



Review: Developing Containerized Applications on Google Cloud

Congratulations on completing this course on Developing Containerized Applications on Google Cloud.

Let's review the topics that were discussed and the skills you gained in this course.

Build container images

With Docker

Build a container image with a Dockerfile.

With Buildpacks

Build a container image with Google Cloud's buildpacks.

By completing this course, you learned about containers, and container images. You learned how to build and package container images for your application with Docker, and with Google Cloud's buildpacks.

Continuous integration and delivery

 Skaffold	 Cloud Build	 Artifact Registry
Command line tool used to continuously deploy containers to your local or remote Kubernetes cluster, Docker environment, or Cloud Run project.	Service to continuously build, test, and deploy your application using a CI/CD pipeline.	Service to store and manage container images in private repositories.

We discussed tools like Skaffold, Cloud Build, and Artifact Registry that can be used to implement your CI/CD process to build, test, and deploy containers.

Skaffold handles the workflow for building, and deploying your application, and provides building blocks for creating CI/CD pipelines. Skaffold can be used to continuously deploy containers to your local or remote Kubernetes cluster, Docker environment, or Cloud Run project.

Cloud Build is a service that executes your builds on Google Cloud. With Cloud Build, you can continuously build, test, and deploy your application using a CI/CD pipeline.

Artifact Registry is a service that is used to store and manage software artifacts in private repositories, including container images, and software packages. Artifact Registry integrates with Cloud Build to store the packages and container images from your builds.

Best practices

- Remove unnecessary tools, and build the smallest image possible.
- Run the application as a non-root user.
- Create container images with common layers.
- Scan your container images for software vulnerabilities



By completing this course, you have the knowledge to implement best practices when building your container images, and securely running your containerized applications.

Cloud Run



- Fully managed compute platform for deploying and running containers.
- Improves developer productivity.
- Scalable, serverless platform for stateless applications.

We discussed Cloud Run, a fully managed compute platform that lets you deploy and run containers directly on top of Google's scalable infrastructure.

Cloud Run works well with other services on Google Cloud, so you can build full-featured applications without spending too much time operating, configuring, and scaling your Cloud Run service.

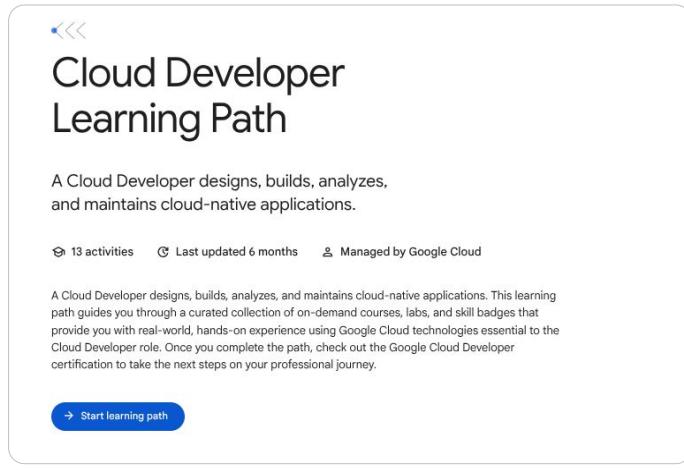
Google Kubernetes Engine



- Managed Kubernetes service
- Offers advanced scalability and configuration
- Full control of container orchestration, networking, storage, logging, monitoring.
- Supports stateful use cases.

We also discussed Google Kubernetes Engine, a managed Kubernetes service for deploying, managing, and scaling your containerized applications on Google infrastructure.

What's next?



The screenshot shows a learning path card for 'Cloud Developer Learning Path'. At the top, there's a decorative icon of three blue arrows pointing left. Below it, the title 'Cloud Developer Learning Path' is displayed in a large, bold, dark font. Underneath the title, a brief description reads: 'A Cloud Developer designs, builds, analyzes, and maintains cloud-native applications.' Further down, there are three small status indicators: '13 activities', 'Last updated 6 months', and 'Managed by Google Cloud'. A detailed description follows: 'A Cloud Developer designs, builds, analyzes, and maintains cloud-native applications. This learning path guides you through a curated collection of on-demand courses, labs, and skill badges that provide you with real-world, hands-on experience using Google Cloud technologies essential to the Cloud Developer role. Once you complete the path, check out the Google Cloud Developer certification to take the next steps on your professional journey.' At the bottom of the card is a blue button with white text that says 'Start learning path'.

Now that you've completed this course on developing containerized applications on Google Cloud, you might consider learning more about other services such as Cloud Run, Google Kubernetes Engine, and about Service Orchestration and Choreography on Google Cloud.

Some of these courses are part of a set of courses and quests in the [Cloud Developer learning path](#) that you can subscribe to, and expand your knowledge and skills on Google Cloud.