Celebal Assignment -5

Step 1: Create a Virtual Network (VNet)

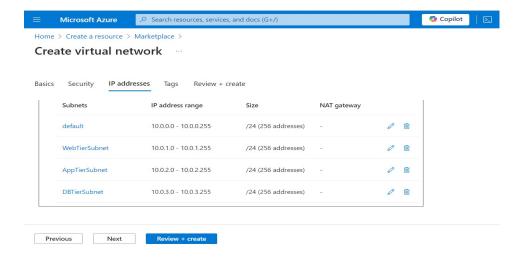
- 1. Sign in to Azure Portal: Go to Azure Portal.
- 2. Create a Virtual Network:
 - 1. In the search bar, type "Virtual Networks" and select it.
 - 2. Click "Create" to start a new VNet.
 - 3. Basics:
 - 1. Subscription: Select your subscription.
 - 2. Resource group: Create a new resource group or select an existing one.
 - 3. Name: Enter a name for your VNet, e.g., MyVNet.
 - 4. Region: Select the region closest to you or where your resources will reside.

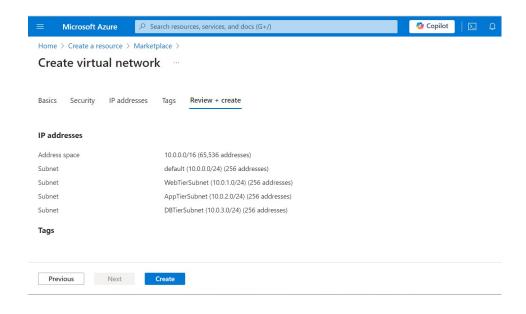
4. IP Addresses:

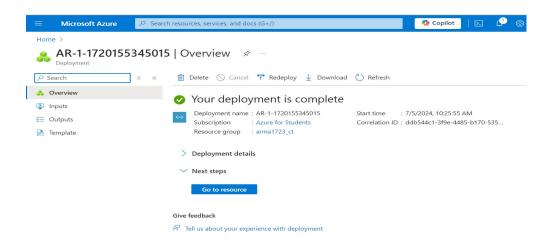
1. IPv4 address space: Enter 10.0.0.0/16.

5. Subnets:

- 1. Click "Add subnet".
- 2. Name: WebTierSubnet
- 3. Subnet address range: 10.0.1.0/24
- 4. Click "Add".
- 5. Repeat to add two more subnets:
 - 1. Name: AppTierSubnet
 - 2. Subnet address range: 10.0.2.0/24
 - 3. Name: DBTierSubnet
 - 4. Subnet address range: 10.0.3.0/24
- 6. Review + Create: Review your settings and click "Create".







Step 2: Create Network Security Groups (NSGs)

Create NSG for Web Tier:

- 1. In the search bar, type "Network Security Groups" and select it.
- 2. Click "Create".
- 3. Basics:
 - 1. Subscription: Select your subscription.

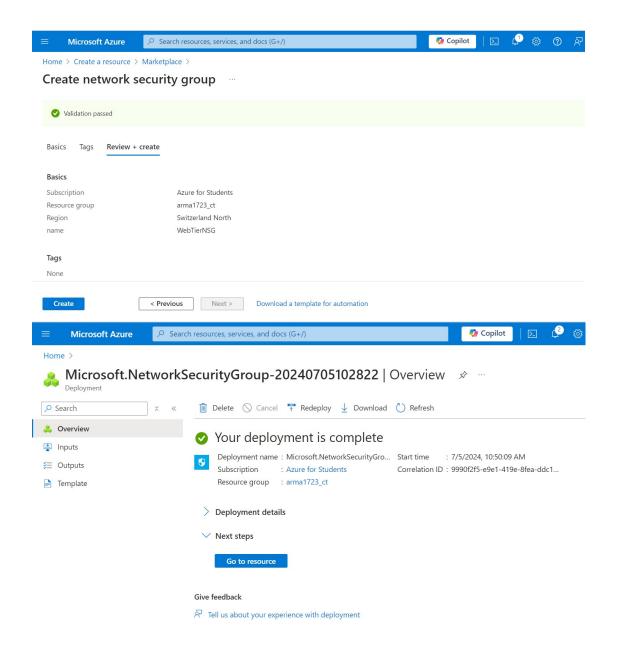
- 2. Resource group: Select the same resource group as your VNet.
- 3. Name: Enter WebTierNSG.
- 4. Region: Select the same region as your VNet.
- 4. Click "Review + create" and then "Create".

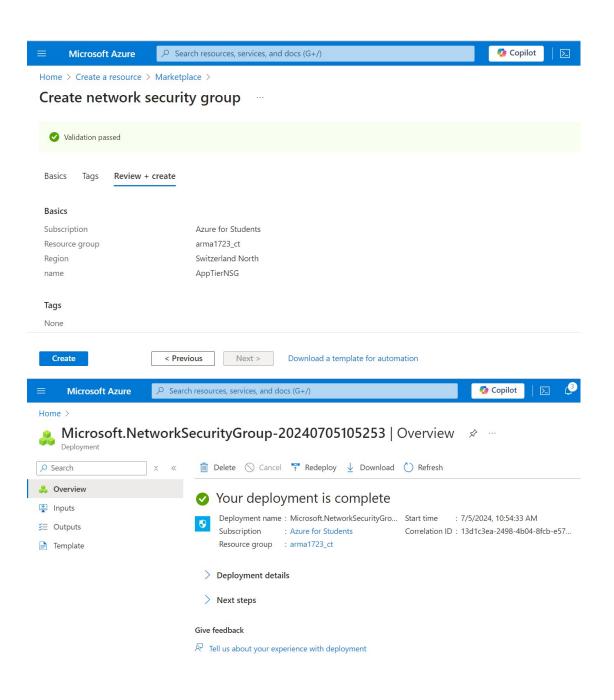
Create NSG for App Tier:

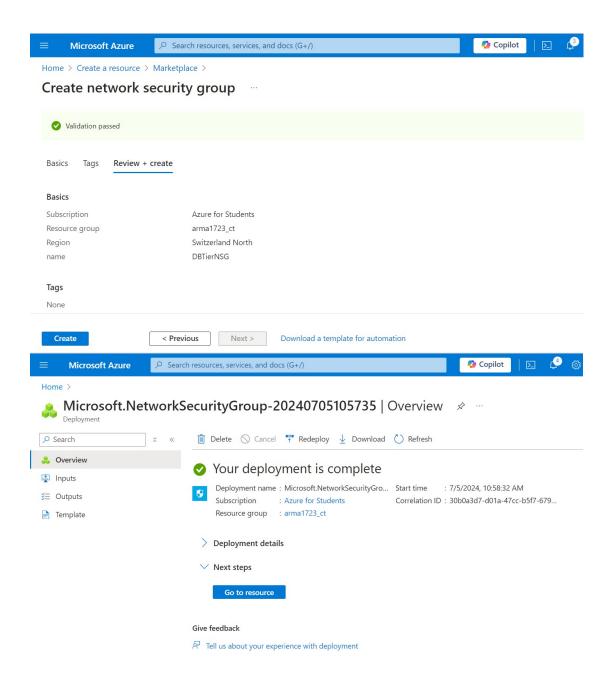
- 1. Follow the same steps as above.
- 2. Name: Enter AppTierNSG.

Create NSG for DB Tier:

- 1. Follow the same steps as above.
- 2. Name: Enter DBTierNSG.







Step 3: Configure NSG Rules

Web Tier NSG Rules

- 1. Allow inbound HTTP (80) and HTTPS (443) from the Internet.
- 2. Allow inbound traffic from Web Tier to App Tier.
- 3. Deny all other inbound traffic (default rule).

App Tier NSG Rules

- 1. Allow inbound traffic from Web Tier.
- 2. Allow inbound traffic from App Tier to DB Tier.
- 3. Deny all other inbound traffic (default rule).

DB Tier NSG Rules

- 1. Allow inbound traffic only from App Tier.
- 2. Deny all other inbound traffic (default rule).

Step 4: Associate NSGs with Subnets

1.

Associate Web Tier NSG:

2.

- 1. Go to "Virtual Networks" and select your VNet.
- 2. Select "Subnets".
- 3. Select the WebTierSubnet.
- 4. Under "Network security group", click "None" and select WebTierNSG.
- 5. Click "Save".

3.

Associate App Tier NSG:

4.

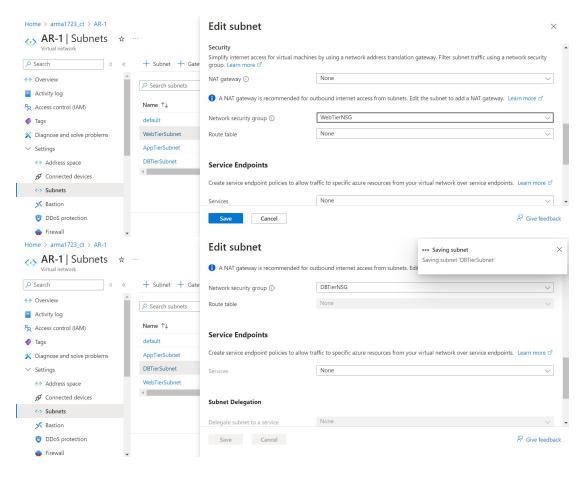
- 1. Follow the same steps as above.
- 2. Select the AppTierSubnet.
- 3. Under "Network security group", select AppTierNSG.
- 4. Click "Save".

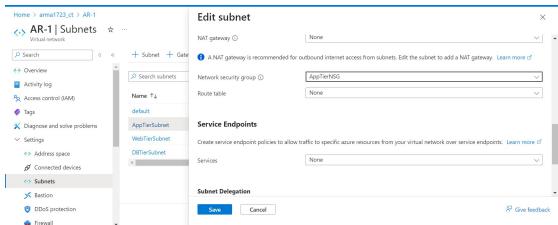
5.

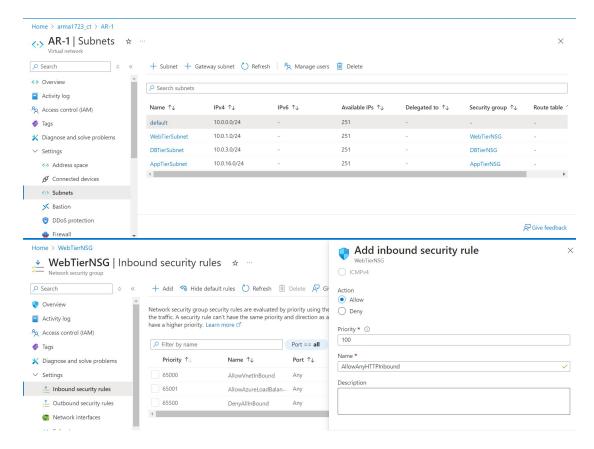
Associate DB Tier NSG:

6.

- 1. Follow the same steps as above.
- 2. Select the DBTierSubnet.
- 3. Under "Network security group", select DBTierNSG.
- 4. Click "Save".







Step 5: Deploy Virtual Machines (VMs)

Web Tier Subnet:

Linux VM: Deploy a Linux VM in the WebTierSubnet

sudo apt update sudo apt install apache2 -y sudo systemctl start apache2 sudo systemctl enable apache2

Install-WindowsFeature -name Web-Server -IncludeManagementTools

App Tier Subnet:

Linux VM: Deploy a Linux VM in the AppTierSubnet

sudo apt update sudo apt install apache2 -y sudo systemctl start apache2 sudo systemctl enable apache2

Install-WindowsFeature -name Web-Server -IncludeManagementTools

DB Tier Subnet:

Linux VM: Deploy a Linux VM in the DBTierSubnet. Windows VM: Deploy a Windows VM in the DBTierSubnet.