

Conectar clientes Oracle desde cualquier cloud a Autonomous Transaction Processing a través de Equinix



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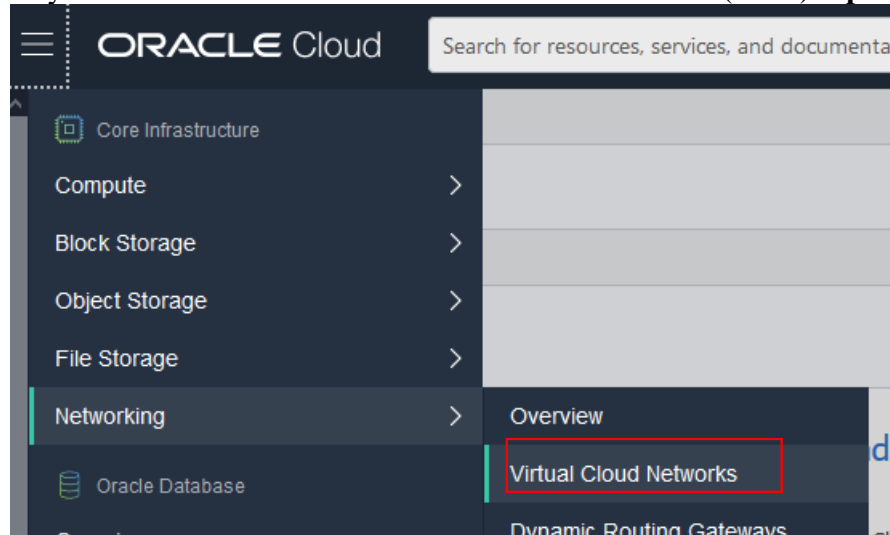
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Configuración Tablas de Rutas en OCI

Lo primero será configurar las tablas de rutas necesarias para habilitar el tráfico entre las diferentes clouds.

Vaya a las tablas de rutas de su Virtual Cloud Network (VCN) **atplabnet**.



Edite la tabla de rutas por defecto “**Default Route Table for atplabnet**”

A screenshot of the Oracle Cloud console showing the 'Virtual Cloud Networks' page for the 'atplab' compartment. The page title is 'Virtual Cloud Networks in atplab Compartment'. Below the title, there is a description: 'Virtual Cloud Networks are virtual, private networks that you set up in Oracle data centers. It closely resembles a traditional network, with firewall rules and specific types of components to use.' There are two buttons: 'Create VCN' and 'Start VCN Wizard'. Below these buttons is a table with the following data:

Name	State	CIDR Block	Default Route Table	DNS Domain Name
atplabnet	Available	10.10.31.0/24	Default Route Table for atplabnet	atplabnet.oraclevcn.com
atplabdmznet	Available	192.168.1.0/24	Default Route Table for atplabdmznet	atplabdmznet.oraclevcn.com

The 'Default Route Table for atplabnet' link in the table is highlighted with a red rectangular box.

Añada una nueva regla que conecte esta red con las rutas con de los otros clouds.



Menu Icon

Search for resources, services, and documentation

Germany Central (Frankfurt)

Networking » Virtual Cloud Networks » atplabnet » Route Table Details

AVAILABLE

Move Resource

Add Tags

Terminate

Route Table Information

Tags

OCID: ...cqogfq

Show

Copy

Compartment: atplab

Created: Mon, Oct 26, 2020, 09:42:18 UTC

Resources

Route Rules (3)

Add Route Rules

Edit

Remove

<input type="checkbox"/>	Destination	Target Type	Target	Description
<input type="checkbox"/>	0.0.0.0/0	NAT Gateway	atplabnatg	⋮
<input type="checkbox"/>	192.168.1.0/24	Local Peering Gateway	atplabnetlpg	⋮
<input type="checkbox"/>	All FRA Services in Oracle Services Nework	Service Gateway	atplabsg	⋮

0 Selected

Showing 3 Items < 1 of 1 >

Esta es la red que utilizaremos para salir a otros Clouds.

TARGET TYPE	Dynamic Routing Gateway
DESTINATION CIDR	10.10.0.0/16
DESCRIPTION (OPTIONAL)	To other clouds



Add Route Rules

[Help](#)

Important:

For a route rule that targets a Private IP, you must first enable "Skip Source/Destination Check" on the VNIC that the Private IP is assigned to.

Route Rule

TARGET TYPE

Dynamic Routing Gateway

DESTINATION CIDR BLOCK

10.10.0.0/16

TARGET DYNAMIC ROUTING GATEWAY

Name: atplabdrg

Compartment: atplab

DESCRIPTION (OPTIONAL)

to other clouds

Maximum 255 characters

+ Additional Route Rule

Add Route Rules

Cancel

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Route Rules

Add Route Rules Edit Remove				
<input type="checkbox"/>	Destination	Target Type	Target	Description
<input type="checkbox"/>	0.0.0.0/0	NAT Gateway	atplabnatg	
<input type="checkbox"/>	10.10.0.0/16	Dynamic Routing Gateways	atplabdrg	to other clouds
<input type="checkbox"/>	192.168.1.0/24	Local Peering Gateway	atplabnetlpg	
<input type="checkbox"/>	All FRA Services In Oracle Services Netw ork	Service Gateway	atplabsg	
0 Selected				
Showing 4 Items < 1 of 1 >				

Una vez hecho esto, cree una nueva tabla de rutas para conectar el DRG con el Service Gateway.

Desde el menú de la izquierda seleccionamos **Network** → **VCN**, seleccionamos la VCN **atplabnet** y pulsamos el botón **Create Route Table**:

Resources

Route Tables in atplab Compartment

Name	State	Number of Rules	Created
routetablefordrg	Available	2	Mon, May 11, 2020, 11:13:18 UTC
Default Route Table for atplabnet	Available	4	Wed, Apr 22, 2020, 07:02:59 UTC

Showing 3 Items < Page 1 >

ORACLE Cloud

Search for resources and services

Germany Central (P)

Networking > Virtual Cloud Networks > Virtual Cloud Network Details > Route Tables

atplabnet

[Move Resource](#) [Add Tags](#) [Terminate](#)

VCN Information

Tags

CIDR Block: 10.10.31.0/24

OCID: [ocv1a](#) [Show](#) [Copy](#)

Compartment: atplab

Default Route Table: [Default Route Table for atplabnet](#)

Created: Wed, Apr 22, 2020, 07:02:59 UTC

DNS Domain Name: atplabnet.oraclecloud.com

Resources

Subnets (1)

Route Tables (2)

Internet Gateways (0)

Dynamic Routing Gateways (1)

Network Security Groups (0)

Route Tables in atplab Compartment

[Create Route Table](#)

Name	State	Number of Rules	Created
routetablefordrg	Available	2	Mon, Ma
Default Route Table for atplabnet	Available	4	Wed, Ap

Creamos la Route Table con los siguientes valores:

- Nombre: **RouteTableDRGtoSG**
- Create In Compartment: **atplab**

Create Route Table [Help](#) [Cancel](#)

NAME

RouteTableDRGtoSG

CREATE IN COMPARTMENT

atplab

workshop20200505a (root)/atplab

Route Rules

Important: For a route rule that targets a Private IP, you must first enable "Skip Source/Destination Check" on the VNIC that the Private IP is assigned to.

[+ Additional Route Rule](#)

Tagging is a metadata system that allows you to organize and track resources within your tenancy. Tags are composed of keys and values that can be attached to resources.



Pulsar botón + **Additional Route Rule**, e informamos los siguientes campos:

- Target Type: **Service Gateway**
- Destination Service: **All FRA Services in Oracle Service Network**
- Compartment: **atplab**
- Target Service Gateway: **atplabsg**

Route Rules

Important: For a route rule that targets a Private IP, you must first enable "Skip Source/Destination Check" on the VNIC that the Private IP is assigned to.

TARGET TYPE

Service Gateway

DESTINATION SERVICE ⓘ

All FRA Services In Oracle Services Network

COMPARTMENT

atplab

workshop20200505a (root)/atplab

TARGET SERVICE GATEWAY

atplabsg

DESCRIPTION OPTIONAL

Maximum 255 characters

+ Additional Route Rule

Pulsamos el botón **Create Route Table**:

Create Route Table [Help](#) [Cancel](#)

NAME

RouteTableDRGtoSG

CREATE IN COMPARTMENT

atplab

workshop20200505a (root)/atplab

Route Rules

Important: For a route rule that targets a Private IP, you must first enable "Skip Source/Destination Check" on the VNIC that the Private IP is assigned to.

TARGET TYPE

Service Gateway

DESTINATION SERVICE ⓘ

All FRA Services In Oracle Services Network

COMPARTMENT

atplab

workshop20200505a (root)/atplab

TARGET SERVICE GATEWAY

atplabsg

DESCRIPTION OPTIONAL

Maximum 255 characters

+ Additional Route Rule

Tagging is a metadata system that allows you to organize and track resources within your tenancy. Tags are composed of keys and values that can be attached to resources.

[Learn more about tagging](#)

TAG NAMESPACE

None (add a free-form tag)

TAG KEY

VALUE

+ Additional Tag

Create Route Table Cancel



Así quedarían las tablas de rutas desde el lado de Oracle

Route Tables <i>in atplab Compartment</i>				
Create Route Table				
Name	State	Number of Rules	Created	
RouteTableDRGtoSG	Available	1	Mon, May 11, 2020, 15:58:40 UTC	
routetablefordrg	Available	2	Mon, May 11, 2020, 11:13:18 UTC	
Default Route Table for atplabnet	Available	4	Wed, Apr 22, 2020, 07:02:59 UTC	
Showing 3 Items < Page 1 >				

A continuación, desde el menú de la izquierda dentro de la VCN *atplabnet* seleccionamos la opción **Dynamic Routing Gateway**:

Oracle Cloud console showing the 'atplabnet' VCN details. The left sidebar has 'Dynamic Routing Gateways (1)' highlighted. The main area shows 'Dynamic Routing Gateways' with a table containing one entry: 'atplabdrg' with state 'Attached', compartment 'atplab', route table 'RouteTableDRGtoSG', and creation time 'Mon, May 11, 2020, 10:49:33 UTC'.

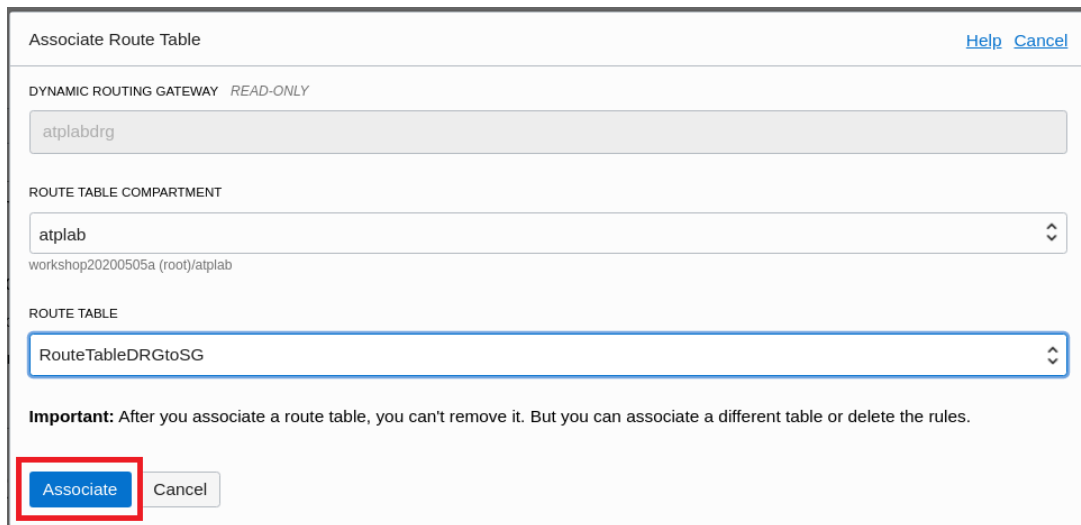
Pulsamos en el link al menú (⋮) del Dynamic Routing Gateway *atplabdrg*, y seleccionamos la opción **Associate Route Table**:

Service Gateways *in atplab Compartment*

Create Service Gateway				
Name	State	Services	Route Table	Created
atplabsg	Available	All FRA Services in Oracle Services Netwo		Mon, Mar 23, 2020
<div> <div>Block Traffic</div> <div>Edit</div> <div>Associate Route Table</div> <div>Move Resource</div> <div>Copy OCID</div> <div>View Tags</div> <div>Add Tags</div> <div>Terminate</div> </div>				



Seleccionamos como Route Table Compartment **atplab**, y como Route Table la **RouteTableDRGtoSG**:



The dialog box titled "Associate Route Table" contains the following fields:

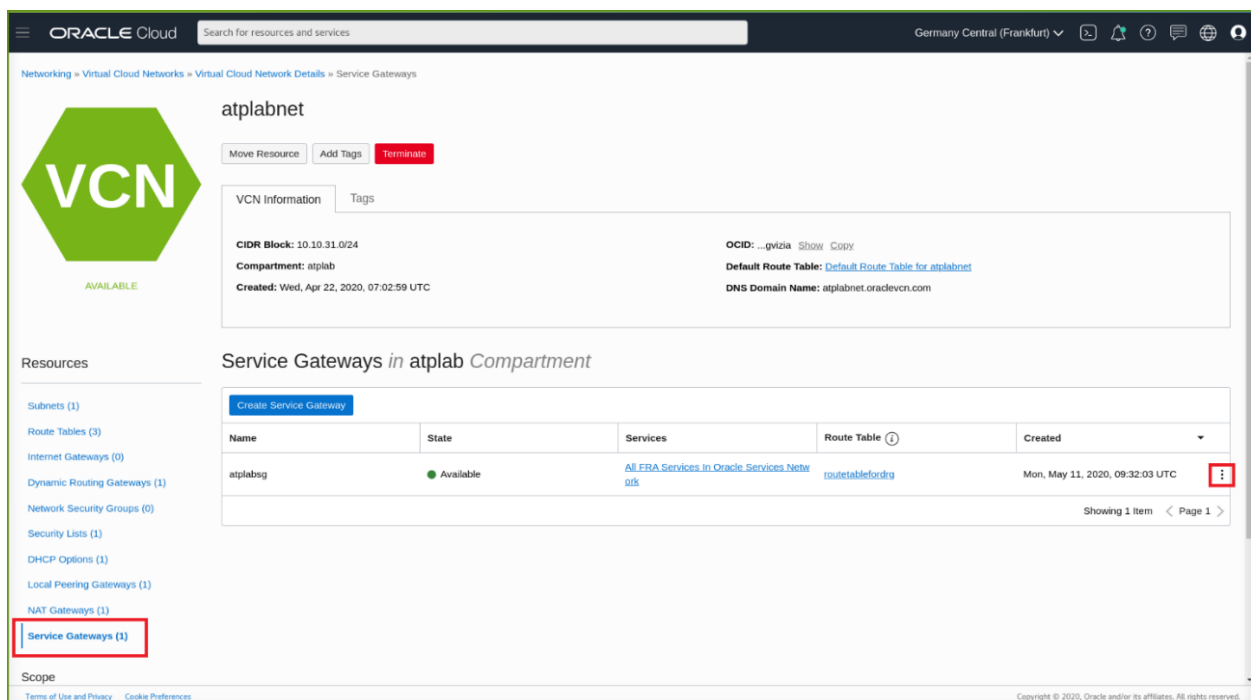
- DYNAMIC ROUTING GATEWAY** (READ-ONLY): atplabdrg
- ROUTE TABLE COMPARTMENT**: atplab (dropdown menu showing workshop20200505a (root)/atplab)
- ROUTE TABLE**: RouteTableDRGtoSG (dropdown menu)

Important: After you associate a route table, you can't remove it. But you can associate a different table or delete the rules.

Buttons: Associate (highlighted with a red box), Cancel

Pulsamos el botón **Associate**.

De la misma forma tenemos que asociar la tabla de rutas **routeablefordrg** al Service Gateway de nuestra VCN. Esto lo haremos seleccionando desde el menú de la izquierda dentro de la VCN **atplabnet** la opción **Service Gateway**:



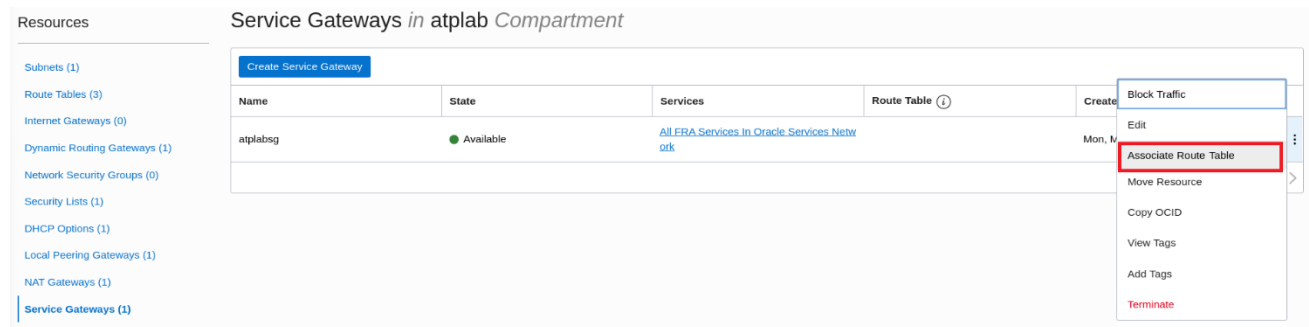
The screenshot shows the Oracle Cloud console for the VCN **atplabnet**. The left sidebar shows the navigation menu with **Service Gateways (1)** highlighted. The main content area shows the **Service Gateways in atplab Compartment** table.

Name	State	Services	Route Table	Created
atplabsg	Available	All FRA Services in Oracle Services Network	routeablefordrg	Mon, May 11, 2020, 09:32:03 UTC

The table shows one service gateway, **atplabsg**, which is in the **Available** state. It is associated with the **routeablefordrg** route table. The **Created** timestamp is **Mon, May 11, 2020, 09:32:03 UTC**. A red box highlights the three-dot menu icon in the **Created** column.



Pulsamos en el link al menu (⋮) del Service Gateway *atplabsg*, y seleccionamos la opción *Associate Route Table*:



Resources

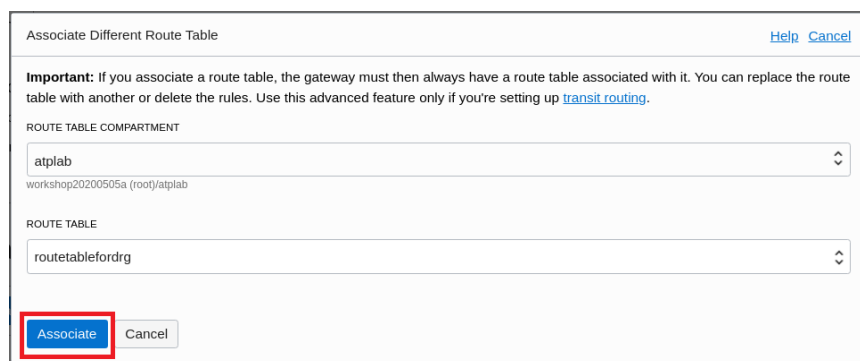
Service Gateways in atplab Compartment

Create Service Gateway

Name	State	Services	Route Table ⓘ	Create
atplabsg	Available	All FRA Services in Oracle Services Network		Mon, M

- Block Traffic
- Edit
- Associate Route Table
- Move Resource
- Copy OCID
- View Tags
- Add Tags
- Terminate

Asociamos el Service Gateway a la Route Table *routetablefordrg*:



Associate Different Route Table [Help](#) [Cancel](#)

Important: If you associate a route table, the gateway must then always have a route table associated with it. You can replace the route table with another or delete the rules. Use this advanced feature only if you're setting up [transit routing](#).

ROUTE TABLE COMPARTMENT

atplab
workshop20200505a (root)/atplab

ROUTE TABLE

routetablefordrg

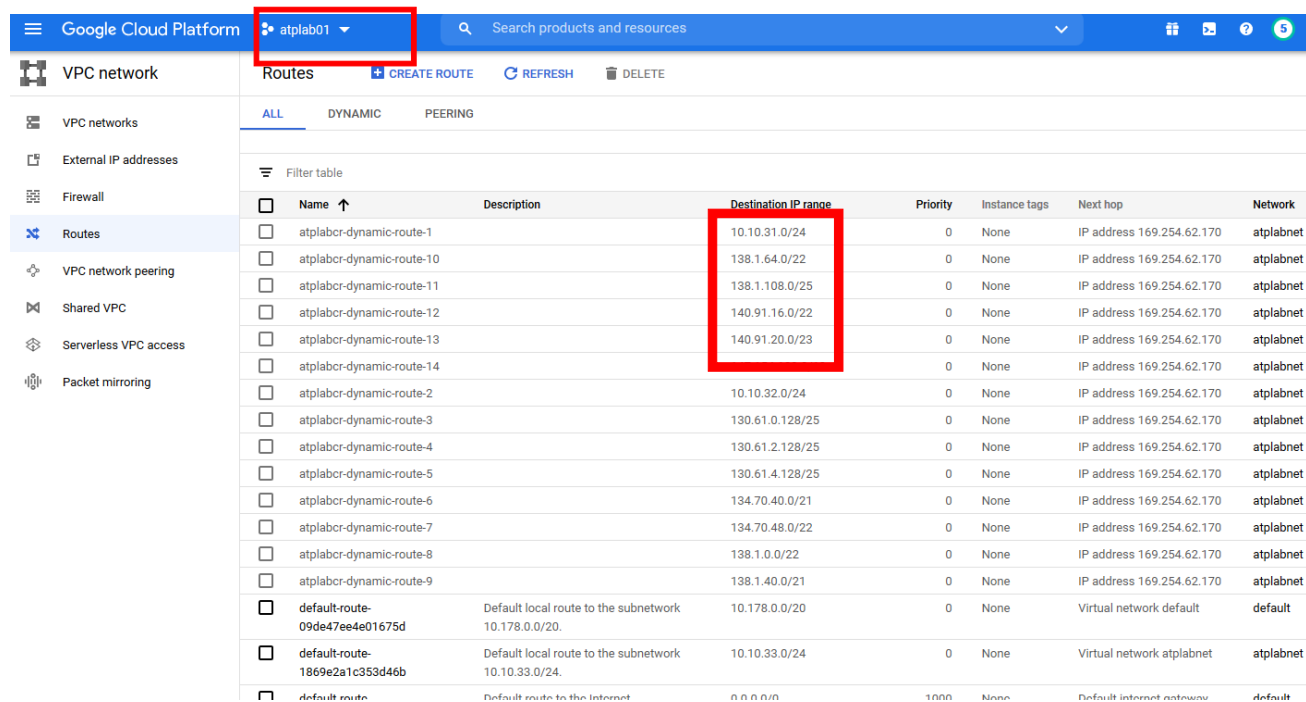
[Associate](#) [Cancel](#)

Pulsamos el botón *Associate*.



Comprobación del estado de las rutas desde todos los clouds

Compruebe que está en su proyecto asignado dentro de GCP, antes de continuar con las pruebas. En la **sección de rutas de Google Cloud**, se pueden ver las **rutas que conectan con Oracle Cloud**. Preste atención a las **direcciones que empiezan por 138 y 140**



Google Cloud Platform							
atplab01							
Search products and resources							
VPC network							
Routes							
ALL DYNAMIC PEERING							
Filter table							
	Name	Description	Destination IP range	Priority	Instance tags	Next hop	Network
<input type="checkbox"/>	atplabcr-dynamic-route-1		10.10.31.0/24	0	None	IP address 169.254.62.170	atplabnet
<input type="checkbox"/>	atplabcr-dynamic-route-10		138.1.64.0/22	0	None	IP address 169.254.62.170	atplabnet
<input type="checkbox"/>	atplabcr-dynamic-route-11		138.1.108.0/25	0	None	IP address 169.254.62.170	atplabnet
<input type="checkbox"/>	atplabcr-dynamic-route-12		140.91.16.0/22	0	None	IP address 169.254.62.170	atplabnet
<input type="checkbox"/>	atplabcr-dynamic-route-13		140.91.20.0/23	0	None	IP address 169.254.62.170	atplabnet
<input type="checkbox"/>	atplabcr-dynamic-route-14			0	None	IP address 169.254.62.170	atplabnet
<input type="checkbox"/>	atplabcr-dynamic-route-2		10.10.32.0/24	0	None	IP address 169.254.62.170	atplabnet
<input type="checkbox"/>	atplabcr-dynamic-route-3		130.61.0.128/25	0	None	IP address 169.254.62.170	atplabnet
<input type="checkbox"/>	atplabcr-dynamic-route-4		130.61.2.128/25	0	None	IP address 169.254.62.170	atplabnet
<input type="checkbox"/>	atplabcr-dynamic-route-5		130.61.4.128/25	0	None	IP address 169.254.62.170	atplabnet
<input type="checkbox"/>	atplabcr-dynamic-route-6		134.70.40.0/21	0	None	IP address 169.254.62.170	atplabnet
<input type="checkbox"/>	atplabcr-dynamic-route-7		134.70.48.0/22	0	None	IP address 169.254.62.170	atplabnet
<input type="checkbox"/>	atplabcr-dynamic-route-8		138.1.0.0/22	0	None	IP address 169.254.62.170	atplabnet
<input type="checkbox"/>	atplabcr-dynamic-route-9		138.1.40.0/21	0	None	IP address 169.254.62.170	atplabnet
<input type="checkbox"/>	default-route-09de47ee4e01675d	Default local route to the subnetwork 10.178.0.0/20.	10.178.0.0/20	0	None	Virtual network default	default
<input type="checkbox"/>	default-route-1869e2a1c353d46b	Default local route to the subnetwork 10.10.33.0/24.	10.10.33.0/24	0	None	Virtual network atplabnet	atplabnet
<input type="checkbox"/>	default-route	Default route to the Internet	0.0.0.0/0	1000	None	Default internet gateway	default

Desde la nube de **AWS** dentro de las **tablas de rutas** de la VPC atplabnet compruebe que las rutas que conectan con Oracle están también **activas y en verde**.



aws

Services

workshop2020050501 Frankfurt Support

New VPC Experience

Tell us what you think

VPC Dashboard

Filter by VPC:

Select a VPC

VIRTUAL PRIVATE CLOUD

Your VPCs

Subnets

Route Tables

Internet Gateways

Egress Only Internet Gateways

DHCP Options Sets

Elastic IPs

Managed Prefix Lists

Endpoints

Endpoint Services

NAT Gateways

Peering Connections

SECURITY

Network ACLs

Security Groups

VIRTUAL PRIVATE NETWORK (VPN)

Customer Gateways

Virtual Private Gateways

Create route table

Actions

Route Table ID: rtb-0e33c603ec9089ed4

Add filter

Name	Route Table ID	Explicit subnet association	Edge associations	Main	VPC ID	Owner
	rtb-0e33c603ec9089ed4	-	-	Yes	vpc-0cdd4310c5cc83799 ...	267111821888


VIEW

TABLES

Destination	Target	Status	Propagated
10.10.32.0/24	local	active	No
10.10.31.0/24	vgw-06abc2d93d2044c7a	active	Yes
130.61.0.128/25	vgw-06abc2d93d2044c7a	active	Yes
130.61.2.128/25	vgw-06abc2d93d2044c7a	active	Yes
130.61.4.128/25	vgw-06abc2d93d2044c7a	active	Yes
134.70.40.0/21	vgw-06abc2d93d2044c7a	active	Yes
134.70.48.0/22	vgw-06abc2d93d2044c7a	active	Yes
138.1.0.0/22	vgw-06abc2d93d2044c7a	active	Yes
138.1.40.0/21	vgw-06abc2d93d2044c7a	active	Yes
138.1.64.0/22	vgw-06abc2d93d2044c7a	active	Yes
138.1.108.0/25	vgw-06abc2d93d2044c7a	active	Yes
140.91.16.0/22	vgw-06abc2d93d2044c7a	active	Yes
140.91.20.0/23	vgw-06abc2d93d2044c7a	active	Yes





Desde la nube de **Azure** dentro del **ExpressRoute**, compruebe en **Private Peering** que se muestran las IPs de Oracle.


 **Microsoft Azure**

Home > atplaber > Private peering >

Route table (Primary)

AzurePrivatePeering - atplaber

 Download  Show secondary

 Showing only top 200 primary records, click Download above to see all.


Network	↑↓	Next hop	↑↓	LocPrf	↑↓	Weight	↑.
10.10.31.0/24		169.254.244.1				0	
10.10.34.0/24		10.10.34.77				0	
10.10.34.0/24		10.10.34.76*				0	
130.61.0.128/25		169.254.244.1				0	
130.61.2.128/25		169.254.244.1				0	
130.61.4.128/25		169.254.244.1				0	
134.70.40.0/21		169.254.244.1				0	
134.70.48.0/22		169.254.244.1				0	
138.1.0.0/22		169.254.244.1				0	
138.1.40.0/21		169.254.244.1				0	
138.1.64.0/22		169.254.244.1				0	
138.1.108.0/25		169.254.244.1				0	
140.91.16.0/22		169.254.244.1				0	
140.91.20.0/23		169.254.244.1				0	
147.154.128.0/19		169.254.244.1				0	



Conectar a ATP a través de un cliente Oracle desde cualquier cloud

Antes de comenzar, en la **consola de ATP** presione **Scale Up/Down** y ponga las OCPU un valor de **1**. Si ya creó su ATP con valor 1 no hace falta hacer Scale Down.

Autonomous Database » Autonomous Database Details



atplabpub

DB Connection Performance Hub Service Console **Scale Up/Down** More Actions

Autonomous Database Information Tools Tags

General Information

Database Name: atplabpub

Workload Type: Transaction Processing

Compartment: workshop20200505a (root)/atplab

OCID: ...6wdzqq [Show](#) [Copy](#)

Scale Up/Down [Help](#) [Cancel](#)

OCPU count

1

The number of OCPU cores to enable. Available cores are subject to your tenancy's service limits.

Storage (TB)

1

The amount of storage to allocate.

☐ **Auto Scaling**
Enabling auto scaling allows Oracle to use up to three times the number of OCPU's for processing workload if required. [Learn more.](#)

Update Cancel

Una vez hecho esto, **compruebe las máquinas virtuales** que estarán conectadas dentro de la red de Amazon que conecta al ATP. En primer lugar, la máquina bastión es la que tiene una IP pública, y a través de esta máquina, conectaremos a la máquina que contiene el cliente de Oracle y está en la red interna que conecta con los demás Clouds. Verifique que todas las máquinas están arrancadas y si no lo están por favor arránquelas (normalmente mediante el menú contextual y comando start).

AWS cloud instances:

aws Services Resource Groups

New EC2 Experience

EC2 Dashboard

Launch Instance

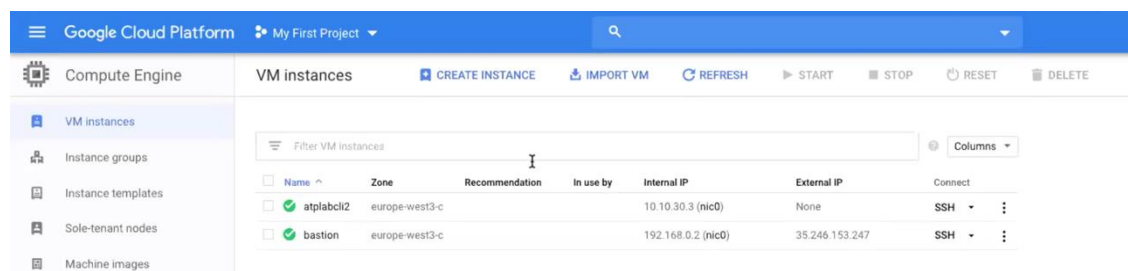
Filter by tags and attributes or search by keyword

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	IP-v4 Public IP	Key Name	Monitoring	Launch Time
bastion	i-074678d712a294da3	t2.micro	eu-central-1a	running	3/2 checks p...	None	3.123.22.164	atplabaws	disabled	March 31, 2020 at 11:27:45 PM...
atplabcl3	i-0a9d1b544a8e952e	t2.micro	eu-central-1a	running	3/2 checks p...	None	-	atplabaws	disabled	March 31, 2020 at 11:27:45 PM...

Select an instance above

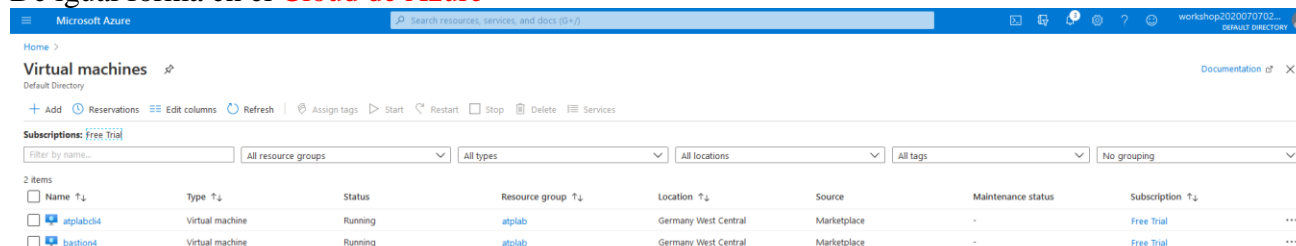


De la misma manera en el **Cloud de Google**



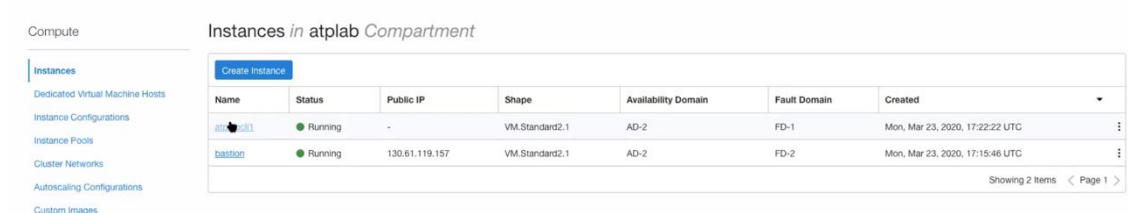
The screenshot shows the Google Cloud Platform interface for 'My First Project'. The 'VM instances' tab is selected. A table lists two instances: 'atplabcli2' and 'bastion', both in the 'europe-west3-c' zone. The 'atplabcli2' instance has an internal IP of 10.10.30.3 and no external IP. The 'bastion' instance has an internal IP of 192.168.0.2 and an external IP of 35.246.153.247. Both instances are running and have SSH access configured.

De igual forma en el **Cloud de Azure**



The screenshot shows the Microsoft Azure portal for 'Virtual machines'. A table lists two instances: 'atplabcli4' and 'bastion4', both in the 'Germany West Central' location. The 'atplabcli4' instance has an internal IP of 10.10.30.3 and no external IP. The 'bastion4' instance has an internal IP of 192.168.0.2 and an external IP of 35.246.153.247. Both instances are running and have SSH access configured.

Y en el Cloud de Oracle

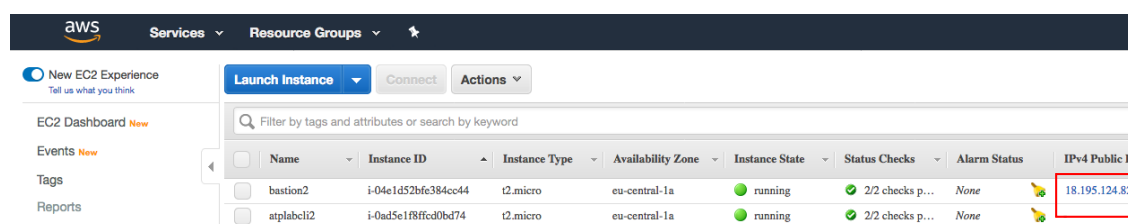


The screenshot shows the Oracle Cloud Compute console for 'Instances in atplab Compartment'. A table lists two instances: 'atplabcli1' and 'bastion', both in the 'AD-2' availability domain. The 'atplabcli1' instance has an internal IP of 10.10.30.3 and no external IP. The 'bastion' instance has an internal IP of 192.168.0.2 and an external IP of 35.246.153.247. Both instances are running and have SSH access configured.

Conectar desde clientes en los clouds de Amazon, Google y Azure

Los pasos a realizar desde **Amazon AWS** son los siguientes:

Conecte desde su máquina a la máquina bastion2 de AWS, y desde ahí a la maquina cliente atplabcli2 mediante ssh. Para ello siga estos pasos.



The screenshot shows the Amazon AWS console for 'EC2 Dashboard'. A table lists two instances: 'bastion2' and 'atplabcli2', both in the 'eu-central-1a' availability zone. The 'bastion2' instance has an internal IP of 10.10.30.3 and an external IP of 35.246.153.247. The 'atplabcli2' instance has an internal IP of 10.10.30.3 and no external IP. Both instances are running and have SSH access configured. The external IP of 'bastion2' is highlighted with a red box.

Use la clave atplab_aws.pem que puede encontrar entre las claves que se dan para este workshop.

```
ssh -i atplab_aws.pem ec2-user@<ip_publica_bastion2>
```

Copie la misma clave ssh **privada aws atplab_aws.pem**, para poder acceder a la máquina **atplabcli2** a través del **bastion2**.

```
$ mkdir .ssh
```

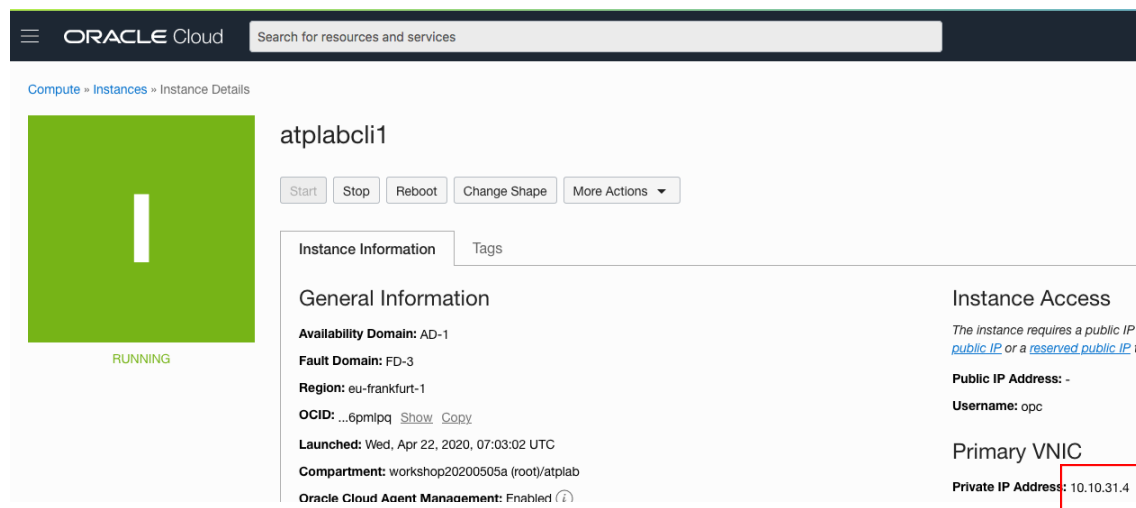


```
$ vi .ssh/atplab_aws.pem
<copie la clave en esta sesion de vi>
$ chmod 600 .ssh/atplab_aws.pem
$ ssh -i .ssh/atplab_aws.pem ec2-user@<ip_privada_atplabcli2>
```

Una vez en la máquina **atplabcli2**, copie la clave privada ssh **atplab_rsa**, para poder acceder a la máquina **atplabcli1** que está en OCI.

```
$ mkdir .ssh
$ vi .ssh/atplab_rsa
<copie la clave en esta sesion de vi>
$ chmod 600 .ssh/atplab_rsa
```

Una vez que tiene la clave privada de acceso a **atplabcli1**, ejecute los siguientes comandos **SCP** desde **atplabcli2**, para importar tanto el directorio con el cliente Oracle como las variables de entorno desde la instancia de OCI:



Oracle Cloud console screenshot for instance **atplabcli1**. The instance is in the **RUNNING** state. The **Instance Access** section shows the **Private IP Address** as **10.10.31.4**, which is highlighted with a red box.

```
$ scp -r -i .ssh/atplab_rsa opc@<ip_atplabcli1>:/home/opc/instantclient_19_9 .
$ scp -r -i .ssh/atplab_rsa opc@<ip_atplabcli1>:/home/opc/.bash_profile .
```

A continuación, cargue el entorno:

```
$ . .bash_profile
```

Ya puede conectar con sqlplus a ATP desde atplabcli2:

```
$ sqlplus hr/hr@atplabpub_medium
```

A continuación cree la tabla lineorder (si no la ha creado en el Lab 0)

```
sql> create table lineorder as
select * from ssb.lineorder
where to_char(lo_orderdate,'YYYY') = '1994';
```

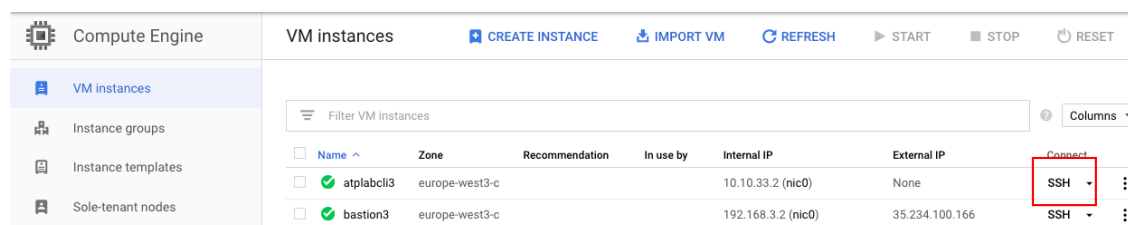
Ya puede ejecutar una consulta contra ATP desde el cloud de Amazon.

```
select /*AWS*/ sum(lo_extendedprice*lo_discount) as revenue
from lineorder, ssb.dwdte
where lo_orderdate = d_datekey
```




```
and d_weeknuminyear = 6
and d_year = 1994
and lo_discount between 5 and 7
and lo_quantity between 26 and 35;
```

Para acceder desde **Google**, se puede acceder directamente a la máquina cliente atplabcli3 pulsando en el **botón SSH** en la consola de GCP.

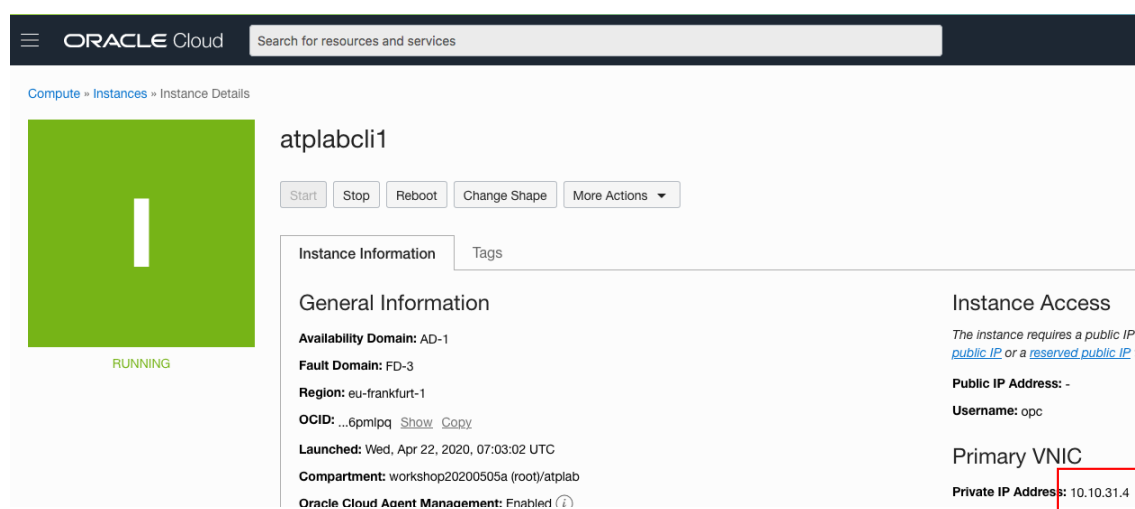


Name	Zone	Recommendation	In use by	Internal IP	External IP	Connect
atplabcli3	europa-west3-c			10.10.33.2 (nic0)	None	SSH
bastion3	europa-west3-c			192.168.3.2 (nic0)	35.234.100.166	SSH

En primer lugar, copie su clave privada ssh. Puede encontrarla en su máquina OCI, o entre las claves que se dan para este workshop.

```
$ mkdir .ssh
$ vi .ssh/atplab_rsa
<copie la clave en esta sesion de vi>
$ chmod 600 .ssh/atplab_rsa
```

Una vez ahí, ejecute los siguientes comandos **SCP** para importar tanto el directorio con el cliente Oracle como las variables de entorno desde la instancia atplabcli1:



atplabcli1

Start Stop Reboot Change Shape More Actions

Instance Information Tags

General Information

Availability Domain: AD-1
 Fault Domain: FD-3
 Region: eu-frankfurt-1
 OCID: ...6pmlpq [Show](#) [Copy](#)
 Launched: Wed, Apr 22, 2020, 07:03:02 UTC
 Compartment: workshop20200505a (root)/atplab
 Oracle Cloud Agent Management: Enabled

Instance Access

The instance requires a public IP or a reserved public IP to

Public IP Address: -
 Username: opc

Primary VNIC

Private IP Address: 10.10.31.4

```
$ scp -r -i .ssh/atplab_rsa opc@<ip_atplabcli1>:/home/opc/instantclient_19_9 .
$ scp -r -i .ssh/atplab_rsa opc@<ip_atplabcli1>:/home/opc/.bash_profile .
```

A continuación, cargue el entorno:

```
$ . .bash_profile
```

Ya puede conectar con sqlplus a ATP desde atplabcli3:

```
$ sqlplus hr/hr@atplabpub_medium
```



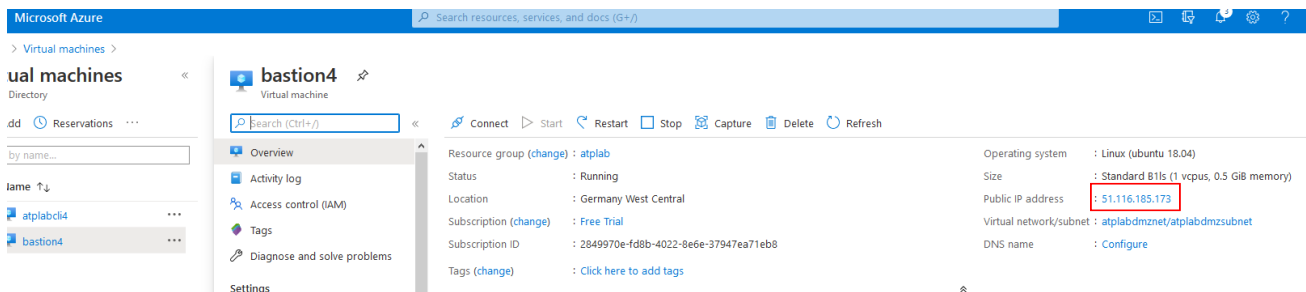
A continuación, cree la tabla lineorder (si no la ha creado antes en este Lab o en el Lab 0)

```
sql> create table lineorder as
select * from ssb.lineorder
where to_char(lo_orderdate,'YYYY') = '1994';
```

Ya puede ejecutar una consulta contra ATP desde el cloud de Google.

```
select /*GCP*/ sum(lo_extendedprice*lo_discount) as revenue
from lineorder, ssb.dwddate
where lo_orderdate = d_datekey
and d_weeknuminyear = 6
and d_year = 1994
and lo_discount between 5 and 7
and lo_quantity between 26 and 35;
```

Para conectar con Microsoft Azure, hay que repetir los pasos como se hicieron con AWS, conectando desde su terminal, PuTTY o similar.
Obtenga la dirección IP de bastion4 haciendo click en ella, desde el menú de Virtual Machines.



Use la clave **atplab_azu.pem** que se le habrá proporcionado al inicio del workshop.

```
ssh -i atplab_azu.pem AzureUser@<ip_publica_bastion4>
```

Copie la misma clave ssh **privada aws atplab_azu.pem**, para poder acceder a la máquina **atplabcli4** a través del **bastion4**.

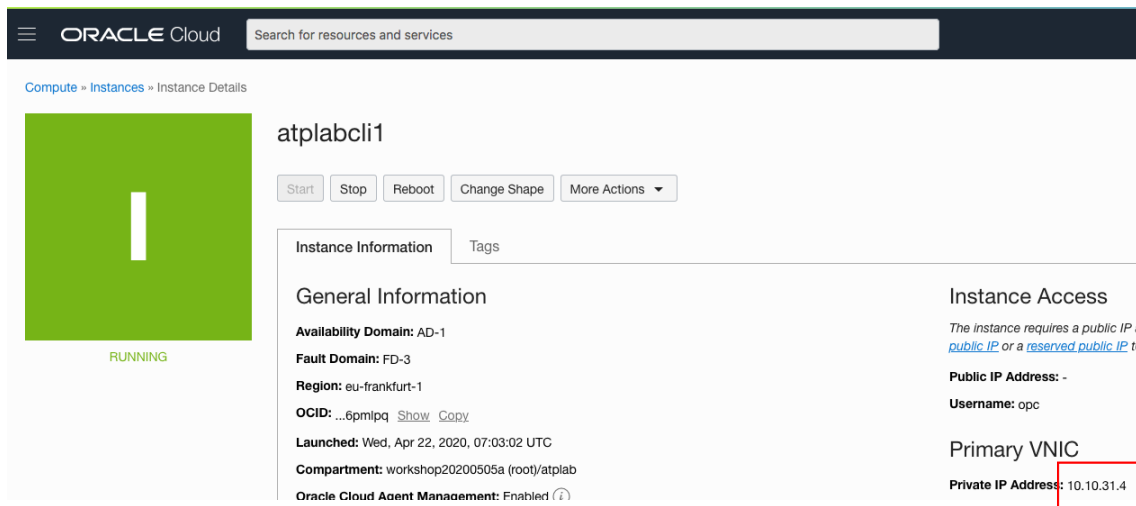
```
$ mkdir .ssh
$ vi .ssh/atplab_aws.pem
<copie la clave en esta sesion de vi>
$ chmod 600 .ssh/atplab_azu.pem
$ ssh -i .ssh/atplab_azu.pem AzureUser@<ip_privada_atplabcli4>
```

Una vez en la máquina **atplabcli4**, copie la clave privada ssh **atplab_rsa**, para poder acceder a la máquina **atplabcli1** que está en OCI.

```
$ mkdir .ssh
$ vi .ssh/atplab_rsa
<copie la clave en esta sesion de vi>
$ chmod 600 .ssh/atplab_rsa
```

Una vez que tiene la clave privada de acceso a **atplabcli1**, ejecute los siguientes comandos **SCP** desde **atplabcli4**, para importar tanto el directorio con el cliente Oracle como las variables de entorno desde la instancia de OCI:





Compute » Instances » Instance Details

atplabcli1

Start Stop Reboot Change Shape More Actions

Instance Information Tags

General Information

Availability Domain: AD-1
 Fault Domain: FD-3
 Region: eu-frankfurt-1
 OCID: ...6pmipq [Show](#) [Copy](#)
 Launched: Wed, Apr 22, 2020, 07:03:02 UTC
 Compartment: workshop20200505a (root)/atplab
 Oracle Cloud Agent Management: Enabled

Instance Access

The instance requires a public IP or a reserved public IP to be accessible from the Internet.

Public IP Address: -
 Username: opc

Primary VNIC

Private IP Address: 10.10.31.4

```
$ scp -r -i .ssh/atplab_rsa opc@<ip_atplabcli1>:/home/opc/instantclient_19_9 .
$ scp -r -i .ssh/atplab_rsa opc@<ip_atplabcli1>:/home/opc/.bash_profile .
```

A continuación, cargue el entorno:

```
$ . .bash_profile
```

Ya puede conectar con sqlplus a ATP desde atplabcli4:

```
$ sqlplus hr/hr@atplabpub_medium
```

A continuación cree la tabla lineorder (si no la ha creado en el Lab 0)

```
sql> create table lineorder as
select * from ssb.lineorder
where to_char(lo_orderdate,'YYYY') = '1994';
```

Ya puede ejecutar una consulta contra ATP desde el cloud de Azure.

```
select /*AZU*/ sum(lo_extendedprice*lo_discount) as revenue
from lineorder, ssb.dwdte
where lo_orderdate = d_datekey
and d_weeknumyear = 6
and d_year = 1994
and lo_discount between 5 and 7
and lo_quantity between 26 and 35;
```

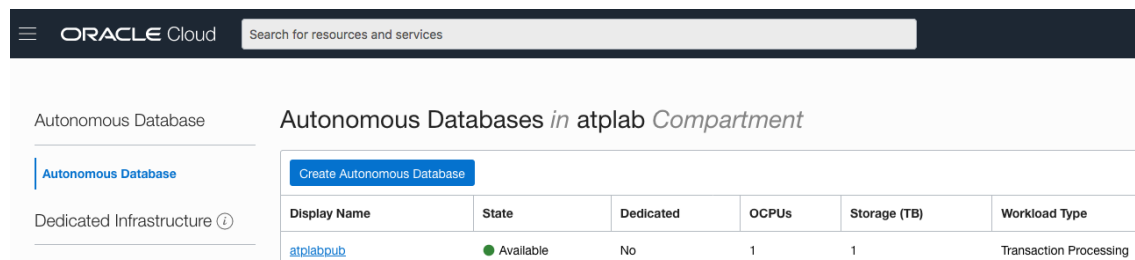
Del mismo modo, también tendrá que ejecutar una consulta contra ATP desde atplabcli1 en el cloud de Oracle.

```
select /*OCI*/ sum(lo_extendedprice*lo_discount) as revenue
from lineorder, ssb.dwdte
where lo_orderdate = d_datekey
and d_weeknumyear = 6
and d_year = 1994
and lo_discount between 5 and 7
and lo_quantity between 26 and 35;
```

Ahora ejecute (Enter) las 3 sentencias que ha preparado en atplabcli1, atplabcli2 y atplabcli3, todas casi al mismo tiempo (para que haya concurrencia).



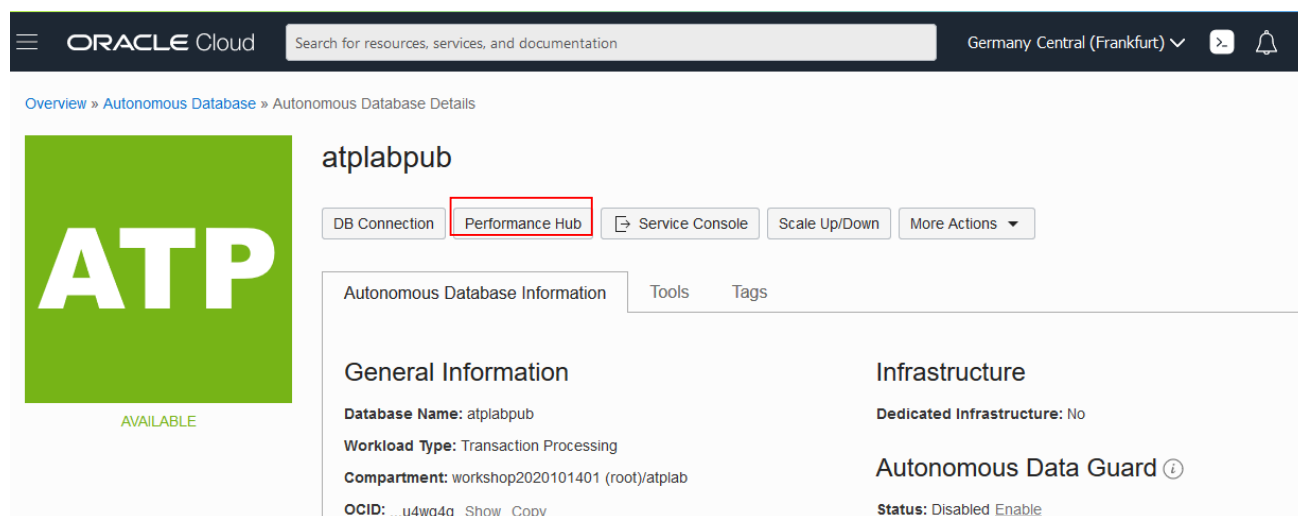
Vaya a la consola de ATP en el navegador:



The screenshot shows the Oracle Cloud console interface. On the left, there's a sidebar with 'Autonomous Database' and 'Dedicated Infrastructure' options. The main area is titled 'Autonomous Databases in atplab Compartment'. It features a 'Create Autonomous Database' button and a table listing the database instances.

Display Name	State	Dedicated	OCPU	Storage (TB)	Workload Type
atplabpub	Available	No	1	1	Transaction Processing

Entre en la instancia atplabpub



The screenshot shows the 'atplabpub' Autonomous Database details page. It includes a large green 'ATP' logo with 'AVAILABLE' text below it. A row of buttons at the top includes 'DB Connection', 'Performance Hub' (highlighted with a red box), 'Service Console', 'Scale Up/Down', and 'More Actions'. Below these are tabs for 'Autonomous Database Information', 'Tools', and 'Tags'. The 'Autonomous Database Information' tab is active, showing 'General Information' and 'Infrastructure' sections.

General Information

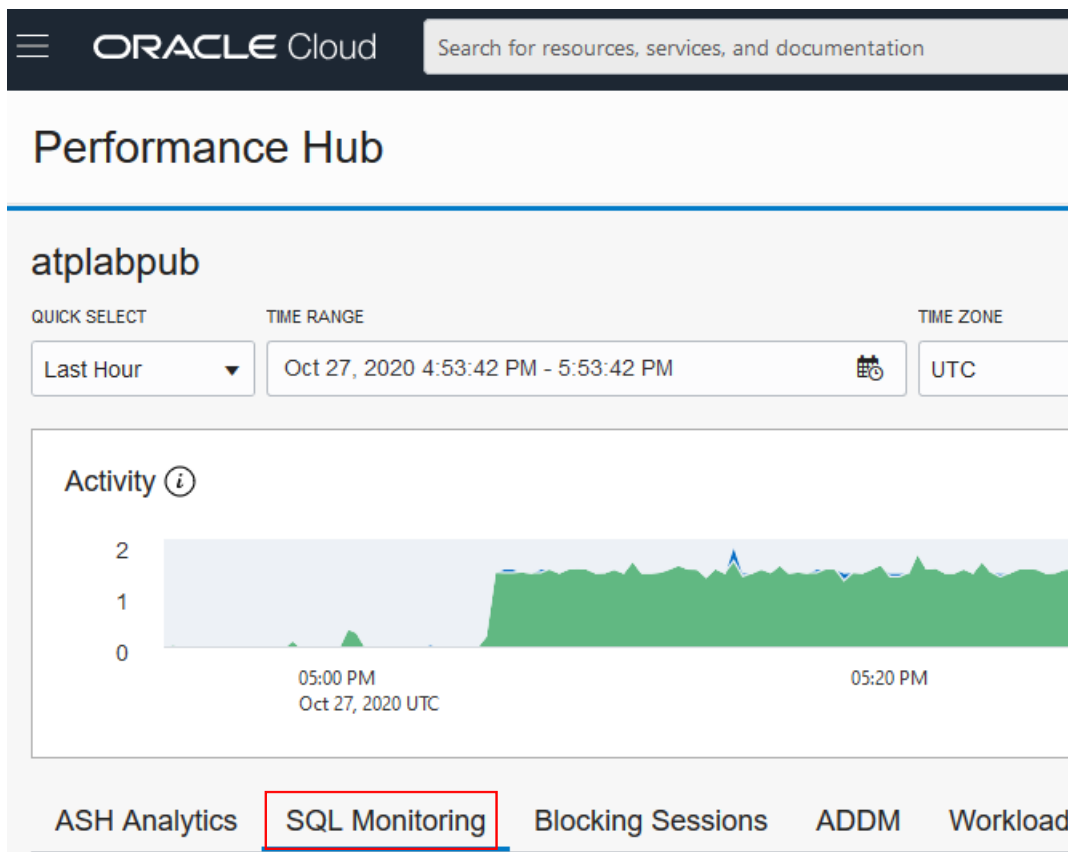
- Database Name: atplabpub
- Workload Type: Transaction Processing
- Compartment: workshop2020101401 (root)/atplab
- OCID: ...u4wq4q [Show](#) [Copy](#)

Infrastructure

- Dedicated Infrastructure: No
- Autonomous Data Guard [i](#)
- Status: Disabled [Enable](#)

Pulse el botón **Performance Hub** y luego pulse en **SQL Monitoring** más abajo en la parte de debajo de la pantalla.





Verá las consultas ejecutadas una a una con los tiempos de Duración y tiempos de Base de Datos correspondientes a cada una de ellas:

✓	13.00s	2	1k0m20octh8tv	3002741515	HR@QLZLWMQW5RRIKD_ATPLABPUB	13.30s	105K	select /*GCP*/ sum(io_extended...
✓	13.00s	2	44z8sqhfoamvh	3002741515	HR@QLZLWMQW5RRIKD_ATPLABPUB	13.22s	105K	select /*OCI*/ sum(io_extended...
✓	13.00s	2	ff77vhdkf16c	3002741515	HR@QLZLWMQW5RRIKD_ATPLABPUB	13.25s	105K	select /*AWS*/ sum(io_extended...

Vuelva a ejecutarlas con el comando “r” en cada cliente atplabcliN al mismo tiempo y verá los nuevos tiempos con concurrencia luego de dar al botón **Refresh** arriba a la derecha en la pantalla del Performance Hub:

Status	Duration	Inst ID	SQL ID	SQL Plan Hash	User Name	Parallel	Database Time	I/O Requests	SQL Text
✓	37.00s	2	44z8sqhfoamvh	3002741515	HR@QLZLWMQW5RRIKD_ATPLABPUB		36.84s	105K	select /*OCI*/ sum(io_extended...
✓	34.00s	2	ff77vhdkf16c	3002741515	HR@QLZLWMQW5RRIKD_ATPLABPUB		34.80s	105K	select /*AWS*/ sum(io_extended...
✓	37.00s	2	1k0m20octh8tv	3002741515	HR@QLZLWMQW5RRIKD_ATPLABPUB		37.41s	105K	select /*GCP*/ sum(io_extended...


Observe que en ambos casos, **sin Parallel**, puesto que la instancia de ATP sólo tiene 1 OCPU aumentan considerablemente.

Cierre esta ventana con el botón abajo a la izquierda. De regreso en la consola de ATP presione **Scale Up/Down** y **aumente las OCPU a 3 (o 4 OCPU si se está accediendo también desde Azure)**.



ORACLE Cloud Search for resources, services, and documentation Germany Central (Frankfurt) ▼

Overview » Autonomous Database » Autonomous Database Details



AVAILABLE

atplabpub

DB Connection Performance Hub Service Console **Scale Up/Down** More Actions ▼

Autonomous Database Information Tools Tags

General Information

Database Name: atplabpub

Workload Type: Transaction Processing

Compartment: workshop2020101401 (root)/atplab

OCID: ...u4wq4q [Show](#) [Copy](#)

Infrastructure

Dedicated Infrastructure: No

Autonomous Data Guard ⓘ

Status: Disabled [Enable](#)

Scale Up/Down [Help](#) [Cancel](#)

OCPU count

3

The number of OCPU cores to enable. Available cores are subject to your tenancy's service limits.

Storage (TB)

1


The amount of storage to allocate.

☐ **Auto Scaling**
Enabling auto scaling allows Oracle to use up to three times the number of OCPUs for processing workload if required. [Learn more.](#)

Update Cancel

Cuando esté listo vuelva a ejecutar las sentencias SQL desde los clientes con el comando “r”. Aunque puede ejecutar las sentencias mientras está escalando las OCPU, no hay problema, sólo tendrá que repetirlas cuando haya terminado para tomar tiempo limpios.

Overview » Autonomous Database » Autonomous Database Details



SCALING IN PROGRESS

atplabpub

DB Connection Performance Hub Service Console **Scale Up/Down** More Actions ▼

Autonomous Database Information Tools Tags

General Information

Database Name: atplabpub

Workload Type: Transaction Processing

Compartment: workshop2020101401 (root)/atplab

Infrastructure

Dedicated Infrastructure: No

Autonomous Data Guard ⓘ



ORACLE Cloud Search for resources, services, and documentation Germany Central (Frankfurt) >

Overview » Autonomous Database » Autonomous Database Details

atplabpub

DB Connection Performance Hub Service Console Scale Up/Down More Actions

ATP
AVAILABLE

Autonomous Database Information Tools Tags

General Information

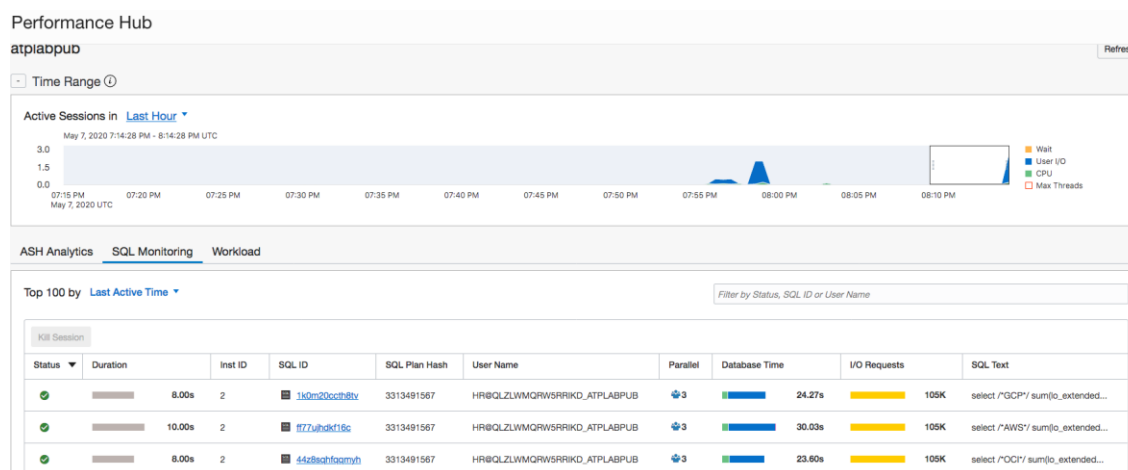
Database Name: atplabpub
Workload Type: Transaction Processing
Compartment: workshop2020101401 (root)/atplab
OCID: ...u4wq4q Show Copy
Created: Mon, Oct 26, 2020, 10:13:15 UTC
OCPU Count: 3
Storage: 1 TB

Infrastructure
Dedicated Infrastructure: No

Autonomous Data Guard ⓘ
Status: Disabled Enable

Backup
Last Automatic Backup: Mon, Oct 26, 2020, 21:18:21

Ahora que las OCPU son 3, vuelva a entrar al **Performance Hub** y ejecute las sentencias todas juntas una vez más.



Observe que ahora el Parallel es 3 en cada sentencia y que el tiempo es 1/3 del anterior y aún menor que los tiempos iniciales para cada una.

Esto demuestra una escalabilidad casi lineal y una capacidad elástica sin costes adicionales. Pregunte a su instructor si tiene dudas para que se lo explique.

Vuelva a poner la OCPU en 1 y aquí termina el HOL4.

