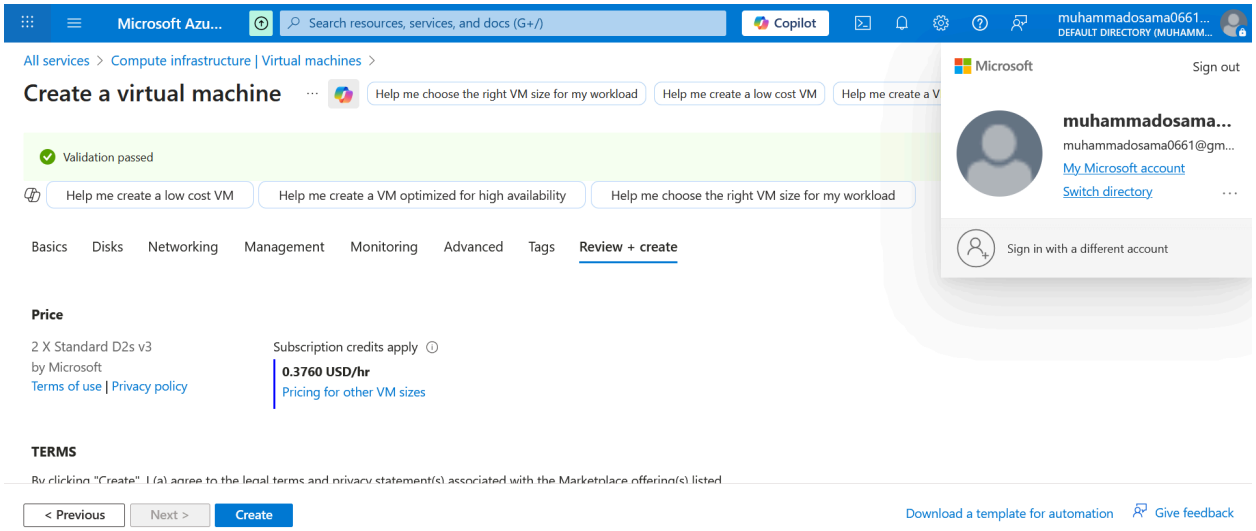
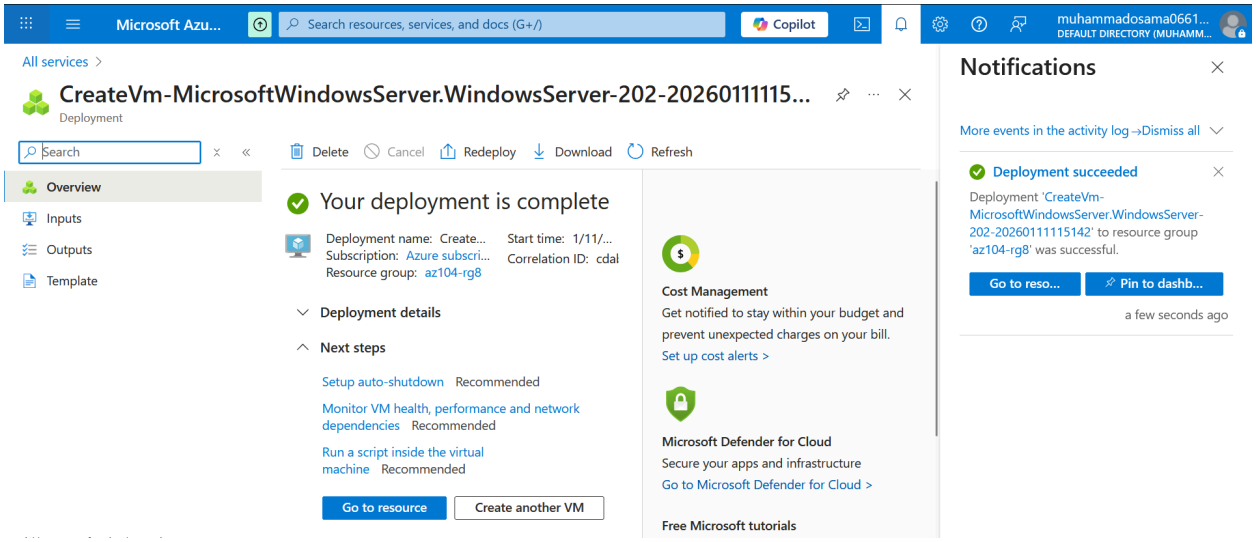
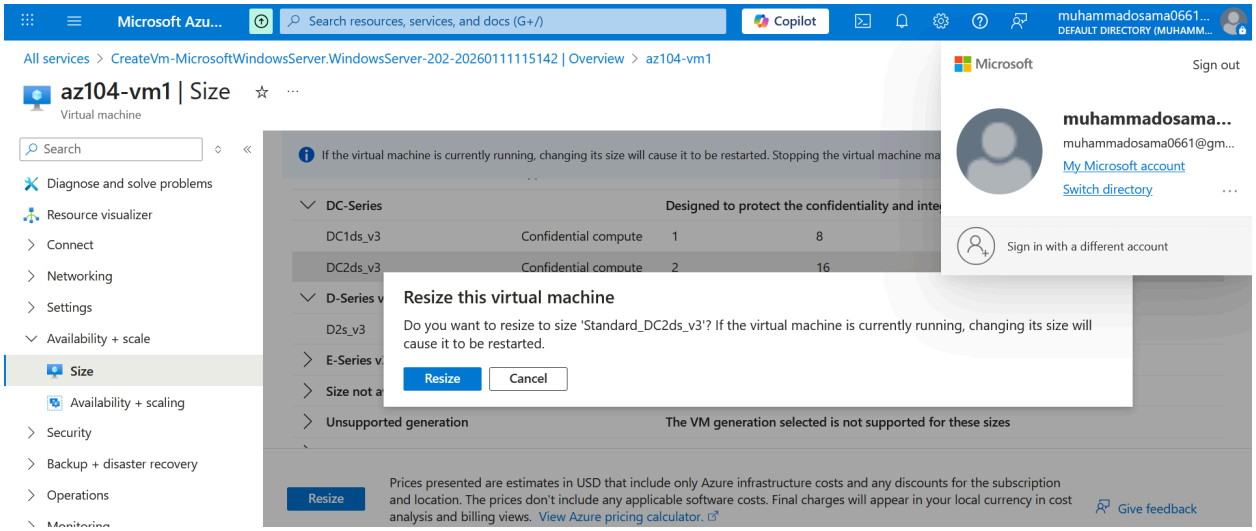
Name: Muhammad Osama
Reg no: 2280151
Section: B
LAB: 08

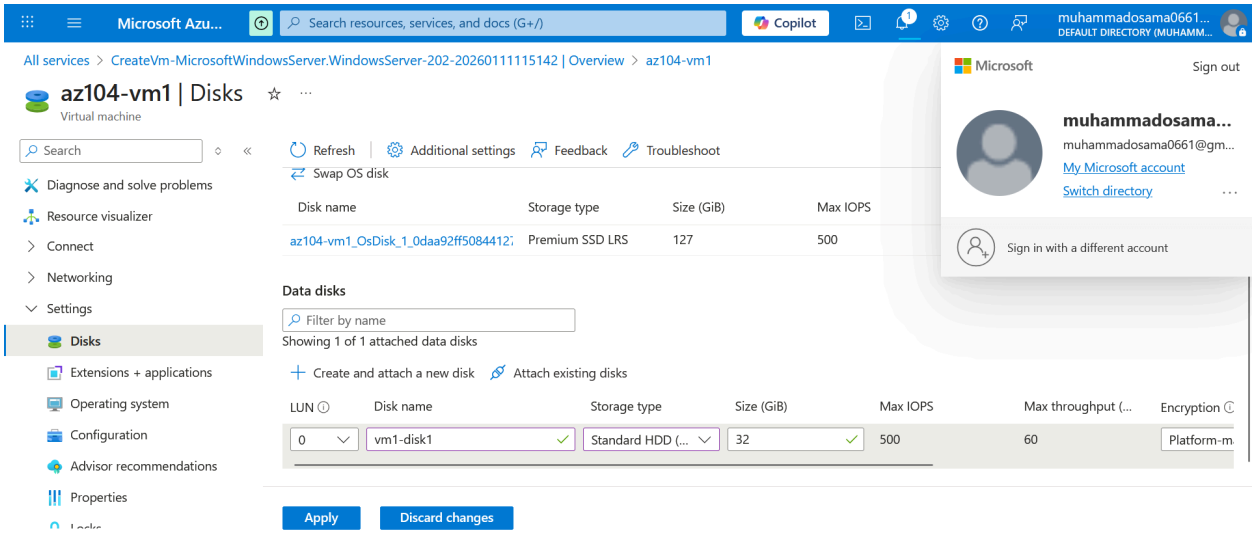
Task 1 - Deploy zone-resilient Azure virtual machines by using the Azure portal:

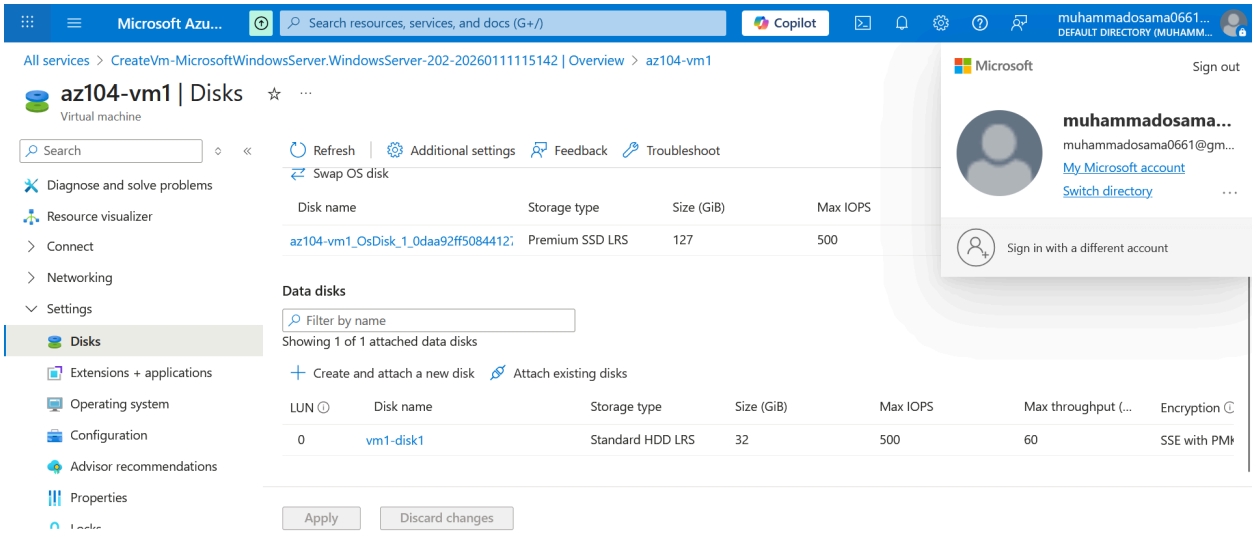


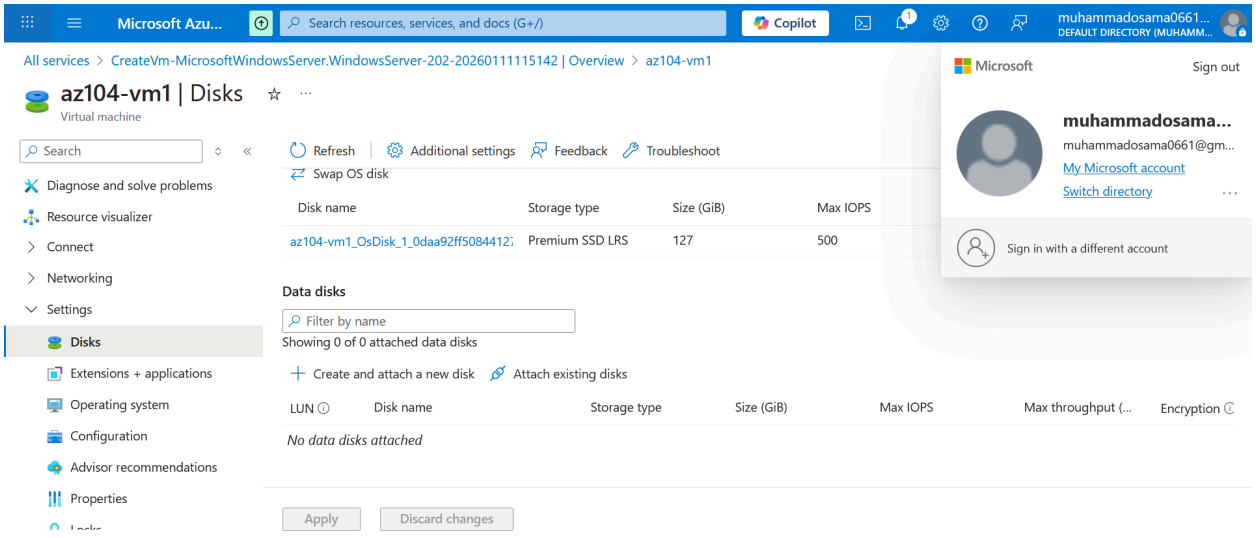


Task 2 - Manage compute and storage scaling for virtual machines:






Microsoft Azu...
Search resources, services, and docs (G+/)
Copilot
muhammadosama0661...
DEFAULT DIRECTORY (MUHAMM...
All services > CreateVm-MicrosoftWindowsServer.WindowsServer-202-20260111115142 | Overview > az104-vm1
az104-vm1 | Disks
Virtual machine
Search
Diagnose and solve problems
Resource visualizer
Connect
Networking
Settings
Disks
Extensions + applications
Operating system
Configuration
Advisor recommendations
Properties
Refresh
Additional settings
Feedback
Troubleshoot
Swap OS disk
Disk name
Storage type
Size (GiB)
Max IOPS
az104-vm1_OsDisk_1_0daa92ff5084412
Premium SSD LRS
127
500
Data disks
Filter by name
Showing 1 of 1 attached data disks
Create and attach a new disk
Attach existing disks
LUN
Disk name
Storage type
Size (GiB)
Max IOPS
Max throughput (...
Encryption
0
vm1-disk1
Standard HDD LRS
32
500
60
SSE with PM
Apply
Discard changes
Microsoft
Sign out
muhammadosama...
muhammadosama0661@gm...
My Microsoft account
Switch directory
Sign in with a different account


Microsoft Azu...
Search resources, services, and docs (G+/)
Copilot
muhammadosama0661...
DEFAULT DIRECTORY (MUHAMM...
All services > CreateVm-MicrosoftWindowsServer.WindowsServer-202-20260111115142 | Overview > az104-vm1
az104-vm1 | Disks
Virtual machine
Search
Diagnose and solve problems
Resource visualizer
Connect
Networking
Settings
Disks
Extensions + applications
Operating system
Configuration
Advisor recommendations
Properties
Refresh
Additional settings
Feedback
Troubleshoot
Swap OS disk
Disk name
Storage type
Size (GiB)
Max IOPS
az104-vm1_OsDisk_1_0daa92ff5084412
Premium SSD LRS
127
500
Data disks
Filter by name
Showing 0 of 0 attached data disks
Create and attach a new disk
Attach existing disks
LUN
Disk name
Storage type
Size (GiB)
Max IOPS
Max throughput (...
Encryption
No data disks attached
Apply
Discard changes
Microsoft
Sign out
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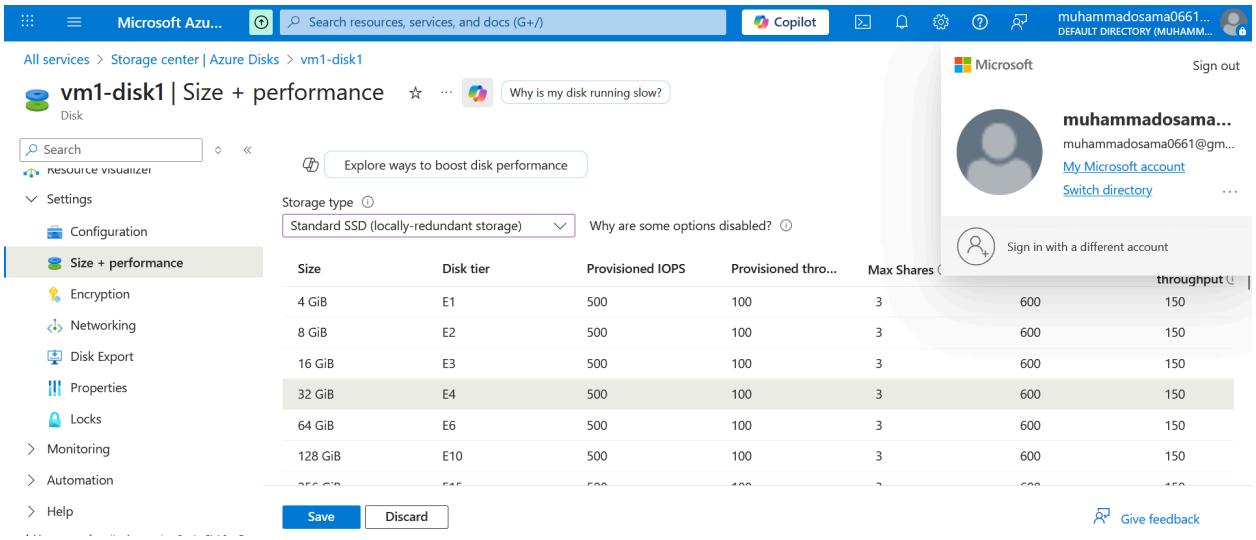
My Microsoft account
Switch directory
Sign in with a different account


Microsoft Azu...
Search resources, services, and docs (G+/)
Copilot
muhammadosama0661...
DEFAULT DIRECTORY (MUHAMM...
All services > Storage center | Azure Disks > vm1-disk1
vm1-disk1 | Size + performance
Disk
Why is my disk running slow?
Search
Settings
Configuration
Size + performance
Encryption
Networking
Disk Export
Properties
Locks
Monitoring
Automation
Help
Explore ways to boost disk performance
Storage type
Standard SSD (locally-redundant storage)
Why are some options disabled?
Size
Disk tier
Provisioned IOPS
Provisioned thro...
Max Shares
4 GiB
E1
500
100
3
600
150
8 GiB
E2
500
100
3
600
150
16 GiB
E3
500
100
3
600
150
32 GiB
E4
500
100
3
600
150
64 GiB
E6
500
100
3
600
150
128 GiB
E10
500
100
3
600
150
Save
Discard
Give feedback
Microsoft
Sign out
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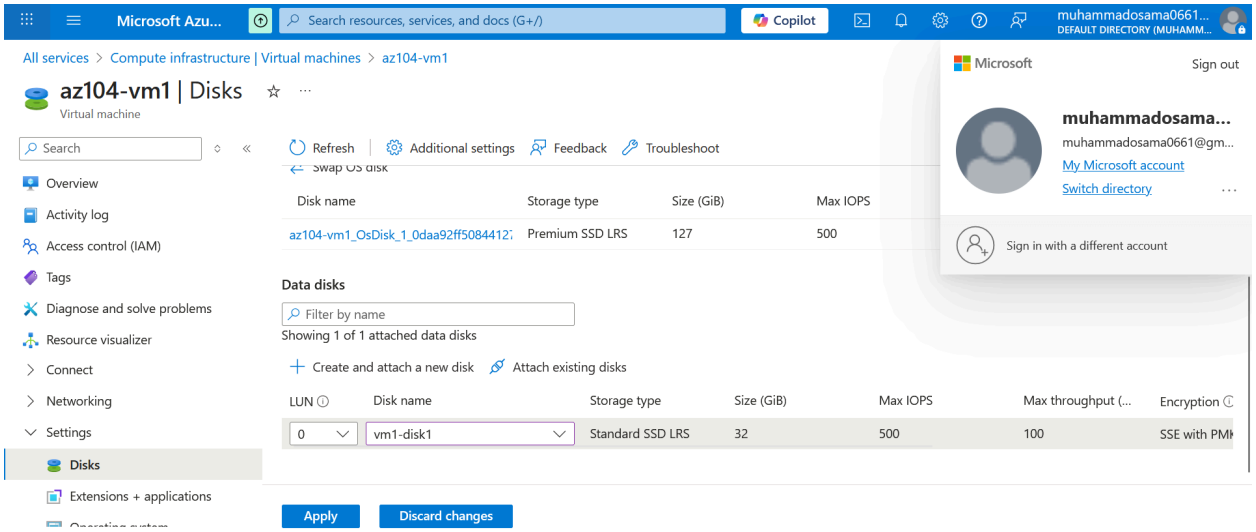
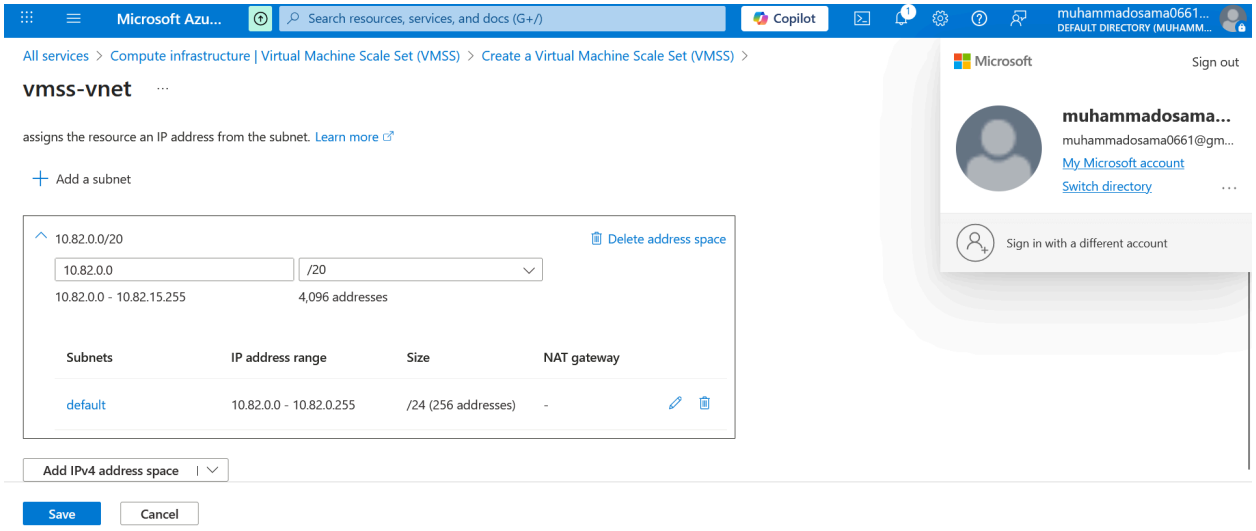
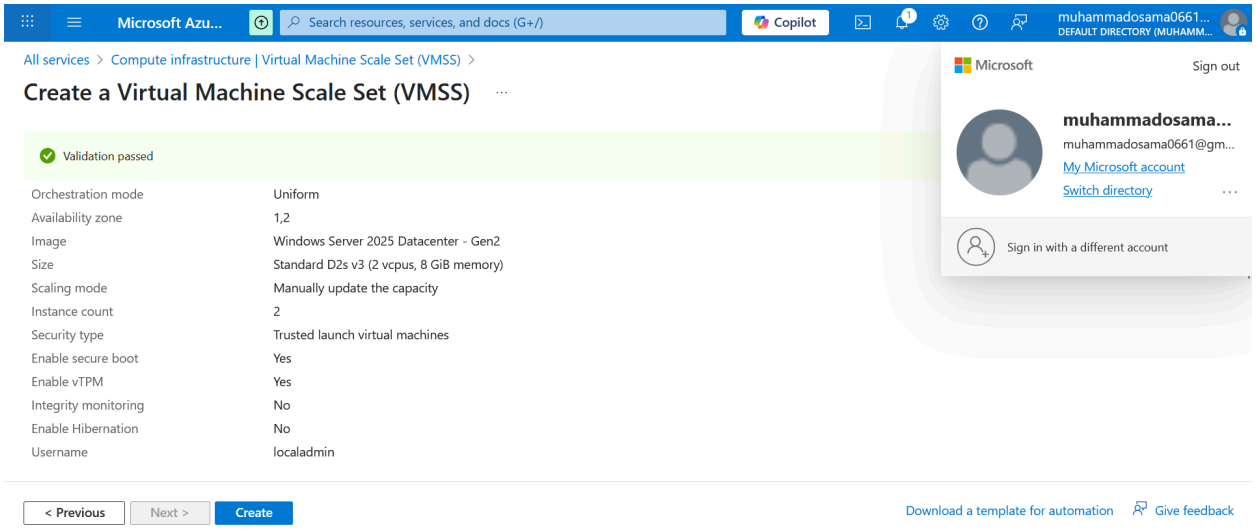
My Microsoft account
Switch directory
Sign in with a different account



Task 3 - Create and configure Azure Virtual Machine Scale Sets:




Microsoft Azu...
Search resources, services, and docs (G+/)
Copilot
muhammadosama0661...
DEFAULT DIRECTORY (MUHAMM...
All services > Compute infrastructure | Virtual Machine Scale Set (VMSS) >
Create a Virtual Machine Scale Set (VMSS)
Validation passed
Orchestration mode Uniform
Availability zone 1,2
Image Windows Server 2025 Datacenter - Gen2
Size Standard D2s v3 (2 vcpus, 8 GiB memory)
Scaling mode Manually update the capacity
Instance count 2
Security type Trusted launch virtual machines
Enable secure boot Yes
Enable vTPM Yes
Integrity monitoring No
Enable Hibernation No
Username localadmin
< Previous
Next >
Create
Download a template for automation
Give feedback
Microsoft
Sign out
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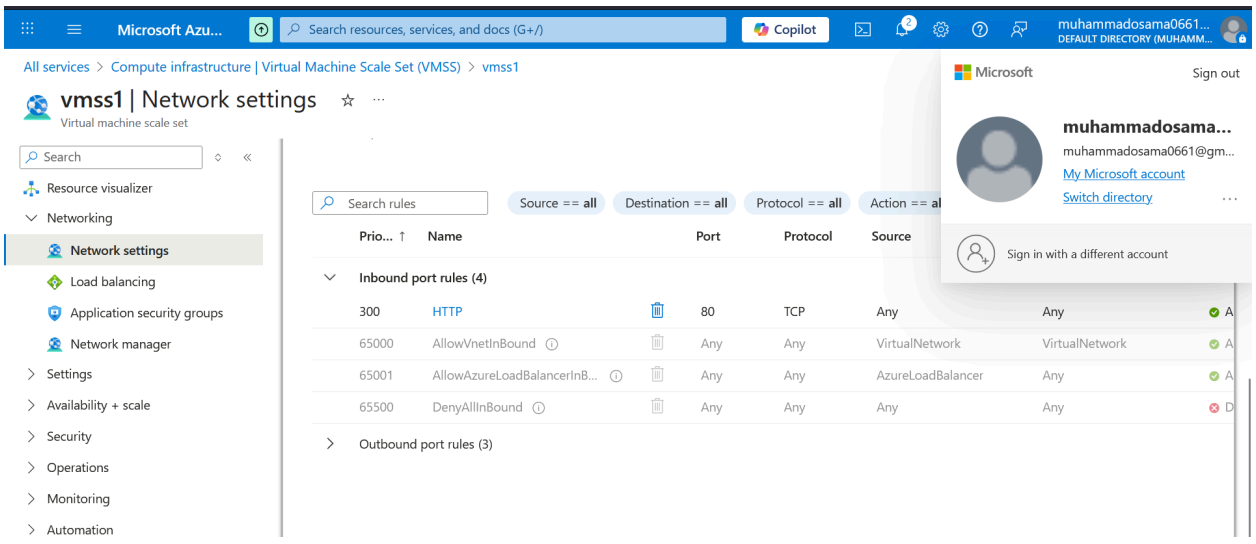
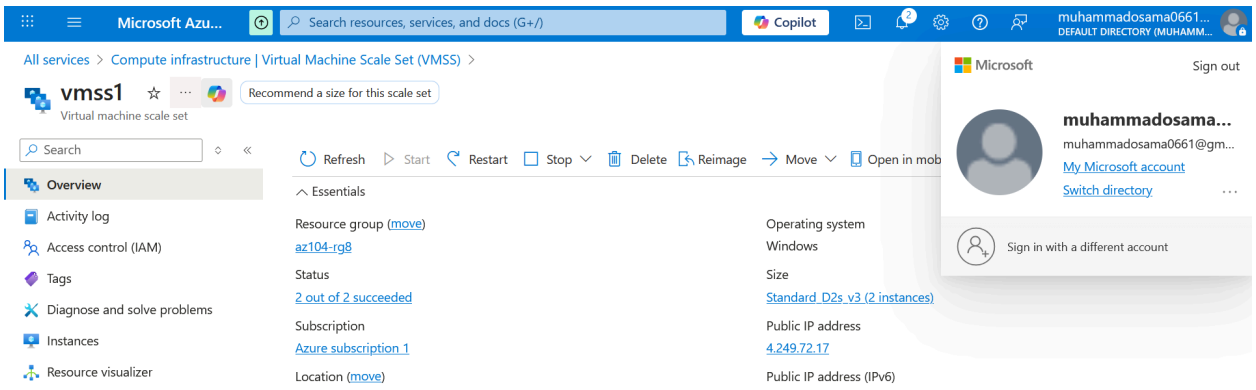
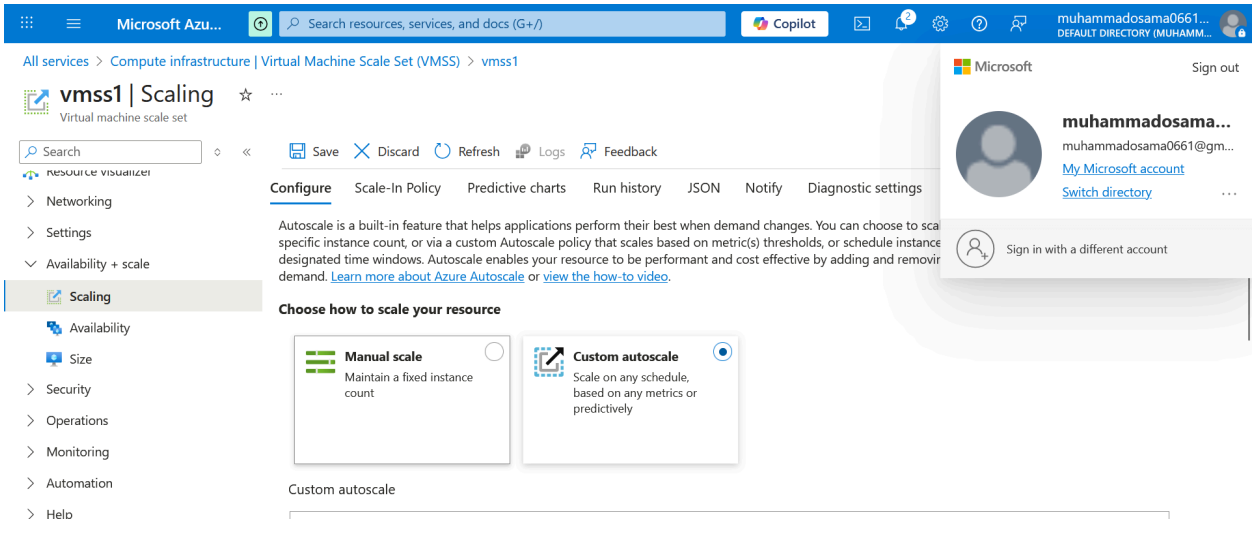
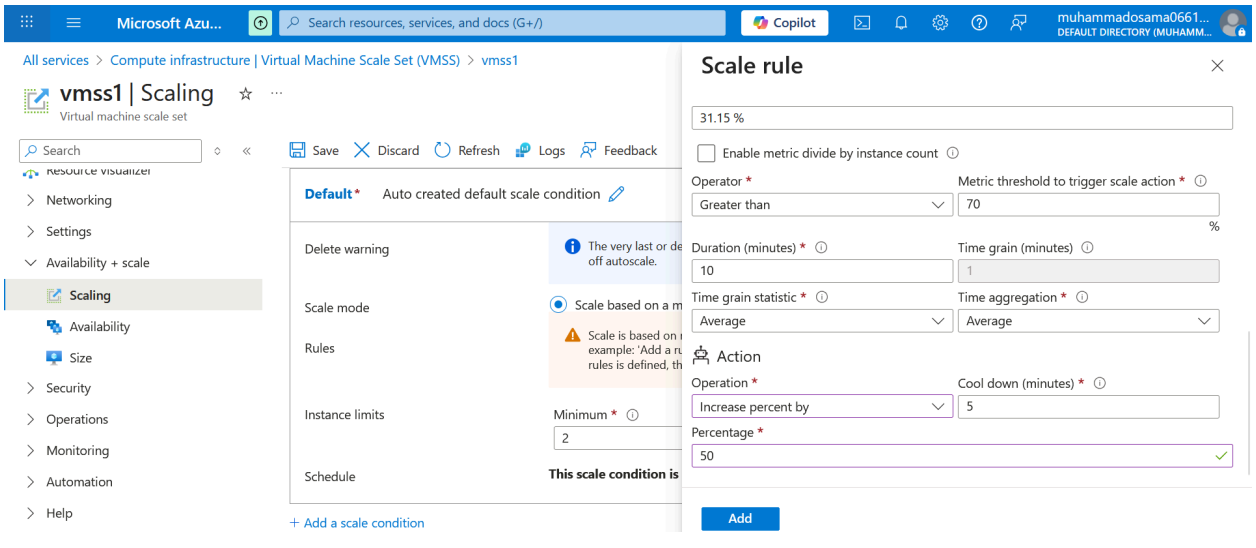
muhammadosama0661@gm...
My Microsoft account
Switch directory
Sign in with a different account

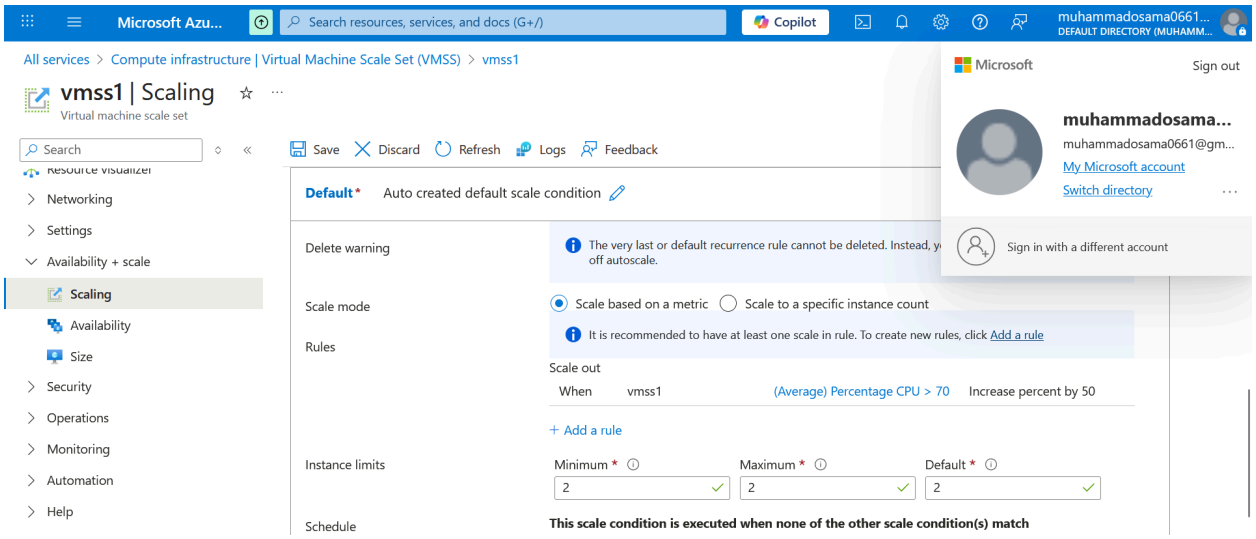

Microsoft Azu...
Search resources, services, and docs (G+/)
Copilot
muhammadosama0661...
DEFAULT DIRECTORY (MUHAMM...
All services > Compute infrastructure | Virtual Machine Scale Set (VMSS) > vmss1
vmss1 | Network settings
Virtual machine scale set
Search
Resource visualizer
Networking
Network settings
Load balancing
Application security groups
Network manager
Settings
Availability + scale
Security
Operations
Monitoring
Automation
Search rules
Source == all
Destination == all
Protocol == all
Action == al
Prio... ↑
Name
Port
Protocol
Source
Inbound port rules (4)
300 HTTP 80 TCP Any Any
65000 AllowVnetInBound Any Any VirtualNetwork VirtualNetwork
65001 AllowAzureLoadBalancerInB... Any Any AzureLoadBalancer Any
65500 DenyAllInBound Any Any Any Any
Outbound port rules (3)
Microsoft
Sign out
muhammadosama...
muhammadosama0661@gm...
My Microsoft account
Switch directory
Sign in with a different account

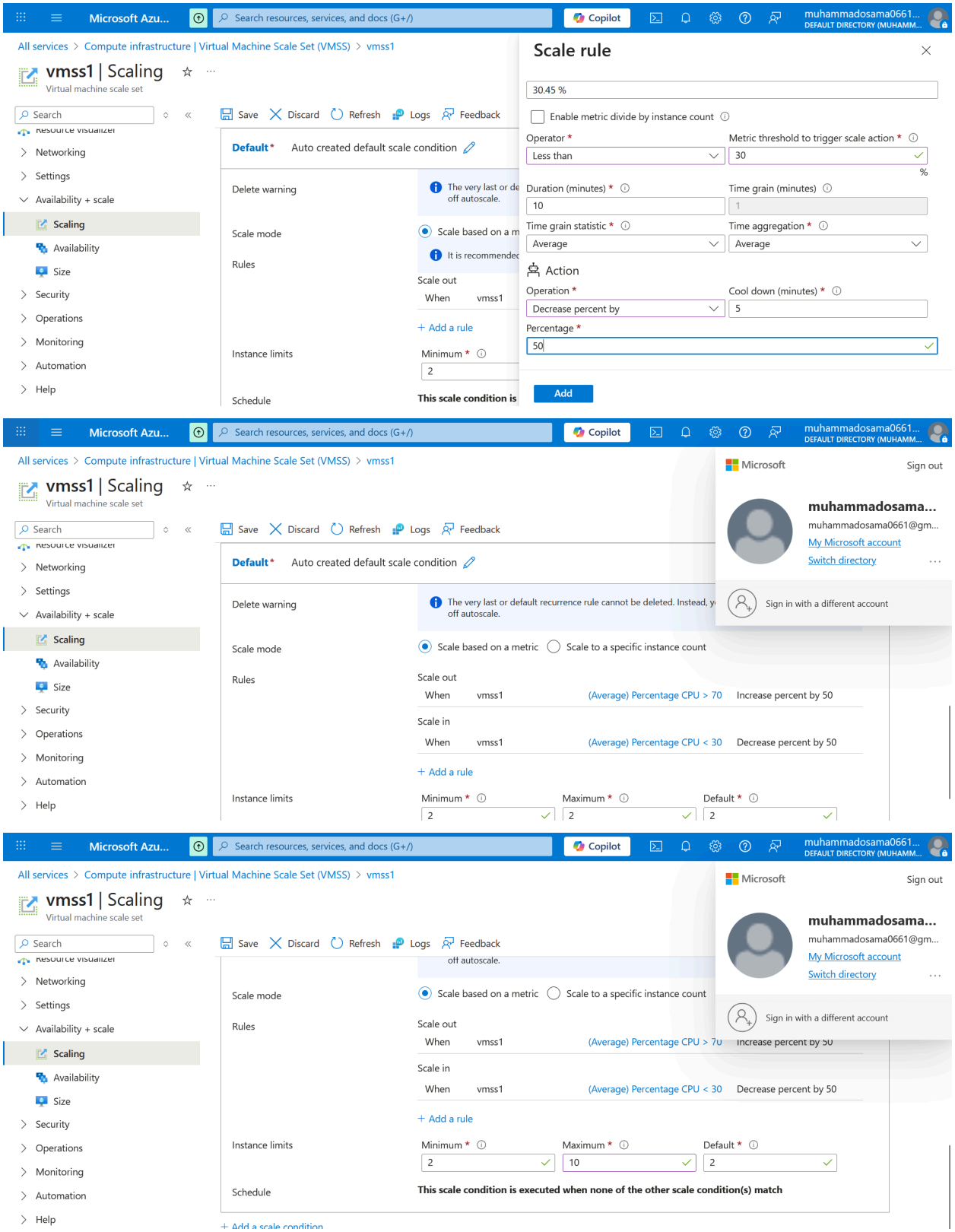

Microsoft Azu...
Search resources, services, and docs (G+/)
Copilot
muhammadosama0661...
DEFAULT DIRECTORY (MUHAMM...
All services > Compute infrastructure | Virtual Machine Scale Set (VMSS) >
vmss1
Virtual machine scale set
Recommend a size for this scale set
Search
Overview
Activity log
Access control (IAM)
Tags
Diagnose and solve problems
Instances
Resource visualizer
Refresh
Start
Restart
Stop
Delete
Reimage
Move
Open in mob
Essentials
Resource group (move)
az104-rg8
Status
2 out of 2 succeeded
Subscription
Azure subscription 1
Location (move)
Operating system
Windows
Size
Standard_D2s_v3 (2 instances)
Public IP address
4.249.72.17
Public IP address (IPv6)
Microsoft
Sign out
muhammadosama...
muhammadosama0661@gm...
My Microsoft account
Switch directory
Sign in with a different account

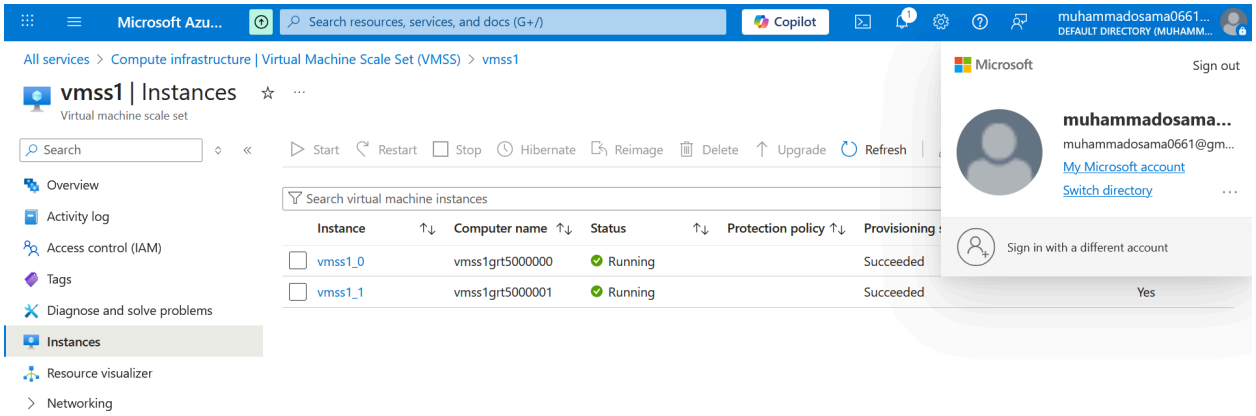
Task 4 - Scale Azure Virtual Machine Scale Sets:








Microsoft Azu...
Search resources, services, and docs (G+/)
Copilot
muhammadosama0661...
DEFAULT DIRECTORY (MUHAMM...
All services > Compute infrastructure | Virtual Machine Scale Set (VMSS) > vmss1
vmss1 | Scaling
Virtual machine scale set
Search
Networking
Settings
Availability + scale
Scaling
Availability
Size
Security
Operations
Monitoring
Automation
Help
Save
Discard
Refresh
Logs
Feedback
Default *
Auto created default scale condition
Delete warning
Scale mode
Rules
Scale out
When vmss1
+ Add a rule
Instance limits
Minimum *
2
Schedule
This scale condition is
Scale rule
30.45 %
Enable metric divide by instance count
Operator *
Less than
Metric threshold to trigger scale action *
30
%
Duration (minutes) *
10
Time grain (minutes)
1
Time grain statistic *
Average
Time aggregation *
Average
Action
Operation *
Decrease percent by
Cool down (minutes) *
5
Percentage *
50
Add
Microsoft
Sign out
muhammadosama...
muhammadosama0661@gm...
My Microsoft account
Switch directory
Sign in with a different account
The very last or default recurrence rule cannot be deleted. Instead, y
off autoscale.
Scale based on a metric
Scale to a specific instance count
When vmss1 (Average) Percentage CPU > 70 Increase percent by 50
Scale in
When vmss1 (Average) Percentage CPU < 30 Decrease percent by 50
Minimum *
Maximum *
Default *
2
10
This scale condition is executed when none of the other scale condition(s) match
+ Add a scale condition



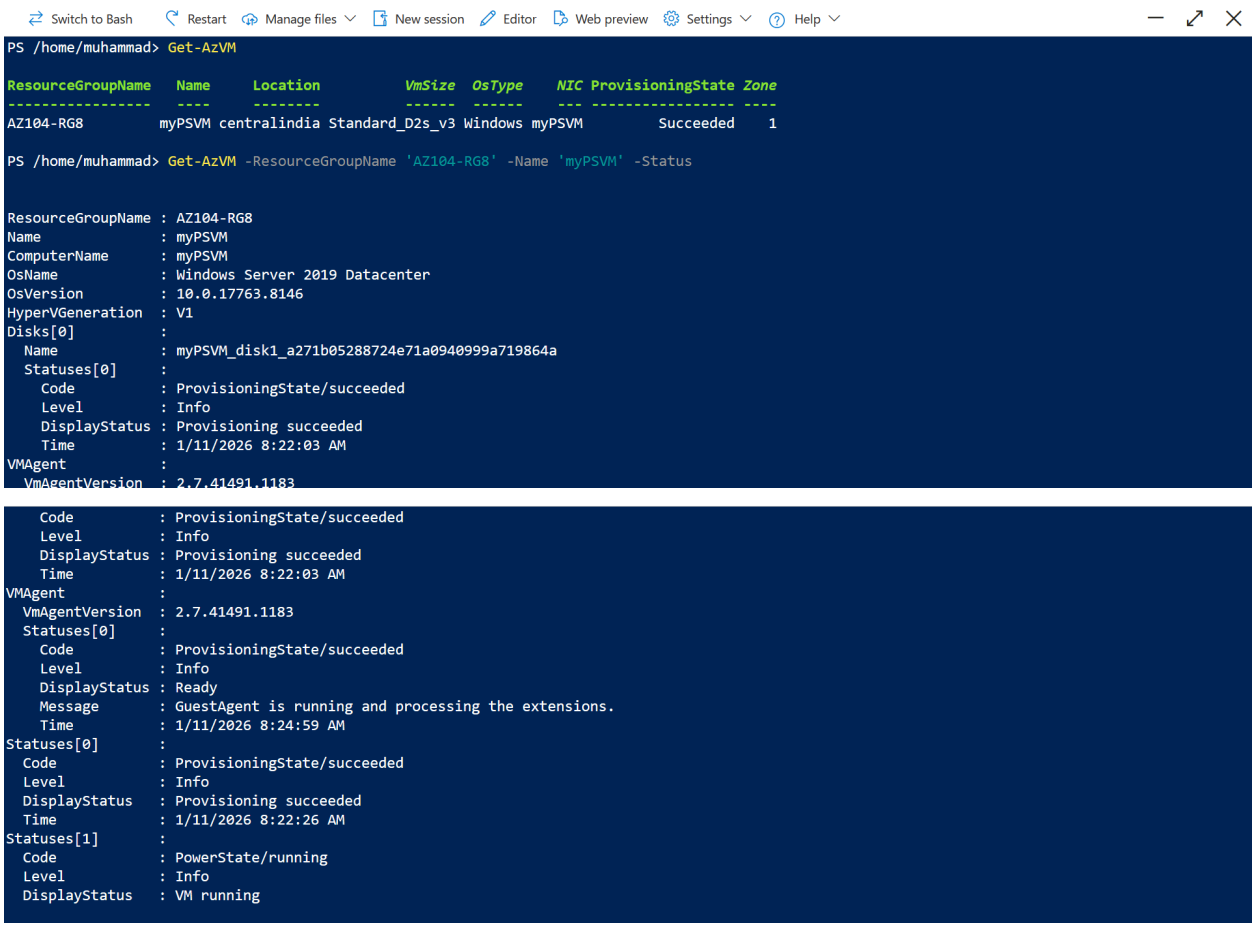
Task 5 - Create a virtual machine using Azure PowerShell (option 1):

```
PS /home/muhammad> New-AzVm `
>> -ResourceGroupName 'az104-rg8' `
>> -Name 'myPSVM' `
>> -Location 'Central India' `
>> -Image 'Win2019Datacenter' `
>> -Zone '1' `
>> -Size 'Standard_D2s_v3' `
>> -Credential (Get-Credential)

PowerShell credential request
Enter your credentials.
User: osama
Password for user osama: ********

WARNING: Upcoming breaking changes in the cmdlet 'New-AzVM' :
The default VM size will change from 'Standard_D2s_v3' to 'Standard_D2s_v5'.
- This change will take effect on '11/1/2025'
- The change is expected to take effect in Az version : '15.0.0'
- The change is expected to take effect in Az.Compute version : '11.0.0'
Note : Go to https://aka.ms/azps-changewarnings for steps to suppress this breaking change warning, and other information on breaking changes in
Azure PowerShell.
You can reference https://aka.ms/findImagePS on how to find VM Images using PowerShell.
Creating Azure resources [14% -                                                                                    ]
```

```
ResourceGroupName        : az104-rg8
Id                       :
/subscriptions/b27ea303-a842-43a4-8123-8bdf4aec006b/resourceGroups/az104-rg8/providers/Microsoft.Compute/virtualMachines/myPSVM
VmId                     : b59c9085-26c9-41ae-9cca-e5394d2b3830
Name                     : myPSVM
Type                     : Microsoft.Compute/virtualMachines
Location                 : centralindia
Tags                     : {}
HardwareProfile          : {VmSize}
NetworkProfile           : {NetworkInterfaces}
OSProfile                : {ComputerName, AdminUsername, WindowsConfiguration, Secrets, AllowExtensionOperations, RequireGuestProvisionSignal}
ProvisioningState        : Succeeded
StorageProfile           : {ImageReference, OsDisk, DataDisks, AlignRegionalDisksToVMZone}
Zones                    : {1}
FullyQualifiedDomainName : mypsvm-340ac0.Central India.cloudapp.azure.com
TimeCreated              : 1/11/2026 8:22:01 AM
Etag                     : "2"
```


Switch to Bash
Restart
Manage files
New session
Editor
Web preview
Settings
Help
PS /home/muhammad> Get-AzVM
ResourceGroupName Name Location VmSize OsType NIC ProvisioningState Zone
AZ104-RG8 myPSVM centralindia Standard_D2s_v3 Windows myPSVM Succeeded 1
PS /home/muhammad> Get-AzVM -ResourceGroupName 'AZ104-RG8' -Name 'myPSVM' -Status
ResourceGroupName : AZ104-RG8
Name : myPSVM
ComputerName : myPSVM
OsName : Windows Server 2019 Datacenter
OsVersion : 10.0.17763.8146
HyperVGeneration : V1
Disks[0] :
Name : myPSVM_disk1_a271b05288724e71a0940999a719864a
Statuses[0] :
Code : ProvisioningState/succeeded
Level : Info
DisplayStatus : Provisioning succeeded
Time : 1/11/2026 8:22:03 AM
VMAgent :
VmAgentVersion : 2.7.41491.1183
Code : ProvisioningState/succeeded
Level : Info
DisplayStatus : Provisioning succeeded
Time : 1/11/2026 8:22:03 AM
VMAgent :
VmAgentVersion : 2.7.41491.1183
Statuses[0] :
Code : ProvisioningState/succeeded
Level : Info
DisplayStatus : Ready
Message : GuestAgent is running and processing the extensions.
Time : 1/11/2026 8:24:59 AM
Statuses[0] :
Code : ProvisioningState/succeeded
Level : Info
DisplayStatus : Provisioning succeeded
Time : 1/11/2026 8:22:26 AM
Statuses[1] :
Code : PowerState/running
Level : Info
DisplayStatus : VM running