

AWS Solutions Architect Certification Training

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Module 3 - Assignment COMPLETED by Nagesha. K.S. **Please check the following screenshots for each question.**

Problem Statement:

You work for XYZ Corporation that uses on-premises solutions and some limited number of systems. With the increase in requests in its application, the load has increased. So, to handle the load, the company needs to buy more systems almost on a regular basis. Realizing the need to cut down the expenses on systems, the company has decided to move its infrastructure onto AWS.

You are asked to:

1. Manage the scaling requirements of the company by:
 - Deploying multiple compute resources on the cloud as soon as the load increases and the CPU utilization exceeds 80%
 - Removing the resources when the CPU utilization goes under 60%
2. Create an Application Load balancer to distribute the load between compute resources
 - In your two target groups, make one for Blue deployment and the other for Green
 - Use weighted routing to route 70% of the traffic to the Blue target group and 30% of the traffic to the Green target group

3. Route the traffic to the company's domain

Note: You can get a free domain from [Freenom](#)

1. Manage the scaling requirements of the company by:

- Deploying multiple compute resources on the cloud as soon as the load increases and the CPU utilization exceeds 80%
- Removing the resources when the CPU utilization goes under 60%

The screenshot displays the AWS Management Console interface for the 'us-east-1' region. The left sidebar shows the navigation menu with options like 'EC2 Dashboard', 'EC2 Global View', 'Events', 'Console-to-Code', and 'Instances'. The main content area shows the 'Instances (1/1)' page with a table listing the instance 'NageshaKS-AWS-Mod-3' with ID 'i-08592b8a6dcc0a7e9', state 'Running', and type 't2.micro'. Below the table, the 'Details' tab for the selected instance is open, showing the instance summary with fields like 'Instance ID', 'Public IPv4 address', 'Private IPv4 addresses', 'IPv6 address', 'Instance state', and 'Public IPv4 DNS'. The instance state is confirmed as 'Running'.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
NageshaKS-AWS-Mod-3	i-08592b8a6dcc0a7e9	Running	t2.micro	Initializing	View alarms	us-east-1a

i-08592b8a6dcc0a7e9 (NageshaKS-AWS-Mod-3)

Instance summary

Instance ID	Public IPv4 address	Private IPv4 addresses
i-08592b8a6dcc0a7e9 (NageshaKS-AWS-Mod-3)	34.235.169.164 open address	172.31.33.34
IPv6 address	Instance state	Public IPv4 DNS
-	Running	ec2-34-235-169-164.compute-1.amazonaws.com open address

Images | EC2 | us-east-1

Images | EC2 | us-east-1

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us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#images:visibility=owned-by-me

aws

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Amazon Machine Images (AMIs) (1/1) info

Recycle Bin

EC2 Image Builder

Actions

Launch instance from AMI

Owned by me

Find AMI by attribute or tag

Name

AMI name

AMI ID

Source

Owner

NageshaKS-AMI

ami-0406473a647cd7321

289436155303/NageshaKS-AMI

289436155303

AMI ID: ami-0406473a647cd7321

Details

Permissions

Storage

Tags

AMI ID

ami-0406473a647cd7321

Image type

machine

Platform details

Linux/UNIX

Root device type

EBS

AMI name

NageshaKS-AMI

Owner account ID

289436155303

Architecture

x86_64

Usage operation

RunInstances

Root device name

/dev/xvda

Status

Pending

Source

289436155303/NageshaKS-AMI

Virtualization type

hvm

Boot mode

State reason

Creation date

Kernel 3D

Activate Windows

Go to Settings to activate Windows.

CloudShell

Feedback

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28-07-2024

Create Auto Scaling group | EC2 xAuto Scaling groups | EC2 | us-east-1 x

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#AutoScalingGroups:id=Mod-3%2520autoscaling:view=details

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EC2 > Auto Scaling groups

Auto Scaling groups (1/1) Info

Launch configurationsLaunch templatesActionsCreate Auto Scaling group

Search your Auto Scaling groups

<input checked="" type="checkbox"/>	Name	Launch template/configuration	Instances	Status	Desired capacity	Min	Max
<input checked="" type="checkbox"/>	Mod-3 autoscaling	Mod-3-autoscaling-template Version De	2	-	2	1	3

Auto Scaling group: Mod-3 autoscaling

DetailsActivityAutomatic scalingInstance managementMonitoringInstance refresh

Group details

Auto Scaling group name	Desired capacity	Desired capacity type	Amazon Resource Name (ARN)
Mod-3 autoscaling	2	Units (number of instances)	arn:aws:autoscaling:us-east-1:289436155303:autoScalingGroup:864e7f22-27ee

Edit

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Create Auto Scaling group | EC2

EC2 | us-east-1

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Instances:instanceState=running

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Instances (3/3) Info

Refresh

Connect

Instance state

Actions

Launch instances

Find Instance by attribute or tag (case-sensitive)

All states

Instance state = running

Clear filters

< 1 >

<input checked="" type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone
<input checked="" type="checkbox"/>		i-0091294ef00956f15	Running	t2.micro	2/2 checks passed	View alarms	us-east-1a
<input checked="" type="checkbox"/>		i-00accacd8a7b6ce64	Running	t2.micro	2/2 checks passed	View alarms	us-east-1a
<input checked="" type="checkbox"/>	NageshaKS-AWS-Mod-3	i-08592b8a6dcc0a7e9	Running	t2.micro	2/2 checks passed	View alarms	us-east-1a

3 instances selected

Monitoring

Configure CloudWatch agent

Alarm recommendations

3h 1d 1w 1h UTC timezone

Add to dashboard

CPU utilization (%)

Various units

0.333

Network in (bytes)

Various units

5.85k

Network out (bytes)

Various units

6.62k

Network packets in ...

Various units

53.8

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Create Auto Scaling group | EC2

EC2 | us-east-1

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Instances:instanceState=running

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Instances (1/3)

Info

Find Instance by attribute or tag (case-sensitive)

Instance state = running

Clear filters

All states

Launch instances

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Avail...
<input checked="" type="checkbox"/>		i-0091294ef00956f15	Running	t2.micro	2/2 checks passed	View alarms	us-
<input type="checkbox"/>		i-00accacdb8a7b6ce64	Running	t2.micro	2/2 checks passed	View alarms	us-
<input type="checkbox"/>	NageshaKS-AWS-Mod-3	i-08592b8a6dcc0a7e9	Running	t2.micro	2/2 checks passed	View alarms	us-

i-0091294ef00956f15

Details

Status and alarms

Monitoring

Security

Networking

Storage

Tags

Instance summary

Instance ID

i-0091294ef00956f15

IPv6 address

Public IPv4 address

18.206.254.172 | open address

Instance state

Running

Private IPv4 addresses

172.31.81.43

Public IPv4 DNS

ec2-18-206-254-172.compute-1.amazonaws.com

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Create Auto Scaling group | EC2

EC2 | us-east-1

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Instances:instanceState=running

aws

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Instance state

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Find Instance by attribute or tag (case-sensitive)

All states

Instance state = running

Clear filters

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<input type="checkbox"/>		i-0091294ef00956f15	Running	t2.micro	2/2 checks passed	View alarms	us-east-1a
<input checked="" type="checkbox"/>		i-00accacd8a7b6ce64	Running	t2.micro	2/2 checks passed	View alarms	us-east-1a
<input type="checkbox"/>	NageshaKS-AWS-Mod-3	i-08592b8a6dcc0a7e9	Running	t2.micro	2/2 checks passed	View alarms	us-east-1a

i-00accacd8a7b6ce64

Details

Status and alarms

Monitoring

Security

Networking

Storage

Tags

Instance summary Info

Instance ID

i-00accacd8a7b6ce64

Public IPv4 address

3.86.76.125 | open address

Private IPv4 addresses

172.31.85.107

IPv6 address

-

Instance state

Running

Public IPv4 DNS

ec2-3-86-76-125.compute-1.amazonaws.com | open address

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2. Create an Application Load balancer to distribute the load between compute resources

- In your two target groups, make one for Blue deployment and the other for Green
- Use weighted routing to route 70% of the traffic to the Blue target group and 30% of the traffic to the Green target group

The screenshot displays the AWS Management Console interface. At the top, a green notification banner states: "Successfully created load balancer: Mod-3-ALB. It might take a few minutes for your load balancer to fully set up and route traffic. Targets will also take a few minutes to complete the registration process and pass initial health checks." Below this, the breadcrumb navigation shows "EC2 > Load balancers > Mod-3-ALB". The main content area is titled "Mod-3-ALB" and includes a "Details" section with the following information:

Load balancer type Application	Status Provisioning	VPC vpc-0bf0d5db870ff0f7c	Load balancer IP address type IPv4
Scheme Internet-facing	Hosted zone Z35SXDOTRQ7X7K	Availability Zones subnet-02306b09dbfd29a85 us-east-1b (use1-az4) subnet-035a71c6682bb50f4 us-east-1a (use1-az2)	Date created July 28, 2024, 20:35 (UTC+05:30)
Load balancer ARN		DNS name Info	

The left sidebar contains navigation links for EC2 Dashboard, EC2 Global View, Events, Console-to-Code, and various instance and image options. The bottom of the screen shows a Windows taskbar with the date and time as 20:36 on 28-07-2024.

Create Auto Scaling group | EC2

Load balancer details | EC2 | us-east-1

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#LoadBalancer:loadBalancerArn=arn:aws:elasticloadbalancing:us-east-1:289436155303:loadbalancer/app/Mod-3-ALB

Services

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EC2 Dashboard

EC2 Global View

Events

Console-to-Code [Preview](#)

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Successfully created listener.

EC2 > Load balancers > Mod-3-ALB

Mod-3-ALB

🔄

Actions

▼ Details

Load balancer type Application	Status Active	VPC vpc-0bf0d5db870ff0f7c	Load balancer IP address type IPv4
Scheme Internet-facing	Hosted zone Z35SXDOTRQ7X7K	Availability Zones subnet-02306b09dbfd29a85 us-east-1b (use1-az4) subnet-035a71c6682bb50f4 us-east-1a (use1-az2)	Date created July 28, 2024, 20:35 (UTC+05:30)
Load balancer ARN arn:aws:elasticloadbalancing:us-east-1:289436155303:loadbalancer/app/Mod-3-ALB/7c1ea5fe29bcbef0		DNS name Info Mod-3-ALB-531384855.us-east-1.elb.amazonaws.com (A Record)	

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3. Route the traffic to the company's domain

Note: You can get a free domain from [Freenom](#)

freenom is not accepting new domain names as mentiod below. I tried with AWS Route 53 but it charges in USD.

