

Lab 08 - Manage Virtual Machines

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

The screenshot shows the Azure portal interface for a deployment named "CreateVm-MicrosoftWindowsServer.WindowsServe...". The deployment is complete, as indicated by a green checkmark and the message "Your deployment is complete". The deployment details table lists the following resources:

Resource	Type	Status
az104-vm-1	Microsoft.Compute/vir...	OK
az104-vm-2	Microsoft.Compute/vir...	OK
az104-vm-1446_z2	Microsoft.Network/net...	Created
az104-vm-1544_z3	Microsoft.Network/net...	Created
az104-vm-1-vnet	Microsoft.Network/virt...	OK
az104-vm-1-nsg	Microsoft.Network/net...	OK
az104-vm-1-ip	Microsoft.Network/pu...	OK

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

Resize vm1 to DS1_v2 from B1s(Free Teer).

The screenshot shows the Azure portal interface for a virtual machine named "az104-vm-1". The virtual machine is running. The Essentials section displays the following information:

Property	Value
Resource group	az104-rg8
Status	Running
Location	East US (Zone 2)
Subscription	Azure for Students
Subscription ID	bcc92c21-80be-4af0-ab7b-38dc7d79ab16
Availability zone	2
Operating system	Windows (Windows Server 2019 Datacenter)
Size	Standard DS1 v2 (1 vcpu, 3.5 GiB memory)
Public IP address	172.210.91.165
Virtual network/subnet	az104-vm-1-vnet/default
DNS name	Not configured
Health state	-
Time created	10/25/2024, 10:37 AM UTC

Attach new disk.

az104-vm-1 | Disks ☆ ...

Virtual machine

Search

Refresh Additional settings Feedback Troubleshoot

Machine size support is for maps. The total for disks attached to virtual machine az104-vm-1 is 200 maps. You can change the virtual machine size to support additional disk(s) throughput. [Learn more](#)

OS disk

Swap OS disk

Disk name	Storage type	Size (GiB)	Max IOPS	Max throughput (...)	Encryption ⓘ
az104-vm-1_OsDisk_1_38210ed32c8	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 (...)	Enc
0	vm1-disk1	Standard SSD LRS	32	500	100	SSE

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

Home > CreateVmss-MicrosoftWindowsServer.WindowsServer-2-20241025135351 | Overview >

vmss1 ☆ ☆ ...

Virtual machine scale set

Search

Move Start Restart Stop Hibernate ...

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Instances

Networking

Settings

Availability + scale

Security

Operations

Monitoring

Automation

Help

Essentials [JSON View](#)

Resource group ([move](#)) : [az104-rg8](#)

Status : [2 out of 2 succeeded](#)

Location : East US (Zone 2, 3)

Subscription ([move](#)) : [Azure for Students](#)

Subscription ID : bcc92c21-80be-4af0-ab7b-...

Operating system : Windows

Size : Standard_DS1_v2 (2 instanc...

Public IP address : [172.171.58.128](#)

Public IP address (IPv6) : -

Virtual network/subnet : [vmss-vnet/subnet0](#)

Orchestration mode : Uniform

Time created : 10/25/2024, 11:02 AM UTC

Tags ([edit](#)) : [Add tags](#)

Properties Monitoring Capabilities (6) ...

Task 4: Scale Azure Virtual Machine Scale Sets.

Scale out rule

Home > CreateVmss-Micro

vmss1 | Scale

Virtual machine scale set

Search

Overview

Activity log

Access control (IAM)

Tags

Diagnose and solve problems

Instances

Networking

Settings

Availability + scale

Scaling

Size

Security

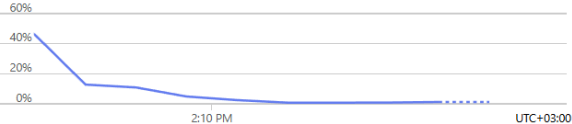
Operations

Monitoring

Automation

Help

Scale rule



Percentage CPU (Average)

21.55 %

☐ Enable metric divide by instance count ⓘ

Operator *

Greater than

Metric threshold to trigger scale action * ⓘ

70

%

Duration (minutes) * ⓘ

10

Time grain (minutes) ⓘ

1

Time grain statistic * ⓘ

Average

Time aggregation * ⓘ

Average

Action

Operation *

Increase percent by

Cool down (minutes) * ⓘ

5

Percentage *

20

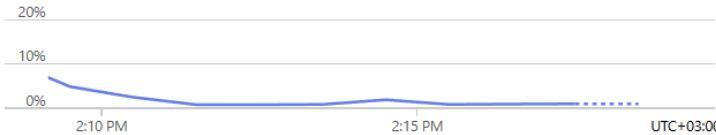
✓

Update

Delete

Scale in rule

Scale rule



Percentage CPU (Average)

3.69 %

☐ 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 *

20

✓

Add

Set the instance limits

Save Discard Refresh Logs Feedback

☒ Scale based on a metric
☐ Scale to a specific instance count

Rules

Scale out

When vmss1 (Average) Percentag... Incre:

Scale in

When vmss1 (Average) Percentag... Decre:

+ 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

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

```
Switch to Bash Restart Manage files New session Editor ...
PS /home/azureuser> New-AzVm `
>> -ResourceGroupName 'az104-rg8' `
>> -Name 'myPSVM' `
>> -Location 'East US' `
>> -Image 'Win2019Datacenter' `
>> -Zone '2' `
>> -Size 'Standard_DS1_v2' `
>> -Credential (Get-Credential)

PowerShell credential request
Enter your credentials.
User: admin02
Password for user admin02: *****

You can reference https://aka.ms/findImagePS on how to find VM Images using PowerShell.
Creating Azure resources [6%]
```

```

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

ResourceGroupName      Name Location      VmSize  OsType      NIC Provisioning
-----
az104-rg8              az104-vm-1 eastus Standard_DS1_v2 Windows az104-vm-1446_z2 ...ded
az104-rg8              az104-vm-2 eastus Standard_B1s Windows az104-vm-1544_z3 ...ded
az104-rg8              myPSVM eastus Standard_DS1_v2 Windows myPSVM ...ded
PS /home/azureuser>

```

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

```

azureuser [ ~ ]$ az vm create --name myCLIVM --resource-group Just-Virtualka --location eastus --image Ubuntu2204 --size Standard_B1s --admin-username localadmin --generate-ssh-keys
{
  "fqdns": "",
  "id": "/subscriptions/bcc92c21-80be-4af0-ab7b-38dc7d79ab16/resourceGroups/Just-Virtualka/providers/Microsoft.Compute/virtualMachines/myCLIVM",
  "location": "eastus",
  "macAddress": "7C-1E-52-45-F0-69",
  "powerState": "VM running",
  "privateIpAddress": "10.0.0.4",
  "publicIpAddress": "52.149.181.204",
  "resourceGroup": "Just-Virtualka",
  "zones": ""
}
azureuser [ ~ ]$

```

```

azureuser [ ~ ]$ az vm show --name myCLIVM --resource-group Just-Virtualka --show-details
{
  "additionalCapabilities": null,
  "applicationProfile": null,
  "availabilitySet": null,
  "billingProfile": null,
  "capacityReservation": null,
  "diagnosticsProfile": null,
  "etag": "\1",
  "evictionPolicy": null,
  "extendedLocation": null,
  "extensionsTimeBudget": null,
  "fqdns": "",
  "hardwareProfile": {
    "vmSize": "Standard_B1s",
    "vmSizeProperties": null
  },
  "host": null,
  "hostGroup": null,
  "id": "/subscriptions/bcc92c21-80be-4af0-ab7b-38dc7d79ab16/resourceGroups/Just-Virtualka/providers/Microsoft.Compute/virtualMachines/myCLIVM",
  "identity": null,
  "licenseType": null,
  "location": "eastus",
  "macAddresses": "7C-1E-52-45-F0-69",
  "managedBy": null,
  "name": "myCLIVM",
  "networkProfile": {
    "networkApiVersion": null,
    "networkInterfaceConfigurations": null,
    "networkInterfaces": [

```

```
azureuser [ ~ ]$ az vm deallocate --resource-group Just-Virtualka --name myCLIVM
azureuser [ ~ ]$
```