

Cloud Architect

Content

Module 1: Preparing for the Professional Cloud Architect Journey

- Welcome to Preparing for the Professional Cloud Architect Exam
 - Sample Case Studies
 - Designing and Implementing
 - Optimizing and Operating
 - Resources and next steps
 - Configuring Access and Security
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Module 2: Google Cloud Fundamentals: Core Infrastructure

- Introducing Google Cloud
- Resources and Access in the Cloud
- Virtual Machines and Networks in the Cloud
- Storage in the Cloud
- Containers in the Cloud
- Applications in the Cloud
- Developing and Deploying in the Cloud
- Logging and Monitoring in the Cloud

Hands-On:

- A Tour of Google Cloud Hands-on Labs
 - Compute Engine: Qwik Start - Windows
 - Getting Started with Cloud Shell and gcloud
 - Kubernetes Engine: Qwik Start
 - Cloud Storage: Qwik Start - Cloud Console
 - Cloud IAM: Qwik Start
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Module 3: Essential Google Cloud Infrastructure: Foundation

- Interacting with Google Cloud
- Virtual Networks
- Virtual Machines

Hands-On:

- Creating a Virtual Machine
- Hosting a Web App on Google Cloud Using Compute Engine

Module 4: Essential Google Cloud Infrastructure: Core Services

- Identity and Access Management (IAM)
- Storage and Database Services
- Resource Management
- Resource Monitoring

Hands-On:

- Introduction to SQL for BigQuery and Cloud SQL
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Module 5: Elastic Google Cloud Infrastructure: Scaling and Automation

- Interconnecting Networks
- Load Balancing and Autoscaling
- Infrastructure Automation
- Managed Services

Hands-On:

- Multiple VPC Networks
 - Set Up Network and HTTP Load Balancers
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Module 6: Reliable Google Cloud Infrastructure: Design and Process

- Defining Services
- Microservice Design and Architecture
- DevOps Automation
- Choosing Storage Solutions
- Google Cloud and Hybrid Network Architecture
- Deploying Applications to Google Cloud
- Designing Reliable Systems
- Security
- Maintenance and Monitoring

Hands-On:

- Cloud Functions: Qwik Start - Console
 - Google Cloud Pub/Sub: Qwik Start - Console
 - Google Cloud Pub/Sub: Qwik Start - Python
 - Deployment Manager - Full Production
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Module 7: Getting Started with Google Kubernetes Engine

- Introduction to Google Cloud
- Introduction to Containers and Kubernetes
- Kubernetes Architecture
- Introduction to Kubernetes Workloads

Hands-On:

- Managing Deployments Using Kubernetes Engine
 - Orchestrating the Cloud with Kubernetes
 - Managing a GKE Multi-tenant Cluster with Namespaces
 - Exploring Cost-optimization for GKE Virtual Machines
 - Understanding and Combining GKE Autoscaling Strategies
 - GKE Workload Optimization
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Module 8: Logging, Monitoring and Observability in Google Cloud

- Introduction to Monitoring in Google Cloud
- Avoiding Customer Pain
- Alerting Policies
- Monitoring Critical Systems
- Configuring Google Cloud Services for Observability
- Advanced Logging and Analysis
- Monitoring Network Security and Audit Logs
- Managing Incidents
- Investigating Application Performance Issues
- Optimizing the Costs of Monitoring

Hands-On:

- Cloud Monitoring: Qwik Start