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Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

School of Computer Science and Engineering
(SCOPE)

Fall Semester 2025-26

CBS3005 - Cloud, Microservices and Applications

LAB ASSESSMENT 2

Submitted by-

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Q1. Create a simple web application using your preferred programming language and framework (e.g., Node.js, Python, Java etc.). Ensure the application is fully functional and ready for deployment. Initialize an AWS Elastic Beanstalk environment for your application. Choose the appropriate platform (e.g., Node.js, Python, Java) and configure the environment settings. Package your web application and deploy it to the Elastic Beanstalk environment. Access the deployed web application via the Elastic Beanstalk URL provided. Test its functionality to confirm that the deployment was successful and that the application is accessible and performs as expected.

Step 1 – Launching the Application on Elastic Beanstalk

- Log in to your AWS Management Console.
- Navigate to **Elastic Beanstalk** and select **Create Application**.
- Provide an application name, e.g., *my-webapp*.
- For the platform, choose **Python** (suitable for serving static HTML).
- Under **Application code**, select **Upload your code** and upload the .zip package containing your project files.
- Click **Create Application** and wait a few minutes (usually 2–5) for the environment to be initialized.

The screenshot shows the AWS Elastic Beanstalk 'Create environment' page. On the left, a progress bar indicates the steps: Step 1 (Configure environment), Step 2 (Configure service access), Step 3 (optional: Set up networking, database, and tags), Step 4 (optional: Configure instance traffic and scaling), Step 5 (optional: Configure updates, monitoring, and logging), Step 6 (optional: Review), and Step 7 (Review). The main content area is titled 'Configure environment' and includes three sections: 'Environment tier' with 'Web server environment' selected, 'Application information' with 'Application name' set to 'my-webapp', and 'Environment information' with a note that names and descriptions cannot be changed later.

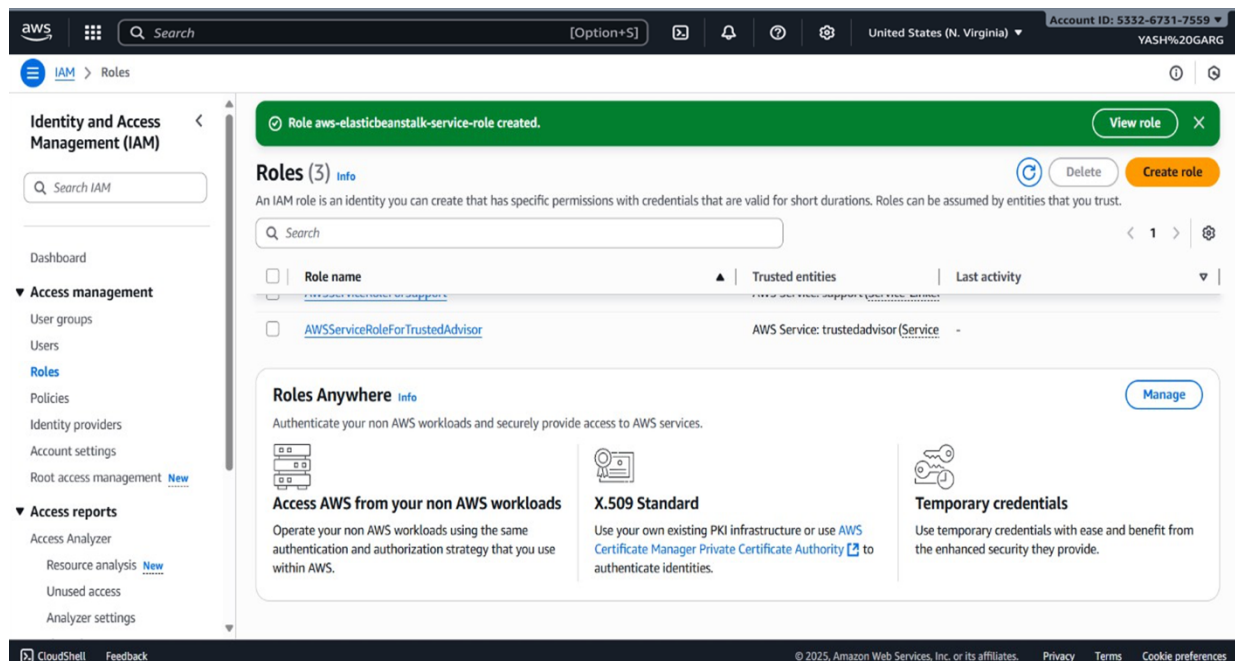
The screenshot shows the 'Application code' section of the 'Create environment' page. It includes dropdowns for 'Platform' (Python), 'Platform branch' (Python 3.13 running on 64bit Amazon Linux 2023), and 'Platform version' (4.7.1 (Recommended)). Under 'Application code', 'Upload your code' is selected. The 'Version label' field is set to 'my-webapp'. The 'Source code origin' is set to 'Local file', and the 'Upload application' button is visible. The 'File name' is 'my-webapp.zip'.

Step 2 – Setting Up the Service Role

- On the service role section, click **Create role** (this opens the IAM console in a new tab).
- In the IAM console, choose **Elastic Beanstalk** as the trusted service.
- Attach the recommended managed policy:

AWSElasticBeanstalkManagedUpdatesCustomerRolePolicy

- Provide a descriptive name (e.g., *aws-elasticbeanstalk-service-role*).
- Click **Create role** to finalize.



Step 3 – Creating the EC2 Instance Profile

- Back in the Beanstalk configuration screen, under **EC2 instance profile**, click **Create role** (opens IAM again).
- This time, select **EC2** as the service.
- Attach the following managed policies:
 - *AWSElasticBeanstalkWebTier*
 - *AWSElasticBeanstalkWorkerTier*
 - *AWSElasticBeanstalkMulticontainerDocker* (*not required for static HTML but useful for future scalability*)
- Name the profile something like *aws-elasticbeanstalk-ec2-role*.
- Create the role.

Service access [Info](#)
Configure the service role and EC2 instance profile that Elastic Beanstalk uses to manage your environment. Choose an EC2 key pair to securely log in to your EC2 instances.

Service role	EC2 instance profile
arn:aws:iam::217553593570:role/aws-elasticbeanstalk-service-role	aws-elasticbeanstalk-ec2-role

Step 3: Set up networking, database, and tags [Edit](#)

Networking, database, and tags [Info](#)
Configure VPC settings, and subnets for your environment's EC2 instances and load balancer. Set up an Amazon RDS database that's integrated with your environment.

No options configured

Tags

Key	Value
No tags	

There are no tags defined

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Review [Info](#)

Step 1: Configure environment [Edit](#)

Environment information

Environment tier Web server environment	Application name my-webapp
Environment name My-webapp-env	Application code my-webapp.zip
Platform arn:aws:elasticbeanstalk:us-east-1::platform/Python 3.13 running on 64bit Amazon Linux 2023/4.7.1	

Step 2: Configure service access [Edit](#)

Service access [Info](#)
Configure the service role and EC2 instance profile that Elastic Beanstalk uses to manage your environment. Choose an EC2 key pair to securely log in to your EC2 instances.

Service role	EC2 instance profile

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Step 4 – Verifying Deployment

- Once the environment status shows **Health: OK**, a URL will be generated, e.g.,

<http://my-webapp.us-east-1.elasticbeanstalk.com>

- Open the URL to access your deployed site.
- Test core features to ensure everything works properly:
 - Navigation links (Home, About, Contact).
 - Buttons and JavaScript functionality.
 - Page styling and images (CSS applied correctly).

Elastic Beanstalk

Applications
Environments
Change history

Application: my-webapp

Environment: My-webapp-env
Go to environment
Configuration
Events
Health
Logs
Monitoring
Alarms
Managed updates
Tags

Elastic Beanstalk is launching your environment. This will take a few minutes.

Domain: My-webapp-env.eba-bujmqdt2.us-east-1.elasticbeanstalk.com
Application name: my-webapp
Running version: -
Platform state: Supported

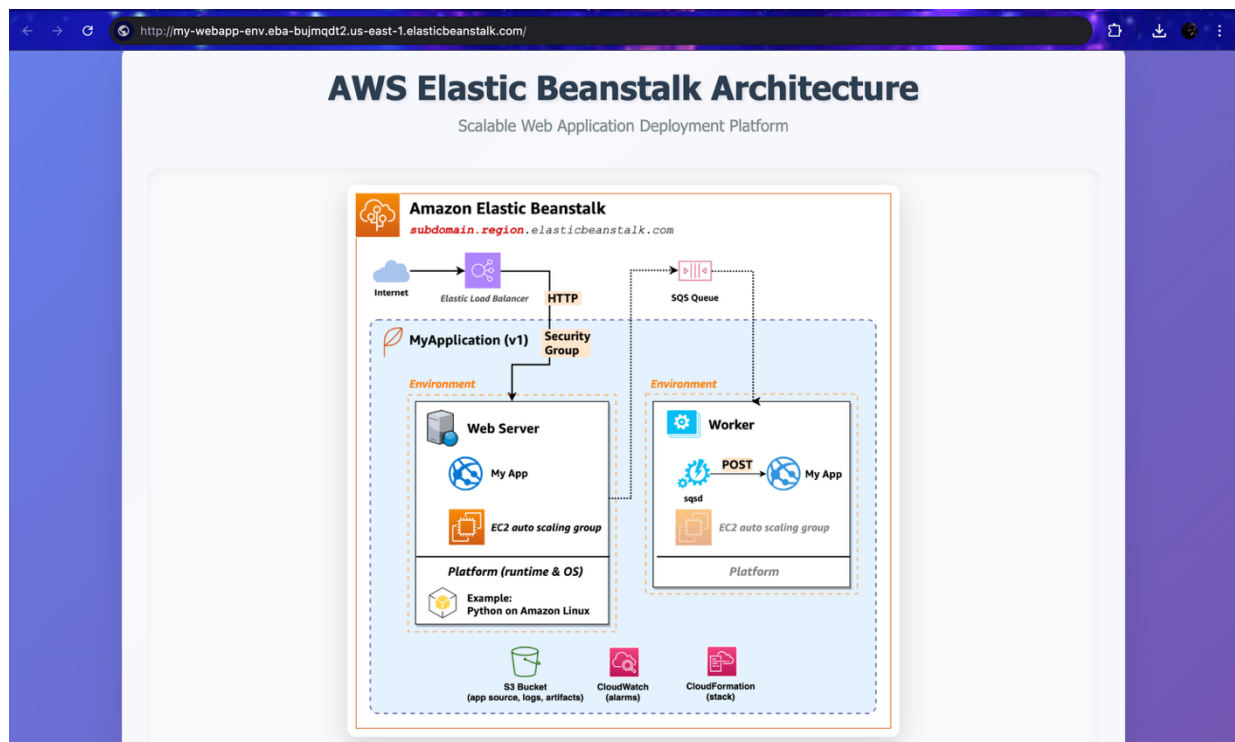
Events (7)

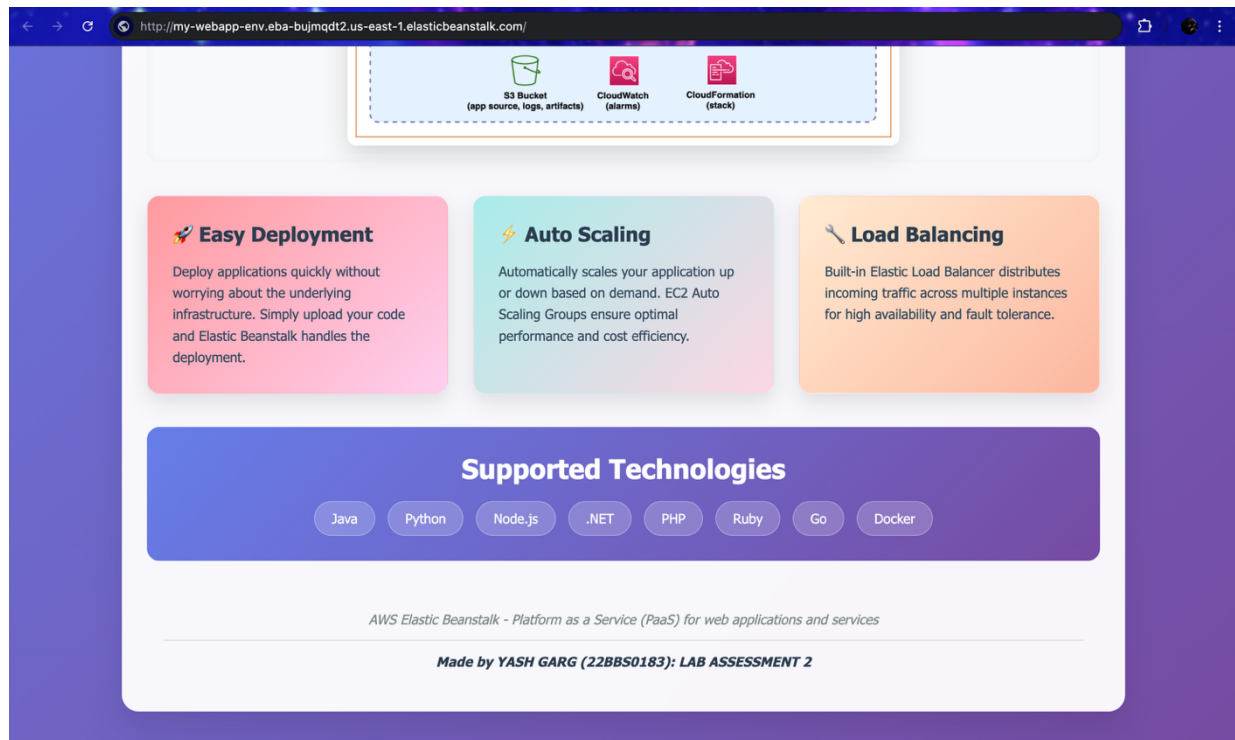
Time	Type	Details
August 29, 2025 11:10:01 (UTC+5:30)	INFO	Added instance [i-042e87d10ea6be442] to your environment.
August 29, 2025 11:09:11 (UTC+5:30)	INFO	Waiting for EC2 instances to launch. This may take a few minutes.
August 29, 2025 11:09:01 (UTC+5:30)	INFO	Environment health has transitioned to Pending. Initialization in progress (running for 33 seconds). There are no instances.
August 29, 2025 11:08:40 (UTC+5:30)	INFO	Created EIP: 3.212.246.210
August 29, 2025 11:08:25 (UTC+5:30)	INFO	Created security group named: awseb-e-v4xbu5qrgg-stack-AWSEBSecurityGroup-

Output:

My web application is now live and accessible via the Elastic Beanstalk-provided URL. Functionality and styling confirm that the deployment has been successful.

Link: <http://my-webapp-env.eba-bujmqdt2.us-east-1.elasticbeanstalk.com/>





Thank You