



Google Cloud Technical Guides for Startups - Start Handbook

Part 1 of 3 Handbooks

Google Cloud

Introduction

How to use this handbook

- This Google Cloud Technical Guides for Startups Handbook - Start, is 1 of 3 handbooks.
- Each handbook maps to a stage of the startup journey - Start, Build and Grow, and this handbook maps to the Start phase. Refer to the [Handbooks Master Guide](#) to navigate across all 3 handbooks.
- The Start Handbook is useful for early-stage startups (pre-seed/seed) wanting to start building and deploying on Google Cloud.
- Resources that fall under the advanced category are indicated.

Check out our [website](#) and Youtube [playlist](#) for more

Table of Contents

Chapter 1

Introduction to the Start Series

Google for Startups	06
Google Cloud introduction	06
Setup checklist	06

Chapter 2

Account, project creation and IAMs

Account creation	06
Project creation	07
IAM management	07

Chapter 3

Application deployment

Application Dev overview	07
Deploy on Cloud Run demos	07
Optimize Cloud Run	08
Startup case studies	08

Chapter 4

Compute with GKE

GKE Standard and Autopilot	08
Deploy on GKE demos	08
Optimize GKE	09
GKE cost optimization	09
Startup case studies	10

Table of Contents

Chapter 5

Compute with GCE

GCE guides	10
GCE demos	10
Best practices	10
Startup case studies	10

Chapter 6

Networking Configuration

Networking overview	11
Networking guides	11
Startup case studies	11

Chapter 7

Database Configuration

Databases overview	11
Choosing databases	11
Cloud SQL overview	12
Cloud SQL optimization	12
Startup case studies	12

Chapter 8

Firestore

Firestore overview	12
Firestore and Google Cloud	13
Firestore deep dive	13
Startup case studies	13

Table of Contents

Chapter 9

CI/CD Deployment

CI/CD overview	13
Cloud Build, Artifact Registry, Cloud Source Repositories, Google Cloud Deploy	
Additional solutions	14
Startup case studies	14

Chapter 10

Setting up Cloud Operations

Cloud Operations overview	15
Cloud Monitoring	16
Cloud Logging	16
Other highlights	16

Chapter 11

Billing and Cost Optimization

Overview of billing accounts	18
Billing reports	18
Billing dashboards	18
Billing alerts	18
Commit use discounts	18







Chapter 12

Support Packages










Support overview	19
How to purchase support	19
Manage support cases	19

Key



Google Cloud









 Video	 Demo Video	 Documentation
 Hands on Lab	 Tutorial / Guide	 Article

1. Introduction to the Series

- **Start Series Video 1 - [Introduction to the Google Cloud Technical Guides for Startups](#)**
- **Google Cloud for Startups**
 - [] [Google Cloud for Startups](#) : Overview of Google Cloud for Startups, applying for credits
- **Introduction to Google Cloud for Startups**
 - [] [What can Google Cloud for Startups do for your business? Video](#) : Overview of Google Cloud benefits
- **Business Journey and Startup Stories**
 - [] [Google Cloud for Startups Youtube Channel](#) : Youtube Channel
- **Google Cloud Introduction**
 - [] [GCP essentials before getting started](#) : Introduction to the Google Cloud platform and console
 - [] [Cloud Reference Architectures and Diagrams](#) : Cloud Architecture Center to explore solutions
 - [] [Google Cloud Essentials Quest - Qwiklabs](#) : Labs to complement introduction to Google Cloud
- **Google Cloud setup checklist**
 - [] [Google Cloud setup checklist](#): Onboarding checklist to get started in documentation
 - [] [10 steps for setting up Google Cloud](#): Same as above in a video format
- **General Architecting Cloud Solutions**
 - [] [Architecting Cloud Solutions Playlist](#) (Advanced): Customer focused architecture examples and deep dive with the customers


2. Account Creation, Project Creation, setting IAMs

- **Start Series Video 2 - [Getting started on Google Cloud](#)**
- **Prior to Account Creation**
 - [] [Free tier essentials](#)
- **Introduction to Google Cloud**
 - [] [Introducing Google Cloud Platform console](#)







- [] [Google Cloud basics overview](#)
- **Project Introduction**
 - [] [Resource hierarchy - project](#)
- **Project Creation**
 - [] [Creating and managing projects](#)
- **IAMs**
 - [] [IAM brief overview](#)
 - [] [IAMs - Overview](#)
 - [] [Access control for organizations using IAM](#)
 - [] [IAM best practices](#)
 - [] [Advanced IAM: Hacks, tips, and tricks for policy management](#)
(Advanced)













3: Application Deployment

Application Development Overview

- **Start Series Video 3 - [Get started on Cloud Run](#)**
- [] [Serverless Overview Options](#)




















Cloud Run










- **Introduction to Cloud Run**
 - [] [Cloud Run Overview Video](#)
 - [] [Going serverless with Cloud Run \(DevFest 2019\) Video](#)
 - [] [Mobile backend app solutions - App Engine and endpoints Video](#)
 - [] [Deploy your website on Cloud Run Qwiklab](#)
- **How to Deploy on Cloud Run Demos**
 - [] [How to deploy an application to Cloud Run with Cloud Shell Editor Video](#)
 - [] [Say hello to serverless containers with Cloud Run Video](#)

- [] [Hosting a web app on Google Cloud using Cloud Run Video](#)
- [] [Build and deploy on Cloud Run](#)
- [] [Serverless Cloud Run Development Qwiklab](#) (Advanced)
- **Cloud Run, Cloud Functions and Cloud Pub Sub Combined Demos**
 - [] [Serverless Expeditions Video Playlist](#)
 - [] [Event driven microservices with Cloud Run webinar](#) (Advanced)
- **Optimization of Cloud Run**
 - [] [How to improve Cloud Run response times](#) (Advanced)
 - [] [Optimize Performance for Serverless Article](#) (Advanced)
 - [] [Optimize Costs Documentation](#)
- **Cloud Run Customer Success Stories and Case Studies**
 - [] [Credit OK Case Study](#)
 - [] [Halfbrick Studios Case Study](#)
 - [] [Invoke Learning Case Study](#)
 - [] [Arabesque AI Case Study](#)










4. Compute with GKE






- **Start Series Video 4 - [Compute with Google Kubernetes Engine](#)**
- **Introduction to GKE**
 - [] [What is Google Kubernetes Engine \(GKE\)? Video](#)
 - [] [Getting Started with Containers and Google Kubernetes Engine \(Cloud Next '18\)](#)
 - [] [Introduction to GKE Documentation](#)
 - [] [GKE One Pager Documentation](#)
 - [] [Kubernetes in Google Cloud Qwiklabs](#)
- **GKE Standard and Autopilot**

- [] [Introducing GKE Autopilot Video](#)
- [] [Autopilot overview Documentation](#)
- [] [Introducing GKE Autopilot: a revolution in managed Kubernetes Article](#)
- **How to Deploy on GKE Demos**
 - [] [Deploy Your Next Application to Google Kubernetes Engine \(Cloud Next '19\)](#)
 - [] [Kubernetes Solutions Qwiklabs](#)
 - [] [Deploy to Kubernetes in Google Cloud Qwiklabs](#)
 - [] [GKE Full List of Qwiklabs](#)
 - [] [Deploying a containerized web application | Kubernetes Engine](#)
- **GKE Architecture Optimization**
 - [] [GKE best practices Documentation](#)
 - [] [Preparing a Google Kubernetes Engine environment for production Documentation](#)
 - [] [GKE best practices: Designing and building highly available clusters Article \(Advanced\)](#)
 - [] [GKE sample architectures on Cloud Architecture Center \(Advanced\)](#)
 - [] [Scalable and Manageable: A Deep-Dive Into GKE Networking Best Practices \(Cloud Next '19\) \(Advanced\)](#)
- **GKE Cost Optimization**
 - [] [Understanding your GKE costs Video](#)
 - [] [Autoscaling with GKE: Clusters and nodes](#)
 - [] [Optimize Costs for GKE Qwiklabs \(Advanced\)](#)
 - [] [Managing a GKE Multi-tenant Cluster with Namespaces \(Advanced\)](#)
 - [] [Best practices for running cost-optimized Kubernetes applications on GKE](#)
- **GKE Security Optimization**
 - [] [Google Kubernetes Engine Best Practices: Security Qwiklabs \(Advanced\)](#)













- [] [Secure Workloads on Google Kubernetes Engine Qwiklabs](#) (Advanced)
- **GKE CICD**
 - [] [DevOps Overview Documentation](#)
 - [] [GKE GitOps-style continuous delivery with Cloud Build Documentation](#) (Advanced)
 - [] [Continuous deployment to Google Kubernetes Engine using Jenkins](#) (Advanced)
- **GKE Customer Success Stories and Case Studies**
 - [] [Coin Hako Case Study](#)
 - [] [Tokopedia Case Study](#)
 - [] [FACEIT Case Study](#)
 - [] [Rakuten Viki Case Study](#)
 - [] [Meitu Case Study](#)






5. Compute with GCE

- **Start Series Video 5 - [Compute with Google Compute Engine](#)**
- **GCE Overview**
 - [] [What is a Compute Engine?](#)
 - [] [Choosing the Right GCE Instance Type for Your Workload](#)
- **GCE guides**
 - [] [Creating a VM instance](#)
 - [] [Creating and starting a VM instance](#)
 - [] [Creating and starting a preemptible VM instance](#)
 - [] [Creating instance templates](#)
 - [] [Creating managed instance groups](#)
- **Pricing**
 - [] [Pricing for GCE resources](#)
 - [] [Resources pricing overview](#)

- **Application demo using GCE**
 - [] [Building high-performance, scalable VM environments with GCE](#)
- **GCE best practices**
 - [] [Best Practices for Managing Compute Engine VM Instances](#)
- **GCE Customer Success Stories and Case Studies**
 - [] [Book Creator Case Study](#)
 - [] [Allthecooks Case Study](#)
 - [] [Sensen.ai Case Study](#)








6. Networking Configuration

- **Start Series Video 6 - [Networking Configurations on Google Cloud](#)**
- **Networking overview**
 - [] [Networking End to End](#)
 - [] [VPC network overview](#)
 - [] [VPC firewall rules overview](#)
 - [] [Hierarchical firewall policies overview](#)
 - [] [IP addresses overview](#)
 - [] [Routes overview](#)
 - [] [Shared VPC overview](#)
 - [] [VPC Network Peering overview](#)
 - [] [Private access options for services](#)
- **Networking guides**
 - [] [Setting up VPC networks](#)
 - [] [Setting up firewall rules](#)
 - [] [Hierarchical firewall policy examples](#)













- [] [Reserving a static internal IP address](#)
- [] [Reserving a static external IP address](#)
- [] [Setting up routes](#)
- [] [Configuring Networks on GCP](#)
- **Networking Customer Success Stories and Case Studies**
 - [] [PacketFabric Case Study](#)








7. Database Configuration with Cloud SQL

- **Start Series Video 7 - [Database Configuration with Cloud SQL](#)**
- **Databases Overview**
 - [] [Overview of Databases Documentation](#)
- **How to Choose which Database**
 - [] [How to choose the right database for application scalability Video](#)
 - [] [How to choose the right database for your workloads Google Cloud Next](#)
- **Cloud SQL Overview**
 - [] [Cloud SQL in a minute Video](#)
 - [] [What is Cloud SQL? Video](#)
 - [] [Cloud SQL Demo Setup Video](#)
- **Cloud SQL for SQL Server**
 - [] [Getting to know Cloud SQL for SQL Server Google Next](#)
 - [] [Cloud SQL for SQL Server Demo Video](#)
 - [] [Cloud SQL for SQL Server: Qwik Start](#)
- **Cloud SQL Insights**
 - [] [Introducing Cloud SQL Insights Video](#) (Advanced)
 - [] [Cloud SQL Insights Codelab](#) (Advanced)
- **Cloud SQL and BigQuery**
 - [] [Introduction to SQL for BigQuery and Cloud SQL Qwiklab](#)
- **Database / Cloud SQL Optimization**

- [] [How to build a scalable database architecture Video](#) (Advanced)
- [] [High availability and disaster recovery with Cloud SQL Video](#) (Advanced)
- **Cloud SQL Pricing**
 - [] [Cloud SQL Pricing Documentation](#)
- **Cloud SQL Customer Success Stories and Case Studies**
 - [] [BenchSci Case Study](#)
 - [] [PacketFabric Case Study](#)
 - [] [Vida Health Case Study](#)
 - [] [Krikey Case Study](#)

8. Firebase

- **Start Series Video 8 - [Working with Firebase](#)**
- **Overview of Firebase**
 - [] [Overview of Firebase Documentation](#)
 - [] [Mobile app backend solutions - Firebase Video](#)
 - [] [Serverless Firebase Development Qwiklabs](#)
 - [] [Build Apps and Websites with Firebase Qwiklabs](#)
- **Relationship of Firebase and Google Cloud**
 - [] [Firebase and Google Cloud Better Together Documentation](#)
 - [] [What's the relationship between Firebase and Google Cloud? Article](#)
 - [] [GCP vs. Firebase - Projects & storage Video](#)
 - [] [GCP vs. Firebase - Functions & Firestore Video](#)
 - [] [Integrate Firebase into Your Existing Infrastructure \(Cloud Next '19\)](#)
 - [] [Firebase SDK for Cloud Functions Qwiklabs](#) (Advanced)
- **Firestore Deep Dive**
 - [] [Firestore Guides](#)
 - [] [Building Better Mobile Gaming Experiences With Firestore \(GDC '19\)](#)







- [] [Firebase Codelabs Walkthrough Steps Video Series](#) (Advanced)
- [] [Optimize your App Revenue with Firebase Video Series](#) (Advanced)
- **Firebase Pricing**
 - [] [Cap your Firebase Spending Video Series](#)
 - [] [Firebase Pricing Documentation](#)
- **Firebase Customer Success Stories and Case Studies**
 - [] [Firebase Use Cases](#)
 - [] [Surfboard Payments Case Study](#)
 - [] [Zirtue Case Study](#)






9. CI/CD Deployment

Overview of CI/CD





- **Start Series Video 9 - [CI/CD on Google Cloud](#)**
- [] [CI/CD Overview](#)
- [] [CI/CD anywhere: Build, test and deploy across clouds and on-premises](#)

Cloud Build, Artifact Registry, Cloud Source Repositories and Google Cloud Deploy

- Cloud Build
 - [] [Cloud Build Overview](#)
 - [] [Quickstart: Build](#)
 - [] [Accelerating software teams with Cloud Build](#)
 - [] [Deploy a Hugo Website with Cloud Build and Firebase Pipeline](#)
 - [] [GitOps-style continuous delivery with Cloud Build](#)
- Artifact Registry
 - [] [Artifact Registry Overview](#)

- [] [Quickstart: Artifact Registry](#)
- Cloud Source Repositories
 - [] [Cloud Source Repository Overview](#)
 - [] [Quickstart: Create a repository](#)
- Google Cloud Deploy
 - [] [Google Cloud Deploy Overview](#)
 - [] [Quickstart: deploy an application](#)

Additional Solutions for CI/CD

- [] [Jenkins on Kubernetes Engine](#)
- [] [Using Terraform with Google Cloud](#)
- [] [Continuous delivery toolchain using Spinnaker on Google Cloud](#)
- [] [Continuous Delivery Pipelines with Spinnaker and Kubernetes Engine](#) (Advanced)









Customer Stories and Use Cases

- [] [Switchboard Live Case Study](#)











10. Setting up and using Cloud Operations





Cloud Operations

- **Start Series Video 10 - [Configuring Cloud Operations](#)**
- **Cloud Operations Overview**
 - [] [All together now: our operations products in one place Article](#)
 - [] [Google Cloud's operations suite Documentation](#)
 - [] [Monitor and Log with Google Cloud Operations Suite Qwiklabs](#)
 - [] [Google Cloud's Operations Suite Qwiklabs](#)
 - [] [Cloud operations spotlight Video](#)
 - [] [Stack Doctor Playlist](#)














- [] [Cloud Operations Pricing](#)
- **Cloud Operations Optimization**
 - [] [Preventing log waste with Stackdriver Logging Article](#)
 - [] [Cost optimization for Google Cloud's operations suite Documentation](#)
 - [] [Gain visibility and take control of Stackdriver costs with new metrics and tools Article](#)
 - [] [Managing Costs Video](#)
- **Cloud Operations Customer Success Stories and Case Studies**
 - [] [Krikey Case Study](#)
 - [] [Air Asia Case Study](#)
 - [] [Gameberry Labs Case Study](#)





Cloud Monitoring

- **Introduction to Cloud Monitoring**
 - [] [Getting started with Cloud Monitoring Video](#)
 - [] [Cloud Monitoring in a minute Video](#)
 - [Monitoring services with Stackdriver Video](#)
 - [] [How to Get Started with Google Cloud Monitoring Demo Video](#)
 - [] [Cloud Monitoring: Qwik Start](#)
- **Cloud Monitoring Agent**
 - [] [Cloud Monitoring agent overview Documentation](#)
- **Cloud Monitoring Metrics**
 - [] [Autoscaling an Instance Group with Custom Cloud Monitoring Metrics Qwiklabs](#) (Advanced)
 - [] [Reporting Application Metrics into Cloud Monitoring Qwiklabs](#) (Advanced)
 - [] [Custom metrics with OpenCensus Video](#) (Advanced)
- **Cloud Monitoring Dashboards**
 - [] [Automating Cloud Monitoring dashboards Video](#)
 - [] [Use the Dashboard API to build your own monitoring dashboard Article](#)









- [] [Building a Dashboard for a data processing pipeline with the Stackdriver Dashboard API Article](#)
- **Cloud Monitoring Alerting**
 - [] [Alerting best practices for Google Cloud Monitoring Demo Video](#)
 - [] [Alerting Policies in Google Cloud Monitoring Demo Video](#)
 - [Alerting with Stackdriver Video](#)
- **How to Cloud Monitoring full Demos**
 - [] [Monitoring Multiple Projects with Cloud Monitoring Qwiklabs](#)

Cloud Logging



- **Introduction to Cloud Logging**
 - [] [Cloud logging Video](#)
 - [] [Getting started with Cloud Logging Video](#)
 - [] [Cloud Logging in a minute Video](#)
 - [Fundamentals of Cloud Logging Qwiklabs](#)
- **Cloud Audit Logging**
 - [] [Understanding audit logs Video](#)
 - [] [How to use Cloud Audit Logging Video](#)
 - [] [Viewing Audit Logs Video](#)
- **Cloud Logging Agent (Fluentd)**
 - [] [Google Cloud operations suite agents Documentation](#)
- **Cloud Logging Based Metrics**
 - [] [Log-based metrics Video](#) (Advanced)
- **Cloud Logging Alerting**
 - [] [Creating and Alerting on Logs-based Metrics Qwiklabs](#)
 - [] [Can you alert on logs in Stackdriver? Article](#)
 - [] [Creating and Alerting on Logs-based Metrics Qwiklabs](#)
- **Cloud Logging Exports**
 - [] [Exporting logs with the Google Cloud Console Documentation](#)
 - [] [Exporting Stackdriver Logs Video](#)








- [] [How to export logs from Google Cloud Logging to BigQuery Video](#)
- [] [Using BigQuery and Cloud Logging to Analyze BigQuery Usage Qwiklabs](#) (Advanced)
- **How to Cloud Logging full Demos**
 - [] [Centralized Logging Solution for Google Cloud Platform \(Cloud Next '18\)](#)
 - [] [Cloud Logging Qwiklabs](#)

Other Cloud Operations Highlights:










- **Cloud Trace**
 - [] [Stackdriver Trace Video](#)
 - [] [Introduction to Stackdriver Distributed Tracing Article](#)
- **Cloud Debugger**
 - [] [Cloud Debugger Overview](#)
 - [] [Debugging in production with Stackdriver Debugger Video](#)
 - [] [How I learned to stop worrying and debug in production Article](#)
 - [] [Cloud Debugger Demo \(GitHub\)](#) (Advanced)
- **Cloud Error Reporting**
 - [] [Error Reporting and error logging Video](#)
- **Cloud Profiler**
 - [] [Stackdriver Profiler Video](#)

11. Billing and Cost Optimization

- **Start Series Video 11 - [Billing administration on Google Cloud](#)**
- **Overview and Billing Accounts**
 - [] [Overview of Cloud Billing concepts](#)
 - [] [Beyond your bill playlist](#)
 - [] [Understanding you Google costs Qwiklab](#)
- **Billing Reports**

- [] [Cloud Billing reports](#)
- [] [Exploring your GCP costs with Billing reports](#)
- [] [Creating and managing labels](#)
- **Visualize Billing Dashboards**
 - [] [Visualize spend over time with Google Data Studio](#)
- **Billing Alerts**
 - [] [Set up budget alerts](#)
 - [] [Creating budgets and alerts for cost management](#)
- **CUDs**
 - [] [Committed use discounts | Documentation](#)

12. Support Packages

- **Start Series Video 12 - [Getting support with Google Cloud Customer Care](#)**
- **Support Packages Overview**
 - [] [Support Overview](#)
 - [] [Standard Support](#)
 - [] [Enhanced Support](#)
 - [] [Premium Support](#)
- **How to Purchase Support**
 - [] [How to Sign Up to Purchase Support Offering Overview](#)
 - [] [Purchasing and setting up Standard Support](#)
 - [] [Purchasing and setting up Enhanced Support](#)
 - [] [To get started with Premium Support, contact sales](#)
- **How to Manage Support Cases**
 - [] [Managing support cases](#)

