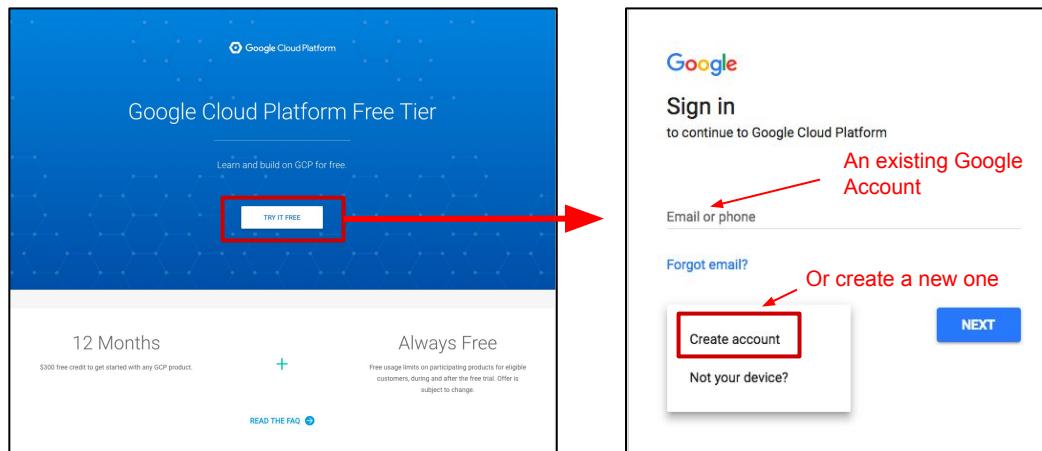


1. Clone or download the slides and code from
<https://github.com/whewatt/gcp-hands-on>
2. To follow along today create a free cloud account...
<https://cloud.google.com/free>



Getting Hands On With Google Cloud Platform

Wes Hewatt
Customer Engineer

Agenda

- ❖ A Better Cloud
- ❖ Lift & Shift
- ❖ New Applications
- ❖ Big Data
- ❖ Machine Learning

Building A Better Cloud

Security & Operations

Holistic approach, backed by certifications

Global Network

High performance SDN, global reach

Open Standards

Maximize capabilities, minimize lock-in

Industry Leading Infrastructure

Perennial price-performance leader

Customer-Friendly

Per-minute billing, no upfront payments

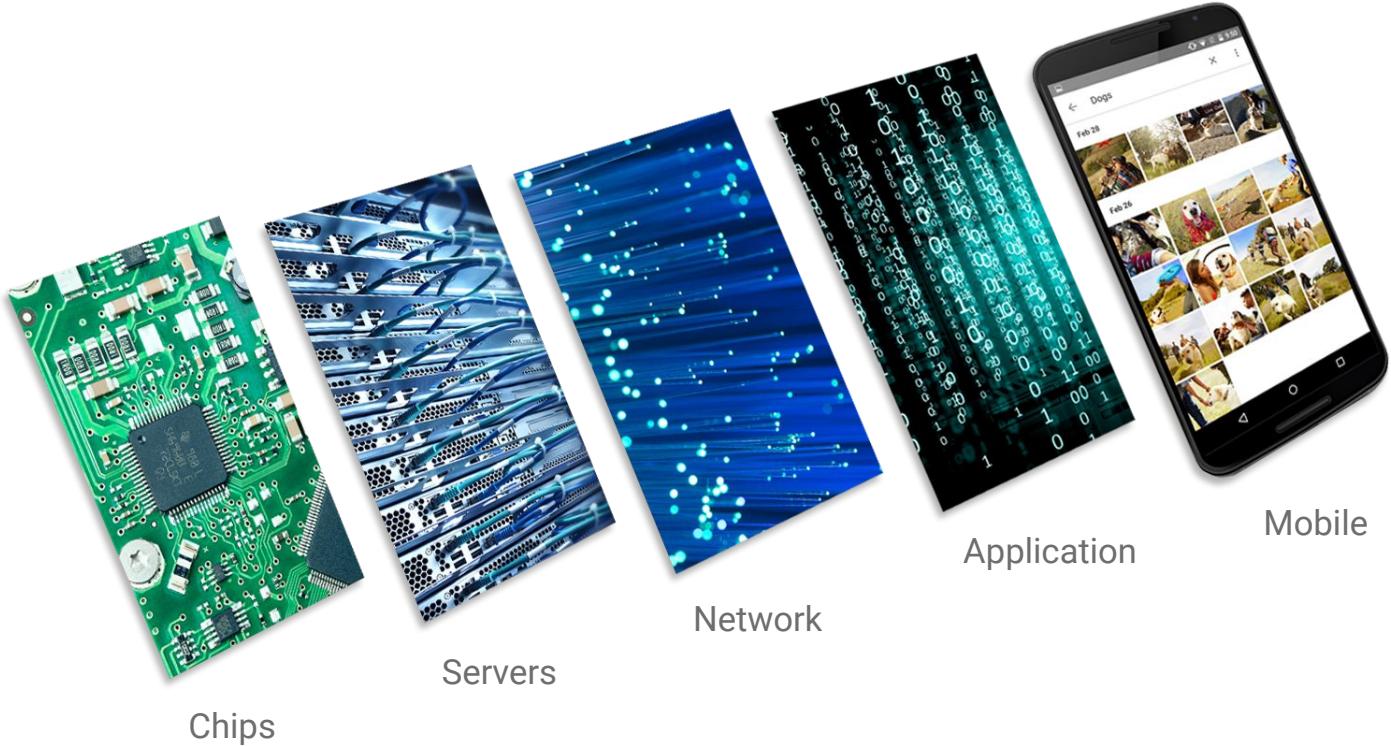


In security, scale matters

- 700+ security engineers
- >\$2B annual security investment
- 24/7 active watch
- 160 academic research papers on security



Defense in depth

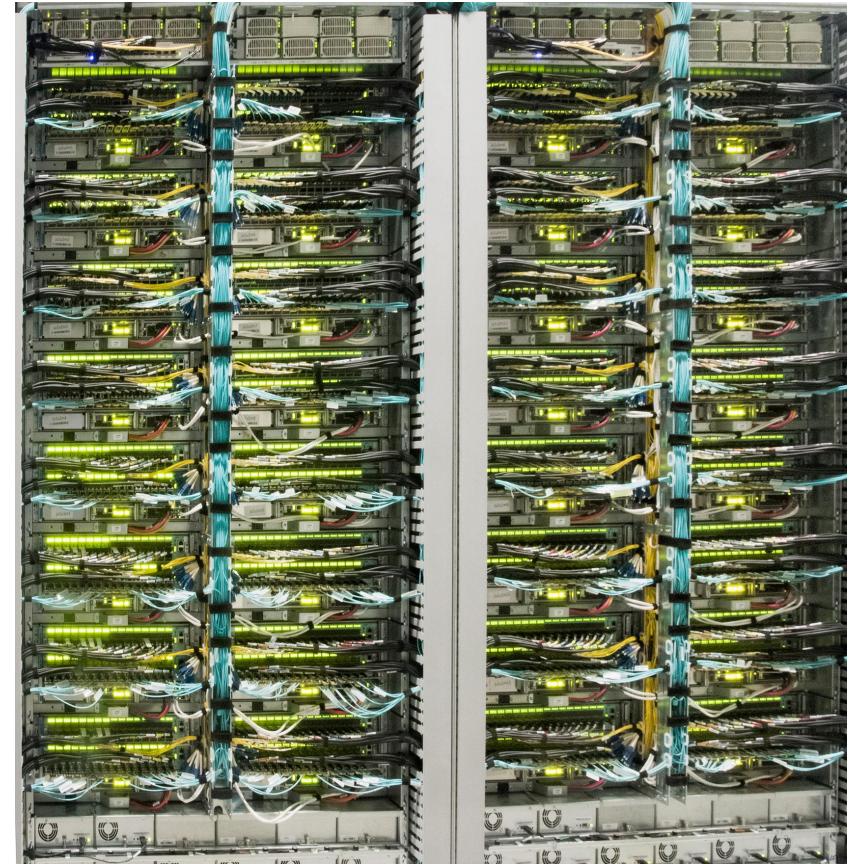
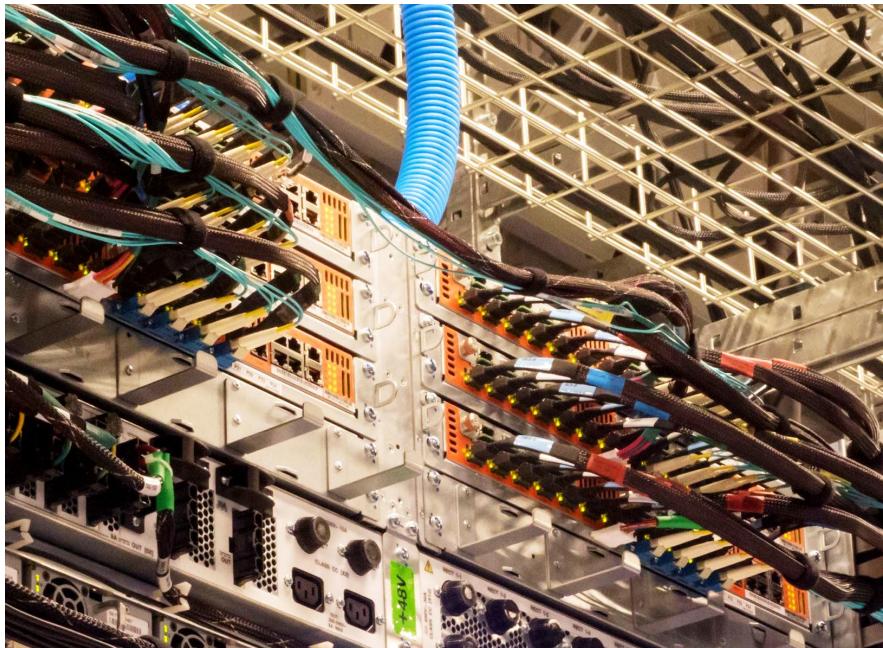


For the past **15 years**,
Google has been building
out the fastest, most
powerful, highest quality
cloud infrastructure **on**
the planet.

- Chipset
- OS
- Applications



Proprietary Network Layer



Google Cloud Network

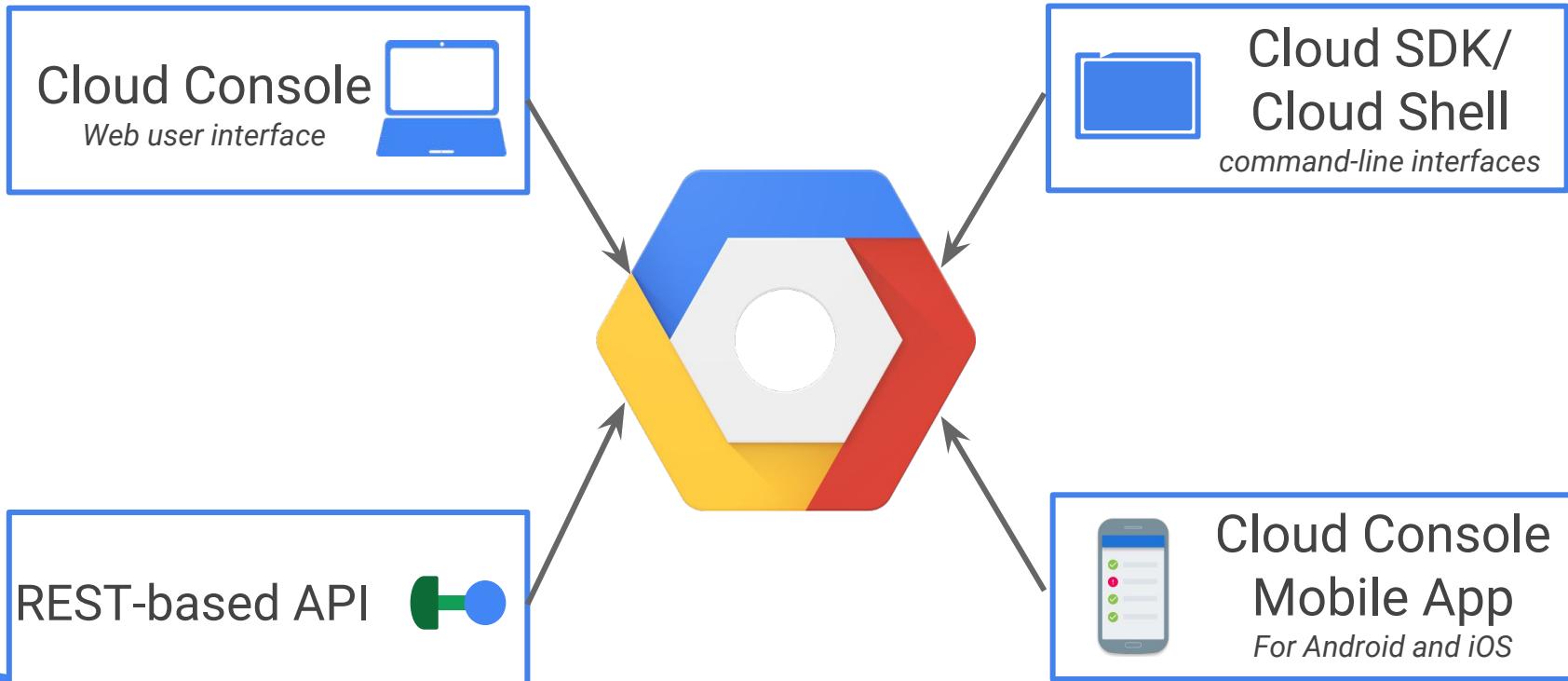


Google's commitment to open APIs and open source



**Customers should use us because they love us,
not because they are locked in**

Interacting with Google Cloud Platform



<https://console.cloud.google.com>

If you don't have a project create one

The screenshot shows the Google Cloud Platform dashboard for the project "whewatt-sandbox". The dashboard includes sections for Project info, App Engine, Compute Engine, Resources, Trace, Google Cloud Platform status, Billing, Error Reporting, and News.

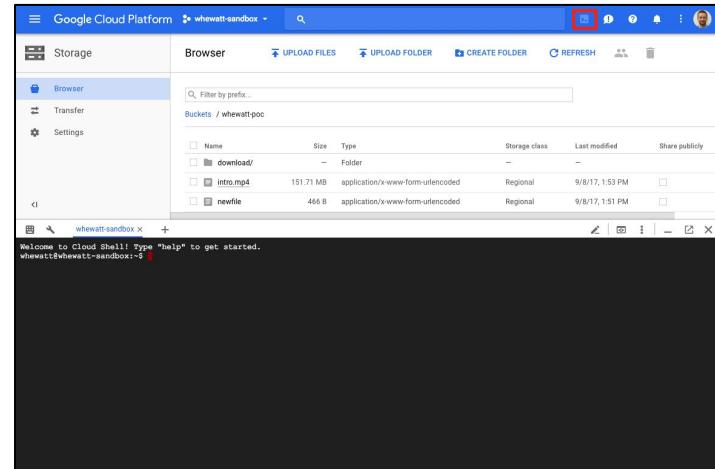
- Project info:** Project name: whewatt-sandbox, Project ID: (redacted), Project number: (redacted). [Go to project settings](#)
- App Engine:** Summary (count/sec) ▾. There is no data for this chart. [Go to the App Engine dashboard](#)
- Compute Engine:** CPU (%) ▾. There is no data for this chart. [Go to the Compute Engine dashboard](#)
- Resources:**
 - App Engine: 1 version
 - Compute Engine: 2 instances
 - Cloud Storage: 15 buckets
 - BigQuery: 4 datasets
- Trace:** No trace data from the past 7 days. [Get started with Stackdriver Trace](#)
- Google Cloud Platform status:** All services normal. [Go to Cloud status dashboard](#)
- Billing:** Estimated charges \$13.24 for the billing period Sep 1 – 22, 2017. [View detailed charges](#)
- Error Reporting:** No application errors in the last 24 hours. [Go to Error Reporting](#)
- News:** Committed use discounts for Google Compute Engine now generally available 18 minutes ago. Announcing Stackdriver Debugger for Node.js Build CL: 169449600 Build label: phrasal-air-20170911104-rc01 3 hours ago Built on Wed Sep 20 14:29:31 2017 (1505942971) Introducing faster GPUs for Google Compute Engine [Hide build data](#)

Google Cloud SDK

- SDK includes CLI tools for Cloud Platform products and services
 - gcloud, gsutil (Cloud Storage), bq (BigQuery)
- Available as Docker image
- Available via Cloud Shell
 - Cloud SDK running on Compute Engine instance

```
whewatt-macbookpro3:test whewatt$ gcloud components list
Your current Cloud SDK version is: 172.0.0
The latest available version is: 172.0.0
```

Components			
Status	Name	ID	Size
Not Installed	App Engine Go Extensions	app-engine-go	97.7 MiB
Not Installed	Cloud Bigtable Command Line Tool	cbt	4.0 MiB
Not Installed	Cloud Bigtable Emulator	bigtable	3.5 MiB
Not Installed	Cloud Datastore Emulator	cloud-datastore-emulator	15.4 MiB
Not Installed	Cloud Datastore Emulator (Legacy)	gcd-emulator	38.1 MiB
Not Installed	Cloud Pub/Sub Emulator	pubsub-emulator	33.2 MiB
Not Installed	Emulator Reverse Proxy	emulator-reverse-proxy	14.5 MiB
Not Installed	Google Container Local Builder	container-builder-local	2.7 MiB
Not Installed	Google Container Registry's Docker credential helper	docker-credential-gcr	2.2 MiB
Not Installed	gcloud app Java Extensions	app-engine-java	130.9 MiB
Not Installed	gcloud app PHP Extensions	app-engine-php	21.9 MiB
Installed	BigQuery Command Line Tool	bq	< 1 MiB
Installed	Cloud Datatab Command Line Tool	dataLab	< 1 MiB
Installed	Cloud SDK Core Libraries	core	6.7 MiB
Installed	Cloud Storage Command Line Tool	gsutil	3.0 MiB
Installed	gcloud Alpha Commands	alpha	< 1 MiB
Installed	gcloud Beta Commands	beta	< 1 MiB
Installed	gcloud app Python Extensions	app-engine-python	6.3 MiB
Installed	Kubectl	kubectl	15.9 MiB



Cloud Workload: Lift & Shift





Live Migration =
Less Downtime

Resize disks on the fly =
Easier operations

Per-minute billing =
Truly Elastic Costs

Custom Machine Types =
No over-provisioning

Sustained Use Discounts =
No upfront payments

High throughput storage at
no extra cost

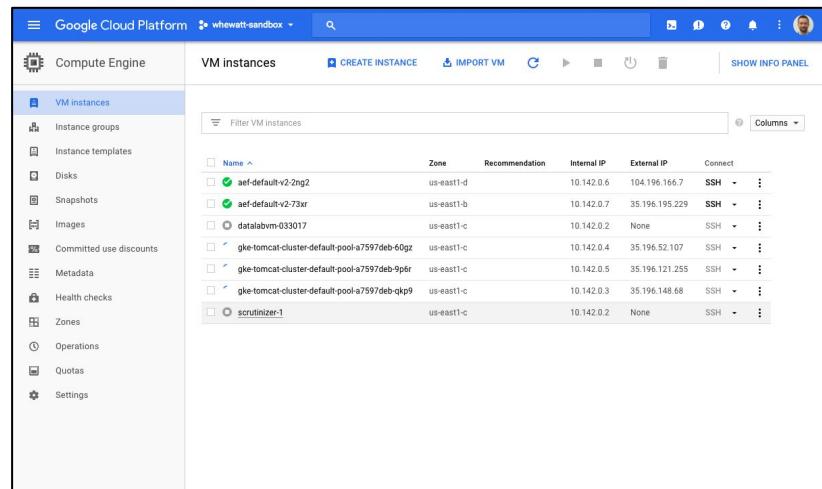
Automatic app-specific sizing
recommendations

Super-fast startup: VMs boot
in seconds, not minutes

Lift and Improve

Google Compute Engine

- Linux, RHEL, SUSE, Windows Server, Microsoft SQL Server, SAP HANA
- Industry leading I/O performance - including SSDs
- Live migration - no maintenance windows
- Resize disks with no downtime



```
whewatt-macbookpro3:~ whewatt$ gcloud compute instances list
NAME          ZONE      MACHINE_TYPE    PREEMPTIBLE INTERNAL_IP  EXTERNAL_IP    STATUS
aef-default-v2-73xr us-east1-b  custom (1 vCPU, 1.00 GiB) 10.142.0.7   35.196.195.229  RUNNING
datalabvm-033017 us-east1-c  n1-standard-1 10.142.0.2   None           TERMINATED
scrutinizer-1   us-east1-c  custom (4 vCPU, 16.00 GiB) 10.142.0.2   None           TERMINATED
aef-default-v2-2ng2 us-east1-d  custom (1 vCPU, 1.00 GiB) 10.142.0.6   104.196.166.7   RUNNING
```

The screenshot shows the Google Cloud Platform dashboard for the project "whewatt-sandbox".

1. The top-left corner of the navigation pane is highlighted with a red box and a red arrow pointing to it.

2. The "Compute Engine" item under the "COMPUTE" section is highlighted with a red box and a red arrow pointing to it.

3. The "VM instances" item in the dropdown menu for "Compute Engine" is highlighted with a red box and a red arrow pointing to it.

The URL at the bottom of the page is: <https://pantheon.corp.google.com/compute/instances?project=whewatt-sandbox>

Google Cloud Platform whewatt-sandbox SHOW INFO PANEL

CREATE INSTANCE

Name	Zone	Recommendation	Internal IP	External IP	Connect
datalabvbm-033017	us-east1-c		10.142.0.2	None	SSH
scrutinizer-1	us-east1-c		10.142.0.2	None	SSH

Build CL: 169449600
Build label: phrasal-air-201709191104-rc01
Built on Wed Sep 20 14:29:31 2017 (1505942974)
[Hide build data](#)

Compute Engine VM instances SHOW INFO PANEL

VM instances

Instance groups

Instance templates

Disk

Snapshots

Images

Committed use discounts

Metadata

Health checks

Zones

Operations

Quotas

Settings

Cloud Workload: New Applications



Delivering What's Next

Innovation at all levels

Hardware, Software, Operations

Kubernetes & Container Engine

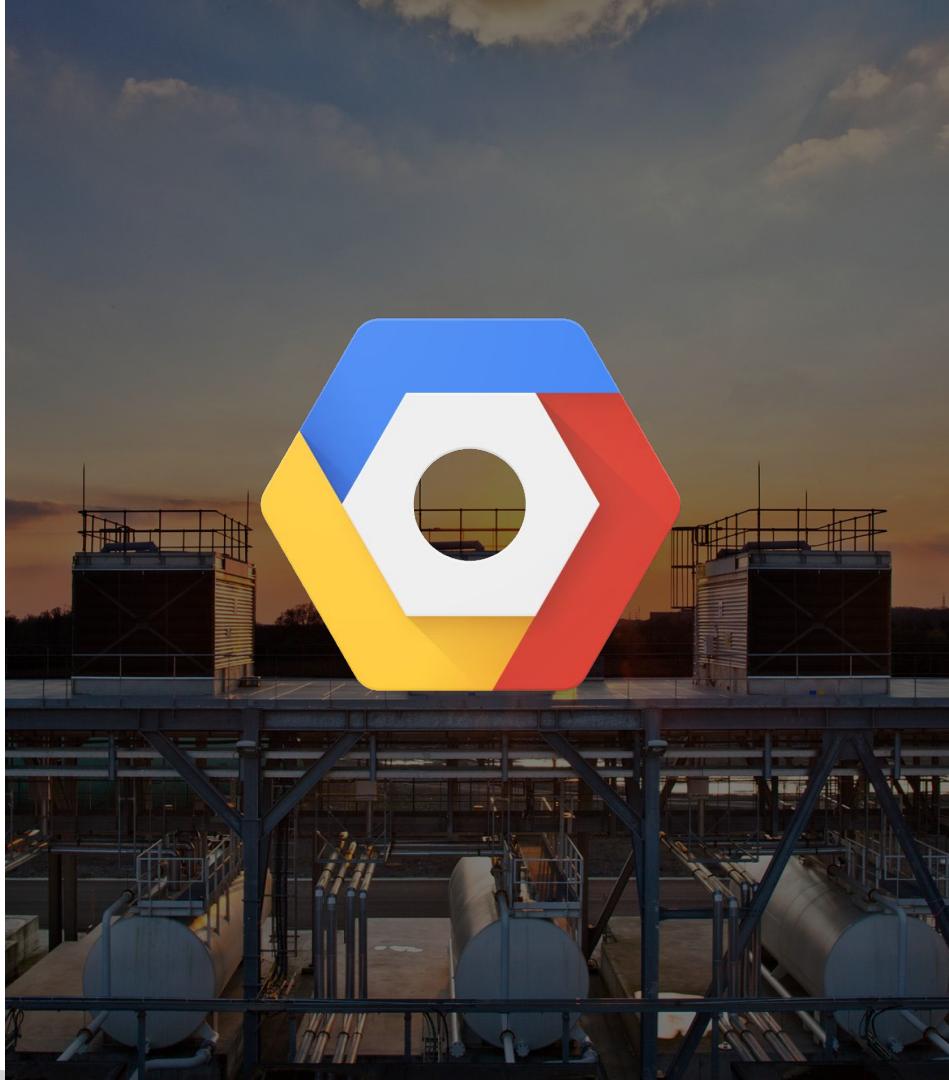
Production-grade container orchestration
Built for Multi-cloud world

Data Platform

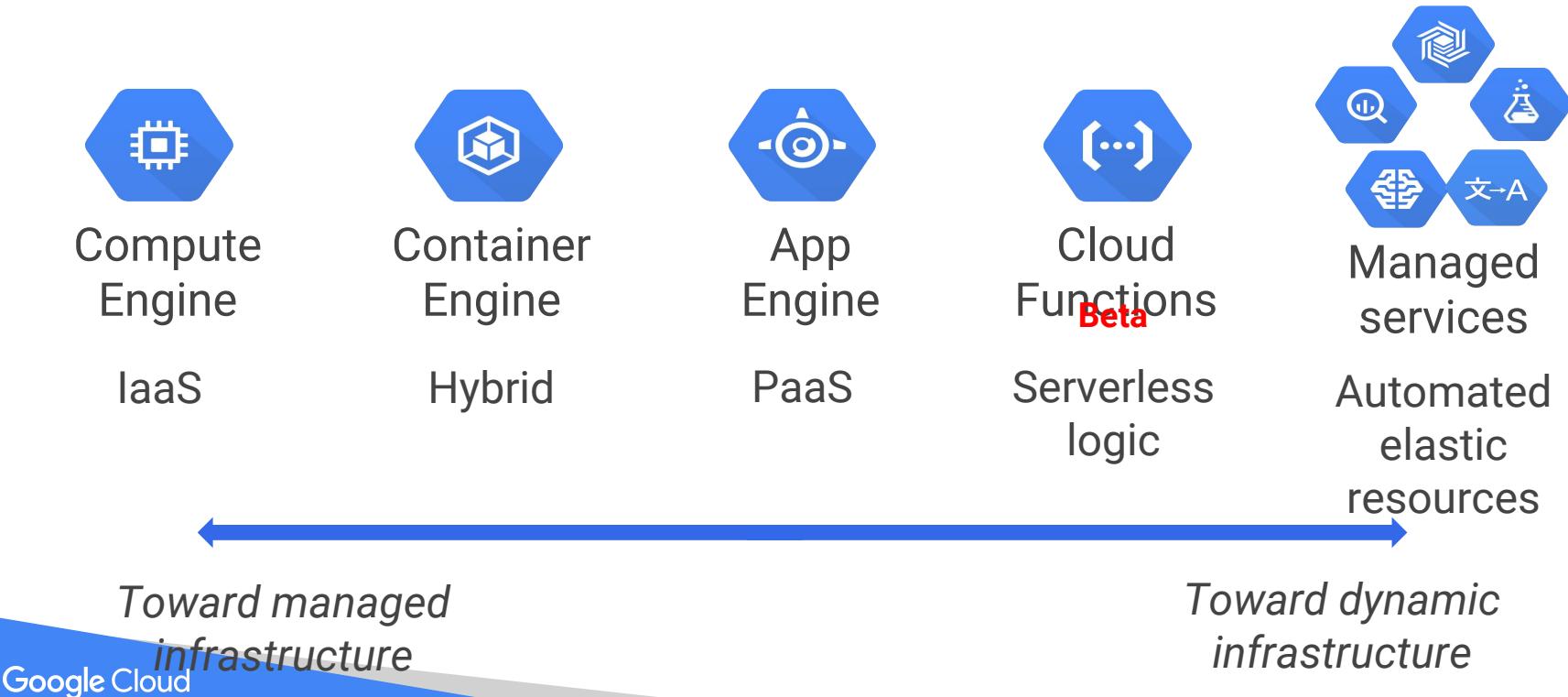
Focus on insights, not infrastructure

Machine Learning

Bringing ML to the mainstream



Range of compute architectures



Kubernetes

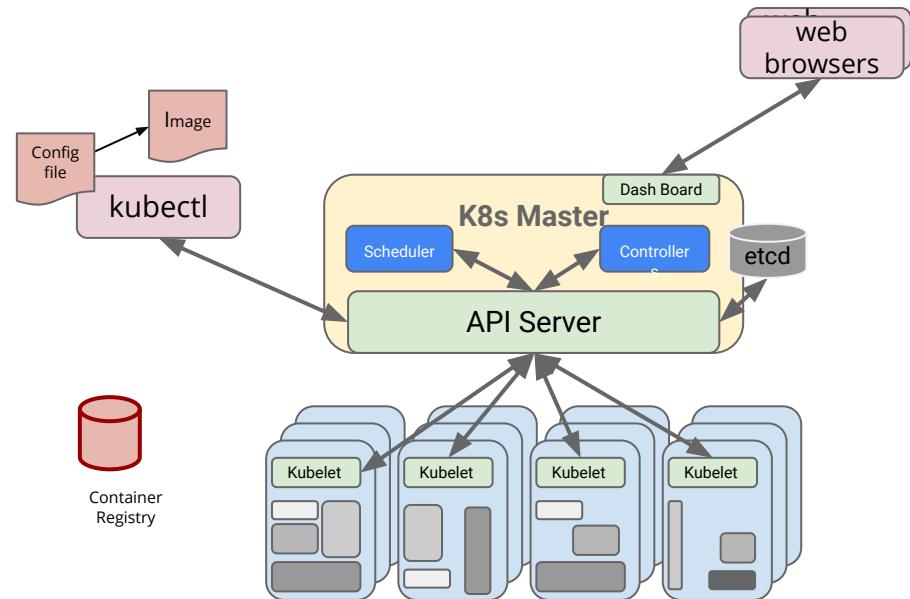
<http://kubernetes.io>

Open source container management platform
Cloud Native Computing Foundation

Based on years of experience running Borg at Google

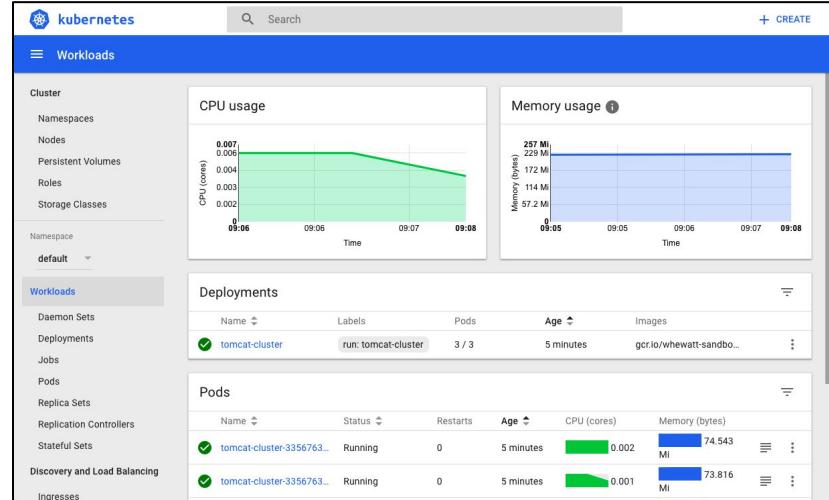
Runs everywhere: laptop, on-prem, different cloud platforms

Reliable deployment of apps, scaling, roll out and roll back of versions, autoscaling, health checks...



Google Container Engine (GKE)

- Managed Kubernetes Clusters for Docker containers
- Uses Compute Engine Resources
- Use kubectl and standard K8S APIs
- Supporting Products:
 - Google Container Builder
 - Google Container Registry



Google App Engine

- Java, PHP, Python, Go, Node.js, .NET
- Integrated Services - Cron, Task Queues, Memcache, Datastore
- Auto-scaling
- Versioning and Traffic Splitting
- Local Developer Tools

The screenshot shows the Google Cloud Platform interface for the App Engine service. The left sidebar lists various services like Dashboard, Services, Instances, Task queues, Security scans, Firewall rules, Quotas, Blobstore, Memcache, Search, and Settings. The 'Versions' option is selected. The main pane displays a table of versions:

Version	Status	Traffic Allocation	Instances	Runtime	Environment	Size	Deployed	Diagnose	Config
v2	Serving	25%	2	custom	Flexible	0 B	Sep 22, 2017, 9:08:43 AM by whewatt@google.com	Tools	View
1	Serving	75%	0	java7	Standard	9.9 MB	Sep 22, 2017, 9:05:02 AM by whewatt@google.com	Tools	View

Cloud Functions

A “**serverless platform for building event-based microservices**”.

Great fit for **event-oriented** architectures, supporting 3 kind of triggers:

Cloud Storage updates

Cloud Pub/Sub messages

Direct HTTP calls (e.g. Webhooks)

Use cases include:

APIs & Microservices

Lightweight ETL

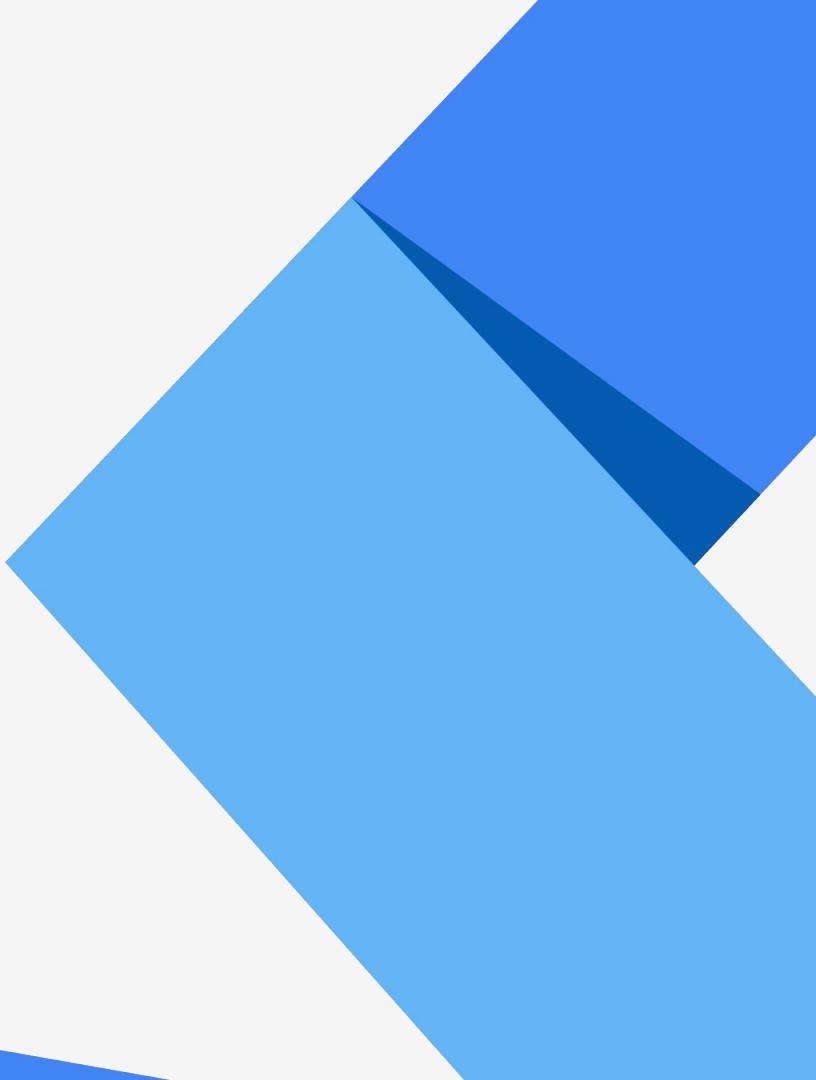
Internet of Things

The screenshot shows the Google Cloud Platform Cloud Functions interface. On the left, there's a list of existing functions with columns for Name, Region, and Trigger. Most functions listed have green checkmarks next to them. The right side features a code editor with two tabs: index.js and package.json. The index.js tab contains the following code:

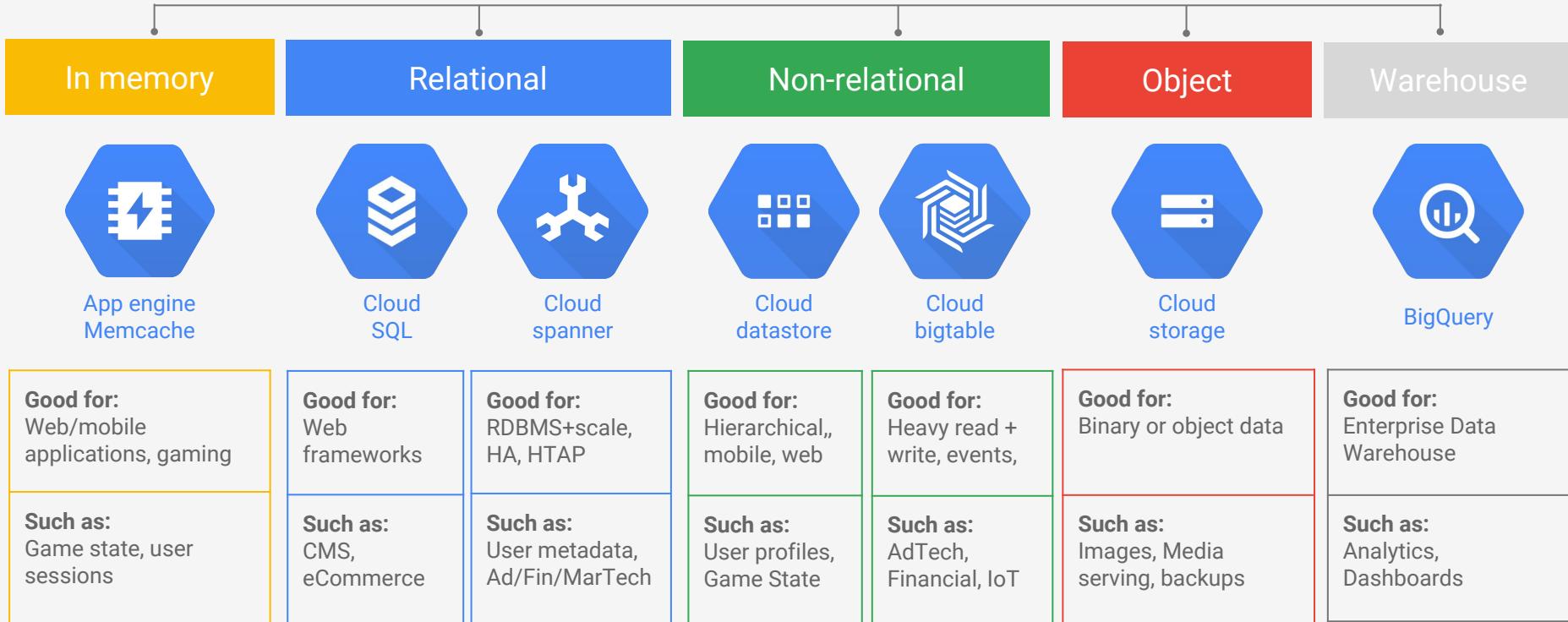
```
1 /**
2  * Responds to any HTTP request that can provide a "message"
3  * parameter.
4  * @param {Object} req Cloud Function request context.
5  * @param {Object} res Cloud Function response context.
6  */
7 exports.helloWorld = function helloWorld(req, res) {
8   // Example input: {"message": "Hello!"}
9   if (req.body.message === undefined) {
10     // This is an error case, as "message" is required.
11     res.status(400).send("No message defined!");
12   } else {
13     // Everything is okay
14     console.log(req.body.message);
15     res.status(200).send(`Success! ${req.body.message}`);
16   }
17 };
18
```

Below the code editor, there are fields for Stage bucket (set to bucket/folder) and Function to execute (set to helloWorld). A note at the bottom says "Function deployment might take a few minutes. To build and test the function locally, use the local emulator". At the bottom right are Create and Cancel buttons.

Cloud Workload: Big Data



Storage & Database Portfolio



Run Existing Data Systems Better



Hadoop on Compute Engine

Run your existing workloads
Take advantage of Google infrastructure



Cloud Dataproc

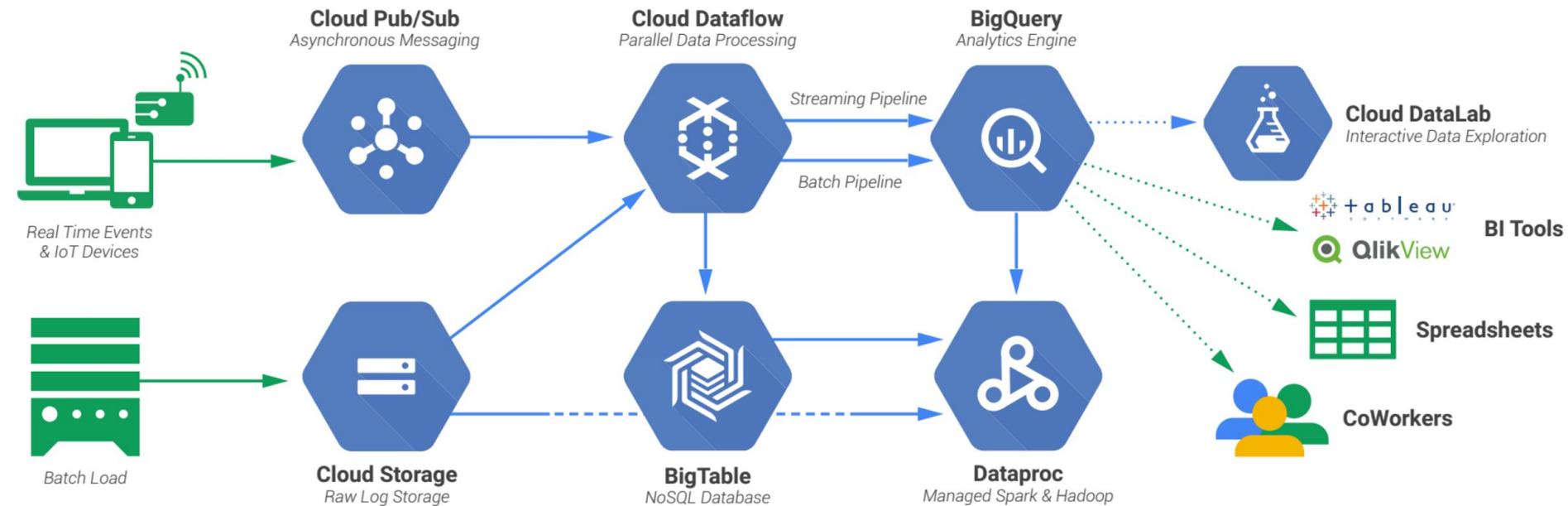
Fully managed Hadoop, Spark, Hive
Turn up clusters in 90 seconds or less
Per-minute pricing



Cloud SQL

Fully managed MySQL or PostgreSQL
Automates backups, replications, patches, updates

Google Cloud Big Data Reference Architecture



BigQuery

- Fully managed, No-Ops Data Warehouse
- Ad-hoc query across multi-terabyte datasets
- SQL 2011 Standard
- Highly Available: Data replication in multiple geographies.
- Secure: Access to data is controlled using customer-owned ACLs

The screenshot shows the Google BigQuery web interface. On the left, the sidebar lists datasets: 'hewatt-sandbox' (Analysis, Wapo, Billing, gcp_billing_export_00886A..., DataflowDemo, Demo, PartitionedTable), 'bigquery-public-data' (bigquery-samples:airline_ontime_data, bigquery-samples:auto_diagnostics, bigquery-samples:naasq_stock_quotes, quotes, quotes_new, nested, playlists, reddit). The main area shows a 'New Query' window with the query: 'SELECT * FROM [bigquery-samples:naasq_stock_quotes].quotes] LIMIT 1000'. Below it is a 'Table Details: quotes' section showing the schema:

Symbol	Type	Nullable	Description
start_date	INTEGER	NULLABLE	Describe this field...
start_time	INTEGER	NULLABLE	Describe this field...
end_date	INTEGER	NULLABLE	Describe this field...
end_time	INTEGER	NULLABLE	Describe this field...
market_center	STRING	NULLABLE	Describe this field...
bid_quantity	INTEGER	NULLABLE	Describe this field...

<https://bigquery.cloud.google.com>

The screenshot shows the Google BigQuery web interface. On the left, the 'COMPOSE QUERY' tab is active, displaying 'Query History' and 'Job History'. A red box labeled '1' highlights the 'natality' dataset in the 'Public Datasets' section. On the right, the 'Table Details: natality' page is shown. The 'Details' tab is selected, indicated by a red box and the number '2'. The table schema is listed below:

Field	Type	Nullable	Description
source_year	INTEGER	REQUIRED	Four-digit year of the birth. Example: 1975.
year	INTEGER	NULLABLE	Four-digit year of the birth. Example: 1975.
month	INTEGER	NULLABLE	Month index of the date of birth, where 1=January.
day	INTEGER	NULLABLE	Day of birth, starting from 1.
wday	INTEGER	NULLABLE	Day of the week, where 1 is Sunday and 7 is Saturday.
state	STRING	NULLABLE	The two character postal code for the state. Entries after 2004 do not include this value.
is_male	BOOLEAN	REQUIRED	TRUE if the child is male, FALSE if female.
child_race	INTEGER	NULLABLE	The race of the child. One of the following numbers: 1 - White 2 - Black 3 - American Indian 4 - Chinese 5 - Japanese
weight_pounds	FLOAT	NULLABLE	Weight of the child, in pounds.
plurality	INTEGER	NULLABLE	How many children were born as a result of this pregnancy. twins=2, triplets=3, and so on.
apgar_1min	INTEGER	NULLABLE	Apgar scores measure the health of a newborn child on a scale from 0-10. Value after 1 minute. Available from 1978-2002.
apgar_5min	INTEGER	NULLABLE	Apgar scores measure the health of a newborn child on a scale from 0-10. Value after 5 minutes. Available from 1978-2002.

21 GB and 137 Million Rows

The screenshot shows the Google BigQuery interface. On the left, there's a sidebar with a 'COMPOSE QUERY' button, 'Query History', 'Job History', a search bar for 'Filter by ID or label', and a dropdown menu for 'My Project'. Below that is a section for 'Public Datasets' containing a list of datasets like 'bigquery-public-data:hacker_ne...', 'bigquery-public-data:noaa_gsod', 'bigquery-public-data:samples' (which is expanded to show 'github_nested', 'github_timeline', 'gsod', 'natality', 'shakespeare', 'trigrams', 'wikipedia'), and others.

The main area is titled 'Table Details: natality'. It has tabs for 'Schema', 'Details' (which is selected), and 'Preview'. A red box highlights the 'Query Table' button in the top right. Below the tabs, there's a 'Description' field with placeholder text 'Describe this table...'. The 'Table Info' section contains a table with the following data:

Table ID	bigquery-public-data:samples.natality
Table Size	21.9 GB
Long Term Storage Size	21.9 GB
Number of Rows	137,826,763
Creation Time	Mar 14, 2016, 1:16:47 PM
Last Modified	Mar 14, 2016, 1:16:47 PM
Data Location	US
Labels	None <button>Edit</button>

Select * on 21 GB in 1.6 seconds

Google BigQuery

COMPOSE QUERY

New Query

```
1 SELECT * FROM [bigquery-public-data:samples.natality] LIMIT 1000
```

Query Editor UDF Editor SQL

RUN QUERY Save Query Save View Format Query Show Options

Ctrl + Enter: run query, Tab or Ctrl + Space: autocomplete.

Query complete (1.6s elapsed, 21.9 GB processed)

Results Explanation Job Information Download as CSV Download as JSON Save as Table Save to Google Sheets

Row	source_year	year	month	day	wday	state	is_male	child_race	weight_pounds	plurality	apgar_1min	apgar_5min
1	1970	1970	7	23	null	HI	false	6	5.8753192823	null	null	
2	1970	1970	12	26	null	HI	false	6	9.87450471498	null	null	
3	1971	1971	9	20	null	HI	true	7	6.062712204999995	1	null	
4	1972	1972	1	19	null	HI	true	7	5.93704871566	1	null	
5	1975	1975	2	18	null	HI	true	6	7.5618555866	1	null	
6	1978	1978	12	19	null	HI	false	7	10.24929056038	1	8	
7	1978	1978	10	20	null	HI	true	6	4.3651527876	1	6	
8	1980	1980	3	4	null	HI	true	6	7.7492485093	1	8	

Table JSON First < Prev Rows 1 - 8 of 1000 Next > Last

Create Your Own Datasets

The screenshot shows the Google BigQuery web interface. On the left, there's a sidebar with 'COMPOSE QUERY' buttons, 'Query History', 'Job History', and a 'Filter by ID or label' input field. Below that is a section for 'My Project' which says 'No datasets found in this project. Please create a dataset or select a new project from the menu above.' A red box highlights the dropdown arrow next to the 'My Project' heading. To the right of this is the main 'New Query' area with a SQL tab selected. The SQL code is: `SELECT * FROM [bigquery-public-data:samples.natality] LIMIT 1000`. Below the code is a message: 'Query complete (1.6s elapsed, 21.9 GB processed)' with a green checkmark icon. The results table has columns: Row, source_year, year, month, day, wday, state, is_male, child_race, weight_pounds, plurality, apgar_1min. The first few rows of data are:

Row	source_year	year	month	day	wday	state	is_male	child_race	weight_pounds	plurality	apgar_1min
1	1970	1970	7	23	null	HI	false		6	5.8753192823	null
2	1970	1970	12	26	null	HI	false		6	9.87450471498	null
3	1971	1971	9	20	null	HI	true		7	6.062712204999995	1
4	1972	1972	1	19	null	HI	true		7	5.93704871566	1
5	1975	1975	2	18	null	HI	true		6	7.5618555866	1
6	1978	1978	12	19	null	HI	false		7	10.24929056038	1
7	1978	1978	10	20	null	HI	true		6	4.3651527876	1
8	1980	1980	3	4	null	HI	true		6	7.7492485093	1
9	1980	1980	10	20	Wednesday	HI	false	Asian	7	6.062712204999995	1

At the bottom, there are buttons for 'Table' and 'JSON', and navigation links: 'First', '< Prev', 'Rows 1 - 8 of 1000', 'Next >', and 'Last'.

Create Tables

Google BigQuery

COMPOSE QUERY

Query History
Job History
Filter by ID or label

My Project
▶ Sales

▼ Public Datasets
▶ bigquery-public-data:hacker_ne...
▶ bigquery-public-data:noaa_gsod
▼ bigquery-public-data:samples
 ■■■ github_nested
 ■■■ github_timeline
 ■■■ gsod
 ■■■ natality
 ■■■ shakespeare
 ■■■ trigrams
 ■■■ wikipedia
▶ bigquery-public-data:usa_names
▶ gdelt-bq:hathitrustbooks
▶ gdelt-bq:internetarchivebooks
▶ lookerdata:cdc
▶ nyc-tlc:green

Create Table

Source Data Create from source Create empty table

Repeat job Select Previous Job

Location File upload Choose file No file chosen

File format CSV

Destination Table

Table name Sales . Destination table name

Table type Native table

Schema Automatically detect

Name	Type	Mode
	STRING	NULLABLE

Add Field Edit as Text

Options

Field delimiter Comma Tab Pipe Other

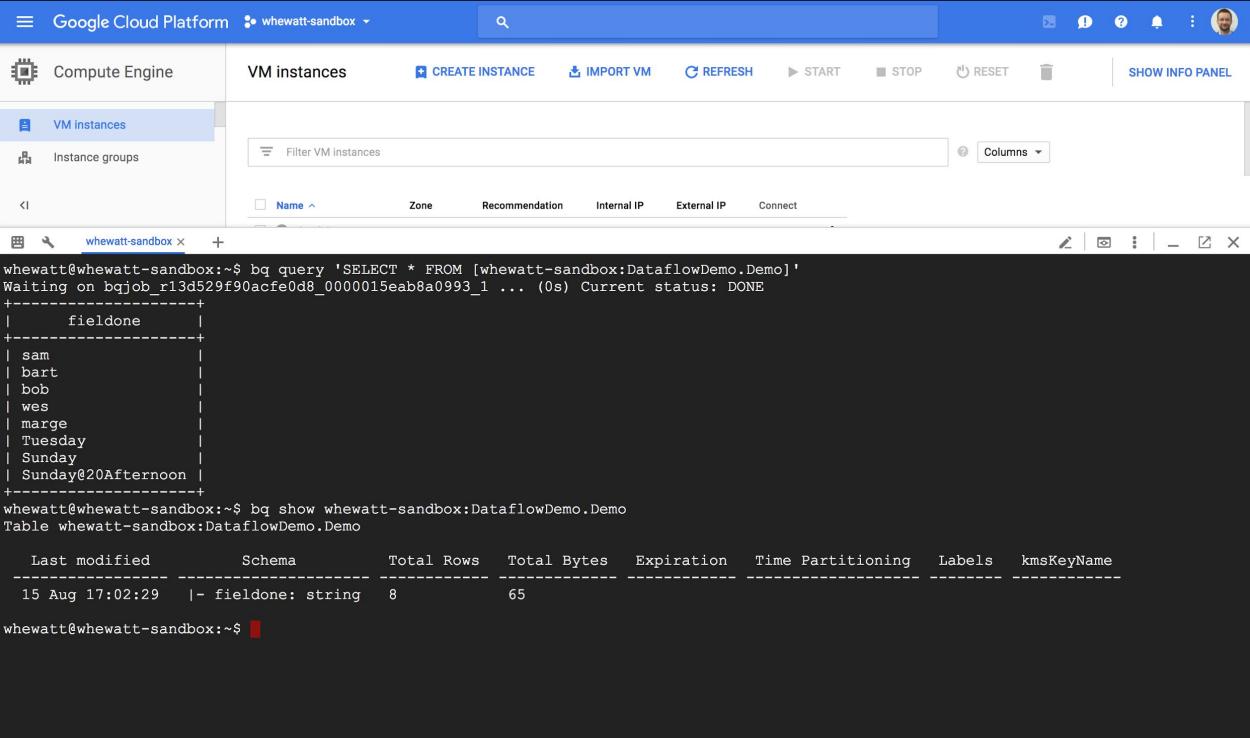
Header rows to skip 0

Number of errors allowed 0

Allow quoted newlines

All options

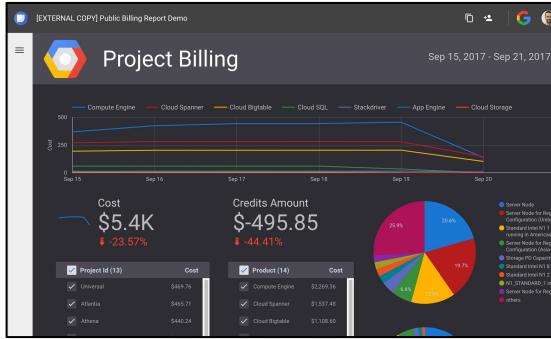
BigQuery Command Line (bq)



The screenshot shows a Google Cloud Platform interface with the Compute Engine VM instances page selected. A terminal window is open in the foreground, displaying command-line output for BigQuery (bq) and BigTable (show). Two red arrows point to specific lines in the terminal output.

```
whewatt@whewatt-sandbox:~$ bq query 'SELECT * FROM [whewatt-sandbox>DataflowDemo.Demo]'  
Waiting on bqjob_r13d529f90acfe0d8_0000015eab8a0993_1 ... (0s) Current status: DONE  
+-----+  
| fielddone |  
+-----+  
| sam       |  
| bart      |  
| bob       |  
| wes       |  
| marge     |  
| Tuesday   |  
| Sunday    |  
| Sunday@20Afternoon |  
+-----+  
whewatt@whewatt-sandbox:~$ bq show whewatt-sandbox>DataflowDemo.Demo  
Table whewatt-sandbox>DataflowDemo.Demo  
Last modified          Schema          Total Rows  Total Bytes  Expiration  Time Partitioning  Labels  kmsKeyName  
-----  -----  -----  -----  -----  -----  -----  
15 Aug 17:02:29  |- fielddone: string  8           65  
whewatt@whewatt-sandbox:~$
```

Data Studio, Datalab, & Dataprep



The screenshot shows a Datalab notebook titled "Distributed Machine Learning using Tensorflow + Cloud ML Engine". The code cell contains Python code for loading data from BigQuery and printing the TensorFlow version. Below the code, a section titled "Steps" lists the process for setting up the environment, and a note about loading raw data from a public GCS bucket.

```
import pandas as pd
import tensorflow as tf

print(tf.__version__)

1.0.0
```

Steps

1. Load raw data
2. Define feature columns
3. Define input function
4. Define input function
5. Define Experiment
6. Package Code
7. Run Job

1) Load Raw Data

The boston housing prices dataset. It is a tab separated text file hosted in a public GCS bucket.

Data Studio

- Drag & Drop reports & dashboards

Datalab

- Cloud hosted Jupyter notebooks
- Python, TensorFlow, BigQuery Integration

The screenshot shows a Dataprep data preview for a dataset named "ga_sessions". The table has 11 columns and 126 rows. The columns are: #, visitId, #, visitStartTime, date, total, trafficSource, and device. The data shows log entries for user sessions, including browser type and referrer information.

#	visitId	#	visitStartTime	date	total	trafficSource	device
137880382	137880382	137880382	20130919 00:00:00	2013-09-19	1	(direct)	Unknown
137880383	137880383	137880383	20130919 00:00:00	2013-09-19	1	(direct)	Unknown
137880384	137880384	137880384	20130919 00:00:00	2013-09-19	1	(direct)	Unknown
137880385	137880385	137880385	20130919 00:00:00	2013-09-19	1	(direct)	Unknown
137880386	137880386	137880386	20130919 00:00:00	2013-09-19	1	(direct)	Unknown
137880387	137880387	137880387	20130919 00:00:00	2013-09-19	1	(direct)	Unknown
137880388	137880388	137880388	20130919 00:00:00	2013-09-19	1	(direct)	Unknown
137880389	137880389	137880389	20130919 00:00:00	2013-09-19	1	(direct)	Unknown
137880390	137880390	137880390	20130919 00:00:00	2013-09-19	1	(direct)	Unknown
137880391	137880391	137880391	20130919 00:00:00	2013-09-19	1	(direct)	Unknown
137880392	137880392	137880392	20130919 00:00:00	2013-09-19	1	(direct)	Unknown
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137880494</							

Cloud Workload: Machine Learning



Google is the **world leader** in applying Machine Learning to real-world situations, inside and outside of Google.



Search
Search Ranking
Speech Recognition



Android
Keyboard and
Speech Input



Play
App Recommendations
Game Developer Experience



Gmail
Smart Reply
Spam Classification



Drive
Intelligence in Apps



Chrome
Search by Image



Photos
Photos Search



YouTube
Video Recommendations
Better Thumbnails



Maps
Street View Image
Parsing Local Search



Translate
Text, Graphic and Speech
Translations



Cardboard
Smart Stitching



Ads
Richer Text Ads
Automated Bidding



Self Driving Car
1.5MM miles driven

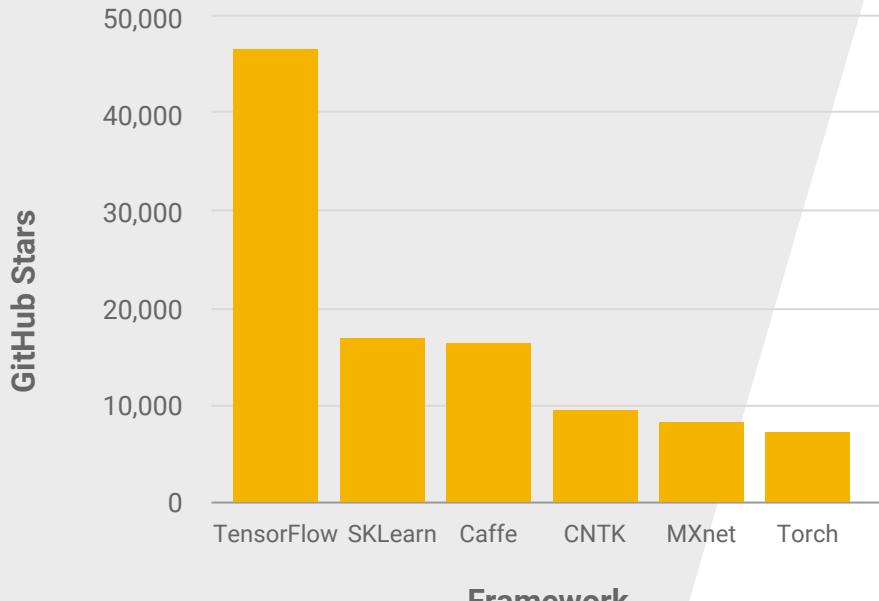


Data Center Power Usage
Reduced cooling energy 40%



Alpha Go
First AI to beat a world Go
champion (2016)

TensorFlow



- World's most popular ML framework
- Developer friendly yet performance optimized
- **Powers over 100 Google services**
- Managed infrastructure with Cloud ML
- Tutorials at <https://www.tensorflow.org>

As of 2-17-2017

Two Ways To Use Machine Learning

Ready to use Machine Learning models



Cloud
Vision API



Cloud
Speech API



Cloud
Jobs API



Cloud
Translation API

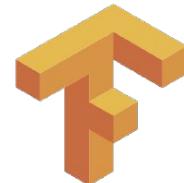


Cloud
Natural
Language API



Cloud
Video
Intelligence

Use your own data to train models



TensorFlow



Cloud Machine
Learning Engine

Try them yourself!

cloud.google.com/translate/

Enter a word or phrase:

Translate from:

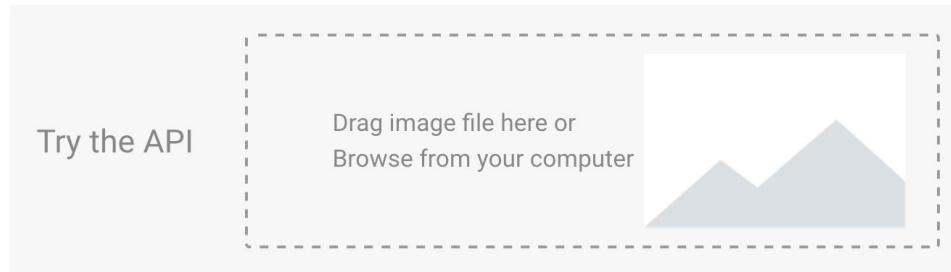
▼

Translate to:

▼

TRANSLATE

cloud.google.com/vision/



cloud.google.com/natural-language/

Try the API

Google, headquartered in Mountain View, unveiled the new Android phone at the Consumer Electronic Show. Sundar Pichai said in his keynote that users love their new Android phones.

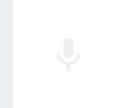
ANALYZE

cloud.google.com/speech/

Convert your voice to text right now

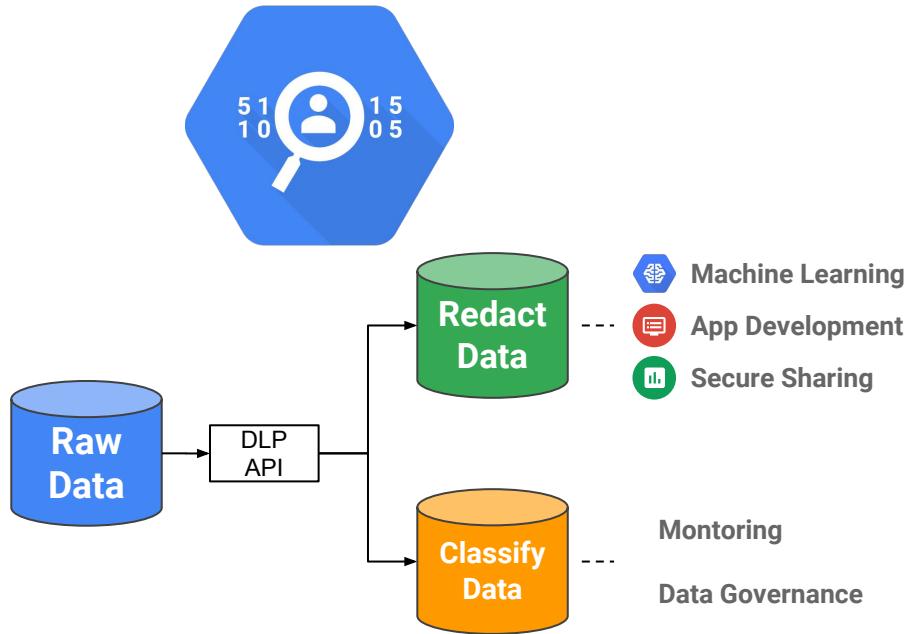
Click on the microphone icon to start recording

English (United States) ▼



Data Loss Prevention (DLP) API BETA

<https://cloud.google.com/dlp/docs/quickstart-json>



DLP lets GCP users scan for and redact sensitive data

- Find sensitive data stored in GCP
- Redact sensitive data to comply with regulations or policies
- Safely unlock more of the cloud

What's Next?

Next

- ❖ Mapping AWS to Google -
<https://cloud.google.com/free/docs/map-aws-google-cloud-platform>
- ❖ Qwiklabs - <https://google.qwiklabs.com/catalog>
- ❖ Documentation - <https://cloud.google.com/docs/>
- ❖ Codelabs - <https://codelabs.developers.google.com/>

Create a free
Qwiklabs
account

