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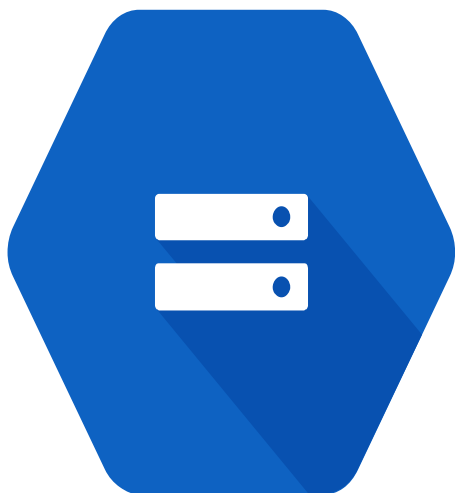
Data Lifecycle

Batch and Streaming Data

Cloud Storage as Staging Ground

Database Types

Monitoring Unmanaged Databases



Cloud Storage

## Cloud Storage as Staging Ground

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### Storage 'swiss army knife':

- GCS holds all data types:
  - All database transfer types, raw data, any format
- Globally available:
  - Multi-regional buckets provide fast access across regions
  - Regional buckets provide fast access for single regions
  - Edge caching for increased performance
- Durable and reliable:
  - Versioning and redundancy
- Lower cost than persistent disk
- Control access:
  - Project, bucket, or object level
  - Useful for ingest, transform, and publish workflows
  - Option for Public read access

### Data Engineering perspective:

- Migrating existing workloads:
  - Migrate databases/data into Cloud Storage for import
- Common first step of data lifecycle - get data to GCS
- Staging area for analysis/processing/machine learning import:
  - 'Data lake'

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## *Getting data in and out of Cloud Storage*

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Storage Transfer Service - S3, GCS, HTTP --> GCS:

- One time transfer, periodic sync

Data Transfer Appliance - physically shipped appliance:

- Load up to **1 petabyte**, ship to GCP, loaded into bucket
- gsutil, JSON API - "gsutil cp ..."

