

Hand On Lab 2 : Installing Docker CE on Ubuntu Server 18.04

Duration: 30 Minutes

Objectives:

To learn installation of docker & docker-compose on Ubuntu box.

Prerequisites:

1. Azure Subscription
2. Internet Connection
3. SSH Client (PuTTY or Ubuntu Bash or Git Bash for Windows client)

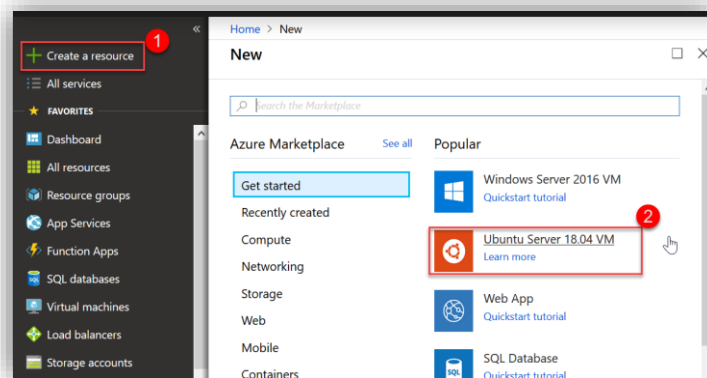
NOTE : MacOS and Linux have built in ssh client.

4. Web Browser (Any)

Steps :

I. Create Azure VM for Ubuntu Server 18.04 LTS

1. Login into your azure portal (<https://portal.azure.com>)
2. Click on “Create Resource” to start creating new windows VM.
Click on “Ubuntu Server 18.04”



3. Create new / Use existing resource group, enter name of VM as “DockerVM2” and then scroll down for more settings.

Home > New > Create a virtual machine

Create a virtual machine

resources.

* Subscription Visual Studio Enterprise 1

* Resource group test 3
[Create new](#)

INSTANCE DETAILS

* Virtual machine name DockerVM2 2 ✓

* Region Southeast Asia

Availability options No infrastructure redundancy required

* Image Ubuntu Server 18.04 LTS
[Browse all images and disks](#)

* Size Standard D2s v3
2 vcpus, 8 GB memory
[Change size](#)

[Review + create](#) [Previous](#) [Next : Disks >](#)

4. Choose “Password” for authentication and then enter user/password. Also need to open port 22 for SSH access.

Home > New > Create a virtual machine

Create a virtual machine

ADMINISTRATOR ACCOUNT

Authentication type ☒ Password 1 ☐ SSH public key

* Username dockeradmin 2 ✓

* Password ✓

* Confirm password ✓

Login with Azure Active Directory (Preview) ☐ On ☒ Off

INBOUND PORT RULES

Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab. 3

* Public inbound ports ☐ None ☒ Allow selected ports

* Select inbound ports 4
SSH

[Review + create](#) [Previous](#) [Next : Disks >](#) 5

Click on “Next: Disk >” for disk configuration.

5. Click “Next: Networking >” to accept the defaults and skip disk management.
6. Click “Next: Management >” to accept the defaults and skip networking.
7. Now, Turn Off boot diagnostic and click on “Review + Create”

Basics Disks Networking **Management** Guest config Tags Review + create

Configure monitoring and management options for your VM.

MONITORING

Boot diagnostics *i* ☐ On ☒ Off

OS guest diagnostics *i* ☐ On ☒ Off

IDENTITY

Managed service identity *i* ☐ On ☒ Off

AUTO-SHUTDOWN

Enable auto-shutdown *i* ☐ On ☒ Off

BACKUP

Enable backup *i* ☐ On ☒ Off

Review + create Previous Next : Guest config >

- Click "Create" on final validation page to start provisioning the VM.

Home > New > Create a virtual machine

Create a virtual machine

✓ Validation passed

Basics Disks Networking Management Guest config Tags **Review + create**

PRODUCT DETAILS

Ubuntu Server 18.04 LTS
by Canonical
[Terms of use](#) | [Privacy policy](#)

Standard D2s v3
by Microsoft
[Terms of use](#) | [Privacy policy](#)

Pricing not available for this offering
View Pricing details for more information.

Subscription credits apply *i*
8.2620 INR/hr
[Pricing for other VM sizes](#)

TERMS

By clicking "Create", I (a) agree to the legal terms and privacy statement(s) associated with the Marketplace offering(s) listed above; (b) authorize Microsoft to bill my current payment method for the fees associated with the offering(s), with the same billing frequency as my Azure subscription; and (c) agree that Microsoft may share my contact, usage and transactional information with the provider(s) of the offering(s) for support, billing and other transactional activities. Microsoft does not provide rights for

Create Previous Next Download a template for automation

- Click on "Go to resource" once deployment finishes.
- Click on connect to retrieve ssh connection parameters

Home > CreateVm-Canonical.UbuntuServer-18.04-LTS-20180924151621 - Overview > DockerVM2

DockerVM2
Virtual machine

Search (Ctrl + /)

Connect Start Restart Stop

Resource group (change)
test

Status
Running

Location
Southeast Asia

Tags (change)
[Click here to add tags](#)

Connect to virtual machine
DockerVM2

RDP **SSH**

To connect to your virtual machine via SSH, select an IP address, optionally change the port number, and use one of the following commands:

* IP address
Public IP address (13.76.4.125)

* Port number
22

Login using VM local account *i*
ssh dockeradmin@13.76.4.125

i Inbound traffic to the Public IP address may be blocked. You can update inbound port rules in the **VM Network** page.

II. Installation of Docker CE & docker-compose

1. Open Ubuntu bash (on Windows 10 pro) or Git Bash (on all windows)
2. Enter ssh connection string copied from step 10.

Then enter “yes” when prompted

Enter password when prompted for password

NOTE : Linux terminal should never echo password or any masked character (*).

```
mahendra@Inspiron-13: ~$ ssh dockeradmin@13.76.4.125
The authenticity of host '13.76.4.125 (13.76.4.125)' can't be established.
ECDSA key fingerprint is SHA256:pZISzxec2MQUts5Qb8oDOKqwwC1CKLxcJHp1GP4c.
Are you sure you want to continue connecting (yes/no)? yes
Warning: Permanently added '13.76.4.125' (ECDSA) to the list of known hosts.
dockeradmin@13.76.4.125's password:
```

3. Try running “docker info” command to check if docker is pre-installed. You should get following message:

```
dockeradmin@DockerVM2:~$ docker info

Command 'docker' not found, but can be installed with:

sudo snap install docker # version 17.06.2-ce, or
sudo apt install docker.io

See 'snap info docker' for additional versions.

dockeradmin@DockerVM2:~$
```

4. As the message clearly suggests, use apt command to install docker.

```
dockeradmin@DockerVM2:~$ sudo apt install -y docker.io
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  bridge-utils cgroupfs-mount libltdl7 ubuntu-fan
Suggested packages:
  ifupdown aufs-tools debootstrap docker-doc rinse zfs-fuse | zfsutils
The following NEW packages will be installed:
  bridge-utils cgroupfs-mount docker.io libltdl7 ubuntu-fan
```

NOTE : the additional “-y” is to suppress prompt which confirms installation.

5. Use command to enable current user to access docker cli without “sudo”

\$ sudo usermod -aG docker \$USER

```
dockeradmin@DockerVM2:~$ sudo usermod -aG docker $USER
dockeradmin@DockerVM2:~$
```

6. Now, logout and login back [Linux Admins : reload current bash session]
Run command “exit” and then “ssh ...” to reconnect

```
dockeradmin@DockerVM2:~$ sudo usermod -aG docker $USER
dockeradmin@DockerVM2:~$ exit
logout
Connection to 13.76.4.125 closed.
mahendra@Inspiron-13:~$ ssh dockeradmin@13.76.4.125
dockeradmin@13.76.4.125's password:
```

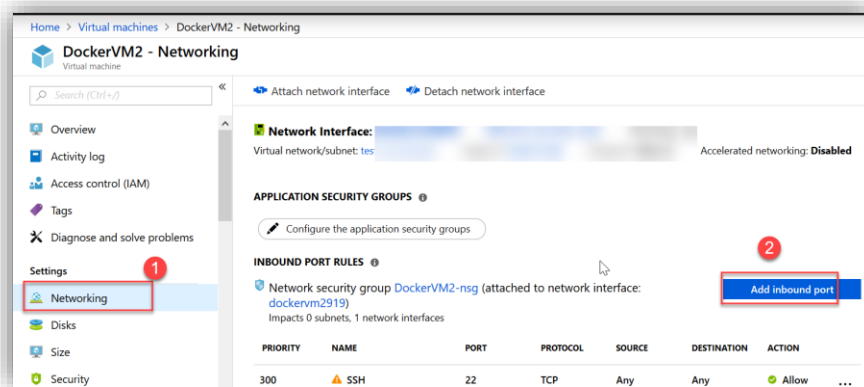
7. Test docker installation with command “docker info”

```
dockeradmin@DockerVM2:~$ docker info
Containers: 0
  Running: 0
  Paused: 0
  Stopped: 0
Images: 0
Server Version: 17.12.1-ce
Storage Driver: overlay2
  Backing Filesystem: extfs
  Supports d_type: true
  Native Overlay Diff: false
Logging Driver: json-file
Cgroup Driver: cgroupfs
Plugins:
  Volume: local
  Network: bridge host macvlan null overlay
  Log: awslogs fluentd gcplogs gelf journald json-file logentries splunk
Swarm: inactive
Runtimes: runc
```

8. Install “docker-compose” using following command:

\$ sudo apt install -y docker-compose

9. Few additional ports are required for next few HOLs, use portal to open them



10. In “Source port ranges” type “*” and in target port ranges type “8000” then click “Apply”

* Source ⓘ
Any

* Source port ranges ⓘ
*

* Destination ⓘ
Any

* Destination port ranges ⓘ
8000

* Protocol
Any TCP UDP

* Action
Allow Deny

* Priority ⓘ

11. Stop the VM from Azure portal

