OCI Reliability and Resilience

Hands on Lab

Instance Pool

Version 1.0

ORACLE

Table of Contents

1. Disclaimer

The following is intended to outline our general product direction. It is intended for information purposes only, and may not be incorporated into any contract. It is not a commitment to deliver any material, code, or functionality, and should not be relied upon in making purchasing decisions. The development, release, and timing of any features or functionality described for Oracle's products remains at the sole discretion of Oracle.

In the document, value of information such as user name, password etc. is shown as XXXX or YYYY etc. Also if actual value is shown consider it as an example value.

2. Introduction

Background

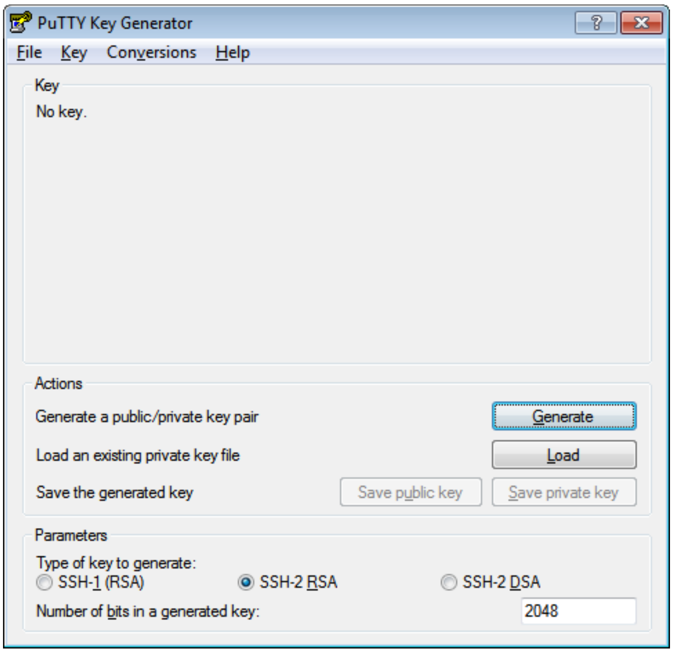
Oracle Cloud Infrastructure (OCI) is a set of complementary cloud services that enable you to build and run a wide range of applications and services in a highly available hosted environment. Oracle Cloud Infrastructure offers high-performance compute capabilities (as physical hardware instances) and storage capacity in a flexible overlay virtual network that is securely accessible from your on-premises network.

3. Pre-Requisites

- To perform the steps in this tutorial, you must have an active subscription to Oracle Cloud Infrastructure or a Free Trial Account.
- PuTTY and PuTTYGen installed

To generate an SSH key pair using the PuTTY Key Generator,

- Find puttygen.exe in the PuTTY folder on your computer, for example, C:\Program Files (x86)\PuTTY. Double-click puttygen.exe to open it. Or you may download it from here.



Key

No key.

Generate a public/private key pair

Load an existing private key file

Save the generated key

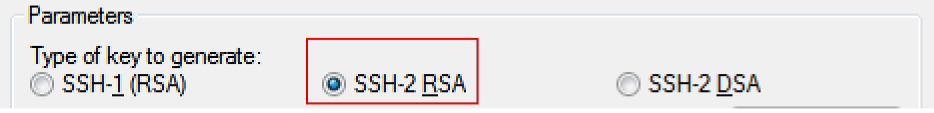
Type of key to generate:

○ SSH-1 (RSA) ● SSH-2 RSA ○ SSH-2 DSA

Number of bits in a generated key: 2048

- Accept the default key type, **SSH-2 RSA**.

SSH-2 is the most recent version of the SSH protocol (and is incompatible with SSH-1). **RSA** and DSA are algorithms for computing digital signatures.



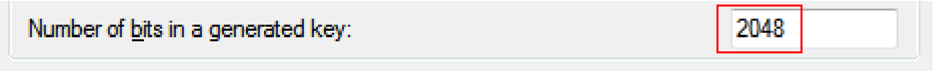
Parameters

Type of key to generate:

○ SSH-1 (RSA) ● SSH-2 RSA ○ SSH-2 DSA

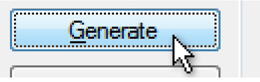
- Set the **Number of bits in a generated key** to 2048 bits, if it is not already set with that value.

This sets the size of your key and thus the security level. A minimum of 2048 bits is recommended for SSH-2 RSA.



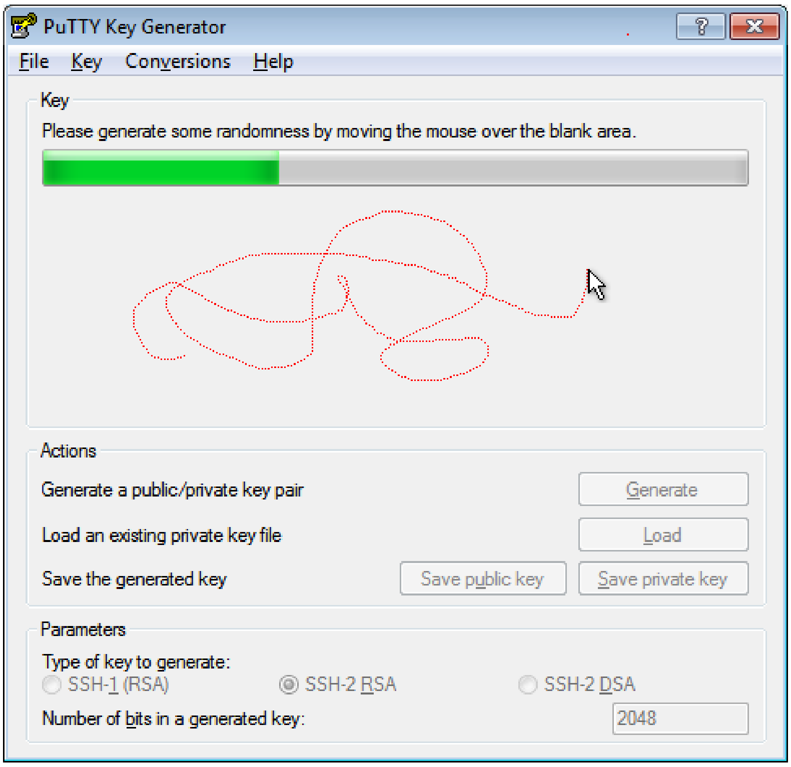
Number of bits in a generated key: 2048

- Click Generate.



- Move your mouse around the blank area to generate randomness to the key.

Note: the dotted red line in the image below is for illustration purposes only. It does not appear in the generator pane as you move the mouse.



Key

Please generate some randomness by moving the mouse over the blank area.

Actions

Generate a public/private key pair

Load an existing private key file

Save the generated key

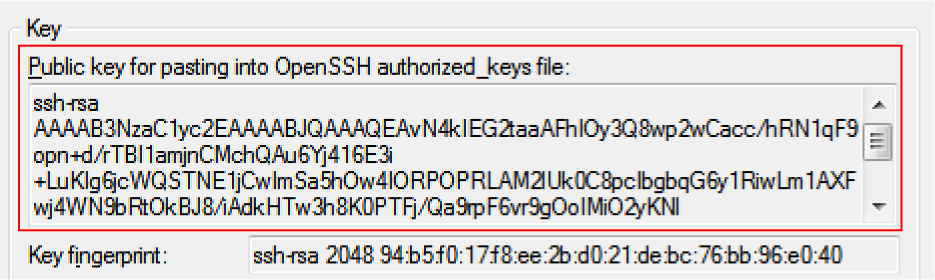
Parameters

Type of key to generate:

○ SSH-1 (RSA) ● SSH-2 RSA ○ SSH-2 DSA

Number of bits in a generated key: 2048

- The generated key appears under Public key for pasting into OpenSSH authorized_keys file.



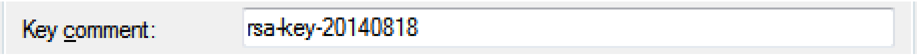
Key

Public key for pasting into OpenSSH authorized_keys file:

```
ssh-rsa
AAAAB3NzaC1yc2EAAAABJQAAAQEAvN4kIEG2taaAFhIOy3Q8wp2wCacc/hRN1qF9
opn+d/rTBI1amjnCMchQAu6Yj416E3i
+LuKlg6jcWQSTNE1jCwlmSa5hOw4lORPOPRLAM2lUk0C8pclbgbqG6y1RiwLm1AXF
wj4WN9bRtOkBJ8/iAdkHTw3h8K0PTFj/Qa9rpF6vr9gOoIMiO2yKNI
```

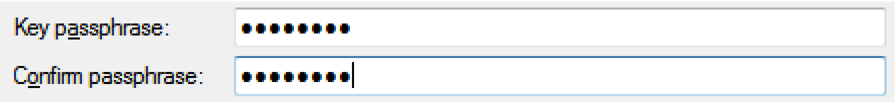
Key fingerprint: ssh-rsa 2048 94:b5:f0:17:f8:ee:2b:d0:21:de:bc:76:bb:96:e0:40

- The key comment is the name of the key that you will use to identify it. You can keep the generated key comment or create your own.



Key comment: rsa-key-20140818

- If you want to password-protect your key, enter a **Key passphrase** and enter it again for **Confirm passphrase**. When you reload a saved private key, you will be asked for the passphrase, if one is set.
-



Key passphrase: ●●●●●●●●

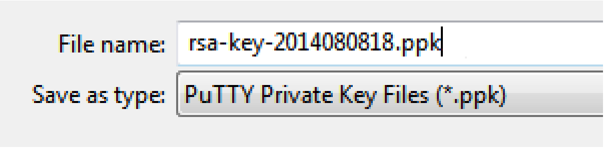
Confirm passphrase: ●●●●●●●●

While a passphrase is not required, you should specify one as a security measure to protect the private key from unauthorized use.

There is no way to recover a passphrase if you forget it.

- Save the private key of the key pair. Depending how you work with the private key in the future, you may need one saved in the PuTTY PPK format and one saved in OpenSSH format. Let's do both.
    - To save the key in the PuTTY PPK format, click **Save private key** to save the private key of the key pair.

You can name it anything you want, although you may want to use the same name as you used for the key comment. The private key is saved in PuTTY's Private Key (PPK) format, which is a proprietary format that works only with the PuTTY toolset.

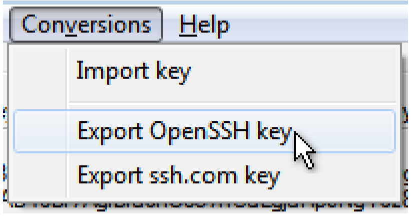


File name: rsa-key-2014080818.ppk

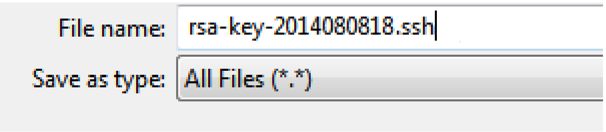
Save as type: PuTTY Private Key Files (*.ppk)

You can use this key whenever you use Putty to perform SSH actions.

- To save the key in OpenSSH format, open the **Conversions** menu and select **Export SSH key**. This will be the same key as above, just saved in a different format.



You can name it anything you want, but to keep track of your keys, you should give it the same name as the key you saved in PPK format in the previous step. You can also use any extension (or no extension), but let's use .ssh, to make it clear what format it is.

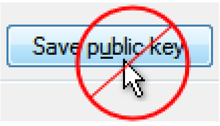


File name: rsa-key-2014080818.ssh

Save as type: All Files (*.*)

You can use this key whenever you use OpenSSH to perform SSH actions using ssh utitlities that support OpenSSH, for example when using Linux in a command shell.

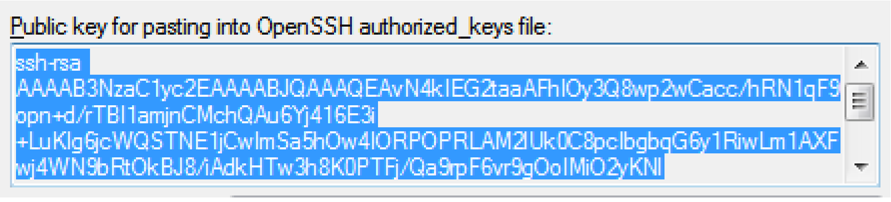
- Now you need to create the public key to be paired with the private key(s) you just created. However, clicking the **Save public key button** will create a public key that won't work with Oracle Cloud services in certain cases. So, for the purposes of this tutorial, there is no reason to save a public key using the **Save public key** button.



Instead, proceed as follows.

- In the PuTTY Key Generator, select all of the characters under Public key for pasting into OpenSSH authorized_keys file.

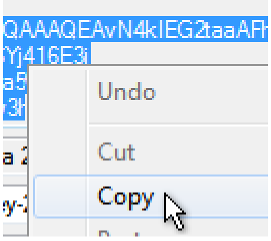
Make sure you select all the characters, not just the ones you can see in the narrow window. If a scroll bar is next to the characters, you aren't seeing all the characters.



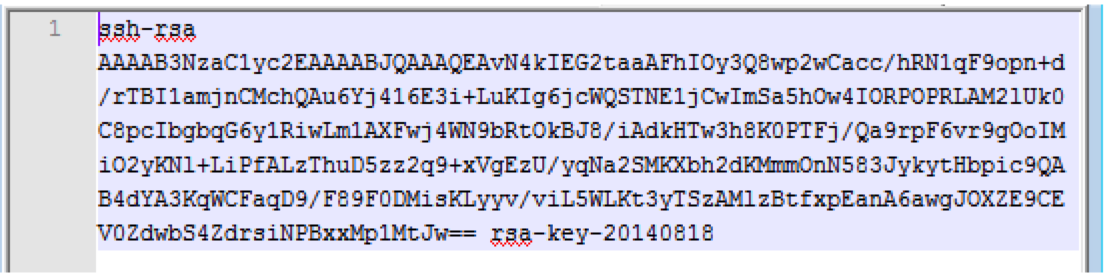
Public key for pasting into OpenSSH authorized_keys file:

```
ssh-rsa
AAAAB3NzaC1yc2EAAAABJQAAAQEAvN4kIEG2taaAFhIOy3Q8wp2wCacc/hRN1qF9
opn+d/rTBI1amjnCMchQAu6Yj416E3i
+LuKIg6jcWQSTNE1jCwImSa5hOw4IORPOPRLAM2lUk0C8pcIbgbqG6y1RiwLm1AXF
wj4WN9bRtOkBJ8/iAdkHTw3h8K0PTFj/Qa9rpF6vr9gOoIMiO2yKNl
```

Right click somewhere in the selected text and select **Copy** from the menu.

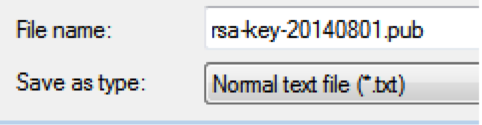


- Open a text editor and paste the characters, just as you copied them. Start at the first character in the text editor, and do not insert any line breaks.



```
ssh-rsa
AAAAB3NzaC1yc2EAAAABJQAAAQEAvN4kIEG2taaAFhIOy3Q8wp2wCacc/hRN1qF9opn+d
/rTBI1amjnCMchQAu6Yj416E3i+LuKIg6jcWQSTNE1jCwImSa5hOw4IORPOPRLAM2lUk0
C8pcIbgbqG6y1RiwLm1AXFwj4WN9bRtOkBJ8/iAdkHTw3h8K0PTFj/Qa9rpF6vr9gOoIM
iO2yKNl+LiPfALzThuD5zz2q9+xVgEzU/yqNa2SMKXbh2dKMmmOnN583JykytHbpic9QA
B4dYA3KqWCFaqD9/F89F0DMisKLyyv/viL5WLKt3yTSzAMlzBtfxpEanA6awgJOXZE9CE
V0ZdwbS4ZdrsiNPBxxMp1MtJw== rsa-key-20140818
```

- Save the key as a text file, using the same root name as you used for the private key. Add a .pub extension. You can give it any extension you want, but .pub is a useful convention to indicate that this is a public key.



File name: rsa-key-20140801.pub

Save as type: Normal text file (*.txt)

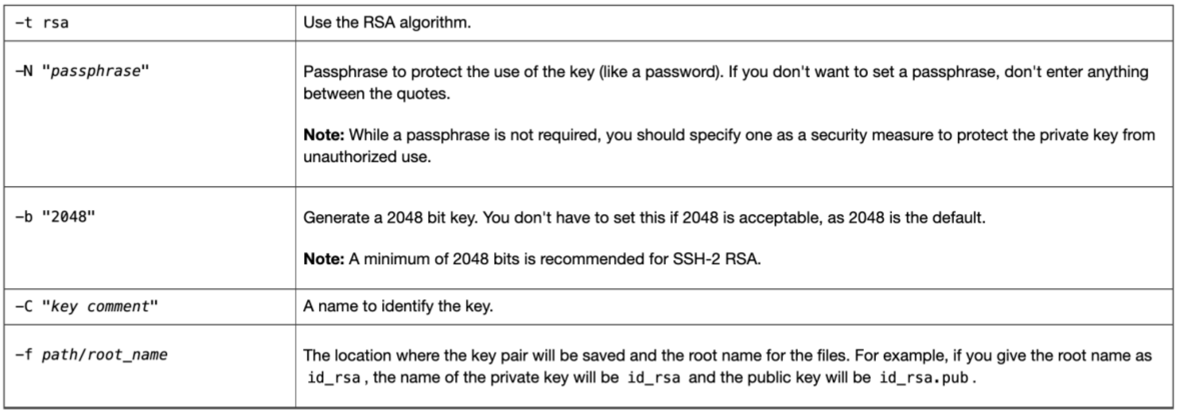
Write down the names of your public and private keys, and note where they are saved. You will need the public key when creating service instances in, for example, Oracle Java Cloud Service and Oracle Database Cloud - Database as a Service. You will need the private key when trying to access a service instance's virtual machine via SSH.

Create an SSH key pair on the command line using ssh-keygen

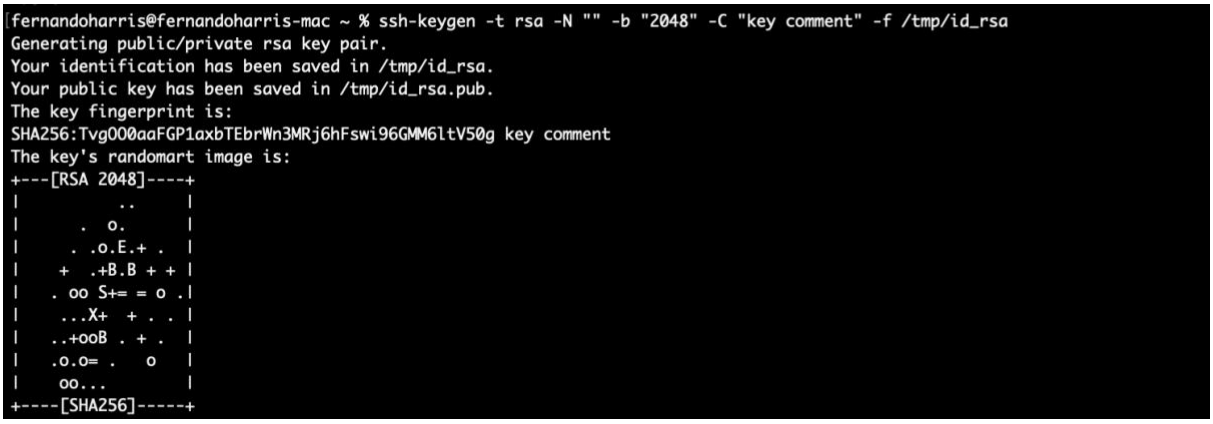
1. Open a shell for entering the commands.
2. At the prompt, enter the following:

```
ssh-keygen -t rsa -N "" -b "2048" -C "key comment" -f path/root_name
```

where the arguments are as follows:

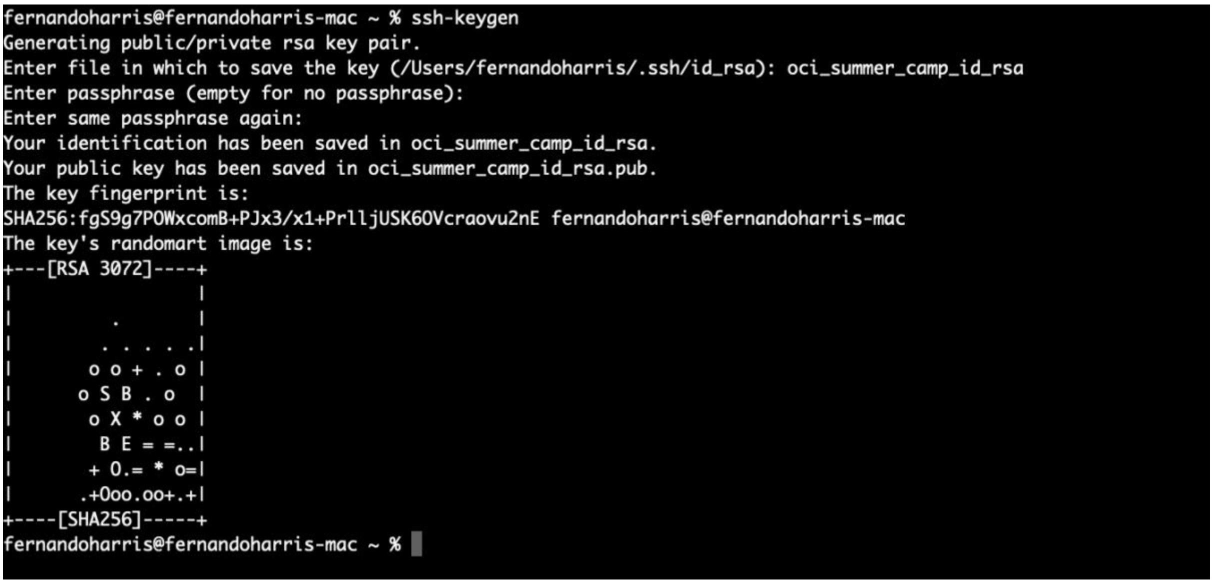


`-t rsa`	Use the RSA algorithm.
`-N "passphrase"`	Passphrase to protect the use of the key (like a password). If you don't want to set a passphrase, don't enter anything between the quotes. **Note:** While a passphrase is not required, you should specify one as a security measure to protect the private key from unauthorized use.
`-b "2048"`	Generate a 2048 bit key. You don't have to set this if 2048 is acceptable, as 2048 is the default. **Note:** A minimum of 2048 bits is recommended for SSH-2 RSA.
`-C "key comment"`	A name to identify the key.
`-f path/root_name`	The location where the key pair will be saved and the root name for the files. For example, if you give the root name as `id_rsa`, the name of the private key will be `id_rsa` and the public key will be `id_rsa.pub`.



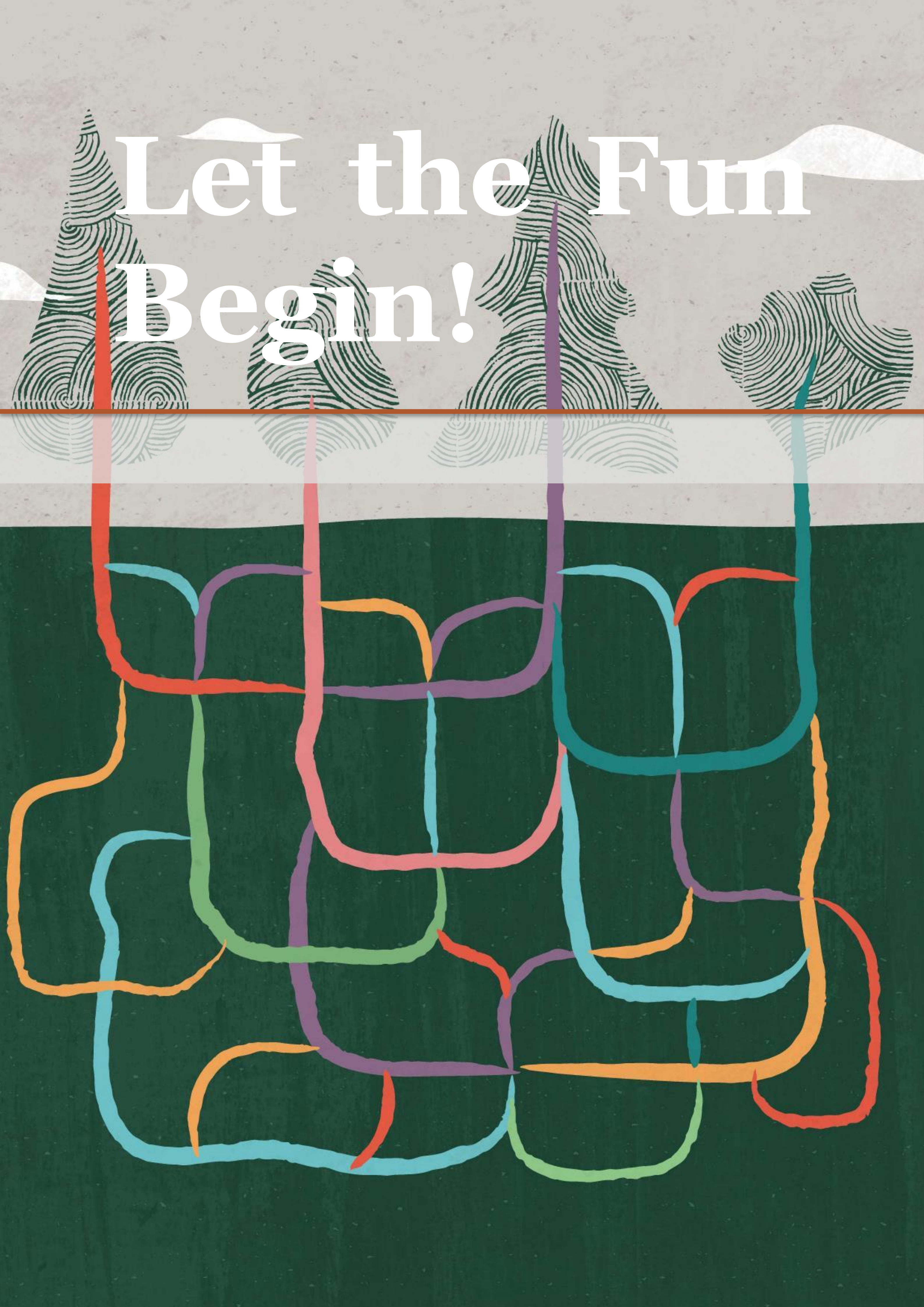
```
[fernandoharris@fernandoharris-mac ~ % ssh-keygen -t rsa -N "" -b "2048" -C "key comment" -f /tmp/id_rsa
Generating public/private rsa key pair.
Your identification has been saved in /tmp/id_rsa.
Your public key has been saved in /tmp/id_rsa.pub.
The key fingerprint is:
SHA256:Tvg000aaFGP1axbTEbrWn3MRj6hFswi96GMM6ltV50g key comment
The key's randomart image is:
+---[RSA 2048]----+
|          ..     |
|      .  o.      |
|     . .o.E.+ .  |
|    +  .+B.B + + |
|   . oo S+= = o .|
|    ...X+  + . . |
|   ..+ooB . + .  |
|   .o.o= .   o   |
|    oo...        |
+----[SHA256]-----+
```

3. Alternatively, you can simply enter ssh-keygen and then enter responses when prompted for a name and a passphrase. The keys will be created with default values: RSA keys of 2048 bits:



```
fernandoharris@fernandoharris-mac ~ % ssh-keygen
Generating public/private rsa key pair.
Enter file in which to save the key (/Users/fernandoharris/.ssh/id_rsa): oci_summer_camp_id_rsa
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in oci_summer_camp_id_rsa.
Your public key has been saved in oci_summer_camp_id_rsa.pub.
The key fingerprint is:
SHA256:fgS9g7POWxcomB+PJx3/x1+PrlljUSK6OVcraovu2nE fernandoharris@fernandoharris-mac
The key's randomart image is:
+---[RSA 3072]----+
|                 |
|         .       |
|        . . . . .|
|       o o + . o |
|      o S B . o  |
|       o X * o o |
|        B E = =..|
|       + O.= * o=|
|      .+Ooo.oo+.+|
+----[SHA256]-----+
fernandoharris@fernandoharris-mac ~ %
```

Let the Fun Begin!



4. Signing in to the OCI Console

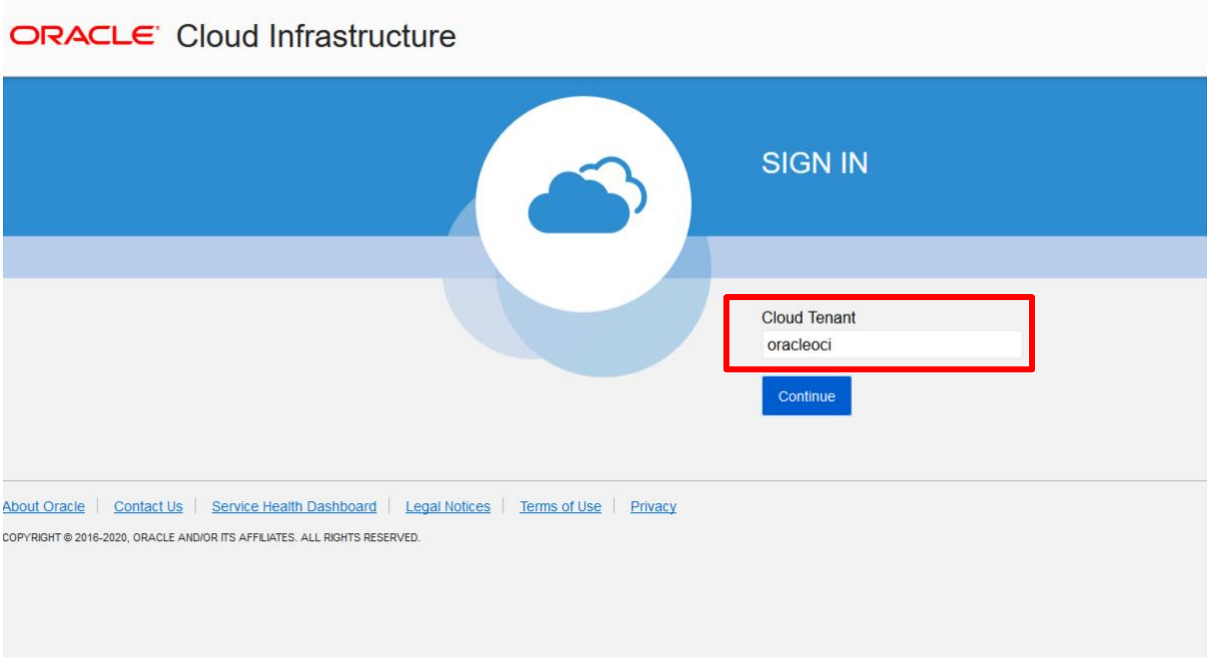
Oracle Cloud Infrastructure Identity and Access Management (IAM) Service lets you control who has access to your cloud resources. You control the types of access a group of users has and to which specific resources. The purpose of this lab is to give you an overview of the IAM Service components and an example scenario to help you understand how they work together.

Pre-requisites:

- Oracle Cloud Infrastructure account credentials (User, Password, and Tenancy)
- To sign in to the Console, you need the following:
  - Tenant, User name and Password
  - URL for the Console: https://console.eu-frankfurt-1.oraclecloud.com/
  - Oracle Cloud Infrastructure supports the latest versions of Google Chrome, Firefox and Internet Explorer 11

In this Lab, you will sign in to the Oracle Cloud Infrastructure console using your credentials.

1. Open a supported browser and go to the Console URL: https://console.eu-frankfurt-1.oraclecloud.com/.
2. Enter your tenant name and click **Continue**



ORACLE Cloud Infrastructure
SIGN IN

Cloud Tenant: oracleoci

Continue
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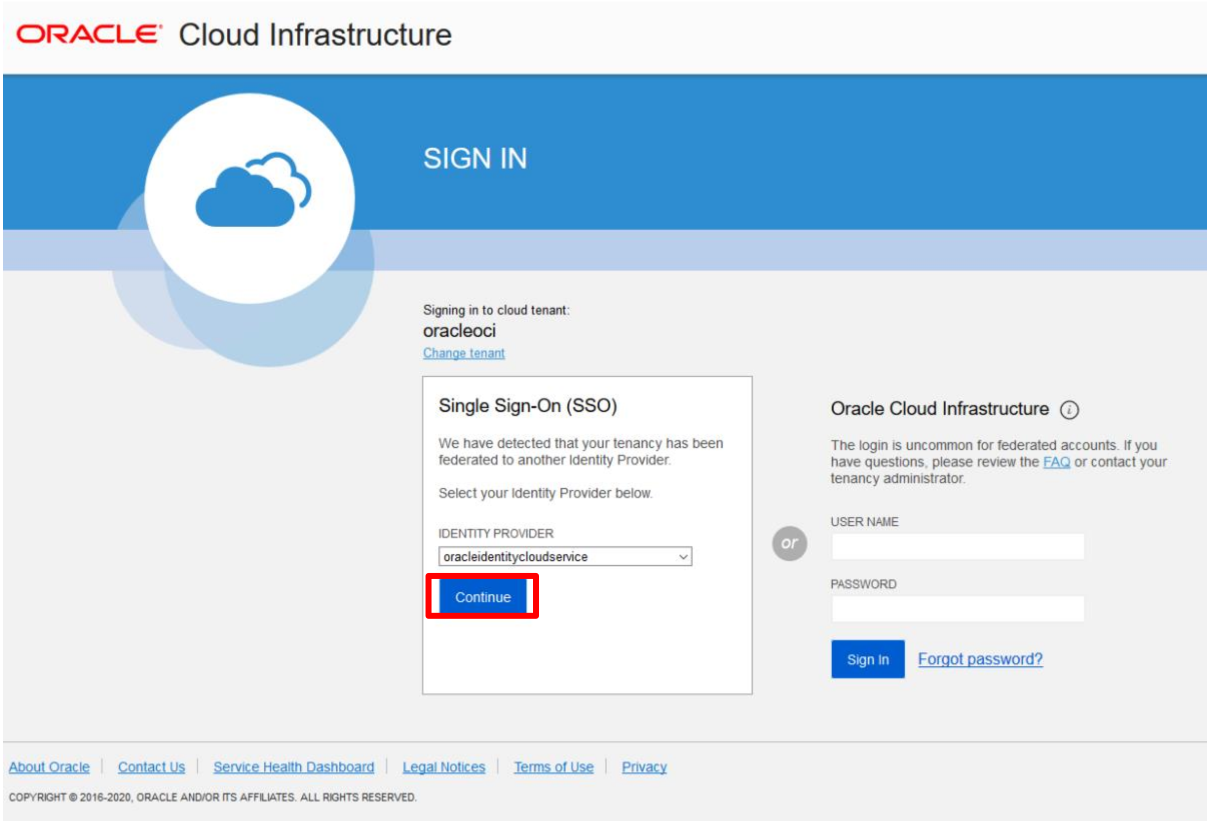
3. Oracle Cloud Infrastructure is integrated with Identity Cloud Services, you will see a screen validating your Identity Provider. Click **Continue**.



ORACLE Cloud Infrastructure

SIGN IN

Signing in to cloud tenant:
oracleoci
Change tenant

Single Sign-On (SSO)

We have detected that your tenancy has been federated to another Identity Provider.

Select your Identity Provider below.

IDENTITY PROVIDER: oracleidentitycloudservice

Oracle Cloud Infrastructure

The login is uncommon for federated accounts. If you have questions, please review the FAQ or contact your tenancy administrator.

USER NAME

PASSWORD

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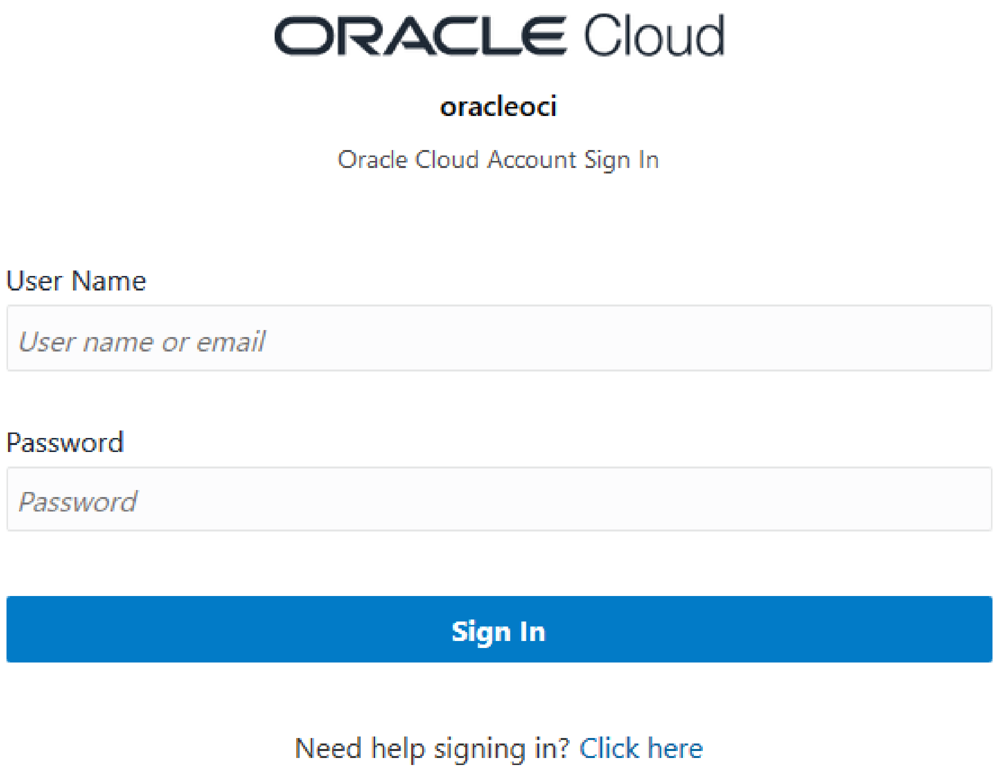
4. Enter your user name and password
    - **Username:** *provided during trial tenant activation*
    - **Password:** *provided during trial tenant activation*



ORACLE Cloud

oracleoci

Oracle Cloud Account Sign In

User Name

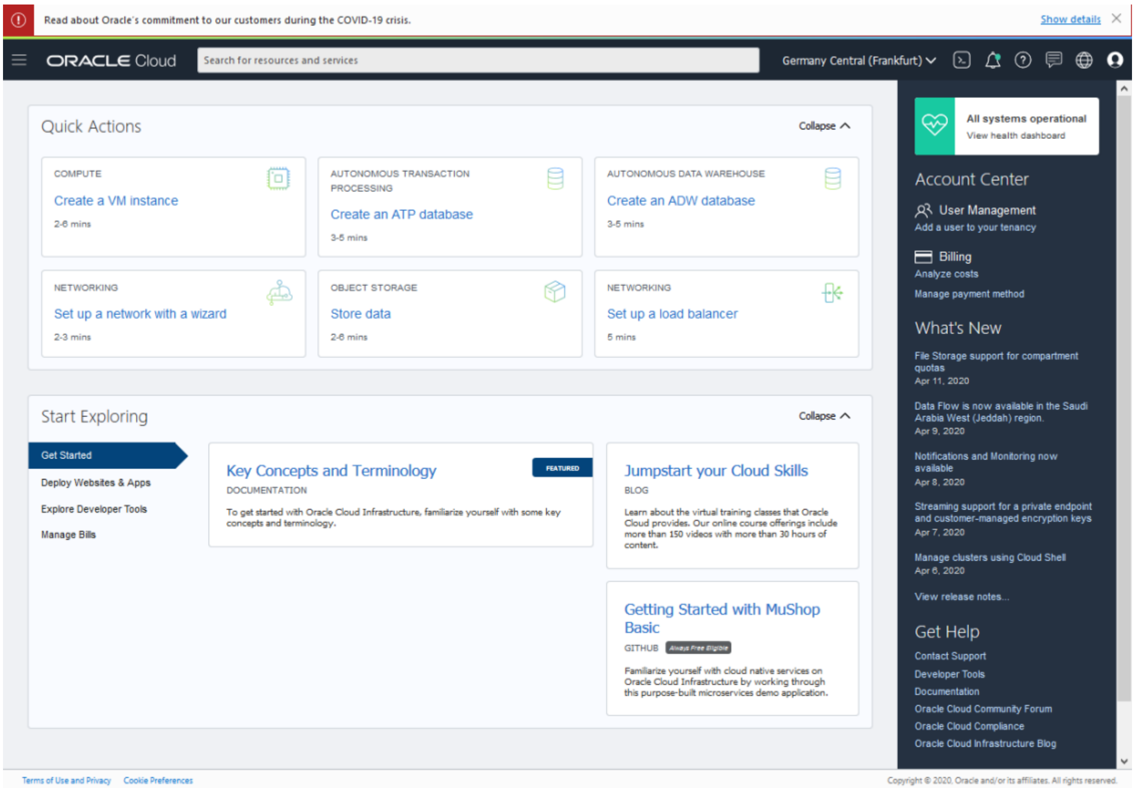
User name or email

Password

Password

Need help signing in? Click here

5. When you sign in to the Console, the dashboard is displayed.



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Quick Actions | Collapse

COMPUTE
Create a VM instance
2-6 mins

AUTONOMOUS TRANSACTION PROCESSING
Create an ATP database
3-5 mins

AUTONOMOUS DATA WAREHOUSE
Create an ADW database
3-5 mins

NETWORKING
Set up a network with a wizard
2-3 mins

OBJECT STORAGE
Store data
2-6 mins

NETWORKING
Set up a load balancer
5 mins

Start Exploring | Collapse

Get Started
Deploy Websites & Apps
Explore Developer Tools
Manage Bills

Key Concepts and Terminology FEATURED
DOCUMENTATION
To get started with Oracle Cloud Infrastructure, familiarize yourself with some key concepts and terminology.

Jumpstart your Cloud Skills
BLOG
Learn about the virtual training classes that Oracle Cloud provides. Our online course offerings include more than 150 videos with more than 30 hours of content.

Getting Started with MuShop Basic
GITHUB Always Free Eligible
Familiarize yourself with cloud native services on Oracle Cloud Infrastructure by working through this purpose-built microservices demo application.

All systems operational
View health dashboard

Account Center

User Management
Add a user to your tenancy

Billing
Analyze costs
Manage payment method

What's New

File Storage support for compartment quotas
Apr 11, 2020

Data Flow is now available in the Saudi Arabia West (Jeddah) region.
Apr 9, 2020

Notifications and Monitoring now available
Apr 8, 2020

Streaming support for a private endpoint and customer-managed encryption keys
Apr 7, 2020

Manage clusters using Cloud Shell
Apr 6, 2020

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Oracle Cloud Community Forum
Oracle Cloud Compliance
Oracle Cloud Infrastructure Blog

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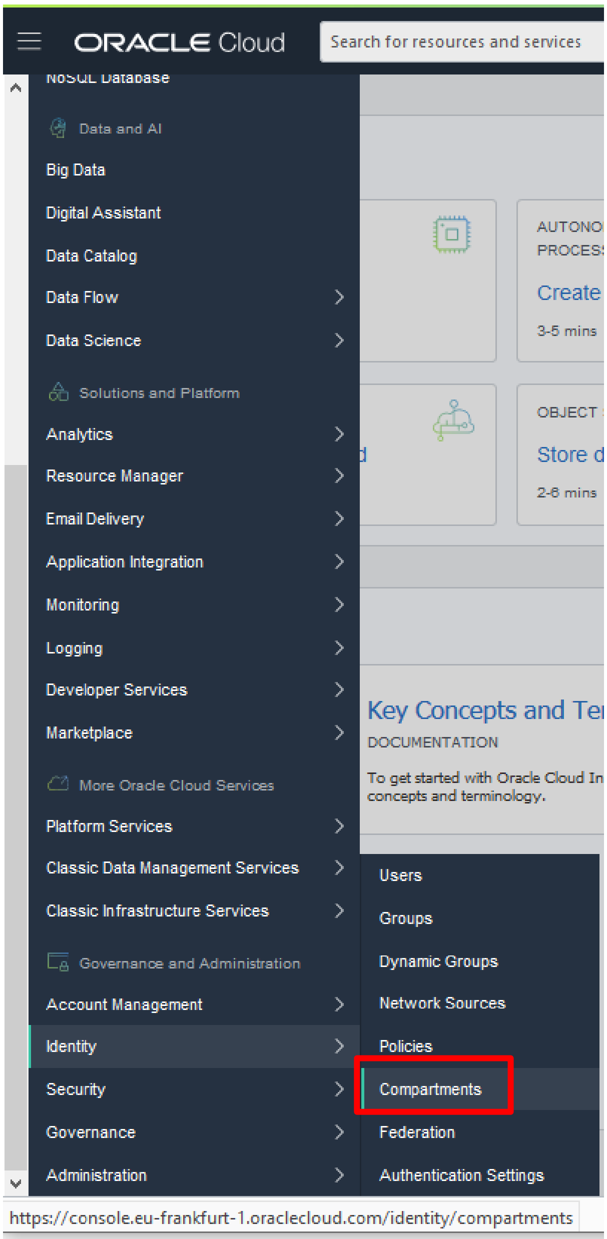
5. Creation of a compartment

A **compartment** – is a collection of related resources that can be accessed only by certain groups that have been given permission by an administrator in your organization. When you first start working with Oracle Cloud Infrastructure, you need to think carefully about how you want to use compartments to organize and isolate your cloud resources. Compartments are fundamental to that process. Most resources can be moved between compartments.

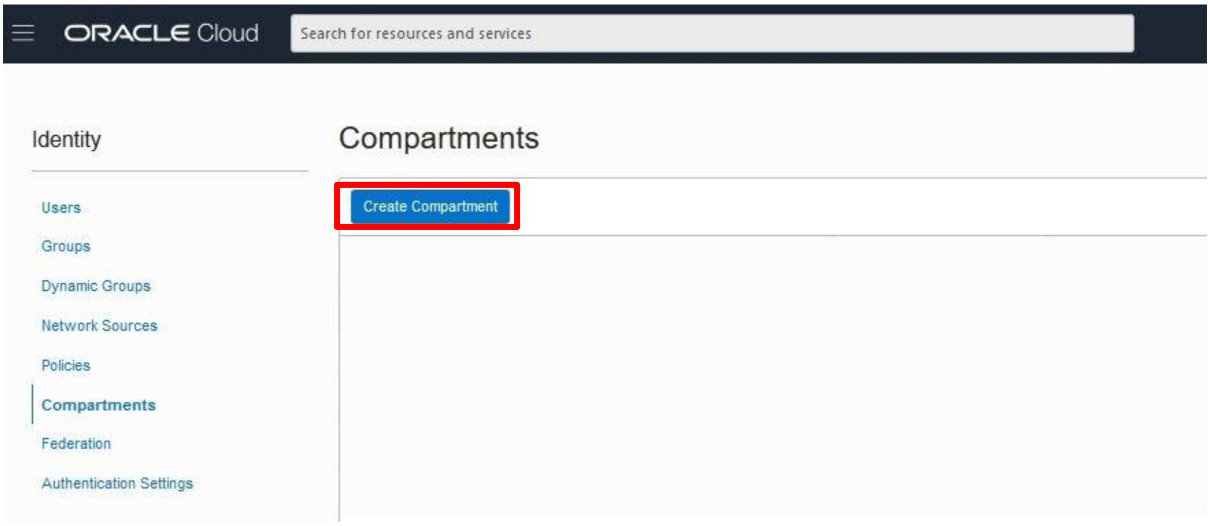
In order to view and create a compartment in your tenancy, please navigate to **Main Menu**, **Governance and Administration** section, **Identity** and select **Compartments**.

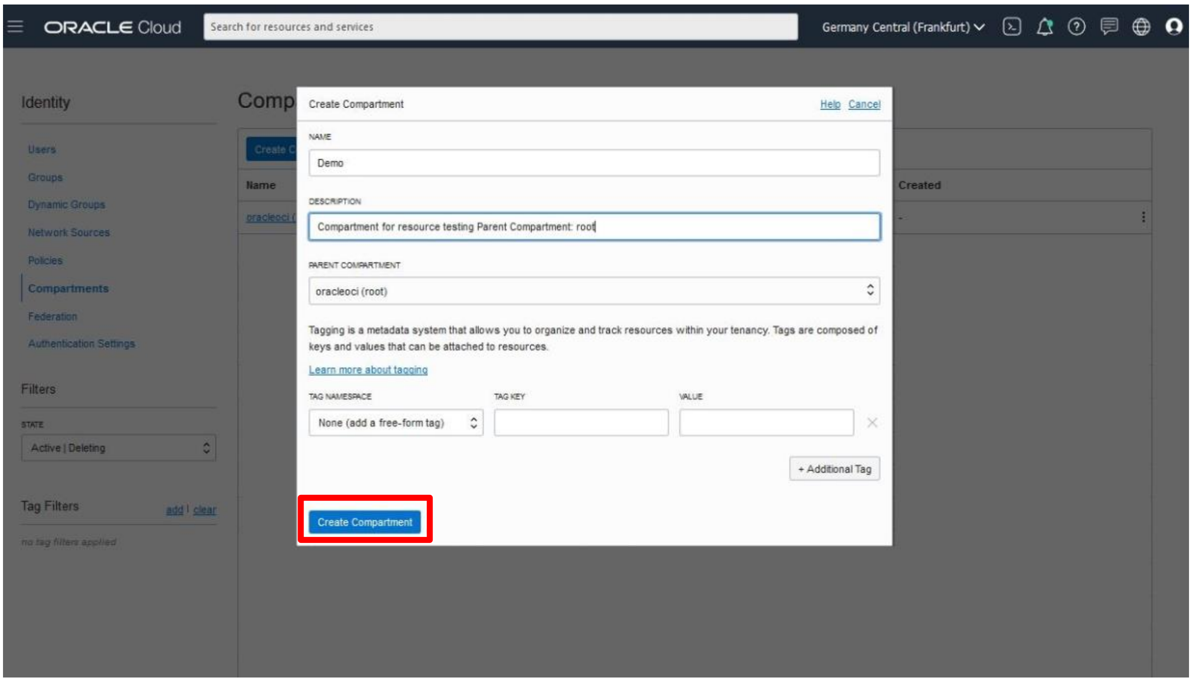


https://console.eu-frankfurt-1.oraclecloud.com/identity/compartments

► Click on "**Create Compartment**" and fill the information:

Name: *Demo*
Description: *Compartment for resource testing Parent Compartment: root*





NAME: Demo

DESCRIPTION: Compartment for resource testing Parent Compartment: root

PARENT COMPARTMENT: oracleoci (root)

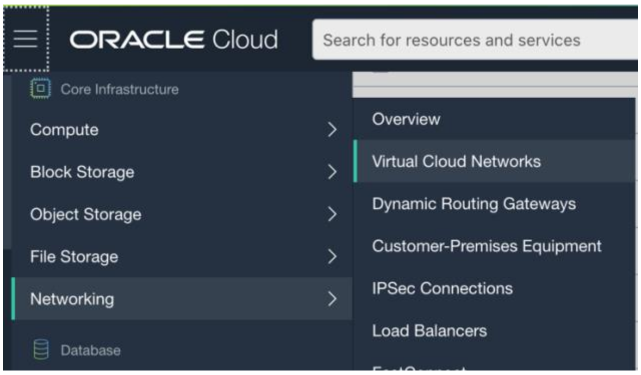
Tagging is a metadata system that allows you to organize and track resources within your tenancy. Tags are composed of keys and values that can be attached to resources.

Learn more about tagging

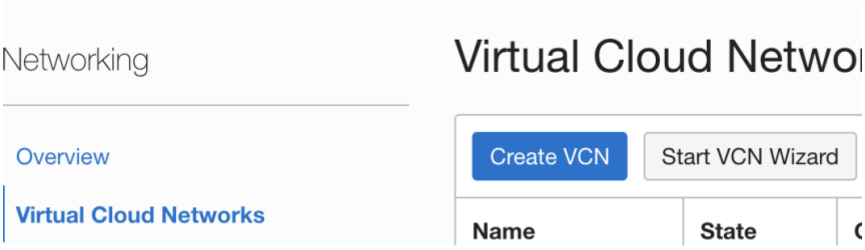
To learn more about compartments in OCI, please visit: https://docs.cloud.oracle.com/en-us/iaas/Content/Identity/Tasks/managingcompartments.htm

6. Create a virtual cloud network via wizard

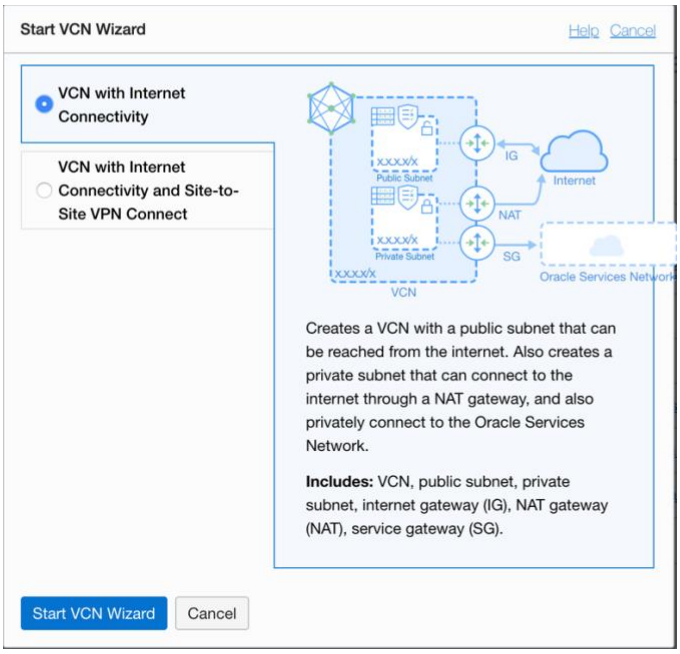
Select from the OCI menu -> Networking -> Virtual Cloud Networks



Click on start VCN wizard



Select VCN with Internet Connectivity and Start VCN Wizard



Creates a VCN with a public subnet that can be reached from the internet. Also creates a private subnet that can connect to the internet through a NAT gateway, and also privately connect to the Oracle Services Network.

Includes: VCN, public subnet, private subnet, internet gateway (IG), NAT gateway (NAT), service gateway (SG).

Complete the requested informations and review all the configurations. Click create to finish.

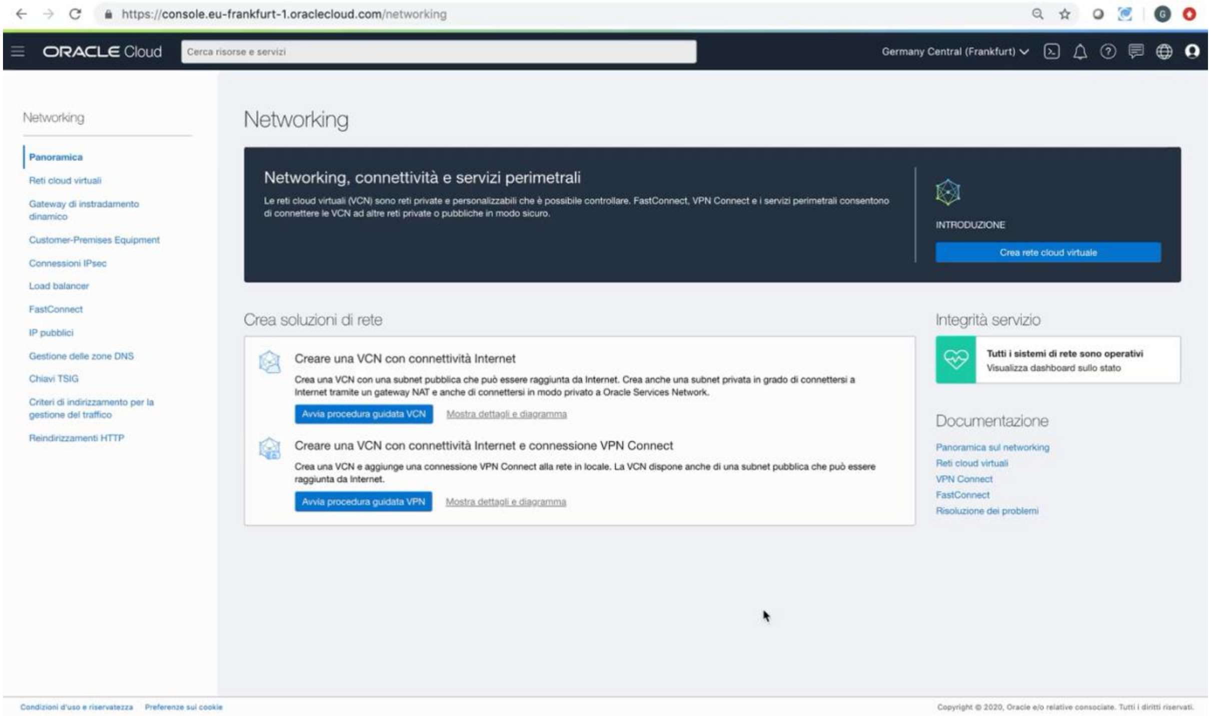
7. Create Bastion Host

It’s necessary to create a VM that will be used a bastion host. The key that has been created during chapter 3 will be used during the deployment of this server.

This VM must be deployed into the public subnet. In this way an Internet IP address will be assigned to the server.

This address will be used to connect to the VM.

The following video will show you how to create the bastion host.



https://console.eu-frankfurt-1.oraclecloud.com/networking
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Customer-Premises Equipment
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Load balancer
FastConnect
IP pubblici
Gestione delle zone DNS
Chiavi TSIG
Criteri di indirizzamento per la gestione del traffico
Reindirizzamenti HTTP
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Avvia procedura guidata VCN
Mostra dettagli e diagramma
Avvia procedura guidata VPN
Mostra dettagli e diagramma
Documentazione
Panoramica sul networking
Reti cloud virtuali
VPN Connect
FastConnect
Risoluzione dei problemi
Condizioni d'uso e riservatezza
Preferenze sui cookie

Networking

Networking, connettività e servizi perimetrali

Le reti cloud virtuali (VCN) sono reti private e personalizzabili che è possibile controllare. FastConnect, VPN Connect e i servizi perimetrali consentono di connettere le VCN ad altre reti private o pubbliche in modo sicuro.

Crea soluzioni di rete

Creare una VCN con connettività Internet

Crea una VCN con una subnet pubblica che può essere raggiunta da Internet. Crea anche una subnet privata in grado di connettersi a Internet tramite un gateway NAT e anche di connettersi in modo privato a Oracle Services Network.

Creare una VCN con connettività Internet e connessione VPN Connect

Crea una VCN e aggiunge una connessione VPN Connect alla rete in locale. La VCN dispone anche di una subnet pubblica che può essere raggiunta da Internet.

Integrità servizio

Tutti i sistemi di rete sono operativi

Visualizza dashboard sullo stato

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At the end, a bastion host will be available. Try to access to it using ssh or putty

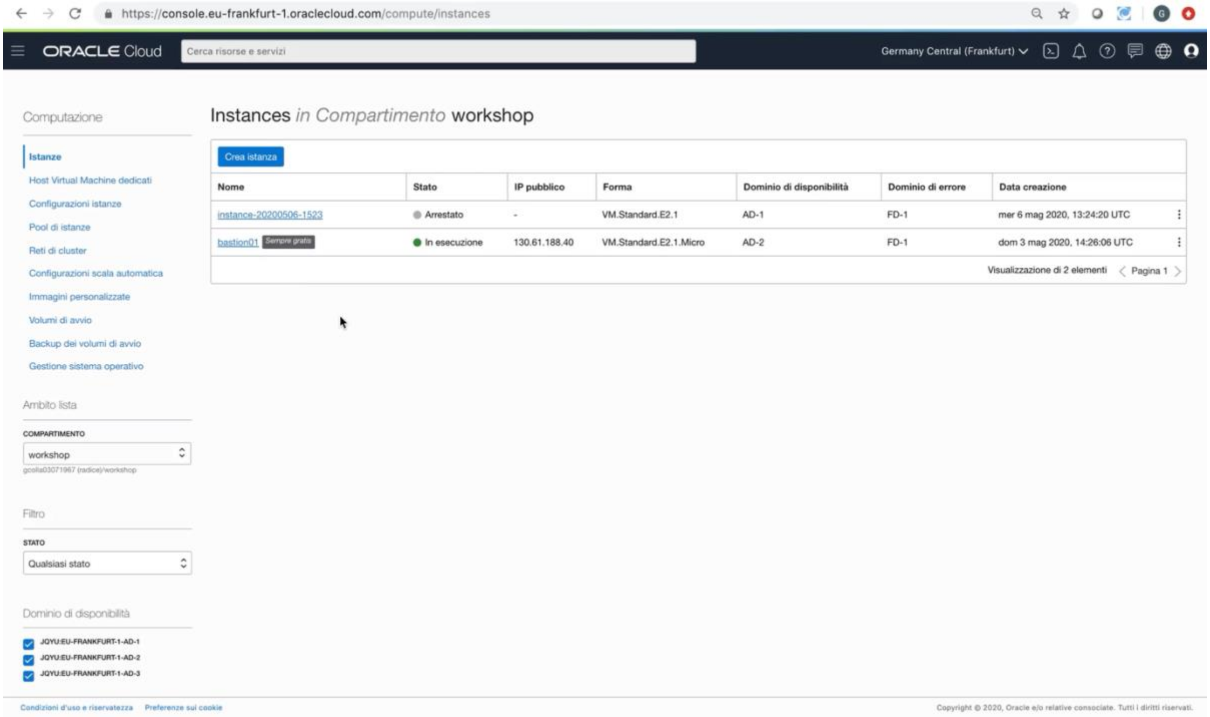
8. Create Template Host

Now it's necessary to create a new VM that will be used to prepare the Application Server for Instance Pooling.

The key that has been created during chapter 3 will be used during the deployment of this server.

This VM must be deployed into the private subnet.

The following video will show you how create this initial template server (template01)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Instances *in Compartimento* workshop

Nome	Stato	IP pubblico	Forma	Dominio di disponibilità	Dominio di errore	Data creazione
instance-20200506-1523	● Arrestato	-	VM.Standard.E2.1	AD-1	FD-1	mer 6 mag 2020, 13:24:20 UTC
bastion01 Sempre gratis	● In esecuzione	130.61.188.40	VM.Standard.E2.1.Micro	AD-2	FD-1	dom 3 mag 2020, 14:26:06 UTC

COMPARTIMENTO: workshop
gcolla03071967 (radice)/workshop

STATO: Qualsiasi stato

☑ JQYU:EU-FRANKFURT-1-AD-1
☑ JQYU:EU-FRANKFURT-1-AD-2
☑ JQYU:EU-FRANKFURT-1-AD-3

A server will be available to install Tomcat as Application Server.

9. Install Tomcat on Template Host

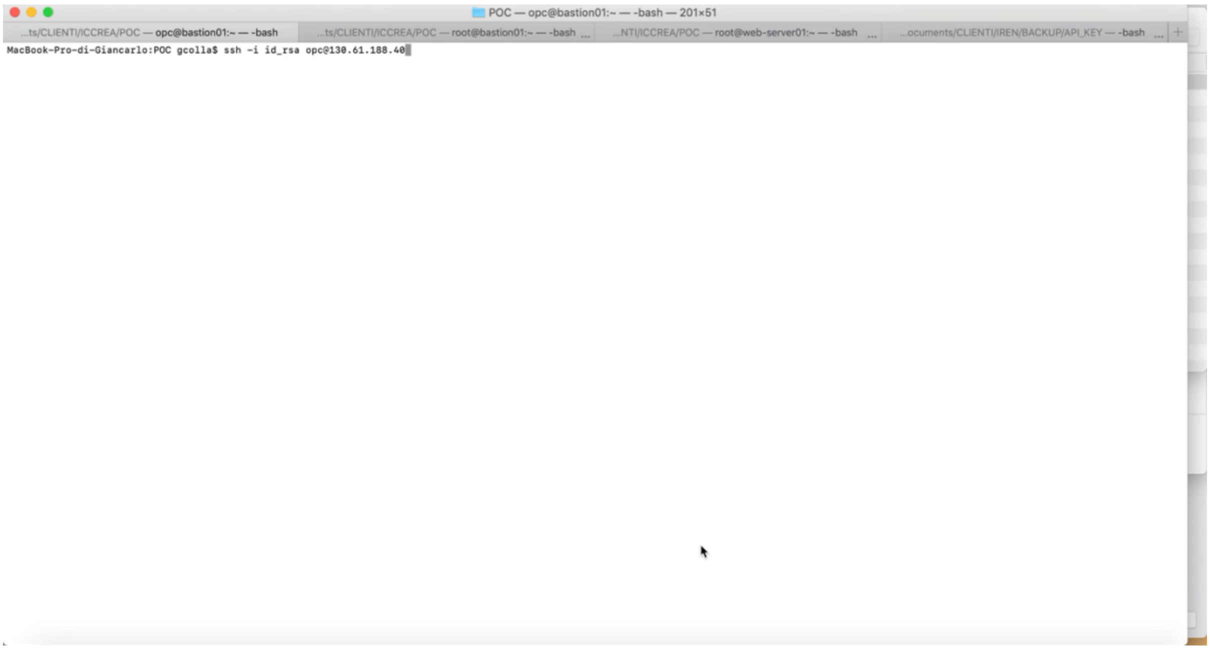
Now it's necessary to access the new VM (template01) and to install Tomcat.

In order to connect to the new server it's necessary:

1. Copy your public id key (id_rsa.pub) from your local desktop to Bastion Host using scp
2. Connect to the Bastion Host from your local desktop (using ssh)
3. Connect from Bastion Host to template01 using ssh and the id_rsa.pub that you have transferred

Example scp: *scp -i id_rsa id_rsa.pub opc@<ip_address_bastion_host>:/tmp*

The following video will show you how to install Apache Tomcat on the server



POC — opc@bastion01:~ — -bash — 201×51
...ts/CLIENTI/ICCREA/POC — opc@bastion01:~ — -bash
...ts/CLIENTI/ICCREA/POC — root@bastion01:~ — -bash
...NTI/ICCREA/POC — root@web-server01:~ — -bash
...ocuments/CLIENTI/IREN/BACKUP/API_KEY — -bash

```
MacBook-Pro-di-Giancarlo:POC gcolla$ ssh -i id_rsa opc@130.61.188.40
```

The commands used to install tomcat are:

# JDK installation

sudo yum install java-1.7.0-openjdk

# Check Java version

java -version

#Download tomcat

wget https://downloads.apache.org/tomcat/tomcat-7/v7.0.103/bin/apache-tomcat-7.0.103.tar.gz

# move into the /opt directory

cd /opt

# untar Apache Tomcat into the /opt directory

sudo tar xvzf /home/opc/apache-tomcat-7.0.103.tar.gz

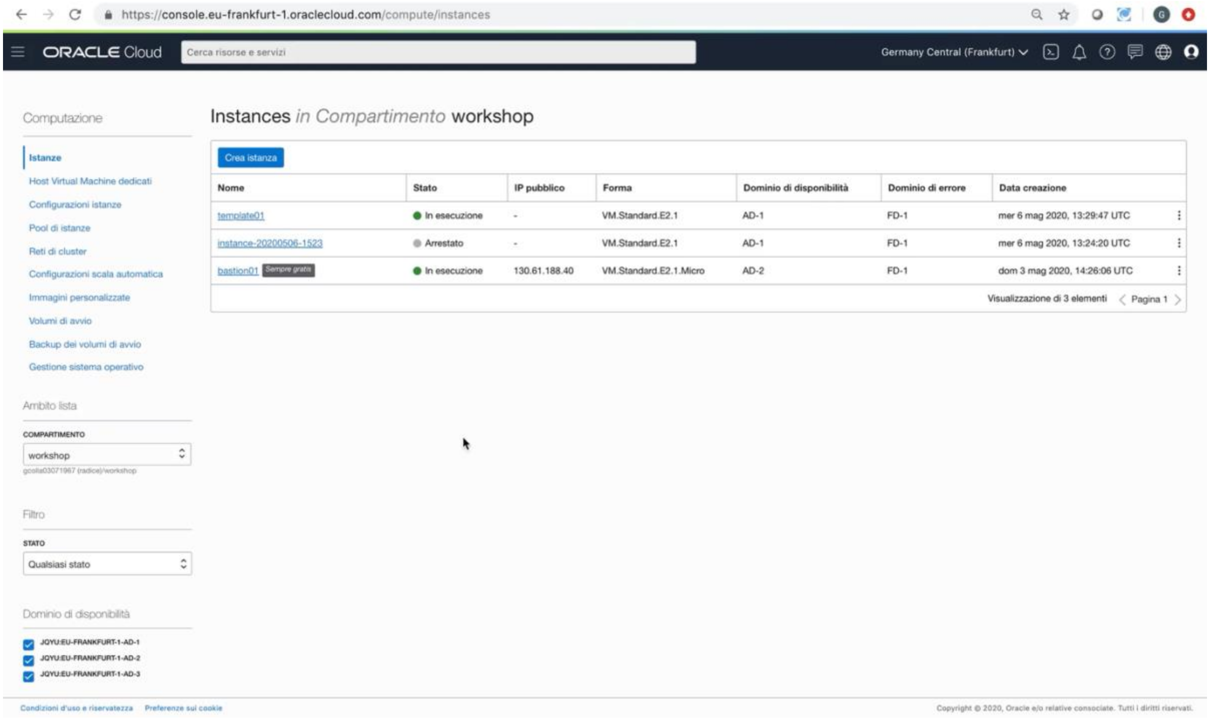
```
# Open ports into the server
sudo firewall-cmd --permanent --zone=public --add-port=80/tcp
sudo firewall-cmd --permanent --zone=public --add-port=443/tcp
sudo firewall-cmd --permanent --zone=public --add-port=8080/tcp
sudo service firewalld restart

# configure auto-start of Apache Tomcat
sudo vi /etc/systemd/system/tomcat.service
        [Unit]
        Description=Tomcat - instance %i
        After=syslog.target network.target
        [Service]
        Type=forking
        User=root
        Group=root
        Environment="JAVA_HOME=/usr/lib/jvm/jre"
        Environment="JAVA_OPTS=-Djava.security.egd=file:///dev/urandom"
        Environment="CATALINA_PID=/opt/apache-tomcat-7.0.103/%i/run/tomcat.pid"
        Environment="CATALINA_BASE=/opt/apache-tomcat-7.0.103/%i/"
        Environment="CATALINA_HOME=/opt/apache-tomcat-7.0.103/"
        Environment="CATALINA_OPTS=-Xms512M -Xmx1024M -server -XX:+UseParallelGC"
        ExecStart=/opt/apache-tomcat-7.0.103/bin/startup.sh
        ExecStop=/opt/apache-tomcat-7.0.103/bin/shutdown.sh
        TimeoutStartSec=0
        [Install]
        WantedBy=multi-user.target
# Enable tomcat service
sudo systemctl enable tomcat
#Start Tomcat service
sudo systemctl start tomcat

# Disconnect from template01
# From Bastion Host test Tomcat
wget http://<template01_ip_address>:8080
```

10. Custom Image

When the installation of the template Tomcat server is completed successfully it’s necessary to create a custom image from this server.

The custom image is used to deploy a new server which is identical to server that has been used to create the custom image.

The following video shows you how to create a custom image from the template01 server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Instances *in Compartimento* workshop

Nome	Stato	IP pubblico	Forma	Dominio di disponibilità	Dominio di errore	Data creazione
template01	● In esecuzione	-	VM.Standard.E2.1	AD-1	FD-1	mer 6 mag 2020, 13:29:47 UTC
instance-20200506-1523	● Arrestato	-	VM.Standard.E2.1	AD-1	FD-1	mer 6 mag 2020, 13:24:20 UTC
bastion01 Sempre gratis	● In esecuzione	130.61.188.40	VM.Standard.E2.1.Micro	AD-2	FD-1	dom 3 mag 2020, 14:26:06 UTC

Visualizzazione di 3 elementi Pagina 1

COMPARTIMENTO: workshop
gcolla03071967 (radice)/workshop

STATO: Qualsiasi stato

☑ JQYU:EU-FRANKFURT-1-AD-1
☑ JQYU:EU-FRANKFURT-1-AD-2
☑ JQYU:EU-FRANKFURT-1-AD-3

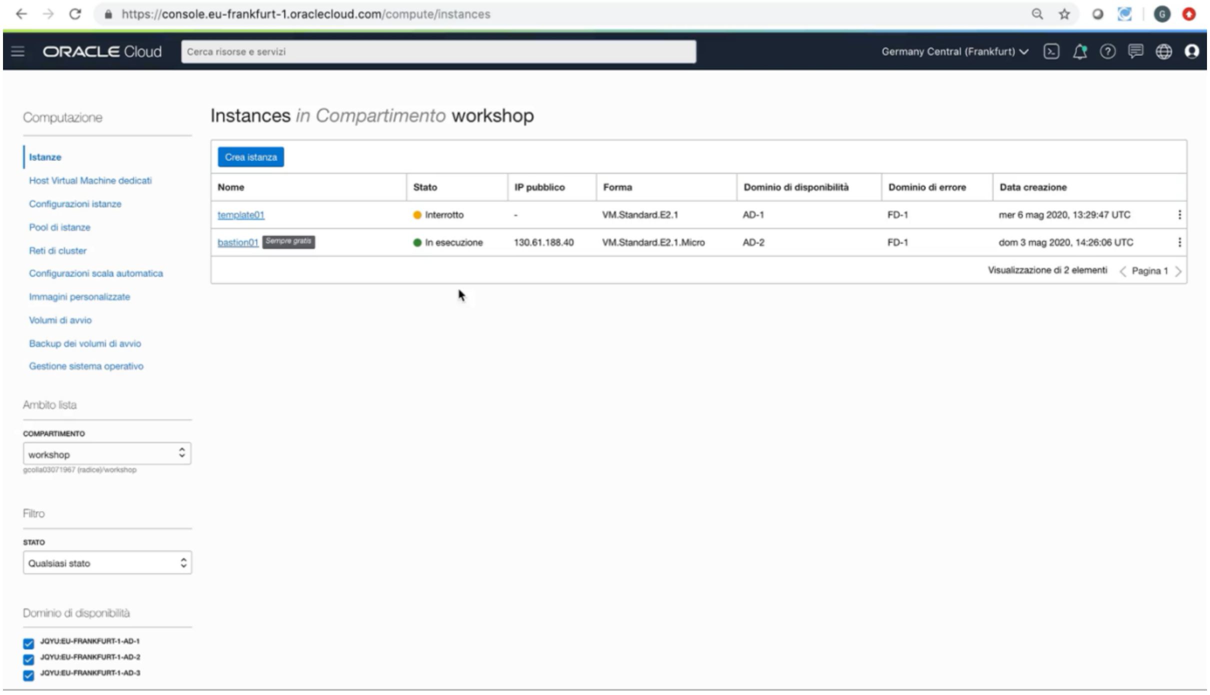
11. Instance Configuration

The next step is to create an instance template.

An Instance Configuration is a template that defines a set of required and optional parameters needed to create a compute instance on Oracle Cloud Infrastructure, including OS image, shape and resources, such as block volumes attached to the instance as a single configuration entity.

In order to create an instance configuration, it's necessary to provision a new server from the custom image.

The following video shows you how to create the VM using the custom image we created in the previous chapter.



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Gestione sistema operativo
Crea istanza
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Instances *in Compartimento* workshop

Nome	Stato	IP pubblico	Forma	Dominio di disponibilità	Dominio di errore	Data creazione
template01	● Interrotto	-	VM.Standard.E2.1	AD-1	FD-1	mer 6 mag 2020, 13:29:47 UTC
bastion01 Sempre gratis	● In esecuzione	130.61.188.40	VM.Standard.E2.1.Micro	AD-2	FD-1	dom 3 mag 2020, 14:26:06 UTC

Ambito lista

COMPARTIMENTO: workshop
gcolla03071967 (radice)/workshop

Filtro

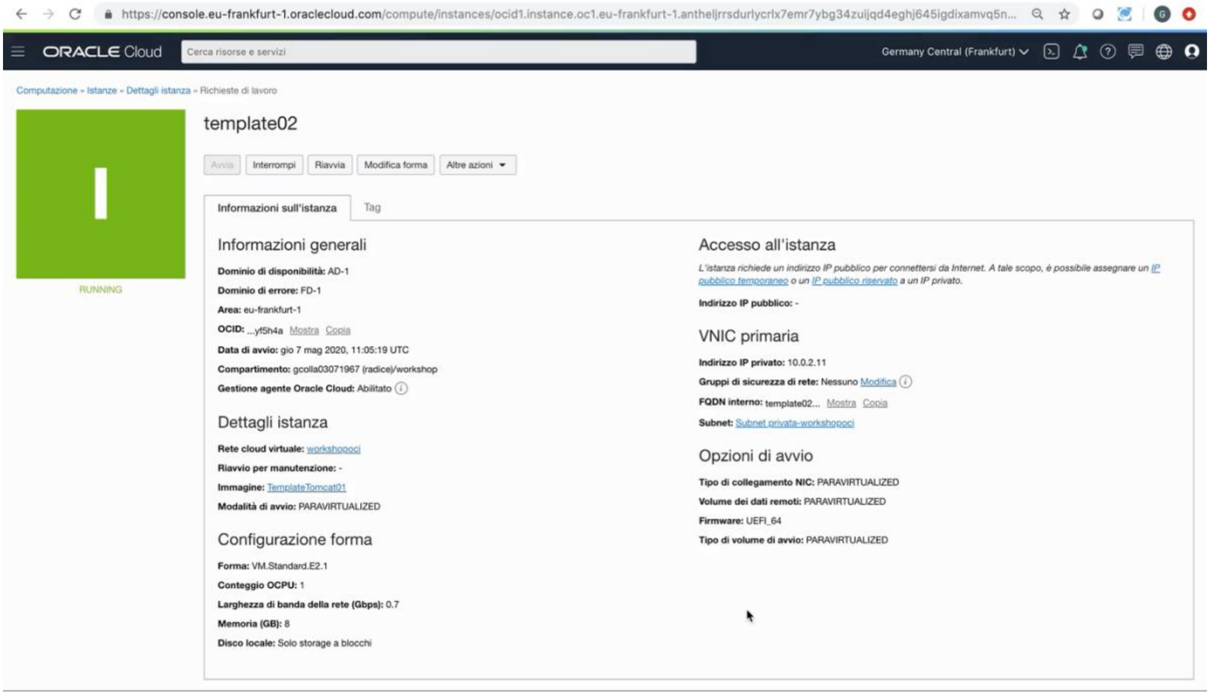
STATO: Qualsiasi stato

Dominio di disponibilità

☑ JQYU:EU-FRANKFURT-1-AD-1
☑ JQYU:EU-FRANKFURT-1-AD-2
☑ JQYU:EU-FRANKFURT-1-AD-3

When the deployment of the VM is completed, it's possible to create the Instance Comfiguration using the Cloud Interface.

The following video shows you how to create the instance configuration.


https://console.eu-frankfurt-1.oraclecloud.com/compute/instances/ocid1.instance.oc1.eu-frankfurt-1.antheljrrsdurlycrlx7emr7ybg34zuijqd4eghj645igdixamvq5n...
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I
RUNNING
Avvia
Interrompi
Riavvia
Modifica forma
Altre azioni
Informazioni sull'istanza
Tag

template02

Informazioni generali

Dominio di disponibilità: AD-1

Dominio di errore: FD-1

Area: eu-frankfurt-1

OCID: ...yf5h4a Mostra Copia

Data di avvio: gio 7 mag 2020, 11:05:19 UTC

Compartimento: gcolla03071967 (radice)/workshop

Gestione agente Oracle Cloud: Abilitato

Dettagli istanza

Rete cloud virtuale: workshopoci

Riavvio per manutenzione: -

Immagine: TemplateTomcat01

Modalità di avvio: PARAVIRTUALIZED

Configurazione forma

Forma: VM.Standard.E2.1

Conteggio OCPU: 1

Larghezza di banda della rete (Gbps): 0.7

Memoria (GB): 8

Disco locale: Solo storage a blocchi

Accesso all'istanza

L'istanza richiede un indirizzo IP pubblico per connettersi da Internet. A tale scopo, è possibile assegnare un IP pubblico temporaneo o un IP pubblico riservato a un IP privato.

Indirizzo IP pubblico: -

VNIC primaria

Indirizzo IP privato: 10.0.2.11

Gruppi di sicurezza di rete: Nessuno Modifica

FQDN interno: template02... Mostra Copia

Subnet: Subnet privata-workshopoci

Opzioni di avvio

Tipo di collegamento NIC: PARAVIRTUALIZED

Volume dei dati remoti: PARAVIRTUALIZED

Firmware: UEFI_64

Tipo di volume di avvio: PARAVIRTUALIZED

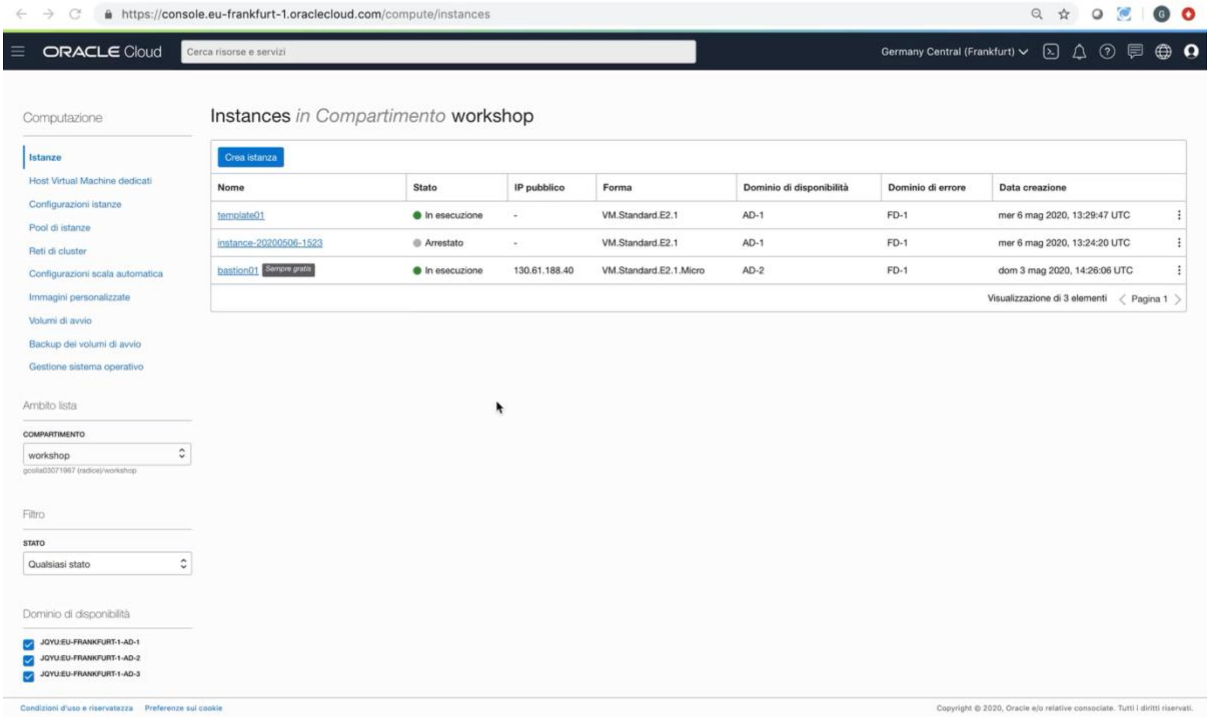
12. Creation of Load Balancer

The next step is to create the load balancer.

The load balancer must be deployed into the public subnet in order to be accessible using a public IP Address.

During the deployment a backend set name is defined. This backend set name will be use to associate the load balancer to the instance pool that we will create in the next step.

The next video shows you how to create a Load Balancer.


https://console.eu-frankfurt-1.oraclecloud.com/compute/instances
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Instances *in Compartimento* workshop

Nome	Stato	IP pubblico	Forma	Dominio di disponibilità	Dominio di errore	Data creazione
template01	● In esecuzione	-	VM.Standard.E2.1	AD-1	FD-1	mer 6 mag 2020, 13:29:47 UTC
instance-20200506-1523	● Arrestato	-	VM.Standard.E2.1	AD-1	FD-1	mer 6 mag 2020, 13:24:20 UTC
bastion01 Sempre gratis	● In esecuzione	130.61.188.40	VM.Standard.E2.1.Micro	AD-2	FD-1	dom 3 mag 2020, 14:26:06 UTC

Visualizzazione di 3 elementi Pagina 1

COMPARTIMENTO: workshop
gcolla03071967 (radice)/workshop

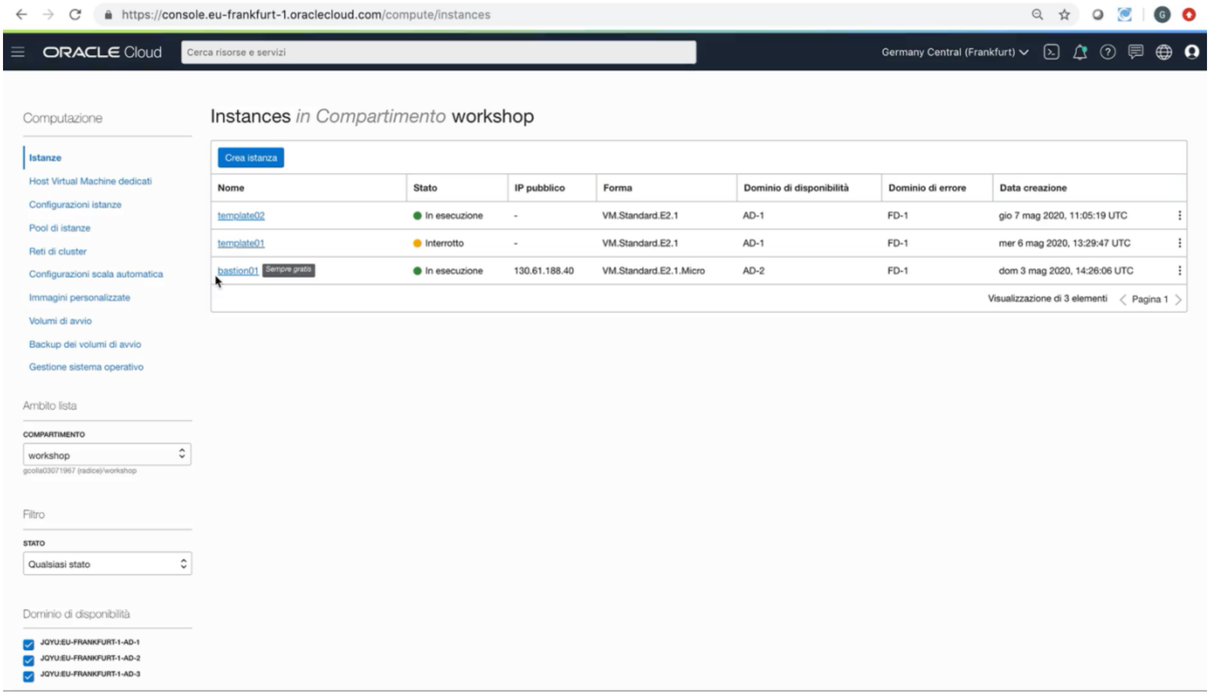
STATO: Qualsiasi stato

☑ JOYU:EU-FRANKFURT-1-AD-1
☑ JOYU:EU-FRANKFURT-1-AD-2
☑ JOYU:EU-FRANKFURT-1-AD-3

13. Creation of Instance Pool

The next step is to create the instance pool. During this step we don’t define autoscaling.

The following video shows you how to create an instance pool using the instance configuration we created in the previous chapter.



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Instances *in Compartimento* workshop

Nome	Stato	IP pubblico	Forma	Dominio di disponibilità	Dominio di errore	Data creazione
template02	● In esecuzione	-	VM.Standard.E2.1	AD-1	FD-1	gio 7 mag 2020, 11:05:19 UTC
template01	● Interrotto	-	VM.Standard.E2.1	AD-1	FD-1	mer 6 mag 2020, 13:29:47 UTC
bastion01	● In esecuzione	130.61.188.40	VM.Standard.E2.1.Micro	AD-2	FD-1	dom 3 mag 2020, 14:26:06 UTC

COMPARTIMENTO: workshop
gcolla03071967 (radice)/workshop

STATO: Qualsiasi stato

☑ JQYU:EU-FRANKFURT-1-AD-1
☑ JQYU:EU-FRANKFURT-1-AD-2
☑ JQYU:EU-FRANKFURT-1-AD-3

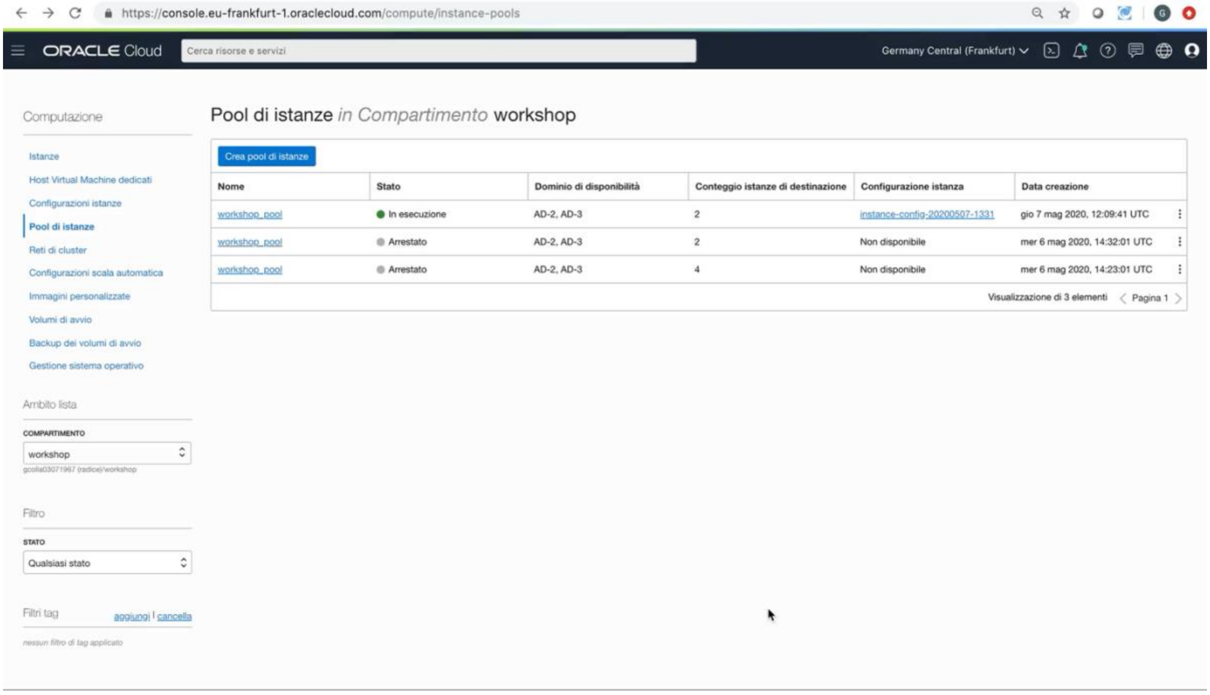
14. Autoscaling

The next step is to define autoscaling.

In order to define autoscaling it's necessary to take some decisions:

- What is the initial number of instances that are started during pool activation
- What is the minimum number of instances that must be active when the pool is under utilization
- What is the maximum number of instances of the pool
- Where the instances are activated (availability domains, fault domains, etc.)
- What is the metric that is used to scale-up or down the pool (cpu or memory)
- What is the value of the metric that is used to scale-up the pool
- What is the value of the metric that is used to scale-down the pool

The following video shows you how to configure autoscaling



COMPARTIMENTO: workshop

gcolla03071967 (radice)/workshop

STATO: Qualsiasi stato

nessun filtro di tag applicato

Pool di istanze *in Compartimento* workshop

Nome	Stato	Dominio di disponibilità	Conteggio istanze di destinazione	Configurazione istanza	Data creazione
workshop_pool	● In esecuzione	AD-2, AD-3	2	instance-config-20200507-1331	gio 7 mag 2020, 12:09:41 UTC
workshop_pool	● Arrestato	AD-2, AD-3	2	Non disponibile	mer 6 mag 2020, 14:32:01 UTC
workshop_pool	● Arrestato	AD-2, AD-3	4	Non disponibile	mer 6 mag 2020, 14:23:01 UTC

Visualizzazione di 3 elementi < Pagina 1 >

15. Testing Autoscaling

It’s possible to test autoscaling using

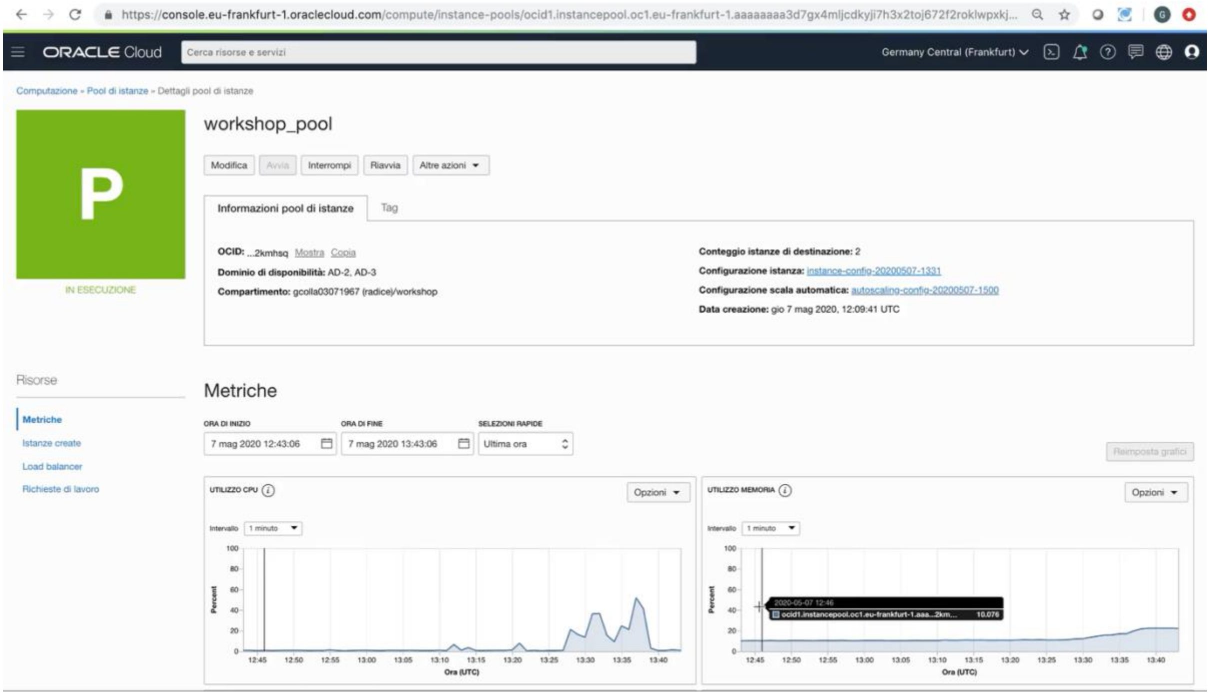
Apache HTTP server benchmarking tool

You may create a new Virtual Server into the public subnet and also to use the bastion host.

Later you can load the instance pool using the “ab” command

```
ab -c 10 -n 5000000 http://<load_balancer_ip_address>/examples/jsp/jsp2/el/basic-arithmetic.jsp
```

The following video shows you how it’s possible to do this



https://console.eu-frankfurt-1.oraclecloud.com/compute/instance-pools/ocid1.instancepool.oc1.eu-frankfurt-1.aaaaaaaa3d7gx4mljcdkyji7h3x2toj672f2roklwpxkj...

Computazione » Pool di istanze » Dettagli pool di istanze

workshop_pool

IN ESECUZIONE

Informazioni pool di istanze

OCID: ...2kmhsq Mostra Copia

Dominio di disponibilità: AD-2, AD-3

Compartimento: gcolla03071967 (radice)/workshop

Conteggio istanze di destinazione: 2

Configurazione istanza: instance-config-20200507-1331

Configurazione scala automatica: autoscaling-config-20200507-1500

Data creazione: gio 7 mag 2020, 12:09:41 UTC

Metriche

ORA DI INIZIO: 7 mag 2020 12:43:06

ORA DI FINE: 7 mag 2020 13:43:06

SELEZIONI RAPIDE: Ultima ora

UTILIZZO CPU — Intervallo: 1 minuto

UTILIZZO MEMORIA — Intervallo: 1 minuto

2020-05-07 12:46
ocid1.instancepool.oc1.eu-frankfurt-1.aaa...2km... 10.076