Step 1: Create a Virtual Machine in Azure

1. Log in to the Azure Portal:

o Go to the <u>Azure Portal</u> and sign in with your account.

2. Create a New Virtual Machine:

o In the Azure Portal, click on "Create a resource" from the left-hand menu.

3. Configure the VM Basics:

- o **Subscription**: Choose your subscription.
- **Resource Group**: You can either create a new resource group or select an existing one.
- o **Virtual Machine Name**: Give your VM a name.
- o **Region**: Select **"West US"** from the dropdown menu.
- **Availability Options**: Choose according to your needs (No infrastructure redundancy, Availability zone, etc.).
- o **Image**: Select **"Ubuntu"** from the list of available images (choose the specific version you need, e.g., Ubuntu 20.04 LTS).
- o **Size**: Choose the VM size based on your requirements.

4. Configure Administrator Account:

- Choose the Authentication type (SSH public key or password). If using SSH, you'll need to generate an SSH key pair if you haven't already.
- o Enter the **Username** and **SSH public key** (if applicable).

5. **Configure Networking**:

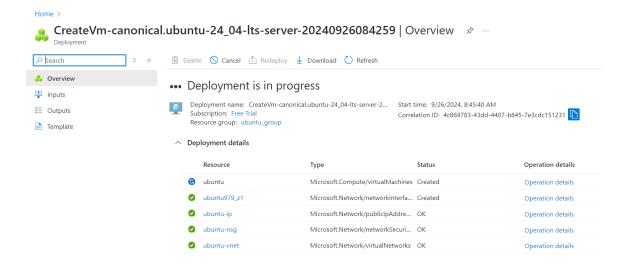
- Under the **Networking** tab, ensure a new virtual network and subnet are created or select an existing one.
- o Make sure to allow **Public IP** to connect to your VM.

6. **Open SSH Port**:

 In the Networking section, add an inbound port rule to allow SSH (port 22) and HTTPS (port 80)

7. Review + Create:

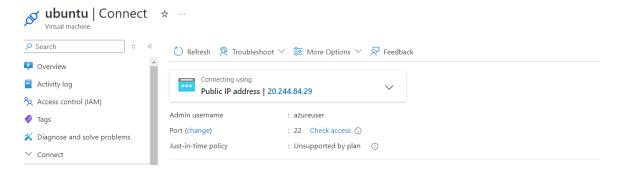
 Review your settings and click "Create" to provision the VM. This may take a few minutes.



Step 2: Connect to the Linux VM using Terminal

1. Get the Public IP Address:

- Once the VM is created, go to the "Overview" page of your VM in the Azure Portal.
- o Note the **Public IP address** of the VM.

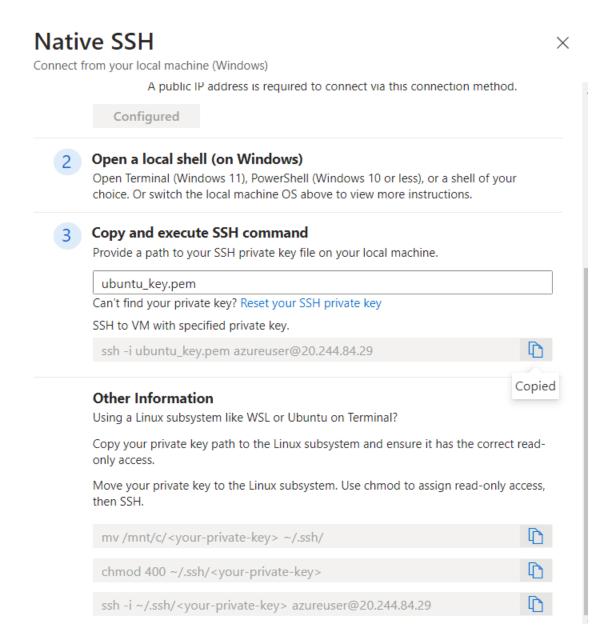


2. **Open Terminal**:

 On your local machine, open a terminal (Linux, macOS, or Windows with WSL).

3. Connect to the VM:

• Use the following command to connect via SSH:



4. Accept the SSH Key:

The first time you connect, you'll be asked to confirm the authenticity of the host. Type "yes" and hit Enter.

```
Microsoft Windows [Version 10.0.22631.4169]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Mohd Shahid\Downloads>ssh -i ubuntu_key.pem azureuser@20.244.84.29
The authenticity of host '20.244.84.29 (20.244.84.29)' can't be established.
ED25519 key fingerprint is SHA256:4fA3F09zmhQZqMWLJteU0fMl/9dm04iFCuVxz7LxbzE.
This key is not known by any other names
Are you sure you want to continue connecting (yes/no/[fingerprint])?
```

o If you used a password for authentication, enter it when prompted.

```
System information as of Thu Sep 26 03:20:44 UTC 2024
                                                         112
 System load:
               0.09
                                 Processes:
               5.0% of 28.02GB
 Usage of /:
                                 Users logged in:
 Memory usage: 28%
                                 IPv4 address for eth0: 10.0.0.4
 Swap usage:
xpanded Security Maintenance for Applications is not enabled.
 updates can be applied immediately.
nable ESM Apps to receive additional future security updates.
ee https://ubuntu.com/esm or run: sudo pro status
he list of available updates is more than a week old.
o check for new updates run: sudo apt update
he programs included with the Ubuntu system are free software;
he exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.
buntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
upplicable law.
o run a command as administrator (user "root"), use "sudo <command>".
ee "man sudo_root" for details.
zureuser@ubuntu:~$
```

Step 2: Install Apache 2 Software

1. Update the Package Index:

Run the following command to update the package index:

sudo apt update

```
root@ubuntu:/home/azureuser# apt update
it:1 http://azure.archive.ubuntu.com/ubuntu noble InRelease
et:2 http://azure.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
et:3 http://azure.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
et:4 http://azure.archive.ubuntu.com/ubuntu noble-security InRelease [126 kB]
et:5 http://azure.archive.ubuntu.com/ubuntu noble/universe amd64 Packages [15.0 MB]
et:6 http://azure.archive.ubuntu.com/ubuntu noble/universe Translation-en [5982 kB]
et:7 http://azure.archive.ubuntu.com/ubuntu noble/universe amd64 Components [3871 kB]
et:8 http://azure.archive.ubuntu.com/ubuntu noble/multiverse amd64 c-n-f Metadata [301 kB]
et:9 http://azure.archive.ubuntu.com/ubuntu noble/multiverse Translation-en [118 kB]
et:10 http://azure.archive.ubuntu.com/ubuntu noble/multiverse amd64 Components [35.0 kB]
et:11 http://azure.archive.ubuntu.com/ubuntu noble/multiverse amd64 Components [35.0 kB]
et:12 http://azure.archive.ubuntu.com/ubuntu noble/multiverse amd64 Components [35.0 kB]
et:13 http://azure.archive.ubuntu.com/ubuntu noble/multiverse amd64 Components [35.0 kB]
et:14 http://azure.archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [551 kB]
et:14 http://azure.archive.ubuntu.com/ubuntu noble-updates/main Translation-en [129 kB]
```

2. Install Apache 2:

o Install the Apache 2 software with the following command:

sudo apt install apache2 -y

```
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
    apache2-bin apache2-data apache2-utils libapr1t64 libaprutil1-dbd-sqlite3 libaprutil1-ldap l:
Suggested packages:
    apache2-doc apache2-suexec-pristine | apache2-suexec-custom www-browser
The following NEW packages will be installed:
    apache2 apache2-bin apache2-data apache2-utils libapr1t64 libaprutil1-dbd-sqlite3 libaprutil1
0 upgraded, 10 newly installed, 0 to remove and 29 not upgraded.
Need to get 2083 kB of archives.
After this operation, 8094 kB of additional disk space will be used.
Get:1 http://azure.archive.ubuntu.com/ubuntu noble/main amd64 libaprutil164 amd64 1.7.2-3.1build2
Get:2 http://azure.archive.ubuntu.com/ubuntu noble/main amd64 libaprutil1-dbd-sqlite3 amd64 1.6.3-1.1ub
Get:3 http://azure.archive.ubuntu.com/ubuntu noble/main amd64 libaprutil1-ldap amd64 1.6.3-1.1u
Get:5 http://azure.archive.ubuntu.com/ubuntu noble/main amd64 libaprutil1-ldap amd64 1.6.3-1.1u
```

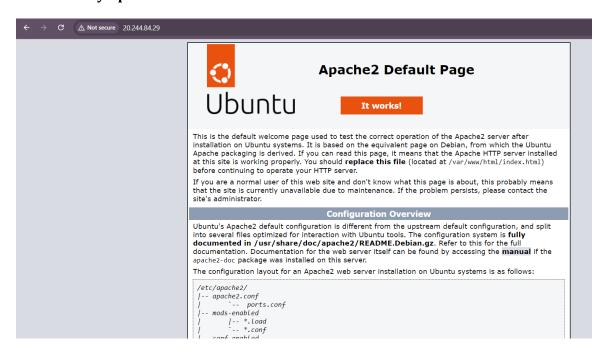
3. Start Apache Service:

Start the Apache service and enable it to start on boot:

sudo systemctl start apache2

sudo systemctl enable apache2

4. Verify Apache Installation:



Step 3: Create an Image Out of the VM

- o Go to the Azure portal and select your VM from the list.
- o On the page for the VM, on the upper menu, select **Capture**.

Create an image



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Resource group ubuntu_group
Region Central India

Share image to Azure compute gallery Yes
Automatically delete this virtual machine No

after creating the image

Azure compute gallery (new) Myimage
Operating system state Generalized
Target VM image definition (new) ubuntu

Version number 1.0.1

Source virtual machine ubuntu

Exclude from latest No

End of life date None

Lock deleting Replicated Locations Yes

Shallow replication No