

## Module 9

### Elastic Beanstalk Assignment

#### Problem Statement:

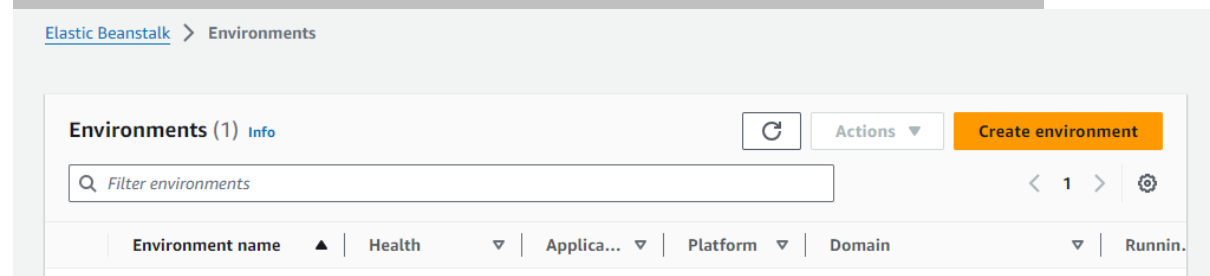
You work for XYZ Corporation. Your corporation wants to launch a new web-based application and they do not want their servers to be running all the time. It should also be managed by AWS. Implement suitable solutions.

#### Tasks to be Performed:



1. Create an Elastic Beanstalk environment with the runtime as PHP.
2. Upload a simple PHP file to the environment once created.

#### Solution:

Go to AWS > Elastic Beanstalk > Environments > Create Environment



Choose Web server and Give Application Name

- ☒ **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

ruchi-webapplication

Maximum length of 100 characters.

► Application tags (optional)

## Give Environment name and Domain name

### Environment information [Info](#)

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

Environment name

Ruchi-webapplication-env

Must be from 4 to 40 characters in length. The name can contain only letters, numbers, and hyphens. It can't start or end with a hyphen. This name must be unique within a region in your account.

Domain

ruchicloudware

.us-east-1.elasticbeanstalk.com

Check availability

✓ ruchicloudware.us-east-1.elasticbeanstalk.com is available

Environment description

## Select Managed platform and choose PHP

Platform [Info](#)

Platform type

☒ Managed platform

Platforms published and maintained by Amazon Elastic Beanstalk. [Learn more](#)

☐ Custom platform

Platforms created and owned by you. This option is unavailable if you have no platforms.

Platform

PHP

Platform branch

PHP 8.2 running on 64bit Amazon Linux 2023

Platform version

4.1.1 (Recommended)

## Select Sample application for now

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.

## Choose Single Instance and give Next



## Select trusted entity [Info](#)

### Trusted entity type

☒ **AWS service**  
Allow AWS services like EC2, Lambda, or others to perform actions in this account.

☐ **AWS account**  
Allow entities in other AWS accounts belonging to you or a 3rd party to perform actions in this account.

☐ **Web identity**  
Allows users federated by the specified external web identity provider to assume this role to perform actions in this account.

☐ **SAML 2.0 federation**  
Allow users federated with SAML 2.0 from a corporate directory to perform actions in this account.

☐ **Custom trust policy**  
Create a custom trust policy to enable others to perform actions in this account.

Choose the service Elastic Beanstalk and Click Next

### Use case

Allow an AWS service like EC2, Lambda, or others to perform actions in this account.

Service or use case

Elastic Beanstalk ▼

Choose a use case for the specified service.

Use case

☒ **Elastic Beanstalk - Customizable**  
Allows Elastic Beanstalk to create and manage AWS resources on your behalf.

☐ **Elastic Beanstalk**  
Allows Elastic Beanstalk to create and manage AWS resources on your behalf.

Cancel

Next

Give the Role Name and Click Submit

Role details

Role name

Enter a meaningful name to identify this role.

Ruchi-EB-role

Maximum 64 characters. Use alphanumeric and '+=, @-\_' characters.

Description

Add a short explanation for this role.

Allows Elastic Beanstalk to create and manage AWS resources on your behalf.

Maximum 1000 characters. Use letters (A-Z and a-z), numbers (0-9), tabs, new lines, or any of the following characters: \_+=, @-\_\[\]!#\$%^&\*()~:~'"<>`

## Go to the Permissions and the Attach the policies

PermissionsTrust relationshipsTagsAccess AdvisorRevoke sessions

Permissions policies (2) Info

You can attach up to 10 managed policies.

Search

Filter by Type

All types

Refresh

Simulate

Remove

Add permissions

Attach policies

Create inline policy

< 1 >

| <input type="checkbox"/> | Policy name                                   | Type        | Attached entities |
|--------------------------|---|-------------|-------------------|
| <input type="checkbox"/> | <a href="#">AWSElasticBeanstalkEnhance...</a> | AWS managed | 1                 |
| <input type="checkbox"/> | <a href="#">AWSElasticBeanstalkService</a>    | AWS managed | 1                 |

## Provide the Administration Access for Elastic Beanstalk Role.

Other permissions policies (1/920)

Search

Filter by Type

All types

< 1 2 3 4 5 6 7 ... 46 >

| <input checked="" type="checkbox"/> | Policy name   | Type                       | Description                            |
|-------------------------------------|---|----------------------------|--|
| <input checked="" type="checkbox"/> | <a href="#">AdministratorAccess</a>                     | AWS managed - job function | Provides full access to AWS services i |
| <input type="checkbox"/>            | <a href="#">AdministratorAccess-Amplify</a>             | AWS managed                | Grants account administrative permi    |
| <input type="checkbox"/>            | <a href="#">AdministratorAccess-AWSElasticBeanstalk</a> | AWS managed                | Grants account administrative permi    |

Next create another role for EC2 Service

Use case

Allow an AWS service like EC2, Lambda, or others to perform actions in this account.

Service or use case

EC2

Choose a use case for the specified service.

Use case

☒ EC2

Allows EC2 instances to call AWS services on your behalf.

☐ EC2 Role for AWS Systems Manager

Allows EC2 instances to call AWS services like CloudWatch and Systems Manager on your behalf.

To add permission Give Admin Access

Add permissions

Info

Permissions policies (1/921)

Info

Choose one or more policies to attach to your new role.

Filter by Type

Search

All types

<

1

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3

4

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...

47

>

|                                     | Policy name                                      | Type                       | Description                                |
|-------------------------------------|--|----------------------------|--|
| <input checked="" type="checkbox"/> | <div><div></div>AdministratorAccess</div>        | AWS managed - job function | Provides full access to AWS services an... |
| <input type="checkbox"/>            | <div><div></div>AdministratorAccess-Amp...</div> | AWS managed                | Grants account administrative permiss...   |

Provide the Role details and Create the Role

Role details

Role name

Enter a meaningful name to identify this role.

Ruchi-EC2-role

Maximum 64 characters. Use alphanumeric and '+','=','@','-\_' characters.

Description

Add a short explanation for this role.

Allows EC2 instances to call AWS services on your behalf.

Maximum 1000 characters. Use letters (A-Z and a-z), numbers (0-9), tabs, new lines, or any of the following characters: '\_+=,., @-/[]!#\$%^&\*(){};:"'<>`

After creating the role Click on Choose existing role and select Elastic Beanstalk role, Key pair and EC2 role.

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.

Ruchi-EB-role

▼

↻

EC2 key pair

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

windows-demo

▼

↻

EC2 instance profile

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

Ruchi-EC2-role

▼

↻

View permission details

Cancel

Skip to review

Previous

Next

## Select the Default VPC

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-07b58ff0917c64fcd | (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.



Select All Available Subnets

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

☐ Activated

**Instance subnets**

| <input checked="" type="checkbox"/> | Availability Zone | Subnet               | CIDR          | Name     |
|-------------------------------------|-------------------|----------------------|---------------|----------|
| <input checked="" type="checkbox"/> | us-east-1f        | subnet-0c5ec99f7f... | 172.31.0.0/24 | Subnet01 |

Select Default Volume

**Configure instance traffic and scaling - optional** [Info](#)

**▼ Instances** [Info](#)  
Configure the Amazon EC2 instances that run your application.

**Root volume (boot device)**

Root volume type

(Container default)

▼

Size

The number of gigabytes of the root volume attached to each instance.

Monitored interval 5 min

## Amazon CloudWatch monitoring

The time interval between when metrics are reported from the EC2 instances

Monitoring interval

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

## Choose Default Security group

### EC2 security groups

Select security groups to control traffic.

EC2 security groups (2)

Filter security groups

| <input checked="" type="checkbox"/> | Group name      | Group ID             | Name |
|-------------------------------------|-----------------|----------------------|------|
| <input checked="" type="checkbox"/> | default         | sg-0d60a60ea7adaccbd |      |
| <input type="checkbox"/>            | launch-wizard-1 | sg-08b4288238b9564f9 |      |

## Choose Single and On demand instance

### 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](#)

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

## Select the following Architecture and Instance Type

#### 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](#)

Choose x86 instance types ▼

t2.small ✕

AMI ID will be created automatically and click on Next

#### 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-0e38b869b8063a534

#### Availability Zones

Number of Availability Zones (AZs) to use.

Any ▼

#### Placement

Specify Availability Zones (AZs) to use.

Choose Availability Zones (AZs) ▼

#### Scaling cooldown

360 seconds

Cancel

Skip to review

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Next

Choose Enhanced system under Monitoring

#### ▼ Monitoring [Info](#)

#### Health reporting

Enhanced health reporting provides free real-time application and operating system monitoring of the instances and other resources in your environment. The **EnvironmentHealth** custom metric is provided free with enhanced health reporting. Additional charges apply for each custom metric. For more information, see [Amazon CloudWatch Pricing](#)

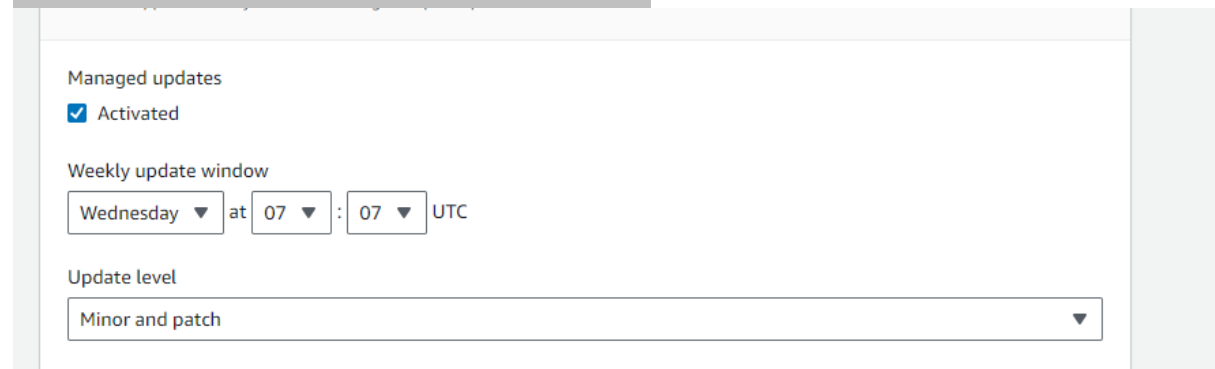
#### System

☐ Basic

☒ **Enhanced**

CloudWatch Custom Metrics - Instance

Check box Activated for Managed updates



The screenshot shows a configuration panel for 'Managed updates'. It includes a checkbox labeled 'Activated' which is checked. Below this is a 'Weekly update window' section with a dropdown menu set to 'Wednesday', followed by 'at', two dropdown menus both set to '07', a colon, and 'UTC'. At the bottom is an 'Update level' dropdown menu set to 'Minor and patch'.

Managed updates

☒ Activated

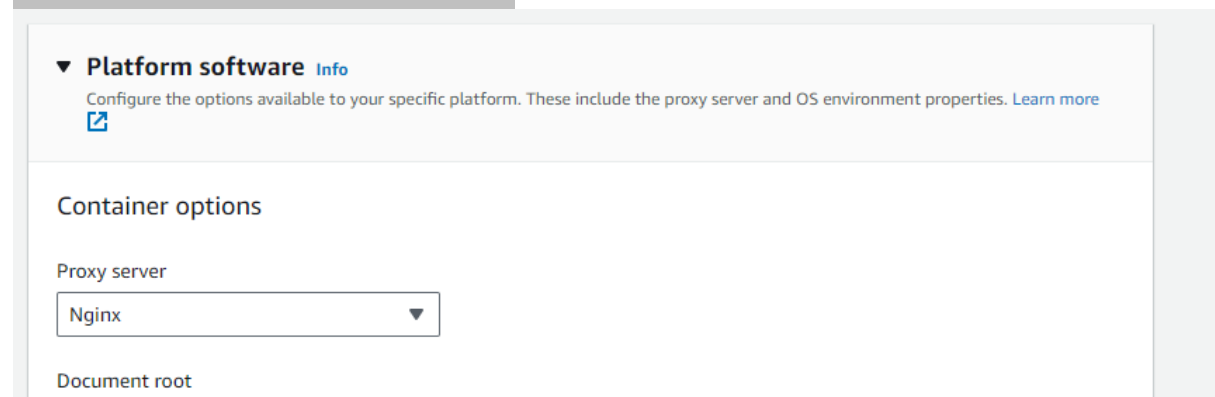
Weekly update window

Wednesday ▼ at 07 ▼ : 07 ▼ UTC

Update level

Minor and patch ▼

Choose the proxy server as Nginx



The screenshot shows a configuration panel for 'Platform software'. It has a title 'Platform software' with an 'Info' link. Below the title is a descriptive sentence: 'Configure the options available to your specific platform. These include the proxy server and OS environment properties.' followed by a 'Learn more' link. Under the heading 'Container options', there is a 'Proxy server' dropdown menu set to 'Nginx'. Below that is a 'Document root' field.

▼ **Platform software** [Info](#)

Configure the options available to your specific platform. These include the proxy server and OS environment properties. [Learn more](#)

[🔗](#)

Container options

Proxy server

Nginx ▼

Document root

Review the configurations, if anything not mention keep it as it is.

## Review Info

### Step 1: Configure environment

[Edit](#)

#### Environment information

Environment tier  
Web server environment

Application name  
ruchi-webapplication

Environment name  
Ruchi-webapplication-env

Application code  
Sample application

Platform  
arn:aws:elasticbeanstalk:us-east-1::platform/PHP 8.2  
running on 64bit Amazon Linux 2023/4.1.1

After reviewing submit the Environment.

#### Environment properties

Key



Value



No environment properties

There are no environment properties defined

[Cancel](#)[Previous](#)[Submit](#)

Go to the Domain Environment you will see the default web page

# Congratulations!

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

You are running PHP version 8.2.15

This environment is launched with Elastic Beanstalk PHP Platform

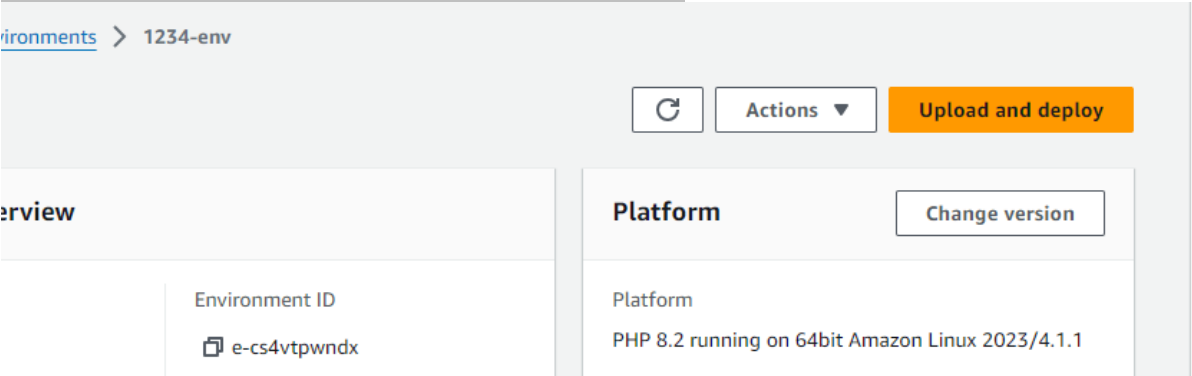
#### What's Next?

- [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](#)

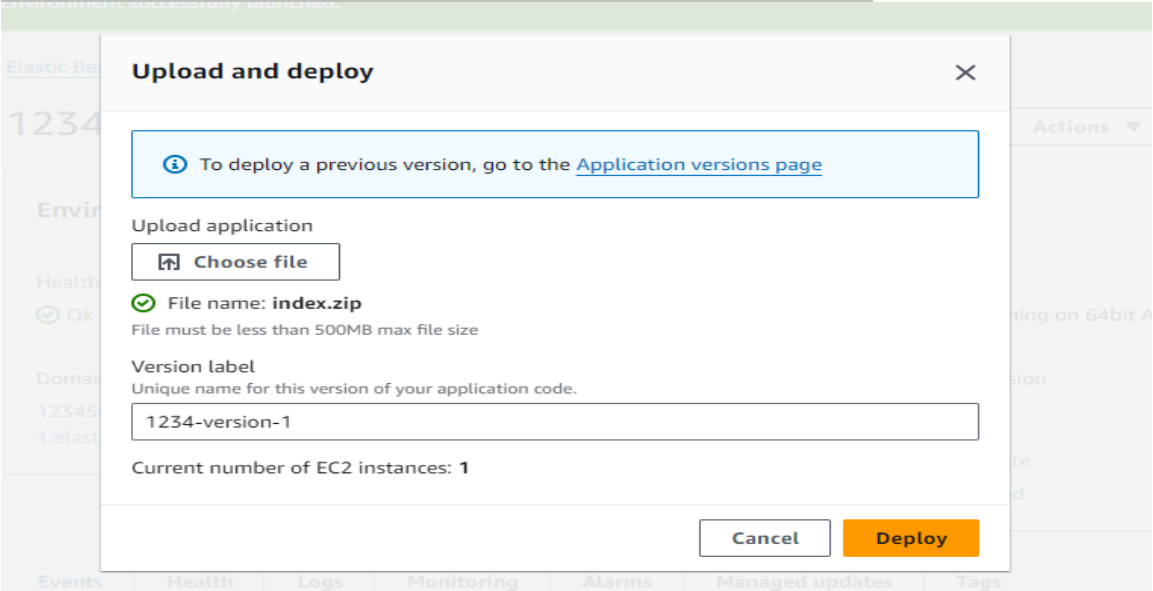
#### AWS SDK for PHP

- [AWS SDK for PHP home](#)
- [PHP developer center](#)
- [AWS SDK for PHP on GitHub](#)

Now upload and deploy the Php index zip file



Choose the file and give the version label and click deploy



Events are created as per the performance

Events (21) Info

Filter events by text, property or value

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| Time                               | Type | Details  |
|------------------------------------|------|--|
| April 21, 2024 14:11:48 (UTC+5:30) | INFO | Environment update completed successfully.   |
| April 21, 2024 14:11:48 (UTC+5:30) | INFO | Successfully deployed new configuration to environment.  |
| April 21, 2024 14:11:48 (UTC+5:30) | INFO | New application version was deployed to running EC2 instances.   |
| April 21, 2024 14:11:41 (UTC+5:30) | INFO | Environment health has transitioned from Ok to Info. Application update in progress. 1 out of 1 instance completed (running for 38 seconds). |
| April 21, 2024 14:11:29 (UTC+5:30) | INFO | Instance deployment completed successfully.  |
| April 21, 2024 14:11:23 (UTC+5:30) | INFO | Instance deployment: You didn't include a 'composer.json' file in your source bundle. The deployment didn't install Composer dependencies.   |
| April 21, 2024 14:11:19 (UTC+5:30) | INFO | Deploying new version to instance(s).  |
| April 21, 2024 14:11:01 (UTC+5:30) | INFO | Updating environment 1234-env's configuration settings.  |

Now click on the domain name

Environment overview

Health

Ok

Domain

123456789.ap-south-1.elasticbeanstalk.com

Environment ID

e-cs4vtpwndx

Application name

1234

Platform

Change version

Platform

PHP 8.2 running on 64bit Amazon Linux 2023/4.1.1

Running version

1234-version-1

Platform state

Now the webpage is created as per the document we uploaded.

Not secure

123456789.ap-south-1.elasticbeanstalk.com

☆

Hello AWS

We terminated the Environment and it is reflected in the Events.

✔ Environment successfully terminated.

Events (32) Info

🔍 Filter events by text, property or value

< 1 2 > ⚙

| Time                               | Type | Details   |
|------------------------------------|------|---|
| April 21, 2024 14:17:20 (UTC+5:30) | INFO | terminateEnvironment completed successfully.  |
| April 21, 2024 14:17:19 (UTC+5:30) | INFO | Deleting SNS topic for environment 1234-env.  |
| April 21, 2024 14:17:16 (UTC+5:30) | INFO | Deleted security group named: sg-020fbd25fb36aac05  |
| April 21, 2024 14:17:01 (UTC+5:30) | INFO | Deleted EIP: 13.233.171.59  |
| April 21, 2024 14:16:41 (UTC+5:30) | INFO | Removed instance [i-0f34f667404f506bd] from your environment.   |
| April 21, 2024 14:15:41 (UTC+5:30) | INFO | Environment health has transitioned from Ok to Pending. Terminate in progress (running for 50 seconds). None of the instances are sending data. |

=====