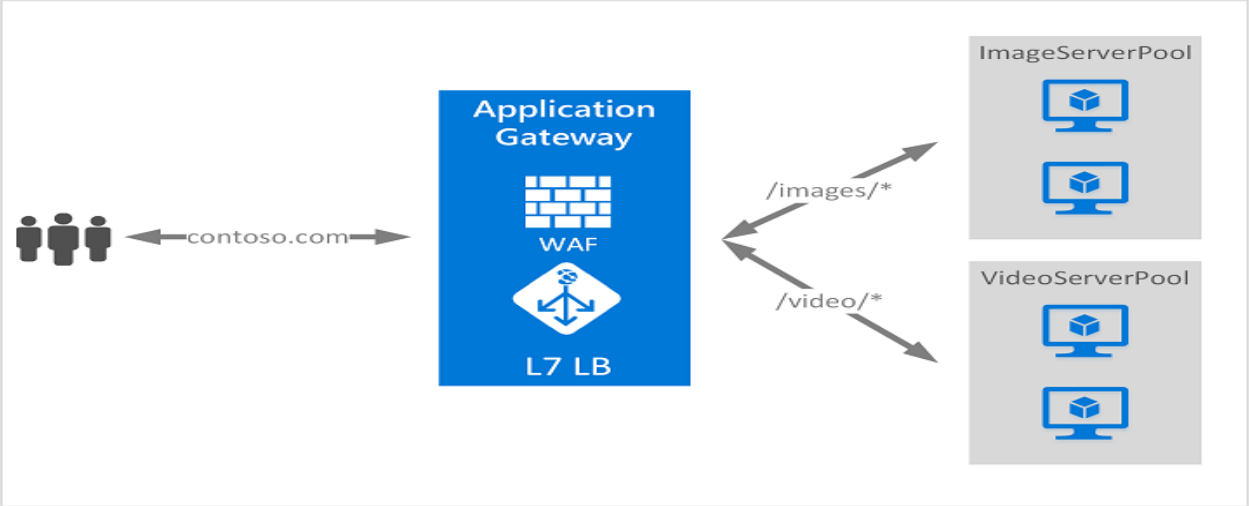
Application Gateways in Azure

- What is Application Gateway in Azure?
- Azure Application Gateway is a web traffic load balancer that enables you to manage traffic to your web applications. Traditional load balancers operate at the transport layer (OSI layer 4 - TCP and UDP) and route traffic based on source IP address and port, to a destination IP address and port.
- Application Gateway can make routing decisions based on additional attributes of an HTTP request, for example URI path or host headers. For example, you can route traffic based on the incoming URL. So if /images is in the incoming URL, you can route traffic to a specific set of servers (known as a pool) configured for images. If /video is in the URL, that traffic is routed to another pool that's optimized for videos.



This type of routing is known as application layer (OSI layer 7) load balancing. Azure Application Gateway can do URL-based routing and more.

Now Lets try with an example how Application GateWays work in the Azure.

1. Login into Azure Portal with the credentials.
2. Here to work with Application Gateway's basically we require the following details.

   A) One Resource Group

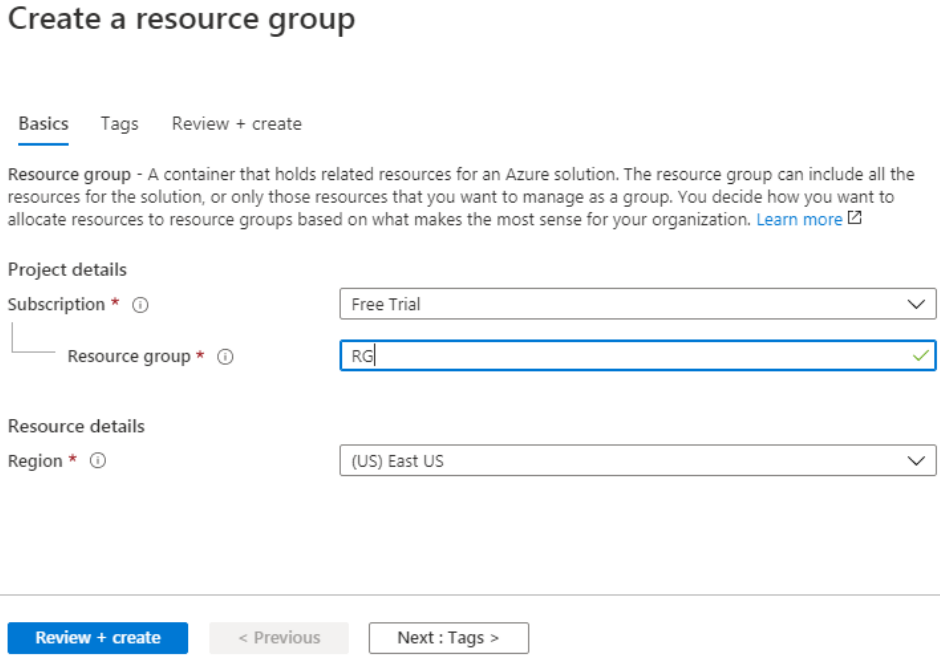
   B) One Virtual Network

   C)Two Virtual Machines

3. Now, in the First step we are going to create a Resource Group with Name RG and Location East US.

   A) For this search the Resource Group in Search Box dashboard.

B) Then Click on the Add button and Create the New Resource Group as shown in the below picture.

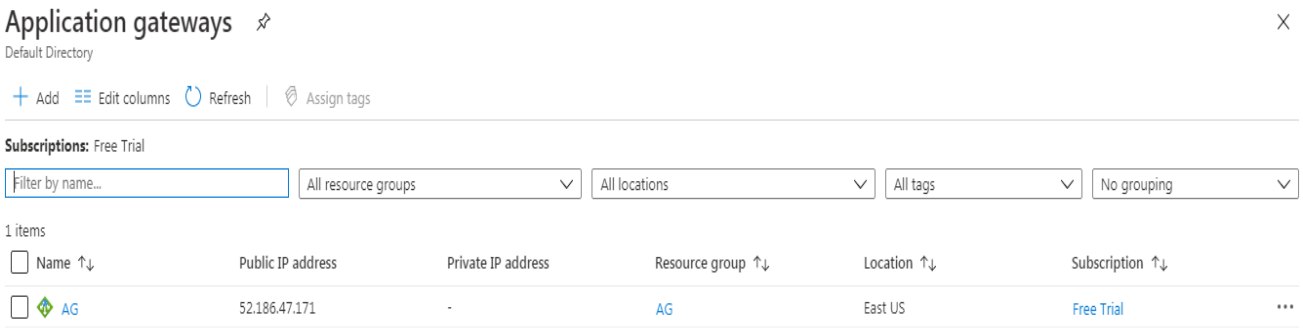


C)After adding the details click on Review + Create and then create button.

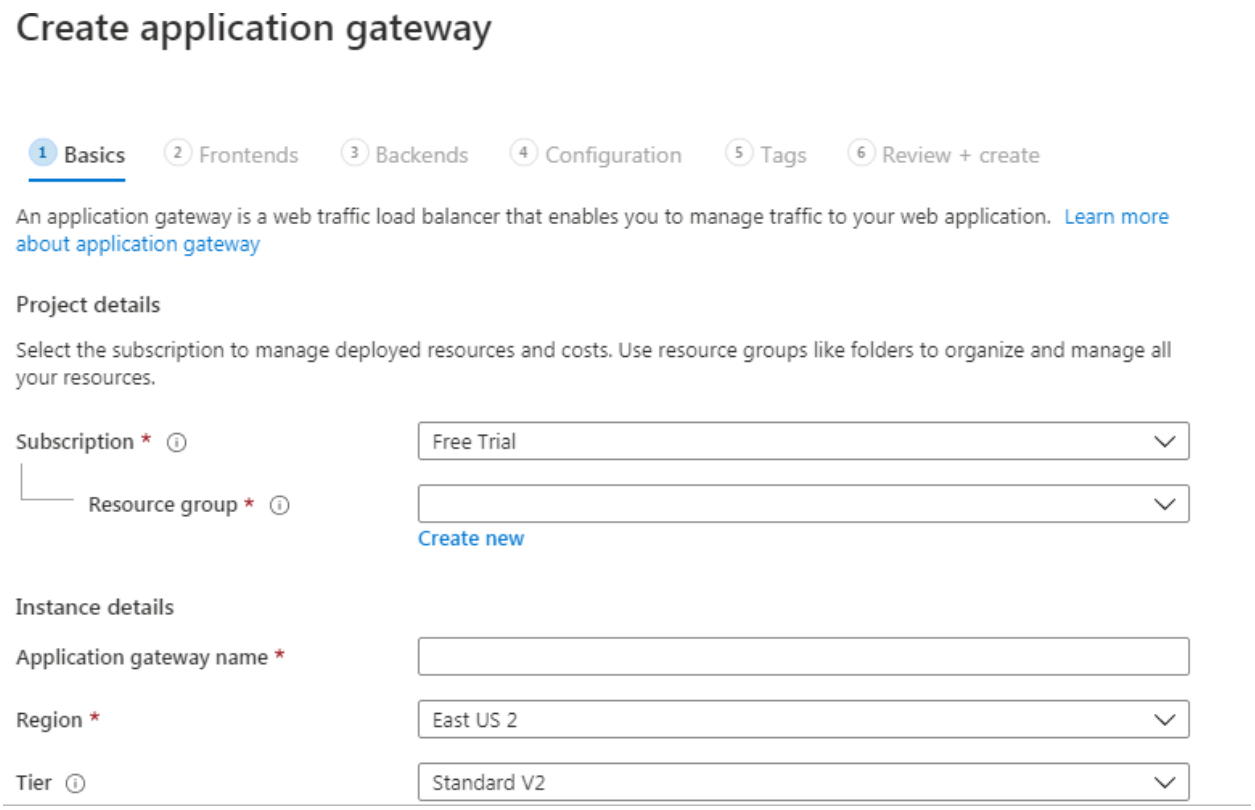
D)Now your new Resource Group was created with Name RG.

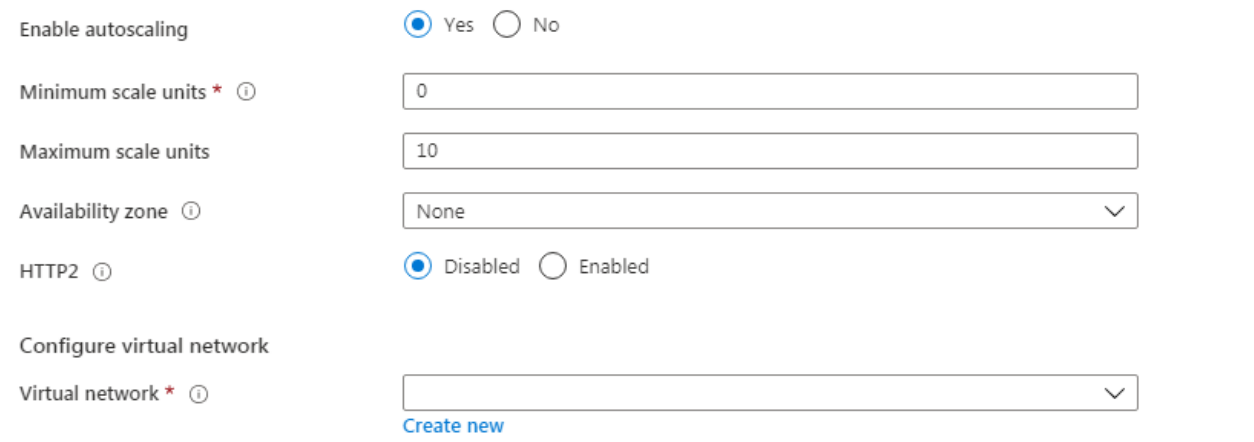
4. Now we are going to create a Application Gateway with the Name RGTest.

A) To do this, search the Application Gateways in the search box in the dashboard.



C) Now Click on the Add button to create a New Application Gateway.





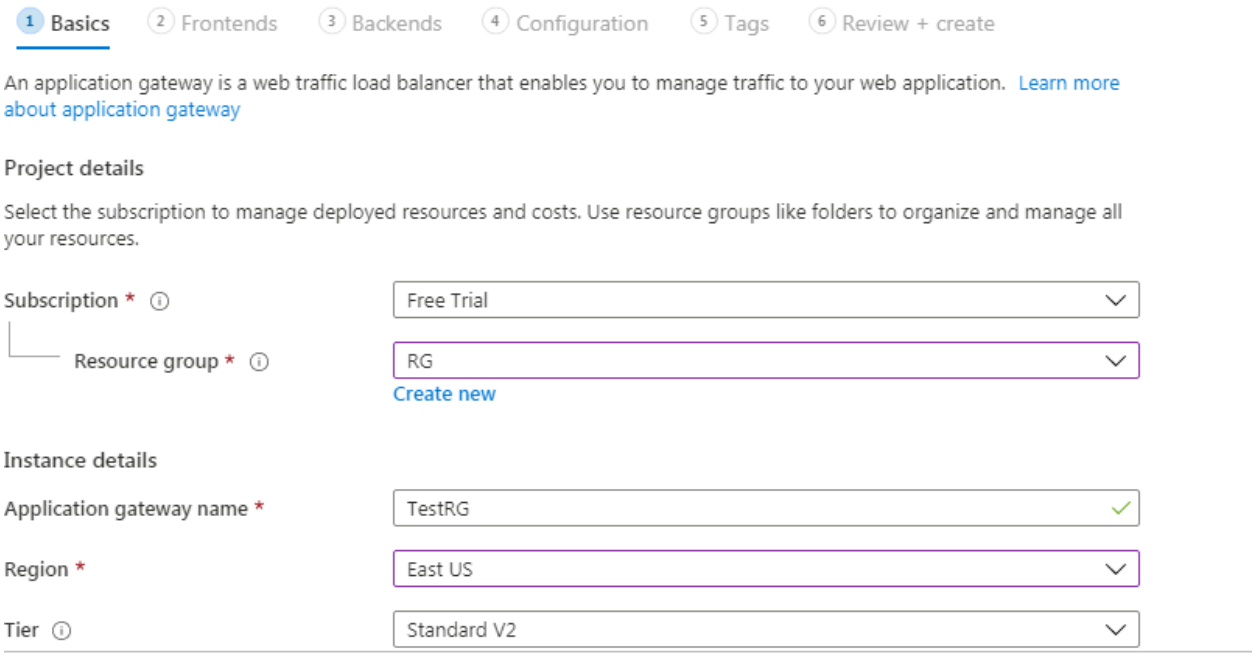
In the above screens enter the following details

A) Resource Group- Select RG

B) Application gateway name: TestRG

C) Region : East US

D)Tier: Standard V2



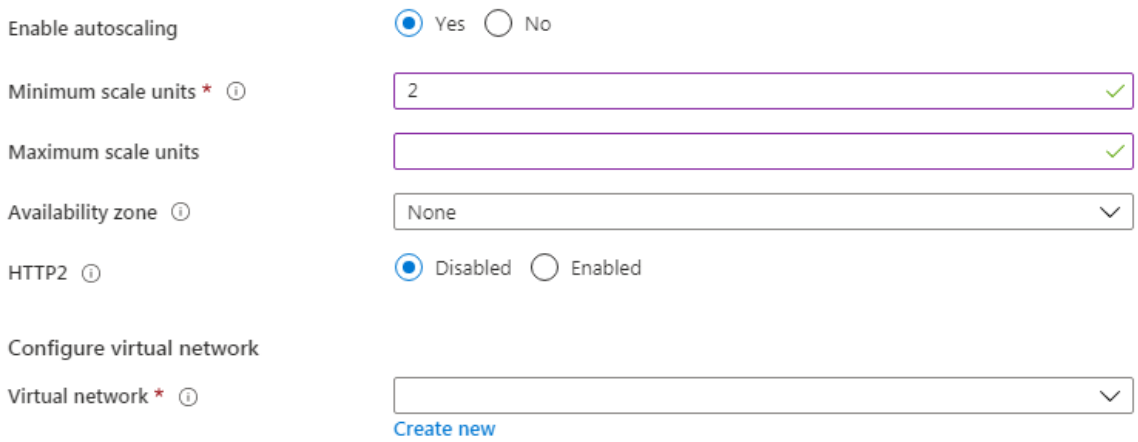
E) Enable autoscaling: Yes

F) Minimum scale units : 2

G) Maximum scale units : Make it empty

H) Availability Zone : None

I) HTTP2: Disabled

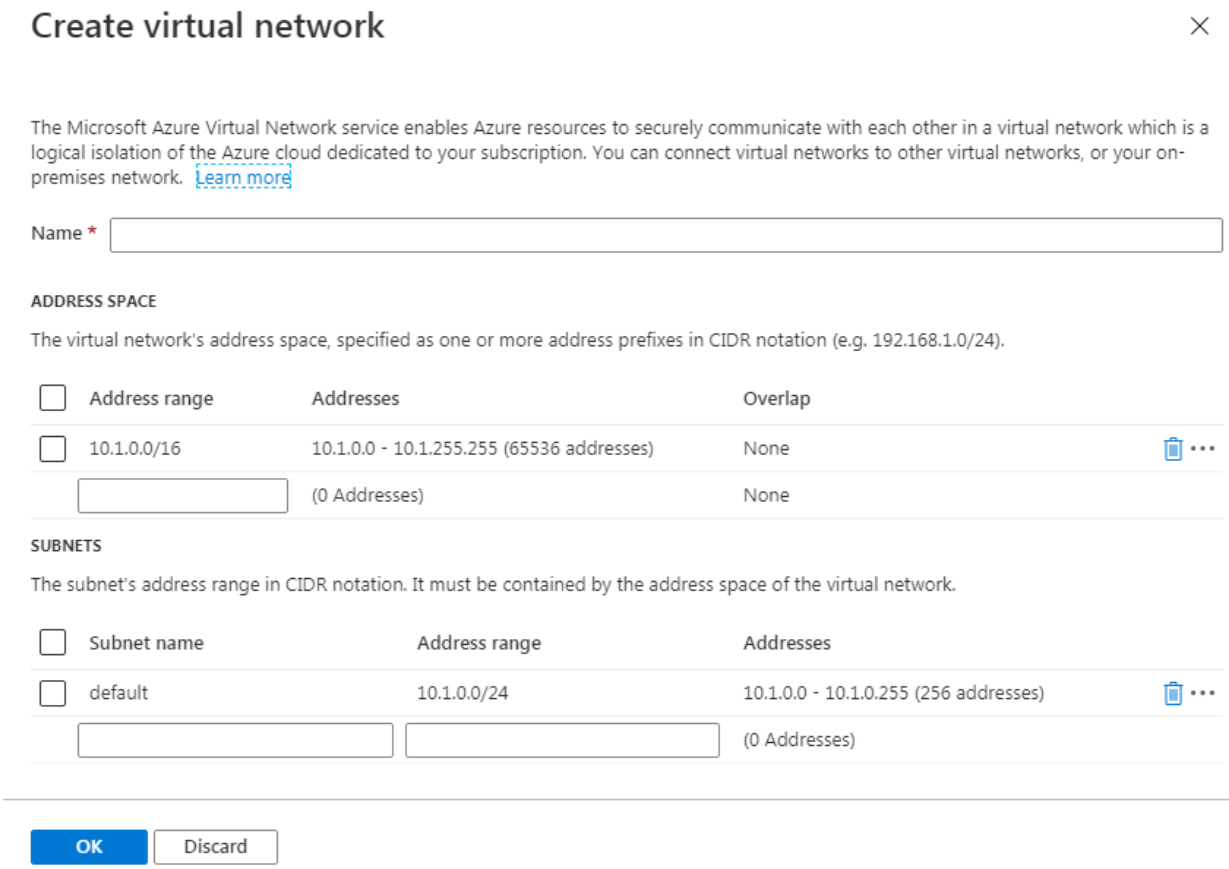


J) Virtual Network :

Till now we are not created any virtual network for the Resource Group RG. So here we are going to create a new virtual network.

1)Click on the Create New link

2) The below window will be opened

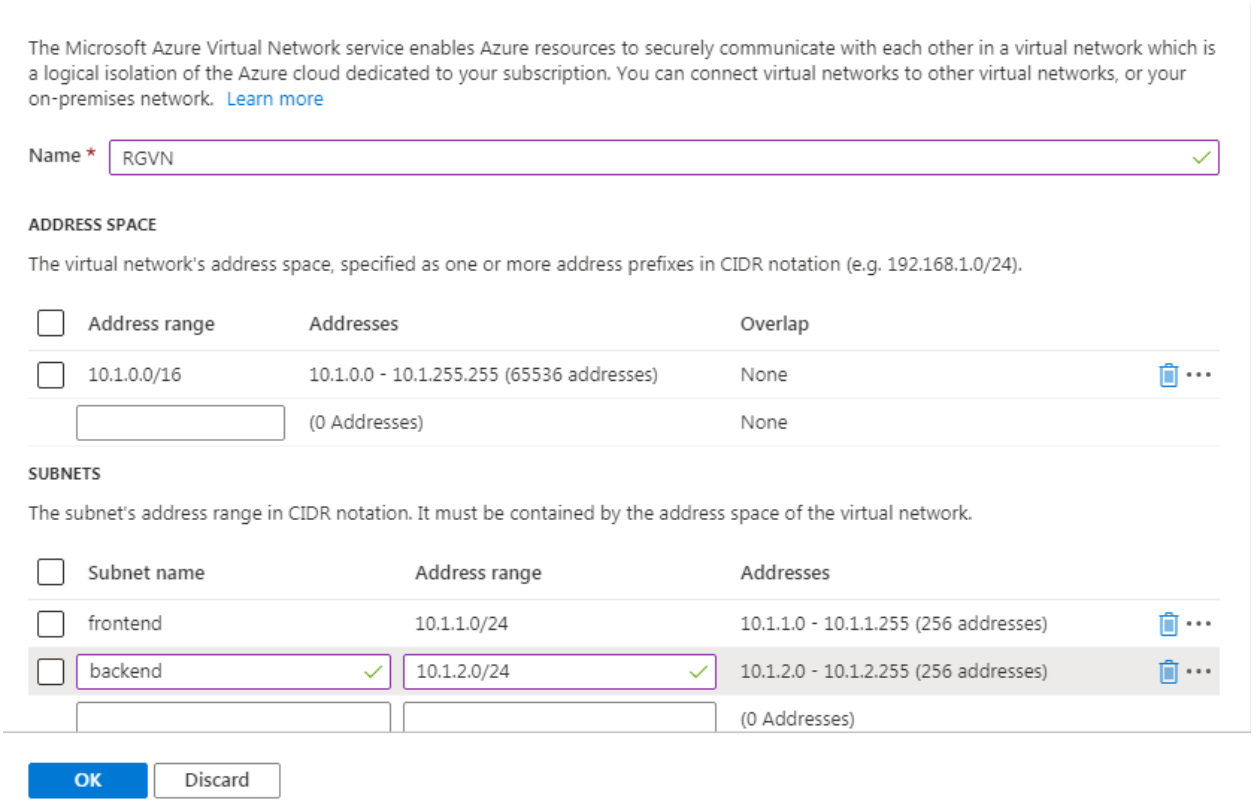


3)Enter the following details

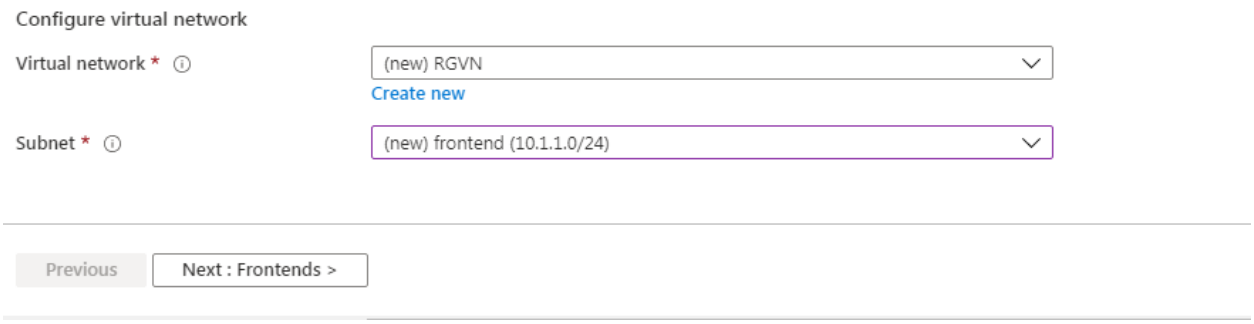
A) Name: REVN

B) Address Space: Leave it as it is

C)Subnets: Modify the Default name as frontend and mention the Address range as 10.1.1.0/24 and add one more subnet with the name Backend with Address range 10.1.2.0/24.



4)Now Click on the Ok button.

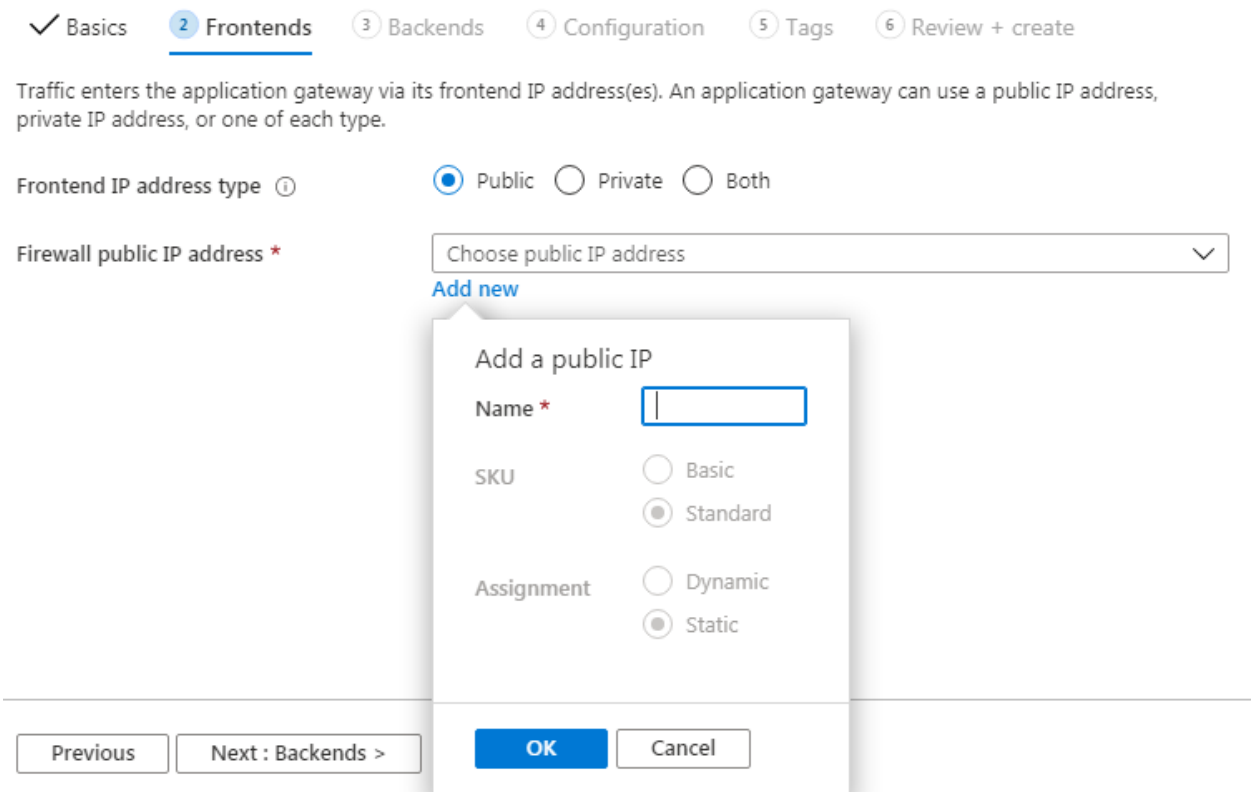


*In the subnet dropdown select the Subnet as frontend

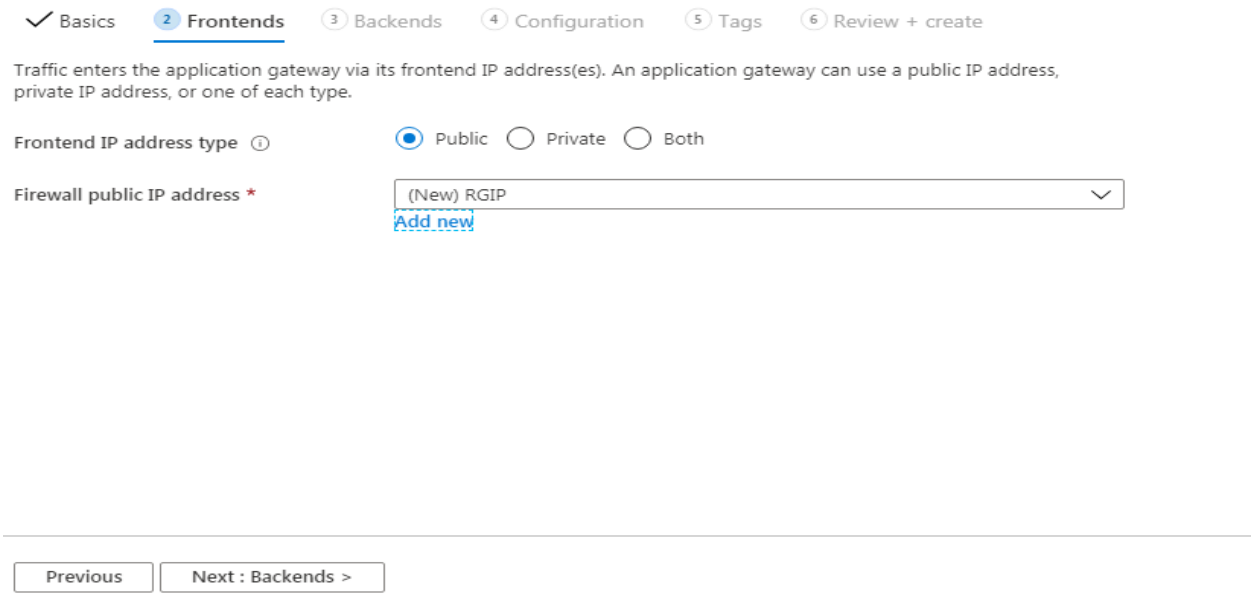
K) Now click on the Frontends, you will navigate to another screen

1) Frontend IP address type : Public

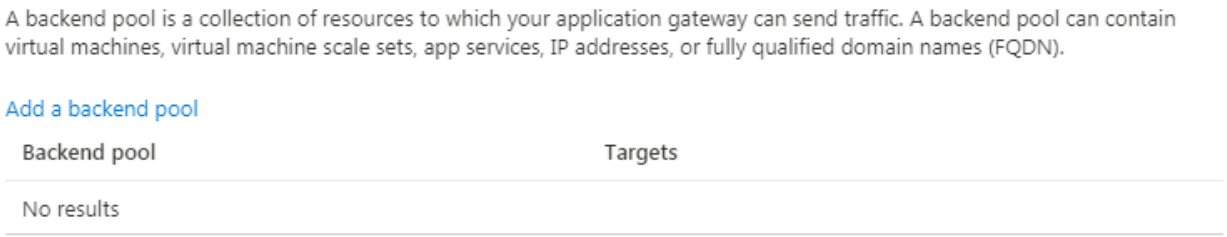
2) Firewall IP address : Click on the Add New



3)Enter Name as RGIP and click on OK.



4) Now click on the Backends you will navigate to another screen



5) Now, Click on the backend pool click

1) Name : BackendPool

2) Add backend pool without targets: By Default, it is in No mode for time being we are making it Yes. After creating the Virtual Machines we will add the backend pools.

3)Now Click on the Add button

6)Then Click on the Configuration button

1)In the Below screen we are seeing Frontends, Routing rules and Backend pools

2)Frontends and Backend pools are created in the earlier steps.

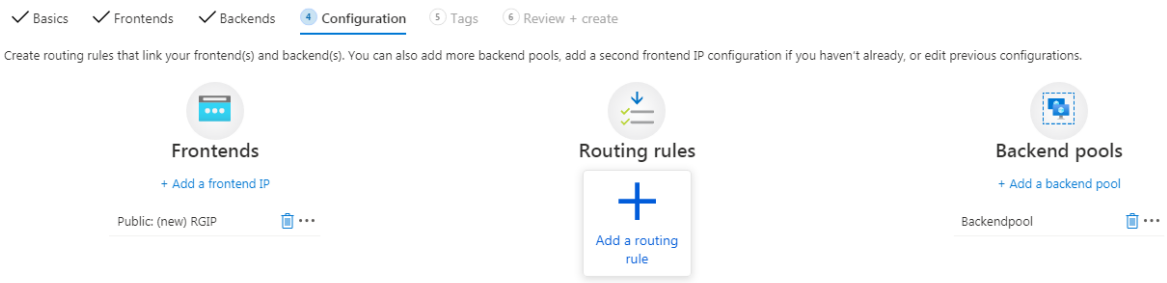
*Here you will get one doubt

->what is Front end?

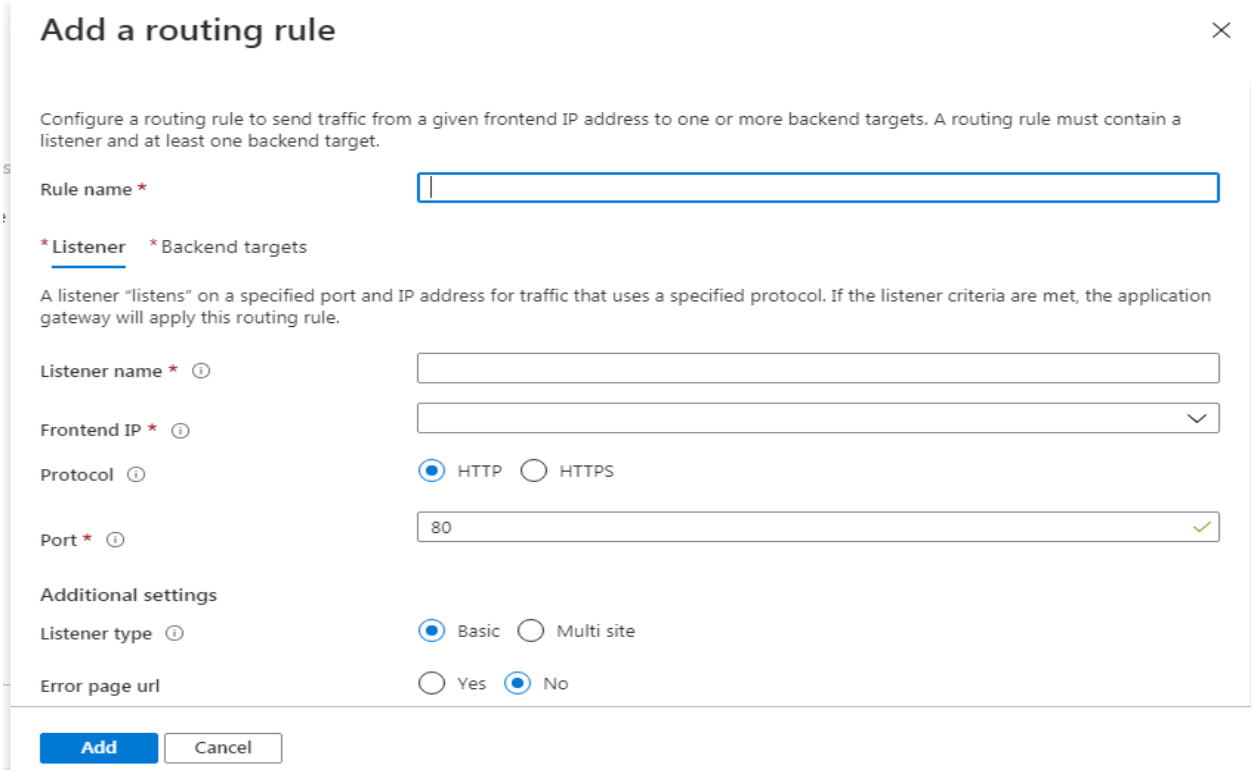
->What is Backend pool?

Frond end means after completing the Application Gateway Deployment one public Ip is generated, with that IP we will check the traffic.

Backend pool means our VMs.



7) Now we are going to add the Routing rules and click on the Add a routing rule



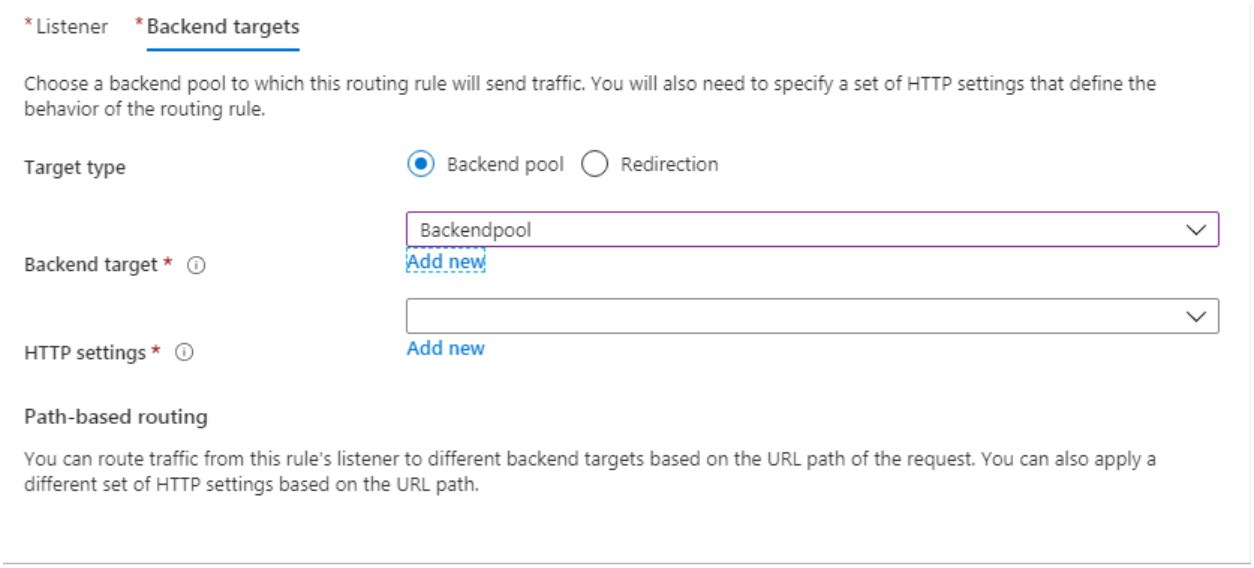
1)Rule Name: RGRouting

2)Listener Name: RoutingListener

3)Frontend IP :Public

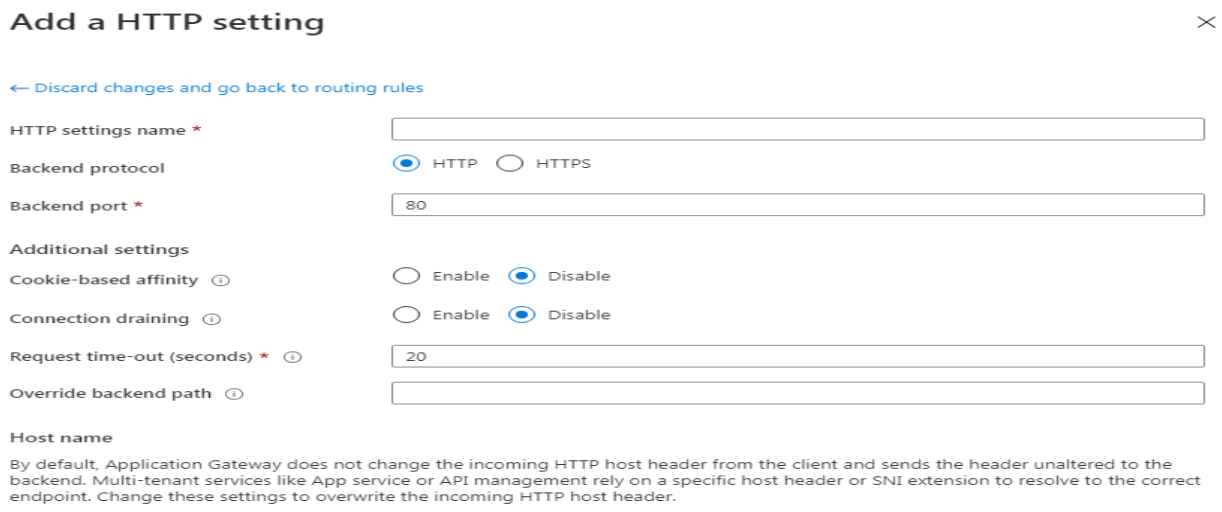
*Remaining fields as it is.

4)Click on Backend targets



1)Select the Backend target as Backendpool

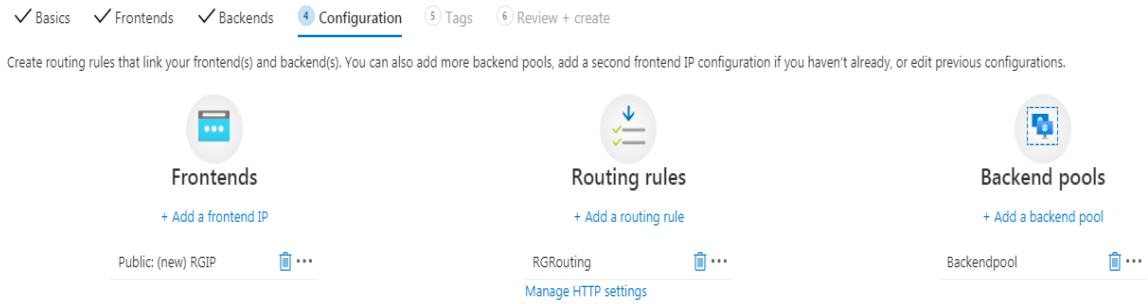
2)HTTP settings : Click on the new

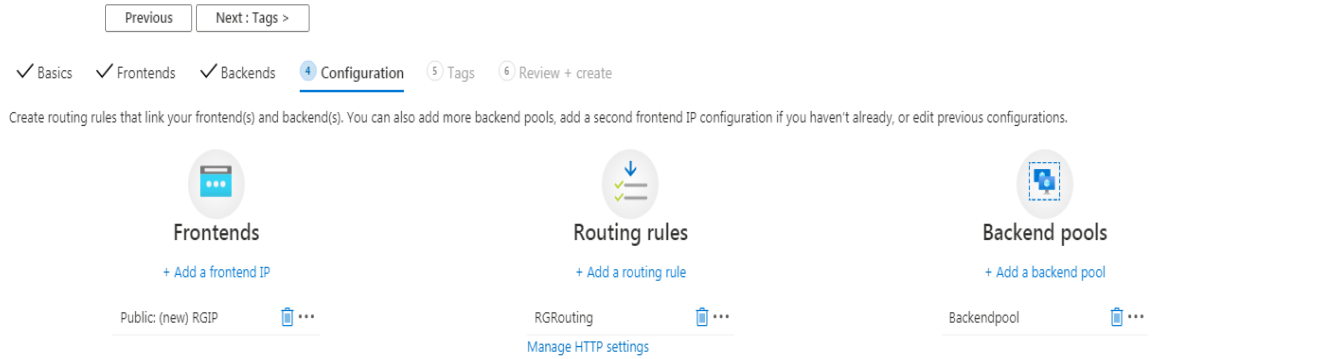


I)HTTP settings name : RGHTTP

II) Leave it remaining fields as it is.

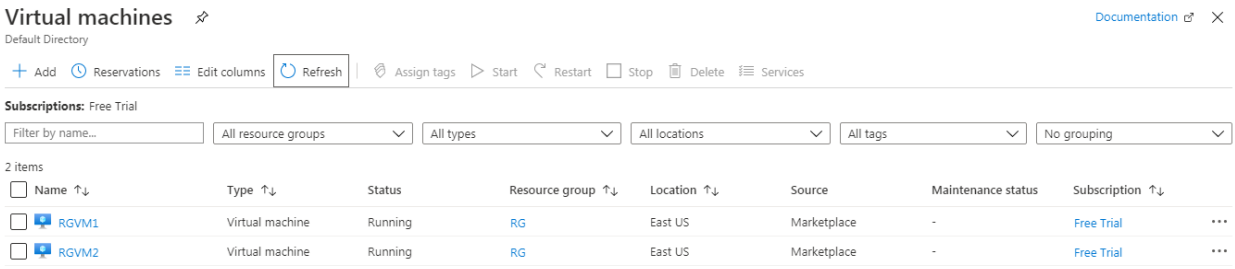
III)Click on Add Button and click on Add button





8)Now click on Tags and click on Review + Create after Validation passed Click on the Create Button.

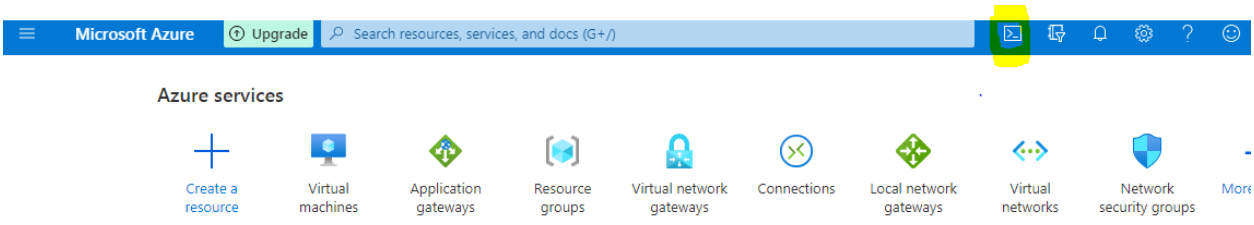
9)Mean while we can create two VMS With Names RGVM1 and RGVM2 under the RG Recourse Group Location East Us.



Note: While Creating the VMs select the inbound ports as HTTP and RDP.

10)Now our Resource Group, Application Gateways and VMs are ready.

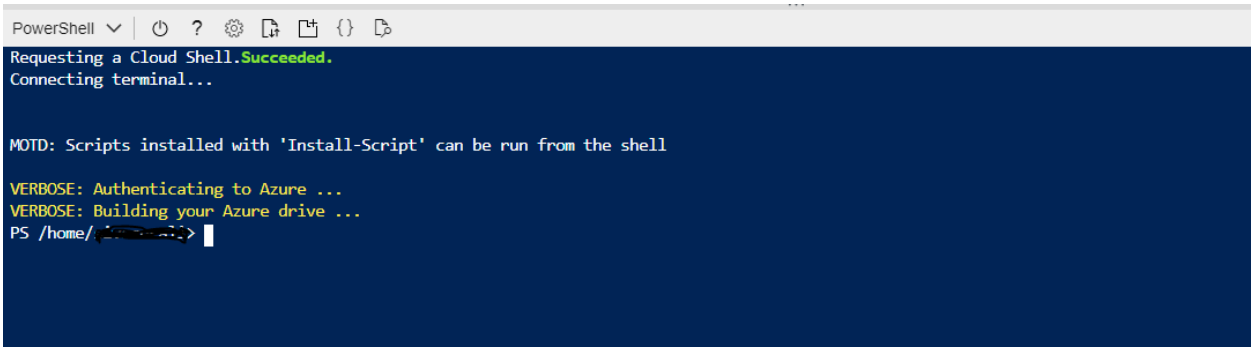
11)In the next step we need to create the IIS in VMs. For this we are going to use Cloud shell in Azure Portal.



12)Click on the above marked one. It will open a command prompt below portal.

13)There it will show the Bash and power shell, select the power shell .

14)Then Click on the Create button.



15)To create the VM's IIS we are using the following script

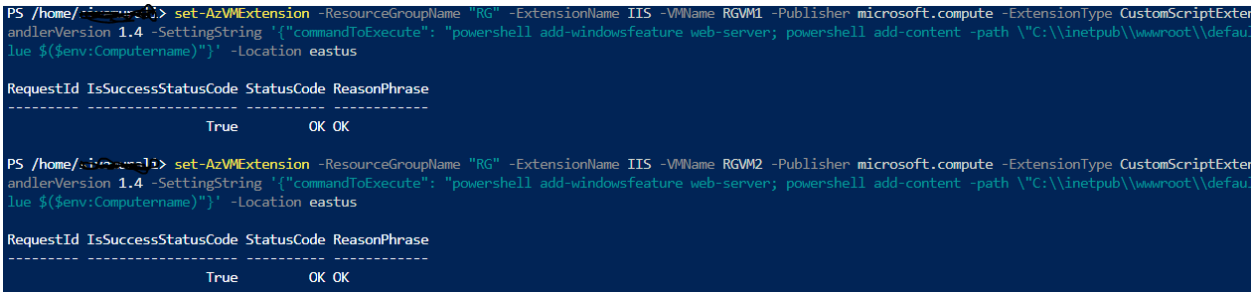
For VM1

set-AzVMExtension -ResourceGroupName "RG" -ExtensionName IIS -VMName RGVM1 -Publisher microsoft.compute -ExtensionType CustomScriptExtension -TypeHandlerVersion 1.4 -SettingString '{"commandToExecute": "powershell add-windowsfeature web-server; powershell add-content -path \"C:\\inetpub\\wwwroot\\default.htm\" -value $($env:Computername)"}' -Location eastus

For Vm2:

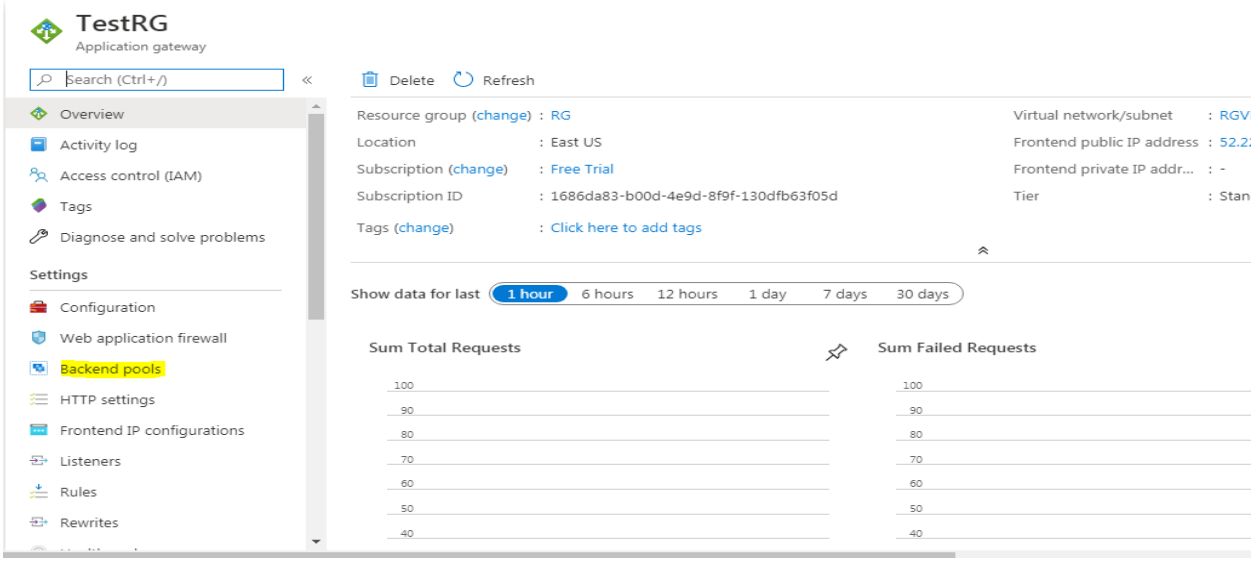
set-AzVMExtension -ResourceGroupName "RG" -ExtensionName IIS -VMName RGVM2 -Publisher microsoft.compute -ExtensionType CustomScriptExtension -TypeHandlerVersion 1.4 -SettingString '{"commandToExecute": "powershell add-windowsfeature web-server; powershell add-content -path \"C:\\inetpub\\wwwroot\\default.htm\" -value $($env:Computername)"}' -Location eastus

16) If IIS are created in the VMS the following status will be displayed in command prompt

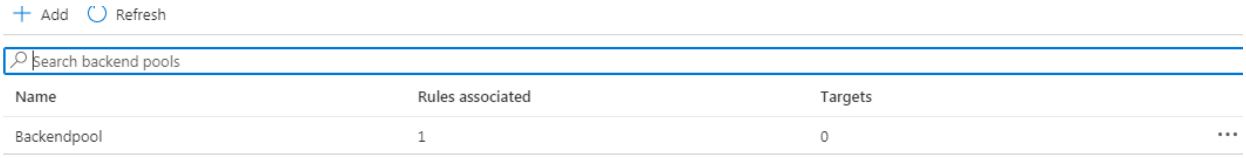


17) Pending part is configuring the Application Gateway with backend pools that means the VMS.

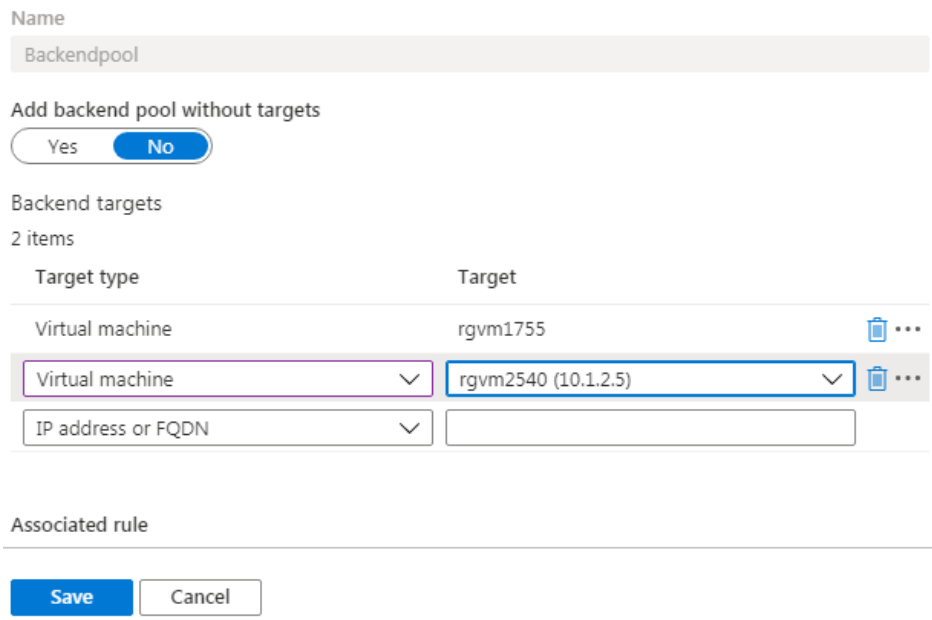
18) For this goto the TESTRG Application Gateway and click on the BankEnd pool



19)Then select BackEndPool

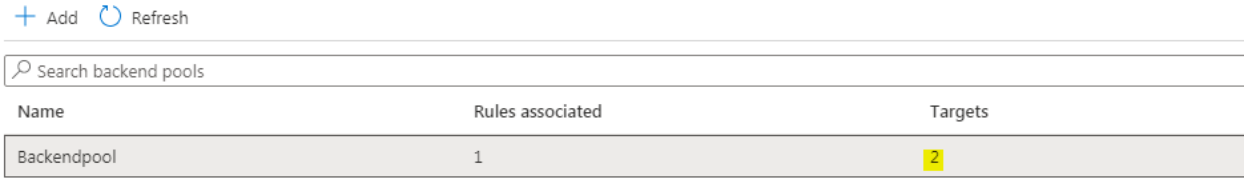


20)Now select Target Type as Virtual Machine and Target as RGVM1 and repeat the same for second Vm also.

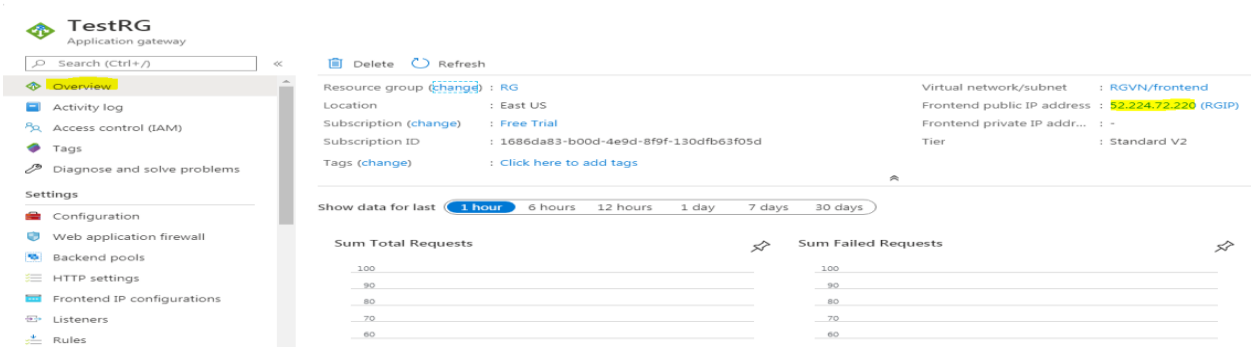


21) And Click On Save.

22) Now you can see two targets are created for TestRG Application GateWay

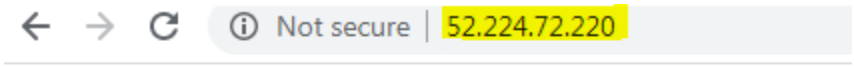


23)Now goto the OverView of TestRG and copy the FrontEnd Public IP.

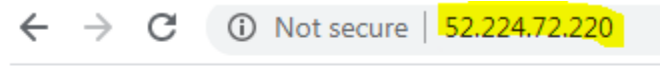


24)Paste the IP in Browser and Press Fn+f5.

25)Now you can see



RGVM2



RGVM1