

# Experiment 11

## Creating VM using Vagrant

- 1) Create a repo and initialise vagrant in it.

```
PS E:\VM> mkdir cisd_lab

Directory: E:\VM

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

PS E:\VM> ls

Directory: E:\VM

Mode                LastWriteTime         Length Name
----                -
d-----          03-11-2020    11:04             cisd_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 .\cisd_lab\
PS E:\VM\cisd_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\cisd_lab> ls

Directory: E:\VM\cisd_lab

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

- 2) Configure Vagrantfile.

```

E: > VM > cisd_lab > Vagrantfile
1  # -*- mode: ruby -*-
2  # vi: set ft=ruby :
3
4  # All Vagrant configuration is done below. The "2" in Vagrant.configure
5  # configures the configuration version (we support older styles for
6  # backwards compatibility). Please don't change it unless you know what
7  # you're doing.
8  Vagrant.configure("2") do |config|
9
10     # The most common configuration options are documented and commented below.
11     # For a complete reference, please see the online documentation at
12     # https://docs.vagrantup.com.
13
14     config.vm.box = "ubuntu/xenial64"
15
16     # Every Vagrant development environment requires a box. You can search for
17     # boxes at https://vagrantcloud.com/search.
18     config.vm.box = "base"
19
20     # Disable automatic box update checking. If you disable this, then
21     # boxes will only be checked for updates when the user runs
22     # 'vagrant box outdated'. This is not recommended.
23     # config.vm.box_check_update = false
24
25     # Create a forwarded port mapping which allows access to a specific port
26     # within the machine from a port on the host machine. In the example below,
27     # accessing "localhost:8080" will access port 80 on the guest machine.
28     # NOTE: This will enable public access to the opened port
29     # config.vm.network "forwarded_port", guest: 80, host: 8080
30
31     # Create a forwarded port mapping which allows access to a specific port
32     # within the machine from a port on the host machine and only allow access
33     # via 127.0.0.1 to disable public access
34     # config.vm.network "forwarded_port", guest: 80, host: 8080, host_ip: "127.0.0.1"
35
36     # Create a private network which allows host-only access to the machine
```

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

```
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_1604385724909_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:

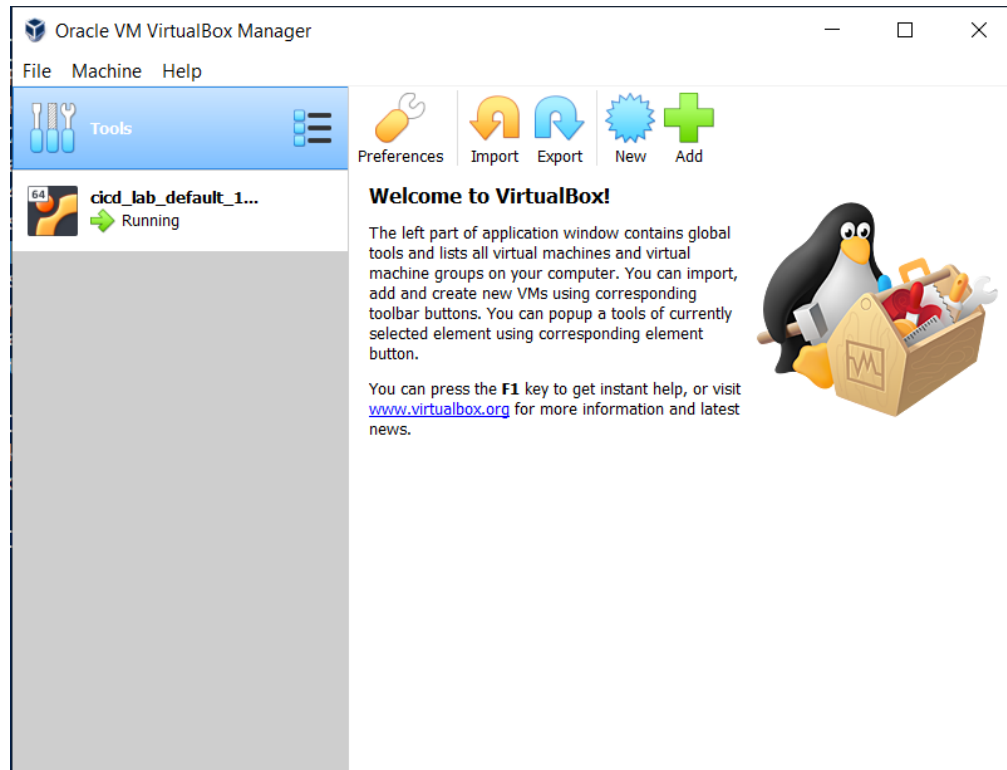
    https://www.virtualbox.org/manual/ch04.html#sharedfolders

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.

```
PS E:\VM\cicd_lab> vagrant ssh
Welcome to Ubuntu 16.04.7 LTS (GNU/Linux 4.4.0-193-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

0 packages can be updated.
0 updates are security updates.

New release '18.04.5 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

vagrant@ubuntu-xenial:~$ sudo apt-update
sudo: apt-update: command not found
vagrant@ubuntu-xenial:~$ sudo apt update
Get:1 http://security.ubuntu.com/ubuntu xenial-security InRelease [109 kB]
Hit:2 http://archive.ubuntu.com/ubuntu xenial InRelease
Get:3 http://archive.ubuntu.com/ubuntu xenial-updates InRelease [109 kB]
Get:4 http://security.ubuntu.com/ubuntu xenial-security/universe amd64 Packages [772 kB]
Get:5 http://archive.ubuntu.com/ubuntu xenial-backports InRelease [187 kB]
Get:6 http://archive.ubuntu.com/ubuntu xenial/universe amd64 Packages [7,532 kB]
Get:7 http://security.ubuntu.com/ubuntu xenial-security/universe Translation-en [218 kB]
Get:8 http://security.ubuntu.com/ubuntu xenial-security/multiverse amd64 Packages [8,236 B]
Get:9 http://security.ubuntu.com/ubuntu xenial-security/multiverse Translation-en [2,888 B]
Get:10 http://archive.ubuntu.com/ubuntu xenial/universe Translation-en [4,354 kB]
Get:11 http://archive.ubuntu.com/ubuntu xenial/multiverse amd64 Packages [344 kB]
Get:12 http://archive.ubuntu.com/ubuntu xenial/multiverse Translation-en [106 kB]
Get:13 http://archive.ubuntu.com/ubuntu xenial-updates/universe amd64 Packages [1,194 kB]
Get:14 http://archive.ubuntu.com/ubuntu xenial-updates/universe Translation-en [348 kB]
Get:15 http://archive.ubuntu.com/ubuntu xenial-updates/multiverse amd64 Packages [23.0 kB]
Get:16 http://archive.ubuntu.com/ubuntu xenial-updates/multiverse Translation-en [8,632 B]
Get:17 http://archive.ubuntu.com/ubuntu xenial-backports/main amd64 Packages [9,812 B]
Get:18 http://archive.ubuntu.com/ubuntu xenial-backports/main Translation-en [4,456 B]
Get:19 http://archive.ubuntu.com/ubuntu xenial-backports/universe amd64 Packages [11.3 kB]
Get:20 http://archive.ubuntu.com/ubuntu xenial-backports/universe Translation-en [4,476 B]
Fetched 15.1 MB in 41s (360 kB/s)
Reading package lists... Done
Building dependency tree
Reading state information... Done
All packages are up to date.
vagrant@ubuntu-xenial:~$
```