

## EXPERIMENT NO. 5

**Aim:** To study and implement Platform as a Service using AWS Elastic Beanstalk

**Theory:**

### AWS Elastic Beanstalk Service

Amazon AWS Elastic Beanstalk is a Platform-as-a-Service (PaaS) offering from Amazon Web Services (AWS) that simplifies the process of deploying, managing, and scaling web applications and services. It abstracts away the underlying infrastructure complexities, allowing developers to focus on writing code and building their applications without worrying about the underlying infrastructure management.

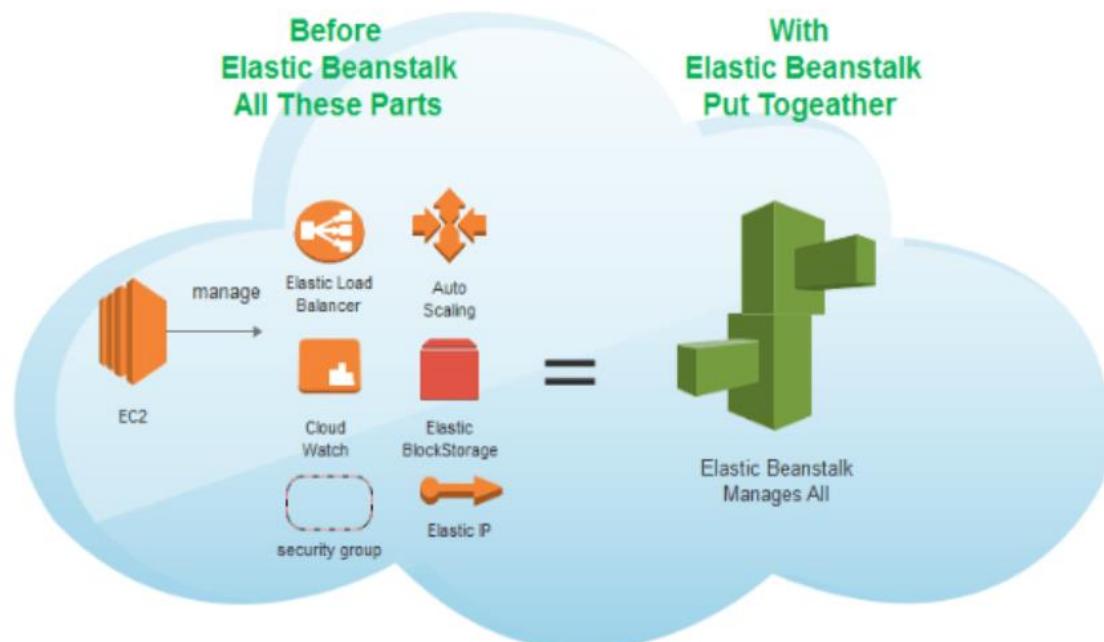
1. Easy Application Deployment: With Elastic Beanstalk, developers can quickly deploy their applications by simply uploading their application code (such as Java, .NET, Node.js, Python, Ruby, Go, Docker, and PHP) along with a configuration file specifying the runtime environment requirements.
2. Automatic Environment Provisioning: Elastic Beanstalk automatically provisions and manages the necessary underlying resources, including EC2 instances, load balancers, auto-scaling groups, databases (optional), and networking components required to run the application.
3. Scalability: Elastic Beanstalk automatically scales the application environment based on traffic fluctuations and load patterns. It supports both manual and automatic scaling, allowing users to configure scaling policies based on predefined metrics such as CPU utilization, request count, or latency.
4. Monitoring and Management: Elastic Beanstalk provides built-in monitoring and management capabilities, allowing users to view real-time performance metrics, logs, and health status of their application environments using the AWS Management Console, CLI, or API.
5. High Availability: Elastic Beanstalk automatically provisions resources across multiple Availability Zones (AZs) within a selected AWS region to ensure high availability and fault tolerance. It also integrates with AWS services like Elastic Load Balancing (ELB) and Amazon Route 53 for load balancing and DNS routing.

6. Integration with AWS Services: Elastic Beanstalk seamlessly integrates with other AWS services such as Amazon RDS (Relational Database Service), Amazon S3 (Simple Storage Service), Amazon SNS (Simple Notification Service), Amazon CloudWatch (for monitoring), and AWS Identity and Access Management (IAM).

7. Customization and Configuration: While Elastic Beanstalk abstracts away much of the infrastructure management, it also provides flexibility for users to customize and configure their application environments. Users can adjust settings such as instance types, environment variables, security settings, and software configurations.

8. Multi-Environment Management: Elastic Beanstalk supports the management of multiple application environments (e.g., development, testing, production) within a single application, allowing users to easily deploy and manage different versions of their applications across various environments.

AWS Elastic Beanstalk simplifies the deployment and management of web applications and services, allowing developers to focus on writing code and delivering value to their customers without the overhead of managing infrastructure. It provides a scalable, flexible, and cost-effective platform for building and running web applications in the cloud.



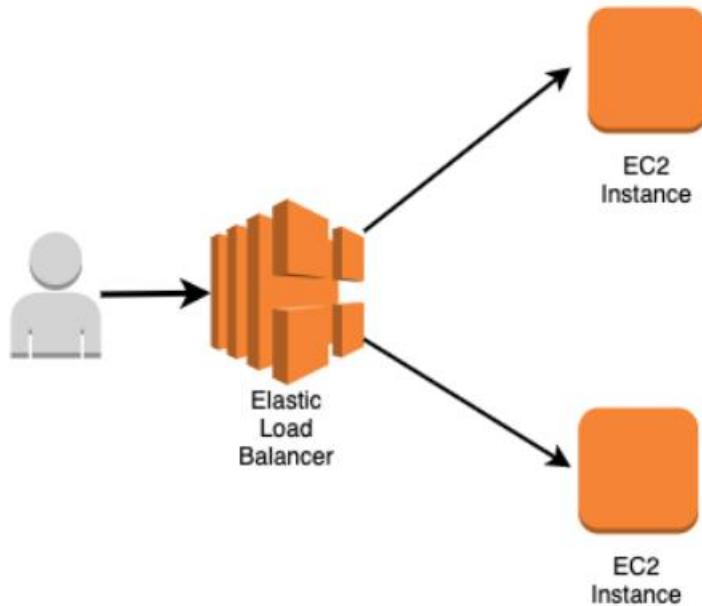
Amazon Elastic Beanstalk (EBS) supports a wide range of programming languages, frameworks, and platforms, allowing developers to deploy and manage various types of web applications and services. Here are some of the most commonly supported languages and frameworks:

1. Java: Elastic Beanstalk supports Java applications using Servlet containers such as Apache Tomcat and Java EE application servers like Apache TomEE and GlassFish.
2. .NET: Developers can deploy .NET applications using Windows Server environments with support for ASP.NET, ASP.NET Core, and .NET Core.
3. Node.js: Elastic Beanstalk supports Node.js applications, allowing developers to run JavaScript server-side applications and APIs using frameworks like Express.js.
4. Python: Python applications can be deployed to Elastic Beanstalk using popular web frameworks such as Django and Flask.
5. Ruby: Elastic Beanstalk supports Ruby applications using frameworks like Ruby on Rails.
6. PHP: PHP applications can be deployed using various PHP runtimes and frameworks such as Laravel, Symfony, and CodeIgniter.
7. Go: Elastic Beanstalk supports Go applications, allowing developers to deploy and run Go-based web services and APIs.
8. Docker: Elastic Beanstalk provides native support for Docker containers, allowing developers to package their applications and dependencies into Docker images and deploy them to Elastic Beanstalk environments.
9. Static Websites: Elastic Beanstalk can also host static websites and single-page applications (SPAs) built using HTML, CSS, and JavaScript frameworks like Angular, React, and Vue.js.
10. Custom Platforms: For languages and frameworks not directly supported by Elastic Beanstalk, developers can create custom platform configurations using platform hooks and configuration files.

Elastic Beanstalk provides pre-configured environments for each supported language and framework, streamlining the deployment process and abstracting away much of the underlying infrastructure management. Additionally, developers have the flexibility to customize and configure their environments to meet their specific application requirements.

<b>Feature</b>	<b>Amazon EC2</b>	<b>AWS Elastic Beanstalk</b>
Deployment Complexity	More complex; requires managing infrastructure and server configurations.	Simplified deployment; abstracts away infrastructure management.
Scalability	Manual or auto-scaling configurations available; requires manual setup.	Automatic scaling based on predefined metrics; auto-scaling is easier to configure.
Application Deployment	Users are responsible for deploying applications and managing server configurations.	Supports various programming languages and frameworks; applications are deployed using pre-configured environments.
Resource Management	Users have full control over resource provisioning and configuration.	Elastic Beanstalk handles resource provisioning and automatically manages underlying infrastructure.
High Availability	Users are responsible for implementing high availability and fault tolerance measures.	Automatically provisions resources across multiple Availability Zones (AZs) for high availability.
Monitoring	Users are responsible for setting up monitoring using AWS services such as CloudWatch.	Provides built-in monitoring and management capabilities for application environments.
Configuration	Requires manual configuration of security groups, load balancers, and auto-scaling groups.	Provides simplified configuration options for environment settings, scaling, and load balancing.
Maintenance	Users are responsible for applying updates, patches, and maintenance tasks to instances.	Managed updates and patches are automatically applied to the underlying infrastructure.
Cost	Pay-as-you-go pricing model; users pay for the resources they consume.	Pay-as-you-go pricing model; additional fees may apply for managed services and resources provisioned by Elastic Beanstalk.

## Elastic load balancing



Elastic Load Balancing (ELB) is a service provided by Amazon Web Services (AWS) that automatically distributes incoming application traffic across multiple targets, such as Amazon EC2 instances, containers, IP addresses, and Lambda functions, to ensure high availability and fault tolerance of your applications.

### 1. Load Balancer Types:

- Application Load Balancer (ALB): Operates at the application layer (Layer 7) and is best suited for HTTP and HTTPS traffic. It supports advanced routing features, content-based routing, and integration with other AWS services such as AWS WAF (Web Application Firewall) and AWS Lambda.
- Network Load Balancer (NLB): Operates at the transport layer (Layer 4) and is capable of handling extremely high volumes of traffic with low latency. It is ideal for TCP, UDP, and TLS traffic, and supports static IP addresses and preservation of the client's source IP address.
- Classic Load Balancer (CLB): The original Elastic Load Balancer offering, now referred to as Classic Load Balancer. It provides basic load balancing across multiple EC2 instances and operates at both the application and transport layers.

## 2. Auto Scaling Integration:

- Elastic Load Balancing seamlessly integrates with AWS Auto Scaling, allowing it to dynamically adjust the number of instances in response to changing traffic patterns. This ensures that the application can handle varying levels of traffic while maintaining performance and availability.

## 3. Health Checks:

- ELB regularly performs health checks on the targets it routes traffic to, automatically removing unhealthy targets from rotation until they are restored to a healthy state. This helps maintain the availability and reliability of the application.

## 4. Security Features:

- ELB supports integration with AWS Identity and Access Management (IAM) for fine-grained access control and authentication. Additionally, Application Load Balancer (ALB) supports SSL/TLS termination, allowing it to offload SSL/TLS decryption from backend instances.

## 5. Native IPv6 Support:

- Elastic Load Balancing provides native support for IPv6, allowing applications to accept incoming traffic over IPv6 connections without any additional configuration or overhead.

## 6. Monitoring and Logging:

- ELB integrates with AWS CloudWatch, allowing users to monitor key performance metrics such as request counts, latency, and error rates in real-time. It also supports access logging, which can be enabled to capture detailed information about incoming requests for analysis and troubleshooting.

## 7. Scalability and Elasticity:

- ELB is designed to scale horizontally and can handle large volumes of traffic without manual intervention. It automatically distributes incoming traffic across multiple targets to ensure optimal performance and availability.

Elastic Load Balancing plays a crucial role in ensuring the availability, scalability, and reliability of applications deployed on AWS by evenly distributing incoming traffic across multiple targets and automatically adjusting to changing workload conditions.

## Implementation:

### 1. Using Php

The image consists of three vertically stacked screenshots of the AWS Management Console.

**Screenshot 1: EC2 Dashboard**

This screenshot shows the EC2 Dashboard for the Asia Pacific (Mumbai) Region. The left sidebar includes options like EC2 Global View, Events, Instances, Images, and Elastic Block Store. The main area displays resource counts: Instances (running) 0, Auto Scaling Groups 0, Dedicated Hosts 0, Elastic IPs 0, Instances 0, Key pairs 0, Load balancers 0, Placement groups 0, Security groups 1, Snapshots 0, and Volumes 0. A "Launch instance" button is present in the "Launch instance" section. The right side shows the "EC2 Free Tier" info and account attributes.

**Screenshot 2: Welcome | Elastic Beanstalk**

This screenshot shows the Elastic Beanstalk home page. It features a large heading "Amazon Elastic Beanstalk" and "End-to-end web application management.". Below this, a "Get started" section explains the service's capabilities, and a "Pricing" section states there's no additional charge. A "Create application" button is visible.

**Screenshot 3: Amazon Elastic Beanstalk - Compute**

This screenshot shows the Amazon Elastic Beanstalk Compute page. It has a "Get started" section with deployment instructions and a "Pricing" section stating no additional charge. The top navigation bar includes "CloudShell" and "Feedback".

The screenshot shows the 'Configure environment' step in the AWS Elastic Beanstalk console. The left sidebar lists steps 1 through 6. Step 1 is selected and titled 'Configure environment'. The main content area is divided into sections: 'Environment tier' (selected), 'Application information', and 'Platform info'. In the 'Environment tier' section, 'Web server environment' is chosen. In 'Application information', the application name is set to 'ishitawebapp'. The 'Platform info' section shows 'Platform type' as 'LAMP'. A Snipping Tool window is overlaid on the bottom right, showing a screenshot of the AWS Lambda console.

Configure environment

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

Environment tier

Web server environment

Application information

Application name

ishitawebapp

Platform info

Platform type

CloudShell Feedback

Configure environment | Elasti... Google ChatGPT

Stop sharing View tab: teams.microsoft.com

aws Services Search [Alt+S] Mumbai ishita123

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36°C Smoke

Leave blank for autogenerated value .ap-south-1.elasticbeanstalk.com Check availability

Environment description

Environment name

Ishitawebapp-env

Platform type

LAMP

CloudShell Feedback

Configure environment | Elasti... Google ChatGPT

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Snipping Tool

Screenshot copied to clipboard and saved Select here to mark up and share the image

The screenshot shows three consecutive steps of the 'Configure environment' wizard in the AWS Elastic Beanstalk console:

- Platform**:
  - Platform type:  Managed platform (Platforms published and maintained by Amazon Elastic Beanstalk)
  - Custom platform (Platforms created and owned by you. This option is unavailable if you have no platforms.)
- Application code**:
  - 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.)
- Presets**:
  - Configuration presets:
    - Single instance (free tier eligible)
    - Single instance (using spot instance)
    - High availability
    - High availability (using spot and on-demand instances)
    - Custom configuration

At the bottom right of the third step, there are 'Cancel' and 'Next' buttons, along with the standard Windows taskbar.

The screenshot shows the AWS Elastic Beanstalk service access configuration interface. The left sidebar lists 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), and Step 6 (Review). The main panel is titled "Configure service access" and contains the "Service access" section. It explains that IAM roles assumed by Elastic Beanstalk as a service role, and EC2 instance profiles allow Elastic Beanstalk to create and manage your environment. Both the IAM role and instance profile must be attached to IAM managed policies that contain the required permissions. A "Service role" section shows the selected option "Create and use new service role" and a "Service role name" input field containing "aws-elasticbeanstalk-service-role". Below it is a "View permission details" button. An "EC2 key pair" section includes a dropdown menu labeled "Choose a key pair" and a "View permission details" button. An "EC2 instance profile" section includes a dropdown menu labeled "Choose an IAM instance profile with managed policies that allow your EC2 instances to perform required operations" and a "View permission details" button. The top navigation bar shows tabs for Microsoft Teams, Google, ChatGPT, and the current tab "Configure service access". The bottom navigation bar includes CloudShell, Feedback, and links to Privacy, Terms, and Cookie preferences.

The screenshot shows the AWS IAM Roles page with the following details:

**Roles (4) Info**

An IAM role is an identity you can create that has specific permissions with credentials that are valid for short durations. Roles can be assumed by entities that you trust.

Role name	Trusted entities	Last activity
AWSServiceRoleForRDS	AWS Service: rds (Service-Linked Role)	12 minutes ago
AWSServiceRoleForSupport	AWS Service: support (Service-Linked Role)	-
AWSServiceRoleForTrustedAdvisor	AWS Service: trustedadvisor (Service-Linked Role)	-
rds-monitoring-role	AWS Service: monitoring.rds	-

**Roles Anywhere Info**

Authenticate your non AWS workloads and securely provide access to AWS services.

Access AWS from your non AWS workloads      X.509 Standard      Temporary credentials

**Role ebs-role created.**

The screenshot shows the AWS IAM Roles page with the following details:

**Roles (5) Info**

An IAM role is an identity you can create that has specific permissions with credentials that are valid for short durations. Roles can be assumed by entities that you trust.

Role name	Trusted entities	Last activity
ebs-role	AWS Service: ec2	-
rds-monitoring-role	AWS Service: monitoring.rds	-

**Roles Anywhere Info**

Authenticate your non AWS workloads and securely provide access to AWS services.

Access AWS from your non AWS workloads      X.509 Standard      Temporary credentials

Use your own existing PKI infrastructure or use [AWS Certificate Manager Private Certificate Authority](#) to authenticate identities.

Screenshot of the AWS IAM Roles page:

The page shows a list of 5 IAM roles:

Role name	Trusted entities	Last activity
AWSServiceRoleForRDS	AWS Service: rds (Service-Linked Role)	1 hour ago
AWSServiceRoleForSupport	AWS Service: support (Service-Linked Role)	-
AWSServiceRoleForTrustedAdvisor	AWS Service: trustedadvisor (Service-Linked Role)	-
ebs-role	AWS Service: ec2	-
rds-monitoring-role	AWS Service: monitoring.rds	-

Screenshot of the AWS Elastic Beanstalk Configure service access step:

The step is titled "Configure service access". It includes the following sections:

- 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**

**Service access**: Describes how IAM roles, assumed by Elastic Beanstalk as a service role, and EC2 instance profiles allow Elastic Beanstalk to create and manage your environment. Both the IAM role and instance profile must be attached to IAM managed policies that contain the required permissions.

**Service role**:  
 Create and use new service role  
 Use an existing service role

**Service role name**: aws-elasticbeanstalk-service-role2

**EC2 key pair**: Choose a key pair to securely log in to your EC2 instances.

**EC2 instance profile**: Choose an IAM instance profile with managed policies that allow your EC2 instances to perform required operations. ebs-role

Reconnect Set up networking, database, and tags - optional ebs-role | IAM | Global

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aws Services Search [Alt+S]

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

**Set up networking, database, and tags - optional** Info

**Virtual Private Cloud (VPC)**

**VPC**  
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-0e48dbf212e7f86a3 | (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 private subnets and load balancer in public subnets. To run 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	Name
<input checked="" type="checkbox"/> ap-south-1b	subnet-0a43eedc5...	172.31.0.0/20	
<input type="checkbox"/> ap-south-1a	subnet-0abeb83eb...	172.31.32.0/20	
<input type="checkbox"/> ap-south-1c	subnet-0f94468ec...	172.31.16.0/20	

**Database Info**  
Integrate an RDS SQL database with your environment. [Learn more](#)

CloudShell Feedback

29°C Smoke Set up networking, database, and tags - optional ebs-role | IAM | Global

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aws Services Search [Alt+S]

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

**Set up networking, database, and tags - optional** Info

**Virtual Private Cloud (VPC)**

**VPC**  
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-0e48dbf212e7f86a3 | (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 private subnets and load balancer in public subnets. To run 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	Name
<input checked="" type="checkbox"/> ap-south-1b	subnet-0a43eedc5...	172.31.0.0/20	
<input type="checkbox"/> ap-south-1a	subnet-0abeb83eb...	172.31.32.0/20	
<input type="checkbox"/> ap-south-1c	subnet-0f94468ec...	172.31.16.0/20	

**Database Info**  
Integrate an RDS SQL database with your environment. [Learn more](#)

CloudShell Feedback

29°C Smoke Set up networking, database, and tags - optional ebs-role | IAM | Global

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aws Services Search [Alt+S]

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

**Set up networking, database, and tags - optional** Info

**Virtual Private Cloud (VPC)**

**VPC**  
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-0e48dbf212e7f86a3 | (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 private subnets and load balancer in public subnets. To run 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	Name
<input checked="" type="checkbox"/> ap-south-1b	subnet-0a43eedc5...	172.31.0.0/20	
<input type="checkbox"/> ap-south-1a	subnet-0abeb83eb...	172.31.32.0/20	
<input type="checkbox"/> ap-south-1c	subnet-0f94468ec...	172.31.16.0/20	

**Database Info**  
Integrate an RDS SQL database with your environment. [Learn more](#)

CloudShell Feedback

Configure instance traffic and security | ebs-role | IAM | Global

With the current setting, the environment enables only IMDSv2.

Deactivated

**EC2 security groups**

Select security groups to control traffic.

**EC2 security groups (1)**

Group name	Group ID	Name
default	sg-05e5c845680f2333d	

**Capacity** Info

Configure the compute capacity of your environment and auto scaling settings to optimize the number of instances used.

**Auto scaling group**

**Environment type**

Select a single-instance or load-balanced environment. You can develop and test an application in a single-instance environment to save costs and then upgrade to a load-balanced environment when the application is ready for production. [Learn more](#)

**Instances**

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CloudShell Feedback

Configure instance traffic and security | ebs-role | IAM | Global

With the current setting, the environment enables only IMDSv2.

Turn on capacity rebalancing

**Architecture**

The processor architecture determines the instance types that are made available. You can't change this selection after you create the environment. [Learn more](#)

**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 libraries.

**Instance types**

Add instance types for your fleet. Change the order that the instances are in to set the preferred launch order. This only affects On-Demand instances. We recommend you include at least two instance types. [Learn more](#)

t2.micro

**AMI ID**

Elastic Beanstalk selects a default Amazon Machine Image (AMI) for your environment based on the Region, platform version, and processor architecture that you choose. [Learn more](#)

ami-093fce4d2b8f6936e

**Availability Zones**

Number of Availability Zones (AZs) to use.

Any

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CloudShell Feedback

Screenshot of the AWS Elastic Beanstalk 'Configure environment - review' step.

**Step 1: Configure environment**

Environment tier	Application name
Web server environment	ishitawebapp
Environment name	Application code
Ishitawebapp-env	Sample application
Platform	arn:aws:elasticbeanstalk:ap-south-1::platform/PHP 8.1 running on 64bit Amazon Linux 2/3.6.0

**Step 2: Configure service access**

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
arnawsiamc:339712761521:role/service-role/aws-elasticbeanstalk-service-role2	ebs-role

**Step 3: Set up networking, database, and tags**

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.

**Network**

VPC	Public IP address	Instance subnets
vpc-0e48dbf212e7f86a3		43eedc5bf3ad6bd

Configure environment - review | ebs-role | IAM | Global

Step 3: Set up networking, database, and tags

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.

**Network**

VPC	Public IP address	Instance subnets
vpc-0e48dbf212e7f86a3	false	subnet-0a43eedc5bf3ad6bd

**Tags**

Key	Value
No tags	
There are no tags defined	

Step 4: Configure instance traffic and scaling

Instance traffic and scaling [Info](#)

Customize the capacity and scaling for your environment. Stop sharing Hide Traffic Configuration

Elastic Beanstalk

CloudShell Feedback

Environment overview - events | ebs-role | IAM | Global

Step 4: Configure instance traffic and scaling

Instance traffic and scaling [Info](#)

Customize the capacity and scaling for your environment. Stop sharing Hide Traffic Configuration

CloudShell Feedback

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

Ishitawebapp-env [Info](#)

Actions [Upload and deploy](#)

Environment overview

Health	Environment ID
Unknown	e-6w2h3ubct9
Domain	Application name
-	ishitawebapp

Platform

Platform	PHP 8.1 running on 64bit Amazon Linux 2/3.6.0
Running version	-
Platform state	Supported

Events | Health | Logs | Monitoring | Alarms | Managed updates | Tags

Events (1) [Info](#)

CloudShell Feedback

The screenshot shows two browser windows. The top window is the AWS Elastic Beanstalk environment overview for 'Ishitawebapp-env'. It displays basic information like Health (Ok), Environment ID (e-6w2h3ubct9), and Application name (ishitawebapp). The bottom window shows the PHP application's landing page, which includes a large 'Congratulations!' message, deployment details, and links to 'What's Next?' and 'AWS SDK for PHP'.

**AWS Elastic Beanstalk Environment Overview**

**Ishitawebapp-env**

**Environment overview**

Health: Ok - View causes

Environment ID: e-6w2h3ubct9

Domain: Ishitawebapp-env.eba-pu69rddx.ap-south-1.elasticbeanstalk.com

Application name: ishitawebapp

**Platform**

Platform: PHP 8.1 running on 64bit Amazon Linux 2/3.6.0

Running version: -

Platform state: Supported

**Events** | **Health** | **Logs** | **Monitoring** | **Alarms** | **Managed updates** | **Tags**

**Events (12)**

Filter: Create instant deployment | Stop sharing | Hide

**PHP Application - AWS Elastic Beanstalk**

**Congratulations!**

Your AWS Elastic Beanstalk PHP application is now running on your own dedicated environment in the AWS Cloud

You are running PHP version 8.1.27

This environment is launched with Elastic Beanstalk PHP Platform

**What's Next?**

- AWS Elastic Beanstalk overview
- Deploying AWS Elastic Beanstalk Applications in PHP Using Eb and Git
- Using Amazon RDS with PHP
- Customizing the Software on EC2 Instances
- Customizing Environment Resources

**AWS SDK for PHP**

- AWS SDK for PHP home
- PHP developer center
- AWS SDK for PHP on GitHub

## 2. Using Python

The screenshot shows the AWS Elastic Beanstalk console interface. The top navigation bar includes tabs for 'Events', 'Health', 'Logs', 'Monitoring', 'Alarms', 'Managed updates', and 'Tags'. The main content area displays the 'Environment overview' for the environment 'Ishitawebapp-env'. It shows the following details:

- Health:** Unknown
- Domain:** -
- Environment ID:** e-6w2h3ubct9
- Application name:** ishitawebapp

The 'Platform' section indicates:

- Platform: PHP 8.1 running on 64bit Amazon Linux 2/3.6.0
- Running version: -
- Platform state: Supported

The bottom section shows the 'Events' tab with 22 entries.

**Configuration:**

- Platform type:** Managed platform (selected)
- Platform:** Python
- Platform branch:** Python 3.8 running on 64bit Amazon Linux 2
- Platform version:** 3.5.12 (Recommended)

**Application code:**

- Sample application** (selected)
- Existing version

The screenshot shows the 'Configure environment' step 1 of the AWS Elastic Beanstalk setup. On the left, a sidebar lists 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), and Step 6 (Review). The main panel is titled 'Configure environment' and contains the 'Environment tier' section. It describes two types of tiers: 'Web server environment' (selected) and 'Worker environment'. The 'Web server environment' is described as running a website, web application, or web API that serves HTTP requests. The 'Worker environment' is described as running a worker application that processes long-running workloads on demand or performs tasks on a schedule. Below this is the 'Application information' section, which includes an 'Application name' field containing 'ishitaflask' and a note that the maximum length is 100 characters. There is also a 'Application tags (optional)' section.

Configure environment

**Environment tier**

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**

Application name: ishitaflask

Maximum length of 100 characters.

► Application tags (optional)

The screenshot shows the 'Configure environment' step 2 of the AWS Elastic Beanstalk setup. The main panel is titled 'Application code' and contains three sections: 'Sample application', 'Existing version', and 'Upload your code'. 'Upload your code' is selected, indicating that a source bundle should be uploaded from the user's computer or copied from Amazon S3. Below this is the 'Version label' section, which asks for a unique name for the version of the application code. The input field contains 'ishitav1'. The 'Source code origin' section specifies a maximum size of 500 MB. The 'Local file' section shows a 'Choose file' button and a file selection dialog showing 'File name: ishitav1.zip'. The 'Presets' section at the bottom allows users to start from a preset that matches their use case or choose custom configuration to unset recommended values and use the service's default.

Configure environment

**Application code**

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.

ishitav1

Source code origin. Maximum size 500 MB

Local file

Upload application

Choose file

File name: ishitav1.zip

File must be less than 500MB max file size

Public S3 URL

**Presets**

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

The screenshot shows the 'Configure environment' step 3 of the AWS Elastic Beanstalk setup. The main panel displays a summary of the configuration choices made in the previous steps. It includes the application name 'ishitaflask', the environment tier 'Web server environment', and the deployment strategy 'Upload your code'. The summary also lists the version label 'ishitav1' and the local file 'ishitav1.zip'. At the bottom, there are 'Next Step' and 'Cancel' buttons.

Configure environment

ishitaflask

Web server environment

Upload your code

ishitav1

ishitav1.zip

Next Step

Cancel

Configure service access | Elastic Beanstalk

https://ap-south-1.console.aws.amazon.com/elasticbeanstalk/home?region=ap-south-1#/create-environment

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

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. Both the IAM role and instance profile must be attached 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.

aws-elasticbeanstalk-service-role2

EC2 key pair

Select an EC2 key pair to securely log in to your EC2 instances. [Learn more](#)

Choose a key pair

EC2 instance profile

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

ebs-role

[View permission details](#)

Cancel Skip to review Previous Next

CloudShell Feedback

Configure instance traffic and scaling

https://ap-south-1.console.aws.amazon.com/elasticbeanstalk/home?region=ap-south-1#/create-environment

Configure instance traffic and scaling

5 minute

Instance metadata service (IMDS)

Your environment's platform supports both IMDSv1 and IMDSv2. To enforce IMDSv2, deactivate IMDSv1. [Learn more](#)

IMDSv1

With the current setting, the environment enables only IMDSv2.  
 Deactivated

EC2 security groups

Select security groups to control traffic.

EC2 security groups (1)

Filter security groups

Group name	Group ID	Name
default	sg-05e5c845680f2335d	

Capacity [Info](#)

Configure the compute capacity of your environment and auto scaling settings to optimize the number of instances used.

CloudShell Feedback

Reconnect Environment overview - events | + https://ap-south-1.console.aws.amazon.com/elasticbeanstalk/home?region=ap-south-1#/environment/dashboard?environmentId=e-qpf5tppkv

Import favorites Booking.com Express VPN McAfee Security LastPass password... LastPass Gmail YouTube Maps Mumbai ishita123

Elastic Beanstalk Services Search [Alt+S]

**Elastic Beanstalk**

Applications Environments Change history

Application: ishitaflask Application versions Saved configurations

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

CloudShell Feedback

**Ishitaflask-env** Info

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

Elastic Beanstalk > Environments > Ishitaflask-env

**Ishitaflask-env** Info

Actions Upload and deploy

**Environment overview**

Health	Environment ID
Unknown	e-qpf5tppkv
Domain	Application name
-	ishitaflask

**Platform** Change version

Platform	Python 3.8 running on 64bit Amazon Linux 2/3.5.12
Running version	-
Platform state	Supported

Events Health Logs Monitoring Alarms Managed updates Tags

Events (1) Info

CloudShell Feedback

29°C Smoke Environment overview - events | New tab https://ap-south-1.console.aws.amazon.com/elasticbeanstalk/home?region=ap-south-1#/environment/dashboard?environmentId=e-qpf5tppkv

Import favorites Booking.com Express VPN McAfee Security LastPass password... LastPass Gmail YouTube Maps Mumbai ishita123

Elastic Beanstalk Services Search [Alt+S]

**Elastic Beanstalk**

Applications Environments Change history

Application: ishitaflask Application versions Saved configurations

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

CloudShell Feedback

**Ishitaflask-env** Info

Environment successfully launched.

Elastic Beanstalk > Environments > Ishitaflask-env

**Ishitaflask-env** Info

Actions Upload and deploy

**Environment overview**

Health	Environment ID
Ok	e-qpf5tppkv
Domain	Application name
Ishitaflask-env.eba-mnukshwr.ap-south-1.elasticbeanstalk.com	ishitaflask

**Platform** Change version

Platform	Python 3.8 running on 64bit Amazon Linux 2/3.5.12
Running version	ishitav1
Platform state	Supported

Events Health Logs Monitoring Alarms Managed updates Tags

Events (12) Info

CloudShell Feedback

## Output:

