

## Module 4: Assignment 3

### Tasks To Be Performed:

1. Create a VM scale set with Ubuntu as OS
2. Give min VM's as 1 and maximum as 5
3. For scale-out CPU % is 75 and increase by 1 VM
4. For scale-in CPU % is 25 increase by 1 VM

Solution:

### 1. Create a VM Scale Set with Ubuntu as OS

Navigate to the Azure Portal:

Go to the Azure Portal and log in with your credentials.

Create a New VM Scale Set:

In the Azure Portal, search for "Virtual machine scale sets" in the search bar.

Click on "Create" to start the setup.

Basics Tab:

Subscription: Select your Azure subscription.

Resource group: Select an existing resource group or create a new one.

Name: Give your scale set a name.

Region: Choose the region where you want the scale set to be deployed.

Availability Zone: Select the appropriate availability zone (if needed).

Image: Choose "Ubuntu Server" as the OS.

Size: Choose an appropriate VM size for the scale set.

Authentication type: Select the authentication method (SSH or password).

Instance count: Set the initial number of instances, e.g., 1.

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## Create a virtual machine scale set

Basics

Spot

Disks

Networking

Management

Health

Advanced

Tags

Review + create

Azure virtual machine scale sets let you create and manage a group of load balanced VMs. The number of VM instances can automatically increase or decrease in response to demand or a defined schedule. Scale sets provide high availability to your applications, and allow you to centrally manage, configure, and update a large number of VMs.

[Learn more about virtual machine scale sets](#)

### 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 \*

123

Create new

### Scale set details

Virtual machine scale set name \*

UbuntuVMSS

Region \*

(Asia Pacific) Central India

Availability zone ⓘ

None

### Orchestration

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aldrinfiguredo1506@ig...  
DEFAULT DIRECTORY (ALDRINFIG...

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Scaling configuration

Condition

Mode

Instance Count

CPU Threshold

Schedule

Default condition

Autoscale

(2, 20, 2)

(80%, 20%)

No

Predictive autoscaling

Enable forecast for predictive autoscaling

Diagnostic logs

Collect diagnostic logs from Autoscale

Scale-In policy

Configure the order in which virtual machines are selected for deletion during a scale-in operation.

Scale-in policy

Default - Balance across zones then delete VM with highest instance ID

Apply force delete to scale-in

Save

Cancel

Add a scaling condition

Condition name \*

Assignment 3 condition

Scale mode

Manually update the capacity: Scaling based on a CPU metric, on any schedule

Autoscaling: Scaling based on a CPU metric, on any schedule

Initial instance count \*

1

Instance limit

Minimum \*

1

The minimum count of instances this condition will scale down to is 1.

Maximum \*

5

The maximum count of instances this condition will scale up to is 5.

Scale out

CPU threshold greater than \*

75

Every time the average CPU usage is greater than 75%.

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### Scaling configuration

Condition	Mode	Instance Count	CPU Threshold	Schedule
Default condition	Autoscale	(2, 20, 2)	(80%, 20%)	No

**Predictive autoscaling**

Enable forecast for predictive autoscaling ☐

**Diagnostic logs**

Collect diagnostic logs from Autoscale ☐

**Scale-in policy**

Configure the order in which virtual machines are selected for deletion during a scale-in operation.

Scale-in policy

Apply force delete to scale-in ☐

**Add a scaling condition**

75  
Every time the average CPU usage is greater than 75%.

Increase instance count by \* 1  
The condition will increase the instance count by 1 instances

**Scale in**  
CPU threshold less than \* 25  
Every time the average CPU usage is less than 25%.

Decrease instance count by \* 1  
The condition will decrease the instance count by 1 instances

**Query duration**  
Minutes \* 5

**Schedule**  
This is the auto created default condition. This condition cannot be deleted. Instead, you can disable autoscale to turn off autoscale. Since this condition is executed when no schedule(s) of the other scale condition(s) match, scheduling will not be needed for this condition.

**Save** **Cancel**

### 3. Configure Scale-out at 75% CPU to Increase by 1 VM

Scaling:

Go to the "Scaling" tab within the scale set creation process.

Scale-out rules:

Add a new rule for scaling out.

Set the metric to "CPU Percentage."

Set the condition to "Greater than" 75%.

Set the action to "Increase count by" 1.

### 4. Configure Scale-in at 25% CPU to Decrease by 1 VM

Scale-in rules:

Add a new rule for scaling in.

Set the metric to "CPU Percentage."

Set the condition to "Less than" 25%.

Set the action to "Decrease count by" 1.

5. Review and Create

Review:

Review all your settings.

Create:

Click "Create" to deploy the VM scale set.

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Scaling configuration

An Azure virtual machine scale set can automatically increase or decrease the number of VM instances that run your application. This automated and elastic behavior reduces the management overhead to monitor and optimize the performance of your application. [Learn more about VMSS scaling.](#)

Scaling conditions

+ Add a scaling condition

Delete

<input type="checkbox"/>	Condition	Mode	Instance Count	CPU Threshold	Schedule	
<input type="checkbox"/>	Assignment 3 condition	Autoscale	(1, 5, 1)	(75%, 25%)	No	

Predictive autoscaling

Enable forecast for predictive autoscaling

☐

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Create a virtual machine scale set

Scaling configuration

Condition	Mode	Instance Count	CPU Threshold	Schedule	
Assignment 3 condition	Autoscale	(1, 5, 1)	(75%, 25%)	No	

Predictive autoscaling

Enable forecast for predictive autoscaling

Diagnostic logs

Collect diagnostic logs from Autoscale

Scale-In policy

Configure the order in which virtual machines are selected for deletion during a scale-in operation.

Scale-in policy

Default - Balance across zones then delete VM with highest instance ID

Apply force delete to scale-in operations

Save

Cancel

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Virtual machine scale sets

Create a virtual machine scale set

Scaling

Scaling mode

Manually update the capacity: Maintain a fixed amount of instances.

Autoscaling: Scaling based on a CPU metric, on any schedule.

No scaling profile: manual attach virtual machines after deployment

Scaling configuration \*

Scaling configuration

Scaling condition count: 1

Predictive autoscaling: Disabled

Diagnostic logs: Disabled

Scale-in policy: Default

Force delete: Disabled

Configure

Instance details

Image

Ubuntu Server 24.04 LTS - x64 Gen2 (free services eligible)

See all images | Configure VM generation

VM architecture

Arm64

x64

Size

Standard\_D2s\_v3 - 2 vcpus, 8 GiB memory (€6.376.87/month)

See all sizes

Enable Hibernation

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## Create a virtual machine scale set

Image \*

Ubuntu Server 24.04 LTS - x64 Gen2 (free services eligible)

See all images | Configure VM generation

VM architecture

Arm64

x64

Size \*

Standard\_D2s\_v3 - 2 vcpus, 8 GiB memory (₹6,376.87/month)

See all sizes

Enable Hibernation

☐

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 Hibernation does not currently support Uniform Orchestration mode. [Learn more](#)

Administrator account

Authentication type

Password

SSH public key

Username \*

Jungkook

Password \*

.....

Confirm password \*

.....

# Create a virtual machine scale set

Validation passed

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## Basics

Subscription	Free Trial
Resource group	123
Virtual machine scale set name	UbuntuVMSS
Region	Central India
Orchestration mode	Uniform
Availability zone	None
Image	Ubuntu Server 24.04 LTS - Gen2
Size	Standard D2s v3 (2 vcpus, 8 GiB memory)
Scaling mode	Autoscaling
Scaling condition count	1
Predictive autoscaling	Disabled
Diagnostics logs	Disabled
Scale-in policy	Default
Force delete	Disabled
Security type	Trusted launch virtual machines
Enable secure boot	Yes

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Deployment

Search

Delete

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Redeploy

Download

Refresh

Overview

Inputs

Outputs

Template

Deployment is in progress

Deployment name : CreateVmss-canonical.ubuntu-24\_04-lts-server-20240... Start time : 8/26/2024, 7:20:11 PM

Subscription : Free Trial Correlation ID : 5808a6c0-bdf2-4114-b4bb-4ab16ee43964

Resource group : 123

Deployment details

Resource	Type	Status	Operation details
basicNsg123-vnet-nic01	Network security group	Created	Operation details
123-vnet	Virtual network	Created	Operation details

Give feedback

Tell us about your experience with deployment

Microsoft Secure you

Go to Mic

Free Micro Start learn

Work with Azure experts who can help and be your

Find an A:

Deployment in progress

Deployment to resource group



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Deployment

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Overview

Inputs

Outputs

Template

Your deployment is complete

Deployment name : CreateVmss-canonical.ubuntu-24\_04-lts-server-20240... Start time : 8/26/2024, 7:20:11 PM

Subscription : Free Trial Correlation ID : 5808a6c0-bdf2-4114-b4bb-4ab16ee43964

Resource group : 123

> Deployment details

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Go to resource

Give feedback

Tell us about your experience with deployment

CosGetpreSet

MicSecGo

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Tags

Diagnose and solve problems

Instances

Networking

Settings

Availability + scale

Security

Operations

Monitoring

Insights

Alerts

Metrics

Logs

Connection monitor

Workbooks

Essentials

Resource group (move) : 123

Status : 1 out of 1 succeeded

Location : Central India

Subscription (move) : Free Trial

Subscription ID : b38e9b3d-e40f-4a03-9ae8-665ffd950134

Operating system : Linux

Size : Standard\_D2s\_v3 (1 instance)

Public IP address : -

Public IP address (IPv6) : -

Virtual network/subnet : 123-vnet/default

Orchestration mode : Uniform

Time created : 8/26/2024, 1:50 PM UTC

Tags (edit) : Add tags

PropertiesMonitoringCapabilities (6)RecommendationsTutorials

Show data for last: 1 hour6 hours12 hours1 day7 days30 days

CPU (average)

Network (total)

Disk bytes (total)

Type here to search

23°C Cloudy

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UbuntuVMSS | Instances

Virtual machine scale set

Search

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Search virtual machine instances

InstanceComputer nameStatusProtection policyProvisioning stateHealth state

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Overview

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Diagnose and solve problems

