

## Week 7 – Lab 1: Introduction to AWS IAM

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### Task 1: Create an AMI for Auto Scaling

Currently creating AMI `ami-0f9b5967377865516` from instance `i-08fa3fe9dc6c2c4eb`. Check that the AMI status is 'Available' before deleting the instance or carrying out other actions related to this AMI.

**Instances (1/2)** Info

Find Instance by attribute or tag (case-sensitive)

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability
<input checked="" type="checkbox"/>	Web Server 1	<code>i-08fa3fe9dc6c2c4eb</code>	Running	t2.micro	2/2 checks passed	<a href="#">View alarms</a>	us-east-1a
<input type="checkbox"/>	Bastion Host	<code>i-0c6ebe552daa9d1ff</code>	Running	t2.micro	2/2 checks passed	<a href="#">View alarms</a>	us-east-1a

*Figure 1: Create AMI for Web Server 1 instance.*

## Task 2: Create a Load Balancer

Programming [Alt+S] N. Virginia voclabs/user3267534=104775085@student.swin.edu.au @ 5335-0442...

✓ Successfully created the target group: **LabGroup**. Anomaly detection is automatically applied to all registered targets. Results can be viewed in the **Targets** tab.

EC2 > Target groups > LabGroup

### LabGroup

Actions ▾

**Details**

arn:aws:elasticloadbalancing:us-east-1:533504420100:targetgroup/LabGroup/d868b280bd91184e

Target type Instance	Protocol : Port HTTP: 80	Protocol version HTTP1	VPC <a href="#">vpc-098c0842cb3fdcec6</a>
IP address type IPv4	Load balancer <a href="#">None associated</a>		

0 Total targets	✓ 0 Healthy 0 Anomalous	✗ 0 Unhealthy	⌚ 0 Unused	⌚ 0 Initial	⌚ 0 Draining
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Figure 2: Create target group for instances.

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✓ Successfully created load balancer: **LabELB**  
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.

EC2 > Load balancers > LabELB

### LabELB

Actions ▾

**Details**

Load balancer type Application	Status ⌚ Provisioning	VPC <a href="#">vpc-098c0842cb3fdcec6</a>	IP address type IPv4
Scheme Internet-facing	Hosted zone Z35XDOTRQ7X7K	Availability Zones <a href="#">subnet-040189fb60ec899dc</a> us-east-1b (use1-az1) <a href="#">subnet-074bc8425ee702939</a> us-east-1a (use1-az6)	Date created June 20, 2024, 16:34 (UTC+07:00)

Load balancer ARN <a href="#">arn:aws:elasticloadbalancing:us-east-1:533504420100:loadbalancer/app/LabELB/054c8168728220e7</a>	DNS name <a href="#">Info</a> <a href="#">LabELB-775109925.us-east-1.elb.amazonaws.com</a> (A Record)
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Figure 3: Create Load Balancer.

### Task 3: Create a Launch Template and an Auto Scaling Group

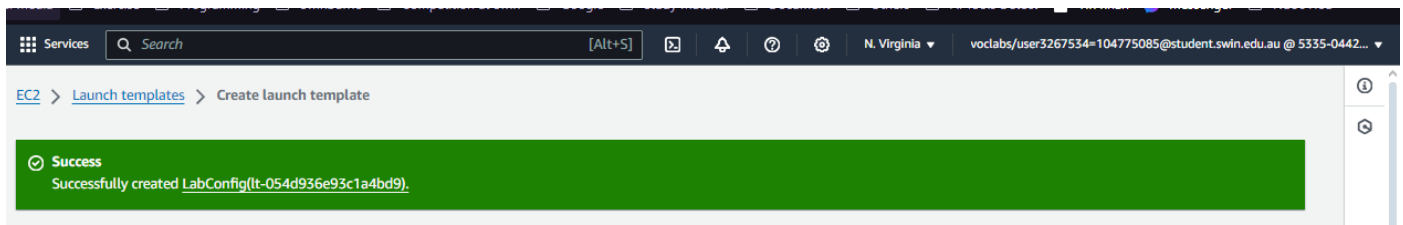


Figure 4: Create Launch Template.

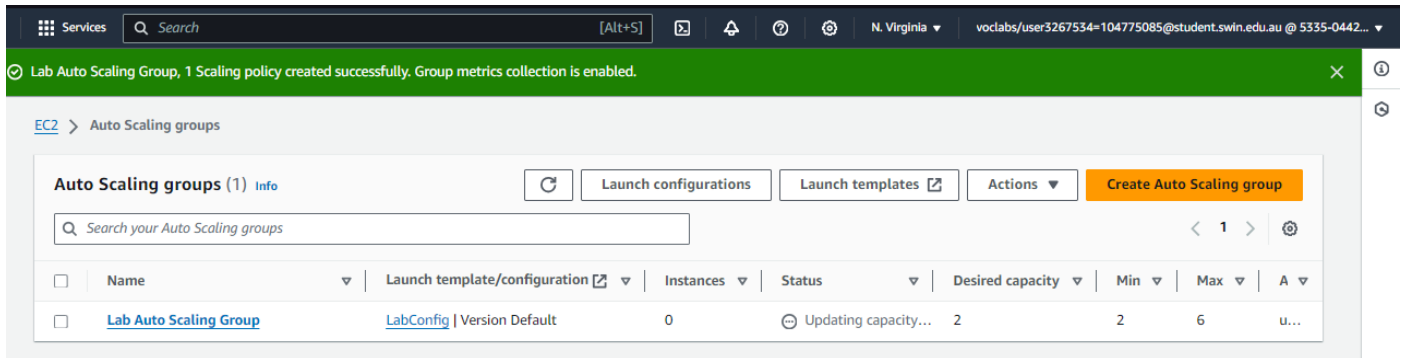


Figure 5: Create an auto scaling group.

### Task 4: Verify that Load Balancing is Working

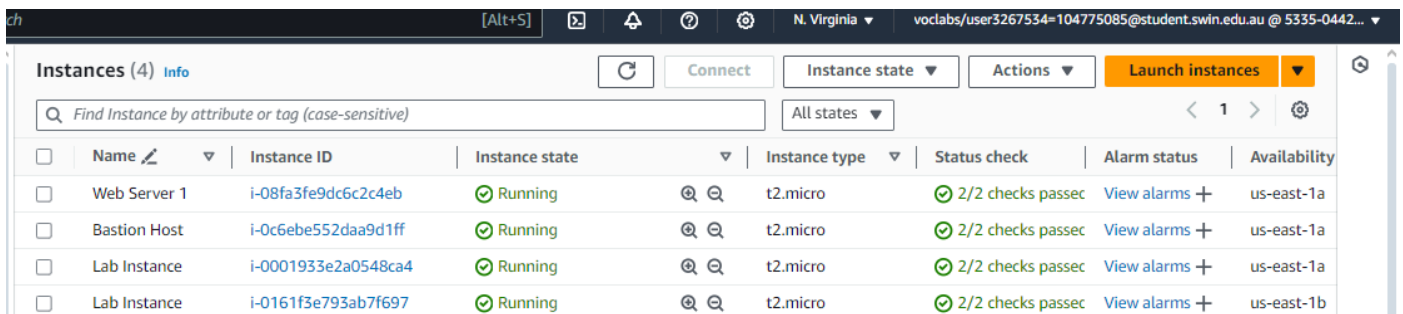
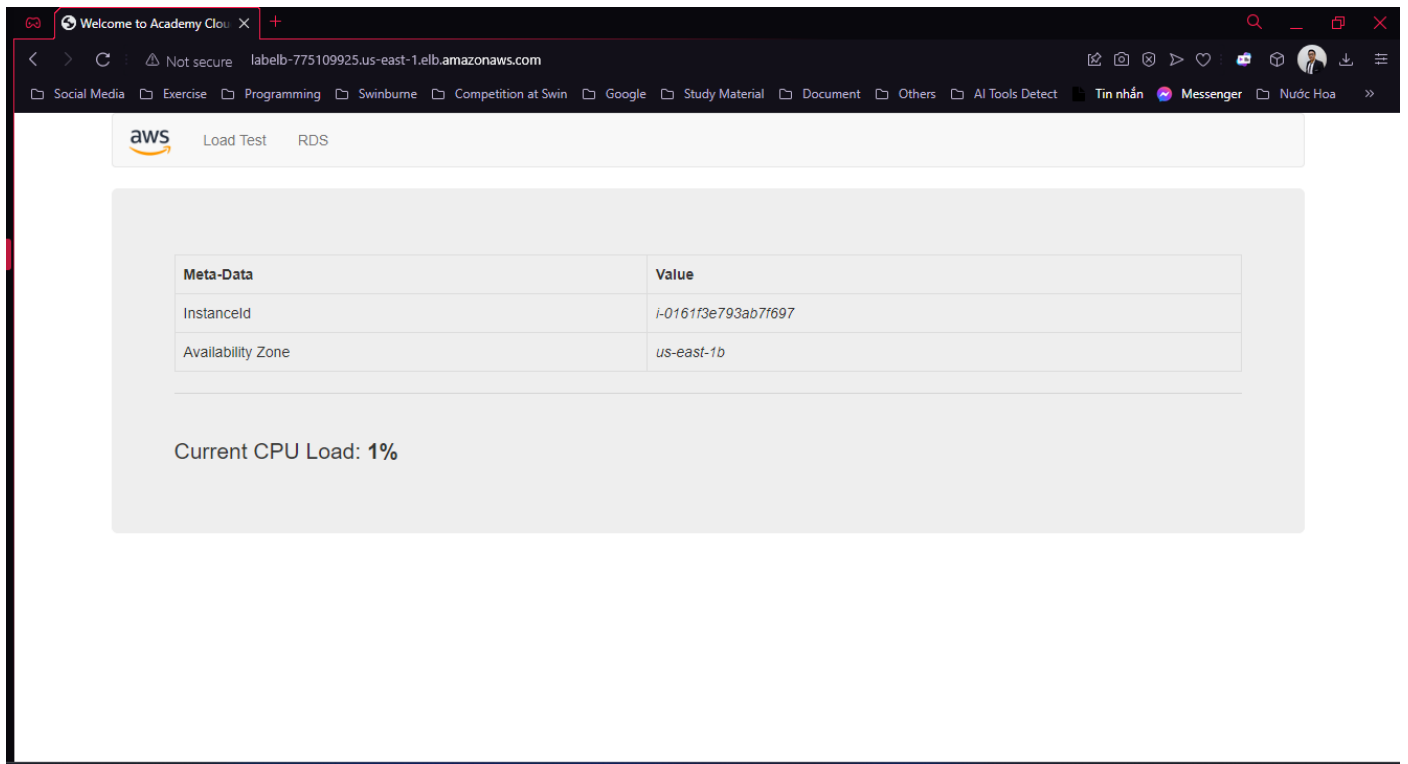
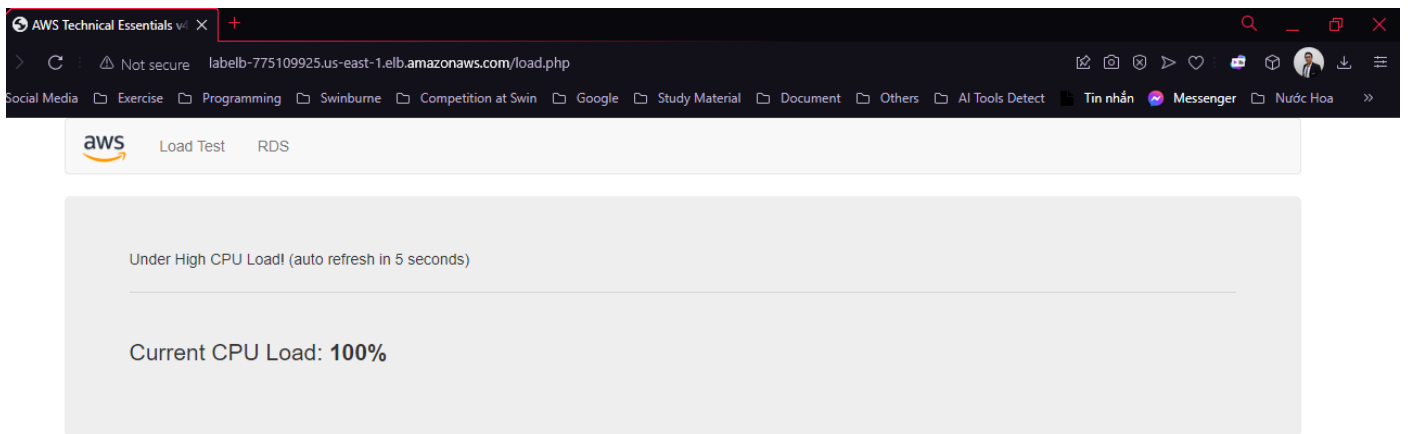


Figure 6: Two more lab instances are created.



*Figure 7: Try the Load Balancer response.*

## Task 5: Test Auto Scaling



*Figure 8: Generate 100% CPU Load.*

CloudWatch > Alarms

Alarms (1/2) ☐ Hide Auto Scaling alarms

Search Alarm state: Any Alarm type: Any Actions status: Any

	Name	State	Last state update (UTC)	Conditions	Actions
<input type="checkbox"/>	TargetTracking-Lab Auto Scaling Group- AlarmLow- 9ba13b51-48e1- 4466-aab5- aa416b8a5d7a	OK	2024-06-20 10:05:07	CPUUtilization < 48 for 15 datapoints within 15 minutes	<input checked="" type="checkbox"/> Actions enable
<input checked="" type="checkbox"/>	TargetTracking-Lab Auto Scaling Group- AlarmHigh- 362c9d45-62ec- 4d9c-80f7- f5cba7a10d20	In alarm	2024-06-20 09:58:12	CPUUtilization > 60 for 3 datapoints within 3 minutes	<input checked="" type="checkbox"/> Actions enable

Figure 9: Alarm is triggered.

Instances (8) Info

Find Instance by attribute or tag (case-sensitive) All states

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability
<input type="checkbox"/>	Web Server 1	i-08fa3fe9dc6c2c4eb	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1a
<input type="checkbox"/>	Bastion Host	i-0c6ebe552daa9d1ff	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1a
<input type="checkbox"/>	Lab Instance	i-09384d489df230fa8	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1a
<input type="checkbox"/>	Lab Instance	i-048962242b24e6310	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1b
<input type="checkbox"/>	Lab Instance	i-0001933e2a0548ca4	Running	t2.micro	2/2 checks passed	View alarms +	us-east-1a
<input type="checkbox"/>	Lab Instance	i-0239d34d2850586f8	Running	t2.micro	Initializing	View alarms +	us-east-1a

Figure 10: More instances are created.

## Task 6: Terminate Web Server 1

Successfully initiated termination of i-08fa3fe9dc6c2c4eb

Instances (1/8) Info

Find Instance by attribute or tag (case-sensitive) All states

	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability
<input checked="" type="checkbox"/>	Web Server 1	i-08fa3fe9dc6c2c4eb	Shutting-down	t2.micro	2/2 checks passed	View alarms +	us-east-1a

Figure 11: Terminate Web Server 1 instance.

Total score	35/35
Task 1 - AMI created	5/5
Task 2 - Load Balancer created	5/5
Task 3a - Launch Template created	5/5
Task 3b - Auto Scaling Group created	5/5
Task 4 - Load Balancer check	5/5
Task 5 - Auto Scaling check	5/5
Task 6 - Web Server 1	5/5

*Figure 12: Score after submission.*

```
Submission Report
Task 3b - Success! An Auto Scaling group with the name Lab Auto Scaling Group was found and appears to be configured properly.

Evaluating Task 4 - Load Balancer check
found a Load Balancer with the name LabELB.
lb_dns: LabELB-775109925.us-east-1.elb.amazonaws.com
url: http://LabELB-775109925.us-east-1.elb.amazonaws.com
The load balancer dns address is returning an HTTP status code of 200
Task 4 - Success! A load balancer named LabELB was found, and the DNS address was responding with HTTP status code 200.

Evaluating Task 5 - Auto Scaling check
Task 5 - Success! More than two instances named Lab Instance were found, and two CloudWatch metrics alarms were found.

Evaluating Task 6 - Web Server 1
Task 6 - Success! Web Server 1 was terminated.

Completed: 2024-06-20 03:12:14
```

*Figure 13: Submission report.*