MANAGING A CI/CD PIPELINE WITH AWS CODE FAMILY

PROJECT 3 / 6

SECURE PROJECT DEPENDENCIES WITH AWS CODEARTIFACT

Muhammad Asif Sahil

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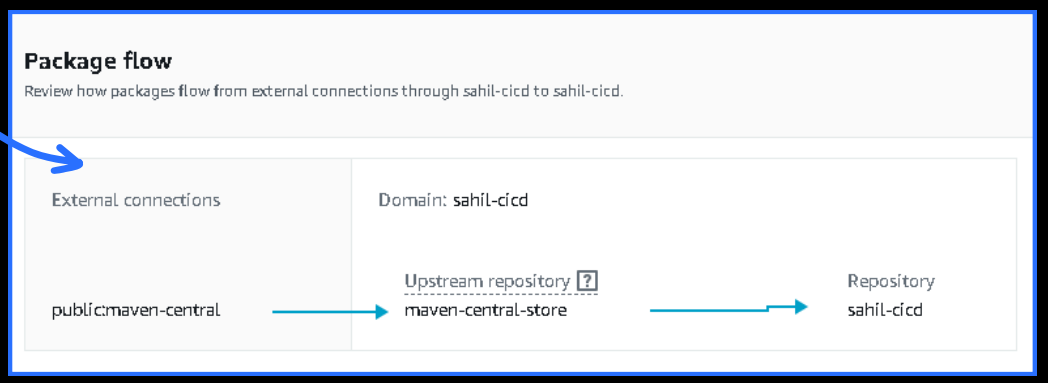
01

CREATE A REPOSITORY

- CodeArtifact is a managed artifact repository service by AWS that enables secure storage, publishing, and sharing of software packages used in your development process.

- Instead of a single repository, there are actually three connected repositories that Maven uses to fetch packages.
  - Central Repositories
  - Maven Repositories
  - Remote Repositories

Package flow illustrating the connections between the three repositories.



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CONNECT IDE TO CODEARTIFACT

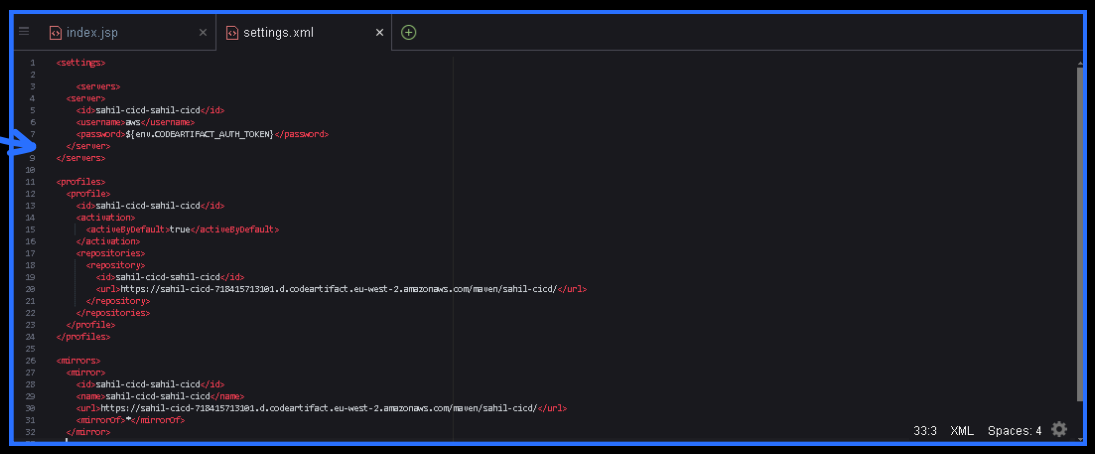
02

- Next, I connected my Cloud9 IDEto CodeArtifact to securely access, store, and share software packages, ensuring that dependencies are consistently managed and available for my projects.

- I created a new file, settings.xml, in my web app. settings.xml is more of controller, which tells the Maven to what to do.

- The code I pasted into settings.xml were provided by CodeArtifact, so I did not have to write from scratch. The snippets of code, The code snippets define repository URLs, authentication details, and other settings so that Maven can correctly work with CodeArtifact to fetch and store your project's dependencies.

My settings.xml file



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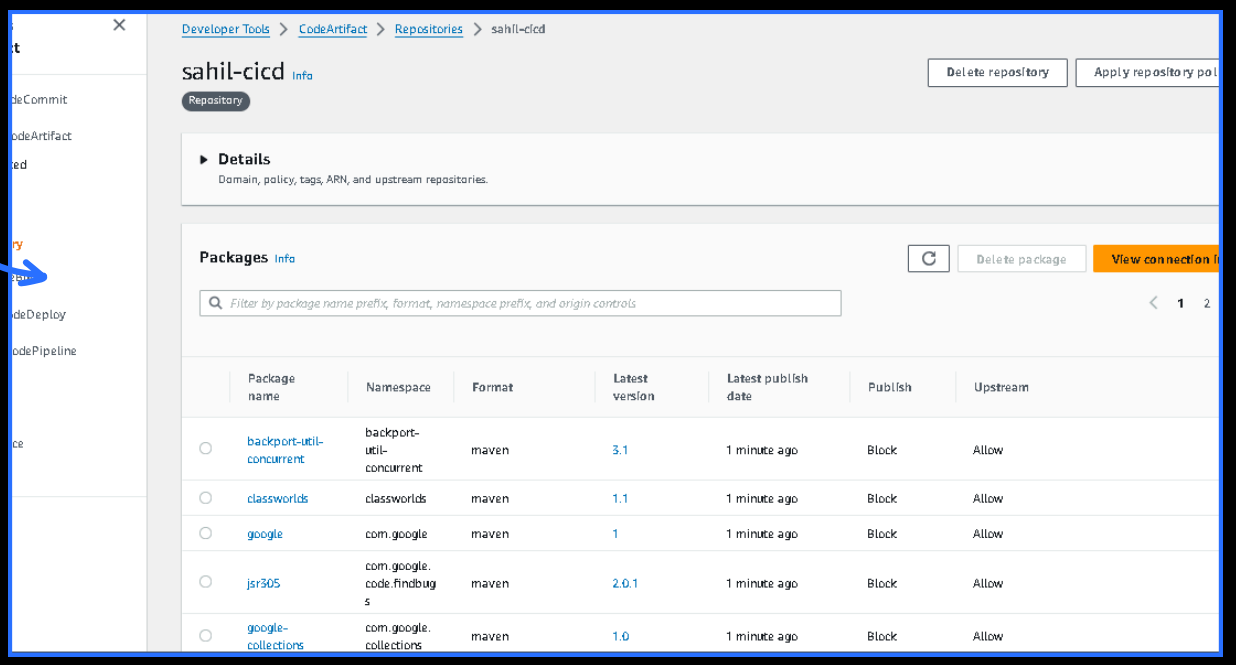
03

TEST THE CONNECTION

- To test the connection between Cloud9 and CodeArtifact, I compiled my web app. Compiling the code means translating source code written in a high-level programming language into machine code or an intermediate code that a computer can execute.

- After compiling, I checked my CodeArtifact project file, and Voila. I could see all the compiled content in there.

My web app's packages popping up in my local repository



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CREATE IAM POLICIES

- I also created an IAM policy, to setup a JSON policy for the Maven project.

- I defined my IAM policy using JSON. This policy will ensure that other DevOps services can use the packages we've just uploaded to our CodeArtifact repository.

04

A peek at the JSON Policy added to provide access to my CodeArtifact repositories

```
18
19          "Resource": "*"
20
21      },
22
23      {
24
25          "Effect": "Allow",
26
27          "Action": "sts:GetServiceBearerToken",
28
29          "Resource": "*",
30
31          "Condition": {
32
33              "StringEquals": {
34
35                  "sts:AWSServiceName": "codeartifact.amazonaws.com"
36
37              }
38
39          }
40
```

Edit statement

Select a statement

Select an existing statement in the policy or add a new statement.

+ Add new statement

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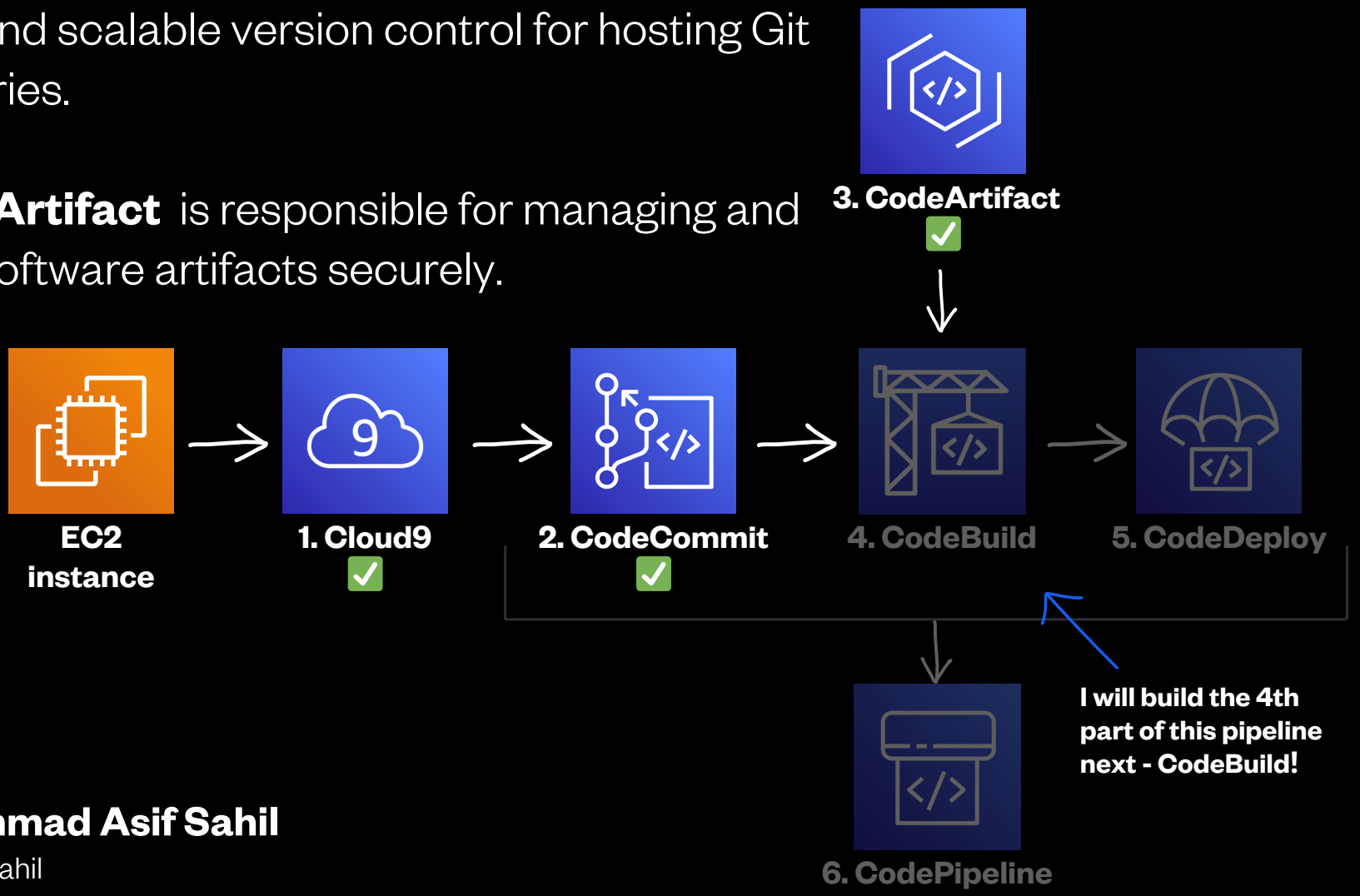
MY CI/CD PIPELINE PROGRESS...

1. Cloud9 is responsible for providing cloud-based integrated development environments (IDEs) for writing, running, and debugging code.

2. CodeCommit is responsible for providing secure and scalable version control for hosting Git repositories.

3. CodeArtifact is responsible for managing and storing software artifacts securely.



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MY KEY LEARNINGS

01 CodeArtifact is responsible for managing and storing software artifacts securely.

02 A public upstream repository is a remote repository that is publicly accessible and typically used to fetch dependencies or packages for software development.

03 settings.xml is a file I set up to, help Maven execute the code and respond to the CICD requests.

04 To test the connection between Cloud9 and CodeArtifact, I compiled the code using the Cloud9 IDE CLI.

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FINAL THOUGHTS...

- This project took me nearly 60 minutes of completion time.
- Let's delete **EVERYTHING** at the end! Let's keep this project free :)
- In the next part of this 6-project series, we will use **AWS CodeBuild** to build our WAR (Web Application Resource) file for the project.

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