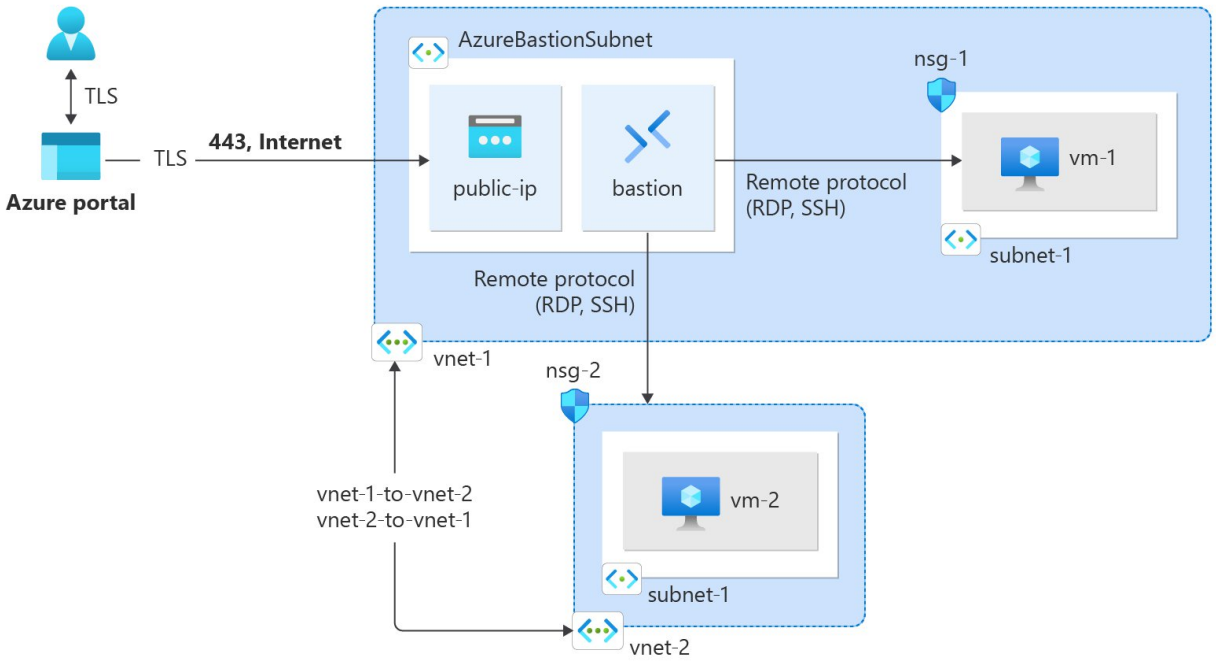
Connect virtual networks with virtual network peering using the Azure portal

You can connect virtual networks to each other with virtual network peering. These virtual networks can be in the same region or different regions (also known as global virtual network peering). Once virtual networks are peered, resources in both virtual networks can communicate with each other over a low-latency, high-bandwidth connection using Microsoft backbone network.



In this , you learn how to:

- Create virtual networks
- Connect two virtual networks with a virtual network peering
- Deploy a virtual machine (VM) into each virtual network
- Communicate between VMs

Prerequisites

- An Azure account with an active subscription.

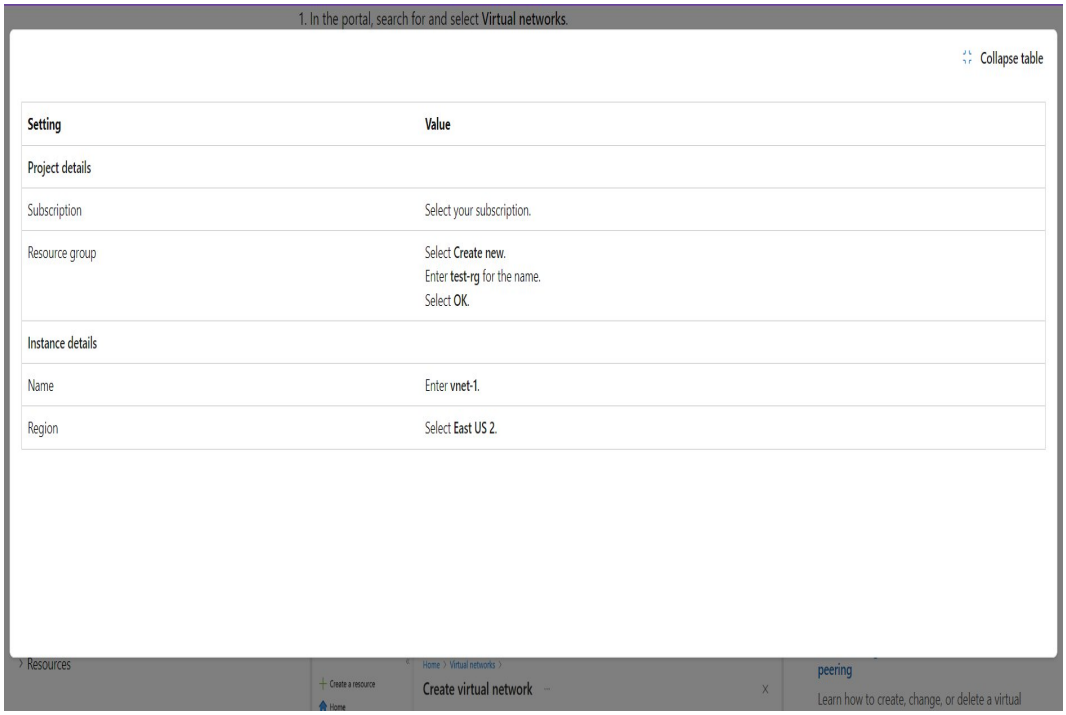
Sign in to Azure

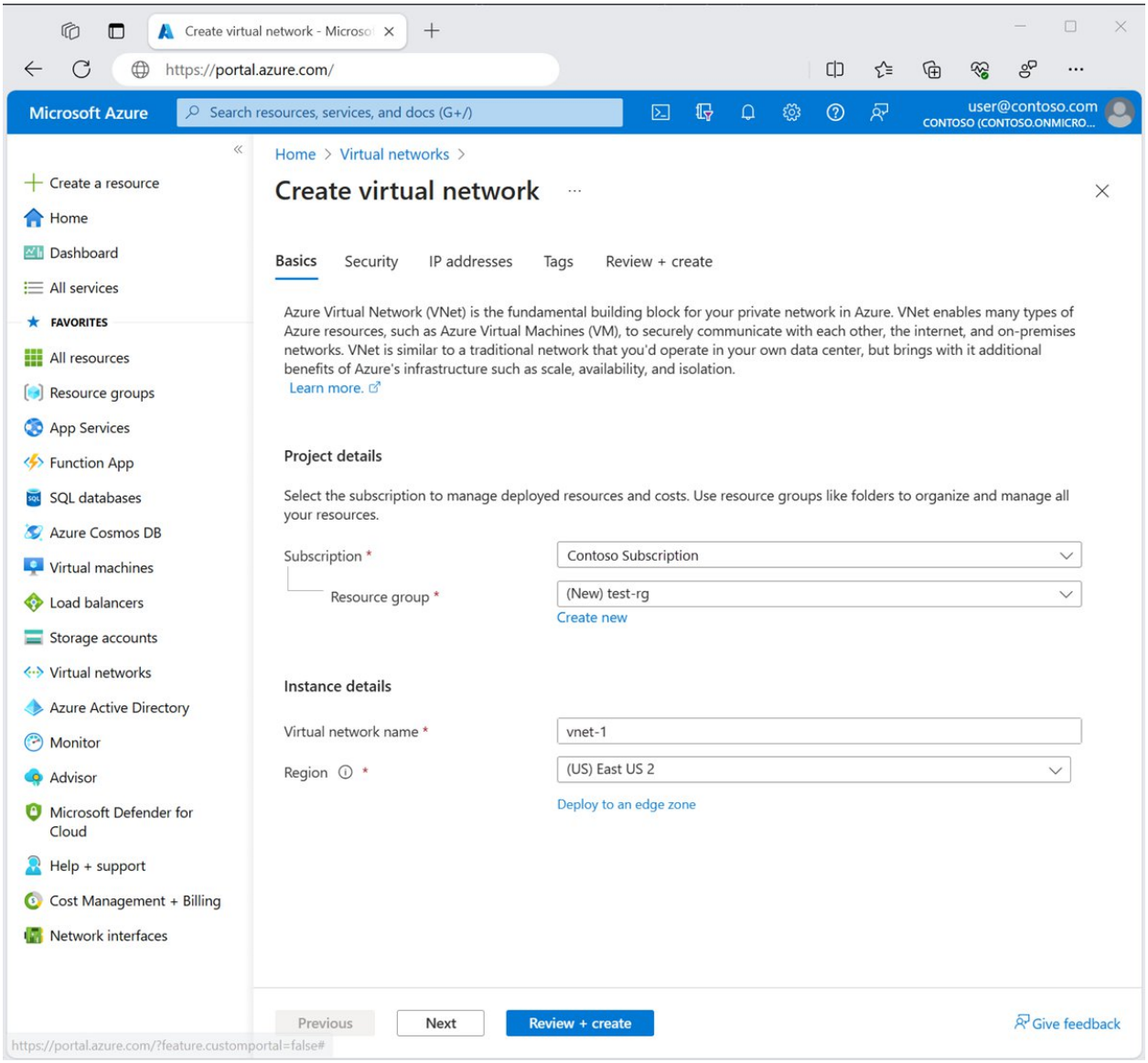
Sign in to the Azure portal.

Create a virtual network and an Azure Bastion host

The following procedure creates a virtual network with a resource subnet, an Azure Bastion subnet, and a Bastion host:

1. In the portal, search for and select **Virtual networks**.
2. On the **Virtual networks** page, select **+ Create**.
3. On the **Basics** tab of **Create virtual network**, enter or select the following information:





4. Select **Next** to proceed to the **Security** tab.

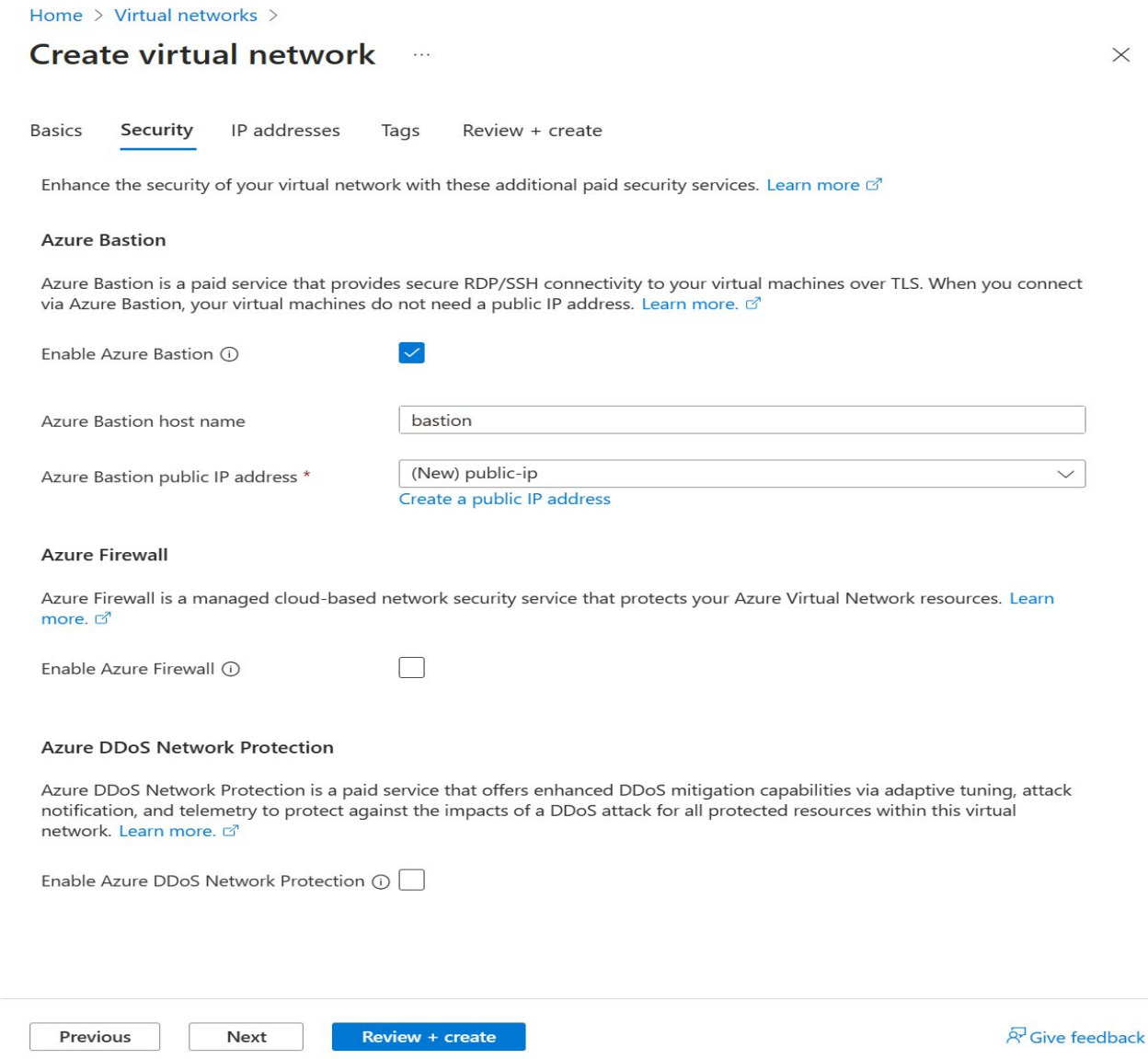
5. In the **Azure Bastion** section, select **Enable Bastion**.

Bastion uses your browser to connect to VMs in your virtual network over Secure Shell (SSH) or Remote Desktop Protocol (RDP) by using their private IP addresses. The VMs don't need public IP addresses, client software, or special configuration. For more information

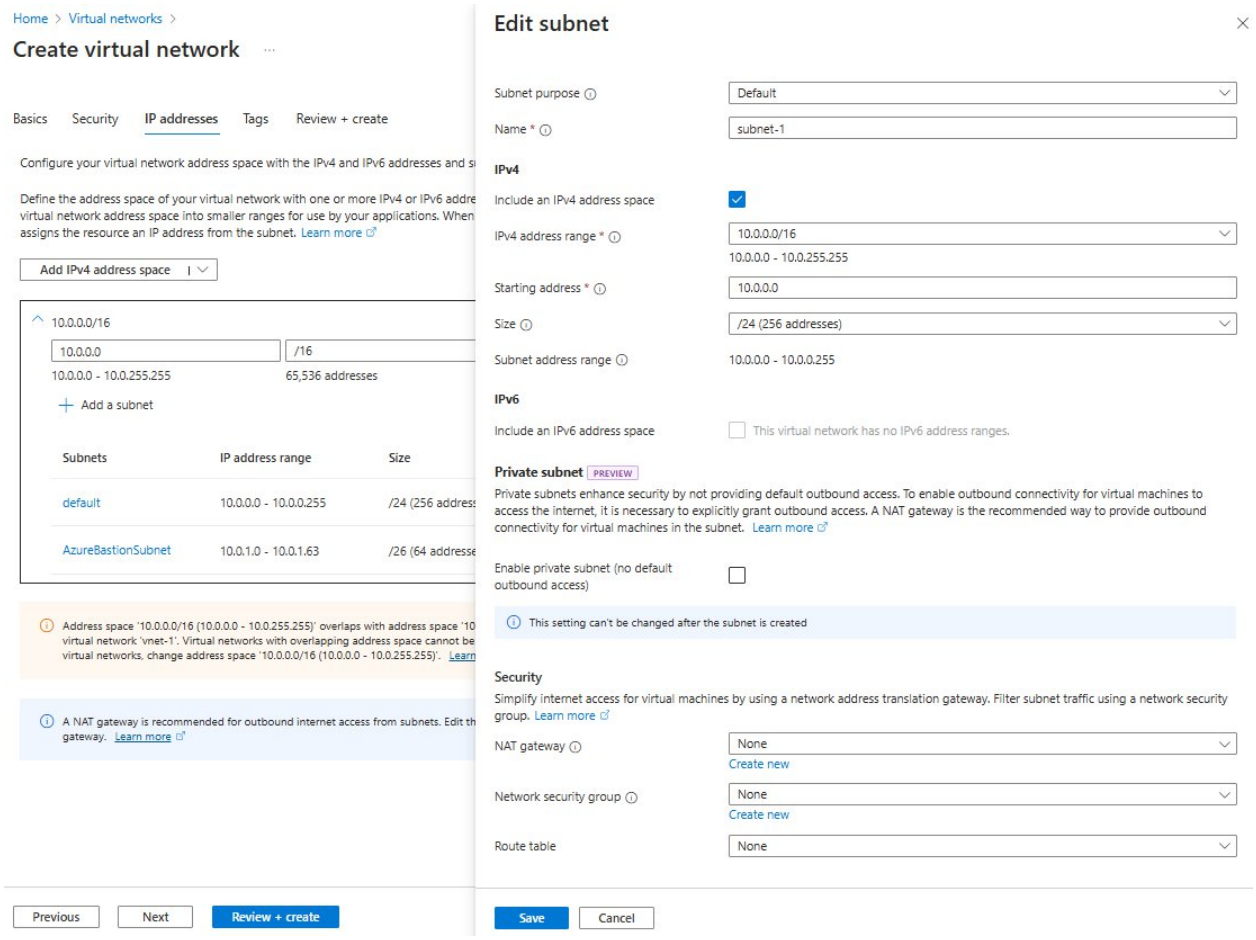
6. In **Azure Bastion**, enter or select the following information:

Expand table

Setting	Value
Azure Bastion host name	Enter **bastion**.
Azure Bastion public IP address	Select **Create a public IP address**. Enter **public-ip-bastion** in Name. Select **OK**.



Setting	Value
Subnet details	
Subnet template	Leave the default of **Default**.
Name	Enter **subnet-1**.
Starting address	Leave the default of **10.0.0.0**.
Subnet size	Leave the default of **/24 (256 addresses)**.



10. Select **Add**.

11. Select **Review + create** at the bottom of the window. When validation passes, select **Create**.

Repeat the previous steps to create a second virtual network with the following values:

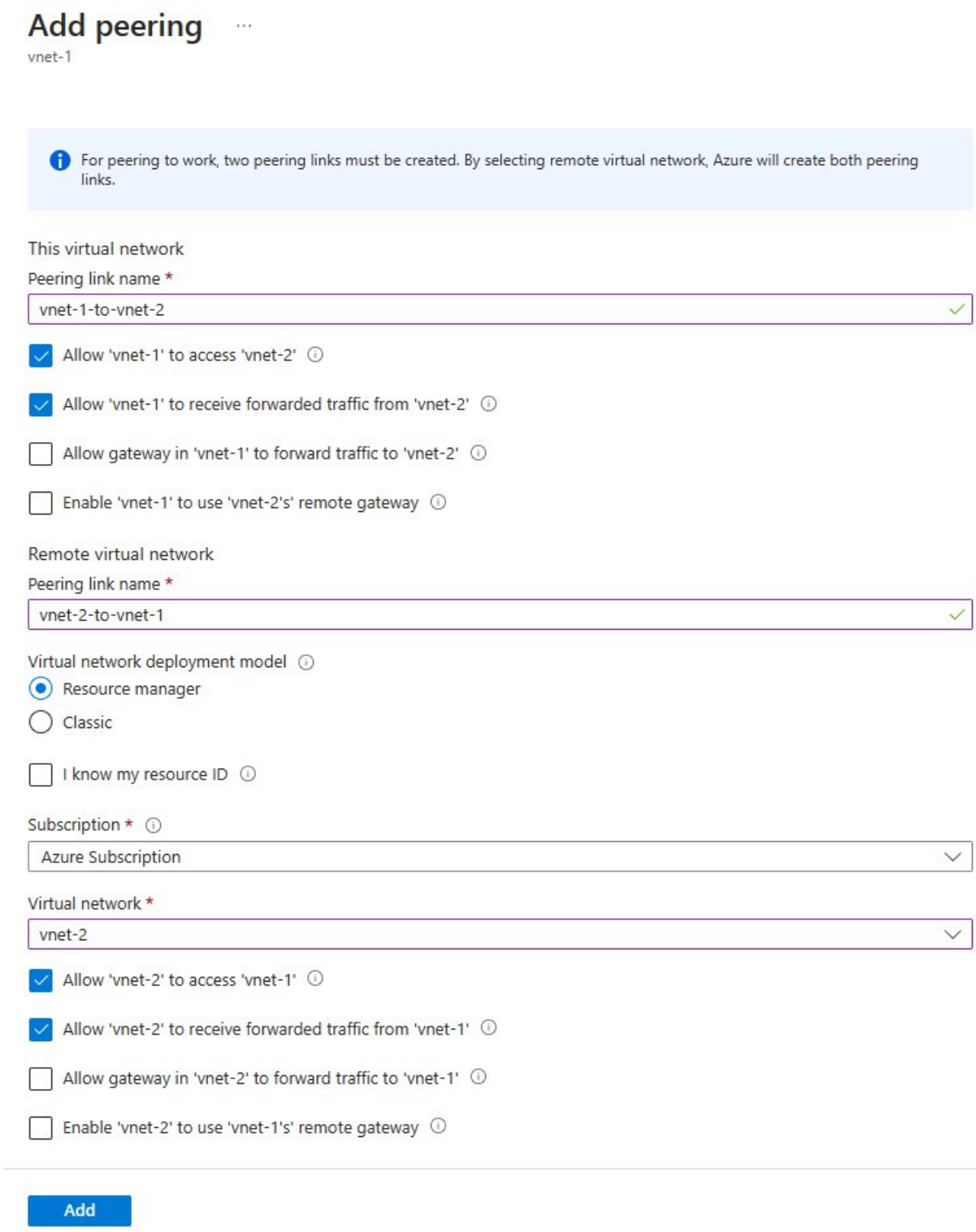
Setting	Value
Name	vnet-2
Address space	10.1.0.0/16
Resource group	test-rg
Subnet name	subnet-1
Subnet address range	10.1.0.0/24

Create virtual network peer

Use the following steps to create a two way network peer between **vnet1** and **vnet2**.

1. In the search box at the top of the portal, enter **Virtual network**. Select **Virtual networks** in the search results.
2. Select **vnet-1**.
3. In **Settings** select **Peerings**.
4. Select **+ Add**.
5. Enter or select the following information in **Add peering**:

Setting	Value
This virtual network	
Peering link name	Enter **vnet-1-to-vnet-2**.
Allow 'vnet-1' to access 'vnet-2'	Leave the default of selected.
Allow 'vnet-1' to receive forwarded traffic from 'vnet-2'	Select the checkbox.
Allow gateway in 'vnet-1' to forward traffic to 'vnet-2'	Leave the default of cleared.
Enable 'vnet-1' to use 'vnet-2' remote gateway	Leave the default of cleared.
Remote virtual network	
Peering link name	Enter **vnet-2-to-vnet-1**.
Virtual network deployment model	Leave the default of **Resource Manager**.
Subscription	Select your subscription.
Virtual network	Select **vnet-2**.
Allow 'vnet-2' to access 'vnet-1'	Leave the default of selected.
Allow 'vnet-2' to receive forwarded traffic from 'vnet-1'	Select the checkbox.
Allow gateway in 'vnet-2' to forward traffic to 'vnet-1'	Leave the default of cleared.
Enable 'vnet-2' to use 'vnet-1's' remote gateway	Leave the default of cleared.



1. Select **Add**.

Create virtual machines

Create a virtual machine in each virtual network to test the communication between them.

Create test virtual machine

The following procedure creates a test virtual machine (VM) named **vm-1** in the virtual network.

1. In the portal, search for and select **Virtual machines**.
2. In **Virtual machines**, select **+ Create**, then **Azure virtual machine**.
3. On the **Basics** tab of **Create a virtual machine**, enter or select the following information:

Setting	Value
Project details	
Subscription	Select your subscription.
Resource group	Select **test-rg**.
Instance details	
Virtual machine name	Enter **vm-1**.
Region	Select **East US 2**.
Availability options	Select **No infrastructure redundancy required**.
Security type	Leave the default of **Standard**.
Image	Select **Ubuntu Server 22.04 LTS - x64 Gen2**.
VM architecture	Leave the default of **x64**.
Size	Select a size.

Size	Select a size.
Administrator account	
Authentication type	Select **Password**.
Username	Enter **azureuser**.
Password	Enter a password.
Confirm password	Reenter the password.
Inbound port rules	
Public inbound ports	Select **None**.

4. Select the **Networking** tab at the top of the page.

5. Enter or select the following information in the **Networking** tab:

Setting	Value
Network interface	
Virtual network	Select **vnet-1**.
Subnet	Select **subnet-1 (10.0.0.0/24)**.
Public IP	Select **None**.
NIC network security group	Select **Advanced**.
Configure network security group	Select **Create new**. Enter **nsg-1** for the name. Leave the rest at the defaults and select **OK**.

6. Leave the rest of the settings at the defaults and select **Review + create**.
7. Review the settings and select **Create**.

Repeat the previous steps to create a second virtual machine in the second virtual network with the following values:

Expand table

Setting	Value
Virtual machine name	**vm-2**
Region	**East US 2** or same region as **vnet-2**.
Virtual network	Select **vnet-2**.
Subnet	Select **subnet-1 (10.1.0.0/24)**.
Public IP	**None**
Network security group name	**nsg-2**

Wait for the virtual machines to be created before continuing with the next steps.

Connect to a virtual machine

Use ping to test the communication between the virtual machines.

1. In the portal, search for and select **Virtual machines**.
2. On the **Virtual machines** page, select **vm-1**.
3. In the **Overview** of **vm-1**, select **Connect**.
4. In the **Connect to virtual machine** page, select the **Bastion** tab.
5. Select **Use Bastion**.
6. Enter the username and password you created when you created the VM, and then select **Connect**.

Communicate between VMs

1. At the bash prompt for **vm-1**, enter ping -c 4 vm-2.
2. You get a reply similar to the following message:

OUTPUT:

azureuser@vm-1:~$ ping -c 4 vm-2

PING vm-2.3bnkevn3313ujpr5l1kqop4n4d.cx.internal.cloudapp.net (10.1.0.4) 56(84) bytes of data.

64 bytes from vm-2.internal.cloudapp.net (10.1.0.4): icmp_seq=1 ttl=64 time=1.83 ms

64 bytes from vm-2.internal.cloudapp.net (10.1.0.4): icmp_seq=2 ttl=64 time=0.987 ms

64 bytes from vm-2.internal.cloudapp.net (10.1.0.4): icmp_seq=3 ttl=64 time=0.864 ms

64 bytes from vm-2.internal.cloudapp.net (10.1.0.4): icmp_seq=4 ttl=64 time=0.890 ms

3. Close the Bastion connection to **vm-1**.

4. Repeat the steps in Connect to a virtual machine to connect to **vm-2**.

5. At the bash prompt for **vm-2**, enter ping -c 4 vm-1.

6. You get a reply similar to the following message:

OUTPUT:

azureuser@vm-2:~$ ping -c 4 vm-1

PING vm-1.3bnkevn3313ujpr5l1kqop4n4d.cx.internal.cloudapp.net (10.0.0.4) 56(84) bytes of data.

64 bytes from vm-1.internal.cloudapp.net (10.0.0.4): icmp_seq=1 ttl=64 time=0.695 ms

64 bytes from vm-1.internal.cloudapp.net (10.0.0.4): icmp_seq=2 ttl=64 time=0.896 ms

64 bytes from vm-1.internal.cloudapp.net (10.0.0.4): icmp_seq=3 ttl=64 time=3.43 ms

64 bytes from vm-1.internal.cloudapp.net (10.0.0.4): icmp_seq=4 ttl=64 time=0.780 ms

7. Close the Bastion connection to **vm-2**.

Clean up resources

When you finish using the resources that you created, you can delete the resource group and all its resources:

1. In the Azure portal, search for and select **Resource groups**.
2. On the **Resource groups** page, select the **test-rg** resource group.
3. On the **test-rg** page, select **Delete resource group**.
4. Enter **test-rg** in **Enter resource group name to confirm deletion**, and then select **Delete**.

Next steps

In this , you:

- Created virtual network peering between two virtual networks.
- Tested the communication between two virtual machines over the virtual network peering with ping.