Google Cloud Platform

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神通資訊科技股份有限公司

MiTAC - The Premier Google Cloud Partner in APAC

MiTAC 神通資科
MITAC INFORMATION TECHNOLOGY CORP.

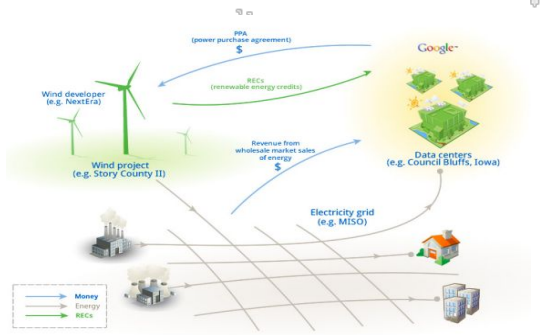
We Provide

Local Invoice and Billing service
First Line Technical Support

Google Cloud Platform
Chrome for Work/Edu
G Suite Basic/Biz /Enterprise/Edu
Chromebook


YouTube

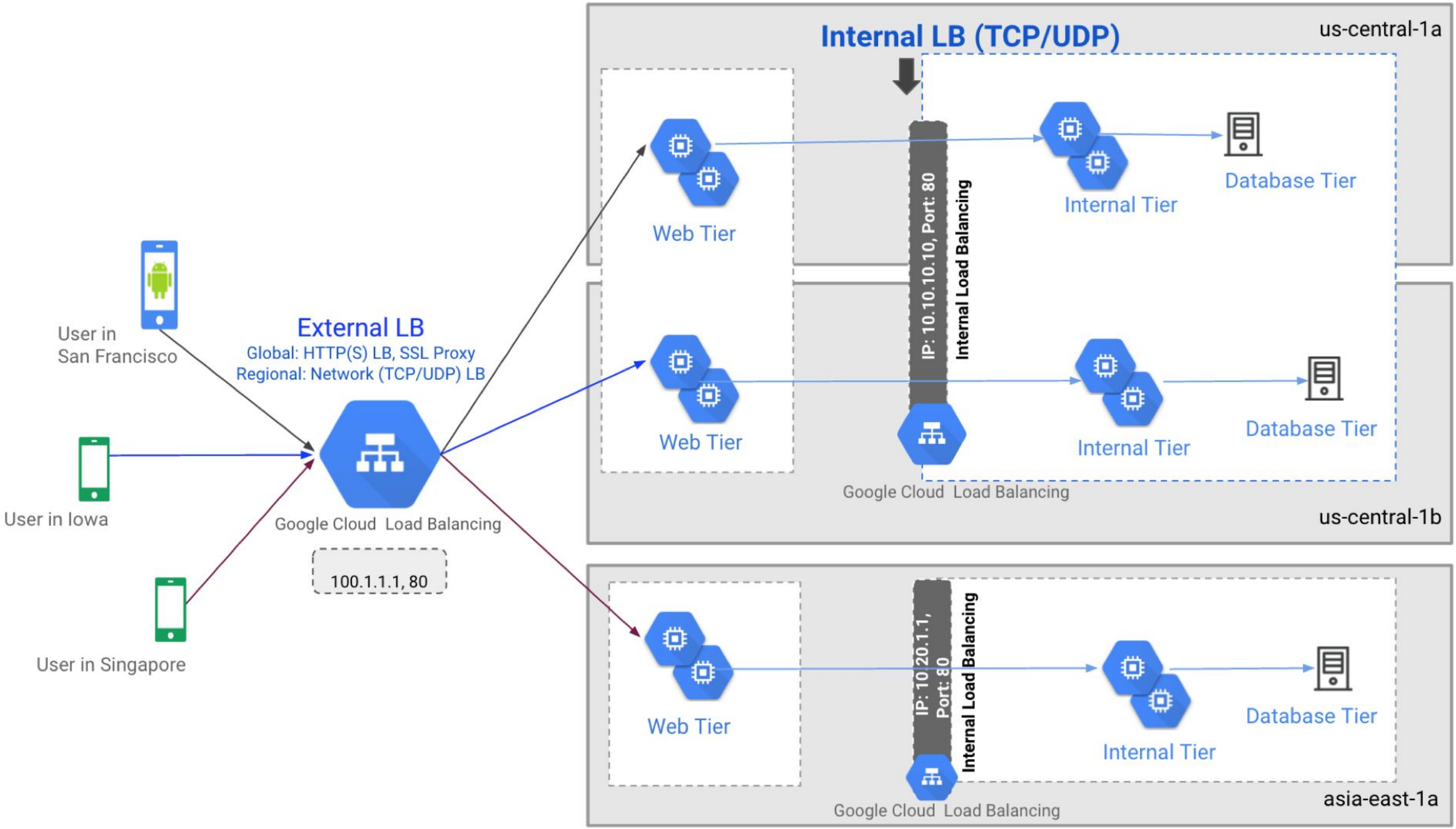
Google 全球資料數據中心



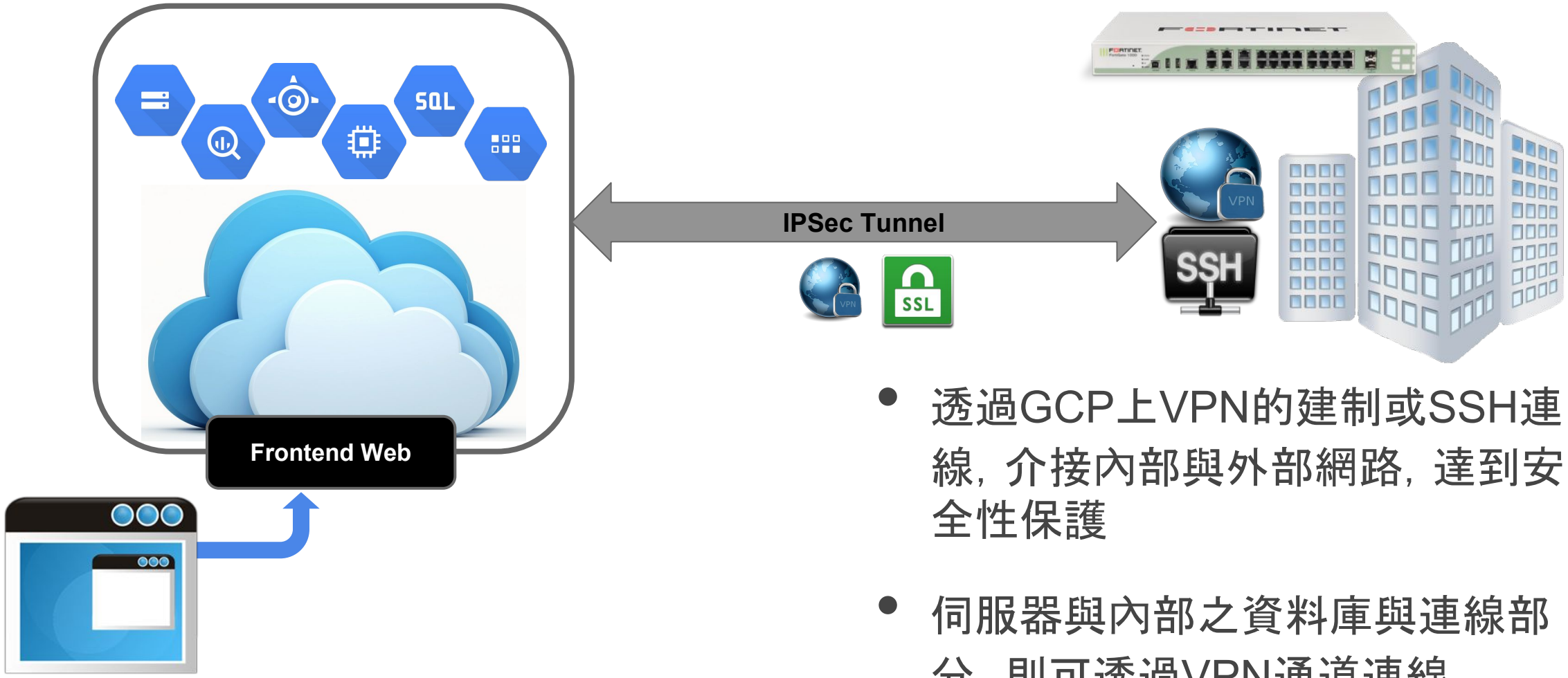
超過 TIA 942標準
所有Google Data Center
平均 PUE 是1.12, 有些時
段PUE低至1.06。

Google Cloud offerings

Management	Compute	Storage	Networking	Data	Machine Learning
STACKDRIVER	COMPUTE ENGINE	CLOUD STORAGE	VIRTUAL NETWORK	BIGQUERY	CLOUD ML
IDENTITY AND ACCESS MANAGEMENT	PREEMPTIBLE VMS	NEARLINE	LOAD BALANCING	DATAFLOW	SPEECH API
	CUSTOM MACHINE TYPES	CLOUD SQL	CDN	DATAPROC	VISION API
	APP ENGINE	DATASTORE	DNS	DATALAB	TRANSLATE API
	CONTAINER ENGINE	BIGTABLE	INTERCONNECT	PUB/SUB	NATURAL LANGUAGE API


Internal LB (TCP/UDP)
us-central-1a
Web Tier
IP: 10.10.10.10, Port: 80
Internal Load Balancing
Internal Tier
Database Tier
Web Tier
Internal Tier
Database Tier
Google Cloud Load Balancing
us-central-1b
User in San Francisco
External LB
Global: HTTP(S) LB, SSL Proxy
Regional: Network (TCP/UDP) LB
User in Iowa
Google Cloud Load Balancing
100.1.1.1, 80
User in Singapore
Web Tier
IP: 10.20.1.1, Port: 80
Internal Load Balancing
Internal Tier
Database Tier
Google Cloud Load Balancing
asia-east-1a

VPN 通道 與 私有雲 串接



- 透過GCP上VPN的建制或SSH連線，介接內部與外部網路，達到安全性保護
- 伺服器與內部之資料庫與連線部分，則可透過VPN通道連線

ISO 27001:2005 Certified

ISO/IEC 27001:2005 Certified
& Registered Organisation (Nº 2012-001)

SLA Pricing

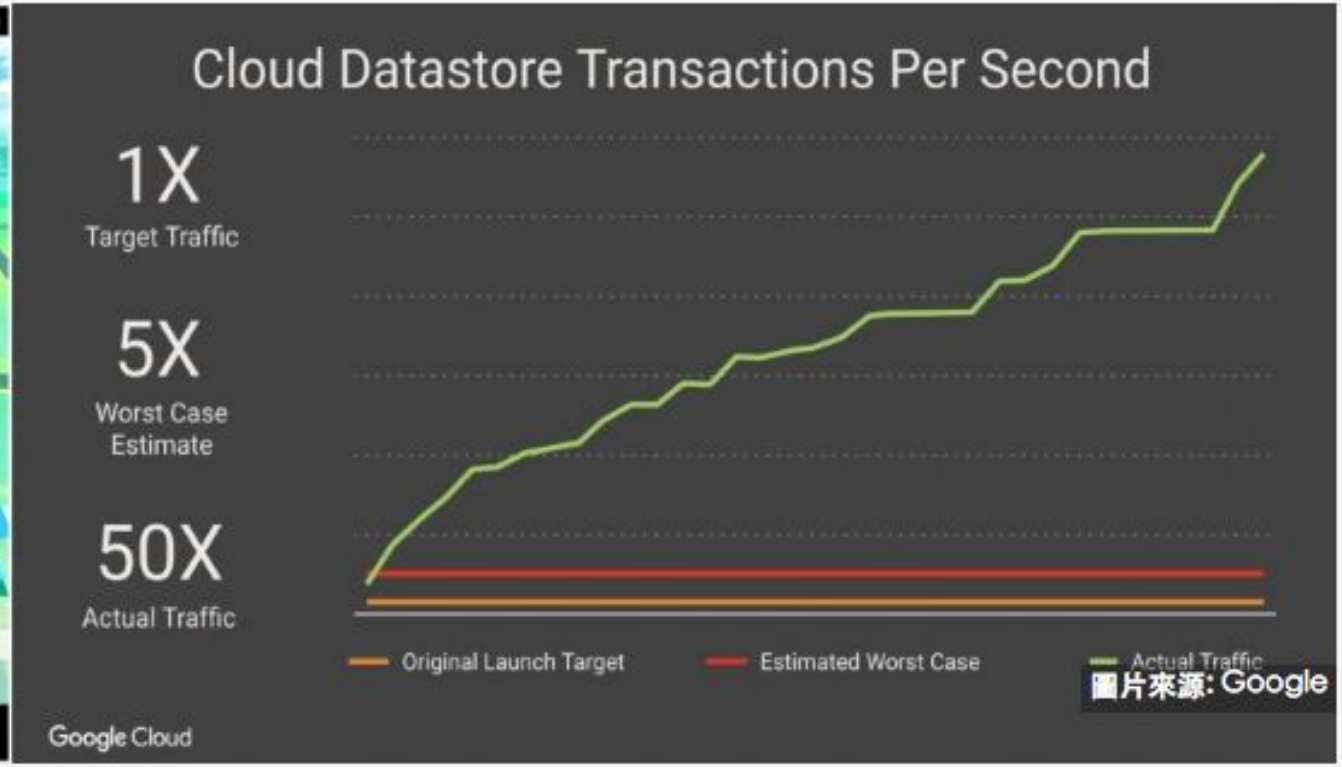
- Pay for only what you use
- 99.95% monthly SLA

新聞

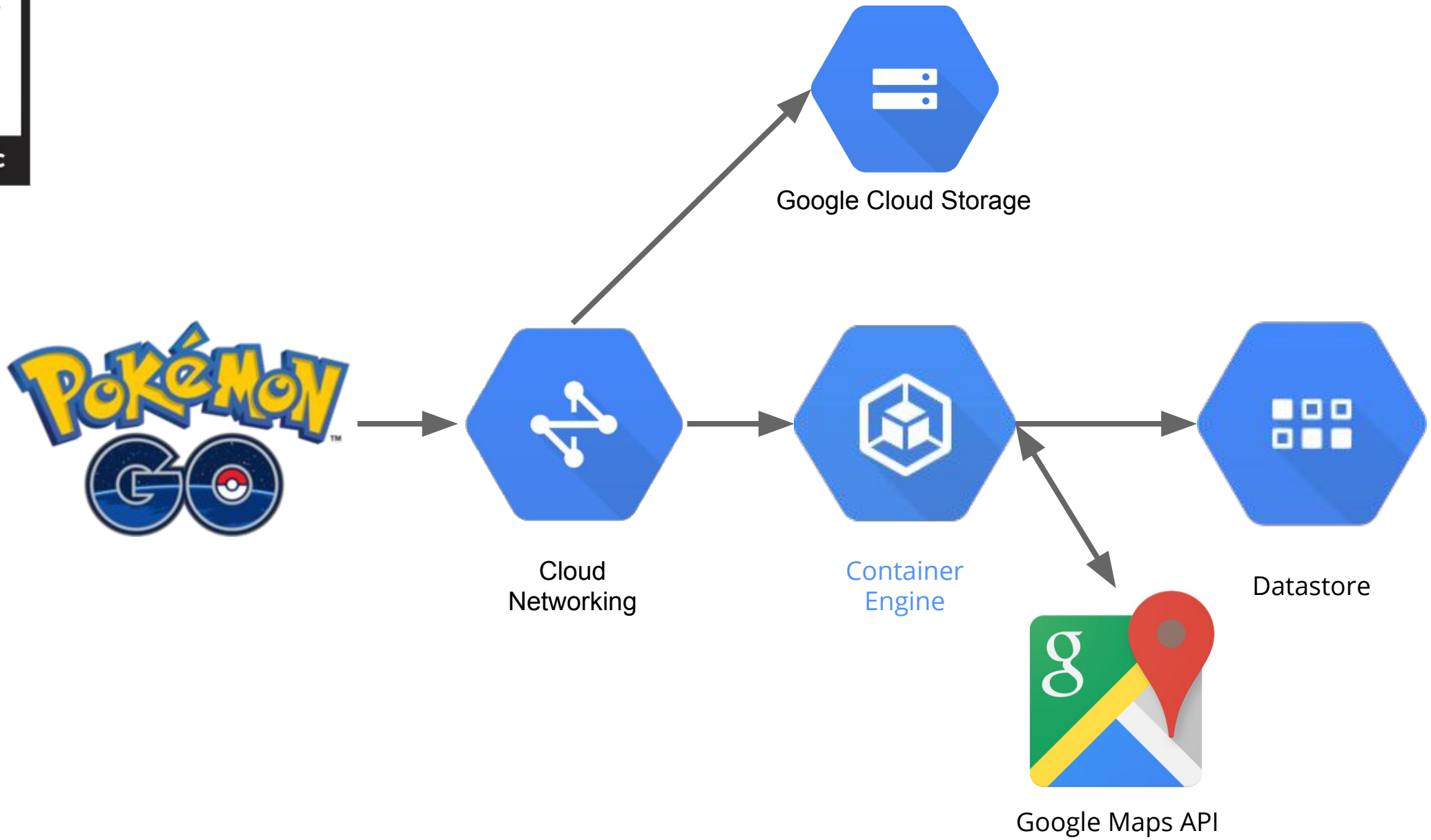
迎戰50倍爆量夢魘！Pokémon遊戲打造GCE史上最大Kubernetes叢集

Niantic用Google的Cloud Datastore資料庫服務來儲存所有玩家資料，這是架構起Pokémon遊戲世界最主要的資料庫。但在遊戲上線第一天，不到15分鐘，Cloud Datastore每秒存取次數迅速從5倍、10倍，增加到了比預期多50倍的爆量流量。

文/ 王宏仁 | 2016-09-30 發表



NIANTIC



CLOUD

Evernote migrates data to Google Cloud Platform

Alice MacGregor Wed 14 Sep 2016 4.29pm

Notes platform Evernote has announced plans to migrate its complete data infrastructure from its own servers and networks onto Google's Cloud.

In an official blog post, Ben McCormack, VP of Operations at Evernote, wrote that following

Featured article

Sites that block adblockers seem to be suffering

Latest posts

Monitoring New York poverty with Urban IoT

AWS expands European data centre reach with new French region

Building an open developer community for the financial industry


Aiming
QSearch
GOTV
AVAYA
appogee
jda.
Plan to deliver™
行政院環境保護署
Environmental Protection Administration
Executive Yuan,R.O.C(Taiwan)
oscar
DeNA
htc
brightcove
zync
癌客邦 PIXNET
Warburtons
DATASTAX
Office DEPOT
ezakus
Crate&Barrel
acer
feedly
Coca-Cola
TiVo
broadleaf commerce
AzaliaBANKS
evite
PHILIPS
UBISOFT
accuen
adcash
U.S. Cellular
KAPLAN
KHAN ACADEMY
Audi
Maidigi Solutions Inc.
just develop it
vimeo
SONY MUSIC
CANACCORD Genuity
UDACITY
CITRIX
ATOMIC FICTION
ocado technology
Met Office
Heathrow
Applibot
NEWS LIMITED
SUNGARD
pulse
ROVIO
BEST BUY
shutterfly
MOTOROLA
R/GA
AUTISM SPEAKS
zulily
SulAmérica
BuzzFeed
WIX
Groovenauts

Google Cloud Platform

IOT

Introduction to **CLOUD IOT CORE**

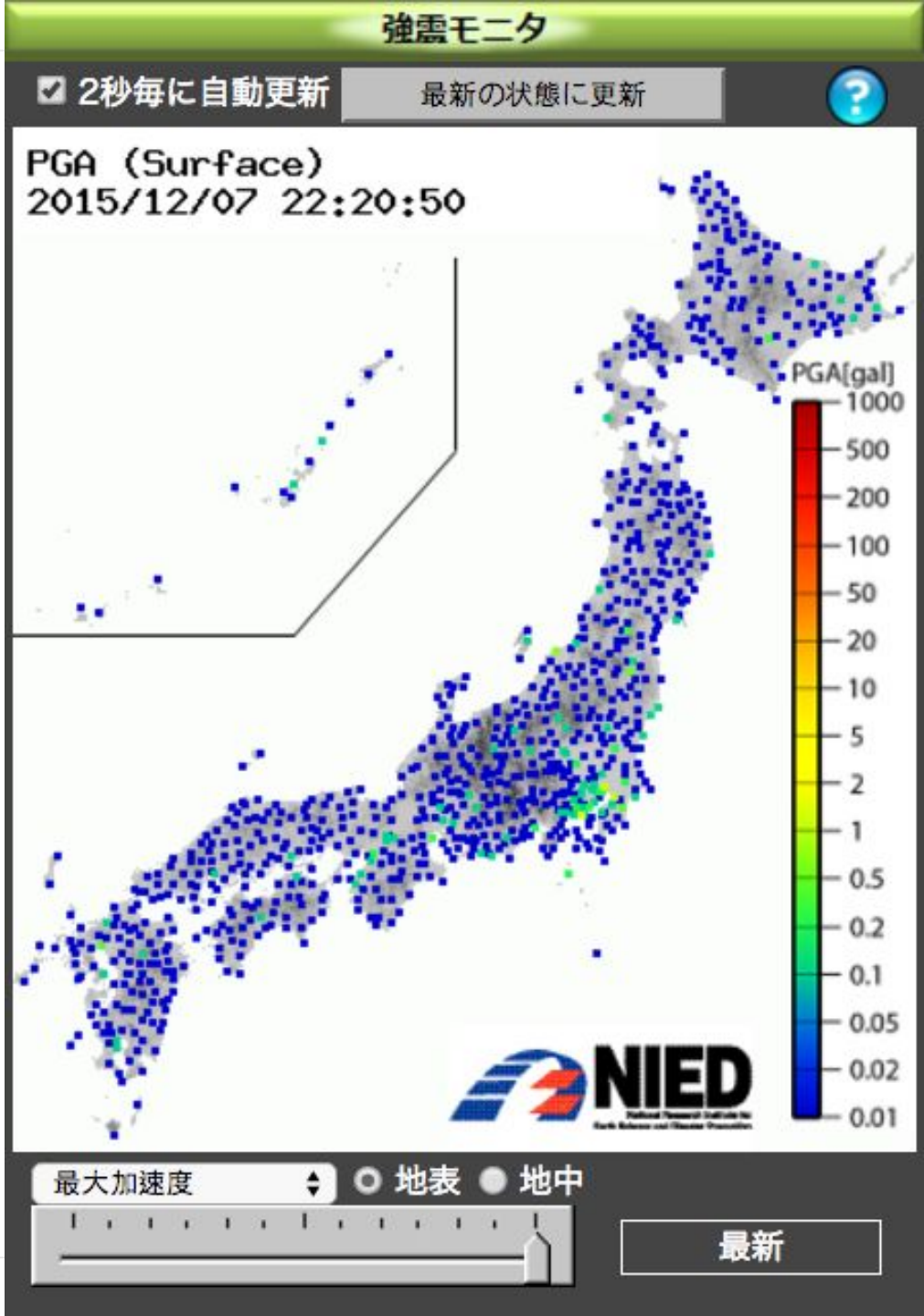
Old Story

- IOT since 2010
- 日本全國即時地震App

全日本上千個地震觀測點每2秒鐘即時把地震強度以圖型方式發送到GAE

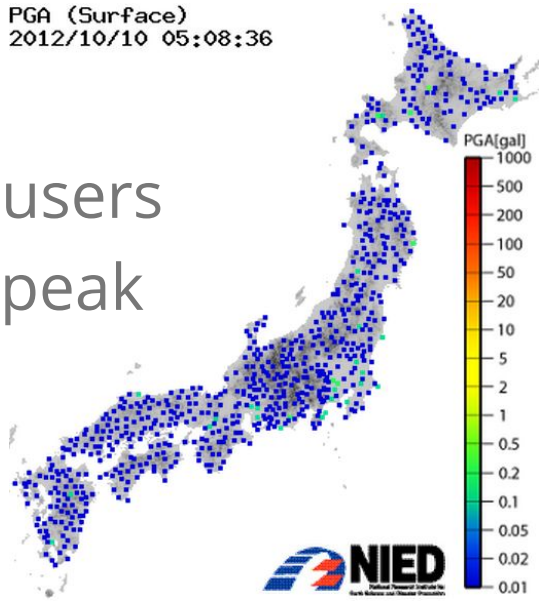
參考網址 : *http://realtime-earthquake-monitor.appspot.com/*

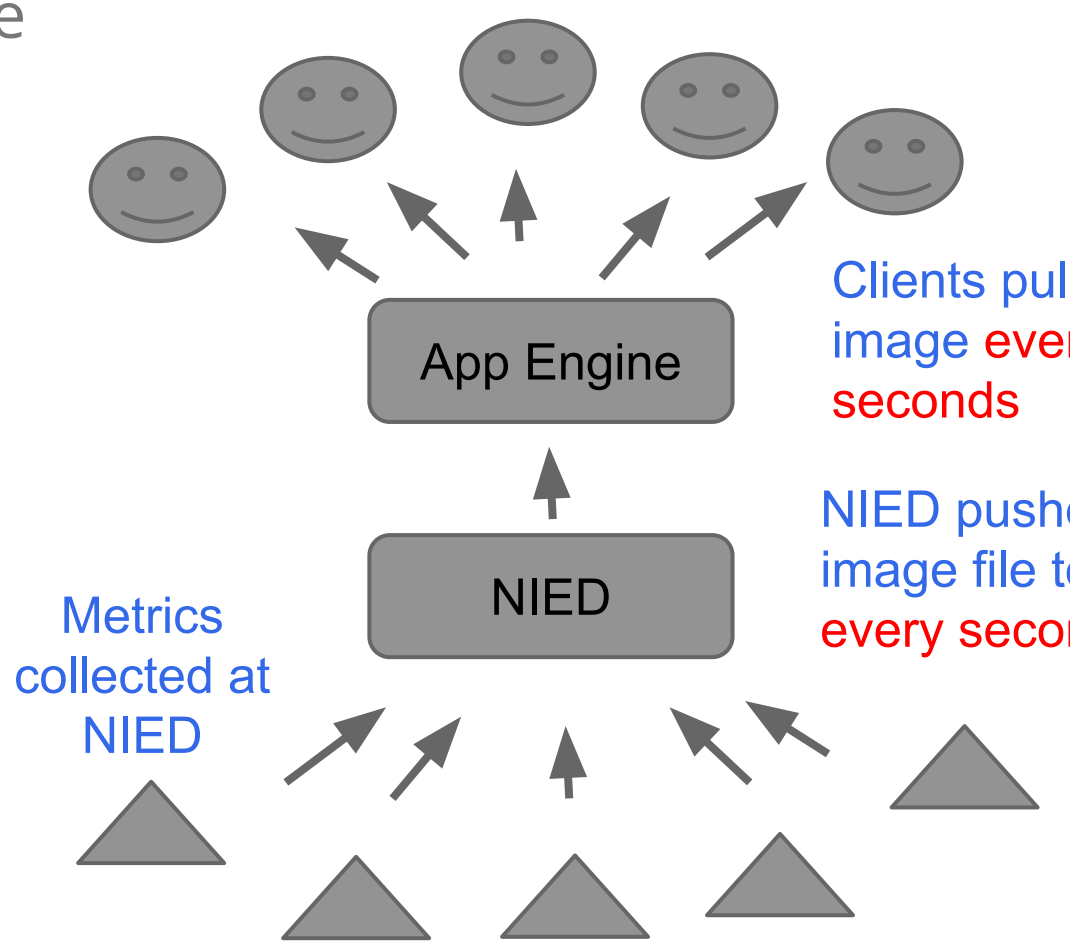
https://youtu.be/C-CM0maeS7Q



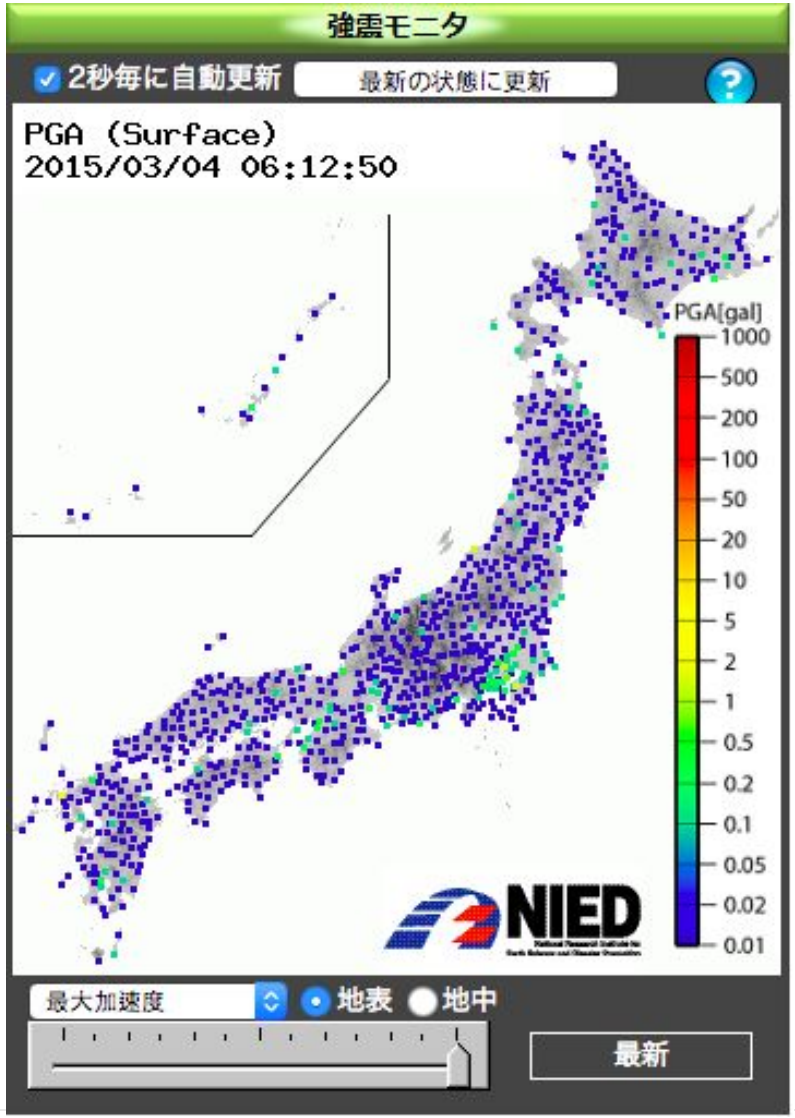
Use Case - Real Time Earthquake Monitor

- GAE Web App By NIED Japan + Google
  - National research Institute for Earth science and Disaster prev.
  - The blinking dots represents **real time Peak Ground Acceleration**
- YouTube video How it worked at the March 11, 2011 earthquake
- 20,000 concurrent users
  10,000 reqs/sec at peak

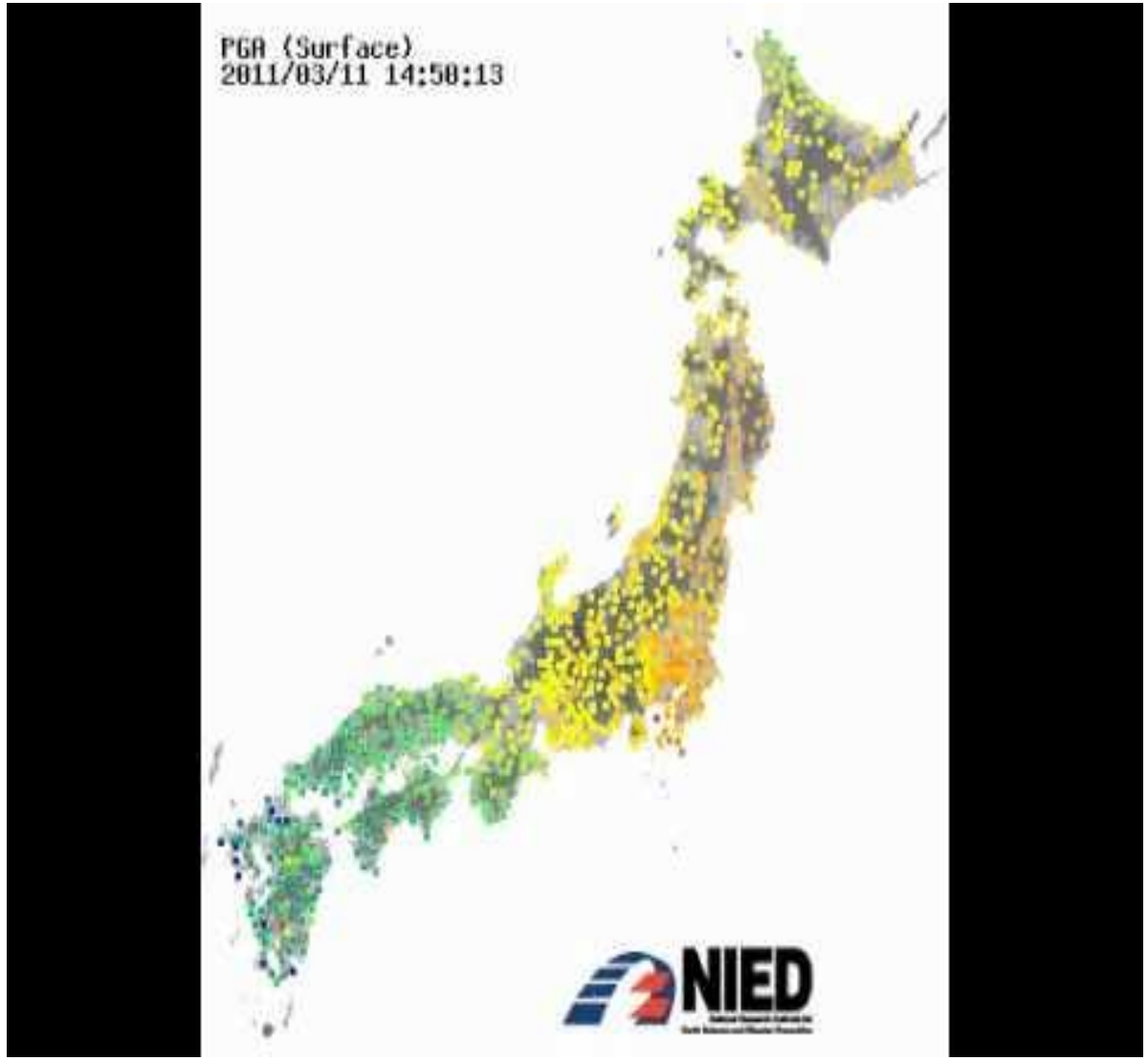




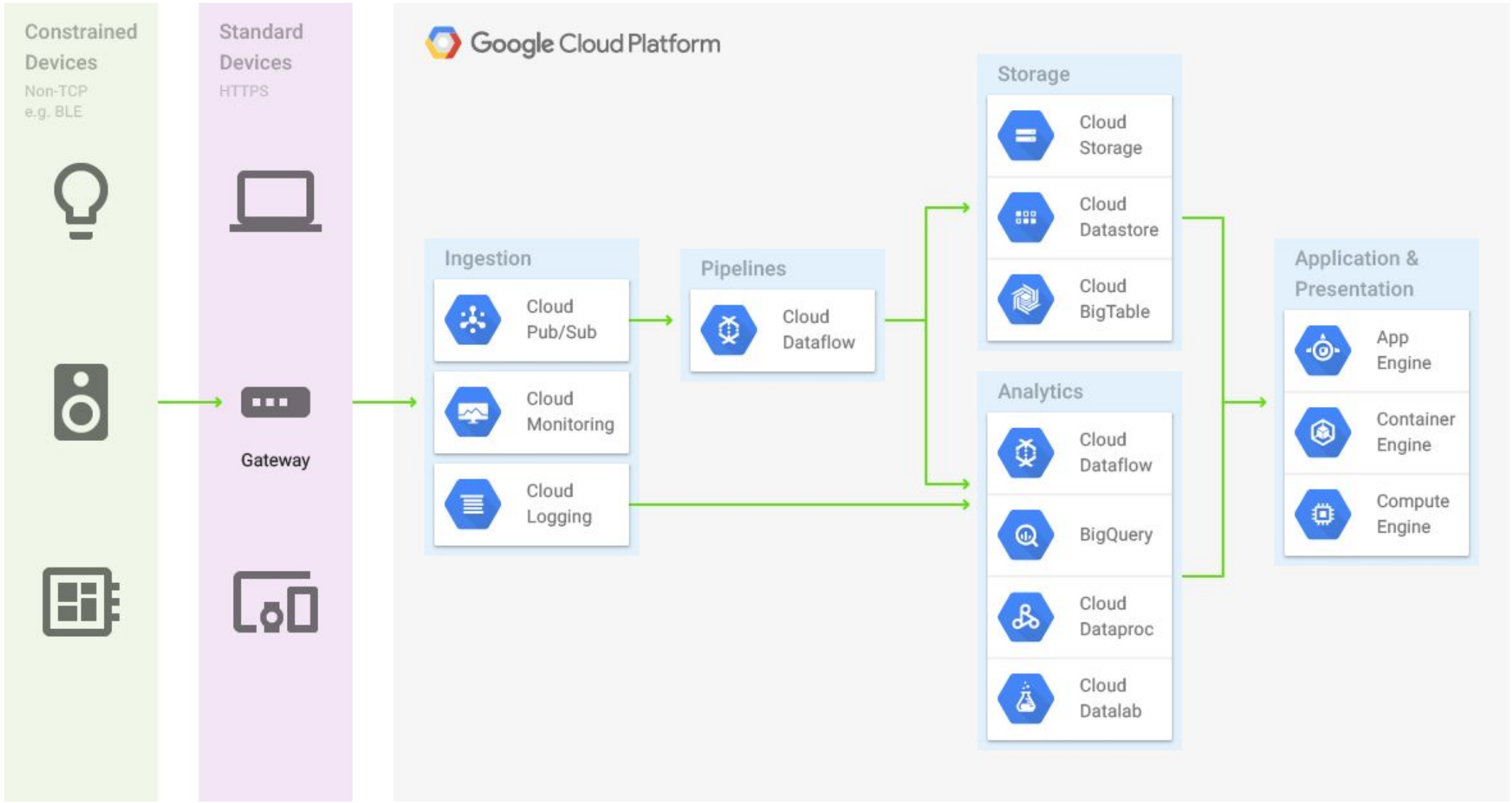
日本全國強震即時監控網站



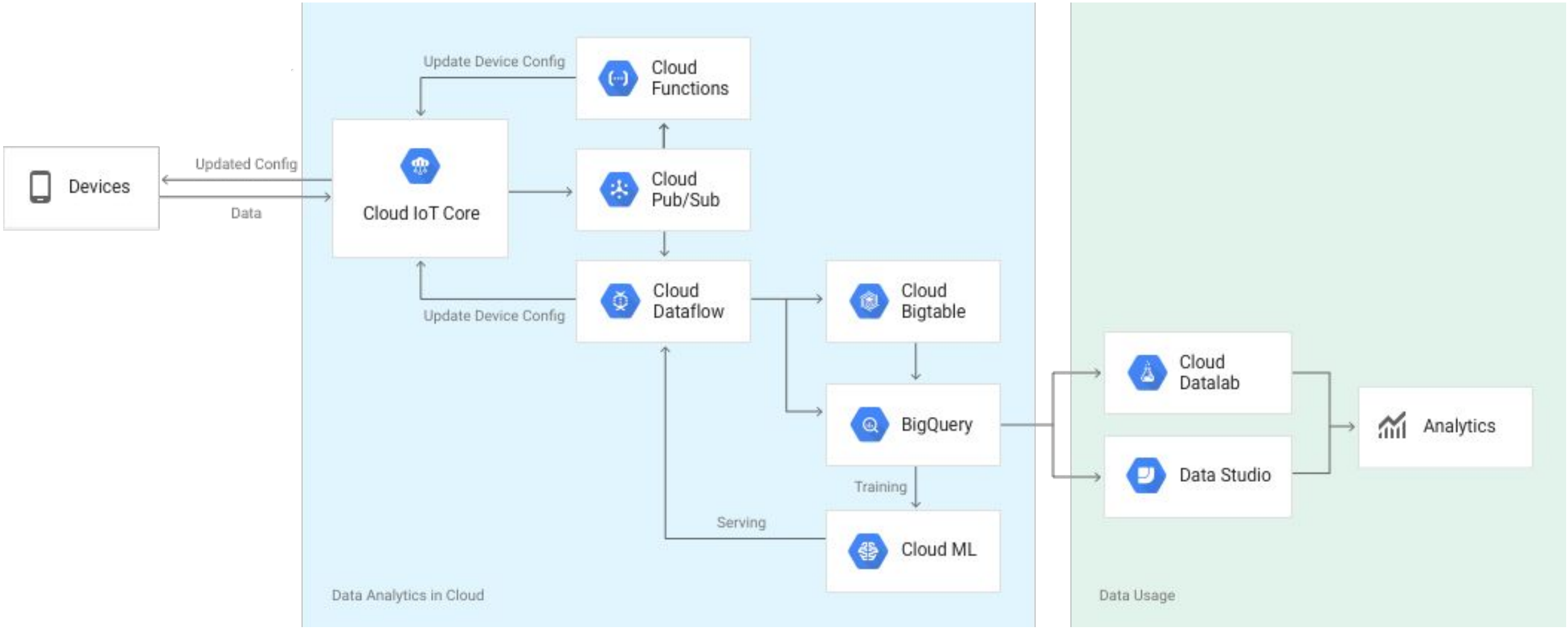
2011/03/11日本海嘯



What News in 2016

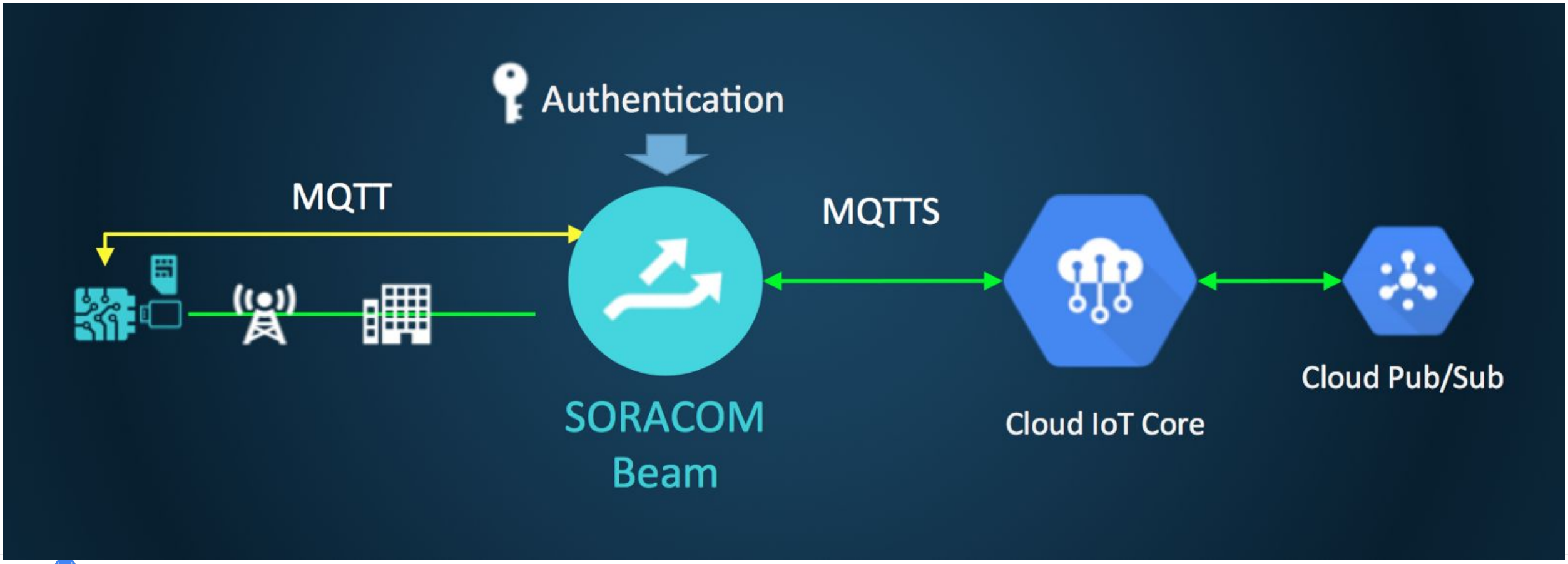


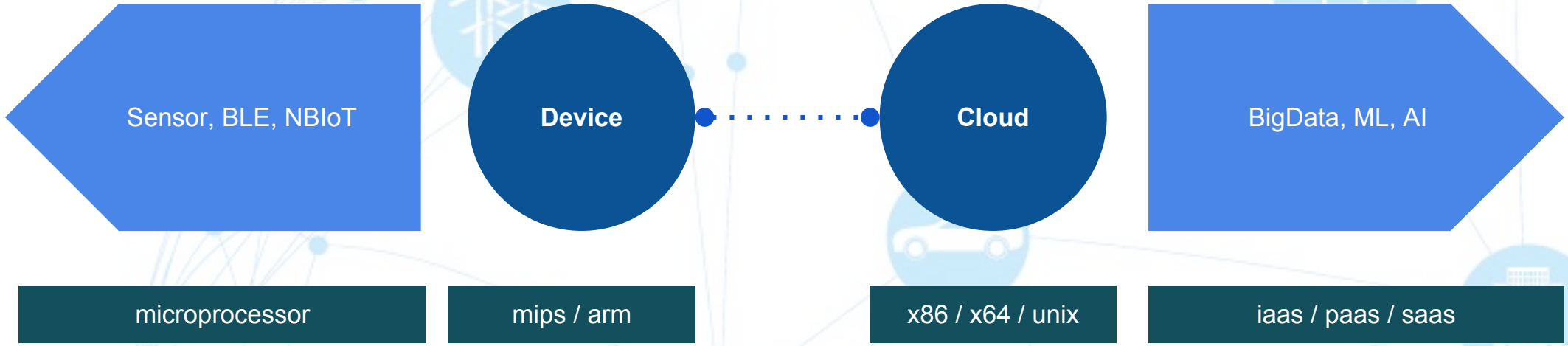
What News in 2017



What News in 2017

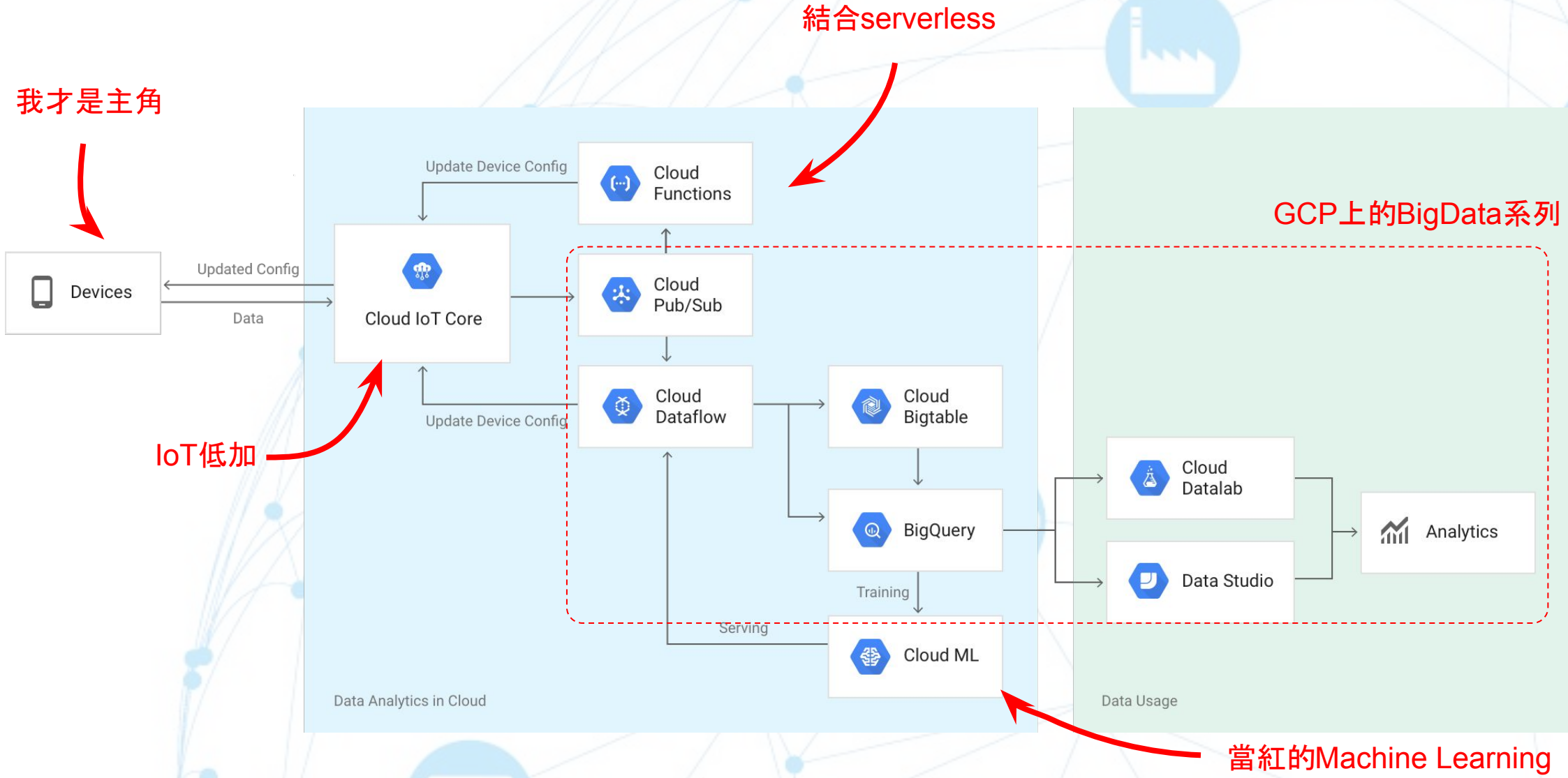
SORACOM announces new integration with Google Cloud Platform




Sensor, BLE, NBIoT
Device
Cloud
BigData, ML, AI
microprocessor
mips / arm
x86 / x64 / unix
iaas / paas / saas

- Connectivity: Async, Sync
- Install & Upgrade: Container, Package
- AI / ML

- Remote Control / Managment
- Data Cache: Queue
- Data Process: Batch, Streaming
- Data Store: Object Store, Data Query
- BI: Report, Business Integration
- AI / ML

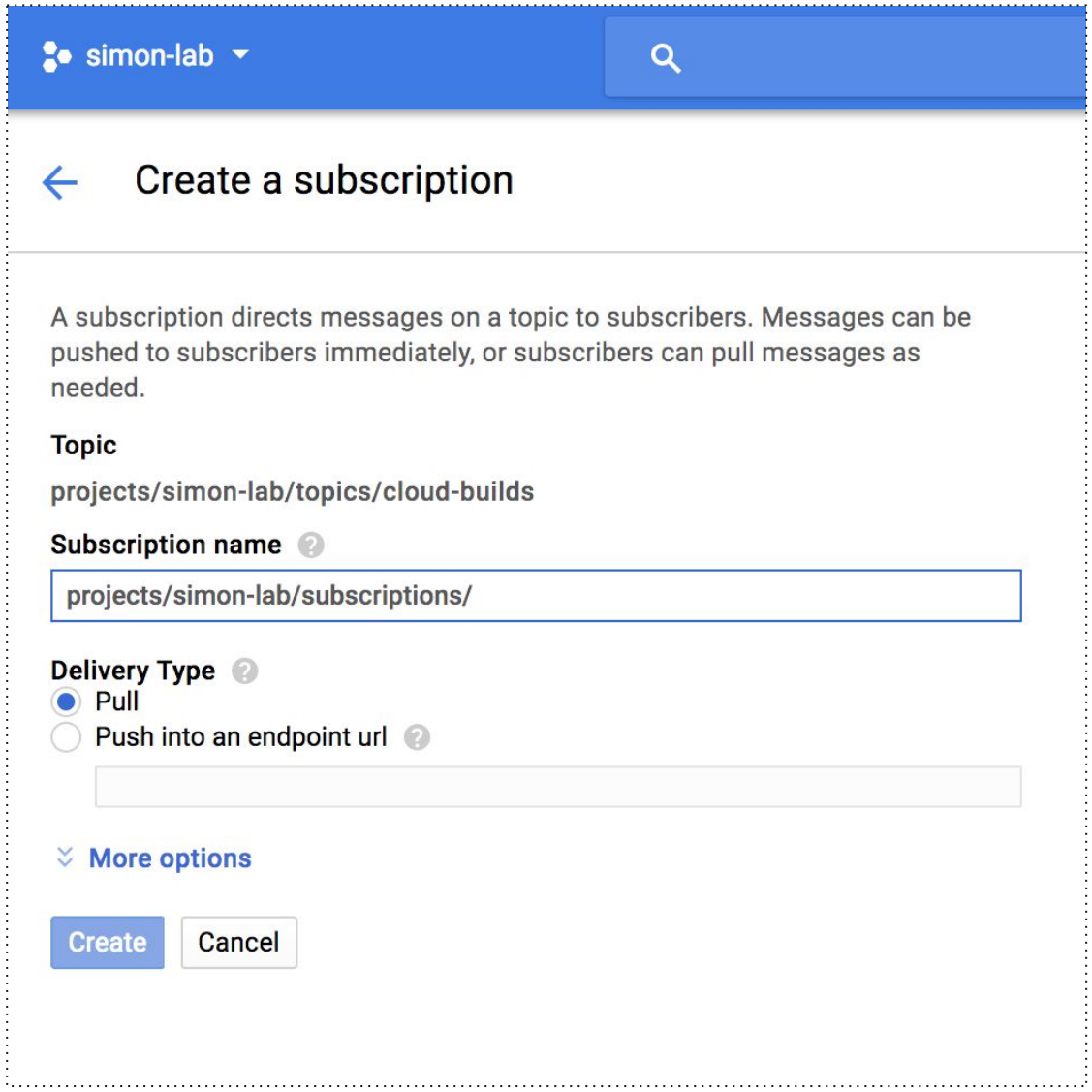


從Google IoT架構看看Google Cloud Platform上的IoT Family

Cloud PubSub

- Deliver event data wherever you need it
- Build multi-cloud and hybrid applications on open architecture
- Scale responsively and automatically
- Bring reliability and security tools to real-time apps

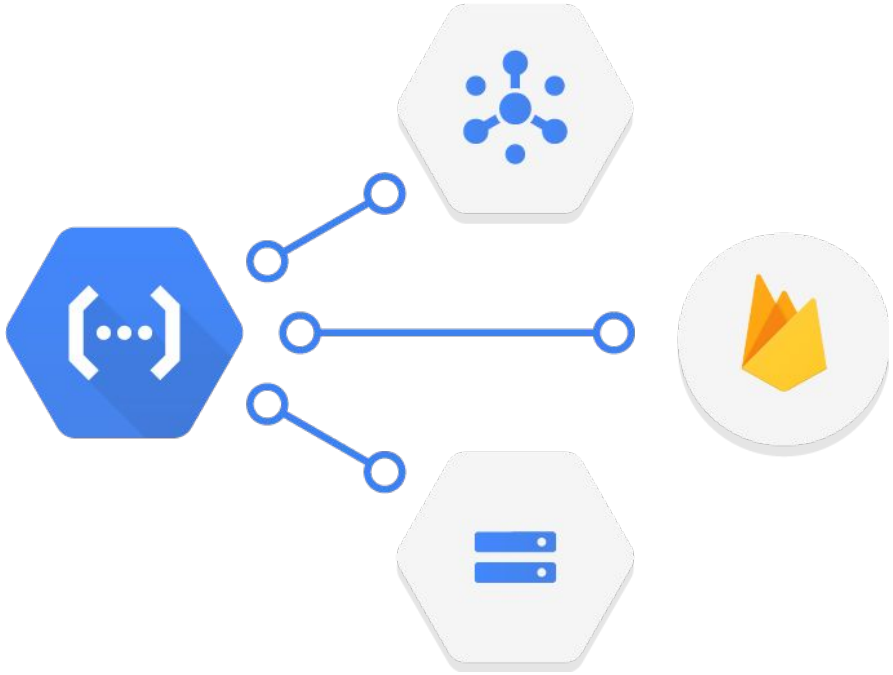
Cloud PubSub




```
subscription.pull(options, function (err, messages) {
  if (err)  return callback(err);

  // Do something for each message
  messages.forEach(handleMessage);
  console.log('Pulled %d messages!', messages.length);

  // Acknowledge messages
  var subscription = pubsub.subscription(subscriptionName);

  if(messages && messages.length > 0)
  subscription.ack(messages.map(function (message) {
    return message.ackId;
  }), function (err) {
    if (err) {
      return callback(err);
    }

    console.log('Acked %d messages!', messages.length);
    return callback(null, messages);
  });
});
```

Repo: https://github.com/gcpug-tw/pubsub-example.git

Cloud Function



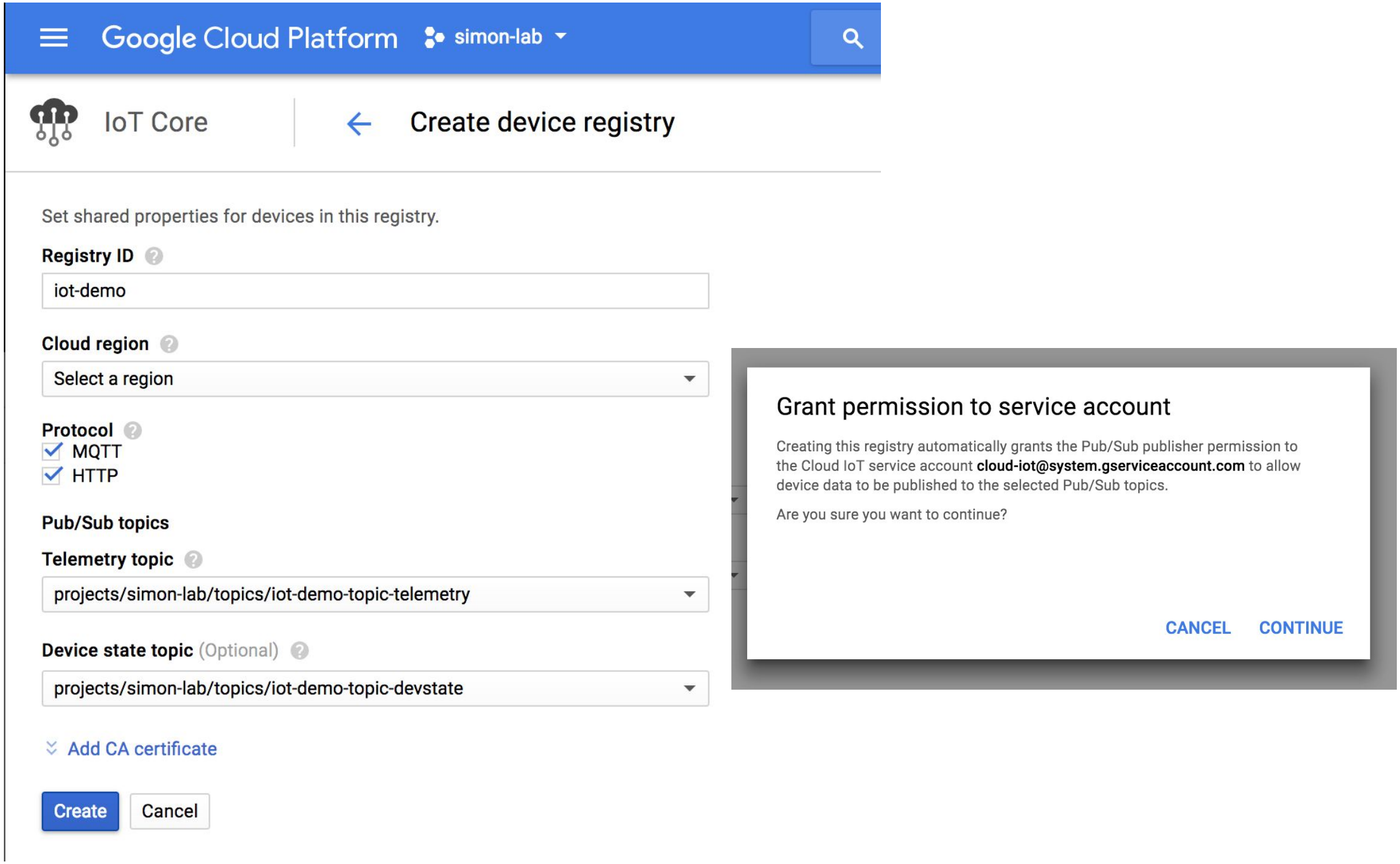
- Microservices Over Monoliths
- Connect & Extend Cloud Services
- Serverless Economics
- Mobile Ready
- Just Add Code
- Open and Familiar

BigQuery

- Enterprise Cloud Data Warehouse
- Speed & Scale
- Incredible Pricing
- Security & Reliability
- Partnerships & Integrations

Google Cloud - IoT Core

- Make informed decisions at Global Scale
- Securely connect your existing device network
- Establish two-way communication with your devices
- Get straight to work


Google Cloud Platform
simon-lab
IoT Core
Create device registry
Set shared properties for devices in this registry.
Registry ID
iot-demo
Cloud region
Select a region
Protocol
MQTT
HTTP
Pub/Sub topics
Telemetry topic
projects/simon-lab/topics/iot-demo-topic-telemetry
Device state topic (Optional)
projects/simon-lab/topics/iot-demo-topic-devstate
Add CA certificate
Create
Cancel
Grant permission to service account
Creating this registry automatically grants the Pub/Sub publisher permission to the Cloud IoT service account cloud-iot@system.gserviceaccount.com to allow device data to be published to the selected Pub/Sub topics.
Are you sure you want to continue?
CANCEL
CONTINUE

Google Cloud Platform

Big Data

Introduction to Big Data on Google Cloud

Google Cloud Offerings

Management	Compute	Storage	Networking	Data	Machine Learning
STACKDRIVER	COMPUTE ENGINE	CLOUD STORAGE	VIRTUAL NETWORK	BIGQUERY	CLOUD ML
IDENTITY AND ACCESS MANAGEMENT	PREEMPTIBLE VMS	NEARLINE	LOAD BALANCING	DATAFLOW	SPEECH API
	CUSTOM MACHINE TYPES	CLOUD SQL	CDN	DATAPROC	VISION API
	APP ENGINE	DATASTORE	DNS	DATALAB	TRANSLATE API
	CONTAINER ENGINE	BIGTABLE	INTERCONNECT	PUB/SUB	NATURAL LANGUAGE API

Manage the Entire Lifecycle of Big Data

Capture

Pub/Sub

Store

Google Cloud Storage

BigTable

Cloud Spanner*

Cloud Memorystore*

Process

Dataflow

Dataproc

Cloud Dataprep*

Analyze

BigQuery

Cloud Datalab

* Pre Beta

Common building blocks

Capture

Process

Store

Analyze

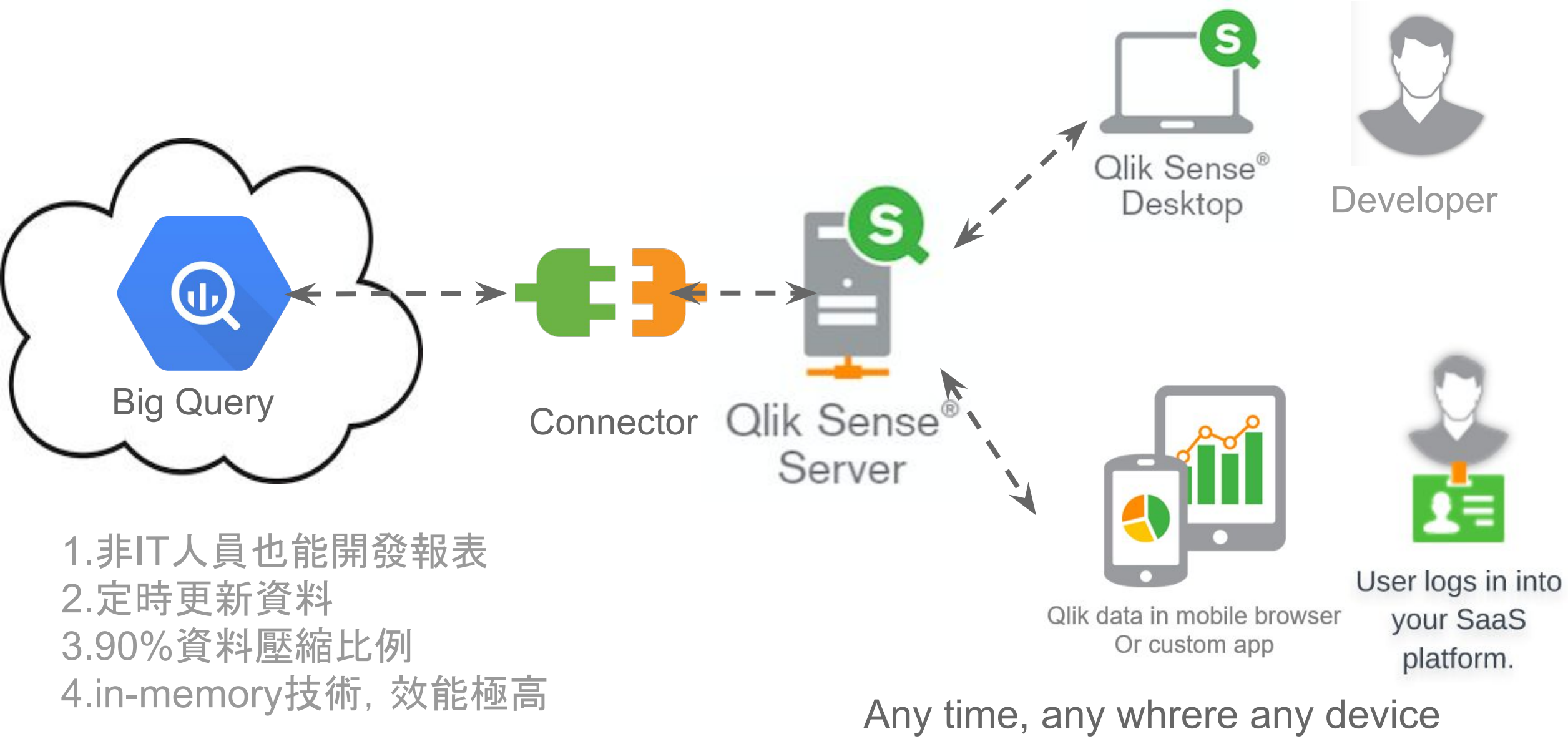
Use

Act on insight

Bring information to decision maker
Visualization

Close-loop feedback
Drive app/device actions from analytics results

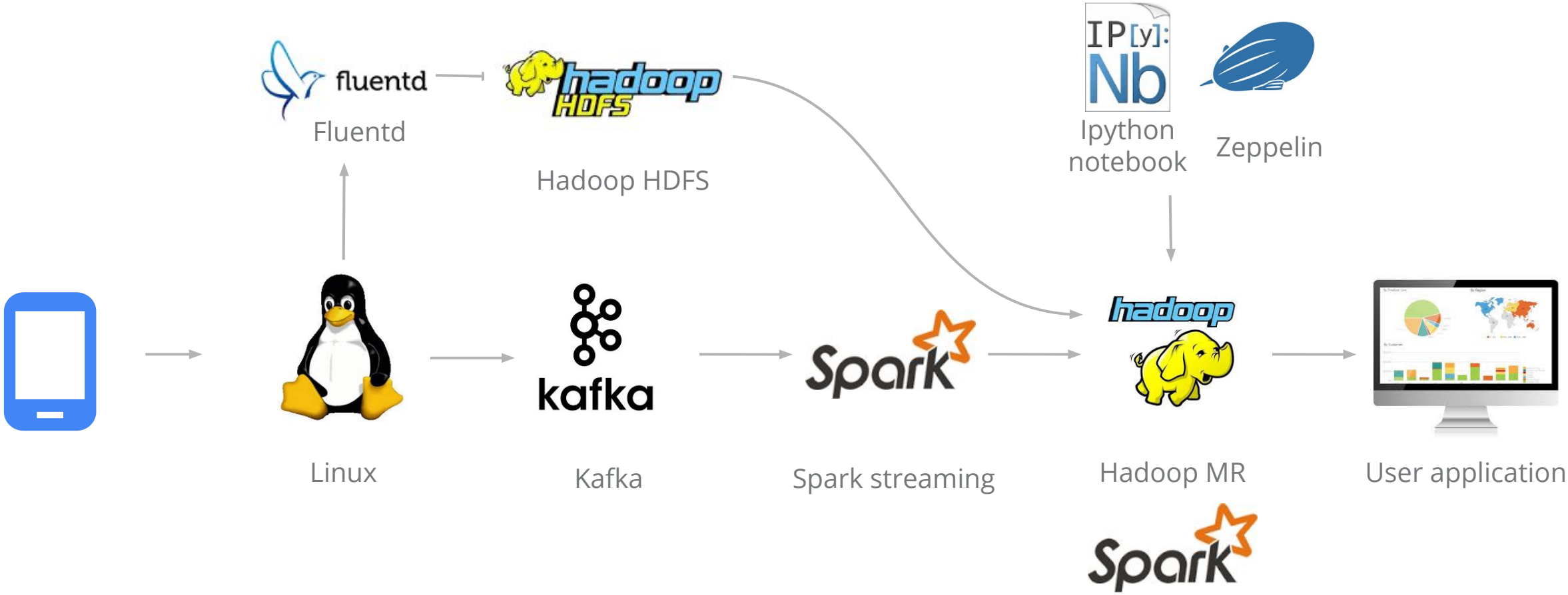
Qlik Sense 行動化即時儀表版



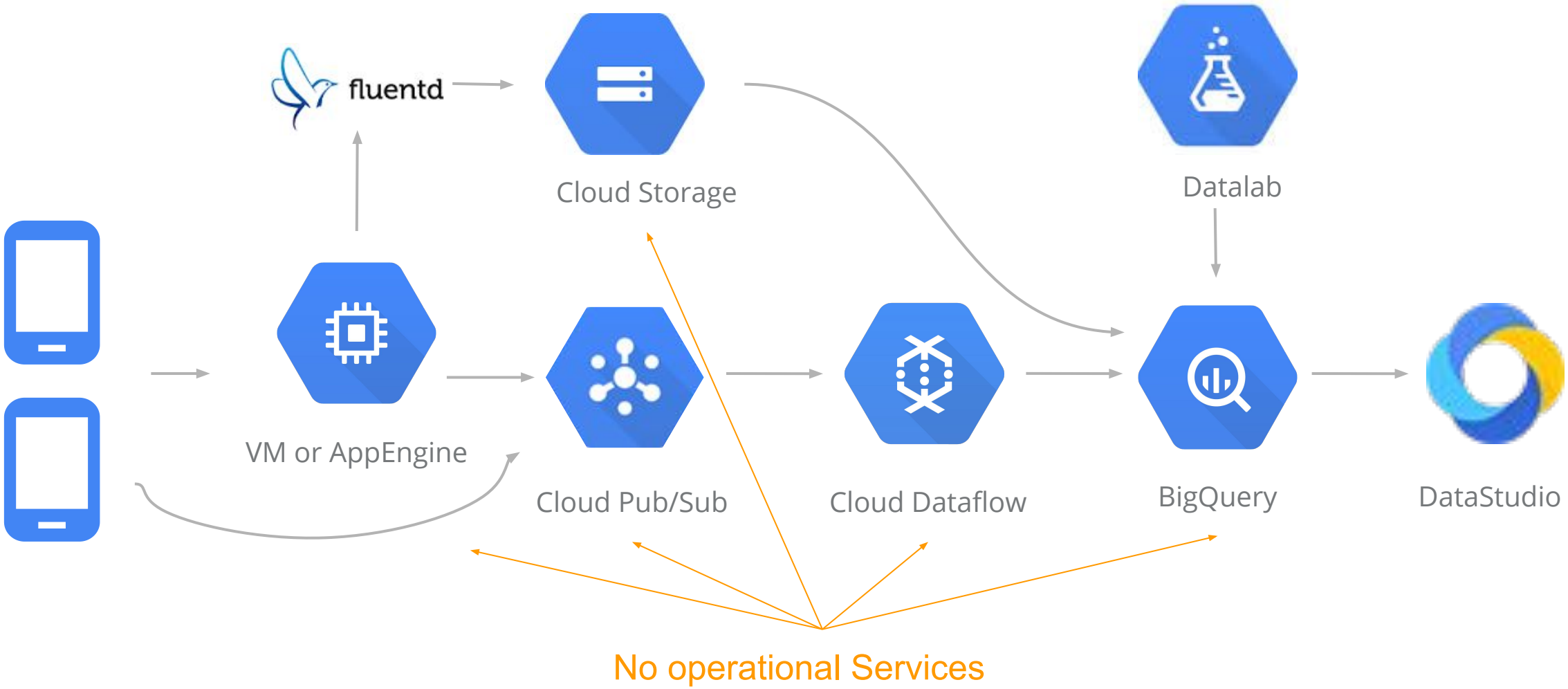
1.非IT人員也能開發報表
2.定時更新資料
3.90%資料壓縮比例
4.in-memory技術，效能極高

Any time, any whrere any device

Open source based Big Data reference architecture



Google cloud based reference architecture



Google Cloud Platform

Machine Learning

Introduction to ML on Google Cloud

Google Cloud OnBoard

Ready to use Machine Learning models

Cloud Vision API

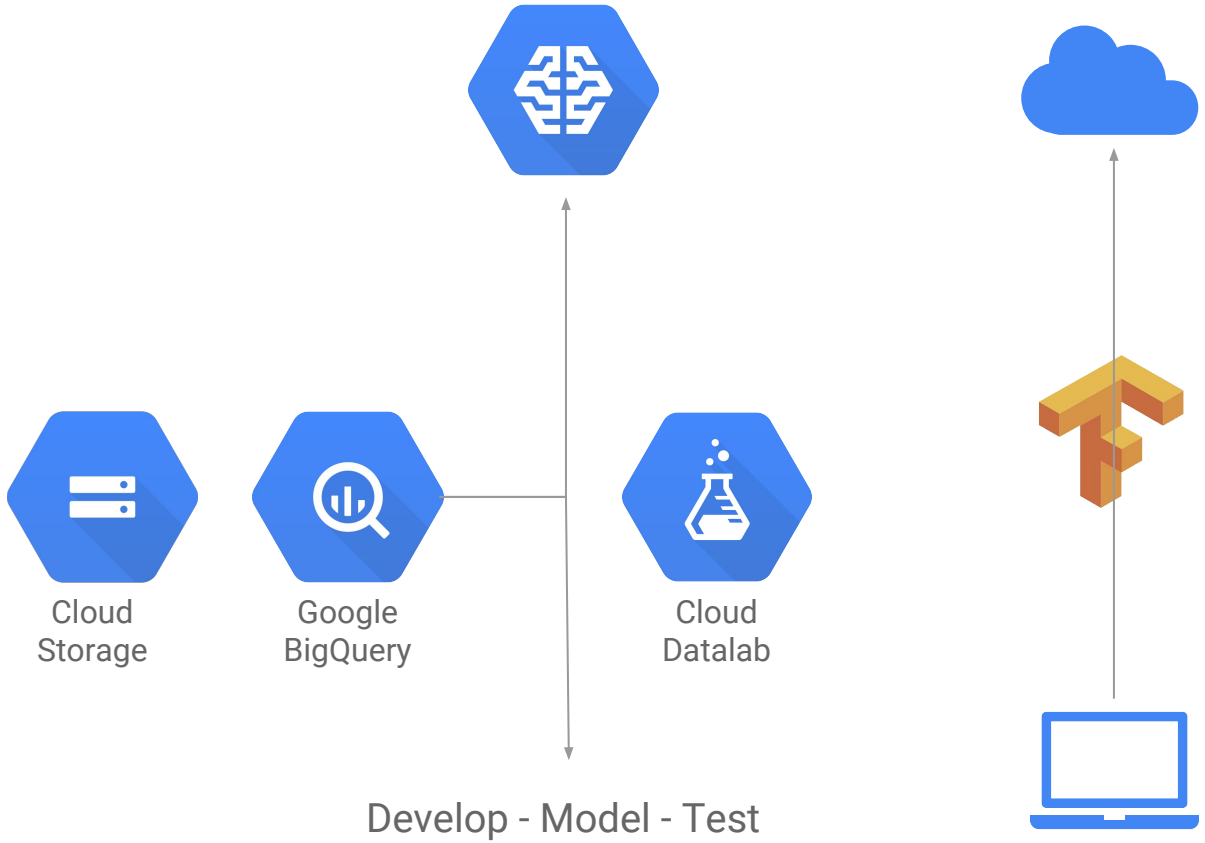
Cloud Speech API

Cloud Translation API

Cloud Natural Language API

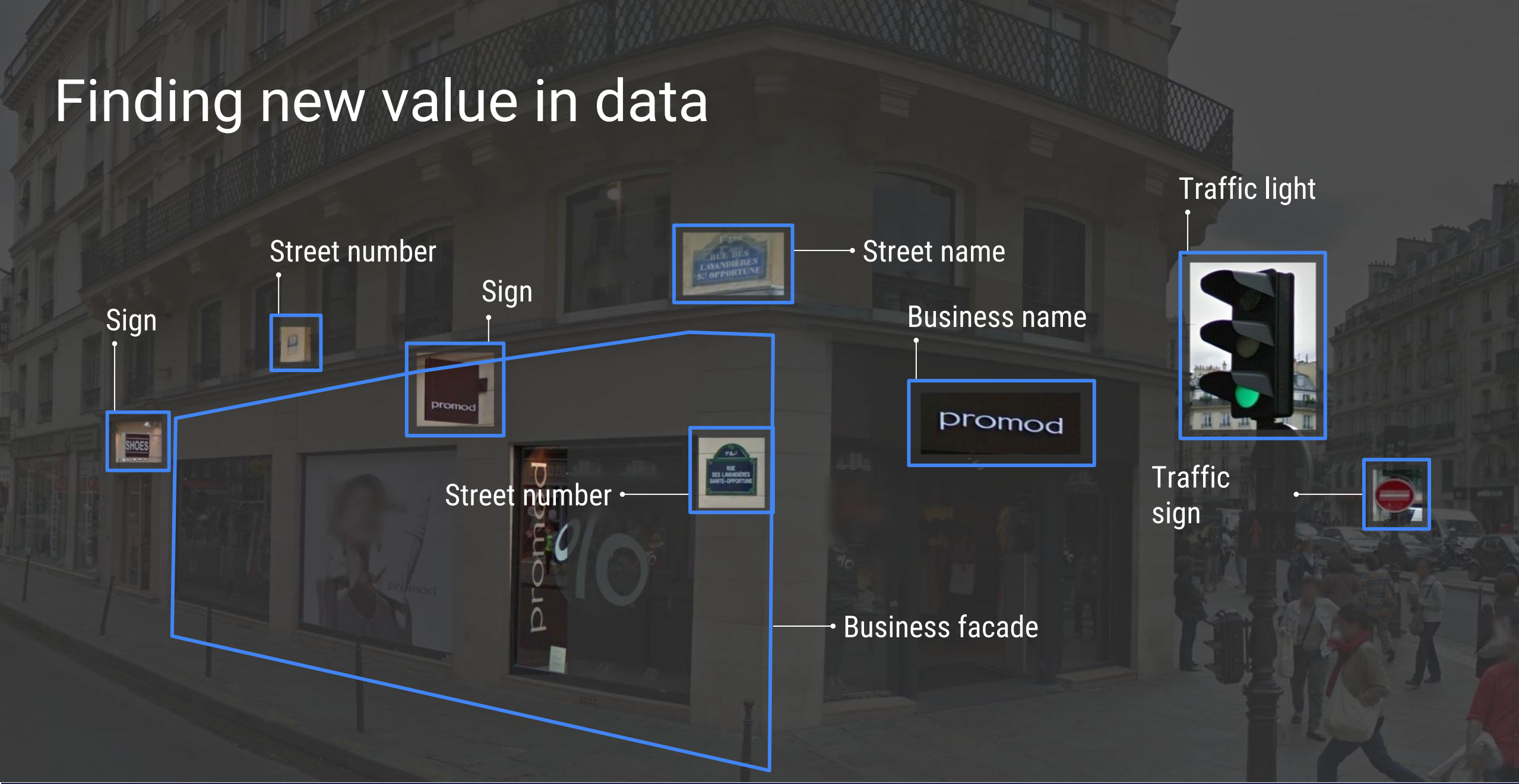
Cloud Video Intelligence

Use your own data to train models




Street View - Apr 2016
promod
promod
promod
CELIOCLUB

Finding new value in data



一位日本小黃瓜農夫如何使用GCP ML 及TensorFlow

How a Japanese cucumber farmer is using deep learning and TensorFlow

沒有錯，真的是小黃瓜的故事：Pushing the limits of deep learning

深度學習的挑戰是消耗大量的計算能力。目前的分揀機使用典型 Windows桌面PC來訓練神經網絡模型。雖然它將黃瓜圖像轉換成80 x 80像素的低分辨率圖像，但仍需要兩到三天才能完成7000張圖像的訓練。

Makoto解釋說：“即使是低分辨率的圖像，也只能根據形狀，長度和變形程度對黃瓜進行分類，不能識別顏色，質地，划痕和刺戳。通過放大黃瓜來增加圖像分辨率會導致更高的準確性，但也會顯著增加訓練時間。

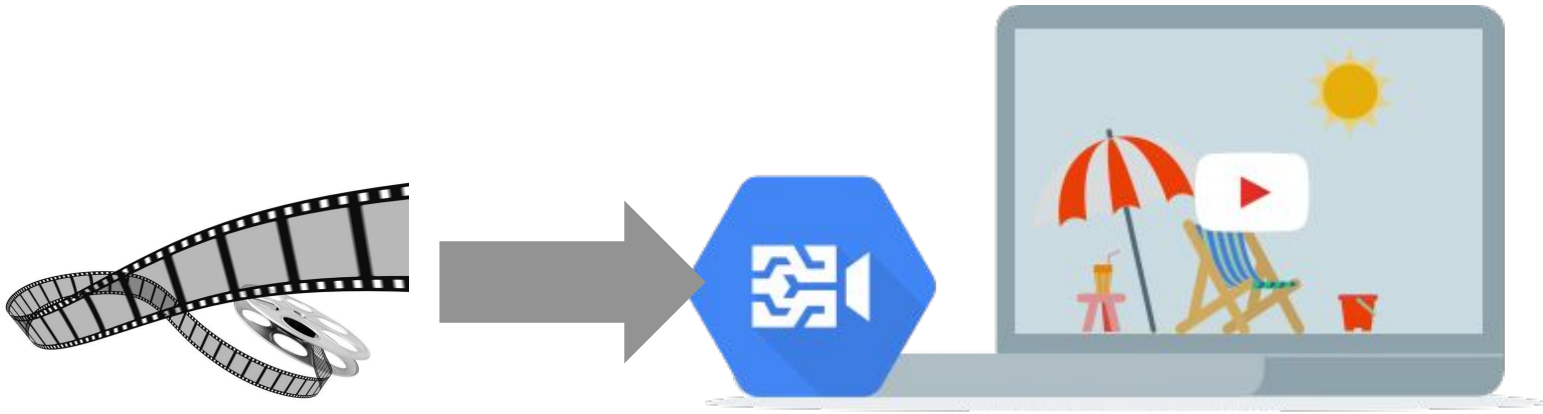
為了提高深度學習，一些大型企業已經開始進行大規模分散運算，但這些伺服器的成本很高。Google提供雲計算機學習（Cloud ML），這是一種低成本的雲平台，用於培訓和預測，專門用數百台雲服務器來培訓我TensorFlow網絡。借助Cloud ML，Google可以為分佈式培訓構建一個大型集群，您只需支付您使用的費用，便於開發人員在不花大量資金投入的情況下嘗試深入學習。

一位日本小黃瓜農夫如何使用GCP ML 及TensorFlow

How a Japanese cucumber farmer is using deep learning and TensorFlow

雲端影音智慧(Cloud Video Intelligence API)

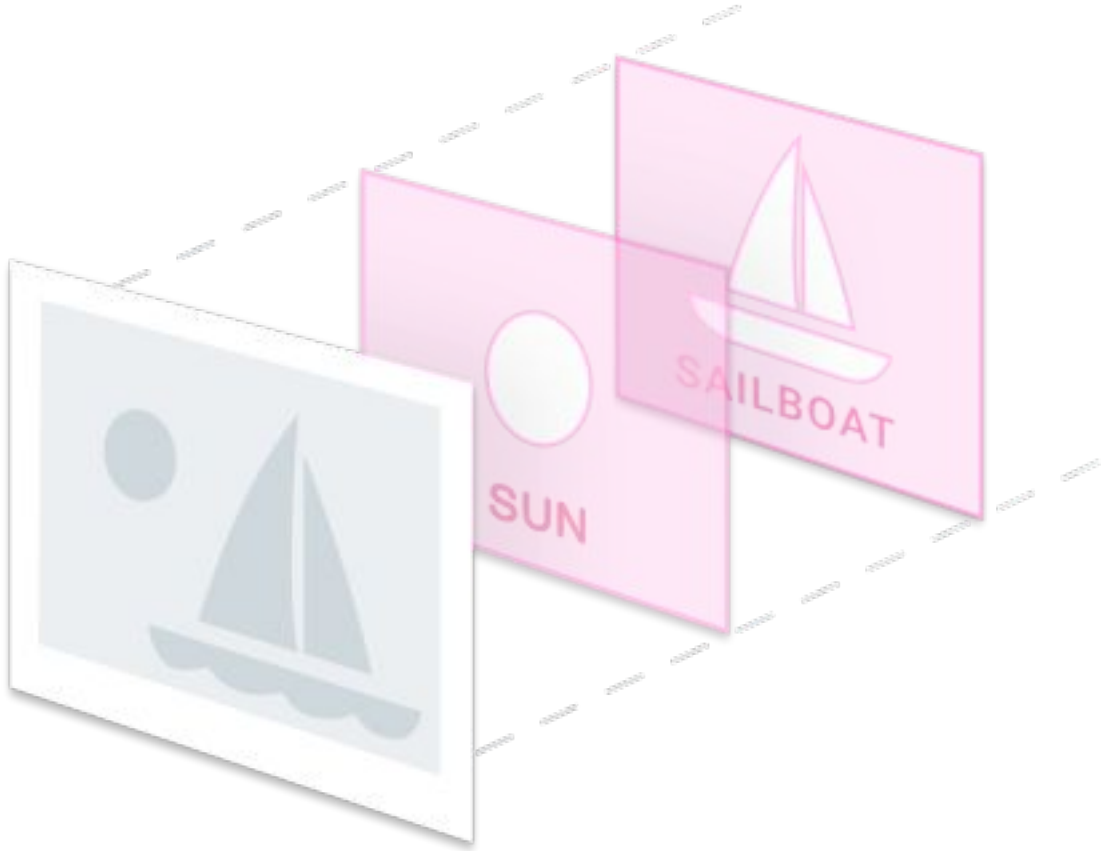
- 分析影片場景
- 影片標籤分類
- 搜尋物件位置
- 管理大量影音



https://cloud.google.com/video-intelligence/#demo

Cloud Vision API

- 了解圖片內容
- 偵測圖中物件
- 尋找來源網站
- 圖片文字辨識

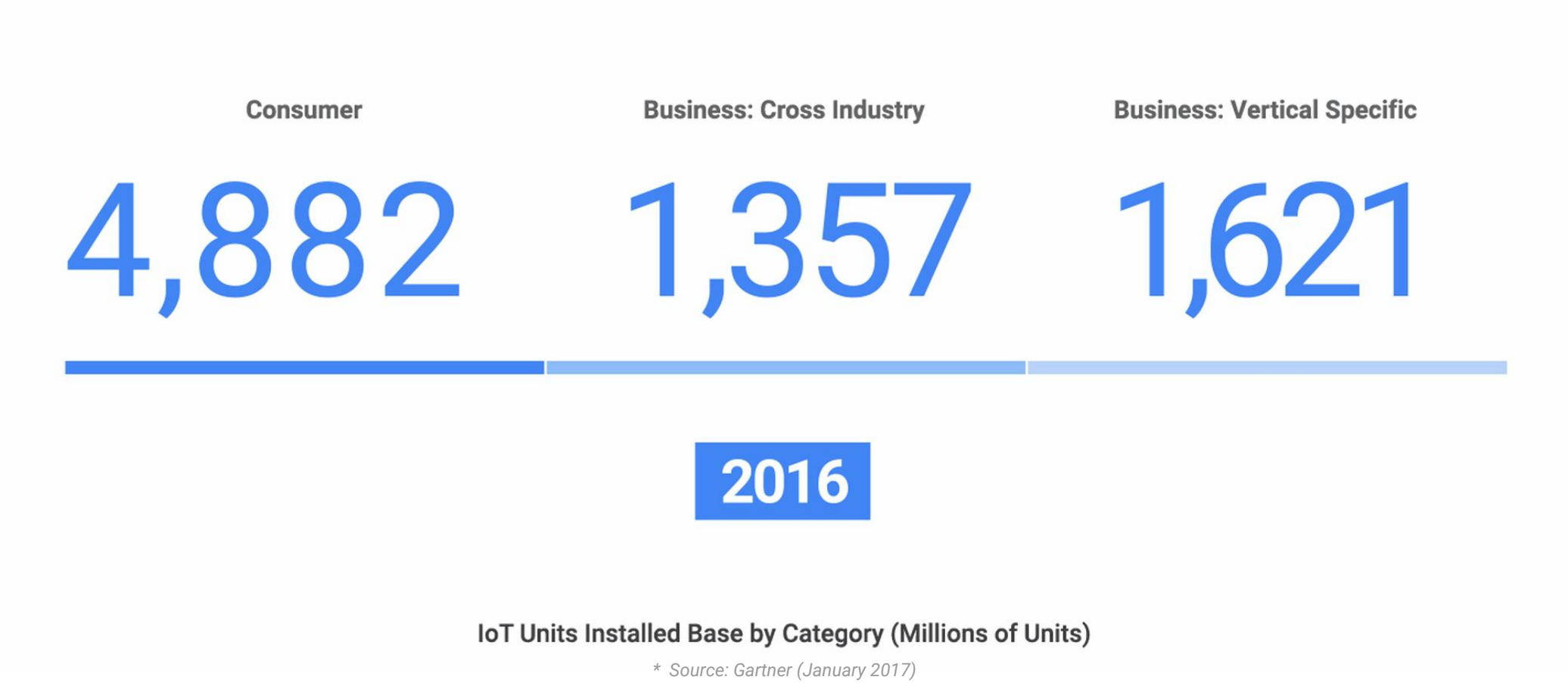


https://cloud.google.com/vision/

Building Machine Learning Platform for IOT

Google Cloud

From everyday things to every type of thing



IoT Units Installed Base by Category (Millions of Units)

* *Source: Gartner (January 2017)*

Google Cloud

Google Cloud IoT

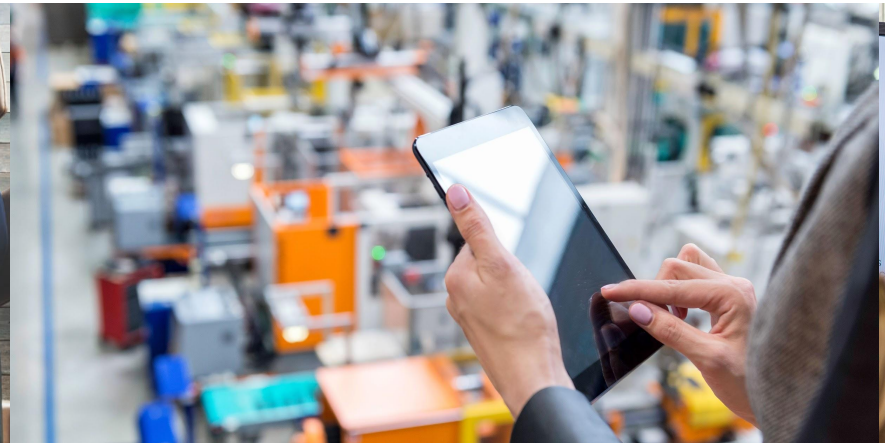
Connected things that are learning

Connected things

Big data

Machine learning

IOT: three main drivers for the business



Reduce risk

Better understanding of what is happening to get more visibility

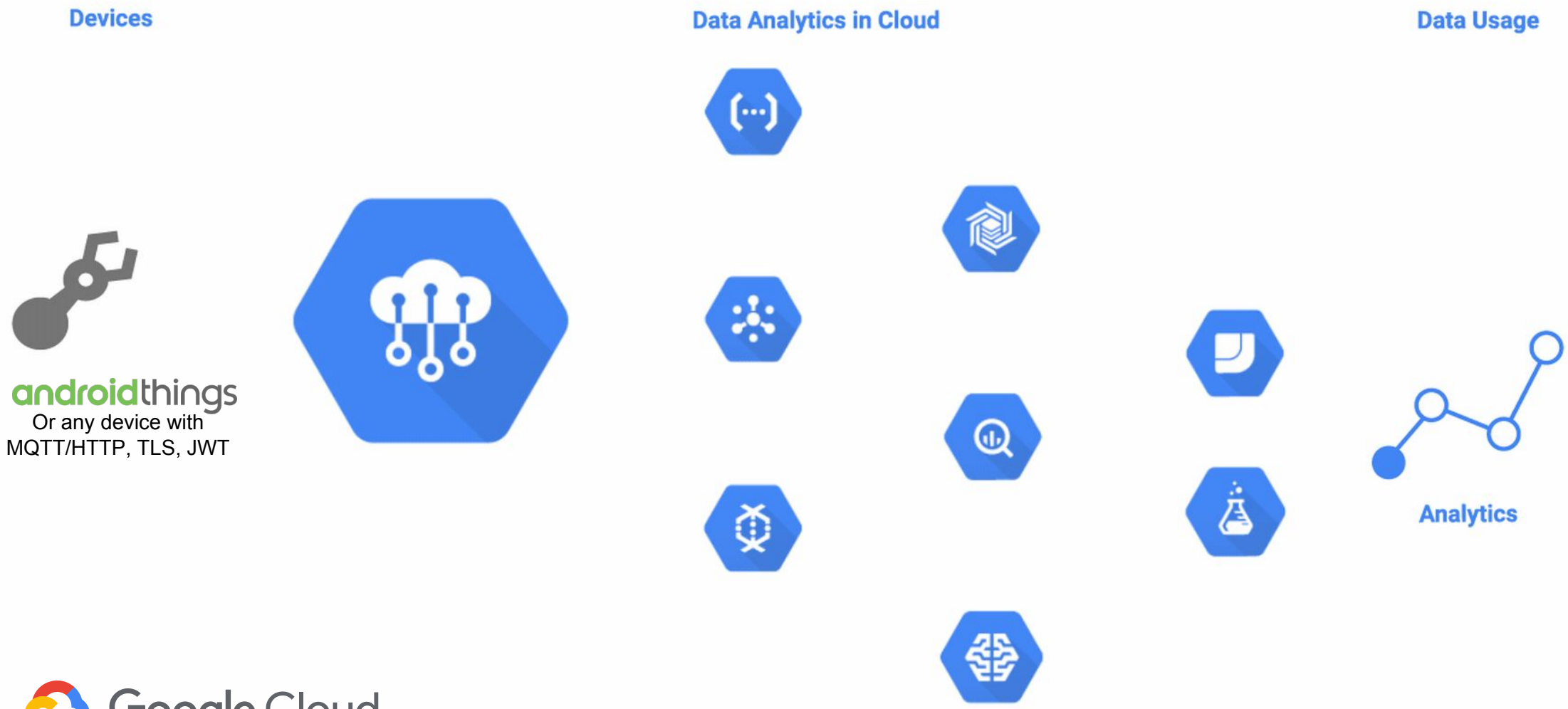
Optimize costs

More output for lower cost through understanding of the value chain, and waste drivers

Grow

Better user or customer experience to increase usage and adoption of a product

Google Cloud IoT solution



Google Cloud

IoT-Core - planet scale device connectivity

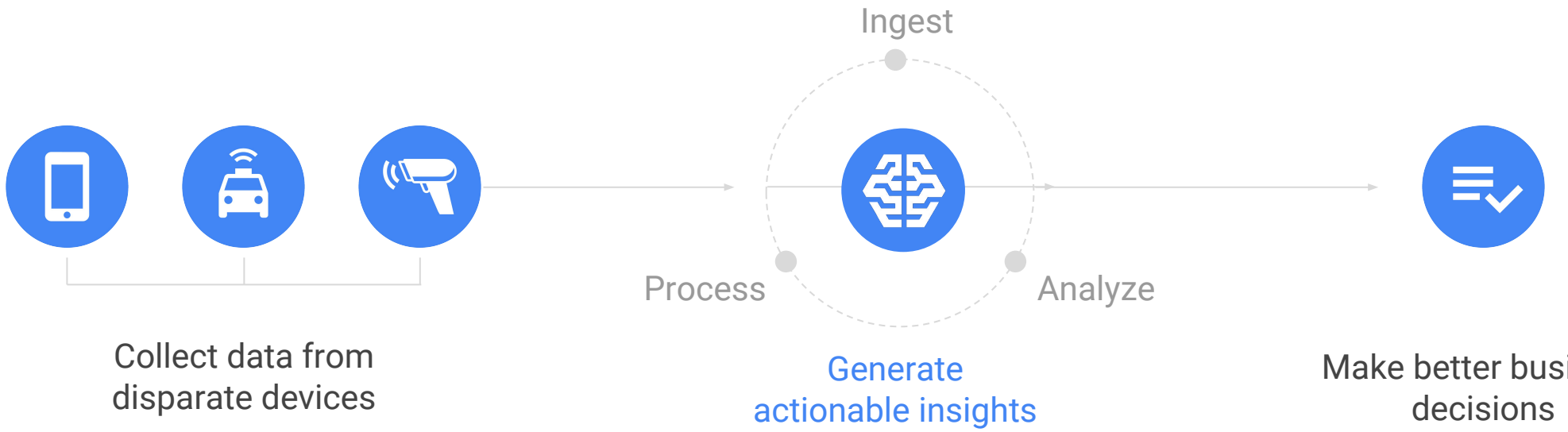
Device Manager

- Controls access to registries
- Protects entries with IAM permissions
- Keeps track of device credentials
- Handles Identity
- API for device configurations
- Maintains state metadata for the device:
  - Enabled/disabled
  - Connectivity
  - Error status

Protocol Bridge

- Supports both MQTT & HTTPS
- Provides a stateful device connection
- Delivers device telemetry data to Cloud PubSub to bridge Google Cloud Platform products and customer applications
- Delivers configuration updates via a Device Manager API
- Is exposed through a global DNS endpoint over multiple ports

Many business leaders think of IoT initiatives as setting up devices to help them make better business decisions



..but returns on any IoT initiative depends on successfully generating actionable insights from the data to make better business decisions

Machine Learning for IOT

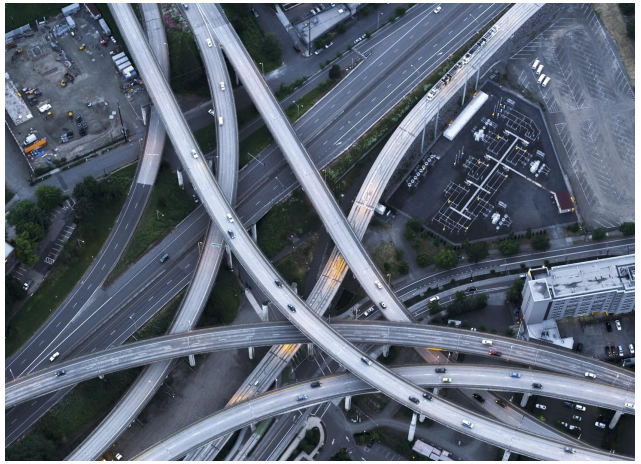
AI improves insights but it is complex to implement

Technology

Difficult to scale, with too many choices for different use cases

Operationalization

Managing ML infrastructure takes away time & very few people have ML expertise



Tooling

Complex pipeline with several point tools - work for limited use-cases only

Google Cloud enables your AI journey

Powerful image analysis
Vision API

Natural chatbot interactions
DialogFlow

Powerful text analysis
Natural Language API

Click to see more

Train custom machine learning models
AutoML

Support for custom ML Models
ML Engine

Open source ML
TensorFlow

Hardware optimised for machine learning
Cloud TPUs

Pre-packaged AI solutions

Early stage enterprises

A new middle pathway

Majority of enterprises

Custom ML models

Advanced stage enterprises

Google Cloud

Machine Learning & AI in Retail

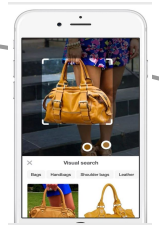
In bold - AI powered

In Italic - partially AI powered

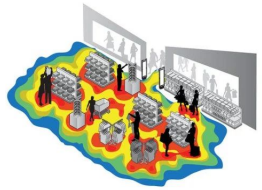
Virtual fitting room - online & instore

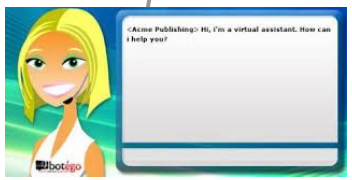
AI driven Marketing

Self-Checkout



Visual Shopping

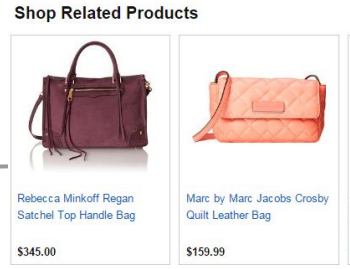




Virtual assistant online and call center

In store robot shopping assistant

Location based notifications, wayfinding and analysis

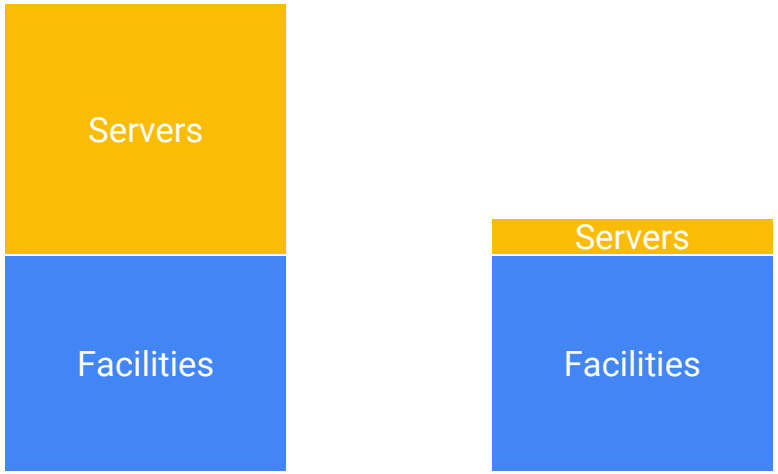


Online Search, Recommendation

Shelf Analytics

Process Optimization

40% reduction in cooling energy



Typical datacenter
electricity usage

Google datacenter
electricity usage

Google Cloud

Predictive Maintenance in Manufacturing

Public Dataset (simulated engine data)

- Predicted using Deep Neural Network Regressor
- Very accurately predicts remaining life
- RMSE 0-2 weeks
- Blog to be published (presented at Data Science conference)

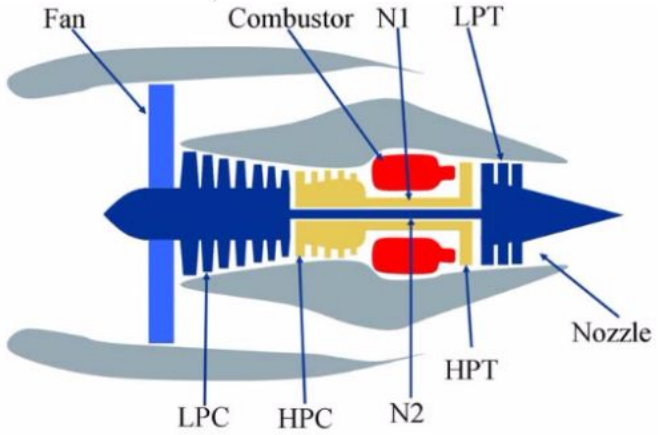


Figure 1. Simplified diagram of engine simulated in C-MAPSS [11].

Symbol	*Description*	*Units*
Parameters available to participants as sensor data		
T2	Total temperature at fan inlet	°R
T24	Total temperature at LPC outlet	°R
T30	Total temperature at HPC outlet	°R
T50	Total temperature at LPT outlet	°R
P2	Pressure at fan inlet	psia
P15	Total pressure in bypass-duct	psia
P30	Total pressure at HPC outlet	psia
Nf	Physical fan speed	rpm
Nc	Physical core speed	rpm
epr	Engine pressure ratio (P50/P2)	--
Ps30	Static pressure at HPC outlet	psia
phi	Ratio of fuel flow to Ps30	pps/psi
NRf	Corrected fan speed	rpm
NRc	Corrected core speed	rpm
BPR	Bypass Ratio	--
farB	Burner fuel-air ratio	--
htBleed	Bleed Enthalpy	--

Google Cloud

What happened at Google Cloud Next '18

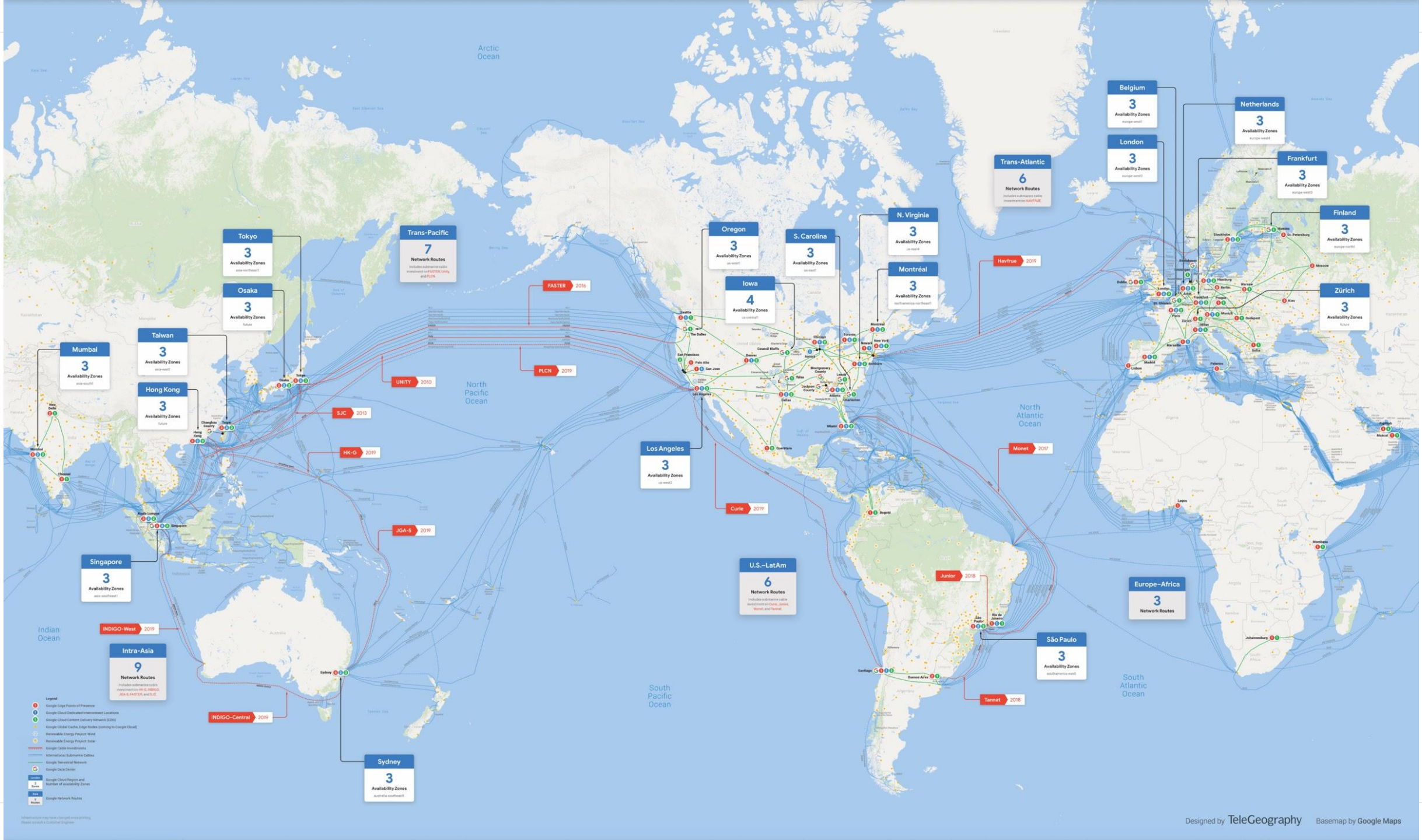
Agenda:

1. Chrome, Devices and Mobility
2. AI and machine learning - 2 pages
3. Infrastructure services
4. Application development
5. Data analytics
6. Databases
7. IoT
8. Security
9. G Suite - 2 pages

What happened at Google Cloud Next '18

IoT

- Edge TPU: Google's purpose-built ASIC chip that's designed to run TensorFlow Lite ML so you can accelerate ML training in the cloud and utilise fast ML inference at the edge.
- Cloud IoT Edge: Extends data processing and machine learning capabilities to gateways, cameras and end devices, helping make IoT devices and deployments smart, secure and reliable.


Arctic Ocean
North Pacific Ocean
South Pacific Ocean
Indian Ocean
North Atlantic Ocean
South Atlantic Ocean
Tokyo
3
Availability Zones
asia-northeast1
Osaka
3
Availability Zones
future
Taiwan
3
Availability Zones
asia-east1
Hong Kong
3
Availability Zones
future
Mumbai
3
Availability Zones
asia-south1
Singapore
3
Availability Zones
asia-southeast1
Sydney
3
Availability Zones
australia-southeast1
Intra-Asia
9
Network Routes
Includes submarine cable investment on HK-G, INDIGO, JGA-S, FASTER, and SJC.
Trans-Pacific
7
Network Routes
Includes submarine cable investment on FASTER, Unity, and PLCN.
FASTER 2016
PLCN 2019
UNITY 2010
SJC 2013
HK-G 2019
JGA-S 2019
INDIGO-West 2019
INDIGO-Central 2019
Oregon
3
Availability Zones
us-west1
S. Carolina
3
Availability Zones
us-east1
N. Virginia
3
Availability Zones
us-east4
Iowa
4
Availability Zones
us-central1
Montréal
3
Availability Zones
northamerica-northeast1
Los Angeles
3
Availability Zones
us-west2
Curie 2019
U.S.–LatAm
6
Network Routes
Includes submarine cable investment on Curie, Junior, Monet, and Tannat.
Trans-Atlantic
6
Network Routes
Includes submarine cable investment on AMANTHUE.
Havfrue 2019
Monet 2017
Junior 2018
Tannat 2018
São Paulo
3
Availability Zones
southamerica-east1
Belgium
3
Availability Zones
europe-west1
London
3
Availability Zones
europe-west2
Netherlands
3
Availability Zones
europe-west4
Frankfurt
3
Availability Zones
europe-west3
Finland
3
Availability Zones
europe-north1
Zürich
3
Availability Zones
future
Europe–Africa
3
Network Routes
Legend
Google Edge Points of Presence
Google Cloud Dedicated Interconnect Locations
Google Cloud Content Delivery Network (CDN)
Google Global Cache, Edge Nodes (coming to Google Cloud)
Renewable Energy Project: Wind
Renewable Energy Project: Solar
Google Cable Investments
International Submarine Cables
Google Terrestrial Network
Google Data Center
Google Cloud Region and Number of Availability Zones
Google Network Routes
Infrastructure may have changed since printing. Please consult a Customer Engineer.
Designed by TeleGeography
Basemap by Google Maps

Google Cloud Platform
Premier Partner

USD300 (1 Year)

GCP PARTNER CAMPAIGN - PARTNER
URL: FREE TRIAL
https://goo.gl/oNFUU8

USD200 (1 Year)

GCP PARTNER CAMPAIGN - PARTNER
URL: PARTNER CREDIT
https://goo.gl/QruHvk

http://training.micloud.tw

Thank you!

Q&A