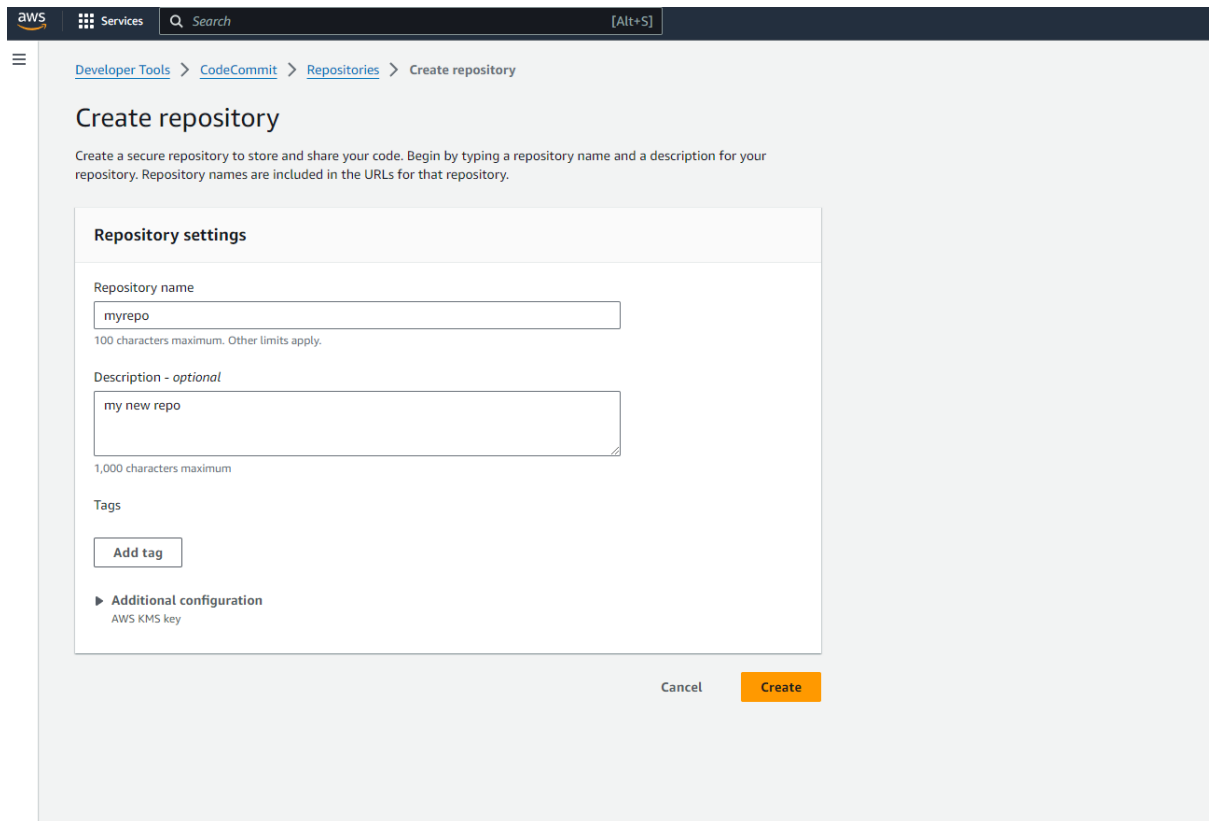


Task – 16

Deploy a simple Nginx application using AWS code commit and deploy & access via browser.

Creating a CodeCommit repository:



Developer Tools > CodeCommit > Repositories > Create repository

Create repository

Create a secure repository to store and share your code. Begin by typing a repository name and a description for your repository. Repository names are included in the URLs for that repository.

Repository settings

Repository name

100 characters maximum. Other limits apply.

Description - optional

1,000 characters maximum

Tags

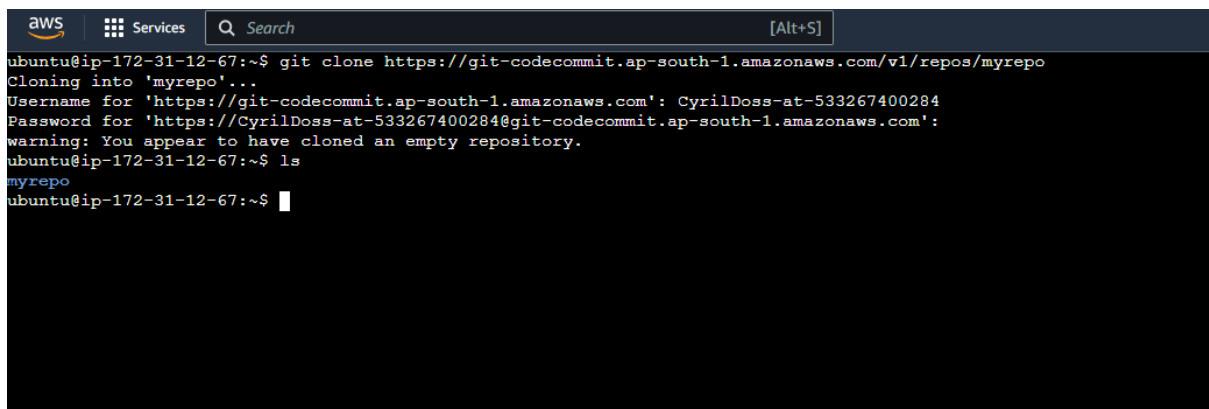
Add tag

► Additional configuration

AWS KMS key

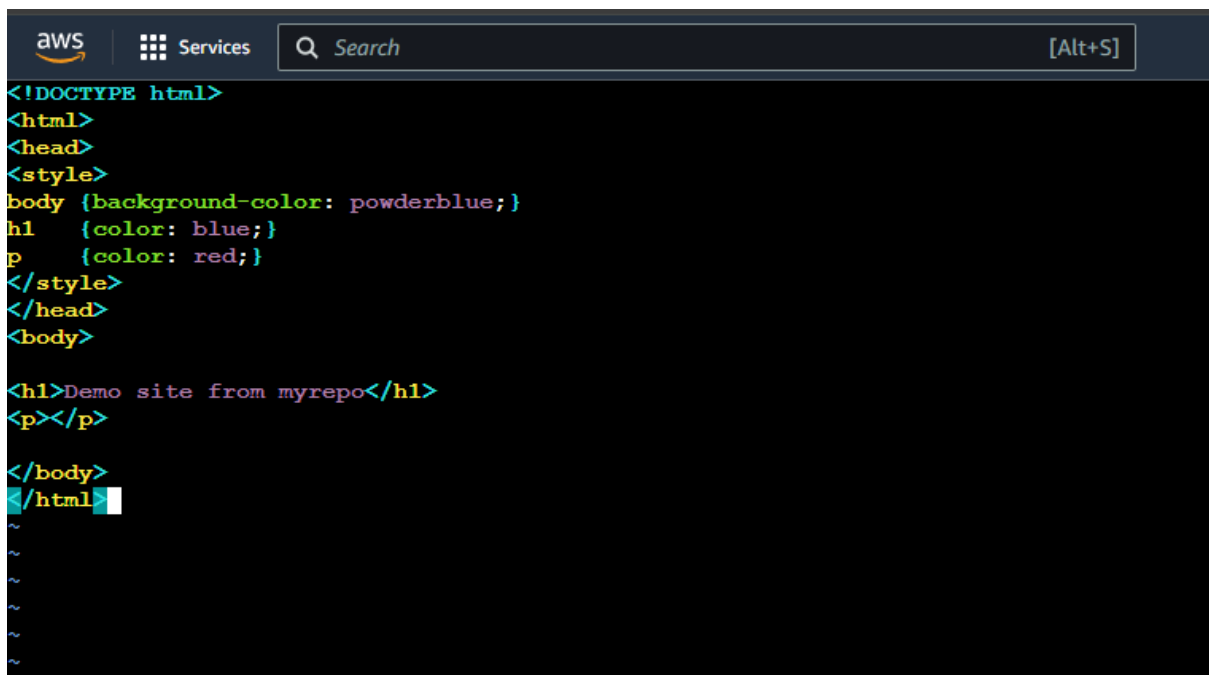
Cancel Create

Cloning the repo in EC2 instance:



```
aws Services Search [Alt+S]
ubuntu@ip-172-31-12-67:~$ git clone https://git-codecommit.ap-south-1.amazonaws.com/v1/repos/myrepo
Cloning into 'myrepo'...
Username for 'https://git-codecommit.ap-south-1.amazonaws.com': CyrilDoss-at-533267400284
Password for 'https://CyrilDoss-at-533267400284@git-codecommit.ap-south-1.amazonaws.com':
warning: You appear to have cloned an empty repository.
ubuntu@ip-172-31-12-67:~$ ls
myrepo
ubuntu@ip-172-31-12-67:~$
```

Sample Html code:



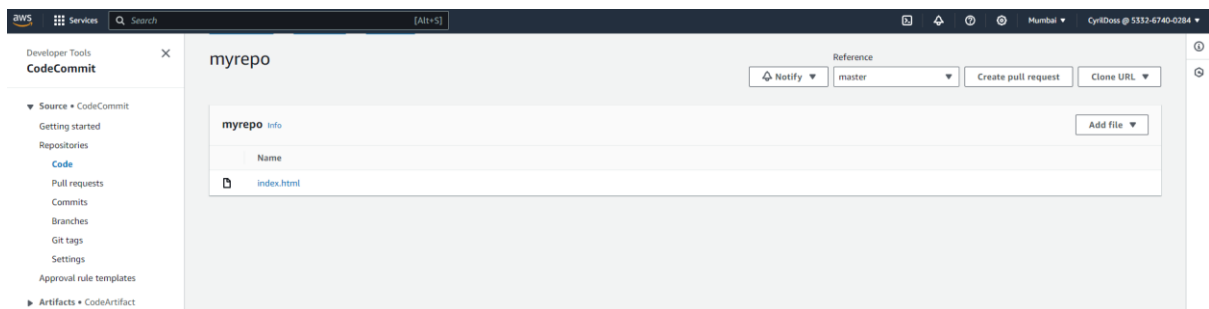
The screenshot shows a code editor window with a dark background. At the top, there is a header bar with the AWS logo, a 'Services' menu, a search bar, and a '[Alt+S]' shortcut. The code is written in a light blue font and is as follows:

```
<!DOCTYPE html>
<html>
<head>
<style>
body {background-color: powderblue;}
h1 {color: blue;}
p {color: red;}
</style>
</head>
<body>

<h1>Demo site from myrepo</h1>
<p></p>

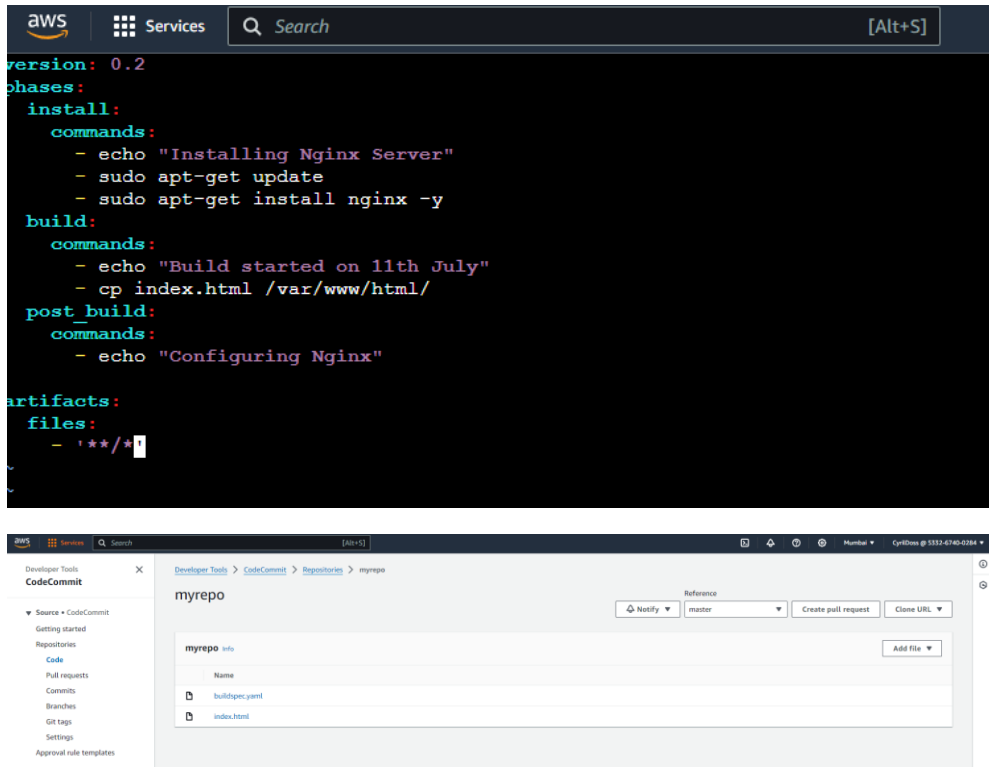
</body>
</html>
```

Pushing index.html to CodeCommit Repo:

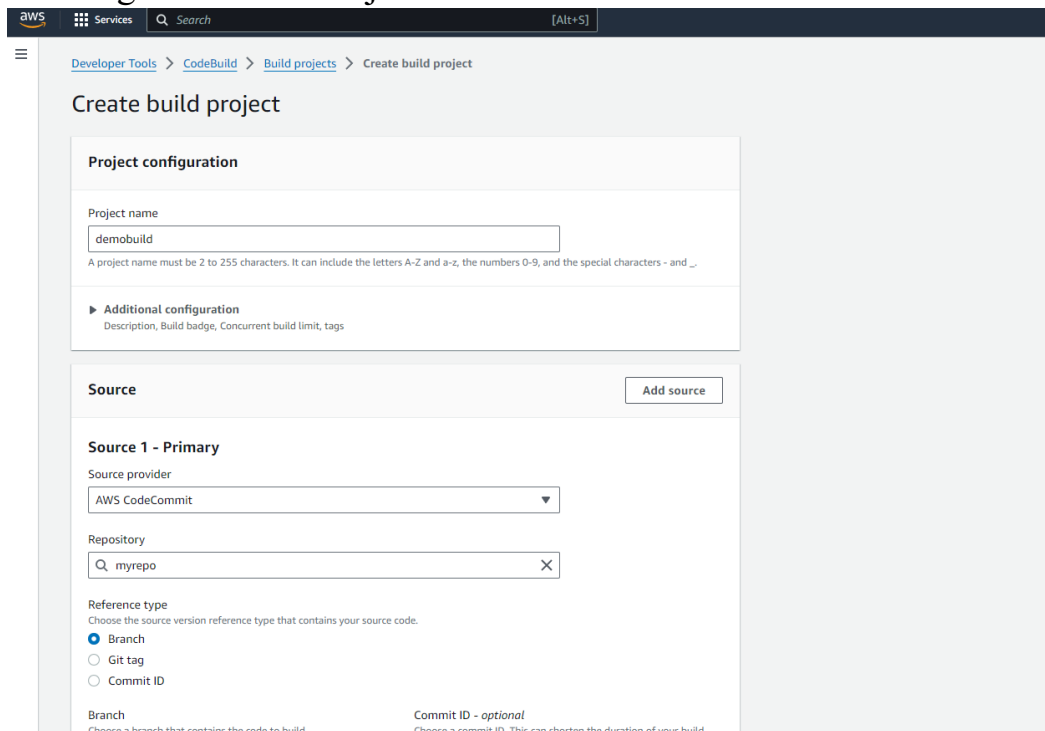


Building the application using Codebuild

Writing buildspec.yaml file:



Creating CodeBuild Project:



aws

Services

Search

[Alt+S]

Environment

Provisioning model [Info](#)

☒ On-demand
Automatically provision build infrastructure in response to new builds.

☐ Reserved capacity
Use a dedicated fleet of instances for builds. A fleet's compute and environment type will be used for the project.

Environment image

☒ Managed image
Use an image managed by AWS CodeBuild

☐ Custom image
Specify a Docker image

Compute

☒ EC2
Optimized for flexibility during action runs

☐ Lambda
Optimized for speed and minimizes the start up time of workflow actions

Operating system

Ubuntu

Runtime(s)

Standard

Image

aws/codebuild/standard:7.0

Image version

Always use the latest image for this runtime version

Service role

☒ New service role
Create a service role in your account

☐ Existing service role
Choose an existing service role from your account

aws

Services

Search

[Alt+S]

Create a service role in your account

Choose an existing service role from your account

Role name

codebuild

Type your service role name

► Additional configuration

Timeout, privileged, certificate, VPC, compute type, environment variables, file systems

Buildspec

Build specifications

☐ Insert build commands
Store build commands as build project configuration

☒ Use a buildspec file
Store build commands in a YAML-formatted buildspec file

Buildspec name - optional

By default, CodeBuild looks for a file named buildspec.yml in the source code root directory. If your buildspec file uses a different name or location, enter its path from the source root here (for example, buildspec-two.yml or configuration/buildspec.yml).

buildspec.yml

Batch configuration

You can run a group of builds as a single execution. Batch configuration is also available in advanced option when starting build.

☐ Define batch configuration - optional

You can also define or override batch configuration when starting a build batch.

Artifacts

Add artifact

Artifact 1 - Primary

aws

Services

Search

[Alt+S]

☰

Artifacts

Add artifact

Artifact 1 - Primary

Type

Amazon S3

You might choose no artifacts if you are running tests or pushing a Docker image to Amazon ECR.

Bucket name

mynews3buc

Name

The name of the folder or compressed file in the bucket that will contain your output artifacts. Use Artifacts packaging under Additional configuration to choose whether to use a folder or compressed file. If the name is not provided, defaults to project name.

Artifacts

☐ Enable semantic versioning

Use the artifact name specified in the buildspec file

Path - optional

The path to the build output ZIP file or folder.

Example: MyPath/MyArtifact.zip.

Namespace type - optional

None

Choose Build ID to insert the build ID into the path to the build output ZIP file or folder, e.g. MyPath/MyBuildID/MyArtifact.zip. Otherwise, choose None.

Artifacts packaging

☐ None

The artifact files will be uploaded to the bucket.

☒ Zip

AWS CodeBuild will upload artifacts into a compressed file that is put into the specified bucket.

aws

Services

Search

[Alt+S]

☰

Example: MyPath/MyArtifact.zip.

Namespace type - optional

None

Choose Build ID to insert the build ID into the path to the build output ZIP file or folder, e.g. MyPath/MyBuildID/MyArtifact.zip. Otherwise, choose None.

Artifacts packaging

☐ None

The artifact files will be uploaded to the bucket.

☒ Zip

AWS CodeBuild will upload artifacts into a compressed file that is put into the specified bucket.

☐ Disable artifact encryption

Disable encryption if using the artifact to publish a static website or sharing content with others

► Additional configuration

Cache, encryption key

Logs

CloudWatch

☐ CloudWatch logs - optional

Checking this option will upload build output logs to CloudWatch.

S3

☐ S3 logs - optional

Checking this option will upload build output logs to S3.

Cancel

Create build project

Developer Tools

CodeBuild

Source • CodeCommit

Artifacts • CodeArtifact

Build • CodeBuild

Getting started

Build projects

Build project

Settings

Build history

Report groups

Report history

Compute fleets [New](#)

Account metrics

Related integrations

Jenkins [↗](#)

GitHub Actions [↗](#) [New](#)

Deploy • CodeDeploy

Pipeline • CodePipeline

Settings

Go to resource

Feedback

Project created

You have successfully created the following project: demobuild

Create a notification rule for this project

Developer Tools

CodeBuild

Build projects

demobuild

Actions

Create trigger

Edit

Clone

Debug build

Start build with overrides

Start build

Configuration

Source provider

AWS CodeCommit

Primary repository

myrepo

Artifacts upload location

mynews3buc

Service role

arn:aws:iam::533267400284:role/service-role/codebuild

Public builds

Disabled

Build history

Batch history

Project details

Build triggers

Metrics

Build history

Stop build

View artifacts

View logs

Delete builds

Retry build

<

1

>

⊙

Build run	Status	Build number	Source version	Submitter	Duration	Completed
No results						
There are no results to display.						

Developer Tools

CodeBuild

Source • CodeCommit

Artifacts • CodeArtifact

Build • CodeBuild

Getting started

Build projects

Build project

Settings

Build history

Report groups

Report history

Compute fleets [New](#)

Account metrics

Related integrations

Jenkins [↗](#)

GitHub Actions [↗](#) [New](#)

Deploy • CodeDeploy

Pipeline • CodePipeline

Settings

Go to resource

Feedback

demobuild:e33140e9-6ec6-4408-8b78-e301b833c097

demobuild:e33140e9-6ec6-4408-8b78-e301b833c097

Stop build

Retry build

Build status

Status

Initiator

Build ARN

Resolved source version

Succeeded

CyrilDoss

arn:aws:codebuild:ap-south-1:533267400284:build/demobuild:e33140e9-6ec6-4408-8b78-e301b833c097

e5f37210342b0662805de6a755dba186a5c713a3

Start time

End time

Build number

Jul 11, 2024 1:03 PM (UTC+5:30)

Jul 11, 2024 1:03 PM (UTC+5:30)

2

Build logs

Phase details

Reports

Environment variables

Build details

Resource utilization

Name	Status	Context	Duration	Start time	End time
SUBMITTED	Succeeded	-	<1 sec	Jul 11, 2024 1:03 PM (UTC+5:30)	Jul 11, 2024 1:03 PM (UTC+5:30)
QUEUED	Succeeded	-	<1 sec	Jul 11, 2024 1:03 PM (UTC+5:30)	Jul 11, 2024 1:03 PM (UTC+5:30)
PROVISIONING	Succeeded	-	3 secs	Jul 11, 2024 1:03 PM (UTC+5:30)	Jul 11, 2024 1:03 PM (UTC+5:30)
DOWNLOAD_SOURCE	Succeeded	-	6 secs	Jul 11, 2024 1:03 PM (UTC+5:30)	Jul 11, 2024 1:03 PM (UTC+5:30)
INSTALL	Succeeded	-	27 secs	Jul 11, 2024 1:03 PM (UTC+5:30)	Jul 11, 2024 1:03 PM (UTC+5:30)
PRE_BUILD	Succeeded	-	<1 sec	Jul 11, 2024 1:03 PM (UTC+5:30)	Jul 11, 2024 1:03 PM (UTC+5:30)
BUILD	Succeeded	-	<1 sec	Jul 11, 2024 1:03 PM (UTC+5:30)	Jul 11, 2024 1:03 PM (UTC+5:30)
POST_BUILD	Succeeded	-	<1 sec	Jul 11, 2024 1:03 PM (UTC+5:30)	Jul 11, 2024 1:03 PM (UTC+5:30)

Amazon S3

Buckets

Access Grants

Access Points

Object Lambda Access Points

Multi-Region Access Points

Batch Operations

IAM Access Analyzer for S3

Block Public Access settings for this account

Storage Lens

Dashboards

Storage Lens groups

AWS Organizations settings

Feature spotlight [?](#)

AWS Marketplace for S3

Amazon S3

Buckets

mynews3buc

Objects

Properties

Permissions

Metrics

Management

Access Points

Objects (1)

Info

Copy S3 URI

Copy URL

Download

Open

Delete

Actions

Create folder

Upload

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

<

1

>

⊙

Name	Type	Last modified	Size	Storage class
Artifacts	-	July 11, 2024, 13:03:59 (UTC+05:30)	18.7 KB	Standard

Deploying the application using CodeDeploy

The screenshot shows the 'Create application' page in the AWS CodeDeploy console. The breadcrumb navigation is 'Developer Tools > CodeDeploy > Applications > Create application'. The main heading is 'Create application'. Below it is a form titled 'Application configuration'. The form has three sections: 'Application name' with a text input containing 'demoapp' and a '100-character limit' note; 'Compute platform' with a dropdown menu set to 'EC2/on-premises'; and 'Tags' with an 'Add tag' button. At the bottom right of the form are 'Cancel' and 'Create application' buttons.

Developer Tools > CodeDeploy > Applications > Create application

Create application

Application configuration

Application name
Enter an application name
demoapp
100-character limit

Compute platform
Choose a compute platform
EC2/on-premises

Tags
Add tag

Cancel Create application

Creating Role for deployment:

The screenshot shows the 'Permissions policies' page in the AWS IAM console. The breadcrumb navigation is 'Identity and Access Management (IAM) > Permissions policies'. The page title is 'Permissions policies (8) Info'. Below the title is a search bar and a 'Filter by Type' dropdown set to 'All types'. A table lists 8 AWS managed policies. Below the table are sections for 'Permissions boundary (not set)' and 'Generate policy based on CloudTrail events'. The footer shows '© 2024, Amazon Web Services, Inc. or its affiliates.' and links for 'Privacy', 'Terms', and 'Cookie preferences'.

Identity and Access Management (IAM)

Search IAM

Dashboard

Access management

- User groups
- Users

Roles

- Policies
- Identity providers
- Account settings

Access reports

- Access analyzer
- External access
- Unused access
- Analyzer settings
- Credential report
- Organization activity
- Service control policies

Related consoles

- IAM Identity Center
- AWS Organizations

CloudShell Feedback

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Last activity
Maximum session duration
1 hour

Permissions Trust relationships Tags Access Advisor Revoke sessions

Permissions policies (8) Info

You can attach up to 10 managed policies.

Search Filter by Type All types

Policy name	Type	Attached entities
AmazonEC2ContainerRegistryFullAccess	AWS managed	1
AmazonEC2ContainerRegistryPowerUser	AWS managed	1
AmazonEC2FullAccess	AWS managed	2
AmazonEC2RoleforAWSCodeDeploy	AWS managed	1
AmazonEC2RoleforAWSCodeDeployLimited	AWS managed	1
AmazonS3FullAccess	AWS managed	2
AWSCodeDeployFullAccess	AWS managed	1
AWSCodeDeployRole	AWS managed	1

Permissions boundary (not set)

Generate policy based on CloudTrail events

Installing deployment agent:

```
aws Services Search [Alt+S]

#!/bin/bash
# This installs the CodeDeploy agent and its prerequisites on Ubuntu 22.04.
sudo apt-get update
sudo apt-get install ruby-full ruby-webrick wget -y
cd /tmp
wget https://aws-coddeploy-ap-south-1.s3.ap-south-1.amazonaws.com/releases/codedeploy-agent_1.3.2-1902_all.deb
mkdir codedeploy-agent_1.3.2-1902_ubuntu22
dpkg-deb -R codedeploy-agent_1.3.2-1902_all.deb codedeploy-agent_1.3.2-1902_ubuntu22
sed 's/Depends:.*//Depends:ruby3.0/' -i ./codedeploy-agent_1.3.2-1902_ubuntu22/DEBIAN/control
dpkg-deb -b codedeploy-agent_1.3.2-1902_ubuntu22/
sudo dpkg -i codedeploy-agent_1.3.2-1902_ubuntu22.deb
systemctl list-units --type=service | grep codedeploy
sudo service codedeploy-agent status
```

Created Deployment Group:

Success
Deployment group created

Developer Tools > CodeDeploy > Applications > demoapp > deploygrp

deploygrp

Deployment group details

Deployment group name	Application name	Compute platform
deploygrp	demoapp	EC2/on-premises
Deployment type	Service role ARN	Deployment configuration
In place	arn:aws:iam::533267400284:role/mycodedeployrole	CodeDeployDefault.AllAtOnce
Rollback enabled	Agent update scheduler	
False	Learn to schedule update in AWS Systems Manager	

Environment configuration: Amazon EC2 instances

Key	Value
Name	amazonc2

Triggers

Name	Events	Type
------	--------	------

No triggers have been created for this deployment group.

Creating Role for Ec2 machine:

IAM > Roles > Create role

Step 1: Select trusted entity

Step 2: Add permissions

Step 3: Name, review, and create

Add permissions

Permissions policies (1/943)

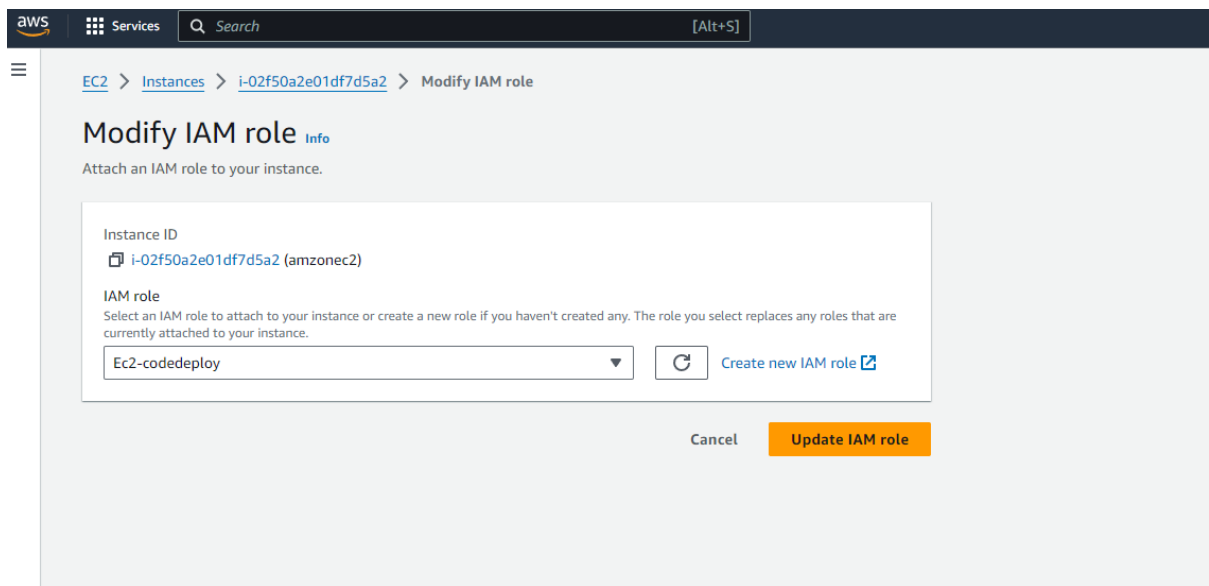
Choose one or more policies to attach to your new role.

Filter by Type: All types 11 matches

Policy name	Type	Description
<input type="checkbox"/> AmazonEC2RoleForAWSCodeDeploy	AWS managed	Provides EC2 access to S3 bucket to do...
<input type="checkbox"/> AmazonEC2RoleForAWSCodeDeployLimited	AWS managed	Provides EC2 limited access to S3 buck...
<input type="checkbox"/> AWSCodeDeployDeveloperAccess	AWS managed	Provides access to register and deploy ...
<input checked="" type="checkbox"/> AWSCodeDeployFullAccess	AWS managed	Provides full access to CodeDeploy res...
<input type="checkbox"/> AWSCodeDeployReadOnlyAccess	AWS managed	Provides read only access to CodeDepl...
<input type="checkbox"/> AWSCodeDeployRole	AWS managed	Provides CodeDeploy service access to ...
<input type="checkbox"/> AWSCodeDeployRoleForCloudFormation	AWS managed	Provides CodeDeploy service access to ...
<input type="checkbox"/> AWSCodeDeployRoleForECS	AWS managed	Provides CodeDeploy service wide acc...
<input type="checkbox"/> AWSCodeDeployRoleForECSlimited	AWS managed	Provides CodeDeploy service limited a...
<input type="checkbox"/> AWSCodeDeployRoleForLambda	AWS managed	Provides CodeDeploy service access to ...
<input type="checkbox"/> AWSCodeDeployRoleForLambdaLimited	AWS managed	Provides CodeDeploy service limited a...

Set permissions boundary - optional

Changing Ec-2 Role:



The screenshot shows the AWS Management Console interface for the 'Modify IAM role' page. The breadcrumb navigation at the top reads: EC2 > Instances > i-02f50a2e01df7d5a2 > Modify IAM role. The main heading is 'Modify IAM role' with an 'Info' link. Below the heading is the instruction 'Attach an IAM role to your instance.' A white box contains the 'Instance ID' section, showing the instance 'i-02f50a2e01df7d5a2 (amazonec2)'. Below this is the 'IAM role' section, which includes the instruction '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.' A dropdown menu is set to 'Ec2-codedeploy', and there is a 'Create new IAM role' link with a plus icon. At the bottom right of the white box are 'Cancel' and 'Update IAM role' buttons.

EC2 > Instances > i-02f50a2e01df7d5a2 > Modify IAM role

Modify IAM role [Info](#)

Attach an IAM role to your instance.

Instance ID

i-02f50a2e01df7d5a2 (amazonec2)

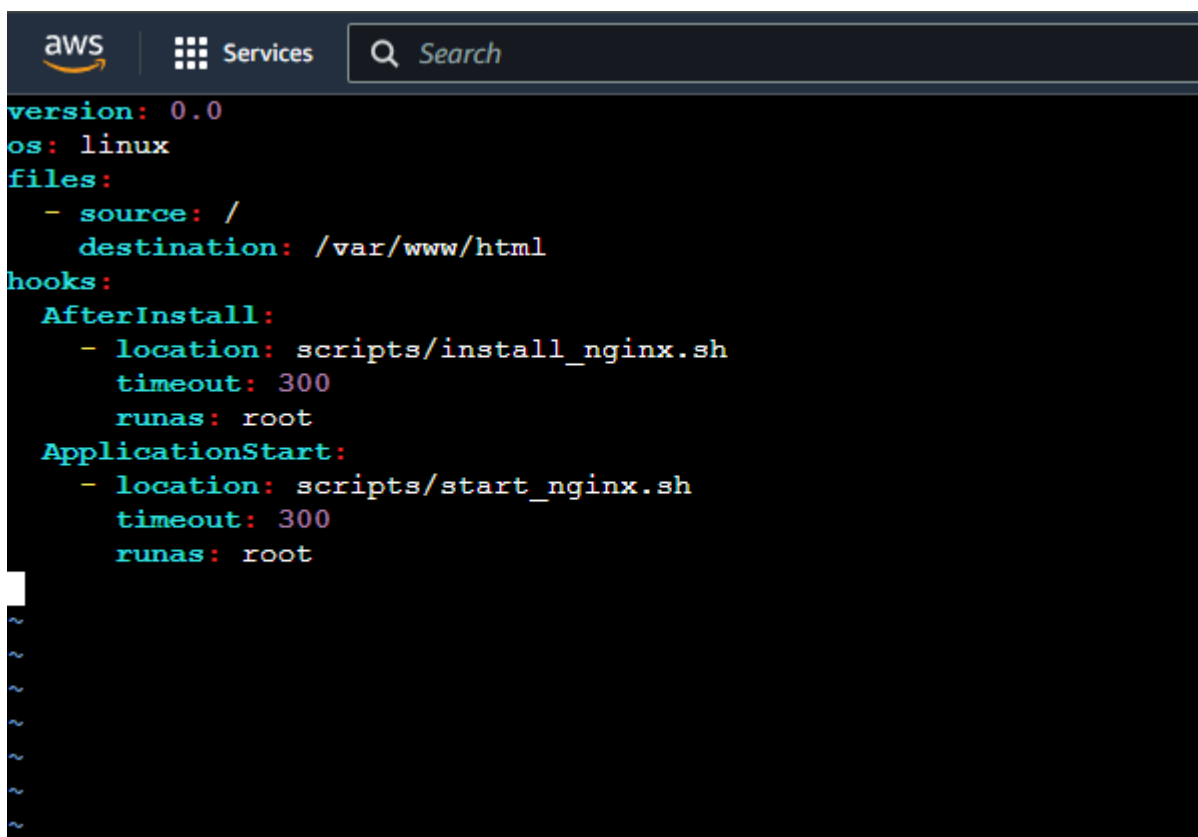
IAM role

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-codedeploy [Create new IAM role](#)

Cancel [Update IAM role](#)

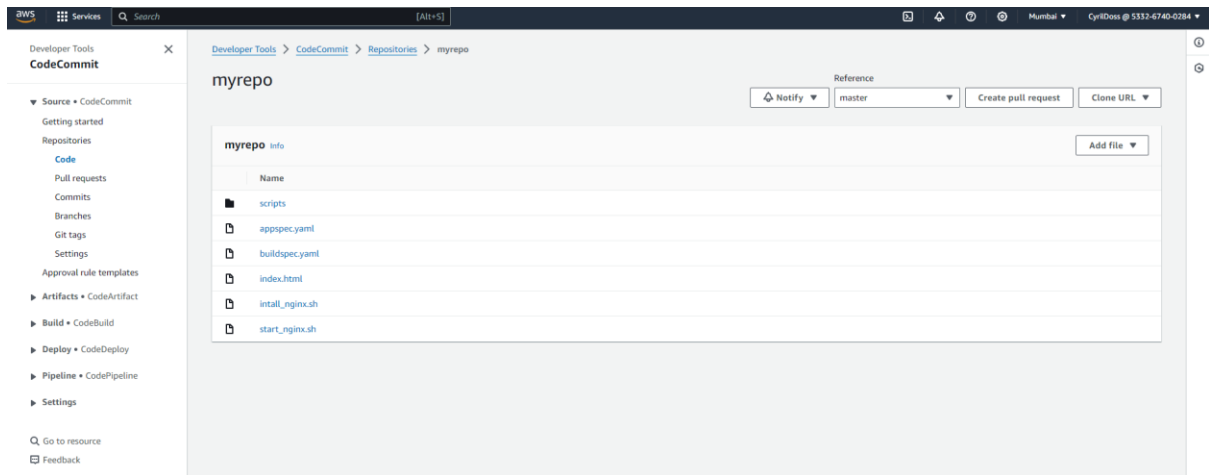
Writing appspec.yaml:



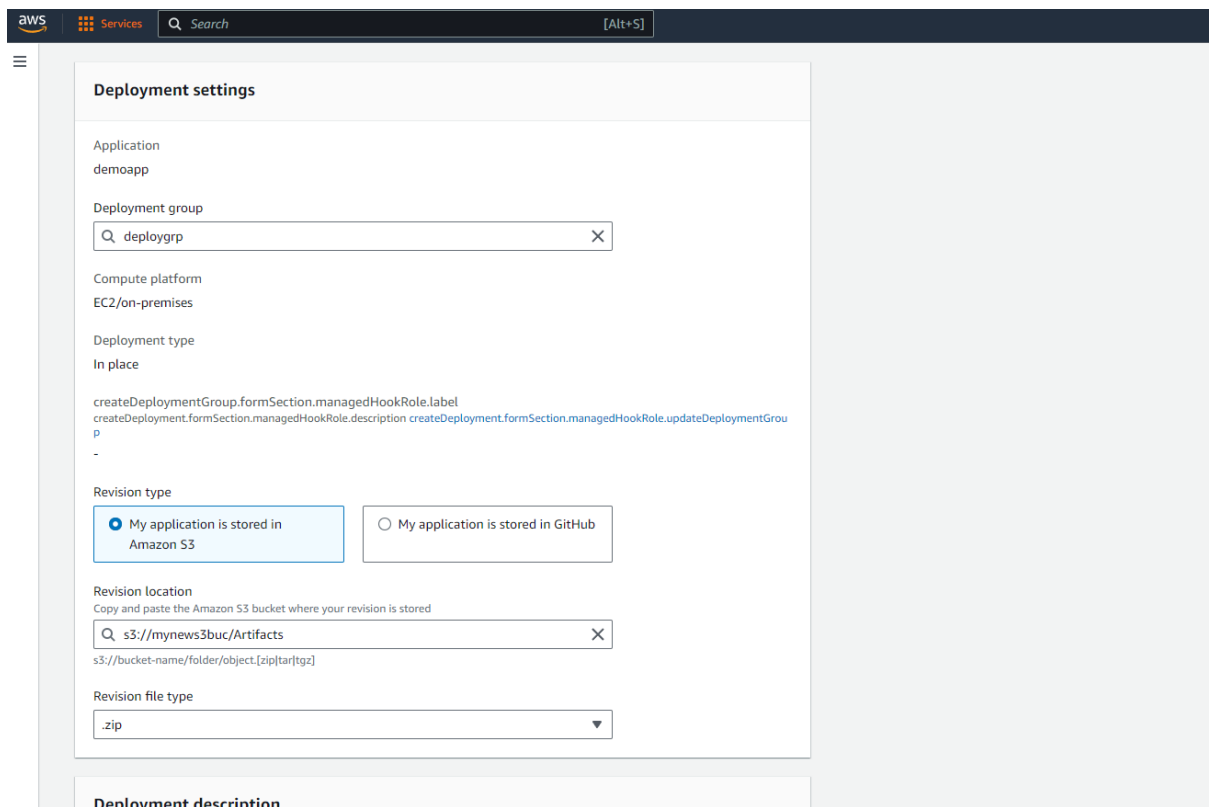
The screenshot shows the AWS CloudFormation console with the 'appspec.yaml' file content displayed in a dark-themed editor. The file content is as follows:

```
version: 0.0
os: linux
files:
  - source: /
    destination: /var/www/html
hooks:
  AfterInstall:
    - location: scripts/install_nginx.sh
      timeout: 300
      runas: root
  ApplicationStart:
    - location: scripts/start_nginx.sh
      timeout: 300
      runas: root
```

Below the main content, there are several lines of tilde (~) characters, likely representing a scrollable list or additional configuration details.



Creating Deployment:



aws

Services

Search

[Alt+S]

Deployment description

Deployment description – optional

Add a brief description of the deployment

deploy

Additional deployment behaviour settings

ApplicationStop lifecycle event failure - optional

Type a deployment group name

☐ Don't fail the deployment to an instance if this lifecycle event on the instance fails

Content options - optional

Choose what to do during a deployment when a file on a target instance has the same name as a file in the application revision

☐ Fail the deployment

An error is reported and the deployment status is changed to Failed.

☐ Overwrite the content

The file in the application revision is copied to the target location on the instance, replacing the previous file.

☐ Retain the content

The file in the application revision is not copied to the instance. The existing file is kept at the target location and treated as part of the new deployment.

► Deployment group overrides

► Roll back configuration overrides

Cancel

Create deployment

CloudShell

Feedback

aws

Services

Search

[Alt+S]

Mumbai

CybilDoss @ 5332-6740-0284

Developer Tools

CodeDeploy

► Source • CodeCommit

► Artifacts • CodeArtifact

► Build • CodeBuild

▼ Deploy • CodeDeploy

Getting started

Deployments

Deployment

Applications

Deployment configurations

On-premises instances

► Pipeline • CodePipeline

► Settings

Go to resource

Feedback

Success

Deployment created

Developer Tools > CodeDeploy > Deployments > d-C6JUBWNOI

d-C6JUBWNOI

Stop deployment

Stop and roll back deployment

Deployment status

Installing application on your instances

0 of 1 instances updated In progress 0%

Deployment details

Application	demoapp	Deployment ID	d-C6JUBWNOI	Status	In progress
Deployment configuration	CodeDeployDefault.AllAtOnce	Deployment group	deploygrp	Initiated by	User action
Deployment description	deploy				

Revision details

Revision location	s3://mynews3bus/Artifacts	Revision created	Just now	Revision description	Application revision registered by Deployment ID: d-C6JUBWNOI
-------------------	---------------------------	------------------	----------	----------------------	---



Developer Tools

CodeDeploy

Source • CodeCommit

Artifacts • CodeArtifact

Build • CodeBuild

Deploy • CodeDeploy

Getting started

Deployments

Deployment

Applications

Deployment configurations

On-premises instances

Pipeline • CodePipeline

Settings

Go to resource

Feedback

Developer Tools > CodeDeploy > Deployments > d-C6JUBWNOI > arn:aws:ec2:ap-south-1:533267400284:instance/i-02f50a2e01df7d5a2

arn:aws:ec2:ap-south-1:533267400284:instance/i-02f50a2e01df7d5a2

Deployment details

Application	demoapp	Deployment ID	d-C6JUBWNOI	Status	In progress
Deployment configuration	CodeDeployDefault::AllAtOnce	Deployment group	deploygrp	Initiated by	User action
Deployment description	deploy				

Revision details

Revision location	s3://mynews3buc/Artifacts	Revision created	3 minutes ago	Revision description	Application revision registered by Deployment ID: d-C6JUBWNOI
-------------------	---------------------------	------------------	---------------	----------------------	---

Event	Duration	Status	Error code	Start time	End time
ApplicationStop	less than one second	Succeeded	-	Jul 11, 2024 3:37 PM (UTC+5:30)	Jul 11, 2024 3:37 PM (UTC+5:30)
DownloadBundle	less than one second	Succeeded	-	Jul 11, 2024 3:37 PM (UTC+5:30)	Jul 11, 2024 3:37 PM (UTC+5:30)

Deployed Application

