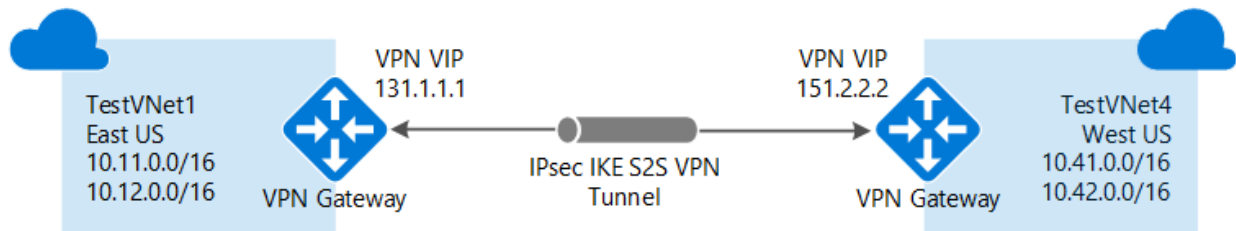# VNet-to-VNet VPN gateway

Example settings

Values for VNet1:

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

Create vnet1 with default settings

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

- **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 * ⓘ	⦿ VPN ◯ ExpressRoute

VPN type * ⓘ	⦿ Route-based ◯ Policy-based

SKU * ⓘ	VpnGw1 ⌄

Virtual network * ⓘ	vnet1 ⌄

Create virtual network

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

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

- **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 *	VNet4GW ✓
Region *	West Europe ⌄
Gateway type * ⓘ	⦿ VPN ○ ExpressRoute
VPN type * ⓘ	⦿ Route-based ○ Policy-based
SKU * ⓘ	VpnGw1 ⌄
Virtual network * ⓘ	VNet4 ⌄
	Create virtual network
Subnet ⓘ	GatewaySubnet (10.2.1.0/24) ⌄
	ⓘ 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

---

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)	:	SKU	: VpnGw1
Location	: West Europe	Gateway type	: VPN
Subscription (change)	:	VPN type	: Route-based
Subscription ID	:	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 t

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					

⊗ 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

Search (Ctrl+/)

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

Settings

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

Monitoring

- Logs

+ Add   ↻ Refresh

Search connections

Name	↑↓	Status	↑↓	Connection type
vnet1-to-vnet4		Unknown		VNet-to-VNet

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

	Name ↑↓	Type ↑↓	Status
☐	🖥 vnet1vm1	Virtual machine	Running

VM in VNET4

2 items

	Name ↑↓	Type ↑↓	Status
☐	🖥️ vnet1vm1	Virtual machine	Running
☐	🖥️ 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.

Now try from VNET4 VM 4 machine

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.
█
```

VNet4GW | Connections
Virtual network gateway

✕

Search (Ctrl+/)

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Settings

Configuration

Connections

Point-to-site configuration

Properties

Locks

+ Add   ↻ Refresh

Search connections

Name	Status	Connection type	Peer	
vnet1-to-vnet4	Not connected	VNet-to-VNet	VNet1GW	•••
vnet4-to-vnet1	Updating	VNet-to-VNet	VNet1GW	•••

Now see from both machines

vnet1vm1 | 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 ⬚ ⚙ ⏻ ▦

```
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
```

vnet4vm1 | Serial console

Virtual machine

Search (Ctrl+/)

🔒 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
```