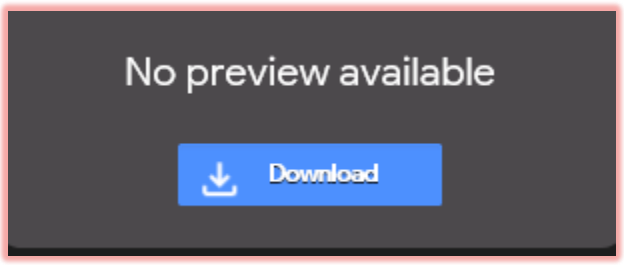
Practices for lab VM Setup

1. You need to have a Linux machine to create ssh keys or use PuttyGen to create the ssh keypair. Keep in mind the practices in future books on rest API , CLI , Terraform, Storage Gateway etc. you will need a Linux Instance (supported version).

2. I have created a Oracle Linux VM that meets all these. Kindly download the Oracle Linux VM available at www.tisyasolutions.com/oci-vm and is about 8GB in size. On visiting the url you will see the image as shown below



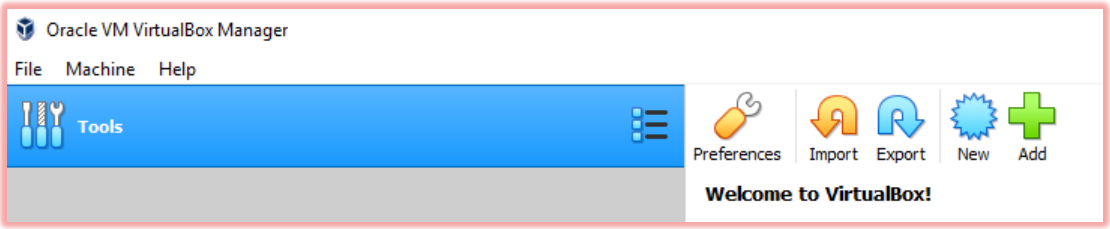
3. Click on Download to download the VM Image.

4. If you get an error that there are too many users trying to download hence please try again later, ensure you are logged into your Google Account and preferably use Chrome Browser, the VM Image will be downloaded.

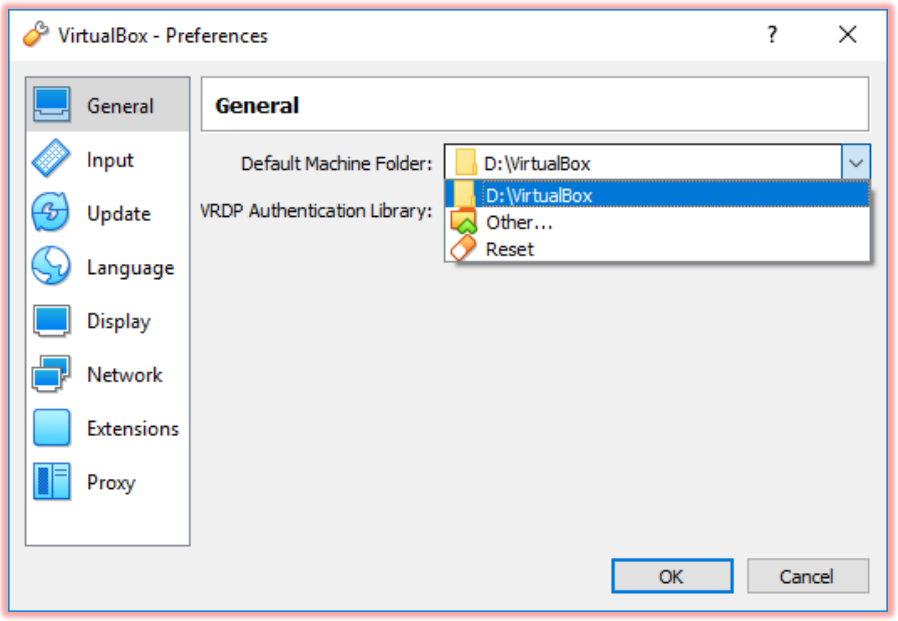
5. Hereafter this downloaded file is referred to as the VM Image.

6. You need to download and install VirtualBox from www.virtualbox.org . This book assumes you are using VirtualBox 6.0.4. Though the features may get added in future releases, the core features should be similar to the version used here.

7. Once you have installed VirtualBox, you can set preferences as to where you want your VMs to store their files. This is to be specified based on the Disk Space you have on your computer. You will need about 8 GB of Space to import the VM Image for this course. To set the preference, click on Preferences (icon) in VirtualBox

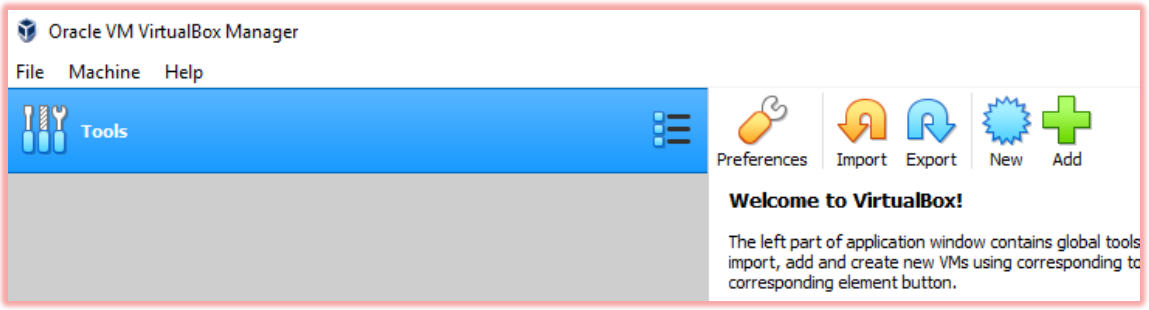


8. In the General Tab of the Preferences screen, choose the Directory in which you want to create the VM related files.

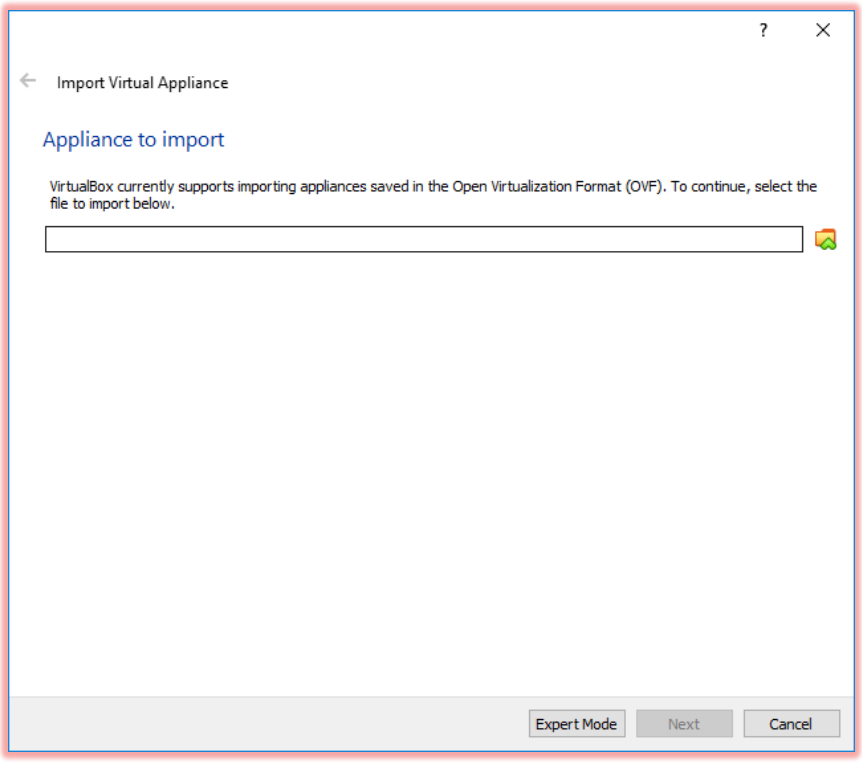


9. Once you have chosen the directory, you can click Ok to close the Preferences screen.

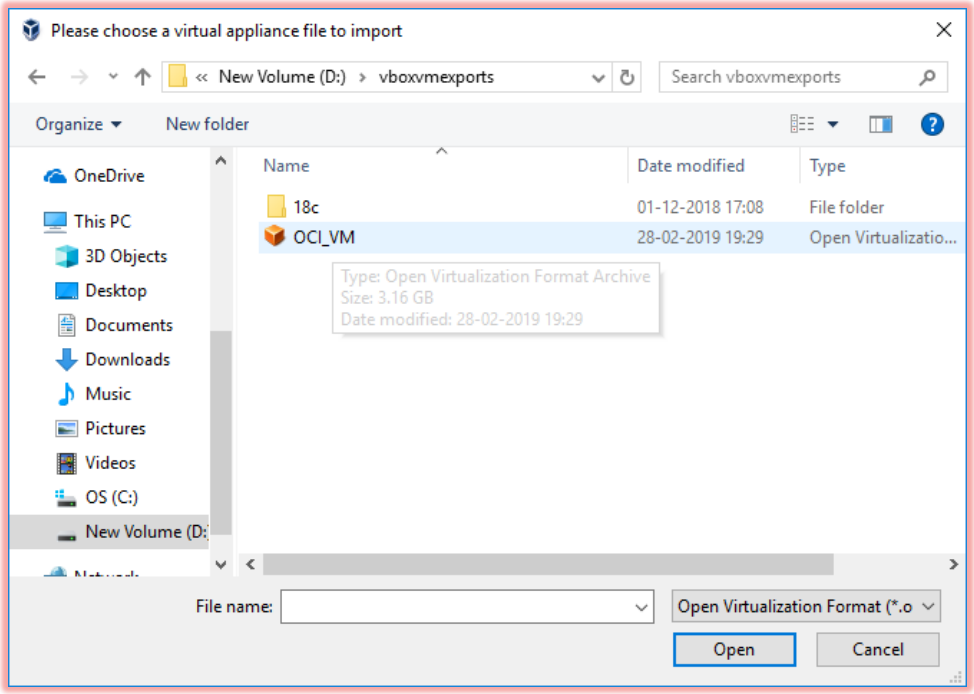
10. Now that you have set your preference, you can import the downloaded VM Image using the Import button(icon) available in VirtualBox.



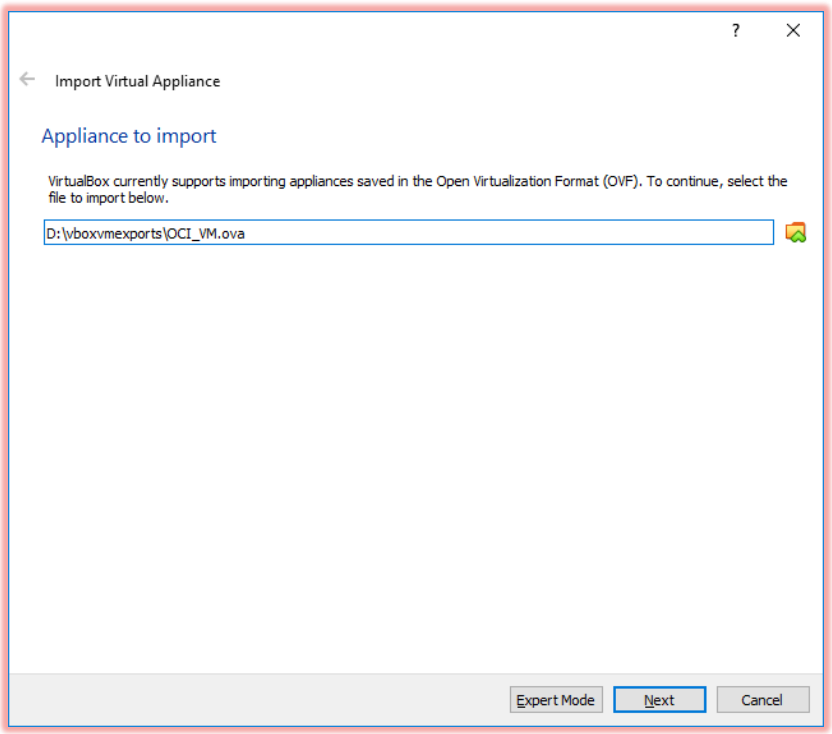
11. On clicking on the Import Button, you will get a pop up in which you need to specify the location of the VM Image that you want to import.



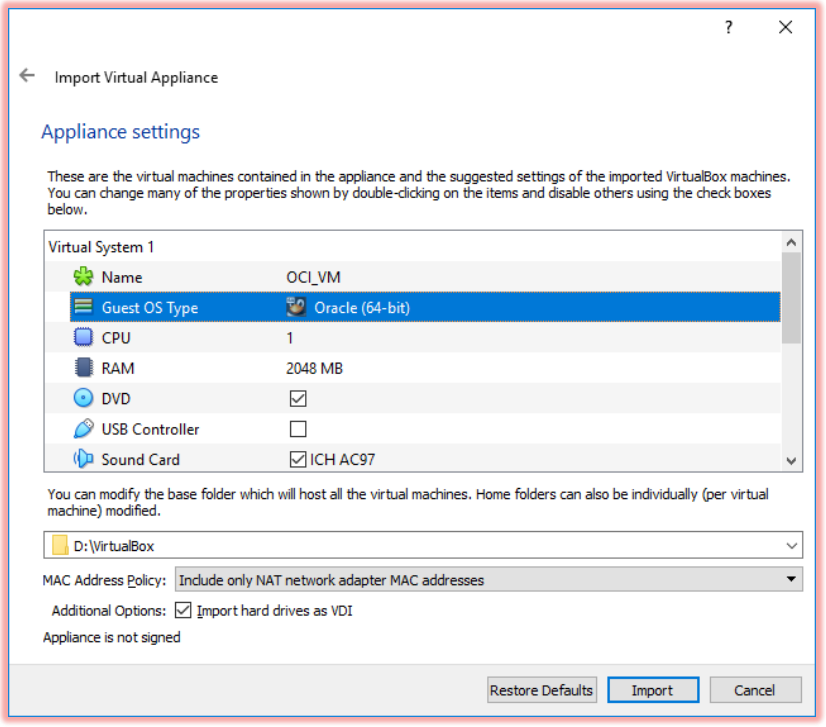
12. Click on the Folder Option available at the end of the Text Box and Navigate to the directory where you downloaded the VM Image and click on the VM Image.



13. Click Open. In the resulting screen click Next



14. The next screen should look like the below screenshot

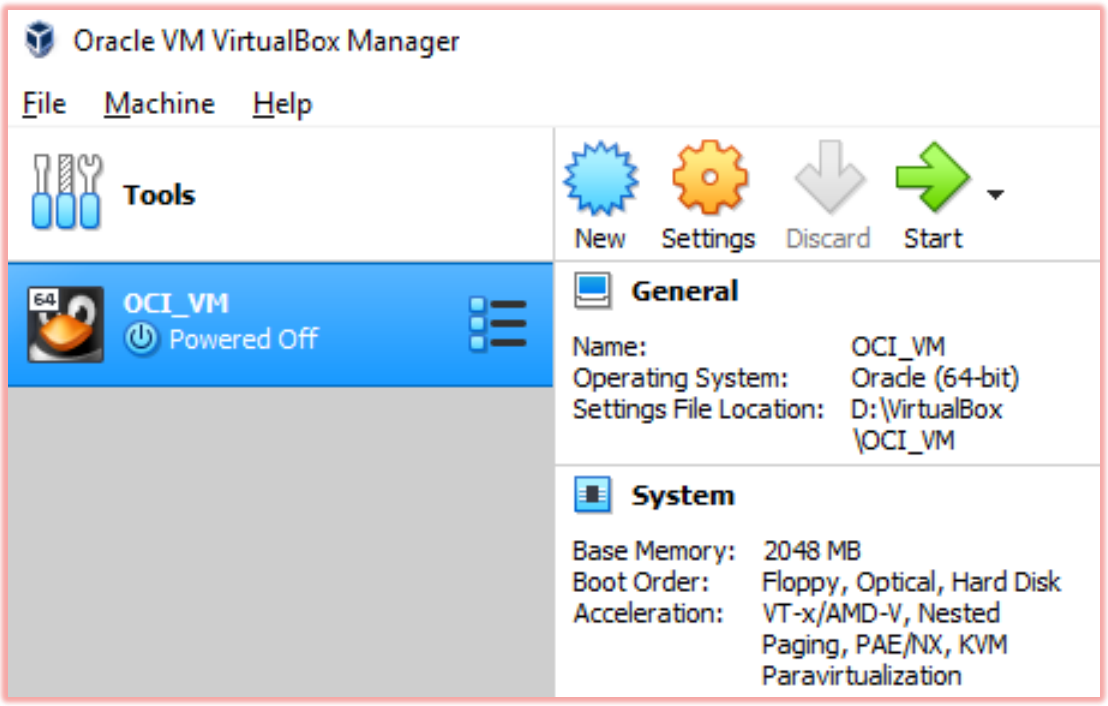


15. If you don't see the Guest OS Type as Oracle (64-bit), just check in the **BIOS** of your computer if **VT is Enabled** for the CPU. Only with VT enabled, 64 Bit OS will be supported in VirtualBox. You need to shut down and boot your computer and use the F2/F8 key to get to the BIOS option. The Function Key can vary from computer to computer, you need to look into the option when the computer boots up for you.

16. It is also required that no other **Hypervisor / Docker** based software is enabled on your Computer, you need to disable it so that Virtual Box can use the Virtualization features of your computer.

17. Click on Import, it will take a few of minutes to complete the import

18. Once the VM Image is imported, the VM is available and listed in VirtualBox as an entry below the Tools Menu as shown below



19. Click on the VM and Click on the Start Button (with Arrow, displayed on the top) in VirtualBox window.

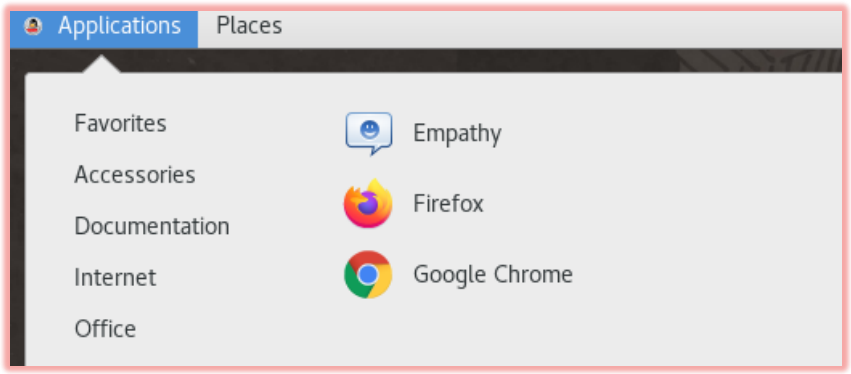
20. The VM boots up and prompts you to enter the username and password to login, the credential is

    Username – oracle
    Password - oracle

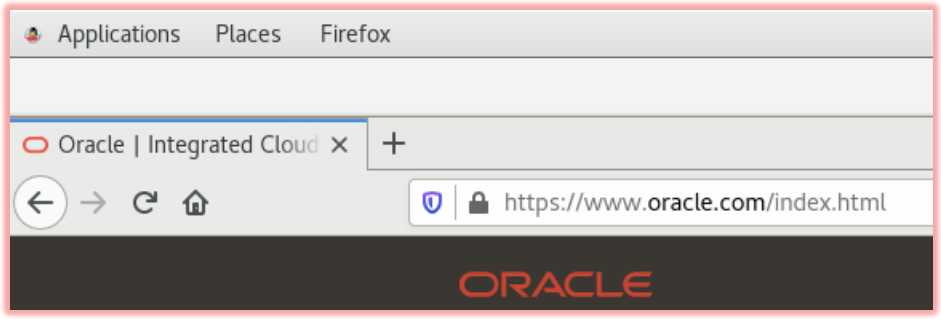
21. Enter the credentials and login to the Linux VM.

22. To facilitate ease of use, you can do all the practices with the OCI Web Console within the Linux VM using the Firefox or Chrome browser, so that you don't need to transfer the files between your VM and Laptop. Wherever possible it will be mentioned whether you can do the practice on your laptop/computer O/S browser or in the VM Firefox/Chrome Browser.

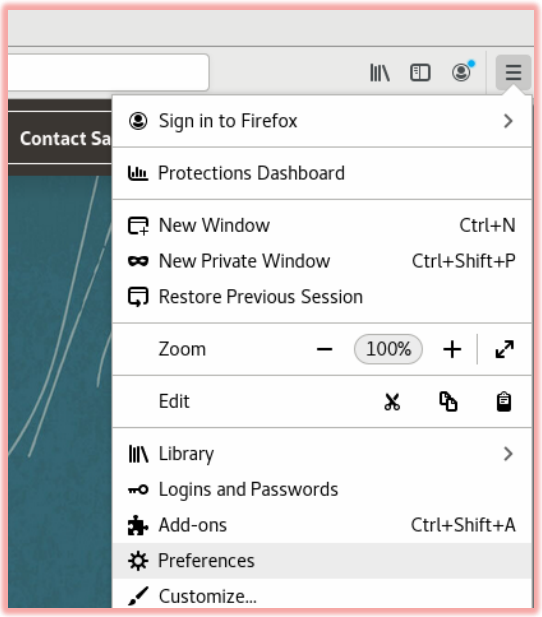
23. You need to ensure your Linux VM has internet Access. To do that, click on the Firefox or Chrome browser as shown below (Applications -> Internet -> Firefox or Chrome)



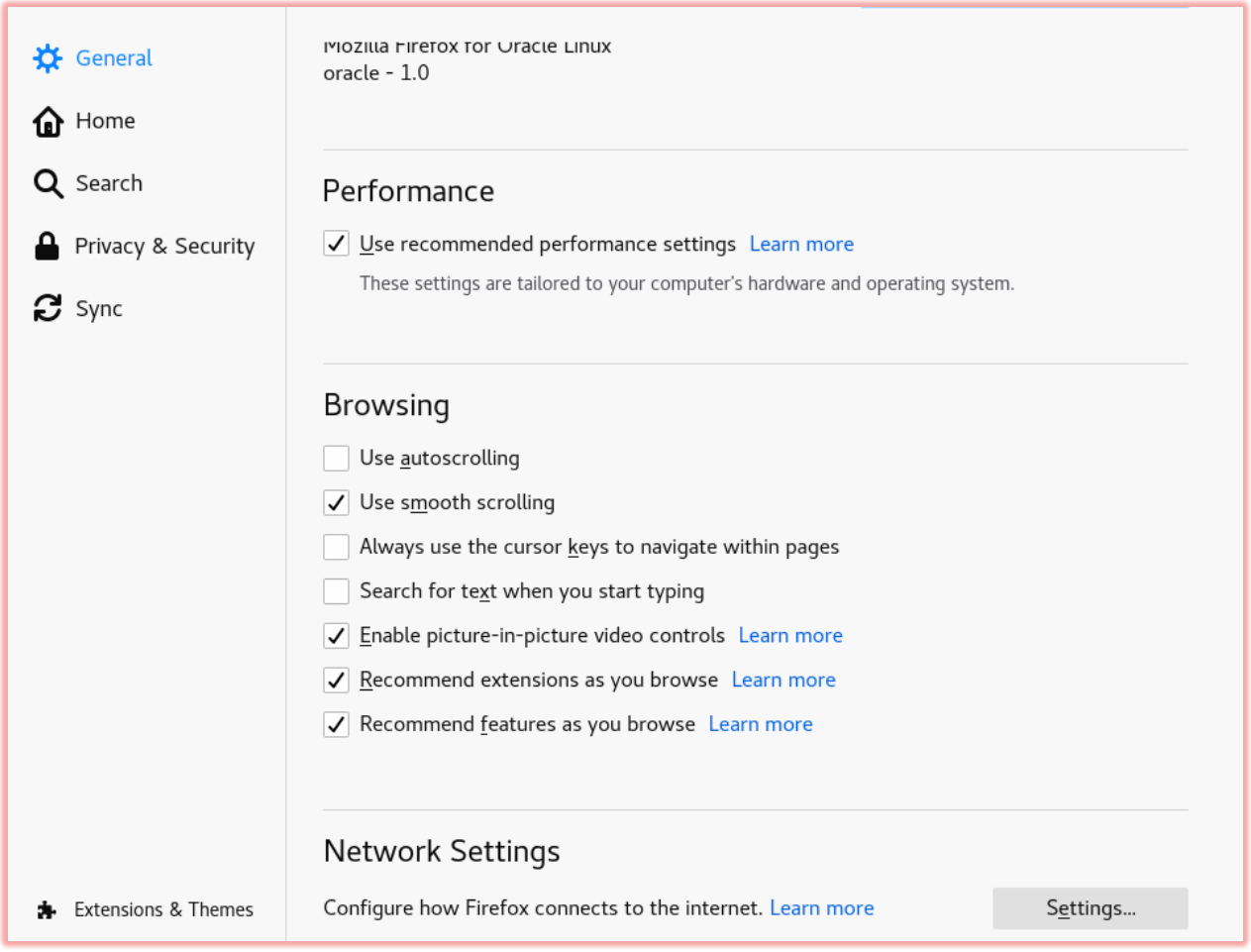
24. Enter a website and check you are able to access the internet. I have used the example of www.oracle.com



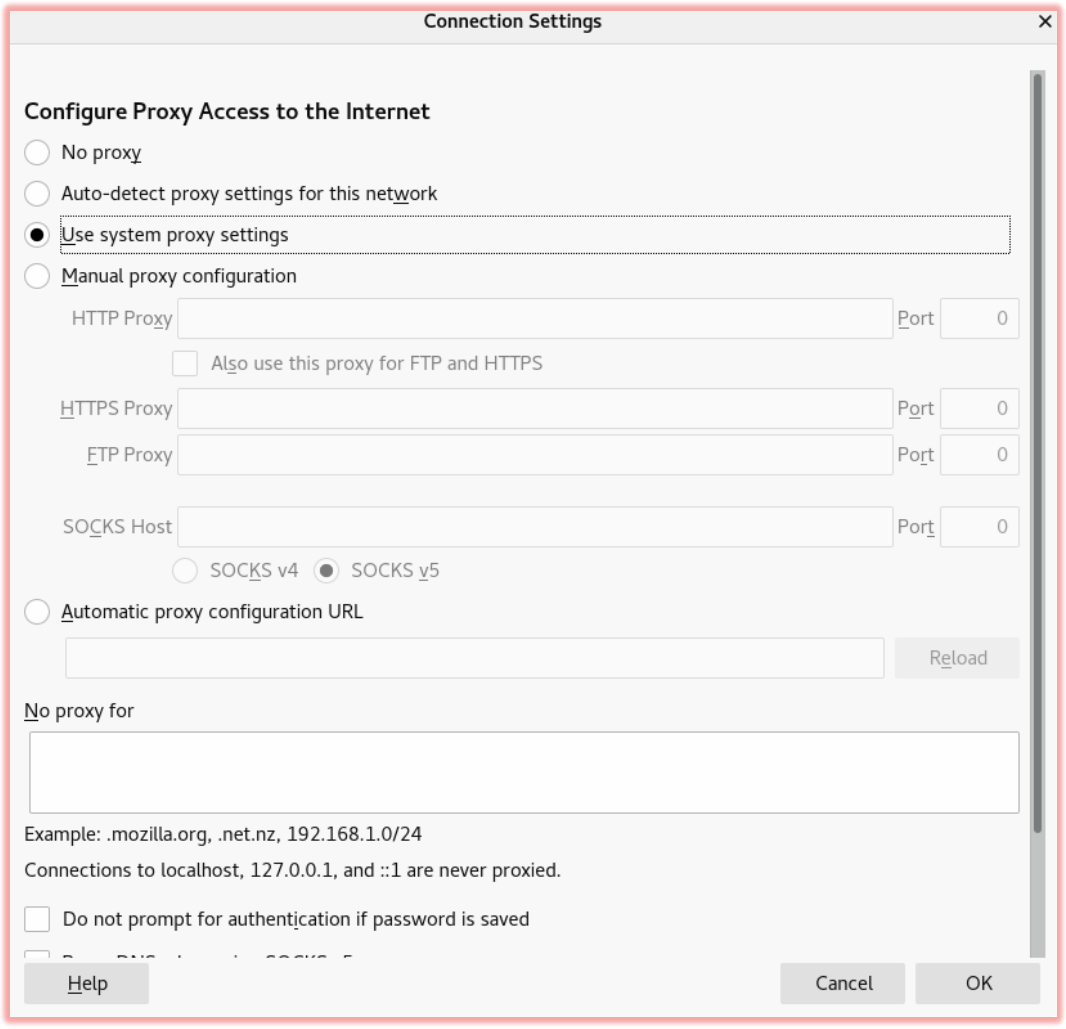
25. You may have to enter proxy settings (example given for Firefox in the next few steps) if you are behind a proxy server. If required specify it by clicking the 3 line menu on the Top Right in your Firefox browser, click on Preferences



26. In the preferences tab, within General, scroll down to Network Settings and click on Settings



27. In the Settings page, specify the proxy settings as required on your network to access the internet



28. Verify from the browser that you are able to access the internet.

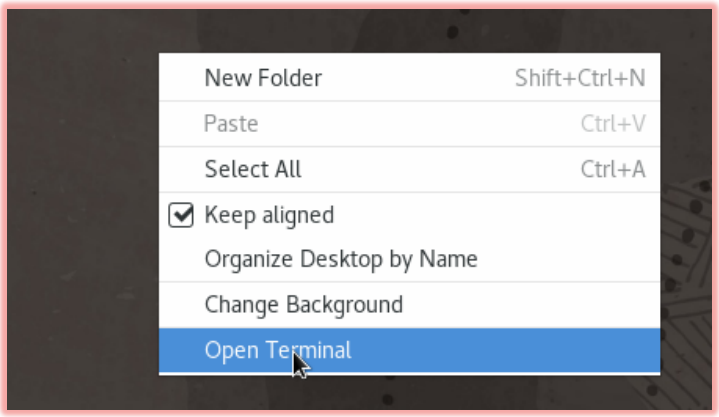
29. Once you have internet access in your VM, you can proceed to the next practice.

Practices for SSH Keys Creation

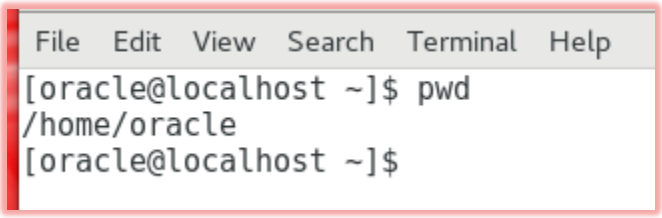
1. First you shall create an SSH key using the Linux VM you have on your computer. The purpose of SSH keys is to provide a Secure Connection to the compute instance.You can also look at the video on Youtube - https://youtu.be/2HnJFOMewJE to understand about SSH Key pair.

2. An SSH Key pair is a unique combination of Public Key and Private key, used to secure the ssh communication between a client and server. The Public Key is uploaded to the Server and the Private Key is used to connect to the server from a client.

3. Login to the Linux VM as the oracle user (password - oracle) Right click on the Linux VM desktop and click on Open Terminal



4. In the terminal check your current directory using pwd command as given in the screenshot below.



5. Now create a key with the following command

   ssh-keygen -b 2048 -t rsa

6. If you already have a pair of SSH keys, you can use that also, you don't need to generate the keys, but its recommended to create it to make it easy follow the instructions in this book.

7. This command will prompt for a few options.

   In the prompt to enter the File in which to save the key – Accept the default and press Enter
   In the prompt Enter Passphrase – Accept default (nothing) press enter
   In the prompt Enter same Passphrase – Accept default (nothing) press enter

8. The result should look like the screenshot below

```
[oracle@localhost ~]$ ssh-keygen -b 2048 -t rsa
Generating public/private rsa key pair.
Enter file in which to save the key (/home/oracle/.ssh/id_rsa):
Created directory '/home/oracle/.ssh'.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in /home/oracle/.ssh/id_rsa.
Your public key has been saved in /home/oracle/.ssh/id_rsa.pub.
The key fingerprint is:
SHA256:LyKLlWAUs75+9dyckL0XO+R3XXSoEeqwiDWkOi7Leyw oracle@localhost.localdomain
The key's randomart image is:
+---[RSA 2048]----+
|  o              |
|   +  .     .    |
|  o  o     . . . |
| o  . o . . . . o|
|  +. o oS*   o ..|
| .oo..o +.o +   .|
| .o.+..o.+.= o  o|
|oE.=.o .o.= = . o|
|.=*..       . o . |
+----[SHA256]-----+
```

9. To identify the keys that got created, navigate to the .ssh folder within your current folder with the command cd .ssh and list the contents with the command ls -a.

```
[oracle@localhost ~]$ cd .ssh
[oracle@localhost .ssh]$ ls -a
.  ..  id_rsa  id_rsa.pub
[oracle@localhost .ssh]$
```

10. You can also explicitly navigate to the directory with the command cd /home/oracle/.ssh

11. There should be 2 files **id_rsa** is the **Private Key** and **id_rsa.pub** is the **Public Key**

12. You will need both these keys for further practices also.

13. This completes this practice on creating the SSH Key pair.

14. You are now all set to start working with OCI