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# Connect a GitHub Repo with AWS



Dennis Chigozirim

```
[ec2-user@ip-172-31-16-209 ~]$ git --version  
git version 2.50.1  
[ec2-user@ip-172-31-16-209 ~]$ □
```



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# Introducing Today's Project!

In this project, I will demonstrate Set up Git and GitHub. Connect your web app project to a GitHub repo inside AWS, I'm doing this project to learn connect a GitHub repo with AWS.

## Key tools and concepts

Services I used were EC2 instance, Git and GitHub, Key concepts I learnt include how to spin up an EC2 instance, how to install files inside of it and how to install and use git for version control and also how to initialize and connect with GitHub.

## Project reflection

This project took me approximately 3 hours The most challenging part was reconnecting to my EC2 and connecting my EC2 with GitHub. It was most rewarding to complete every task that was given in the project.

I did this project because I wanted to learn how to use an EC2 intance and also how connect it with GitHub using Git commands.



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This project is part two of a series of DevOps projects where I'm building a CI/CD pipeline! I'll be working on the next project tomorrow by God's grace. Thanks.



# Git and GitHub

Git is Git is like a time machine and filing system for your code. It tracks every change you make inside your code. I installed Git using the commands sudo dnf update -y  
sudo dnf install git -y

GitHub is GitHub is a place for engineers to store and share their code and projects online. I'm using GitHub in this project to store different version of my projects that Git tracks.

The screenshot shows a GitHub repository page for 'nextwork-web-project'. The repository is public and was created by 'DevOpsAvatar'. The commit history shows three initial commits from 'DevOpsAvatar' at 921d926, all labeled 'Initial commit' and made 19 minutes ago. The README file contains the text 'Java web app set up on an EC2 instance.' The repository has 0 stars, 0 forks, and 0 releases. There are no packages published. The footer includes links to Terms, Privacy, Security, Status, Docs, Contact, Manage cookies, and a 'Do not share my personal information' checkbox, along with a GitHub logo and the text '© 2025 GitHub, Inc.'



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# My local repository

A Git repository are folders that contain all your project files and their entire version history.

Git init is a command it sets up the directory as a local Git repository which means changes are now tracked for version control. I ran git init in my project directory to turn it to a local repository so that my projects can be versioned by Git.

A branch in Git is a parallel versions of the same project. After running git init, the response from the terminal was a bunch of yellow texts giving me heads up about naming my main branch master.

```
[ec2-user@ip-172-31-16-209 nextwork-web-project]$ git init
hint: Using 'master' as the name for the initial branch. This default branch name
hint: is subject to change. To configure the initial branch name to use in all
hint: of your new repositories, which will suppress this warning, call:
hint:
hint:   git config --global init.defaultBranch <name>
hint:
hint: Names commonly chosen instead of 'master' are 'main', 'trunk' and
hint: 'development'. The just-created branch can be renamed via this command:
hint:
hint:   git branch -m <name>
hint:
hint: Disable this message with "git config set advice.defaultBranchName false"
Initialized empty Git repository in /home/ec2-user/nextwork-web-project/.git/
[ec2-user@ip-172-31-16-209 nextwork-web-project]$ █
```



# To push local changes to GitHub, I ran three commands

## **git add**

The first command I ran was `git add .`. A staging area is like a buffer zone between your working directory and the repository.

## **git commit**

The second command I ran was `git commit -m "Updated index.jsp with new content"`. Using '`-m`' means it lets you leave a message describing what the commit is about, making it easier to review what changed in this version.

## **git push**

The third command I ran was `git push -u origin master`. Using '`-u`' means you're also setting an 'upstream' for your local branch, which means you're telling Git to remember to push to master by default.



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# Authentication

When I commit changes to GitHub, Git asks for my credentials because Git needs to double check that you have the right to push any changes to the remote origin your local repo is connected with.

## Local Git identity

Git needs my name and email because Git needs author information for commits to track who made what change.

Running git log showed me (HEAD -> master, origin/master) Author: EC2 Default User <ec2-user@ip-172-31-16-209.eu-north-1.compute.internal> Date: Wed Aug 20 21:50:47 2025 +0000 Updated index.jsp with new content

```
[ec2-user@ip-172-31-16-209 nextwork-web-project]$ git log
commit 9e92387b6e708b01096d3b7d16ad810154521dfb (HEAD -> master, origin/master)
Author: EC2 Default User <ec2-user@ip-172-31-16-209.eu-north-1.compute.internal>
Date:   Wed Aug 20 21:50:47 2025 +0000

    Updated index.jsp with new content
[ec2-user@ip-172-31-16-209 nextwork-web-project]$ █
```



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# GitHub tokens

GitHub authentication failed when I entered my password because GitHub phased out password authentication to connect with repositories over HTTPS. Passwords are too risky and can be intercepted over the internet very easily.

A GitHub token is A token expiration limit is how long your personal access token would work for. I'm using one in this project because I want to secure access my GitHub repo.

I could set up a GitHub token by going to GitHub Settings → Developer settings → Personal access tokens → Generate new token, selecting scopes, and copying it for Git operations.



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**Note**

This token has **Read & Write** Access. This is a part of NextWork's 7 Day DevOps Challenge.

What's this token for?

**Expiration**

This token expires on *Fri, Sep 19 2025*. To set a new expiration date, you must [regenerate the token](#).

**Select scopes**

Scopes define the access for personal tokens. [Read more about OAuth scopes](#).

<input checked="" type="checkbox"/> <b>repo</b>	Full control of private repositories
<input checked="" type="checkbox"/> repo:status	Access commit status
<input checked="" type="checkbox"/> repo_deployment	Access deployment status
<input checked="" type="checkbox"/> public_repo	Access public repositories
<input checked="" type="checkbox"/> repo:invite	Access repository invitations
<input checked="" type="checkbox"/> security_events	Read and write security events
<input type="checkbox"/> <b>workflow</b>	Update GitHub Action workflows
<input type="checkbox"/> <b>write:packages</b>	Upload packages to GitHub Package Registry
<input type="checkbox"/> read:packages	Download packages from GitHub Package Registry



# Making changes again

I wanted to see Git working in action, so I updated index.jsp file. which is the file in our web app that defines both html content i.e the static element that goes into our web apps code as well any code that goes into the file.

I saw the changes in my GitHub repo after using the git config --global credential.helper store command and editing in my name and public access token.

The screenshot shows a GitHub commit page for the file index.jsp. The commit is titled "Initial commit" by "DevOpsAvatar". It was made 3 minutes ago with commit hash c6780ce. The file has 7 lines (7 loc) and 223 Bytes. The code content is:

```
1 <html>
2 <body>
3 <h2>Hello DevOps Avatar!</h2>
4 <p>This is my Nextwork web application working!</p>
5 <p>If you see this line in Github, that means your latest changes are getting pushed to your cloud repo :o</p>
6 </body>
7 </html>
```



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