



Google Cloud Storage

Google Cloud Platform



Google Cloud Platform

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Overview

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Cloud Storage Components

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Cloud Storage Integration with Google Cloud Platform

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Lab

Cloud Storage

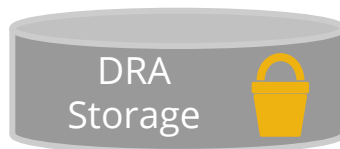
- High performance, Internet scale immutable **blob storage**
- *Not* a mountable file system on physical or virtual machines
- **Simple** administration and does not require capacity management
- All storage options accessed through the same APIs and include client libraries
 - **JSON** API
 - **XML** API



Cloud Storage Options



Standard Storage provides the highest durability, availability and **performance** with **low latency** and is ideal for use with website content distribution and video streaming



Durable Reduced Availability Storage offers the **same durability** as Standard Storage but with a lower availability SLA at a **reduced cost**



Nearline Storage offers **low-cost**, highly durable storage service for data **archiving**, online **backup**, and **DR**, without having to wait hours or days to retrieve or access your data

Each option comes with detailed [pricing](#)

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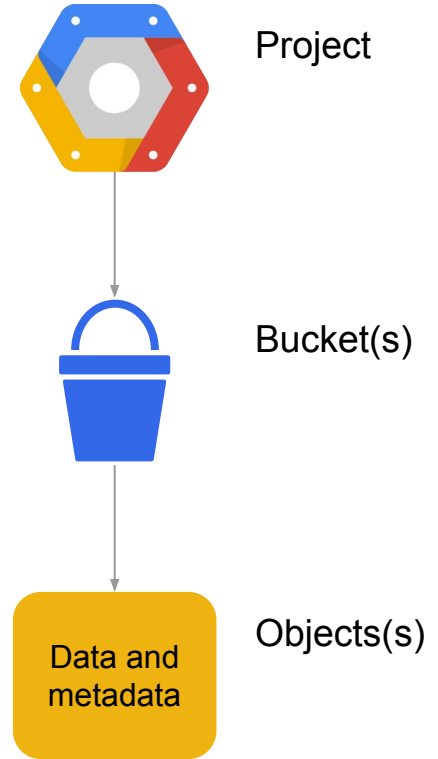
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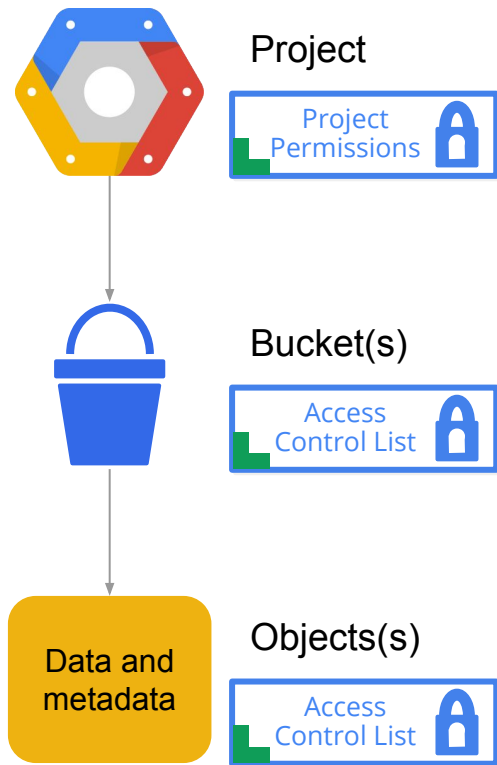
Cloud Storage Components

- Data is organized into **buckets** are configured with one of the storage types: Standard, DRA or Nearline
- All buckets share a **global** namespace
- Create and manage multiple buckets within a project
- Buckets are used to store objects
- Objects are comprised of **data and metadata**
- Buckets cannot be nested inside buckets
- Objects cannot be nested inside objects (folders can be simulated)



Cloud Storage Components

- Administrative access to buckets is typically shared using Google Cloud Platform project permissions
- All buckets and objects have default access control lists (ACLs)
- Can modify ACLs to allow for public web access
- ACLs use Google Accounts
- Can also generate signed URIs for anonymous access



gsutil Tool

- Cloud SDK includes the **gsutil** command line utility
- Buckets use the URI scheme **gs://**
- Can be used to work with buckets and objects:

```
$ gsutil ls
```

```
gs://exported-data/
```

← bucket names

```
gs://startup-scripts/
```

```
$ gsutil ls startup-scripts
```

```
gs://startup-scripts/startup.sh
```

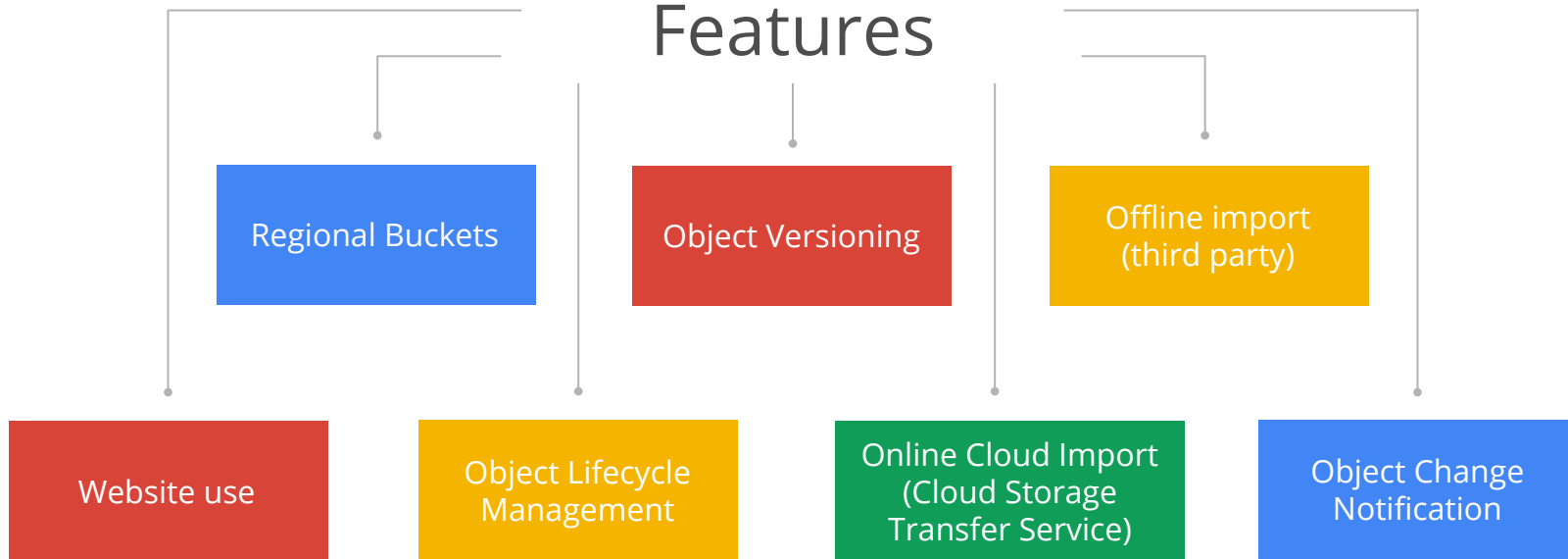
```
gs://startup-scripts/shutdown.sh
```

← object names

Other useful gsutil commands:

acl	# work with ACLs
cp	# copy objects
help	# contextual help
mb	# make buckets
mv	# move objects
rb	# remove buckets
rm	# remove objects
rsync	# sync content

Cloud Storage Features



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Cloud Storage Integration

Import and
export
tables



BigQuery

Object
storage
and export
logs



App Engine



Cloud Storage



Compute
Engine

Startup
scripts,
images
and
general
object
storage



Cloud SQL

Import and
export
tables



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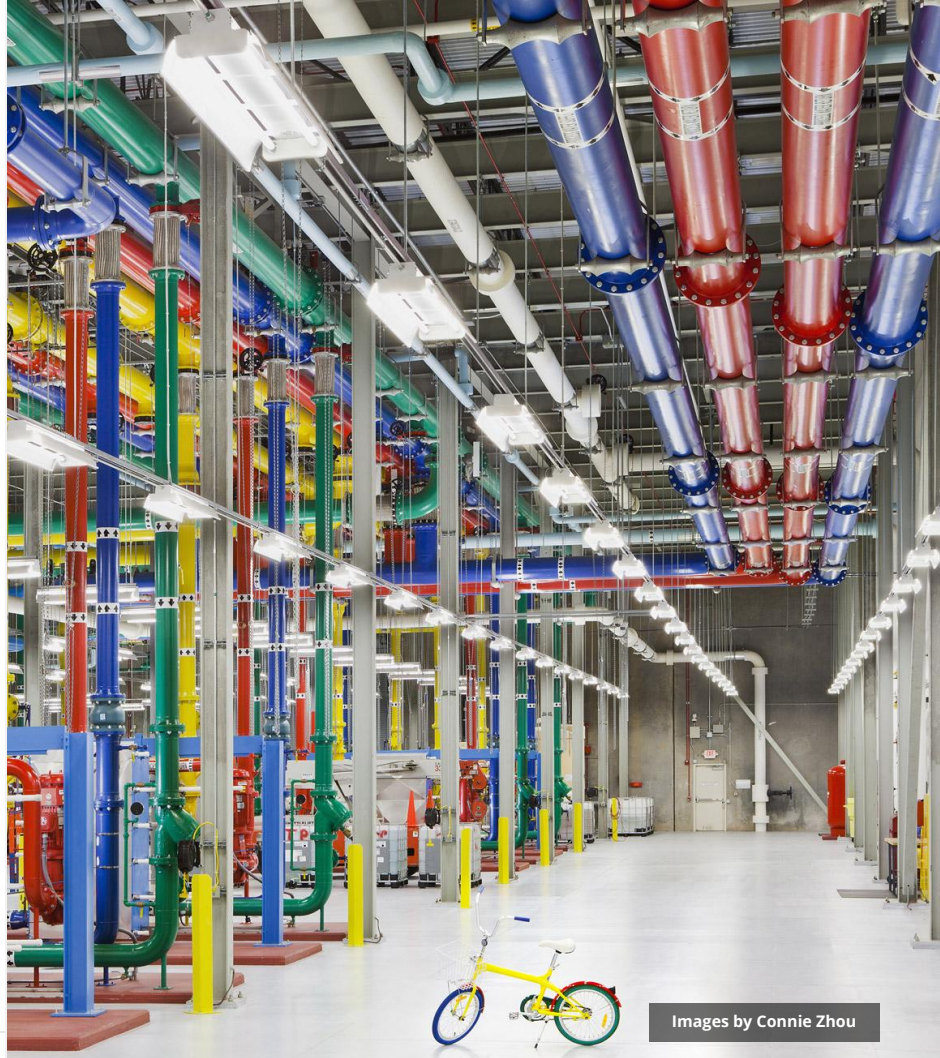
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Lab (1 of 2)

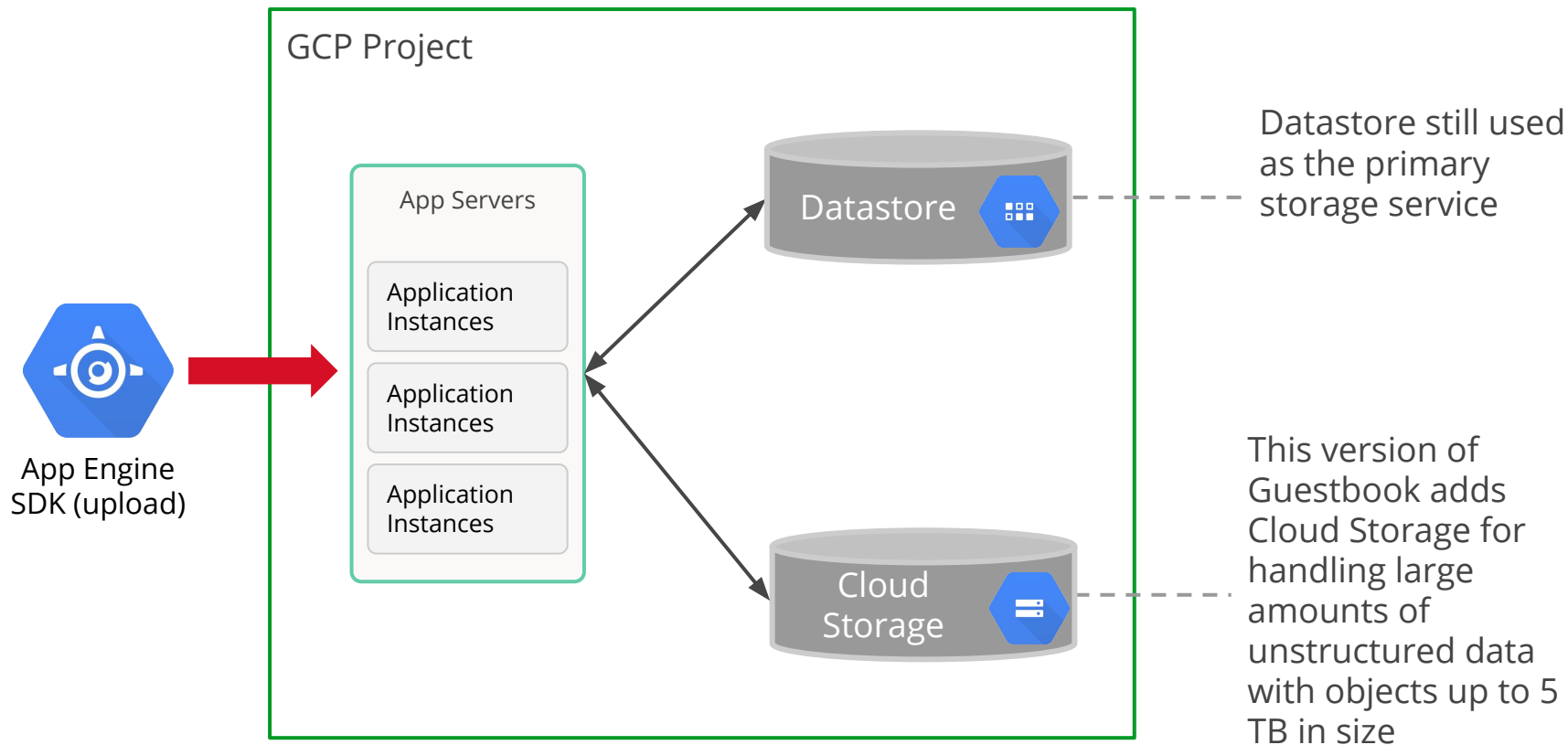
Deploy the Guestbook application on App Engine with Cloud Storage.

1. Deploy a Python frontend
2. Clone a copy of the Guestbook application in Python
3. Modify the application to use a Cloud Storage bucket in your project
4. Upload the application to App Engine
5. Test the application in your browser



Images by Connie Zhou

Lab (2 of 2)



Resources

- Cloud Storage: product options, benefits, case studies, pricing, & documentation
<https://cloud.google.com/storage/>
- DevBytes - File Storage in the Cloud
<https://www.youtube.com/watch?v=vylap827rHs>
- Getting Started: Using the Developers Console
<https://cloud.google.com/storage/docs/getting-started-console>



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