

Lab 4


Implement a vpc with cidr 10.0.0.0/16 with 2 public subnets with cidrs 10.0.0.0/24 and 10.0.0.2.0/24 with a load balancer to Distribute the traffic between 2 machines with nginx installed in them as a proxy and 2 private subnets with the below cidrs 10.0.1.0/24 and 10.0.0.3.0/24 then a 2 instances attached in autoscaling in the private subnets with apache installed without SSH and load balancer to install between them and the ec2 will get the app from an s3

Needed :



- A screenshot from the autoscaling group after indicating the minimum ,maximum and desired instances
- Screenshot from the 2 target groups indicating the machines are healthy
- Screenshot indicate the the machines BE WS are private
- Screenshot from the public load balancer when you hit a request from it from a browser with a response returned from the instances
- Screenshot from the userdata
- Screenshot from s3 to be private

- A screenshot from the autoscaling group after indicating the minimum ,maximum and desired instances


EC2 > Auto Scaling groups

Auto Scaling groups (1/2) [Info](#)  [Edit](#) [Delete](#) [Create an Auto Scaling group](#)

<input type="checkbox"/>	Name	Launch template/configuration	Instances	Desired...	Min	Max	A
<input checked="" type="checkbox"/>	lab4-private-asg	lab4-private-ec2-temp Version Default	2	2	1	2	u...
<input type="checkbox"/>	lab4-public_asg	lab4-public-ec2-temp Version Default	2	2	1	2	u...


Auto Scaling group: lab4-private-asg  

[Details](#) | [Activity](#) | [Automatic scaling](#) | [Instance management](#) | [Monitoring](#) | [Instance refresh](#)



Instances (2)  [Actions](#)

<input type="checkbox"/>	Instance ID	Lifecycle	Instanc...	Weight...	Launch...	Availab...	Health ...	Protect.
<input type="checkbox"/>	i-052d42c1cc37c4429 🔗	InService	t2.micro	-	lab4-private-ec	us-east-1c	🟢 Healthy	
<input type="checkbox"/>	i-0ed19e9b6d2cc8575 🔗	InService	t2.micro	-	lab4-private-ec	us-east-1d	🟢 Healthy	


EC2 > Auto Scaling groups

Auto Scaling groups (1/2) [Info](#)  [Edit](#) [Delete](#) [Create an Auto Scaling group](#)

<input type="checkbox"/>	Name	Launch template/configuration	Instances	Desired...	Min	Max	A
<input type="checkbox"/>	lab4-private-asg	lab4-private-ec2-temp Version Default	2	2	1	2	u...
<input checked="" type="checkbox"/>	lab4-public_asg	lab4-public-ec2-temp Version Default	2	2	1	2	u...

Auto Scaling group: lab4-public_asg  

[Details](#) | [Activity](#) | [Automatic scaling](#) | [Instance management](#) | [Monitoring](#) | [Instance refresh](#)

Instances (2)  [Actions](#)

<input type="checkbox"/>	Instance ID	Lifecycle	Instanc...	Weight...	Launch...	Availab...	Health ...	Protect.
<input type="checkbox"/>	i-0248f8a0351114ed4 🔗	InService	t2.micro	-	lab4-public-ec	us-east-1c	🟢 Healthy	
<input type="checkbox"/>	i-0610bc665009ebb9a 🔗	InService	t2.micro	-	lab4-public-ec	us-east-1d	🟢 Healthy	

- Screenshot from the 2 target groups indicating the machines are healthy

Target groups (1/2) Info

Q Search or filter target groups

< 1 > ⚙

	Name	ARN	Port	Protocol	Target type	Load balancer
<input checked="" type="checkbox"/>	lab3-private-tg	arn:aws:elasticloadbalanci...	80	HTTP	Instance	lab3-private-lb
<input type="checkbox"/>	lab3-public-tg	arn:aws:elasticloadbalanci...	80	HTTP	Instance	lab3-public-lb

Target group: lab3-private-tg

Registered targets (2)

Q Filter resources by property or value

< 1 > ⚙

<input type="checkbox"/>	Instance ID	Name	Port	Zone	Health status	Health status details
<input type="checkbox"/>	i-0ed19e9b6d2cc8575		80	us-east-1d	🟢 healthy	
<input type="checkbox"/>	i-052d42c1cc37c4429		80	us-east-1c	🟢 healthy	

Target groups (1/2) Info

Q Search or filter target groups

< 1 > ⚙

	Name	ARN	Port	Protocol	Target type	Load balancer
<input type="checkbox"/>	lab3-private-tg	arn:aws:elasticloadbalanci...	80	HTTP	Instance	lab3-private-lb
<input checked="" type="checkbox"/>	lab3-public-tg	arn:aws:elasticloadbalanci...	80	HTTP	Instance	lab3-public-lb

Target group: lab3-public-tg

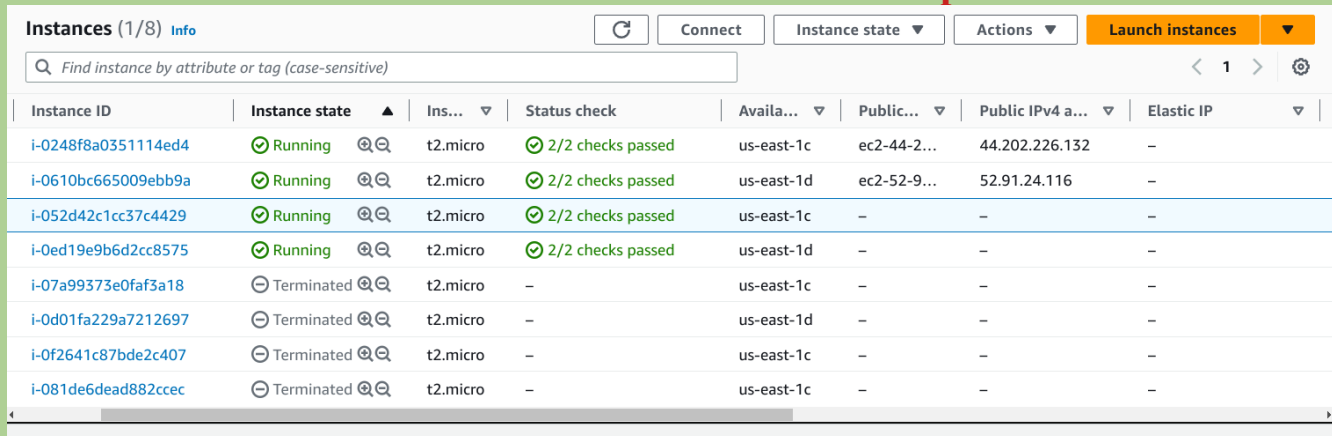
Registered targets (2)

Q Filter resources by property or value

< 1 > ⚙

<input type="checkbox"/>	Instance ID	Name	Port	Zone	Health status	Health status details
<input type="checkbox"/>	i-0610bc665009ebb9a		80	us-east-1d	🟢 healthy	
<input type="checkbox"/>	i-0248f8a0351114ed4		80	us-east-1c	🟢 healthy	

- **Screenshot indicate the the machines BE WS are private**



Instance ID	Instance state	Ins...	Status check	Availa...	Public...	Public IPv4 a...	Elastic IP
i-0248f8a0351114ed4	Running	t2.micro	2/2 checks passed	us-east-1c	ec2-44-2...	44.202.226.132	-
i-0610bc665009ebb9a	Running	t2.micro	2/2 checks passed	us-east-1d	ec2-52-9...	52.91.24.116	-
i-052d42c1cc37c4429	Running	t2.micro	2/2 checks passed	us-east-1c	-	-	-
i-0ed19e9b6d2cc8575	Running	t2.micro	2/2 checks passed	us-east-1d	-	-	-
i-07a99373e0faf3a18	Terminated	t2.micro	-	us-east-1c	-	-	-
i-0d01fa229a7212697	Terminated	t2.micro	-	us-east-1d	-	-	-
i-0f2641c87bde2c407	Terminated	t2.micro	-	us-east-1c	-	-	-
i-081de6dead882ccec	Terminated	t2.micro	-	us-east-1c	-	-	-

as the screenshot informs, the two instances whose ids ends with “29” and “75”, which are in the private target group and in the private auto scale group as implied by the previous screenshot, those two instances have no public IP.s

- **Screenshot from the public load balancer when you hit a request from it from a browser with a response returned from the instances**



Not secure | lab3-public-lb-1226023966.us-east-1.elb.amazonaws.com

Track: DevOps

Duration: 4m

Branch: Main Branch - Smart Village

Name: Hadi Lotfy Al-Atally

Email: hadi.al.atally@gmail.com

- **Screenshot from the userdata**

User data - optional [Info](#)

Enter user data in the field.

```
#!/bin/bash

# install aws
curl "https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip" -o "awscliv2.zip"
yum install -y unzip
unzip awscliv2.zip
./aws/install

# install nginx
yum install -y nginx &> /home/ec2-user/install_log_nginx

# remove default configuration
mv /etc/nginx/nginx.conf /home/ec2-user/

# get configuration file from s3 instance
aws s3 cp s3://lab4-bucket-html-files/original\_nginx.conf /etc/nginx/nginx.conf

# stop selinux from interfering
setsebool -P httpd_can_network_connect 1

# run nginx
systemctl enable --now nginx
```

user data section in the public-instance Launch Template.

User data - optional [Info](#)

Enter user data in the field.

```
#!/bin/bash

# install aws
curl "https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip" -o "awscliv2.zip"
yum install -y unzip
unzip awscliv2.zip
./aws/install

# install nginx
yum install -y httpd &> /home/ec2-user/install_log_httpd

# get webpage from s3 bucket
aws s3 cp s3://lab4-bucket-html-files/page.html "/var/www/html/status"

# run nginx
systemctl enable --now httpd
```

user data section in the private-instance Launch Template.

- **Screenshot from s3 to be private**

lab4-bucket-html-files [Info](#)

Objects

Properties

Permissions

Metrics

Management

Access Points

Permissions overview

Access

Bucket and objects not public

- Additional screenshots:

IAM instance profile [Info](#)

```
arn:aws:iam::385582076770:instance-profile/lab4-allow-ec2-access-s3
```

The first screenshot shows the 'lab4-allow-ec2-access-s3' role in the AWS IAM console. The role is associated with the instance profile 'arn:aws:iam::385582076770:instance-profile/lab4-allow-ec2-access-s3'. The 'Trusted entities' section shows the trust policy, which allows the role to be assumed by EC2 instances.

```
1- {
2-   "Version": "2012-10-17",
3-   "Statement": [
4-     {
5-       "Effect": "Allow",
6-       "Principal": {
```

The second screenshot shows the 'Permissions policies' section for the same role. It lists the 's3_full_access_policy' as a customer-managed policy. The policy details show a statement that allows all S3 actions on all resources.

```
1- {
2-   "Version": "2012-10-17",
3-   "Statement": [
4-     {
5-       "Sid": "VisualEditor0",
6-       "Effect": "Allow",
7-       "Action": "s3:*",
8-       "Resource": "*"
9-     ]
10-  ]
11- }
```

```

10.10.2.65 - - [12/May/2023:14:40:10 +0000] "GET /index.html HTTP/1.1" 200 5909 "-" "ELB-HealthChecker/2.0" "-"
10.10.1.202 - - [12/May/2023:14:40:11 +0000] "GET /index.html HTTP/1.1" 200 5909 "-" "ELB-HealthChecker/2.0" "-"
10.10.2.65 - - [12/May/2023:14:40:40 +0000] "GET /index.html HTTP/1.1" 200 5909 "-" "ELB-HealthChecker/2.0" "-"
10.10.1.202 - - [12/May/2023:14:40:41 +0000] "GET /index.html HTTP/1.1" 200 5909 "-" "ELB-HealthChecker/2.0" "-"
10.10.2.65 - - [12/May/2023:14:41:10 +0000] "GET /index.html HTTP/1.1" 200 5909 "-" "ELB-HealthChecker/2.0" "-"
10.10.1.202 - - [12/May/2023:14:41:11 +0000] "GET /index.html HTTP/1.1" 200 5909 "-" "ELB-HealthChecker/2.0" "-"
10.10.2.65 - - [12/May/2023:14:41:40 +0000] "GET /index.html HTTP/1.1" 200 5909 "-" "ELB-HealthChecker/2.0" "-"
10.10.1.202 - - [12/May/2023:14:41:41 +0000] "GET /index.html HTTP/1.1" 200 5909 "-" "ELB-HealthChecker/2.0" "-"
10.10.2.65 - - [12/May/2023:14:42:10 +0000] "GET /index.html HTTP/1.1" 200 5909 "-" "ELB-HealthChecker/2.0" "-"
10.10.1.202 - - [12/May/2023:14:42:11 +0000] "GET /index.html HTTP/1.1" 200 5909 "-" "ELB-HealthChecker/2.0" "-"
10.10.2.65 - - [12/May/2023:14:42:40 +0000] "GET /index.html HTTP/1.1" 200 5909 "-" "ELB-HealthChecker/2.0" "-"
10.10.1.202 - - [12/May/2023:14:42:41 +0000] "GET /index.html HTTP/1.1" 200 5909 "-" "ELB-HealthChecker/2.0" "-"
10.10.2.65 - - [12/May/2023:14:43:10 +0000] "GET /index.html HTTP/1.1" 200 5909 "-" "ELB-HealthChecker/2.0" "-"
10.10.1.202 - - [12/May/2023:14:43:11 +0000] "GET /index.html HTTP/1.1" 200 5909 "-" "ELB-HealthChecker/2.0" "-"
10.10.2.65 - - [12/May/2023:14:43:40 +0000] "GET /index.html HTTP/1.1" 200 5909 "-" "ELB-HealthChecker/2.0" "-"
10.10.1.202 - - [12/May/2023:14:43:41 +0000] "GET /index.html HTTP/1.1" 200 5909 "-" "ELB-HealthChecker/2.0" "-"
10.10.2.65 - - [12/May/2023:14:44:10 +0000] "GET /index.html HTTP/1.1" 200 5909 "-" "ELB-HealthChecker/2.0" "-"
10.10.1.202 - - [12/May/2023:14:44:11 +0000] "GET /index.html HTTP/1.1" 200 5909 "-" "ELB-HealthChecker/2.0" "-"
10.10.2.65 - - [12/May/2023:14:44:40 +0000] "GET /index.html HTTP/1.1" 200 5909 "-" "ELB-HealthChecker/2.0" "-"
10.10.1.202 - - [12/May/2023:14:44:41 +0000] "GET /index.html HTTP/1.1" 200 5909 "-" "ELB-HealthChecker/2.0" "-"
10.10.2.65 - - [12/May/2023:14:45:10 +0000] "GET /index.html HTTP/1.1" 200 5909 "-" "ELB-HealthChecker/2.0" "-"
10.10.1.202 - - [12/May/2023:14:45:11 +0000] "GET /index.html HTTP/1.1" 200 5909 "-" "ELB-HealthChecker/2.0" "-"
10.10.2.65 - - [12/May/2023:14:45:40 +0000] "GET /index.html HTTP/1.1" 200 5909 "-" "ELB-HealthChecker/2.0" "-"
10.10.1.202 - - [12/May/2023:14:45:41 +0000] "GET /index.html HTTP/1.1" 200 5909 "-" "ELB-HealthChecker/2.0" "-"
10.10.2.65 - - [12/May/2023:14:46:10 +0000] "GET /index.html HTTP/1.1" 200 5909 "-" "ELB-HealthChecker/2.0" "-"
10.10.1.202 - - [12/May/2023:14:46:11 +0000] "GET /index.html HTTP/1.1" 200 5909 "-" "ELB-HealthChecker/2.0" "-"
10.10.2.65 - - [12/May/2023:14:46:29 +0000] "GET /index.html HTTP/1.1" 304 0 "-" "Mozilla/5.0 (X11; Linux x86_64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/113.0.0.0 Safari/537.36 Edg/113.0.0.0" "156.205.84.249"
10.10.2.65 - - [12/May/2023:14:46:36 +0000] "GET / HTTP/1.1" 499 0 "-" "Mozilla/5.0 (X11; Linux x86_64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/113.0.0.0 Safari/537.36 Edg/113.0.0.0" "156.205.84.249"
10.10.2.65 - - [12/May/2023:14:46:41 +0000] "GET /index.html HTTP/1.1" 200 5909 "-" "ELB-HealthChecker/2.0" "-"
10.10.1.202 - - [12/May/2023:14:46:41 +0000] "GET /index.html HTTP/1.1" 200 5909 "-" "ELB-HealthChecker/2.0" "-"
10.10.2.77 - - [12/May/2023:14:46:51 +0000] "GET /index.html HTTP/1.1" 200 5909 "-" "ELB-HealthChecker/2.0" "-"
;q

```

while doing some troubleshooting this screenshot was taken for the access.log file for nginx in one of the public instances,

It shows the continuous health checking which of course comes from the auto scale group and the target group.

And it shows some http Get requests from the end user ip (the selected lines)