

Lab 04: Implement Virtual Networking

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

The screenshot shows the 'Create virtual network' wizard in the Microsoft Azure portal, specifically the 'IP addresses' tab. The wizard is titled 'Create virtual network' and has tabs for 'Basics', 'Security', 'IP addresses', 'Tags', and 'Review + create'. The 'IP addresses' tab is active, showing a list of IP address spaces. The first space is '10.20.0.0/16' with a 'Delete' button. Below this, a table lists the subnets:

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)	-
DatabaseSubnet	10.20.20.0 - 10.20.20.255	/24 (256 addresses)	-



At the bottom, there is a button to 'Add IPv4 address space'.



The screenshot shows the 'CoreServicesVnet' overview page in the Microsoft Azure portal. The page title is 'CoreServicesVnet' with the subtitle 'Virtual network'. The left sidebar contains a navigation menu with options: 'Overview' (selected), 'Activity log', 'Access control (IAM)', 'Tags', 'Diagnose and solve problems', 'Resource visualizer', 'Settings', 'Monitoring', 'Automation', and 'Help'. The main content area displays the 'Essentials' section, which includes the following information:

- Resource group: [az104-rg4](#) (move)
- Location: [East US](#) (move)
- Subscription: [Azure for Students](#) (move)
- Subscription ID: 16fcb738-3661-4bf0-8442-5f3f16e61ad0
- Address space: [10.20.0.0/16](#)
- DNS servers: [Azure provided DNS service](#)
- BGP community string: [Configure](#)
- Virtual network ID: 9637a93a-6b65-4355-88eb-fdcac7e46df2
- Tags: [edit](#)

At the bottom, there is a button to 'Add address space'.

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

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Home >

Edit parameters

 ...  Load file  Download

```
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 }
```

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Custom deployment

 ... 

Deploy from a custom template

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 the offering(s), including applicable taxes, with the same billing frequency as my Azure subscription, until I discontinue use of the offering(s); 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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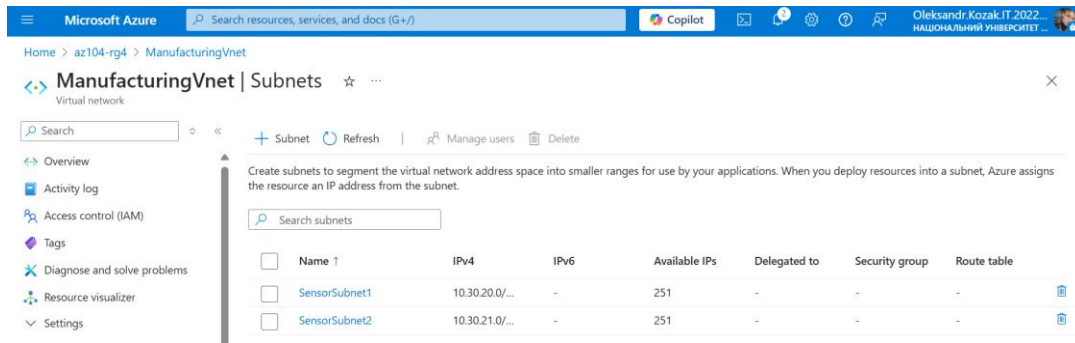
Basics

Subscription	Azure for Students
Resource group	az104-rg4
Region	East US
Vnet_name	ManufacturingVnet

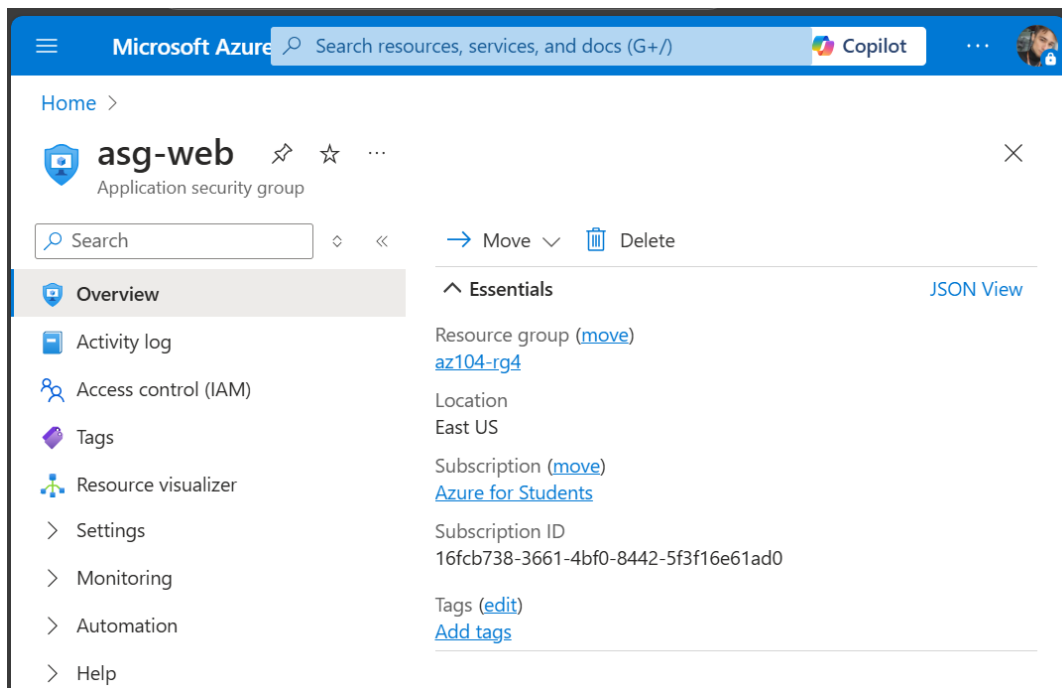
Previous

Next

Create



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



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Home >

myNSGSecure

Network security group

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Move

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Essentials

JSON View

Resource group (move)
az104-rg4

Location
East US

Subscription (move)
Azure for Students

Subscription ID
16fcb738-3661-4bf0-8442-5f3f16e61ad0

Custom security rules
0 inbound, 0 outbound

Associated with
0 subnets, 0 network interfaces

Tags (edit)

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Home > myNSGSecure

myNSGSecure | Subnets

Network security group

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Associate

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Resource visualizer

Search subnets

Name	Address range	Virtual network
SharedServicesSubnet	10.20.10.0/24	CoreServicesVnet

Give feedback

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Home > myNSGSecure

myNSGSecure | Inbound security rules

Network security group

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Hide default rules

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Give feedback

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Diagnose and solve problems

Resource visualizer

Filter by name

Port == all

Protocol == all

Source == all

Destination == all

Action == all

Priority	Name	Port	Protocol	Source	Destination	Action
100	AllowASG	80,443	TCP	asg-web	Any	Allow

Created security rule
Successfully created security rule 'AllowASG'.

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Home > myNSGSecure

myNSGSecure | Outbound security rules
Network security group

Search Add Hide default rules Refresh Delete

Overview
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Inbound security rules
Outbound security rules
Network interfaces

Created security rule
Successfully created security rule 'DenyAnyCustom8080Outbound'.

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

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

Priority	Name	Port
4096	DenyAnyCustom8080...	8080

Task 4: Configure public and private Azure DNS zones.

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Home >

contoso0.com DNS zone

Search Child zone Record sets DNSSEC Import Export Move Refresh Delete Give feedback

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Essentials

Resource group (move)	Max number of record sets
az104-rg4	10000
Location	Name server 1
Global	ns1-09.azure-dns.com.
Subscription (move)	Name server 2
Azure for Students	ns2-09.azure-dns.net.
Subscription ID	Name server 3
16fcb738-3661-4bf0-8442-5f3f16e61ad0	ns3-09.azure-dns.org.
Recordsets	Name server 4
2	ns4-09.azure-dns.info.
Tags (edit)	
...	

JSON View

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Home > contoso0.com

contoso0.com | Recordsets

DNS zone

Search

+ Add Refresh Delete Give feedback

A 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

Fetches 3 record set(s).

Name	Type	TTL	Value	Alias resource type	Alias target
@	NS	172800	ns1-09.azure-dns.com. ns2-09.azure-dns.net. ns3-09.azure-dns.org. ns4-09.azure-dns.info.		
@	SOA	3600	Email: azuredns-hostmaster.microsoft.com Host: ns1-09.azure-dns.com. Refresh: 3600 Retry: 300 Expire: 2419200 Minimum TTL: 300 Serial number: 1		
www	A	3600	10.1.1.4		

Create record set
Successfully created record set 'www'

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```
PS C:\Users\Oleksandr> nslookup www.contoso0.com ns1-09.azure-dns.com
Server: UnKnown
Address: 13.107.236.9

Name: www.contoso0.com
Address: 10.1.1.4

PS C:\Users\Oleksandr>
```

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Home > private.contoso.com_1742938566724 | Overview >

private.contoso.com

Private DNS zone

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Essentials

JSON View

Resource group (move)

az104-rg4

Location

Global

Subscription (move)

Azure for Students

Subscription ID

16fcb738-3661-4bf0-8442-5f3f16e61ad0

Recordsets

1

Virtual Network Links

0

Virtual Network Links With Registration

0

Tags (edit)

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private.contoso.com | Recordsets

Private DNS zone

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Virtual Network Links

+ AddRefreshDeleteGive feedback

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

Fetches 2 record set(s).

0 record sets selected

Name	Type	TTL
sensorvm	A	3600
@	SOA	3600

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private.contoso.com | Virtual Network Links

Private DNS zone

Search

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Search virtual network links

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Settings

Fetches 1 virtual Network link(s).

0 Virtual Network links selected

Link Name	Link Status	Virtual Network
manufacturing-link	Completed	ManufacturingVnet

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Home > Resource groups >

az104-rg4

Resource group

Search

+ Create Manage view Delete resource group Refresh Export to CSV Open query Assign tags Move

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Filter for any field...

Type equals all

Location equals all

Add filter

Showing 1 to 6 of 6 records. Show hidden types

No grouping List view

Name	Type	Location
asg-web	Application security group	East US
contoso0.com	DNS zone	Global
CoreServicesVnet	Virtual network	East US
ManufacturingVnet	Virtual network	East US
myNSGSecure	Network security group	East US
private.contoso.com	Private DNS zone	Global