DESCRIPTION

OSS Corporation is a globally distributed firm. They have their headquarters in the **East US** with another branch office in the **WEST US**. Currently, they are working on a project and decided that the application tier of this project will reside in one of its branch regions. For security reasons, OSS Corporation management is adamant on keeping their data tier in the headquarter region.

Background of the problem statement:

As an organization, they are open to suggestions and are currently evaluating Azure as a deployment platform. To prepare for the deployment of laaS **Standard_B1ms**, OSS Corporation must deploy an laaS v2 virtual network in the headquarters region for its database. But for the application, it should create another laaS v2 virtual network in the branch region. In addition, because the communication between App and data should happen over a private channel, one needs to prepare their branch office virtual network for establishing connectivity to the headquarter's laaS v2 virtual network by creating a virtual network gateway and deploy a test laaS **Standard_B1ms** VM to the virtual networks for verifying the connection.

After the deployment team ensures the connectivity between both the networks, you can validate the same using Ping.

Following requirements should be met:

- Create virtual networks in the aforementioned region
- Create test virtual machines in both the virtual networks
- Establish the connectivity between both the networks via VNet peering
- Ensure connectivity is established properly

Create a First Virtual Network in East US Region (Head Quarters)

Vnet Name: Vnet1

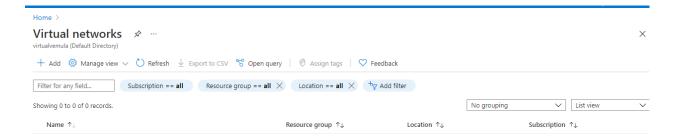
Vnet1 CIDR: 10.0.0.0/16

Subnet Name: Subnet1

Subnet1 CIDR: 10.0.0.0/24

Resource Group Name: HQ Rg

Location: East US





No virtual networks to display

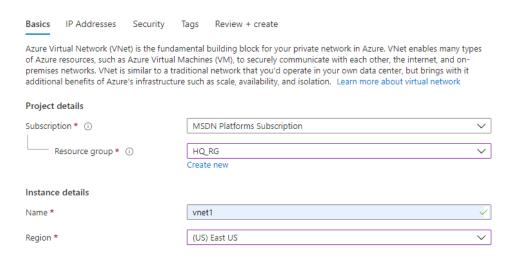
Create a virtual network to securely connect your Azure resources to each other. Connect your virtual network to your onpremises network using an Azure VPN Gateway or ExpressRoute.

Learn more 🗗

Create virtual network

Home > Virtual networks >

Create virtual network

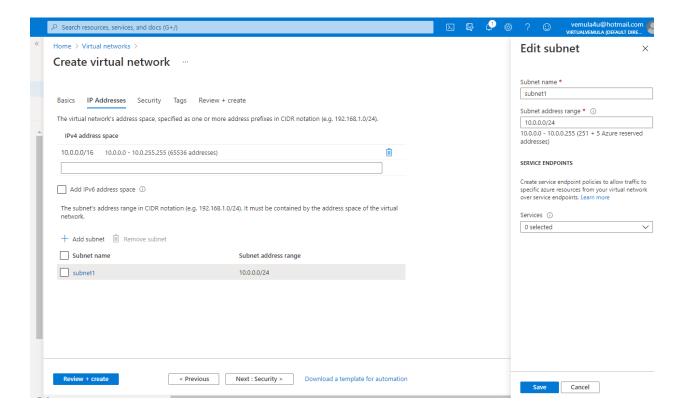


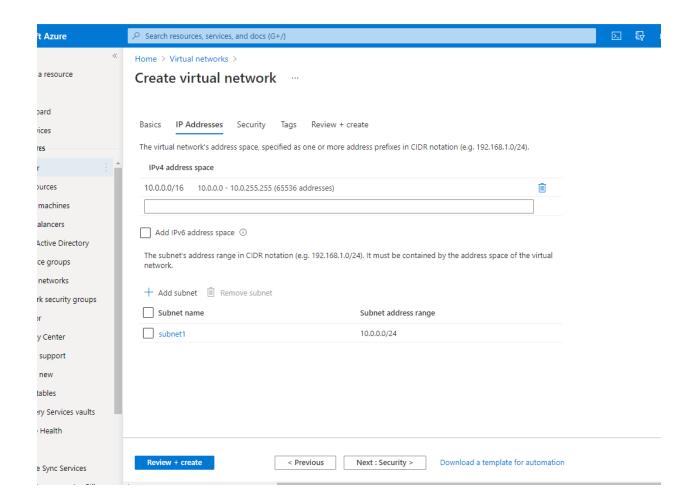
Review + create

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Next : IP Addresses >

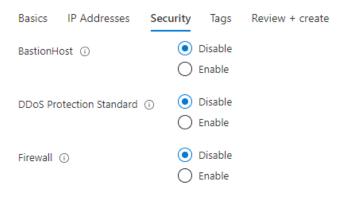
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Create virtual network



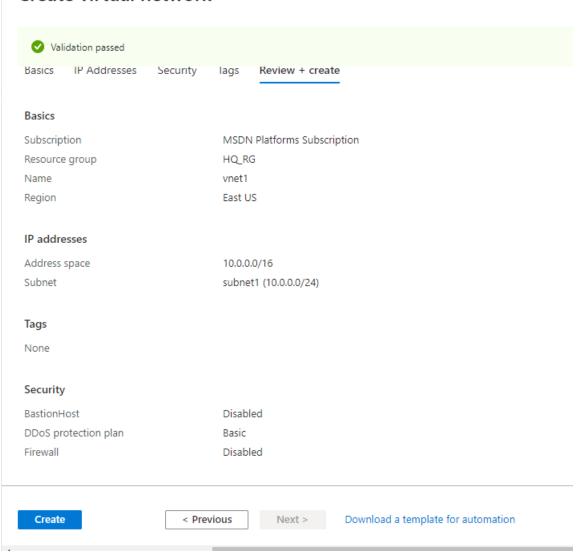
Review + create < Previous Next : Tags > Download a template for automation

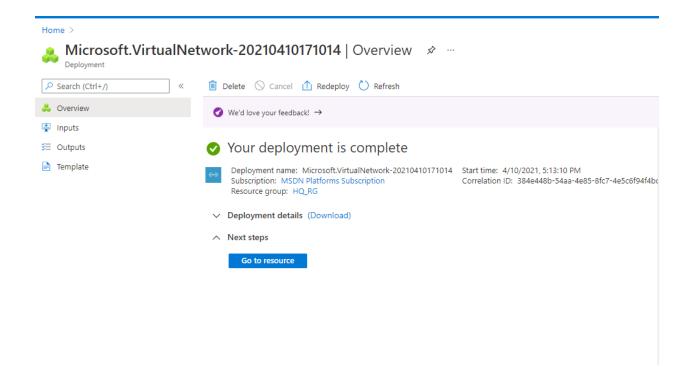
Create virtual network

Basics	IP Addresse	s Security	Tags	Review +	- create	
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Note tha	t if you create	tags and then ch	ange resou	urce setting	gs on other tabs, your tags will be	automatically updated.
Name (Ď				Value ①	
				:		
Review	+ create		< Prev	/ious	Next : Review + create >	Download a template for automation



Create virtual network





Virtual Network Vnet1 with Subnet1 is created in HeadQuarters (East US) Region

Create a Second Virtual Network in West US Region (Branch Office)

Vnet Name: Vnet2

Resource Group Name: BO_Rg

Location: West US

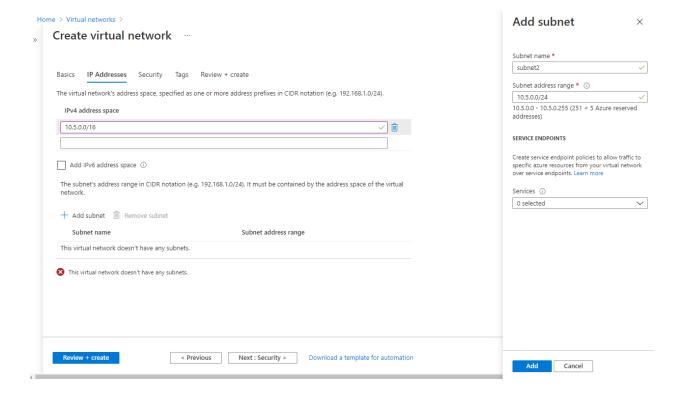
Vnet1 CIDR: 10.5.0.0/16

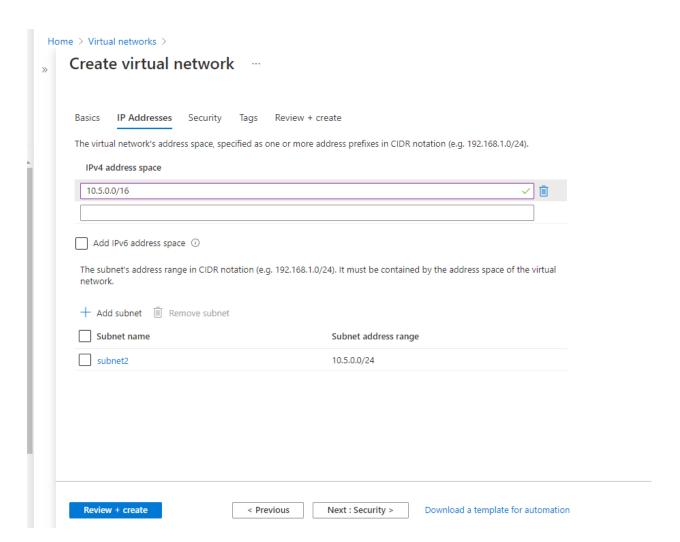
Subnet Name: Subnet1

Subnet1 CIDR: 10.5.0.0/24

Create virtual network ...

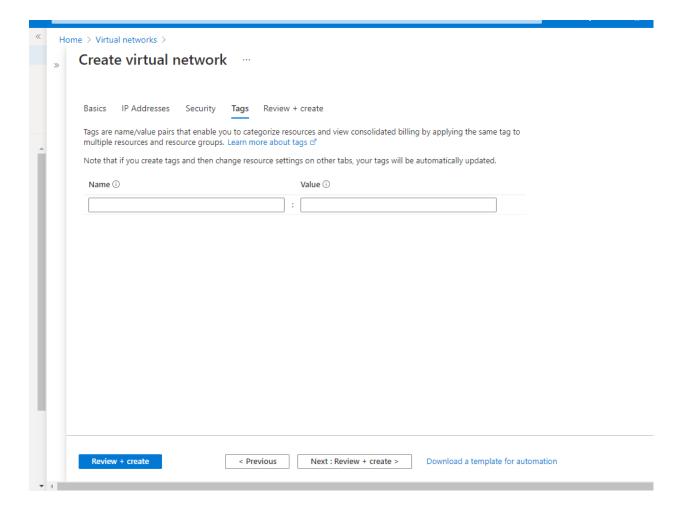
Basics IP Addresses	Security Tags F	eview + create	
of Azure resources, such as A premises networks. VNet is si	zure Virtual Machines (' milar to a traditional ne	ding block for your private network i /M), to securely communicate with ex twork that you'd operate in your owr cale, availability, and isolation. Learn	ach other, the internet, and on- n data center, but brings with it
Project details			
Subscription * (i)	MSDN	Platforms Subscription	~
Resource group * ①	(New) I		V
Instance details			
Name *	Vnet2		~
Region *	(US) W	est US	✓
Review + create	< Previo	us Next : IP Addresses >	Download a template for automation





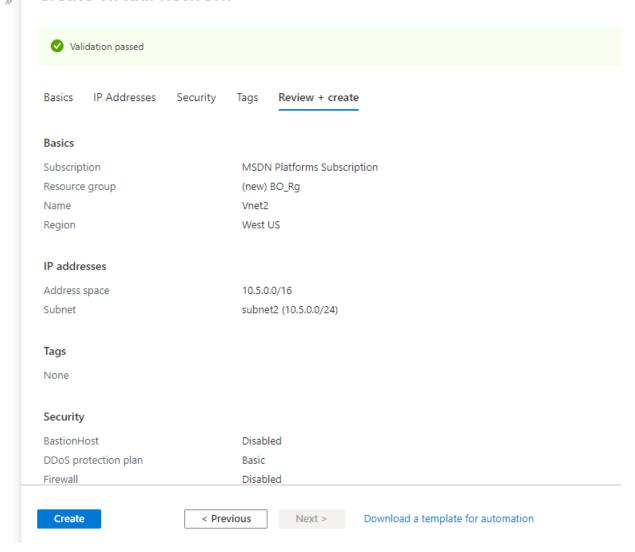
Home > Virtual networks >

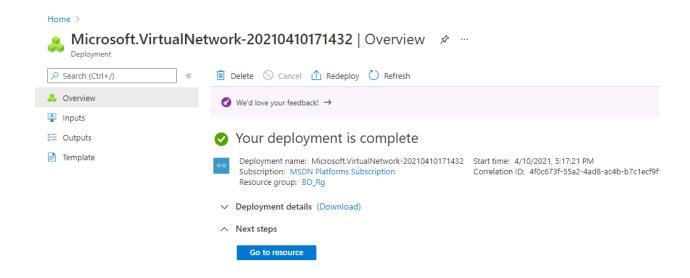
Create virtual network Tags Basics IP Addresses Security Review + create Disable BastionHost (i) ○ Enable Disable DDoS Protection Standard (i) ○ Enable Disable Firewall (i) Enable Review + create < Previous Next : Tags > Download a template for automation



Home > Virtual networks >

Create virtual network





Create a Virtual Machine in East US Region (Head Quarters)

Virtual Machine Name: VM1

Resource Group: HQ_Rg

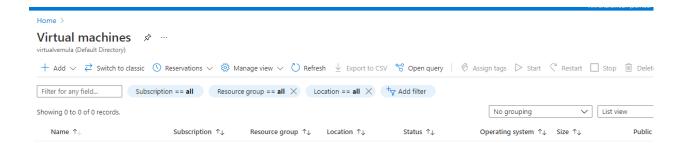
Location: East US

OS Type: Windows 2016 Datacenter-Gen1

Instance Size: Standard_B1ms

Virtual Network Name: Vnet1

Subnet Name: Subnet1





No virtual machines to display

Create a virtual machine that runs Linux or Windows. Select an image from the marketplace or use your own customized image.

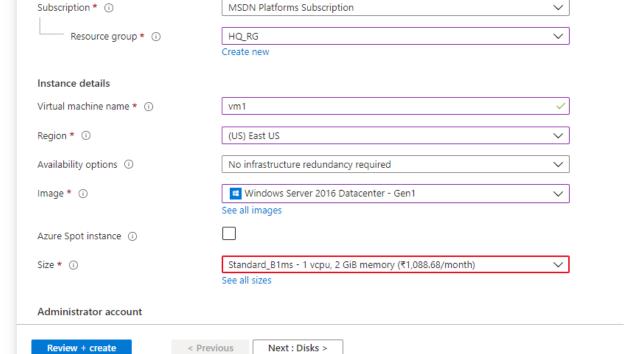
Learn more about Windows virtual machines & Learn more about Linux virtual machines &

Create a virtual machine

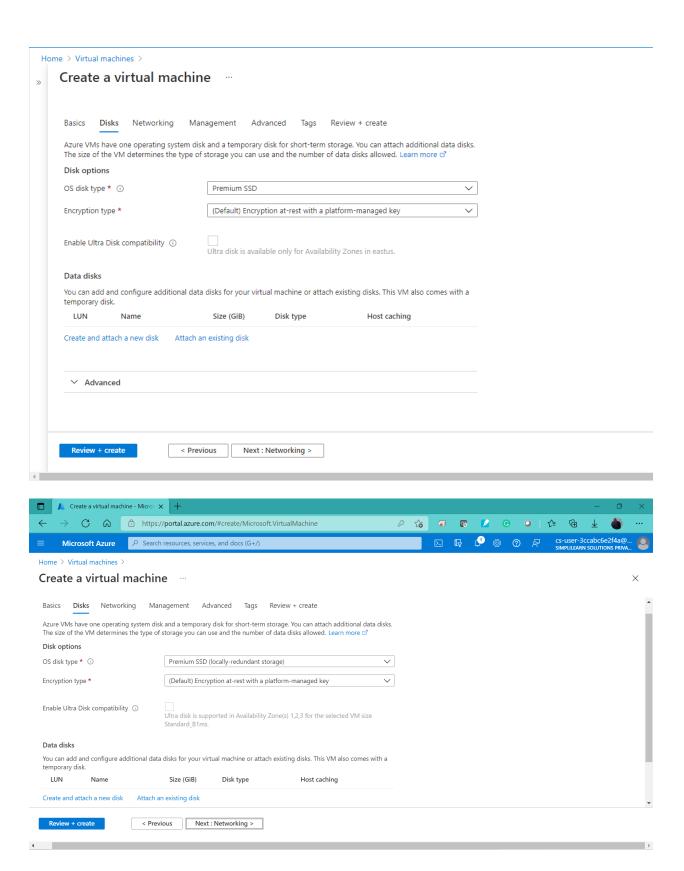
image. Complete the Basics tab then Review + create to provision a virtual machine with default parameters or review each tab for full customization. Learn more

Project details

Select the subscription to manage deployed resources and costs. Use resource groups like folders to organize and manage all your resources.



Jsername * ①	cloudadmin
Password * ①	······································
Confirm password * ①	··············
nbound port rules	
Select which virtual machine netwo network access on the Networking	ork ports are accessible from the public internet. You can specify more limited or granular tab.
Public inbound ports * (i)	None
,	Allow selected ports
Select inbound ports *	RDP (3389) V
	⚠ This will allow all IP addresses to access your virtual machine. This is only recommended for testing. Use the Advanced controls in the Networking tab to create rules to limit inbound traffic to known IP addresses.
Licensing	
	already own using Azure Hybrid Benefit. Learn more ♂



	virtual machine by configuring network interface card (NIC) settings. You can control ctivity with security group rules, or place behind an existing load balancing solution.
letwork interface	
When creating a virtual machine, a ne	etwork interface will be created for you.
/irtual network * ①	vnet1 🗸
	Create new
Subnet * ①	subnet1 (10.0.0.0/24)
	Manage subnet configuration
Public IP ①	(new) vm1-ip
	Create new
NIC network security group ①	None
	Basic
	Advanced
Public inbound ports * (i)	None
	Allow selected ports
	RDP (3389)

Public IP ①	(new) vm1-ip Create new
NIC network security group ①	None Basic Advanced
Public inbound ports * ①	None Allow selected ports
Select inbound ports *	RDP (3389) V
	⚠ This will allow all IP addresses to access your virtual machine. This is only recommended for testing. Use the Advanced controls in the Networking tab to create rules to limit inbound traffic to known IP addresses.
Accelerated networking ①	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?	

Basics Disks	Networking I	Management Advanced Tags Review + create
Configure monito	ring and managemer	nt options for your VM.
Azure Security C	Center	
Azure Security Ce Learn more 🗗	nter provides unified	security management and advanced threat protection across hybrid cloud workloads.
Your subscrip	otion is protected by	Azure Security Center basic plan.
Monitoring		
Boot diagnostics	①	Enable with managed storage account (recommended)
		Enable with custom storage account
		O Disable
Enable OS guest o	diagnostics (i)	
Identity		
System assigned r	managed identity (i	
Auto-shutdown		
Enable auto-shuto	down ①	
Review + creat	e < P	revious Next : Advanced >

Guest OS updates

Enable hotpatch (Preview) ①

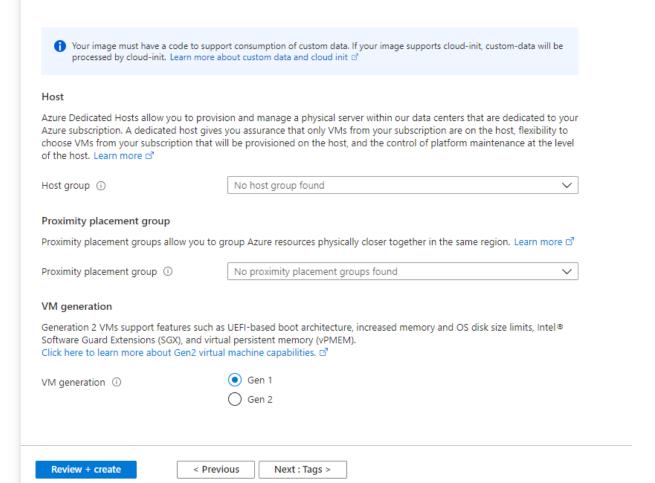
Patch orchestration options ①

Automatic by OS (Windows Automatic Updates)

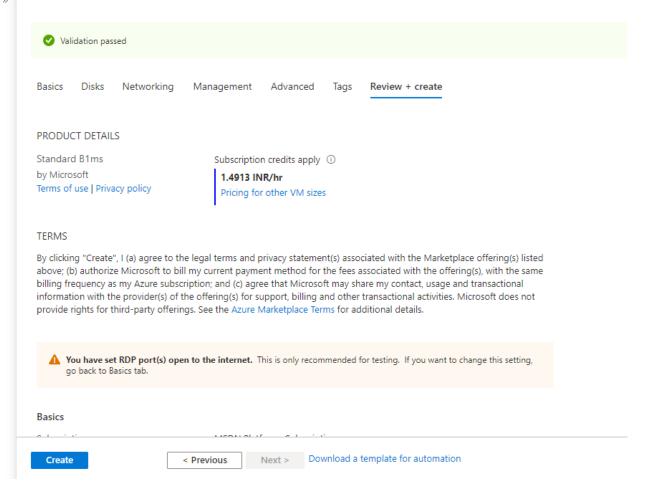
1 Some patch orchestration options are not available for this image.

Review + create < Previous Next : Advanced >

Basics	Disks	Networking	Management	Advanced	Tags	Review + create	
Add addi	itional cor	nfiguration, agent	s, scripts or applica	tions via virtual	machine	e extensions or cloud-init.	
Extensio	ons						
Extension	ns provide	post-deploymen	t configuration and	d automation.			
Extension	ns (i)		Select an e	xtension to inst	all		
Custom	data						
			ther data into the v nore about custom			s being provisioned. The data will be saved on	
Custom o	data						
			o support consumpt more about custom			r image supports cloud-init, custom-data will be	
Host Azure De	dicated H	osts allow you to	provision and mar	nage a physical	server wit	ithin our data centers that are dedicated to your	
	v + create			Next : Tags >			

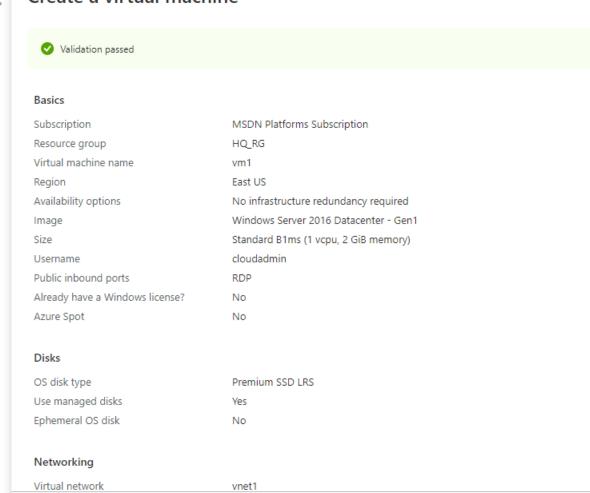


e groups. Learn more about tag: d then change resource settings		cally updated.
Value ①	Resource	
:	12 selected	~
	d then change resource settings Value ①	d then change resource settings on other tabs, your tags will be automatic



Create

Create a virtual machine

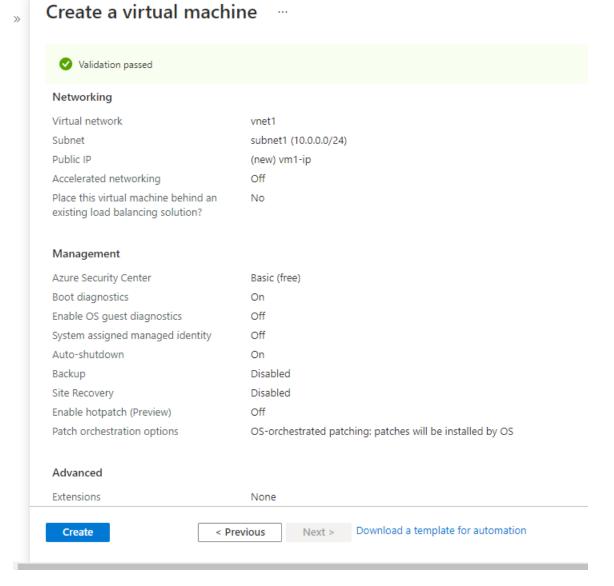


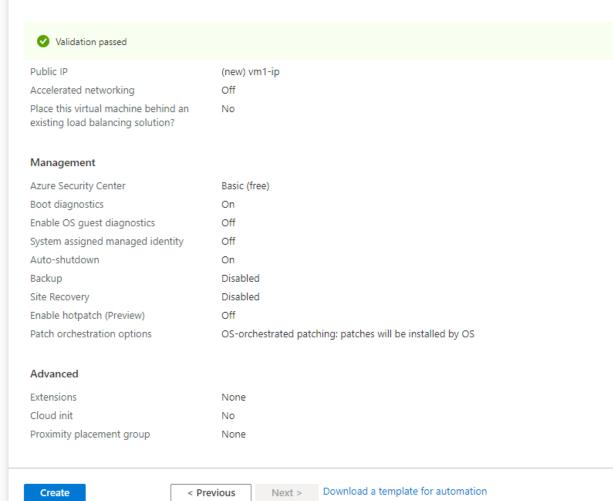
Next >

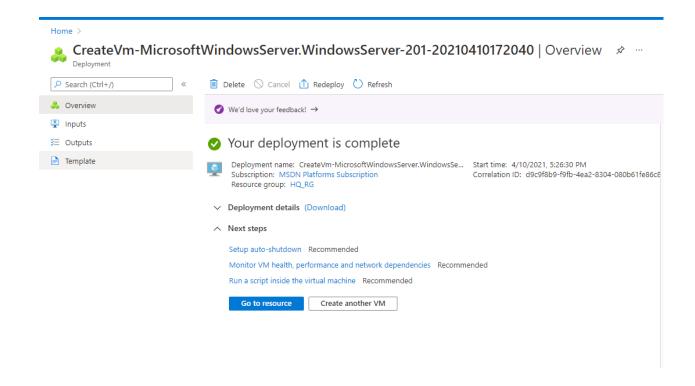
< Previous

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_







VM1 is Created in HQ Region East US.

Create a Virtual Machine in West US Region (Branch Office)

Virtual Machine Name: VM2

Resource Group: BO_Rg

Location: West US

OS Type: Windows 2016 Datacenter-Gen1

Instance Size: Standard_B1ms

Virtual Network Name: Vnet2

Subnet Name: Subnet2

Basics	Disks	Networking	Management	Advanced	Tags	Review + create
image. C	omplete t		n Review + create t	_		re marketplace or use your own customized hine with default parameters or review each
Project	details					
Select th your reso		tion to manage o	leployed resources	and costs. Use	resource	groups like folders to organize and manage all
Subscrip	tion * i		MSDN Pl	atforms Subscri	ption	V
F	Resource <u>c</u>	group * ①	BO_Rg			<u> </u>
			Create new	I		
Instance	e details					
Virtual m	nachine na	ame * (i)	VM2			✓
Region *	· (i)		(US) Wes	t US		· ·
Availabil	ity option:	s (i)	No infras	tructure redund	ancy requ	uired ∨
Image *	①		Wind See all ima	ows Server 2010 ges	5 Datacer	ster - Gen1 V
Azure Sp	ot instanc	ce (i)				

Create a virtual machine Azure Spot instance ① Size * ① Standard_B1ms - 1 vcpu, 2 GiB memory (₹1,304.31/month) Administrator account Username * ① cloudadmin Password * ① Confirm password * ① Inbound port rules 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. O None Public inbound ports * ① Allow selected ports Select inbound ports * RDP (3389) \vee ⚠ This will allow all IP addresses to access your virtual machine. This is only recommended for testing. Use the Advanced controls in the Networking tab to create rules to limit inbound traffic to known IP addresses. Licensing Save up to 49% with a license you already own using Azure Hybrid Benefit. Learn more 27 Would you like to use an existing

< Previous

Review + create

Next : Disks >

			em disk and a tempora				
Disk option		etermines the t	ype of storage you can	use and the num	ber of data disk	cs allowed. Learn mo	re 🗹
OS disk type			Standard SSD)			~
Encryption ty	ype *		(Default) Encr	yption at-rest wit	h a platform-m	anaged key	~
Enable Ultra	Disk com	npatibility ①					
Data disks							
Data disks							
		figure addition	al data disks for your vi	rtual machine or	attach existing	disks. This VM also co	omes with a
You can add			al data disks for your vi Size (GiB)	rtual machine or Disk type	attach existing (disks. This VM also co	omes with a
You can add temporary d	isk. Nan attach a n	ne	-		attach existing (omes with a
You can add temporary d LUN Create and a	isk. Nan attach a n	ne	Size (GiB)		attach existing (omes with a
You can add temporary d LUN Create and a	isk. Nan attach a n	ne	Size (GiB)		attach existing (omes with a
You can add temporary d LUN Create and a	isk. Nan attach a n	ne	Size (GiB)		attach existing (omes with a

	bound and					terface card (NIC) settings. You can ehind an existing load balancing so			
Networ	k interfac	e							
When cr	eating a vi	rtual machine, a r	etwork interface w	vill be created fo	r you.				
Virtual n	etwork *	0	Vnet2				~		
			Create new	/					
Subnet *	(()			subnet2 (10.5.0.0/24)					
			Manage su	bnet configurat	ion				
Public IP	0		(new) VIV	12-ip			~		
			Create new	/					
NIC netv	vork securi	ty group ①	None						
			Basic						
			(Advan	icea					
Public in	bound por	ts * ①	○ None						
			Allow	selected ports					
Select in	bound por	ts*	RDP (338	9)			~		
			reco	mmended for tes	sting. Use	es to access your virtual machine. The the Advanced controls in the Network traffic to known IP addresses.			

Home > Virtual machines > Create a virtual machine Create new Subnet * ① subnet2 (10.5.0.0/24) Manage subnet configuration Public IP ① (new) VM2-ip \vee Create new O None NIC network security group ① Basic Advanced O None Public inbound ports * ① Allow selected ports RDP (3389) Select inbound ports * ⚠ This will allow all IP addresses to access your virtual machine. This is only recommended for testing. Use the Advanced controls in the Networking tab to create rules to limit inbound traffic to known IP addresses. Accelerated networking ① 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 of Place this virtual machine behind an existing load balancing solution? Review + create < Previous Next : Management >

Home > Virtual machines >

Create a virtual machine ...

asics	Disks	Networking	Management	Advanced	Tags	Review + create			
onfigur	e monitori	ing and manager	nent options for yo	our VM.					
zure S	ecurity Ce	enter							
zure Se earn mo		ter provides unifi	ed security manag	ement and adva	nced thre	eat protection across hybrid cloud worklo	ads.		
You	r subscript	ion is protected	by Azure Security C	Center basic plar	٦.				
/lonitor	ing								
Boot diagnostics ①			Enable	Enable with managed storage account (recommended) Enable with custom storage account Disable					
nable OS guest diagnostics ①									
dentity									
ystem a	ssigned m	anaged identity	0 🗆						
uto-sh	utdown								
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hutdown time ①			7:00:00 P	7:00:00 PM					
ime zon	ne ①		(UTC) Cod	ordinated Unive	rsal Time		~		

Home > Virtual machines > Create a virtual machine ... Auto-shutdown Enable auto-shutdown ① Shutdown time ① 7:00:00 PM (UTC) Coordinated Universal Time Time zone ① Notification before shutdown ① Email * ① vemula4u@hotmail.com Backup Enable backup ① Site Recovery Enable Disaster Recovery ① **Guest OS updates** Enable hotpatch (Preview) ① Automatic by OS (Windows Automatic Updates) Patch orchestration options ① \vee 1 Some patch orchestration options are not available for this image. Learn more of Review + create < Previous Next : Advanced >

Create a virtual machine

Basics Disks Networking Management Advanced Tags Review + create								
Add additional configuration, agents, scripts or applications via virtual machine extensions or cloud-init.								
Extensions								
Extensions provide post-deployment configuration and automation.								
Extensions ① Select an extension to install								
Custom data								
Pass a script, configuration file, or other data into the virtual machine while it is being provisioned. The data will be saved on the VM in a known location. Learn more about custom data for VMs ♂								
Custom data								
Your image must have a code to support consumption of custom data. If your image supports cloud-init, custom-data will be processed by cloud-init. Learn more about custom data and cloud init ex								
Host Azure Dedicated Hosts allow you to provision and manage a physical server within our data centers that are dedicated to your Azure subscription. A dedicated host gives you assurance that only VMs from your subscription are on the host, flexibility to choose VMs from your subscription that will be provisioned on the host, and the control of platform maintenance at the level of the host. Learn more ©								
Review + create < Previous Next : Tags >								

Home > Virtual machines > Create a virtual machine 1 Your image must have a code to support consumption of custom data. If your image supports cloud-init, custom-data will be processed by cloud-init. Learn more about custom data and cloud init & Host Azure Dedicated Hosts allow you to provision and manage a physical server within our data centers that are dedicated to your Azure subscription. A dedicated host gives you assurance that only VMs from your subscription are on the host, flexibility to choose VMs from your subscription that will be provisioned on the host, and the control of platform maintenance at the level of the host. Learn more 🗗 No host group found Host group ① Proximity placement group Proximity placement groups allow you to group Azure resources physically closer together in the same region. Learn more 🗗 Proximity placement group ① No proximity placement groups found VM generation Generation 2 VMs support features such as UEFI-based boot architecture, increased memory and OS disk size limits, Intel® Software Guard Extensions (SGX), and virtual persistent memory (vPMEM). Click here to learn more about Gen2 virtual machine capabilities. ☑ Gen 1 VM generation ①

Gen 2

Next : Tags >

< Previous

Review + create

Home > Virtual machines >

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Create a virtual machine Basics Disks Networking Management Advanced Tags Review + create Tags are name/value pairs that enable you to categorize resources and view consolidated billing by applying the same tag to multiple resources and resource groups. Learn more about tags of Note that if you create tags and then change resource settings on other tabs, your tags will be automatically updated. Name ① Value ① Resource 12 selected

Next : Review + create >

Create a virtual machine

Basics Disks Networking Management Advanced Tags Review + create

PRODUCT DETAILS

Standard B1ms Subscription credits apply ①

by Microsoft 1.7867 INR/hr

Terms of use | Privacy policy 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.

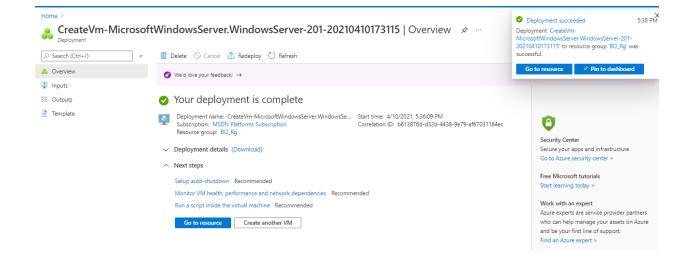
A You have set RDP port(s) open to the internet. This is only recommended for testing. If you want to change this setting, go back to Basics tab.

Basics

Subscription MSDN Platforms Subscription

Resource group BO_Rg VM2 Virtual machine name West US Region

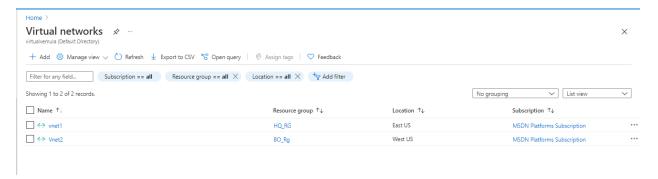
Availability options No infrastructure redundancy required Windows Server 2016 Datacenter - Gen1 Image



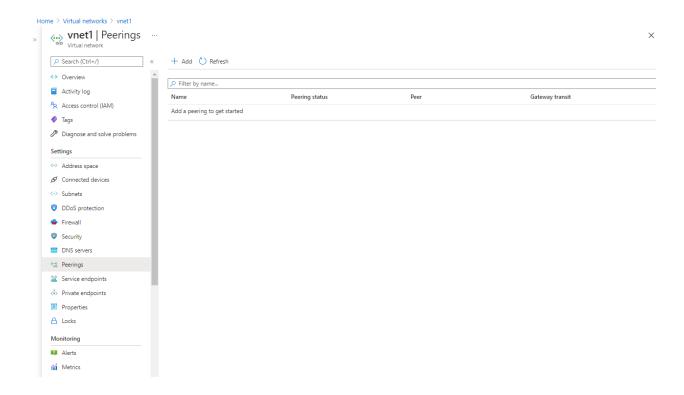


Create Virtual Network Peering between Vnet1 and Vnet2

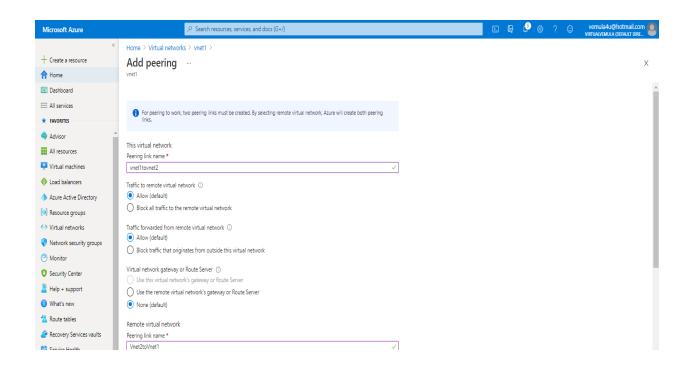
Go to one of the Vnets in Vnet1 or Vnet2 in this case Vnet1/

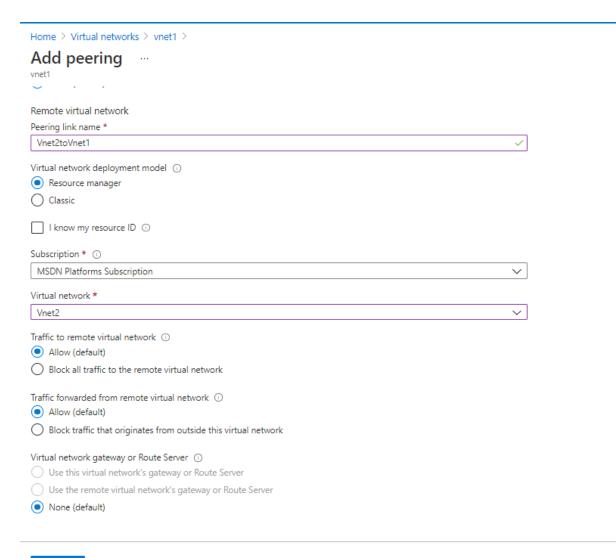


Go to peering section under settings of Vnet1,

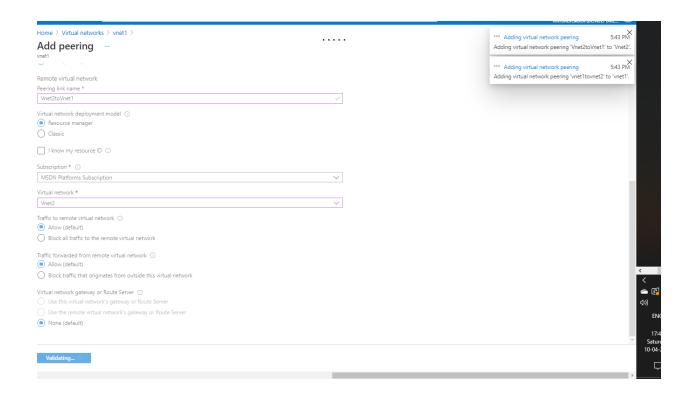


Add Vnet Peering between Vnet1 and Vent2 by selecting **Add** Options.

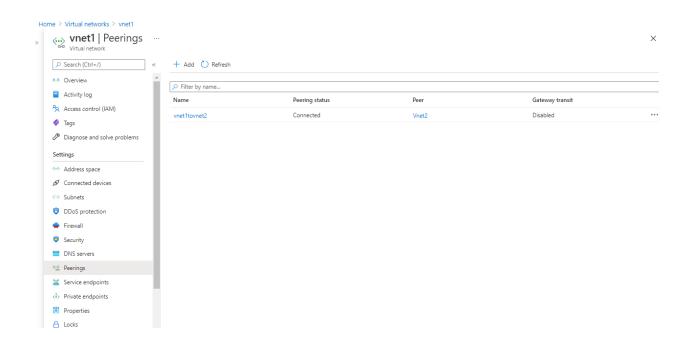


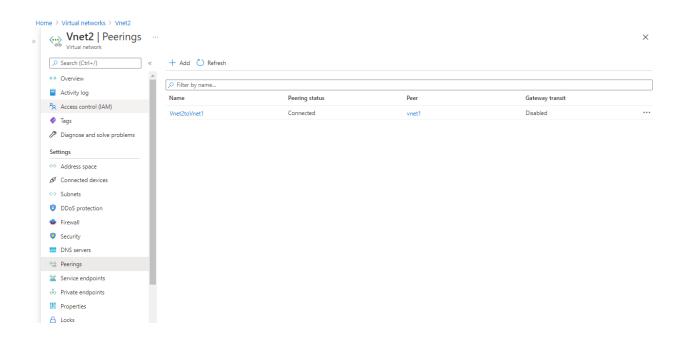


Add



Validate the peering on Vnet1 and Vnet2

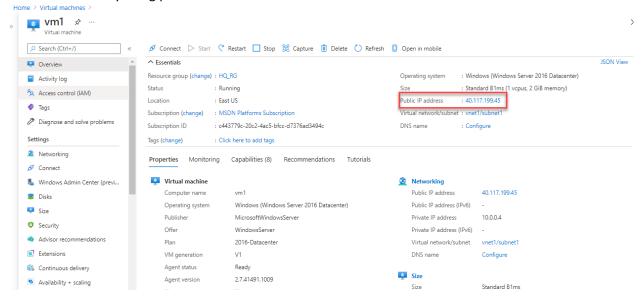


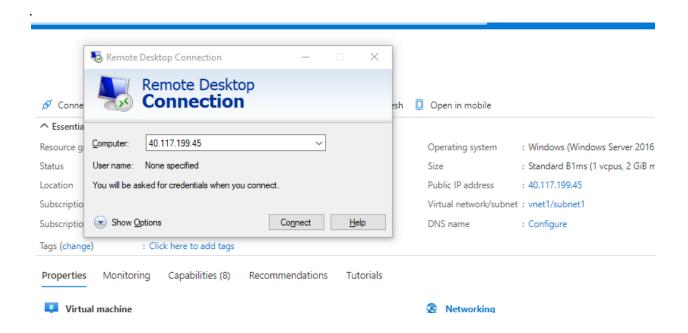


This completes the configuration of Peering between vnet1 and Vent2 which are in HQ and Branch offices.

Connectivity Test between HQ and Branch VMs i.e., VM1 and VM2

1) Connect to VM1 by using public IP address with MSTSC

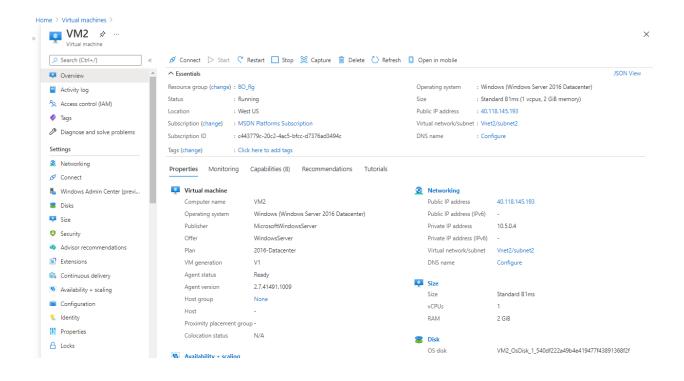




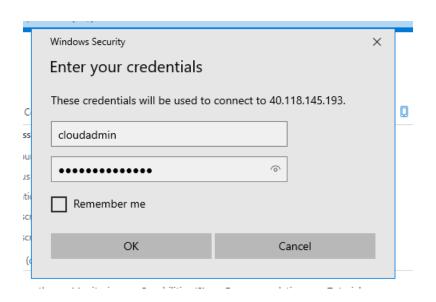
Put username and password



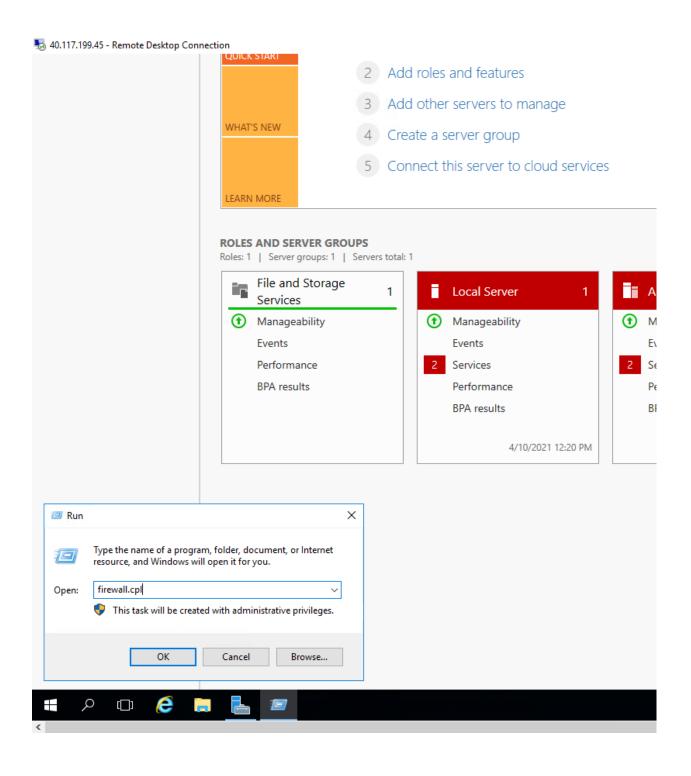
Connect to Second Virtual Machine VM2 in Branch office i.e., West US.



Copy public IP and paste it by doing MSTSC and put username and password



Run firewall.cpl in both VMs and then in Advanced Settings allow ICMP traffic in Inbound Rules.

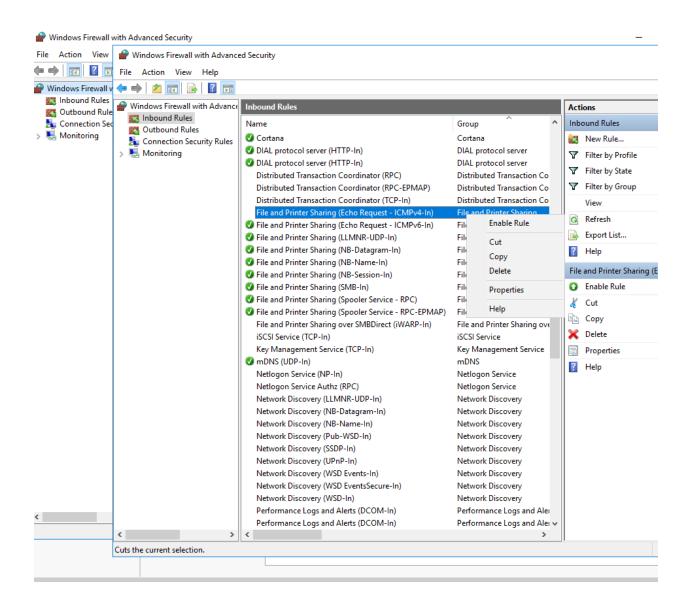


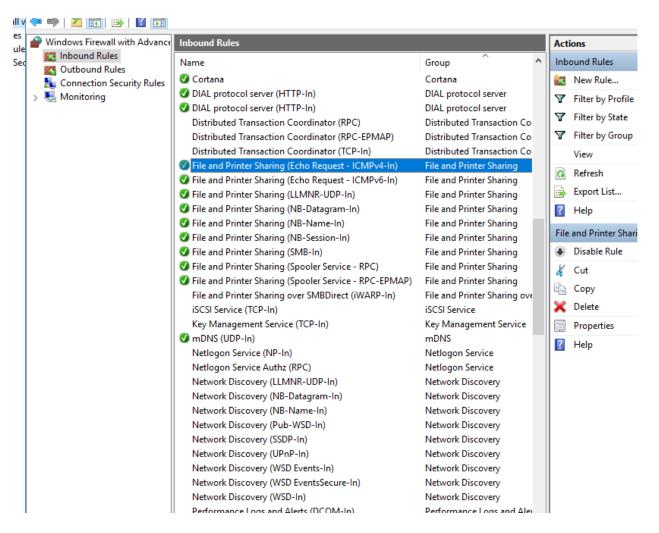


See also

Security and Maintenance

Network and Sharing Center



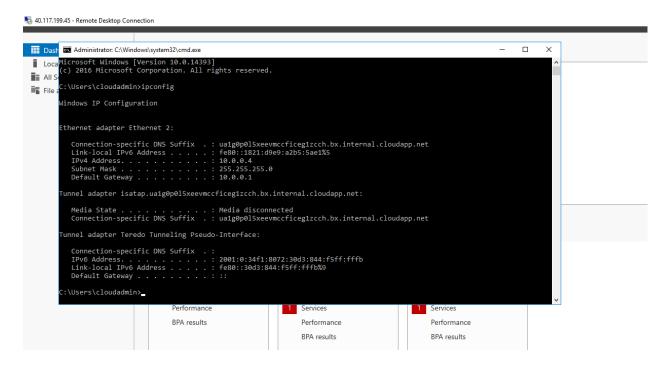


D.Go to Command prompt on both the VMs by typing cmd

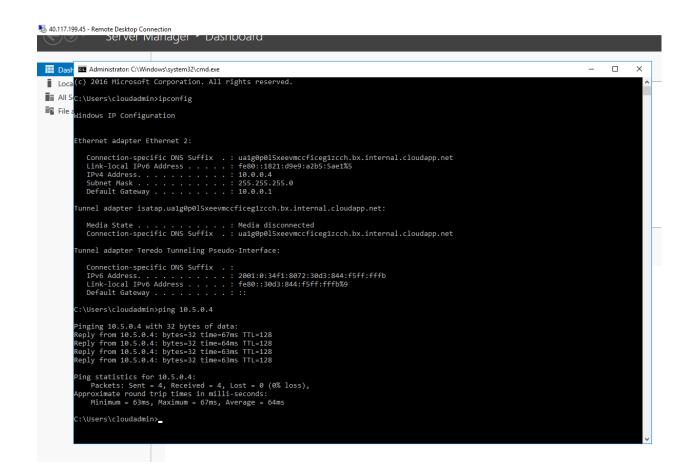
Then type ipconfig to check the ips of both VMs and then try to ping both VMs with each other by the command:

Ping <IP of other VM>

Ip Config Details of VM1



Ip Config Details of VM2



Ping 10.0.0.4

Both VMs are able to ping each other and Hence the project is completed successfully.