Lab: Create and run your first GitLab CI/CD pipeline

This lab shows you how to configure and run your first CI/CD pipeline in GitLab.

Prerequisites

Before you start, make sure you have:

- A project in GitLab that you would like to use CI/CD for.
- The Maintainer or Owner role for the project.

If you don't have a project, you can create a public project for free on https://gitlab.com.

Steps

To create and run your first pipeline:

1. Ensure you have runners available to run your jobs.

   Important! Disable shared runners for all the projects that you create. Otherwise, gitlab will fail your pipeline and ask for account verification.

2. Create a `.gitlab-ci.yml` file at the root of your repository. This file is where you define the CI/CD jobs.

When you commit the file to your repository, the runner runs your jobs. The job results are displayed in a pipeline.

Ensure you have runners available

In GitLab, runners are agents that run your CI/CD jobs.

To view available runners:

- Go to **Settings > CI/CD** and expand **Runners**.

As long as you have at least one runner that's active, with a green circle next to it, you have a runner available to process your jobs.

When your CI/CD jobs run, in a later step, they will run on your local machine.

Create a `.gitlab-ci.yml` file

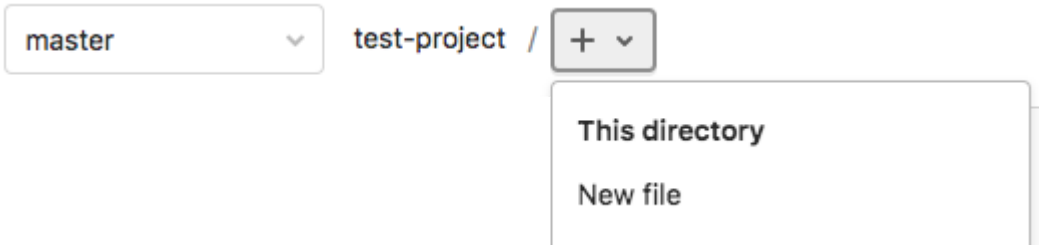
Now create a `.gitlab-ci.yml` file. It is a **YAML** file where you specify instructions for GitLab CI/CD.

In this file, you define:

- The structure and order of jobs that the runner should execute.
- The decisions the runner should make when specific conditions are encountered.

To create a `.gitlab-ci.yml` file:

1. On the left sidebar, select **Repository > Files**.
2. Above the file list, select the branch you want to commit to. If you're not sure, leave `master` or `main`. Then select the plus icon and **New file**:



3. For the **Filename**, type `.gitlab-ci.yml` and in the larger window, paste this sample code:

```
build-job:
  stage: build
  script:
    - echo "Hello, $GITLAB_USER_LOGIN!"

test-job1:
  stage: test
  script:
    - echo "This job tests something"

test-job2:
  stage: test
  script:
    - echo "This job tests something, but takes more time than test-job1."
    - echo "After the echo commands complete, it runs the sleep command for 20
seconds"
    - echo "which simulates a test that runs 20 seconds longer than test-job1"
    - sleep 20

deploy-prod:
  stage: deploy
  script:
    - echo "This job deploys something from the $CI_COMMIT_BRANCH branch."
  environment: production
```

   This example shows four jobs: `build-job`, `test-job1`, `test-job2`, and `deploy-prod`. The comments listed in the `echo` commands are displayed in the UI when you view the jobs. The values for the [predefined variables] `$GITLAB_USER_LOGIN` and `$CI_COMMIT_BRANCH` are populated when the jobs run.

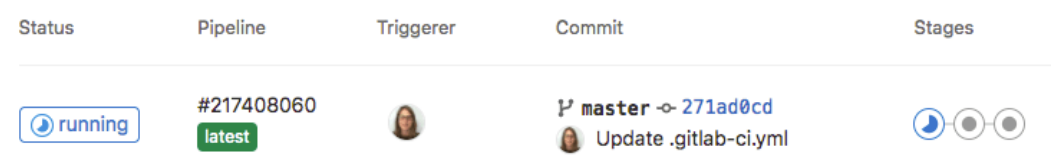
4. Select **Commit changes**.

The pipeline starts and runs the jobs you defined in the `.gitlab-ci.yml` file.

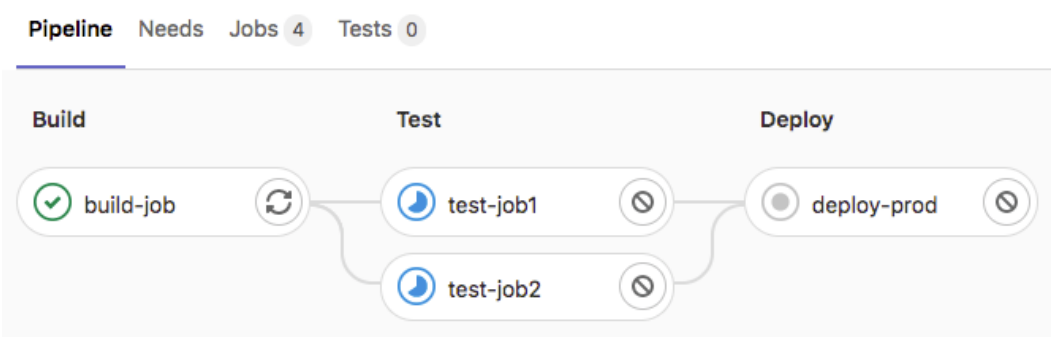
View the status of your pipeline and jobs

Now take a look at your pipeline and the jobs within.

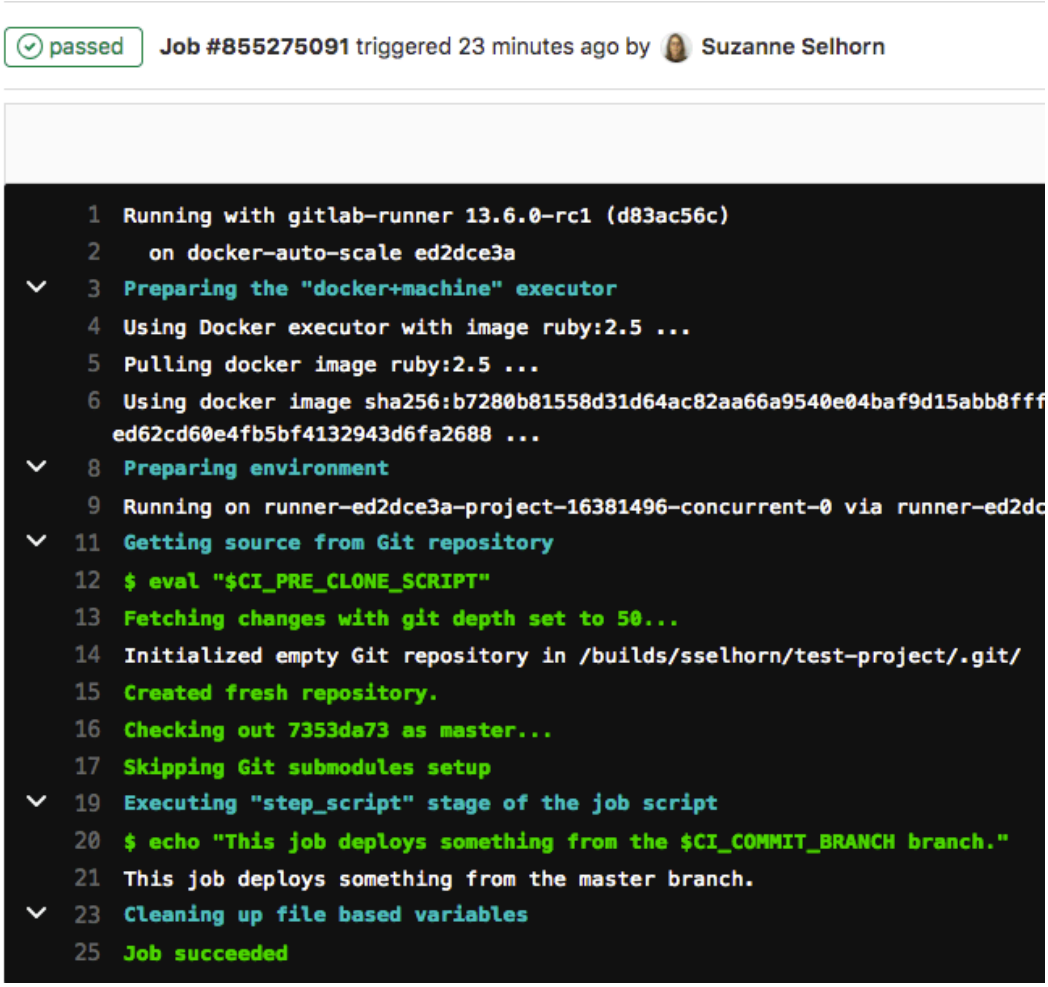
1. Go to **CI/CD > Pipelines**. A pipeline with three stages should be displayed:



2. View a visual representation of your pipeline by selecting the pipeline ID:



3. View details of a job by selecting the job name. For example, `deploy-prod`:



You have successfully created your first CI/CD pipeline in GitLab. Congratulations!

Disabling GitLab CI/CD

GitLab CI/CD is enabled by default on all new projects. If you use an external CI/CD server like Jenkins or Drone CI, you can disable GitLab CI/CD to avoid conflicts with the commits status API.

Disable CI/CD in a project

When you disable GitLab CI/CD:

- The **CI/CD** item in the left sidebar is removed.
- The `/pipelines` and `/jobs` pages are no longer available.
- Existing jobs and pipelines are hidden, not removed.

To disable GitLab CI/CD in your project:

1. On the top bar, select **Main menu > Projects** and find your project.
2. On the left sidebar, select **Settings > General**.
3. Expand **Visibility, project features, permissions**.
4. In the **Repository** section, turn off **CI/CD**.
5. Select **Save changes**.

Enable CI/CD in a project

To enable GitLab CI/CD in your project:

1. On the top bar, select **Main menu > Projects** and find your project.
2. On the left sidebar, select **Settings > General**.
3. Expand **Visibility, project features, permissions**.
4. In the **Repository** section, turn on **CI/CD**.
5. Select **Save changes**.