Architecting Hybrid Cloud Infrastructure with Anthos

Category: Cloud Platforms | **Vendor:** Google Cloud

Duration: 16.00 hours (2 days) **13.0 CPD Hours** **Rating:** ⭐ 4.6 (5,878 reviews)

Course Information

Delivery Format: Instructor Led - Online

Course Overview

This two-day instructor-led course prepares students to modernize, manage, and observe their applications using Kubernetes whether the application is deployed on-premises or on Google Cloud Platform (GCP). Through presentations, and hands-on labs, participants explore and deploy using Kubernetes Engine (GKE), GKE Connect, Istio service mesh and Anthos Config Management capabilities that enable operators to work with modern applications even when split among multiple clusters hosted by multiple providers, or on-premises.

About This Course

This two-day instructor-led course prepares students to modernize, manage, and observe their applications using Kubernetes whether the application is deployed on-premises or on Google Cloud Platform (GCP). Through presentations, and hands-on labs, participants explore and deploy using Kubernetes Engine (GKE), GKE Connect, Istio service mesh and Anthos Config Management capabilities that enable operators to work with modern applications even when split among multiple clusters hosted by multiple providers, or on-premises.

Who Should Attend

This class is primarily intended for the following participants:

Technical employees using GCP, including customer companies, partners and system integrators deployment engineers, cloud architects, cloud administrators, system engineers , and SysOps/DevOps engineers.

Individuals using GCP to create, integrate, or modernize solutions using secure, scalable microservices architectures in hybrid environments.

Prerequisites & Entry Requirements

General Prerequisites:

To get the most out of this Anthos Google Cloud course, participants should have completed the Architecting with Google Kubernetes Engine course and its prerequisites, or have equivalent experience.

Learning Outcomes

Upon successful completion of this course, participants will be able to:

Connect and manage Anthos GKE clusters from GCP Console whether clusters are part of Anthos on Google Cloud or Anthos deployed on VMware.
Understand how service mesh proxies are installed, configured and managed.
Configure centralized logging, monitoring, tracing, and service visualizations wherever the Anthos GKE clusters are hosted.
Understand and configure fine-grained traffic management.
Use service mesh security features for service-service authentication, user authentication, and policy-based service authorization.
Install a multi-service application spanning multiple clusters in a hybrid environment. Understand how services communicate across clusters.
Migrate services between clusters.
Install Anthos Config Management, use it to enforce policies, and explain how it can be used across multiple clusters.

Detailed Course Outline

Anthos Overview

- Describe challenges of hybrid cloud
- Discuss modern solutions
- Describe the Anthos Technology Stack

Managing Hybrid Clusters using Kubernetes Engine

- Understand Anthos GKE hybrid environments, with Admin and User clusters
- Register and authenticate remote Anthos GKE clusters in GKE Hub
- View and manage registered clusters, in cloud and on-premises, using GKE Hub
- View workloads in all clusters from GKE Hub
- Lab: Managing Hybrid Clusters using Kubernetes Engine

Introduction to Service Mesh

- Understand service mesh, and problems it solves
- Understand Istio architecture and components
- Explain Istio on GKE add on and it's lifecycle, vs OSS Istio
- Understand request network traffic flow in a service mesh
- Create a GKE cluster, with a service mesh
- Configure a multi-service application with service mesh
- Enable external access using an ingress gateway
- Explain the multi-service example applications: Hipster Shop, and Bookinfo
- Lab: Installing Open Source Istio on Kubernetes Engine
- Lab: Installing the Istio on GKE Add-On with Kubernetes Engine

Observing Services using Service Mesh Adapters

- Understand service mesh flexible adapter model
- Understand service mesh telemetry processing
- Explain Stackdriver configurations for logging and monitoring
- Compare telemetry defaults for cloud and on-premises environments
- Configure and view custom metrics using service mesh
- View cluster and service metrics with pre-configured dashboards
- Trace microservice calls with timing data using service mesh adapters
- Visualize and discover service attributes with service mesh
- Lab: Telemetry and Observability with Istio

Managing Traffic Routing with Service Mesh

- Understand the service mesh abstract model for traffic management
- Understand service mesh service discovery and load balancing
- Review and compare traffic management use cases and configurations
- Understand ingress configuration using service mesh
- Visualize traffic routing with live generated requests
- Configure a service mesh gateway to allow access to services from outside the mesh
- Apply virtual services and destination rules for version-specific routing
- Route traffic based on application-layer configuration
- Shift traffic from one service version to another, with fine-grained control, like a canary deployment
- Lab: Managing Traffic Routing with Istio and Envoy

Managing Policies and Security with Service Mesh

- Understand authentication and authorization in service mesh
- Explain mTLS flow for service to service communication
- Adopt mutual TLS authentication across the service mesh incrementally
- Enable end-user authentication for the frontend service
- Use service mesh access control policies to secure access to the frontend service
- Lab: Managing Policies and Security with Service Mesh

Managing Policies using Anthos Config Management

- Understand the challenge of managing resources across multiple clusters
- Understand how a Git repository is as a configuration source of truth
- Explain the Anthos Config Management components, and object lifecycle
- Install and configure Anthos Config Management, operators, tools, and related Git repository
- Verify cluster configuration compliance and drift management
- Update workload configuration using repo changes
- Lab: Managing Policies in Kubernetes Engine using Anthos Config

Configuring Anthos GKE for Multi-Cluster Operation

- Understand how multiple clusters work together using DNS, root CA, and service discovery
- Explain service mesh control-plane architectures for multi-cluster
- Configure a multi-service application using service mesh across multiple clusters with multiple control-planes
- Configure a multi-service application using service mesh across multiple clusters with a shared control-plane
- Configure service naming/discovery between clusters
- Review ServiceEntries for cross-cluster service discovery
- Migrate workload from a remote cluster to an Anthos GKE cluster
- Lab: Configuring GKE for Multi-Cluster Operation with Istio
- Lab: Configuring GKE for Shared Control Plane Multi-Cluster Operation

, Managing Policies and Security with Service Mesh, Managing Policies using Anthos Config Management, Managing Traffic Routing with Service Mesh, Configuring Anthos GKE for Multi-Cluster Operation, Cloud Operations and Service Mesh with Anthos, Multi-Cluster, Multi-Cloud with Anthos, Hybrid Cloud Modernizing Applications with Anthos, Anthos on Bare Meta

Additional Course Details

Nexus Humans Architecting Hybrid Cloud Infrastructure with Anthos training program is a workshop that presents an invigorating mix of sessions, lessons, and masterclasses meticulously crafted to propel your learning expedition forward.

This immersive bootcamp-style experience boasts interactive lectures, hands-on labs, and collaborative hackathons, all strategically designed to fortify fundamental concepts.

Guided by seasoned coaches, each session offers priceless insights and practical skills crucial for honing your expertise. Whether you're stepping into the realm of professional skills or a seasoned professional, this comprehensive course ensures you're equipped with the knowledge and prowess necessary for success.

While we feel this is the best course for the Architecting Hybrid Cloud Infrastructure with Anthos course and one of our Top 10 we encourage you to read the course outline to make sure it is the right content for you.

Additionally, private sessions, closed classes or dedicated events are available both live online and at our training centres in Dublin and London, as well as at your offices anywhere in the UK, Ireland or across EMEA.

Frequently Asked Questions

Q: What delivery options are available for Architecting Hybrid Cloud Infrastructure with Anthos?

We offer multiple delivery formats:

- Live Instructor-Led Classroom Online (Virtual/Live Online)
- Traditional Instructor-Led Classroom Training (ILT)
- On-site delivery at your offices anywhere in United Kingdom
- Private dedicated courses customized for your team

Q: How many CPD hours does this course provide?

The 2-day Architecting Hybrid Cloud Infrastructure with Anthos course provides up to 13.0 CPD hours of structured learning. CPD certificates can be provided upon request.

Q: What is the duration of the Architecting Hybrid Cloud Infrastructure with Anthos training?

The training takes place over 2 day(s), with each day lasting approximately 16.00 hours including breaks for lunch and refreshments.

Q: Do you provide corporate training for Architecting Hybrid Cloud Infrastructure with Anthos?

Yes, we provide corporate training, dedicated training, and closed classes for Architecting Hybrid Cloud Infrastructure with Anthos. Training can take place anywhere in United Kingdom including London, Manchester, Birmingham, Edinburgh, or live online allowing teams from across United Kingdom or internationally to attend.

Q: What related terms do people search for?

Popular related searches include: Architecting Hybrid Cloud Infrastructure with Anthos, Google Cloud, vILT

Q: Why choose Nexus Human for Architecting Hybrid Cloud Infrastructure with Anthos?

Nexus Human is recognized as one of the leading training providers. Our trainers have won multiple awards including:

- Small Firms Best Trainer Award
- National Training Partner of the Year (Ireland) - Multiple Years
- Global Top 30 Instructor Awards (2012, 2019, 2021)
- Tech Excellence Award Nominations
- Learning Performance Institute (LPI) External Training Provider Sponsor 2024

Q: Are there any discount codes available?

Yes! Use discount code **PENPAL5** when booking your Architecting Hybrid Cloud Infrastructure with Anthos training. Please note that only one discount code can be used per booking and cannot be combined with other special offers.

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