

VERZEO AZURE MAJOR PROJECT.

To do in the Project :

Azure Major Project

- Create a Resource group by Name (VerzeRG01)
- Create a virtual network (verzvnet01)
- Create a virtual machine in the portal(VerzVM01)
- Create blob storage(VerzSTR01)
 - o Create a File Share (Verzfs01)and mount on the (VerzVM01)
- Create a network security group
- Configure an inbound security port rule to allow RDP
- Configure an outbound security port rule to deny Internet access
- Create an Azure Policy to only allow certain locations (Southeast Asia), try to create a resource in any other location and check the policy evaluation.(You can use any other region)
- Apply a lock on the (VerzeRG01) and test if you are allowed to delete any resource.
- Setup CPU Threshold alert for the VM (VerzVM01)
- Create Action(Verzactgrp) Group for the above alert with your email id.
- Check if you are receiving the alert
- Create a Recovery Services vault (Vezvault01) in the Resource Group (VerzeRG01)
- Setup Backup for the Virtual Machine (VerzVM01) and ensure backup is completed successfully.

Output – Create a Word Document and attach all the screenshots of the above activity along with one liner description

*Step 1: Resource Group ‘VerzeRG01’ creation -

The screenshot displays the Microsoft Azure portal interface. The top navigation bar shows the 'Microsoft Azure' logo and a search bar. The left sidebar contains the 'Resource groups' section, with a filter for 'NetworkWatcherRG'. The main content area shows the 'Create a resource group' wizard, which is currently on the 'Review + create' step. The wizard displays the following details:

- Subscription: Free Trial
- Resource group: VerzeRG01
- Region: East US
- Tags: None

At the bottom of the wizard, there is a 'Create' button and a 'Download a template for automation' link. Below the wizard, the 'VerzeRG01' resource group overview is shown. The overview includes a search bar, a list of resources (currently empty), and a 'JSON View' button. The 'Essentials' section shows the subscription ID and location. The 'Overview' section shows the resource group name and location. The 'Settings' section shows the resource group's properties, including the subscription ID and location.

*Step 2: Virtual Network ‘verzvnet01’ creation -

Microsoft Azure

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

Home > Virtual networks >

Virtual networks

Default Directory

+ Add

Manage view

...

Filter for any field...

Name ↑↓

No virtual networks to display

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

Learn more

Create virtual network

Create virtual network

BasicsIP AddressesSecurityTagsReview + create

Azure Virtual Network (VNet) is the fundamental building block for your private network in Azure. VNet enables many types of Azure resources, such as Azure Virtual Machines (VM), to securely communicate with each other, the internet, and on-premises networks. VNet is similar to a traditional network that you'd operate in your own data center, but brings with it additional benefits of Azure's infrastructure such as scale, availability, and isolation. [Learn more about virtual network](#)

Project details

Subscription * ⓘFree Trial

Resource group * ⓘVerzeRG01

Create new

Instance details

Name *verzvnet01

Region *(US) East US

Review + create

< Previous

Next : IP Addresses >

Download a template for automati

Added Subnet 'verzsubnet01'

Home > Virtual networks >

Virtual networks

Default Directory

+ Add

Manage view

...

Filter for any field...

Name ↑↓

No virtual networks to display

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

Learn more

Create virtual network

Create virtual network

BasicsIP AddressesSecurityTagsReview + create

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

IPv4 address space

10.1.0.0/16

☐ Add IPv6 address space ⓘ

The subnet's address range in CIDR notation (e.g. 192.168.1.0/24). It must be contained by the address space of the virtual network.

+ Add subnet

Remove subnet

Subnet name

Subnet address range

This virtual network doesn't have any subnets.

This virtual network doesn't have any subnets.

Review + create

< Previous

Next : Security >

Download a template for automation

Add subnet

Subnet name *verzsubnet01

Subnet address range * ⓘ10.1.0.0/24

10.1.0.0 - 10.1.0.255 (251 - 5 Azure reserved addresses)

SERVICE ENDPOINTS

Create service endpoint policies to allow traffic to specific Azure resources from your virtual network over service endpoints. [Learn more](#)

Services ⓘ

0 selected

Add

Cancel

Notifications



[More events in the activity log →](#)

[Dismiss all](#) ▼



Deployment succeeded



Deployment 'Microsoft.VirtualNetwork-20210326121524' to resource group 'VerzeRG01' was successful.

[Go to resource](#)

[Pin to dashboard](#)

a few seconds ago



Resource group created



Creating resource group 'VerzeRG01' in subscription 'Free Trial' succeeded.

[Go to resource group](#)

[Pin to dashboard](#)

11 minutes ago

Successfully created VNet with a Subnet.

*Step 3: Virtual Machine 'VerzVM01' creation -

[Home](#) >

Create a virtual machine ...

[Basics](#) [Disks](#) [Networking](#) [Management](#) [Advanced](#) [Tags](#) [Review + create](#)

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](#)

Project details

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

Subscription * ⓘ

Free Trial

Resource group * ⓘ

VerzeRG01

[Create new](#)

Instance details

Virtual machine name * ⓘ

VerzVM01

Region * ⓘ

(US) East US

Availability options ⓘ

Availability zone

Availability zone * ⓘ

1

[Review + create](#)

[< Previous](#)

[Next : Disks >](#)

Create a virtual machine ...

Image * ⓘ Windows Server 2016 Datacenter - Gen1 See all images

Azure Spot instance ⓘ ☐

Size * ⓘ Standard_B1s - 1 vcpu, 1 GiB memory (₹736.30/month) See all sizes

Administrator account

Username * ⓘ azurets ✓

Password * ⓘ ✓

Confirm password * ⓘ

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.

Public inbound ports * ⓘ ☐ None ☒ Allow selected ports

Select inbound ports * RDP (3389) ✓

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

Enabling the Backup Option (Backup policy: DailyPolicy) and Creating a Recovery Service Vault 'verzvault01'.

Home > Create a virtual machine ...

Auto-shutdown

Enable auto-shutdown ⓘ ☒

Shutdown time ⓘ 1:00:00 PM

Time zone ⓘ (UTC) Coordinated Universal Time

Notification before shutdown ⓘ ☒

Email * ⓘ sinhatushar17@gmail.com ✓

Backup

Enable backup ⓘ ☒

Recovery Services vault * ⓘ (new) defaultVault901 Create new

Backup policy * ⓘ (new) DailyPolicy Create new

Site Recovery

Enable Disaster Recovery ⓘ ☐

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

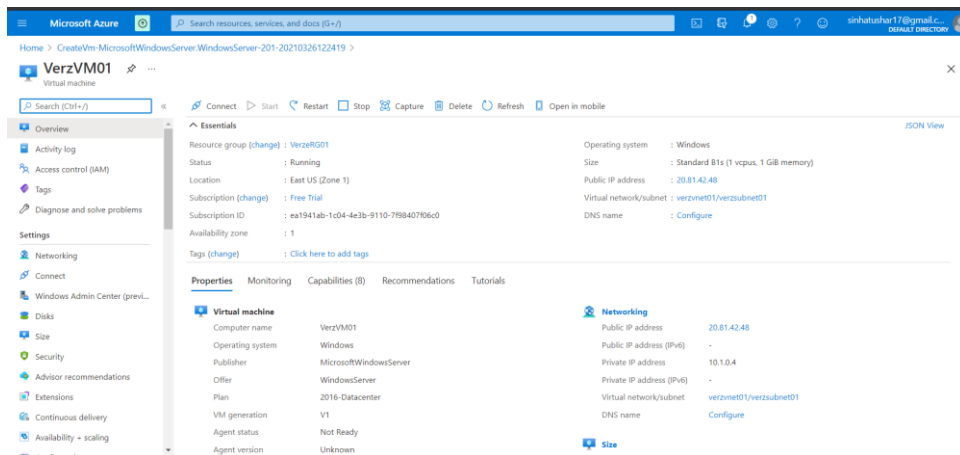
Create recovery service vault ✕

Resource group * VerzeRG01 Create new

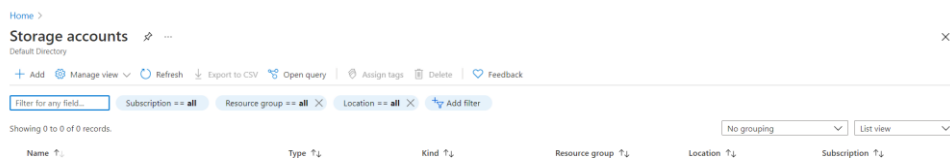
Name vezvault01 ✓

[Create](#) [Cancel](#)

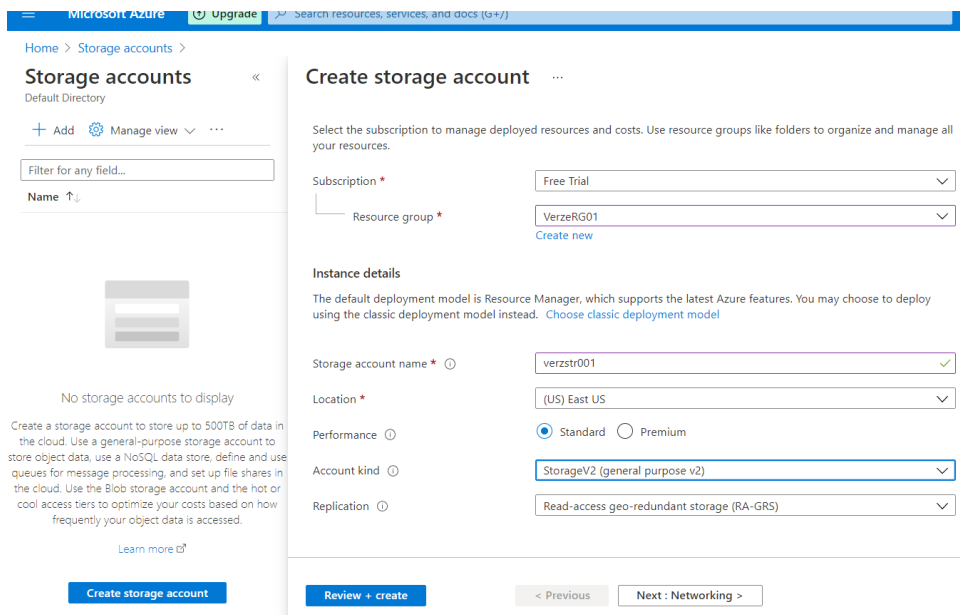
VM successfully created.



*Step 4: Creating a Blob Storage 'verzstr001' -



Clicked on Add option to add/create a new storage of type Blob.



[Home](#) > [Storage accounts](#) >

Create storage account ...

Basics Networking Data protection **Advanced** Tags Review + create

Security

Secure transfer required ⓘ ☐ Disabled ☒ Enabled

Allow shared key access ⓘ ☐ Disabled ☒ Enabled

Minimum TLS version ⓘ ▼

Infrastructure encryption ⓘ ☒ Disabled ☐ Enabled

i Sign up is currently required to enable infrastructure encryption on a per-subscription basis. [Sign up for infrastructure encryption](#) ↗

Blob storage

Allow Blob public access ⓘ ☐ Disabled ☒ Enabled

Blob access tier (default) ⓘ ☐ Cool ☒ Hot

NFS v3 ⓘ ☒ Disabled ☐ Enabled

i Sign up is currently required to utilize the NFS v3 feature on a per-subscription basis. [Sign up for NFS v3](#) ↗

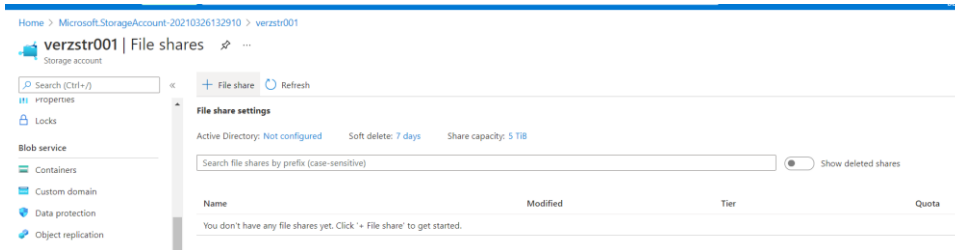
Review + create

< Previous

Next : Tags >

Blob Storage successfully created.

***Step5: Creating a File Share 'verzfs01' -**



Giving it a maximum size of 5GB.

New file share ×

Name *

verzfs01 ✓

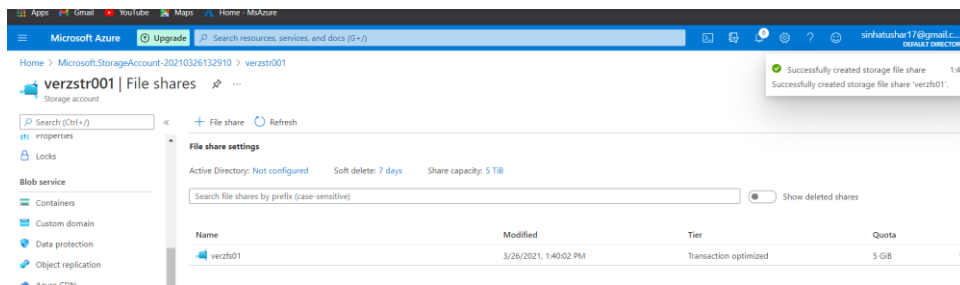
Quota i

5 ✓

Set to maximum GiB

Tiers i

- ☐ Premium
- ☒ Transaction optimized
- ☐ Hot
- ☐ Cool



Successfully created the required File Share.

***Step 6: Mounting File Share 'verzfs01' on the VM 'VerzVM01' -**

Clicked on Connect option and Copied the Code inside the first box and then Running it in PowerShell.

Home > Microsoft.StorageAccount-20210326132910 > verzstr001 >

verzfs01
File share

Search (Ctrl+F) < > Connect Upload Add directory Refresh Delete share Change tier Edit quota

Overview Search files by prefix

Access Control (IAM)

Settings No files found.

Properties

Operations

Snapshots

Backup

Connect

verzfs01

To connect to this Azure file share from Windows, choose from the following authentication methods and run the PowerShell commands from a normal (not elevated) PowerShell terminal:

Drive letter

Authentication method

☐ Active Directory

☒ Storage account key

Connecting to a share using the storage account key is only appropriate for admin access. Utilizing Active Directory allows to differentiate file and folder access, per AD account, within a share. [Learn more](#)

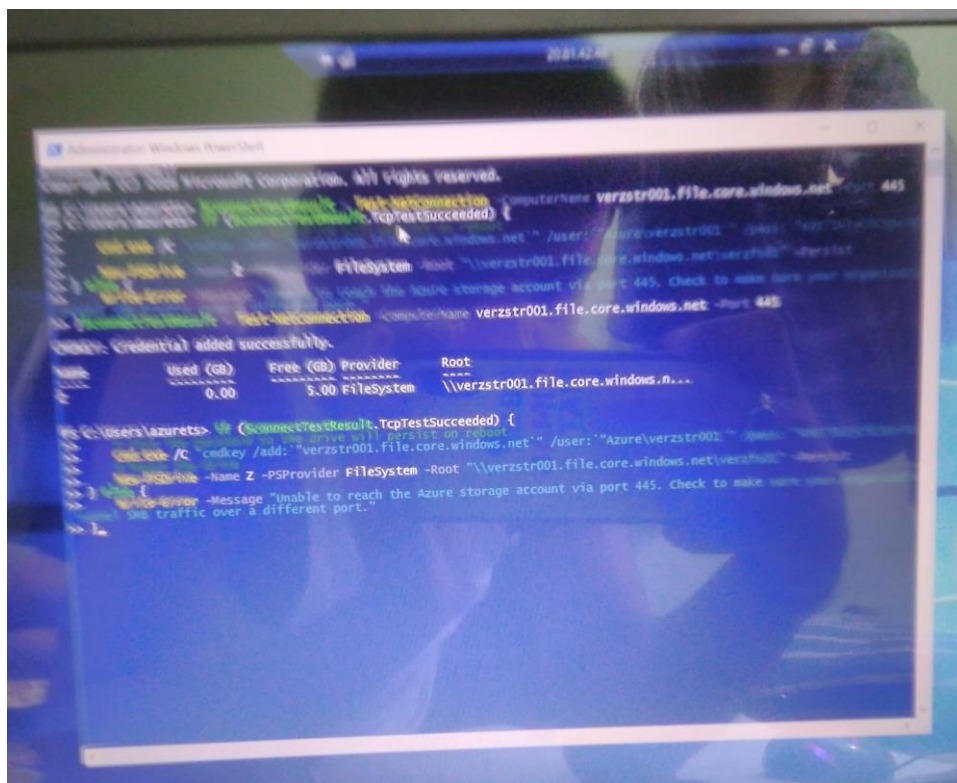
```

$connectTestResult = Test-NetConnection -ComputerName
verzstr001.file.core.windows.net -Port 445
If ($connectTestResult.TcpTestSucceeded) {
    # Save the password so the drive will persist on reboot
    cmdkey /c: "verzstr001.file.core.windows.net"
    /user:"Azure\verzstr001"
    /pass:"49175h3JC9QeTK9gwq6By1Ap6j7Thy9XG3kmglU0zHFA7ABKHnC1D60"
}

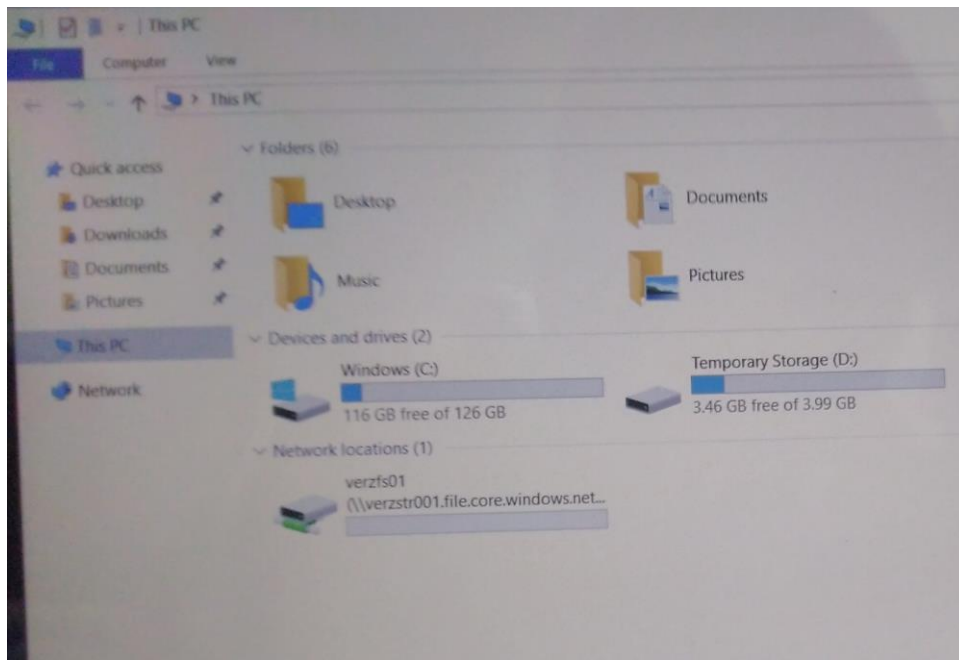
```

This script will check to see if this storage account is accessible via TCP port 445, which is the port SMB uses. If port 445 is available, your Azure file share will be persistently mounted. Your organization or Internet service provider (ISP) may block port 445, however you may use Azure Point-to-Site (P2S) VPN, Azure Site-to-Site (S2S) VPN, or ExpressRoute to tunnel SMB traffic to your Azure file share over a different port.

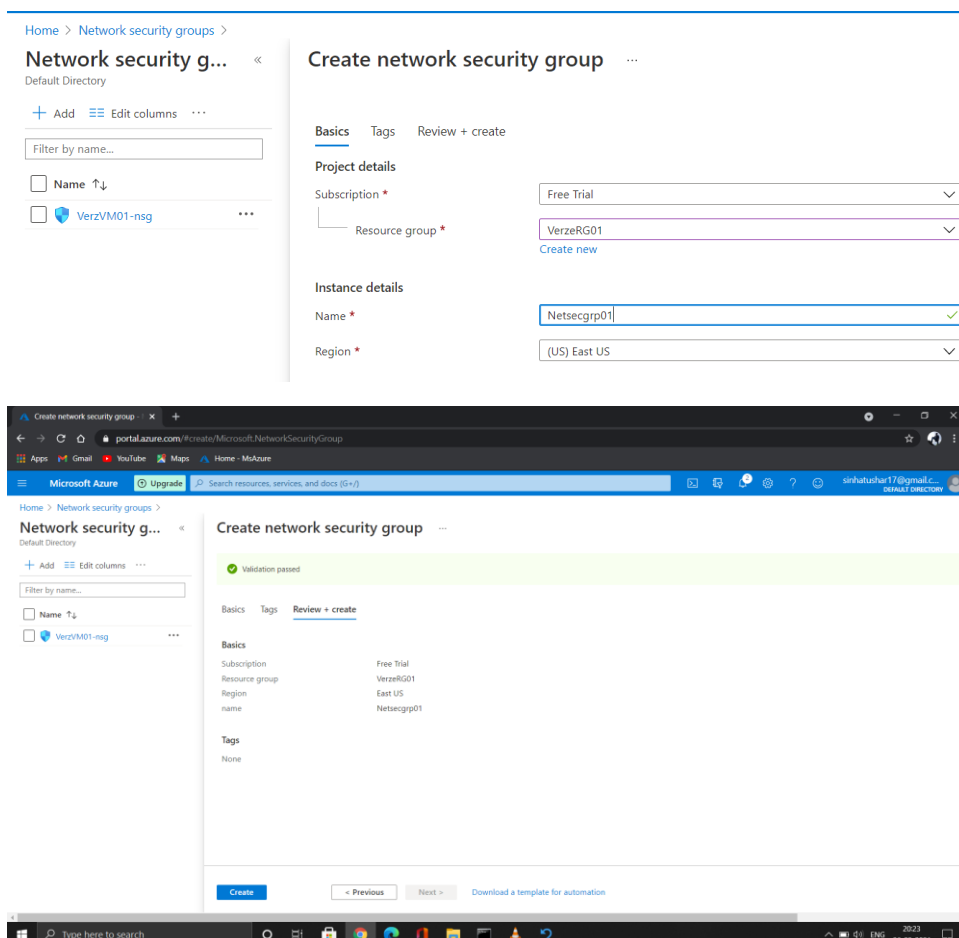
[Learn how to circumvent the port 445 problem \(VPN\)](#)



After running the code in PowerShell. Connected to the VM and Logged in... Then, going to MyPC We got to see a Disk 'verzfs01' attached to it. Thus, this proves that file share has been mounted into VM.



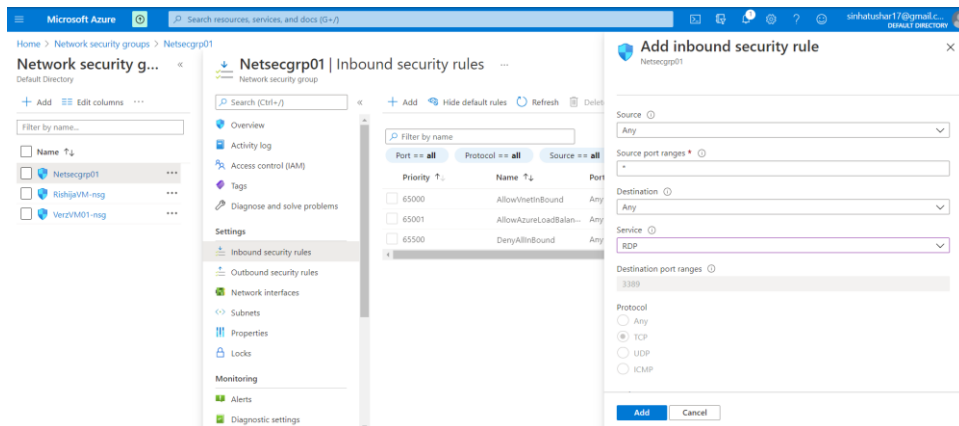
***Step 7: Creating a Network Security Group ‘Netsecgrp01’ - Entered NSG menu and Clicked on Add and further continued to create an NSG.**



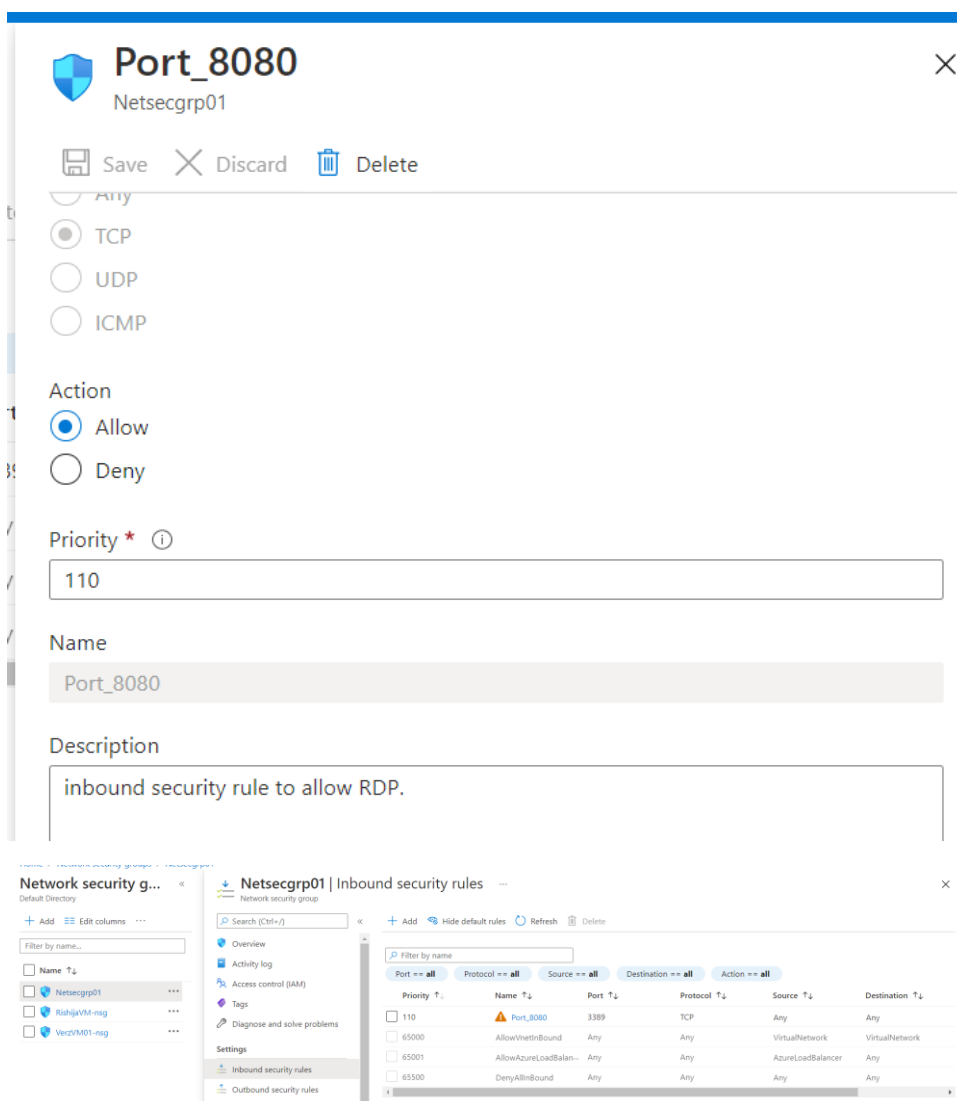
*Step 8: Configuring a Inbound security port rule to allow RDR.

Went to NSG menu < Inbound Security Rules < Add

Then, added a port rule to allow RDP



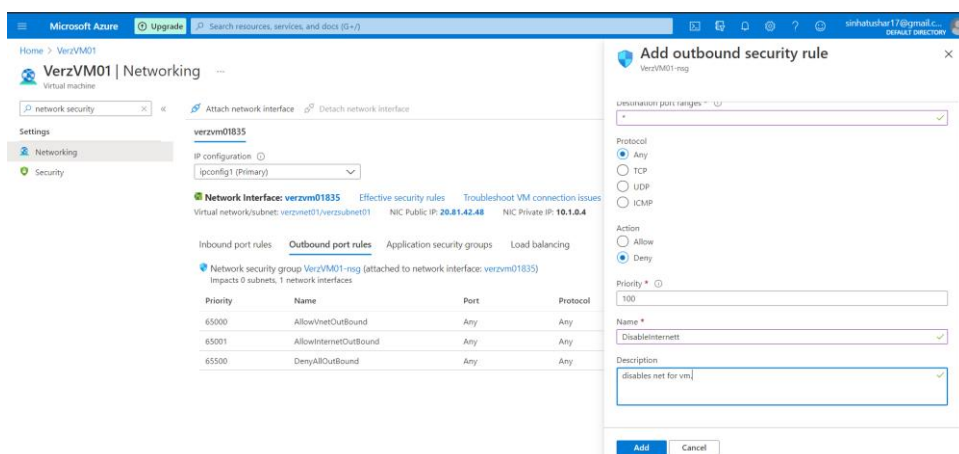
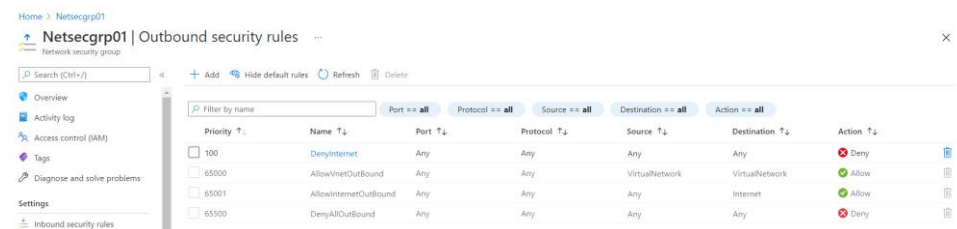
The Port_8080 Allows RDP.



*Step 9: Configuring an Outbound Security Port Rule to Deny Internet Access to VM.

Went to NSG < Outbound Security Rules <Add

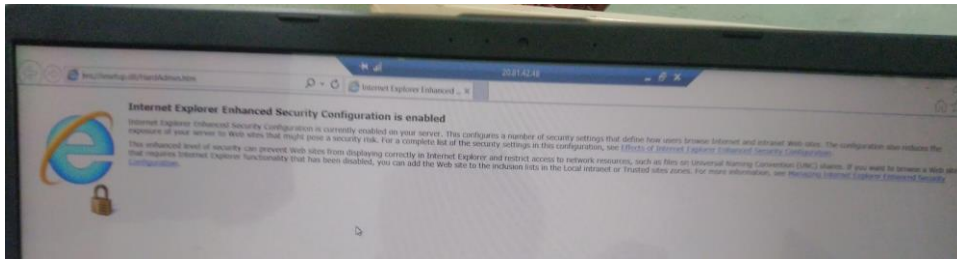
Then, clicked on add outbound port rule 'DisableInternett' to add the required outbound rule and Denied Action to Deny Internet access.



Inbound port rules						
Outbound port rules						
Application security groups						
Load balancing						
Network security group VerzVM01-nsg (attached to network interface: verzm01835) Impacts 0 subnets, 1 network interfaces						
Add outbound port rule						
Priority	Name	Port	Protocol	Source	Destination	Action
100	DisableInternett	Any	Any	Any	Any	Deny
65000	AllowVnetOutBound	Any	Any	VirtualNetwork	VirtualNetwork	Allow
65001	AllowInternetOutBound	Any	Any	Any	Internet	Allow
65500	DenyAllOutBound	Any	Any	Any	Any	Deny

To check the outbound rule's Validation – Logged into VM < opened Internet Explorer < then searched for Batman.

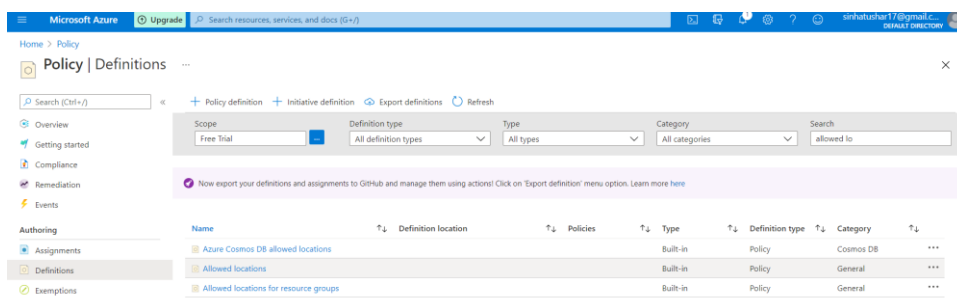
The search 'Batman' over Internet was not completed. Which proves that due to outbound port rule there is NO internet access for the VM.



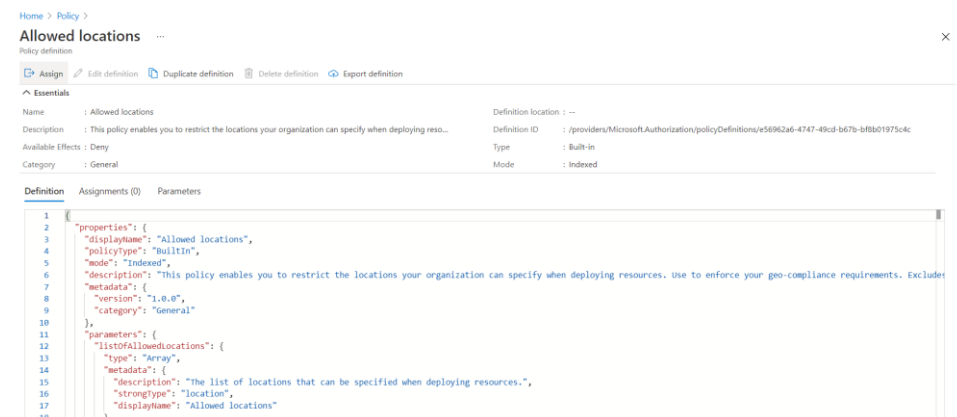
*Step 10: Creating an Azure policy to only allow Southeast Asia Location for Resource creation and then Verifying the Policy -

Went to Policy < Definitions

Searched Allowed Locations and entered into it. This tells that there are certain pre-defined policies.



Inside Allowed Locations clicked on Assign to create a new policy.



[Home](#) > [Policy](#) > [Allowed locations](#) >

Allowed locations ...

Assign policy

Basics Parameters Remediation Non-compliance messages Review + create

Scope

Scope [Learn more about setting the scope](#) *

Free Trial/VerzeRG01 ✓ ...

Exclusions

Optionally select resources to exclude from the policy assignment. ...

Basics

Policy definition

Allowed locations

Assignment name * ⓘ

SeAsiaAllowedLocation ✓

Description

Southeast AsiaLocation is only the allowed location to create any resource in the resource group VerzeRG01. ✓

Review + create

Cancel

Previous

Next



Inside Parameters section selected the Location I.e 'Southeast Asia' in which we had to allow any resource creation.

[Home](#) > [Policy](#) > [Allowed locations](#) >

Allowed locations ...

Assign policy

Basics **Parameters** Remediation Non-compliance messages Review + create

Specify parameters for this policy assignment.

Allowed locations * ⓘ

Southeast Asia ✓

Proceeded further and Finally created the Policy.

[Home](#) > [Policy](#) > [Allowed locations](#) >

Allowed locations ...

Assign policy

Basics Parameters Remediation Non-compliance messages Review + create

Basics

Scope	Free Trial/VerzeRG01
Exclusions	--
Policy definition	Allowed locations
Assignment name	SeAsiaAllowedLocation
Description	Southeast AsiaLocation is only the allowed location to create any resource...
Policy enforcement	Enabled
Assigned by	Tushar Sinha

Parameters

listOfAllowedLocations	southeastasia
------------------------	---------------



Notifications



[More events in the activity log](#) →

[Dismiss all](#) ✓



Creating policy assignment succeeded



Creating policy assignment 'SeAsiaAllowedLocation' in 'Free Trial/VerzeRG01' was successful. Please note that the assignment takes around 30 minutes to take effect.

a few seconds ago

Checking the Policy Evaluation/Effect -

Tried to create a VM in East US Location but its creation was Unsuccessful due to the policy.

Create virtual network ...

Basics IP Addresses Security Tags Review + create

Azure Virtual Network (VNet) is the fundamental building block for your private network in Azure. VNet enables many types of Azure resources, such as Azure Virtual Machines (VM), to securely communicate with each other, the internet, and on-premises networks. VNet is similar to a traditional network that you'd operate in your own data center, but brings with it additional benefits of Azure's infrastructure such as scale, availability, and isolation. [Learn more about virtual network](#)

Project details

Subscription * ⓘ

Free Trial

Resource group * ⓘ

VerzeRG01

Create new

Instance details

Name *

AllowedLocationVnet1

Region *

(US) East US

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

Create virtual network ...

Validation failed. Click here to view details. →

Basics IP Addresses Security Tags Review + create

Basics

Subscription

Free Trial

Resource group

VerzeRG01

Name

AllowedLocationVnet1

Region

East US

IP addresses

Address space

10.0.0.0/16

Subnet

default (10.0.0.0/24)

Tags

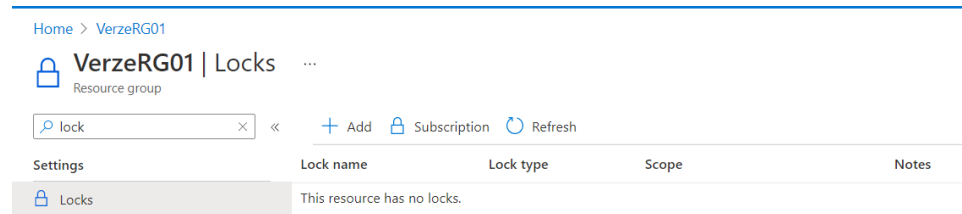
None

Security

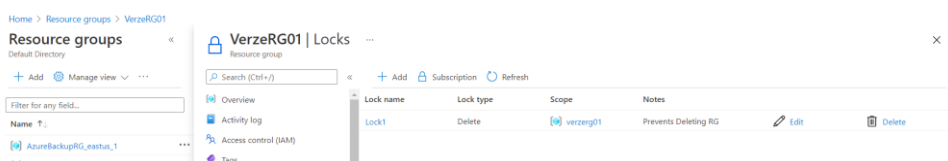
Create < Previous Next > Download

***Step 11: Applying a Lock on Resource Group ‘VerzeRG01’ and testing if I was able to delete any resource inside it or not. -**

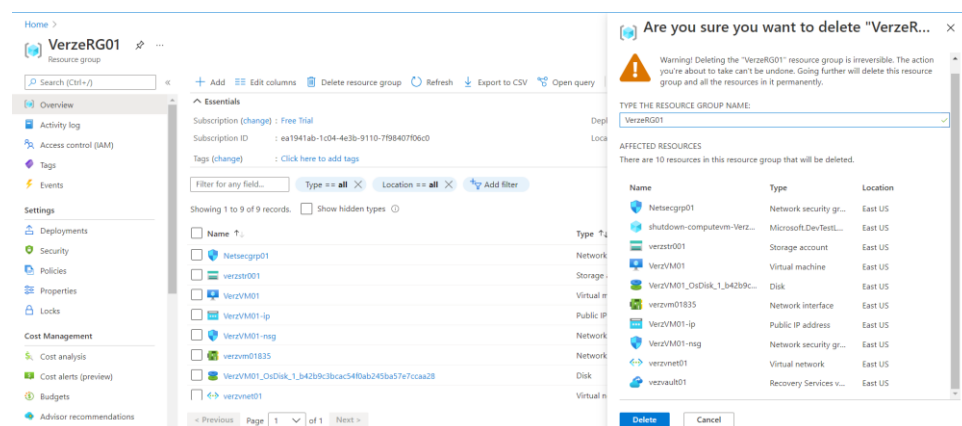
Entered the RG ‘VerzeRG01’ < Locks < Add

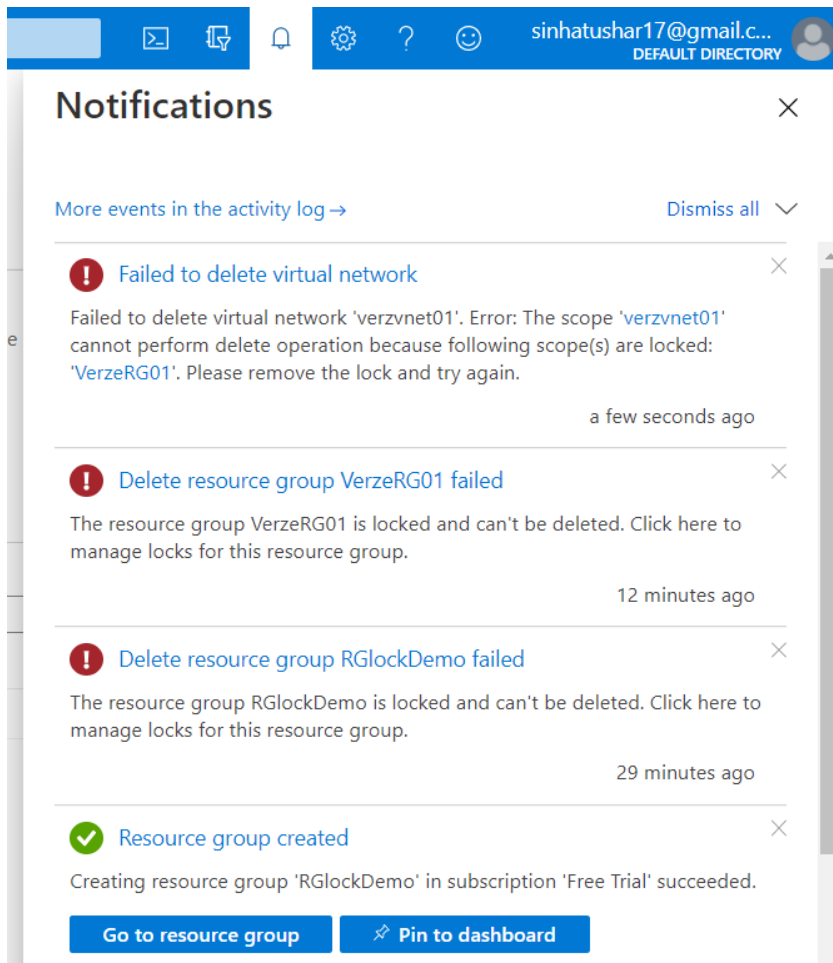


Added a Delete type Lock ‘Loc1’ that will restrict Resource Deletion.



Checking the Lock – Tried to Delete the Whole Resource Group ‘VerzeRG01’ and a Virtual Network ‘verzvnet01’, But Deletion Failed. This proves that the Lock1 is Effective.

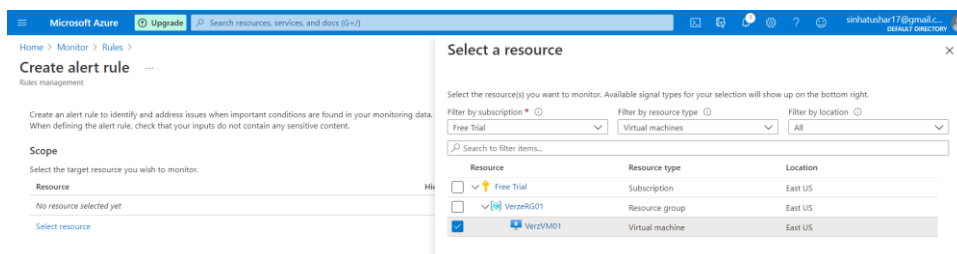




*Step 12: Setting up CPU Threshold Alert for the VM 'VerzeVM01' -

Gone to – Monitor < Alerts < Manage alert rules < Add alert rule (to create a new required alert rule).

Then Selected the resource group for which we want the action group to work. (VM 'VerzVM01' is inside this resource group only)



Selected the Start Virtual Machine in Signal type to get the notification whenever my VM Starts.

Create alert rule

Rules management

Create an alert rule to identify and address issues when important conditions are found in your monitoring data. When defining the alert rule, check that your inputs do not contain any sensitive content.

Scope

Select the target resource you wish to monitor.

Resource

VerzvM01

Edit resource

Condition

Configure when the alert rule should trigger by selecting a signal and defining its logic.

Condition name

No condition selected yet

Add condition

Actions

Create alert rule

Choose a signal below and configure the logic on the next screen to define the alert condition.

Signal type: All

Monitor service: Activity Log - Administrative

To alert on guest metrics like disk space and memory, enable guest metrics (Preview)

Displaying 1 - 20 signals out of total 20 signals

Signal name	Signal type	Monitor service
All Administrative operations	Activity Log	Administrative
Create or Update Virtual Machine (Microsoft.Compute/virtualMachines)	Activity Log	Administrative
Delete Virtual Machine (Microsoft.Compute/virtualMachines)	Activity Log	Administrative
Start Virtual Machine (Microsoft.Compute/virtualMachines)	Activity Log	Administrative
Power Off Virtual Machine (Microsoft.Compute/virtualMachines)	Activity Log	Administrative
Reapply a virtual machine's current model (Microsoft.Compute/virtualMachines)	Activity Log	Administrative
Redeploy Virtual Machine (Microsoft.Compute/virtualMachines)	Activity Log	Administrative
Restart Virtual Machine (Microsoft.Compute/virtualMachines)	Activity Log	Administrative
Retrieve boot diagnostic logs blob URIs (Microsoft.Compute/virtualMachines)	Activity Log	Administrative

Done

*Step 13: Creating Action Group 'Verzactgrp' for the Alert Rule-

[Home](#) > [Monitor](#) > [Rules](#) > [Create alert rule](#) >

Create action group

[Basics](#) [Notifications](#) [Actions](#) [Tags](#) [Review + create](#)

An action group invokes a defined set of notifications and actions when an alert is triggered. [Learn more](#)

Project details

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

Subscription *

Free Trial

Resource group *

VerzeRG01

Create new

Instance details

Action group name *

Verzactgrp

Display name *

Verzactgrp

This display name is limited to 12 characters

[Review + create](#)

[Previous](#)

[Next: Notifications >](#)

[Home](#) > [Monitor](#) > [Rules](#) > [Create alert rule](#) >

Create action group

[Basics](#) [Notifications](#) [Actions](#) [Tags](#) [Review + create](#)

Notifications

Configure the method in which users will be notified when the action group triggers. Select notification types, provide receiver details and add a unique description. This step is optional.

Notification type	Name	Selected
Email/SMS message/Push/Voice		<input checked="" type="checkbox"/>
		<input type="checkbox"/>

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

Email/SMS message/Push/Voice

Add or edit an Email/SMS/Push/Voice action

☒ Email

Email *

sinhatushar17@gmail.com

☐ SMS (Carrier charges may apply)

Country code

1

Phone number

☒ Azure app Push Notifications

Azure account email *

sinhatushar17@gmail.com

☐ Voice

Country code

1

Phone number

Enable the common alert schema. [Learn more](#)

☐ Yes
 ☒ No

OK

Filling the alert rule details and finally completing Alert Rule creation. -

Home > Monitor > Rules >

Create alert rule

Rules management

Actions

Send notifications or invoke actions when the alert rule triggers, by selecting or creating a new action group. [Learn more](#)

Action group name	Contains actions
Verzactgrp	1 Email, 1 Azure app

[Manage action groups](#)

Alert rule details

Provide details on your alert rule so that you can identify and manage it later.

Alert rule name

Description

Save alert rule to resource group

Enable alert rule upon creation ☒

[Create alert rule](#)

Notifications

[More events in the activity log](#) [Dismiss all](#)

✓

Creating alert rule

'VMstarted' successfully created! Note: Activity log rules take up to 5 minutes to activate.
It might take a few minutes for changes to be shown.

a few seconds ago

✓

Create or update action group

Successfully create or update action group name 'Verzactgrp'

2 minutes ago

*Step 14: Checking whether if we are receiving the Alert or not. -

Started the VM 'VerzVM01'

Home >

VerzVM01

Virtual machine

Search (Ctrl+F)

- Overview
- Activity log
- Access control (IAM)
- Tags
- Diagnose and solve problems
- Settings

Connect Start Restart Stop Capture Delete Refresh Open in mobile

Advisor (1 of 1) Upgrade the standard disks attached to your premium-capable VM to premium disks →

Essentials

Resource group (change) : VerzeRG01

Status : Stopped (deallocated)

Location : East US (Zone 1)

Subscription (change) : Free Trial

Operating system

Size

Public IP address

Virtual network

Notifications

[More events in the activity log](#) [Dismiss all](#)

Starting virtual machine

Starting virtual machine 'VerzVM01'...

a few seconds ago

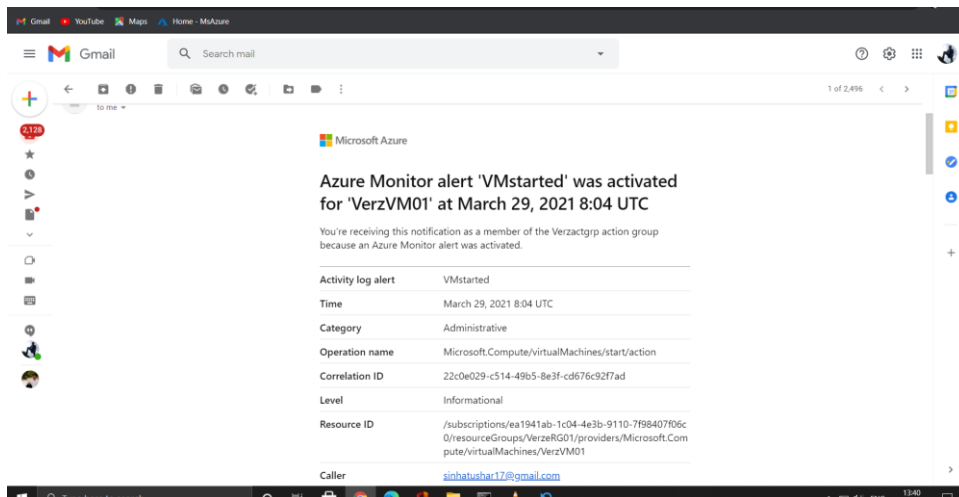
✓

Creating alert rule

'VMstarted' successfully created! Note: Activity log rules take up to 5 minutes to activate.
It might take a few minutes for changes to be shown.

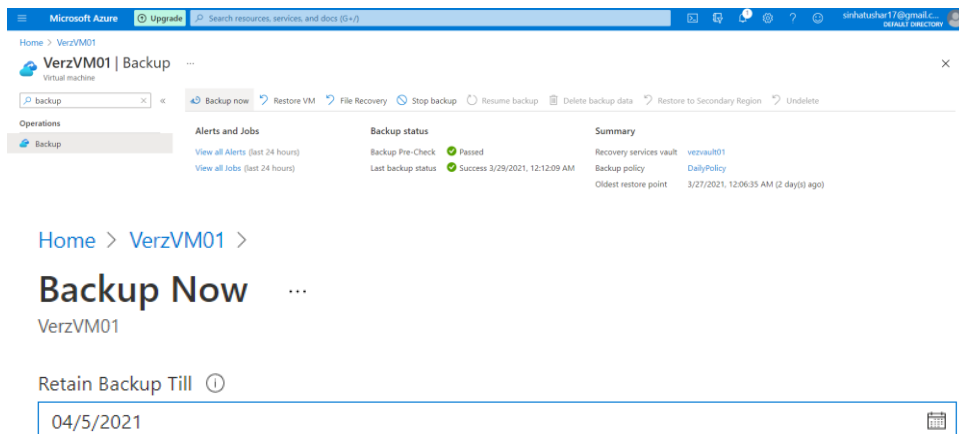
4 minutes ago

Successfully received the VM Start Notification on my Email Id.

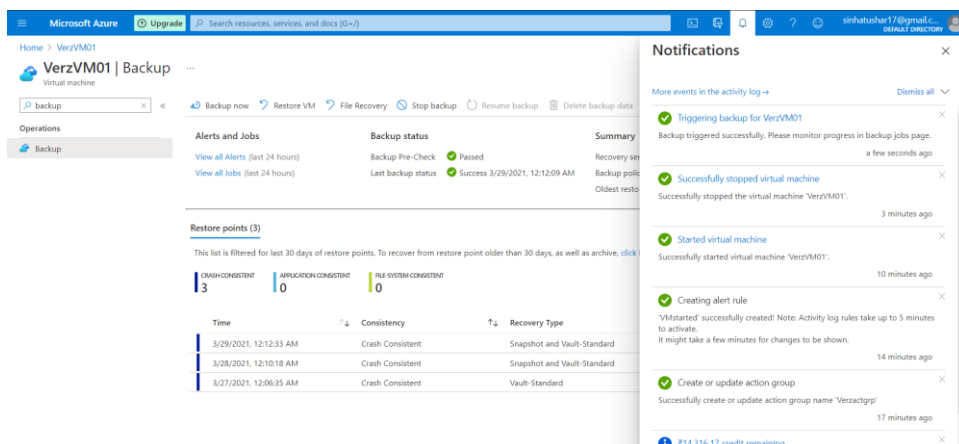


***Step 15: setting up Backup for VM 'VerzVM01'. -**

Inside the VM clicked on "Backup Now" to create its Backup.



Backup was successful as we got its Notification.



(This was all the required Steps which I had to in this Project)

- Thankyou.

- Submitted By: Tushar Sinha
- Email Id: sinhatushar17@gmail.com
- Contact Number: 8294222970
- Project Group : AZCC02-SB1