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Lab 4

1- create load balancer

Load balancers (1/1)

Elastic Load Balancing scales your load balancer capacity automatically in response to changes in incoming traffic.

Filter by property or value

<input checked="" type="checkbox"/>	Name	DNS name	State	VPC ID	Availability Zones	Type	Date created
<input checked="" type="checkbox"/>	lb-labs-DevOps-iti	lb-labs-DevOps-iti-375252...	Active	vpc-0e8480a77de7d1bd8	3 Availability Zones	application	September 8, 2023, 14:18 (UTC+03:00)

us-east-1c (use1-az1)

us-east-1a (use1-az4)

us-east-1b (use1-az6)

2- create ASG

Auto Scaling groups (1)

Search your Auto Scaling groups

<input type="checkbox"/>	Name	Launch template/configuration	Instances	Status	Desired capacity	Min	Max	Availability Zones
<input type="checkbox"/>	ASG-labs-DevOps-iti	lt-lab4-DevOps-iti Version Latest	1	-	1	1	3	us-east-1a, us-east-1b, us-east-1c

3- create launch template to have script to install httpd and print hostname in index.html file (script I used in lec)

Launch templates > lt-lab4-DevOps-iti

lt-lab4-DevOps-iti (lt-011f0dc52a84c7a3b)

Actions Delete template

Launch template details

Launch template ID	Launch template name	Default version	Owner
lt-011f0dc52a84c7a3b	lt-lab4-DevOps-iti	1	arn:aws:iam::355001659877:root

Details Versions Template tags

Launch template version details

Version: 1 (Default)

Description: -

Date created: 2023-09-08T11:06:29.000Z

Created by: arn:aws:iam::355001659877:root

Instance details Storage Resource tags Network interfaces Advanced details

AMI ID	Instance type	Availability Zone	Key pair name
ami-01c647eace872fc02	t2.micro	-	lab4
Security groups	Security group IDs		
-	sg-0cd49129359a29c7f		

4- make sure the desired number of machines has been created.

Group details

Auto Scaling group name	Desired capacity
ASG-labs-DevOps-iti	2
Date created	Minimum capacity
Fri Sep 08 2023 14:24:43 GMT+0300 (Eastern European Summer Time)	1
	Maximum capacity
	3

Instances (9) [Info](#)

[Refresh](#) [Connect](#) [Instance state](#) [Actions](#) [Launch instances](#)

<input type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP	IF
<input type="checkbox"/>	-	i-0749c085775e04a71	Running	t2.micro	Initializing	No alarms	us-east-1a	ec2-54-163-38-156.co...	54.163.38.156	-	-
<input type="checkbox"/>	-	i-002080799a5df05b8	Running	t2.micro	2/2 checks passed	No alarms	us-east-1b	ec2-35-174-9-229.com...	35.174.9.229	-	-
<input type="checkbox"/>	-	i-024f9a54e6c129c36	Terminated	t2.micro	-	No alarms	us-east-1a	-	-	-	-

← → ↻ ⚠ Not secure | lb-labs-devops-iti-375252632.us-east-1.elb.amazonaws.com

Hello World From ip-10-0-22-31.ec2.internal

← → ↻ ⚠ Not secure | lb-labs-devops-iti-375252632.us-east-1.elb.amazonaws.com

Hello World From ip-10-0-9-62.ec2.internal

← → ↻ ⚠ Not secure | lb-labs-devops-iti-375252632.us-east-1.elb.amazonaws.com

Hello World From ip-10-0-44-3.ec2.internal

5-create scale policy to increase ec2 from 2 to 3 incase cpu is over 70%

Scale Down

Simple scaling

Enabled

Scale down will occur

breaches the alarm threshold: CPUUtilization < 20 for 1 consecutive periods of 300 seconds for the metric dimensions:

AutoScalingGroupName = ASG-labs-DevOps-iti

Remove 1 capacity units

300 seconds before allowing another scaling activity

Scale Up

Simple scaling

Enabled

scale up is a must

breaches the alarm threshold: CPUUtilization > 70 for 1 consecutive periods of 300 seconds for the metric dimensions:

AutoScalingGroupName = ASG-labs-DevOps-iti

Add 1 capacity units

300 seconds before allowing another scaling activity

6-increase the instances cpu to be 100% and see what happens


```
Example: stress --cpu 8 --io 4 --vm 2 --vm-bytes 128M --timeout 10s

Note: Numbers may be suffixed with s,m,h,d,y (time) or B,K,M,G (size) .
[ec2-user@ip-10-0-22-31 ~]$ stress --cpu 8
stress: info: [26276] dispatching hogs: 8 cpu, 0 io, 0 vm, 0 hdd

Installed:
  stress-1.0.4-28.amzn2023.0.2.x86_64

Complete!
[ec2-user@ip-10-0-9-62 ~]$ stress --cpu 8
stress: info: [26221] dispatching hogs: 8 cpu, 0 io, 0 vm, 0 hdd
```

ALARM: "scale up is a must" in US East (N. Virginia) Inbox x

 **AWS Notifications** <no-reply@sns.amazonaws.com> 3:42 PM (0 minutes ago)

to me ▾

You are receiving this email because your Amazon CloudWatch Alarm "scale up is a must" in the US East (N. Virginia) region has entered the ALARM state, because "Threshold Crossed: 1 out of the last 1 datapoints [99.81854308395103 (08/09/23 12:32:00)] was greater than the threshold (70.0) (minimum 1 datapoint for OK -> ALARM transition)." at "Friday 08 September, 2023 12:42:24 UTC".

View this alarm in the AWS Management Console:
<https://us-east-1.console.aws.amazon.com/cloudwatch/deeplink.js?region=us-east-1#alarmsV2:alarm/scale%20up%20is%20a%20must>

Alarm Details:

- Name:

scale up is a must

- Description:

- State Change:

OK -> ALARM

- Reason for State Change:

Threshold Crossed: 1 out of the last 1 datapoints [99.81854308395103 (08/09/23 12:32:00)] was greater than the threshold (70.0) (minimum 1 datapoint for OK -> ALARM transition).

- Timestamp:

Friday 08 September, 2023 12:42:24 UTC

- AWS Account:

355001659877

- Alarm Arn:

arn:aws:cloudwatch:us-east-1:355001659877:alarm:scale up is a must

Threshold:

- The alarm is in the ALARM state when the metric is GreaterThanThreshold 70.0 for at least 1 of the last 1 period(s) of 300 seconds.

Monitored Metric:

- MetricNamespace:

AWS/EC2

- MetricName:

CPUUtilization

- Dimensions:

[AutoScalingGroupName = ASG-labs-DevOps-ItI]

- Period:

300 seconds

- Statistic:

Average

- Unit:

not specified

- TreatMissingData:







missing

State Change Actions:

- OK:

- ALARM: [arn:aws:sns:us-east-1:355001659877:alert] [arn:aws:autoscaling:us-east-1:355001659877:scalingPolicy:59281018-f4fa-411f-af5f-e24a47e8cd35:autoScalingGroupName/ASG-labs-DevOps-ItI:policyName/Scale Up]

- INSUFFICIENT_DATA:

<input type="checkbox"/>	Name ▾	Instance ID	Instance state ▲	Instance type ▾	Status check
<input type="checkbox"/>	-	i-0749c085775e04a71	✔ Running  	t2.micro	✔ 2/2 checks passed
<input type="checkbox"/>	-	i-07ac0dcce1dde8962	✔ Running  	t2.micro	⌚ Initializing
<input type="checkbox"/>	-	i-002080799a5df05b8	✔ Running  	t2.micro	✔ 2/2 checks passed

7-create scale down plicy of cpu is under 20%

Scale Down

Simple scaling

Enabled

Scale down will occur

breaches the alarm threshold: CPUUtilization < 20 for 1 consecutive periods of 300 seconds for the metric dimensions:

AutoScalingGroupName = ASG-labs-DevOps-iti

Remove 1 capacity units

300 seconds before allowing another scaling activity

Scale Up

Simple scaling

Enabled

scale up is a must

breaches the alarm threshold: CPUUtilization > 70 for 1 consecutive periods of 300 seconds for the metric dimensions:

AutoScalingGroupName = ASG-labs-DevOps-iti

Add 1 capacity units

300 seconds before allowing another scaling activity

8-kill process that increase resouces and see what happens

ALARM: "Scale down will occur" in US East (N. Virginia)

AWS Notifications

<no-reply@sns.amazonaws.com>

to me

3:52 PM (4 minutes ago)

You are receiving this email because your Amazon CloudWatch Alarm "Scale down will occur" in the US East (N. Virginia) region has entered the ALARM state, because "Threshold Crossed: 1 out of the last 1 datapoints [5.072867783293627 (08/09/23 12:42:00)] was less than the threshold (20.0) (minimum 1 datapoint for OK -> ALARM transition)." at "Friday 08 September, 2023 12:52:33 UTC".

View this alarm in the AWS Management Console:
<https://us-east-1.console.aws.amazon.com/cloudwatch/deeplink.js?region=us-east-1#alarmsV2:alarm:Scale%20down%20will%20occur>

Alarm Details:

- Name: Scale down will occur
- Description:
- State Change: OK -> ALARM
- Reason for State Change: Threshold Crossed: 1 out of the last 1 datapoints [5.072867783293627 (08/09/23 12:42:00)] was less than the threshold (20.0) (minimum 1 datapoint for OK -> ALARM transition).
- Timestamp: Friday 08 September, 2023 12:52:33 UTC
- AWS Account: 355001659877
- Alarm Arn: arn:aws:cloudwatch:us-east-1:355001659877:alarm:Scale down will occur

Threshold:

- The alarm is in the ALARM state when the metric is LessThanThreshold 20.0 for at least 1 of the last 1 period(s) of 300 seconds.

Monitored Metric:

- MetricNamespace: AWS/EC2
- MetricName: CPUUtilization
- Dimensions: [AutoScalingGroupName = ASG-labs-DevOps-iti]
- Period: 300 seconds
- Statistic: Average
- Unit: not specified
- TreatMissingData: missing

State Change Actions:

- OK:
- ALARM: [arn:aws:autoscaling:us-east-1:355001659877:scalingPolicy:1005f77c-05e3-42bb-a132-72df9a67d513:autoScalingGroupName/ASG-labs-DevOps-iti:policyName/Scale Down] [arn:aws:sns:us-east-1:355001659877:alert]
- INSUFFICIENT_DATA:

Instances (3)

🔍 Filter instances

↻

Actions ▾

<

1

>

⌛

<input type="checkbox"/>	Instance ID ▲	Lifecycle ▾	Instance type ▾	Weighted capacity ▾	Launch templat... ▾	Availability Zone ▾	Health status ▾	Protected from ▾
<input type="checkbox"/>	i-002080799a5df05b8 🔗	Terminating	t2.micro	-	lt-lab4-DevOps-iti 🔗 🔗	us-east-1b	🟢 Healthy	
<input type="checkbox"/>	i-0749c085775e04a71 🔗	InService	t2.micro	-	lt-lab4-DevOps-iti 🔗 🔗	us-east-1a	🟢 Healthy	
<input type="checkbox"/>	i-07ac0dce1dde8962 🔗	InService	t2.micro	-	lt-lab4-DevOps-iti 🔗 🔗	us-east-1c	🟢 Healthy	