Project - 1: Deploying a Multi-Tier Website Using AWS EC2

Description:

Amazon Elastic Compute Cloud (Amazon EC2) provides scalable computing capacity in the Amazon Web Services (AWS) cloud. Using Amazon EC2 eliminates your need to invest in hardware up front so you can develop and deploy applications faster. You can use Amazon EC2 to launch as many or as few virtual servers as you need, configure security and networking, and manage storage. Amazon EC2 enables you to scale up or down to handle changes in requirements or spikes in popularity, reducing your need to forecast traffic.

Problem Statement:

Company ABC wants to move their product to AWS. They have the following things set up right now:

1. MySQL DB
2. Website (PHP)

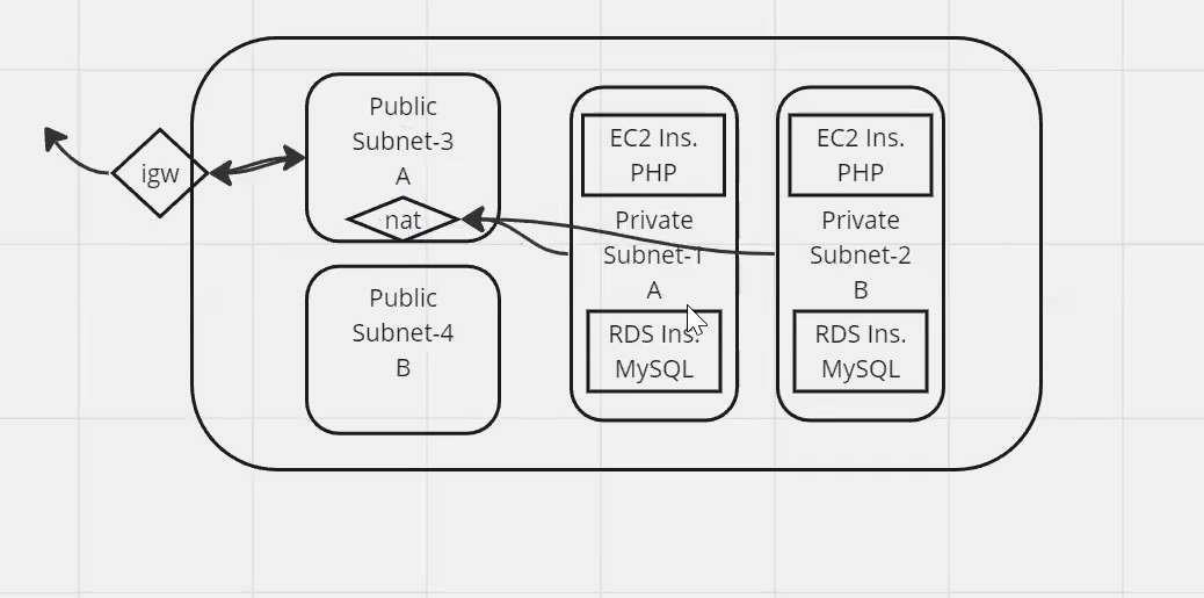
The company wants high availability on this product, therefore wants Auto Scaling to be enabled on this website.

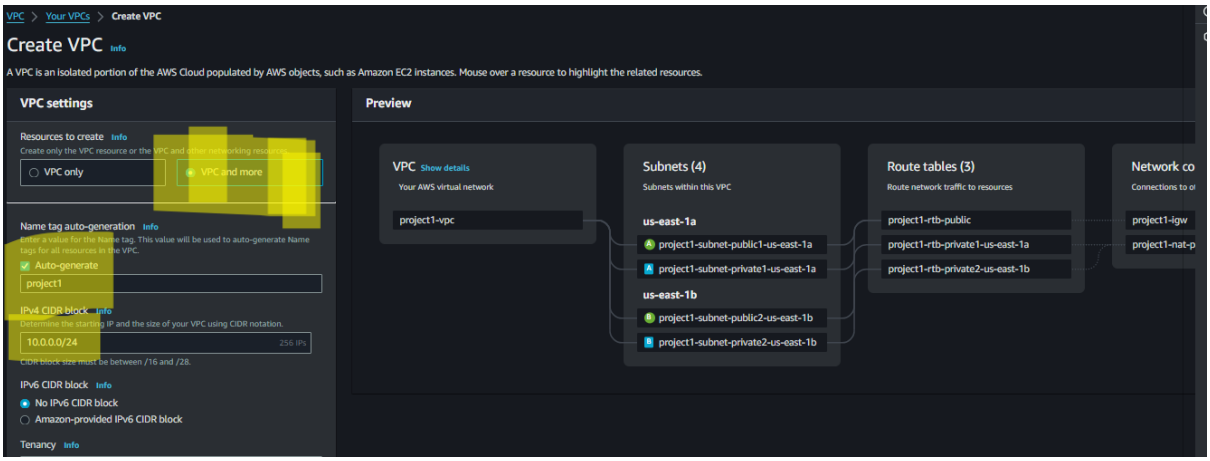
Steps To Solve:

1. Launch an EC2 Instance
2. Enable Auto Scaling on these instances (minimum 2)
3. Create an RDS Instance
4. Create Database & Table in RDS instance:
    a. Database name: intel
    b. Table name: data
    c. Database password: intel123
5. Change hostname in website
6. Allow traffic from EC2 to RDS instance
7. Allow all-traffic to EC2 instance

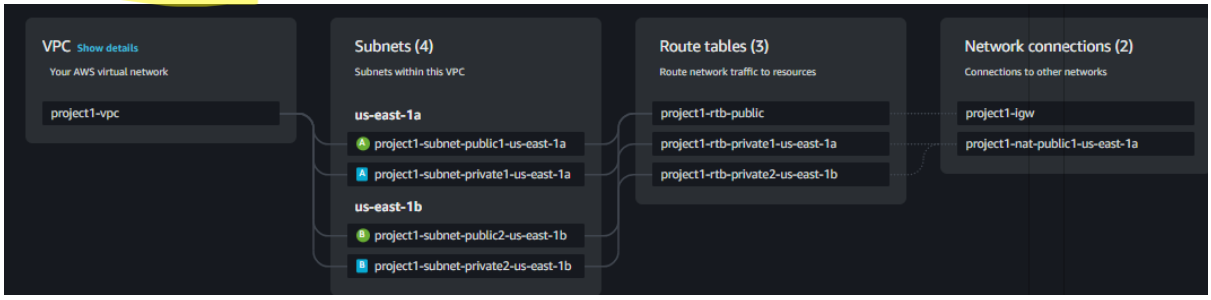
Solution:

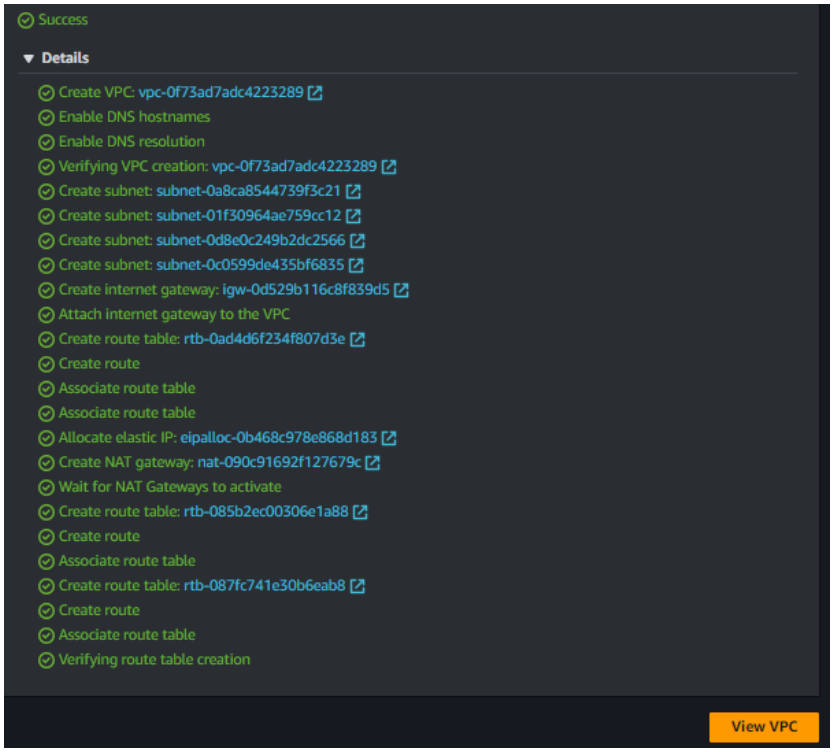
Architecture

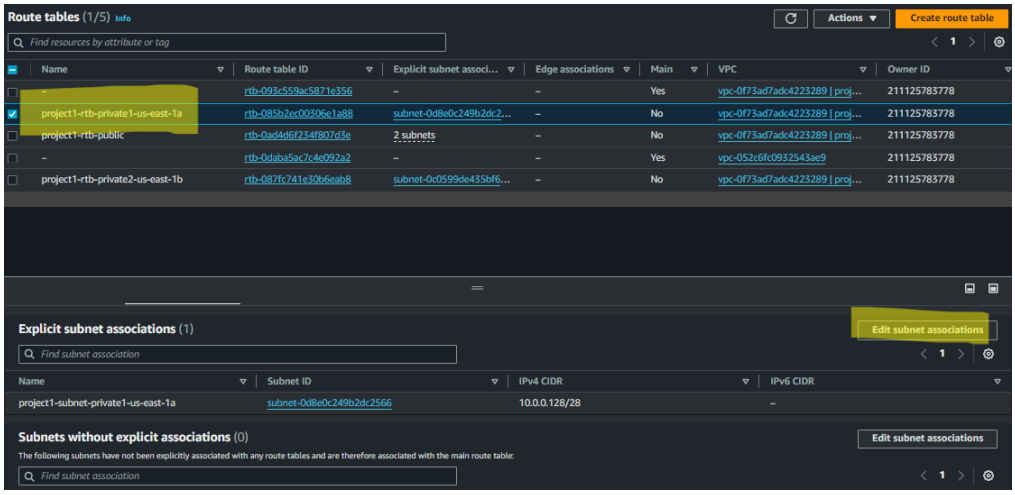

igw
Public
Subnet-3
A
nat
Public
Subnet-4
B
EC2 Ins.
PHP
Private
Subnet-1
A
RDS Ins.
MySQL
EC2 Ins.
PHP
Private
Subnet-2
B
RDS Ins.
MySQL

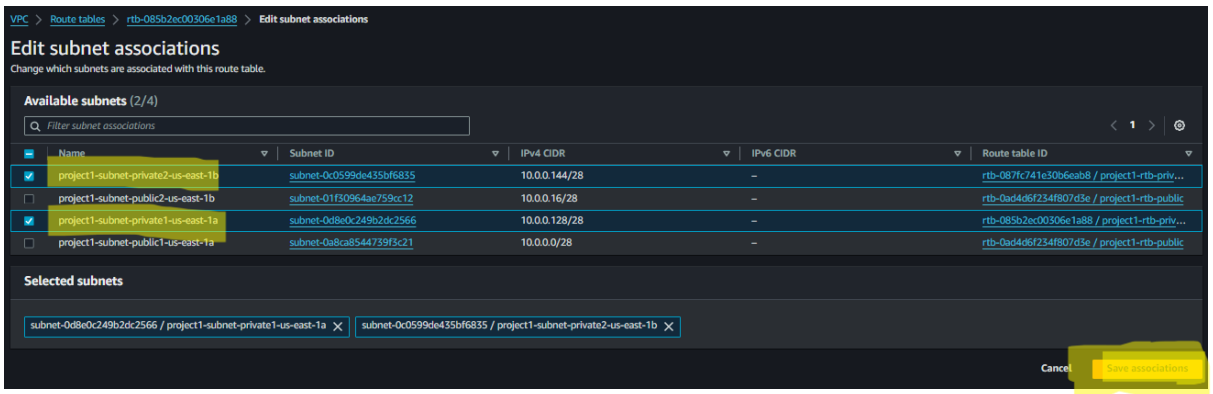

VPC > Your VPCs > Create VPC
Create VPC Info
A VPC is an isolated portion of the AWS Cloud populated by AWS objects, such as Amazon EC2 instances. Mouse over a resource to highlight the related resources.
VPC settings
Resources to create Info
Create only the VPC resource or the VPC and other networking resources.
VPC only
VPC and more
Name tag auto-generation Info
Enter a value for the Name tag. This value will be used to auto-generate Name tags for all resources in the VPC.
Auto-generate
project1
IPv4 CIDR block Info
Determine the starting IP and the size of your VPC using CIDR notation.
10.0.0.0/24
256 IPs
CIDR block size must be between /16 and /28.
IPv6 CIDR block Info
No IPv6 CIDR block
Amazon-provided IPv6 CIDR block
Tenancy Info
Preview
VPC Show details
Your AWS virtual network
project1-vpc
Subnets (4)
Subnets within this VPC
us-east-1a
project1-subnet-public1-us-east-1a
project1-subnet-private1-us-east-1a
us-east-1b
project1-subnet-public2-us-east-1b
project1-subnet-private2-us-east-1b
Route tables (3)
Route network traffic to resources
project1-rtb-public
project1-rtb-private1-us-east-1a
project1-rtb-private2-us-east-1b
Network co
Connections to o
project1-igw
project1-nat-p

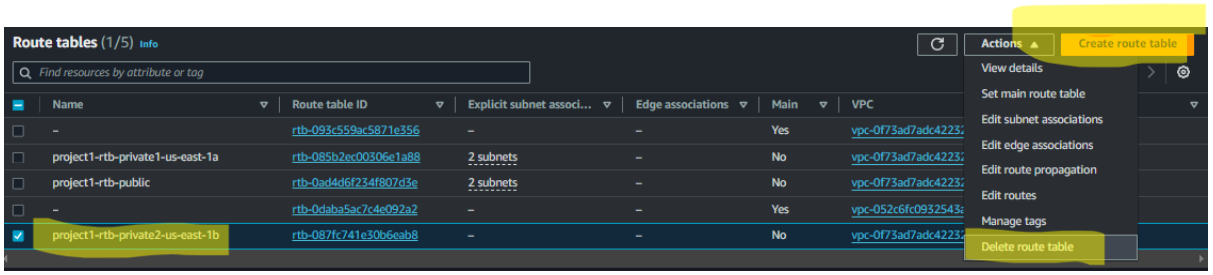

Number of Availability Zones (AZs) Info
Choose the number of AZs in which to provision subnets. We recommend at least two AZs for high availability.
1
2
3
Customize AZs
Number of public subnets Info
The number of public subnets to add to your VPC. Use public subnets for web applications that need to be publicly accessible over the internet.
0
2
Number of private subnets Info
The number of private subnets to add to your VPC. Use private subnets to secure backend resources that don't need public access.
0
2
4
Customize subnets CIDR blocks
NAT gateways ($) Info
Choose the number of Availability Zones (AZs) in which to create NAT gateways. Note that there is a charge for each NAT gateway
None
In 1 AZ
1 per AZ
VPC endpoints Info
Endpoints can help reduce NAT gateway charges and improve security by accessing S3 directly from the VPC. By default, full access policy is used. You can customize this policy at any time.
None
S3 Gateway

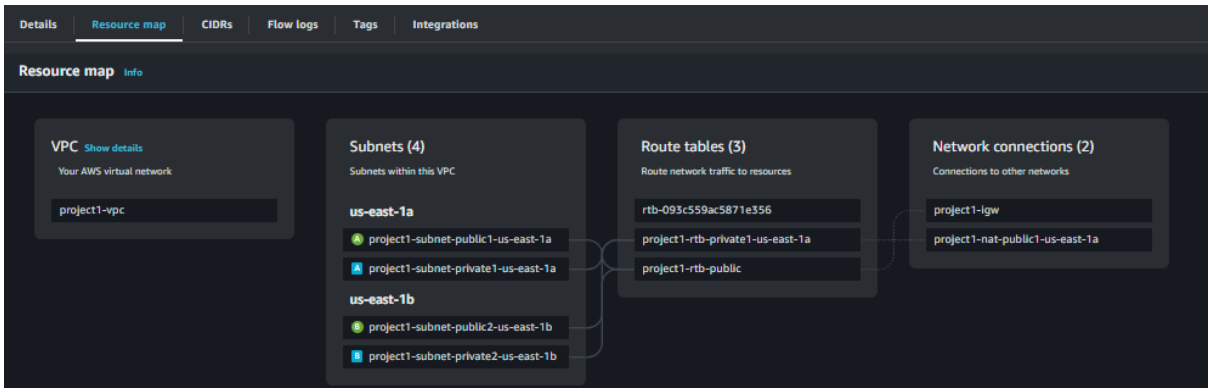

VPC Show details
Your AWS virtual network
project1-vpc
Subnets (4)
Subnets within this VPC
us-east-1a
project1-subnet-public1-us-east-1a
project1-subnet-private1-us-east-1a
us-east-1b
project1-subnet-public2-us-east-1b
project1-subnet-private2-us-east-1b
Route tables (3)
Route network traffic to resources
project1-rtb-public
project1-rtb-private1-us-east-1a
project1-rtb-private2-us-east-1b
Network connections (2)
Connections to other networks
project1-igw
project1-nat-public1-us-east-1a

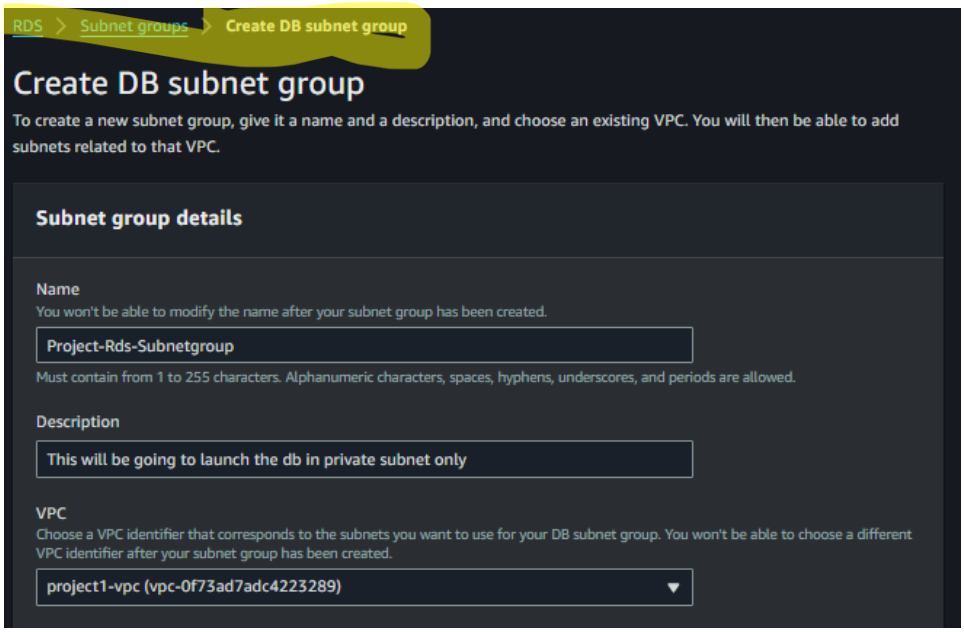

Success
Details
Create VPC: vpc-0f73ad7adc4223289
Enable DNS hostnames
Enable DNS resolution
Verifying VPC creation: vpc-0f73ad7adc4223289
Create subnet: subnet-0a8ca8544739f3c21
Create subnet: subnet-01f30964ae759cc12
Create subnet: subnet-0d8e0c249b2dc2566
Create subnet: subnet-0c0599de435bf6835
Create internet gateway: igw-0d529b116c8f839d5
Attach internet gateway to the VPC
Create route table: rtb-0ad4d6f234f807d3e
Create route
Associate route table
Associate route table
Allocate elastic IP: eipalloc-0b468c978e868d183
Create NAT gateway: nat-090c91692f127679c
Wait for NAT Gateways to activate
Create route table: rtb-085b2ec00306e1a88
Create route
Associate route table
Create route table: rtb-087fc741e30b6eab8
Create route
Associate route table
Verifying route table creation
View VPC

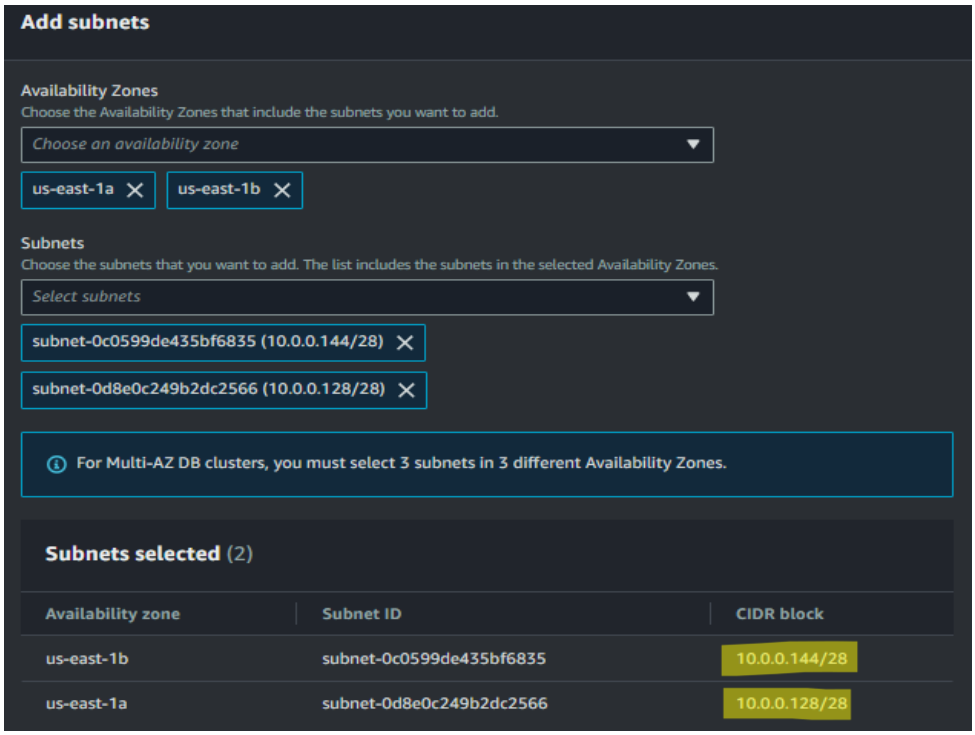

Route tables (1/5) Info
Actions
Create route table
Find resources by attribute or tag
Name
Route table ID
Explicit subnet associ...
Edge associations
Main
VPC
Owner ID
project1-rtb-private1-us-east-1a
rtb-085b2ec00306e1a88
subnet-0d8e0c249b2dc2...
No
vpc-0f73ad7adc4223289 | proj...
211125783778
project1-rtb-public
rtb-0ad4d6f234f807d3e
2 subnets
Yes
vpc-052c6fc0932543ae9
project1-rtb-private2-us-east-1b
rtb-087fc741e30b6eab8
subnet-0c0599de435bf6...
Explicit subnet associations (1)
Edit subnet associations
Find subnet association
Subnet ID
IPv4 CIDR
IPv6 CIDR
subnet-0d8e0c249b2dc2566
10.0.0.128/28
Subnets without explicit associations (0)
The following subnets have not been explicitly associated with any route tables and are therefore associated with the main route table:


VPC
Route tables
rtb-085b2ec00306e1a88
Edit subnet associations
Edit subnet associations
Change which subnets are associated with this route table.
Available subnets (2/4)
Filter subnet associations
Name
Subnet ID
IPv4 CIDR
IPv6 CIDR
Route table ID
project1-subnet-private2-us-east-1b
subnet-0c0599de435bf6835
10.0.0.144/28
rtb-087fc741e30b6eab8 / project1-rtb-priv...
project1-subnet-public2-us-east-1b
subnet-01f30964ae759cc12
10.0.0.16/28
rtb-0ad4d6f234f807d3e / project1-rtb-public
project1-subnet-private1-us-east-1a
subnet-0d8e0c249b2dc2566
10.0.0.128/28
rtb-085b2ec00306e1a88 / project1-rtb-priv...
project1-subnet-public1-us-east-1a
subnet-0a8ca8544739f3c21
10.0.0.0/28
rtb-0ad4d6f234f807d3e / project1-rtb-public
Selected subnets
subnet-0d8e0c249b2dc2566 / project1-subnet-private1-us-east-1a
subnet-0c0599de435bf6835 / project1-subnet-private2-us-east-1b
Cancel
Save associations

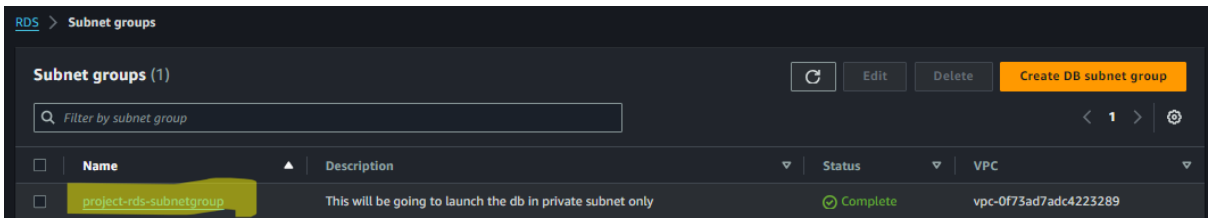

Route tables (1/5) Info
Actions
Create route table
View details
Set main route table
Edit subnet associations
Edit edge associations
Edit route propagation
Edit routes
Manage tags
Delete route table
Find resources by attribute or tag
Name
Route table ID
Explicit subnet associ...
Edge associations
Main
VPC
project1-rtb-private1-us-east-1a
rtb-085b2ec00306e1a88
2 subnets
No
project1-rtb-public
rtb-0ad4d6f234f807d3e
Yes
project1-rtb-private2-us-east-1b
rtb-087fc741e30b6eab8

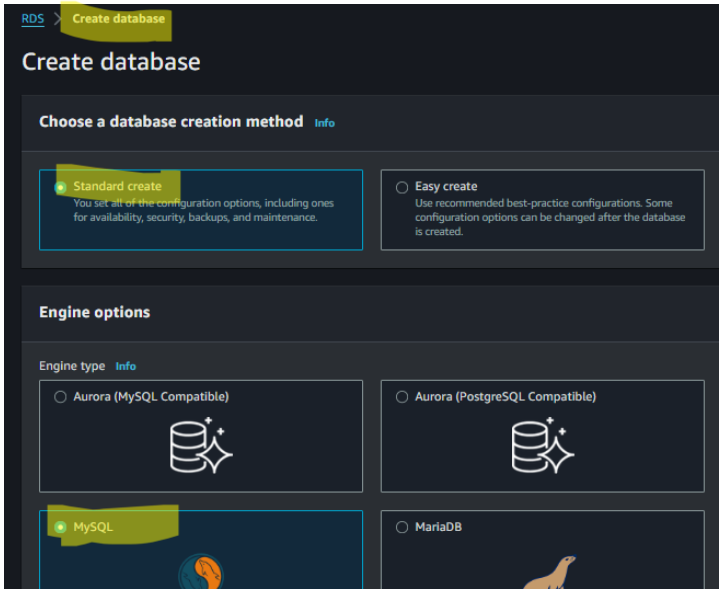

Details
Resource map
CIDRs
Flow logs
Tags
Integrations
Resource map Info
VPC Show details
Your AWS virtual network
project1-vpc
Subnets (4)
Subnets within this VPC
us-east-1a
project1-subnet-public1-us-east-1a
project1-subnet-private1-us-east-1a
us-east-1b
project1-subnet-public2-us-east-1b
project1-subnet-private2-us-east-1b
Route tables (3)
Route network traffic to resources
rtb-093c559ac5871e356
project1-rtb-private1-us-east-1a
project1-rtb-public
Network connections (2)
Connections to other networks
project1-igw
project1-nat-public1-us-east-1a

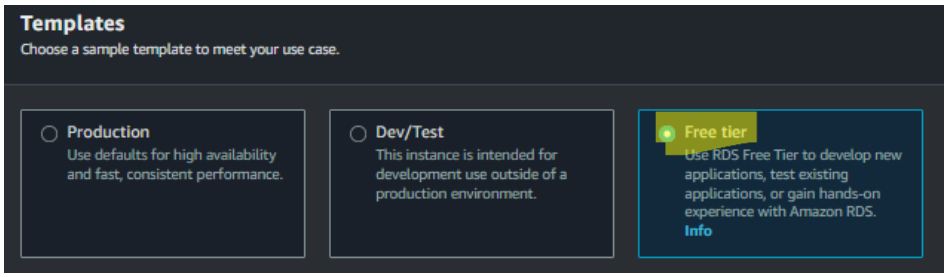


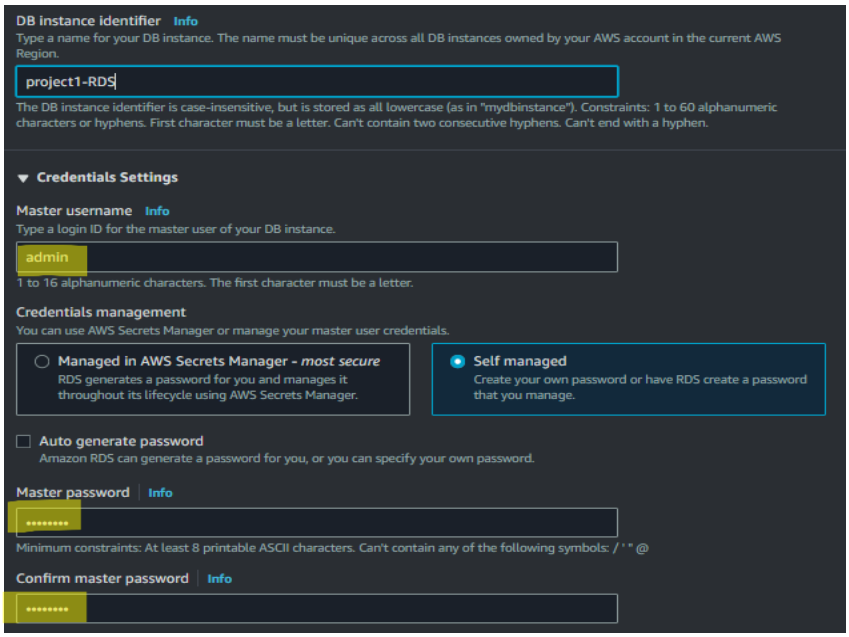


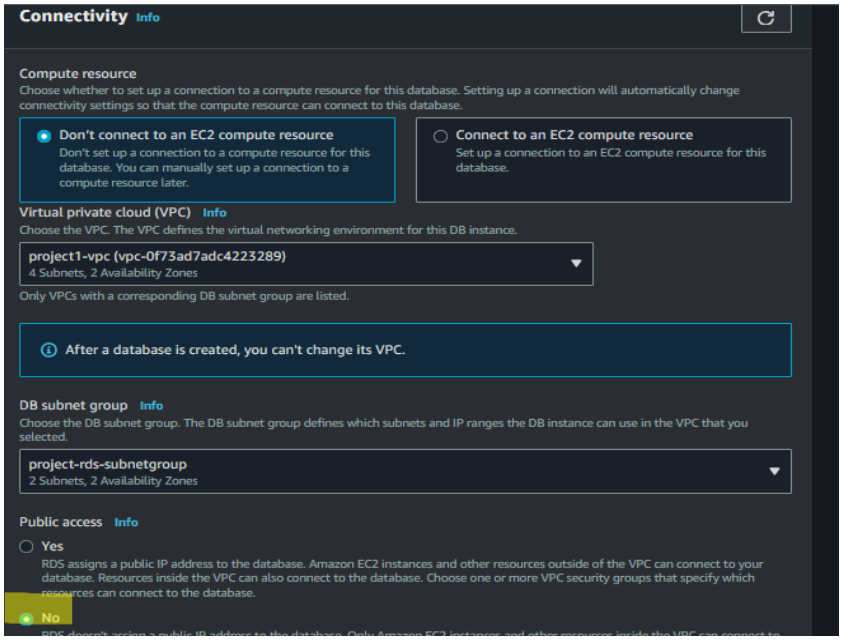
Successfully Created SubnetGroups

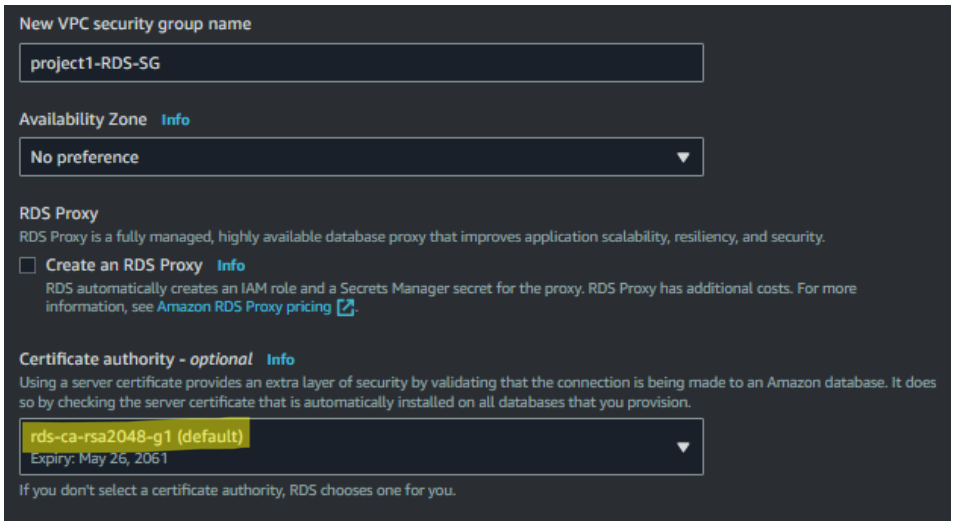


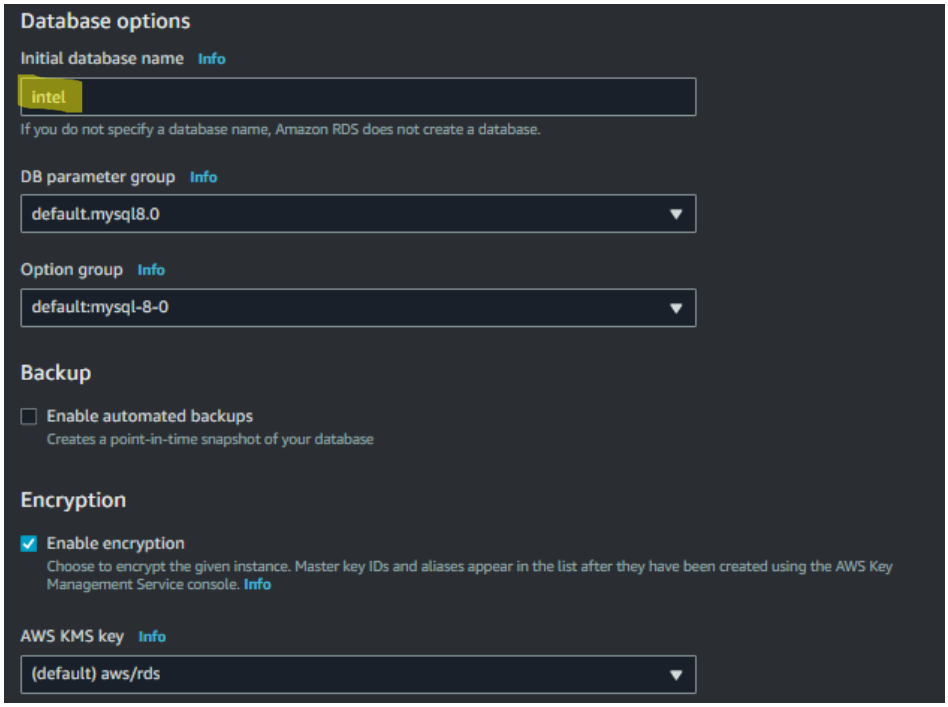

RDS
Create database
Create database
Choose a database creation method Info
Standard create
You set all of the configuration options, including ones for availability, security, backups, and maintenance.
Easy create
Use recommended best-practice configurations. Some configuration options can be changed after the database is created.
Engine options
Engine type Info
Aurora (MySQL Compatible)
Aurora (PostgreSQL Compatible)
MySQL
MariaDB


Templates
Choose a sample template to meet your use case.
Production
Use defaults for high availability and fast, consistent performance.
Dev/Test
This instance is intended for development use outside of a production environment.
Free tier
Use RDS Free Tier to develop new applications, test existing applications, or gain hands-on experience with Amazon RDS.
Info

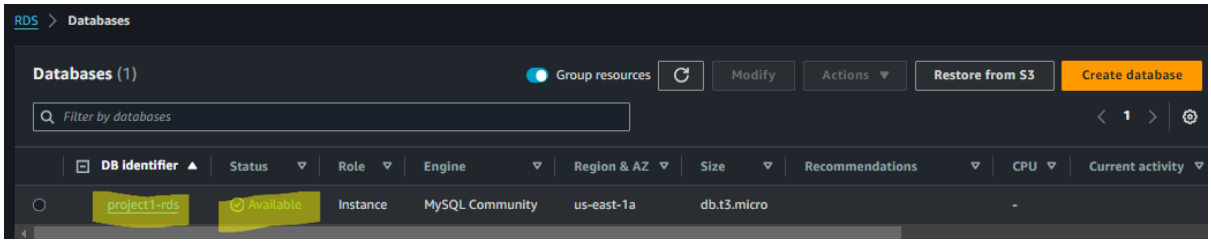

DB instance identifier Info
Type a name for your DB instance. The name must be unique across all DB instances owned by your AWS account in the current AWS Region.
project1-RDS
The DB instance identifier is case-insensitive, but is stored as all lowercase (as in "mydbinstance"). Constraints: 1 to 60 alphanumeric characters or hyphens. First character must be a letter. Can't contain two consecutive hyphens. Can't end with a hyphen.
Credentials Settings
Master username Info
Type a login ID for the master user of your DB instance.
admin
1 to 16 alphanumeric characters. The first character must be a letter.
Credentials management
You can use AWS Secrets Manager or manage your master user credentials.
Managed in AWS Secrets Manager - most secure
RDS generates a password for you and manages it throughout its lifecycle using AWS Secrets Manager.
Self managed
Create your own password or have RDS create a password that you manage.
Auto generate password
Amazon RDS can generate a password for you, or you can specify your own password.
Master password Info
Minimum constraints: At least 8 printable ASCII characters. Can't contain any of the following symbols: / ' " @
Confirm master password Info

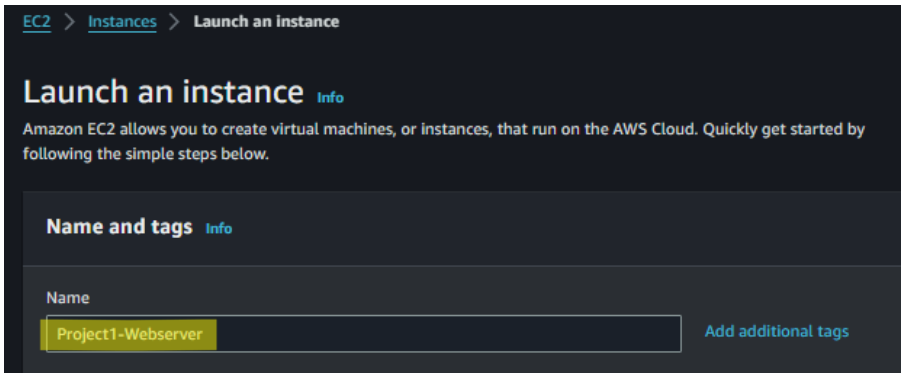

Connectivity Info
Compute resource
Choose whether to set up a connection to a compute resource for this database. Setting up a connection will automatically change connectivity settings so that the compute resource can connect to this database.
Don't connect to an EC2 compute resource
Don't set up a connection to a compute resource for this database. You can manually set up a connection to a compute resource later.
Connect to an EC2 compute resource
Set up a connection to an EC2 compute resource for this database.
Virtual private cloud (VPC) Info
Choose the VPC. The VPC defines the virtual networking environment for this DB instance.
project1-vpc (vpc-0f73ad7adc4223289)
4 Subnets, 2 Availability Zones
Only VPCs with a corresponding DB subnet group are listed.
After a database is created, you can't change its VPC.
DB subnet group Info
Choose the DB subnet group. The DB subnet group defines which subnets and IP ranges the DB instance can use in the VPC that you selected.
project-rds-subnetgroup
2 Subnets, 2 Availability Zones
Public access Info
Yes
RDS assigns a public IP address to the database. Amazon EC2 instances and other resources outside of the VPC can connect to your database. Resources inside the VPC can also connect to the database. Choose one or more VPC security groups that specify which resources can connect to the database.
No

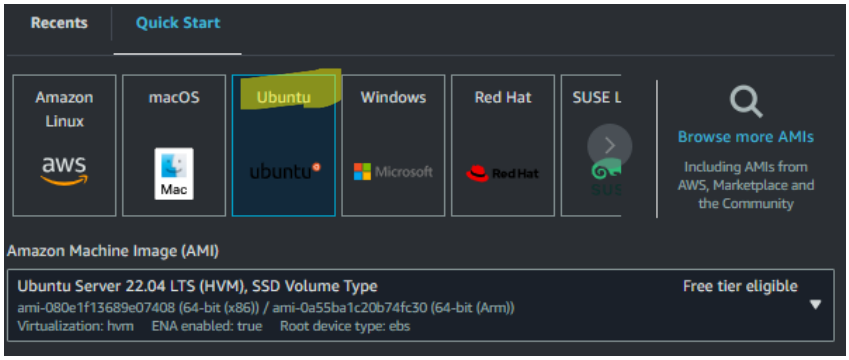

New VPC security group name
project1-RDS-SG
Availability Zone Info
No preference
RDS Proxy
RDS Proxy is a fully managed, highly available database proxy that improves application scalability, resiliency, and security.
Create an RDS Proxy Info
RDS automatically creates an IAM role and a Secrets Manager secret for the proxy. RDS Proxy has additional costs. For more information, see Amazon RDS Proxy pricing.
Certificate authority - optional Info
Using a server certificate provides an extra layer of security by validating that the connection is being made to an Amazon database. It does so by checking the server certificate that is automatically installed on all databases that you provision.
rds-ca-rsa2048-g1 (default)
Expiry: May 26, 2061
If you don't select a certificate authority, RDS chooses one for you.

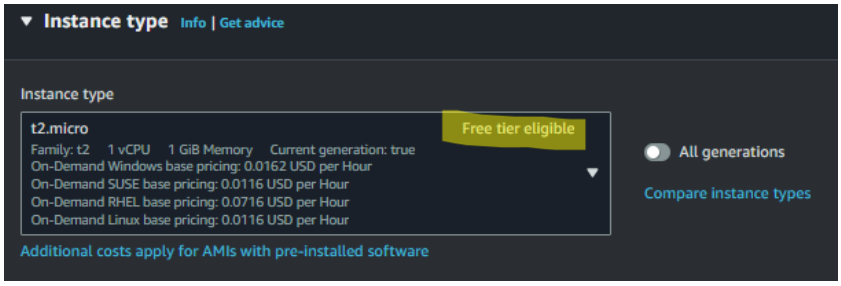


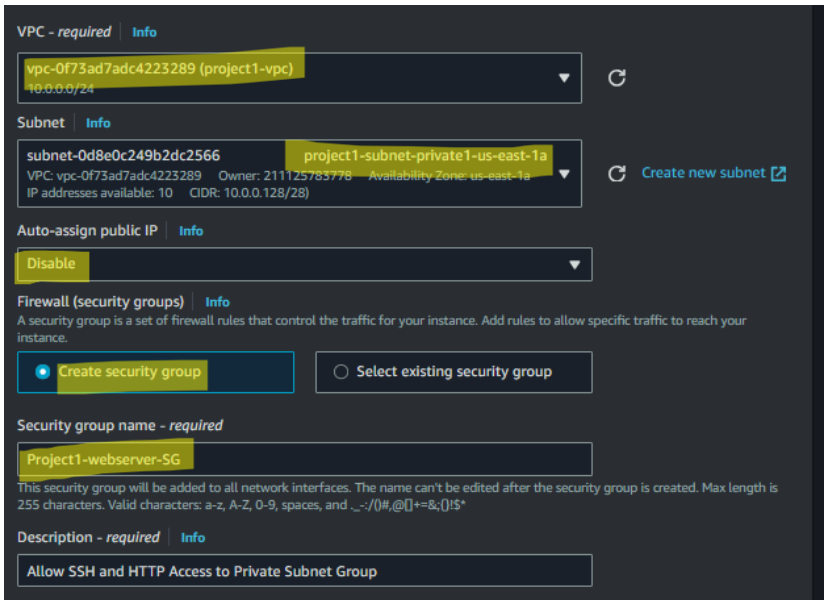
Created MySQL Database

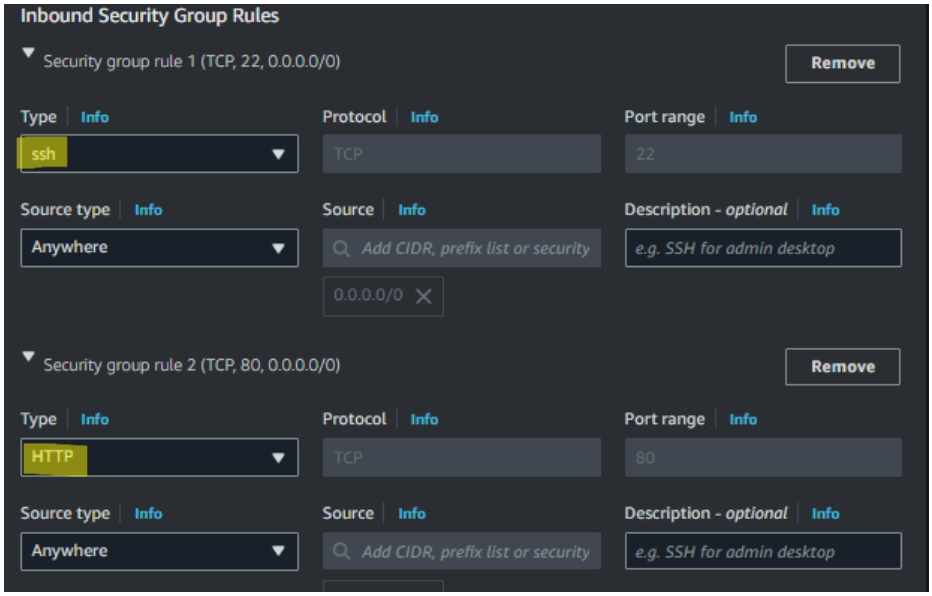




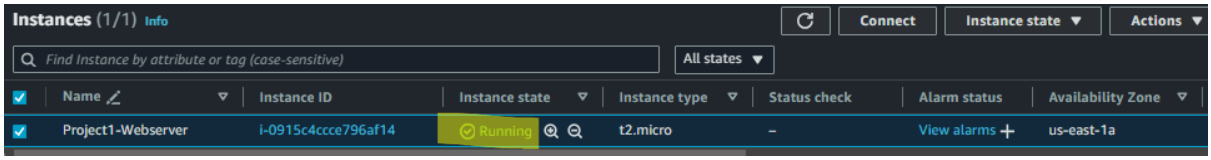

Recents
Quick Start
Amazon Linux
macOS
Ubuntu
Windows
Red Hat
SUSE L
Browse more AMIs
Including AMIs from AWS, Marketplace and the Community
Amazon Machine Image (AMI)
Ubuntu Server 22.04 LTS (HVM), SSD Volume Type
Free tier eligible
ami-080e1f13689e07408 (64-bit (x86)) / ami-0a55ba1c20b74fc30 (64-bit (Arm))
Virtualization: hvm ENA enabled: true Root device type: ebs

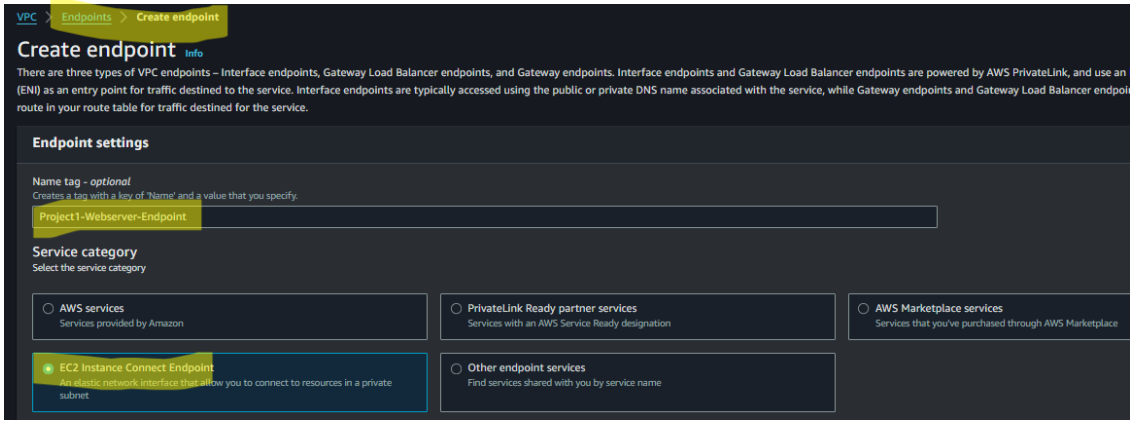

Instance type Info | Get advice
Instance type
t2.micro
Free tier eligible
Family: t2 1 vCPU 1 GiB Memory Current generation: true
On-Demand Windows base pricing: 0.0162 USD per Hour
On-Demand SUSE base pricing: 0.0116 USD per Hour
On-Demand RHEL base pricing: 0.0716 USD per Hour
On-Demand Linux base pricing: 0.0116 USD per Hour
All generations
Compare instance types
Additional costs apply for AMIs with pre-installed software

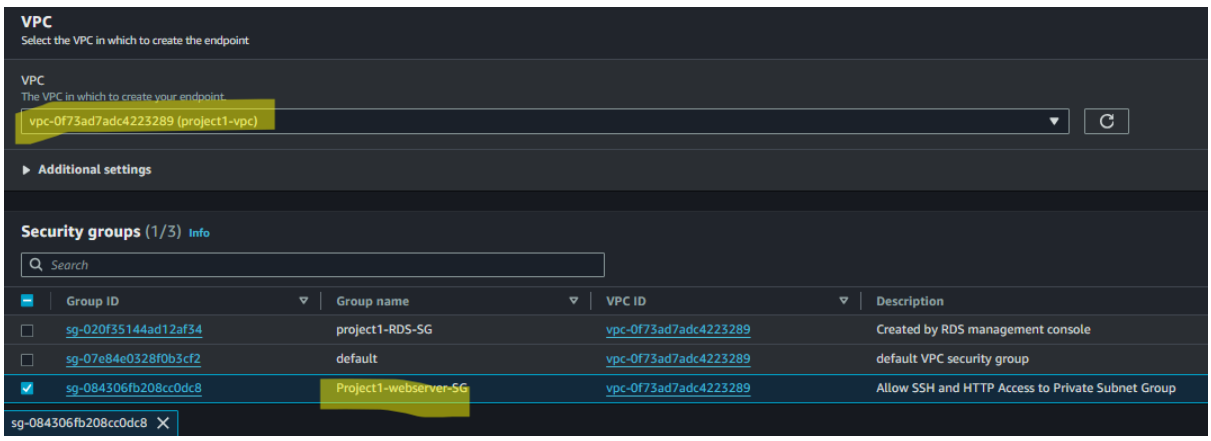

VPC - required Info
vpc-0f73ad7adc4223289 (project1-vpc)
10.0.0.0/24
Subnet Info
subnet-0d8e0c249b2dc2566
project1-subnet-private1-us-east-1a
VPC: vpc-0f73ad7adc4223289 Owner: 211125783778 Availability Zone: us-east-1a
IP addresses available: 10 CIDR: 10.0.0.128/28)
Create new subnet
Auto-assign public IP Info
Disable
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
Security group name - required
Project1-webserver-SG
This security group will be added to all network interfaces. The name can't be edited after the security group is created. Max length is 255 characters. Valid characters: a-z, A-Z, 0-9, spaces, and ._-:/()#,@[]+=&;{}!$*
Description - required Info
Allow SSH and HTTP Access to Private Subnet Group

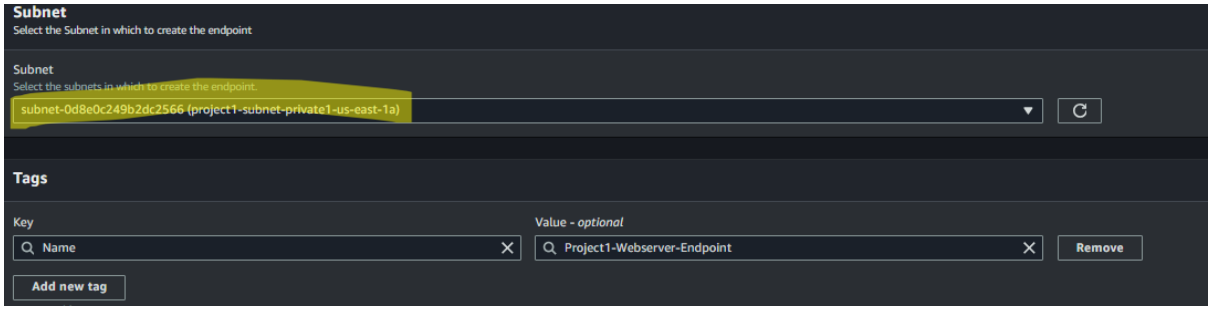


Created Instances

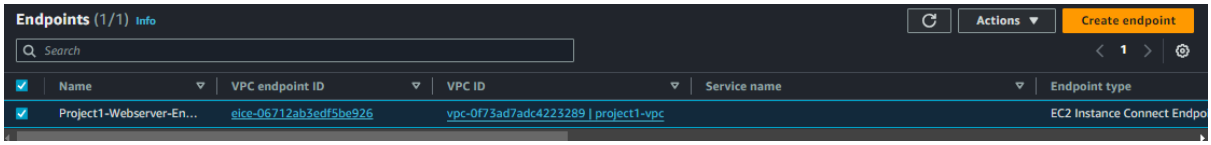


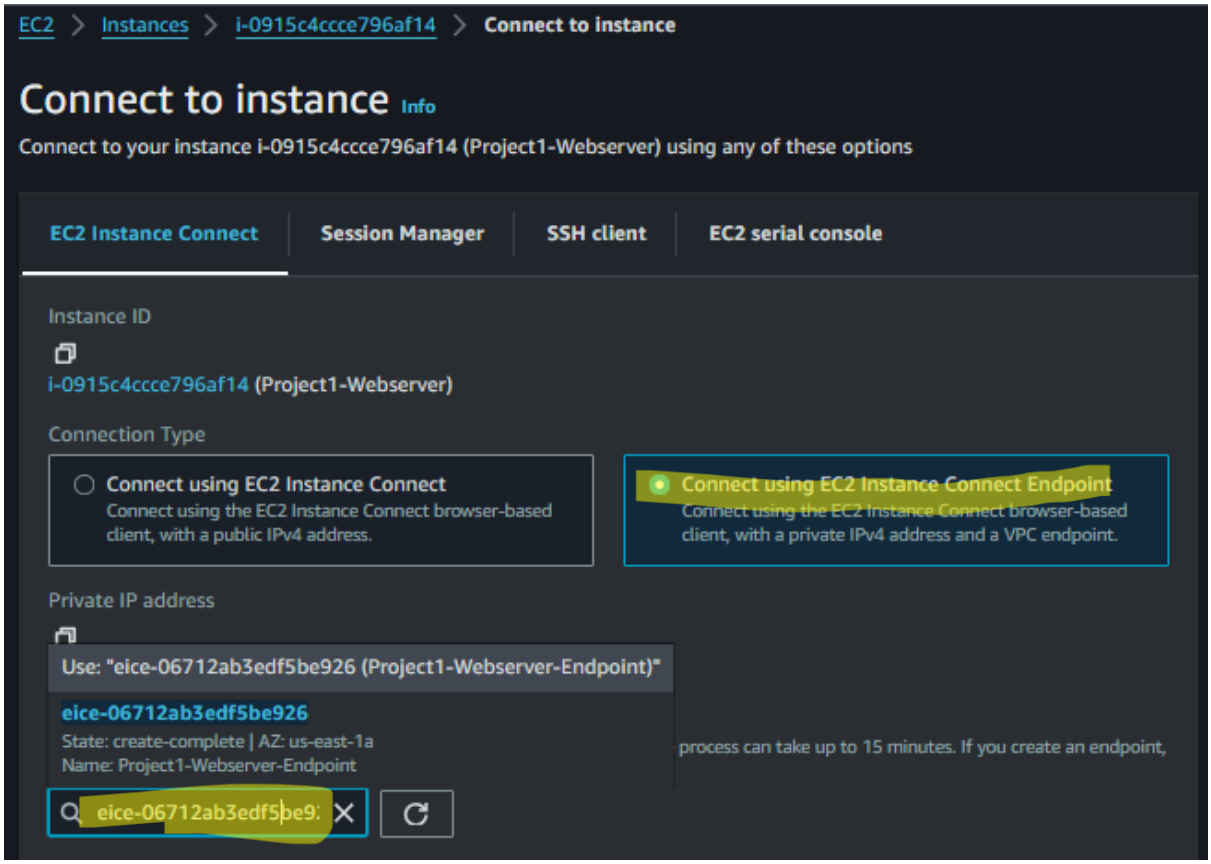






Created Endpoint



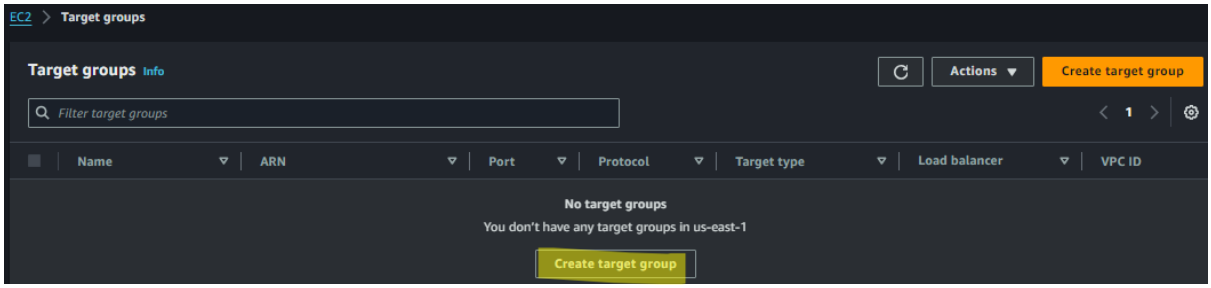


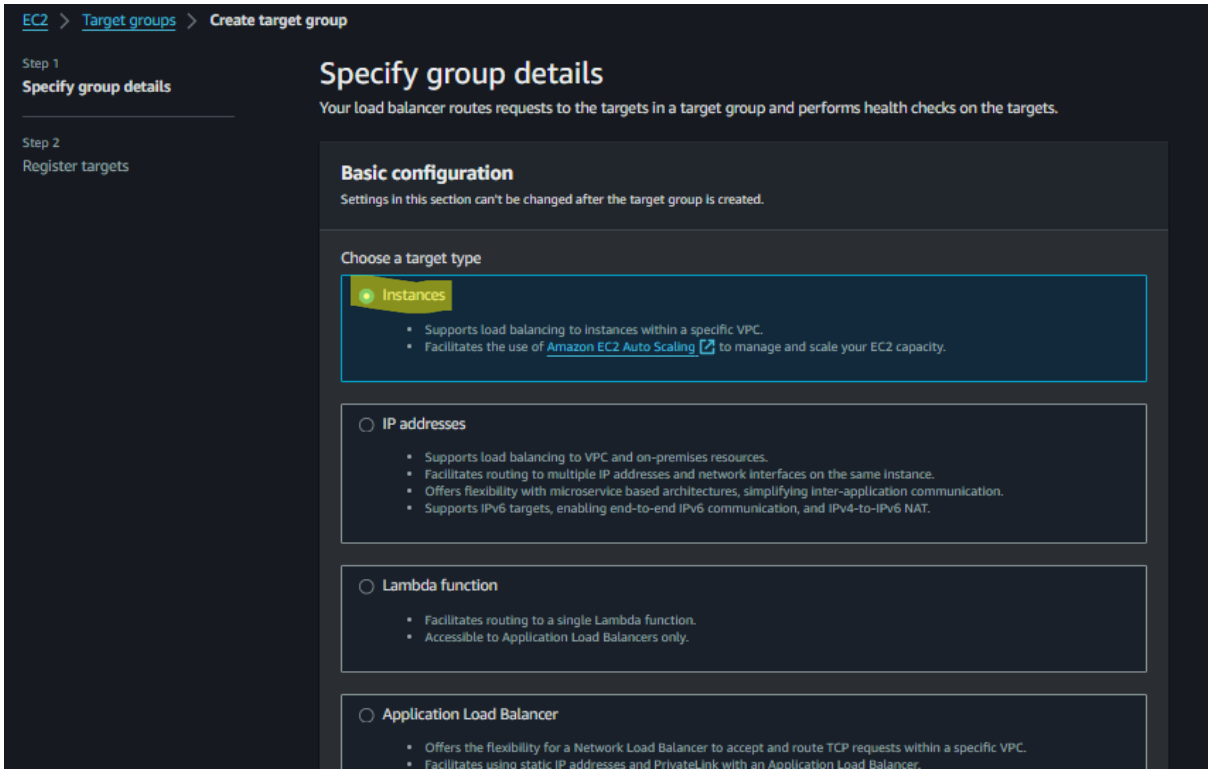

```
Fetched 31.0 MB in 6s (5429 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
52 packages can be upgraded. Run 'apt list --upgradable' to see them.
ubuntu@ip-10-0-0-134:~$
```

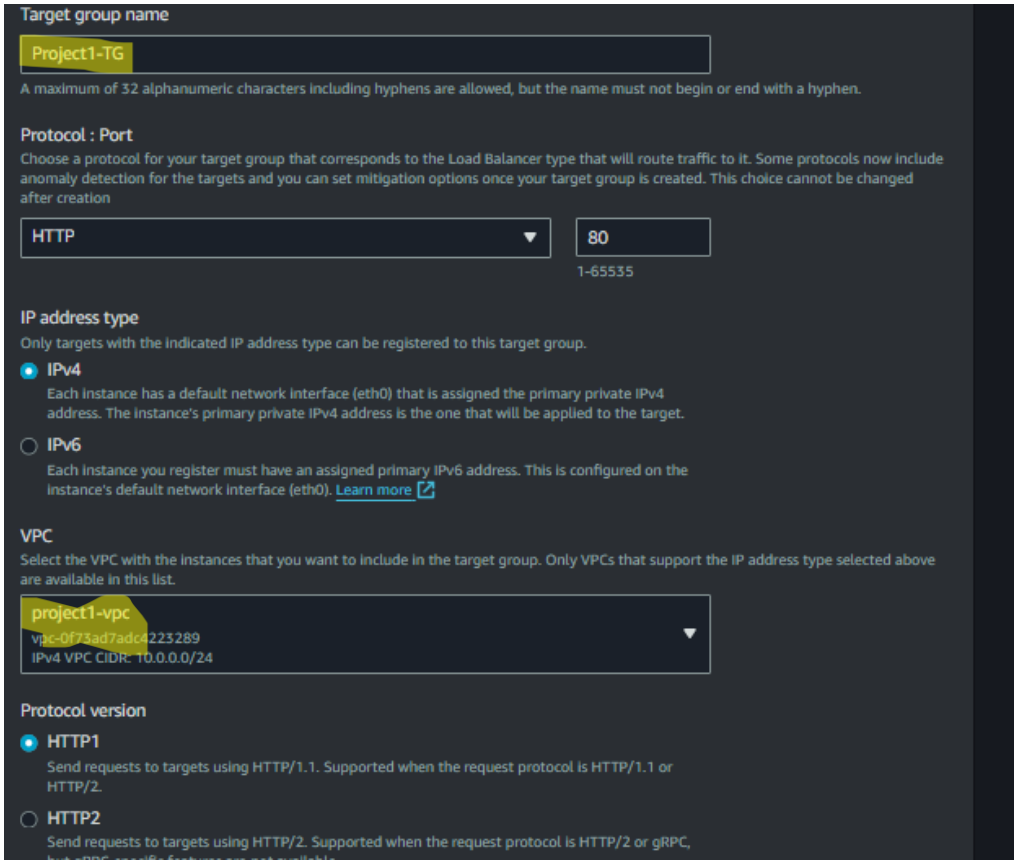
Installing apache2 web server

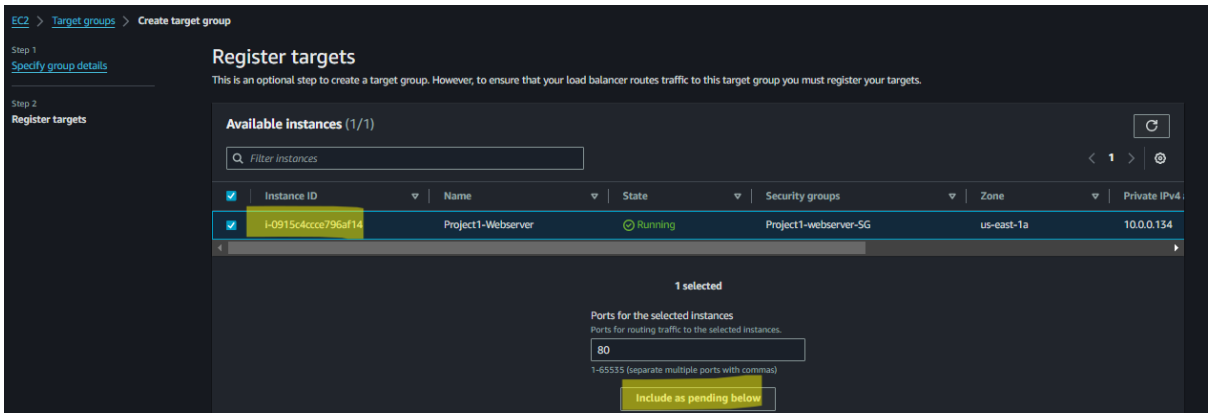
```
Enabling module filter.
Enabling module deflate.
Enabling module status.
Enabling module reqtimeout.
Enabling conf charset.
Enabling conf localized-error-pages.
Enabling conf other-vhosts-access-log.
Enabling conf security.
Enabling conf serve-cgi-bin.
Enabling site 000-default.
Created symlink /etc/systemd/system/multi-user.target.wants/apache2.service → /lib/systemd/system/apache2.service.
Created symlink /etc/systemd/system/multi-user.target.wants/apache-htcacheclean.service → /lib/systemd/system/apache-htcacheclean.service.
Processing triggers for ufw (0.36.1-4ubuntu0.1) ...
Processing triggers for man-db (2.10.2-1) ...
Processing triggers for libc-bin (2.35-0ubuntu3.6) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
```

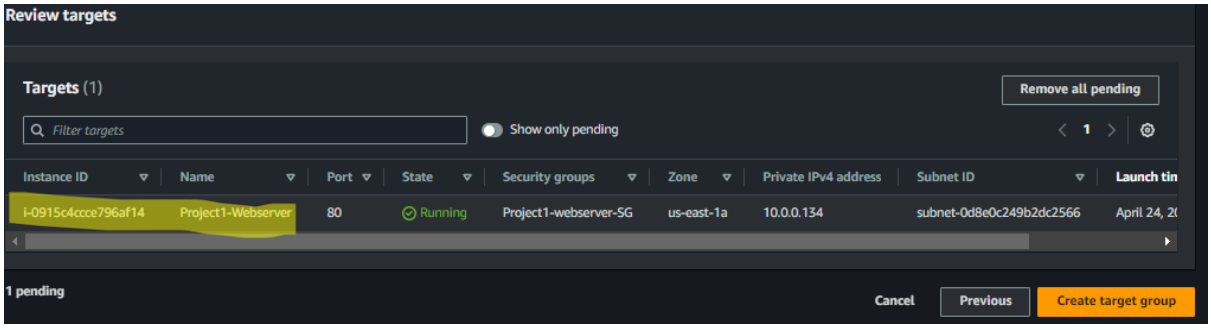
Created Target Group

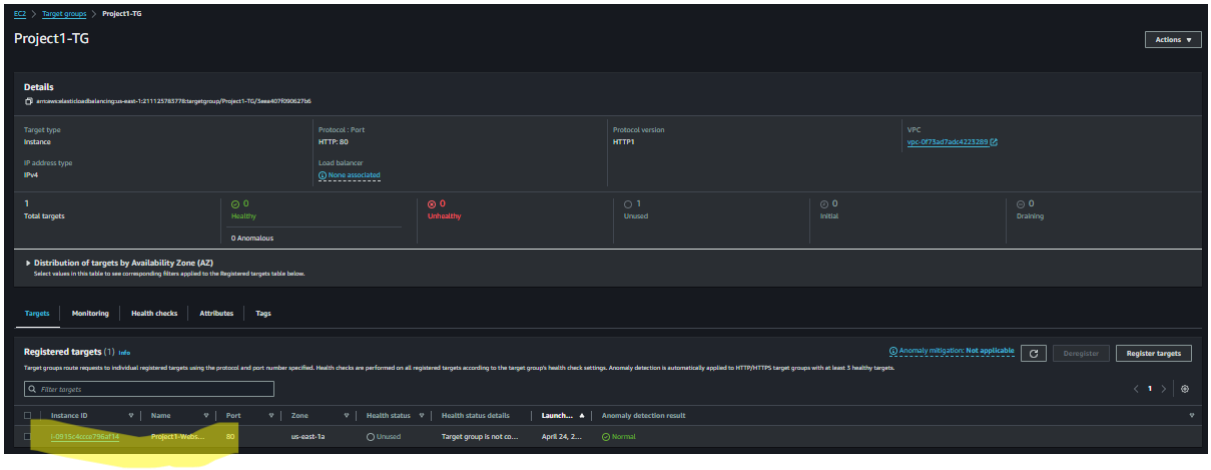


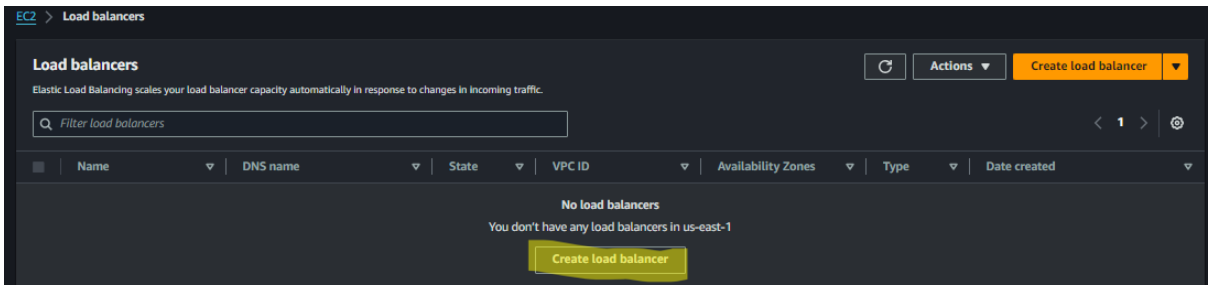


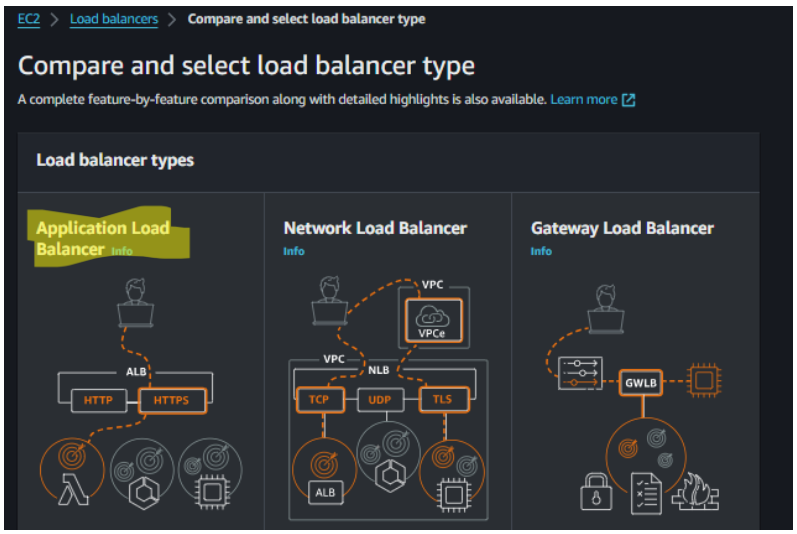

Target group name
Project1-TG
A maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen.
Protocol : Port
Choose a protocol for your target group that corresponds to the Load Balancer type that will route traffic to it. Some protocols now include anomaly detection for the targets and you can set mitigation options once your target group is created. This choice cannot be changed after creation
HTTP
80
1-65535
IP address type
Only targets with the indicated IP address type can be registered to this target group.
IPv4
Each instance has a default network interface (eth0) that is assigned the primary private IPv4 address. The instance's primary private IPv4 address is the one that will be applied to the target.
IPv6
Each instance you register must have an assigned primary IPv6 address. This is configured on the instance's default network interface (eth0). Learn more
VPC
Select the VPC with the instances that you want to include in the target group. Only VPCs that support the IP address type selected above are available in this list.
project1-vpc
vpc-0f73ad7adc4223289
IPv4 VPC CIDR: 10.0.0.0/24
Protocol version
HTTP1
Send requests to targets using HTTP/1.1. Supported when the request protocol is HTTP/1.1 or HTTP/2.
HTTP2
Send requests to targets using HTTP/2. Supported when the request protocol is HTTP/2 or gRPC,


EC2 > Target groups > Create target group
Step 1
Specify group details
Step 2
Register targets
Register targets
This is an optional step to create a target group. However, to ensure that your load balancer routes traffic to this target group you must register your targets.
Available instances (1/1)
Filter instances
Instance ID
Name
State
Security groups
Zone
Private IPv4
i-0915c4ccce796af14
Project1-Webserver
Running
Project1-webserver-SG
us-east-1a
10.0.0.134
1 selected
Ports for the selected instances
Ports for routing traffic to the selected instances.
80
1-65535 (separate multiple ports with commas)
Include as pending below

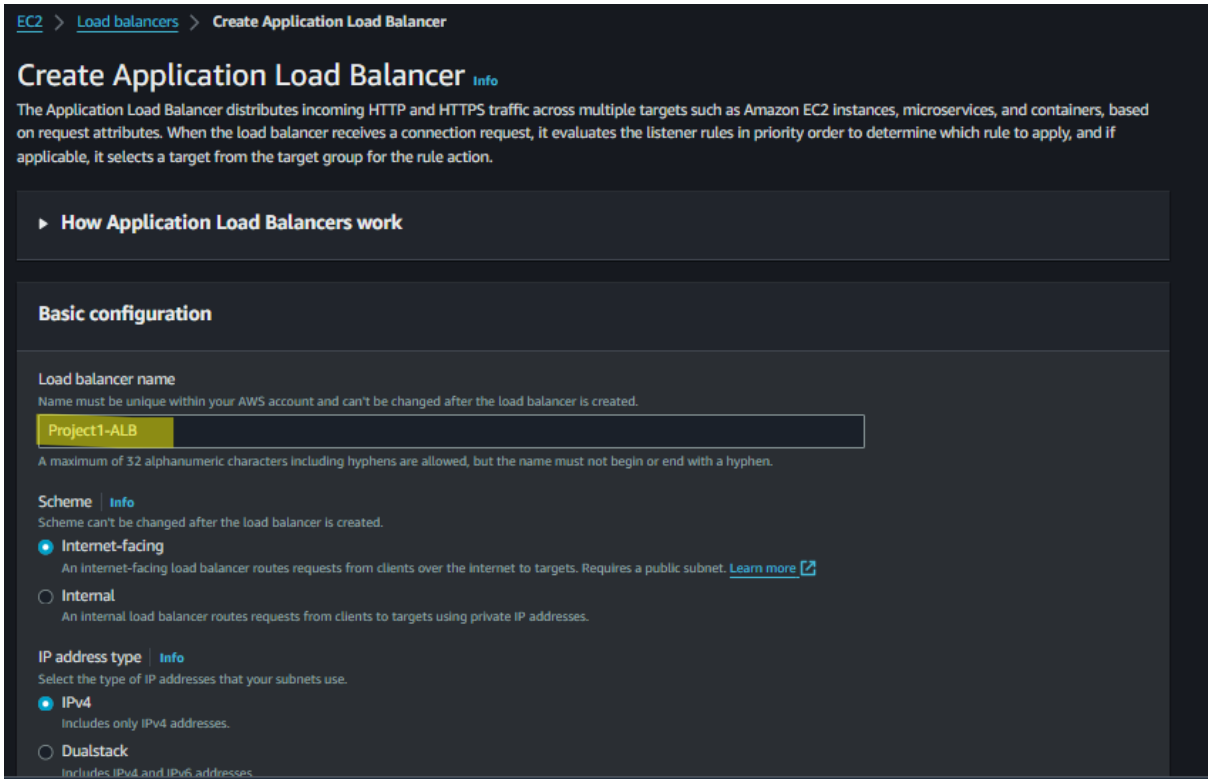

Review targets
Targets (1)
Remove all pending
Filter targets
Show only pending
Instance ID
Name
Port
State
Security groups
Zone
Private IPv4 address
Subnet ID
Launch tin
i-0915c4ccce796af14
Project1-Webserver
80
Running
Project1-webserver-SG
us-east-1a
10.0.0.134
subnet-0d8e0c249b2dc2566
April 24, 2(
1 pending
Cancel
Previous
Create target group

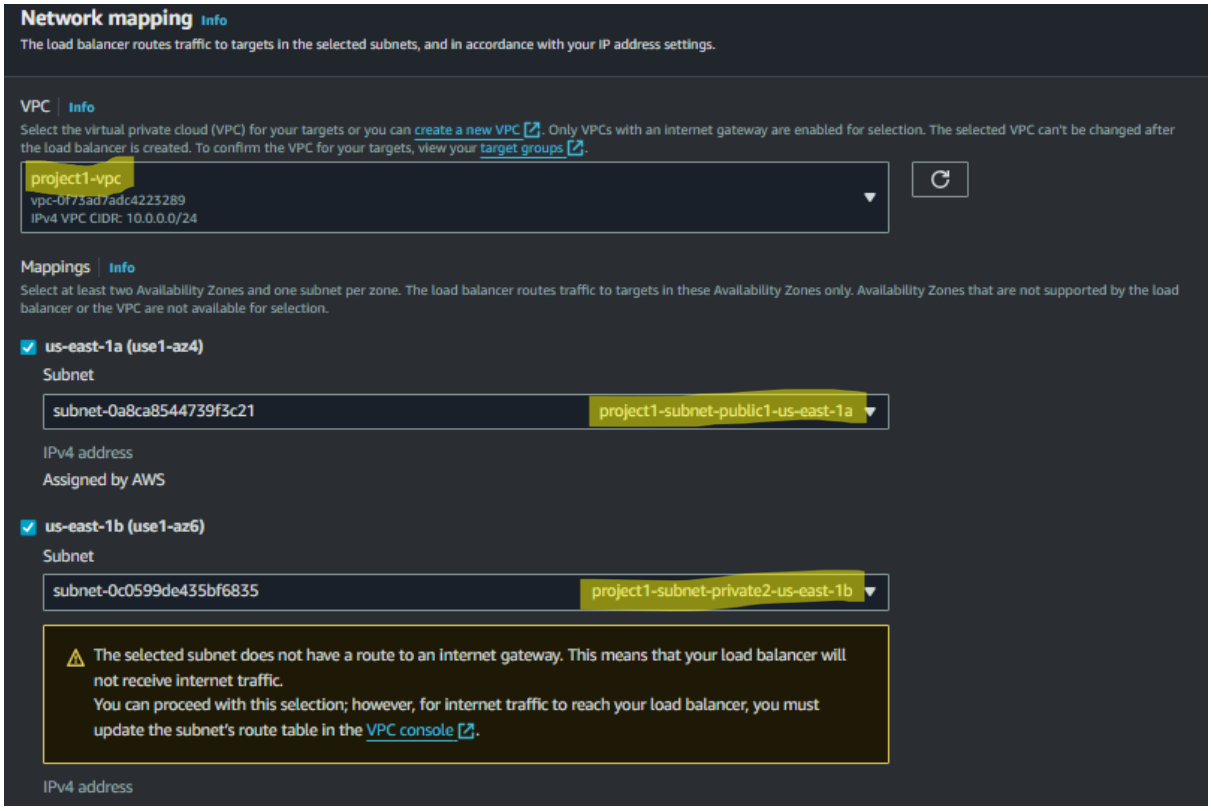

EC2 > Target groups > Project1-TG
Project1-TG
Actions
Details
Target type
Instance
Protocol : Port
HTTP: 80
Protocol version
HTTP1
VPC
IP address type
IPv4
Load balancer
None associated
1
Total targets
0
Healthy
0 Anomalous
0
Unhealthy
1
Unused
0
Initial
0
Draining
Distribution of targets by Availability Zone (AZ)
Targets
Monitoring
Health checks
Attributes
Tags
Registered targets (1) Info
Anomaly mitigation: Not applicable
Deregister
Register targets
Filter targets
Instance ID
Name
Port
Zone
Health status
Health status details
Launch...
Anomaly detection result
80
us-east-1a
Unused
Target group is not co...
April 24, 2...
Normal

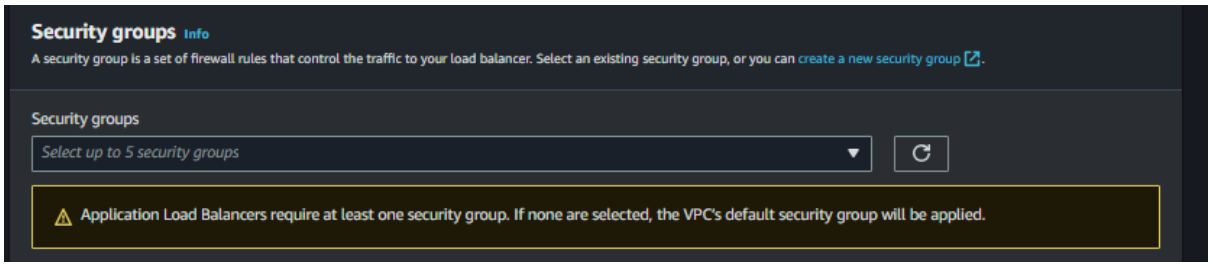

EC2 > Load balancers
Load balancers
Elastic Load Balancing scales your load balancer capacity automatically in response to changes in incoming traffic.
Actions
Create load balancer
Filter load balancers
1
Name
DNS name
State
VPC ID
Availability Zones
Type
Date created
No load balancers
You don't have any load balancers in us-east-1
Create load balancer


EC2 > Load balancers > Compare and select load balancer type
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
ALB
HTTP
HTTPS
Network Load Balancer
Info
VPC
VPCe
VPC
NLB
TCP
UDP
TLS
ALB
Gateway Load Balancer
Info
GWLB

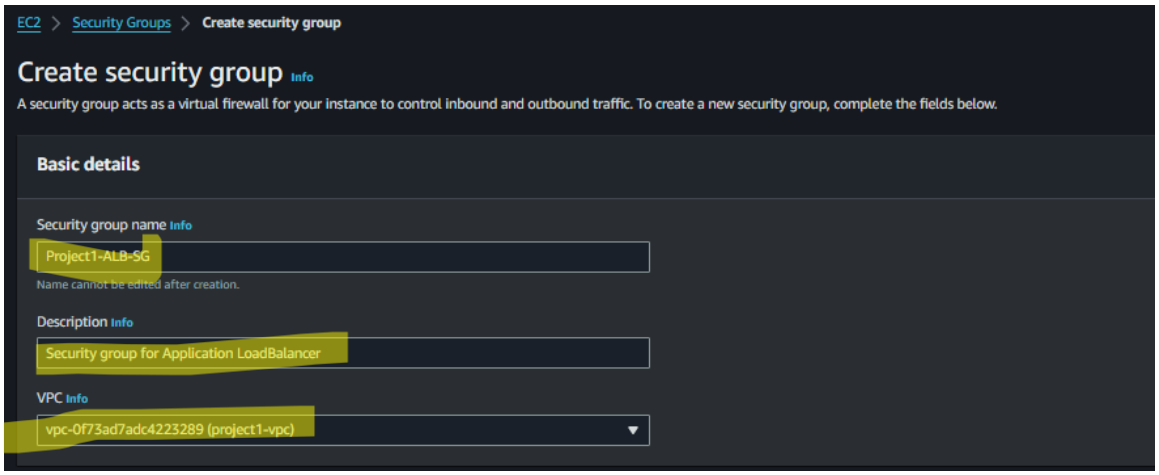
Create load balancer

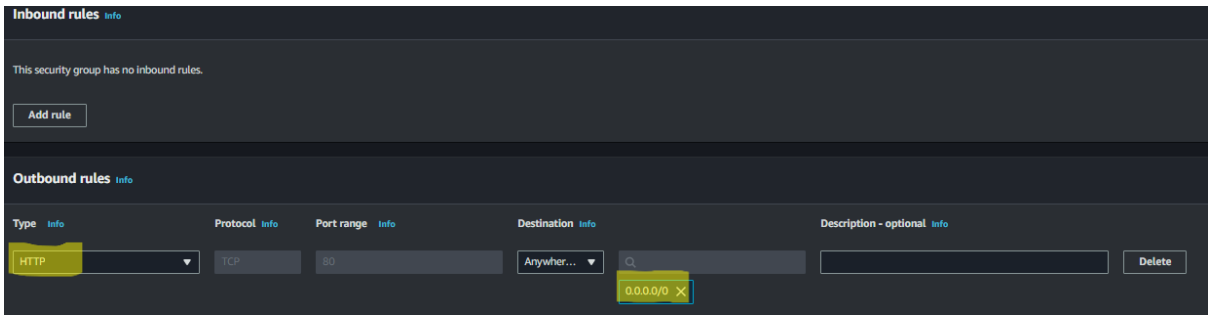


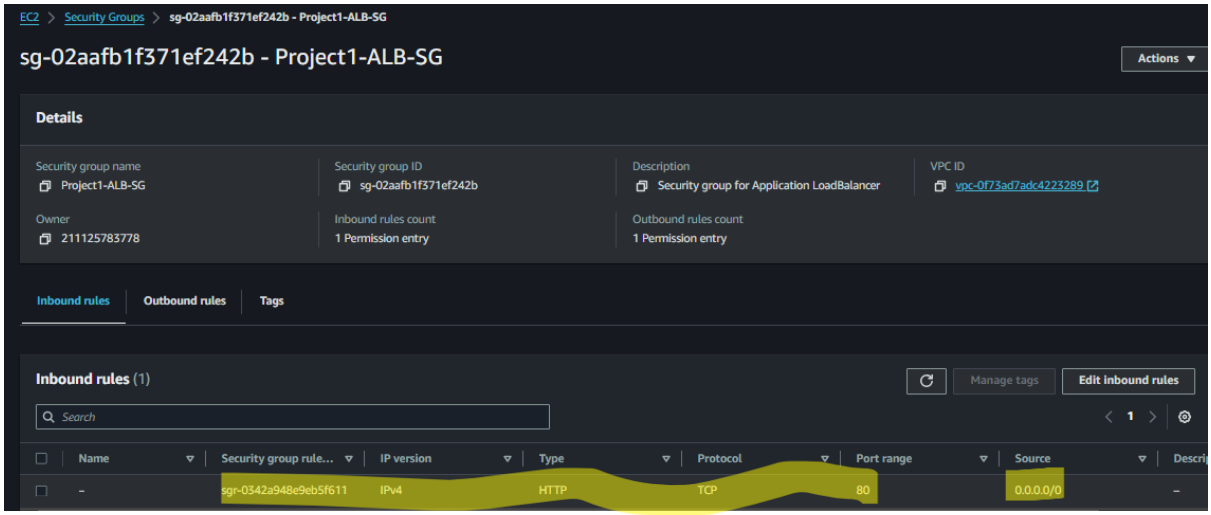


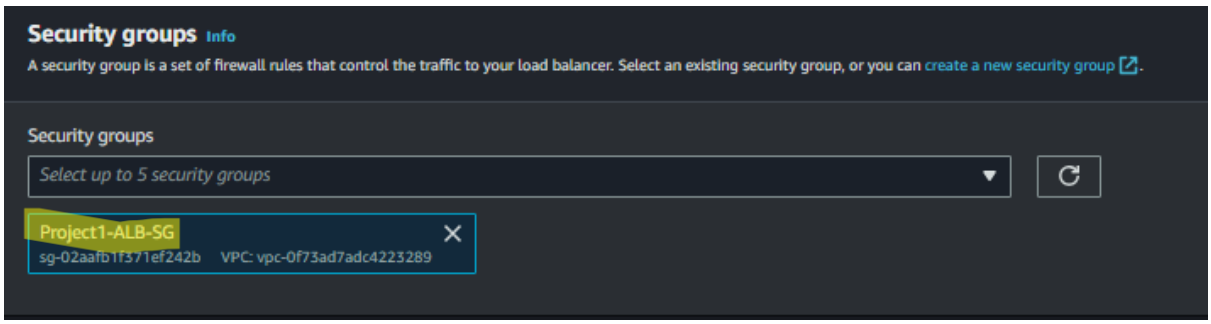


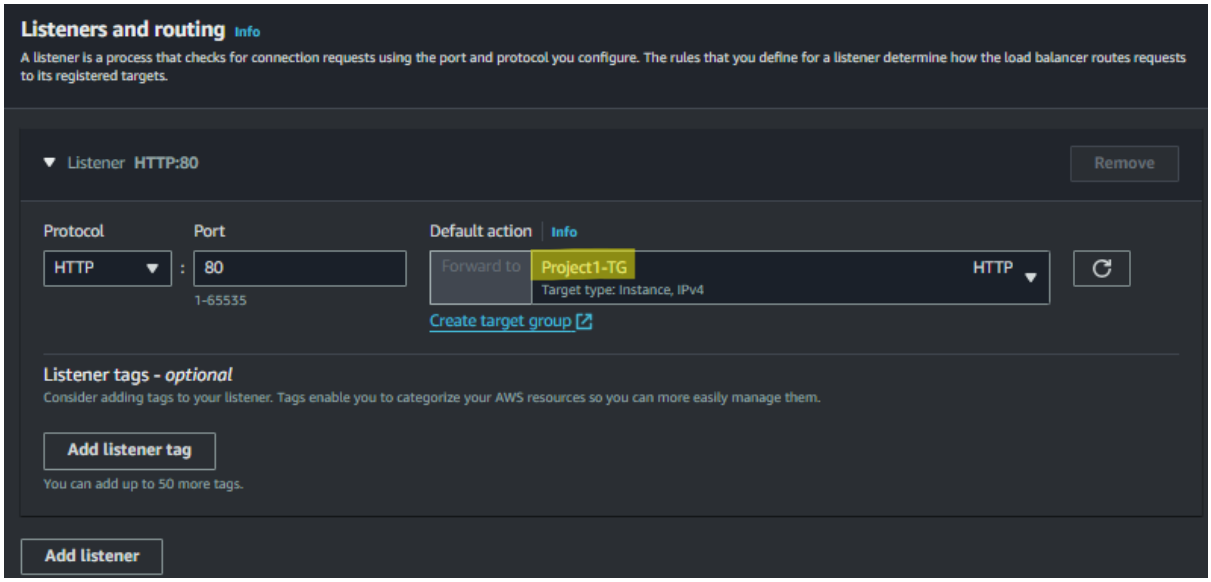
Created Security group

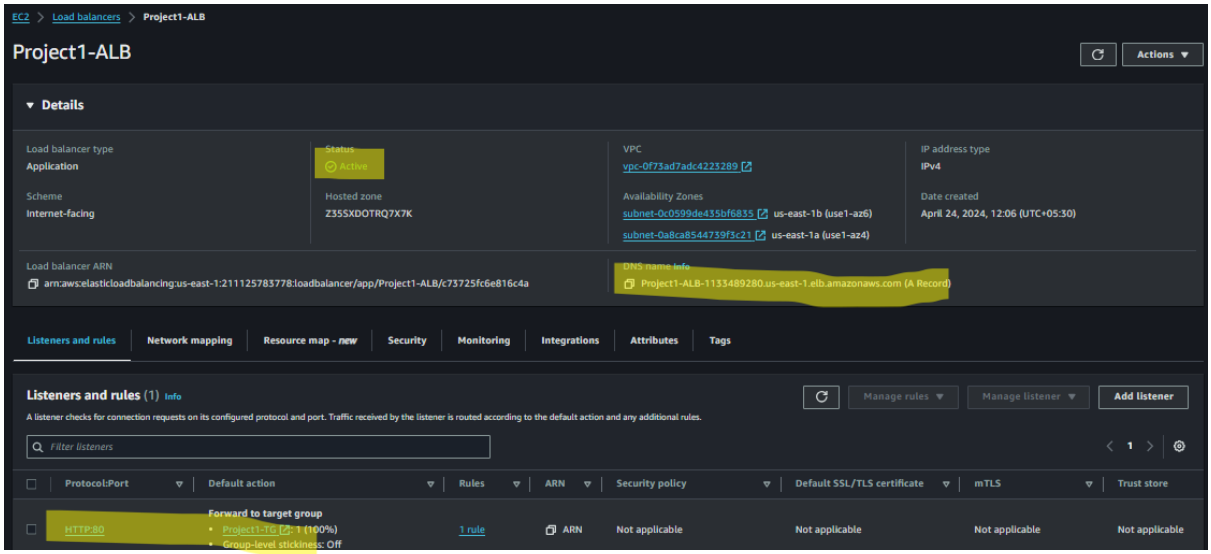


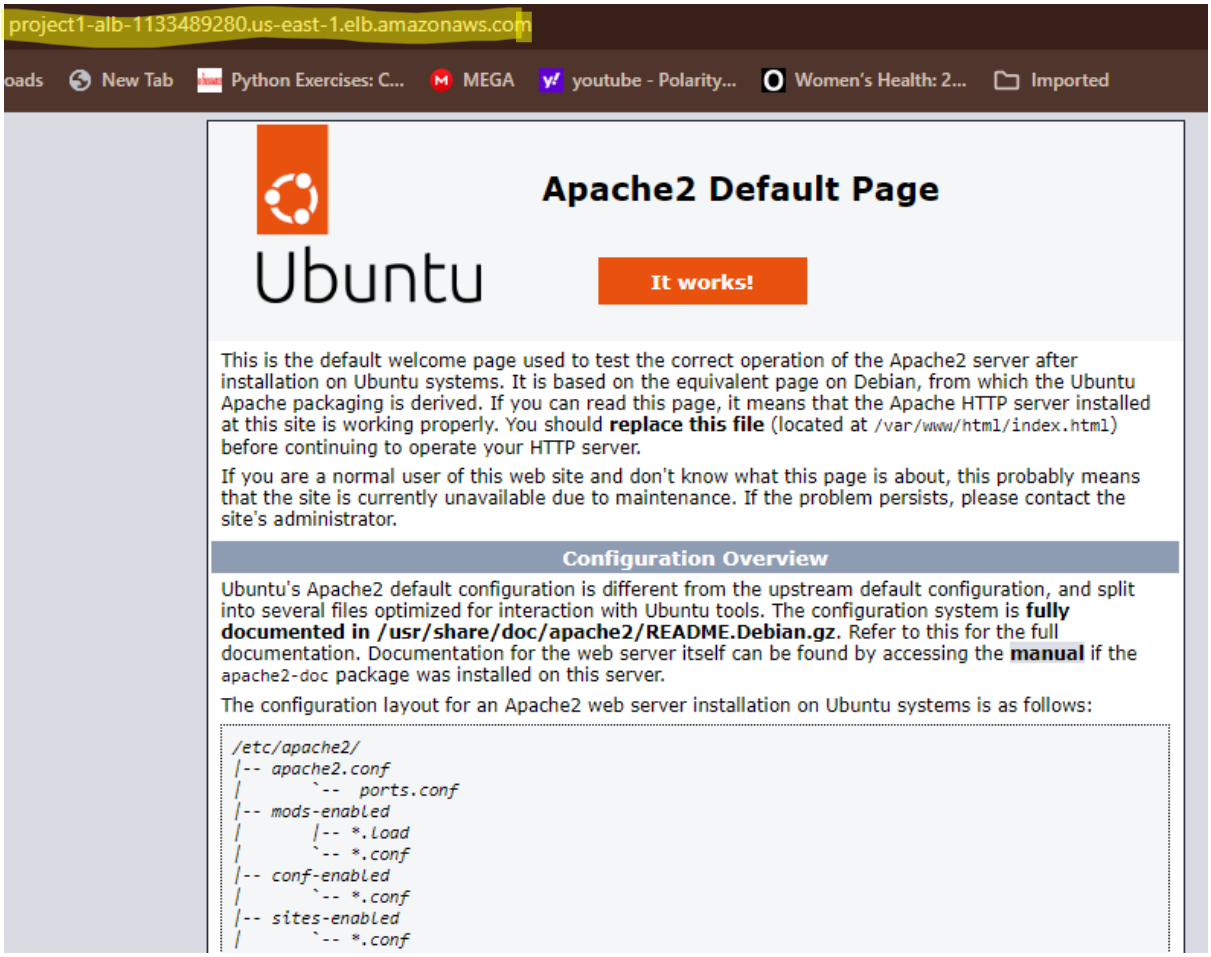



EC2 > Security Groups > sg-02aafb1f371ef242b - Project1-ALB-SG
sg-02aafb1f371ef242b - Project1-ALB-SG
Actions
Details
Security group name
Project1-ALB-SG
Security group ID
sg-02aafb1f371ef242b
Description
Security group for Application LoadBalancer
VPC ID
vpc-0f73ad7adc4223289
Owner
211125783778
Inbound rules count
1 Permission entry
Outbound rules count
1 Permission entry
Inbound rules
Outbound rules
Tags
Inbound rules (1)
Manage tags
Edit inbound rules
Search
Name
Security group rule...
IP version
Type
Protocol
Port range
Source
sgr-0342a948e9eb5f611
IPv4
HTTP
TCP
80
0.0.0.0/0

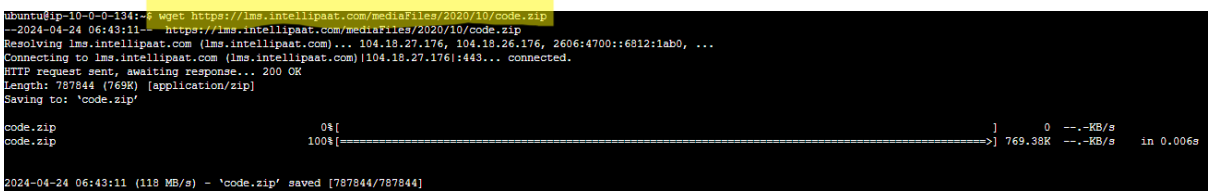

Security groups Info
A security group is a set of firewall rules that control the traffic to your load balancer. Select an existing security group, or you can create a new security group.
Security groups
Select up to 5 security groups
Project1-ALB-SG
sg-02aafb1f371ef242b VPC: vpc-0f73ad7adc4223289


Listeners and routing Info
A listener is a process that checks for connection requests using the port and protocol you configure. The rules that you define for a listener determine how the load balancer routes requests to its registered targets.
Listener HTTP:80
Remove
Protocol
Port
HTTP
80
1-65535
Default action Info
Forward to
Project1-TG
Target type: Instance, IPv4
HTTP
Create target group
Listener tags - optional
Consider adding tags to your listener. Tags enable you to categorize your AWS resources so you can more easily manage them.
Add listener tag
You can add up to 50 more tags.
Add listener





wget https://lms.intellipaat.com/mediaFiles/2020/10/code.zip

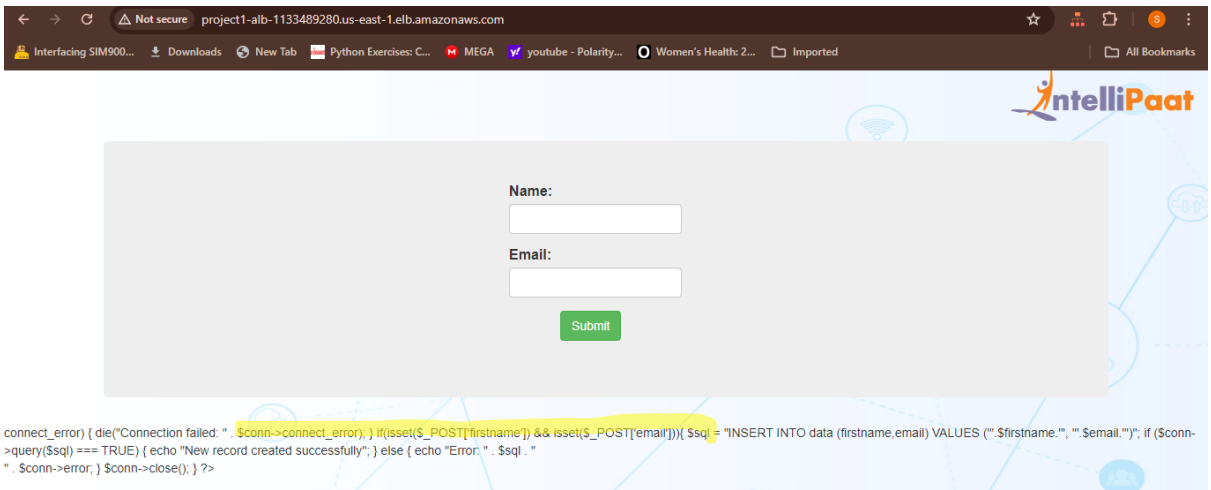


```
No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
ubuntu@ip-10-0-0-134:~$ unzip code.zip
Archive:  code.zip
   creating: 1243/images/
  inflating: 1243/images/1.png
  inflating: 1243/images/2.png
  inflating: 1243/index.php
ubuntu@ip-10-0-0-134:~$ ls
1243  code.zip
```

```
ubuntu@ip-10-0-0-134:~$ cd 1243
ubuntu@ip-10-0-0-134:~/1243$ ls
images  index.php
```

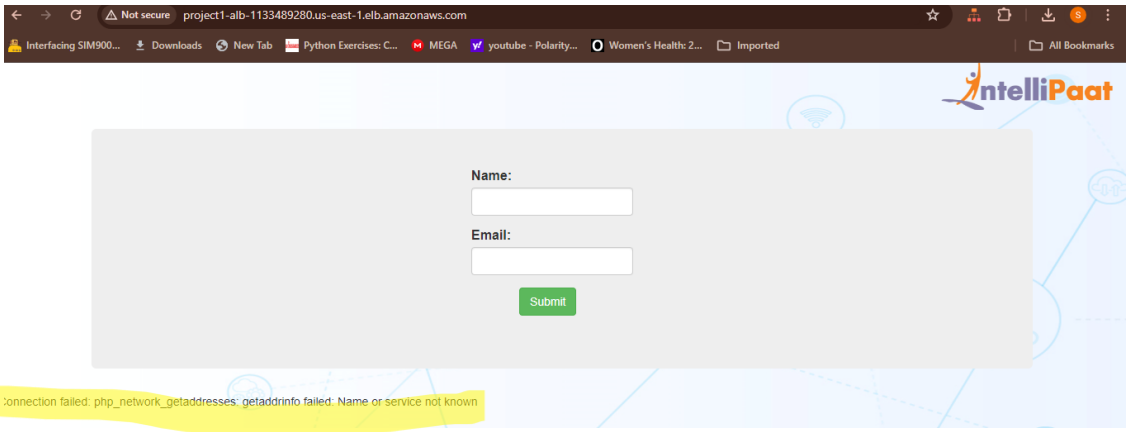
What Commands I Run its Marked In Yellow Mark

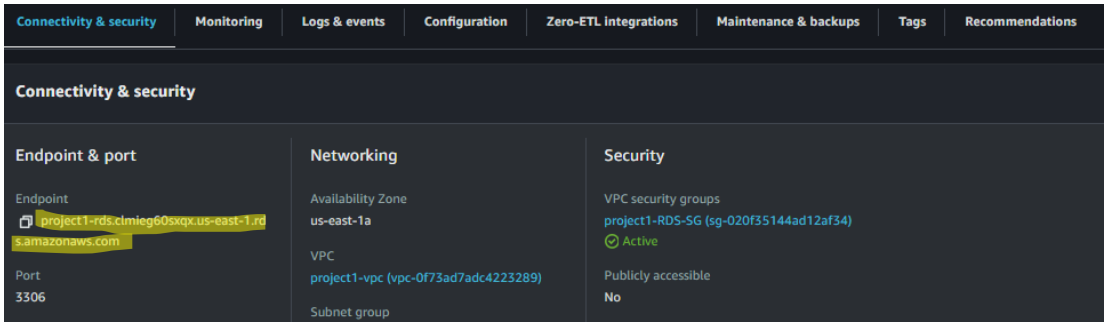
```
ubuntu@ip-10-0-0-134:~/1243$ sudo mv * /var/www/html
ubuntu@ip-10-0-0-134:~/1243$ cd /var/www/html
ubuntu@ip-10-0-0-134:/var/www/html$ ls
images  index.html  index.php
ubuntu@ip-10-0-0-134:/var/www/html$ sudo rm index.html
ubuntu@ip-10-0-0-134:/var/www/html$ ls
images  index.php
ubuntu@ip-10-0-0-134:/var/www/html$
```

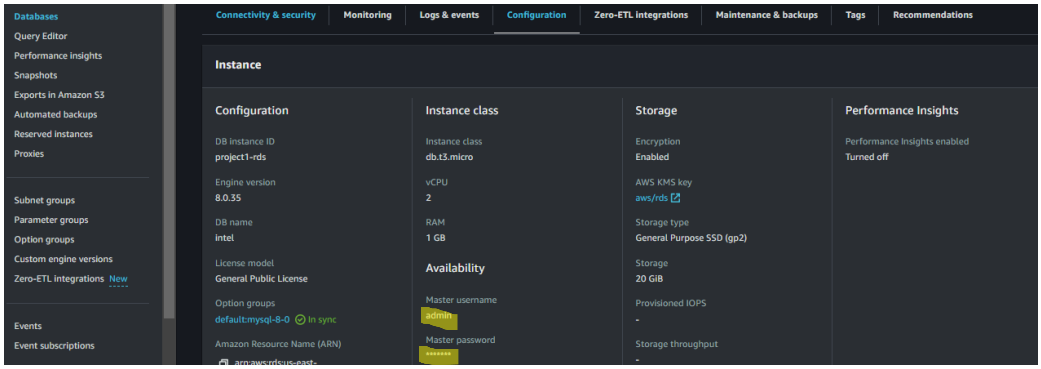


```
ubuntu@ip-10-0-0-134:/var/www/html$ sudo add-apt-repository -y ppa:ondrej/php
PPA publishes dbgsym, you may need to include 'main/debug' component
Repository: 'deb https://ppa.launchpadcontent.net/ondrej/php/ubuntu/ jammy main'
Description:
Co-installable PHP versions: PHP 5.6, PHP 7.x, PHP 8.x and most requested extensions are included. Only Supported Versions of PHP (http://
untu Releases (https://wiki.ubuntu.com/Releases) are provided. Don't ask for end-of-life PHP versions or Ubuntu release, they won't be pro

Debian oldstable and stable packages are provided as well: https://deb.sury.org/#debian-dpa

You can get more information about the packages at https://deb.sury.org

IMPORTANT: The <foo>-backports is now required on older Ubuntu releases.

BUGS&FEATURES: This PPA now has a issue tracker:
https://deb.sury.org/#bug-reporting

CAVEATS:
```

```
ubuntu@ip-10-0-0-134:/var/www/html$ sudo apt install php5.6 mysql-client php5.6-mysql -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  libapache2-mod-php5.6 libpcre3 mysql-client-8.0 mysql-client-core-8.0 mysql-common php-common php5.6-cli php5.6-common
Suggested packages:
  php-pear
The following NEW packages will be installed:
  libapache2-mod-php5.6 mysql-client mysql-client-8.0 mysql-client-core-8.0 mysql-common php-common php5.6 php5.6-cli ph
  php5.6-readline
The following packages will be upgraded:
  libpcre3
1 upgraded, 13 newly installed, 0 to remove and 54 not upgraded.
Need to get 7072 kB of archives.
After this operation, 76.7 MB of additional disk space will be used.
```





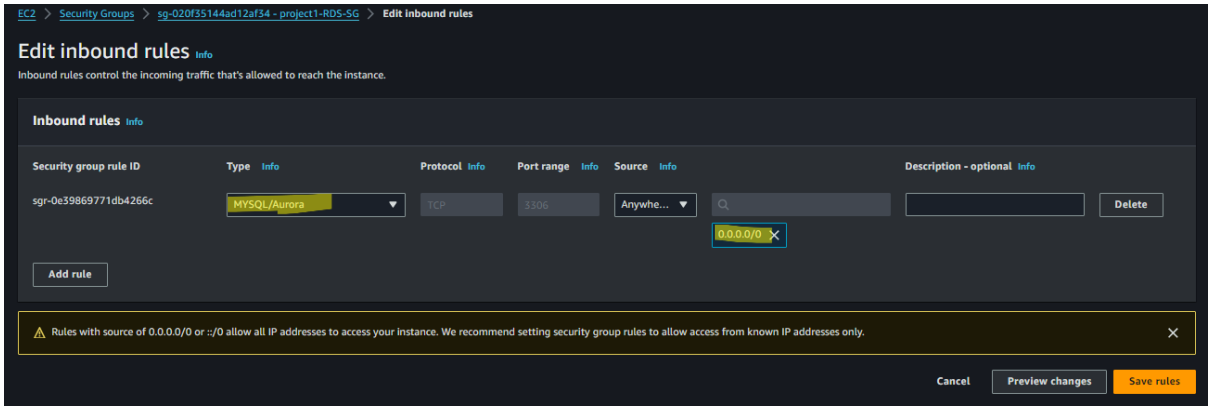


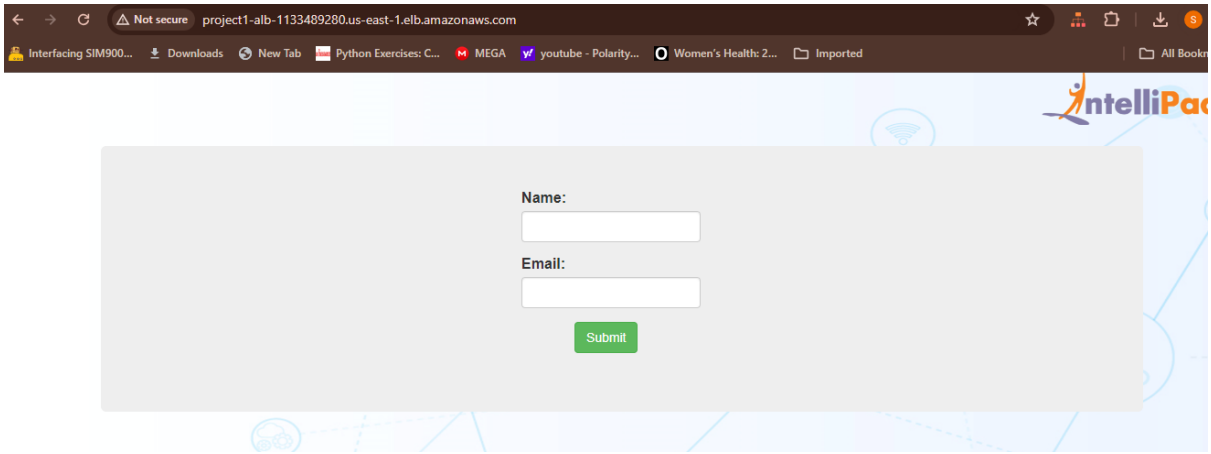
Sudo nano index.php

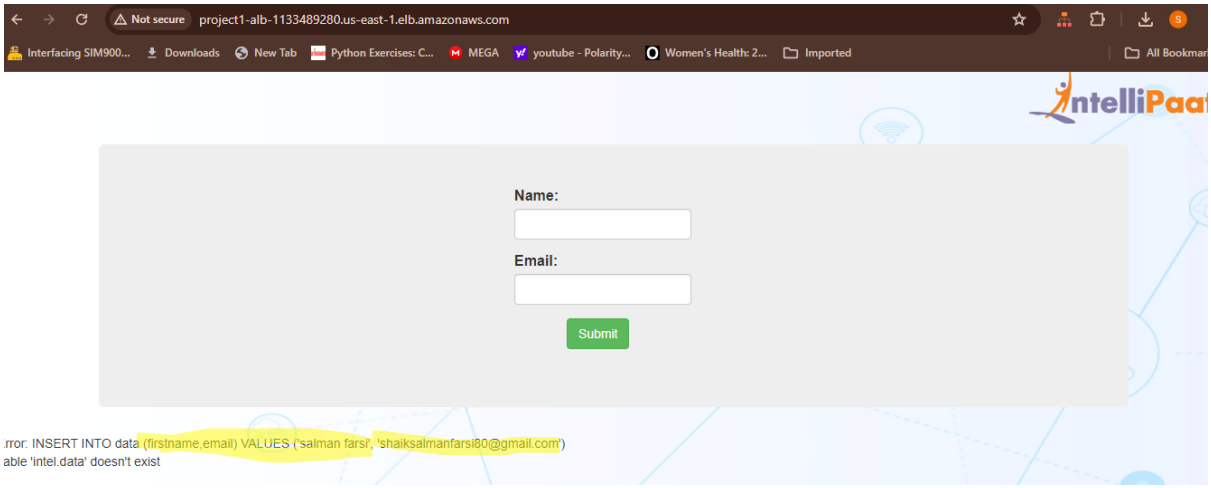
Edit :Servername, Username, Password which u are given in the RDS

```
  GNU nano 6.2                                                  index.php *
</div>
</div>
<?php
$firstname=$_POST['firstname'];
$email=$_POST['email'];
$servername = "project1-rds.clmieg60sxqx.us-east-1.rds.amazonaws.com";
$username = "admin";
$password = "admin123";
$db = "intel";
// Create connection
$conn = new mysqli($servername, $username, $password, $db);

// Check connection
if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}
if(isset($_POST['firstname']) && isset($_POST['email'])){
$sql = "INSERT INTO data (firstname,email)
VALUES ('".$firstname."', '".$email."')";

if ($conn->query($sql) === TRUE) {
    echo "New record created successfully";
} else {
    echo "Error: " . $sql . "<br>" . $conn->error;
```

Check RDS SG is allowed the source to Everyone or not








```
ubuntu@ip-10-0-0-134:/var/www/html$ mysql -h project1-rds.clmieg60sxqx.us-east-1.rds.amazonaws.com -u admin -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 64
Server version: 8.0.35 Source distribution

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| intel              |
| mysql              |
| performance_schema |
| sys                |
+--------------------+
5 rows in set (0.01 sec)

mysql>
```
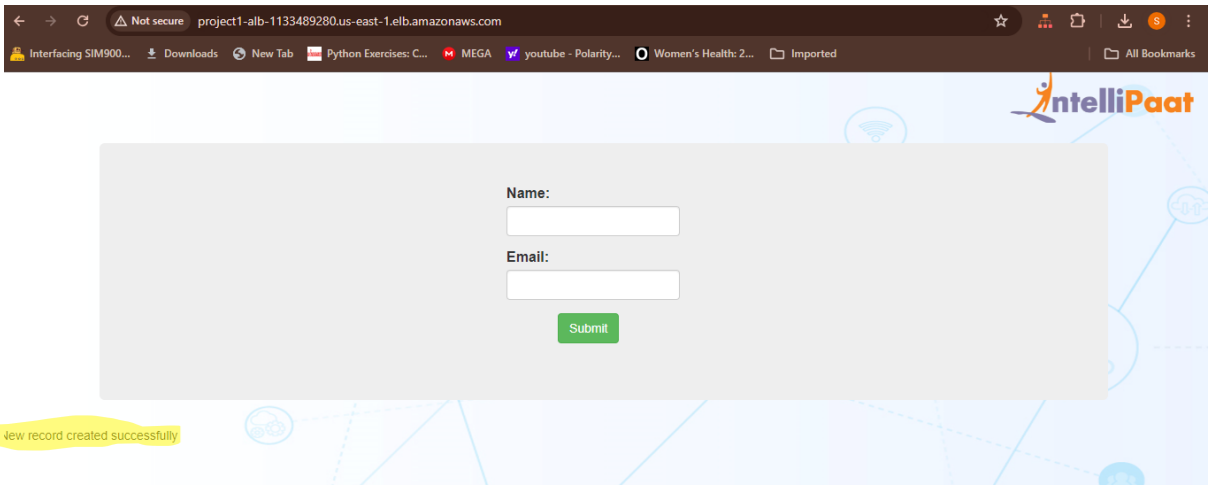

```
mysql> use intel;
Database changed
mysql> create table data (firstname varchar(20), email varchar(30));
Query OK, 0 rows affected (0.03 sec)

mysql>
```




```
mysql> select * from data;
+-------------+--------------------------------+
| firstname   | email                          |
+-------------+--------------------------------+
| salman farsi | shaiksultanaktarsha80@gmail.com |
| Sultan Sa   | shaiksultanaktarsha@gmail.com  |
+-------------+--------------------------------+
2 rows in set (0.00 sec)

mysql>
```