Set up a Git Repo with CodeCommit

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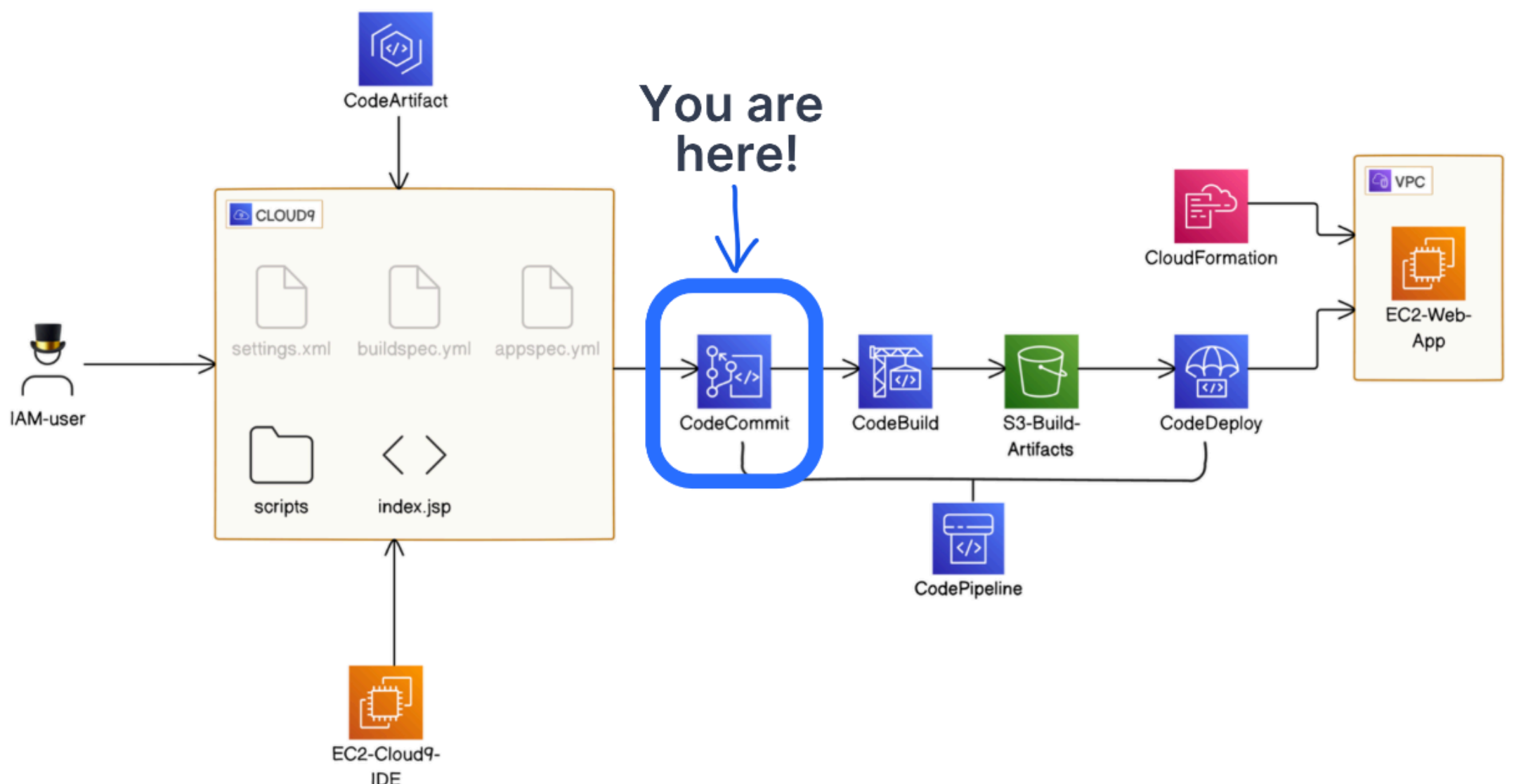
Introducing AWS CodeCommit!

What it does & how it's useful

AWS Cloud9 is a cloud-based IDE that allows developers to write, run, and debug code with just a browser. It includes a code editor, terminal, and essential tools for working with programming languages and frameworks. **Developers and teams use AWS CodeCommit** for its secure, scalable, and managed Git repositories that facilitate collaboration, version control, and code storage in the cloud. **Unlike GitHub, which manages access through its own user accounts**, CodeCommit leverages AWS IAM for user and role management, enhancing security by allowing precise control over repository access. This makes it highly secure, enabling you to share repositories with specific individuals and limit their access. AWS CodeCommit is a powerful tool for managing source code, offering robust security, scalability, and seamless integration with various DevOps tools, making it a convenient choice for teams within the AWS ecosystem.

How I'm using it in today's project

I'm using AWS CodeCommit in this project to securely store and manage my basic Java web application integrating with Cloud9 for development and Maven, ensuring version control and collaboration capabilities.
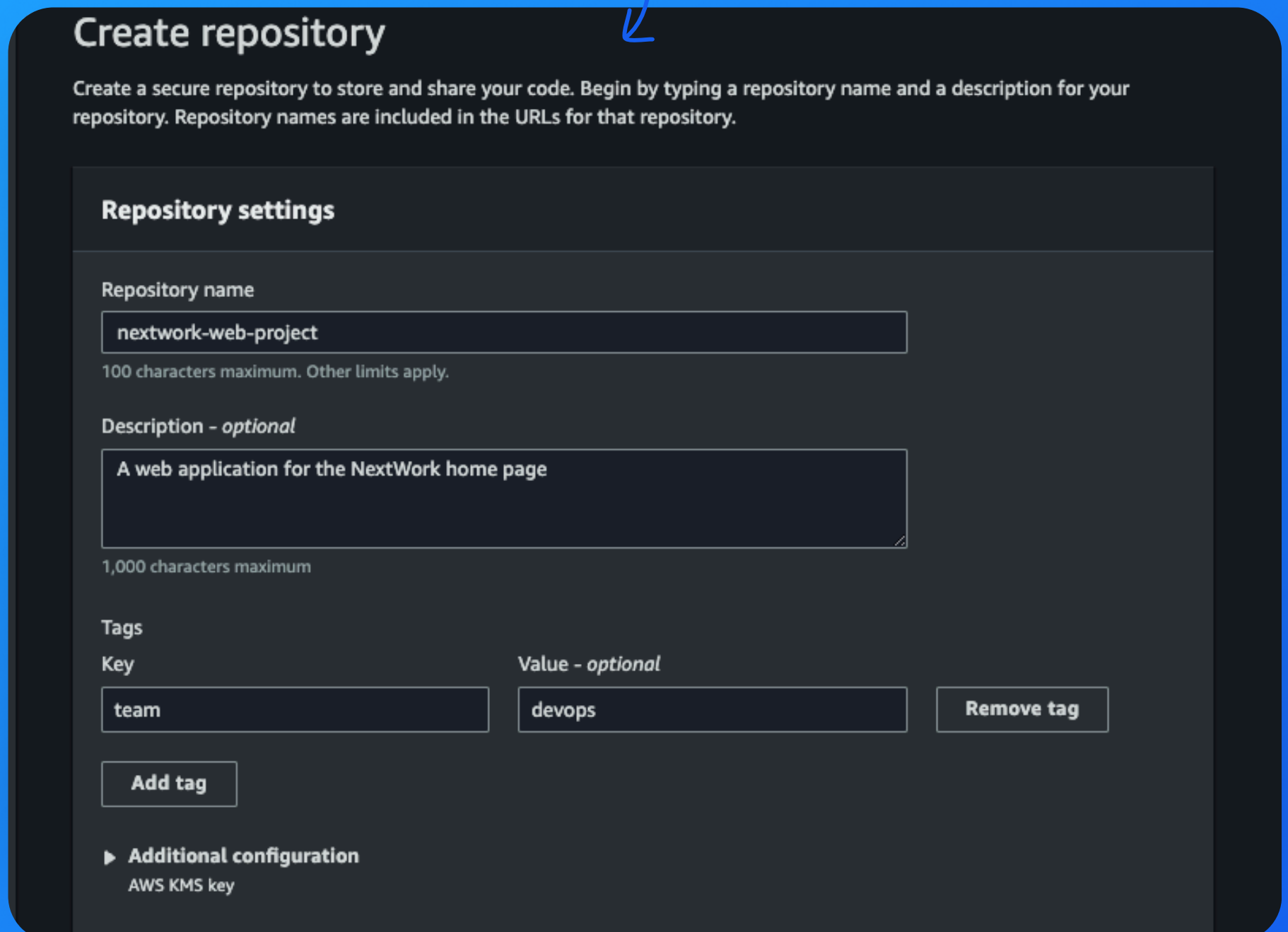
This project took me...

Documentation took me a few hours because I tried to understand what was the main difference between CloudCommit and Github.

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Create a Git repository

- Git is a free and open source distributed version control system designed to handle everything from small to very large projects with speed and efficiency.
- A Git repository is a storage space where your project's files and their revision history are kept; it tracks changes, supports collaboration, manages multiple branches of development, and integrates smoothly with CI/CD pipelines to automate builds and deployments.
- To create a Git repository in the cloud, I used AWS CodeCommit.

My setup page for a CodeCommit repo

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

nextwork-web-project

100 characters maximum. Other limits apply.

Description - optional

A web application for the NextWork home page

1,000 characters maximum

Tags

Key	Value - optional	
team	devops	Remove tag

Add tag

▶ **Additional configuration**
AWS KMS key

My first commit

- I initialized a Git repository in my web application by running **git init** in my Cloud9 IDE.
- To commit and push my code, I will have to run three different commands in order:
- git add . This command stages all the changes in the current directory for the next commit, preparing them to be recorded in the repository.
- git commit -m "Your commit message" . This command creates a commit with a descriptive message, to keep track on the current state of the staged changes in the repository's history.
- git push origin main .This command pushes the committed changes to the remote repository named origin on the main branch, making the updates available to others and storing them in the cloud.

Files I committed showing up in my CodeCommit repo!

```
Rasha-IAM-Admin:~/environment/nextwork-web-project (main) $ git add .
Rasha-IAM-Admin:~/environment/nextwork-web-project (main) $
Rasha-IAM-Admin:~/environment/nextwork-web-project (main) $ git commit -m "Initial commit. Updated index.jsp."
[main (root-commit) 04f0ded] Initial commit. Updated index.jsp.
 3 files changed, 39 insertions(+)
 create mode 100644 pom.xml
 create mode 100644 src/main/webapp/WEB-INF/web.xml
 create mode 100644 src/main/webapp/index.jsp
Rasha-IAM-Admin:~/environment/nextwork-web-project (main) $
Rasha-IAM-Admin:~/environment/nextwork-web-project (main) $ git push -u origin main

Enumerating objects: 9, done.
Counting objects: 100% (9/9), done.
Compressing objects: 100% (6/6), done.
Writing objects: 100% (9/9), 1.05 KiB | 269.00 KiB/s, done.
Total 9 (delta 0), reused 0 (delta 0), pack-reused 0
remote: Validating objects: 100%
To https://git-codecommit.eu-west-3.amazonaws.com/v1/repos/nextwork-web-project
 * [new branch]      main -> main
branch 'main' set up to track 'origin/main'.
Rasha-IAM-Admin:~/environment/nextwork-web-project (main) $
Rasha-IAM-Admin:~/environment/nextwork-web-project (main) $ 
```

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Git in action

- I wanted to see Git working in action, so I edited the index.jsp file in Cloud9 to add a new line of HTML.

- Then I tried seeing these changes in my CodeCommit repository, but this didn't work because saving changes in Cloud9 only updates the local repository, not the remote CodeCommit repository.

- I finally saw the changes in my CodeCommit repository after running git add ., git commit -m "Update index.jsp", and git push commands to push my changes to the origin.

My updated index.jsp file showing up in CodeCommit!


```
extwork-web-project / src / main / webapp / index.jsp  Info
e code editor uses the Tab key to control indentation. To navigate away from the code editor, use Escape plus Tab keys.

<html>

<body>

<h2>Hello Rasha!</h2>

<p>This is my NextWork web application working!</p>

<p>Yo! If you see this line in CodeCommit, your latest changes are saved in the origin.</p>

</body>

</html>
```

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My key learnings

1 Git is a free and open source distributed version control system designed to handle everything from small to very large projects with speed and efficiency.

2 • A local repository means a storage space on your local machine where your project's files and their revision history are kept, allowing you to track changes, manage branches, and work offline.

3 To commit my code, I had to run three key commands:
  • git add .
  • git commit -m "Your message"
  • git push

4 One thing I didn't expect was how crucial the commit messages are for tracking the history of changes and understanding the context behind each update.