

Walkthrough-Create a virtual network via the Azure Portal

In this walkthrough task we will create a virtual network, deploy two virtual machines onto that virtual network and then configure them to allow one virtual machine to ping the other over that virtual network.

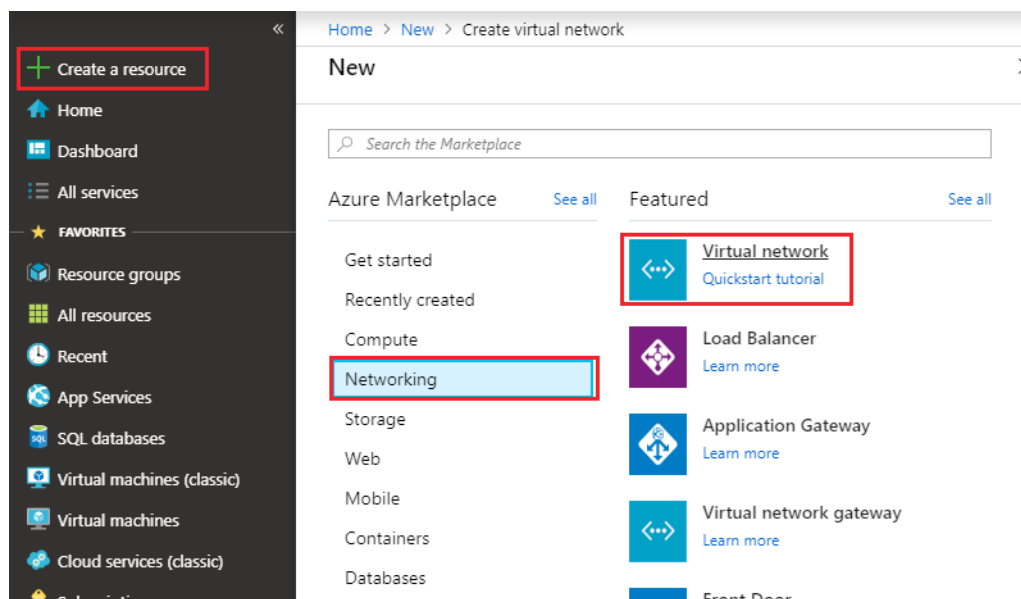
You can complete this walkthrough task by completing the steps outlined below, or you can simply read through them, depending on your available time.

Prerequisites

- You require need an Azure subscription to perform these steps. If you don't have one you can create one by following the steps outlined on the **Create your Azure free account today**¹ webpage.

Steps

1. Sign in to the Azure portal at <https://portal.azure.com>²
2. Choose **Create a resource** in the upper left-hand corner of the Azure portal, then select **Networking** > **Virtual network**



3. In the **Create virtual network** pane above the list of Azure Marketplace resources, search for and select **Windows Server 2016 Datacenter**, then choose **Create**.

¹ https://azure.microsoft.com/en-us/free/?ref=microsoft.com&utm_source=microsoft.com&utm_medium=docs&utm_campaign=visualstudio

² <https://portal.azure.com>

Setting	Value
Name	vnet1
Address space	10.1.0.0/16
Subscription	< Select your subscription >
Resource group	Select Create new , enter vnet1-rg1 , then select OK .
Location	East US
Subnet - Name	subnet1
Subnet Address range	10.1.0.0/24

5. Leave the rest of the settings at their default values and select **Create**.

Create virtual network
□
×

* Name
✓

* Address space ⓘ
✓

10.1.0.0 - 10.1.255.255 (65536 addresses)

* Subscription

Pay-As-You-Go

▼

* Resource group

(New) vnet1-rg1

▼

[Create new](#)

* Location

East US

▼

Subnet

* Name
✓

* Address range ⓘ
✓

10.1.0.0 - 10.1.0.255 (256 addresses)

DDoS protection ⓘ

☒ Basic
☐ Standard

Service endpoints ⓘ

Disabled
Enabled

Firewall ⓘ

Disabled
Enabled

Create

Automation options

6.

7. Verify the creation of the virtual network by going to the newly created resource group and viewing the virtual network is present, you can click on the virtual network and view its properties if you wish.

Resource group: **vnet1-rg1**

Subscription (change): Pay-As-You-Go | Subscription ID: 974e6e39-73eb-48b0-9226-dae31425c367 | Deployments: 1 Succeeded

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

Filter by name... | All types | All locations | No grouping

1 items ☐ Show hidden types

NAME	TYPE	LOCATION
vnet1	Virtual network	East US

8.

9. Create a virtual machine by going to the the upper-left side of the Azure Portal and selecting **Create a resource** > **Compute** > **Windows Server 2016 Datacenter**

Home > New > Marketplace > Everything

Marketplace

My Saved List 1

Everything

Compute

Networking

Storage

Web

Mobile

Containers

Everything

Search: windows server 2016 datacenter

Pricing: All | Operating System: All | Publisher: All

Results

NAME	PUBLISHER	CATEGORY
Windows Server 2016 Datacenter	Microsoft	Compute
Windows Server 2016 Datacenter - with Containers	Microsoft	Compute
[smalldisk] Windows Server 2016 Datacenter	Microsoft	Compute

10.

Windows Server 2016 Datacenter

Microsoft



Windows Server 2016 is a comprehensive server operating system designed to run the applications and infrastructure that power your business. It includes built-in layers of security and innovation to help you run traditional and cloud-native applications with confidence. This Server with Desktop Experience image includes all roles including the graphical user interface (GUI).

This image can be used with [Azure Hybrid Benefit for Windows Server](#).

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Save for later

PUBLISHER

Microsoft

USEFUL LINKS

[Documentation](#)
[Introducing Windows Server 2016](#)
[What's New in 2016](#)
[Learn more](#)

Select a deployment model ⓘ

Resource Manager

Activate Windows

Go to Settings to activate Windows.

Create

11.

12. In Create a **virtual machine** - **Basics** tab, enter or select this information:

Setting	Value
Subscription	< Select your subscription >
Resource group	The resource group you created it in the last section, i.e. vnet1-rg1
Virtual machine name	vm1
Region	East US
Availability options	Leave the default No infrastructure redundancy required
Image	Leave the default Windows Server 2016 Data-center
Size	Leave the default Standard DS1 v2
Username	azureuser
Password	enter a password that meets the complexity requirements.
Public inbound ports	Select Allow selected ports
Selected inbound ports	Select HTTP, HTTPS, SSH and RDP

13. Select **Next** : **Disks**, leave the default values.

14. Select **Next** : **Networking**, complete the following details

Setting	Value
Virtual network	Leave the default vnet1
Subnet	Leave the default subnet1 (10.1.0.0/24)
Public IP	Leave the default (new) vm1-ip
NIC network security group	accept the default Basic
Public inbound ports	Select Allow selected ports
Select inbound ports	Select HTTP, HTTPS, SSH and RDP

Create a virtual machine

NETWORK INTERFACE

When creating a virtual machine, a network interface will be created for you.

CONFIGURE VIRTUAL NETWORKS

* Virtual network ⓘ

vnet1

Create new

* Subnet ⓘ

subnet1 (10.1.0.0/24)

Manage subnet configuration

Public IP ⓘ

(new) vm1-ip

Create new

NIC network security group ⓘ


☐ None
☒ Basic
☐ Advanced

* Public inbound ports ⓘ

☐ None
☒ Allow selected ports

* Select inbound ports

HTTP, HTTPS, SSH, RDP



These ports will be exposed to the internet. Use the Advanced controls to limit inbound traffic to known IP addresses. You can also update inbound traffic rules later.

15.

16. Select **Next : Management**, accept all the default values except for the below settings:

Setting	Value
Boot diagnostics	accept the default value i.e. On
Diagnostic storage account	accept the default value i.e. vnet1rgdiag

Create a virtual machine

[Basics](#) [Disks](#) [Networking](#) [Management](#) [Guest config](#) [Tags](#) [Review + create](#)

Configure monitoring and management options for your VM.

MONITORING

Boot diagnostics ⓘ ☒ On ☐ Off

OS guest diagnostics ⓘ ☐ On ☒ Off

* Diagnostics storage account ⓘ [Create new](#)

IDENTITY

System assigned managed identity ⓘ ☐ On ☒ Off

AUTO-SHUTDOWN

Enable auto-shutdown ⓘ ☐ On ☒ Off

BACKUP

Enable backup ⓘ ☐ On ☒ Off

17.

18. Select **Review + create**. Azure will validate the configuration. When you see that Validation passed, select **Create**. Deployment times can vary but it can generally take between three to six minutes to deploy.

Create a virtual machine

✓ Validation passed

[Basics](#) [Disks](#) [Networking](#) [Management](#) [Guest config](#) [Tags](#) [Review + create](#)

PRODUCT DETAILS

Standard DS1 v2

by Microsoft

[Terms of use](#) | [Privacy policy](#)

Subscription credits apply ⓘ

0.1063 EUR/hr

[Pricing for other VM sizes](#)

TERMS

By clicking "Create", I (a) agree to the legal terms and privacy statement(s) associated with the Marketplace offering(s) listed above; (b) authorize Microsoft to bill my current payment method for the fees associated with the offering(s), with the same billing frequency as my Azure subscription; and (c) agree that Microsoft may share my contact, usage and transactional information with the provider(s) of the offering(s) for support, billing and other transactional activities. Microsoft does not provide rights for third-party offerings. See the [Azure Marketplace Terms](#) for additional details.

BASICS

Subscription	Pay-As-You-Go
Resource group	vnet1-rg1
Virtual machine name	vm1
Region	East US
Availability options	No infrastructure redundancy required
Username	azureuser
Public inbound ports	HTTP, HTTPS, SSH, RDP
Already have a Windows license?	No

Create

Previous

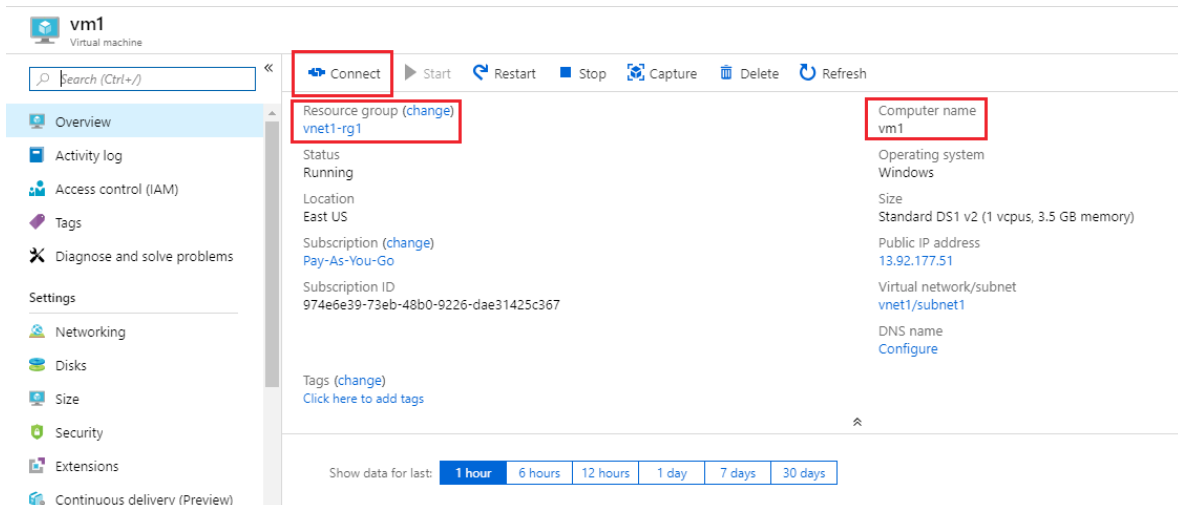
Next

[Download a template for automation](#)

1. Create a second Virtual machine by repeating steps **5 to 9** above, using the same values above above ensuring the below settings are set:

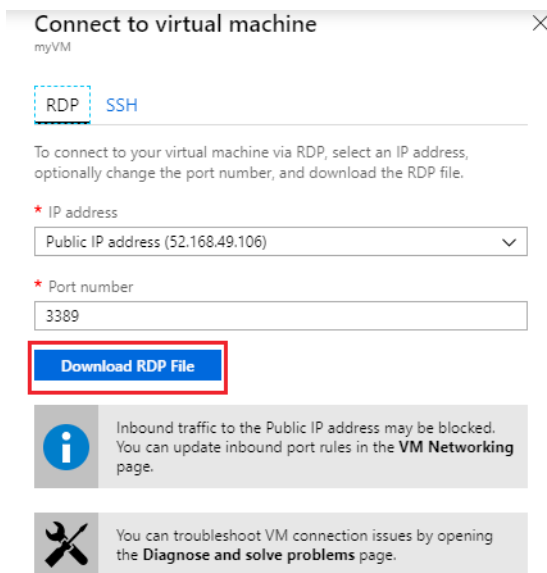
Setting	Value
Virtual machine name	vm2
Public IP	Leave the default (new) vm2-ip
Diagnostic storage account	Leave the default value i.e. vnet1rg1diag

2. When finished filling in the details, validate the configuration by clicking **Review + create** and once successfully validated click **Create**
3. When both virtual machine have completed deployment connect to the first virtual machine, **vm1**, by going to the resource group you placed the virtual machine in, **vnet-rg1** and open up the virtual machine, then click the **Connect** button on the virtual machine properties page.

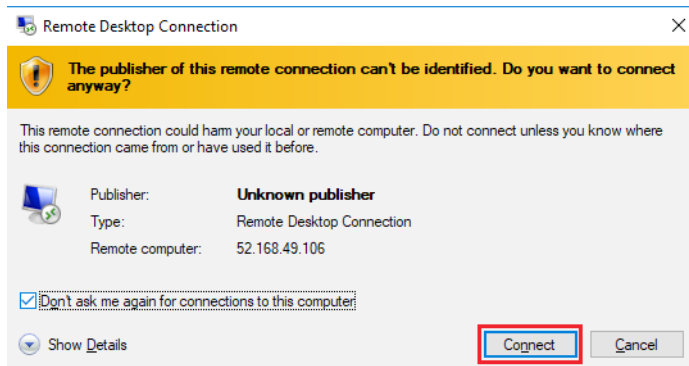


Note: The following directions tell you how to connect to your VM from a Windows computer. On a Mac, you need an RDP client such as this Remote Desktop Client from the Mac App Store and on Linux virtual machine you could connect directly from a bash shell using `ssh`.

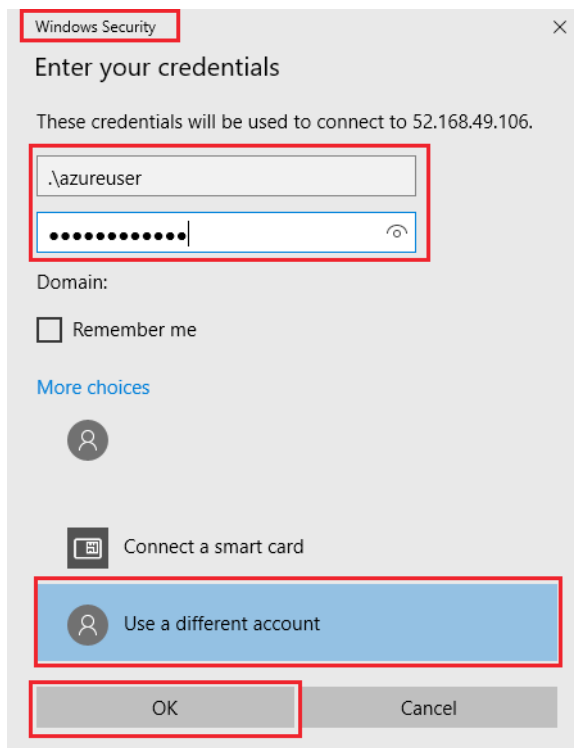
1. In the **Connect to virtual machine** page, keep the default options to connect by DNS name over port 3389 and click **Download RDP File**.



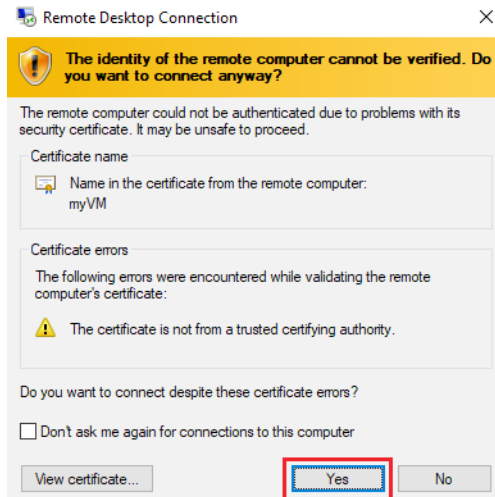
1. Open the downloaded RDP file and click **Connect** when prompted.



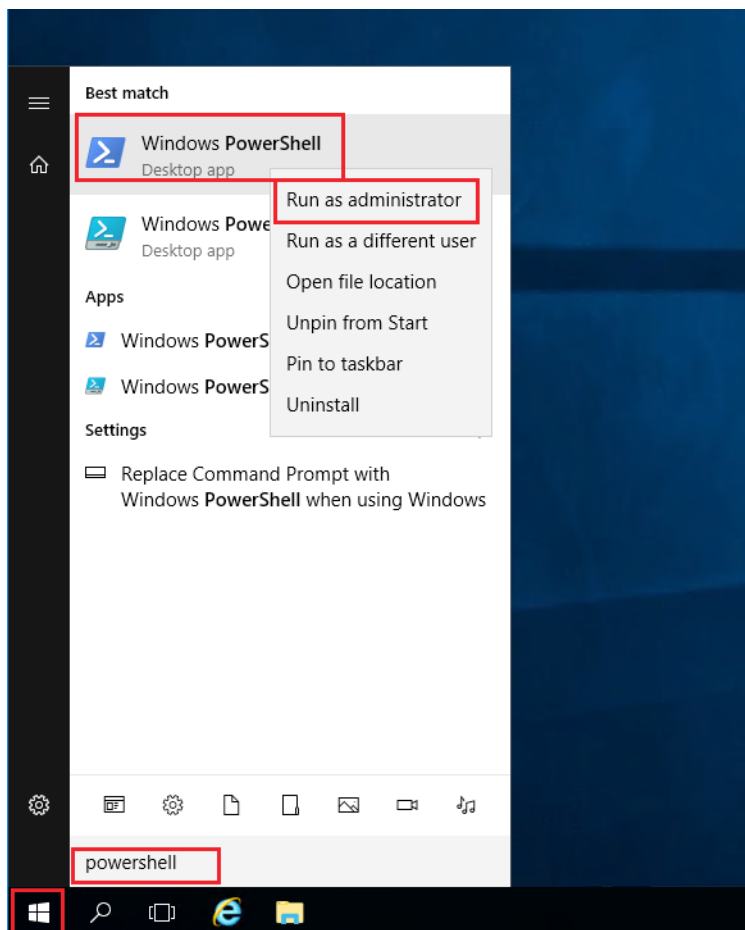
1. In the **Windows Security** window, select **More choices** and then **Use a different account**. Type the username as localhost\username, (you could also type **.\azureuser**) enter password you created for the virtual machine, and then click **OK**.



1. You may receive a certificate warning during the sign-in process. Click **Yes** or to create the connection and connect to your deployed VM. You should connect successfully.



1. Open up a PowerShell command prompt on the virtual machine, by clicking the **Start** button, typing **PowerShell** right clicking **Windows PowerShell** in the menu and selecting **Run as administrator**



19. Run the command

```
ping vm2
```

You receive an error, saying request timed out. The `ping` fails, because `ping` uses the **Internet Control Message Protocol (ICMP)**. By default, ICMP isn't allowed through the Windows firewall.

```
Administrator: Windows PowerShell (x86)
Windows PowerShell
Copyright (C) 2016 Microsoft Corporation. All rights reserved.

PS C:\Users\azureuser> ping vm2

Pinging vm2.2r25jxbiqu5j11n1jzcmnged.bx.internal.cloudapp.net [10.1.0.5] with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 10.1.0.5:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
PS C:\Users\azureuser>
```

1. To allow `vm2` to ping `vm1` enter the below command. This command allows ICMP inbound through the Windows firewall:

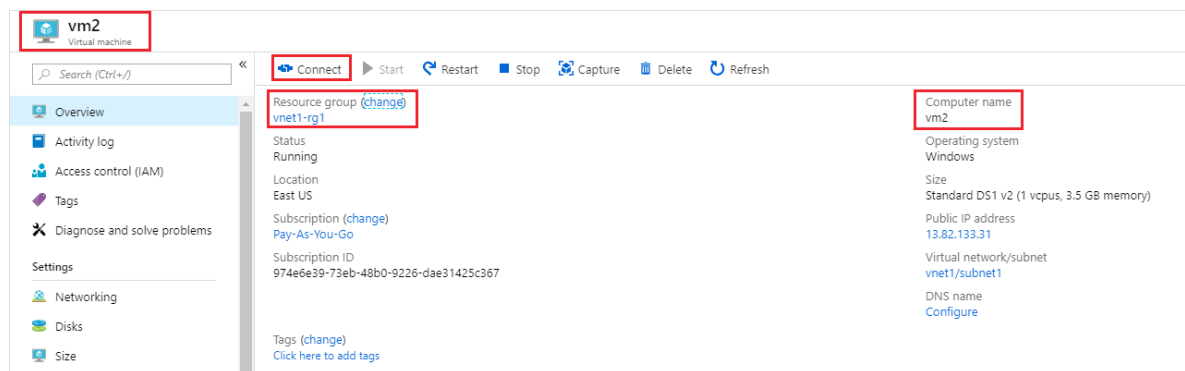
```
New-NetFirewallRule -DisplayName "Allow ICMPv4-In" -Protocol ICMPv4
```

```
PS C:\Users\azureuser> New-NetFirewallRule -DisplayName "Allow ICMPv4-In" -Protocol ICMPv4

Name                : {b24b8908-f93e-4dd1-9c92-24354810e66a}
DisplayName          : Allow ICMPv4-In
Description          :
DisplayGroup         :
Group                :
Enabled              : True
Profile              : Any
Platform             : {}
Direction            : Inbound
Action               : Allow
EdgeTraversalPolicy  : Block
LooseSourceMapping   : False
LocalOnlyMapping     : False
Owner                :
PrimaryStatus        : OK
Status               : The rule was parsed successfully from the store. (65536)
EnforcementStatus    : NotApplicable
PolicyStoreSource    : PersistentStore
PolicyStoreSourceType : Local

PS C:\Users\azureuser>
```

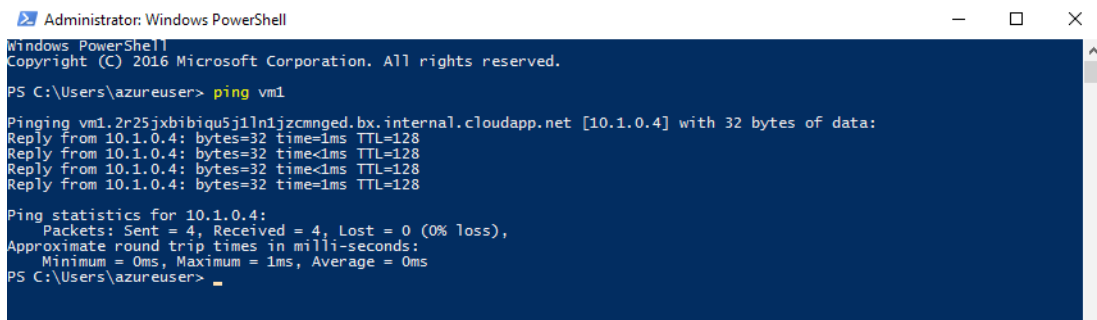
1. Connect to `VM2` as has been done for `VM1`, using `rdp`. i.e. open **vm2** properties and click the **Connect** button to download and then connect vis RDP



1. Open up a PowerShell command prompt on the virtual machine, `VM2`, and run the command:

```
ping vm1
```

You should now be able to ping the `vm1` virtual machine successfully, because ICMP has been configured to be allowed through the Windows firewall on the `vm1` virtual machine in an earlier step.



```
Administrator: Windows PowerShell
Windows PowerShell
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PS C:\Users\azureuser> ping vm1

Pinging vm1.2r25jxbibiqu5j1ln1jzcmnged.bx.internal.cloudapp.net [10.1.0.4] with 32 bytes of data:
Reply from 10.1.0.4: bytes=32 time=1ms TTL=128
Reply from 10.1.0.4: bytes=32 time<1ms TTL=128
Reply from 10.1.0.4: bytes=32 time<1ms TTL=128
Reply from 10.1.0.4: bytes=32 time=1ms TTL=128

Ping statistics for 10.1.0.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms
PS C:\Users\azureuser>
```

Congratulations! This ping is being done using the *virtual network* you created and deployed the two virtual machines into. The two virtual machines are communicating over this *virtual network* that was created.

Note: Remember to delete the resources you have just deployed if you are no longer using them to ensure you do not incur costs for running resources. You can delete all deployed resources by deleting the resource group in which they all reside.