft	Not provisioned	-	-	-

Global Reach

ExpressRoute Global Reach allows you to link your ExpressRoute circuits together to make a private network between your on-premises networks. With Global Reach, your branch offices can directly exchange data with each other through your ExpressRoute circuits and via Microsoft's global network.

Global Reach name	ExpressRoute Circuit name	IPv4 Subnet	IPv6 Subnet	Actions
Add Global Reach Save				

Circuit Status

Show Data For: Last 24 hours

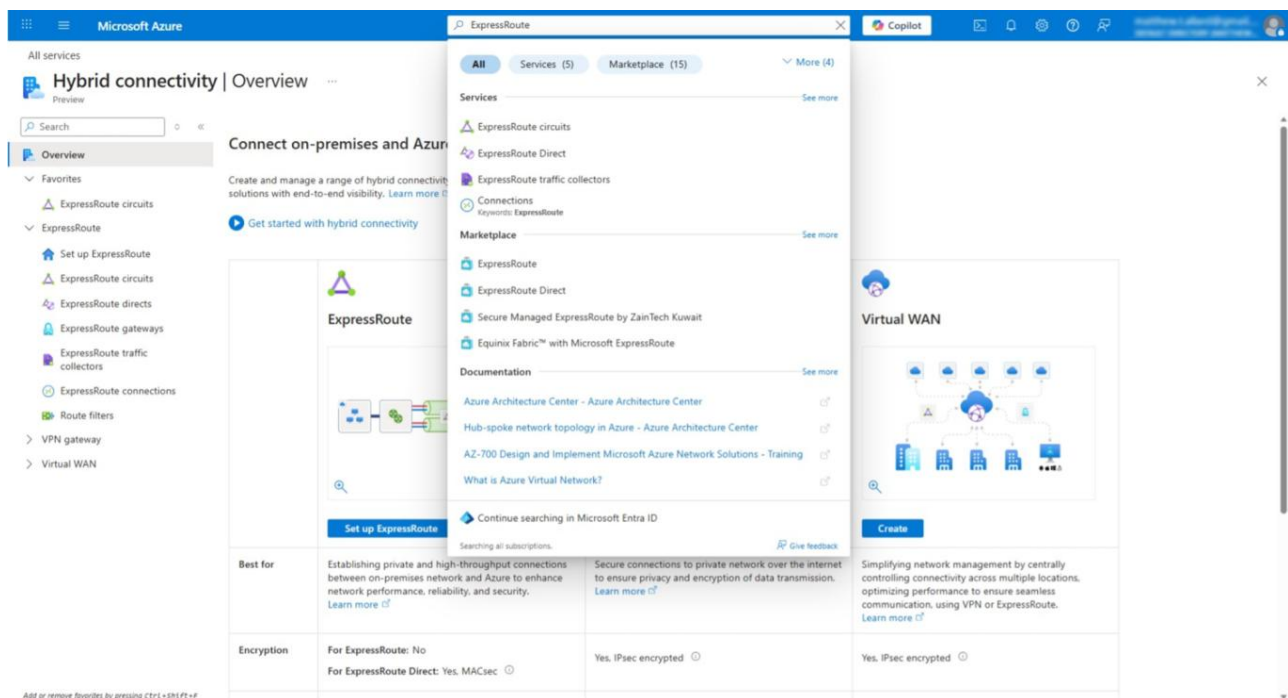
Name	Health Status	12:00	15:00	18:00	21:00	Feb 26	03:00	06:00	09:00
ExpressRoute Circuit	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy
Private Peering	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy
Primary IPv4	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy
ARP Availability	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy
BGP Availability	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy
Secondary IPv4	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy
ARP Availability	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy
BGP Availability	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy
FastPath	Not Avail...	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy
Packet Drop	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy	Healthy

1. Your BGP Peer is established and you may now continue your Microsoft Azure Network configuration

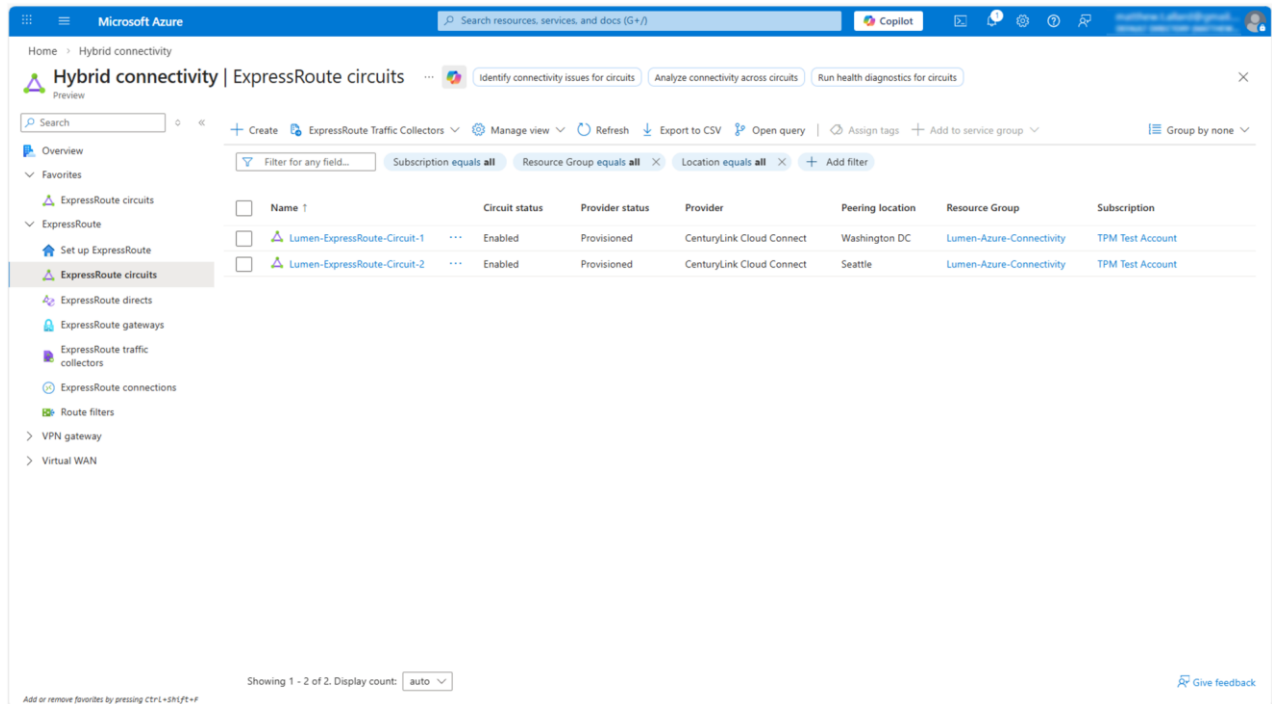
Note: For detailed guidance on configuring your Microsoft Azure networking, refer to the [Microsoft Azure ExpressRoute documentation](#). If you'd like personalized support, please contact your Lumen Account Team to explore our professional services for Microsoft Azure management.

Disconnect Lumen Network-as-a-Service IP VPN On-Demand to Microsoft Azure ExpressRoute

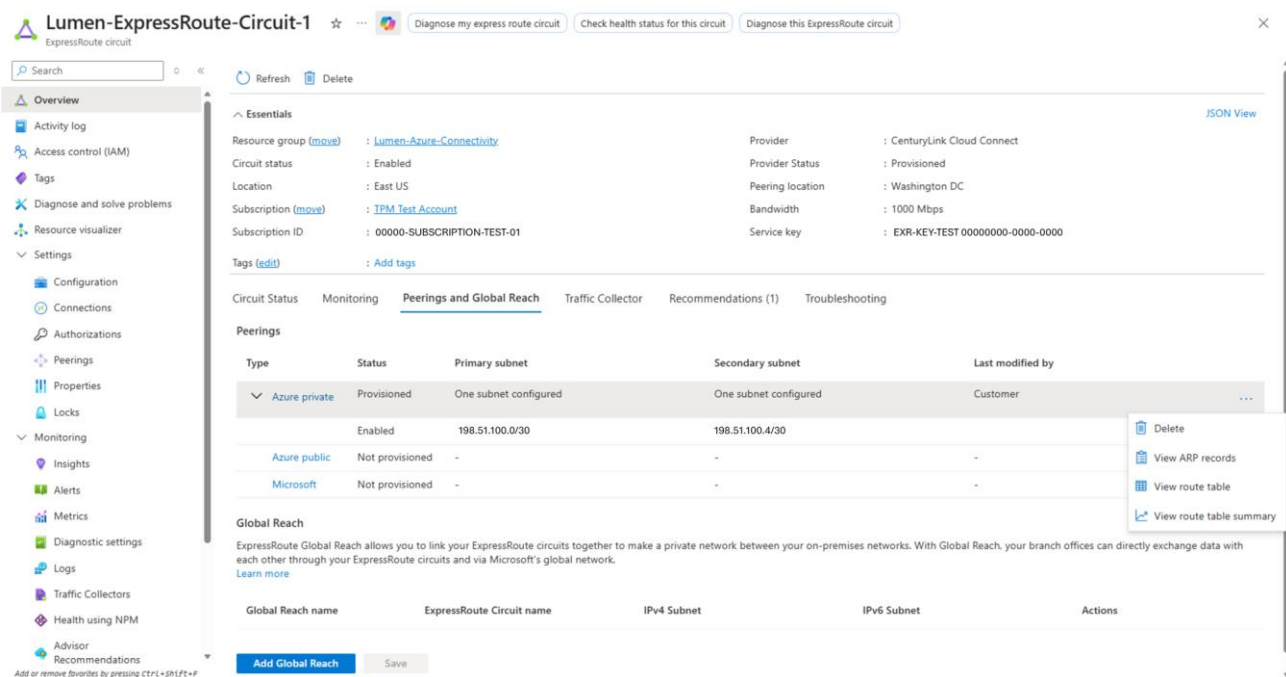
1. Sign in to the [Microsoft Azure portal](#) and navigate to ExpressRoute circuits by searching for ExpressRoute.



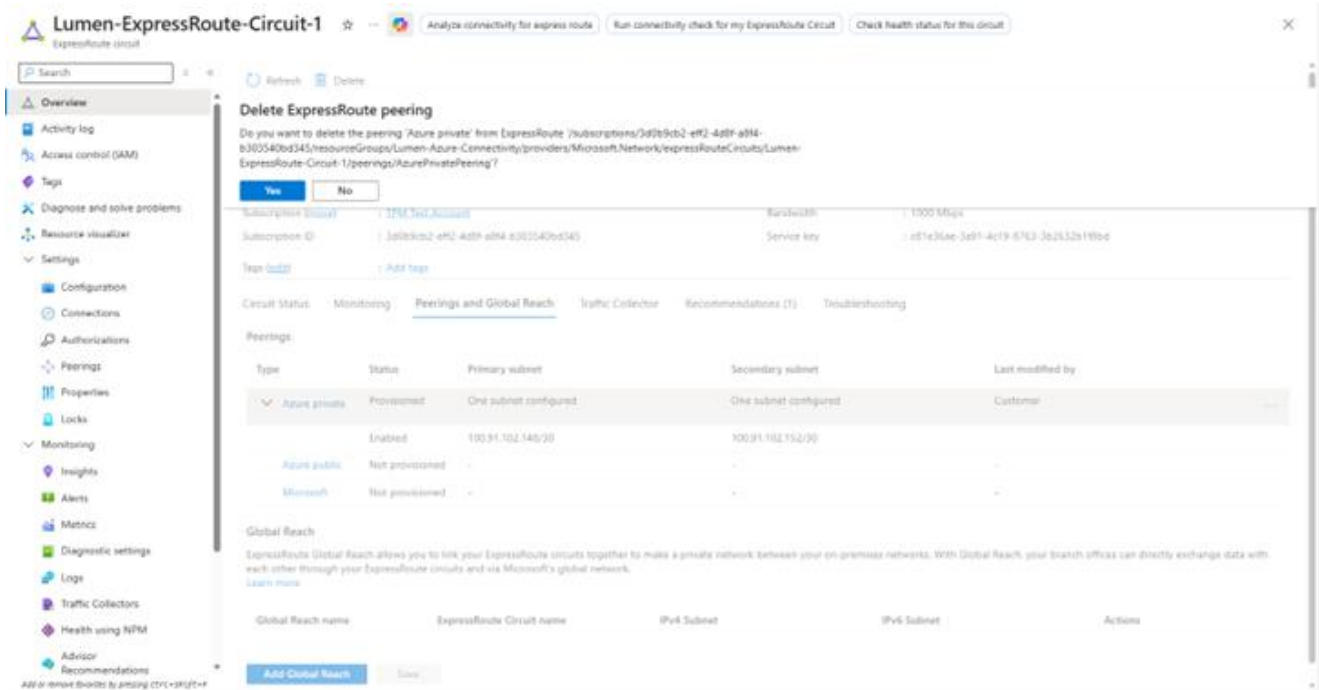
2. Expand the ExpressRoute resource group



3. Expand the ellipsis "... " at the end of the **Azure private** peering row and select **Delete**



4. A pop-up will ask for confirmation. Click **Yes**.

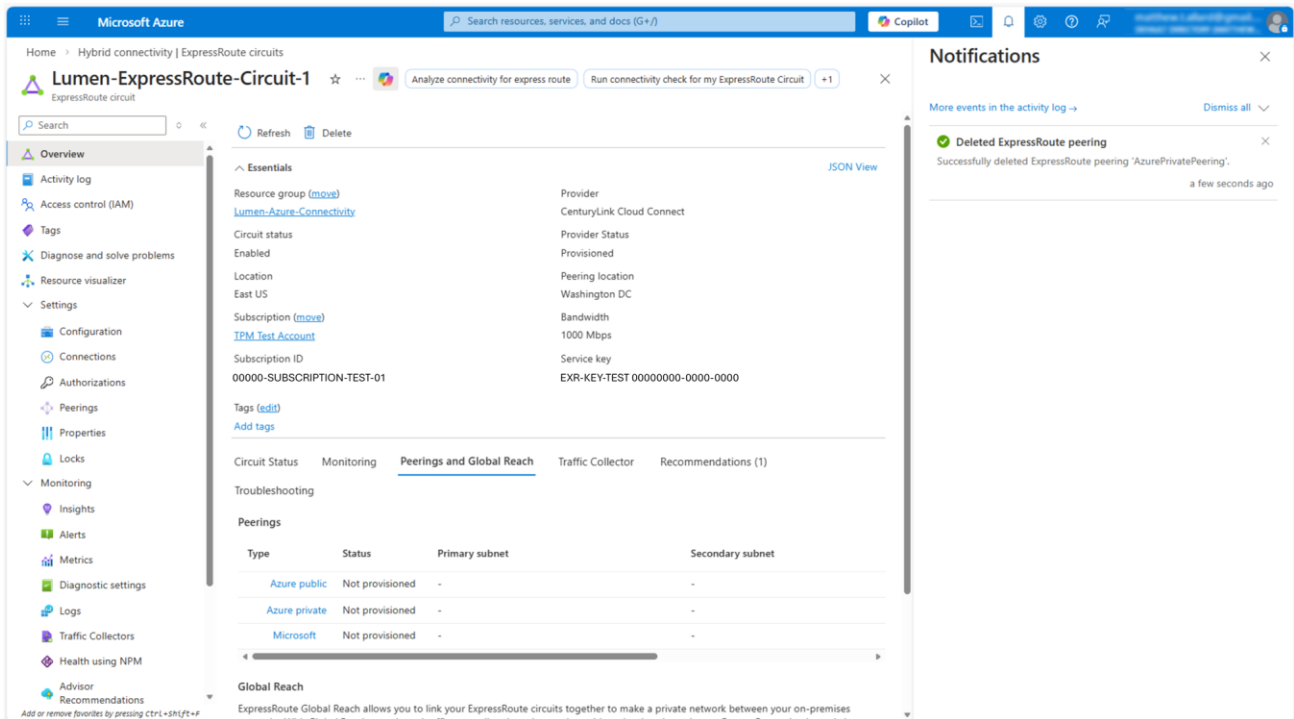


5. The ExpressRoute circuit will show Updating for a few minutes while it removes the BGP Peering.

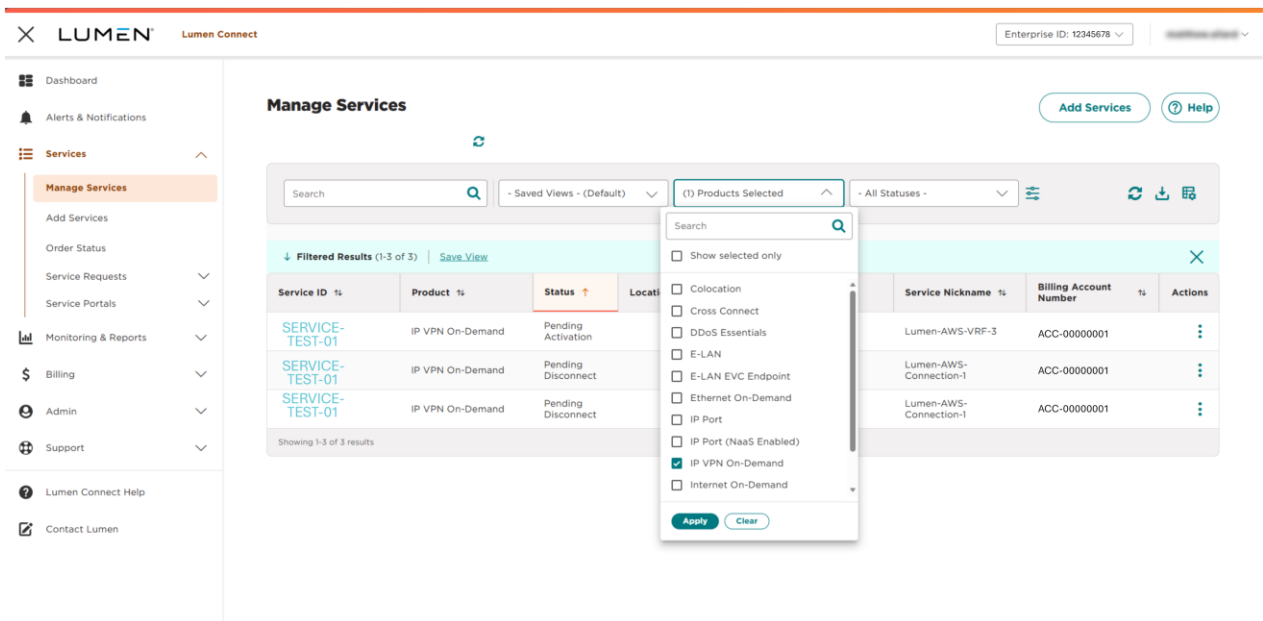
The screenshot shows the Azure portal interface for an ExpressRoute circuit. The left sidebar contains navigation options like Overview, Activity log, and Settings. The main content area displays the circuit's details, including its status (Enabled) and location (East US). The 'Peering and Global Reach' tab is selected, showing a table of peering configurations. The 'Azure private' peering is currently 'Not provisioned'. A notification on the right side of the screen indicates that the 'Azure private' peering is being deleted.

Type	Status	Primary subnet	Secondary subnet
Azure private	Not provisioned	One subnet configured	One subnet configured
Azure public	Not provisioned	-	-
Microsoft	Not provisioned	-	-

6. Once complete the **Azure private** peering will show **Not provisioned**



7. Within Lumen ConnectSM you can now select the **Manage Services, filter by Product, select IP VPN on-Demand** to locate the Service ID of the connection you want to disconnect.



8. Select the Service ID of the connection you want to disconnect and click **Disconnect**

IP VPN Service Details SERVICE-TEST-01

Summary

Product IP VPN	Status Active	Service Nickname MA-Lumen-Azure-VRF-1	Creator Matthew.Atkins@lumen.com
Billing Account ACC-00000001	Customer Account SUNDAY UAT 1 (1T8BD)	Billing Type Monthly	Billing Price \$100.00
Bandwidth 1 Gbps	Start Date 2026/02/25 14:30 GMT	End Date --	

From Location

VRF Description
Lumen-Azure-VRF-2

VRF Name
00/VPXX/UAT-VRF-01TEST

Service Id
SERVICE-TEST-01

To Location

Provider
Azure

NNI On-Ramp
West US 2 (Washington) - Seattle

9. Check the box to confirm the change and click **Confirm Disconnect**

Confirm Service Disconnect

Service Details

Service ID
SERVICE-TEST-01

Connection Nickname
MA-Lumen-Azure-VRF-1

Product Type
IPVPN

Order Contact
Matthew.Atkins@lumen.com

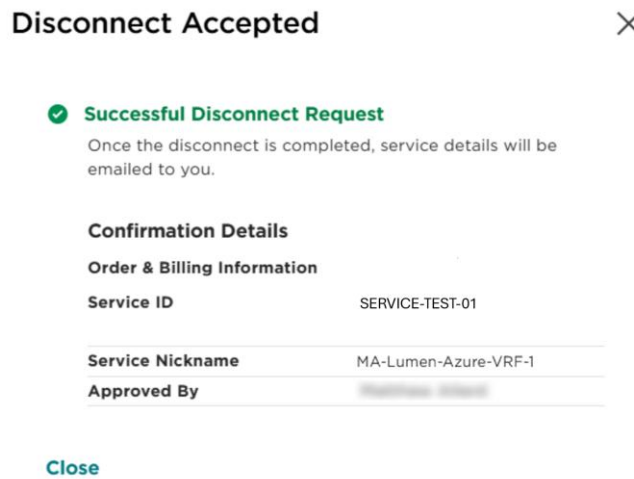
To Location Details
East US (Virginia) - Washington
DC

I understand I will be billed for the full hour or full day based on the billing method once I confirm the disconnect.

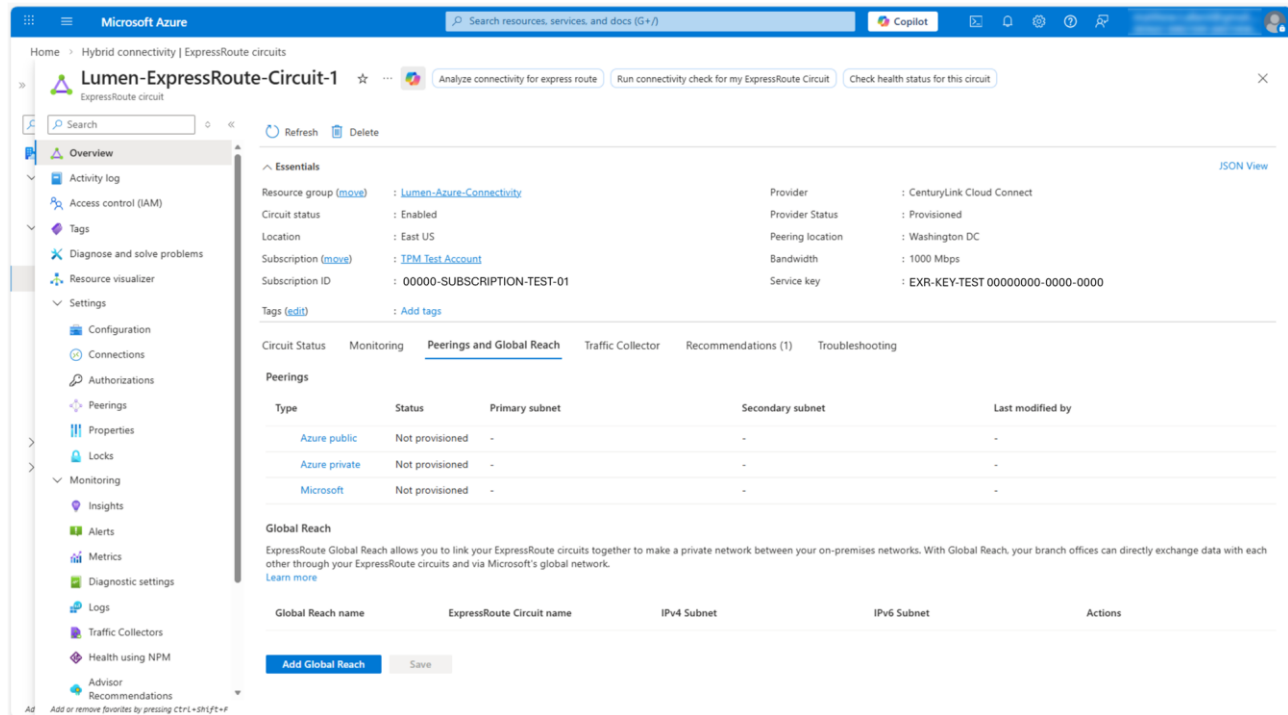
The AWS connection cannot be deleted with active [\(Check AWS virtual interfaces](#). Please make sure you have successfully disconnected resources associated with [interfaces here\)](#) the hosted connection in AWS Portal before disconnecting your Lumen Connection.

Confirm Disconnect **Cancel**

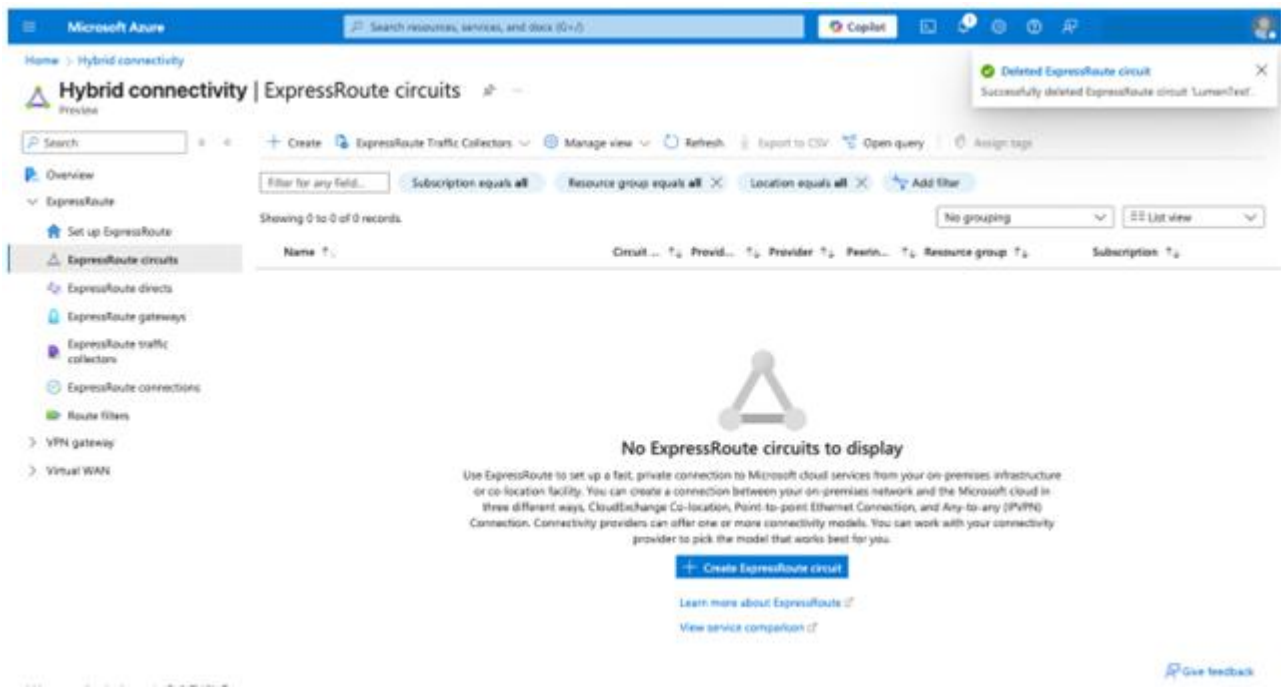
10. A pop-up will display **Disconnect Accepted - Successful Disconnect Request**. You may now click **CLOSE**.



11. Returning to the ExpressRoute circuit information in Microsoft Azure, in the middle of the screen, click **Delete**



12. Once completed a pop-up will display **Deleted ExpressRoute circuit**



Lumen Network-as-a-Service IP VPN On-Demand to Google Cloud

Creating a **Google Cloud Partner Interconnect** involves coordination between Lumen, Google Cloud, and the end customer.

What is a Google Cloud Partner Interconnect?

A **Partner Interconnect** is a type of Google Cloud connection provisioned by a partner who owns the physical Network-to-Network (NNI) infrastructure (e.g., port) and allocates bandwidth to customers on demand. It is different than **Dedicated Interconnects** where Lumen would provision a physical port and dedicated third-party cross-connect (3PXC) and a single customer would own the usage of the entire physical connection.

All Network-as-a-Service IP VPN On-Demand connections to Google Cloud are Partner Interconnects.

Customer **Self-Assessment Questions**

1. **About Your Use Case**

- What will you use this connection for (e.g., cloud storage, data transfer, hybrid workloads)?
- Do your applications require low latency or guaranteed uptime?
- Will your connection needs change frequently?

2. **Bandwidth Planning**

- What is the peak and average bandwidth you need?

3. **Redundancy & Resiliency**

- Do you need a backup path in case of a failure?
- Do you want to connect to multiple Google Cloud regions or Availability Zones?

4. **Google Cloud Connectivity Setup**

- Which Google Cloud region(s) and VPC(s) do you need to reach?

-
- Do you want to connect to multiple VPCs?

7. IP Addressing & Routing

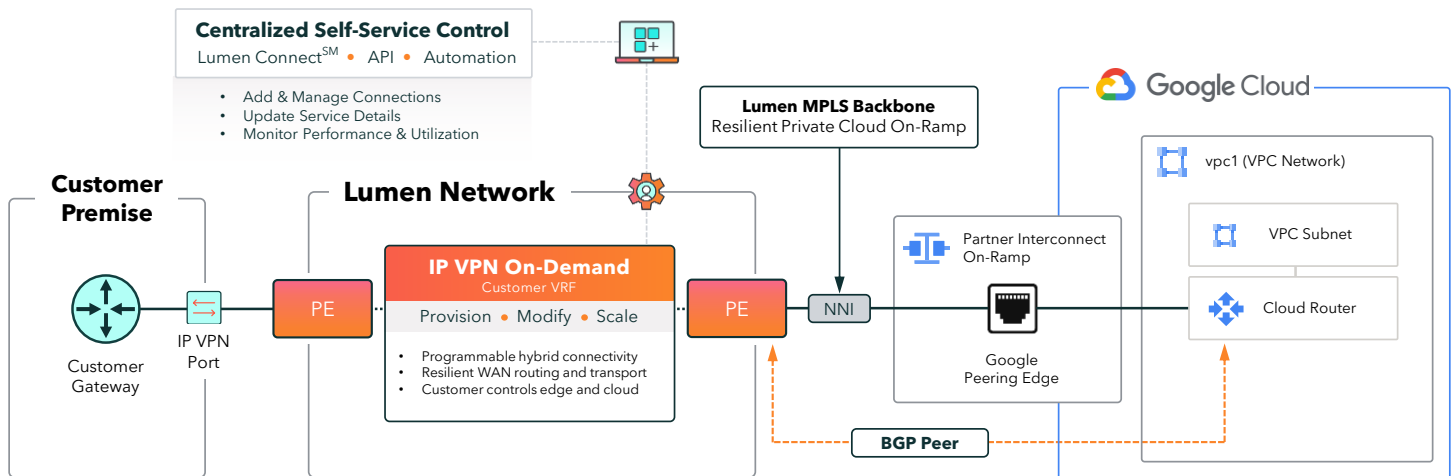
- Do you have your IP address ranges ready?
- Are your IP addresses overlapping with any Google Cloud environments?

Key Considerations

- Google Cloud Partner Interconnect SLAs apply only when redundant connections are provisioned in in a single or diverse region.
 - [Learn more about Partner Interconnects](#)
 - [Learn more about Partner Interconnect SLAs](#)

Deploying Lumen Network-as-a-Service IP VPN On-Demand to Google Cloud Partner Interconnect

Google Cloud Router peering with connectivity to a VPC Network



Hybrid Connectivity Responsibility Model:

Customer Edge Configuration	Lumen IP VPN On-Demand Connectivity with Self-Service Control	Customer Activation of VLAN Attachment (In Google Cloud)	Customer Google Cloud Network Configuration
-----------------------------	---	--	---

Getting Started Checklist

1. **Lumen ConnectSM Access** - Confirm you have access to **Lumen ConnectSM** and are entitled for the **Fabric & On-Demand Services** functionality.
2. **Google Cloud Console Access** - Verify that you have the necessary **login credentials and permissions** to access the Google Cloud environment for the target account.
3. In your Google Cloud project, you need:
 1. A **VPC network** with subnets in the region(s) you'll connect to.
 2. A **Cloud Router** in each region, with BGP ASN **16550** (or another private ASN you choose). You will need the ASN when configuring the IP VPN On-Demand Connection

Step 1: Create the Partner Interconnect Pairing Key

To create a Partner Interconnect Pairing Key in the Google Cloud console:

1. Sign into the Google Cloud console and navigate to **Network Connectivity > Interconnect**

The screenshot shows the Google Cloud console interface for the 'Interconnect' section. At the top, there's a navigation bar with 'Google Cloud', 'My Project 3107', and a search bar. The main content area is titled 'Interconnect' and includes a 'Refresh' button and 'Recommended alerts'. Below this, there are tabs for 'VLAN attachments', 'Cross-site networks', 'Physical connections', and 'Observability'. A prominent card titled 'Get started with real-time analytics' lists benefits like visualizing network resources and diagnosing connectivity issues. Below the card, there are two buttons: 'Try now' and 'Remind me later'. Further down, there are sections for 'Attachment groups' and 'VLAN attachments', each with a 'Create' button. The 'VLAN attachments' section shows an empty table with columns: Name, Region, Status, Type, Encryption, Bandwidth, IP stack type, Cloud Router, and VLAN ID.



No VLAN attachments

VLAN attachments are connections between your local routers and Google Cloud routers for your Dedicated or Partner Interconnect connections.

[Learn more](#)

[Create VLAN attachments](#)

2. Click **Create VLAN attachments**
3. Select **Partner Interconnect**

4. Choose **Unencrypted** (or **Encrypted** if you're doing HA VPN over Interconnect), then **Continue**.
5. Click **Continue**

Google Cloud My Project 3107 Search (/) for resources, docs, products, and more Search

Network Connectivity / Select attachment

Network Connectivity Cen... Add VLAN attachment

VPN

Interconnect

Cloud Router

Interconnect type

Dedicated Interconnect connection
Connect your on-premises network to your Google Cloud VPC network by connecting a new fiber to your equipment. Supports IPv4 and IPv6 traffic. [Learn more](#)

On-premise network **Customer provided Cross-connect** **VPC network**

Partner Interconnect connection
Connect your on-premises network to your Google Cloud VPC network through a connection from a supported service provider. Supports IPv4 and IPv6 traffic. [Learn more](#) or [check supported service providers](#)

On-premise network **Partner network** **VPC network**

Cross-Cloud Interconnect connection
Connect your Google Cloud VPC network to your other cloud service provider network. [Learn more](#)

Cloud service provider **Google provided Cross-connect** **VPC network**

Encrypt interconnect

Set up unencrypted Interconnect
Choose this option if you do not want to set up HA VPN over your Interconnect for encryption purposes

Set up HA VPN over Interconnect
Choose this option if you want HA VPN over your Interconnect connection. You must deploy on-premises IPsec devices to choose this option

Continue Cancel

6. Click **I already have a service provider**.

7. Under Add VLAN attachments configure the following values and click Create

- Redundancy option

Note: For the purposes of this demo we will create a single VLAN by selecting **Create a single VLAN (no redundancy)**

- Network
- Region
- VLAN A Cloud Router
- VLAN A attachment name
- VLAN A attachment description
- IP stack type (IPV4 or IPV4 and IPv6)
- Maximum MTU

The screenshot shows the 'Add Partner VLAN attachment' configuration page in the Google Cloud console. The page is divided into three main sections: a left-hand navigation menu, a central configuration area, and a right-hand informational panel.

- Navigation Menu:** Includes 'Network Connectivity Cen...', 'VPN', 'Interconnect' (selected), and 'Cloud Router'.
- Central Configuration Area:**
 - Progress Bar:** Shows three steps: 1. Check your connection (completed), 2. Add VLAN attachments (current step), and 3. Connect to your VPC networks.
 - Add VLAN attachments:** A section explaining that a VLAN attachment allows access to a VPC network via a service provider connection.
 - Redundancy:** Offers three options: 'Create a redundant pair of VLAN attachments (recommended)', 'Add a redundant VLAN to an existing VLAN', and 'Create a single VLAN (no redundancy)' (selected).
 - Network:** A dropdown menu set to 'default'.
 - Region:** A dropdown menu set to 'us-east4 (Northern Virginia)'. A note indicates 'Region is permanent'.
 - VLAN:**
 - VLAN A cloud router:** A dropdown menu set to 'lumentest'.
 - VLAN A attachment name:** A text field containing 'lumentest'. A note says 'Lowercase letters, numbers, hyphens allowed'.
 - VLAN A attachment description:** A text area containing 'Lumen Test'.
 - IP stack type:** Two radio buttons: 'IPv4 (single-stack)' (selected) and 'IPv4 and IPv6 (dual-stack)'.
 - VLAN A Maximum transmission unit (MTU):** A dropdown menu set to '1440'.
 - Warning:** A yellow box with a triangle icon stating: 'VPC network that uses the VLAN attachment should have the same MTU value. Learn more'.
 - Buttons:** 'Create' and 'Back' buttons at the bottom.
- Right-hand Panel:** Titled 'Connecting through a service provider partner'. It provides instructions on how to connect an on-premise network to Google via a service provider, listing the same three steps as the progress bar.

- When ready, copy the generated **pairing key**—you'll need this for the next step.

The screenshot shows the Google Cloud console interface for configuring a Partner VLAN attachment. The breadcrumb trail is 'Network Connectivity / Add Partner VLAN attachment'. The left sidebar shows 'Interconnect' as the active section. The main content area has three steps: 'Check your connection', 'Add VLAN attachments', and 'Connect to your VPC networks' (which is currently selected). The 'Connect to your VPC networks' step is titled 'Connect to your VPC networks' and contains the following elements:

- Pairing keys:** A section with the instruction: "To complete the VLAN attachment, go to your service provider's portal and add a connection to Google. You'll be prompted to provide a pairing key to complete the connection."
- Form fields:** A table with two columns: 'VLAN attachment name' and 'Pairing key'. The first row contains the value 'lumentest' in the first column and 'PAIRING-KEY-TEST-000000000000' in the second column.
- Pre-activate these VLAN attachments:** A section with a checkbox labeled 'Enable' which is currently unchecked.
- Buttons:** An 'OK' button is located below the 'Pre-activate' section.

A dark notification box at the bottom of the console displays the message: "Successfully created interconnect attachment 'lumentest'".

9. Copy the Pairing Key to be utilized in Lumen ConnectSM

Step 2: Add the connection in Lumen ConnectSM

To add the IP VPN On-Demand connection:

1. [Sign in to Lumen ConnectSM](#). ([Get help retrieving your username/password.](#))

The screenshot displays the Lumen Connect dashboard interface. At the top, there is a navigation bar with the Lumen logo and user information. A left-hand sidebar contains various menu items such as Alerts & Notifications, Services, Monitoring & Reports, Billing, Admin, Support, and Lumen Connect Help. The main content area is titled 'Dashboard' and features a 'Core Capabilities' section with several key metrics: Pay Balance Due (\$0.00), Active Repair Tickets (0), Open Orders (11), Change Requests (0), Disconnect Requests (0), Network Visibility Status (7 Down, 19 Up), Potential Repair Tickets (0), and Security Change Requests (0). Below this is an 'On-Demand Services Overview' section with a '+ Add Services' button. The 'Services by Location' section includes a map of the United States with port availability zones highlighted in orange and clusters marked with blue circles. A legend at the bottom of the map explains the symbols for Port, Connection, Cluster, and Port Location Availability. A 'Contact a Specialist' button is located at the bottom right of the map area.

2. Using the left menu click **Services**, then click **Add Services**.

Add Services

Add these services using the Lumen digital experience. If you prefer sales assistance, click the Help button at the bottom of this page.

Self-Serve

Networking

- Internet On-Demand Connection**
Rapidly deploy dedicated internet access. [Learn More](#) [+ Add](#) [View Pricing](#)
- IP VPN On-Demand Connection**
Create real-time layer-3 network connections between your IP VPN endpoints and cloud service providers. [Learn More](#) [+ Add](#) [View Pricing](#)
- Ethernet On-Demand Connection**
Add real-time layer-2 network connections between your locations and partner interconnects or virtual cross connects. [Learn More](#) [+ Add](#) [View Pricing](#)
- Network-as-a-Service (NaaS) Port**
Order a port to add On-Demand services. [Learn More](#) [+ Add](#)
- Dedicated Internet Access (DIA)**
High-performance, dedicated internet for enterprise apps and needs. [Learn More](#) [+ Add](#)
- Wavelength**
Handle up to 400 Gbps with fewer elements for max speed, scalability, etc. [Learn More](#) [+ Add](#)

Edge Cloud

- Secure Access Service Edge (SASE)**
Lumen SASE Solutions integrate SD-WAN and cloud network security functions. [Learn More](#) [+ Add](#)

Cybersecurity

- DDoS Hyper**
Self-serve DDoS protection for critical web assets activated in minutes. [Learn More](#) [+ Add](#)

I don't see what I need

Work with Lumen to find and add a service. Some services require professional assistance. Contact a Lumen specialist to find additional services by calling 888-856-5226 or clicking [Help](#) to chat.

3. Click **+ Add** for IP VPN On-Demand.
4. From the **Customer ID** and **Billing Account Number** lists, select the customer number and billing account number you want to add IP VPN On-Demand to.

Lumen ConnectSM fills in the VRF inventory based on the customer ID and billing account number you selected.

5. In the **Service Nickname** field, type a name for the connection you're creating. (Be sure to use something memorable. This name will appear on your invoice.)
6. In the **From Location (Select Your VRF)** section, select or create a VRF for the other end of your connection.
 - Select the VRF to use for the other end of your connection. Click **View Details** for a VRF to view the VRF's routes.
 - Click **Create New**, then type a description for the new VRF in the **New VRF Description** field. Lumen ConnectSM will create the VRF and activate your VPN service once you create your connection.

The screenshot shows the Lumen Connect interface for adding a new IP VPN on-demand connection. The page title is "Add IP VPN On-Demand Connection". The form is divided into several sections:

- 1. Select Locations & Providers**: This section contains several fields:
 - Customer ID ***: A dropdown menu with "SUNDAY UAT 1 (1T8BD)" selected.
 - Billing Account Number ***: A dropdown menu with "ACC-00000001" selected.
 - Service Nickname ***: A text input field containing "Lumen-Google-Test-VRF-1".
 - From Location (Select Your VRF) ***: A section with two buttons: "Use Existing VRF" and "Create New".
 - New VRF Description ***: A text input field containing "Lumen-Google-Test-VRF-1" with a green checkmark icon to its right.
 - Cloud Provider ***: A dropdown menu with "Google" selected.
 - Google Pairing Key ***: A text input field with a help icon.
 - Cloud Provider On Ramp ***: A dropdown menu with "-Select-" selected.
- 2. Select Bandwidth & Price**: A section with a blank form area.
- 3. Select Additional Settings**: A section with a blank form area.
- 4. Review & Submit Order**: A section with a blank form area.

At the bottom right of the form, there are "Cancel" and "Continue" buttons.

7. From the **Cloud Provider** list, select **Google**.

8. Fill in the information for the Google connection:
 - In the **Google Pairing key** field, type your pairing key from Google. Lumen ConnectSM validates the pairing key.
 - From the **Cloud Provider On Ramp** list, select an on ramp.
9. Click **CONTINUE**.
10. Use the **Billing Method** buttons to select whether you want monthly or hourly billing for the connection, then select the bandwidth for the connection. Bandwidth options are determined by the destination (to location). (You can't change the bandwidth once you create the connection. If you need to choose a different bandwidth after creating the connection, disconnect the connection and create a new one.)

Add IP VPN On-Demand Connection

VRF: 00/VPXX/UAT-VRF-01TEST
Cloud Provider: Google

1. Select Locations & Providers

2. Select Bandwidth & Price

Billing Method: Monthly Hourly

Bandwidth	Monthly
<input type="radio"/> 50 Mbps	...
<input type="radio"/> 100 Mbps	...
<input type="radio"/> 200 Mbps	...
<input type="radio"/> 300 Mbps	...
<input type="radio"/> 400 Mbps	...
<input type="radio"/> 500 Mbps	...
<input checked="" type="radio"/> 1 Gbps	...
<input type="radio"/> 2 Gbps	...
<input type="radio"/> 5 Gbps	...
<input type="radio"/> 10 Gbps	...
<input type="radio"/> 20 Gbps	...

Monthly - Billing begins once connection is active. Customer will be billed MRC(s) with pro-ration occurring at both the beginning and end of the connection rounded up to the nearest full day.

Cancel Previous **Continue**

3. Select Additional Settings

4. Review & Submit Order

11. Click **CONTINUE**.

12. In the **Select Additional Settings** section, fill in the additional details for the connection:

- Input the ASN of your Cloud Router in the **AS Number on Google** field. (in this example 16550)
- Select the **Internet Protocol Version** you want to use.

- Select whether this is a primary or backup connection.
 - Primary will set the local-pref to 750
 - Backup will set the local-pref to 700
- In the **IPv4 Routing Option** field, select the radio button for the routing option you want to use for the connection. [Learn more about routing options for an IP VPN connection](#)
- Use the buttons to select whether you want to advertise default routes (for both IPv4 and IPv6 if you selected both Internet Protocol versions).

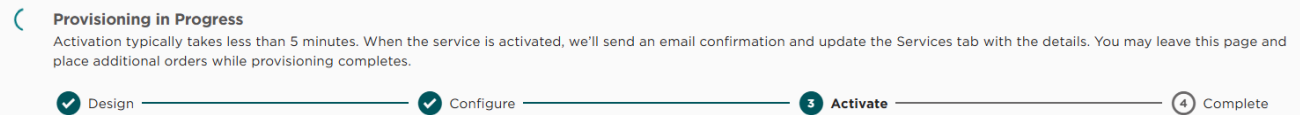
The screenshot shows the Lumen Connect interface for configuring an IP VPN connection. The page is titled "Add IP VPN On-Demand Connection" and is divided into four main steps:


- 1. Select Locations & Providers:** Shows VRF: 00/VPXX/UAT-VRF-01TEST and Cloud Provider: Google. A "Change" button is available.
- 2. Select Bandwidth & Price:** Shows 1 Gbps bandwidth. A "Change" button is available.
- 3. Select Additional Settings:**
 - Provider Service:** Set to "Private".
 - AS Number on Google:** Set to 16550.
 - Internet Protocol Version:** Radio buttons for IPv4 (selected) and IPv4 / IPv6.
 - Primary/Backup:** Radio buttons for Primary (selected) and Backup.
 - IPv4 Routing Option:**
 - Aggregate and advertise my RFC 1918 routes:** Selected. Description: "Ideal for cloud service providers (CSPs) with restrictive BGP prefix limits like AWS and Google and if most of your prefixes are RFC 1918. Lumen automatically aggregates network prefixes according to RFC 1918 standards to reduce the number of prefixes sent to the CSP. Lumen only advertises network RFC 1918 prefixes: 10.0.0.0/8, 172.16.0.0/12, and 192.168.0.0/16. Note: Aggregates are NOT injected into your routing tables." More Details link is present.
 - Advertise all routes except those specified:** Unselected. Description: "Allows you to control which routes are advertised to the CSP. Check with your CSP to verify any BGP maximum prefix limits before selecting this option, as it could cause issues with your connection." More Details link is present.
 - Deny all routes except those specified:** Unselected. Description: "Optimal for CSPs with maximum prefix limits that require reducing advertised prefixes and your prefixes don't fall under RFC 1918 ranges." More Details link is present.
 - Advertise Default Routes for IPv4:** Radio buttons for Yes and No (selected).
- 4. Review & Submit Order:** (Partially visible at the bottom)

Navigation buttons at the bottom of the form include "Cancel", "Previous", and "Continue".

13. Click **CONTINUE**.

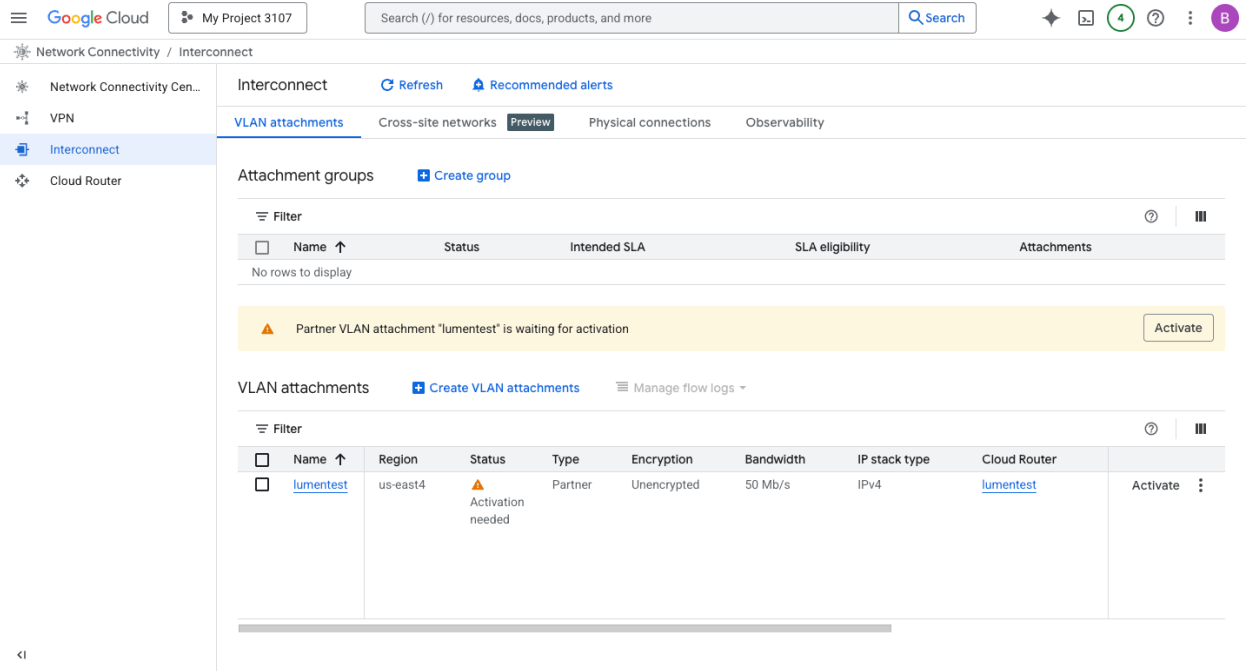
14. Review the order information and correct any missing or invalid selections, then click **SUBMIT ORDER**.



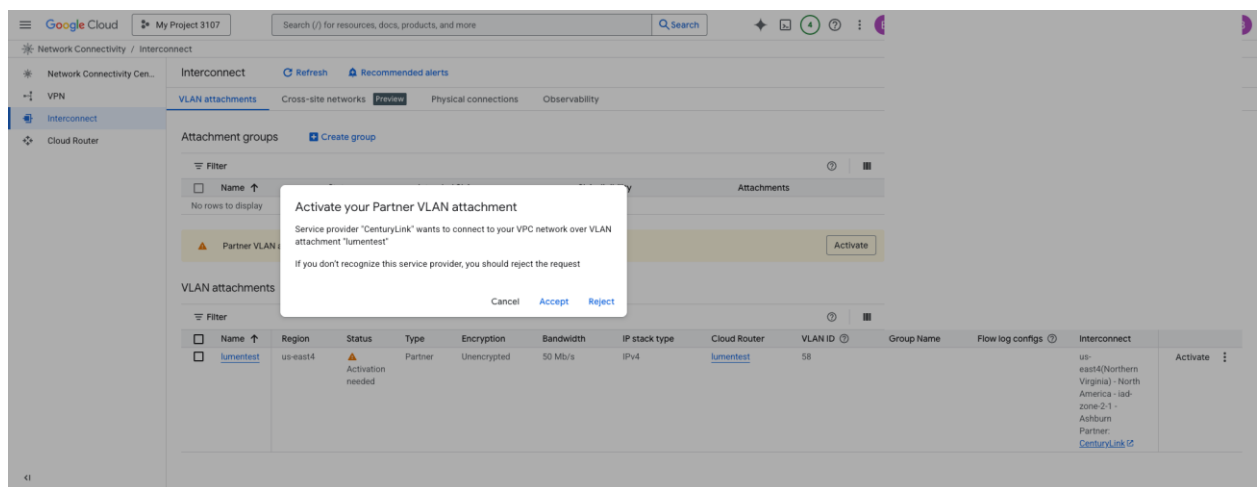
Lumen ConnectSM creates the request for connection, places it in *Pending Activation* status, and routes you to the Services tab so you can monitor the status of the connection. To see status updates, click . Once Lumen assigns the permanent VRF (within five minutes), the connection changes to *Active* status.

Step 3: Finish provisioning the Partner Interconnect with Google Cloud

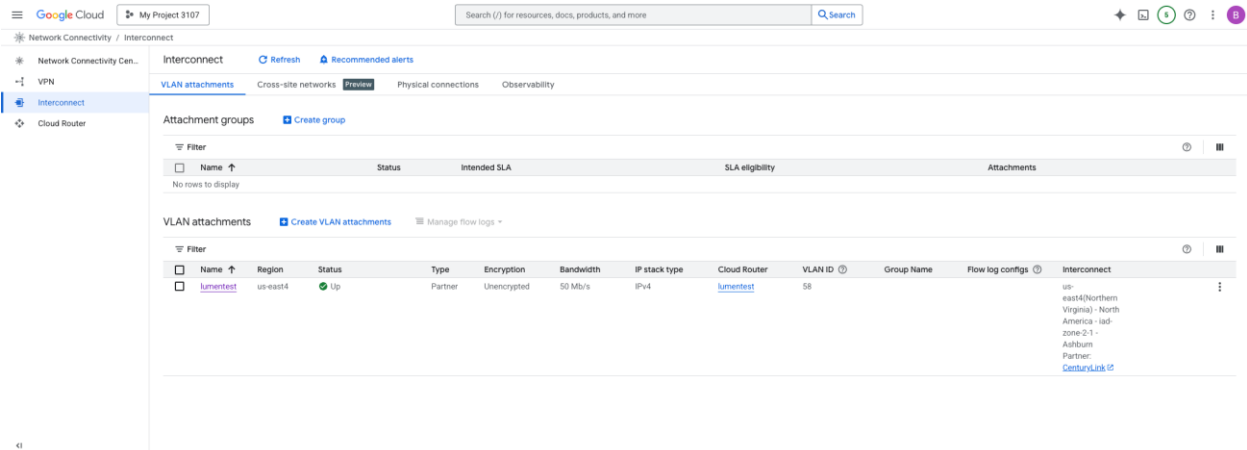
1. Sign into the Google Cloud console and navigate to **Network Connectivity > Interconnect**
2. The VLAN attachment previously created will have a Status of **Activation needed**.
3. Click **Activate**



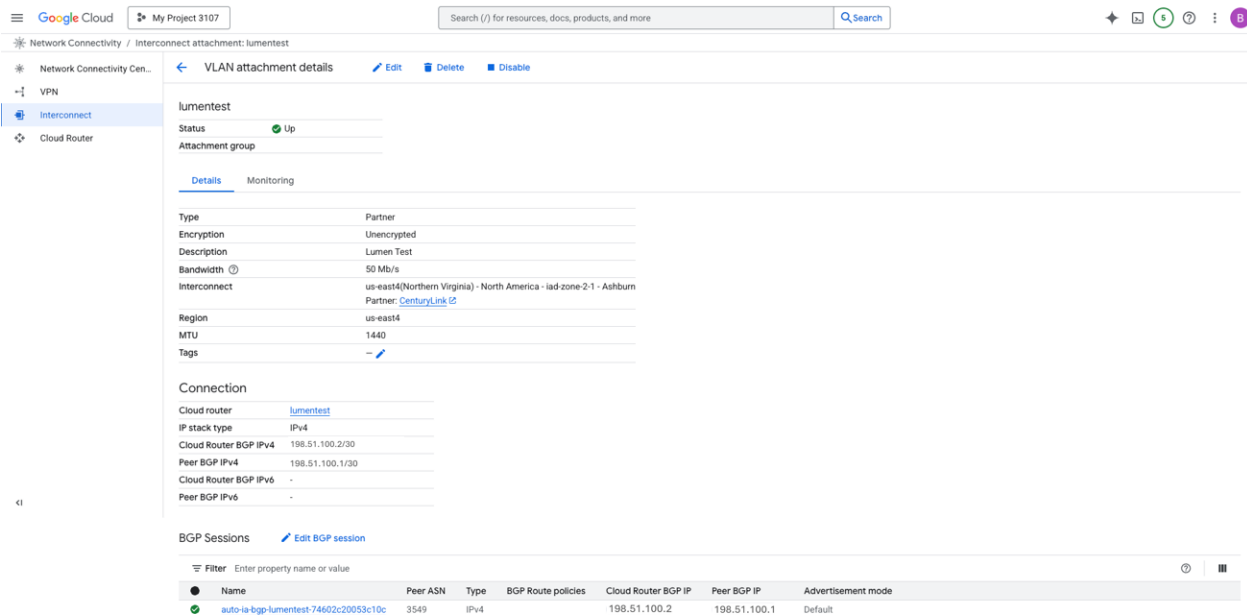
4. A pop-up to Activate your Partner VLAN attachment will appear. Click Accept



5. After a few minutes the VLAN attachment will have a **Status of Up**



6. Expanding the VLAN Attachment will show the BGP Peering Subnets and other connectivity details

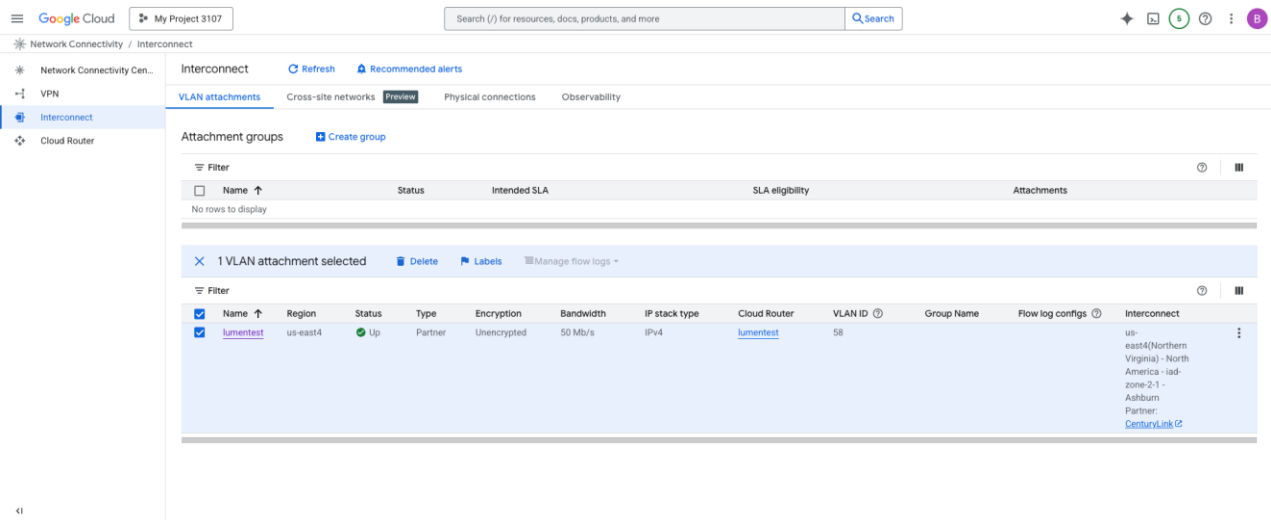


7. Your BGP Peer is established, and you may now continue your Google Cloud network configuration

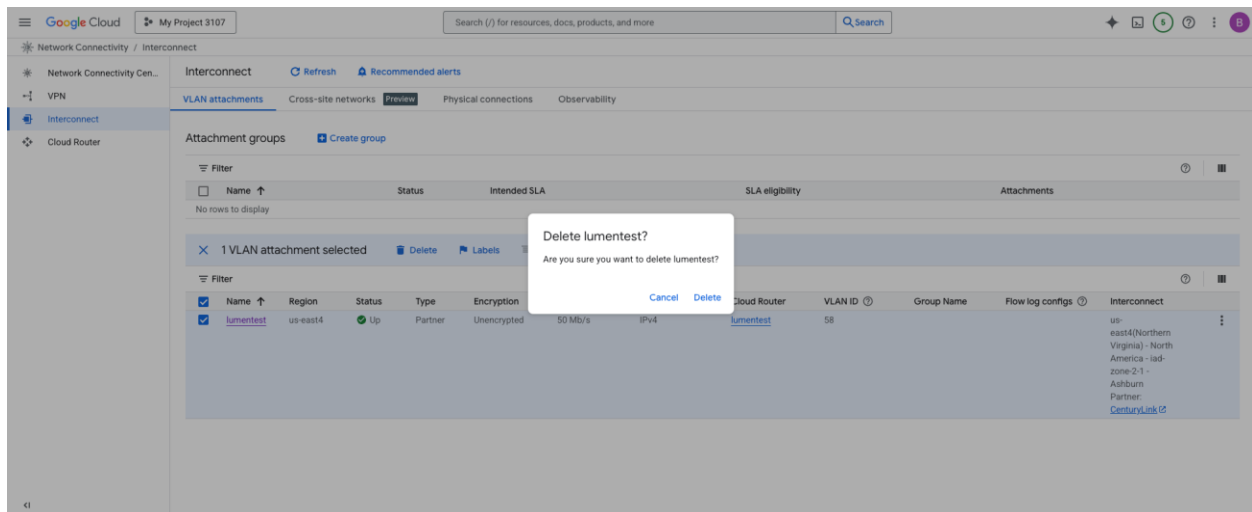
8. **Note:** For detailed guidance on configuring your Google Cloud networking, refer to the [Partner Interconnect Documentation](#). If you'd like personalized support, please contact your Lumen Account Team to explore our professional services for Google Cloud management.

Disconnect Lumen Network-as-a-Service IP VPN On-Demand to Google Cloud Partner Interconnect

1. Sign into the Google Cloud console and navigate to **Network Connectivity > Interconnect**
2. Locate VLAN attachment associated with the IP VPN On-Demand Connection you would like to remove, select the box, and click Delete



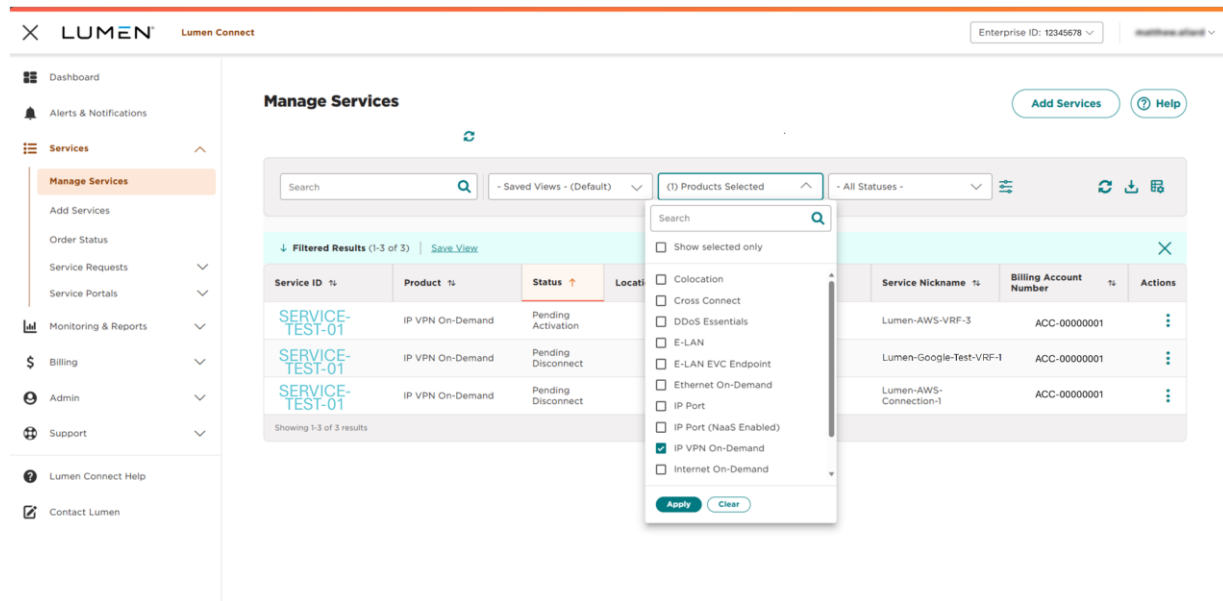
3. A pop-up will ask for confirmation. Click **Delete**



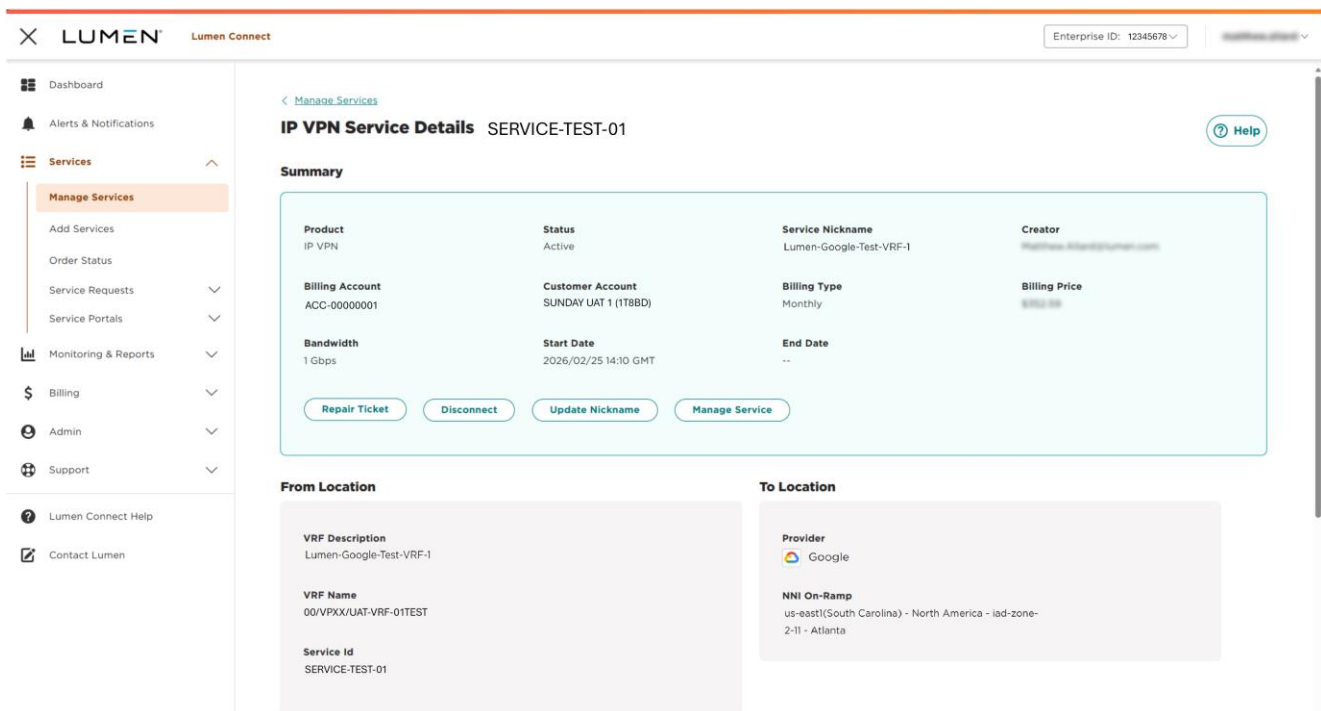
4. After a few minutes the VLAN attachment will be removed

The screenshot shows the Google Cloud Network Connectivity Center interface. The left sidebar is expanded to 'Interconnect'. The main content area is titled 'Interconnect' and has tabs for 'VLAN attachments', 'Cross-site networks', 'Physical connections', and 'Observability'. The 'VLAN attachments' tab is active. Below the tabs, there are two sections: 'Attachment groups' and 'VLAN attachments'. The 'Attachment groups' section shows a filter input and a table with columns: Name, Status, Intended SLA, SLA eligibility, and Attachments. Below this table, it says 'No rows to display'. The 'VLAN attachments' section also has a filter input and a table with columns: Name, Region, Status, Type, Encryption, Bandwidth, IP stack type, Cloud Router, VLAN ID, Group Name, Flow log configs, and Interconnect. Below this table, there is a large empty space with a central icon of a box containing a cloud. Below the icon, the text reads: 'No VLAN attachments. VLAN attachments are connections between your local routers and Google Cloud routers for your Dedicated or Partner Interconnect connections. Learn more'. At the bottom of this section is a blue button labeled 'Create VLAN attachments'.

5. Within Lumen ConnectSM you can now select the **Manage Services, filter by Product, select IP VPN on-Demand** to locate the Service ID of the connection you want to disconnect.



6. Select the Service ID of the connection you want to disconnect and click **Disconnect**



7. Check the box to confirm the change and click **Confirm Disconnect**

Confirm Service Disconnect ✕

Service Details

Service ID SERVICE-TEST-01	Connection Nickname Lumen-Google-Test-VRF-1
Product Type IPVPN	Order Contact [Redacted]

To Location Details
us-east1(South Carolina) - North America - iad-zone-2-11 - Atlanta

- I understand I will be billed for the full hour or full day based on the billing method once I confirm the disconnect.
- The AWS connection cannot be deleted with active [AWS](#) virtual interfaces. Please make sure you have successfully disconnected resources associated with [Interfaces](#) the hosted connection in AWS Portal before [here](#) disconnecting your Lumen Connection.

Confirm Disconnect
Cancel

1. A pop-up will display **Disconnect Accepted - Successful Disconnect Request**. You may now click **CLOSE**.

Disconnect Accepted ✕

✔ **Successful Disconnect Request**

Once the disconnect is completed, service details will be emailed to you.

Confirmation Details

Order & Billing Information

Service ID	SERVICE-TEST-01
Service Nickname	Lumen-Google-Test-VRF-1
Approved By	[Redacted]

Close

Lumen Network-as-a-Service IP VPN On-Demand to Oracle Cloud Infrastructure

Creating an **Oracle Cloud Infrastructure Partner FastConnect** involves coordination between Lumen, Oracle Cloud Infrastructure, and the end customer.

What is a Oracle Cloud Infrastructure Partner FastConnect?

A **Partner FastConnect** is a type of Oracle Cloud Infrastructure connection provisioned by a partner who owns the physical Network-to-Network (NNI) infrastructure (e.g., port) and allocates bandwidth to customers on demand. It is different than **Dedicated FastConnect** where Lumen would provision a physical port and dedicated third-party cross-connect (3PXC) and a single customer would own the usage of the entire physical connection.

All Network-as-a-Service IP VPN On-Demand connections to Oracle Cloud Infrastructure are Partner FastConnects.

Customer Self-Assessment Questions

1. About Your Use Case

- What will you use this connection for (e.g., cloud storage, data transfer, hybrid workloads)?
- Do your applications require low latency or guaranteed uptime?
- Will your connection needs change frequently?

2. Bandwidth Planning

- What is the peak and average bandwidth you need?

3. Redundancy & Resiliency

- Do you need a backup path in case of a failure?
- Do you want to connect to multiple Oracle Cloud Infrastructure regions or Availability Zones?

4. Oracle Cloud Infrastructure Connectivity Setup

- Which Oracle Cloud Infrastructure region(s) and VCN(s) do you need to reach?
- Do you want to connect to multiple VCNs?

6. IP Addressing & Routing

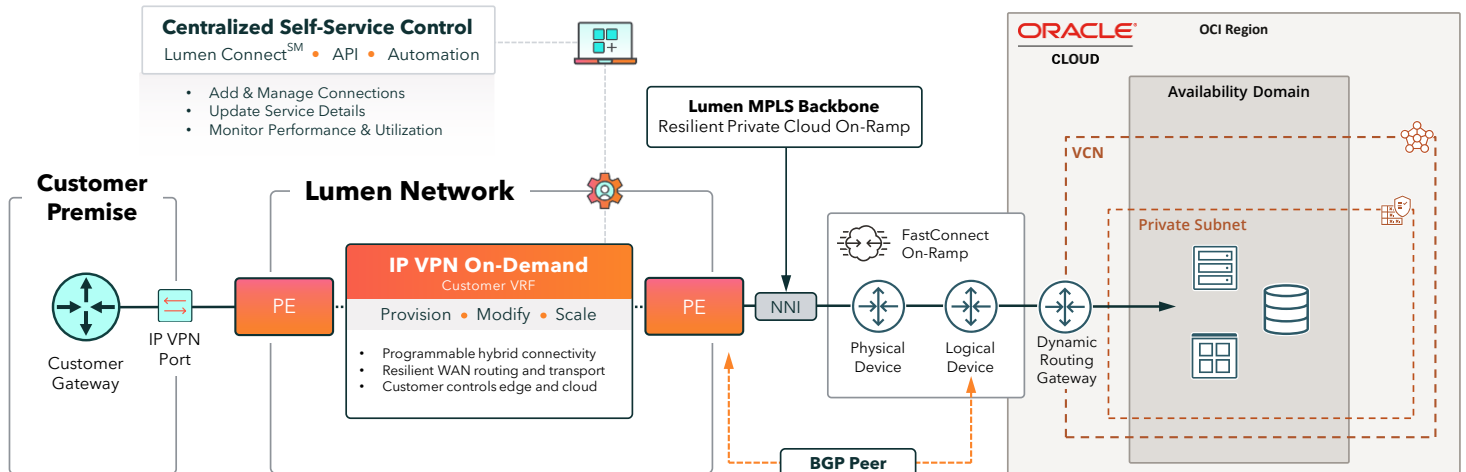
- Do you have your IP address ranges ready?
- Are your IP addresses overlapping with any Oracle Cloud Infrastructure environments?

Key Considerations

- Oracle Cloud Infrastructure Partner FastConnect SLAs apply only when redundant connections are provisioned in a single or diverse region.
 - [Learn more about FastConnect](#)
 - [FastConnect FAQ](#)

Deploying Lumen Network-as-a-Service IP VPN On-Demand to Oracle Cloud Infrastructure FastConnect

FastConnect logical device peering with connectivity to a VCN



Hybrid Connectivity Responsibility Model:

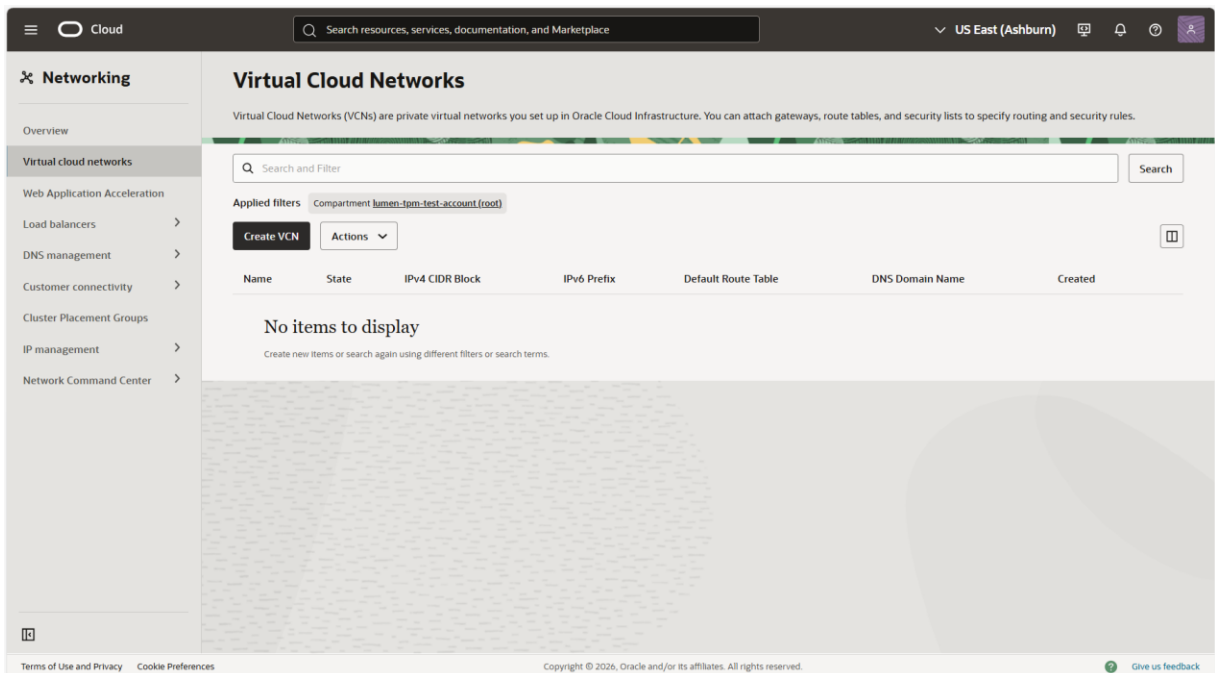
Customer Edge Configuration	Lumen IP VPN On-Demand Connectivity with Self-Service Control	Customer FastConnect Configuration	Customer Oracle Cloud Network Configuration
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Getting Started Checklist

1. **Lumen ConnectSM Access** - Confirm you have access to Lumen ConnectSM and are entitled for the **Fabric & On-Demand Services** functionality.
2. **Oracle Cloud Infrastructure Console Access** - Verify that you have the necessary **login credentials and permissions** to access the Oracle Cloud Infrastructure for the target account.
3. In your Oracle Cloud Infrastructure account, you need:
 1. A **Virtual Cloud Network (VCN)** pre-created in OCI
 2. A **Dynamic Routing Gateway (DRG)**

Step 1: Create the Virtual Cloud Network (VCN)

1. Login to the **OCI Console**: <https://cloud.oracle.com> and navigate to **Networking > Virtual Cloud Networks**



2. Click **Create VCN**
3. Fill in:
 - **Name**
 - **Create In Compartment** (select compartment)
 - **CIDR Block**
 - **DNS Label**: Optional, for internal DNS resolution
4. Click **Create VCN**

☰ Cloud
US Midwest (Chicago)

Create a Virtual Cloud Network

IPv4 CIDR Blocks

You can assign up to 5 IPv4 CIDR blocks to a VCN. There must be at least one IPv4 CIDR block assigned to a VCN. [Learn more.](#)

Required for instance hostname assignment if you plan to use VCN DNS or a third-party DNS. This choice cannot be changed after the VCN is created. [Learn More.](#)

Use DNS hostnames in this VCN

IPv6 Prefixes

You can assign up to 5 IPv6 prefixes to a VCN. [Learn more.](#)

Assign an Oracle allocated IPv6 /56 prefix.

Selecting this option allows a single Oracle assigned IPv6 prefix to your Virtual Cloud Network. [Learn More.](#)

BYOIPv6 Prefix

Add IPv6 Prefixes
Remove
☰

IPv6 Prefix	IP Range	Total IPs
<p>No items to display</p> <p><small>Create new items or search again using different filters or search terms.</small></p>		

▼ **Tags**

Add tags to organize your resources. [What can I do with tagging?](#)

No items to display

▶ **Show security attributes**

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5. A new window will show the completed VCN details

The screenshot displays the OCI Console interface for a Virtual Cloud Network (VCN) named 'LumenTest'. The page is titled 'Virtual Cloud Networks' and shows the VCN is 'Available'. The left sidebar lists various networking services, with 'Virtual cloud networks' selected. The main content area shows the 'VCN Information' tab, which includes the following details:

Property	Value	Action
Compartment	level3_customer_testing	
Created	Jul 1, 2025, 15:10 UTC	
IPv4 CIDR Block	10.0.0.0/16	
IPv6 Prefix	—	
OCID	ocid1.instance.oc1.aaaa.01010xxx01010xxx01010xxx01010xxx01010xxx01010xxx	Copy
DNS Resolver	resolver.example.01010xxx01010xxx01010xxx01010xxx01010xxx	Copy
Default Route Table	Default Route Table for LumenTest	
DNS Domain Name	lumentest.oraclevcn.com	

The footer of the console shows 'Terms of Use and Privacy', 'Cookie Preferences', 'Copyright © 2025, Oracle and/or its affiliates. All rights reserved.', and a 'Give us feedback' link.

Step 2: Create the Dynamic Routing Gateway (DRG)

1. Login to the **OCI Console**: <https://cloud.oracle.com> and navigate to **Networking > Customer Connectivity > Dynamic routing gateway**
2. Click **Create dynamic routing gateway**

Dynamic routing gateways

Dynamic routing gateways (DRGs) are optional virtual routers that you can add to your VCN. They provide a path for private network traffic between your VCN and on-premises network.

Oracle redundancy status indicates whether your connection to Oracle is at risk. If so, an exclamation point is displayed. Click the DRG and view its details for more information.

Search and Filter Search

Applied filters `Compartment level3_customer_testing`

[Create dynamic routing gateway](#)

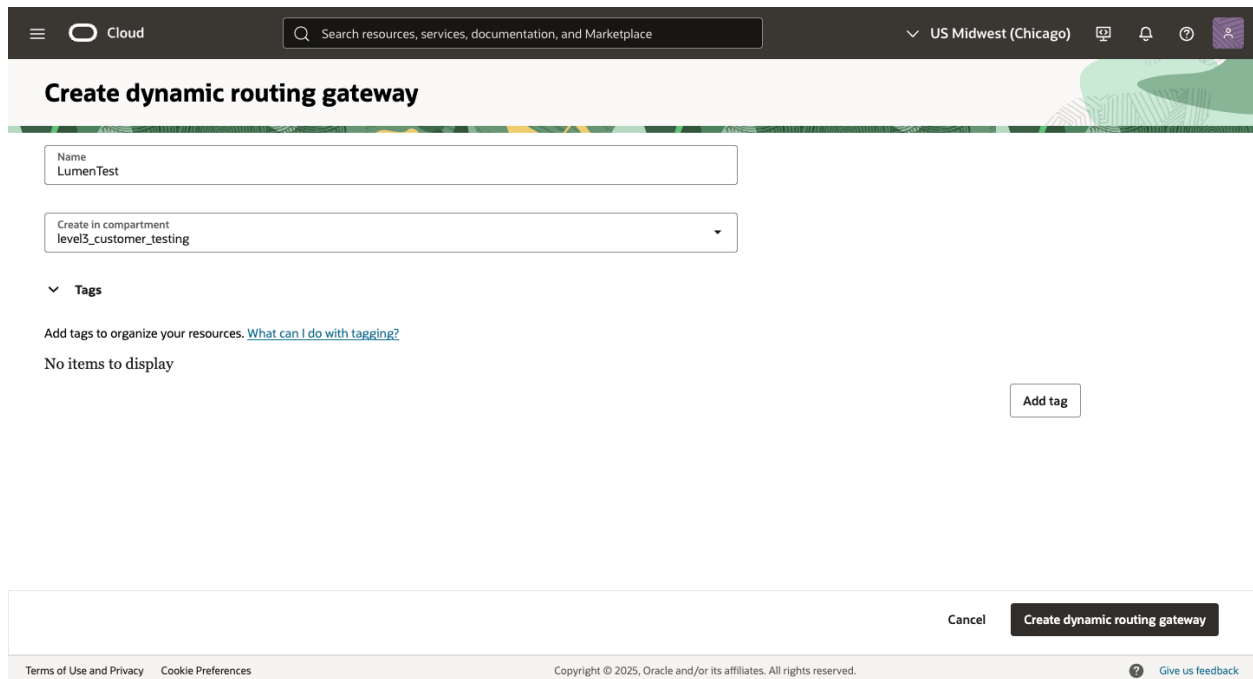
Name	Lifecycle state	Oracle redundancy status	Created
Test	Available	No active connections	Oct 16, 2023, 22:11 UTC

Page 1 of 1 (1 - 1 of 1 total items) Items per page 25

3. Fill in:

- **Name**
- **Create In Compartment** (select compartment)

4. **Click Create dynamic routing gateway**



5. A new window will display the of the newly created Dynamic routing gateway

The screenshot displays the OCI Console interface for a dynamic routing gateway. The breadcrumb navigation shows 'Dynamic routing gateways' and the resource name 'LumenTest' with a 'Provisioning' status. The left sidebar is under 'Networking' > 'Customer connectivity' > 'Dynamic routing gateway'. The main content area shows 'Dynamic routing gateway information' with the following details:

Property	Value	Actions
OCID	ocid1.instance.oc1.aaaa.01010xxx01010xxx01010xxx	Copy
Compartment	level3-test (root)/level3_customer_testing	
Created	Jul 1, 2025, 15:11 UTC	
Oracle redundancy status	-	

A success message is displayed at the bottom: 'Success: Dynamic routing gateway and associated resources have been created successfully.'

Step 3: Create the FastConnect OCID

1. Login to the **OCI Console**: <https://cloud.oracle.com> and navigate to **Networking > Customer Connectivity > FastConnect**
2. **Click Create FastConnect**

The screenshot shows the 'Create connection' wizard in the Oracle Cloud console. The 'Connection type' step is selected, with a 'Required' label. The instructions state: 'FastConnect lets you access your existing network from your virtual cloud network (VCN) without traversing the internet. Choose an option:'. Under 'Connection type', there are two options: 'FastConnect partner' (described as using a partner's connection) and 'FastConnect direct' (described as using a third-party provider or colocation). Under 'Redundancy level', there are two options: 'Redundant virtual circuit' (described as achieving minimum link and device redundancy) and 'Single virtual circuit' (described as creating a single non-redundant circuit). At the bottom, a progress bar shows 'Tasks Completed 0 of 2'. The 'Next' button is highlighted in black, while 'Cancel', 'Save as stack', and 'Previous' are in grey. The footer includes 'Terms of Use and Privacy', 'Cookie Preferences', 'Copyright © 2020, Oracle and/or its affiliates. All rights reserved.', and 'Give us feedback'.

3. Select **FastConnect partner** and choose a **Redundancy level** (for the purposes of this demo we will build a Single virtual circuit)
4. **Click Next**

The screenshot shows the 'Create connection' wizard in the Oracle Cloud console, specifically the 'Virtual circuit' step. The interface includes a search bar at the top, navigation tabs for 'Connection type' and 'Configuration', and a progress indicator showing 'Tasks Completed 1 of 2'. The 'Virtual circuit' section contains several input fields and options:

- Name:** Lumen-Oracle-VC-1
- Compartment:** lumen-tpm-test-account (root)
- Partner:** Lumen: Cloud_Connect_IPVPN
- Virtual circuit type:** Private virtual circuit (selected)
- Traffic:** All traffic (selected)
- Dynamic routing gateway compartment:** lumen-tpm-test-account (root)
- Dynamic routing gateway:** Lumen-Oracle-Test-DRG
- Provisioned bandwidth:** 1 Gbps
- MTU:** 1500
- Tags:** No items to display

At the bottom, there are buttons for 'Cancel', 'Save as stack', 'Previous', and 'Next'. The footer contains 'Terms of Use and Privacy', 'Cookie Preferences', 'Copyright © 2026, Oracle and/or its affiliates. All rights reserved.', and 'Give us feedback'.

5. Complete the **Virtual circuit 1** section by filling in the additional details for the connection:
 1. Name
 2. Compartment
 3. Partner: **Lumen: Cloud_Connect_IPVPN**
 4. Private virtual circuit (Public virtual circuits are not currently supported)

5. Traffic: All traffic
6. Dynamic routing gateway
7. Provisioned Bandwidth
8. MTU

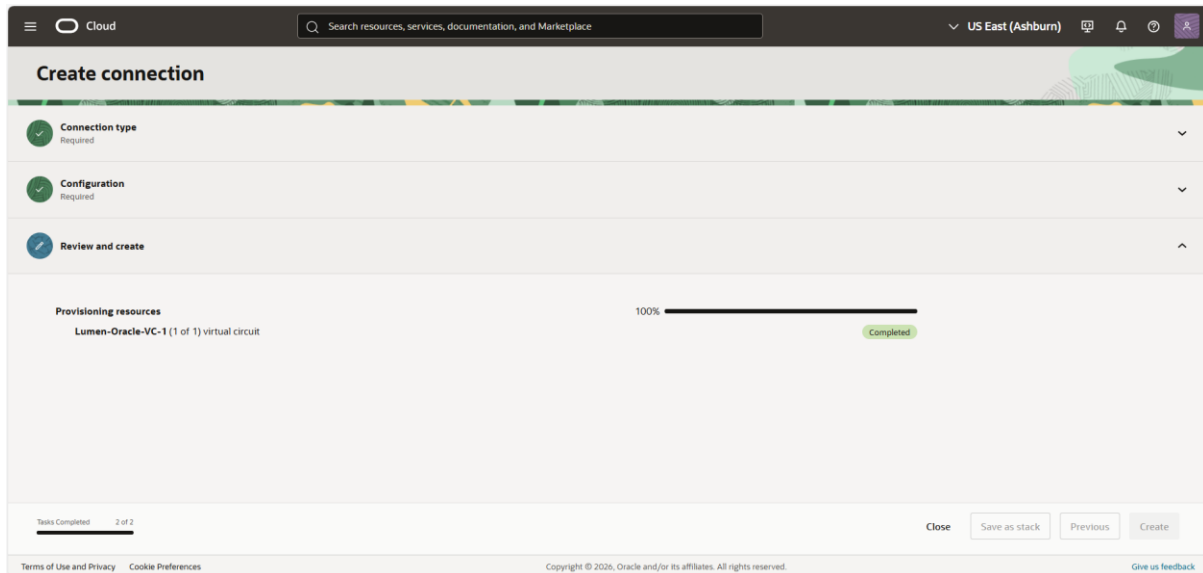
6. Click **Next**

The screenshot shows the 'Create connection' wizard in the Oracle Cloud console, specifically the 'Review and create' step. The wizard is titled 'Create connection' and has three steps: 'Connection type', 'Configuration', and 'Review and create'. The 'Review and create' step is active and shows the following details:

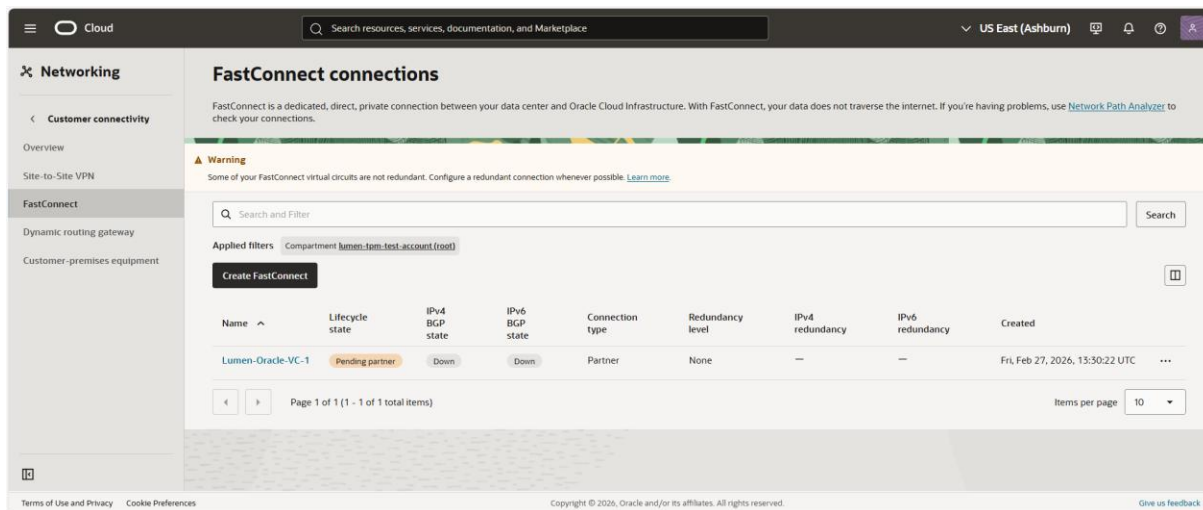
Virtual circuit	
Name	Lumen-Oracle-VC-1
Compartment	lumen-tpm-test-account (root)
Partner	Lumen:Cloud_Connect_IPVPN
Virtual circuit type	PRIVATE
Traffic	All traffic
Dynamic routing gateway	Lumen-Oracle-Test-DRG
Provisioned bandwidth	1 Gbps
MTU	1500

At the bottom of the wizard, there is a progress indicator showing 'Tasks Completed 2 of 2' and buttons for 'Cancel', 'Save as stack', 'Previous', and 'Create'. The footer contains 'Terms of Use and Privacy', 'Cookie Preferences', 'Copyright © 2026, Oracle and/or its affiliates. All rights reserved.', and 'Give us feedback'.

7. Review the connection details and click **Create**
8. A new window will show **Provisioning resources** completed when finished.
9. Click Close



10. Locate the new FastConnect and select it to see details of the connection.



The screenshot shows the Oracle Cloud console interface for a virtual circuit. The main content area displays a notification: "Connection created" with the text "What's next? Copy the OCID and give it to the partner to provision the virtual circuit from their end. When BGP state changes to UP, the virtual circuit is ready to test." Below this is a "Partner portal (Lumen)" button. A tabbed interface shows "Details" selected, displaying the following information:

Virtual circuit information	
Connection type	Partner Help
Partner name	Lumen
Lifecycle state	Pending partner
Virtual circuit	Activated
Virtual circuit type	Private
Redundancy level	Pending
Traffic	All traffic
IPv4 BGP state	Down
IPv6 BGP state	Down
Provisioned bandwidth	1 Gbps
BGP MDS authentication	Not enabled
MTU(bytes)	1500
Compartment	lumen-tpm-test-account (root)
OCID	ocid1.instance.oc1..dummyid Copy
Created	Fri, Feb 27, 2026, 13:30:22 UTC
Dynamic routing gateway	Lumen-Oracle-Test-DRG

11. Copy the OCID for use in Lumen ConnectSM

Step 4: Add the connection in Lumen ConnectSM

To add the IP VPN On-Demand connection:

1. [Sign in to Lumen ConnectSM](#). ([Get help retrieving your username/password.](#))

The screenshot displays the Lumen Connect dashboard. The top navigation bar includes the Lumen logo, user information (Enterprise ID: 12345678), and a Help button. The left sidebar contains a menu with options: Dashboard, Alerts & Notifications, Services, Monitoring & Reports, Billing, Admin, Support, Lumen Connect Help, and Contact Lumen. The main content area is titled 'Dashboard' and features a 'Core Capabilities' section with various service metrics and a 'Snapshots' section with a grid of key performance indicators (KPIs) such as Pay Balance Due (\$0.00), Active Repair Tickets (0), Open Orders (11), Change Requests (0), Disconnect Requests (0), Network Visibility Status (7 Down, 19 Up), Potential Repair Tickets (0), and Security Change Requests (0). Below this is an 'On-Demand Services Overview' section with a '+ Add Services' button and a 'Manage Services' button. The 'Services by Location' section includes a 'Port Availability' search bar and a map of the United States showing service availability zones. A legend at the bottom of the map identifies symbols for Port, Connection, Cluster, and Port Location Availability. A 'Contact a Specialist' button is located at the bottom right of the map area.

2. Using the left menu click **Services**, then click **Add Services**.

The screenshot displays the 'Add Services' interface in the Lumen Connect portal. The left sidebar contains navigation links for Dashboard, Alerts & Notifications, Services (with sub-links for Manage Services, Add Services, Order Status, Service Requests, and Service Portals), Monitoring & Reports, Billing, Admin, Support, Lumen Connect Help, and Contact Lumen. The main content area is titled 'Add Services' and includes a 'Self-Serve' section. This section is organized into categories: Networking, Edge Cloud, and Cybersecurity. Under Networking, there are six service cards: Internet On-Demand Connection, IP VPN On-Demand Connection, Ethernet On-Demand Connection, Network-as-a-Service (NaaS) Port, Dedicated Internet Access (DIA), and Wavelength. Under Edge Cloud, there is one card for Secure Access Service Edge (SASE). Under Cybersecurity, there is one card for DDoS Hyper. Each card provides a short description and a '+ Add' button. At the bottom, there is a section for 'I don't see what I need' with a 'Help' button. The top right of the page shows the Enterprise ID and a user profile icon.

3. Click **+ Add** for IP VPN On-Demand.
4. From the **Customer ID** and **Billing Account Number** lists, select the customer number and billing account number you want to add IP VPN On-Demand to.

Lumen ConnectSM fills in the VRF inventory based on the customer ID and billing account number you selected.

5. In the **Service Nickname** field, type a name for the connection you're creating. (Be sure to use something memorable. This name will appear on your invoice.)

6. In the **From Location (Select Your VRF)** section, select or create a VRF for the other end of your connection.
 - Select the VRF to use for the other end of your connection. Click **View Details** for a VRF to view the VRF's routes.
 - Click **Create New**, then type a description for the new VRF in the **New VRF Description** field. Lumen ConnectSM will create the VRF and activate your VPN service once you create your connection.

The screenshot shows the 'Add IP VPN On-Demand Connection' form in the Lumen Connect interface. The form is titled 'Add IP VPN On-Demand Connection' and is part of the 'Add Services' section. It contains several fields: 'Customer ID' (SUNDAY UAT 1 (1T8BD)), 'Billing Account Number' (ACC-00000001), 'Service Nickname' (Lumen-Oracle-VRF-1), 'From Location (Select Your VRF)' (Use Existing VRF), 'New VRF Description' (00/VPXX/UAT-VRF-01TEST), 'Cloud Provider' (Oracle), 'Oracle Cloud Identifier (OCID)', and 'Cloud Provider On Ramp' (-Select-). There are 'Cancel' and 'Continue' buttons at the bottom right. The form is divided into four steps: 1. Select Locations & Providers, 2. Select Bandwidth & Price, 3. Select Additional Settings, and 4. Review & Submit Order.

7. From the **Cloud Provider** list, select **Oracle**.

In the **Oracle Cloud Identifier (OCID)** field, type your inactive Oracle OCID. (You can obtain this from the [Oracle FastConnect portal](#)). You can only use an OCID on a single, active connection.

To reuse an OCID, you must first [disconnect the active connection](#) and then create a new connection using the OCID. Use the FastConnect portal to view the status of your OCIDs.)

Lumen ConnectSM uses the OCID information to select the correct on ramp for you based on the work load region you selected when you created the OCID in the FastConnect portal.

8. Click **CONTINUE**.
9. Use the **Billing Method** buttons to select whether you want monthly or hourly billing for the connection, then select the bandwidth for the connection. Bandwidth options are determined by the destination (to location). (You can't change the bandwidth once you create the connection. If you need to choose a different bandwidth after creating the connection, disconnect the connection and create a new one.)

The screenshot shows the Lumen Connect user interface for configuring an IP VPN connection. The page is titled "Add IP VPN On-Demand Connection" and includes a sidebar with navigation options like Dashboard, Alerts & Notifications, Services, and Billing. The main content area is divided into four steps:

- 1. Select Locations & Providers**: Shows VRF: 00VPXX/LAT-VRF-01TEST and Cloud Provider: Oracle. A "Change" button is visible.
- 2. Select Bandwidth & Price**: Features a "Billing Method" section with "Monthly" and "Hourly" buttons. Below it is a "Bandwidth" table with a "Monthly" column. The "1 Gbps" option is selected. A note states: "Monthly - Billing begins once connection is active. Customer will be billed MRC(s) with pro-ration occurring at both the beginning and end of the connection rounded up to the nearest full day." "Cancel", "Previous", and "Continue" buttons are at the bottom.
- 3. Select Additional Settings**
- 4. Review & Submit Order**

10. Click **CONTINUE**.

11. In the **Select Additional Settings** section, fill in the additional details for the connection. (Lumen ConnectSM automatically makes the connection private and sets 31898 as the AS number for Oracle.)

- a. Select the **Internet Protocol Version** you want to use.
- b. Select whether this is a primary or backup connection.
 - Primary will set the local-pref to 750
 - Backup will set the local-pref to 700
- c. In the **IPv4 Routing Option** field, select the radio button for the routing option you want to use for the connection. [Learn more about routing options for an IP VPN connection](#)
- d. Use the buttons to select whether you want to advertise default routes (for both IPv4 and IPv6 if you selected both Internet Protocol versions).

LUMEN Lumen Connect Enterprise 12345678

[Add Services](#) **Add IP VPN On-Demand Connection** [Help](#)

- Select Locations & Providers** VRF: 00/VPXX/UAT-VRF-01TEST [Change](#)
Cloud Provider: Oracle
- Select Bandwidth & Price** 1 Gbps / mo [Change](#)
- Select Additional Settings**
 - Provider Service *** Private
 - AS Number on Oracle *** 31098
 - Internet Protocol Version *** IPv4 IPv4 / IPv6
 - Primary/Backup *** Primary Backup
 - IPv4 Routing Option *What is this?**
 - Aggregate and advertise my RFC 1918 routes**
Ideal for cloud service providers (CSPs) with restrictive BGP prefix limits like AWS and Google and if most of your prefixes are RFC 1918.
More Details ^
Lumen automatically aggregates network prefixes according to RFC 1918 standards to reduce the number of prefixes sent to the CSP.
Lumen only advertises network RFC 1918 prefixes: 10.0.0.0/8, 172.16.0.0/12, and 192.168.0.0/16.
Note: Aggregates are NOT injected into your routing tables.
 - Advertise all routes except those specified**
Allows you to control which routes are advertised to the CSP. Check with your CSP to verify any BGP maximum prefix limits before selecting this option, as it could cause issues with your connection.
More Details v
 - Deny all routes except those specified**
Optimal for CSPs with maximum prefix limits that require reducing advertised prefixes and your prefixes don't fall under RFC 1918 ranges.
More Details v
 - Advertise Default Routes for IPv4 *** Yes No

[Cancel](#) [Previous](#) [Continue](#)

4. Review & Submit Order

12. Click **CONTINUE**.

13. Review the order information and correct any missing or invalid selections, then click **SUBMIT ORDER**.

Provisioning in Progress

Activation typically takes less than 5 minutes. When the service is activated, we'll send an email confirmation and update the Services tab with the details. You may leave this page and place additional orders while provisioning completes.

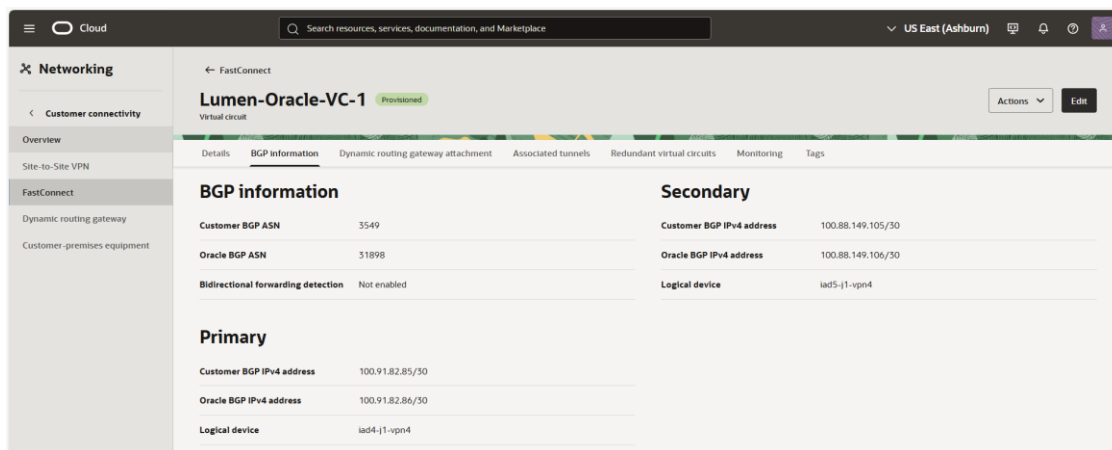
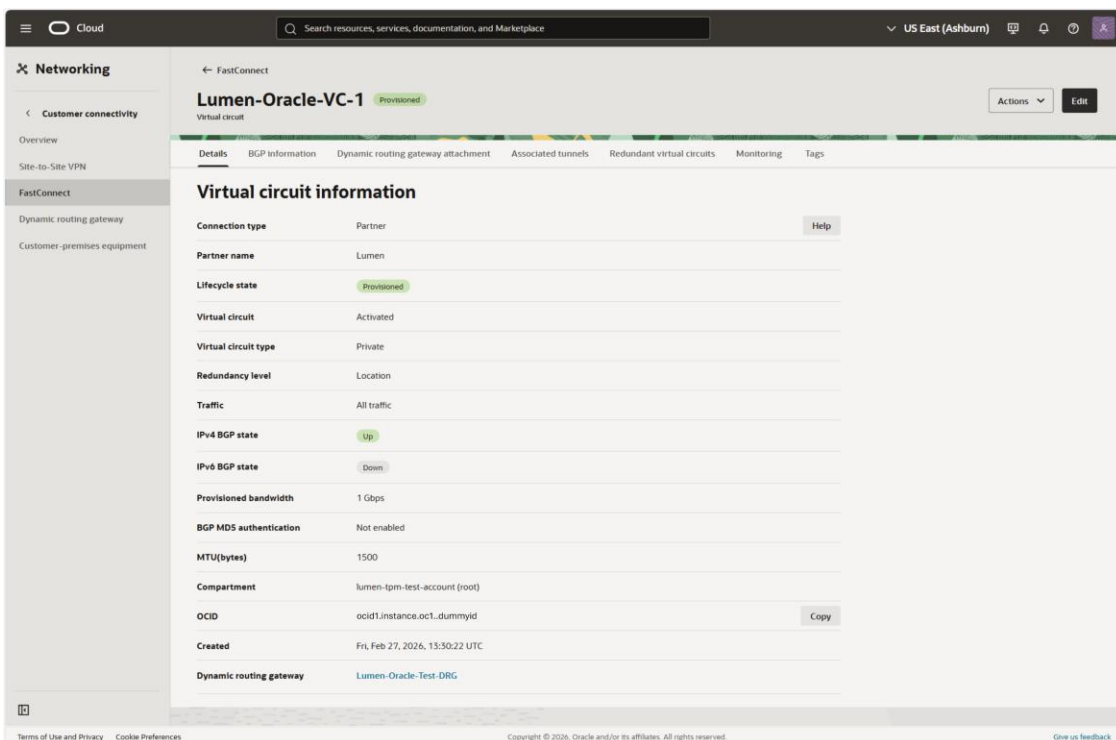


Lumen ConnectSM creates the request for connection, places it in *Pending Activation* status, and routes you to the Services tab so you can monitor the status of the connection. To see status updates, click . Once Lumen assigns the permanent VRF (within five minutes), the connection changes to *Active* status.

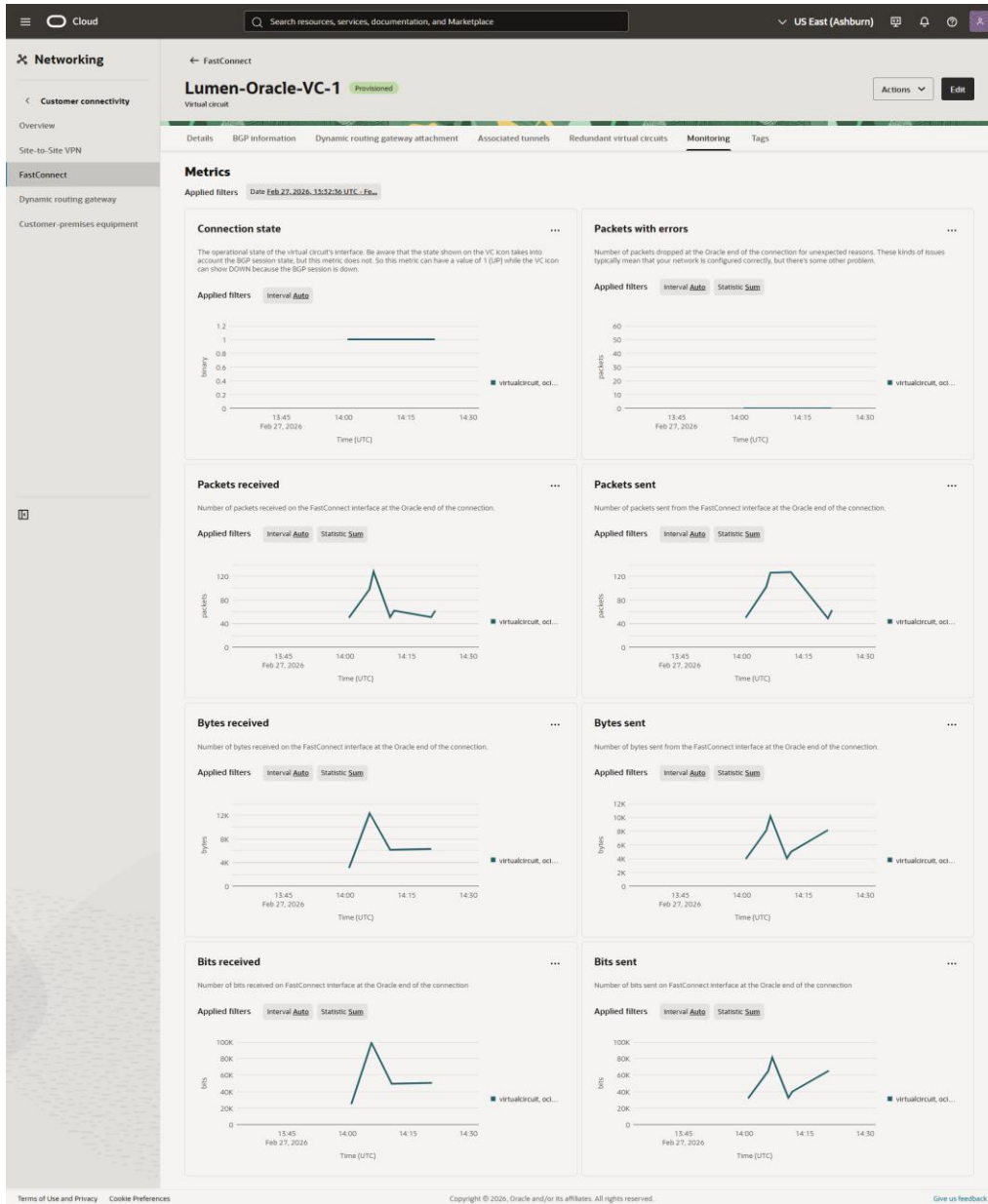
Step 5: Verify the Oracle connection

To verify the connection in Oracle:

1. Login to the **OCI Console**: <https://cloud.oracle.com> and navigate to **Networking > FastConnect**
2. Locate the new FastConnect and select it to see details of the connection.
3. You will see the **BGP state** as **Up**



- Your BGP Peer is established, and you may now continue any additional Oracle Cloud Infrastructure Network configuration



Note: For detailed guidance on configuring your Oracle Cloud Infrastructure networking, refer to the Oracle’s [FastConnect: With an Oracle Partner Documentation](#). If you’d like personalized support, please contact your Lumen Account Team to explore our professional services for Oracle Cloud Infrastructure management.

Disconnect Lumen Network-as-a-Service IP VPN On-Demand to Oracle Cloud Infrastructure FastConnect

1. Within Lumen ConnectSM you can now select the **Manage Services**, filter by **Product**, select **IP VPN on-Demand** to locate the Service ID of the connection you want to disconnect.

The screenshot shows the Lumen Connect interface. The left sidebar contains navigation options: Dashboard, Alerts & Notifications, Services (with Manage Services selected), Add Services, Order Status, Service Requests, Service Portals, Monitoring & Reports, Billing, Admin, Support, Lumen Connect Help, and Contact Lumen. The main content area is titled 'Manage Services' and features a search bar with 'Oracle' entered, a dropdown for 'Saved Views - (Default)', a filter for '(1) Products Selected', and a status dropdown set to 'All Statuses'. Below the search bar, a table displays filtered results. The table has columns for Service ID, Product, Status, and Local. One row is visible: SERVICE-TEST-01, IP VPN On-Demand, Pending Activation. A dropdown menu is open over the table, showing a search bar and a list of products with checkboxes. 'IP VPN On-Demand' is checked. Other products include Colocation, Cross Connect, DDoS Essentials, E-LAN, E-LAN EVC Endpoint, Ethernet On-Demand, IP Port, IP Port (NaaS Enabled), and Internet On-Demand. The 'Apply' button is highlighted.

Service ID	Product	Status	Local
SERVICE-TEST-01	IP VPN On-Demand	Pending Activation	

2. Select the Service ID of the connection you want to disconnect and click **Disconnect**

Summary

Product IP VPN	Status Active	Service Nickname Lumen-Oracle-VRF-1	Creator Matthew.Allard@lumen.com
Billing Account ACC-00000001	Customer Account SUNDAY UAT 1 (TT8BD)	Billing Type Monthly	Billing Price \$100.00
Bandwidth 1 Gbps	Start Date 2026/02/27 14:00 GMT	End Date --	

[Repair Ticket](#)
[Disconnect](#)
[Update Nickname](#)
[Manage Service](#)


From Location

VRF Description
Lumen-Oracle-VRF-1

VRF Name
00/VPXX/UAT-VRF-01TEST

Service Id
SERVICE-TEST-01

To Location

Provider
 Oracle

Cloud Region
us-ashburn-1

NNI On-Ramp
US East (Ashburn) - Ashburn 100G

3. Check the box to confirm the change and click **Confirm Disconnect**

Confirm Service Disconnect



Service Details

Service ID
SERVICE-TEST-01

Connection Nickname
Lumen-Oracle-VRF-1

Product Type
IPVPN

Order Contact
Matthew.Allard@lumen.com

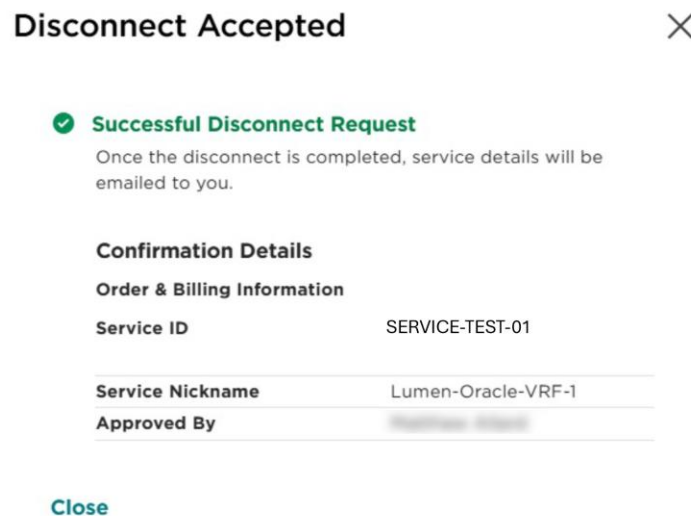
To Location Details
US East (Ashburn) - Ashburn
100G

I understand I will be billed for the full hour or full day based on the billing method once I confirm the disconnect.

Confirm Disconnect

Cancel

- A pop-up will display **Disconnect Accepted - Successful Disconnect Request**. You may now click **CLOSE**.



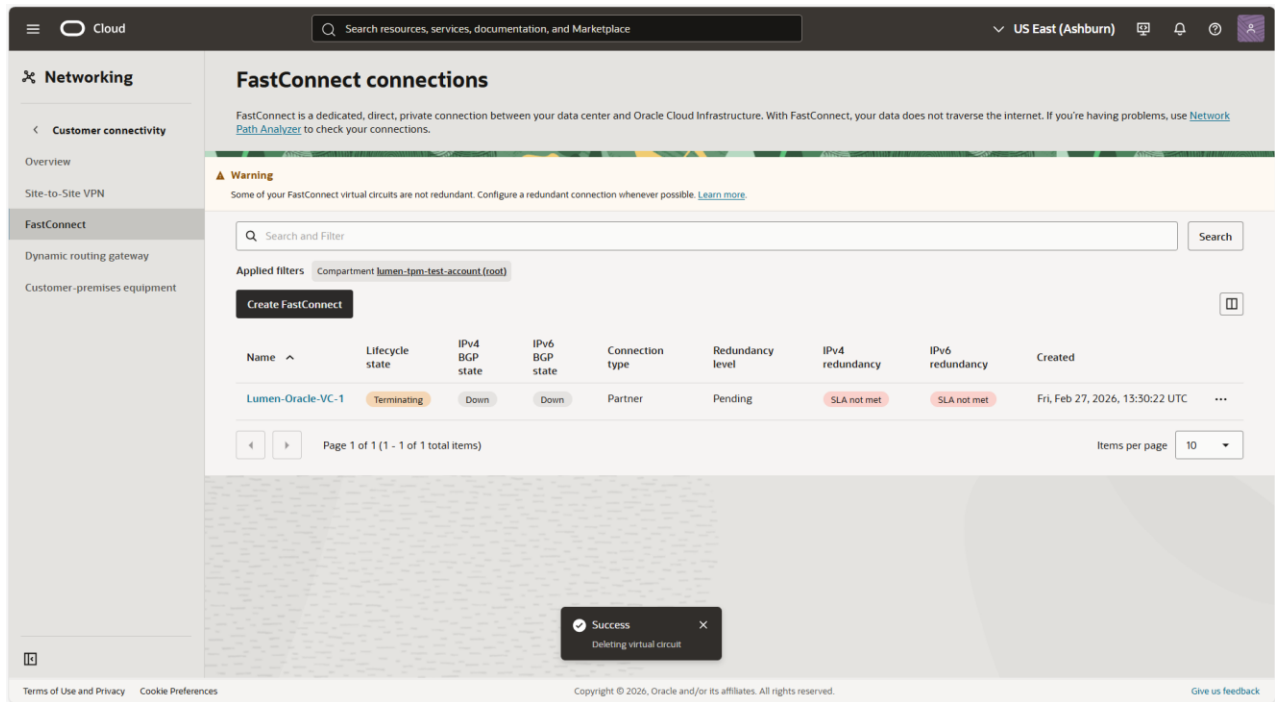
- Login to the **OCI Console**: <https://cloud.oracle.com> and navigate to **Networking > Customer Connectivity > FastConnect**
- Locate the FastConnect associated with the IP VPN On-Demand Connection you would like to remove, select it, and click **Actions > Delete**

The screenshot shows the Oracle Cloud console interface for a virtual circuit. The breadcrumb trail is 'FastConnect' > 'Lumen-Oracle-VC-1' (Provisioned). A warning banner at the top indicates 'BGP session down' with the message: 'The virtual circuit's BGP session is currently down. For help, see the [troubleshooting topic](#).' Below the warning, there are tabs for 'Details', 'BGP information', 'Dynamic routing gateway attachment', 'Associated tunnels', 'Redundant virtual circuits', 'Monitoring', and 'Tags'. The 'Details' tab is active, showing 'Virtual circuit information' in a table format. The table includes fields like Connection type (Partner), Partner name (Lumen), Lifecycle state (Provisioned), Virtual circuit (Activated), Virtual circuit type (Private), Redundancy level (Location), Traffic (All traffic), IPv4 BGP state (Down), IPv6 BGP state (Down), Provisioned bandwidth (1 Gbps), BGP MD5 authentication (Not enabled), MTU(bytes) (1500), Compartment (lumen-tpm-test-account (root)), OCID (ocid1.virtualcircuitLoc1.jad.amaaaaaak3pgfkiawhdv5m2deathci34rx3ooud3t7txlmgh2ldoskqembq), Created (Fri, Feb 27, 2026, 13:30:22 UTC), and Dynamic routing gateway (Lumen-Oracle-Test-DRG). An 'Actions' dropdown menu is open in the top right corner, showing options: 'Deactivate', 'Move resource', and 'Delete'. The footer contains 'Terms of Use and Privacy', 'Cookie Preferences', 'Copyright © 2026, Oracle and/or its affiliates. All rights reserved.', and 'Give us feedback'.

7. A pop-up will ask for confirmation. Click **Delete**

The screenshot displays the Oracle Cloud console interface for a FastConnect virtual circuit. The main heading is 'Lumen-Oracle-VC-1' with a 'Provisioned' status tag. A notification indicates a 'BGP session down' with a link to a troubleshooting topic. The 'Virtual circuit information' section is visible, showing details such as Connection type (Private), Partner name, Lifecycle state, Virtual circuit type (Private), Redundancy level (Location), Traffic (All traffic), IPv4 BGP state (Down), IPv6 BGP state (Down), and Provisioned bandwidth (1 Gbps). A modal dialog box titled 'Delete virtual circuit' is overlaid on the page, asking 'Are you sure you want to delete the virtual circuit named Lumen-Oracle-VC-1?' with 'Cancel' and 'Delete' buttons.

8. The selected FastConnect will show **Terminating**



9. After a few minutes it will no longer show within the Oracle Console

10. If required, continue deleting your Dynamic Routing Gateway and Virtual Cloud Network.

For More Information

- Lumen IPVPN On-Demand: <https://www.lumen.com/en-us/services/ip-vpn-on-demand.html>
- Lumen IPVPN On-Demand Documentation: <https://docs.lumen.com/ip-vpn-on-demand/>
- Sign in to Lumen ConnectSM: <https://connect.lumen.com/>
- Learn more about Lumen: <https://www.lumen.com/>