

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

[Cloud Run: Serverless Computing](https://cloud.google.com/run/) (https://cloud.google.com/run/)

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

Building Containers

Cloud Run accepts container images built with any tool capable of building container images, as long as they respect the [container contract](https://cloud.google.com/run/docs/reference/container-contract)

(https://cloud.google.com/run/docs/reference/container-contract). In particular, your code must listen for HTTP requests on the port defined by the `PORT` environment variable. This `PORT` environment variable is automatically injected by Cloud Run into your container.

In this page, we describe two ways to build container images: using Docker and using Cloud Build.

Before building your sources into a container image ("containerizing"), you need a [Dockerfile](https://docs.docker.com/engine/reference/builder/) (https://docs.docker.com/engine/reference/builder/) to be present along your sources. The [Build and deploy](https://cloud.google.com/run/docs/quickstarts/build-and-deploy) (https://cloud.google.com/run/docs/quickstarts/build-and-deploy) quickstart contains sample applications and Dockerfiles in many popular languages.

Building using Cloud Build

You can build your image on Google Cloud by using [Cloud Build](https://cloud.google.com/cloud-build/docs/)

(https://cloud.google.com/cloud-build/docs/):

1. Navigate to the folder containing your sources and Dockerfile.
2. Run the command:

```
gcloud builds submit --tag gcr.io/[PROJECT-ID]/[IMAGE]
```



Replace `[PROJECT-ID]` with your Google Cloud project ID and replace `[IMAGE]` with the image name of your choice.

For tips on improving build performance, see [Speeding up your Builds](https://cloud.google.com/cloud-build/docs/speeding-up-builds)

(https://cloud.google.com/cloud-build/docs/speeding-up-builds)

Building locally and pushing using Docker

If you have Docker installed locally (<https://docs.docker.com/install/>), you can use `docker build` (<https://docs.docker.com/engine/reference/commandline/build/>) instead of using Cloud Build.

To build your container image using Docker:

1. Navigate to the folder containing your sources and `Dockerfile`.
2. Run the command:

```
docker build . --tag gcr.io/[PROJECT-ID]/[IMAGE]
```



Replace `[PROJECT-ID]` with your Google Cloud project ID and replace `[IMAGE]` with the image name of your choice.

3. If you have not yet configured Docker to use the `gcloud` command-line tool to authenticate requests to Container Registry, do so now using the command:

```
gcloud auth configure-docker
```



You need to do this before you can push or pull images using Docker. You only need to do it once.

4. Push the container image to Container Registry:

```
docker push gcr.io/[PROJECT-ID]/[IMAGE]
```



Replace `[PROJECT-ID]` with your Google Cloud project ID and replace `[IMAGE]` with the image name you chose when you invoked `docker build`.

To exclude local files from this process, follow the [.dockerignore configuration file](https://docs.docker.com/engine/reference/builder/#dockerignore-file) (<https://docs.docker.com/engine/reference/builder/#dockerignore-file>) instructions.

What's next

- To learn more about the contract your containers must respect to be deployed to Cloud Run, see [Container Contract](https://cloud.google.com/run/docs/reference/container-contract) (<https://cloud.google.com/run/docs/reference/container-contract>).
- To deploy your built containers to Cloud Run, follow [Deploying Services](https://cloud.google.com/run/docs/deploying) (<https://cloud.google.com/run/docs/deploying>).

- To automate the builds and deployments of your Cloud Run services using Cloud Build Triggers, [set up Continuous Deployment](https://cloud.google.com/run/docs/continuous-deployment) (<https://cloud.google.com/run/docs/continuous-deployment>)

Except as otherwise noted, the content of this page is licensed under the [Creative Commons Attribution 4.0 License](https://creativecommons.org/licenses/by/4.0/) (<https://creativecommons.org/licenses/by/4.0/>), and code samples are licensed under the [Apache 2.0 License](https://www.apache.org/licenses/LICENSE-2.0) (<https://www.apache.org/licenses/LICENSE-2.0>). For details, see our [Site Policies](https://developers.google.com/terms/site-policies) (<https://developers.google.com/terms/site-policies>). Java is a registered trademark of Oracle and/or its affiliates.

Last updated December 4, 2019.