

My Project on Virtual Network Peering

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1. What Is Azure VNet Peering?

Azure Virtual Network is used for the Virtual Network Peering which helps users to communicate with virtual networks in Azure network. **Virtual network Peering in Azure** helps the traffic of one virtual network to communicate to another virtual network. This can be used for database failover, cross-region data replication or disaster recovery. Virtual network Peering provides connection sharing in different regions.

2. Types Of VNet Peering

1. **Regional Virtual Network Peering:** This is connectivity between different Virtual Network within the same region.
2. **Global Virtual Network Peering:** This is connectivity across different regions, the connection is private peering that has low latency with high bandwidth in Azure backbone infrastructure.

3. Importance Of VNet Peering

- VNet peering is similar to an inter-VLAN Routing in VLAN of On-premise networks so it works similarly to inter-VLAN connect to one VLAN to another VLAN for communication.
- In Azure infrastructure, need to connect to virtual networks to each other for sharing traffic which can be applications, backup, replication, recovery, or information sharing.
- The virtual machines of virtual network connections to other virtual machines of different Virtual network via connection of VNet Peering in the same region or across the region

4. Benefits of Vnet peering

- The network traffic of peered Virtual networks will be private.
- It configures the connection with high bandwidth with low latency in the Virtual network region.
- This allows transferring data across Azure deployment models, subscriptions, and other regions.
- virtual network peering has no downtime issue.
- The use of global Virtual network peering has erased the need for Vnet to Vnet peering Azure configuration. It disabled the use of VPN encryption, public internet, or any gateways.
- This is time-saving process that controlling the backup, traffic, sharing from different regions and cost-effective.

5. Step-by-Step Configuration

1. Log into the Azure portal <https://portal.azure.com>.. if you don't have an account try to sign-up.
2. Kindly follow this pictures to create two Virtual Machines with two Virtual networks in two Different regions like *Uksouth-Vnet and UkWest-Vnet*.

This is my portal page. Here I want to start creating my VM1 and VM2.

The screenshot shows the 'Create a virtual machine' wizard in the Microsoft Azure portal. The 'Basics' tab is selected. The page includes a navigation bar at the top with 'Microsoft Azure' and 'Upgrade' buttons. Below the navigation bar, there's a breadcrumb trail: 'Home > Virtual machines >'. The main heading is 'Create a virtual machine'. Below this, there's a sub-heading 'Basics' and a brief description: 'Create a virtual machine that runs Linux or Windows. Select an image from Azure marketplace or use your own customized image. Complete the Basics tab then Review > create to provision a virtual machine with default parameters or review each tab for full customization. Learn more >'. A note states: 'This subscription may not be eligible to deploy VMs of certain sizes in certain regions.' The 'Project details' section asks to 'Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.' It shows 'Subscription' as 'Azure subscription 1' and 'Resource group' as 'DevOps RG'. The 'Instance details' section includes 'Virtual machine name' as 'VM1', 'Region' as 'Europe UK South', 'Availability options' as 'No infrastructure redundancy required', 'Security type' as 'Trusted launch virtual machines', and 'Image' as 'Windows Server 2022 Datacenter: Azure Edition - x64 Gen2 (free services et...)'. At the bottom, there are buttons for 'Review > create', '< Previous', and 'Next: Disks >'. A 'Give feedback' link is also present.

Input your username and password, I choose none because I want to use Azure Bastion instead of Rdp.

The screenshot shows the 'Create a virtual machine' wizard in the Microsoft Azure portal, specifically the 'Inbound port rules' step. A warning banner at the top states: 'Changing Basic options may reset selections you have made. Review all options prior to creating the virtual machine.' The 'Administrator account' section includes 'Username' as 'VM1', 'Password' as '*****', and 'Confirm password' as '*****'. The 'Inbound port rules' section asks to 'Select which virtual machine network ports are accessible from the public internet. You can specify more limited or granular network access on the Networking tab.' It shows 'Public inbound ports' as 'None' (selected) and 'Allow selected ports' as an option. Below this, there's a dropdown for 'Select inbound ports'. A note at the bottom states: 'All traffic from the internet will be blocked by default. You will be able to change inbound port rules in the VM > Networking page.' At the bottom, there are buttons for 'Review > create', '< Previous', and 'Next: Disks >'. A 'Give feedback' link is also present.

This is where i created my Virtual Network as UkSouth-Vnet

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

Home > Virtual machines > Create a virtual machine

Basics Disks **Networking** Management Monitoring Advanced Tags Review + create

Define network connectivity for your virtual machine by configuring network interface card (NIC) settings. You can control ports, inbound and outbound connectivity with security group rules, or place behind an existing load balancing solution. [Learn more](#)

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

Virtual network * (new) VM1-vnet [Create new](#)

Subnet * (new) default (10.0.0.0/24)

Public IP (new) VM1-ip [Create new](#)

NIC network security group ☐ None ☒ Basic ☐ Advanced

Public inbound ports * ☒ None ☐ Allow selected ports

Select inbound ports [Select one or more ports](#)

[Review + create](#) < Previous Next: Management >

Create virtual network

The Microsoft Azure Virtual Network service enables Azure resources to securely communicate with each other in a virtual network which is a logical isolation of the Azure cloud dedicated to your subscription. You can connect virtual networks to other virtual networks, or your on-premises network. [Learn more](#)

Name * UkSouthVnet

Address space
The virtual network's address space, specified as one or more address prefixes in CIDR notation (e.g. 192.168.1.0/24).

Address range	Addresses	Overlap
<input type="checkbox"/> 10.0.0.0/16	10.0.0.0 - 10.0.255.255 (65536 addresses)	None
<input type="text"/>	(0 Addresses)	None

Subnets
The subnet's address range in CIDR notation. It must be contained by the address space of the virtual network.

Subnet name	Address range	Addresses
<input type="checkbox"/> default	10.0.0.0/24	10.0.0.0 - 10.0.0.255 (256 addresses)
<input type="text"/>	(0 Addresses)	(0 Addresses)

[OK](#) [Discard](#)

Here I want to use NGS(NETWORK sECURITY GROUP), no Public IP. I want to use Azure Bastion instead of Rdp.

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

Home > Virtual machines > Create a virtual machine

Basics Disks **Networking** Management Monitoring Advanced Tags Review + create

Define network connectivity for your virtual machine by configuring network interface card (NIC) settings. You can control ports, inbound and outbound connectivity with security group rules, or place behind an existing load balancing solution. [Learn more](#)

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

Virtual network * (new) Uk-SouthVnet [Create new](#)

Subnet * (new) default (10.0.0.0/24)

Public IP ☐ None [Create new](#)

NIC network security group ☐ None ☐ Basic ☒ Advanced

Configure network security group * (new) VM1-nsig [Create new](#)

Delete NIC when VM is deleted ☐

[Review + create](#) < Previous Next: Management > [Give feedback](#)

Here I created My NSG as South-NSG

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

Home > Virtual machines > Create a virtual machine > Create network security group

Create network security group

Name * South-nsig

Inbound rules
1000: default-allow-rdp
Any
RDP (TCP/3389)
+ Add an inbound rule

Outbound rules
No results
+ Add an outbound rule

[OK](#)

Click review and create, then wait for validation.

Microsoft Azure Upgrade Search resources, services, and docs (0+)

Home > Virtual machines >

Create a virtual machine

Virtual network * (new) UK-SouthVNet
[Create new](#)

Subnet * (new) default (10.0.0/24)
[Create new](#)

Public IP None
[Create new](#)

NIC network security group ☐ None ☐ Basic ☒ Advanced

Configure network security group * (new) South-nsg
[Create new](#)

Delete NIC when VM is deleted ☐

Enable accelerated networking ☐ The selected VM size does not support accelerated networking.

Load balancing
You can place this virtual machine in the backend pool of an existing Azure load balancing solution. [Learn more](#)?

Place this virtual machine behind an existing load balancing solution? ☐

Review + create < Previous Next: Management > [Give feedback](#)

I Click Create to create my VM1

Microsoft Azure Upgrade Search resources, services, and docs (0+)

Home > Virtual machines >

Create a virtual machine

Validation passed

Basics Disks Networking Management Monitoring Advanced Tags **Review + create**

Cost given below is an estimate and not the final price. Please use [Pricing calculator](#) for all your pricing needs.

Price
1X Standard B1s by Microsoft
[Terms of use](#) | [Privacy policy](#)

Subscription credits apply ☐
0.0158 USD/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

Create < Previous Next > [Download a template for automation](#) [Give feedback](#)

To create VM2 Just follow the same step on how we created VM1

The screenshot shows the 'Create a virtual machine' wizard in the Microsoft Azure portal, specifically the 'Basics' tab. The interface includes a top navigation bar with the Microsoft Azure logo and a search bar. Below the navigation bar, the breadcrumb trail reads 'Home > Virtual machines >'. The main heading is 'Create a virtual machine', followed by a sub-heading 'Basics' and a list of tabs: 'Basics', 'Disks', 'Networking', 'Management', 'Monitoring', 'Advanced', 'Tags', and 'Review + create'. A blue information box states: 'This subscription may not be eligible to deploy VMs of certain sizes in certain regions.' Below this, the 'Project details' section instructs the user to select a subscription and resource group. The 'Subscription' dropdown is set to 'Azure subscription 1', and the 'Resource group' dropdown is set to 'RG'. The 'Instance details' section includes fields for 'Virtual machine name' (set to 'VM2'), 'Region' (set to '(Europe) UK West'), 'Availability options' (set to 'No infrastructure redundancy required'), and 'Security type' (set to 'Trusted launch virtual machines'). At the bottom, there are buttons for 'Review + create', '< Previous', and 'Next: Disks >'. A 'Give feedback' link is also present.

Input your username and password, I choose none because I want to use VM1 Azure Bastion instead of Rdp as jump server to check connection.

The screenshot shows the 'Create a virtual machine' wizard in the Microsoft Azure portal, specifically the 'Inbound port rules' tab. The interface includes a top navigation bar with the Microsoft Azure logo and a search bar. Below the navigation bar, the breadcrumb trail reads 'Home > Virtual machines >'. The main heading is 'Create a virtual machine', followed by a sub-heading 'Inbound port rules'. A blue information box states: 'You are in the free trial period. Costs associated with this VM can be covered by any remaining credits on your subscription. Learn more >'. Below this, the 'Size' dropdown is set to 'Standard_B1s - 1 vcpu, 1 GiB memory (US\$11.53/month) (free services elig...)'. The 'Administrator account' section includes fields for 'Username' (set to 'VM2'), 'Password', and 'Confirm password'. The 'Inbound port rules' section includes a dropdown for 'Public inbound ports' (set to 'None') and a dropdown for 'Select inbound ports'. At the bottom, there are buttons for 'Review + create', '< Previous', and 'Next: Disks >'. A 'Give feedback' link is also present.

This is how i created my second Virtual Network as UkWest-Vnet

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

Home > Virtual machines >

Create a virtual machine

Basics Disks **Networking** Management Monitoring Advanced Tags Review + create

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Network interface

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

Virtual network * (new) VM2-vnet
 Create new

Subnet * (new) default (10.1.0.0/24)
 Create new

Public IP (new) VM2-ip
 Create new

NIC network security group
 ☐ None
 ☒ Basic
 ☐ Advanced

Public inbound ports *
 ☒ None
 ☐ Allow selected ports

Select inbound ports
 Select one or more ports

Review + create < Previous Next : Management >

Create virtual network

The Microsoft Azure Virtual Network service enables Azure resources to securely communicate with each other in a virtual network which is a logical isolation of the Azure cloud dedicated to your subscription. You can connect virtual networks to other virtual networks, or your on-premises network. [Learn more](#)

Name * UkWest-Vnet ✓

Address space

The virtual network's address space, specified as one or more address prefixes in CIDR notation (e.g. 192.168.1.0/24).

Address range	Addresses	Overlap
<input type="checkbox"/> 10.1.0.0/16	10.1.0.0 - 10.1.255.255 (65536 addresses)	None
<input type="text"/>	(0 Addresses)	None

Subnets

The subnet's address range in CIDR notation, it must be contained by the address space of the virtual network.

Subnet name	Address range	Addresses
<input type="checkbox"/> default	10.1.0.0/24	10.1.0.0 - 10.1.0.255 (256 addresses)
<input type="text"/>	<input type="text"/>	(0 Addresses)

OK Discard

No Public I.P and no Rdp.

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

Home > Virtual machines >

Create a virtual machine

Basics Disks **Networking** Management Monitoring Advanced Tags Review + create

Define network connectivity for your virtual machine by configuring network interface card (NIC) settings. You can control ports, inbound and outbound connectivity with security group rules, or place behind an existing load balancing solution. [Learn more](#)

Network interface

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

Virtual network * (new) UkWest-Vnet
 Create new

Subnet * (new) default (10.1.0.0/24)
 Create new

Public IP
 ☐ None
 ☒ Create new

NIC network security group
 ☐ None
 ☐ Basic
 ☒ Advanced

Configure network security group * (new) VM2-nsg
 Create new

Delete NIC when VM is deleted
 ☐

Review + create < Previous Next : Management > [Give feedback](#)

Here I created My NSG as West-NSG,

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

Home > Virtual machines > Create a virtual machine >

Create network security group

Name * West-nsg ✓

Inbound rules

1000: default-allow-rdp ✓

Any RDP (TCP/3389)

+ Add an inbound rule

Outbound rules

No results

+ Add an outbound rule

OK

Click review and create to wait for validation.

The screenshot shows the 'Create a virtual machine' wizard in the Microsoft Azure portal. The 'Review + create' button is highlighted with a red box. The wizard is at the 'Review + create' step, showing a summary of the configuration. The configuration includes: Virtual network: (new) UKWest-VNet; Subnet: (new) default (10.1.0.0/24); Public IP: None; NIC network security group: None; Configure network security group: (new) West-nsg; Delete NIC when VM is deleted: ☐; Enable accelerated networking: ☐ (The selected VM size does not support accelerated networking.); Load balancing: ☐ (You can place this virtual machine in the backend pool of an existing Azure load balancing solution.); Place this virtual machine behind an existing load balancing solution?: ☐. The 'Review + create' button is highlighted with a red box.

I Click Create to create my VM2

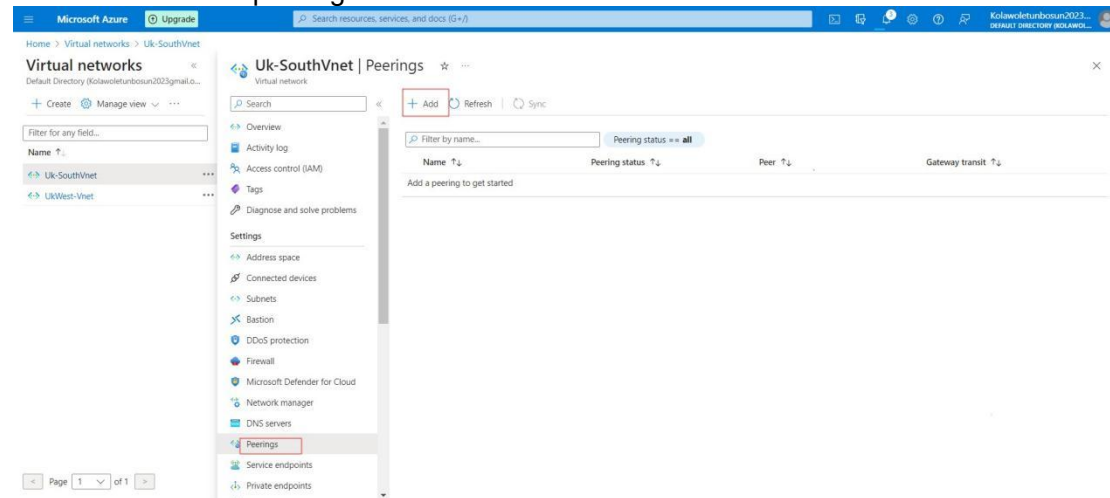
The screenshot shows the 'Create a virtual machine' wizard in the Microsoft Azure portal. The 'Create' button is highlighted with a red box. The wizard is at the 'Create' step, showing a summary of the configuration. The configuration includes: Price: 1 X Standard B1s by Microsoft; Subscription credits apply: 0.0150 USD/hr; TERMS: By clicking "Create", I agree to the legal terms and privacy statement(s) associated with the Marketplace offering(s) listed above; Basics: ☐. The 'Create' button is highlighted with a red box.

Now that my VMs are ready, I want to use Azure Bastion for more security. I deploy my Bastion. It will take approximately up to five minutes for the deployment.

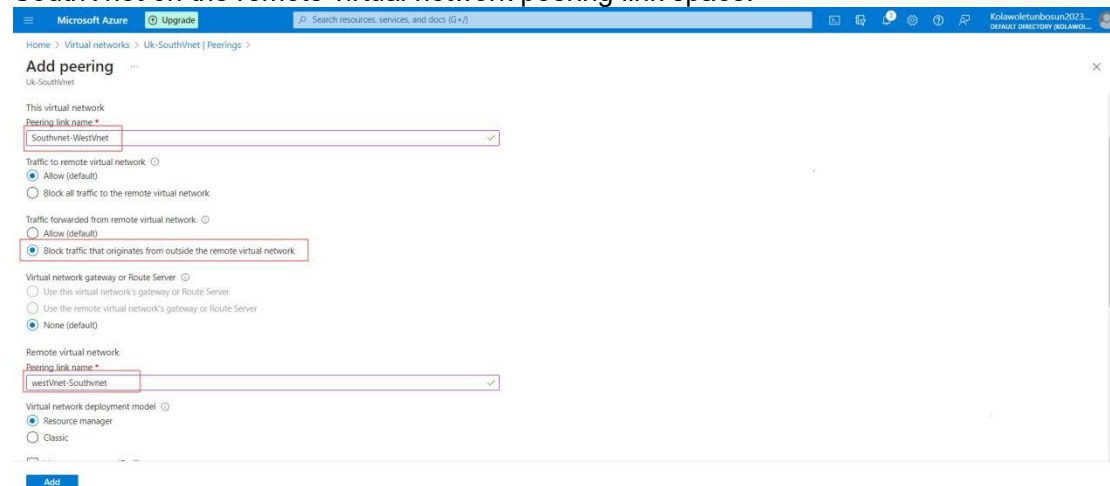
The screenshot shows the 'VM1 | Bastion' page in the Microsoft Azure portal. The 'Deploy Bastion' button is highlighted with a red box. The page shows the 'Create Bastion' form with the following configuration: Name: UK-SouthVNet-bastion; Resource group: RG; Virtual network: UK-SouthVNet; Public IP address: UK-SouthVNet-ip. The 'Deploy Bastion' button is highlighted with a red box.

Now go to either of the two **Virtual Networks** and select **Peerings**, from the **Settings blade**, and select **Add**.

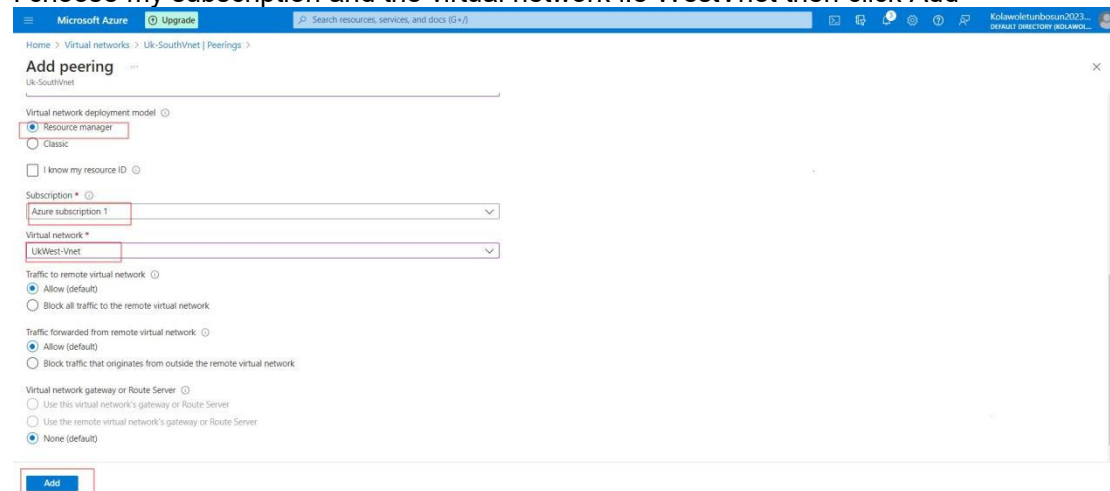
Now, I go back to my UkSouth-Vnet to peer it with UkWest-Vnet. On my UkSouth-Vnet blade I will click on peering then click on Add.



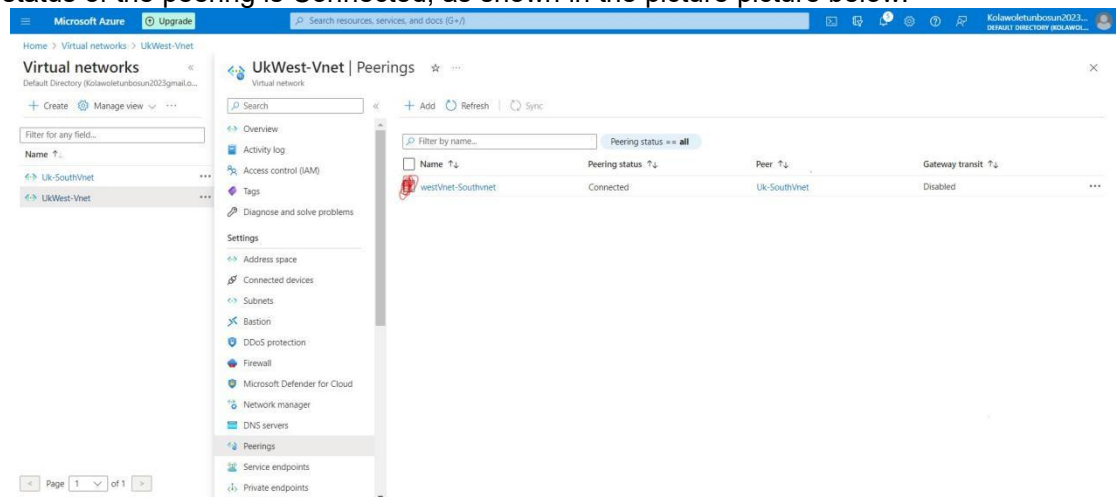
I Add my peering as SouthVnet-WestVnet in the peering link name space and WestVnet-SouthVnet on the remote virtual network peering link space.



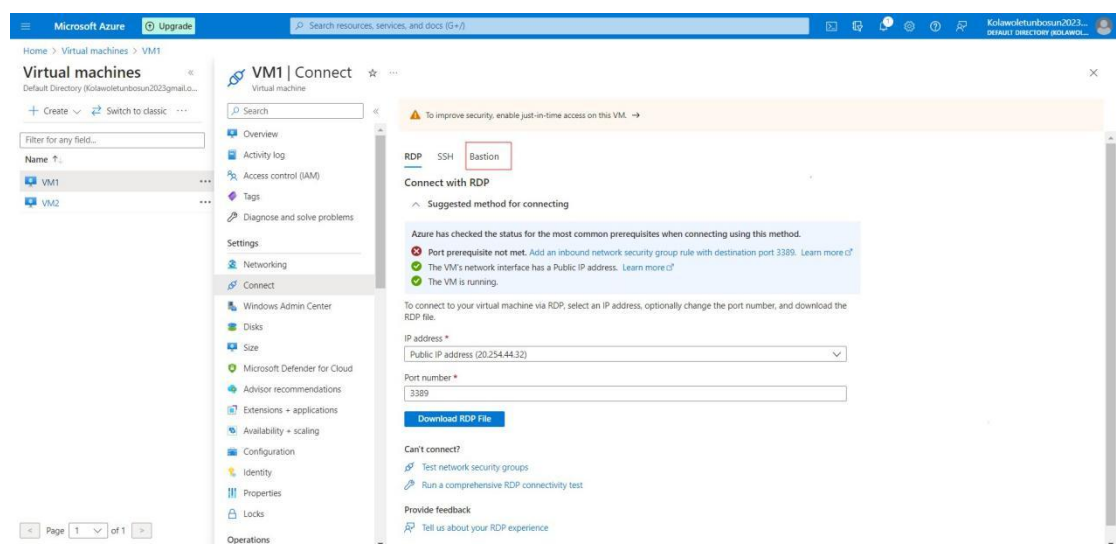
I choose my subscription and the virtual network i.e WestVnet then click Add



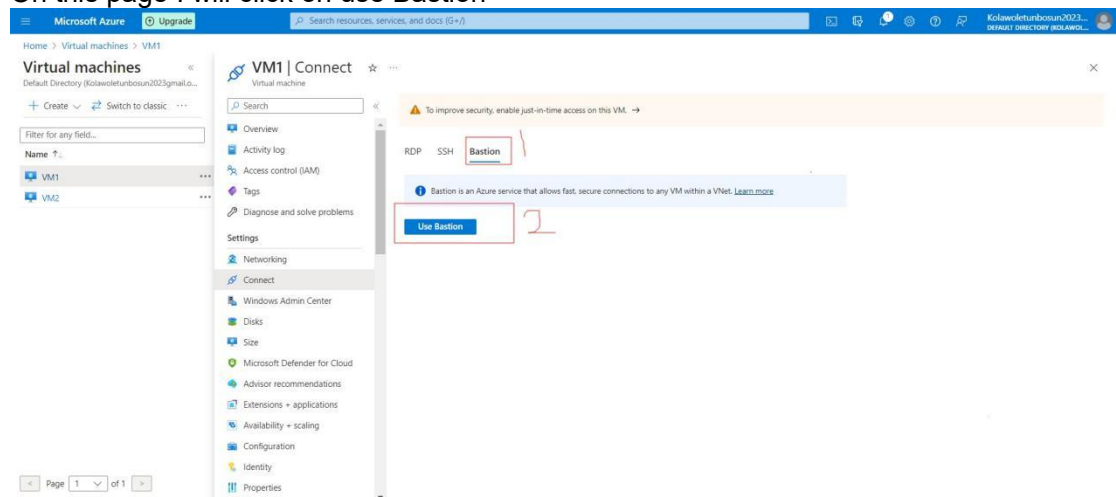
The status of the peering is Connected, as shown in the picture below.



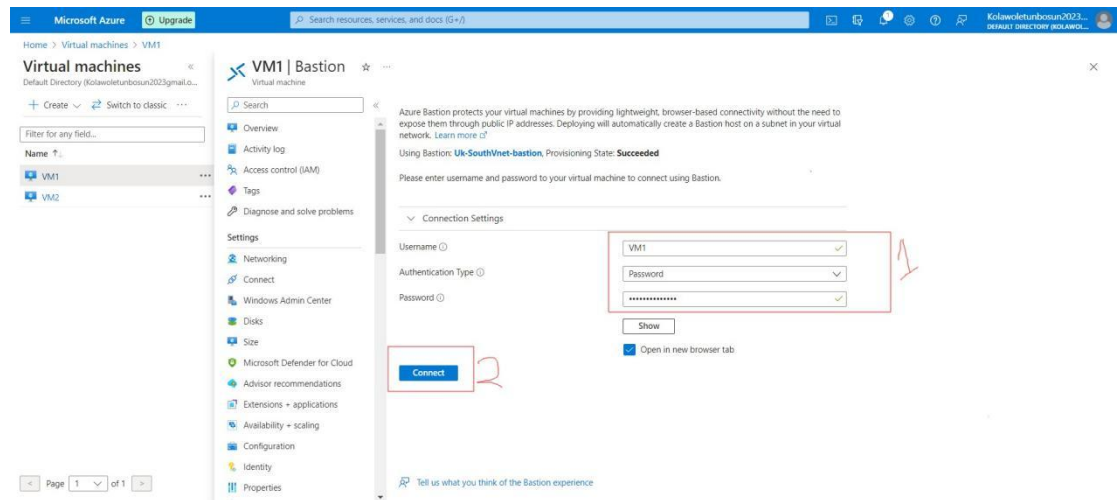
Now that my both Vnet are connected, I need to connect to my VM1 with Bastion already deployed. I will use the Bastion to connect to my VM1 by clicking Use Bastion.



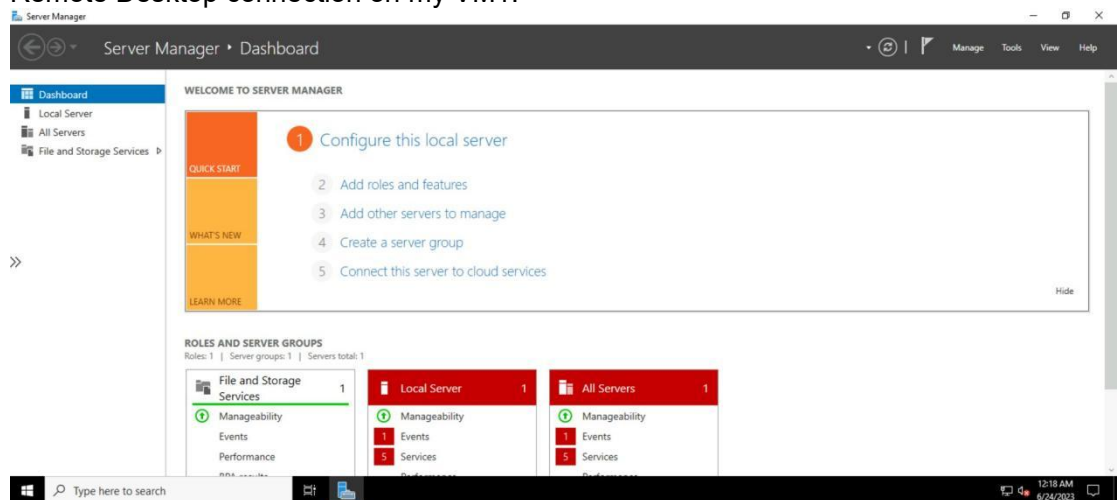
On this page I will click on use Bastion



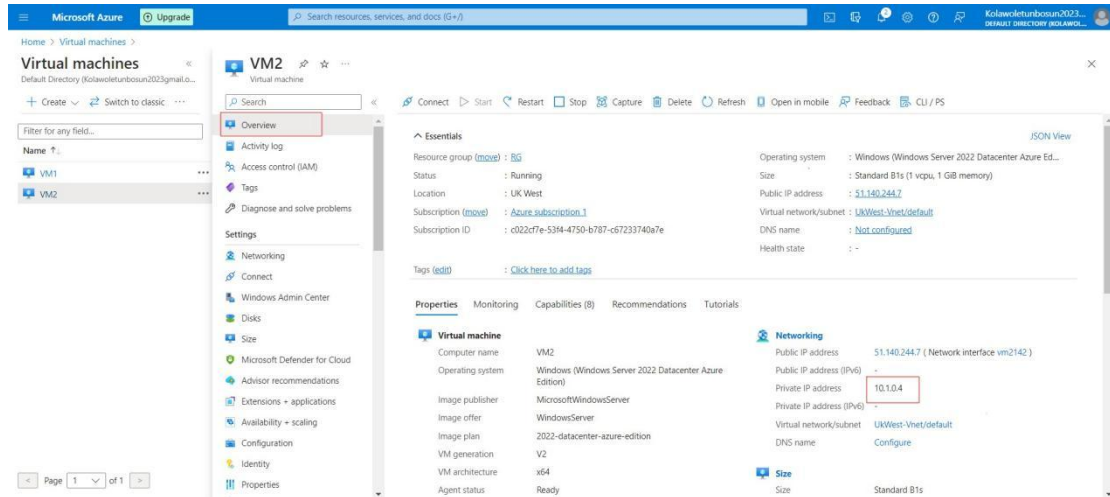
Here the Bastion will give option for username and password then fill it in then I will click connect.



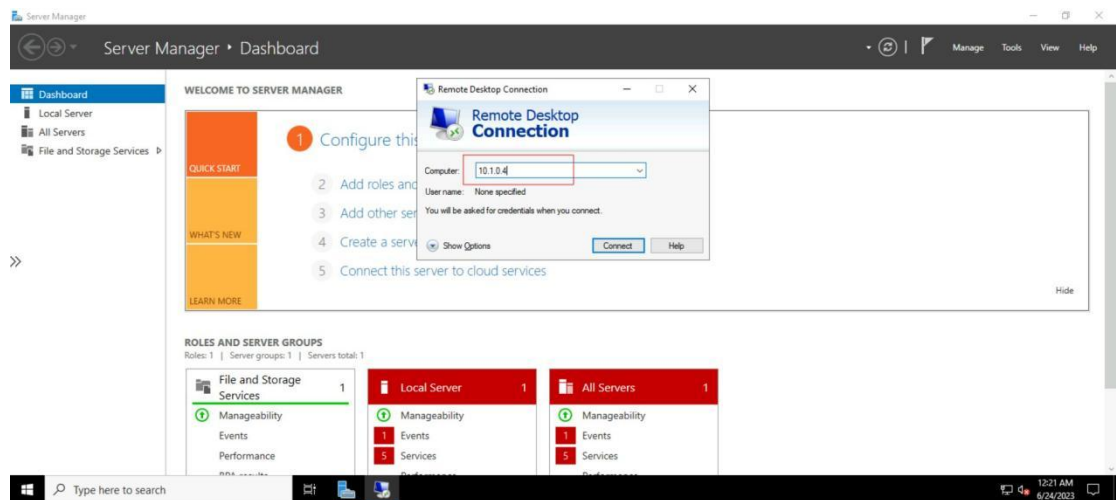
Here is my VM1 after signing in. To show connection to my Ukwest-Vnet I will go to Remote Desktop connection on my VM1.



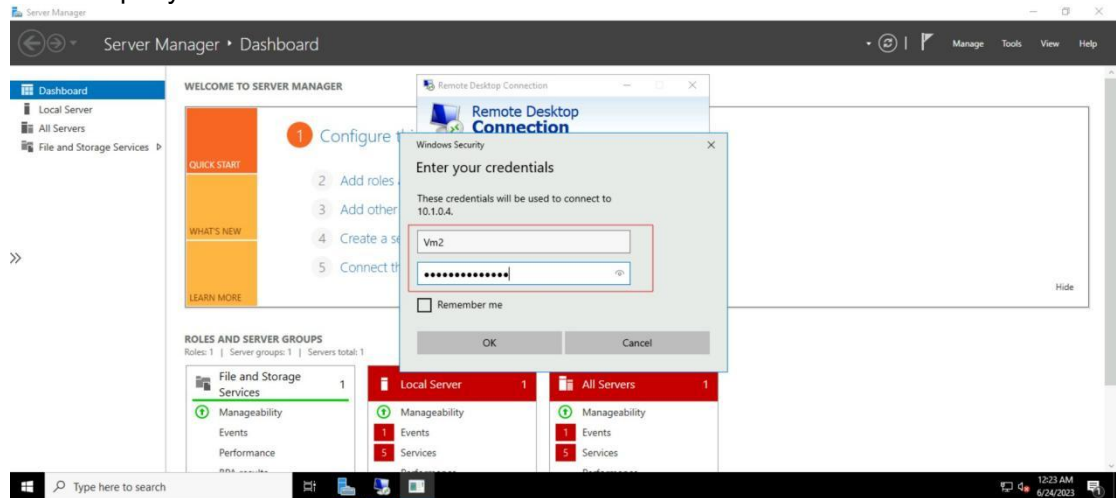
Before I go to Remote Desktop connection on my VM1, I will go to my Vm2 overview to copy VM2 Private I.P to connect.



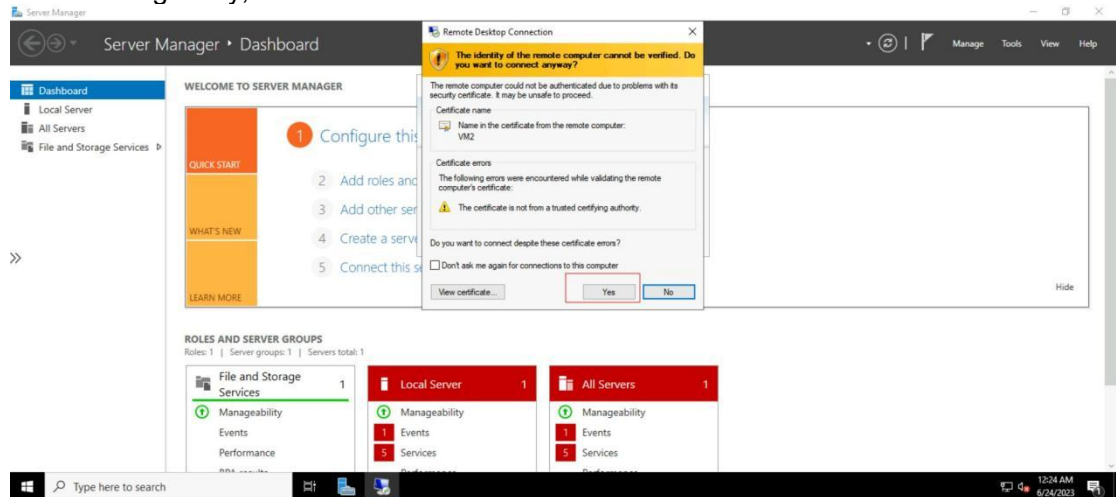
Input my VM2 private I.P into the Remote Desktop connection of my VM1 then click connect.



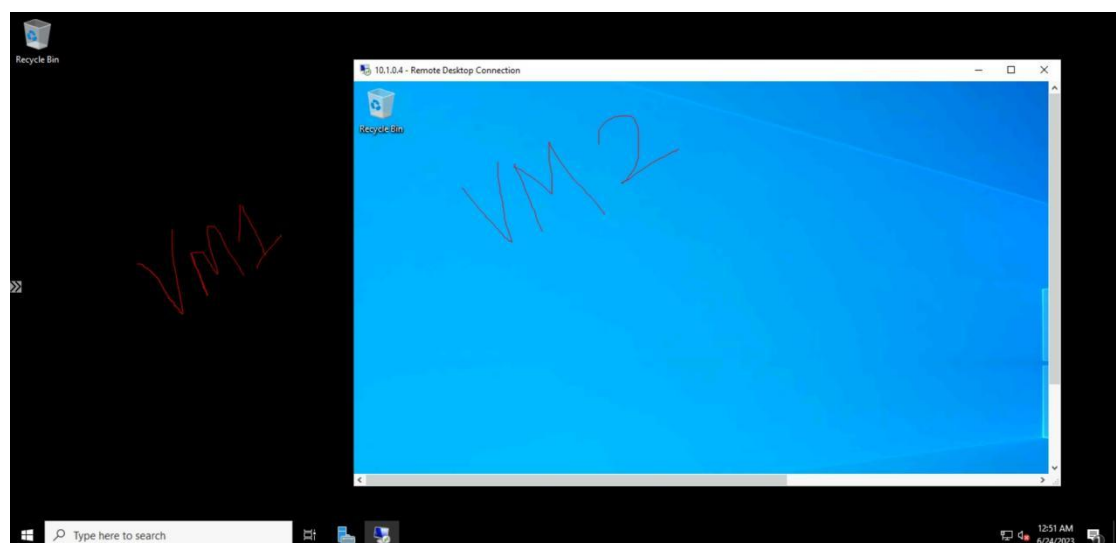
It will prompt for username and password to show connection between the two Vnets. Input your username and Password and click Ok.



After clicking Okay, I will then click Yes to connection.



Here is my VM1 and VM2



I have successfully configured and tested the **VNet Peering**, I hope you can use the step by step to understand on how configure **VNet Peering in Azure**. The virtual network establishes the connection between two different **Virtual network Peering** (UkSouthVnet-UkWestVnet) but this depends on the condition and requirements.

References.

- [*Virtual Networks In Microsoft Azure: VNet Peering,*](#)
- [*Microsoft Azure VNet Peering \(Microsoft Official\)*](#)