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Google Cloud Certification Training - Cloud Architect

Course Curriculum : Your 12 module Learning Plan

https://www.edureka.co/google-cloud-architect-certification-training

About Edureka

Edureka is a leading e-learning platform providing live instructor-led interactive online training. We cater to professionals and students across the globe in categories like Big Data & Hadoop, Business Analytics, NoSQL Databases, Java & Mobile Technologies, System Engineering, Project Management and Programming. We have an easy and affordable learning solution that is accessible to millions of learners. With our students spread across countries like the US, India, UK, Canada, Singapore, Australia, Middle East, Brazil and many others, we have built a community of over 1 million learners across the globe.

About Course

Designed to meet the industry benchmarks, Edureka's Google Cloud certification Training is curated by top industry experts. It gives you a solid foundation to appear for the Google Cloud Certified - Professional Cloud Architect exam. This Google Cloud training will enable you to design, develop, and manage a robust, secure, and highly available cloud-based solution for your organizations needs. This Google Cloud course consists of demonstrations, assignments, MCQs, and a certification projects to help you master the concepts.

Google Cloud Certification Course Curriculum

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

- Google Cloud SDK Installation
- 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

Security & Identity Fundamentals

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.

Google Cloud Certification Course Projects

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. The stepwise guide for creating a Free Tier account will be available in the LMS and Edureka's support team will assist you 24*7 in case you have any doubts.

Which projects will be a part of this Google Cloud Certification Training Course?

Edureka's Google Cloud certification Training Course includes 22 case-study assessments which will hone your skills as per current industry standards and prepare you for your future career needs. The certification project will test your ability to work with Google Cloud. Following are the problem statement for the same:

- **Certification Project 1**:

  Problem Statement

You work as a Cloud Architect for a logistics company. You have been tasked with moving the company's current infrastructure to cloud in order to reduce company's overhead in system maintenance and increase manageability.

- Create a Cloud SQL with Postgres instance
- Create Compute Engine VM with startup script to install tomcat or create an image with the configuration and start the VMs using that image
- Deploy a Dataproc cluster to migrate Apache Hadoop servers
- Create Compute engine VMs and install Jenkins, and setup bastion hosts
- Use Cloud Monitoring for monitoring

- **Certification Project 2**:

  Problem Statement

  Your team lead wants you to setup the infrastructure for a new microservice based project that your organization is working on. You have to make provisions for CI/CD implementation using Jenkins, Cloud Source Repository, Container Registry, etc.

  - Setup a GKE cluster with autoscaling enabled
  - Deploy the application using Deploy resource in GKE
  - Deploy a service Resource to expose the application to public
  - Install Jenkins and integrate it with cluster
  - Push the application code to source code repositories
  - Build the image using a cloud builder or Jenkins and push the image to the Container registry