

HOL 2 - AWS Direct Connect



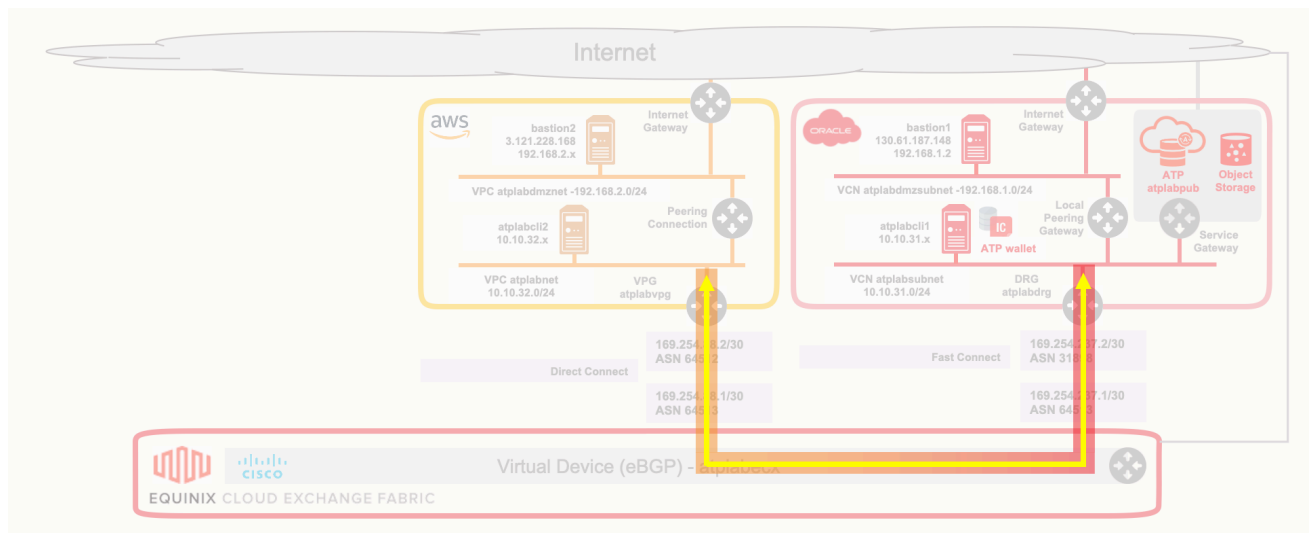
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Objetivo del Laboratorio

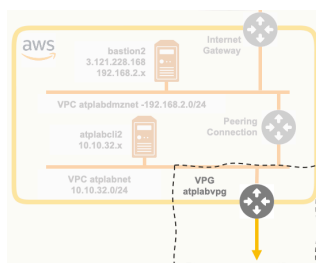
El objetivo del laboratorio es configurar los elementos necesarios para establecer la conectividad entre las nubes de Amazon Web Services (AWS) y Oracle Cloud Infrastructure (OCI):



Configuración de la interconexión desde el lado de Amazon

¿Qué voy a hacer?

Vamos a crear el recurso *Virtual Private Gateway* que permitirá conectar la VPC privada atplabnet ya existente con el DC de Equinix



Datos de conexión para este apartado:

Consola: <https://console.aws.amazon.com>
Account ID (IAM user): <Your AWS Account ID>
IAM user name: <Your IAM user name>
Password: <Your AWS password>

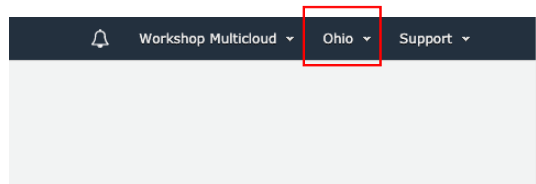
Nota: Todas las credenciales a las consolas serán proporcionadas individualmente por los instructores al comienzo del curso.

En primer lugar, abrimos la consola de cloud de AWS (<https://console.aws.amazon.com>) y seleccionamos la opción IAM user:

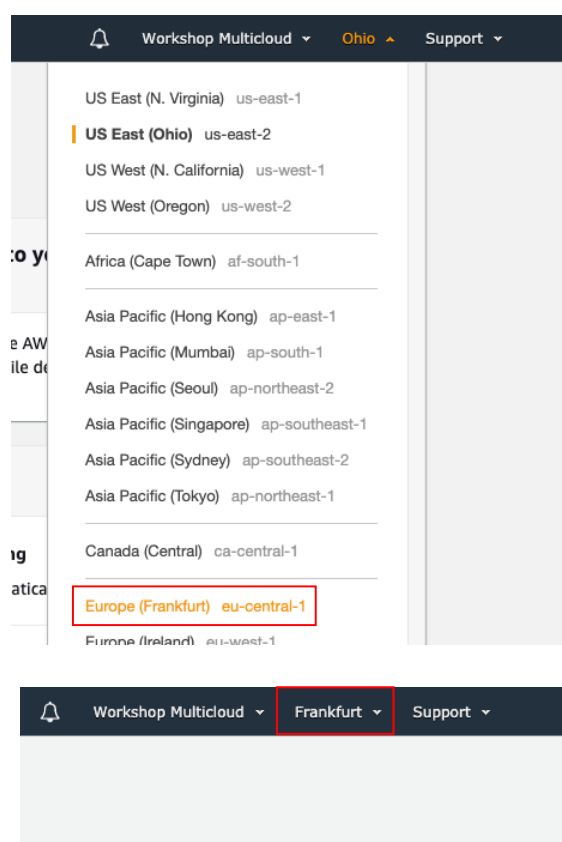
La imagen muestra la interfaz de usuario de la consola de AWS para crear un nuevo usuario IAM. Se han seleccionado las opciones 'Sign in as IAM user' y 'IAM user'. Los campos de entrada para 'Account ID (12 digits) or account alias', 'IAM user name' y 'Password' están resaltados con un recuadro rojo. El botón 'Next' está visible al final de la sección de 'Sign in'.



Una vez logados, primero debemos comprobar que nos encontramos en la región `Frankfurt` de AWS. Es muy posible que la región por defecto a la que se conecta la consola sea otra. Para ello, en la esquina superior derecha, comprobamos en cuál estamos:



Si no es `Frankfurt` la región actual, desplegamos el menú y seleccionamos `Europe (Frankfurt) eu-central-1`:



Si en algún momento de los laboratorios, observamos que falta algún elemento que debería aparecer en la consola de AWS, comprobaremos de nuevo si la región actual sigue siendo `Frankfurt`.



Una vez comprobada la región, abrimos el menú **Services** y nos dirigimos a la sección VPC y una vez dentro vamos a Virtual Private Gateways dentro de la sección Virtual Private Network (VPN):

The screenshot shows the AWS Management Console interface. At the top, the 'Services' menu is highlighted. On the left sidebar, under 'Recently visited', 'EC2', 'IAM', 'Billing', 'Console Home', and 'AWS Cost Explorer' are listed. The main area displays 'All services' with a search bar and a grid of service categories. The 'Networking & Content Delivery' category is expanded, and 'VPC' is highlighted. On the right sidebar, the 'VIRTUAL PRIVATE NETWORK (VPN)' section is expanded, showing 'Your VPCs', 'Subnets', 'Route Tables', 'Internet Gateways', 'Egress Only Internet Gateways', 'DHCP Options Sets', 'Elastic IPs', 'Managed Prefix Lists', 'Endpoints', 'Endpoint Services', 'NAT Gateways', and 'Peering Connections'. The 'Virtual Private Gateways' link is highlighted.

Una vez en la sección Virtual Private Gateways, pulsamos **Create Virtual Private Gateway**:

The screenshot shows the AWS Virtual Private Gateways console. At the top, the 'Create Virtual Private Gateway' button is highlighted. Below the button, there is a search bar and a message stating 'You do not have any Virtual Private Gateways in this region'. A link to 'Click the Create Virtual Private Gateway button to create your first Virtual Private Gateway' is provided. The 'Create Virtual Private Gateway' button is also visible at the bottom of the page.

Especificamos `atplabvpg` como Name Tag, seleccionamos la opción Amazon default ASN y pulsamos el botón **Create Virtual Private Gateway** para crear el recurso:



aws Services ▾

workshop2020050501 ▾ Frankfurt ▾ Support ▾

Virtual Private Gateways > Create Virtual Private Gateway

Create Virtual Private Gateway

A virtual private gateway is the router on the Amazon side of the VPN tunnel.

Name tag

ASN ☒ Amazon default ASN ☐ Custom ASN

* Required

Cancel **Create Virtual Private Gateway**

Cerramos la ventana de confirmación pulsando `Close`:

Virtual Private Gateways > Create Virtual Private Gateway

Create Virtual Private Gateway


✔ Create Virtual Private Gateway succeeded

Virtual Private Gateway ID `vgw-025d3c716c4368b0c`

Close

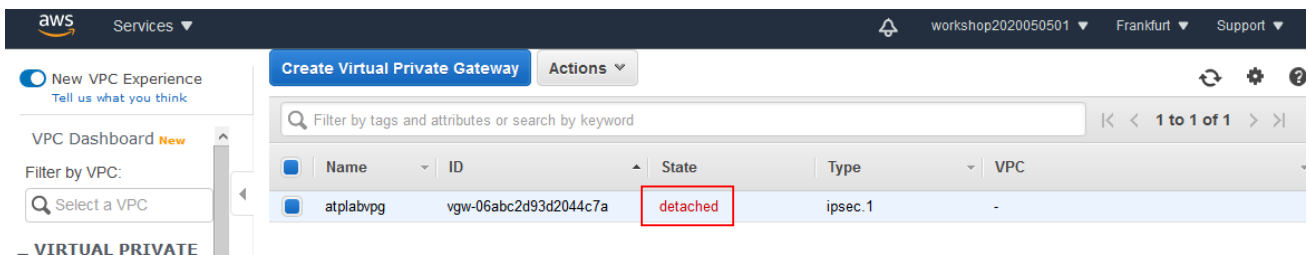


Una vez creado aparecerá en la lista de la consola:



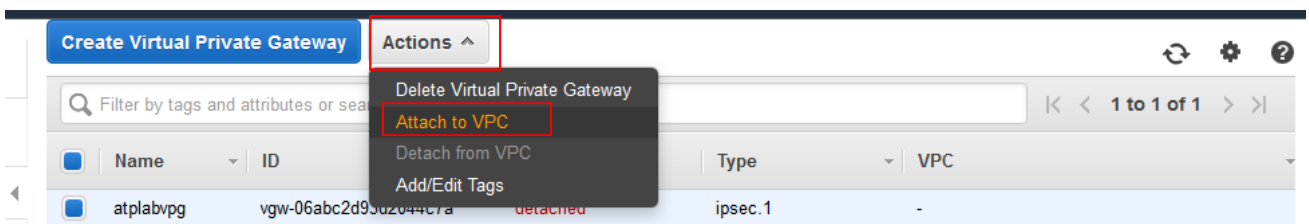
The screenshot shows the AWS Management Console interface. On the left, there's a sidebar with 'New VPC Experience' and 'VPC Dashboard'. The main area displays a table of Virtual Private Gateways. The table has columns: Name, ID, State, Type, and VPC. One gateway is listed: 'atplabvpg' with ID 'vgw-06abc2d93d2044c7a', State 'detached', Type 'ipsec.1', and VPC '-'. Below the table, there's a diagram illustrating the network setup. It shows an Internet Gateway connected to a VPC 'atplabdmznet' and another VPC 'atplabnet'. A Peering Connection is shown between the two VPCs. A Virtual Private Gateway 'atplabvpg' is shown connected to 'atplabnet', but it has a red arrow pointing to it with a question mark, indicating it's not yet connected. To the right of the diagram, text says: 'Hemos creado el VPG, pero aún no está *conectado* a la red VPC atplabnet'.

Podemos observar, no obstante, que el VPG aun no está conectado a ninguna red VPC:



This screenshot is similar to the previous one, showing the same table of Virtual Private Gateways. The 'detached' state of the 'atplabvpg' gateway is highlighted with a red rectangular box.

Para ello, dentro del menú **Actions** seleccionamos **Attach to VPC** para conectarlo a una red virtual:



This screenshot shows the 'Actions' dropdown menu for the 'atplabvpg' gateway. The menu options are: 'Delete Virtual Private Gateway', 'Attach to VPC' (highlighted with a red box), 'Detach from VPC', and 'Add/Edit Tags'.



Seleccionamos una VPC existente, en este caso seleccionaremos `atplabnet` y pulsaremos `Yes, Attach`:

Virtual Private Gateways > Attach to VPC

Attach to VPC

Select the VPC to attach to the virtual private gateway.

Virtual Private Gateway Id vgw-06abc2d93d2044c7a

VPC* vpc-0cdd4310c5cc83799

Filter by attributes

vpc-0cdd4310c5cc83799 atplabnet
vpc-0d2f5912080afb7c atplabdmznet

* Required

Cancel

Yes, Attach

Nota: la VPC `atplabnet` es una red creada previamente a este laboratorio

Ahora el VPG aparecerá en naranja un mensaje diciendo que se está conectando la VPC con la VPG:

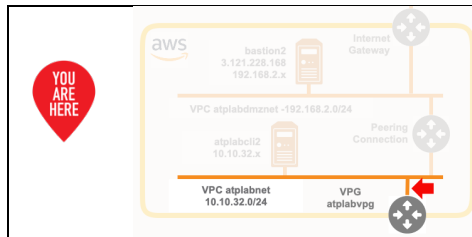
Create Virtual Private Gateway Actions					
Filter by tags and attributes or search by keyword					
1 to 1 of 1					
	Name	ID	State	Type	VPC
<input checked="" type="checkbox"/>	atplabvpg	vgw-06abc2d93d2044c7a	attaching	ipsec.1	vpc-0cdd4310c5cc83799 atplabnet

La consola en AWS no actualiza los estados automáticamente, hay que hacerlo mediante el botón de refresco que tenemos en la parte superior izquierda:

Create Virtual Private Gateway Actions					
Filter by tags and attributes or search by keyword					
1 to 1 of 1					
	Name	ID	State	Type	VPC
<input checked="" type="checkbox"/>	atplabvpg	vgw-06abc2d93d2044c7a	attached	ipsec.1	vpc-0cdd4310c5cc83799 atplabnet

Cuando haya acabado, aparecerá como `attached` en verde.





Hemos conectado la red atplabnet con el VPG atplabvpg. Pero aun hemos de notificar a la red atplabnet que sus rutas deben ser propagadas a través del VPG, para que así las otras cloud sepan de su existencia.

Volvemos a la lista de redes VPC en el menú principal y seleccionamos la red privada atplabnet. Pinchamos en el enlace del nombre de la Route table.

Your VPCs (1/2)

Name	VPC ID	State	IPv4 CIDR
atplabnet	vpc-0cdd4310c5cc83799	Available	10.10.32.0/24
atplabdmznet	vpc-0d2ff5912080afb7c	Available	192.168.2.0/24

vpc-0cdd4310c5cc83799 / atplabnet

Details

VPC ID vpc-0cdd4310c5cc83799	State Available	DNS hostnames Disabled	DNS resolution Enabled
Tenancy Default	DHCP options set dopt-c9a777a3	Route table rtb-0e33c603ec9089ed4	Network ACL acl-0fbb813075897d2b5
Default VPC No	IPv4 CIDR 10.10.32.0/24	IPv6 pool -	IPv6 CIDR -
Owner ID 267111821888			

Seleccionamos la pestaña Route Propagation y pulsamos el botón Edit route propagation:



The screenshot shows the AWS Management Console interface. On the left, there's a navigation menu with 'VIRTUAL PRIVATE CLOUD' expanded, showing 'Route Tables'. The main content area displays the 'Route Table: rtb-0e33c603ec9089ed4'. Below the tabs (Summary, Routes, Subnet Associations, Edge Associations, Route Propagation, Tags), the 'Route Propagation' tab is active. It shows a table with one entry for 'Virtual Private Gateway' with ID 'vgw-06abc2d93d2044c7a' and the 'Propagate' status set to 'No'. The 'Edit route propagation' button is also visible.

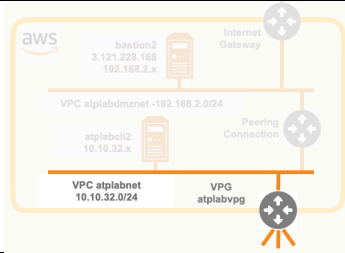
A continuación, marcamos la opción `Propagate` correspondiente a la entrada del VPG creado anteriormente y salvamos con `Save`:

This screenshot shows the 'Edit route propagation' page. The 'Route table' is 'rtb-0e33c603ec9089ed4'. The 'Route propagation' table shows one entry for 'Virtual Private Gateway' with ID 'vgw-06abc2d93d2044c7a'. The 'Propagate' checkbox is checked. At the bottom right, the 'Save' button is highlighted with a red box.

Comprobamos que la opción de `Propagate` está en `Yes` ahora:

This screenshot shows the 'Route Propagation' tab after saving the changes. The 'Propagate' status for the VPC Gateway 'vgw-06abc2d93d2044c7a' is now 'Yes', which is highlighted with a red box.



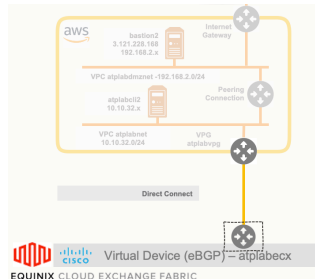


La configuración del lado de AWS ya está lista. El VPG que nos permitirá establecer la conexión con Equinix está creado y asociado con la red privada. También hemos habilitado la propagación de las rutas de la red atplabnet hacia el exterior (esto es, hacia Equinix).

Configuración de la conexión desde Equinix

¿Qué voy a hacer?

Vamos a establecer una conexión dentro del router *virtual* de Equinix hacia la nube de AWS, más concretamente, hacia el VPG creado en el apartado anterior

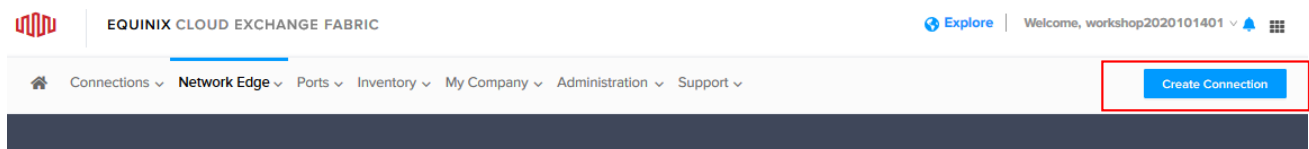


Datos de conexión para este apartado:

Consola: <https://ecxfabric.equinix.com>
User name: <Your Equinix username>
Password: <Your Equinix password>

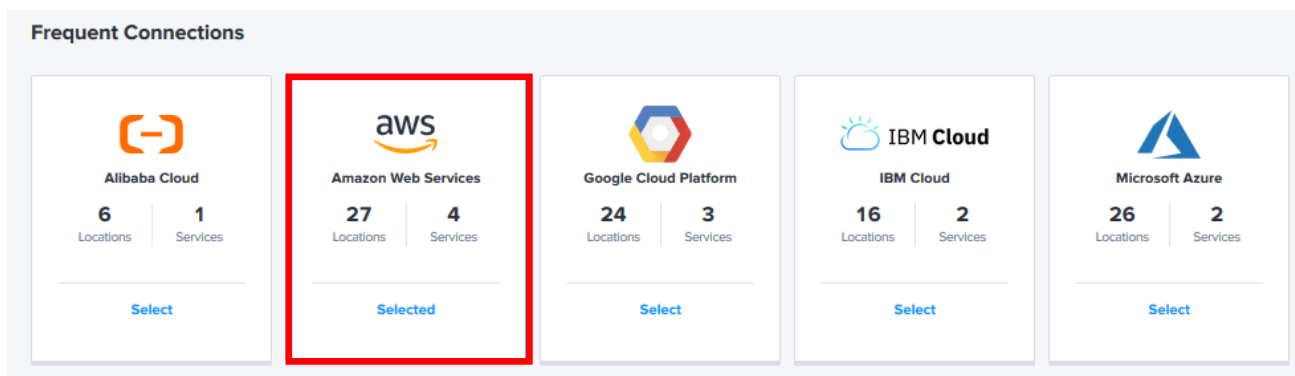
Nota: Todas las credenciales a las consolas serán proporcionadas individualmente por los instructores al comienzo del curso.

Una vez logados en la consola de Equinix, pulsamos en la barra superior el botón Create Connection:

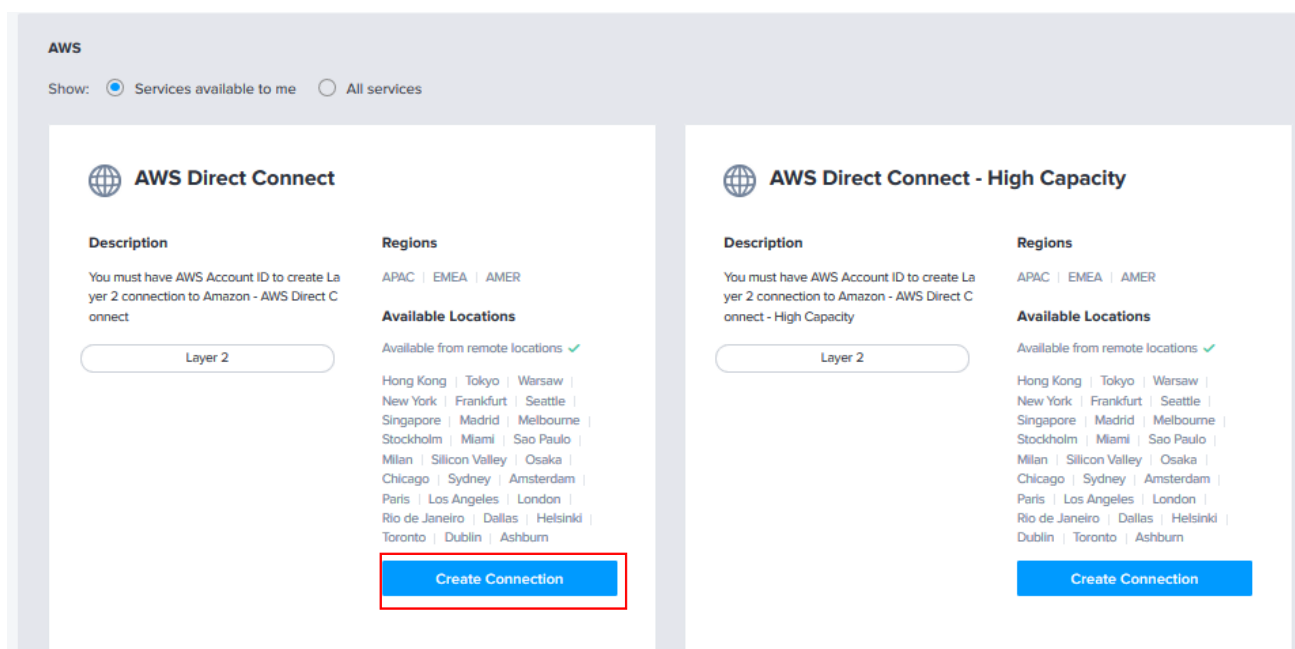


Aparecerán las conexiones más frecuentes, seleccionamos la de Amazon Web Services:





A continuación, seleccionamos la de AWS Direct Connect, que incluye la región de Frankfurt, y pulsamos Create Connection:



Una vez seleccionado el tipo de conexión, aparecerá un resumen sobre los pasos a seguir para crear la conexión con el cloud de Amazon. Pulsamos Create a Connection to Amazon Web Services para continuar:



The screenshot shows the Equinix Cloud Exchange Fabric (ECX) console. At the top, there's a navigation bar with the Equinix logo, 'EQUINIX CLOUD EXCHANGE FABRIC', and a user profile 'Welcome, workshop2020101401'. Below this is a secondary navigation bar with links like 'Connections', 'Network Edge', 'Ports', 'Inventory', 'My Company', 'Administration', and 'Support'. A 'Create Connection' button is on the right. The main content area is titled 'Steps: Connecting to AWS' and contains three numbered steps:

- 1 Amazon Account Info**
in the AWS Management Console
Retrieve your Account ID from the AWS Management Console.
- 2 Create Cloud Exchange Connection**
in the ECX Fabric portal
Complete the primary or secondary connection workflow on the ECX Fabric portal. Select Create a Connection to Amazon Web Services below to get started.
- 3 Accept Connection**
in the AWS management console or ECX Cloud Fabric.
Accept the hosted connection on either the ECX Fabric dashboard or the AWS Management Console.

At the bottom of step 2, there is a blue button labeled 'Create a Connection to Amazon Web Services' which is highlighted with a red rectangular box.

A continuación, seleccionamos Frankfurt como región de **origen y destino** y también el **dispositivo virtual** atplabecx creado en el laboratorio anterior y pulsamos Next para continuar:





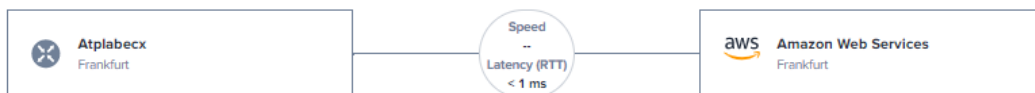
Select Locations

Connection Details

Review

Select Locations

Preview



Origin

Locations with ports or Virtual Devices

Connect Using

Port

Service Token

Virtual Device

EMEA 1

Select Location

Frankfurt

2 Virtual Devices

Select Virtual Device Type

Virtual Devices
Total: 2

Redundant Devices
Total: 0

Clusters
Total: 0

Virtual Devices in Frankfurt:

atplabecxdos
Frankfurt | Zone 1
Cisco | CSR1000V_TRIAL | R...

Atplabecx
Frankfurt | Zone 1
Cisco | CSR1000V_TRIAL | R...

Destination

EQUINIX-ECP-IXP-ETHERNET locations you can connect with

AMER 11 EMEA 11 APAC 7

Suggested:

Frankfurt

EU - Frankfurt
Latency (RTT) < 1 ms

Remote:

Warsaw (=) EU - Frankfurt Latency (RTT) 21 ms	Dubai (=) EU - Ireland Latency (RTT) --	Madrid (=) EU - Frankfurt Latency (RTT) 25 ms
Stockholm (=) EU-Stockholm Latency (RTT) 21 ms	Milan (=) EU - Frankfurt Latency (RTT) 10 ms	Amsterdam (=) EU - Frankfurt Latency (RTT) 8 ms
Paris (=) EU - Paris Latency (RTT) 8 ms	London (=) EU - London Latency (RTT) 15 ms	London (=) EU - Ireland Latency (RTT) 15 ms
Helsinki (=) EU - Frankfurt Latency (RTT) 21 ms	Dublin (=) EU - Ireland Latency (RTT) 25 ms	

Next



Origin

Locations with ports or Virtual Devices

Connect Using



Port



Service
Token



Virtual
Device

[EMEA](#) 1

Select Location

Frankfurt

1 Virtual Devices

Select Virtual Device Type

Virtual Devices

Total: 1

Redundant Devices

Total: 0

Clusters

Total: 0

Virtual Devices in Frankfurt:



Atplabex

Frankfurt | Zone 1

Cisco | CSR 1000V_TRIAL | ...



Destination

EQUINIX-ECP-IXP-ETHERNET locations you can connect with

[AMER](#) 11 [EMEA](#) 11 [APAC](#) 7

Suggested:

Frankfurt

eu-central-1

Latency (RTT) < 1 ms

Remote:

Warsaw

eu-central-1

Latency (RTT) 22 ms

Dubai

eu-west-1

Latency (RTT) --

Madrid

eu-central-1

Latency (RTT) 24 ms

Stockholm

eu-north-1

Latency (RTT) 21 ms

Milan

eu-south-1

Latency (RTT) 10 ms

Milan

eu-central-1

Latency (RTT) 10 ms

Amsterdam

eu-central-1

Latency (RTT) 8 ms

Paris

eu-west-3

Latency (RTT) 8 ms

London

eu-west-2

Latency (RTT) 15 ms

London

eu-west-1

Latency (RTT) 15 ms

Helsinki

eu-central-1

Latency (RTT) 21 ms

Dublin

eu-west-1

Latency (RTT) 25 ms

Next

Seleccionamos la opción de velocidad de conexión de 50 MBPS.



Connection Speed

Billing Tier
Up to 50 Mbps

50Mbps

Speed Selected

Monthly Charge
55.00EUR

Billing Tier
Up to 200 Mbps

100Mbps

Select Speed

Monthly Charge
75.00EUR

Billing Tier
Up to 200 Mbps

200Mbps

Select Speed

Monthly Charge
75.00EUR

Billing Tier
Up to 500 Mbps

300Mbps

Select Speed

Monthly Charge
110.00EUR

Billing Tier
Up to 500 Mbps

400Mbps

Select Speed

Monthly Charge
110.00EUR

Billing Tier
Up to 500 Mbps

500Mbps

Select Speed

Monthly Charge
110.00EUR

Pricing Overview

Local Connection: 55.00 EUR

Remote Connection: 0.00 EUR

Total: 55.00 EUR

 This is a test account. You will not be billed for this order, it will not be displayed on the invoice.

Additional taxes and/or fees may apply, depending on the Metro.

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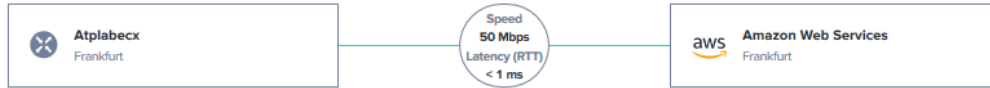
Select Locations

Connection Details

Review

Connection Details

Preview



Connection Information

Virtual Circuit Name

atplab-toAWS

AWS ACCOUNT ID

267111821888

Interface Selection

This interface will be reserved for all incoming Connections to this device. It will not be available to create Connections to any other service provider.

- ☒ Automatically select the next available interface on my device(s)
- ☐ I will select the interface on my device

Purchase Order Number

Optional

The purchase order number will be included in the order confirmation email

e.g. PO1544555



Interface Selection

This interface will be reserved for all incoming Connections to this device. It will not be available to create Connections to any other service provider.

☒ Automatically select the next available interface on my device(s)
 ☐ I will select the interface on my device

Purchase Order Number

Optional

The purchase order number will be included in the order confirmation email

Connection Speed

<div> <div>Billing Tier Up to 50 Mbps</div> <div>50Mbps</div> <div>Speed Selected</div> <div>Monthly Charge 55.00EUR</div> </div>	<div> <div>Billing Tier Up to 200 Mbps</div> <div>100Mbps</div> <div>Select Speed</div> <div>Monthly Charge 75.00EUR</div> </div>	<h3>Pricing Overview</h3> <table> <tbody> <tr> <td>Local Connection:</td> <td>55.00 EUR</td> </tr> <tr> <td>Remote Surcharge:</td> <td>0.00 EUR</td> </tr> <tr> <td>Total:</td> <td>55.00 EUR</td> </tr> </tbody> </table> <p><i>This is a test account. You will not be billed for this order, it will not be displayed on the invoice.</i></p> <p><i>Additional taxes and/or fees may apply, depending on the Metro.</i></p> <div> Design Summary </div>	Local Connection:	55.00 EUR	Remote Surcharge:	0.00 EUR	Total:	55.00 EUR
Local Connection:	55.00 EUR							
Remote Surcharge:	0.00 EUR							
Total:	55.00 EUR							
<div> <div>Billing Tier Up to 200 Mbps</div> <div>200Mbps</div> <div>Select Speed</div> <div>Monthly Charge 75.00EUR</div> </div>	<div> <div>Billing Tier Up to 500 Mbps</div> <div>300Mbps</div> <div>Select Speed</div> <div>Monthly Charge 110.00EUR</div> </div>							
<div> <div>Billing Tier Up to 500 Mbps</div> <div>400Mbps</div> <div>Select Speed</div> <div>Monthly Charge 110.00EUR</div> </div>	<div> <div>Billing Tier Up to 500 Mbps</div> <div>500Mbps</div> <div>Select Speed</div> <div>Monthly Charge 110.00EUR</div> </div>							

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Una vez hecho todo esto y revisados los datos, introducimos un mail para recibir notificaciones (puede ser cualquier email, incluso uno inválido) y pulsamos `Submit your Order`:



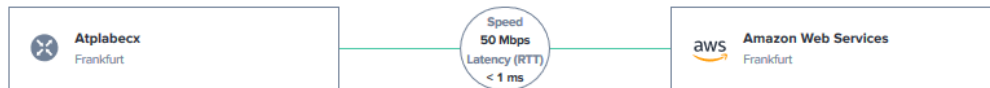
✓
Select Locations

✓
Connection Details

✎
Review

Review

Preview



Connection Summary

Connection Name	atplab-toAWS
Virtual Device Name	Atplabexx
Speed	50 Mbps
Billing Tier	Up to 50 Mbps
Purchase Order Number	-
AWS ACCOUNT ID	267111821888
Average last month latency	< 1 ms
Billed to	

Pricing Overview

Local Connection	55.00 EUR
Remote Connection	0.00 EUR
Total	55.00 EUR

Additional taxes and/or fees may apply.

Notifications

1 Recipient(s)

Enter email address(es) that will receive notifications about this connection:

workshop2020101401@mybestdemo.com

[Add another email](#)

[Design Summary](#)

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[Submit your Order](#)



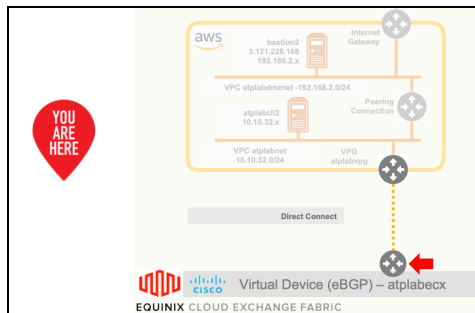
Una vez se haya procesado la orden (inmediato) pulsamos en el botón Go to My Inventory:

The screenshot shows the Equinix Cloud Exchange Fabric dashboard. At the top, there's a navigation bar with the Equinix logo and the text "EQUINIX CLOUD EXCHANGE FABRIC". On the right, there's a user profile section with "Explore" and "Welcome, workshop2020101401". A notification banner at the top right says "Update: Equinix status of connection 'atplab-toAWS' is PROVISIONED". The main content area has a large green checkmark and the text "Your order was submitted." followed by "We've sent a confirmation email to the emails you have provided." Below this, there are two main sections: "Next Steps" and "Look for your order details in your email". The "Next Steps" section lists three bullet points and has two buttons: "Go To My Dashboard" and "Accept hosted connection on AWS". The "Look for your order details in your email" section has a button "Go To My Inventory" which is highlighted with a red box. To the right, there's a diagram showing the connection from "Frankfurt Atplabex Origin" to "AWS Direct Connect (eu-central-1) Destination".

En la siguiente pantalla, podemos ver la nueva conexión Direct Connect de AWS hacia Frankfurt:

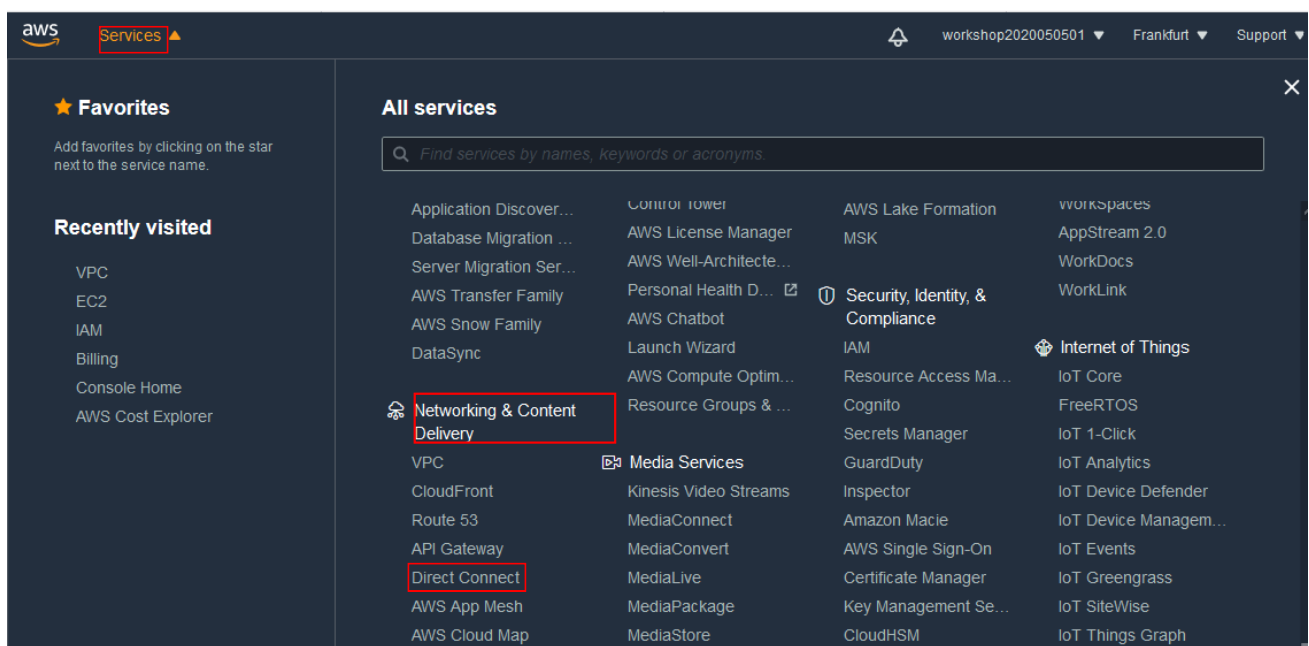
The screenshot shows the Equinix Cloud Exchange Fabric dashboard with the "Connections" tab selected. The dashboard displays a list of connections. The first connection, "atplab-toAWS", is highlighted with a red box. It shows a diagram of the connection from "Frankfurt Atplabex Origin" to "AWS Direct Connect (eu-central-1) Destination". The second connection, "Atplab-toOCI", shows a diagram from "Frankfurt Origin" to "Oracle Cloud Infrastructure-OCI- FastConnect (eu-fr ankfurt-1) Destination". The dashboard also includes search filters and a "Reset Filters" button.



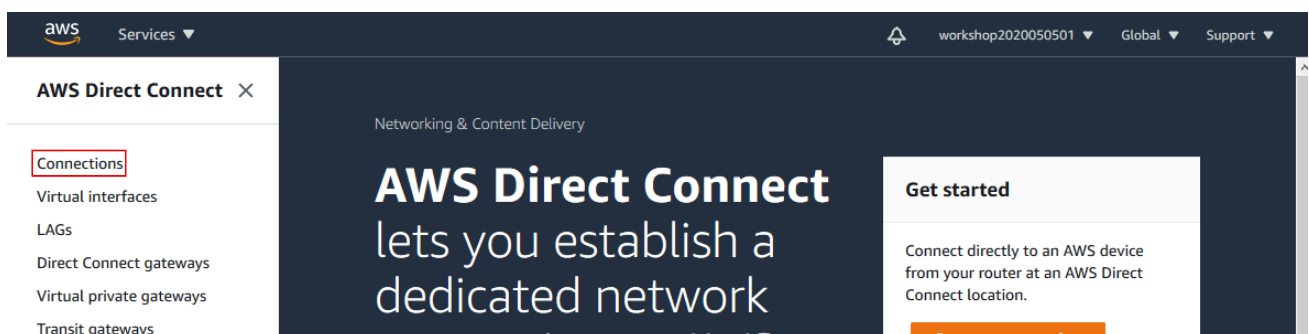


Hemos establecido la conexión entre Equinix y nuestra instancia de AWS. Sin embargo, aún es necesario establecer los parámetros de conexión a nuestro VPG de AWS.

Volvemos a la consola de AWS (<https://console.aws.amazon.com>). Nos dirigimos a la sección Networking & Content Delivery y pinchamos en Direct Connect:



Pinchamos el menú Connections:



Y podemos ver como la nueva conexión está en estado ordering:



The screenshot shows the AWS Direct Connect console. On the left, there's a sidebar with 'Connections' selected. The main area shows a table of connections. The first connection is 'dxcon-fflr...' with state 'ordering'. Both the ID and the state are highlighted with red boxes.

ID	Name	Region	Location	Bandwidth	State
dxcon-fflr...	atplab-toA...	eu-central-1	Equinix FR5, F...	50Mbps	ordering

Pinchamos en el enlace del ID de la conexión para ver los detalles de ésta y aceptamos pulsando **Accept**:

The screenshot shows the details page for connection 'DXCON-FFLRGSFC'. The 'Accept' button is highlighted with a red box. Below the button is a 'General configuration' section with a table of details.

General configuration			
Connection ID dxcon-fflrgsfc	State ordering	Location Equinix FR5, Frankfurt, DEU	Jumbo frame capable true
Connection name atplab-toAWS	Port speed 50Mbps	AWS device EqFA5-bqddwtdg6ab1	VLAN 377
AWS account 267111821888	Region eu-central-1	Loa issued at -	Partner name EQUINIX NNI

Nos pedirá confirmación y pulsamos en **Confirm**:

The screenshot shows a dialog box titled 'Accept hosted connection'. It asks 'Are you sure you want to accept the hosted connection dxcon-fflrgsfc?'. At the bottom, there are 'Cancel' and 'Confirm' buttons. The 'Confirm' button is highlighted with a red box.

Su estado pasará de `ordering` a `pending`:



aws Services ▼ workshop2020050501 ▼ Global ▼ Support ▼

AWS Direct Connect ✕

Connections

- Virtual interfaces
- LAGs
- Direct Connect gateways
- Virtual private gateways
- Transit gateways

Direct Connect > Connections > DXCON-FFLRGSFC

DXCON-FFLRGSFC

Edit Delete

General configuration

Connection ID dxcon-fflrgsfc	State ⌚ pending	Location Equinix FR5, Frankfurt, DEU	Jumbo frame capable true
Connection name atplab-toAWS	Port speed 50Mbps	AWS device EqFA5-bqddwtg6ab1	VLAN 377
AWS account 267111821888	Region eu-central-1	Loa issued at -	Partner name EQUINIX NNI

Tras unos minutos, cuando el estado cambie a available, pulsamos el botón Create Virtual Interface:

aws Services ▼ workshop2020050501 ▼ Global ▼ Support ▼

AWS Direct Connect ✕

Connections

- Virtual interfaces
- LAGs
- Direct Connect gateways
- Virtual private gateways
- Transit gateways

Direct Connect > Connections > DXCON-FFLRGSFC

DXCON-FFLRGSFC

Edit Delete

General configuration

Connection ID dxcon-fflrgsfc	State ✅ available	Location Equinix FR5, Frankfurt, DEU	Jumbo frame capable true
Connection name atplab-toAWS	Port speed 50Mbps	AWS device EqFA5-bqddwtg6ab1	VLAN 377
AWS account 267111821888	Region eu-central-1	Loa issued at -	Partner name EQUINIX NNI

Virtual interfaces | Monitoring | Tags

Virtual interfaces

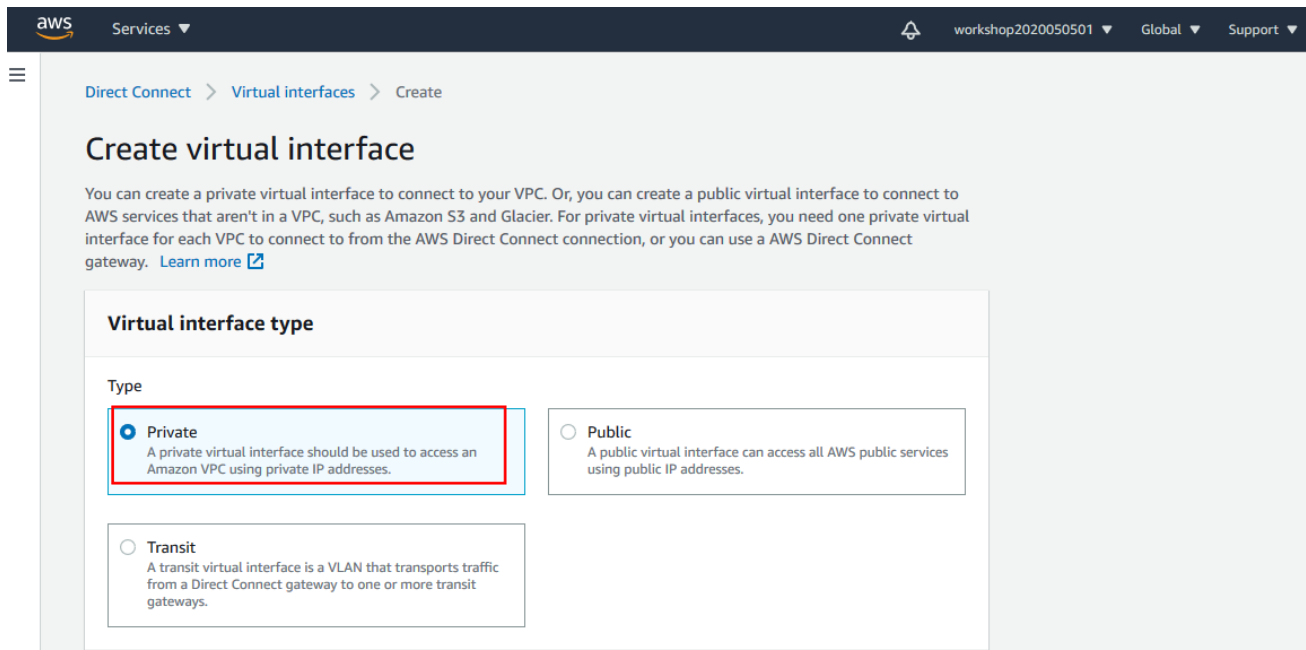
View details Edit Delete Actions ▼ **Create virtual interface**

Search virtual interfaces

ID	Name	Region	Connection ...	VLAN	Type
No virtual interfaces					
No virtual interfaces to display					
Create virtual interface					



En el asistente para crear el interfaz, seleccionamos primero el tipo `Private`:



The screenshot shows the AWS Management Console interface for creating a virtual interface. The breadcrumb trail is 'Direct Connect > Virtual interfaces > Create'. The main heading is 'Create virtual interface'. Below this, there is explanatory text about private and public virtual interfaces. The 'Virtual interface type' section contains three radio button options: 'Private' (selected), 'Public', and 'Transit'. The 'Private' option is highlighted with a red rectangular box. The descriptions for each option are as follows:

- 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.

A continuación, rellenar los campos siguientes con la información que mostramos a continuación. Prestar mucha atención en cada uno de ellos. Si nos equivocamos, la conexión no funcionará correctamente:

Virtual Interface Name	atplabvlan
Connection	atplab-toAWS
Virtual Interface Owner	My AWS account
Gateway Type	Virtual private gateway
Virtual private gateway	atplabvpg
VLAN	(dejamos el nº que aparezca por defecto)
BGP ASN	64513
(desplegamos el menú Additional Settings)	
Address family	IPV4
Your router peer IP	169.254.88.1/30
Amazon router peer IP	169.254.88.2/30
BGP Authentication key	7182KZL
Jumbo MTU	<i>unchecked</i>



Private 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 – (hyphen)

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

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.

VLAN

The Virtual Local Area Network number for the new virtual interface

Valid ranges are 1 - 4094



BGP ASN
The Border Gateway Protocol Autonomous System Number of your gateway for the new virtual interface.

Valid ranges are 1 - 2147483647.

▼ **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 9001) - optional
Allow MTU size of 9001 on virtual interface.

☐ Enabled

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

(Deberemos introducir estos mismos datos más adelante en la configuración BGP de Equinix)

Una vez hayamos rellenado todos los campos, pulsamos `Create virtual interface` y esperamos hasta ver que el estado de la conexión pase de `pending` a `down`:



Virtual interfaces Monitoring Tags								
Virtual interfaces (1) View details Edit Delete Actions Create virtual interface								
<input type="text" value="Search virtual interfaces"/>								
<input type="checkbox"/>	ID	Name	Region	Connection ...	VLAN	Type	State	
<input type="checkbox"/>	dxvif-fhed6pt3	atplabvlan	eu-central-1	dxcon-fflrgsfc	377	private	pending	

Virtual interfaces Monitoring Tags								
Virtual interfaces (1) View details Edit Delete Actions Create virtual interface								
<input type="text" value="Search virtual interfaces"/>								
<input type="checkbox"/>	ID	Name	Region	Connection ID	VLAN	Type	State	
<input type="checkbox"/>	dxvif-fhed6pt3	atplabvlan	eu-central-1	dxcon-fflrgsfc	377	private	down	

Cuando esté su estado en `down`, pinchamos en el enlace del ID del interfaz para ver los detalles:

Direct Connect

>

Virtual interfaces

>

DXVIF-FHED6PT3

DXVIF-FHED6PT3

Actions

Edit

Delete

General configuration

Virtual interface ID dxvif-fhed6pt3	State ⓧ down	Amazon side ASN 64512	AWS device EqFA5-bqddwtdg6ab1
Virtual interface name atplabvlan	Virtual private gateway vgw-06abc2d93d2044c7a	Connection ID dxcon-fflrgsfc	MTU 1500
AWS account 267111821888	VLAN 377	Location Equinix FR5, Frankfurt, DEU	Jumbo frame capable true
Virtual interface type private	Region eu-central-1		

Peerings

Monitoring

Tags

Test history

Peerings (1)

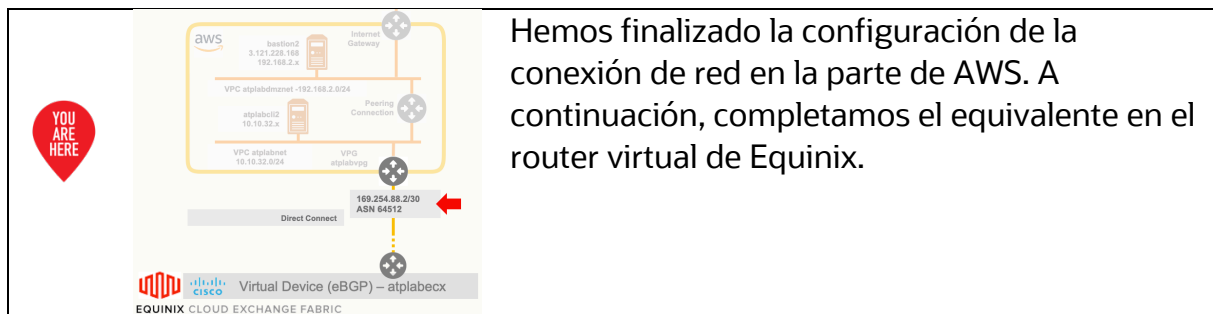
Delete

Add peering

	ID	Na...	BGP ASN	BGP authentication k...	Your router peer...	Amazon router peer...	AWS device	State	BGP status
<input type="radio"/>	dxpeer-fgmm7k...	ipv4	64513	7182KZL	169.254.88.1/30	169.254.88.2/30	EqFA5-bqddwtdg6a...	✔ available	ⓧ down

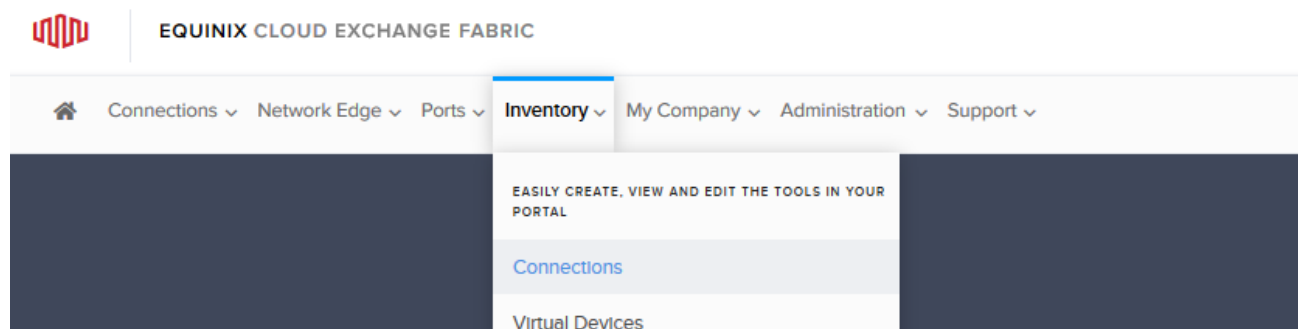
Observar cómo, aunque el estado del interfaz es `available`, el estado del BGP es aún `down` porque es necesario configurar el otro extremo de la conexión en Equinix.



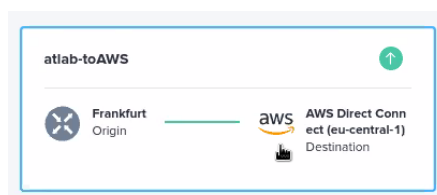


Hemos finalizado la configuración de la conexión de red en la parte de AWS. A continuación, completamos el equivalente en el router virtual de Equinix.

Continuamos volviendo de nuevo a la consola de Equinix (<https://ecxfabric.equinix.com>), abrimos el menú Inventory y pulsamos en Connections:



Podremos ver todas las conexiones existentes hasta el momento. Abrimos los detalles de la de AWS pinchando sobre ella:




Introducimos los siguientes datos del apartado Primary BGP Information de Amazon en Equinix (en la parte inferior de la página):

Local ASN	64513
Local IP Address	169.254.88.1/30
Remote ASN	64512
Remote IP address	169.254.88.2
BGP Authentication Key	7182KZL



Primary BGP Information [Learn More](#)

Local ASN	64513	✓
Local IP Address	169.254.88.1/30	✓
Remote ASN 	64512	✓
Remote IP address	169.254.88.2	✓
BGP Authentication Key	7182KZL	✓

[Accept](#)

Pulsamos Accept para continuar.



Una vez hecho esto, el estado del BGP pasará a ser `PROVISIONING`.

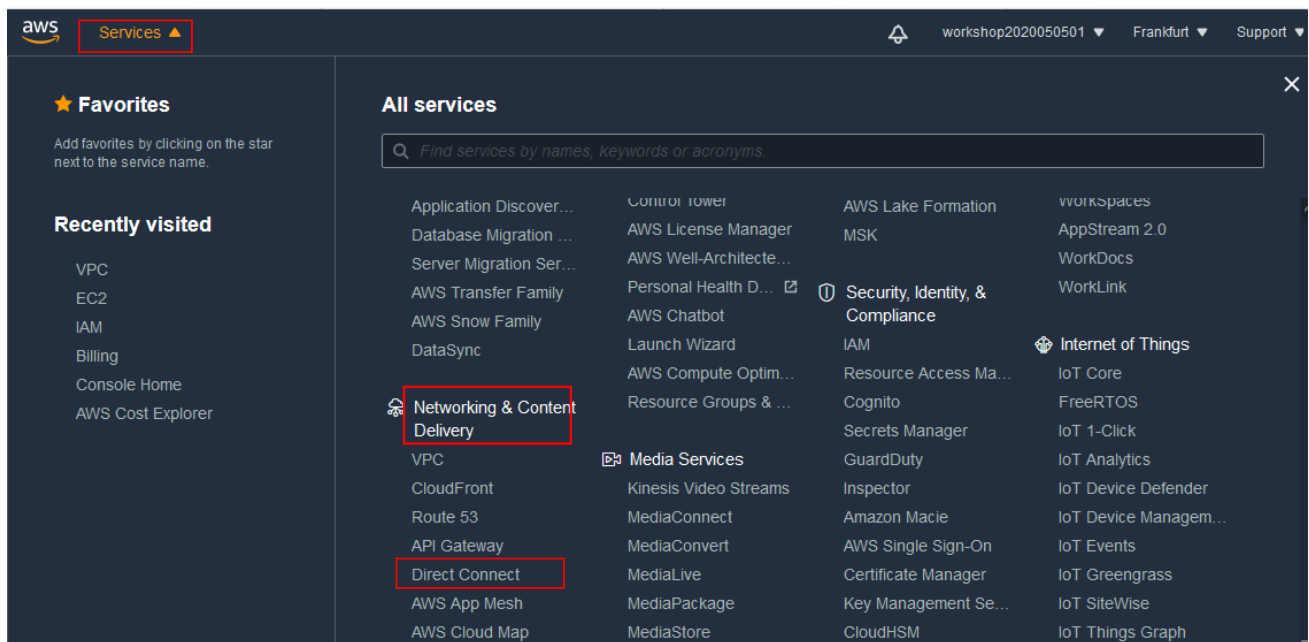
Primary BGP Information Learn More		Edit
Local ASN	64513	
Local IP Address	169.254.88.1/30	
Remote ASN i	64512	
Remote IP address	169.254.88.2	
BGP Authentication Key	7182KZL	
Provisioning Status	Provisioning	

Esperamos unos minutos y cambiará a `PROVISIONED`:

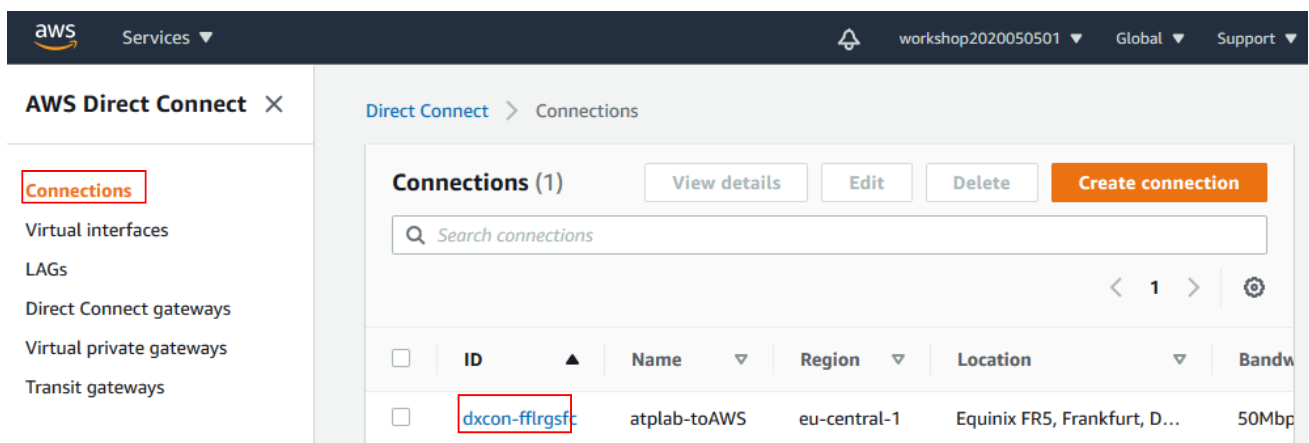
Primary BGP Information Learn More		Edit
Local ASN	64513	
Local IP Address	169.254.88.1/30	
Remote ASN i	64512	
Remote IP address	169.254.88.2	
BGP Authentication Key	7182KZL	
Provisioning Status	Provisioned	

Ahora podemos volver a la consola de AWS (<https://console.aws.amazon.com>) para ver el estado actual del Virtual Interface creado anteriormente. En `Services` abrimos la pantalla de `Direct Connect`:





Abrimos las Connections y pinchamos sobre el enlace de nuestra conexión:



Pinchamos sobre nuestro Virtual Interface:



aws Services

workshop2020050501 Global Support

AWS Direct Connect

Connections

Virtual interfaces

LAGs

Direct Connect gateways

Virtual private gateways

Transit gateways

Direct Connect > Connections > DXCON-FFLRGSFC

DXCON-FFLRGSFC [Edit] [Delete]

General configuration

Connection ID dxcon-fflrgsfc	State available	Location Equinix FR5, Frankfurt, DEU	Jumbo frame capable true
Connection name atplab-toAWS	Port speed 50Mbps	AWS device EqFA5-bqddwdtg6ab1	VLAN 377
AWS account 267111821888	Region eu-central-1	Loa issued at -	Partner name EQUINIX NNI

Virtual interfaces | Monitoring | Tags

Virtual interfaces (1) [View details] [Edit] [Delete] [Actions] [Create virtual interface]

Search virtual interfaces

	ID	Name	Region	Connection ID	VLAN	Type	State
<input type="checkbox"/>	dxvif-fhed6pt3	atplabvlan	eu-central-1	dxcon-fflrgsfc	377	private	available

Y aquí ya podemos comprobar que el estado del Peering es available y su BGP Status es up, y ambos aparecen en verde:

Peerings | Monitoring | Tags | Test history

Peerings (1) [Delete] [Add peering]

	ID	Na...	BGP ASN	BGP authentication k...	Your router peer...	Amazon router peer...	AWS device	State	BGP status
<input type="radio"/>	dxpeer-fgmm7k...	ipv4	64513	7182KZL	169.254.88.1/30	169.254.88.2/30	EqFA5-bqddwdtg6a...	available	up

Podemos comprobar que las rutas para 10.10.31.0/24 se están publicando. En la lista de VPC seleccione atplabnet y en el panel inferior la Route table asociada:



aws Services Search for services, features, marketplace products, and docs [Alt+S] workshop2020050512 Frankfurt Sup

New VPC Experience Tell us what you think

VPC Dashboard New

Filter by VPC: Select a VPC

VIRTUAL PRIVATE CLOUD

Your VPCs New

Subnets New

Route Tables

Internet Gateways New

Egress Only Internet Gateways New

DHCP Options Sets New

Elastic IPs New

Managed Prefix Lists New

Endpoints

Endpoint Services

NAT Gateways New

Peering Connections

SECURITY

Network ACLs New

Security Groups New

Your VPCs (1/2) Info

Filter VPCs

Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR
<input checked="" type="checkbox"/> atplabnet	vpc-0cccd52fbf167cb622	Available	10.10.32.0/24	-
<input type="checkbox"/> atplabdmznet	vpc-0b8700d1fe29a98af	Available	192.168.2.0/24	-

vpc-0cccd52fbf167cb622 / atplabnet

Details CIDRs Flow logs Tags

Details

VPC ID vpc-0cccd52fbf167cb622	State Available	DNS hostnames Disabled	DNS resolution Enabled
Tenancy Default	DHCP options set dopt-be3296d4	Route table rtb-0a8141b29146d061c / atplabnetrt	Network ACL acl-068afbe551100ee15
Default VPC No	IPv4 CIDR 10.10.32.0/24	IPv6 pool -	IPv6 CIDR -

En la lista de rutas compruebe que 10.10.31.0/24 aparece con target el Virtual Private Gateway:

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New VPC Experience Tell us what you think

VPC Dashboard New

Filter by VPC: Select a VPC

VIRTUAL PRIVATE CLOUD

Your VPCs New

Subnets New

Route Tables

Internet Gateways New

Egress Only Internet Gateways New

DHCP Options Sets New

Elastic IPs New

Managed Prefix Lists New

Endpoints

Endpoint Services

NAT Gateways New

Create route table Actions

Route Table ID : rtb-0a8141b29146d061c Add filter

Name	Route Table ID	Explicit subnet association	Edge associations	Main	VPC ID
<input checked="" type="checkbox"/> atplabnetrt	rtb-0a8141b29146d061c	-	-	Yes	vpc-0cccd52fbf167cb622

Route Table: rtb-0a8141b29146d061c

Summary Routes Subnet Associations Edge Associations Route Propagation Tags

Edit routes

View All routes

Destination	Target	Status	Propagated
10.10.32.0/24	local	active	No
10.10.31.0/24	vgw-012c908c2fa9db457	active	Yes
192.168.2.0/24	pcx-013b616621e1d1b9f	active	No



