GCP DATA STORAGE AND MANAGEMENT

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BYTEWISE LIMITED

Contents

GCP's data storage services

1. Cloud Storage

- Cloud storage is a fully managed scalable service for storing objects in Google Cloud
- Each object in Cloud storage has a URL.
- These objects are stored in containers called buckets Cloud storage consists of buckets you create and configure and use to hold your storage objects (immutable – no edit, create new versions).
- Cloud storage encrypts your data on the server side before being written to disk. (By default, = https).

- You can move objects of cloud storage to other GCP storage services. When you create a bucket, it is given a globally unique name, specify a geographic location where the bucket and its contents are stored, and a default storage class.
- **Object Storage:** Google Cloud Storage is an object storage platform, which means that data is stored in containers called buckets and accessed using unique object identifiers.

- **Bucket:** Each project can contain multiple buckets, which are containers to store your objects. For example, you might create a photos bucket for all the image files your app generates and a separate videos bucket.

- **Object:** An individual file, such as an image called puppy.png

2. Cloud SQL

- Cloud SQL is a fully managed database service that helps you set up, maintain, manage, and administer your relational databases on Google Cloud Platform. You can use Cloud SQL with MySQL, PostgreSQL, or SQL Server.
- Cloud SQL automatically ensures your databases are reliable, secure, and scalable so that your business continues to run without disruption.

3. Cloud Bigtable

- Fully managed NoSQL database to manage analytical and operational workloads.
- Highly scalable database with low latency
- It is designed as a sparsely scalable table that can scale billions of rows and thousands of columns enabling you to store terabytes or petabytes of data.
- Big table is key value store.
- If you need to increase queries per second juts add more Big Table nodes
- It is an ideal data store for Map Reduce style operations & integrate easily with existing big data tools like Hadoop, Data flow and Data proc.
- In the big table you write data once and it automatically replicates where needed with eventual consistency.

4. Firestore

- Easily develop rich applications using a fully managed, scalable, and serverless document database.
- Serverless document database for your mobile, web and IoT apps at global scale.
- Simplifies app development providing built in security and automatic scaling

- Works in real time allowing you to fetch changes from backend as they happen means you can work with multiple users and keep your data sync across multiple devices.
- It provides offline support, so your app remains responsive and regardless of internet connectivity.
- Integrates with google cloud and firebase.
- Directly connects your app with the data.
- You only pay to read & write.
- Firestore allows you to run sophisticated ACID transactions against your document data.
- Cloud Firestore is Firebase's newest database for mobile app development. It builds on the successes of the Realtime Database with a new, more intuitive data model. Cloud Firestore also features richer, faster queries and scales further than the Realtime Database. Realtime Database is Firebase's original database.
- Helps build apps quickly by simplifying data storage in cloud.
- Perfect for cloud native apps mobile web multiuser gaming and IoT.

5. Cloud Spanner

- Fully managed relational database
- Create real time mission critical system at scale.
- You can import and export data and data is encrypted at rest and in transit providing you full security.
- Perfect choice for high scale online transaction processing & real-time decision-making workloads in industries such as retail, gaming, healthcare, financial services and more.
- Deliver mission critical apps and a unified experience and low maintenance.