

Configuration Manual

MSc Research Project

Building Firewall Application To Enhance The Cyber Security

MSc in Cyber Security

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National College of Ireland
MSc Project Submission Sheet
School of Computing



Student Name: Venkatesh Reddy Morthala
Student ID: X20184441
Programme: MSc in Cyber Security **Year:** 2021-2022
Module: Academic Internship
Supervisor: Prof. Imran Khan
Submission Due Date: 30/01/2022
Project Title: Building Firewall Application To Enhance The Cyber Security

Word Count:850

Page Count: 9

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Signature: Venkatesh Reddy
Morthala

Date: 30/01/2022

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Configuration Manual

Venkatesh Reddy Morthala

X20184441

Azure Application Gateway the Azure Web Application Firewall (WAF) provides protection against intrusion into a Web site through a variety of uses and vulnerabilities. Web applications are targeted by malicious attacks, which usually use unknown techniques. Scripting between SQL injection and sites is one of the most common challenges. All of the WAF lists below are in the WAF Code. You may create multiple policies and associate them with Application Gateway, client, or custom policies according to the terms of use of the gateway. This way, you can have separate rules for each field after the Application Gateway, if necessary. For more information on WAF policies, see [Creating WAF Policies](#).

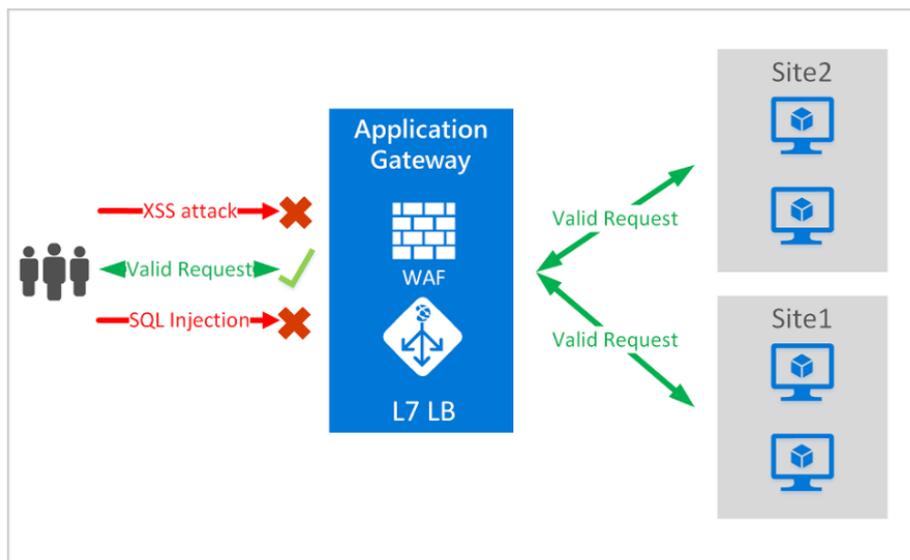


Figure 1: Application Gateway

The Application Gateway complies with the Application Delivery (ADC) standard. Includes Secure Sockets Layer (SSL), formerly known as Transport Layer Security (TLS), decommissioning, sharing all cookies, the sharing environment, content routing, the ability to host multiple sites, and improved security.

Improving Application Portal security includes TLS policy administration and full TLS support. Application security has been strengthened by integrating WAF into the Application Gateway. The combination of web applications avoids the disadvantages. And it provides a central location that is easy to set up and maintain.

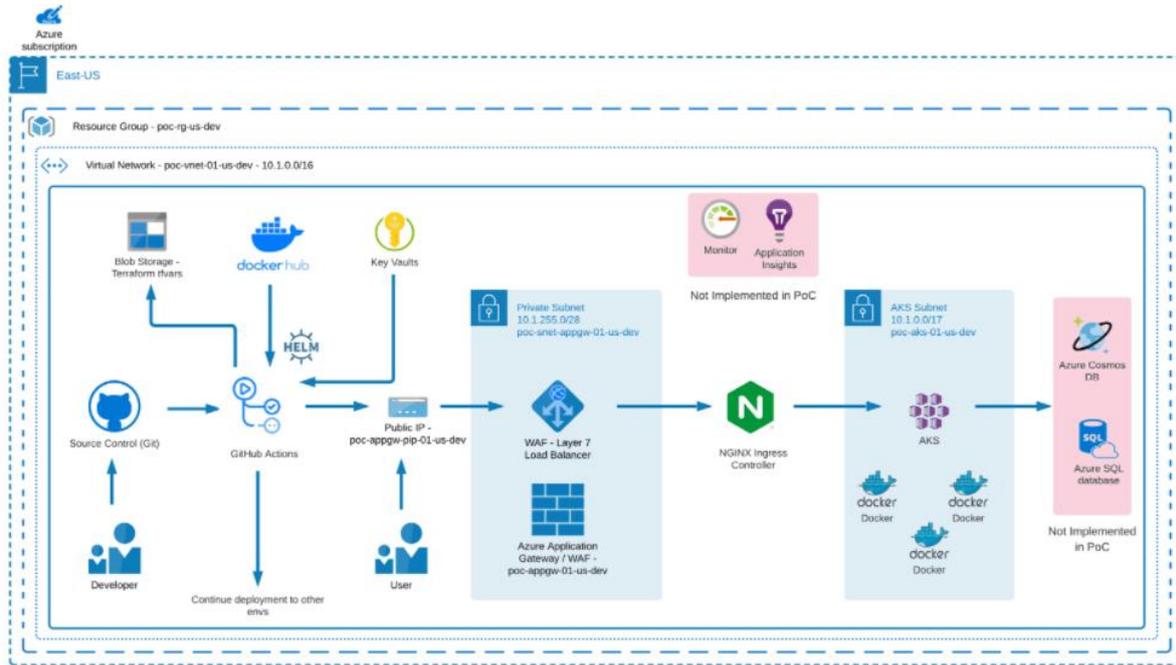


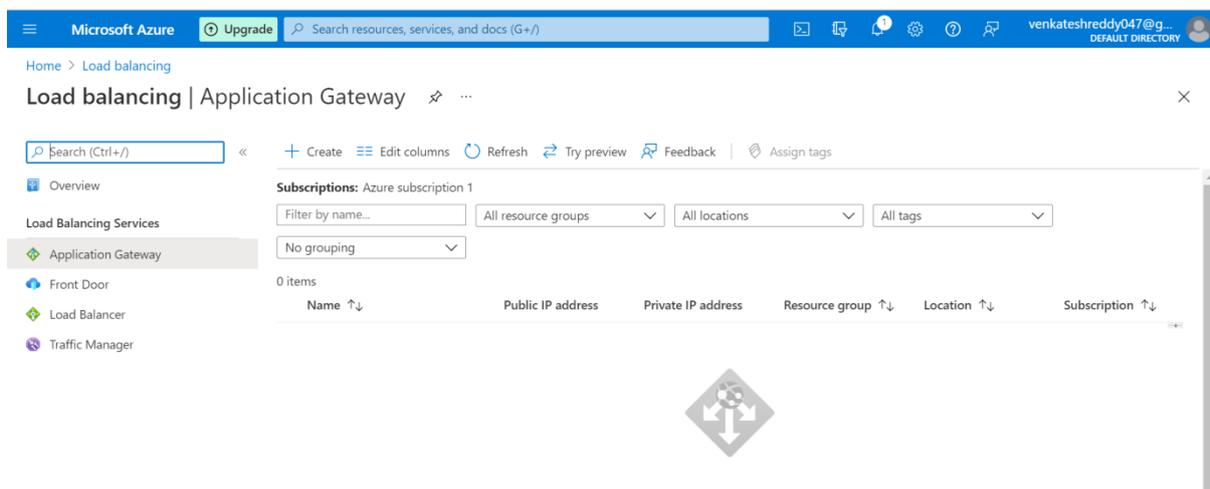
Figure 2:WAF services

There are two types of web application firewall:

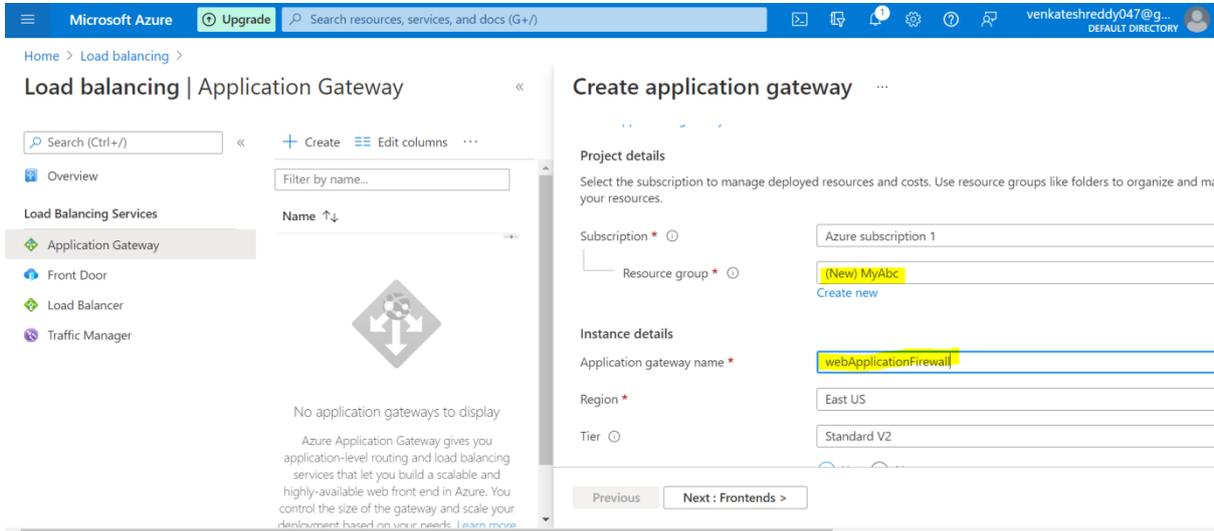
- Search Status: Use this method to diagnose, understand and learn about network connections, which includes identifying vulnerabilities. Monitor and set all alarms. Make sure diagnostics is selected on the WAF engine and turn it on. Note that WAF does not block incoming requests while in search mode.
- Type of protection: prevents access to official attacks. The attacker received a "Unauthorized Access 403" stop and the link was lost. Security mode records these attacks on the WAF machine.

Azure configuration

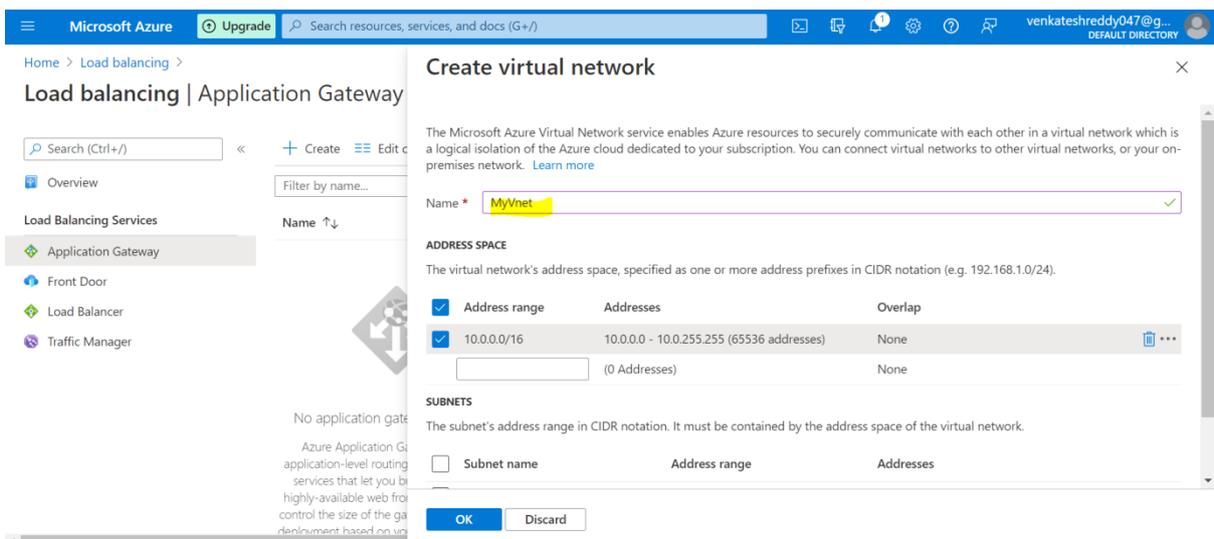
- Enter the Azure Portal, enter the Azure Market, and find your way
- Select the Application
- Click Create

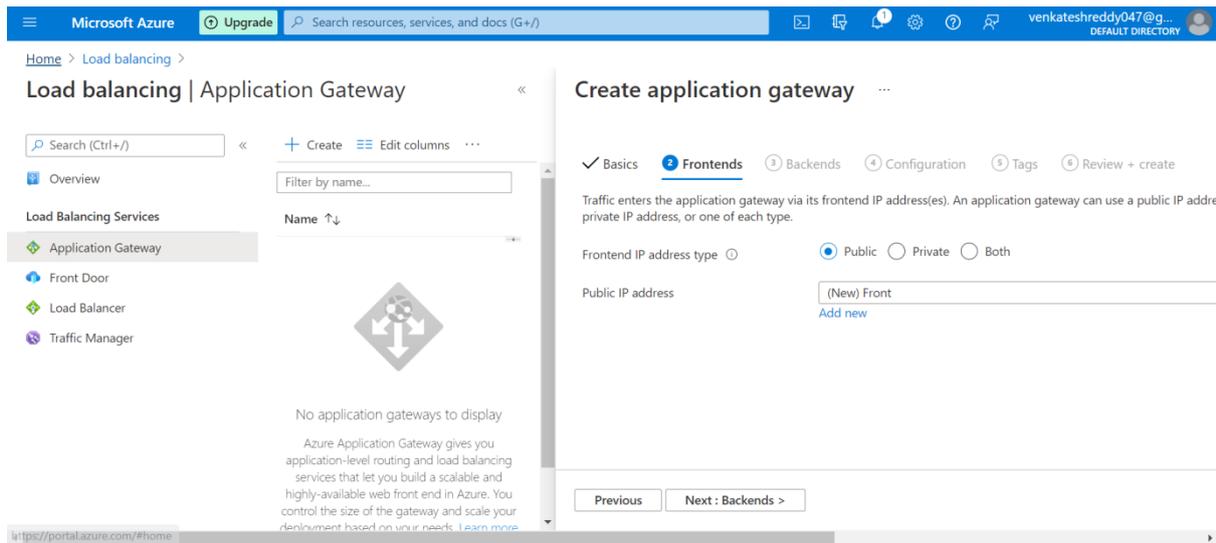


- If you selected WAF V2, select Yes or No for Auto Scaling
- If you selected Yes in the Support Automatic Scaling section, enter the Minimum and Maximum Scale units.

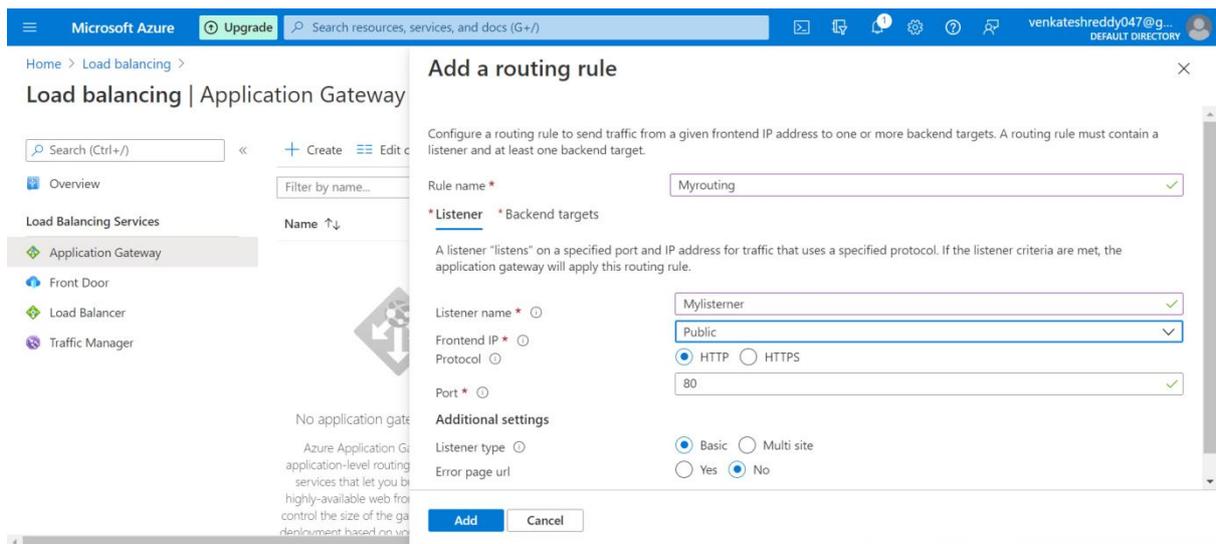


- If you selected No in the Enable Automatic Scaling section, go to Units
- Firewall Management "Enabled"
- Set the firewall mode to "Father" or "Long" according to your taste
- Keep the existing space as a unit
- Keeping HTTP2 "Disabled"
- In the Configure Virtual Network section, select an existing virtual network or create a new one by selecting Create New.





- Write a name for the background
- Keep the background Add to "No" without target
- Choose the right goal and purpose, there are many options, choose the one that suits your needs



The routing rule also requires a destination date. Click the "Recovery Options" tab

Select the object selected as "Backend Pool"

Select the after-sales plan required by this policy. In our example, the postdoctoral pool we designed at Level 4 above can be selected

To configure HTTP, click the "Add New" button to create a new HTTP site. An HTTP Web site defines the behavior of this policy, including port and protocol protocols for Web sites and Web sites such as cookie-based social networking and networking.

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Home > Load balancing >

Load balancing | Application Gateway

Search (Ctrl+/) Create Edit columns ...

Overview

Load Balancing Services

- Application Gateway
- Front Door
- Load Balancer
- Traffic Manager

Filter by name...

Name ↑↓



No application gateways to display

Azure Application Gateway gives you application-level routing and load balancing services that let you build a scalable and highly-available web front end in Azure. You control the size of the gateway and scale your deployment based on your needs. [Learn more](#)

Create application gateway

Running final validation...

Basics Frontends Backends Configuration Tags Review + create

Basics

Subscription	Azure subscription 1
Resource group	(new) MyAbc
Name	webApplicationFirewall
Region	East US
Tier	WAF_v2
Enable autoscaling	Enabled
Minimum instance count	0
Maximum instance count	10

Create Previous Next Download a template for automation

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Home > Load balancing >

Load balancing | Application Gateway

Search (Ctrl+/) Create Edit columns ...

Overview

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Create application gateway

Validation passed

Basics Frontends Backends Configuration Tags Review + create

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Minimum instance count	0
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Home >

Microsoft.ApplicationGateway-20211114121634 | Overview

Deployment

Search (Ctrl+/) Delete Cancel Redeploy Refresh

Overview

Inputs

Outputs

Template

We'd love your feedback! →

Deployment is in progress

Deployment name: Microsoft.ApplicationGateway-20211114121634 Start time: 11/14/2021, 12:26:03 PM
 Subscription: Azure subscription 1 Correlation ID: 45e1b406-3dd5-4a1f-b5ea-292a2eb59c
 Resource group: MyAbc

Deployment details (Download)

Resource	Type	Status	Operation details
No results.			

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Home > Microsoft.ApplicationGateway-20211114121634 | Overview

Deployment

Search (Ctrl+/) Delete Cancel Redeploy Refresh

Overview

Inputs

Outputs

Template

We'd love your feedback! →

✓ Your deployment is complete

Deployment name: Microsoft.ApplicationGateway-2021111412... Start time: 11/14/2021, 12:26:03 PM
 Subscription: Azure subscription 1 Correlation ID: 45e1b406-3dd5-4a1f-b5ea-292a2ebe...
 Resource group: MyAbc

Deployment details (Download)

Next steps

[Go to resource group](#)

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Home > Microsoft.ApplicationGateway-20211114121634 > MyAbc > Create a resource >

Azure Web Application Firewall (WAF) Add to Favorites

edgeNEXUS

Plan

Web Application Firewall (WAF) Create Start with a pre-set configuration

Want to deploy programmatically? [Get started](#)

Overview Plans + Pricing Usage Information + Support Reviews

Try out our "TEST DRIVE" for a complete Web application security testing environment. This is what our customers say:

"The ALB-X is intuitive and incredibly easy to use, we had it set up, configured and running in minutes."
 "The ALB-X is brilliant. From testing to implementation and going live, it has exceeded our expectations & delivered."

Web Application Firewall (WAF) Features:

The Application Firewall controls the input, output and access to and from an application by inspecting the HTTP conversation between the application and clients according to a set of rules.

Microsoft Azure Upgrade Search resources, services, and docs (G+)

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Home > Microsoft.ApplicationGateway-20211114121634 > MyAbc > Create a resource > Azure Web Application Firewall (WAF) >

Create a virtual machine

Subscription * Azure subscription 1

Resource group * MyAbc
[Create new](#)

Instance details

Virtual machine name * MyWebFire

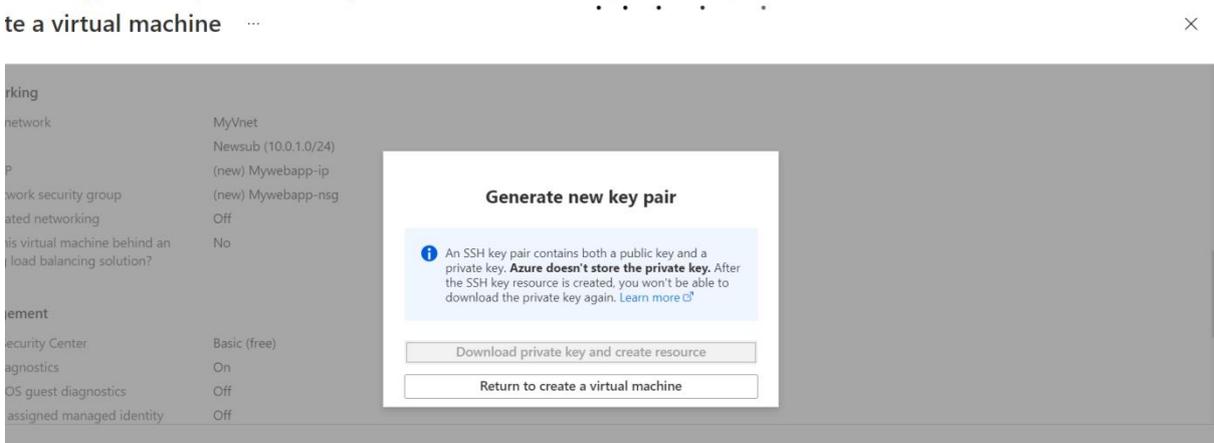
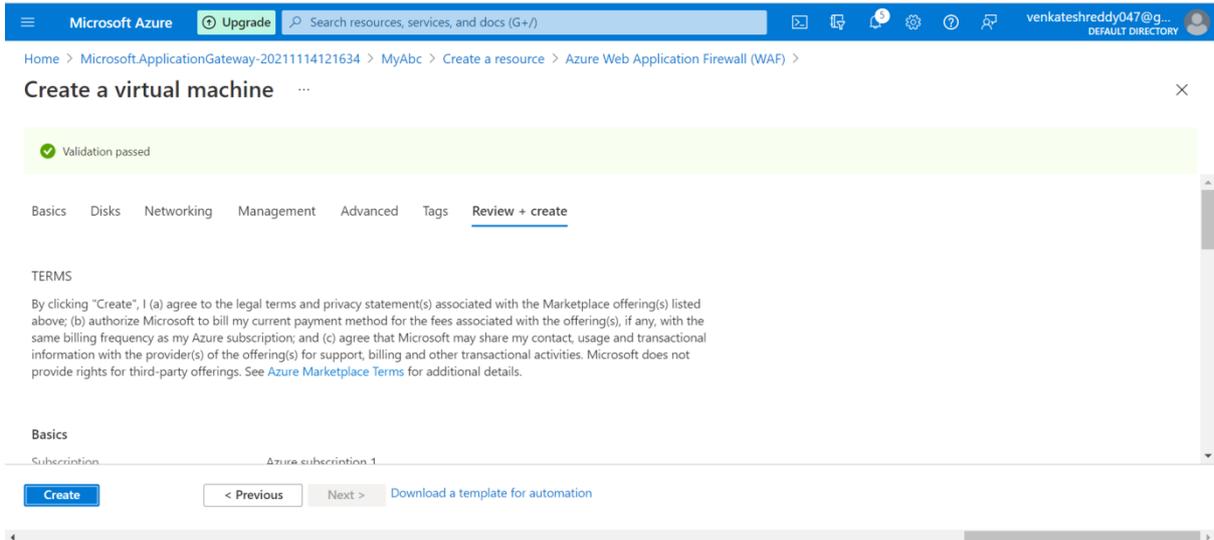
Region * (US) East US

Availability options No infrastructure redundancy required

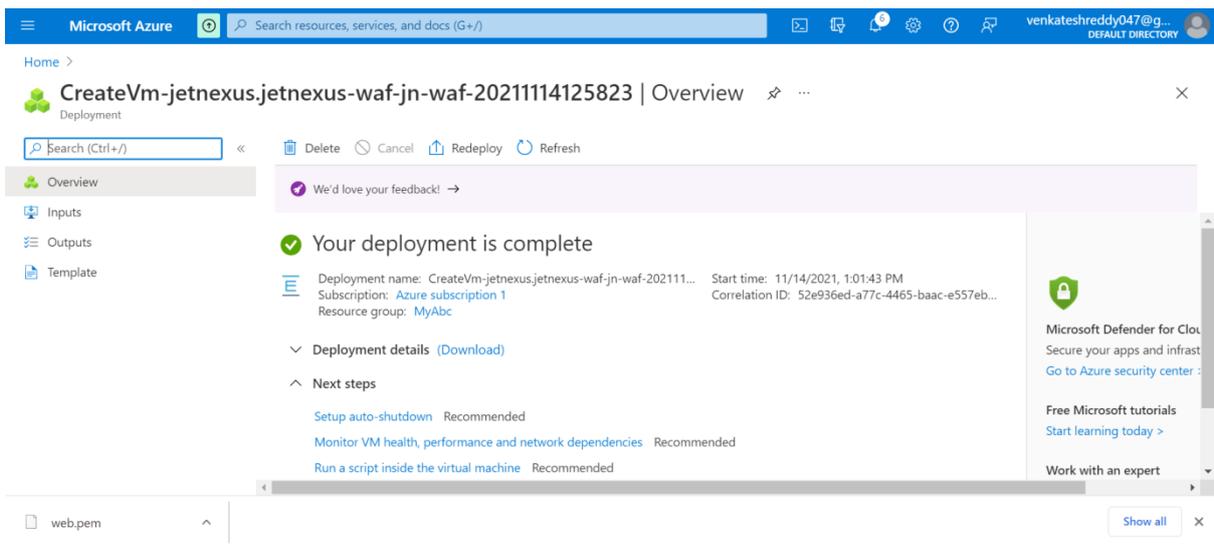
Security type Standard

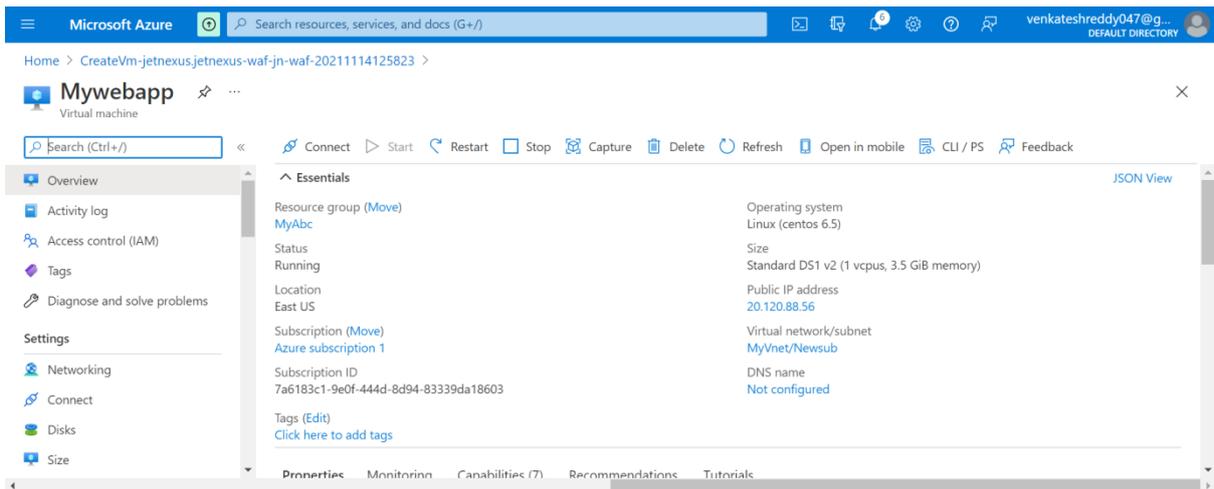
Image * Web Application Firewall (WAF) - Gen1
[See all images](#) [Configure VM generation](#)

[Review + create](#) < Previous Next : Disks >

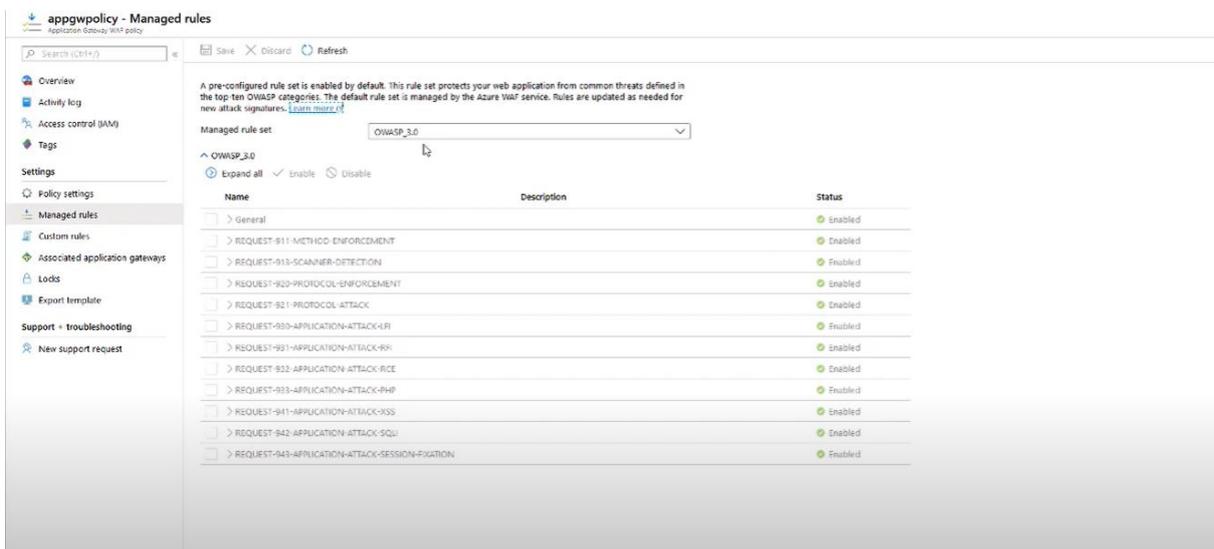
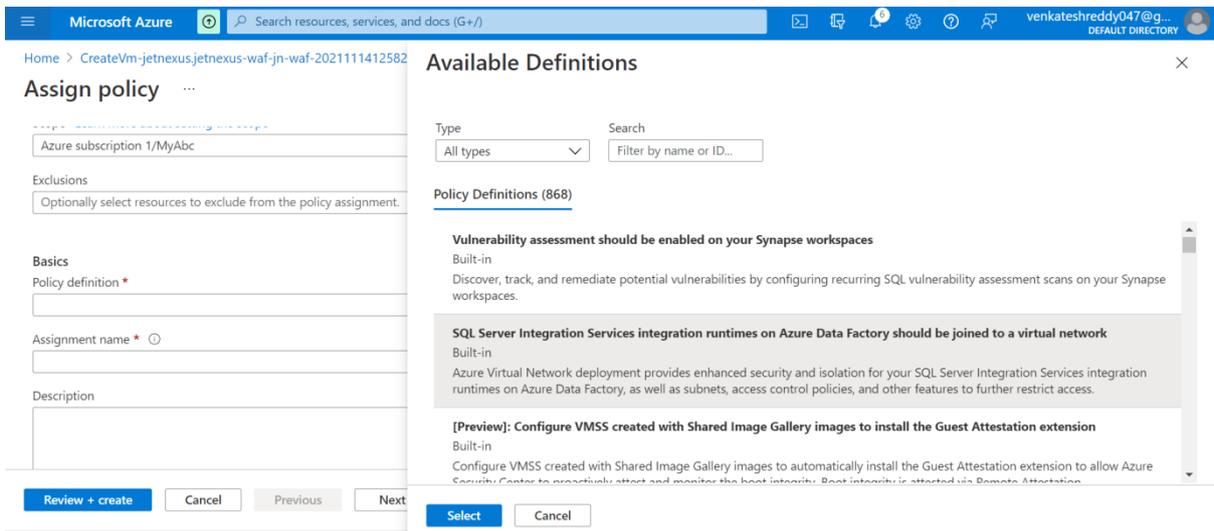


Select / Remove Profile / Group: By default, all options in configuration help are enabled as well as advanced policy configuration options are disabled. By promoting advanced command processing, you can select a command / group command based on the application.





To set customized rules: A WAF administrator can write customized rules that have a legal name, legal need, and a number of relevant terms. These rules have higher requirements than other rules and regulations regulated by them. Depending on the relevant criteria, the customs law prohibits or allows traffic.



appgwpolicy - Associated application gateways

Application Gateway WAF policy

Search (Ctrl+F)

Save Discard Refresh

Overview

Activity log

Access control (IAM)

Tags

Settings

Policy settings

Managed rules

Custom rules

Associated application gateways

Lods

Export template

Support + troubleshooting

New support request

Associated application gateways

Associate this WAF policy with a specific application gateway. This will remove and replace any existing WAF policy associations with the selected application gateway. A WAF policy can be associated with multiple application gateways. [Learn more](#)

+ Associate an application gateway

Search application gateways

Application Gateways

appgwtest01