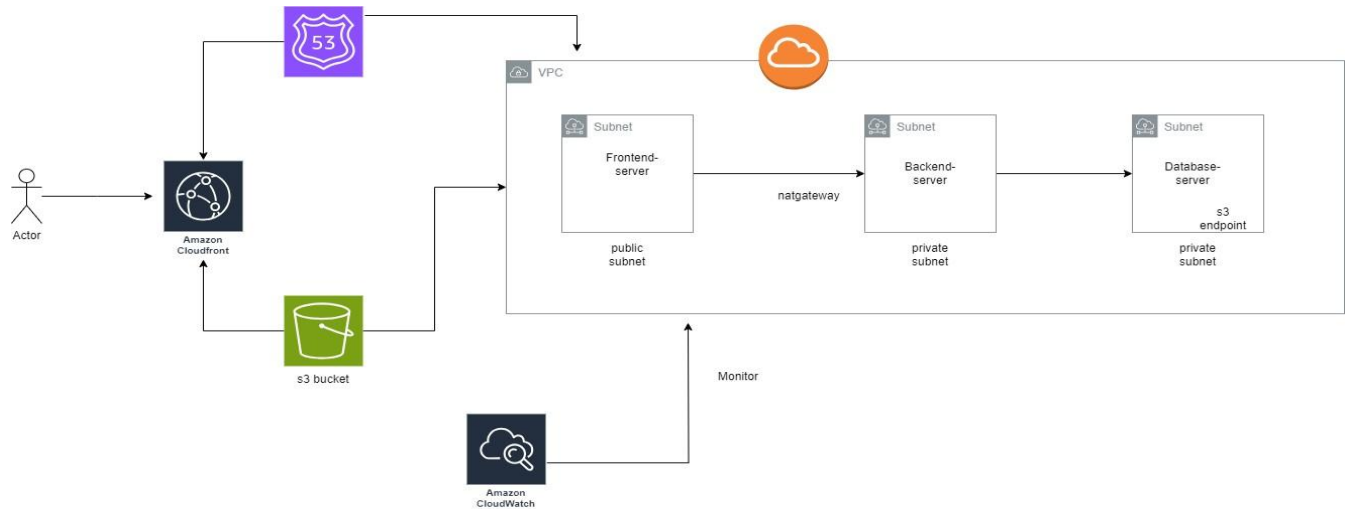


Aws project

Diagram :-



Step 1:- create a vpc using vpc more

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

IPv4 CIDR block [Info](#)
Determine the starting IP and the size of your VPC using CIDR notation.

65,536 IPs

CIDR block size must be between /16 and /28.

IPv6 CIDR block [Info](#)

☒ No IPv6 CIDR block
☐ Amazon-provided IPv6 CIDR block

Preview

VPC [Show details](#)
Your AWS virtual network

project-vpc

Subnets (3)
Subnets within this VPC

ap-south-1a

- project-subnet-public1-ap-south-1a
- project-subnet-private1-ap-south-
- project-subnet-private2-ap-south-

Success

Details

✔ Create VPC: vpc-00e3b457598b4d18f

✔ Enable DNS hostnames

✔ Enable DNS resolution

✔ Verifying VPC creation: vpc-00e3b457598b4d18f

✔ Create subnet: subnet-07aa4e2709892e932

✔ Create subnet: subnet-0631aed7649782d6c

✔ Create subnet: subnet-06feb507ad7a4fe5a

✔ Create internet gateway: igw-0bc6d0c9b60fea7d7

✔ Attach internet gateway to the VPC

✔ Create route table: rtb-0f1d2a12156a6fb2f

✔ Create route

✔ Associate route table

✔ Allocate elastic IP: eipalloc-01e468b8b18430aa4

✔ Create NAT gateway: nat-00fa7922ac3aca472

✔ Wait for NAT Gateways to activate

✔ Create route table: rtb-00e79974781eeb78f

✔ Create route

✔ Associate route table

✔ Create route table: rtb-0115f9a9b8c1390a9

✔ Create route

✔ Associate route table

✔ Verifying route table creation

View VPC

Step 2:- Now we will launch 3 instance

Name

frontend-server

Add additional tags

Application and OS Images (Amazon Machine Image)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

Search our full catalog including 1000s of application and OS images

Recents

Quick Start

Amazon Linux

macOS

Ubuntu

Windows

Red Hat

SUSE L

Browse more AMIs

Summary

Number of instances

1

Software Image (AMI)

Canonical, Ubuntu, 24.04, ar

ami-0522ab6e1ddcc7055

Virtual server type (instance

t2.micro

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 8 GiB

Cancel

For backend-server

Name

Backend-server

Add additional tags

Application and OS Images (Amazon Machine Image)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

Search our full catalog including 1000s of application and OS images

Recents

Quick Start

Amazon Linux

macOS

Ubuntu

Windows

Red Hat

SUSE L

Browse more AMIs

Summary

Number of instances

1

Software Image (AMI)

Canonical, Ubuntu, 24.04, amd6..

ami-0522ab6e1ddcc7055

Virtual server type (instance type)

t2.micro

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 8 GiB

Cancel

For Database-server

Database-server

Add additional tags

▼ Application and OS Images (Amazon Machine Image) Info

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

Recents

Quick Start

Amazon Linux

aws

macOS

Mac

Ubuntu

ubuntu

Windows

Microsoft

Red Hat

Red Hat

SUSE L

SUS

Browse more AMIs

Including AMIs from AWS, Marketplace and the Community

Amazon Machine Image (AMI)

▼ Summary

Number of instances

1

Software Image (AMI)

Canonical, Ubuntu, 24

ami-0522ab6e1ddcc7055

Virtual server type (in:

t2.micro

Firewall (security grou

New security group

Storage (volumes)

1 volume(s) - 8 GiB

Cancel

Now we will create a RDS 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)




☐ MySQL




☐ PostgreSQL




☐ Aurora (PostgreSQL Compatible)



☒ MariaDB



☐ Oracle



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

Availability and durability

Deployment options Info

The deployment options below are limited to those supported by the engine you selected above.

☐ Multi-AZ DB Cluster

Creates a DB cluster with a primary DB instance and two readable standby DB instances, with each DB instance in a different Availability Zone (AZ). Provides high availability, data redundancy and increases capacity to serve read workloads.

☐ Multi-AZ DB instance

Creates a primary DB instance and a standby DB instance in a different AZ. Provides high availability and data redundancy, but the standby DB instance doesn't support connections for read workloads.

☒ Single DB instance

Creates a single DB instance with no standby DB instances.

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.

database-1

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](#)

Password strength [Strong](#)

Minimum constraints: At least 8 printable ASCII characters. Can't contain any of the following symbols: / ' " @

Confirm master password [Info](#)

Storage type [Info](#)

Provisioned IOPS SSD (io2) storage volumes are now available.

General Purpose SSD (gp3)
Performance scales independently from storage

Allocated storage [Info](#)

25

GiB

Minimum: 20 GiB. Maximum: 65,536 GiB

i After you modify the storage for a DB instance, the status of the DB instance will be in storage-optimization. Your instance will remain available as the storage-optimization operation completes. [Learn more](#)

► Advanced settings

Baseline IOPS of 3,000 IOPS and storage throughput of 125 MiBps are included for allocated storage less than 400 GiB.

► Storage autoscaling

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.

EC2 instance [Info](#)

Choose the EC2 instance to add as the compute resource for this database. A VPC security group is added to this EC2 instance. A VPC security group is also added to the database with an inbound rule that allows the EC2 instance to access the database.

i-0815006bdf3c84425

Database-server



Some VPC settings can't be changed when a compute resource is added

Adding an EC2 compute resource automatically selects the VPC, DB subnet group, and public access settings for this database. To allow the EC2 instance to access the database, a VPC security group `rds-ec2-X` is added to the database and another called `ec2-rds-X` to the EC2 instance. You can remove the new security group for the database only by removing the compute resource.

Virtual private cloud (VPC) [Info](#)

Choose the VPC. The VPC defines the virtual networking environment for this DB instance.

project-vpc (vpc-00e3b457598b4d18f)

3 Subnets, 1 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.



Choose existing

Choose existing DB subnet group



Automatic setup

RDS creates a new subnet group for you or reuses an existing subnet group

DB subnet group name

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

RDS doesn't assign a public IP address to the database. Only Amazon EC2 instances and other resources inside the VPC can connect to your database. Choose one or more VPC security groups that specify which resources can connect to the database.

VPC security group (firewall) [Info](#)

Choose one or more VPC security groups to allow access to your database. Make sure that the security group rules allow the appropriate incoming traffic.



Choose existing

Choose existing VPC security groups



Create new

Create new VPC security group

Additional VPC security group

Choose one or more options

default X



Amazon RDS will add a new VPC security group `rds-ec2-1` to allow connectivity with your compute resource.

Availability Zone [Info](#)

ap-south-1a

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-r32049-e1 (default)

Now we have to edit security group & add port

Protocol	Port	Source	Destination	Action
All traffic	All	All	Cust...	Delete
SSH	TCP	22	Any...	Delete
HTTP	TCP	80	Any...	Delete
HTTPS	TCP	443	Any...	Delete
MySQL/Aurora	TCP	3306	Any...	Delete
Custom TCP	TCP	8080	Any...	Delete

Now we have to connect to any third party app

Connect ec2 instance to ubuntu terminal

```
Welcome to Ubuntu 24.04 LTS (GNU/Linux 6.8.0-1012-aws x86_64)

* Documentation:  https://help.ubuntu.com
* Management:    https://landscape.canonical.com
* Support:        https://ubuntu.com/pro

System information as of Thu Aug 29 10:25:33 UTC 2024

System load:  0.0          Processes:            115
Usage of /:   22.9% of 6.71GB Users logged in:       0
Memory usage: 5%          IPv4 address for enX0: 192.168.0.22
Swap usage:   0%

Expanded Security Maintenance for Applications is not enabled.
0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The list of available updates is more than a week old.
To check for new updates run: sudo apt update

Last login: Thu Aug 29 10:03:36 2024 from 18.202.216.51
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-192-168-0-22:~$
```

Change the hostname `sudo hostnamectl set-hostname frontend_server`

```
ubuntu@ip-192-168-0-22:~$ exit
logout
Connection to 3.255.113.130 closed.
pratham@publicserver:~$ sudo ssh -i project.pem ubuntu@3.255.113.130
sudo: unable to resolve host publicserver: Name or service not known
Welcome to Ubuntu 24.04 LTS (GNU/Linux 6.8.0-1012-aws x86_64)
```

Login again `sudo ssh -i project.pem ubuntu@3.255.113.130`

```
to check for new updates run: sudo apt update
Last login: Thu Aug 29 10:25:33 2024 from 103.184.105.55
ubuntu@frontendserver:~$
```

Now connect to another terminal with same process

Here we will use sftp to connect to public instance & then transfer file to public terminal.

```
Connection closed
pratham@publicserver:~$ sudo sftp -i project.pem ubuntu@3.255.113.130
sudo: unable to resolve host publicserver: Name or service not known
Connected to 3.255.113.130.
sftp> put project.pem /home/ubuntu
Uploading project.pem to /home/ubuntu/project.pem
project.pem
sftp> exit
```

Then we will transfer the file

Put project.pem /home/ubuntu

```
sftp> put project.pem /home/ubuntu
Uploading project.pem to /home/ubuntu/project.pem
project.pem
sftp> exit
```

Now we will connect to public instance

```
pratham@publicserver:~$ sudo ssh -i project.pem ubuntu@3.255.113.130
sudo: unable to resolve host publicserver: Name or service not known
Welcome to Ubuntu 24.04 LTS (GNU/Linux 6.8.0-1012-aws x86_64)

* Documentation:  https://help.ubuntu.com
* Management:    https://landscape.canonical.com
* Support:       https://ubuntu.com/pro

System information as of Thu Aug 29 10:52:37 UTC 2024
```

Now we will connect to private instance

Sudo ssh -i project.pem ubuntu@192.168.0.124

```
ubuntu@frontendserver:~$ sudo ssh -i project.pem ubuntu@192.168.0.124
The authenticity of host '192.168.0.124 (192.168.0.124)' can't be established.
ED25519 key fingerprint is SHA256:sEUh8Jb0oGuoQrUDe8lAIvKMNYS47AzLr1Z7Lo/1yiM.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '192.168.0.124' (ED25519) to the list of known hosts.
Welcome to Ubuntu 24.04 LTS (GNU/Linux 6.8.0-1012-aws x86_64)

* Documentation:  https://help.ubuntu.com
```

After that go RDS-server terminal

Sudo apt update

Sudo apt install mariadb-server

Sudo systemctl start mariadb

Sudo systemctl enable mariadb

sudo mysql -h database-1.ctce6osqiqv4.eu-west-1.rds.amazonaws.com -u admin -p

```
ubuntu@RDSserver:~$ sudo mysql -h database-1.ctce6osqiqv4.eu-west-1.rds.amazonaws.com -u admin -p
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MariaDB connection id is 237
Server version: 10.11.8-MariaDB-log managed by https://aws.amazon.com/rds/

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.
```


Here we have to create database & grant permission

CREATE DATABASE springbackend;

GRANT ALL PRIVILEGES ON springbackend.* TO
'admin'@'10.0.136.96' IDENTIFIED BY 'Pratham123';

```
MariaDB [(none)]> CREATE DATABASE springbackend;
Query OK, 1 row affected (0.003 sec)

MariaDB [(none)]> GRANT ALL PRIVILEGES ON springbackend.* TO 'admin'@'10.0.136.96' IDENTIFIED BY 'Pratham123';
Query OK, 0 rows affected (0.004 sec)

MariaDB [(none)]>
```

Now use springbackend;

```
ERROR 1698 (28000): Access denied for user 'admin'@'localhost'
ubuntu@Database-server:~/angular-java$ sudo mysql -h database-1.ctq2s4eqkzcg.ap-south-1.rds.amazonaws.com -u admin -p sp
ringbackend < springbackend.sql
Enter password:
ubuntu@Database-server:~/angular-java$
```

```
MariaDB [(none)]> show databases;
+-----+
| Database |
+-----+
| information_schema |
| innodb |
| mysql |
| performance_schema |
| springbackend |
| sys |
+-----+
6 rows in set (0.001 sec)

MariaDB [(none)]> use springbackend;
Reading table information for completion of table and column names
```

```
Error 1064 (42000): You have an error in your SQL syntax;
on for the right syntax to use near 'table' at line 1
MariaDB [springbackend]> show tables;
+-----+
| Tables_in_springbackend |
+-----+
| tbl_workers              |
+-----+
1 row in set (0.001 sec)

MariaDB [springbackend]> select * from tbl_workers;
+-----+-----+-----+-----+
| id | status | workerfname | workerlname |
+-----+-----+-----+-----+
| 1  | Working | Ivan        | Holicek     |
| 37 | Vacation | Marko       | Markovic    |
| 40 | Working | Ivo         | Ivica       |
| 41 | Working | Luka        | Lukovic     |
| 42 | Working | Filip       | Filipovic   |
+-----+-----+-----+-----+
5 rows in set (0.001 sec)

MariaDB [springbackend]> _
```

```
+ Bye
ubuntu@RDSserver:~$ sudo git clone https://github.com/rajatpzade/angular-java.git
Cloning into 'angular-java'...
remote: Enumerating objects: 80, done.
remote: Counting objects: 100% (80/80), done.
remote: Compressing objects: 100% (62/62), done.
remote: Total 80 (delta 3), reused 80 (delta 3), pack-reused 0 (from 0)
Receiving objects: 100% (80/80), 268.11 KiB | 4.62 MiB/s, done.
Resolving deltas: 100% (3/3), done.
6 ubuntu@RDSserver:~$
```

Now go to backend terminal & clone the git file

```
ubuntu@backendserver:~$ ls
ubuntu@backendserver:~$ git clone https://github.com/rajatpzade/angular-java.git
Cloning into 'angular-java'...
remote: Enumerating objects: 80, done.
remote: Counting objects: 100% (80/80), done.
remote: Compressing objects: 100% (62/62), done.
remote: Total 80 (delta 3), reused 80 (delta 3), pack-reused 0 (from 0)
Receiving objects: 100% (80/80), 268.11 KiB | 4.54 MiB/s, done.
Resolving deltas: 100% (3/3), done.
ubuntu@backendserver:~$
ubuntu@backendserver:~$ _
```

```

ubuntu@backendserver:~$ ls
angular-java
ubuntu@backendserver:~$ cd angular-java/
ubuntu@backendserver:~/angular-java$ ls
README.md  angular-frontend  spring-backend  springbackend.sql
ubuntu@backendserver:~/angular-java$ cd spring-backend/
ubuntu@backendserver:~/angular-java/spring-backend$ ls
README.md  mvnw  mvnw.cmd  pom.xml  src
ubuntu@backendserver:~/angular-java/spring-backend$ sudo apt update

```

```

Downloaded from central: https://repo.maven.apache.org/maven2/com/google/guava/guava/28
[INFO] Replacing main artifact with repackaged archive
[INFO] -----
[INFO] BUILD SUCCESS
[INFO] -----
[INFO] Total time: 21.628 s
[INFO] Finished at: 2024-08-29T12:28:13Z
[INFO] -----
ubuntu@backendserver:~/angular-java/spring-backend$

```

```

[INFO] -----
ubuntu@backendserver:~/angular-java/spring-backend$ ls
README.md  mvnw  mvnw.cmd  pom.xml  src  target
ubuntu@backendserver:~/angular-java/spring-backend$ cd src/
ubuntu@backendserver:~/angular-java/spring-backend/src$ ls
main  test
ubuntu@backendserver:~/angular-java/spring-backend/src$ cd main/
ubuntu@backendserver:~/angular-java/spring-backend/src/main$ ls
java  resources
ubuntu@backendserver:~/angular-java/spring-backend/src/main$ cd resources/
ubuntu@backendserver:~/angular-java/spring-backend/src/main/resources$ ls
application.properties
ubuntu@backendserver:~/angular-java/spring-backend/src/main/resources$ vim application.properties
ubuntu@backendserver:~/angular-java/spring-backend/src/main/resources$

```

```

ubuntu@backendserver: ~/angular-java/spring-backend/src/main/resources
spring.datasource.url=jdbc:mysql://database-1.c6osq1qv4.eu-west-1.rds.amazonaws.com:3306/springbackend?useSSL=false
spring.datasource.username=admin
spring.datasource.password=Pratham123

spring.jpa.generate-ddl=true
~
~
~

```

Here we have to give RDS endpoint & name & password.

Now go to frontend-server

Git clone

sudo apt update

sudo apt install nodejs npm

```
sudo npm install -g @angular/cli@14.2.1
```

```
npm install
```

```
27 packages are looking for funding
  run `npm fund` for details
ubuntu@Frontendserver:~/anguler-java/angular-frontend$ ng --version
Error: You need to specify a command before moving on. Use '--help' to view the available commands.
ubuntu@Frontendserver:~/anguler-java/angular-frontend$ npm install

added 918 packages, and audited 919 packages in 30s

24 packages are looking for funding
  run `npm fund` for details

6 vulnerabilities (7 moderate, 15 high, 4 critical)

To address all issues, run:
  npm audit fix

Run `npm audit` for details.
ubuntu@Frontendserver:~/anguler-java/angular-frontend$
```

Now we have to create network loadbalancer with backend –server to transfer the data.

EC2 > Load balancers > Create Network Load Balancer

Create Network Load Balancer [Info](#)

The Network Load Balancer distributes incoming TCP and UDP traffic across multiple targets such as Amazon EC2 instances, microservices, and containers. When the load balancer receives a connection request, it selects a target based on the protocol and port that are specified in the listener configuration, and the routing rule specified in the default action.

► How Network 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.

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

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

☒ Internet-facing

An Internet-facing load balancer routes requests from clients over the Internet to targets. Requires a public subnet. [Learn more](#)

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Availability Zones

☒ **ap-south-1a (aps1-az1)**

Subnet

subnet-07aa4e2709892e932
IPv4 subnet CIDR: 10.0.0.0/20

project-subnet-public1-ap-south-1a ▼

IPv4 address

The front-end IPv4 address of the load balancer in the selected Availability Zone.

☒ Assigned by AWS

☐ Use an Elastic IP address

☐ **ap-south-1b (aps1-az3)**

☐ **ap-south-1c (aps1-az2)**

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

TCP ▼

8080

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.

project-vpc

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Review targets

Targets (1)

Remove all pending

Filter targets

Show only pending

< 1 >



Instance ID ▼	Name ▼	Port ▼	State ▼	Security groups ▼	Zone ▼	Private IP ▼
i-05b8055e952b4f23f	Backend-server	8080	Running	default	ap-south-1a	10.0.1.10

1 pending

Cancel

Previous

Create target group

```

Resolving deltas: 100% (3/3), done.
ubuntu@frontendserver:~$ ls
angular-java  project.pem
ubuntu@frontendserver:~$ cd angular-java/
ubuntu@frontendserver:~/angular-java$ ls
README.md  angular-frontend  spring-backend  springbackend.sql
ubuntu@frontendserver:~/angular-java$ cd angular-frontend/
ubuntu@frontendserver:~/angular-java/angular-frontend$ ls
README.md  angular.json  karma.conf.js  package-lock.json  package.json  src  tsconfig.app.json  tsconfig.json  tsconfig.spec.json
ubuntu@frontendserver:~/angular-java/angular-frontend$ cd src/
ubuntu@frontendserver:~/angular-java/angular-frontend/src$ ls
app  assets  environments  favicon.ico  index.html  main.ts  polyfills.ts  styles.css  test.ts
ubuntu@frontendserver:~/angular-java/angular-frontend/src$ cd app/
ubuntu@frontendserver:~/angular-java/angular-frontend/src/app$ ls
app.component.css  app.component.html  app.component.spec.ts  app.component.ts  app.module.ts  components  models  services
ubuntu@frontendserver:~/angular-java/angular-frontend/src/app$ cd services/
ubuntu@frontendserver:~/angular-java/angular-frontend/src/app/services$ ls
worker.service.ts
ubuntu@frontendserver:~/angular-java/angular-frontend/src/app/services$ vim worker.service.ts

```

Here we will give loadbalancer DNS

```

import { HttpClient } from '@angular/common/http';
import { Injectable } from '@angular/core';
import { Observable } from 'rxjs';
import { map } from 'rxjs/operators';
import { Worker } from '../models/worker';

@Injectable({
  providedIn: 'root'
})
export class WorkerService {

  private getUrl: string = "http://nlb-4acecd3a6ea5f8f6.elb.ap-south-1.amazonaws.com:8080/api/v1/workers";

  constructor(private _httpClient: HttpClient) { }

  getWorkers(): Observable<Worker[]> {
    return this._httpClient.get<Worker[]>(this.getUrl).pipe(
      map(response => response)
    )
  }

  saveWorkers(worker: Worker): Observable<Worker> {
    return this._httpClient.post<Worker>(this.getUrl, worker);
  }

  getWorker(id: Number): Observable<Worker> {
    return this._httpClient.get<Worker>(`${this.getUrl}/${id}`).pipe(
      map(response => response)
    )
  }
}
-- INSERT --

```


now we have to this command in backend

java -jar target/spring-backend-v1.jar

```

ubuntu@backendserver:~/angular-java/spring-backend/src/main$ cd ..
ubuntu@backendserver:~/angular-java/spring-backend/src$ cd ..
ubuntu@backendserver:~/angular-java/spring-backend$ java -jar target/spring-backend-v1.jar

```



```

:: Spring Boot ::
(v2.7.4)

```

Then we will go back to Frontend-server

```

cd dist/angular-frontend
sudo ng serve --host 0.0.0.0 --port=80

```

Output:-

Workers					
Add Worker		<input type="text" value="Search by Name"/>			
Order	First Name	Last Name	Status	Edit Button	Delete Button
1.	Ivan	Holicek	Working	Edit	<input type="button" value="Delete"/>
2.	Marko	Markovic	Vacation	Edit	<input type="button" value="Delete"/>
3.	Ivo	Ivica	Working	Edit	<input type="button" value="Delete"/>
4.	Luka	Lukovic	Working	Edit	<input type="button" value="Delete"/>
5.	Filip	Filipovic	Working	Edit	<input type="button" value="Delete"/>

Modified By CloudBlitz

Now for creating S3 bucket & taking backup we will install Awscli

Install AWSCLI by below link

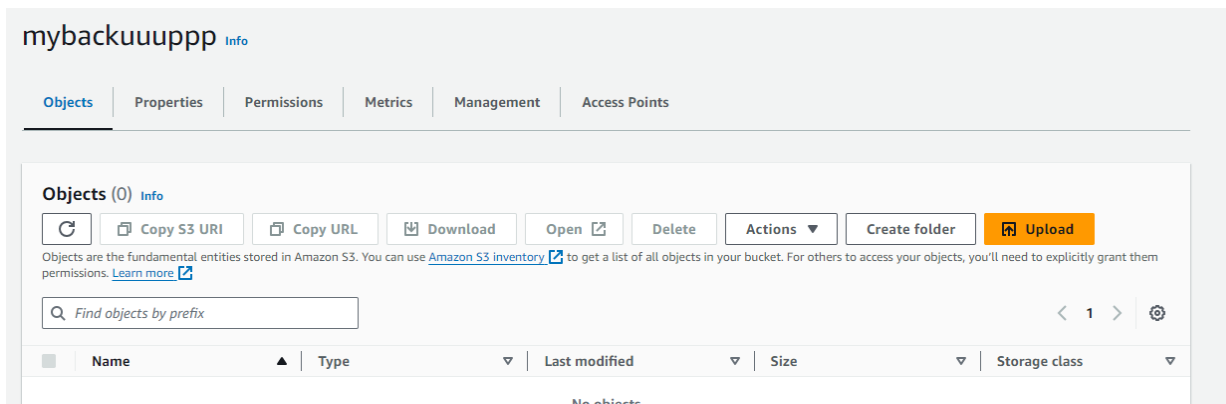
```
curl "https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip" -o "awscliv2.zip"
```

```
sudo apt install unzip
```

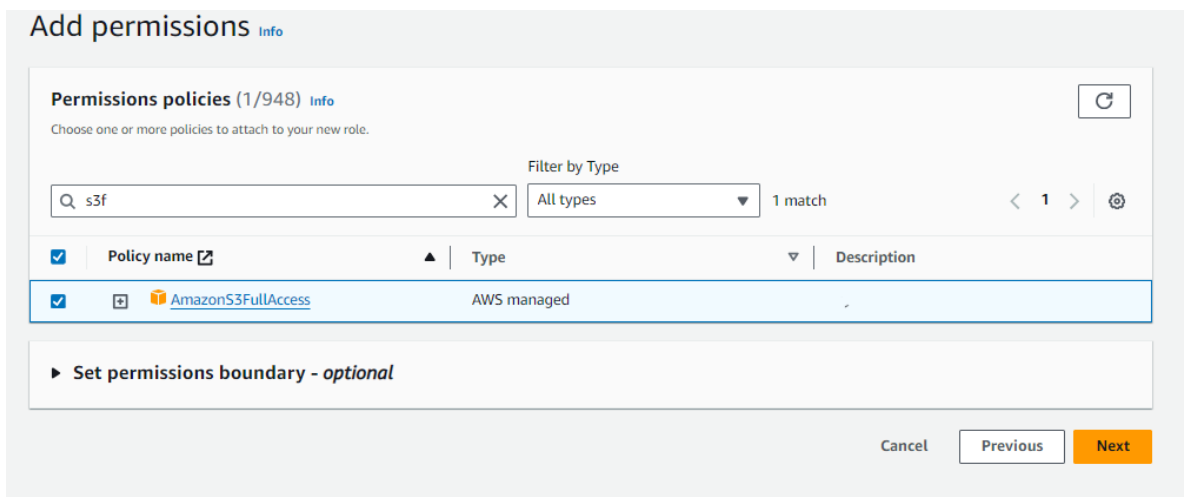
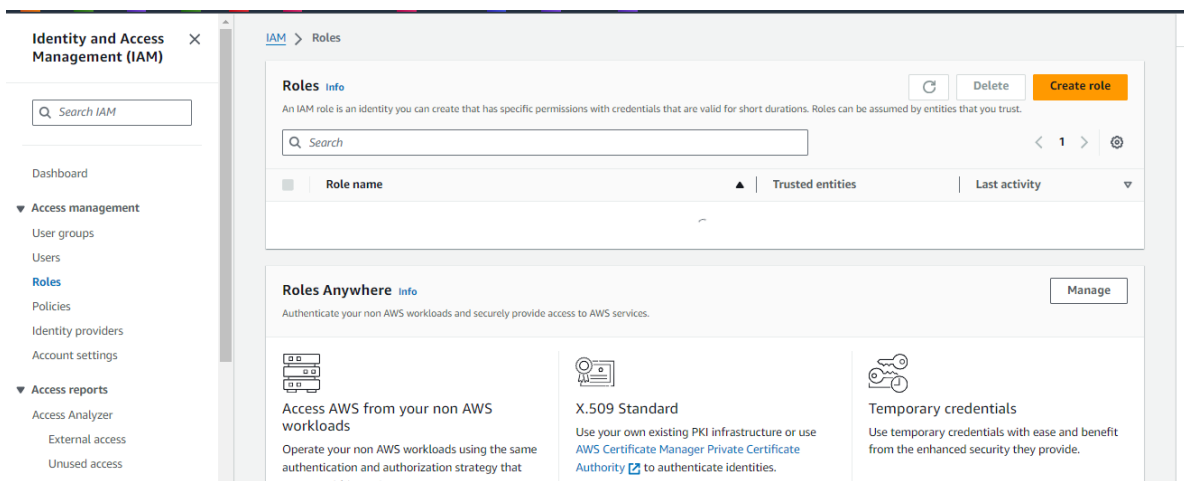
Then ls & unzip the file

```
ubuntu@Frontendserver:~/angular-java/angular-frontend$ curl "https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip" -o "awscliv2.zip"
% Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
           Dload  Upload   Total   Spent    Left  Speed
100 58.0M  100 58.0M    0     0  120M      0 --:--:-- --:--:-- --:--:-- 120M
ubuntu@Frontendserver:~/angular-java/angular-frontend$ ls
AWSCLIV2.pkg  angular.json  awscliv2.zip  karma.conf.js  package-lock.json  src  tsconfig.json
README.md     awscli-exe-linux-x86_64.zip  dist  node_modules  package.json  tsconfig.app.json  tsconfig.spec.json
ubuntu@Frontendserver:~/angular-java/angular-frontend$ unzip awscliv2.zip
```

Now we will create a s3 bucket & make it public



Then we will create a IAM role to give full access of S3



Now we have to modify IAM Role with public instance & Database instance

Then we will copy the Angular frontend to S3 bucket

Aws s3 cp angular-frontend/ s3://mybackuuuppp --recursive

```
angular-frontend
ubuntu@Frontendserver:~/angular-java/angular-frontend/dist$ aws s3 cp angular-frontend/ s3://mybackuuuppp --recursive
upload: angular-frontend/favicon.ico to s3://mybackuuuppp/favicon.ico
upload: angular-frontend/index.html to s3://mybackuuuppp/index.html
upload: angular-frontend/polyfills.b525ededa71d3b7f.js to s3://mybackuuuppp/polyfills.b525ededa71d3b7f.js
upload: angular-frontend/runtime.e411e20b75d2e1de.js to s3://mybackuuuppp/runtime.e411e20b75d2e1de.js
upload: angular-frontend/styles.ef46db3751d8e999.css to s3://mybackuuuppp/styles.ef46db3751d8e999.css
upload: angular-frontend/main.753a51c1a3960468.js to s3://mybackuuuppp/main.753a51c1a3960468.js
upload: angular-frontend/3rdpartylicenses.txt to s3://mybackuuuppp/3rdpartylicenses.txt
ubuntu@Frontendserver:~/angular-java/angular-frontend/dist$
```

Here we will check the copy file in s3 bucket object

Objects	Properties	Permissions	Metrics	Management	Access Points
<div>Objects (7) Info</div> <div><div></div><div> Copy S3 URI</div><div> Copy URL</div><div> Download</div><div> Open</div><div> Delete</div><div>Actions </div><div>Create folder</div><div> Upload</div></div> <div>Objects are the fundamental entities stored in Amazon S3. You can use Amazon S3 inventory to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. Learn more</div> <div><input type="text" value="Find objects by prefix"/></div> <div> 1 </div> <div></div>					
<input type="checkbox"/>	Name	Type	Last modified	Size	Storage class
<input type="checkbox"/>	3rdpartylicenses.txt	txt	September 12, 2024, 04:30:06 (UTC-07:00)	12.7 KB	Standard
<input type="checkbox"/>	favicon.ico	ico	September 12, 2024, 04:30:06 (UTC-07:00)	948.0 B	Standard
<input type="checkbox"/>	index.html	html	September 12, 2024, 04:30:06 (UTC-07:00)	551.0 B	Standard
<input type="checkbox"/>	main.753a51c1a3960468.js	js	September 12, 2024, 04:30:06 (UTC-07:00)	237.8 KB	Standard
<input type="checkbox"/>	polyfills.b525ededa71d3b7f.js	js	September 12, 2024, 04:30:06 (UTC-07:00)	354.6 KB	Standard
<input type="checkbox"/>	runtime.e411e20b75d2e1de.js	js	September 12, 2024, 04:30:06 (UTC-07:00)	1.1 KB	Standard
<input type="checkbox"/>	styles.ef46db3751d8e999.css	css	September 12, 2024, 04:30:06 (UTC-07:00)	1.1 KB	Standard

Now we have to create cloudfront service

CloudFront > Distributions > E1OJL9Z03IMN62

E1OJL9Z03IMN62 View metrics

General | Security | Origins | Behaviors | Error pages | Invalidations | Tags

Details

Distribution domain name d134s0smiaws37.cloudfront.net	ARN arn:aws:cloudfront::211125410545:distribution/E1OJL9Z03IMN62	Last modified Deploying
---	---	----------------------------

Settings Edit

Description -	Alternate domain names -	Standard logging Off
Price class		Cookie logging

Output :- paste the Dns on the browser

Not secure d134s0smiaws37.cloudfront.net/workers

Workers

[Add Worker](#) Search by Name

Order	First Name	Last Name	Status	Edit Button	Delete Button
1.	Ivan	Holicek	Working	Edit	<button>Delete</button>
2.	Marko	Markovic	Vacation	Edit	<button>Delete</button>
3.	Ivo	Ivica	Working	Edit	<button>Delete</button>
4.	Luka	Lukovic	Working	Edit	<button>Delete</button>
5.	Filip	Filipovic	Working	Edit	<button>Delete</button>
6.	gaurav	fwfwee	eerrer	Edit	<button>Delete</button>

Modified By CloudBlitz

Now we have create Route 53 service to attach domain name with our website

Hosted zone configuration

A hosted zone is a container that holds information about how you want to route traffic for a domain, such as example.com, and its subdomains.

Domain name

Info

This is the name of the domain that you want to route traffic for.

prathameshenterprises.shop

Valid characters: a-z, 0-9, ! " # \$ % & ' () * + , - / : ; < = > ? @ [\] ^ _ ` { | } . ~

Description - optional

Info

This value lets you distinguish hosted zones that have the same name.

The hosted zone is used for...

The description can have up to 256 characters. 0/256

Type

Info

The type indicates whether you want to route traffic on the internet or in an Amazon VPC.

☒ Public hosted zone

A public hosted zone determines how traffic is routed on the internet.

☐ Private hosted zone

A private hosted zone determines how traffic is routed within an Amazon VPC.

Tags

Info

Apply tags to hosted zones to help organize and identify them.

Create a-name record

Record details

Edit record

Record name

prathameshenterprises.shop

Record type

A

Value

d134s0smiaws37.cloudfront.net.

Alias

Yes

TTL (seconds)

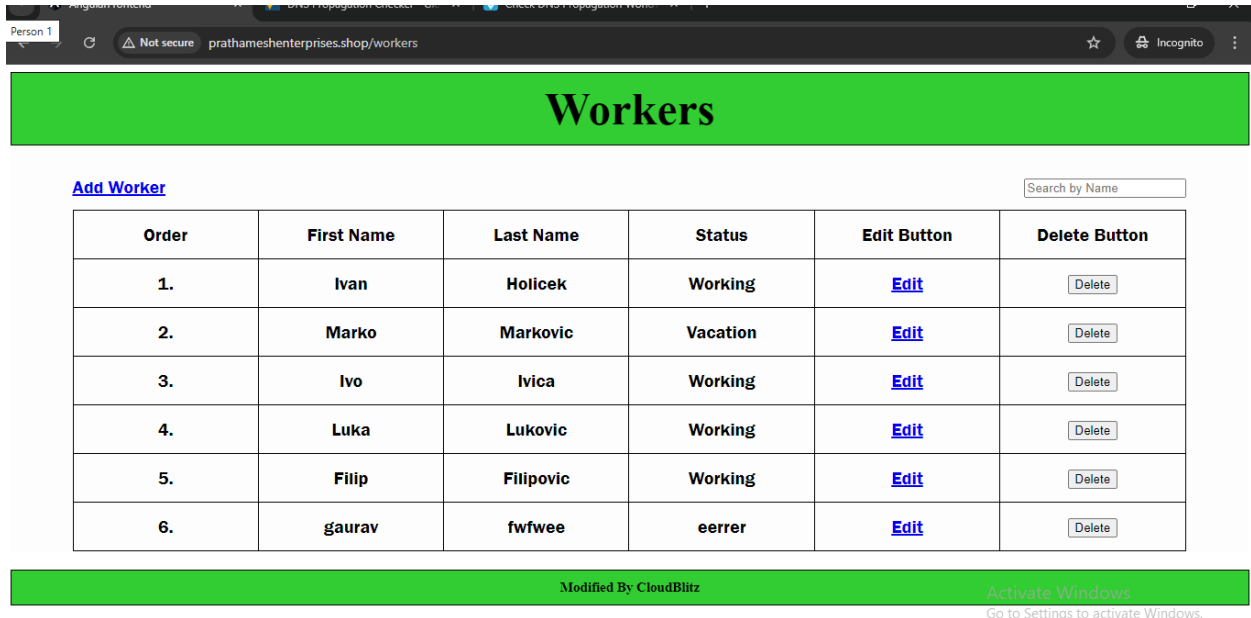
-

Routing policy

Simple

We have to create c-name certificate & ACM certificate

Output :-



The screenshot shows a web browser window with the URL `prathamshenterprises.shop/workers`. The page has a green header with the title "Workers". Below the header, there is a link "Add Worker" and a search bar labeled "Search by Name". The main content is a table with 6 rows of worker data. The table has columns for Order, First Name, Last Name, Status, Edit Button, and Delete Button. The status values are Working, Vacation, Working, Working, Working, and eerrer. The delete buttons are labeled "Delete".

Order	First Name	Last Name	Status	Edit Button	Delete Button
1.	Ivan	Holicek	Working	Edit	Delete
2.	Marko	Markovic	Vacation	Edit	Delete
3.	Ivo	Ivica	Working	Edit	Delete
4.	Luka	Lukovic	Working	Edit	Delete
5.	Filip	Filipovic	Working	Edit	Delete
6.	gaurav	fwfwee	eerrer	Edit	Delete

After that we have to create one more s3bucket to get backup of database.

Then go to Database-server & install awscli

Then we will change the directory

cd aws

sudo ./install --- to install awscli

then check the version using :- **AWS --version**

aws s3 ls ----- to check the s3 bucket

```

ubuntu@Databaseserver:~$ cd aws/
ubuntu@Databaseserver:~/aws$ ls
README.md  THIRD_PARTY_LICENSES  dist  install
ubuntu@Databaseserver:~/aws$ ./install
mkdir: cannot create directory '/usr/local/aws-cli': Permission denied
ubuntu@Databaseserver:~/aws$ sudo ./install
You can now run: /usr/local/bin/aws --version
ubuntu@Databaseserver:~/aws$ aws --version
aws-cli/2.17.49 Python/3.11.9 Linux/6.8.0-1012-aws exe/x86_64.ubuntu.24
ubuntu@Databaseserver:~/aws$ ls
README.md  THIRD_PARTY_LICENSES  dist  install
ubuntu@Databaseserver:~/aws$ aws s3 ls

Unable to locate credentials. You can configure credentials by running "aws configure".
ubuntu@Databaseserver:~/aws$ aws s3 ls
2024-09-12 13:53:31 databuckeett
2024-09-12 12:55:26 mybackuuupp
ubuntu@Databaseserver:~/aws$

```

Here we will write the following script in a file.

Sudo nano pratham.sh

```
#!/bin/bash
```

```
mysqldump -h database-2.ctq2s4eqkzog.ap-south-1.rds.amazonaws.com -u
admin -pPratham123 springbackend > /home/ubuntu/m.sql
```

```
aws s3 cp /home/ubuntu/springbackendpratham.sql/ s3://databuckeett/
```

```

ubuntu@Databaseserver:~$
ubuntu@Databaseserver:~$ ld
Command 'ld' not found, but can be installed with:
sudo apt install binutils
ubuntu@Databaseserver:~$ ld
Command 'ld' not found, but can be installed with:
sudo apt install binutils
ubuntu@Databaseserver:~$ ls
angular-java  aws  awscliv2.zip  m.sql  pratham.sh
ubuntu@Databaseserver:~$ sudo nano pratham.sh
ubuntu@Databaseserver:~$ ./pratham.sh
warning: Skipping file /home/ubuntu/m.sql/. File does not exist.

ubuntu@Databaseserver:~$ sudo nano pratham.sh
ubuntu@Databaseserver:~$ ./pratham.sh
upload: ./m.sql to s3://databuckeett/m.sql
ubuntu@Databaseserver:~$ ls
angular-java  aws  awscliv2.zip  m.sql  pratham.sh

```

```
ubuntu@Databaseserver:~$ cat pratham.sh
#!/bin/bash
mysqldump -h database-2.ctq2s4eqkzog.ap-south-1.rds.amazonaws.com -u admin -pPratham123 springbackend > /home/ubuntu/m.sql
aws s3 cp /home/ubuntu/m.sql s3://databuckeett/
ubuntu@Databaseserver:~$
```

And we will create a crontab to take automatic backup of databases

Crontab –e

```
# 0 5 * * 1 tar -zcf /var/backups/home.tar.gz /home/
#
# For more information see the manual pages of crontab(5) and cron(8)
#
# m h dom mon dow   command
* * * * * /home/ubuntu/./pratham.sh
```

```
ubuntu@Databaseserver:~$ ll
total 56
drwxr-x--- 6 ubuntu ubuntu 4096 Sep 12 11:51 ./
drwxr-xr-x 3 root    root   4096 Sep 12 09:36 ../
-rw----- 1 ubuntu ubuntu   51 Sep 12 10:00 .bash_history
-rw-r--r-- 1 ubuntu ubuntu  220 Mar 31 08:41 .bash_logout
-rw-r--r-- 1 ubuntu ubuntu 3771 Mar 31 08:41 .bashrc
drwx----- 2 ubuntu ubuntu 4096 Sep 12 10:00 .cache/
drwxrwxr-x 3 ubuntu ubuntu 4096 Sep 12 11:33 .local/
-rw-r--r-- 1 ubuntu ubuntu  807 Mar 31 08:41 .profile
-rw-rw-r-- 1 ubuntu ubuntu   66 Sep 12 11:33 .selected_editor
drwx----- 2 ubuntu ubuntu 4096 Sep 12 09:36 .ssh/
-rw-r--r-- 1 ubuntu ubuntu    0 Sep 12 10:00 .sudo_as_admin_successful
-rw----- 1 ubuntu ubuntu 1563 Sep 12 11:51 .viminfo
drwxrwxr-x 5 ubuntu ubuntu 4096 Sep 12 11:38 angular-java/
-rwxrwxrwx 1 ubuntu ubuntu  234 Sep 12 11:51 pratham.sh*
-rw-rw-r-- 1 ubuntu ubuntu 2362 Sep 12 11:48 springbackendpratham.sql
ubuntu@Databaseserver:~$ crontab -e
crontab: installing new crontab
ubuntu@Databaseserver:~$
```

Here in the s3 bucket object we can see the backup file

Edit the bucket versioning to check the file we have take backup using crontab



databucket Info





Objects (4) Info

Copy S3 URI Copy URL Download Open Delete Actions Create folder Upload

Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

Find objects by prefix Show versions

<input type="checkbox"/>	Name	Type	Version ID	Last modified	Size	Storage class
<input type="checkbox"/>	 m.sql	sql	N60fglVC9Tv BpNToMUI8Z ZmKYa7HaU 9T	September 12, 2024, 07:14:03 (UTC-07:00)	2.3 KB	Standard
<input type="checkbox"/>	 m.sql	sql	RuJXHvArq07 69yQqHwzY9 6xWFB8q_4ia	September 12, 2024, 07:13:03 (UTC-07:00)	2.3 KB	Standard

<input type="checkbox"/>	Name	Type	Version ID	Last modified	Size	Storage class
<input type="checkbox"/>	 m.sql	sql	ZmKYa7HaU 9T	07:14:03 (UTC-07:00)	2.3 KB	Standard
<input type="checkbox"/>	 m.sql	sql	RuJXHvArq07 69yQqHwzY9 6xWFB8q_4ia	September 12, 2024, 07:13:03 (UTC-07:00)	2.3 KB	Standard
<input type="checkbox"/>	 m.sql	sql	6uRlcl1ZUBu _11do.ZGWxz Hu5VVIL6eq	September 12, 2024, 07:12:03 (UTC-07:00)	2.3 KB	Standard
<input type="checkbox"/>	 m.sql	sql	null	September 12, 2024, 07:11:03 (UTC-07:00)	2.3 KB	Standard

Now we have to create cloudwatch for monitoring the server

We will create a cloudwatch dashboard

Add widget

Data sources types - new

- ☒ Cloudwatch
- ☐ Other content types
- ☐ Create data sources

Widget Configuration

Data type

Metrics Logs Alarms

Widget type

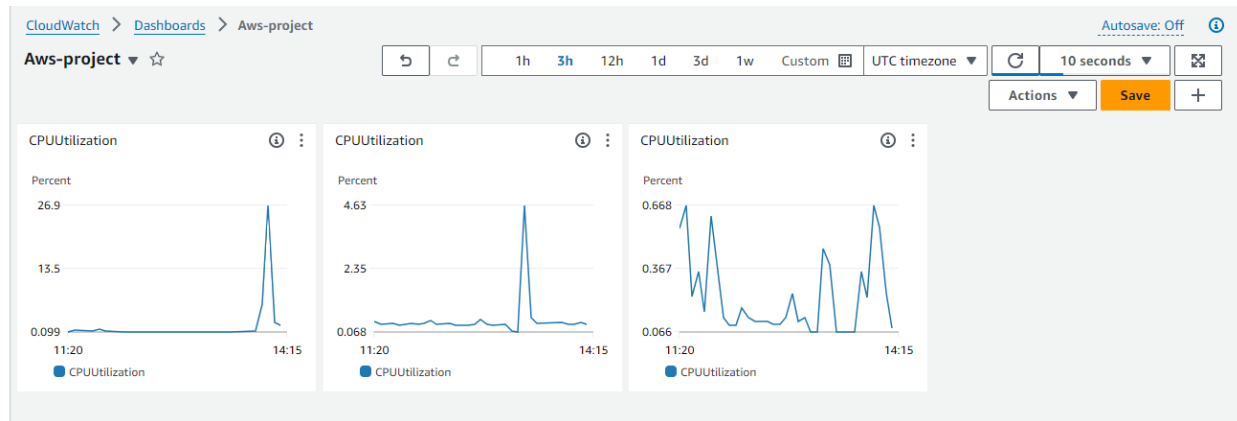
☒ Line
Compare metrics over time

☐ Data table
Compare metrics values over time in a table

☐ Number
Instantly see the latest value for a metric

☐ Gauge
See the latest value of a metric within a range

Cancel Next



Note :-

- Give proper certification to Route 53 service.
- Network loadbalancer is important for transfer to data.
- While taking the backup of database first create a proper script & run the file carefully.
- Make sure your S3 bucket has public access.
- IAM role is important while taking backup of data using awscli.