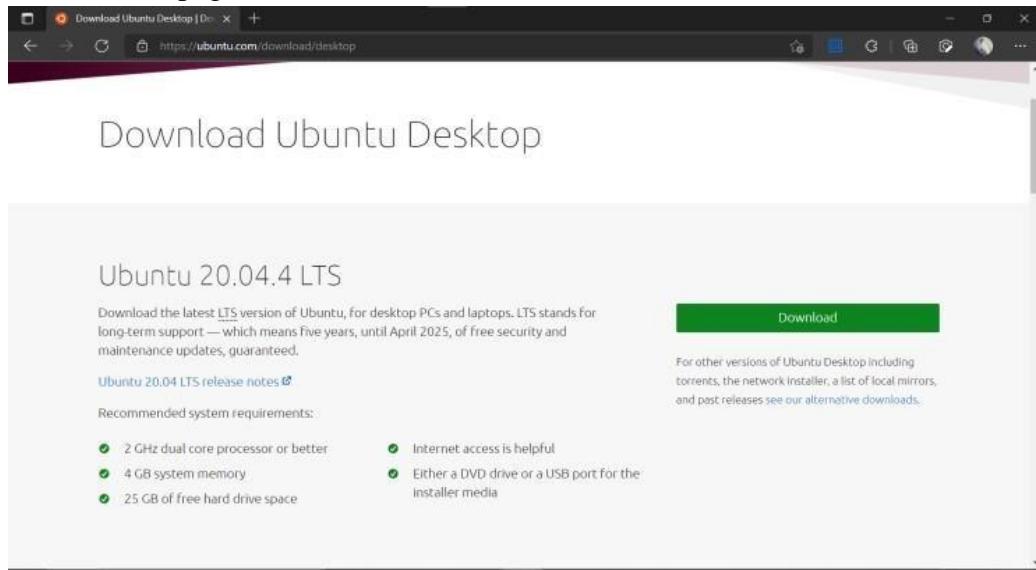


Q1. Install Virtual box and making Ubuntu And Window Virtual Machine. Ubuntu

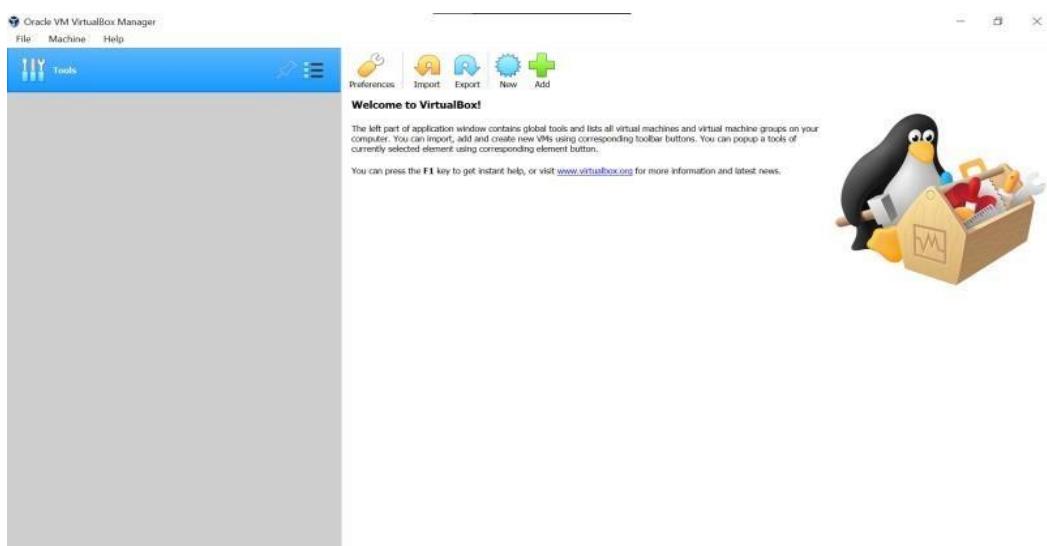
Step-1: Download VirtualBox for Windows and install it on your computer



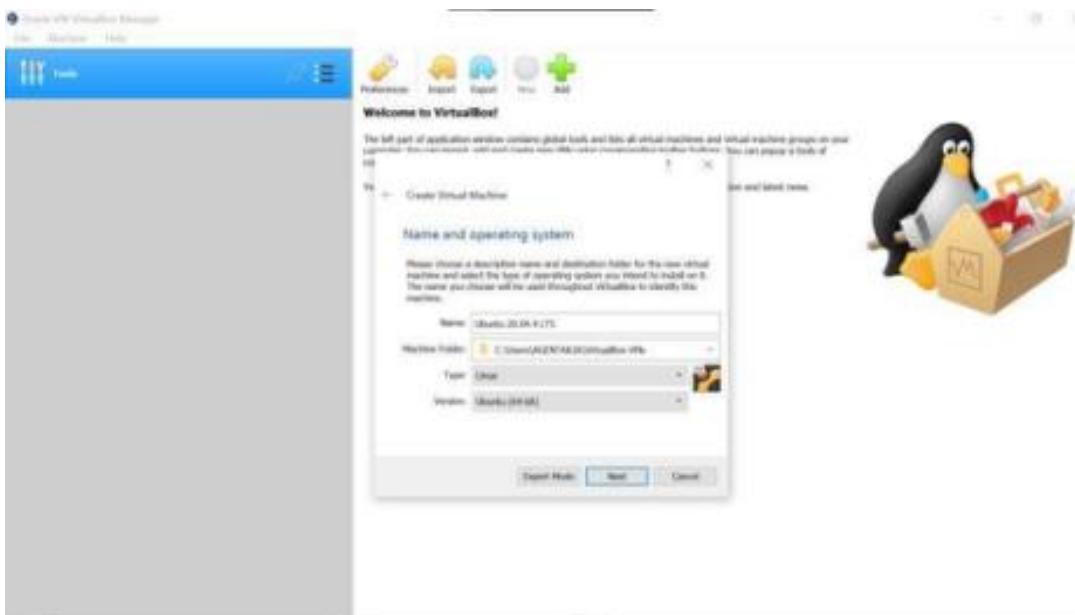
Step-2: Download the Ubuntu ISO file you want to install from the Ubuntu download page.



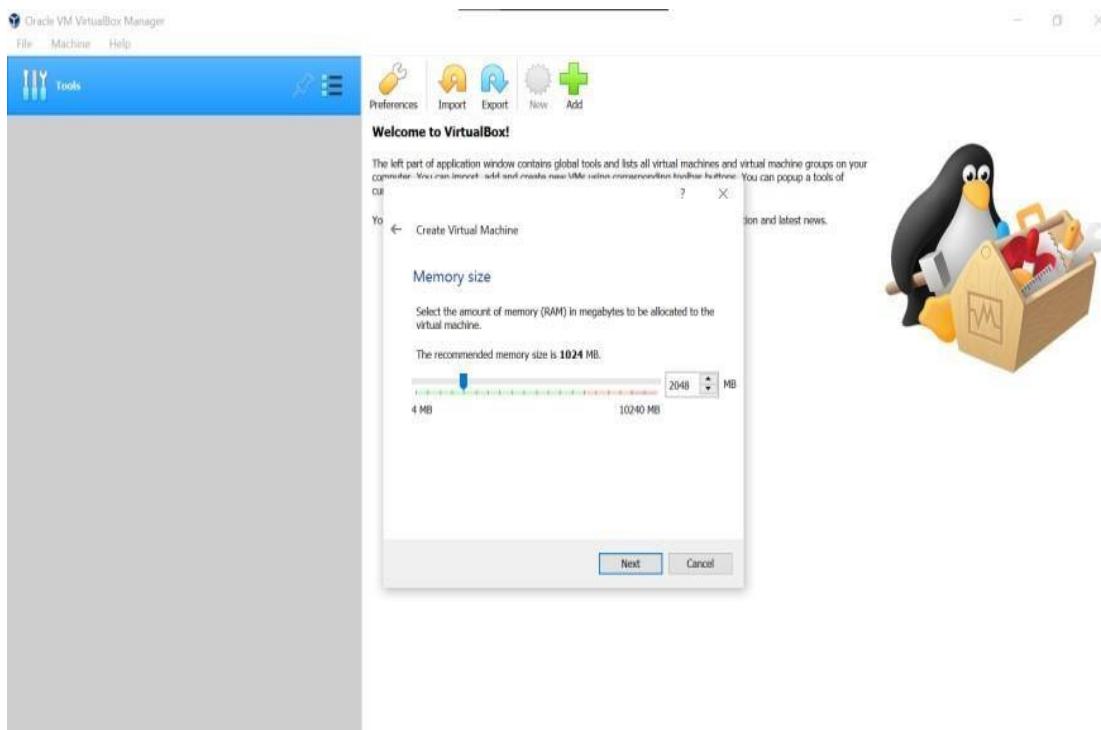
Step-3: Open VirtualBox and select New in the top taskbar.



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

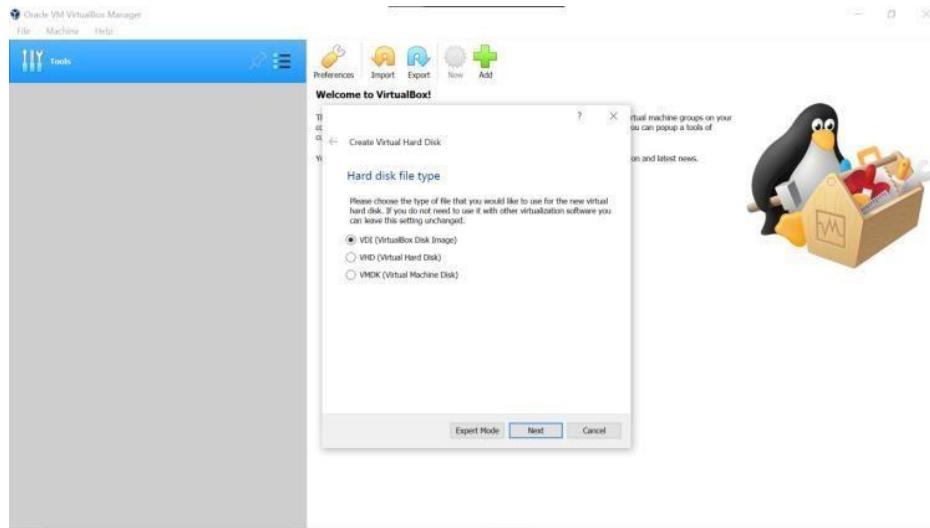


Step-5. Choose how much RAM you want to assign to the virtual machine and select Next. The recommended minimum is 1024 MB.



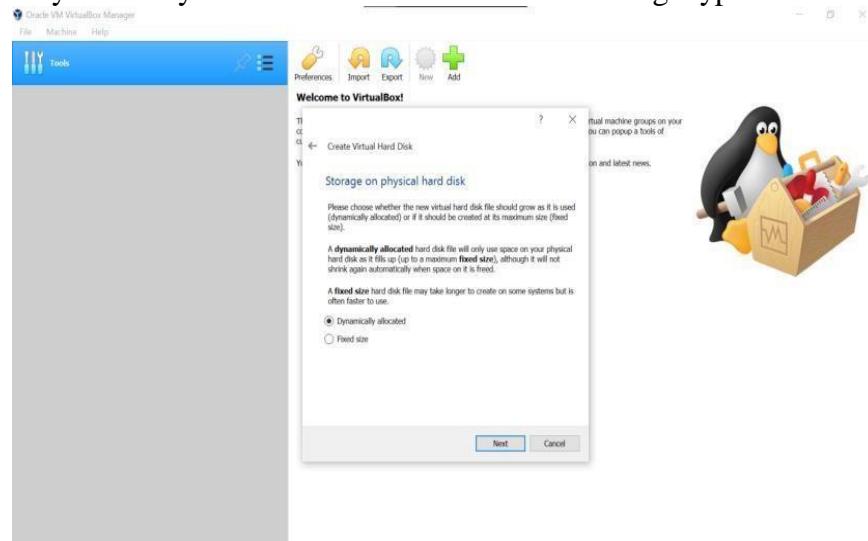
Step-6: Choose Create a virtual hard disk now and select Create.

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

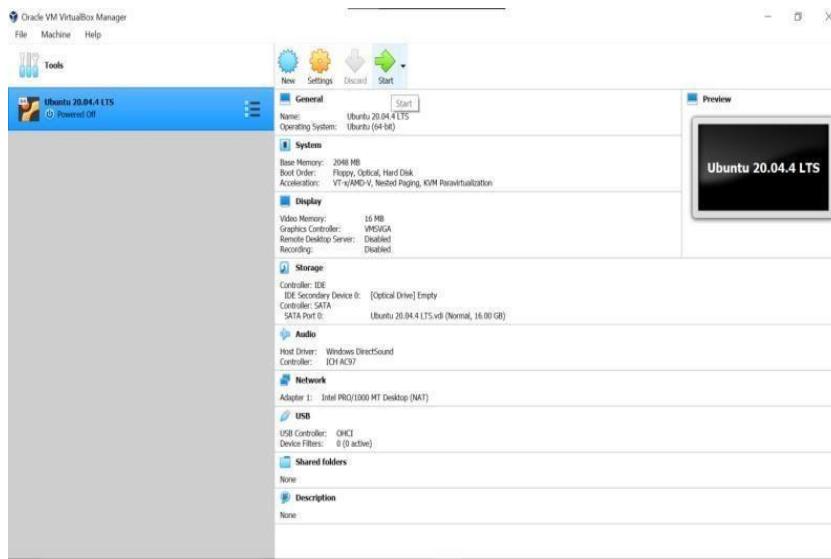


Tip: A fixed size disk performs better because the virtual machine doesn't have to increase the file size as you install software.

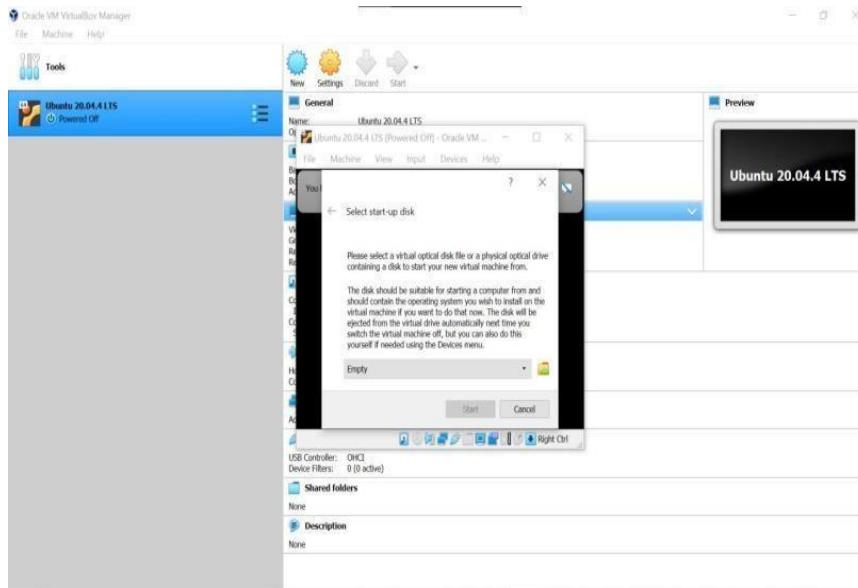
Step-9: Choose how much space you wish to set aside for Ubuntu and select Create.

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.

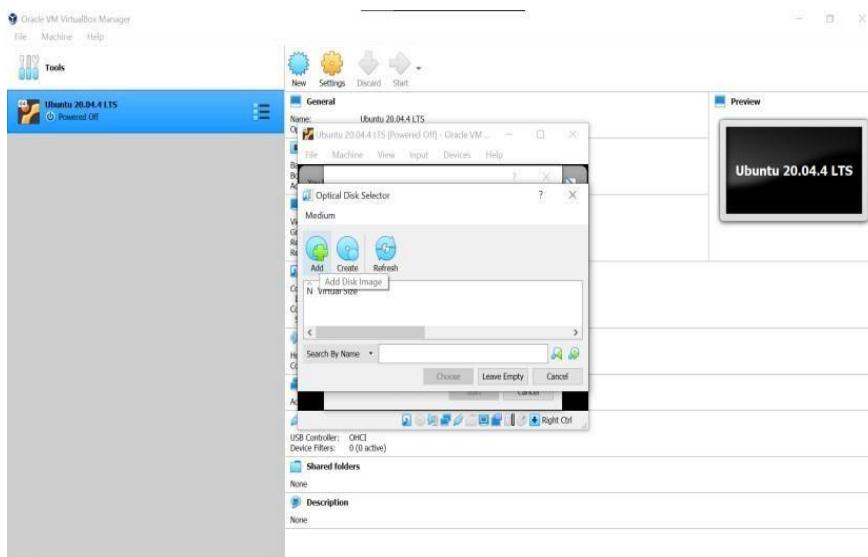
Step-10: The name of your virtual machine will now appear on the left side of the VirtualBox manager. Select Start in the toolbar to launch your VM.



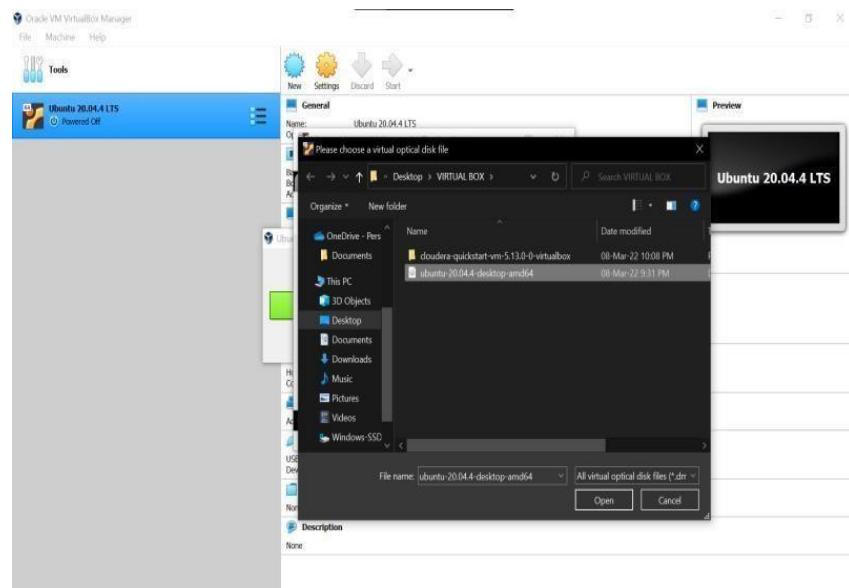
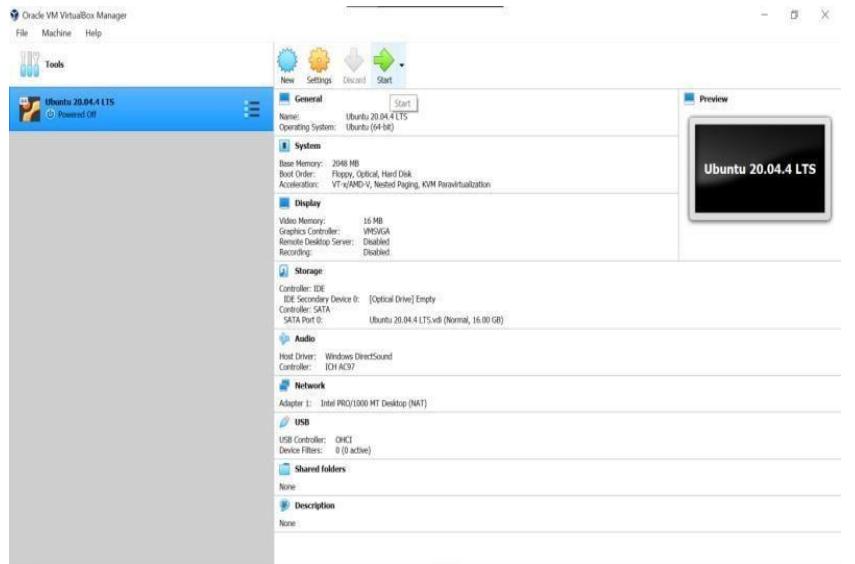
Step-11: This is the point where you need to choose the Ubuntu ISO file you downloaded earlier. If the VM doesn't automatically detect it, select the folder next to the Empty field.



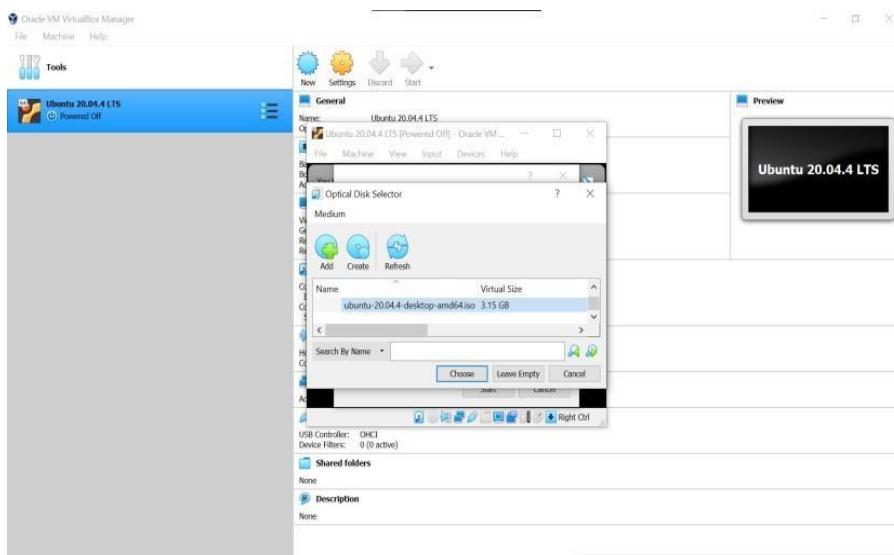
Step-12: Select Add in the window that pops up.



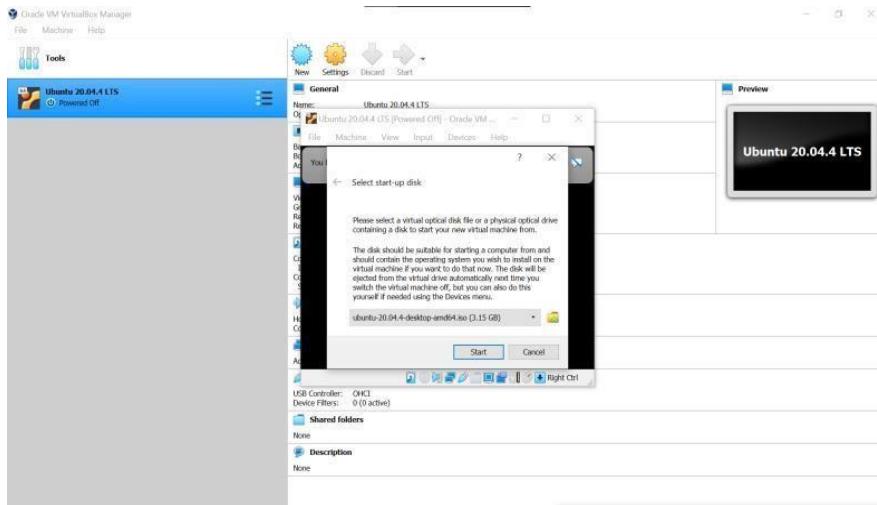
Step-13: Choose your Ubuntu disk image and select Open.



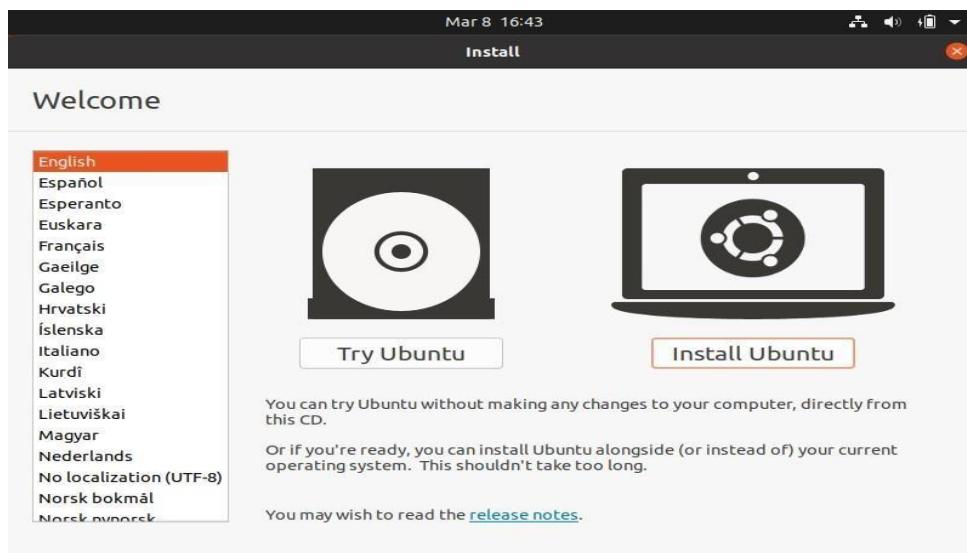
Step-14: - Select Choose



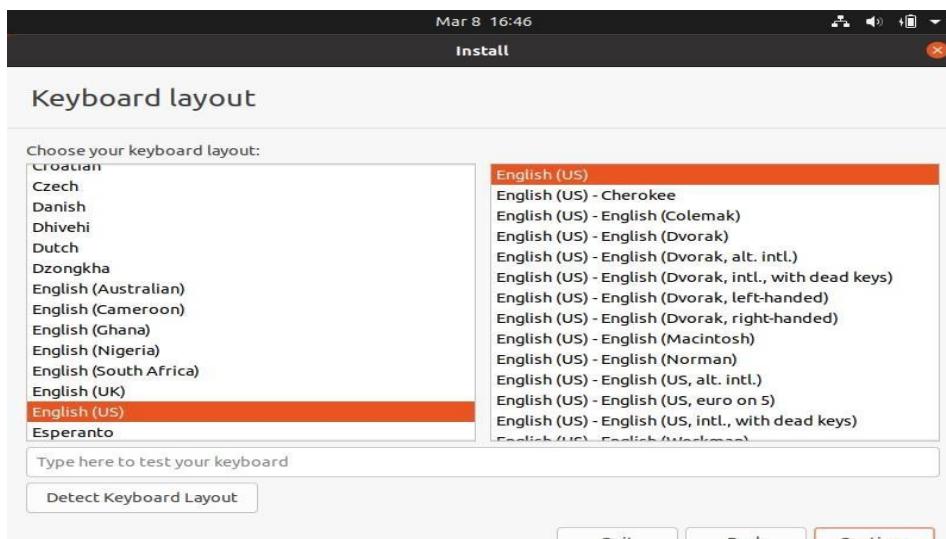
Step-15: Select Start.



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



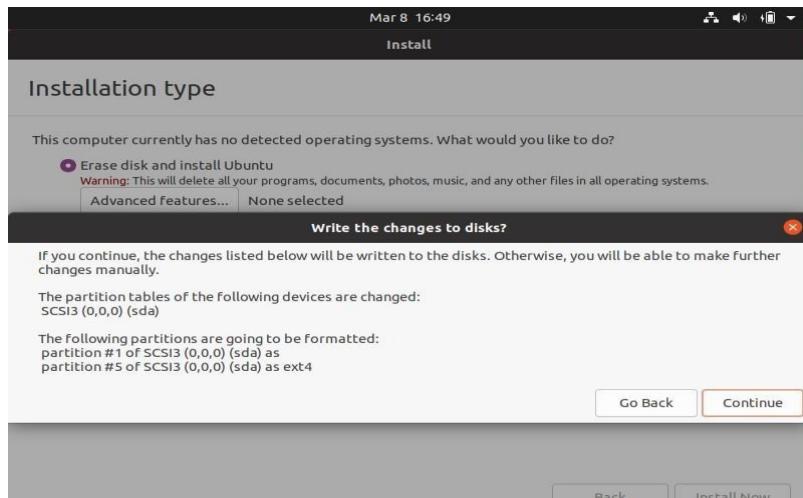
Step-17: Choose your keyboard layout and select Continue.



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

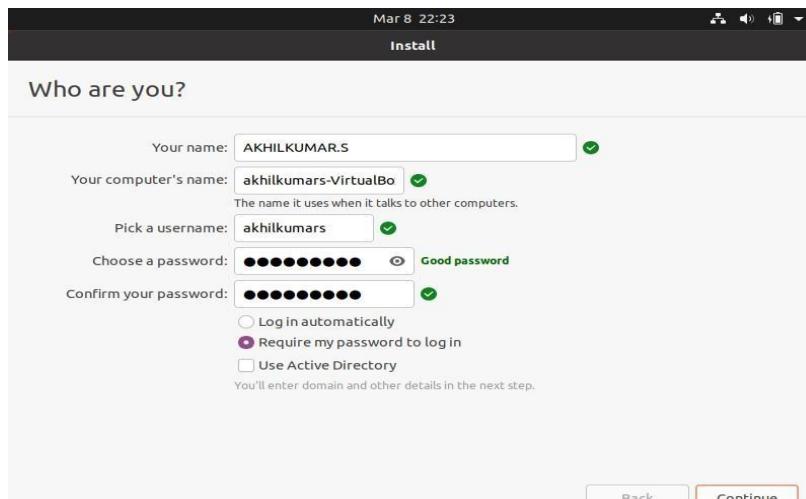
Step-19: Choose Erase disk and install Ubuntu and select Install Now, then select Continue to ignore the warning.

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

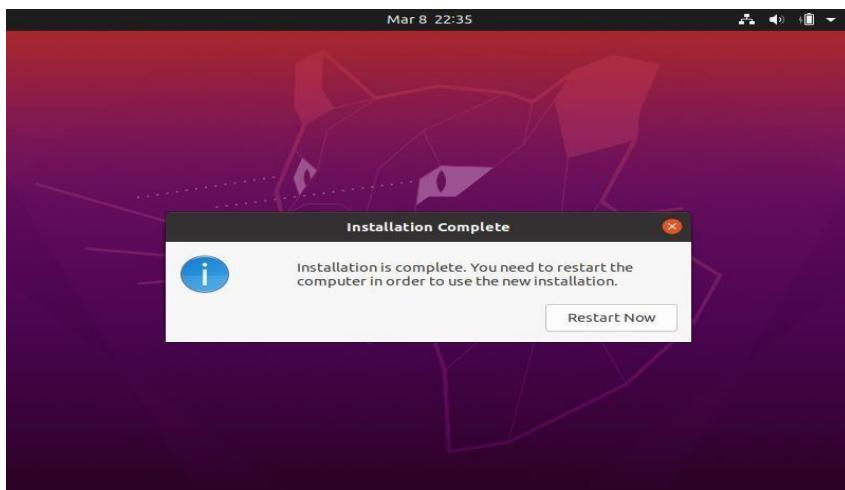


Step-20: - Choose your time zone on the map, then select Continue.

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

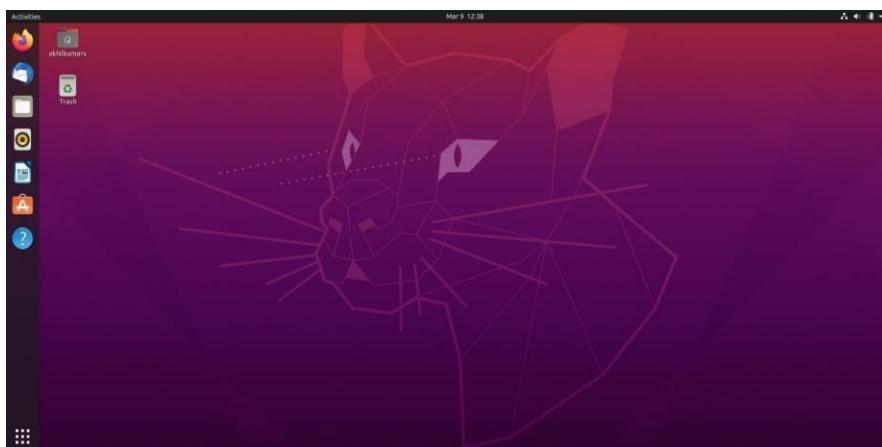


Step-22: - Select Restart Now.



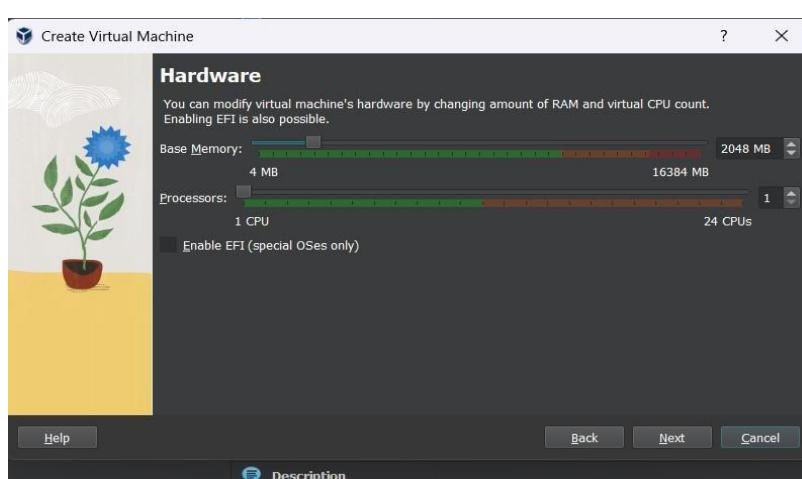
Step-23: - After restarting your VM and booting into Ubuntu, you may notice that the desktop doesn't scale correctly if you choose to view it in full-screen mode. You can fix this problem by selecting the VBox_Gas icon to install VirtualBox Guest Additions.

Output:



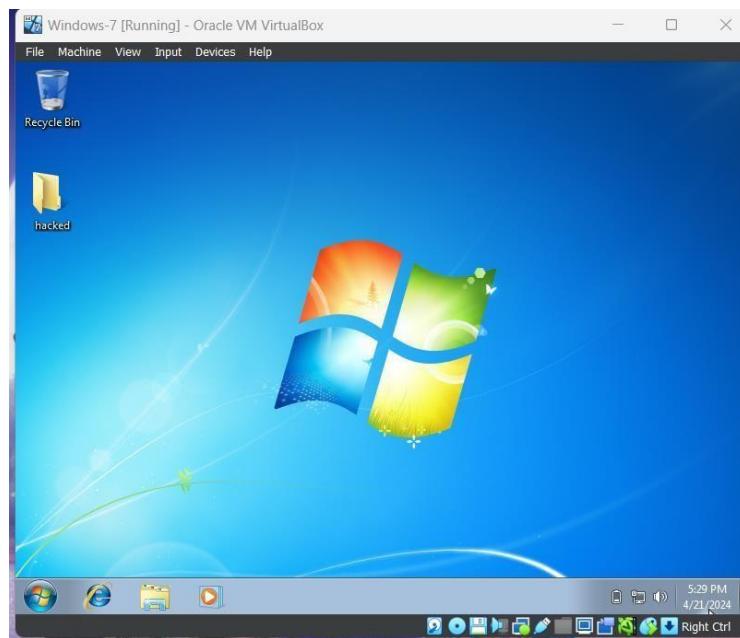
Windows:

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





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.

The screenshot shows the Microsoft Azure Virtual machines dashboard. At the top, there's a search bar and various navigation and filter options. Below the header, it says "Showing 0 to 0 of 0 records". In the center, there's a large "No virtual" message with three options: "Azure virtual machine", "Azure virtual machine with preset configuration", and "More VMs and related solutions". Below these options, there are links to "Learn more about Windows virtual machines" and "Learn more about Linux virtual machines". At the bottom right, there's a "Give feedback" link.

Step-3: Fill the details in that window by creating a “Resource Group”, Select Region as: Asia(Central India) and select the appropriate image.
Select the disk storage and so on.

The screenshot shows the "Create a virtual machine" wizard. Step 1: Set instance details. It asks for a Subscription (selected: Azure for Students) and a Resource group (selected: (New) win). Under Instance details, the Virtual machine name is "windows", Region is "(Asia Pacific) Central India", Availability options are "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." Security type is "Trusted launch virtual machines" and Image is "Windows Server 2019 Datacenter - x64 Gen2". VM architecture is set to x64. At the bottom, there are buttons for "< Previous", "Next : Disks >", and "Review + create".

Step -4: Give the username and password and select the ports. After that click on “Create + Review”

The screenshot shows the Microsoft Azure portal interface for creating a virtual machine. The page title is "Create a virtual machine". The configuration section includes:

- Size:** Standard_B1s - 1 vcpu, 1 GiB memory (₹923.13/month) (free services eligible)
- Administrator account:**
 - Username: poojitha
 - Password: *****
 - Confirm password: *****
- Inbound port rules:** Select which virtual machine network ports are accessible from the public internet. Options include "None" and "Allow selected ports". The "Allow selected ports" option is selected, with "RDP (3389)" listed.

At the bottom, there are navigation buttons: < Previous, Next : Disks >, and a prominent blue "Review + create" button.

Virtual machine is deployed successfully.

The screenshot shows the Microsoft Azure portal interface for the deployment overview of a Windows Server VM. The page title is "CreateVm-MicrosoftWindowsServer.WindowsServer-201-20240614192358 | Overview". The deployment status is shown as "Your deployment is complete". Deployment details include:

- Deployment name: CreateVm-MicrosoftWindowsServer.WindowsSe...
- Subscription: Azure for Students
- Start time: 6/14/2024, 7:36:19 PM
- Correlation ID: 7d1a2dbf-15ce-46b6-a5eb-38b3ecd80524

Next steps include:

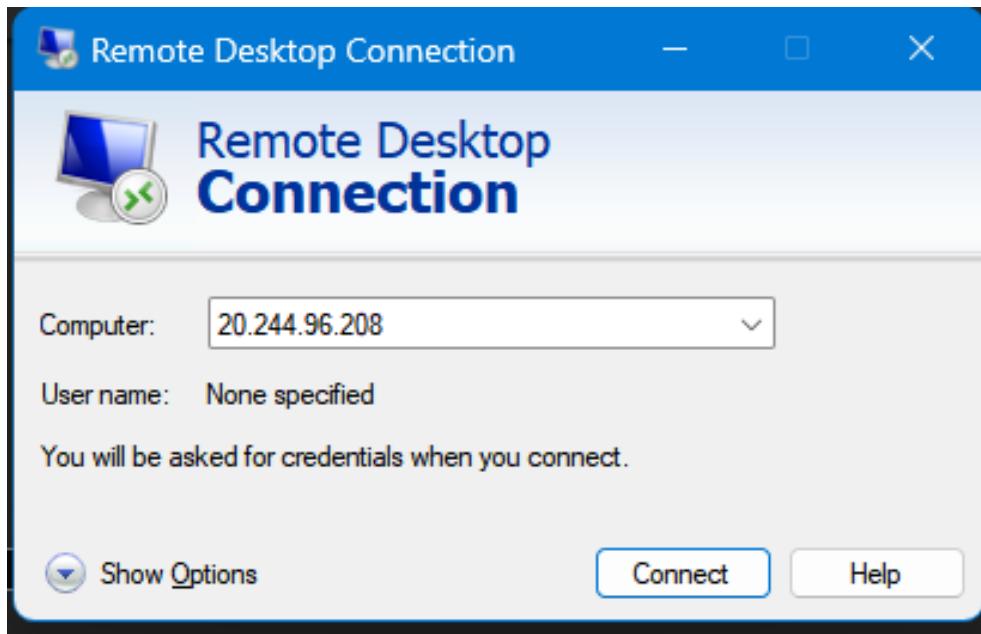
- Setup auto-shutdown (Recommended)
- Monitor VM health, performance and network dependencies (Recommended)
- Run a script inside the virtual machine (Recommended)

At the bottom, there are buttons for "Go to resource" and "Create another VM". On the right side, there are promotional links for Cost Management, Microsoft Defender for Cloud, Free Microsoft tutorials, and Work with an expert.

Step-5: Copy the public IP Address of that created virtual machine.

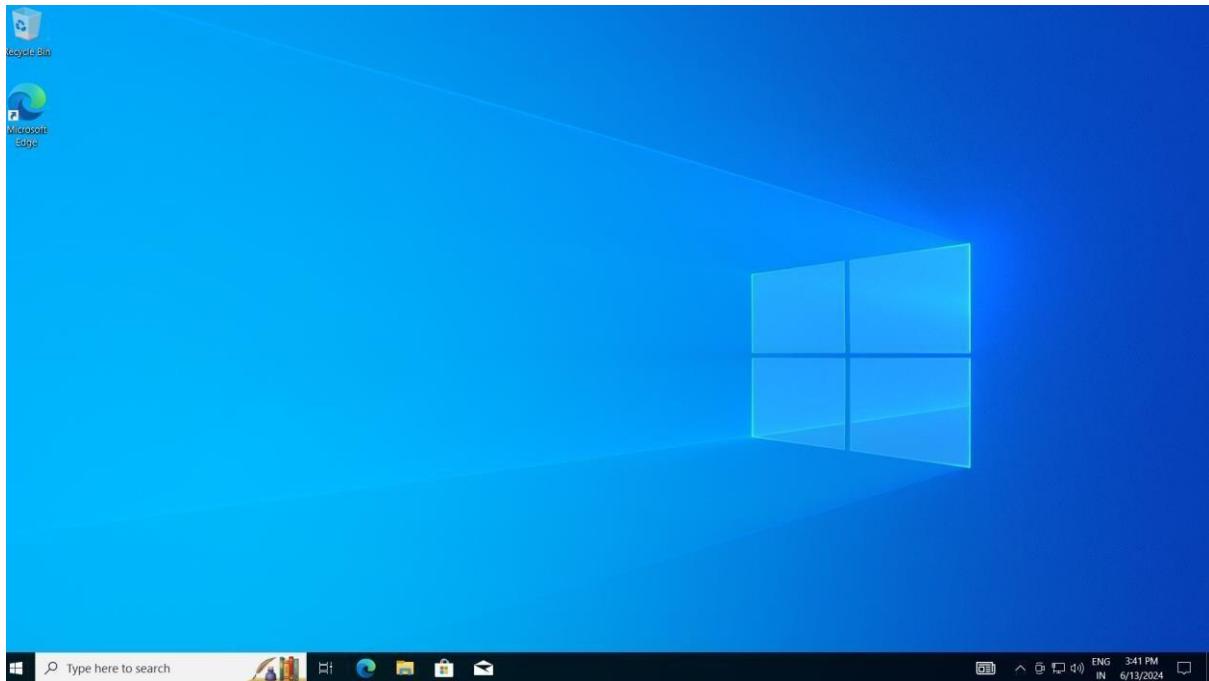
The screenshot shows the Microsoft Azure portal interface. In the top navigation bar, 'Microsoft Azure' is selected. Below it, the path 'Home > Virtual machines >' is shown. On the left, a sidebar titled 'Virtual machines' lists various options like 'Create', 'Switch to classic', and a search bar. A table displays one item: 'windows' (Virtual machine). The main content area shows the 'Overview' tab for the 'windows' VM. It includes sections for 'Essentials' (Resource group: win, Status: Running, Location: Central India (Zone 1), etc.) and 'Properties' (Computer name: windows, Operating system: Windows (Windows Server 2019 Datacenter), VM generation: V2, etc.). On the right, there's a 'Networking' section showing Public IP address: 20.244.96.208 and a 'Size' section indicating Standard B1s. At the bottom, there are tabs for 'Monitoring', 'Capabilities (8)', 'Recommendations', and 'Tutorials'.

Step-6: Open remote desktop connection(RDP) and enter the copied IP address.



Step-7: By using that copied IP Address open the window virtual machine through remote desktop connection.

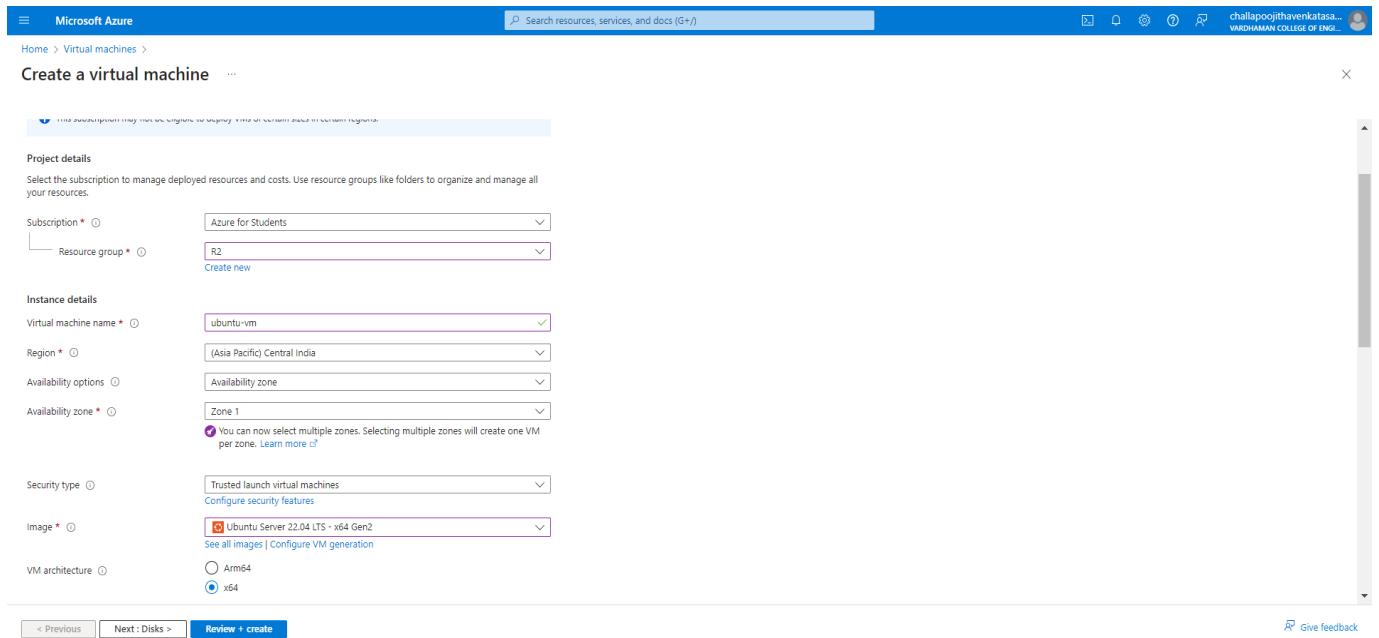
Output:



Q3) Create a Ubuntu Virtual Machine in Microsoft Azure

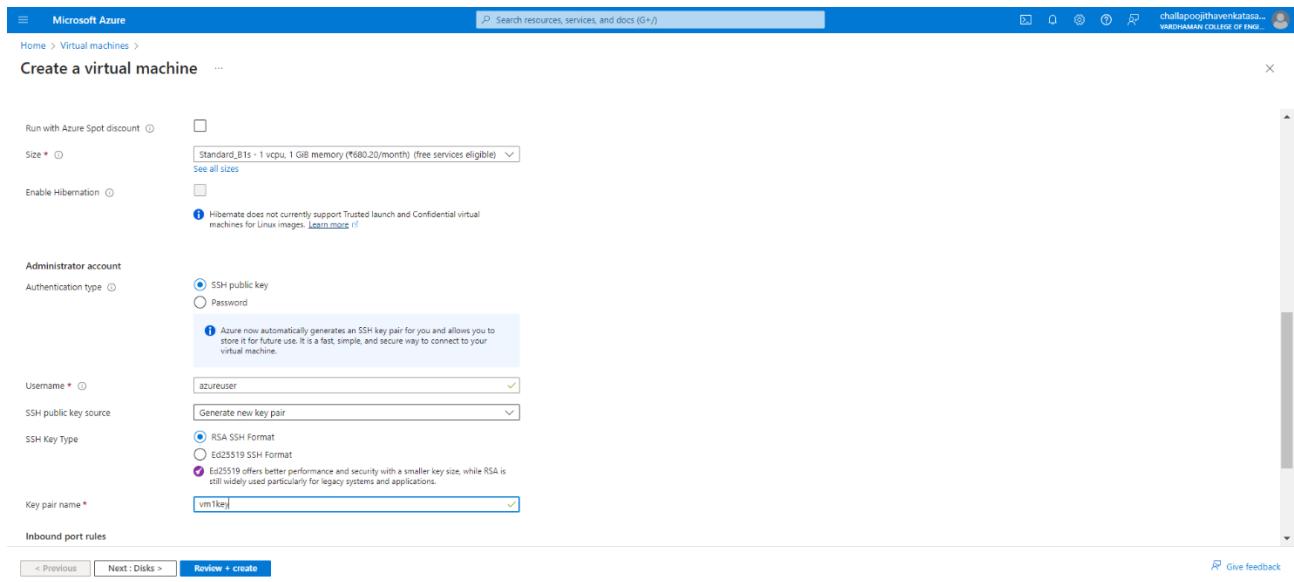
Step-1: Sign in to your Microsoft Azure account.

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



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

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



Your deployment is complete

Deployment name: CreateVm-canonical.0001-com-ubuntu-server-jammy-2-20240617135341 | Start time: 6/17/2024, 2:00:18 PM | Subscription: Azure for Students | Resource group: R2

Deployment details

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

[Go to resource](#) [Create another VM](#)

Give feedback [Tell us about your experience with deployment](#)

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 >](#)

Work with an expert
Azure experts are service provider partners who can help manage your assets on Azure and be your first line of support. [Find an Azure expert >](#)

Step-4: Firstly, copy the public IP Address of that created virtual machine

Essentials	
Name	: R2
Status	: Running
Location	: Central India (Zone 1)
Subscription	: Azure for Students
Subscription ID	: dfa58732-c441-4b58-addc-898a43fe6493
Availability zone	: 1
Tags	: Add tags

Properties	
Virtual machine	Computer name: ubuntu-vm Operating system: Linux (Ubuntu 22.04) VM generation: V2 Agent status: Ready Agent version: 2.11.1.4 Hibernation: Disabled Host group: - Host: - Proximity placement group: - Colocation status: N/A Capacity reservation group: -
Networking	Public IP address: 98.70.78.94 (Network interface ubuntu-vm_1) Private IP address (IPv6): - Private IP address (IPv4): 10.1.0.4 Virtual network/subnet: ubuntu-vm-vnet/default DNS name: Configure
Size	Size: Standard_B1s
Source image details	Source image publisher: canonical

Step-5: After Deployment is over, Go to the remote desktop connection

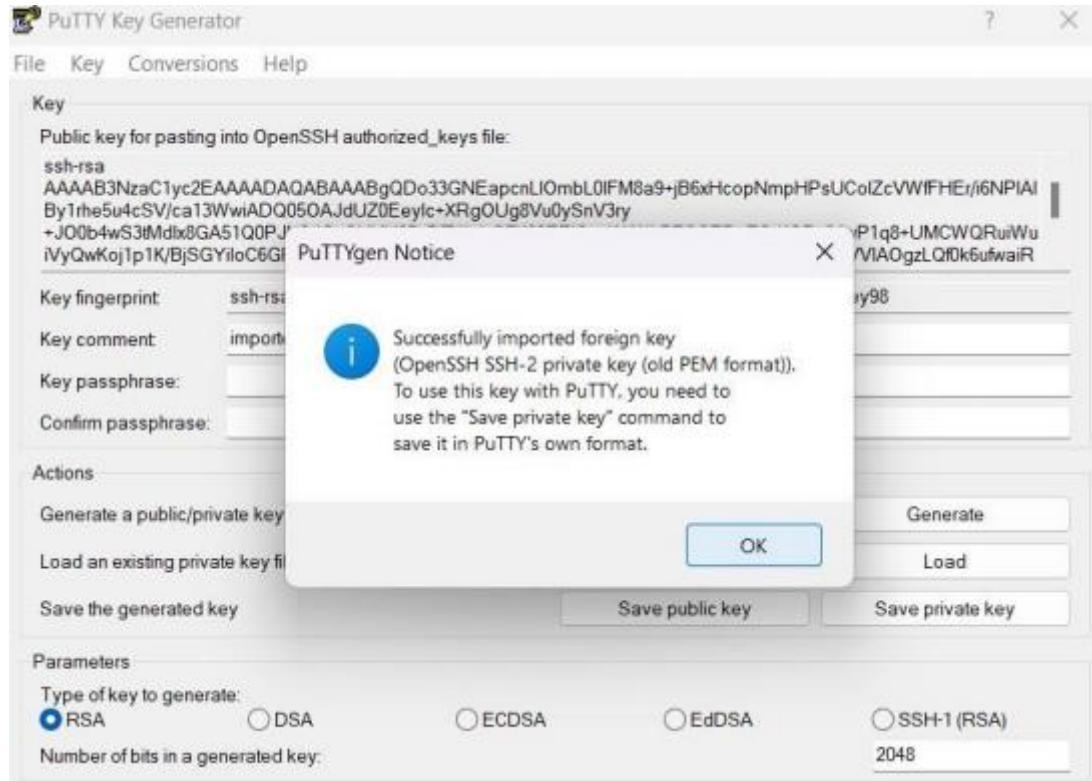
Generate new key pair

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

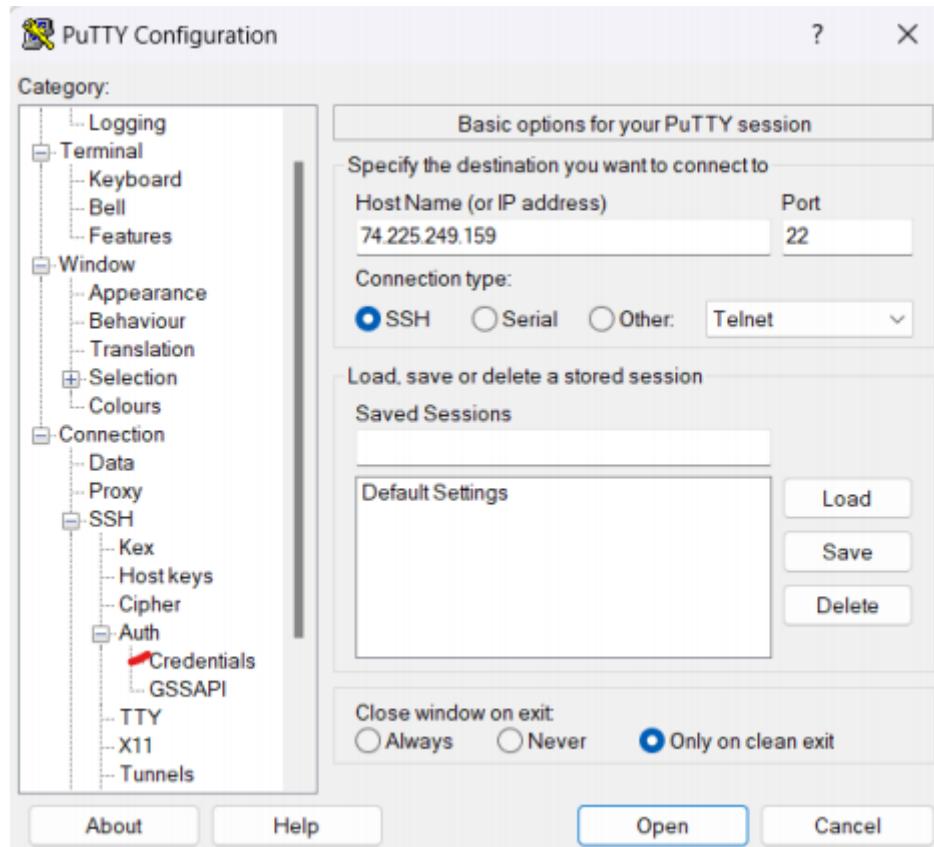
[Download private key and create resource](#)

[Return to create a virtual machine](#)

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



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



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

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

Output:

```
[✓] 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 Fri Jun 14 06:01:35 UTC 2024

System load: 0.0      Processes:          126
Usage of /: 5.1% of 28.89GB  Users logged in: 0
Memory usage: 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 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@vm1:~$
```

4Q) 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 Deployment Overview page for a deployment named "CreateVm-MicrosoftWindowsServer.WindowsServer-201-20240614192358". The status is "Your deployment is complete". Deployment details include a start time of 6/14/2024, 7:36:19 PM, a correlation ID of 7d1a2dbf-15ce-46b6-a5eb-38b3ecd80524, and a resource group of "win". There are sections for "Deployment details" (Setup auto-shutdown, Monitor VM health, Run a script inside the virtual machine), "Next steps", and buttons for "Go to resource" and "Create another VM". On the right side, there are promotional cards for Cost Management, Microsoft Defender for Cloud, Free Microsoft tutorials, and Work with an expert.

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

The screenshot shows the Microsoft Azure Virtual machines page for a VM named "windows". The "Overview" tab is selected. A modal dialog titled "Stop this virtual machine" asks "Do you want to stop 'windows'?". Below the dialog, the VM's properties are listed, including its name ("windows"), operating system ("Windows (Windows Server 2019 Datacenter)"), size ("B1s (1 vcpu, 1 GiB memory)"), and networking details. The "Networking" section shows a public IP address of 20.244.96.208 and a private IP address of 10.0.0.4. The "Size" section indicates it is a Standard B1s instance.

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.

Size	Disk 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	-	-

Step-5: Go back to the VM that is created and click on overview we can see the disk size is updated.

The screenshot shows the Microsoft Azure portal interface. The top navigation bar includes 'Microsoft Azure', a search bar, and user information ('challapoojithavenkatas... VARDHAMAN COLLEGE OF ENGL...'). The main title is 'Virtual machines' under 'Windows' (Resource group: 'win'). The left sidebar lists options like 'Overview', 'Activity log', 'Access control (IAM)', 'Tags', 'Diagnose and solve problems', 'Connect', 'Networking', 'Settings' (selected), 'Disks', 'Extensions + applications', 'Operating system', 'Configuration', 'Advisor recommendations', 'Properties', 'Locks', 'Availability + scale', 'Size' (selected), and 'Logs'. The main content area displays 'Essentials' details for the VM 'windows', including its resource group, status (Stopped), location (Central India), subscription, and availability zone. It also shows 'Properties' (Virtual machine, Networking, Size) and 'Monitoring', 'Capabilities (8)', 'Recommendations', and 'Tutorials'. A message at the bottom right indicates the VM has been successfully resized to 'Standard_B2ms'.

Step-6: Click on the left side there will be select + performance and click on size.

The screenshot shows the Microsoft Azure portal interface. The top navigation bar includes 'Microsoft Azure', a search bar, and user information ('challapoojithavenkatas... VARDHAMAN COLLEGE OF ENGL...'). The main title is 'Virtual machines' under 'windows'. The left sidebar lists options like 'Networking', 'Settings' (selected), 'Disks', 'Extensions + applications', 'Operating system', 'Configuration', 'Advisor recommendations', 'Properties', 'Locks', 'Availability + scale', 'Size' (selected), 'Availability + scaling', 'Security', 'Backup + disaster recovery', 'Operations', 'Monitoring', 'Automation', and 'Help'. The main content area displays a table of 'VM sizes' with columns: VM Size, Type, vCPUs, RAM (GiB), Data disks, Max IOPS, and Local. The table is filtered to show the 'Most used by Azure users' (e.g., DS1_v2, D2s_v3, B2s, B1s, B2ms, DS2_v2, B4ms, D4s_v3, DS3_v2). A message at the top right indicates the VM has been successfully resized to 'Standard_B2ms'.

Step-7: Click on disk name and select your preferred ram size, save it.

Virtual machines > windows

Size

VM Size	Type	vCPUs	RAM (GiB)	Data disks	Max IOPS	Local
DS1_v2	General purpose	1	3.5	4	3200	7
D2s_v3	General purpose	2	8	4	3200	16
B2s	General purpose	2	4	4	1280	8
B1s	(free services eligible)	1	1	2	320	4
B2ms	General purpose	2	8	4	1920	16
DS2_v2	General purpose	2	7	8	6400	14
B4ms	General purpose	4	16	8	2880	32
D4s_v3	General purpose	4	16	8	6400	32
DS3_v2	General purpose	4	14	16	12800	28

Step-8: We can see that the scaling is done successfully.

Virtual machines > windows

Size

VM Size	Type	vCPUs	RAM (GiB)	Data disks	Max IOPS	Local
DS1_v2	General purpose	1	3.5	4	3200	7
D2s_v3	General purpose	2	8	4	3200	16
B2s	General purpose	2	4	4	1280	8
B1s	(free services eligible)	1	1	2	320	4
B2ms	General purpose	2	8	4	1920	16
DS2_v2	General purpose	2	7	8	6400	14
B4ms	General purpose	4	16	8	2880	32
D4s_v3	General purpose	4	16	8	6400	32
DS3_v2	General purpose	4	14	16	12800	28

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 Deployment Overview page for a resource named "CreateVm-MicrosoftWindowsServer.WindowsServer-201-20240614192358". The status is "Your deployment is complete". Key details include:

- Deployment name: CreateVm-MicrosoftWindowsServer.WindowsServer-201-20240614192358
- Subscription: Azure for Students
- Resource group: win
- Start time: 6/14/2024, 7:36:19 PM
- Correlation ID: 7d1a2dbf-15ce-46b6-a5eb-38b3ecd80524

Under "Deployment details", there are three recommended steps:

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

Buttons at the bottom include "Go to resource" and "Create another VM".

On the right side, there are promotional links for Cost Management, Microsoft Defender for Cloud, Free Microsoft tutorials, and Work with an expert.

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 Virtual machines page for a VM named "windows". The "Locks" section is selected in the navigation pane. A modal dialog titled "Add lock" is open, prompting for:

- Lock name * (input field)
- Lock type * (dropdown menu set to "Read-only")
- Notes (text input field)

Other sections visible in the sidebar include:

- Access control (IAM)
- Tags
- Diagnose and solve problems
- Settings
- Disks
- Extensions + applications
- Operating system
- Configuration
- Advisor recommendations
- Properties

Step-3: click on ok. Lock is applied for VM.

Lock name	Lock type	Scope	Notes
lock1	Read-only	windows	

Step-4: Similarly lock is applied for resource group named “win”.

Lock name	Lock type	Scope	Notes
lock1	Read-only	windows	

Step-5: Similarly lock is applied for subscription.

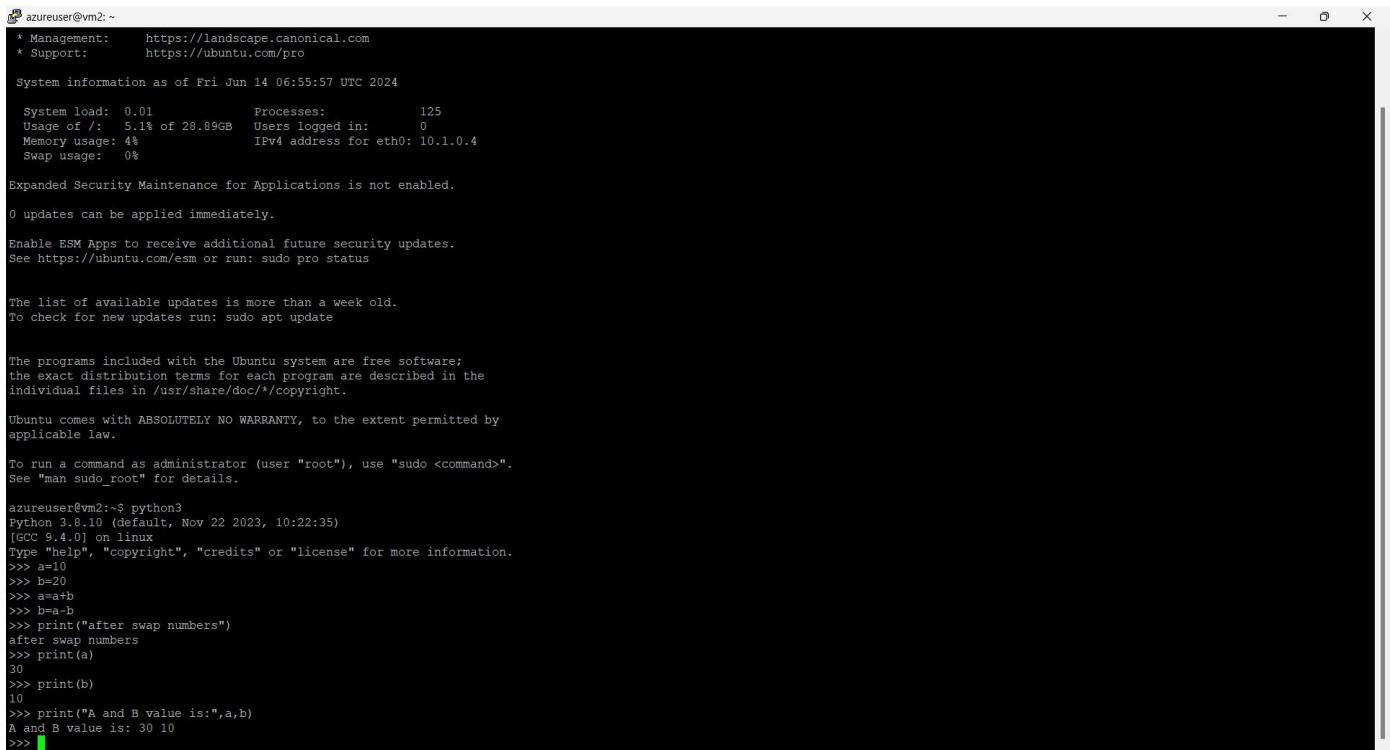
The screenshot shows the Microsoft Azure portal interface. The top navigation bar includes the Microsoft Azure logo, a search bar, and various icons. Below the navigation bar, the URL path is visible: Home > Virtual machines > windows | Locks > win. The main title is "Azure for Students" with a "Subscription" dropdown. Below the title, there are buttons for "+ Add", "Refresh", and "Feedback". The main content area displays a table with one row of data. The columns are "Lock name", "Lock type", "Scope", and "Notes". The data row shows "lock1" in the Lock name column, "Read-only" in the Lock type column, and "windows" in the Scope column. There are "Edit" and "Delete" buttons at the bottom right of the table row. The entire interface has a light blue header and a white body with dark blue and grey accents.

Lock name	Lock type	Scope	Notes
lock1	Read-only	windows	

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

Step-1: Create a ubuntu virtual machine using SSH key same as previous experiment.

Step-2: Login with your username and type python3, write your python program and execute it.



```

azuser@vm2: ~
* Management: https://landscape.canonical.com
* Support: https://ubuntu.com/pro

System information as of Fri Jun 14 06:55:57 UTC 2024

System load: 0.01      Processes:          125
Usage of /: 5.1% of 28.89GB  Users logged in: 0
Memory usage: 4%          IPv4 address for eth0: 10.1.0.4
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 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.

azuser@vm2:~$ 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
>>> print("after swap numbers")
after swap numbers
>>> print(a)
30
>>> print(b)
10
>>> print("A and B value is:",a,b)
A and B value is: 30 10
>>> 

```

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

Step-1: Create a ubuntu virtual machine using SSH as previous experiment and copy public IP address.

The screenshot shows the Azure portal interface for managing virtual machines. On the left, a sidebar lists other VMs: 'ubuntu-vm' and 'vm33'. The main panel displays the 'ubuntu-vm' VM details. Key information includes:

- Resource group:** R2
- Status:** Running
- Location:** Central India (Zone 1)
- Subscription:** Azure for Students
- Subscription ID:** dfa58732-c441-4b58-addc-898a43fe4a93
- Availability zone:** 1
- Tags:** Add tags
- Properties:** Computer name: ubuntu-vm, Operating system: Linux (Ubuntu 22.04), VM generation: V2, Agent status: Ready, Agent version: 2.11.1.4, Hibernation: Disabled, Host group: -, Host: -, Proximity placement group: -, Colocation status: N/A, Capacity reservation group: -, Disk controller type: SCSI.
- Networking:** Public IP address: 98.70.78.94 (Network interface ubuntu-vm01_1), Private IP address (IPv6): -, Virtual network/subnet: ubuntu-vm-vnet/default, DNS name: Not configured.
- Size:** Standard B1s
- Source image details:** Source image publisher: canonical.

Step-2: Login into your ubuntu VM using PUTTY and type ls command as you can see nothing.

```

[3] azureuser@Ubuntu: ~
[3] login as: azureuser
[3] 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 16:53:37 UTC 2024

System load: 0.0      Processes:           116
Usage of /: 5.0% of 28.89GB   Users logged in: 0
Memory usage: 9%          IPv4 address for eth0: 10.0.0.4
Swap usage: 0%            Swap usage: 0

Expanded Security Maintenance for Applications is not enabled.

2 updates can be applied immediately.
2 of these updates are standard security updates.
To see these additional updates run: apt list --upgradable

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

New release '22.04.3 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

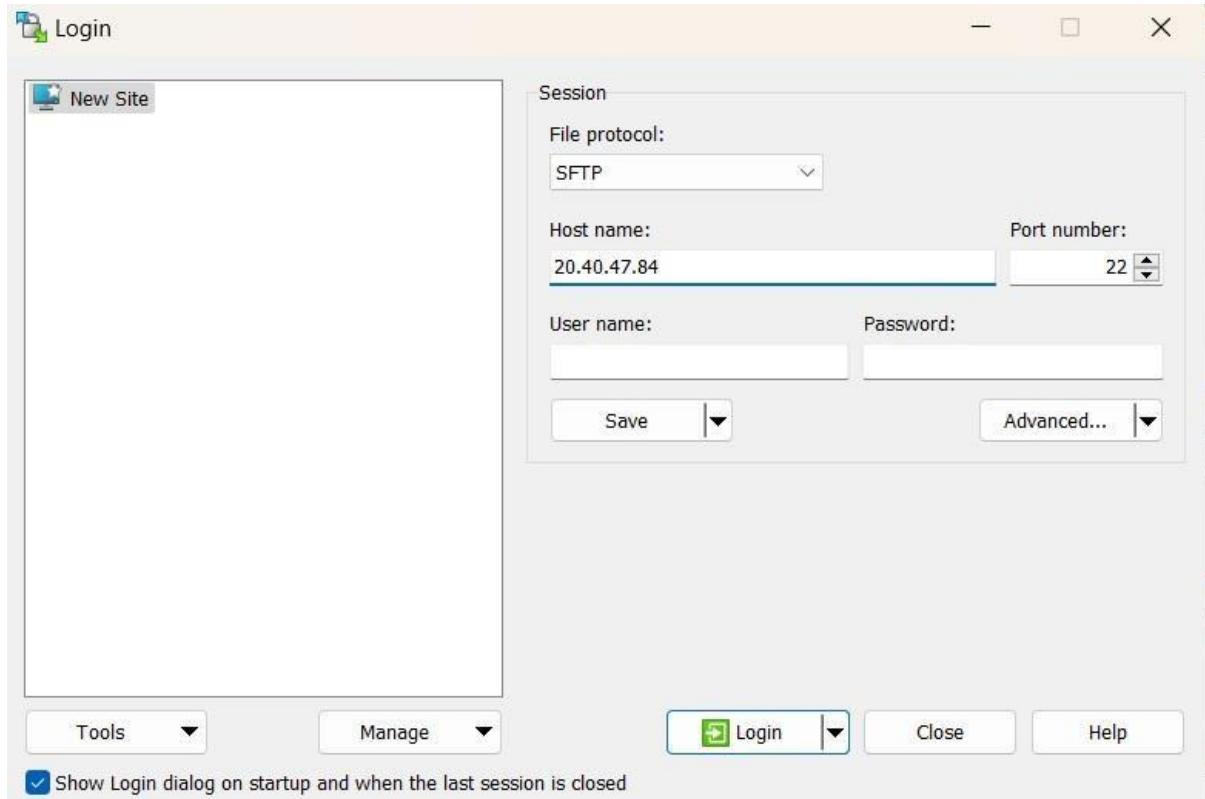
Last login: Thu Jun 13 16:27:10 2024 from 152.58.197.228
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

azureuser@Ubuntu:~$ ls
azureuser@Ubuntu:~$ 

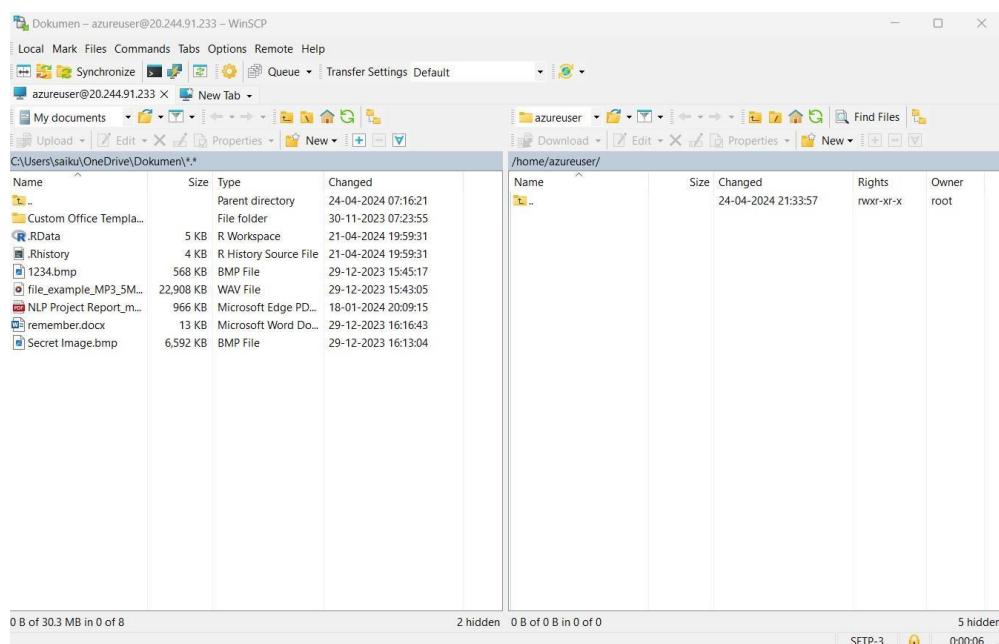
```

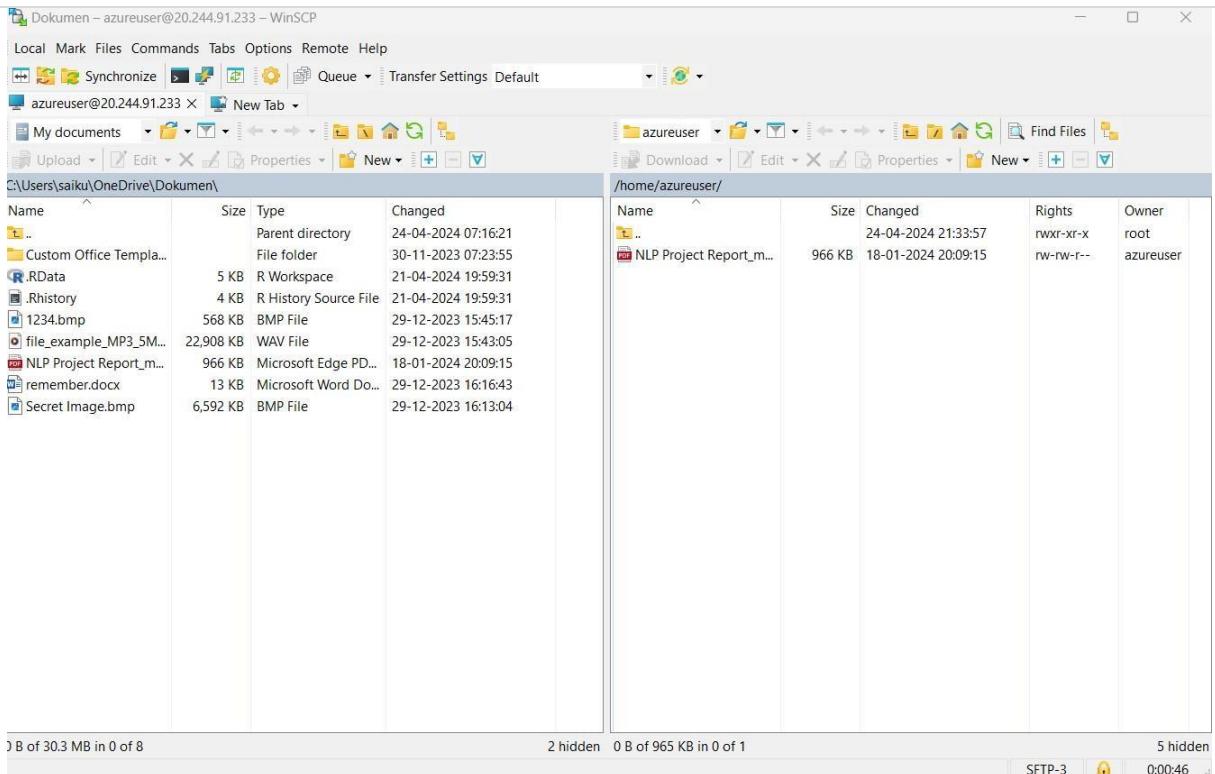
Step-3: Open WinScp at right bottom you can see Advanced option->SSH>Authentication->In that drag private key file and click on ok.

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-4: Now again type ls command as you can see file inside ubuntu VM.

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

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

Step-1: Create a ubuntu virtual machine using SSH as previous experiment and copy public IP address.

Step-2: Login into your Ubuntu VM using your username and type the following commands.
\$sudo su

\$sudo apt-get update

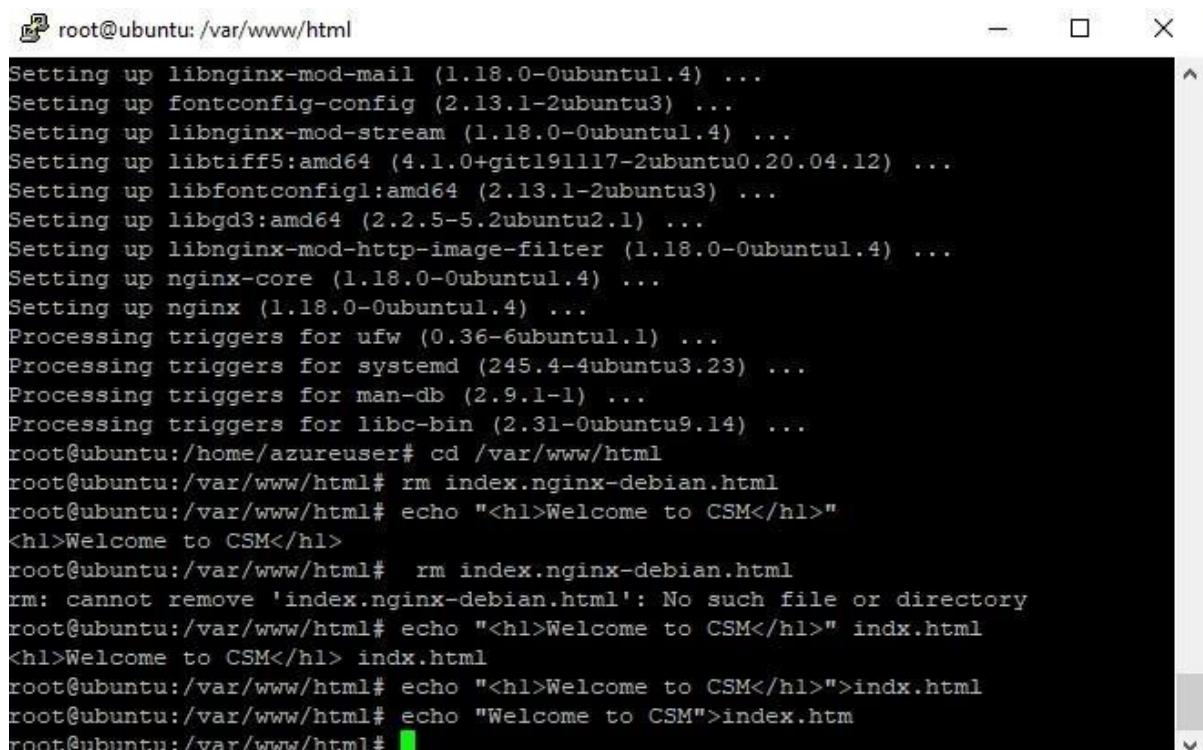
After typing the two command, now install web server using the below command

\$sudo apt-get install nginx

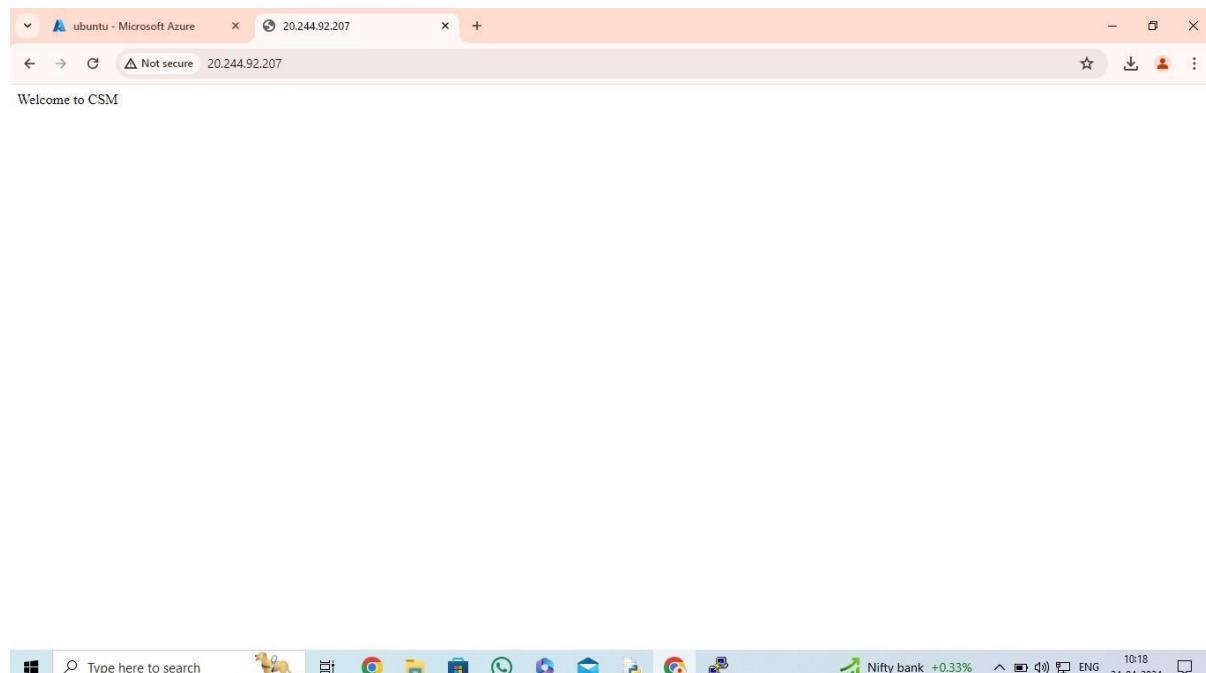
After installing in VM, paste the public ip address in desktop browser and you can see.

Step-3: To remove following information and keep new information in that page type the following command and refresh the browser page.

```
$cd /var/www/html
$rm index.nginx-debian.html
$echo "Welcome to CSM" >index.html
```



```
root@ubuntu:/var/www/html
Setting up libnginx-mod-mail (1.18.0-0ubuntu1.4) ...
Setting up fontconfig-config (2.13.1-2ubuntu3) ...
Setting up libnginx-mod-stream (1.18.0-0ubuntu1.4) ...
Setting up libtiff5:amd64 (4.1.0+git191117-2ubuntu0.20.04.12) ...
Setting up libfontconfig1:amd64 (2.13.1-2ubuntu3) ...
Setting up libgd3:amd64 (2.2.5-5.2ubuntu2.1) ...
Setting up libnginx-mod-http-image-filter (1.18.0-0ubuntu1.4) ...
Setting up nginx-core (1.18.0-0ubuntu1.4) ...
Setting up nginx (1.18.0-0ubuntu1.4) ...
Processing triggers for ufw (0.36-6ubuntu1.1) ...
Processing triggers for systemd (245.4-4ubuntu3.23) ...
Processing triggers for man-db (2.9.1-1) ...
Processing triggers for libc-bin (2.31-0ubuntu9.14) ...
root@ubuntu:/home/azureuser# cd /var/www/html
root@ubuntu:/var/www/html# rm index.nginx-debian.html
root@ubuntu:/var/www/html# echo "<h1>Welcome to CSM</h1>" > 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>
root@ubuntu:/var/www/html# echo "<h1>Welcome to CSM</h1>" > index.html
root@ubuntu:/var/www/html# echo "Welcome to CSM" > index.html
root@ubuntu:/var/www/html#
```



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

Step-1: Create and login windows VM same as previous experiment and copy public IP address.

The screenshot shows the Microsoft Azure Virtual Machines dashboard. On the left, there's a list of virtual machines: 'ubuntu' and 'vm33'. The 'vm33' card is selected and expanded. The main pane displays the 'Essentials' section for 'vm33', which includes the following details:

- Resource group (move) : R33
- Status : Running
- Location : Central India (Zone 1)
- Subscription (move) : Azure for Students
- Subscription ID : dfa58732-c441-4b58-addc-898a43fe4a93
- Availability zone : 1
- Operating system : Windows (Windows Server 2019 Datacenter)
- Size : Standard B1s (1 vcpu, 1 GiB memory)
- Public IP address : 4.240.104.67
- Virtual network/subnet : vm33-vnet/default
- DNS name : Not configured
- Health state : -
- Time created : 6/17/2024, 8:19 AM UTC

Below the essentials, there are tabs for Properties, Monitoring, Capabilities (8), Recommendations, and Tutorials. The 'Properties' tab is selected. To the right, there are sections for Networking and Size. The Networking section shows:

- Public IP address : 4.240.104.67 (Network interface vm33483_z1)
- Public IP address (IPv6) : -
- Private IP address : 10.0.0.4
- Private IP address (IPv6) : -
- Virtual network/subnet : vm33-vnet/default
- DNS name : Configure

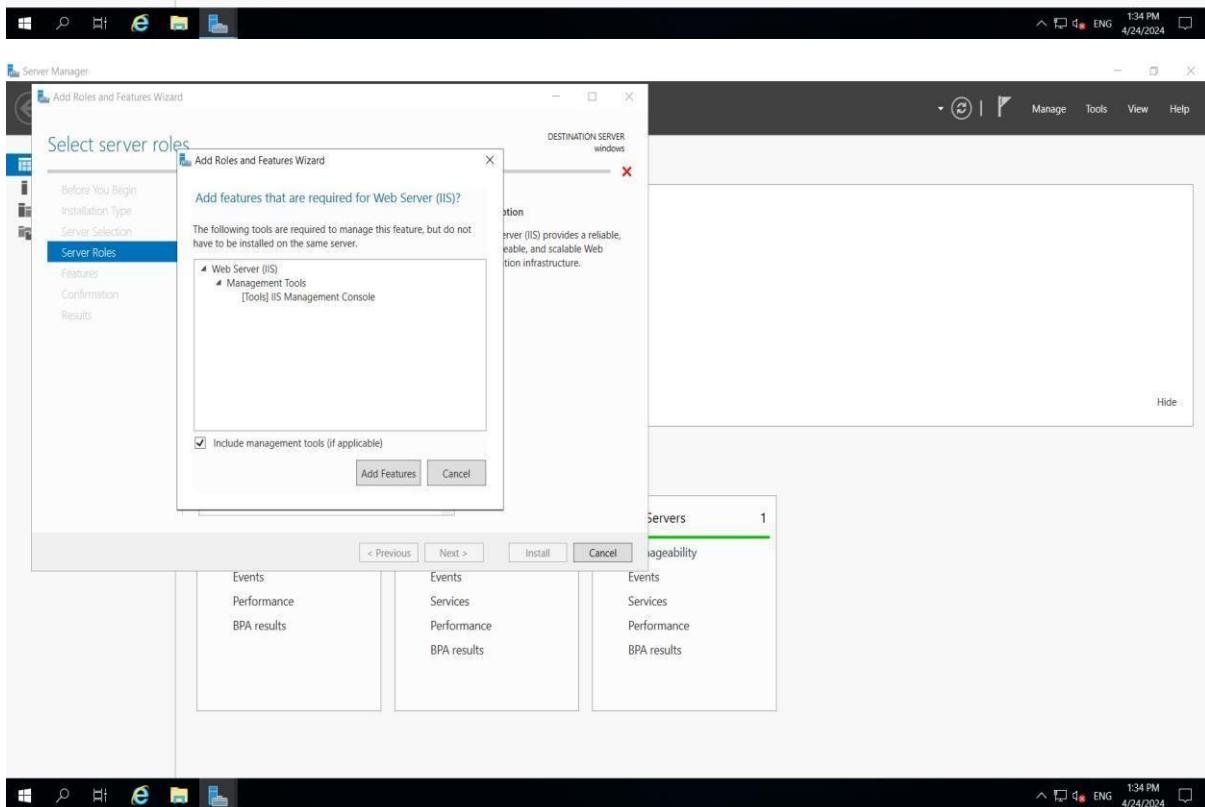
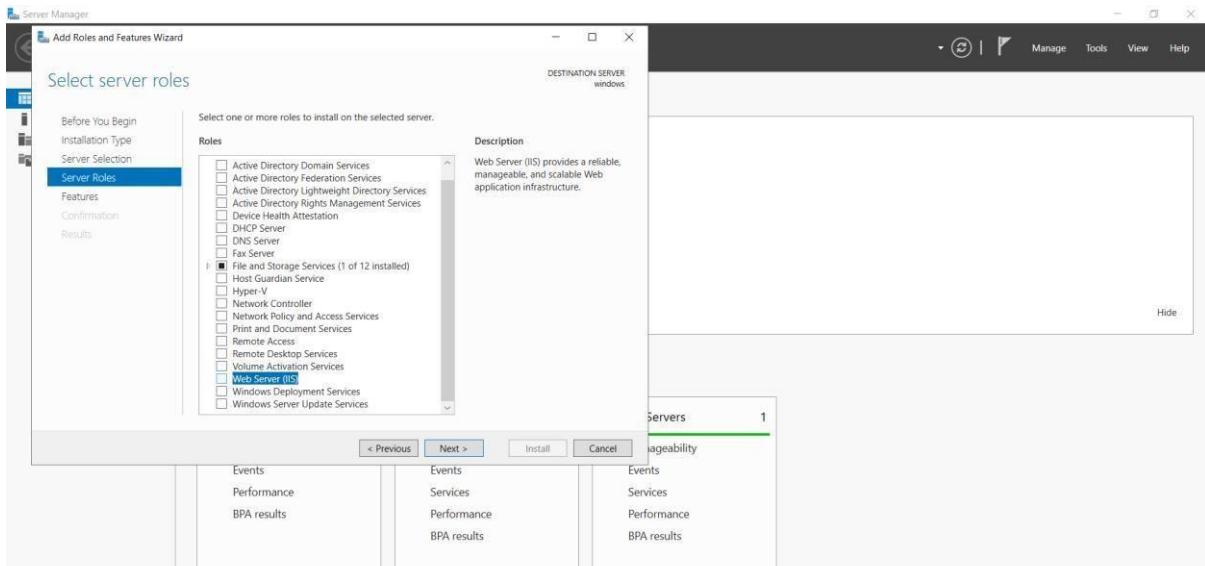
The Size section indicates the VM is Standard B1s.

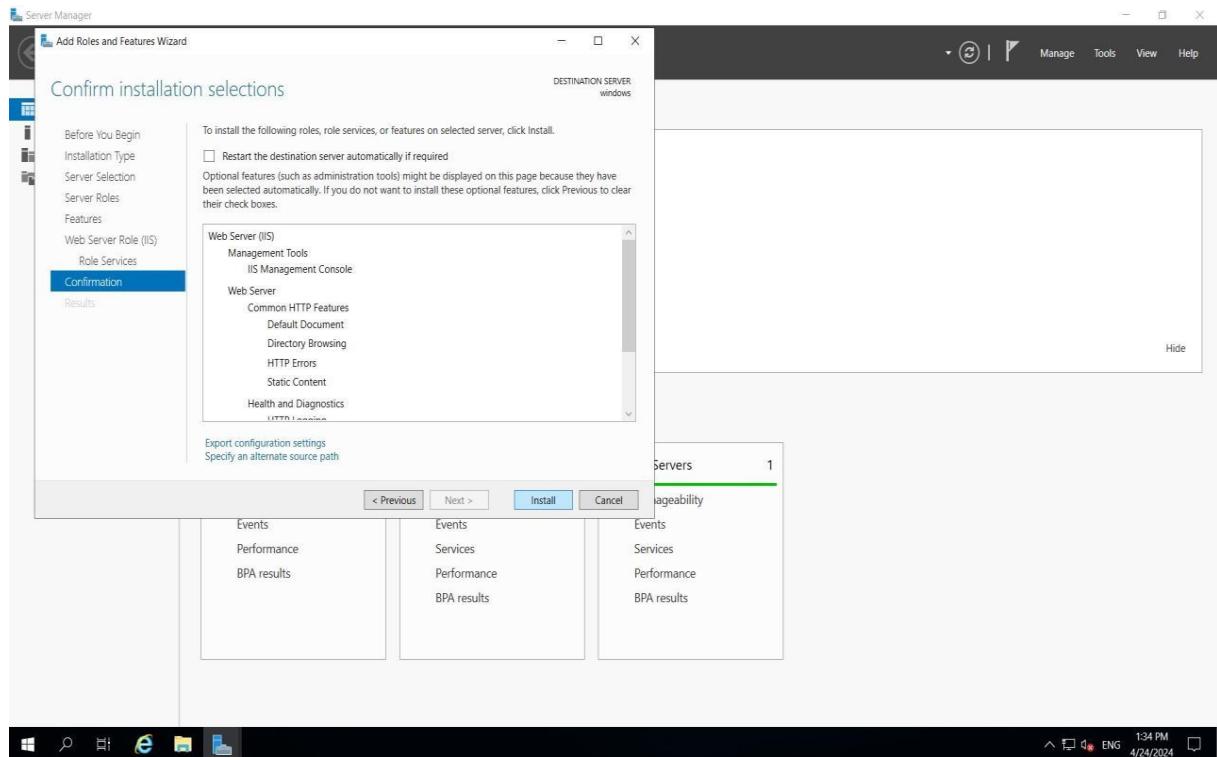
Step-2: When remote desktop will start(windows vm) you can see there will be Server Manager will be opened and in that you can see Configure this local server , Click on “Add roles and features”.

The screenshot shows the Server Manager Dashboard. On the left, there's a navigation bar with 'Dashboard', 'Local Server', 'All Servers', and 'File and Storage Services'. The main area is titled 'WELCOME TO SERVER MANAGER' and displays the following information:

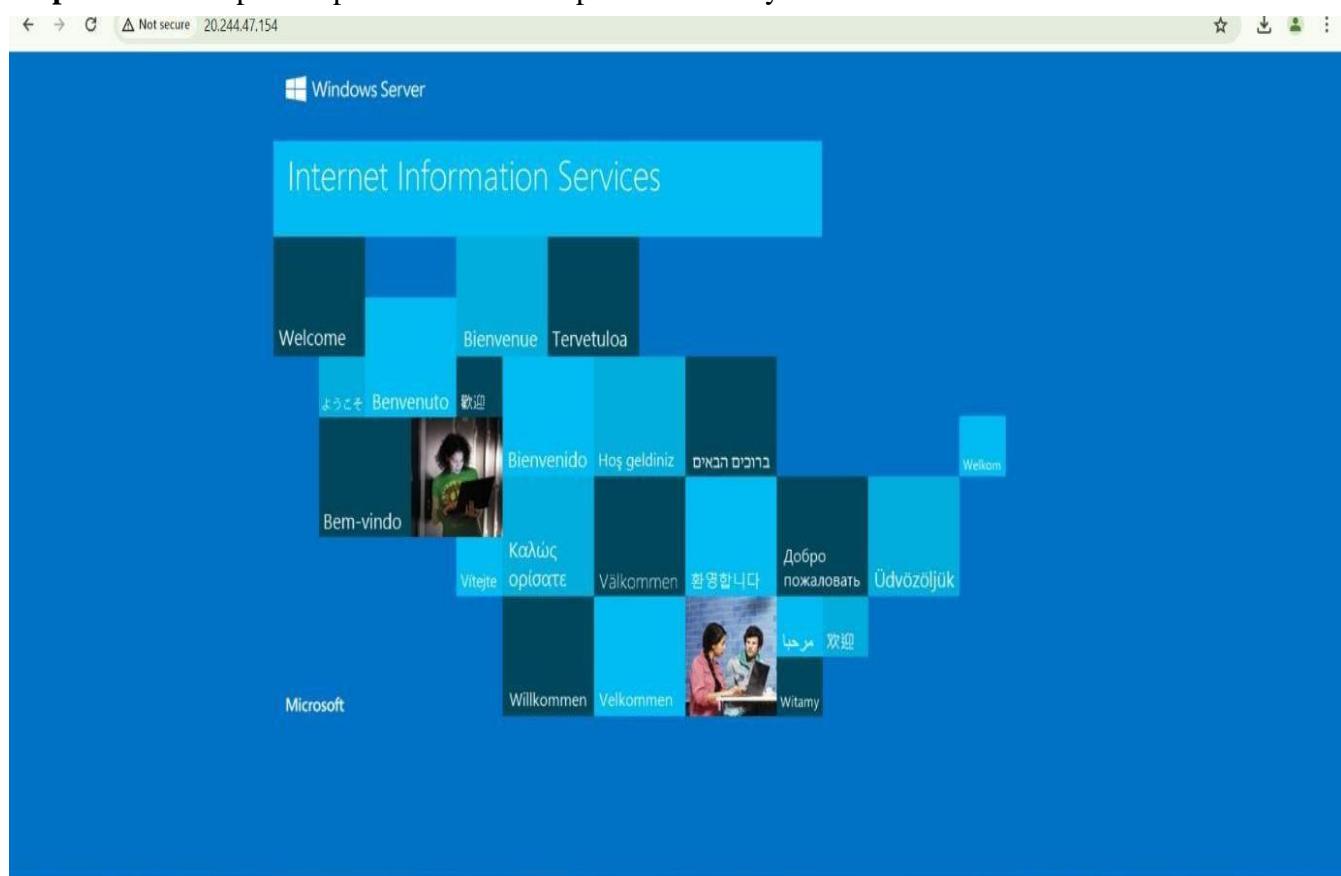
- QUICK START**: Step 1: Configure this local server, Step 2: Add roles and features, Step 3: Add other servers to manage, Step 4: Create a server group, Step 5: Connect this server to cloud services.
- ROLES AND SERVER GROUPS**: Roles: 1 | Server groups: 1 | Servers total: 1. It lists three categories: File and Storage Services (1 role), Local Server (1 role), and All Servers (1 role). Each category has a 'Manageability' link and other options like Events, Performance, and BPA results.

Step-3: 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 .



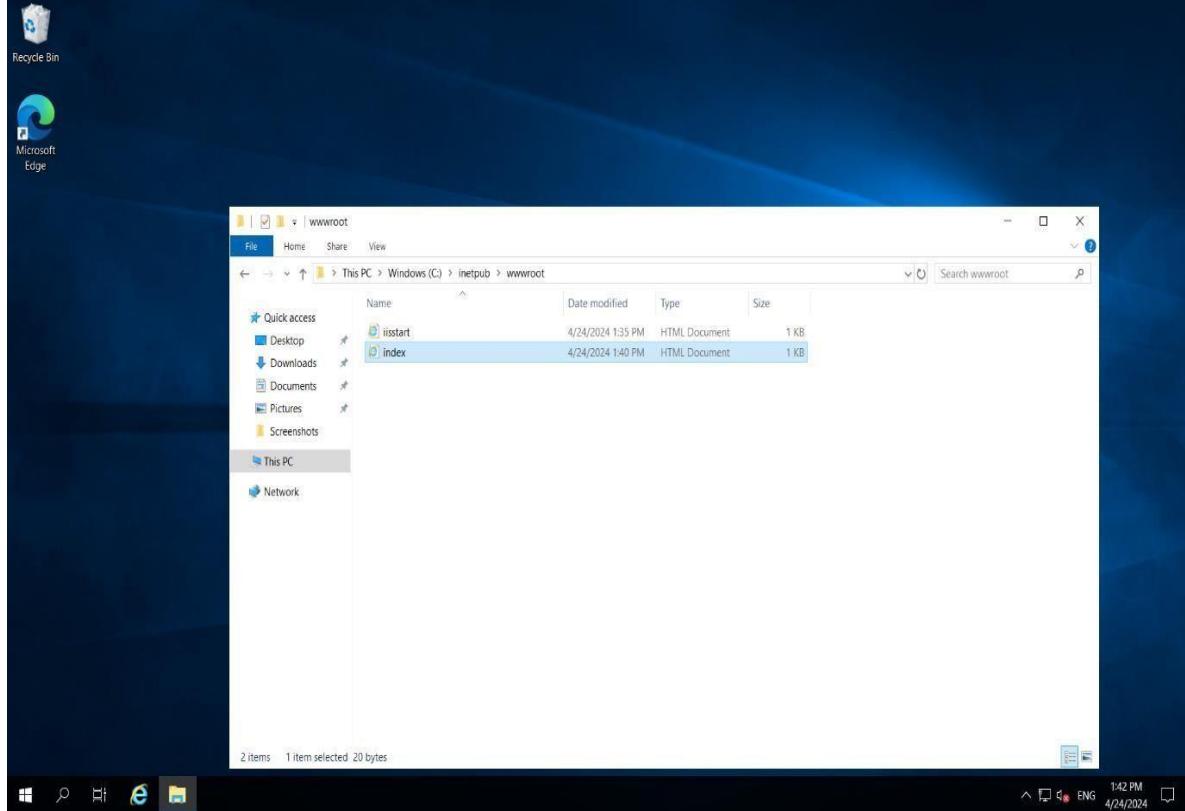


Step-4: Paste the public ip address in desktop browser and you can see.

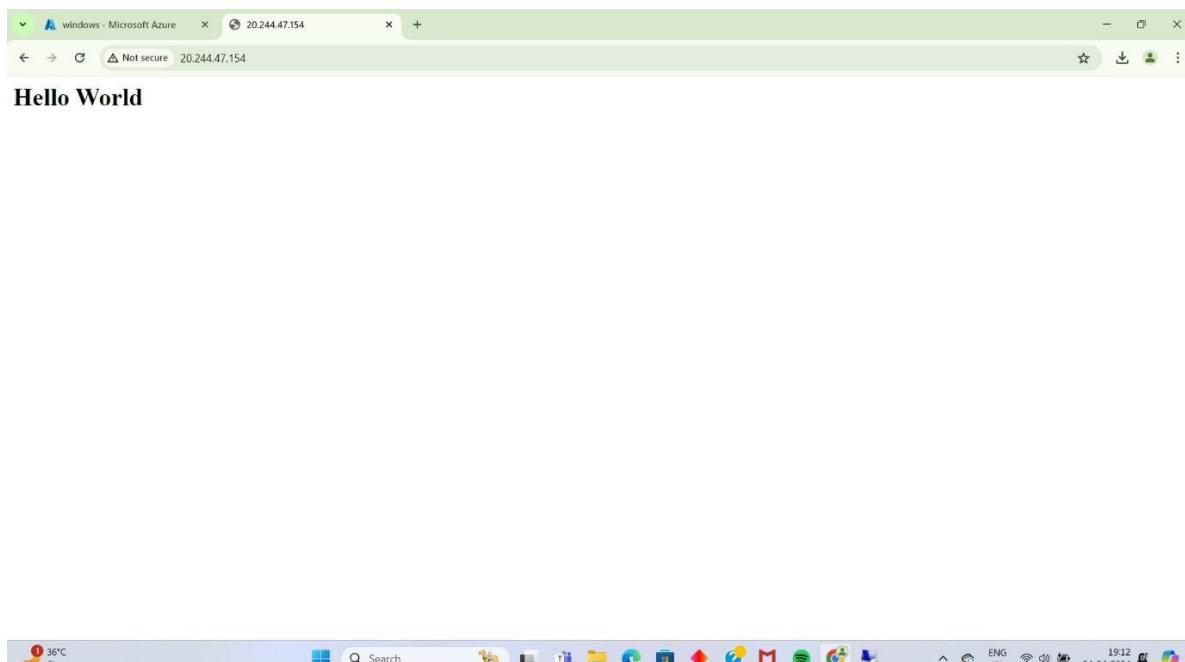


Step-5: Now to remove this all information first of all create index.html in desktop and that should paste in the specified location of remote desktop VM that is ThisPC-

>windows(c)->inetup->wwwroot and remove iistart.png.



Step-6: Refresh the browser page.



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

Step-1: Create a ubuntu virtual machine using SSH as previous experiment.

Step-2: Login into your Ubuntu VM using your username and type the following commands.

To add new user in Linux server:

\$sudo useradd -m srina To set

new password:

```
$sudo password srina
```

Enter new password and Retype password.

To modify login credentials: \$sudo usermod

-aG sudo srina To

switch the user:

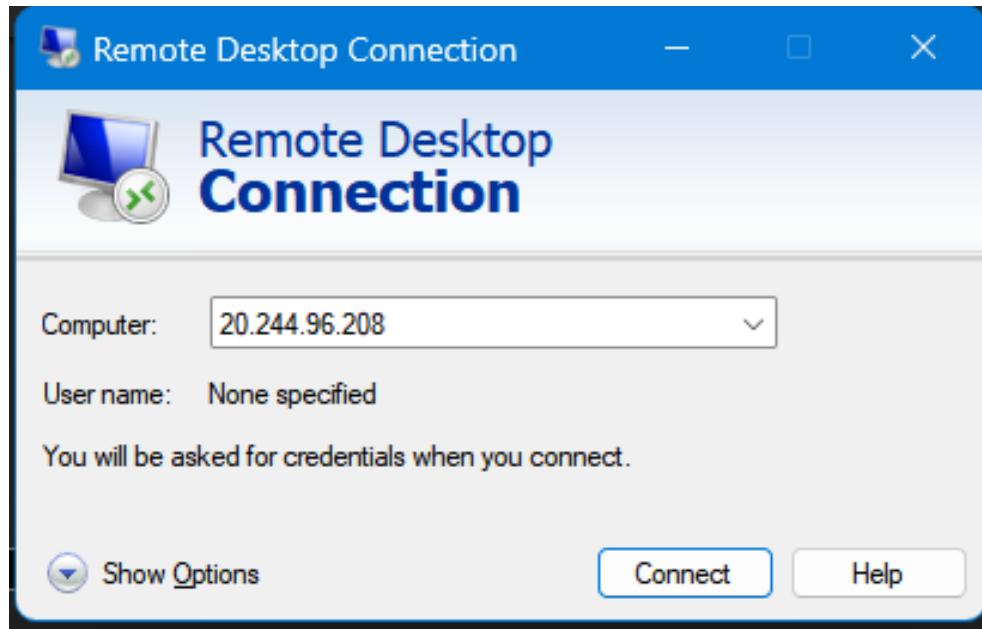
```
$sudo su srina
```

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

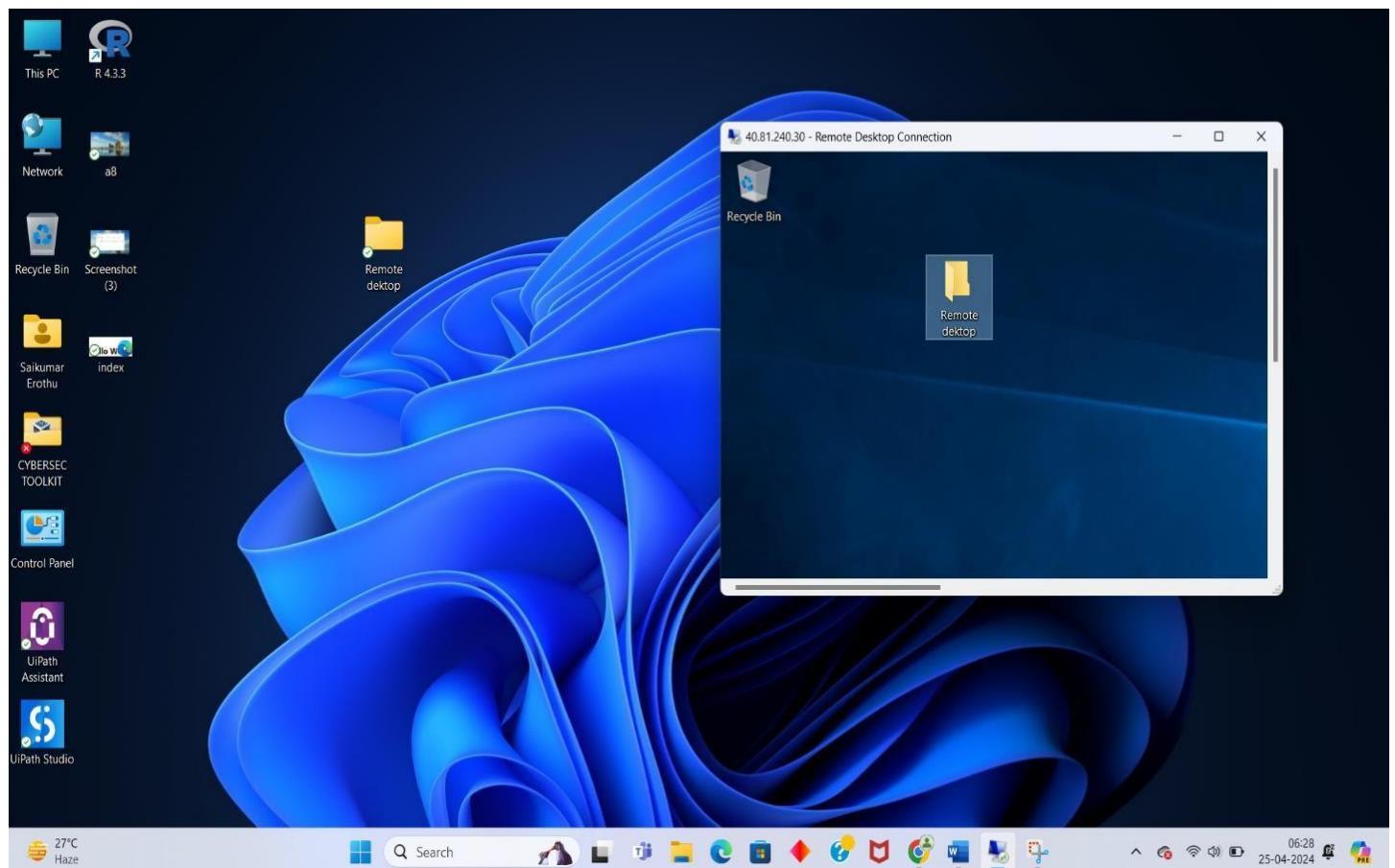
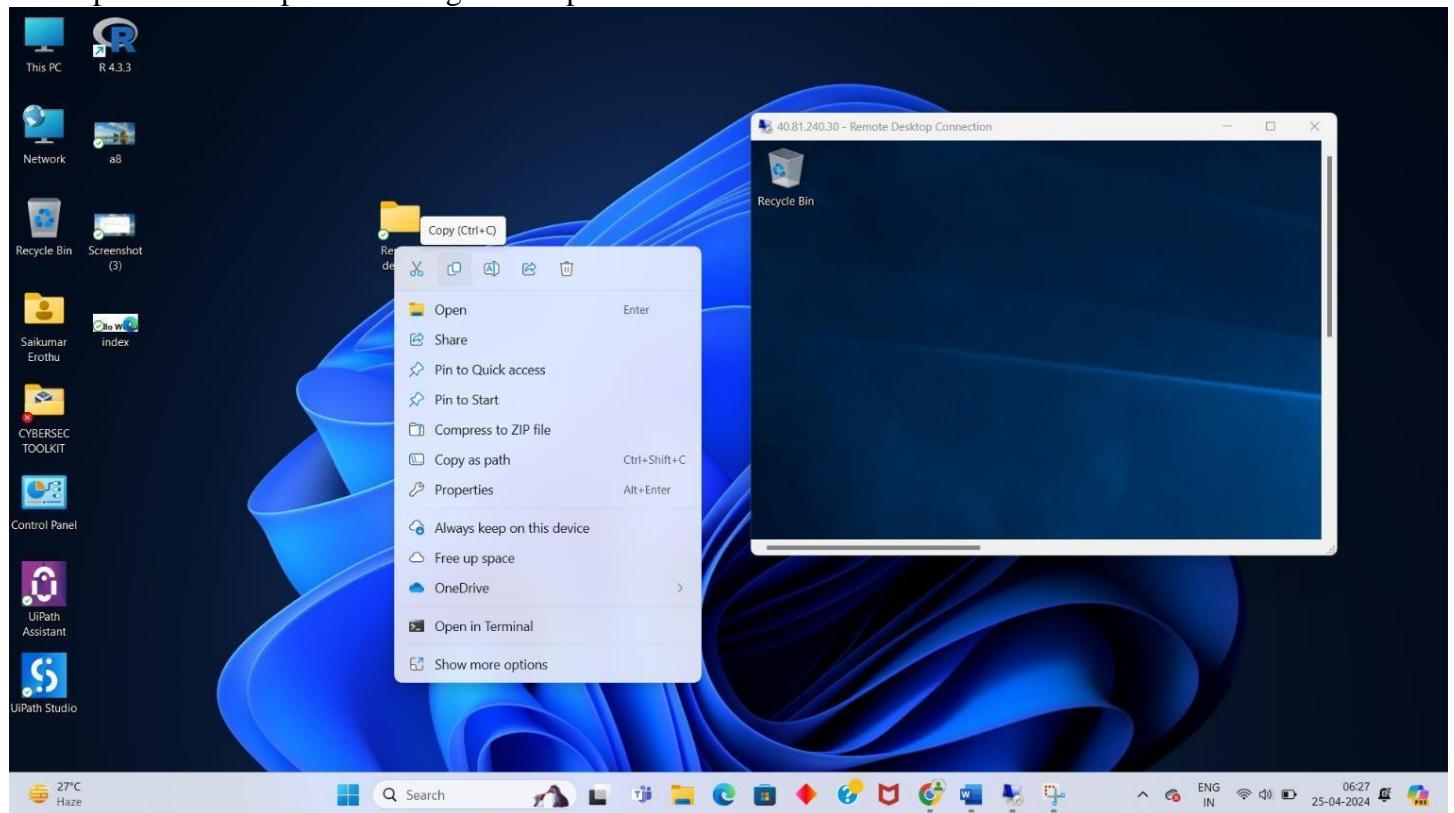
Step-1: Create Windows VM same as previous experiments and copy public IP Address.

The screenshot shows the Microsoft Azure portal interface. The top navigation bar includes 'Microsoft Azure', a search bar, and user information ('challapoojithavenkatas... VARDHAMAN COLLEGE OF ENGL...'). The main area displays a 'Virtual machines' list with one item: 'windows' (Virtual machine). The 'Overview' tab is selected, showing details like Resource group (move), Status (Running), Location (Central India (Zone 1)), and Public IP address (20.244.96.208). Other tabs include 'Properties', 'Monitoring', 'Capabilities (8)', 'Recommendations', and 'Tutorials'. On the left, a sidebar provides navigation links for 'Virtual machines', 'Create', 'Switch to classic', and 'Tags'. A bottom navigation bar shows 'Page 1 of 1'.

Step-2: Login into your account using username and password using remote desktop.



Step-3: Minimize the Remote desktop and copy file from desktop. Right click in remote desktop and click on paste. Or drag and drop into Window server.



Q12) How to attach and detach data disks for windows

Step:1. Create a Virtual Machine and select image as Window server, set up Username and password

The screenshot shows the 'Create a virtual machine' wizard in Microsoft Azure. The current step is 'Set image, size, and administrator account'. Key settings include:

- Image:** Windows Server 2019 Datacenter - x64 Gen2
- VM architecture:** x64 (selected)
- Run with Azure Spot discount:** Unchecked
- Size:** Standard_B1s - 1 vcpu, 1 GiB memory (₹923.13/month) (free services eligible)
- Enable Hibernation:** Unchecked
- Administrator account:**
 - Username: poojitha
 - Password: [REDACTED]
 - Confirm password: [REDACTED]

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

Step:2. Go to disks and click on “Create and attach new disks”.

The screenshot shows the 'Create a virtual machine' wizard in Microsoft Azure. The current step is 'Configure OS disk and Data disks for windows'. Key settings include:

- OS disk:**
 - OS disk size: Image default
 - OS disk type: Premium SSD (locally-redundant storage)
 - Delete with VM: Checked
 - Key management: Platform-managed key
 - Enable Ultra Disk compatibility: Unchecked
- Data disks for windows:** A note states you can add and configure additional data disks or attach existing disks. It also mentions a temporary disk.
- Actions:** Buttons for 'Create and attach a new disk' and 'Attach an existing disk'.

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

Step:3 Select the disk size of your preference and check the option “delete disk with vm” and click on “OK”.

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

Name * windows_DataDisk_0

Source type * None (empty disk)

Size * 2048 GB
Premium SSD LRS
[Change size](#)

Key management Platform-managed key

Enable shared disk Yes No

Delete disk with VM

OK [Give feedback](#)

Step:4. We can see the selected disk in our vm page.Click on review+create.

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

OS disk

OS disk size Image default

OS disk type Premium SSD (locally-redundant storage)

Delete with VM

Key management Platform-managed key

Enable Ultra Disk compatibility

Data disks for windows

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

LUN	Name	Size (GiB)	Disk type	Host caching	Delete with VM
0	windows_DataDisk_0	2048	Premium SSD LRS	None	<input checked="" type="checkbox"/>

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

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

Step:5. Go to the virtual machine that you have created and go to settings and click on “DISKS”. You can see that a disk is attached to your VM named “Windows”.

LUN	Disk name	Storage type	Size (GiB)	Max IOPS	Max throughput (MiB/s)	Encryption	Host caching
0	windows_DataDisk_0	Premium SSD LRS	2048	7500	250	SSE with PMK	None

Step:6. To detach a disk click on the detach symbol that is present at the right side and click on apply.

LUN	Disk name	Storage type	Size (GiB)	Max IOPS	Max throughput (MiB/s)	Encryption	Host caching
-----	-----------	--------------	------------	----------	------------------------	------------	--------------

Q13) How to add data disks to Linux server in azure data attach and detach

Step:1. Create a resource group and launch a Azure Linux server using VM.

Microsoft Azure

Search resources, services, and docs (G+)

Home > Virtual machines >

Create a virtual machine ...

Image * ⓘ Ubuntu Server 22.04 LTS - x64 Gen2

VM architecture ⓘ

- Arm64
- x64

Run with Azure Spot discount ⓘ

Size * ⓘ Standard_B1s - 1 vcpu, 1 GiB memory (₹680.20/month) (free services eligible)

Enable Hibernation ⓘ

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

Administrator account

Authentication type ⓘ

- SSH public key
- Password

Username * ⓘ pojitha

Password *

Confirm password *

< Previous Next : Disks > Review + create Give feedback

Step:2. Click on create a new disk and change the disk size to your preferable size and enable “delete disk with vm” and click on OK.

Microsoft Azure

Search resources, services, and docs (G+)

Home > Virtual machines > Create a virtual machine >

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 * ⓘ ubuntu_DataDisk_0

Source type * ⓘ None (empty disk)

Size * ⓘ 1024 GiB

Premium SSD LRS

Change size

Key management ⓘ Platform-managed key

Enable shared disk

Yes No

Delete disk with VM

OK Give feedback

Step:3. Open putty and launch linux server,\$clear

\$df-h(used to display hard disk storage not shown it)

\$lsblk(to see hidden drives)

\$ sudo file -s/dev/sdc(information about the device)

create file system on the data disk->\$sudo mkfsc -t extH/dev/sdc

```

azureuser@linux-vm:~$ clear
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

azureuser@linux-vm:~$ df -hT
Filesystem      Type  Size  Used Avail Use% Mounted on
/dev/root      ext4   29G  1.6G  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/loop1     squashfs 92M   92M  0 100% /snap/ldxd/24061
/dev/loop2     squashfs 39M   39M  0 100% /snap/snapd/21759
/dev/sda15     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@linux-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/ldxd/24061
loop2  7:2    0 38.8M  1 loop /snap/snapd/21759
sda   8:0    0   30G  0 disk 
├─sda1  8:1    0 29.9G  0 part /
└─sda14 8:14   0   4M  0 part 
└─sda15 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   10G 0 disk 
sr0   11:0   1 628K  0 rom
azureuser@linux-vm:~$ 
```

Step:4. Create directory->\$mkdir test

\$sudo mount/dev/sdc test->\$sudo touch files

\$ls->\$df -hT(after mounting it shows 5GB disk

\$sudo Umount test

```

azureuser@linux-vm:~$ clear
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/loop1     squashfs 92M   92M  0 100% /snap/ldxd/24061
/dev/loop2     squashfs 39M   39M  0 100% /snap/snapd/21759
/dev/sda15     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@linux-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/ldxd/24061
loop2  7:2    0 38.8M  1 loop /snap/snapd/21759
sda   8:0    0   30G  0 disk 
├─sda1  8:1    0 29.9G  0 part /
└─sda14 8:14   0   4M  0 part 
└─sda15 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   10G 0 disk 
sr0   11:0   1 628K  0 rom
azureuser@linux-vm:~$ sudo file -s/dev/sdc
file: invalid option -- '/'
Usage: file [-bcCdEhikLlNnprssVvzz0] [--apple] [--extension] [--mime-encoding]
          [--mime-type] [-e <testname>] [-F <separator>] [-f <namefile>]
          [-m <magicfiles>] [-P <parameter=value>] <file> ...
  file -C [-m <magicfiles>]
  file [--help]
azureuser@linux-vm:~$ sudo file -s /dev/sdc
/dev/sdc: data
azureuser@linux-vm:~$ 
```

Step:5.To detach open disk in VM and detach it,Click on apply

The desired performance might not be reached due to the maximum virtual machine disk performance cap. The current virtual machine size supports up to 23 MBps. The total for disks attached to 'ubuntu' is 125 MBps. [Learn more](#)

LUN	Disk name	Storage type	Size (GiB)	Max IOPS	Max throughput (MBps)	Encryption	Host caching
0	ubuntu_disk1_95fd376cf35742ac825061e013df73	Premium SSD LRS	30	120	25	SSE with PMK	Read/write

LUN	Disk name	Storage type	Size (GiB)	Max IOPS	Max throughput (MBps)	Encryption	Host caching
0	ubuntu_DataDisk_0	Premium SSD LRS	100	500	100	SSE with PMK	None

Q14) Move Ubuntu server files from one resource to another resource

Steps:-

- 1) Open Resource groups in Microsoft Azure account and click on create
- 2) Give a name and create two resource groups

Basics Tags Review + create

Resource group - A container that holds related resources for an Azure solution. The resource group can include all the resources for the solution, or only those resources that you want to manage as a group. You decide how you want to allocate resources to resource groups based on what makes the most sense for your organization. [Learn more](#)

Project details

Subscription * Resource group *

Resource details

Region *

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

Resource groups ...

Vardhaman College of Engineering

+ Create Manage view Refresh Export to CSV Open query Assign tags

Filter for any field... Subscription equals all Location equals all Add filter

Showing 1 to 5 of 5 records.

Name	Subscription	Location
NetworkWatcherRG	Azure for Students	Central India
R1	Azure for Students	Central India
R17	Azure for Students	Central India
static-app	Azure for Students	Central US
win	Azure for Students	Central India

No grouping List view

< Previous Page 1 of 1 Next > Give feedback

Create a resource group

Basics Tags Review + create

Resource group - A container that holds related resources for an Azure solution. The resource group can include all the resources for the solution, or only those resources that you want to manage as a group. You decide how you want to allocate resources to resource groups based on what makes the most sense for your organization. [Learn more](#)

Project details

Subscription * Resource group *

Resource details

Region *

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

Resource groups

Vardhaman College of Engineering

+ Create Manage view Refresh Export to CSV Open query Assign tags

Filter for any field... Subscription equals all Location equals all Add filter

Showing 1 to 5 of 5 records.

	Subscription	Location
<input type="checkbox"/> Name ↑	Azure for Students	Central India
<input type="checkbox"/> (1) NetworkWatcherRG	Azure for Students	Central India
<input type="checkbox"/> (1) R1	Azure for Students	Central India
<input type="checkbox"/> (1) r17	Azure for Students	Central India
<input type="checkbox"/> (1) static-app	Azure for Students	Central US
<input type="checkbox"/> (1) win	Azure for Students	Central India

No grouping List view

Resource group created
Creating resource group 'R2' in subscription 'Azure for Students' succeeded.

[Go to resource gr...](#) [Pin to dashboard...](#)

< Previous Page 1 of 1 Next > Give feedback

3) Select Virtual machine and click on create

The screenshot shows the Microsoft Azure portal's Virtual Machines list page. At the top, there are navigation links for Home, Virtual machines, and a search bar. Below the search bar is a toolbar with various filters and actions like Create, Refresh, Export to CSV, Start, Stop, Delete, Services, and Maintenance. A message at the top says 'No virtual machines to display'. In the center, there is a large icon of a computer monitor with a cube on it, and below it, the text 'No virtual machines to display'. Below this, there is a note: 'Create a virtual machine that runs Linux or Windows. Select an image from the marketplace or use your own customized image.' A prominent blue 'Create' button is centered below the note. At the bottom right, there is a 'Give feedback' link.

4) Create a VM with username and password & click on "Review+ create"

The screenshot shows the Microsoft Azure portal's 'Create a virtual machine' wizard, Step 1: Set instance details. The page has a header 'Create a virtual machine' and a back/forward navigation bar. It includes sections for Run with Azure Spot discount, Size (selected: Standard_B1s - 1 vcpu, 1 GB memory), Enable Hibernation (disabled), Administrator account (Username: poojitha, Password: masked, Confirm password: masked), and Inbound port rules (Public inbound ports: Allow selected ports, SSH (22)). At the bottom, there are buttons for < Previous, Next: Disks >, and Review + create.

5) Click on create

The screenshot shows the Microsoft Azure portal interface. At the top, there's a navigation bar with links to Gmail, YouTube, Maps, and a search bar containing 'ppt parking system...'. Below it is the Microsoft Azure logo and a search bar. The main content area is titled 'CreateVm-MicrosoftWindowsServer.WindowsServer-201-20240614234609 | Overview'. On the left, there's a sidebar with 'Overview', 'Inputs', 'Outputs', and 'Template' options. The main pane displays a message 'Deployment in progress...' with a sub-message 'Deployment to resource group 'R33'' is in progress. Below this, there's a table titled 'Deployment details' with columns for Resource, Type, Status, and Operation details, showing 'No results'. To the right, there are promotional cards for Microsoft Defender for Cloud, Free Microsoft tutorials, and Work with an expert.

6) click on "Go to resource"

This screenshot shows the Microsoft Azure portal after a deployment has completed. The title is 'CreateVm-MicrosoftWindowsServer.WindowsServer-201-20240614234609 | Overview'. The deployment status is now 'Your deployment is complete'. The deployment details table shows recommendations for setup auto-shutdown, monitor VM health, and run a script inside the virtual machine. At the bottom, there are 'Go to resource' and 'Create another VM' buttons. The right side of the screen contains promotional cards for Cost Management, Microsoft Defender for Cloud, and Work with an expert, similar to the previous screenshot.

7) Select all resources & click on "move" on the top

portal.azure.com/#/vardhaman.org/resource/subscriptions/dfa58732-c441-4b58-addc-898a43fe4a93/resourceGroups/R33/overview

R33 Resource group

Subscription (move) : Azure for Students
Subscription ID : dfa58732-c441-4b58-addc-898a43fe4a93
Tags (edit) : Add tags

Deployments : 1 Succeeded
Location : Central India

Resources

Name	Type	Location
VM33	Virtual machine	Central India
VM33-ip	Public IP address	Central India
VM33-nsg	Network security group	Central India
VM33-vnet	Virtual network	Central India
vm33464_21	Network interface	Central India
VM33_disk1_2e4446789974618a3405b9c200ee9d	Disk	Central India

8) Click on move to another resource group

portal.azure.com/#/vardhaman.org/resource/subscriptions/dfa58732-c441-4b58-addc-898a43fe4a93/resourceGroups/R33/overview

R33 Resource group

Subscription (move) : Azure for Students
Subscription ID : dfa58732-c441-4b58-addc-898a43fe4a93
Tags (edit) : Add tags

Move to another resource group

Resources

Name	Type	Location
VM33	Virtual machine	Central India
VM33-ip	Public IP address	Central India
VM33-nsg	Network security group	Central India
VM33-vnet	Virtual network	Central India
vm33464_21	Network interface	Central India
VM33_disk1_2e4446789974618a3405b9c200ee9d	Disk	Central India

9) Give the target Resource group i.e., RG2 & click on next

The screenshot shows the 'Move resources' wizard in the Azure portal. Step 2: Resources to move. The source is 'R33' in 'Azure for Students'. The target is 'R1' in 'Azure for Students'. Both are under the 'Subscription' section.

The screenshot shows the 'Move resources' wizard in the Azure portal. Step 3: Review. It lists the resources being moved:

Name	Type	Resource type	Validation status	Action
VM33	Virtual machine	microsoft.compute/virtualmachines	Succeeded	Remove
VM33-ip	Public IP address	microsoft.network/publicipaddresses	Succeeded	Remove
VM33-msg	Network security group	microsoft.network/networksecuritygroups	Succeeded	Remove
VM33-vnet	Virtual network	microsoft.network/virtualnetworks	Succeeded	Remove
VM33_disk1_f2e446e78997461ba3405b9c200ee9d	Disk	microsoft.compute/disks	Succeeded	Remove
vm33444_21	Network interface	microsoft.network/networkinterfaces	Succeeded	Remove

At the bottom, there are 'Previous' and 'Next' buttons, with 'Next' being highlighted.

10) After all validation status "Succeeded" click on next

Selection summary

Source subscription	Azure for Students
Source resource group	R33
Target subscription	Azure for Students
Target resource group	R1
Number of resources to move	6

I understand that tools and scripts associated with moved resources will not work until I update them to use new resource IDs

[Previous](#) [Move](#)

11) Click on "move" then all the resources from the RG1 moves to RG2

Selection summary

Source subscription	Azure for Students
Source resource group	R33
Target subscription	Azure for Students
Target resource group	R1
Number of resources to move	6

I understand that tools and scripts associated with moved resources will not work until I update them to use new resource IDs

[Previous](#) [Move](#)

12) To check if the resource RG2, open RG2, All the resources can be seen

portal.azure.com/#@vardhaman.org/resource/subscriptions/dfa58732-c441-4b58-addc-898a43fe4a93/resourceGroups/R1/overview

Microsoft Azure

R1

Overview

Subscription (move) : Azure for Students

Subscription ID : dfa58732-c441-4b58-addc-898a43fe4a93

Tags (edit) : Add tag

Type : Virtual machine, Public IP address, Network security group, Virtual network, Network interface, Disk

Location : Central India

Deployments : No deployments

Resources Recommendations

Filter for any field... Type equals all Location equals all Add filter

Name	Type	Location
VM33	Virtual machine	Central India
VM33-ip	Public IP address	Central India
VM33-msg	Network security group	Central India
VM33-nnet	Virtual network	Central India
vm33464_x1	Network interface	Central India
VM33_disk1_1	Disk	Central India

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Give feedback

s are moved to

Q15) How to create Storage Account, container and upload/delete objects?

Steps:-

- 1) Open Microsoft Azure portal and click on storage accounts

The screenshot shows the Microsoft Azure Storage accounts page. At the top, there are navigation links for Gmail, YouTube, Maps, and ppt parking system.... A search bar is present, followed by account settings and a user profile. Below the header, the page title is "Storage accounts" with a "Vardhaman College of Engineering (vardhaman.org)" link. A toolbar with actions like "+ Create", "Restore", "Manage view", "Refresh", "Export to CSV", "Open query", "Assign tags", and "Delete" is visible. Filter options include "Subscription equals all", "Resource group equals all", and "Location equals all". Below the filters, it says "Showing 0 to 0 of 0 records." and "No grouping" with a "List view" dropdown. The main content area displays a large gray placeholder icon and the message "No storage accounts to display". A descriptive text block explains how to create a storage account for storing up to 500TB of data. A prominent blue "Create storage account" button is centered below the text.

- 2) Click on create, select LRS/GRS in redundancy

The screenshot shows the "Create a storage account" wizard in the Microsoft Azure portal. The title bar indicates the URL is portal.azure.com/#create/Microsoft.StorageAccount. The page has a back and forward navigation bar at the top. Below the header, there are links for Home, Microsoft Azure, and a user profile. The main content starts with a "Create a storage account" heading. A "Basics" tab is selected, while other tabs like "Advanced", "Networking", "Data protection", "Encryption", "Tags", and "Review" are available. The "Project details" section asks for a subscription and resource group. The "Subscription" dropdown shows "Azure for Students" and the "Resource group" dropdown shows "(New) r17" with a "Create new" option. The "Instance details" section includes fields for "Storage account name" (r117), "Region" ((Asia Pacific) Central India), and "Performance". Under "Performance", the "Standard" radio button is selected. The "Redundancy" dropdown shows "Locally-redundant storage (LRS)". At the bottom, there are "Review" and "Next : Advanced >" buttons, along with a "Give feedback" link.

3) Click on next, Tick "Allow enabling anonymous access on individual containers"

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

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

4) Click on Review+create and click on create

Basics	Value
Subscription	Azure for Students
Resource Group	r17
Location	centralindia
Storage account name	r117
Deployment model	Resource manager
Performance	Standard
Replication	Locally-redundant storage (LRS)

Advanced	Value
Enable hierarchical namespace	Disabled
Enable network file system v3	Disabled
Allow cross-tenant replication	Disabled
Access tier	Hot
Enable SFTP	Disabled
Large file shares	Enabled

Networking	Value
Network connectivity	Public endpoint (all networks)
Default routing tier	Microsoft network routing
Protocol version	Protocol version

Review [< Previous](#) [Next >](#) [Download a template for automation](#) [Give feedback](#)

5) Open Storage Account which you have created

Storage account

Overview

Essentials

Resource group (move)	: r117	Performance	: Standard
Location	: centralindia	Replication	: Locally-redundant storage (LRS)
Subscription (move)	: Azure for Students	Account kind	: StorageV2 (general purpose v2)
Subscription ID	: dfa58732-c441-4b58-addc-898a43fe4a93	Provisioning state	: Succeeded
Disk state	: Available	Created	: 6/14/2024, 8:35:48 PM
Tags (edit)	: Add tags		

Properties **Monitoring** **Capabilities (7)** **Recommendations (0)** **Tutorials** **Tools + SDKs**

Blob service

Hierarchical namespace	Disabled	Require secure transfer for REST API operations	Enabled
Default access tier	Hot	Storage account key access	Enabled
Blob anonymous access	Enabled	Minimum TLS version	Version 1.2
Blob soft delete	Enabled (7 days)	Infrastructure encryption	Disabled
Container soft delete	Enabled (7 days)		
Versioning	Disabled		
Change feed	Disabled		
NFS v3	Disabled		
Allow cross-tenant replication	Disabled		
Storage tasks assignments	None		

File service

Large file share	Enabled	Allow access from	All networks
Identity-based access	Not configured	Number of private endpoint connections	0
		Network routing	Microsoft network routing
		Access for trusted Microsoft services	Yes
		Endpoint type	Standard

Security

Networking

6) Click containers under Data Storage on the left side and click on "+ Container"

Containers

Search containers by prefix:

Name	Last modified	Anonymous access level	Lease state
slogs	6/14/2024, 8:36:18 PM	Private	Available

Containers

File shares

Queues

Tables

Tables

Containers

File shares

Queues

Tables

Containers

File shares

Queues

Tables

Containers

File shares

Queues

Tables

7) Give a name & select "blob" in Anonymous access level and click on create

Name	Last modified	Anonymous access level
r17	6/14/2024, 8:36:18 PM	Private

8) Click on upload and browse for files

9)Upload any file/image/audio/video/pdf

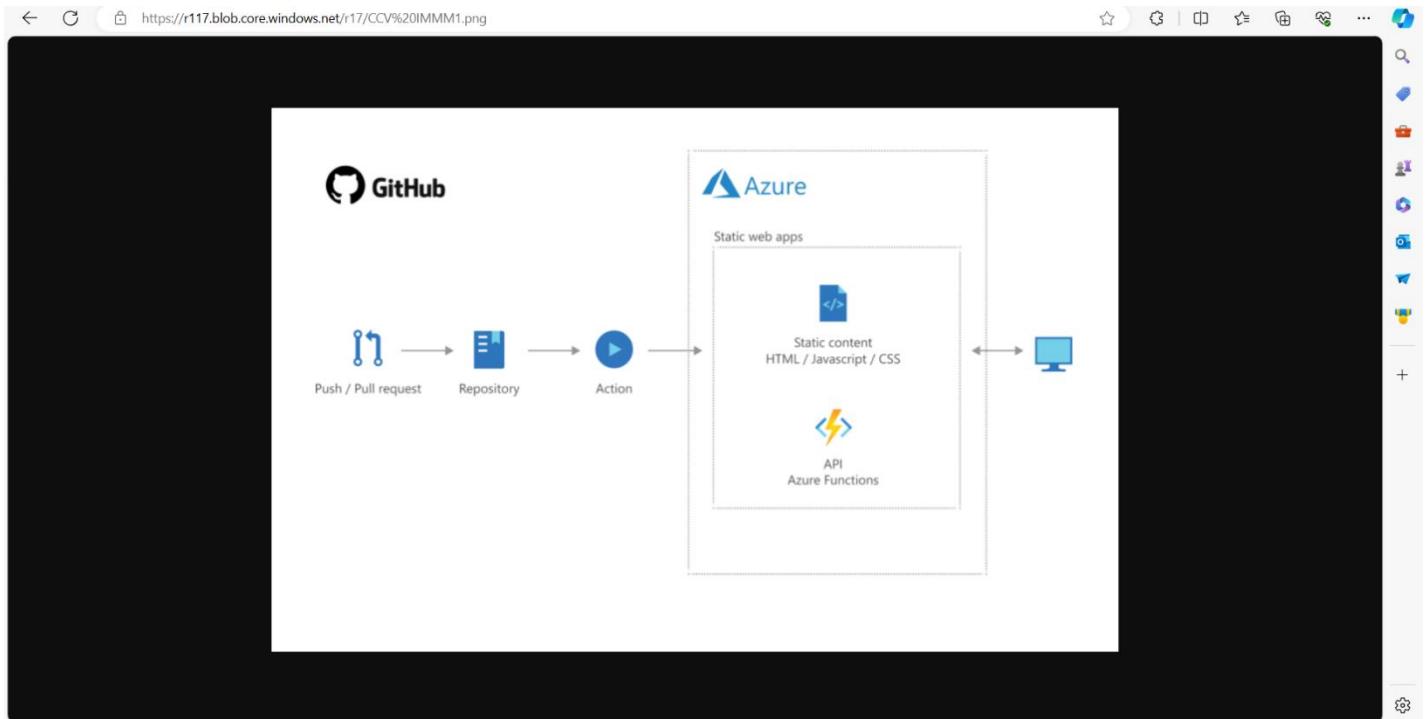
The screenshot shows the Microsoft Azure Storage Container blade for the 'r117' container. A modal window in the top right corner displays the message 'Successfully uploaded blob(s)' and 'Successfully uploaded 1 blob(s)'. The main table lists one file: 'CCV IMMM1.png'.

Name	Modified	Access tier	Archive status	Blob type	Size	Lease state
CCV IMMM1.png	6/14/2024, 8:40:47 PM	Hot (inferred)		Block blob	58.47 kB	Available

10)Click on the file which you have uploaded and copy url

The screenshot shows the Microsoft Azure Blob Properties blade for the file 'CCV IMMM1.png'. The 'Properties' section includes a 'Copied' link next to the 'URL' field, which contains the value 'https://r117.blob.core.windows.net/CCV%20IMMM1.png'. Other properties listed include Last Modified, Creation Time, Version ID, Type, Size, Access Tier, and more.

11) Paste the URL in any browser



12) To change the access level, click on Change access level

Access tier	Archive status	Blob type	Size	Lease state
Hot (inferred)		Block blob	58.47 KiB	Available

13)Select any Anonymous access level and click on OK

14)Again copy the URL of the file which you have uploaded previuosly and paste it any browser

```

<Error>
  <Code>ResourceNotFound</Code>
  <Message>The specified resource does not exist. RequestId:067b994f-e01e-0073-146d-bec2ec000000 Time:2024-06-14T15:16:01.0872151Z</Message>
</Error>

```

15) To delete a blob, select the blob and click on delete

16) To view the deleted blobs, click on "show deleted blobs"

The screenshot shows the Microsoft Azure Storage Container Overview page for a container named 'r17'. In the center, there is a table listing blobs. One blob, 'CCV IMMM1.png', is listed with a status of 'Deleted'. To the right of the table, there is a blue button labeled 'Show deleted blobs' with a circular arrow icon. Below the table, there is a 'More' button represented by three dots.

Name	Status	Retention (days)	Modified	Access tier	Archive status	Blob type	Size	Lease state
CCV IMMM1.png	Deleted	6	6/14/2024, 8:40:47 PM	Hot (Inferred)		Block blob	58.47 KiB	-

17) To undo deleted blob:

select the blob, click on more and click on undelete

The screenshot shows the same Microsoft Azure Storage Container Overview page as before. The blob 'CCV IMMM1.png' is selected, indicated by a blue checkmark icon. A context menu is open over the blob's row, showing options: 'Properties', 'View snapshots', and 'Undelete'. The 'Undelete' option is highlighted with a blue background and white text.

Q16)Find the procedure to implement static web hosting.

1.Create 2 websites named First.html and Second.html

Welcome to CCV

Links for Google and Facebook

1. [Google](#)
2. [Facebook](#)

2.Create and resource group named “r1”.

Name	Type	Location
s011	Storage account	Central India
ubuntu	Virtual machine	Central India
ubuntu-ns	Network security group	Central India
ubuntu925_z1	Network Interface	Central India
ubuntu_DataDisk_0	Disk	Central India
ubuntu_disk1_95fd376cf35742ac825061e013df7375	Disk	Central India

3.Create a storage account .

The screenshot shows the Microsoft Azure Storage accounts interface. On the left, a sidebar lists storage accounts: r117, s011 (selected), and s022. The main panel displays the details for 's011' under the 'Overview' tab. Key information includes:

- Resource group:** r117
- Location:** centralindia
- Subscription (move):** Azure for Students
- Subscription ID:** dfa58732-c441-4b58-addc-898a43fe4a93
- Disk state:** Primary: Available, Secondary: Available
- Tags:** Add tags

The 'Properties' tab is selected, showing Blob service settings like Hierarchical namespace (Disabled), Default access tier (Hot), and Blob anonymous access (Disabled). It also shows Security settings (Require secure transfer for REST API operations Enabled) and Networking settings (Allow access from All networks).

4.Click on storage account under data management click on static website and enable static website.

The screenshot shows the 'Static website' configuration for 's011'. The sidebar lists storage accounts: r117, s011 (selected), and s022. The main panel shows the 'Static website' section with the 'Enabled' button highlighted. Configuration options include:

- Index document name:** First.html
- Error document path:** Second.html

A note at the top right suggests improving page load time using Azure Front Door.

Index document name-First.html

Error document name-Second.html

5.Click on containers and click on web and upload the files.

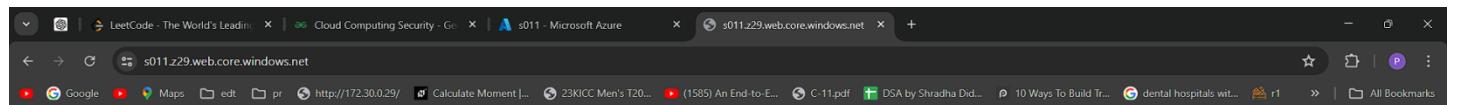
The screenshot shows the Microsoft Azure Storage account overview for 's011'. In the center, there is a table listing two blobs: 'First.html' and 'Second.html'. Both blobs were uploaded on 6/18/2024 at 11:07:33 PM and are categorized as 'Hot (Inferred)'. The table includes columns for Name, Modified, Access tier, Archive status, Blob type, Size, and Lease state. A message box in the top right corner indicates that two blobs have been successfully uploaded.

Name	Modified	Access tier	Archive status	Blob type	Size	Lease state
First.html	6/18/2024, 11:07:33 PM	Hot (Inferred)		Block blob	200 B	Available
Second.html	6/18/2024, 11:07:33 PM	Hot (Inferred)		Block blob	21 B	Available

6.Copy the path from the primary endpoint and paste it in the browser to view the website.

The screenshot shows the 's011 | Static website' configuration page. Under the 'Static website' section, the 'Enabled' button is set to 'Enabled'. The 'Primary endpoint' is listed as 'https://s011.z29.web.core.windows.net/'. Below this, the 'Index document name' is set to 'First.html' and the 'Error document path' is set to 'Second.html'.

7.Primary document website



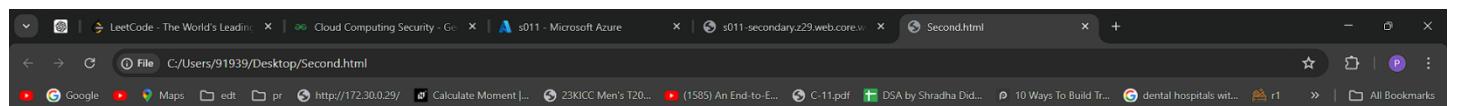
Welcome to CCV

Links for Google and Facebook

1. [Google](#)

2. [Facebook](#)

Error document



Invalid page

Q17) Create an Object replication in Azure machine

1. Create a Storage account with Name: s011 click on create and deployment completed

The screenshot shows the Microsoft Azure portal with the URL <https://portal.azure.com/#view/HubsExtension/DeploymentDetailsBlade/~/overview/id/%2Fsubscriptions%2Fdfa58732-c441-4b58-addc-898a43fe4a93%2FresourceGroups%2Fr1%2Fpr...>. The page displays a deployment status message: "Your deployment is complete". It includes deployment details: Deployment name: s011_1718621347431, Subscription: Account for Students, Resource group: r1, Start time: 6/17/2024, 4:19:15 PM, Correlation ID: fbe568c-2bc7-4c63-88f1-688a846d37f6. There are links for "Go to resource", "Give feedback", and "Tell us about your experience with deployment". To the right, there are promotional cards for Cost Management, Microsoft Defender for Cloud, Free Microsoft tutorials, and Work with an expert.

2. Under Data storage click new container with name: c011 and upload image.

The screenshot shows the Microsoft Azure portal with the URL <https://portal.azure.com/#/resource/subscriptions/dfa58732-c441-4b58-addc-898a43fe4a93/resourceGroups/r1/providers/Microsoft.Storage/storageAccounts/s011/c...>. The left sidebar shows the navigation path: Home > s011 > Containers. The main area shows a table of existing containers: Name (Slogs), Last modified (6/17/2024, 4:19:47 PM), and Anonymous access level (Private). On the right, a "New container" dialog is open, showing the input field "Name" set to "c011" and "Anonymous access level" set to "Private (no anonymous access)". A note states: "The access level is set to private because anonymous access is disabled on this storage account." At the bottom of the dialog are "Create" and "Give feedback" buttons.

3. Create another storage account name: s022 and add container name: c022

s022 | Containers

Name	Last modified	Anonymous access
\$logs	6/17/2024, 4:26:29 PM	Private

New container

Name * c022

Anonymous access level Private (no anonymous access)

The access level is set to private because anonymous access is disabled on this storage account.

Create Give feedback

4. In Storage account (s011) go to Under Data management click on Object Replication.

s011 | Object replication

When object replication is enabled, blobs are copied asynchronously from a source storage account to a destination account. Cross-tenant policies will appear under "Other accounts", along with policies on accounts not in an active subscription or on deleted accounts. The storage accounts may be in different Azure regions. Learn more.

Your accounts Other accounts

Objects copied from this account

Destination account	Source container	Destination container	Filters
No replication policies found			

Objects copied into this account

Source account	Source container	Destination container	Filters
No replication policies found			

5. Click on create Replication rules

- Destination Storage account: s022
- Source container: c011
- Destination container: c022(copy cover – only new object change)

The screenshot shows the 'Create replication rules' page in the Microsoft Azure portal. At the top, there's a navigation bar with links to Home, Storage accounts, and Object replication. Below that, a sub-header says 'Create replication rules'. A note at the top left states: 'When you create object replication rules, blob change feed and blob versioning are automatically enabled for the source and destination storage accounts. Enabling these features may increase costs.' Below this, the 'Destination details' section asks to specify source and destination storage accounts. The 'Source subscription' dropdown is set to 'Azure for Students' and 'Source storage account' is 's011'. The 'Destination subscription' dropdown is set to 'Azure for Students' and 'Destination storage account' is 's022'. Under 'Container pair details', it shows a mapping between 'c011' in 's011' and 'c022' in 's022'. There are 'Filters' and 'Copy over' options. A note below says: 'To configure more than 10 container pairs (up to 1000), see [Configure object replication using a JSON file](#)'. At the bottom are 'Create' and 'Cancel' buttons.

6. Check in storage account in s022 to container-c022(verify image)