



Package an App with CodeBuild



Shikha Gupta

The screenshot shows the AWS CodeBuild console with a success message: "Project created. You have successfully created the following project: nextwork-web-build". The configuration details for the project "nextwork-web-build" are displayed, including the source provider (AWS CodeCommit), primary repository ("nextwork-web-project"), artifacts upload location ("nextwork-build-artifacts-shikha"), and service role ("arn:aws:iam::110060005140:role/service-role/codebuild-nextwork-web-build-service-role"). The "Build history" tab is selected, showing a single build entry with status "Success". The browser's address bar shows the URL: "ap-south-1.console.aws.amazon.com/codesuite/codebuild/projects/nextwork-web-build/builds-meta=eyJmIjp7nRleHQ2OiiifSwicyf6e30slm4tOjlxLClpjowfQ".



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Introducing today's project!

What is AWS CodeBuild?

AWS CodeBuild is a managed service that automates building and testing code. It's useful because it handles builds, scales automatically, and integrates with other AWS services, making development and deployment easier.

How I used CodeBuild in this project

I used AWS CodeBuild in today's project to automate the build process. It compiled the code, ran tests, and produced build artifacts, streamlining the development workflow and integrating with other AWS services.

One thing I didn't expect in this project was...

One thing I didn't expect was how quickly AWS CodeBuild handled the build process and integrated with other AWS services, significantly speeding up development and deployment.

This project took me...

The project took me about 1hr to complete, including setup, configuration, and testing of all services involved.



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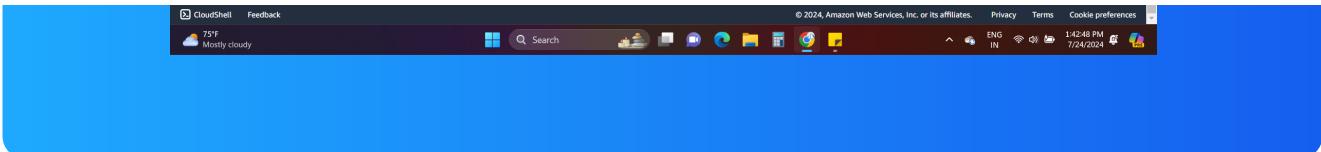
Set up an S3 bucket

I started my project by creating an S3 bucket because we have to store a file that gets created in the build process

The key artifact that this S3 bucket will capture is called Build artifacts

This artifact is important because it packages up everything a server could need to host our web app in one neat bundle

A screenshot of the AWS S3 console. The browser address bar shows the URL: ap-south-1.console.aws.amazon.com/s3/buckets?region=ap-south-1&bucketType=general. The main content area displays a green success message: "Successfully created bucket \"nextwork-build-artifacts-shikha\". To upload files and folders, or to configure additional bucket settings, choose View details." Below this, the "Amazon S3 > Buckets" section shows an account snapshot updated every 24 hours. A "General purpose buckets" table is present, listing one bucket: "nextwork-build-artifacts-shikha". The table includes columns for Name, AWS Region, IAM Access Analyzer, and Creation date. The "Create bucket" button is visible at the top right of the table area.



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Set up a CodeBuild project

Source

Source means the location of the code that CodeBuild will fetch, compile, and package into a WAR file and I selected AWS CodeCommit repository.

Environment

An environment includes all the software, tools, settings, and configurations that your application needs to function properly.

Artifacts

My CodeBuild project's Artifacts configuration means the files that CodeBuild will produce while building your project. So in this panel, we're telling CodeBuild to package all the artifacts it creates into a WAR file.

Logs

My CodeBuild project's Logs configuration means it collects and stores log files from AWS services in your account.



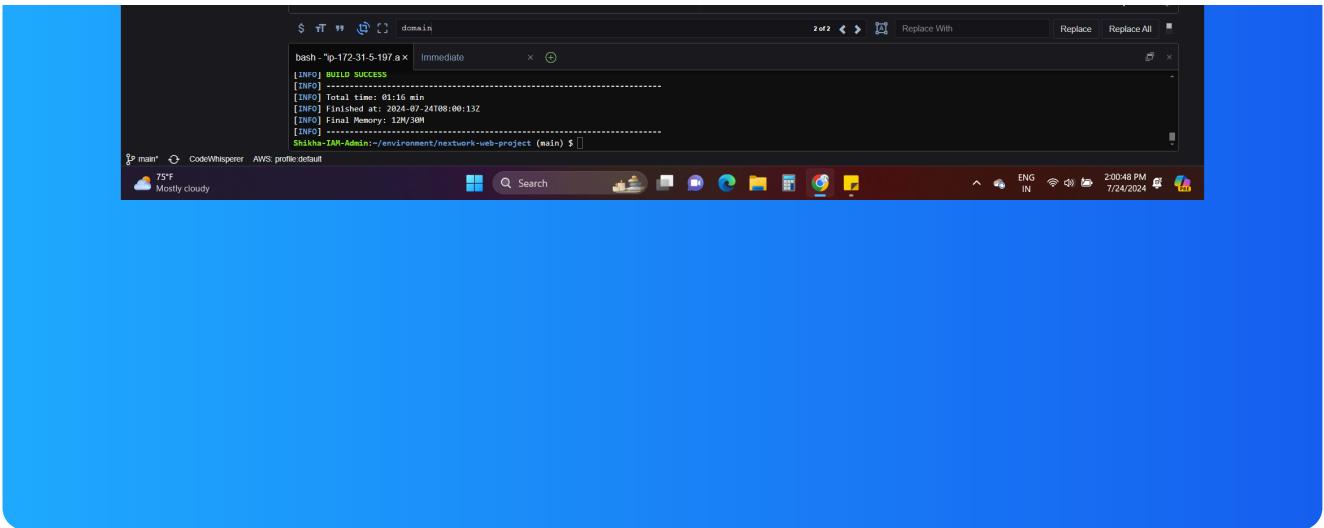
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Create a buildspec.yml file

I created a buildspec.yml file in my project because this file makes sure that every build follows the same steps and produces consistent results.

```
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-packages --domain-owner 110060005140 --query authorizationToken --output text)
    build:
      commands:
        - echo Build started on `date`
        - mvn s settings.xml package
    post_build:
      commands:
        - echo Build completed on `date`
        - mvn s settings.xml package
  artifacts:
    files:
      - target/nextwork-web-project.war
    discard-paths: no
```



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Create a CodeBuild build project

My buildspec.yml file has four stages

The first two phases in my buildspec.yml file were: `install`: This phase installs necessary dependencies and sets up the environment. `pre_build`: This phase runs commands to prepare the build, such as configuring settings or fetching resources.

The third phase in my buildspec.yml file was `build`. This phase executes the commands to compile the code, run tests, and produce the build artifacts.

The fourth phase in my buildspec.yml file was `post_build`. This phase typically includes commands for tasks like uploading build artifacts, deploying the

application, or performing any final steps required after the build process is complete.



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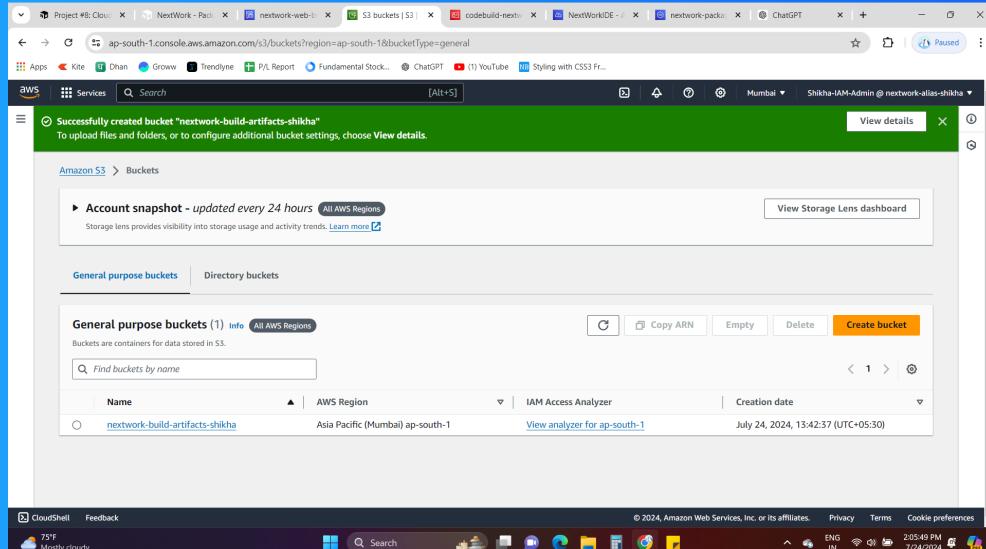
Modify CodeBuild's IAM role

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, which established the necessary permissions for CodeBuild to interact with other AWS services and resources.

I attached a new policy called CodeBuildPolicy to my CodeBuild role. This policy grants the necessary permissions for CodeBuild to access and manage resources such as source repositories, artifact storage, and build logs.

Attaching this policy means that CodeBuild has the required permissions to access and manage resources like source repositories, build artifacts, and logs. It ensures that the build process can run smoothly and interact with other AWS services.



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My first project build

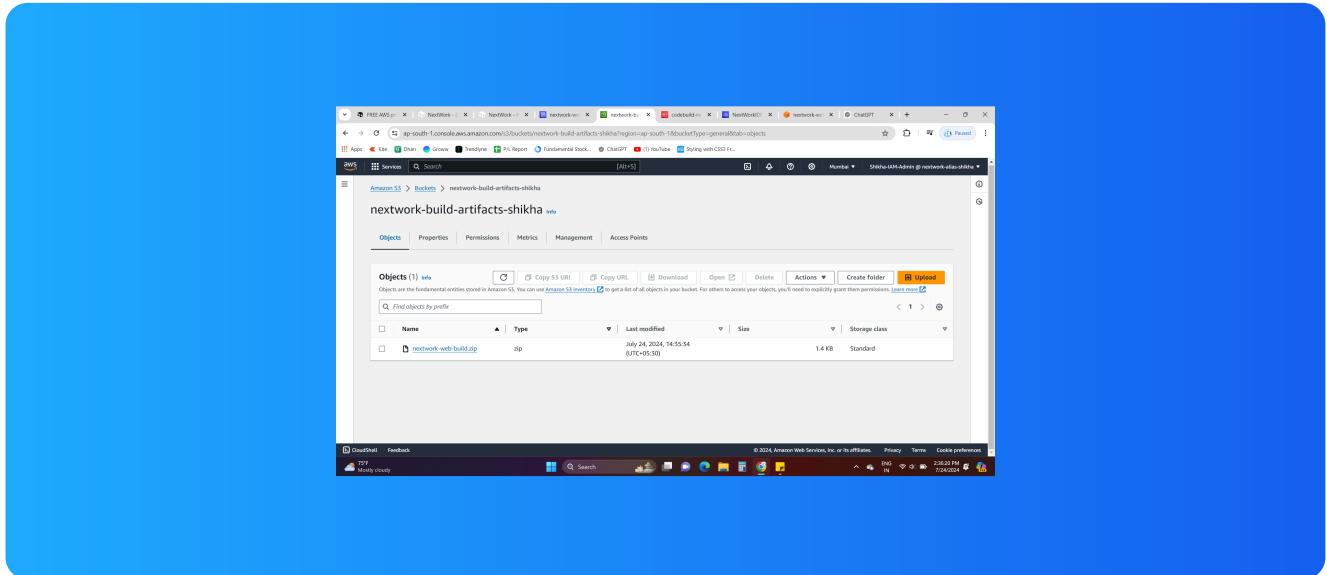


To build my project, all I had to do was initiate the build process in AWS CodeBuild. This action kicked off the defined buildspec.yml phases, compiling code, running tests, and generating the artifacts as specified.

The build process in CodeBuild took 5 mins.

Once the build is complete, I checked S3 bucket "nextwork-build-artifacts-shikha".

I saw that there is nextwork-web-build.zip which verified that the build was completed successfully.



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