

Cloud Computing and Virtualization

Laboratory Manual

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CSM-B

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9. Create a Virtual machine and do scale up in Azure.
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12. How to create storage account, container and upload / delete objects.
13. File sharing using Storage Accounts in Azure.
- 14.
- 15.

Lab Experiment-1

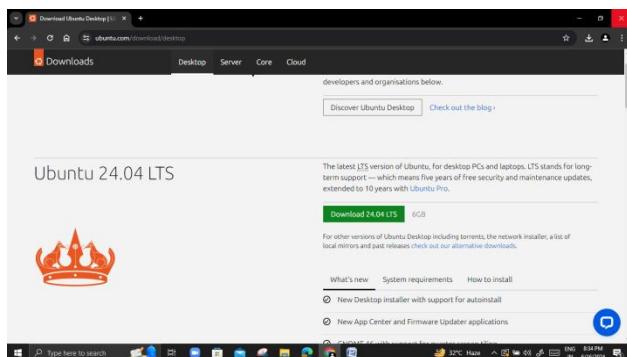
Install Virtual box and making Ubuntu and Window Virtual Machine.

Step-1: Download virtualbox for windows from

<https://www.virtualbox.org/wiki/Downloads> and install it to your computer.



Step-2: Download the Ubuntu ISO file from <https://ubuntu.com/download/desktop> and install it.

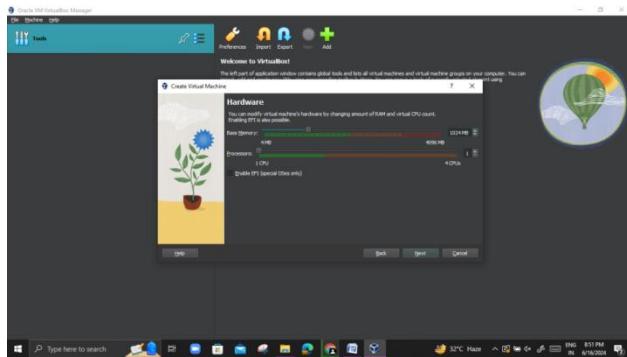


Step-3: Now open the Virtualbox and click on new

Step-4: Give your VM a name, choose Linux as the type and version as Ubuntu. Click on next.

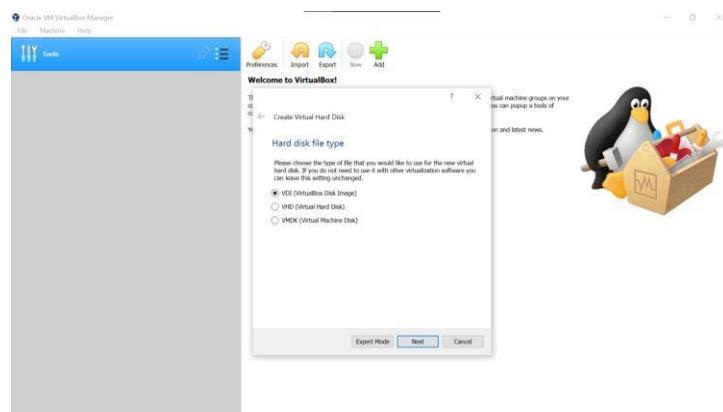


Step-5: Choose how much RAM you want to assign to the virtual machine and select Next. The recommended minimum is 1024 MB.



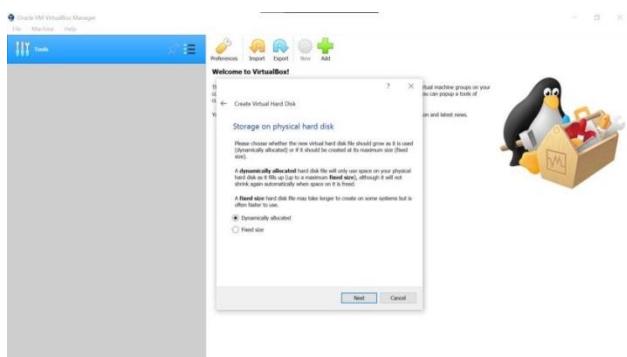
Step-6: Choose Create a virtual hard disk now and select Create.

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.

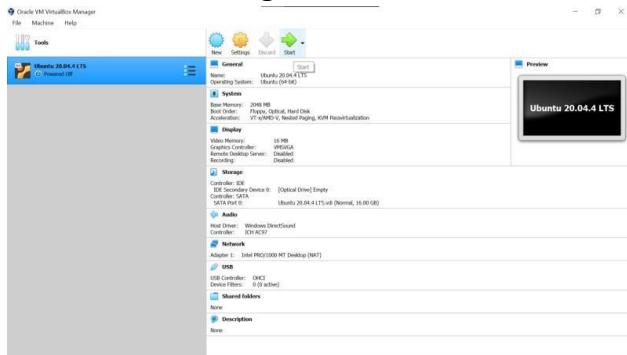


Tip: A fixed size disk performs better because the virtual machine doesn't have to increase the file size as you install software.

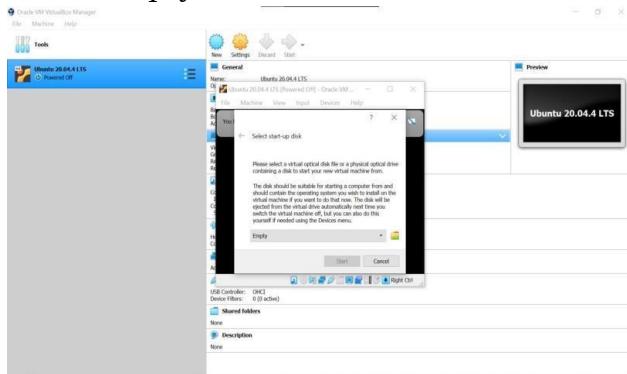
Step-9: Choose how much space you wish to set aside for Ubuntu and select Create.

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.

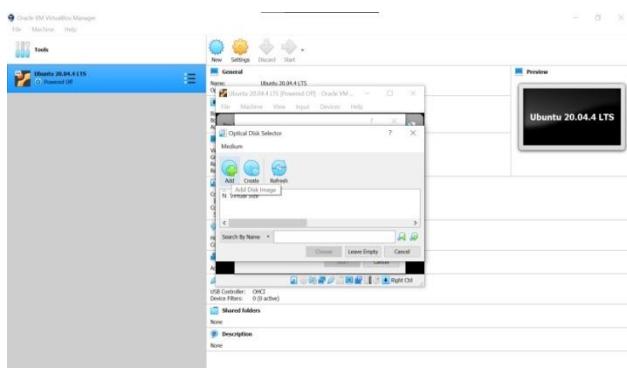
Step-10: The name of your virtual machine will now appear on the left side of the VirtualBox manager. Select Start in the toolbar to launch your VM.



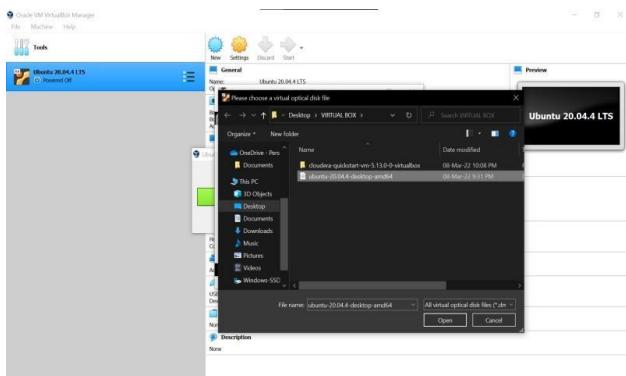
Step-11: This is the point where you need to choose the Ubuntu ISO file you downloaded earlier. If the VM doesn't automatically detect it, select the folder next to the Empty field.



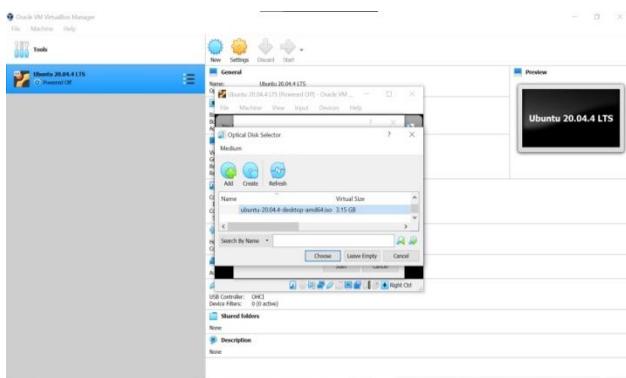
Step-12: Select Add in the window that pops up.



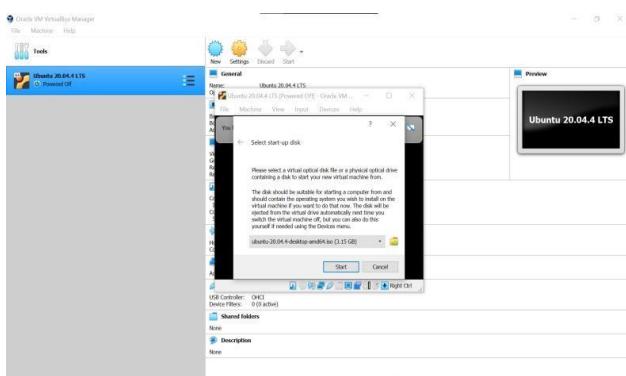
Step-13: Choose your Ubuntu disk image and select Open.



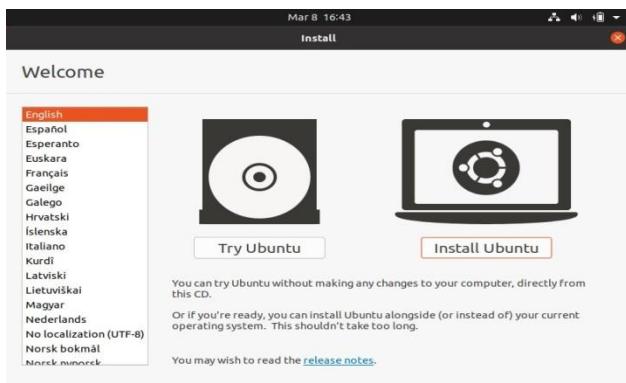
Step-14: - Select Choose



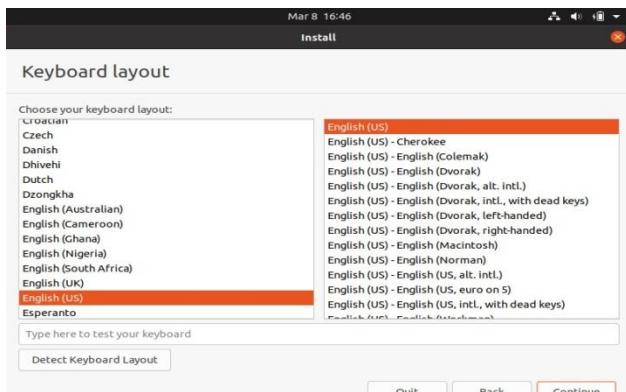
Step-15: Select Start.



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



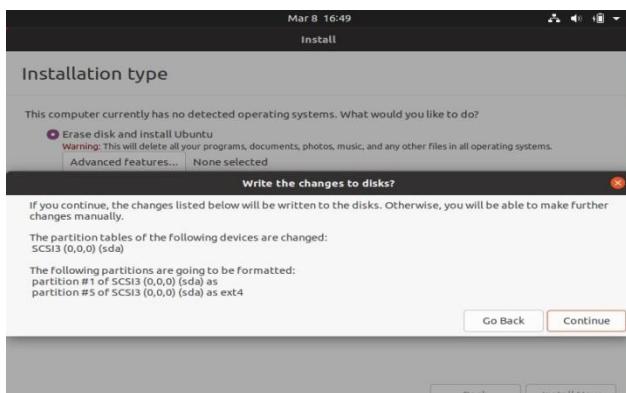
Step-17: Choose your keyboard layout and select Continue.



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

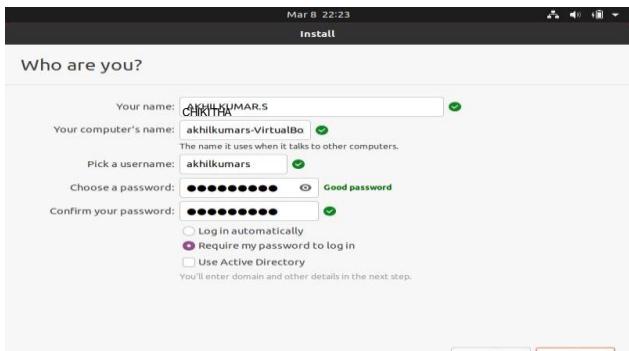
Step-19: Choose Erase disk and install Ubuntu and select Install Now, then select Continue to ignore the warning.

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

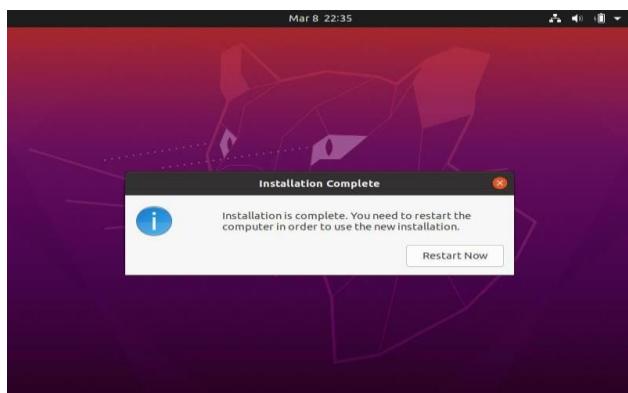


Step-20: - Choose your time zone on the map, then select Continue.

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



Step-22: - Select Restart Now.



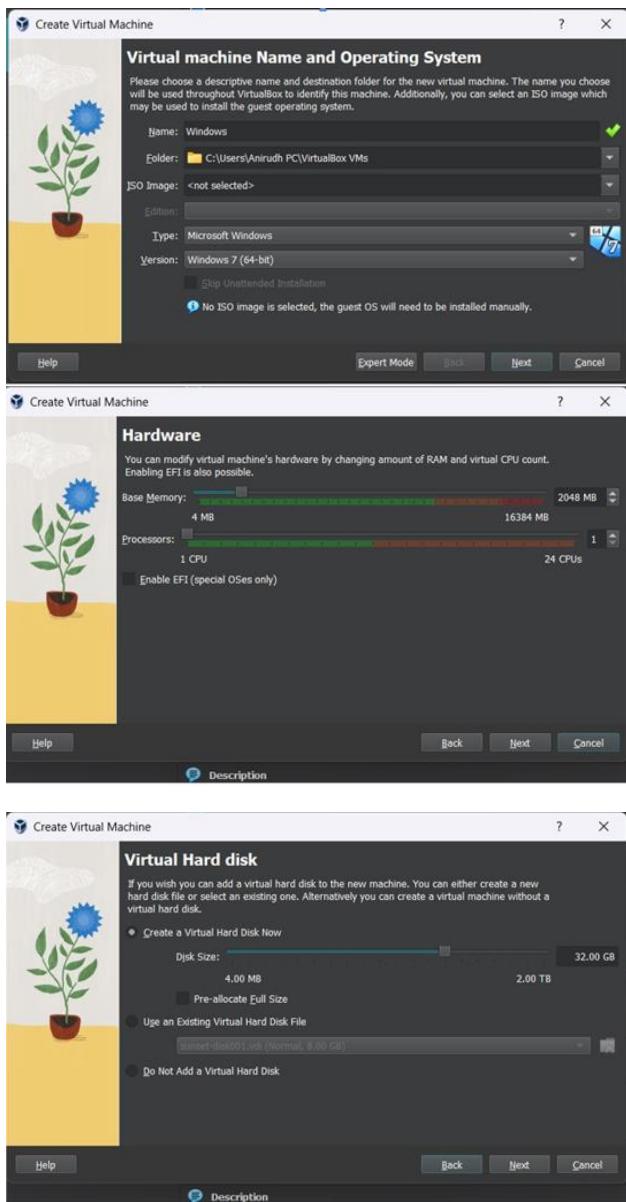
Step-23: - After restarting your VM and booting into Ubuntu, you may notice that the desktop doesn't scale correctly if you choose to view it in full-screen mode. You can fix this problem by selecting the VBox_Gas icon to install VirtualBox Guest Additions.

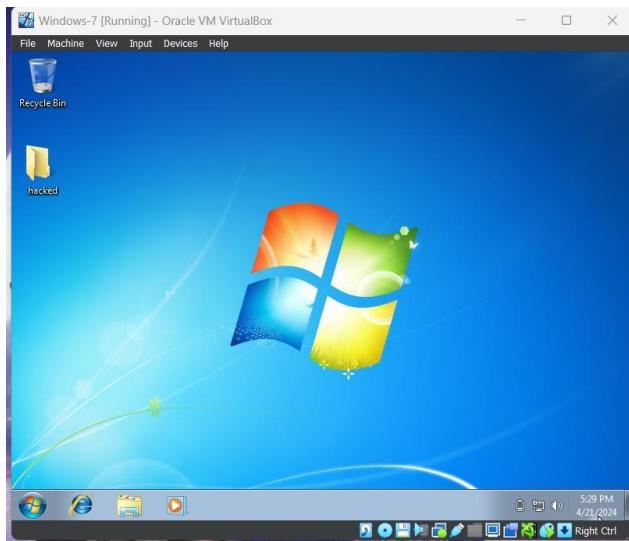


Lab Experiment-2

Install Virtual box and making Windows as Virtual Machine.

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





Lab Experiment-3

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

Step-1: Login to Azure and create a azure virtual machine.

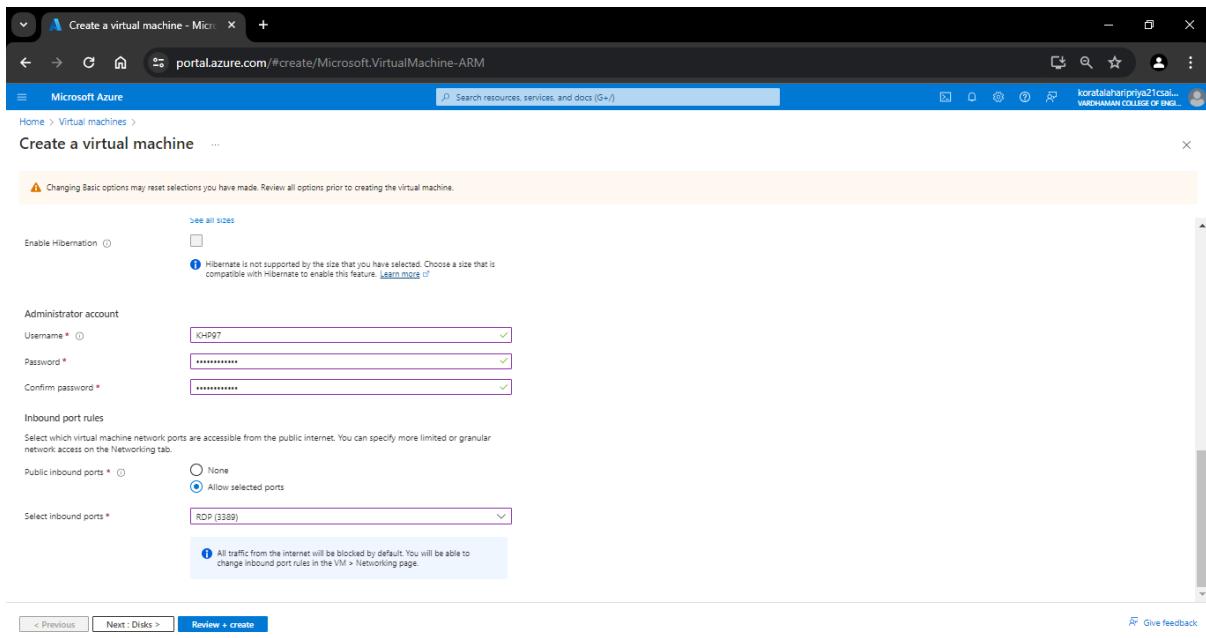
The screenshot shows the Microsoft Azure portal interface. At the top, there's a navigation bar with links for Home - Microsoft Azure, portal.azure.com/#home, Microsoft Azure, and a search bar. Below the navigation bar is the Azure services section with icons for Create a resource, Cost Management, Subscriptions, Virtual machines, Storage accounts, Resource groups, Quickstart Center, and More services. Under the 'Resources' section, there's a table showing a single entry: 'Azure for Students' under 'Subscription'. The 'Navigate' section includes links for Subscriptions, Resource groups, All resources, and Dashboard. The taskbar at the bottom shows various pinned apps and the current date and time as 6/16/2024.

2. Click on Review + create.

The screenshot shows the 'Create a virtual machine' wizard in the Microsoft Azure portal, currently on the 'Review + create' step. The configuration details shown include:

- Availability zone:** Zone 1 (radio button selected)
- Security type:** Trusted launch virtual machines
- Image:** Windows Server 2019 Datacenter - x64 Gen2 (radio button selected)
- VM architecture:** x64 (radio button selected)
- Size:** Standard_DS1_v2 - 1 vcpu, 3.5 GB memory (\$7.895.17/month) (dropdown selected)
- Administrator account:** (dropdown menu open)

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



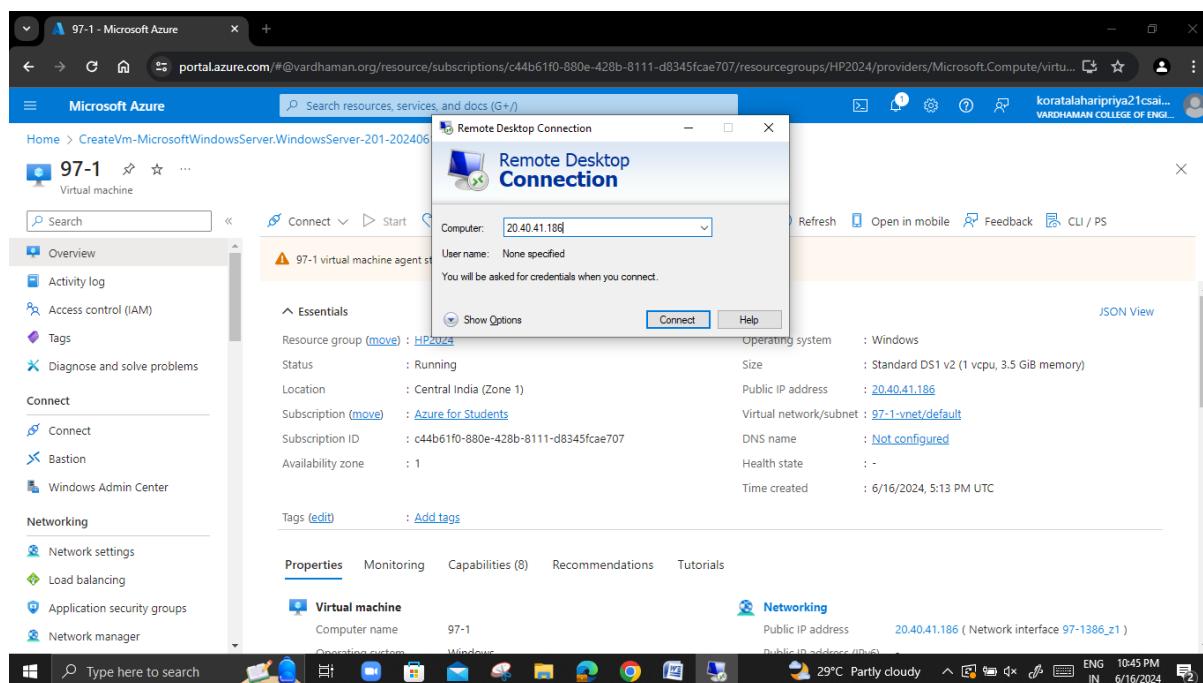
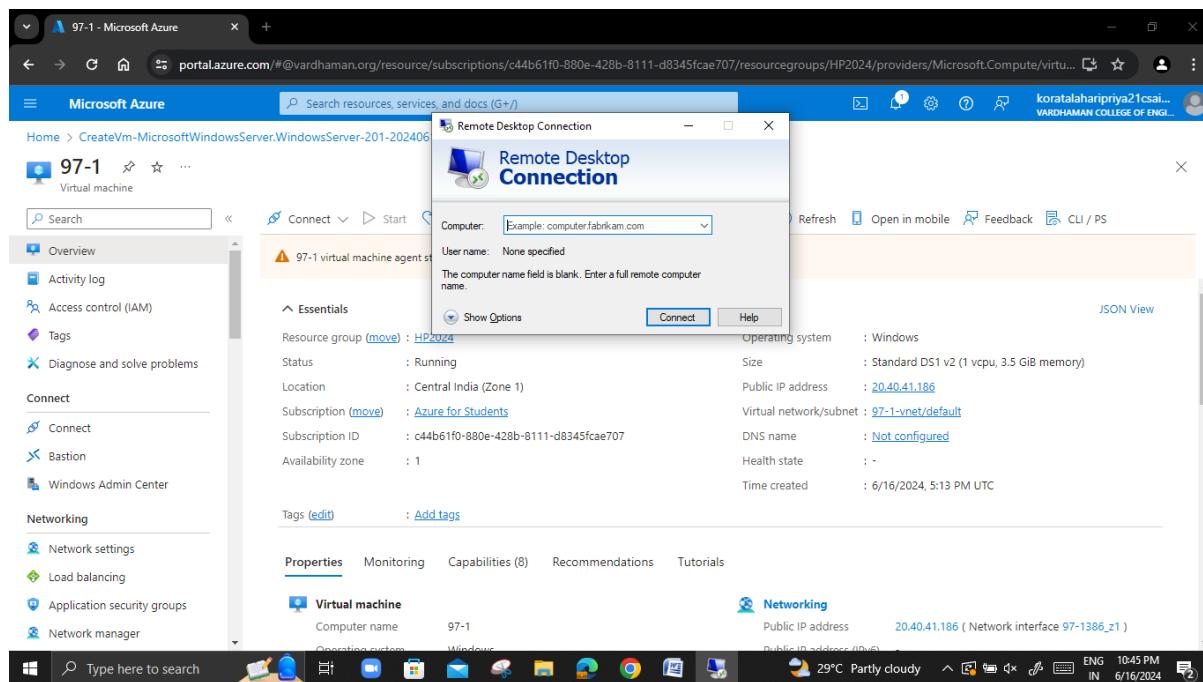
3. Copy public IP address and paste it in Remote Desktop Connection.

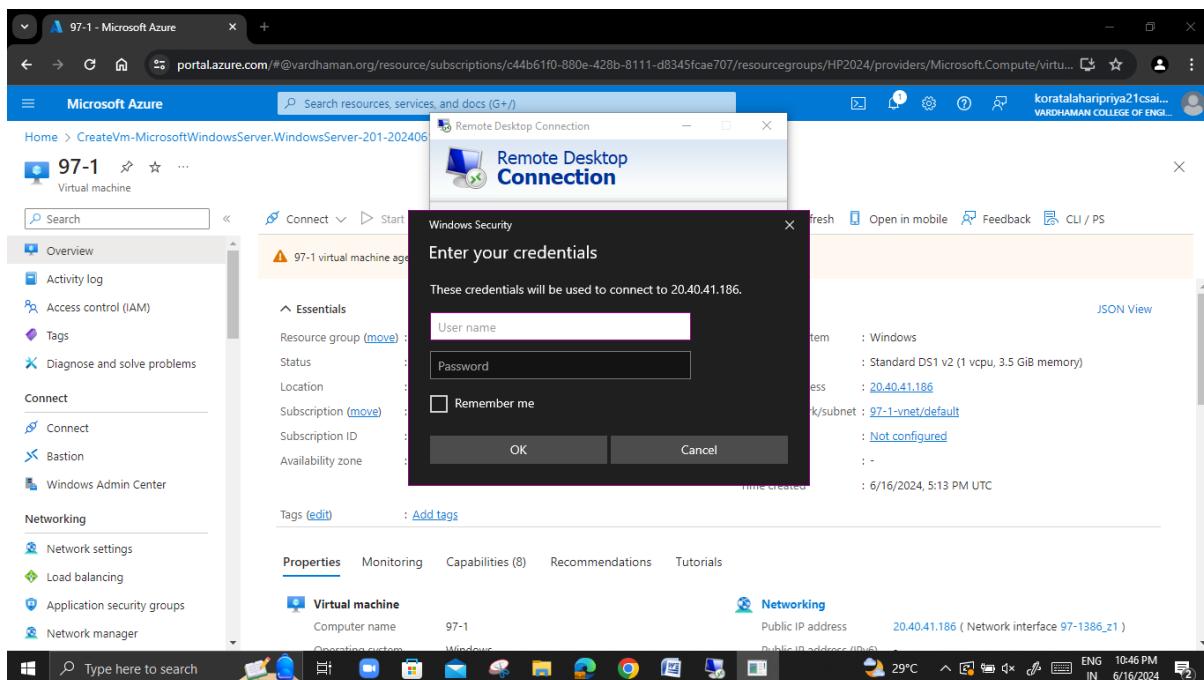
Essentials

Resource group (move) : HP2024	Operating system : Windows
Status : Running	Size : Standard DS1 v2 (1 vcpu, 3.5 GiB memory)
Location : Central India (Zone 1)	Public IP address : 20.40.41.186
Subscription (move) : Azure for Students	Virtual network/subnet : 97-1-vnet/default
Subscription ID : c44b61f0-880e-428b-8111-d8345fcae707	DNS name : Not configured
Availability zone : 1	Health state : -
	Time created : 6/16/2024, 5:13 PM UTC

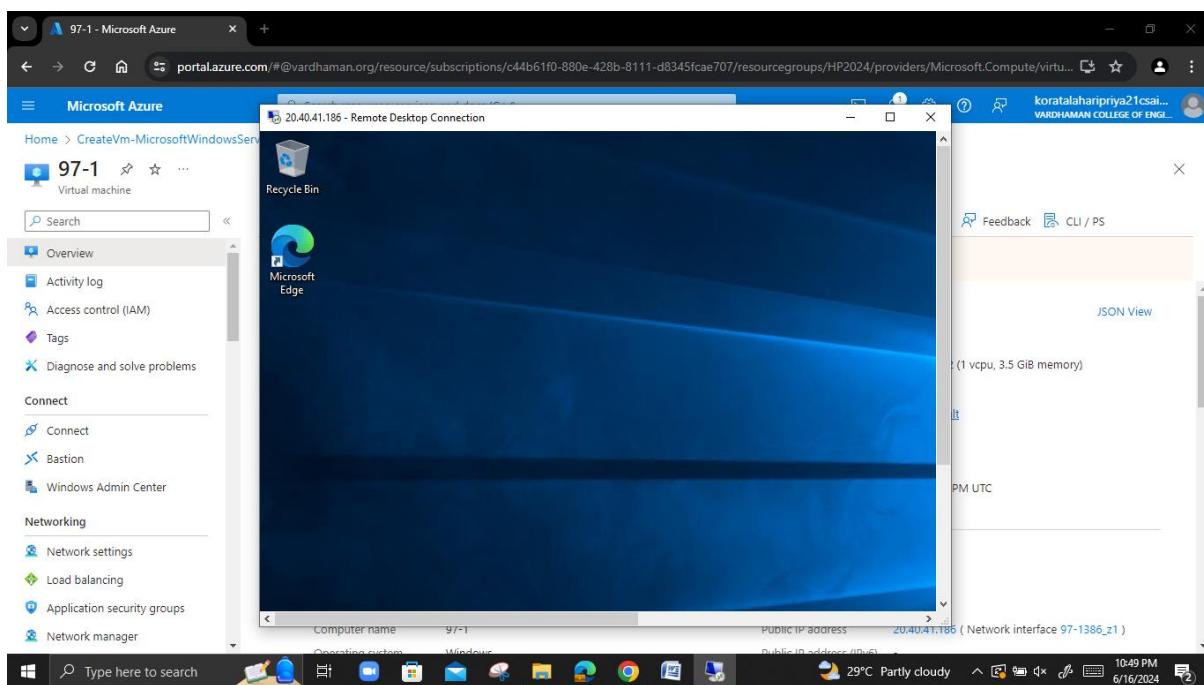
Networking

Public IP address : 20.40.41.186 (Network interface 97-1386_z1)
Public IP address (IDv6) :





4. Click on connect.



Lab Experiment-4

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.

Virtual machines

Subscription: India | Resource group: Azure for Students | Location: Central India | Status: Running | Operating system: Windows | Size: Standard_DS1_v2 | Public IP: 20.40.41.1

Type equals all | Resource group equals all | Location equals all | Add filter

No grouping | List view

Windows VM

Subscription: India | Resource group: Azure for Students | Location: Central India | Status: Running | Operating system: Windows | Size: Standard_DS1_v2 | Public IP: 20.40.41.1

More VMs and related solutions

Give feedback

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

Basic settings

Security type: Trusted launch virtual machines
 Configure security features

Image: Ubuntu Server 20.04 LTS - x64 Gen2
 See all images | Configure VM generation

VM architecture: x64
 Arm64

Run with Azure Spot discount:

Size: Standard_DS1_v2 - 1 vcpu, 3.5 GiB memory (₹5,101.50/month)
 See all sizes

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

< Previous | Next : Disks > | **Review + create** | Give feedback

Create a virtual machine

Administrator account

Authentication type: SSH public key
 Password

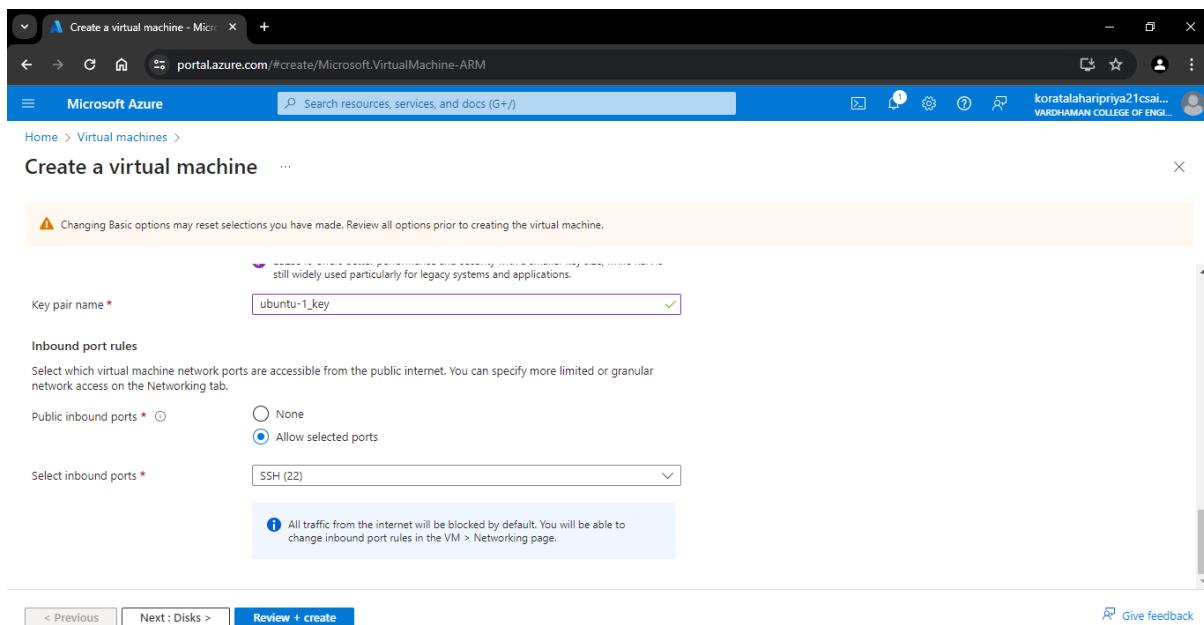
Azure now automatically generates an SSH key pair for you and allows you to store it for future use. It is a fast, simple, and secure way to connect to your virtual machine.

Username: azureuser

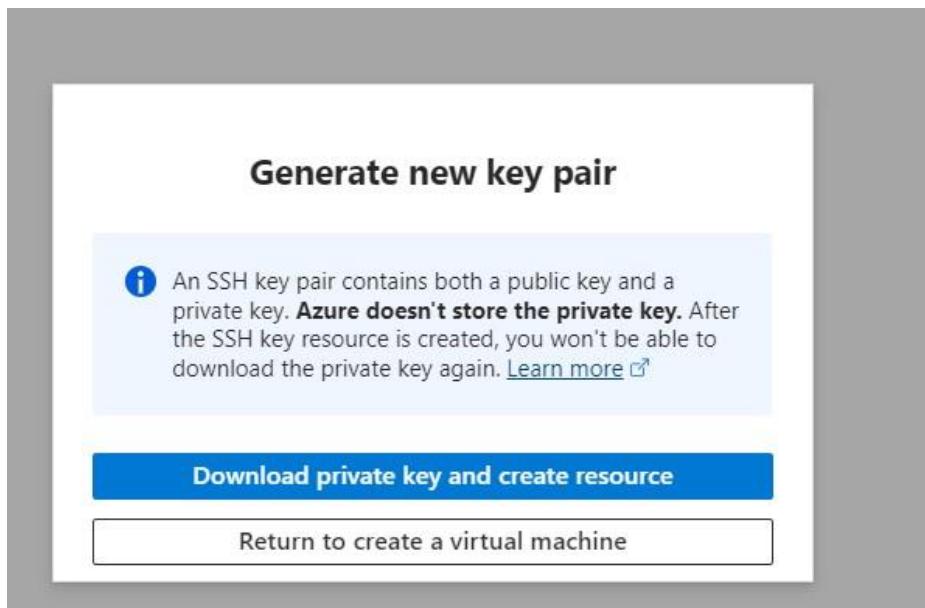
SSH public key source: Generate new key pair
 RSA SSH Format
 Ed25519 SSH Format
Ed25519 offers better performance and security with a smaller key size, while RSA is still widely used particularly for legacy systems and applications.

Key pair name: ubuntu-1 key

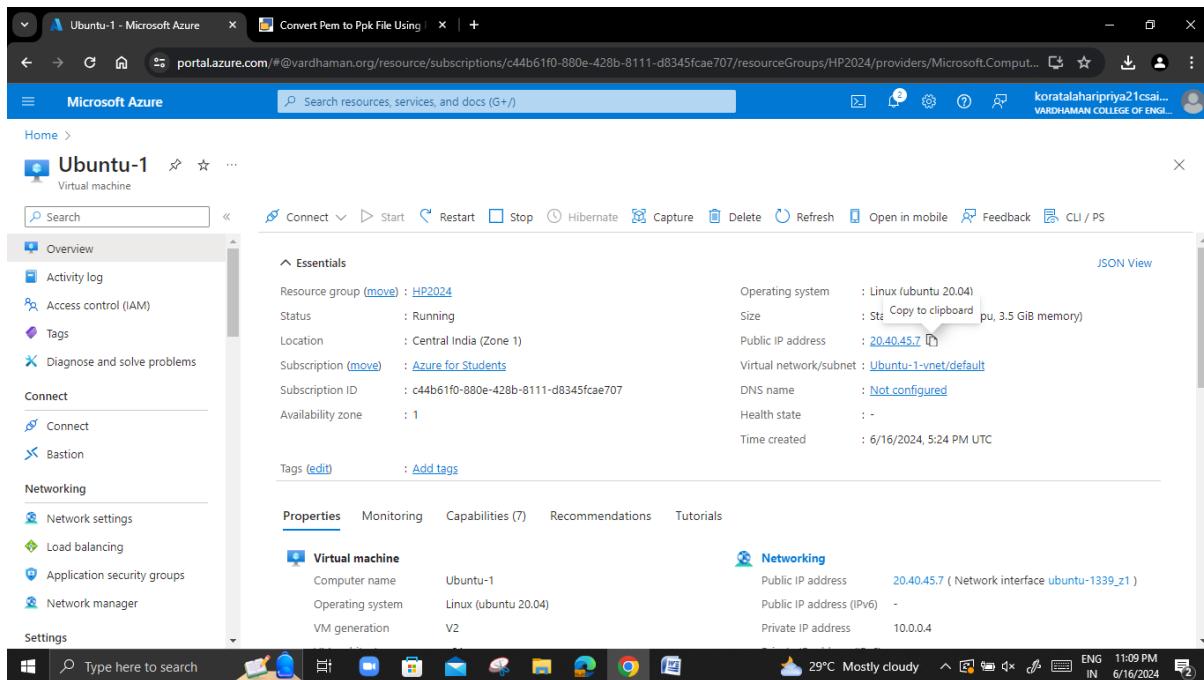
< Previous | Next : Disks > | **Review + create** | Give feedback



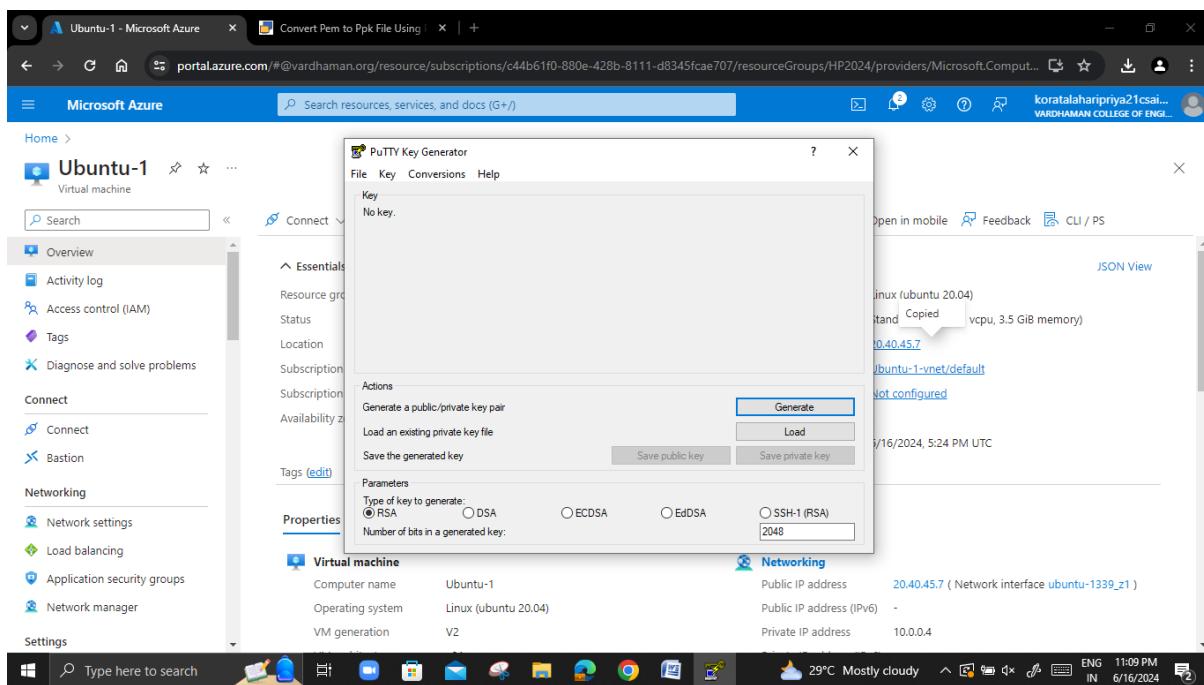
Step-4: After Deployment is over, Go to the remote desktop connection.

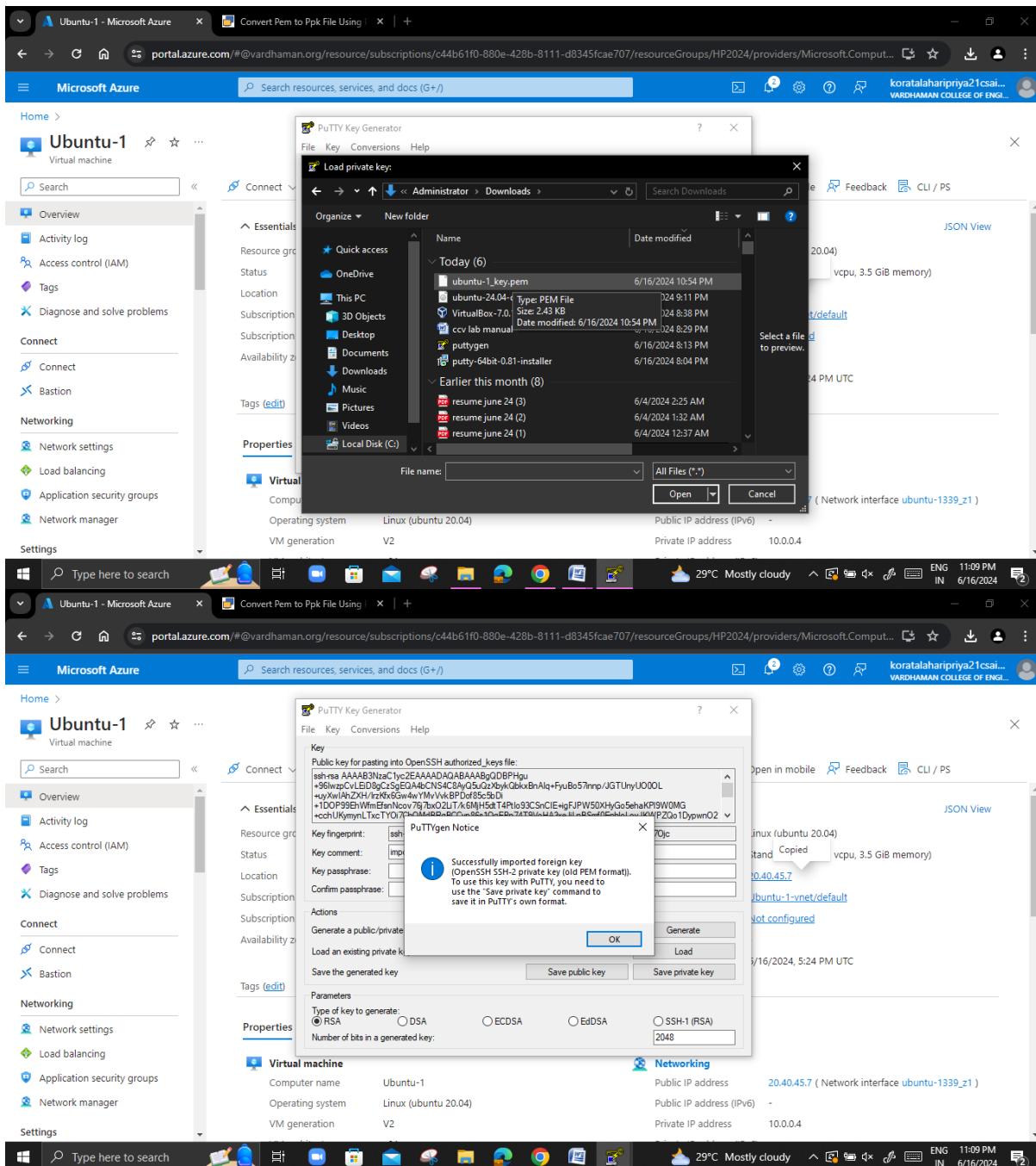


Step-5: Firstly, copy the public IP Address of that created virtual machine.

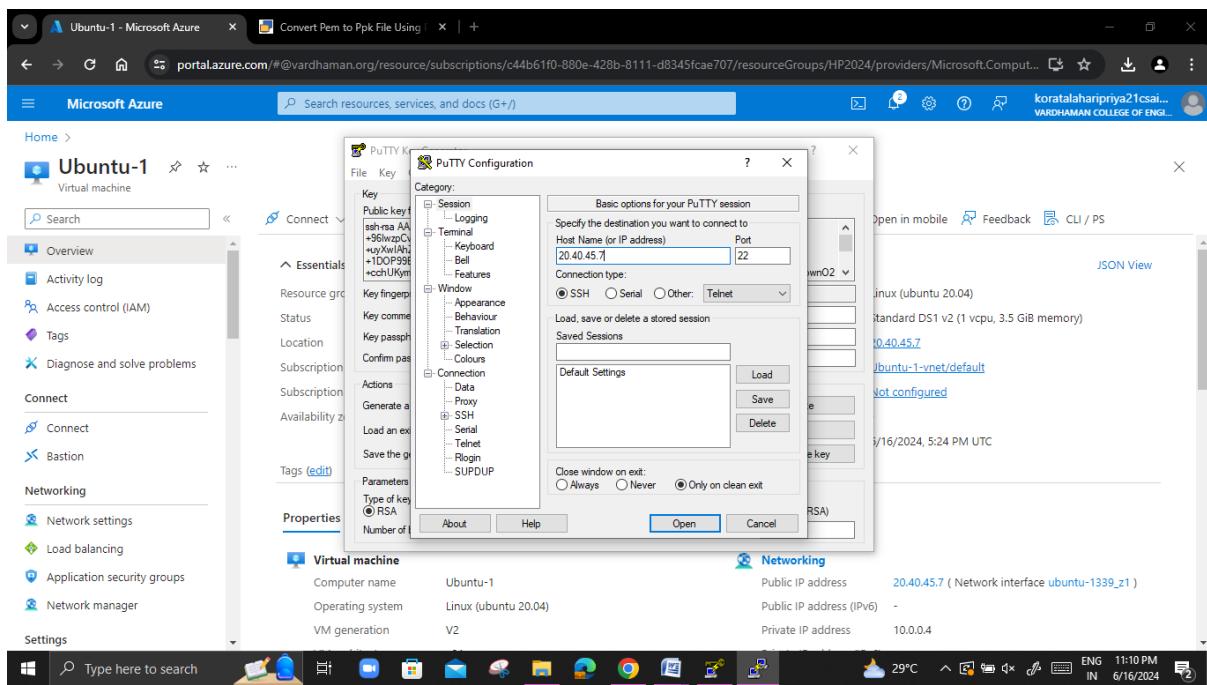


Step-6: Go to putty gen and click on load the key generator that you have downloaded.

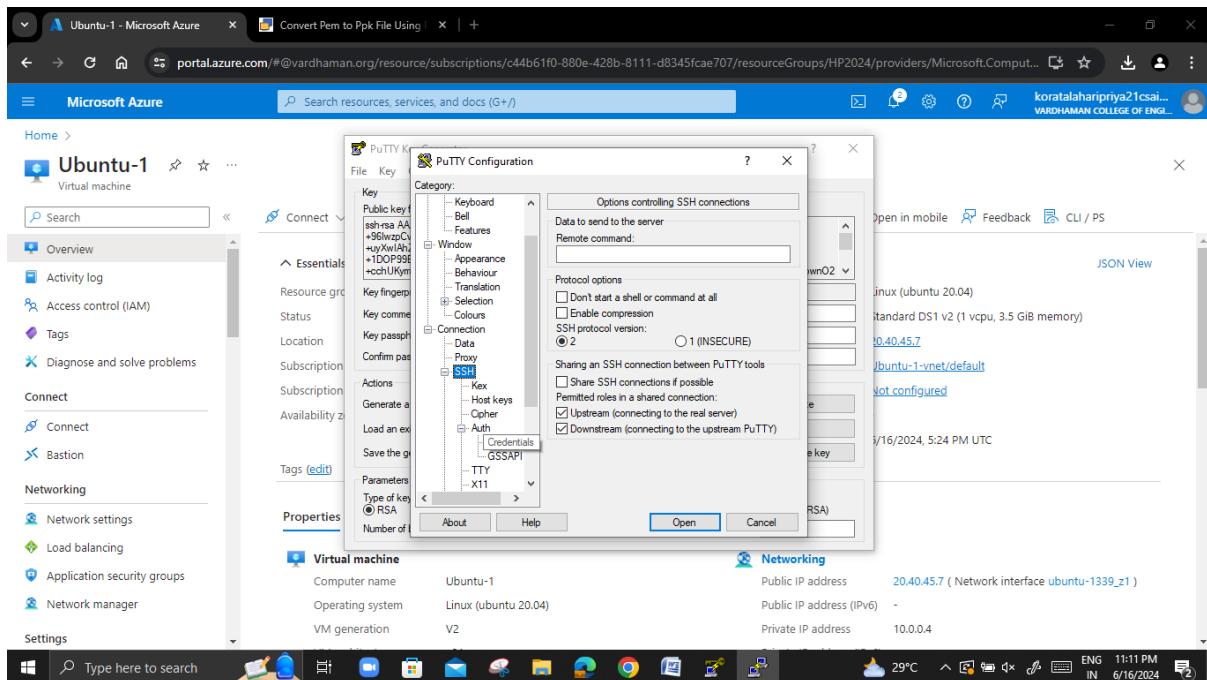


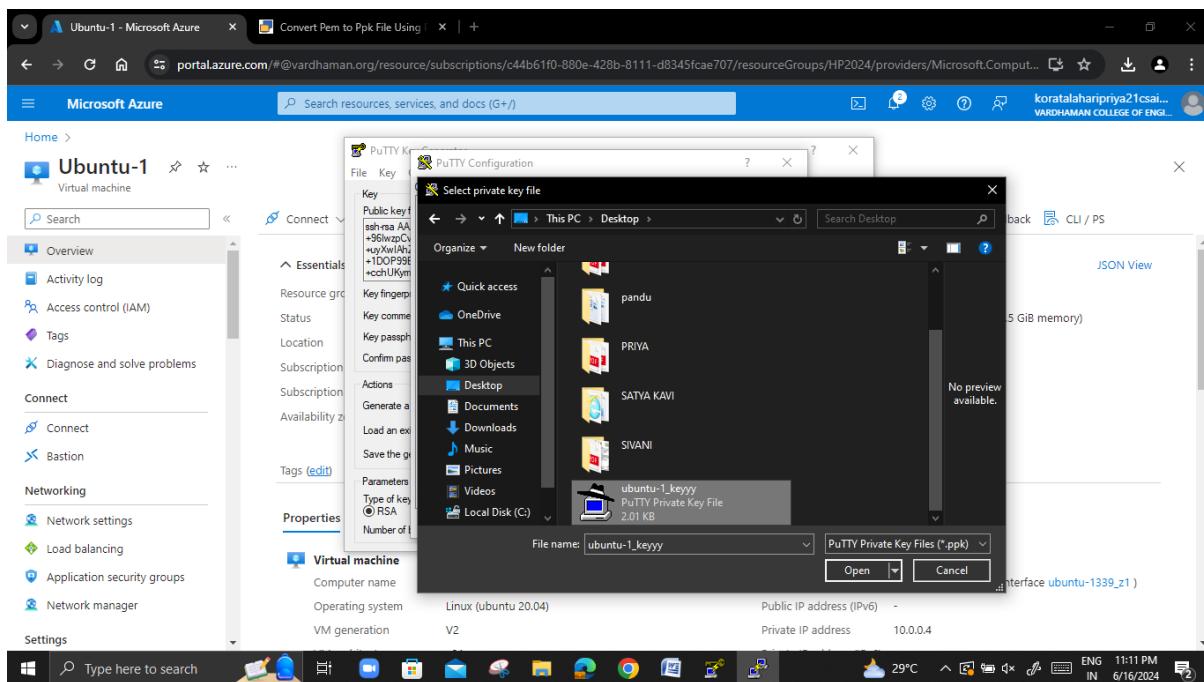


Step-7: In putty, put the Copied IP Adress into it, and then go to ssh->auth->credentials And the put the generated private key.



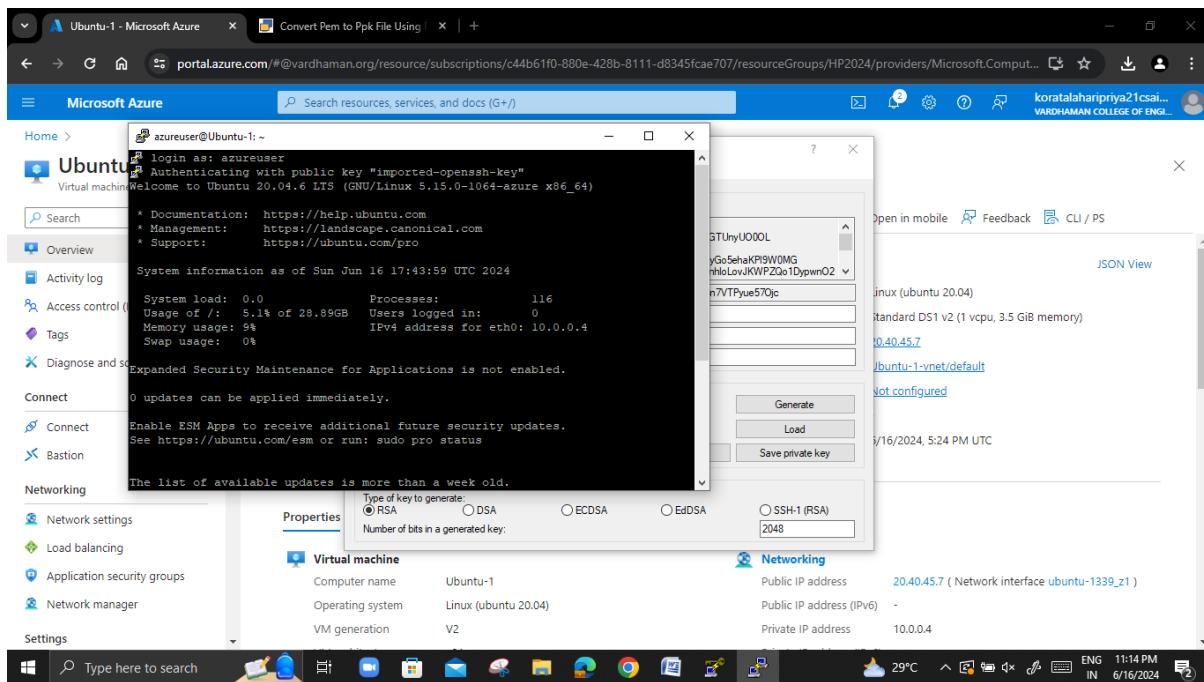
Step-8: A login page will be opened in that type your username and you will be into the ubuntu.





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

Output:

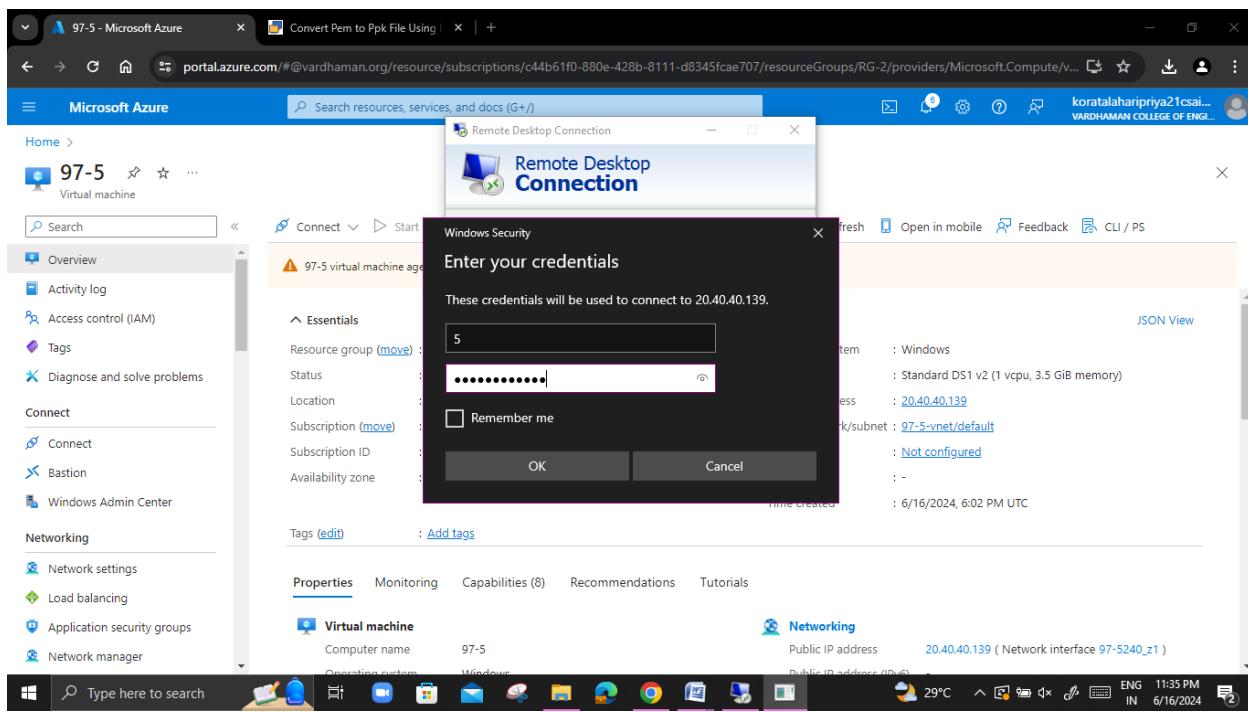


Lab Experiment-5

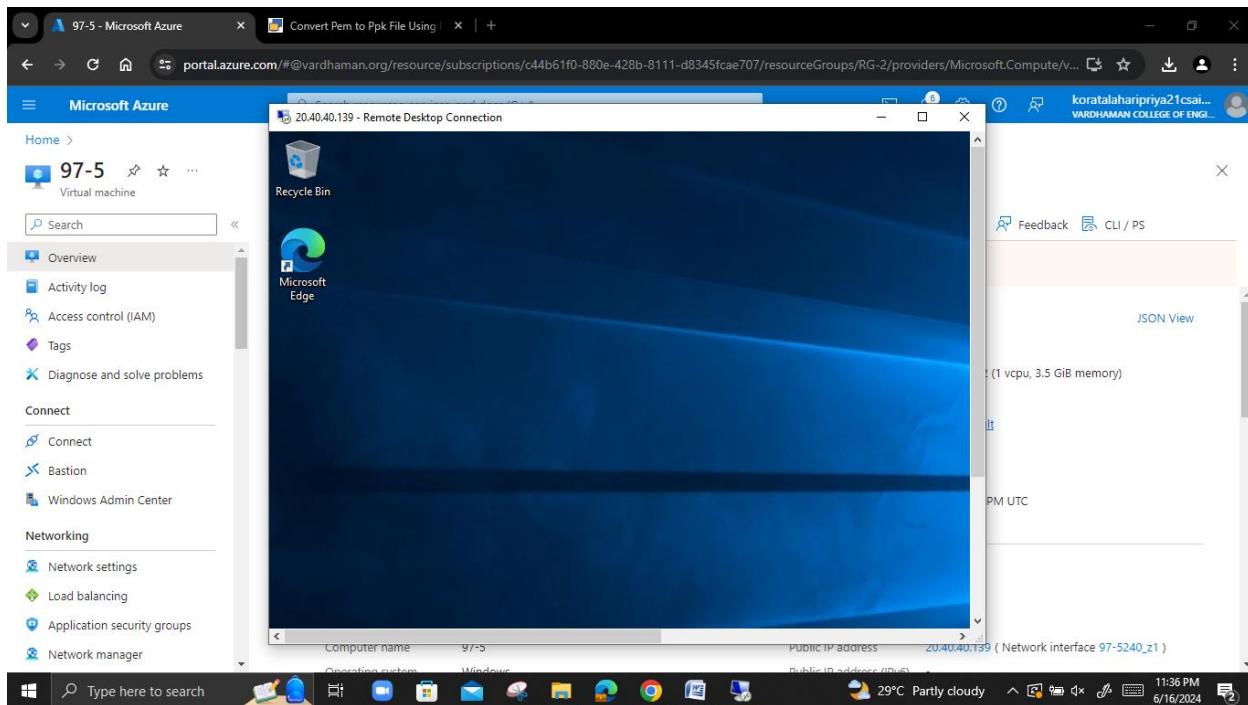
Create an instance in virtual machine and launch windows server through Azure portal and transfer files from local machine to guest machine.

Step-1: Login to Azure and create a azure virtual machine.

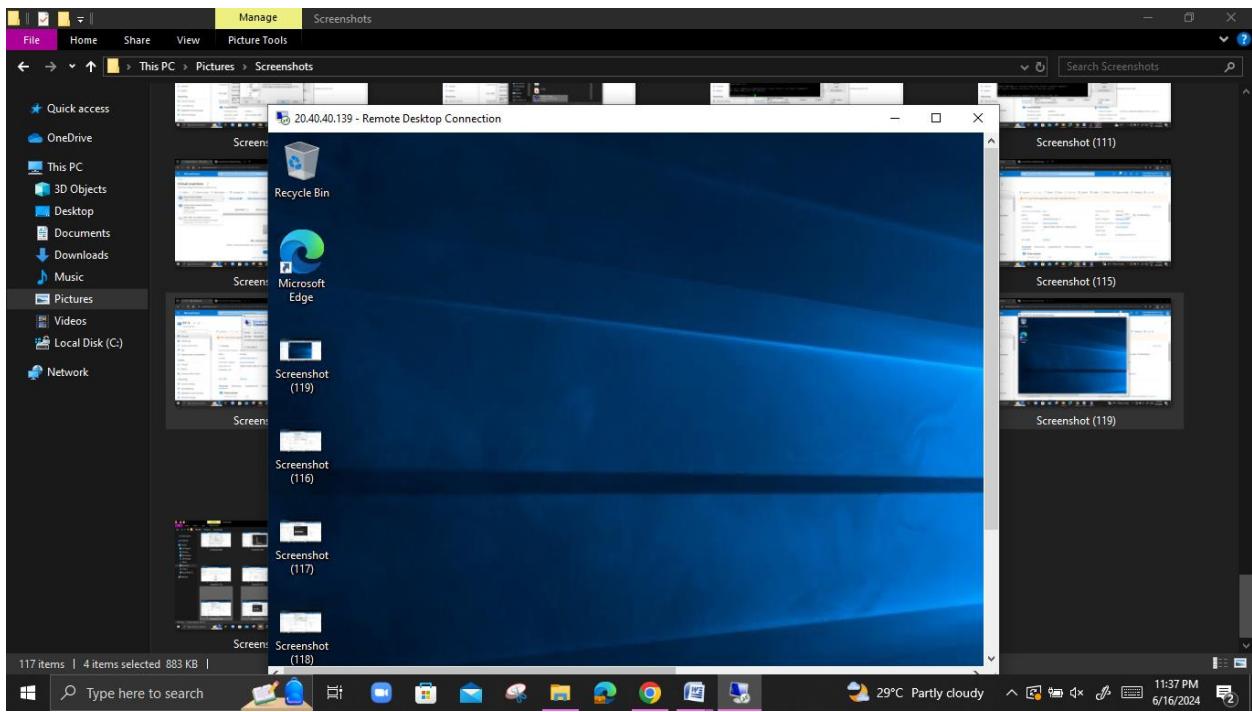
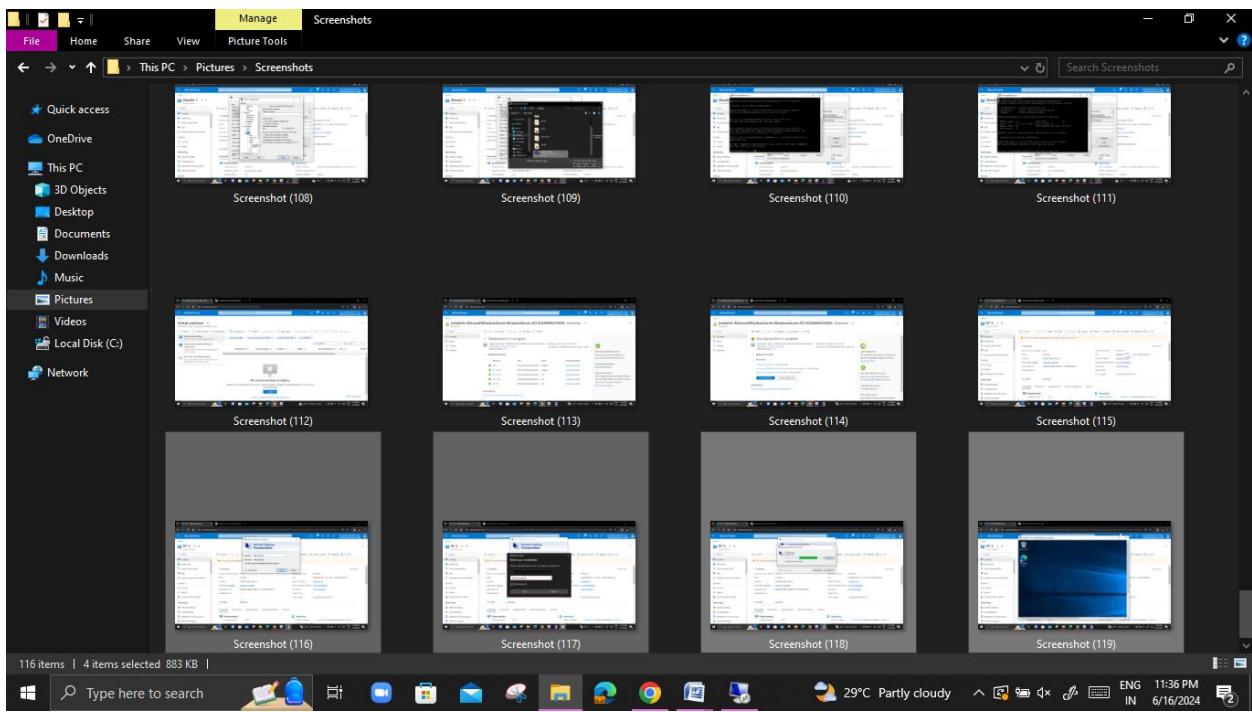
Step-2: Copy public IP address and paste it in Remote Desktop Connection.



3. Click on connect.



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



Lab Experiment-6

Configure azure linux server as web server (nginx).

The screenshot shows the Microsoft Azure Virtual machines dashboard. A search bar at the top right contains the query "Search resources, services, and docs (G+ /)". The main area displays a table of existing virtual machines. The columns are: Subscription, Resource group, Location, Status, Operating system, Size, and Public IP. One row is highlighted, showing the details: Subscription: Azure for Students, Resource group: RG-2, Location: Central India, Status: Running, Operating system: Windows, Size: Standard_DS1_v2, and Public IP: 20.40.40.1.

The screenshot shows the Windows taskbar. It includes a search bar with the placeholder "Type here to search", a pinned icon for Microsoft Edge, and other pinned icons for File Explorer, Mail, Photos, and others. The system tray shows the date and time as "6/16/2024 11:38 PM".

The screenshot shows the "Create a virtual machine" wizard on the "Basics" tab. The top navigation bar includes "Home > Virtual machines > Create a virtual machine". Below the tabs, it says "Create a virtual machine that runs Linux or Windows. Select an image from Azure marketplace or use your own customized image. Complete the Basics tab then Review + create to provision a virtual machine with default parameters or review each tab for full customization. [Learn more](#)". A note indicates "This subscription may not be eligible to deploy VMs of certain sizes in certain regions." The "Project details" section allows selecting a subscription ("Azure for Students") and a resource group ("RG-2"). The "Instance details" section shows the virtual machine name as "07-1". At the bottom, there are buttons for "< Previous" and "Next : Disks >".

Instance details

Virtual machine name * ✓

Region *

Availability options

Availability zone *

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

Security type

Image *

VM architecture x64

< Previous Next : Disks > Review + create Give feedback

Authentication type

SSH public key Password

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

Username * ✓

SSH public key source

SSH Key Type RSA SSH Format Ed25519 SSH Format

Ed25519 offers better performance and security with a smaller key size, while RSA is still widely used particularly for legacy systems and applications.

Key pair name * ✓

Inbound port rules

< Previous Next : Disks > Review + create Give feedback

Validation passed

Basics Disks Networking Management Monitoring Advanced Tags Review + create

Cost given below is an estimate and not the final price. For all your pricing needs, see the Azure Pricing page.

Price
1 X Standard DS1 v2 by Microsoft **6.9884 INR/hr**
Subscription credits apply (optional)
[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 frequency and at the same time intervals as the Marketplace offering(s).

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

Type here to search ENG IN 11:41 PM 6/16/2024

97-6 - Microsoft Azure

Home >

Virtual machine

Search

Connect Start Restart Stop Hibernate Capture Delete Refresh Open in mobile Feedback CLI / PS

Overview Activity log Access control (IAM) Tags Diagnose and solve problems

97-6 virtual machine agent status is not ready. Troubleshoot the issue →

Essentials JSON View

Resource group (move): RG-2	Operating system: Linux
Status: Running	Size: Standard_D2_v2 (2 CPU, 3.5 GB memory)
Location: Central India (Zone 1)	Public IP address: 20.40.43.110
Subscription (move): Azure for Students	Virtual network/subnet: 97-6-vnet/default
Subscription ID: c44b61f0-880e-428b-8111-d8345fcae707	DNS name: Not configured
Availability zone: 1	Health state: -
Tags (edit): Add tags	Time created: 6/16/2024, 6:11 PM UTC

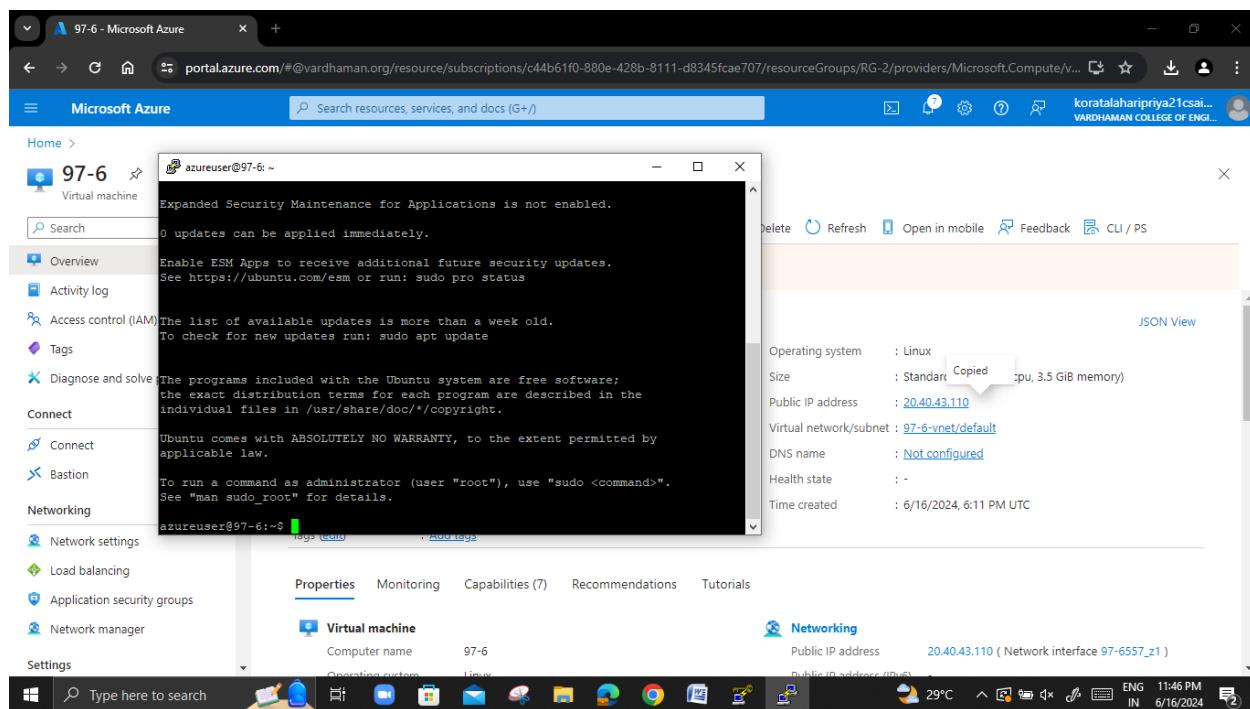
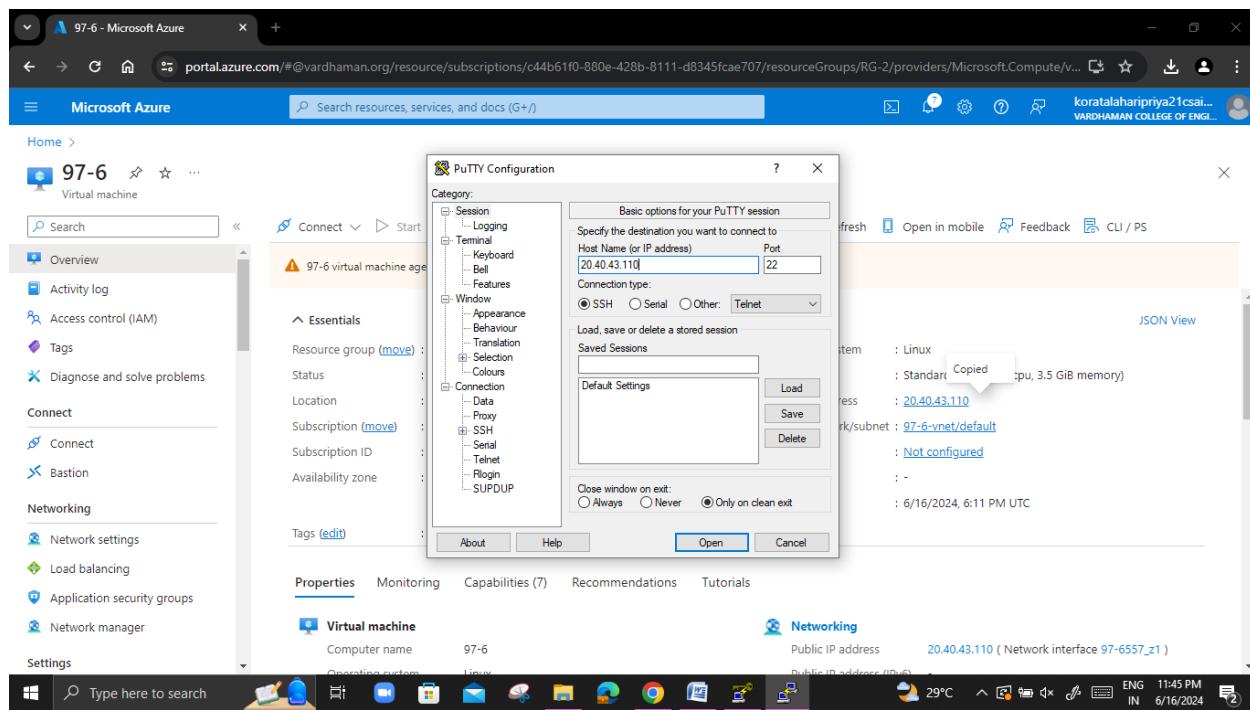
Properties Monitoring Capabilities (7) Recommendations Tutorials

Virtual machine
Computer name: 97-6
Operation system: Linux

Networking
Public IP address: 20.40.43.110 (Network interface 97-6-5557_z1)
Public IP address (ID): 97-6-5557_z1

Type here to search ENG IN 11:42 PM 6/16/2024

The screenshot shows the Microsoft Azure portal interface with a virtual machine named "97-6" selected. A "PuTTY Key Generator" window is open, showing options to generate or load a key pair. The "Generate" button is highlighted. Below it, a "Load private key" dialog is open, displaying a file selection interface for "Administrator > Downloads". The file "Ubuntu-1_key (1).pem" is selected. The Azure portal sidebar includes sections like Overview, Activity log, Connect, Networking, and Settings.



Lab Experiment-7

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

Step-1: Login to Azure and create a Virtual machine.

The screenshot shows the Microsoft Azure portal interface. The top navigation bar includes 'Virtual machines - Microsoft Az' and the URL 'portal.azure.com/#browse/Microsoft.Compute%2FvirtualMachines'. The main content area is titled 'Virtual machines' and shows a list of VMs. One VM, 'Windows-iis', is highlighted. The list includes columns for Subscription, Resource group, Location, Status, Operating system, Size, and Public IP. Below the list, there are filter options like 'Type equals all', 'Resource group equals all', and 'Location equals all'. A sidebar on the left provides links for creating a new VM, using preset configurations, and exploring more solutions.

The screenshot shows the 'Create a virtual machine' wizard in progress. The current step is 'Instance details'. The user has entered 'Windows-iis' for the virtual machine name, selected '(Asia Pacific) Central India' for the region, chosen 'Availability zone' for availability options, and selected 'Zone 1' for the availability zone. A note indicates that multiple zones can be selected to create one VM per zone. Other fields shown include security type ('Trusted launch virtual machines') and image selection ('Windows Server 2019 Datacenter - x64 Gen2'). Navigation buttons at the bottom include 'Previous', 'Next: Disks >', and 'Review + create'.

Create a virtual machine

Username * iis

Password * Confirm password *

Inbound port rules

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

Public inbound ports * None Allow selected ports

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

- HTTP (80)
- HTTPS (443)
- SSH (22)
- RDP (3389)

< Previous Next : Disks > Review + create Give feedback

Virtual machines

Windows-iis Virtual machine

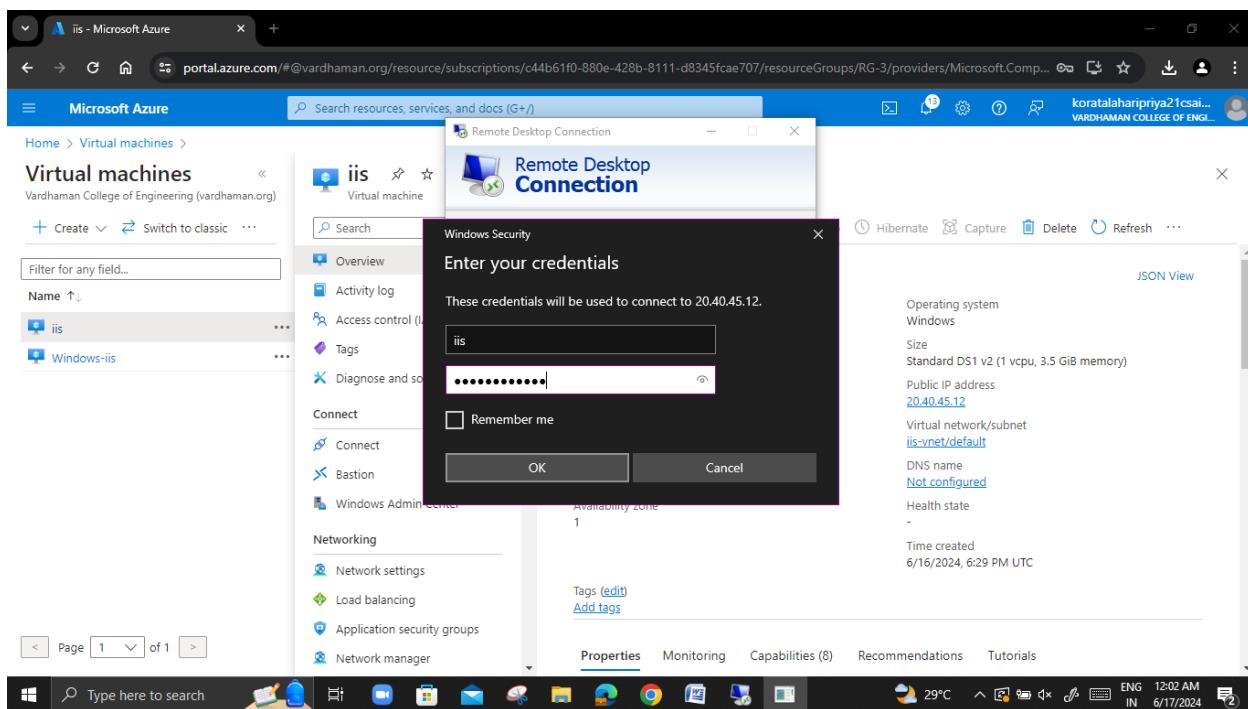
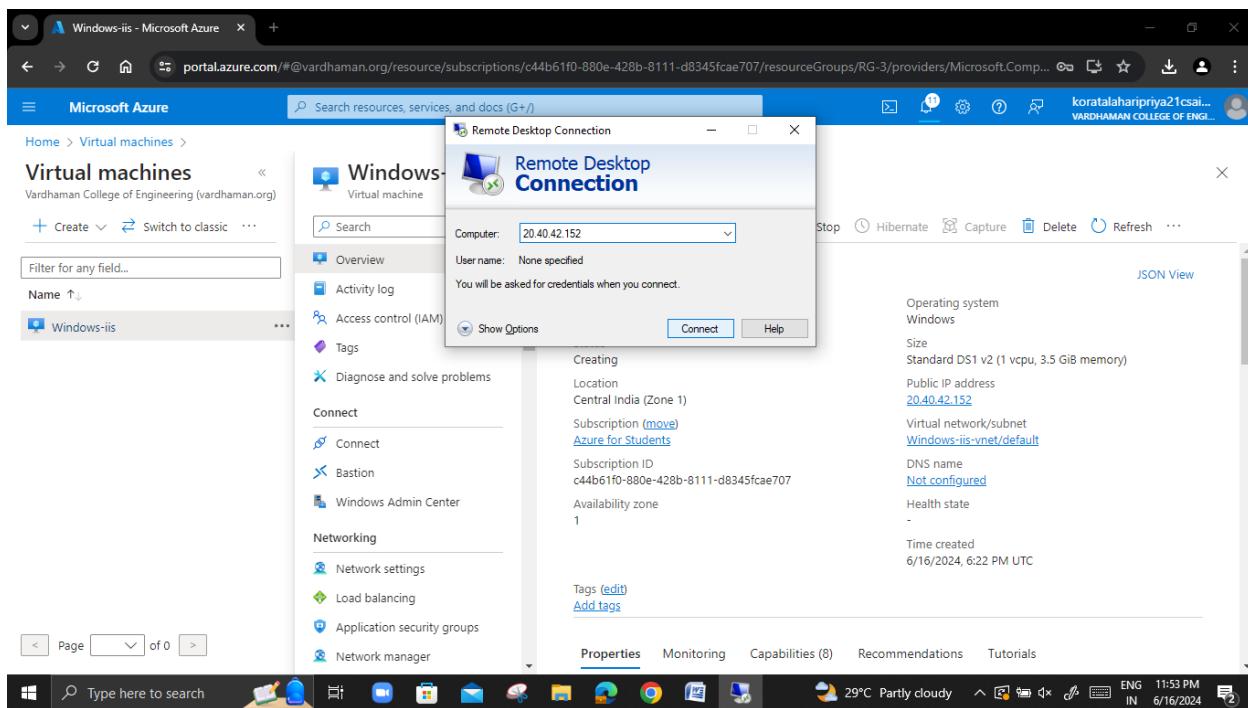
Overview Activity log Access control (IAM) Tags Diagnose and solve problems Connect Bastion Windows Admin Center Network settings Load balancing Application security groups Network manager

Essentials

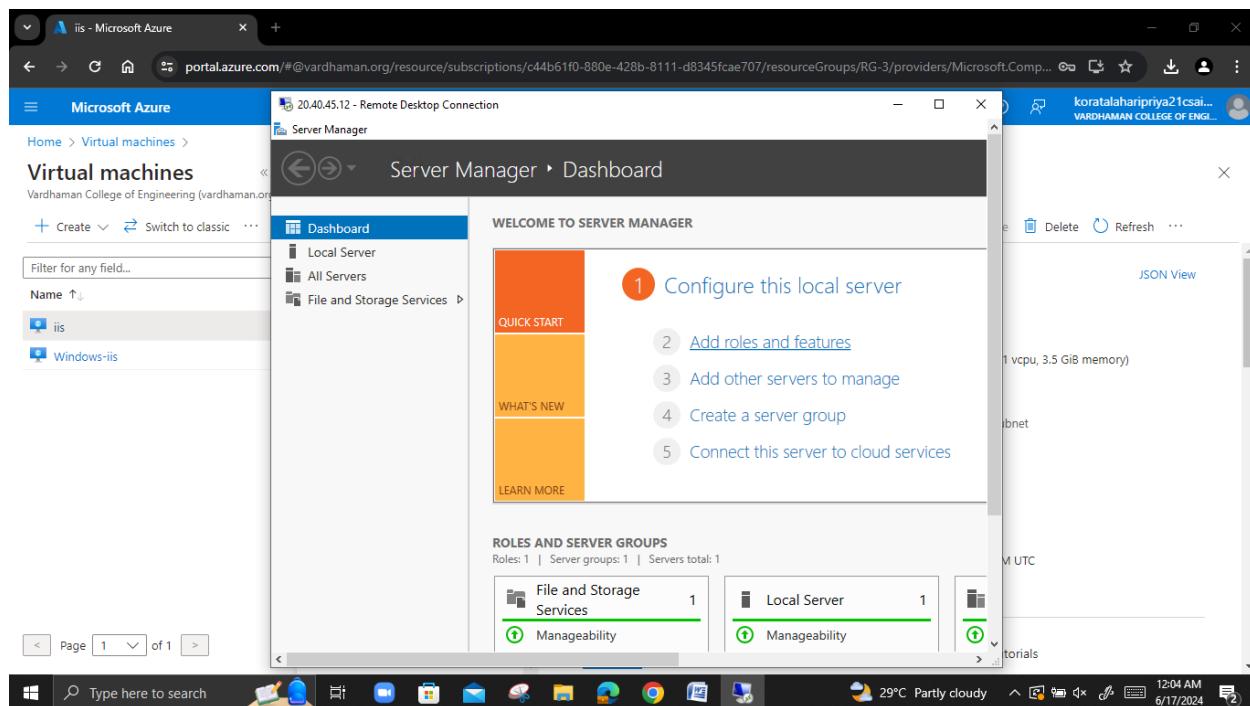
Resource group (move) RG-3 Status Creating Location Central India (Zone 1) Subscription (move) Azure for Students Subscription ID c44b61f0-880e-428b-8111-d8345fcae707 Availability zone 1 Tags (edit) Add tags

Operating system Windows Size Standard DS1 v2 (1 vcpu, 3.5 GiB memory) Public IP address 20.40.42.152 Virtual network/subnet Windows-iis-vnet/default DNS name Not configured Health state - Time created 6/16/2024, 6:22 PM UTC

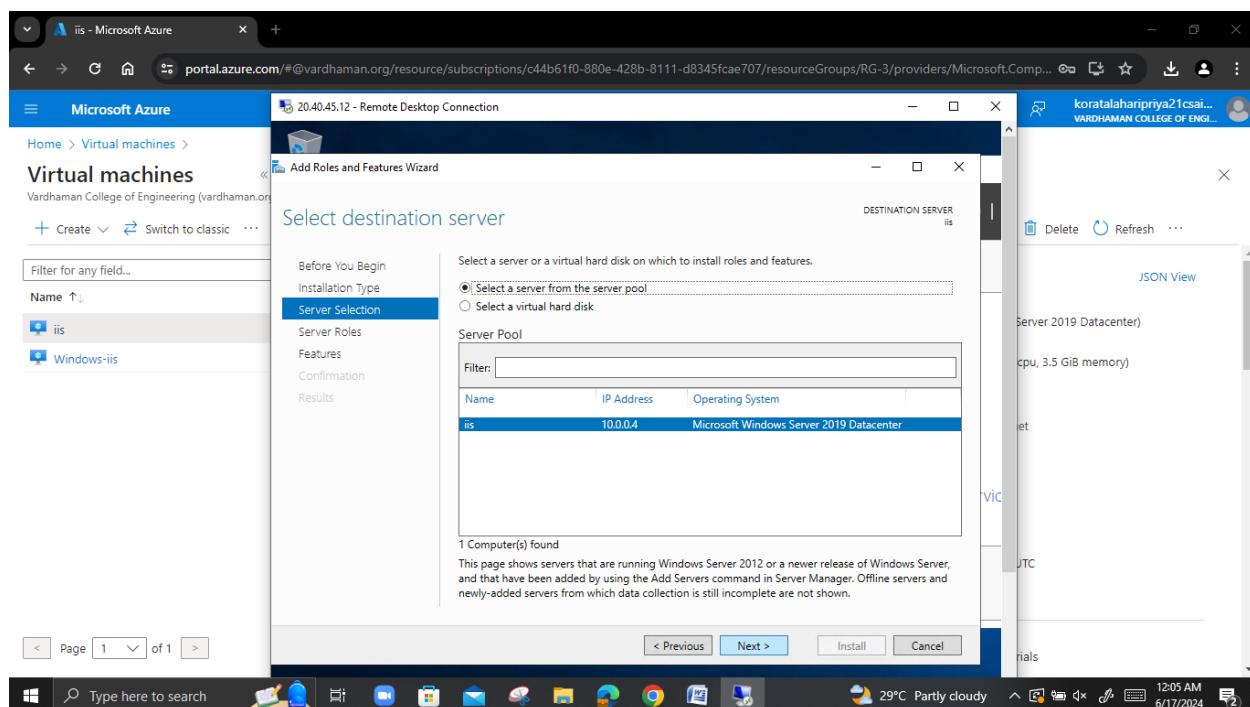
Properties Monitoring Capabilities (8) Recommendations Tutorials

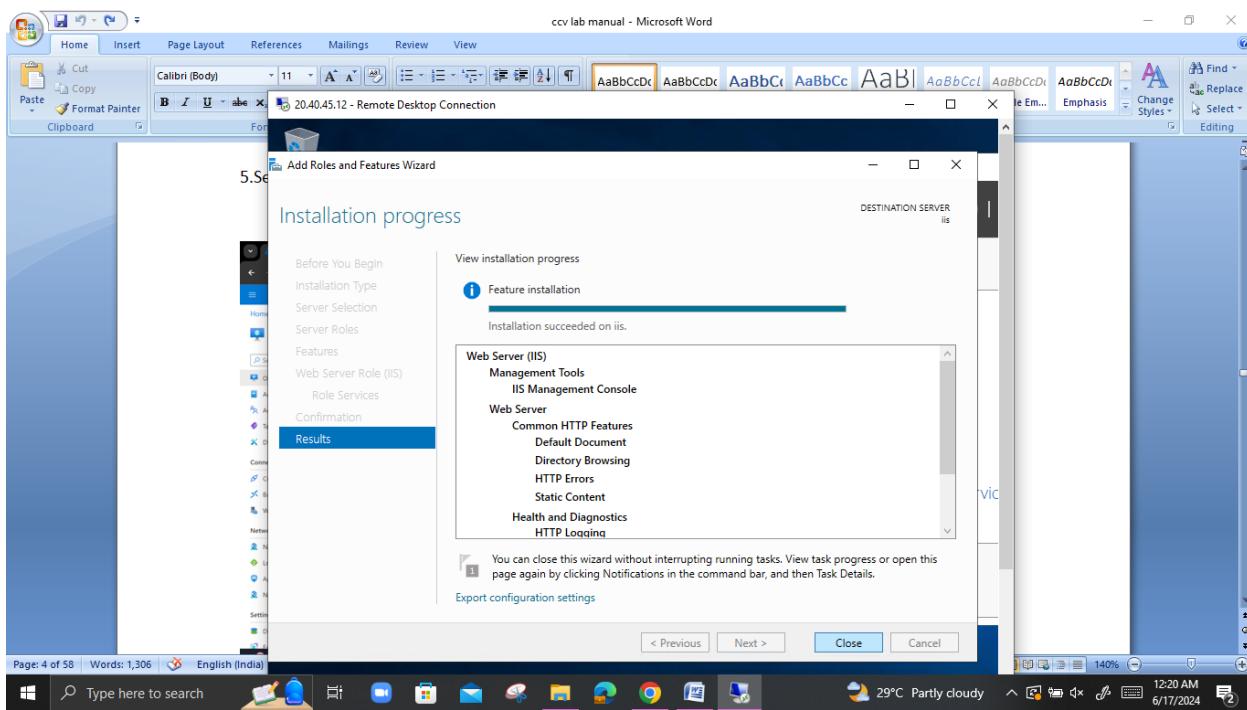


2. Copy public IP address and paste it in Remote Desktop Connection.
3. After launching windows 7, server manager opens automatically.
4. Server Manager → Dashboard → Add Roles and Features → install IIS.



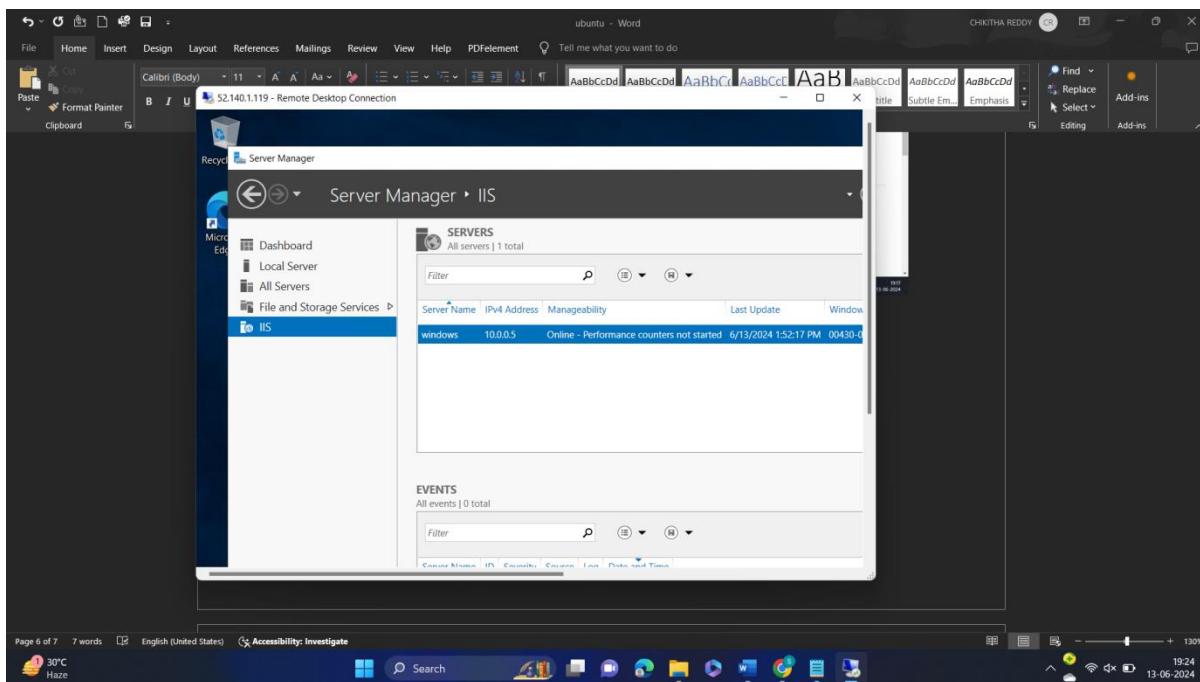
5. Select a sever → Select web server(IIS) → next → next → next → Install.

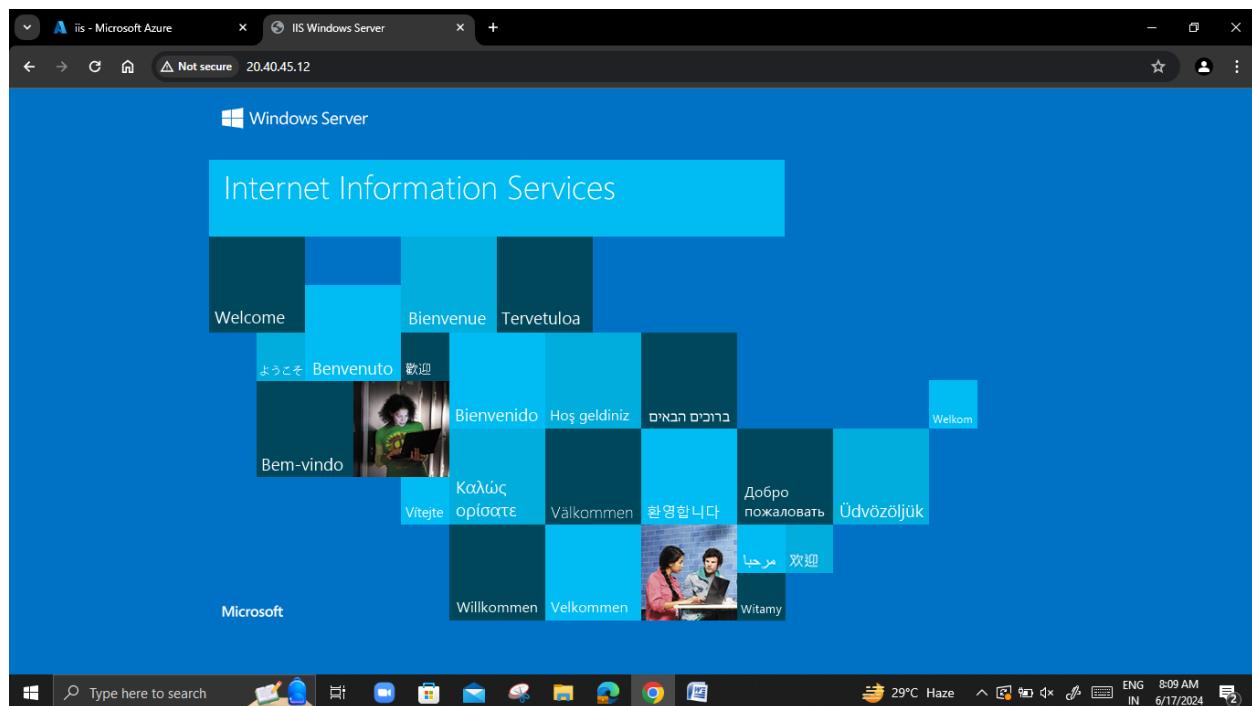




6. After completion of installation, refresh the vm in azure.

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

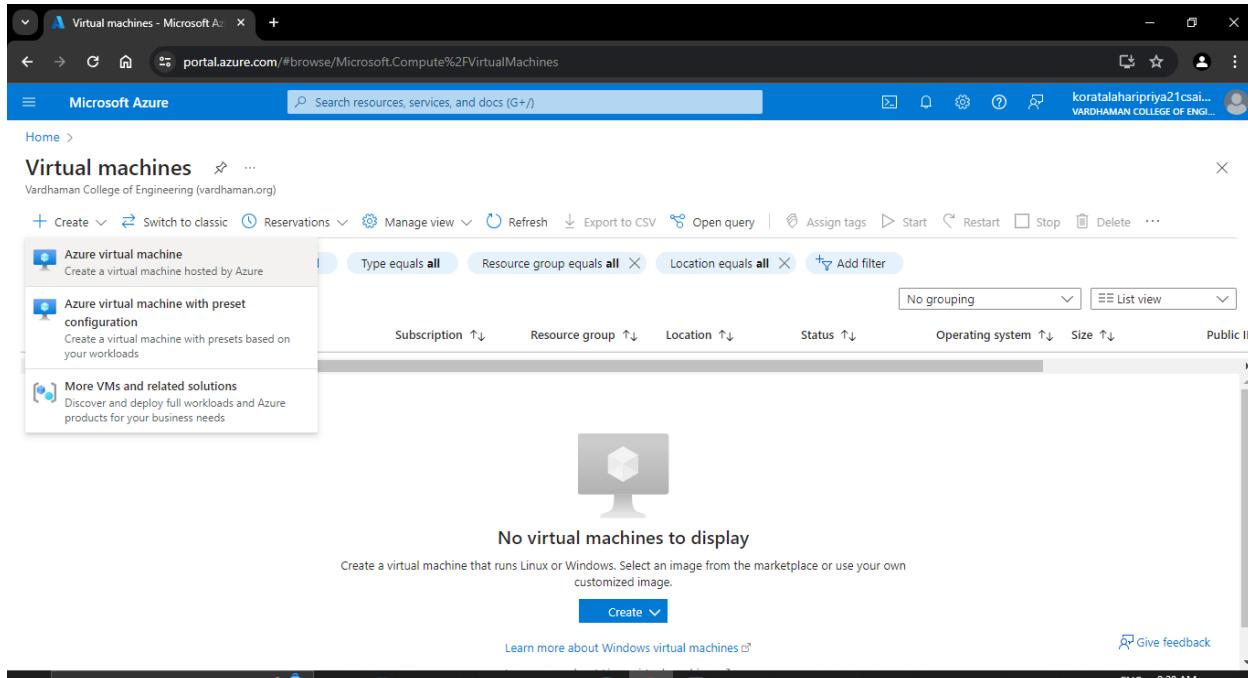




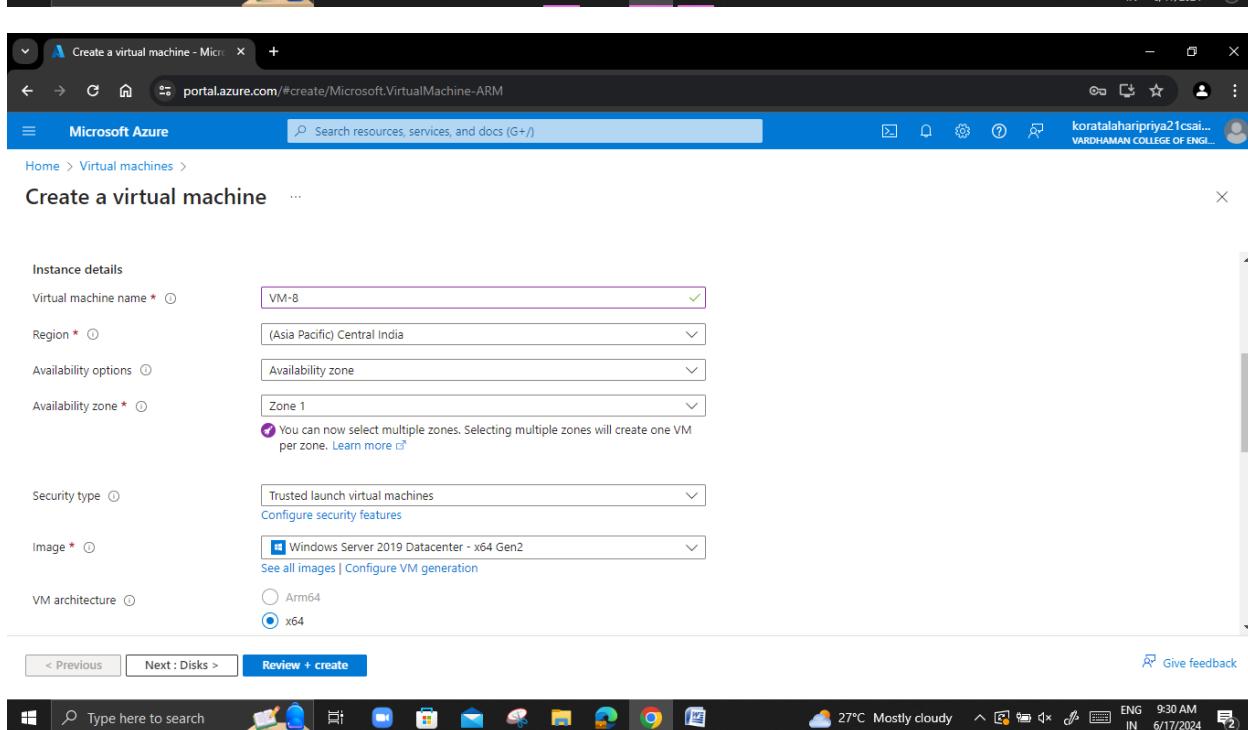
Lab Experiment-8

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 Machines dashboard. The URL is portal.azure.com/#browse/Microsoft.Compute%2FVirtualMachines. The search bar at the top contains "Search resources, services, and docs (G+)" and the user's name "koratalaharipriya21csai... VARDHAMAN COLLEGE OF ENGL...". The main area is titled "Virtual machines" and shows a list of 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). A large central icon is labeled "No virtual machines to display". Below it, there is a call-to-action button "Create" and a link "Learn more about Windows virtual machines". The bottom status bar shows the date and time as "6/17/2024 9:28 AM".



The screenshot shows the "Create a virtual machine" wizard, Step 1: Instance details. The URL is portal.azure.com/#create/Microsoft.VirtualMachine-ARM. The search bar at the top contains "Search resources, services, and docs (G+)" and the user's name "koratalaharipriya21csai... VARDHAMAN COLLEGE OF ENGL...". The main form fields include:

- Virtual machine name ***: VM-8
- Region ***: (Asia Pacific) Central India
- Availability options**: Availability zone
- Availability zone ***: Zone 1
- Security type**: Trusted launch virtual machines
- Image ***: Windows Server 2019 Datacenter - x64 Gen2
- VM architecture**: x64

At the bottom, there are navigation buttons: "< Previous", "Next : Disks >", and "Review + create". The bottom status bar shows the date and time as "6/17/2024 9:30 AM".

Create a virtual machine

Run with Azure Spot discount

Size *

Enable Hibernation

Administrator account

Username *

Password *

Confirm password *

< Previous Next : Disks > Review + create Give feedback

VM-8 - Microsoft Azure

Virtual machine

Search

Overview Activity log Access control (IAM) Tags Diagnose and solve problems Connect Bastion Windows Admin Center Networking Network settings Load balancing Application security groups Network manager

Connect Start Restart Stop Hibernate Capture Delete Refresh Open in mobile Feedback CLI / PS

Essentials

Resource group (move) : RG-3 Operating system : Windows Status : Running Size : Standard DS1 v2 (1 vcpu, 3.5 GiB memory) Location : Central India (Zone 1) Public IP address : 20.193.153.106 Subscription (move) : Azure for Students Virtual network/subnet : VM-8-vnet/default Subscription ID : c44b61f0-880e-428b-8111-d8345fcae707 DNS name : Not configured Availability zone : 1 Health state : - Time created : 6/17/2024, 4:01 AM UTC

Tags (edit) : Add tags

Properties Monitoring Capabilities (8) Recommendations Tutorials

Virtual machine

Computer name : VM-8 Operation system : Windows

Networking

Public IP address : 20.193.153.106 (Network interface vm-8608_z1) Public IP address (IDv2) : 20.193.153.106 (Network interface vm-8608_z1)

27°C Mostly cloudy 9:33 AM 6/17/2024 ENG IN

2. Stop the virtual machine before doing lock.

The screenshot shows the Microsoft Azure portal interface. On the left, the navigation menu is open, showing options like Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Connect, Networking, and Locks. The main content area displays the details for 'VM-8' under the 'Virtual machine' section. The 'Essentials' tab is selected, showing information such as Resource group (RG-3), Status (Stopped (deallocated)), Location (Central India (Zone 1)), Subscription (Azure for Students), Subscription ID, Availability zone, Operating system (Windows), Size (Standard DS1 v2 (1 vcpu, 3.5 GiB ...)), Public IP address (20.193.153.106), Virtual network/subnet (VM-8-vnet/default), DNS name (Not configured), and Health state. Below this, there is a note about the VM-8 virtual machine agent status being not ready, with a link to troubleshoot. To the right, the 'Notifications' pane is open, displaying two recent events: 'Successfully stopped virtual machine' (a few seconds ago) and 'Deployment succeeded' (Deployment 'CreateVm-MicrosoftWindowsServer.WindowsServer-201-20240617092828' to resource group 'RG-3' was successful). Buttons for 'Go to resource' and 'Pin to dashboard' are available at the bottom of the notifications pane.

3. 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 the 'VM-8' virtual machine. The left sidebar is expanded, showing sections like Settings, Availability + scale, and Security, with 'Locks' currently selected. A modal dialog box titled 'Add lock' is open in the center. It has fields for 'Lock name' (containing 'VM-8') and 'Lock type' (set to 'Read-only'). There is also a 'Notes' field which is empty. At the bottom of the dialog are 'OK' and 'Cancel' buttons. The background shows the general Azure portal header and some blurred UI elements.

The screenshot shows the Microsoft Azure portal interface. On the left, there's a sidebar with various settings like Disks, Extensions + applications, Operating system, Configuration, Advisor recommendations, Properties, and Locks (which is currently selected). The main area is titled 'VM-8 | Locks' and contains a sub-header 'Virtual machine'. A central modal window is open, titled 'Add lock'. It has fields for 'Lock name' (set to 'VM-8') and 'Lock type' (set to 'Delete'). There's also a 'Notes' field which is empty. At the bottom of the modal are two buttons: 'OK' (highlighted in blue) and 'Cancel'.

The screenshot shows the Microsoft Azure portal interface for the VM-8 virtual machine. The left sidebar includes Overview, Activity log, Access control (IAM), Tags, and Diagnose and solve problems. The main content area shows the 'Essentials' section with details such as Resource group (RG-3), Status (Stopped (deallocated)), Location (Central India (Zone 1)), Subscription (Azure for Students), and more. Below this is a 'Tags (edit)' section. At the bottom, tabs for Properties, Monitoring, Capabilities (8), Recommendations, and Tutorials are visible. The 'Properties' tab is active, showing sections for Virtual machine (Computer name: VM-8, Operating system: Windows, VM generation: V2) and Networking (Public IP address: 20.193.153.106, Network interface: vm-8608_z1). A tooltip message on the right side of the screen states: 'Failed to delete virtual machine 'VM-8''. It explains that an error occurred while deleting the virtual machine because it is associated with selected resource(s) and cannot perform the delete operation because the scope(s) are locked. It suggests removing the lock and trying again.

4. Click on ok.

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

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

VM-8 | Locks

This resource has no locks.

VM-8

Essentials

- Resource group ([move](#)) : RG-3
- Status : Stopped (deallocated)
- Location : Central India (Zone 1)
- Subscription ([move](#)) : Azure for Students
- Subscription ID : c44b61f0-880e-428b-8111-d8345fcae707
- Availability zone : 1
- Operating system : Windows
- Size : Standard DS1 v2 (1 vcpu, 3.5 GiB ...)
- Public IP address : [20.193.153.106](#)
- Virtual network/subnet : [VM-8-vnet/default](#)
- DNS name : [Not configured](#)
- Health state : -
- Time created : 6/17/2024, 4:01 AM UTC
- Tags ([edit](#)) : [Add tags](#)

Notifications

- Successfully deleted virtual machine 'VM-8'** Dismiss all
- Virtual machine 'VM-8' and any selected resource(s) have been successfully deleted.
a few seconds ago
- Failed to delete virtual machine 'VM-8'** X
- An error occurred while deleting virtual machine 'VM-8' and/or any selected resource(s) associated with it. Error: 'The scope '/subscriptions/c44b61f0-880e-428b-8111-d8345fcae707/resourceGroups/RG-3/providers/Microsoft.Compute/virtualMachines/VM-8' cannot perform delete operation because following scope(s) are locked: '/subscriptions/c44b61f0-880e-428b-8111-d8345fcae707/resourceGroups/RG-3/providers/Microsoft.Compute/virtualMachines/VM-8'. Please remove the lock and try again.'
- Successfully stopped virtual machine** X
- Successfully stopped the virtual machine 'VM-8'.
3 minutes ago

Lab Experiment-9

Create a Virtual machine and do scale up in Azure.

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

Basics Disks Networking Management Monitoring Advanced Tags Review + create

Create a virtual machine that runs Linux or Windows. Select an image from Azure marketplace or use your own customized image. Complete the Basics tab then Review + create to provision a virtual machine with default parameters or review each tab for full customization. [Learn more](#)

Project details

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

Subscription * Resource group * [Create new](#)

Instance details

Virtual machine name * [Review + create](#) [Give feedback](#)

< Previous Next : Disks > Review + create

Windows Type here to search 27°C Mostly cloudy ENG IN 9:38 AM 6/17/2024

Create a virtual machine

Username * VM-9

Password * Confirm password *

Inbound port rules

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

Public inbound ports * Allow selected ports

Select inbound ports * HTTP (80), RDP (389)

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

VM-9 - Microsoft Azure

Virtual machine

Configuration Advisor recommendations Properties Locks Availability + scale Size Availability + scaling

Tags (edit) Add tags

Essentials		JSON View	
Resource group (move)	: RG-3	Operating system	: Windows
Status	: Stopped (deallocated)	Size	: Standard DS1 v2 (1 vcpu, 3.5 GB memory)
Location	: Central India (Zone 1)	Public IP address	: 20.193.155.117
Subscription (move)	: Azure for Students	Virtual network/subnet	: VM-9-vnet/default
Subscription ID	: c44b61f0-880e-428b-8111-d8345fcae707	DNS name	: Not configured
Availability zone	: 1	Health state	: -
		Time created	: 6/17/2024, 4:09 AM UTC

Properties Monitoring Capabilities (8) Recommendations Tutorials

Virtual machine

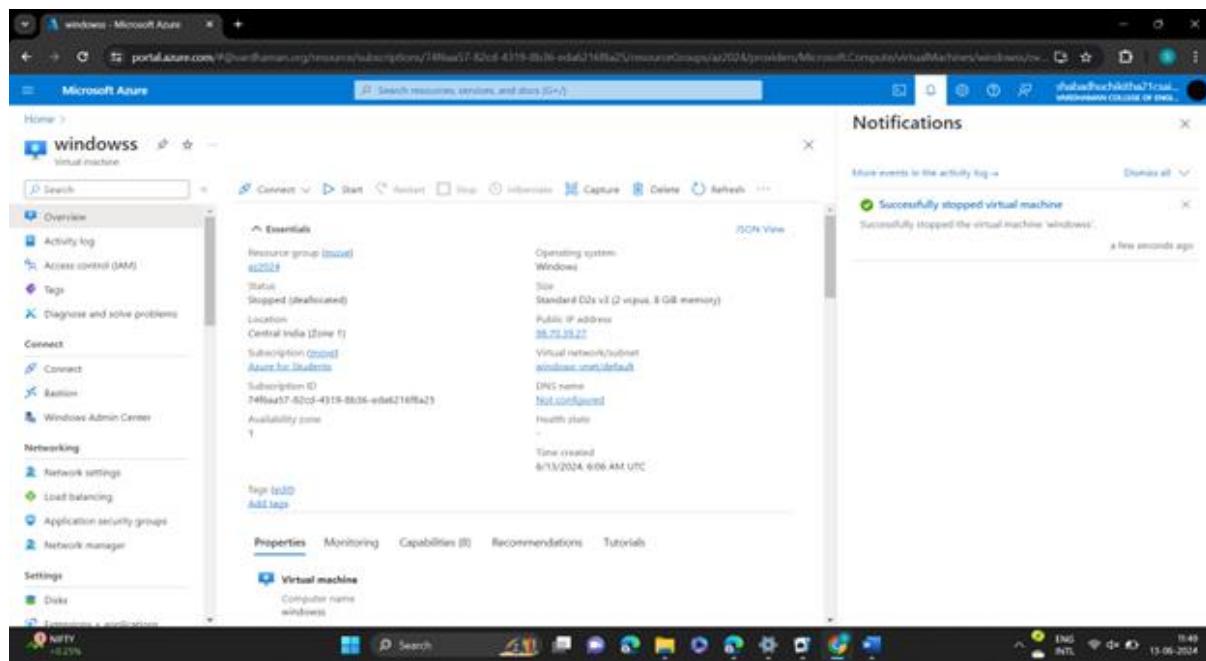
Computer name	VM-9
Operating system	Windows
VM generation	V2

Networking

Public IP address	20.193.155.117 (Network interface vm-9573_z1)
Public IP address (IPv6)	-
Private IP address	10.0.0.4

https://portal.azure.com/#@vardhaman.org/resource/subscriptions/c44b61f0-880e-428b-8111-d8345fcae707/resourceGroups/RG-3/providers/Microsoft.Compute/virtualMachines/VM-9

2. After deployment of VM stop VM for scaling.



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

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

VM Size	Type	vCPUs	RAM (GB)	Data disks	Max IOPS	Loc.
DS1_v2	General purpose	1	3.5	4	3200	7
D2s_v3	General purpose	2	8	4	3200	1
D2as_v4	General purpose	2	8	4	3200	1
DS2_v2	General purpose	2	7	8	6400	1
D4s_v3	General purpose	4	16	8	6400	2
DS3_v2	General purpose	4	14	16	12800	2

5. We scaled up virtual machine.

6. We can see results in Size option.

Lab Experiment-2

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

Steps:

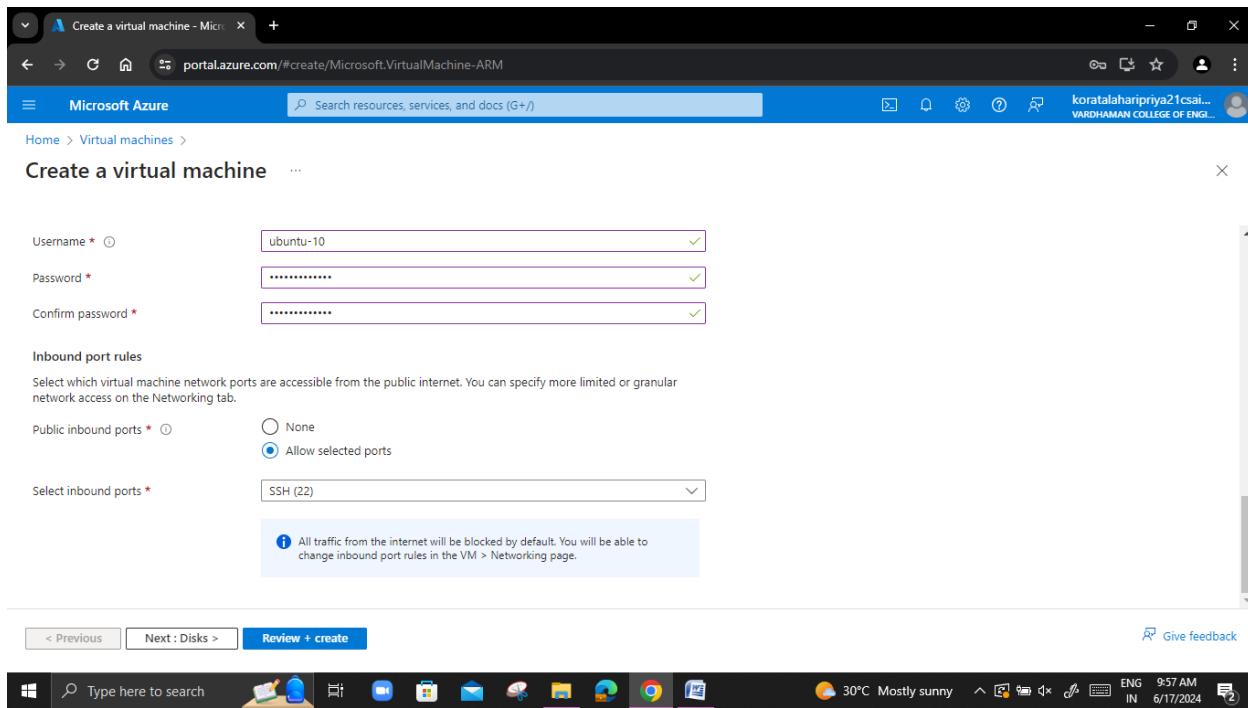
1) Create a Virtual name with VM name as "UbuntU" with username &password.

The screenshot shows the Microsoft Azure portal interface. The top navigation bar includes 'Virtual machines - Microsoft Az' and the URL 'portal.azure.com/#browse/Microsoft.Compute%2FVirtualMachines'. The main title is 'Virtual machines'. A sidebar on the left lists 'Azure virtual machine', 'Azure virtual machine with preset configuration', and 'More VMs and related solutions'. The main content area displays a message: 'No virtual machines to display' with a sub-instruction: 'Create a virtual machine that runs Linux or Windows. Select an image from the marketplace or use your own customized image.' A 'Create' button is visible. The bottom of the screen shows a taskbar with various icons and system status.

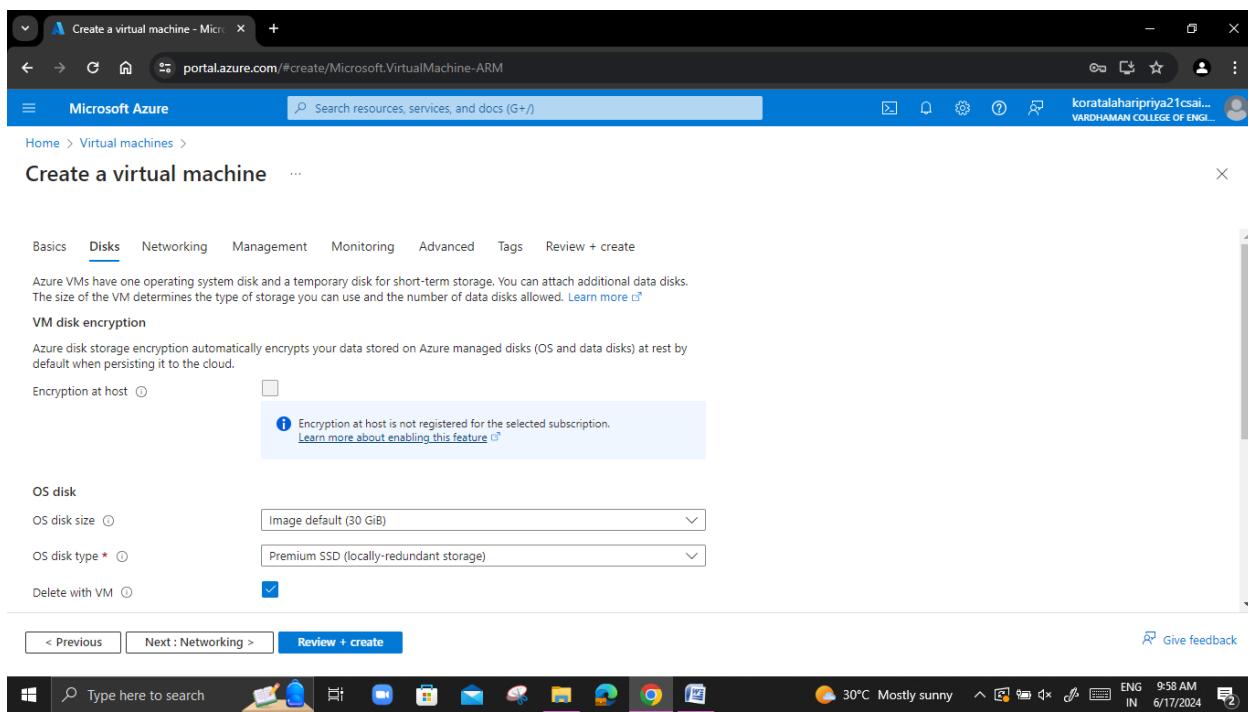
The screenshot shows the 'Create a virtual machine' wizard in the Microsoft Azure portal. The current step is 'Instance details'. The form fields are as follows:

- Virtual machine name ***: ubuntu-10
- 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**: x64

At the bottom, there are buttons for '< Previous' and 'Next : Disks >', and a prominent blue 'Review + create' button. The bottom of the screen shows a taskbar with various icons and system status.



2) click on "Next:Disks>".



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

Create a virtual machine

OS disk type * Premium SSD (locally-redundant storage)

Delete with VM

Key management Platform-managed key

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

Data disks for ubuntu-10

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
					<input type="checkbox"/>

Create and attach a new disk Attach an existing disk

Advanced

< Previous Next : Networking > Review + create Give feedback

Select a disk size

Storage type * Premium SSD (locally-redundant storage)

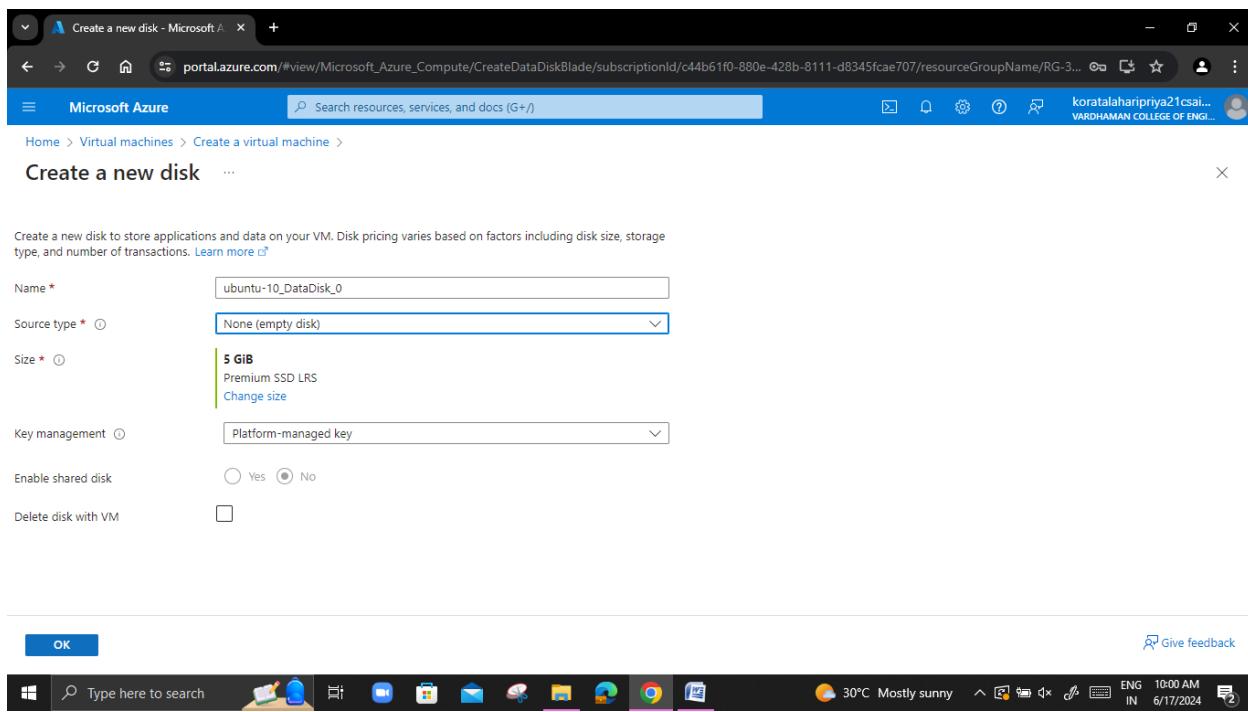
Size	Performance tier	Provisioned IOPS	Provisioned throughput	Max Shares	Max burst IOPS	Max burst throughput
4 GiB	P1	120	25	3	3500	170
8 GiB	P2	120	25	3	3500	170
16 GiB	P3	120	25	3	3500	170
32 GiB	P4	120	25	3	3500	170
64 GiB	P6	240	50	3	3500	170
128 GiB	P10	500	100	3	3500	170
256 GiB	P15	1100	125	3	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	-	-
32768 GiB	P80	20000	900	10	-	-

Custom disk size (GB) * 5

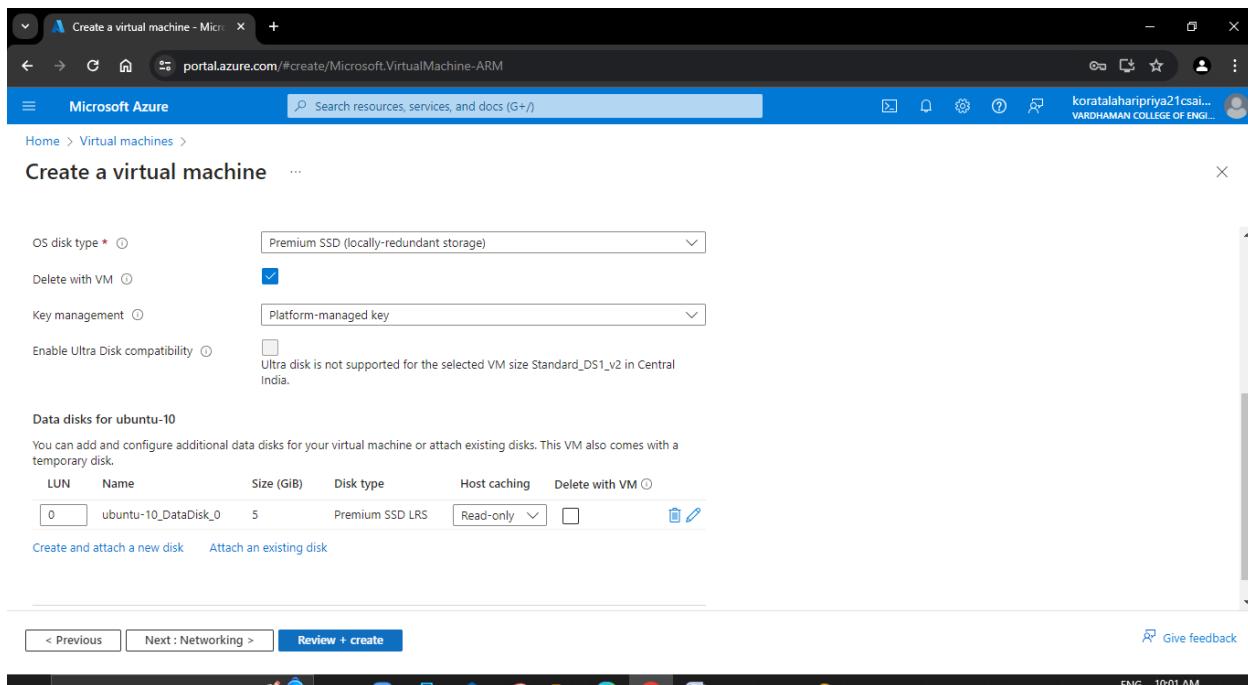
Performance tier

OK Give feedback

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



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



6) Click on "Go to resource group".

Deployment name: CreateVm-canonical.0001-com-ubuntu-server-focal-2-202406...

Subscription: Azure for Students

Resource group: RG-3

Start time: 6/17/2024, 10:01:17 AM

Correlation ID: 46271e14-f496-4f26-a099-326a897f5b8a

Deployment succeeded

Deployment 'CreateVm-canonical.0001-com-ubuntu-server-focal-2-20240617095622' to resource group 'RG-3' was successful.

Go to resource | Pin to dashboard

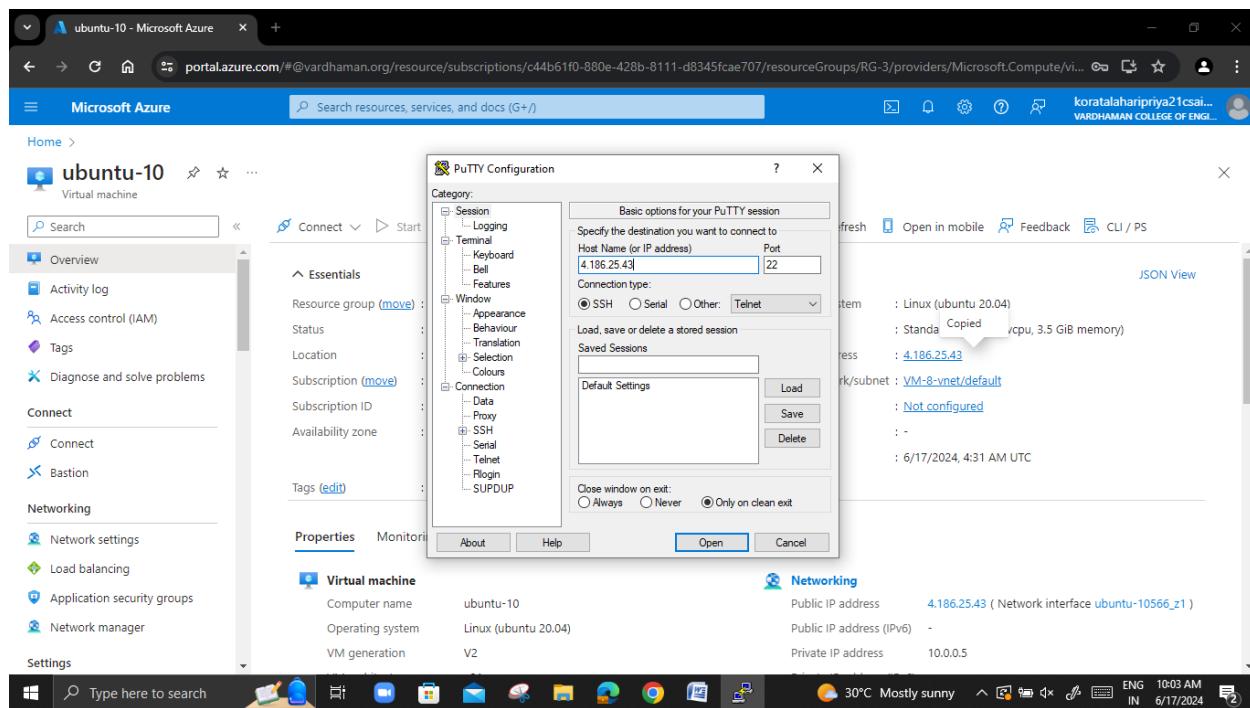
a few seconds ago

7) Copy public IP Address.

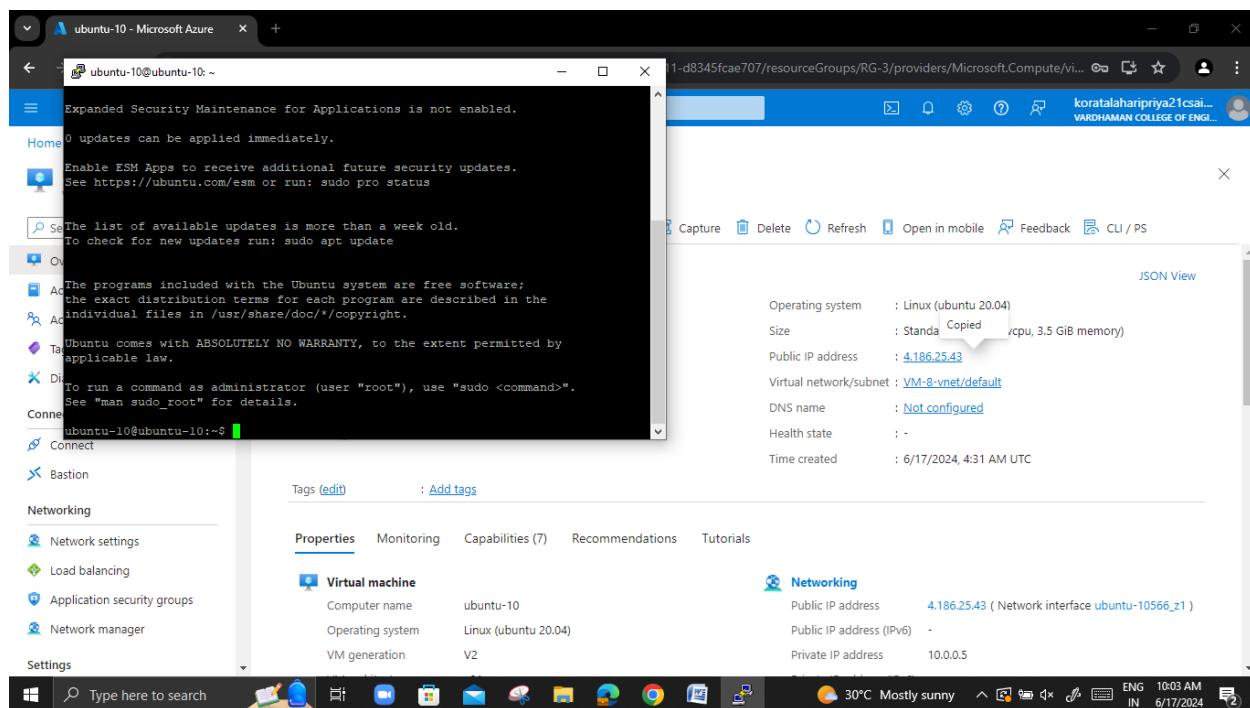
Essentials	Properties
Resource group (move) : RG-3	Operating system : Linux (ubuntu 20.04)
Status : Running	Size : Standard_B1ms (1 vcpu, 3.5 GiB memory)
Location : Central India (Zone 1)	Public IP address : 4.186.25.43
Subscription (move) : Azure for Students	Virtual network/subnet : VM-8-vnet/default
Subscription ID : c44b61f0-880e-428b-8111-d8345cae707	DNS name : Not configured
Availability zone : 1	Health state : -
Tags (edit) : Add tags	Time created : 6/17/2024, 4:31 AM UTC

Networking
Public IP address : 4.186.25.43 (Network interface ubuntu-10566_21)
Public IP address (IPv6) : -
Private IP address : 10.0.0.5

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



9) Login into it with username and password.



Operating system: Linux (Ubuntu 20.04)

Size: Standard_B1ms (1 vCPU, 3.5 GB memory)

Public IP address: 4.186.25.43

Virtual network/subnet: VM-8-vnet/default

DNS name: Not configured

Health state: -

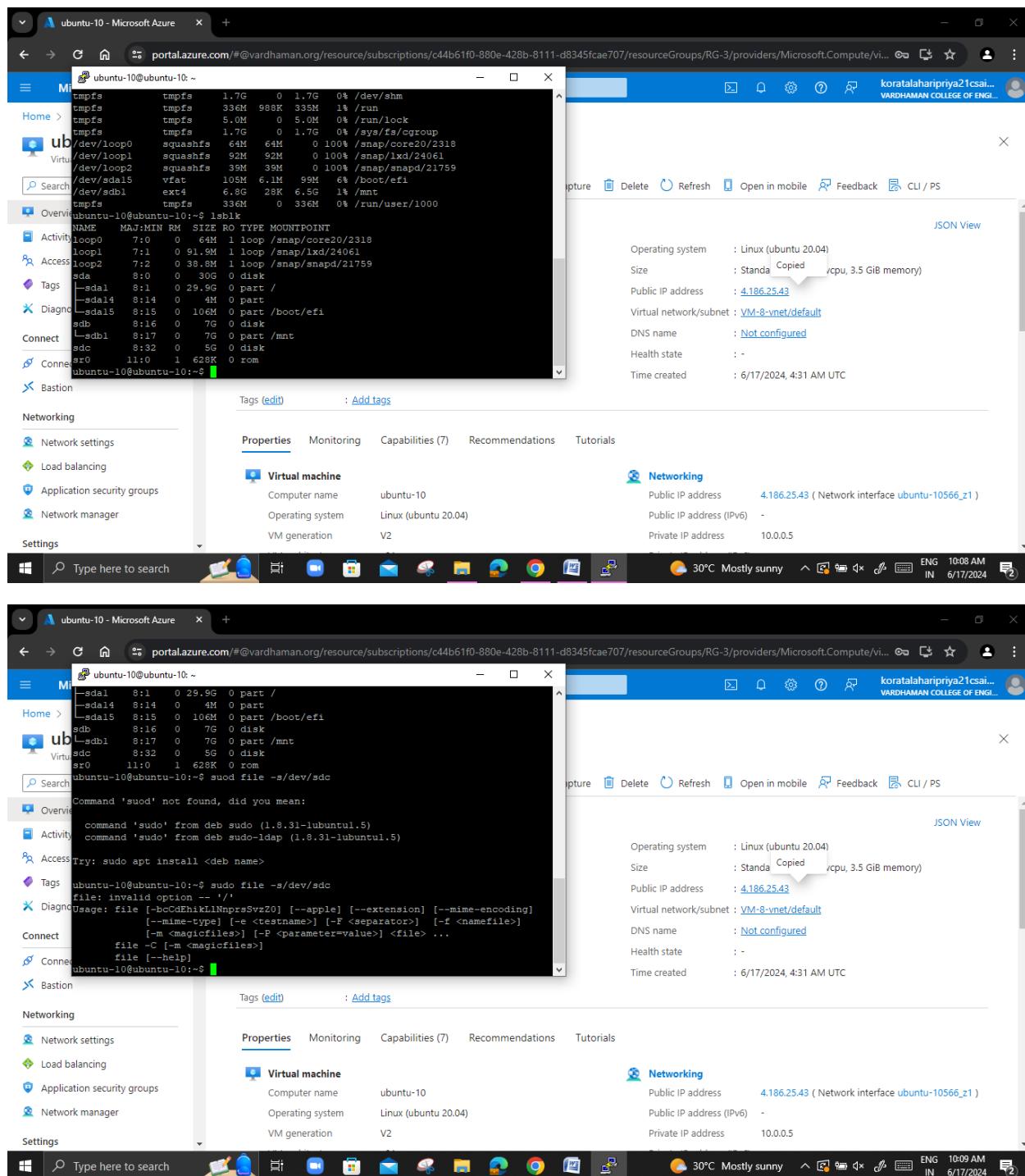
Time created: 6/17/2024, 4:31 AM UTC

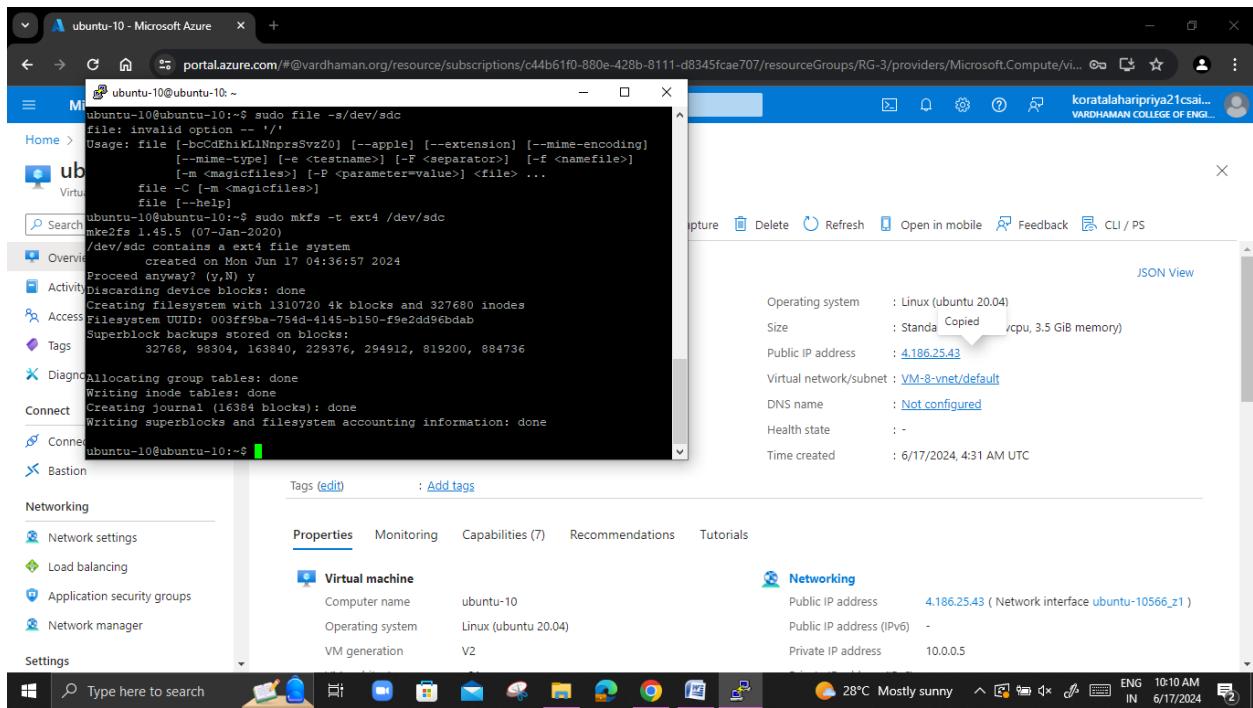

```
System information as of Mon Jun 17 04:38:07 UTC 2024
System load: 0.0 Processes: 117
Usage of /: 5.2% of 28.89GB Users logged in: 0
Memory usage: 9% IPv4 address for eth0: 10.0.0.5
Swap usage: 0%
```

```
Last login: Mon Jun 17 04:33:36 2024 from 122.171.46.168
ubuntu-10@ubuntu-10:~$
```

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/lxde/24061
/dev/loop2	squashfs	39M	39M	0	100%	/snap/snappyd/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





10) Type the below commands \$ df -hT

\$ lsblk

\$ sudo filoe -s/dev/sdc

\$ sudo mkfs -t ext4 /dev/sdc

\$ mkdir test

\$ sudo mount /dev/sdc/ test

\$ cd test

11) Open the VM and move to disks.

ubuntu-10 Virtual machine

Networking

- Network settings
- Load balancing
- Application security groups
- Network manager

Settings

- Disks
- Extensions + applications
- Operating system
- Configuration
- Advisor recommendations
- Properties
- Locks

Tags (edit): Add tags

Properties Monitoring Capabilities (7) Recommendations Tutorials

Virtual machine		Networking	
Computer name	ubuntu-10	Public IP address	4.186.25.43 (Network interface ubuntu-10566_z1)
Operating system	Linux (ubuntu 20.04)	Public IP address (IPv6)	-
VM generation	V2	Private IP address	10.0.0.5

ubuntu-10 | Disks

OS disk

Disk name	Storage type	Size (GiB)	Max IOPS	Max throughput (...)	Encryption	Host caching
ubuntu-10_OsDisk_1_a31	Premium SSD LRS	30	120	25	SSE with PMK	Read/write

Data disks

Showing 0 of 0 attached data disks

+ Create and attach a new disk Attach existing disks

LUN	Disk name	Storage type	Size (GiB)	Max IOPS	Max throughput (...)	Encryption
No data disks attached						

Apply **Discard changes**

12) Click on detach and click on apply.

Lab Experiment-11

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

Steps-1:

Create a virtual machine

Virtual machine name *

Region *

Availability options

Availability zone *

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

Security type

Image *

VM architecture x64
 Arm64

Arm64 is not supported with the selected image.

< Previous Next : Disks > Review + create Give feedback

Create a virtual machine

Username *

Password *

Confirm password *

Inbound port rules

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

Public inbound ports * None
 Allow selected ports

Select inbound ports *

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

Create a virtual machine

OS disk type * Premium SSD (locally-redundant storage)

Delete with VM

Key management Platform-managed key

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

Data disks for VM-11

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

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

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

Advanced

< Previous Next : Networking > Review + create

Select a disk size

Size (GiB)	Performance tier	IOPS	Throughput (MB/s)	Latency (ms)	Throughput (MB/s)	Latency (ms)
256 GiB	P15	1100	125	3	3500	170
512 GiB	P20	2300	150	3	3500	170
1024 GiB	P30	5000	200	5	-	-
2048 GiB	P40	7500	250	5	-	-
4096 GiB	P50	7500	250	5	-	-
8192 GiB	P60	16000	500	10	-	-
16384 GiB	P70	18000	750	10	-	-
32767 GiB	P80	20000	900	10	-	-

Custom disk size (GiB) * 10

Performance tier Select a performance tier to upgrade

OK Give feedback

Create a new disk

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

Name * VM-11_DataDisk_0

Source type * None (empty disk)

Size * 10 GiB Premium SSD LRS Change size

Key management Platform-managed key

Enable shared disk No

Delete disk with VM

OK Give feedback

Create a virtual machine

Delete with VM

Key management Platform-managed key

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

Data disks for VM-11

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-11_DataDisk_0	10	Premium SSD LRS	Read-only	<input type="checkbox"/>

Create and attach a new disk Attach an existing disk

Review + create Give feedback

Create a virtual machine

OS disk type * Premium SSD (locally-redundant storage)

Delete with VM

Key management Platform-managed key

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

Data disks for VM-11

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

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

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

Advanced

< Previous Next : Networking > Review + create

Select a disk size

Size (GiB)	Performance tier	IOPS	Throughput (MB/s)	Latency (ms)	Encryption	Encryption at rest	Encryption at transfer
256 GiB	P15	1100	125	3	3500	170	
512 GiB	P20	2300	150	3	3500	170	
1024 GiB	P30	5000	200	5	-	-	
2048 GiB	P40	7500	250	5	-	-	
4096 GiB	P50	7500	250	5	-	-	
8192 GiB	P60	16000	500	10	-	-	
16384 GiB	P70	18000	750	10	-	-	
32767 GiB	P80	20000	900	10	-	-	

Custom disk size (GiB) * 10

Performance tier Select a performance tier to upgrade

OK Give feedback

Create a new disk

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

Name * VM-11_DataDisk_1

Source type * None (empty disk)

Size * 10 GiB Premium SSD LRS Change size

Key management Platform-managed key

Enable shared disk No

Delete disk with VM

OK Give feedback

Create a virtual machine

OS disk type * Premium SSD (locally-redundant storage)

Delete with VM

Key management Platform-managed key

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

Data disks for VM-11

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-11_DataDisk_1	10	Premium SSD LRS	Read-only	<input type="checkbox"/>

Create and attach a new disk Attach an existing disk

< Previous Next : Networking > Review + create Give feedback

Project details

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

Subscription * Resource group *

< Previous Next : Disks > Review + create Give feedback

Region *

Availability options

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

Security type

Image *

VM architecture Arm64 is not supported with the selected image.

< Previous Next : Disks > Review + create Give feedback

Create a virtual machine

Username *: VM-11

Password *:

Confirm password *:

Inbound port rules

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

Public inbound ports *: Allow selected ports

Select inbound ports *: RDP (3389)

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

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

VM-11 - Microsoft Azure

Virtual machine

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Connect

Bastion

Windows Admin Center

Networking

Network settings

Load balancing

Application security groups

Properties

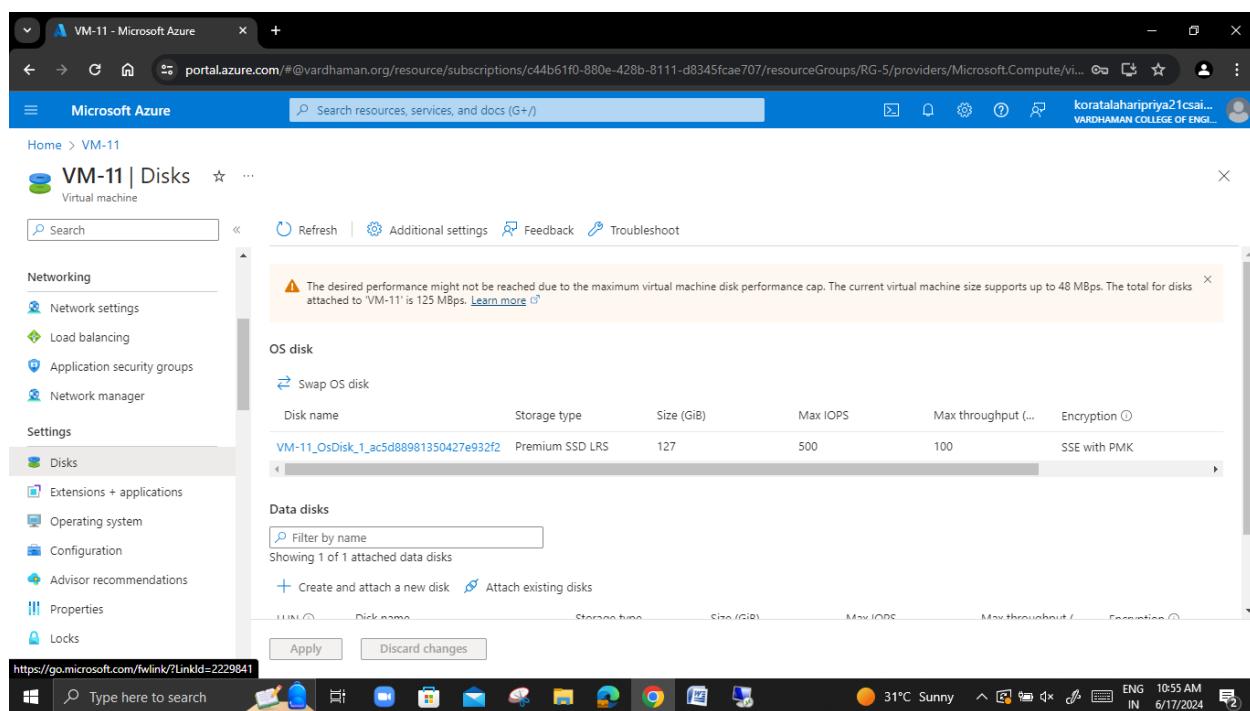
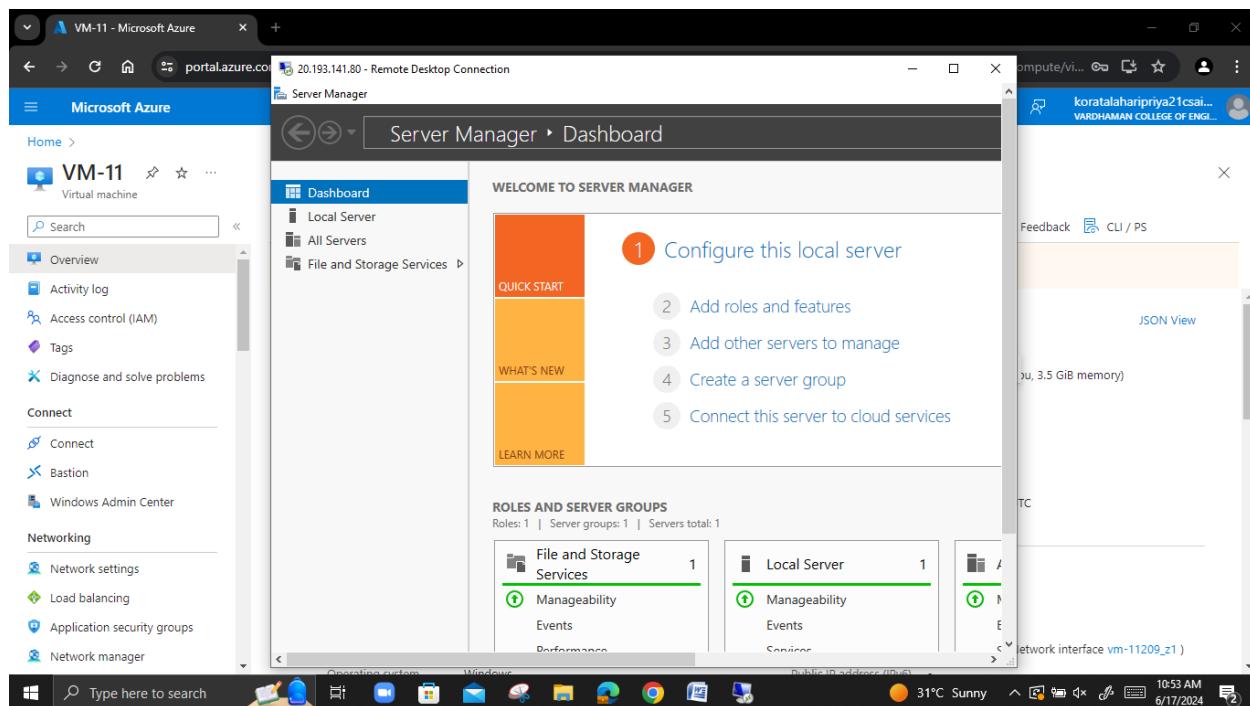
Virtual machine

Computer name: VM-11

Networking

Public IP address: 20.193.141.80 (Network interface vm-11209_z1)

31°C Sunny | 10:49 AM | 6/17/2024



OS disk

Storage type	Size (GiB)	Max IOPS	Max throughput (MB/s)	Encryption	Host caching
Premium SSD LRS	127	500	100	SSE with PMK	Read/write

Data disks

Storage type	Size (GiB)	Max IOPS	Max throughput (MB/s)	Encryption	Host caching
Premium SSD LRS	10	120	25	SSE with PMK	Read-only

OS disk

Storage type	Size (GiB)	Max IOPS	Max throughput (MB/s)	Encryption	Host caching
Premium SSD LRS	127	500	100	SSE with PMK	Read/write

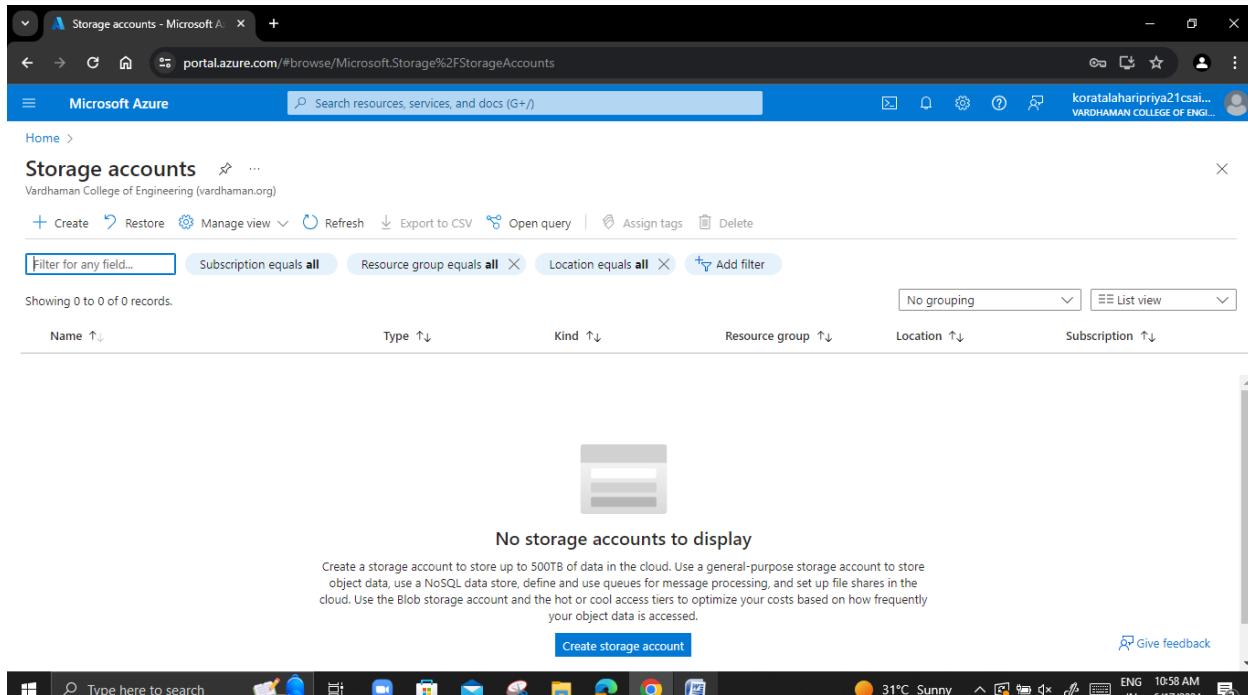
Data disks

LUN	Disk name	Storage type	Size (GiB)	Max IOPS	Max throughput (MB/s)	Encryption
No data disks attached						

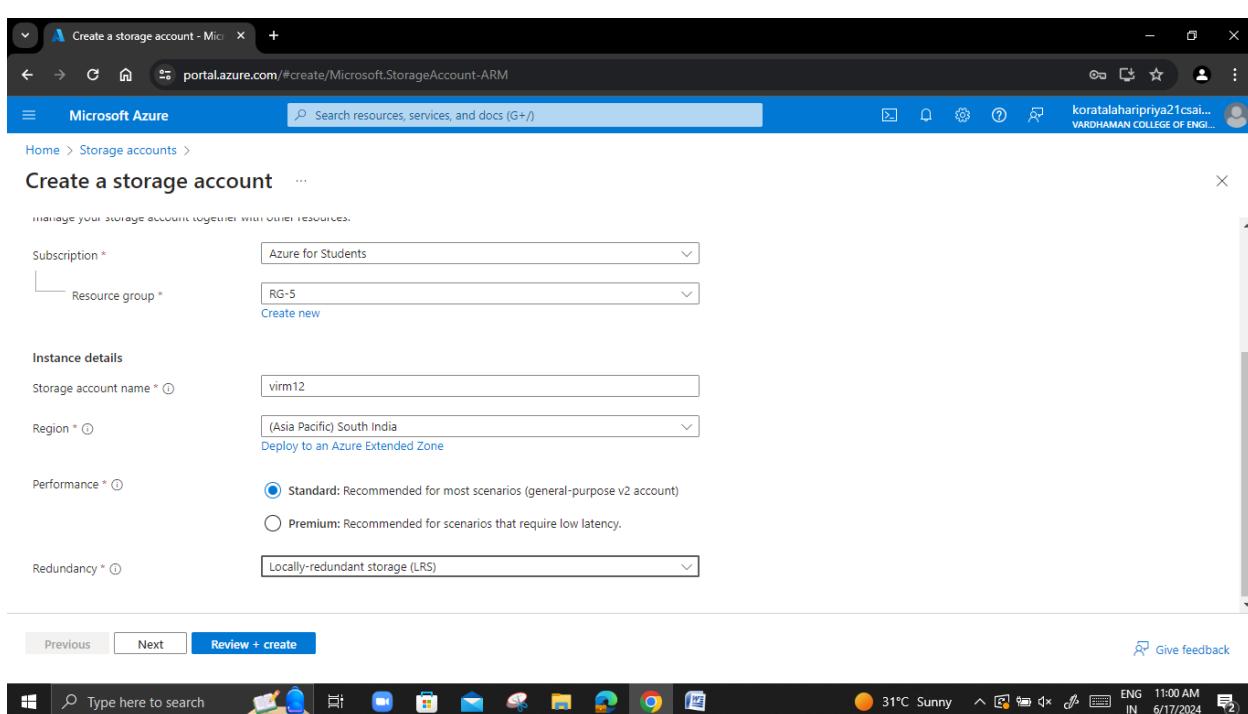
Lab Experiment-12

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

Step-1: Login to Azure account and create a storage account.

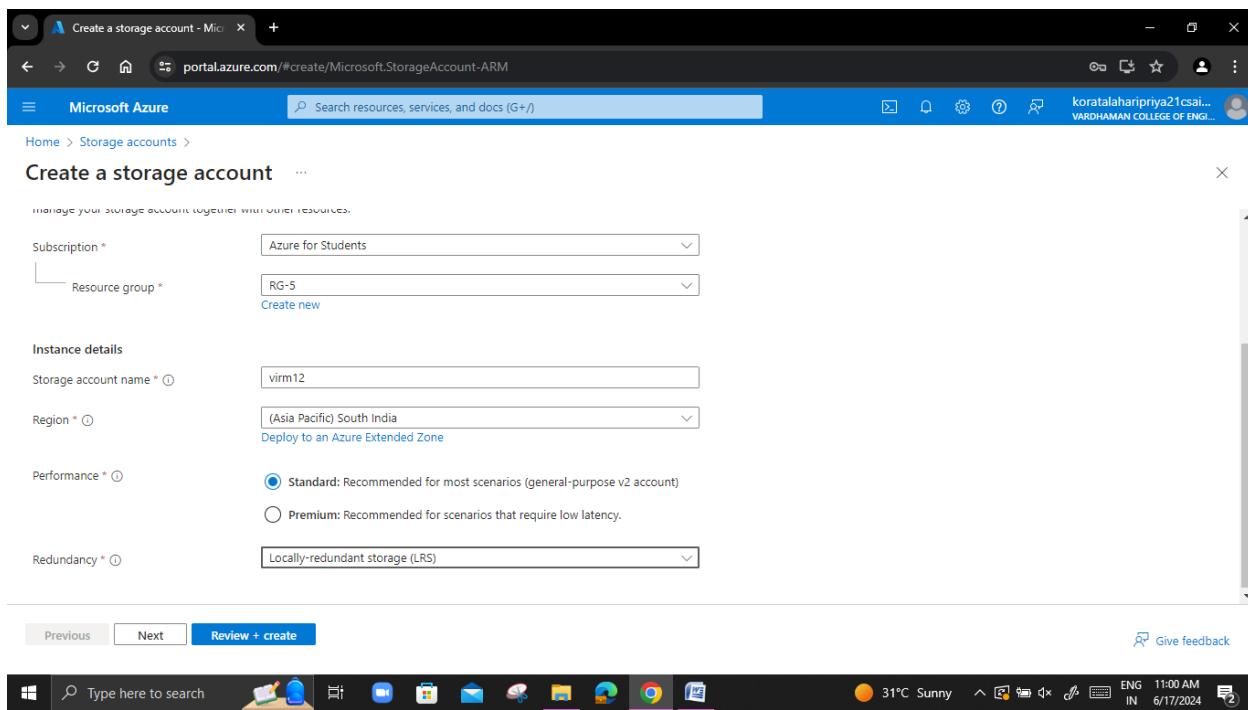


The screenshot shows the Microsoft Azure Storage accounts page. The URL is portal.azure.com/#browse/Microsoft.Storage%2FStorageAccounts. The page title is "Storage accounts". It displays a search bar and filter options: "Subscription equals all", "Resource group equals all", "Location equals all", and "Add filter". Below these are sorting options: "Name ↑", "Type ↑↓", "Kind ↑↓", "Resource group ↑↓", "Location ↑↓", and "Subscription ↑↓". A message "Showing 0 to 0 of 0 records." is displayed. In the center, there is a placeholder icon for a storage account and the text "No storage accounts to display". Below this, a descriptive text encourages creating a storage account to store up to 500TB of data in the cloud, mentioning Blob storage accounts and access tiers. A prominent blue button labeled "Create storage account" is centered at the bottom of the page.



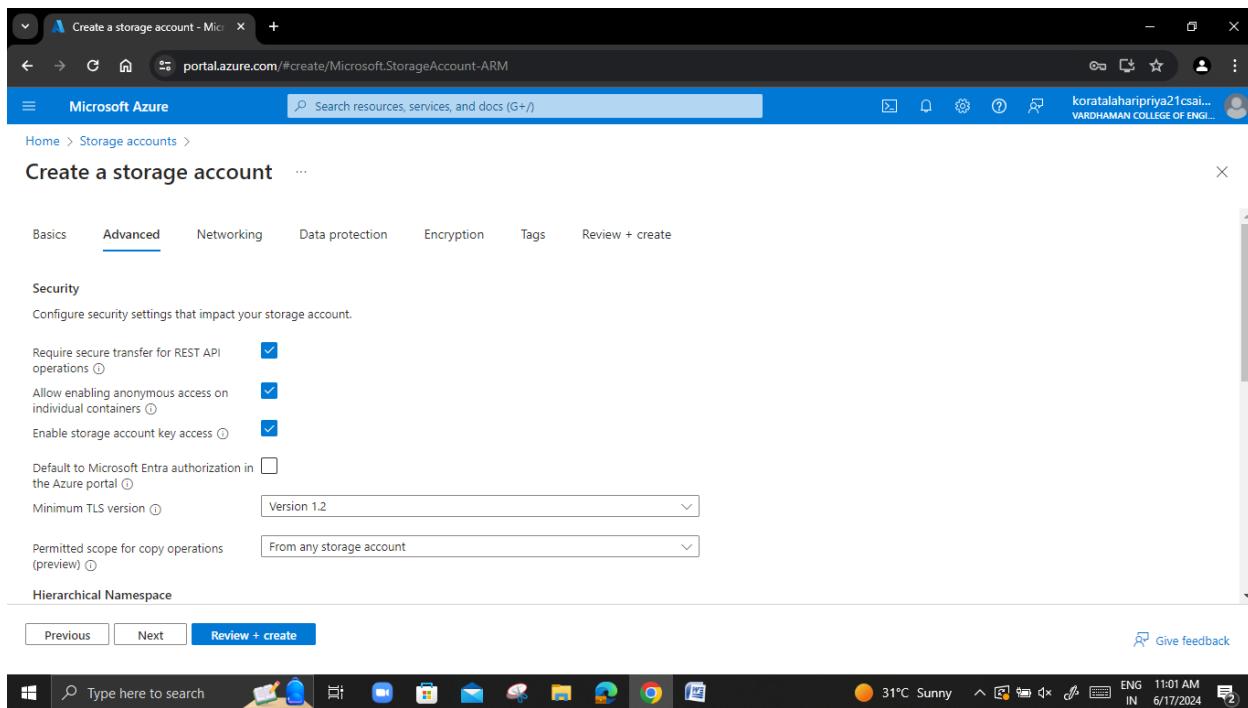
The screenshot shows the "Create a storage account" wizard page. The URL is portal.azure.com/#create/Microsoft.StorageAccount-ARM. The page title is "Create a storage account". It starts with a note: "Manage your storage account together with other resources." Below this, there are dropdown menus for "Subscription" (set to "Azure for Students") and "Resource group" (set to "RG-5"). Under "Instance details", there is a "Storage account name" field containing "virm12", a "Region" dropdown set to "(Asia Pacific) South India", and a note about "Deploy to an Azure Extended Zone". Under "Performance", two radio buttons are shown: "Standard: Recommended for most scenarios (general-purpose v2 account)" (selected) and "Premium: Recommended for scenarios that require low latency.". Under "Redundancy", a dropdown menu is set to "Locally-redundant storage (LRS)". At the bottom, there are "Previous" and "Next" buttons, and a "Review + create" button. The status bar at the bottom shows system information: 31°C Sunny, ENG IN 10:58 AM 6/17/2024.

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



3. Click Review + Create .

4. Now go to “ Advanced “ option and choose “ Allow enabling anonymous access on individual containers “.



5. Click on Review + Create .

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

The screenshot shows the Microsoft Azure portal interface. The top navigation bar includes the Azure logo, a search bar, and user information. Below the header, the main content area has a title 'virm12 | Containers'. On the left, a sidebar lists various storage services: Overview, Activity log, Tags, Diagnose and solve problems, Access Control (IAM), Data migration, Events, Storage browser, and Storage Mover. Under 'Data storage', 'Containers' is selected and highlighted in grey. The main pane displays a table with one row for the container '\$logs'. The columns are Name, Last modified, Anonymous access level, and Lease state. The container details are: Name '\$logs', Last modified 6/17/2024, 11:01:52 AM, Anonymous access level Private, Lease state Available. A search bar at the top of the main pane allows searching by container prefix. A toggle switch for 'Show deleted containers' is also present.

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

The screenshot shows the 'New container' dialog box overlaid on the Azure portal. The dialog has a title 'New container'. It contains a 'Name' input field with the value 'virm-12' and an 'Anonymous access level' dropdown set to 'Blob (anonymous read access for blobs only)'. A warning message box is displayed, stating: 'Blobs within the container can be read by anonymous request, but container data is not available. Anonymous clients cannot enumerate the blobs within the container.' At the bottom of the dialog are 'Create' and 'Give feedback' buttons.

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

The screenshot shows the Microsoft Azure Storage Container Overview page for the 'virm-12' container. On the right, a modal window titled 'Upload blob' is open, showing a file selection area with '1 file(s) selected: EIA UNIT 1.pdf'. Below it are options to 'Overwrite if files already exist' and a 'Upload' button. The main container view shows a table with one row: 'Name' (EIA UNIT 1.pdf), 'Modified' (6/17/2024, 11:04:41 AM), 'Access tier' (Hot (Inferred)), 'Archive status' (Not yet archived), 'Blob type' (Block blob), 'Size' (12.19 MiB), and 'Lease state' (Available). The Windows taskbar at the bottom indicates the system is at 31°C, sunny, and the date is 6/17/2024.

This screenshot shows the same Azure Storage Container Overview page for 'virm-12'. The 'Upload blob' modal is closed, and the main table now lists the uploaded file: 'EIA UNIT 1.pdf'. The table columns are Name, Modified, Access tier, Archive status, Blob type, Size, and Lease state. The file details match the previous screenshot. The Windows taskbar at the bottom shows the system is at 31°C, sunny, and the date is 6/17/2024.

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

EIA UNIT 1.pdf

Properties

URL: <https://virm12.blob.core.windows.net/virm-12/EIA%20UNIT%201.pdf>

LAST MODIFIED: 6/17/2024, 11:04:41 AM

CREATION TIME: 6/17/2024, 11:04:41 AM

VERSION ID: -

TYPE: Block blob

SIZE: 12.19 MiB

ACCESS TIER: Hot (Inferred)

ACCESS TIER LAST MODIFIED: N/A

ARCHIVE STATUS: -

REHYDRATE PRIORITY: -

SERVER ENCRYPTED: true

ETAG: 0x8DC8E8F2FAE63B6

VERSION-LEVEL IMMUTABILITY POLICY: Disabled

CACHE-CONTROL:

CONTENT-TYPE: application/pdf

Unit - 1

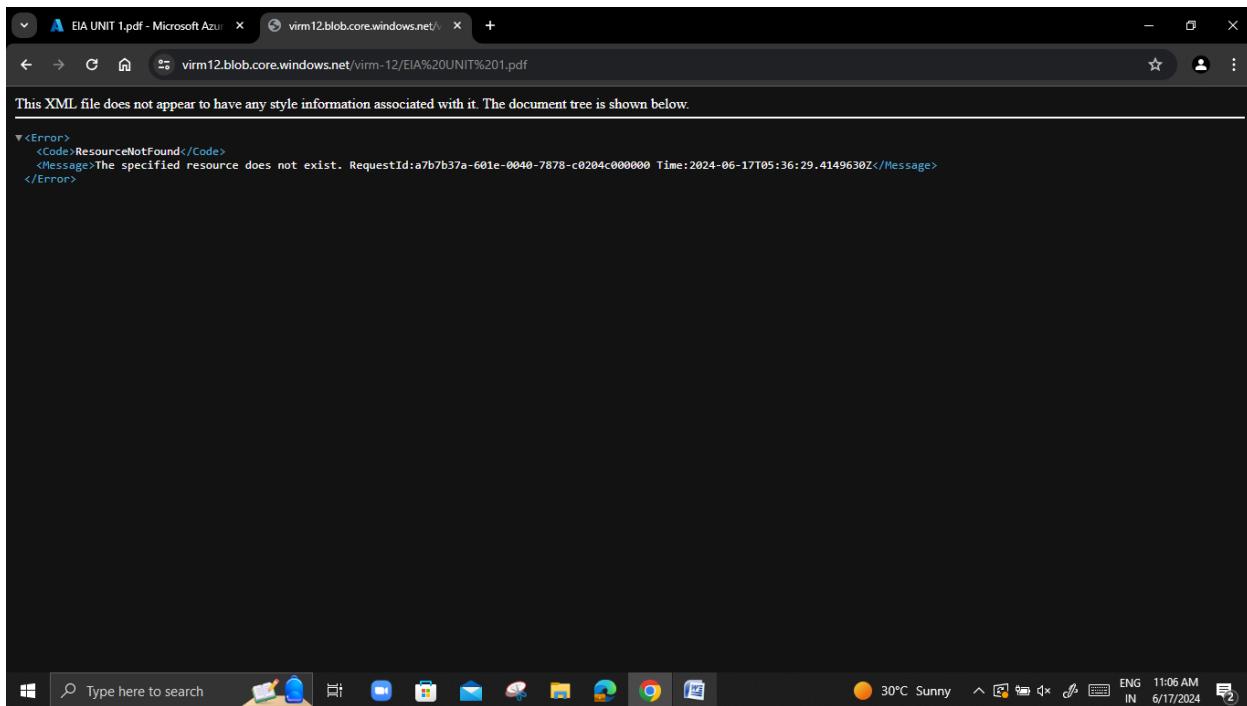
Basic Concepts of EIA

Introduction

- EIA is an activity to identify and predict the impact of a project on biogeophysical chemical environment and on human health so as to recommend appropriate legislative measures, programs, & operational procedures to minimize the impact.
- Generally EIA is carried out before commencement of any project or major activity so as to ensure that it will not in any way harm the environment on a short-term or long-term basis.
- Any major activity requires a detailed assessment of the effect of a proposed development on the environment along with monetary costs and benefits involved, need of such project.
- An impact can be defined as any change in physical, chemical, biological, cultural or socio-economic environmental system as a result of activities relating to a project.

Salient features of EIA

- EIA procedure identifies the possible positive and negative impacts resulting from a proposed project.



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

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

The screenshot shows the Microsoft Azure portal interface. The user is in the 'Containers' section of a storage account named 'virm-12'. A modal dialog box is open, asking for confirmation to delete blobs. The dialog includes a list of deletion rules, a checkbox to delete blob snapshots, and two buttons: 'OK' and 'Cancel'. The Azure search bar at the top contains the query 'Search resources, services, and docs (G+)'. The top navigation bar shows the user's name 'koratalaharipriya21csai...' and affiliation 'VARDHAMAN COLLEGE OF ENGL...'. The left sidebar lists various container management options like Overview, Diagnose and solve problems, Access Control (IAM), Settings, Shared access tokens, Access policy, Properties, and Metadata.



Lab Experiment-2

13Q. File sharing using Storage Accounts in Azure.

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

Create a storage account

Project details

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

Subscription *: Azure for Students

Resource group *: NetworkWatcherRG

Instance details

Storage account name *: stroa2

Region *: (Asia Pacific) South India

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

Redundancy *: Locally-redundant storage (LRS)

Review + create

2.Click on “Review + Create”.

The screenshot shows the Microsoft Azure portal interface for creating a new storage account. The account name is set to "stroa2". The region is selected as "(Asia Pacific) South India". The performance tier is set to "Standard" (Recommended for most scenarios), and the redundancy is set to "Locally-redundant storage (LRS)". At the bottom, there are "Previous" and "Next" buttons, and a prominent "Review + create" button.

3. Click on “Goto resources”. And click on “File Shares” in Disk Storage.

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

The screenshot shows the Microsoft Azure portal for the "stroa2" storage account. The left sidebar has a "File shares" section selected. The main area displays a table with columns: Name, Modified, Tier, and Quota. A message at the bottom states, "You don't have any file shares yet. Click '+ File share' to get started." The status bar at the bottom shows the URL as https://portal.azure.com/#@vardhaman.org/resource/subscriptions/c44b61f0-880e-428b-8111-d8345fcae707/resourcegroups/RG-6/providers/Microsoft.Storage/storageAccounts/stroa2/fileList.

The screenshot shows the Microsoft Azure portal interface for creating a new file share. The top navigation bar includes the Azure logo, a search bar, and user information. The main title is "New file share". Below it, there's a green validation message: "Validation passed". The "Review + create" tab is selected. The "Basics" section shows the file share name as "abc", access tier as "TransactionOptimized", and protocol as "SMB". The "Backup" section details a vault named "(new) vault-lxixlkuc", a backup policy of "(new) DailyPolicy-lxixl0m", and a daily backup frequency at 7:30 PM UTC, retaining backups for 30 days. At the bottom, there are "Create" and "Next >" buttons, along with a "Give feedback" link.

The screenshot shows the Microsoft Azure portal interface for the newly created file share "abc". The top navigation bar and user information are visible. The main title is "abc - Microsoft Azure". The left sidebar shows "Overview", "Diagnose and solve problems", "Access Control (IAM)", "Browse", "Operations", "Solutions", and "Backup". The main content area displays basic information about the file share, including storage account ("stroa2"), resource group ("RG-6"), location ("South India"), and configuration modified on "6/17/2024, 5:39:28 PM". It also shows the share URL as "https://stroa2.file.core.windows.net/abc". The "Properties" tab is selected. Below it, there are sections for "Size" (maximum capacity 100 TiB, used capacity 0 B, tier Transaction optimized), "Feature status" (soft delete 7 days, large file shares enabled), and "Identity-based access" (directory service not configured). The bottom navigation bar and system tray are visible.

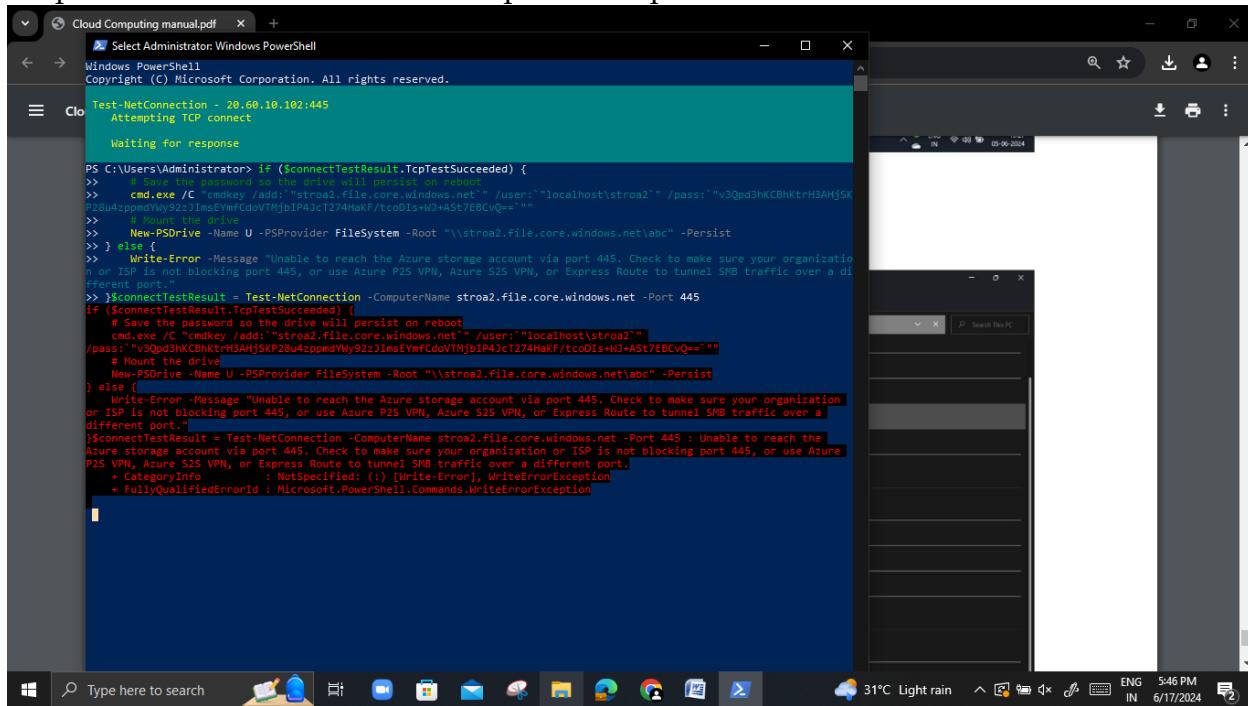
5. Click on upload and upload some files and click on upload.

The screenshot shows the Microsoft Azure portal interface. On the left, there's a sidebar with options like Overview, Diagnose and solve problems, Access Control (IAM), Browse, Operations, Snapshots, and Backup. The main area displays details for a file share named 'abc' under the storage account 'stroa2'. It shows the storage account as 'stroa2', resource group as 'RG-6', location as 'South India', subscription as 'Azure for Students', and subscription ID as 'c44b61f0-880e-428b-8111-d8345fcae707'. Below this, there are tabs for Properties, Capabilities (2), and Tutorials. Under Properties, there are sections for Size (maximum capacity 100 TiB, used capacity 0 B, tier Transaction optimized) and Performance. On the right, there's a 'Upload files' section with a message saying 'Successfully uploaded file(s)' and a note that one file was uploaded. Below it is a dashed box for dragging files or a 'Browse for files' button. There's also a checkbox for 'Overwrite if files already exist' and a 'Upload' button. At the bottom, it shows 'Current uploads' with 'AWP unit-1 ans.pdf' listed as completed at 9.32 MiB / 9.32 MiB. The taskbar at the bottom of the screen shows various icons and system status.

6.Click on connect and select Drive letter.

This screenshot shows the 'Connect' section of the Azure portal for the 'abc' file share. It provides instructions for connecting from Windows, Linux, and macOS. For Windows, it asks for a 'Drive letter' (set to 'U') and an 'Authentication method' (set to 'Storage account key'). It also includes a note about connecting using a storage account key for admin access. Below this is a 'Hide Script' button and a code editor containing a PowerShell script for testing connectivity. The taskbar at the bottom shows system status.

7. Open Windows PowerShell and paste Script.



The screenshot shows a Windows desktop environment. In the center, there is a Windows PowerShell window titled "Select Administrator: Windows PowerShell". The command being run is a PowerShell script to test network connection to an Azure storage account via port 445. The script includes commands to mount the drive, save the password, and handle errors. The PowerShell window has a dark blue background with white text. To the right of the PowerShell window is a File Explorer window showing a list of files and folders. At the bottom of the screen is the Windows taskbar, which includes icons for Start, Search, Task View, File Explorer, Edge, File Explorer, Task Manager, and others. The system tray on the right shows the date (6/17/2024), time (5:46 PM), weather (31°C Light rain), and battery status.

```
PS C:\Users\Administrator> if ($connectTestResult.TcpTestSucceeded) {  
>>     # Save the password so the drive will persist on reboot  
>>     cmd.exe /C "cmdkey /add:\\"stroa2.file.core.windows.net\" /user:'localhost\stroa2' /pass:'v3Qpd3hKCBhKtrH3AHjSKP28u4zppm0Yw92zJmsYmfCdoVThjbIP4JcT274HeKF/tco0Is+H0+ASt7EBCvQ=='"  
>>     # Mount the drive  
>>     New-PSDrive -Name U -PSProvider FileSystem -Root "\stroa2.file.core.windows.net\abc" -Persist  
>> } else {  
>>     Write-Error -Message "Unable to reach the Azure storage account via port 445. Check to make sure your organization or ISP is not blocking port 445, or use Azure P2S VPN, Azure S2S VPN, or Express Route to tunnel SMB traffic over a different port."  
>> }  
>> $connectTestResult = Test-NetConnection -ComputerName stroa2.file.core.windows.net -Port 445  
if ($connectTestResult.TcpTestSucceeded) {  
    # Save the password so the drive will persist on reboot  
    cmd.exe /C "cmdkey /add:\\"stroa2.file.core.windows.net\" /user:'localhost\stroa2' /pass:'v3Qpd3hKCBhKtrH3AHjSKP28u4zppm0Yw92zJmsYmfCdoVThjbIP4JcT274HeKF/tco0Is+H0+ASt7EBCvQ=='"  
    # Mount the drive  
    New-PSDrive -Name U -PSProvider FileSystem -Root "\stroa2.file.core.windows.net\abc" -Persist  
} else {  
    Write-Error -Message "Unable to reach the Azure storage account via port 445. Check to make sure your organization or ISP is not blocking port 445, or use Azure P2S VPN, Azure S2S VPN, or Express Route to tunnel SMB traffic over a different port."  
}  
$connectTestResult = Test-NetConnection -ComputerName stroa2.file.core.windows.net -Port 445 : Unable to reach the Azure storage account via port 445. Check to make sure your organization or ISP is not blocking port 445, or use Azure P2S VPN, Azure S2S VPN, or Express Route to tunnel SMB traffic over a different port.  
+ CategoryInfo          : NotSpecified: (:) [Write-Error], WriteErrorException  
+ FullyQualifiedErrorId : Microsoft.PowerShell.Commands.WriteErrorException
```

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