



Package an App with CodeBuild



tiubenedict@gmail.com

Developer Tools > CodeBuild > Build projects > nextwork-web-build

nextwork-web-build

Actions ▾ Create trigger Edit Clone Debug build Start build with overrides

Start build

Configuration			
Source provider AWS CodeCommit	Primary repository nextwork-web-project	Artifacts upload location nextwork-build-artifacts-bene	Service role arn:aws:iam::050752641312:role/service-role/codebuild-nextwork-web-build-service-role
Public builds Disabled			



tiubenedict@gmail.com

NextWork Student

NextWork.org

Introducing today's project!

What is AWS CodeBuild?

CodeBuild is AWS' own scalable and on-demand build server solution, and we can use it to compile our projects from a source repo, drawing from an artifacts repo for dependencies, and export the final build artifact toward storage, all automatically.

How I used CodeBuild in this project

We used it to trigger a build process drawing from our CodeCommit/Github repo and CodeArtifact package repo, and export the WAR file to an S3 bucket.

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

I didn't expect setting up a build server to be so quick.

This project took me...

20 minutes.



Set up an S3 bucket

I started my project by creating an S3 bucket because I need to host the compiled web app in it, so that it can be served to the clients later on.

The key build artifact that this S3 bucket will capture is called a WAR file (web app resource), created by CodeBuild using the packages stored in CodeArtifact.

This artifact is important because it contains the compiled web app, which can be easily hosted and run by the EC2 instance to serve the web app online.

The screenshot shows the AWS S3 console interface. At the top, there are two tabs: "General purpose buckets" (which is selected) and "Directory buckets". Below the tabs, a search bar contains the text "nextwork" and displays "1 match". A table lists one bucket entry:

Name	AWS Region	IAM Access Analyzer	Creation date
nextwork-build-artifacts-bene	Asia Pacific (Sydney) ap-southeast-2	View analyzer for ap-southeast-2	October 14, 2024, 13:06:59 (UTC+09:00)



tiubenedict@gmail.com

NextWork Student

NextWork.org

Set up a CodeBuild project

Source

My CodeBuild project's Source configuration means where it will get the source code from, and I selected CodeCommit/Github to pull my web app code from there.

Environment

My CodeBuild project's Environment configuration means what type of instance and image will be used on the build server, and I selected standard Amazon Linux with coretto 8 on EC2.

Artifacts

My CodeBuild project's Artifacts configuration means where it will store the build artifacts after building, and I selected my S3 bucket for this.

Logs

My CodeBuild project's Logs configuration means how it will store the logs for the build process, and I selected a stream name prefix of "webapp" so that I can capture all related build logs under that name.



tiubenedict@gmail.com

NextWork Student

NextWork.org

Create a buildspec.yml file

I created a buildspec.yml file in my project because CodeBuild uses that as instructions for different parts of the build phase, from setting up to building to uploading artifacts.

```
! buildspec.yml U X
! buildspec.yml
1   version: 0.2
2
3   phases:
4     install:
5       runtime-versions:
6         | java: corretto8
7     pre_build:
8       commands:
9         | - echo Initializing environment
10        | - export CODEARTIFACT_AUTH_TOKEN=`aws codeartifact get-authorization-token --domain nextwork --domain-owner 0507
11   build:
12     commands:
13       | - echo Build started on `date`
14       | - mvn -s settings.xml compile
15     post_build:
16       commands:
17         | - echo Build completed on `date`
18         | - mvn -s settings.xml package
19   artifacts:
20     files:
21       | - target/nextwork-web-project.war
22     discard-paths: no
23
```



tiubenedict@gmail.com

NextWork Student

NextWork.org

Create a CodeBuild build project

My buildspec.yml file has four stages

The first two phases in my buildspec.yml were about installing the runtime version (corretto 8) and setting the environment variable for the CodeArtifact authentication token.

The third phase in my buildspec.yml file contains the commands for the actual build phase.

The fourth phase in my buildspec.yml file contains commands to run after the build is completed.



tiubenedict@gmail.com

NextWork Student

NextWork.org

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 created the Build Project and indicated that I wanted a custom service role created for this.

I attached a new policy called codeartifact-nextwork-consumer-policy, which allows other DevOps resources to access my CodeArtifact repo.

Attaching this policy means CodeBuild is now able to retrieve packages from my CodeArtifact repo.

The screenshot shows the AWS IAM Policies page with a blue header. The top navigation bar includes 'Refresh policies' (which is highlighted), 'Trust relationships', 'Tags', 'Last Accessed', and 'Revoke sessions'. Below this, there's a section titled 'Permissions policies (3) Info' with a note: 'You can attach up to 10 managed policies.' There are four buttons: a 'Create' button, 'Simulate' (with a dropdown arrow), 'Remove', and 'Add permissions' (with a dropdown arrow). A search bar labeled 'Search' and a 'Filter by Type' dropdown set to 'All types' are also present. The main table lists three policies:

Policy name	Type	Attached entities
codeartifact-nextwork-consumer-policy	Customer managed	1
CodeBuildBasePolicy-nextwork-web-build-a...	Customer managed	1
CodeBuildCloudWatchLogsPolicy-nextwork-...	Customer managed	1



tiubenedict@gmail.com

NextWork Student

NextWork.org

My first project build □

To build my project, all I had to do was click on the "Start build" button, after the buildspec.yml has been committed to the CodeCommit/Github source repo.

The build process in CodeBuild took around 1-2 minutes!

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

I saw the nextwork-web-build.zip file, which verified that the build was completed successfully.

The screenshot shows the Amazon S3 console interface. The top navigation bar includes 'Amazon S3', 'Buckets', and the specific bucket name 'nextwork-build-artifacts-bene'. Below the navigation is a toolbar with 'Objects', 'Properties', 'Permissions', 'Metrics', 'Management', and 'Access Points'. A sub-toolbar for 'Objects' includes 'Upload' (which is highlighted in orange), 'Create folder', and other actions like 'Copy S3 URI', 'Copy URL', 'Download', 'Open', 'Delete', and 'Actions'. A search bar labeled 'Find objects by prefix' is present. The main content area displays a table of objects. The table has columns for 'Name', 'Type', 'Last modified', and 'Size'. One object is listed: 'nextwork-web-build.zip' (Type: zip, Last modified: October 14, 2024, 15:37:51 (UTC+09:00), Size: 1.2 K).



NextWork.org

Everyone should be in a job they love.

Check out nextwork.org for
more projects

