

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.

If you're using GitLab.com, you can skip this step. GitLab.com provides shared runners for you.

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

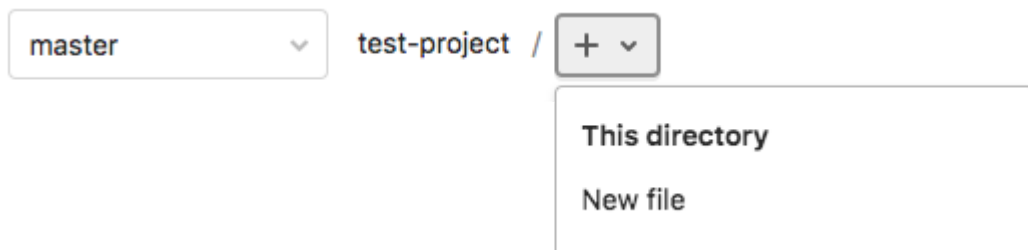
Now create a `.gitlab-ci.yml` file. It is a **YAML** file where you specify instructions for GitLab CI/CD.

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.

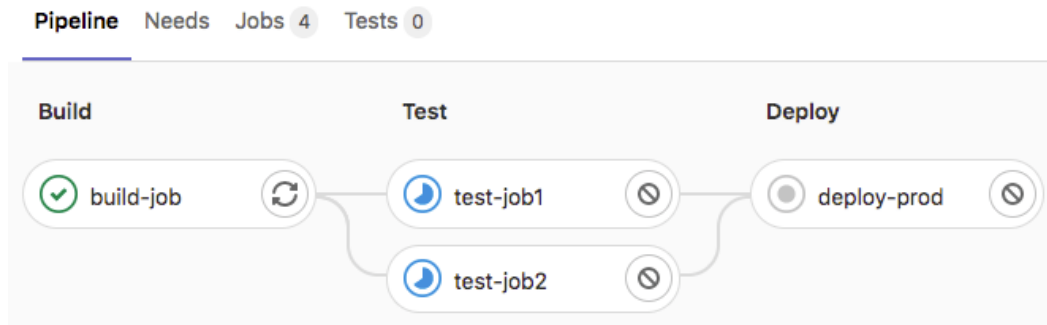
View the status of your pipeline and jobs

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:

Status	Pipeline	Triggerer	Commit	Stages
 running	#217408060 latest		 master → 271ad0cd Update .gitlab-ci.yml	

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



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



Job #855275091 triggered 23 minutes ago by Suzanne Selhorn

```
1 Running with gitlab-runner 13.6.0-rc1 (d83ac56c)
2   on docker-auto-scale ed2dce3a
3   ✓ Preparing the "docker+machine" executor
4   Using Docker executor with image ruby:2.5 ...
5   Pulling docker image ruby:2.5 ...
6   Using docker image sha256:b7280b81558d31d64ac82aa66a9540e04baf9d15abb8fff
   ed62cd60e4fb5bf4132943d6fa2688 ...
7   ✓ Preparing environment
8   Running on runner-ed2dce3a-project-16381496-concurrent-0 via runner-ed2dce3a
9   ✓ Getting source from Git repository
10  $ eval "$CI_PRE_CLONE_SCRIPT"
11  Fetching changes with git depth set to 50...
12  Initialized empty Git repository in /builds/sselhorn/test-project/.git/
13  Created fresh repository.
14  Checking out 7353da73 as master...
15  Skipping Git submodules setup
16  ✓ Executing "step_script" stage of the job script
17  $ echo "This job deploys something from the $CI_COMMIT_BRANCH branch."
18  This job deploys something from the master branch.
19  ✓ Cleaning up file based variables
20  Job succeeded
```

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**.