Start Cloud Now

Google Cloud Professional Cloud Architect

Prep Notes by

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V1

Google Cloud Professional Cloud Architect Prep Sheet

by Ammett v.1

There already exist a lot of great material out there for this certification. This is my prep sheet based on my study for this exam, easy to review just in case you missed something

General Knowledge

Organisations

What it is

Resources are organized hierarchically. This allows you to map your enterprise's operational structure to GCP, and to manage access control and permissions for groups of related resources

Key points

- Flow (Organisation, Folders, projects, resources)
- Where to manage permissions for groups, department, entire organisation, etc

Folders

What it is

Folders are an additional grouping mechanism on top of projects.

Key points

- Folders can be used to identify your departments or various environments of your cloud space. These are optional

What you should know

General knowledge

Review documents

Resource Hierachy

Video

Resource Hierachy

My experience

This knowledge is key and fundamental. Combination question may appear with any combination of Org, Folder, project, region, AZ, On prep (hybrid)

Projects

What it is

The project resource is the base-level organizing entity. Organizations and folders may contain multiple projects.

Key points

- A project is required to use services, resources and billing.

Region

What it is

Regions are independent geographic areas that consist of *zones*

Key points

- Isolated from other regions
- Transfer fee for data between regions

What you should know

- Multi regional design can be used for fault tolerance

Review documents

Region and Zones

Region, Zone and Multi

Video

Region and Zones

Availability Zone

What it is

A *zone* is a deployment area for Google Cloud resources within a region.

Key points

- Isolated from other zones
- Low latency connection between AZ within the region

What you should know

- Zonal resources operate within a single zone. If a zone becomes unavailable, all of the zonal resources in that zone are unavailable until service is restored

On Prem

What it is

Your organisation private data centre

Key points

- Why choose cloud
- Type of application
- Type of infrastructure
- How to connect to cloud

What you should know

- Why move, requirements.
- Suitable cloud services (on cloud replacements / equivalents)

Key points

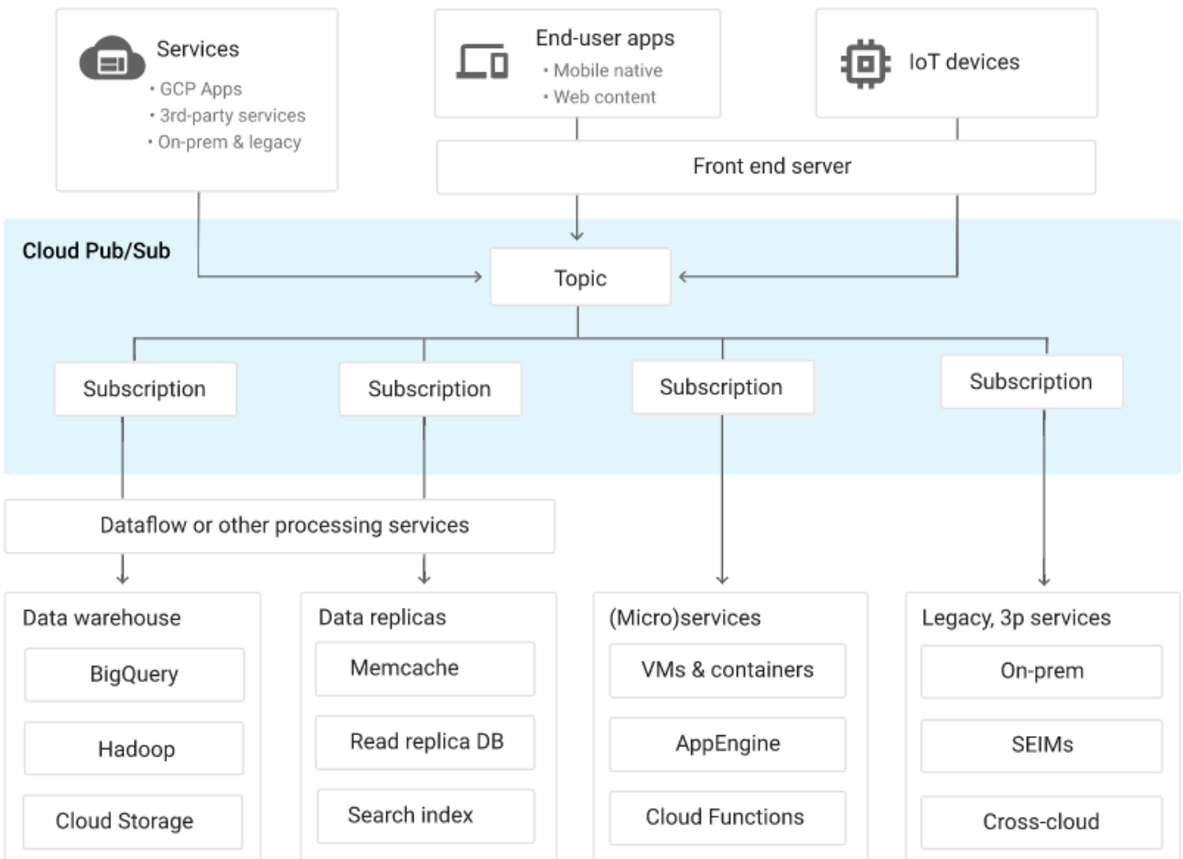
Staple based on the cases. Please review so you can appreciate the architecture and how it can migrate or connect to the cloud.

Compute						
Compute Engine 	**What it is** Compute Engine lets you create and run virtual machines on Google infrastructure	**What you should know** • Improve performance • Troubleshooting issues • How to scale	**Review documents** Compute engine	**Video** Best Practices for GCE Enterprise Deployments Managing Highly Available and Scalable Workloads on VMs	**Qwiklabs** Compute engine	**My experience** This will be mentioned is several scenarios. Once you understand why, when and what. You can decide if it is necessary an in what configuration.
App Engine 	**What it is** App Engine is a fully managed, serverless platform for developing and hosting web applications at scale.	**What you should know** 1- Must know difference between flexible and standard 2- It's no ops 3- It's PaaS	**Review documents** App engine Standard environment Flexible environment	**Video** App Engine	**Qwiklabs** API explore: App engine	**My experience** This will be mentioned.
GKE 	**What it is** Is a managed, production-ready environment for deploying containerized applications.	**What you should know** 1- Optional 2- Default is ephemeral-these change	**Review documents** App engine Standard environment Flexible environment	**Video** GKE	**Qwiklabs** GKE	**My experience** Kubernetes is like a staple on GCP exams.
Cloud Functions 	**What it is** Event-driven serverless compute platform	**What you should know** 1- This scale from nothing. No limit must be maintained for it's use	**Review documents**	**Video** What is Cloud Functions	**Qwiklabs** Cloud function quick start	**My experience** A pop up question of two may appear
Unmanaged groups 	**What it is** Unmanaged instance groups are collections of instances that exist in a single zone and do not share a common instance template.	**What you should know** 1- Use instances that are not identical, 2- Do not allow automatic creation, deletion or scaling.	**Review documents** Unmanaged instance groups			**My experience** Know the different between a managed instance group and a unmanaged instance group
Managed groups 	**What it is** This offers autoscaling capabilities, which let you automatically add or based on increases or decreases in load.	**What you should know** 1- Use identical instances templates 2- Allow automatic creation, deletion and scaling.	**Review documents** Managed instance groups	**Video** Managed group Managed group template	**Qwiklabs** Autoscaling an Instance Group with Stackdriver Custom Metrics Join	**My experience** Know when and why you should use a managed instance group with autoscaling
Auto Scaling 	**What it is** This offers autoscaling capabilities, which let you automatically add or based on increases or decreases in load.	**What you should know** 1- Use identical instances templates 2- Allow automatic creation, deletion and scaling.	**Review documents** Managed instance groups	**Video** Scaling Web apps		
No-ops	**What it is** No operations is the concept that an IT environment can become so automated and abstracted that there is no need for a dedicated team to manage in-house.	**What you should know** 1- Be aware of the NoOps services on GCP				

Containers						
Cloud Build 	**What it is** Cloud Build can import source code from a variety of repositories or cloud storage, execute and produce artifacts such as Docker containers or Java archives.	**What you should know** • Improve performance • Troubleshooting issues • How to scale	**Review documents** Cloud Build	**Video** Shift left: Cloud build		**My experience** Just be aware of this not heavily featured
Container Registry 	**What it is** This is a private container image registry that runs on Google Cloud Platform. It supports Docker Image Manifest V2 and OCI image formats.	**What you should know** 1- Must know difference between flexible and standard 2- It's no ops 3- It's PaaS	**Review documents** Container registry	**Video** Container registry		**My experience** Not heavily featured but can pick you up a point or two
Data Analytics \ Big Data						
BigQuery 	**What it is** Enterprise data warehouse that enables super-fast **SQL** queries using the processing power of Google's infrastructure.	**What you should know** 1- Managed by Google 2- Analyse Data with SQL 3- Use API 4- Streaming Data to BQ 5- Support OLAP	**Review documents** BigQuery BigQuery API Streaming into Partitions	**Video** Dataware housing with BQ	**Qwiklabs** Building an IoT Analytics Pipeline on Google Cloud Platform	**My experience** Well mentioned know what it's used for, API, No management required, streaming data into it, views and permissions and creating partitions. Can pick you up a few points
Dataflow 	**What it is** This is a fully-managed service for transforming and enriching data in stream (real time) and batch (historical) modes with equal reliability and expressiveness	**What you should know** 1- Used to batch and real time 2- Reliable, exactly once, low latency.	**Review documents** DataFlow	**Video** Real Time Streaming Analytics		**My experience** What this does is good to know so you can identify when to use in with other tools in GCP. This may pop up on the exam.
Dataprep 	**What it is** Use Cloud Dataprep to explore and transform raw data from disparate and/or large datasets into clean and structured data for further analysis and processing.	**What you should know** 1- Detect problem and clean dirty data	**Review documents** Dataprep	**Video** Creating ETL with DataPrep Advanced Data Cleanup		**My experience** This should pick you up a quick point or two. Clean Data who does not want that right.
Dataproc 	**What it is** This is you managed Spark and Hadoop cloud offering	**What you should know** 1- Hadoop/ spark 2- How to configure you clusters	**Review documents** Cloud Dataproc	**Video** Cloud Dataproc newest features	**Qwiklabs** Dataproc quick start	**My experience** This should pick you up a quick point or two. Know design options

Cloud Pub/Sub	**What it is** is a fully-managed real-time messaging service that allows you to send and receive messages between independent applications	**What you should know** 1- Ingest millions of streaming events 2-	**Review documents** Pub Sub	**Video** What is Cloud Pub/Sub?		**My experience** Ingesting large amounts of real time data. This may be used in combination with other tool for end to end outcomes
Data Studio	**What it is** Is a visualization and reporting tool, and an integral part of Google Marketing Platform. .	**What you should know** 1- Use identical instances templates	**Review documents** Data Studio	**Video** Data Studio	**Qwiklabs** Data Studio Qwiklab	

Cloud Pub/Sub flow



Still in progress: To be added – Databases, security, networking, plus more