

Creating GitHub App triggers

GitHub App triggers enable you to automatically invoke builds on Git pushes and pull requests, and view your build results on GitHub and Cloud Console. Additionally, GitHub App triggers support all the features supported by the [existing GitHub triggers](/cloud-build/docs/running-builds/automate-builds) (</cloud-build/docs/running-builds/automate-builds>) and use the [Cloud Build GitHub app](https://github.com/marketplace/google-cloud-build) (<https://github.com/marketplace/google-cloud-build>) to configure and authenticate to GitHub.

This page explains how to create GitHub App triggers.

To create and use GitHub App triggers, your repositories must be hosted on [GitHub](https://github.com/) (<https://github.com/>). Cloud Build does not currently support GitHub Enterprise.

Creating GitHub App triggers

This section explains how to install the Cloud Build GitHub App to connect your GitHub repository to your Cloud project and then create GitHub App triggers.

Installing the Cloud Build app


To install the Cloud Build app and connect your GitHub repository to your Cloud project:

1. Open the **Triggers** page in the Google Cloud Console.

[Open the Triggers page](https://console.cloud.google.com/cloud-build/triggers) (<https://console.cloud.google.com/cloud-build/triggers>)

2. In the project selector in the top bar, select your Cloud project.
3. Click **Connect repository**.
4. Select **GitHub (Cloud Build GitHub App)**, check the consent checkbox, and click **Continue**.
5. (Optional) If you have not signed into GitHub before, do so now.

The Authorization page appears where you are asked to authorize the **Google Cloud Build** app to connect to Google Cloud Platform.



Authorize Google Cloud Build by GoogleCloudBuild

Authorizing will redirect to
<https://console.cloud.google.com>

Click **Authorize Google Cloud Build by GoogleCloudBuild**.

6. Click **Install Google Cloud Build**.

7. In the pop-up that appears, select your GitHub username or organization.

8. Select one of the following options based on your business need:

- **All repositories** - enable all current and future GitHub repositories for access via the Cloud Build app.
- **Only select repositories** - use the **Select repositories** drop-down to enable only specific repositories for access via the Cloud Build app. You will be able to enable additional repositories at a later time.

9. Click **Install** to install the Cloud Build app.

The pop-up closes and you are returned to the **Select repository** page in the Cloud Console. In this page you will connect your GitHub repositories to your Cloud project.

10. In the **Select repository** page that appears, connect your GitHub repositories to your Cloud project as follows:

- a. Confirm the correct GitHub account has been selected.
- b. Select the checkbox next to each target repository.
- c. Read the consent disclaimer and select the checkbox next to it to indicate that you accept the presented terms.
- d. Click **Connect repository**.

If you don't see one or more of your target repositories, click **Edit repositories on GitHub** and repeat the steps above to enable additional repositories in the Cloud Build app.

11. (Optional) To create push triggers for the repositories you're connecting, select the boxes next to each target repository and click **Create push triggers**; otherwise, click **Skip for now**.

You have now connected one or more GitHub repositories to your Cloud project. You are directed to the **Triggers** page in Cloud Console.

Creating GitHub App triggers

To create GitHub App triggers:

1. Open the **Triggers** page in the Google Cloud Console.

[Open the Triggers page](https://console.cloud.google.com/cloud-build/triggers) (https://console.cloud.google.com/cloud-build/triggers)

2. Select your project from the project selector drop-down menu at the top of the page.
3. Click **Open**.
4. Click **Create trigger**.
5. Enter the following trigger settings:

- **Name:** Enter a name for your trigger.
- **Description** (optional): Enter a description for your trigger.
- **Event:** Select the repository event to invoke your trigger.
 - **Push to a branch:** Set your trigger to start a build on commits to a particular branch.
 - **Push new tag:** Set your trigger to start a build on commits that contain a particular tag.
 - **Pull request (GitHub App only):** Set your trigger to start a build on commits to a pull request.

★ **Note:** Running builds initiated by a GitHub App pull request trigger will be canceled when you close the pull request associated with your build. Running builds and builds that have not been started yet will not be canceled when merging a pull request.

- **Source:** Select the repository and the corresponding branch or tag to watch for events.

- **Repository:** From the list of available repositories, select the desired repository. To connect a new repository, see [Connecting to source repositories](#) (#connect_repo).
 - **Branch or Tag:** Specify a regular expression with the branch or tag value to match. For information on acceptable regular expression syntax, see [RE2 syntax](#) (<https://github.com/google/re2/wiki/Syntax>).
 - **Comment control:** If you selected **Pull request (GitHub App only)** as your **Event**, choose one of the following options to control whether a build will automatically be executed by the trigger:
 - **Required except for owners and collaborators:** When a pull request is created or updated by a repository owner or collaborator, builds will automatically be executed by the trigger. If an external contributor initiates the action, builds will only be executed after an owner or collaborator comments `/gcbrun` on the pull request.
 - **Required:** When a pull request is created or updated by any contributor, builds will only be executed after an owner or collaborator comments `/gcbrun` on the pull request.
 - **Not required:** When a pull request is created or updated by any contributor, builds will automatically be executed by triggers.
- ★ **Note:** Any user with read access to the repository can submit a pull request, which may execute a build that includes changes to the source code in the pull request. To disable this behavior, we recommend you select **Required except for owners and collaborators** or **Required**. For more information on build-time privileges of triggers, see [Build triggers and Cloud Build service account](#) (/cloud-build/docs/cloud-build-service-account#build_triggers_and_service_account).
- **Included files** (optional): Changes affecting at least one of these files will invoke a build.
 - **Ignored files** (optional): Changes only affecting ignored files will not invoke a build.
- ★ **Note:** **Included files** and **Ignored files** can only be specified if you selected **Push to a branch** as your **Event**. For more information on **Included files** and **Ignored files** see the **Console** tab under

Creating a build trigger

(/cloud-build/docs/automating-builds/create-manage-triggers#build_trigger).

- **Build configuration:** Select the build config file (located in the GitHub repository connected to your Cloud project) to use for your build.
 - To use a **Dockerfile** for your build configuration, you'll need to specify the Dockerfile directory and a name for the resulting image. When you've provided the **Dockerfile** and image name, you'll see a preview of the **docker build** command that your build will execute.
 - To use a build config file for your build configuration, you'll need to provide the location of your build config file (/cloud-build/docs/build-config) and optionally, substitution variables (/cloud-build/docs/configuring-builds/substitute-variable-values) you'll want to use.
6. Click **Create** to save your build trigger.

Different types of GitHub-based triggers

If your source code is in GitHub, Cloud Build provides two ways by which you can automatically invoke builds. This section explains the two GitHub-based triggers and compares their features.

- **GitHub triggers:** When you create a GitHub trigger, Cloud Build mirrors your GitHub repository in Cloud Source Repositories and uses the mirrored repository for all its operations. You can create and manage GitHub triggers (/cloud-build/docs/automating-builds/create-manage-triggers) using the Cloud Console.
- **GitHub App triggers:** This type of trigger uses the Cloud Build GitHub app to configure and authenticate to GitHub. GitHub App triggers allow you to automatically start builds on Git pushes and pull requests and view build results on GitHub and Cloud Console. You can create and manage GitHub App triggers (/cloud-build/docs/automating-builds/create-manage-triggers) using Cloud Console or the Cloud Build API.

The following table compares the features of GitHub triggers and GitHub App triggers:

Feature	GitHub triggers	GitHub App triggers
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Feature	GitHub triggers	GitHub App triggers
Invoke builds on pushes to the source code	Yes	Yes
Invoke builds on pull requests	No	Yes
Create trigger using Cloud Console	Yes	Yes
Create trigger using the Cloud Build API	No	Yes
Create trigger using the Cloud Build GitHub app	No	Yes
View build status on Cloud Console	Yes	Yes
View build status on GitHub	No	Yes

Data sharing

GitHub app triggers send data to the Cloud Build GitHub app. The data sent to the app helps you identify triggers by name and see build results on GitHub.

The following data is currently shared between Google Cloud and GitHub app:

- Trigger name

If you created triggers prior to August 2020, data sharing may not be enabled for your project. You can enable data sharing for all GitHub app triggers in your project by clicking **Enable** on the [Cloud Build Data sharing page](#)

(<https://console.cloud.google.com/cloud-build/triggers/settings/data-sharing>).

If you have [required status checks](#)

(<https://docs.github.com/en/github/administering-a-repository/enabling-required-status-checks>) enabled for a GitHub repository, enabling data sharing may temporarily break status checks. You can adjust status check configurations to look for your trigger name by:

- Disabling any Cloud Build-specific required checks on the GitHub repository
- Ensuring that data sharing is enabled in Cloud Build
- Executing a new build in Cloud Build that posts statuses to your repository
- Re-enabling required status checks, selecting trigger name

Enabling data sharing for a project is not reversible.

What's next

- Learn how to [create and manage build triggers](/cloud-build/docs/automating-builds/create-manage-triggers/) (/cloud-build/docs/automating-builds/create-manage-triggers).
- Learn how to [run builds on GitHub](/cloud-build/docs/automating-builds/run-builds-on-github/) (/cloud-build/docs/automating-builds/run-builds-on-github).
- Learn how to [start builds manually](/cloud-build/docs/running-builds/start-build-manually/) (/cloud-build/docs/running-builds/start-build-manually) in Cloud Build.

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Last updated 2020-08-18 UTC.