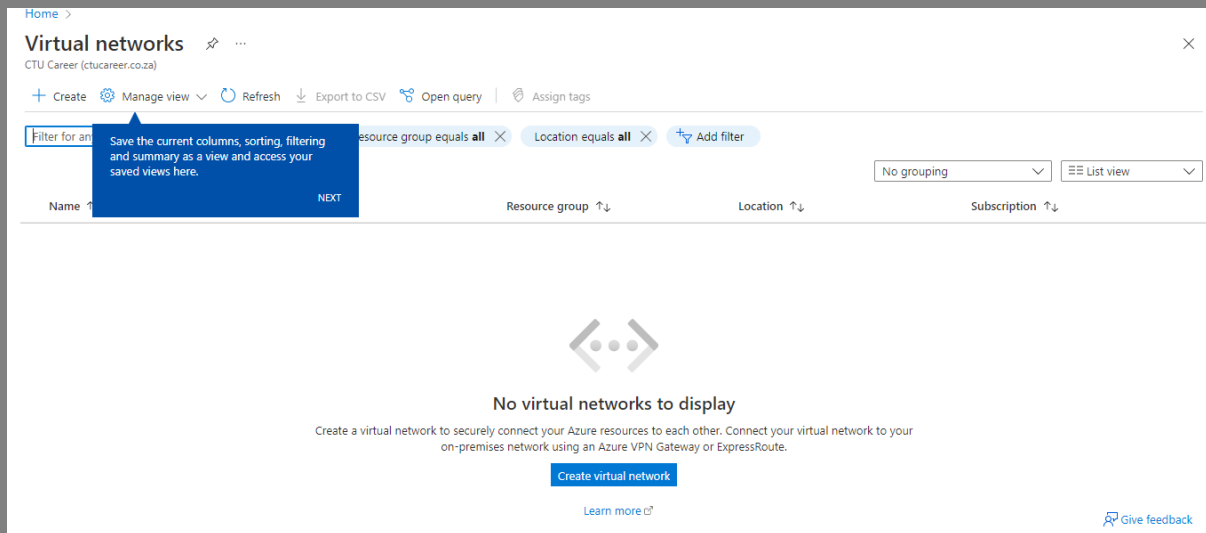


# Unit 4 Configure an ExpressRoute Gateway

## Task 1: Create the VNet and gateway subnet

1. On any Azure Portal page, in Search resources, services and docs, enter virtual network, and then select Virtual networks from the results



2. On the Virtual networks page, select +Create.

### 3. On the Create virtual networks pane, on the Basics tab, use the information in the following table to create the VNet:

Home > Virtual networks >

## Create virtual network

Basics IP Addresses Security 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 about virtual network](#)

**Project details**

Subscription \* ⓘ Azure for Students

Resource group \* ⓘ (New) ContosoResourceGroup  
[Create new](#)

**Instance details**

Name \* CoreServicesVNet ✓

Region \* East US

[Review + create](#) < Previous Next : IP Addresses > [Download a template for automation](#)

### 4. Select Next : IP addresses.

Home > Virtual networks >

## Create virtual network

Basics IP Addresses Security Tags Review + create

The virtual network's address space, specified as one or more address prefixes in CIDR notation (e.g., 192.168.1.0/24).

**IPv4 address space**

10.0.0.0/16 10.0.0.0 - 10.0.255.255 (65536 addresses) [Add](#)

☐ Add IPv6 address space ⓘ

The subnet's address range in CIDR notation (e.g., 192.168.1.0/24). It must be contained by the address space of the virtual network.

+ Add subnet [Remove subnet](#)

Subnet name	Subnet address range	NAT gateway
<input type="checkbox"/> default	10.0.0.0/24	-

**i** Use of a NAT gateway is recommended for outbound internet access from a subnet. You can deploy a NAT gateway and assign it to

[Review + create](#) < Previous Next : Security > [Download a template for automation](#)

5. On the IP Addresses tab, in IPv4 address space, enter 10.20.0.0/16, and then select + Add subnet.

Home > Virtual networks >

Create virtual network ...

The virtual network's address space, specified as one or more address prefixes in CIDR notation (e.g. 192.168.1.0/24).

IPv4 address space

10.0.0.0/1610.0.0.0 - 10.0.255.255 (65536 addresses)

10.20.0.0/16✓

☐ Add IPv6 address space ⓘ

The subnet's address range in CIDR notation (e.g. 192.168.1.0/24). It must be contained by the address space of the virtual network.

+ Add subnet

Remove subnet

<input type="checkbox"/> Subnet name	Subnet address range	NAT gateway
<input type="checkbox"/> default	10.0.0.0/24	-

ⓘ Use of a NAT gateway is recommended for outbound internet access from a subnet. You can deploy a NAT gateway and assign it to a subnet after you create the virtual network. [Learn more](#)

Review + create

< Previous

Next : Security >

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Add subnet

Subnet name \*

Subnet address range \* ⓘ

e.g. 10.0.0.0/24

(0 Addresses)

NAT GATEWAY

Simplify connectivity to the internet using a network address translation gateway. Outbound connectivity is possible without a load balancer or public IP addresses attached to your virtual machines. [Learn more](#)

NAT gateway

None

SERVICE ENDPOINTS

Create service endpoint policies to allow traffic to specific azure resources from your virtual network over service endpoints. [Learn more](#)

Add

Cancel

6. In the Add subnet pane, use the information in the following table to create the subnet:

**Add subnet** ✕

Subnet name \*  
GatewaySubnet ✓

Subnet address range \* ⓘ  
10.20.0.0/27 ✓  
10.20.0.0 - 10.20.0.31 (27 + 5 Azure reserved addresses)

**NAT GATEWAY**

Simplify connectivity to the internet using a network address translation gateway. Outbound connectivity is possible without a load balancer or public IP addresses attached to your virtual machines. [Learn more](#)

NAT gateway  
None ▾

**SERVICE ENDPOINTS**

Create service endpoint policies to allow traffic to specific azure resources from your virtual network over service endpoints. [Learn more](#)

**Add** Cancel

## 7. And then select Add.

[+ Add subnet](#) [Remove subnet](#)

<input type="checkbox"/> Subnet name	Subnet address range	NAT gateway
<input type="checkbox"/> default	10.0.0.0/24	-
<input type="checkbox"/> GatewaySubnet	10.20.0.0/27	-

**i** Use of a NAT gateway is recommended for outbound internet access from a subnet. You can deploy a NAT gateway and assign it to a subnet after you create the virtual network. [Learn more](#)

[Review + create](#) [< Previous](#) [Next : Security >](#) [Download a template for automation](#)

## 8. On the Create virtual network page, select Review + Create.

Home > Virtual networks >

Create virtual network

Validation passed

Basics IP Addresses Security Tags Review + create

**Basics**  
Subscription Azure for Students  
Resource group (new) ContosoResourceGroup  
Name CoreServicesVNet  
Region East US

**IP addresses**  
Address space 10.0.0.0/16,10.20.0.0/16  
Subnet default (10.0.0.0/24),GatewaySubnet (10.20.0.0/27)

**Tags**  
None

[Create](#) [< Previous](#) [Next >](#) [Download a template for automation](#)

## 9. Confirm that the VNet passes the validation and then select Create.

Home > Microsoft.VirtualNetwork-20220818134021 | Overview

Deployment

Search (Ctrl+/) << Delete Cancel Redeploy Download Refresh

Overview Inputs Outputs Template

We'd love your feedback! →

✓ Your deployment is complete

Deployment name: Microsoft.VirtualNetwork-20220818... Start time: 8/18/2022, 1:57:14 PM  
Subscription: Azure for Students Correlation ID: ed08185e-d4b6-4a90-a981-33774a325eb4  
Resource group: ContosoResourceGroup

Deployment details  
Next steps

Go to resource

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## Task 2: Create the virtual network gateway

1. On any Azure Portal page, in Search resources, services and docs (G+//), enter virtual network gateway, and then select Virtual network gateways from the results.

Home > Virtual network gateways

CTU Career (ctucareer.co.za)

Create Manage view Refresh Export to CSV Open query Assign tags

Filter for an Save the current columns, sorting, filtering and summary as a view and access your saved views here. resource group equals all Location equals all Add filter

No grouping List view

Name	Virtual ...	Gateway...	Resource group	Location	Subscription
------	-------------	------------	----------------	----------	--------------

No virtual network gateways to display

Azure VPN Gateway connects your on-premises networks to Azure through Site-to-Site VPNs in a similar way that you set up and connect to a remote branch office. The connectivity is secure and uses the industry-standard protocols Internet Protocol Security (IPsec) and Internet Key Exchange (IKE).

Create virtual network gateway

Learn more about Virtual network gateway

Give feedback

## 2. On the Virtual network gateways page, select +Create

Home > Virtual network gateways >

### Create virtual network gateway

Basics Tags Review + create

Azure has provided a planning and design guide to help you configure the various VPN gateway options. [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 ⓘ Select a virtual network to get resource group

**Instance details**

Name \*

Region \* West Europe

Gateway type \* ⓘ ☒ VPN ☐ ExpressRoute

VPN type \* ⓘ ☒ Route-based ☐ Policy-based

[Review + create](#) [Previous](#) [Next : Tags >](#) [Download a template for automation](#)

## 3. On the Create virtual network gateway page, use the information in the following table to create the gateway:

Home > Virtual network gateways >

### Create virtual network gateway

Basics Tags Review + create

Azure has provided a planning and design guide to help you configure the various VPN gateway options. [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 ⓘ ContosoResourceGroup (derived from virtual network's resource group)

**Instance details**

Name \* CoreServicesVnetGateway ✓

Region \* East US

Gateway type \* ⓘ ☐ VPN ☒ ExpressRoute

SKU \* ⓘ Standard

[Review + create](#) [Previous](#) [Next : Tags >](#) [Download a template for automation](#)

#### 4. Select Review + Create.

Home > Virtual network gateways >

### Create virtual network gateway

Validation passed

Basics Tags **Review + create**

**Basics**

Subscription	Azure for Students
Resource group	ContosoResourceGroup
Name	CoreServicesVnetGateway
Region	East US
SKU	Standard
Virtual network	CoreServicesVNet
Subnet	GatewaySubnet (10.20.0.0/27)
Gateway type	ExpressRoute

**Tags**

None

[Create](#) [Previous](#) [Next](#) [Download a template for automation](#)

#### 5. Confirm that the Gateway configuration passes validation and then select Create.

Home >

### Microsoft.VirtualNetworkGateway-20220818140206 | Overview

Deployment

Search (Ctrl+/) Delete Cancel Redeploy Download Refresh

We'd love your feedback! →

**✓ Your deployment is complete**

Deployment name: Microsoft.VirtualNetworkGateway-2022... Start time: 8/18/2022, 2:11:31 PM  
Subscription: [Azure for Students](#) Correlation ID: f49c1088-837d-41a7-a02c-72b443cc57  
Resource group: [ContosoResourceGroup](#)

Deployment details

Next steps

[Go to resource](#)

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## 6. When the deployment is complete, select Go to Resource

The screenshot displays the Azure portal interface for the resource **CoreServicesVnetGateway** (Virtual network gateway). The breadcrumb navigation at the top shows the path: Home > Microsoft.VirtualNetworkGateway-20220818140206 | Overview >. Below the breadcrumb, the resource name **CoreServicesVnetGateway** is shown with a search icon, a star icon, and a menu icon. A search bar with the placeholder text "Search (Ctrl+/)" and a refresh button are located below the resource name. The left sidebar contains a navigation menu with the following sections: Overview (selected), Activity log, Access control (IAM), Tags, Diagnose and solve problems, Settings (Configuration, Connections, Properties, Locks), and Monitoring (Logs, Alerts, Metrics). The main content area is titled **Essentials** and displays the following properties:

Resource group (move)	: <a href="#">ContosoResourceGroup</a>	SKU	: Standard
Location	: East US	Gateway type	: ExpressRoute
Subscription (move)	: <a href="#">Azure for Students</a>	Virtual network	: <a href="#">CoreServicesVNet</a>
Subscription ID	: d49079e0-b13c-4413-8b03-36b4ad43ffd0	Public IP address	: <a href="#">20.121.195.92 (CoreServicesVnetGateway-IP)</a>
Tags (edit)	: <a href="#">Click here to add tags</a>		

A **JSON View** link is visible in the top right corner of the Essentials section.