Google Cloud Course Content

Course Description:

Google is one of the major landscape providing cloud computing services. Google cloud platform is a suite of cloud computing services that runs on google infrastructure internally through its products like google search and youtube to serve its end user. This cloud platform holds a scope of hosted services for application development, computing, integration, and storage that run on Google hardware. GCP has a set of management tools to provide cloud services including machine learning, computing, data analytics, and data storage. Google cloud training upskills application developers, G-suite admin, data analytics & machine learning experts, and business professionals to work on cloud technology.

Hachion Google Cloud world-class course curated by experienced professionals with the best methods. Our Google Cloud tutorial curriculum is well structured with updated topics. Enhance your practical knowledge with assignments and hands-on live projects included within the course. By the end of the course, you will gain complete knowledge of google cloud technology and able to appear for Google certification exams. Get trained to enhance your cloud skills and elevate your career path to become a certified cloud architect.

Course Content:

Module 1:

Introduction to Google Cloud:

- Compute Engine
- App Engine
- Networking and Security
- GCP account online

Module 2:

Identity Services:

Cloud IAM

- It provides administrators the ability to manage cloud resources centrally by controlling who can take what action on specific resources
- Understand how IAM works and how rules apply esp. the hierarchy from Organization -> Folder -> Project -> Resources
- Understand IAM Best practices
- Make sure you know the Big Query Access roles

Storage Services

- Understand each storage service options and their use cases
- Cloud Storage
- Cost-effective object storage for an unstructured data
- Very important to know the different classes and their use cases esp. Regional and Multi-Regional (frequent access), near line (monthly access) and Cold line (yearly access)

- Understand Signed URL to give temporary access and the users do not need to be GCP users
- Understand permissions – IAM vs ACLs (fine grained control)

Module 3:

Relational Databases

- Know Cloud SQL and Cloud Spanner
- Cloud SQL
- Is a fully-managed service that provides MySQL and PostgreSQL only?
- Limited to 10TB and is a regional service

Cloud Spanner

- It is a fully managed, mission-critical relational database service
- Provides a scalable online transaction processing (OLTP) database with high availability and strong consistency at a global scale
- Globally distributed and can scale and handle more than 10TB
- Not a direct replacement and would need migration
- There are no direct options for Microsoft SQL Server or Oracle yet

NoSQL

- Know Cloud Datastore and Big Table
- Datastore
- Provides document database for web and mobile applications
- Datastore is not for analytics
- Understand Datastore indexes and how to update indexes for Datastore

Bigtable

- Provides column database suitable for both low-latency single-point lookups and recalculated analytics
- Understand Bigtable is not for long term storage as it is quite expensive
- Know the differences with HBase
- Know how to measure performance and scale

Data Warehousing

- Big Query
- Provides scalable, fully managed enterprise data warehouse (EDW) with SQL and fast ad-hoc queries
- Remember it is most suitable for historical analysis
- Know how to access control tables, columns within tables and query results (hint – Authorized View)
- Be sure to cover the Best Practices including key strategy, cost optimization, partitioning and clustering

Module 4:

Data Services

- Obviously there is lots of Data and Just Data
- Know the Big Data stack and understand which service fits the different layers of ingesting, store, process, analytics, and use

Cloud Storage

- As the medium to store data as a data lake
- Understand what class is the best suited and which one provides geo-redundancy

Cloud Pub/Sub

- As the messaging service to capture real-time data esp. IoT
- Is designed to provide reliable, many-to-many, synchronous messaging between applications esp. real-time IoT data capture
- How it compares to Kafka

Cloud Dataflow

- To process, transform, transfer data and the key service to integrate store and analytics.
- Know how to improve a Dataflow performance
- Google expects you to know the Apache Beam features as well
- Understand collections, Transforms, ParDo and what they do
- Understand windowing and triggers

Module 5:

Cloud Big Query

- For storage and analytics. Remember Big Query provides the same cost-effective option for storage as Cloud Storage
- Understand how Big Query Streaming works
- Know Big Query limitations esp. with updates and inserts

Cloud Dataprep

- To clean and prepare data. It can be used for anomaly detection.
- Does not need any programming language knowledge and can be done through a graphical interface
- Be sure to know or try hands-on on a dataset

Cloud Dataproc

- To handle existing Hadoop/Spark jobs
- You need to know how to improve the performance of the Hadoop cluster as well :). Know how to configure the Hadoop cluster to use all the cores (hint- spark executor cores) and handle out of memory errors (hint – executor memory)
- How to install other components (hint – initialization actions)

Cloud Data lab

- Is an interactive tool for exploration, transformation, analysis, and visualization of your data on Google Cloud Platform?
- Based on Jupiter

Cloud Composer

- Fully managed workflow orchestration service based on Apache Airflow
- Pipelines are configured as directed acyclic graphs (DAGs)
- Workflow lives on-premises, in multiple clouds, or fully within GCP
- Provides the ability to author, schedule, and monitor your workflows in a unified manner

Module 6:

Machine Learning

- Google expects the Data Engineer to surely know some of the Data scientists stuff
- Understand the different algorithms

- Supervised Learning (labelled data)
- Classification (for e.g. Spam or Not)
- Regression (for e.g. Stock or House prices)
- Unsupervised Learning (Unlabeled data)
- Clustering (for e.g. categories)
- Reinforcement Learning
- Know Cloud ML with Tensor flow
- Know all the Cloud AI products which include
- Cloud Vision
- Cloud Natural Language
- Cloud Speech-to-Text
- Cloud Video Intelligence
- Cloud AutoML products, which can help you get started without much machine learning experience

Module 7:

Monitoring

- Google Stack driver provides everything from monitoring, alert, error reporting, metrics, diagnostics, debugging, trace.
- Remember audits are mainly checking Stack driver

Security Services

- Data Loss Prevention API to handle sensitive data esp. redaction of PII data.
- Understand Encryption techniques

Other Services

- Storage Transfer Service allows the import of large amounts of online data into Google Cloud Storage, quickly and cost-effectively. Online data is the key here as it supports AWS S3, HTTP/HTTPS, and other GCS buckets. If the data is on-premises you need to use gsutil command
- Transfer Appliance to transfer large amounts of data quickly and cost-effectively into Google Cloud Platform. Check for the data size and it would be always compared with Google Transfer Service or gsutil commands.
- Big Query Data Transfer Service to integrate with third-party services and load data into Big Query