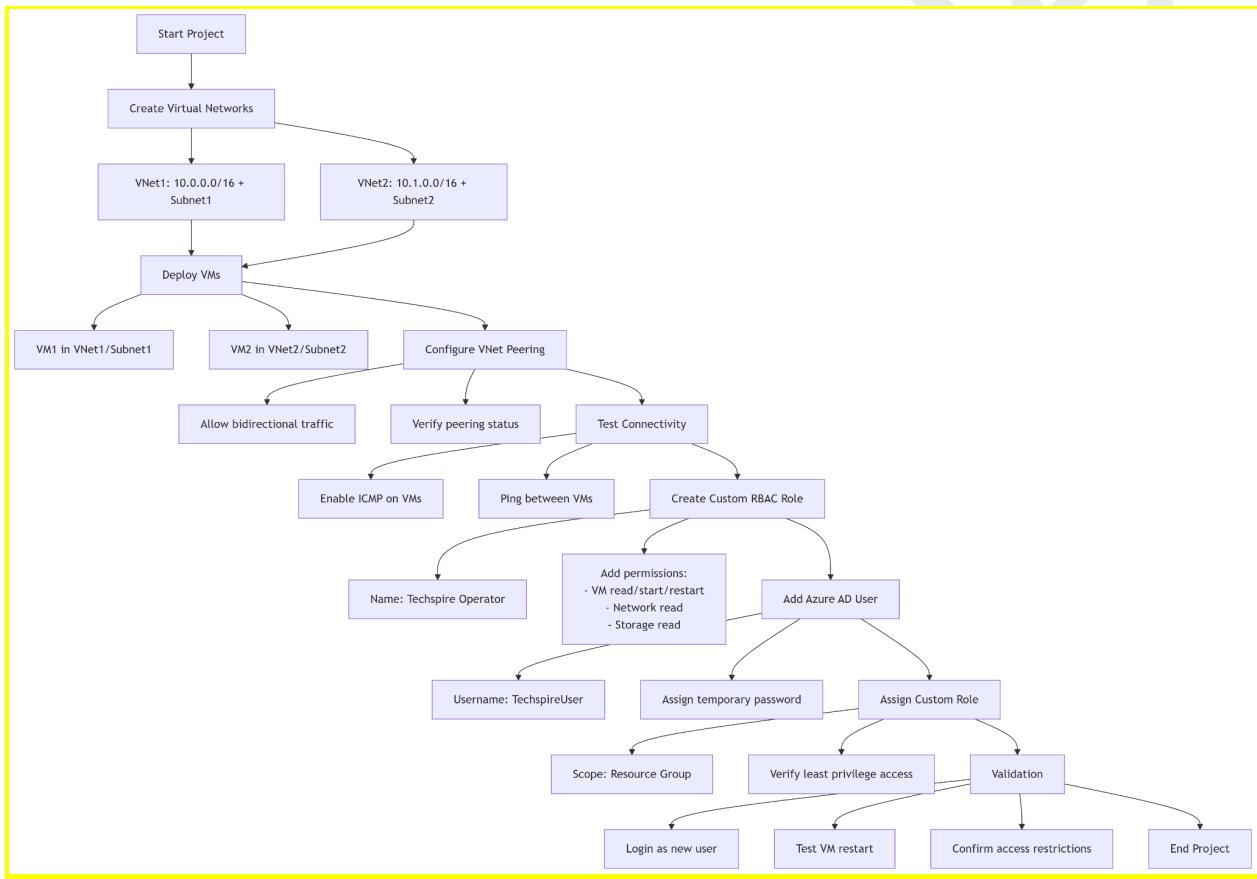


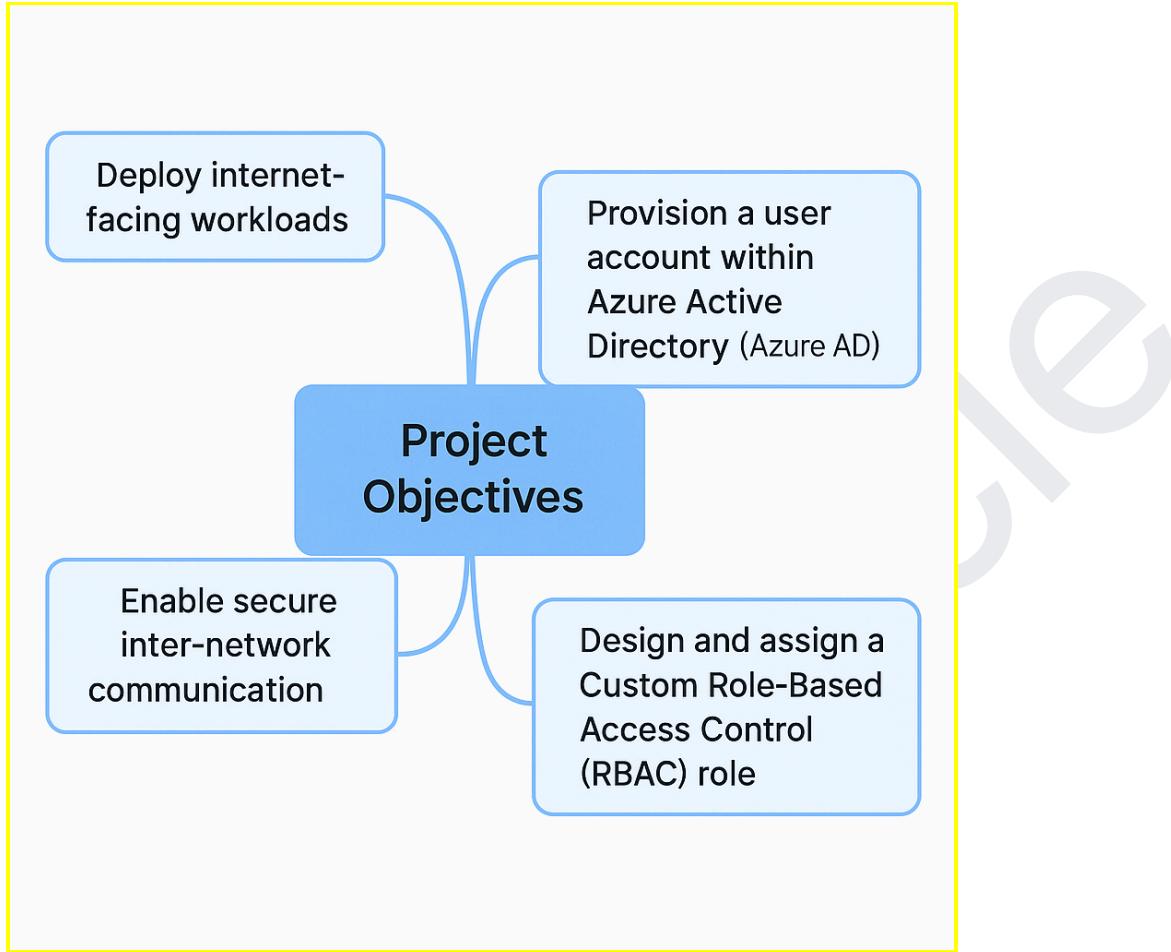
## Sample Project - Techspire



## Enterprise-Grade Azure VNet Integration with Custom Roles Project Summary:

This project focuses on establishing secure and efficient connectivity between internet-facing workloads using Azure Virtual Network (VNet) Peering. Additionally, it involves the implementation of a custom Azure role

to manage access and operations for these workloads, ensuring adherence to the principle of least privilege while maintaining operational efficiency.



## Techspire Vnet-01

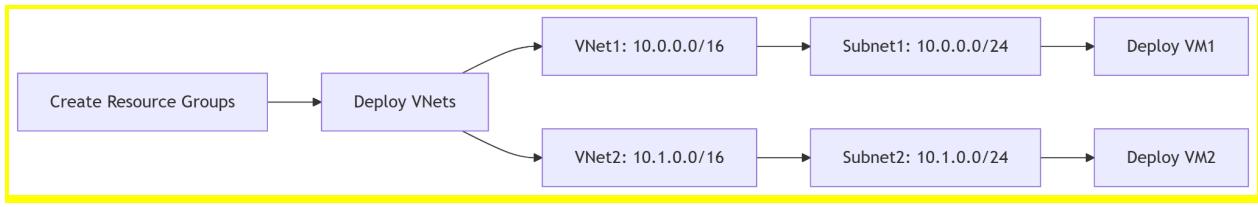
### Steps to be followed:

1. Creating Test Virtual Machines and Virtual Networks
2. Establishing Vnet Peering
3. Testing connectivity
4. Creating a custom RBAC Role
5. Adding a user to the Directory and Assign the custom RBAC Role

### Step 1: Creating Test Virtual Machines and Virtual Networks

1.1 Sign in to the Azure portal

1.2 Create a virtual network **vnet1** with an IP address space of 10.0.0.0/16. Then, add a subnet (**subnet1**) with a subnet address range of 10.0.0.0/24



**Techspire** Resource group

Search Overview + Create Manage view Delete resource group Refresh Export to CSV ...

Essentials

Resources Recommendations

Filter for any field... Type equals all Add filter More (1)

Showing 0 to 0 of 0 records. Show hidden types No grouping

Name ↑	Type ↑	Location ↑
--------	--------	------------

## Techspire subnet-01

TechSpire-Vnet01 | Subnets Virtual network

Search Overview Activity log Access control (IAM) Tags Resource visualizer Events Settings Cost Management Monitoring Automation Help

+ Subnet Refresh Manage users Delete

Create subnets to segment the virtual network address space into smaller ranges for use by your applications. When you deploy resources into a subnet, Azure assigns the resource an IP address from the subnet.

Name ↑	IPv4	IPv6	Available IPs	Delegated to	Security group	Route table
Techspire-Subnet01	10.0.0.0/24	-	251	-	-	-

## Techspire Vm-01

Create a virtual machine (**vm1**) in **vnet1** virtual network

Properties	Value
Image	Windows Server 2019 Datacenter - Gen2
Vm Name	vm1
Region	East US
Username	Techspire01

Password	Password01
Size	Ds1V2

## Create a virtual machine ...

Help me create a low cost VM Help me create a VM optimized for high availability Help me choose the right VM size for my workload

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 \* ⓘ

TechSpire-Vnet01

[Create new](#)

Subnet \* ⓘ

Techspire-Subnet01 (10.0.0.0/24)

[Manage subnet configuration](#)

[< Previous](#)

[Next : Management >](#)

**Review + create**

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

### Price

1 X Standard B1s  
by Microsoft

[Terms of use](#) | [Privacy policy](#)

Subscription credits apply ⓘ

**0.0140 USD/hr**

[Pricing for other VM sizes](#)

### TERMS

[< Previous](#)

[Next >](#)

**Create**

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## Create a virtual machine ...

×

Validation passed

Help me create a low cost VM

Help me create a VM optimized for high availability

Help me choose the right VM size for my workload

### Basics

Subscription	Azure subscription 1
Resource group	Techspire
Virtual machine name	Techspire-VM01
Region	East US
Availability options	Availability zone
Zone options	Self-selected zone
Availability zone	2
Security type	Trusted launch virtual machines

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Give feedback

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[Next >](#)

**Create**

## Create a virtual machine ...

✓ Validation passed

[Help me create a low cost VM](#) [Help me create a VM optimized for high availability](#) [Help me choose the right VM size for my workload](#)

Availability zone	2
Security type	Trusted launch virtual machines
Enable secure boot	Yes
Enable vTPM	Yes
Integrity monitoring	No
Image	Windows Server 2019 Datacenter - Gen2
VM architecture	x64
Size	Standard B1s (1 vcpu, 1 GiB memory)
Enable Hibernation	No
Username	techspire
Public inbound ports	RDP

< Previous Next > **Create**

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## Create a virtual machine ...

✓ Validation passed

[Help me create a low cost VM](#) [Help me create a VM optimized for high availability](#) [Help me choose the right VM size for my workload](#)

### Disks

OS disk size	Image default
OS disk type	Premium SSD LRS
Use managed disks	Yes
Delete OS disk with VM	Enabled
Ephemeral OS disk	No

### Networking

< Previous Next > **Create**

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## Create a virtual machine ...

✓ Validation passed

[Help me create a low cost VM](#) [Help me create a VM optimized for high availability](#) [Help me choose the right VM size for my workload](#)

### Networking

Virtual network	TechSpire-Vnet01
Subnet	Techspire-Subnet01 (10.0.0.0/24)
Public IP	(new) Techspire-VM01-ip
Accelerated networking	Off
Place this virtual machine behind an existing load balancing solution?	No
Delete public IP and NIC when VM is deleted	Enabled

< Previous Next > **Create**

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Create a virtual machine ...

Validation passed

Help me create a low cost VM Help me create a VM optimized for high availability Help me choose the right VM size for my workload

Enable periodic assessment Off

Enable hotpatch Off

Patch orchestration options OS-orchestrated patching: patches will be installed by OS

**Monitoring**

Alerts Off

Boot diagnostics On

Enable OS guest diagnostics Off

Enable application health monitoring Off

< Previous Next > Create Download a template for automation Give feedback

Create a virtual machine ...

Validation passed

Help me create a low cost VM Help me create a VM optimized for high availability Help me choose the right VM size for my workload

Enable application health monitoring Off

**Advanced**

Extensions None

VM applications None

Cloud init No

User data No

Disk controller type SCSI

Proximity placement group None

Capacity reservation group None

< Previous Next > Create Download a template for automation Give feedback

Home >

**Techspire** Resource group

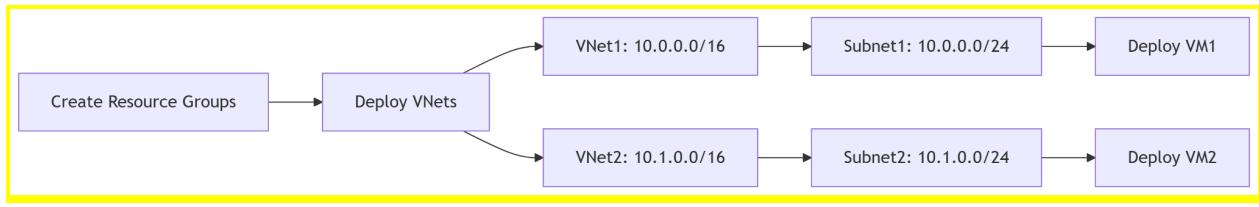
Search < Previous Page 1 of 1 Next > Create Manage view Delete resource group Refresh Export to CSV Open query Assign tags Move ...

Name	Type	Location	...
Techspire-VM01-nsg	Network security group	East US	...
TechSpire-Vnet01	Virtual network	East US	...
TechSpire-Vnet02	Virtual network	East US	...
TechspireVM	Virtual machine	East US	...
TechspireVM-ip	Public IP address	East US	...
TechspireVM-nsg	Network security group	East US	...
techspirevm229_z2	Network Interface	East US	...

Give feedback

## Techspire Vnet-02

Create a virtual network vnet2 with an IP address space of 10.1.0.0/16. Next, add a subnet (subnet2) with a subnet address range of 10.1.0.0/24



**TechSpire-Vnet01** Virtual network

Search Overview Move Delete Refresh Give feedback JSON View

Essentials

- Resource group (move) Techspire
- Location (move) East US
- Subscription (move) Azure subscription 1
- Subscription ID 4a8937a7-b294-4a1f-8d31-79bbb1a4c17f
- Tags (edit) Add tags

Validation passed

Basics Security IP addresses Tags Review + create

View automation template

### Basics

Subscription	Azure subscription 1
Resource Group	Techspire
Name	TechSpire-Vnet02
Region	East US

### Security

Validation passed

Basics Security IP addresses Tags Review + create

Azure Bastion	Disabled
Azure Firewall	Disabled
Azure DDoS Network Protection	Disabled

### IP addresses

Address space	10.1.0.0/16 (65,536 addresses)
---------------	--------------------------------

**Techspire Subnet-02**

TechSpire-Vnet02 | Subnets

Virtual network

Overview Activity log Access control (IAM) Tags Diagnose and solve problems Resource visualizer Settings Address space Connected devices Subnets

Create subnets to segment the virtual network address space into smaller ranges for use by your applications. When you deploy resources into a subnet, Azure assigns the resource an IP address from the subnet.

Name ↑	IPv4	IPv6	Available IPs	Delegated to	Security group	Route table
TechSpire-...	10.1.0.0/24	-	251	-	-	-

## Techspire Vm-02

Create a virtual machine (**Techspirevm1**) in **vnet1** virtual network

Properties	Value
Image	Windows Server 2019 Datacenter - Gen2
Vm Name	vm1
Region	East US
Username	Techspire02
Password	Password02
Size	Ds1V2

Validation passed

Help me create a low cost VM Help me create a VM optimized for high availability Help me choose the right VM size for my workload

You have selected ports open to the internet. This is only recommended for testing. If you want to change this setting, go back to Basics tab.

**Basics**

Subscription	Azure subscription 1
Resource group	Techspire
Virtual machine name	Techspirevm02
Region	East US
Availability options	Availability zone
Zone options	Self-selected zone
Availability zones	2

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## Create a virtual machine

X

Validation passed

[Help me create a low cost VM](#) [Help me create a VM optimized for high availability](#) [Help me choose the right VM size for my workload](#)

Availability options	Availability zone
Zone options	Self-selected zone
Availability zone	2
Security type	Trusted launch virtual machines
Enable secure boot	Yes
Enable vTPM	Yes
Integrity monitoring	No
Image	Windows Server 2019 Datacenter - Gen2
VM architecture	x64
Size	Standard B1s (1 vcpu, 1 GiB memory)
Enable Hibernation	No

< Previous Next > **Create**

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Validation passed

[Help me create a low cost VM](#) [Help me create a VM optimized for high availability](#) [Help me choose the right VM size for my workload](#)

Already have a Windows license?	No
Azure Spot	No

### Disk

OS disk size	Image default
OS disk type	Premium SSD LRS
Use managed disks	Yes
Delete OS disk with VM	Enabled
Ephemeral OS disk	No

< Previous Next > **Create**

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## Create a virtual machine

X

Validation passed

[Help me create a low cost VM](#) [Help me create a VM optimized for high availability](#) [Help me choose the right VM size for my workload](#)

### Networking

Virtual network	TechSpire-Vnet02
Subnet	TechSpire-Subnet02 (10.1.0.0/24)
Public IP	(new) Techspirevm02-ip
Accelerated networking	Off
Place this virtual machine behind an existing load balancing solution?	No
Delete public IP and NIC when VM is deleted	Enabled

### Management

< Previous Next > **Create**

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**Create a virtual machine** ... X

✓ Validation passed

Help me create a low cost VM Help me create a VM optimized for high availability Help me choose the right VM size for my workload

**Management**

Microsoft Defender for Cloud	Basic (free)
System assigned managed identity	Off
Login with Microsoft Entra ID	Off
Auto-shutdown	Off
Backup	Disabled
Enable periodic assessment	Off
Enable hotpatch	Off
Patch orchestration options	OS-orchestrated patching: patches will be installed by OS

[< Previous](#) [Next >](#) [Create](#)

[Download a template for automation](#) [Give feedback](#)

✓ Validation passed

Help me create a low cost VM Help me create a VM optimized for high availability Help me choose the right VM size for my workload

Enable application health monitoring

**Advanced**

Extensions	None
VM applications	None
Cloud init	No
User data	No
Disk controller type	SCSI
Proximity placement group	None
Capacity reservation group	None

[< Previous](#) [Next >](#) [Create](#)

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Manage view Refresh Export to CSV Clear | Assign tags

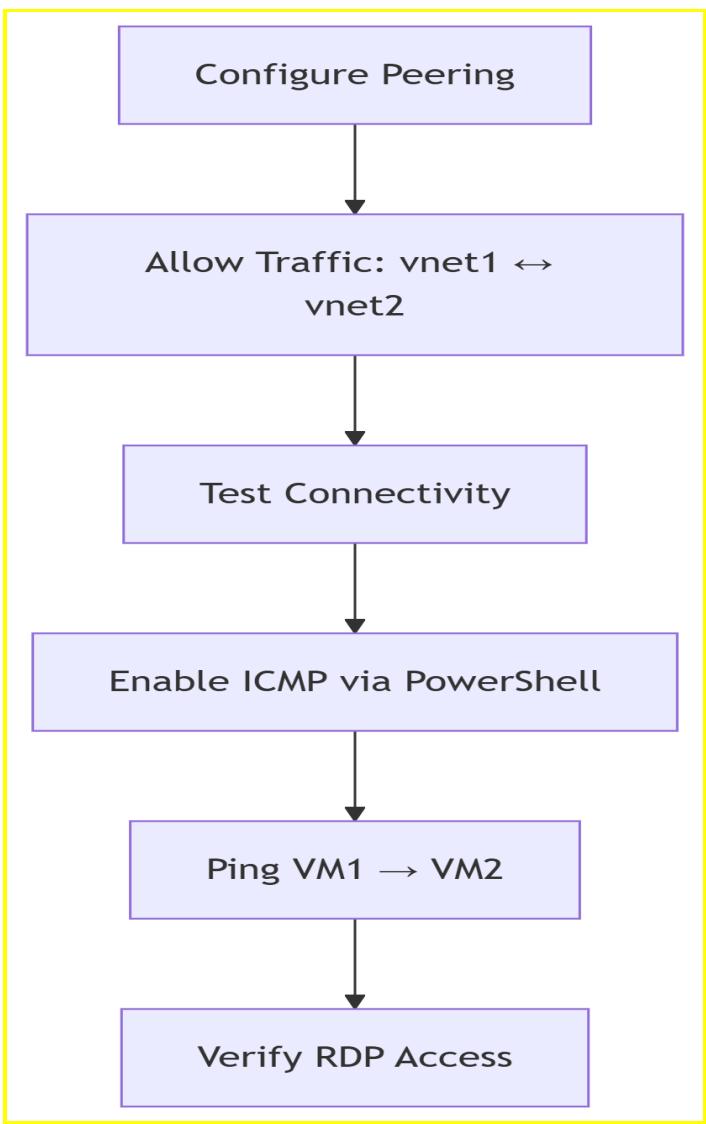
Group by none

Filter for any field... Subscription equals all Resource Group equals all Type equals all Location equals all + Add filter

<input type="checkbox"/> Name	Type	Location	Resource Group	Subscription	Last accessed
<span style="color: blue;">💻</span> Techspirevm02	Virtual machine		Techspire	Azure subscription 1	30 seconds ago
<span style="color: blue;">🌐</span> Techspire	Resource group		Techspire	Azure subscription 1	33 seconds ago
<span style="color: blue;">🔗</span> TechSpire-Vnet01	Virtual network	East US	Techspire	Azure subscription 1	18 minutes ago
<span style="color: blue;">💻</span> TechspireVM	Virtual machine	East US	Techspire	Azure subscription 1	36 minutes ago
<span style="color: blue;">🔗</span> TechSpire-Vnet02	Virtual network	East US	Techspire	Azure subscription 1	1 hour ago

## Step 2: Establishing Vnet peering

- 2.1 Locate the **Techspire vnet1** virtual network
- 2.2 Select **Peering**. Then, add a **peering connection**



Properties	Value
Peering link name	vnet1tovnet2
Traffic to remote virtual network	Allow
Traffic forwarded from remote virtual network	Allow
Virtual network gateway or Route Server	None
Remote virtual network peering link name	vnet2tovnet1
Virtual network deployment model	Techspire
Subscription	#####
Virtual network	Vnet2

# TechspireVM01

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

Copilot

shubhamtripathi@azur... DEFAULT DIRECTORY (AZUREDEV...)

Home > TechspireVM Virtual machine

Manage this VM with Azure CLI Help me copy this VM in any region +1

Overview Activity log Access control (IAM) Tags Diagnose and solve problems Resource visualizer Connect Networking Settings Availability + scale Security

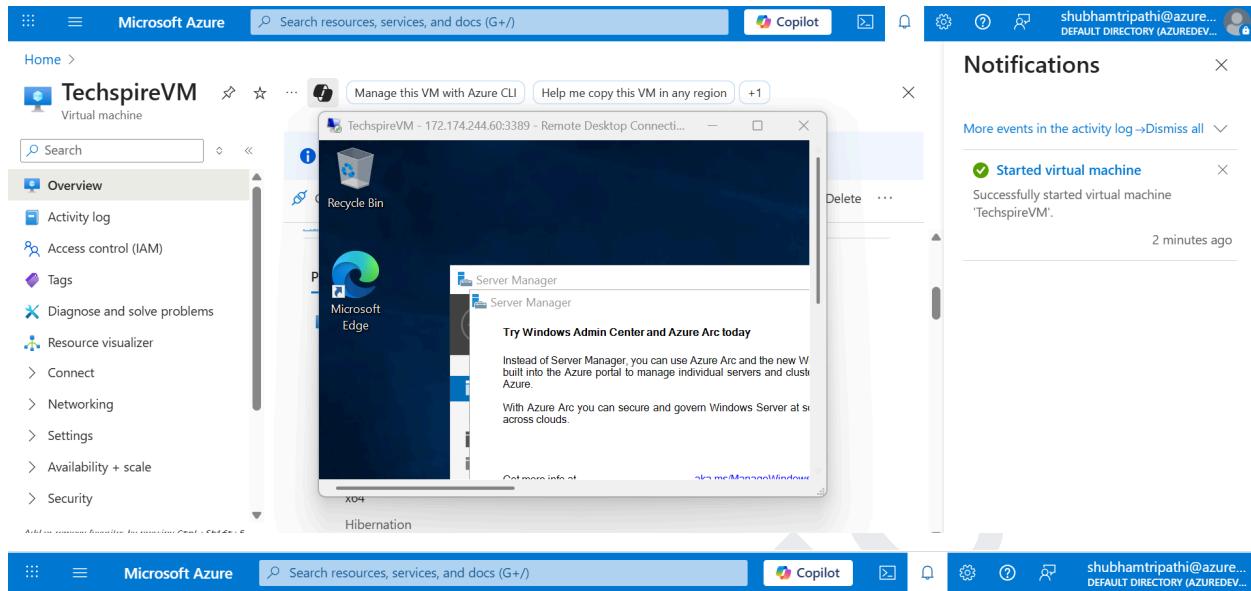
Search

Recycle Bin Server Manager Microsoft Edge Try Windows Admin Center and Azure Arc today Instead of Server Manager, you can use Azure Arc and the new W built into the Azure portal to manage individual servers and clusters across clouds. With Azure Arc you can secure and govern Windows Server at scale across clouds.

X04 Hibernation

Notifications More events in the activity log → Dismiss all

Started virtual machine Successfully started virtual machine 'TechspireVM'. 2 minutes ago



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Copilot

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Home > TechspireVM Virtual machine

Manage this VM with Azure CLI Help me copy this VM in any region +1

Overview Activity log Access control (IAM) Tags Diagnose and solve problems Resource visualizer Connect Networking Settings Availability + scale Security

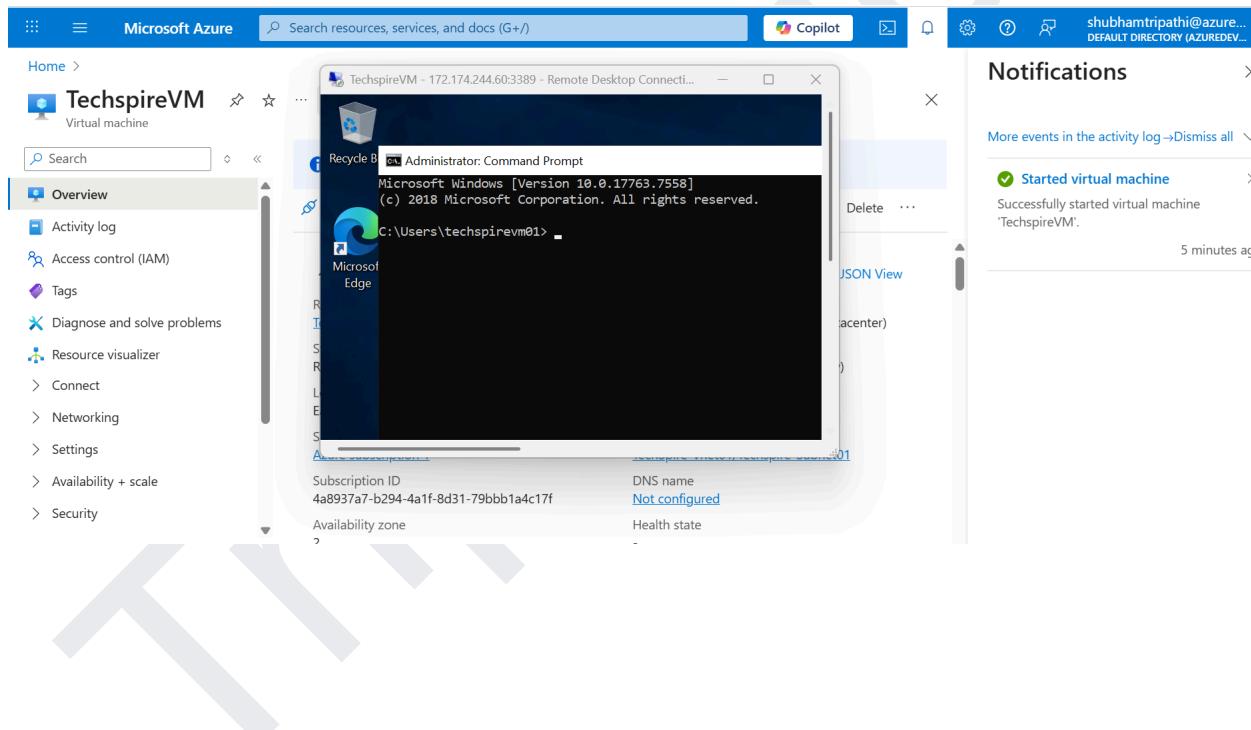
Search

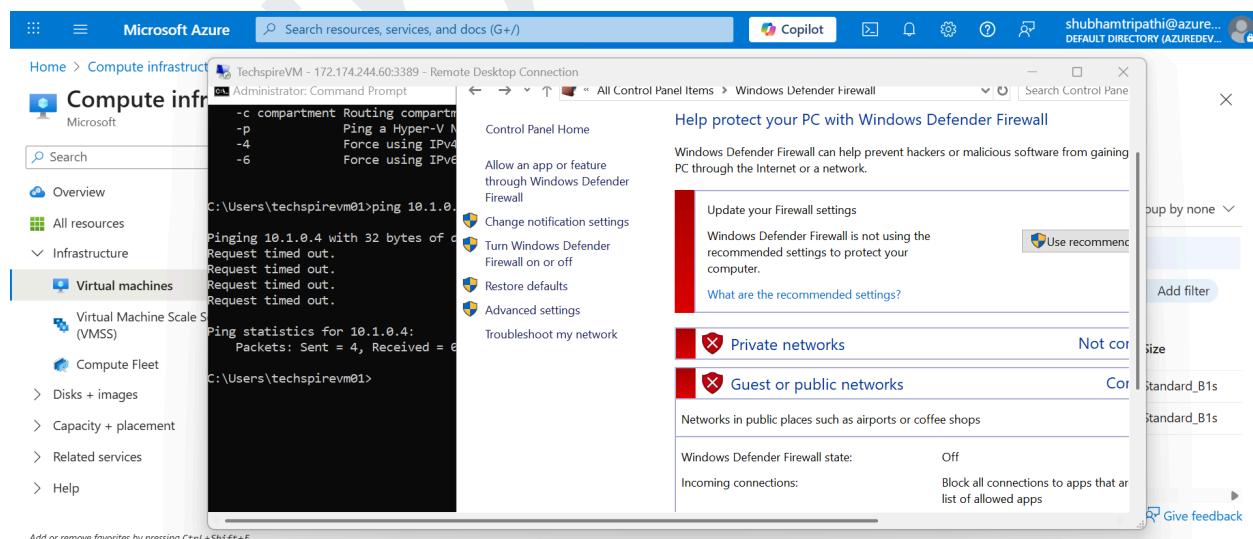
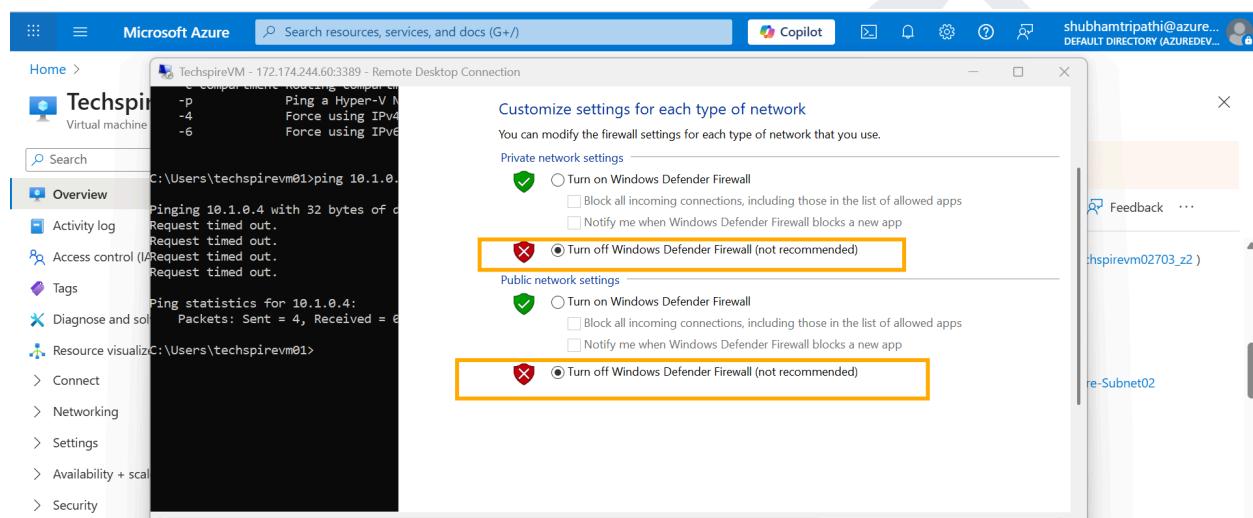
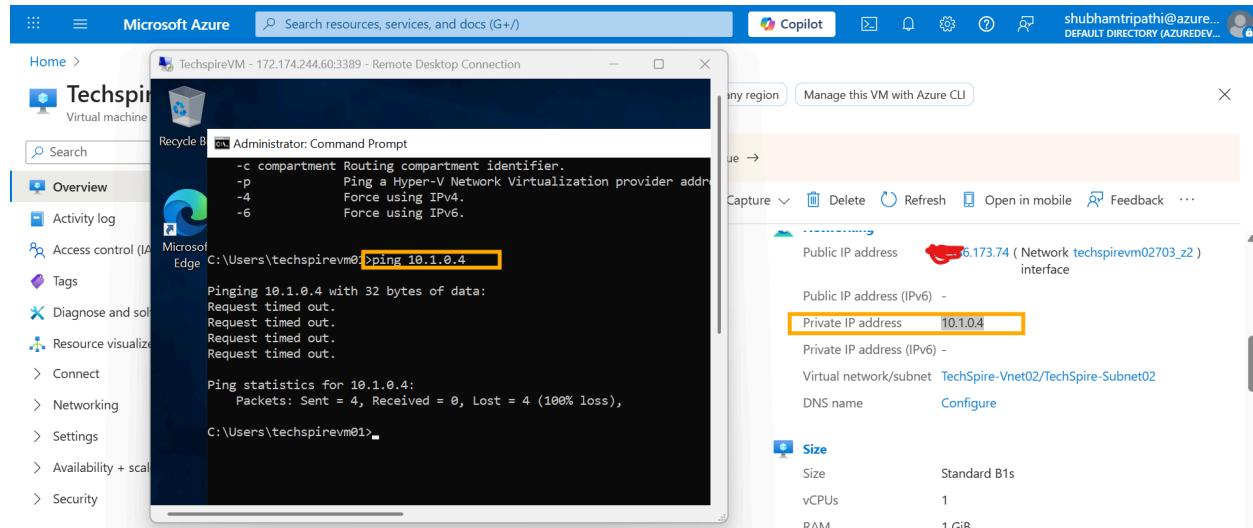
Administrator: Command Prompt Microsoft Windows [Version 10.0.17763.7558] (c) 2018 Microsoft Corporation. All rights reserved. C:\Users\ttechspirevm01>

Subscription ID 4a8937a7-b294-4a1f-8d31-79bbb1a4c17f Availability zone ? DNS name Not configured Health state

Notifications More events in the activity log → Dismiss all

Started virtual machine Successfully started virtual machine 'TechspireVM'. 5 minutes ago





**TechspireVM02**

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

Techspirevm02 Virtual machine

Home >

Overview Activity log Access control (IAM) Tags Diagnose and solve problems Resource visualizer > Connect > Networking > Settings > Availability + scale > Security

Add or remove favorites by pressing **Ctrl+Shift+F**

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

Copilot

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Notifications More events in the activity log → Dismiss all

Started virtual machine Successfully started virtual machine 'Techspirevm02'. 2 minutes ago

Started virtual machine Successfully started virtual machine 'Techspirevm02'. 3 minutes ago

Server Manager Dashboard WELCOME TO SERVER MANAGER

Local Server All Servers File and Storage Services > QUICK START Config Add

Azure subscription 1 TechSpire-Vnet02/TechSpire-Subnet02

Subscription ID 4a8937a7-b294-4a1f-8d31-79bbb1a4c17f DNS name Not configured

Availability zone 2 Health state -

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

Copilot

shubhamtripathi@azur... DEFAULT DIRECTORY (AZUREDEV...)

Home >

Techspirevm02 Virtual machine

Overview Activity log Access control (IAM) Tags Diagnose and solve problems Resource visualizer > Connect > Networking > Settings > Availability + scale > Security

Add or remove favorites by pressing **Ctrl+Shift+F**

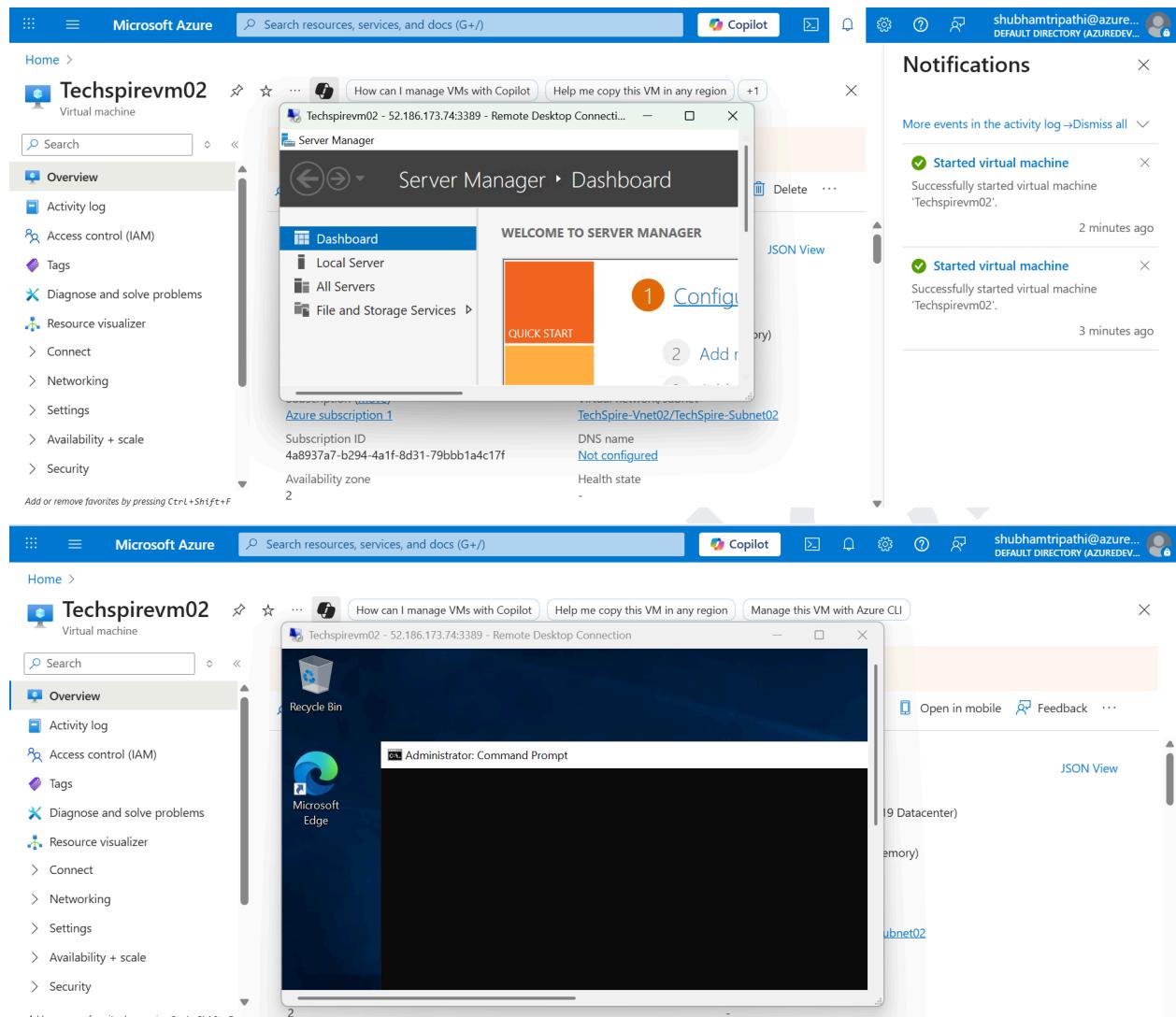
Administrator: Command Prompt

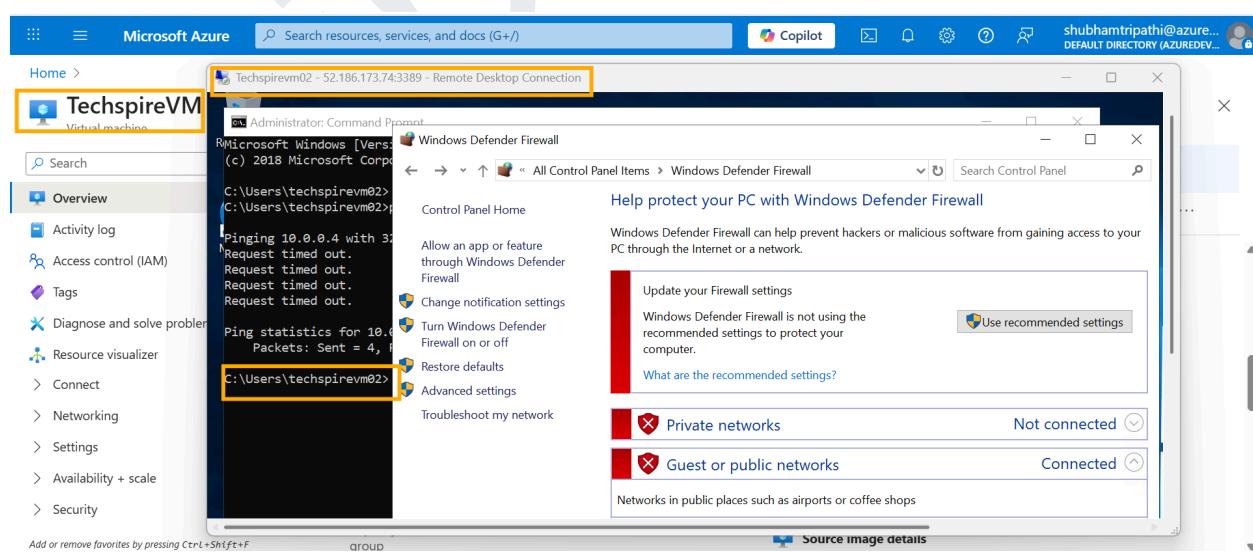
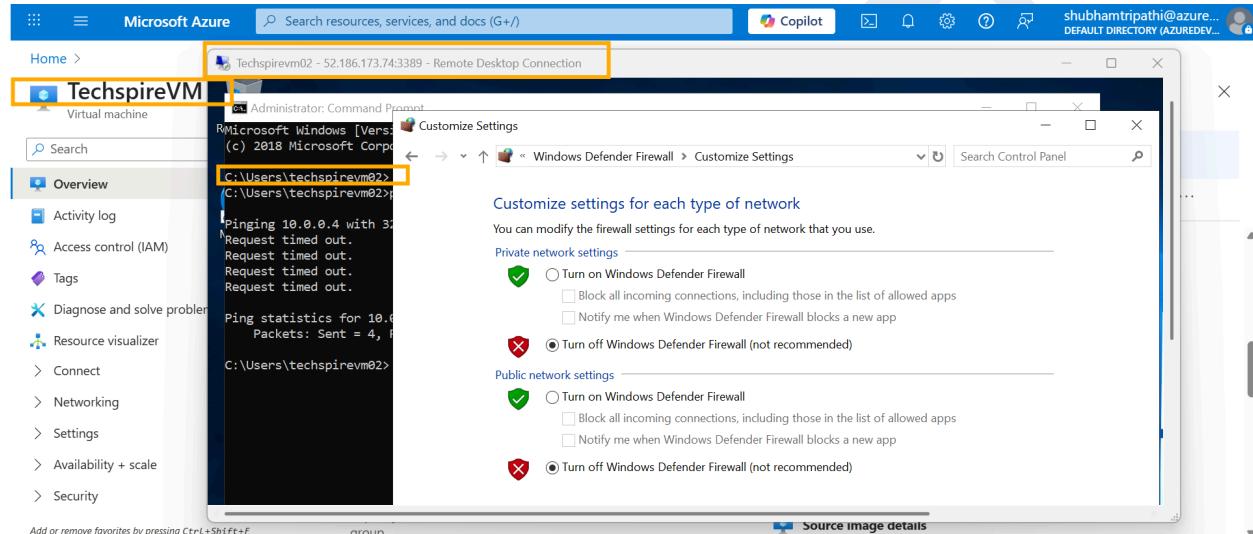
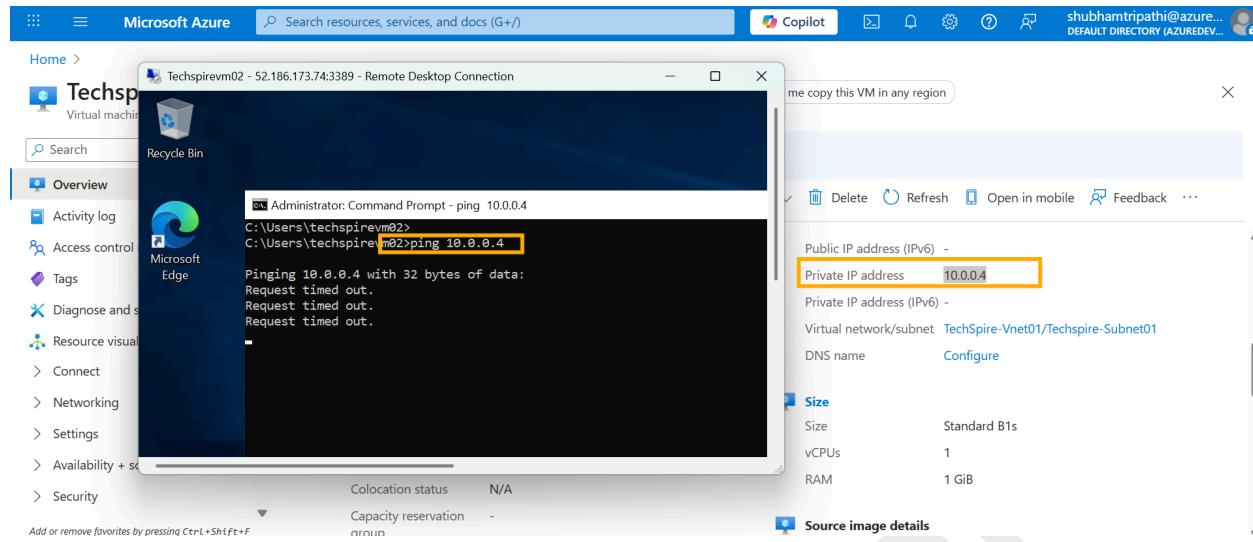
Open in mobile Feedback ...

JSON View

1 Datacenter)

ubnet02





## Establishing VNet Peering Between vnet01 and vnet02 (Same Region)

The screenshot shows two pages from the Microsoft Azure portal:

- Top Page:** Shows the "TechSpire-Vnet01" virtual network details. The "Peering" section is highlighted with a yellow box. The "Essentials" section shows the address space as 10.0.0.0/16, DNS servers as Azure provided DNS service, and BGP community string as Configure.
- Bottom Page:** Shows the "TechSpire-Vnet01 | Peerings" page. The "Peerings" section is highlighted with a yellow box. It displays a table with one row, indicating no peerings have been added yet.

## Step 2: Establishing Vnet peering

2.3 Locate the **vnet1** virtual network

2.4 Select **Peering**. Then, add a **peering connection**

Properties	Value
Peering link name	vnet1tovnet2
Traffic to remote virtual network	Allow
Traffic forwarded from remote virtual network	Allow
Virtual network gateway or Route Server	None
Remote virtual network peering link name	vnet2tovnet1

Virtual network deployment model	Techspire
Subscription	#####
Virtual network	Vnet2

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

Home > TechSpire-Vnet01 | Peerings >

### Add peering

TechSpire-Vnet01

Virtual network peering enables you to seamlessly connect two or more virtual networks in Azure. This will allow resources in either virtual network to directly connect and communicate with resources in the peered virtual network.

**Remote virtual network summary**

Peering link name \* techspirevnet01-to-techspirevnet02

Virtual network deployment model  Resource manager  Classic

I know my resource ID

Subscription \* Azure subscription 1

**Add** **Cancel** [Give feedback](#)

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

Home > TechSpire-Vnet01 | Peerings >

### Add peering

TechSpire-Vnet01

**Local virtual network peering settings**

Allow 'TechSpire-Vnet01' to access 'TechSpire-Vnet02'

Allow 'TechSpire-Vnet01' to receive forwarded traffic from 'TechSpire-Vnet02'

Allow gateway or route server in 'TechSpire-Vnet01' to forward traffic to 'TechSpire-Vnet02'

Enable 'TechSpire-Vnet01' to use 'TechSpire-Vnet02's' remote gateway or route server

**Add** **Cancel** [Give feedback](#)

**Check whether Peering status is connected**

Home > TechSpire-Vnet01

## TechSpire-Vnet01 | Peerings

Virtual network

Search Subnets Add Refresh Export to CSV Delete Sync

Virtual network peering enables you to seamlessly connect two or more virtual networks in Azure. The virtual networks appear as one for connectivity purposes. [Learn more](#)

Filter by name...

Showing all 1 items

Name	Peering status	Peer IP address	Region	Virtu...	Cross-tenant
techspirevnet01-to...	Fully Synchronized	Connected	TechSpire...	Disabled	No

Give feedback

Notifications

More events in the activity log → Dismiss all

Added virtual network peering (TechSpire-Vnet01-to-techspirevnet02) to TechSpire-Vnet02. a few seconds ago

Added virtual network peering (techspirevnet01-to-techspirevnet02) to TechSpire-Vnet01. a few seconds ago

## TechspireVM01 TO TechspireVM02

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

shubhamtripathi@azured... DEFAULT DIRECTORY (AZUREDEV...)

Home > TechspireVM - 172.174.244.60:3389 - Remote Desktop Connection

Administrator: Command Prompt

```
Pinging 10.1.0.4 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 10.1.0.4:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\Users\techspirevm01>ping 10.1.0.4

Pinging 10.1.0.4 with 32 bytes of data:
Reply from 10.1.0.4: bytes=32 time=1ms TTL=128

Ping statistics for 10.1.0.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
```

Manage this VM with Azure CLI

Public IP address 52.186.173.74 ( Network techspirevm02703\_z2 ) interface

Public IP address (IPv6) -

Private IP address 10.1.0.4 (highlighted)

Private IP address (IPv6) -

Virtual network/subnet TechSpire-Vnet02/TechSpire-Subnet02

DNS name Configure

**Size**

Size Standard B1s

vCPUs 1

RAM 1 GiB

## Vm02tovm01

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

shubhamtripathi@azured... DEFAULT DIRECTORY (AZUREDEV...)

Home > TechspireVM - 52.186.173.74:3389 - Remote Desktop Connection

Administrator: Command Prompt

```
C:\Users\techspirevm02>
C:\Users\techspirevm02>ping 10.0.0.4

Pinging 10.0.0.4 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 10.0.0.4:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\Users\techspirevm02>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=128
McReply from 10.0.0.4: bytes=32 time=1ms TTL=128
Reply from 10.0.0.4: bytes=32 time=1ms TTL=128
AuReply from 10.0.0.4: bytes=32 time=1ms TTL=128

Ping statistics for 10.0.0.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
```

How can I manage VMs with Copilot? Manage this VM with Azure CLI? Help me copy this VM in any region?

Delete Refresh Open in mobile Feedback

Public IP address (IPv6) -

Private IP address 10.0.0.4 (highlighted)

Private IP address (IPv6) -

Virtual network/subnet TechSpire-Vnet01/Techspire-Subnet01

DNS name Configure

**Size**

Size Standard B1s

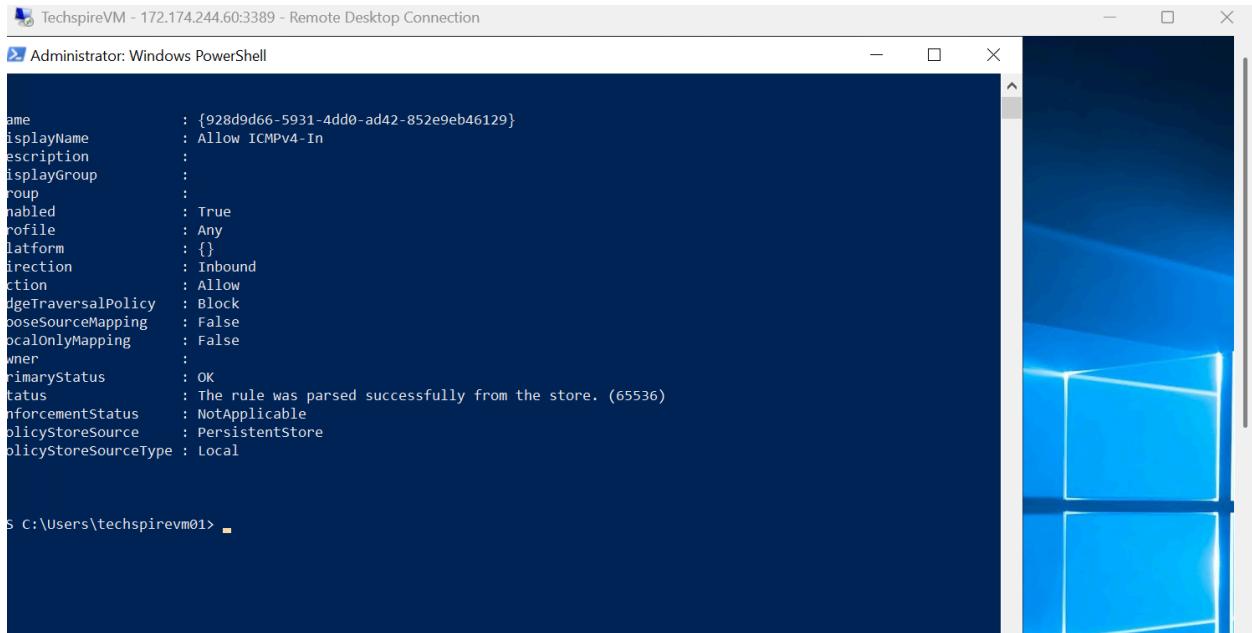
vCPUs 1

RAM 1 GiB

Source image details

**Enable ICMP through the Windows firewall so that you can ping vm1 from vm2 by below command**

```
New-NetFirewallRule -DisplayName "Allow ICMPv4-In" -Protocol ICMPv4
```

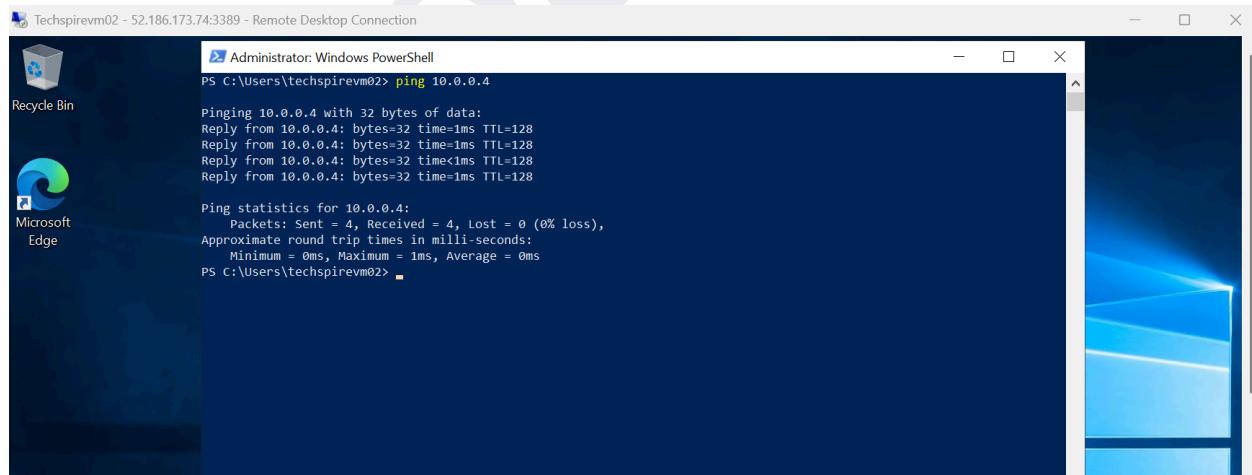


```
name          : {928d9d66-5931-4dd0-ad42-852e9eb46129}
displayName   : Allow ICMPv4-In
description   :
displayGroup :
group        :
enabled      : True
profile      : Any
platform    : {}
direction   : Inbound
action       : Allow
edgeTraversalPolicy : Block
poseSourceMapping : False
localOnlyMapping : False
owner        :
primaryStatus : OK
status       : The rule was parsed successfully from the store. (65536)
enforcementStatus : NotApplicable
policyStoreSource : PersistentStore
policyStoreSourceType : Local

S C:\Users\techspirevm01>
```

### 3.1 Connect to vm2 with RDP and ping vm1

```
ping 10.0.0.4
```

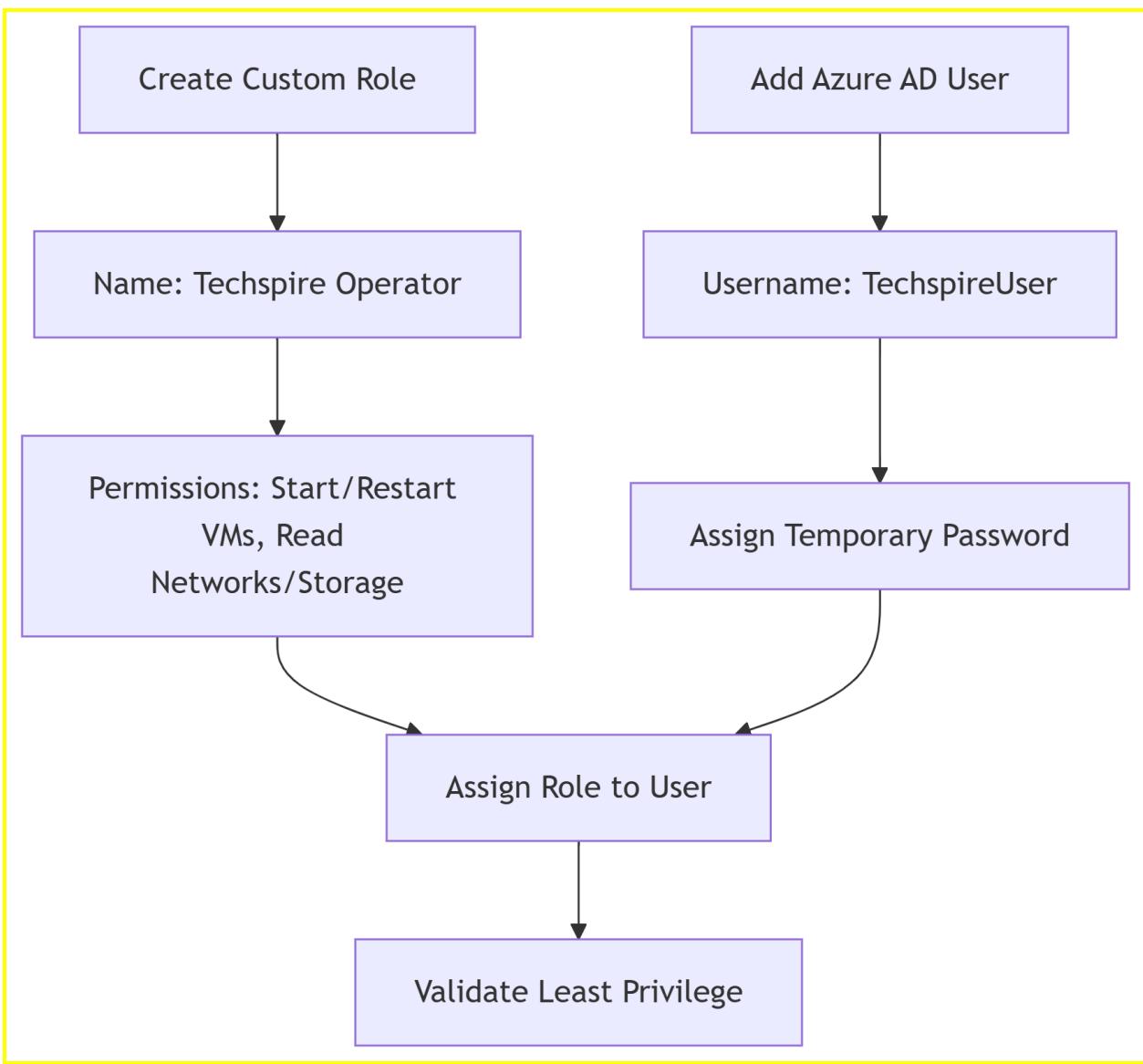


```
PS C:\Users\techspirevm02> ping 10.0.0.4

Pinging 10.0.0.4 with 32 bytes of data:
Reply from 10.0.0.4: bytes=32 time=1ms TTL=128
Reply from 10.0.0.4: bytes=32 time=1ms TTL=128
Reply from 10.0.0.4: bytes=32 time<1ms TTL=128
Reply from 10.0.0.4: bytes=32 time=1ms TTL=128

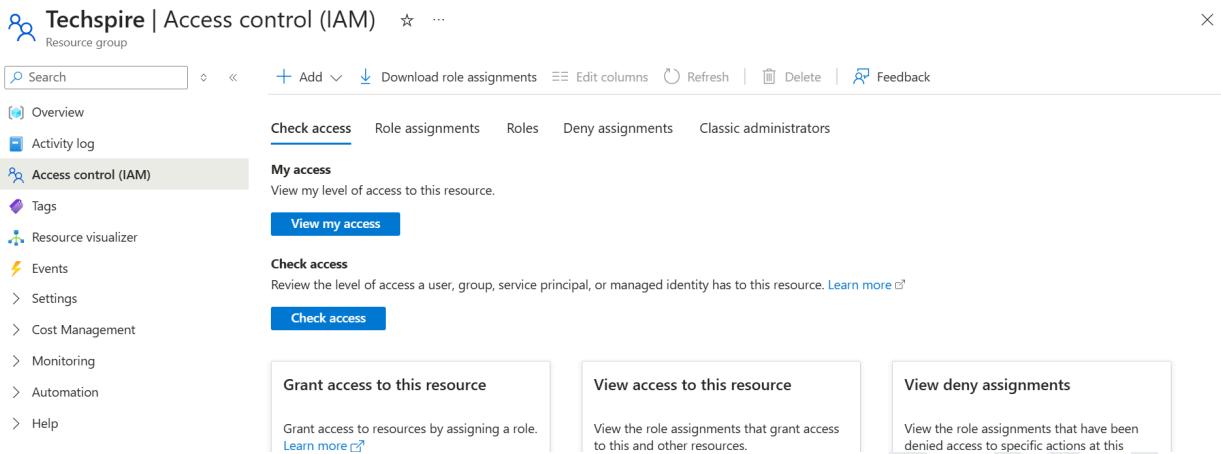
Ping statistics for 10.0.0.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 1ms, Average = 0ms
PS C:\Users\techspirevm02>
```

### Step 4: Creating a custom RBAC Role

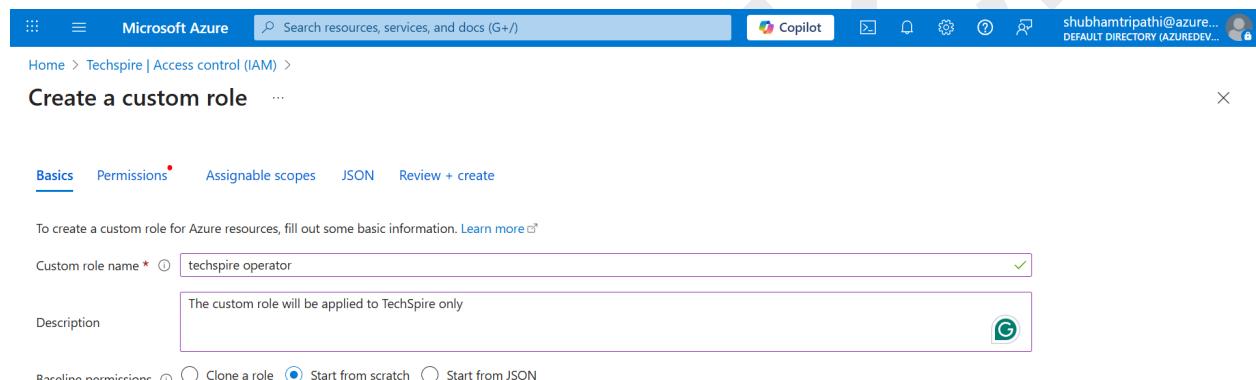


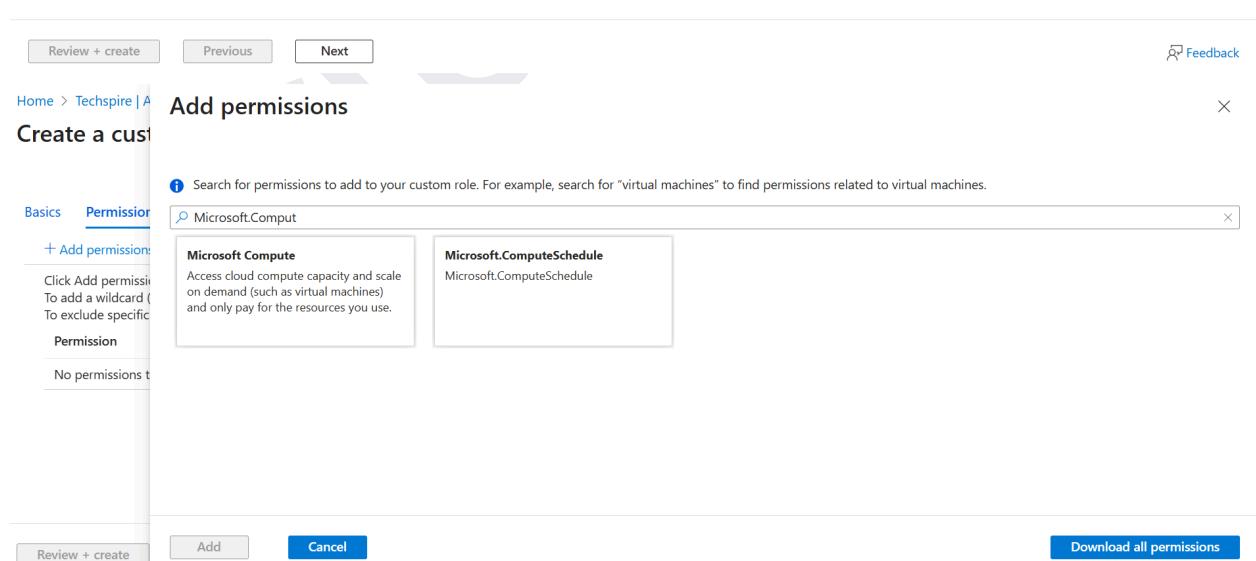
4.1 Go to Resource Group > Access Control (IAM)

4.2 Select Add custom role



#### 4.1 Under the Basics tab, provide a custom role name. Next, select Start from scratch





Microsoft Azure Search resources, services, and docs (G+) Copilot shubhamtripathi@azur... DEFAULT DIRECTORY (AZUREDEV...) X

Home > Techspire | A Microsoft.Compute permissions Create a custom role

Basics Permission + Add permission

Click Add permissions To add a wildcard (\*) permission, you must manually add the permission on the JSON tab. To exclude specific permissions from a wildcard permission, click Exclude permissions. Learn more

Actions Data Actions

Permission

Microsoft.Compute/virtualMachines

Read : Get Virtual Machine ⓘ Description Get the properties of a virtual machine

Review + create Add Cancel

**Microsoft.Compute/virtualMachines/read**

**Microsoft.Compute/virtualMachines/start/action**

**Microsoft.Compute/virtualMachines/restart/action**

**Microsoft.Network/virtualNetworks/read Microsoft.Storage/storageAccounts/read/**

**Microsoft.Storage/storageAccounts/blobServices/containers/read**

**Microsoft.Resources/subscriptions/resourceGroups/read**

**Microsoft.Resources/subscriptions/read**

Home > Techspire | Access control (IAM) >

Create a custom role ...

Click Add permissions to select the permissions you want to add to this custom role.

To add a wildcard (\*) permission, you must manually add the permission on the JSON tab. [Learn more](#)

To exclude specific permissions from a wildcard permission, click Exclude permissions. [Learn more](#)

Permission	↑↓	Description	↑↓	Permission type	↑↓
Microsoft.Compute/virtualMachines/read		Get the properties of a virtual machine		Action	
Microsoft.Compute/virtualMachines/start/...		Starts the virtual machine		Action	
Microsoft.Compute/virtualMachines/resta...		Restarts the virtual machine		Action	
Microsoft.Network/virtualNetworks/read		Get the virtual network definition		Action	
Microsoft.Storage/storageAccounts/read		Returns the list of storage accounts or gets...		Action	
Microsoft.Storage/storageAccounts/blobS...		Returns a container		Action	
Microsoft.Resources/subscriptions/resour...		Gets or lists resource groups.		Action	
Microsoft.Resources/subscriptions/read		Gets the list of subscriptions.		Action	

#### Definitions

##### Control plane

Actions specify the operations that a role is allowed to perform. NotActions specify the operations that are excluded from the allowed Actions (this is useful if a role has wildcards).

##### Data plane

DataActions specify the operations that a role is allowed to perform to the data within an object. NotDataActions specify the operations that are excluded from the allowed DataActions (this is useful if a role has wildcards).

##### Wildcards (\*)

A wildcard (\*) extends a permission to everything

Review + create

Previous

Next

Feedback

## 4.1 Under the Review + create tab, select Create

Microsoft Azure Search resources, services, and docs (G+) Copilot Home > Techspire | Access control (IAM) > Create a custom role ...

Action Microsoft.Compute/virtualMachines/read  
Action Microsoft.Compute/virtualMachines/start/action  
Action Microsoft.Compute/virtualMachines/restart/action  
Action Microsoft.Network/virtualNetworks/read  
Action Microsoft.Storage/storageAccounts/read  
Action Microsoft.Storage/storageAccounts/blobServices/containers/read  
Action Microsoft.Resources/subscriptions/resourceGroups/read  
Action Microsoft.Resources/subscriptions/read

**Assignable Scopes**

Scope /subscriptions/4a8937a7-b294-4a1f-8d31-79bbb1a4c17f/resourceGroups/Techspire

**Create** **Previous** **Feedback**

Create a custom role ...

You have successfully created the custom role "techspire operator". It may take the system a few minutes to display your role everywhere.

**OK**

Action Microsoft.Network/virtualNetworks/read  
Action Microsoft.Storage/storageAccounts/read  
Action Microsoft.Storage/storageAccounts/blobServices/containers/read  
Action Microsoft.Resources/subscriptions/resourceGroups/read  
Action Microsoft.Resources/subscriptions/read

**Assignable Scopes**

Scope /subscriptions/4a8937a7-b294-4a1f-8d31-79bbb1a4c17f/resourceGroups/Techspire

**Create** **Previous** **Feedback**

## Step 5: Adding a User to the Directory and assign the custom RBAC Role

5.1 Go to Active Directory > All Users

5.2 Select New user

5.3 Under Identity, provide a username and name

5.4 Copy the auto-generated password and keep it for future use

Select Create

5.5 Go to Resource Group > Access control (IAM)

**5.6** Select Add role assignment

**5.7** Under Role, select the custom role created in the previous step

**5.8** Go to Members > Select members. Then, select TechspireUser

**5.9** Select Review + assign

**5.10** Under Role assignments, verify the role that is assigned

**5.11** Test the user permissions by logging in to the Azure portal with the user ID

**5.12** Update the password when prompted

**5.13** Restart Techspire vm01. You should be able to restart the vm

