Experiment 5

Title:	Deploying Scalable and Secure Web Applications on AWS: A Comprehensive Lab on VPC and Elastic Beanstalk Integration	LO2	
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Sign here to indicate that you have read all relevant material provided/ available on Moodle/ Classroom while performing and writing this experiment			

Rubrics:

Criteria	Excellent	Good	Satisfactory	Poor	Total Marks
VPC Setup & Security (R1)	Fully functional VPC setup with 2 public and 2 private subnets, correct route tables, gateways, and comprehensive documentation. (5-6)	Minor errors in setup or documentation but overall functional VPC with most components correctly configured. (3-4)	Major setup issues or inaccuracies affecting functionality with basic or lacking documentation. (2)	Incomplete or incorrect VPC setup severely affecting functionality with minimal or no documentation. (1)	6
Application Deployment & Environment Configuration in Beanstalk (R2)	Successful deployment with optimal configuration and comprehensive documentation, including detailed steps and clear, annotated screenshots. (5-6)	Minor misconfigurations or omissions in documentation, but application runs adequately. (3-4)	Significant issues during deployment or with configuration settings, with basic documentation. (2)	Failed deployment or non-functional application with minimal or no documentation on deployment process or settings. (1)	5
Post Lab (R3)	Fully completed exercise with exceptional creativity or insight, applying lab concepts effectively with thorough documentation. (5-6)	Mostly completed with minor omissions, showing good understanding and creativity, well-documented. (3-4)	Partially completed with significant omissions but some understanding, with sufficient documentation. (2)	Exercise not completed or shows very little understanding of the topic, with inadequate documentation. (1)	5
Timeliness of Submission (R4)	On time (2)	1-week late (1)	2-weeks late (0)	More than 2 weeks late (Deduct up to 5 marks)	2
Total Marks					17

Date of Performance	Date of Submission	Signature of the Teacher

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
Review

Configure environment Info

Environment tier Info

Amazon Elastic Beanstalk has two types of environment tiers to support different types of web applications.

- (•) Web server environment
  Run a website, web application, or web API that serves HTTP requests. Learn more
- ( ) Worker environment
  Run a worker application that processes long-running workloads on demand or performs tasks on a schedule. Learn more

Application information Info

Application name

woho

Maximum length of 100 characters.

▸ **Application tags (optional)**

Environment information Info

Choose the name, subdomain and description for your environment. These cannot be changed later.

Environment name

Woho-env

Platform

Docker

Platform branch

Docker running on 64bit Amazon Linux 2023

Platform version

4.5.0 (Recommended)

Application code Info

- ( ) Sample application
- ( ) Existing version
  Application versions that you have uploaded.
- (•) Upload your code
  Upload a source bundle from your computer or copy one from Amazon S3.

Version label

Unique name for this version of your application code.

v

Source code origin. Maximum size 500 MB

- (•) Local file

Upload application

Choose file

File name: **dynamo-demo main frontend.zip**

File must be less than 500MB max file size

Presets Info

Start from a preset that matches your use case or choose custom configuration to unset recommended values and use the service's default values.

Configuration presets

- (•) Single instance (free tier eligible)
- ( ) Single instance (using spot instance)
- ( ) High availability
- ( ) High availability (using spot and on-demand instances)
- ( ) Custom configuration

Cancel Next

Configure service access Info

Service access

IAM roles, assumed by Elastic Beanstalk as a service role, and EC2 instance profiles allow Elastic Beanstalk to create and manage your environment. B to IAM managed policies that contain the required permissions. Learn more

Service role

- ○ Create and use new service role
- ◉ Use an existing service role

Existing service roles

Choose an existing IAM role for Elastic Beanstalk to assume as a service role. The existing IAM role must have the required IAM managed policies.

marky

EC2 key pair

Select an EC2 key pair to securely log in to your EC2 instances. Learn more

first

EC2 instance profile

Choose an IAM instance profile with managed policies that allow your EC2 instances to perform required operations.

marky

View permission details

Canc

Launch your environment in a custom VPC instead of the default VPC. You can create a VPC and subnets in the VPC management console. Learn more

vpc-00a8b71bb6e71c81d | (172.31.0.0/16)

Create custom VPC

Instance settings

Choose a subnet in each AZ for the instances that run your application. To avoid exposing your instances to the Internet, run your instances in your load balancer and instances in the same public subnets, assign public IP addresses to the instances. Learn more

Public IP address

Assign a public IP address to the Amazon EC2 instances in your environment.

☑ Activated

Instance subnets

Filter instance subnets

	Availability Zone	Subnet ▲	CIDR
☐	ap-south-1c	subnet-0100d1cf77544d69c	172.31.16.0/20
☐	ap-south-1b	subnet-0495f3380099a5529	172.31.0.0/20
☑	ap-south-1a	subnet-0916d6899691790d2	172.31.32.0/20

Database Info

Integrate an RDS SQL database with your environment. Learn more

Database subnets

If your Elastic Beanstalk environment is attached to an Amazon RDS, choose subnets for your database instances. Learn more

Choose database subnets (3)

Filter database subnets

	Availability Zone	Subnet	CIDR
☐	ap-south-1c	subnet-0100d1cf77544d69c	172.31.16.0/20
☐	ap-south-1b	subnet-0495f3380099a5529	172.31.0.0/20
☑	ap-south-1a	subnet-0916d6899691790d2	172.31.32.0/20

Enable database

EC2 security groups

Select security groups to control traffic.

EC2 security groups (5)

Filter security groups

	Group name	Group ID
☐	awseb-e-vzppbnn3n2-stack-AWSEBSecurityGroup-uF5…	sg-0f319d966ab581109
☑	default	sg-07737f3f010c7b8c5
☑	launch-wizard-1	sg-03b55f0c7a58291c0
☑	launch-wizard-2	sg-0b0059a754d8dee78
☐	rds_vpc	sg-02d7ff24bce701b20

Configure the compute capacity of your environment and auto scaling se

Auto scaling group

Environment type

Select a single-instance or load-balanced environment. You can develop and test an appl
production. Learn more

Single instance

Instances

1 Min

1 Max

Fleet composition

Spot instances are launched at the lowest available price. Learn more

- (•) On-Demand instance
- ( ) Spot instance

Spot allocation strategy - *new* | Info

Turn on capacity rebalancing

Architecture

The processor architecture determines the instance types that are made available. You can't change this selection a

- (•) x86_64
  This architecture uses x86 processors and is compatible with most third-party tools and libraries.
- ( ) arm64 - *new*
  This architecture uses AWS Graviton2 processors. You might have to recompile some third-party tools and libra

Instance types

Add instance types for your environment with your preferred launch order. The order preference only applies to On
you include at least two instance types. Learn more

1. t3.micro

Add instance type

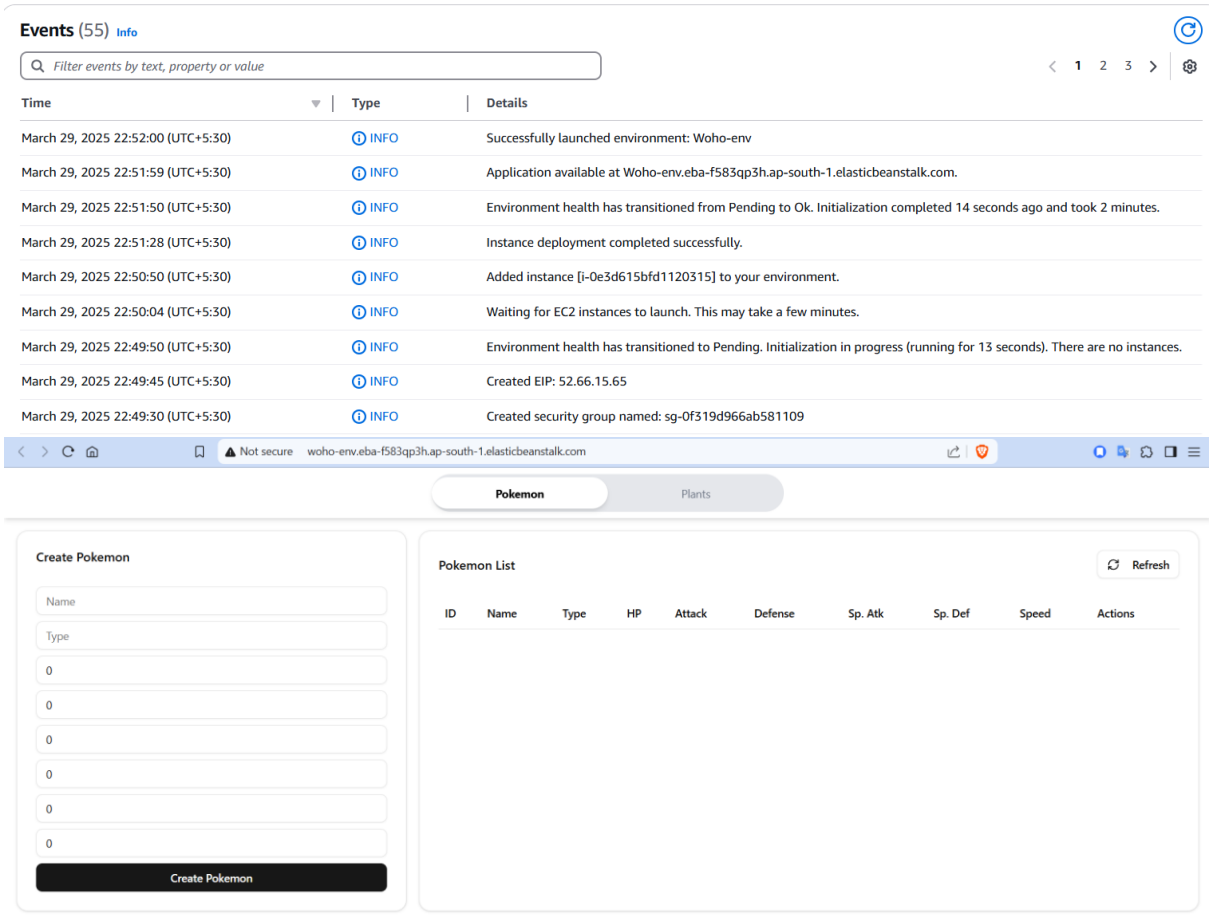
AMI ID

Elastic Beanstalk selects a default Amazon Machine Image (AMI) for your environment based on the Region, platfo

ami-0809fbbd8edebc1a3

Availability Zones

Number of Availability Zones (AZs) to use.


Events (55) Info
Filter events by text, property or value
1 2 3
Time
Type
Details
March 29, 2025 22:52:00 (UTC+5:30) INFO Successfully launched environment: Woho-env
March 29, 2025 22:51:59 (UTC+5:30) INFO Application available at Woho-env.eba-f583qp3h.ap-south-1.elasticbeanstalk.com.
March 29, 2025 22:51:50 (UTC+5:30) INFO Environment health has transitioned from Pending to Ok. Initialization completed 14 seconds ago and took 2 minutes.
March 29, 2025 22:51:28 (UTC+5:30) INFO Instance deployment completed successfully.
March 29, 2025 22:50:50 (UTC+5:30) INFO Added instance [i-0e3d615bfd1120315] to your environment.
March 29, 2025 22:50:04 (UTC+5:30) INFO Waiting for EC2 instances to launch. This may take a few minutes.
March 29, 2025 22:49:50 (UTC+5:30) INFO Environment health has transitioned to Pending. Initialization in progress (running for 13 seconds). There are no instances.
March 29, 2025 22:49:45 (UTC+5:30) INFO Created EIP: 52.66.15.65
March 29, 2025 22:49:30 (UTC+5:30) INFO Created security group named: sg-0f319d966ab581109

Not secure
woho-env.eba-f583qp3h.ap-south-1.elasticbeanstalk.com
Pokemon
Plants
Create Pokemon
Name
Type
0
0
0
0
0
0
Create Pokemon
Pokemon List
Refresh
ID
Name
Type
HP
Attack
Defense
Sp. Atk
Sp. Def
Speed
Actions