



# OCI Getting Started Workshop

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Hands-on Lab manual for the OCI Getting Started Workshop

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Public

## PURPOSE STATEMENT

This document provides guidance and instructions needed for the OCI Getting Started Hands-on workshop. It is intended solely to help you get acquainted with the OCI platform.

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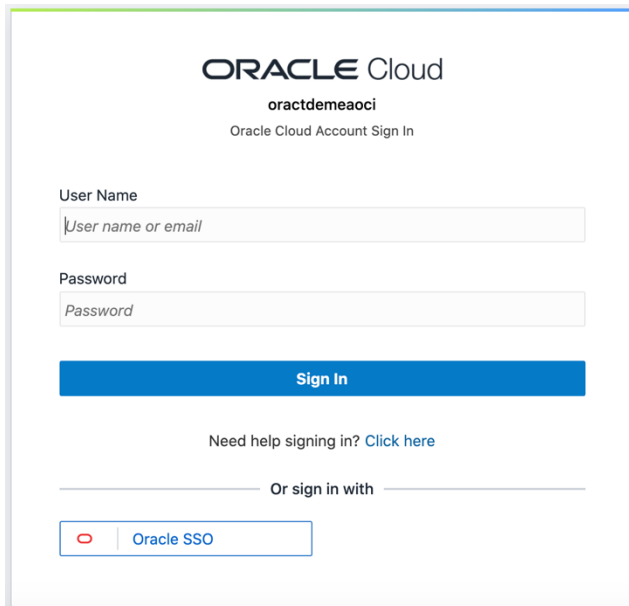
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## 1. GETTING ACCESS TO THE OCI CONSOLE

During this workshop you will work in a shared tenancy. Your instructor will provide information regarding your login credential.

### Connecting to the OCI Console

Please go to <https://www.oci-workshop.com/login> and select the correct region for your workshop. This link will take you to the login page of the cloud tenancy you will use during this workshop.

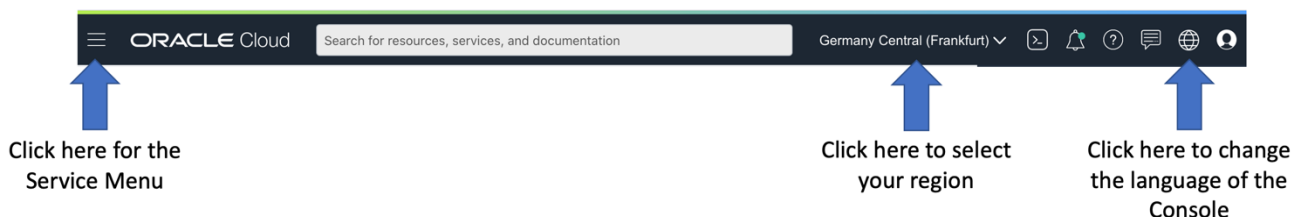
The image shows the Oracle Cloud Account Sign In page. At the top, it says "ORACLE Cloud" and "oractdemeaoci Oracle Cloud Account Sign In". Below this are two input fields: "User Name" with a placeholder "User name or email" and "Password" with a placeholder "Password". A blue "Sign In" button is below the password field. Underneath the button, it says "Need help signing in? Click here". At the bottom, there is a section "Or sign in with" followed by a button with the Oracle SSO logo and the text "Oracle SSO".

Your instructor will provide you with your User Name and Password.

Accept the term of service and you will be directed to the main OCI Console page.

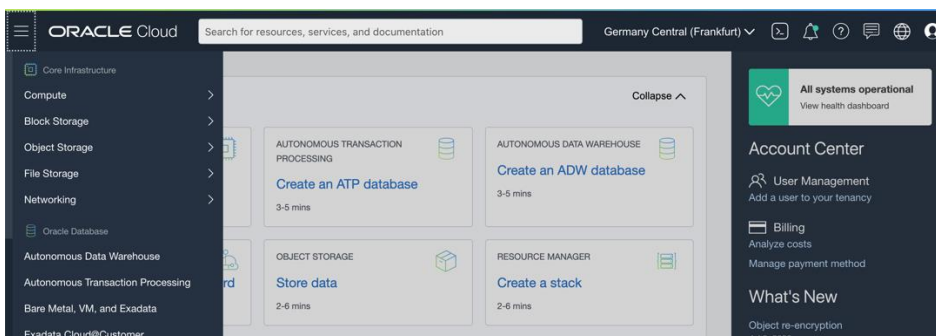
### The OCI Menu bar

At the top of the OCI Console page you will see the main menu bar.



If you want to change the language of your interface, you can click on the Globe Icon on the right and select the language you want to console to be displayed in.

By Clicking on the left "hamburger menu" Icon, a list of the OCI services will be shown,



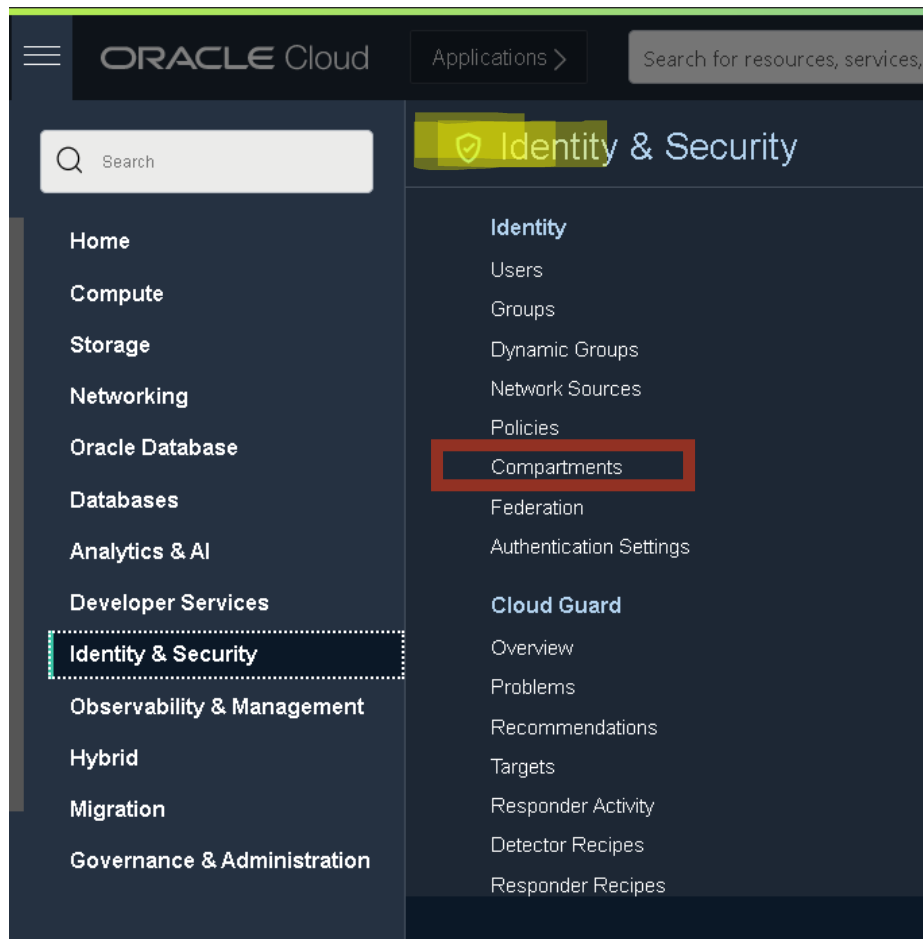
## 2. CREATE YOUR OWN COMPARTMENT

### Mission:

Create your own compartment, inside the already present Workshop Compartment

### Identity Service

Navigate to the Identity & Security and click on the submenu Compartments. If you do not see the Identity service in the menu, you have to scroll down using 2 fingers on your touch pad or your middle mouse wheel. Alternatively, you can also use your Arrow Down key.




You will be shown a list of existing compartments. Click on the **Workshop** compartment. This will navigate you inside this compartment. Now you are ready to create your own compartment.

**IMPORTANT:** Make sure you are inside the workshop compartment, as this is the only area where you have full administrator privileges.

### Child Compartments

Create Compartment				
Name	Status	OCID	Authorized	Created
No items found.				
Showing 0 Items < Page 1 >				

Click on the [Create Compartment] button and follow the steps to create your compartment.



TIP: After you have created your compartment, **it is recommended to reload the page**. Most elements in the OCI Console are dynamically updated and therefor do not require browser refreshes/reloads. One of the few exceptions is the Compartment Panel on most pages. To ensure they will show the newly created compartment, the page refresh is needed.

### 3. CREATE A VIRTUAL CLOUD NETWORK (VCN)

#### Mission:

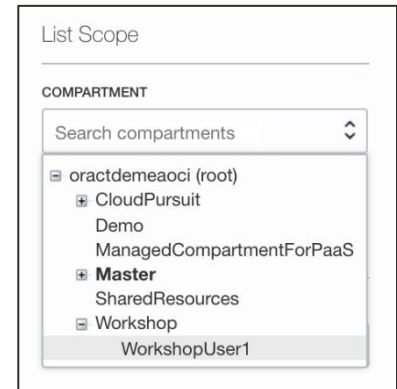
Create a Virtual Cloud Network in your Compartment, that has as least one subnet with Internet connectivity.

#### Virtual Cloud Network

Using the top "Hamburger menu" navigate to the Networking (click) go to submenu-> Virtual Cloud Networks section. On the left toolbar you will see a Compartment explorer. Make sure it is set to your newly created compartment.

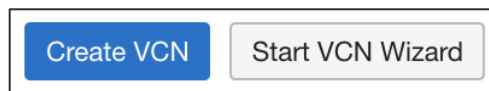
Use the [+] to expand the Workshop compartment.

If you do not see your newly created compartment, you want to refresh / reload your web browser.



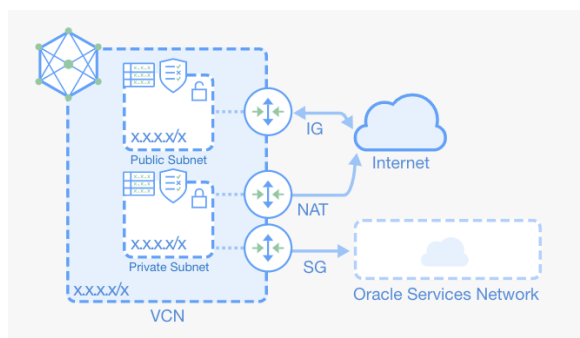
#### Creating a VCN

You have 2 options on how to create your VCN. If this is your first time, it is **recommended to use the Wizard**. The Wizard can automatically create the VCN with Subnets for you and also ensure there is an Internet Gateway configured with the correct routing tables for the public subnet.



When launching the wizard, choose the **[VCN with Internet Connectivity]** option. Give your VCN a name and leave all other options as default.

The wizard will show you all the components that will be created.



All the resources we will create later in this hands-on workshop will need to be connected to the Public Subnet. When all finished, you should see you have 2 subnets in your VCN.

#### Subnets in WorkshopUser1 Compartment

Create Subnet				
Name	State	CIDR Block	Subnet Access	Created
<a href="#">Private Subnet-MyNetwork</a>	Available	10.0.1.0/24	Private (Regional)	Fri, Jul 17, 2020, 07:05:24 UTC
<a href="#">Public Subnet-MyNetwork</a>	Available	10.0.0.0/24	Public (Regional)	Fri, Jul 17, 2020, 07:05:24 UTC

Showing 2 Items < 1 of 1 >

## 4. CREATE LINUX BASED COMPUTE VM WITH WEBSERVER

### Mission:

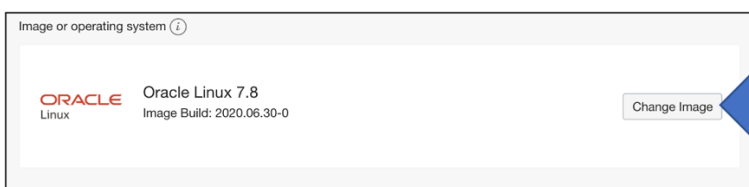
Create an Ubuntu Linux based virtual machine with a webserver running in it and also ensure you can connect to it from the public Internet.

### Create a Standard2.1 Virtual Machine

Using the top "Hamburger menu" navigate to the Compute (click) -> Instances section. Again, ensure that the Compartment Scope in the left toolbar is selected to your compartment.

Use the [Create Instance] button to create a new Virtual Machine Instance.

In the top section you can select / change the image you want to use for this instance. We want to use an **Ubuntu 18.04 instance**, so click on the [Change Image] button and find the Ubuntu 18.04 image.



Click here  
to change  
the image

### Browse All Images

An image is a template of a virtual hard drive that determines the operating system and other software for an instance.

Image source

Platform images

Compartment

Comp\_

oraseemearl (root)/APP/Comp\_RS

[Platform images](#) are pre-built operating systems for Oracle Cloud Infrastructure.

Image name	OS version	Image build	
<input checked="" type="checkbox"/> Canonical Ubuntu	20.04 Minimal	2021.04.19-0	<a href="#">Advanced Options</a>
<input type="checkbox"/> CentOS	20.04 Minimal	2021.04.14-0	<a href="#">Advanced Options</a>
<input type="checkbox"/> Oracle Autonomous Linux	20.04	2021.04-0	<a href="#">Advanced Options</a>
<input type="checkbox"/> Oracle Linux	18.04 Minimal	2021.04.09-0	<a href="#">Advanced Options</a>
<input type="checkbox"/> Windows	18.04	2021.04.13-0	<a href="#">Advanced Options</a>
<input type="checkbox"/> 16.04 Minimal	16.04		

### Image and shape

[Collapse](#)

A [shape](#) is a template that determines the number of CPUs, amount of memory, and other resources allocated to an instance. The image is the operating system that runs on top of the shape.

Image



Canonical Ubuntu 18.04  
Image build: 2021.04.15-0

Ubuntu is a free, open-source Linux distribution that is suitable for use in the cloud. For more information, see <https://www.ubuntu.com>.


[Change Image](#)



Next we have to select the correct Shape for the Instance. There are different Shapes in OCI based on different CPUs (Intel Xeon and AMD Epic Processors) and each Shape has a different number of CPUs and Memory footprint.

For this exercise you need to select a **[VMstandard2.1]** shape. Scroll down until you see the Shape selection box.

Shape ⓘ

 VM.Standard.E3.Flex  
Virtual Machine, 1 core OCPU, 16 GB memory, 1 Gbps network bandwidth

Change Shape

Click here to change the Shape


Click on the [Change Shape] button and find the VMstandard2.1 shape. You can find this in the [Intel ] section.


Instance type

Virtual Machine  
A virtual machine is an independent computing environment that runs on top of physical bare metal hardware. ✓

Bare Metal Machine  
A bare metal compute instance gives you dedicated physical server access for highest performance and strong isolation.

Shape series

 AMD  
Flexible OCPU count. AMD processors.

 Intel  
Current generation Intel processors. ✓

Specialty and Previous Generation  
Earlier generation AMD and Intel Standard shapes. Always Free, Dense I/O, GPU, and HPC shapes.

Image: Canonical Ubuntu 18.04

Shape Name	OCPU	Memory (GB)	Network Bandwidth (Gbps)	Max. Total VNICs
✓ VM.Standard2.1	1	15	1	2

Check that the network configuration for this instance is set to your VCN and the **PUBLIC SUBNET!**. In the Networking section. Also make sure the Public IP Address button is selected.

Public IP Address

☒ Assign a public IPv4 address ☐ Do not assign a public IPv4 address

!

Assigning a public IP address makes this instance accessible from the internet. If you're not sure whether you need a public IP address, you can always assign one later.

For the next selection 'Add SSH keys' - **please follow these directions carefully depending on your desktop OS.**

Access to Linux based instances is done using SSH Keys. You can create these keys yourself or you can use the automatically generated key by OCI. For this workshop you can use the generated keys if you are using a Mac or Windows and do NOT need to use PuTTY (i.e. you can use a Linux command line system within Windows). If you do need to use PuTTY, follow the below instructions.


For Mac Users and Windows Users using the SSH command, you can use the OCI console generated keys



**IMPORTANT:** Before you click on the [create] button, make sure you have downloaded the generated private key file!

### Add SSH keys

Linux-based instances use an [SSH key pair](#) instead of a password to authenticate remote users. Generate a key pair or upload your own public key now. When you [connect to the instance](#), you will provide the associated private key.

☒ Generate SSH key pair ☐ Choose public key files ☐ Paste public keys ☐ No SSH keys

 Download the private key so that you can connect to the instance using SSH. It will not be shown again.

 Save Private Key  [Save Public Key](#)

### Note for Windows users wanting to use Putty:

If you want to use Putty instead of the windows build-in SSH client, you need to have a different key format (Putty SSH key format). This format is not created by the OCI Console. You can go to [www.oci-workshop.com/keys](http://www.oci-workshop.com/keys) to download a generated key file that contains both formats. For this lab, use these keys for creating your instance and logging into your instance.

Click the Create button on bottom

Create

Save as Stack

Cancel

It usually takes a minute for the Instance to be created and to be up and running and it will then also display the Public IP address you can use to connect to this Instance.

Name	Status	Public IP	Shape	Availability Domain	Fault Domain	Created	
<a href="#">MyWebServer1</a>	● Running	130.61.99.117	VM.Standard2.1	AD-1	FD-2	Fri, Jul 17, 2020, 07:28:42 UTC	⋮
Showing 1 Item < Page 1 >							

## Connecting to your instance using SSH

To connect to your instance, open up a Terminal if you are using a Mac (or a Linux shell environment on Windows – make sure you put the key file in your shell home directory). Go to the directory where the private key was downloaded.

Type the command:

```
ssh -i [your_private_keyfile] ubuntu@[public_ipaddress_of_your_instance]
```

*[your private key file] should look something like this:*

*ssh-key-2021-01-01.key    ssh-key-[date from today].key*

for examples see:

- Mac/Linux users
- Windows ssh users
- Windows Putty users.

## Mac/linux users

Mac Example:

```
Downloads — ubuntu@mywebserver1: ~ — ssh -i ssh-private-key.key ubuntu...
[$ cd Downloads/
[$ ssh -i ssh-private-key.key ubuntu@130.61.99.117
The authenticity of host '130.61.99.117 (130.61.99.117)' can't be established.
ECDSA key fingerprint is SHA256:p1uQ1u6CLbWly1yelCf9I+tdJ39BmcDOW5E2QjLW9YM.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '130.61.99.117' (ECDSA) to the list of known hosts.
Welcome to Ubuntu 18.04.4 LTS (GNU/Linux 5.3.0-1024-oracle x86_64)
```

If you get an error that your key is unprotected, change the permission on the file.

```

Warning: UNPROTECTED PRIVATE KEY FILE!
```

Run the command:

`chmod 600 [your_key_file]` for Linux users.

## Windows users

Open your command shell

Windows Example:

```
ubuntu@mywebserver1: ~
C:\Users\workshop>cd Downloads
C:\Users\workshop\Downloads>ssh -i ssh-private-key.key ubuntu@130.61.99.117
The authenticity of host '130.61.99.117 (130.61.99.117)' can't be established.
ECDSA key fingerprint is SHA256:p1uQ1u6CLbWly1yelCf9I+tdJ39BmcDOW5E2QjLW9YM.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '130.61.99.117' (ECDSA) to the list of known hosts.
Welcome to Ubuntu 18.04.4 LTS (GNU/Linux 5.3.0-1024-oracle x86_64)
```

If you get an error that your key is unprotected, change the permission on the file.

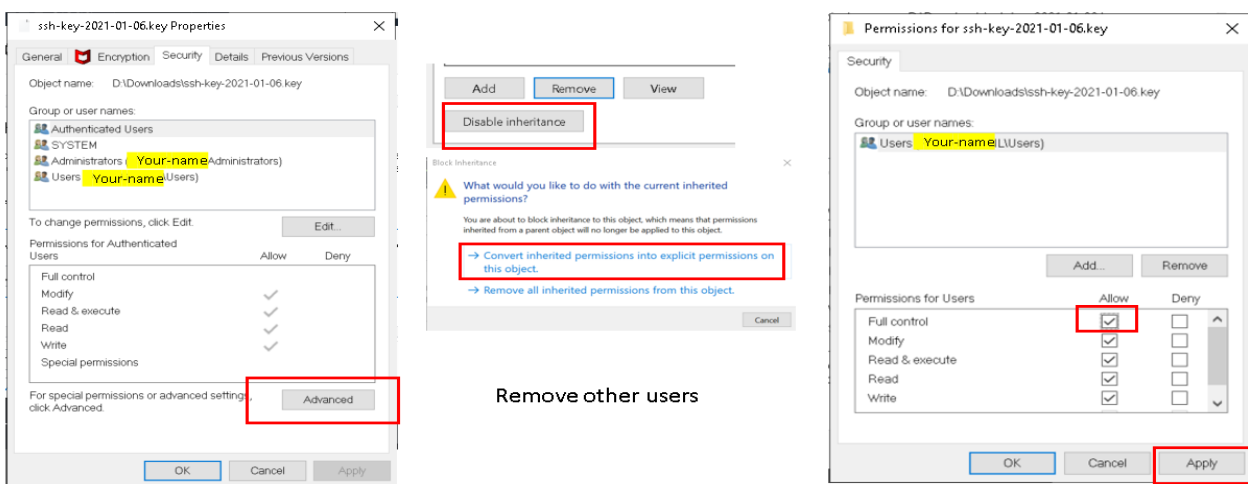
```

Warning: UNPROTECTED PRIVATE KEY FILE!
```

For windows users:

Open the downloaded [your key file] in your download directory.

Change file-ownership to only for yourself.

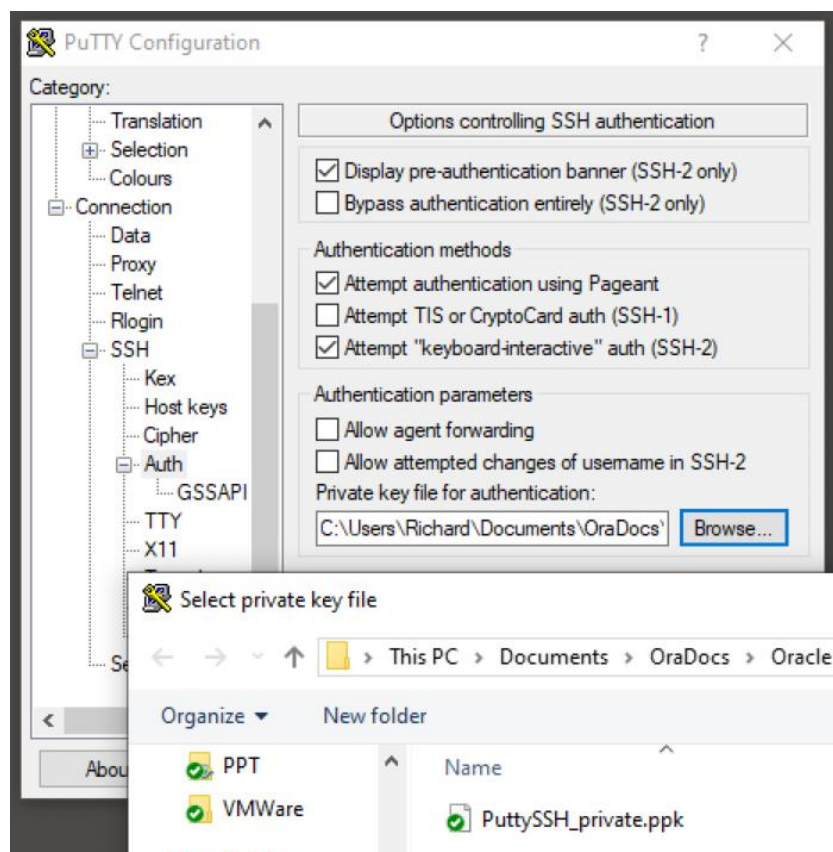


## Windows PuTTY users

### Note for Windows users using PuTTY:

To use PuTTY – you will need to use the PuTTY SSH key format. This format is not created by the OCI Console, so as advised for this workshop, download and use the PuTTY format keys (*you must have specified the PuTTY format Public key when you created the Ubuntu Instance*). The following screenshot shows the configuration within PuTTY for using the Private key.

You can download the putty key from [www.oci-workshop.com/keys](http://www.oci-workshop.com/keys)



## Installing the Webserver components

Now that you are logged in to your Ubuntu Instance, issue the following 3 commands:

```
wget http://www.oci-workshop.com/installweb.sh
chmod 755 installweb.sh
./installweb.sh
```

This will automatically install all the webserver (apache) components and setup a default webpage.

If you try to open your local web browser to the public ip address of your instance, you will notice that it does not connect yet. This is because **by default no traffic other than ssh is allowed**.

## Configure the Network Security List

Using the 'hamburger menu', navigate to your Virtual Cloud Network via Networking -> Virtual Cloud Networks and then click on the name of your Virtual Cloud Network.

In the left toolbar menu, you will see the option 'Security Lists'. Click on that to navigate to the Security Lists for [your VCN name].

- Click on the **"Default Security List for MyNetwork"**, this is the security list for your Public Subnet. Click on the **[Add Ingress Rules]** button.
- You can now create a new Ingress (incoming traffic) rule.
- Set Source CIDR to: **0.0.0.0/0**  
(This will allow incoming traffic from all internet addresses)
- Set Destination port to: **80**  
(This allows traffic to port 80, for the HTTP protocol)
- Give the rule a Description name.
- Click on the **[Add Ingress Rules]**

Now incoming traffic is allowed to port 80 and as this is a stateful rule (the Stateless button is unchecked), it means that automatically the reverse traffic is allowed as well,

Now try to use your local web browser and 'surf' to the public IP Address of your Ubuntu Instance. You should be seeing the default webpage as below:

**Add Ingress Rules** Cancel

Ingress Rule 1

Allows TCP traffic 80

☐ STATELESS ⓘ

SOURCE TYPE: CIDR SOURCE CIDR: 0.0.0.0/0 IP PROTOCOL: TCP ⓘ

Specified IP addresses: 0.0.0.0-255.255.255.255 (4,294,967,296 IP addresses)

SOURCE PORT RANGE: All (Optional ⓘ) DESTINATION PORT RANGE: 80 (Optional ⓘ)

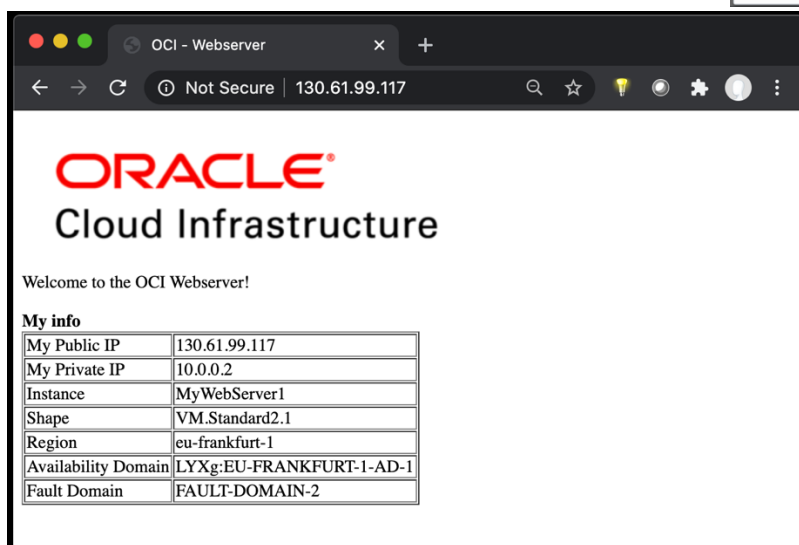
Examples: 80, 20-22

DESCRIPTION: Webserver access (Optional ⓘ)

Maximum 255 characters

+ Additional Ingress Rule

Add Ingress Rules Cancel



## 5. CREATING WINDOWS BASED COMPUTE VM

### Mission:

Create a new Instance using a Windows based image. Configure a Network Security Group so that port 3389 (RDP) is allowed and connect to you Windows Instance using a Remote Desktop client

### Create Windows Instance

Using the “hamburger menu” navigate to Compute -> Instances and click on the [create instance].

This time create the instance based on a Windows Image (you can choose any Windows instance). With the Change Image button.

For the shape type, select the **VM.Standard.E2.2** shape, you will find this in the 'Specialty and Previous Generation' Section.

Instance type

Virtual Machine  
A virtual machine is an independent computing environment that runs on top of physical bare metal hardware.

Bare Metal Machine  
A bare metal compute instance gives you dedicated physical server access for highest performance and strong isolation.

Shape series

AMD  
Flexible OCPU count, AMD processors.

Intel  
Current generation Intel processors.

Specialty and Previous Generation  
Earlier generation AMD and Intel Standard shapes. Always Free, Dense I/O, GPU, and HPC shapes.

Image: Oracle Linux 7.9

	Shape Name	OCPU	Memory (GB)	Network Bandwidth (Gbps)	Max. Total VNICS
<input type="checkbox"/>	VM.Standard.E2.1	1	8	0.7	2
<input checked="" type="checkbox"/>	VM.Standard.E2.2	2	16	1.4	2

Again, ensure your Instance is using the correct VCN and is connected to the **Public Subnet**.

Click the [create] button and the Instance creation process will start. This will take a few minutes. While waiting for the instance to be up and running, you can configure a Network Security Group that will configure RDP access.

### Create a Network Security Group

Using the “hamburger menu” navigate to your VCN, by going to Networking -> Virtual Cloud Networks and click on the name of your VCN.

On the left toolbar menu you will find the section 'Network Security Group'. Click on this section and create a new Network Security Group.

### Create Network Security Group

1 Basic Info  
2 Security Rules

First, provide basic information about the group. Next, you will add security rules

NAME ⓘ  
WindowsInstances

CREATE IN COMPARTMENT  
WorkshopUser1  
oractdemeaoci (root)/Workshop/WorkshopUser1

Show Advanced Options

Provide a name for your NSG (Network Security Group) and click [next].

Create a rule that any IP Address (0.0.0.0/0) can access (Destination port) using the RDP Protocol (TCP port 3389)

**Rule**

☐ STATELESS ⓘ

**DIRECTION**  
Ingress

**SOURCE TYPE** ⓘ  
CIDR

**SOURCE CIDR** ⓘ  
0.0.0.0/0  
Specified IP addresses: 0.0.0.0-255.255.255.255 (4,294,967,296 IP addresses)

**IP PROTOCOL** ⓘ  
TCP

**SOURCE PORT RANGE** OPTIONAL ⓘ  
All

**DESTINATION PORT RANGE** OPTIONAL ⓘ  
3389

**Allows:** Allows TCP traffic 3389

**DESCRIPTION** OPTIONAL  
RDP Access  
Maximum 255 characters

Navigate back your windows instance and assign it to the Network Security Group you have created.

Compute » Instances » Instance Details » Work Requests

## MyWindows

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: ...jv5r7q [Show](#) [Copy](#)  
Launched: Fri, Jul 17, 2020, 09:07:33 UTC  
Compartment: oractdemeaoci (root)/Workshop/WorkshopUser1  
Oracle Cloud Agent Management: Enabled ⓘ

**Instance Access**  
The instance must be running before you can connect to it.

**Primary VNIC**

Private IP Address: 10.0.0.3  
Network Security Groups: None [Edit](#) ⓘ **Assign Instance to NSG**  
Internal FQDN: mywindows... [Show](#) [Copy](#)  
Subnet: [Public Subnet-MyNetwork](#)

You can assign the NSG by clicking on the [edit] link next to the Network Security Group title. Select your NSG and click on [assign].

**Edit Network Security Groups** [Help](#) [Close](#)

NETWORK SECURITY GROUP IN WORKSHOPUSER1 [\(CHANGE COMPARTMENT\)](#)

WindowsInstances

[Save Changes](#) [Cancel](#) [+ Another Network Security Group](#)

Wait for your windows Instance to be in a "running state". After that you can try to use Microsoft Remote Desktop Client to connect to your Windows Instance. For Mac users you might first need to install the Microsoft Remote Desktop application, you can find this in the App store.

You will again find the Public IP address, needed username and the initial windows password on the Instance's main page.

On the first login, you will be asked to change your password.

**Public IP Address:** 130.61.251.25 [Copy](#)

**Username:** opc

**Initial Password:** y9!E\*D2hFzNM0 [Hide](#) [Copy](#)



## SUMMARY

- The first thing you need in your Tenancy is a Compartment.
- You will need at least one Virtual Cloud Network with a public subnet to connect any instance to.
- When creating Compute instances, you can choose various **Images**, allowing you to select the correct operating system you desire
- When creating Compute instances, you can configure the Instance size based on the **shapes** available
- When creating a Linux based instance, you will need a SSH Key set
  - The public SSH key is used inside the created instance to validate access
  - The private SSH key is used by the SSH Client to connect to the instance
  - The private key should be stored securely! This is what gives you access to your instance.
- By default, only port 22 / SSH is allowed to any instance. To configure any other access, you have 2 choices:
  - Network Security list: This sets the permissions **for all instances inside a single subnet**
  - Network Security group: This sets the permissions for **individual instances assigned to the group**
- The Public IP Address and default username for login are displayed on the Instance's main overview page

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Fout! Gebruik het tabblad Start om Title toe te passen op de tekst die u hier wilt weergeven.

May 2121

Author: Richard.garsthagen@oracle.com

