

INTRODUCTION TO CLOUD COMPUTING

Lab Task 03 (Implement Virtual Networking)

Name: M. Talha Arif

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

- Create a Virtual network “CoreServicesVnet”:

Microsoft Azure

Home > Network foundation | Virtual networks >

Create virtual network

Basics Security IP addresses Tags Review + create

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 * Azure for Students

Resource group * (New) az104-rg4 [Create new](#)

Instance details

Virtual network name * CoreServicesVnet

Region * (Asia Pacific) East Asia [Deploy to an Azure Extended Zone](#)

[Previous](#) [Next](#) [Review + create](#) [Give feedback](#)

- Configure IP Address Space & Create SharedServicesSubnet:

Microsoft Azure

Home > Network foundation | Virtual networks >

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](#)

☐ Allocate using IP address pools. [Learn more](#)

[+ Add a subnet](#)

10.20.0.0/16 [Delete address space](#)

10.20.0.0 /16 65,536 addresses

Subnets	IP address range	Size	NAT gateway
default	10.20.0.0 - 10.20.0.255	/24 (256 addresses)	-

[Previous](#) [Next](#) [Review + create](#) [Give feedback](#)

Add a subnet

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 Default

Name * SharedServicesSubnet

IPv4

Include an IPv4 address space ☒

IPv4 address range 10.20.0.0/16

10.20.0.0 - 10.20.255.255

Starting address * 10.20.10.0

Size /24 (256 addresses)

Subnet address range 10.20.10.0 - 10.20.10.255

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

[Add](#) [Cancel](#) [Give feedback](#)

- Create DatabaseSubnet:

INTRODUCTION TO CLOUD COMPUTING

Lab Task 03 (Implement Virtual Networking)

Create virtual network

Basics Security **IP addresses** Tags Review + create

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](#)

☐ Allocate using IP address pools. [Learn more](#)

+ Add a subnet

Subnets	IP address range	Size	NAT gateway
default	10.20.0.0 - 10.20.0.255	/24 (256 addresses)	-
SharedServicesSubnet	10.20.10.0 - 10.20.10.255	/24 (256 addresses)	-

+ Add IPv4 address space

Add a subnet

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: Default

Name: DatabaseSubnet

IPv4

Include an IPv4 address space: ☒

IPv4 address range: 10.20.0.0/16

Starting address: 10.20.0.0

Size: /24 (256 addresses)

Subnet address range: 10.20.20.0 - 10.20.20.255

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): ☐

Add Cancel Give feedback

- **Verify Virtual Network and Subnets:**

CoreServicesVnet | Address space

Virtual network

Search

+ Add address space Refresh

The address space for a virtual network is composed of one or more non-overlapping address ranges that are specified in CIDR notation. IP Address Management (IPAM) is recommended to simplify address management and avoid overlapping address space. When not using IPAM, it is recommended to use an address range that is not globally routable, such as 172.16.0.0/12, or a range defined in RFC 1918 or RFC 6598. [Learn more](#)

Showing all 1 items

Address space	Address range	Address count
10.20.0.0/16	10.20.0.0 - 10.20.255.255	/16 65,536 addresses

Peered virtual network address space

Search

Showing all 0 items

Peering name	Peered to	Address space	Address range
No items found			

Save Cancel Give feedback

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.

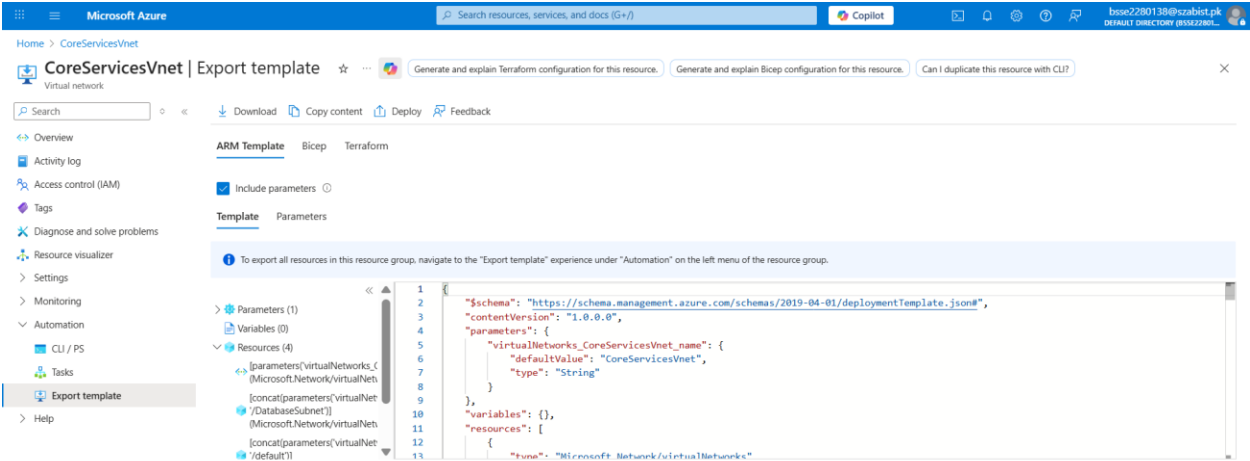
Search subnets

Name	IPv4	IPv6	Available IPs	Delegated to	Security group	Route table
default	10.20.0.0/24	-	251	-	-	-
SharedServicesSubnet	10.20.10.0/24	-	251	-	-	-
DatabaseSubnet	10.20.20.0/24	-	251	-	-	-

- **Export ARM Template:**

INTRODUCTION TO CLOUD COMPUTING

Lab Task 03 (Implement Virtual Networking)



Downloads > ExportedTemplate-az104-rg4

Name	Date modified	Type	Size
parameters	12/20/2025 7:32 PM	JSON Source File	1 KB
template	12/20/2025 7:32 PM	JSON Source File	6 KB

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

• Edit ARM Template for ManufacturingVnet & Modify Address Space and Subnets:

C: > Users > hp > Downloads > ExportedTemplate-az104-rg4 > {} template.json > {} resources > {} 0 > {} properties > {} subnets > {} 1 > {} properties >

```

1  {
2      "$schema": "https://schema.management.azure.com/schemas/2019-04-01/deploymentTemplate.json#",
3      "contentVersion": "1.0.0.0",
4      "parameters": {
5          "virtualNetworks_ManufacturingVnet_name": {
6              "defaultValue": "ManufacturingVnet",
7              "type": "String"
8          }
9      },
10     "variables": {},
11     "resources": [
12         {
13             "type": "Microsoft.Network/virtualNetworks",
14             "apiVersion": "2024-07-01",
15             "name": "[parameters('virtualNetworks_ManufacturingVnet_name')]",
16             "location": "eastasia",
17             "properties": {
18                 "addressSpace": {
19                     "addressPrefixes": [
20                         "10.30.0.0/16"
21                     ]
22                 },
23                 "encryption": {
24                     "enabled": false,
25                     "enforcement": "AllowUnencrypted"
26                 },
27                 "privateEndpointVNetPolicies": "Disabled",
28                 "subnets": [
29

```

C: > Users > hp > Downloads > ExportedTemplate-az104-rg4 > {} template.json > {} resources > {} 0 > {} properties > {} subnets > {} 1 > {} properties > <== privateLinkServiceNetworkPolicies

```

11
12
17     "properties": {
18         "addressSpace": {
19             "addressPrefixes": [
20                 "10.30.0.0/16"
21             ]
22         },
23         "encryption": {
24             "enabled": false,
25             "enforcement": "AllowUnencrypted"
26         },
27         "privateEndpointVNetPolicies": "Disabled",
28         "subnets": [
29
30             {
31                 "name": "default",
32                 "id": "[resourceId('Microsoft.Network/virtualNetworks/subnets', parameters('virtualNetworks_ManufacturingVnet_name'), 'default')]",
33                 "properties": {
34                     "addressPrefixes": [
35                         "10.30.0.0/24"
36                     ],
37                     "delegations": [],
38                     "privateEndpointNetworkPolicies": "Disabled",
39                     "privateLinkServiceNetworkPolicies": "Enabled"
40                 },
41                 "type": "Microsoft.Network/virtualNetworks/subnets"
42             },
43             {
44                 "name": "SensorSubnet1",
45                 "id": "[resourceId('Microsoft.Network/virtualNetworks/subnets', parameters('virtualNetworks_ManufacturingVnet_name'), 'SensorSubnet1')]",
46                 "properties": {
47                     "addressPrefixes": [
48                         "10.30.20.0/24"
49                     ],
50                     "delegations": [],
51                     "privateEndpointNetworkPolicies": "Disabled",
52                     "privateLinkServiceNetworkPolicies": "Enabled"
53                 },
54                 "type": "Microsoft.Network/virtualNetworks/subnets"
55             },
56             {
57                 "name": "SensorSubnet2",
58                 "id": "[resourceId('Microsoft.Network/virtualNetworks/subnets', parameters('virtualNetworks_ManufacturingVnet_name'), 'SensorSubnet2')]",
59                 "properties": {
60                     "addressPrefixes": [
61                         "10.30.21.0/24"
62                     ],
63                     "delegations": [],
64                     "privateEndpointNetworkPolicies": "Disabled",
65                     "privateLinkServiceNetworkPolicies": "Enabled"
66                 },
67                 "type": "Microsoft.Network/virtualNetworks/subnets"
68             }
69         ],
70         "privateLinkServiceNetworkPolicies": "Enabled"
71     },
72     "type": "Microsoft.Network/virtualNetworks/subnets"
73 }

```

INTRODUCTION TO CLOUD COMPUTING

Lab Task 03 (Implement Virtual Networking)

```
73     {
74         "type": "Microsoft.Network/virtualNetworks/subnets",
75         "apiVersion": "2024-07-01",
76         "name": "[concat(parameters('virtualNetworks_ManufacturingVnet_name'), '/SensorSubnet2')]",
77         "dependsOn": [
78             "[resourceId('Microsoft.Network/virtualNetworks', parameters('virtualNetworks_ManufacturingVnet_name'))]"
79         ],
80         "properties": {
81             "addressPrefixes": [
82                 "10.30.21.0/24"
83             ],
84             "delegations": [],
85             "privateEndpointNetworkPolicies": "Disabled",
86             "privateLinkServiceNetworkPolicies": "Enabled"
87         }
88     },
89     {
90         "type": "Microsoft.Network/virtualNetworks/subnets",
91         "apiVersion": "2024-07-01",
92         "name": "[concat(parameters('virtualNetworks_ManufacturingVnet_name'), '/default')]",
93         "dependsOn": [
94             "[resourceId('Microsoft.Network/virtualNetworks', parameters('virtualNetworks_ManufacturingVnet_name'))]"
95         ],
96         "properties": {
97             "addressPrefixes": [
98                 "10.30.0.0/24"
99             ],
100             "delegations": [],
101             "privateEndpointNetworkPolicies": "Disabled",
102             "privateLinkServiceNetworkPolicies": "Enabled"
103         }
104     },
105     {
106         "type": "Microsoft.Network/virtualNetworks/subnets",
107         "apiVersion": "2024-07-01",
108         "name": "[concat(parameters('virtualNetworks_ManufacturingVnet_name'), '/SensorSubnet1')]",
109         "dependsOn": [
110             "[resourceId('Microsoft.Network/virtualNetworks', parameters('virtualNetworks_ManufacturingVnet_name'))]"
111         ],
112         "properties": {
113             "addressPrefixes": [
114                 "10.30.20.0/24"
115             ],
116             "delegations": [],
117             "privateEndpointNetworkPolicies": "Disabled",
118             "privateLinkServiceNetworkPolicies": "Enabled"
119         }
120     }
121 ]
122 }
```

- **Update Parameters File:**

```
LAB_04-Implement_Virtual_Networking.md {} parameters.json • {} template.json 1
C: > Users > hp > Downloads > ExportedTemplate-az104-rg4 > {} parameters.json > ...
1  {
2      "$schema": "https://schema.management.azure.com/schemas/2015-01-01/deploymentParameters.json#",
3      "contentVersion": "1.0.0.0",
4      "parameters": {
5          "virtualNetworks_ManufacturingVnet_name": {
6              "value": null
7          }
8      }
9  }
10
```

INTRODUCTION TO CLOUD COMPUTING

Lab Task 03 (Implement Virtual Networking)

• Deploy Custom ARM Template:

The screenshot shows the 'Custom deployment' page in the Microsoft Azure portal. The header includes the Azure logo, a search bar, and the user's profile. The main content area has a 'Select a template' tab selected, with sub-tabs for 'Basics' and 'Review + create'. Below the tabs, there's a description of custom deployment and a link to 'Build your own template in the editor'. A section titled 'Common templates' lists options like 'Create a Linux virtual machine', 'Create a Windows virtual machine', 'Create a web app', 'Create a SQL database', and 'Azure landing zone'. At the bottom, the 'Start with a quickstart template or template spec' section shows 'Quickstart template' selected as the 'Template source'.

The screenshot shows the 'Edit template' page in the Microsoft Azure portal. The header is the same as the previous screenshot. The main content area has an 'Edit template' tab selected. On the left, there's a sidebar with 'Parameters (1)', 'Variables (0)', and 'Resources (4)'. The main area displays a JSON ARM template for a virtual network. The template includes parameters for 'virtualNetworks_ManufacturingVnet_name', variables for 'addressSpace', and resources for the virtual network. The 'encryption' property is set to 'false'.

The screenshot shows the 'Review + create' page in the Microsoft Azure portal. The header is the same. The main content area has a 'Customized template' card with '4 resources'. Below this, the 'Project details' section shows the subscription 'Azure for Students' and resource group 'az104-rg4'. The 'Instance details' section shows the region '(Asia Pacific) East Asia' and the virtual network name 'ManufacturingVnet'. At the bottom, there are 'Previous', 'Next', and 'Review + create' buttons.

INTRODUCTION TO CLOUD COMPUTING

Lab Task 03 (Implement Virtual Networking)

- **Verify ManufacturingVnet and Subnets:**

The screenshot shows the Microsoft Azure portal interface. The top navigation bar includes the Microsoft Azure logo, a search bar, and a Copilot button. The breadcrumb trail indicates the path: Home > Microsoft.Template-20251220195610 | Overview > az104-rg4 > ManufacturingVnet. The left sidebar contains a search bar and a list of navigation options: Overview (selected), Activity log, Access control (IAM), Tags, Diagnose and solve problems, Resource visualizer, Settings, Monitoring, Automation, CLI / PS, Tasks, Export template, and Help. The main content area displays the 'Overview' page for 'ManufacturingVnet'. It includes a search bar, a list of actions (Move, Delete, Refresh, Give feedback), and a 'JSON View' button. The 'Essentials' section shows key properties: Resource group (az104-rg4), Location (East Asia), Subscription (Azure for Students), Subscription ID (57a8b5a5-89cd-44d7-aaaf-c65ebd15a43), Address space (10.30.0.0/16), Subnets (3 subnets), DNS servers (Azure provided DNS service), BGP community string (Configure), and Virtual network ID (21f31b26-beef-4e77-a124-72b1ef0d2b33). Below this, the 'Capabilities (5)' section is visible, showing 'DDoS protection' (Not configured), 'Azure Firewall' (Not configured), 'Peerings' (Not configured), and 'Microsoft Defender for Cloud' (Strengthen the security posture of your environment).

The screenshot shows the 'Address space' page for 'ManufacturingVnet'. The breadcrumb trail is: Home > Microsoft.Template-20251220195610 | Overview > az104-rg4 > ManufacturingVnet > Address space. The left sidebar is the same as the previous screenshot. The main content area shows the 'Address space' page with a search bar, '+ Add address space', and a 'Refresh' button. A description states: 'The address space for a virtual network is composed of one or more non-overlapping address ranges that are specified in CIDR notation. IP Address Management (IPAM) is recommended to simplify address management and avoid overlapping address space. When not using IPAM, it is recommended to use an address range that is not globally routable, such as 172.16.0.0/12, or a range defined in RFC 1918 or RFC 6598. Learn more.' Below this, a table shows the address space: '10.30.0.0/16' with an 'Address range' of '10.30.0.0 - 10.30.255.255' and an 'Address count' of '65,536 addresses'. The 'Peered virtual network address space' section shows 'Showing all 0 items' and a table with columns: 'Peering name', 'Peered to', 'Address space', and 'Address range'. There are 'Save' and 'Cancel' buttons at the bottom.

The screenshot shows the 'Subnets' page for 'ManufacturingVnet'. The breadcrumb trail is: Home > Microsoft.Template-20251220195610 | Overview > az104-rg4 > ManufacturingVnet > Subnets. The left sidebar is the same as the previous screenshots. The main content area shows the 'Subnets' page with a search bar, '+ Subnet', 'Refresh', 'Manage users', 'Delete', and 'Export to CSV' buttons. A description states: '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.' Below this, a table lists the subnets: 'default', 'SensorSubnet1', and 'SensorSubnet2'. The table has columns: 'Name', 'IPv4', 'IPv6', 'Available IPs', 'Delegated to', 'Security group', and 'Route table'. The 'default' subnet has an IPv4 range of '10.30.0.0/24' and 251 available IPs. 'SensorSubnet1' has an IPv4 range of '10.30.20.0/24' and 251 available IPs. 'SensorSubnet2' has an IPv4 range of '10.30.21.0/24' and 251 available IPs. There are 'Save' and 'Cancel' buttons at the bottom.

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

• Create Application Security Group (ASG):

Microsoft Azure | Search resources, services, and docs (G+V) | Copilot | bssn2280138@szabist.pk | DEFAULT DIRECTORY (85522801...)

Home > Create an application security group

Validation passed

Basics Tags Review + create

Basics

Subscription	Azure for Students
Resource group	az104-rg4
Location	East Asia
Name	asg-web

Create < Previous Next > Download a template for automation

Microsoft Azure | Search resources, services, and docs (G+V) | Copilot | bssn2280138@szabist.pk | DEFAULT DIRECTORY (85522801...)

Home > CreateApplicationSecurityGroupBladeViewModel | Overview

asg-web Application security group

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

Search

Overview

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

Essentials

Virtual Network

Resource group (move) az104-rg4

Location (move) East Asia

Subscription (move) Azure for Students

Subscription ID 57a8b5a5-89cd-44d7-aaaf-cf5ebdf15a43

Provisioning state Succeeded

Tags (edit) Add tags

JSON View

• Create Network Security Group (NSG):

Microsoft Azure | Search resources, services, and docs (G+V) | Copilot | bssn2280138@szabist.pk | DEFAULT DIRECTORY (85522801...)

Home > Network foundation | Network security groups > Create network security group

Validation passed

Basics Tags Review + create

Basics

Subscription	Azure for Students
Resource group	az104-rg4
Region	East Asia
Name	myNSGSecure

Tags

None

Create < Previous Next > Download a template for automation

Deployment succeeded

Deployment 'CreateNetworkSecurityGroupBladeV2-20251220200604' to resource group 'az104-rg4' was successful.

Go to resource Pin to dashboard

- Associate NSG with Subnet:

Microsoft Azure | Search resources, services, and docs (G+/I)

Home > CreateNetworkSecurityGroupBladeV2-20251220200604 | Overview > myNSGSecure

myNSGSecure | Subnets

Network security group

Search

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Associate

Search subnets

Name	Address range	Virtual network
SharedServicesSubnet	10.20.10.0/24	CoreServicesVnet

Give feedback

Saving subnet

Successfully saved network security group for subnet 'SharedServicesSubnet'.

- Configure Inbound Rule to Allow ASG Traffic:

Microsoft Azure | Search resources, services, and docs (G+/I)

Home > CreateNetworkSecurityGroupBladeV2-20251220200604 | Overview > myNSGSecure

myNSGSecure | Inbound security rules

Network security group

Search

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

Filter by name

Port == all

Protocol == all

Source == all

Destination == all

Priority	Name	Port	Protocol	Source
65000	AllowVnetInBound	Any	Any	VirtualNetwork
65001	AllowAzureLoadBalancerInBo...	Any	Any	AzureLoadBalancer
65500	DenyAllInBound	Any	Any	Any

Add inbound security rule

myNSGSecure

Source

Application security group

Source application security groups

asg-web

No application security groups found

Source port ranges

*

Destination

Any

Service

Custom

Destination port ranges

80,443

Protocol

Any

TCP

UDP

ICMPv4

Add

Cancel

Give feedback

Action

☒ Allow☐ Deny

Priority *

100

Name *

AllowASG

Description

Give feedback

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	AllowAzureLoadBalancerInBo...	Any	Any	AzureLoadBalancer	Any	Allow
<input type="checkbox"/> 65500	DenyAllInBound	Any	Any	Any	Any	Deny

• **Configure Outbound Rule to Deny Internet Access:**

Microsoft Azure

Search resources, services, and docs (G+)

Copilot

bsac2280138@szabist.pk
DEFAULT DIRECTORY (BSAC2280138@szabist.pk)

Home > CreateNetworkSecurityGroupBladeV2-20251220200604 | Overview > myNSGSecure

myNSGSecure | Outbound 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
Locks
Monitoring
Automation
Help

Network security group security rules are evaluated by priority using the combination of source, source port, destination, destination port, and protocol. You can't delete default security rules, but you can override them with rules that have a higher priority. [Learn more](#)

Filter by name

Priority	Name	Port	Protocol	Source
65000	AllowVnetOutBound	Any	Any	VirtualNetwork
65001	AllowInternetOutBound	Any	Any	Any
65500	DenyAllOutBound	Any	Any	Any

Add outbound security rule

myNSGSecure

Source

Any

Source port ranges

*

Destination

Service Tag

Destination service tag

Internet

Service

Custom

Destination port ranges

*

Protocol

☒ Any
☐ TCP
☐ UDP
☐ ICMPv4
☐ ICMPv6

Add Cancel

Give feedback

Action

☐ Allow

☒ Deny

Priority * ⓘ

4096

Name *

DenyInternetOutbound

Microsoft Azure

Search resources, services, and docs (G+)

Copilot

bsac2280138@szabist.pk
DEFAULT DIRECTORY (BSAC2280138@szabist.pk)

Home > CreateNetworkSecurityGroupBladeV2-20251220200604 | Overview > myNSGSecure

myNSGSecure | Outbound 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
Locks
Monitoring
Automation
Help

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](#)

Filter by name

Priority	Name	Port	Protocol	Source	Destination	Action
4096	DenyInternetOutbound	Any	Any	Any	Internet	Deny
65000	AllowVnetOutBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	AllowInternetOutBound	Any	Any	Any	Internet	Allow
65500	DenyAllOutBound	Any	Any	Any	Any	Deny

Task 4: Configure public and private Azure DNS zones.

Public DNS Zone

- **Create Public DNS Zone:**

Home > DNS zones > Create a DNS Zone

Validation passed

Basics DNS Zone Editor Tags Review + Create

View automation template

Basics

Subscription: Azure for Students
Resource group: az104-rg4
Resource group location: East Asia
Name: contoso.azure104

DNS Zone Record Set(s)

Number of record sets: 0 record set(s)

Create < Previous Next > Give feedback

- **Add A Record (www):**

Home > contoso.azure104 | Recordsets

contoso.azure104 | Recordsets

Search

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

Recordsets

Record set is a collection of records in a zone that have the same name and are the same type. You can search for record sets 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

Fetch 2 record set(s).

Name	Type	TTL	Value
@	NS	172800	ns1-05.azure-dns.com, ns2-05.azure-dns.net, ns3-05.azure-dns.org, ns4-05.azure-dns.info
@	SOA	3600	Email: azure-dns-hostmaster.microsoft.com, Host: ns1-05.azure-dns.com, Refresh: 3600, Retry: 300, Expire: 2419200, Minimum TTL: 300, Serial number: 1

Add record set

contoso.azure104

Name: www

Type: A - IPv4 Address records

Alias record set: No

TTL: 1

TTL unit: Hours

IP address: 10.1.1.4

Add Cancel Give feedback

Home > contoso.azure104 | Recordsets

contoso.azure104 | Recordsets

Search

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

Recordsets

Record set is a collection of records in a zone that have the same name and are the same type. You can search for record sets 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

Fetch 3 record set(s).

Name	Type	TTL	Value	Alias resource type	Alias target
@	NS	172800	ns1-05.azure-dns.com, ns2-05.azure-dns.net, ns3-05.azure-dns.org, ns4-05.azure-dns.info		
@	SOA	3600	Email: azure-dns-hostmaster.microsoft.com, Host: ns1-05.azure-dns.com, Refresh: 3600, Retry: 300, Expire: 2419200, Minimum TTL: 300, Serial number: 1		
www	A	3600	10.1.1.4		

INTRODUCTION TO CLOUD COMPUTING

Lab Task 03 (Implement Virtual Networking)

- **Verify DNS Resolution Using nslookup:**

```
PS /home/ariha> nslookup www.contoso.az104 ns1-05.azure-dns.com
Server:      ns1-05.azure-dns.com
Address:     13.107.236.5#53

Name:   www.contoso.az104
Address: 10.1.1.4
```

Private DNS Zone

- **Create Private DNS Zone:**

Microsoft Azure

Home > 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 for Students
Resource group: az104-rg4
Resource group location: East Asia
Name: private.contoso.az104

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)

Create < Previous Next > Give feedback

- **Link Private DNS Zone to Virtual Network:**

Microsoft Azure

Home > private.contoso.az104_1766245871614 | Overview > private.contoso.az104

private.contoso.az104 | 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 Intern
manufacturing-link	Completed	ManufacturingVnet	Disabled	Disabled

Creating virtual network link
Successfully created virtual network link 'manufacturing-link'.

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

INTRODUCTION TO CLOUD COMPUTING

Lab Task 03 (Implement Virtual Networking)

- **Add Private DNS A Record:**

The screenshot shows the Microsoft Azure portal interface. The main pane displays the 'private.contoso.az104' Private DNS zone. A sidebar on the left contains navigation links: Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Resource visualizer, Settings, DNS Management, and Recordsets. The 'Recordsets' link is selected. The main content area shows a table with one record set: 'sensorvm' of type 'A - IPv4 Address records' with a TTL of 3600. An 'Add record set' dialog is open on the right. The dialog has fields for Name (sensorvm), Type (A - IPv4 Address records), TTL (1), and TTL unit (Hours). The IP address field is set to 10.1.1.4. The dialog also has an 'Add' button and a 'Cancel' button.

Name	Type	TTL	Value
sensorvm	A - IPv4 Address records	3600	10.1.1.4

The screenshot shows the Microsoft Azure portal interface. The main pane displays the 'private.contoso.az104' Private DNS zone. A sidebar on the left contains navigation links: Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Resource visualizer, Settings, DNS Management, and Recordsets. The 'Recordsets' link is selected. The main content area shows a table with two record sets: 'sensorvm' of type 'A' with a TTL of 3600, and 'sensorvm' of type 'SOA' with a TTL of 3600. The 'Add record set' dialog is open on the right. The dialog has fields for Name (sensorvm), Type (A - IPv4 Address records), TTL (1), and TTL unit (Hours). The IP address field is set to 10.1.1.4. The dialog also has an 'Add' button and a 'Cancel' button.

Name	Type	TTL	Value	Auto registered
sensorvm	A	3600	10.1.1.4	False
sensorvm	SOA	3600	Email: azureprivatedns-host:microsoft.com Host: azureprivatedns.net Refresh: 3600 Retry: 300 Expire: 2419200 Minimum TTL: 10 Serial number: 1	False