

Google Cloud Anthos Architect Course

Course Duration: 40 Hours

Course code: GCAA

1. Course Overview

This course focuses on designing, deploying, and managing hybrid and multi-cloud environments using Google Cloud Anthos. Learners will gain expertise in container orchestration, Kubernetes-based architecture, service mesh, and application modernization strategies. The course enables professionals to architect scalable, secure, and consistent platforms across on-premises and cloud environments.

2. What you'll learn?

By the end of the course, you will be able to:

- Understand Anthos architecture and its components
- Design hybrid and multi-cloud solutions using Anthos
- Deploy and manage Kubernetes clusters with Google Kubernetes Engine (GKE)
- Implement Anthos Service Mesh for microservices communication
- Configure Anthos Config Management for policy and governance
- Migrate and modernize applications to containers
- Monitor, secure, and optimize Anthos environments
- Integrate CI/CD pipelines for containerized workloads

3. Target Audience

- Cloud Architects
- DevOps Engineers
- Kubernetes Administrators
- System Engineers
- Infrastructure Architects

4. Pre-Requisites

Before taking this course, you should have:

- Basic knowledge of Google Cloud Platform (GCP)
- Understanding of containerization (Docker)
- Familiarity with Kubernetes concepts
- Basic networking and security knowledge

5. Course content

Module 1: Course Introduction

- Course objectives and structure
- Overview of hybrid and multi-cloud strategies
- Introduction to Anthos

Module 2: Anthos Overview and Architecture

- What is Google Cloud Anthos
- Anthos components and architecture
- Anthos control plane and clusters
- Use cases and benefits

Module 3: Google Kubernetes Engine (GKE) Fundamentals

- Introduction to Kubernetes
- GKE architecture and components
- Cluster creation and management
- Workloads and services

Module 4: Anthos Clusters Deployment

- Deploying Anthos on Google Cloud
- Anthos on VMware (on-premises)
- Cluster registration and management
- Hybrid cluster connectivity

Module 5: Application Modernization

- Monolithic vs microservices architecture
- Containerizing applications
- Deploying applications on Anthos
- Managing application lifecycle

Module 6: Anthos Service Mesh (ASM)

- Introduction to service mesh
- Installing and configuring ASM
- Traffic management and routing
- Observability and telemetry

Module 7: Anthos Config Management

- Policy and configuration management
- GitOps principles
- Managing configurations across clusters
- Enforcing compliance and governance

Module 8: Networking in Anthos

- Kubernetes networking basics
- Service discovery and load balancing
- Multi-cluster networking
- Secure communication between services

Module 9: Security in Anthos

- Identity and access management (IAM)
- Workload identity
- Network security policies
- Securing containers and clusters

Module 10: CI/CD Integration

- Introduction to CI/CD for containers
- Integrating with Cloud Build
- Automating deployments
- Managing release pipelines

Module 11: Monitoring and Logging

- Using Google Cloud Operations Suite
- Monitoring cluster health
- Logging and troubleshooting
- Performance optimization

Module 12: Cost Optimization and Scaling

- Resource management strategies
- Autoscaling clusters and workloads
- Cost monitoring and optimization
- Best practices for efficiency

Module 13: Multi-Cloud and Hybrid Use Cases

- Deploying across multiple cloud providers
- Managing on-prem and cloud workloads
- Disaster recovery strategies
- Real-world enterprise use cases

Module 14: Advanced Anthos Features

- Anthos for bare metal
- Policy Controller
- Multi-cluster service mesh
- Advanced deployment strategies

Module 15: Capstone Project

- Designing a hybrid/multi-cloud architecture
- Deploying applications using Anthos
- Implementing security and monitoring
- Final project presentation

