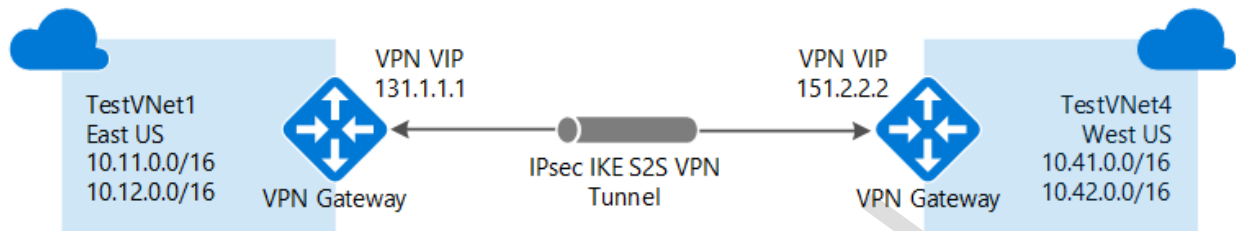


# VNet-to-VNet VPN gateway



Example settings

## Values for VNet1:

- **Virtual network settings**
  - **Name:** VNet1
  - **Address space:** 10.1.0.0/16
  - **Subscription:** Select the subscription you want to use.
  - **Resource group:** TestRG1
  - **Location:** East US
  - **Subnet**
    - **Name:** FrontEnd
    - **Address range:** 10.1.0.0/24
  - **Gateway subnet:**
    - **Name:** *GatewaySubnet* is autofilled
    - **Address range:** 10.1.255.0/27

[Home](#) > [New](#) > [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 \* ⓘ

Resource group \* ⓘ

[Create new](#)

### Instance details

Name \*

Region \*

[Review + create](#)

[< Previous](#)

[Next : IP Addresses >](#)

[Download a template for automation](#)

## Create vnet1 with default settings

Home > Virtual networks > vnet1

### Virtual networks

+ Add Manage view ...

Filter by name...

Name ↑↓

- [Redacted]
- [Redacted]
- vnet1
- VNet4

Page 1 of 1

### vnet1 | Subnets

Virtual network

Search (Ctrl+/)

+ Subnet + Gateway subnet Refresh

Search subnets

Name ↑↓	IPv4 ↑↓	IPv6 (many availa... ↑↓	Delegated to ↑↓	Security group ↑↓
default	10.1.0.0/24 (251 availa...	-	-	-

Create gateway subnet also and explain to student what is mean by gateway subnet.

vnet1 | Subnets
Virtual network

Search (Ctrl+/)

+ Subnet + Gateway subnet Refresh

Overview
Activity log
Access control (IAM)
Tags
Diagnose and solve problems

Settings

Address space
Connected devices
Subnets
DDoS protection
Firewall
Security
DNS servers
Peerings

Search subnets

Name ↑↓	IPv4 ↑↓	IPv6 (many availa... ↑↓	Delegated to ↑↓	Security group ↑↓
default	10.1.0.0/24 (251 availa...	-	-	-
GatewaySubnet	10.1.1.0/24 (251 availa...	-	-	-

- **Virtual network gateway settings**

- **Name:** VNet1GW
- **Gateway type:** Select **VPN**.
- **VPN type:** Select **Route-based**.
- **SKU:** Select the gateway SKU you want to use.
- **Public IP address name:** VNet1GWpip
- **Connection**
  - **Name:** VNet1toVNet4
  - **Shared key:** You can create the shared key yourself. When you create the connection between the VNets, the values must match. For this exercise, use abc123.

## Virtual network gateways



+ Add Edit columns Refresh Assign tags

### Subscriptions:

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

0 items

Name ↑↓	Virtual network	Gateway type	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). Learn more about Virtual network gateway.

Create virtual network gateway

[Home](#) > [Virtual network gateways](#) >

## Create virtual network gateway

Name *	VNet1GW ✓
Region *	West Europe ▼
Gateway type * ⓘ	<input checked="" type="radio"/> VPN <input type="radio"/> ExpressRoute
VPN type * ⓘ	<input checked="" type="radio"/> Route-based <input type="radio"/> Policy-based
SKU * ⓘ	VpnGw1 ▼
Virtual network * ⓘ	vnet1 ▼ <a href="#">Create virtual network</a>
Subnet ⓘ	GatewaySubnet (10.1.1.0/24) ▼

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

### Public IP address

Public IP address \* ⓘ ☒ Create new ☐ Use existing

Review + create

Previous

Next : Tags >

[Download a template for automation](#)

## Create virtual network gateway

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 \*

VNet1GWpip ✓

Public IP address SKU

Basic

Assignment

☒ Dynamic ☐ Static

Enable active-active mode \*

☐ Enabled ☒ Disabled

Configure BGP \*

☐ Enabled ☒ Disabled

Azure recommends using a validated VPN device with your virtual network gateway. To view a list of validated devices and instructions for configuration, refer to Azure's [documentation](#) regarding validated VPN devices.

[Review + create](#)

[Previous](#)

[Next : Tags >](#)

[Download a template for automation](#)

### Create VNET Gateway 1

#### Values for VNet4:

- **Virtual network settings**
  - **Name:** VNet4
  - **Address space:** 10.41.0.0/16
  - **Subscription:** Select the subscription you want to use.
  - **Resource group:** TestRG4
  - **Location:** West US
  - **Subnet**
    - **Name:** FrontEnd
    - **Address range:** 10.41.0.0/24
  - **GatewaySubnet**
    - **Name:** *GatewaySubnet* is autofilled

- **Address range:** 10.41.255.0/27

[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 \* ⓘ

Resource group \* ⓘ

[Create new](#)

### Instance details

Name \*

VNet4

Region \*

(Europe) North Europe

[Review + create](#)

[< Previous](#)

[Next : IP Addresses >](#)

[Download a template for automation](#)

Create vnet4 with default settings.

Now create gateway subnet

**VNet4 | Subnets** Virtual network ×

Search (Ctrl+/) << + Subnet + Gateway subnet Refresh

Search subnets

Name ↑↓	IPv4 ↑↓	IPv6 (many availa... ↑↓	Delegated to ↑↓	Security g
default	10.2.0.0/24 (251 available)	-	-	-
GatewaySubnet	10.2.1.0/24 (251 available)	-	-	-

Overview  
Activity log  
Access control (IAM)  
Tags  
Diagnose and solve problems

Settings

Address space  
Connected devices  
**Subnets**  
DDoS protection  
Firewall  
Security  
DNS servers  
Peerings

- **Virtual network gateway settings**

- **Name:** VNet4GW
- **Gateway type:** Select **VPN**.
- **VPN type:** Select **Route-based**.
- **SKU:** Select the gateway SKU you want to use.
- **Public IP address name:** VNet4GWpip
- **Connection**
  - **Name:** VNet4toVNet1
  - **Shared key:** You can create the shared key yourself. When you create the connection between the VNets, the values must match. For this exercise, use abc123.

## Create virtual network gateway

Name *	<input type="text" value="VNet4GW"/>
Region *	<input type="text" value="West Europe"/>
Gateway type * ⓘ	<input checked="" type="radio"/> VPN <input type="radio"/> ExpressRoute
VPN type * ⓘ	<input checked="" type="radio"/> Route-based <input type="radio"/> Policy-based
SKU * ⓘ	<input type="text" value="VpnGw1"/>
Virtual network * ⓘ	<input type="text" value="VNet4"/> <a href="#">Create virtual network</a>
Subnet ⓘ	<input type="text" value="GatewaySubnet (10.2.1.0/24)"/>
<b>i</b> Only virtual networks in the currently selected subscription and region are listed.	
Public IP address	
Public IP address * ⓘ	<input checked="" type="radio"/> Create new <input type="radio"/> Use existing

[Review + create](#)

[Previous](#)

[Next : Tags >](#)

[Download a template for automation](#)

Now virtual network Vnet1 , Virtual Network Gateway 1 has been created.

Now virtual network Vnet4 , Virtual Network Gateway 4 has been created.

This will take 40 mins

Now first goto VNET Gateway 1

Go to connections



## VNet1GW

Virtual network gateway

Search (Ctrl+/)

Refresh Move Delete

### Overview

- Activity log
- Access control (IAM)
- Tags
- Diagnose and solve problems

### Settings

- Configuration
- Connections
- Point-to-site configuration
- Properties
- Locks

### Monitoring

- Logs

### Essentials

Resource group (change) :

Location : West Europe

Subscription (change) :

Subscription ID :

SKU : VpnGw1

Gateway type : VPN

VPN type : Route-based

Virtual network : vnet1

Public IP address : 40.118.98.185 (VNet1GW)

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



#### Health check

Perform a quick health check to detect possible gateway issues

[Go to Resource health](#)



#### Documentation

View guidance on helpful topics related to

[View documentation](#)

Show data for last 1 hour 6 hours 12 hours 1 day 7 days 30 days

Total tunnel ingress

Total tunnel egress



## VNet1GW | Connections

Virtual network gateway

Search (Ctrl+/)

Add Refresh

### Overview

### Activity log

### Access control (IAM)

### Tags

### Diagnose and solve problems

### Settings

### Configuration

### Connections

### Point-to-site configuration

### Properties

### Locks

### Monitoring

### Logs

### Alerts

Search connections

Name

↑↓

Status

↑↓

Connection type

↑↓

No results

[Home](#) > [Virtual network gateways](#) > [VNet1GW](#) >



## Add connection

VNet1GW

Name \*

vnet1-to-vnet4

Connection type ⓘ

VNet-to-VNet

\*First virtual network gateway ⓘ

VNet1GW

\*Second virtual network gateway ⓘ

VNet4GW

Shared key (PSK) \* ⓘ

abc123

☐ Use Azure Private IP Address ⓘ

☐ Enable BGP ⓘ

IKE Protocol ⓘ

OK

Now goto vnet gateway 4

Do the same vnet4 to vnet 1 → secret name – abc123



## VNet4GW | Connections

Virtual network gateway



Add



Refresh



Overview



Activity log



Access control (IAM)



Tags



Diagnose and solve problems

### Settings



Configuration



Connections



Point-to-site configuration



Properties



Locks

### Monitoring



Logs

Name



Status



Connection type

vnet1-to-vnet4

Unknown

VNet-to-VNet

[Home](#) > [Virtual network gateways](#) > [VNet4GW](#) >



## Add connection

VNet4GW

Name \*

vnet4-to-vnet1

Connection type ⓘ

VNet-to-VNet

\*First virtual network gateway ⓘ

VNet4GW

\*Second virtual network gateway ⓘ

VNet1GW

Shared key (PSK) \* ⓘ

abc123

☐ Use Azure Private IP Address ⓘ

☐ Enable BGP ⓘ

IKE Protocol ⓘ


OK

Now create one VM in Vnet1 and another VM in VNET4

Login in each machine and try to ping other machine.



VM in VNET1

1 items

<input type="checkbox"/>	Name ↑↓	Type ↑↓	Status
<input type="checkbox"/>	 vnet1vm1	Virtual machine	Running

VM in VNET4

2 items

<input type="checkbox"/>	Name ↑↓	Type ↑↓	Status
<input type="checkbox"/>	 vnet1vm1	Virtual machine	Running
<input type="checkbox"/>	 vnet4vm1	Virtual machine	Running

Go to each vm serial console option.if you get any warning then go to boot diagnostics...enable

[Home](#) > [vnet4vm1](#) >



## Boot diagnostics

vnet4vm1



Save



Discard

Use this feature to troubleshoot boot failures for custom or platform images. Boot diagnostics can be used with a custom storage account or with a pre-provisioned storage account managed by Microsoft. Please download the info you need before switching from managed storage account to custom storage account. [Learn more](#)

### Status

- ☐ Enable with managed storage account (recommended)
- ☒ Enable with custom storage account
- ☐ Disable

Diagnostics storage account \*

testdatapoc1



[Create new](#)

Now go to serial console and it will work.

## vnet1vm1 | Serial console

Virtual machine

Connection monitor

Automation

Tasks

Export template

Support + troubleshooting

Resource health

Boot diagnostics

Performance diagnostics (Prev...

Reset password

Redeploy

Ubuntu Advantage support pl...

Serial console

Connection troubleshoot

New support request

? Feedback

Support: <https://ubuntu.com/advantage>

System information as of Fri Oct 2 17:44:18 UTC 2020

System load:	0.18	Processes:	106
Usage of /:	4.4% of 28.90GB	Users logged in:	0
Memory usage:	65%	IP address for eth0:	10.1.0.4
Swap usage:	0%		

0 packages can be updated.  
0 updates are security updates.

The programs included with the Ubuntu system are free software;  
the exact distribution terms for each program are described in the  
individual files in /usr/share/doc/\*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by  
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo\_root" for details.

bvijaycom@vnet1vm1:~\$ ping 10.2.0.4  
PING 10.2.0.4 (10.2.0.4) 56(84) bytes of data.  
█

Now try from VNET4 VM 4 machine

Home > vnet4vm1 >

## vnet4vm1 | Serial console

Virtual machine

Search (Ctrl+/)

Connection monitor

### Automation

Tasks

Export template

### Support + troubleshooting

Resource health

Boot diagnostics

Performance diagnostics (Prev...

Reset password

Redeploy

Ubuntu Advantage support pl...

Serial console

Connection troubleshoot

New support request

```
? Feedback [?] [?] [?] [?]  
* Support: https://ubuntu.com/advantage  
  
System information as of Fri Oct 2 17:45:51 UTC 2020  
  
System load: 0.04          Processes:      105  
Usage of /:  4.4% of 28.90GB Users logged in: 0  
Memory usage: 42%         IP address for eth0: 10.2.0.4  
Swap usage:  0%  
  
0 packages can be updated.  
0 updates are security updates.  
  
The programs included with the Ubuntu system are free software;  
the exact distribution terms for each program are described in the  
individual files in /usr/share/doc/*/copyright.  
  
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by  
applicable law.  
  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
bvijaycom@vnet4vm1:~$ ping 10.1.0.4  
PING 10.1.0.4 (10.1.0.4) 56(84) bytes of data.  
[ ]
```

Home >

## VNet4GW | Connections

Virtual network gateway

Search (Ctrl+/)

+ Add Refresh

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

### Settings

Configuration

Connections

Point-to-site configuration

Properties

Locks

Search connections					
Name	↑↓	Status	↑↓	Connection type	↑↓
vnet1-to-vnet4		Not connected		VNet-to-VNet	↑↓
vnet4-to-vnet1		Updating		VNet-to-VNet	↑↓


Now see from both machines



Home > vnet1vm1 >


## vnet1vm1 | Serial console

Virtual machine


 Connection monitor


### Automation


 Tasks


 Export template


### Support + troubleshooting


 Resource health


 Boot diagnostics

 Performance diagnostics (Prev...


 Reset password

 Redeploy

 Ubuntu Advantage support pl...

 Serial console

 Connection troubleshoot

 New support request

« ? [Feedback](#)    

```
64 bytes from 10.2.0.4: icmp_seq=201 ttl=64 time=5.02 ms
64 bytes from 10.2.0.4: icmp_seq=202 ttl=64 time=5.09 ms
64 bytes from 10.2.0.4: icmp_seq=203 ttl=64 time=4.62 ms
64 bytes from 10.2.0.4: icmp_seq=204 ttl=64 time=4.98 ms
64 bytes from 10.2.0.4: icmp_seq=205 ttl=64 time=4.78 ms
64 bytes from 10.2.0.4: icmp_seq=206 ttl=64 time=4.89 ms
64 bytes from 10.2.0.4: icmp_seq=207 ttl=64 time=4.93 ms
64 bytes from 10.2.0.4: icmp_seq=208 ttl=64 time=4.87 ms
64 bytes from 10.2.0.4: icmp_seq=209 ttl=64 time=4.89 ms
64 bytes from 10.2.0.4: icmp_seq=210 ttl=64 time=5.60 ms
64 bytes from 10.2.0.4: icmp_seq=211 ttl=64 time=5.22 ms
64 bytes from 10.2.0.4: icmp_seq=212 ttl=64 time=5.21 ms
64 bytes from 10.2.0.4: icmp_seq=213 ttl=64 time=4.99 ms
64 bytes from 10.2.0.4: icmp_seq=214 ttl=64 time=5.48 ms
64 bytes from 10.2.0.4: icmp_seq=215 ttl=64 time=4.61 ms
64 bytes from 10.2.0.4: icmp_seq=216 ttl=64 time=4.73 ms
64 bytes from 10.2.0.4: icmp_seq=217 ttl=64 time=5.00 ms
64 bytes from 10.2.0.4: icmp_seq=218 ttl=64 time=5.46 ms
64 bytes from 10.2.0.4: icmp_seq=219 ttl=64 time=4.72 ms
64 bytes from 10.2.0.4: icmp_seq=220 ttl=64 time=5.23 ms
64 bytes from 10.2.0.4: icmp_seq=221 ttl=64 time=5.55 ms
64 bytes from 10.2.0.4: icmp_seq=222 ttl=64 time=5.37 ms
64 bytes from 10.2.0.4: icmp_seq=223 ttl=64 time=4.93 ms
64 bytes from 10.2.0.4: icmp_seq=224 ttl=64 time=7.63 ms
64 bytes from 10.2.0.4: icmp_seq=225 ttl=64 time=12.1 ms
64 bytes from 10.2.0.4: icmp_seq=226 ttl=64 time=4.60 ms
```

[Home](#) > [vnet4vm1](#) >



## vnet4vm1 | Serial console

Virtual machine

Locks

### Operations

Bastion

Auto-shutdown

Backup

Disaster recovery

Guest + host updates

Inventory

Change tracking

Configuration management (P...

Policies

Run command

### Monitoring

<<

? [Feedback](#)



```
64 bytes from 10.1.0.4: icmp_seq=73 ttl=64 time=5.02 ms
64 bytes from 10.1.0.4: icmp_seq=74 ttl=64 time=5.52 ms
64 bytes from 10.1.0.4: icmp_seq=75 ttl=64 time=4.79 ms
64 bytes from 10.1.0.4: icmp_seq=76 ttl=64 time=6.05 ms
64 bytes from 10.1.0.4: icmp_seq=77 ttl=64 time=4.86 ms
64 bytes from 10.1.0.4: icmp_seq=78 ttl=64 time=5.20 ms
64 bytes from 10.1.0.4: icmp_seq=79 ttl=64 time=6.64 ms
64 bytes from 10.1.0.4: icmp_seq=80 ttl=64 time=5.53 ms
64 bytes from 10.1.0.4: icmp_seq=81 ttl=64 time=5.43 ms
64 bytes from 10.1.0.4: icmp_seq=82 ttl=64 time=6.09 ms
64 bytes from 10.1.0.4: icmp_seq=83 ttl=64 time=5.62 ms
64 bytes from 10.1.0.4: icmp_seq=84 ttl=64 time=4.87 ms
64 bytes from 10.1.0.4: icmp_seq=85 ttl=64 time=5.05 ms
64 bytes from 10.1.0.4: icmp_seq=86 ttl=64 time=4.59 ms
64 bytes from 10.1.0.4: icmp_seq=87 ttl=64 time=5.15 ms
64 bytes from 10.1.0.4: icmp_seq=88 ttl=64 time=5.40 ms
64 bytes from 10.1.0.4: icmp_seq=89 ttl=64 time=4.58 ms
64 bytes from 10.1.0.4: icmp_seq=90 ttl=64 time=5.20 ms
64 bytes from 10.1.0.4: icmp_seq=91 ttl=64 time=4.98 ms
64 bytes from 10.1.0.4: icmp_seq=92 ttl=64 time=5.77 ms
64 bytes from 10.1.0.4: icmp_seq=93 ttl=64 time=4.84 ms
64 bytes from 10.1.0.4: icmp_seq=94 ttl=64 time=5.72 ms
64 bytes from 10.1.0.4: icmp_seq=95 ttl=64 time=5.52 ms
64 bytes from 10.1.0.4: icmp_seq=96 ttl=64 time=6.41 ms
64 bytes from 10.1.0.4: icmp_seq=97 ttl=64 time=4.84 ms
64 bytes from 10.1.0.4: icmp_seq=98 ttl=64 time=5.49 ms
```