Deploying Azure protected Geo-Redundant Solution having path based routing

Overview

The main tasks for this exercise are as follows:

1. Login to Azure Portal
2. Provision Application gateway
3. Add application gateways to the Traffic Manager endpoints.

Exercise 1: Login to Azure Portal

Task 1: Sign into the Azure Portal

1. On the Start screen, click the **Internet Explorer** tile.
2. Go to *(https://portal.azure.com)*.
3. Enter the email address of your Microsoft account. Click **Next**.
4. Enter the password for your Microsoft account.
5. Click **Sign In**.

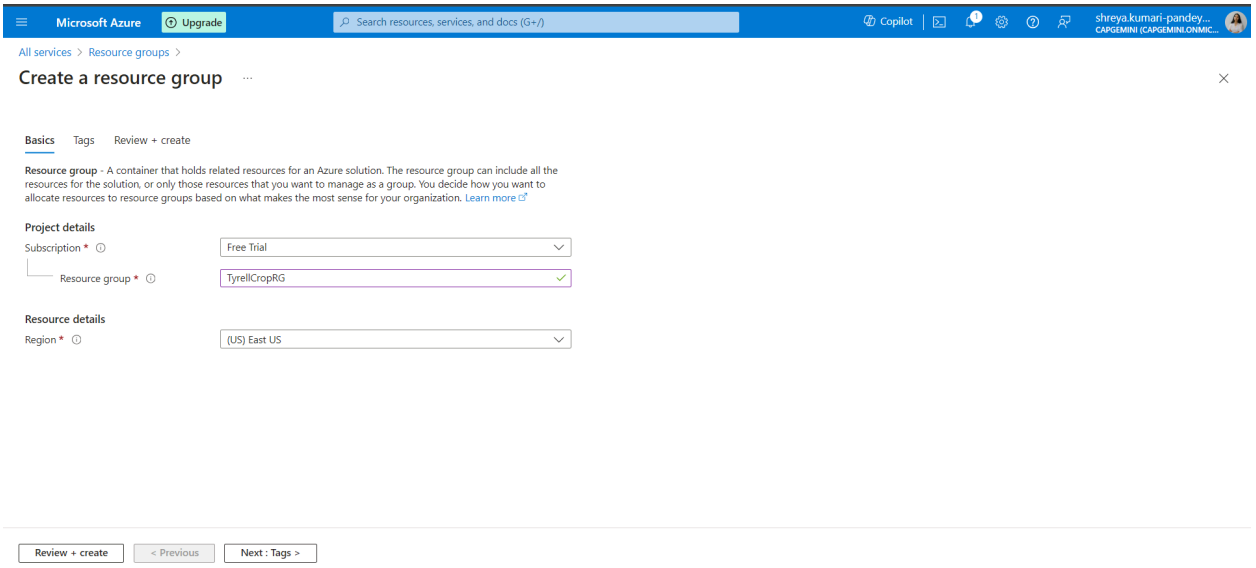
Exercise 2: Configure Traffic Manager

The main tasks for this exercise are as follows:

1. Create and setup Traffic manager profile to provides global DNS load balancing. While setting it up select Performance routing to send the requestor to the closest endpoint in terms of latency.

Task 1: Create a Resource Group

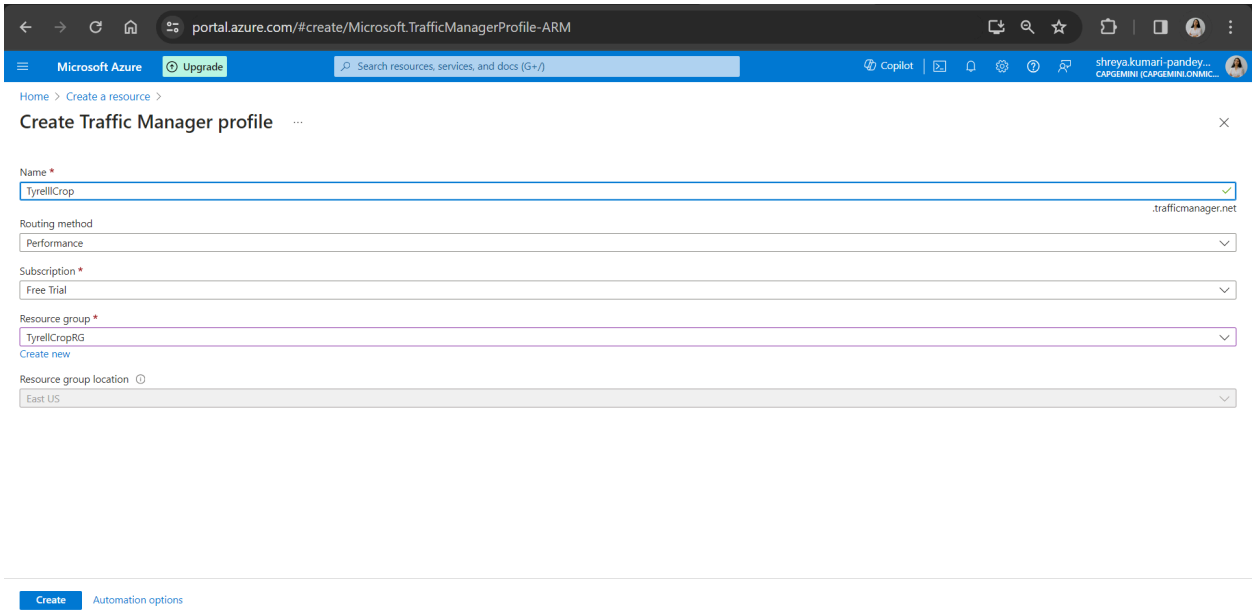
1. In the navigation pane on the left side of the Azure Portal, click **All services**.
2. In the **All services** blade that displays, click **Resource groups**.
3. In the **Resource groups** blade that displays, view your list of resource groups.
4. At the top of the **Resource groups** blade, click the **Add** button.
5. In the **Resource group** blade, perform the following steps:
    a. In the **Resource group name** dialog box, provide the value **TyrellCropRG**.
6. In the **Resource group location** list, select East US.
7. In the **Resource group** blade, click **Create**.



Task 2: Create a Traffic Manager profile

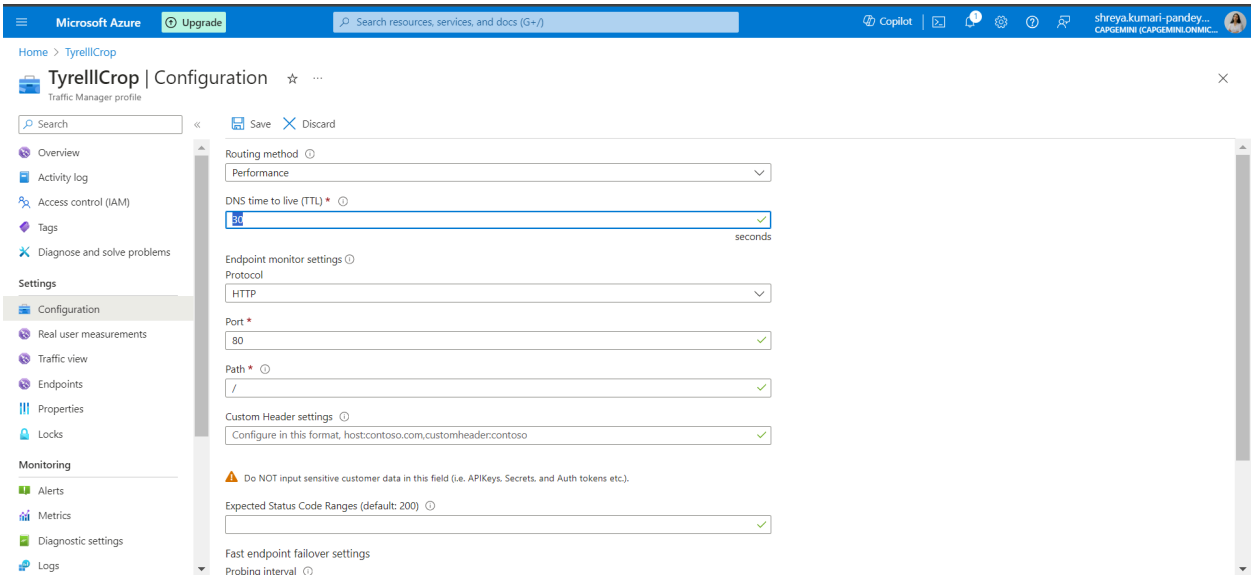
1. In the Azure portal, click **Create a resource** > **Networking** > **Traffic Manager profile** > **Create**
2. In the **Create Traffic Manager Profile** blade, perform the following steps:
    - **Name**:TyrelllCrop
    - **Routing method**: Performance

- **Resource group**:TyrellCropRG
- **Resource group Location:** EastUS



3. Click **Create** to create the Traffic Manager profile.

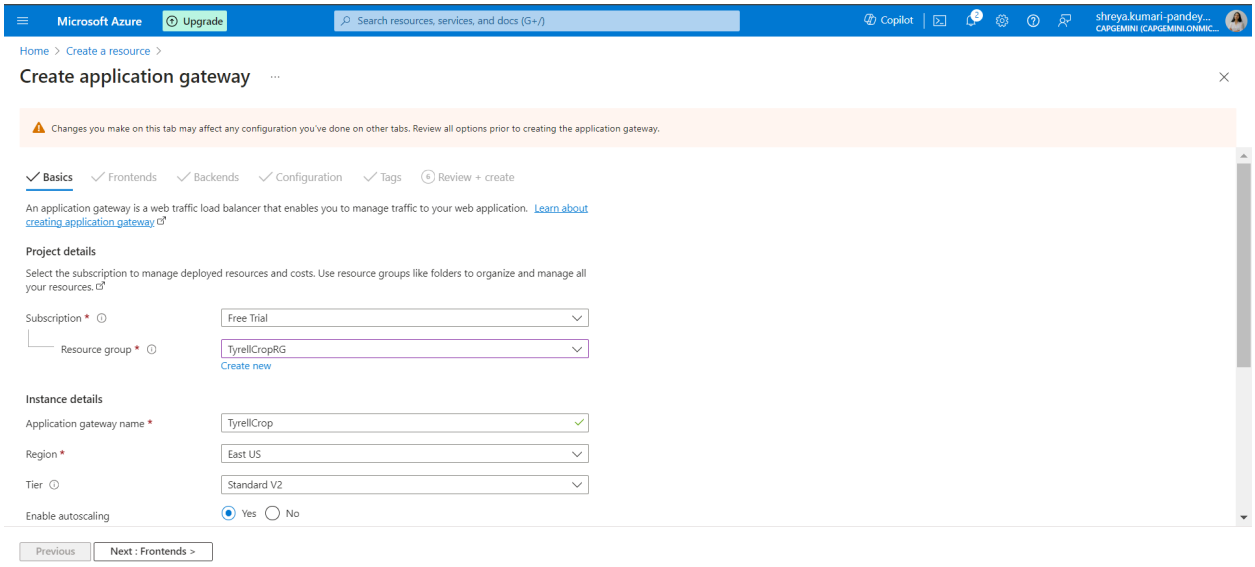
4. Change the Traffic Manager DNS TTL to 30 seconds (easier to validate a failover)



Exercise 3: Create the application gateway

Task 1: Create application gateway

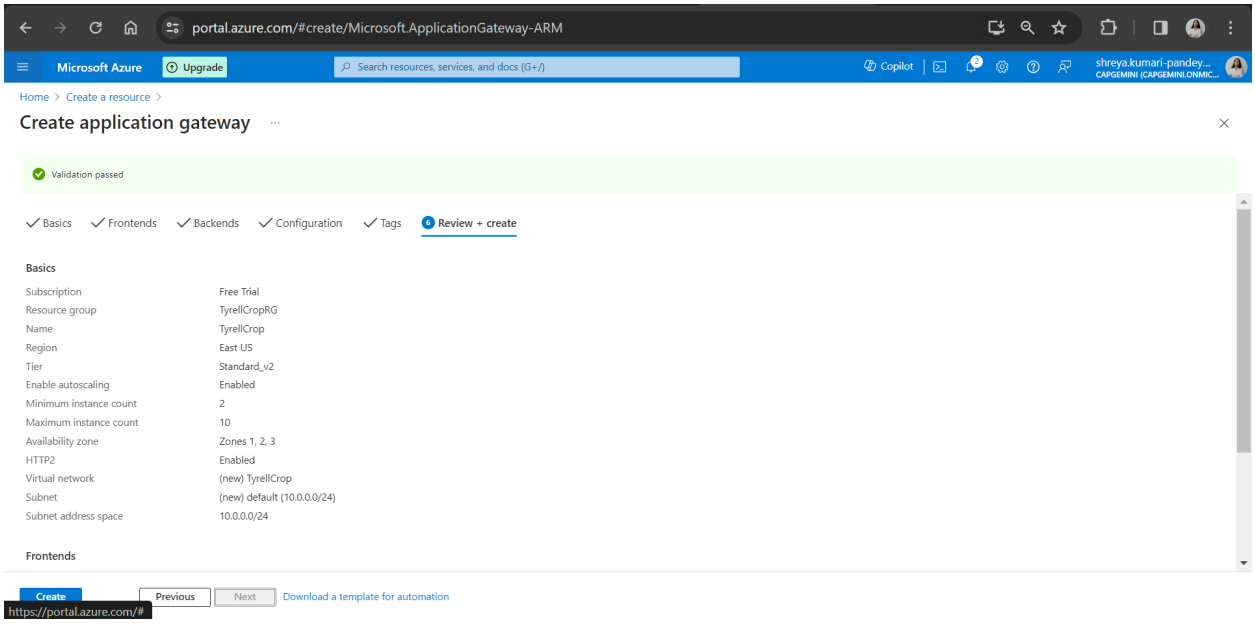
1. In the Azure portal, click **Create a resource** > **Networking** > **Application Gateway** > **Create.**
2. In the **Create Application Gateway** blade, perform the following steps on Basic tab:
    - **Name**: TyrellCrop
    - **SKU size**: Performance
    - **Instance count**
    - **Resource group**: TyrellCropRG
    - **Location:** EastUS

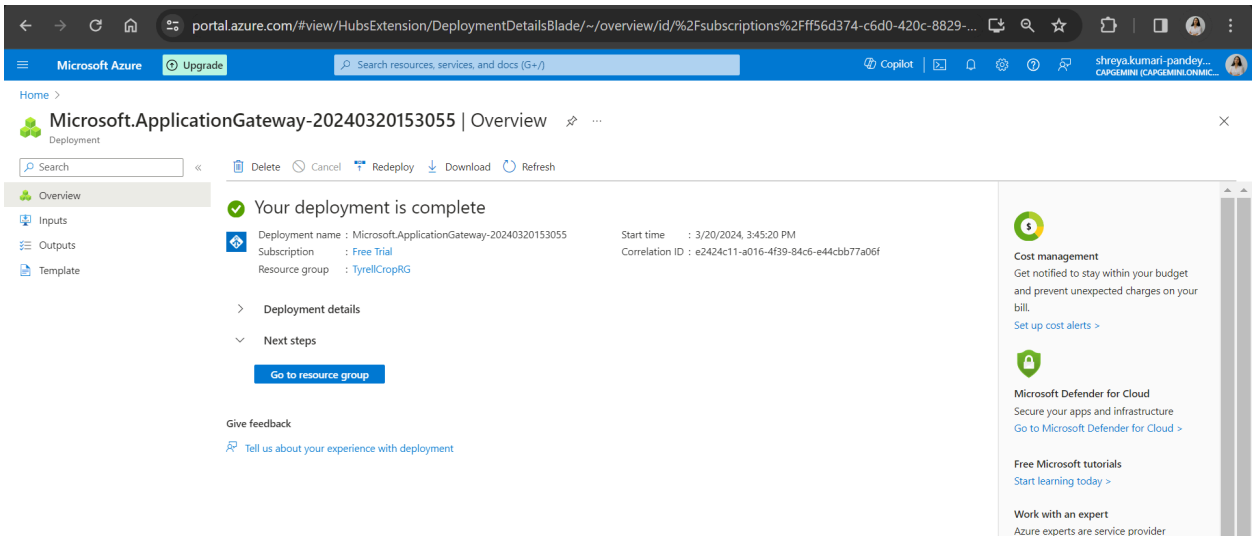


3. On the **Settings** page, under **Subnet configuration**, select **Create virtual network**.
    a. **Name**: TyrellCrop
    b. **Address**: **10.0.0.0/24**
    c. **Subnet Name:** Frontend (need a separate/exclusive subnet with any resource inside it)
    d. **Subnet address range:** 10.0.0.0/24

4. On the **Settings** page, provide below value and click okay
    a. **IP Address Type**: Public
    b. **Public IP address**: create new->TyrellCrop
    c. **DNS Name**:TyrellCrop

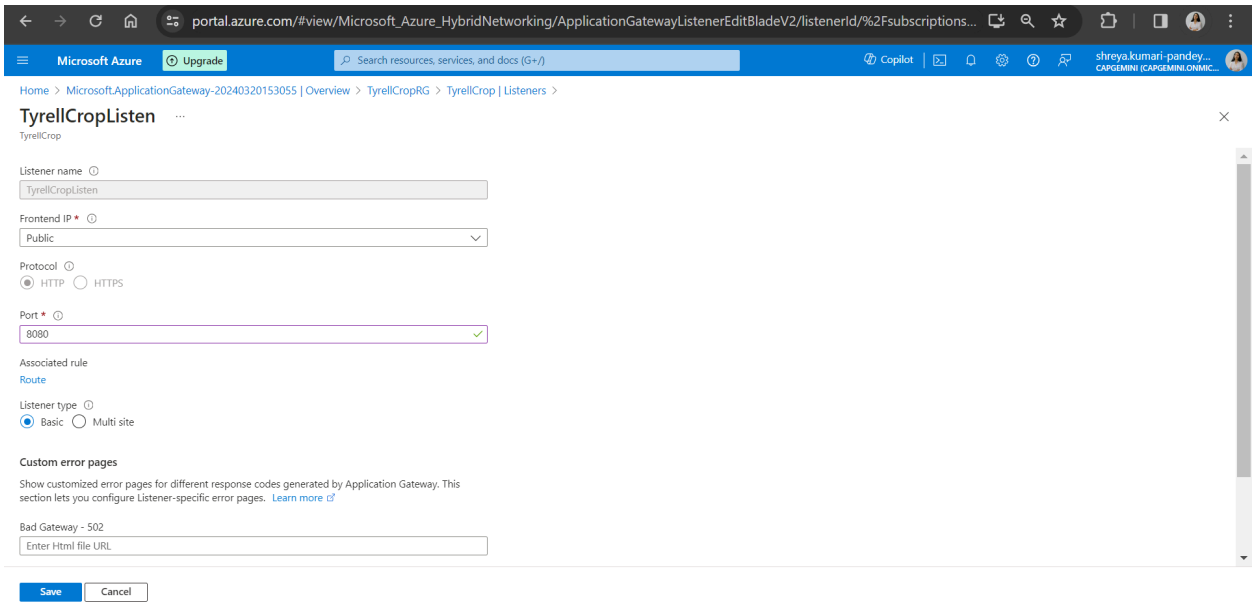
5. on the **summary** page, validate the entries and click **ok**





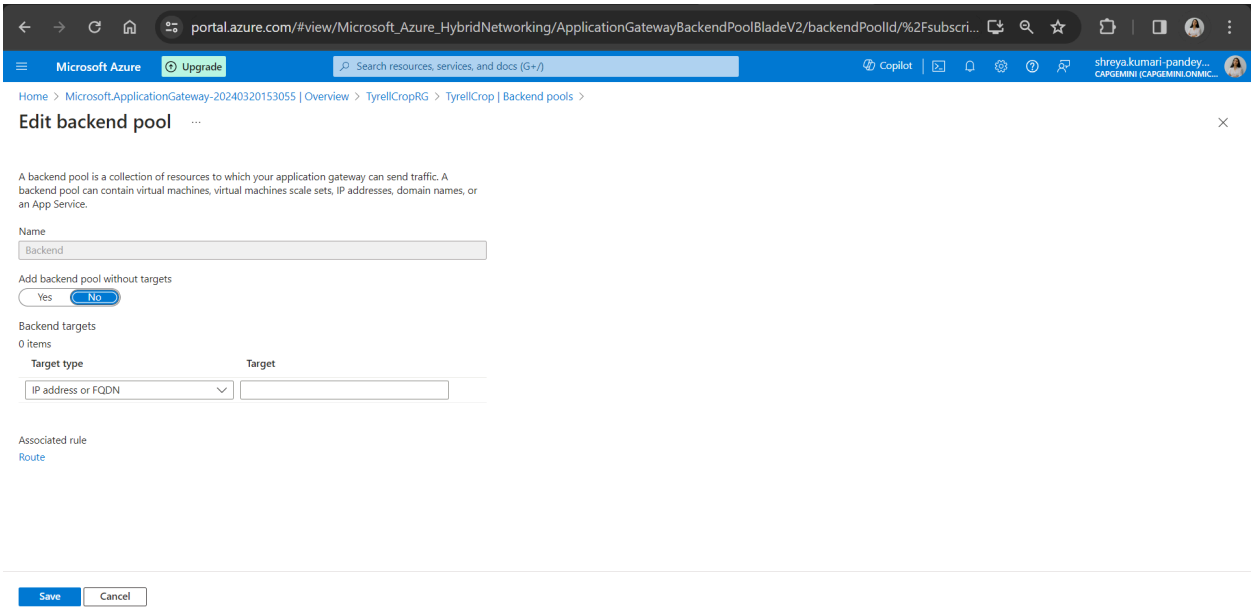
Task 2: Create backend listener

1. From resource group- **TyrellCropRG**, go to the instance of the application gateway- **TyrellCrop**
2. Click **Listeners** and the click **Basic**.
3. Enter **TyrellCropListen** for the name, *Frontend* for the name of the frontend port, and then *8080* as the port for the listener.
4. Click **OK**.



Task 3: Create backend Pool

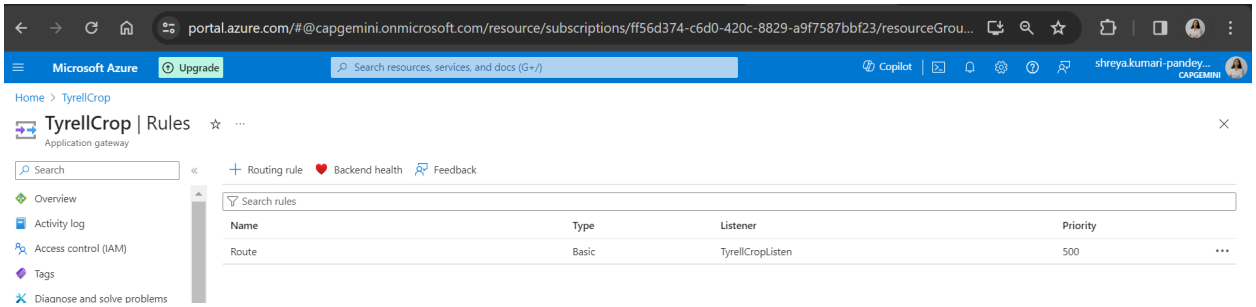
1. From resource group- **TyrellCropRG**, go to the instance of the application gateway- **TyrellCrop**
2. Click **Backend pools** and then click **Add**
3. Enter a name of ***Backend***
4. Click **OK**.



Task 4: Create a path-based routing rule

Configure URL routing for application gateways

1. From resource group- **TyrellCropRG**, go to the instance of the application gateway- **TyrellCropAG-USE**
2. Under **Settings** of the application gateway, select **Rules**, and then click the **Path based** button to add a rule.



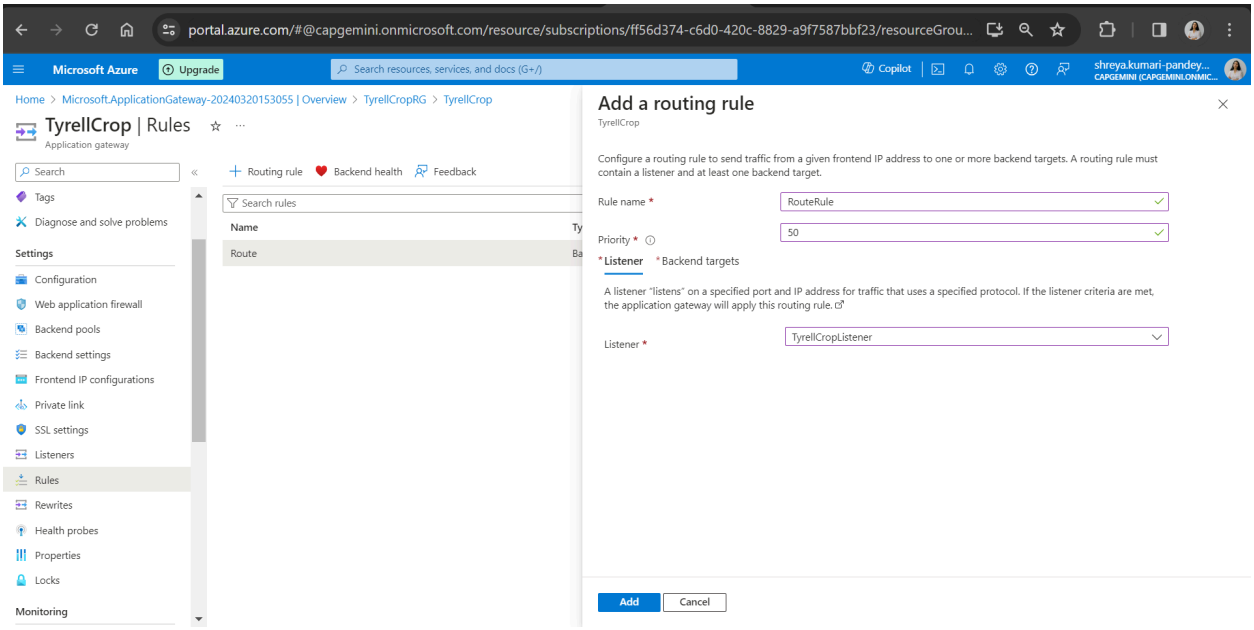
Create the rule with below details-

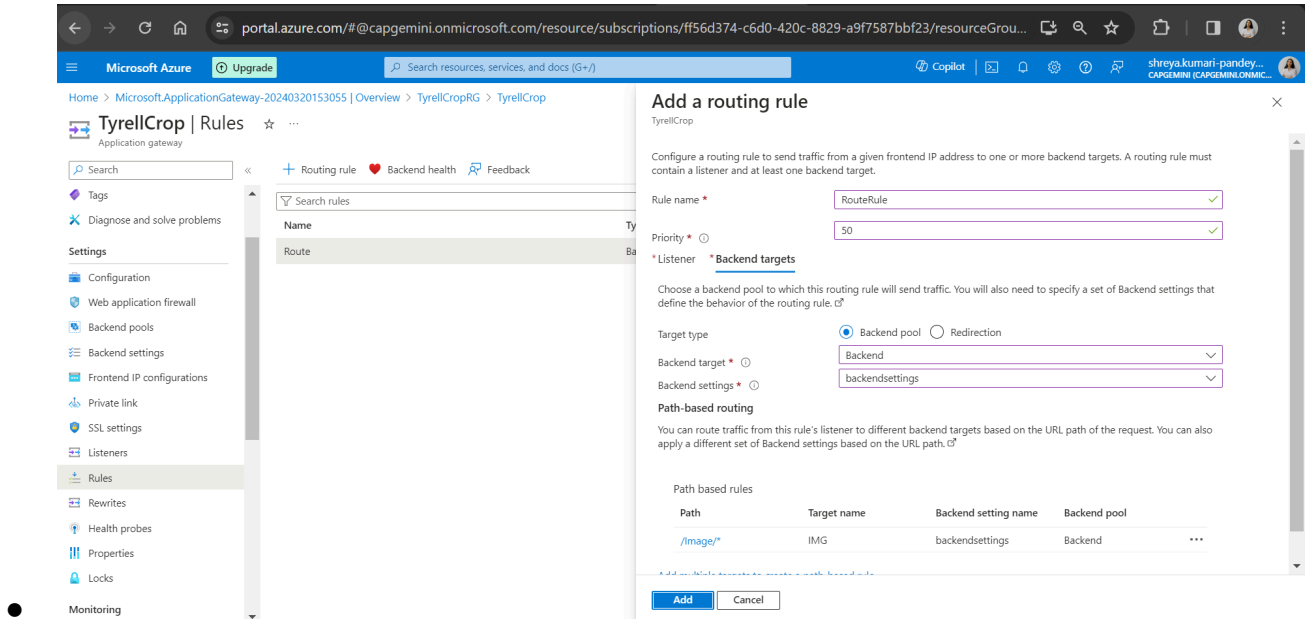
Basic settings:

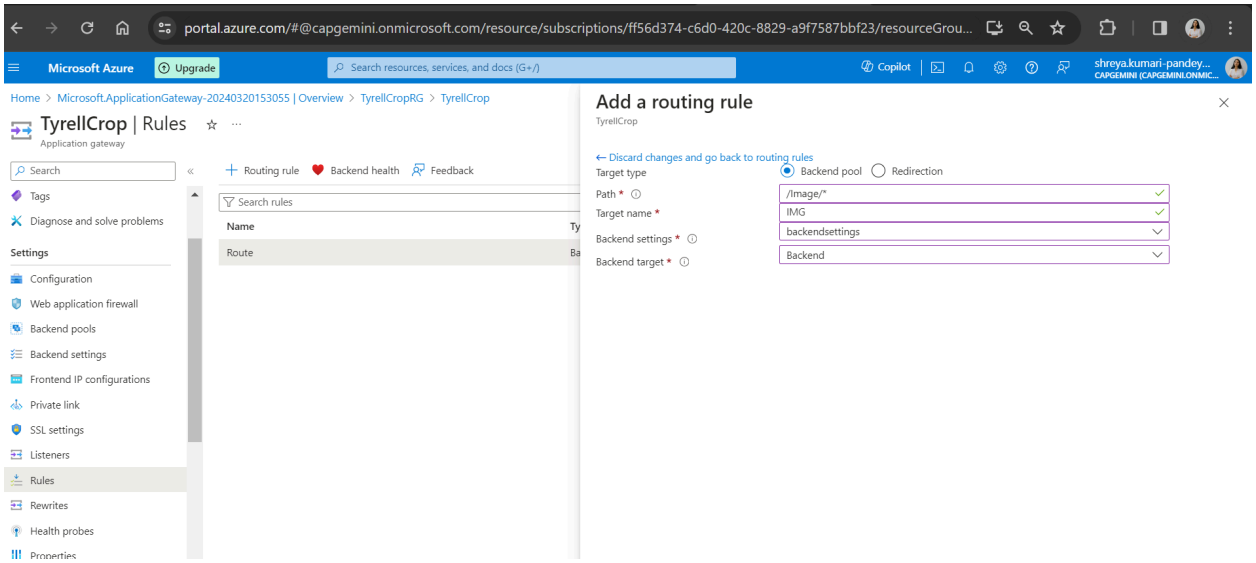
- **Name**: RouteRule
- **Listener**: TyrellCropListen
- **Default backend pool**: Backend
- **Default HTTP settings**: Backendsettings

Path-based rules:

- **Name**: IMG
- **Paths**: /Image/*
- **Backend Pool**: Backend
- **HTTP Setting**: Backendsettings

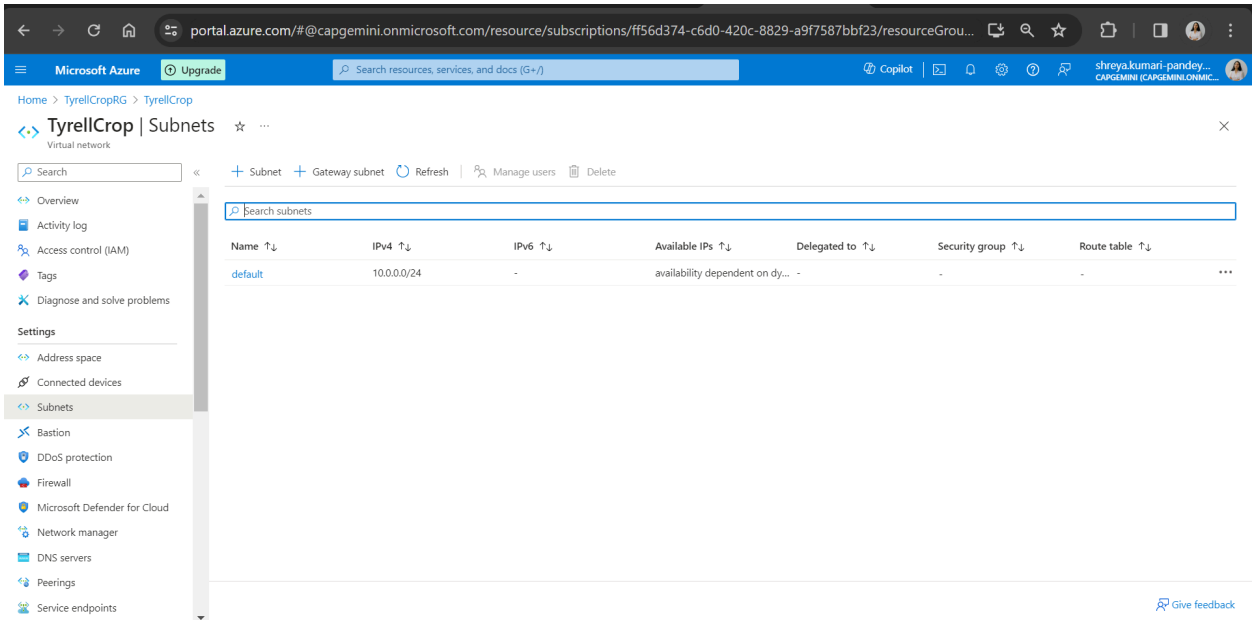






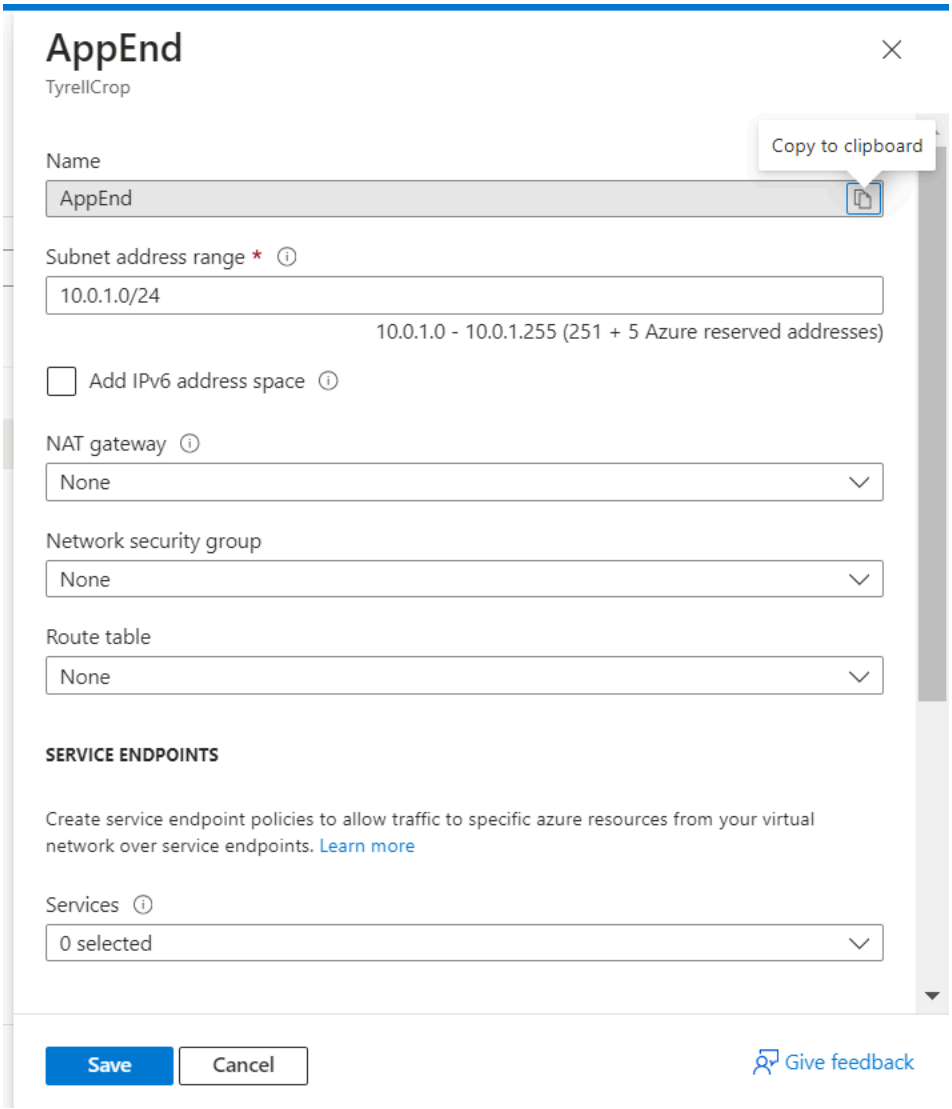
Task 4: Add a subnet

1. From resource group- **TyrellCropRG**, go to the Virtual Network - **TyrellCrop**
2. Click **Subnets**, and then click **Subnet**

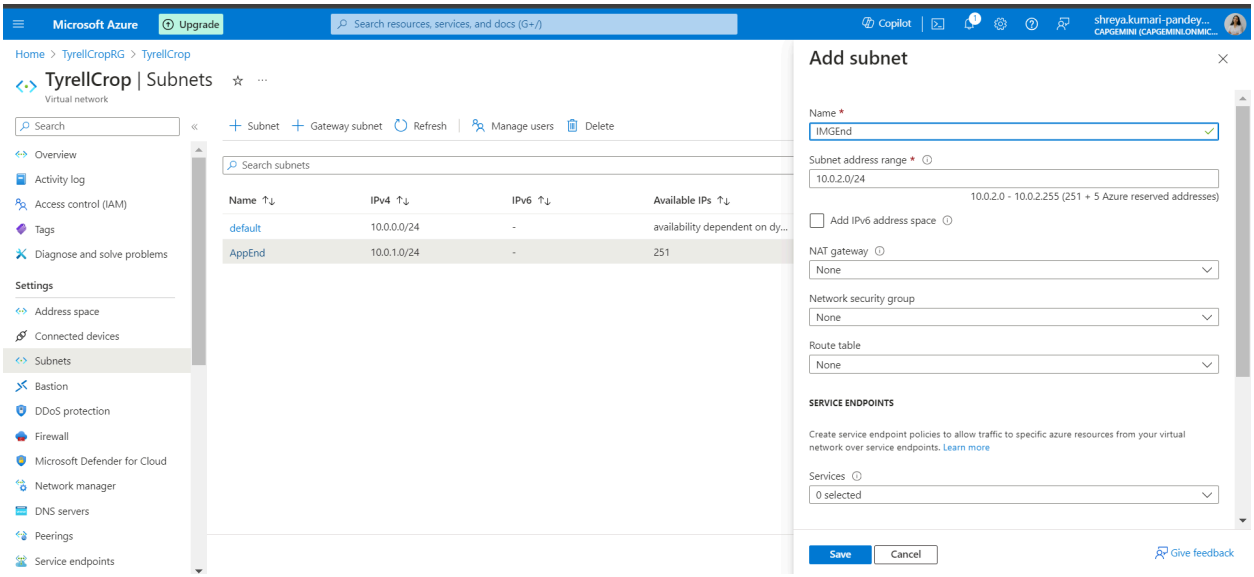


3. Provide the Value-

    1. **Name:**AppEnd
    2. **Address** Space:10.0.1.0/24



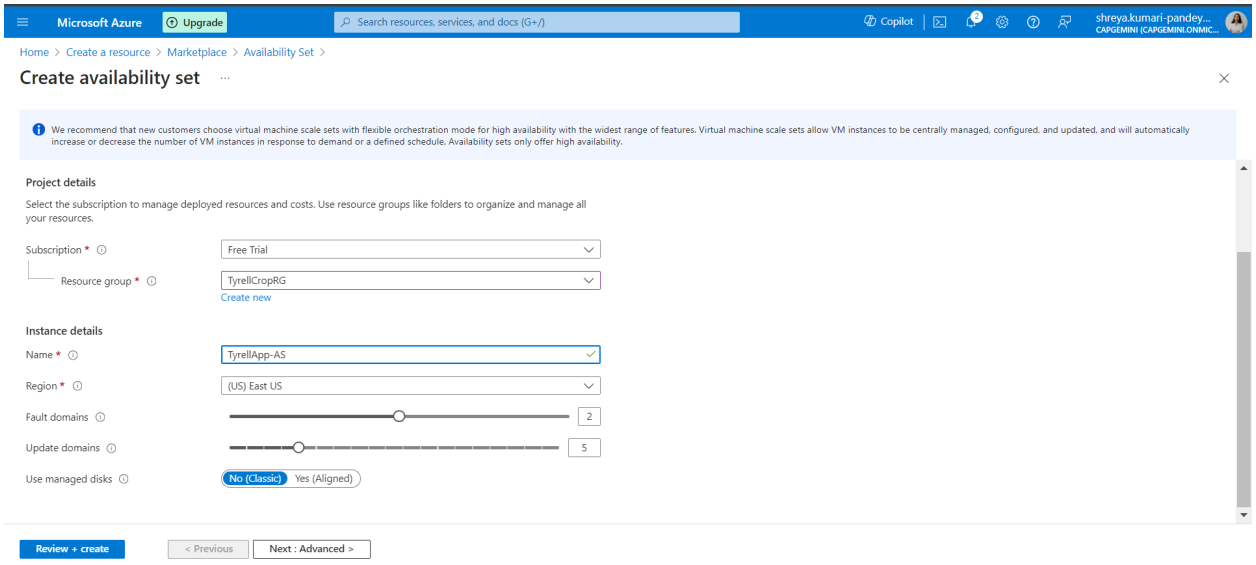
1. Provide the Value-
    1. **Name:**IMGEnd
    2. **Address** Space:10.0.2.0/24



Task 4: Create Availability Set

1. From the "+"**Create a Resource** blade, Search for **Availability Set** and click **Create**.
    A. Name: TyrellApp-AS
    B. Resource Group: TyrellCropRG
    C. Location:East US

*with **2** fault domains and **5** update domains



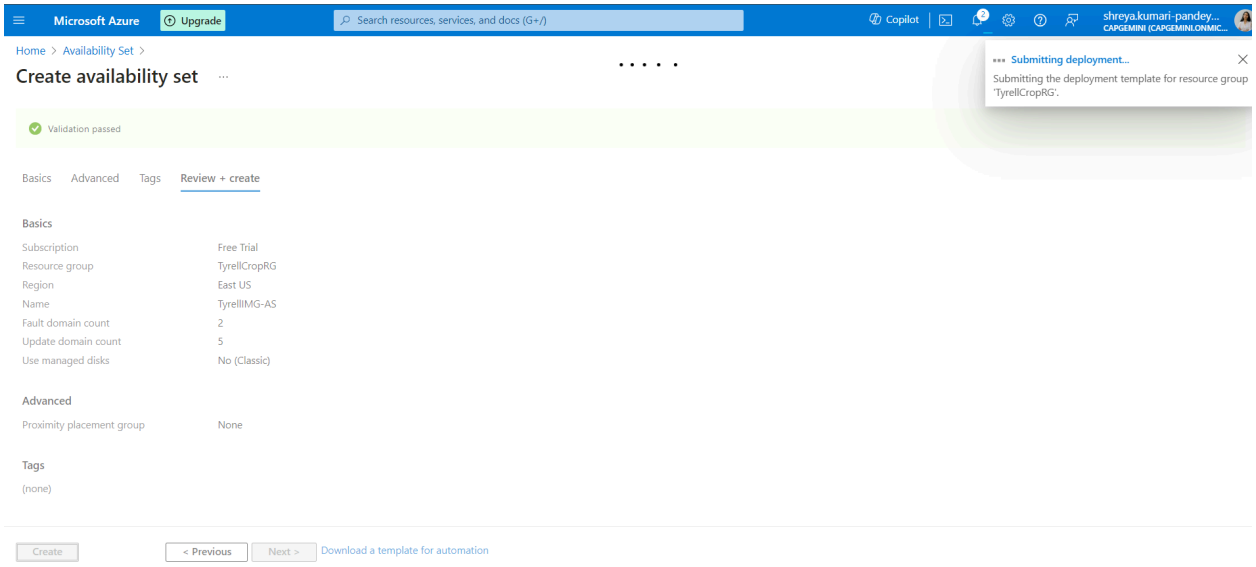
2. From the **Create a Resource** blade, Search for Availability Set and click **Create to add another Availability Set**.

    A. Name: TyrellIMG-AS

    B. Resource Group: TyrellCropRG

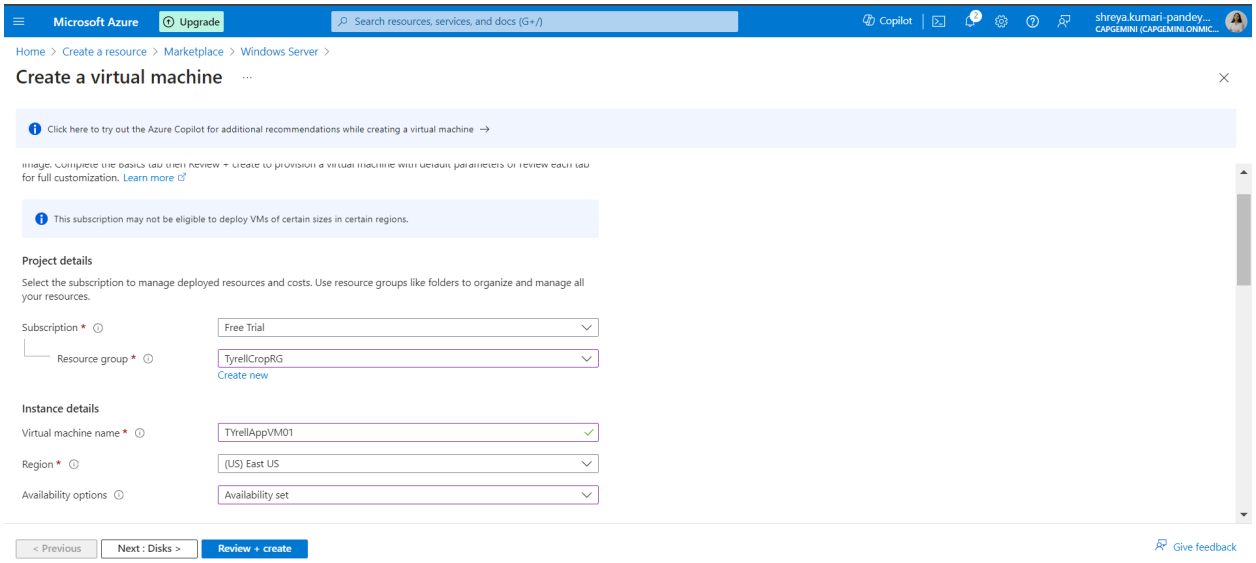
    C. Location:East US

*with **2** fault domains and **5** update domains



Task 5: Add VM's – For Application

1. From the **Create a Resource** blade, click on **Compute** and select **Windows Server 2016 Datacenter**.



2. Use the **Create a virtual machine** blade to deploy a virtual machine with the following settings:

Basic:

A. Resource group: **TyrellCropRG**

B. Virtual machine name: TYrellAppVM01

C. Region: east us

D. Availability options: **Availability set ->TyrellApp-AS**

E. Image: **Windows Server 2016 Datacenter**

F. Size: **Standard DS1 v2**

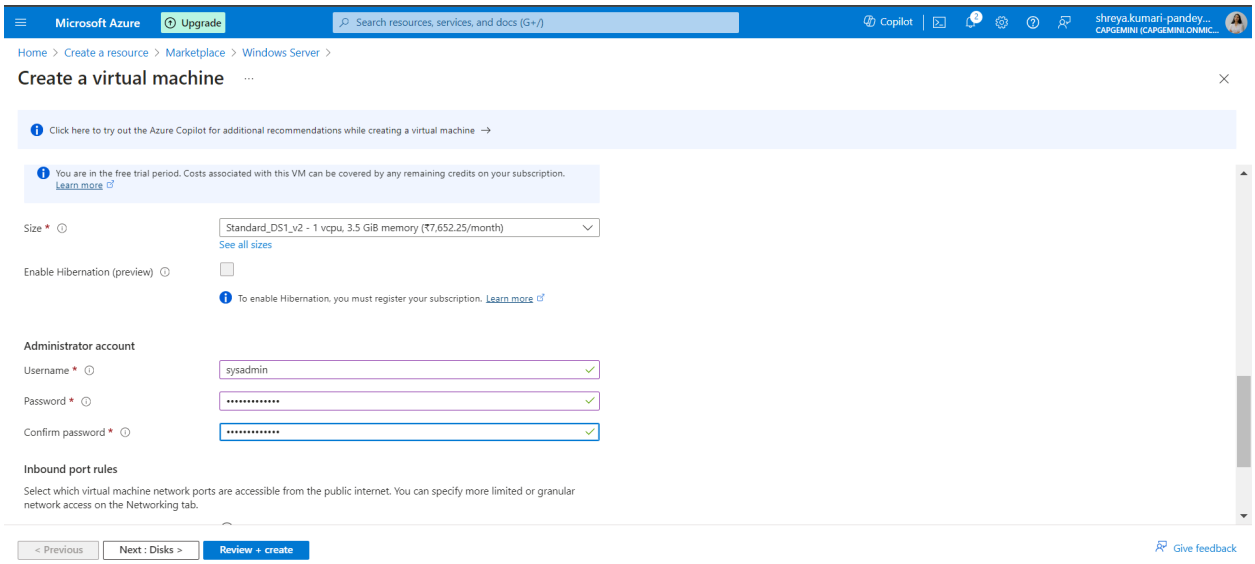
G. Username: **sysadmin**

H. Password: **Pa55w.rd!234**

I. Public inbound ports: **Allow Selected Ports**

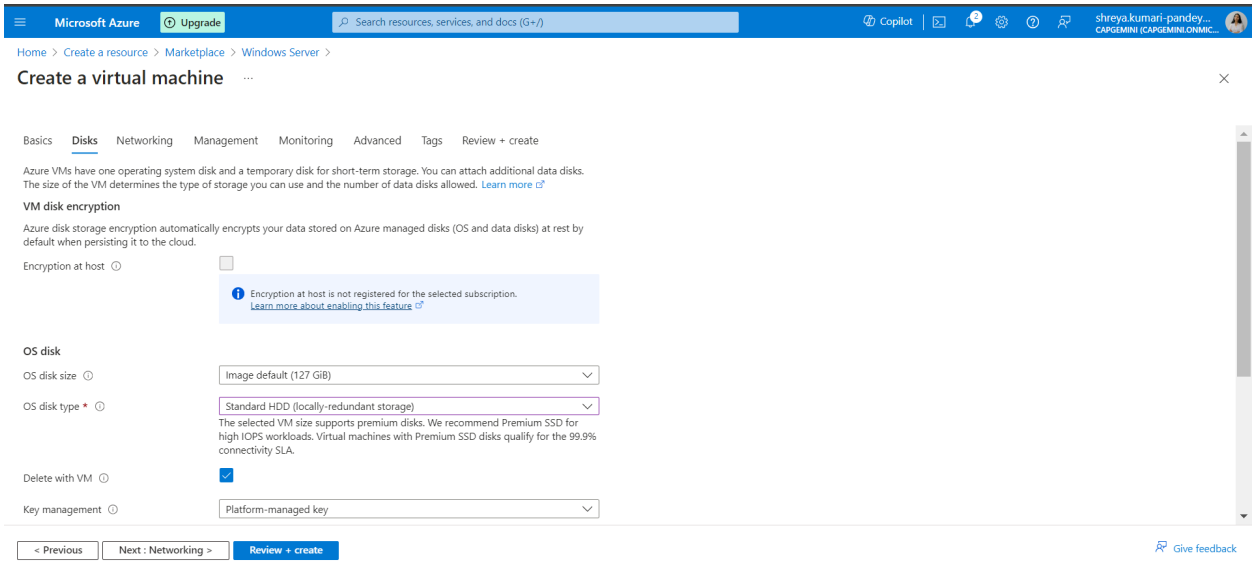
J. Selected Inbound ports**: rdp**

K. Already have a Windows license? **No**



Disk:

A. OS disk type: **Standard HDD**



Networking:

A. Virtual network: TyrellCrop

- Subnet name: **AppEnd**

B. Public IP: **TYrellAppVM01-ip**

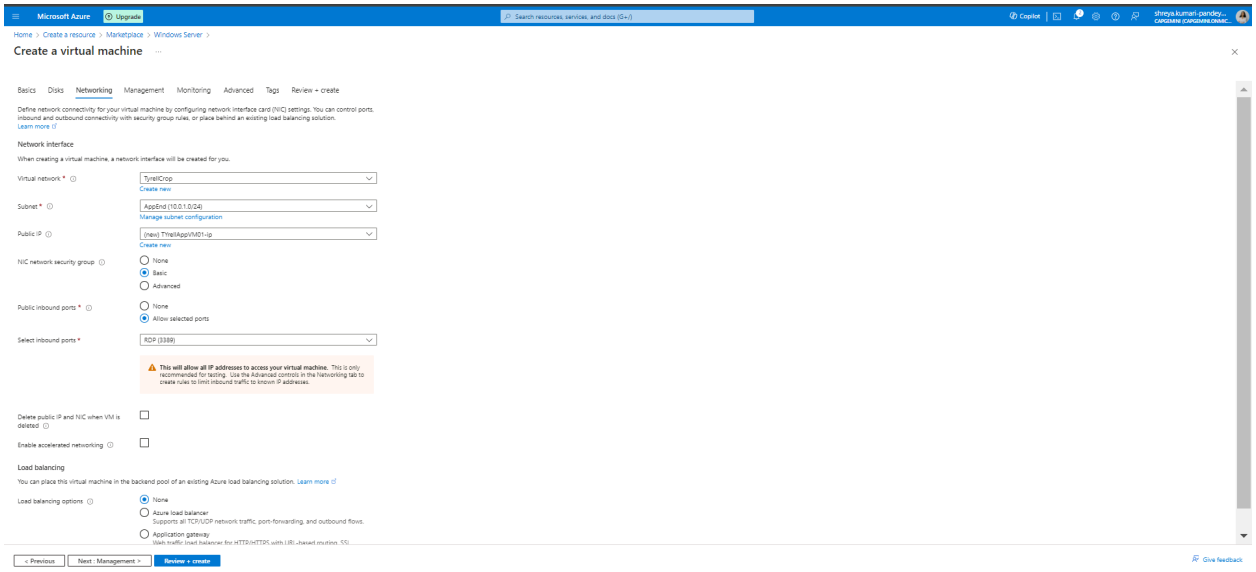
C. NIC Network security group: **Basic**

D. Public inbound ports: **Allow Selected Ports**

E. Selected Inbound ports**: rdp**

F. Accelerated networking: **Off**

G. **Load balancing: No**



Management:

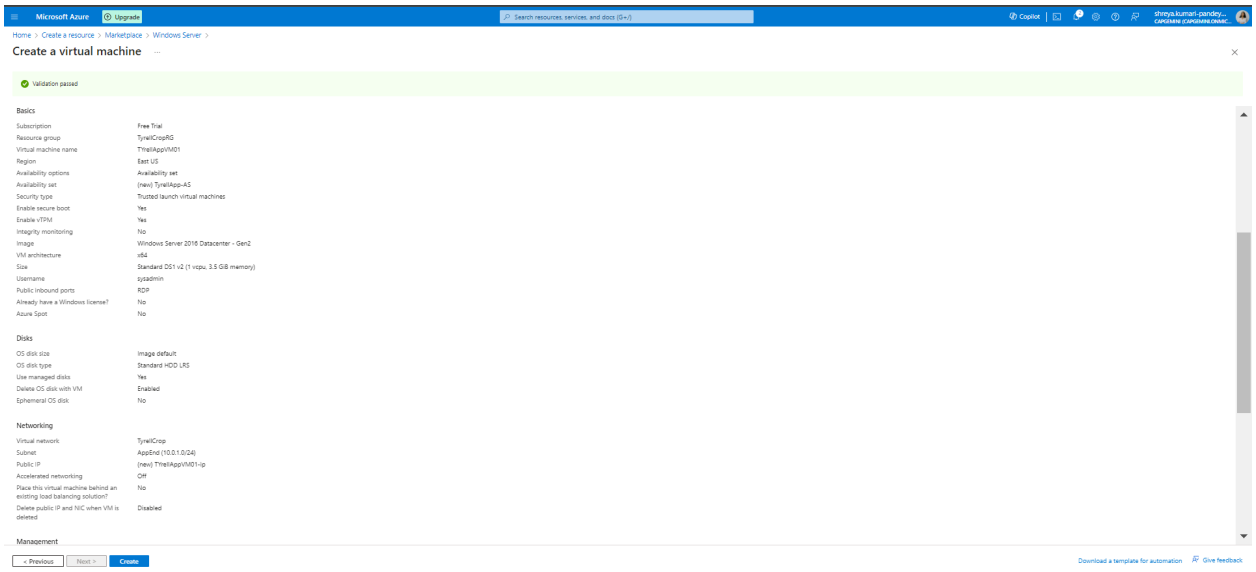
A. Boot diagnostics: **Off**

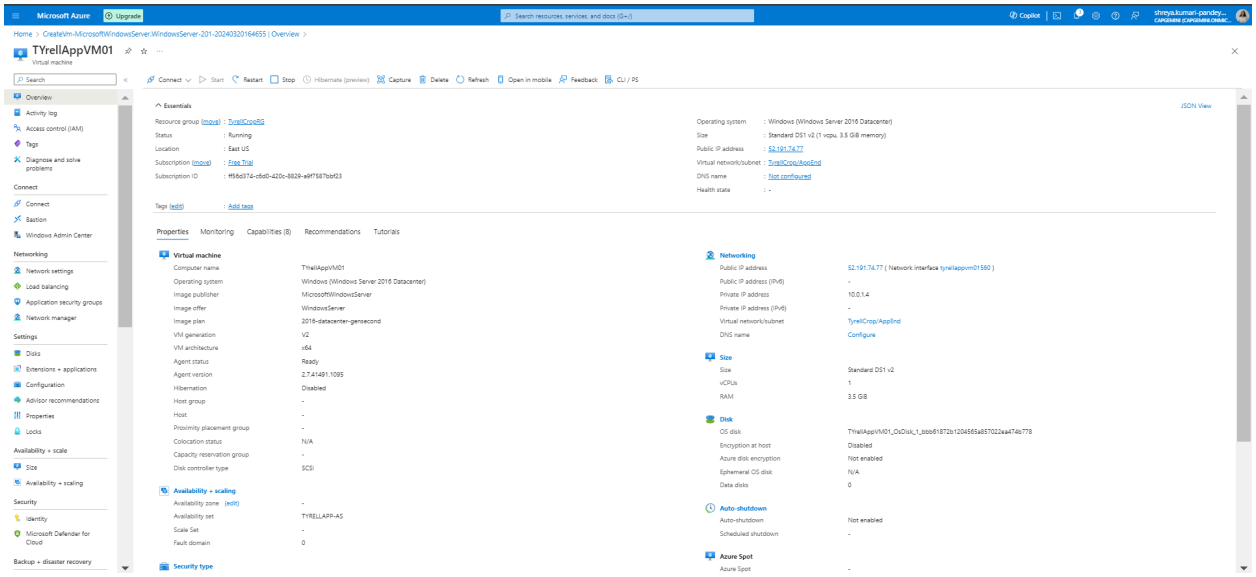
B. OS guest diagnostics: **Off**

C. System assigned managed identity: **Off**

D. Enable auto-shutdown: **Off**

E. **Enable Backup: Off**





Task 6: Add VM's – For Images

1. From the **Create a Resource** blade, click on Compute and select **Windows Server 2016 Datacenter**.

2. Use the **Create a virtual machine** blade to deploy a virtual machine with the following settings:

Basic:

A. Resource group: **TyrellCropRG**

B. Virtual machine name: TyrellIMGVM01

C. Region: east us

D. Availability options: **Availability set ->TyrellIMG-AS**

E. Image: **Windows Server 2016 Datacenter**

F. Size: **Standard DS1 v2**

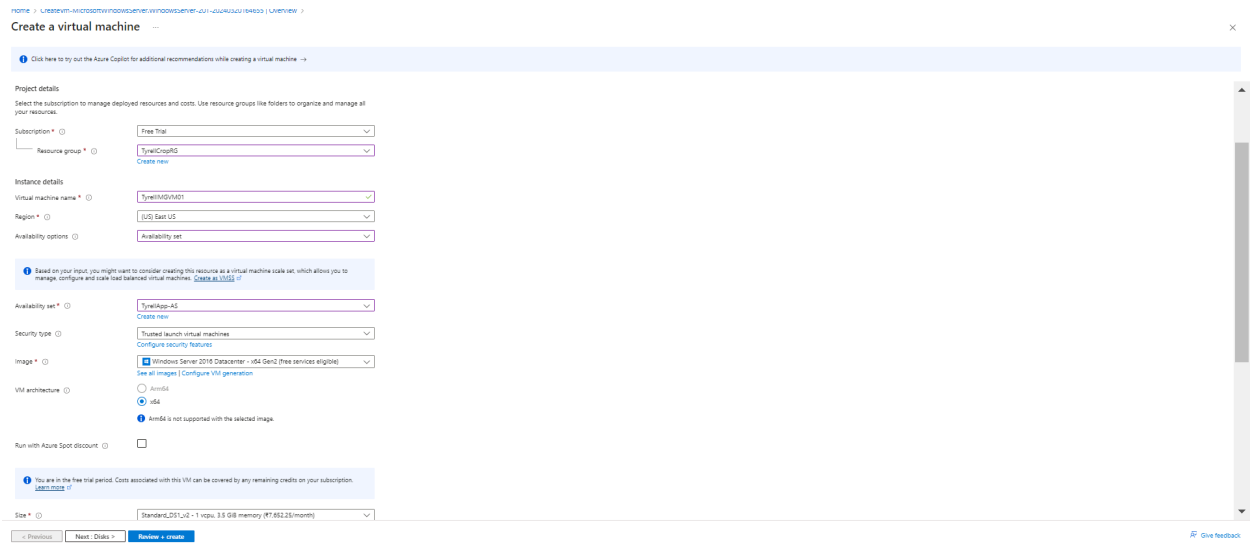
G. Username: **sysadmin**

H. Password: **Pa55w.rd!234**

I. Public inbound ports: **Allow Selected Ports**

J. Selected Inbound ports**: rdp**

K. Already have a Windows license? **No**



Disk:

B. OS disk type: **Standard HDD**

Networking:

H. Virtual network: TyrellCrop

- Subnet name: **IMGNet**

I. Public IP: **TYrellIMGVM01-ip**

J. NIC Network security group: **Basic**

K. Public inbound ports: **Allow Selected Ports**

L. Selected Inbound ports**: rdp**

M. Accelerated networking: **Off**

N. **Load balancing: No**

Management:

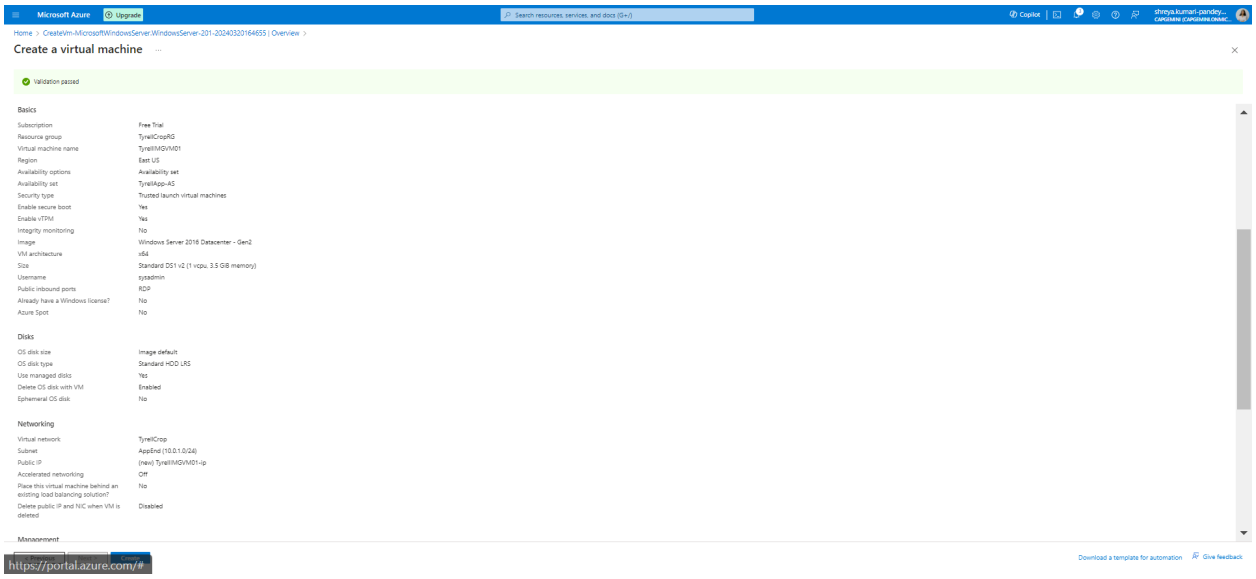
F. Boot diagnostics: **Off**

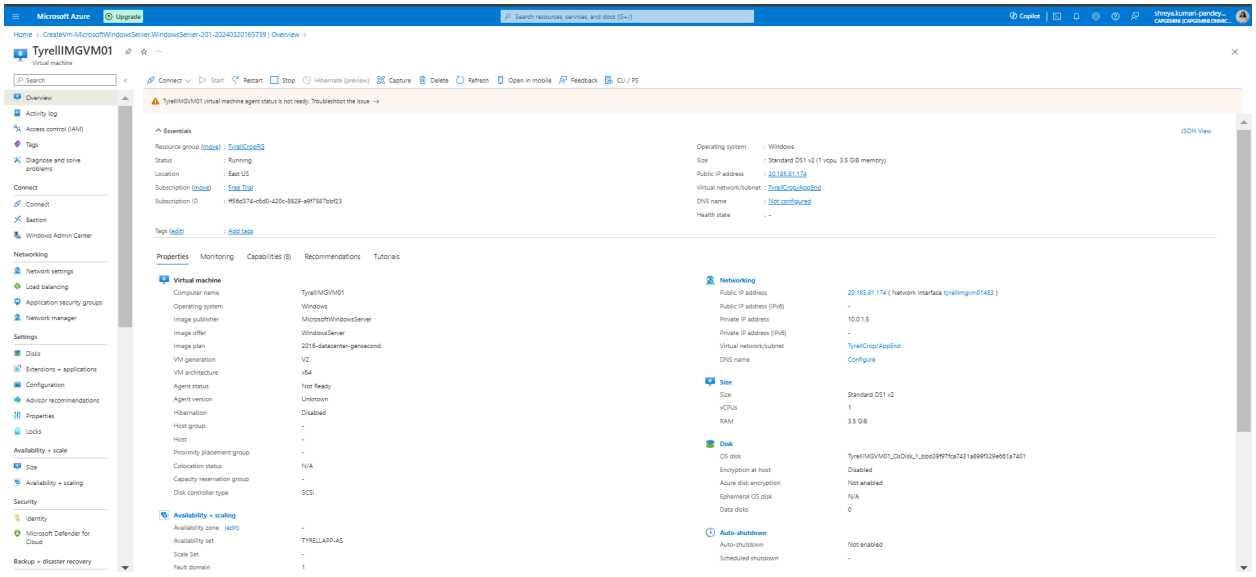
G. OS guest diagnostics: **Off**

H. System assigned managed identity: **Off**

I. Enable auto-shutdown: **Off**

J. **Enable Backup: Off**





Task 7: Add IIS role to the Windows Servers.

1. After each virtual machine is provisioned login using remote desktop by clicking the Connect button on the virtual machine configuration blade and logging in with the administrative credentials.

2. Once inside the VM, click the PowerShell icon on the task bar.
3. In the PowerShell console execute the following command to install IIS:

```
Add-WindowsFeature -Name "Web-Server"
```

4. After Once IIS has completed installation open the file C:\InetPub\wwwroot\iisstart.htm in notepad on each server. Inside the <body> tag insert-

   This content comes from App server !! (on TYrellAppVM01)

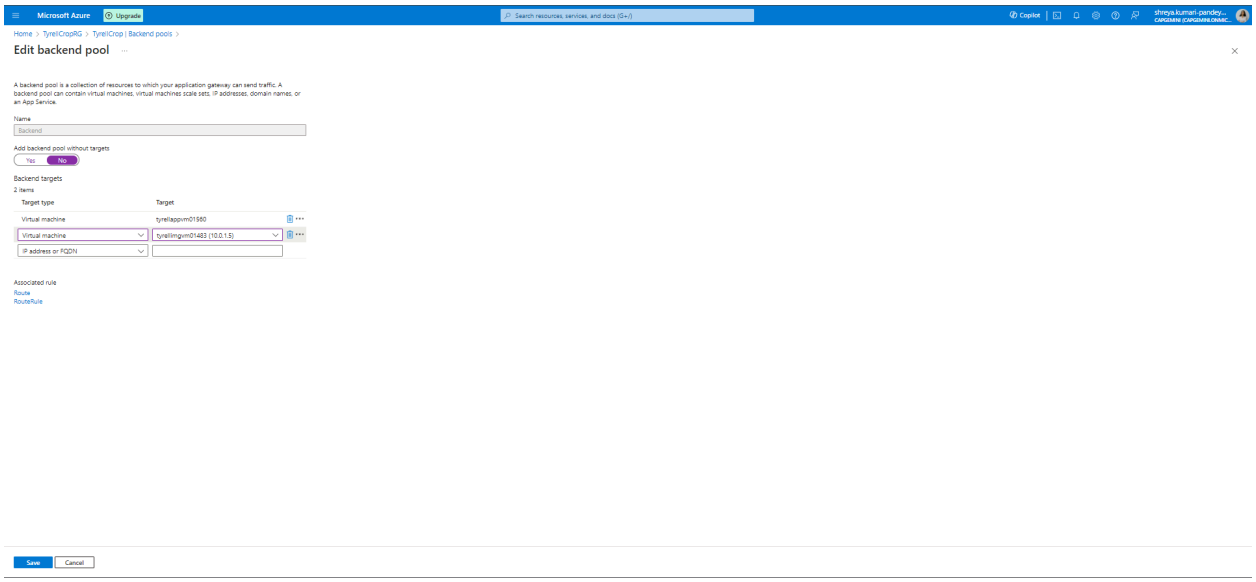
   This content comes from IMG server !! (on TYrellIMGVM01)

5. Repeat the steps for both virtual machines to install IIS.

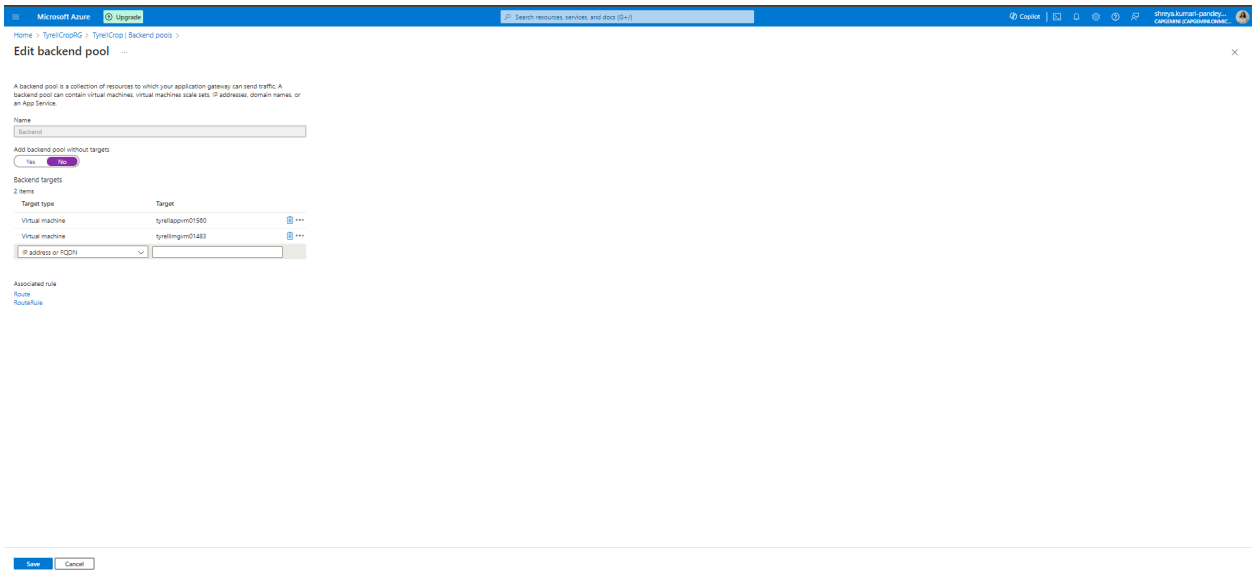
Task8: Add VM's to backend pools

1. From resource group- **TyrellCropRG**, go to the instance of the application gateway- **TyrellCrop**

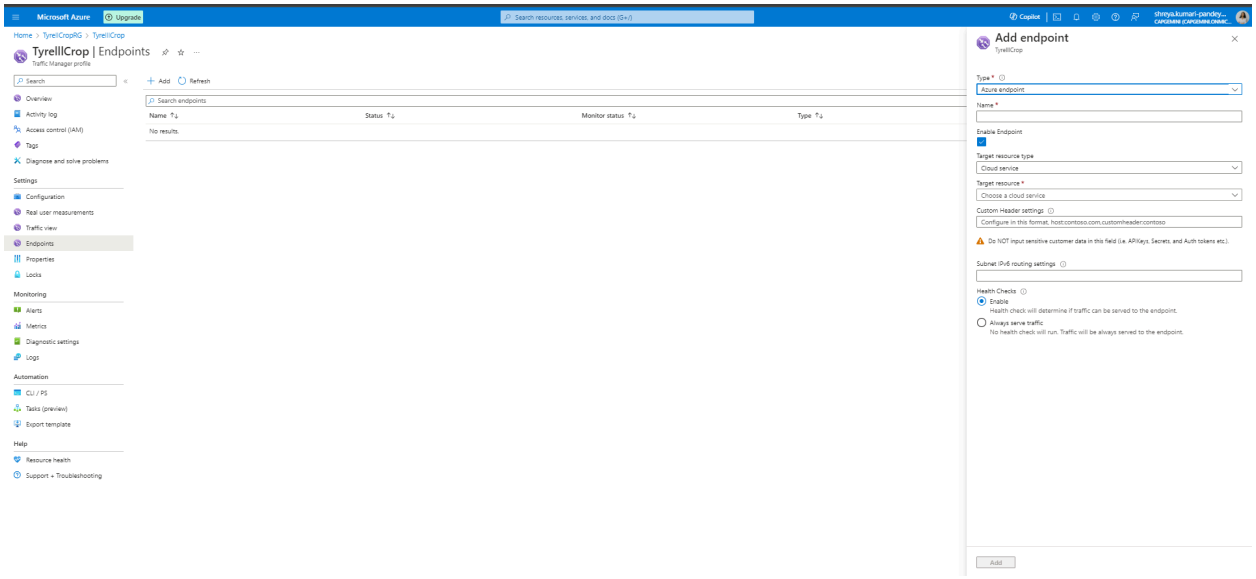
2. Click **Backend pools**-> Click **Backend**.
3. Click **Add target** to add *TYrellAppVM01* to Backend.



4. On **Backend pools**-> Click **Backend**.
5. Click **Add target** to add *TYrellIMGVM01* to **Backend**.



Task 9: Add application gateways to the Traffic Manager endpoints

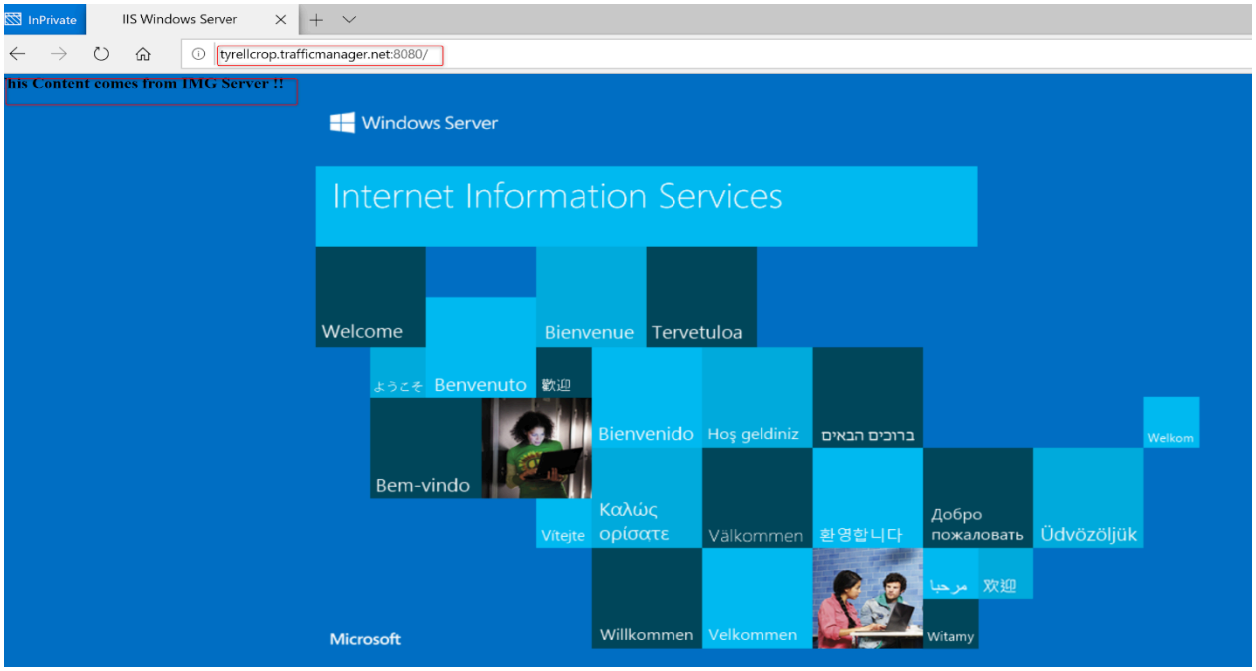


1. Create an endpoint by entering the following information-

- **Type**: **Azure endpoint**
- **Name**: TyrellCropAG1.
- **Target resource type**: **Public IP address** and then, under **Target resource**, select the public IP of the application gateway

Test the Functionality

http://tyrellcrop.trafficmanager.net:8080/ (response from TYrellAppVm01)



http://tyrellcrop.trafficmanager.net (response from TYrellIMGVm01)