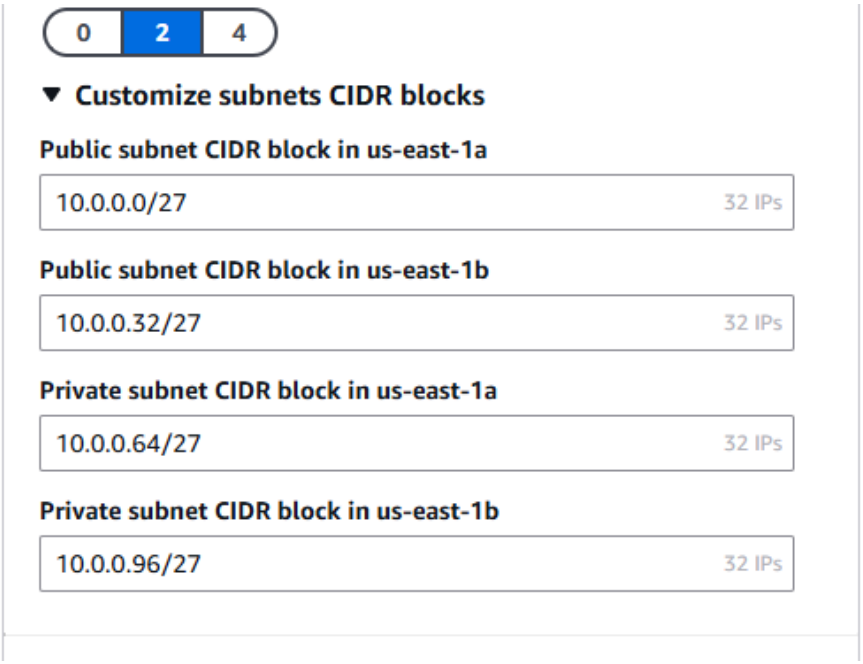
הוראות התקנה:

1. **יצירת VPC:**

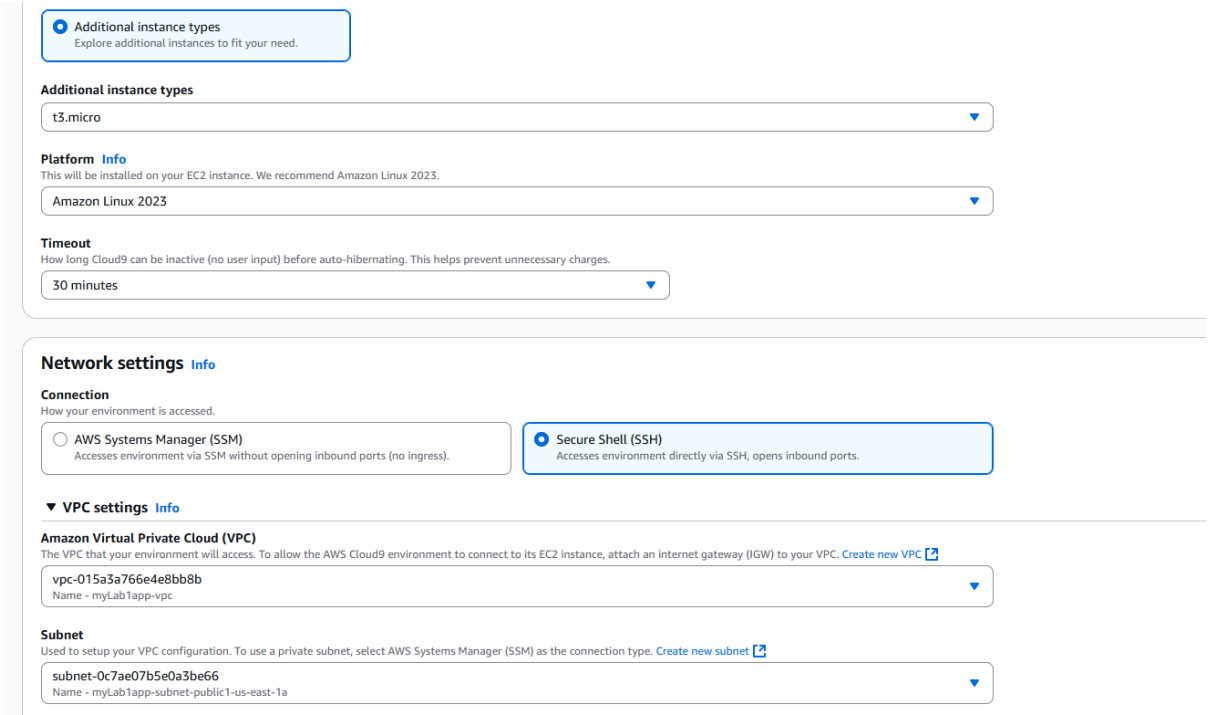
הגדרות:

שם VPC

2 רשתות פומביות ו-2 רשתות פרטיות

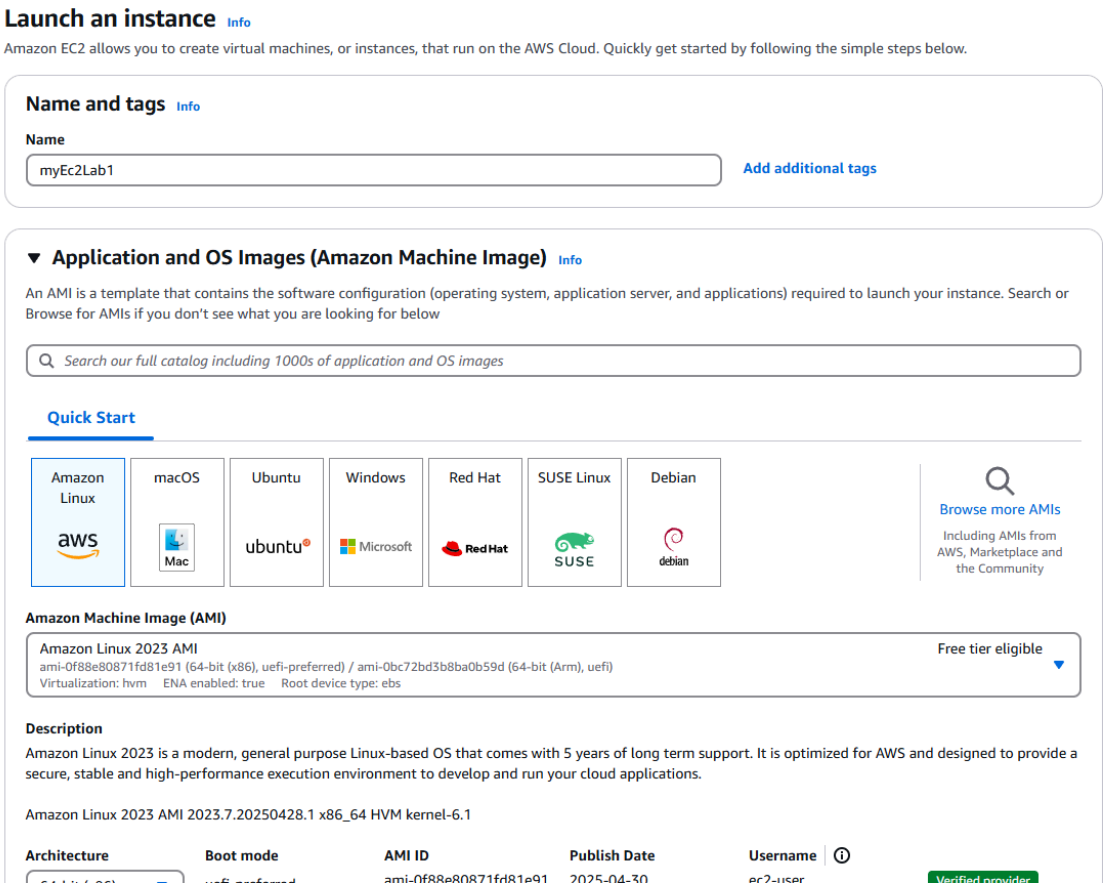


2. **יצירת Cloud9 לפני Ec2:**

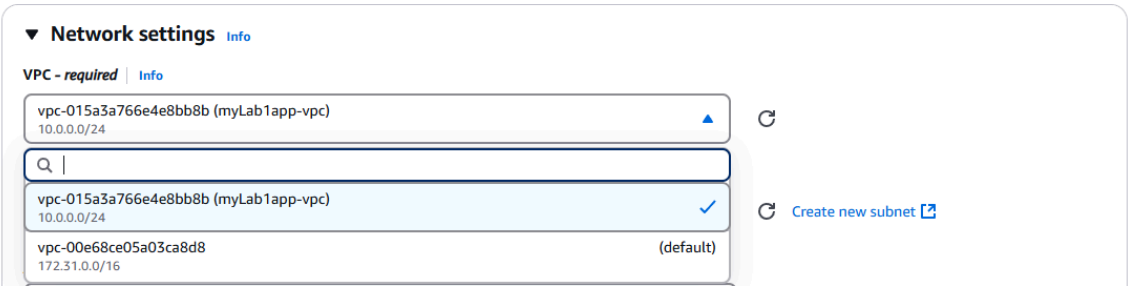


3. יצירת EC2:

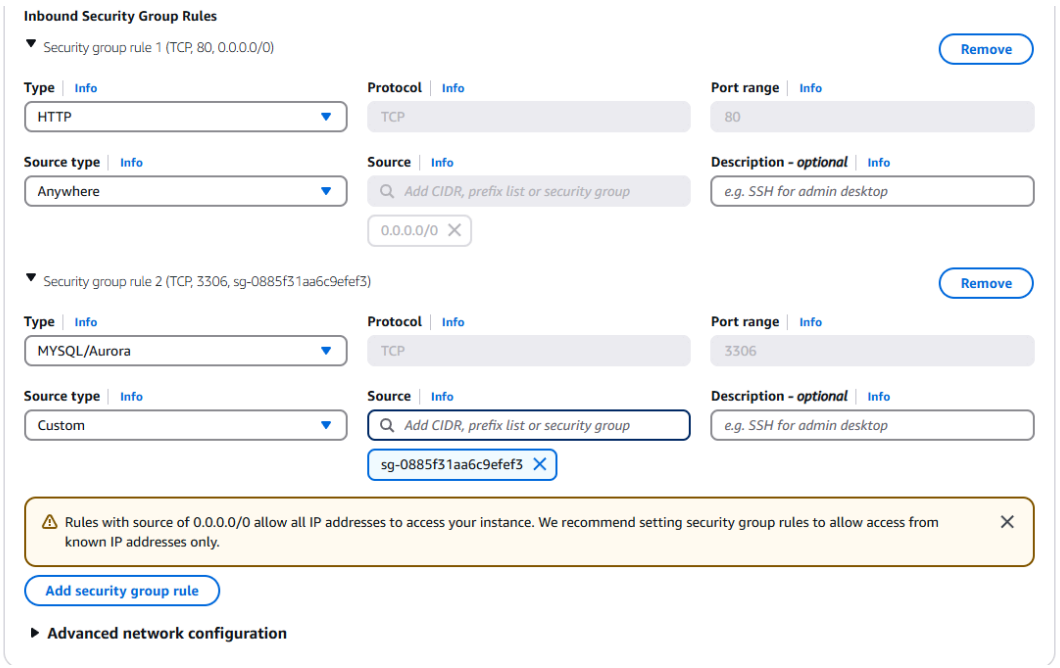
בחירת שם והגדרות המכונה



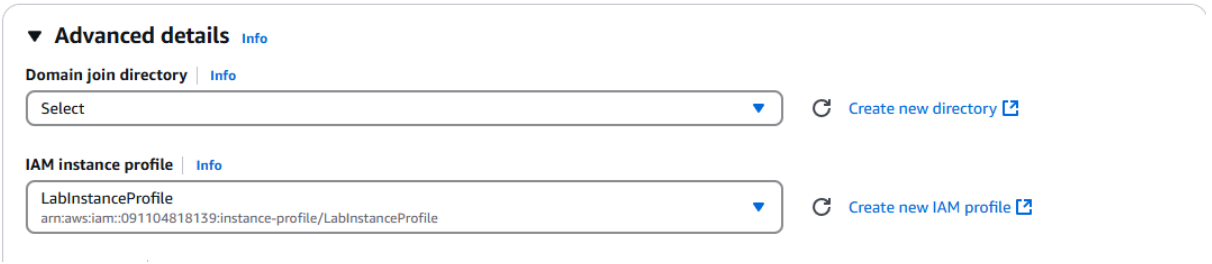
החלפת הגדרות Network settings לVPC שיצרנו



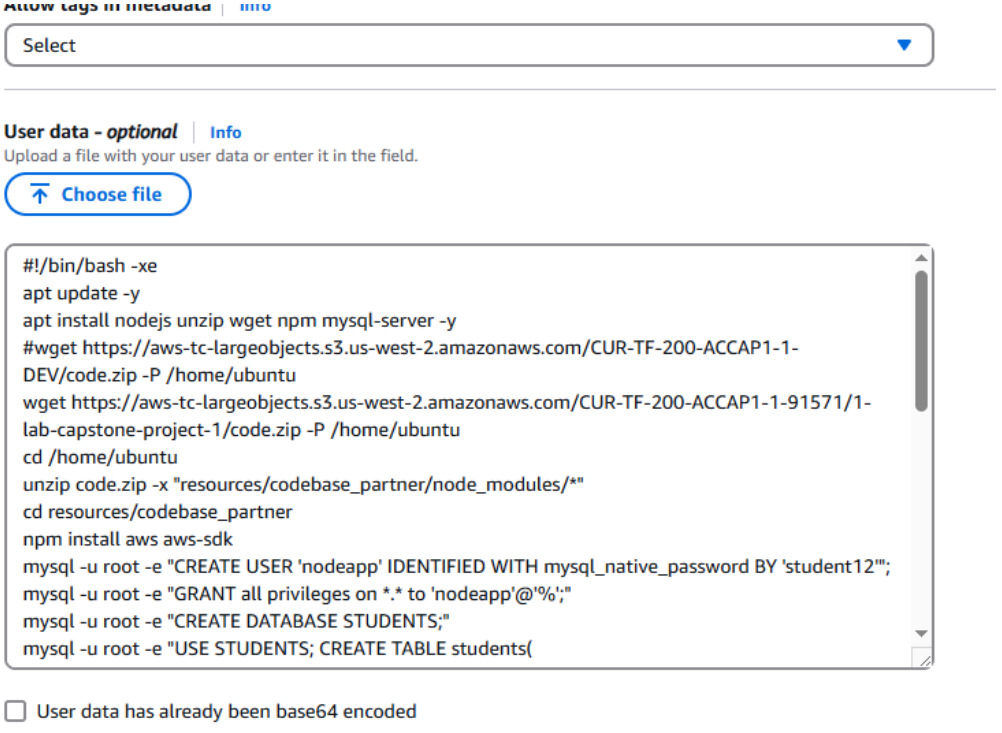
הוספת חוק עבור HTTP ו- MYSQL והוספת Cloud9 בהגדרות גישה



הוספת הגדרה IAM:

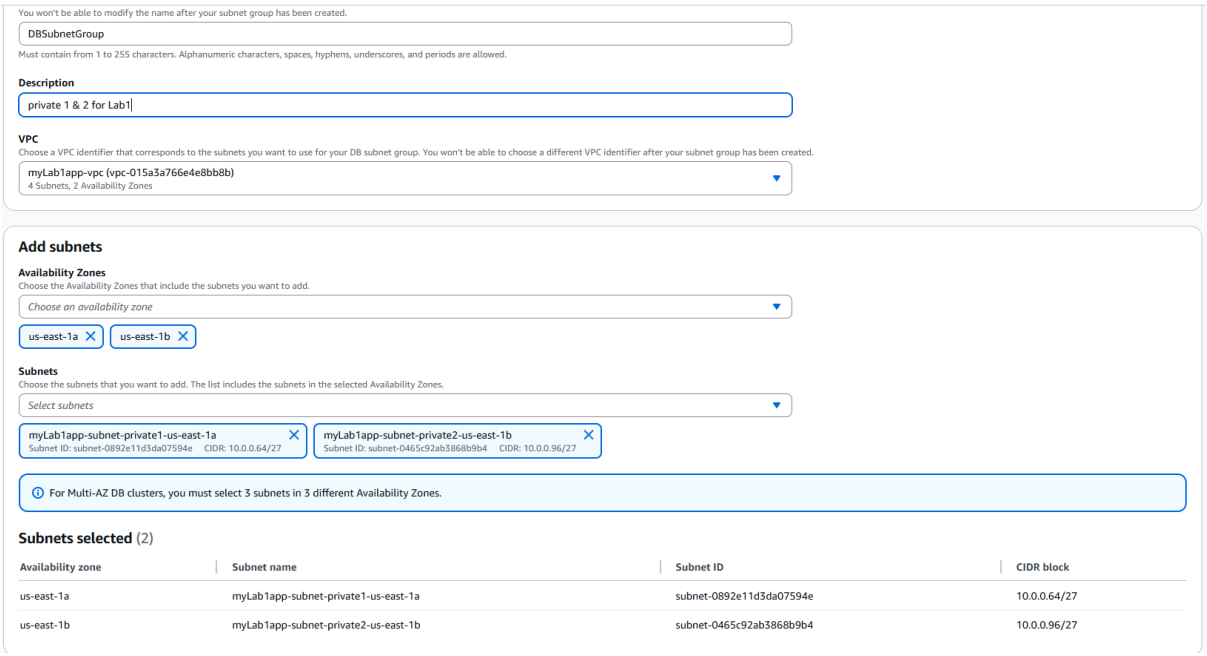


הוספת קובץ או טקסט סקיפט מתוך הקובץ הנתון במעבדה
UserdataScript-phase-2.sh



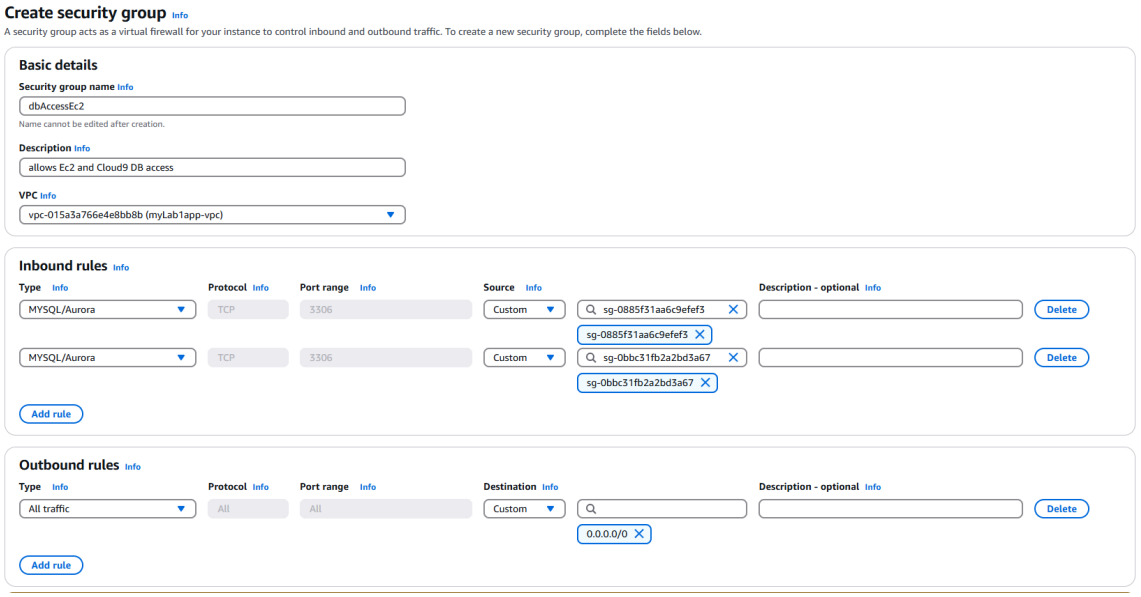
4. **<u>יצירת RDS ו-subnet group:</u>**

הוספה תחת הרשתות הפרטיות



5. **<u>יצירת security group עם גישה לMYSQL:</u>**

הוספת 2 חוקים עבור EC2 ו-Cloud9



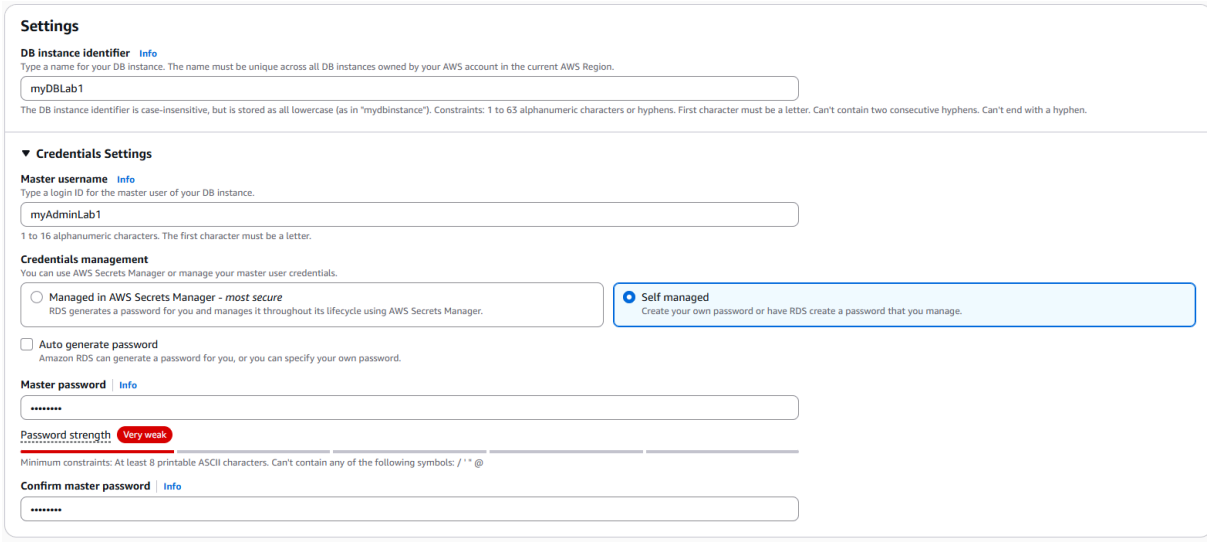
6. **<u>יצירת DB:</u>**

בחירת MYSQL ו-Free tier

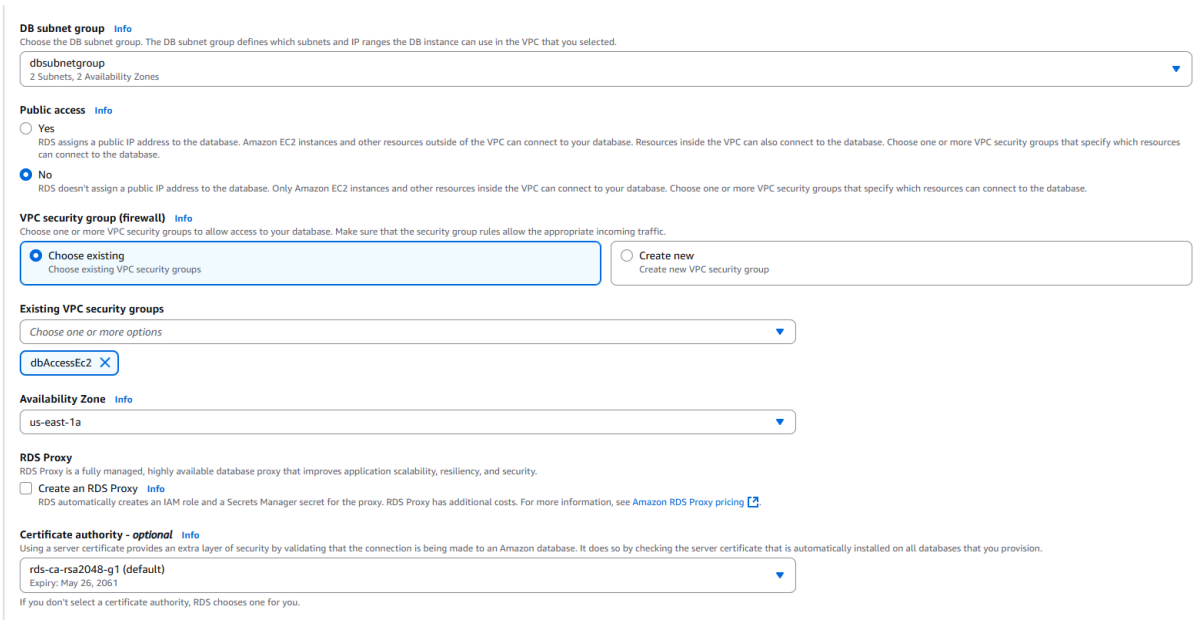
הגדרת משתמש אדמין:

nodeapp

student12



הוספת הגדרת ה-security group



7. הפרדת בסיס הנתונים של EC2

נכנסים לCLOUD9 ומריצים את סקריפט 3 מתוך cloud9-scripts.yml

mysqldump -h <EC2instancePrivateip> -u nodeapp -p --databases STUDENTS > data.sql

מכניסים את המידע מתוך הקובץ הנוצר ל-MySql

mysql -h <RDSEndpoint> -u nodeapp -p STUDENTS < data.sql

אם יש תקלה אז קודם ניצור בסיס נתונים של STUDENTS

```
mysql -h <RDSEndpoint> -u nodeapp -p
```

רושמים את הסיסמא: student12
ואז:

```
CREATE DATABASE IF NOT EXISTS STUDENTS;
```

לאחר מכן ניתן לצאת ע"י

```
quit;
```

ולכתוב את הפקודה הראשונה

```
mysql -h <RDSEndpoint> -u nodeapp -p  STUDENTS < data.sql
```

8. יצירת Secret

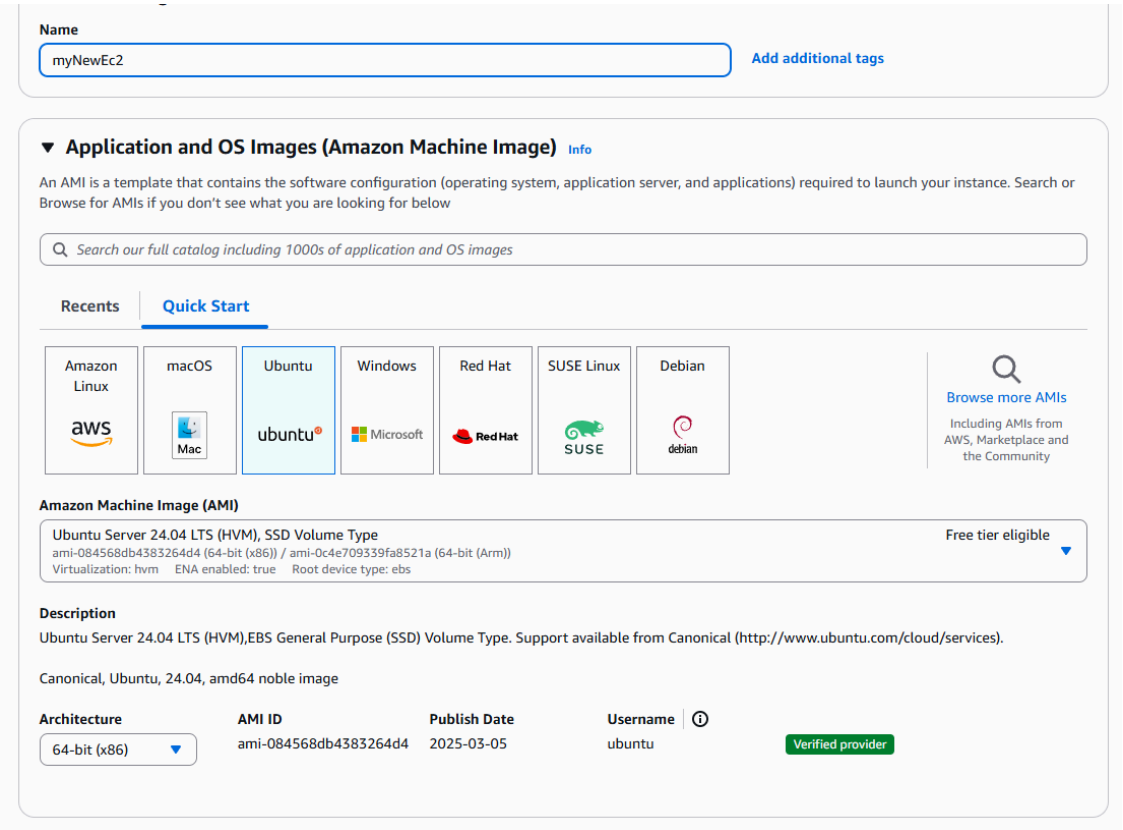
ניצור Secret חדש בסביבת הCloud9

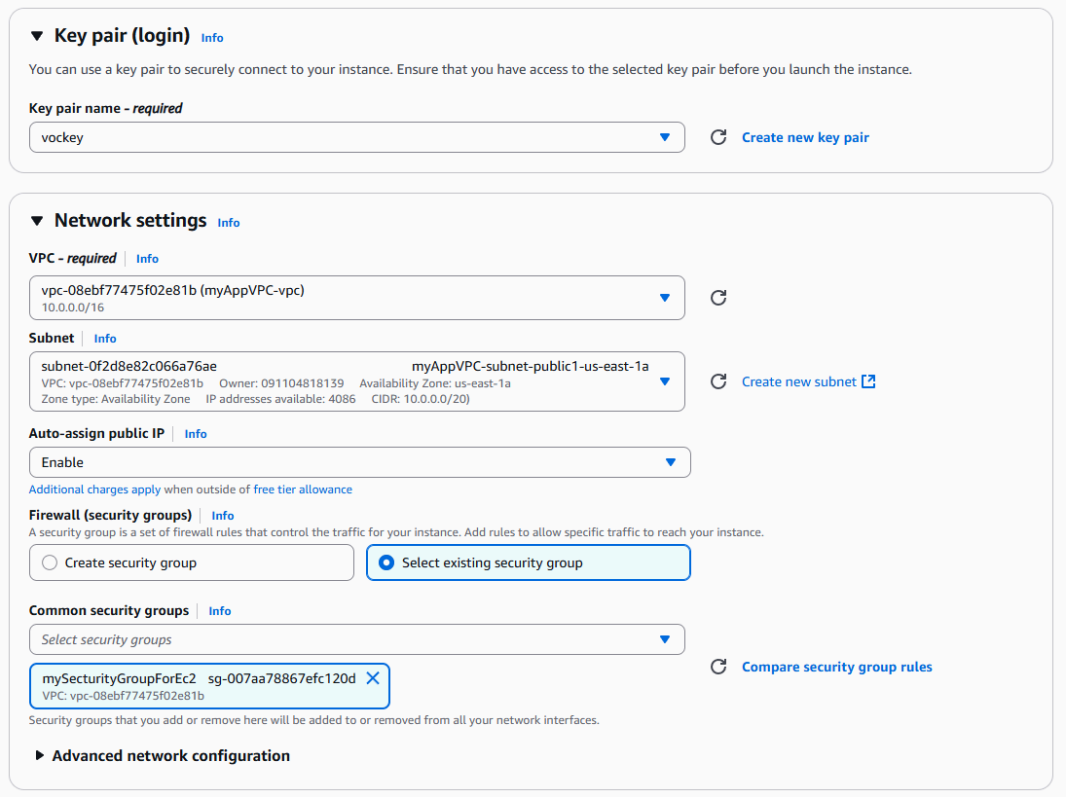
נשתמש בסקריפט 1 מתוך הקובץ cloud9-scripts.yml

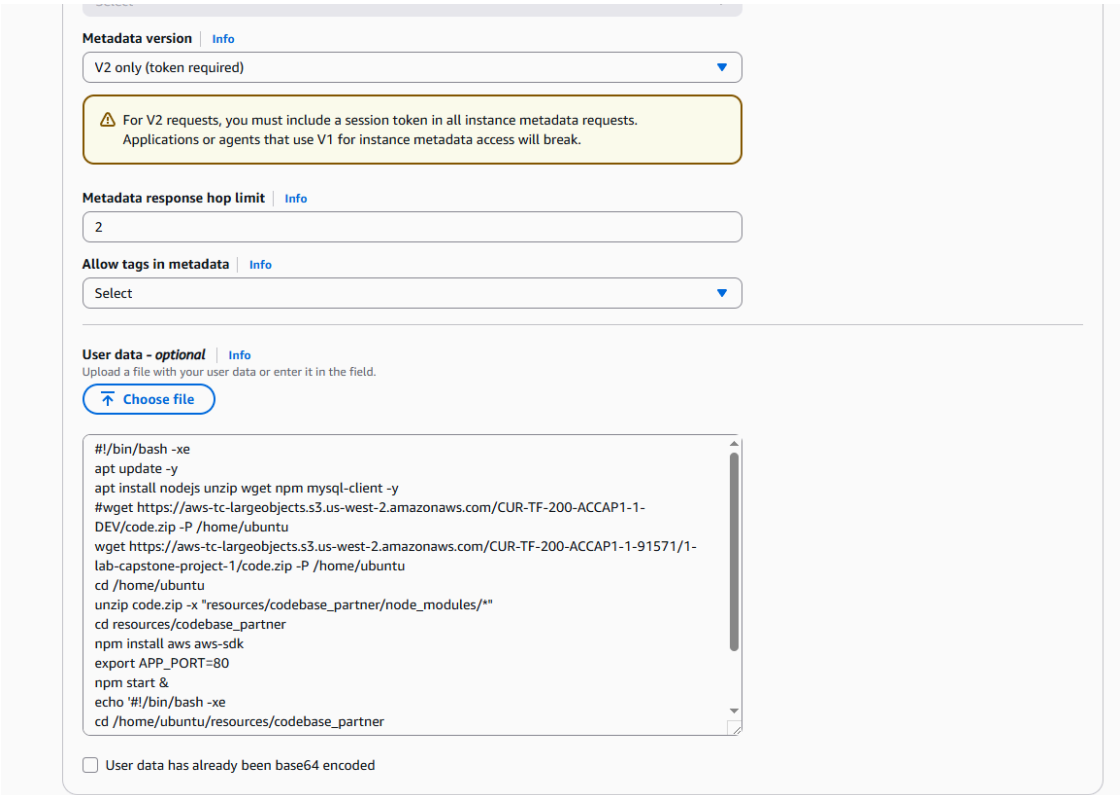
```
aws secretsmanager create-secret \
   --name Mydbsecret \
   --description "Database secret for web app" \
   --secret-string "{\"user\":\"nodeapp\",\"password\":\"student12\",\"host\":\"<RDS Endpoint>\",\"db\":\"STUDENTS\"}"
```

9. ניצור EC2 חדש

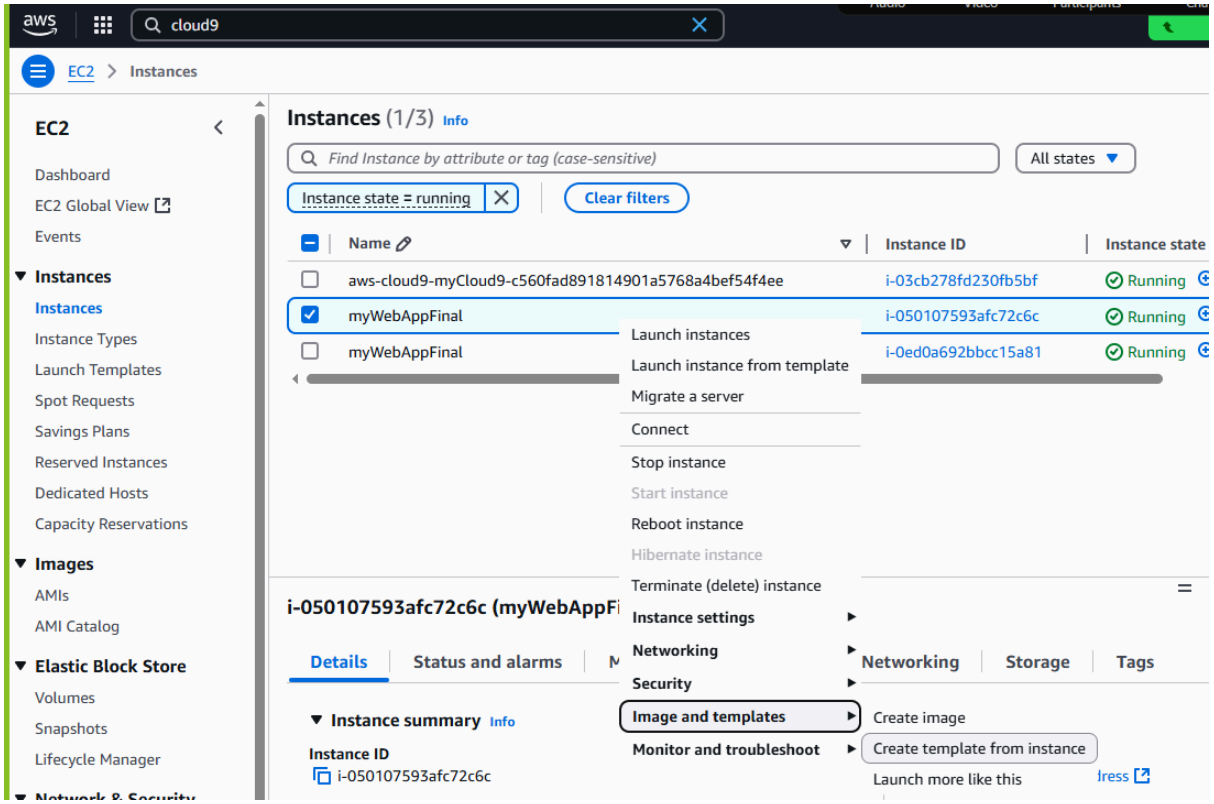
נשתמש בסקריפט UserdataScipt-phase3.sh




Key pair (login) Info
You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.
Key pair name - required
vockey
Create new key pair
Network settings Info
VPC - required | Info
vpc-08ebf77475f02e81b (myAppVPC-vpc)
10.0.0.0/16
Subnet | Info
subnet-0f2d8e82c066a76ae myAppVPC-subnet-public1-us-east-1a
VPC: vpc-08ebf77475f02e81b Owner: 091104818139 Availability Zone: us-east-1a
Zone type: Availability Zone IP addresses available: 4086 CIDR: 10.0.0.0/20)
Create new subnet
Auto-assign public IP | Info
Enable
Additional charges apply when outside of free tier allowance
Firewall (security groups) | Info
A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.
Create security group
Select existing security group
Common security groups | Info
Select security groups
mySecturityGroupForEc2 sg-007aa78867efc120d
VPC: vpc-08ebf77475f02e81b
Compare security group rules
Security groups that you add or remove here will be added to or removed from all your network interfaces.
Advanced network configuration


Metadata version | Info
V2 only (token required)
For V2 requests, you must include a session token in all instance metadata requests.
Applications or agents that use V1 for instance metadata access will break.
Metadata response hop limit | Info
2
Allow tags in metadata | Info
Select
User data - optional | Info
Upload a file with your user data or enter it in the field.
Choose file
#!/bin/bash -xe
apt update -y
apt install nodejs unzip wget npm mysql-client -y
#wget https://aws-tc-largeobjects.s3.us-west-2.amazonaws.com/CUR-TF-200-ACCAP1-1-DEV/code.zip -P /home/ubuntu
wget https://aws-tc-largeobjects.s3.us-west-2.amazonaws.com/CUR-TF-200-ACCAP1-1-91571/1-lab-capstone-project-1/code.zip -P /home/ubuntu
cd /home/ubuntu
unzip code.zip -x "resources/codebase_partner/node_modules/*"
cd resources/codebase_partner
npm install aws aws-sdk
export APP_PORT=80
npm start &
echo '#!/bin/bash -xe
cd /home/ubuntu/resources/codebase_partner
User data has already been base64 encoded

10. יצירת Template של EC2



בחלון הבא נותנים שם ולוחצים create launch template

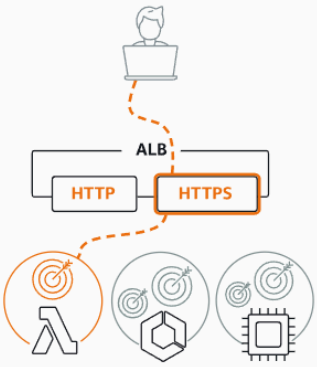
11. יצירת Load Balancer

Compare and select load balancer type

A complete feature-by-feature comparison along with detailed highlights is also available. Learn more

Load balancer types

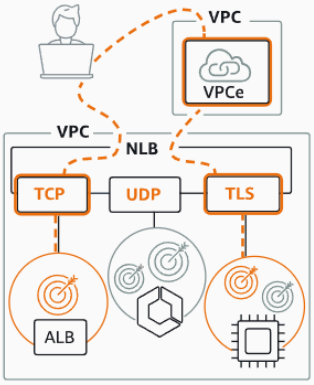
Application Load Balancer Info



Choose an Application Load Balancer when you need a flexible feature set for your applications with HTTP and HTTPS traffic. Operating at the request level, Application Load Balancers provide advanced routing and visibility features targeted at application architectures, including microservices and containers.

Create

Network Load Balancer Info



Choose a Network Load Balancer when you need ultra-high performance, TLS offloading at scale, centralized certificate deployment, support for UDP, and static IP addresses for your applications. Operating at the connection level, Network Load Balancers are capable of handling millions of requests per second securely while maintaining ultra-low latencies.

Create

Gateway Load Balancer Info

Choose a Gateway Load Balancer when you need to deploy and manage a fleet of third-party virtual appliances that support GENEVE. These appliances enable you to improve security, compliance, and policy controls.

Create

▶ Classic Load Balancer - *previous generation*

Application Load Balancer נבחר

Create Application Load Balancer Info

The Application Load Balancer distributes incoming HTTP and HTTPS traffic across multiple targets such as Amazon EC2 instances, microservices, and containers, based on request attributes. When the load balancer receives a connection request, it evaluates the listener rules in priority order to determine which rule to apply, and if applicable, it selects a target from the target group for the rule action.

▶ How Application Load Balancers work

Basic configuration

Load balancer name

Name must be unique within your AWS account and can't be changed after the load balancer is created.

myLoadBalancer

A maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen.

Scheme | Info

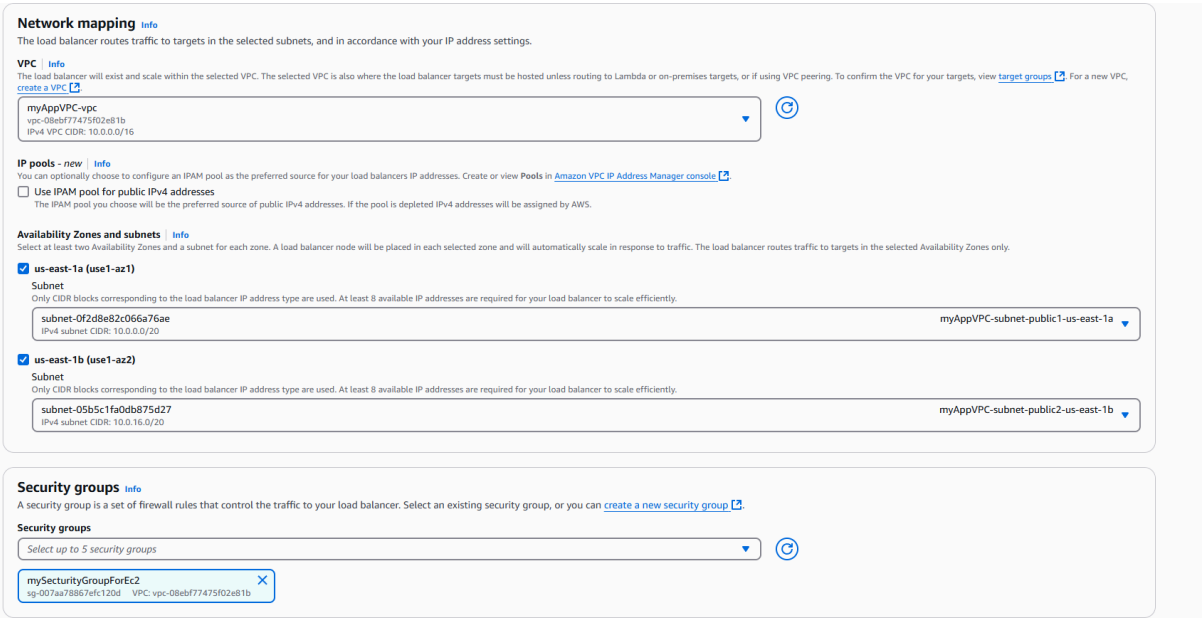
Scheme can't be changed after the load balancer is created.

- (●) Internet-facing
  - Serves internet-facing traffic.
  - Has public IP addresses.
  - DNS name resolves to public IPs.
  - Requires a public subnet.
- ( ) Internal
  - Serves internal traffic.
  - Has private IP addresses.
  - DNS name resolves to private IPs.
  - Compatible with the **IPv4** and **Dualstack** IP address types.

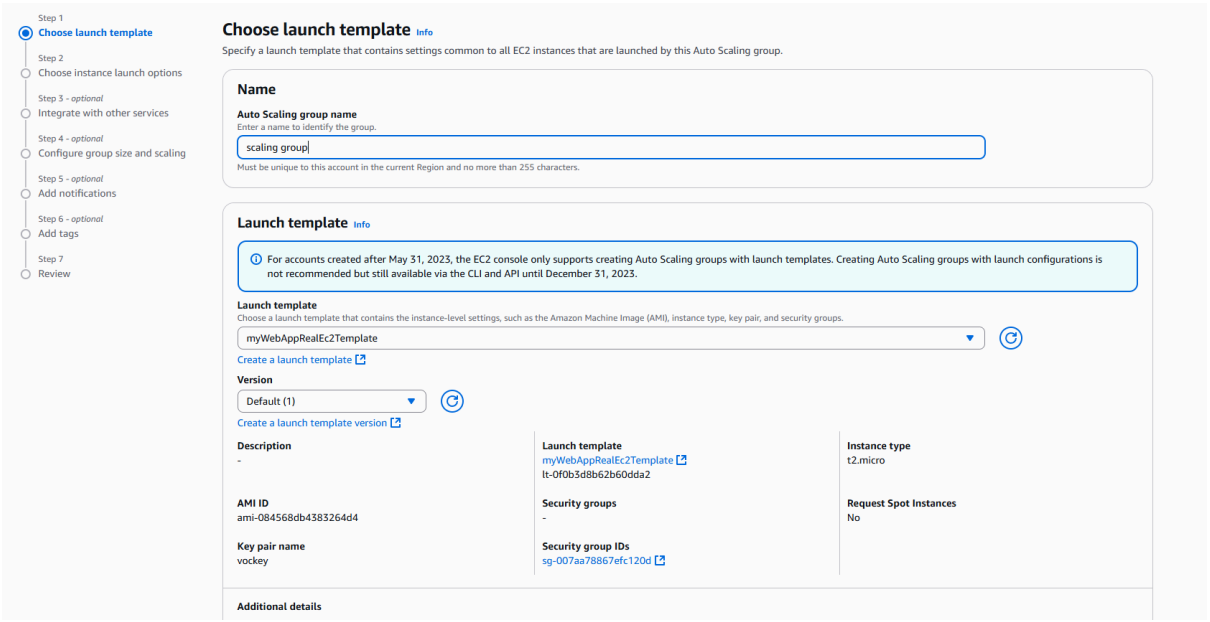
Load balancer IP address type | Info

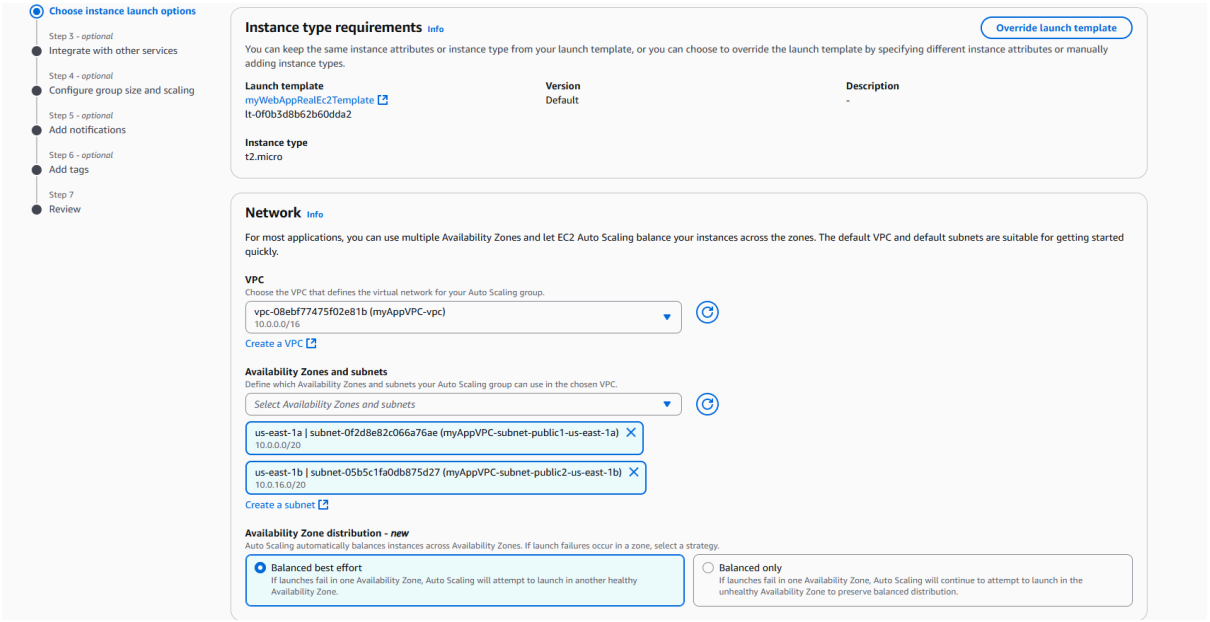
Select the front-end IP address type to assign to the load balancer. The VPC and subnets mapped to this load balancer must include the selected IP address types. Public IPv4 addresses have an additional cost.

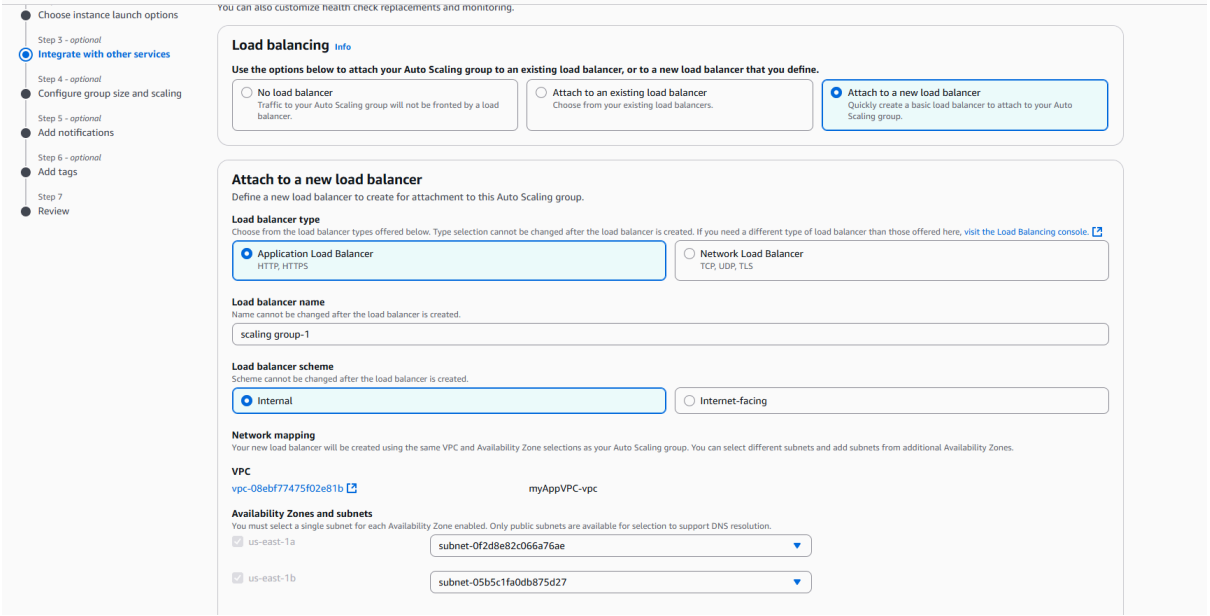
- (●) IPv4
  Includes only IPv4 addresses.
- ( ) Dualstack
  Includes IPv4 and IPv6 addresses.
- ( ) Dualstack without public IPv4
  Includes a public IPv6 address, and private IPv4 and IPv6 addresses. Compatible with **internet-facing** load balancers only.

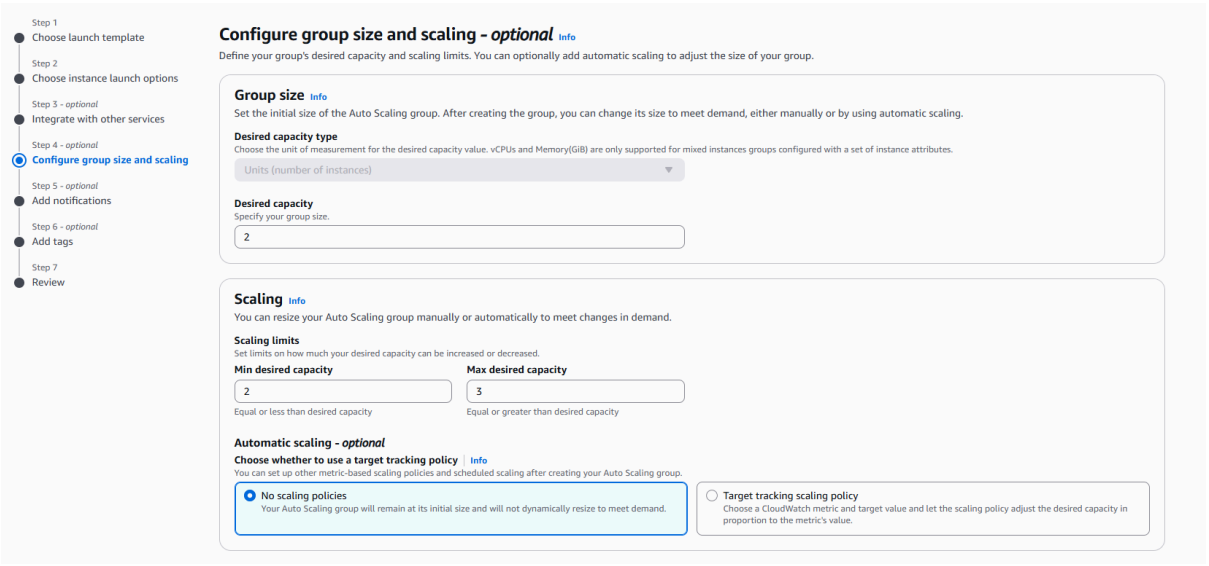


12. יצירת Auto Scaling Group להרחבת המופעים של EC2

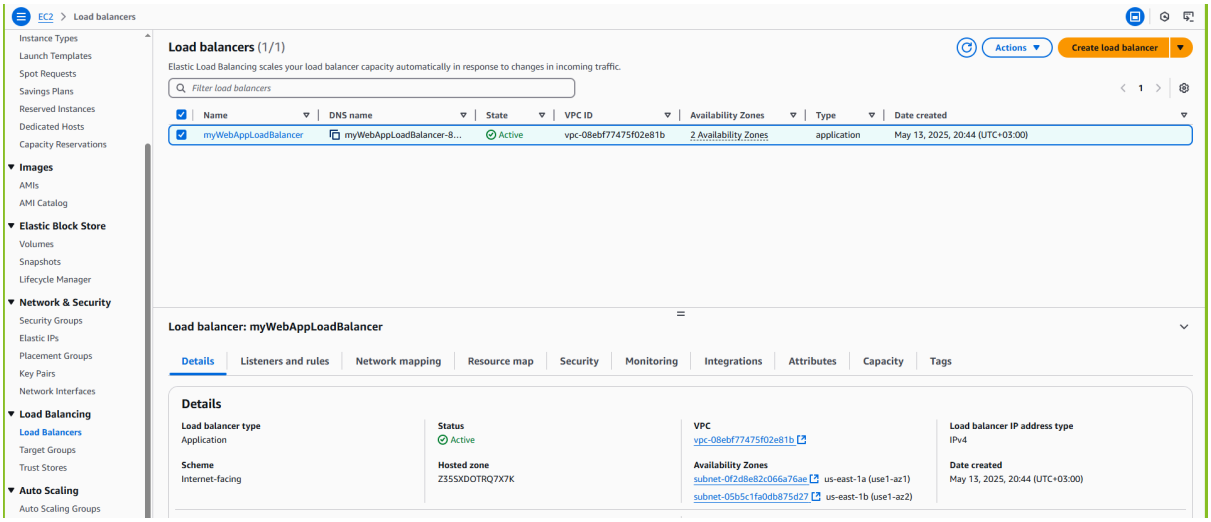



Choose instance launch options
Step 3 - optional
Integrate with other services
Step 4 - optional
Configure group size and scaling
Step 5 - optional
Add notifications
Step 6 - optional
Add tags
Step 7
Review
Instance type requirements Info
Override launch template
You can keep the same instance attributes or instance type from your launch template, or you can choose to override the launch template by specifying different instance attributes or manually adding instance types.
Launch template
myWebAppRealEc2Template
lt-0f0b3d8b62b60dda2
Version
Default
Description
-
Instance type
t2.micro
Network Info
For most applications, you can use multiple Availability Zones and let EC2 Auto Scaling balance your instances across the zones. The default VPC and default subnets are suitable for getting started quickly.
VPC
Choose the VPC that defines the virtual network for your Auto Scaling group.
vpc-08ebf77475f02e81b (myAppVPC-vpc)
10.0.0.0/16
Create a VPC
Availability Zones and subnets
Define which Availability Zones and subnets your Auto Scaling group can use in the chosen VPC.
Select Availability Zones and subnets
us-east-1a | subnet-0f2d8e82c066a76ae (myAppVPC-subnet-public1-us-east-1a)
10.0.0.0/20
us-east-1b | subnet-05b5c1fa0db875d27 (myAppVPC-subnet-public2-us-east-1b)
10.0.16.0/20
Create a subnet
Availability Zone distribution - new
Auto Scaling automatically balances instances across Availability Zones. If launch failures occur in a zone, select a strategy.
Balanced best effort
If launches fail in one Availability Zone, Auto Scaling will attempt to launch in another healthy Availability Zone.
Balanced only
If launches fail in one Availability Zone, Auto Scaling will continue to attempt to launch in the unhealthy Availability Zone to preserve balanced distribution.


Choose instance launch options
Step 3 - optional
Integrate with other services
Step 4 - optional
Configure group size and scaling
Step 5 - optional
Add notifications
Step 6 - optional
Add tags
Step 7
Review
You can also customize health check replacements and monitoring.
Load balancing Info
Use the options below to attach your Auto Scaling group to an existing load balancer, or to a new load balancer that you define.
No load balancer
Traffic to your Auto Scaling group will not be fronted by a load balancer.
Attach to an existing load balancer
Choose from your existing load balancers.
Attach to a new load balancer
Quickly create a basic load balancer to attach to your Auto Scaling group.
Attach to a new load balancer
Define a new load balancer to create for attachment to this Auto Scaling group.
Load balancer type
Choose from the load balancer types offered below. Type selection cannot be changed after the load balancer is created. If you need a different type of load balancer than those offered here, visit the Load Balancing console.
Application Load Balancer
HTTP, HTTPS
Network Load Balancer
TCP, UDP, TLS
Load balancer name
Name cannot be changed after the load balancer is created.
scaling group-1
Load balancer scheme
Scheme cannot be changed after the load balancer is created.
Internal
Internet-facing
Network mapping
Your new load balancer will be created using the same VPC and Availability Zone selections as your Auto Scaling group. You can select different subnets and add subnets from additional Availability Zones.
VPC
vpc-08ebf77475f02e81b
myAppVPC-vpc
Availability Zones and subnets
You must select a single subnet for each Availability Zone enabled. Only public subnets are available for selection to support DNS resolution.
us-east-1a
subnet-0f2d8e82c066a76ae
us-east-1b
subnet-05b5c1fa0db875d27



כעת ניתן להיכנס ל-Load Balancer מהקישור



לפי DNS name