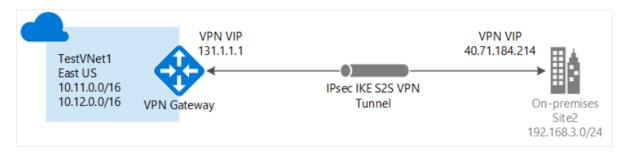
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#### Task-3

# **Create Site-to-Site VPN Peering in the Azure**

A Site-to-Site VPN gateway connection is used to connect your on-premises network to an Azure virtual network over an IPsec/IKE (IKEv1 or IKEv2) VPN tunnel. This type of connection requires a VPN device located on-premises that has an externally facing public IP address assigned to it. For more information about VPN gateways



#### Prerequisite for Site-to-Site VPN

- Virtual Network
- Virtual Network Gateway
- Local Network Gateway
- Compatible VPN Device On-Premises with Public IP

## **Brief steps to create Azure Site to Site VPN**

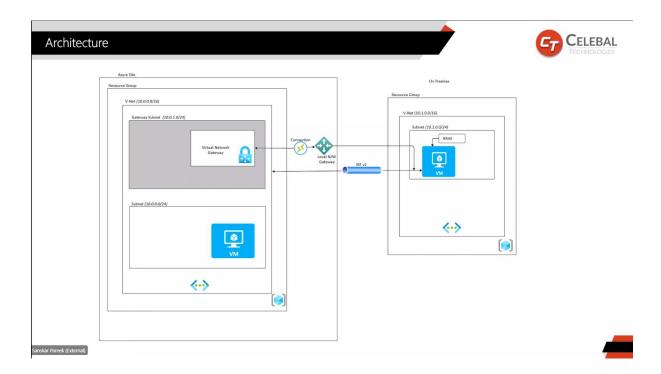
# Deploying a site-to-site VPN from the Azure side involves the following steps:

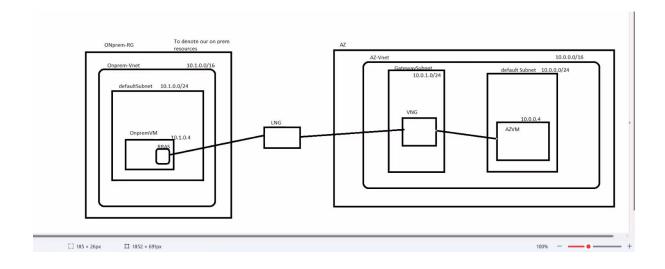
- Creating/editing a virtual network
- Verifying or adding virtual subnets to the virtual network
- Creating the gateway subnet
- Creating the virtual network gateway
- Creating a local network gateway
- Integrating with your VPN device
- Creating the site-to-site VPN tunnel
- Verifying the connections in both directions

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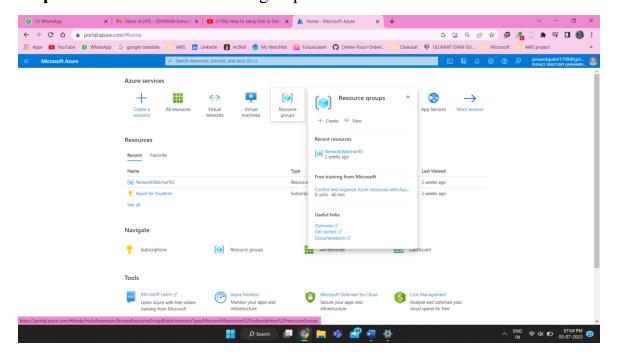
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#### **Step-1** Navigate to **portal.azure.com**

Step-2 Click on create resource group icon.

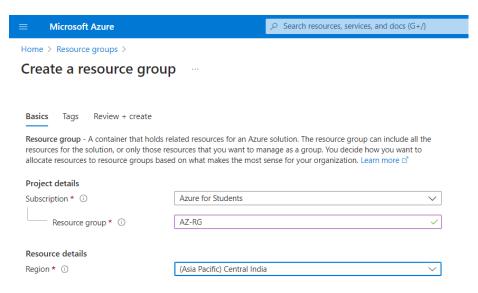


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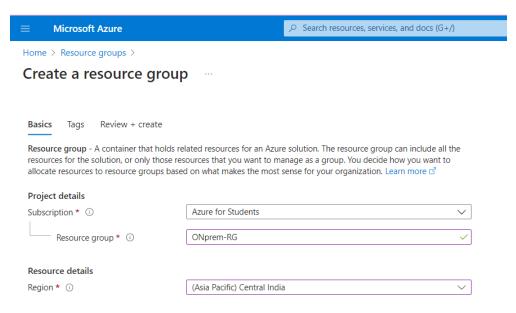
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## **Create Resource Group:**

**Step-3** We have selected here as Azure for student subscription, entered the resource group name as AZ-RG and choose the region. after entering details click on next button.



**Step-4** Same as above create On-premises resource group as ONprem-RG and click on next button.



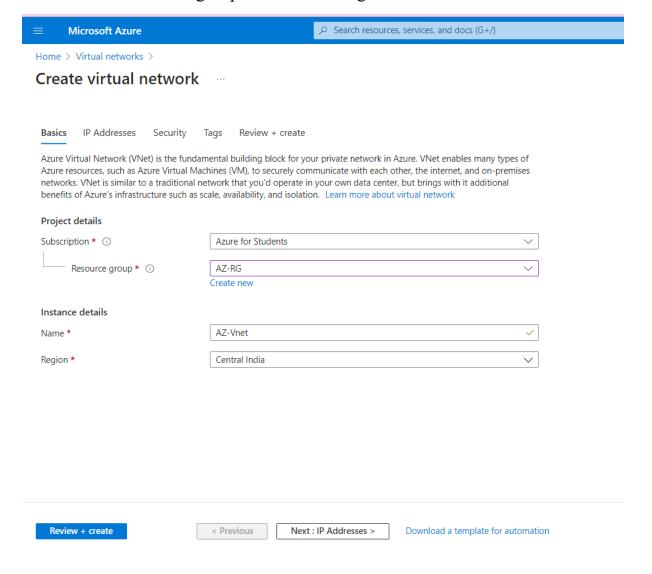
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#### **Create Virtual Network:**

**Step-5** Enter the basic details of virtual network. (Subscription, name, region) and select the resource group as AZ-RG and give AZ-Vnet as a name.

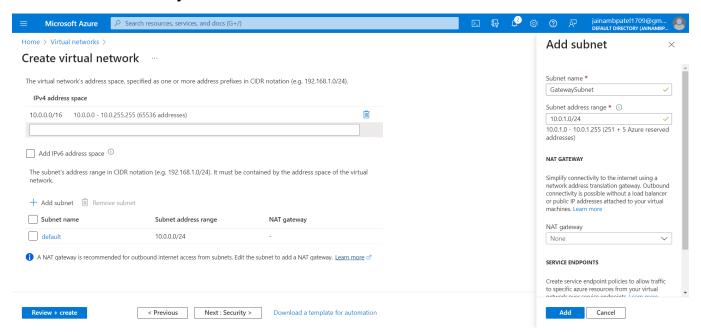


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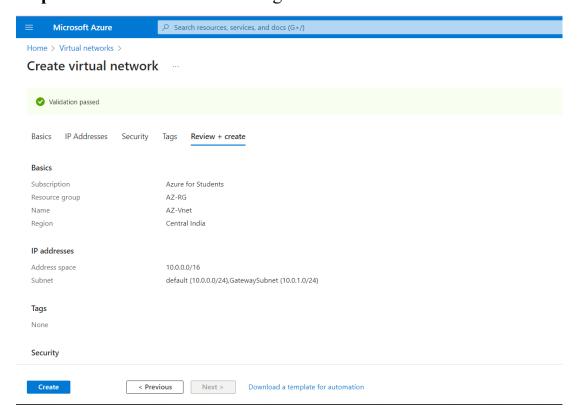
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**Step-6** On IP Addresses tab we can select default subnet but here we created a subnet named GatewaySubnet.



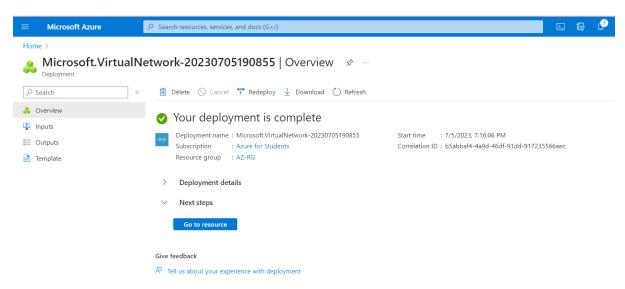
Step-7 After review and create stage click on create button.



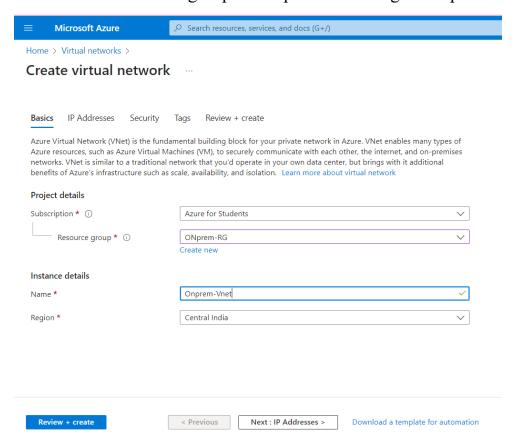
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**Step-8** Azure Virtual Network has been created. you can click on go to resource and can see all the details of Virtual Network.



**Step-9** Enter the basic details of virtual network. (Subscription, name, region) and select the resource group as ONprem-RG and give Onprem-Vnet as a name.

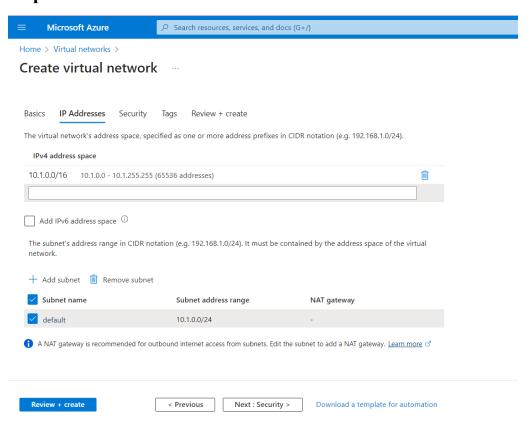


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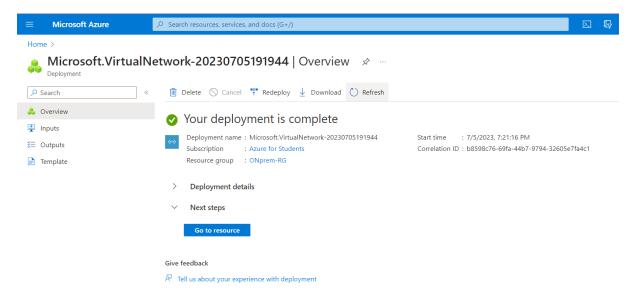
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Step-10 On IP Addresses tab we have selected default subnet.



**Step-11** On premise Virtual Network has been created. you can click on go to resource and can see all the details of Virtual Network.

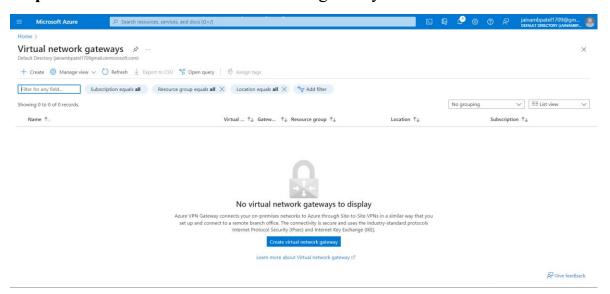


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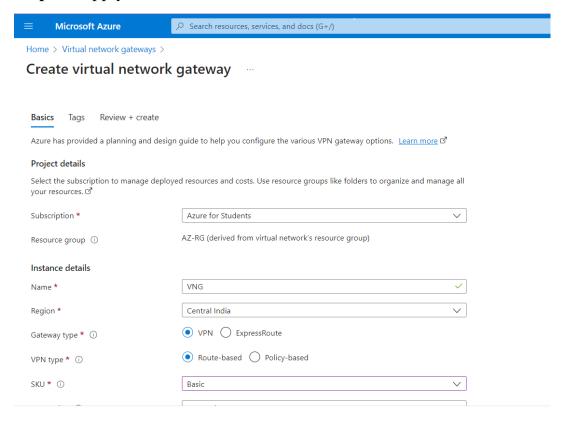
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Step-12 Click on Create Virtual network gateway for create VNG.



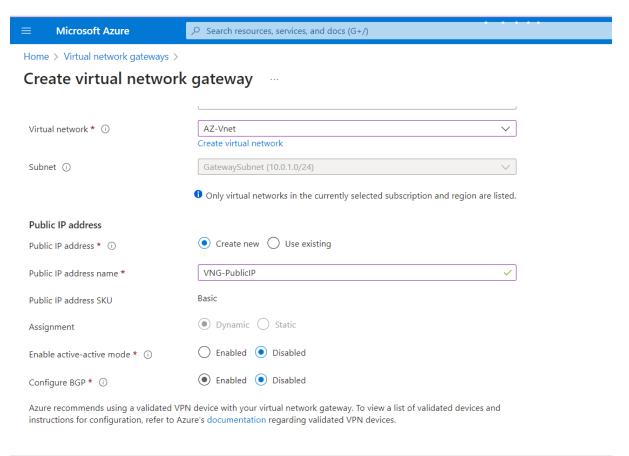
Step-13 Apply name as VNG and select SKU as Basic.



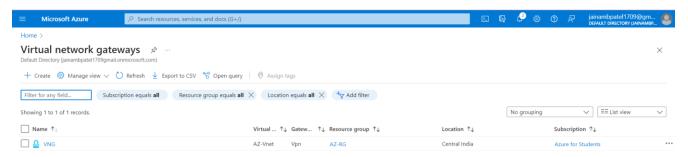
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**Step-14** Select Virtual network "AZ-Vnet" and create Public IP address "VNG-PublicIP" and disable active-active mode.



**Step-15** Virtual network gateway has been created.



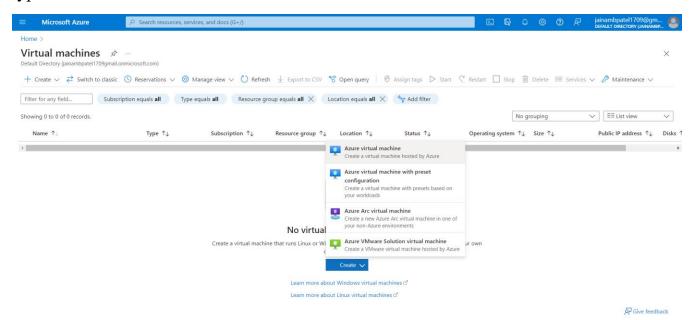
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### **Create Virtual Machine:**

**Step-16** After click on Create Button select Azure virtual machine as a VM type.



#### Create Azure Virtual machine.

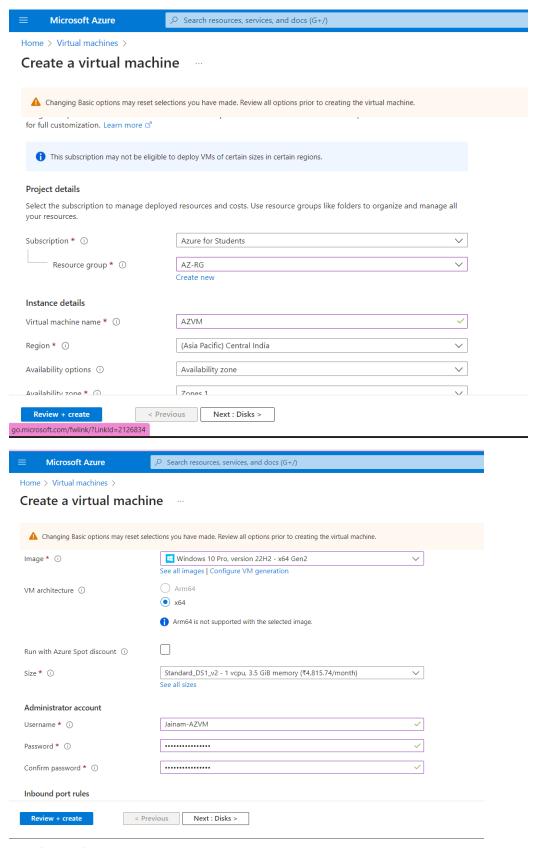
#### **Step-17** In the Basics tab:

- 1. Select your Subscription.
- 2. Create or select a Resource Group as AZ-RG.
- 3. Choose a virtual machine Name as AZVM.
- 4. Select the Region where you want to deploy the virtual machine.
- 5. Choose a suitable Availability Options based on your requirements.
- 6. Select an Image that corresponds to the operating system you want to use.
- 7. Choose a Size for your virtual machine based on the desired compute power and memory.
- 8. Specify the Administrator account username and password for the virtual machine.

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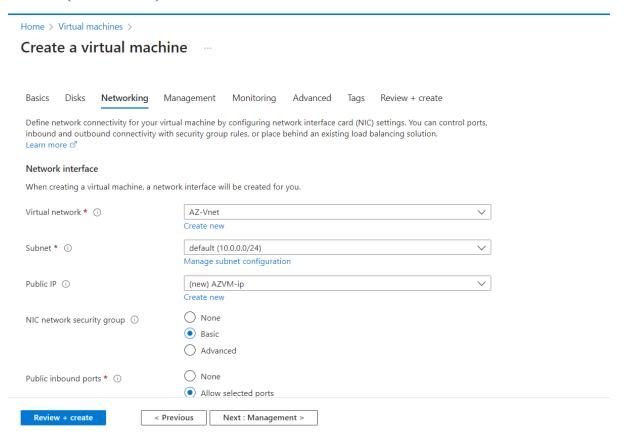


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**Step-18** In Networking tab Select Virtual network as AZ-Vnet and Subnet as default (10.0.0.0/24).



## Create On premises Virtual machine.

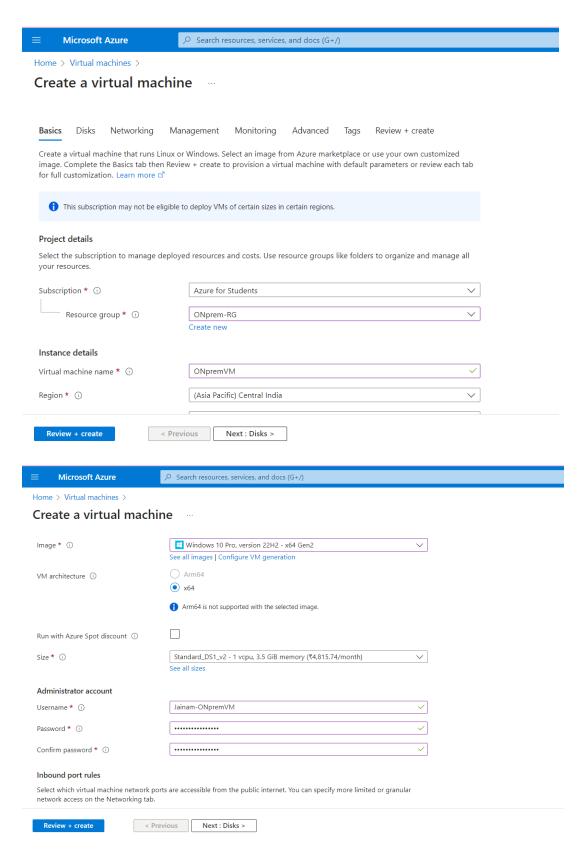
#### Step-19 In the Basics tab:

- 1. Select your Subscription.
- 2. Create or select a Resource Group as ONprem-RG.
- 3. Choose a virtual machine Name as ONpremVM.
- 4. Select the Region where you want to deploy the virtual machine.
- 5. Choose a suitable Availability Options based on your requirements.
- 6. Select an Image that corresponds to the operating system you want to use.
- 7. Choose a Size for your virtual machine based on the desired compute power and memory.
- 8. Specify the Administrator account username and password for the virtual machine.

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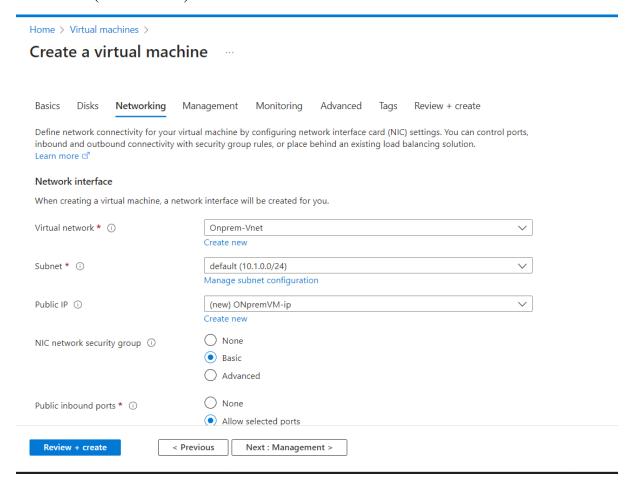
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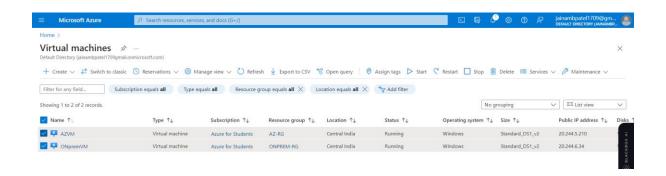
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**Step-19** In Networking tab Select Virtual network as Onprem-Vnet and Subnet as default (10.1.0.0/24).



**Step-20** In virtual machines Tab you can see that both virtual machines has been created.



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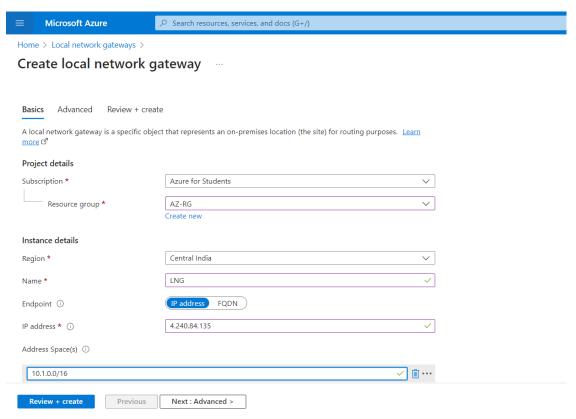
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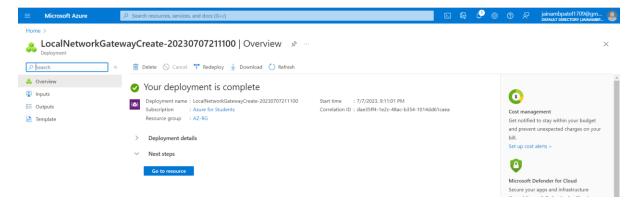
**Step-21** For create Local Network Gateway we have provided all the necessary configuration in Basic tab.

IP address: OnpremVM public IP address.

Address Space: ONprem-Vnet address space.



**Step-22** click on Overview tab we can see that LNG has been created.



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#### **Create Site-to-Site Connection**

**Step-23** Under Virtual Network Gateways click on connection. Provide all the configurations.

Connection type: Site-to-Site

Name: s2s. Home > VNG | Connections > Create connection Basics Settings Tags Review + create Create a secure connection to your virtual network by using VPN Gateway or ExpressRoute. Learn more about VPN Gateway ♂ Learn more about ExpressRoute ♂ Project details Subscription \* Azure for Students AZ-RG Resource group \* Create new Instance details Connection type \* ① Site-to-site (IPsec) Name \* Region \* Central India

Next : Settings >

Download a template for automation

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Review + create

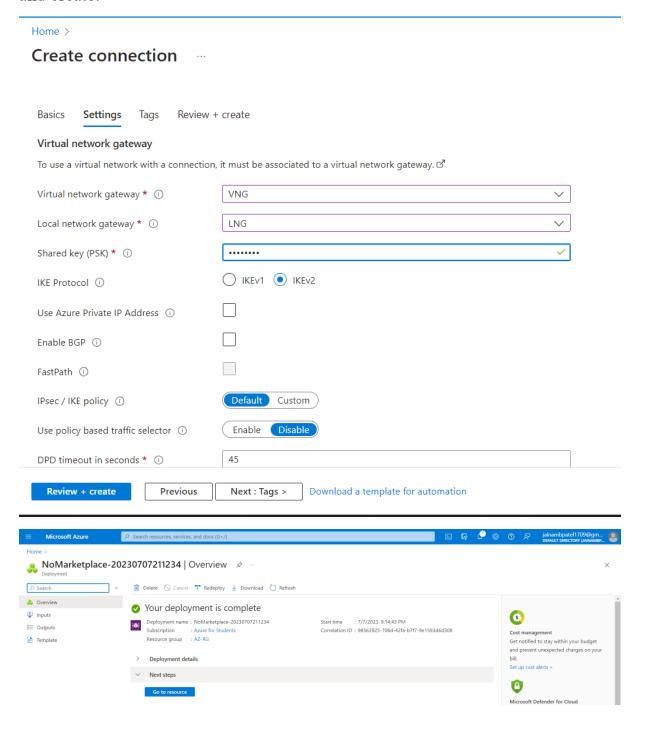
Student Name: Jainam Bijalkumar Patel

Previous

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**Step-24** Select VNG and LNG and provide Shared Key and click on Review and create.

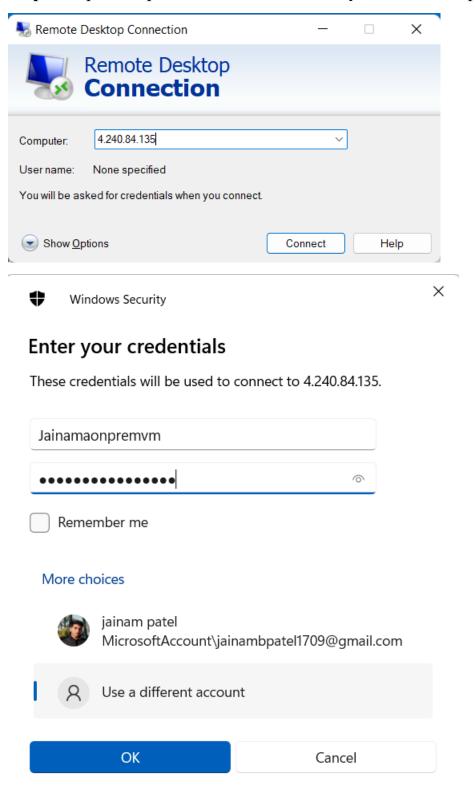


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Step-24 Open On-premises virtual machine by remote desktop.

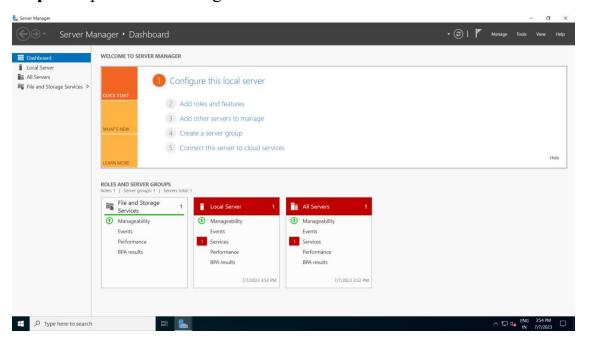


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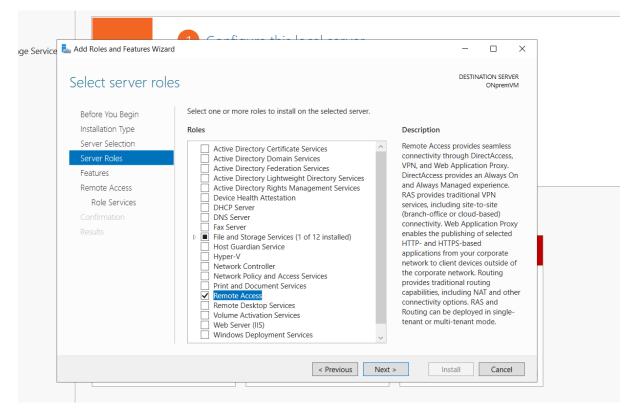
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Step-25 Open server manager dashboard and click on "add rules and features".



**Step-26** Go to server rules and enable the "remote access".

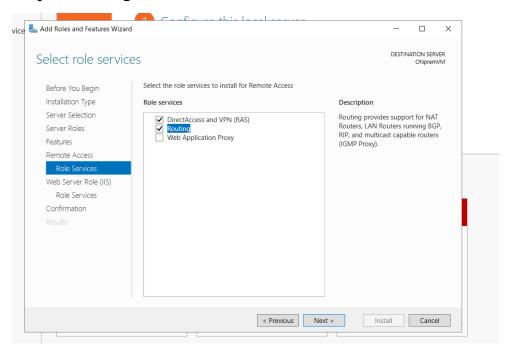


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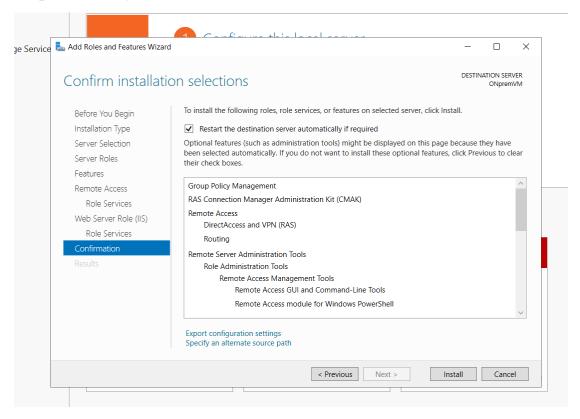
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Step-27 Next, go to rule services and enable DirectAccess and Routing.



Step-28 Now, go to confirmation and check the restart box.

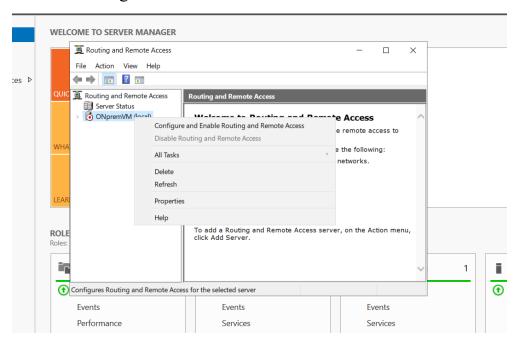


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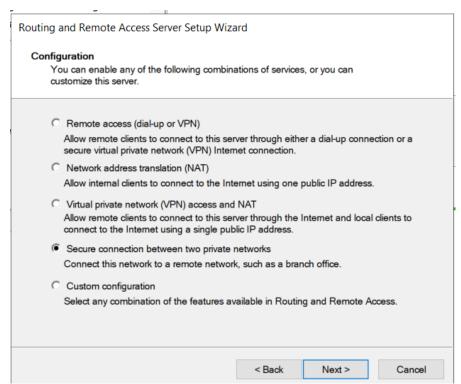
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**Step-29** Now, Right click on "OnPrem-VM (local)" and Select "Configure and Enable Routing and Remote Access".



Step-30 Check the "Secure Connection" box.

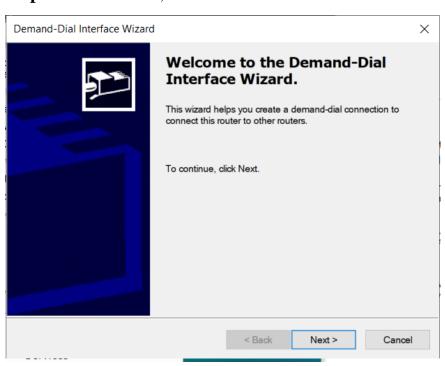


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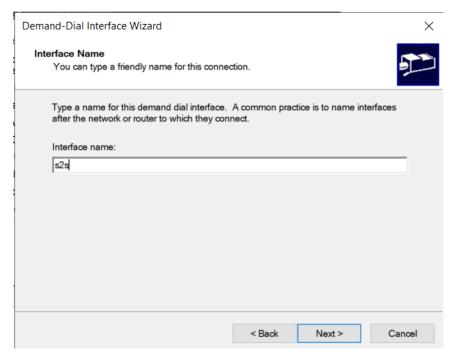
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Step-31 To continue, click Next.



Step-32 Enter an Interface Name.

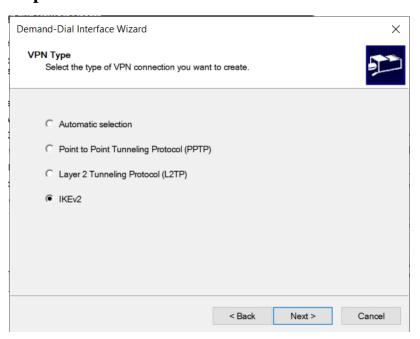


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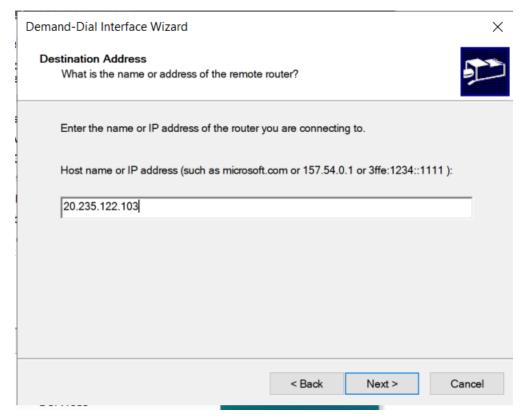
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Step-33 Select IKEv2.



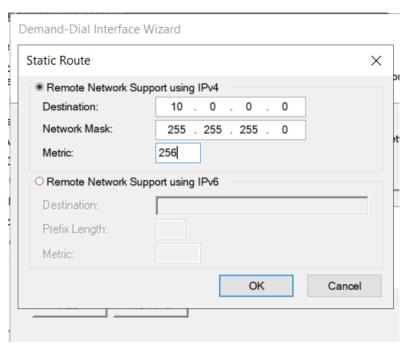
Step-34 Enter the Public IP address of Virtual Network Gateway



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**Step-35** Add Ip Address of Azure Virtual Network in Destination and add Network Mask after click on OK then Click on Finish.



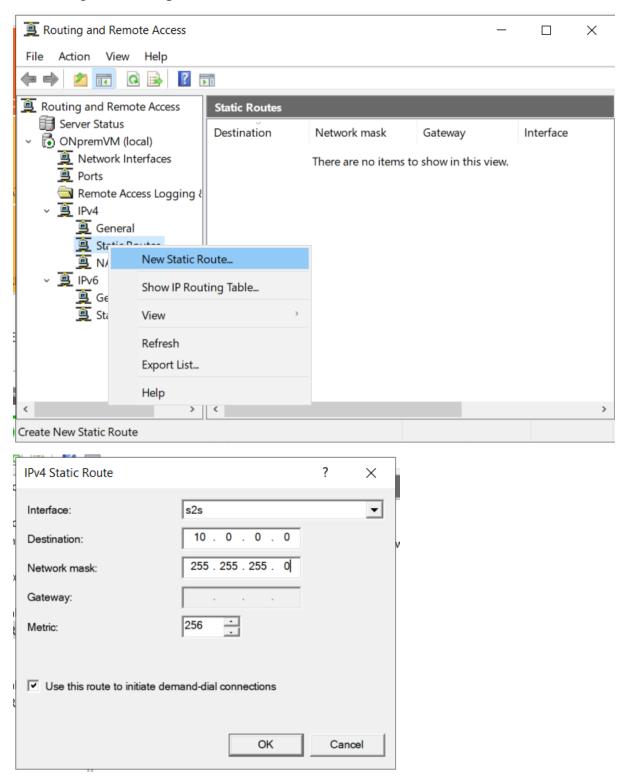


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**Step-36** go to OnPrem-VM (local)/Network Interfaces and right click select on S2S and go to in Properties.

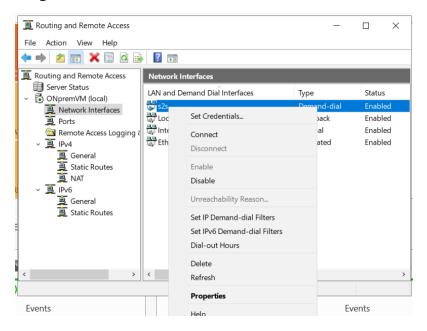


Student Id: 20IT096

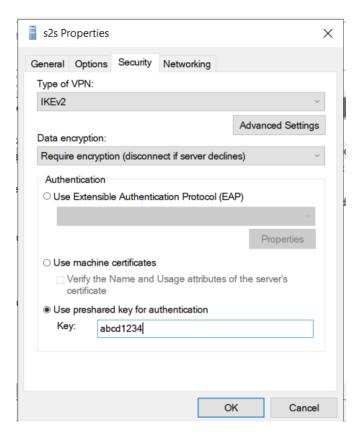
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Step-37 Let's connect S2S Network Interface.



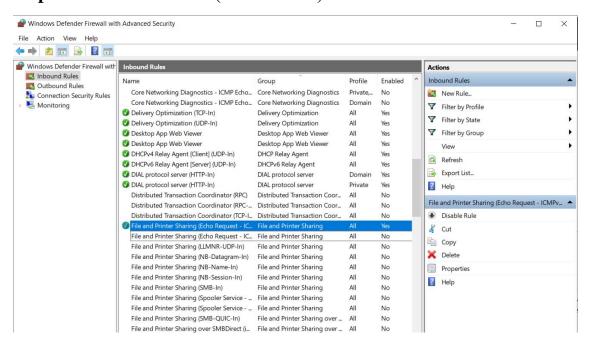
**Step-38** Step-Now, go to in Options and select Persistent connection and click on "Ok".

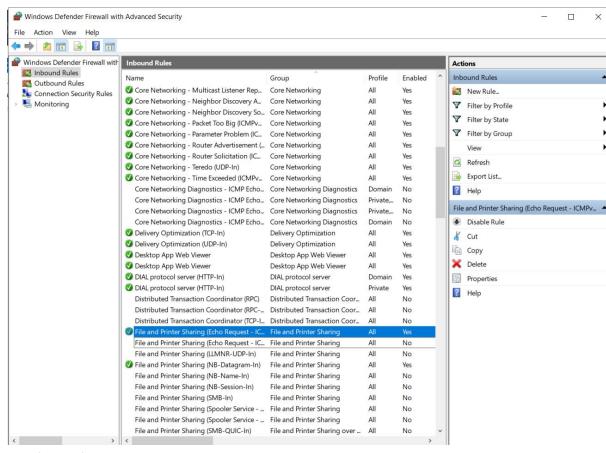


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Step-39 Enable the ICMP. (Inbound rule) In both the VM.

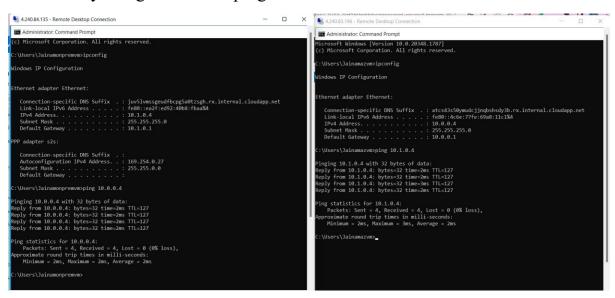




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**Step-40** Check the Ip address using command: ipconfig and check the connectivity using command: ping.



Step-41 Our Site-to-Site Connection between on Premise to Azure Virtual Networks is Successfully Established.

```
Administrator: Command Prompt
Microsoft Windows [Version 10.0.20348.1787]
(c) Microsoft Corporation. All rights reserved.
:\Users\Jainamonpremvm>ipconfig
Windows IP Configuration
Ethernet adapter Ethernet:
    Connection-specific DNS Suffix .: juv5lvmssgeudfbcpg5a0tzsgh.rx.internal.cloudapp.net Link-local IPv6 Address . . . : fe80::ea2f:ed92:40b8:fbaa¾4
IPv4 Address . . . . : 10.1.0.4
Subnet Mask . . . . . . : 255.255.255.25 .255 .0
Default Gateway . . . . : 10.1.0.1
   Connection-specific DNS Suffix : Autoconfiguration IPv4 Address : 169.254.0.27 Subnet Mask . . . . . . : 255.255.0.0 Default Gateway . . . . :
 :\Users\Jainamonpremvm>ping 10.0.0.4
Pinging 10.0.0.4 with 32 bytes of data:
Reply from 10.0.0.4: bytes=32 time=2ms TTL=127
Ping statistics for 10.0.0.4:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 2ms, Maximum = 2ms, Average = 2ms
 :\Users\Jainamonpremvm>_
```

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```
Administrator: Command Prompt
Microsoft Windows [Version 10.0.20348.1787]
(c) Microsoft Corporation. All rights reserved.
C:\Users\Jainamazvm>ipconfig
Windows IP Configuration
Ethernet adapter Ethernet:
   Connection-specific DNS Suffix . : atcs43s50ymudcjjnqbshsdy3b.rx.internal.cloudapp.net Link-local IPv6 Address . . . . : fe80::4c6e:77fe:69a8:11c1%4
   IPv4 Address. . . . . . . . . : 10.0.0.4
   Subnet Mask . . . . . . . . : 255.255.255.0
Default Gateway . . . . . . : 10.0.0.1
C:\Users\Jainamazvm>ping 10.1.0.4
Pinging 10.1.0.4 with 32 bytes of data:
Reply from 10.1.0.4: bytes=32 time=2ms TTL=127
Reply from 10.1.0.4: bytes=32 time=2ms TTL=127
Reply from 10.1.0.4: bytes=32 time=3ms TTL=127
Reply from 10.1.0.4: bytes=32 time=2ms TTL=127
Ping statistics for 10.1.0.4:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss), Approximate round trip times in milli-seconds:
   Minimum = 2ms, Maximum = 3ms, Average = 2ms
C:\Users\Jainamazvm>_
```

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