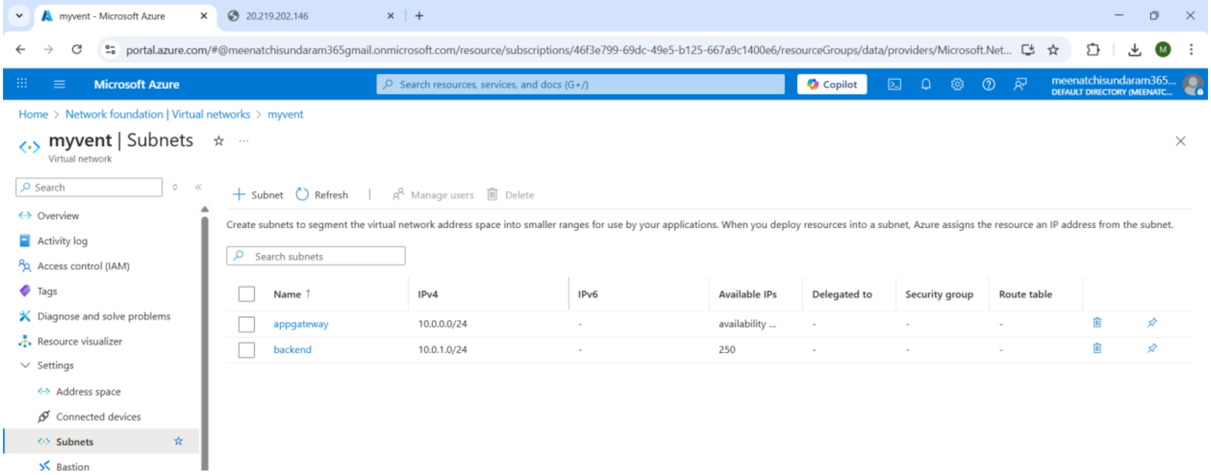
Configure Azure Application Gateway with WAF

Step 1: Create a Virtual Network and Subnets

1. In the Azure Portal, search and select **Virtual Networks** > + **Create**.
2. Fill in the details:
   - Name: MyVNet
   - Region: Same as your Application Gateway
3. Add two subnets:
   - **AppGatewaySubnet** (e.g., 10.0.0.0/24)
   - **BackendSubnet** (e.g., 10.0.1.0/24)
4. Click **Review + Create > Create**


myvent - Microsoft Azure
20.219.202.146
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Home > Network foundation | Virtual networks > myvent
Search
Overview
Activity log
Access control (IAM)
Tags
Diagnose and solve problems
Resource visualizer
Settings
Address space
Connected devices
Subnets
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+ Subnet
Refresh
Manage users
Delete
Search subnets

myvent | Subnets

Virtual network

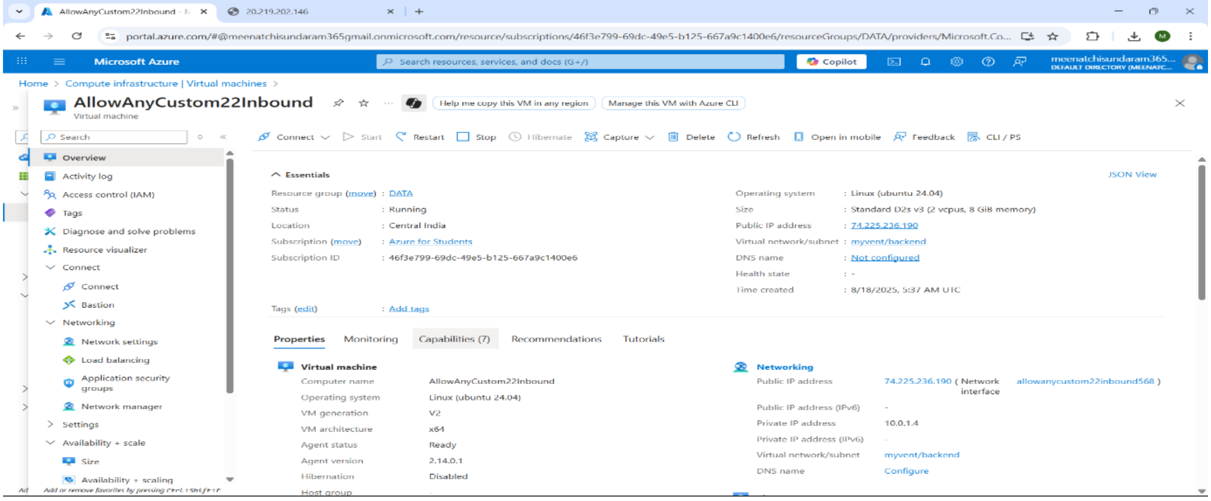
Create subnets to segment the virtual network address space into smaller ranges for use by your applications. When you deploy resources into a subnet, Azure assigns the resource an IP address from the subnet.

Name ↑	IPv4	IPv6	Available IPs	Delegated to	Security group	Route table
appgateway	10.0.0.0/24	-	availability ...	-	-	-
backend	10.0.1.0/24	-	250	-	-	-

Step 2: Deploy Backend Target (VM or Web App)

Option A: Create a Virtual Machine

5. Go to **Virtual Machines > + Create**
6. Use the same region and resource group
7. Choose size and credentials
8. Under Networking, place it in **BackendSubnet**
9. Allow **HTTP (port 80)** traffic
10. Deploy and install a basic web server (e.g., IIS on Windows or Apache on Linux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portal.azure.com/#@meenatchisundaram365gmail.onmicrosoft.com/resource/subscriptions/46f3e799-69dc-49e5-b125-667a9c1400e6/resourceGroups/DATA/providers/Microsoft.Co...
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Home > Compute infrastructure | Virtual machines >
Help me copy this VM in any region
Manage this VM with Azure CLI
Search
Overview
Activity log
Access control (IAM)
Tags
Diagnose and solve problems
Resource visualizer
Connect
Connect
Bastion
Networking
Network settings
Load balancing
Application security groups
Network manager
Settings
Availability + scale
Size
Availability + scaling
Add or remove favorites by pressing Ctrl+Shift+F
Connect
Start
Restart
Stop
Hibernate
Capture
Delete
Refresh
Open in mobile
Feedback
CLI / PS
JSON View
Properties
Monitoring
Capabilities (7)
Recommendations
Tutorials

AllowAnyCustom22Inbound

Virtual machine

Essentials

Resource group (move) : DATA
Status : Running
Location : Central India
Subscription (move) : Azure for Students
Subscription ID : 46f3e799-69dc-49e5-b125-667a9c1400e6
Tags (edit) : Add tags

Operating system : Linux (ubuntu 24.04)
Size : Standard D2s v3 (2 vcpus, 8 GiB memory)
Public IP address : 74.225.236.190
Virtual network/subnet : myvent/backend
DNS name : Not configured
Health state : -
Time created : 8/18/2025, 5:37 AM UTC

Virtual machine

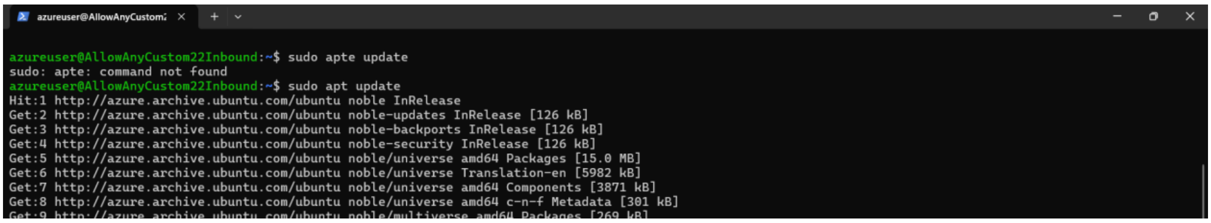
Computer name	AllowAnyCustom22Inbound
Operating system	Linux (ubuntu 24.04)
VM generation	V2
VM architecture	x64
Agent status	Ready
Agent version	2.14.0.1
Hibernation	Disabled
Host group	-

Networking

Public IP address	74.225.236.190 (Network interface allowanycustom22inbound568)
Public IP address (IPv6)	-
Private IP address	10.0.1.4
Private IP address (IPv6)	-
Virtual network/subnet	myvent/backend
DNS name	Configure

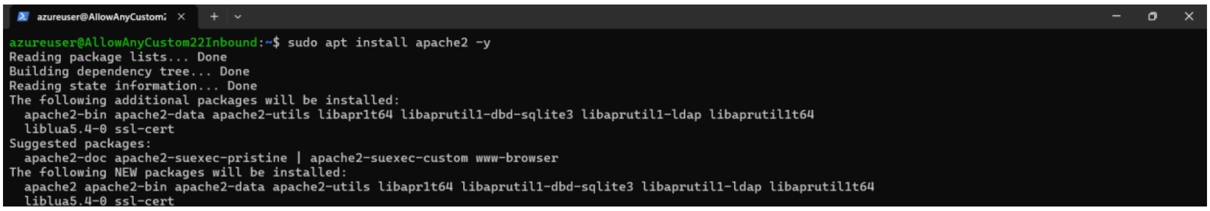
Execute this commands in Linux

sudo apt update



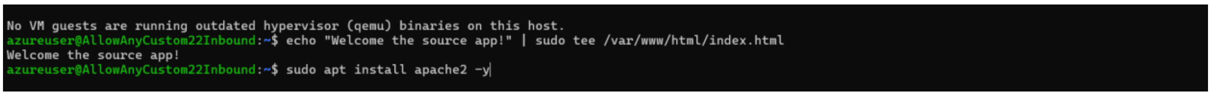
```
azureuser@AllowAnyCustom22Inbound:~$ sudo apte update
sudo: apte: command not found
azureuser@AllowAnyCustom22Inbound:~$ sudo apt update
Hit:1 http://azure.archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://azure.archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:3 http://azure.archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:4 http://azure.archive.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:5 http://azure.archive.ubuntu.com/ubuntu noble/universe amd64 Packages [15.0 MB]
Get:6 http://azure.archive.ubuntu.com/ubuntu noble/universe Translation-en [5982 kB]
Get:7 http://azure.archive.ubuntu.com/ubuntu noble/universe amd64 Components [3871 kB]
Get:8 http://azure.archive.ubuntu.com/ubuntu noble/universe amd64 c-n-f Metadata [301 kB]
Get:9 http://azure.archive.ubuntu.com/ubuntu noble/multiverse amd64 Packages [269 kB]
```

sudo apt install apache2 -y



```
azureuser@AllowAnyCustom22Inbound:~$ sudo apt install apache2 -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  apache2-bin apache2-data apache2-utils libapr1t64 libaprutil1-dbd-sqlite3 libaprutil1-ldap libaprutil1t64
  liblua5.4-0 ssl-cert
Suggested packages:
  apache2-doc apache2-suexec-pristine | apache2-suexec-custom www-browser
The following NEW packages will be installed:
  apache2 apache2-bin apache2-data apache2-utils libapr1t64 libaprutil1-dbd-sqlite3 libaprutil1-ldap libaprutil1t64
  liblua5.4-0 ssl-cert
```

echo "Welcome to the secure app!" | sudo tee /var/www/html/index.html

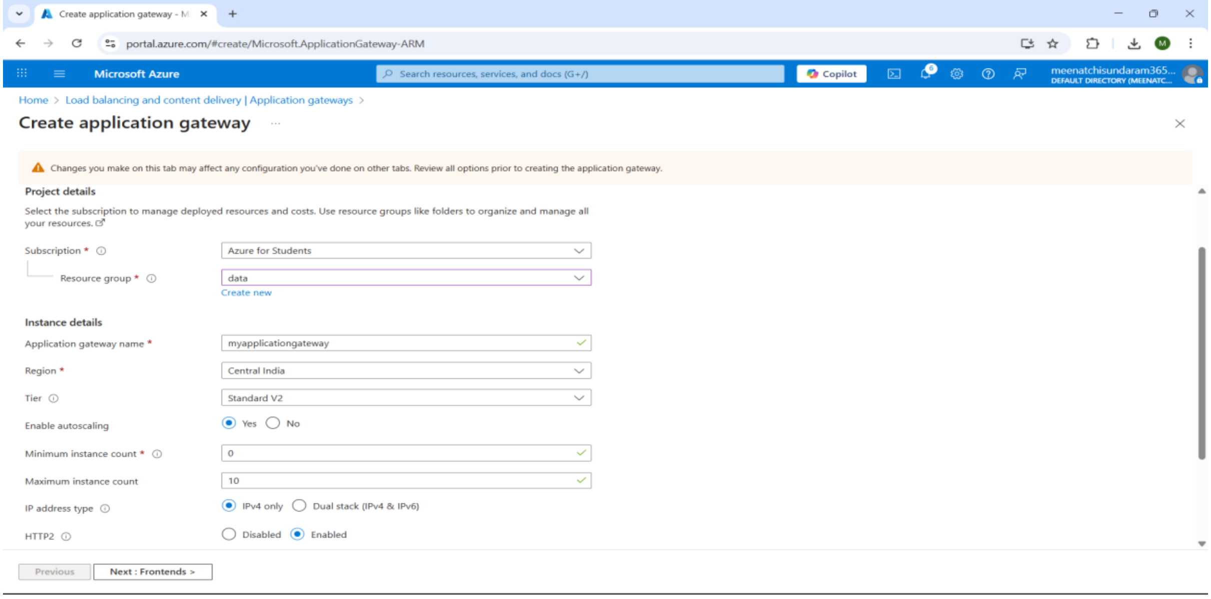


```
No VM guests are running outdated hypervisor (qemu) binaries on this host.
azureuser@AllowAnyCustom22Inbound:~$ echo "Welcome the source app!" | sudo tee /var/www/html/index.html
Welcome the source app!
azureuser@AllowAnyCustom22Inbound:~$ sudo apt install apache2 -y
```

Step 3: Create Azure Application Gateway with WAF

11. Go to **Application Gateways > + Create**
12. Fill in the **Basics** tab:

- Subscription and resource group
- Name: MyAppGateway
- Region: Same as VNet
- Tier: **WAF V2**
- Enable autoscaling (optional)


Create application gateway - M
portal.azure.com/#create/Microsoft.ApplicationGateway-ARM
Microsoft Azure
Search resources, services, and docs (G+/)
Copilot
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DEFAULT DIRECTORY (MEENATC...
Home > Load balancing and content delivery | Application gateways >

Create application gateway

Changes you make on this tab may affect any configuration you've done on other tabs. Review all options prior to creating the application gateway.

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.

Subscription *	Azure for Students
Resource group *	data

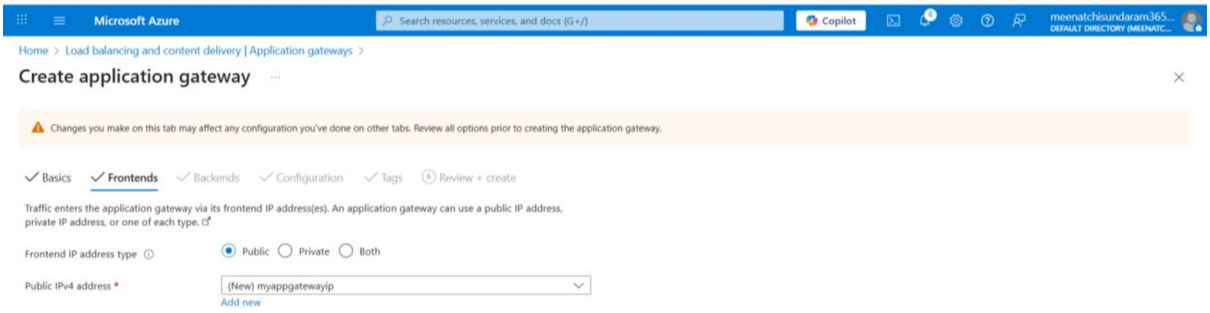
Create new

Instance details

Application gateway name *	myapplicationgateway
Region *	Central India
Tier	Standard V2
Enable autoscaling	● Yes ○ No
Minimum instance count *	0
Maximum instance count	10
IP address type	● IPv4 only ○ Dual stack (IPv4 & IPv6)
HTTP2	○ Disabled ● Enabled

13. Frontend configuration:

- Choose **Public IP**
- Click **+ Add new** to create a new IP (MyAppGatewayIP)


Microsoft Azure
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Home > Load balancing and content delivery | Application gateways >
✓ Basics
✓ Frontends
✓ Backends
✓ Configuration
✓ Tags
⑥ Review + create

Create application gateway

Changes you make on this tab may affect any configuration you've done on other tabs. Review all options prior to creating the application gateway.

Traffic enters the application gateway via its frontend IP address(es). An application gateway can use a public IP address, private IP address, or one of each type.

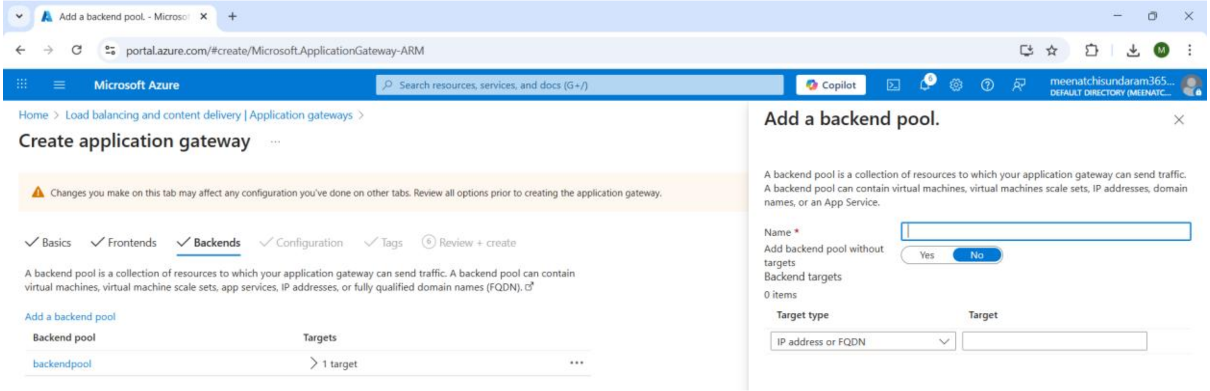
Frontend IP address type ● Public ○ Private ○ Both

Public IPv4 address * (New) myappgatewayip

Add new

14. Backend pool:

- Name: BackendPool
- Add the IP address of your VM or FQDN of your web app


Add a backend pool. - Microso
portal.azure.com/#create/Microsoft.ApplicationGateway-ARM
Microsoft Azure
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Home > Load balancing and content delivery | Application gateways >
✓ Basics
✓ Frontends
✓ Backends
✓ Configuration
✓ Tags
⑥ Review + create

Create application gateway

Changes you make on this tab may affect any configuration you've done on other tabs. Review all options prior to creating the application gateway.

A backend pool is a collection of resources to which your application gateway can send traffic. A backend pool can contain virtual machines, virtual machine scale sets, app services, IP addresses, or fully qualified domain names (FQDN).

Add a backend pool

Backend pool	Targets
backendpool	1 target

Add a backend pool.

A backend pool is a collection of resources to which your application gateway can send traffic. A backend pool can contain virtual machines, virtual machines scale sets, IP addresses, domain names, or an App Service.

Name *

Add backend pool without targets Yes [✓ No]

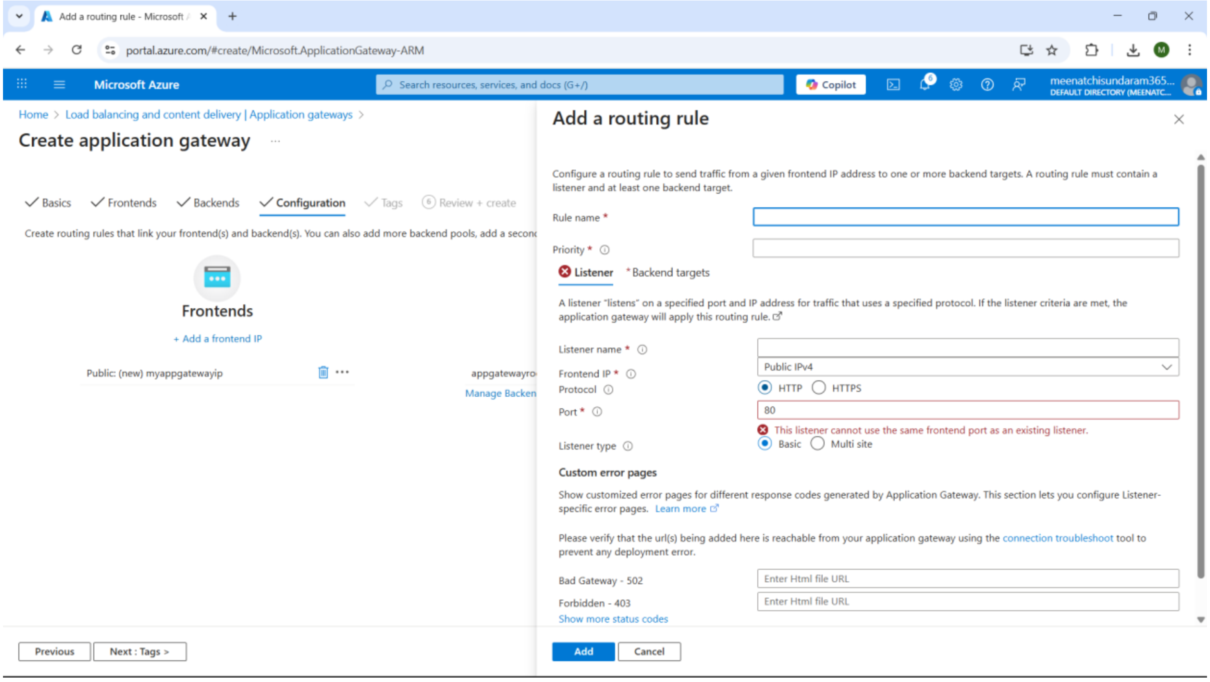
Backend targets

0 items

Target type	Target
IP address or FQDN	

15. Routing rules:

- **Listener:**
  - Name: AppListener
  - Protocol: **HTTP**
  - Port: 80
  - Frontend IP: Public
- **Rule:**
  - Name: HTTPRule
  - Backend Pool: BackendPool
  - Backend HTTP Settings:
    - Port: 80
    - Protocol: HTTP
    - Affinity: Disabled


Add a routing rule - Microsoft
portal.azure.com/#create/Microsoft.ApplicationGateway-ARM
Microsoft Azure
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Create application gateway

✓ Basics ✓ Frontends ✓ Backends ✓ Configuration ✓ Tags ⑥ Review + create

Create routing rules that link your frontend(s) and backend(s). You can also add more backend pools, add a second

Frontends

+ Add a frontend IP

Public: (new) myappgatewayip

appgatewayro

Manage Backen

Previous | Next : Tags >

Add a routing rule

Configure a routing rule to send traffic from a given frontend IP address to one or more backend targets. A routing rule must contain a listener and at least one backend target.

Rule name *

Priority *

☒ Listener | * Backend targets

A listener "listens" on a specified port and IP address for traffic that uses a specified protocol. If the listener criteria are met, the application gateway will apply this routing rule.

Listener name *

Frontend IP * : Public IPv4

Protocol : ● HTTP ○ HTTPS

Port * : 80

☒ This listener cannot use the same frontend port as an existing listener.

Listener type : ● Basic ○ Multi site

Custom error pages

Show customized error pages for different response codes generated by Application Gateway. This section lets you configure Listener-specific error pages. Learn more

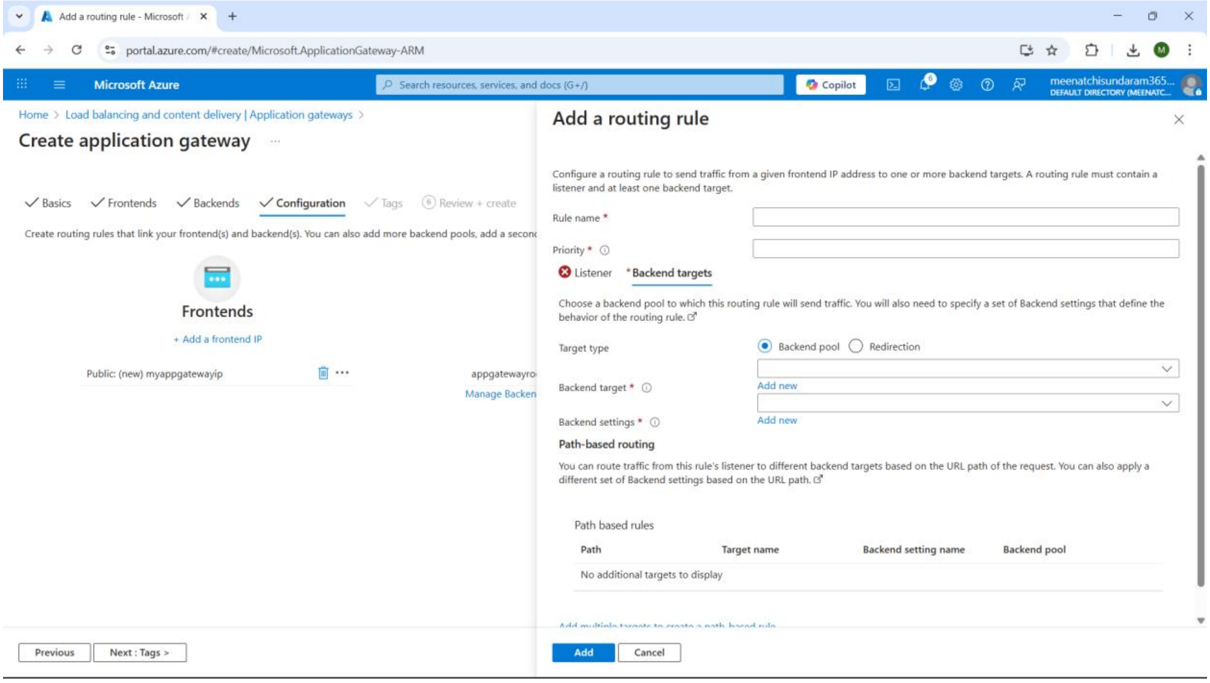
Please verify that the url(s) being added here is reachable from your application gateway using the connection troubleshoot tool to prevent any deployment error.

Bad Gateway - 502 : Enter Html file URL

Forbidden - 403 : Enter Html file URL

Show more status codes

Add | Cancel


Add a routing rule - Microsoft
portal.azure.com/#create/Microsoft.ApplicationGateway-ARM
Microsoft Azure
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Manage Backen

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Configure a routing rule to send traffic from a given frontend IP address to one or more backend targets. A routing rule must contain a listener and at least one backend target.

Rule name *

Priority *

☒ Listener | * Backend targets

Choose a backend pool to which this routing rule will send traffic. You will also need to specify a set of Backend settings that define the behavior of the routing rule.

Target type : ● Backend pool ○ Redirection

Backend target * : Add new

Backend settings * : Add new

Path-based routing

You can route traffic from this rule's listener to different backend targets based on the URL path of the request. You can also apply a different set of Backend settings based on the URL path.

Path based rules

Path	Target name	Backend setting name	Backend pool
No additional targets to display			

Add multiple targets to create a path-based rule

Add | Cancel

16. Click **Next** through remaining tabs > **Review + Create** > **Create**

Step 4: Enable and Configure WA

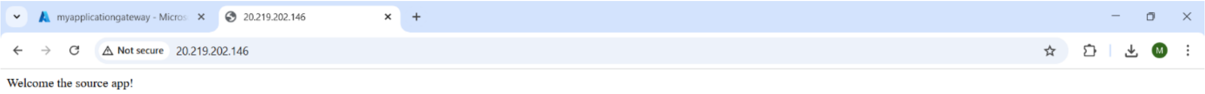
17. Go to the **Application Gateway** resource
18. Under **Settings**, select **Web application firewall**
19. Click **Edit**

20. Set the following:

- **WAF status:** Enabled
- **Firewall mode:** Prevention (or Detection for testing)
- **Rule set:** OWASP 3.2 or 3.1
- **Request size:** Leave default unless needed

21. Click **Save**

Output :



Welcome the source app!