



Package an App with CodeBuild



Prerana P

The screenshot shows the AWS CodeBuild console with a new project named "nextwork-web-build". The "Configuration" tab is selected, displaying details such as the source provider (GitHub), primary repository ("Prerana/AWS_CI_CD"), artifacts upload location ("nextwork-build-artifacts-prerana"), and service role ("arn:aws:iam::385008081047:role/service-role/codebuild-nextwork-web-build-service-role-3"). The "Build history" tab shows no results.



Introducing today's project!

What is AWS CodeBuild?

AWS CodeBuild is a fully managed continuous integration service that compiles source code, runs tests, and produces deployable build artifacts. It is useful because it eliminates the need to set up and manage build servers, automatically scales to ha

How I used CodeBuild in this project

I used AWS CodeBuild in today's project to automate the process of building my web app. CodeBuild pulled the source code from the repository, compiled it, ran tests, and packaged the output into a zip file (a build artifact). The build artifact was t

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One thing I didn't expect in this project was attaching the policy to the role. Setting up the correct permissions for the CodeBuild role required more attention than anticipated to ensure it could access resources like the S3 bucket and CloudWatch L

This project took me...

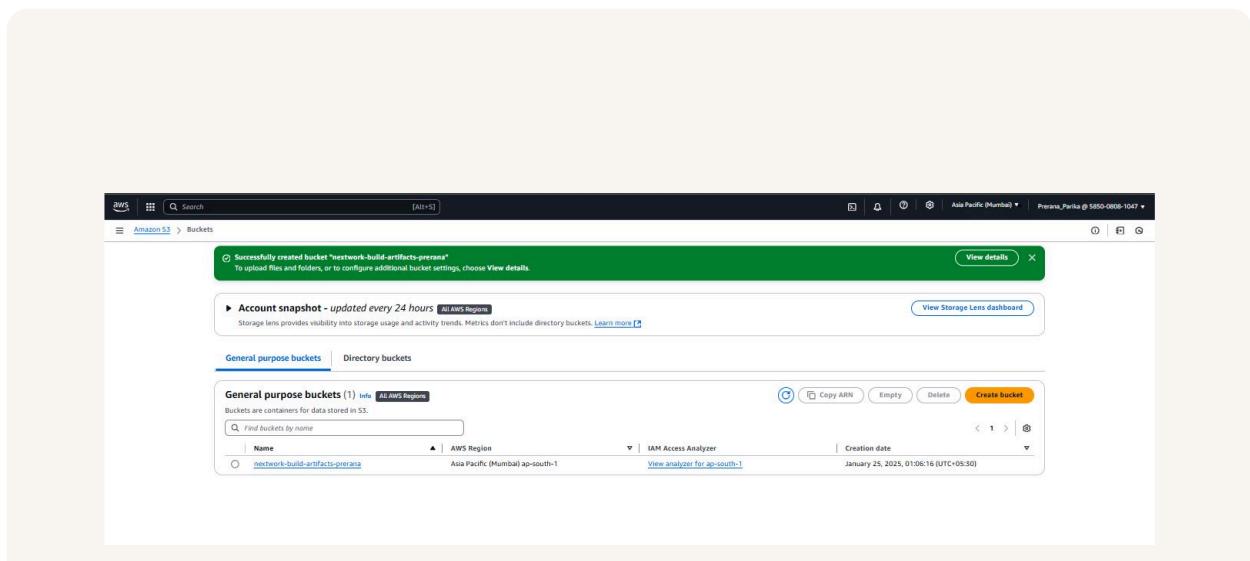
This project took me 20 minutes to complete.

Set up an S3 bucket

I started my project by creating an S3 bucket because it serves as a storage location for files generated during the build process. This ensures that AWS CodeBuild has a destination to store build artifacts, facilitating smoother integration and auto

The build process translates web app code into machine code that servers can run. It involves compiling, testing, and packaging the app. The key build artifact is a WAR file, which bundles everything a server needs to host the web app, similar to a z

This artifact is important because it bundles all the necessary files and resources required to deploy and run the web app on a server. The WAR file simplifies deployment by packaging everything into a single, easily transferable file that servers ca





Set up a CodeBuild project

Source

My CodeBuild project's Source configuration means that CodeBuild will pull the source code for the build process from a specified location. I selected a repository in AWS CodeCommit, GitHub, or another supported source control service where my web ap

Environment

My CodeBuild project's Environment configuration means that I am specifying the runtime environment in which the build will execute. I selected the appropriate build environment, such as an operating system (e.g., Amazon Linux 2) and a runtime (e.g.,

Artifacts

My CodeBuild project's Artifacts configuration means that I am specifying where and how the output of the build process will be stored after the build completes. I selected an S3 bucket to store the build artifact, which is a zip or WAR file, making

Logs

My CodeBuild project's Logs configuration means that I am specifying where the logs of the build process will be stored for monitoring and troubleshooting. I selected Amazon CloudWatch Logs to capture and view detailed logs of the build, allowing me

Create a buildspec.yml file

I created a buildspec.yml file in my project because it defines the build instructions for AWS CodeBuild. This file specifies the phases of the build process, such as installing dependencies, running tests, and packaging the application, along with t

```
version: 0.2
phases:
  install:
    runtime-versions:
      java: corretto8
  pre_build:
    commands:
      - echo Initializing environment
      - export CODEARTIFACT_AUTH_TOKEN=`aws codeartifact get-authorization-token --domain nextwork --domain-owner 58500808`
  build:
    commands:
      - echo Build started on `date`
      - mvn -s settings.xml compile
  post_build:
    commands:
      - echo Build completed on `date`
      - mvn -s settings.xml package
artifacts:
  files:
    - target/nextwork-web-project.war
discard-paths: no
```



Create a CodeBuild build project

My buildspec.yml file has four stages

The first two phases in my buildspec.yml file were the install phase, where I set up dependencies and tools needed for the build, and the pre_build phase, where I ran preparatory commands such as configuring the environment or validating prerequisite

The third phase in my buildspec.yml file was the build phase, where the actual build process took place. In this phase, I compiled the code, ran tests, and created the build artifact, such as a zip file or WAR file, which was then stored in the design

The fourth phase in my buildspec.yml file was the post_build phase, where any post-build actions were executed. This typically included steps like notifying other services, uploading build artifacts to an S3 bucket, or running additional scripts to f

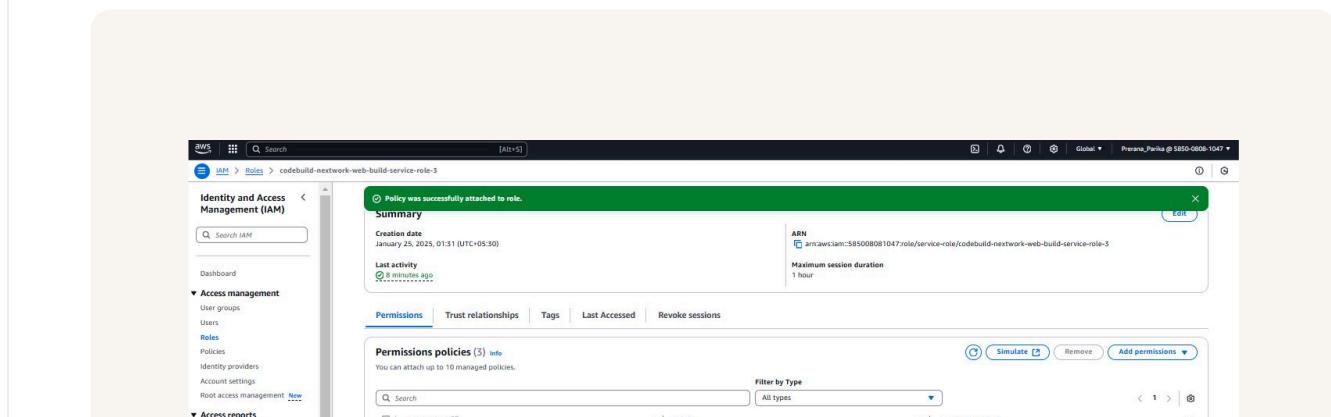
Modify CodeBuild's IAM role

Before building my CodeBuild project, I modified its service role first.

My CodeBuild project's service role was first created when I set up the CodeBuild project. This role was automatically generated to allow CodeBuild to interact with other AWS services, such as S3 for storing build artifacts and CloudWatch for logging

I attached a new policy called codeartifact-nextwork-consumer-policy and CodeBuildCloudWatchLogsAccess to my CodeBuild role. The codeartifact-nextwork-consumer-policy allows CodeBuild to access resources in AWS CodeArtifact, while CodeBuildCloudWatch

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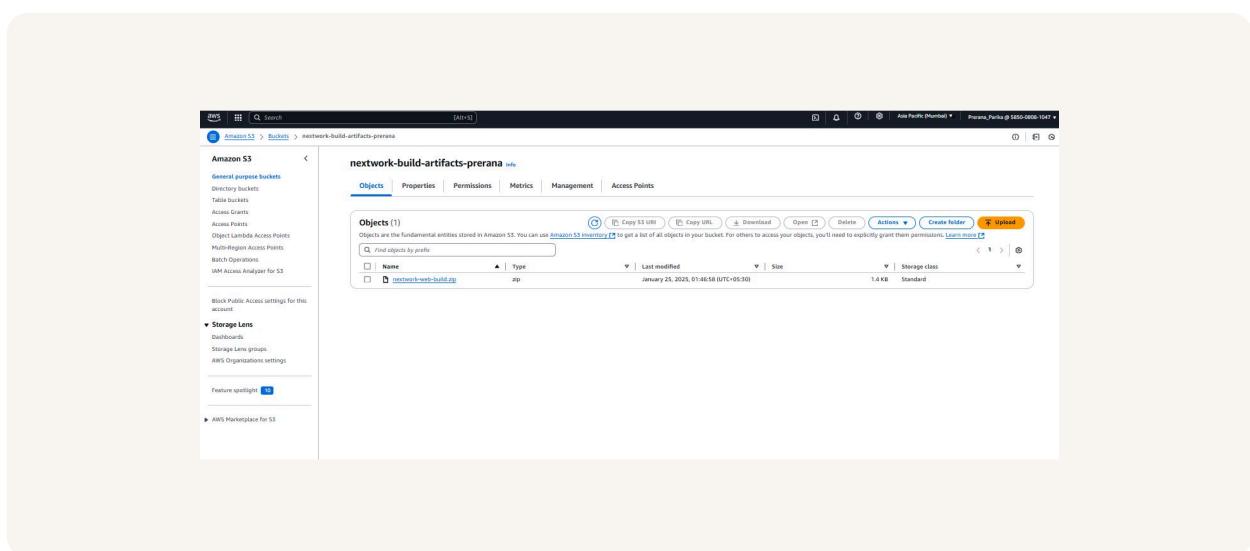
My first project build □

To build my project, all I had to do was navigate to the AWS CodeBuild console, select my project, and click the "Start Build" button. This initiated the build process using the configured source, environment, and settings.

The build process in CodeBuild took 1 minute and 19 seconds to complete.

Once the build was complete, I checked the S3 bucket where the zip file, containing the build artifact, was created and stored.

I saw a zip file in the S3 bucket, which verified that the build was completed successfully.





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