Experiment 11
Creating VM using Vagrant

1) Create a repo and initialise vagrant in it.

```
PS E:\VM> mkdir cicd_lab


    Directory: E:\VM


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
d-----        03-11-2020     11:04                cicd_lab


PS E:\VM> ls


    Directory: E:\VM


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
d-----        03-11-2020     11:04                cicd_lab
d-----        22-10-2020     01:04                LinuxReboot
da----        03-11-2020     10:51                Red Hat Enterprise Linux 8 64-bit
d-----        03-11-2020     10:51                RHEL
d-----        03-11-2020     10:51                Ubuntu 64-bit
d-----        03-11-2020     11:00                Vagrant


PS E:\VM> cd .\cicd_lab\
PS E:\VM\cicd_lab> vagrant init
A `Vagrantfile` has been placed in this directory. You are now
ready to `vagrant up` your first virtual environment! Please read
the comments in the Vagrantfile as well as documentation on
`vagrantup.com` for more information on using Vagrant.
PS E:\VM\cicd_lab> ls


    Directory: E:\VM\cicd_lab


Mode                 LastWriteTime         Length Name
----                 -------------         ------ ----
-a----        03-11-2020     11:05           3080 Vagrantfile
```

2) Configure Vagantfile.

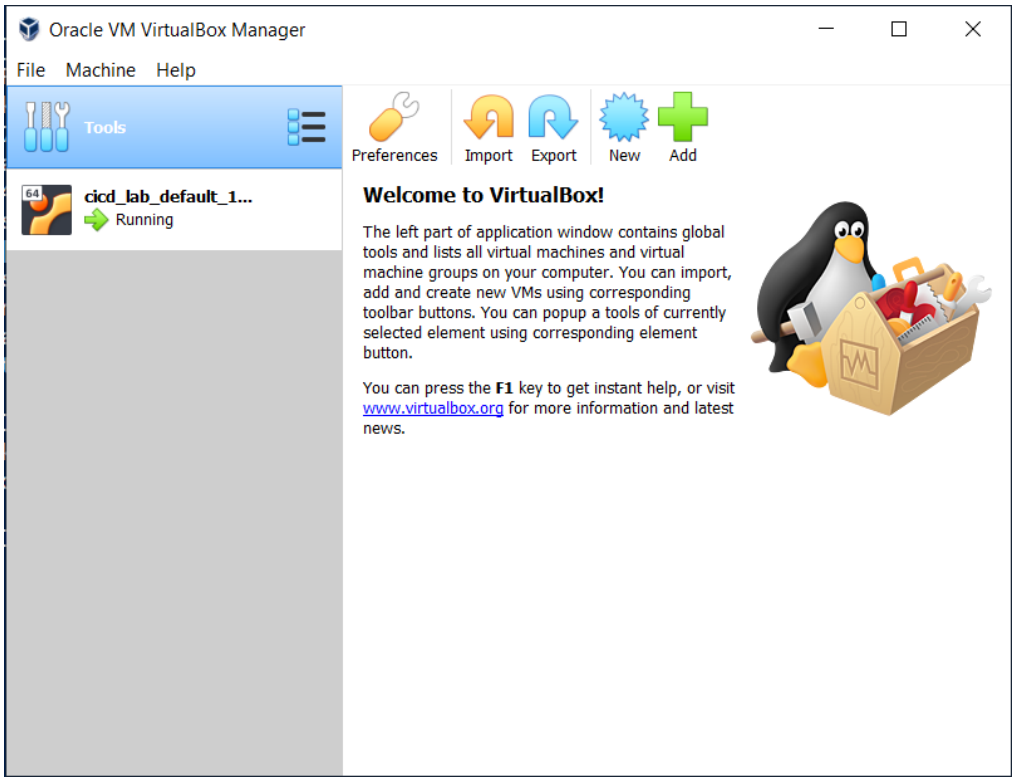
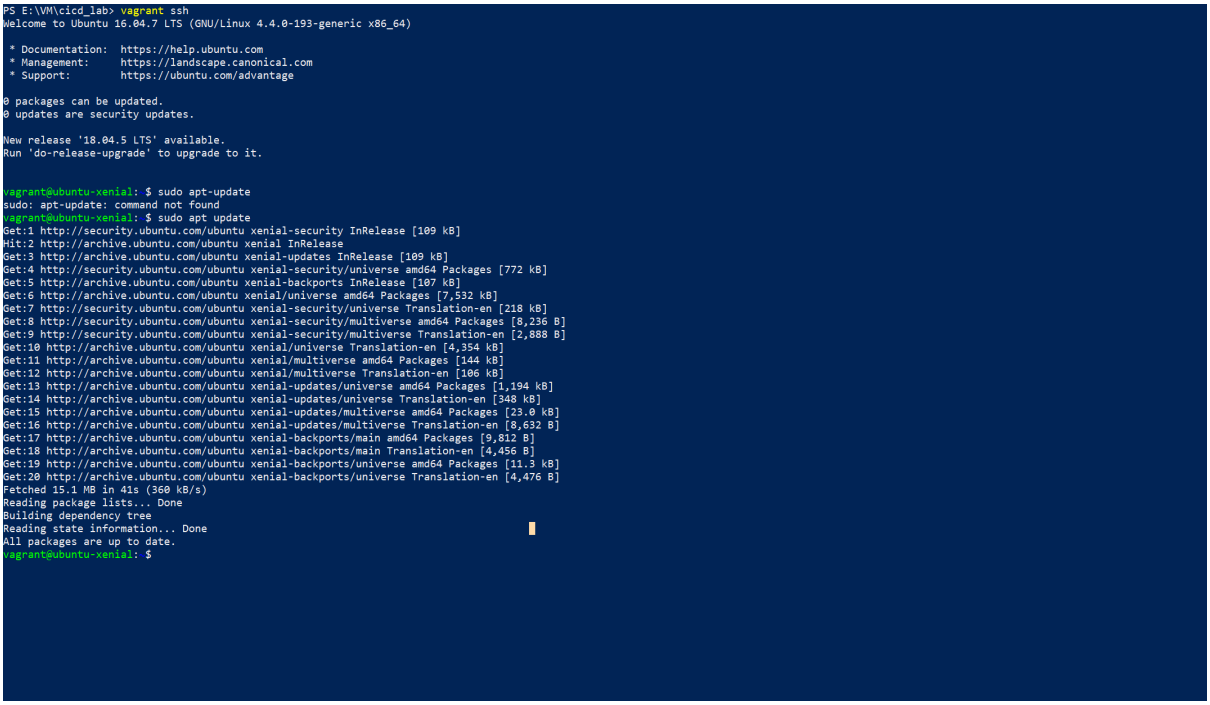
Vagrantfile

E: > VM > cicd_lab > Vagrantfile

```
# -*- mode: ruby -*-
# vi: set ft=ruby :

# All Vagrant configuration is done below. The "2" in Vagrant.configure
# configures the configuration version (we support older styles for
# backwards compatibility). Please don't change it unless you know what
# you're doing.
Vagrant.configure("2") do |config|
  # The most common configuration options are documented and commented below.
  # For a complete reference, please see the online documentation at
  # https://docs.vagrantup.com.

config.vm.box = "ubuntu/xenial64"

  # Every Vagrant development environment requires a box. You can search for
  # boxes at https://vagrantcloud.com/search.
  config.vm.box = "base"

  # Disable automatic box update checking. If you disable this, then
  # boxes will only be checked for updates when the user runs
  # `vagrant box outdated`. This is not recommended.
  # config.vm.box_check_update = false

  # Create a forwarded port mapping which allows access to a specific port
  # within the machine from a port on the host machine. In the example below,
  # accessing "localhost:8080" will access port 80 on the guest machine.
  # NOTE: This will enable public access to the opened port
  # config.vm.network "forwarded_port", guest: 80, host: 8080

  # Create a forwarded port mapping which allows access to a specific port
  # within the machine from a port on the host machine and only allow access
  # via 127.0.0.1 to disable public access
  # config.vm.network "forwarded_port", guest: 80, host: 8080, host_ip: "127.0.0.1"
```

3) Make the machine up using **vagrant up** command.

```
Windows PowerShell
PS E:\VM\cicd_lab> vagrant up
Bringing machine 'default' up with 'virtualbox' provider...
==> default: Box 'ubuntu/xenial64' could not be found. Attempting to find and install...
    default: Box Provider: virtualbox
    default: Box Version: >= 0
==> default: Loading metadata for box 'ubuntu/xenial64'
    default: URL: https://vagrantcloud.com/ubuntu/xenial64
==> default: Adding box 'ubuntu/xenial64' (v20201102.0.0) for provider: virtualbox
    default: Downloading: https://vagrantcloud.com/ubuntu/boxes/xenial64/versions/20201102.0.0/providers/virtualbox.box
Download redirected to host: cloud-images.ubuntu.com
    default:
==> default: Successfully added box 'ubuntu/xenial64' (v20201102.0.0) for 'virtualbox'!
==> default: Importing base box 'ubuntu/xenial64'...
==> default: Matching MAC address for NAT networking...
==> default: Checking if box 'ubuntu/xenial64' version '20201102.0.0' is up to date...
==> default: Setting the name of the VM: cicd_lab_default_1604386724909_90987
Vagrant is currently configured to create VirtualBox synced folders with
the `SharedFoldersEnableSymlinksCreate` option enabled. If the Vagrant
guest is not trusted, you may want to disable this option. For more
information on this option, please refer to the VirtualBox manual:

  https://www.virtualbox.org/manual/ch04.html#sharedfolders

This option can be disabled globally with an environment variable:

  VAGRANT_DISABLE_VBOXSYMLINKCREATE=1

or on a per folder basis within the Vagrantfile:

  config.vm.synced_folder '/host/path', '/guest/path', SharedFoldersEnableSymlinksCreate: false
==> default: Clearing any previously set network interfaces...
==> default: Preparing network interfaces based on configuration...
    default: Adapter 1: nat
==> default: Forwarding ports...
    default: 22 (guest) => 2222 (host) (adapter 1)
==> default: Running 'pre-boot' VM customizations...
==> default: Booting VM...
==> default: Waiting for machine to boot. This may take a few minutes...
    default: SSH address: 127.0.0.1:2222
    default: SSH username: vagrant
    default: SSH auth method: private key
    default: Warning: Connection aborted. Retrying...
    default:
    default: Vagrant insecure key detected. Vagrant will automatically replace
    default: this with a newly generated keypair for better security.
    default:
    default: Inserting generated public key within guest...
    default: Removing insecure key from the guest if it's present...
    default: Key inserted! Disconnecting and reconnecting using new SSH key...
==> default: Machine booted and ready!
==> default: Checking for guest additions in VM...
    default: The guest additions on this VM do not match the installed version of
    default: VirtualBox! In most cases this is fine, but in rare cases it can
    default: prevent things such as shared folders from working properly. If you see
    default: shared folder errors, please make sure the guest additions within the
    default: virtual machine match the version of VirtualBox you have installed on
    default: your host and reload your VM.
    default:
    default: Guest Additions Version: 5.1.38
```



4) Connect via **vagrant ssh** command and perform the tasks on the machine.