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Adv. DevOPS

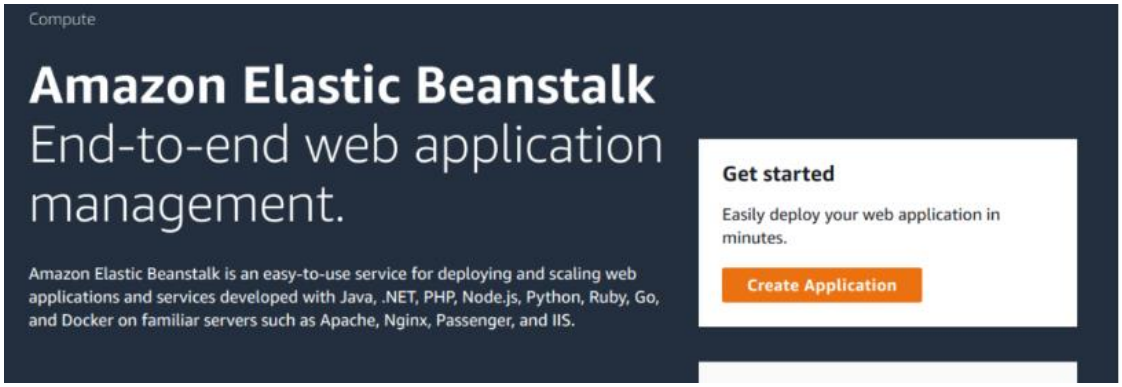
Experiment No. 2

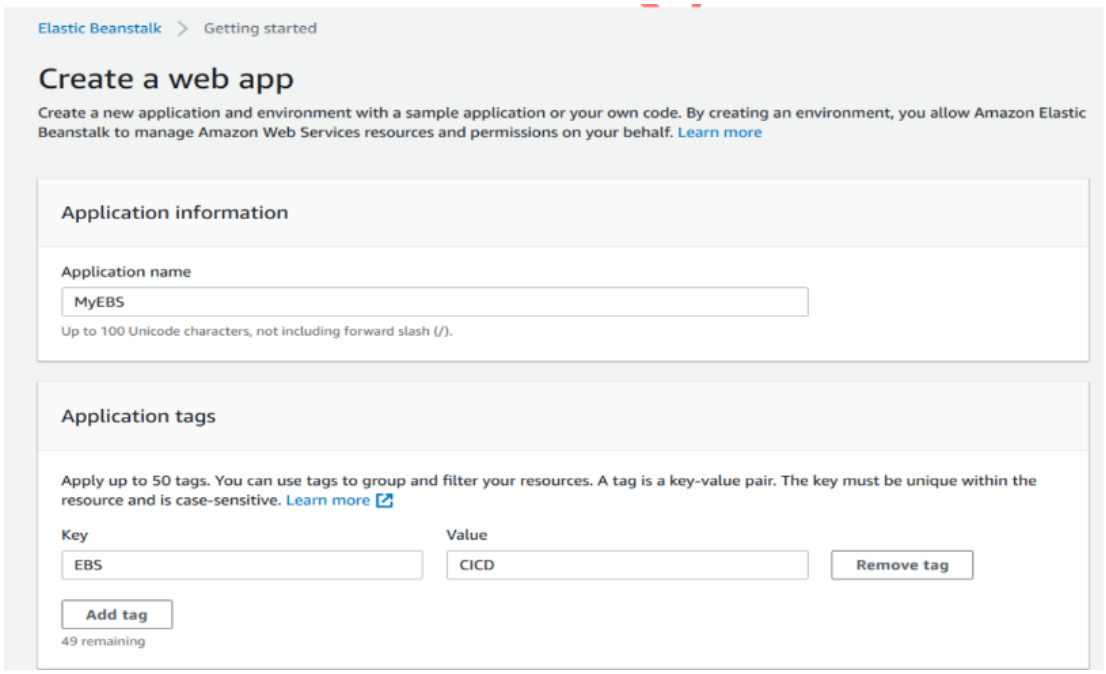
Aim- To build your Application using AWS CodeBuild and Deploy on S3 / SEBS using AWS CodePipeline, deploy sample Application on EC2 instance using AWS code.

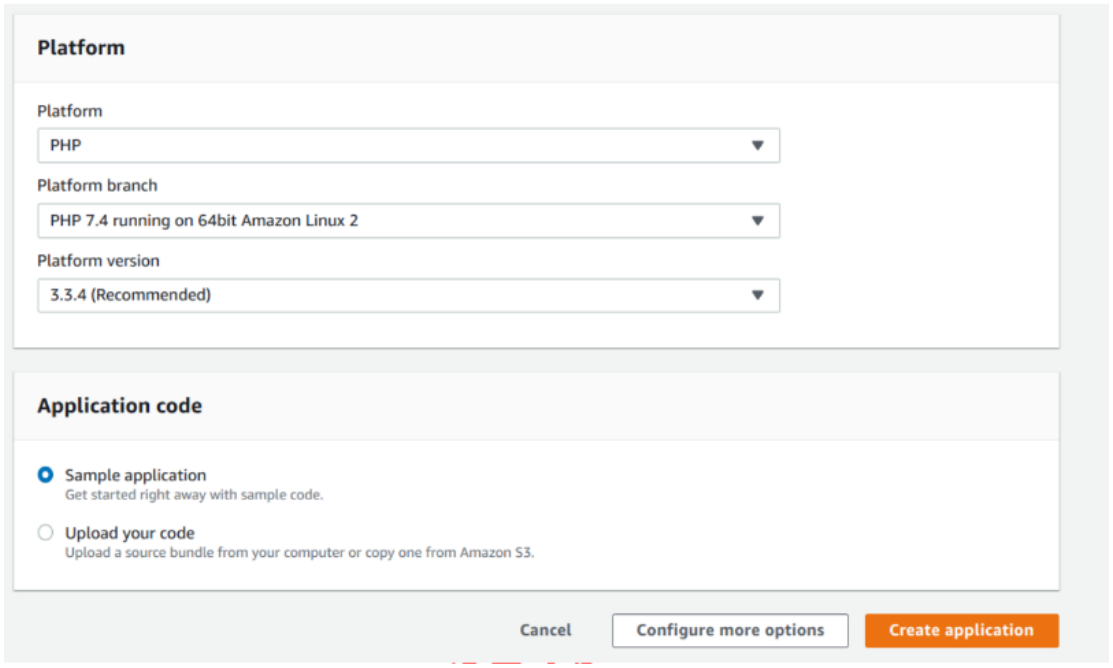
Theory -

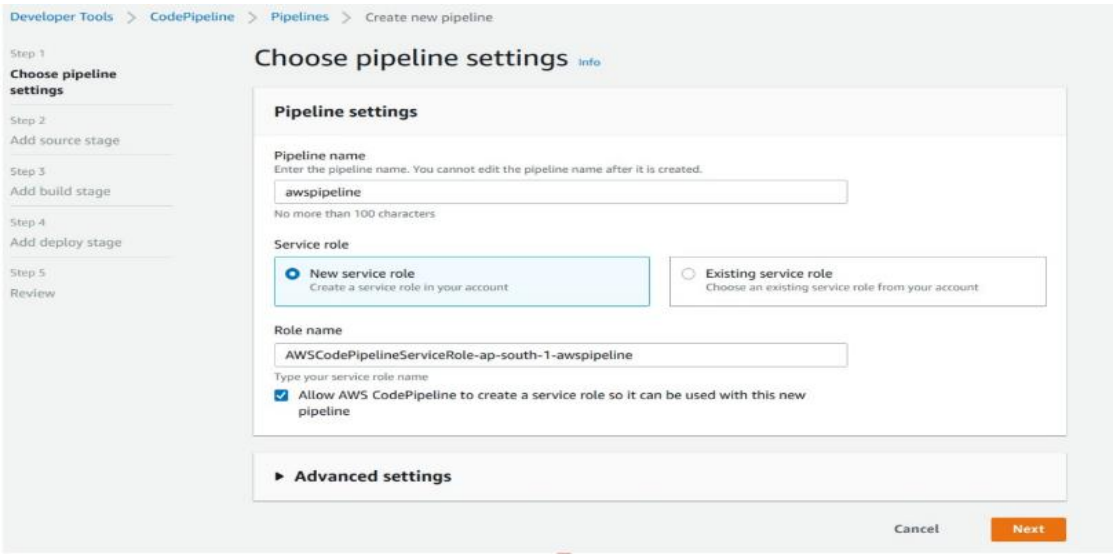
Continuous deployment allows you to deploy revisions to a production environment automatically without explicit approval from a developer, making the entire software release process automated.

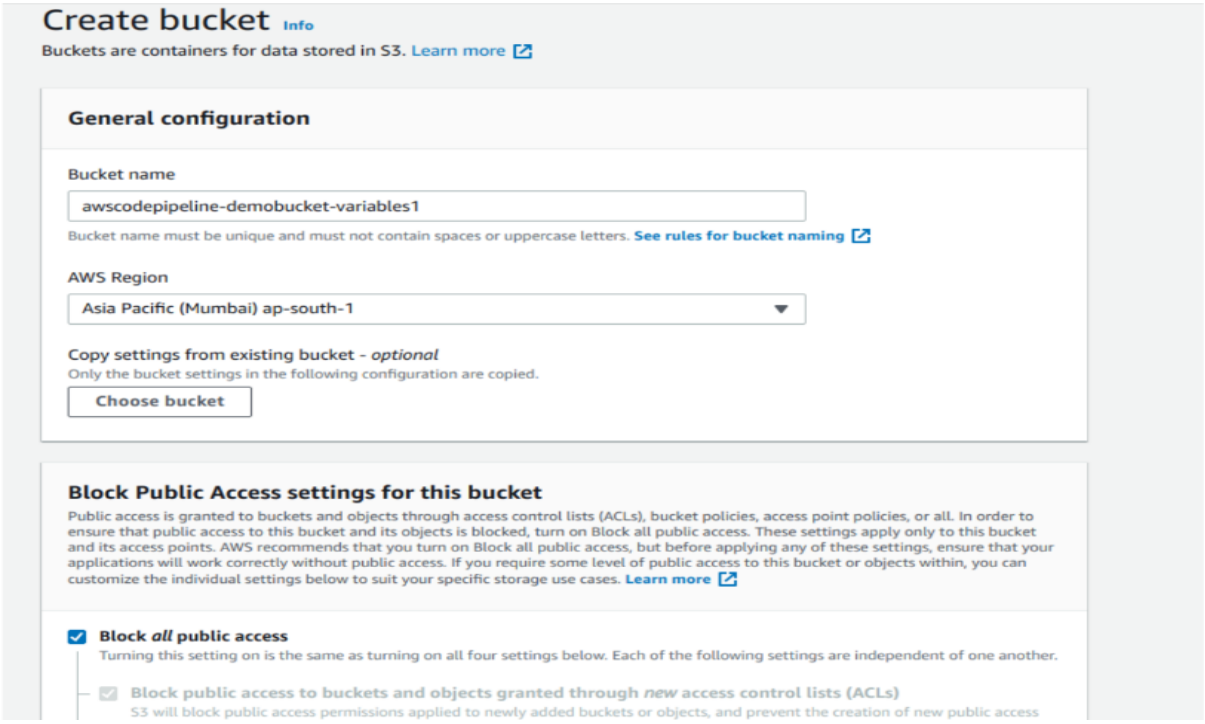
We will create the pipeline using AWS CodePipeline, a service that builds, tests and deploys your code every time there is a code change. ~~You~~ we will use our GitHub account, an Amazon simple storage service (S3) bucket, or an AWS code commit repository as the source location for the sample app's code. We will also use AWS Elastic Beanstalk as the deployment target for the sample app. our completed pipeline will be able to detect changes made to the source repository containing the sample app and then automatically update our sample app.

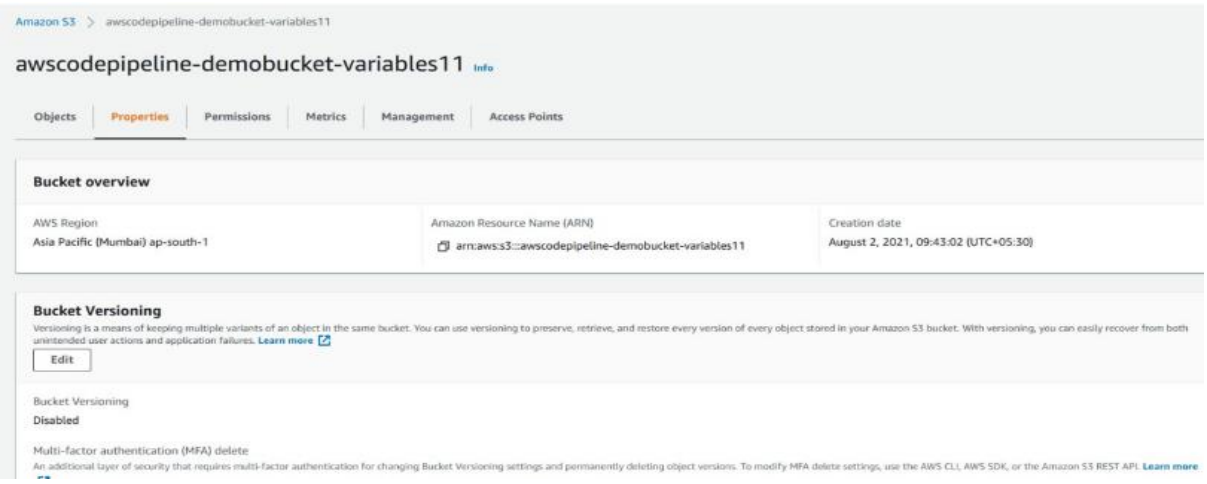

Compute
Amazon Elastic Beanstalk
End-to-end web application management.
Amazon Elastic Beanstalk is an easy-to-use service for deploying and scaling web applications and services developed with Java, .NET, PHP, Node.js, Python, Ruby, Go, and Docker on familiar servers such as Apache, Nginx, Passenger, and IIS.
Get started
Easily deploy your web application in minutes.
Create Application

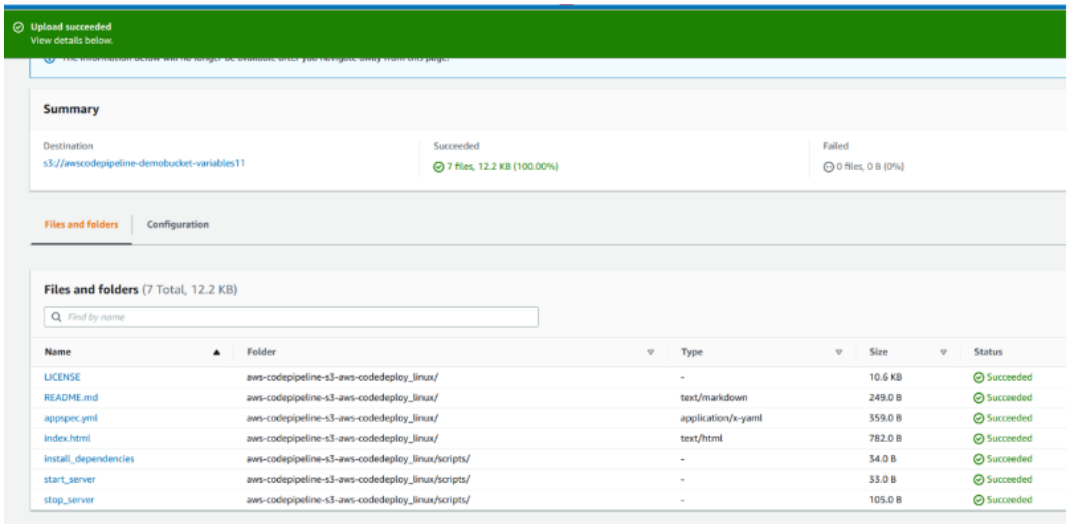

Elastic Beanstalk > Getting started
Create a web app
Create a new application and environment with a sample application or your own code. By creating an environment, you allow Amazon Elastic Beanstalk to manage Amazon Web Services resources and permissions on your behalf. Learn more
Application information
Application name
MyEBS
Up to 100 Unicode characters, not including forward slash (/).
Application tags
Apply up to 50 tags. You can use tags to group and filter your resources. A tag is a key-value pair. The key must be unique within the resource and is case-sensitive. Learn more
Key
Value
EBS
CICD
Remove tag
Add tag
49 remaining

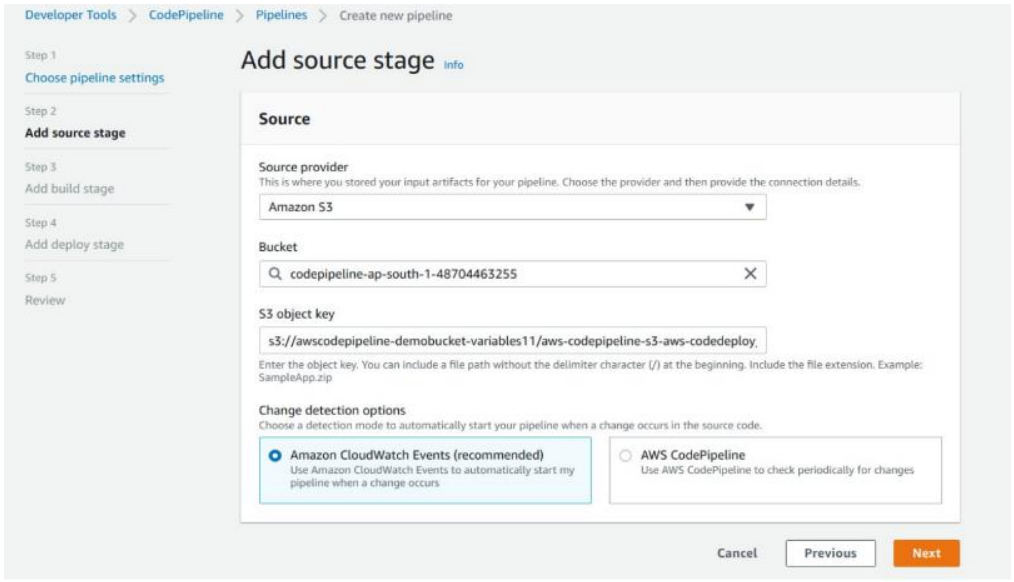

Platform
Platform
PHP
Platform branch
PHP 7.4 running on 64bit Amazon Linux 2
Platform version
3.3.4 (Recommended)
Application code
Sample application
Get started right away with sample code.
Upload your code
Upload a source bundle from your computer or copy one from Amazon S3.
Cancel
Configure more options
Create application

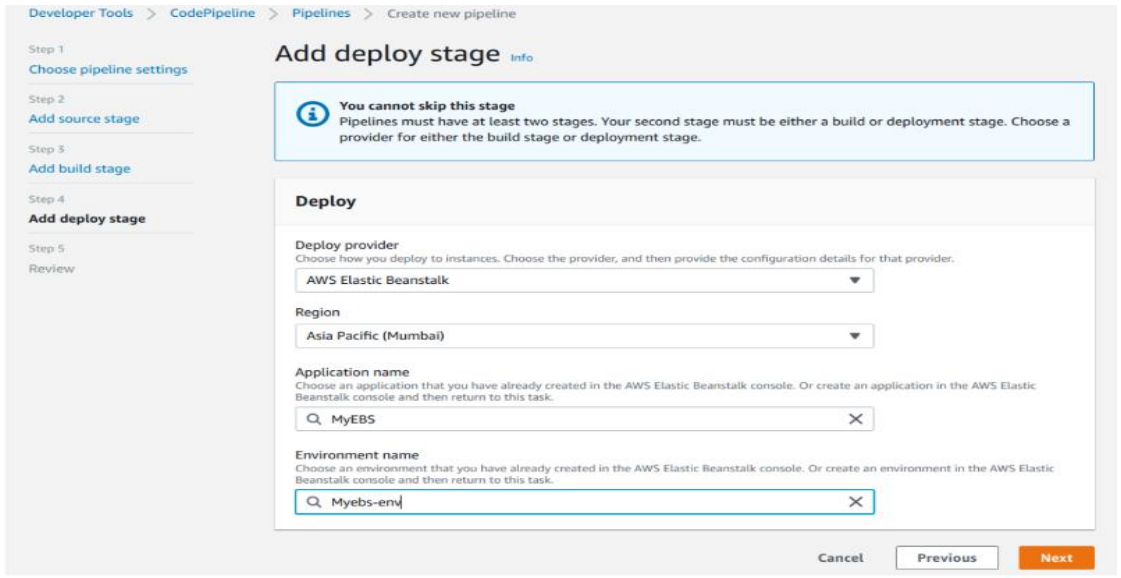

Developer Tools > CodePipeline > Pipelines > Create new pipeline
Step 1
Choose pipeline settings
Step 2
Add source stage
Step 3
Add build stage
Step 4
Add deploy stage
Step 5
Review
Choose pipeline settings Info
Pipeline settings
Pipeline name
Enter the pipeline name. You cannot edit the pipeline name after it is created.
awspipeline
No more than 100 characters
Service role
New service role
Create a service role in your account
Existing service role
Choose an existing service role from your account
Role name
AWSCodePipelineServiceRole-ap-south-1-awspipeline
Type your service role name
Allow AWS CodePipeline to create a service role so it can be used with this new pipeline
Advanced settings
Cancel
Next

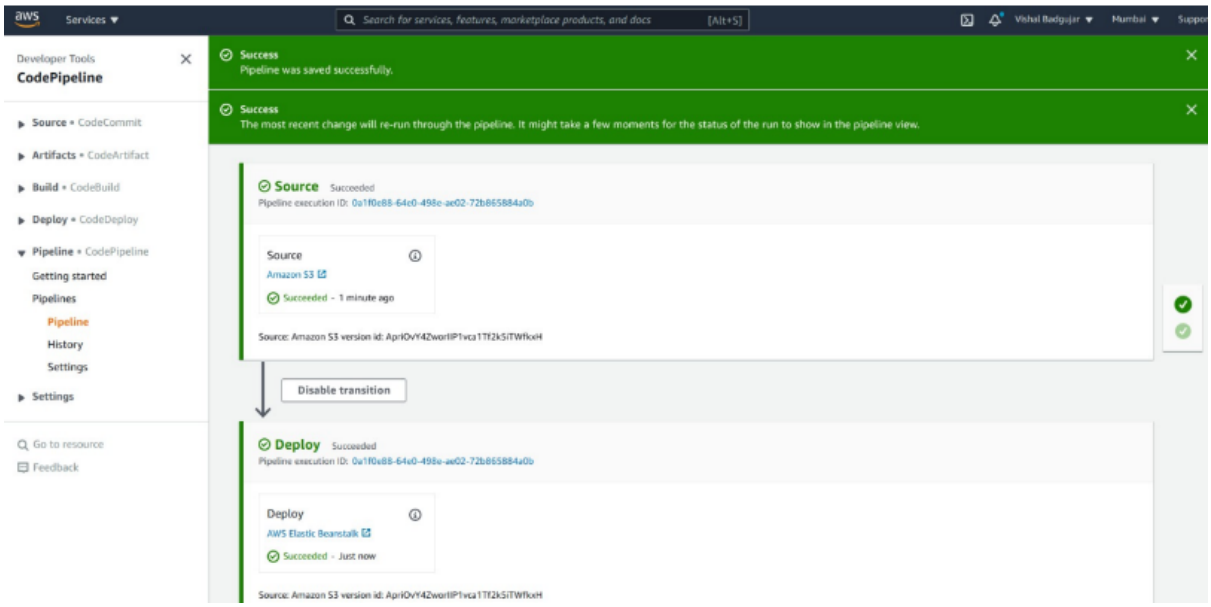

Create bucket Info
Buckets are containers for data stored in S3. Learn more
General configuration
Bucket name
awscodepipeline-demobucket-variables1
Bucket name must be unique and must not contain spaces or uppercase letters. See rules for bucket naming
AWS Region
Asia Pacific (Mumbai) ap-south-1
Copy settings from existing bucket - optional
Only the bucket settings in the following configuration are copied.
Choose bucket
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

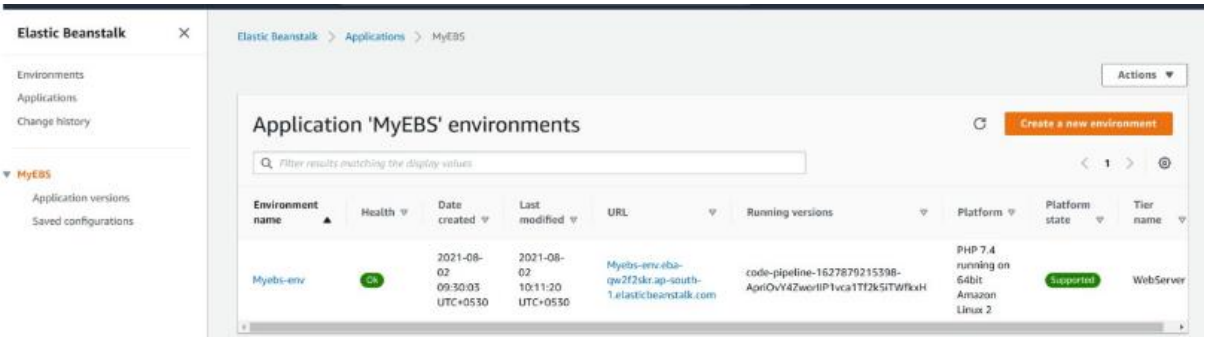

Amazon S3 > awscodepipeline-demobucket-variables11
awscodepipeline-demobucket-variables11 Info
Objects
Properties
Permissions
Metrics
Management
Access Points
Bucket overview
AWS Region
Asia Pacific (Mumbai) ap-south-1
Amazon Resource Name (ARN)
arn:aws:s3:::awscodepipeline-demobucket-variables11
Creation date
August 2, 2021, 09:43:02 (UTC+05:30)
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
Edit
Bucket Versioning
Disabled
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


Upload succeeded
View details below.
Summary
Destination
s3://awscodepipeline-demobucket-variables11
Succeeded
7 files, 12.2 KB (100.00%)
Failed
0 files, 0 B (0%)
Files and folders
Configuration
Files and folders (7 Total, 12.2 KB)
Find by name
Name
Folder
Type
Size
Status
LICENSE
aws-codepipeline-s3-aws-codedeploy_linux/
-
10.6 KB
Succeeded
README.md
aws-codepipeline-s3-aws-codedeploy_linux/
text/markdown
249.0 B
Succeeded
appspec.yml
aws-codepipeline-s3-aws-codedeploy_linux/
application/x-yaml
359.0 B
Succeeded
index.html
aws-codepipeline-s3-aws-codedeploy_linux/
text/html
782.0 B
Succeeded
install_dependencies
aws-codepipeline-s3-aws-codedeploy_linux/scripts/
-
34.0 B
Succeeded
start_server
aws-codepipeline-s3-aws-codedeploy_linux/scripts/
-
33.0 B
Succeeded
stop_server
aws-codepipeline-s3-aws-codedeploy_linux/scripts/
-
105.0 B
Succeeded


Developer Tools
CodePipeline
Pipelines
Create new pipeline
Step 1
Choose pipeline settings
Step 2
Add source stage
Step 3
Add build stage
Step 4
Add deploy stage
Step 5
Review
Add source stage
Info
Source
Source provider
This is where you stored your input artifacts for your pipeline. Choose the provider and then provide the connection details.
Amazon S3
Bucket
codepipeline-ap-south-1-48704463255
S3 object key
s3://awscodepipeline-demobucket-variables11/aws-codepipeline-s3-aws-codedeploy_
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


Developer Tools
CodePipeline
Pipelines
Create new pipeline
Step 1
Choose pipeline settings
Step 2
Add source stage
Step 3
Add build stage
Step 4
Add deploy stage
Step 5
Review
Add deploy stage
Info
You cannot skip this stage
Pipelines must have at least two stages. Your second stage must be either a build or deployment stage. Choose a provider for either the build stage or deployment stage.
Deploy
Deploy provider
Choose how you deploy to instances. Choose the provider, and then provide the configuration details for that provider.
AWS Elastic Beanstalk
Region
Asia Pacific (Mumbai)
Application name
Choose an application that you have already created in the AWS Elastic Beanstalk console. Or create an application in the AWS Elastic Beanstalk console and then return to this task.
MyEBS
Environment name
Choose an environment that you have already created in the AWS Elastic Beanstalk console. Or create an environment in the AWS Elastic Beanstalk console and then return to this task.
Myebs-env
Cancel
Previous
Next





Congratulations!

You have successfully created a pipeline that retrieved this source application from an Amazon S3 bucket and deployed it to three Amazon EC2 instances using AWS CodeDeploy.

For next steps, read the AWS CodePipeline Documentation.

Conclusion - We learnt that AWS CodeBuild is a continuous managed service that compiles source code, runs tests and produces software packages. CodePipeline is a continuous managed delivery that helps to automate fast release of pipelines. Also we successfully deployed a application on EC2 instance.