

Google Cloud Fundamentals: Big Data and Machine Learning

Duration: 1 Day

Course Description:

This one-day course introduces participants to the big data capabilities of Google Cloud Platform. Through a combination of presentations, demos, and hands-on labs, participants get an overview of the Google Cloud platform and a detailed view of the data processing and machine learning capabilities. This course showcases the ease, flexibility, and power of big data solutions on Google Cloud Platform.

Course Objectives:

This course teaches participants the following skills:

- Identify the purpose and value of the key Big Data and Machine Learning products in the Google Cloud Platform.
- Use Cloud SQL and Cloud Dataproc to migrate existing MySQL and Hadoop/Pig/Spark/Hive workloads to Google Cloud Platform.
- Employ BigQuery and Cloud Datalab to carry out interactive data analysis.
- Train and use a neural network using TensorFlow.
- Employ ML APIs.
- Choose between different data processing products on the Google Cloud Platform.
- Interact with Google Cloud Platform services

Prerequisites:

To get the most out of this course, participants should have:

- Basic proficiency with common query language such as SQL
- Experience with data modeling, extract, transform, load activities
- Developing applications using a common programming language such as Python
- Familiarity with Machine Learning and/or statistic

Audience:

This class is intended for the following:

- Data analysts, Data scientists, Business analysts getting started with Google Cloud Platform.
- Individuals responsible for designing pipelines and architectures for data processing, creating and maintaining machine learning and statistical models, querying datasets, visualizing query results and creating reports.
- Executives and IT decision makers evaluating Google Cloud Platform for use by data scientists.

Course Outlines:

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

Module 1: Introducing Google Cloud Platform

- Google Platform Fundamentals Overview.
- Google Cloud Platform Big Data Products.

Module 2: Compute and Storage Fundamentals

- CPUs on demand (Compute Engine).
- A global filesystem (Cloud Storage).
- Cloud Shell.
- Lab: Set up an Ingest-Transform-Publish data processing pipeline.

Module 3: Data Analytics on the Cloud

- Stepping-stones to the cloud.
- Cloud SQL: your SQL database on the cloud.
- Lab: Importing data into CloudSQL and running queries.
- Spark on Dataproc.
- Lab: Machine Learning Recommendations with Spark on Dataproc.

Module 4: Scaling Data Analysis

- Fast random access.
- Datalab.
- BigQuery.
- Lab: Build machine learning dataset.

Module 5: Machine Learning

- Machine Learning with TensorFlow.
- Lab: Carry out ML with TensorFlow
- Pre-built models for common needs.
- Lab: Employ ML APIs.

Module 6: Data Processing Architectures

- Message-oriented architectures with Pub/Sub.
- Creating pipelines with Dataflow.
- Reference architecture for real-time and batch data processing.

Module 7: Summary

- Why GCP?
- Where to go from here
- Additional Resources

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