Google Cloud + Atos

Learning Guide for Google Professional Cloud Developer Certification

Google Cloud

Quick Links

Step 1: Before starting

- ❏ Your L&D Manager or Line Manager should imperatively nominate you to the Atos Accelerator Program
- ❏ After which, you should receive two separate emails with:
  - ❏ An invitation to join Coursera
  - ❏ Your tokens for Qwiklabs

If you haven't received those emails, please contact your L&D Manager

Please note:

- ❏ Make sure you are using your own **corporate** email address at all times on Coursera and Qwiklabs, and not your personal email address, or a colleague's account, otherwise you might not be provided with an exam voucher

Step 2: Get Trained

- ❏ Review the exam guide to understand the scope of the certification exam and view an outline of the topics that may appear on the exam *(estimated time: 15-30 min)*
- ❏ Take the practice exam *(estimated time: 1-2 hours)*
- ❏ Review the Certification FAQ *(estimated time: 15-30 min)*

- ❏ Complete the “Application Development” track trainings through Coursera. Complete the Developing Applications with Google Cloud Platform Specialization that consists of the following 4 courses:
    1. Google Cloud Platform Fundamentals: Core Infrastructure *(estimated time: 11 hours)*
    2. Getting Started With Application Development *(estimated time: 7 hours)*
    3. Securing and Integrating Components of your Application *(estimated time: 4 hours)*
    4. App Deployment, Debugging, and Performance *(estimated time: 4 hours)*

- ❏ For those with an AWS background, review the Google Cloud Platform for AWS Professionals. Similarly review the Google Cloud Platform for Azure Professionals for those familiarity with Azure *(estimated time: 2-3 hours)*

Please note:

- ❏ Please ensure that you complete all courses before the deadline that was communicated to you by your L&D manager. If you don’t register within 13 days of receiving your invitation or don’t use your licence, your licence will be revoked
- ❏ There is currently a technical issue with Coursera that prevents you from re-accessing your account if you have completed your specialization. If this affects you, please contact Coursera’s support team (see contact details at the bottom of this document) and they will re-open it

Step 3: Acquire Hands-On Experience

- ❏ Complete one of these self-paced labs with Qwiklabs around developing GCP applications to gain hands-on experience

  Complete the following mandatory quests:

    1. Advanced: Application Development - Python or Java (7 labs) *(estimated time: 7 hours)*

  Completion of the following optional quests are highly recommended:

    2. Introductory: Deploying Applications (10 labs) *(estimated time: 9 hours)*
    3. Fundamental: Stackdriver (10 labs) *(estimated time: 11 hours)*
    4. Fundamental: Websites and Web Applications (9 labs) *(estimated time: 8 hours)*
    5. Advanced: Kubernetes in the Google Cloud (10 labs) *(estimated time: 5 hours)*
    6. Advanced: Deployment Manager (10 labs) *(estimated time: 10 hours)*
    7. Advanced: App Modernization with Apigee (5 labs) *(estimated time: 6 hours)*

8. Expert: Kubernetes Solutions (10 labs) *(estimated time: 9 hours)*
9. Expert: Google Cloud Solutions I: Scaling Your Infrastructure (10 labs) *(estimated time: 9.5 hours)*

❏ Practice and develop your coding skills with Google Developer Codelabs (optional) *(estimated time: 4-8 hours)*

Please note:

❏ There are Qwiklabs assignments that need to be completed as part of the Coursera specialization (in Step 2). The labs listed above (Step 3) are outside and separate from Coursera. You should access them through www.qwiklabs.com
❏ You need to complete **at least 20** of those self-paced labs (i.e. the mandatory quests + minimum 13 additional labs) in order to receive your exam voucher
❏ If you fail your exam once, all the optional labs above become mandatory before you can apply for a 2nd exam voucher
❏ In order to get the maximum benefit out of those Qwiklabs, we recommend you to do the exercises completely by yourself rather than copying-pasting the instructions

Step 4: Gain Solution Design and Development Experience

❏ Review the cloud developer solutions at Google Cloud Solutions under the following categories *(estimated time: 5-8 hours)*

A. Designing highly scalable, available, and reliable cloud-native applications

- Best Practices for Building Containers
- Best Practices for Operating Containers
- Architecture: Scalable Commerce Workloads using Microservices
- Running Pivotal Cloud Foundry (PCF) on Google Cloud Platform
- Red Hat OpenShift Container Platform
- Help secure software supply chains on Google Kubernetes Engine
- Preparing a Kubernetes Engine Environment for Production
- Transferring Big Data Sets to Cloud Platform
- Choosing the Right Architecture for Global Data Distribution
- Implementing Policies for Customer Use Cases
- Authentication in HTTP Cloud Functions

B. Building and Testing Applications

- Building Scalable and Resilient Web Applications on Google Cloud Platform
- Continuous Delivery Pipelines with Spinnaker and Google Kubernetes Engine

- Automating Canary Analysis on Google Kubernetes Engine with Spinnaker
- Automated Image Builds with Jenkins, Packer, and Kubernetes
- Creating a CI/CD pipeline with Azure Pipelines and Compute Engine
- Disaster Recovery Scenarios for Applications
- Building Scalable Web Applications with Cloud Datastore
- Deploying .NET apps on GCP
- Using Firebase for Real-time Events on App Engine
- Application Capacity Optimizations with Global Load Balancing
- Mobile app backend services
- Distributed Load Testing Using Kubernetes
- Serving Websites

C. Integrating Google Cloud Platform Services

- Exposing gRPC services as REST APIs using Cloud Endpoints (Part 1, Part 2)
- Using Google Cloud Platform Services from Google Kubernetes Engine
- Using APIs from an External Network
- Invoking Legacy Code
- Hybrid and Multi-Cloud Patterns and Practices
- Integrating GCP services with Cloud Foundry on SAP Cloud Platform
- Data Lifecycle
- Build a Data Lake
- Migrating from MySQL to Cloud Spanner
- Migrating HDFS Data from On-Premises to Google Cloud Platform
- Using Cloud SQL for MySQL as a mobile game backend database
- Using Spark on Kubernetes Engine to Process Data in BigQuery
- Performing ETL from a Relational Database into BigQuery
- Architecture: Complex Event Processing
- Using Cloud Pub/Sub for Long-running Tasks
- Best Practices for Using Deployment Manager

D. Managing Application Performance Monitoring

- Design Patterns for Exporting Stackdriver Logging
- Scenarios for Exporting Stackdriver Logging: Security and Access Analytics
- Customizing Stackdriver Logs for Kubernetes Engine with Fluentd
- Using Stackdriver Uptime Checks for Triggering Cloud Functions on a Schedule
- Stackdriver cost optimization
- Processing Logs at Scale Using Cloud Dataflow
- White-Box App Monitoring for Google Kubernetes Engine with Prometheus

❏ Review the sample architecture flow charts

Please note:

- ❏ This is a very important part of your study to ensure your continued success with Google Cloud and your certification. It takes approximately 5-8 hours to study all those individual solutions so please consider this when planning your training. You must have read them all before taking your exam

Step 5: Review Documentation, Blogs and Whitepapers

- ❏ Review the Pricing Calculator, Product Pricing, Cost Comparison Calculator and the Always Free Usage Limits *(estimated time: 2 hours)*
- ❏ Read the Site Reliability Engineering Book, especially Chapter 2 (The Production Environment at Google, from the Viewpoint of an SRE), Chapter 6 (Monitoring Distributed Systems), Chapter 8 (Release Engineering), Chapter 12 (Effective Troubleshooting), Chapter 17 (Testing for Reliability) and Chapter 18 (Software Engineering in SRE) *(estimated time: 4-6 hours)*
- ❏ Explore the current Google Cloud Platform Marketplace solution offerings *(estimated time: 2 hours)*
- ❏ View the short videos at Cloud Performance Atlas, that dive into the intricacies of App Engine, GCE, GKE, and Networking *(estimated time: 2 hours)*
- ❏ In general, review the Google Cloud Platform Documentation and the GCP Blogs *(estimated time: 2+ hours)*

Step 6: Get Ready for the Exam

- ❏ Review the sample case study that may be used in the exam:
    1. HipLocal *(estimated time: 15 min)*
- ❏ Re-take the practice exam *(estimated time: 1-2 hours)*

Step 7: Register for your Exam

- ❏ Submit a voucher request to Google via this form
- ❏ If you meet all the requirements listed in this document and qualify for a voucher, you will be sent a voucher by email from either Google or your L&D Manager
- ❏ Register through Kryterion WebAssessor with your **corporate** email address, select the next available date (as soon as possible) and use the voucher provided to you to avoid the registration fee. This exam is in-person and not online

Please note:

- In order to receive your voucher and take the exam, **you must** complete all the requirements listed in this document. All steps are tracked, and if you missed one (e.g. completed 3 courses out of 4 on Coursera or did 15 labs on Qwiklabs), you will not be given access to a voucher

Support & Contact

- For any technical issue with Coursera, please get in touch with clientsupport@coursera.org
- For any technical issue with Qwiklabs, please get in touch with support@qwiklabs.com
- For any other questions about your certification program, please contact your L&D Manager

Something wrong on this learning guide or got an enhancement suggestion?
Please fill in this form

Google Cloud