

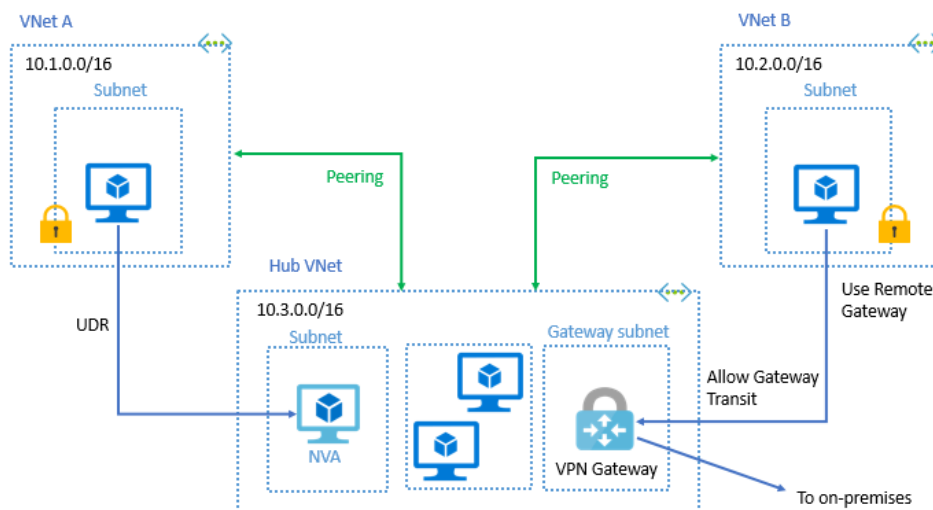
NEERAJ PANWAR (B7- CEQ545)

VNET (AZURE VIRTUAL NETWORK):

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 PEERING:

Virtual network peering enables us to seamlessly connect two or more Virtual Networks in Azure. The virtual networks appear as one for connectivity purposes.



Through VNet Peering: We can connect virtual networks to each other, enabling resources in either virtual network to communicate with each other, using virtual network peering. We can connect to the virtual networks in the same, or different, Azure regions.

TYPES

Azure supports the following types of peering:

- Virtual network peering: Connecting virtual networks within the same Azure region.
- Global virtual network peering: Connecting virtual networks across Azure regions.

There are three types of peering -->

- 1) Vnet peering under **same subscription** under **same tenant** same region
- 2) Vnet peering under **different subscription same tenant** under same region
- 3) Vnet peering under **different subscription different tenant** same region

In this assignment, we will create 2 virtual network and 2 virtual machines under **same** resource group(**neeraj-rg**)

The two virtual networks are **neerajvnet-1** and **neerajvnet-2**

The two **VMs** are **neerajvm-1** and **neerajvm-2**

Creating VNETS

- Creating first VNET named as **neerajvnet-1**

The screenshot shows the 'Create virtual network' page in the Microsoft Azure portal. The page has a blue header with the Microsoft Azure logo and a search bar. Below the header, there's a breadcrumb trail: Home > Virtual networks >. The main heading is 'Create virtual network'. There are tabs for 'Basics', 'IP Addresses', 'Security', 'Tags', and 'Review + create'. The 'Basics' tab is selected. The page contains two sections: 'Project details' and 'Instance details'. In 'Project details', the 'Subscription' is set to 'Free Trial' and the 'Resource group' is 'neeraj-rg'. In 'Instance details', the 'Name' is 'neerajvnet-1' and the 'Region' is 'Central India'. At the bottom, there are three buttons: 'Review + create', '< Previous', and 'Next: IP Addresses >'. There is also a link to 'Download a template for automation'.

Microsoft Azure

Search resources, services, and docs (G+)

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 *

Region *

[Review + create](#) [< Previous](#) [Next: IP Addresses >](#) [Download a template for automation](#)

The screenshot shows the 'Overview' page for a deployment named 'Microsoft.VirtualNetwork-20230311004128'. The page has a blue header with the Microsoft Azure logo and a search bar. Below the header, there's a breadcrumb trail: Home >. The main heading is 'Microsoft.VirtualNetwork-20230311004128 | Overview'. There are tabs for 'Overview', 'Inputs', 'Outputs', and 'Template'. The 'Overview' tab is selected. The page contains a section titled 'Your deployment is complete' with a green checkmark. Below this, there's a table with deployment details: Deployment name, Subscription, Resource group, Start time, and Correlation ID. There are also links for 'Deployment details', 'Next steps', and 'Go to resource'. At the bottom, there's a 'Give feedback' section with a link to 'Tell us about your experience with deployment'. On the right side, there's a 'Deployment succeeded' notification box with a green checkmark and a link to 'Go to resource'. Below the notification, there are three sections: 'Cost Management', 'Microsoft Defender for Cloud', and 'Free Microsoft tutorials'. Each section has a brief description and a link to learn more.

Microsoft Azure

Search resources, services, and docs (G+)

Home >

Microsoft.VirtualNetwork-20230311004128 | Overview

Deployment

[Delete](#) [Cancel](#) [Redeploy](#) [Download](#) [Refresh](#)

Overview Inputs Outputs Template

✓ Your deployment is complete

Deployment name: Microsoft.VirtualNetwork-20230311004128 Start time: 3/11/2023, 1:00:12 AM
Subscription: [Free Trial](#) Correlation ID: 01aafa3f-5d20-4521-b07a-896d37736393
Resource group: [neeraj-rg](#)

Deployment details

Next steps

[Go to resource](#)

Give feedback
[Tell us about your experience with deployment](#)

Deployment succeeded
Deployment 'Microsoft.VirtualNetwork-20230311004128' to resource group 'neeraj-rg' was successful.
[Go to resource](#) [Pin to dashboard](#)

Cost Management
Get notified to stay within your budget and prevent unexpected charges on your bill.
[Set up cost alerts >](#)

Microsoft Defender for Cloud
Secure your apps and infrastructure
[Go to Microsoft Defender for Cloud >](#)

Free Microsoft tutorials
[Start learning today >](#)

Work with an expert
Azure experts are service provider partners who can help manage your assets on Azure and be your first line of support.
[Find an Azure expert >](#)

- Creating second VNET named as **neerajvnet-2**

Microsoft Azure

Search resources, services, and docs (G+I)

Neeraj@vikashk7070ou...
DEFAULT DIRECTORY (VIKASHK7...

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 * Free Trial

Resource group * neeraj-rg
[Create new](#)

Instance details

Name * neerajvnet-2

Region * Central India

Review + create

< Previous

Next : IP Addresses >

Download a template for automation

Microsoft Azure

Search resources, services, and docs (G+I)

Neeraj@vikashk7070ou...
DEFAULT DIRECTORY (VIKASHK7...

Home >

Microsoft.VirtualNetwork-20230311010528 | Overview

Deployment

Search

Delete Cancel Redeploy Download Refresh

Overview

Inputs

Outputs

Template

✓ Your deployment is complete

Deployment name: Microsoft.VirtualNetwork-20230311010528 Start time: 3/11/2023, 1:06:57 AM
Subscription: [Free Trial](#) Correlation ID: d4d135e3-d563-4061-87cd-158e9b7a0b22
Resource group: [neeraj-rg](#)

Deployment details

Next steps

Go to resource

Give feedback
[Tell us about your experience with deployment](#)

Cost Management

Get notified to stay within your budget and prevent unexpected charges on your bill.
[Set up cost alerts >](#)

Microsoft Defender for Cloud

Secure your apps and infrastructure
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Free Microsoft tutorials

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[Find an Azure expert >](#)

Creating VMs

- Creating first VM named as “neerajvm-1”

The screenshot shows the Azure portal interface for a deployment named 'CreateVm-MicrosoftWindowsServer.WindowsServer-201-20230311072641'. The deployment is in progress. The left sidebar shows the navigation menu with 'Overview' selected. The main content area displays the deployment details, including the deployment name, subscription, resource group, start time, and correlation ID. A table lists the resources created: 'neerajvm-1' (Microsoft.Compute/virtualMa...), 'neerajvm-1928_x1' (Microsoft.Network/networkIn...), 'neerajvm-1-ip' (Microsoft.Network/publicIpA...), and 'neerajvm-1-nsg' (Microsoft.Network/networkSe...). The status of each resource is shown as 'Created' or 'OK'. The right sidebar contains links to Microsoft Defender for Cloud, Free Microsoft tutorials, and Work with an expert.

Home > **CreateVm-MicrosoftWindowsServer.WindowsServer-201-20230311072641** | Overview

Deployment

Search

Delete Cancel Redeploy Download Refresh

Deployment is in progress

Deployment name: CreateVm-MicrosoftWindowsServer.WindowsServer-201-20230311072641 Start time: 3/11/2023, 7:28:11 AM
Subscription: [Free Trial](#) Correlation ID: 8fc75ba9-0f8a-4da0-9100-5b53c77fade7

Deployment details

Resource	Type	Status	Operation details
neerajvm-1	Microsoft.Compute/virtualMa...	Created	Operation details
neerajvm-1928_x1	Microsoft.Network/networkIn...	Created	Operation details
neerajvm-1-ip	Microsoft.Network/publicIpA...	OK	Operation details
neerajvm-1-nsg	Microsoft.Network/networkSe...	OK	Operation details

Give feedback
[Tell us about your experience with deployment](#)

Microsoft Defender for Cloud
Secure your apps and infrastructure
[Go to Microsoft Defender for Cloud >](#)

Free Microsoft tutorials
[Start learning today >](#)

Work with an expert
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[Find an Azure expert >](#)

The screenshot shows the Azure portal interface for the same deployment, now completed. The left sidebar shows the navigation menu with 'Overview' selected. The main content area displays the deployment details, including the deployment name, subscription, resource group, start time, and correlation ID. A table lists the resources created: 'neerajvm-1' (Microsoft.Compute/virtualMa...), 'neerajvm-1928_x1' (Microsoft.Network/networkIn...), 'neerajvm-1-ip' (Microsoft.Network/publicIpA...), and 'neerajvm-1-nsg' (Microsoft.Network/networkSe...). The status of each resource is shown as 'Created' or 'OK'. The right sidebar contains links to Cost Management, Microsoft Defender for Cloud, Free Microsoft tutorials, and Work with an expert.

Home > **CreateVm-MicrosoftWindowsServer.WindowsServer-201-20230311072641** | Overview

Deployment

Search

Delete Cancel Redeploy Download Refresh

Your deployment is complete

Deployment name: CreateVm-MicrosoftWindowsServer.WindowsServer-201-20230311072641 Start time: 3/11/2023, 7:28:11 AM
Subscription: [Free Trial](#) Correlation ID: 8fc75ba9-0f8a-4da0-9100-5b53c77fade7

Deployment details

Next steps

- [Setup auto-shutdown](#) Recommended
- [Monitor VM health, performance and network dependencies](#) Recommended
- [Run a script inside the virtual machine](#) Recommended

[Go to resource](#) [Create another VM](#)

Give feedback
[Tell us about your experience with deployment](#)

Cost Management
Get notified to stay within your budget and prevent unexpected charges on your bill.
[Set up cost alerts >](#)

Microsoft Defender for Cloud
Secure your apps and infrastructure
[Go to Microsoft Defender for Cloud >](#)

Free Microsoft tutorials
[Start learning today >](#)

Work with an expert
Azure experts are service provider partners who can help manage your assets on Azure and be your first line of support.
[Find an Azure expert >](#)

- Creating second VM named as “neerajvm-2”

The screenshot shows the Azure portal interface. The top navigation bar includes the Microsoft Azure logo, a search bar, and user information for 'Neeraj@vikashk7070ou...'. The main heading is 'CreateVm-MicrosoftWindowsServer.WindowsServer-201-20230311075209 | Overview'. The left sidebar contains links for Overview, Inputs, Outputs, and Template. The main content area displays 'Deployment is in progress' with a progress bar. Below this, deployment details are shown: Deployment name, Subscription (Free Trial), Resource group (neeraj-rg), Start time (3/11/2023, 7:53:42 AM), and Correlation ID. A table lists the resources created:

Resource	Type	Status	Operation details
neerajvm-2	Microsoft.Compute/virtualMa...	Created	Operation details
neerajvm-2358_x1	Microsoft.Network/networkIn...	Created	Operation details
neerajvm-2-nsg	Microsoft.Network/networkSe...	OK	Operation details
neerajvm-2-ip	Microsoft.Network/publicIpA...	OK	Operation details

On the right, there are recommendations for Microsoft Defender for Cloud, Free Microsoft tutorials, and working with an expert.

The screenshot shows the Azure portal interface with the deployment status updated to 'Your deployment is complete'. The main content area displays a green checkmark and the text 'Your deployment is complete'. Below this, deployment details are shown: Deployment name, Subscription (Free Trial), Resource group (neeraj-rg), Start time (3/11/2023, 7:53:42 AM), and Correlation ID. The 'Next steps' section includes recommendations for 'Setup auto-shutdown', 'Monitor VM health, performance and network dependencies', and 'Run a script inside the virtual machine'. At the bottom, there are buttons for 'Go to resource' and 'Create another VM'. The right sidebar remains the same as in the previous screenshot.

NOTE: We need to configure both VMs for peering by turning Firewall **OFF** in each VM, temporarily.

VNET PEERING

Microsoft Azure

Search resources, services, and docs (G+)

Neeraj@vikashk7070ou...
DEFAULT DIRECTORY (VIKASHK7...

Home > Virtual networks > neerajvnet-1 | Peerings >

Add peering ...

neerajvnet-1

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 *
vnet1tovnet2 ✓

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 the remote 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)

Remote virtual network

Peering link name *
vnet2tovnet1 ✓

Virtual network deployment model ⓘ
☒ Resource manager
☐ Classic

Add

Microsoft Azure

Search resources, services, and docs (G+)

Neeraj@vikashk7070ou...
DEFAULT DIRECTORY (VIKASHK7...

Home > Virtual networks > neerajvnet-1 | Peerings >

Add peering ...

neerajvnet-1

Remote virtual network

Peering link name *
vnet2tovnet1 ✓

Virtual network deployment model ⓘ
☒ Resource manager
☐ Classic
☐ I know my resource ID ⓘ

Subscription * ⓘ
Free Trial ✓

Virtual network *
neerajvnet-2 ✓

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 the remote 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

Microsoft Azure Search resources, services, and docs (G+)

Home > Virtual networks > neerajvnet-1

Virtual networks

Default Directory (vikashk7070outlook.onmicrosof...

+ Create Manage view ...

Filter for any field...

Name ↑↓

- neerajvnet-1
- neerajvnet-2

neerajvnet-1 | Peerings

Virtual network

+ Add Refresh Sync

Filter by name... Peering status == all

Name ↑↓	Peering status ↑↓	Peer ↑↓	Gateway transit ↑↓
vnet1tovnet2	Connected	neerajvnet-2	Disabled

Network manager
DNS servers
Peerings
Service endpoints
Private endpoints
Properties
Locks
Monitoring
Alerts
Metrics
Diagnostic settings
Logs
Connection monitor (classic)
Diagram

Microsoft Azure Search resources, services, and docs (G+)

Home > Virtual networks > neerajvnet-2

Virtual networks

Default Directory (vikashk7070outlook.onmicrosof...

+ Create Manage view ...

Filter for any field...

Name ↑↓

- neerajvnet-1
- neerajvnet-2

neerajvnet-2 | Peerings

Virtual network

+ Add Refresh Sync

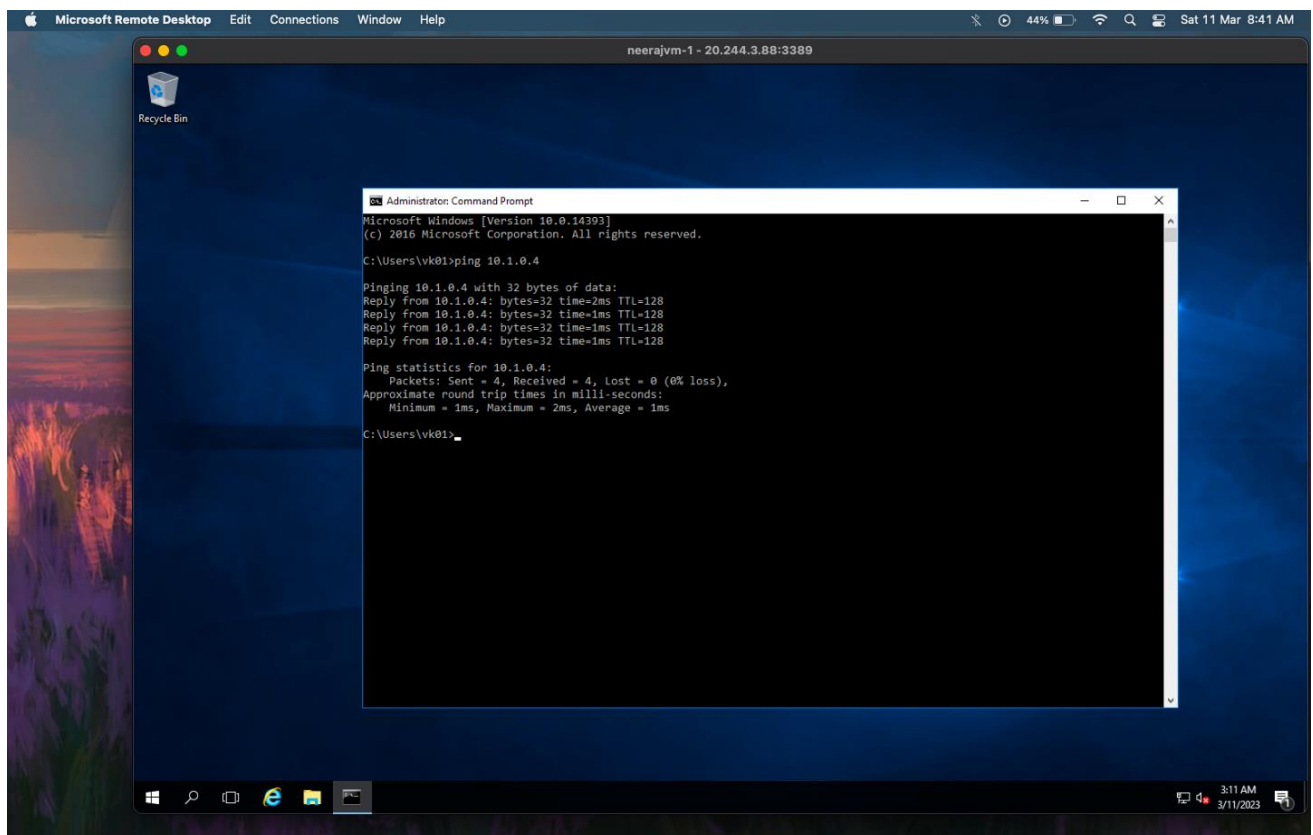
Filter by name... Peering status == all

Name ↑↓	Peering status ↑↓	Peer ↑↓	Gateway transit ↑↓
vnet2tovnet1	Connected	neerajvnet-1	Disabled

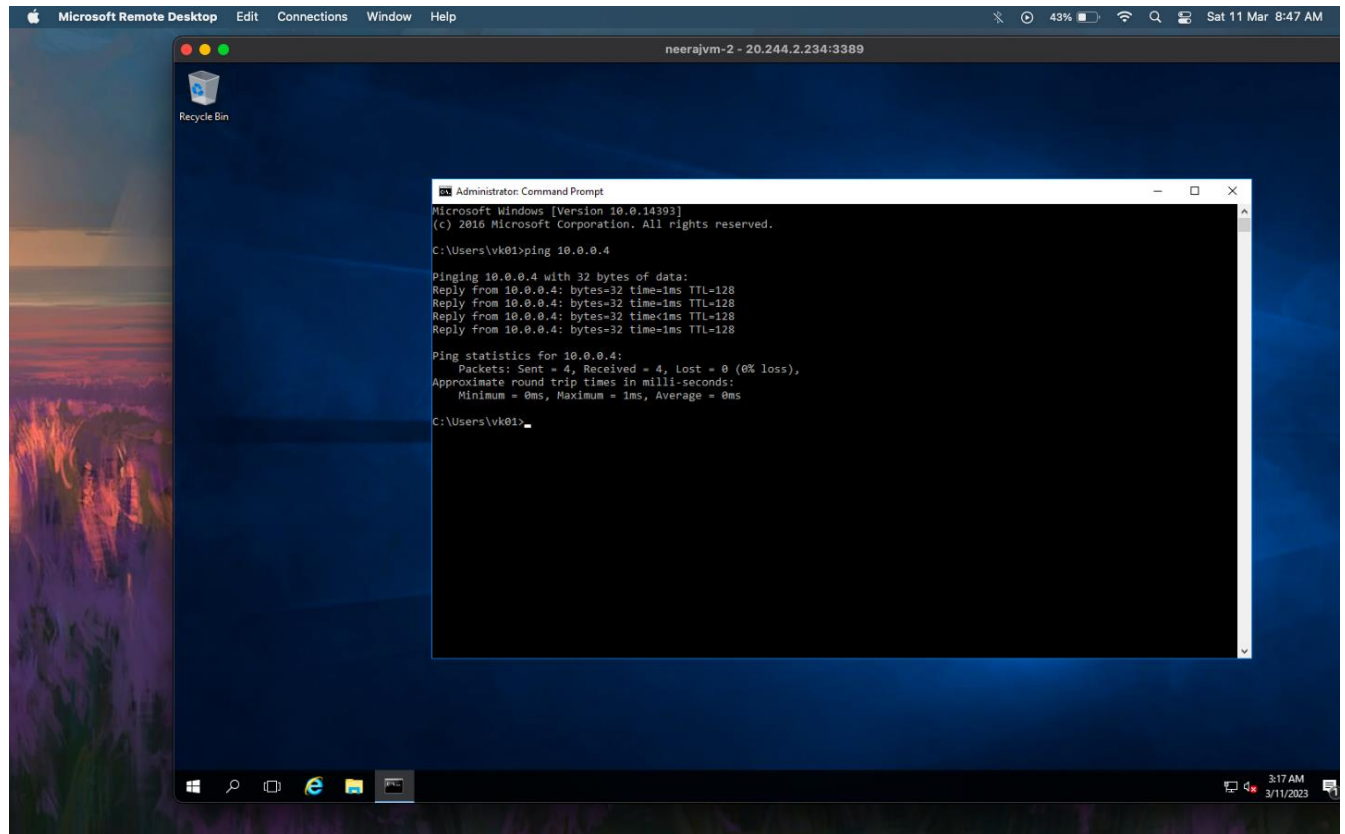
Overview
Activity log
Access control (IAM)
Tags
Diagnose and solve problems
Settings
Address space
Connected devices
Subnets
Bastion
DDoS protection
Firewall
Microsoft Defender for Cloud
Network manager
DNS servers
Peerings

PINGING VMs

- Pinging **VM2** from **VM1**



- Pinging **VM1** from **VM2**



Thank You!