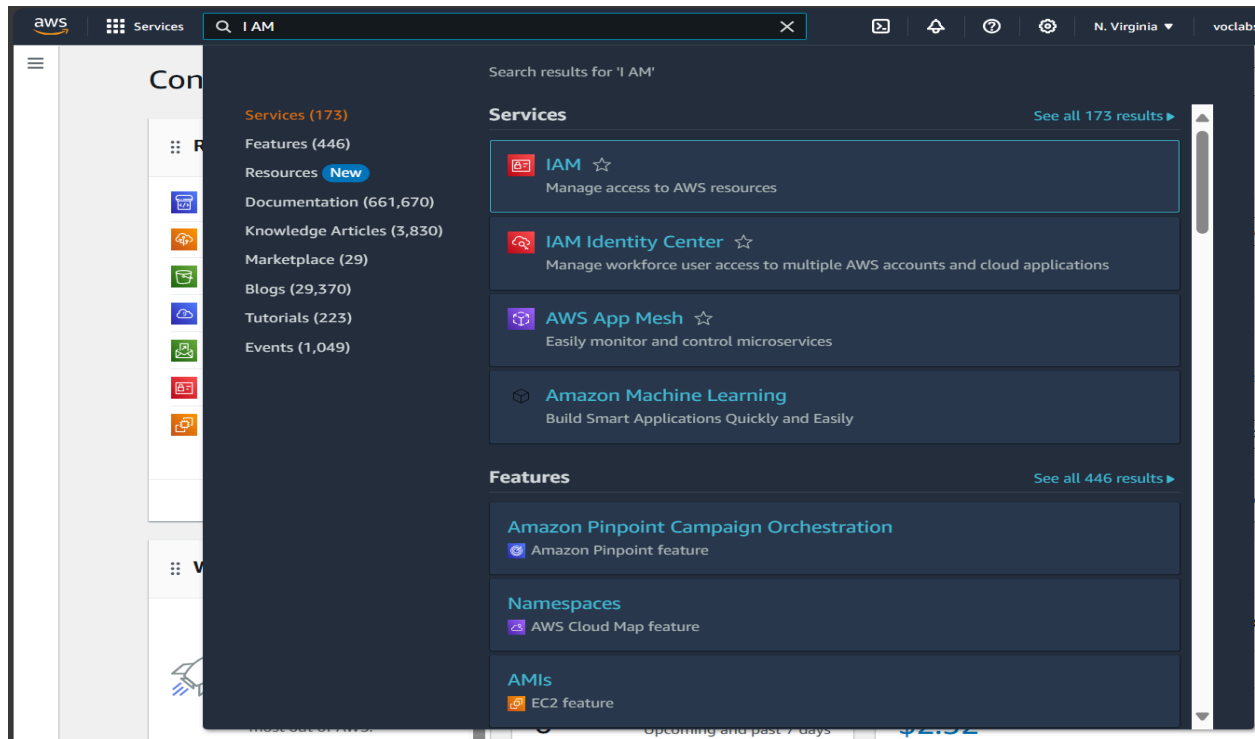


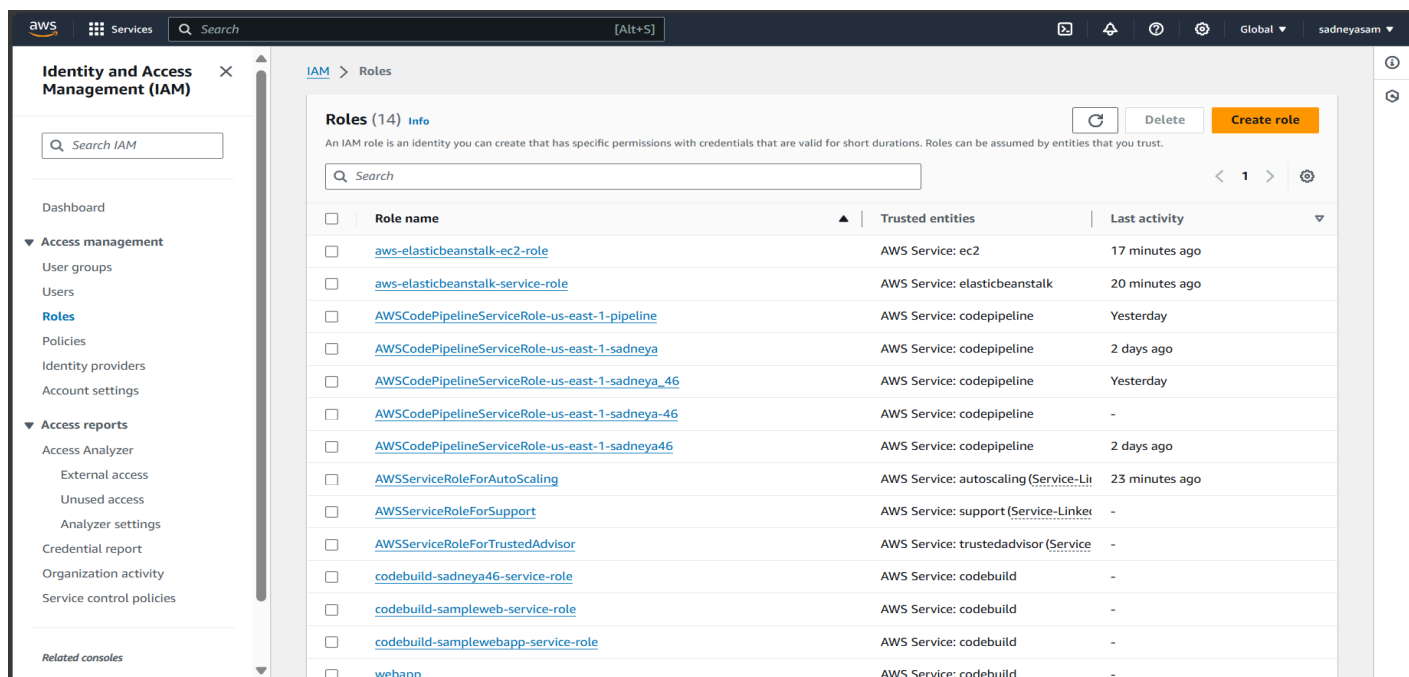
## Experiment No: 2

### Step1:- Creation of role:-

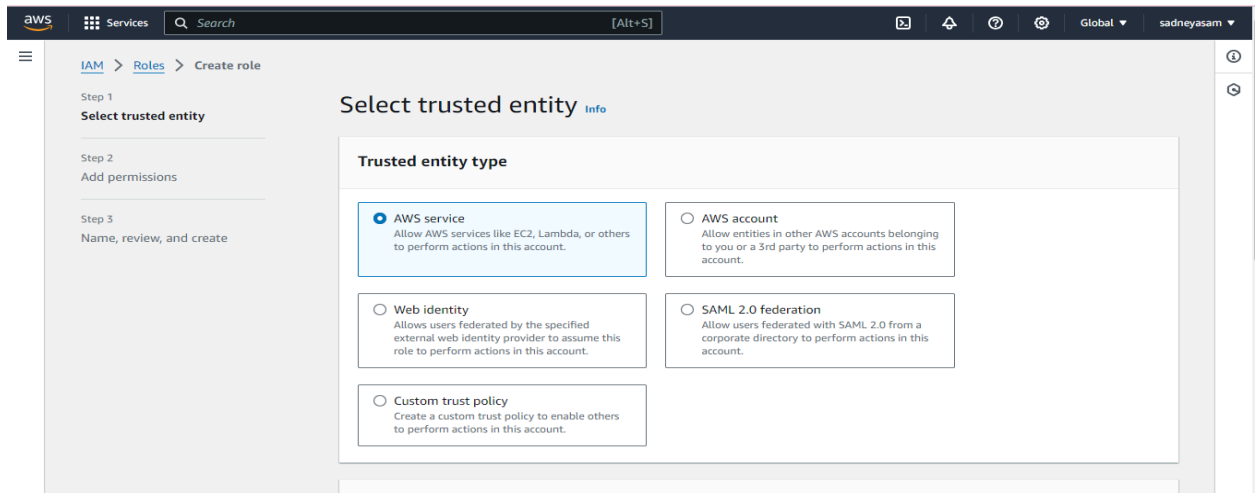
1. Login to your AWS account and search for IAM



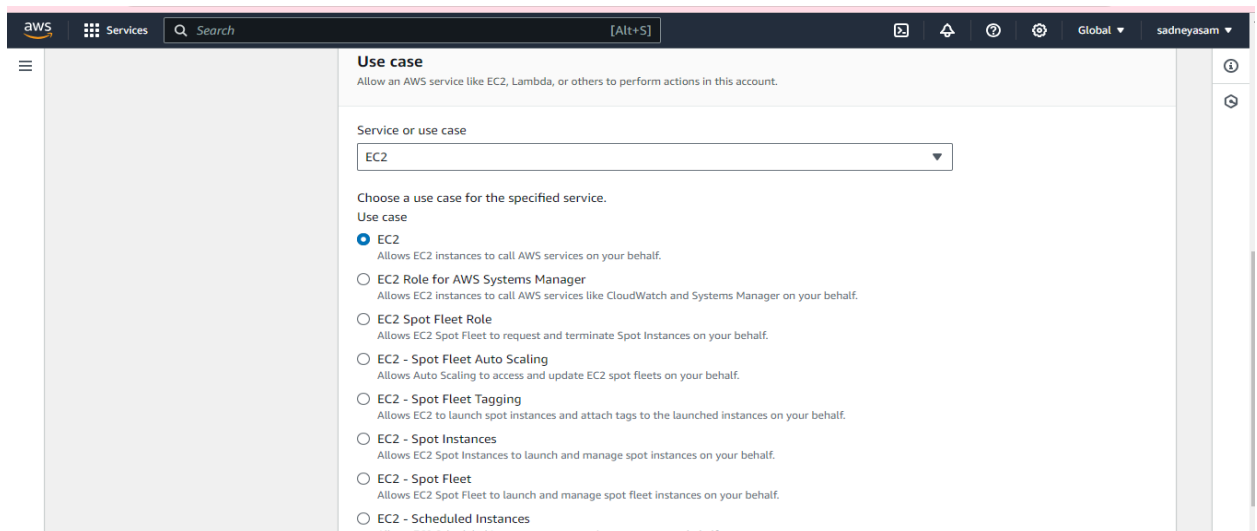
2. Then go into the role section and click on create role.



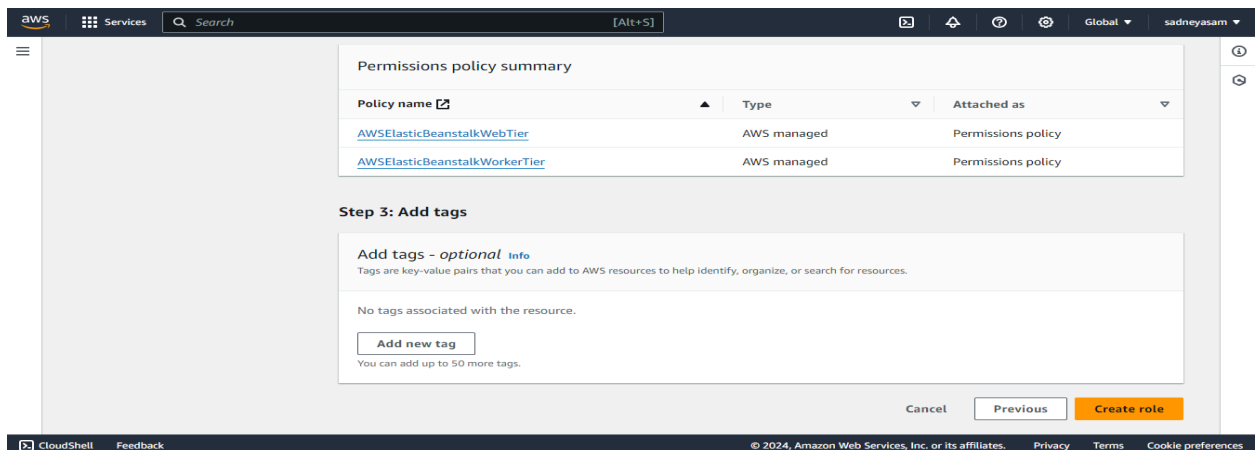
3. Then select a trusted entity as AWS service.



4. Select use case as EC2.



5. Select permissions as AWS Elastic Beanstalk Web Tier and AWS elastic Beanstalk worker tier.



6. Give a name to Role. Here I have given my role name as aws-elasticbeanstalk-ec2-role.

The screenshot shows the AWS IAM console interface for creating a new role. The breadcrumb navigation is IAM > Roles > Create role. On the left, a sidebar shows the progress: Step 1 (Select trusted entity), Step 2 (Add permissions), and Step 3 (Name, review, and create). The main content area is titled 'Name, review, and create' and contains a 'Role details' section. In the 'Role name' field, the text 'aws-elasticbeanstalk-ec2-role' is entered. Below it, a description field contains the text 'Allows EC2 instances to call AWS services on your behalf.' At the bottom of the form, there is a button labeled 'Edit'.

aws-elasticbeanstalk-ec2-role

Allows EC2 instances to call AWS services on your behalf.

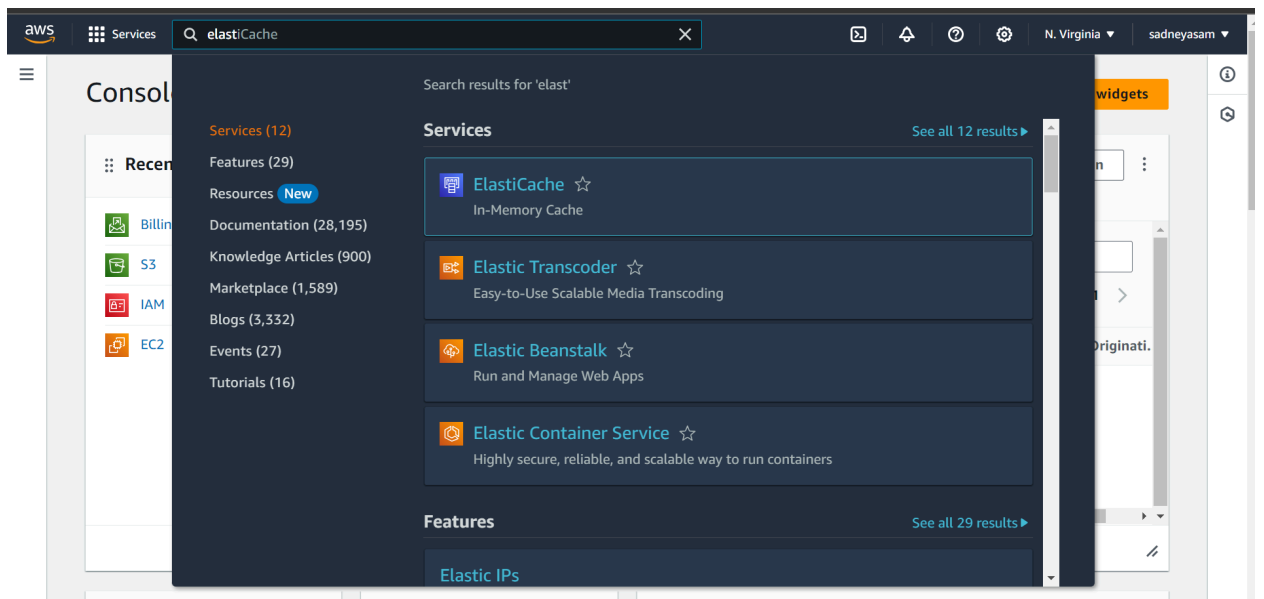
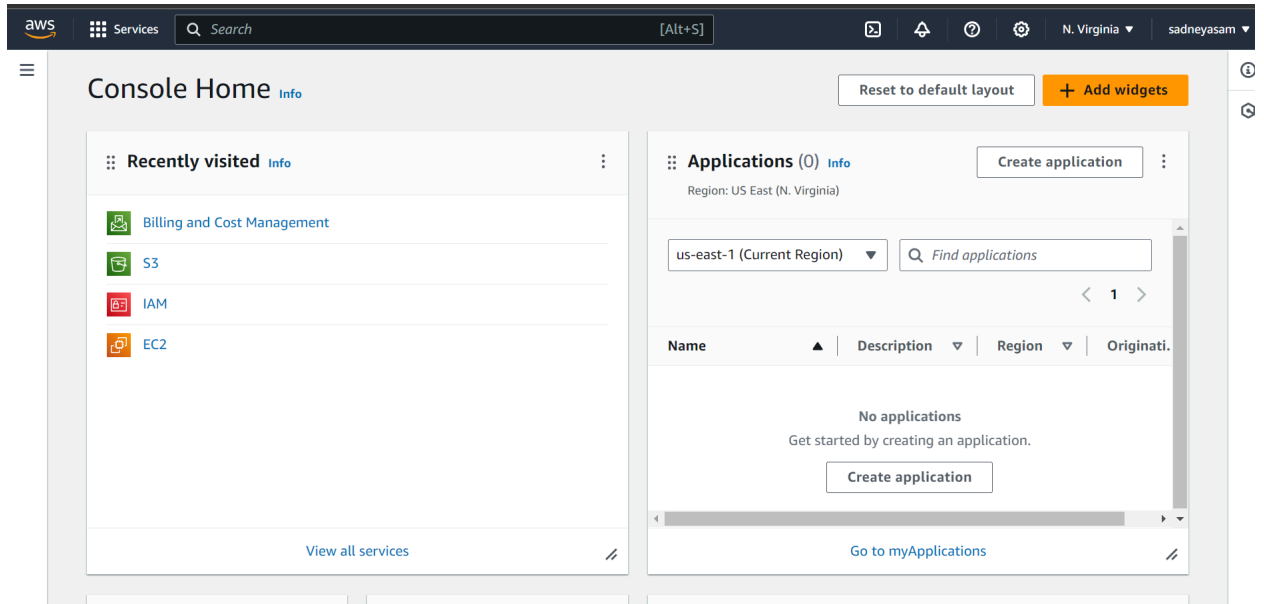
7. Then the role gets created.

The screenshot shows the AWS IAM console interface for the newly created role 'aws-elasticbeanstalk-ec2-role'. The breadcrumb navigation is IAM > Roles > aws-elasticbeanstalk-ec2-role. The role's description is 'Allows EC2 instances to call AWS services on your behalf.' Below this is a 'Summary' section with a table of key information. The table has three columns: 'Creation date', 'ARN', and 'Instance profile ARN'. The 'Creation date' is 'August 09, 2024, 09:33 (UTC+05:30)'. The 'ARN' is 'arn:aws:iam::851725480355:role/aws-elasticbeanstalk-ec2-role'. The 'Instance profile ARN' is 'arn:aws:iam::851725480355:instance-profile/aws-elasticbeanstalk-ec2-role'. Below the summary, there are tabs for 'Permissions', 'Trust relationships', 'Tags', 'Access Advisor', and 'Revoke sessions'. The 'Permissions' tab is selected, showing 'Permissions policies (2)'. At the bottom, there are buttons for 'Simulate', 'Remove', and 'Add permissions'.

| Creation date                      | ARN  | Instance profile ARN   |
|------------------------------------|--|--|
| August 09, 2024, 09:33 (UTC+05:30) | arn:aws:iam::851725480355:role/aws-elasticbeanstalk-ec2-role | arn:aws:iam::851725480355:instance-profile/aws-elasticbeanstalk-ec2-role |

## Step2:- Creation Elastic Beanstalk Environment

1. search for Elastic Beanstalk in the search box.



2. Open up Elastic Benstalk and name your web app. (here I have given name sadneya123)

The screenshot shows the AWS Elastic Beanstalk console. The top navigation bar includes the AWS logo, 'Services', a search bar, and the user's account information (N. Virginia, sadneyasam). The left sidebar lists the configuration 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 content area is titled 'Configure environment' and contains three sections: 'Environment tier' with 'Web server environment' selected, 'Application information' with 'Application name' set to 'sadneya123', and 'Application tags (optional)'.

3. Select platform as PHP.

The screenshot shows the AWS Elastic Beanstalk console configuration pages. The 'Platform' section is titled 'Platform' and includes 'Platform type' (Managed platform selected), 'Platform' (PHP selected), 'Platform branch' (PHP 8.3 running on 64bit Amazon Linux 2023 selected), and 'Platform version' (4.3.1 (Recommended) selected). The 'Application code' section is titled 'Application code' and includes 'Sample application' selected. The 'Presets' section is titled 'Presets' and includes 'Single instance (free tier eligible)' selected.

4. After clicking on next u need to select the use existing role. Then you will see the existing role select it like here it is aws-elasticbeanstalk-service-role. Which we created in 1st part. Select role, then select key you have created then profile will be automatically selected according to role. then click on create application by keeping all the remaining settings as it is.

This screenshot shows the 'Configure service role' step in the AWS Elastic Beanstalk console. The left sidebar lists the setup steps: 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 content area is titled 'Service role' and contains three sections: 'Service role' with radio buttons for 'Create and use new service role' (unselected) and 'Use an existing service role' (selected); 'Existing service roles' with a dropdown menu showing 'aws-elasticbeanstalk-service-role' and a refresh button; and 'EC2 key pair' with a dropdown menu showing 'key-linux' and a refresh button. Below these is the 'EC2 instance profile' section with a dropdown menu showing 'aws-elasticbeanstalk-ec2-role' and a refresh button, along with a 'View permission details' button. At the bottom are buttons for 'Cancel', 'Skip to review', 'Previous', and 'Next'.

This screenshot shows the 'Set up networking, database, and tags' step in the AWS Elastic Beanstalk console. The left sidebar lists the setup 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 content area is titled 'Set up networking, database, and tags - optional' and contains three sections: 'Virtual Private Cloud (VPC)' with a dropdown menu showing '--' and a 'Create custom VPC' button; 'Instance settings' with a 'Public IP address' checkbox (unselected) and an 'Instance subnets' section with a search bar and a table showing 'No instance subnets'; and 'Database' with an 'Enable database' checkbox (selected), a 'Restore a snapshot - optional' section with a 'Snapshot' dropdown menu showing 'None', and a 'Database settings' section with 'Engine' and 'Engine version' dropdown menus.

**Configure instance traffic and scaling - optional**

**Instances**

Root volume (boot device)

Root volume type: (Container default)

Size: 8 GB

IOPS: 100 IOPS

Throughput: 125 MB/s

Amazon CloudWatch monitoring

Monitoring interval: 5 minute

Instance metadata service (IMDS)

IMDSv1: Deactivated

EC2 security groups

| Group name          | Group ID            | Name           |
|---------------------|---------------------|----------------|
| awsb-e-ec2sg-cp-... | sg-075e1d6b19c5c8fc | Sadneya123-env |
| default             | sg-0e4c75bae698878  |                |
| launch-wizard-1     | sg-0596c0ae3d79c0fc |                |

**Configure updates, monitoring, and logging - optional**

**Monitoring**

Health reporting: Enhanced

CloudWatch Custom Metrics - Instance: Choose metrics

CloudWatch Custom Metrics - Environment: Choose metrics

Health event streaming to CloudWatch Logs

Log streaming: Activated

Retention: 7

Lifecycle: Keep logs after terminating environment

**Managed platform updates**

Managed updates: Activated

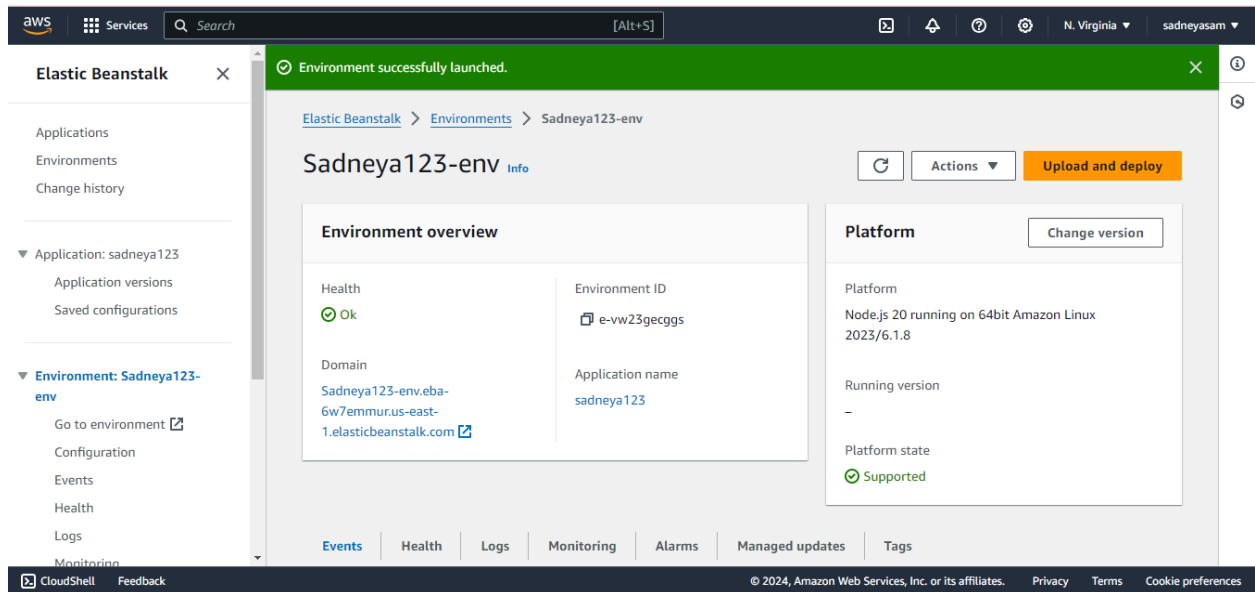
Weekly update window: Sunday 00:00 to 11:00 UTC

Update level: Minor and patch

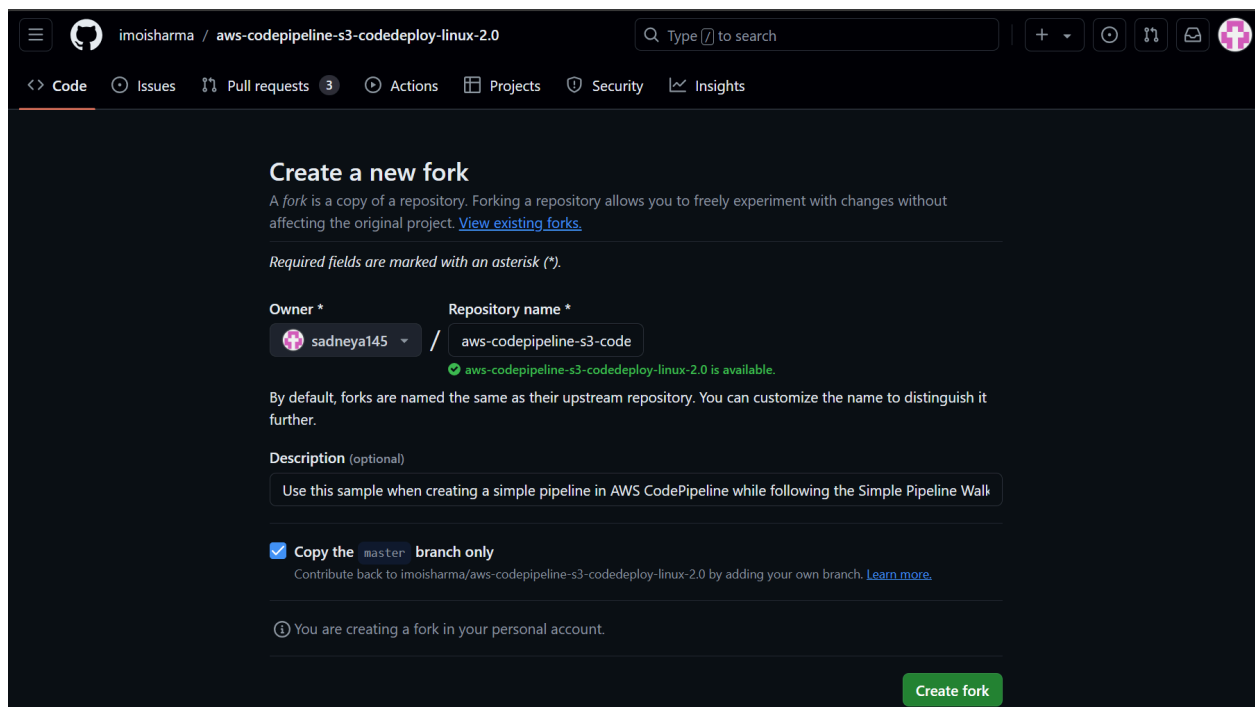
Instance replacement: Activated

Keep Set up networking, database, and tags ,Configure instance traffic and scaling,Configure updates, monitoring, and logging all these default.

- Beanstalk creates a sample environment for you to deploy your application. By default, it creates an EC2 instance, a security group, an Auto Scaling group, an Amazon S3 Bucket, Amazon CloudWatch alarms and a domain name for your Application.



### Step 3: Get a copy of your sample code

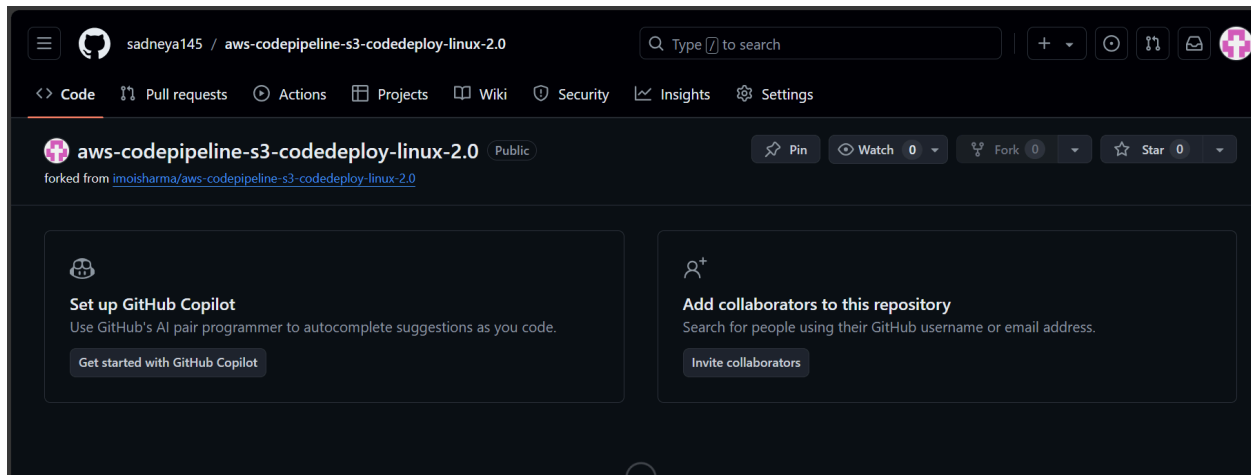


In this step, we will get the sample code from this GitHub Repository to later host it. The pipeline takes code from the source and then performs actions on it.

For this experiment, as a source, we will use this forked GitHub repository. We can alternatively also use Amazon S3 and AWS CodeCommit.



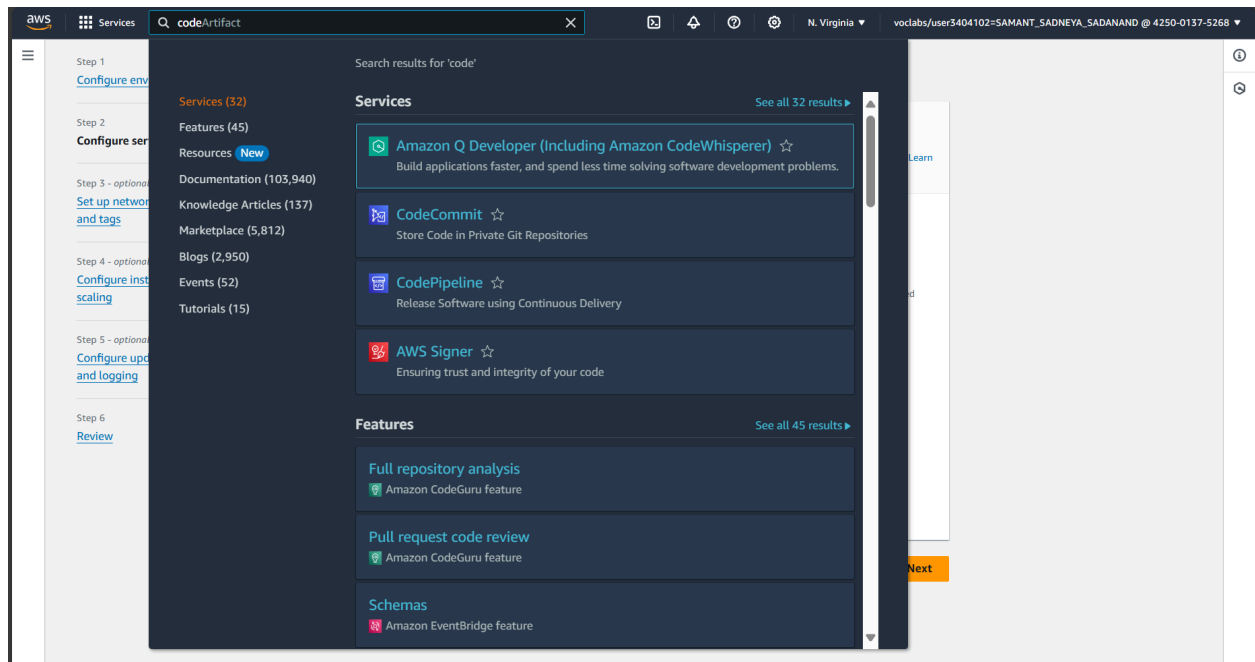
Go to the repository shared above and simply fork it.

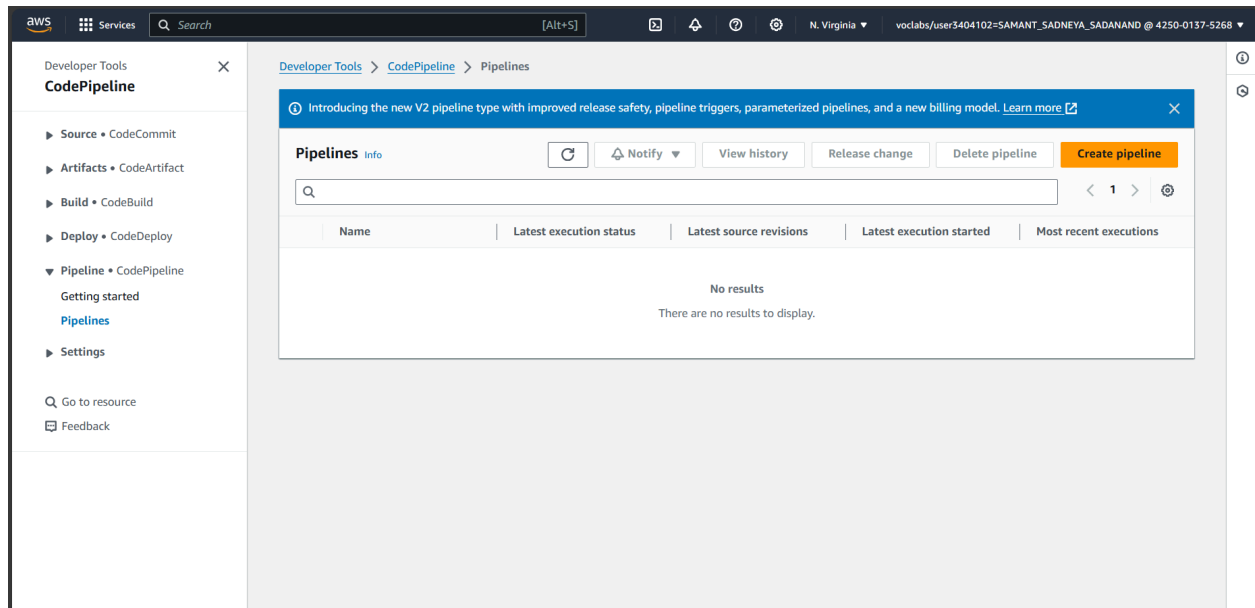


## Step 4: Creating a CodePipeline

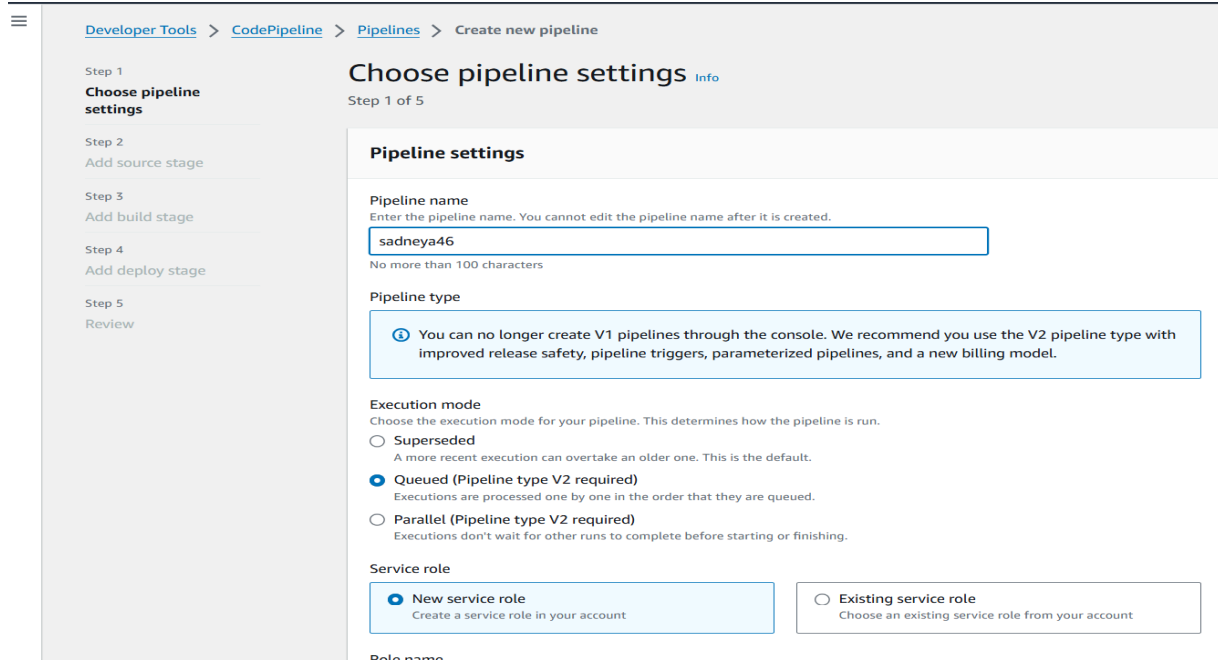
In this step, we'll create a simple pipeline that has its source and deployment information. In this case, however, we will skip the build stage where you get to plug in our preferred build provider.

1. Search CodePipeline in the search bar and click on create a new Pipeline.





2. Give a name to your pipeline. Here I have given name as sadneya\_46



3. In the source stage, choose GitHub v2 as the provider, then connect your GitHub account to AWS by creating a connection. You'd need your GitHub credentials and then you'd need to authorize and install AWS on the forked GitHub Repository.

Create connection | CodePipeline | us-east-1 - Personal - Microsoft Edge

https://us-east-1.console.aws.amazon.com/codesuite/settings/connection...

aws Services N. Virginia sadneyasam

Developer Tools > Connections > Create connection

Beginning July 1, 2024, the console will create connections with codeconnections in the resource ARN. Resources with both service prefixes will continue to display in the console. [Learn more](#)

## Connect to GitHub

**GitHub connection settings** Info

Connection name

pipeline

GitHub Apps

GitHub Apps create a link for your connection with GitHub. Install a new app and save this connection.

53565526 or Install a new app

Tags - optional


Connect

CloudShell Feedback Privacy Terms Cookie preferences

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Sign in to GitHub · GitHub - Google Chrome

github.com/login?client\_id=0e7f650266b94e42c337&return\_to=%2Flogin%2F...



Sign in to **GitHub**  
to continue to **AWS CodePipeline**  
(N. Virginia)

Username or email address

sadenyasam05@gmail.com

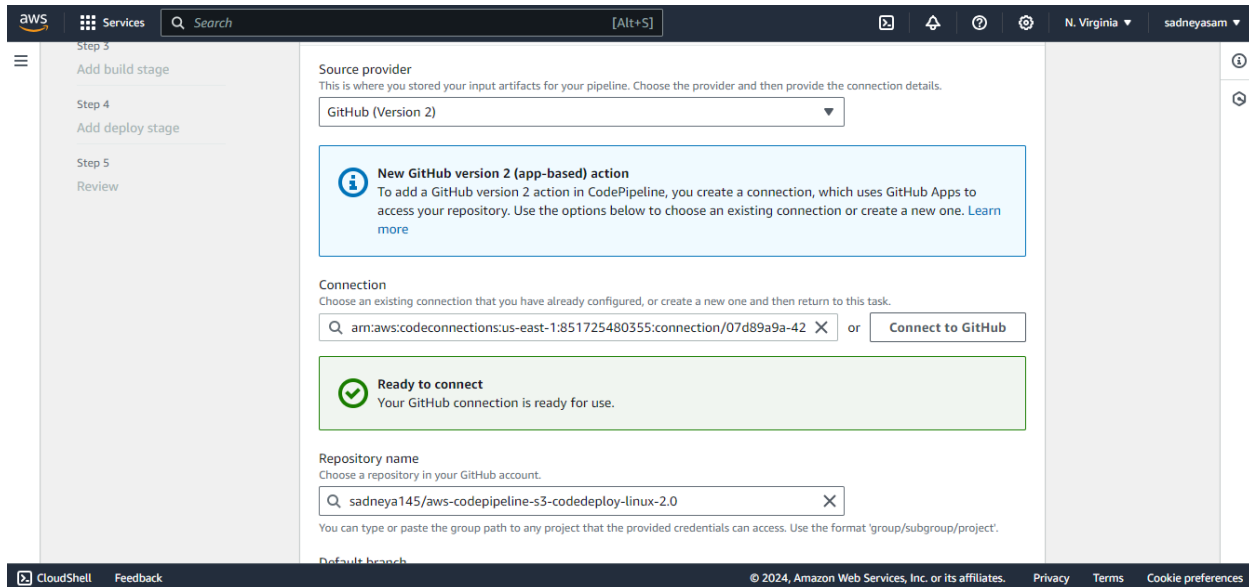
Password [Forgot password?](#)

.....

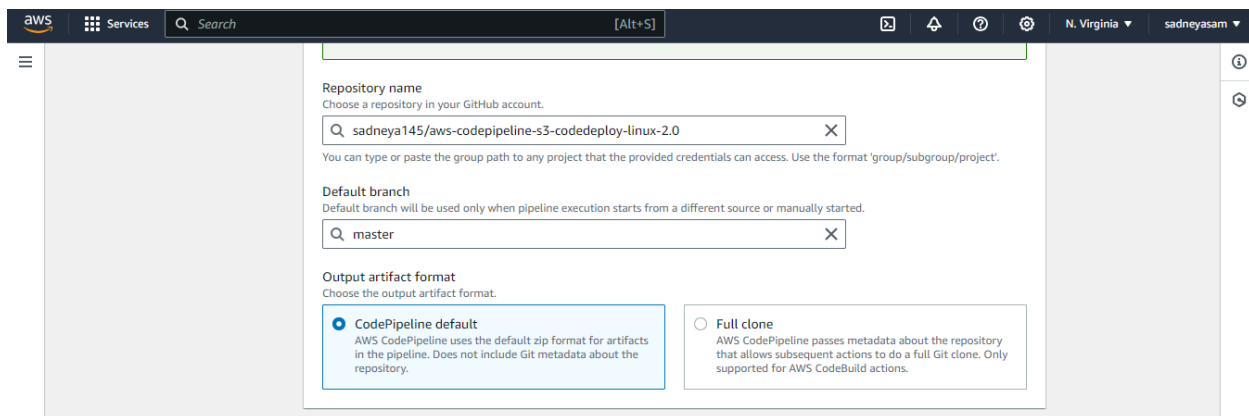
**Sign in**

[Sign in with a passkey](#)

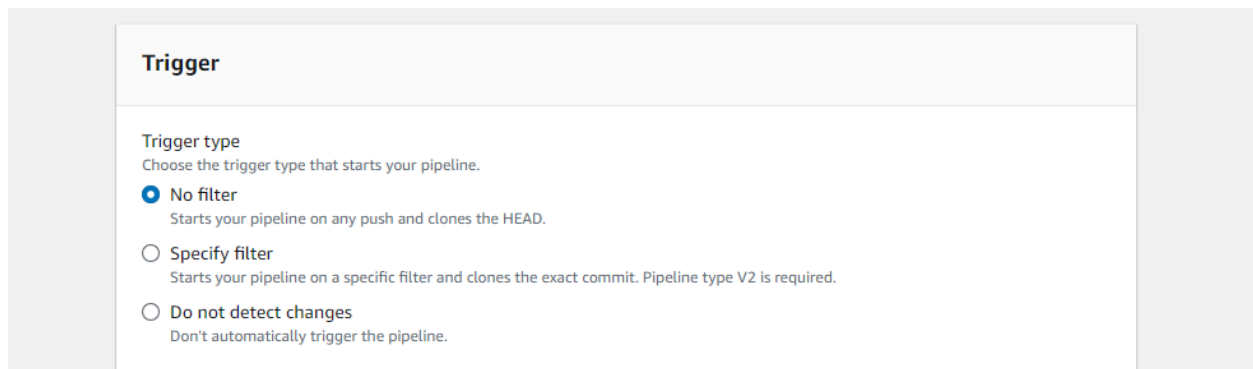
New to GitHub? [Create an account](#)



4. select the forked repository then select the master branch.



5. Then select trigger type none.



After that, click Continue and skip the build stage. Proceed to the Deployment stage.

## Step 5: Deployment

1. Choose Beanstalk as the Deploy Provider, same region as the Bucket and Beanstalk, name and environment name.

The screenshot shows the AWS CodePipeline console interface. The top navigation bar includes the AWS logo, a 'Services' menu, and a search bar containing 'ElasticCache'. The breadcrumb trail is 'Developer Tools > CodePipeline > Pipelines > Create new pipeline'. On the left sidebar, the steps of the pipeline are listed: Step 1 (Choose pipeline settings), Step 2 (Add source stage), Step 3 (Add build stage), Step 4 (Add deploy stage), Step 5, and Review. The main content area is titled 'Add deploy stage' with an 'Info' link. Below the title, it says 'Step 4 of 5'. A blue information box states: 'You cannot skip this stage. Pipelines must have at least two stages. Your second stage must be either a build or deployment stage. Choose a provider for either the build stage or deployment stage.' The 'Deploy' section contains the following fields: 'Deploy provider' (set to 'AWS Elastic Beanstalk'), 'Region' (set to 'US East (N. Virginia)'), 'Input artifacts' (empty), 'Application name' (set to 'sadneya123'), and 'Environment name' (set to 'Sadneya123-env-1'). There is an unchecked checkbox for 'Configure automatic rollback on stage failure'. At the bottom right, there are three buttons: 'Cancel', 'Previous', and 'Next'.

aws Services Q ElasticCache X

Developer Tools > CodePipeline > Pipelines > Create new pipeline

Step 1  
Choose pipeline settings

Step 2  
Add source stage

Step 3  
Add build stage

Step 4  
Add deploy stage

Step 5  
Review

### Add deploy stage [Info](#)

Step 4 of 5

**You cannot skip this stage**  
Pipelines must have at least two stages. Your second stage must be either a build or deployment stage. Choose a provider for either the build stage or deployment stage.

#### Deploy

**Deploy provider**  
Choose how you deploy to instances. Choose the provider, and then provide the configuration details for that provider.

AWS Elastic Beanstalk

**Region**

US East (N. Virginia)

**Input artifacts**  
Choose an input artifact for this action. [Learn more](#)

No more than 100 characters

**Application name**  
Choose an application that you have already created in the AWS Elastic Beanstalk console. Or create an application in the AWS Elastic Beanstalk console and then return to this task.

sadneya123

**Environment name**  
Choose an environment that you have already created in the AWS Elastic Beanstalk console. Or create an environment in the AWS Elastic Beanstalk console and then return to this task.

Sadneya123-env-1

☐ Configure automatic rollback on stage failure

Cancel Previous Next

## 2. Click Next, Review and create the pipeline.

Developer Tools > CodePipeline > Pipelines > Create new pipeline

Step 1

Choose pipeline settings

Step 2

Add source stage

Step 3

Add build stage

Step 4

Add deploy stage

Step 5

Review

Review

Info

Step 5 of 5

Step 1: Choose pipeline settings

Pipeline settings

Pipeline name

sadneya46

Pipeline type

V2

Execution mode

QUEUED

Artifact location

codepipeline-us-east-1-204862929919

Service role name

arn:aws:iam::851725480355:role/service-role/AWSCodePipelineServiceRole-us-east-1-sadneya\_46

Variables

| Name   | Default value | Description |
|--|---------------|-------------|
| No variables   |               |             |
| No variables defined at the pipeline level in this pipeline. |               |             |

aws Services Q ElastiCache X

Step 2: Add source stage

Source action provider

Source action provider

GitHub (Version 2)

OutputArtifactFormat

CODE\_ZIP

DetectChanges

true

ConnectionArn

arn:aws:codeconnections:us-east-1:851725480355:connection/800ab011-6749-4e3f-8a54-ba529c85155b

FullRepositoryId

sadneya145/aws-codepipeline-s3-codedeploy-linux-2.0

Default branch

master

Trigger configuration

You can add additional pipeline triggers after the pipeline is created.

Trigger type

No filter

Step 3: Add build stage

Build action provider

Build stage

No build

Step 4: Add deploy stage

Deploy action provider

Deploy action provider

AWS Elastic Beanstalk

ApplicationName

sadneya123

EnvironmentName

Sadneya123-env

Configure automatic rollback on stage failure

Disabled

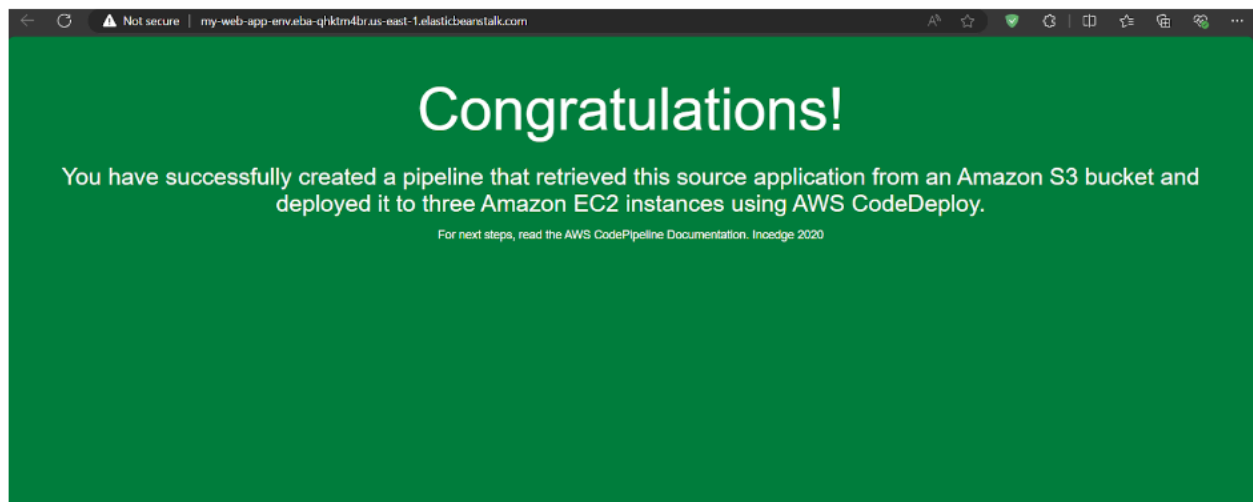
3. Then it will give you this result on screen. i.e. deployed successfully.

The screenshot shows the AWS CodePipeline console. A green banner at the top indicates 'Success: Congratulations! The pipeline sadneya46 has been created.' The pipeline 'sadneya46' is shown with a 'QUEUED' status. It has two stages: 'Source' (Succeeded) and 'Deploy' (Succeeded). The 'Source' stage used the 'GitHub (Version 2)' provider, and the 'Deploy' stage used the 'AWS Elastic Beanstalk' provider. The pipeline execution ID is 18746523-d277-41ca-a269-c21357c7d9a1.

4. In a few minutes the website will get hosted successfully. Then click on the url present over the environment created on Elastic Benstalk.

The screenshot shows the AWS Elastic Beanstalk console. A green banner at the top indicates 'Environment update successfully completed.' The environment 'Sadneya123-env-1' is shown with a 'Warning' health status. The environment overview shows the following details:

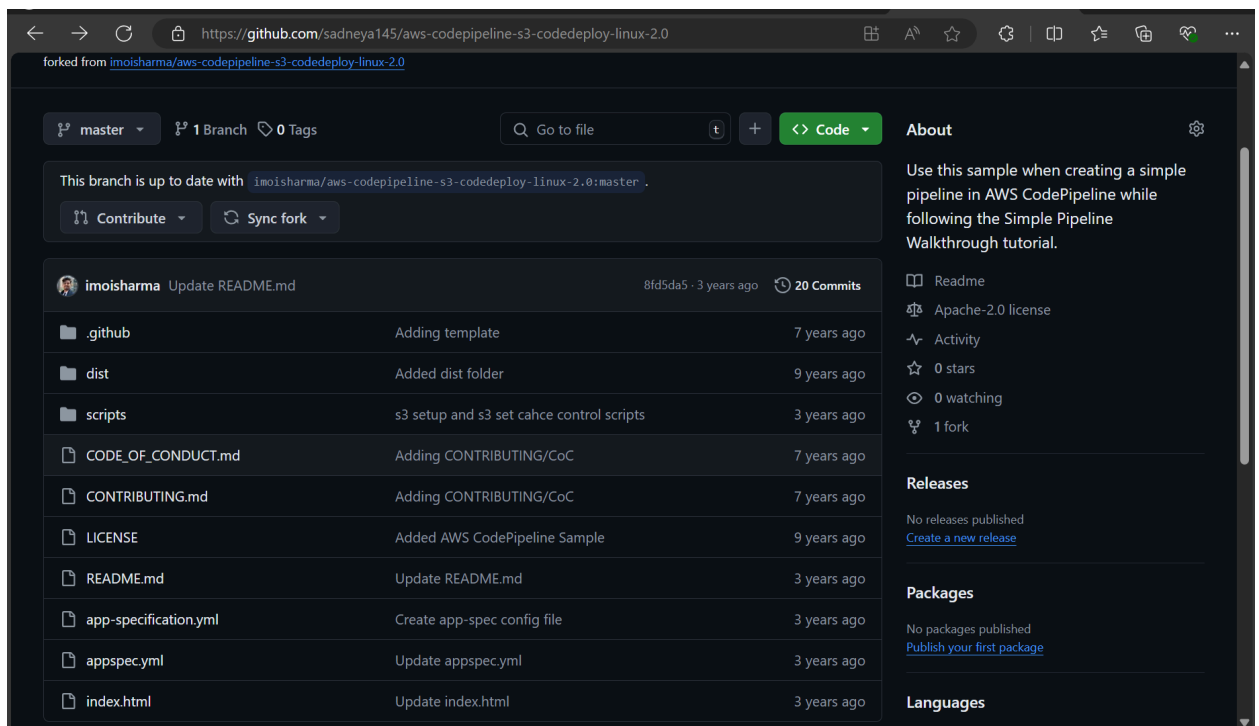
- Health: Warning - View causes
- Environment ID: e-wax39sqfbq
- Domain: Sadneya123-env-1.elasticbeanstalk.com
- Application name: sadneya123
- Platform: PHP 8.3 running on 64bit Amazon Linux 2023/4.3.1
- Running version: code-pipeline-1723294146916-21d92e3c605bb7138abf0640332acc6205711000
- Platform state: Supported



If you can see this, that means that you successfully created an automated software using CodePipeline.

### Step 6: Committing changes to update app

1. In this we make some changes in the file. Open [github.com](https://github.com) then open the forked repository. Then update the changes in the index.html file and finally commit those changes.





Commit changes

Commit message

Update index.html

Extended description

Add an optional extended description..

☒ Commit directly to the master branch

☐ Create a new branch for this commit and start a pull request [Learn more about pull requests](#)

Cancel

Commit changes

2. Then again start the deployment of the pipeline.

Developer Tools

CodePipeline

Source • CodeCommit

Artifacts • CodeArtifact

Build • CodeBuild

Deploy • CodeDeploy

Pipeline • CodePipeline

Getting started

Pipelines

Pipeline

History

Settings

Settings

Go to resource

Feedback

Success

Congratulations! The pipeline sadneya46 has been created.

Create a notification rule for this pipeline

Developer Tools > CodePipeline > Pipelines > sadneya46

sadneya46

Notify

Edit

Stop execution

Clone pipeline

Release change

Pipeline type: V2 Execution mode: QUEUED

Source

Succeeded

Pipeline execution ID: 1874b523-d277-41ca-a269-c21357c7d6a1

Source

[GitHub \(Version 2\)](#)

Succeeded - 1 minute ago

21d92e3c

View details

21d92e3c Source: Update index.html

Disable transition

Deploy

Succeeded

Pipeline execution ID: 1874b523-d277-41ca-a269-c21357c7d6a1

Deploy

[AWS Elastic Beanstalk](#)

Succeeded - just now

View details

21d92e3c Source: Update index.html

Start rollback

CloudShell

Feedback

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3. Check the changes in the website , here I have added a message in h3 tag.

