

Create the Virtual Network and Virtual Network gateway 1

Create our virtual networks in two different regions according the instructions files.

1. Log in to the Azure portal at <https://portal.azure.com>.

Step 1 – Create Resource Group for VNET-1

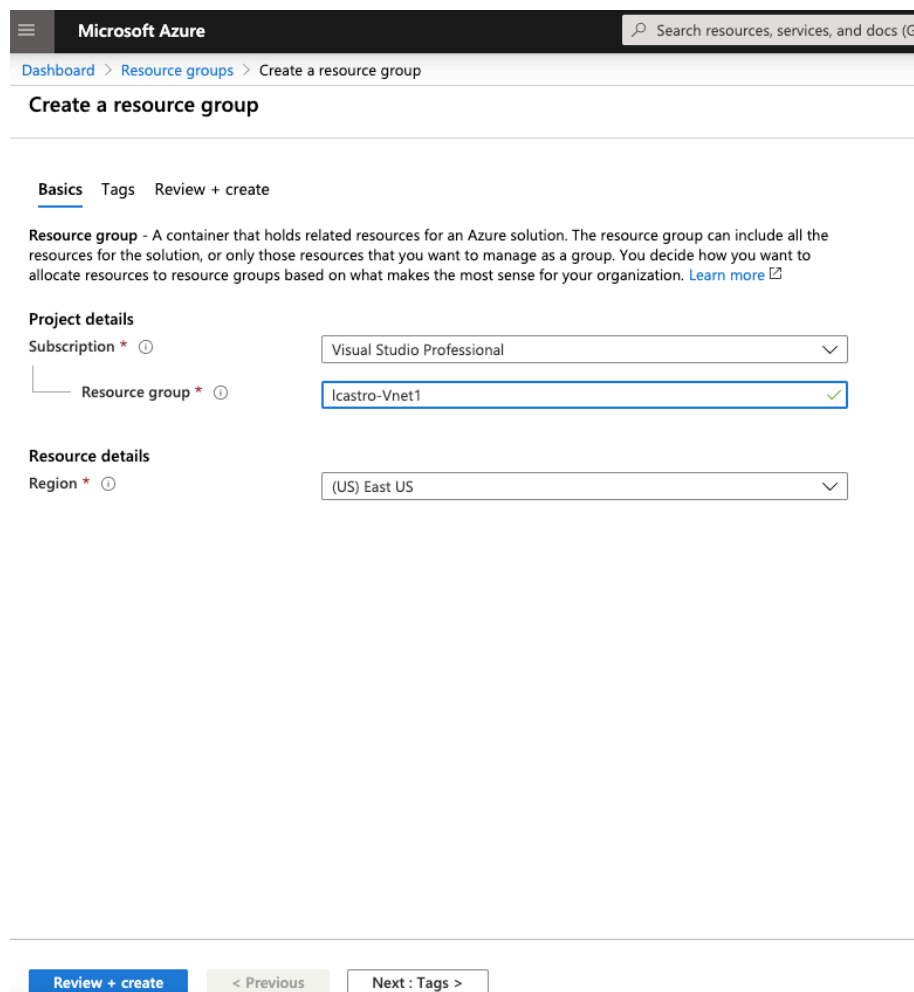
Select the **Resource Groups** menu item (which will open the Resource Groups blade) and then select **Add**.

Create a new resource group in the region for VNET1

- username-VNET1
- Eg: lcastro-VNET1

Add the defined Region for VNET1

Click the **Create** button.



Microsoft Azure

Search resources, services, and docs (G)

Dashboard > Resource groups > Create a resource group

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](#)

Project details

Subscription * ⓘ Visual Studio Professional

Resource group * ⓘ lcastro-Vnet1 ✓

Resource details

Region * ⓘ (US) East US

Review + create < Previous Next : Tags >

Step 2 – Create Resource Group for VNET-2

Select the **Resource Groups** menu item (which will open the Resource Groups blade) and then select **Add**.

Create a new resource group in the region for VNET1

- username-VNET2
- Eg: lcastro-VNET2

Add the defined Region for VNET2

Click the **Create** button.

Microsoft Azure

Search resources, services, and docs

[Dashboard](#) > [Resource groups](#) > Create a resource group

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](#)

Project details

Subscription * ⓘ

Visual Studio Professional

Resource group * ⓘ

lcastro-VNET2

Resource details

Region * ⓘ

(US) West US 2

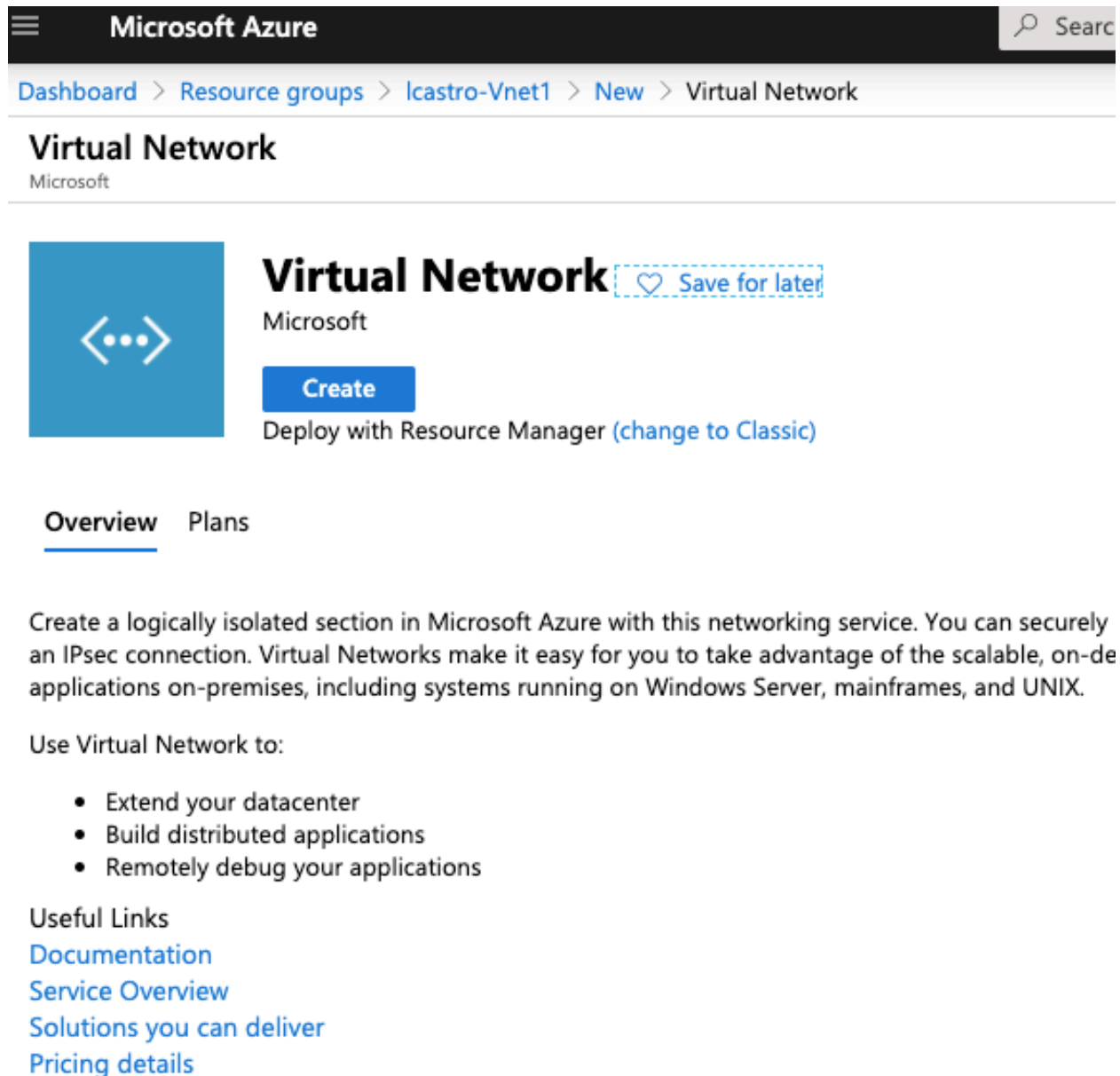
Review + create

< Previous

Next : Tags >

Step 3 - Create Virtual Network VNET-1

1. Go back to the Resource Groups blade and pick **VNET1**. This will open up the resource group blade.
2. Create a new virtual network by selecting **Create**



The screenshot shows the Microsoft Azure portal interface. At the top, the navigation bar includes the Microsoft Azure logo and a search bar. Below the navigation bar, the breadcrumb trail reads: Dashboard > Resource groups > lcastro-Vnet1 > New > Virtual Network. The main heading is "Virtual Network" with the Microsoft logo underneath. To the left of the heading is a blue square icon with a white double arrow and three dots. To the right of the heading is a "Save for later" button with a heart icon. Below the heading is a blue "Create" button. Underneath the "Create" button is the text "Deploy with Resource Manager" followed by a link "(change to Classic)". Below this section are two tabs: "Overview" (which is selected and underlined) and "Plans". The "Overview" tab contains a paragraph: "Create a logically isolated section in Microsoft Azure with this networking service. You can securely an IPsec connection. Virtual Networks make it easy for you to take advantage of the scalable, on-de applications on-premises, including systems running on Windows Server, mainframes, and UNIX." Below this paragraph is the text "Use Virtual Network to:" followed by a bulleted list: "Extend your datacenter", "Build distributed applications", and "Remotely debug your applications". At the bottom of the "Overview" tab is a section titled "Useful Links" with four links: "Documentation", "Service Overview", "Solutions you can deliver", and "Pricing details".

3. Select the Resource Group create for VNET1 then name the virtual network **VNET1**.
4. For the address range, enter the IP **10.1.0.0/16**, with a subnet name of **AppSubnet**. The subnet IP address should be **10.1.1.0/24**.

Microsoft Azure

Search resources, services, and docs (G)

[Dashboard](#) > [Resource groups](#) > [Icastro-Vnet1](#) > [New](#) > [Virtual Network](#) > [Create virtual network](#)

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 *

Visual Studio Professional

Resource group *

Icastro-Vnet1

[Create new](#)

Instance details

Name *

VNET1

Region *

(US) East US

[Dashboard](#) > [Resource groups](#) > [Icastro-Vnet1](#) > [New](#) > [Virtual Network](#) > [Create virtual network](#)

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

10.1.0.0/16

✓

✕

☐ 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

Subnet name	Subnet address range
<input type="checkbox"/> AppSubnet	10.1.1.0/24

Review + create

< Previous

Next : Security >

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Step 4 - Virtual Gateway Subnet VNET1

Once the virtual network has been created, create a new subnet that will be used as the gateway.

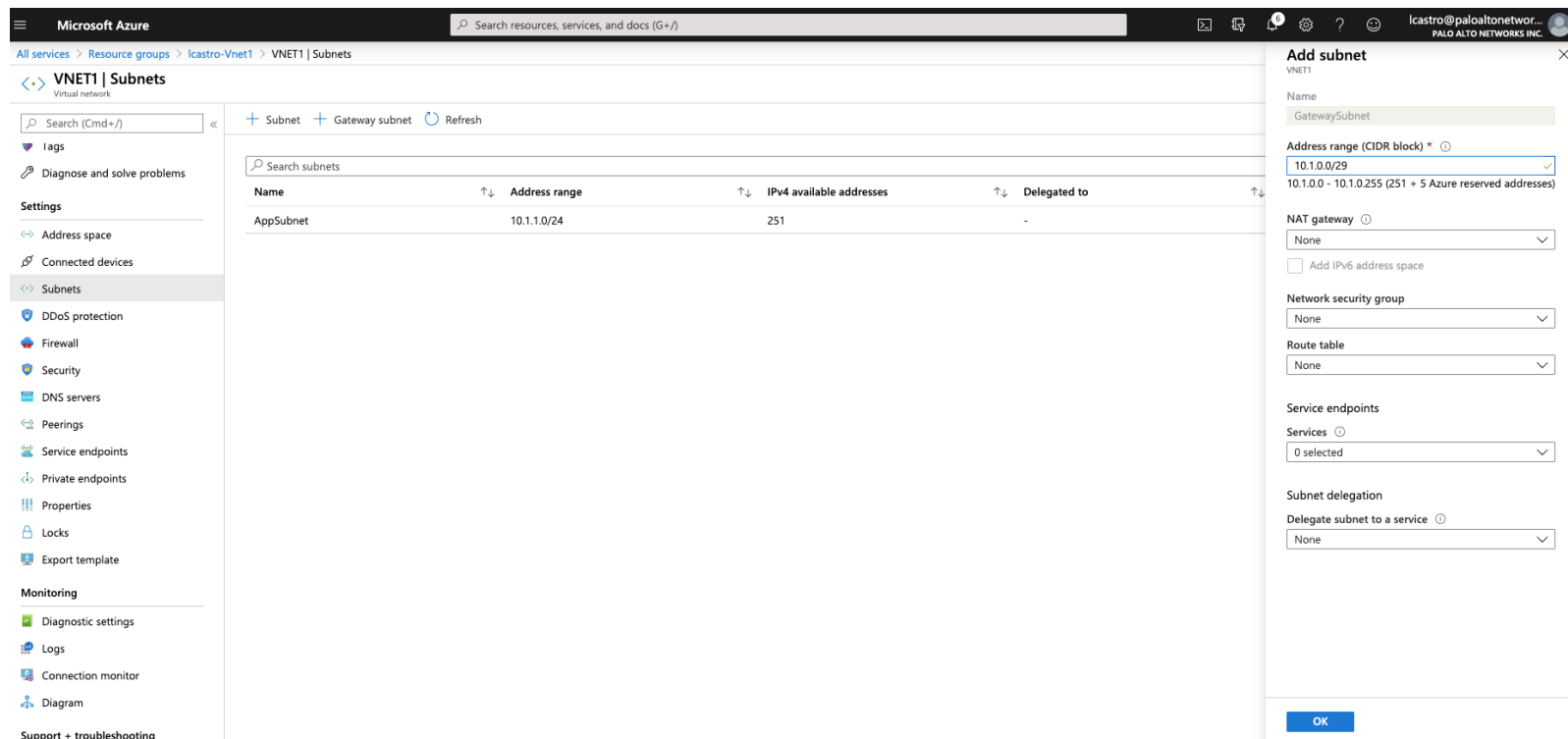
We need to add a 'gateway subnet'. When a virtual network gateway is created, Azure will create virtual machines that will act as a load balanced public IP gateway for another network to connect to.

The subnet MUST be named **GatewaySubnet** and the CIDR block MUST be **/29**. Notice here that we are starting with the IP addresses that are left within the virtual networks address range. Click the **OK** button. Once the new subnet has been created, go back to the rgEast resource group blade.

Go to VNET1>Subnets>Add Gateway Subnet

Address Range: 10.1.0.0/29

Click Ok



The screenshot shows the Microsoft Azure portal interface. The main pane displays the 'VNET1 | Subnets' view, showing a table with one subnet, 'AppSubnet', with an address range of '10.1.0.0/24' and 251 IPv4 available addresses. The right-hand pane shows the 'Add subnet' dialog for VNET1. The dialog is configured with the following settings:

- Name:** GatewaySubnet
- Address range (CIDR block):** 10.1.0.0/29 (10.1.0.0 - 10.1.0.255 (251 + 5 Azure reserved addresses))
- NAT gateway:** None
- Add IPv6 address space:** ☐
- Network security group:** None
- Route table:** None
- Service endpoints:** 0 selected
- Subnet delegation:** Delegate subnet to a service (None)

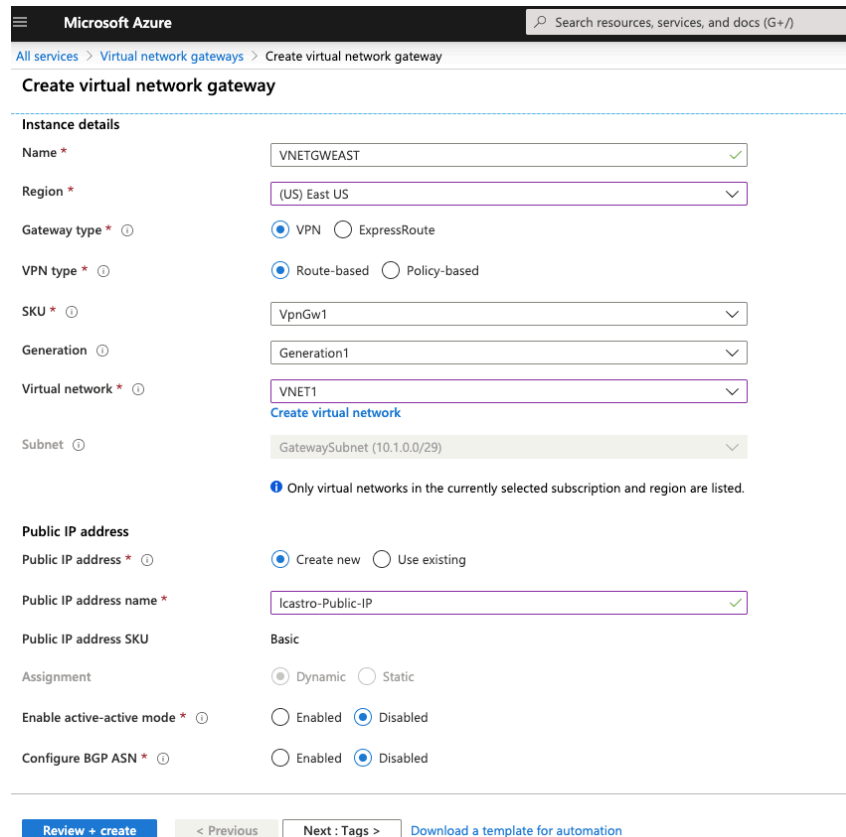
The 'OK' button at the bottom right of the dialog is highlighted in blue.

Step 4 - Virtual Network Gateway VNET1

In order for our virtual network to connect to another network (virtual or otherwise), it needs to have a virtual network gateway. This gateway represents a public IP address that that can be connected to.

Click the Add button and then type in *virtual network gateway* into the Everything blade. Then select the **Virtual Network gateway** list item. Click the **Create** button.

- **Name:**
- VNETGW<Region VNET1>
- Eg: VNETGWEAST
- Choose Region for **VNET1**
- Click on the Virtual Network link and choose **VNET1**
- Public IP address
- <username>-Public-IP
- Eg: lcastro-Public-IP
- Choose **Route-based** for the VPN type
- Click **Review and Create**



Microsoft Azure

Search resources, services, and docs (G+)

All services > Virtual network gateways > Create virtual network gateway

Create virtual network gateway

Instance details

Name * VNETGWEAST ✓

Region * (US) East US ✓

Gateway type * ☒ VPN ☐ ExpressRoute

VPN type * ☒ Route-based ☐ Policy-based

SKU * VpnGw1 ✓

Generation Generation1 ✓

Virtual network * VNET1 ✓
[Create virtual network](#)

Subnet GatewaySubnet (10.1.0.0/29) ✓

Only virtual networks in the currently selected subscription and region are listed.

Public IP address

Public IP address * ☒ Create new ☐ Use existing

Public IP address name * lcastro-Public-IP ✓

Public IP address SKU Basic

Assignment ☒ Dynamic ☐ Static

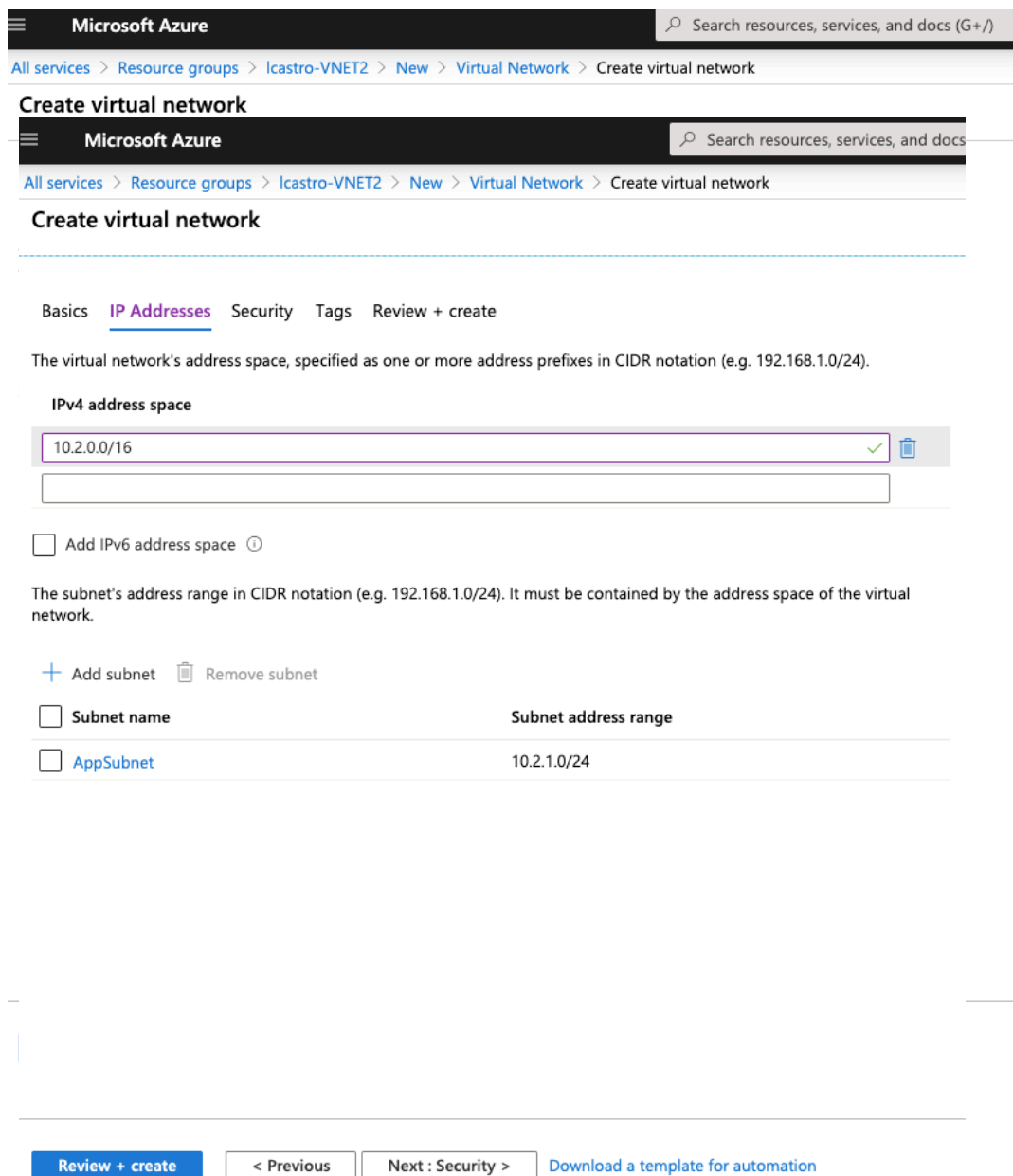
Enable active-active mode * ☐ Enabled ☒ Disabled

Configure BGP ASN * ☐ Enabled ☒ Disabled

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Step 5 – Create Virtual Network VNET-2

1. Go back to the Resource Groups blade and pick **VNET2**. This will open up the resource group blade.
2. Create a new virtual network by selecting **Create**
3. Select the Resource Group create for VNET2 then name the virtual network **VNET**.
4. For the address range, enter the IP **10.2.0.0/16**, with a subnet name of **AppSubnet**. The subnet IP address should be **10.2.1.0/24**.



Microsoft Azure

Search resources, services, and docs (G+)

All services > Resource groups > lcastro-VNET2 > New > Virtual Network > Create virtual network

Create virtual network

Microsoft Azure

Search resources, services, and docs

All services > Resource groups > lcastro-VNET2 > New > Virtual Network > Create virtual network

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

10.2.0.0/16

☐ 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

Subnet name	Subnet address range
AppSubnet	10.2.1.0/24

Review + create < Previous Next : Security > Download a template for automation

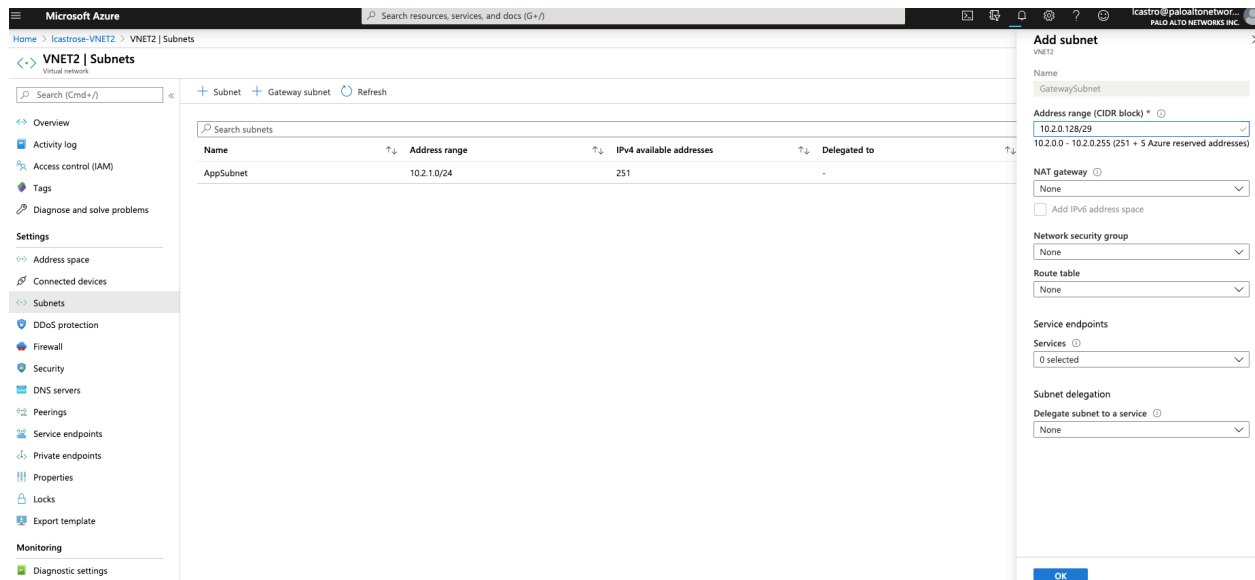
Step 6 – Create Virtual Gateway Subnet VNET-2

Once the virtual network has been created, create a new subnet that will be used as the gateway.

Go to VNET2>Subnets>Add Gateway Subnet

Address Range: 10.2.0.0/29

Click Ok



The screenshot shows the Microsoft Azure portal interface for configuring a new subnet. The left sidebar displays the navigation menu with 'Subnets' selected. The main area shows the 'Add subnet' configuration for VNET2. The 'Address range (CIDR block)' is set to 10.2.0.0/29. The 'NAT gateway' is set to None. The 'Network security group' is set to None. The 'Route table' is set to None. The 'Service endpoints' are set to 0 selected. The 'Subnet delegation' is set to None. The 'OK' button is visible at the bottom right.

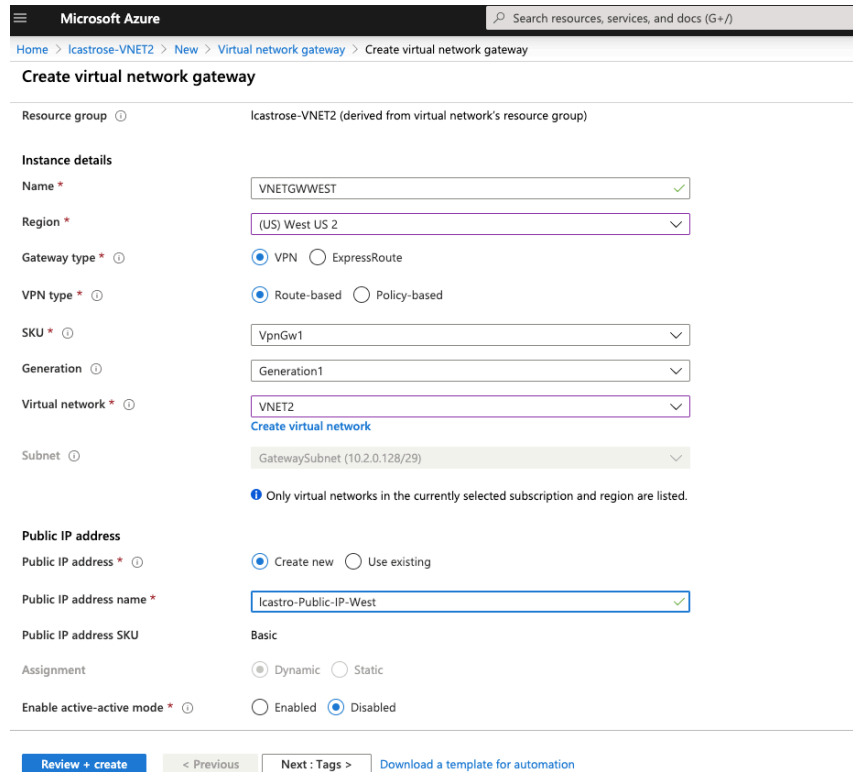
Name	Address range	IPv4 available addresses	Delegated to
AppSubnet	10.2.1.0/24	251	-

Step 7 Virtual Network Gateway

In order for our virtual network to connect to another network (virtual or otherwise), it needs to have a virtual network gateway. This gateway represents a public IP address that that can be connected to.

Click the Add button and then type in *virtual network gateway* into the Everything blade. Then select the **Virtual Network gateway** list item. Click the **Create** button.

- **Name:**
- VNETGW<Region VNET2>
 - Eg: VNETGWWEST
- Choose Region for **VNET2**
- Click on the Virtual Network link and choose **VNET2**
- Public IP address
 - <username>-Public-IP
 - Eg: lcastro-Public-IP-West
- Choose **Route-based** for the VPN type
- Click **Review and Create**



Microsoft Azure

Home > lcastro-VNET2 > New > Virtual network gateway > Create virtual network gateway

Create virtual network gateway

Resource group ⓘ lcastro-VNET2 (derived from virtual network's resource group)

Instance details

Name * VNETGWWEST ✓

Region * (US) West US 2 ✓

Gateway type * ⓘ ☒ VPN ☐ ExpressRoute

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

SKU * ⓘ VpnGw1 ✓

Generation ⓘ Generation1 ✓

Virtual network * ⓘ VNET2 ✓
[Create virtual network](#)

Subnet ⓘ GatewaySubnet (10.2.0.128/29) ✓

Only virtual networks in the currently selected subscription and region are listed.

Public IP address

Public IP address * ⓘ ☒ Create new ☐ Use existing

Public IP address name * lcastro-Public-IP-West ✓

Public IP address SKU Basic

Assignment ☒ Dynamic ☐ Static

Enable active-active mode * ⓘ ☐ Enabled ☒ Disabled

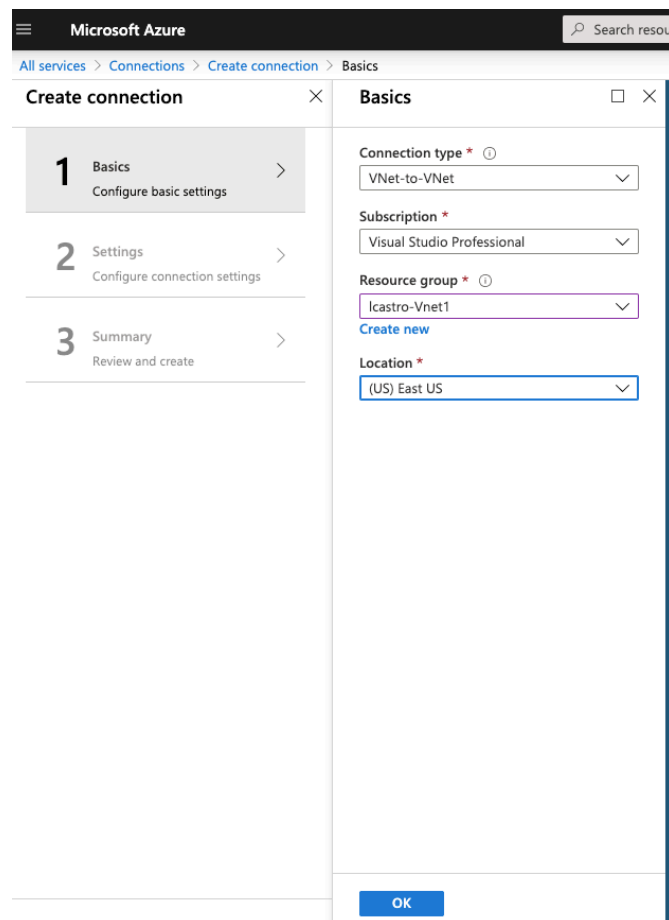
[Review + create](#) < Previous Next : Tags > [Download a template for automation](#)

Step 8 - Azure Connection VNET1

Now that you have the virtual network gateways created, you need to create Azure Connections so that the gateways can connect together.

It does not matter which resource group you start with, since both resource groups/virtual network connections will require an Azure Connection.

1. From within the **VNET1** resource group blade, select **Add** and then enter connection and select Connection in the Everything blade. Select the **Create** button.



The screenshot shows the Microsoft Azure portal interface for creating a new connection. The breadcrumb navigation at the top indicates the path: All services > Connections > Create connection > Basics. The main heading is 'Create connection'. On the left, there is a step indicator with three steps: 1 Basics (Configure basic settings), 2 Settings (Configure connection settings), and 3 Summary (Review and create). The 'Basics' step is currently active. The right pane shows the configuration details for the 'Basics' step. It includes four required fields, each with an asterisk and a help icon: 'Connection type' is set to 'VNet-to-VNet'; 'Subscription' is set to 'Visual Studio Professional'; 'Resource group' is set to 'Icastro-Vnet1', with a 'Create new' link below it; and 'Location' is set to '(US) East US'. At the bottom of the pane is a blue 'OK' button.

Connection Settings

First Virtual Network Gateway:

- VNETGWEAST

Second Virtual Networks Gateway

- VNETGWWEST

Deselect

- Establish bidirectional connectivity

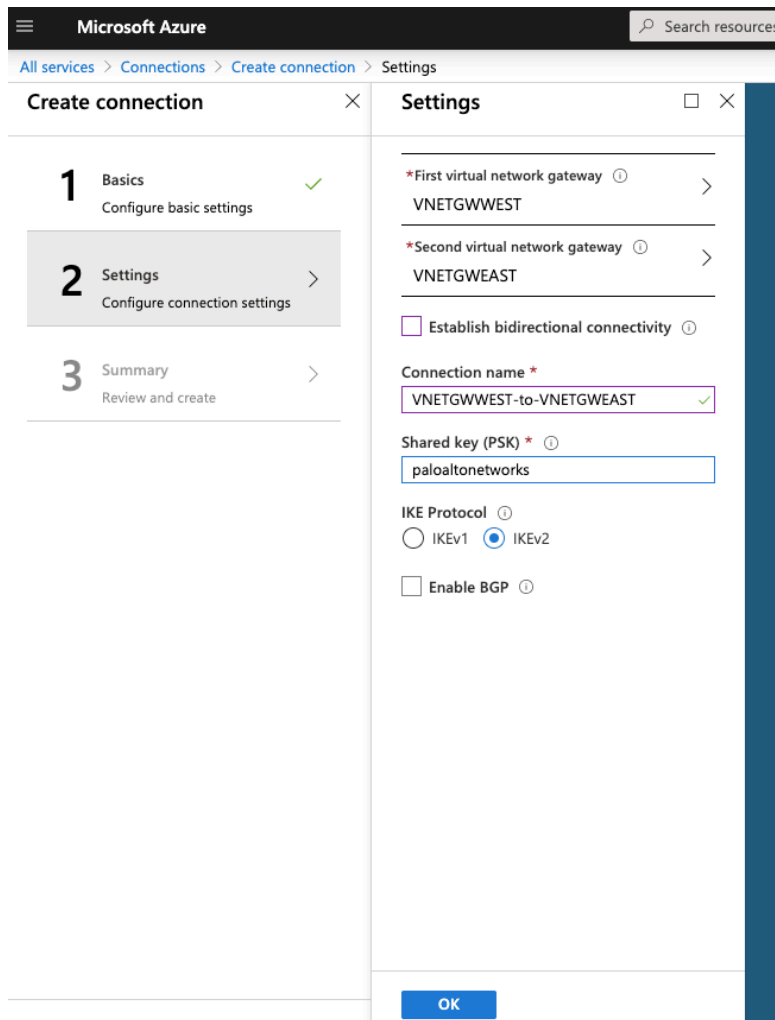
Connection Name

- VNETGWEAST-toVNETGWWEST

Shared Key (PSK)

- paloaltonetworks

Create



The screenshot shows the 'Create connection' wizard in the Microsoft Azure portal. The 'Settings' step is selected, showing the configuration for a VNET-to-VNET connection. The left sidebar shows the progression: 1 Basics (Configure basic settings), 2 Settings (Configure connection settings), and 3 Summary (Review and create). The main settings area includes:

- *First virtual network gateway**: VNETGWWEST
- *Second virtual network gateway**: VNETGWEAST
- ☐ **Establish bidirectional connectivity**
- Connection name ***: VNETGWWEST-to-VNETGWEAST
- Shared key (PSK) ***: paloaltonetworks
- IKE Protocol**: IKEv2 (selected)
- ☐ **Enable BGP**

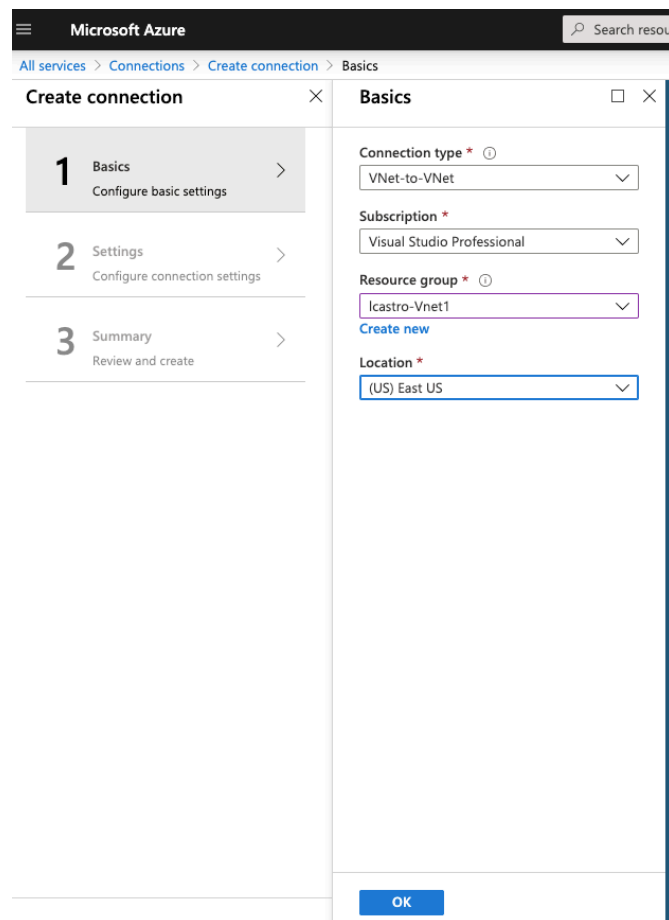
An 'OK' button is at the bottom right.

Step 9 - Azure Connection VNET2

Now that you have the virtual network gateways created, you need to create Azure Connections so that the gateways can connect together.

It does not matter which resource group you start with, since both resource groups/virtual network connections will require an Azure Connection.

1. From within the **VNET2** resource group blade, select **Add** and then enter connection and select Connection in the Everything blade. Select the **Create** button.



The screenshot shows the Microsoft Azure portal interface for creating a new connection. The breadcrumb navigation at the top reads: **All services > Connections > Create connection > Basics**. The main heading is **Create connection**. On the left, there is a progress indicator with three steps: **1 Basics** (Configure basic settings), **2 Settings** (Configure connection settings), and **3 Summary** (Review and create). The **Basics** step is currently active. The right pane shows the configuration options for the connection:

- Connection type ***: VNet-to-VNet
- Subscription ***: Visual Studio Professional
- Resource group ***: lcastro-Vnet1 (with a **Create new** link below it)
- Location ***: (US) East US

An **OK** button is located at the bottom right of the configuration pane.

Connection Settings

First Virtual Network Gateway:

- VNETGWWEST

Second Virtual Networks Gateway

- VNETGWEAST

Deselect

- Establish bidirectional connectivity

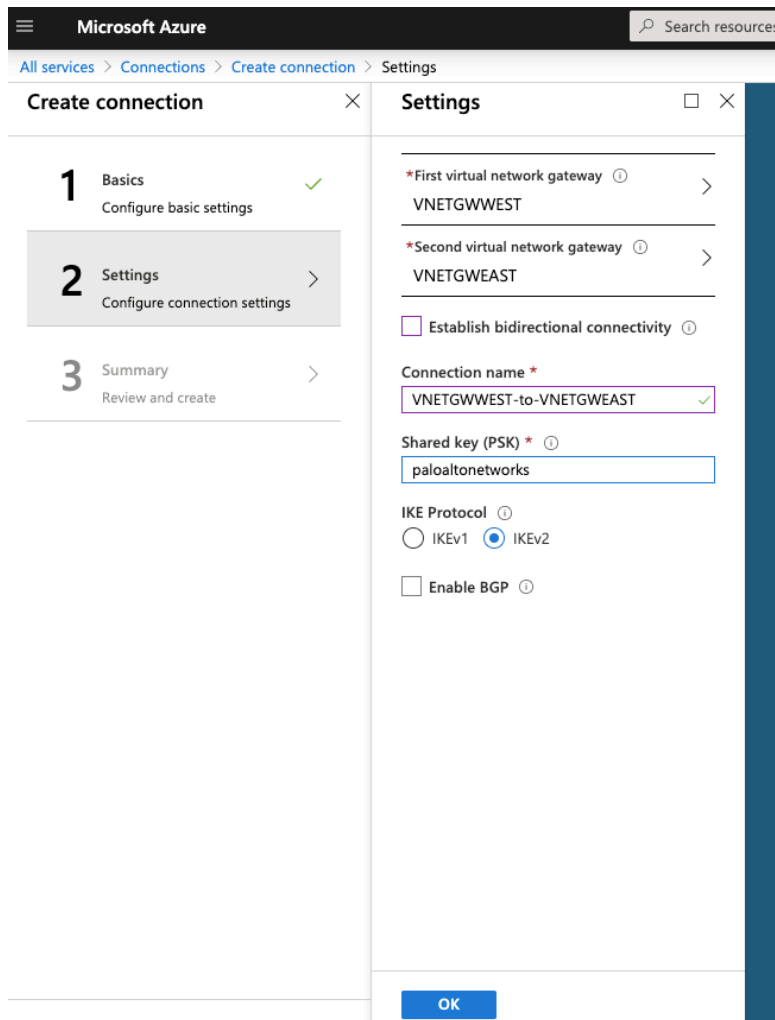
Connection Name

- VNETGWWEST-to-VNETGWEAST

Shared Key (PSK)

- paloaltonetworks

Create



The screenshot shows the 'Create connection' dialog box in the Microsoft Azure portal. The 'Settings' tab is selected, and the following configuration is visible:

- 1 Basics** (Configure basic settings) - Status: ✓
- 2 Settings** (Configure connection settings) - Status: >
- 3 Summary** (Review and create) - Status: >

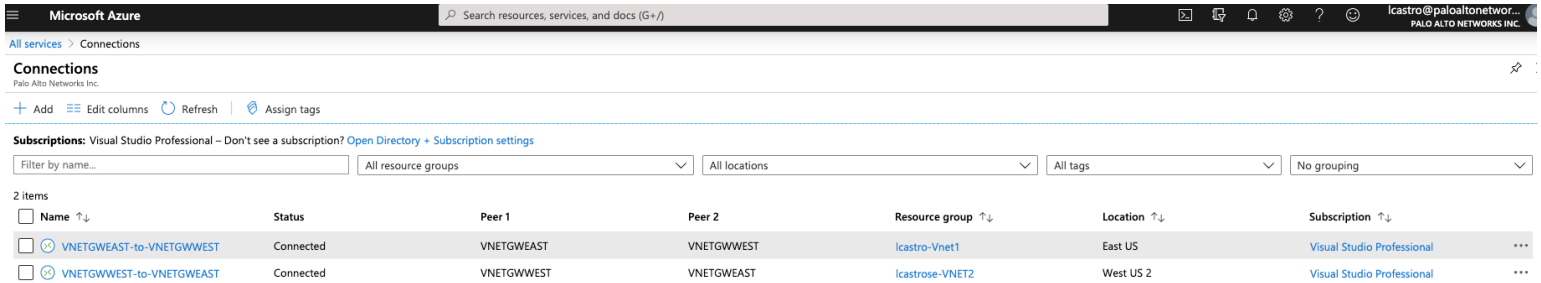
Settings:

- *First virtual network gateway** ① >: VNETGWWEST
- *Second virtual network gateway** ① >: VNETGWEAST
- ☐ **Establish bidirectional connectivity** ①
- Connection name** *: VNETGWWEST-to-VNETGWEAST ✓
- Shared key (PSK)** * ①: paloaltonetworks
- IKE Protocol** ①: ☐ IKEv1 ☒ IKEv2
- ☐ **Enable BGP** ①

OK

Step 10 - Validate Connections

Go to Connections



Connections
Palo Alto Networks Inc.

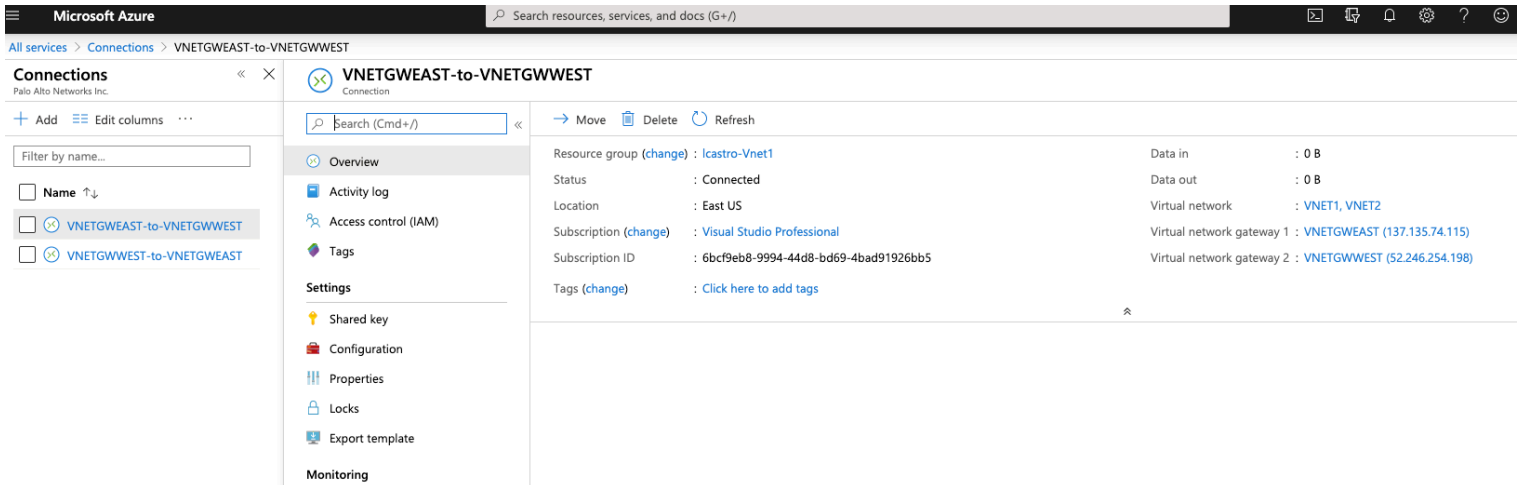
+ Add Edit columns Refresh Assign tags

Subscriptions: Visual Studio Professional – Don't see a subscription? [Open Directory + Subscription settings](#)

Filter by name... All resource groups All locations All tags No grouping

Name ↑↓	Status	Peer 1	Peer 2	Resource group ↑↓	Location ↑↓	Subscription ↑↓
VNETGWEAST-to-VNETGWWEST	Connected	VNETGWEAST	VNETGWWEST	lcastro-Vnet1	East US	Visual Studio Professional
VNETGWWEST-to-VNETGWEAST	Connected	VNETGWWEST	VNETGWEAST	lcastrose-VNET2	West US 2	Visual Studio Professional

Go inside any of the two connections and click to check Gateways and IPs



Connections
Palo Alto Networks Inc.

+ Add Edit columns ...

Filter by name...

☐ Name ↑↓

☒ VNETGWEAST-to-VNETGWWEST

☐ VNETGWWEST-to-VNETGWEAST

VNETGWEAST-to-VNETGWWEST
Connection

Search (Cmd+/) Move Delete Refresh

Overview

Resource group (change) : lcastro-Vnet1

Status : Connected

Location : East US

Subscription (change) : Visual Studio Professional

Subscription ID : 6bcf9eb8-9994-44d8-bd69-4bad91926bb5

Tags (change) : [Click here to add tags](#)

Data in : 0 B

Data out : 0 B

Virtual network : VNET1, VNET2

Virtual network gateway 1 : VNETGWEAST (137.135.74.115)

Virtual network gateway 2 : VNETGWWEST (52.246.254.198)

Settings

- Shared key
- Configuration
- Properties
- Locks
- Export template

Monitoring