Application Development with Cloud Run

Category: Software Development & Programming | **Vendor:** Google Cloud

Duration: 24.00 hours (3 days) **19.5 CPD Hours** **Rating:** ⭐ 4.6 (5,878 reviews)

Course Information

Delivery Format: Instructor Led - Online

Course Overview

This course introduces you to fundamentals, practices, capabilities and tools applicable to modern cloud-native application development using Google Cloud Run. Through a combination of lectures, hands-on labs, and supplemental materials, you will learn how to design, implement, deploy, secure, manage, and scale new (greenfield) and existing (brownfield) applications on Google Cloud using Cloud Run.

About This Course

This course introduces you to fundamentals, practices, capabilities and tools applicable to modern cloud-native application development using Google Cloud Run. Through a combination of lectures, hands-on labs, and supplemental materials, you will learn how to design, implement, deploy, secure, manage, and scale new (greenfield) and existing (brownfield) applications on Google Cloud using Cloud Run.

Who Should Attend

Cloud Developers, API Developers

Prerequisites & Entry Requirements

General Prerequisites:

- Familiarity with Linux commands and command line interface.
- Basic understanding of Google Cloud.
- Basic understanding of networking.
- Basic understanding of one or more programming languages like Go, Python, Java, Ruby, or Node.js.
- Basic understanding of shell scripts, YAML, JSON, HTTP, and TLS.

Learning Outcomes

Upon successful completion of this course, participants will be able to:

- Gain detailed understanding of Cloud Run, Google Cloud’s fully managed compute platform for deploying and scaling containerized applications quickly and securely.
- Write and migrate code your way using your favorite languages (Go, Python, Java, Ruby, Node.js, and more).
- Secure service to service communication based on service identities and grant applications only the permissions they need.
- Learn how to build highly available applications with low end-user latency, globally.
- Learn how to connect to, and persist data in the managed database offerings on Google Cloud.
- Understand how abstracting away all infrastructure management creates a simple developer experience.

Detailed Course Outline

The course includes presentations, demonstrations, and hands-on labs.

Module 1: Introducing Application Development with Cloud Run

- A general understanding of Cloud Run
- Understand how how high availability, low end-user latency and developer productivity are important architectural drivers for web based applications today.
- Understand the advantages of serverless on Google Cloud.

Module 2: Understanding Cloud Run

- Understand Container Images and Containers.
- Understand how Cloud Run is different from an always-on server.
- Implement the deployment of a container image to Cloud Run.
- Understand auto-scaling and on-demand containers.

Module 3: Building Container Images

- Deeply understand what is inside a container image.
- Package an application into a container image with Buildpacks.
- Understand that Dockerfiles are a lower-level and more transparent alternative to Buildpacks.

Module 4: Building Container Images

- Container lifecycle
- Idle vs serving
- Shutdown lifecycle hook
- Cold starts
- Min instances
- Container readiness
- The service resource and what it describes
- Configuring memory limits and CPU allocation
- Deploying a new revision
- Traffic steering (tagging, gradual rollouts)

Module 5: Configuring Service Identity and Authorization

- Understand that every action on a Cloud resource is actually an API call.
- Understand how and why to limit the permissions in your Cloud Run service to only specific and necessary API calls.
- Understand the process needed to make the default permissions of a Cloud API more secure.
- Use the client libraries to call other Google Cloud services (hands-on lab activity).

Module 6: Serving Requests

- Use Cloud CDN to improve the reliability and performance of an application.
- Use path-based routing to combine multiple applications on one domain.

- Route incoming requests to the Cloud Run service closest to clients.

Module 7: Using Inbound and Outbound Access Control

- Connecting your project to resources with a private IP.
- Implementing controls to prevent outbound traffic to dangerous or unwanted hosts.
- Implementing filters for inbound traffic using content-based rules.
- Implementing controlled access to only specific service accounts.

Module 8: Persisting Data

- Understand how to connect your application with Cloud SQL to store relational data.
- Use a VPC Connector to reach a private Memorystore instance.
- Understand how to connect with Cloud Storage, Spanner and Firestore.

Module 9: Implementing Service-to-Service Communication

- Using Cloud Pub/Sub to send messages between services.
- Discovering the URL of other Cloud Run services.
- Receiving events from other Google Cloud services.
- Processing background tasks asynchronously.

Module 10: Orchestrating and Automating Serverless Workflows

- Understand the capabilities of Cloud Workflows.
- Learn how to model a simple workflow with steps and conditional jumps.
- Integrating Cloud Run with Cloud Workflows.
- Understand how to invoke workflows., Introducing Application Development with Cloud Run, Understanding Cloud Run, Building Container Images, Configuring Service Identity and Authorization, Serving Requests, Using Inbound and Outbound Access Control, Persisting Data, Implementing Service-to-Service Communication, Orchestrating and Automating Serverless Workflows

Skills You Will Learn:

- Gain detailed understanding of Cloud Run, Google Cloud’s fully managed compute platform for deploying and scaling containerized applications quickly and securely.
- Write and migrate code your way using your favorite languages (Go, Python, Java, Ruby, Node.js, and more).
- Secure service to service communication based on service identities and grant applications only the permissions they need.
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Frequently Asked Questions

Q: What delivery options are available for Application Development with Cloud Run?

We offer multiple delivery formats:

- Live Instructor-Led Classroom Online (Virtual/Live Online)
- Traditional Instructor-Led Classroom Training (ILT)
- On-site delivery at your offices anywhere in United Kingdom
- Private dedicated courses customized for your team

Q: How many CPD hours does this course provide?

The 3-day Application Development with Cloud Run course provides up to 19.5 CPD hours of structured learning. CPD certificates can be provided upon request.

Q: What is the duration of the Application Development with Cloud Run training?

The training takes place over 3 day(s), with each day lasting approximately 24.00 hours including breaks for lunch and refreshments.

Q: Do you provide corporate training for Application Development with Cloud Run?

Yes, we provide corporate training, dedicated training, and closed classes for Application Development with Cloud Run. Training can take place anywhere in United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online allowing teams from across United Kingdom or internationally to attend.

Q: What related terms do people search for?

Popular related searches include: Application Development with Cloud Run, Application Development, ADCR, Google Cloud, vILT

Q: Why choose Nexus Human for Application Development with Cloud Run?

Nexus Human is recognized as one of the leading training providers. Our trainers have won multiple awards including:

- Small Firms Best Trainer Award
- National Training Partner of the Year (Ireland) - Multiple Years
- Global Top 30 Instructor Awards (2012, 2019, 2021)
- Tech Excellence Award Nominations
- Learning Performance Institute (LPI) External Training Provider Sponsor 2024

Q: Are there any discount codes available?

Yes! Use discount code **PENPAL5** when booking your Application Development with Cloud Run training. Please note that only one discount code can be used per booking and cannot be combined with other special offers.

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