

Q1. Install Virtual box and making Ubuntu And Window Virtual Machine.

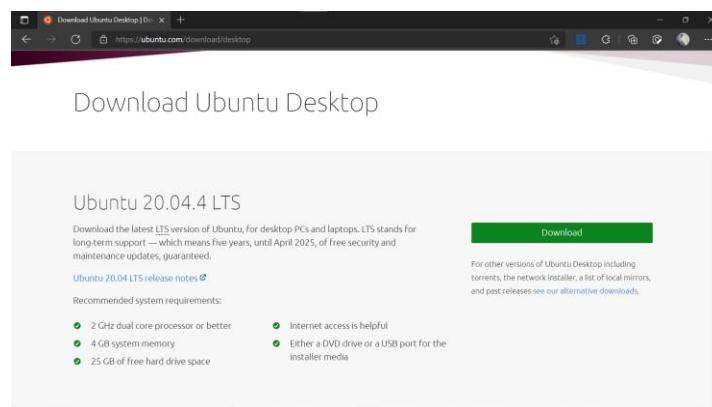
Ubuntu:

Step-1: Download VirtualBox for Windows and install it on your computer

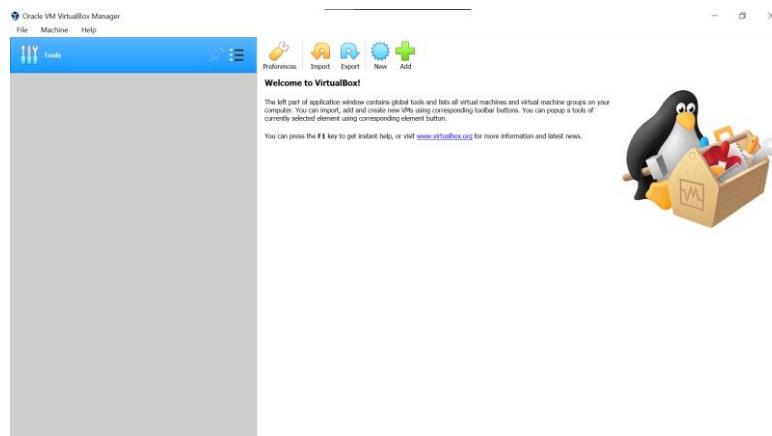


<https://www.virtualbox.org/wiki/Downloads>

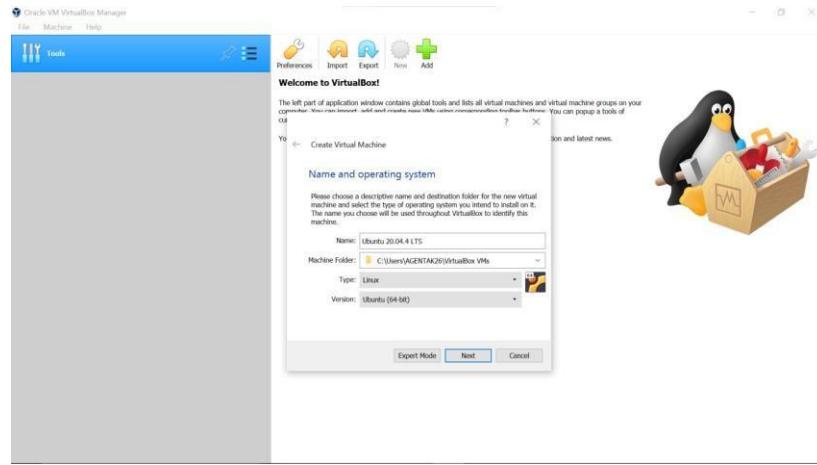
Step-2: Download the Ubuntu ISO file you want to install from the Ubuntu download page.



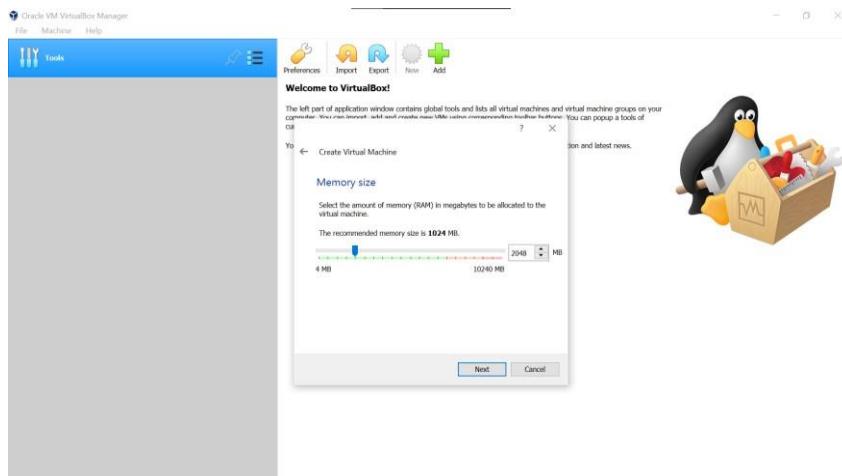
Note: The current version of Ubuntu only works on 64-bit machines. **Step-3:** Open VirtualBox and select New in the top toolbar.



Step-4: Give your VM a name, choose Linux as the Type, then choose Ubuntu as the Version and select Next.

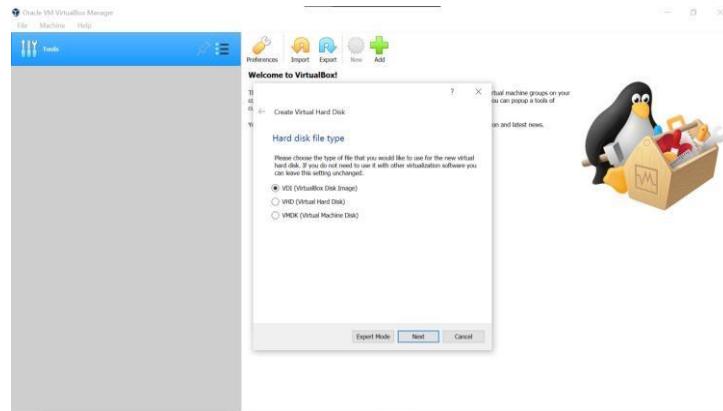


Step-5: Choose how much RAM you want to assign to the virtual machine and select Next. The recommended minimum is 1024 MB.



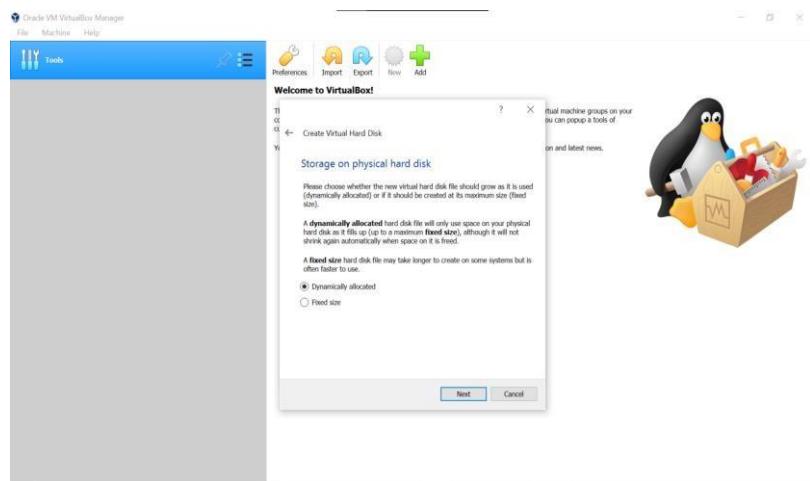
Step-6: Choose Create a virtual hard disk now and select Create.

Step-7: Choose VDI (VirtualBox Disk Image) and select Next.



Note on (VDI): Normally, Oracle VM VirtualBox uses its own container format for guest hard disks. This is called a Virtual Disk Image (VDI) file. This format is used when you create a new virtual machine with a new disk.

Step-8: Choose Dynamically allocated or Fixed size for the storage type and select Next.

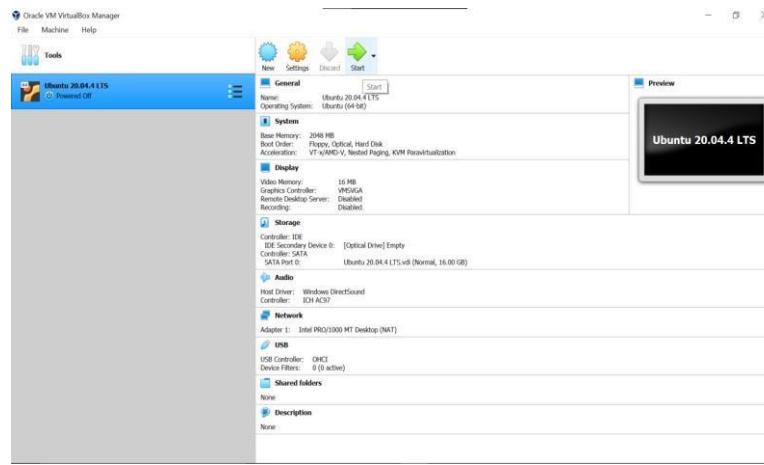


Tip: A fixed size disk performs better because the virtual machine doesn't have to increase the file size as you install software.

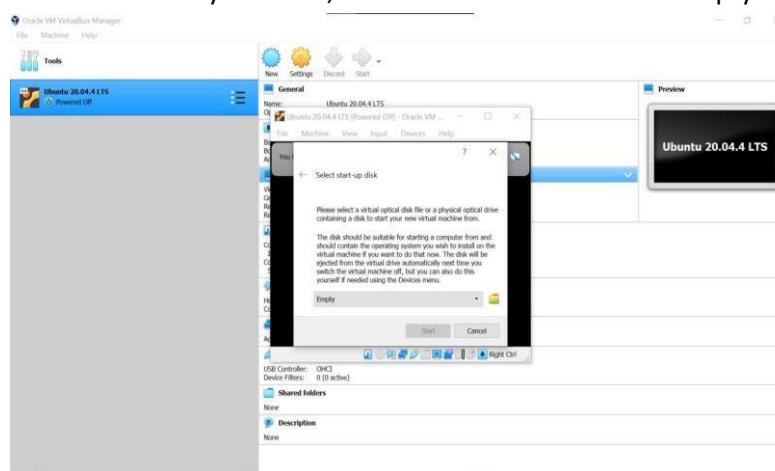
Step-9: Choose how much space you wish to set aside for Ubuntu and select Create.

Note: The amount of space you allocate for your virtual machine determines how much room you must install applications, so set aside a sample amount.

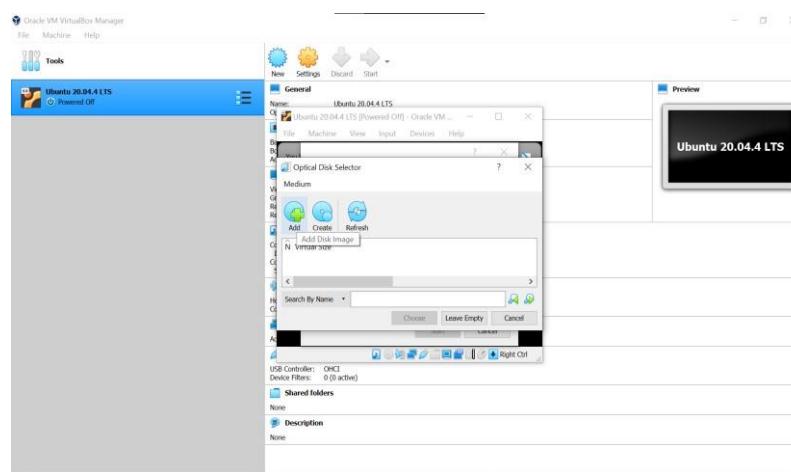
Step-10: The name of your virtual machine will now appear on the left side of the VirtualBox manager. Select Start in the toolbar to launch your VM.



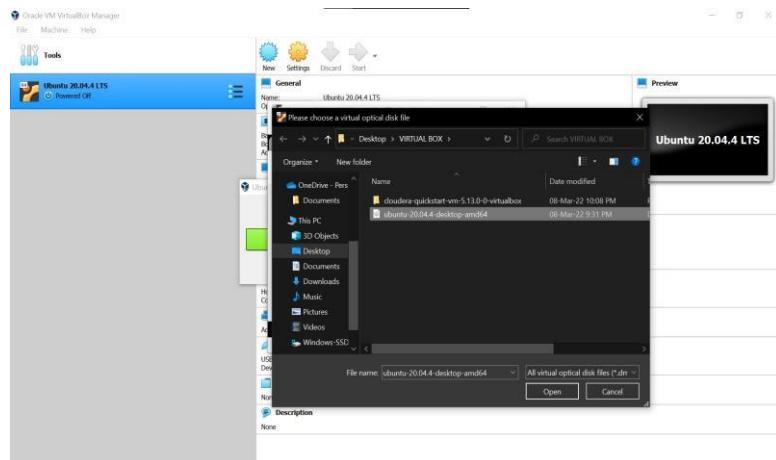
Step-11: This is the point where you need to choose the Ubuntu ISO file you downloaded earlier. If the VM doesn't automatically detect it, select the folder next to the Empty field.



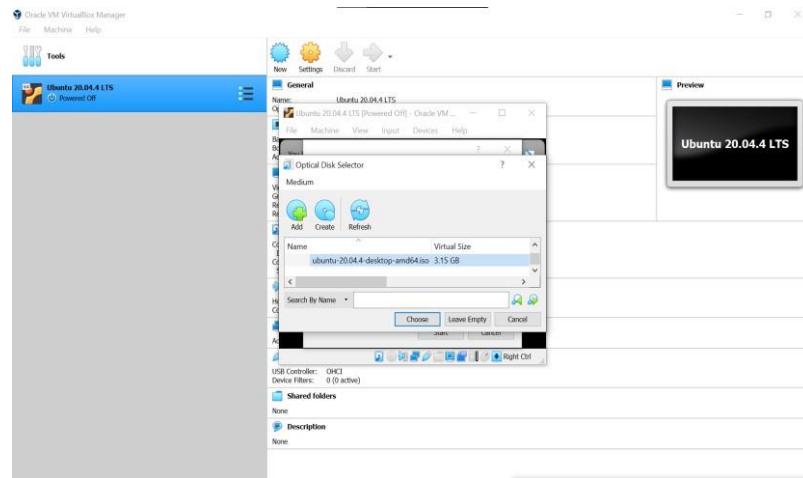
Step-12: Select Add in the window that pops up.



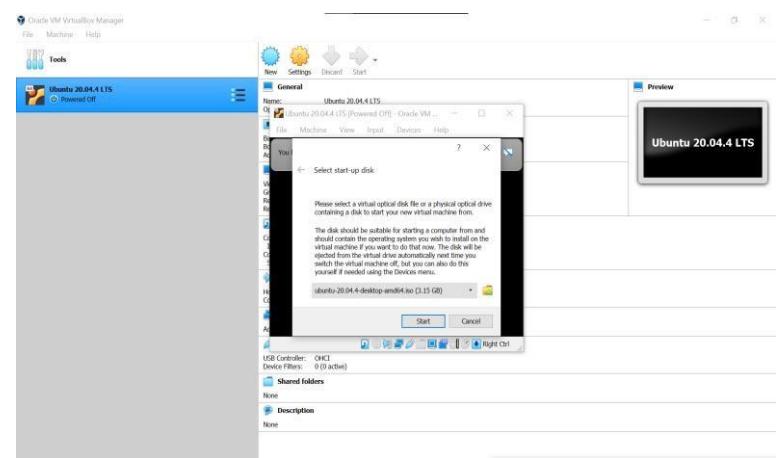
Step-13: Choose your Ubuntu disk image and select Open.



Step-14: - Select Choose

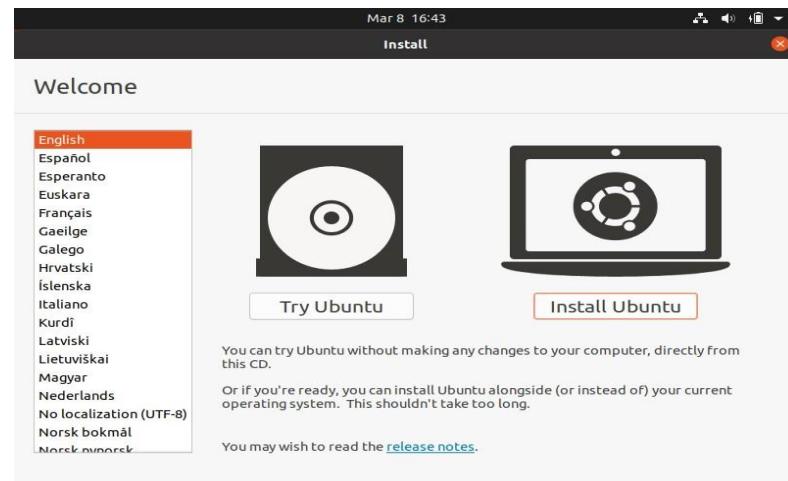


Step-15: Select Start.



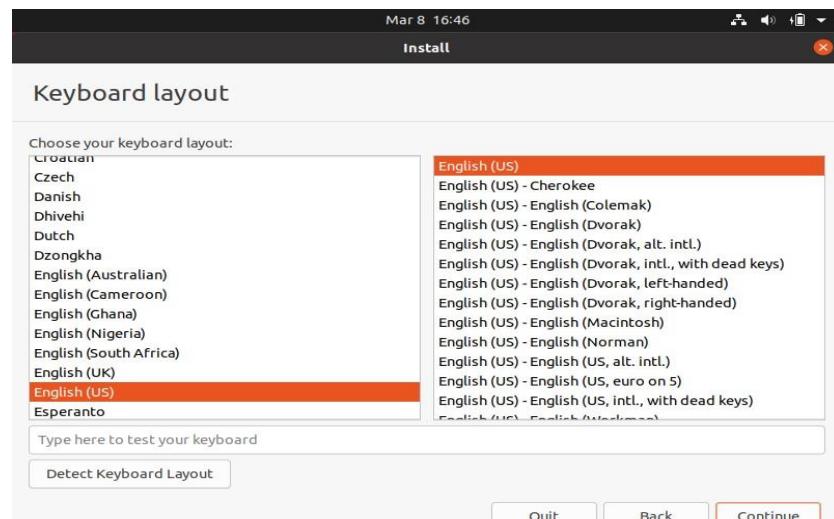
Step-16: Your VM will now boot into a live version of Ubuntu. Choose your language and select

Install Ubuntu



u.

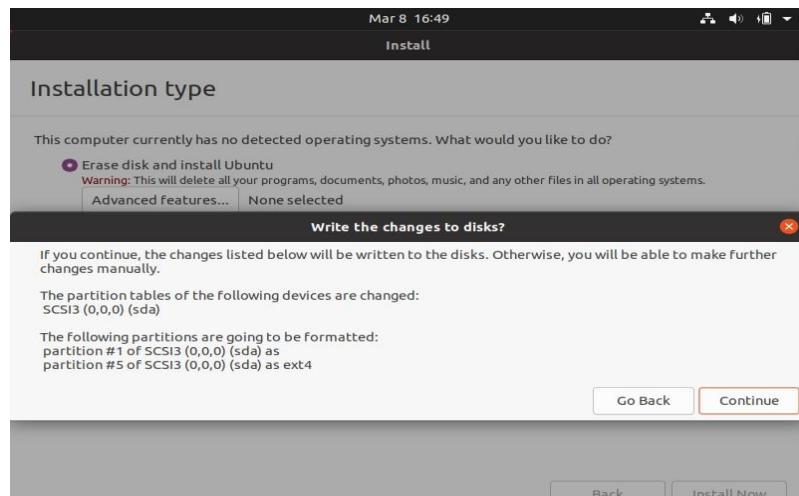
Step-17: Choose your keyboard layout and select Continue.



Step-18: Choose Normal installation or Minimal installation, then select Continue.

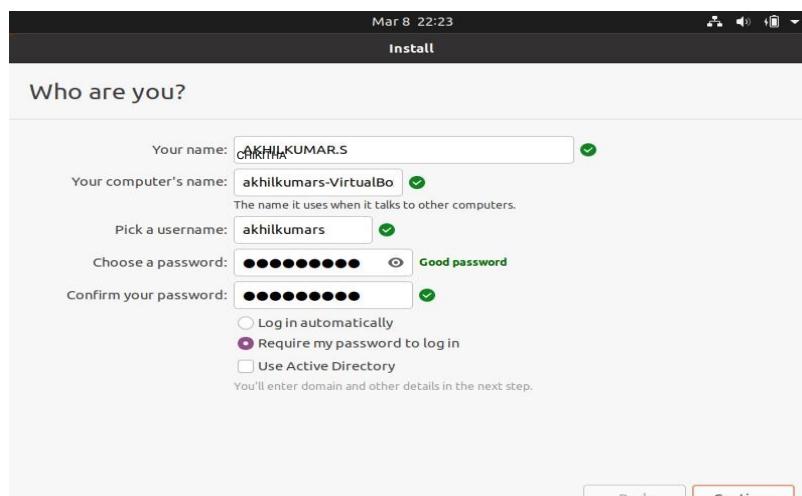
Step-19: Choose Erase disk and install Ubuntu and select Install Now, then select Continue to ignore the warning.

Note: This step will not erase your computer's physical hard drive; it only applies to the virtual machine.

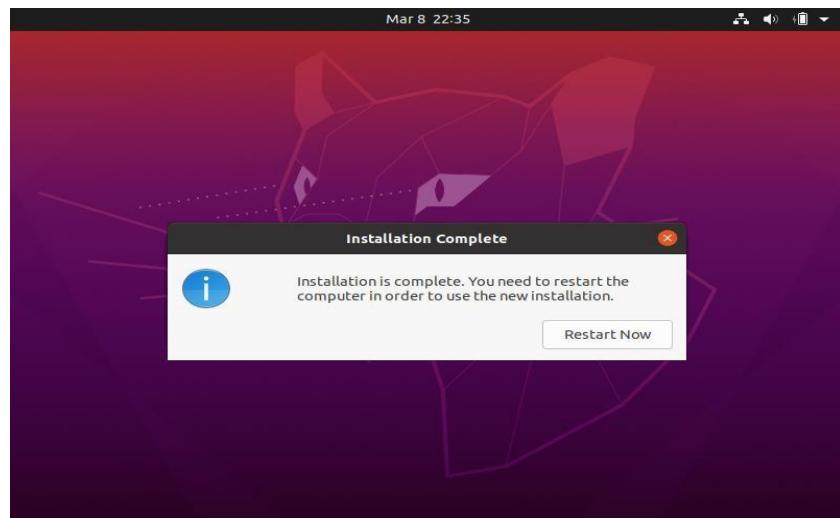


Step-20: - Choose your time zone on the map, then select Continue.

Step-21: - Set up your user account and select Continue.

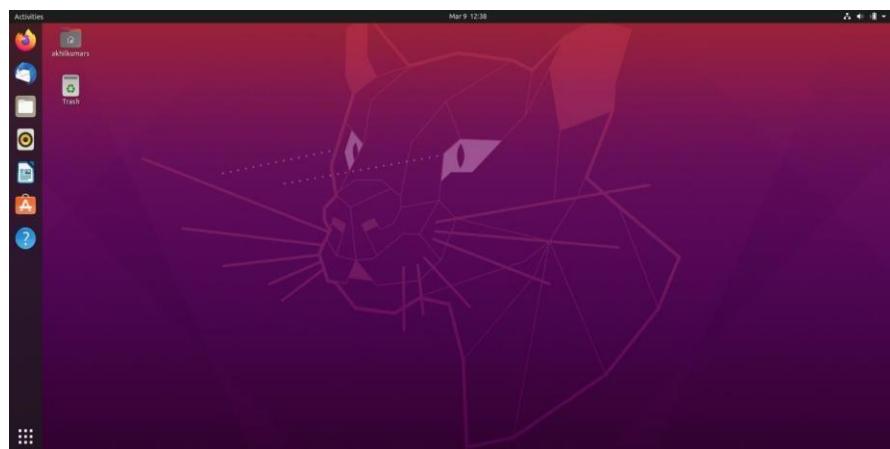


Step-22: - Select Restart Now.



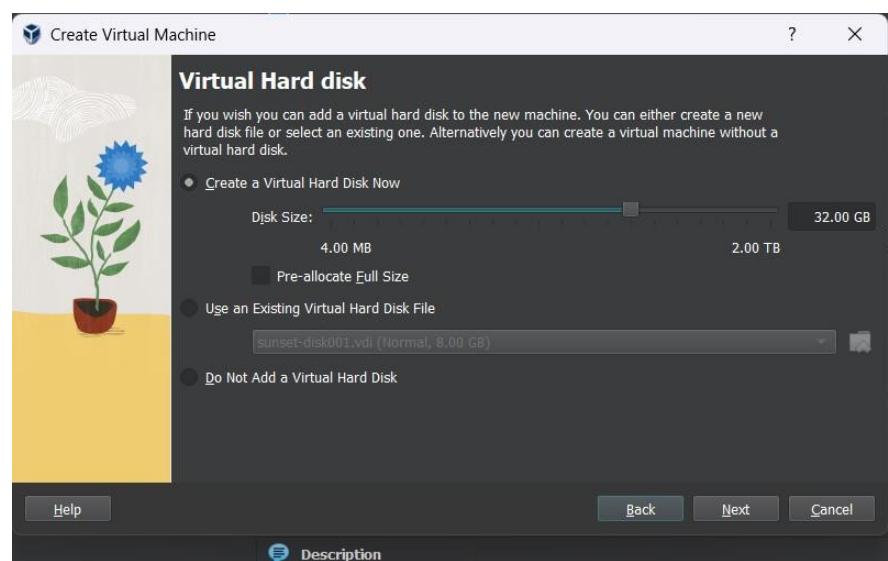
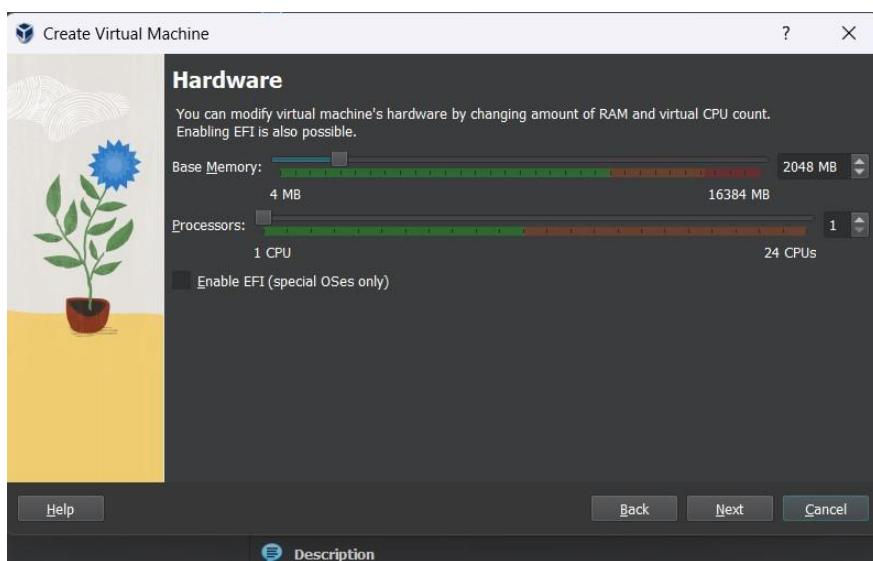
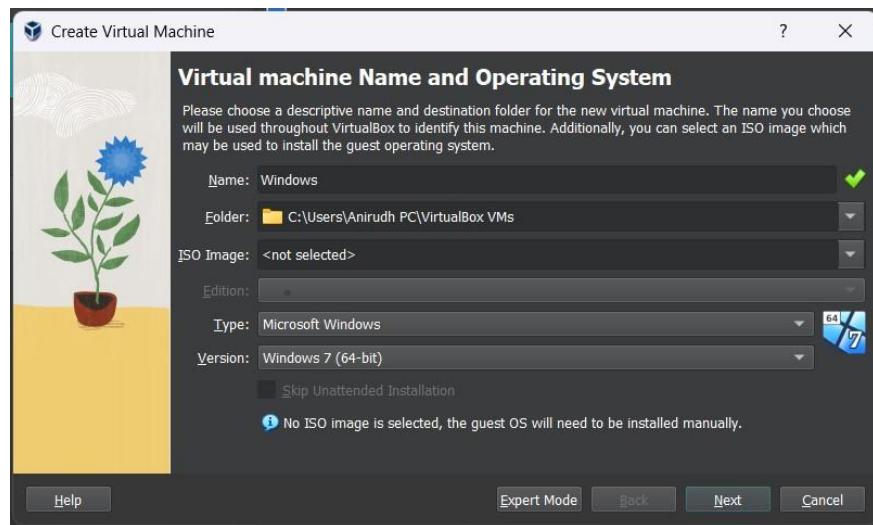
Step-23: - After restarting your VM and booting into Ubuntu, you may notice that the desktop doesn't scale correctly if you choose to view it in full-screen mode. You can fix this problem by selecting the VBox_Gas icon to install VirtualBox Guest Additions.

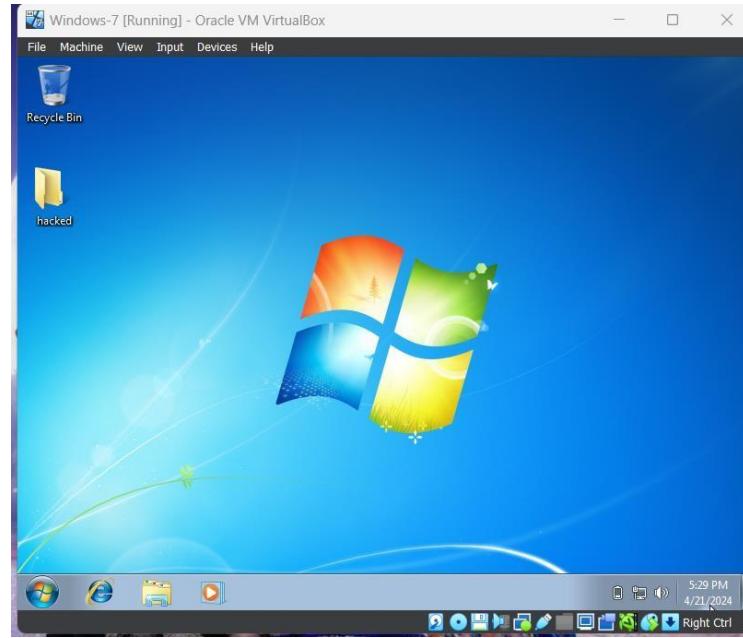
Output:



Q2.Windows:

Similarly, Follow the same steps above to Build Windows Virtual Machine.



Output:

3Q. Create an instance in VM and launch windows server through Azure Portal.

Steps:

1.Login to Azure and create a azure virtual machine.

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription * Azure for Students

Resource group * (New) A2Z2024

Create new

Virtual machine name * windows

Region * (Asia Pacific) Central India

Availability options Availability zone

Availability zone * Zone 1

You can now select multiple zones. Selecting multiple zones will create one VM per zone. [Learn more](#)

Security type Trusted launch virtual machines

Configure security features

Image * Windows Server 2019 Datacenter - x64 Gen2

See all images | Configure VM generation

< Previous Next : Disks > Review + create Give feedback

2.Click on Review + create.

Hibernate is not supported by the size that you have selected. Choose a size that is compatible with Hibernate to enable this feature. [Learn more](#)

Administrator account

Username * chikitha

Password * *****

Confirm password * *****

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.

Public inbound ports * None

Allow selected ports

Select inbound ports * HTTP (80), RDP (3389)

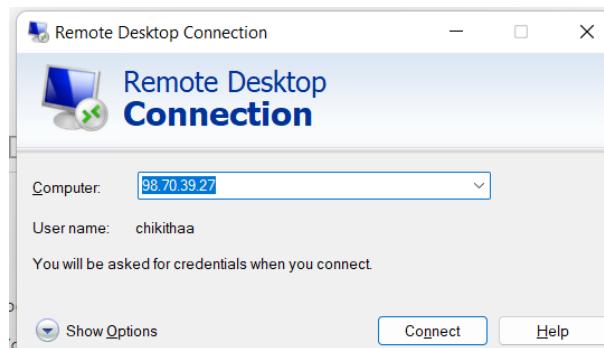
All traffic from the internet will be blocked by default. You will be able to change inbound port rules in the VM > Networking page.

< Previous Next : Disks > Review + create Give feedback

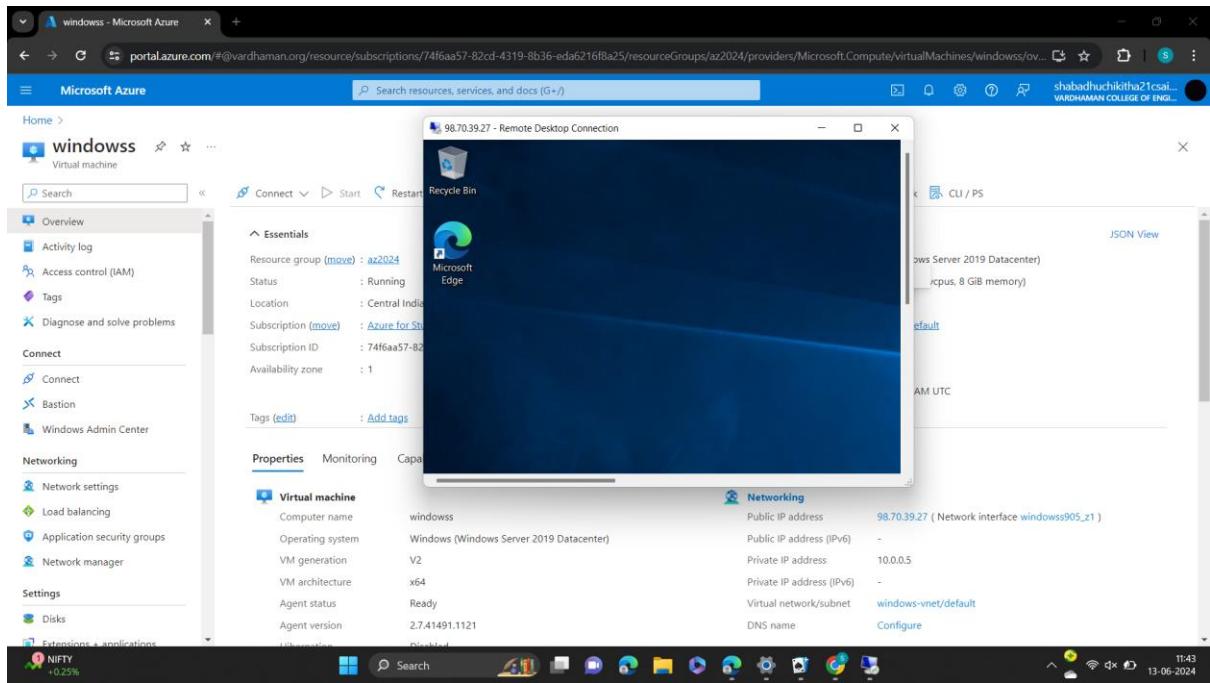
3.Copy public IP address and paste it in Remote Desktop Connection.

The screenshot shows the Microsoft Azure portal interface. A virtual machine named "windowss" is selected. The "Networking" tab is active, showing the following details:

Setting	Value
Public IP address	98.70.39.27
Virtual network/subnet	windows-vnet/default
DNS name	Not configured



4.Click on connect.



4Q) Create a Ubuntu Virtual Machine in Microsoft Azure

Step-1: Sign in to your Microsoft Azure account.

Step-2: Go To Virtual machine, and click on “Create” to create a window virtual machine.

The screenshot shows the Microsoft Azure portal interface. At the top, there's a navigation bar with 'Microsoft Azure' and a search bar. Below the navigation bar, the 'Virtual machines' blade is open. A tooltip for 'Virtual machines' is displayed, stating: 'Create a virtual machine that runs Linux or Windows. Select an image from the marketplace or use your own customized image.' Below the tooltip, there are sections for 'Free training from Microsoft' and 'Useful links'. In the main content area, there are filters for 'Subscription equals all', 'Type equals all', 'Resource group equals all', 'Location equals all', and a 'Create filter' button. A message 'Showing 0 of 0 records.' is shown. At the bottom, there's a 'Create' button with a dropdown menu containing options like 'Azure virtual machine', 'Azure virtual machine with preset configuration', and 'More VMs and related solutions'.

Step-3: Fill the details in that ubuntu by creating a “Resource Group”, Zone: Asia, Image:

ubuntu, select “SSH”, Select the disk storage and so on. After that click on “Create + Review”. And Finally click on “Create”.

your resources.

Subscription * ⓘ

Resource group * ⓘ [Create new](#)

Instance details

Virtual machine name * ⓘ

Region * ⓘ

Availability options ⓘ

Availability zone * ⓘ ⓘ You can now select multiple zones. Selecting multiple zones will create one VM per zone. [Learn more](#)

Security type ⓘ [Configure security features](#)

Image * ⓘ [See all images](#) | [Configure VM generation](#)

Administrator account

Authentication type ⓘ SSH public key Password

ⓘ Azure now automatically generates an SSH key pair for you and allows you to store it for future use. It is a fast, simple, and secure way to connect to your virtual machine.

Username * ⓘ

SSH public key source

Key pair name *

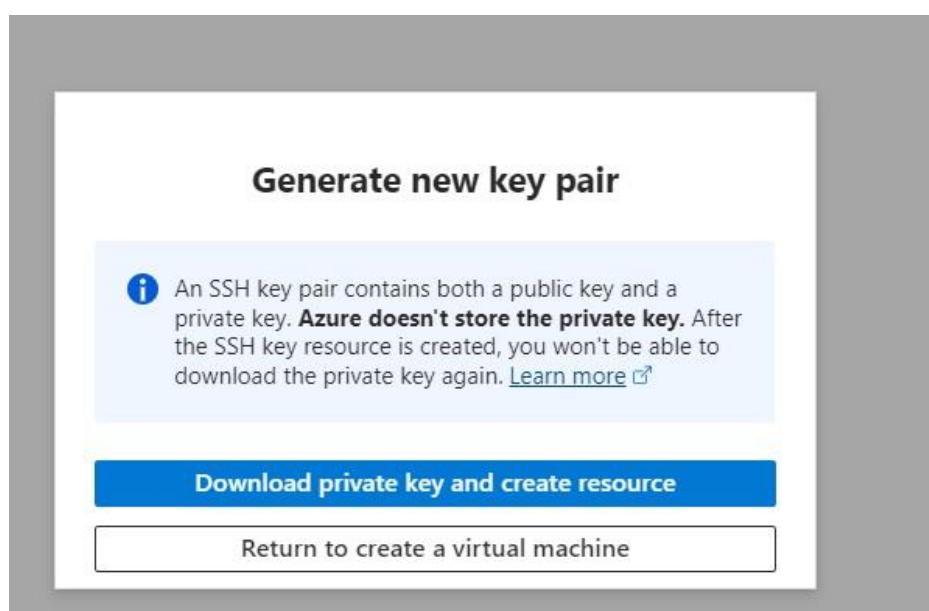
Inbound port rules

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.

Public inbound ports * ⓘ None Allow selected ports

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

Step-4: After Deployment is over, Go to the remote desktop connection.



Step-5: Firstly, copy the public IP Address of that created virtual machine.

Essentials

Resource group ([move](#)) : [AZ224](#)

Status : Creating

Location : Central India (Zone 1)

Subscription ([move](#)) : [Azure for Students](#)

Subscription ID : f3c5ae6-bd1f-4731-805e-48c71c8d7f77

Availability zone : 1

Tags ([edit](#)) : [Add tags](#)

Operating system : Linux

Size : Standard E1s, 8 GiB memory

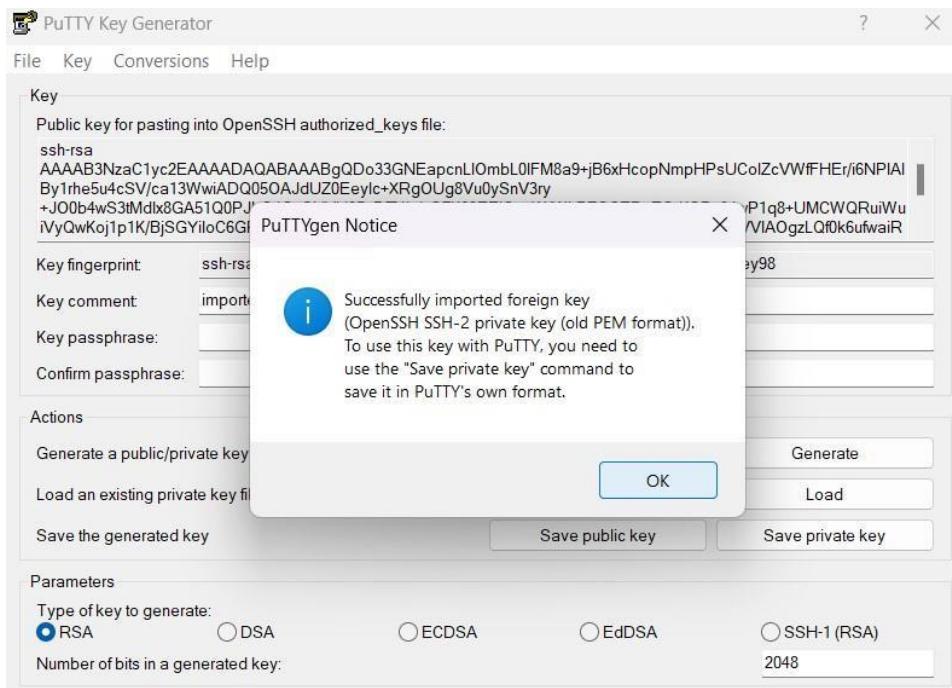
Public IP address : [74.225.249.159](#) Copied

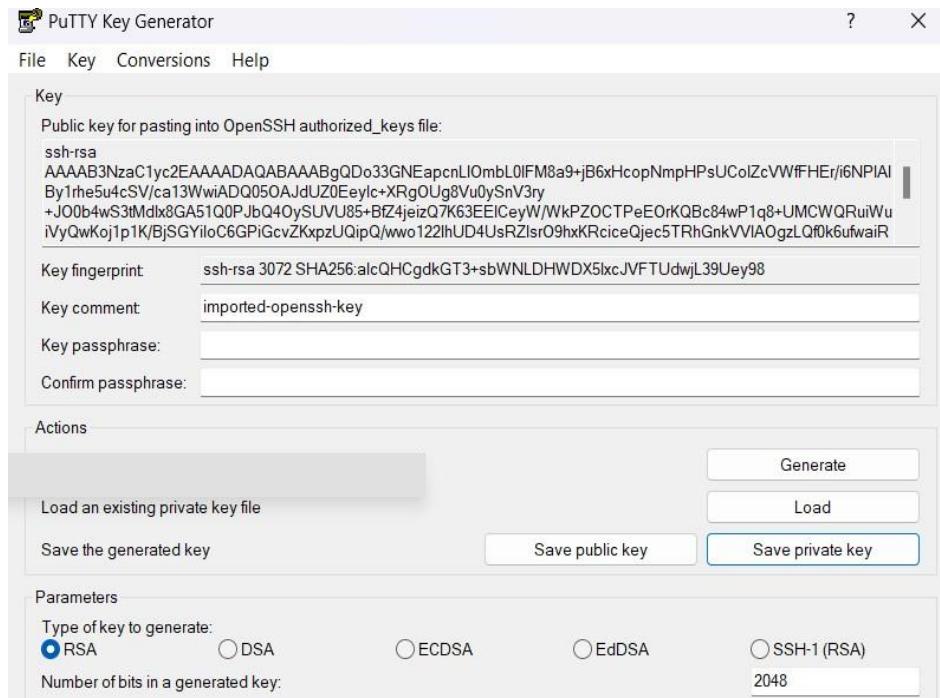
Virtual network/subnet : [Window-vnet/default](#)

DNS name : [Not configured](#)

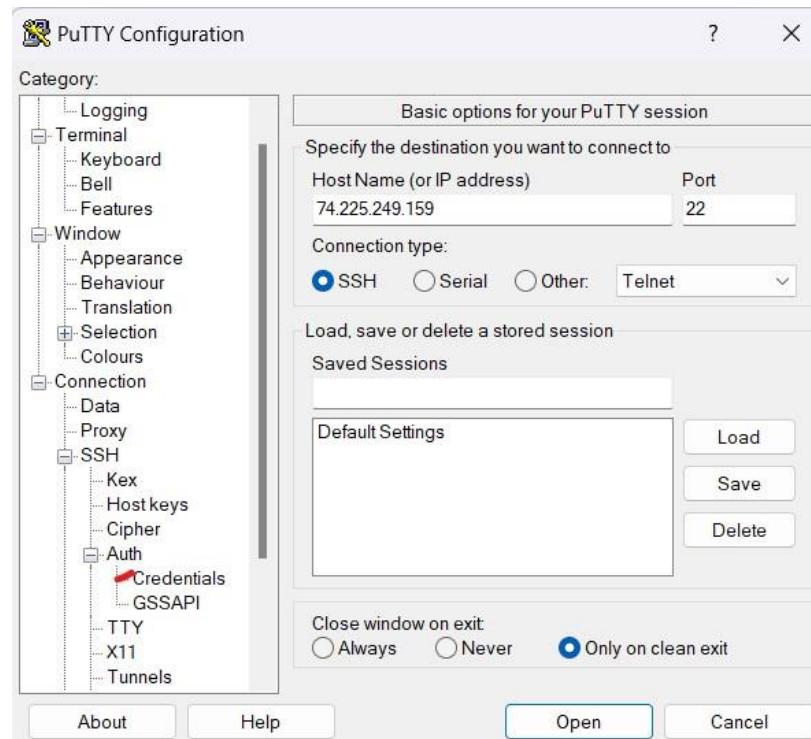
Health state : -

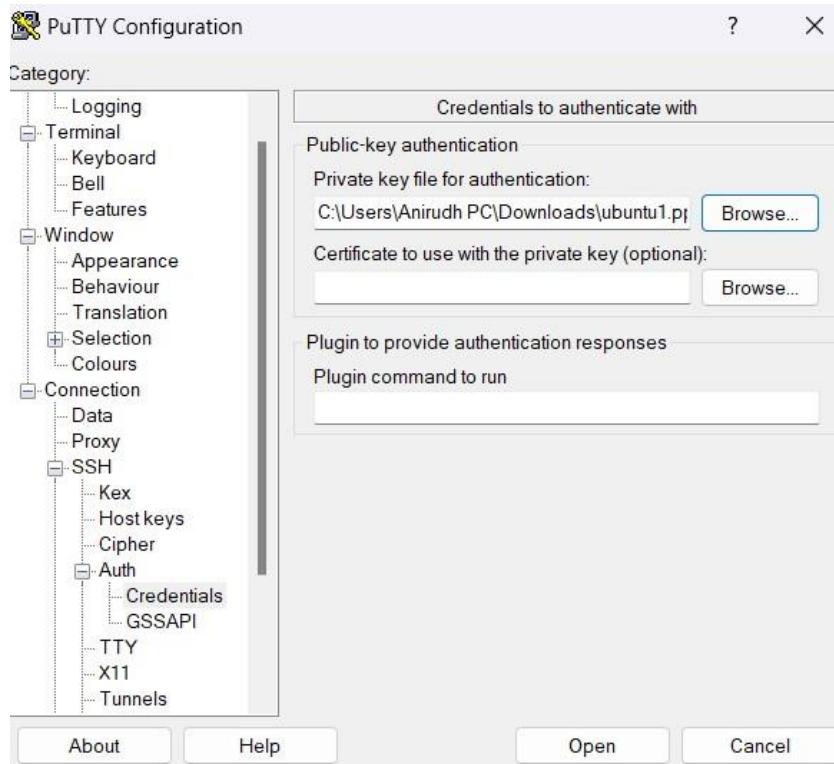
Step-6: Go to putty gen and click on load the key generator that you have downloaded.





Step-7: In putty, put the Copied IP Adress into it, and then go to ssh->auth->credentials And the put the generated private key.





Step-8: A login page will be opened in that type your username and you will be into the ubuntu.

Step-9: After this delete its resource group and virtual machine.

Output:

```

azureuser@ubuntu: ~
login as: azureuser
Authenticating with public key "imported-openssh-key"
Welcome to Ubuntu 22.04.4 LTS (GNU/Linux 6.5.0-1018-azure x86_64)

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

 System information as of Sun Apr 21 13:11:06 UTC 2024

 System load: 0.08349609375      Processes: 126
 Usage of /: 5.1% of 28.89GB    Users logged in: 0
 Memory usage: 4%                IPv4 address for eth0: 10.0.0.5
 Swap usage: 0%

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The list of available updates is more than a week old.

```

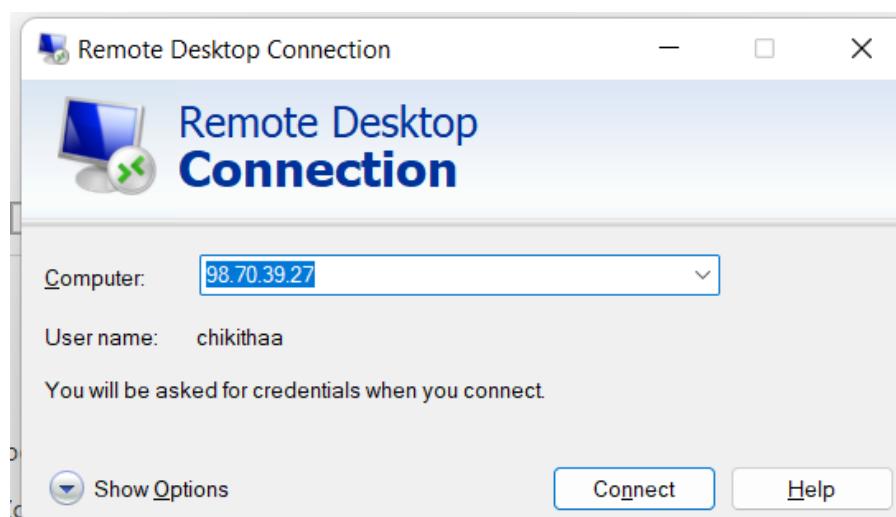
5Q. Create an instance in virtual machine and launch windows server through Azure portal and transfer files from local machine to guest machine.

Steps:

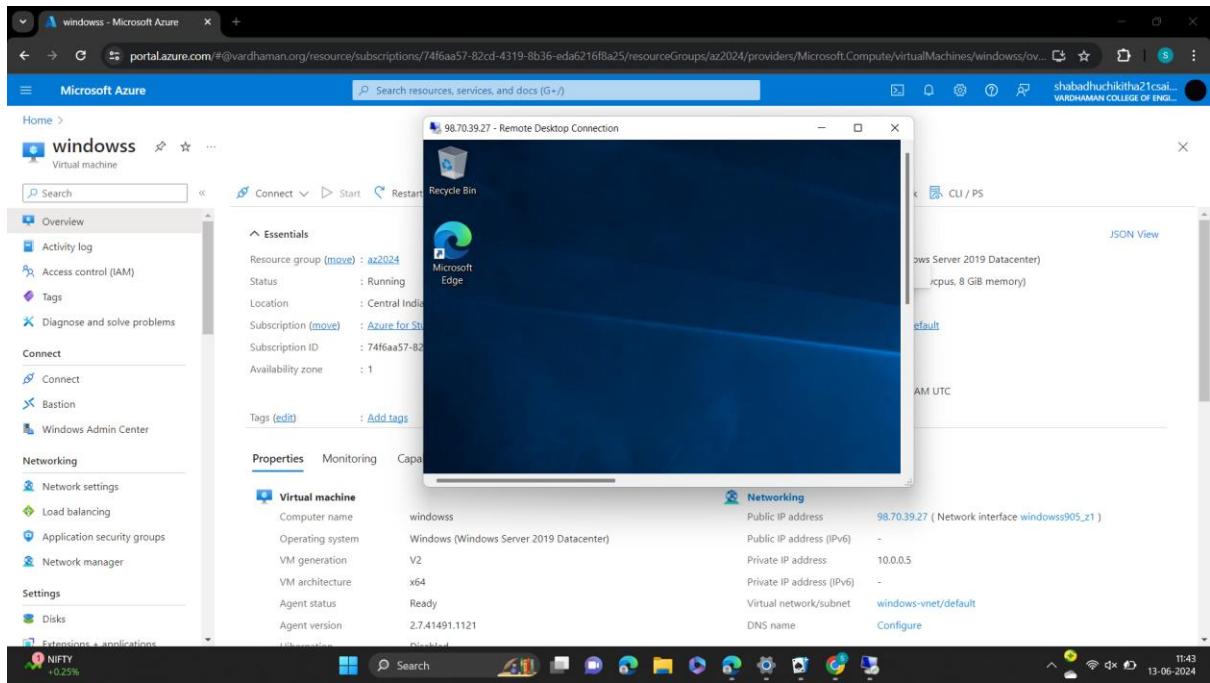
1. Login to Azure and create a azure virtual machine.

2. Copy public IP address and paste it in Remote Desktop Connection.

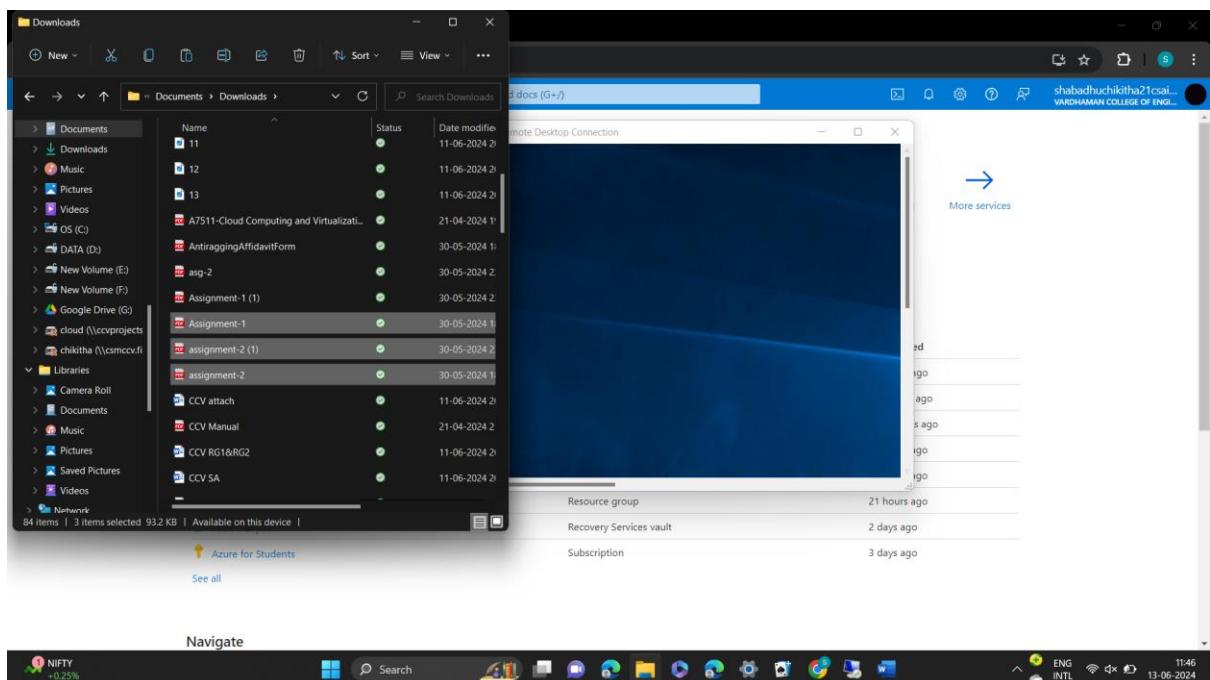
The screenshot shows the Microsoft Azure portal interface. On the left, there's a sidebar with navigation links like Home, Connect, Bastion, and Windows Admin Center. The main area displays the 'windowss' virtual machine details. Under the 'Essentials' section, the public IP address is listed as 98.70.39.27. The Networking tab shows the same IP address under the Public IP address field. The status bar at the bottom right indicates the IP address 98.70.39.27.

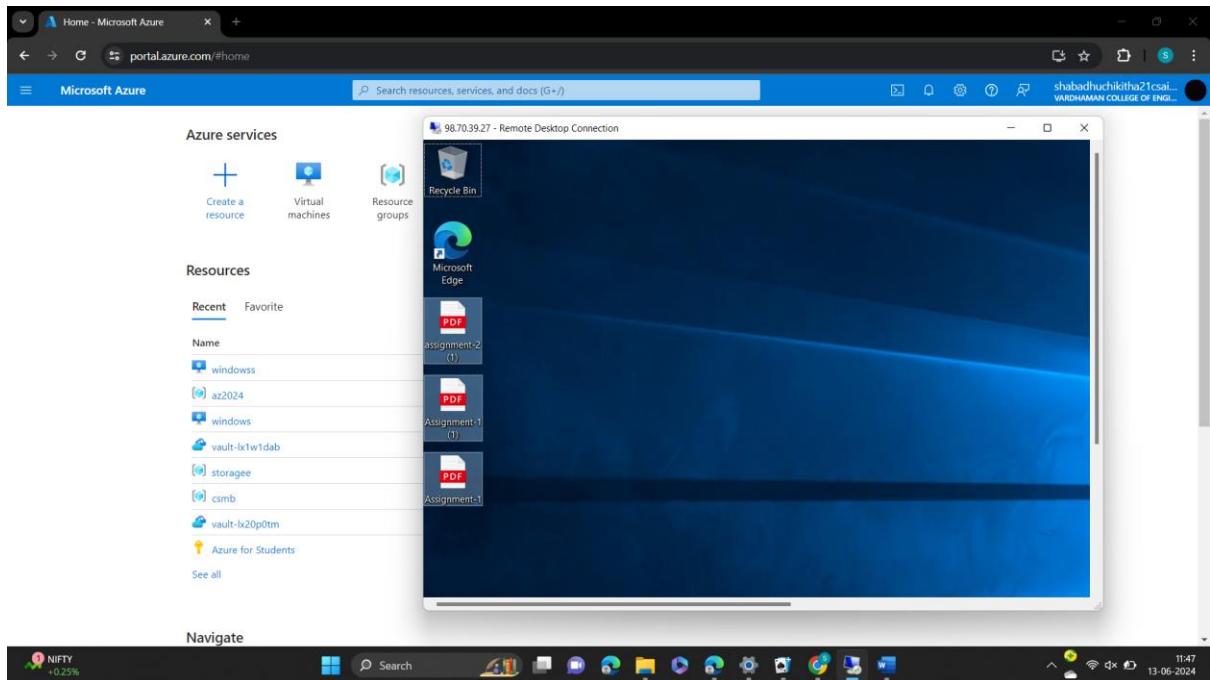


3.Click on connect.



4.Copy files from our local Windows and paste it in guest machine.

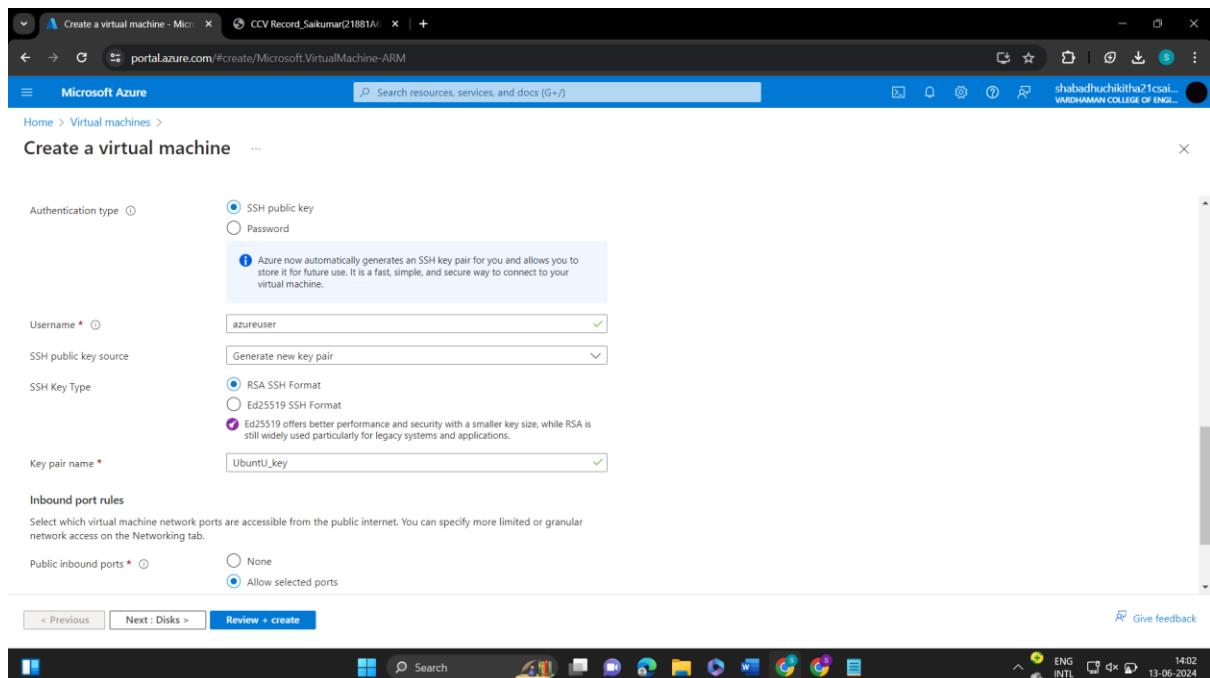
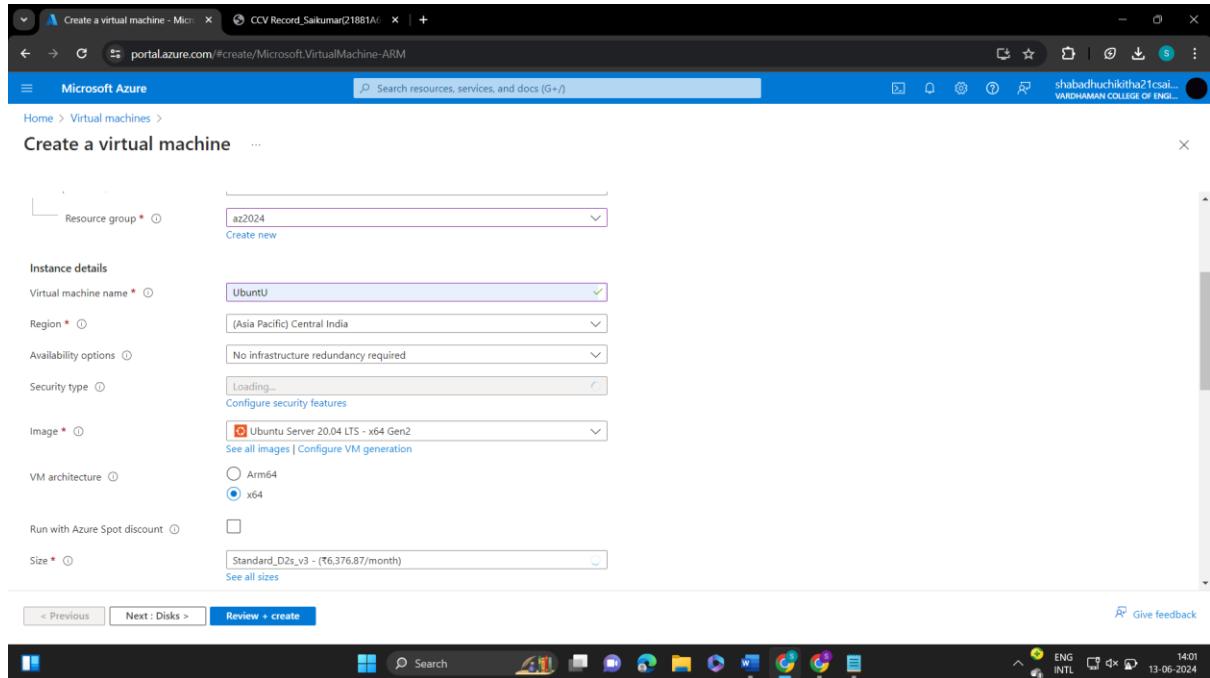




6Q. Configure azure linux server as web server (nginx).

Steps:

1. Login to Azure account and Create a VM for ubuntu .



Generate new key pair

! An SSH key pair contains both a public key and a private key. **Azure doesn't store the private key.** After the SSH key resource is created, you won't be able to download the private key again. [Learn more](#)

[Download private key and create resource](#)

[Return to create a virtual machine](#)

2. Click on Download private key.

3. Create a ubuntu virtual machine using SSH as previous experiment and copy public IP address.

UbuntuU - Microsoft Azure

[Search resources, services, and docs \(G+\)](#)

[shabdhachikitha21csai... VARDHAMAN COLLEGE OF ENGI...](#)

[Home > CreateVm-canonical.0001-com-ubuntu-server-focal-2-20240613151035 | Overview >](#)

UbuntuU Virtual machine

[Connect](#) [Start](#) [Restart](#) [Stop](#) [Hibernate](#) [Capture](#) [Delete](#) [Refresh](#) [Open in mobile](#) [Feedback](#) [CLI / PS](#)

Overview

Essentials

Resource group (move)	: azz24	Operating system	: Linux (ubuntu 20.04)
Status	: Running	Size	: Standard D2s v3 (2 vcpus, 8 GiB memory)
Location	: Central India (Zone 1)	Public IP address	: 74.225.255.230
Subscription (move)	: Azure for Students	Virtual network/subnet	: UbuntuU-vnet/default
Subscription ID	: 74f6aa57-82cd-4319-8b36-eda6216fba25	DNS name	: Not configured
Availability zone	: 1	Health state	: >
Tags (edit)	: Add tags	Time created	: 6/13/2024, 9:44 AM UTC

Properties **Monitoring** **Capabilities (7)** **Recommendations** **Tutorials**

Virtual machine

Computer name	UbuntuU	Networking	Public IP address	74.225.255.230 (Network interface ubuntu21_z1)
Operating system	Linux (ubuntu 20.04)	Public IP address (IPv6)	-	
VM generation	V2	Private IP address	10.1.0.4	
VM architecture	x64	Private IP address (IPv6)	-	
Agent status	Ready	Virtual network/subnet	UbuntuU-vnet/default	
Agent version	2.11.1.4	DNS name	Configure	
Last connection	Previously connected			

91°F Party sunny

4. Login into your Ubuntu VM using your username and type the following commands.

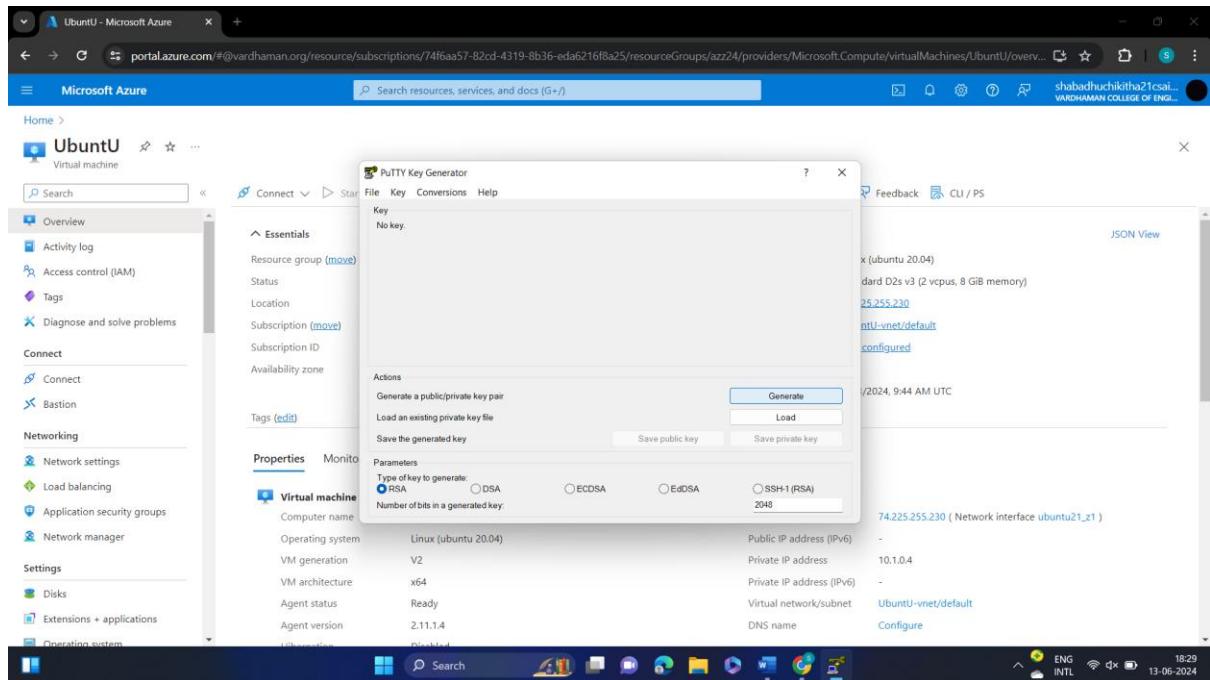
```
$sudo su
```

```
$sudo apt-get update
```

After typing the two command, now install web server using the below command

```
$sudo apt-get install nginx
```

After installing in VM, paste the public ip address in desktop browser and you can see.

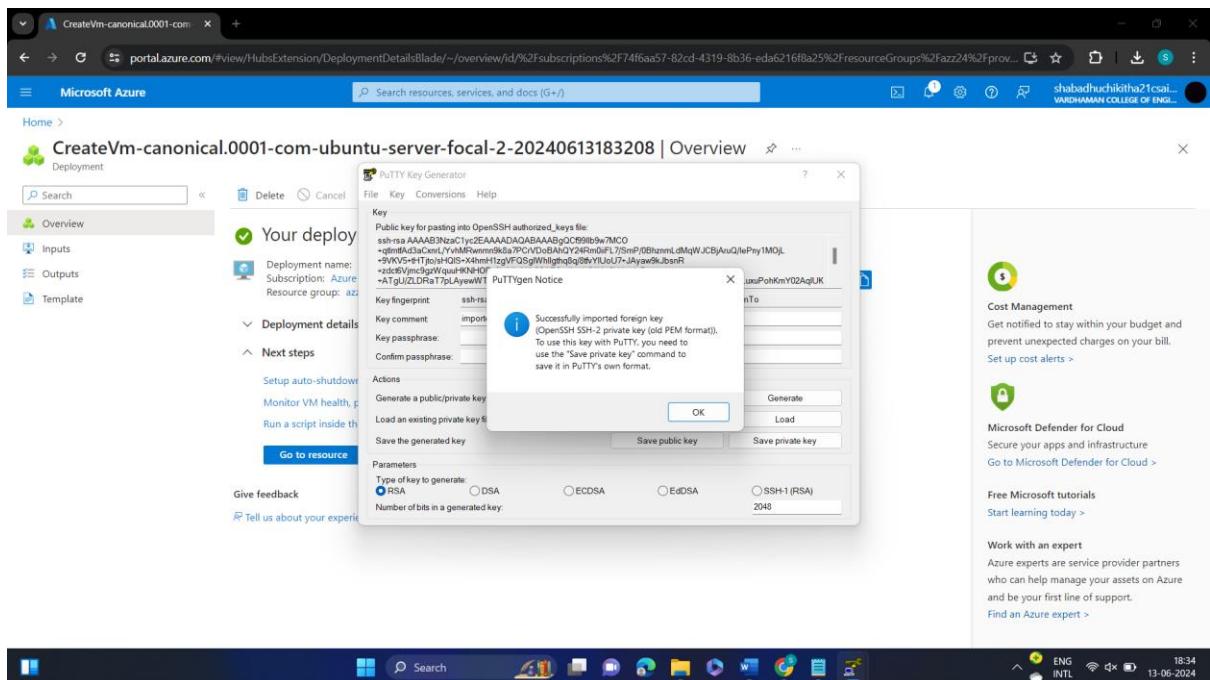


5. To remove following information and keep new information in that page type the following command and refresh the browser page.

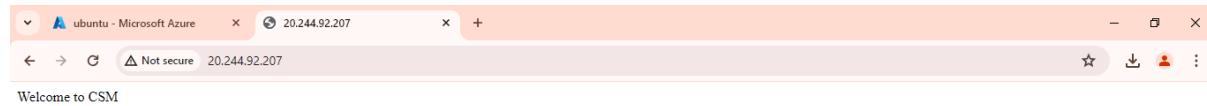
```
$cd /var/www/html
```

```
$rm index.nginx-debian.html
```

```
$echo "Welcome to CSM ">index.html
```



```
root@ubuntu: /var/www/html
Setting up libnginx-mod-mail (1.18.0-0ubuntu1.4) ...
Setting up fontconfig-config (2.13.1-2ubuntu3) ...
Setting up libnginx-mod-stream (1.18.0-0ubuntu1.4) ...
Setting up libtiff5:amd64 (4.1.0+git191117-2ubuntu0.20.04.12) ...
Setting up libfontconfig1:amd64 (2.13.1-2ubuntu3) ...
Setting up libgd3:amd64 (2.2.5-5.2ubuntu2.1) ...
Setting up libnginx-mod-http-image-filter (1.18.0-0ubuntu1.4) ...
Setting up nginx-core (1.18.0-0ubuntu1.4) ...
Setting up nginx (1.18.0-0ubuntu1.4) ...
Processing triggers for ufw (0.36-6ubuntu1.1) ...
Processing triggers for systemd (245.4-4ubuntu3.23) ...
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for libc-bin (2.31-0ubuntu9.14) ...
root@ubuntu:/home/azureuser# cd /var/www/html
root@ubuntu:/var/www/html# rm index.nginx-debian.html
root@ubuntu:/var/www/html# echo "<h1>Welcome to CSM</h1>"
<h1>Welcome to CSM</h1>
root@ubuntu:/var/www/html# rm index.nginx-debian.html
rm: cannot remove 'index.nginx-debian.html': No such file or directory
root@ubuntu:/var/www/html# echo "<h1>Welcome to CSM</h1>" indx.html
<h1>Welcome to CSM</h1> indx.html
root@ubuntu:/var/www/html# echo "<h1>Welcome to CSM</h1>">indx.html
root@ubuntu:/var/www/html# echo "Welcome to CSM">index.htm
root@ubuntu:/var/www/html#
```

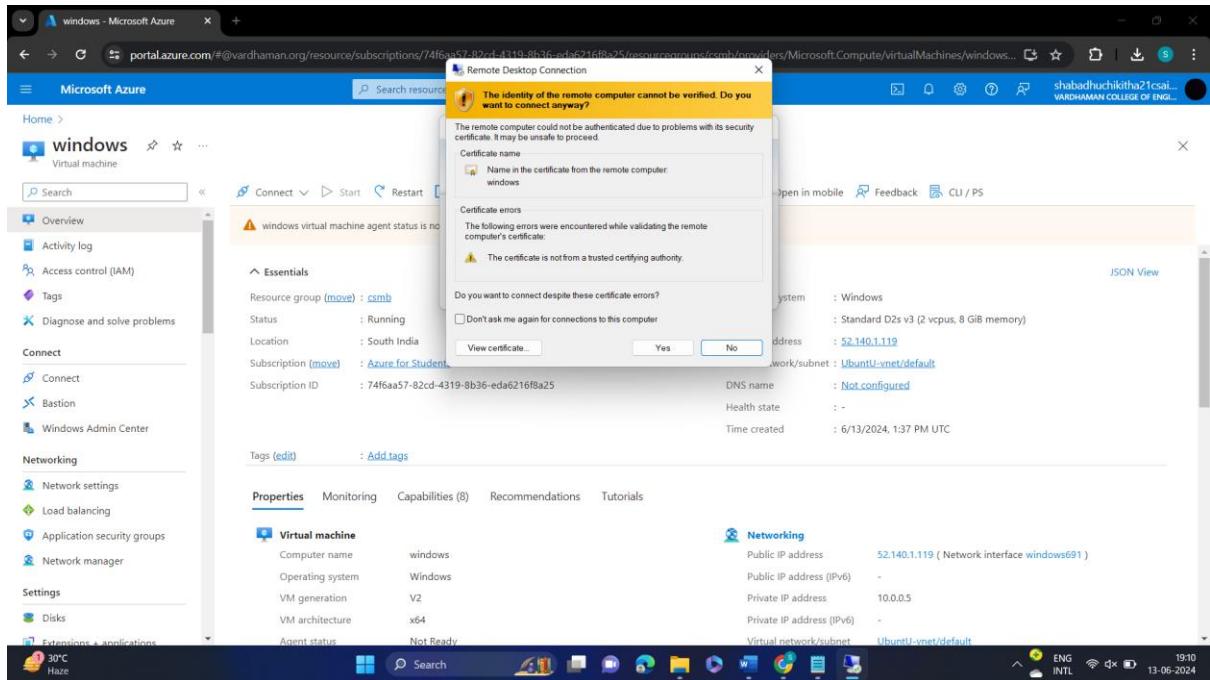


7Q. Setup and configure azure webserver for windows IIS- Internet Information Services.

Steps:

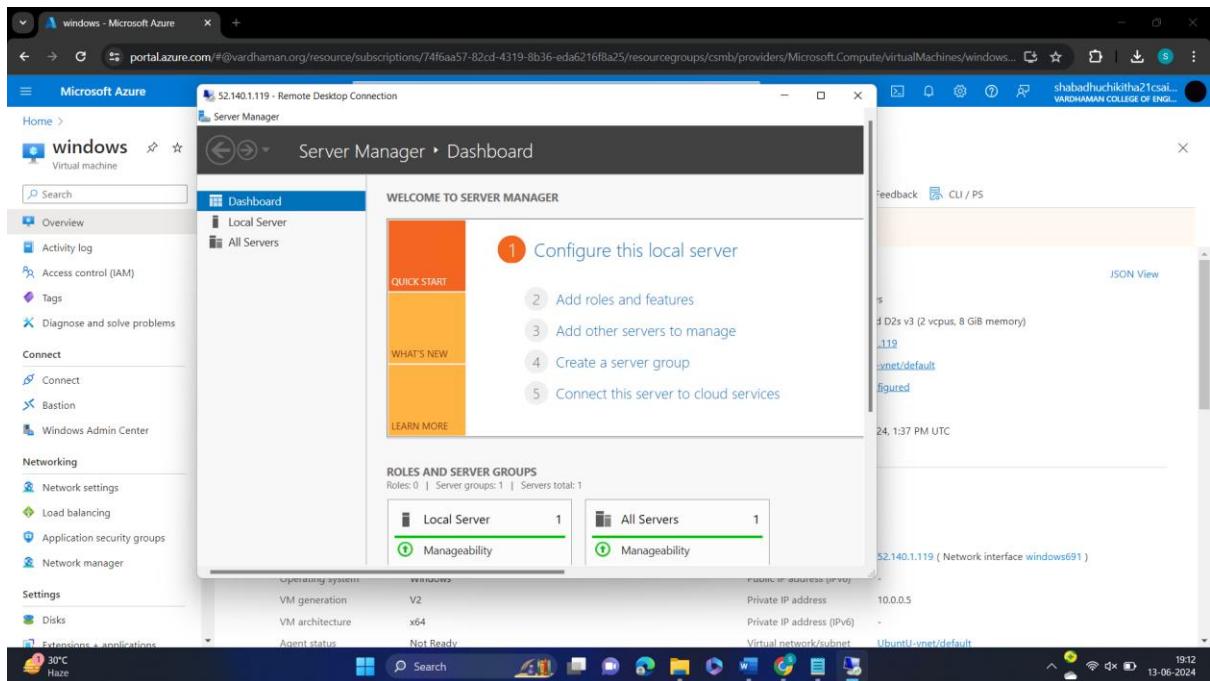
1.Login to Azure and create a Virtual machine.

2. Copy public IP address and paste it in Remote Desktop Connection.

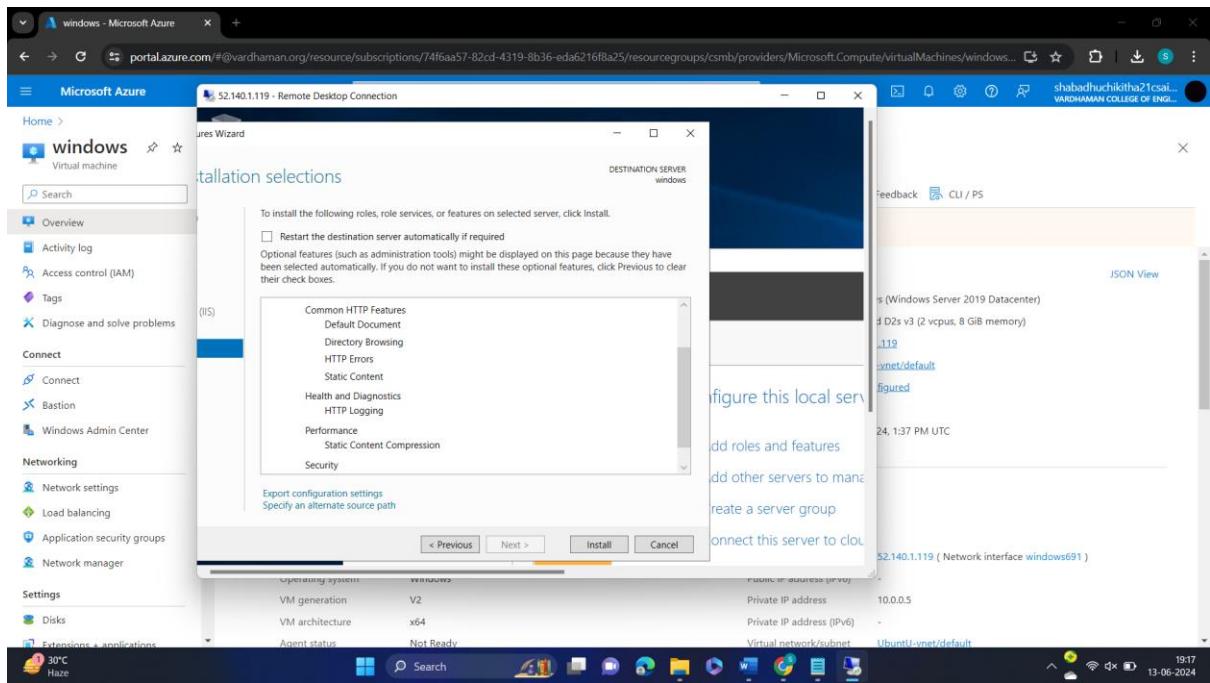
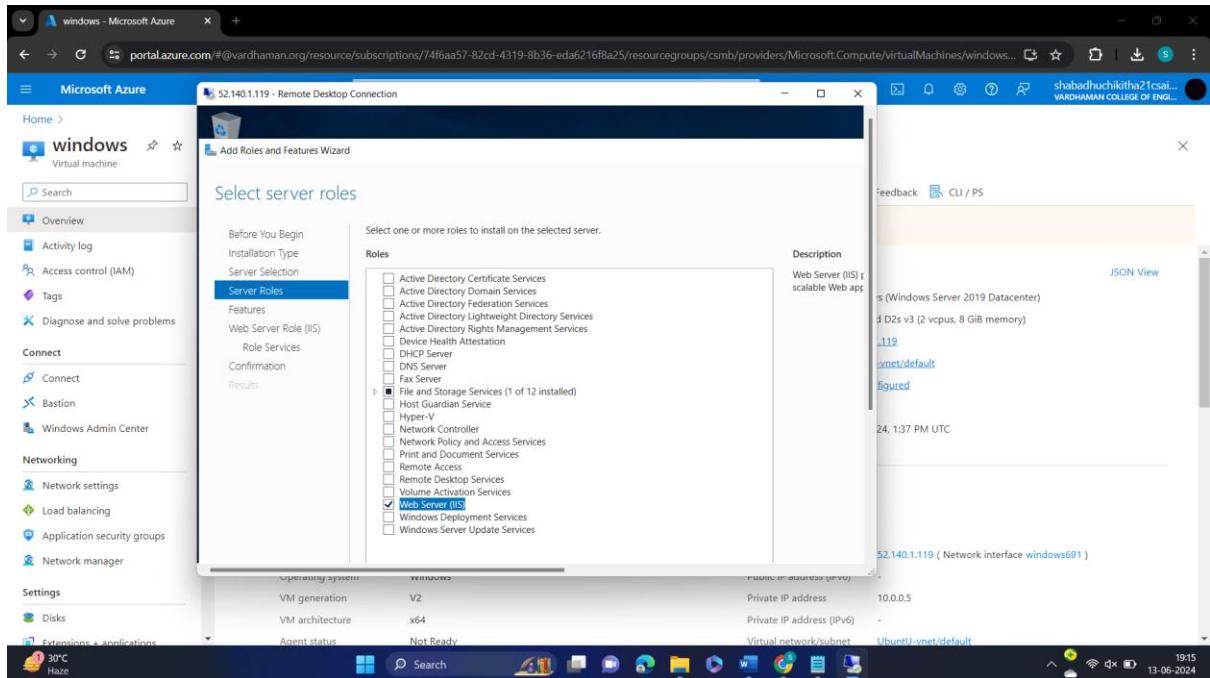


3. After launching windows 7, server manager opens automatically.

4. Server Manager → Dashboard → Add Roles and Features → install IIS.

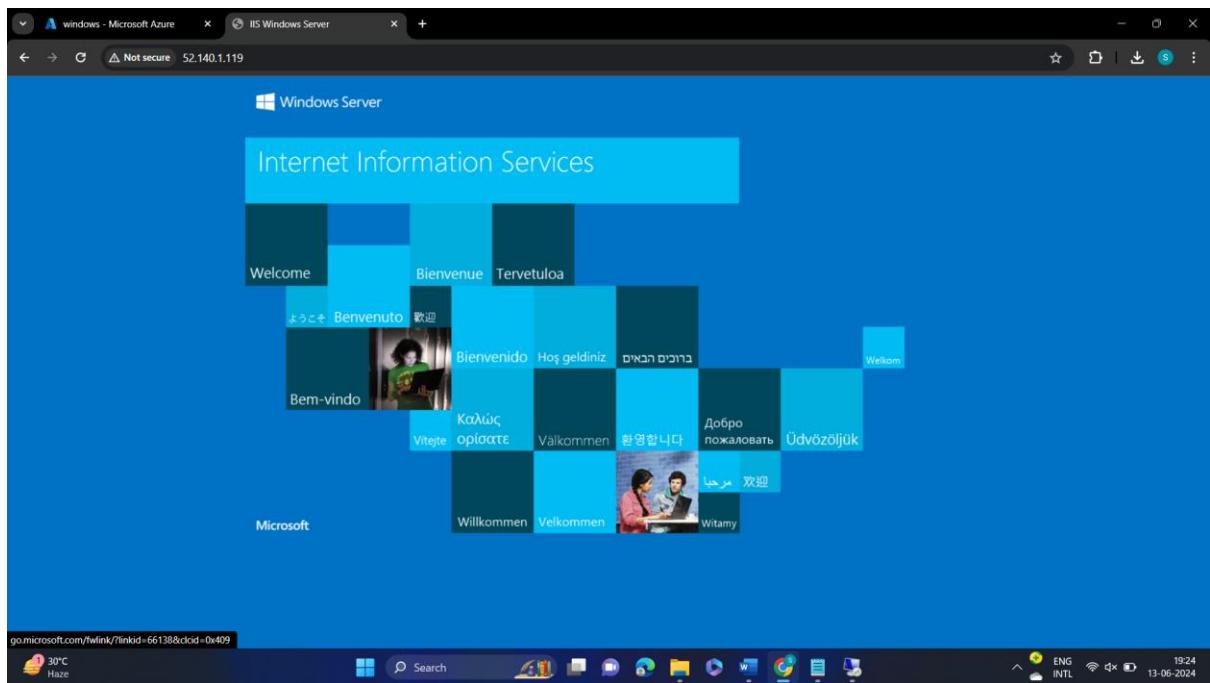
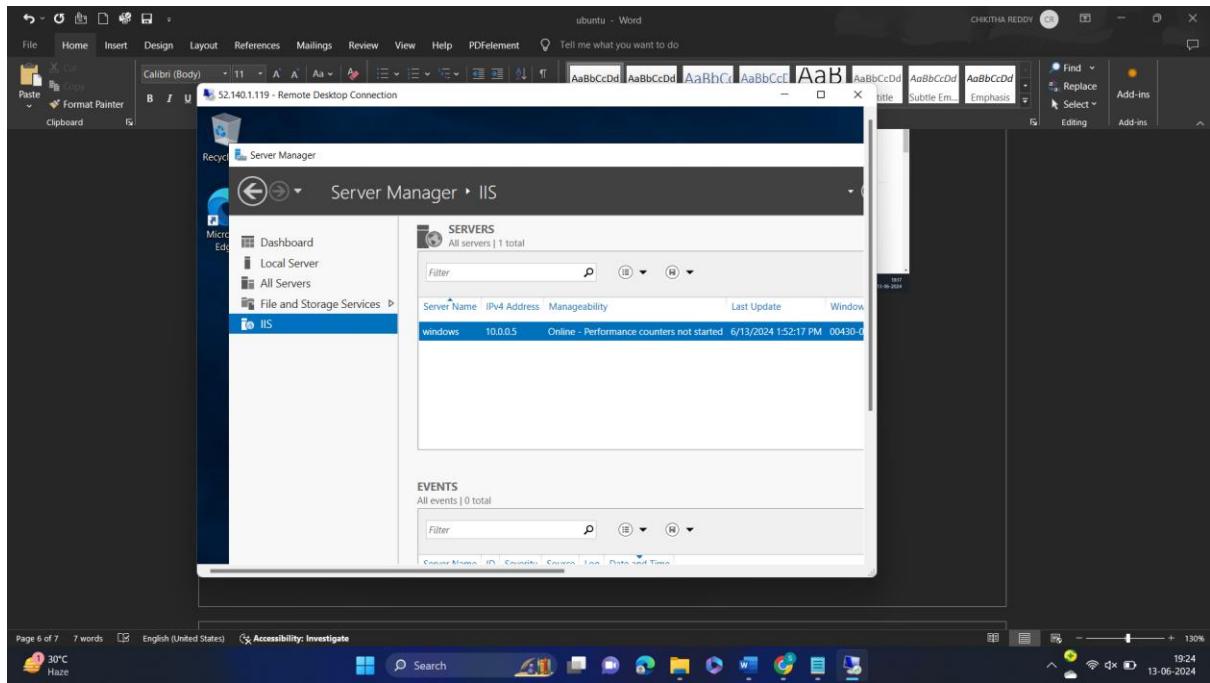


5.Select a sever → Select web server (IIS) → next → next → next → Install.



6.After completion of installation, refresh the vm in azure.

7.Copy public IP address and paste it in browser, we can get IIS.



8Q. Create a Virtual machine and do lock for VM in AZURE.

Steps:

- 1.Create a virtual machine (ubuntu or windows).

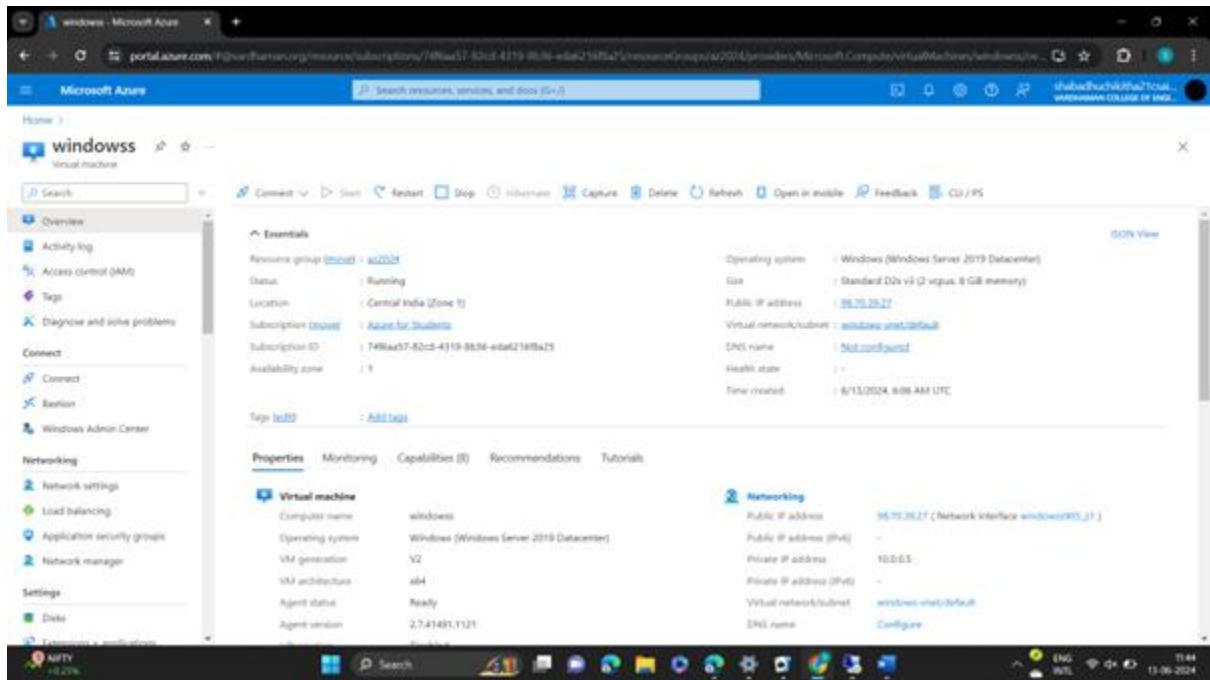
Subscription: Azure for Students
 Resource group: Panel-AZ0024
 Virtual machine name: windows
 Region: (Asia Pacific) Central India
 Availability options: Availability zone: Zone 1
 Security type: Trusted launch virtual machines
 Image: Windows Server 2019 Datacenter - a84 Gms2

Hibernate is not supported by the size that you have selected. Choose a size that is compatible with Hibernate to enable this feature. [Learn more](#)

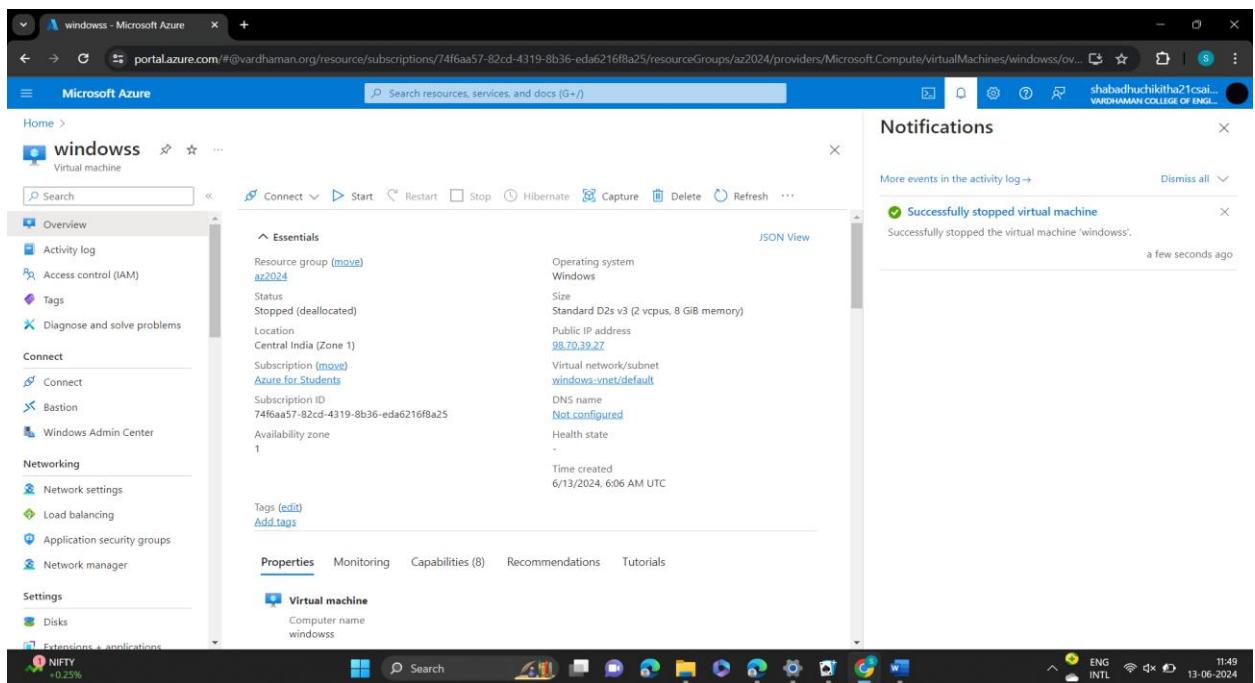
Administrator account:
 Username: chaitanya
 Password: *****
 Confirm password: *****

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.
 Public inbound ports: Allow selected ports
 Select inbound ports: HTTP (80), RDP (3389)

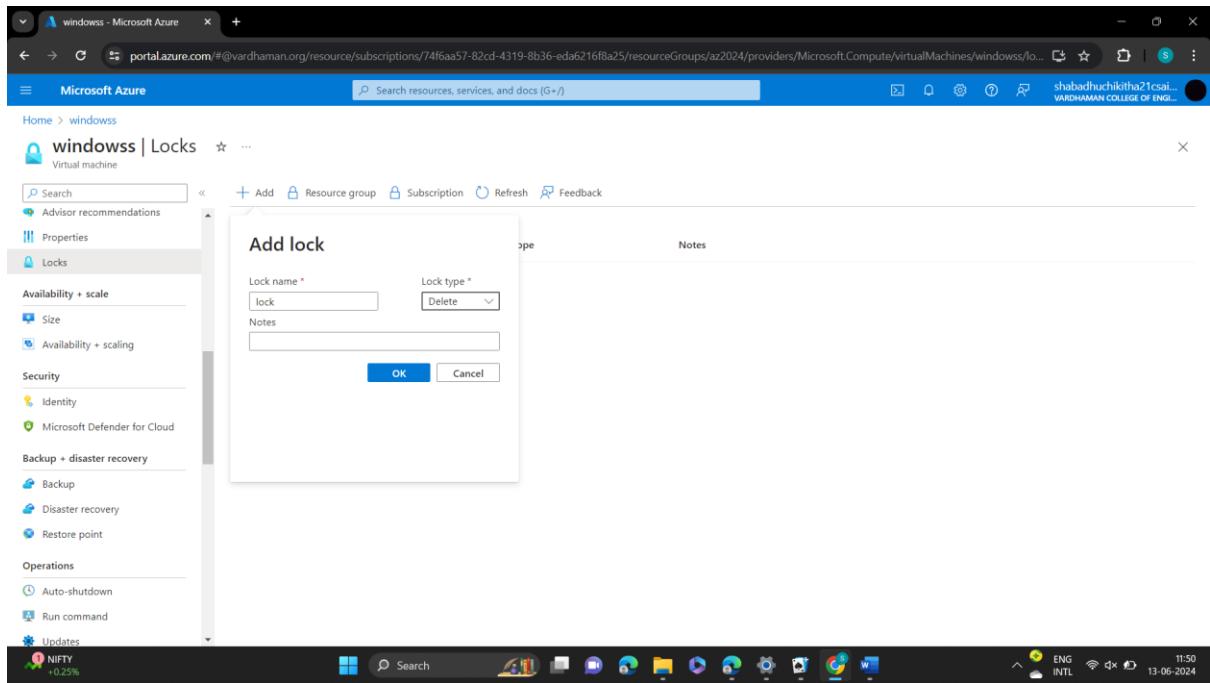
All traffic from the internet will be blocked by default. You will be able to change inbound port rules in the VM > Networking page.



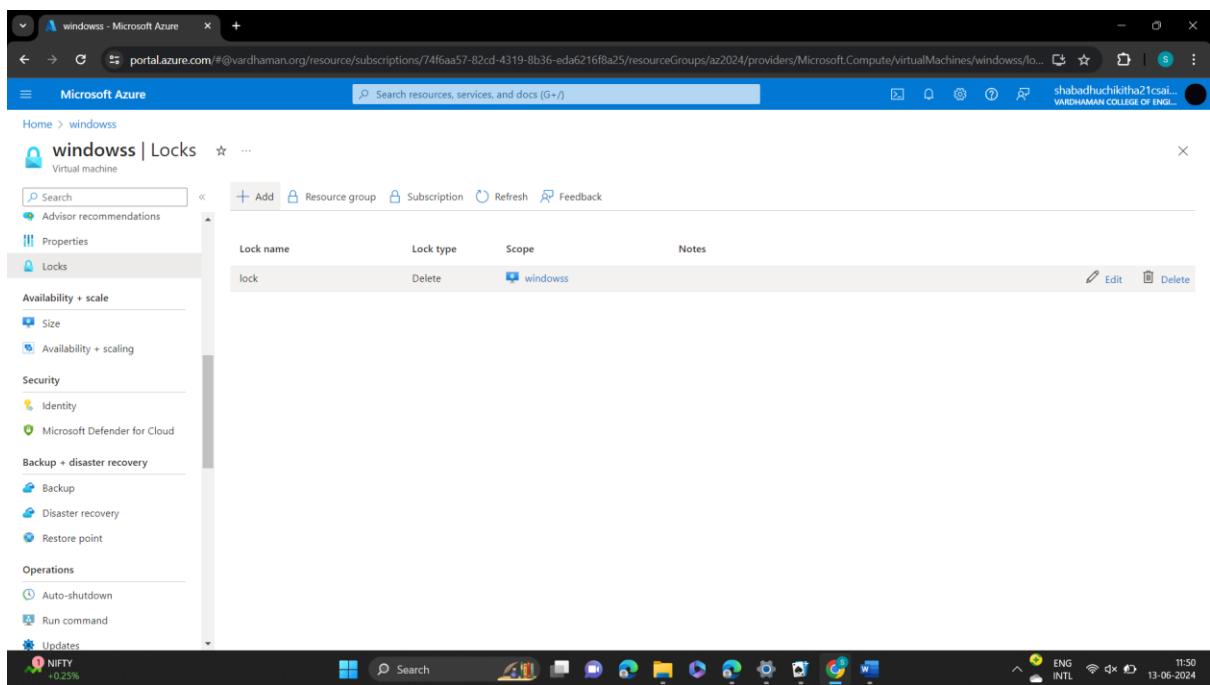
2. Stop the virtual machine before doing lock.



3. On the left side there will be settings and click on locks, give lock name and select lock type.



4.Click on ok.



5.After doing lock, we cannot delete virtual machine, resource groups.

Delete windowss

This action will permanently delete this virtual machine.

Resource to be deleted	Resource type
windowss	Virtual machine

Apply force delete ⓘ

You can also choose to delete associated resources at the same time. Resources that aren't deleted will be orphaned. Associated resources that are in use by other resources are not shown here.

Associated resource type	Quantity	Delete with VM
OS disk	1	<input checked="" type="checkbox"/>
Network interfaces	1	<input type="checkbox"/>
Public IP addresses	1	<input type="checkbox"/>

I have read and understand that this virtual machine as well as any selected associated resources listed above will be deleted.

Delete **Cancel**

Notifications

More events in the activity log → Dismiss all ▾

- Failed to delete virtual machine 'windowss'** ⓘ
An error occurred whilst deleting virtual machine 'windowss' and/or any selected resource(s) associated with it. Error: 'The scope /subscriptions/74f6aa57-82cd-4319-8b36-eda6216f8a25/resourceGroups/az2024/providers/Microsoft.Compute/vir... cannot perform delete operation because following scope(s) are locked: /subscriptions/74f6aa57-82cd-4319-8b36-eda6216f8a25/resourceGroups/az2024/providers/Microsoft.Compute/vir... Please remove the lock and try again.'
- Successfully stopped virtual machine** ⓘ
Successfully stopped the virtual machine 'windowss'.

a few seconds ago
2 minutes ago

6.After creating the lock, you need to delete it for deleting VM.

The screenshot shows the Microsoft Azure portal interface. The left sidebar is collapsed, and the main area displays the 'Locks' blade for a virtual machine named 'windowss'. The blade has a header with search, resource group, subscription, refresh, and feedback buttons. Below the header is a table with columns: Lock name, Lock type, Scope, and Notes. One row is present in the table, showing 'lock' under Lock name, 'Delete' under Lock type, and 'windowss' under Scope. At the bottom of the blade are 'Edit' and 'Delete' buttons, with 'Delete' being the active one. On the far left, a vertical sidebar lists various management categories like Bastion, Windows Admin Center, Networking, Settings, and Availability + scale. The 'Locks' option is selected. The bottom of the screen shows the Windows taskbar with various pinned icons and system status indicators.

9Q. Create a Virtual machine and do scale up in Azure.

Steps:

- 1.Create a virtual machine (ubuntu or windows).

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription: Azure for Students

Resource group: Panel-AZ/0024

Virtual machine name: windows

Region: (Asia Pacific) Central India

Availability options: Availability zone

Availability zone: Zone 1

Security type: Trusted launch virtual machines

Image: Windows Server 2019 Datacenter - a84 Gms2

< Previous | Next : Disks > Review + Create | Give feedback

Hibernate is not supported by the size that you have selected. Choose a size that is compatible with Hibernate to enable this feature. [Learn more](#)

Administrator account

Username: chaitanya

Password:

Confirm password:

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.

Public inbound ports: Allow selected ports

Select inbound ports: HTTP (80), RDP (3389)

All traffic from the internet will be blocked by default. You will be able to change inbound port rules in the VM > Networking page.

< Previous | Next : Disks > Review + Create | Give feedback

Essentials

- Resource group (move) : az2024
- Status : Running
- Location : Central India (Zone 1)
- Subscription (move) : Azure for Students
- Subscription ID : 74f6aa57-82cd-4319-8b36-ed6216f8a25
- Availability zone : 1

Networking

- Public IP address : 98.70.39.27 (Network interface windowsss905_z1)
- Public IP address (IPv6) : -
- Private IP address : 10.0.0.5
- Private IP address (IPv6) : -
- Virtual network/subnet : windows-vnet/default
- DNS name : Not configured
- Health state : -
- Time created : 6/13/2024, 6:06 AM UTC

Tags (edit) : Add tags

Properties Monitoring Capabilities (8) Recommendations Tutorials

Virtual machine

Computer name	windowss	Public IP address	98.70.39.27
Operating system	Windows (Windows Server 2019 Datacenter)	Public IP address (IPv6)	-
VM generation	V2	Private IP address	10.0.0.5
VM architecture	x64	Private IP address (IPv6)	-
Agent status	Ready	Virtual network/subnet	windows-vnet/default
Agent version	2.7.41491.1121	DNS name	Configure
Disabled			

2. After deployment of VM stop VM for scaling.

Essentials

- Resource group (move) : az2024
- Status : Stopped (deallocated)
- Location : Central India (Zone 1)
- Subscription (move) : Azure for Students
- Subscription ID : 74f6aa57-82cd-4319-8b36-ed6216f8a25
- Availability zone : 1

Notifications

More events in the activity log →

Successfully stopped virtual machine

Successfully stopped the virtual machine 'windowss'.

Properties Monitoring Capabilities (8) Recommendations Tutorials

Virtual machine

Computer name	windowss
---------------	----------

3. On the left side there will be settings and click on size.

Virtual machines > windowsss > **Size**

Showing 451 VM sizes. Subscription: Azure for Students | Region: Central India | Current size: Standard_D2s_v3

VM Size ↑	Type ↑	vCPUs ↑	RAM (GiB) ↑	Data disks ↑	Max IOPS ↑
DS1_v2	General purpose	1	3.5	4	3200
D2s_v3	General purpose	2	8	4	3200
D2as_v4	General purpose	2	8	4	3200
B2s	General purpose	2	4	4	1280
B1s	(free services eligible)	1	1	2	320
B2ms	General purpose	2	8	4	1920
DS2_v2	General purpose	2	7	8	6400
B4ms	General purpose	4	16	8	2880
DS3_v2	General purpose	4	14	16	12800

4. Click on size name and select your preferred size, and click on resize.

Virtual machines > windowsss > **Size**

Showing 451 VM sizes. Subscription: Azure for Students | Region: Central India | Current size: Standard_D2as_v4

VM Size ↑	Type ↑	vCPUs ↑	RAM (GiB) ↑	Data disks ↑	Max IOPS ↑
DS1_v2	General purpose	1	3.5	4	3200
D2s_v3	General purpose	2	8	4	3200
D2as_v4	General purpose	2	8	4	3200
B2s	General purpose	2	4	4	1280
B1s	(free services eligible)	1	1	2	320
B2ms	General purpose	2	8	4	1920
DS2_v2	General purpose	2	7	8	6400
B4ms	General purpose	4	16	8	2880
DS3_v2	General purpose	4	14	16	12800

Prices presented are estimates in INR that include only Azure infrastructure costs and any discounts for the subscription and location. The prices don't include any applicable software costs. Final charges will appear in your local currency in cost analysis and billing views. [View Azure pricing calculator.](#)

5. We scaled up virtual machine.

VM Size ↑	Type ↑	vCPUs ↑	RAM (GiB) ↑	Data disks ↑
D1_v2 ↗	General purpose	1	3.5	4
D2s_v3 ↗	General purpose	2	8	4
D2as_v4 ↗	General purpose	2	8	4
B2s ↗	General purpose	2	4	4
B1s (free services)	General purpose	1	1	2
B2ms ↗	General purpose	2	8	4
DS2_v2 ↗	General purpose	2	7	8

6. We can see results in Size option.

Resource group (move)
[az2024](#)

Status
Stopped (deallocated)

Location
Central India (Zone 1)

Subscription (move)
[Azure for Students](#)

Subscription ID
74f6aa57-82cd-4319-8b36-eda6216f8a25

Availability zone
1

Tags (edit)
[Add tags](#)

Operating system
Windows

Size
Standard D2s v3 (2 vcpus, 8 GiB memory)

Public IP address
[98.70.39.27](#)

Virtual network/subnet
[windows-vnet/default](#)

DNS name
Not configured

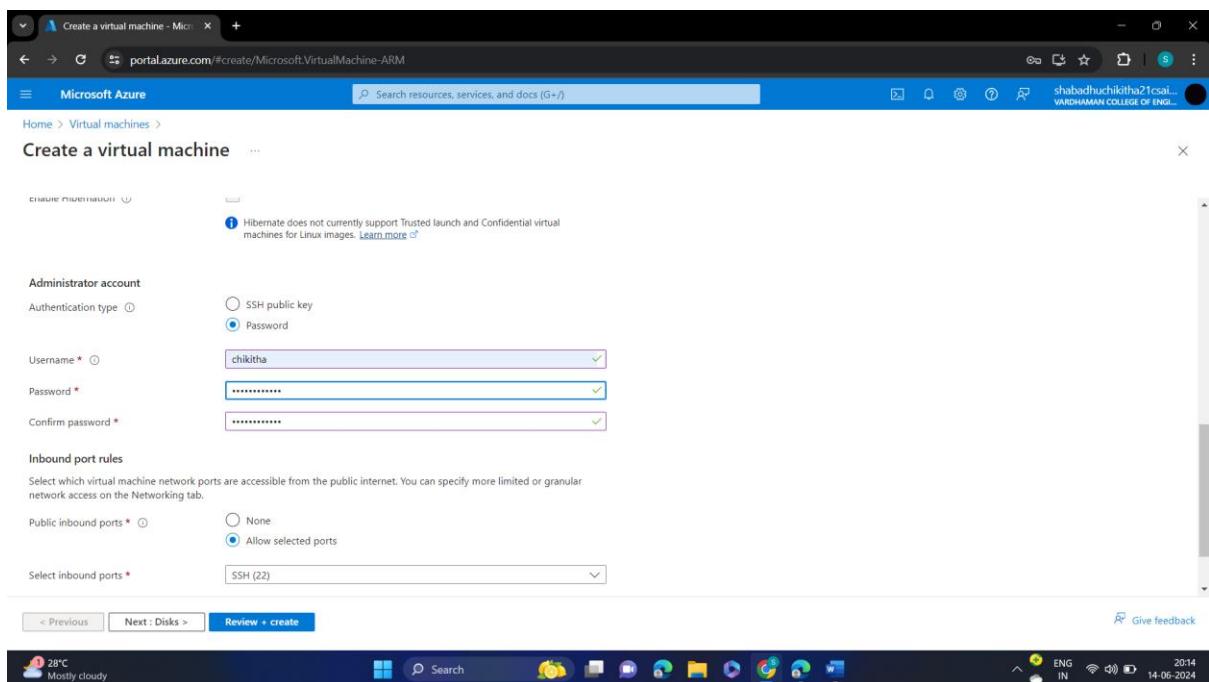
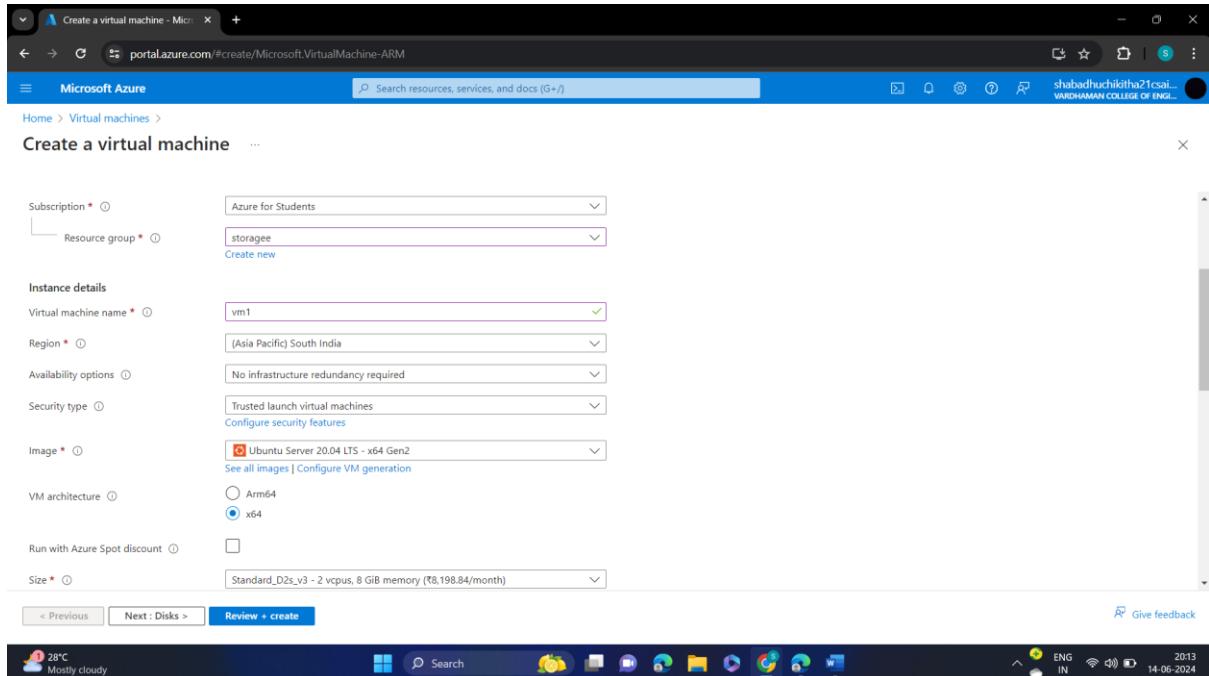
Health state
-

Time created
6/13/2024, 6:06 AM UTC

10Q) How to attach and detach data disks to linux server in azure data center.

Steps:

1) Create a Virtual name with VM name as "UbuntU" with username &password.



2) click on "Next:Disks>".

OS disk

- OS disk size: Image default (30 GiB)
- OS disk type: Premium SSD (locally-redundant storage)
- Delete with VM: checked
- Key management: Platform-managed key
- Enable Ultra Disk compatibility: Ultra disk is not supported in South India.

Data disks for vmf

You can add and configure additional data disks for your virtual machine or attach existing disks. This VM also comes with a temporary disk.

LUN	Name	Size (GiB)	Disk type	Host caching	Delete with VM

Create and attach a new disk Attach an existing disk

< Previous Next : Networking > Review + create Give feedback

3) Click on "Create & attach a new disk".

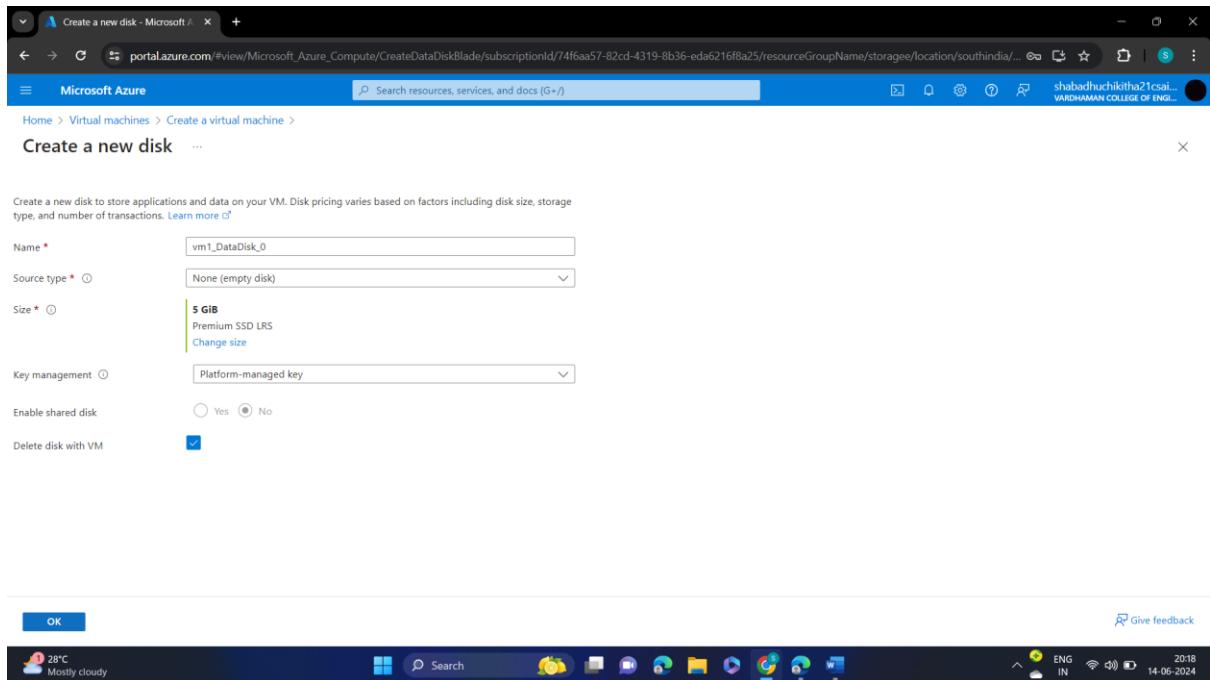
32 GiB	P4	120	25	3	3500	170
64 GiB	P6	240	50	3	3500	170
128 GiB	P10	500	100	3	3500	170
256 GiB	P15	1100	125	3	3500	170
512 GiB	P20	2300	150	3	3500	170
1024 GiB	P30	5000	200	5	-	-
2048 GiB	P40	7500	250	5	-	-
4096 GiB	P50	7500	250	5	-	-
8192 GiB	P60	16000	500	10	-	-
16384 GiB	P70	18000	750	10	-	-
32767 GiB	P80	20000	900	10	-	-

Custom disk size (GiB) *

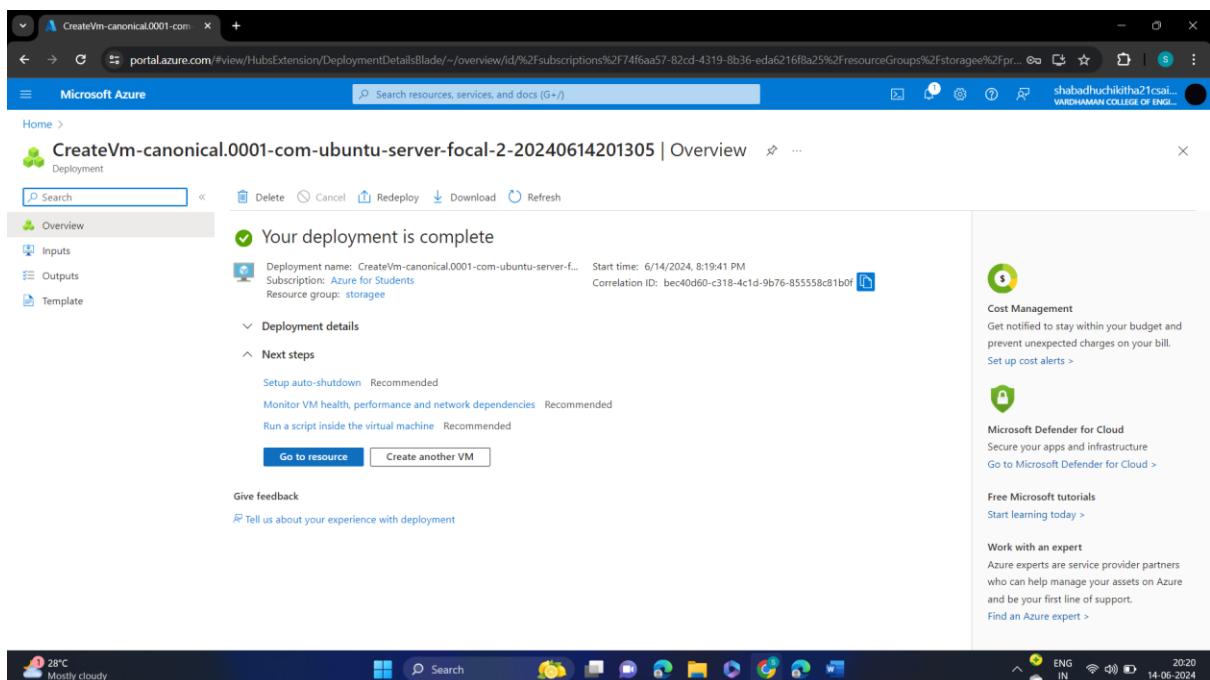
Performance tier

OK Give feedback

4) Select Storage type -----Premium SSD(LRS), Custom disk size (GB) -----5 ,click on OK.



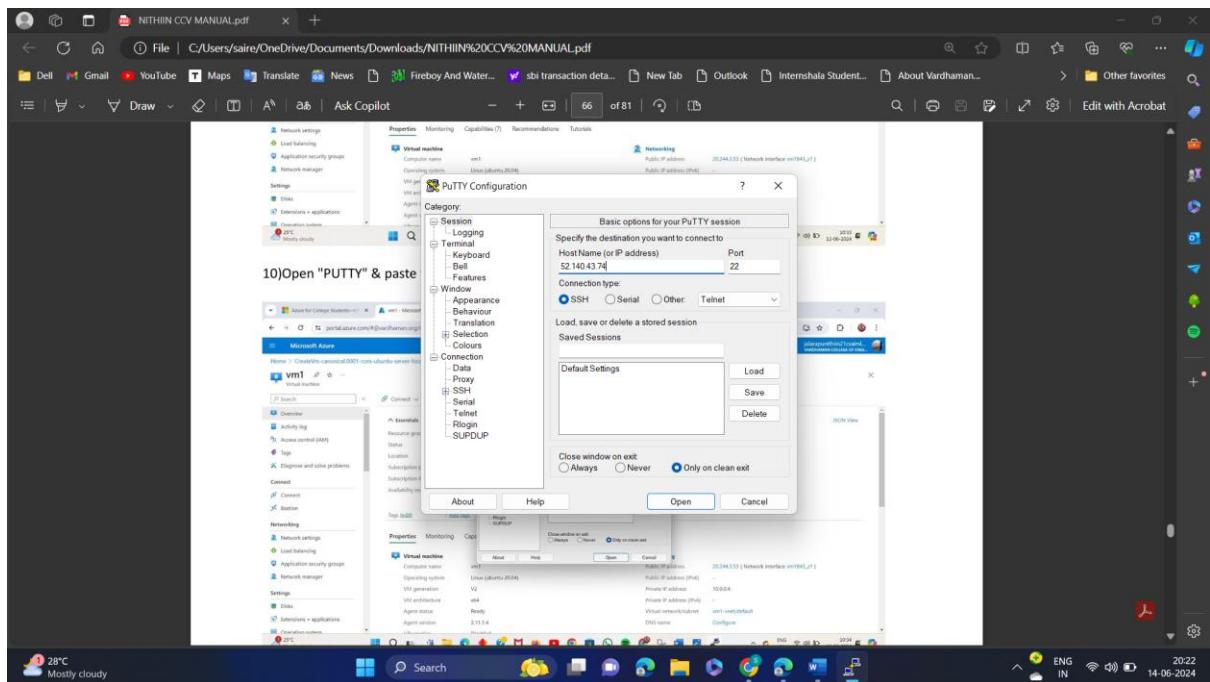
5) Click on "Review+ create" & click on create.



6) Click on "Go to resource group".

7) Copy public IP Address.

8) Open "PUTTY" & paste the IP address and click on "open".



9) Login into it with username and password.

Operating system : Linux (ubuntu 20.04)
 Size : Standard D2s v3 (2 vcpus, 8 GB memory)
 Public IP address : 52.140.43.74
 Virtual network/subnet : vm1-vnet/default
 DNS name : Not configured
 Health state : -
 Time created : 6/14/2024, 2:49 PM UTC

10) Type the below commands \$ df -hT

```
$ lsblk
```

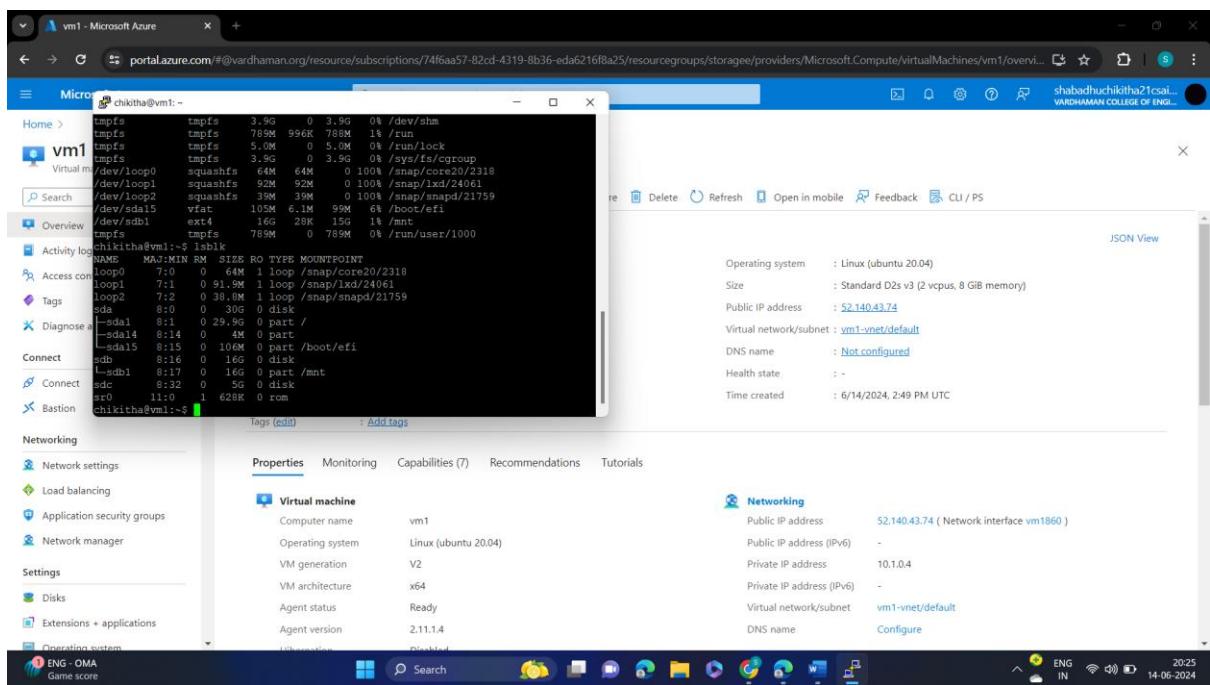
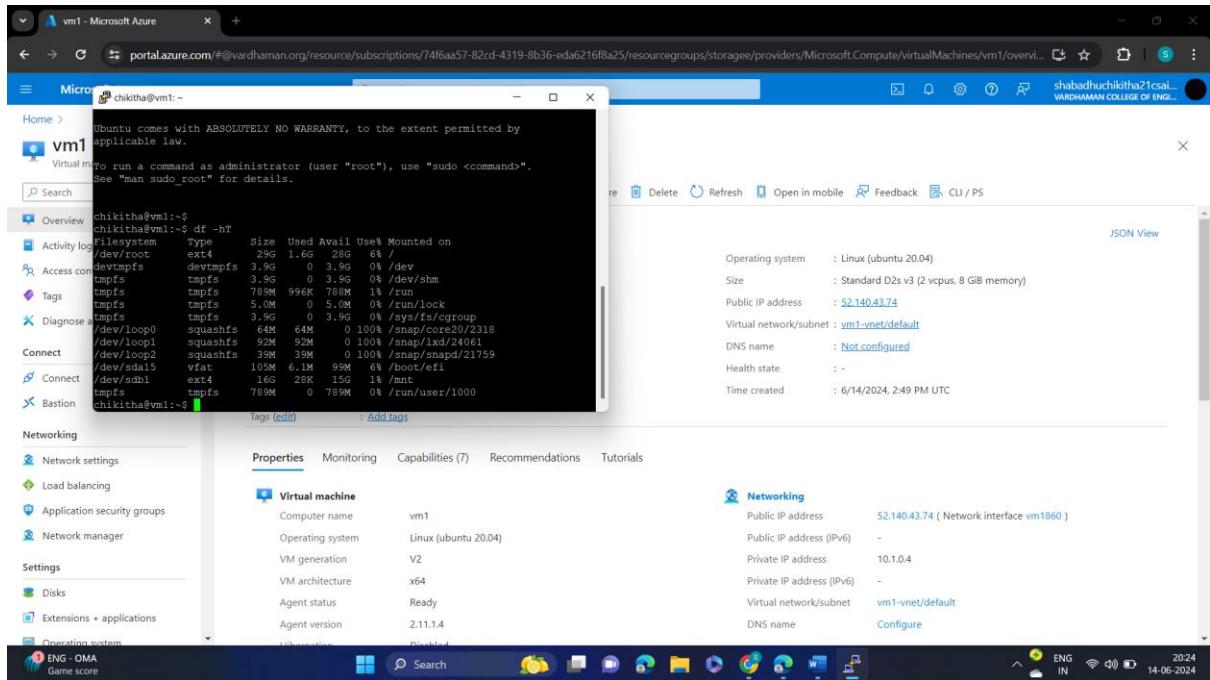
```
$ sudo filoe -s/dev/sdc
```

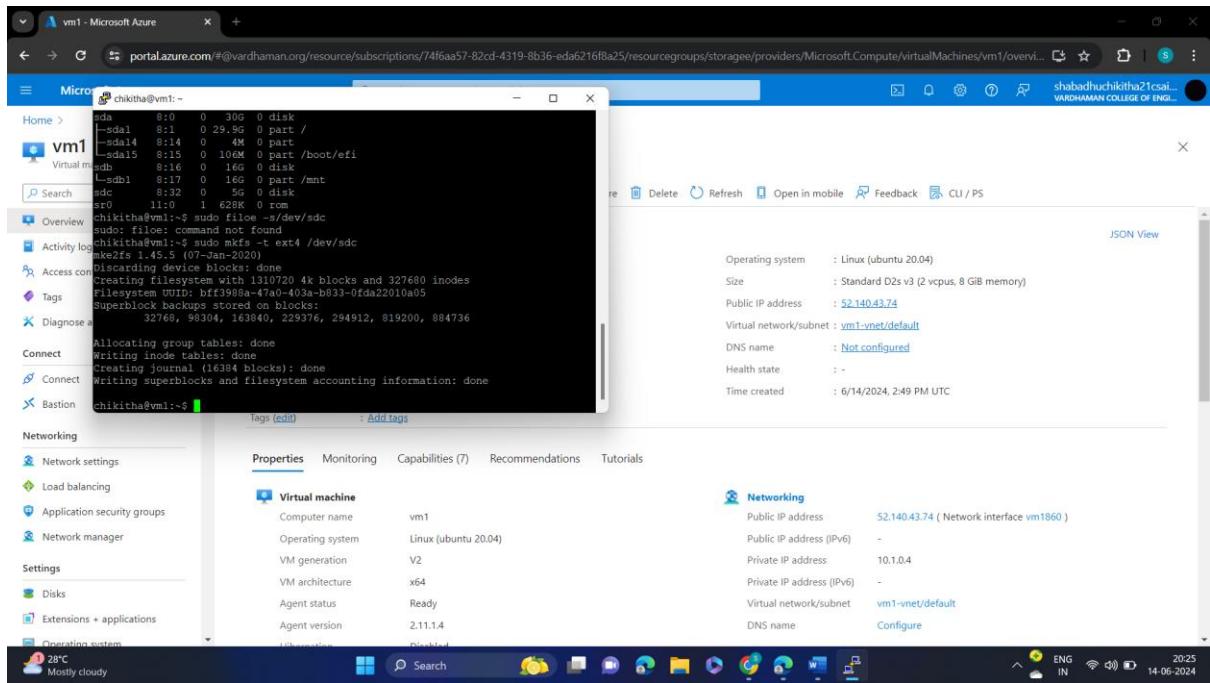
```
$ sudo mkfs -t ext4 /dev/sdc
```

```
$ mkdir test
```

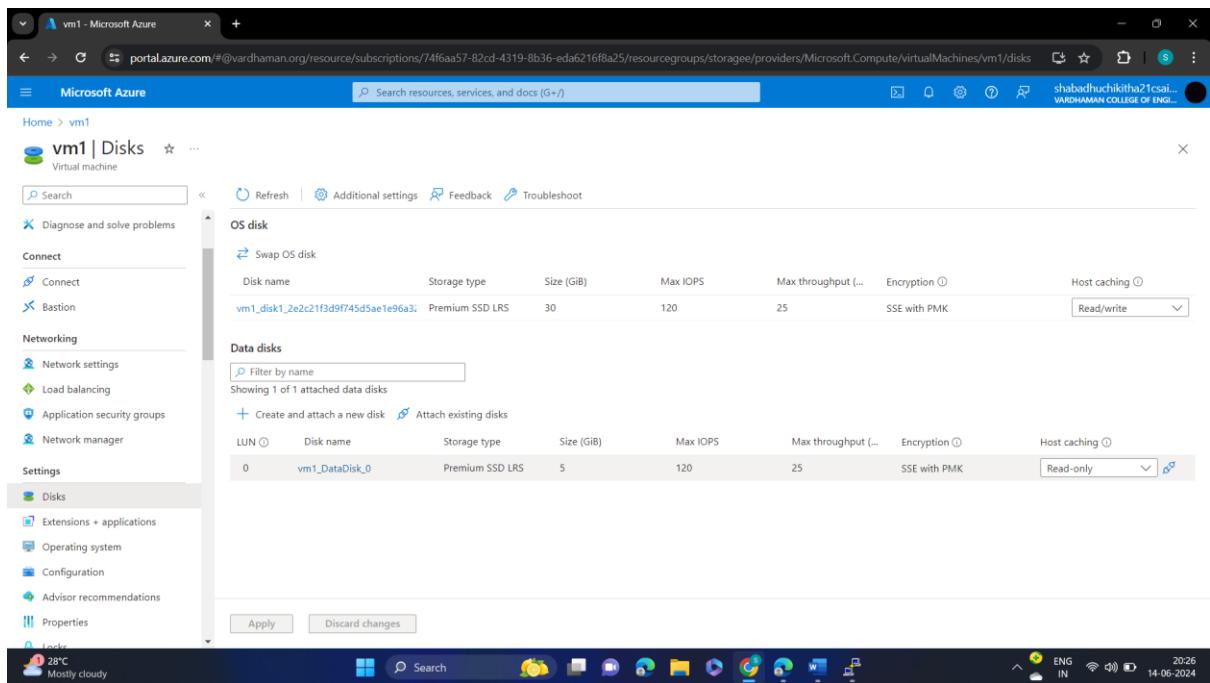
```
$ sudo mount /dev/sdc/ test
```

```
$ cd test
```





11) Open the VM and move to disks.

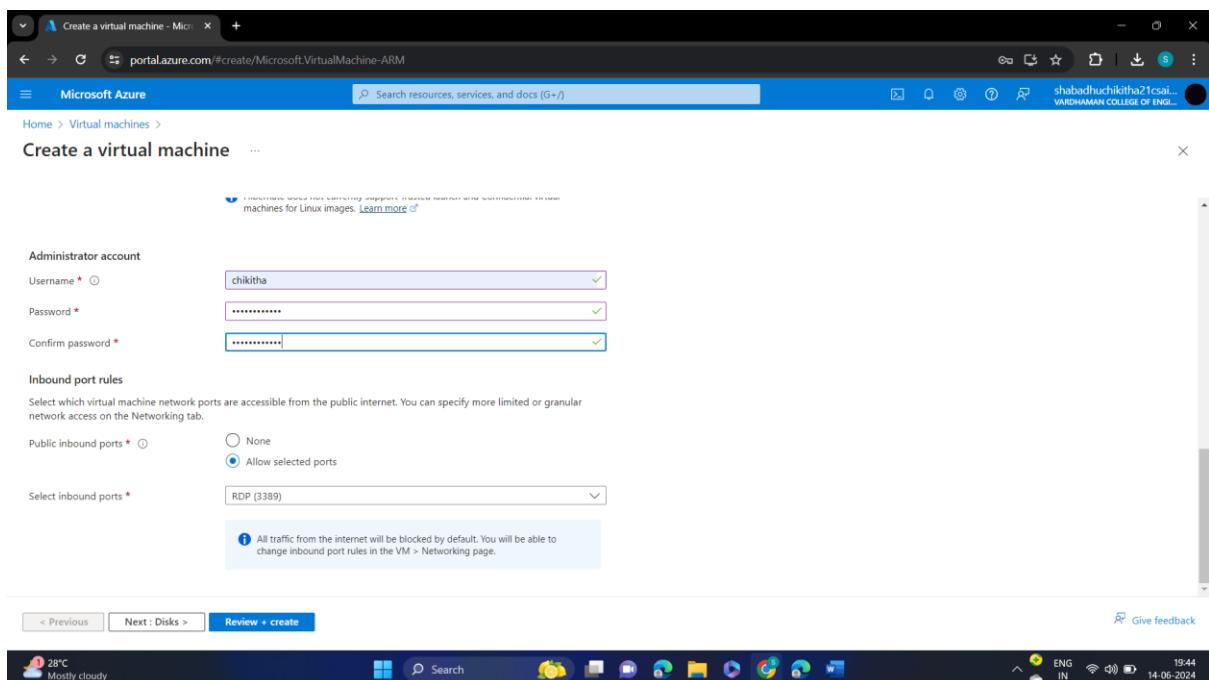
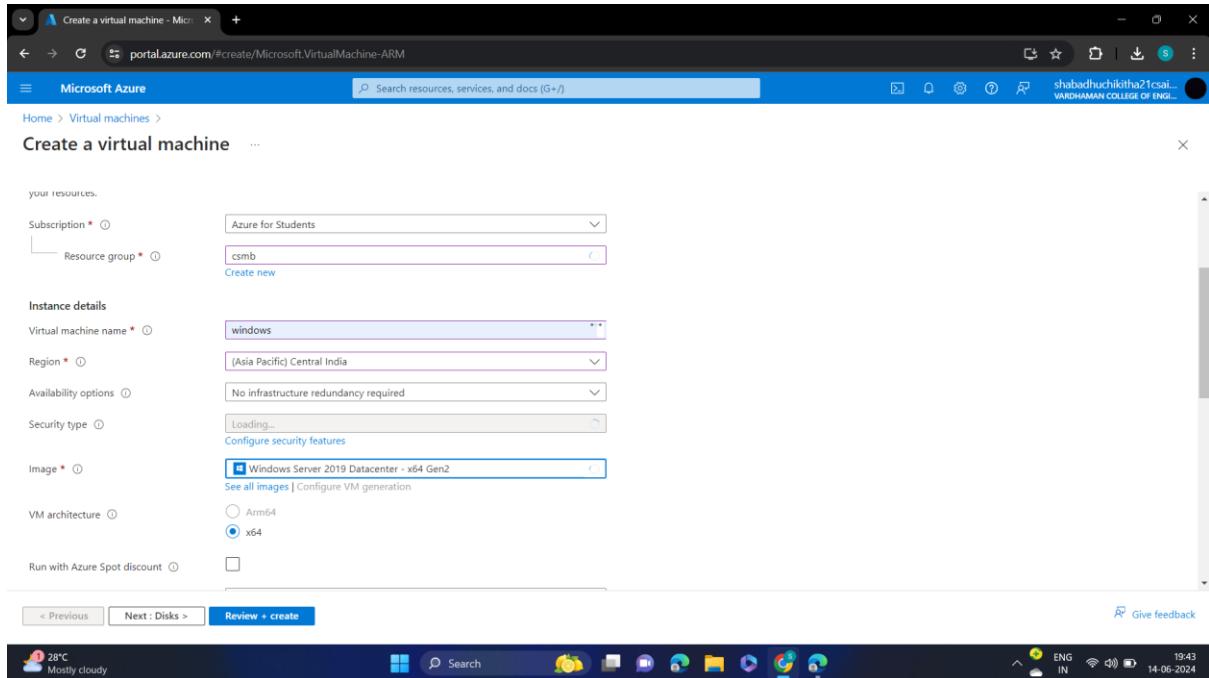


12) Click on detach and click on apply.

The screenshot shows the Microsoft Azure portal interface for managing disks of a virtual machine named 'vm1'. The left sidebar navigation includes 'Home', 'Connect', 'Networking', and 'Settings' sections. Under 'Settings', 'Disks' is selected. The main content area displays the 'OS disk' configuration for 'vm1_disk1_2e2c21f3d9f745d5ae1e96a3'. The disk is a Premium SSD LRS type with 30 GiB of storage, 120 Max IOPS, 25 Max throughput, and SSE with PMK encryption. The 'Host caching' setting is set to 'Read/write'. Below this, a 'Data disks' section shows 'No data disks attached'. At the bottom of the page are 'Apply' and 'Discard changes' buttons. The browser address bar shows the URL for the Azure portal, and the system tray at the bottom right indicates the date as 14-06-2024.

11Q) How to attach and detach data disk to windows server in azure data center.

Steps:



Create a virtual machine

OS disk

- OS disk size: Image default
- OS disk type: Premium SSD (locally-redundant storage)
- Delete with VM:
- Key management:
- Enable Ultra Disk compatibility:

Data disks for windows

You can add and configure additional data disks for your virtual machine or attach existing disks. This VM also comes with a temporary disk.

LUN	Name	Size (GiB)	Disk type	Host caching	Delete with VM

[Create and attach a new disk](#) [Attach an existing disk](#)

Advanced

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

Create a new disk

Create a new disk to store applications and data on your VM. Disk pricing varies based on factors including disk size, storage type, and number of transactions. [Learn more](#)

Name *: windows_DataDisk_0

Source type *: None (empty disk)

Size *: 1024 GiB
Premium SSD LRS
[Change size](#)

Key management: Platform-managed key

Enable shared disk: Yes No

Delete disk with VM:

OK

Select a disk size

Disk Size (GiB)	Performance tier	IOPS	Throughput (MB/s)	Latency (ms)	Bandwidth (GB/s)	Encryption
32 GiB	P4	120	25	3	3500	170
64 GiB	P6	240	50	3	3500	170
128 GiB	P10	500	100	3	3500	170
256 GiB	P15	1100	125	3	3500	170
512 GiB	P20	2300	150	3	3500	170
1024 GiB	P30	5000	200	5	-	-
2048 GiB	P40	7500	250	5	-	-
4096 GiB	P50	7500	250	5	-	-
8192 GiB	P60	16000	500	10	-	-
16384 GiB	P70	18000	750	10	-	-
32767 GiB	P80	20000	900	10	-	-

Custom disk size (GiB) *

Performance tier

OK **Give feedback**

Create a new disk

Create a new disk to store applications and data on your VM. Disk pricing varies based on factors including disk size, storage type, and number of transactions. [Learn more](#)

Name *	<input type="text" value="windows_DataDisk_0"/>
Source type *	<input type="button" value="None (empty disk)"/>
Size *	10 GiB Premium SSD LRS <input type="button" value="Change size"/>
Key management	<input type="button" value="Platform-managed key"/>
Enable shared disk	<input type="radio"/> Yes <input checked="" type="radio"/> No
Delete disk with VM	<input type="checkbox"/>

OK **Give feedback**

Create a new disk - Microsoft Azure

Home > Virtual machines > Create a virtual machine > Create a new disk

Create a new disk

Create a new disk to store applications and data on your VM. Disk pricing varies based on factors including disk size, storage type, and number of transactions. [Learn more](#)

Name * windows_DataDisk_0

Source type * None (empty disk)

Size * 10 GB Premium SSD LRS [Change size](#)

Key management Platform-managed key

Enable shared disk Yes No

Delete disk with VM

OK Give feedback

Microsoft Azure

Home > CreateVm-MicrosoftWindowsServer.WindowsServer-201-20240614194356 | Overview

Deployment

Overview

Your deployment is complete

Deployment name: CreateVm-MicrosoftWindowsServer.WindowsSe... Start time: 6/14/2024, 7:53:41 PM
Subscription: Azure for Students Correlation ID: b8f01996-4e00-4c8b-a94e-09b5ca78226c

Deployment details

Next steps

Setup auto-shutdown Recommended
Monitor VM health, performance and network dependencies Recommended
Run a script inside the virtual machine Recommended

Go to resource Create another VM

Give feedback Tell us about your experience with deployment

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28°C Mostly cloudy ENG IN 14-06-2024

VM Details:

- Resource group: csmb
- Status: Running
- Location: Central India (Zone 1)
- Subscription: Azure for Students
- Subscription ID: 74f6aa57-82cd-4319-8b36-ed6216fba25
- Availability zone: 1
- Tags: Add tags
- Operating system: Windows
- Size: Standard D2s v3 (2 vcpus, 8 GiB memory)
- Public IP address: 98.70.9.111
- Virtual network/subnet: windows-vnet/default
- DNS name: Not configured
- Health state: -
- Time created: 6/14/2024, 2:23 PM UTC

Networking:

- Public IP address: 98.70.9.111 (Network interface windows519_z1)
- Private IP address (IPv6): -
- Private IP address (IPv6): 10.0.0.4
- Virtual network/subnet: windows-vnet/default
- DNS name: Configure

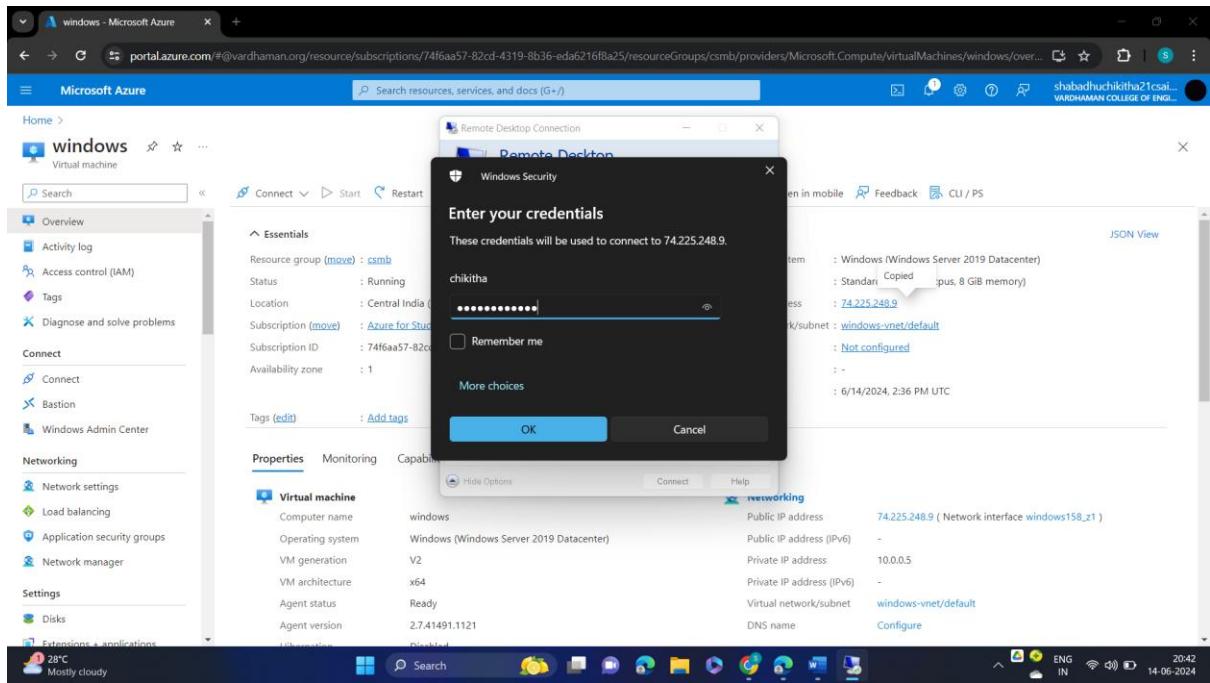
Remote Desktop Connection:

General

- Computer: 74.225.248.9
- User name: chikitha
- Allow me to save credentials:

VM Details:

- Resource group: csmb
- Status: Running
- Location: Central India (Zone 1)
- Subscription: Azure for Students
- Subscription ID: 74f6aa57-82cd-4319-8b36-ed6216fba25
- Availability zone: 1
- Tags: Add tags
- Computer name: windows
- Operating system: Windows (Windows Server 2019 Datacenter)
- VM generation: V2
- VM architecture: x64
- Agent status: Ready
- Agent version: 2.7.1491.1095
- Public IP address: 74.225.248.9 (Network interface windows158_z1)
- Public IP address (IPv6): -
- Private IP address: 10.0.0.5
- Virtual network/subnet: windows-vnet/default
- DNS name: Configure



Pg.no 76 in nithiin

12Q. How to create storage account, container and upload / delete objects?

Steps :

1. Login to Azure account and create a storage account.

The screenshot shows the Microsoft Azure portal interface. The title bar says "Storage accounts - Microsoft Azure". The address bar shows the URL "portal.azure.com/#view/HubsExtension/BrowseResource/resourceType/Microsoft.Storage%2FStorageAccounts". The top navigation bar includes "Microsoft Azure", a search bar, and user information "shabdhuchikitha21cs... VARDHAMAN COLLEGE OF ENGL...". Below the navigation is a toolbar with "Create", "Restore", "Manage view", "Refresh", "Export to CSV", "Open query", "Assign tags", and "Delete". A filter bar at the top allows filtering by "Subscription", "Resource group", "Location", and "Add filter". The main content area displays a message: "No storage accounts to display". It provides instructions to "Create a storage account to store up to 500TB of data in the cloud. Use a general-purpose storage account to store object data, use a NoSQL data store, define and use queues for message processing, and set up file shares in the cloud. Use the Blob storage account and the hot or cool access tiers to optimize your costs based on how frequently your object data is accessed." It includes a "Create storage account" button and a "Learn more" link. The bottom of the screen shows a taskbar with various icons and system status indicators like weather (39°C), battery level, and network connection.

2. Giving a resource name, storage account name and changing region to (Asia Pacific) South India and change redundancy to LRS(Local redundant storage).

The screenshot shows the "Create a storage account" wizard on the Microsoft Azure portal. The title bar says "Create a storage account - Microsoft Azure". The address bar shows the URL "portal.azure.com/#create/Microsoft.StorageAccount-ARM". The top navigation bar includes "Microsoft Azure", a search bar, and user information "shabdhuchikitha21cs... VARDHAMAN COLLEGE OF ENGL...". Below the navigation is a toolbar with "Create storage account", "Storage accounts", and "Storage accounts (C)". The main form has sections for "Project details", "Instance details", and "Performance & Redundancy". In "Project details", "Subscription" is set to "Azure for Students" and "Resource group" is set to "(New) sto". In "Instance details", "Storage account name" is "chikithaa", "Region" is "(Asia Pacific) South India", and "Performance" is "Standard: Recommended for most scenarios (general-purpose v2 account)". In "Redundancy", "Locally-redundant storage (LRS)" is selected. At the bottom are "Previous", "Next", and "Review + create" buttons. The bottom of the screen shows a taskbar with various icons and system status indicators like weather (39°C), battery level, and network connection.

3. Click Review + Create .

4. Now go to “Advanced” option and choose “Allow enabling anonymous access on individual containers”.
5. Click on Review + Create .

6. After completion of deployment, click on “ Go to resources ”.

7. Click on container and “+ container” and give a name to create and set anonymous access level to “ Blob”.

The screenshot shows the Microsoft Azure Storage Containers page. On the left, there's a sidebar with 'Containers' selected under 'Data storage'. The main area shows a table with one row: 'Name' (slogs), 'Last modified' (5/6/2024, 7:13:39 PM), and 'Anonymous' (Private). A modal window titled 'New container' is open on the right, prompting for a 'Name' (set to 'cloud') and 'Anonymous access level' (set to 'Blob (anonymous read access for blobs only)'). Below the modal, a warning message states: 'Blobs within the container can be read by anonymous request, but container data is not available. Anonymous clients cannot enumerate the blobs within the container.' At the bottom right of the modal is a 'Create' button.

8. Open named container and click on upload and upload a file.

The screenshot shows the Microsoft Azure Storage Container 'cloud' page. The sidebar on the left has 'Overview' selected. The main area displays a table with one row: 'Name' (access modifier.txt), 'Modified' (5/6/2024, 7:15:37 PM), 'Access tier' (Hot (Inferred)), 'Archive status' (Not yet archived), 'Blob type' (Block blob), 'Size' (331 B), and 'Lease state' (Available). At the top of the table, it says 'Authentication method: Access key (Switch to Microsoft Entra user account)' and 'Location: cloud'. The bottom right corner of the screen shows a Windows taskbar with various icons and a system tray indicating '39°C Partly cloudy'.

9. Open the file and copy the URL and paste it in browser.

The screenshot shows the Microsoft Azure Storage Blob Properties blade for a blob named "access modifier.txt". The URL field contains the value "https://chikithaa.blob.core.windows.net/cloud/access%20modifier.txt". A tooltip "Copy to clipboard" is visible over the URL field.

Properties	Value
URL	https://chikithaa.blob.core.windows.net/cloud/access%20modifier.txt
LAST MODIFIED	5/6/2024, 7:15:37 PM
CREATION TIME	5/6/2024, 7:15:37 PM
VERSION ID	-
TYPE	Block blob
SIZE	331 B
ACCESS TIER	Hot (Inferred)
ACCESS TIER LAST MODIFIED	N/A
ARCHIVE STATUS	-
REHYDRATE PRIORITY	-
SERVER ENCRYPTED	true
ETAG	0x8DC6DD2CFC59EF4
VERSION-LEVEL IMMUTABILITY POLICY	Disabled
CACHE-CONTROL	
CONTENT-TYPE	text/plain
CONTENT-MD5	SRy+fbPy2Osu37BxwXPaKg...
CONTENT-ENCODING	

The screenshot shows a web browser window displaying the contents of the "access modifier.txt" file. The content is as follows:

```

4-05-2024
Access Specifiers : 4 types
1.private- cannot use outside class
2.public- can be used within and outside the class
3.protected- can be used outside the package through inheritance
4.default- cannot be used outside the package

Packages:
1.built in package - ex: lang, util, awt
2. user defined package

```

10. Do this step 7 by changing access level to “ Private ”.

The screenshot shows the Microsoft Azure portal interface. The left sidebar is titled 'chikithaa | Containers' and includes sections for Overview, Activity log, Tags, Diagnose and solve problems, Access Control (IAM), Data migration, Events, Storage browser, and Storage Mover. Under 'Data storage', 'Containers' is selected. The main content area shows a table of existing containers:

Name	Last modified	Anonymous access level
\$logs	5/6/2024, 7:13:39 PM	Private
cloud	5/6/2024, 7:15:11 PM	Blob

A modal window titled 'New container' is open on the right, prompting for a 'Name' (set to 'cloud1') and 'Anonymous access level' (set to 'Private (no anonymous access)'). Below the table, there are 'Create' and 'Give feedback' buttons.

11. Click on delete to delete a file along with Blobs.

This screenshot shows the same Azure portal interface as the previous one, but with a different context. A modal window titled 'Delete container(s)' is open on the right, containing the following text:

Containers which are in a leased state are locked for deletion and will be skipped. This action will move the following container(s) and its contents to a soft deleted state. The container(s) will remain recoverable for the retention period of 7 days. [Learn more](#)

Container(s) to be soft deleted

cloud1

At the bottom of the modal are 'Delete' and 'Cancel' buttons. The status bar at the bottom of the screen shows the date and time as 06-05-2024 and 19:19.

13Q. File sharing using Storage Accounts in Azure.

Steps:

1.Login to Azure Account and Create a Storage account.

Create a storage account

Project details

Select the subscription in which to create the new storage account. Choose a new or existing resource group to organize and manage your storage account together with other resources.

Subscription *: Azure for Students

Resource group *: (New) storage
Create new

Storage account name *: ccvprjct

Region *: (Asia Pacific) South India
Deploy to an Azure Extended Zone

Performance *: Standard: Recommended for most scenarios (general-purpose v2 account)
Premium: Recommended for scenarios that require low latency.

Redundancy *: Locally-redundant storage (LRS)

Next Review + create

2.Click on “Review + Create”.

ccvprjct_1717595479169 | Overview

Your deployment is complete

Deployment name: ccvprjct_1717595479169
Subscription: Azure for Students
Resource group: storage

Start time: 05/06/2024, 19:21:28
Correlation ID: 9082eb29-47f1-432a-b119-7bc1a576dc01

Deployment details
Next steps
Go to resource

Give feedback
Tell us about your experience with deployment

Cost Management
Get notified to stay within your budget and prevent unexpected charges on your bill.
Set up cost alerts >

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Go to Microsoft Defender for Cloud >

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Azure experts are service provider partners who can help manage your assets on Azure and be your first line of support.
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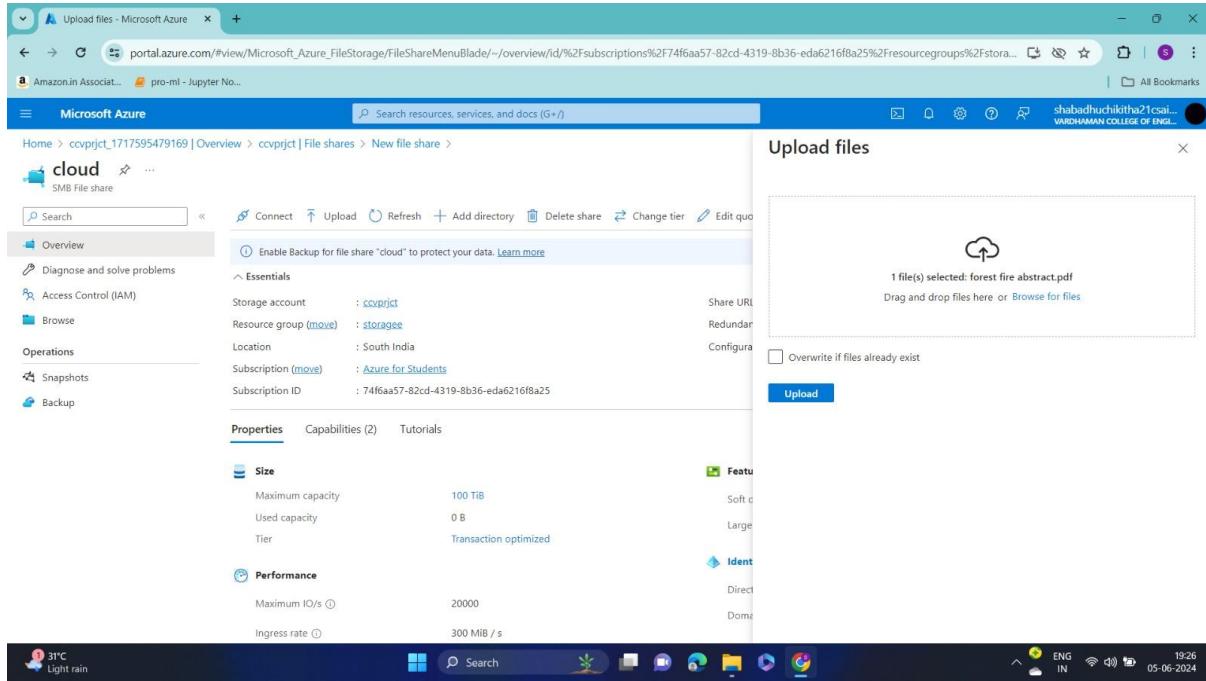
3.Click on “Goto resources”. And click on “File Shares” in Disk Storage.

The screenshot shows the Microsoft Azure Storage account settings for the 'ccvprjct' project. On the left, the navigation menu is expanded to show 'Data storage' under 'Storage account'. Under 'Data storage', 'File shares' is selected. The main content area displays 'File share settings' with various configuration options like Identity-based access, Default share-level permissions, Soft delete, Maximum capacity, and Security. A table lists existing file shares, which currently has one entry: 'You don't have any file shares yet. Click 'File share' to get started.' At the bottom right of the browser window, there is a system tray showing battery status, language (ENG IN), signal strength, and the date/time (05-06-2024).

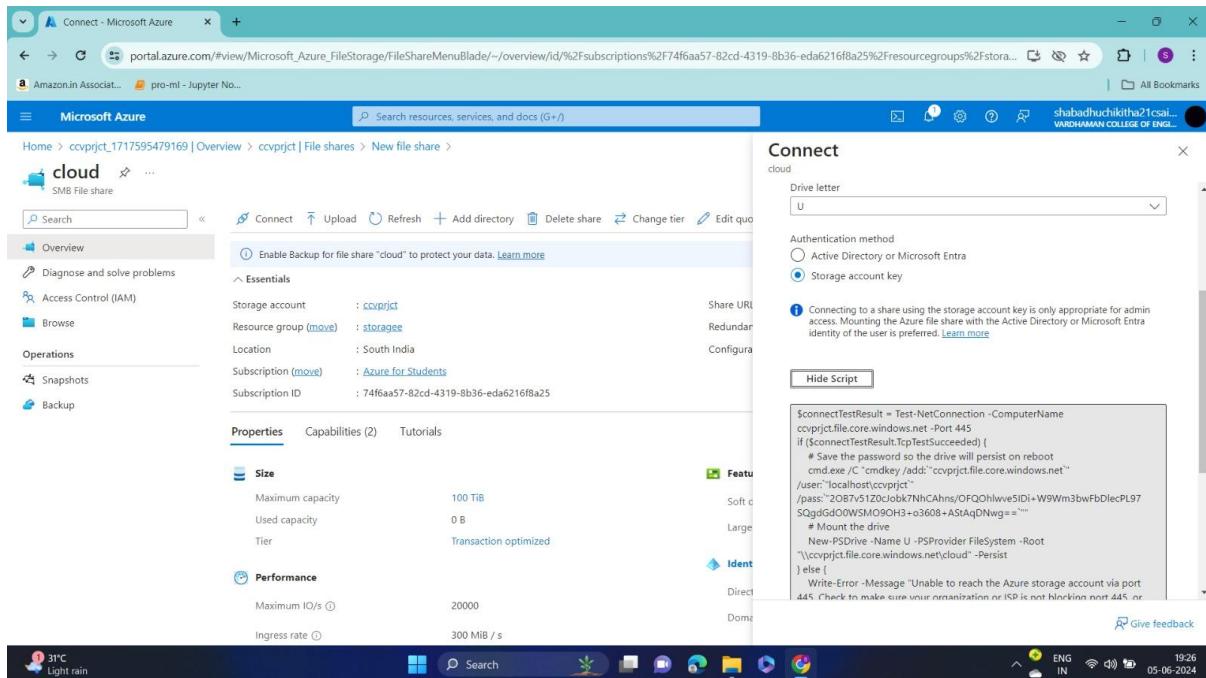
4.Click on “+ File Share” and give Access Tier : TransactionOptimized.

The screenshot shows the 'New file share' creation wizard in Microsoft Azure, specifically the 'Review + create' step. The 'Validation passed' message is displayed at the top. Below it, the 'Basics' and 'Backup' sections are shown. In the 'Basics' section, the file share name is 'cloud', Access Tier is set to 'TransactionOptimized', and the protocol is 'SMB'. In the 'Backup' section, the vault name is '(new) vault-lx1w1dab', and a backup policy is defined with daily backups at 7:30 PM UTC, retaining 30 days. At the bottom, there are 'Create' and 'Next >' buttons, along with a link to download a template for automation. The system tray at the bottom right shows battery status, language (ENG IN), signal strength, and the date/time (05-06-2024).

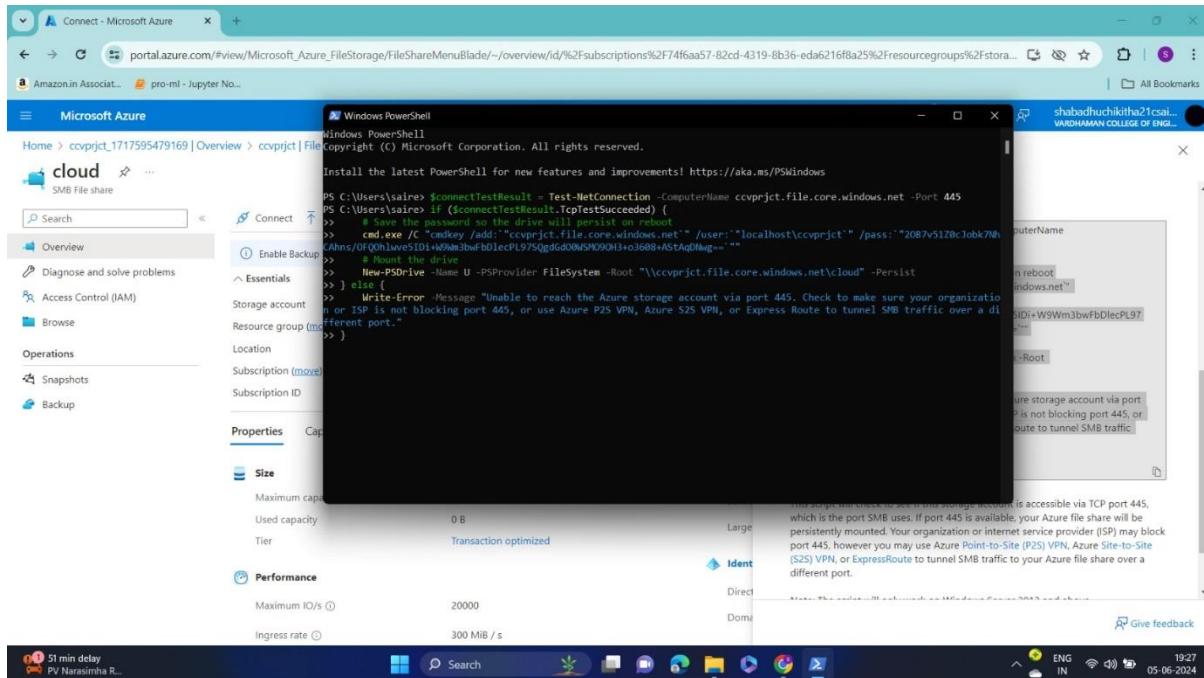
5.Click on upload and upload some files and click on upload.



6.Click on connect and select Drive letter.



7. Open Windows PowerShell and paste Script.



8. Now open file explorer we can see our uploaded files.

