

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



# Contenido

<b>CONECTAR CLIENTES ORACLE DESDE CUALQUIER CLOUD A AUTONOMOUS TRANSACTION PROCESSING A TRAVÉS DE EQUINIX .....</b>	<b>1</b>
CONFIGURACIÓN TABLAS DE RUTAS EN OCI.....	3
COMPROBACIÓN DEL ESTADO DE LAS RUTAS DESDE TODOS LOS CLOUDS .....	9
<b>CONECTAR A ATP A TRAVÉS DE UN CLIENTE ORACLE DESDE CUALQUIER CLOUD .....</b>	<b>11</b>
CONECTAR DESDE CLIENTES EN LOS CLOUDS DE AMAZON, GOOGLE Y AZURE .....	12



## 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** y edite la tabla de rutas por defecto “**Default Route Table for atplabnet**”

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

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

<b>TARGET TYPE</b>	Dynamic Routing Gateway
<b>DESTINATION CIDR</b>	10.10.0.0/16
<b>DESCRIPTION (OPTIONAL)</b>	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: atplabdr  
Compartment: atplab

**DESCRIPTION - OPTIONAL**  
to other clouds

+ Additional Route Rule

[Add Route Rules](#) [Cancel](#)

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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**:

The screenshot shows the Oracle Cloud console interface. On the left, the 'Resources' sidebar is expanded to 'Route Tables (3)'. The main content area shows 'Route Tables in atplab Compartment' with a table listing existing route tables. The 'Create Route Table' button is highlighted in the sidebar.

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

Creamos la Route Table con los siguientes valores:

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

The screenshot shows the 'Create Route Table' form. The 'NAME' field contains 'RouteTableDRGtoSG'. The 'CREATE IN COMPARTMENT' dropdown is set to 'atplab'. The 'Route Rules' section is expanded, showing an important note and a button to add additional 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

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



Resources

Route Tables *in atplab Compartment*

Create Route Table

Name	State	Number of Rules	Created
<a href="#">RouteTableDRGtoSG</a>	Available	1	Mon, May 11, 2020, 15:58:40 UTC
<a href="#">routeTableforDrg</a>	Available	2	Mon, May 11, 2020, 11:13:18 UTC
<a href="#">Default Route Table for atplabnet</a>	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

Germany Central (Frankfurt)

Networking > Virtual Cloud Networks > Virtual Cloud Network Details > Dynamic Routing Gateways

atplabnet

VCN Information

CIDR Block: 10.10.31.0/24

Compartment: atplab

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

OCID: ...gvizia

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

DNS Domain Name: atplabnet.oraclecloud.com

Resources

Dynamic Routing Gateways

Attach Dynamic Routing Gateway

Name	State	Compartment	Route Table	Created
<a href="#">atplabdrg</a>	Attached	atplab	<a href="#">RouteTableDRGtoSG</a>	Mon, May 11, 2020, 10:49:33 UTC

Showing 1 item < Page 1 >

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
<a href="#">atplabsg</a>	Available	<a href="#">All FRA Services In Oracle Services Network</a>		Mon, Mar 23, 2020

Block Traffic

Edit

Associate Route Table

Move Resource

Copy OCID

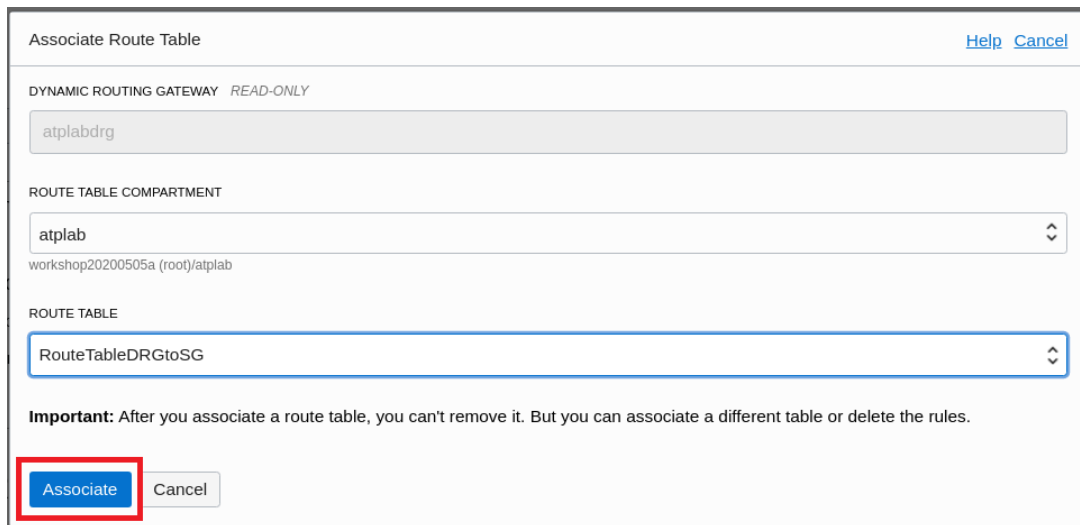
View Tags

Add Tags

Terminate



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



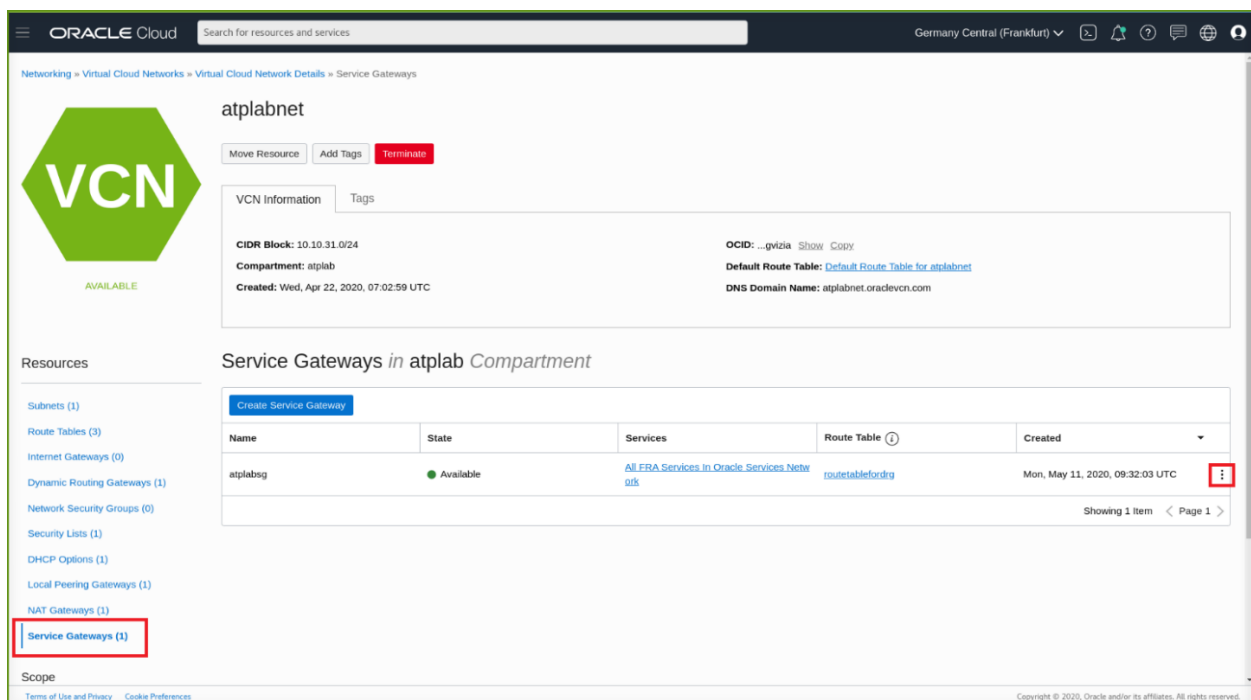
The dialog box titled "Associate Route Table" contains the following fields:

- DYNAMIC ROUTING GATEWAY** (READ-ONLY): atplabdrg
- ROUTE TABLE COMPARTMENT**: atplab (with a dropdown arrow and the text "workshop20200505a (root)/atplab" below it)
- ROUTE TABLE**: RouteTableDRGtoSG (with a dropdown arrow)

Below the fields, there is an **Important** note: "After you associate a route table, you can't remove it. But you can associate a different table or delete the rules." At the bottom, there are two buttons: **Associate** (highlighted with a red box) and **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**:

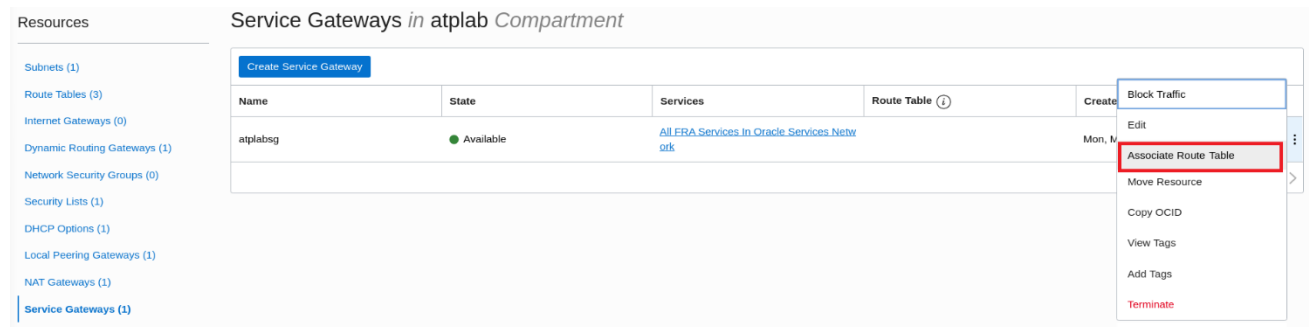


The screenshot shows the Oracle Cloud console for the VCN **atplabnet**. The left sidebar lists various resources, with **Service Gateways (1)** highlighted by a red box. The main content area shows the details for the **atplabsg** Service Gateway, which is in an **Available** state. The **Route Table** column shows **routeablefordrg**, which is also highlighted with a red box. The table has columns for Name, State, Services, Route Table, and Created. The Services column contains a link to "All FRA Services in Oracle Services Network".

Name	State	Services	Route Table	Created
atplabsg	Available	<a href="#">All FRA Services in Oracle Services Network</a>	routeablefordrg	Mon, May 11, 2020, 09:32:03 UTC



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



Resources

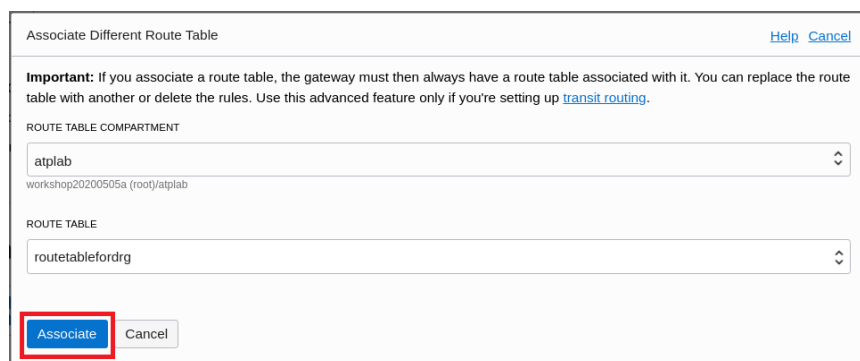
Service Gateways in atplab Compartment

Create Service Gateway

Name	State	Services	Route Table ⓘ	Create
atplabsg	Available	<a href="#">All FRA Services in Oracle Services Network</a>		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

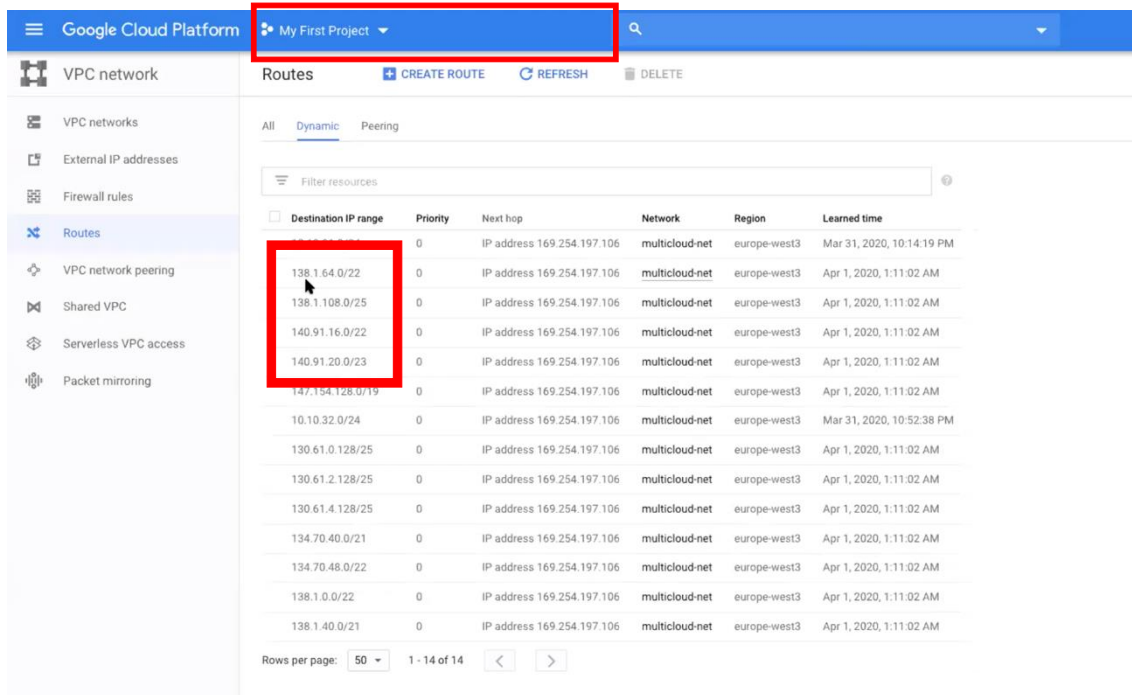
Pulsamos el botón **Associate**.





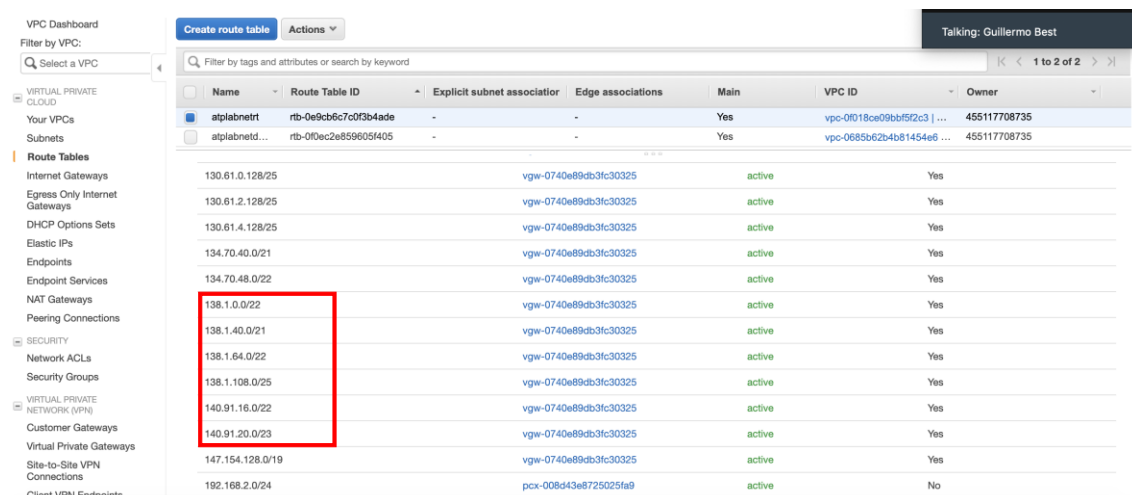
## Comprobación del estado de las rutas desde todos los clouds

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**



Destination IP range	Priority	Next hop	Network	Region	Learned time
138.1.64.0/22	0	IP address 169.254.197.106	multicloud-net	europe-west3	Mar 31, 2020, 10:14:19 PM
138.1.108.0/25	0	IP address 169.254.197.106	multicloud-net	europe-west3	Apr 1, 2020, 1:11:02 AM
140.91.16.0/22	0	IP address 169.254.197.106	multicloud-net	europe-west3	Apr 1, 2020, 1:11:02 AM
140.91.20.0/23	0	IP address 169.254.197.106	multicloud-net	europe-west3	Apr 1, 2020, 1:11:02 AM
147.154.128.0/19	0	IP address 169.254.197.106	multicloud-net	europe-west3	Apr 1, 2020, 1:11:02 AM
10.10.32.0/24	0	IP address 169.254.197.106	multicloud-net	europe-west3	Mar 31, 2020, 10:52:38 PM
130.61.0.128/25	0	IP address 169.254.197.106	multicloud-net	europe-west3	Apr 1, 2020, 1:11:02 AM
130.61.2.128/25	0	IP address 169.254.197.106	multicloud-net	europe-west3	Apr 1, 2020, 1:11:02 AM
130.61.4.128/25	0	IP address 169.254.197.106	multicloud-net	europe-west3	Apr 1, 2020, 1:11:02 AM
134.70.40.0/21	0	IP address 169.254.197.106	multicloud-net	europe-west3	Apr 1, 2020, 1:11:02 AM
134.70.48.0/22	0	IP address 169.254.197.106	multicloud-net	europe-west3	Apr 1, 2020, 1:11:02 AM
138.1.0.0/22	0	IP address 169.254.197.106	multicloud-net	europe-west3	Apr 1, 2020, 1:11:02 AM
138.1.40.0/21	0	IP address 169.254.197.106	multicloud-net	europe-west3	Apr 1, 2020, 1:11:02 AM


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



Name	Route Table ID	Explicit subnet association	Edge associations	Main	VPC ID	Owner
atplabnetrt	rtb-0e9cb6c7c0f3b4ade	-	-	Yes	vpc-0f018ce09bbf5f2c3   ...	455117708735
atplabnetd...	rtb-0f0ec2e859605405	-	-	Yes	vpc-0685b62b4b81454e6 ...	455117708735
130.61.0.128/25			vgw-0740e89db3fc30325	active		Yes
130.61.2.128/25			vgw-0740e89db3fc30325	active		Yes
130.61.4.128/25			vgw-0740e89db3fc30325	active		Yes
134.70.40.0/21			vgw-0740e89db3fc30325	active		Yes
134.70.48.0/22			vgw-0740e89db3fc30325	active		Yes
138.1.0.0/22			vgw-0740e89db3fc30325	active		Yes
138.1.40.0/21			vgw-0740e89db3fc30325	active		Yes
138.1.108.0/25			vgw-0740e89db3fc30325	active		Yes
140.91.16.0/22			vgw-0740e89db3fc30325	active		Yes
140.91.20.0/23			vgw-0740e89db3fc30325	active		Yes
147.154.128.0/19			vgw-0740e89db3fc30325	active		Yes
192.168.2.0/24			pcx-008d43e8725025fa9	active		No





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

Launch Instance

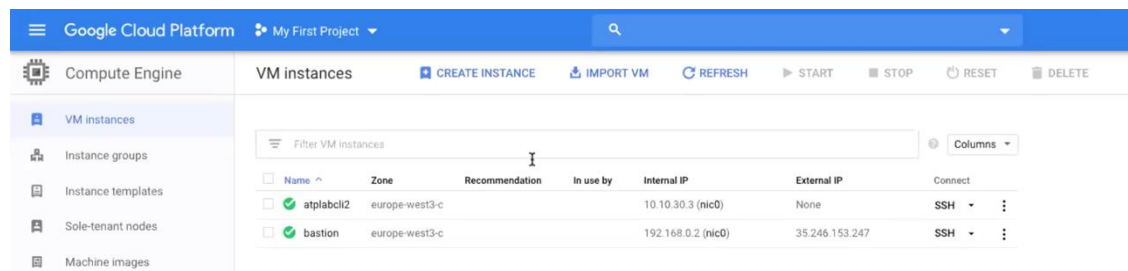
Filter by tags and attributes or search by keyword

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



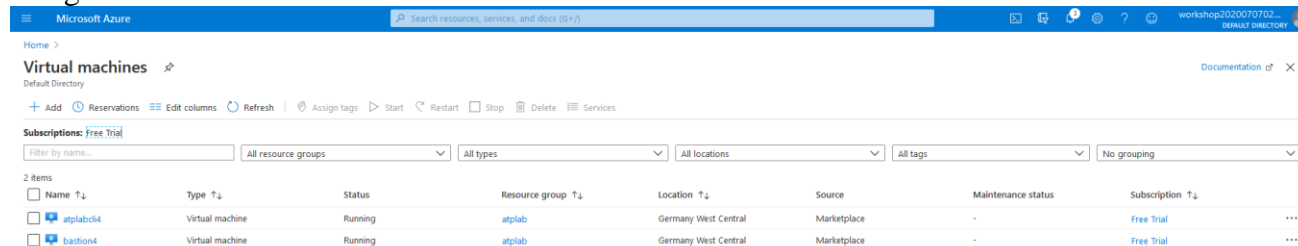
De la misma manera en el **Cloud de Google**



The screenshot shows the Google Cloud Platform interface for VM instances. The left sidebar lists 'VM instances' as the selected option. The main area displays a table of VM instances. The table has columns for Name, Zone, Recommendation, In use by, Internal IP, External IP, and Connect. Two instances are listed: '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 connected via SSH.

Name	Zone	Recommendation	In use by	Internal IP	External IP	Connect
atplabcli2	europe-west3-c			10.10.30.3 (nic0)	None	SSH
bastion	europe-west3-c			192.168.0.2 (nic0)	35.246.153.247	SSH

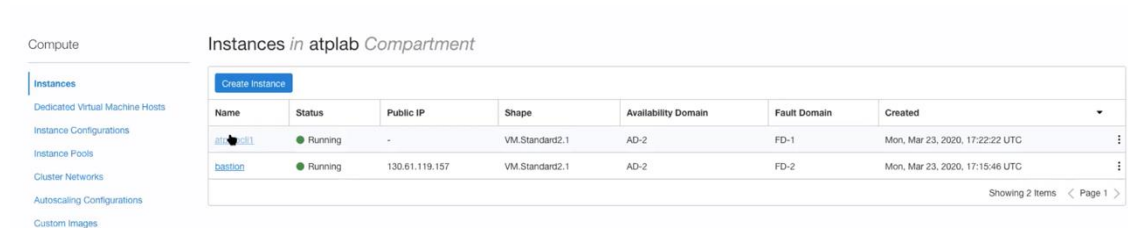
De igual forma en el **Cloud de Azure**



The screenshot shows the Microsoft Azure portal for Virtual machines. The left sidebar lists 'Virtual machines' as the selected option. The main area displays a table of VM instances. The table has columns for Name, Type, Status, Resource group, Location, Source, Maintenance status, and Subscription. Two instances are listed: 'atplabcli4' and 'bastion4', both in the 'Germany West Central' location. The 'atplabcli4' instance has a status of 'Running' and a subscription of 'Free Trial'. The 'bastion4' instance has a status of 'Running' and a subscription of 'Free Trial'.

Name	Type	Status	Resource group	Location	Source	Maintenance status	Subscription
atplabcli4	Virtual machine	Running	atplab	Germany West Central	Marketplace	-	Free Trial
bastion4	Virtual machine	Running	atplab	Germany West Central	Marketplace	-	Free Trial

Y en el Cloud de Oracle



The screenshot shows the Oracle Cloud Compute page for instances in the 'atplab' compartment. The left sidebar lists 'Instances' as the selected option. The main area displays a table of VM instances. The table has columns for Name, Status, Public IP, Shape, Availability Domain, Fault Domain, and Created. Two instances are listed: 'atplabcli1' and 'bastion', both in the 'AD-2' availability domain. The 'atplabcli1' instance has a status of 'Running' and no public IP. The 'bastion' instance has a status of 'Running' and a public IP of 130.61.119.157. Both instances are created on Mon, Mar 23, 2020, 17:22:22 UTC.

Name	Status	Public IP	Shape	Availability Domain	Fault Domain	Created
atplabcli1	Running	-	VM.Standard2.1	AD-2	FD-1	Mon, Mar 23, 2020, 17:22:22 UTC
bastion	Running	130.61.119.157	VM.Standard2.1	AD-2	FD-2	Mon, Mar 23, 2020, 17:15:46 UTC

## 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 Management Console for EC2 instances. The left sidebar lists 'EC2 Dashboard' as the selected option. The main area displays a table of VM instances. The table has columns for Name, Instance ID, Instance Type, Availability Zone, Instance State, Status Checks, Alarm Status, and IPv4 Public IP. Two instances are listed: 'bastion2' and 'atplabcli2', both in the 'eu-central-1-a' availability zone. The 'bastion2' instance has a status of 'running' and a public IP of 18.195.124.82. The 'atplabcli2' instance has a status of 'running' and no public IP.

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	IPv4 Public IP
bastion2	i-04e1d52bfc384cc44	t2.micro	eu-central-1-a	running	2/2 checks p...	None	18.195.124.82
atplabcli2	i-0ad5e1f8ffcd0bd74	t2.micro	eu-central-1-a	running	2/2 checks p...	None	

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
```

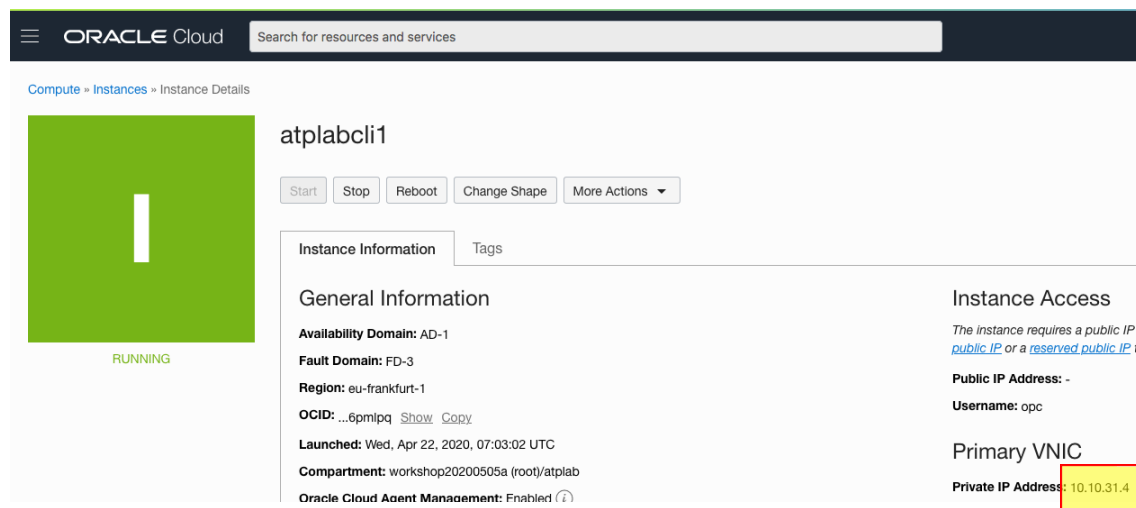


```
$ vi .ssh/atplab_aws.pem
<copie la clave en esta sesion de vi>
$ chmod 600 .ssh/atplab_aws.pem
$ ssh -i .ssh/atplab_aws.pem ec2-user@<ip_privada_atplabcli2>
```

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:



```
$ scp -r -i .ssh/atplab_rsa opc@<ip_atplabcli1>:/home/opc/instantclient_19_6 .
$ 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';
```

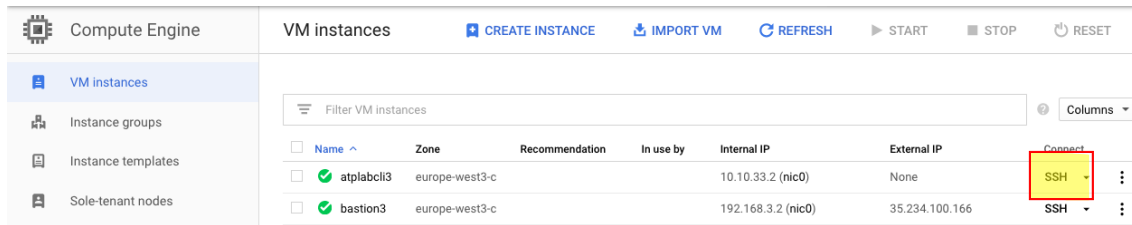
Ya puede ejecutar una consulta contra ATP desde el cloud de Amazon.

```
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.

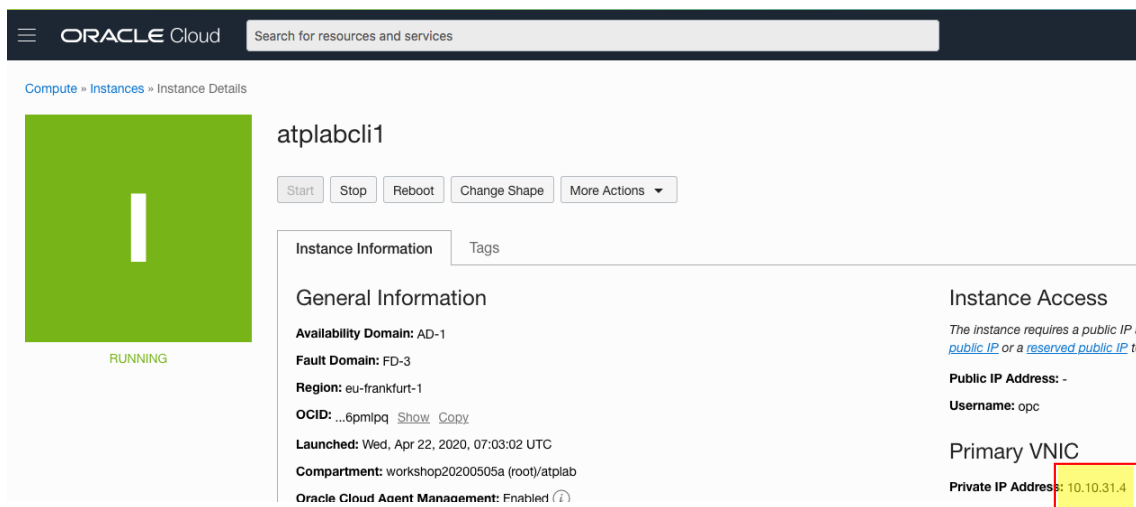


Name	Zone	Recommendation	In use by	Internal IP	External IP	Connect
atplabcli3	europe-west3-c			10.10.33.2 (nic0)	None	SSH
bastion3	europe-west3-c			192.168.3.2 (nic0)	35.234.100.166	SSH

En primer lugar, copie su clave privada ssh. Puede encontrarla en su maquina 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 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_6 .
$ 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)

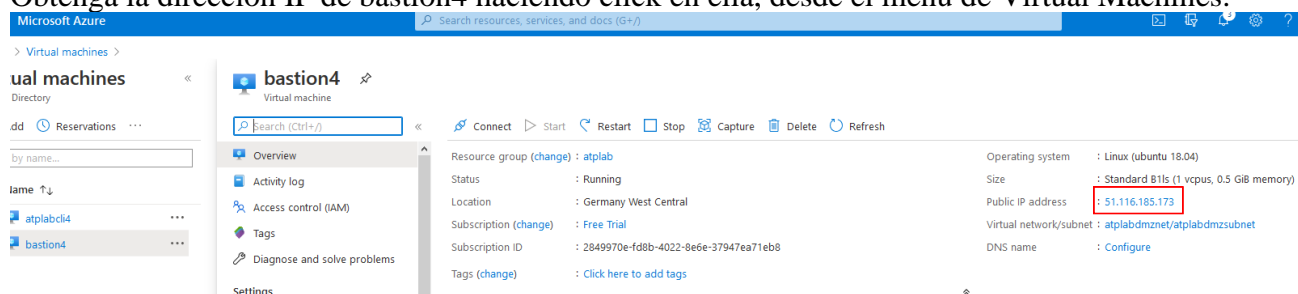
```
sql> create table lineorder as
select * from ssb.lineorder
where to_char(lo_orderdate,'YYYY') = '1994';
```

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>
```

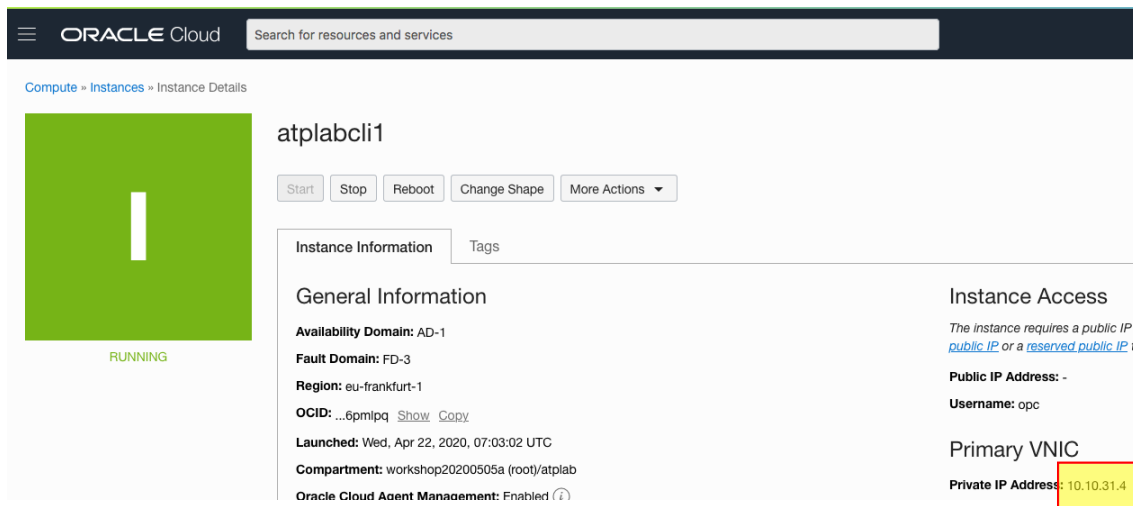
Una vez en la máquina **atplabcli4**, copie la clave privada ssh **atplab\_rsa**, para poder acceder a la máquina **atplabcli1** que está en OCI.

```
$ 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_6 .
$ 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. At the top, there's a search bar and the Oracle Cloud logo. Below, the 'Autonomous Database' section is active, showing a list of databases in the 'atplab' compartment. A table lists the database 'atplabpub' with the following details:

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

Entre en la instancia atplabpub

The screenshot shows the 'atplabpub' Autonomous Database instance details page. On the left, there's a green 'ATP' logo with the word 'AVAILABLE' below it. On the right, there's a 'Performance Hub' button highlighted with a red box. Below the buttons, the 'Autonomous Database Information' section is expanded, showing the following details:

- Database Name:** atplabpub
- Workload Type:** Transaction Processing
- Compartment:** workshop20200505a (root)/atplab
- OCID:** ...6wdzqq (with Show and Copy links)
- Created:** Tue, May 5, 2020, 09:54:01 UTC
- OCPU Count:** 1
- Storage:** 1 TB
- License Type:** Bring Your Own License (BYOL)
- Database Version:** 19c
- Auto Scaling:** Disabled (with an info icon)
- Lifecycle State:** Available
- Instance Type:** Paid

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

The screenshot shows the 'Performance Hub' section for the 'atplabpub' instance. It includes a 'Time Range' dropdown set to 'Last Hour'. Below this, there's a bar chart showing 'Active Sessions' over time. The chart shows a single bar for the time range 'May 7, 2020 6:58:44 PM - 7:58:44 PM UTC' with a value of 4. At the bottom, there are three tabs: 'ASH Analytics', 'SQL Monitoring' (highlighted with a red box), and 'Workload'.



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	1x0m20cch8ty	3002741515	HR@QLZLWMQRWSRRIKD_ATPLABPUB	13.30s	105K	select /*GCP*/ sum(jo_extended...
✓	13.00s	2	44z8eahf9amyh	3002741515	HR@QLZLWMQRWSRRIKD_ATPLABPUB	13.22s	105K	select /*OCI*/ sum(jo_extended...
✓	13.00s	2	f77vuhdkf16c	3002741515	HR@QLZLWMQRWSRRIKD_ATPLABPUB	13.25s	105K	select /*AWS*/ sum(jo_extended...


Vuelva a ejecutarlas con el comando “r” en cada cliente atplabliN 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	44z8eahf9amyh	3002741515	HR@QLZLWMQRWSRRIKD_ATPLABPUB		36.84s	105K	select /*OCI*/ sum(jo_extended...
✓	34.00s	2	f77vuhdkf16c	3002741515	HR@QLZLWMQRWSRRIKD_ATPLABPUB		34.80s	105K	select /*AWS*/ sum(jo_extended...
✓	37.00s	2	1x0m20cch8ty	3002741515	HR@QLZLWMQRWSRRIKD_ATPLABPUB		37.41s	105K	select /*GCP*/ sum(jo_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).

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:** workshop20200505a (root)/atplab

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

**Created:** Tue, May 5, 2020, 09:54:01 UTC

**OCPU Count:** 1

**Storage:** 1 TB

**License Type:** Bring Your Own License (BYOL)

**Database Version:** 19c

**Auto Scaling:** Disabled ⓘ

**Lifecycle State:** Available

**Instance Type:** Paid



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 OCPU's 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.

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:** workshop20200505a (root)/atplab  
**OCID:** ...6wdzqq [Show](#) [Copy](#)  
**Created:** Tue, May 5, 2020, 09:54:01 UTC  
**OCPU Count:** 3  
**Storage:** 1 TB  
**License Type:** Bring Your Own License (BYOL)  
**Database Version:** 19c  
**Auto Scaling:** Disabled ⓘ  
**Lifecycle State:** Available  
**Instance Type:** Paid

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



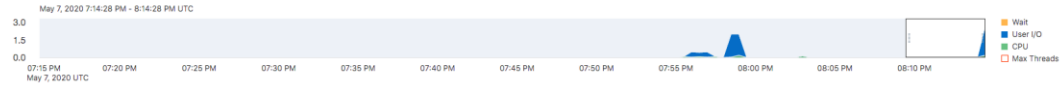
## Performance Hub

atpiabpub

Refresh

Time Range

Active Sessions in Last Hour



ASH Analytics SQL Monitoring Workload

Top 100 by Last Active Time

Filter by Status, SQL ID or User Name

Status	Duration	Inst ID	SQL ID	SQL Plan Hash	User Name	Parallel	Database Time	I/O Requests	SQL Text
	8.00s	2	<a href="#">1k0m20ocb8ty</a>	3313491567	HR@QLZLWMQRW/SRRKD_ATPLABPUB	3	24.27s	105K	select /*OCPU*/ sum(io_extended...
	10.00s	2	<a href="#">f77uuhdkf16c</a>	3313491567	HR@QLZLWMQRW/SRRKD_ATPLABPUB	3	30.03s	105K	select /*AWS*/ sum(io_extended...
	8.00s	2	<a href="#">4428ashfoamyh</a>	3313491567	HR@QLZLWMQRW/SRRKD_ATPLABPUB	3	23.60s	105K	select /*OCI*/ sum(io_extended...

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.

