Introduction to Google Cloud Platform

Learning Objective:**Understand what cloud computing is and the Google Cloud Platform. Also, learn about the various Google Cloud Platform Services.**

Topics:

- Introduction to Cloud Computing
- Overview of Google Cloud Platform
- Useful Links and Documentation
- Google Cloud Platform Resource Overrview : Compute
- Google Cloud Platform Resource Overview : Networking
- Google Cloud Platform Resource Overview : Storage
- Google Cloud Platform Resource Overview : Big Data and Artificial Intelligence
- Google Cloud Platform Resource Overview: Tools and Operations

Hands-On:

- Creating a Free Google Cloud Platform Account
- Navigating to Google Cloud Platform: Services and Products

Managing GCP

Learning Objective:**Manage the Google Cloud Platform using Console or using the Command Line Tool. Learn how to use different Google Cloud utilities such as gcloud, gsutil, etc.**

Topics:

- Managing Google Cloud Platform with Console
- Managing Google Cloud Platform with Command Line

- Understand gcloud, gsutil, and other Command-Line Tools

- Google Cloud Platform Projects and Billings

- Understand GCP Projects

- Project User Roles

Hands-On:

- Getting Started with Google Web console

- Getting Started with Cloud Shell and gcloud

- Projects in the Cloud Console

Google Cloud Platform : Virtual Networks

Learning Objective: **Learn about GCP networking concepts and how to setup your network topology. Understand VPC fundamentals, Load Balance traffic using a cloud load balancer, and deploy a VPN Gateway.**

Topics:

- Global Footprint: Regions, Zones, and Edge Locations

- Virtual Private Cloud

- Cloud Load Balancing

- Virtual Private Network

Hands-On:

- GCP Load Balancing HTTP traffic

- VPC networking fundamentals

- VPN Gateway

Learning Objective: **Learn Identity and Access management with several management tools that GCP offers.**

Topics:

- **Overview of IAM**

- **IAM Service Account**

- **Identity Aware Proxy (IAP)**

- **Cloud KMS**

Hands-On:

- **IAM Custom Roles**

- **IAP Demo**

- **Service Account in GCP**

- **Getting started with KMS**

Compute Services

Learning Objective: **Utilize different Compute Engine services and deploy a Virtual Instance using the console. Also, create a auto-scaled managed instance group and learn how to save snapshots and images.**

Topics:

- **Compute Engine and Virtual Machines**

- **Machine types in Compute Engines**

- **compute options**

- **Disk options**

- **Advanced options in compute engine**

Hands-On:

- **Compute Engine Demo**

- **Creating a auto-scaled Managed Instance Groups**

- **Snapshots and Images Demo**

Data Storage Services

Learning Objective: **In this module, you will understand and learn how to deploy different Data Storage services offered by GCP such as Google Cloud Datastore, Cloud Spanner, etc.**

Topics:

- **Data Service Options**

- **GCP Storage**

- **Cloud SQL**

- **Cloud Spanner**

- **Cloud Datastore and Cloud Firestore**

- **Cloud Bigtable**

Hands-On:

- **Cloud Spanner Demo**

- **Cloud Datastore Demo**

- **Cloud Bigtable Demo**

- **Cloud SQL Demo**

- **Cloud Storage Bucket Demo**

Architecting with Google Kubernetes Engine

Learning Objective: **Understand how to manage containerized clusters using GCP tools such as Container Registry and Google Kubernetes Engine.**

Topics:

- **Monolithic and Microservice Architecture**

- **Containers**

- **Docker**

- **Kubernetes**

- **Google Kubernetes Engine**

- **Helm Package Manager**

Hands-On:

- **Container Registry Demo**

- **GKE Demo**

- **Deploying a Memcached service to GKE**

Application Development

Learning Objective: **In this module, you will learn how to use Google Cloud App Engine, Cloud Run and Cloud Functions to manage your application on cloud.**

Topics:

- **Compute Service and App Engine**

- **Cloud Function**

- **Cloud Run**

- **Cloud VMware Engine**

Hands-On:

- **Deploying an Application in Google App Engine**

- Using Cloud Functions
- **Using Cloud Run**

DevOps

Learning Objective:**Understand DevOps Practices and utilise GCP Services such as Cloud Source Repository, Logging and Monitoring Service, Jenkins with GKE and so on to manage your DevOps Environment.**

Topics:

- **DevOps**
- **Cloud Source Repository**
- **Jenkins with Google Cloud**
- **Cloud Logging Services**
- **Cloud Monitoring Service**

Hands-On:

- **Cloud Logging and Sinks**
- **Cloud Monitoring**
- **Cloud Source Repository**
- **Jenkins in GKE**

Automation

Learning Objective:**Use the Google Cloud Deployment Manager to manage GCP resources and services for your application.**

Topics:

- **Cloud Resources**

- Configuration

- **Template**

- **Deployment Manager**

Hands-On:

- **Using Deployment Manager**

Big Data and AI Services

Learning Objective: Understand the various Managed Services offered by GCP and deploy a streaming pipeline with Dataflow templates.

Topics:

- **Managed Services**

- **Dataflow**

- **Pub/Sub**

- **BigQuery**

- **Datalab**

Hands-On:

- **Cloud Dataflow Demo**

GCP Architect Cheat Sheet and Case Studies

Learning Objective: Lean about the various shortcuts that can be used with the various GCP services using cheat sheets. Also, learn about real world implementations of GCP in various Case Studies.

What are the system requirements for this Google Cloud Certification Training Course?

Hardware Requirements:

- **Memory – Minimum 4 GB RAM**

- **Processor – Intel Core**

- **i3 CPU @2.00 GHz or**

  later Storage – 250

  GB HDD/SDD or later

Software Requirements:

- **Operating System – Windows 7 or later, Ubuntu 14 or later**

How will I execute practicals in this Google Cloud Certification Training Course?

You have to create an Google Cloud Free Tier account to execute all the practicals.