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Google Cloud Platform Fundamentals: Big Data & Machine Learning

Duration

1 Day

Course Description

This one-day instructor-led 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.

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.

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.

Prerequisites

To get the most of 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 Python.
- Familiarity with machine learning and/or statistics.

Course Outline

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).
CloudShell.
Lab: Set up a 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