

Project Title: Cloud Infrastructure and Security Domain

Counsellor: Nita Jadav

Virtual Network Peering in Azure

What is VNet Peering in AZURE?

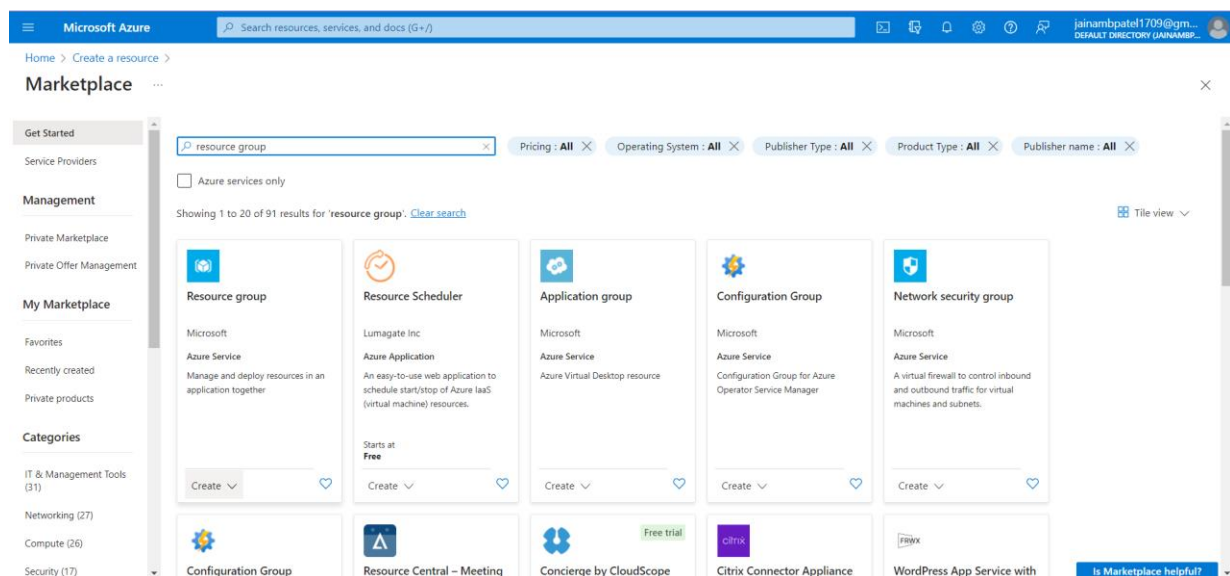
- Virtual network peering enables you to seamlessly connect two or more Virtual Networks in Azure. The virtual networks appear as one for connectivity purposes. The traffic between virtual machines in peered virtual networks uses the Microsoft backbone infrastructure.
- Like traffic between virtual machines in the same network, traffic is routed through Microsoft's private network only.

Azure supports the following types of peering:

- *Virtual network peering*: Connecting virtual networks within the same Azure region.
- *Global virtual network peering*: Connecting virtual networks across Azure regions.

Create Resource Group:

Step-1 In the search bar, type "Resource Group" and select "Resource Group" from the search results and click on "Create" button to create resource group.

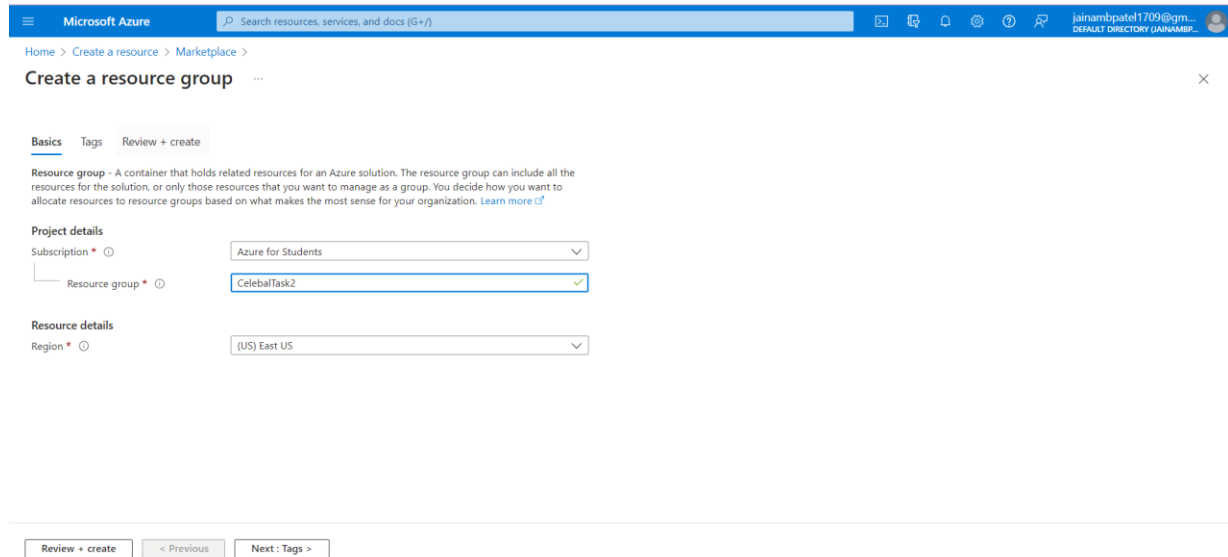


Student Id: 20IT096

Student Name: Jainam Bijalkumar Patel

Project Title: Cloud Infrastructure and Security Domain
Counsellor: Nita Jadav

Step-2 Now, select the subscription we selected here as Azure for student, entered the resource group name as CelebalTask2 and choose the region. after entering details click on next button.



Microsoft Azure

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

Home > Create a resource > Marketplace >

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 * Azure for Students

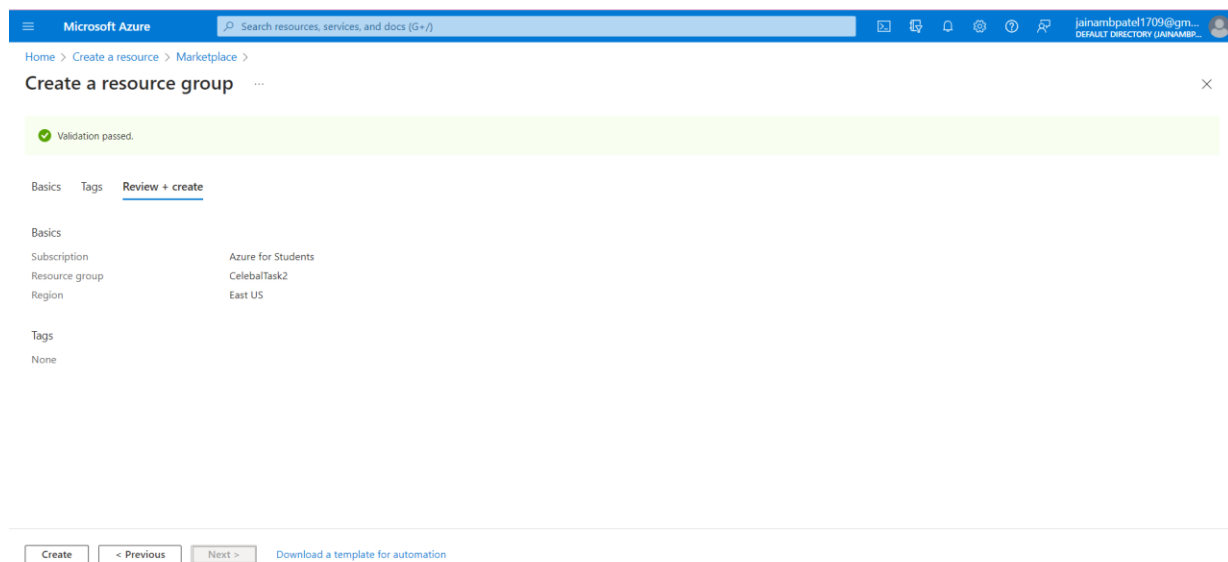
Resource group * CelebalTask2

Resource details

Region * (US) East US

Review + create < Previous Next: Tags >

Step-3 We entered the name-value keypair here also we can keep it blank. click on Next: Review + create.



Microsoft Azure

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

Home > Create a resource > Marketplace >

Create a resource group

Validation passed.

Basics Tags Review + create

Basics

Subscription Azure for Students

Resource group CelebalTask2

Region East US

Tags

None

Create < Previous Next > Download a template for automation

Student Id: 20IT096

Student Name: Jainam Bijalkumar Patel

Project Title: Cloud Infrastructure and Security Domain
Counsellor: Nita Jadav

Create Virtual Network:

Step-4 Enter the basic details of virtual network. (Subscription, name, region) and select the resource group as vNet1.

Microsoft Azure

Home > Virtual networks >

Create virtual network

Basics IP Addresses Security Tags Review + create

Azure Virtual Network (VNet) is the fundamental building block for your private network in Azure. VNet enables many types of Azure resources, such as Azure Virtual Machines (VM), to securely communicate with each other, the internet, and on-premises networks. VNet is similar to a traditional network that you'd operate in your own data center, but brings with it additional benefits of Azure's infrastructure such as scale, availability, and isolation. [Learn more about virtual network](#)

Project details

Subscription * Azure for Students

Resource group * CelebalTask2
[Create new](#)

Instance details

Name * vNet1

Region * East US

[Review + create](#) [< Previous](#) [Next : IP Addresses >](#) [Download a template for automation](#)

Step-5 On IP Addresses tab we can select default subnet but here we created a subnet named subnet1.

Microsoft Azure

Home > Virtual networks >

Create virtual network

Basics **IP Addresses** Security Tags Review + create

The virtual network's address space, specified as one or more address prefixes in CIDR notation (e.g. 192.168.1.0/24).

IPv4 address space

192.168.1.0/24 192.168.1.0 - 192.168.1.255 (256 addresses)

☐ Add IPv6 address space

The subnet's address range in CIDR notation (e.g. 192.168.1.0/24). It must be contained by the address space of the virtual network.

[+ Add subnet](#) [Remove subnet](#)

Subnet name	Subnet address range	NAT gateway
subnet1	192.168.1.0/24	-

Edit subnet

Subnet name * subnet1

Subnet address range * 192.168.1.0/24
192.168.1.0 - 192.168.1.255 (251 + 5 Azure reserved addresses)

NAT GATEWAY

Simplify connectivity to the internet using a network address translation gateway. Outbound connectivity is possible without a load balancer or public IP addresses attached to your virtual machines. [Learn more](#)

NAT gateway
None

SERVICE ENDPOINTS

Create service endpoint policies to allow traffic to specific azure resources from your virtual network over service endpoints. [Learn more](#)

Services

[Save](#) [Cancel](#)

[Review + create](#) [< Previous](#) [Next : Security >](#) [Download a template for automation](#)

Student Id: 20IT096

Student Name: Jainam Bijalkumar Patel

Project Title: Cloud Infrastructure and Security Domain
Counsellor: Nita Jadav

Step-6 Virtual Network is created. you can click on go to resource and can see all the details of Virtual Network.

The screenshot shows the Microsoft Azure portal interface. The main heading is "Microsoft.VirtualNetwork-20230621210457 | Overview". Below this, it states "Your deployment is complete". The deployment details show the name "Microsoft.VirtualNetwork-20230621210457", subscription "Azure for Students", and resource group "CelebalTask2". The start time is "6/21/2023, 9:10:58 PM" and the correlation ID is "3022c54d-4fb2-4b26-83ec-4e4e4ab2bf00". A "Go to resource" button is present. A notification in the top right corner says "Deployment succeeded" and "Deployment 'Microsoft.VirtualNetwork-20230621210457' to resource group 'CelebalTask2' was successful." The right sidebar contains sections for "Cost management", "Microsoft Defender for Cloud", "Free Microsoft tutorials", and "Work with an expert".

Step-7 Enter the basic details of virtual network. (Subscription, name, region) and select the resource group as vNet2.

The screenshot shows the "Create virtual network" form in the Microsoft Azure portal. The form is in the "Basics" tab. The "Project details" section is filled out with the following information:

- Subscription: Azure for Students
- Resource group: CelebalTask2
- Name: vNet2
- Region: East US

The "Instance details" section is also visible, showing the name "vNet2" and region "East US". At the bottom, there are buttons for "Review + create", "< Previous", "Next: IP Addresses >", and "Download a template for automation". A link to "https://go.microsoft.com/fwlink/?linkid=2097844" is also present.

Student Id: 20IT096

Student Name: Jainam Bijalkumar Patel

Project Title: Cloud Infrastructure and Security Domain

Counsellor: Nita Jadav

Step-8 On IP Addresses tab we can select default subnet but here we created a subnet named subnet2.

Microsoft Azure

Home > Virtual networks >

Create virtual network

Basics IP Addresses Security Tags Review + create

The virtual network's address space, specified as one or more address prefixes in CIDR notation (e.g. 192.168.1.0/24).

IP v4 address space

172.16.1.0/24

☐ Add IPv6 address space

The subnet's address range in CIDR notation (e.g. 192.168.1.0/24). It must be contained by the address space of the virtual network.

+ Add subnet Remove subnet

Subnet name	Subnet address range	NAT gateway
subnet2	172.16.1.0/24	-

Edit subnet

Subnet name *
subnet2

Subnet address range *
172.16.1.0/24
172.16.1.0 - 172.16.1.255 (251 + 5 Azure reserved addresses)

NAT GATEWAY

Simplify connectivity to the internet using a network address translation gateway. Outbound connectivity is possible without a load balancer or public IP addresses attached to your virtual machines. [Learn more](#)

NAT gateway
None

SERVICE ENDPOINTS

Create service endpoint policies to allow traffic to specific azure resources from your virtual network over service endpoints. [Learn more](#)

Services

Save Cancel

Review + create < Previous Next : Security > Download a template for automation

Step-9 Virtual Network is created. you can click on go to resource and can see all the details of Virtual Network.

Microsoft Azure

Home >

Microsoft.VirtualNetwork-20230621211157 | Overview

Deployment

Search

Delete Cancel Redeploy Download Refresh

Your deployment is complete

Deployment name : Microsoft.VirtualNetwork-20230621211157 Start time : 6/21/2023, 9:14:20 PM
Subscription : Azure for Students Correlation ID : fd413670-8109-434b-9e73-fb431654e44a
Resource group : CelebalTask2

Deployment details

Next steps

[Go to resource](#)

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

Cost management
Get notified to stay within your budget and prevent unexpected charges on your bill.
[Set up cost alerts >](#)

Microsoft Defender for Cloud
Secure your apps and infrastructure
[Go to Microsoft Defender for Cloud >](#)

Free Microsoft tutorials
[Start learning today >](#)

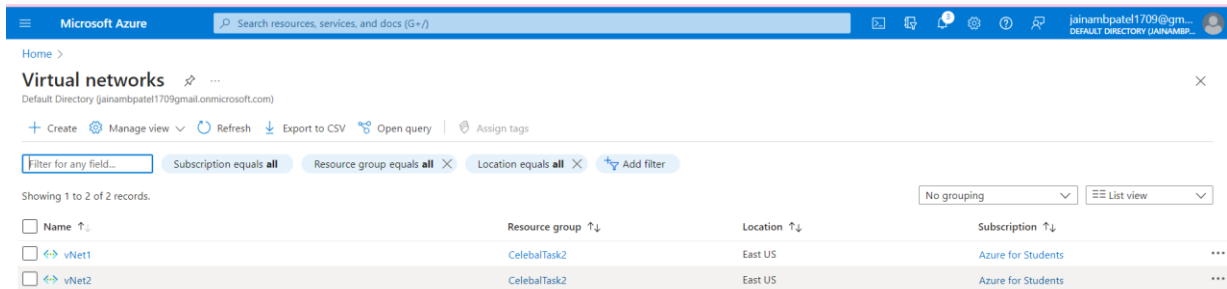
Work with an expert
Azure experts are service provider partners who can help manage your assets on Azure and be your first line of support.
[Find an Azure expert >](#)

Student Id: 20IT096

Student Name: Jainam Bijalkumar Patel

Project Title: Cloud Infrastructure and Security Domain
Counsellor: Nita Jadav

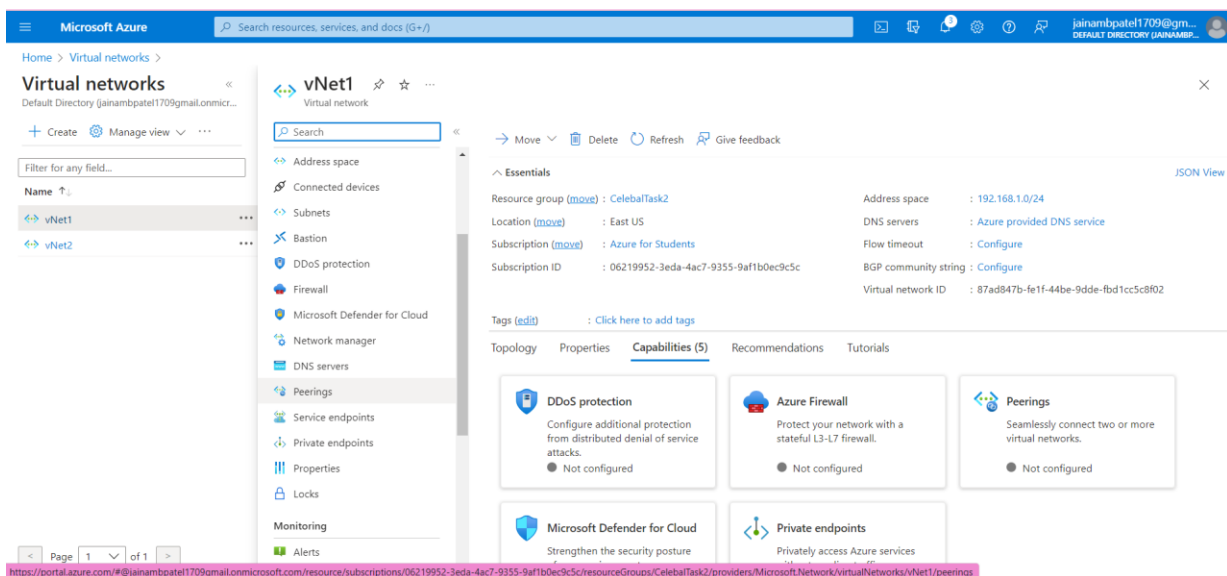
Step-10 Go to the Virtual networks dashboard to check if the virtual network is created.



VNET Peering

Step-1 Go to the Azure portal and search for Virtual networks.

Step-2 Select the vNet1 we created and open its settings and peering tab and click on add button.



Student Id: 20IT096

Student Name: Jainam Bijalkumar Patel

Project Title: Cloud Infrastructure and Security Domain

Counsellor: Nita Jadav

Step-3 Give the Peering link a name.

Microsoft Azure

Search resources, services, and docs (G+)

Home > Virtual networks > vNet1 | Peerings >

Add peering

vNet1

This virtual network

Peering link name *

vNet1-vNet2

Traffic to remote virtual network ⓘ

☒ Allow (default)

☐ Block all traffic to the remote virtual network

Traffic forwarded from remote virtual network ⓘ

☒ Allow (default)

☐ Block traffic that originates from outside the remote virtual network

Virtual network gateway or Route Server ⓘ

☐ Use this virtual network's gateway or Route Server

☐ Use the remote virtual network's gateway or Route Server

☒ None (default)

Remote virtual network

Peering link name *

vNet1-vNet2

Virtual network deployment model ⓘ

☒ Resource manager

Add

Step-4 Give peering link name as vNet2-vNet1 and the select vNet2 as remote virtual network and then click on add.

Microsoft Azure

Search resources, services, and docs (G+)

Home > Virtual networks > vNet1 | Peerings >

Add peering

vNet1

Remote virtual network

Peering link name *

vNet1-vNet2

Virtual network deployment model ⓘ

☒ Resource manager

☐ Classic

☐ I know my resource ID ⓘ

Subscription *

Azure for Students

Virtual network *

vNet2

Traffic to remote virtual network ⓘ

☒ Allow (default)

☐ Block all traffic to the remote virtual network

Traffic forwarded from remote virtual network ⓘ

☒ Allow (default)

☐ Block traffic that originates from outside the remote virtual network

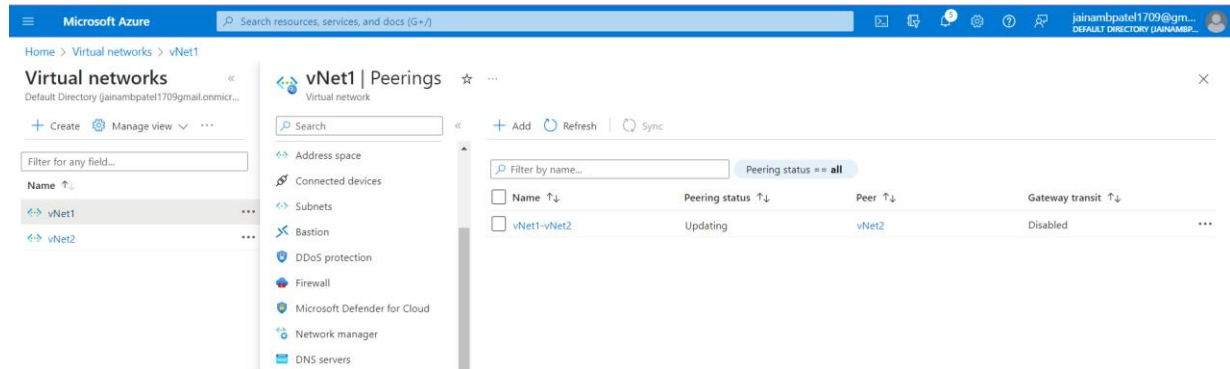
Add

Student Id: 20IT096

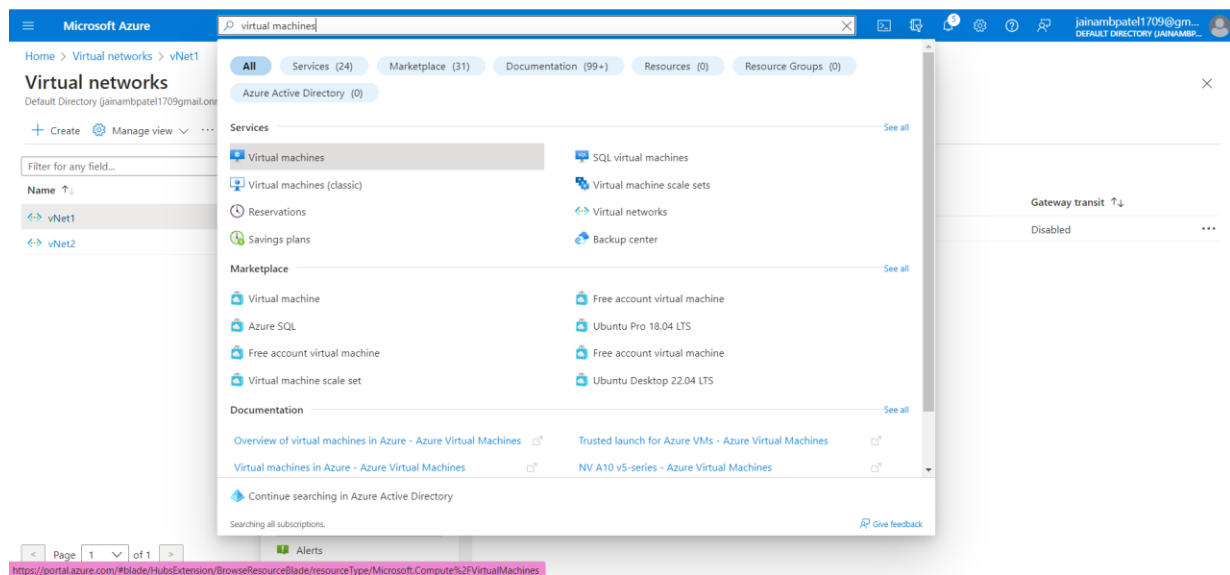
Student Name: Jainam Bijalkumar Patel

Project Title: Cloud Infrastructure and Security Domain

Counsellor: Nita Jadav

Step-5 In the Peering tab check the Peering status, it should show connected.

Create Virtual Machine:

Step-1 Go to the Azure portal and search for Virtual Machine and click on it.

Student Id: 20IT096

Student Name: Jainam Bijalkumar Patel

Project Title: Cloud Infrastructure and Security Domain**Counsellor: Nita Jadav**

Step-2 Select the resource group and then name the VM, also you may select the desired region as well.

Microsoft Azure

Home > Virtual machines >

Create a virtual machine

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 *

Region *

Availability options

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

Security type
[Configure security features](#)

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

VM architecture ☐ ARM64 ☒ x64

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

Step-3 Now Create a username and password for the VM instance and select inbound port as RDP(3389).

Microsoft Azure

Home > Virtual machines >

Create a virtual machine

Changing Basic options may reset selections you have made. Review all options prior to creating the virtual machine.

Run with Azure Spot discount ☐

Size *
[See all sizes](#)

Administrator account

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.

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

go.microsoft.com/fwlink/?LinkId=2126834

Student Id: 20IT096**Student Name: Jainam Bijalkumar Patel**

Project Title: Cloud Infrastructure and Security Domain

Counsellor: Nita Jadav

Step-4 Click on next and select OS disk type as Standard HDD.

The screenshot shows the 'Create a virtual machine' wizard in the Microsoft Azure portal, specifically the 'Disks' tab. The wizard is for a Windows 11 VM. The 'OS disk' section is expanded, showing 'Standard SSD (locally-redundant storage)' selected. Below this, it states: 'The selected VM size supports premium disks. We recommend Premium SSD for high IOPS workloads. Virtual machines with Premium SSD disks qualify for the 99.9% connectivity SLA.' The 'Delete with VM' checkbox is checked. The 'Key management' dropdown is set to 'Platform-managed key'. The 'Enable Ultra Disk compatibility' checkbox is unchecked, with a note: 'Ultra disk is not supported with selected security type.' At the bottom, there are buttons for 'Review + create', '< Previous', and 'Next: Networking >'. A URL 'https://portal.azure.com/#' is visible in the bottom left corner.

Step-5 After that click on review and create. Then it will show you the pricing and then click on create and we can see that vm1 has been created.

The screenshot shows the 'Overview' page for a deployment named 'CreateVm-microsoftwindowsdesktop.windows-11-win11-20230622193455'. The deployment is complete, with a green checkmark icon. The deployment details show: Deployment name: CreateVm-microsoftwindowsdesktop.windows-11-win11-20230622193455, Subscription: Azure for Students, Resource group: CelebaTask2, Start time: 6/22/2023, 7:36:37 PM, and Correlation ID: 58fa3726-e417-4688-b64a-c5c38e00343. The 'Next steps' section includes links for 'Setup auto-shutdown', 'Monitor VM health, performance and network dependencies', and 'Run a script inside the virtual machine'. There are buttons for 'Go to resource' and 'Create another VM'. A 'Give feedback' link is also present. On the right side, there is a 'Deployment succeeded' notification and a sidebar with links to 'Cost Management', 'Microsoft Defender for Cloud', 'Free Microsoft tutorials', and 'Work with an expert'.

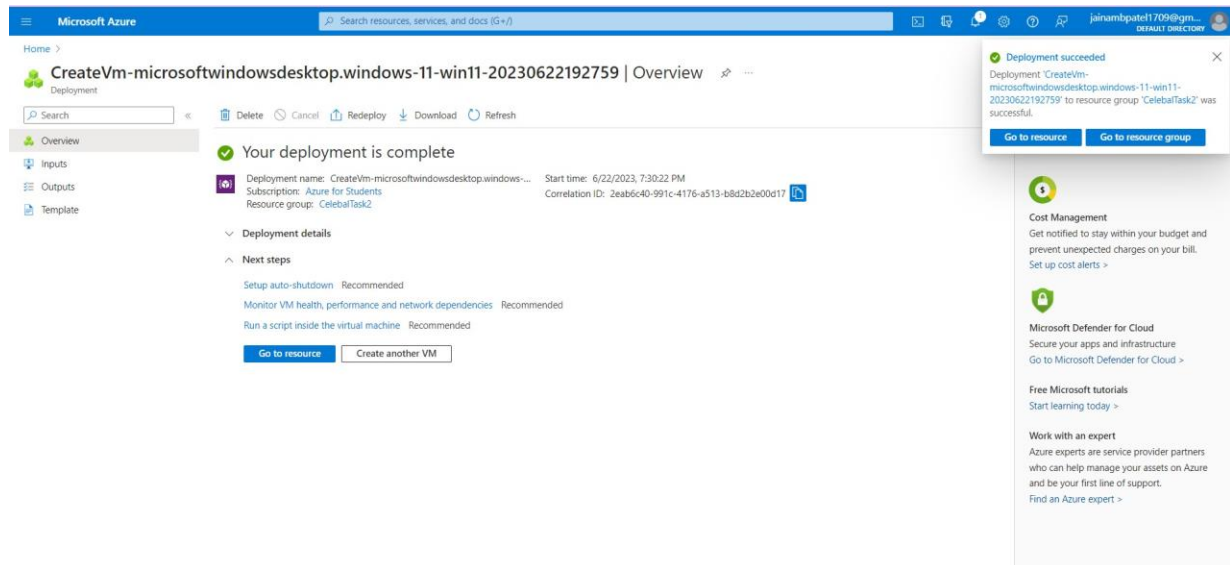
Student Id: 20IT096

Student Name: Jainam Bijalkumar Patel

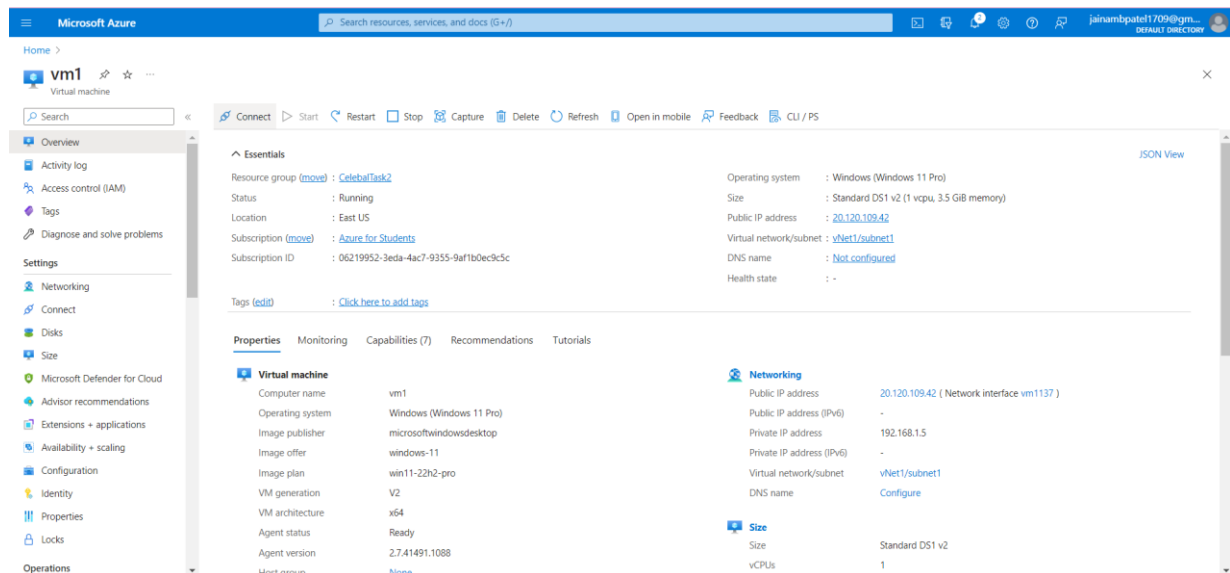
Project Title: Cloud Infrastructure and Security Domain

Counsellor: Nita Jadav

Step-6 create vm2 with the same process and steps we have created vm1 we can see that VM1 has been created.



Step-7 After creation of virtual machine click on Connect button.



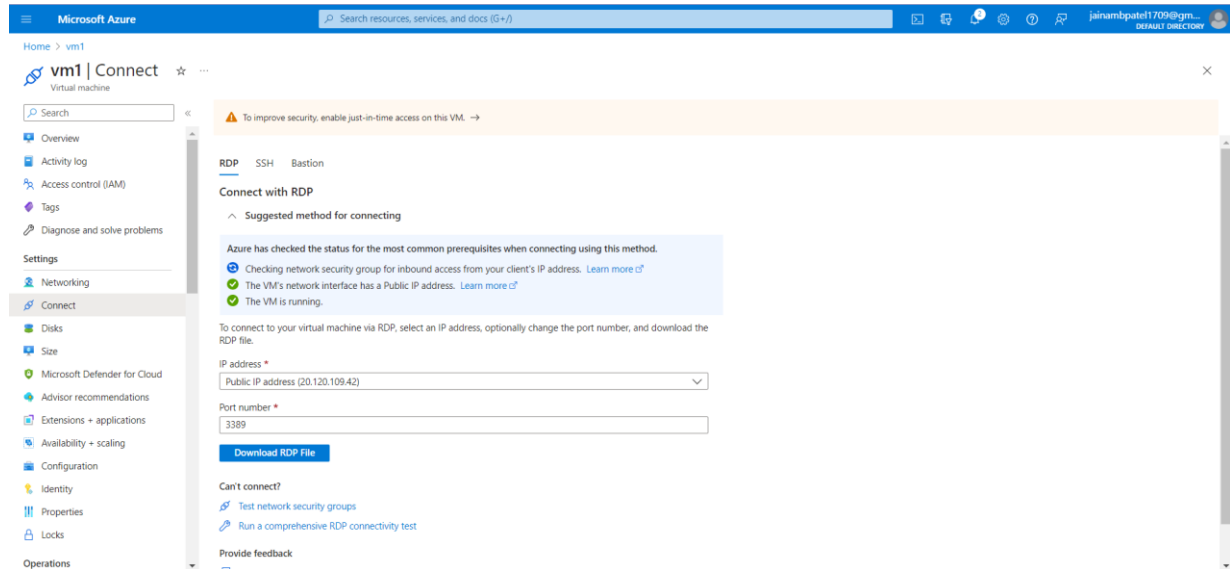
Student Id: 20IT096

Student Name: Jainam Bijalkumar Patel

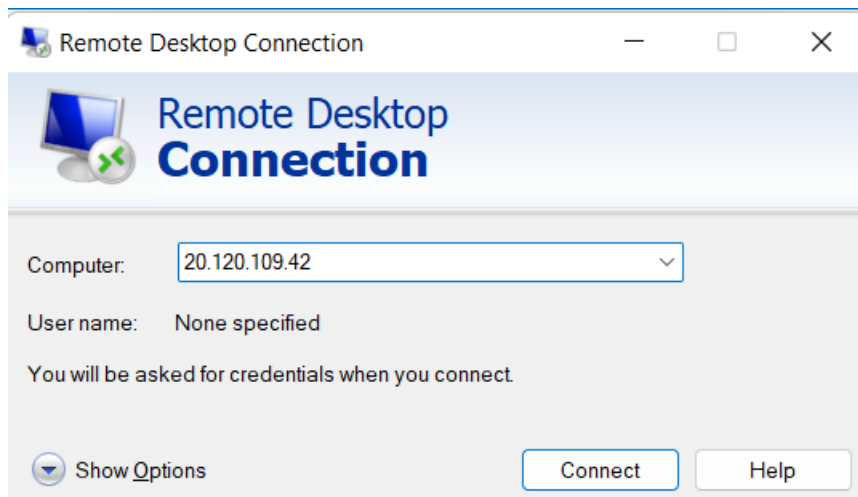
Project Title: Cloud Infrastructure and Security Domain

Counsellor: Nita Jadav

Step-8 click on download RDP file to connect/for remote desktop vm1



Step-9 Connect with vm1



Student Id: 20IT096

Student Name: Jainam Bijalkumar Patel

Project Title: Cloud Infrastructure and Security Domain

Counsellor: Nita Jadav

Windows Security

Enter your credentials


These credentials will be used to connect to 20.120.109.42.


Jainamvm1

••••••••••

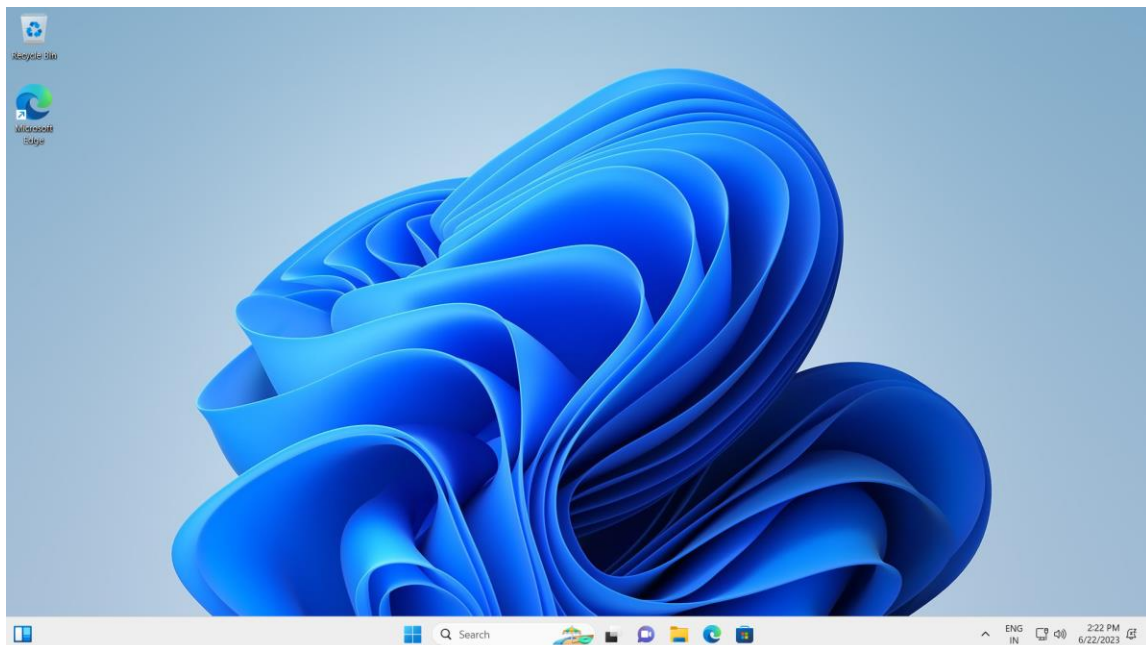
☐ Remember me

[More choices](#)

 jainam patel
MicrosoftAccount\jainambpatel1709@gmail.com

 Use a different account

OK Cancel

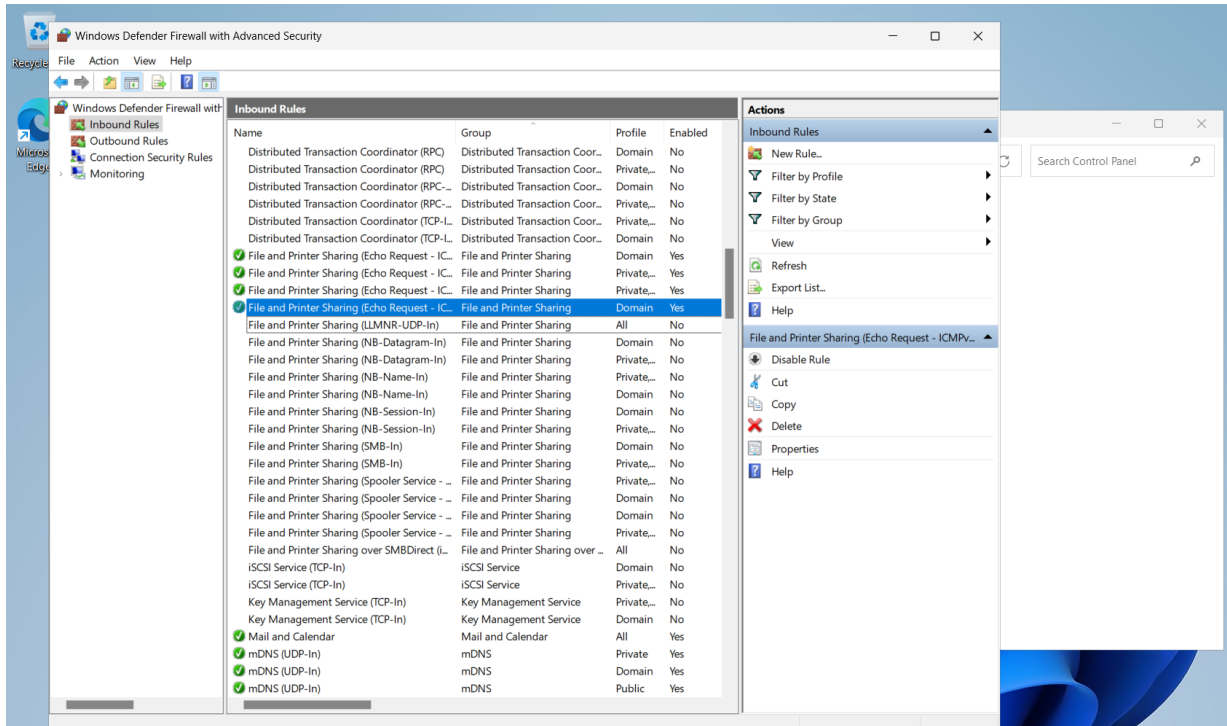


Student Id: 20IT096

Student Name: Jainam Bijalkumar Patel

Project Title: Cloud Infrastructure and Security Domain

Counsellor: Nita Jadav

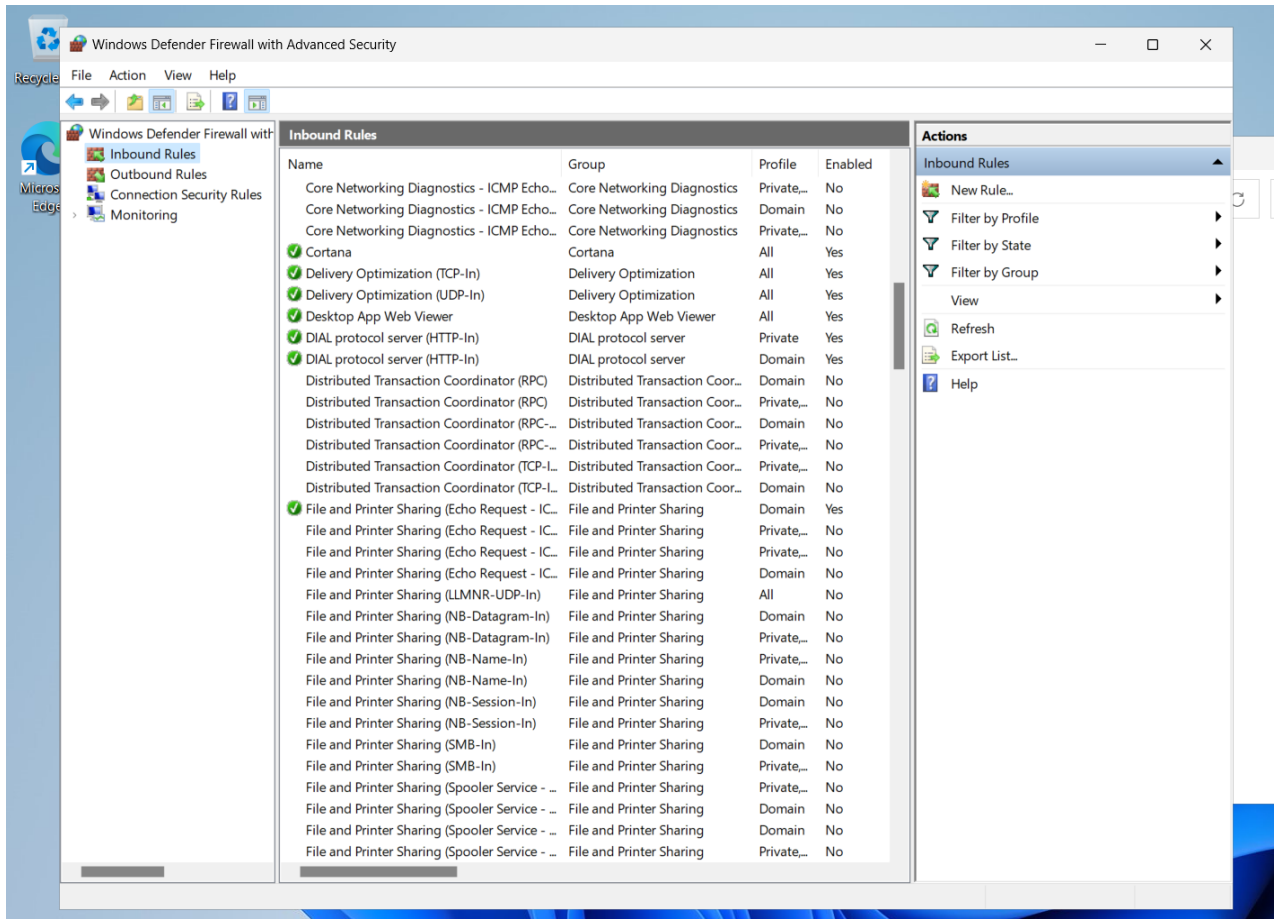
Step-10 Enable the Internet Control Message Protocol (ICMP) in Inbound Rule Section in vm1

Student Id: 20IT096

Student Name: Jainam Bijalkumar Patel

Project Title: Cloud Infrastructure and Security Domain

Counsellor: Nita Jadav

Step-11 Enable the Internet Control Message Protocol (ICMP) in Inbound Rule Section in vm2

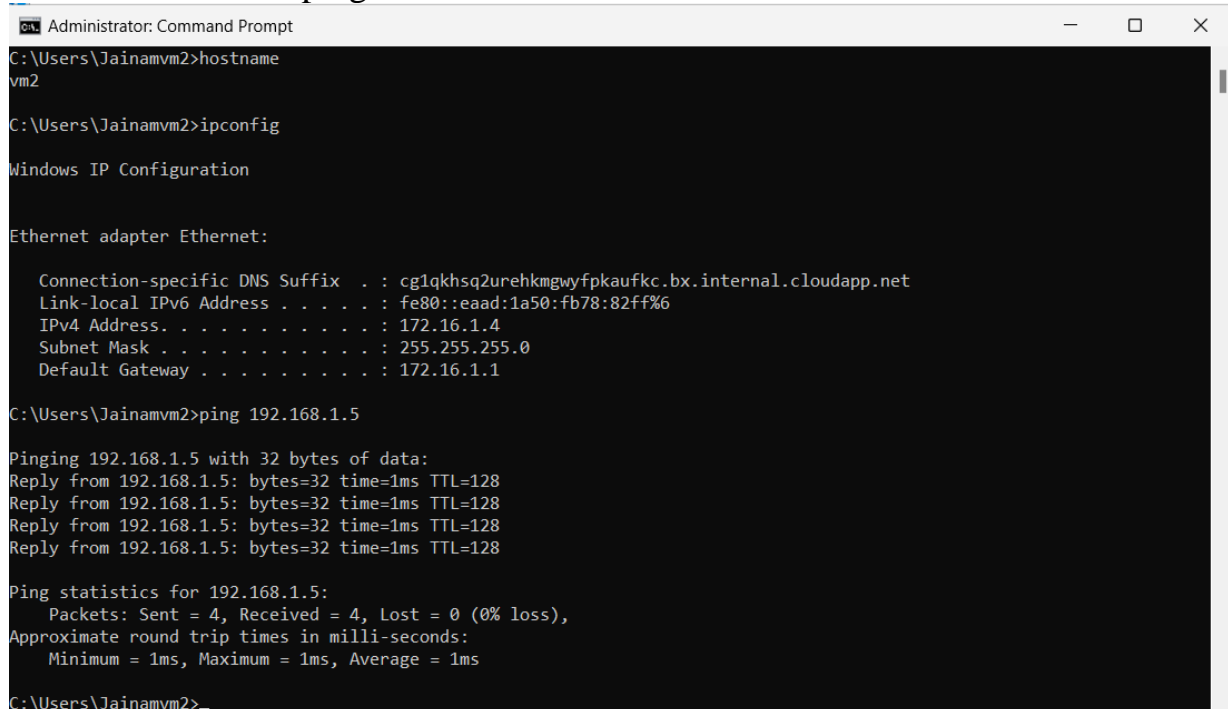
Project Title: Cloud Infrastructure and Security Domain

Counsellor: Nita Jadav

Step-12

1. Check the hostname using command: hostname
2. Check the ip address using command: ipconfig
3. Check the connectivity using command: ping

We can see that ping is successful so connection is established



```
Administrator: Command Prompt
C:\Users\Jainamvm2>hostname
vm2
C:\Users\Jainamvm2>ipconfig

Windows IP Configuration

Ethernet adapter Ethernet:

    Connection-specific DNS Suffix  . : cg1qkhsq2urehkmgyfypkaufkc.bx.internal.cloudapp.net
    Link-local IPv6 Address . . . . . : fe80::ead:1a50:fb78:82ff%6
    IPv4 Address. . . . . : 172.16.1.4
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 172.16.1.1

C:\Users\Jainamvm2>ping 192.168.1.5

Pinging 192.168.1.5 with 32 bytes of data:
Reply from 192.168.1.5: bytes=32 time=1ms TTL=128
Reply from 192.168.1.5: bytes=32 time=1ms TTL=128
Reply from 192.168.1.5: bytes=32 time=1ms TTL=128
Reply from 192.168.1.5: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.1.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 1ms, Average = 1ms

C:\Users\Jainamvm2>
```

Student Id: 20IT096

Student Name: Jainam Bijalkumar Patel