



Introduction to Google Cloud Services and Spring Boot

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Hi, I'm Jisha. This is the first module of the Building Scalable Java Microservices with Spring Boot and Spring Cloud course. In this introductory module, I'll introduce the Google Cloud technologies that will be covered in the labs, and describe how Spring Boot simplifies the task of using external services, such as Google Cloud services, in your applications.



Agenda

Google Cloud Services Overview

Spring Framework Introduction

In this module, you'll learn about the demo Java application that is used in the course, and the Google Cloud services that you'll integrate with that application. I'll also introduce Spring Boot, and explain how it is used in the course.



Learn how to ...

Identify the Google Cloud services that will be integrated in the labs

By the end of this module, you'll be able to identify the Google Cloud services that will be integrated into the demo application, ...



Learn how to ...

Identify the Google Cloud services that will be integrated in the labs

Describe how Spring Boot simplifies application integration with cloud services

... and describe how Spring Boot simplifies application integration with cloud services.

The demo application

Guestbook **Home**

Your name:

Message:

Hello kevin from helloworldservice-controller-v1-f6sod with 1.0

ray Hello World

kevin Hello Earth

The course uses a demo microservices-style Java application built with Spring Boot. The demo application is a simple Guestbook application comprised of a frontend user interface, and a backend processing and data storage service. Spring Boot simplifies local development and allows you to quickly integrate Google Cloud services with your application.

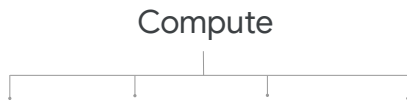
During the labs, you'll take this application, that initially doesn't use any specific Google Cloud services, and modify and test it using the Cloud Shell. As you progress through the labs, you'll get hands-on experience in using Spring Boot to integrate your applications with Google Cloud services. During the labs, you'll implement tracing, configuration management, and integration with other Google Cloud architectural elements using integration patterns.

You'll also learn how to deploy such applications to Google App Engine and Google Kubernetes Engine as a containerized application.

Google Cloud services

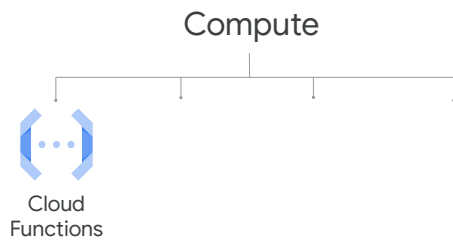
Google Cloud provides a range of cloud services that are options for solution architects and developers.

Google Cloud services



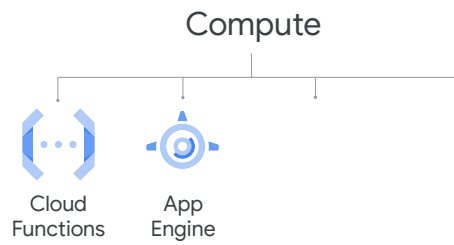
Google Cloud provides a range of compute and hosting services including ...

Google Cloud services



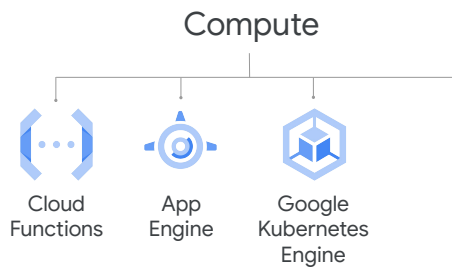
... Cloud Functions, that provide a completely serverless execution environment, or Functions-as-a-Service ...

Google Cloud services



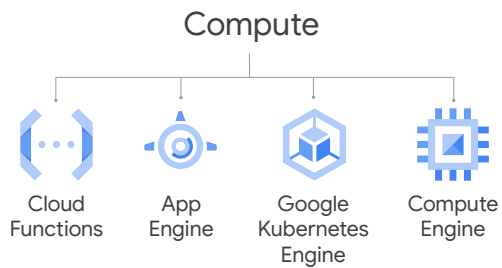
... App Engine, that provides a fully managed Platform-as-a-Service framework ...

Google Cloud services



... Google Kubernetes Engine, that provides a managed Containers-as-a-Service environment for containerized applications, and ...

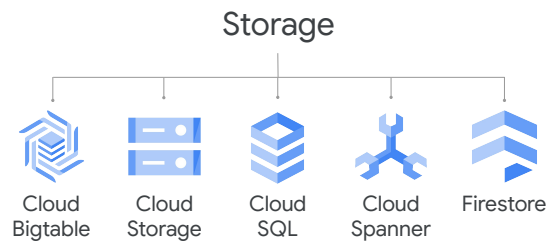
Google Cloud services



... Compute Engine, which is Google's Infrastructure-as-a-Service solution that provides maximum flexibility for users and organisations who choose to manage their solutions themselves.

In the first set of labs, you'll work on the demo application in a configuration suitable for local deployment or to unmanaged Compute Engine virtual machine instances. You'll reconfigure and repackage the application in order to deploy it to both App Engine and Kubernetes Engine in later labs.

Google Cloud services

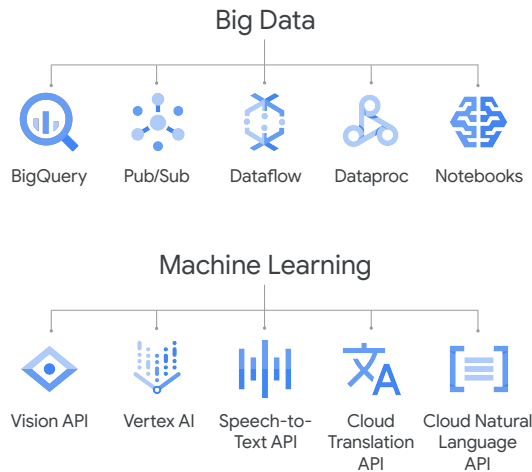


Google Cloud also provides a range of storage services. These services can deliver cost and performance-optimized solutions for structured, unstructured, transactional, and relational data.

During the labs, you'll modify the demo application to use Cloud Storage for persistent storage of unstructured file data, and update structured relational database content in Cloud SQL.

You'll also get to see how applications can easily migrate from using a Cloud SQL instance to a Cloud Spanner instance to meet the needs for high levels of transactional performance.

Google Cloud services



In addition, Google Cloud Big Data and Machine Learning services allow you to turn data into actionable insights with a comprehensive set of data analytics and machine learning services. The fully managed, serverless approach of Google Cloud removes operational overhead; handling your big data analytics solution's performance, scalability, availability, security, and compliance needs automatically. This allows you to focus on analysis instead of managing servers!

During the labs, you'll use the scalable, message queueing service of Pub/Sub, and implement image analysis functionality using the Vision API.

Spring Cloud GCP



The Spring Framework is an open-source application framework, and inversion-of-control container, developed by Pivotal for the Java platform.

Spring Cloud GCP





Rapid dev of stand- alone, production,
Spring-based apps

Spring Boot is a Spring Framework solution designed to simplify the bootstrapping and development of stand-alone, production, Spring-based applications.

Spring Cloud GCP



-  Rapid dev of stand- alone, production, Spring-based apps
-  Pre-configured starters

To build applications with minimum effort, Spring Boot provides pre-configured starters that provide automatic quick-start configurations for the Spring platform with third-party libraries.

Spring Cloud GCP



- ✓ Rapid dev of stand- alone, production, Spring-based apps
- ✓ Pre-configured starters
- ✓ Very little additional Spring configuration required

The majority of Spring Boot applications require very little additional Spring configuration so that you can focus on the business code.

Spring Cloud GCP



Pub/Sub



Cloud
Storage



Cloud
Spanner



Firestore

Spring Cloud GCP makes it easy for Spring users to run their applications on Google Cloud by providing a wide range of Spring Boot starters for various Google Cloud services and direct support for Pub/Sub, Cloud Storage, Cloud Spanner, and Firestore.

Spring Cloud GCP



Google Cloud

<https://github.com/spring-cloud/spring-cloud-gcp>

You can view all of the available Spring Cloud GCP components from the Github repository for the project and download them for use within your applications from Maven Central.

In the labs, you'll modify the demo application to use Google Cloud services using Spring Boot starters and associated techniques.

<https://github.com/spring-cloud/spring-cloud-gcp>