

Name: Muhammad Osama

Reg no: 2280151

Section: B

LAB: 04

Task 1 - Create a virtual network with subnets using the portal:

The screenshot shows the Microsoft Azure portal interface for creating a virtual network. The top navigation bar includes 'Microsoft Azure', 'Upgrade', 'Search resources, services, and docs (G+)', 'Copilot', and user account information ('muhammadosama0661...', 'Sign out'). The main content area is titled 'Create virtual network' with a sub-section 'IP addresses'. A note says: 'Configure your virtual network address space with the IPv4 and IPv6 addresses and subnets you need. Learn more'.

The 'IP addresses' tab is selected. An address space of '10.20.0.0/16' is defined, covering the range '10.20.0.0 - 10.20.255.255' and providing '65,536 addresses'. Two subnets are listed:

Subnets	IP address range	Size	NAT gateway
SharedServicesSubnet	10.20.10.0 - 10.20.10.255	/24 (256 addresses)	-
DatabaseSubnet	10.20.20.0 - 10.20.20.255	/24 (256 addresses)	-

A link 'Add a subnet' is available. At the bottom, there's a button 'Add IPv4 address space' and a 'Delete address space' option.

The screenshot shows the 'Review + create' step of the virtual network creation wizard. The top navigation bar and user account information are identical to the previous screenshot.

The 'Review + create' step has a green header bar indicating 'Validation passed'. The 'Basics' section contains the following configuration:

Subscription	Azure subscription 1
Resource Group	az104-rg4
Name	CoreServicesVNet
Region	Central India

The 'Security' section includes:

Azure Bastion	Disabled
Azure Firewall	Disabled
Azure DDoS Network Protection	Disabled

The 'IP addresses' section lists:

Address space	10.20.0.0/16 (65,536 addresses)
Subnet	SharedServicesSubnet (10.20.10.0/24) (256 addresses)
Subnet	DatabaseSubnet (10.20.20.0/24) (256 addresses)

The 'Tags' section is empty.

Microsoft Azure | Overview

Your deployment is complete

Deployment name : CoreServicesVnet-1767779517909
Subscription : Azure subscription 1
Resource group : az104-rg4

Start time : 1/7/2026, 2:52:04 PM
Correlation ID : 3b63f930-3bc9-4a15-b8c0-e9e0fd117312

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Notifications

muhammadosama0661...
microsoft.com
Sign out

More events in the activity log

Deployment success
Deployment 'CoreServiceVnet-1767779517909' was successful
[Go to resource](#)

Sign in with a different account

Microsoft Azure | Overview

CoreServicesVnet | Virtual network

Move | Delete | Refresh | Give feedback

Overview

Activity log | Access control (IAM) | Tags | Diagnose and solve problems | Resource visualizer | Help

Essentials

Resource group (move) : az104-rg4	Address space : 10.20.0.0/16
Location (move) : Central India	Subnets : 2 subnets
Subscription (move) : Azure subscription 1	DNS servers : Azure provided DNS service
Subscription ID : b27ea303-a842-43a4-8123-8bd4aec006b	BGP community string : Configure
Tags (edit) : Add tags	Virtual network ID : 69763d7f-7f17-4903-aaef-9924ddde9561

Topology Properties Capabilities (5) Recommendations Tutorials

DDoS protection | Azure Firewall | Peering | Microsoft Defender for Cloud | Private endpoints

Not configured | Not configured | Not configured | Strengthen the security posture of your environment. | Privately access Azure services without sending traffic across internet.

Sign in with a different account

Microsoft Azure | Overview

All services > CoreServicesVnet | Subnets

Virtual network

Search | + Subnet | Refresh | Manage users | Delete | Export to CSV

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
SharedServicesSubnet	10.20.10.0/24	-	251	-	-	-
DatabaseSubnet	10.20.20.0/24	-	251	-	-	-

Activity log | Access control (IAM) | Tags | Diagnose and solve problems | Resource visualizer | Settings | Address space | Connected devices | Subnets

Sign in with a different account

Task 2 - Create a virtual network and subnets using a template:

Screenshot 1: Export template view

```

1  {
2    "$schema": "https://schema.management.azure.com/schemas/2019-04-01/deploymentTemplate.json#",
3    "contentVersion": "1.0.0.0",
4    "parameters": {
5      "virtualNetworks_CoreServicesVnet_name": {
6        "defaultValue": "CoreServicesVnet",
7        "type": "String"
8      }
9    },
10   "variables": {},
11   "resources": [
12     {
13       "type": "Microsoft.Network/virtualNetworks",
14       "apiVersion": "2024-07-01",
15       "name": "[parameters('virtualNetworks_CoreServicesVnet_name')]",
16       "location": "centralindia",
17       "properties": {
18         "addressSpace": {
19           "addressPrefixes": [
20             "10.20.0.0/16"
21           ]
22         },
23         "encryption": {
24           "enabled": false,
25           "enforcement": "AllowUnencrypted"
26         },
27         "privateEndpointNetPolicies": "Disabled",
28         "subnets": [
29           {
30             ...
31           }
32         ]
33       }
34     }
35   ]
36 }

```

Screenshot 2: Custom deployment view

Custom deployment

Deploy from a custom template

Summary

Custom template 3 resources

Azure Marketplace Terms | Azure Marketplace

By clicking "Create," I (a) agree to the applicable legal terms associated with the offering; (b) authorize Microsoft to charge or bill my current payment method for the fees associated with the offerings, including applicable taxes, with the same billing frequency as my Azure subscription, until I discontinue use of the offerings; and (c) agree that, if the deployment involves 3rd party offerings, Microsoft may share my contact information and other details of such deployment with the publisher of that offering.

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Basics

Subscription	Azure subscription 1
Resource group	az104-rg4
Region	Central India
Virtual Networks_Core Services Vnet_na...	ManufacturingVnet

Previous | Next | Create

az104-rg4 Resource group

Subscription (move) : Azure subscription 1
Subscription ID : b27ea303-a842-43a4-8123-8bdff4aec006b

Deployments : 2 Succeeded
Location : Central India

Resources Recommendations

	Type	Location
Name 1	Virtual network	Central India
CoreServicesVNet	Virtual network	Central India
ManufacturingVNet	Virtual network	Central India

Task 3 - Create and configure communication between an Application Security Group and a Network Security Group:

Create an application security group

Validation passed

Basics Tags Review + create

Azure subscription 1
az104-rg4
Central India
asg-web

asg-web Application security group

How do I troubleshoot issues with this resource? List security rules for this Application Security Group. Show me metrics for this Application Security Group.

Overview Activity log Access control (IAM) Tags Resource visualizer Settings Monitoring Automation Help

Resource group (move) : az104-rg4 Location (move) : Central India Subscription (move) : Azure subscription 1 Subscription ID : b27ea303-a842-43a4-8123-8bdff4aec006b Provisioning state : Succeeded

Tags (edit) : Add tags

Showing the network interfaces linked to this application security group. Only the primary IP address of each network interface is shown. You can add or remove one or more network interfaces associated with asg-web in this virtual network.

Private IP Address	Network interface	Attached to	Resource type
No items found			

Create network security group

Validation passed

Basics Tags Review + create

Azure subscription 1
az104-rg4
Central India
myNSGSecure

Tags None

Microsoft Azure | Overview

myNSGSecure Network security group

Search | Move | Delete | Refresh | Give feedback

Essentials

Resource group (move) : az104-rg4
Location : Central India
Subscription (move) : Azure subscription 1
Subscription ID : b27ea303-a842-43a4-8123-8bd4aec006b
Tags (edit) : Add tags

Custom security rules : 0 inbound, 0 outbound
Associated with : 0 subnets, 0 network interfaces

Inbound Security Rules

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

Sign out

muhammadosama... muhammadosama0661@gmail.com My Microsoft account Switch directory ...

Sign in with a different account

Microsoft Azure | Overview

All services > CreateNetworkSecurityGroupBladeV2-20260107152903 | Overview > myNSGSecure

myNSGSecure | Subnets Network security group

Search | Associate

Associate subnet

Virtual network : CoreServicesVnet (az104-rg4)
Subnet * : SharedServicesSubnet

Search subnets

Name Address range

No results.

Sign out

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Sign in with a different account

Microsoft Azure | Overview

All services > CreateNetworkSecurityGroupBladeV2-20260107152903 | Overview > myNSGSecure

myNSGSecure | Subnets Network security group

Search | Associate

Associate subnet

Virtual network : CoreServicesVnet (az104-rg4)

Search subnets

Name Address range Virtual network

Name	Address range	Virtual network
SharedServicesSubnet	10.20.10.0/24	CoreServicesVnet

Sign out

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Sign in with a different account

Give feedback

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

All services > CreateNetworkSecurityGroupBladeV2-20260107152903 | Overview > myNSGSecure

myNSGSecure | Inbound security rules

Network security group

Network security group security rules are evaluated by priority using the combination of source, so 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 the same priority and direction.

Priority ↑↓	Name ↑↓	Port ↑↓	Protocol ↑↓
<input type="checkbox"/> 65000	AllowVnetInBound	Any	Any
<input type="checkbox"/> 65001	AllowAzureLoadBalanc...	Any	Any
<input type="checkbox"/> 65500	DenyAllInBound	Any	Any

Port == all Protocol == all

Add inbound security rule

Source myNSGSecure

Source application security groups No application security groups found

Source port ranges *

Destination Any

Service Custom

Destination port ranges * 80,443

Protocol Any TCP UDP ICMPV4 ICMPV6

Action Allow Deny

Priority * 100

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

All services > CreateNetworkSecurityGroupBladeV2-20260107152903 | Overview > myNSGSecure

myNSGSecure | Inbound security rules

Network security group

Network security group security rules are evaluated by priority using the combination of source, source port, destination, destination port, and protocol. You 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 the same priority and direction.

Priority ↑↓	Name ↑↓	Port ↑↓	Protocol ↑↓	Source ↑↓	Destination ↑↓	Action ↑↓
<input type="checkbox"/> 100	AllowASG	80,443	TCP	ASG-WEB	Any	Allow
<input type="checkbox"/> 65000	AllowVnetInBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow
<input type="checkbox"/> 65001	AllowAzureLoadBalanc...	Any	Any	AzureLoadBalancer	Any	Allow
<input type="checkbox"/> 65500	DenyAllInBound	Any	Any	Any	Any	Deny

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

Inbound security rules

Add inbound security rule

Source myNSGSecure

Source application security groups No application security groups found

Source port ranges *

Destination Any

Service Custom

Destination port ranges * 80,443

Protocol Any TCP UDP ICMPV4 ICMPV6

Action Allow Deny

Priority * 100

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

All services > CreateNetworkSecurityGroupBladeV2-20260107152903 | Overview > myNSGSecure

myNSGSecure | Outbound security rules

Network security group

Network security group security rules are evaluated by priority using the combination of source, so can't have the same priority and direction as an existing rule. You can't delete default security rules.

Priority ↑	Name ↑	Port ↑	Protocol ↑
<input type="checkbox"/> 65000	AllowVnetOutBound	Any	Any
<input type="checkbox"/> 65001	AllowInternetOutBound	Any	Any
<input type="checkbox"/> 65500	DenyAllOutBound	Any	Any

Port == all Protocol == all

> Monitoring Automation Help

Add or remove favorites by pressing Ctrl+Shift+F

Add outbound security rule

Source Source port ranges

Destination Destination service tag Destination port ranges

Protocol

Action

Priority Name

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

All services > CreateNetworkSecurityGroupBladeV2-20260107152903 | Overview > myNSGSecure

myNSGSecure | Outbound security rules

Network security group

Network security group security rules are evaluated by priority using the combination of source, source port, destination, destination port, and protocol. You 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 higher priority.

Priority ↑	Name ↑	Port ↑	Protocol ↑	Source ↑	Destination ↑	Action ↑
<input type="checkbox"/> 4096	DenyinternetOutbound	Any	Any	Any	Internet	<input checked="" type="radio" value="Deny"/> <input type="button" value="Edit"/>
<input type="checkbox"/> 65000	AllowVnetOutBound	Any	Any	VirtualNetwork	VirtualNetwork	<input checked="" type="radio" value="Allow"/> <input type="button" value="Edit"/>
<input type="checkbox"/> 65001	AllowInternetOutBound	Any	Any	Any	Internet	<input checked="" type="radio" value="Allow"/> <input type="button" value="Edit"/>
<input type="checkbox"/> 65500	DenyAllOutBound	Any	Any	Any	Any	<input checked="" type="radio" value="Deny"/> <input type="button" value="Edit"/>

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

> Monitoring Automation Help

Add or remove favorites by pressing Ctrl+Shift+F

Add outbound security rule

Source Source port ranges

Destination Destination service tag Destination port ranges

Protocol

Action

Priority Name

Task 4 - Configure public and private Azure DNS zones:

Screenshot 1: Create a DNS Zone

Screenshot 2: mycontoso.com | Recordsets

Screenshot 3: Add record set

Screenshot 4: mycontoso.com | Recordsets

Microsoft Azure Upgrade

All services > mycontoso.com_176778282958 | Overview > mycontoso.com

mycontoso.com | Recordsets ...

DNS zone

that have been loaded on this page. If you don't see what you're looking for, you can try scrolling to allow more record sets to load. [Learn more](#)

Search

Overview Activity log Access control (IAM) Tags Diagnose and solve problems Resource visualizer Settings DNS Management Recordsets DNSSEC Monitoring Automation Help

Fetched 3 record set(s).

Name	Type	TTL	Value	Alias resource type	Alias to
www	NS	172800	ns1-07.azure-dns.com, ns2-07.azure-dns.net, ns3-07.azure-dns.org, ns4-07.azure-dns.info.		
www	SOA	3600	Email: ns1-07... Host: ns1-07.azure-dns.com Refresh: 3600 Retry: 900 Expire: 2419200 Minimum TTL: 300 Serial number: 1		
www	A	3600	10.1.1.4		

Add or remove resources by pressing **Ctrl+Shift+F1+F2**

Switch to Bash Restart Manage files New session Editor Web preview Settings Help

```
PS /home/muhammad> sh
sh-5.2$ nslookup www.mycontoso.com ns1-07.azure-dns.com.
Server: ns1-07.azure-dns.com.
Address: 13.107.236.7#53

Name: www.mycontoso.com
Address: 10.1.1.4

sh-5.2$ 
```

Microsoft Azure Upgrade

All services > Private DNS zones >

Create Private DNS Zone ...

Validation passed

Basics Private DNS Zone Editor Virtual Network Links Tags Review + Create

[View automation template](#)

Basics

Subscription: Azure subscription 1
 Resource group: az104-rg4
 Resource group location: Central India
 Name: private.contoso.com

DNS Zone Record Set(s)

Number of record sets: 0 record set(s)

Virtual network link(s)

Number of Virtual Network Links: 0 virtual network link(s)

Microsoft Azure Upgrade

All services > private.contoso.com_176778383571 | Overview >

private.contoso.com ...

Private DNS zone

Search

Import Export Move Refresh Delete Give feedback

Overview Activity log Access control (IAM) Tags Diagnose and solve problems Resource visualizer Settings DNS Management Monitoring Capabilities Tutorials Tools + SDKs Recommendations (0)

Essentials

Resource group (Move): az104-rg4	Recordsets: 1
Location: Global	Virtual Network Links: 0
Subscription (Move): Azure subscription 1	Virtual Network Links With Registrations: 0
Subscription ID: b27ea303-a842-43a4-8123-8bdf4aec006b	
Tags (edit): Add tags	

Azure Monitor Tools

Get alerted to issues
 Create alerts to monitor resource health, usage, cost and more.

Get started with Log Analytics
 Leverage the value of the data in Azure Monitoring Logs and perform complex operations with minimal code.

Monitor at scale with Insights
 Get visibility into the resource's performance and health, accounting for different processes and interconnected dependencies.

Microsoft Azure Upgrade

All services > private.contoso.com | Virtual Network Links >

Add Virtual Network Link

Link name *

Virtual network details

Only virtual networks with Resource Manager deployment model are supported for linking with Private DNS zones. Virtual networks with Classic deployment model are not supported.

I know the resource ID of virtual network. [?](#)

Subscription *

Virtual Network *

Sign out

muhammadosama0661...
muhammadosama0661@gmail.com
My Microsoft account
Switch directory ...

Sign in with a different account

Microsoft Azure Upgrade

All services > private.contoso.com

private.contoso.com | Virtual Network Links

Private DNS zone

Search Add Refresh Delete Give feedback

Overview Activity log Access control (IAM) Tags Diagnose and solve problems Resource visualizer Settings DNS Management Recordsets Virtual Network Links

Search virtual network links

Fetched 1 virtual Network link(s). 0 Virtual Network links selected

Link Name	Link Status	Virtual Network	Auto-Registration	Fallback to Internet
manufacturing-link	Completed	ManufacturingVNet	Disabled	Disabled

Notifications

muhammadosama0661...
muhammadosama0661@gmail.com
My Microsoft account
Switch directory ...

More events in the activity feed

Creating virtual network link Successfully created virtual network link

Sign in with a different account

Microsoft Azure Upgrade

All services > private.contoso.com

private.contoso.com | Recordsets

Private DNS zone

Search Add Refresh Delete Give feedback

Overview Activity log Access control (IAM) Tags Diagnose and solve problems Resource visualizer Settings DNS Management Recordsets Virtual Network Links Monitoring Automation

A record set is a collection of records in a zone that have the same name and are the same type. Record Sets will be automatically fetched in batches of 100 as you scroll through the existing record sets. [Learn more](#)

Search

Fetched 2 record set(s). 0 record sets selected

Name	Type	TTL	Value	Auto registered
sensorvm	A	3600	10.1.14	False
	SOA	3600	Email: acureprivatedns-host.microsoft.com Host: acureprivatedns.net Refresh: 3600 Retry: 300 Expire: 2419200 Minimum TTL: 10 Serial number: 1	False

Suc

muhammadosama0661...
muhammadosama0661@gmail.com
My Microsoft account
Switch directory ...

Sign in with a different account