

CHAPTER 2

An Overview of Google Cloud Platform Services

Google Cloud Platform offers a wide range of services for securing, storing, serving, and analyzing data. These cloud services form a secure cloud perimeter for data, where different operations and transformations can be carried out on the data without it ever leaving the cloud ecosystem.

The services offered by Google Cloud include compute, storage, big data/analytics, artificial intelligence (AI), and other networking, developer, and management services. Let's briefly review some of the features of the Google Cloud ecosystem.

Cloud Compute

Google Compute offers a range of products shown in Figure 2-1 for catering to a wide range of computational needs. The compute products consist of the Compute Engine (virtual computing instances for custom processing), App Engine (a cloud-managed platform for developing web, mobile, and IoT app), Kubernetes Engine (orchestration manager for custom docker containers based on Kubernetes), Container Registry (private container storage), Serverless Cloud Functions (cloud-based functions to connect or extend cloud services), and Cloud Run (managed compute platform that automatically scales your stateless containers).

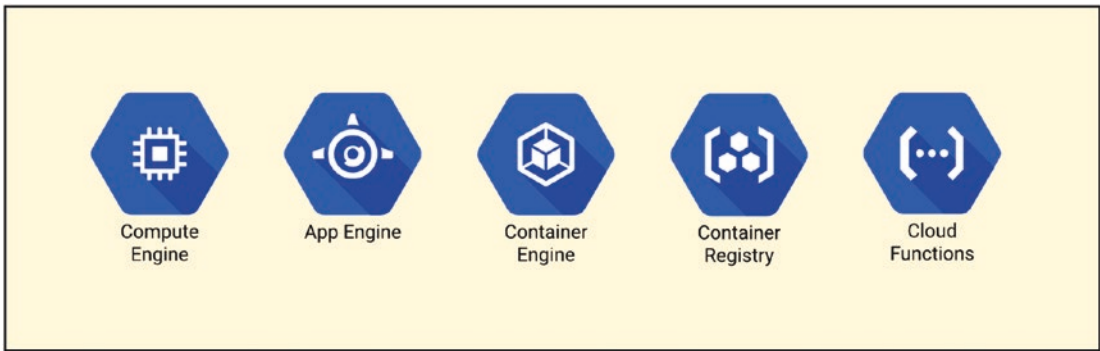


Figure 2-1. *Cloud compute services*

For our purposes of machine learning modeling, the cloud compute engine is what we will concentrate on. As later seen in Chapter 6, JupyterLab will provision a compute engine with all the relevant tools, packages, and frameworks for data analytics and modeling machine learning and deep learning solutions.

Cloud Storage

Google Cloud Storage options provide scalable and real-time storage access to live and archival data within the cloud perimeter. Cloud storage as an example is set up to cater for any conceivable storage demand. Data stored on cloud storage is available anytime and from any location around the world. What’s more, this massive storage power comes at an almost negligible cost, taking into consideration the size and economic value of the stored data. Moreover, acknowledging the accessibility, security, and consistency provided by cloud storage, the cost is worth every penny.

The cloud storage products shown in Figure 2-2 include Cloud Storage (general-purpose storage platform), Cloud SQL (cloud-managed MySQL and PostgreSQL), Cloud Bigtable (NoSQL petabyte-sized storage), Cloud Spanner (scalable/high availability transactional storage), Cloud Datastore (transactional NoSQL database), and Persistent Disk (block storage for virtual machines).