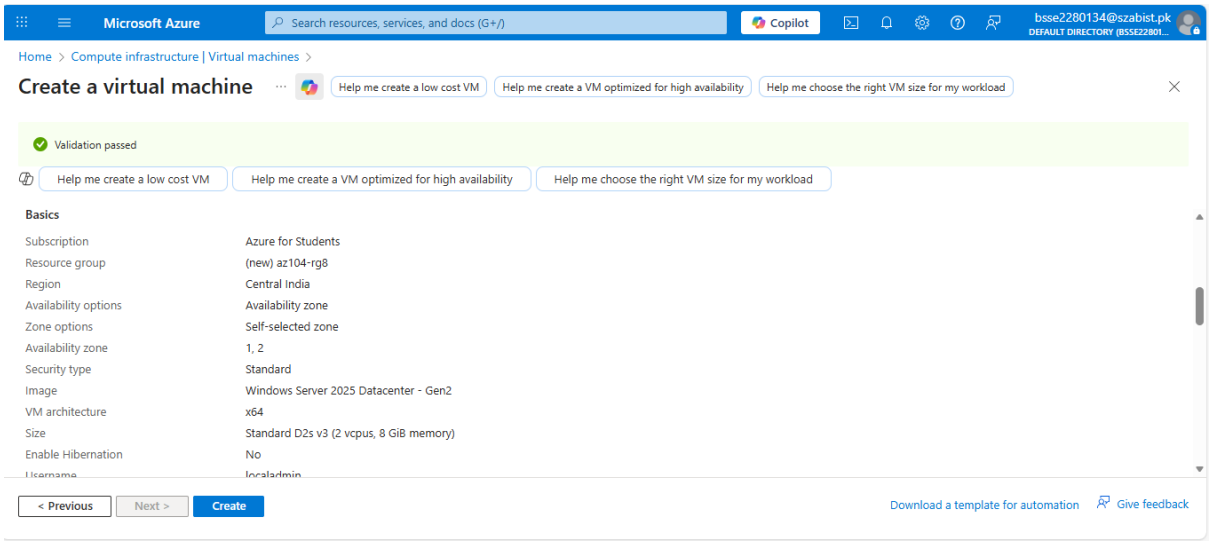
Name: Zainab Asif

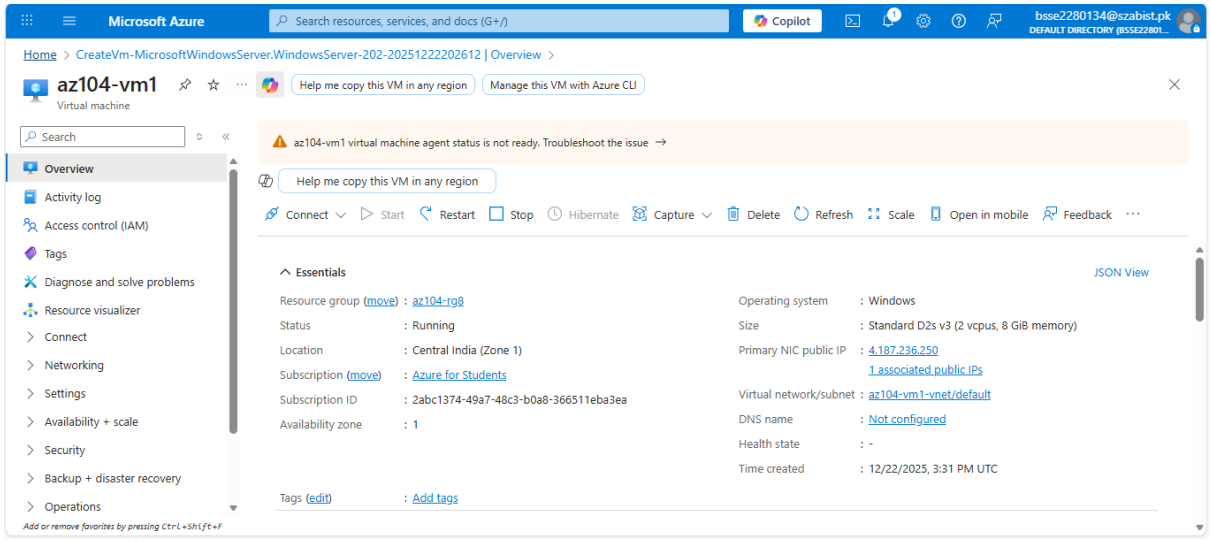
Id: 2280134

Section: A

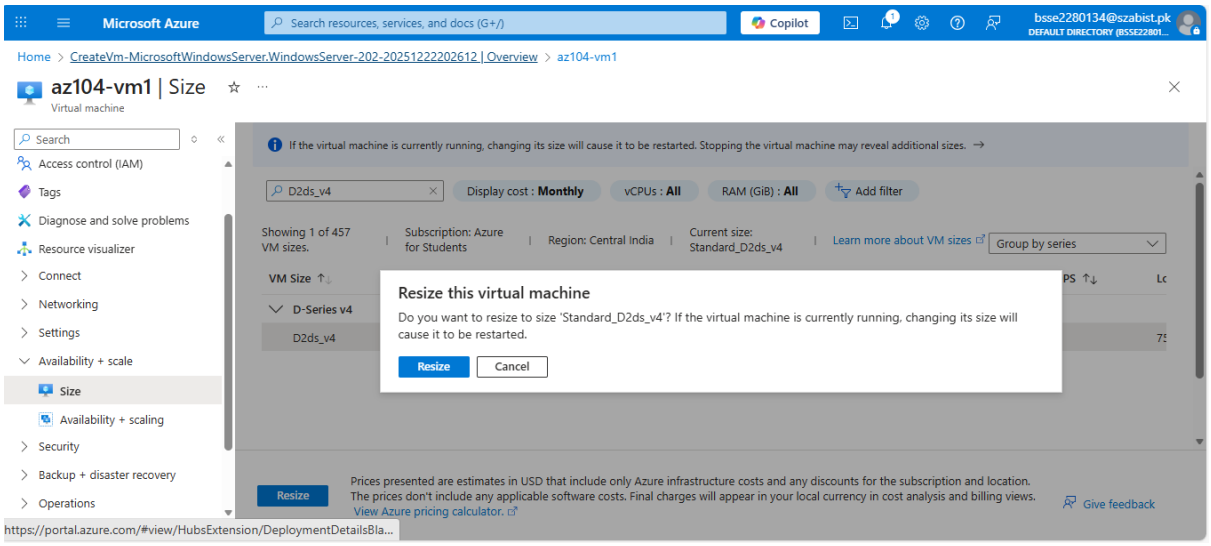
LAB: 08

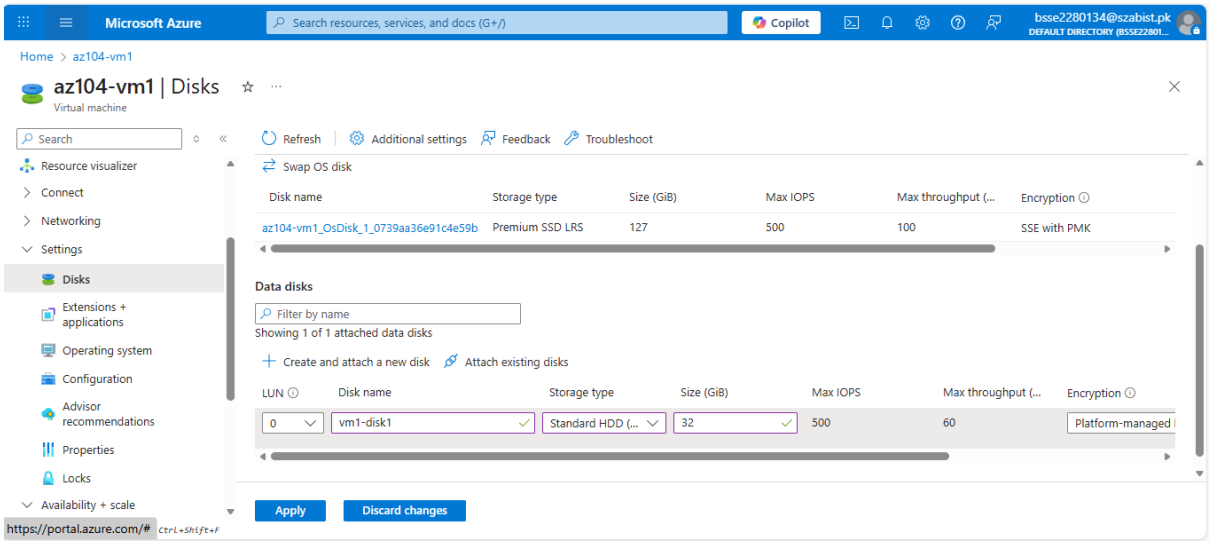
Task 1: Deploy zone-resilient Azure virtual machines by using the Azure portal.

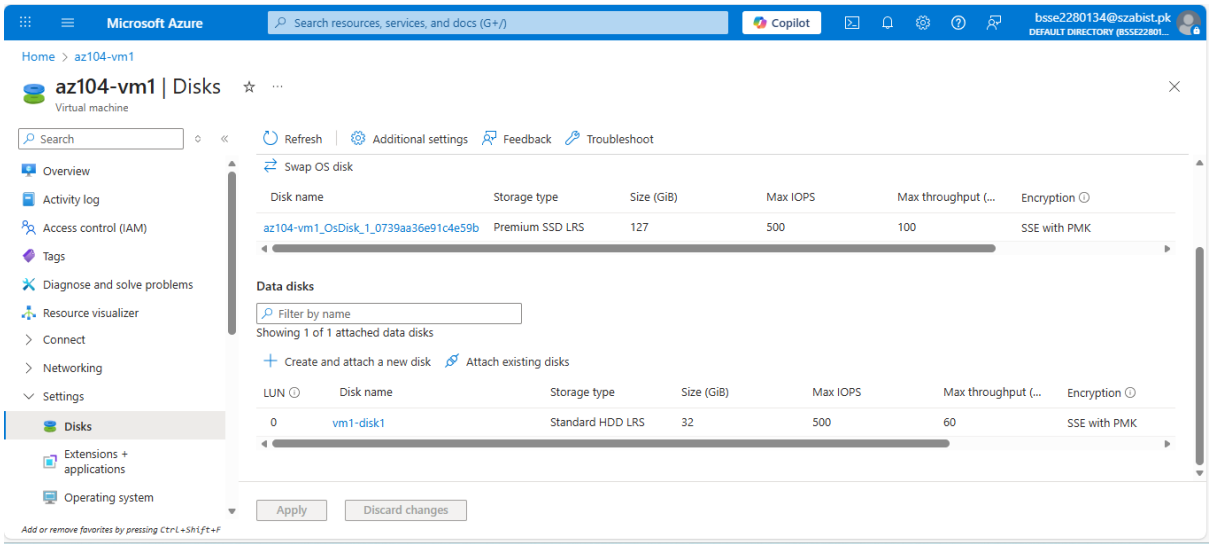


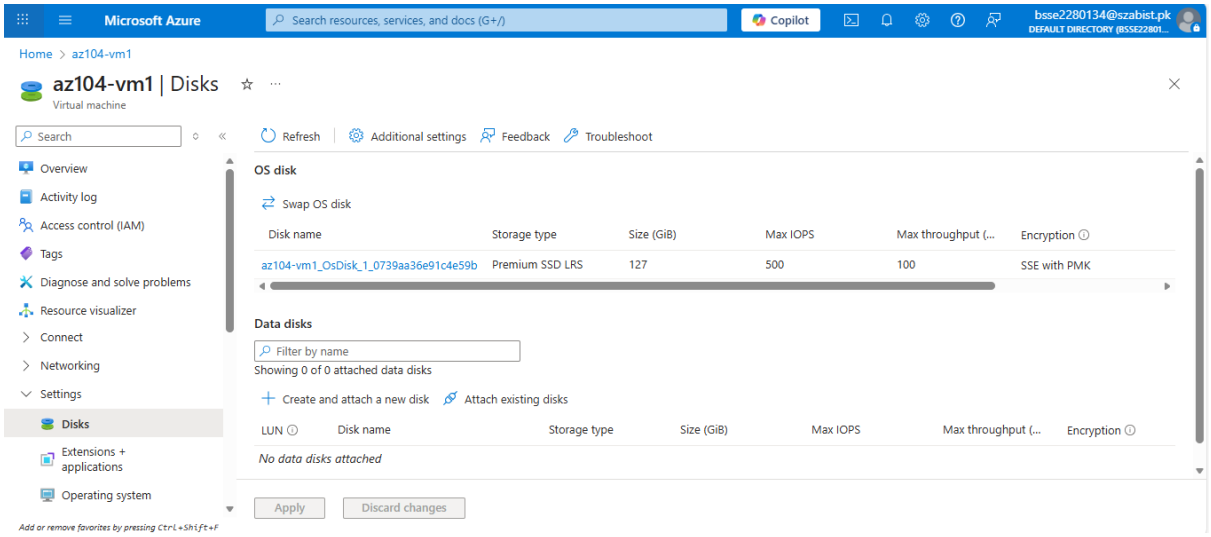


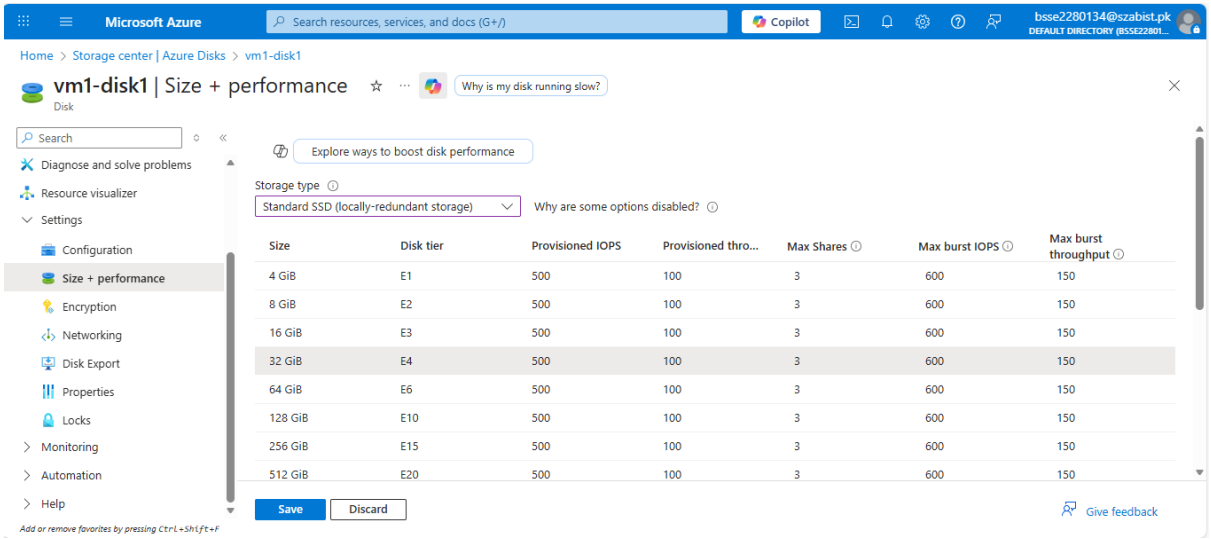
Task 2: Manage compute and storage scaling for virtual machines.








Microsoft Azure
Search resources, services, and docs (G+/)
Copilot
bsse2280134@szabist.pk
DEFAULT DIRECTORY (BSSE22801...
Home > az104-vm1
az104-vm1 | Disks
Virtual machine
Search
Overview
Activity log
Access control (IAM)
Tags
Diagnose and solve problems
Resource visualizer
Connect
Networking
Settings
Disks
Extensions + applications
Operating system
Add or remove favorites by pressing Ctrl+Shift+F
Refresh
Additional settings
Feedback
Troubleshoot
OS disk
Swap OS disk
Disk name
Storage type
Size (GiB)
Max IOPS
Max throughput (...
Encryption
az104-vm1_OsDisk_1_0739aa36e91c4e59b
Premium SSD LRS
127
500
100
SSE with PMK
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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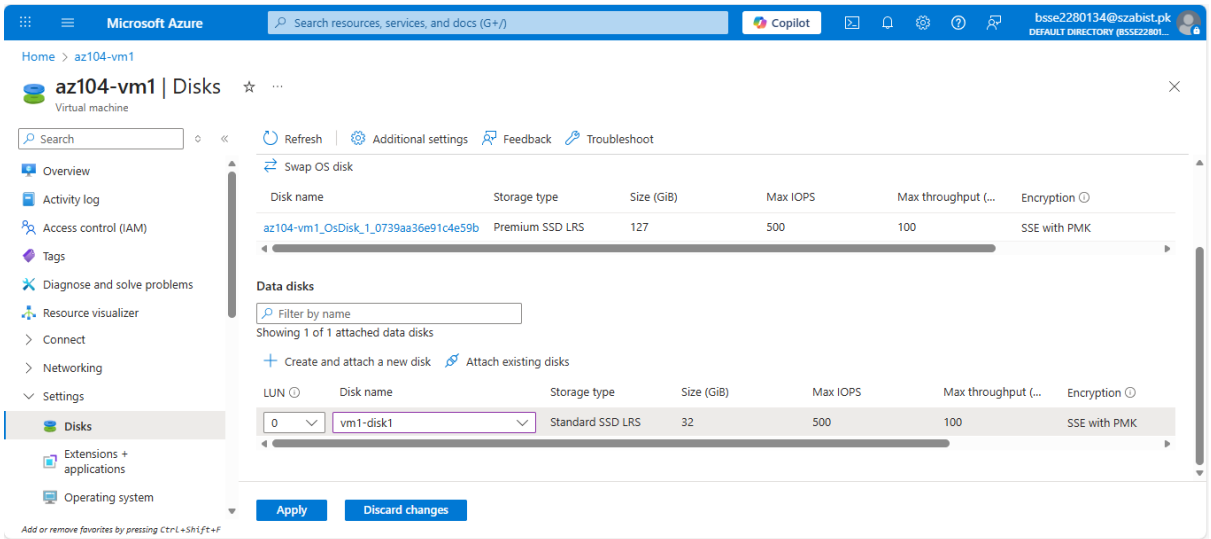
Search resources, services, and docs (G+/)
Copilot
bsse2280134@szabist.pk
DEFAULT DIRECTORY (BSSE22801...
Home > Storage center | Azure Disks > vm1-disk1
vm1-disk1 | Size + performance
Disk
Why is my disk running slow?
Search
Diagnose and solve problems
Resource visualizer
Settings
Configuration
Size + performance
Encryption
Networking
Disk Export
Properties
Locks
Monitoring
Automation
Help
Add or remove favorites by pressing Ctrl+Shift+F
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
Max burst IOPS
Max burst throughput
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
256 GiB E15 500 100 3 600 150
512 GiB E20 500 100 3 600 150
Save
Discard
Give feedback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az104-vm1 | Disks
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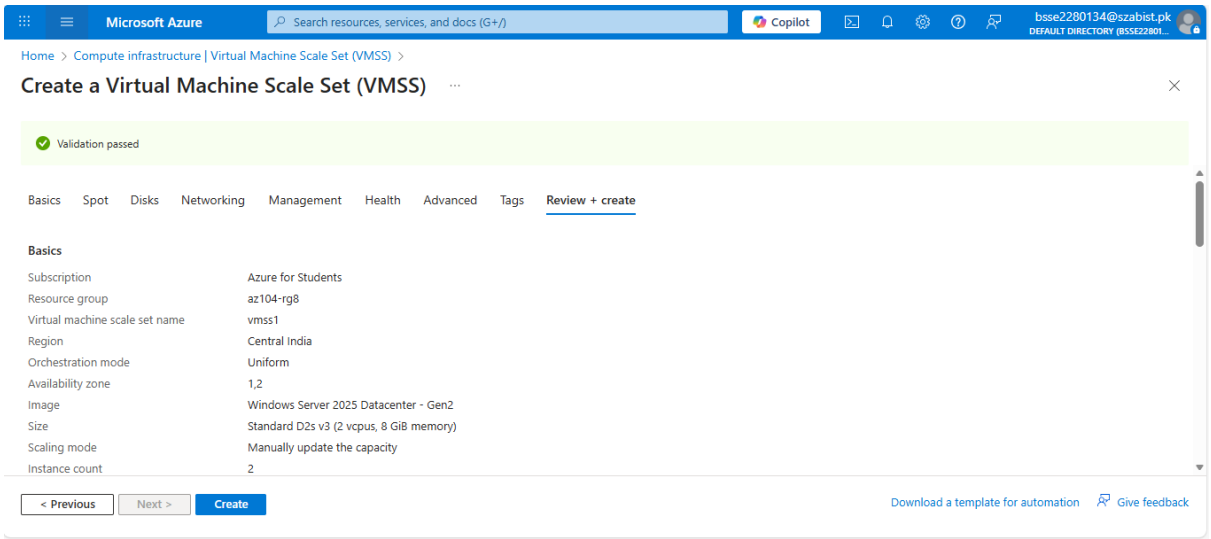
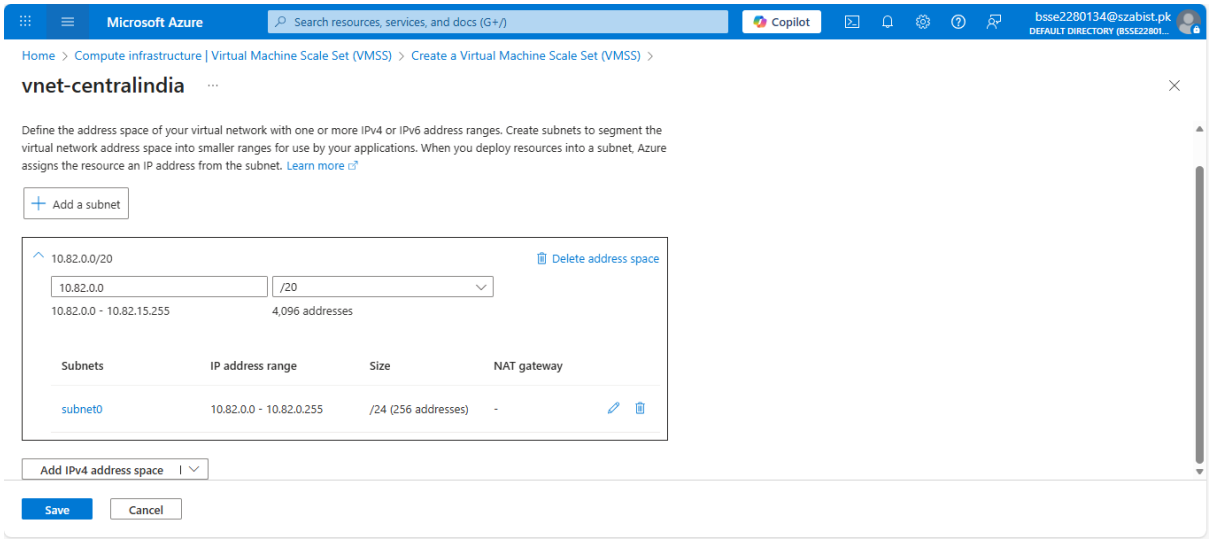
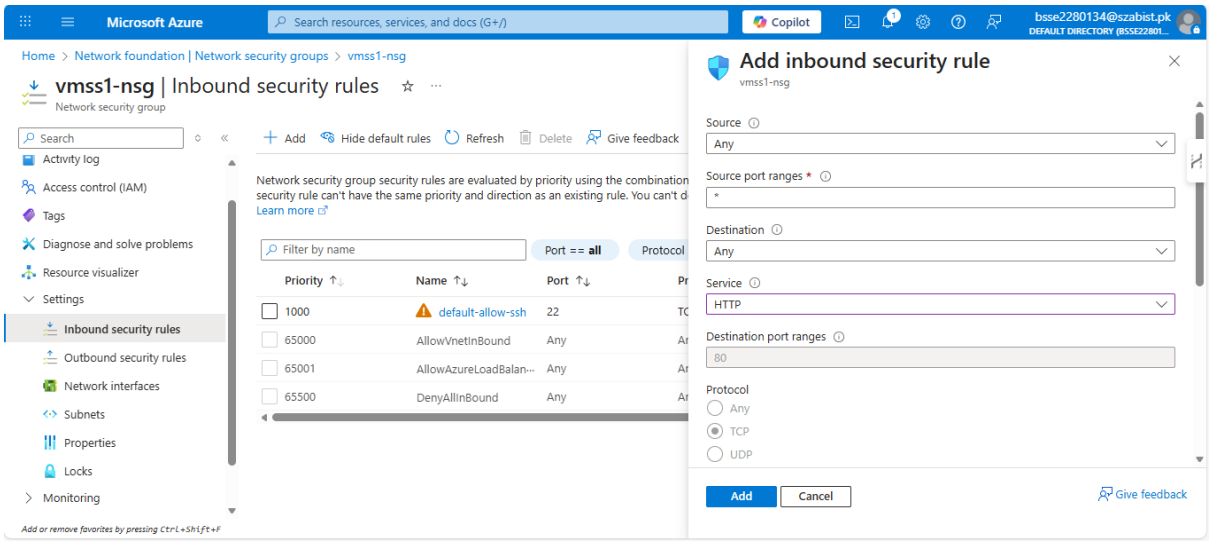
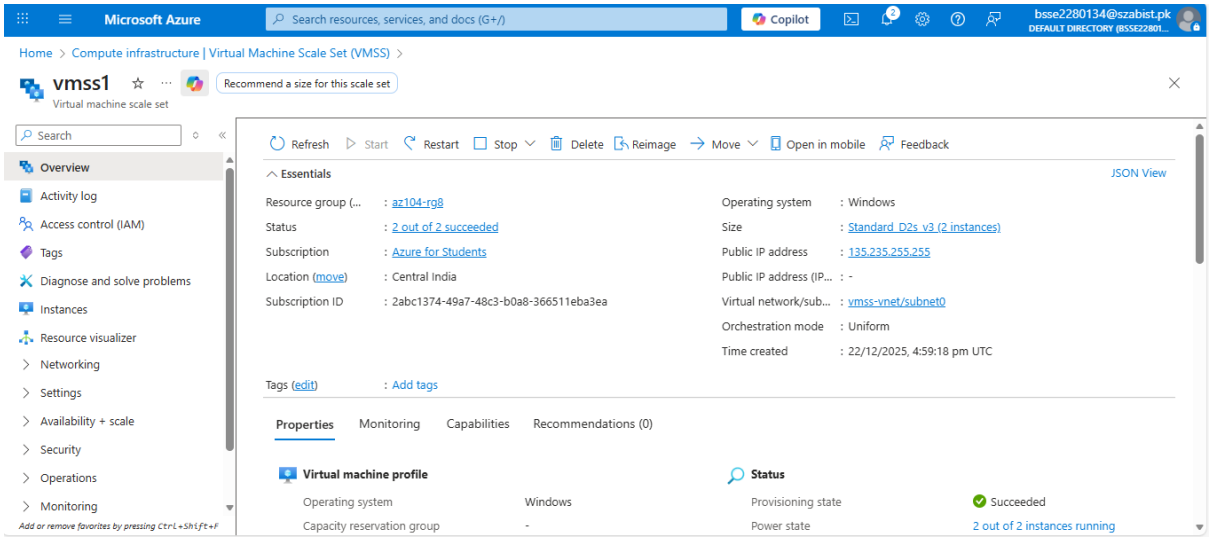
Overview
Activity log
Access control (IAM)
Tags
Diagnose and solve problems
Resource visualizer
Connect
Networking
Settings
Disks
Extensions + applications
Operating system
Add or remove favorites by pressing Ctrl+Shift+F
Refresh
Additional settings
Feedback
Troubleshoot
Swap OS disk
Disk name
Storage type
Size (GiB)
Max IOPS
Max throughput (...
Encryption
az104-vm1_OsDisk_1_0739aa36e91c4e59b
Premium SSD LRS
127
500
100
SSE with PMK
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 SSD LRS
32
500
100
SSE with PMK
Apply
Discard changes

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

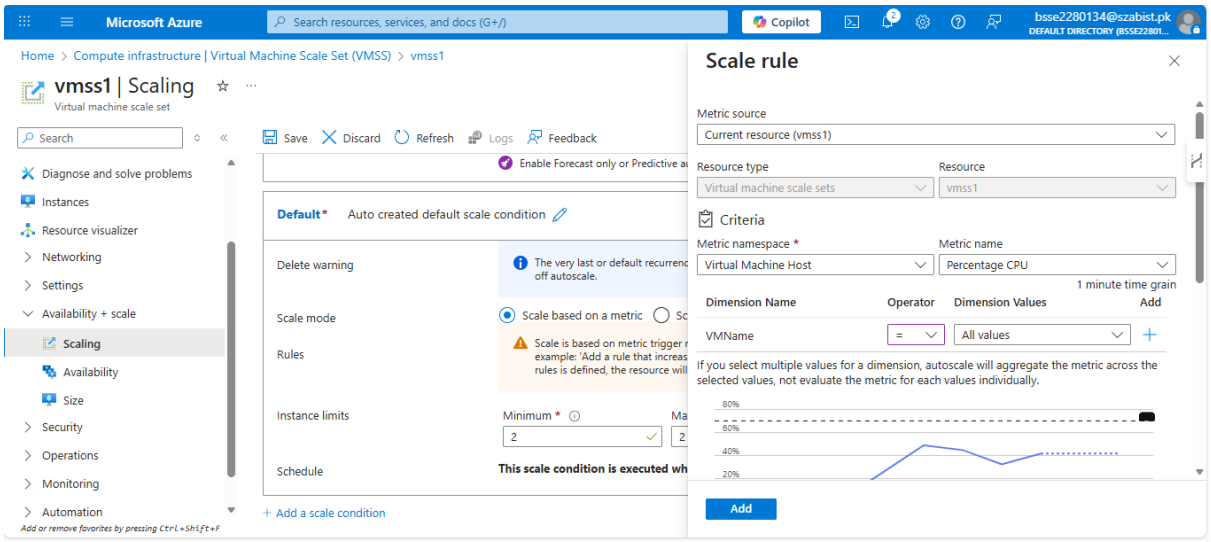


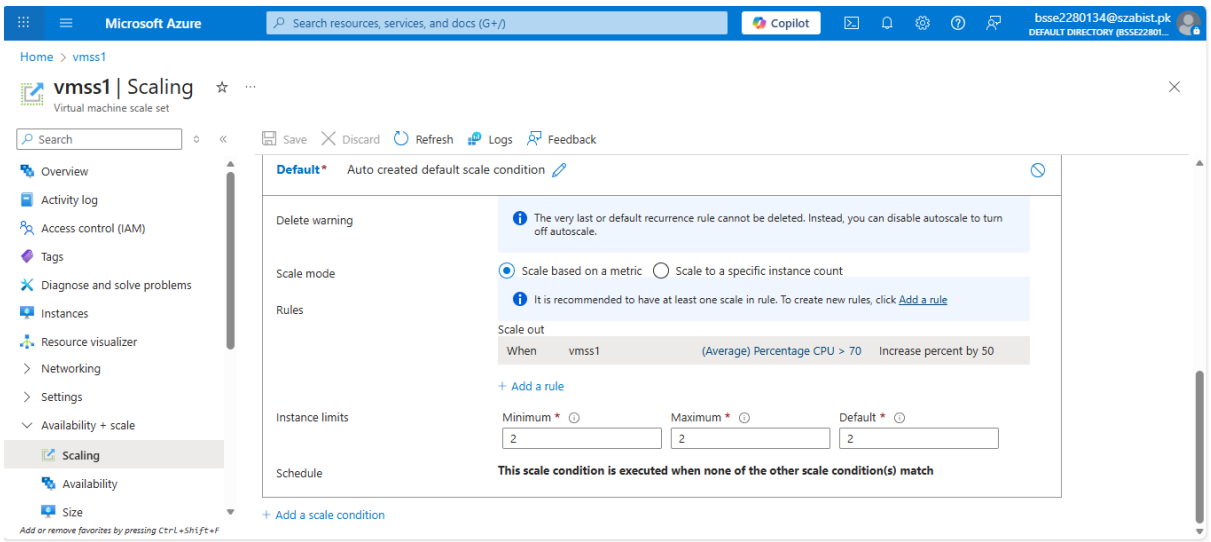


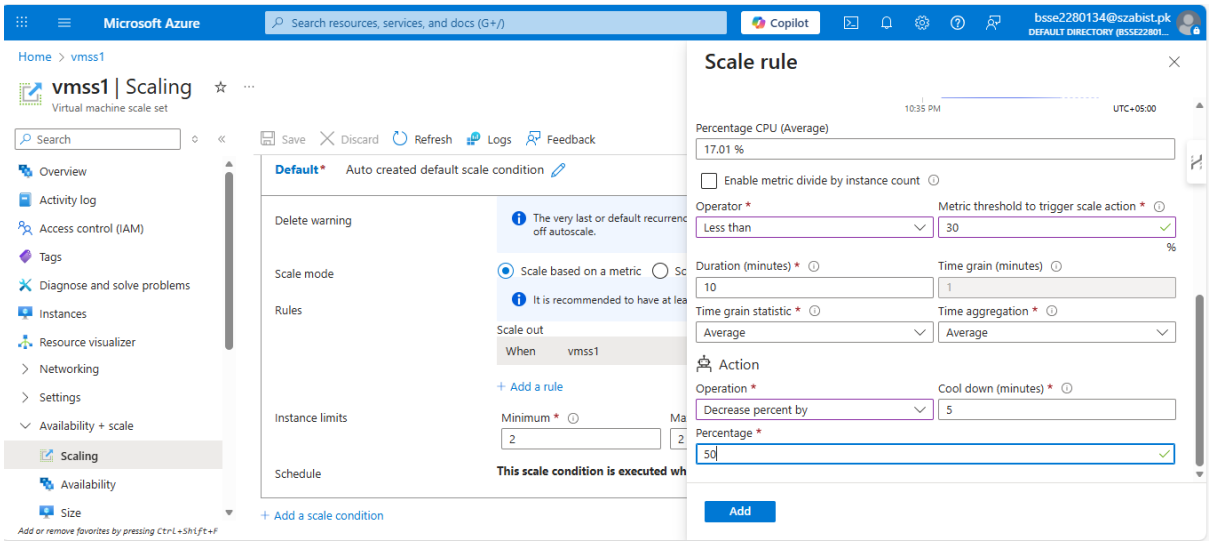




Task 4: Scale Azure Virtual Machine Scale Sets



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Home > vmss1
vmss1 | Scaling
Virtual machine scale set
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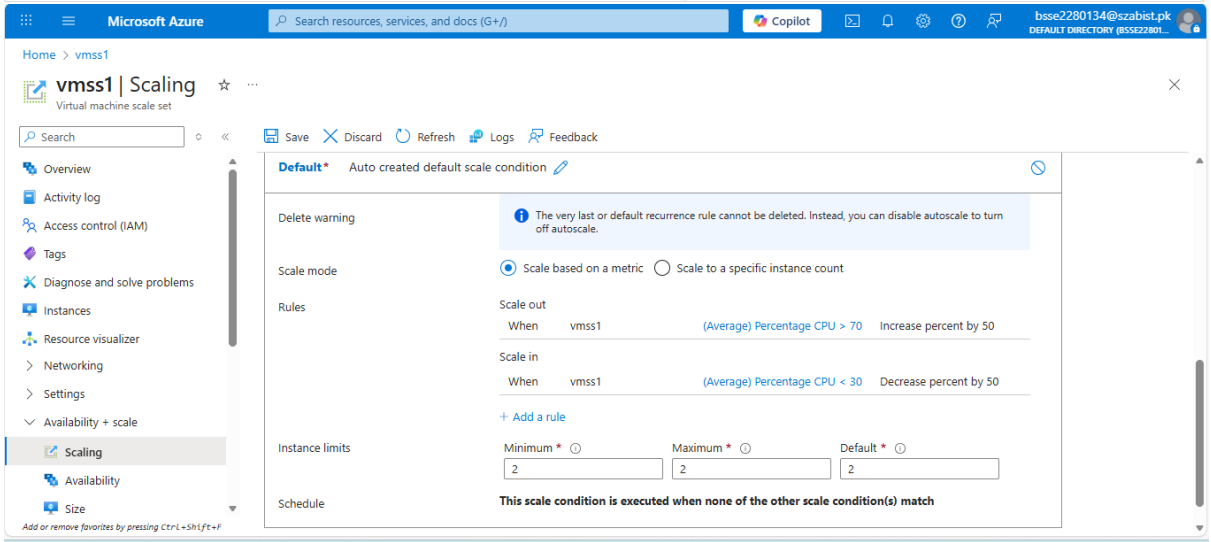
Overview
Activity log
Access control (IAM)
Tags
Diagnose and solve problems
Instances
Resource visualizer
Networking
Settings
Availability + scale
Scaling
Availability
Size
Add or remove favorites by pressing Ctrl+Shift+F
Save
Discard
Refresh
Logs
Feedback
Default*
Auto created default scale condition
Delete warning
The very last or default recurrenc
off autoscale.
Scale mode
Scale based on a metric
Sc
Rules
It is recommended to have at lea
Scale out
When
vmss1
+ Add a rule
Instance limits
Minimum *
2
Schedule
This scale condition is executed wh
+ Add a scale condition
Scale rule
10:35 PM
UTC+05:00
Percentage CPU (Average)
17.01 %
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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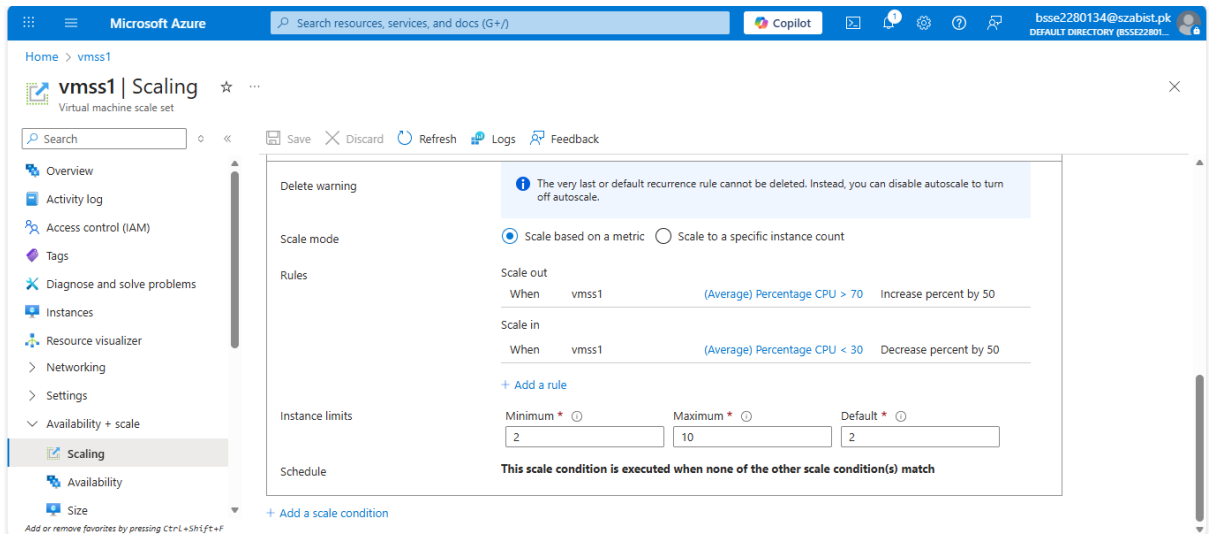
Scaling
Availability
Size
Add or remove favorites by pressing Ctrl+Shift+F
Save
Discard
Refresh
Logs
Feedback
Default*
Auto created default scale condition
Delete warning
The very last or default recurrence rule cannot be deleted. Instead, you can disable autoscale to turn off autoscale.
Scale mode
Scale based on a metric
Scale to a specific instance count
Rules
Scale out
When
vmss1
(Average) Percentage CPU > 70
Increase percent by 50
Scale in
When
vmss1
(Average) Percentage CPU < 30
Decrease percent by 50
+ Add a rule
Instance limits
Minimum *
2
Maximum *
2
Default *
2
Schedule
This scale condition is executed when none of the other scale condition(s) match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Availability
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Add or remove favorites by pressing Ctrl+Shift+F
Save
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Refresh
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Feedback
Delete warning
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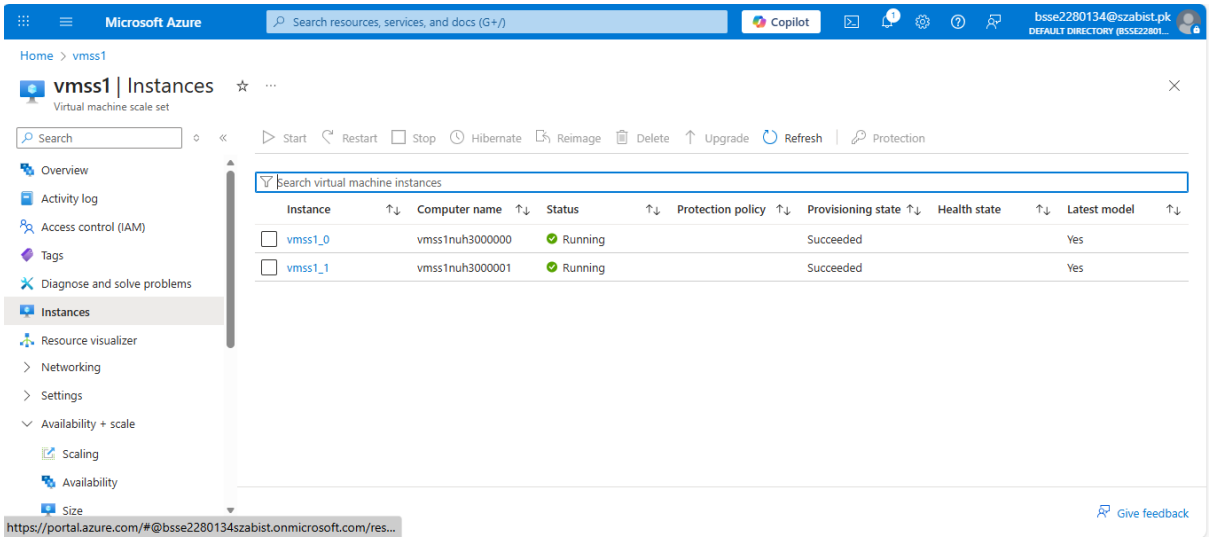
Scale mode
Scale based on a metric
Scale to a specific instance count
Rules
Scale out
When
vmss1
(Average) Percentage CPU > 70
Increase percent by 50
Scale in
When
vmss1
(Average) Percentage CPU < 30
Decrease percent by 50
+ Add a rule
Instance limits
Minimum *
2
Maximum *
10
Default *
2
Schedule
This 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/zainab>     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: zainab
Password for user zainab: ************

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.
```

```
ResourceGroupName       : az104-rg8
Id                      : /subscriptions/2abc1374-49a7-48c3-b0a8-366511eba3ea/resourceGroups/az104-rg8/providers/Microsoft.Compute/virtualMachines/myPSVM
VmId                    : 905b2fe5-b7de-463f-8732-b9d5d6f9924b
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-72ba60.Central India.cloudapp.azure.com
TimeCreated             : 12/22/2025 6:28:50 PM
Etag                    : "2"


PS /home/zainab>
```

```
PS /home/zainab>     Get-AzVM `
>>     -ResourceGroupName 'az104-rg8' `
>>     -Status

ResourceGroupName   Name     Location         VmSize  OsType    NIC Provisioning Zone PowerState MaintenanceAllowed
-----------------   ----     --------         ------  ------    --- ------------ ---- ---------- ------------------
az104-rg8           myPSVM centralindia Standard_D2s_v3 Windows myPSVM    Succeeded    1 VM running

PS /home/zainab>
```

Task 6: Create a virtual machine using the CLI (option 2)

```
sh-5.2$ az vm create \
  --name myCLIVM \
  --resource-group az104-rg8 \
  --image Ubuntu2204 \
  --size Standard_B2s \
  --admin-username localadmin \
  --generate-ssh-keys
The default value of '--size' will be changed to 'Standard_D2s_v5' from 'Standard_DS1_v2' in a future release.
{
  "fqdns": "",
  "id": "/subscriptions/2abc1374-49a7-48c3-b0a8-366511eba3ea/resourceGroups/az104-rg8/providers/Microsoft.Compute/virtualMachines/myCLIVM",
  "location": "centralindia",
  "macAddress": "00-22-48-6E-48-90",
  "powerState": "VM running",
  "privateIpAddress": "192.168.1.5",
  "publicIpAddress": "135.235.153.66",
  "resourceGroup": "az104-rg8"
}
sh-5.2$ az vm show --name myCLIVM --resource-group az104-rg8 --show-details --output table
Name     ResourceGroup    PowerState    PublicIps       Fqdns    Location
-------  ---------------  ------------  --------------  -------  ------------
myCLIVM  az104-rg8        VM running    135.235.153.66           centralindia
sh-5.2$ az vm deallocate --resource-group az104-rg8 --name myCLIVM
sh-5.2$ az vm show --name myCLIVM --resource-group az104-rg8 --show-details --output table
Name     ResourceGroup    PowerState      PublicIps       Fqdns    Location
-------  ---------------  --------------  --------------  -------  ------------
myCLIVM  az104-rg8        VM deallocated  135.235.153.66           centralindia
```