

[Serverless Computing](https://cloud.google.com/products/serverless/) (https://cloud.google.com/products/serverless/)

[Cloud Functions](https://cloud.google.com/functions/) (https://cloud.google.com/functions/)

[Documentation](https://cloud.google.com/functions/docs/) (https://cloud.google.com/functions/docs/) [Guides](#)

Deploying from Source Control

Cloud Repositories

If you prefer to deploy your function source code from a source repository like GitHub or Bitbucket, you can use [Google Cloud Source Repositories](https://cloud.google.com/tools/cloud-repositories/docs) (https://cloud.google.com/tools/cloud-repositories/docs) to deploy functions directly from branches or tags in your repository.

Set up Cloud Source Repositories

1. Follow the Cloud Source Repositories [getting started steps](https://cloud.google.com/tools/cloud-repositories/docs/cloud-repositories-setup) (https://cloud.google.com/tools/cloud-repositories/docs/cloud-repositories-setup) to set up your repository.
2. Connect your GitHub or Bitbucket repository by following the [mirrored repository guide](https://cloud.google.com/tools/cloud-repositories/docs/cloud-repositories-hosted-repository) (https://cloud.google.com/tools/cloud-repositories/docs/cloud-repositories-hosted-repository).

Once the connection between Cloud Source Repositories and your external repository is established, these repositories are kept synchronized so that you can commit to your chosen repository as you would normally.

Deploy using the gcloud tool

To deploy a function from your source repo, use the `--source` command line argument:

```
gcloud functions deploy NAME \  
  --source https://source.developers.google.com/projects/PROJECT_ID/repos/REPOSITORY \  
  --runtime RUNTIME \  
  TRIGGER... \  
  [FLAGS...]
```

Note: In the command above, note that **SOURCE** cannot be empty. It must be at least `/`. Additionally, branch and tag names containing slashes (`/`) are not supported.

Also note that when you deploy a function for the first time, you must include the `--runtime` (<https://cloud.google.com/sdk/gcloud/reference/functions/deploy#--runtime>) flag. The `--runtime` flag is not required on subsequent deployments of the function.

The command uses the following arguments to `gcloud functions deploy` (<https://cloud.google.com/sdk/gcloud/reference/functions/deploy>):

Argument	Description
NAME	The name of the Cloud Function you are deploying. This name can only contain letters, numbers, underscores, and hyphens. Unless you specify the <code>--entry-point</code> flag, your code must contain a function with the same name.
<code>--source</code> PATH	The location of the source code to deploy. The location can be a reference to a source repository, a path in Google Cloud Storage, or a local filesystem path. For details, see the gcloud Command Reference (https://cloud.google.com/sdk/gcloud/reference/functions/deploy).
<code>--runtime</code> RUNTIME	The name of the runtime you are using. For a complete list, see the gcloud reference (https://cloud.google.com/sdk/gcloud/reference/functions/deploy#--runtime). Note that you must include this flag the first time you deploy a function, but you can omit it on subsequent deployments.
TRIGGER...	<p>If you have an HTTP function, use the flag <code>--trigger-http</code>.</p> <p>If you have a background function, use the flags <code>--trigger-resource</code> MY_RESOURCE and <code>--trigger-event</code> MY_EVENT. If your background function is assigned a Pub/Sub trigger, you can instead use the shorthand <code>--trigger-topic</code> MY_TOPIC. Likewise, when deploying functions that are assigned Cloud Storage triggers, you can simply use the flag <code>--trigger-bucket</code> MY_STORAGE_BUCKET to trigger function execution whenever files in the specified bucket change.</p>
FLAGS...	(Optional) Additional flags you can specify during deployment, such as <code>--stage-bucket</code> or <code>--entry-point</code> . For a full reference, see the gcloud functions deploy documentation (https://cloud.google.com/sdk/gcloud/reference/functions/deploy).

Next steps

- [Calling HTTP Functions](https://cloud.google.com/functions/docs/calling/http) (https://cloud.google.com/functions/docs/calling/http).
- [Calling Cloud Storage Trigger Functions](https://cloud.google.com/functions/docs/calling/storage) (https://cloud.google.com/functions/docs/calling/storage).
- [Calling Cloud Pub/Sub Trigger Functions](https://cloud.google.com/functions/docs/calling/pubsub) (https://cloud.google.com/functions/docs/calling/pubsub).
- [HTTP Cloud Functions Tutorial](https://cloud.google.com/functions/docs/tutorials/http) (https://cloud.google.com/functions/docs/tutorials/http).
- [Cloud Functions with Cloud Storage Tutorial](https://cloud.google.com/functions/docs/tutorials/storage) (https://cloud.google.com/functions/docs/tutorials/storage).
- [Cloud Functions with Cloud Pub/Sub Tutorial](https://cloud.google.com/functions/docs/tutorials/pubsub) (https://cloud.google.com/functions/docs/tutorials/pubsub).
- [Deploying Cloud Functions automatically with CI/CD](https://cloud.google.com/functions/docs/testing/test-cicd) (https://cloud.google.com/functions/docs/testing/test-cicd).

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