

INTRODUCTION TO AWS CODEDEPLOY AND CODE PIPILINE

CODE PIPELINE:

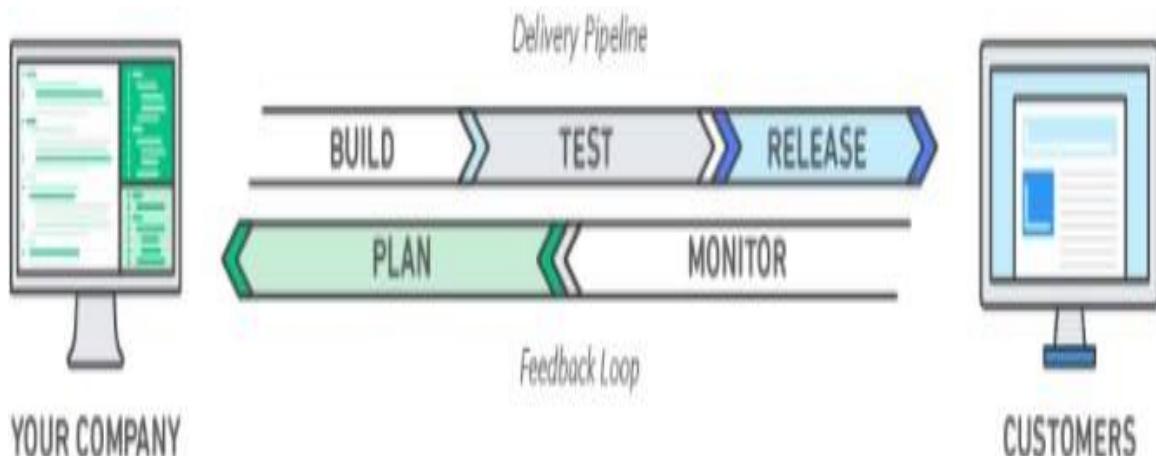
AWS CodePipeline is a continuous delivery service that enables you to model, visualize, and automate the steps required to release your software. AWS CodePipeline then builds, tests, and deploys your application according to the defined workflow every time there is a code change.

CODE DEPLOY:

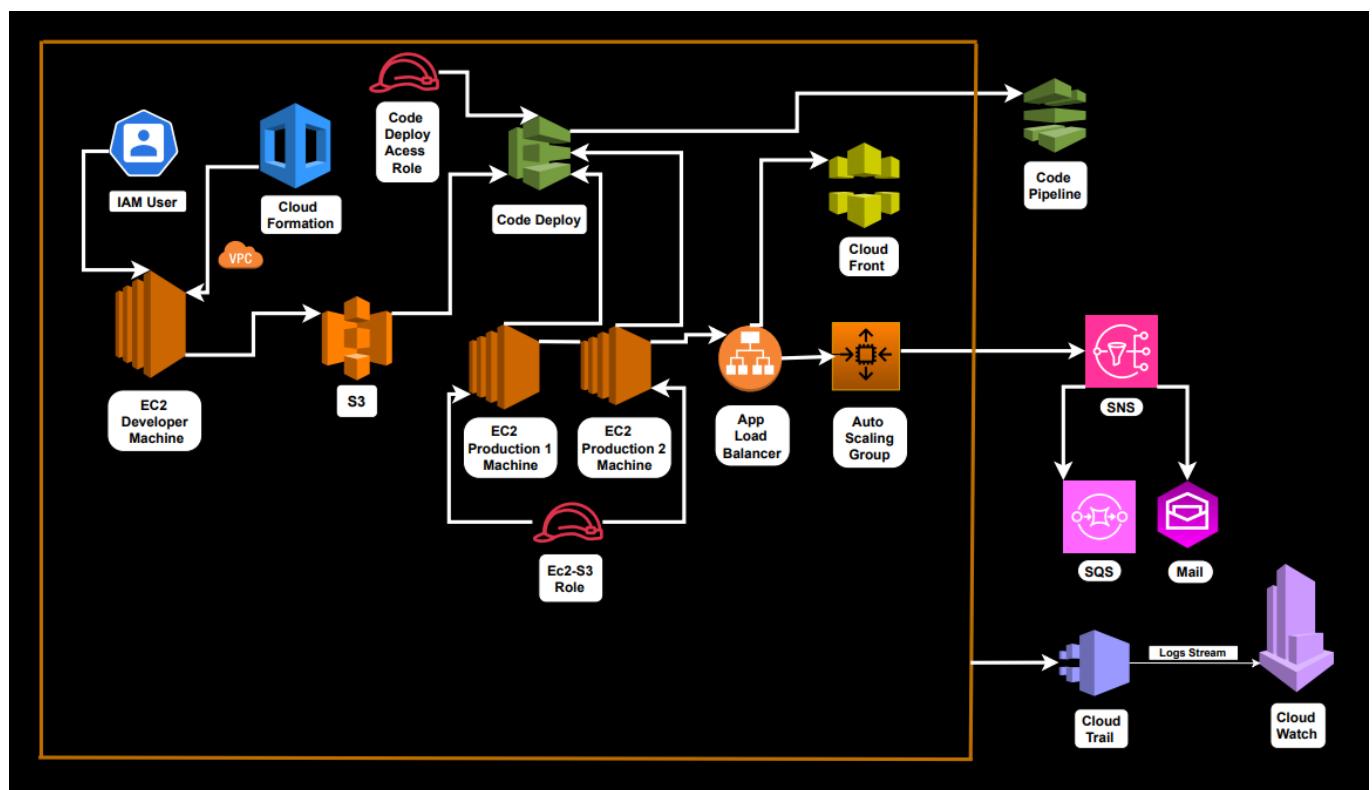
AWS CodeDeploy is a service that automates code deployments to Elastic Compute Cloud (EC2) and on-premises servers. Accelerating how fast a developer can release code allows him to release new features for an application faster and avoid deployment errors in complex applications.

OBJECTIVE TO THE AWS CODE DEPLOY AND CODE PIPELINE:

The objective of this project is to develop and deploy a dynamic web application using a microservice architecture, with a focus on front-end development utilizing HTML and CSS. The project aims path based routing using App Loadbalancer and CloudFront for Content Delivery Network (CDN) to deliver a website. The goal is to manage and scale the web application efficiently, ensuring high availability, security, performance optimization, and automated CI/CD with AWS CodeCommit, AWS CodeBuild, AWS CodeDeploy, and AWS CodePipeline.



CODE DEPLOY AND CODE PIPELINE PROJECT:



CODE DEPLOY AND CODE PIPELINE PROJECT STEPS:

CodeDeploy is a deployment service from AWS which can automate application deployments to Amazon EC2 instances, on-premises instances or Lambda functions. This does a onetime deployment, for scheduling of deployment you may have to use AWS CodePipeline also.

Application: A CodeDeploy application can be defined from AWS CodeDeploy web console.

Revision: Represents the code need to be deployed on EC2 instance

Appspec file: This contains the instruction to CodeDeploy, like copying of files, executing the scripts etc during the code deployment process. It is present in the root directory of unzipped code with

Deployment Group: Represent set of machines of Lambda function where code has to be deployed

Deployment: The process of deployment.

Setup in Brief:

I have used two EC2 instance of AMZ2 Linux. First one is the web server we will be configuring, also called CodeDeploy agent. Second and Third EC2 machine is supposed to use by developer where the codes are programmed. The names of the resources in the experiment are arbitrary and may name the resources your own

1. Create **IAM Roles** for EC2-S3 & CodeDeploy access.
2. Create **IAM user** account for Developer Machine.
3. Create **VPC** using with help of **Cloud Formation** service.
4. Create **3 EC2** instances – 1 Developer Machine & 2 Production Machine.
5. Create **SQS & SNS** for Communication service.
6. Create **Cloud Trail** for Logs that streams on **Cloud Watch**.
7. Create **S3 Bucket** for store a website files.
8. Connect IAM user in Developer Machine **CLI**.
9. Install and prepare the Code Deploy agent on webserver in Production Machine.
10. Create the code from Developer Machine.
11. Create **Code Deploy** Application and Push the code to S3 bucket from Developer machine.
12. Create Deployment Group to include webserver.
13. Create Deployment to push the code to the webserver.
14. Create **App Load Balancer** for path based routing and **Auto-Scaling Group**.
15. Create **Cloud Front** with App LB.
16. Browse the Website.
17. Create **Code Pipeline** S3 bucket.
18. Re-edit the website in Developer Machine.
19. Copy website file to S3 bucket.
20. Refresh the website changes will show.

AWS SERVICES USED :

IAM, VPC, Cloud Formation, EC2, SQS, SNS, Cloud Trail, Cloud Watch, S3, Code Deploy, App Load Balancer & Auto Scaling Group, Cloud Front, Code Pipeline.

Step 1 : Create IAM Roles for EC2-S3 & Code Deploy access.

a) EC2 – S3 full access :

IAM Service

Roles: Select EC2 UseCase

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.

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

Service or use case
EC2

Then select S3 full access policy

Add permissions Info

Permissions policies (1/960) Info

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

Filter by Type

Policy name	Type	Description
<input type="checkbox"/> AmazonDMSRedshiftS3...	AWS managed	Provides access to manage S3 settings...
<input checked="" type="checkbox"/> AmazonS3FullAccess	AWS managed	Provides full access to all buckets via t...
<input type="checkbox"/> AmazonS3ObjectLamb...	AWS managed	Provides AWS Lambda functions permi...
<input type="checkbox"/> AmazonS3OutpostsFull...	AWS managed	Provides full access to Amazon S3 on ...
<input type="checkbox"/> AmazonS3OutpostsRea...	AWS managed	Provides read only access to Amazon S...

Name, review, and create

Role details

Role name
Enter a meaningful name to identify this role.

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

Description
Add a short explanation for this role.

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

- b) Create an Code-Deploy role:
CodeDeploy UseCase

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.

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

Service or use case

Choose a use case for the specified service.

Attach a permission policy

Add permissions Info

Permissions policies (1) Info
The type of role that you selected requires the following policy.

Policy name	Type
<input type="checkbox"/>  AWSCodeDeployRole	AWS managed

▶ **Set permissions boundary - optional**

Name, review, and create

Role details

Role name
Enter a meaningful name to identify this role.

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

Description
Add a short explanation for this role.

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

Step 2: Create IAM user account for Developer Machine

Goto users and add user

User details

User name

The user name can have up to 64 characters. Valid characters: A-Z, a-z, 0-9, and +-=,. @ _ - (hyphen)

Provide user access to the AWS Management Console - optional
If you're providing console access to a person, it's a best practice [to manage their access in IAM Identity Center](#).

If you are creating programmatic access through access keys or service-specific credentials for AWS CodeCommit or Amazon Keypairs, you can generate them after you create this IAM user. [Learn more](#)

[Cancel](#) [Next](#)

Add permission

Set permissions

Add user to an existing group or create a new one. Using groups is a best-practice way to manage user's permissions by job functions. [Learn more](#)

Permissions options

Add user to group
Add user to an existing group, or create a new group. We recommend using groups to manage user permissions by job function.

Copy permissions
Copy all group memberships, attached managed policies, and inline policies from an existing user.

Attach policies directly
Attach a managed policy directly to a user. As a best practice, we recommend attaching policies to a group instead. Then, add the user to the appropriate group.

Permissions policies (1239)

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

Filter by Type

Policy name	Type	Attached entities
AccessAnalyzerServiceRolePolicy	AWS managed	0
AdministratorAccess	AWS managed - job function	4

Create Access key

Permissions Groups Tags Security credentials Access Advisor

Console sign-in

Console sign-in link <https://hari2000.signin.aws.amazon.com/console> Console password Not enabled [Enable console access](#)

Multi-factor authentication (MFA) (0)

Use MFA to increase the security of your AWS environment. Signing in with MFA requires an authentication code from an MFA device. Each user can have a maximum of 8 MFA devices assigned. [Learn more](#)

Type Identifier Certifications Created on

No MFA devices. Assign an MFA device to improve the security of your AWS environment [Assign MFA device](#)

Access keys (0)

Use access keys to send programmatic calls to AWS from the AWS CLI, AWS Tools for PowerShell, AWS SDKs, or direct AWS API calls. You can have a maximum of two access keys (active or inactive) at a time. [Learn more](#)

No access keys. As a best practice, avoid using long-term credentials like access keys. Instead, use tools which provide short term credentials. [Learn more](#)

[Create access key](#)

Use case

Command Line Interface (CLI)

You plan to use this access key to enable the AWS CLI to access your AWS account.

Local code

You plan to use this access key to enable application code in a local development environment to access your AWS account.

Application running on an AWS compute service

You plan to use this access key to enable application code running on an AWS compute service like Amazon EC2, Amazon ECS, or AWS Lambda to access your AWS account.

Third-party service

You plan to use this access key to enable access for a third-party application or service that monitors or manages your AWS resources.

Application running outside AWS

You plan to use this access key to authenticate workloads running in your data center or other infrastructure outside of AWS that needs to access your AWS resources.

Retrieve access keys Info

Access key

If you lose or forget your secret access key, you cannot retrieve it. Instead, create a new access key and remember the new key ID and secret access key.

Access key

 AKIAU6GDYZ7CTSNYGGTI

Secret access key

 ***** [Show](#)

Step 3 : Create VPC using with help of **Cloud Formation** service.

Create a Stack

The screenshot shows the AWS CloudFormation Stacks page. At the top, there is a navigation bar with 'CloudFormation > Stacks'. Below the navigation, there is a header with 'Stacks (0)' and four buttons: 'Create' (highlighted in orange), 'Delete', 'Update', and 'Stack actions'. There is also a 'Filter status' dropdown set to 'Active' and a 'View nested' link. A search bar labeled 'Filter by stack name' is present. The main area has columns for 'Stack name', 'Status', and 'Created time'. A message 'No stacks' and 'No stacks to display' is centered. Below this is a large orange 'Create stack' button and a link 'View getting started guide'.

Upload a Yaml Code for creating VPC

The screenshot shows the 'Prepare template' step of the CloudFormation wizard. It starts with a 'Prepare template' section where it says every stack is based on a template. Three options are shown: 'Choose an existing template' (selected), 'Use a sample template', and 'Build from Application Composer'. The 'Choose an existing template' option has a sub-instruction 'Upload or choose an existing template.' Below this is a 'Specify template' section with a note that a template is a JSON or YAML file. It includes a 'Template source' section with three options: 'Amazon S3 URL', 'Upload a template file' (selected), and 'Sync from Git - new'. The 'Upload a template file' section has a 'Choose file' button and a text input field containing 'Cloud formation creations (1).txt'. A note at the bottom says 'JSON or YAML formatted file'.

Specify stack details

Provide a stack name

Stack name

myvpc

Stack name must be 1 to 128 characters, start with a letter, and only contain alphanumeric characters. Character count: 5/128.

The screenshot shows the CloudFormation console interface. On the left, the navigation bar reads "CloudFormation > Stacks > myvpc". The main area is titled "myvpc". Under "Stacks (1)", there is one item: "myvpc" (Status: CREATE_IN_PROGRESS). On the right, the "Events" tab is selected, showing one event: "2024-08-26 14:51:22 UTC+0530" with status "CREATE_IN_PROGRESS".

VPC was created

The screenshot shows the "Your VPCs" section. It lists two VPCs: "myvpc-VPC" (State: Available, IPv4 CIDR: 10.1.0.0/16) and another unnamed VPC (State: Available, IPv4 CIDR: 172.31.0.0/16).

Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR
myvpc-VPC	vpc-06e16904a1fe991cd	Available	10.1.0.0/16	-
-	vpc-0dcac49e5fd20028f	Available	172.31.0.0/16	-

The screenshot shows the "NAT gateways" section. It lists one NAT gateway: "NAT-myvpc" (State: Available). The table columns are Name, NAT gateway ID, Connectivity..., and State.

Name	NAT gateway ID	Connectivity...	State
NAT-myvpc	nat-0450cb1d8afaed2df	Public	Available

Step 4 : Create 3 EC2 instances – 1 Developer Machine & 2 Production Machine.

- Create a 1 instance for Developer Machine

The screenshot shows the 'Name and tags' step of the 'Launch an instance' wizard. At the top, the breadcrumb navigation shows 'EC2 > Instances > Launch an instance'. The main title is 'Launch an instance' with an 'Info' link. Below the title, a descriptive text states: 'Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.' The 'Name and tags' section contains a 'Name' field with the value 'Developer Machine' and a 'Add additional tags' link.

The screenshot shows the 'Quick Start' step of the 'Amazon Machine Image (AMI)' selection wizard. At the top, there are tabs for 'Recents' and 'Quick Start'. Below the tabs, there are several AMI icons: Amazon Linux (selected), macOS, Ubuntu, Windows, Red Hat, and SUSE. To the right of the icons is a search icon and a link 'Browse more AMIs'. Below the AMI selection, the heading 'Amazon Machine Image (AMI)' is followed by a detailed description of the selected AMI: 'Amazon Linux 2 AMI (HVM) - Kernel 5.10, SSD Volume Type'. The description includes the AMI ID 'ami-0e1a3a59369c81682 (64-bit (x86)) / ami-09de4c878e8371d89 (64-bit (Arm))', 'Virtualization: hvm', 'ENA enabled: true', and 'Root device type: ebs'. The 'Free tier eligible' status is also indicated. Below this, the 'Description' section provides a detailed overview of the AMI's features and support. At the bottom, the 'Architecture' is set to '64-bit (x86)', the 'AMI ID' is 'ami-0e1a3a59369c81682', and a green 'Verified provider' badge is present.

▼ Instance type [Info](#) | [Get advice](#)

Instance type

t2.micro

Free tier eligible

Family: t2 1 vCPU 1 GiB Memory Current generation: true
On-Demand Linux base pricing: 0.0116 USD per Hour
On-Demand SUSE base pricing: 0.0116 USD per Hour
On-Demand Windows base pricing: 0.0162 USD per Hour
On-Demand RHEL base pricing: 0.026 USD per Hour

All generations

[Compare instance types](#)

[Additional costs apply for AMIs with pre-installed software](#)

▼ Key pair (login) [Info](#)

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - required

LIN

[!\[\]\(7453c0f29ed3a7dcecf77fe714fbbf84_img.jpg\) Create new key pair](#)

▼ Network settings [Info](#)

Subnet [Info](#)

subnet-0a78929b1ec5b1fc3

myvpc-Public-A

VPC: vpc-06e16904a1fe991cd Owner: 339712987077
Availability Zone: us-east-2a Zone type: Availability Zone
IP addresses available: 246 CIDR: 10.1.10.0/24

[!\[\]\(007bb571fc5331b364ae27ddf8a1c148_img.jpg\) Create new subnet](#)

When you specify a subnet, a network interface is automatically added to your template.

Firewall (security groups) [Info](#)

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

[Select existing security group](#)

[Create security group](#)

b) Create a 2 instance for Production Machine

Launch an instance [Info](#)

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

Name and tags [Info](#)

Name
Production Machine [Add additional tags](#)

Number of instances [Info](#)
2

When launching more than 1 instance [Scaling](#)

Software Image (AMI)
Amazon Linux 2023 AMI 2023.09.0 ami-0490fddec0cbe88b

Virtual server type (instance)
t2.micro

Instances (3) [Info](#) Last updated less than a minute ago [C](#) [Connect](#) [Instance state ▾](#) [Actions ▾](#) [Launch instances](#)

Find Instance by attribute or tag (case-sensitive) All states ▾ < 1 >

<input type="checkbox"/>	Name ✎	Instance ID	Instance state	Instance type	Status check	Alarm status
<input type="checkbox"/>	Developer Mac...	i-020ff79cfda1138a7	Running Q Q	t2.micro	2/2 checks passed View alarms +	
<input type="checkbox"/>	Production Ma...	i-0dadd7b9bbe7045bd	Running Q Q	t2.micro	2/2 checks passed View alarms +	

Instances (1/3) [Info](#) Last updated less than a minute ago [C](#) [Connect](#) [Instance state ▾](#) [Actions ▾](#) [Launch instances](#)

Find Instance by attribute or tag (case-sensitive) All states

<input type="checkbox"/>	Name ✎	Instance ID	Instance state	Instance type	Action
<input type="checkbox"/>	Developer Mac...	i-067cccfb49c5a4857	Running Q Q	t2.micro	Connect View details Manage instance state
<input checked="" type="checkbox"/>	Production Ma...	i-0ef3bfce030904732	Running Q Q	t2.micro	Instance settings Networking Security Image and templates Monitor and troubleshoot
<input type="checkbox"/>	production Ma...	i-0b6e0d007b61bcaa9	Running Q		Change security groups Get Windows password Modify IAM role

Modify IAM role [Info](#)

Attach an IAM role to your instance.

Instance ID
[i-0ef3bfce030904732 \(Production Machine\)](#)

IAM role

Select an IAM role to attach to your instance or create a new role if you haven't created any. The role you select replaces any roles that are currently attached to your instance.

ec2_accessing_s3 [Create new IAM role](#)

[Cancel](#) [Update IAM role](#)

Step 5 : Create SQS & SNS for Communication service.

a) Create a SQS

Create queue

Details

Type
Choose the queue type for your application or cloud infrastructure.

Standard Info
At-least-once delivery, message ordering isn't preserved

- At-least once delivery
- Best-effort ordering

FIFO Info
First-in-first-out delivery, message ordering is preserved

- First-in-first-out delivery
- Exactly-once processing

i You can't change the queue type after you create a queue.

Name

A queue name is case-sensitive and can have up to 80 characters. You can use alphanumeric characters, hyphens (-), and underscores (_).

Access policy Info

Define who can access your queue.

Choose method

Basic
Use simple criteria to define a basic access policy.

Advanced
Use a JSON object to define an advanced access policy.

Define who can send messages to the queue

Only the queue owner
Only the owner of the queue can send messages to the queue.

Only the specified AWS accounts, IAM users and roles
Only the specified AWS account IDs, IAM users and roles can send messages to the queue.

Define who can receive messages from the queue

Only the queue owner
Only the owner of the queue can receive messages from the queue.

Only the specified AWS accounts, IAM users and roles
Only the specified AWS account IDs, IAM users and roles can receive messages.

JSON (read-only)

```
{  
  "Version": "2012-10-17",  
  "Id": "__default_policy_ID",  
  "Statement": [  
    {  
      "Sid": "__owner_statement",  
      "Effect": "Allow",  
      "Principal": {  
        "AWS": "339712987077"  
      },  
      "Action": [  
        "SQS:*"  
      ],  
      "Resource": "arn:aws:sqs:us-east-1:339712987077:SQS-Test-Queue"  
    }  
  ]}
```

b) Create a SNS

The screenshot shows the 'Topics' page in the Amazon SNS console. At the top, there are buttons for 'Edit', 'Delete', 'Publish message', and a prominent orange 'Create topic' button. Below these are search and navigation controls. A table header row includes columns for 'Name', 'Type', and 'ARN'. A message in the center says 'No topics' and 'To get started, create a topic.' with a 'Create topic' button.

The screenshot shows the 'Create topic' page. It has a 'Details' section with tabs for 'Type' (selected) and 'Info'. A note says 'Topic type cannot be modified after topic is created'. Two options are shown: 'FIFO (first-in, first-out)' and 'Standard'. 'Standard' is selected. Below is a 'Name' field containing 'sns_notif' with a note about character limits. The 'Info' tab contains a note: 'Maximum 256 characters. Can include alphanumeric characters, hyphens (-) and underscores (_).'

The screenshot shows the 'Subscriptions' page. At the top, tabs are available for 'Subscriptions', 'Access policy', 'Data protection policy', 'Delivery policy (HTTP/S)', and 'Delivery status logging'. Below is a 'Subscriptions (0)' section with buttons for 'Edit', 'Delete', 'Request confirmation', 'Confirm subscription', and a prominent orange 'Create subscription' button. A search bar and navigation controls are present. A message in the center says 'No subscriptions found' and 'You don't have any subscriptions to this topic.' with a 'Create subscription' button.

Details

Topic ARN

 X

Protocol

The type of endpoint to subscribe

 ▼

Endpoint

Only Amazon SQS standard queues will be listed and can receive notifications from an Amazon SNS standard topic.

 X

Enable raw message delivery

ⓘ After your subscription is created, you must confirm it. [Info](#)

Amazon SNS > Subscriptions > Create subscription

Create subscription

Details

Topic ARN

 X

Protocol

The type of endpoint to subscribe

 ▼

Endpoint

An email address that can receive notifications from Amazon SNS.



Simple Notification Service

Subscription confirmed!

You have successfully subscribed.

Your subscription's id is:

arn:aws:sns:us-east-2:339712987077:sns_notif:f6955214-3454-420f-bc8c-e8b0492b8185

If it was not your intention to subscribe, [click here to unsubscribe](#).

Amazon SQS > Queues > sqs_msg > Subscribe to Amazon SNS topic

Subscribe to Amazon SNS topic [Info](#)

Amazon SNS topic

To allow your queue to receive messages from an Amazon SNS topic, subscribe it to an Amazon SNS topic.

Specify an Amazon SNS topic available for this queue.

 ▼

Cancel

Save

Step 6 : Create Cloud Trail for Logs that streams on Cloud Watch.

The screenshot shows the AWS CloudTrail Trails page. At the top, there is a breadcrumb navigation: CloudTrail > Trails. Below the header, there is a table with columns: Name, Home region, Multi-region trail, Insights, Organization trail, S3 bucket, Log file prefix, Cloud Watch Logs log group, and Status. A search bar is located at the top right. Below the table, a message says "No trails" and "No trails to display." At the bottom right of the main area, there is a "Create trail" button.

Choose trail attributes

General details

A trail created in the console is a multi-region trail. [Learn more](#)

Trail name
Enter a display name for your trail.

3-128 characters. Only letters, numbers, periods, underscores, and dashes are allowed.

Enable for all accounts in my organization
To review accounts in your organization, open AWS Organizations. [See all accounts](#)

Storage location | [Info](#)

Create new S3 bucket
Create a bucket to store logs for the trail.

Use existing S3 bucket
Choose an existing bucket to store logs for this trail.

Trail log bucket and folder
Enter a new S3 bucket name and folder (prefix) to store your logs. Bucket names must be globally unique.

Logs will be stored in aws-cloudtrail-logs-339712987077-6e0d32a3/AWSLogs/339712987077

CloudWatch Logs - optional

Configure CloudWatch Logs to monitor your trail logs and notify you when specific activity occurs. Standard AWS CloudTrail usage fees apply. [Learn more](#)

CloudWatch Logs | [Info](#)

Enabled

Log group Info

New

Existing

Log group name

aws-cloudtrail-logs-339712987077-138b875e

1-512 characters. Only letters, numbers, dashes, underscores, forward slashes, and periods are allowed.

IAM Role [Info](#)

AWS CloudTrail assumes this role to send CloudTrail events to your CloudWatch Logs log group.

New

Existing

Role name

CloudtrailRoleForCloudWatchLogs_service_logs

Choose log events

Events [Info](#)

Record API activity for individual resources, or for all current and future resources in AWS account.

Event type

Choose the type of events that you want to log.

Management events

Capture management operations performed on your AWS resources.

Data events

Log the resource operations performed on or within a resource.

Insights events

Identify unusual activity, errors, or user behavior in your account.

Management events [Info](#)

Management events show information about management operations performed on resources in your account.

The screenshot shows the AWS CloudWatch interface. On the left, a sidebar lists navigation options: Favorites and recents, Dashboards, Alarms (with 1 alarm), In alarm, All alarms, Logs (selected), Log groups, Log Anomalies, Live Tail, Logs Insights, Contributor Insights, Metrics (selected), All metrics, Explorer, and Streams. The main content area displays a summary for the last 4 hours, showing Retention set to Never expire and Stored bytes at 0. Below this, a tab bar includes Log streams (selected), Tags, Anomaly detection, Metric filters, Subscription filters, and Contributor Insights. The Log streams section shows a table with four entries:

	Log stream	Last event time
<input type="checkbox"/>	339712987077_CloudTrail_us-east-2_3	2024-08-26 13:36:13 (UTC)
<input type="checkbox"/>	339712987077_CloudTrail_us-east-2_4	2024-08-26 13:34:03 (UTC)
<input type="checkbox"/>	339712987077_CloudTrail_us-east-2_2	2024-08-26 13:26:17 (UTC)
<input type="checkbox"/>	339712987077_CloudTrail_us-east-2	2024-08-26 13:22:47 (UTC)

CloudWatch	X	▶	2024-08-26T13:29:39.152Z	{"eventVersion": "1.09", "userIdentity": {"type": "AssumedRole", "principalId": "AROAU6GDY27CVKZDYI..."}}
Favorites and recents	▶	▶	2024-08-26T13:29:39.152Z	{"eventVersion": "1.10", "userIdentity": {"type": "AssumedRole", "principalId": "AROAU6GDY27CVKZDYI..."}}
Dashboards	▶	▶	2024-08-26T13:29:39.152Z	{"eventVersion": "1.09", "userIdentity": {"type": "Root", "principalId": "3397129870777", "arn": "arn:..."}}
Alarms ⚠ 1 ⌚ 2 🕒 0	▶	▶	2024-08-26T13:29:39.152Z	{"eventVersion": "1.10", "userIdentity": {"type": "AssumedRole", "principalId": "AROAU6GDY27CVKZDYI..."}}
In alarm	▶	▶	2024-08-26T13:29:39.153Z	{"eventVersion": "1.10", "userIdentity": {"type": "AssumedRole", "principalId": "AROAU6GDY27CVKZDYI..."}}
All alarms	▶	▶	2024-08-26T13:29:39.153Z	{"eventVersion": "1.09", "userIdentity": {"type": "Root", "principalId": "3397129870777", "arn": "arn:..."}}
Logs	▶	▶	2024-08-26T13:29:39.153Z	{"eventVersion": "1.09", "userIdentity": {"type": "Root", "principalId": "3397129870777", "arn": "arn:..."}}
Log groups	▶	▶	2024-08-26T13:29:39.153Z	{"eventVersion": "1.10", "userIdentity": {"type": "AssumedRole", "principalId": "AROAU6GDY27CVKZDYI..."}}
Log Anomalies	▶	▶	2024-08-26T13:29:39.153Z	{"eventVersion": "1.09", "userIdentity": {"type": "AssumedRole", "principalId": "AROAU6GDY27CVKZDYI..."}}
Live Tail	▶	▶	2024-08-26T13:29:39.153Z	{"eventVersion": "1.10", "userIdentity": {"type": "AssumedRole", "principalId": "AROAU6GDY27CVKZDYI..."}}
Logs Insights	▶	▶	2024-08-26T13:29:39.153Z	{"eventVersion": "1.09", "userIdentity": {"type": "AssumedRole", "principalId": "AROAU6GDY27CVKZDYI..."}}
Contributor Insights	▶	▶	2024-08-26T13:29:39.153Z	{"eventVersion": "1.09", "userIdentity": {"type": "AWS Service", "invokedBy": "cloudtrail.amazonaws.com"}}
Metrics	▶	▶	2024-08-26T13:29:39.153Z	{"eventVersion": "1.10", "userIdentity": {"type": "AssumedRole", "principalId": "AROAU6GDY27CVKZDYI..."}}
All metrics	▶	▶	2024-08-26T13:36:13:645Z	{"eventVersion": "1.09", "userIdentity": {"type": "Root", "principalId": "3397129870777", "arn": "arn:..."}}
Explorer	▶	▶	2024-08-26T13:36:13:645Z	{"eventVersion": "1.10", "userIdentity": {"type": "AssumedRole", "principalId": "AROAU6GDY27CVKZDYI..."}}
Streams	▶	▶	2024-08-26T13:36:13:645Z	{"eventVersion": "1.10", "userIdentity": {"type": "AssumedRole", "principalId": "AROAU6GDY27CVKZDYI..."}}
X-Ray traces	▶	▶	2024-08-26T13:36:13:645Z	{"eventVersion": "1.10", "userIdentity": {"type": "AssumedRole", "principalId": "AROAU6GDY27CVKZDYI..."}}

The screenshot shows the CloudWatch Log Events interface. The left sidebar includes sections for Favorites and recents, Dashboards, Alarms (with 1 active and 2 pending), Logs (Log groups, Log Anomalies, Live Tail, Logs Insights, Contributor Insights), and Metrics (All metrics, Explorer, Streams). The main content area shows a log entry for CloudTrail:

Log events

You can use the filter bar below to search for and match terms, phrases, or values in your log events. [Learn more about filter patterns](#)

Filter events - press enter to search | 1m | 1h | UTC timezone | Display | [Edit](#)

	Timestamp	Message
		There are older events to load. Load more .
▼	2024-08-26T13:29:39.152Z	{"eventVersion": "1.09", "userIdentity": {"type": "Root", "principalId": "339712987077", "arn": "arn:aws:iam::339712987077:root", "accountId": "339712987077", "accessKeyId": "ASIAUGGDY27CJASHM1O0", "userName": "har12000", "sessionContext": {"attributes": {"creationDate": "2024-08-26T09:14:10Z", "mfaAuthenticated": "false"}}}

Step 7 : Create S3 Bucket for store a website files.

Create bucket Info

Buckets are containers for data stored in S3.

General configuration

AWS Region

US East (Ohio) us-east-2

Bucket name Info

homebuckey

Bucket name must be unique within the global namespace and follow the bucket naming rules. [See rules for bucket naming](#) ↗

Copy settings from existing bucket - *optional*

Only the bucket settings in the following configuration are copied.

[Choose bucket](#)

Format: s3://bucket/prefix

Object Ownership Info

Control ownership of objects written to this bucket from other AWS accounts and the use of access control lists (ACLs). Object ownership determines who can specify access to objects.

ACLs disabled (recommended)

All objects in this bucket are owned by this account. Access to this bucket and its objects is specified using only policies.

ACLs enabled

Objects in this bucket can be owned by other AWS accounts. Access to this bucket and its objects can be specified using ACLs.

⚠ We recommend disabling ACLs, unless you need to control access for each object individually or to have the object writer own the data they upload. Using a bucket policy instead of ACLs to share data with users outside of your account simplifies permissions management and auditing.

Object Ownership

Bucket owner preferred

If new objects written to this bucket specify the bucket-owner-full-control canned ACL, they are owned by the bucket owner. Otherwise, they are owned by the object writer.

Object writer

The object writer remains the object owner.

Block Public Access settings for this bucket

Public access is granted to buckets and objects through access control lists (ACLs), bucket policies, access point policies, or all. In order to ensure that public access to this bucket and its objects is blocked, turn on Block all public access. These settings apply only to this bucket and its access points. AWS recommends that you turn on Block all public access, but before applying any of these settings, ensure that your applications will work correctly without public access. If you require some level of public access to this bucket or objects within, you can customize the individual settings below to suit your specific storage use cases. [Learn more](#)

Block all public access

Turning this setting on is the same as turning on all four settings below. Each of the following settings are independent of one another.

Block public access to buckets and objects granted through new access control lists (ACLs)

S3 will block public access permissions applied to newly added buckets or objects, and prevent the creation of new public access ACLs for existing buckets and objects. This setting doesn't change any existing permissions that allow public access to S3 resources using ACLs.

Block public access to buckets and objects granted through any access control lists (ACLs)

S3 will ignore all ACLs that grant public access to buckets and objects.

Block public access to buckets and objects granted through new public bucket or access point policies

S3 will block new bucket and access point policies that grant public access to buckets and objects. This setting doesn't change any existing policies that allow public access to S3 resources.

Block public and cross-account access to buckets and objects through any public bucket or access point policies

S3 will ignore public and cross-account access for buckets or access points with policies that grant public access to buckets and objects.

Bucket Versioning

Versioning is a means of keeping multiple variants of an object in the same bucket. You can use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. With versioning, you can easily recover from both unintended user actions and application failures. [Learn more](#)

Bucket Versioning

- Disable
 Enable

Bucket Key

Using an S3 Bucket Key for SSE-KMS reduces encryption costs by lowering calls to AWS KMS. S3 Bucket Keys aren't supported for DSSE-KMS. [Learn more](#)

- Disable
 Enable

► Advanced settings

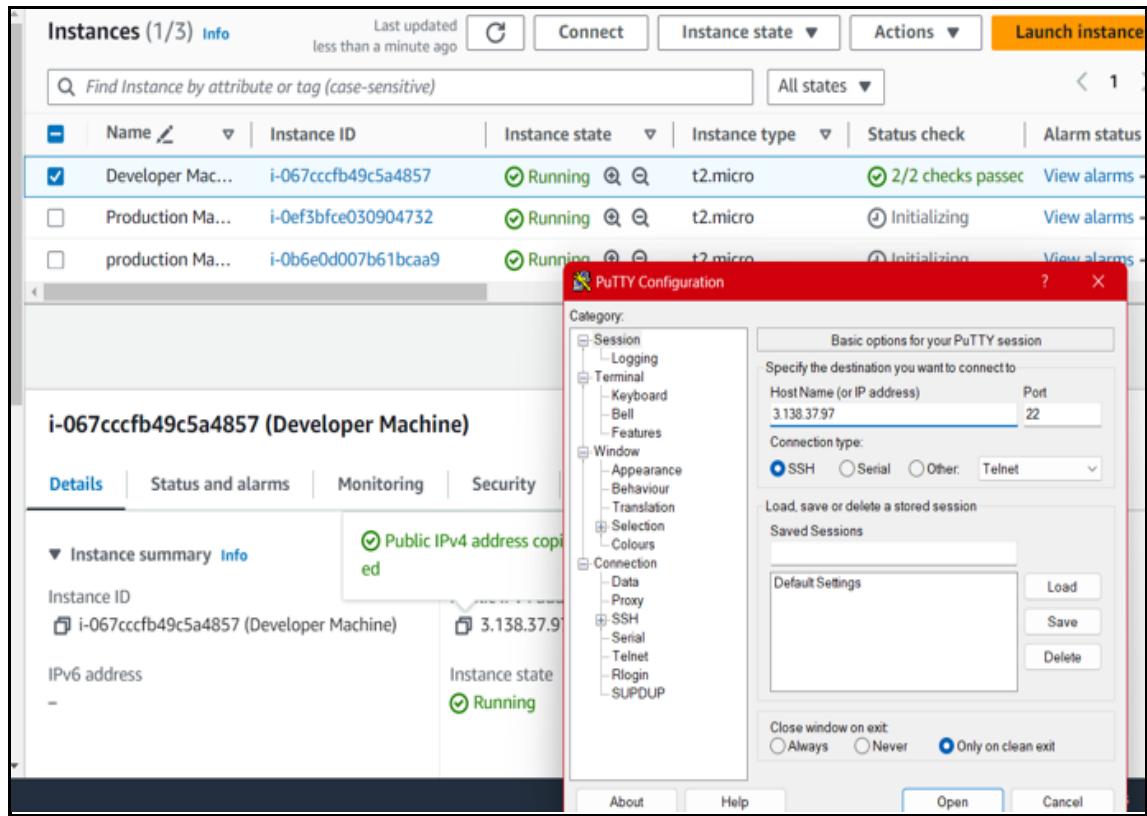
 After creating the bucket, you can upload files and folders to the bucket, and configure additional bucket settings.

Cancel

Create bucket

Step 8 : Connect IAM user in Developer Machine CLI.

Put a Developer Machine IP in Putty

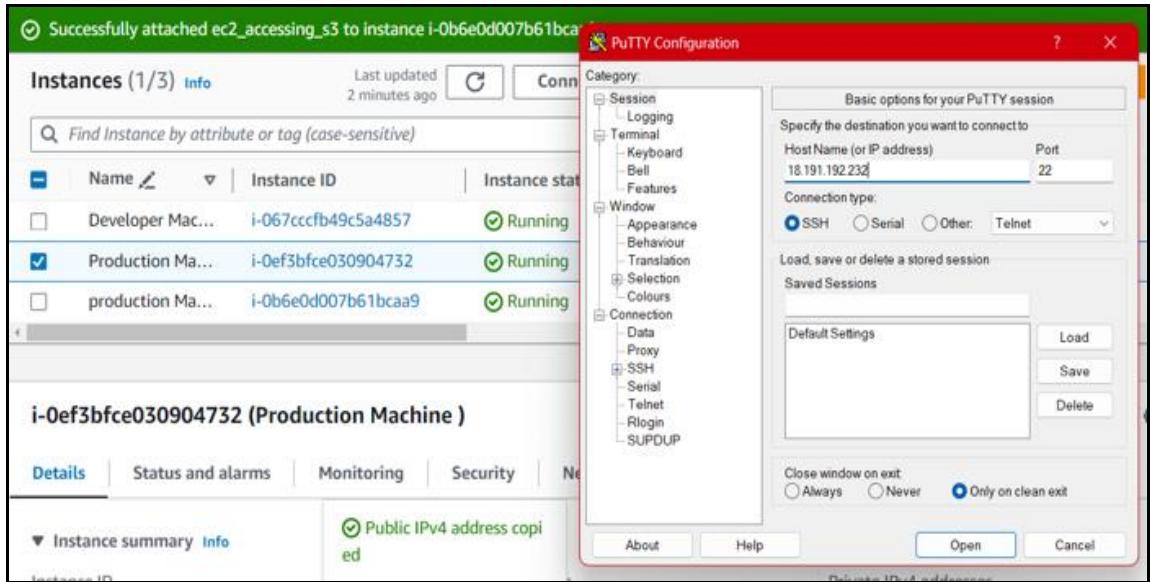


Connect IAM user in Developer Machine CLI

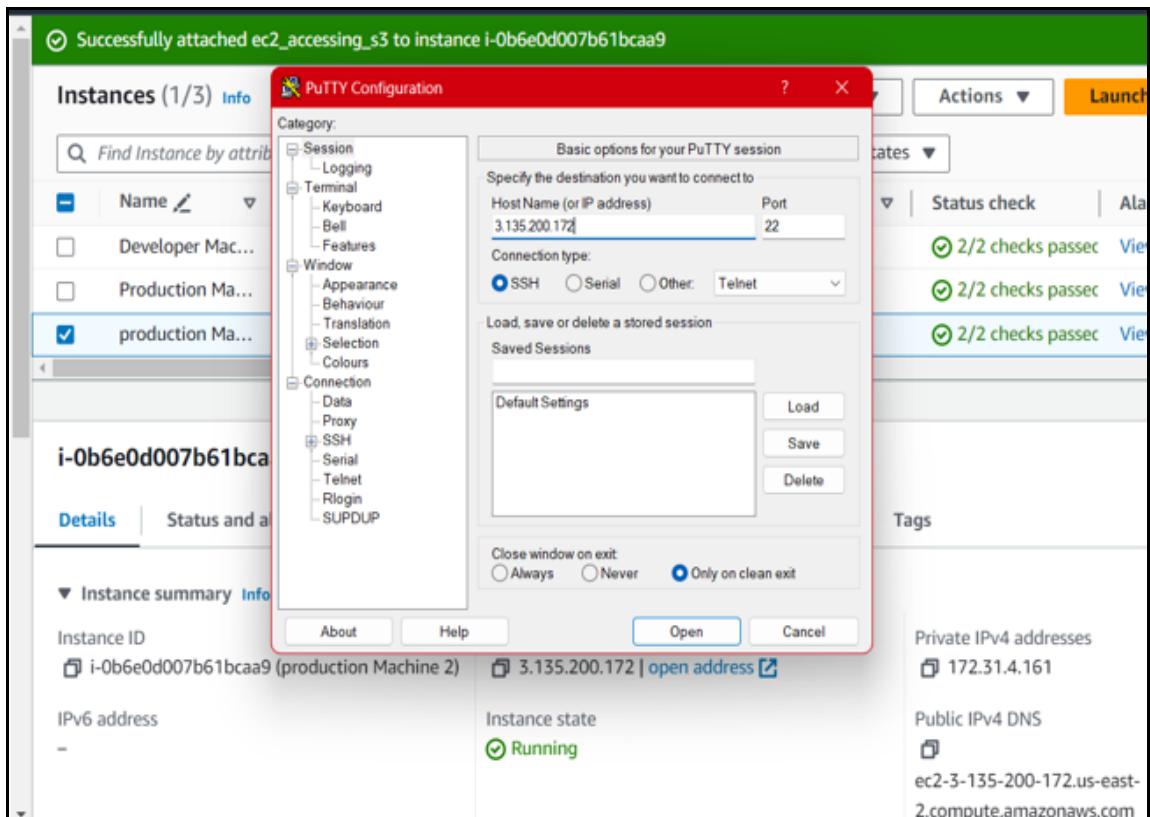
```
root@ip-172-31-1-16:~#
[ec2-user@ip-172-31-1-16 ~]$ ssh -i /path/to/keyfile ec2-user@3.138.37.9
[ec2-user@ip-172-31-1-16 ~]$ aws configure
AWS Access Key ID [None]: AKIAU6GDYZ7CTSNEYGGTI
AWS Secret Access Key [None]: dFBKZK+nRQIqlGgtTfnCupChY7aSW4BWZ06mM5E3
Default region name [None]: us-east-2
Default output format [None]: json
[ec2-user@ip-172-31-1-16 ~]$ aws s3 ls
2024-08-28 04:34:04 homebuckey
[ec2-user@ip-172-31-1-16 ~]$
```

Step 9 : Install and prepare the Code Deploy agent on webserver in 2 Production Machines.

a) Put a Production Machine 1 IP in Putty



b) Put a Production Machine 2 IP in Putty



```
root@ip-172-31-10-226:~  
└─ login as: ec2-user  
└─ Authenticating with public key "LIN"  
      #  
      ~\_\ ####_ Amazon Linux 2  
      ~~ \####\ AL2 End of Life is 2025-06-30.  
      ~~ \##/  
      ~~ V~'__->  
      ~~~ / A newer version of Amazon Linux is available!  
      ~~ . / Amazon Linux 2023, GA and supported until 2028-03-15.  
      ~/m/ / https://aws.amazon.com/linux/amazon-linux-2023/  
[ec2-user@ip-172-31-10-226 ~]$ sudo -i  
[root@ip-172-31-10-226 ~]# yum install ruby -y
```

aws codedeploy agent install

All Videos Images Shopping News Books Web More Tools

Amazon AWS Documentation
<https://docs.aws.amazon.com/latest/userguide/coded...>

Install the CodeDeploy agent
You can also install the CodeDeploy agent directly from an S3 bucket with the command line. For the recommended version to install, see Version history of the ...

AWS Docs
<https://docs.aws.amazon.com/latest/userguide/coded...>

Install the CodeDeploy agent for Amazon Linux or RHEL
AWS supports the latest minor version of the CodeDeploy agent. Currently the latest minor version is 1.7.x. To check that the service is running, run the ...

bucket-name is the name of the Amazon S3 bucket that contains the CodeDeploy Resource Kit files for your region, and **region-identifier** is the identifier for your region.

For example:

<https://aws-codedeploy-us-east-2.s3.us-east-2.amazonaws.com/latest/install>

```
[root@ip-172-31-10-226 ~]# Verifying : ruby-libs-2.0.0.648-36.amzn2.0.10.x86_64 3/9  
Verifying : rubygem-json-1.7.7-36.amzn2.0.10.x86_64 4/9  
Verifying : rubygem-io-console-0.4.2-36.amzn2.0.10.x86_64 5/9  
Verifying : rubygems-2.0.14.1-36.amzn2.0.10.noarch 6/9  
Verifying : rubygem-rdoc-4.0.0-36.amzn2.0.10.noarch 7/9  
Verifying : ruby-2.0.0.648-36.amzn2.0.10.x86_64 8/9  
Verifying : rubygem-psych-2.0.0-36.amzn2.0.10.x86_64 9/9  
  
Installed:  
  ruby.x86_64 0:2.0.0.648-36.amzn2.0.10  
  
Dependency Installed:  
  ruby-irb.noarch 0:2.0.0.648-36.amzn2.0.10  
  ruby-libs.x86_64 0:2.0.0.648-36.amzn2.0.10  
  rubygem-bigdecimal.x86_64 0:1.2.0-36.amzn2.0.10  
  rubygem-io-console.x86_64 0:0.4.2-36.amzn2.0.10  
  rubygem-json.x86_64 0:1.7.7-36.amzn2.0.10  
  rubygem-psych.x86_64 0:2.0.0-36.amzn2.0.10  
  rubygem-rdoc.noarch 0:4.0.0-36.amzn2.0.10  
  rubygems.noarch 0:2.0.14.1-36.amzn2.0.10  
  
Complete!  
[root@ip-172-31-10-226 ~]# wget https://aws-codedeploy-us-east-2.s3.us-east-2.amazonaws.com/latest/install
```

```
[root@ip-172-31-10-226 ~]# --2024-08-28 04:40:58-- https://aws-codedeploy-us-east-2.s3.us-east-2.amazonaws.com/latest/install  
Resolving aws-codedeploy-us-east-2.s3.us-east-2.amazonaws.com (aws-codedeploy-us-east-2.s3.us-east-2.amazonaws.com)... 52.219.233.58, 3.5.128.175, 3.5.130.118,  
...  
Connecting to aws-codedeploy-us-east-2.s3.us-east-2.amazonaws.com (aws-codedeploy-us-east-2.s3.us-east-2.amazonaws.com)|52.219.233.58|:443... connected.  
HTTP request sent, awaiting response... 200 OK  
Length: 19045 (19K) []  
Saving to: 'install'  
  
100%[=====] 19,045      --.-K/s   in 0.001s  
  
2024-08-28 04:40:58 (22.6 MB/s) - 'install' saved [19045/19045]  
  
[root@ip-172-31-10-226 ~]# ls -lrt  
total 20  
-rw-r--r-- 1 root root 19045 Feb 29 21:45 install  
[root@ip-172-31-10-226 ~]# chmod 777 install  
[root@ip-172-31-10-226 ~]# ls  
install  
[root@ip-172-31-10-226 ~]# ./install auto  
I, [2024-08-28T04:41:44.286734 #3423] INFO -- : Starting Ruby version check.  
I, [2024-08-28T04:41:44.287008 #3423] INFO -- : Starting update check.
```

```
root@ip-172-31-10-226:~#
[Download packages:
[Running transaction check
[Running transaction test
[Transaction test succeeded
[Running transaction
[pre hook : 1
[Checking if there is already a process named codedeploy-agent running.
[  Installing : codedeploy-agent-1.7.0-92.noarch
[post hook : 1
[Check if there is a codedeployagent config file.
[Start codedeploy-agent in post hook if this is a first install.
[  Verifying : codedeploy-agent-1.7.0-92.noarch
[Installed:
[  codedeploy-agent.noarch 0:1.7.0-92
[Complete!
[I, [2024-08-28T04:41:46.857406 #3423] INFO -- : Update check complete.
[I, [2024-08-28T04:41:46.857470 #3423] INFO -- : Stopping updater.
[root@ip-172-31-10-226 ~]# service codedeploy-agent status
The AWS CodeDeploy agent is running as PID 3501
[root@ip-172-31-10-226 ~]#
```

```
root@ip-172-31-4-161:/var/www/html/register
[Verifying : codedeploy-agent-1.7.0-92.noarch
[Installed:
[  codedeploy-agent.noarch 0:1.7.0-92
[Complete!
[I, [2024-08-28T04:45:01.429682 #3425] INFO -- : Update check complete.
[I, [2024-08-28T04:45:01.429741 #3425] INFO -- : Stopping updater.
[root@ip-172-31-4-161 ~]# service codedeploy-agent status
The AWS CodeDeploy agent is running as PID 3503
```

Step 10 : Create the code from Developer Machine.

```
root@ip-172-31-1-16:~/deploy_dir/sampleapp
└─ login as: ec2-user
└─ Authenticating with public key "LIN"
   └─
      └─ #####
         └─ Amazon Linux 2
         └─ #####\ AL2 End of Life is 2025-06-30.
         └─ \#/
         └─ V~! →
         └─ / A newer version of Amazon Linux is available!
         └─ / Amazon Linux 2023, GA and supported until 2028-03-15.
         └─ /m/ https://aws.amazon.com/linux/amazon-linux-2023/

[ec2-user@ip-172-31-1-16 ~]$ sudo -i
[root@ip-172-31-1-16 ~]# aws configure
AWS Access Key ID [None]: AKIAU6GDYZ7CTSNEYGGTI
AWS Secret Access Key [None]: dFBKZK+nRQIqlGgtTfnCupChY7aSW4BWZ06mM5E3
Default region name [None]: us-east-2
Default output format [None]: json
[root@ip-172-31-1-16 ~]# aws s3 ls
2024-08-28 04:34:04 homebuckey
[root@ip-172-31-1-16 ~]# mkdir deploy_dir
[root@ip-172-31-1-16 ~]# cd deploy_dir/
[root@ip-172-31-1-16 deploy_dir]# mkdir sampleapp
[root@ip-172-31-1-16 deploy_dir]# cd sampleapp/
[root@ip-172-31-1-16 sampleapp]# pwd
/root/deploy_dir/sampleapp
[root@ip-172-31-1-16 sampleapp]# vi index.html
```

```
<div class="footer">
  <center>
    <h1>Contact</h1>
    <h2>+91 9876543210 | btreesystems@gmail.com</h2>
    <p >
      <a class="links" href="https://www.youtube.com/@btreesystems">Youtube</a>
    <!--
      <a class="links" href="https://www.instagram.com/btreesystems/?hl=en">Instagram</a> |
      <a class="links" href="https://www.linkedin.com/company/btreesystems/?originalSubdomain=in">Linkedin</a>
    </p>
  </center>

</div>

</body>
</html>
```

```
#
#_____
#|   Amazon Linux 2
#|   #####
#|   \###\ AL2 End of Life is 2025-06-30.
#|   \#/ 
#|   V~' '-->
#|   / A newer version of Amazon Linux is available!
#|   / 
#|   / Amazon Linux 2023, GA and supported until 2028-03-15.
#|   /m' https://aws.amazon.com/linux/amazon-linux-2023/
[ec2-user@ip-172-31-1-16 ~]$ sudo -i
[root@ip-172-31-1-16 ~]# aws configure
AWS Access Key ID [None]: AKIAU6GDYZ7CTSNEYGGTI
AWS Secret Access Key [None]: dFBKZK+nRQIqlGgtTfnCupChY7aSW4BWZO6mM5E3
Default region name [None]: us-east-2
Default output format [None]: json
[root@ip-172-31-1-16 ~]# aws s3 ls
2024-08-28 04:34:04 homebuckey
[root@ip-172-31-1-16 ~]# mkdir deploy_dir
[root@ip-172-31-1-16 ~]# cd deploy_dir/
[root@ip-172-31-1-16 deploy_dir]# mkdir sampleapp
[root@ip-172-31-1-16 deploy_dir]# cd sampleapp/
[root@ip-172-31-1-16 sampleapp]# pwd
/root/deploy_dir/sampleapp
[root@ip-172-31-1-16 sampleapp]# vi index.html
[root@ip-172-31-1-16 sampleapp]# vi appspec.html
```

```
version: 0.0
os: linux
files:
- source: /index.html
  destination: /var/www/html
hooks:
  BeforeInstall:
- location: scripts/httpd_install.sh
  timeout: 300
  runas: root
- location: scripts/httpd_start.sh
  timeout: 300
  runas: root
  ApplicationStop:
- location: scripts/httpd_stop.sh
  timeout: 300
  runas: root
~
```

```
[root@ip-10-1-10-106 sampleapp]# vi index.html
[root@ip-10-1-10-106 sampleapp]# vi appspec.yaml
[root@ip-10-1-10-106 sampleapp]# mkdir scripts
[root@ip-10-1-10-106 sampleapp]# cd scripts/
[root@ip-10-1-10-106 scripts]# █
```

```
[root@ip-10-1-10-106 sampleapp]# cd scripts/
[root@ip-10-1-10-106 scripts]# touch httpd_install.sh
[root@ip-10-1-10-106 scripts]# touch httpd_start.sh
[root@ip-10-1-10-106 scripts]# touch httpd_stop.sh
[root@ip-10-1-10-106 scripts]# ls
httpd_install.sh  httpd_start.sh  httpd_stop.sh
[root@ip-10-1-10-106 scripts]# vi httpd install.sh
```

```
#!/bin/bash
yum install -y httpd
~
```

```
[root@ip-10-1-10-106 sampleapp]# cd scripts/
[root@ip-10-1-10-106 scripts]# touch httpd_install.sh
[root@ip-10-1-10-106 scripts]# touch httpd_start.sh
[root@ip-10-1-10-106 scripts]# touch httpd_stop.sh
[root@ip-10-1-10-106 scripts]# ls
httpd_install.sh  httpd_start.sh  httpd_stop.sh
[root@ip-10-1-10-106 scripts]# vi httpd_install.sh
[root@ip-10-1-10-106 scripts]# vi httpd start.sh
```

```
#!/bin/bash
systemctl start httpd
systemctl enable httpd
~
```

```
[root@ip-10-1-10-106 sampleapp]# cd scripts/
[root@ip-10-1-10-106 scripts]# touch httpd_install.sh
[root@ip-10-1-10-106 scripts]# touch httpd_start.sh
[root@ip-10-1-10-106 scripts]# touch httpd_stop.sh
[root@ip-10-1-10-106 scripts]# ls
httpd_install.sh  httpd_start.sh  httpd_stop.sh
[root@ip-10-1-10-106 scripts]# vi httpd_install.sh
[root@ip-10-1-10-106 scripts]# vi httpd_start.sh
[root@ip-10-1-10-106 scripts]# vi httpd_stop.sh
```

```
#!/bin/bash
systemctl stop httpd
systemctl disable httpd
~
```

```
[root@ip-10-1-10-106 sampleapp]# aws deploy create-application --application-name sampleapp
{
    "applicationId": "9b40548c-9923-4890-b97c-0aea87d1d03c"
```

```
[root@ip-10-1-10-106 scripts]# mkdir deploy
[root@ip-10-1-10-106 scripts]# cd deploy
[root@ip-10-1-10-106 deploy]# mkdir sampleapp
[root@ip-10-1-10-106 deploy]# ls
sampleapp
[root@ip-10-1-10-106 deploy]# rmdir sampleapp
[root@ip-10-1-10-106 deploy]# ls
[root@ip-10-1-10-106 deploy]# mkdir sample
[root@ip-10-1-10-106 deploy]# cd sample
[root@ip-10-1-10-106 sample]# pwd
/root/deploy_dir/sampleapp/scripts/deploy/sample
[root@ip-10-1-10-106 sample]# vi index.html
```

The screenshot shows a terminal window with the following content:

```
root@ip-10-1-10-106:~/deploy_dir/sampleapp/scripts/deploy/sample
border-inline-color: black;
}

.tabs{
margin-left: 90px;
}
.naming{
border-radius: 10px;
background-color: black;
color: white;
}
</style>
</head>
<body>
<div class="register">
<center>
<h1>BTREE SYSTEM</h1>
<h4>Training | Career Building | Freshers Guide</h4>
<p>Empowering young students to level up their skills through training in software development technologies <a href="#">More</a></p>
<hr>
</center>
<center>
<h2>Registration Form</h2>
<form class =tabs>
<table class="table">
<tr>
<td >Name:</td>
<td><input class="names" type="text" placeholder="Enter your name"></td>
</tr>
```

At the bottom of the terminal window, there is a status bar with the text "INSERT" and some other information.

```
[root@ip-10-1-10-106 sample]# vi appspec.yaml
[root@ip-10-1-10-106 sample]# aws deploy push --application-name sample --s3-location s3://homebuckey/sample.zip
/root/deploy_dir/sampleapp/scripts/deploy/sample/appspec.yml was not found
[root@ip-10-1-10-106 sample]# mv appspec.yaml appspec.yml
```

```
root@ip-172-31-1-16:~/deploy_dir/sampleapp/scripts/deploy/sample

version: 0.0
os: linux
files:
- source: /index.html
  destination: /var/www/html/register
hooks:
  BeforeInstall:
  - location: scripts/httpd_install.sh
    timeout: 300
    runas: root
  - location: scripts/httpd_start.sh
    timeout: 300
    runas: root
  ApplicationStop:
  - location: scripts/httpd_stop.sh
    timeout: 300
    runas: root
```

```
[root@ip-10-1-10-106 sample]# mkdir scripts
[root@ip-10-1-10-106 sample]# cd scripts/
[root@ip-10-1-10-106 scripts]# vi httpd_install.sh
[root@ip-10-1-10-106 scripts]# vi httpd_start.sh
[root@ip-10-1-10-106 scripts]# vi httpd_stop.sh
[root@ip-10-1-10-106 scripts]# cd ..
```

Step 11 : Create Code Deploy Application and Push the code to S3 bucket from Developer machine.

```
[root@ip-10-1-10-106 sampleapp]# mv appspec.yaml appspec.yml  
[root@ip-10-1-10-106 sampleapp]# ls  
appspec.yml index.html scripts  
[root@ip-10-1-10-106 sampleapp]# aws deploy push --application-name sampleapp --s3-location s3://homebuckey/sampleapp.zip
```

To deploy with this revision, run:

```
aws deploy create-deployment --application-name sampleapp --s3-location bucket=homebuckey,key=sampleapp.zip,bundleType=zip,eTag=cdb94f395d5d3cd1c2d9d8c79ae73a3b --deployment-group-name <deployment-group-name> --deployment-config-name <deployment-config-name> --description <description>  
[root@ip-10-1-10-106 sampleapp]#
```

```
[root@ip-10-1-10-106 sample]# aws deploy push --application-name sample --s3-location s3://homebuckey/sample.zip
```

/root/deploy_dir/sampleapp/scripts/deploy/sample/appspec.yml was not found

```
[root@ip-10-1-10-106 sample]# mv appspec.yaml appspec.yml
```

```
[root@ip-10-1-10-106 sample]# aws deploy push --application-name sample --s3-location s3://homebuckey/sample.zip
```

To deploy with this revision, run:

```
aws deploy create-deployment --application-name sample --s3-location bucket=homebuckey,key=sample.zip,bundleType=zip,Tag=a9684a8c21ae4ba26c340cbe0dcbe8e4,version=0TwI8laVxBsgXtv148ZiCQQS02aKbAAF --deployment-group-name <deployment-group-name> --deployment-config-name <deployment-config-name> --description <description>  
[root@ip-10-1-10-106 sample]#
```

Step 12 : Create Deployment Group to include webserver.

Application details

Name	sampleapp	Compute platform	EC2/On-premises
------	-----------	------------------	-----------------

Deployments **Deployment groups** Revisions

Deployment groups

Name	Status	Last attempted d...	Last successful de...	Trigger count
No deployment groups				

[View details](#) [Edit](#) [Create deployment group](#)

Create deployment group

Application

Application
sampleapp
Compute type
EC2/On-premises

Deployment group name

Enter a deployment group name
 100 character limit

Service role

Enter a service role
Enter a service role with CodeDeploy permissions that grants AWS CodeDeploy access to your target instances.

[X](#)

Deployment type

Choose how to deploy your application

In-place
Updates the instances in the deployment group with the latest application revisions. During a deployment, each instance will be briefly taken offline for its update

Blue/green
Replaces the instances in the deployment group with new instances and deploys the latest application revision to them. After instances in the replacement environment are registered with a load balancer, instances from the original environment are deregistered and can be terminated.

Environment configuration

Select any combination of Amazon EC2 Auto Scaling groups, Amazon EC2 instances, and on-premises instances to add to this deployment

Amazon EC2 Auto Scaling groups

Amazon EC2 instances

1 unique matched instance. [Click here for details](#)

You can add up to three groups of tags for EC2 instances to this deployment group.

One tag group: Any instance identified by the tag group will be deployed to.

Multiple tag groups: Only instances identified by all the tag groups will be deployed to.

Tag group 1

Key

Name X

Value - optional

Production Machine X

[Remove tag](#)

[Add tag](#)

[+ Add tag group](#)

Agent configuration with AWS Systems Manager [Info](#)



We recommend configuring your CodeDeploy Agent install and updates with AWS Systems Manager.

AWS Systems Manager provides more control over CodeDeploy Agent version updates and rollbacks than installing using other methods. [Learn more](#)

Install AWS CodeDeploy Agent

Never

Only once

Now and schedule updates

Deployment settings

Deployment configuration

Choose from a list of default and custom deployment configurations. A deployment configuration is a set of rules that determines how fast an application is deployed and the success or failure conditions for a deployment.

CodeDeployDefault.AllAtOnce



or

[Create deployment configuration](#)

Load balancer

Select a load balancer to manage incoming traffic during the deployment process. The load balancer blocks traffic from each instance while it's being deployed to and allows traffic to it again after the deployment succeeds.

Enable load balancing

► Advanced - optional

[Cancel](#)

[Create deployment group](#)

Application

Application
sampleapp
Compute type
EC2/On-premises

Deployment group name

Enter a deployment group name

regis

100 character limit

Environment configuration

Select any combination of Amazon EC2 Auto Scaling groups, Amazon EC2 instances, and on-premises instances to add to this deployment

Amazon EC2 Auto Scaling groups

Amazon EC2 instances

1 unique matched instance. [Click here for details](#)

You can add up to three groups of tags for EC2 instances to this deployment group.

One tag group: Any instance identified by the tag group will be deployed to.

Multiple tag groups: Only instances identified by all the tag groups will be deployed to.

Tag group 1

Key

Value - optional

Name

production Machine 2

X

Remove tag

Add tag

+ Add tag group

Step 13 : Create Deployment to push the code to the webserver.

Search: ec2_deployment X

Compute platform
EC2/On-premises

Deployment type
In-place

Managed hook execution role
The IAM role used by the CodeDeploy Managed Hook function to perform actions. [Edit Managed Hook execution](#)

Revision type
 My application is stored in Amazon S3 My application is stored in GitHub

Revision location
Copy and paste the Amazon S3 bucket where your revision is stored
 X
s3://bucket-name/folder/object.[zip|tar|tgz]

Revision file type
 ▼

Developer Tools > CodeDeploy > Deployments > d-PNPC3WPR6

d-PNPC3WPR6

Deployment status

Installing application on your instances

1 of 1 instances updated✔ Succeeded100%

Deployment type

In-place

Managed hook execution role

The IAM role used by the CodeDeploy Managed Hook function to perform actions. [Edit Managed Hook execution role](#).

Revision type

My application is stored in Amazon S3

My application is stored in GitHub

Revision location

Copy and paste the Amazon S3 bucket where your revision is stored

s3://homebuckey/sample.zip?eTag=ec8e3f3cf2fa3f9ee520fb95638fa7b X

s3://bucket-name/folder/object.[zip|tar|tgz]

Revision file type

.zip

Application details

Name

sampleapp

Compute platform

EC2/On-premises

Deployments

Deployment groups

Revisions

Deployment groups

[View details](#)

[Edit](#)

[Create deployment group](#)



< 1 > @

Name	Status	Last attempted d...	Last successful de...	Trigger count
<input type="radio"/> regis	✓ Succeeded	Aug 28, 2024 2:18...	Aug 28, 2024 2:18...	0
<input type="radio"/> ec2_deployment	✓ Succeeded	Aug 28, 2024 12:1...	Aug 28, 2024 12:1...	0

Step 14 : Create App Load Balancer for path based routing and Auto-Scaling Group.

Create a 2 Target Group

[EC2](#) > Target groups

Target groups [Info](#)

[Create target group](#)

Filter target groups

Name	ARN	Port	Protocol	Target type
No target groups You don't have any target groups in us-east-2				

IP addresses

- Supports load balancing to VPC and on-premises resources.
- Facilitates routing to multiple IP addresses and network interfaces on the same instance.
- Offers flexibility with microservice based architectures, simplifying inter-application communication.
- Supports IPv6 targets, enabling end-to-end IPv6 communication, and IPv4-to-IPv6 NAT.

Lambda function

- Facilitates routing to a single Lambda function.
- Accessible to Application Load Balancers only.

Application Load Balancer

- Offers the flexibility for a Network Load Balancer to accept and route TCP requests within a specific VPC.
- Facilitates using static IP addresses and PrivateLink with an Application Load Balancer.

Target group name

hometarget1

A maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen.

Protocol : Port

Choose a protocol for your target group that corresponds to the Load Balancer type that will route traffic to it. Some protocols now include anomaly detection for the targets and you can set mitigation options once your target group is created. This choice cannot be changed after creation

HTTP 80

Health checks

The associated load balancer periodically sends requests, per the settings below, to the registered targets to

Health check protocol

HTTP

Health check path

Use the default path of "/" to perform health checks on the root, or specify a custom path if preferred.

/index.html

Up to 1024 characters allowed.

Available instances (1/3)				
	Instance ID	Name	State	Security groups
<input checked="" type="checkbox"/>	i-0ef3bfce030904732	Production Machine	Running	linsg
<input type="checkbox"/>	i-0b6e0d007b61bcaa9	production Machine 2	Running	linsg
<input type="checkbox"/>	i-067cccfb49c5a4857	Developer Machine	Running	linsg

O selected

Ports for the selected instances
Ports for routing traffic to the selected instances.

80

1-65535 (separate multiple ports with commas)

Include as pending below

1 selection is now pending below. Include more or register targets when ready.

Review targets

Targets (1)

<input type="checkbox"/> Filter targets	Remove all pending					
Instance ID	Name	Port	State	Security groups	Zone	Private IP
i-0ef3bfce030904732	Production Machine	80	Running	linsg	us-east-2a	172.31.10

Target group name

A maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen.

Protocol : Port

Choose a protocol for your target group that corresponds to the Load Balancer type that will route traffic to it. Some protocols now include anomaly detection for the targets and you can set mitigation options once your target group is created. This choice cannot be changed after creation

HTTP	80
------	----

1-65535

Health check protocol

HTTP

Health check path

Use the default path of "/" to perform health checks on the root, or specify a custom path if preferred.

Up to 1024 characters allowed.

Advanced health check settings

Filter instances

Instance ID	Name	State	Security groups
i-0ef3bfce030904732	Production Machine	Running	linsg
<input checked="" type="checkbox"/> i-0b6e0d007b61bcaa9	production Machine 2	Running	linsg
<input type="checkbox"/> i-067cccfb49c5a4857	Developer Machine	Running	linsg

1 selected

Ports for the selected instances
Ports for routing traffic to the selected instances.

80
1-65535 (separate multiple ports with commas)

Include as pending below

1 selection is now pending below. Include more or register targets when ready.

Review targets

Targets (1)

Remove all pending

Filter targets

Show only pending

Instance ID	Name	Port	State	Security groups	Zone	Private IP
i-0b6e0d007b61bcaa9	production Machine 2	80	Running	linsg	us-east-2a	172.31

1 pending

Create target group

[EC2](#) > Target groups

Target groups (2) [Info](#)

Create target group

Filter target groups

Name	ARN	Port	Protocol	Target type
<input checked="" type="checkbox"/> registrarget	<input type="checkbox"/> arn:aws:elasticloadbalancing:us-east-2:123456789012:targetgroup/registrarget/1234567890123456	80	HTTP	Instance
<input type="checkbox"/> hometarget	<input type="checkbox"/> arn:aws:elasticloadbalancing:us-east-2:123456789012:targetgroup/hometarget/1234567890123456	80	HTTP	Instance

Create a APP Load Balancer for path based routing

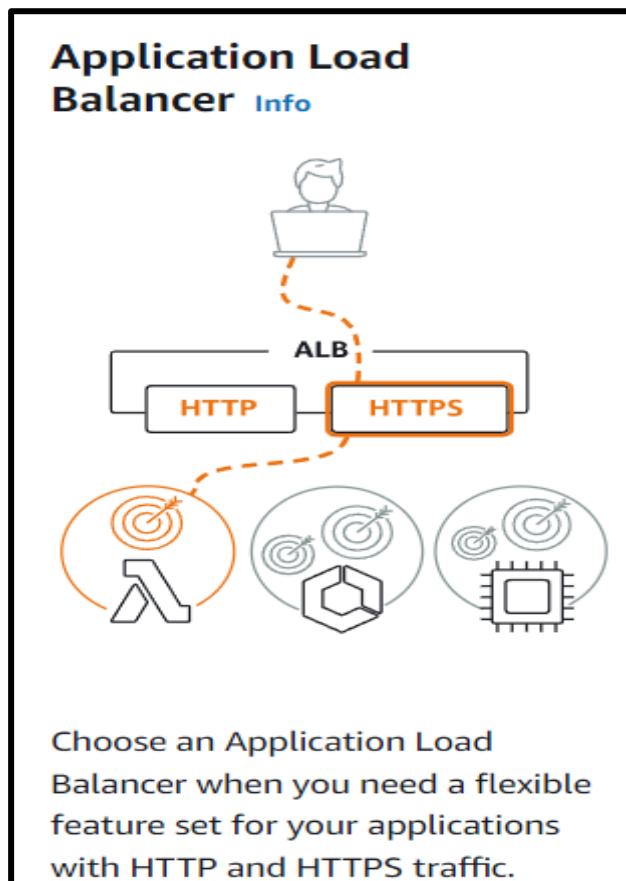
EC2 > Load balancers

Load balancers

Elastic Load Balancing scales your load balancer capacity automatically in response to changes in incoming traffic.

Filter load balancers

Name	DNS name	State	VPC ID	Availability Zones
No load balancers You don't have any load balancers in us-east-1.				



EC2 > Load balancers > Create Application Load Balancer

Create Application Load Balancer

The Application Load Balancer distributes incoming HTTP and HTTPS traffic across multiple targets such as Amazon EC2 instances, AWS Lambda functions, and AWS API Gateways. You can route traffic to targets based on request attributes. When the load balancer receives a connection request, it evaluates the listener rules in priority order to determine which target group to forward the request to. If no rule applies, or if no target is available in the target group, the load balancer returns an error response. If no target is available in all target groups, and no default error response is defined, the load balancer returns a 503 error response.

▶ How Application Load Balancers work

Basic configuration

Load balancer name

Name must be unique within your AWS account and can't be changed after the load balancer is created.

AppLB

A maximum of 32 alphanumeric characters including hyphens are allowed, but the name must not begin or end with a hyphen.

Scheme | **Info**

Scheme can't be changed after the load balancer is created.

Internet-facing

An internet-facing load balancer routes requests from clients over the internet to targets. Requires a public subnet. [Learn more](#)

Internal

An internal load balancer routes requests from clients to targets using private IP addresses. Compatible with the IPv4 and Dualstack IP address types.

Security groups Info

A security group is a set of firewall rules that control the traffic to your load balancer. Select an existing security group or create a new one.

Security groups

Select up to 5 security groups

http&https

sg-0603609b6cb12b51b VPC: vpc-0dcac49e5fd20028f



Listeners and routing Info

A listener is a process that checks for connection requests using the port and protocol you configure. The rules that you define for a listener determine how the load balancer routes traffic to its registered targets.

▼ Listener HTTP:80

Protocol

Port

Default action Info

HTTP

: 80

1-65535

Forward to

hometarget

Target type: Instance, IPv4

HTTP

[Create target group](#)

[EC2](#) > Load balancers

Load balancers (1/1)

Elastic Load Balancing scales your load balancer capacity automatically in response to changes in incoming traffic.

Filter load balancers

< 1 >

Name	DNS name	State	VPC ID	Availability Zones
AppLB	AppLB-1275407115.us-ea...	Active	vpc-0dcac49e5fd20028f	2 Availability Zones

[Listeners and rules](#) [Network mapping](#) [Resource map - new](#) [Security](#) [Monitoring](#) [Integrations](#) [Attributes](#)

Listeners and rules (1/1) Info

A listener checks for connection requests on its configured protocol and port. Traffic received by the listener is routed according to the rules you define.

Filter listeners

Protocol:Port	Default action	Rules	Actions
HTTP:80	Forward to target group <ul style="list-style-type: none">hometarget: 1 (100%)Target group stickiness: Off	1 rule	Edit listener Add SSL certificates for SNI Manage tags Delete listener

Default actions | [Info](#)

The default action is used if no other rules apply. Choose the default action for traffic on this listener.

Routing actions

Forward to target groups

Redirect to URL

Return fixed response

Forward to target group | [Info](#)

Choose a target group and specify routing weight or [Create target group](#).

Target group

Weight Percent

hometarget

HTTP ▾



1

50%

[Remove](#)

Target type: Instance, IPv4

registertarget

HTTP ▾



1

50%

[Remove](#)

Target type: Instance, IPv4

[Add target group](#)

You can add up to 3 more target groups.

Listener rules (1) | [Info](#)

Rule limits



[Actions ▾](#)

[Add rule](#)

Traffic received by the listener is routed according to the default action and any additional rules. Rules are evaluated in priority order from the lowest value to the highest value.

Filter rules



Name tag

Priority ▲

Conditions (If)

Actions (Then)

Default

Last

(default)

If no other rule applies

Forward to target group

- [hometarget](#): 1 (50%)
- [registertarget](#): 1 (50%)
- Target group stickiness: Off

Create a Template

EC2 > Launch templates > Create launch template

Create launch template

Creating a launch template allows you to create a saved instance configuration that can be reused, shared and launched at a later time. Templates can have multiple versions.

Launch template name and description

Launch template name - *required*

Must be unique to this account. Max 128 chars. No spaces or special characters like '&', '*', '@'.

Template version description

Max 255 chars

Auto Scaling guidance | [Info](#)
Select this if you intend to use this template with EC2 Auto Scaling
 Provide guidance to help me set up a template that I can use with EC2 Auto Scaling

Recents Quick Start

Don't include in launch template Recently launched Currently in use

Browse more AMIs
Including AMIs from AWS, Marketplace and the Community

Amazon Machine Image (AMI)

amzn2-ami-kernel-5.10-hvm-2.0.20240816.0-x86_64-gp2
ami-0e1a3a59369c81682
2024-08-17T04:11:27.000Z Architecture: 64-bit (x86) Virtualization: hvm ENA enabled: true Root device type: ebs

Description
Amazon Linux 2 Kernel 5.10 AMI 2.0.20240816.0 x86_64 HVM gp2

Architecture AMI ID
x86_64 ami-0e1a3a59369c81682

▼ Instance type [Info](#) | [Get advice](#) Advanced

Instance type

t2.micro Free tier eligible
Family: t2 1 vCPU 1 GiB Memory Current generation: true
On-Demand Linux base pricing: 0.0116 USD per Hour
On-Demand SUSE base pricing: 0.0116 USD per Hour
On-Demand Windows base pricing: 0.0162 USD per Hour
On-Demand RHEL base pricing: 0.026 USD per Hour

All generations [Compare instance types](#)

Additional costs apply for AMIs with pre-installed software

▼ Key pair (login) [Info](#)

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name

LIN

[Create new key pair](#)

Create a Auto scaling Group

Amazon EC2 Auto Scaling

helps maintain the availability of your applications

Auto Scaling groups are collections of Amazon EC2 instances that enable automatic scaling and fleet management features. These features help you maintain the health and availability of your applications.

[Create Auto Scaling group](#)

Choose launch template [Info](#)

Specify a launch template that contains settings common to all EC2 instances that are launched by this Auto Scaling group.

Name

Auto Scaling group name
Enter a name to identify the group.
ASG

Must be unique to this account in the current Region and no more than 255 characters.

Name

Auto Scaling group name
Enter a name to identify the group.
ASG

Must be unique to this account in the current Region and no more than 255 characters.

Launch template [Info](#)

For accounts created after May 31, 2023, the EC2 console only supports creating Auto Scaling groups with launch templates. Creating Auto Scaling groups with launch configurations is not recommended but still available via the CLI and API until December 31, 2023.

Launch template
Choose a launch template that contains the instance-level settings, such as the Amazon Machine Image (AMI), instance type, key pair, and security groups.
autoscaletemp

Choose a Hometarget Group in APP Load Balancer

Load balancing Info

Use the options below to attach your Auto Scaling group to an existing load balancer, or to a new load balancer that you define.

No load balancer
Traffic to your Auto Scaling group will not be fronted by a load balancer.

Attach to an existing load balancer
Choose from your existing load balancers.

Attach to a new load balancer
Quickly create a basic load balancer to attach to your Auto Scaling group.

Attach to an existing load balancer

Select the load balancers that you want to attach to your Auto Scaling group.

Choose from your load balancer target groups
This option allows you to attach Application, Network, or Gateway Load Balancers.

Choose from Classic Load Balancers

Existing load balancer target groups

Only instance target groups that belong to the same VPC as your Auto Scaling group are available for selection.

Select target groups ▼ 

hometarget | HTTP X
Application Load Balancer: APPLB

VPC Lattice integration options Info

To improve networking capabilities and scalability, integrate your Auto Scaling group with VPC Lattice. VPC Lattice facilitates communications between AWS services and helps you connect and manage your applications across compute services in AWS.

Select VPC Lattice service to attach

No VPC Lattice service
VPC Lattice will not manage your Auto Scaling group's network access and connectivity with other services.

Attach to VPC Lattice service
Incoming requests associated with specified VPC Lattice target groups will be routed to your Auto Scaling group.

Create new VPC Lattice service 

EC2 health checks

 Always enabled

Additional health check types - optional Info

Turn on Elastic Load Balancing health checks Recommended
Elastic Load Balancing monitors whether instances are available to handle requests. When it reports an unhealthy instance, EC2 Auto Scaling can replace it on its next periodic check.

 EC2 Auto Scaling will start to detect and act on health checks performed by Elastic Load Balancing. To avoid unexpected terminations, first verify the settings of these health checks in the [Load Balancer console](#) 

Turn on VPC Lattice health checks
VPC Lattice can monitor whether instances are available to handle requests. If it considers a target as failed a health check, EC2 Auto Scaling replaces it after its next periodic check.

Additional settings

Monitoring | [Info](#)

Enable group metrics collection within CloudWatch

Default instance warmup | [Info](#)

The amount of time that CloudWatch metrics for new instances do not contribute to the group's aggregated instance metrics, as their usage data is not reliable yet.

Enable default instance warmup

[Cancel](#)

[Skip to review](#)

[Previous](#)

[Next](#)

Group size [Info](#)

Set the initial size of the Auto Scaling group. After creating the group, you can change its size to meet demand, either manually or by using automatic scaling.

Desired capacity type

Choose the unit of measurement for the desired capacity value. vCPUs and Memory(GiB) are only supported for mixed instances groups configured with a set of instance attributes.

Units (number of instances)



Desired capacity

Specify your group size.

3



Scaling [Info](#)

You can resize your Auto Scaling group manually or automatically to meet changes in demand.

Scaling limits

Set limits on how much your desired capacity can be increased or decreased.

Min desired capacity

1

Max desired capacity

3

Equal or less than desired capacity

Equal or greater than desired capacity

Automatic scaling - optional

Choose whether to use a target tracking policy | [Info](#)

You can set up other metric-based scaling policies and scheduled scaling after creating your Auto Scaling group.

No scaling policies

Your Auto Scaling group will remain at its initial size and will not dynamically resize to meet demand.

Target tracking scaling policy

Choose a CloudWatch metric and target value and let the scaling policy adjust the desired capacity in proportion to the metric's value.

Scaling policy name

Target Tracking Policy

Metric type | [Info](#)

Monitored metric that determines if resource utilization is too low or high. If using EC2 metrics, better scaling performance.

Average CPU utilization ▾

Target value

80

Instance warmup | [Info](#)

300 seconds

Disable scale in to create only a scale-out policy

Instance maintenance policy [Info](#)

Control your Auto Scaling group's availability during instance replacement events. This includes health checks, instance refreshes, maximum instance lifetime features and events that happen automatically to keep your group balanced, called rebalancing events.

Choose a replacement behavior depending on your availability requirements

Mixed behavior

No policy

For rebalancing events, new instances will launch before terminating others. For all other events, instances terminate and launch at the same time.

Prioritize availability

Launch before terminating

Launch new instances and wait for them to be ready before terminating others. This allows you to go above your desired capacity by a given percentage and may temporarily increase costs.

Control costs

Terminate and launch

Terminate and launch instances at the same time. This allows you to go below your desired capacity by a given percentage and may temporarily reduce availability.

Flexible

Custom behavior
Set custom values for the minimum and maximum amount of available capacity. This gives you greater flexibility in setting how far below and over your desired capacity EC2 Auto Scaling goes when replacing instances.

Set healthy percentage

Set the maximum percentage of your desired capacity that can be in service during instance replacement events.

Min

100

Max

110

% of 3 instances

i Your group's scaling limits will be temporarily exceeded based on current calculations.

► View capacity during replacements based on your desired capacity

Add notifications - optional [Info](#)

Send notifications to SNS topics whenever Amazon EC2 Auto Scaling launches or terminates the EC2 instances in your Auto Scaling group.

▼ Notification 1

[Remove](#)

SNS Topic

Choose an SNS topic to use to send notifications

sns_notif (ariharasudhanr1@gmail.com, +1 more) ▾

[Create a topic](#)

Event types

Notify subscribers whenever instances

- Launch
- Terminate
- Fail to launch
- Fail to terminate

[Add notification](#)

[Cancel](#)

[Skip to review](#)

[Previous](#)

[Next](#)

Step 5: Add notifications

Notifications	
Notification 1 SNS Topic sns_notif (ariharasudhanr1@gmail.com, +1 more)	Event types <input checked="" type="checkbox"/> Launch <input checked="" type="checkbox"/> Terminate <input checked="" type="checkbox"/> Fail to launch <input checked="" type="checkbox"/> Fail to terminate

Step 6: Add tags

Tags (0)		
Key	Value	Tag new instances
No tags		

Cancel Previous **Create Auto Scaling group**

[EC2](#) > Auto Scaling groups

Auto Scaling groups (1/1) Info		C	Launch configurations	Launch templates	Actions ▾	Create Auto Scaling group
<input type="text"/> Search your Auto Scaling groups						
<input checked="" type="checkbox"/>	Name	▼	Launch template/configuration	▼	Instances	▼
<input checked="" type="checkbox"/>	ASG		autoscaletemp Version Default		0	Updating capacity... 3

[h](#) [Alt+S]

Instances (1/13) Info		Last updated 1 minute ago	C	Connect	Instance state ▾	Actions ▾	Launch instances ▾	G
<input type="text"/> Find Instance by attribute or tag (case-sensitive)		All states ▾	< 1 > G					
<input type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Available	
<input type="checkbox"/>	i-00fa93e9298f7c5d5	(Pending Q Q)	t2.micro	-	View alarms +	us-east-1		
<input type="checkbox"/>	i-0d24d42edf3a673bd	(Running Q Q)	t2.micro	2/2 checks passed	View alarms +	us-east-1		
<input checked="" type="checkbox"/>	Production Ma...	(Running Q Q)	t2.micro	2/2 checks passed	View alarms +	us-east-1		
<input type="checkbox"/>	i-0ab548abbca014255	(Terminated Q Q)	t2.micro	-	View alarms +	us-east-1		
<input type="checkbox"/>	i-0ff7f8bc3135e4f93	(Terminated Q Q)	t2.micro	-	View alarms +	us-east-1		

AWS Notifications

Service: AWS Auto Scaling Time: 2024-08-26T11:25:26.227Z RequestId: 90964639-a6a5-053c-e424-1daded383581 Event: autoscaling:EC2_INSTANCE_TERMINATE

22

AWS Notifications

Service: AWS Auto Scaling Time: 2024-08-26T13:26:58.748Z RequestId: 4616463b-6198-f892-3ee7-24a63dc57377 ActivityId: 4616463b-6198-f892-3ee7-24a...

AWS Notifications <no-reply@sns.amazonaws.com>

to me ▾

Service: AWS Auto Scaling
Time: 2024-08-26T13:32:16.711Z
RequestId: 71f6463b-77b5-ce9e-2aba-548fc8ab0406
Event: autoscaling:EC2_INSTANCE_TERMINATE
AccountId: 339712987077
AutoScalingGroupName: homeAGS
AutoScalingGroupARN: arn:aws:autoscaling:us-east-2:339712987077:autoScalingGroup:05d469b8-21bb-45d9-930d-2554675e2cd2:autoScalingGroupName/homeAGS
ActivityId: 71f6463b-77b5-ce9e-2aba-548fc8ab0406
Description: Terminating EC2 instance: i-039259605a0801539
Cause: At 2024-08-26T13:26:34Z an instance was taken out of service in response to an ELB system health check failure.
StartTime: 2024-08-26T13:26:34.611Z

Messages (10)

View details Delete

Search messages

ID	Sent	Size	Receive count
17e3cfa9-1971-4c45-b6d2-7cad6d454ff9	2024-08-26T16:43+05:30	910 bytes	1
3010cbc6-4316-41b7-82ac-9e6dcfd3329f	2024-08-26T16:50+05:30	910 bytes	1
7a65d0d7-753d-4dee-94ca-1704897cb779	2024-08-26T16:56+05:30	910 bytes	1
3e167b36-fd28-4b11-a8d7-03b1355d8f3e	2024-08-26T16:58+05:30	950 bytes	1
3a08f1ca-786f-4824-a538-f6c10129b515	2024-08-26T17:01+05:30	911 bytes	1
513a7643-4757-4e69-8435-e997c2b13859	2024-08-26T17:21+05:30	910 bytes	1
c2c927a3-0dc0-41cf-9c1f-cd3bf594677e	2024-08-26T17:27+05:30	911 bytes	1
f00c44e6-83bb-4768-a199-faabdf6d26b9	2024-08-26T17:56+05:30	911 bytes	1
5f34acce-6719-4ae3-9386-1ee812271867	2024-08-26T18:15+05:30	910 bytes	1
cf2eac2b-9df5-4e48-a12e-d26889c677c3	2024-08-26T18:26+05:30	911 bytes	1

Message: 17e3cfa9-1971-4c45-b6d2-7cad6d454ff9

Body Attributes Details

{"Origin": "EC2", "Destination": "AutoScalingGroup", "Progress": 50, "AccountId": "339712987077", "Description": "Launching a new EC2 instance: i-0ff7f8bc3135e4f93", "RequestId": "45464639-90b4-8844-7c01-1343dd0fb92b", "EndTime": "2024-08-26T11:13:41.597Z", "AutoScalingGroupARN": "arn:aws:autoscaling:us-east-1:4768-a199-faabdf6d26b9", "StartTime": "2024-08-26T11:25:26.227Z", "Size": 911 bytes}

Done

Step 15 : Create Cloud Front with App LB.

[CloudFront](#) > [Distributions](#) > [Create](#)

Create distribution

Origin

Origin domain
Choose an AWS origin, or enter your origin's domain name.
 [X](#)

Protocol [Info](#)
 HTTP only
 HTTPS only
 Match viewer

HTTP port
Enter your origin's HTTP port. The default is port 80.

Path pattern [Info](#)

Compress objects automatically [Info](#)
 No
 Yes

Viewer

Viewer protocol policy
 HTTP and HTTPS
 Redirect HTTP to HTTPS
 HTTPS only

Allowed HTTP methods
 GET, HEAD
 GET, HEAD, OPTIONS
 GET, HEAD, OPTIONS, PUT, POST, PATCH, DELETE

Cache HTTP methods
GET and HEAD methods are cached by default.
 OPTIONS

Restrict viewer access
If you restrict viewer access, viewers must use CloudFront signed URLs or signed cookies to access your content.
 No
 Yes

Web Application Firewall (WAF) [Info](#)

Enable security protections
Keep your application secure from the most common web threats and security vulnerabilities using AWS WAF. Blocked requests are stopped before they reach your web servers.

Do not enable security protections
Select this option if your application does not need security protections from AWS WAF.

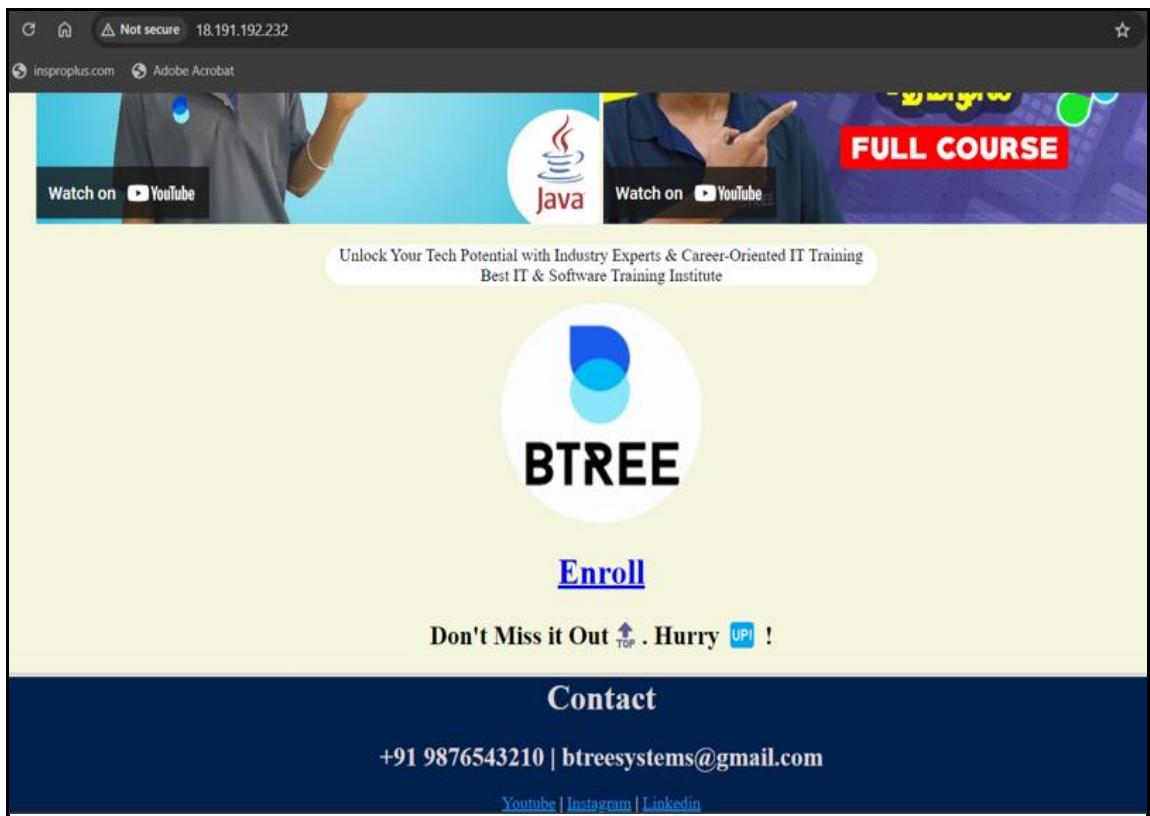
Settings

Price class [Info](#)
Choose the price class associated with the maximum price that you want to pay.
 Use all edge locations (best performance)
 Use only North America and Europe
 Use North America, Europe, Asia, Middle East, and Africa

Alternate domain name (CNAME) - optional
Add the custom domain names that you use in URLs for the files served by this distribution.
[Add item](#)

[Distributions \(5\)](#) [Info](#)										
[C](#) [Enable](#) [Disable](#) [Delete](#) [Create distribution](#)										
[Search all distributions](#) [X](#) [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [9](#) [10](#) [11](#) [12](#) [13](#) [14](#) [15](#) [16](#) [17](#) [18](#) [19](#) [20](#) [21](#) [22](#) [23](#) [24](#) [25](#) [26](#) [27](#) [28](#) [29](#) [30](#) [31](#) [32](#) [33](#) [34](#) [35](#) [36](#) [37](#) [38](#) [39](#) [40](#) [41](#) [42](#) [43](#) [44](#) [45](#) [46](#) [47](#) [48](#) [49](#) [50](#) [51](#) [52](#) [53](#) [54](#) [55](#) [56](#) [57](#) [58](#) [59](#) [60](#) [61](#) [62](#) [63](#) [64](#) [65](#) [66](#) [67](#) [68](#) [69](#) [70](#) [71](#) [72](#) [73](#) [74](#) [75](#) [76](#) [77](#) [78](#) [79](#) [80](#) [81](#) [82](#) [83](#) [84](#) [85](#) [86](#) [87](#) [88](#) [89](#) [90](#) [91](#) [92](#) [93](#) [94](#) [95](#) [96](#) [97](#) [98](#) [99](#) [100](#) [101](#) [102](#) [103](#) [104](#) [105](#) [106](#) [107](#) [108](#) [109](#) [110](#) [111](#) [112](#) [113](#) [114](#) [115](#) [116](#) [117](#) [118](#) [119](#) 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Step 16 : Browse the Website.



The screenshot shows a registration form titled 'Registration Form' under the heading 'BTREE SYSTEMS'. The form includes fields for Name, Email, Qualification, Gender (Male/Female), Passed Out year, Course (Python Programming), and Upload your Resume. Buttons for 'Reset' and 'Submit' are at the bottom. Below the form, a link to 'Home' is visible.

BTREE SYSTEMS

Training | Career Building | Freshers Guide

Empowering young students to level up their skills through training in software development technologies 🎓

Registration Form

Name:

Email:

Qualification:

Gender: Male Female

Passed Out year:

Course:

Upload your Resume: No file chosen

[Home](#)

Not secure applb-78095747.us-east-2.elb.amazonaws.com

Java FULL COURSE

Unlock Your Tech Potential with Industry Experts & Career-Oriented IT Training
Best IT & Software Training Institute

BTREE

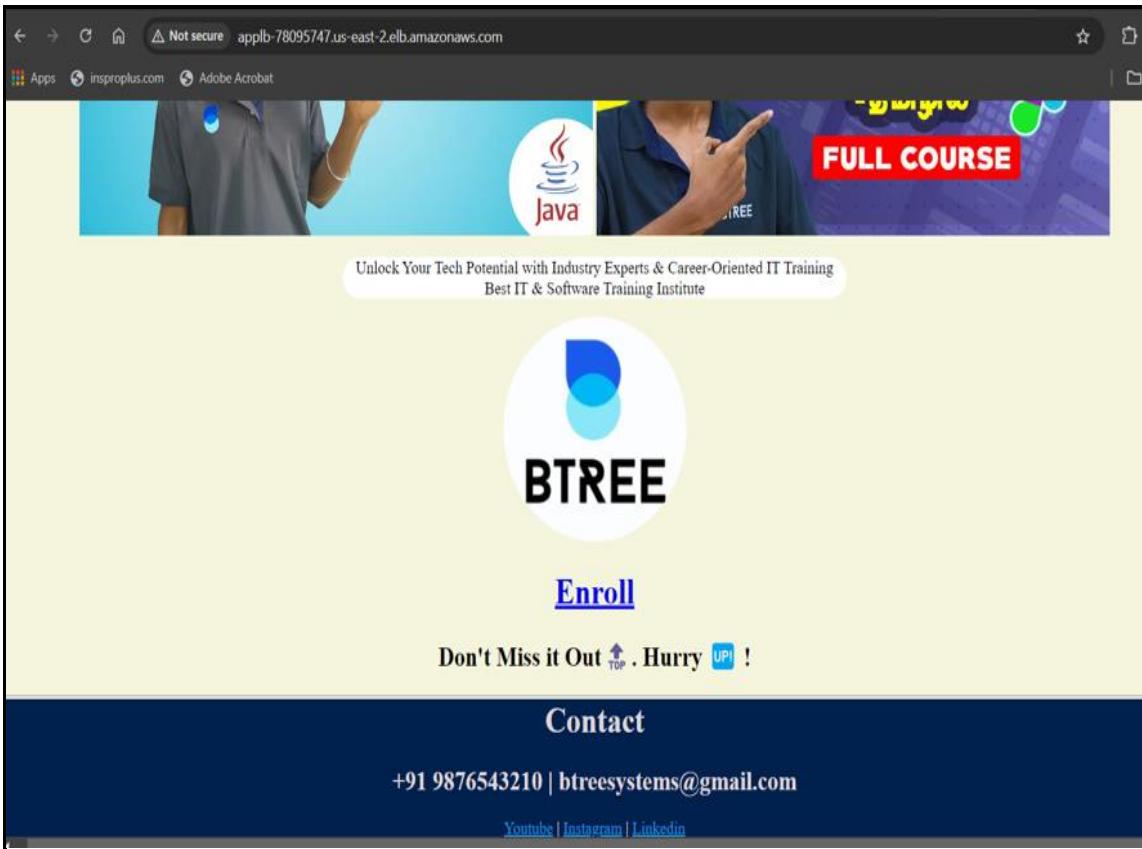
[Enroll](#)

Don't Miss it Out . Hurry !

Contact

+91 9876543210 | btreesystems@gmail.com

[Youtube](#) | [Instagram](#) | [Linkedin](#)



Not secure applb-78095747.us-east-2.elb.amazonaws.com/register/

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Registration Form

Name:

Email:

Qualification:

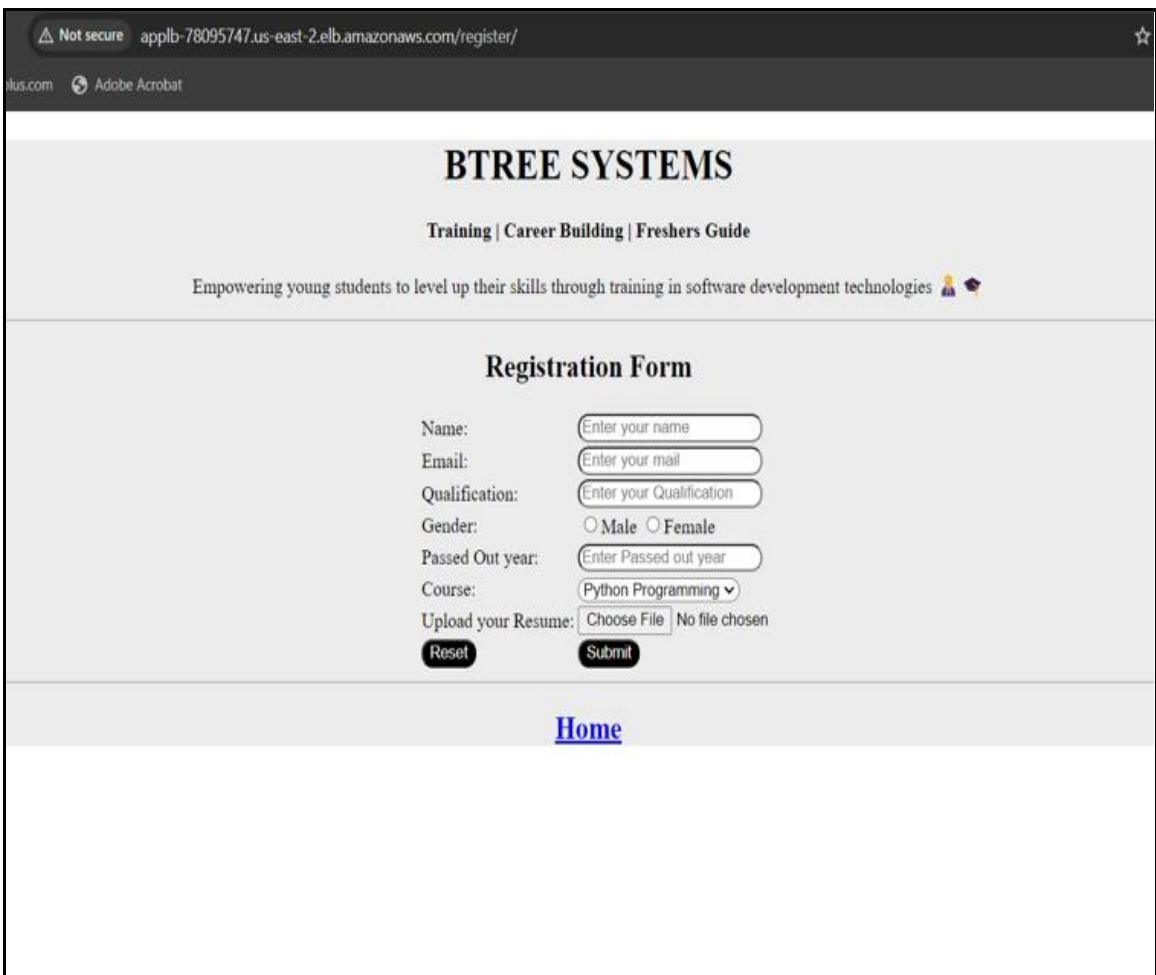
Gender: Male Female

Passed Out year:

Course:

Upload your Resume: No file chosen

[Home](#)



Watch on YouTube

Watch on YouTube

FULL COURSE

Unlock Your Tech Potential with Industry Experts & Career-Oriented IT Training
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BTREE

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d3o8od6l4cgsxk.cloudfront.net/register/

insproplus.com Adobe Acrobat

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Registration Form

Name:

Email:

Qualification:

Gender: Male Female

Passed Out year:

Course:

Upload your Resume: No file chosen

[Home](#)

Step 17 : Create Code Pipeline S3 bucket.

Enable Bucket Versioning

Edit Bucket Versioning [Info](#)

Bucket Versioning

Versioning is a means of keeping multiple variants of an object in the same bucket. You can use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. With versioning, you can easily recover from both unintended user actions and application failures. [Learn more](#)

Suspend
This suspends the creation of object versions for all operations but preserves any existing object versions.

Enable

After enabling Bucket Versioning, you might need to update your lifecycle rules to manage previous versions of objects.

Multi-factor authentication (MFA) delete

An additional layer of security that requires multi-factor authentication for changing Bucket Versioning settings and permanently deleting object versions. To modify MFA delete settings, use the AWS CLI, AWS SDK, or the Amazon S3 REST API. [Learn more](#)

Disabled

[Cancel](#) [Save changes](#)

Create Pipeline

Developer Tools > CodePipeline > Pipelines

Introducing the new V2 pipeline type with improved release safety, pipeline triggers, parameterized pipelines, and a new billing model. [Learn more](#)

Pipelines [Info](#)

[View history](#) [Release change](#) [Delete pipeline](#) [Create pipeline](#)

Q

Name	Latest execution status	Latest source revisions	Latest execution started	Most recent executions
No results				
There are no results to display.				

Create 1st Code Pipeline

Choose pipeline settings Info

Step 1 of 5

Pipeline settings

Pipeline name

Enter the pipeline name. You cannot edit the pipeline name after it is created.

No more than 100 characters

Pipeline type

ⓘ You can no longer create V1 pipelines through the console. We recommend you use the V2 pipeline type with improved release safety, pipeline triggers, parameterized pipelines, and a new billing model.

Execution mode

Choose the execution mode for your pipeline. This determines how the pipeline is run.

Superseded

A more recent execution can overtake an older one. This is the default.

Queued (Pipeline type V2 required)

Executions are processed one by one in the order that they are queued.

Parallel (Pipeline type V2 required)

Source

Source provider

This is where you stored your input artifacts for your pipeline. Choose the provider and then provide the connection details.

Bucket



S3 object key

Enter the object key. You can include a file path without the delimiter character (/) at the beginning. Include the file extension. Example: SampleApp.zip

Change detection options

Choose a detection mode to automatically start your pipeline when a change occurs in the source code.

Amazon CloudWatch Events (recommended)

Use Amazon CloudWatch Events to automatically start my pipeline when a change occurs

AWS CodePipeline

Use AWS CodePipeline to check periodically for changes

Cancel

Previous

Next

Deploy

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

AWS CodeDeploy

Region

US East (Ohio)

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 CodeDeploy console. Or create an application in the AWS CodeDeploy console and then return to this task.

sampleapp

Deployment group
Choose a deployment group that you have already created in the AWS CodeDeploy console. Or create a deployment group in the AWS CodeDeploy console and then return to this task.

ec2_deployment

Configure automatic rollback on stage failure

Step 4: Add deploy stage

Deploy action provider

Deploy action provider
AWS CodeDeploy

ApplicationName
sampleapp

DeploymentGroupName
ec2_deployment

Configure automatic rollback on stage failure
Disabled

[Cancel](#) [Previous](#) [Create pipeline](#)

Developer Tools > CodePipeline > Pipelines

Introducing the new V2 pipeline type with improved release safety, pipeline triggers, parameterized pipelines, and a new billing model. [Learn more](#)

Pipelines [Info](#)

C	Notify	View history	Release change	Delete pipeline	Create pipeline
Q					
Name	Latest execution status	Latest source revisions	Latest execution started	Most recent executions	
homecodepipeline (Type: V2 Execution mode: QUEUED)	In progress	Source: Amazon S3 version id: null	Just now	View details	

Create 2nd Code Pipeline

Choose pipeline settings Info

Step 1 of 5

Pipeline settings

Pipeline name

Enter the pipeline name. You cannot edit the pipeline name after it is created.

No more than 100 characters

Pipeline type

- ! You can no longer create V1 pipelines through the console. We recommend you use the V2 pipeline type with improved release safety, pipeline triggers, parameterized pipelines, and a new billing model.

Execution mode

Choose the execution mode for your pipeline. This determines how the pipeline is run.

Superseded

A more recent execution can overtake an older one. This is the default.

Queued (Pipeline type V2 required)

Executions are processed one by one in the order that they are queued.

Source

Source provider

This is where you stored your input artifacts for your pipeline. Choose the provider and then provide the connection details.



Bucket



S3 object key

Enter the object key. You can include a file path without the delimiter character (/) at the beginning. Include the file extension. Example:
SampleApp.zip

Change detection options

Choose a detection mode to automatically start your pipeline when a change occurs in the source code.

Amazon CloudWatch Events (recommended)

Use Amazon CloudWatch Events to automatically start my pipeline when a change occurs

AWS CodePipeline

Use AWS CodePipeline to check periodically for changes

Cancel

Previous

Next

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

AWS CodeDeploy ▾

Region

US East (Ohio) ▾

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 CodeDeploy console. Or create an application in the AWS CodeDeploy console and then return to this task.

sampleapp X

Deployment group
Choose a deployment group that you have already created in the AWS CodeDeploy console. Or create a deployment group in the AWS CodeDeploy console and then return to this task.

register_deploy X

Configure automatic rollback on stage failure

Developer Tools > CodePipeline > Pipelines

ⓘ Introducing the new V2 pipeline type with improved release safety, pipeline triggers, parameterized pipelines, and a new billing model. [Learn more](#)

Pipelines [Info](#)

C Notify ▾ View history Release change Delete pipeline Create pipeline

< 1 > @

Name	Latest execution status	Latest source revisions	Latest execution started	Most recent executions
registercodepipeline <small>(Type: V2 Execution mode: QUEUED)</small>	✔ Succeeded	Source: Amazon S3 version id: null	2 minutes ago	✔ View details
homecodepipeline <small>(Type: V2 Execution mode: QUEUED)</small>	✔ Succeeded	Source: Amazon S3 version id: null	11 minutes ago	✔ View details

Step 18 : Re-edit the website in Developer Machine.

```
[root@ip-172-31-1-16 sample]# cd ..
[root@ip-172-31-1-16 deploy]# cd ..
[root@ip-172-31-1-16 scripts]# cd ..
[root@ip-172-31-1-16 sampleapp]# vi index.html
[root@ip-172-31-1-16 sampleapp]# zip -r ../sampleapp.zip .
  adding: scripts/ (stored 0%)
  adding: scripts/httpd_install.sh (stored 0%)
  adding: scripts/httpd_start.sh (deflated 21%)
  adding: scripts/httpd_stop.sh (deflated 21%)
  adding: scripts/deploy/ (stored 0%)
  adding: scripts/deploy/sample/ (stored 0%)
  adding: scripts/deploy/sample/index.html (deflated 68%)
  adding: scripts/deploy/sample/scripts/ (stored 0%)
  adding: scripts/deploy/sample/scripts/httpd_install.sh (stored 0%)
  adding: scripts/deploy/sample/scripts/httpd_start.sh (deflated 21%)
  adding: scripts/deploy/sample/scripts/httpd-stop.sh (deflated 21%)
  adding: scripts/deploy/sample/appspec.yml (deflated 52%)
  adding: appspec.yml (deflated 52%)
  adding: index.html (deflated 60%)
[root@ip-172-31-1-16 sampleapp]# cd ..
[root@ip-172-31-1-16 deploy_dir]# ls
sampleapp  sampleapp.zip
```

```
root@ip-172-31-1-16:/deploy_dir/sampleapp
 <br>
<h1>

<a href="register.html">Enroll</a>
</h1>
<h2 class="hurry">Don't Miss it Out! Hurry !</h2>

</center>

<hr>

<div class="footer">
  <center>
    <h1>Contact</h1>
    <h2>+91 0123456789 | btreesystems@gmail.com</h2>
    <p>
      <a class="links" href="https://www.youtube.com/@btreesystems">Youtube</a> |
      <a class="links" href="https://www.instagram.com/btreesystems/?hl=en">Instagram</a> |
      <a class="links" href="https://www.linkedin.com/company/btreesystems/?originalSubdomain=in">Linkedin</a>
    </p>
  </center>
</div>

</body>
</html>
-- INSERT --
```

```
[root@ip-172-31-1-16 deploy_dir]# aws s3 cp sampleapp.zip s3://homebuckey
upload: ./sampleapp.zip to s3://homebuckey/sampleapp.zip
[root@ip-172-31-1-16 deploy_dir]# cd ./sample/
-bash: cd: ./sample/: No such file or directory
[root@ip-172-31-1-16 deploy_dir]# cd ./sample
-bash: cd: ./sample: No such file or directory
[root@ip-172-31-1-16 deploy_dir]# cd sampleapp
[root@ip-172-31-1-16 sampleapp]# pwd
/root/deploy_dir/sampleapp
[root@ip-172-31-1-16 sampleapp]# ls
appspec.yml index.html scripts
[root@ip-172-31-1-16 sampleapp]# cd /scripts/deploy/sample
-bash: cd: /scripts/deploy/sample: No such file or directory
[root@ip-172-31-1-16 sampleapp]# cd /scripts
-bash: cd: /scripts: No such file or directory
[root@ip-172-31-1-16 sampleapp]# cd scripts
[root@ip-172-31-1-16 scripts]# cd deploy/sample
[root@ip-172-31-1-16 sample]# vi index.html
```

```
root@ip-172-31-1-16:~/deploy_dir/sampleapp/scripts/deploy/sample
)

.file{
    border-inline-color: black;
}

.tabs{
    margin-left: 90px;
}
.naming{
    border-radius: 10px;
    background-color: black;
    color: white;
}
</style>
</head>
<body>
    <div class="register">
        <center>
            <h1>BTREE SYSTEMS FORM</h1>
            <h4>Training | Career Building | Freshers Guide</h4>
            <p>Empowering young students to level up their skills through training in software development technologies <a href="#">More</a></p>
            <hr>
        </center>
        <center>
            <h2>Registration Form</h2>
            <form class =tabs>
                <table class="table">
                    <tr>
                        <td>Name:</td>
```

-- INSERT --

35,31 18%

Step 19 : Copy website file to S3 bucket.

```
[root@ip-172-31-1-16 sampleapp]# zip -r ../sampleapp.zip .
  adding: scripts/ (stored 0%)
  adding: scripts/httpd_install.sh (stored 0%)
  adding: scripts/httpd_start.sh (deflated 21%)
  adding: scripts/httpd_stop.sh (deflated 21%)
  adding: scripts/deploy/ (stored 0%)
  adding: scripts/deploy/sample/ (stored 0%)
  adding: scripts/deploy/sample/index.html (deflated 68%)
  adding: scripts/deploy/sample/scripts/ (stored 0%)
  adding: scripts/deploy/sample/scripts/httpd_install.sh (stored 0%)
  adding: scripts/deploy/sample/scripts/httpd_start.sh (deflated 21%)
  adding: scripts/deploy/sample/scripts/httpd-stop.sh (deflated 21%)
  adding: scripts/deploy/sample/appspec.yml (deflated 52%)
  adding: appspec.yml (deflated 52%)
  adding: index.html (deflated 60%)
[root@ip-172-31-1-16 sampleapp]# cd ..
[root@ip-172-31-1-16 deploy_dir]# ls
sampleapp  sampleapp.zip
[root@ip-172-31-1-16 deploy_dir]# aws s3 cp sampleapp.zip s3://homebuckey
upload: ./sampleapp.zip to s3://homebuckey/sampleapp.zip
[root@ip-172-31-1-16 deploy dir]#
```

homebuckey Info

Objects Properties Permissions Metrics Management Access Points

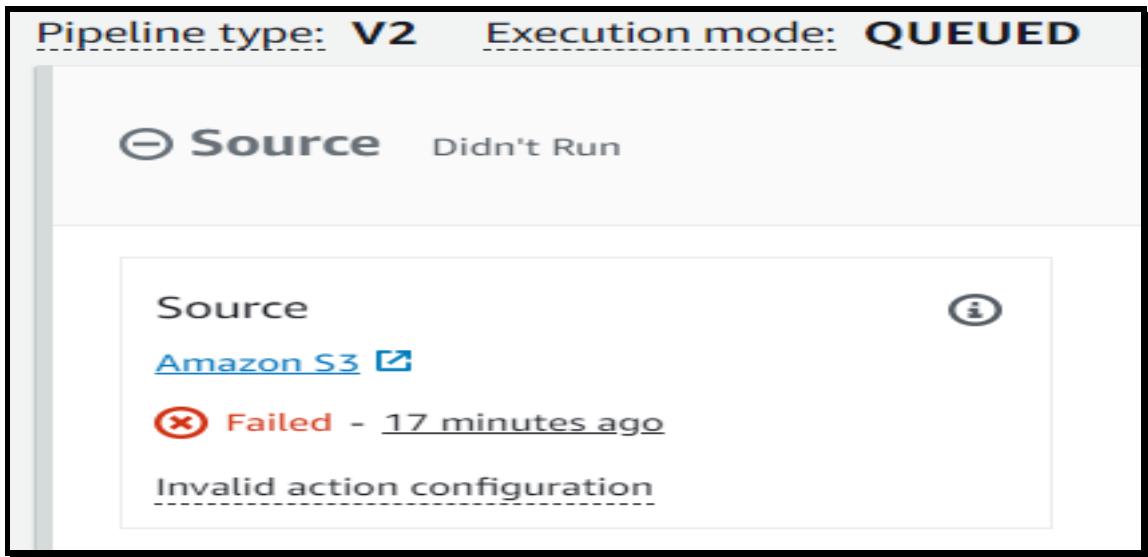
Objects (2) Info

Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to explicitly grant them permissions. [Learn more](#)

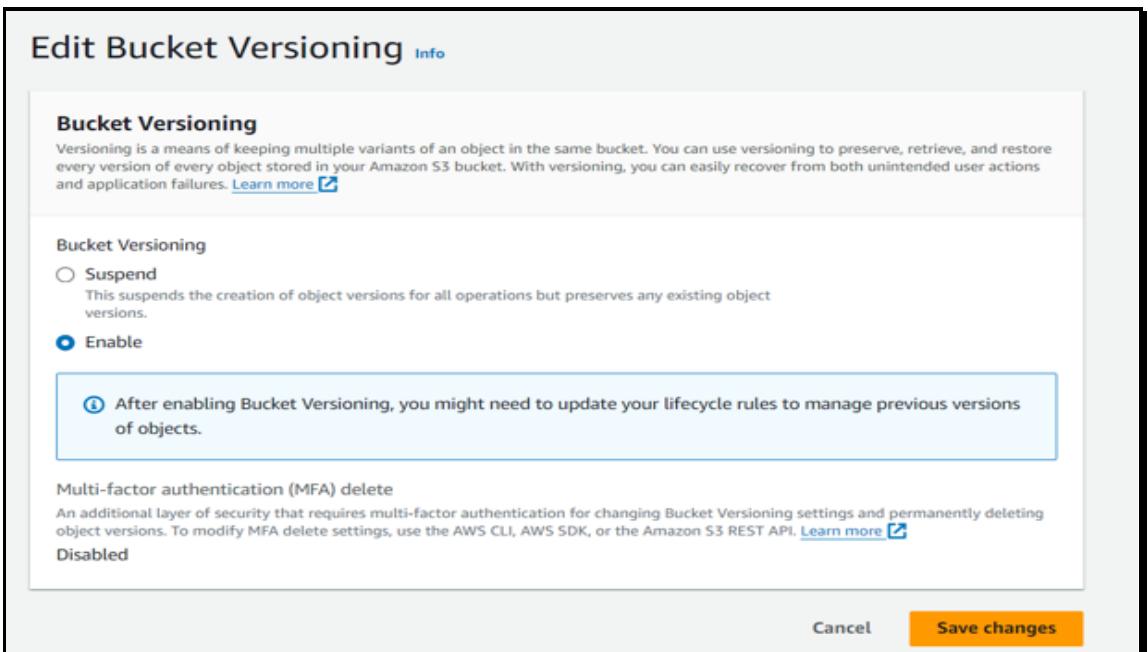
Find objects by prefix Show versions

<input type="checkbox"/>	Name	Type	Last modified	Size	Storage class
<input type="checkbox"/>	sample.zip	zip	August 26, 2024, 18:34:56 (UTC+05:30)	2.0 KB	Standard
<input type="checkbox"/>	sampleapp.zip	zip	August 26, 2024, 17:09:02 (UTC+05:30)	3.3 KB	Standard

CHALLENGES FACED :



TOUBLESHOOT :



LESSON LEARNED :

- Hands – on experience with all Amazon web services.
- Good understanding of networking concepts including VPN, VPC, Route table, subnet, and internet gateways.
- Acquired proficiency in how website works from Developer to End user.

OUTPUT :

Step 20 : Refresh the website changes will show.

The screenshot shows the homepage of the BTREE Systems website. At the top, there's a banner featuring two video thumbnails: one for Java training and another for a full course. Below the banner, a tagline reads "Unlock Your Tech Potential with Industry Experts & Career-Oriented IT Training" and "Best IT & Software Training Institute". The BTREE logo, consisting of a blue and white circular graphic above the word "BTREE", is prominently displayed. A large "Enroll" button is centered below the logo. A promotional message "Don't Miss it Out ↑ . Hurry UP !" is visible. The contact information "+91 0123456789 | btreesystems@gmail.com" and social media links for YouTube, Instagram, and LinkedIn are at the bottom of the main content area.

The screenshot shows the registration form page of the BTREE Systems website. The title "BTREE SYSTEMS FORM" is at the top, along with links to "Training | Career Building | Freshers Guide". A subtitle states "Empowering young students to level up their skills through training in software development technologies 🎓💻". The main section is titled "Registration Form". It contains fields for Name, Email, Qualification, Gender (Male/Female), Passed Out year, Course (Python Programming dropdown), and Upload your Resume (file input field showing "No file chosen"). There are "Reset" and "Submit" buttons at the bottom. A "Home" link is at the very bottom of the page.

The screenshot shows a web browser window with the URL <https://d3iu4cumkkgvhc.cloudfront.net/>. The page has a light blue header bar with the BTREE logo and navigation links. Below the header is a large banner for a Java full course, featuring a person in a grey shirt and a person pointing at a screen. The banner includes a 'Watch on YouTube' link and a 'FULL COURSE' button. A call-to-action bubble says 'Unlock Your Tech Potential with Industry Experts & Career-Oriented IT Training' and 'Best IT & Software Training Institute'. In the center is a large circular logo with three overlapping circles in blue, green, and yellow, with the word 'BTREE' below it. Below the logo is a blue button labeled 'Enroll'. At the bottom of the page is a dark blue footer bar with the text '+91 0123456789 | btreesystems@gmail.com' and links to 'Youtube', 'Instagram', and 'Linkedin'.

The screenshot shows a web browser window with the URL <https://d3iu4cumkkgvhc.cloudfront.net/register/>. The page has a light gray header bar with the BTREE logo and navigation links. Below the header is a large title 'BTREE SYSTEMS FORM'. Underneath the title are links for 'Training | Career Building | Freshers Guide' and a subtitle 'Empowering young students to level up their skills through training in software development technologies'. The main content is a 'Registration Form' with fields for Name, Email, Qualification, Gender, Passed Out year, Course, and Upload your Resume. There are 'Reset' and 'Submit' buttons at the bottom. At the very bottom of the page is a 'Home' link.

