

NSG & ASG

Prepare a R&D document on the working of NSG & ASG, allowing specific IPs to access VMs and Deny Internet using NSG, Public IPs and Types, Static and Dynamic IP, Service tags, Allocate Static IPs to all VM's, creating a Network Security Group, Creating Public IP, Associating/De-associating Public IP with virtual machine, Creation of Network Interface.

◆ **PART 1: BASICS**

1. What is NSG (Network Security Group)?

- NSG is like a firewall for your virtual machines (VMs).
- It allows or denies traffic (inbound or outbound) to your VM.
- Example: You can use NSG to allow only your office IP to connect to VM and block the rest.

2. What is ASG (Application Security Group)?

- ASG is a way to group VMs logically for easier NSG rule management.
- You can apply NSG rules to groups (ASG) instead of each VM one by one.

3. What is a Public IP?

- It's how your VM is accessible from the internet.
- There are two types:
 - Dynamic IP: Changes when VM is restarted.
 - Static IP: Remains the same always.

◆ PART 2: STEP-BY-STEP IMPLEMENTATION

Step 1: Create a Resource Group

1. Go to [Azure Portal](#).
2. In the search bar, type Resource Groups.
3. Click Create.
4. Name it something like: MyResourceGroup.
5. Select a region (example: East US).
6. Click Review + Create > Create.

Home > Resource groups >

Create a resource group ...

Basics Tags Review + create

Resource group - A container that holds related resources for an Azure solution. The resource group can include all the resources for the solution, or only those resources that you want to manage as a group. You decide how you want to allocate resources to resource groups based on what makes the most sense for your organization. [Learn more](#)

Subscription * ⓘ	Azure subscription 1
Resource group name * ⓘ	MyResourceGroup
Region * ⓘ	(US) East US

Home >

MyResourceGroup

Resource group

Search | Create | Manage view | Delete resource group | Refresh | Export to CSV | Open query | Assign tags | Move | Delete | Export template | Open in mobile

Overview

Subscription (move) : Azure subscription 1
Subscription ID : d69b934d-dda2-44e2-8b9d-d19aa122435b
Tags (edit) : Add tags

Deployments : No deployments
Location : East US

Essentials

Resources Recommendations

Filter for any field... Type equals all X Location equals all X Add filter

Showing 0 to 0 of 0 records. Show hidden types

Name ↑ Type ↑ Loca ↑

No resources match your filters

Step 2: Create a Virtual Network (VNet)

1. Search Virtual Networks > Click Create.
2. Subscription: Select your subscription.
3. Resource Group: Select MyResourceGroup.
4. Name: MyVNet.
5. Region: Same as resource group.
6. Click Next: IP Addresses.
 - o IPv4: Leave default or change as needed.
 - o Add a subnet:
 - Subnet name: MySubnet
 - Subnet range: Use suggested or 10.0.0.0/24

7. Click

Review+Create>Create.

Create virtual network ...

Basics Security IP addresses Tags Review + create

Azure Virtual Network (VNet) is the fundamental building block for your private network in Azure. VNet enables many types of Azure resources, such as Azure Virtual Machines (VM), to securely communicate with each other, the internet, and on-premises networks. VNet is similar to a traditional network that you'd operate in your own data center, but brings with it additional benefits of Azure's infrastructure such as scale, availability, and isolation.

[Learn more.](#) ↗

Project details

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

Subscription *	<input type="text" value="Azure subscription 1"/>
Resource group *	<input type="text" value="MyResourceGroup"/> Create new

Instance details

Virtual network name *	<input type="text" value="MyVNet"/>
Region * ⓘ	<input type="text" value="(US) East US"/> Deploy to an Azure Extended Zone

Create virtual network

Basics Security IP addresses Tags Review + create

Configure your virtual network address space with the IPv4 and IPv6 addresses and subnets you need. [Learn more](#)

Define the address space of your virtual network with one or more IPv4 or IPv6 address ranges. 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. [Learn more](#)

+ Add a subnet

10.0.0.0/16		Delete address space	
Subnets	IP address range	Size	NAT gateway
default	10.0.0.0 - 10.0.0.255	/24 (256 addresses)	-

Add IPv4 address space | ▾

Add a subnet

X

Select an address space and configure your subnet. You can customize a default subnet or select from subnet templates if you plan to add select services later. [Learn more](#)

Subnet purpose i

Default

Name * i

MySubnet

IPv4

Include an IPv4 address space



IPv4 address range i

10.0.0.0/16

10.0.0.0 - 10.0.255.255

Starting address * i

10.0.1.0

Size i

/24 (256 addresses)

Subnet address range i

10.0.1.0 - 10.0.1.255

IPv6

Include an IPv6 address space



This virtual network has no IPv6 address ranges.

Private subnet

Private subnets enhance security by not providing default outbound access. To enable outbound connectivity for virtual machines to access the internet, it is necessary to explicitly grant outbound access. A NAT gateway is the recommended way to provide outbound connectivity for virtual machines in the subnet. [Learn more](#)

Enable private subnet (no default outbound access)



Security

Simplify internet access for virtual machines by using a network address translation gateway. Filter subnet traffic using a network security group. [Learn more](#)

NAT gateway i

None

[Create new](#)

[Add](#)

[Cancel](#)

 [Give feedback](#)

Create virtual network

Basics Security IP addresses Tags Review + create

Configure your virtual network address space with the IPv4 and IPv6 addresses and subnets you need. [Learn more](#)

Define the address space of your virtual network with one or more IPv4 or IPv6 address ranges. 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. [Learn more](#)

+ Add a subnet

10.0.0.0/16		Delete address space			
Subnets	IP address range	Size	NAT gateway		
default	10.0.0.0 - 10.0.0.255	/24 (256 addresses)	-		
MySubnet	10.0.1.0 - 10.0.1.255	/24 (256 addresses)	-		

Add IPv4 address space |

Previous

Next

Review + create

Create virtual network

Basics Security IP addresses Tags [Review + create](#)

[View automation template](#)

Basics

Subscription	Azure subscription 1
Resource Group	MyResourceGroup
Name	MyVNet
Region	East US

Security

Azure Bastion	Disabled
Azure Firewall	Disabled
Azure DDoS Network Protection	Disabled

IP addresses

Address space	10.0.0.0/16 (65,536 addresses)
Subnet	default (10.0.0.0/24) (256 addresses)
Subnet	MySubnet (10.0.1.0/24) (256 addresses)

Tags

[Previous](#)

[Next](#)

[Create](#)

The screenshot shows the Azure Deployment Overview page for a deployment named "MyVNet-1751782062615".

Deployment Details:

- Deployment name: MyVNet-1751782062615
- Subscription: Azure subscription 1
- Resource group: MyResourceGroup

Deployment Status: Deployment is in progress.

Resource Status:

Resource	Type	Status	Operation details
MyVNet	Virtual network	Created	Operation details

Feedback Options:

- [Give feedback](#)
- [Tell us about your experience with deployment](#)

Step 3: Create a Network Security Group (NSG)

1. Search Network Security Groups > Click Create.
2. Resource Group: MyResourceGroup.
3. NSG name: MyNSG.
4. Region: Same as above.
5. Click Review + Create > Create.

Create network security group

Basics Tags Review + create

Project details

Subscription * Azure subscription 1

Resource group * MyResourceGroup

[Create new](#)

Instance details

Name * MyNSG

Region * East US

Create network security group

Validation passed

Basics Tags Review + create

Basics

Subscription Azure subscription 1

Resource group MyResourceGroup

Region East US

name MyNSG

Tags

None

Home >

 Microsoft.NetworkSecurityGroup-20250706114821 | Overview

Deployment

Search X < Delete Cancel Redeploy Download Refresh

Overview Inputs Outputs Template

Your deployment is complete

Deployment name : Microsoft.NetworkSecurityGroup-20250706114821
Subscription : Azure subscription 1
Resource group : MyResourceGroup

Start time : 06/07/2025, 11:49:28
Correlation ID : 4d21b45c-0ab7-4be9-b073-d5ab43dfa0f3

> Deployment details

▽ Next steps

Go to resource

Give feedback

Tell us about your experience with deployment

Step 4: Add Rules to NSG

1. Go to the NSG you created (MyNSG).
2. In the left menu, click Inbound security rules.
3. Click Add:
 - o Name: AllowMyIP
 - o Source: IP Addresses
 - o Source IP: Enter your public IP (use <https://whatismyip.com>)
 - o Destination: Any
 - o Port: 3389 (for Windows RDP) or 22 (for Linux SSH)
 - o Action: Allow
 - o Priority: 100
 - o Protocol: TCP

4. Now add Deny All Internet rule (if needed):

- o **Name:** DenyInternet
- o **Source:** Any
- o **Destination:** Any
- o **Port:** 80/443 or Any
- o **Action:** Deny
- o **Priority:** 200

Home > MyNSG

MyNSG | Inbound security rules ☆ ...

Network security group

>Add Hide default rules Refresh Delete Give feedback

Overview Activity log Access control (IAM) Tags Diagnose and solve problems Resource visualizer Settings Inbound security rules Outbound security rules Network interfaces Subnets Properties Locks Monitoring Automation Help Effective security rules Support + Troubleshooting

Network security group security rules are evaluated by priority using the combination of source, source port, destination, destination port, and protocol security rules, but you can override them with rules that have a higher priority. [Learn more](#)

<input type="text" value="Filter by name"/>	Port == all	Protocol == all	Source == all	Destination == all	Actions
Priority ↑↓	Name ↑↓	Port ↑↓	Protocol ↑↓	Protocol ↑↓	
<input type="checkbox"/> 65000	AllowVnetInBound	Any		Any	
<input type="checkbox"/> 65001	AllowAzureLoadBalancerInBound	Any		Any	
<input type="checkbox"/> 65500	DenyAllInBound	Any		Any	



Add inbound security rule

X

Source ⓘ

IP Addresses



Source IP addresses/CIDR ranges * ⓘ

103.160.167.153



Source port ranges * ⓘ

*

Destination ⓘ

Any



Service ⓘ

Custom



Destination port ranges * ⓘ

3389



Protocol

Any

TCP

UDP

ICMPv4

ICMPv6

Action

Allow

Deny

Priority * ⓘ

100

Name *

AllowMyIP



Add

Cancel

Give feedback



Add inbound security rule

X

Source ⓘ

Any

Source port ranges * ⓘ

*

Destination ⓘ

Any

Service ⓘ

Custom

Destination port ranges * ⓘ

8080

Protocol

Any

TCP

UDP

ICMPv4

ICMPv6

Action

Allow

Deny

Priority * ⓘ

200

Name *

DenyInternet

Description

(Empty text area)

Add

Cancel

Give feedback

Inbound security rules

Network security group security rules are evaluated by priority using the combination of source, source port, destination, destination port, and protocol to allow or deny the traffic. A security rule can't have the same priority and direction as an existing rule. You can't delete default security rules, but you can override them with rules that have a higher priority. [Learn more](#)

Priority ↑	Name ↓	Port ↑	Protocol ↑	Source ↑	Destination ↑	Action ↑↓
100	AllowMyIP	3389	TCP	103.160.167.153	Any	Allow
200	DenyInternet	443	Any	Any	Any	Deny
65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	AllowAzureLoadBalancerInBound	Any	Any	AzureLoadBalancer	Any	Allow
65500	DenyAllInBound	Any	Any	Any	Any	Deny

Step 5: Create a Virtual Machine (VM)

1. Search Virtual Machines > Click Create > Azure Virtual Machine.
2. Subscription & Resource Group: MyResourceGroup
3. VM Name: MyVM
4. Region: Same as above.
5. Image: Choose Windows or Ubuntu.
6. Size: Select a small size like B1s.
7. Username & Password: Enter credentials.
8. Public inbound ports: Allow selected ports (RDP for Windows or SSH for Linux).
9. Under Networking:
 - o Virtual Network: MyVNet
 - o Subnet: MySubnet
 - o Public IP: Create new or use none (we'll add later).

- o NIC network security group: Select Advanced, then Select existing NSG: MyNSG.

10. Click Review + Create > Create

Home > Compute infrastructure | Virtual machines >

Create a virtual machine

Help me create a low cost VM Help me create a VM optimized for high availability Help me choose the right VM size f

Basics Disks Networking Management Monitoring Advanced Tags Review + create

Create a virtual machine that runs Linux or Windows. Select an image from Azure marketplace or use your own customized image. Complete the Basics tab then Review + create to provision a virtual machine with default parameters or review each tab for full customization. [Learn more ↗](#)

This subscription may not be eligible to deploy VMs of certain sizes in certain regions.

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 subscription 1
Resource group *	MyResourceGroup Create new

Instance details

Virtual machine name *	MyVM
Region *	(US) East US
Availability options	Availability zone
Zone options	<input checked="" type="radio"/> Self-selected zone Choose up to 3 availability zones, one VM per zone
	<input type="radio"/> Azure-selected zone (Preview) Let Azure assign the best zone for your needs
	Using an Azure-selected zone is not supported in region 'East US'.
Availability zone *	Zone 1
	You can now select multiple zones. Selecting multiple zones will create one VM

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

Create a virtual machine

Help me create a low cost VM Help me create a VM optimized for high availability Help me choose the right VM size for my work

Availability options Availability zone

Zone options Self-selected zone
Choose up to 3 availability zones, one VM per zone
 Azure-selected zone (Preview)
Let Azure assign the best zone for your needs
i Using an Azure-selected zone is not supported in region 'East US'.

Availability zone * Zone 1
i You can now select multiple zones. Selecting multiple zones will create one VM per zone. [Learn more](#)

Security type Trusted launch virtual machines
[Configure security features](#)

Image *  Windows Server 2022 Datacenter: Azure Edition - x64 Gen2 (free services eligible)
[See all images](#) | [Configure VM generation](#)

VM architecture Arm64 x64
i Arm64 is not supported with the selected image.

Run with Azure Spot discount

i You are in the free trial period. Costs associated with this VM can be covered by any remaining credits on your subscription.
[Learn more](#)

Size * Standard_B1s - 1 vcpu, 1 GiB memory (US\$10.22/month) (free services eligible)
[See all sizes](#)

Enable Hibernation
i Hibernate is not supported by the size that you have selected. Choose a size that is compatible with Hibernate to enable this feature. [Learn more](#)

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

Create a virtual machine

...



Help me create a low cost VM

Help me create a VM optimized for high availability

Help me choose the right VM size for

Run with Azure Spot discount (i)



You are in the free trial period. Costs associated with this VM can be covered by any remaining credits on your subscription.
[Learn more](#)

Size * (i)

Standard_B1s - 1 vcpu, 1 GiB memory (US\$10.22/month) (free services eligib... ▼

[See all sizes](#)

Enable Hibernation (i)



i Hibernate is not supported by the size that you have selected. Choose a size that is compatible with Hibernate to enable this feature. [Learn more](#)

Administrator account

Username * (i)

Admins ✓

Password *

***** ✓

Confirm password *

***** ✓

Inbound port rules

Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.

Public inbound ports * (i)

None

Allow selected ports

Select inbound ports *

RDP (3389) ▼

⚠ **This will allow all IP addresses to access your virtual machine.** This is only recommended for testing. Use the Advanced controls in the Networking tab to create rules to limit inbound traffic to known IP addresses.

[< Previous](#)

[Next : Disks >](#)

Review + create

Create a virtual machine



Help me create a low cost VM

Help me create a VM optimized for high availability

Help me choose the right VM

Basics

Disks

Networking

Management

Monitoring

Advanced

Tags

Review + create

Define network connectivity for your virtual machine by configuring network interface card (NIC) settings. You can control ports, inbound and outbound connectivity with security group rules, or place behind an existing load balancing solution.

[Learn more](#)

Network interface

When creating a virtual machine, a network interface will be created for you.

Virtual network * ⓘ

MyVNet



[Create new](#)

Subnet * ⓘ

MySubnet (10.0.1.0/24)



[Manage subnet configuration](#)

Public IP ⓘ

None



[Create new](#)

NIC network security group ⓘ

None

Basic

Advanced

Configure network security group *

MyNSG



[Create new](#)

Delete NIC when VM is deleted ⓘ



Enable accelerated networking ⓘ



The selected VM size does not support accelerated networking.

Load balancing

You can place this virtual machine in the backend pool of an existing Azure load balancing solution. [Learn more](#)

Load balancing options ⓘ

None

[< Previous](#)

[Next : Management >](#)

Review + create

Create a virtual machine

Validation passed



Help me create a low cost VM

Help me create a VM optimized for high availability

Help me choose the right '

Basics

Disks

Networking

Management

Monitoring

Advanced

Tags

Review + create

Price

1 X Standard B1s

Subscription credits apply

by Microsoft

0.0140 USD/hr

[Terms of use](#) | [Privacy policy](#)

[Pricing for other VM sizes](#)

TERMS

By clicking "Create", I (a) agree to the legal terms and privacy statement(s) associated with the Marketplace offering(s) listed above; (b) authorize Microsoft to bill my current payment method for the fees associated with the offering(s), with the same billing frequency as my Azure subscription; and (c) agree that Microsoft may share my contact, usage and transactional information with the provider(s) of the offering(s) for support, billing and other transactional activities. Microsoft does not provide rights for third-party offerings. See the [Azure Marketplace Terms](#) for additional details.

Basics

Subscription	Azure subscription 1
Resource group	MyResourceGroup
Virtual machine name	MyVM
Region	East US
Availability options	Availability zone
Zone options	Self-selected zone
Availability zone	1
Security type	Trusted launch virtual machines
Enable secure boot	Yes
Enable vTPM	No

< Previous

Next >

Create

Create a virtual machine

Validation passed



Help me create a low cost VM

Help me create a VM optimized for high availability

Help me ch

Basics

Subscription	Azure subscription 1
Resource group	MyResourceGroup
Virtual machine name	MyVM
Region	East US
Availability options	Availability zone
Zone options	Self-selected zone
Availability zone	1
Security type	Trusted launch virtual machines
Enable secure boot	Yes
Enable vTPM	Yes
Integrity monitoring	No
Image	Windows Server 2022 Datacenter: Azure Edition - Gen2
VM architecture	x64
Size	Standard B1s (1 vcpu, 1 GiB memory)
Enable Hibernation	No
Username	Admins
Already have a Windows license?	No
Azure Spot	No

Disk

OS disk size	Image default
OS disk type	Premium SSD LRS
Use managed disks	Yes
Delete OS disk with VM	Enabled
Enhanced OS disk	No

< Previous

Next >

Create

Create a virtual machine

 Validation passed

 Help me create a low cost VM  Help me create a VM optimized for high availability  Help me create a VM for a specific workload

Networking

Virtual network	MyVNet
Subnet	MySubnet (10.0.1.0/24)
Public IP	None
NIC network security group	MyNSG
Accelerated networking	Off
Place this virtual machine behind an existing load balancing solution?	No
Delete NIC when VM is deleted	Disabled

Management

Microsoft Defender for Cloud	None
System assigned managed identity	Off
Login with Microsoft Entra ID	Off
Auto-shutdown	Off
Enable periodic assessment	Off
Enable hotpatch	Off
Patch orchestration options	OS-orchestrated patching: patches will be installed by OS

Monitoring

Alerts	Off
Boot diagnostics	On
Enable OS guest diagnostics	Off
Enable application health monitoring	Off

< Previous

Next >

Create



The screenshot shows the Azure portal interface for a virtual machine named 'MyVM'. The left sidebar contains navigation links for Home, Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Resource visualizer, Connect, Windows Admin Center, Networking, Settings, Availability + scale, Security, Backup + disaster recovery, Operations, Auto-shutdown, Run command, and Updates. A search bar and a 'Help me copy this VM in any region' button are also present.

The main content area displays the 'Essentials' section with the following details:

	:	
Resource group (move)	:	MyResourceGroup
Status	:	Running
Location	:	East US (Zone 1)
Subscription (move)	:	Azure subscription 1
Subscription ID	:	d69b934d-dda2-44e2-8b9d-d19aa122435b
Availability zone	:	1
Operating system	:	Windows (Windows Server 2022 Datacenter Azure Edition)
Size	:	Standard_B1s
Public IP address	:	-
Virtual network/subnet	:	-
DNS name	:	-
Health state	:	-
Time created	:	06/07/2025, 06:42 UTC

Below the essentials section is a 'Tags (edit)' button and a link to 'Add tags'.

The 'Properties' tab is selected, showing the following configuration details:

Virtual machine	Networking
Computer name	MyVM
Operating system	Windows (Windows Server 2022 Datacenter Azure Edition)
VM generation	V2
Agent status	Ready
Agent version	2.7.41491.1149
Hibernation	Disabled
Host group	-
Host	-
Proximity placement group	-
Colocation status	N/A
Capacity reservation group	-
Disk controller type	SCSI
Public IP address	-
Private IP address (IPv6)	-
Private IP address (IPv6)	-
Virtual network/subnet	-
DNS name	-

Other tabs available include Monitoring, Capabilities (8), Recommendations, and Tutorials.

On the right side, there are sections for Networking, Size, and Source image details:

Networking	Size	Source image details	
Public IP address	-	Source image publisher	MicrosoftWindowsServer
Public IP address (IPv6)	-	Source image offer	WindowsServer
Private IP address	-	Source image plan	2022-datacenter-azure-edition
Private IP address (IPv6)	-		
Virtual network/subnet	-		
DNS name	-		

Step 6: Create Public IP (Static)

1. Search Public IP addresses > Click Create.
2. Name: MyPublicIP
3. SKU: Basic
4. Assignment: Static
5. Resource Group: MyResourceGroup
6. Click Review + Create > Create

Home >

Create public IP address

...

Basics DDoS Protection Tags Review + create

Create a public IP address. Associate it with a virtual machine or other Azure resources. Internet resources communicate to Azure resources through a public IP address. [Learn more.](#)

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 subscription 1

Resource group * ⓘ

MyResourceGroup

[Create new](#)

Instance details

Region *

(US) East US

[Deploy to an Azure Extended Zone](#)

Configuration details

Name *

MyPublicIP

IP Version * ⓘ

IPv4

IPv6

SKU * ⓘ

Standard

[Previous](#)

[Next](#)

[Review + create](#)

Home >

Create public IP address

...

Basics DDoS Protection Tags Review + create

Tier * ⓘ

Regional

Global

(i) The limit for global public IP addresses with the selected IP version in the selected subscription and region has been reached.

IP address assignment

Static IPs are assigned at the time the resource is created and released when the resource is deleted. Dynamic IPs are assigned when associating the IP to a resource and is released when you stop, restart, or delete a resource. Dynamic is only available for Basic SKU. [Learn more ↗](#)

IP address assignment * ⓘ

Dynamic

Static

Routing preference * ⓘ

Microsoft network

Internet

(i) The limit for public IP addresses with 'Internet' routing preference in the selected subscription and region has been reached.

Idle timeout (minutes) * ⓘ

4

DNS name label ⓘ

.eastus.cloudapp.azure.com

Domain name label scope (preview) ⓘ

None

[Previous](#)

[Next](#)

[Review + create](#)

[Home](#) >

Create public IP address

...



Validation passed

Basics

DDoS Protection

Tags

[Review + create](#)

Basics

Subscription	Azure subscription 1
Resource group	MyResourceGroup
Region	eastus
Name	MyPublicIP
IP Version	IPv4
SKU	Standard
Tier	Regional
Availability zone	Zone-redundant
IP address assignment	Static
Routing preference	MicrosoftNetwork
Idle timeout (minutes)	4
DNS name label	-
Domain name label scope (preview)	None

DDoS Protection

Protection type	Network
-----------------	---------

Tags

The screenshot shows the Azure Deployment Overview page for a deployment named "PublicIPAddress-ARM". The main message is "Your deployment is complete". Deployment details include: Deployment name: PublicIPAddress-ARM, Subscription: Azure subscription 1, Resource group: MyResourceGroup. The start time was 06/07/2025, 12:43:59. The Correlation ID is 9c32235c-291a-4b58-a2fc-24ef41ce0da0. On the left, there's a navigation bar with "Overview", "Inputs", "Outputs", and "Template". Below the main message are sections for "Deployment details" and "Next steps". A "Go to resource" button is at the bottom.

Step 7: Associate Public IP with VM

1. Go to Virtual Machines > Select your VM.
2. On the left, click Networking.
3. Under Network Interface, click the NIC name (e.g. myvm123-nic).
4. Under Settings, click IP configurations.
5. Click the existing configuration name (e.g., ipconfig1).
6. Under Public IP address, click Associate.
7. Select the MyPublicIP you created.
8. Save.

To remove public IP later:

- Go to the same place and click Disassociate, then Save.

Home > MyVM

MyVM | Network settings ⋮

Virtual machine

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

Overview List all my network interfaces for MyVM. What are the requirements for attaching or detaching a network interface? How can I make my virtual machine secure?

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

Tags

Diagnose and solve problems

Resource visualizer

Connect

Networking

Network settings ☆

Load balancing Application security groups Network manager

Settings Availability + scale

Network interface / IP configuration myvm8_z1 (primary) / ipconfig1 (primary)

Essentials

Network interface	: myvm8_z1	Load balancers	: 0 (Configure)
Virtual network / subnet	: MyVNet / MySubnet	Application security groups	: 0 (Configure)
Public IP address	: - (Configure)	Network security group	: MyNSG
Private IP address	: 10.0.1.4	Accelerated networking	: Disabled
Admin security rules	: 0 (Configure)	Effective security rules	: 0

Rules [Collapse all](#)

Home > MyVM | Network settings >

myvm8_z1 ⋮

Network interface

Search Move Delete Refresh Edit accelerated networking

Overview ☆

Activity log Resource group ([move](#)) Private IPv4 address : 10.0.1.4

Access control (IAM) Location ([move](#)) Public IPv4 address : -

Tags Subscription ([move](#)) Private IPv6 address : -

Resource visualizer Subscription ID Public IPv6 address : -

Settings Accelerated networking Attached to : MyVM (Virtual machine)
MyNSG (Network security group)

IP configurations Virtual network/subnet Type : Regular

DNS servers Tags ([edit](#)) : Add tags

Network security group

Properties

myvm8_z1 | IP configurations ☆ ...

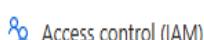
Network interface



«



Refresh



Settings



IP Settings

Enable IP forwarding ⓘ



Virtual network

MyVNet

Subnet * ⓘ

MySubnet (10.0.1.0/24) 250 free IP addresses

250 free IP addresses

DNS servers

Network security group

Properties

Locks

Monitoring

Automation

Help

+ Add ⚙️ Make primary ☒ Delete

Name	IP Version	Type	Private IP Address	Public IP Address
<input type="checkbox"/> ipconfig1	IPv4	Primary	10.0.1.4 (Dynamic)	-

Edit IP configuration

X

myvm8_z1

- i A primary IP configuration already exists. Any additional IP configurations will be secondary.
The virtual network this network interface is attached to only supports IPv4. [Learn more](#)

Name *

ipconfig1

IP version

IPv4

Type

Primary

Private IP address settings

Allocation

Dynamic

Static

Public IP address settings

Associate public IP address



Public IP address *

mypublicip (74.235.38.45)



[Create a public IP address](#)

myvm8_z1 | IP configurations ⋮

Network interface

Search Refresh

Overview Activity log Access control (IAM) Tags Resource visualizer Settings IP configurations DNS servers Network security group Properties Locks Monitoring Automation Help

IP Settings

Enable IP forwarding Virtual network MyVNet Gateway load balancer None Subnet * MySubnet (10.0.1.0/24) 250 free IP addresses 250 free IP addresses

Private and public IP addresses can be assigned to a virtual machine's network interface controller. You can add as many private and public IPv4 addresses as necessary to a network interface, within the limits listed in the Azure limits article. [Learn more](#)

Add Make primary Delete

Name	IP Version	Type	Private IP Address	Public IP Address
ipconfig1	IPv4	Primary	10.0.1.4 (Dynamic)	74.235.38.45 (MyPublicIP)

Step 8: Create Application Security Group (ASG)

1. Search Application Security Groups > Click Create.
2. Name: MyASG.
3. Resource Group: MyResourceGroup.
4. Region: Same as VNet.
5. Click Review + Create > Create.

Home > Network foundation | Application security groups >

Create an application security group

Basics Tags Review + create

Project details

Subscription *

Azure subscription 1

Resource group *

MyResourceGroup

[Create new](#)

Instance details

Name *

MyASG

Region *

East US

Home > Network foundation | Application security groups >

Create an application security group

Validation passed

Basics Tags Review + create

Summary

Basics

Subscription
Resource group
Location
Name

Azure subscription 1
MyResourceGroup
East US
MyASG

Home >

 Microsoft.ApplicationSecurityGroup | Overview

Deployment

Search X < Delete Cancel Redeploy Download Refresh

Overview Inputs Outputs Template

✓ Your deployment is complete

Deployment name : Microsoft.ApplicationSecurityGroup
Subscription : Azure subscription 1
Resource group : MyResourceGroup

Start time : 06/07/2025, 13:01:01
Correlation ID : e75fc97c-cbd1-43ae-8b0e-892434c9675c

> Deployment details

Next steps

Go to resource

Give feedback

Tell us about your experience with deployment

Step 9: Add VM to ASG

1. Go to Virtual Machines > Select your VM.
2. Under Networking, click the Network Interface.
3. Under Settings, click Application Security Groups.
4. Click Configure ASG.
5. Add MyASG > Click Save.

Home >

 MyVM ⚡ ⋮

Virtual machine

Search Help me copy this VM in any region

Overview Activity log Access control (IAM) Tags Diagnose and solve problems Resource visualizer Favorites Application security groups Connect Networking Network settings Load balancing Application security groups Network manager Settings Availability + scale Security Backup + disaster recovery Operations Monitoring Automation Help Add or remove favorites by pressing Ctrl+Shift+F

Help me copy this VM in any region

Connect Start Restart Stop Hibernate Capture Delete Refresh Open in mobile Feedback CLI / PS

Essentials

Resource group (move)	: MyResourceGroup	Operating system	: Windows (Windows Server 2022 Datacenter Azure Edition)
Status	: Running	Size	: Standard B1s (1 vcpu, 1 GiB memory)
Location	: East US (Zone 1)	Public IP address	: 74.235.38.45
Subscription (move)	: Azure subscription 1	Virtual network/subnet	: MyVNet/MySubnet
Subscription ID	: d69b934d-dda2-44e2-8b9d-d19aa122435b	DNS name	: Not configured
Availability zone	: 1	Health state	: -
		Time created	: 06/07/2025, 06:42 UTC

Tags ([edit](#)) : [Add tags](#)

Properties Monitoring Capabilities (8) Recommendations Tutorials

Virtual machine

Computer name	MyVM	Networking	Public IP address	74.235.38.45 (Network interface myvm8_z1)
Operating system	Windows (Windows Server 2022 Datacenter Azure Edition)	Public IP address (IPv6)	-	
VM generation	V2	Private IP address	10.0.1.4	
VM architecture	x64	Private IP address (IPv6)	-	
Agent status	Ready	Virtual network/subnet	MyVNet/MySubnet	
Agent version	2.7.41491.1149	DNS name	Configure	
Hibernation	Disabled	Size	Size	Standard B1s
Host group	-	vCPUs	1	
Host	-	RAM	1 GiB	
Proximity placement group	-	Source image details	Source image publisher	MicrosoftWindowsServer
Colocation status	N/A	Source image name	WindowsServer2022Datacenter	
Capacity reservation group	-			
Disk controller type	SCSI			

Show portal menu >

 myvm8_z1 ⚡ ⋮

Network interface

Search Move Delete Refresh Edit accelerated networking

Overview Activity log Access control (IAM) Tags Resource visualizer Settings IP configurations DNS servers Network security group Properties Locks Monitoring

Essentials

Resource group (move)	: MyResourceGroup	Private IPv4 address	: 10.0.1.4
Location (move)	: East US	Public IPv4 address	: 74.235.38.45 (MyPublicIP)
Subscription (move)	: Azure subscription 1	Private IPv6 address	: -
Subscription ID	: d69b934d-dda2-44e2-8b9d-d19aa122435b	Public IPv6 address	: -
Accelerated networking	: Disabled	Attached to	: MyVM (Virtual machine) MyNSG (Network security group)
Virtual network/subnet	: MyVNet/MySubnet	Type	: Regular
Tags (edit)	: Add tags		

Get started Properties

Enable Azure resources to communicate with each other

Home > MyVM

MyVM | Application security groups ☆ ...



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

Overview

+ Add application security groups X Remove ⟳ Refresh ↗ Give feedback

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Resource visualizer

▼ Favorites

Application security groups

Network interface / IP configuration

myvm8_z1 (primary) / ipconfig1 (primary) ▼

Name

[MyASG](#)

Home > MyVM | Application security groups >

MyASG ☆ ...



Move ▼



Delete

^ Essentials

Resource group ([move](#)) : [MyResourceGroup](#)

Location : East US

Subscription ([move](#)) : [Azure subscription 1](#)

Subscription ID : d69b934d-dda2-44e2-8b9d-d19aa122435b

Tags ([edit](#)) : [Add tags](#)

Overview

Activity log

Access control (IAM)

Tags

Resource visualizer

▼ Settings

Properties

Locks

> Monitoring

> Automation

> Help

Step 10: Create NSG Rule Using ASG

1. Go back to MyNSG.
2. Click Inbound security rules > Add.
3. Name: AllowFromASG
4. Source: Application Security Group
 - o Choose MyASG
5. Destination: Any
6. Port: e.g. 80 (Web)
7. Action: Allow
8. Priority: 150
9. Click Add.

Home >

MyNSG ⚡ ⭐ ...

Network security group

Search Move Delete Refresh Give feedback

Overview Essentials JSON View

Activity log Resource group (move) : MyResourceGroup Custom security rules : 1 inbound, 0 outbound

Access control (IAM) Location : East US Associated with : 0 subnets, 1 network interfaces

Tags Subscription (move) : Azure subscription 1

Diagnose and solve problems Subscription ID : d69b934d-dda2-44e2-8b9d-d19aa122435b

Resource visualizer Tags (edit) : Add tags

Inbound security rules Outbound security rules

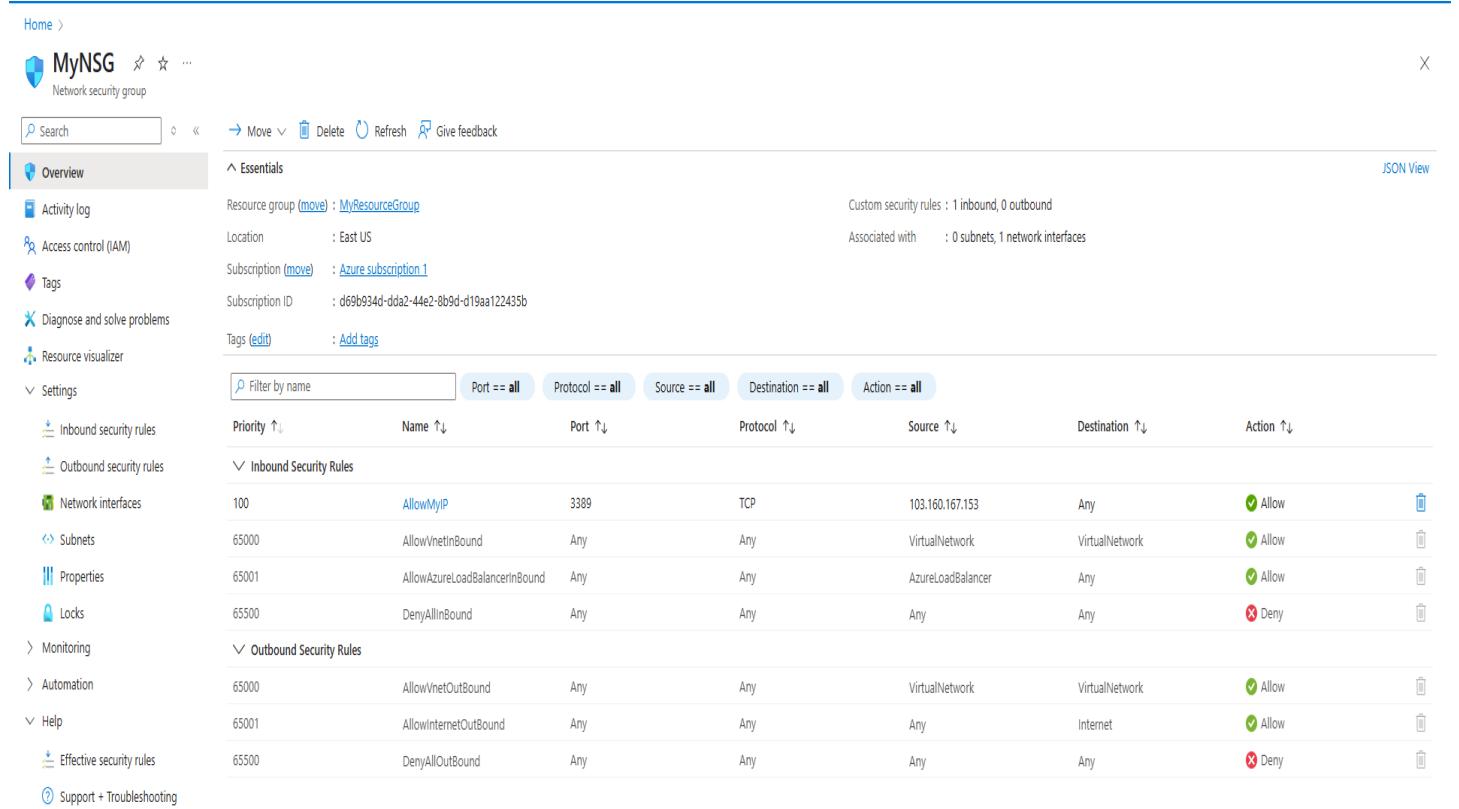
Inbound Security Rules

Priority ↑	Name ↑	Port ↑	Protocol ↑	Source ↑	Destination ↑	Action ↑
100	AllowMyIP	3389	TCP	103.160.167.153	Any	Allow
65000	AllowWnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	AllowAzureLoadBalancerInBound	Any	Any	AzureLoadBalancer	Any	Allow
65500	DenyAllInBound	Any	Any	Any	Any	Deny

Outbound Security Rules

Priority ↑	Name ↑	Port ↑	Protocol ↑	Source ↑	Destination ↑	Action ↑
65000	AllowWnetOutBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	AllowInternetOutBound	Any	Any	Any	Internet	Allow
65500	DenyAllOutBound	Any	Any	Any	Any	Deny

Monitoring Automation Help Effective security rules Support + Troubleshooting





Add inbound security rule

X

MyNSG

Application security group

Source application security groups

MyASG



No application security groups found

Source port ranges * ⓘ

*



Destination ⓘ

Any



Service ⓘ

Custom



Destination port ranges * ⓘ

8080

Protocol

Any

TCP

UDP

ICMPv4

ICMPv6

Action

Allow

Deny

Priority * ⓘ

150



Name *

AllowFromASG



Add

Cancel

Give feedback

MyNSG | Inbound security rules ⭐ ...

Network security group

Search Add Hide default rules Refresh Delete Give feedback

Overview Activity log Access control (IAM) Tags Diagnose and solve problems Resource visualizer Settings Inbound security rules Outbound security rules Network interfaces Subnets Properties

Filter by name Port == all Protocol == all Source == all Destination == all Action == all

Priority ↑	Name ↓	Port ↑↓	Protocol ↑↓	Source ↑↓	Destination ↑↓	Action ↑↓
100	AllowMyIP	3389	TCP	103.160.167.153	Any	Allow
150	AllowFromASG	8080	Any	MyASG	Any	Allow
65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	AllowAzureLoadBalancerInBound	Any	Any	AzureLoadBalancer	Any	Allow
65500	DenyAllInBound	Any	Any	Any	Any	Deny

◆ PART 3: SUMMARY

Task	Purpose
NSG	Controls who can access your VMs.
ASG	Groups VMs for easy rule management.
Public IP	Needed to access VM from internet.
Static IP	Useful when IP should never change.
NIC	Network card of the VM; handles IP and NSG.