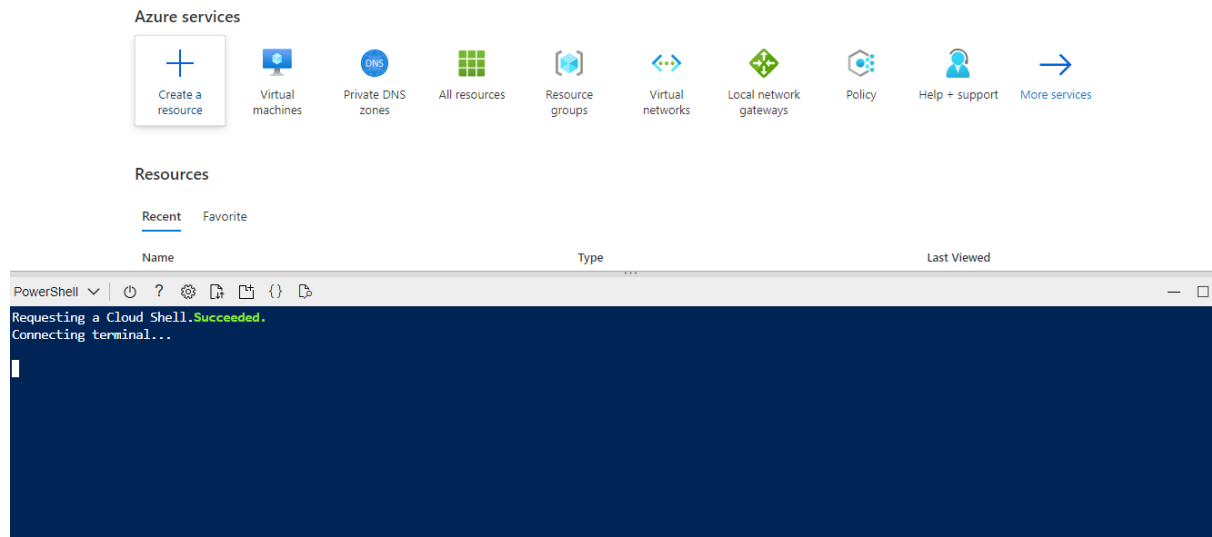


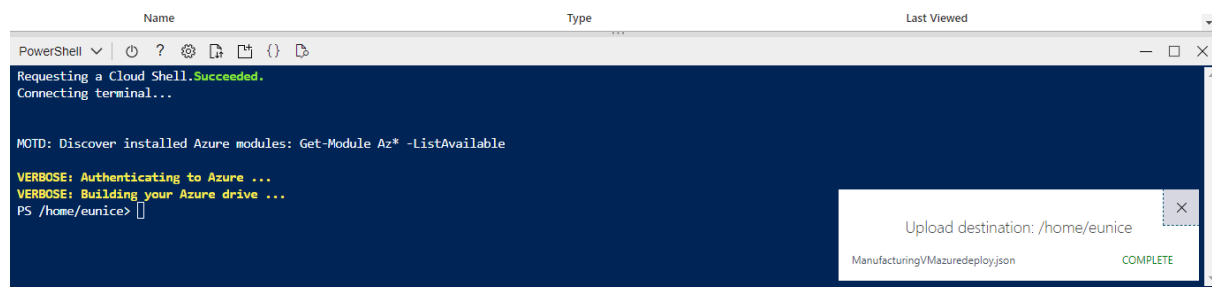
Connect two Azure virtual networks using global virtual network peering

Task 1: Create a Virtual Machine to test the configuration

1. In the Azure portal, open the PowerShell session within the Cloud Shell pane.



2. In the toolbar of the Cloud Shell pane, select the Upload/Download files icon, in the drop-down menu, select Upload and upload the following files ManufacturingVMazuredeploy.json and ManufacturingVMazuredeploy.parameters.json into the Cloud Shell home directory one by one from the source folder F:\Allfiles\Exercises\M01.



3. Deploy the following ARM templates to create the VMs needed for this exercise:

```
PowerShell
Requesting a Cloud Shell.Succeeded.
Connecting terminal...

MOTD: Discover installed Azure modules: Get-Module Az* -ListAvailable

VERBOSE: Authenticating to Azure ...
VERBOSE: Building your Azure drive ...
PS /home/eunice> $RGName = "ContosoResourceGroup"
PS /home/eunice>
PS /home/eunice> New-AzResourceGroupDeployment -ResourceGroupName $RGName -TemplateFile ManufacturingVMazuredeploy.json -TemplateParameterFile ManufacturingVMazuredeploy.parameters.json
```

4. When the deployment is complete, go to the Azure portal home page, and then select Virtual Machines.

```
VERBOSE: Authenticating to Azure ...
VERBOSE: Building your Azure drive ...
PS /home/eunice> $RGName = "ContosoResourceGroup"
PS /home/eunice>
PS /home/eunice> New-AzResourceGroupDeployment -ResourceGroupName $RGName -TemplateFile ManufacturingVMazuredeploy.json -TemplateParameterFile ManufacturingVMazuredeploy.parameters.json

DeploymentName      : ManufacturingVMazuredeploy
ResourceGroupName  : ContosoResourceGroup
ProvisioningState   : Succeeded
Timestamp          : 8/2/2022 10:04:01 AM
Mode               : Incremental
TemplateLink       :
Parameters         :
                    Name                Type                Value
                    =====
                    vmName1             String              "ManufacturingVM"
                    nicName1            String              "ManufacturingVM-nic"
                    vmSize               String              "Standard_DS1_v2"
                    adminUsername        String              "TestUser"
                    adminPassword        SecureString        null

Outputs            :
DeploymentDebugLogLevel :
```

5. Verify that the virtual machine has been created.

Home >

Virtual machines

Default Directory

+ Create ▾ Switch to classic Reservations ▾ Manage view ▾ Refresh Export to CSV Open query Assign tags Start Restart Stop Delete ...

Filter for any field... Subscription equals all Type equals all Resource group equals all Location equals all Add filter

No grouping List view

<input type="checkbox"/>	Name ↑↓	Type ↑↓	Subscription ↑↓	Resource group ↑↓	Location ↑↓	Status ↑↓	Operating system ↑↓	Size ↑↓	Public IP
<input type="checkbox"/>	ManufacturingVM	Virtual machine	Azure for Students	ContosoResourceGroup	West Europe	Running	Windows	Standard_DS1_v2	20.16.74.35
<input type="checkbox"/>	testvm1	Virtual machine	Azure for Students	ContosoResourceGroup	East US	Running	Windows	Standard_DS1_v2	20.115.6.1
<input type="checkbox"/>	testvm2	Virtual machine	Azure for Students	ContosoResourceGroup	East US	Running	Windows	Standard_DS1_v2	20.115.2.1

< Previous Page 1 of 1 Next > Showing 1 to 3 of 3 records. Give feedback

Task 2: Connect to the Test VMs using RDP

1. On the Azure Portal home page, select Virtual Machines. +
2. Select ManufacturingVM.

Home > Virtual machines >

Virtual machines

Default Directory

+ Create ▾ Switch to classic ...

Filter for any field...

Name ↑↓

- ManufacturingVM
- testvm1
- testvm2

Page 1 of 1

ManufacturingVM

Virtual machine

Search (Ctrl+/)

Connect ▾ Start Restart Stop Capture Delete Refresh Open in mobile ...

Essentials

JSON View

Resource group (move)	Operating system
ContosoResourceGroup	Windows (Windows Server 2019 Datacenter)
Status	Size
Running	Standard_DS1_v2 (1 vcpu, 3.5 GiB memory)
Location	Public IP address
West Europe	20.16.74.35
Subscription (move)	Virtual network/subnet
Azure for Students	ManufacturingVnet/ManufacturingSystemSubnet
Subscription ID	DNS name
2a8e3ab1-f621-4dd7-a587-e036a332e9c4	Not configured
Tags (edit)	
Click here to add tags	

Properties

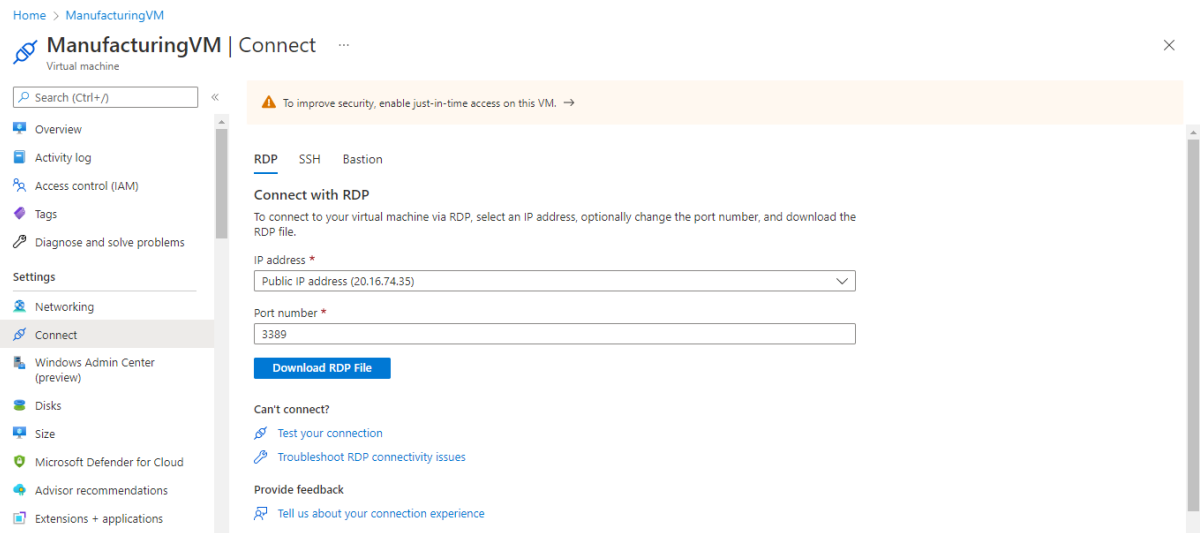
Monitoring Capabilities (8) Recommendations Tutorials

Virtual machine

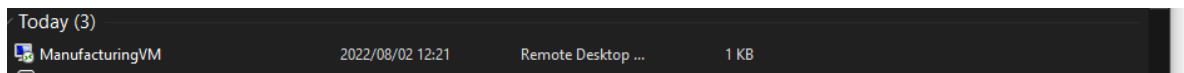
Computer name
ManufacturingVM

Health state

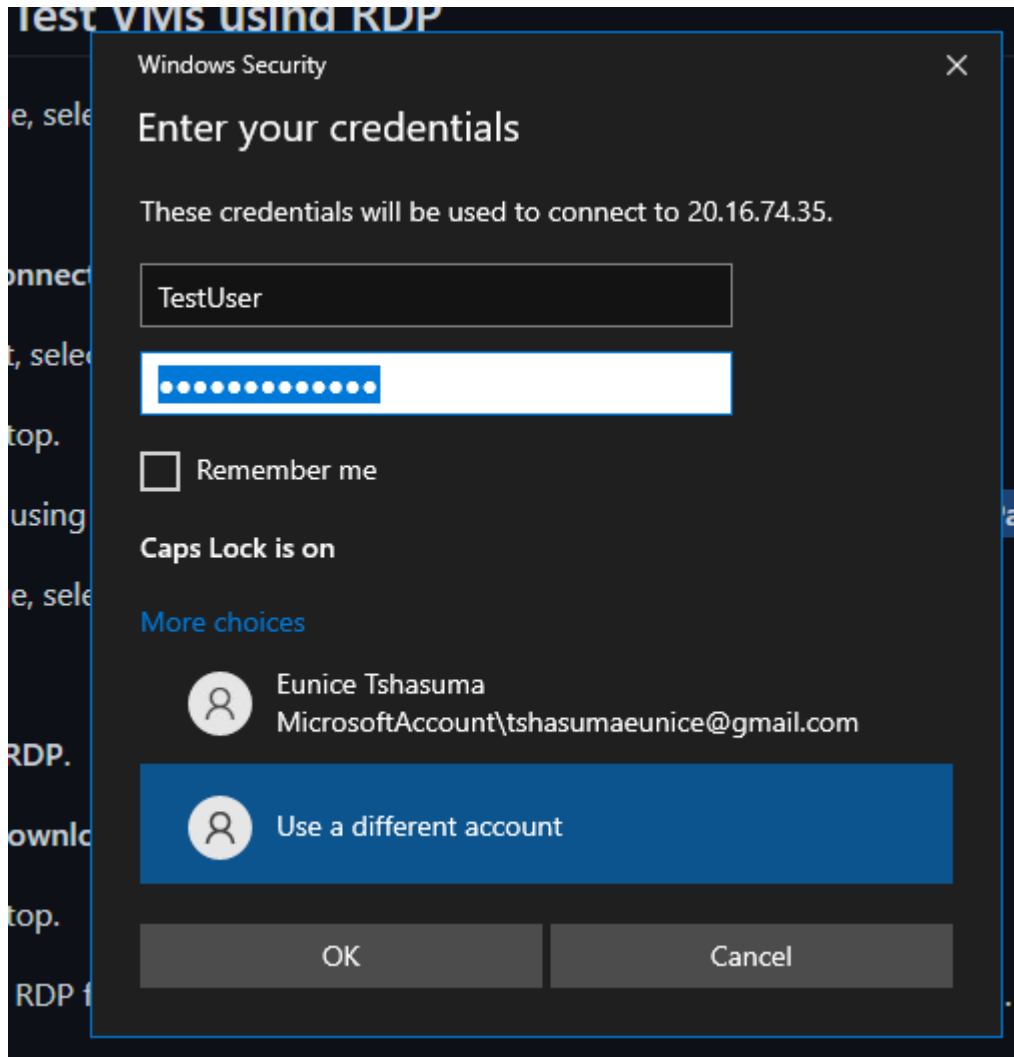
3.In ManufacturingVM, select Connect > RDP.



4.In ManufacturingVM | Connect, select Download RDP file



5. Save the RDP file to your desktop. + 6. Connect to ManufacturingVM using the RDP file, and the username TestUser and the password TestPa\$\$w0rd!.



7. On the Azure Portal home page, select Virtual Machines.

Home >

Virtual machines

Default Directory

+ Create | Switch to classic | Reservations | Manage view | Refresh | Export to CSV | Open query | Assign tags | Start | Restart | Stop | Delete | ...

Filter for any field... | Subscription equals all | Type equals all | Resource group equals all | Location equals all | Add filter

No grouping | List view

<input type="checkbox"/>	Name ↑↓	Type ↑↓	Subscription ↑↓	Resource group ↑↓	Location ↑↓	Status ↑↓	Operating system ↑↓	Size ↑↓	Public IP
<input type="checkbox"/>	ManufacturingVM	Virtual machine	Azure for Students	ContosoResourceGroup	West Europe	Running	Windows	Standard_DS1_v2	20.16.74.35
<input type="checkbox"/>	testvm1	Virtual machine	Azure for Students	ContosoResourceGroup	East US	Running	Windows	Standard_DS1_v2	20.115.6.1
<input type="checkbox"/>	testvm2	Virtual machine	Azure for Students	ContosoResourceGroup	East US	Running	Windows	Standard_DS1_v2	20.115.2.1

< Previous | Page 1 of 1 | Next > | Showing 1 to 3 of 3 records.

Give feedback

8. Select TestVM1.

The screenshot shows the Azure portal interface. On the left, the 'Virtual machines' blade is open, displaying a list of VMs: 'ManufacturingVM', 'testvm1', and 'testvm2'. 'testvm1' is selected. The main pane shows the 'testvm1' details page. The left sidebar lists various management options: Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Settings, Networking, Connect, Windows Admin Center (preview), Disks, Size, Microsoft Defender for Cloud, Advisor recommendations, and Extensions + applications. The 'Connect' option is highlighted. The main content area shows the 'Connect' tab for 'testvm1'. It includes a search bar, a list of actions (Connect, Start, Restart, Stop, Capture, Delete, Refresh, Open in mobile), and an 'Advisor' section with a recommendation to enable virtual machine replication. Below this, the 'Essentials' section displays key VM properties: Resource group (ContosoResourceGroup), Status (Running), Location (East US), Subscription (Azure for Students), Subscription ID (2a8e3ab1-f621-4dd7-a587-e036a332e9c4), Tags (edit), and a link to add tags. The 'Properties' section is also visible, showing 'Virtual machine' and 'Networking' tabs. The 'Networking' tab shows the public IP address 20.115.6.217.

9. In TestVM1, select Connect > RDP.

The screenshot shows the Azure portal interface. On the left, the 'Virtual machines' blade is open, displaying a list of VMs: 'ManufacturingVM', 'testvm1', and 'testvm2'. 'testvm1' is selected. The main pane shows the 'testvm1' details page. The left sidebar lists various management options: Overview, Activity log, Access control (IAM), Tags, Diagnose and solve problems, Settings, Networking, Connect, Windows Admin Center (preview), Disks, Size, Microsoft Defender for Cloud, Advisor recommendations, and Extensions + applications. The 'Connect' option is highlighted. The main content area shows the 'Connect' tab for 'testvm1'. It includes a search bar, a list of actions (Connect, Start, Restart, Stop, Capture, Delete, Refresh, Open in mobile), and an 'Advisor' section with a recommendation to enable virtual machine replication. Below this, the 'Essentials' section displays key VM properties: Resource group (ContosoResourceGroup), Status (Running), Location (East US), Subscription (Azure for Students), Subscription ID (2a8e3ab1-f621-4dd7-a587-e036a332e9c4), Tags (edit), and a link to add tags. The 'Properties' section is also visible, showing 'Virtual machine' and 'Networking' tabs. The 'Networking' tab shows the public IP address 20.115.6.217. The 'Connect' tab is selected, showing a warning to enable just-in-time access. Below the warning, the 'RDP' tab is selected, displaying the 'Connect with RDP' section. It includes instructions on how to connect via RDP, a form to enter the IP address (Public IP address (20.115.6.217)) and port number (3389), and a 'Download RDP File' button. There are also links for 'Can't connect?' (Test your connection, Troubleshoot RDP connectivity issues) and 'Provide feedback' (Tell us about your connection experience).

10. In TestVM1 | Connect, select Download RDP file.- 15. On TestVM1, open a PowerShell prompt, and run the following command: ipconfig

```
Administrator: Windows PowerShell
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

PS C:\Users\TestUser> ipconfig

Windows IP Configuration

Ethernet adapter Ethernet:

    Connection-specific DNS Suffix  . : 3wqkc1w330junp1dmw0sd2gx3b.bx.internal.cloudapp.net
    Link-local IPv6 Address . . . . . : fe80::a142:3958:a52c:ed9f%8
    IPv4 Address. . . . . : 10.20.20.4
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 10.20.20.1
PS C:\Users\TestUser>
```

16. Note the IPv4 address.

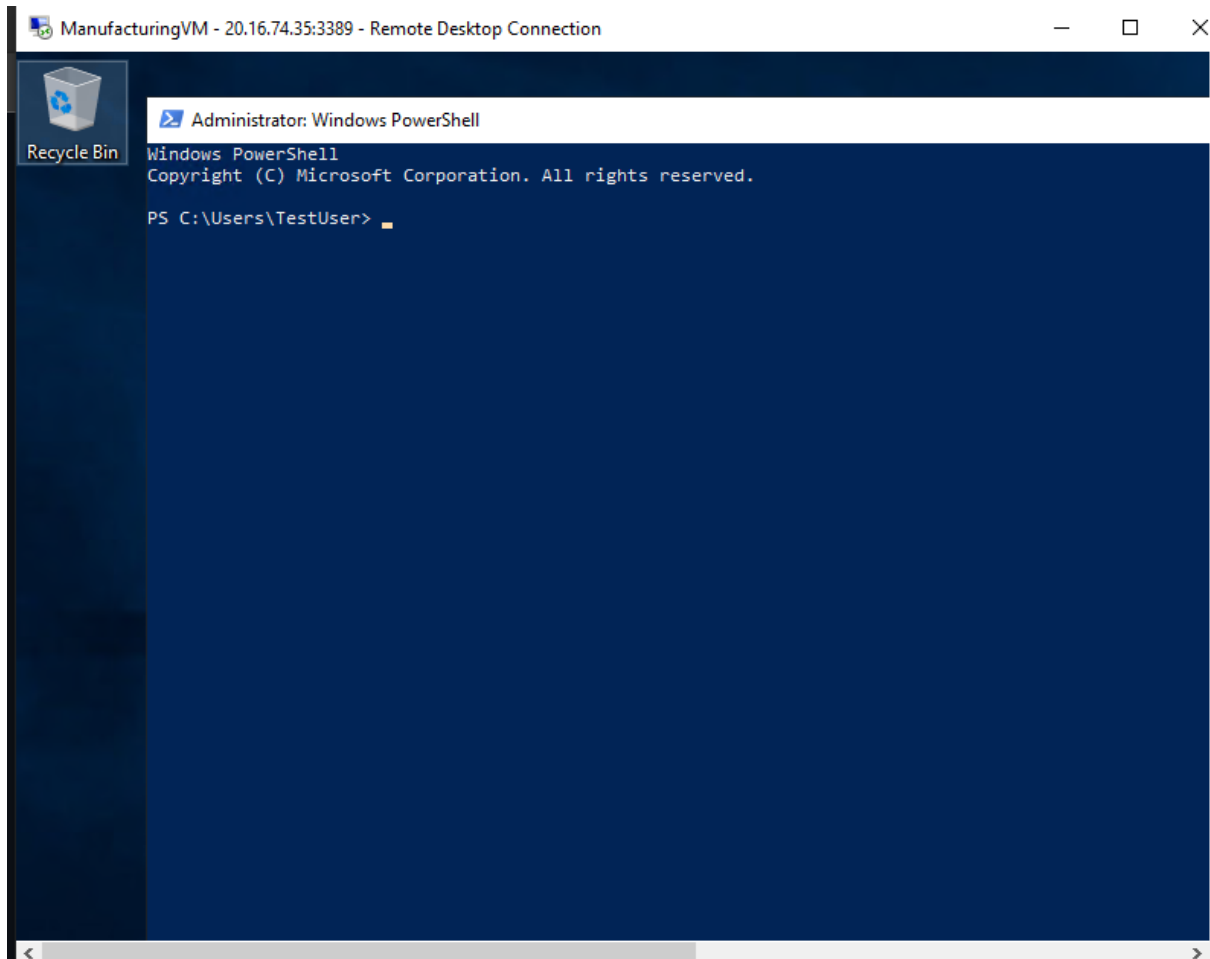
```
Windows IP Configuration

Ethernet adapter Ethernet:


    Connection-specific DNS Suffix  . : 3wqkc1w330junp1dmw0sd2gx3b.bx.internal.cloudapp.net
    Link-local IPv6 Address . . . . . : fe80::a142:3958:a52c:ed9f%8
    IPv4 Address. . . . . : 10.20.20.4
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 10.20.20.1
PS C:\Users\TestUser>
```

Task 3: Test the connection between the VMs

1. On the ManufacturingVM, open a PowerShell prompt.



2. Use the following command to verify that there is no connection to TestVM1 on CoreServicesVnet. Be sure to use the IPv4 address for TestVM1. + 3. The test connection should fail, and you will see a result similar to the following:



Administrator: Windows PowerShell

```
Windows PowerShell
Copyright (C) Microsoft Corporation. All rights reserved.

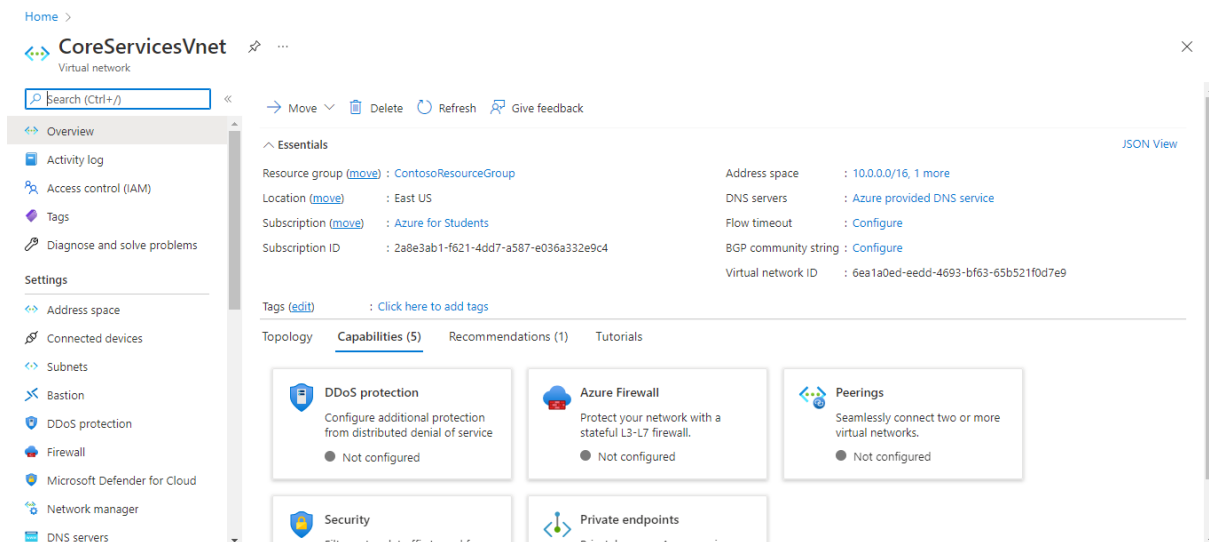
PS C:\Users\TestUser> Test-NetConnection 10.20.20.4 -port 3389
WARNING: TCP connect to (10.20.20.4 : 3389) failed
WARNING: Ping to 10.20.20.4 failed with status: TimedOut

ComputerName           : 10.20.20.4
RemoteAddress          : 10.20.20.4
RemotePort             : 3389
InterfaceAlias         : Ethernet
SourceAddress          : 10.30.10.4
PingSucceeded          : False
PingReplyDetails (RTT) : 0 ms
TcpTestSucceeded       : False

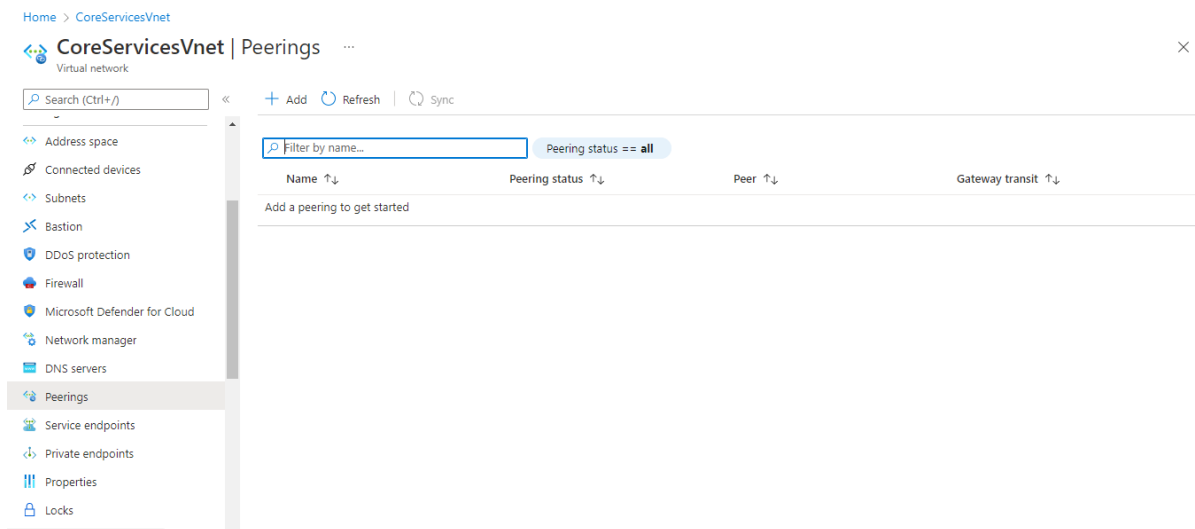
PS C:\Users\TestUser> 
```

Task 4: Create VNet peerings between CoreServicesVnet and ManufacturingVnet

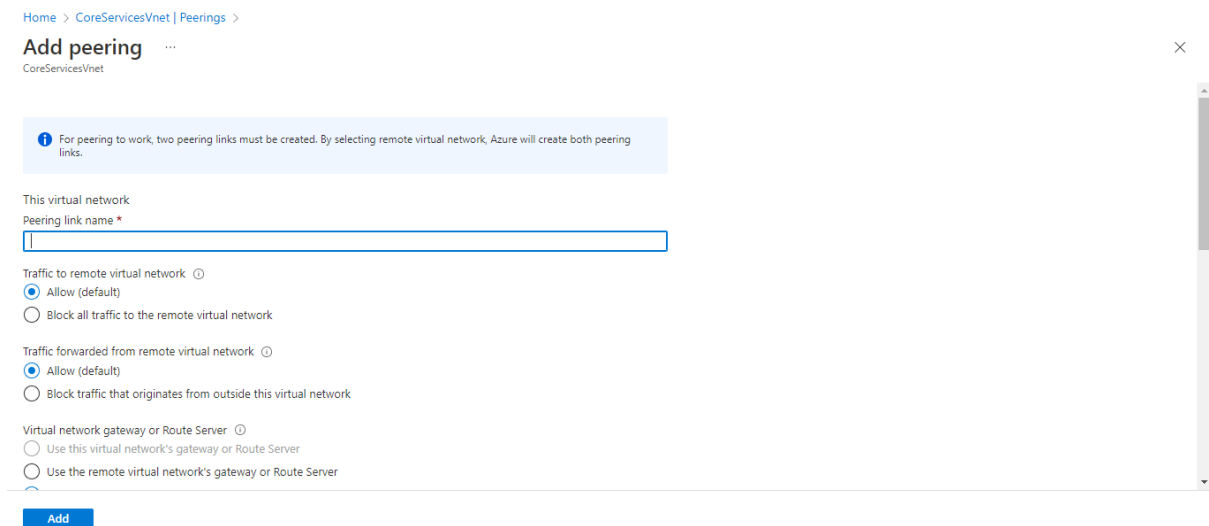
1. On the Azure home page, select Virtual Networks, and then select CoreServicesVnet.



2. In CoreServicesVnet, under Settings, select Peerings.



3. On CoreServicesVnet | Peerings, select + Add.



4. Use the information in the following table to create the peering.

Home > CoreServicesVnet | Peerings >

Add peering

CoreServicesVnet

For peering to work, two peering links must be created. By selecting remote virtual network, Azure will create both peering links.

This virtual network

Peering link name *

CoreServicesVnet-to-ManufacturingVnet

Traffic to remote virtual network

☒ Allow (default)

☐ Block all traffic to the remote virtual network

Traffic forwarded from remote virtual network

☒ Allow (default)

☐ Block traffic that originates from outside this virtual network

Virtual network gateway or Route Server

☐ Use this virtual network's gateway or Route Server

☐ Use the remote virtual network's gateway or Route Server

Add

Subscription *

Azure for Students

Virtual network *

ManufacturingVnet

Traffic to remote virtual network

☒ Allow (default)

☐ Block all traffic to the remote virtual network

Traffic forwarded from remote virtual network

☒ Allow (default)

☐ Block traffic that originates from outside this virtual network

Virtual network gateway or Route Server

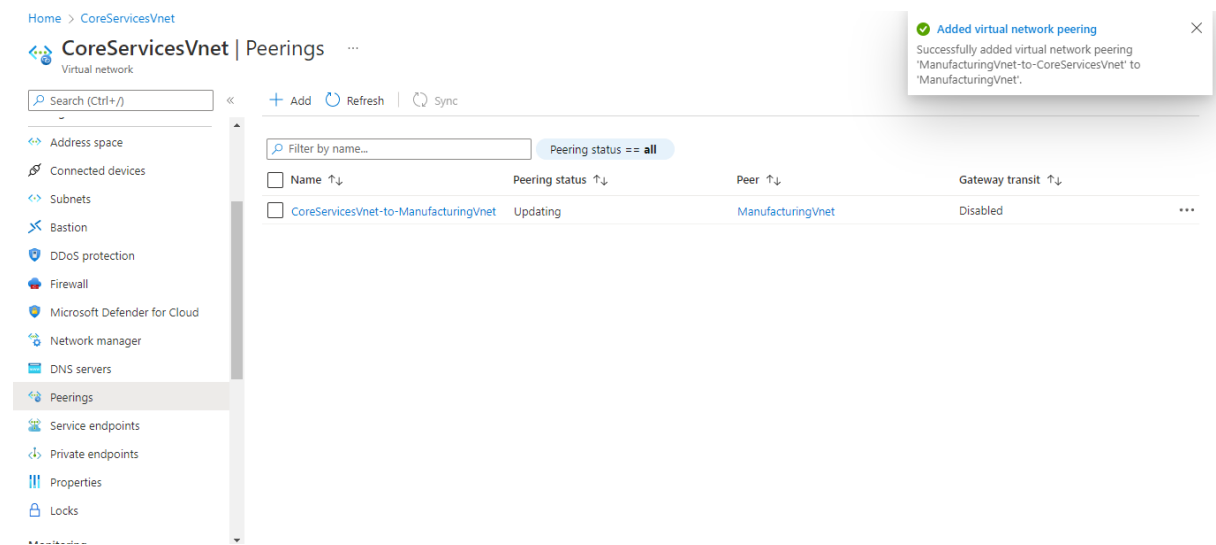
☐ Use this virtual network's gateway or Route Server

☐ Use the remote virtual network's gateway or Route Server

☒ None (default)

Add

5. In CoreServicesVnet | Peerings, verify that the CoreServicesVnet-to-ManufacturingVnet peering is listed. + 6. Under Virtual networks, select ManufacturingVnet, and verify the ManufacturingVnet-to-CoreServicesVnet peering is listed.



Task 5: Test the connection between the VMs

1. On the ManufacturingVM, open a PowerShell prompt. + 3. The test connection should succeed, and you will see a result similar to the following:

```
PingSucceeded : False
PingReplyDetails (RTT) : 0 ms
TcpTestSucceeded : False

PS C:\Users\TestUser> Test-NetConnection 10.20.20.4 -port 3389

ComputerName      : 10.20.20.4
RemoteAddress     : 10.20.20.4
RemotePort        : 3389
InterfaceAlias    : Ethernet
SourceAddress     : 10.30.10.4
TcpTestSucceeded  : True

PS C:\Users\TestUser>
```

Task 6: Clean up resources

1. In the Azure portal, open the PowerShell session within the Cloud Shell pane. (Create Cloud Shell storage if needed, using default settings.)

```
PowerShell | ? | ? | ? | ? | {} | 
Requesting a Cloud Shell.Succeeded.
Connecting terminal...

Welcome to Azure Cloud Shell

Type "az" to use Azure CLI
Type "help" to learn about Cloud Shell


MOTD: Save files to $home/clouddrive for persistence across sessions


VERBOSE: Authenticating to Azure ...
VERBOSE: Building your Azure drive ...
PS /home/eunice> 
```

2. Delete all resource groups you created throughout the labs of this module by running the following command:

```

requesting a Cloud Shell. Succeeded.
Connecting terminal...

Welcome to Azure Cloud Shell

Type "az" to use Azure CLI
Type "help" to learn about Cloud Shell

MOTD: Save files to $home/clouddrive for persistence across sessions

VERBOSE: Authenticating to Azure ...
VERBOSE: Building your Azure drive ...
PS /home/eunice> Remove-AzResourceGroup -Name 'ContosoResourceGroup' -Force -AsJob




| <b>ID</b> | <b>Name</b>       | <b>PSJobTypeName</b> | <b>State</b> | <b>HasMoreData</b> | <b>Location</b> | <b>Command</b>         |
|-----------|-------------------|----------------------|--------------|--------------------|-----------------|------------------------|
| ---       | ----              | -----                | -----        | -----              | -----           | -----                  |
| 2         | Long Running O... | AzureLongRunni...    | Running      | True               | localhost       | Remove-AzResourceGroup |





PS /home/eunice>


```


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