# Building Enterprise Applications on App Engine

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Google™ 11 IO

# Getting Started

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Session short link: http://goo.gl/io/ZQp2V
Session hash tags: #io2011 #AppEngine
Session feedback: http://goo.gl/Xuaof

# Agenda

- A Brief History of App Engine

- What we are announcing today

- What is happening to App Engine for Business?
- What does this mean for customers?
- Key Partner Perspectives
- Summary

# A Brief History of App Engine

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# A Brief History of App Engine

2008 -  **App Engine Launches**
- rapid development: python, dev_appserver
- automatic scaling
- 30s request deadline
- APIs: memcache, datastore, urlfetch, mail
- free quotas

2009 - **Platform Expands**
- Billing Support
- **Java Runtime**
- Task Queue & Cron
- XMPP API
- Blobstore API
- Datastore Replication

# A Brief History of App Engine

2010 - **Remove Limitations**
- Datastore Query
- AppStats
- Mapper API
- **10 minute Tasks**
- **Channel API**
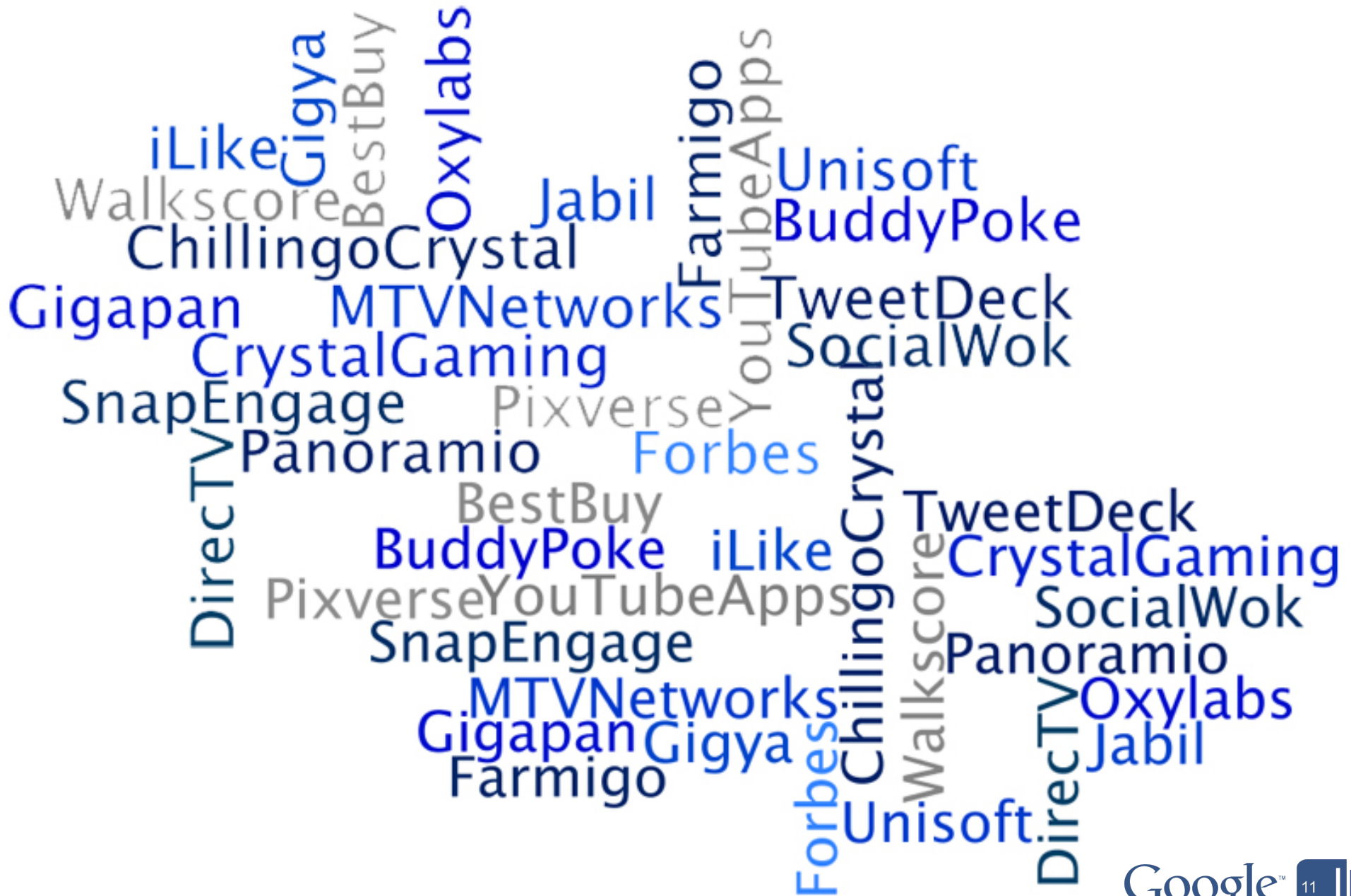- Always On

2011 - **Enterprise**
- **High-Replication Datastore**
- Prospective Search API
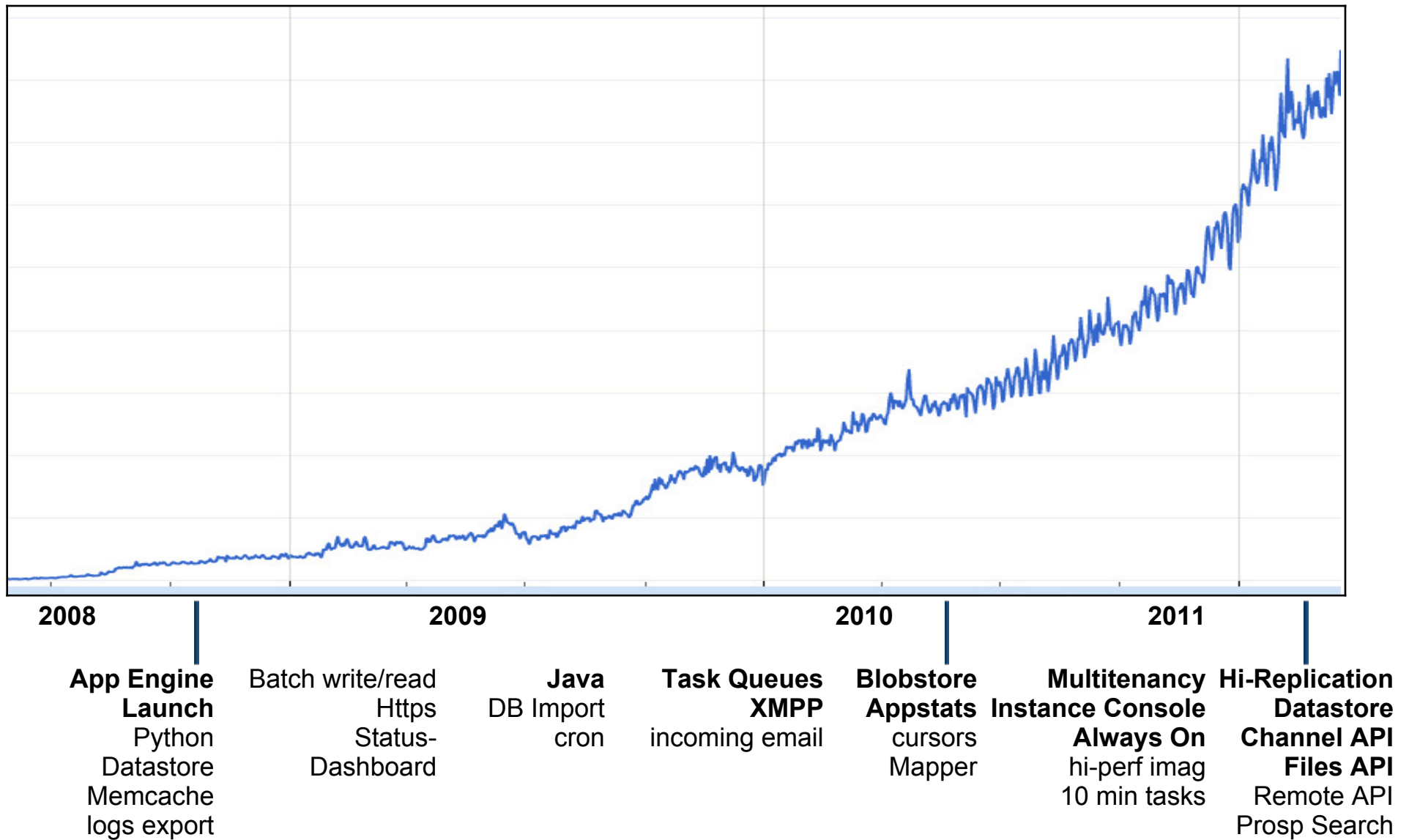- File API
- ProtoRPC
- ...!

# A Brief History of App Engine

Today (1.5.0)
- Backends
- Pull Queues with REST API
- High Replication Datastore as Default
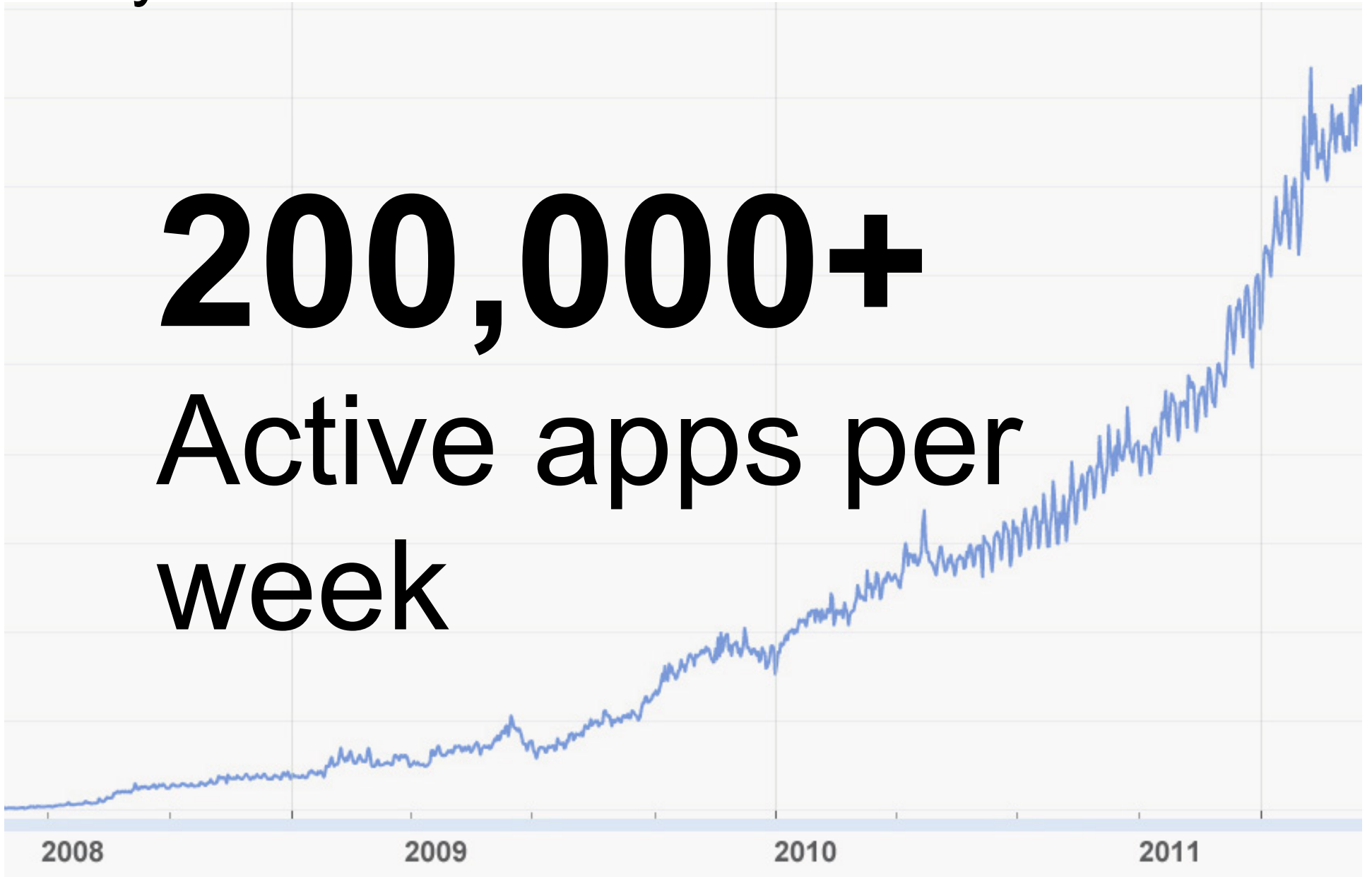
# Some App Engine Partners

# App Engine Growth



| 2008 | 2009 | 2010 | 2011 |
|------|------|------|------|

**App Engine Launch**
Python
Datastore
Memcache
logs export

Batch write/read
Https
Status-
Dashboard

**Java**
DB Import
cron

**Task Queues**
**XMPP**
incoming email

**Blobstore**
**Appstats**
cursors
Mapper

**Multitenancy**
**Instance Console**
**Always On**
hi-perf imag
10 min tasks

**Hi-Replication**
**Datastore**
**Channel API**
**Files API**
Remote API
Prosp Search

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By the Numbers

# 100,000+ Active Developers per Month

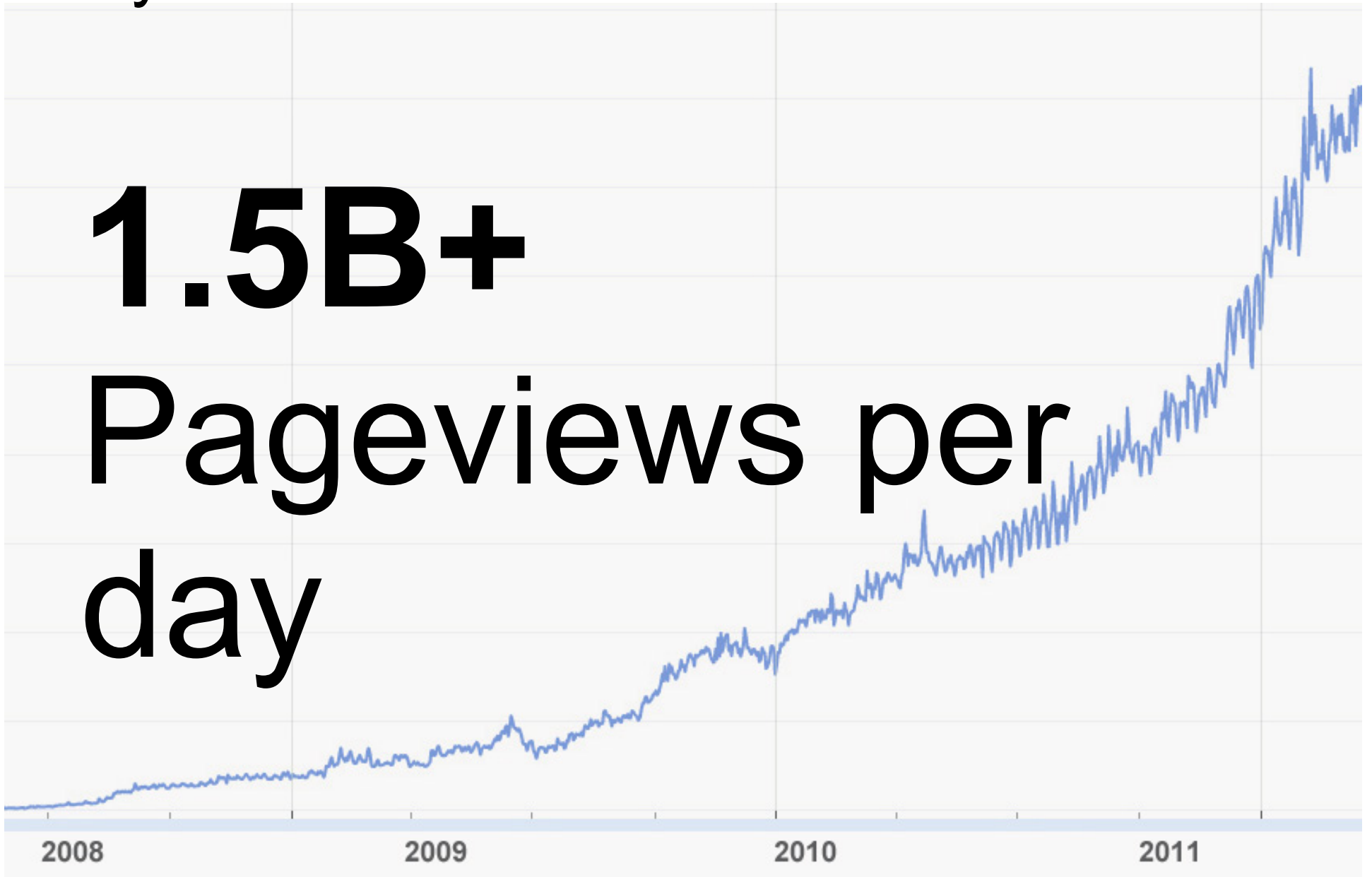2008    2009    2010    2011

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By the Numbers

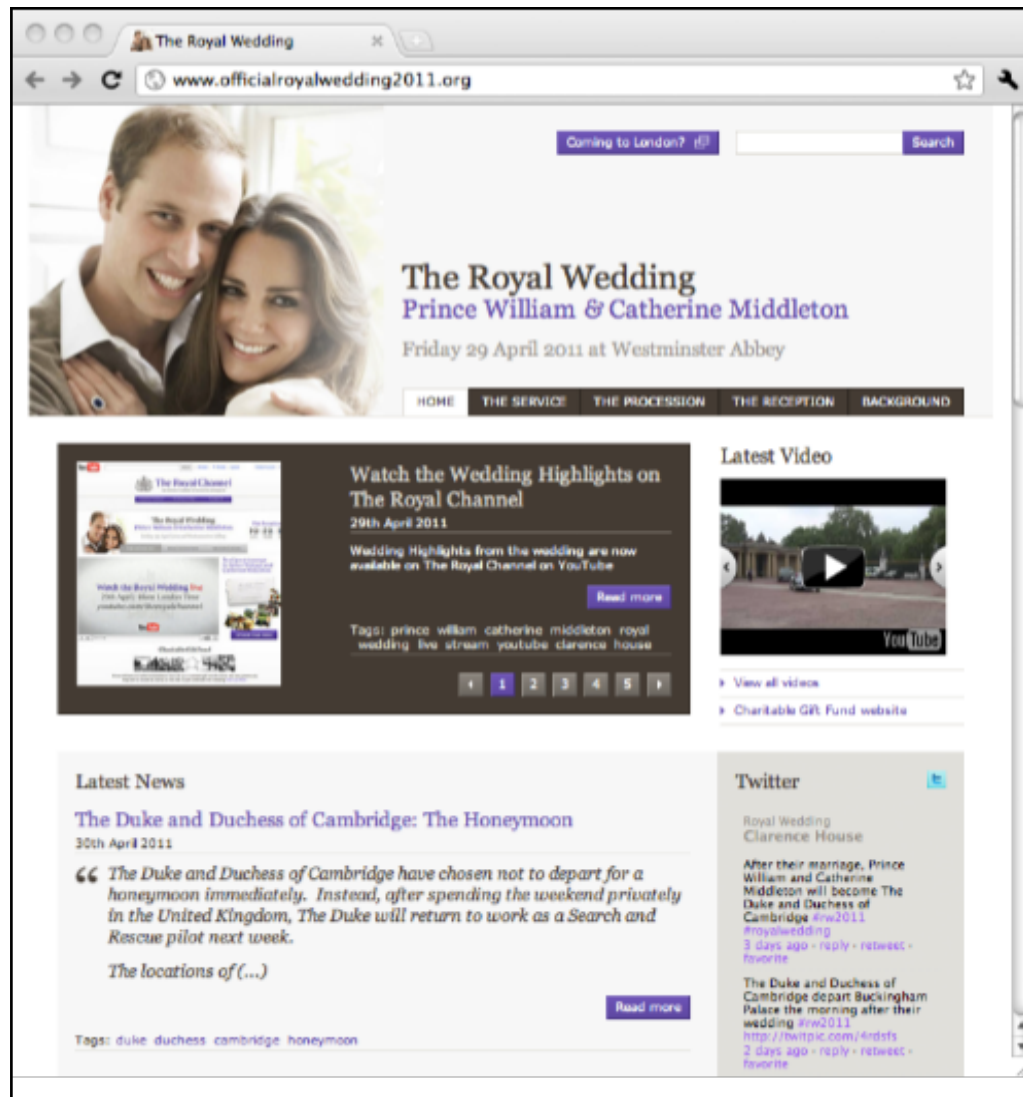**200,000+** Active apps per week

By the Numbers

1.5B+
Pageviews per day

# By the Numbers



Official Royal Wedding on App Engine

On Wedding day, served:
- Up to 32k requests per second
- 37.7 million pageviews
- 13.7 million visitors

http://goo.gl/F1SGc

# What we are announcing today

# Google App Engine is leaving preview later this year!

Google App Engine

Google App Engine

A Closer Look...

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# A Closer Look...

- Full Google Product - 3 year deprecation support
- 99.95% SLA for all paid users
- Operational and Developer Support available
- New business-friendly Terms of Service

- Billing via invoice
- Rounded out feature set including Frontend and Backend capabilities

- New sustainable pricing model

# SLAs are more than just 9s

- SLA is about transparency
- HRD does not need planned downtime
- Uptime will be measured by 1000s of various probes from around the globe
- Customers will be able to contribute to our metrics
- Upcoming Monitoring API to automatically monitor your own applications

- Check out tomorrow's sessions
  - More 9s Please: Under The Covers of the High Replication Datastore: http://goo.gl/io/7JJtn
  - Life in App Engine Production: http://goo.gl/io/1jWjD

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# Frontends and Backends?

- Instances (running unit for both Frontends and Backends)
  - Have set amount of CPU and Memory
  - Run your code

- Frontends
  - Scale dynamically based on your traffic
    - The App Engine Scheduler determines when to spin up or down Frontend instances
    - Controls will be added to allow customers to optimize the Scheduler for particular usage

- Backends (Launching today with 1.5.0!)
  - Run based on admin control
  - Choose CPU and Memory size
  - Long-running

# New pricing model Overview

- Usage types:
  - Free - similar to today
  - Paid - $9/app/mo (+ usage) including SLA
  - Premier - $500/account/mo (+ usage) including operational support
- No more CPU hours
  - Charging for size and number of running Frontends/Backends (incorporating CPU + memory)
  - APIs (including Datastore) charged based on operations
- Add-ons
  - For example: SSL for custom domains will be available for monthly fee

# New App Engine Pricing Model details (tentative)

| Resource | Unit | Unit Cost | Free per day |
|---|---|---|---|
| On-Demand Instances | Instance-hour | $0.08 | 24 |
| Reserved Instances | Instance-hour | $0.05 | - |
| **Datastore Storage** | **GB / mo** | **$0.24** | **1G** |
| Datastore Operations | Operation | $0.01 / 10k | 50k |
| Blobstore Storage | GB / mo | $0.17 | 5G |
| Outgoing Bandwidth | GB | $0.15 | 1G |
| Incoming Bandwidth | GB | $0.10 | 1G |
| Email API | Recipients | $0.03 / 100 | 100 |
| XMPP API | Stanza | $0.01 / 1k | 1k |
| Channel API | Channel Opened | $0.01 / 100 | 100 |

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# What is happening to App Engine for Business?

# What is happening to App Engine for Business?

- Preview was announced at Google IO 2010
    - 99.9% SLA
    - Premium Developer Support
    - Custom domain SSL
    - Simplified Pricing model
    - Company specific administration console

- Trusted Tester program started in Q3 2010
    - Gave early access to hundreds of developers
    - Held internal and external workshops and webinars to gather feedback

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# What is happening to App Engine for Business?

- Overall feedback from Trusted Testers
  - <u>All</u> customers were interested in GAE4B features: SLA, Support, Hosted SQL, SSL for custom domains
  - But..
    - Certain aspects of GAE4B were not fully realistic
      - Not all companies were focused purely on building internal apps
      - Per user, per app pricing was not appropriate for all companies

What does this mean for customers?

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# What does this mean for customers?

- Timing
  - Google App Engine will be leaving preview in the second half of 2011

- New Terms of Service

- New pricing
  - To help companies model their budgets in advance of the change, we will offer online comparative bills

Dan Murray
Co-Founder, Managing Director

# Key Partner Perspectives

# WebFilings Overview



Accounting/ Reporting Dept.

Controller

Audit Committee

Auditors

Disclosure Committee

Outside Counsel

General Counsel

Tax Advisors

CFO

Sub-certifiers

CEO

Investor Relations

**Started building product in May 2008**

- GAE-based from day one
- Greatly simplified development, deployment, and maintenance
- Cost-effective
- Supports agile development

**Launched product mid-March 2010**

- Hundreds of customers with hundreds more signing-up every quarter
- Marquee customers from F100
- Fastest growing company in our market

*WebFilings' collaborative, browser-based software dramatically improves the efficiency and effectiveness of financial reporting teams*

# WebFilings and Google App Engine

What we've learned about GAE

- It scales…
- It is reliable…
- It is secure.

We're excited about

- New features
- SLA 99.95% uptime
- Expanded support
- 3-year deprecation

**Matt Fowler**
Systems Engineer, Global IT Architecture

# Key Partner Perspectives

# App Engine at Jabil

- Jabil is a leading global electronics production company with over 85k employees and 13B+ in FY10 revenue
- Use both GAE/J and Google Apps
- What we like about App Engine today
  - Able to manage our dev/QA/production environments with App Engine versioning and multitenant datastore
  - Reduced time to scale applications up from a pilot site to production in many sites across our global footprint
- Participated App Engine for Business trusted tester program
    - Original pricing model didn't work for us
    - Locked in to Apps domain - will be able to have consumer facing

# Jabil's Perspective on App Engine Changes

- We are excited about the new features
- Will allow for more widespread adoption by internal development groups.
  - No longer considered "preview"
  - Operational support and new SLA
- Hosted SQL allows us to transition applications that use a relational DB more easily
  - Developers are more experienced with relational DBs
  - No need to rethink applications to move them to the cloud
- New cost model will allow us to better forecast costs as applications scale
- Centralized billing makes it even easier for us to manage

# Summary

- Excited to leave preview!
- Everyone will get to take advantage upcoming features, not just App Engine for Business

- App Engine is here to stay!

# Q&A

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