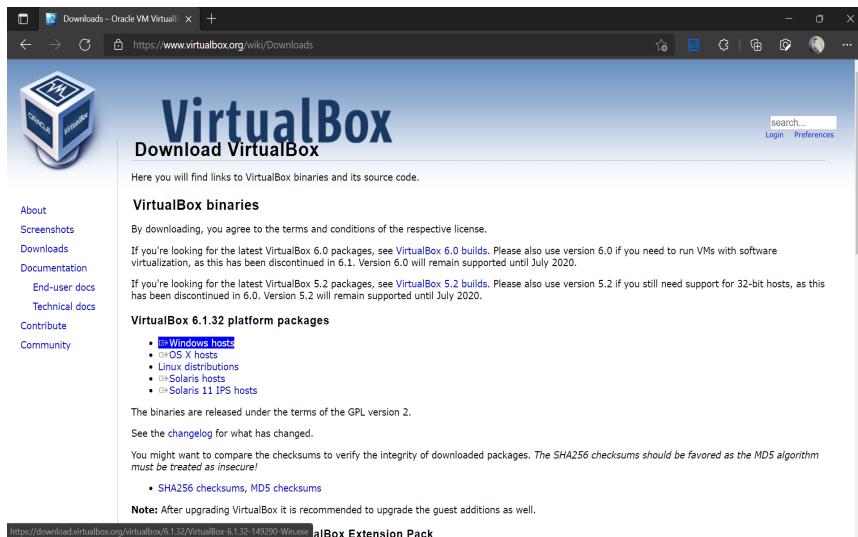


Q1. Install Virtual box and making Ubuntu and Window Virtual Machine.

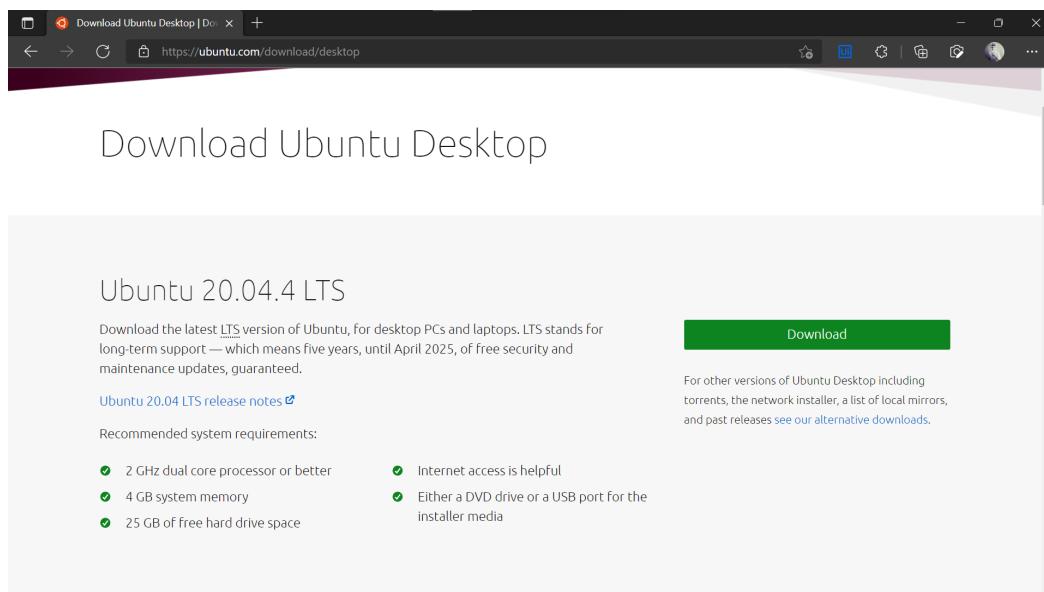
Ubuntu:

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



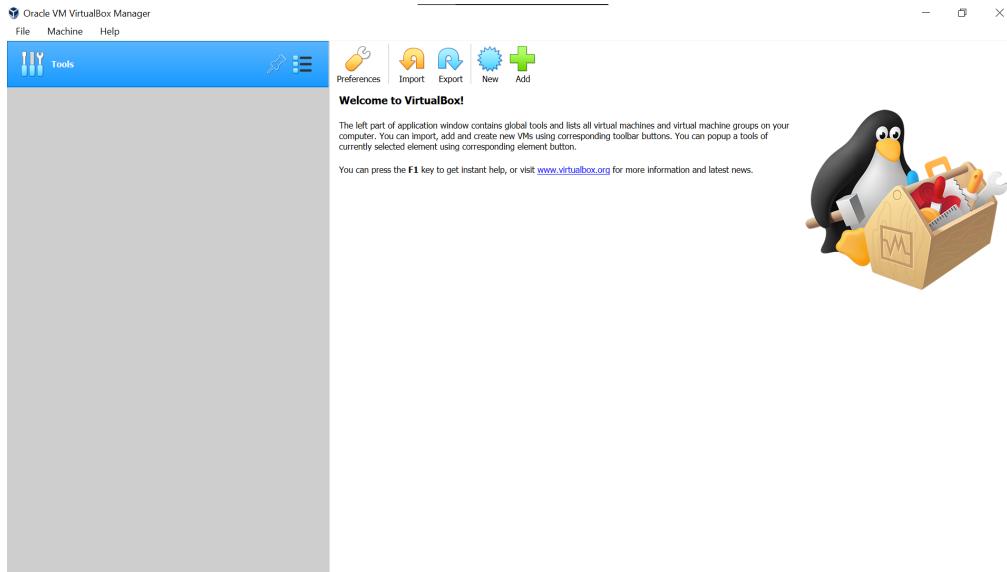
<https://www.virtualbox.org/wiki/Downloads>

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

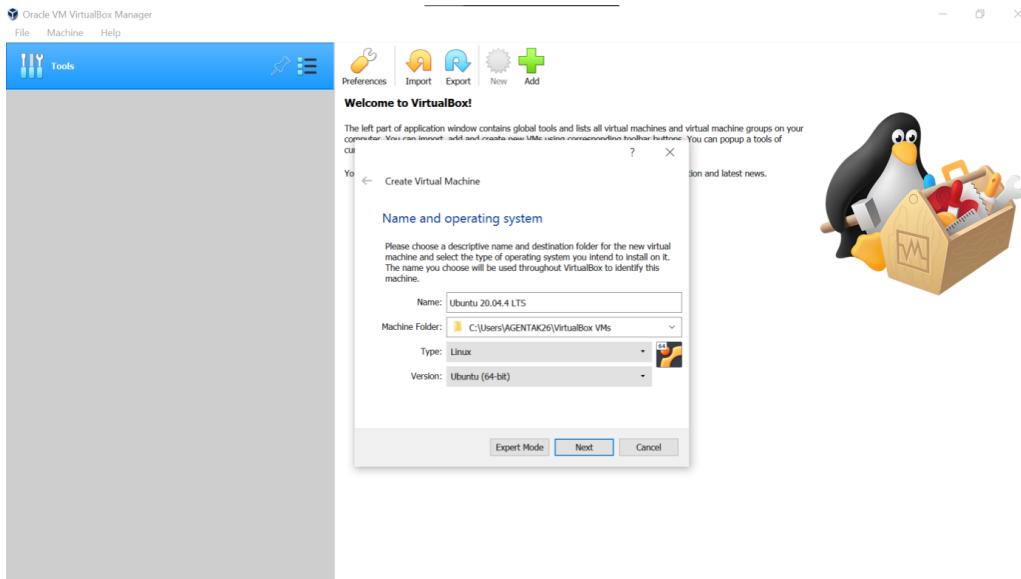


Note: The current version of Ubuntu only works on 64-bit machines.

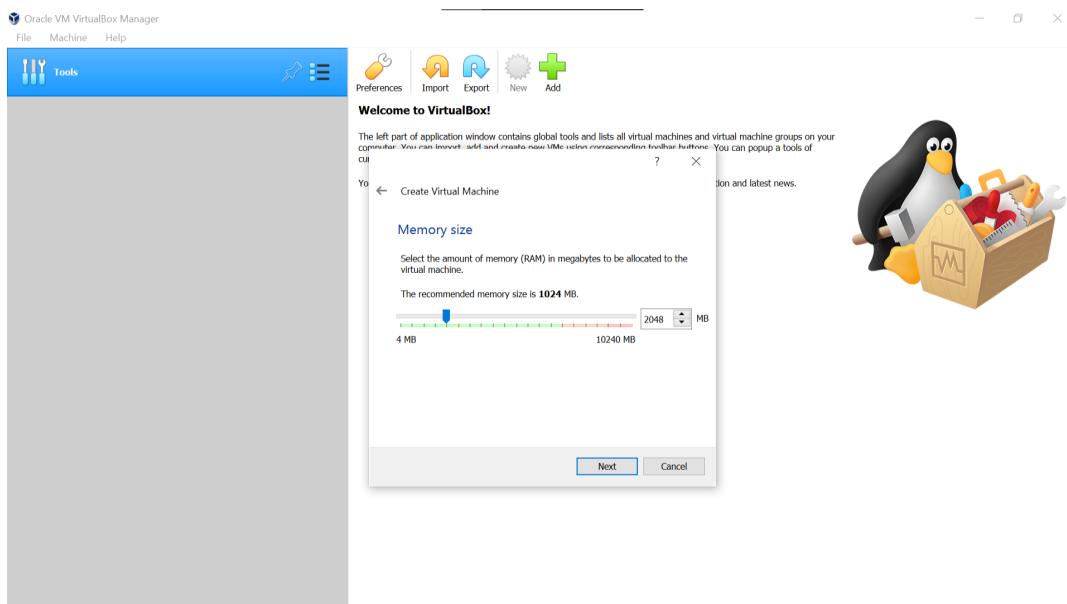
Step-3: Open VirtualBox and select New in the top taskbar.



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

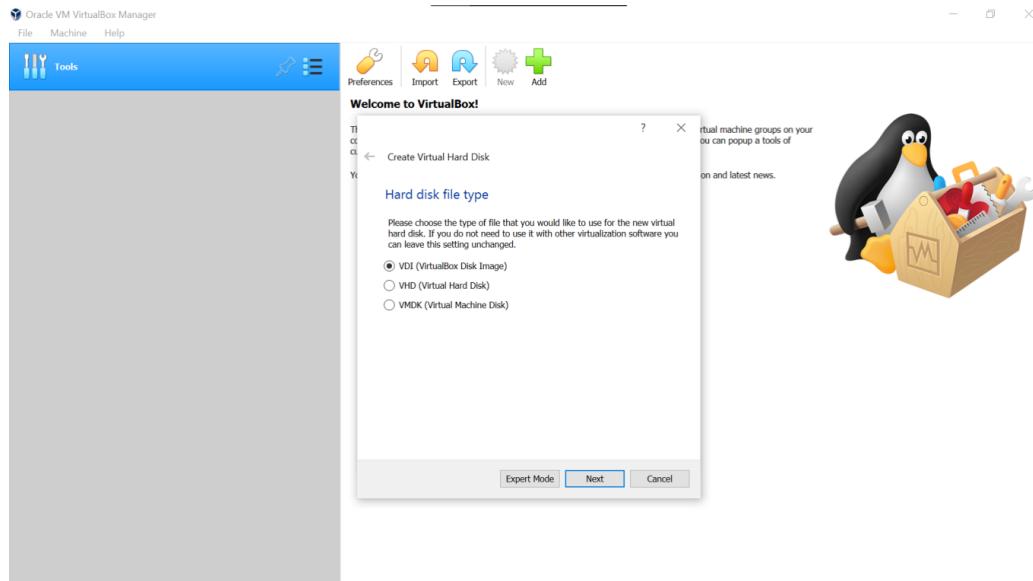


Step-5: Choose how much RAM you want to assign to the virtual machine and select Next. The recommended minimum is 1024 MB.



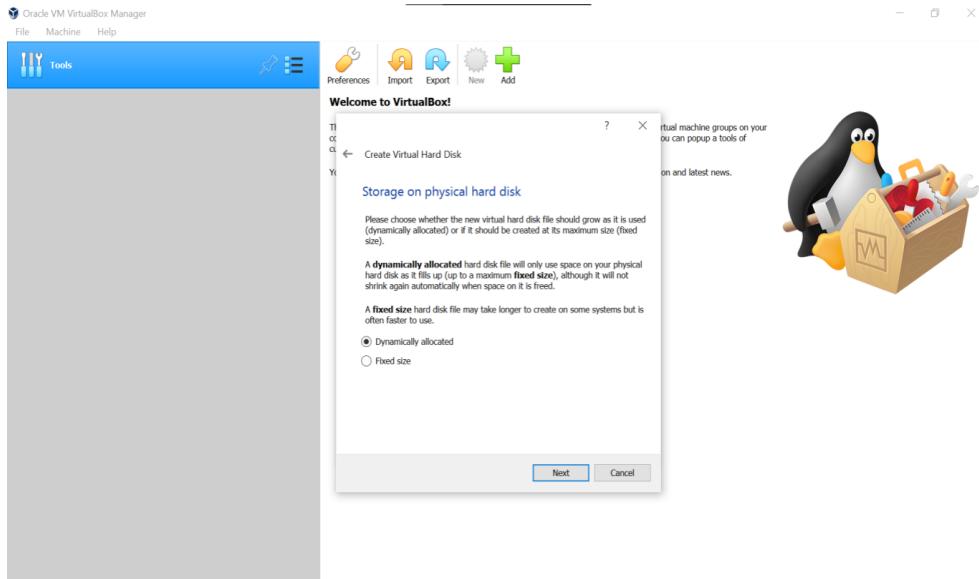
Step-6: Choose Create a virtual hard disk now and select Create.

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.

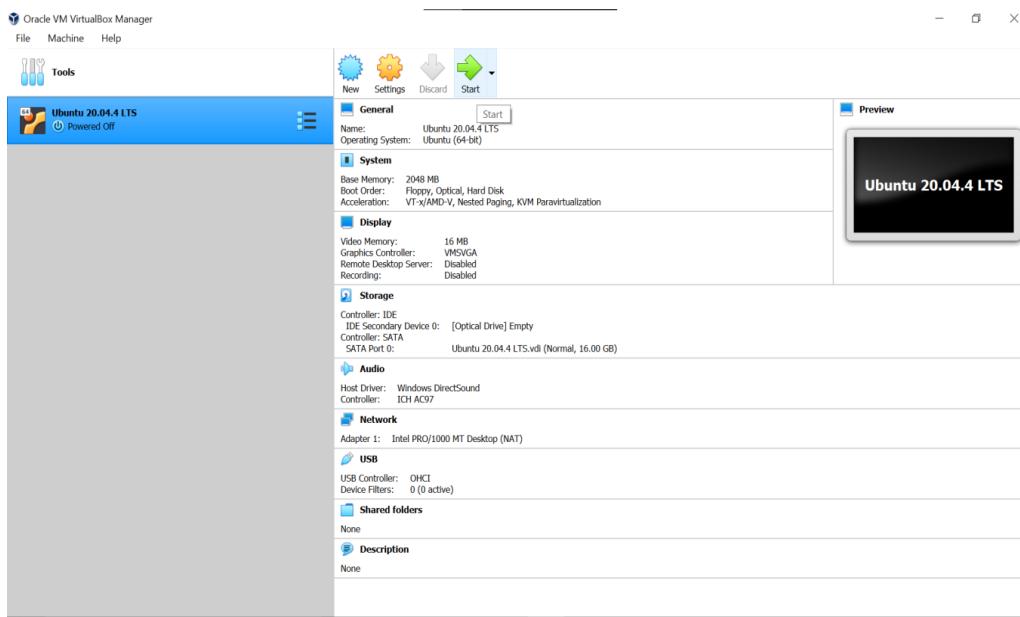


Tip: A fixed size disk performs better because the virtual machine doesn't have to increase the file size as you install software.

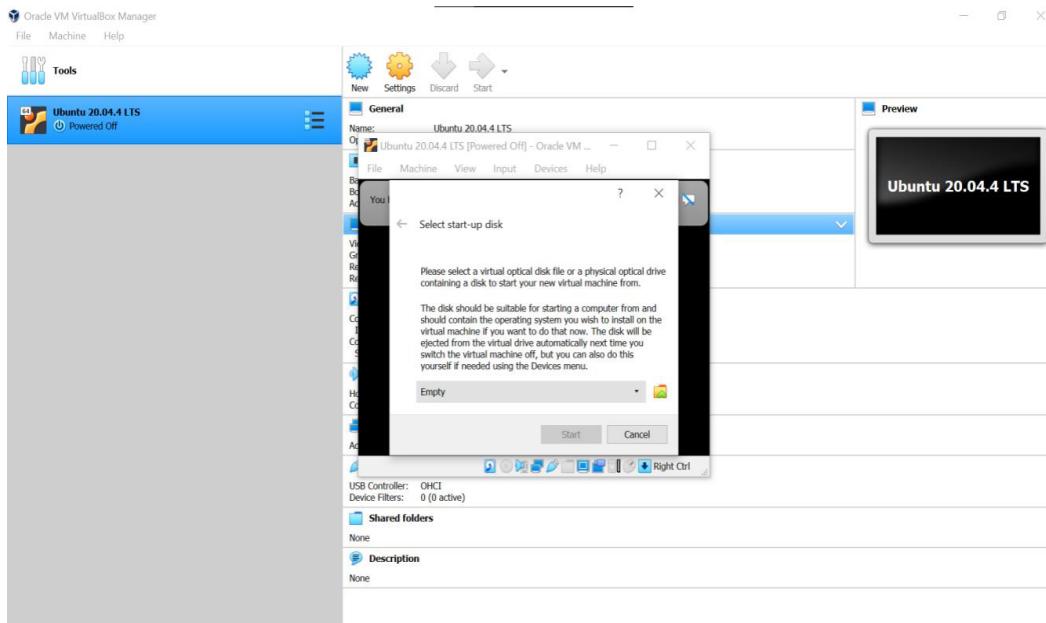
Step-9: Choose how much space you wish to set aside for Ubuntu and select Create.

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.

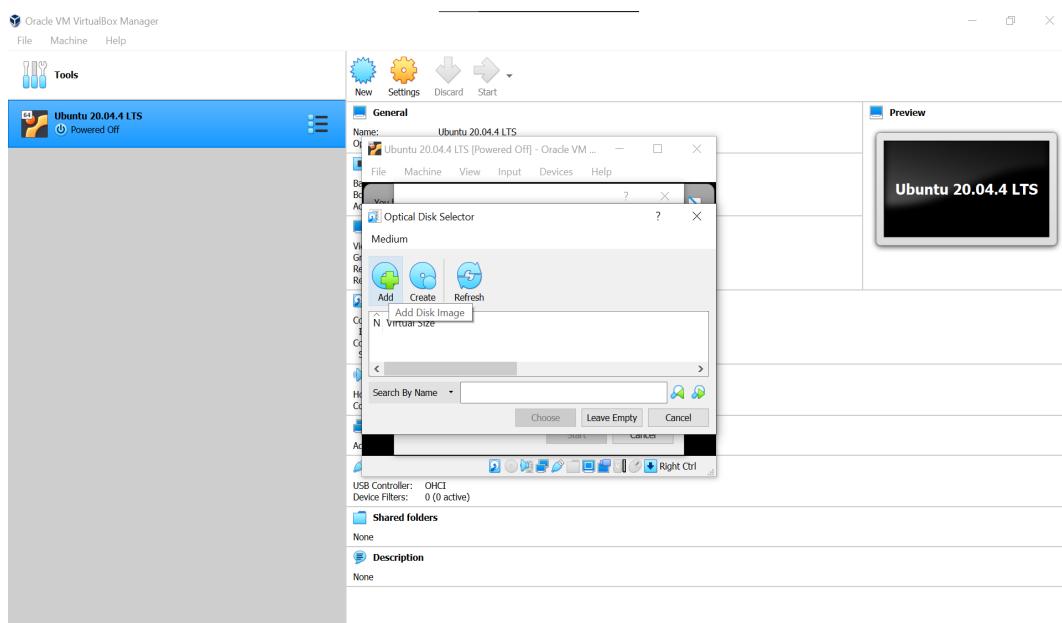
Step-10: The name of your virtual machine will now appear on the left side of the VirtualBox manager. Select Start in the toolbar to launch your VM.



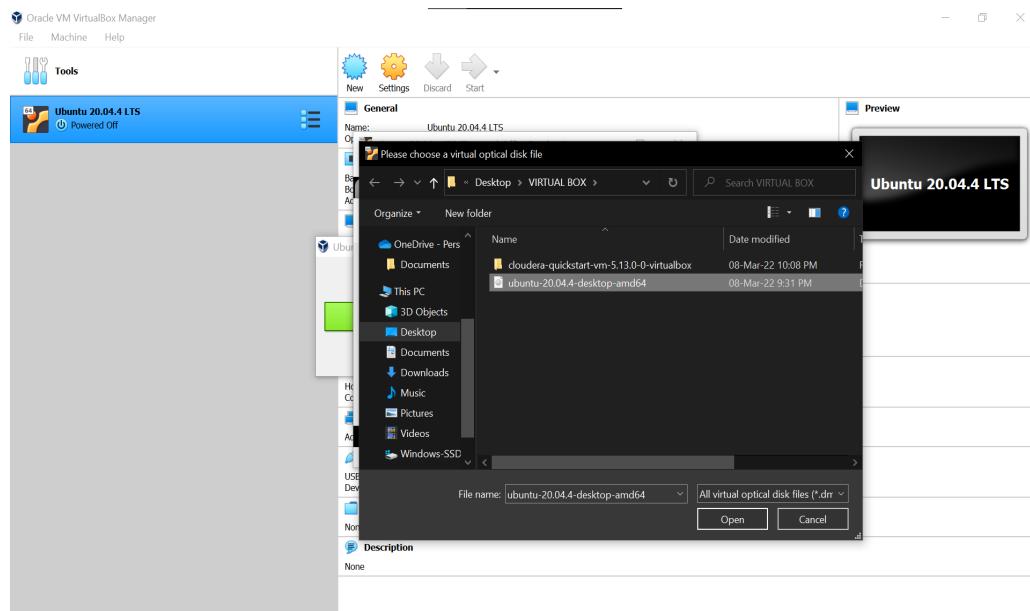
Step-11: This is the point where you need to choose the Ubuntu ISO file you downloaded earlier. If the VM doesn't automatically detect it, select the folder next to the Empty field.



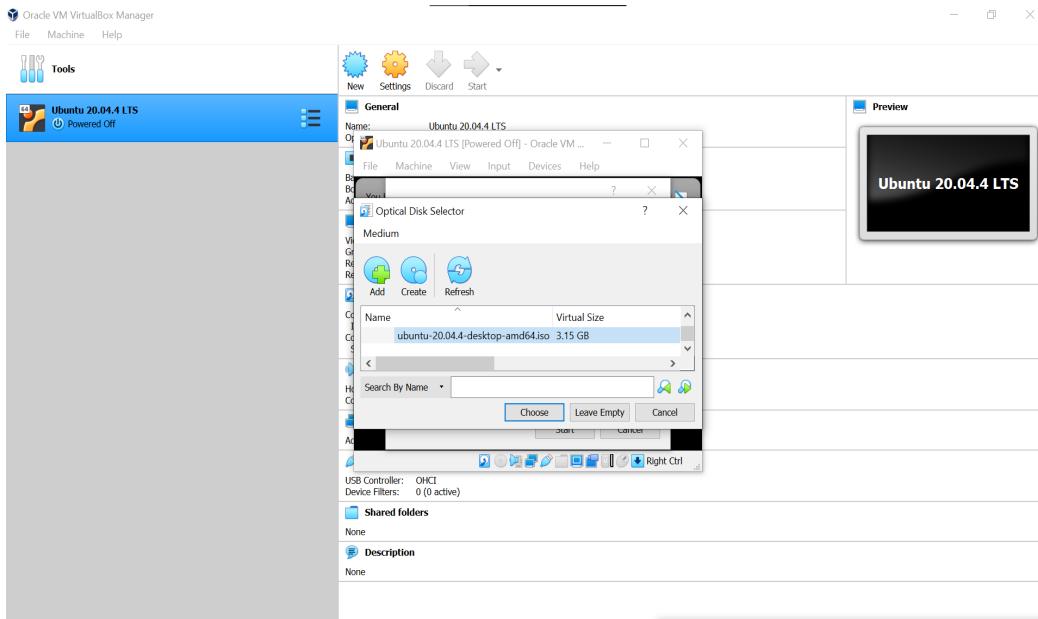
Step-12: Select Add in the window that pops up.



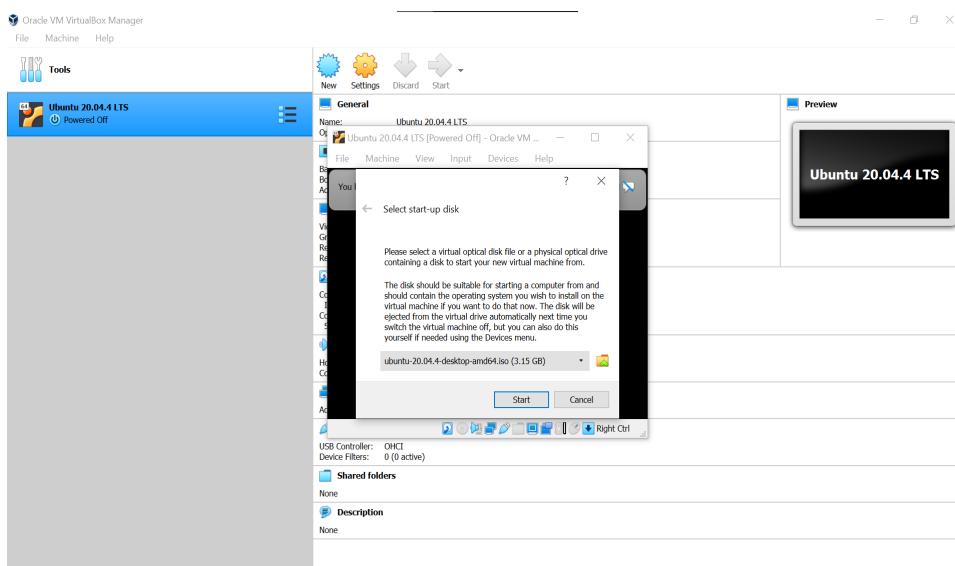
Step-13: Choose your Ubuntu disk image and select Open.



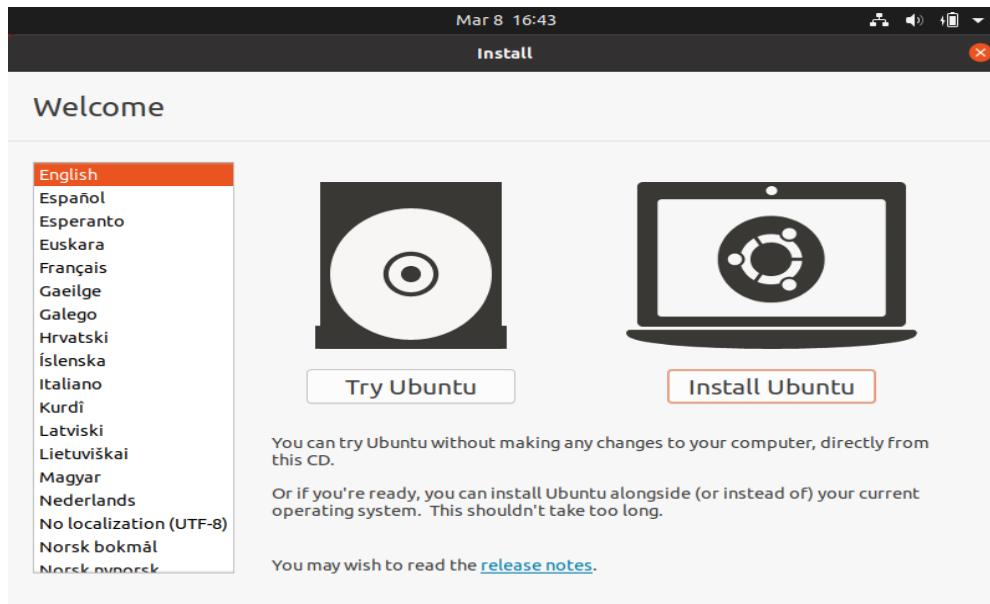
Step-14: - Select Choose



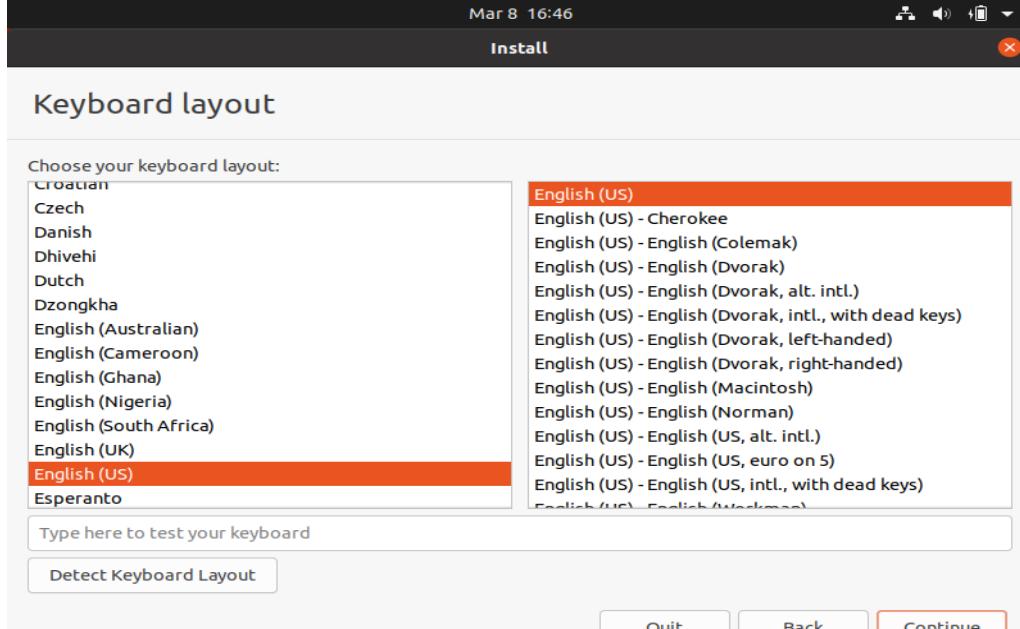
Step-15: Select Start.



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



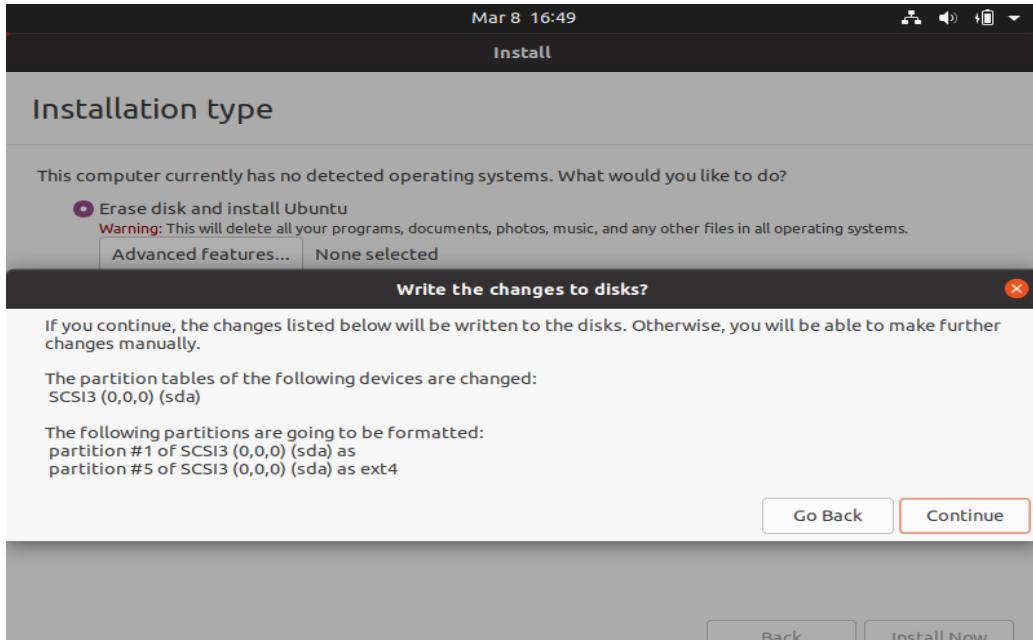
Step-17: Choose your keyboard layout and select Continue.



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.

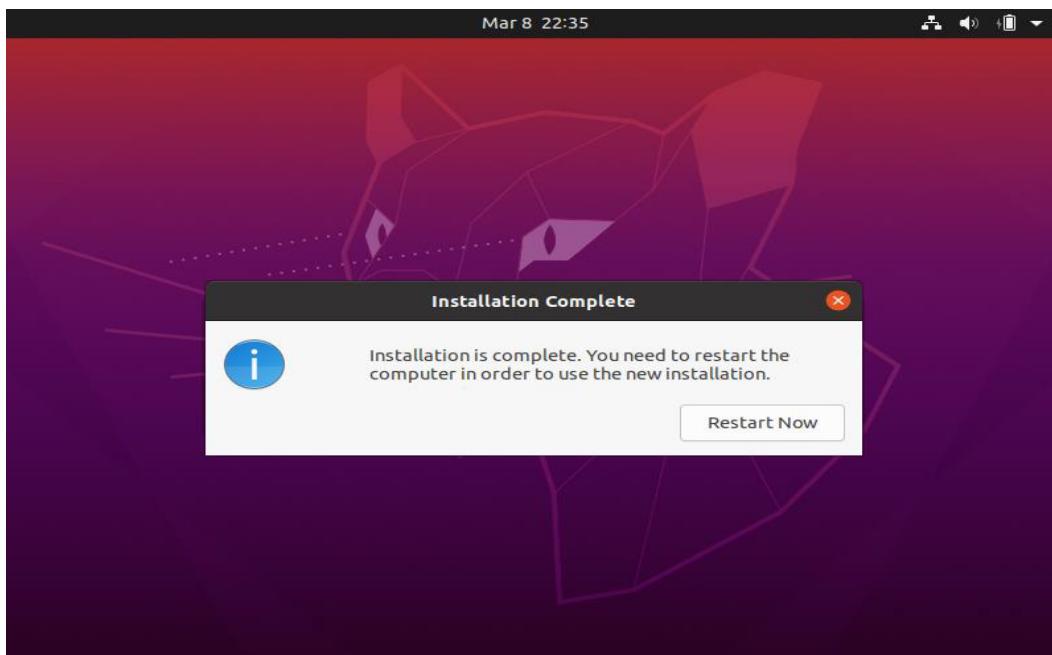
Note: This step will not erase your computer's physical hard drive; it only applies to the virtual machine.



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

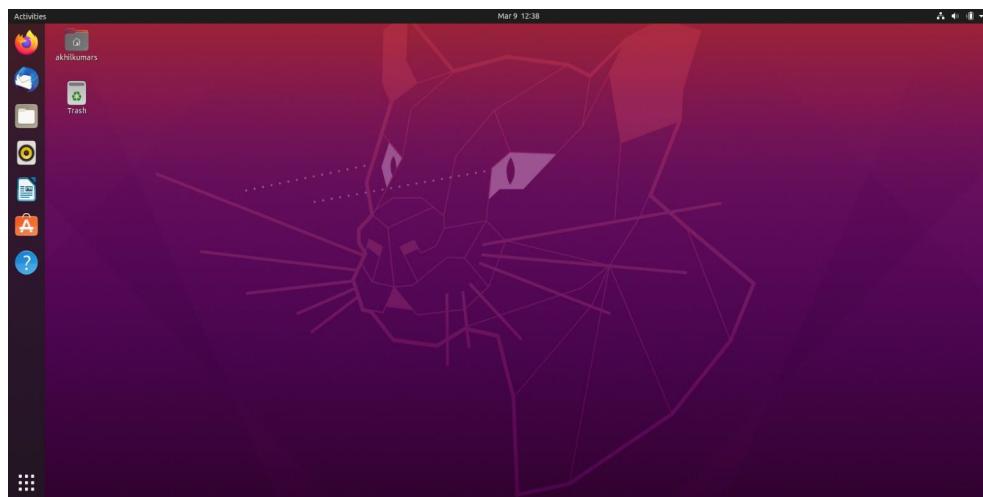
Step-21: - Set up your user account and select Continue.

Step-22: - Select Restart Now.



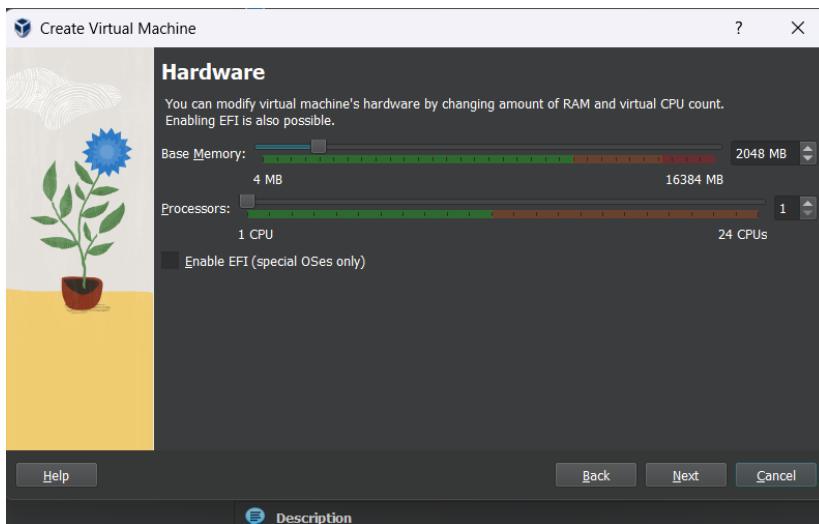
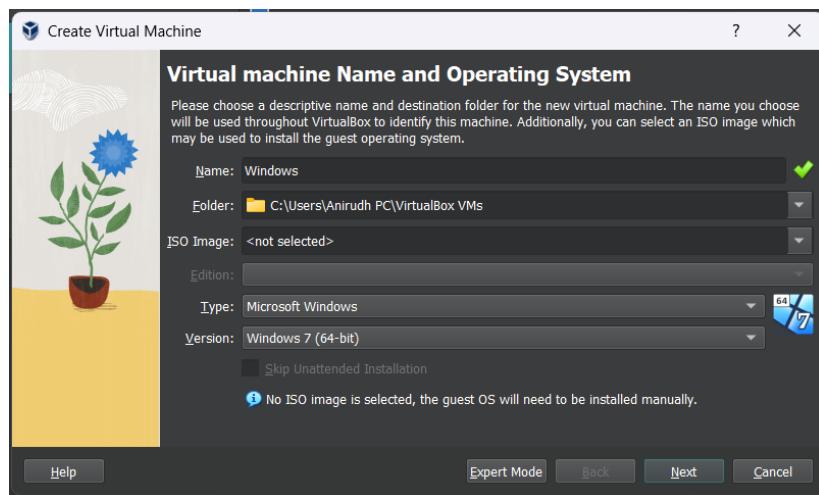
Step-23: - After restarting your VM and booting into Ubuntu, you may notice that the desktop doesn't scale correctly if you choose to view it in full-screen mode. You can fix this problem by selecting the VBox_Gas icon to install VirtualBox Guest Additions.

Output:



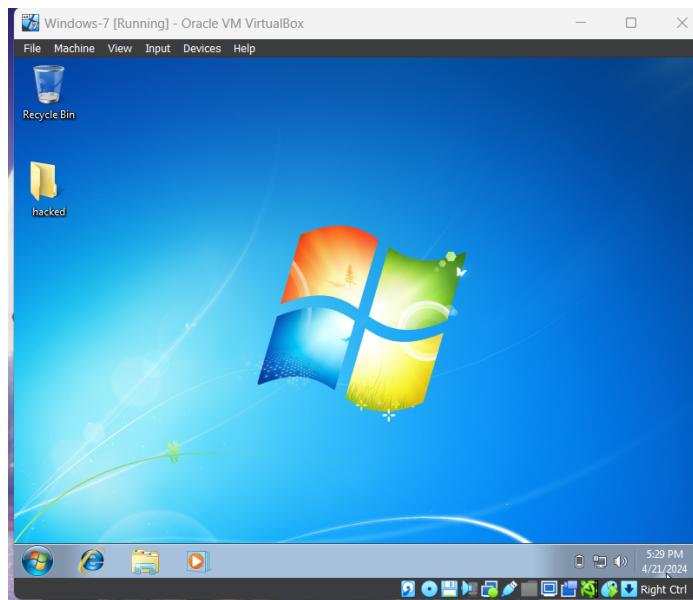
Windows:

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



The screenshot shows the Microsoft Azure Virtual Machines dashboard. At the top, there's a navigation bar with links like Gmail, Maps, Machine Learning..., Home - Skill Builder, EDA-Indian Premie..., Cricket Players ES..., and M.A. Chidambara... On the right of the bar are icons for notifications, settings, and user profile. Below the bar is a search bar with placeholder text "Search resources, services, and docs (G+/" followed by a magnifying glass icon. To the right of the search bar are icons for export to CSV, open query, assign tags, start, restart, stop, delete, and services. Below the search bar is a filter section with dropdowns for Subscription equals all, Type equals all, Resource group equals all, Location equals all, and Add filter. The main area displays a message "Showing 0 to 0 of 0 records." with a table header row containing columns for Name, Type, Subscription, Resource group, Location, Status, Operating system, Size, and Public IP address. Below the table is a "Create" button. A tooltip for the "Create" button provides three options: "Azure virtual machine" (Create a virtual machine hosted by Azure), "Azure virtual machine with preset configuration" (Create a virtual machine with presets based on your workloads), and "More VMs and related solutions" (Discover and deploy full workloads and Azure products for your business needs). There are also links to "Learn more about Windows virtual machines" and "Learn more about Linux virtual machines".

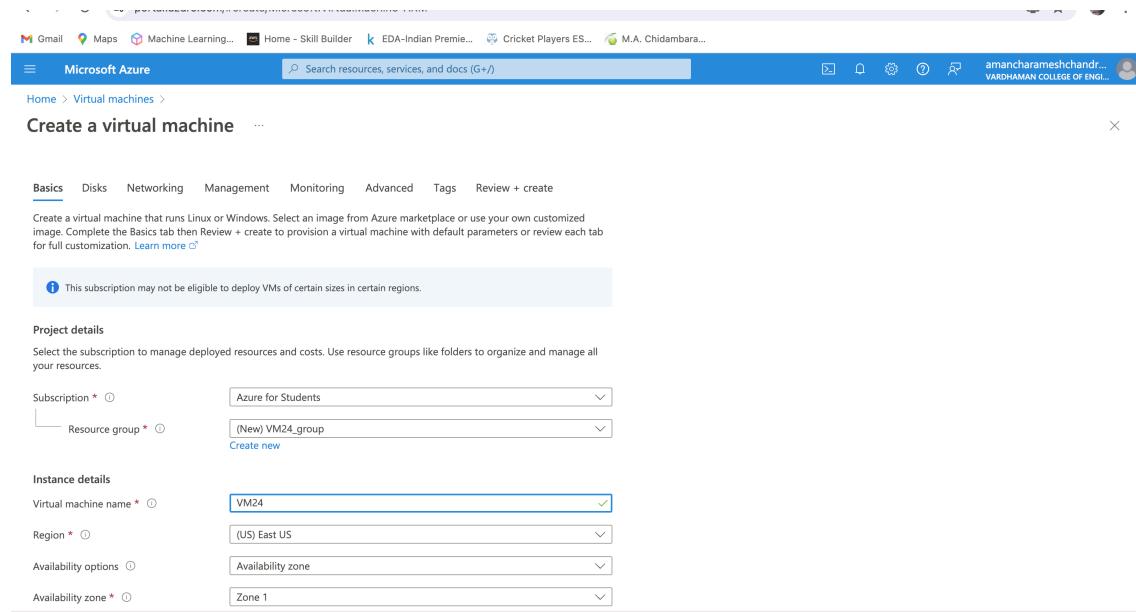
Output:



Q2) Create a Windows 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.



Step-3: Fill the details in that window by creating a “Resource Group”, Zone: Asia, Image: window, Select the disk storage and so on. After that click on “Create + Review”. And Finally click on “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.

The image consists of three vertically stacked screenshots of the Microsoft Azure portal, illustrating the steps to create a virtual machine.

Screenshot 1: Create a virtual machine - Step 1

This screenshot shows the initial configuration page for creating a virtual machine. It includes fields for:

- Processor:** x64 (selected)
- Size:** Standard_DS1_v2 - 1 vcpu, 3.5 GiB memory (₹5,101.50/month) (selected)
- Administrator account:** AzureUser (username), Password (redacted), Confirm password (redacted)
- Inbound port rules:** A note stating "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."

At the bottom, there are buttons for < Previous, Next : Disks >, Review + create, and Give feedback.

Screenshot 2: Create a virtual machine - Step 2

This screenshot shows the validation step after the previous configuration. It displays a green success message: "Validation passed". Below it, the "Review + create" tab is selected. The "Price" section shows:

- 1 X Standard DS1 v2 by Microsoft
- Subscription credits apply: 6.9884 INR/hr
- [Terms of use](#) | [Privacy policy](#)

The "TERMS" section contains legal disclaimers. A warning message at the bottom states: "⚠️ You have set RDP port(s) open to the internet. This is only recommended for testing. If you want to change this setting, go back to Basics tab."

At the bottom, there are buttons for < Previous, Next >, Create, Download a template for automation, and Give feedback.

Screenshot 3: CreateVm-MicrosoftWindowsDesktop.Windows-10-win10-20240613203743 | Overview

This screenshot shows the overview of the deployed virtual machine. It includes:

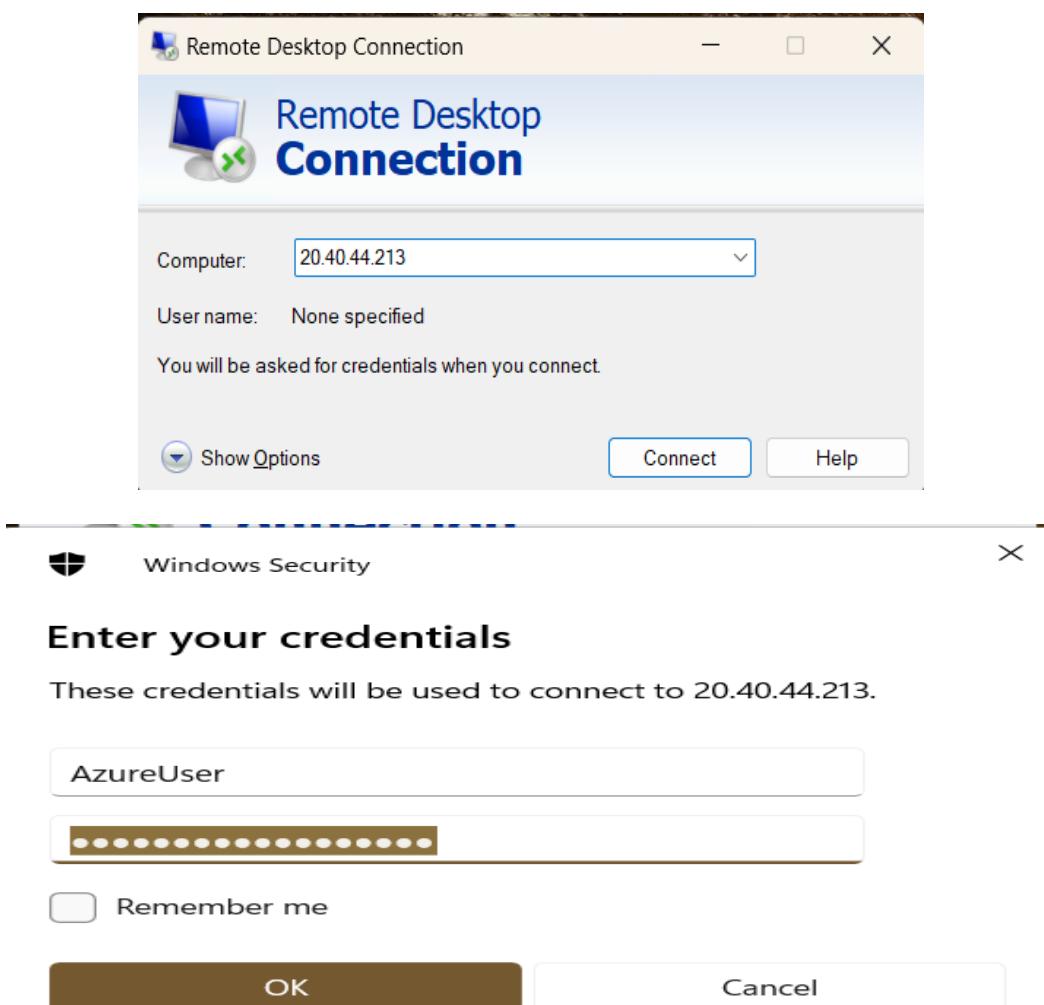
- Deployment name:** CreateVm-MicrosoftWindowsDesktop.Windows...
- Subscription:** Azure for Students
- Resource group:** A224
- Start time:** 6/13/2024, 8:41:09 PM
- Correlation ID:** 91279413-fe42-433c-a5ca-c9066b78be85

Overview section highlights: "Your deployment is complete". It lists deployment details like "Setup auto-shutdown" and "Monitor VM health, performance and network dependencies".

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

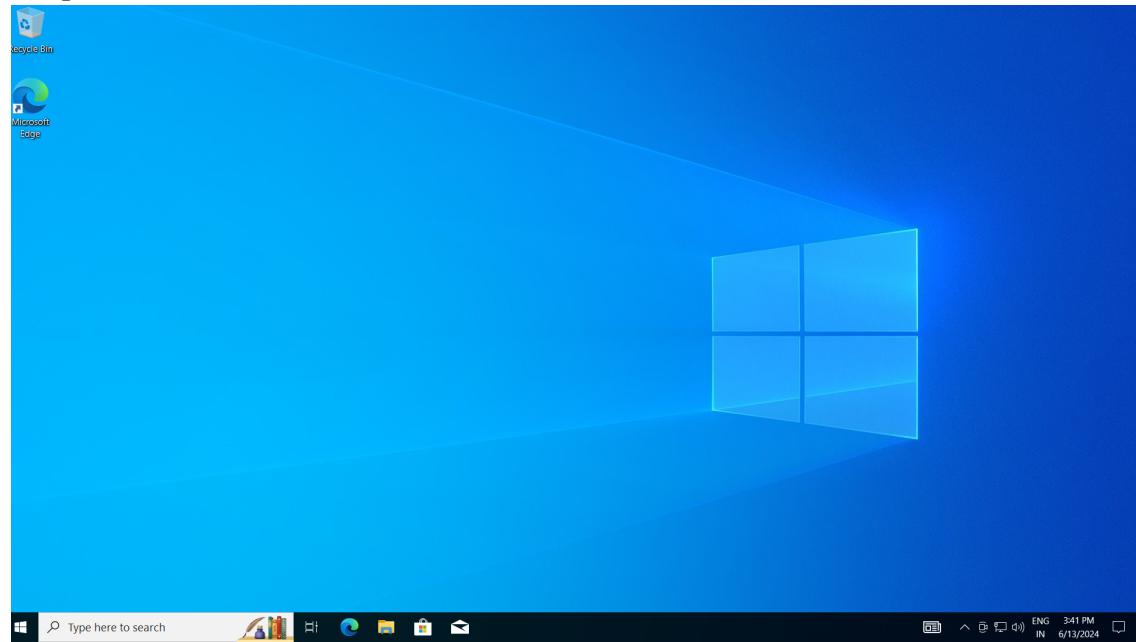
Microsoft Defender for Cloud sidebar: "Secure your apps and infrastructure. Go to Microsoft Defender for Cloud >"

Free Microsoft tutorials sidebar: "Start learning today >"



Step-6: By using that copied IP Address open the window virtual machine through remote desktop connection.

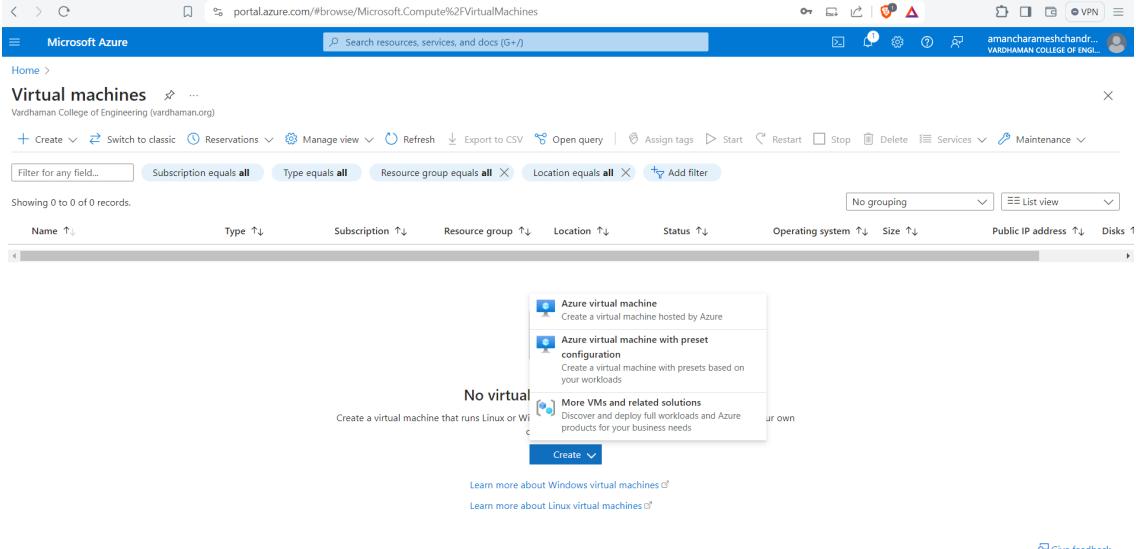
Output:



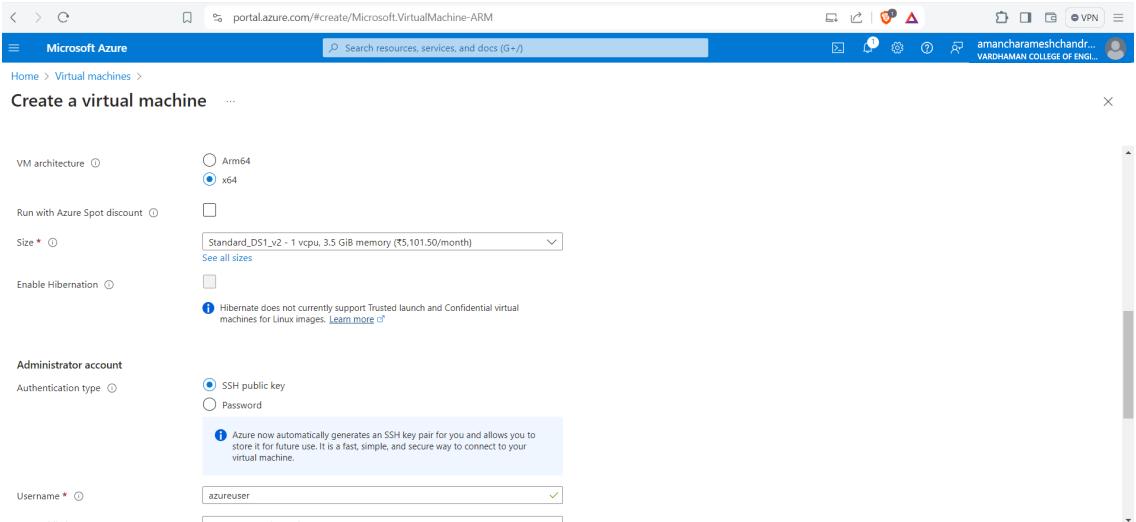
Q3) Create an Ubuntu Virtual Machine in Microsoft Azure

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's 'Virtual machines' blade. At the top, there are various navigation and search tools. Below that, a search bar and filter options like 'Subscription equals all', 'Type equals all', 'Resource group equals all', and 'Location equals all'. The main area displays a message 'Showing 0 to 0 of 0 records.' followed by a table header with columns: Name, Type, Subscription, Resource group, Location, Status, Operating system, Size, Public IP address, and Disks. A large 'Create' button is prominently displayed at the bottom left. A context menu is open over this button, listing three options: 'Azure virtual machine', 'Azure virtual machine with preset configuration', and 'More VMs and related solutions'. The 'Create' button is highlighted in blue.



The screenshot shows the 'Create a virtual machine' blade. It includes fields for VM architecture (Arm64 or x64, x64 is selected), Run with Azure Spot discount (unchecked), Size (Standard_DS1_v2 selected), Enable Hibernation (unchecked), Administrator account (SSH public key selected), and Username (azureuser). A note at the bottom states: '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.' There is also a 'Generate new key pair' button.

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”.

The screenshot shows the 'Create a virtual machine' wizard in the Microsoft Azure portal. The 'Instance details' section is visible, containing fields for:

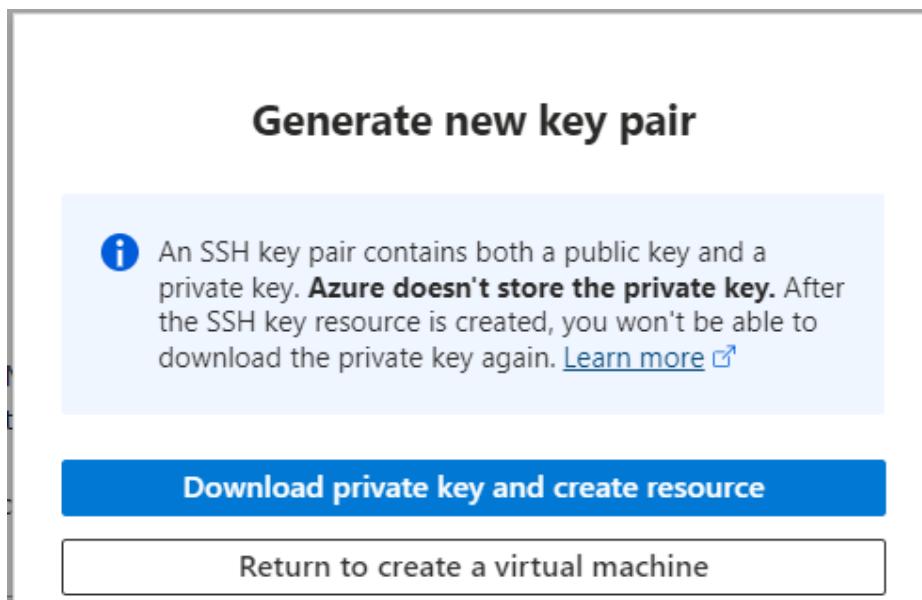
- Subscription:** Azure for Students
- Resource group:** (New) AZ24
- Virtual machine name:** Ubuntu
- Region:** (Asia Pacific) Central India
- Availability options:** Availability zone
- Availability zone:** Zone 1
- Security type:** Trusted launch virtual machines
- Image:** Ubuntu Server 20.04 LTS - x64 Gen2
- VM architecture:** Arm64

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

The screenshot shows the 'Create a virtual machine' wizard in the Microsoft Azure portal, continuing from the previous step. The 'SSH configuration' section is visible, containing fields for:

- Username:** azureuser
- SSH public key source:** Generate new key pair
- SSH Key Type:** RSA SSH Format (selected)
- Key pair name:** ubuntu_key

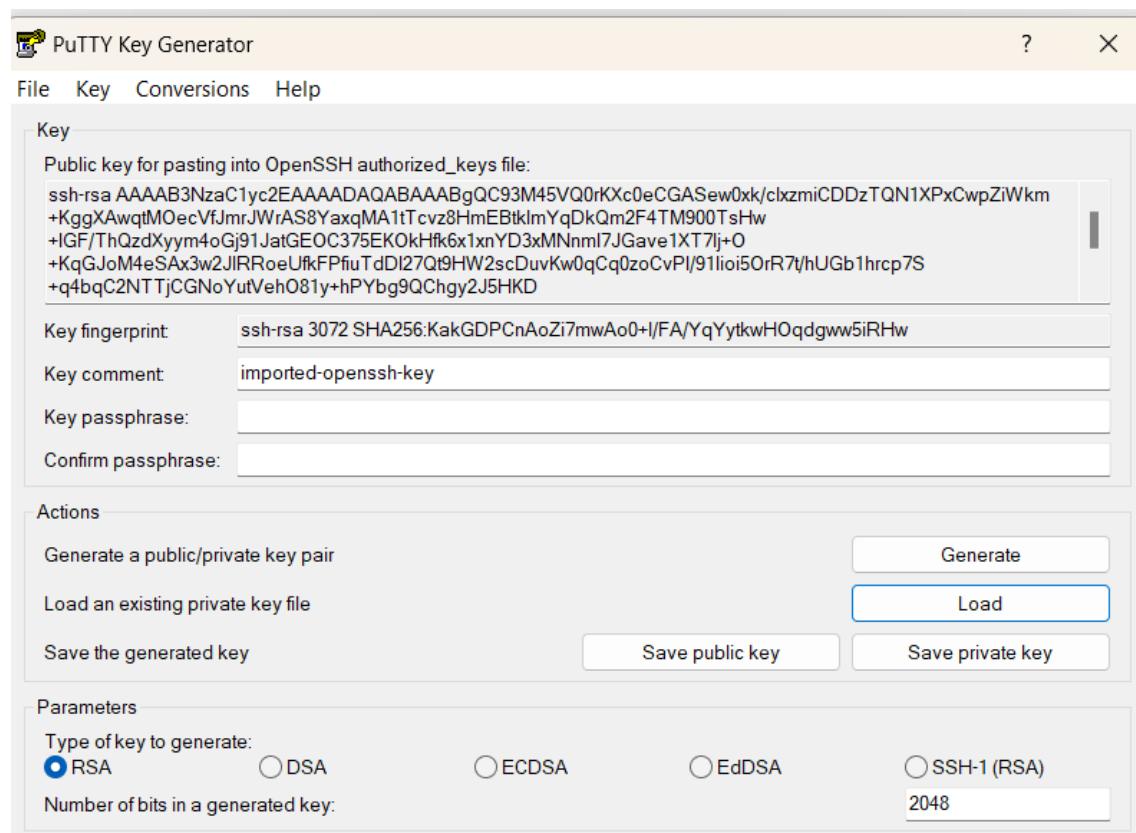
The 'Inbound port rules' section is also visible, with the note: "Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab." The 'Public inbound ports' field is set to "Allow selected ports" and the 'Select inbound ports' dropdown is set to "SSH (22)".



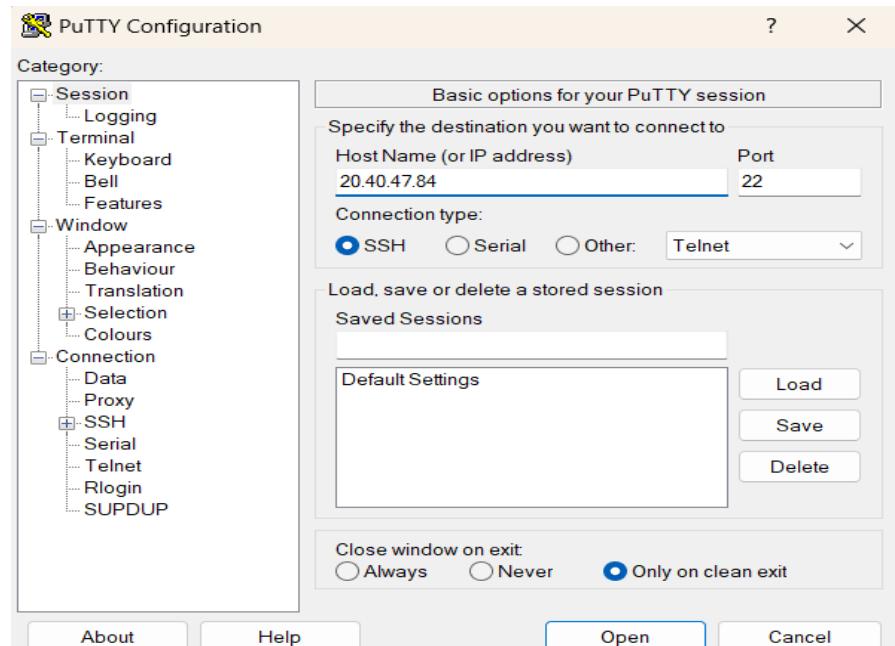
Step-5: Firstly, copy the public IP Address of that created virtual machine.

The screenshot shows the Microsoft Azure portal interface. The left sidebar is titled "Virtual machines" and lists "Ubuntu" as the selected item. The main pane displays the details for the "Ubuntu" virtual machine, including its name, resource group (A724), status (Running), location (Central India (Zone 1)), subscription (Azure for Students), and public IP address (20.40.47.84). The "JSON View" button is visible at the top right of the details pane.

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.

Output:

```
azureuser@Ubuntu: ~
└─$ login as: azureuser
└─$ Authenticating with public key "imported-openssh-key"
Welcome to Ubuntu 20.04.6 LTS (GNU/Linux 5.15.0-1064-azure x86_64)

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

System information as of Thu Jun 13 16:27:08 UTC 2024

System load: 0.08      Processes:          116
Usage of /: 5.1% of 28.89GB   Users logged in: 0
Memory usage: 8%          IPv4 address for eth0: 10.0.0.4
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 programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

azureuser@Ubuntu:~$
```

Q4) Create a Virtual machine and do scale up in Azure.

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

The screenshot shows the Microsoft Azure portal interface. The left sidebar shows 'Virtual machines' with a single item 'Ubuntu'. The main panel displays the 'Ubuntu' virtual machine details under the 'Overview' tab. Key information includes:

- Resource group:** AZ24
- Status:** Running
- Location:** Central India (Zone 1)
- Subscription:** Azure for Students
- Subscription ID:** 763b4aa1-744d-4fa4-9b3a-815e4bcd0be8
- Availability zone:** 1
- Tags (edit):** Add tags
- Properties:** Computer name: Ubuntu, Operating system: Linux (ubuntu 20.04)
- Networking:** Public IP address: 20.40.47.84 (Network interface: ubuntu537_21)

Step-2: After deployment of VM stop VM for scaling.

The screenshot shows the Microsoft Azure portal interface. The left sidebar shows 'Virtual machines' with a single item 'Ubuntu'. The main panel displays the 'Ubuntu' virtual machine details under the 'Overview' tab. A modal dialog box is open, asking 'Stop this virtual machine' with the question 'Do you want to stop 'Ubuntu'?'. Below the dialog, there is a note: 'Deallocate operations usually complete within 1-2 minutes but may take up to 90 minutes in some cases. You can leave the page and track the progress via notifications.' At the bottom of the dialog are 'Yes' and 'No' buttons. The background shows the same virtual machine details as the previous screenshot.

Step-3: On the left side there will be settings and click on disks.

Step-4: click on disk name and select your preferred size, save it.

This screenshot shows the Microsoft Azure portal interface for managing a virtual machine named 'Ubuntu'. The 'Disks' section is selected under the 'OS disk' tab. A single data disk, 'Ubuntu_disk1_a8c7bb2ef74d4bbdae4', is listed with details: Storage type: Premium SSD LRS, Size (GiB): 30, Max IOPS: 120, Max throughput: 25, Encryption: SSE with PMK, and Host caching: Read/write. Below this, a 'Data disks' section shows no attached disks. At the bottom are 'Apply' and 'Discard changes' buttons.

This screenshot is identical to the one above, but the 'Host caching' dropdown has been changed from 'Read/write' to 'Write-through'. The rest of the disk configuration remains the same.

Step-5: On the left side there will be select + performance and click on size.

Step-6: click on disk name and select your preferred ram size, save it.

The screenshot shows the Microsoft Azure Storage blade for a disk named "Ubuntu_disk1_a8c7bb2ef74d4bbdae4312c4683c2c8b". The "Size + performance" tab is selected. A dropdown menu is open under "Storage type" with "Premium SSD (locally-redundant storage)" selected. Below is a table of available sizes:

Size	Disk tier	Provisioned IOPS	Provisioned through...	Max Shares	Max burst IOPS	Max burst throughput
4 GiB	P1	120	25	3	3500	170
8 GiB	P2	120	25	3	3500	170
16 GiB	P3	120	25	3	3500	170
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	-	-

Buttons at the bottom: Save, Discard, Give feedback.

Q5) Create a Virtual machine and do lock for VM in AZURE.

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

The screenshot shows the Microsoft Azure Virtual Machine blade for an Ubuntu VM. The "Disks" tab is selected. It shows an OS disk named "Ubuntu_disk1_a8c7bb2ef74d4bbdae4312c4683c2c8b" with a size of 30 GiB and a storage type of Premium SSD LRS. Below is a table for data disks:

LUN	Disk name	Create and attach a new disk	Size (GiB)	Max IOPS	Max throughput (..)	Encryption	Host caching
						SSE with PMK	Read/write

Buttons at the bottom: Refresh, Additional settings, Feedback, Troubleshoot.

The screenshot shows the Microsoft Azure portal interface for selecting a VM size. The search bar at the top contains 'Search resources, services, and docs (G+)'. The main content area displays a table of 416 VM sizes, grouped by series. The columns include VM Size, Type, vCPUs, RAM (GiB), Data disks, Max IOPS, and Local storage (GiB). The 'D4s_v3' row is highlighted. Below the table, there are sections for 'D-Series v4', 'E-Series v4', and 'F-Series v2'. A note at the bottom states: '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.' A 'Give feedback' link is also present.

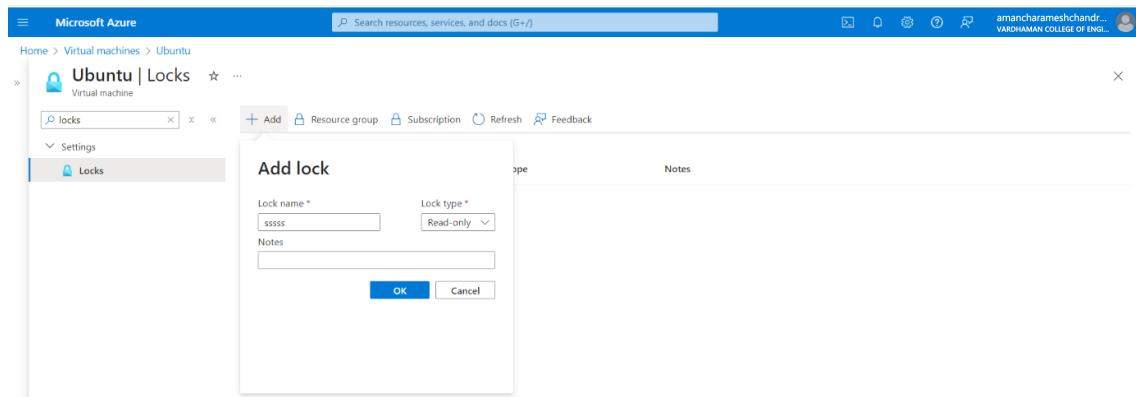
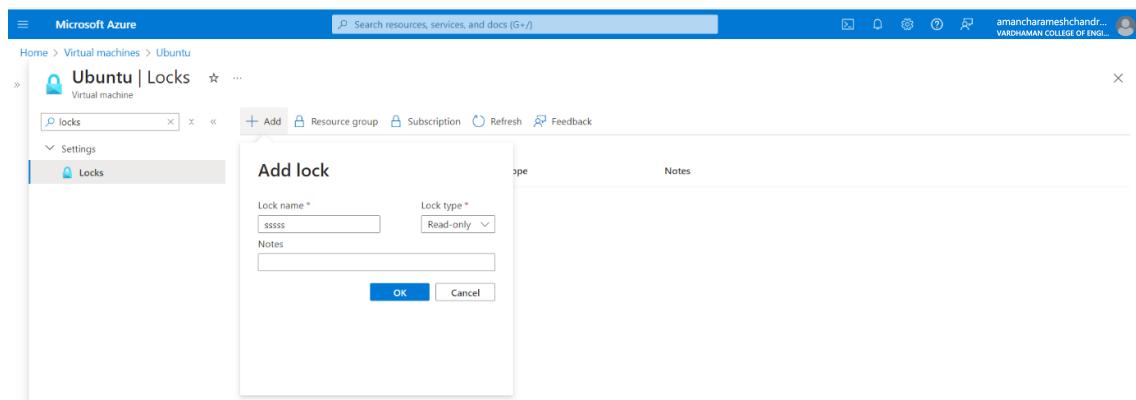
Step-2: On the left side there will be settings and click on locks, give lock name and select lock type.

The screenshot shows the Microsoft Azure portal interface for a specific virtual machine named 'Ubuntu'. The left sidebar shows navigation options like Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Connect, Networking, Settings, Availability + scale, Security, Backup + disaster recovery, Operations, and Monitoring. The main content area is the 'Overview' tab, which displays detailed information about the VM, including its resource group (AZ24), status (Running), location (Central India (Zone 1)), subscription (Azure for Students), and tags. It also shows network details like public IP address (20.40.47.84) and virtual network/subnet (Ubuntu-vnet/default). The 'Properties' tab is selected, showing sections for Virtual machine (Computer name: Ubuntu, Operating system: Linux (ubuntu 20.04), etc.) and Networking (Public IP address: 20.40.47.84, Private IP address: 10.0.0.4, etc.).

Step-3: click on ok.

Similarly, you can do for Resource group and subscriptions.

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



Q6) Create Ubuntu VM and run a python program in it.

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

The screenshot shows the Microsoft Azure portal's 'Virtual machines' overview page. A specific Ubuntu VM is selected, with its name 'Ubuntu' visible in the navigation bar. The main pane displays the VM's status as 'Running'. On the right side, there is a detailed view of the VM's properties, including its operating system (Ubuntu 20.04), size (Standard_B1s), and network information (Ubuntu vnet/default). A tooltip appears over the 'Stop' button, stating: 'Failed to stop the virtual machine 'Ubuntu'. Error: The scope 'Ubuntu' cannot perform write operation because following scope(s) are locked: AZ24/subscriptions/673b4aa1-744d-4fa4-9b3a-815e4bcd0be8. Please remove the lock and try again.' Below the properties, tabs for 'Properties', 'Monitoring', 'Capabilities (7)', 'Recommendations', and 'Tutorials' are visible. At the bottom, sections for 'Virtual machine' and 'Networking' provide specific details like computer name, operating system, public IP address, and network interface.

CCV

The screenshot shows the Azure portal interface for a virtual machine named 'Ubuntu'. The left sidebar has 'Virtual machines' selected. Under 'Ubuntu', 'Locks' is highlighted. The main content area shows a table with one row: 'This resource has no locks.' Below the table, there's a note: 'This resource has no locks.'

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

The screenshot shows the Azure portal with the 'Virtual machines' blade open. The 'Create' button is highlighted, and a dropdown menu is displayed with three options: '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”.

Create a virtual machine

Subscription * (Azure for Students)

Resource group * ((New) AZ24) [Create new](#)

Virtual machine name * (Ubuntu)

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)

Image * (Ubuntu Server 20.04 LTS - x64 Gen2) [See all images](#) | [Configure VM generation](#)

VM architecture (Arm64)

VM architecture (x64)

Run with Azure Spot discount (unchecked)

Size * (Standard_DS1_v2 - 1 vcpu, 3.5 GiB memory (\$5,101.50/month)) [See all sizes](#)

Enable Hibernation (unchecked) Hibernate does not currently support Trusted launch and Confidential virtual machines for Linux images. [Learn more](#)

Administrator account

Authentication type (SSH public key selected)

Username * (azureuser)

SSH public key source (Generate new key pair)

virtual machine

Username * (azureuser)

SSH public key source (Generate new key pair)

SSH Key Type (RSA SSH Format selected)

Key pair name * (ubuntu_key)

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.

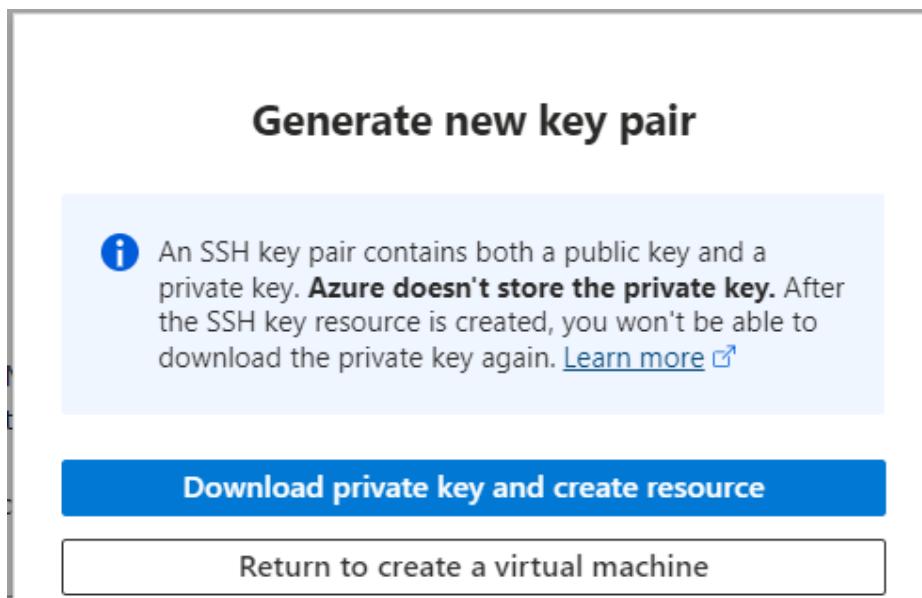
Public inbound ports * (None)

Select inbound ports * (SSH (22))

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](#)

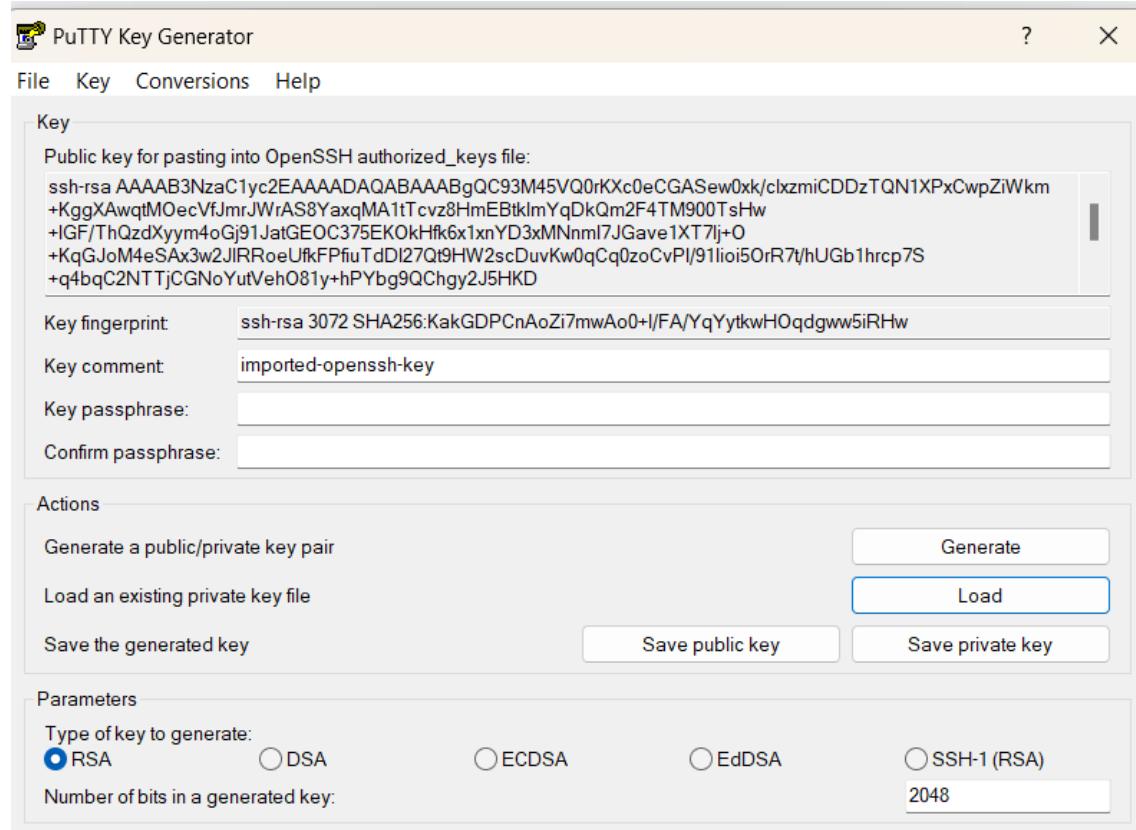
Step-4: After Deployment is over, Go to the Putty Key Generator.

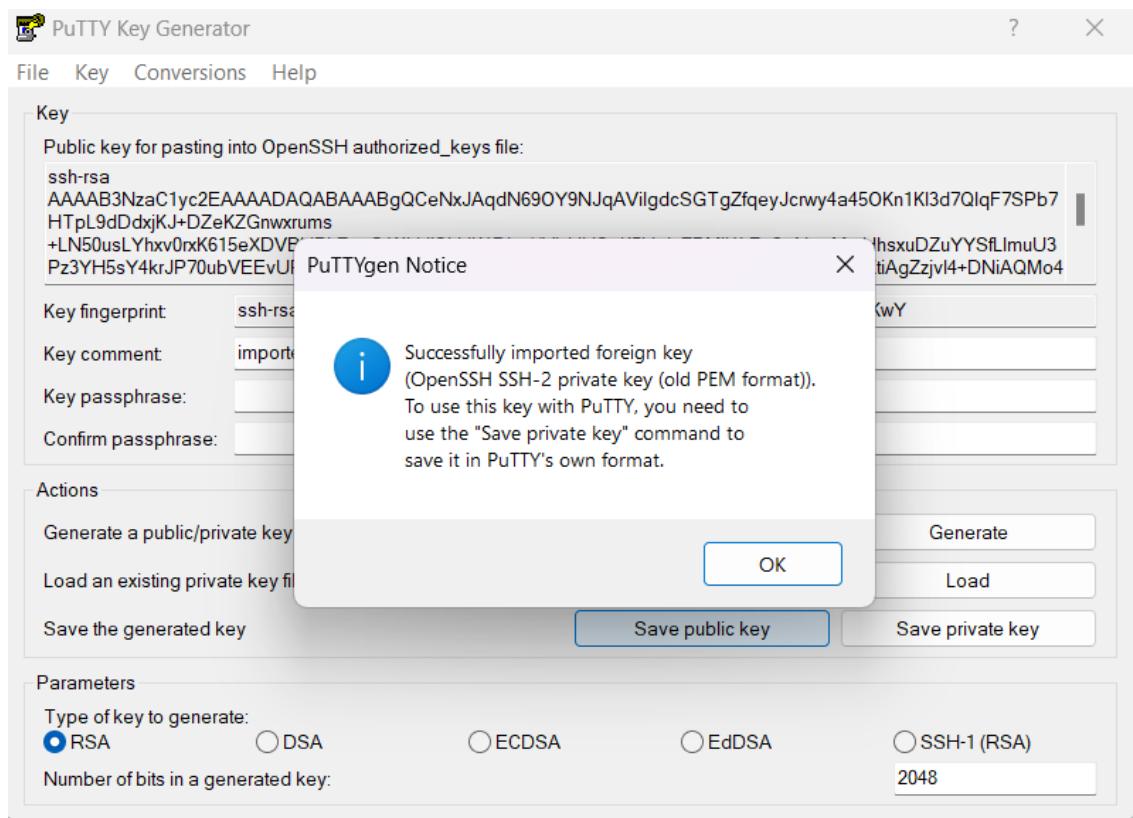


Step-5: Firstly, copy the public IP Address of that created virtual machine.

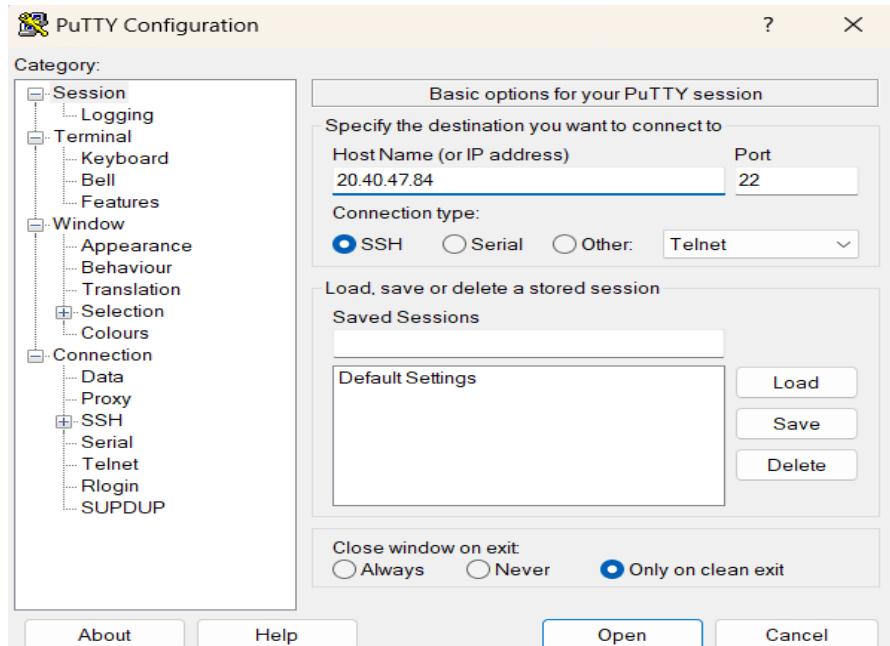
The screenshot shows the Microsoft Azure portal interface. On the left, there's a sidebar with "Virtual machines" selected. In the main area, a virtual machine named "Ubuntu" is listed. The machine has a green status indicator and is described as a "Virtual machine". To the right of the machine name, there's a detailed view panel. The "Essentials" section includes fields for Resource group (set to "AZ24"), Status (Running), Location (Central India (Zone 1)), Subscription (set to "Azure for Students"), and other details like Subnet ("Ubuntu-vnet/default") and DNS name ("Not configured"). The "Public IP address" field shows "20.40.47.84" with a "Copied" status and a copy icon. At the bottom of the view panel, there are "Tags (edit)" and "Add tags" buttons. The top of the screen shows the Azure logo, a search bar, and a user profile.

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: Login with your username and type python3, write your python program and execute it.

```
azureuser@Ubuntu: ~
login as: azureuser
Authenticating with public key "imported-openssh-key"
Welcome to Ubuntu 20.04.6 LTS (GNU/Linux 5.15.0-1064-azure x86_64)

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

System information as of Thu Jun 13 16:27:08 UTC 2024

System load: 0.08      Processes:          116
Usage of /: 5.1% of 28.89GB   Users logged in:    0
Memory usage: 8%
              IPv4 address for eth0: 10.0.0.4
Swap usage: 0%

Expanded Security Maintenance for Applications is not enabled.
0 updates can be applied immediately.

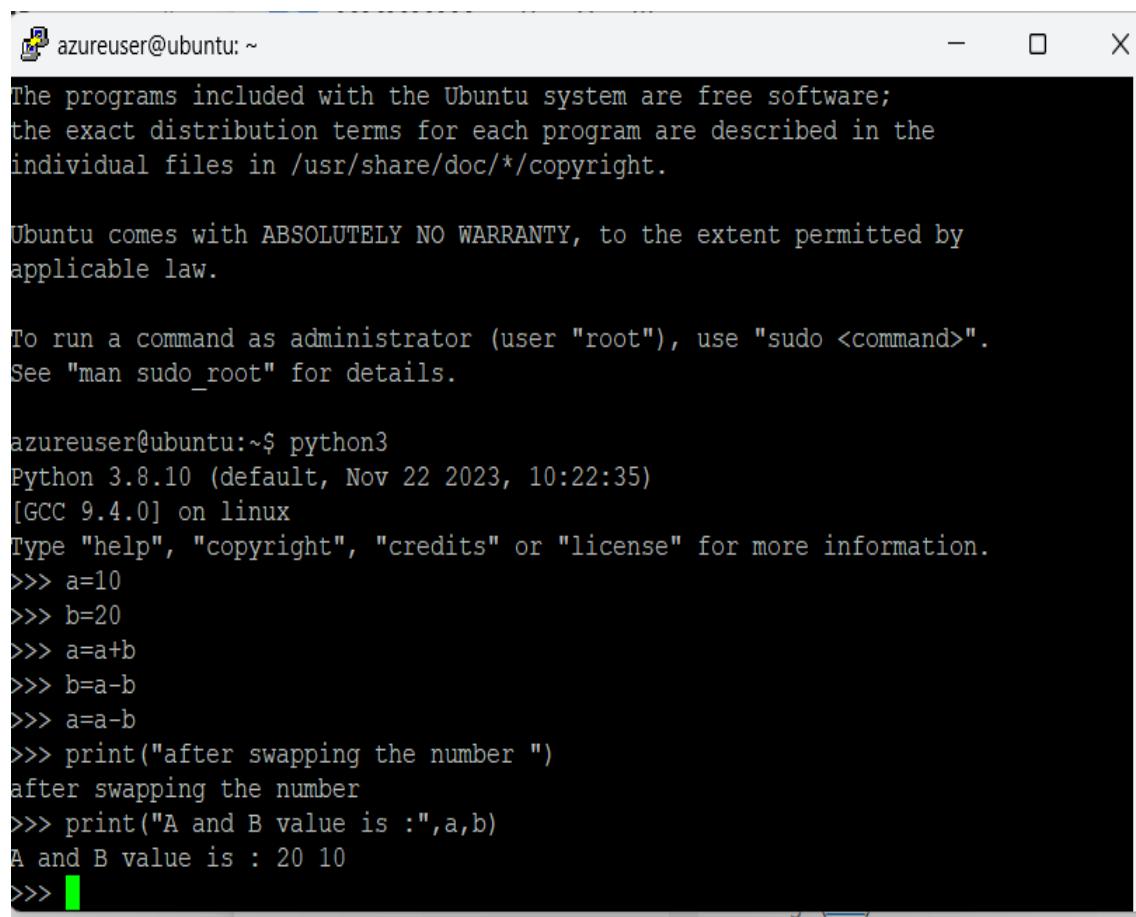
Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

azureuser@Ubuntu:~$
```



The screenshot shows a terminal window titled "azureuser@ubuntu: ~". The window displays the following text:

```
The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

azureuser@ubuntu:~$ python3
Python 3.8.10 (default, Nov 22 2023, 10:22:35)
[GCC 9.4.0] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>> a=10
>>> b=20
>>> a=a+b
>>> b=a-b
>>> a=a-b
>>> print("after swapping the number ")
after swapping the number
>>> print("A and B value is :",a,b)
A and B value is : 20 10
>>> 
```

Q7) Create a Ubuntu VM and transfer files using WinScp.

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

The screenshot shows the 'Create a virtual machine' wizard in the Microsoft Azure portal. The 'Subscription' dropdown is set to 'Azure for Students'. The 'Resource group' dropdown shows '(New) AZ24' and has a 'Create new' option. Under 'Instance details', the 'Virtual machine name' is 'Ubuntu', 'Region' is '(Asia Pacific) Central India', 'Availability options' is 'Availability zone', and 'Availability zone' is 'Zone 1'. A note says 'You can now select multiple zones. Selecting multiple zones will create one VM per zone.' The 'Security type' dropdown is 'Trusted launch virtual machines'. The 'Image' dropdown shows 'Ubuntu Server 20.04 LTS - x64 Gen2' selected. The 'VM architecture' dropdown is 'Arm64'. The URL in the browser is <https://portal.azure.com/#create/Microsoft.VirtualMachine-ARM>.

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

The screenshot shows the 'Create a virtual machine' wizard in the Microsoft Azure portal. Under 'VM architecture', 'x64' is selected. The 'Run with Azure Spot discount' checkbox is unchecked. The 'Size' dropdown is set to 'Standard_DS1_v2 - 1 vcpu, 3.5 GiB memory (₹5,101.50/month)'. The 'Enable Hibernation' checkbox is unchecked. In the 'Administrator account' section, 'Authentication type' is 'SSH public key', and 'Username' is 'azureuser'. A note says '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.' The URL in the browser is <https://portal.azure.com/#create/Microsoft.VirtualMachine-ARM>.

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”.

Click to go forward, hold to see history. Search resources, services, and docs (G+)

Home > Virtual machines > Create a virtual machine

virtual machine

Username * (azureuser)

SSH public key source (Generate new key pair)

SSH Key Type (RSA SSH Format selected)

Key pair name * (ubuntu_key)

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 selected)

Select inbound ports * (SSH (22))

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

Generate new key pair

i 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

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.

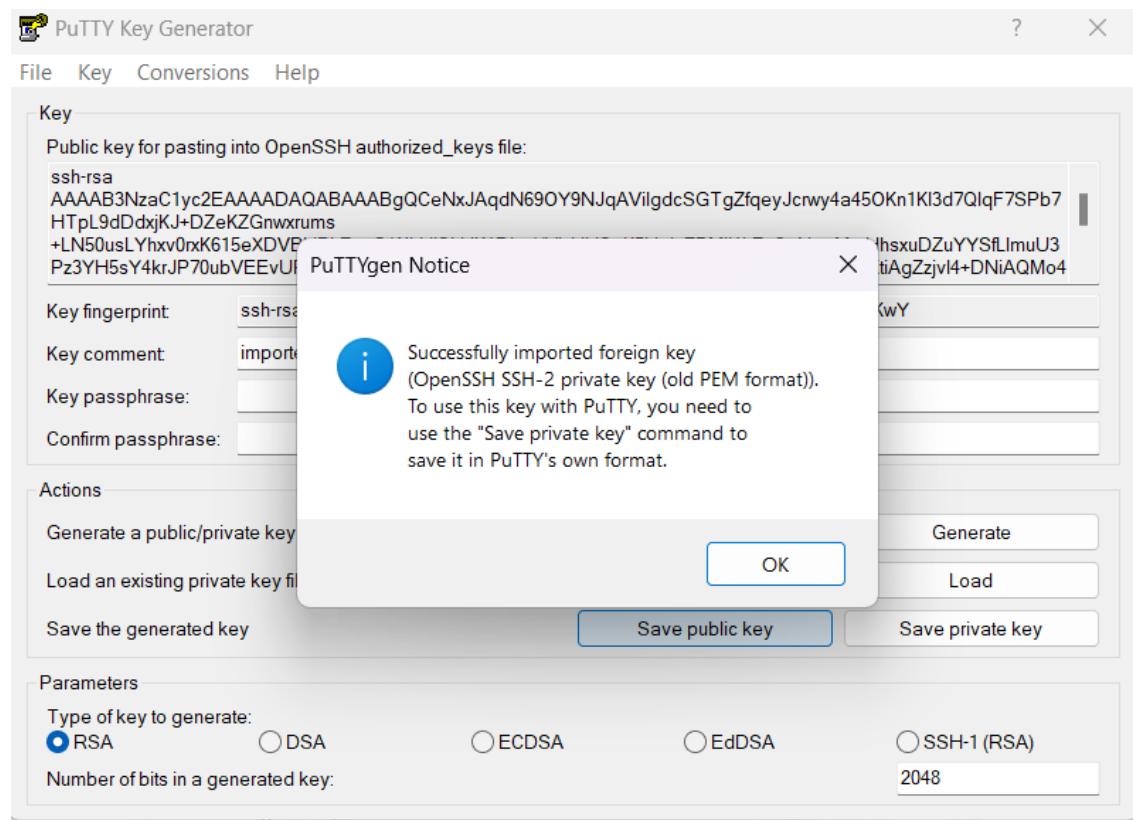
The screenshot shows the Microsoft Azure portal interface. The top navigation bar includes 'Search resources, services, and docs (G+)', a user profile icon, and the text 'amancharameshchand... VARDHAMAN COLLEGE OF ENGL.' Below the navigation bar, the main content area displays the 'Virtual machines' section for 'Ubuntu'. On the left, there's a sidebar with options like 'Create', 'Switch to classic', and a search bar. The main panel shows the 'Ubuntu' virtual machine details, including its name 'Ubuntu', status 'Running', location 'Central India (Zone 1)', and various configuration settings like 'Subscription (move) Azure for Students', 'Subscription ID 763b4a81-744d-4fa4-9b3a-815e4bcd0be8', and 'Availability zone 1'. There are also tabs for 'Tags' and 'Activity log'.

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

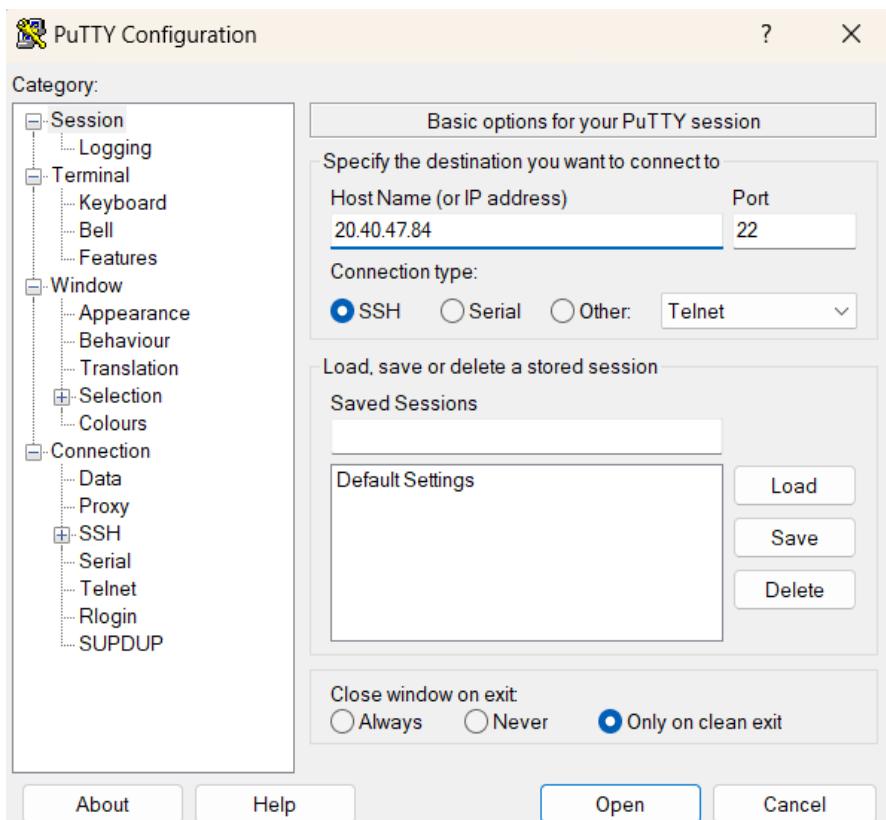
The screenshot shows the 'PuTTY Key Generator' application window. The 'Key' tab is selected, displaying a large text area containing a public SSH key:

```
ssh-rsa AAAAB3NzaC1yc2EAAAQABAAABgQC93M45VQ0rKXc0eCGASew0kk/clxzmiCDDzTQN1XPxCwpZiWkm+KggXAwqtMOecVfJmrJWrAS8YaxqMA1tTcvz8l-mEBtklmYqDkQm2F4TM900TsHw+IGF/TbQzdXyyym4oGj91JatGEOC375EK0kHfk6x1xnYD3xMNnmI7JGave1XT7j+O+KqGJoM4eSAx3w2JIRoeUrkFPfiuTdDl27Q19HW2scDuvKw0qCq0zoCvPI/91lio5OrR7lhUGb1hrcp7S+q4bqc2NTTjCGNoYutVehO81y+hPYbg9QChgy2J5HKD
```

 Below this, there are fields for 'Key fingerprint' (ssh-rsa 3072 SHA256:KakGDPCnAoZi7mwAo0+l/FA/YqYtkwHOqdgww5iRHw), 'Key comment' (imported-openssh-key), and two empty fields for 'Key passphrase' and 'Confirm passphrase'. In the 'Actions' section, there are buttons for 'Generate' (disabled), 'Load' (highlighted in blue), 'Save public key', and 'Save private key'. At the bottom, the 'Parameters' section shows 'Type of key to generate:' with 'RSA' selected (radio button is checked), and 'Number of bits in a generated key:' set to '2048'.



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.

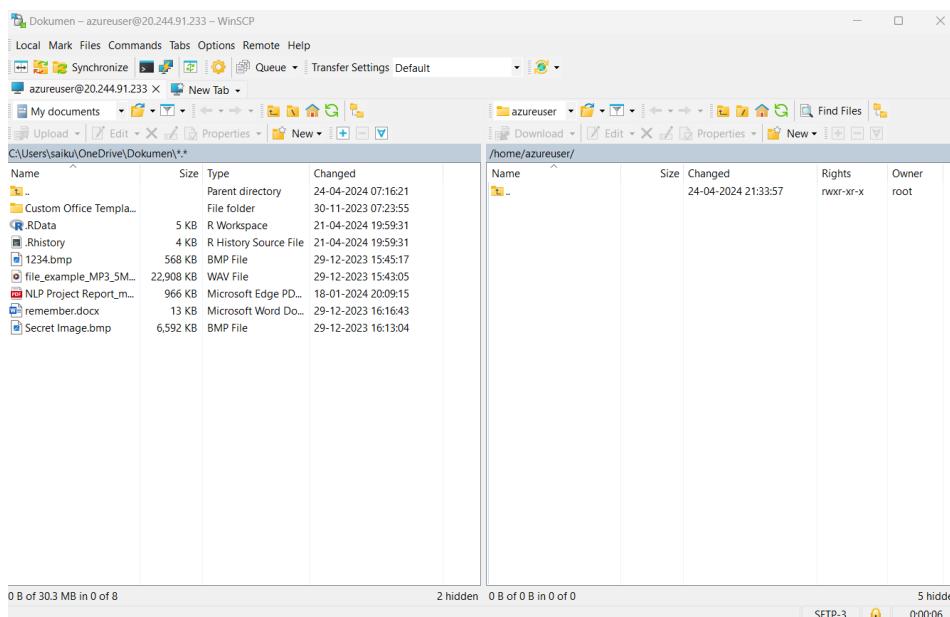
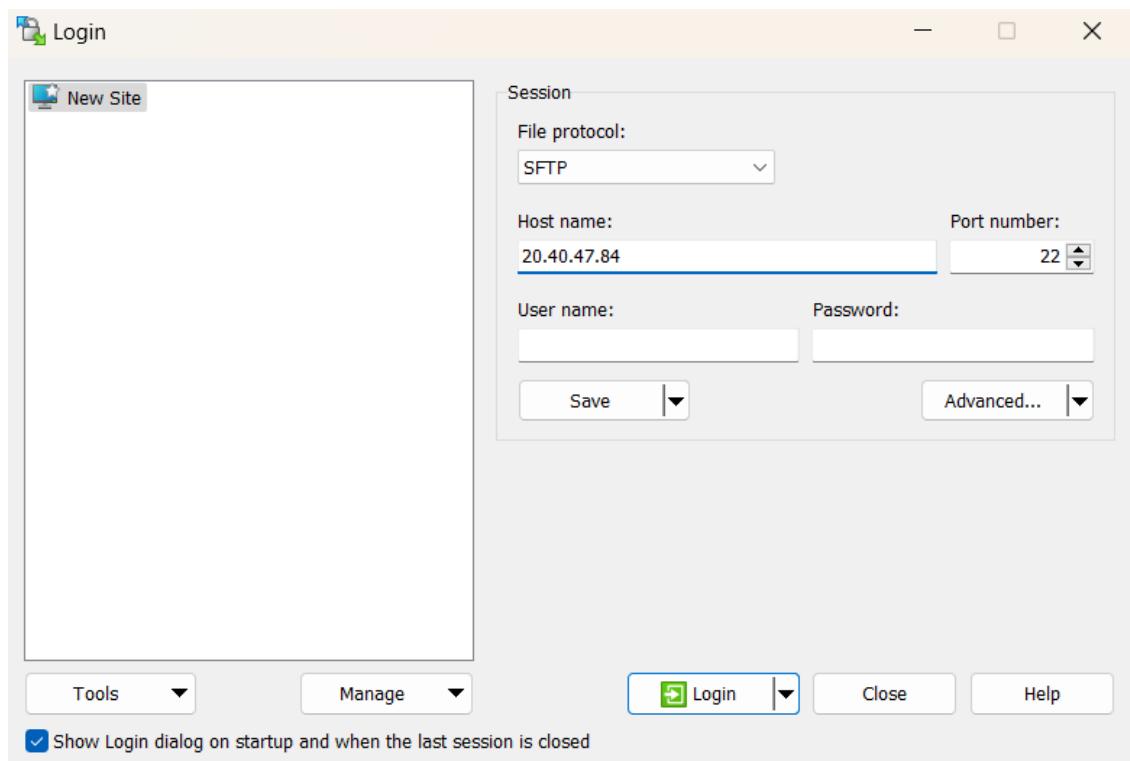


Step-8: A login page will be opened in that type your username and you will be into the ubuntu.

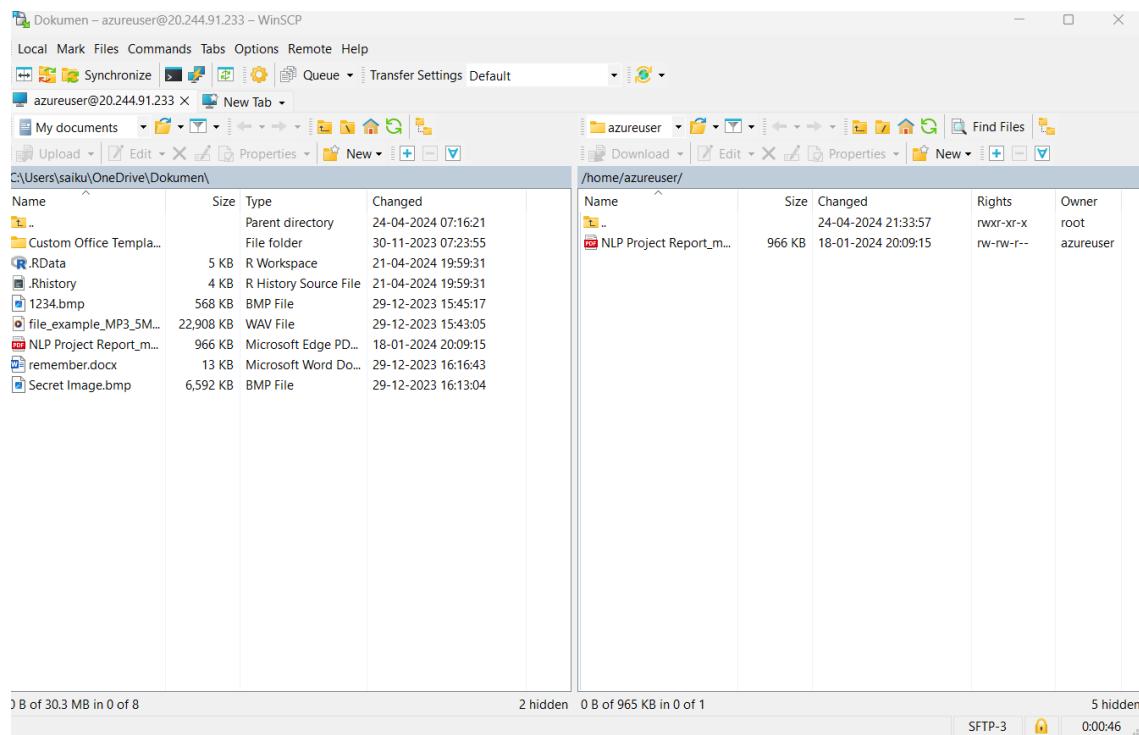
Step-9: Login into your ubuntu VM using PUTTY and type ls command as you can see nothing.

Step-10: Open WinScp at right bottom you can see Advanced option->SSH->Authentication->In that drag private key file and click on ok.

At last Login into your account using public IP address and username in WinScp.



Now, you can drag your files from your desktop to ubuntu VM in WinScp.



Step-11: Now again type ls command as you can see file inside ubuntu VM.

```
azureuser@ubuntu:~$ ls
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.
To check for new updates run: sudo apt update

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.

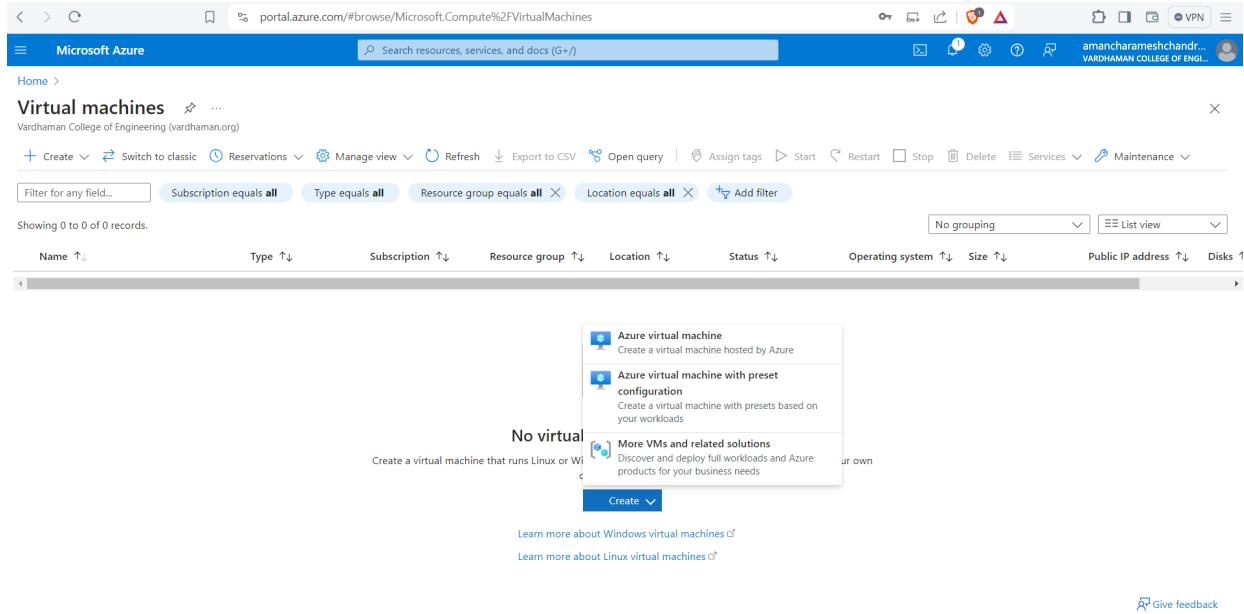
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

azureuser@ubuntu:~$ ls
'NLP Project Report_main.pdf'
azureuser@ubuntu:~$
```

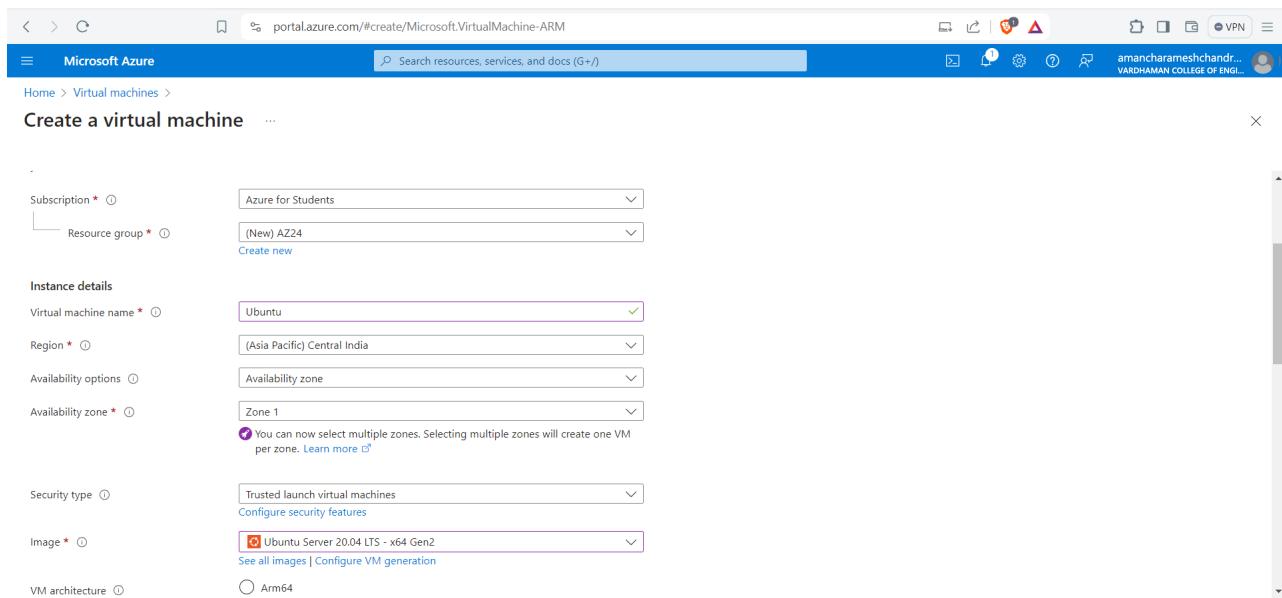
Q8) How to make Linux server as web server in AZURE.

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



The screenshot shows the Microsoft Azure portal interface. The user is on the 'Virtual machines' page. A context menu is open over the 'Create' button, listing three options: 'Azure virtual machine', 'Azure virtual machine with preset configuration', and 'More VMs and related solutions'. The 'Create' button is highlighted in blue.

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



The screenshot shows the 'Create a virtual machine' wizard. The 'Subscription' dropdown is set to 'Azure for Students'. The 'Virtual machine name' field contains 'Ubuntu'. Other fields include 'Region' (Asia Pacific Central India), 'Availability zone' (Zone 1), 'Security type' (Trusted launch virtual machines), 'Image' (Ubuntu Server 20.04 LTS - x64 Gen2), and 'VM architecture' (Arm64). The 'Create' button is visible at the bottom right.

The screenshot shows the 'Create a virtual machine' wizard in the Microsoft Azure portal. The configuration settings are as follows:

- VM architecture:** x64 (selected)
- Run with Azure Spot discount:** Unchecked
- Size:** Standard_DS1_v2 - 1 vcpu, 3.5 GiB memory (₹5,101.50/month)
- Enable Hibernation:** Unchecked
- Administrator account:**
 - Authentication type:** SSH public key (selected)
 - SSH public key source:** azureuser (selected)

A tooltip for the SSH public key source field states: "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."

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”.

The screenshot shows the PuTTY Key Generator application. The generated key details are:

- Public key for pasting into OpenSSH authorized_keys file:**

```
ssh-rsa AAAAB3NzaC1yc2EAAAQABAAABgQC93M45VQ0rKXc0eCGASew0xk/clxzmiCDDzTQN1XPxCwpZiWkm
+KggXAwqtMOecVfJmrJWrAS8YaxqMA1tTcvz8HmEBtklmYqDkQm2F4TM900TsHw
+IGF/Th0zdXyym4oGj91JatGEOC375EK0kHfk6x1xnYD3xMNml7JGave1XT7lj+O
+KqGJoM4eSAx3w2JIRRoeUfkFPfiuTdDI27Qt9HW2scDuvKw0qCq0zoCvPl/91lio5OrR7t/hUGb1hrcp7S
+q4bqC2NTTjCGNoYutVeh081y+hPYbg9QChgy2J5HKD
```
- Key fingerprint:** ssh-rsa 3072 SHA256:KakGDPCnAoZi7mwAo0+l/FA/YqYtkwHOqdgww5iRHw
- Key comment:** imported-openssh-key
- Key passphrase:** (empty)
- Confirm passphrase:** (empty)

Actions:

- Generate a public/private key pair (Generate button)
- Load an existing private key file (Load button)
- Save the generated key (Save public key and Save private key buttons)

Parameters:

- Type of key to generate:** RSA (selected)
- Number of bits in a generated key:** 2048

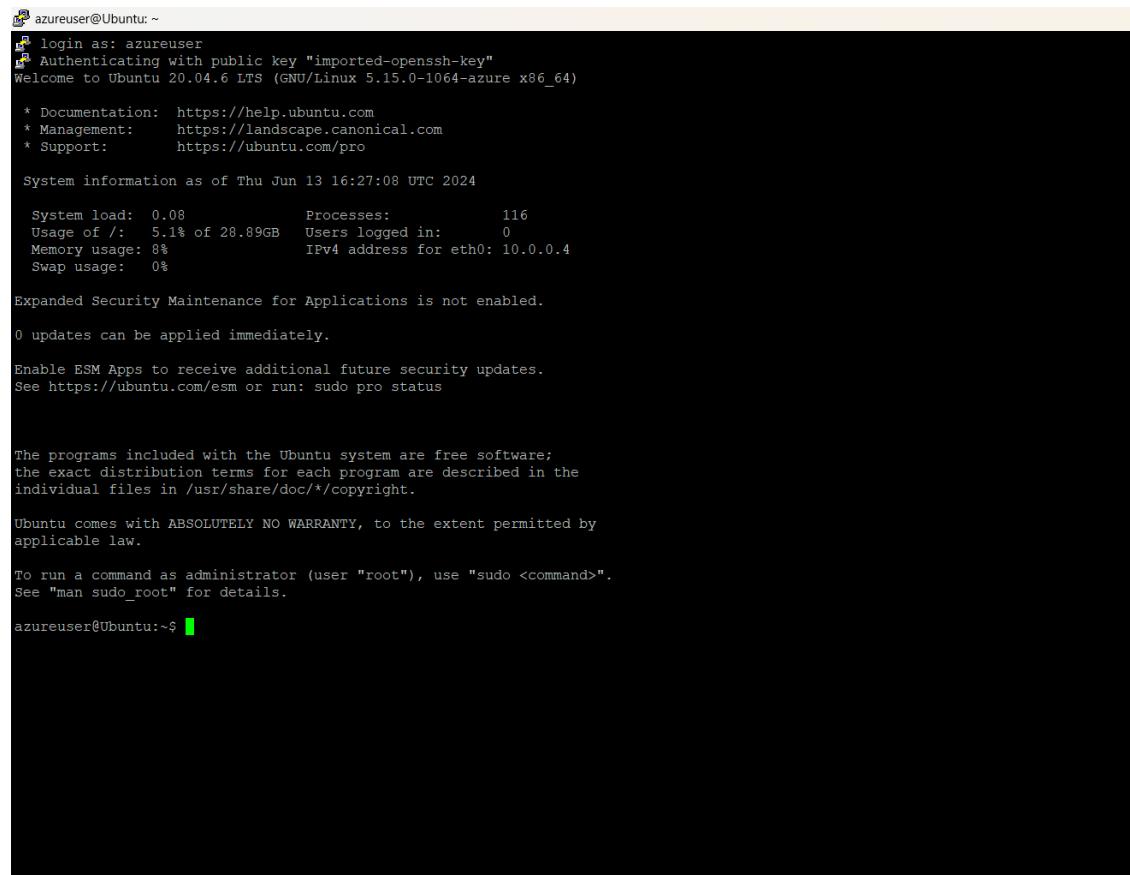
Step-4: After Deployment is over, Go to the remote desktop connection.

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

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 then 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.



```
azureuser@Ubuntu: ~
[?] login as: azureuser
[?] Authenticating with public key "imported-openssh-key"
Welcome to Ubuntu 20.04.6 LTS (GNU/Linux 5.15.0-1064-azure x86_64)

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

System information as of Thu Jun 13 16:27:08 UTC 2024

 System load: 0.08      Processes:           116
 Usage of /: 5.1% of 28.89GB  Users logged in:     0
 Memory usage: 8%
 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 programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/*copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

azureuser@Ubuntu:~$
```

Step-9: Login into your Ubuntu VM using your username and type the following commands.

The screenshot shows the Microsoft Azure portal interface. The top navigation bar includes the Microsoft Azure logo, a search bar, and user information. Below the navigation bar, the main content area displays the 'Virtual machines' section. On the left, there is a sidebar with a search bar, a 'Create' button, and a 'Switch to classic' link. The main pane shows a list of virtual machines, with one named 'Ubuntu' selected. The right side of the screen provides detailed information about the selected VM, including its resource group (AZ24), status (Running), location (Central India (Zone 1)), subscription (Azure for Students), and various configuration settings like network and storage. A 'JSON View' link is also present in the top right of the details pane.

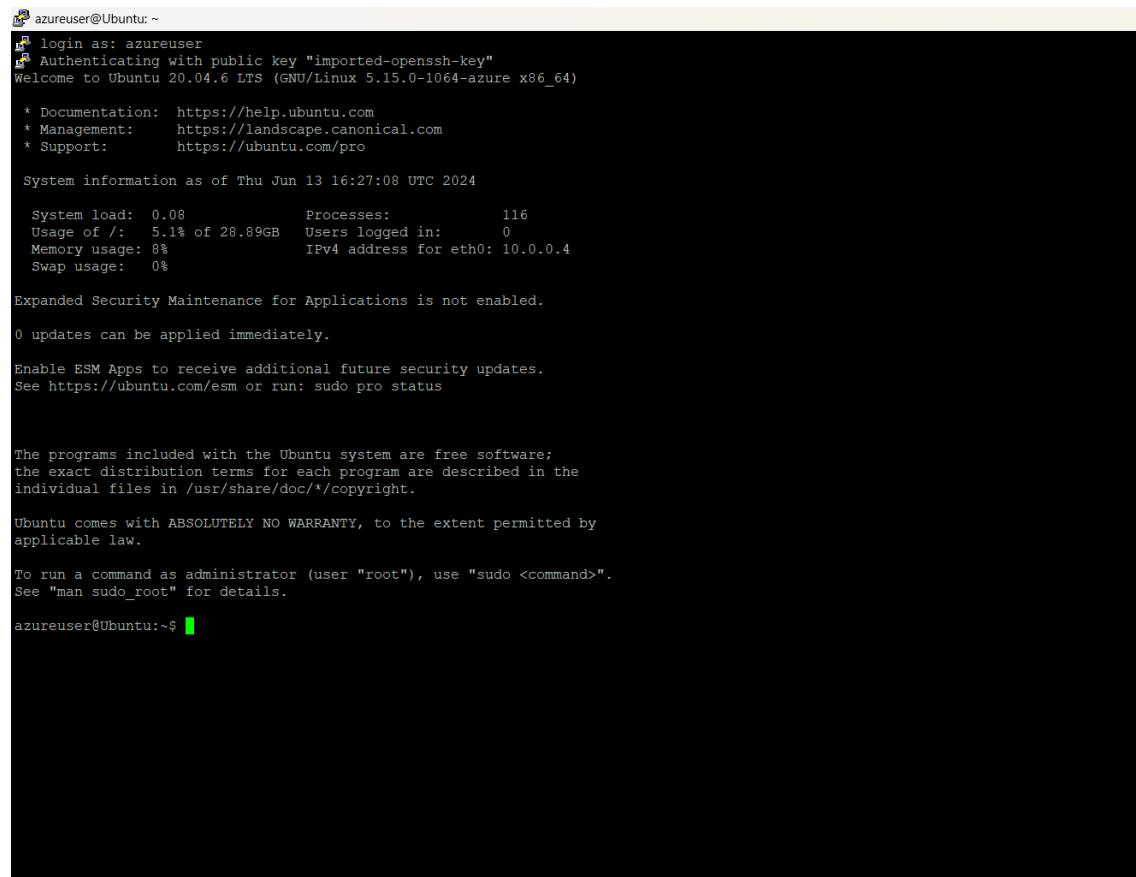
\$sudo su

\$sudo apt-get update

After typing the two commands, 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.



The screenshot shows a terminal window with the following text:

```
azureuser@Ubuntu: ~
login as: azureuser
Authenticating with public key "imported-openssh-key"
Welcome to Ubuntu 20.04.6 LTS (GNU/Linux 5.15.0-1064-azure x86_64)

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

System information as of Thu Jun 13 16:27:08 UTC 2024

 System load: 0.08      Processes:          116
 Usage of /: 5.1% of 28.89GB   Users logged in:    0
 Memory usage: 8%
 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 programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.

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applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

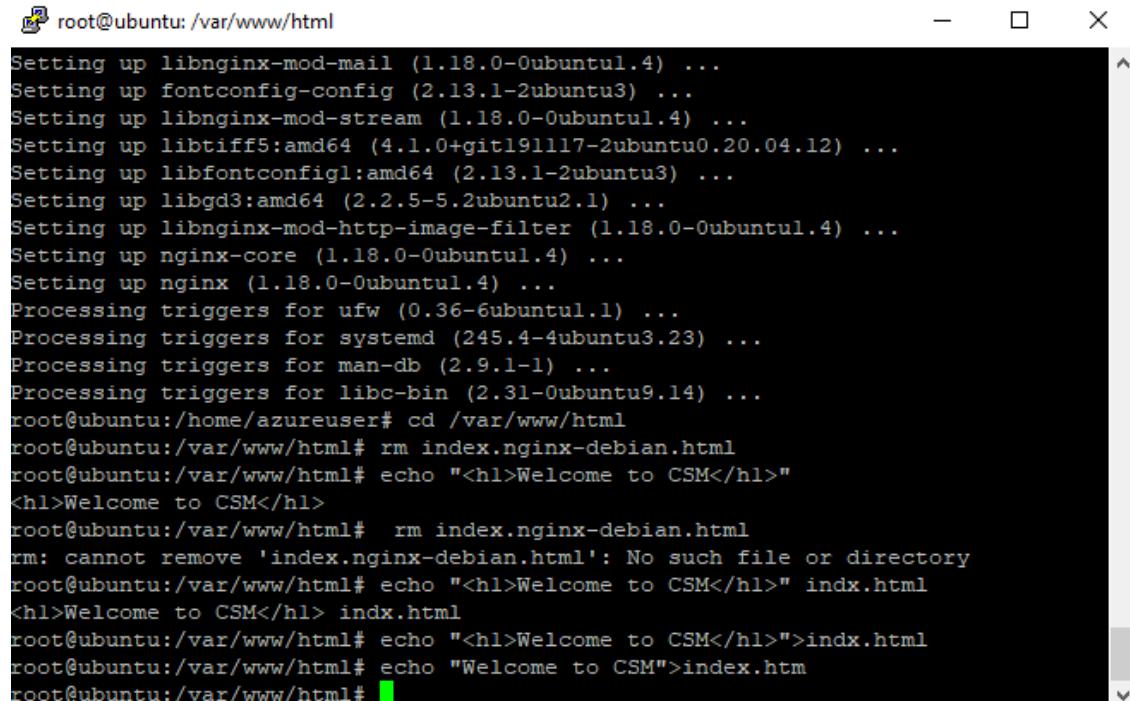
azureuser@Ubuntu:~$
```

Step-10: To remove following information and keep new information in that page type the following command and refresh the browser page.

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

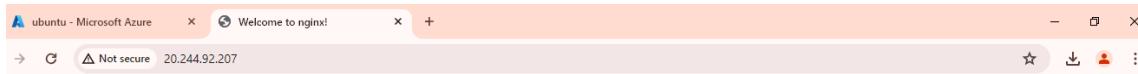
```
$rm index.nginx-debian.html
```

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



The terminal window shows the following sequence of commands and their output:

```
root@ubuntu:/var/www/html# Setting up libnginx-mod-mail (1.18.0-0ubuntu1.4) ...
root@ubuntu:/var/www/html# Setting up fontconfig-config (2.13.1-2ubuntu3) ...
root@ubuntu:/var/www/html# Setting up libnginx-mod-stream (1.18.0-0ubuntu1.4) ...
root@ubuntu:/var/www/html# Setting up libtiff5:amd64 (4.1.0+git191117-2ubuntu0.20.04.12) ...
root@ubuntu:/var/www/html# Setting up libfontconfig1:amd64 (2.13.1-2ubuntu3) ...
root@ubuntu:/var/www/html# Setting up libgd3:amd64 (2.2.5-5.2ubuntu2.1) ...
root@ubuntu:/var/www/html# Setting up libnginx-mod-http-image-filter (1.18.0-0ubuntu1.4) ...
root@ubuntu:/var/www/html# Setting up nginx-core (1.18.0-0ubuntu1.4) ...
root@ubuntu:/var/www/html# Setting up nginx (1.18.0-0ubuntu1.4) ...
root@ubuntu:/var/www/html# Processing triggers for ufw (0.36-6ubuntu1.1) ...
root@ubuntu:/var/www/html# Processing triggers for systemd (245.4-4ubuntu3.23) ...
root@ubuntu:/var/www/html# Processing triggers for man-db (2.9.1-1) ...
root@ubuntu:/var/www/html# 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>" > index.html
<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>" > index.html
<h1>Welcome to CSM</h1>
```

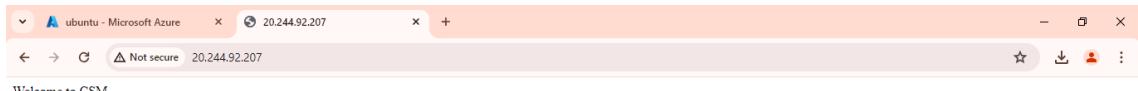


Welcome to nginx!

If you see this page, the nginx web server is successfully installed and working. Further configuration is required.

For online documentation and support please refer to nginx.org.
Commercial support is available at nginx.com.

Thank you for using nginx.

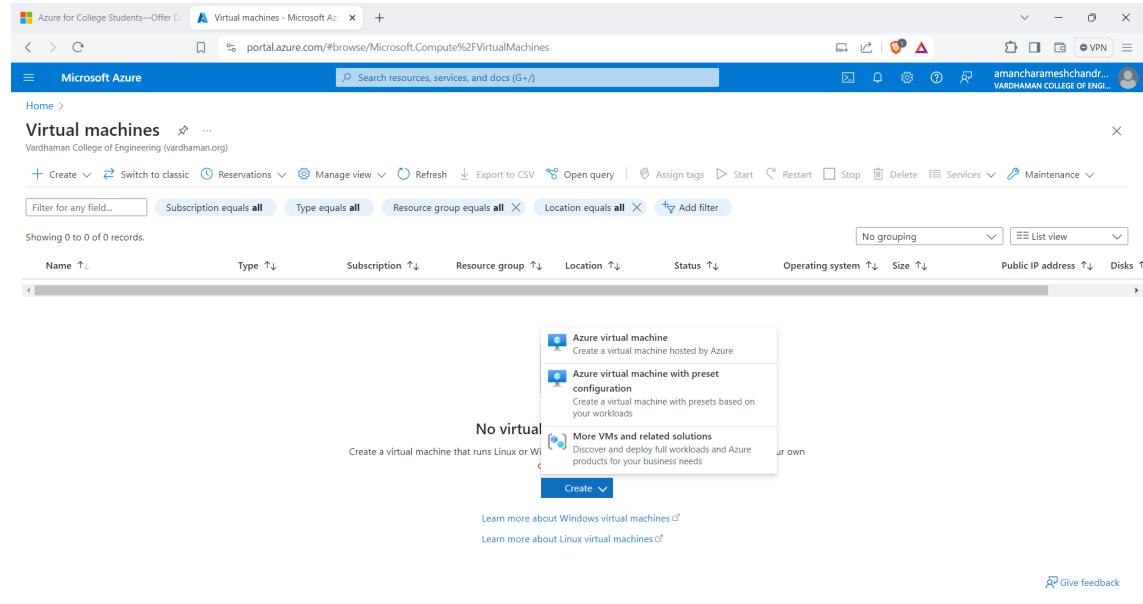


Welcome to CSM



Q9) Setup and configure AZURE web server for windows server (IIS).

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.

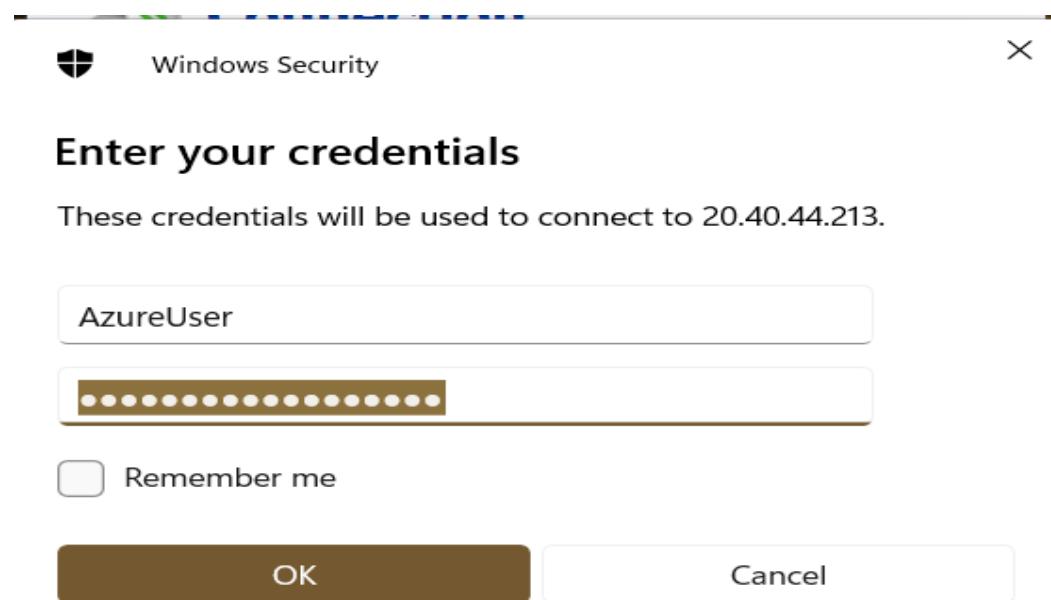
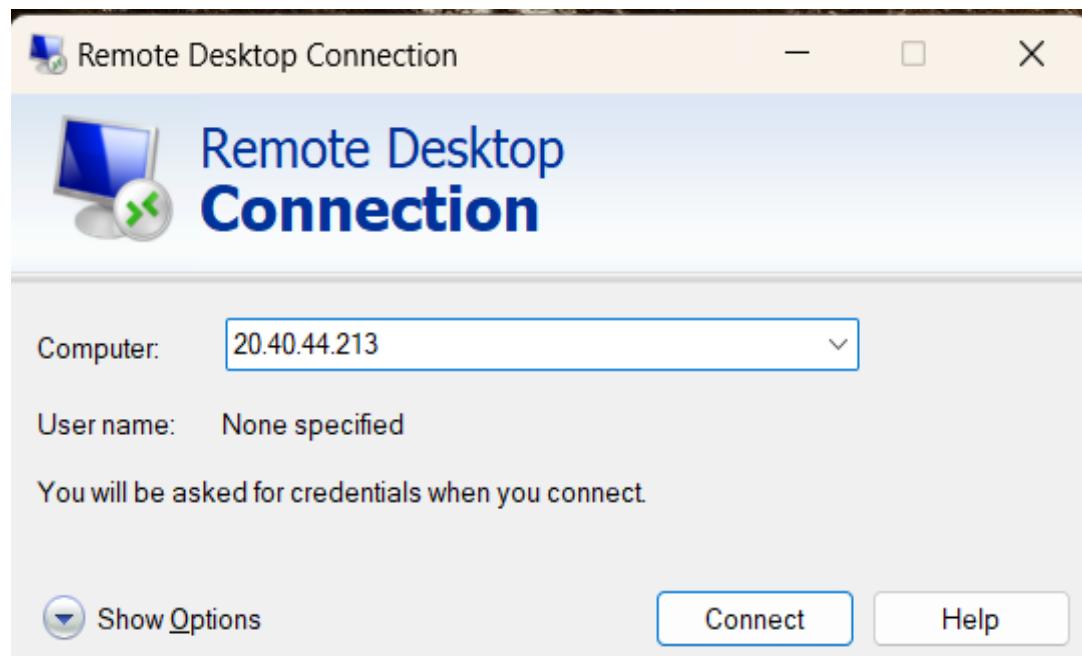
Step-3: Fill the details in that window by creating a “Resource Group”, Zone: Asia, Image: window, Select the disk storage and so on. After that click on “Create + Review”. And Finally click on “Create”

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

The screenshot shows the Microsoft Azure portal interface for managing virtual machines. The top navigation bar includes 'Virtual machines - Microsoft Azure' and the URL 'portal.azure.com/#browse/Microsoft.Compute%2FVirtualMachines'. The main content area is titled 'Virtual machines' and shows a message 'Showing 0 to 0 of 0 records.' Below this, there are several filter options: 'Subscription equals all', 'Type equals all', 'Resource group equals all', 'Location equals all', and 'Add filter'. A 'Create' button is prominently displayed at the bottom left of the page, with a dropdown menu open above it. The dropdown menu contains four items: 'Azure virtual machine' (selected), 'Azure virtual machine with preset configuration', 'More VMs and related solutions', and 'Learn more about Windows virtual machines' and 'Learn more about Linux virtual machines'.

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

Step-6: By using that copied IP Address open the window virtual machine through remote desktop connection.



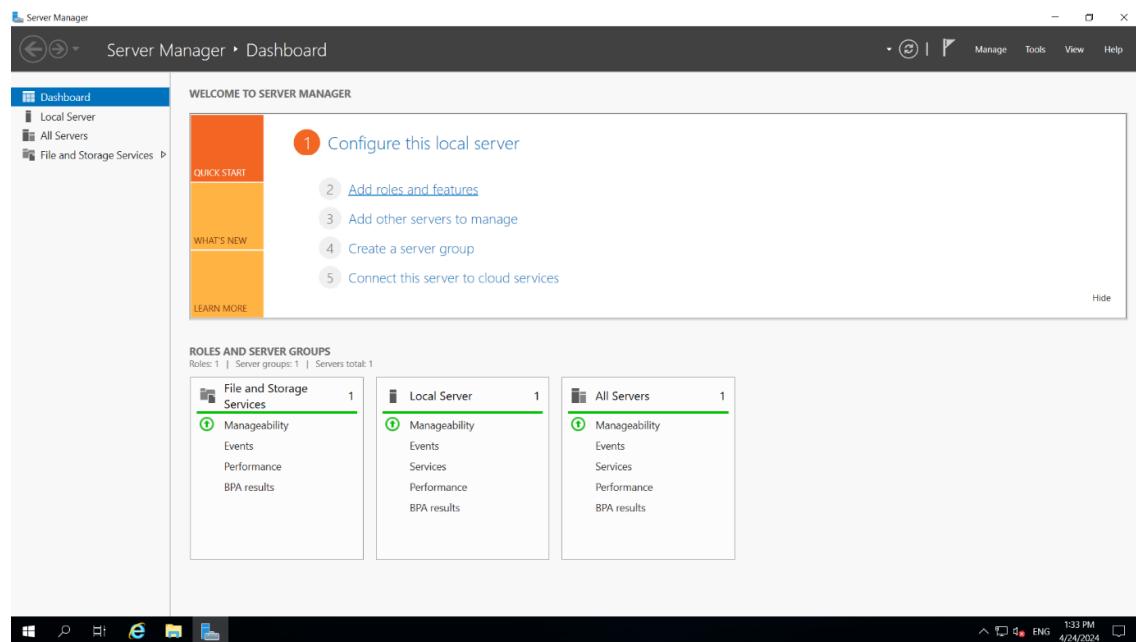
Step-7: When remote desktop will start (windows VM) you can see there will be Sever Manager will be opened and in that you can see Configure this local server, click on “Add roles and features”.

The screenshot shows the 'Create a virtual machine' wizard in the Azure portal. The current step is 'Networking'. The 'Inbound port rules' section is expanded, showing that 'Allow selected ports' is selected and 'RDP (3389)' is chosen. There is a note stating: 'All traffic from the internet will be blocked by default. You will be able to change inbound port rules in the VM > Networking page.' Below this, the 'Licensing' section is shown, with a checkbox for 'I confirm I have an eligible Windows 10/11 license with multi-tenant hosting rights'. At the bottom, there are buttons for 'Previous', 'Next : Disks >', 'Review + create', and 'Give feedback'.

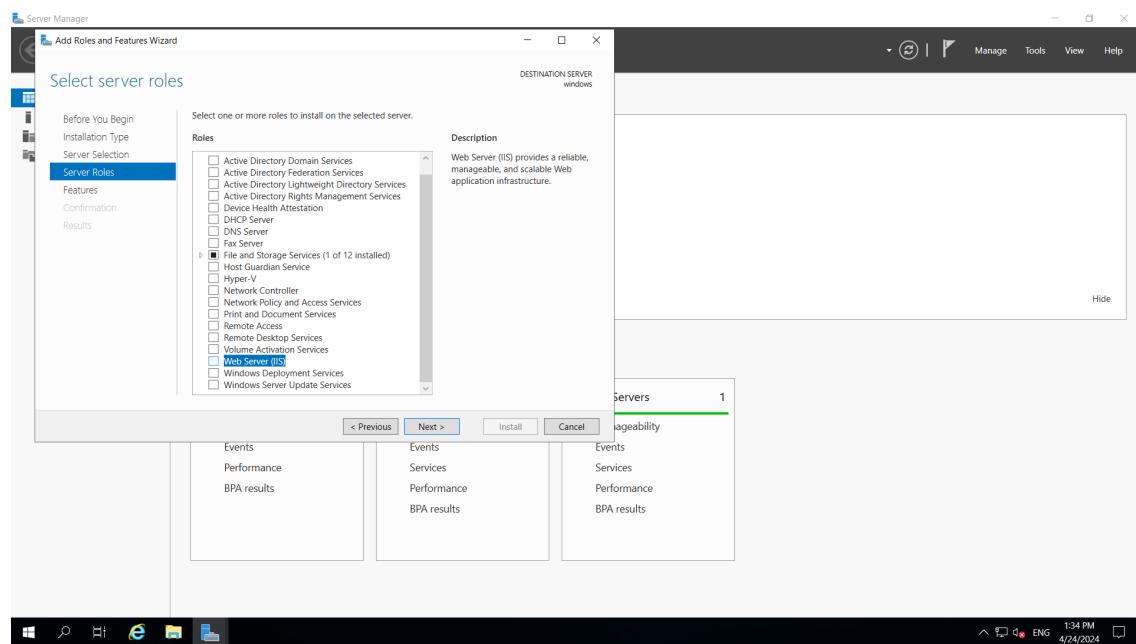
The screenshot shows the 'CreateVm-MicrosoftWindowsDesktop.Windows-10-win10-20240613203743 | Overview' page in the Azure portal. The 'Overview' tab is selected, displaying a green checkmark and the message 'Your deployment is complete'. It shows deployment details: Deployment name: CreateVm-MicrosoftWindowsDesktop.Windows..., Start time: 6/13/2024, 8:41:09 PM, Subscription: Azure for Students, Correlation ID: 91279413-fe42-433c-a5ca-c9066b78be85. To the right, there are sections for 'Cost Management', 'Microsoft Defender for Cloud', and 'Free Microsoft tutorials'.

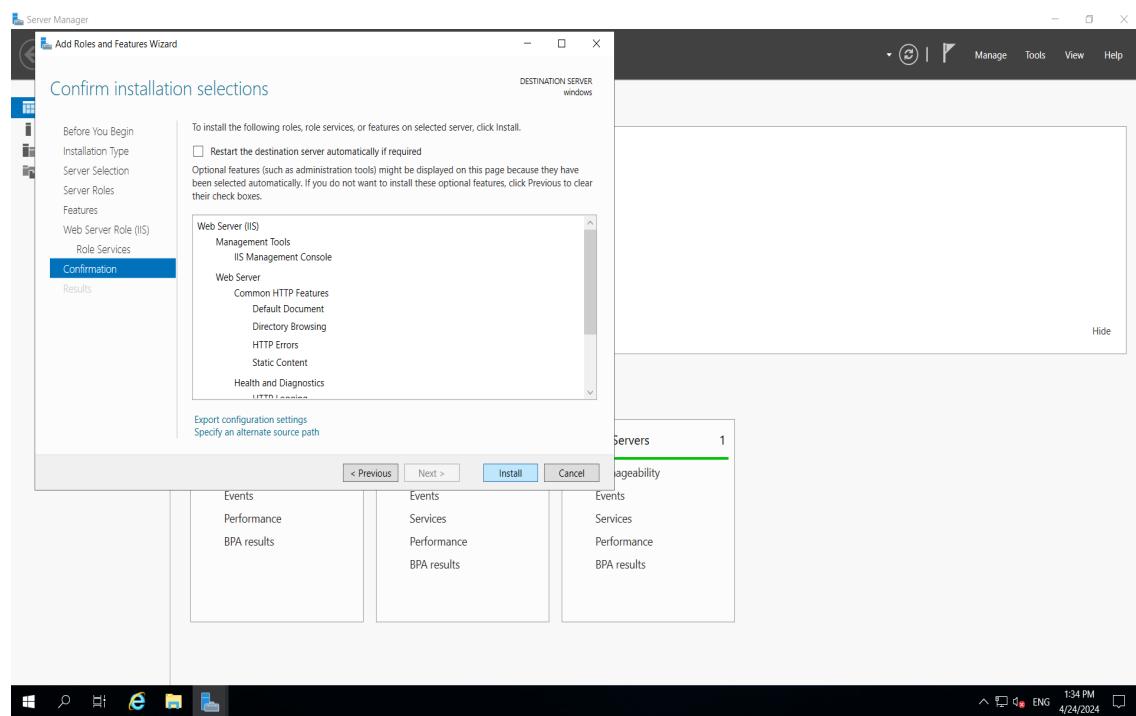
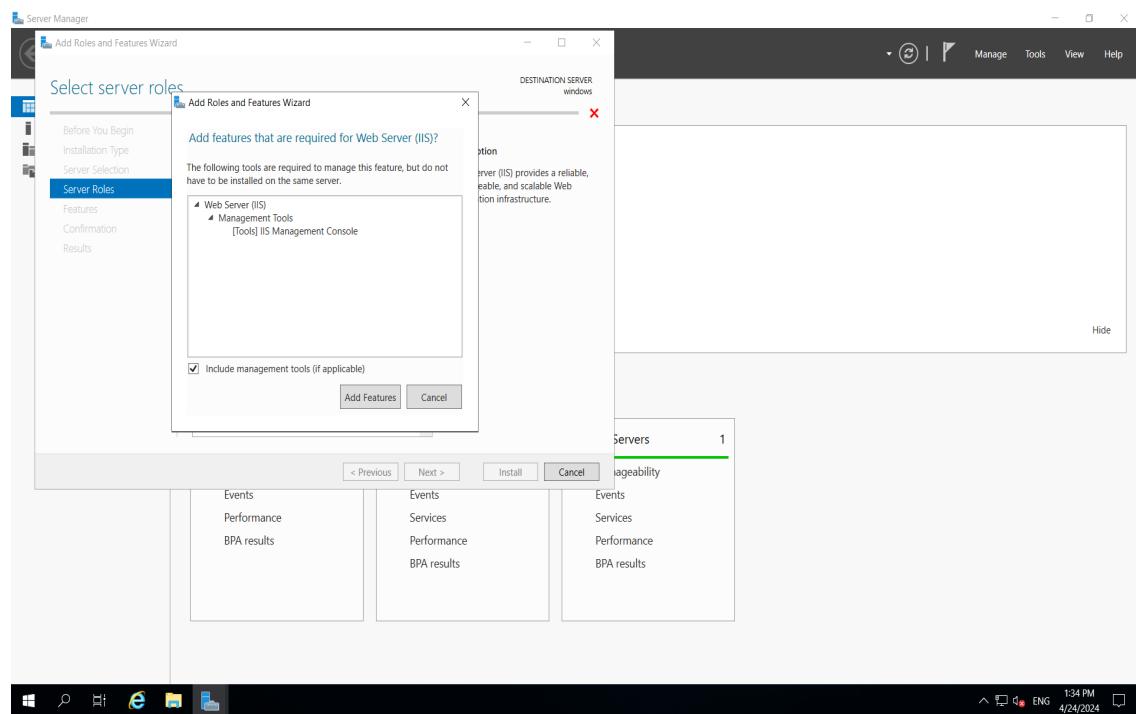
The screenshot shows the 'Create a virtual machine' wizard in the Microsoft Azure portal. The current step is 'Review + create'. A green validation bar at the top indicates 'Validation passed'. Below it, tabs for Basics, Disks, Networking, Management, Monitoring, Advanced, Tags, and Review + create are visible, with 'Review + create' being the active tab. Under the 'Price' section, it shows '1 X Standard DS1 v2 by Microsoft' at a cost of '6.9884 INR/hr'. A note says 'Subscription credits apply'. Below the price, there's a 'TERMS' section with legal text and a link to 'Azure Marketplace Terms'. A warning message in a box says: '⚠ You have set RDP port(s) open to the internet. This is only recommended for testing. If you want to change this setting, go back to Basics tab.' At the bottom, there are 'Previous', 'Next >', and a large blue 'Create' button.

The screenshot shows the Microsoft Azure Virtual machines dashboard. On the left, a sidebar lists 'Virtual machines' under 'Vardhaman College of Engineering (vardhaman.org)'. It shows one VM named 'VM24'. The main area displays the 'VM24' virtual machine details. The 'Overview' tab is selected, showing the status 'VM24 virtual machine agent status is not ready. Troubleshoot the issue →'. The 'Essentials' section provides details: Resource group (AZ24), Status (Running), Location (Central India (Zone 1)), Subscription (Azure for Students), and Operating system (Windows). Other tabs include 'Activity log', 'Access control (IAM)', 'Tags', 'Diagnose and solve problems', 'Connect', 'Networking', 'Network settings', and 'Load balancing'. There are also 'Capture', 'Delete', 'Refresh', and 'Open in mobile' buttons.

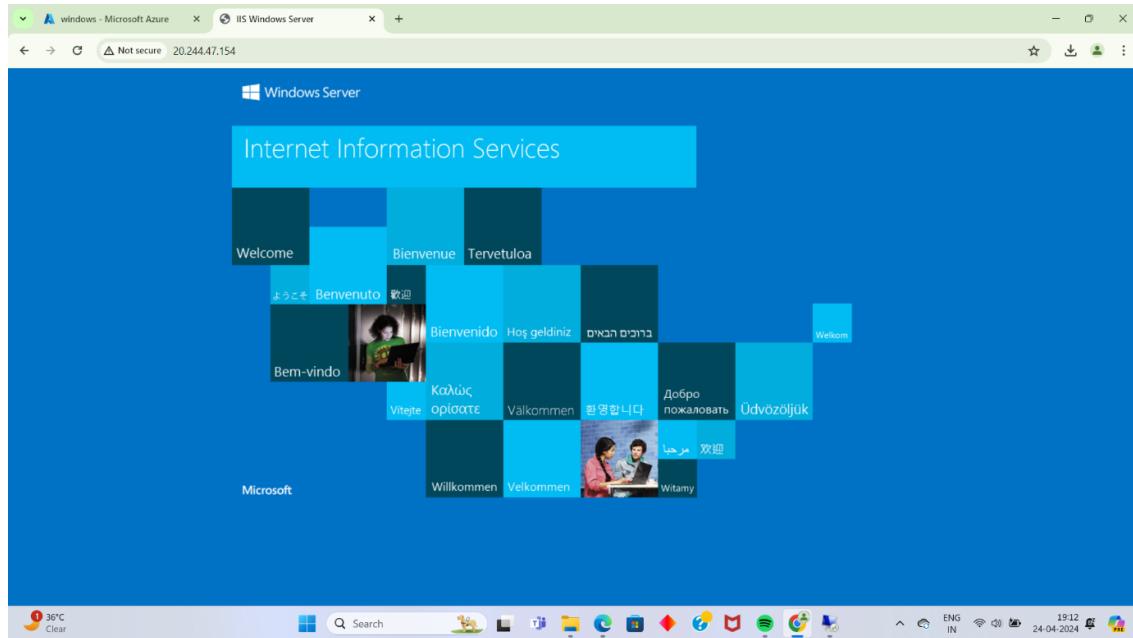


Step-8: Click on next, next and in Server Roles select Web Server (IIS) click on add feature, click on next, next till you can get install button and click on install.

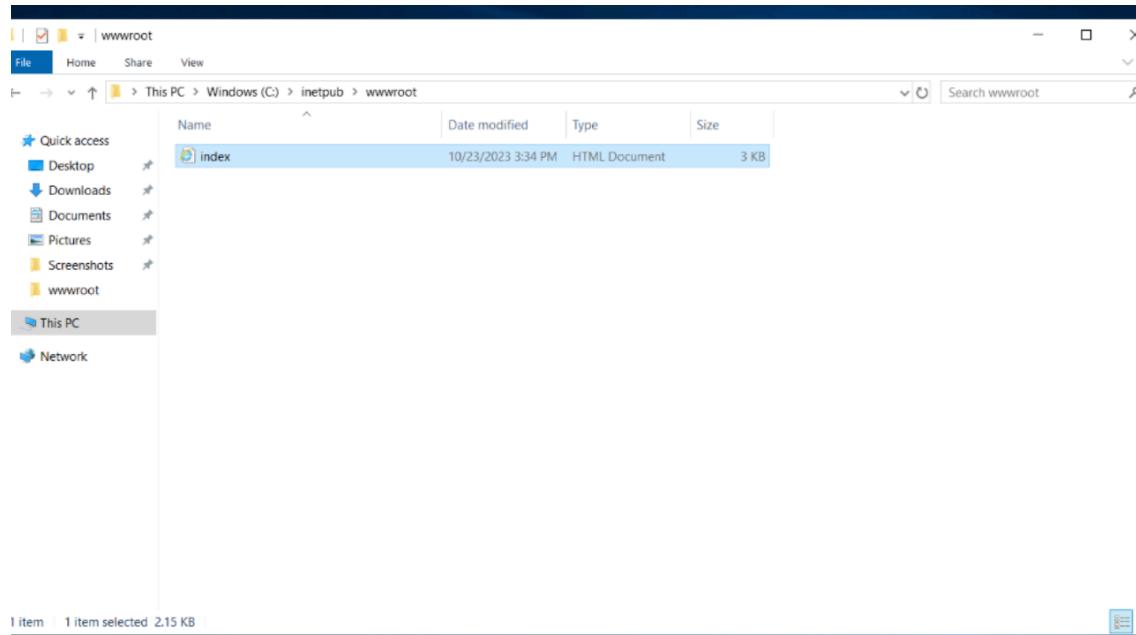




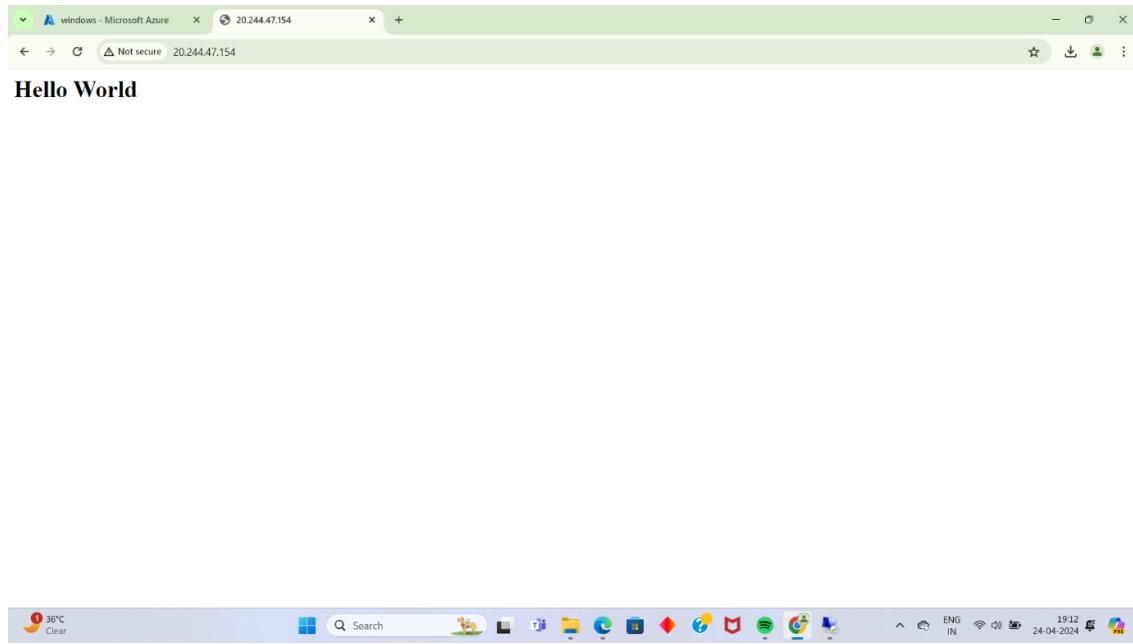
Step- 9: paste the public ip address in desktop browser and you can see.



Now to remove this all information first of all create index.html in desktop and that should paste in the specified location of remote desktop VM that is ThisPC->windows(c)->inetup->wwwroot and remove iistart.png.



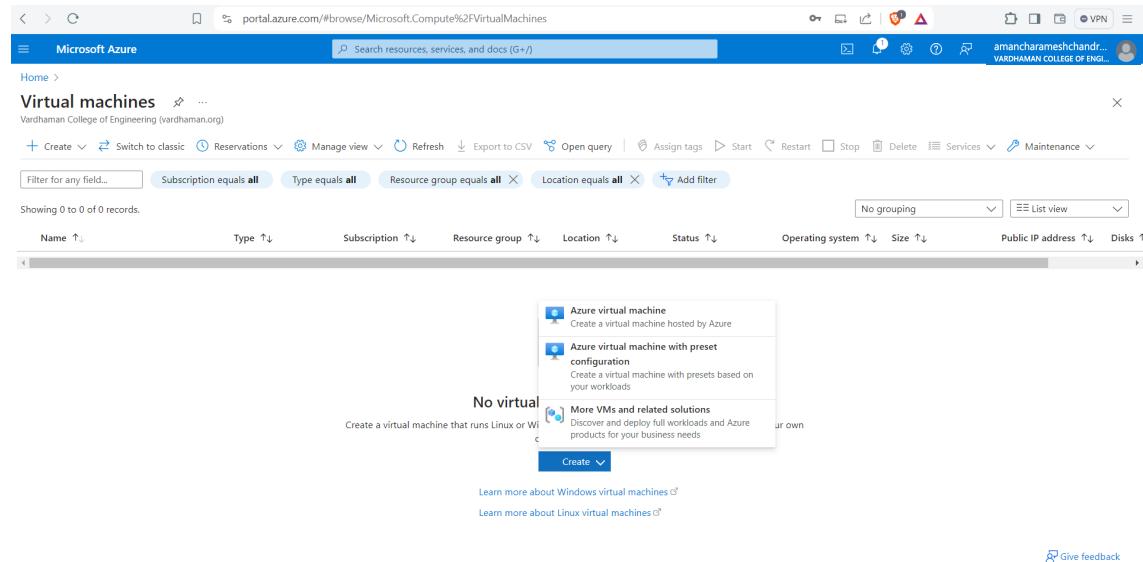
Step-10: Refresh the browser page.



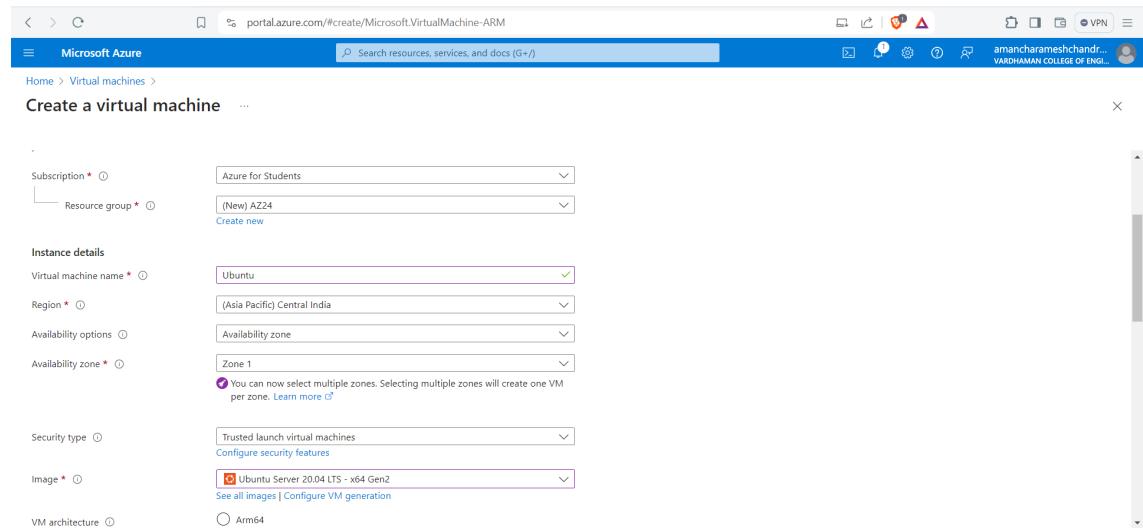
Q10) How we are adding new users, login credentials, changing owner, create authorized key files.

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.



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”.

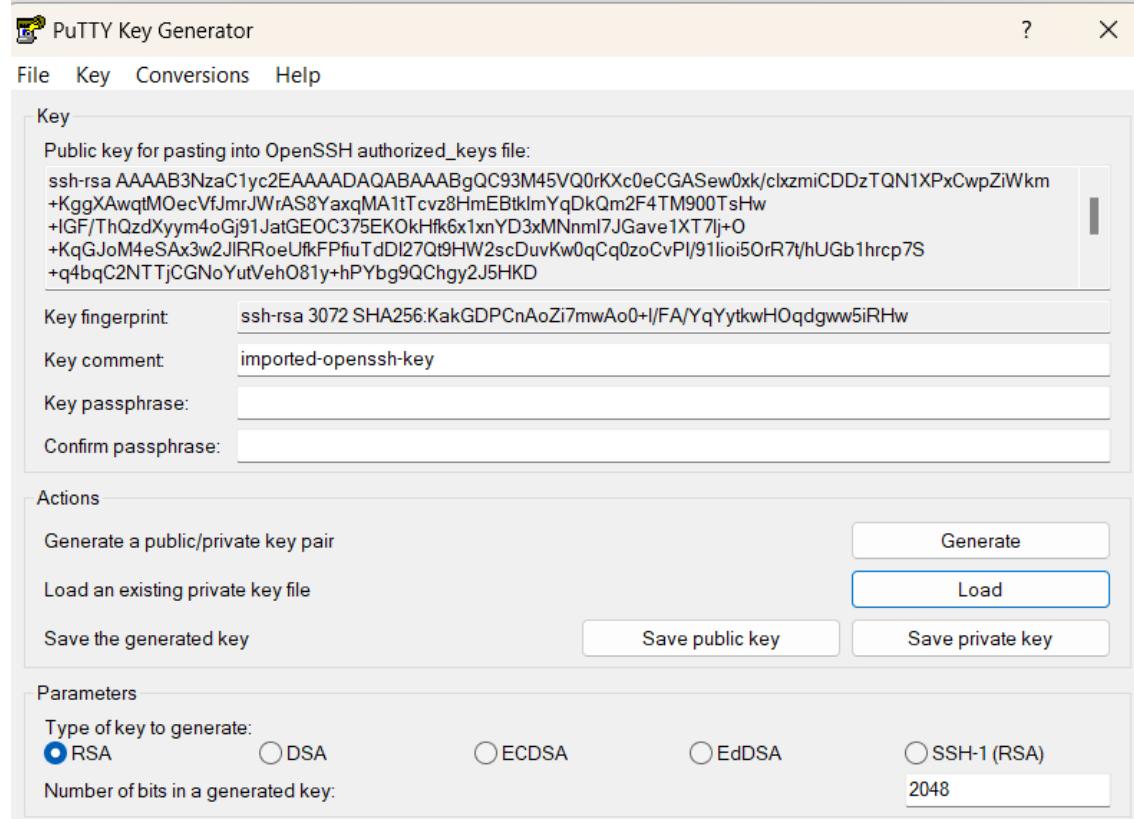
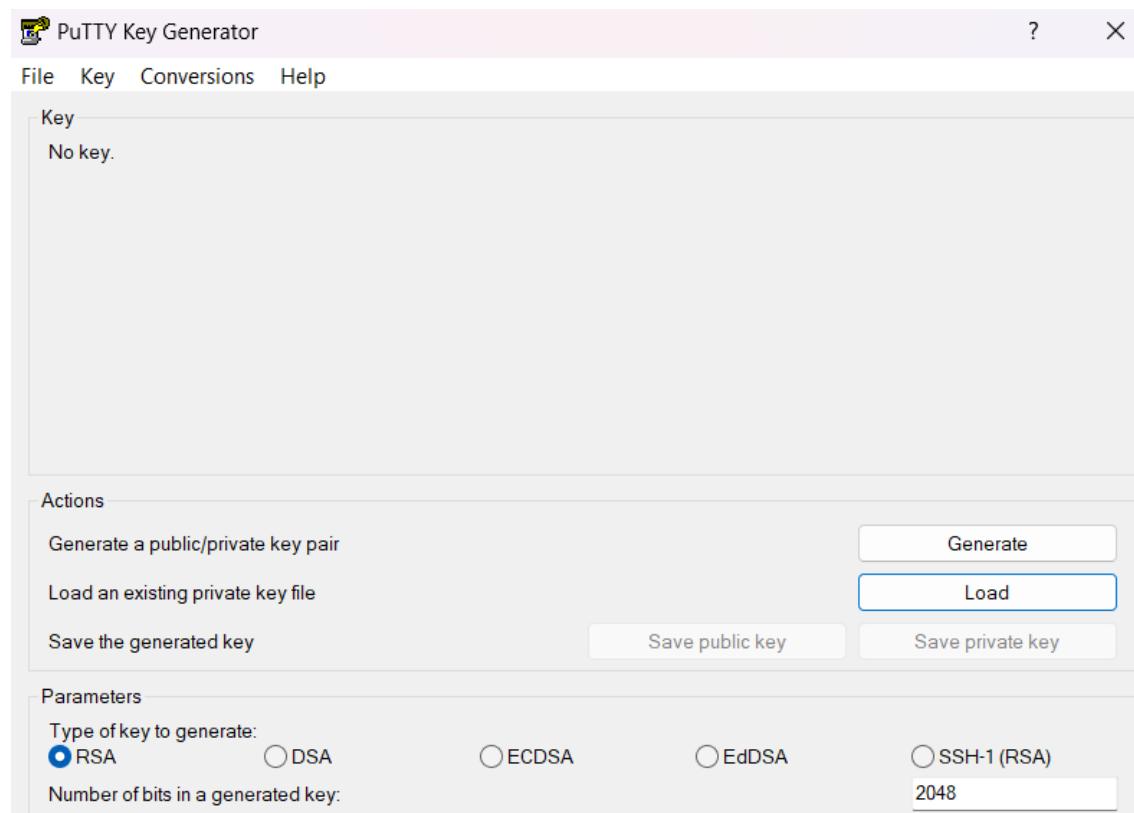


Step-4: After Deployment is over, Go to the remote desktop connection.

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

This screenshot shows the 'Create a virtual machine' wizard in the Microsoft Azure portal. The 'Administrator account' section is highlighted, showing the 'SSH public key' option selected. A tooltip explains that Azure automatically generates an SSH key pair for secure connection. The 'Username' field is set to 'azureuser'. Other visible fields include 'VM architecture' (x64), 'Size' (Standard_DS1_v2), and 'SSH public key source' (Generate new key pair).

This screenshot continues the 'Create a virtual machine' wizard. Under the 'Networking' tab, it shows the 'Inbound port rules' configuration. The 'Public inbound ports' section has 'Allow selected ports' selected, with 'SSH (22)' chosen from the dropdown. A note states that all traffic will be blocked by default. Navigation buttons at the bottom include '< Previous', 'Next: Disks >', 'Review + create', and 'Give feedback'.



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.

The screenshot shows two windows side-by-side. The top window is the Microsoft Azure 'Virtual machines' dashboard, showing a single VM named 'Ubuntu'. The bottom window is the 'PuTTY Configuration' dialog, specifically the 'Session' tab. In the PuTTY window, the 'Host Name (or IP address)' field is set to '20.40.47.84' and the 'Port' field is set to '22'. The 'Connection type:' radio button is selected for 'SSH'. The 'Category' tree on the left of the PuTTY window includes options like Session, Logging, Terminal, Window, and Connection.

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

Step-9: Login into your Ubuntu VM using your username and type the following commands.

To add new user in Linux server:

```
$sudo useradd -m Saiteja
```

To set new password:

```
$sudo passwd Saiteja
```

Enter new password and Retype password.

To modify login credentials:

```
$sudo usermod -aG sudo Saiteja
```

To switch the user:

```
$sudo su Saiteja
```

The screenshot shows a terminal window titled 'saiteja@Ubuntu: /home/azureuser'. The session log indicates the user last logged in on June 13, 2024. It provides instructions for running commands as root using 'sudo'. The user then runs several commands to create a new user account:

- 'ls' command shows the current directory.
- 'sudo useradd -m saiteja' creates the user account.
- 'sudo passwd saiteja' sets a password for the new user.
- 'New password:' and 'Retype new password:' prompts for the password.
- 'passwd: password updated successfully' confirmation.
- 'sudo usermod -aG sudo saiteja' adds the user to the sudo group.
- 'sudo su saiteja' switches the user to 'saiteja'.
- 'To run a command as administrator (user "root"), use "sudo <command>". See "man sudo_root" for details.' usage information.

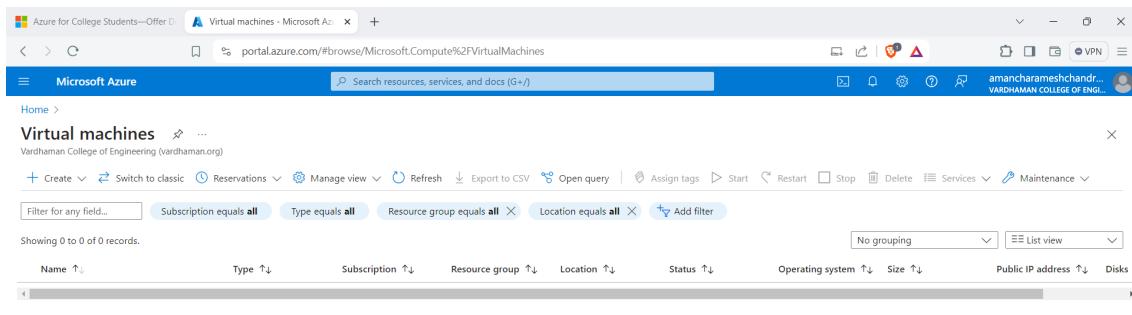
The terminal prompt at the bottom is 'saiteja@Ubuntu:/home/azureuser\$'.

Q11) Create a Windows VM and transfer files from desktop to remote desktop VM.

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

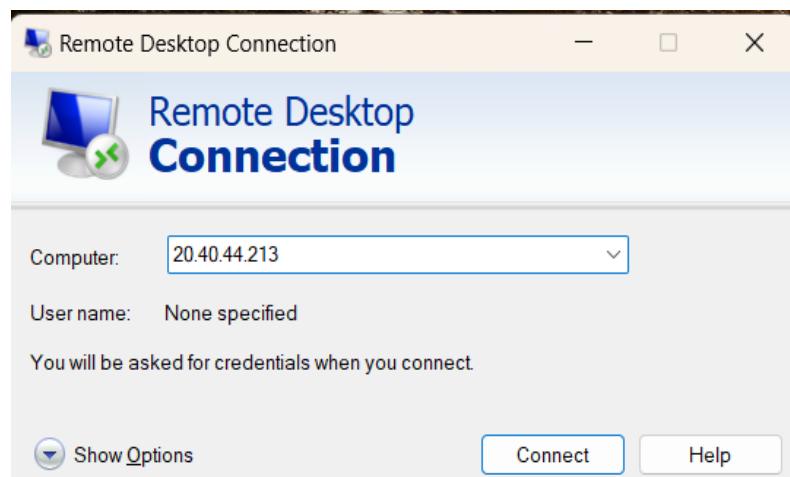
Step-2: Go To Virtual machine, and click on “Create” to create a window virtual machine.

Step-3: Fill the details in that window by creating a “Resource Group”, Zone: Asia, Image: window, Select the disk storage and so on. After that click on “Create + Review”. And finally click on “Create”

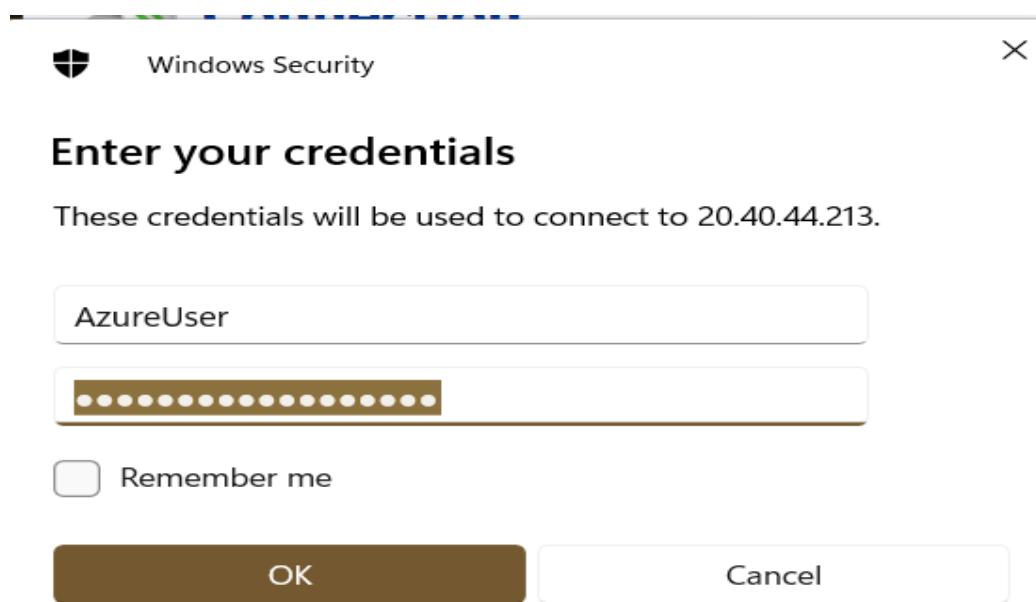


Step-4: After Deployment is over, Go to the remote desktop connection.

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

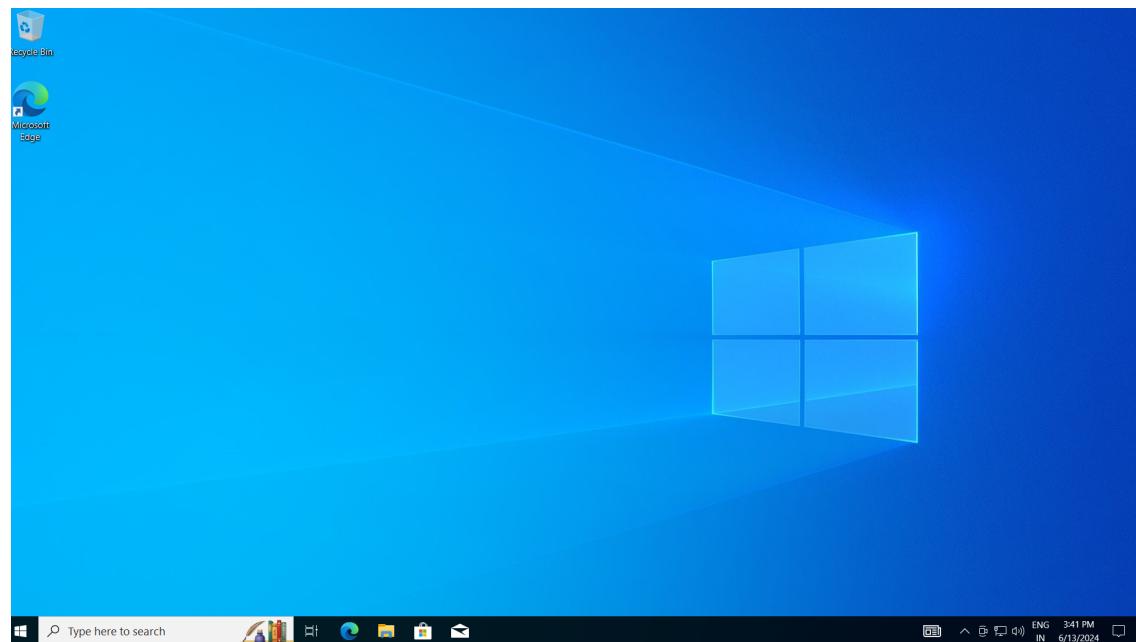


Step-6: By using that copied IP Address open the window virtual machine through remote desktop connection.



Step-7: Minimize the Remote desktop and copy file from desktop.

Right click in remote desktop and click on paste.



Screenshot 1: Create a virtual machine - Microsoft Azure

This screenshot shows the initial configuration steps for creating a virtual machine. It includes:

- Processor:** x64 (selected)
- Warning:** Arm64 is not supported with the selected image.
- Run with Azure Spot discount:** Unchecked
- Size:** Standard_DS1_v2 - 1 vcpu, 3.5 GiB memory (₹5,101.50/month) (selected)
- Enable Hibernation:** Unchecked (with a note that it's unsupported for the selected size)
- Administrator account:**
 - Username:** AzureUser (valid)
 - Password:** (redacted)
 - Confirm password:** (redacted)
- Inbound port rules:** Note: 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.

Screenshot 2: Create a virtual machine - Microsoft Azure

This screenshot continues the configuration process, focusing on inbound port rules:

- Administrator account:** Same as Screenshot 1.
- Inbound port rules:**
 - Public inbound ports:** Selected "Allow selected ports".
 - Select inbound ports:** RDP (3389) (selected)
 - Note:** All traffic from the internet will be blocked by default. You will be able to change inbound port rules in the VM > Networking page.

Screenshot 3: CreateVm-MicrosoftWindowsDesktop.Windows-10-win10-20240613203743 | Overview - Microsoft Azure

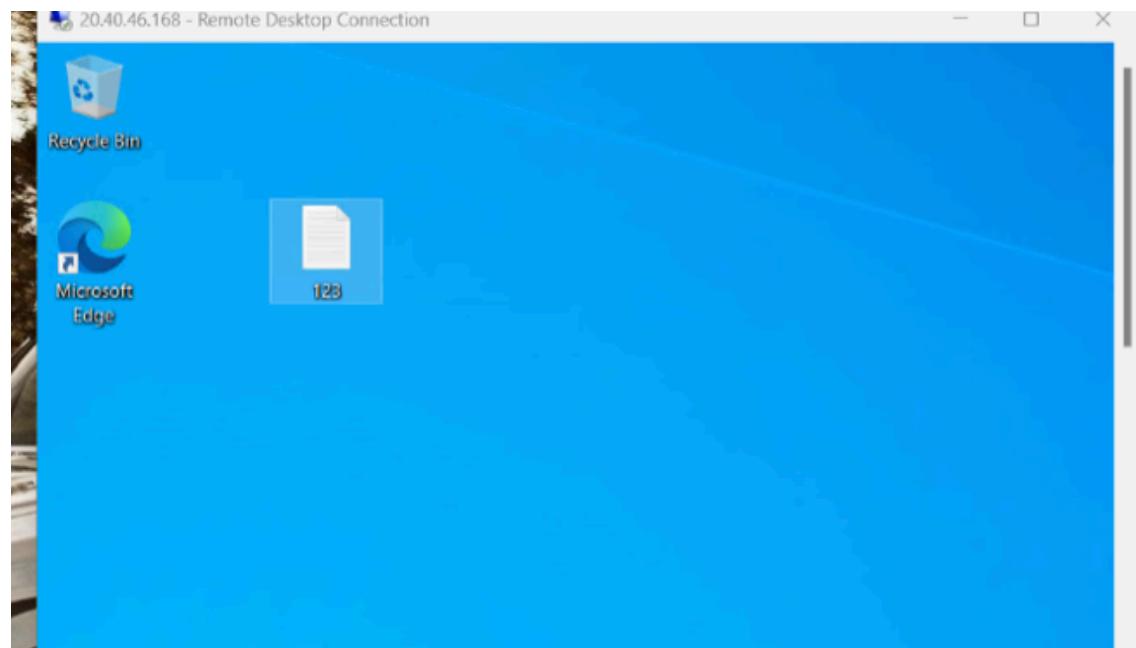
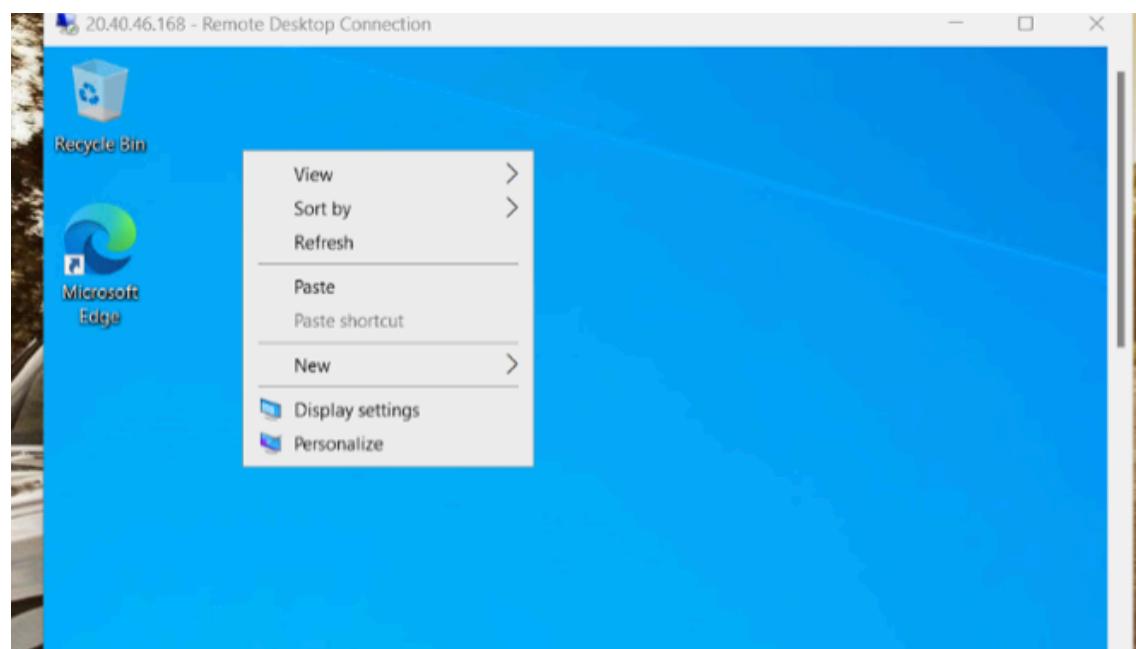
This screenshot shows the completed deployment summary:

- Deployment name:** CreateVm-MicrosoftWindowsDesktop.Windows-10-win10-20240613203743
- Start time:** 6/13/2024, 8:41:09 PM
- Correlation ID:** 91279413-fe42-433c-a5ca-c906b78be85
- Resource group:** A224
- Cost Management:** Get notified to stay within your budget and prevent unexpected charges on your bill. Set up cost alerts >
- Microsoft Defender for Cloud:** Secure your apps and infrastructure. Go to Microsoft Defender for Cloud >
- Free Microsoft tutorials:** Start learning today >

The screenshot shows the Microsoft Azure portal interface. At the top, there's a navigation bar with 'Microsoft Azure' and a search bar. Below it, the main content area is titled 'Virtual machines' and shows a list with 'VM24'. The main panel displays the 'VM24' virtual machine details. On the left, a sidebar lists various management options like 'Overview', 'Activity log', 'Tags', 'Diagnose and solve problems', 'Networking', 'Settings', 'Availability + scale', 'Security', 'Backup + disaster recovery', and more. The 'Overview' section is selected. The main content area shows the following details for VM24:

Setting	Value
Resource group (move)	AZ24
Status	Running
Location	Central India (Zone 1)
Subscription (move)	Azure for Students
Subscription ID	763b4aa1-744d-4fa4-9b3a-815e4bdc0be8
Availability zone	1
Operating system	Windows
Size	Standard D51 v2 (1 vcpu, 3.5 GiB memory)
Public IP address	20.40.44.213
Virtual network/subnet	VM24-vnet/default
DNS name	Not configured
Health state	-
Time created	6/13/2024, 3:11 PM UTC

Below the main content, there are tabs for 'Properties', 'Monitoring', 'Capabilities (8)', 'Recommendations', and 'Tutorials'. The desktop background of the user's computer is visible at the bottom, showing icons for 'Recycle Bin' and 'Microsoft Edge'.

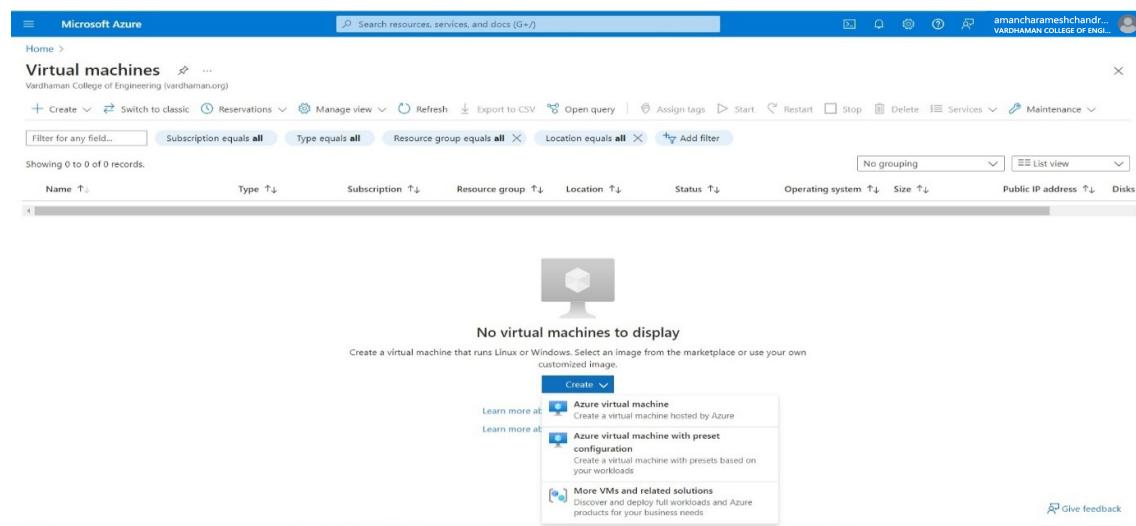


Q12) How to attach and detach data disks to Windows server in azure data center

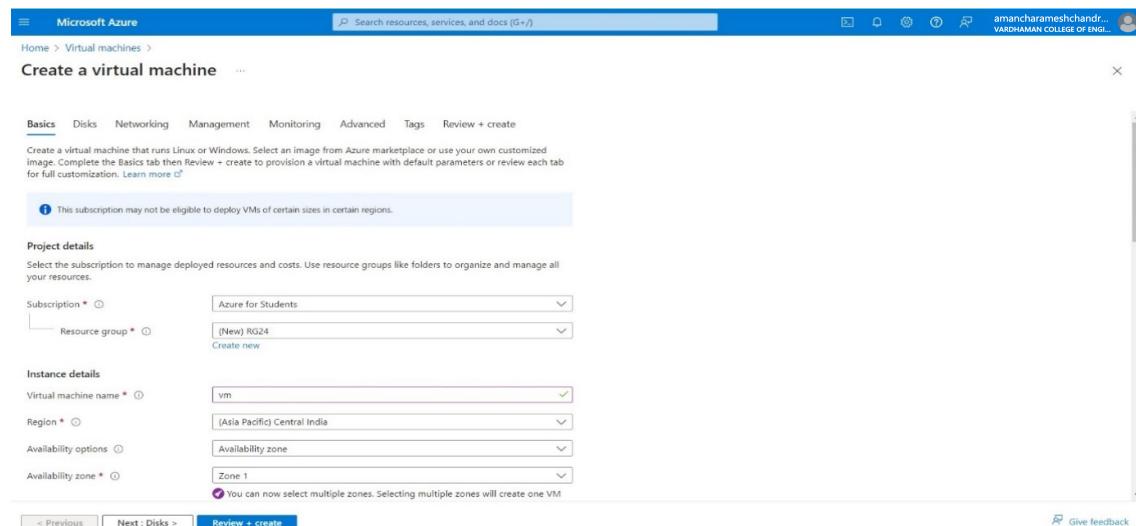
Steps:-

- 1) Create a Virtual name with VM name as "UbuntU" with username &password.
- 2) click on "Next:Disks>"
- 3) Click on "Create & attach a new disk"

- 4) Click on "change size"



The screenshot shows the Microsoft Azure portal interface. The top navigation bar includes 'Microsoft Azure', a search bar, and user account information. Below it, the 'Virtual machines' section is visible, showing a message 'No virtual machines to display' with a link to 'Create'. A dropdown menu is open under the 'Create' button, listing options like 'Azure virtual machine' and 'Azure virtual machine with preset configuration'. The main content area is empty, indicating no existing VMs.



The screenshot shows the 'Create a virtual machine' wizard in progress. The 'Basics' tab is selected. The 'Project details' section shows 'Subscription' set to 'Azure for Students' and 'Resource group' set to '(New) RG24'. The 'Instance details' section includes fields for 'Virtual machine name' (set to 'vm'), 'Region' (set to '(Asia Pacific) Central India'), 'Availability options' (set to 'Availability zone'), and 'Availability zone' (set to 'Zone 1'). A note at the bottom states, 'You can now select multiple zones. Selecting multiple zones will create one VM'. At the bottom of the screen, there are navigation buttons: '< Previous', 'Next : Disks >', and 'Review + create'.

- 5) Customize data size to 10 GiB and click on OK

- 6) Enable delete with VM and click on OK
- 7) Click on "Review+create" & click on create
- 8) Click on "Go to resource group"

9) Copy public IP Address

The screenshots show the 'Create a virtual machine' wizard in the Microsoft Azure portal.

Screenshot 1: Basic VM Configuration

- Security type:** Trusted launch virtual machines
- Image:** Ubuntu Server 20.04 LTS - x64 Gen2
- VM architecture:** x64
- Run with Azure Spot discount:** Off
- Size:** Standard_DS1_v2 • 1 vCPU, 3.5 GB memory (€5.101.50/month)
- Enable Hibernation:** Off
- Administrator account:**
 - Authentication type: Password
 - Username: azureuser
 - Password: [REDACTED]

Screenshot 2: OS Disk Configuration

- Encryption at host:** Off (Note: Encryption at host is not registered for the selected subscription.)
- OS disk:** 128 GB (P10)
- OS disk type:** Premium SSD (locally-redundant storage)
- Delete with VM:** Checked
- Key management:** Platform-managed key
- Enable Ultra Disk compatibility:** Off (Note: Ultra disk is not supported for the selected VM size Standard_DS1_v2 in Central India.)

Screenshot 3: Data Disk Configuration

- Create a new disk:** vm_DataDisk_0
- Type:** None (empty disk)
- Size:** 1024 GiB (Premium SSD LRS)
- Management:** Platform-managed key
- Shared disk:** No
- Link with VM:** Checked

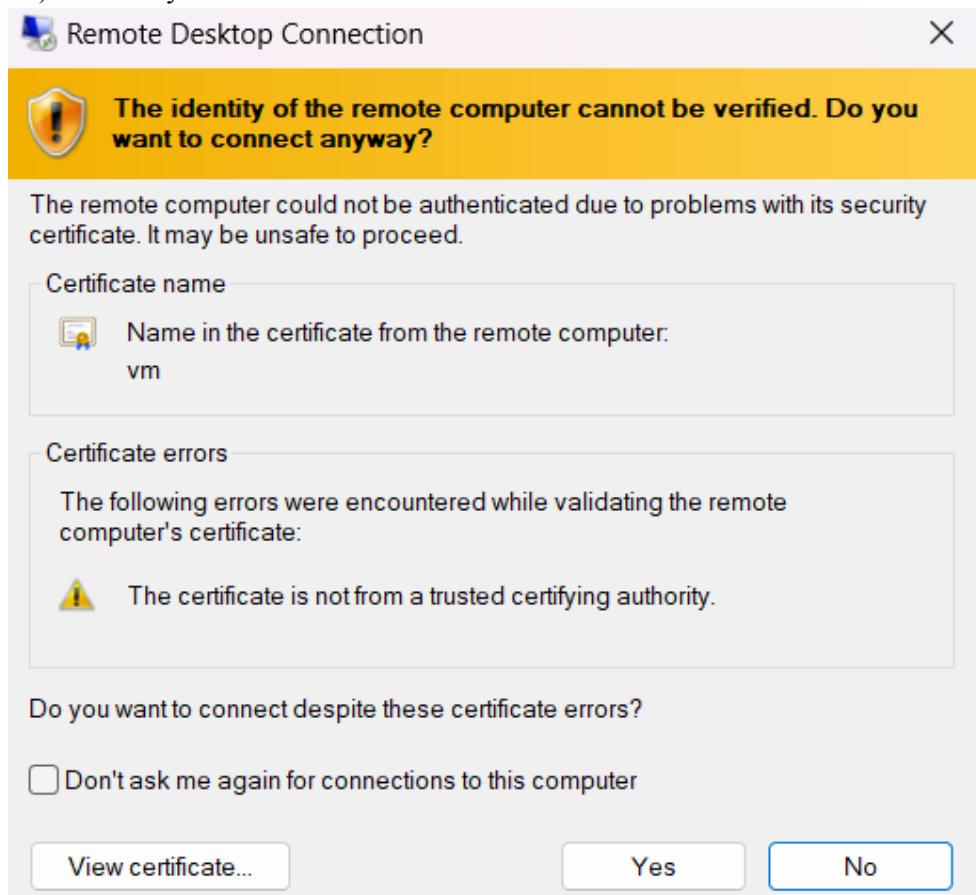
10) Open Remote Desktop Connection in your windows/system and paste the public IP Address

11) Click on “More choices”

12) Click on “Use a different account”, enter the credentials and click on OK



13) Click on yes and now the data disks are attached to the windows server



14) Click on “Disks” in your VM and you can see the attached data disks to the windows server

15) Detach the data disks from the windows server by clicking on the detach symbol

The screenshot shows the Microsoft Azure interface for creating a new disk. At the top, there's a navigation bar with 'Microsoft Azure' and a search bar. Below it, the path 'Home > Create a virtual machine > Create a new disk' is visible. The main section is titled 'Select a disk size' with a '...' button. A note says 'Browse available disk sizes and their features.' A dropdown menu for 'Storage type' is open, showing 'Premium SSD (locally-redundant storage)' as the selected option. Below is a table with columns: Size, Performance tier, Provisioned IOPS, Provisioned throughput, Max Shares, Max burst IOPS, and Max burst throughput. The table lists various disk sizes from 4 GiB to 32767 GiB, each with its corresponding performance tier (P1 to P80), IOPS, throughput, shares, and burst metrics.

Size	Performance tier	Provisioned IOPS	Provisioned throughput	Max Shares	Max burst IOPS	Max burst throughput
4 GiB	P1	120	25	3	3500	170
8 GiB	P2	120	25	3	3500	170
16 GiB	P3	120	25	3	3500	170
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	-	-

OK Give feed!

16) Click on “Apply”

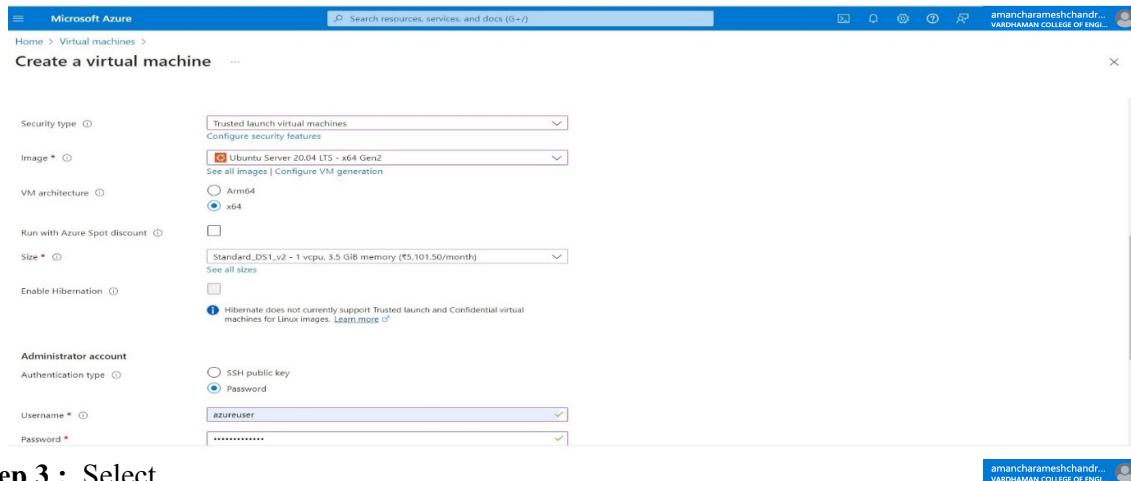
17) Now the data disks are detached from the windows server

Q13) How to add data disks to linux server in azure data center

Steps:-

Step 1 : Create a Virtual Machine with username & password.

Step 2 : click on "Next:Disks>"



Step 3 : Select

OS disk size -----30GB

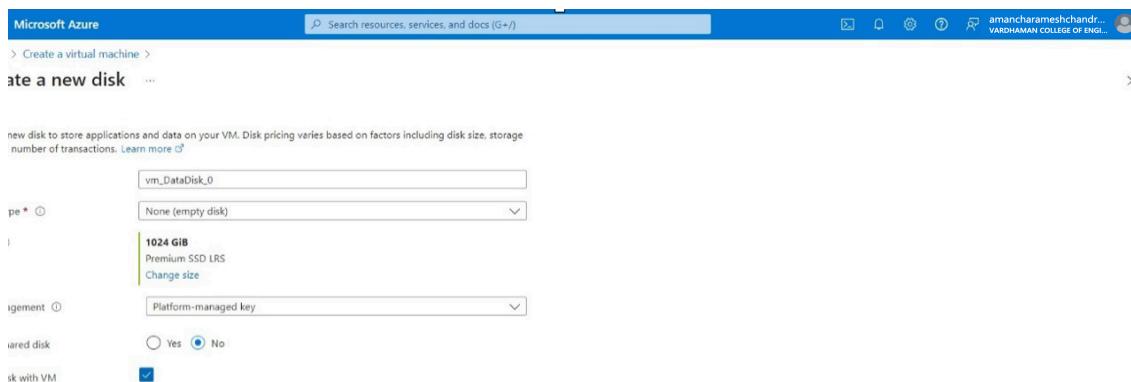
OS disk type -----Premium SSD(LRS)

enable "Delete with VM"

Step 4 : Click on "Create & attach a new disk"

Step 5 : Select

Source type -----None (empty disk), Size -----1024GB, Key manager ----- Platform managed key,



Microsoft Azure

Create a new disk

Storage type: None (empty disk)

Size: 4 GB

Key management: Platform-managed key

Shared disk: No

Create disk with VM: Yes

OK

Microsoft Azure

Home > Virtual machines > vm

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Connect

Networking

Settings

Availability + scale

Security

Backup + disaster recovery

Operations

Monitoring

Automation

Help

Tags (edit) : Add tags

Properties Monitoring Capabilities (7) Recommendations Tutorials

Virtual machine

- Computer name: vm
- Operating system: Linux
- VM generation: V2
- VM architecture: x64
- Agent status: Not Ready
- Agent version: Unknown
- Hibernation: Disabled

Networking

- Public IP address: 20.40.46.16 (Network interface vm606_x1)
- Public IP address (IPv6): -
- Private IP address: 10.0.0.4
- Private IP address (IPv6): -
- Virtual network/subnet: vm-vnet/default
- DNS name: Configure

Enable shared disk -----NO and finally click on OK

Step 6 : Select

Storage type -----Premium SSD(LRS), Custom disk size (GB) -----5

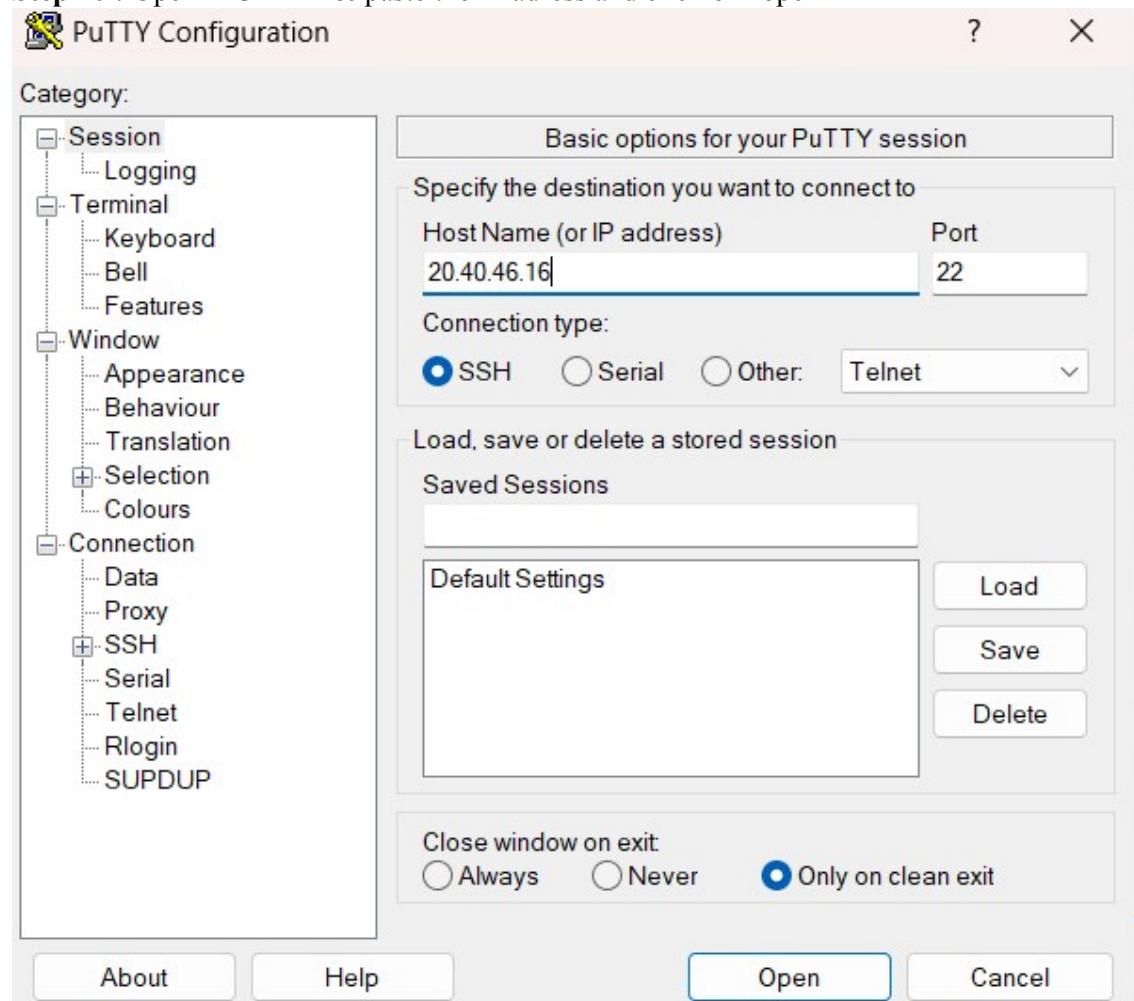
click on OK

Step 7 : Click on "Review + create" & click on create

Step 8 : Click on "Go to resource group"

Step 9 : Copy public IP Address

Step 10 : Open "PUTTY" & paste the IP address and click on "open"



The desired performance might not be reached due to the maximum virtual machine disk performance cap. The current virtual machine size supports up to 48 MBps. The total for disks attached to 'vm' is 125 MBps.

LUN	Disk name	Storage type	Size (GiB)	Max IOPS	Max throughput (MBps)	Encryption	Host caching
0	vm_DataDisk_0	Premium SSD LRS	4	120	25	SSE with PMK	Read-only

Step 11 : Login into it with username and password

No data disks attached

https://go.microsoft.com/fwlink/?LinkId=2229841

The screenshot shows the Microsoft Azure portal interface for managing disks of a virtual machine named 'vm'. The 'Disks' tab is selected under the 'OS disk' section. A warning message at the top states: 'The desired performance might not be reached due to the maximum virtual machine disk performance cap. The current virtual machine size supports up to 48 MBps. The total for disks attached to 'vm' is 100 MBps.' Below this, there is a table for the OS disk:

Disk name	Storage type	Size (GiB)	Max IOPS	Max throughput (...)	Encryption	Host caching
vm_OsDisk_1_8b113cab1f8b4c90b0fc	Premium SSD LRS	128	500	100	SSE with PMK	Read/write

The 'Data disks' section shows 'No data disks attached'. At the bottom, there are 'Apply' and 'Discard changes' buttons.

This screenshot is identical to the one above, showing the Microsoft Azure portal interface for managing disks of a virtual machine named 'vm'. The 'Disks' tab is selected under the 'OS disk' section. A warning message at the top states: 'The desired performance might not be reached due to the maximum virtual machine disk performance cap. The current virtual machine size supports up to 48 MBps. The total for disks attached to 'vm' is 100 MBps.' Below this, there is a table for the OS disk:

Disk name	Storage type	Size (GiB)	Max IOPS	Max throughput (...)	Encryption	Host caching
vm_OsDisk_1_8b113cab1f8b4c90b0fc	Premium SSD LRS	128	500	100	SSE with PMK	Read/write

The 'Data disks' section shows 'No data disks attached'. At the bottom, there are 'Apply' and 'Discard changes' buttons.

The screenshot shows the Microsoft Azure portal interface for managing virtual machines. At the top, there's a navigation bar with links for Home, Create, Reservations, Manage view, Refresh, Export to CSV, Open query, Assign tags, Start, Stop, Delete, Services, and Maintenance. Below the navigation bar, there are several filter options: Subscription equals all, Type equals all, Resource group equals all, Location equals all, and Add filter. The main content area displays a message: "No virtual machines to display". It includes instructions to "Create a virtual machine that runs Linux or Windows. Select an image from the marketplace or use your own customized image." Below this, there are three main creation options: "Azure virtual machine" (selected), "Azure virtual machine with preset configuration", and "More VMs and related solutions". Each option has a brief description and a "Create" button. At the bottom right, there's a "Give feedback" link.

The screenshot shows two consecutive steps of the 'Create a virtual machine' wizard in the Microsoft Azure portal.

Project details: This step allows you to manage resources by selecting a subscription and a resource group. The selected subscription is 'Azure for Students' and the resource group is '(New) RG24'. A note indicates that resource groups can be used to organize and manage all your resources.

Instance details: This step defines the VM configuration. The virtual machine name is 'vm', located in the '(Asia Pacific) Central India' region. Under 'Availability options', 'Zone 1' is selected. A note states that multiple zones can be selected to create one VM per zone. The security type is set to 'Trusted launch virtual machines'. The image chosen is 'Ubuntu Server 20.04 LTS - x64 Gen2'.

Administrator account: This step sets up the VM's administrator credentials. Authentication type is 'Password', with 'azureuser' as the username and a complex password entered twice. A note about SSH public key support is present.

Inbound port rules: This step configures network access. It shows that 'Allow selected ports' is selected, and 'SSH (22)' is listed as an inbound port.

At the bottom, there are navigation buttons: '< Previous' and 'Next: Disks >' (disabled), and a prominent 'Review + create' button.

The screenshot shows the 'Create a virtual machine' wizard on the 'Disks' step. The 'OS disk' section is configured as follows:

- OS disk size: Image default (30 GiB)
- OS disk type: Premium SSD (locally-redundant storage)
- Delete with VM: Checked
- Key management: Platform-managed key

A note indicates that Ultra disk is not supported for the selected VM size Standard_DS1_v2 in Central India.

The 'Data disks for vm' section is collapsed.

At the bottom, there are navigation buttons: < Previous, Next : Networking >, Review + create, and a 'Give feedback' link.

Create a new disk

The screenshot shows the 'Create a new disk' wizard. The 'Disk' section is configured as follows:

- Name: vm_DataDisk_0
- Source type: None (empty disk)
- Size: 1024 GiB (Premium SSD LRS)
- Key management: Platform-managed key
- Enable shared disk: No (radio button selected)
- Delete disk with VM: Unchecked

An 'OK' button is visible at the bottom left.

Microsoft Azure Search resources, services, and docs (G+ /)

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 *

Source type *

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

Key management

Enable shared disk Yes No

Delete disk with VM

OK [Give feedback](#)

Microsoft Azure Search resources, services, and docs (G+ /)

Home > Virtual machines > Create a virtual machine

Create a virtual machine

Encryption at host is not registered for the selected subscription. [Learn more about enabling this feature](#)

OS disk

OS disk size

OS disk type *

Delete with VM

Key management

Enable Ultra Disk compatibility Ultra disk is not supported for the selected VM size Standard_DS1_v2 in Central India.

Data disks for vm

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
0	vm_DataDisk_0	1024	Premium SSD LRS	Read-only	<input checked="" type="checkbox"/>

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

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

Price

1 X Standard DS1 v2
by Microsoft

Subscription credits apply ⓘ
6.9884 INR/hr
[Terms of use](#) | [Privacy policy](#)
[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 third-party offerings. See the [Azure Marketplace Terms](#) for additional details.

Name: ERUMALLA SAITEJA
Preferred e-mail address: erumallasaiteja21csaiml@student.vardhaman.org
Preferred phone number:

< Previous Next > **Create** Download a template for automation ⓘ Give feedback

Deployment

Overview

Your deployment is complete

Deployment name: CreateVm-canonical.0001-com-ubuntu-server-f... Start time: 6/14/2024, 10:45:53 PM
Subscription: Azure for Students Correlation ID: 3f3aabc2-d4b0-4e4f-8000-2f36a462be9d ⓘ

Resource group: RG24

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**

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Tell us about your experience with deployment

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Microsoft Azure

Home > Virtual machines > VM

VM Overview

Essentials

Resource group (move) : RG24
Status : Running
Location : Central India (Zone 1)
Subscription (move) : Azure for Students
Subscription ID : 763b4aa1-744d-4fa4-9b3a-815e4bd0be8
Availability zone : 1

Operating system : Linux (ubuntu 20.04)
Size : Standard DS1 v2 (1 vcpu, 3.5 GB memory)
Public IP address : 20.40.46.16
Virtual network/subnet : vm-vnet/default
DNS name : Not configured
Health state : -
Time created : 6/14/2024, 5:15 PM UTC

Tags (edit) : Add tags

Properties Monitoring Capabilities (7) Recommendations Tutorials

Virtual machine

Computer name : vm
Operating system : Linux (ubuntu 20.04)
VM generation : V2
VM architecture : x64
Agent status : Ready
Agent version : 2.11.4
Hibernation : Disabled
Host group : -
Host : -

Networking

Public IP address : 20.40.46.16 (Network interface vm45_z1)
Public IP address (IPv6) : -
Private IP address : 10.0.0.4
Private IP address (IPv6) : -
Virtual network/subnet : vm-vnet/default
DNS name : Configure

Size

Standard DS1 v2

```
azureuser@vm: ~
login as: azureuser
azureuser@20.40.46.16's password:
Welcome to Ubuntu 20.04.6 LTS (GNU/Linux 5.15.0-1064-azure x86_64)

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

System information as of Fri Jun 14 17:18:57 UTC 2024

System load: 0.1      Processes:          120
Usage of /: 5.0% of 28.89GB   Users logged in:    0
Memory usage: 9%
Swap usage:  0%

* Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s just raised the bar for easy, resilient and secure K8s cluster deployment.

https://ubuntu.com/engage/secure-kubernetes-at-the-edge

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.
To check for new updates run: sudo apt update

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

azureuser@vm:~$
```

Step 12 : 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
```

```
azureuser@vm:~/test  
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.  
To check for new updates run: sudo apt update  
  
The programs included with the Ubuntu system are free software;  
the exact distribution terms for each program are described in the  
individual files in /usr/share/doc/*/copyright.  
  
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by  
applicable law.  
  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
azureuser@vm:~$ df -hT  
Filesystem      Type   Size  Used Avail Use% Mounted on  
/dev/root       ext4   29G   28G   6% /  
devtmpfs        devtmpfs 1.7G    0  1.7G  0% /dev  
tmpfs          tmpfs   1.7G    0  1.7G  0% /dev/shm  
tmpfs          tmpfs   336M  988K 335M  1% /run  
tmpfs          tmpfs   5.0M   0  5.0M  0% /run/lock  
tmpfs          tmpfs   1.7G    0  1.7G  0% /sys/fs/cgroup  
/dev/loop0      squashfs 64M   64M   0 100% /snap/core20/2318  
/dev/loop2      squashfs 39M   39M   0 100% /snap/snapd/21759  
/dev/loop1      squashfs 92M   92M   0 100% /snap/lxd/24061  
/dev/sdal15     vfat    105M  6.1M  99M   6% /boot/efi  
/dev/sdb1       ext4    6.8G  28K  6.5G   1% /mnt  
tmpfs          tmpfs   336M   0  336M  0% /run/user/1000  
azureuser@vm:~$ lsblk  
NAME   MAJ:MIN RM  SIZE RO TYPE MOUNTPOINT  
loop0    7:0    0   64M  1 loop /snap/core20/2318  
loop1    7:1    0  91.9M  1 loop /snap/lxd/24061  
loop2    7:2    0 38.8M  1 loop /snap/snapd/21759  
sda     8:0    0   30G  0 disk  
|---sdal  8:1    0 29.9G  0 part /  
|---sdal14 8:14   0   4M  0 part  
|---sdal15 8:15   0 106M  0 part /boot/efi  
sdb     8:16   0   7G  0 disk  
└---sdb1  8:17   0   7G  0 part /mnt  
sdc     8:32   0   1T  0 disk  
sr0    11:0    1  628K  0 rom  
azureuser@vm:~$ sudo filoe -s/dev/sdc  
sudo: filoe: command not found  
azureuser@vm:~$ sudo mkfs -t ext4 /dev/sdc  
mkfs: no device specified  
Try 'mkfs --help' for more information.  
azureuser@vm:~$ mkdir test  
azureuser@vm:~$ sudo mount /dev/sdc/test  
mount: /dev/sdc/test: can't find in /etc/fstab.  
azureuser@vm:~$ cd test  
azureuser@vm:~/test$
```

Q14) Move Server Files from one Resource Group to another.

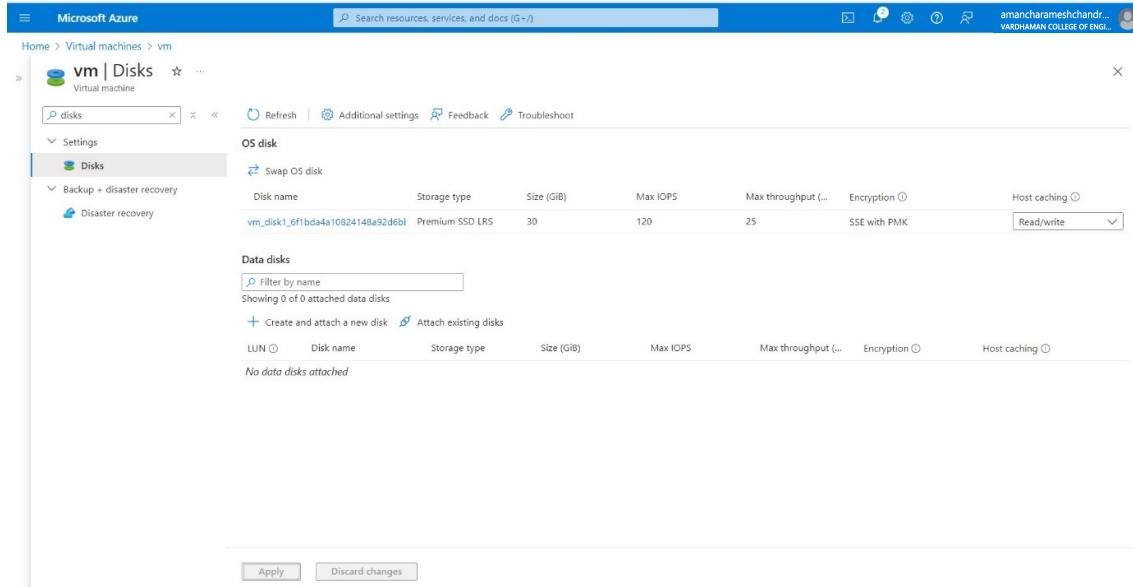
Step-1: Create ResourceGroup1, ResourceGroup2 and a Virtual machine on ResourceGroup1.

The screenshot shows the 'Create a resource group' wizard in the Microsoft Azure portal. The 'Basics' tab is selected. Under 'Project details', the subscription is set to 'Azure for Students' and the resource group is named 'RG1'. Under 'Resource details', the region is set to '(Asia Pacific) Central India'. At the bottom, there are buttons for 'Review + create', '< Previous', and 'Next : Tags >'.

Step 2: Select Resource 1 and to transfer from source to destination click on move.

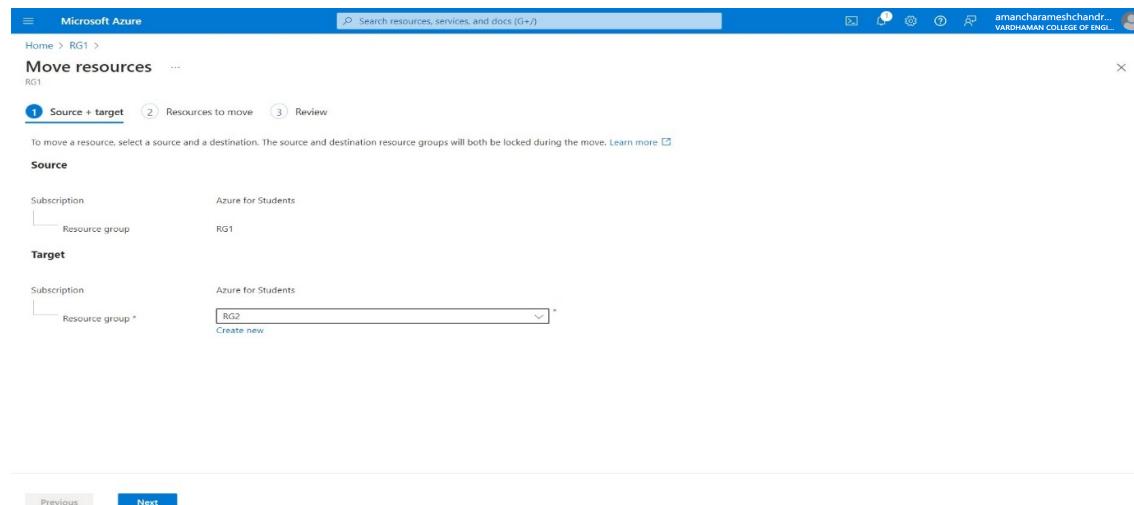
The screenshot shows the 'Resource groups' list page in the Microsoft Azure portal. It displays two resource groups: 'RG1' and 'RG2'. Both are listed under the 'Subscription equals all' filter. The columns show 'Name', 'Subscription', and 'Location'. Each resource group has a three-dot menu icon on the right.

Name	Subscription	Location
RG1	Azure for Students	Central India
RG2	Azure for Students	Central India



The screenshot shows the Microsoft Azure portal interface for managing disks of a virtual machine. The top navigation bar includes 'Home', 'Virtual machines', and 'vm'. The main title is 'vm | Disks'. The left sidebar has sections for 'Settings' (selected), 'Disks' (highlighted in blue), 'Backup + disaster recovery', and 'Disaster recovery'. The 'Disks' section contains two tabs: 'OS disk' and 'Data disks'. Under 'OS disk', there is a table with one row showing 'vm_disk1_6f1bda4a10924148a92d6b1' as a Premium SSD LRS type disk with 30 GB size, 120 Max IOPS, 25 Max throughput, SSE with PMK encryption, and Read/write host caching. Under 'Data disks', it says 'Showing 0 of 0 attached data disks' and provides options to 'Create and attach a new disk' or 'Attach existing disks'. At the bottom are 'Apply' and 'Discard changes' buttons.

Step 3: Select the target Resource group as Resoucegroup2 an click on move.



The screenshot shows the 'Move resources' wizard in the Microsoft Azure portal. The title is 'Move resources ...' and the path is 'Home > RG1 >'. Step 1 is selected: 'Source + target'. Step 2 is 'Resources to move' and Step 3 is 'Review'. A note at the top says: 'To move a resource, select a source and a destination. The source and destination resource groups will both be locked during the move.' Below this, the 'Source' section shows 'Subscription: Azure for Students' and 'Resource group: RG1'. The 'Target' section shows 'Subscription: Azure for Students' and 'Resource group: RG2' (with a dropdown menu open). At the bottom are 'Previous' and 'Next' buttons.

The screenshot shows the Microsoft Azure Resource Group Overview page for 'RG1'. The left sidebar includes links for Overview, Activity log, Access control (IAM), Tags, Resource visualizer, Events, Settings, Cost Management, Monitoring, Automation, and Help. The main content area displays the following details:

- Subscription:** Azure for Students (move) - Subscription ID: 763b4aa1-744d-4fa4-9b3a-815e4bd0be8
- Deployments:** 1 Succeeded
- Location:** Central India
- Tags:** Add tags

The 'Resources' section lists 6 items:

Type	Location
Virtual machine	Central India
Public IP address	Central India
Network security group	Central India
Virtual network	Central India
Network interface	Central India
Disk	Central India

Filter options include 'Type equals all' and 'Location equals all'. Navigation buttons at the bottom are < Previous, Page 1 of 1, and Next >. A 'Give feedback' link is also present.

Q15) Create Azure Storage Account, Container – Upload and Delete Objects(blob) in it.

Step-1: Click On Storage Account and Create one and select redundancy as GRS/LRS.

Step-2: Go to advance and Allow enabling anonymous access on individual containers.

Microsoft Azure

Home > Storage accounts >

Create a storage account

redundant. Azure Storage includes Azure Blobs (objects), Azure Data Lake Storage Gen2, Azure Files, Azure Queues, and Azure Tables. The cost of your storage account depends on the usage and the options you choose below. [Learn more about Azure storage accounts](#)

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) RG1

Storage account name * stor81

Region * (Asia Pacific) Central India

Performance * Standard: Recommended for most scenarios (general-purpose v2 account)

Premium: Recommended for scenarios that require low latency.

Redundancy * Geo-redundant storage (GRS)

Make read access to data available in the event of regional unavailability.

Previous Next Review + create Give feedback

Microsoft Azure

Home > Virtual machines > VM

VM Overview

vm virtual machine agent status is not ready. Troubleshoot the issue →

Essential

Resource group (move) : RG1	Operating system : Windows
Status : Running	Size : Standard DS1 v2 (1 vcpu, 3.5 GiB memory)
Location : Central India (Zone 1)	Public IP address : 20.40.40.98
Subscription (move) : Azure for Students	Virtual network/subnet : vm-vnet/default
Subscription ID : 763b4aa1-744d-4fa4-9b3a-815e4bdcb68	DNS name : Not configured
Availability zone : 1	Health state : -
Tags (edit) : Add tags	Time created : 6/14/2024, 5:36 PM UTC

Properties Monitoring Capabilities (8) Recommendations Tutorials

Virtual machine

Computer name : vm	Public IP address : 20.40.40.98 (Network interface vm748_z1)
Operating system : Windows	Public IP address (IPv6) : -
VM generation : V2	Private IP address : 10.0.0.4
VM architecture : x64	Private IP address (IPv6) : -
Agent status : Not Ready	Virtual network/subnet : vm-vnet/default
Agent version : Unknown	DNS name : Configure
Hibernation : Disabled	

Networking

Security
Configure security settings that impact your storage account.

- Require secure transfer for REST API operations
- Allow enabling anonymous access on individual containers
- Enable storage account key access

Default to Microsoft Entra authorization in the Azure portal

Minimum TLS version

Permitted scope for copy operations (preview)

Hierarchical Namespace
Hierarchical namespace, complemented by Data Lake Storage Gen2 endpoint, enables file and directory semantics, accelerates big data analytics workloads, and enables access control lists (ACLs) [Learn more](#)

Enable hierarchical namespace

Access protocols
Blobs and Data Lake Gen2 endpoints are provisioned by default. [Learn more](#)

[Previous](#) [Next](#) [Review + create](#) [Give feedback](#)

Step-3: After deployment Click on go to resource group and on Left Click on Containers and Create it with anonymous access level as blob (anonymous read access to blob only)

New container

Name * cont1

Anonymous access level

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.

[Create](#) [Give feedback](#)

Step-4: Then open new container, click on upload and upload a file from desktop.

Upload blob

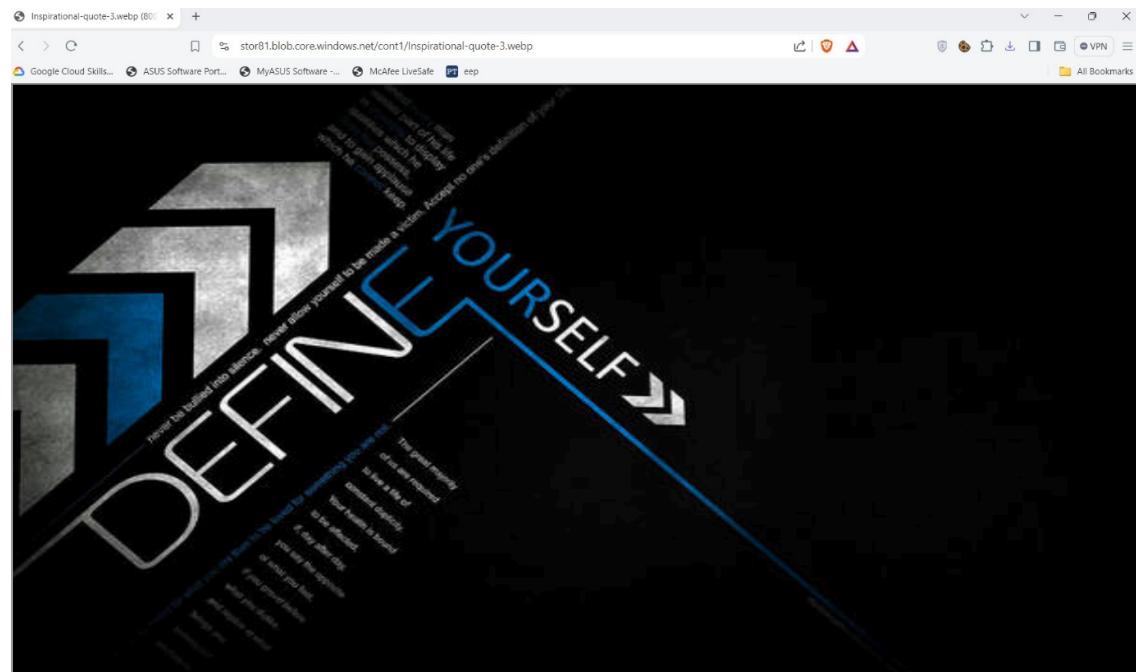
Drag and drop files here
or
Browse for files

Overwrite if files already exist

[Upload](#) [Give feedback](#)

Step-5: Select the file and click on provided URL to open the file.

The screenshot shows the Microsoft Azure Storage Explorer interface. At the top, there's a search bar and a navigation bar with options like 'Upload', 'Change access level', 'Refresh', 'Delete', 'Change tier', 'Acquire lease', 'Break lease', 'View snapshots', 'Create snapshot', and 'Give feedback'. Below the navigation bar, it says 'Authentication method: Access key (Switch to Microsoft Entra user account)' and 'Location: cont1'. There's also a 'Search blobs by prefix (case-sensitive)' input field and a 'Show deleted blobs' checkbox. On the left, there's a sidebar with 'Overview', 'Diagnose and solve problems', 'Access Control (IAM)', and 'Settings'. The main area displays a table with columns: Name, Modified, Access tier, Archive status, Blob type, Size, and Lease state. One row is visible, showing 'Inspirational-quote-3.webp' with details: Modified: 6/14/2024, 11:37:13 ..., Access tier: Hot (inferred), Blob type: Block blob, Size: 26.76 KiB, Lease state: Available.



The screenshot shows the Microsoft Azure Storage Container Overview page for a container named 'cont1'. A modal dialog box titled 'Change access level' is open, prompting the user to change the access level of the container. The current setting is 'Anonymous access level' set to 'Private (no anonymous access)'. There are 'OK' and 'Cancel' buttons at the bottom of the dialog. In the background, the main interface shows a single blob named 'Inspirational-quote-3.webp' with a size of 26.76 KiB and an 'Available' lease state.

The screenshot shows the Microsoft Azure Storage Container Overview page for a container named 'cont1'. A modal dialog box titled 'Delete blob(s)' is open, asking if the user is sure they want to delete the selected blobs. It lists three reasons why deletion might be skipped: 1. Blobs in leased state are locked for deletion and will be skipped. 2. Folder deletion is not supported and any selected folders will be skipped. 3. If an immutable policy is applied to a blob, the blob will not be deleted. There is a checkbox labeled 'Also delete blob snapshots' and 'OK' and 'Cancel' buttons at the bottom. In the background, the main interface shows the same blob 'Inspirational-quote-3.webp' with its details.

Step-6: On container click Change access level to Private (no anonymous access) and try to open the file in new tab it will show error.

The screenshot shows the Microsoft Azure Storage account interface for 'stor81'. The left sidebar navigation includes Home, stor81, Overview, Activity log, Tags, Diagnose and solve problems, Access Control (IAM), Data migration, Events, Storage browser, Storage Mover, Data storage (Containers, File shares, Queues, Tables), Security + networking, Data management, Settings, Monitoring, Monitoring (classic), Help, and a section for Change feed, NFS v3, Allow cross-tenant replication, and Storage tasks assignments. The 'Containers' section is selected. In the main pane, a list of containers is shown with columns for Name and Last modified. '\$logs' was last modified on 6/14/2024, 11:33:38 PM, and 'cont1' was last modified on 6/14/2024, 11:38:39 PM. A modal window titled 'Delete container(s)' is displayed, showing a list of selected containers (cont1) and a note about soft deletion. Another modal window titled 'Delete' is overlaid, asking for confirmation with the storage account name 'stor81' entered in a text field. Buttons for 'Delete' and 'Cancel' are visible.

Step-7: Then delete blob container and storage account.