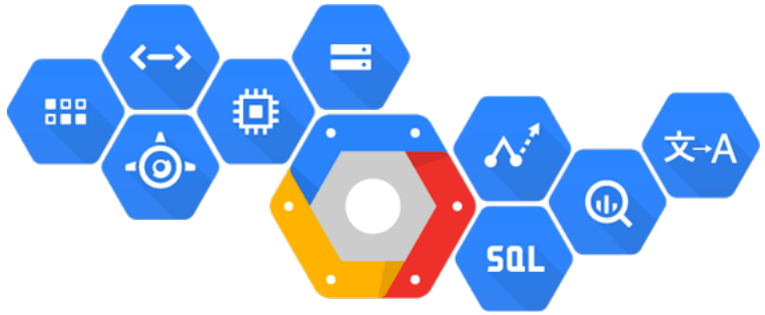
Architecture: Storage



- Cloud Storage
- Block Storage
  - Persistent Disk
  - Local SSD
- Filestore
- Data Transfer
  - Transfer Service | Cloud
  - Transfer Service | On-premise
  - Transfer Appliances
  - BigQuery Data Transfer Service
- Artifact Registry

Architecture: Storage

Storage Use Cases

Store anything

Object / BLOB Storage

Cloud Storage

- Object storage with global edge-caching.
- Ultra low-cost archival storage

Store for a machine/application

BLOCK Storage

Persistent Disk

Block storage for virtual machines and containers.

Local SSD

Ephemeral locally-attached block storage for virtual machines and containers.

Store for sharing between applications

File Storage

Filestore

Fully managed, scalable file storage with predictable performance.

Store for Mobile

Mobile Applications

Cloud Storage for Firebase

Scalable storage for user-generated content from your app.

Moving Service

Data Transfer

Data Transfer Services

Fast offline, online, or cloud-to-cloud data transfer.

Transfer Appliance

Physical data movement for large datasets.

Workspace Storage

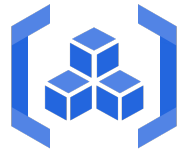
Collaborations

Google Workspace Essentials

Cloud-based content collaboration and storage.

Build & Deploy Storage

Build artifacts



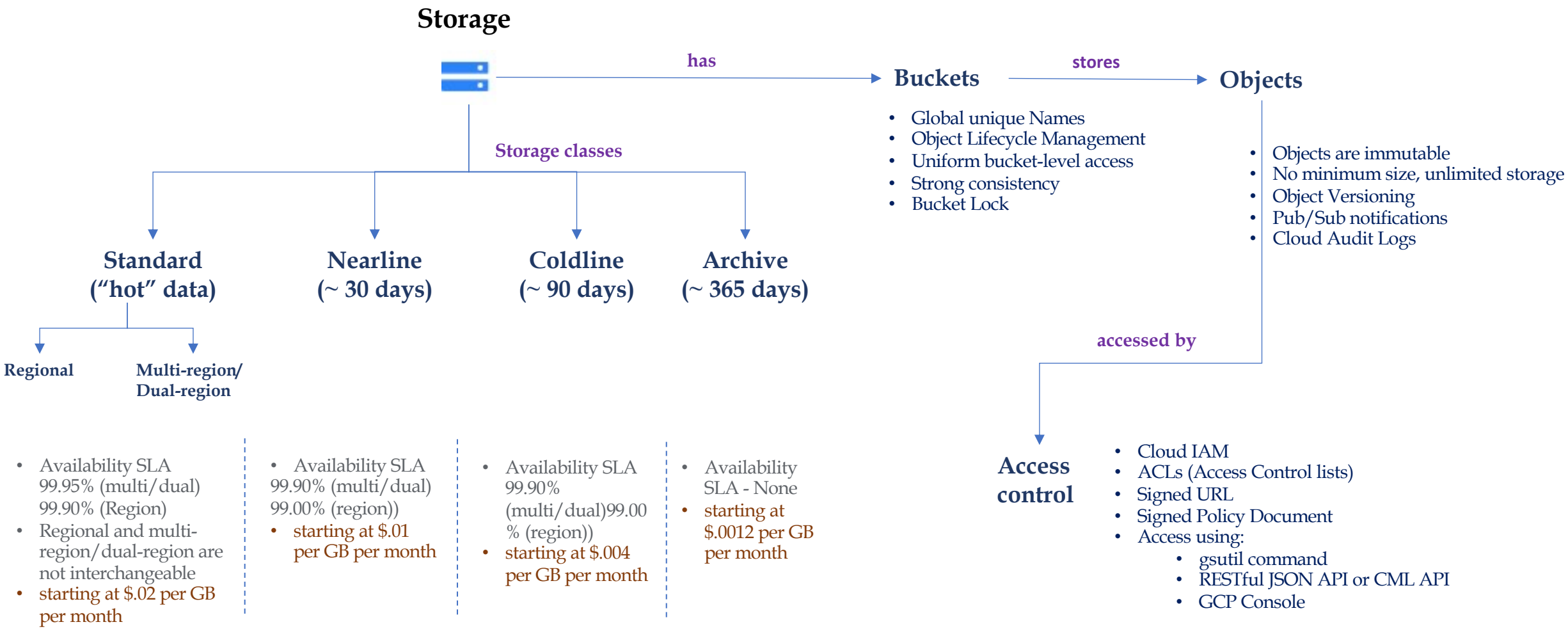
Artifact Registry

Repository manager for container images, OS packages, and language packages

Source: https://cloud.google.com/docs, https://cloud.google.com/products

Storage: Cloud Storage

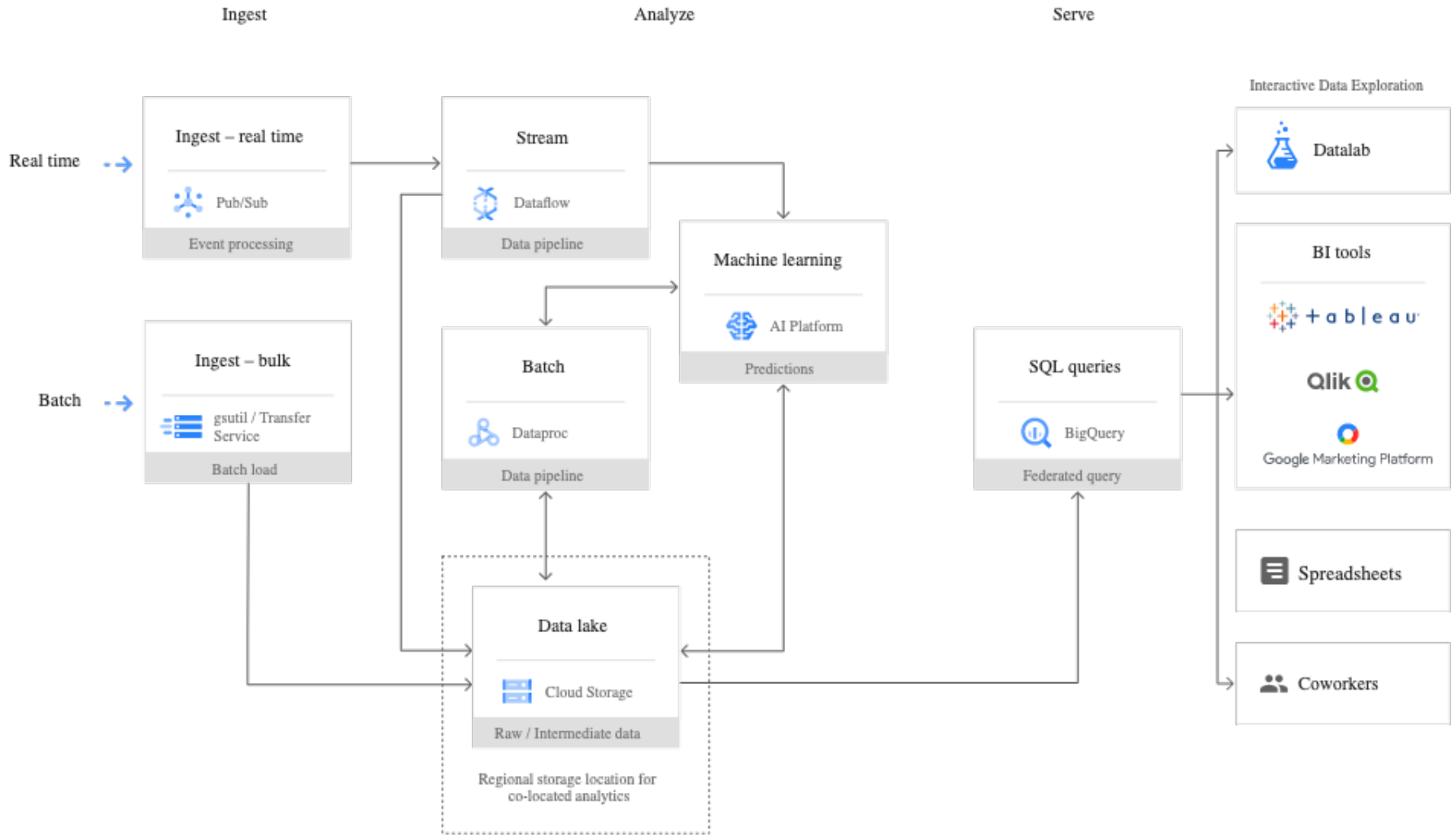
Object storage for companies of all sizes. Store any amount of data. Retrieve it as often as desired.



Source: https://cloud.google.com/docs, https://cloud.google.com/products

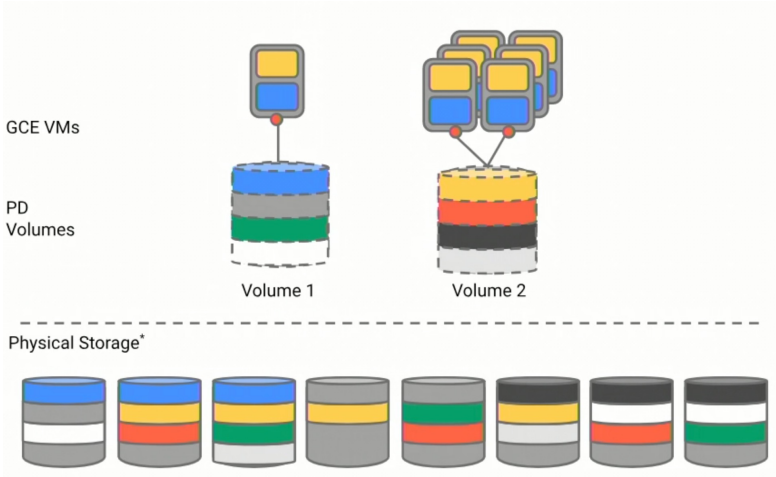
Storage: Cloud Storage Use Case – Big Data Analytics & ML

The highest level of availability and performance within a single region is ideal for compute, analytics, and machine learning workloads in a particular region. Cloud Storage is also strongly consistent, giving you confidence and accuracy in analytics workloads.



Source: https://cloud.google.com/docs, https://cloud.google.com/products

Persistent Disk



- Standard persistent disks (pd-standard) are backed by standard hard disk drives (HDD).
- SSD persistent disks (pd-ssd) are backed by solid-state drives (SSD).
- Balanced persistent disks (pd-balanced) are backed by solid-state drives (SSD).
- Persistent Disks are Zonal or Regional disks

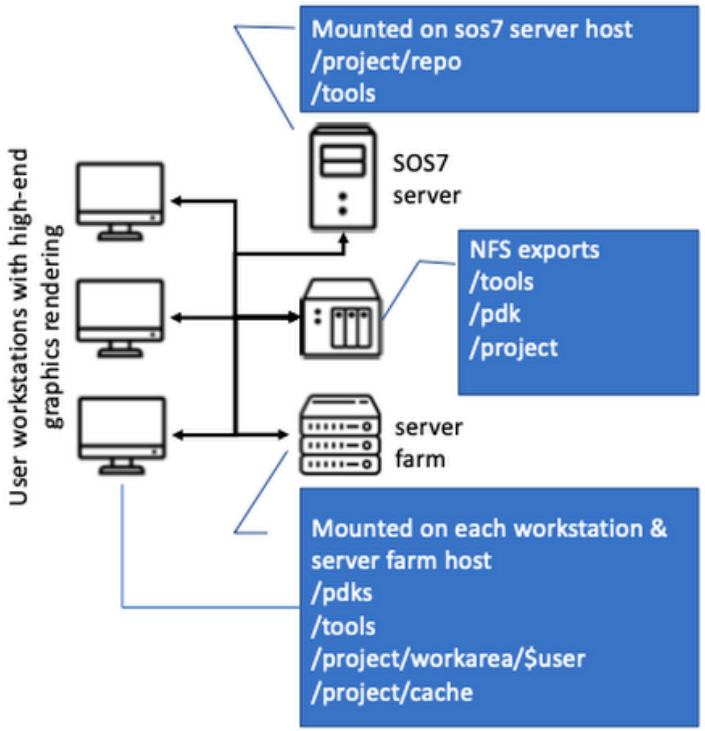
Local SSD

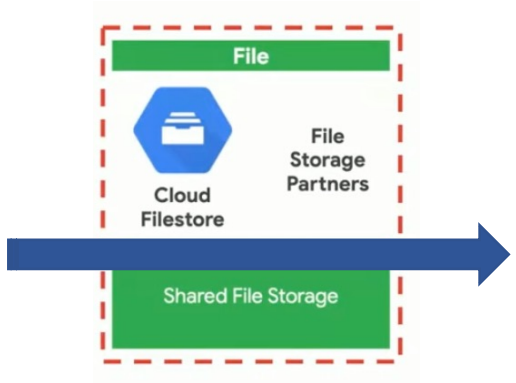
- Fast IOPS and high-speed throughput
- Local SSDs are designed for temporary storage use cases such as caches or scratch processing space.
- Local SSDs can be attached to preemptible VM instances
- You can't use customer-supplied encryption keys with local SSDs.

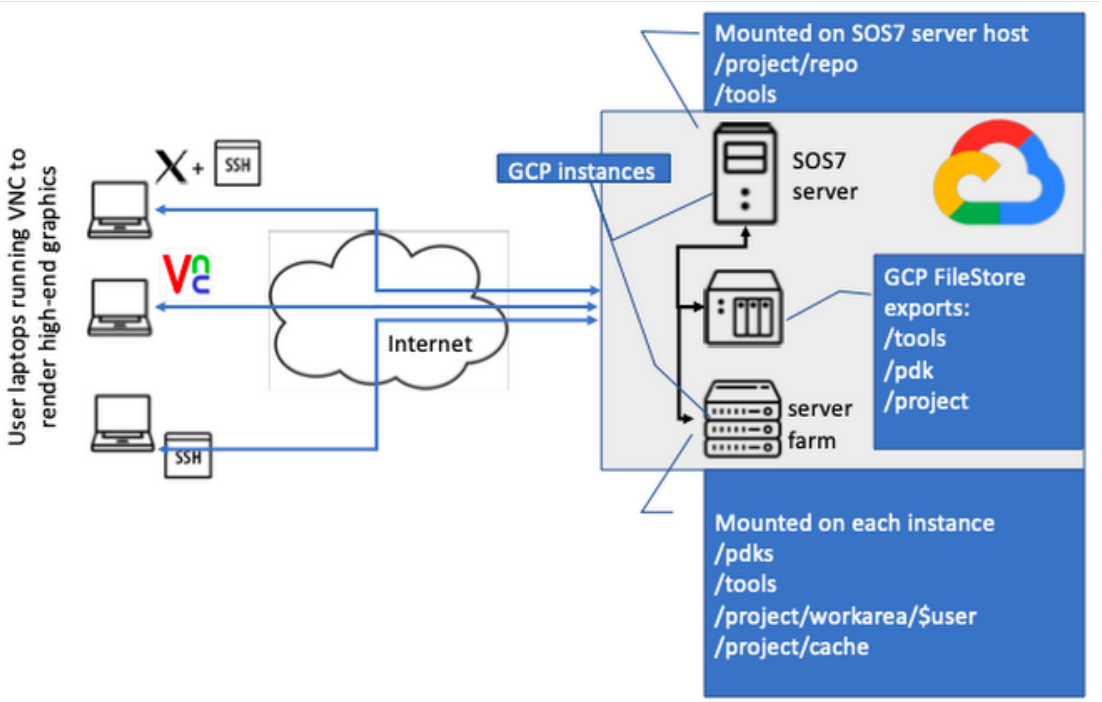
Source: https://cloud.google.com/docs, https://cloud.google.com/products

Storage: Filestore

Shared file systems are the arteries of Enterprise Applications. Filestore provides high-performance, fully managed file storage.







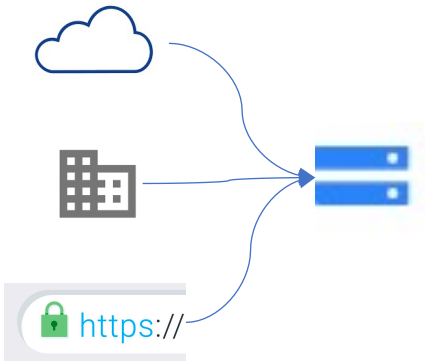
USE CASES: Application migration, Media rendering, Electronic Design Automation (EDA), Data analytics, Genomics processing, Web content management

Source: https://cloud.google.com/docs, https://cloud.google.com/products

Storage: Data Transfer

Data Transfer Services

Transfer Service | Cloud
(Data < 1 TB)



Transfer Service | on-premises
(1 TB -> 100s TB)

Docker agent on Linux Machine

BigQuery Data Transfer Service
(SaaS -> BigQuery)

Google Software as a Service (SaaS) apps
- Campaign Manager
- Cloud Storage
- Google Ad Manager
- Google Ads
- Google Play
- Search Ads 360 (beta)
- YouTube Channel reports
- YouTube Content Owner reports

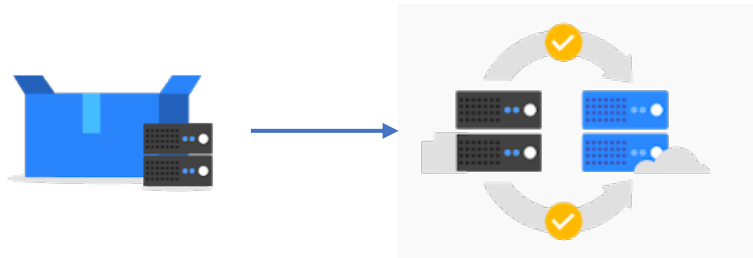
External cloud storage providers
- Amazon S3

Data warehouses
- Teradata
- Amazon Redshift

Transfer Appliance

Transfer Appliances
(~100 TBs -> 1 PB)

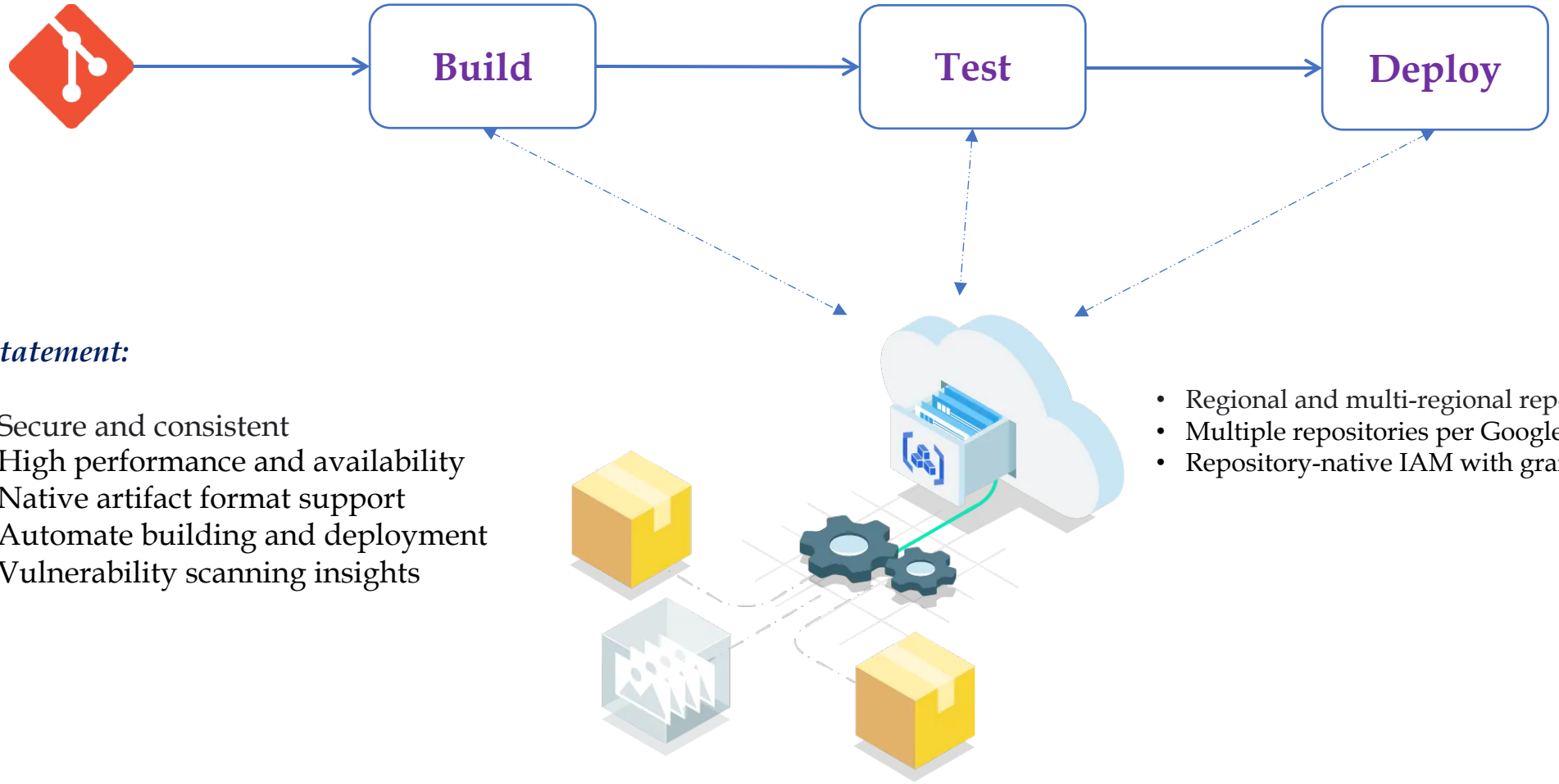
Transfer Appliance is a high-capacity storage device that enables transfer and securely shipping of data to a Google upload facility, where data is uploaded to Google Cloud Storage.



Source: https://cloud.google.com/docs, https://cloud.google.com/products

Storage: Artifact Repository

Artifact Registry enables you to centrally store artifacts and build dependencies as part of an integrated Google Cloud experience.



Problem Statement:

1. Secure and consistent
2. High performance and availability
3. Native artifact format support
4. Automate building and deployment
5. Vulnerability scanning insights

- Regional and multi-regional repositories
- Multiple repositories per Google Cloud project
- Repository-native IAM with granular permissions

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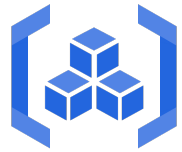

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