Scalable-Web-Application

- **Report By : Sumit S Deshmukh.**
- **Cloud 01**
- **Git Repo : https://github.com/gekyume40/INFOTRIXS**

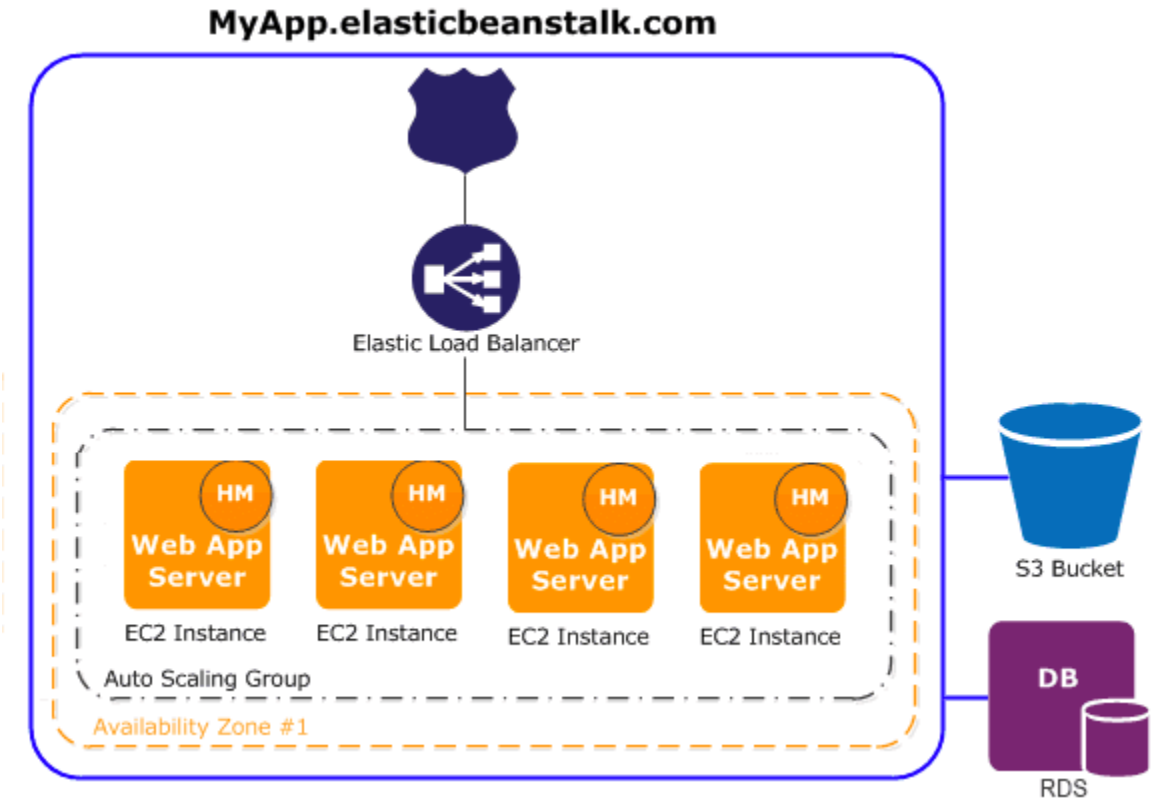
Project Requirements: Scalable Web Application on AWS

Description:

Develop a scalable web application using AWS Elastic Beanstalk, EC2, and RDS. The application should handle high traffic and dynamically scale resources as needed.

Architecture :

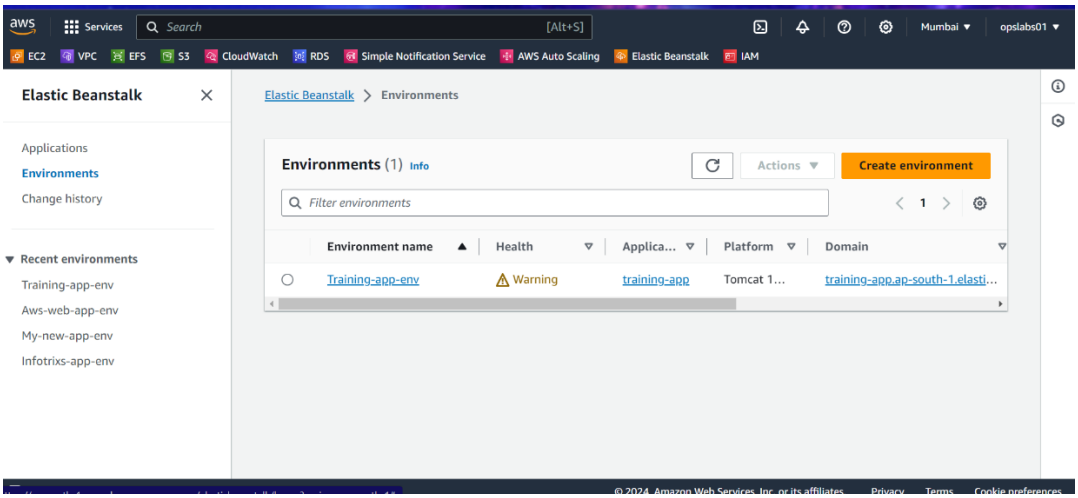
The web application builds by using the following AWS services :

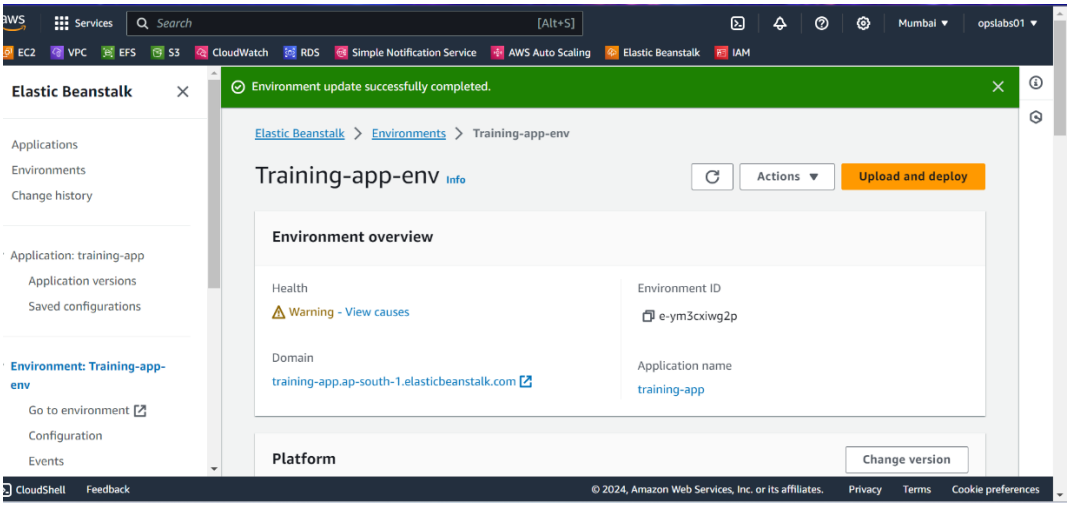


AWS Elastic Beanstalk :

Used for deployment and management of the web application.

Elastic Beanstalk is a service for deploying and scaling web applications and services. Upload your code and Elastic Beanstalk automatically handles the deployment—from capacity provisioning, load balancing, and auto scaling to application health monitoring.

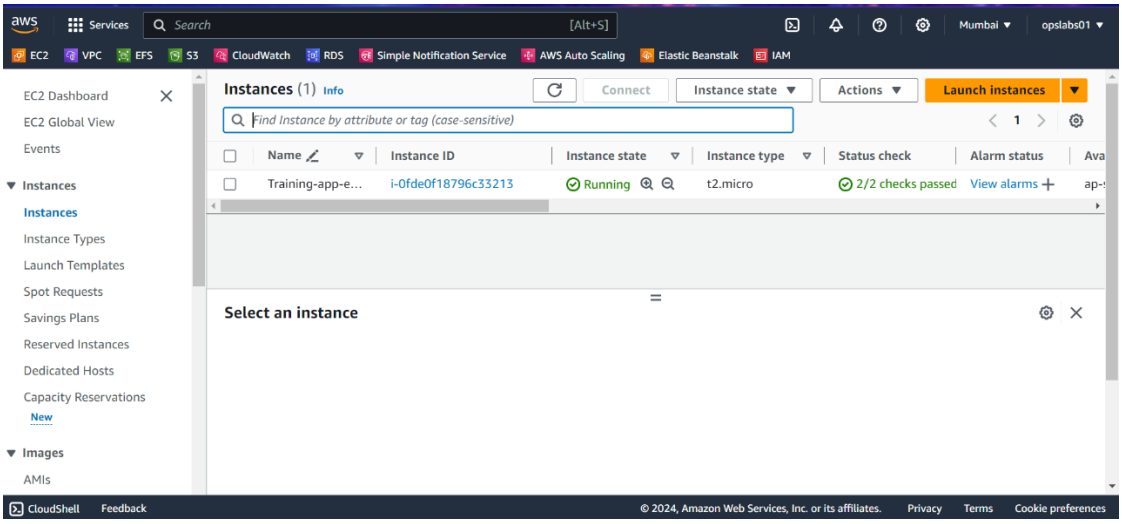

aws
Services
Search
[Alt+S]
Mumbai
opslabs01
EC2
VPC
EFS
S3
CloudWatch
RDS
Simple Notification Service
AWS Auto Scaling
Elastic Beanstalk
IAM
Elastic Beanstalk
Applications
Environments
Change history
Recent environments
Training-app-env
Aws-web-app-env
My-new-app-env
Infotrixs-app-env
Elastic Beanstalk > Environments
Environments (1) Info
Actions
Create environment
Filter environments
1
Environment name
Health
Applica...
Platform
Domain
Training-app-env
Warning
training-app
Tomcat 1...
training-app.ap-south-1.elasti...
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences


aws
Services
Search
[Alt+S]
Mumbai
opslabs01
EC2
VPC
EFS
S3
CloudWatch
RDS
Simple Notification Service
AWS Auto Scaling
Elastic Beanstalk
IAM
Elastic Beanstalk
Applications
Environments
Change history
Application: training-app
Application versions
Saved configurations
Environment: Training-app-env
Go to environment
Configuration
Events
Environment update successfully completed.
Elastic Beanstalk > Environments > Training-app-env
Training-app-env Info
Actions
Upload and deploy
Environment overview
Health
Warning - View causes
Environment ID
e-ym3cxiwg2p
Domain
training-app.ap-south-1.elasticbeanstalk.com
Application name
training-app
Platform
Change version
CloudShell
Feedback
© 2024, Amazon Web Services, Inc. or its affiliates.
Privacy
Terms
Cookie preferences

Time	Type	Details
January 16, 2024 14:04:59 (UTC+5:30)	WARN	Environment health has transitioned from Info to Warning. Configuration update completed 53 seconds ago and took 51 seconds. 1 out of 1 instances are impacted. See instance health for details.
January 16, 2024 14:03:59 (UTC+5:30)	INFO	Environment health has transitioned from Warning to Info. Configuration update in progress on 1 instance. 0 out of 1 instance completed (running for 24 seconds).
January 16, 2024 14:03:38 (UTC+5:30)	INFO	Environment update completed successfully.
January 16, 2024 14:03:38 (UTC+5:30)	INFO	Successfully deployed new configuration to environment.
January 16, 2024 14:03:16 (UTC+5:30)	INFO	Instance deployment completed successfully.
January 16, 2024 14:02:47 (UTC+5:30)	INFO	Updating environment Training-app-env's configuration settings.

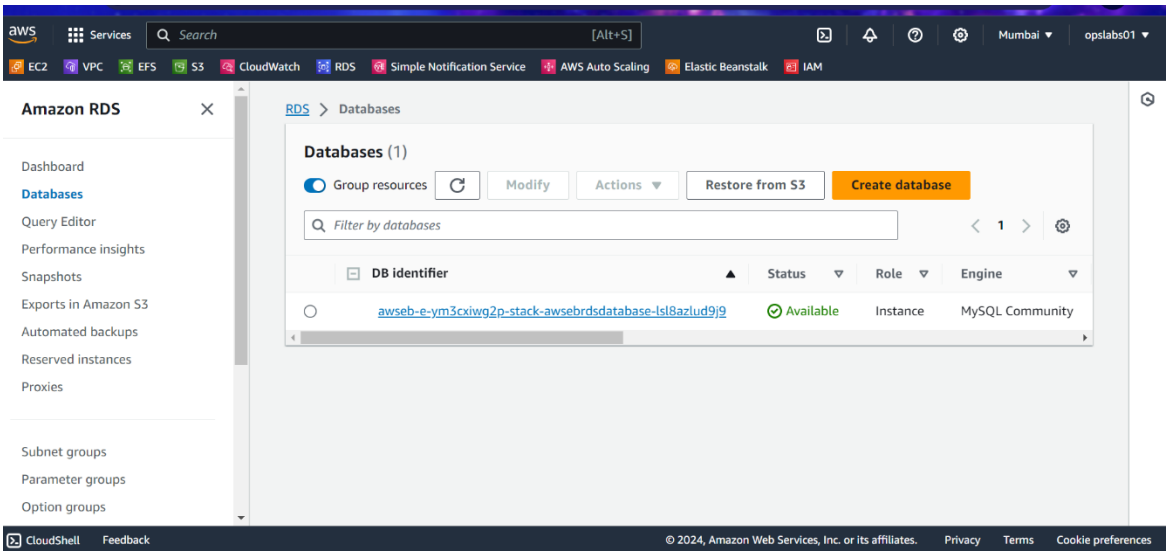
EC2 Instances:

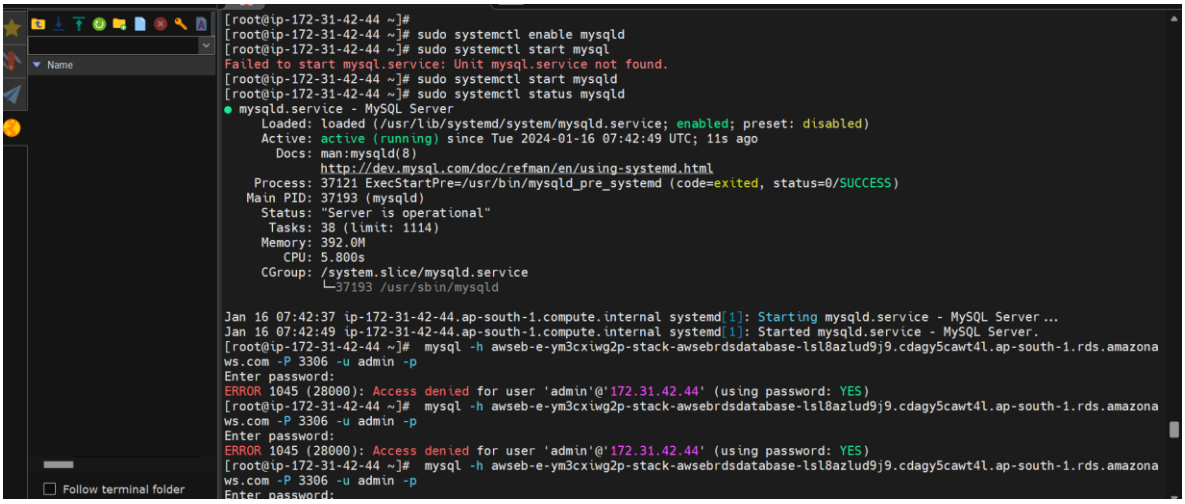
Provide hosting environment for the application.

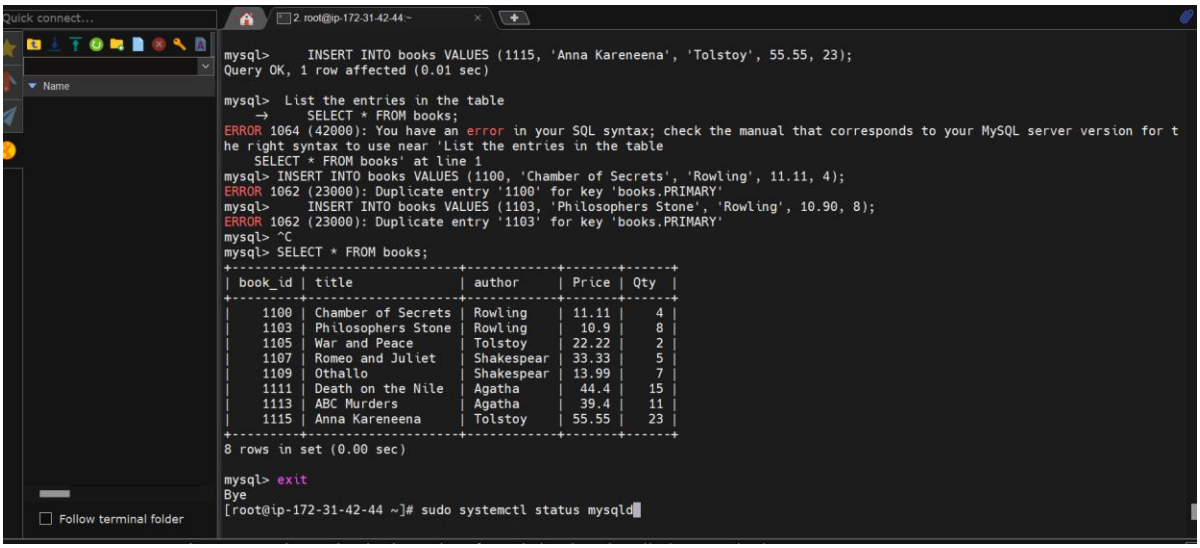


RDS (Relational Database Service) :

Used for hosting the application's database.




[root@ip-172-31-42-44 ~]#
[root@ip-172-31-42-44 ~]# sudo systemctl enable mysqld
[root@ip-172-31-42-44 ~]# sudo systemctl start mysql
Failed to start mysql.service: Unit mysql.service not found.
[root@ip-172-31-42-44 ~]# sudo systemctl start mysqld
[root@ip-172-31-42-44 ~]# sudo systemctl status mysqld
● mysqld.service - MySQL Server
Loaded: loaded (/usr/lib/systemd/system/mysqld.service; enabled; preset: disabled)
Active: active (running) since Tue 2024-01-16 07:42:49 UTC; 11s ago
Docs: man:mysqld(8)
http://dev.mysql.com/doc/refman/en/using-systemd.html
Process: 37121 ExecStartPre=/usr/bin/mysqld_pre_systemd (code=exited, status=0/SUCCESS)
Main PID: 37193 (mysqld)
Status: "Server is operational"
Tasks: 38 (limit: 1114)
Memory: 392.0M
CPU: 5.800s
CGroup: /system.slice/mysqld.service
└─37193 /usr/sbin/mysqld
Jan 16 07:42:37 ip-172-31-42-44.ap-south-1.compute.internal systemd[1]: Starting mysqld.service - MySQL Server...
Jan 16 07:42:49 ip-172-31-42-44.ap-south-1.compute.internal systemd[1]: Started mysqld.service - MySQL Server.
[root@ip-172-31-42-44 ~]# mysql -h awseb-e-ym3cxiwg2p-stack-awsebrdsdatabase-lsl8azlud9j9.cdagy5cawt4l.ap-south-1.rds.amazonaws.com -P 3306 -u admin -p
Enter password:
ERROR 1045 (28000): Access denied for user 'admin'@'172.31.42.44' (using password: YES)
[root@ip-172-31-42-44 ~]# mysql -h awseb-e-ym3cxiwg2p-stack-awsebrdsdatabase-lsl8azlud9j9.cdagy5cawt4l.ap-south-1.rds.amazonaws.com -P 3306 -u admin -p
Enter password:
ERROR 1045 (28000): Access denied for user 'admin'@'172.31.42.44' (using password: YES)
[root@ip-172-31-42-44 ~]# mysql -h awseb-e-ym3cxiwg2p-stack-awsebrdsdatabase-lsl8azlud9j9.cdagy5cawt4l.ap-south-1.rds.amazonaws.com -P 3306 -u admin -p
Enter password:
Name
Follow terminal folder

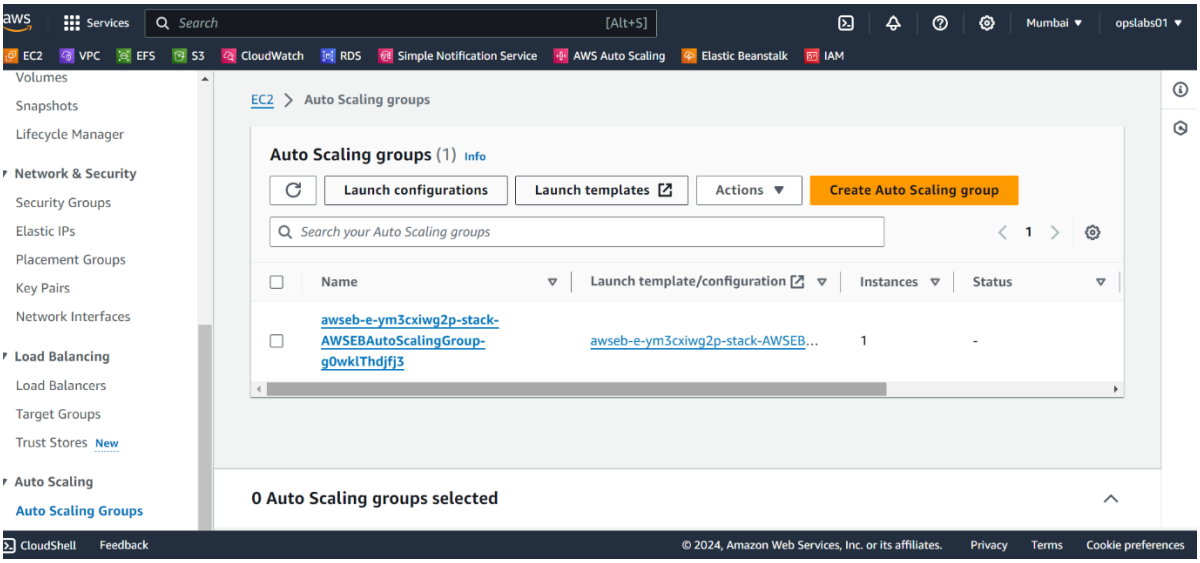

Quick connect...
2 root@ip-172-31-42-44:~
mysql> INSERT INTO books VALUES (1115, 'Anna Kareneena', 'Tolstoy', 55.55, 23);
Query OK, 1 row affected (0.01 sec)
mysql> List the entries in the table
-> SELECT * FROM books;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'List the entries in the table
SELECT * FROM books' at line 1
mysql> INSERT INTO books VALUES (1100, 'Chamber of Secrets', 'Rowling', 11.11, 4);
ERROR 1062 (23000): Duplicate entry '1100' for key 'books.PRIMARY'
mysql> INSERT INTO books VALUES (1103, 'Philosophers Stone', 'Rowling', 10.90, 8);
ERROR 1062 (23000): Duplicate entry '1103' for key 'books.PRIMARY'
mysql> ^C
mysql> SELECT * FROM books;
book_id	title	author	Price	Qty
1100	Chamber of Secrets	Rowling	11.11	4
1103	Philosophers Stone	Rowling	10.9	8
1105	War and Peace	Tolstoy	22.22	2
1107	Romeo and Juliet	Shakespear	33.33	5
1109	Othallo	Shakespear	13.99	7
1111	Death on the Nile	Agatha	44.4	15
1113	ABC Murders	Agatha	39.4	11
1115	Anna Kareneena	Tolstoy	55.55	23
8 rows in set (0.00 sec)
mysql> exit
Bye
[root@ip-172-31-42-44 ~]# sudo systemctl status mysqld
Name
Follow terminal folder

Load Balancer :

Implement load balancing to distribute incoming traffic evenly across multiple EC2 instances.

Auto Scaling:

Configure automatic scaling of resources based on the application's workload.



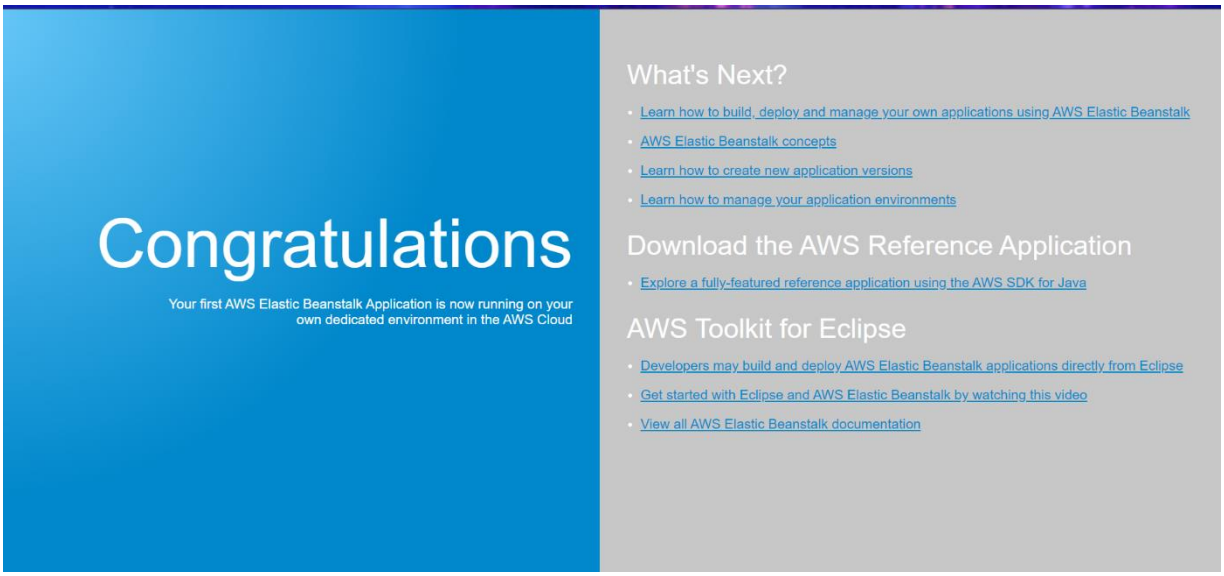
Application :

Description :

Academy E-bookstore scalable web-application. User can buy book online and make secure payment. This application developed using Aws environment like EC2, RDS, Autoscaling, Load balancer, Elastic Beanstalk.

Elastic Beanstalk is a service for deploying and scaling web applications and services. Upload your code and Elastic Beanstalk automatically handles the deployment—from capacity provisioning, load balancing, and auto scaling to application health monitoring.

Application build and compile by with the help of Maven and deploy and scaling with the help of elastic beanstalk. RDS Used for hosting the application's database.



Academy E-Bookstore

Choose Author(s):

- [x] Tolstoy
- [ ] Shakespear
- [ ] Agatha Christie
- [ ] J K Rowling

List the Books and Price

Academy E-Bookstore

Choose Author(s):

- [ ] Tolstoy
- [ ] Shakespear
- [ ] Agatha Christie
- [ ] J K Rowling

List the Books and Price

Order	Author	Title	Price	Qty
☐	Tolstoy	Anna Kareneena	$55	23
☐	Tolstoy	War and Peace	$22	2

Order Clear

Back

Thank you for ordering books

Your Feedback, Please

☐ Excellent ☐ Good ☐ Average

Submit Feedback

Thank you for ordering books

Your Feedback, Please

☐ Excellent ☐ Good ☐ Average

Submit Feedback

Thank You for the Feedback

BACK

Documentation Links :

- AWS Elastic Beanstalk: https://aws.amazon.com/elasticbeanstalk/
- Amazon EC2: https://aws.amazon.com/ec2/
- Amazon RDS: https://aws.amazon.com/rds/
- Elastic Load Balancing: https://aws.amazon.com/elasticloadbalancing/
- Auto Scaling: https://aws.amazon.com/autoscaling/