

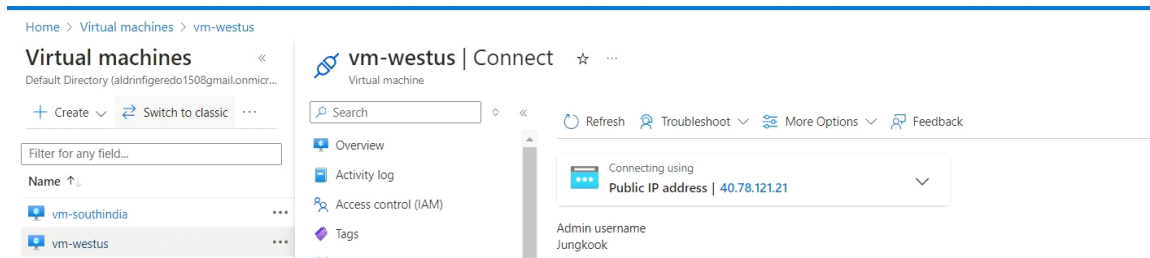
Module 6: Assignment 4

Tasks To Be Performed:

1. Use the previously created Linux VM
2. Install Apache2 on this VM
3. Create a Network Security Group to the subnet in which VM has been deployed
4. Open NSG rules for subnet and VM on port 80
5. Verify if you can see the Apache2 page

Solution:

1. Use the previously created Linux VM



2. Install Apache2 on this VM

Jungkook@vm-westus: ~

```
Microsoft Windows [Version 10.0.19045.4780]
(c) Microsoft Corporation. All rights reserved.
```

```
C:\Users\Suttu>ssh Jungkook@40.78.121.21
```

```
Jungkook@40.78.121.21's password:
```

```
Welcome to Ubuntu 22.04.4 LTS (GNU/Linux 6.5.0-1025-azure x86_64)
```

```
* Documentation:  https://help.ubuntu.com
* Management:    https://landscape.canonical.com
* Support:        https://ubuntu.com/pro
```

```
System information as of Fri Sep  6 08:22:07 UTC 2024
```

```
System load:  0.0              Processes:            104
Usage of /:   5.9% of 28.89GB   Users logged in:     0
Memory usage: 36%              IPv4 address for eth0: 20.0.0.4
Swap usage:   0%
```

```
Expanded Security Maintenance for Applications is not enabled.
```

```
10 updates can be applied immediately.
```

```
10 of these updates are standard security updates.
```

```
To see these additional updates run: apt list --upgradable
```

```
Enable ESM Apps to receive additional future security updates.
```

```
See https://ubuntu.com/esm or run: sudo pro status
```

```
Last login: Fri Sep  6 08:09:13 2024 from 223.233.81.229
```

```
To run a command as administrator (user "root"), use "sudo <command>".
```

```
See "man sudo_root" for details.
```

Jungkook@vm-westus:~\$

```
Jungkook@vm-westus:~$ sudo apt-get update
```

```
Hit:1 http://azure.archive.ubuntu.com/ubuntu jammy InRelease
```

```
Hit:2 http://azure.archive.ubuntu.com/ubuntu jammy-updates InRelease
```

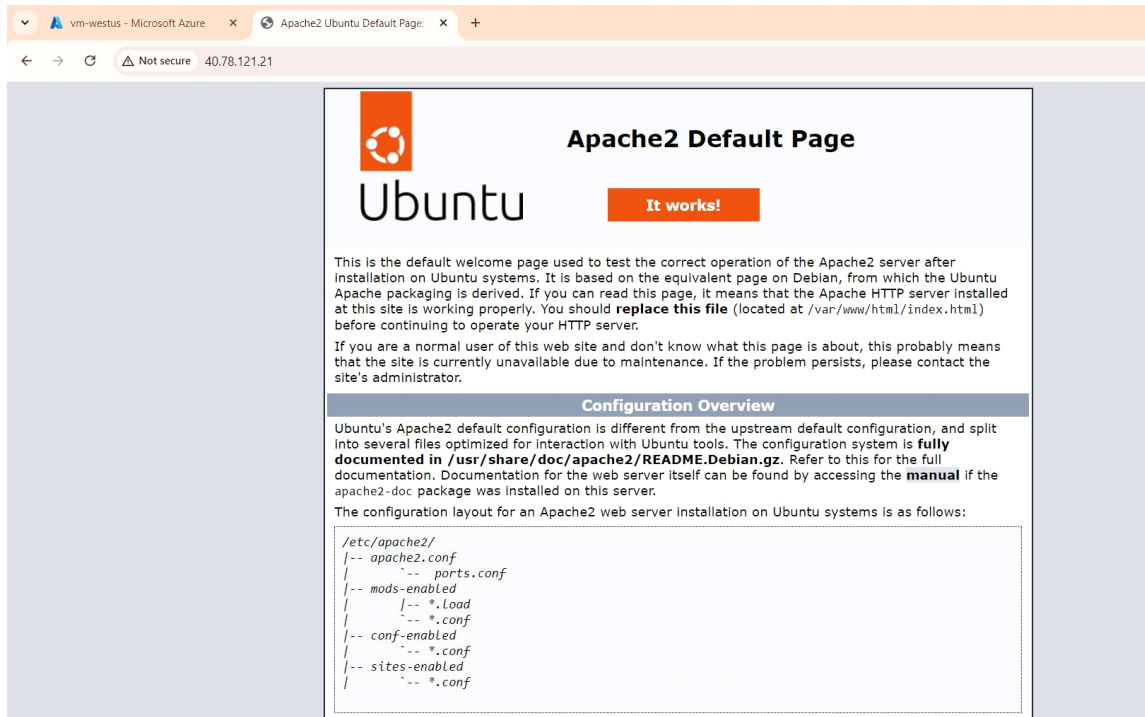
```
Hit:3 http://azure.archive.ubuntu.com/ubuntu jammy-backports InRelease
```

```
Hit:4 http://azure.archive.ubuntu.com/ubuntu jammy-security InRelease
```

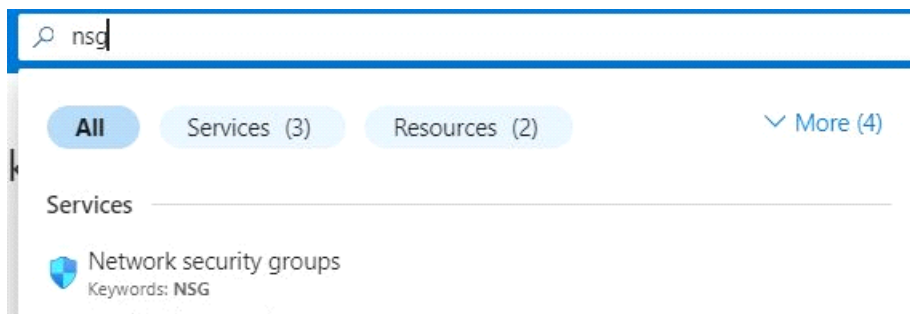
```
Reading package lists... Done
```

Jungkook@vm-westus:~\$

```
Jungkook@vm-westus:~$ sudo apt-get install apache2 -y
```



3. Create a Network Security Group to the subnet in which VM has been deployed



Create network security group ...

Basics Tags Review + create

Project details

Subscription *

Free Trial

Resource group *

module6

Create new

Instance details

Name *

custom-nsg

Region *

West US

Review + create

< Previous

Next : Tags >

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Home > Microsoft.NetworkSecurityGroup-20240906140636 | Overview > custom-nsg

custom-nsg | Network interfaces

Network security group

Search

Associate Refresh Dissociate

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Inbound security rules

Outbound security rules

Network interfaces

Subnets

Search network interfaces

Name ↑↓	Public IP address ↑↓	Private IP address ↑↓	Virtual machine ↑↓
No results.			

Associate network interface

custom-nsg



Network interface associations ★ i

Can be associated to network security group

custom-nic

Cannot be associated to network security group

vm-westus100

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custom-nsg | Network interfaces ★ ⋮

Network security group

Search

Associate Refresh Dissociate

Overview

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Inbound security rules

Outbound security rules

Network interfaces

Search network interfaces

Name ↑↓	Public IP address ↑↓	Private IP address ↑↓	Virtual machine ↑↓
custom-nic	-	20.0.0.5	vm-westus

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custom-nsg | Subnets ⚡ ★ ⋮

Network security group

Search

+ Associate

Search subnets

Name	Address range
No results.	

Associate subnet

custom-nsg

Virtual network i

vmnet2 (module0)

Subnet * i

default

OK

Home > Microsoft.Network.SecurityGroup-20240906140636 | Overview > custom-nsg

custom-nsg | Subnets

Network security group

Search

Associate

Overview

Activity log

Access control (IAM)

Tags

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Outbound security rules

Network interfaces

Subnets

Name	Address range	Virtual network
default	20.0.0.0/24	vnet2

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custom-nsg

Network security group

Search

Move Delete Refresh Give feedback

Overview

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Access control (IAM)

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Diagnose and solve problems

Settings

Inbound security rules

Outbound security rules

Network interfaces

Subnets

Properties

Locks

Monitoring

Automation

Help

Essentials

Resource group (move) : module1

Location : West US

Subscription (move) : Free Trial

Subscription ID : b38e9b3d-e40f-4a03-9aef-665f9f950134

Tags (edit) : Add tags

Custom security rules : 0 inbound, 0 outbound

Associated with : 1 subnets, 1 network interfaces

JSON View

Filter by name

Port == all Protocol == all Source == all Destination == all Action == all

Priority	Name	Port	Protocol	Source	Destination	Action
Inbound Security Rules						
65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	AllowAzureLoadBalancerInBound	Any	Any	AzureLoadBalancer	Any	Allow
65500	DenyAllInBound	Any	Any	Any	Any	Deny
Outbound Security Rules						
65000	AllowVnetOutBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	AllowInternetOutBound	Any	Any	Any	Internet	Allow
65500	DenyAllOutBound	Any	Any	Any	Any	Deny

Custom security rules : 0 inbound, 0 outbound

Associated with : 1 subnets, 1 network interfaces

4. Open NSG rules for subnet and VM on port 80

Home > Virtual machines > vm-westus

Virtual machines

Default Directory (admin@firedot150@gmail.com)...

+ Create - Switch to classic ...

Filter for any field...

Name ↑

- vm-southindia
- vm-westus

vm-westus | Network settings

Virtual machine

Search

This is a new experience. [Please provide feedback](#)

Attach network interface Detach network interface View topology Troubleshoot Refresh Give feedback

Network interface / IP configuration: custom-nic / ipv4config (primary)

Essentials

Network interface	: custom-nic	Load balancers	: 0 (Configure)
Virtual network / sub...	: vnet2 / default	Application security ...	: 0 (Configure)
Public IP address	: - (Configure)	Network security gro...	: custom-nsg
Private IP address	: 20.0.0.5	Accelerated network...	: Disabled
Admin security rules	: 0 (Configure)	Effective security rules	: 0

Rules

Collapse all

Network security group custom-nsg (attached to networkInterface: custom-nic)
Impacts 1 subnets, 1 network interfaces

+ Create port rule

Search rules

Source == all Destination == all Protocol == all Action == all

Priority ↑	Name	Port	Protocol	Source	Destination	Action
Inbound port rules (3)						
65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	AllowAzureLoadBalancerInBound	Any	Any	AzureLoadBalancer	Any	Allow

Rules Collapse all

Network security group custom-nsg (attached to networkInterface: custom-nic)
Impacts 1 subnets, 1 network interfaces

+ Create port rule

Inbound port rule

Outbound port rule

Search rules

Source == all Destination == all Protocol == all Action == all

Priority ↑	Name	Port	Protocol	Source	Destination	Action
Inbound port rules (3)						
65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	AllowAzureLoadBalancerInBound	Any	Any	AzureLoadBalancer	Any	Allow

28°C Mostly cloudy 14:16



Add inbound security rule

custom-nsg



Source ⓘ

Any

Source port ranges * ⓘ

*

Destination ⓘ

Any

Service ⓘ

SSH

Destination port ranges ⓘ

22

Protocol

- ☐ Any
- ☒ TCP
- ☐ UDP
- ☐ ICMPv4

Action

- ☒ Allow
- ☐ Deny

Priority * ⓘ

100

Name *

Add

Cancel

Give feedback



Add inbound security rule

custom-nsg



Source ⓘ

Any

Source port ranges * ⓘ

*

Destination ⓘ

Any

Service ⓘ

HTTP

Destination port ranges ⓘ

80

Protocol

- ☐ Any
- ☒ TCP
- ☐ UDP
- ☐ ICMPv4

Action

- ☒ Allow
- ☐ Deny

Priority * ⓘ

110

Name *

Add

Cancel

Give feedback



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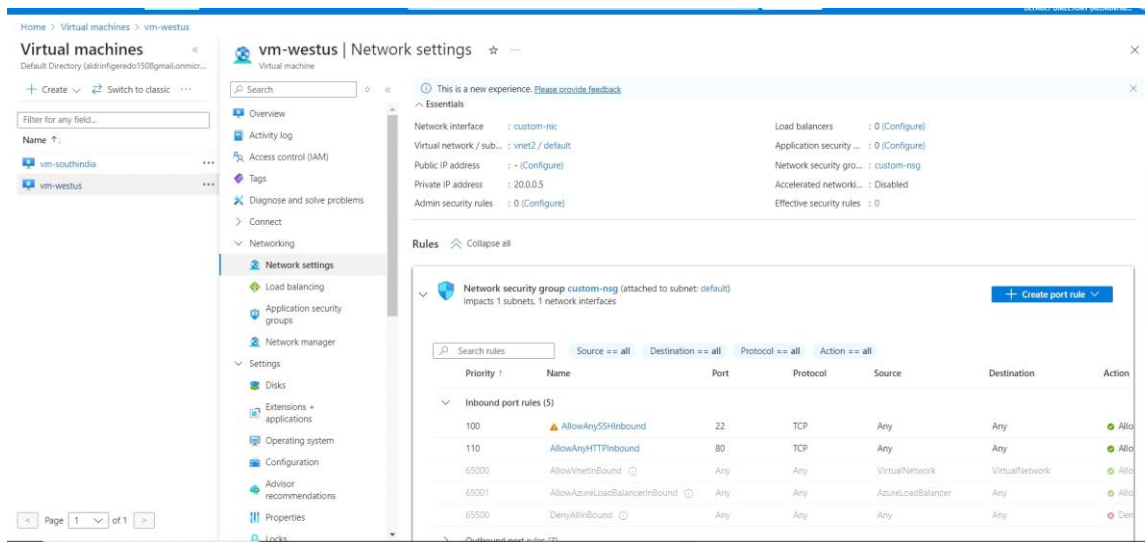


ENG

14:17

06-09-2024





5. Verify if you can see the Apache2 page

Starting virtual machine

Starting virtual machine 'vm-westus'...

