

Deploying Azure Infrastructure: A Step-by-Step Guide



- Create a resource group
- Create a virtual network with 2 subnets
- Deploy a virtual machine and attach a disk
- Configure a network interface and assign private and public IPs
- Attach the NIC to the VM
- Set up a Network Security Group (NSG) with rules to allow web traffic and RDP
- Configure Virtual Network Peering

Deploying Azure Infrastructure: A Step-by-Step Guide

In this guide, you will learn how to:

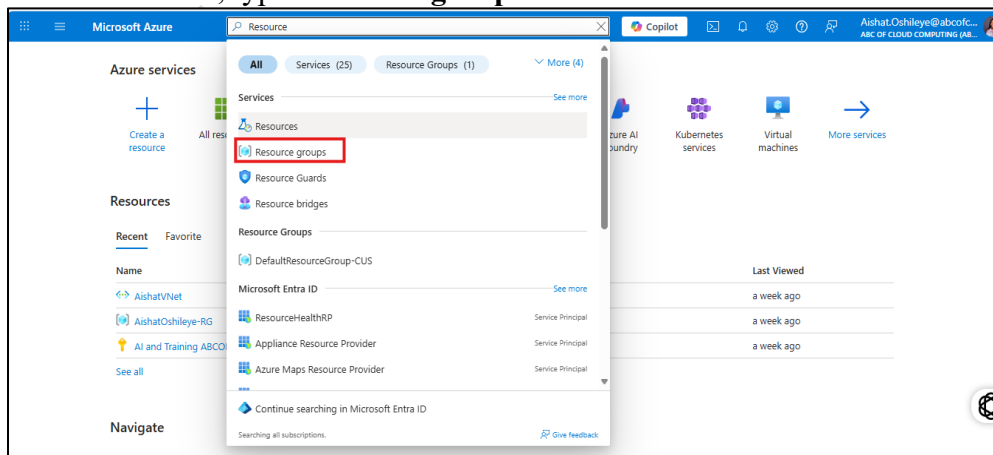
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Prerequisites

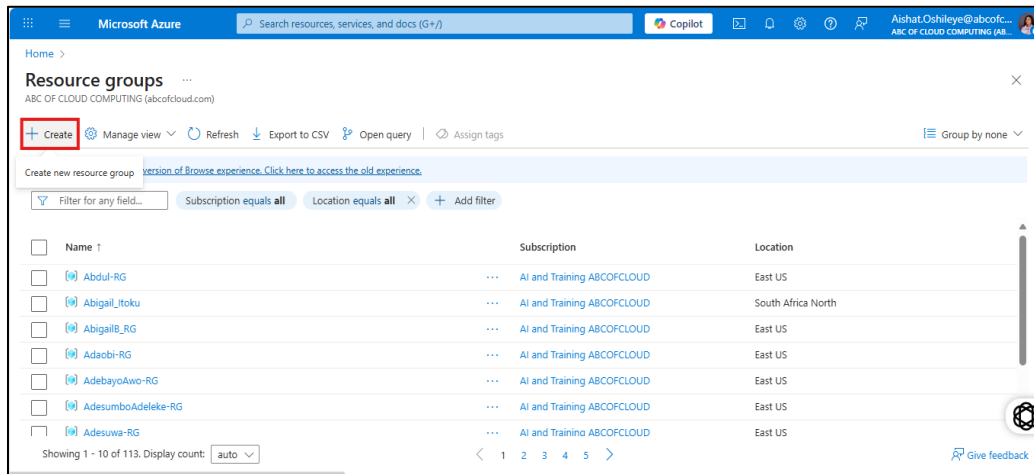
- An active [Azure subscription](#)
- Access to [Azure Portal](#)

Task 1: Create a Resource Group

1. Log in to the Azure Portal.
2. In the search bar, type **Resource groups** and select it.



3. Click on + Create.

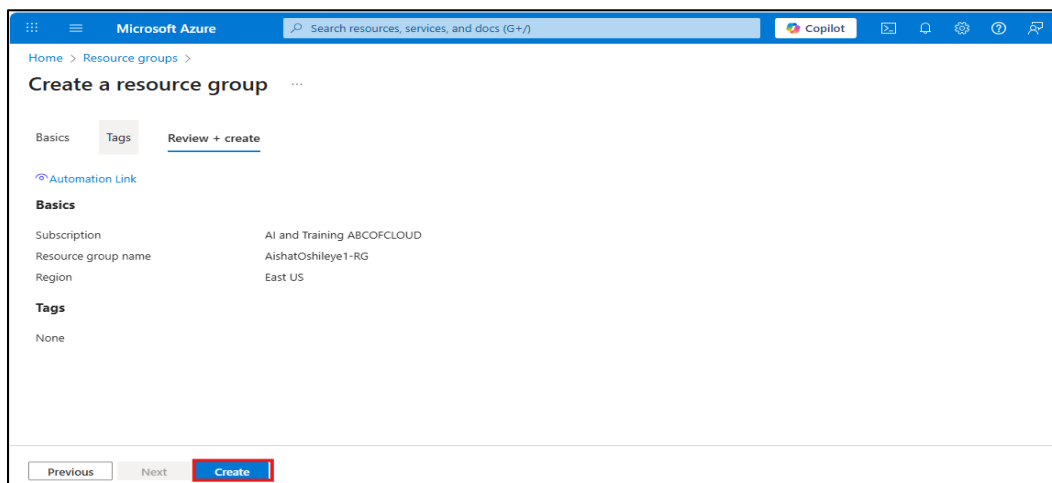
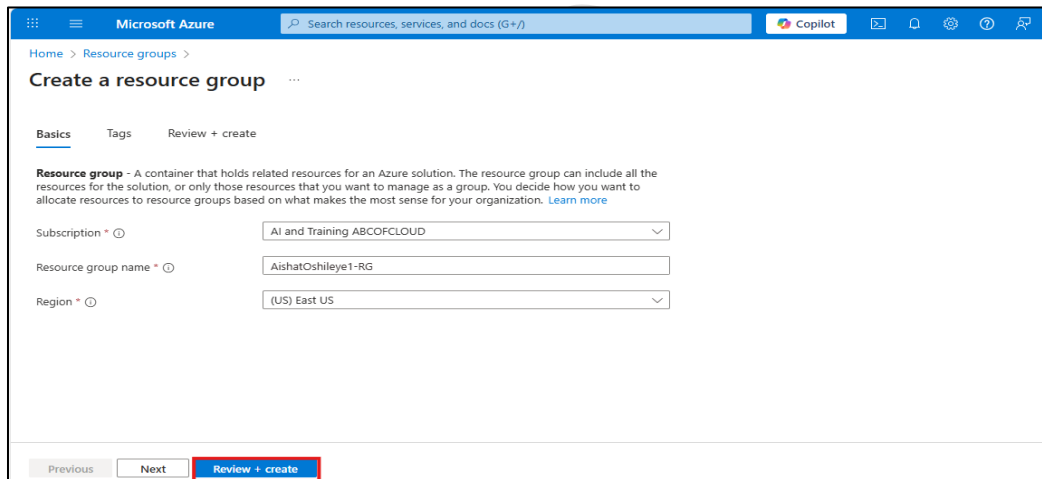


4. Choose your Subscription.

5. Enter a Resource Group Name (e.g., MyResourceGroup).

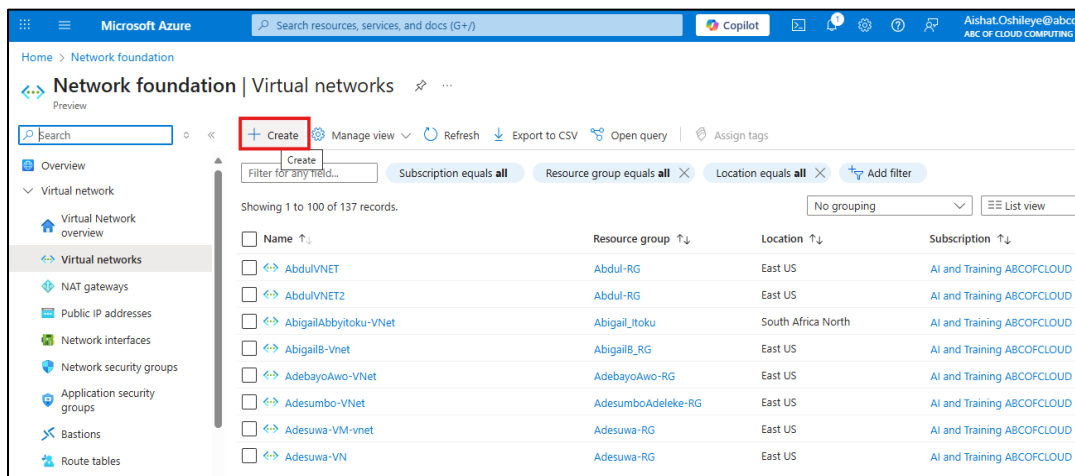
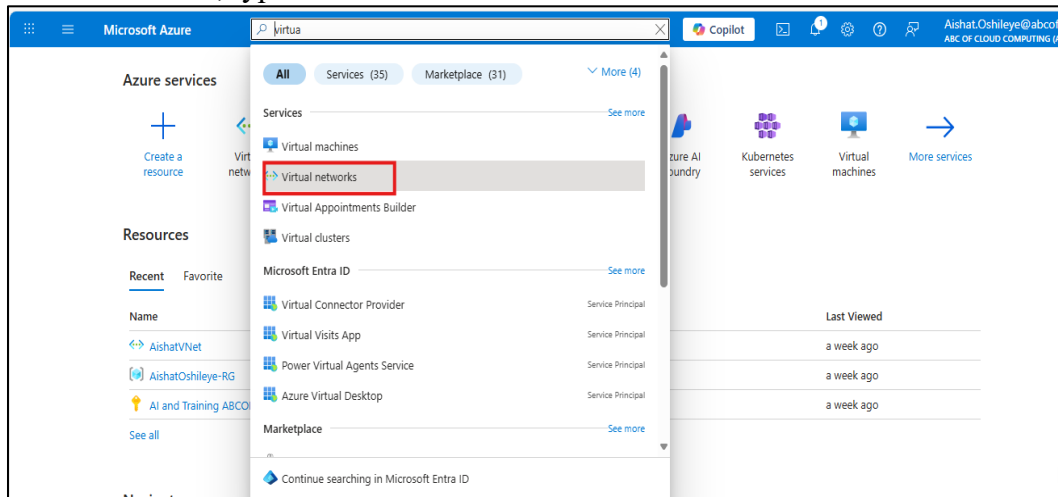
6. Select a Region (e.g., West Europe).

7. Click Review + Create → Create.



Task 2: Create a Virtual Network (VNet) with 2 Subnets

1. In the search bar, type **Virtual networks** and click **+ Create**.



2. Choose your **Subscription** and **Resource Group**.
3. Enter a **Name** for your VNet (e.g., MyVNet).

4. Select the **Region**. Then Navigate to the IP Addresses tab

Microsoft Azure

Home > Network foundation > Virtual networks >

Create virtual network

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

Subscription * AI and Training ABCOFCLOUD

Resource group * AishatOshiley1-RG

Instance details

Virtual network name * AishatO-Vnet

Region * (US) East US

Previous Next: Security Review + create

5. Under **IP Addresses**, define your **Address Space** (e.g., 10.0.0.0/16).

6. Add 2 Subnets: Example;

- Subnet1: 10.0.1.0/24
- Subnet2: 10.0.2.0/24

Microsoft Azure

Home > Network foundation > Virtual networks >

Create virtual network

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

+ Add a subnet

10.13.0.0/16

10.13.0.0 /16 65,536 addresses

Subnets

Subnets	IP address range	Size	NAT gateway
default	10.13.0.0 - 10.13.0.255	/24 (256 addresses)	-

Previous Next: Tags Review + create

Add a subnet

Select an address space and configure your subnet. You can customize a default subnet or select from subnet templates if you plan to add select services later. Learn more

Subnet purpose Default

Name * AishatO-Subnet1

IPv4

Include an IPv4 address space

IPv4 address range 10.13.0.0 - 10.13.255.255

Starting address * 10.13.1.0

Size /24 (256 addresses)

Subnet address range 10.13.1.0 - 10.13.1.255

IPv6

Add Cancel

Microsoft Azure

Home > Network foundation > Virtual networks >

Create virtual network

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

+ Add a subnet

192.168.13.0/24

192.168.13.0 /24 256 addresses

Subnets

Subnets	IP address range	Size	NAT gateway
default	192.168.13.0 - 192.168.13.255	/24 (256 addresses)	-

Previous Next: Tags Review + create

Edit subnet

Select an address space and configure your subnet. You can customize a default subnet or select from subnet templates if you plan to add select services later. Learn more

Subnet purpose Default

Name * AishatO-Subnet1

IPv4

Include an IPv4 address space

IPv4 address range 192.168.13.0 - 192.168.13.255

Starting address * 192.168.13.0

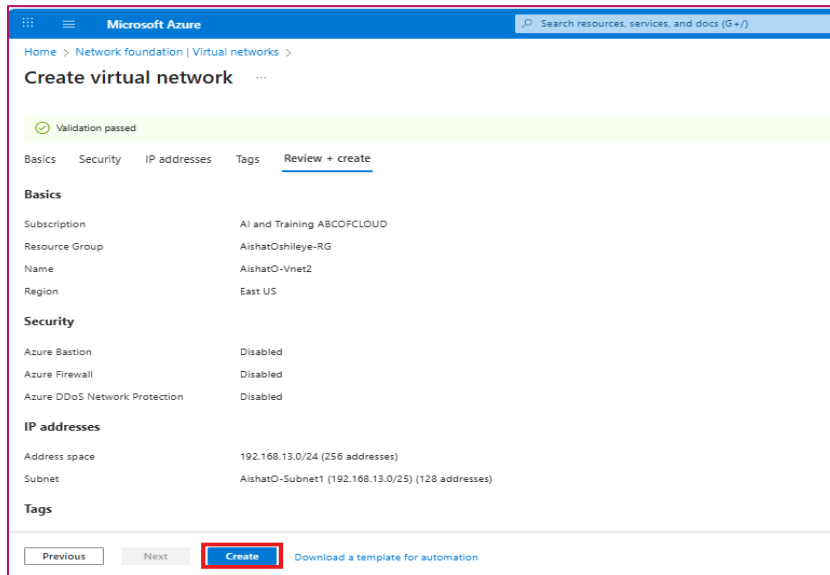
Size /25 (128 addresses)

Subnet address range 192.168.13.0 - 192.168.13.127

IPv6

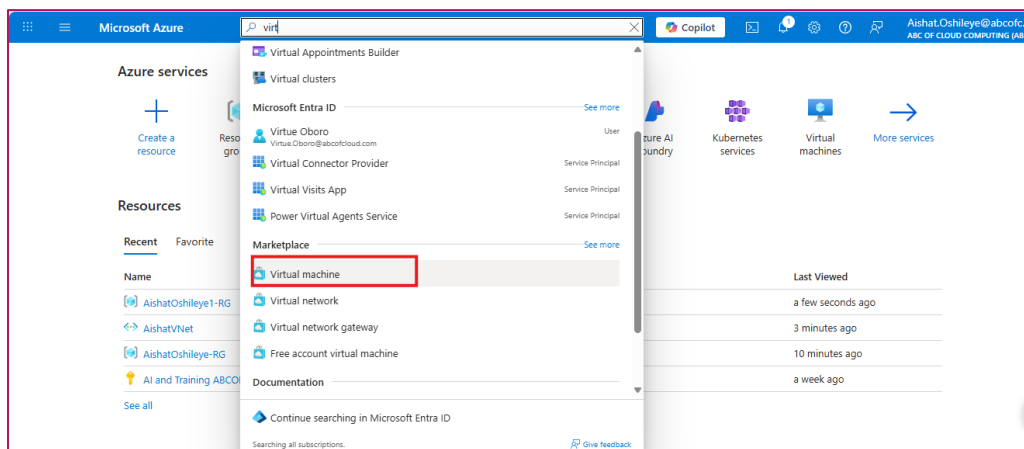
Save Cancel

7. Click **Review + Create** → **Create**.



Task 3: Create a Virtual Machine and Attach an Additional Disk

1. In the search bar, type **Virtual machines** → Click + **Create** → **Azure virtual machine**.



2. Select your **Resource Group**.
3. Name your VM (e.g., MyVM).
4. Choose the **Region** (same as your VNet).
5. Choose an **Image** (e.g., Windows Server 2019 Datacenter).

Microsoft Azure Search resources, services, and docs (G+/I) Copilot Aishat.Oshiley@abcof ABC OF CLOUD COMPUTING (A)

Home > **Create a virtual machine** ...

Help me create a low cost VM Help me create a VM optimized for high availability Help me choose the right VM size for my workload

Subscription *

Resource group * [Create new](#)

Instance details

Virtual machine name * ✓

Region *

Availability options

Zone options ☒ Self-selected zone
Choose up to 3 availability zones, one VM per zone
☐ Azure-selected zone (Preview)
Let Azure assign the best zone for your needs
Using an Azure-selected zone is not supported in region 'East US'.

< Previous Next : Disks > Review + create Give feedback

Microsoft Azure Search resources, services, and docs (G+/I) Copilot Aishat.Oshiley@abcof ABC OF CLOUD COMPUTING (A)

Home > **Create a virtual machine** ...

Help me create a low cost VM Help me create a VM optimized for high availability Help me choose the right VM size for my workload

Security type [Configure security features](#)

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

VM architecture ☐ Arm64 ☒ x64 ☒ Arm64 is not supported with the selected image.

Run with Azure Spot discount ☐

Size * [See all sizes](#)

✓ The size you've selected is supported by higher storage performance with NVMe enabled. [Learn more](#) ⓘ

< Previous Next : Disks > Review + create

6. Create or select an **Admin username and Password**.
7. Under **Inbound port rules**, select **RDP (3389)**.

Microsoft Azure Search resources, services, and docs (G+/I) Copilot Aishat.Oshiley@abcof ABC OF CLOUD COMPUTING (A)

Home > **Create a virtual machine** ...

Help me create a low cost VM Help me create a VM optimized for high availability Help me choose the right VM size for my workload

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 *

< Previous Next : Disks > Review + create

8. Click **Next: Disks** and enter disk details → **Create and Attach a New Disk**.

Configure New Disk details, **Save** and Click **Next: Networking**

Microsoft Azure

Home > Create a virtual machine >

Create a new disk

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

Name *

Source type *

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

Key management

Enable shared disk ☐ Yes ☒ No

Delete disk with VM ☒

OK

Microsoft Azure

Home >

Create a virtual machine

Help me create a low cost VM | Help me create a VM optimized for high availability | Help me choose the right VM size for my workload

Key management

Enable Ultra Disk compatibility ☐
Ultra disk is supported in Availability Zone(s) 1,2,3 for the selected VM size Standard_D2ds_v6.

Data disks for AishatO-VM

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

LUN	Name	Size (GiB)	Disk type	Host caching	Delete with VM
0	AishatO-VM_DataDis...	1024	Standard SSD LRS	Read/write	<input checked="" type="checkbox"/>

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

< Previous | **Next: Networking >** | Review + create

- Under **Networking**, choose:
 - Existing **Virtual Network** and **Subnet**
 - Select **create new** under **Public IP** (optional for RDP)
 - Select an option (**Basic**) for **NIC Network Security Group**
- Click **Review + Create** → **Create**.

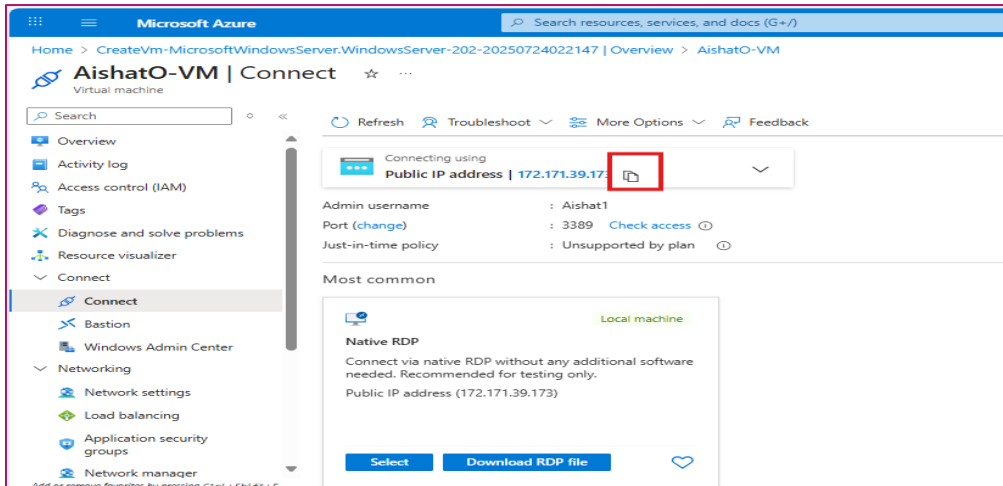
The first screenshot shows the 'Create a virtual machine' page. The 'Public IP' dropdown is set to '(new) AishatO-VM-ip', and the 'Review + create' button is highlighted. The second screenshot shows the 'Validation passed' screen with a summary of the VM configuration, including the subscription, resource group, region, and image. The third screenshot shows the 'Your deployment is complete' overview page, displaying the deployment name, subscription, and resource group, along with recommended next steps like 'Setup auto-shutdown' and 'Monitor VM health'.

Connect to the VM Via RDP, only recommended for testing purpose. RDP exposes the VM to the public

1. In the left-hand menu, click **Virtual machines**.
2. Click on the **name of your VM**.

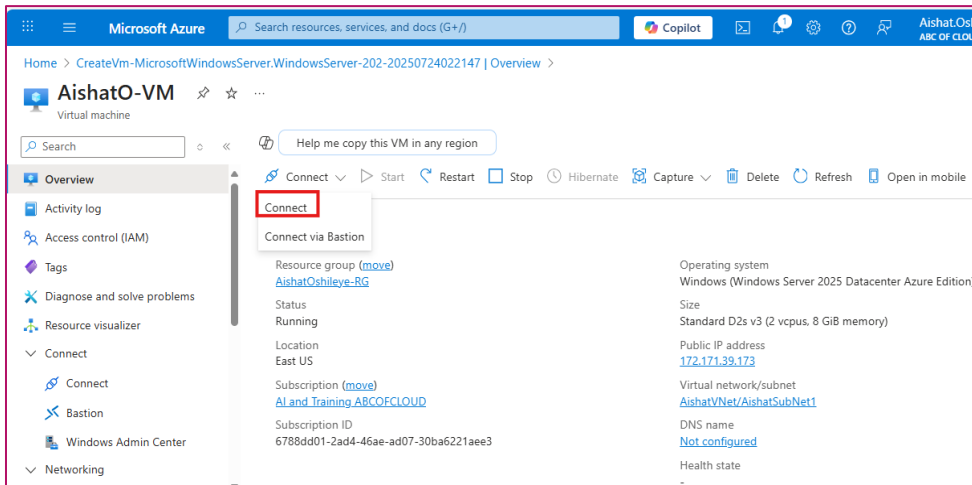
Locate the Public IP Address

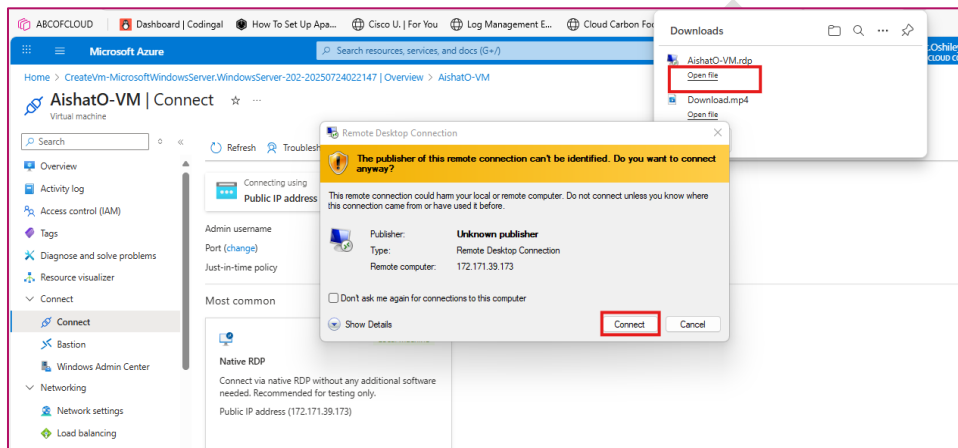
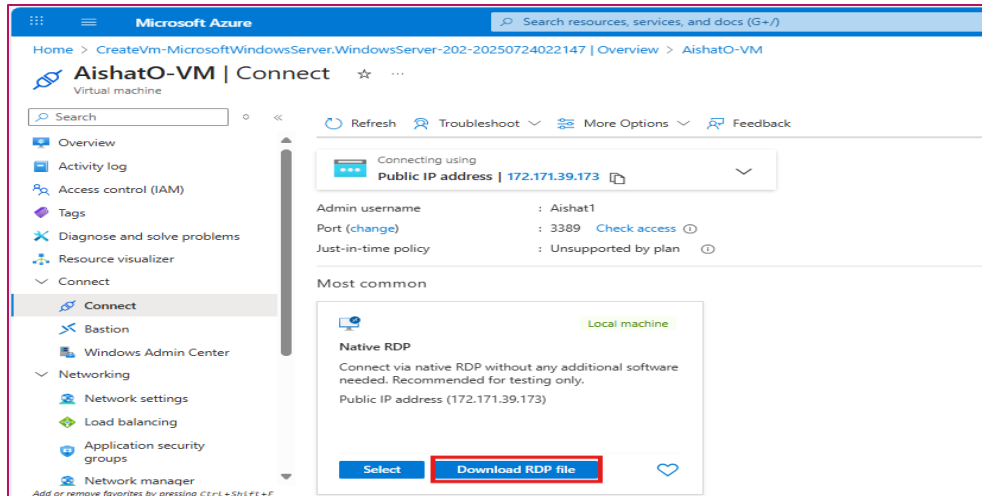
1. In the VM Overview page, look for **Public IP address**.
2. Copy this IP — you will need it for the RDP connection.



Download the RDP File (Optional Method)

1. Still on the VM Overview page, click the **Connect** button at the top.
2. Choose **RDP**.
3. In the pane that appears, click **Download RDP File**.
4. Open the downloaded .rdp file.

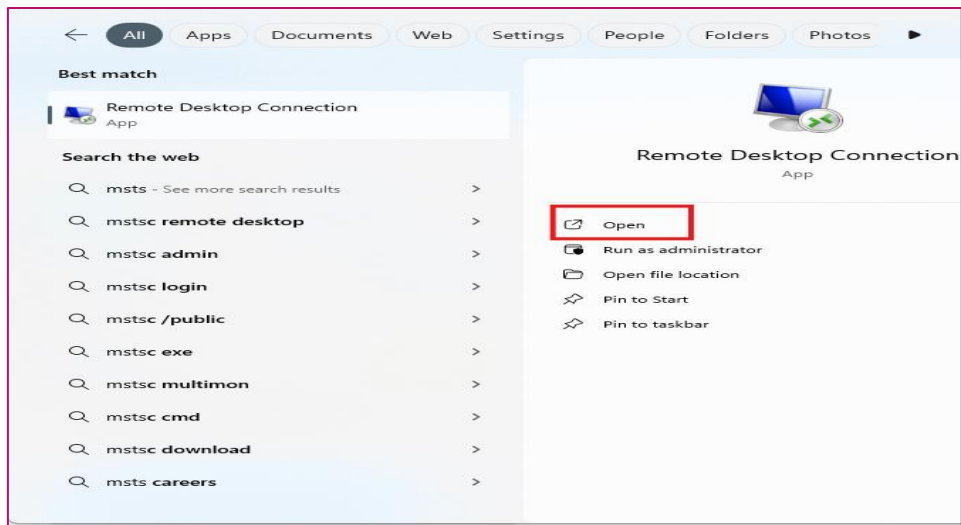




Connect Using Remote Desktop App (Manual Method)

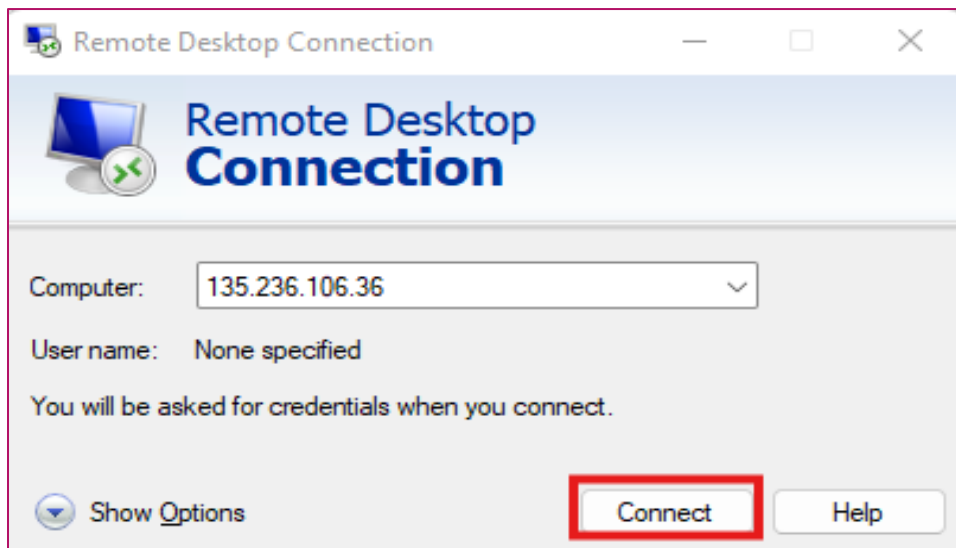
RDP is used only for testing purposes and not recommended for use in Production environments

1. On your local computer, press **Windows + R**, type `mstsc`, and press **Enter**.
2. In the **Remote Desktop Connection** window:
 - o Enter the **Public IP address** of your VM
 - o Click **Connect**

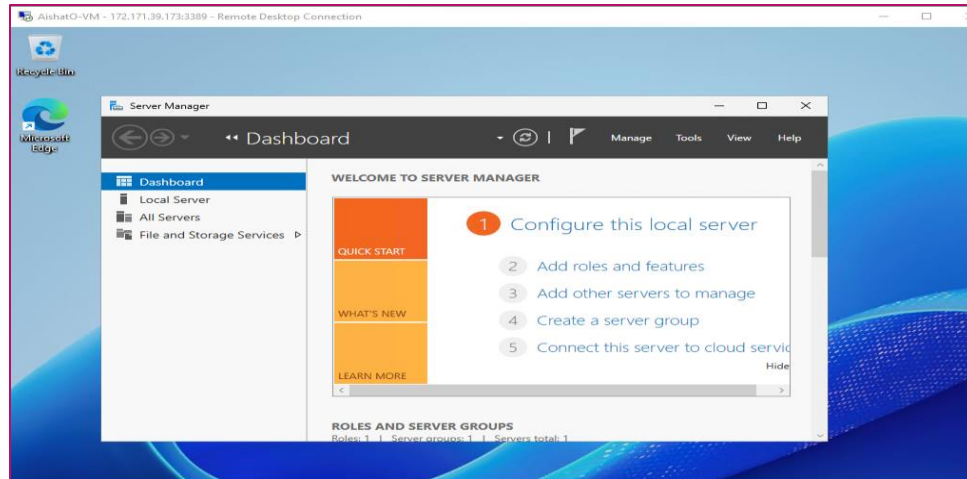


Enter Credentials

1. When prompted, enter the **admin username and password** you created when setting up the VM.
2. Click **OK**. Accept the certificate warning if prompted



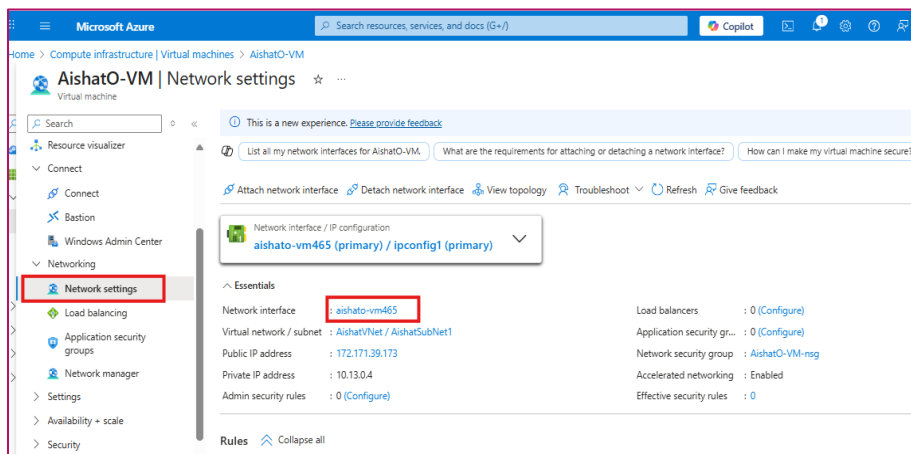
3.



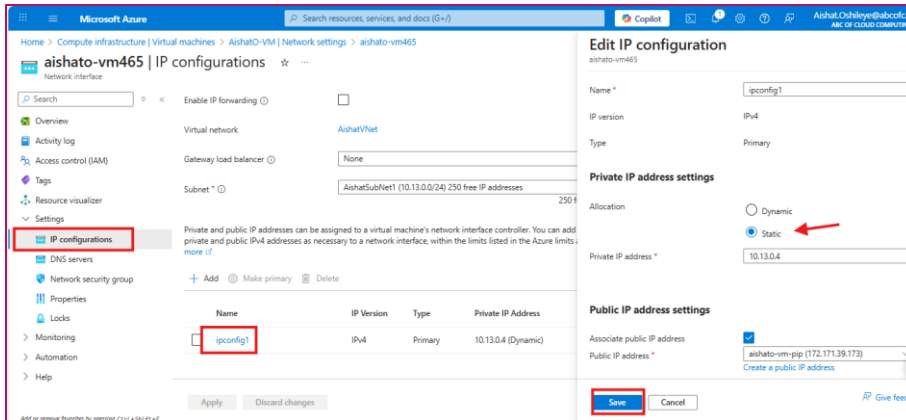
You should now be connected to your Azure VM via RDP and can interact with it like a regular Windows computer.

Step 4: Configure the Network Interface (NIC)

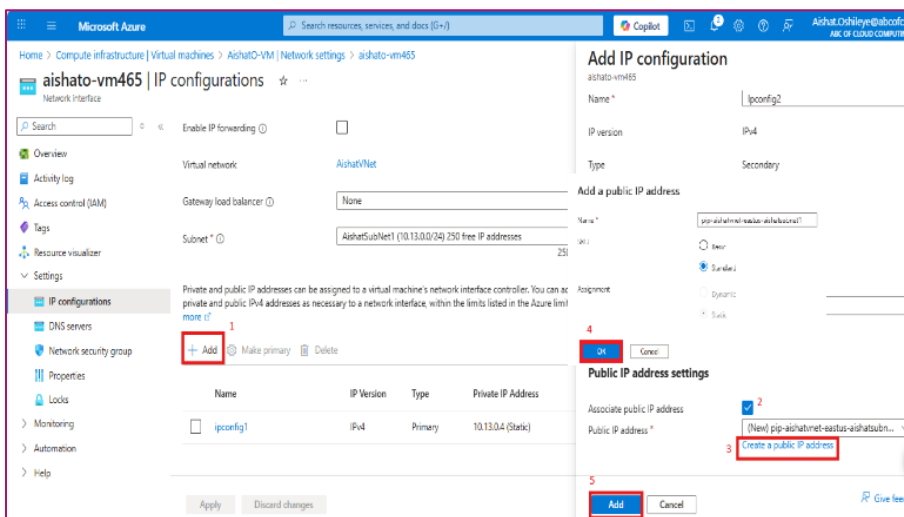
1. Go to **Virtual machines** → Select your VM.
2. In the VM blade, under **Settings**, click **Networking**.
3. Click on the **Network interface name**.



4. Under **Settings**, go to **IP configurations**.
5. Select the configuration, click **Edit**, and:
 - Set **Private IP address** to **Static**
 - Enter the IP (e.g., 10.0.1.4)

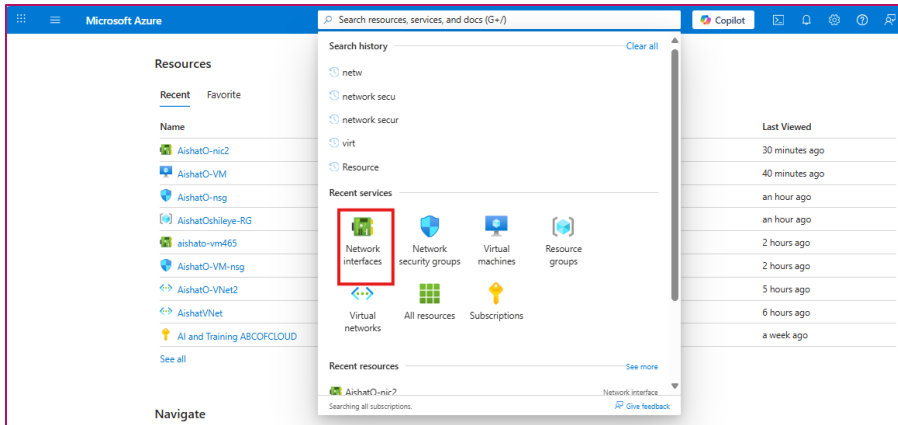


6. Save changes.
7. Create a new network interface by clicking **+Add**. This opens a new window that prompts you to Add IP configurations.
8. Add a name for the ipconfig.
9. Set private IP address to **static**.
10. Select **create a new public IP address** and configure the public IP address settings.
11. Click **OK**, then **Add**



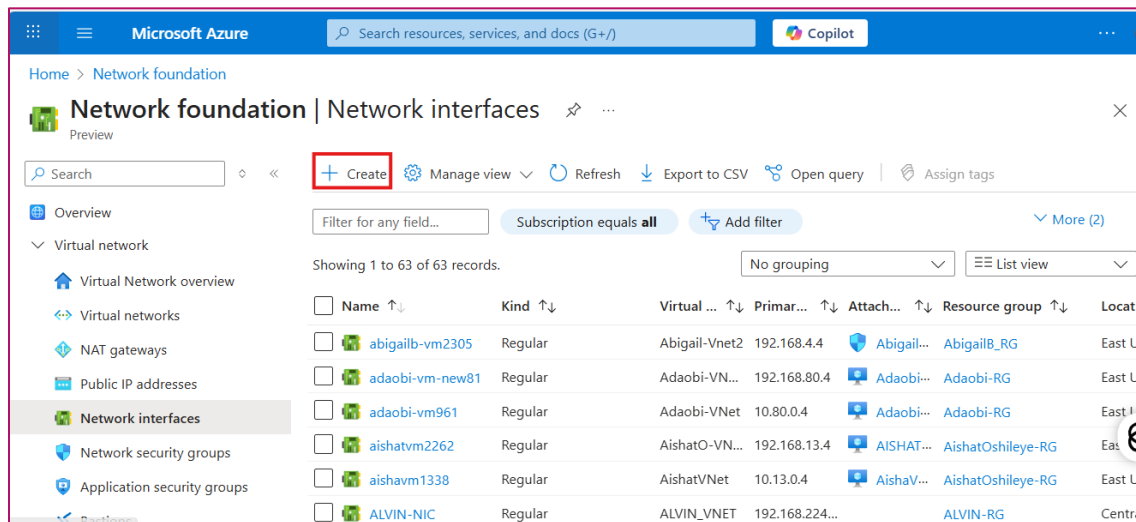
Create a New Network Interface

Step 1: Search for "Network Interfaces"



◆ Step 3: Start Creating a New NIC

1. Click on + **Create** or + **Add** at the top.



◆ Step 4: Fill in NIC Details

1. **Subscription:** Choose your Azure subscription.
2. **Resource Group:** Select the existing resource group (e.g., MyResourceGroup).
3. **Name:** Enter a name for the NIC (e.g., MyNIC1).
4. **Region:** Select the same region as your VM and VNet (e.g., West Europe).

Configure Network Settings

1. **Virtual Network:** Choose the existing VNet (e.g., MyVNet).
2. **Subnet:** Select one of the subnets you created earlier (e.g., Subnet1).
3. **Private IP:** You can leave it as **Dynamic**, or choose **Static** and enter an IP (e.g., 10.0.1.5).
4. Click **Review + create**.

5. Once validation passes, click **Create**.

Microsoft Azure

Home > Network foundation | Network interfaces >

Create network interface

Subscription * **AI and Training ABCOFCLOUD**

Resource group * **AishatOshiley-RG**

Instance details

Name * **AishatO-nic2**

Region * **East US**

Virtual network **AishatVNet (AishatOshiley-RG)**

Subnet * **AishatSubNet1**

IP version **IPv4**

Private IP address assignment **Static**

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

Microsoft Azure

Home > Microsoft.Template-20250724053232 | Overview >

Custom deployment

Deploy from a custom template

Deploying this template will create one or more Azure resources or Marketplace offerings. You acknowledge that you are responsible for reviewing the applicable pricing and legal terms associated with all resources and offerings deployed as part of this template. Prices and associated legal terms for any Marketplace offerings can be found in the [Azure Marketplace](#); both are subject to change at any time prior to deployment.

Neither subscription credits nor monetary commitment funds may be used to purchase non-Microsoft offerings. These purchases are billed separately.

If any Microsoft products are included in a Marketplace offering (e.g. Windows Server or SQL Server), such products are licensed by Microsoft and not by any third party.

Basics

Subscription	AI and Training ABCOFCLOUD
Resource group	AishatOshiley-RG
Region	East US
Network Interface Name	AishatO-nic2
Location	eastus
Subnet Id	/subscriptions/6788dd01-2ad4-46ae-ad07-30ba6221aee3/resourceGroups/A...
Private IP Allocation Method	Static
Private IP Address	10.13.0.06

Previous Next **Create**

Microsoft Azure

Home >

Microsoft.Template-20250724054120 | Overview

Deployment

Search x < Delete Cancel Redeploy Download Refresh

Overview

Inputs

Outputs

Template

Your deployment is complete

Deployment name : Microsoft.Template-20250724054120 Start time : 7/24/2025, 5:41:31 AM

Subscription : AI and Training ABCOFCLOUD Correlation ID : db89381c-6f74-4498-8d3f-6d5f91384714

Resource group : AishatOshiley-RG

> Deployment details

> Next steps

Go to resource

Give feedback

Tell us about your experience with deployment

Task 5: Create and Configure Network Security Group (NSG)

1. In the search bar, type **Network security groups** → Click **+ Create**.
2. Select your **Subscription** and **Resource Group**.
3. Enter **Name** (e.g., `MyNSG`) and select the **Region**.
4. Click **Review + Create** → **Create**.

This screenshot shows the 'Create network security group' page in the Microsoft Azure portal, specifically the 'Basics' tab. The page is titled 'Create network security group' with a breadcrumb trail 'Home > Network foundation | Network security groups >'. Below the title are tabs for 'Basics', 'Tags', and 'Review + create'. The 'Basics' tab is active. Under 'Project details', the 'Subscription' is set to 'AI and Training ABCOFCLOUD' and the 'Resource group' is 'AishatOshiley-RG'. Under 'Instance details', the 'Name' is 'AishatO-nsg' and the 'Region' is 'East US'. A red box highlights the 'Review + create' button at the bottom left.

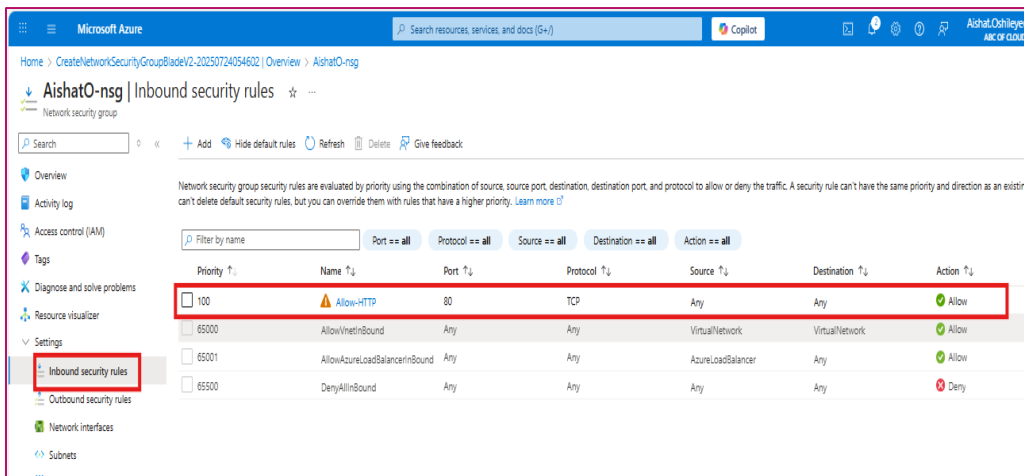
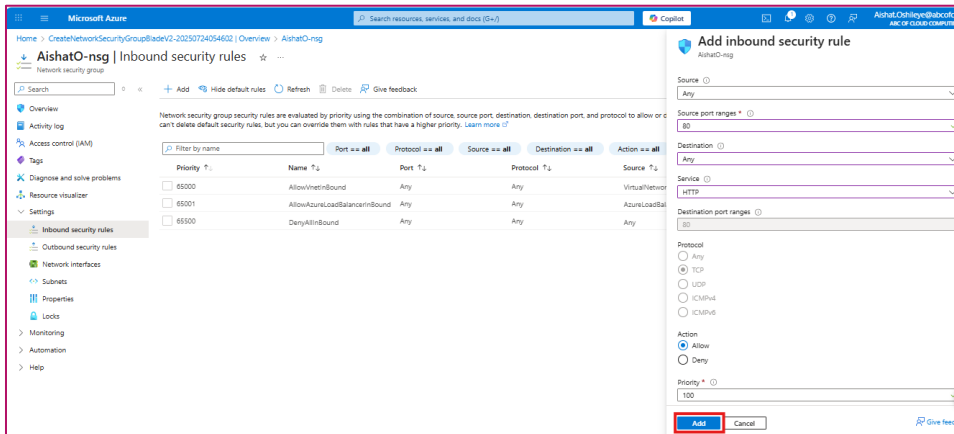
This screenshot shows the 'Create network security group' page in the Microsoft Azure portal, specifically the 'Review + create' tab. The page is titled 'Create network security group' with a breadcrumb trail 'Home > Network foundation | Network security groups >'. Below the title are tabs for 'Basics', 'Tags', and 'Review + create'. The 'Review + create' tab is active. A green banner at the top indicates 'Validation passed'. The 'Basics' section shows a summary of the configuration: Subscription (AI and Training ABCOFCLOUD), Resource group (AishatOshiley-RG), Region (East US), and Name (AishatO-nsg). The 'Tags' section shows the Owner (AishatO). A red box highlights the 'Create' button at the bottom left.

5. After creation, open the NSG → Go to **Inbound security rules** → **+ Add**:

Rule 1 – Allow Web App (HTTP)

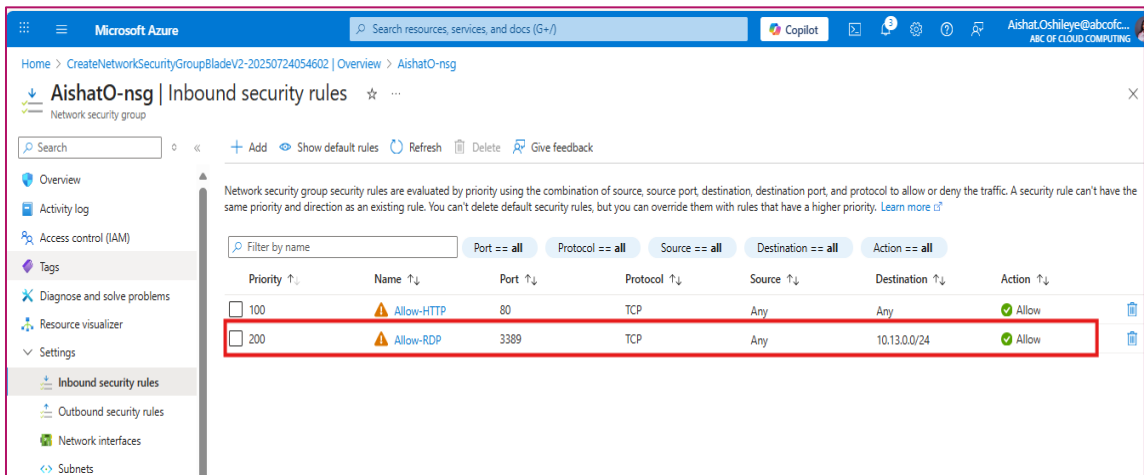
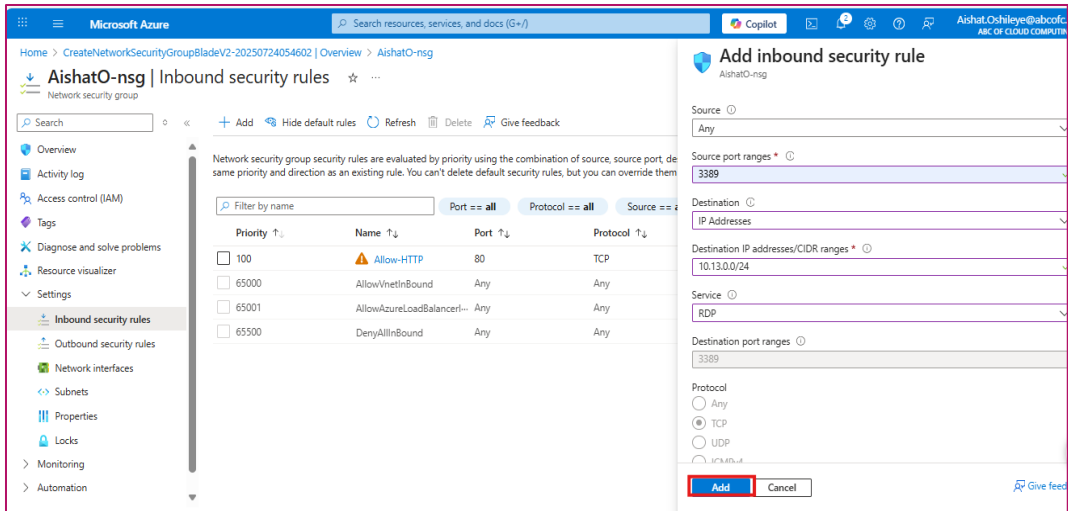
- **Source:** Any
- **Protocol:** TCP
- **Port:** 80

- **Action:** Allow
- **Priority:** 100
- **Name:** Allow-HTTP

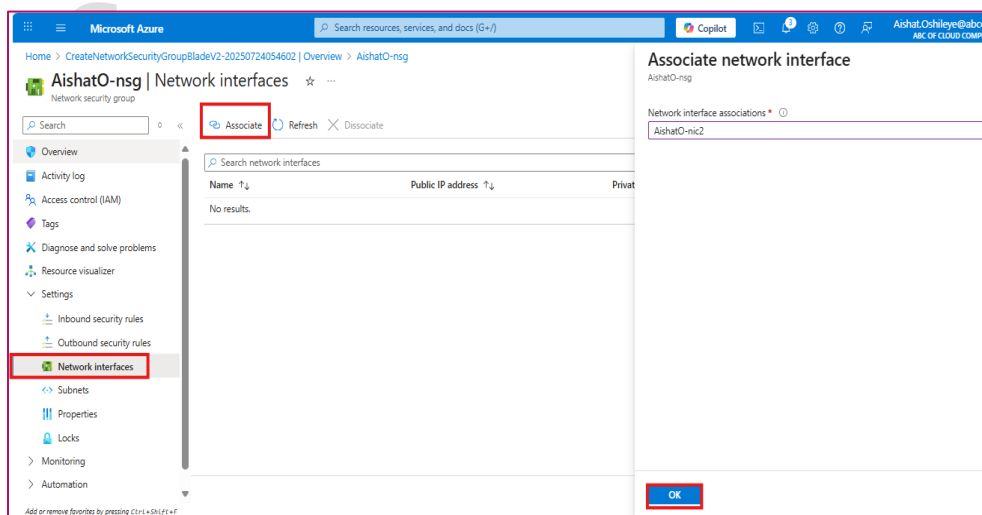


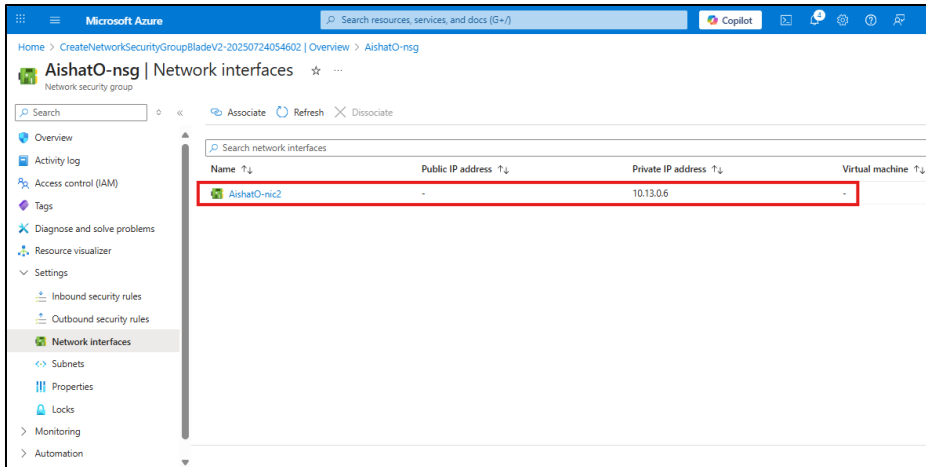
Rule 2 – Allow RDP

- **Source:** Any
- **Protocol:** TCP
- **Port:** 3389
- **Action:** Allow
- **Priority:** 200
- **Name:** Allow-RDP



- Associate the NSG to your NIC or Subnet by selecting **Network interfaces** or **Subnets** under **Settings** in the NSG.

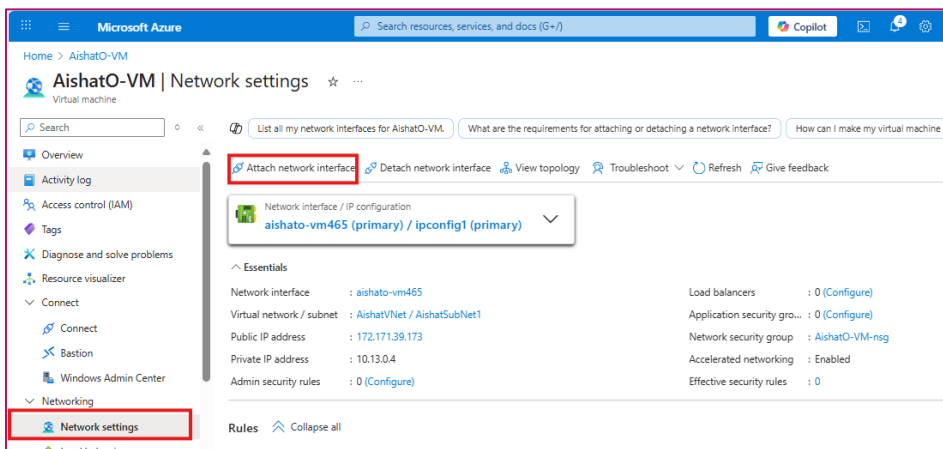


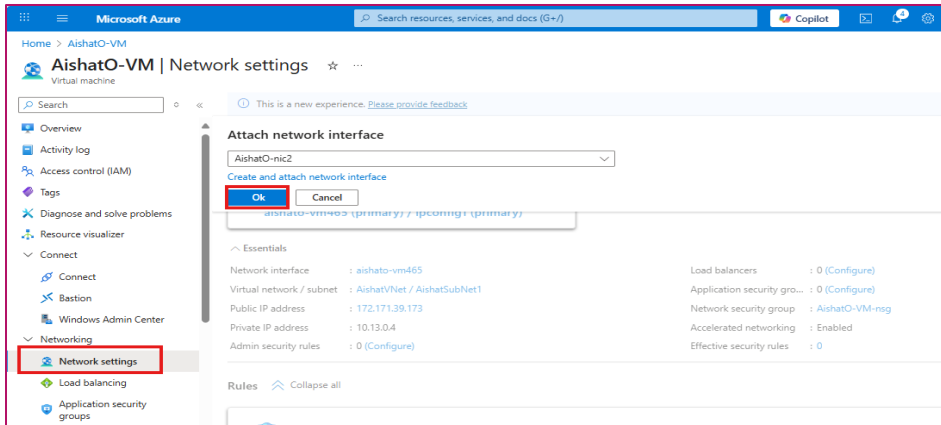


Task 6: Attach the NIC to the VM

This step applies if you created a NIC separately and want to attach it to a VM.

1. Stop the VM if running.
2. Go to the **Virtual machine** → **Networking** → **Detach network interface** (if needed).
3. Attach the new NIC via **Networking** → + **Attach network interface**.
4. Select the NIC → OK.

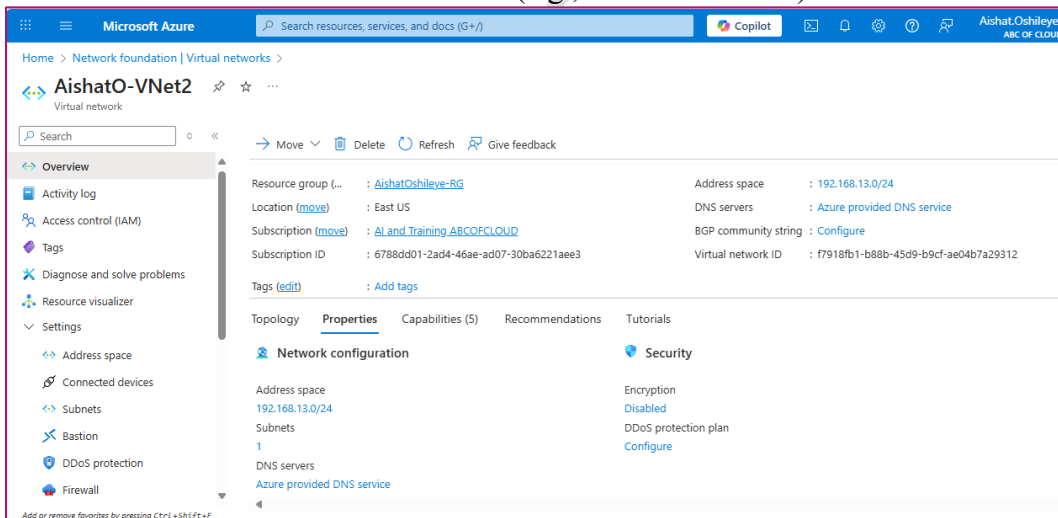


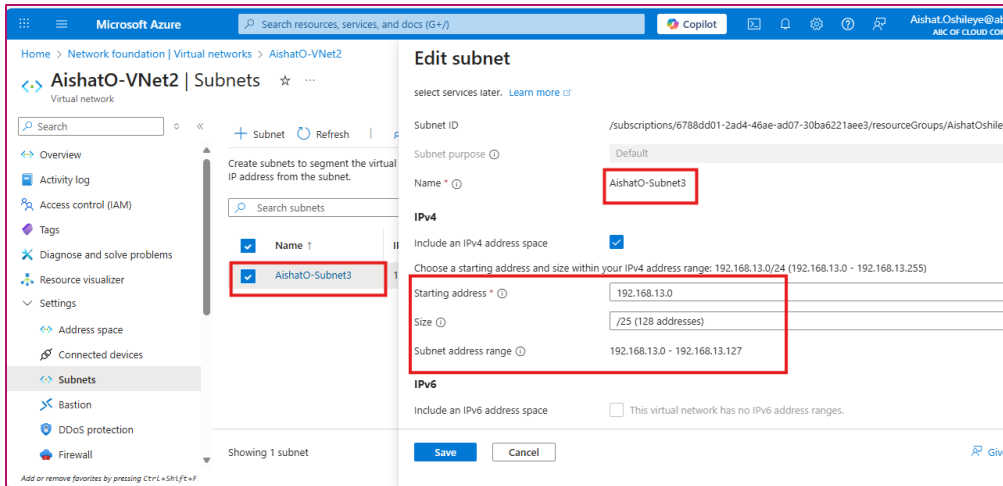


Task 7: Configure VNet Peering and Connect Two VMs

Step 1: Create a Subnet in a second Vnet

1. Go back to your second VNet
2. Add another subnet: **AishatO-Subnet3** (e.g., 192.168.13.0/25)



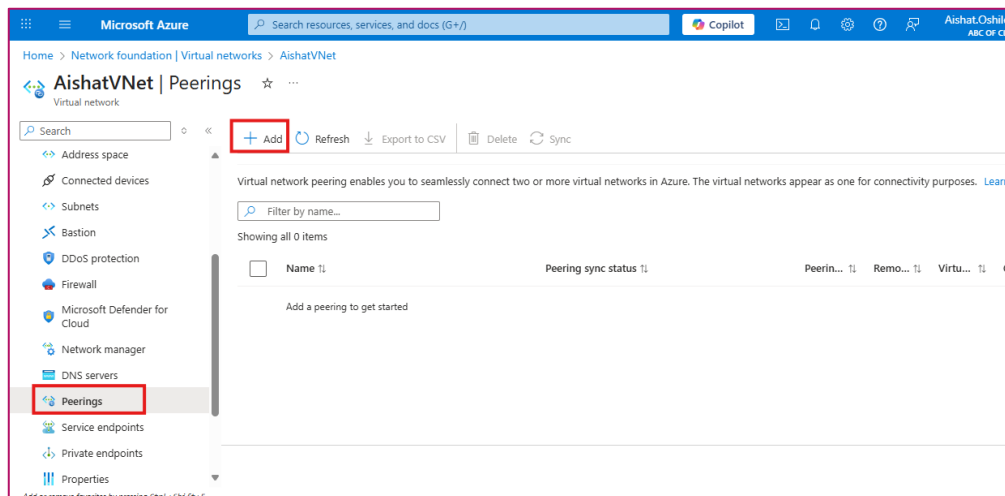


Step 2: Create Another VM in AishatO-Subnet3

Repeat VM creation steps and place it in AishatO-Subnet3. Name it AishatOVM2.

Step 3: Configure VNet Peering

1. Navigate Home > Virtual networks > Your VNet > Peerings > + Add
 - o **Peering link name:** vnet-to-vnet (or more descriptive)
 - o **Virtual network:** Same VNet or another one (in this case, another one)
 - o Enable "Allow traffic" both ways
 - o Click "Add"



Microsoft Azure

Home > Network foundation > Virtual networks > AishatVNet > Peerings

Add peering

AishatVNet

Virtual network peering enables you to seamlessly connect two or more virtual networks in Azure. This will allow resources in either virtual network to directly connect and communicate with resources in the peered virtual network.

Remote virtual network summary

Peering link name *

Virtual network deployment model ☒ Resource manager ☐ Classic

I know my resource ID ☐

Subscription *

Virtual network *

Remote virtual network peering settings

Microsoft Azure

Home > Network foundation > Virtual networks > AishatVNet > Peerings

Add peering

AishatVNet

Local virtual network summary

Peering link name *

Local virtual network peering settings

Allow 'AishatVNet' to access 'AishatO-VNet2' ☒

Allow 'AishatVNet' to receive forwarded traffic from 'AishatO-VNet2' ☒

Allow gateway or route server in 'AishatVNet' to forward traffic to 'AishatO-VNet2' ☐

Enable 'AishatVNet' to use 'AishatO-VNet2's' remote gateway or route server ☐

Microsoft Azure

Home > Network foundation > Virtual networks > AishatVNet

AishatVNet | Peerings

Virtual network

Search

+ Add Refresh Export to CSV Delete Sync

Virtual network peering enables you to seamlessly connect two or more virtual networks in Azure. The virtual networks appear as one for connectivity purposes. [Learn more](#)

Sorting all 1 items

<input type="checkbox"/>	Name	Peering sync status	Peering state	Remo...	Virtual ...	Cross-tenant
<input type="checkbox"/>	AishatVnet-AishatOVnet	Fully Synchronized	Connected	AishatO...	Disabled	No

Subnets
Bastion
DDoS protection
Firewall
Microsoft Defender for Cloud
Network manager
DNS servers
Peerings
Service endpoints
Private endpoints

Step 4: Test VM Connectivity

- Use RDP from VM1 to SSH into the other via its **Private IP** (found in NIC or VM overview) RDP into VM1 and SSH from VM1 to VM2

```

C:\Users\Aishat1>ping 192.168.13.4

Pinging 192.168.13.4 with 32 bytes of data:
Reply from 192.168.13.4: bytes=32 time=2ms TTL=64
Reply from 192.168.13.4: bytes=32 time<1ms TTL=64
Reply from 192.168.13.4: bytes=32 time=1ms TTL=64
Reply from 192.168.13.4: bytes=32 time=1ms TTL=64

Ping statistics for 192.168.13.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 2ms, Average = 1ms

C:\Users\Aishat1>ssh Aishat1@192.168.13.4
The authenticity of host '192.168.13.4 (192.168.13.4)' can't be established.
ED25519 key fingerprint is SHA256:793JaabPFrpk46iQK3YgeK/INXLONqpWUp2Xe6KPD4M.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '192.168.13.4' (ED25519) to the list of known hosts.
Aishat1@192.168.13.4's password:
Welcome to Ubuntu 24.04.2 LTS (GNU/Linux 6.11.0-1018-azure x86_64)

* Documentation:  https://help.ubuntu.com

```

Summary

Resource	Task
Resource Group	Created a Resource Group to contain all resources
Virtual Network	Created 2 Vnets in resource group
Subnet	Created two subnets in VNet2 and 1 subnet in Vnet2
VM	Created 1 each in 2 subnets
Disks	Attached to VMs
NIC + NSG	Created, configured and attached to VMs
NSG Rules	Allow HTTP and RDP
Peering	Configured between Vnets
Connection	Verified between VMs

If you have come this far, you're ready to build more advanced cloud solutions!