





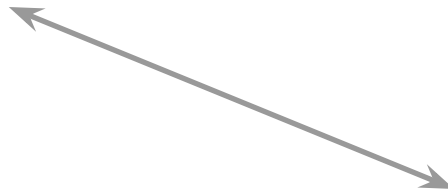
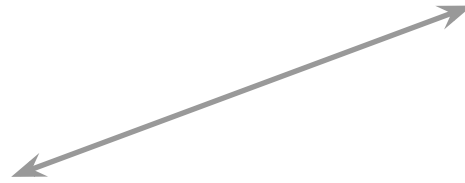
Building Android Applications that Use Web APIs

Yaniv Inbar, Senior Software Engineer, Google

Sriram Saroop, Product Manager, Google

#io12 #AndroidWebAPIs

Android and Web APIs



Endpoints



Web APIs












Google's Web APIs



Web APIs



-  Blogger API
-  Books API
-  Calendar API
-  Drive API
-  Google+ API
-  Prediction API
-  Tasks API
-  Translate API
-  YouTube API



Google Client Libraries for Java

Open Source (Apache License 2.0)

Google API Libraries & Base Library
(goo.gl/yV6R6)

OAuth (goo.gl/dXFtZ)

HTTP (goo.gl/onpMx)



Client Library Architecture



Google's Web APIs References

Google APIs: Getting Started

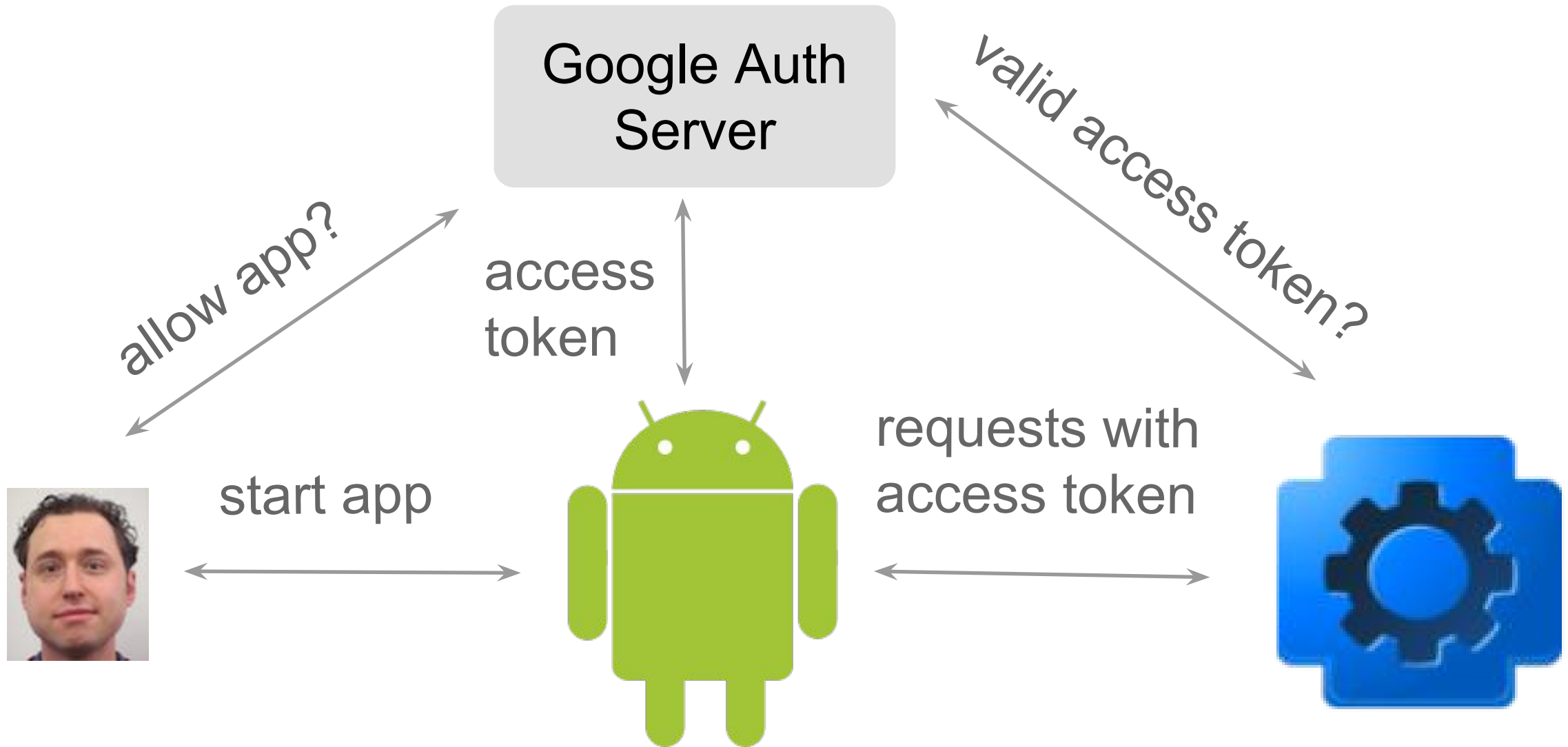
youtu.be/SZj6rAYkYOg

Optimizing Your Code Using Features of Google APIs

goo.gl/dNwik



OAuth 2.0



OAuth 2.0 Scopes

Calendar API

Scope	Permission
calendar	Manage your calendars
calendar.readonly	View your calendars

e.g. <https://www.googleapis.com/auth/calendar.readonly>



OAuth 2.0 Reference

OAuth 2.0 for Identity and Data Access

goo.gl/d7jFg

Using OAuth 2.0 to Access Google APIs

goo.gl/W1hUc



“OAuth on Android is complicated”



Old Way

AccountManager Woes (Froyo)

Access Request

The following one or more applications request permission to access your account, now and in the future.

- **Google Calendar Sample**



Google

yaniv.io2012@gmail.com

**oauth2:https://www.
googleapis.com/auth/
calendar**

Do you want to allow this request?

Allow

Deny



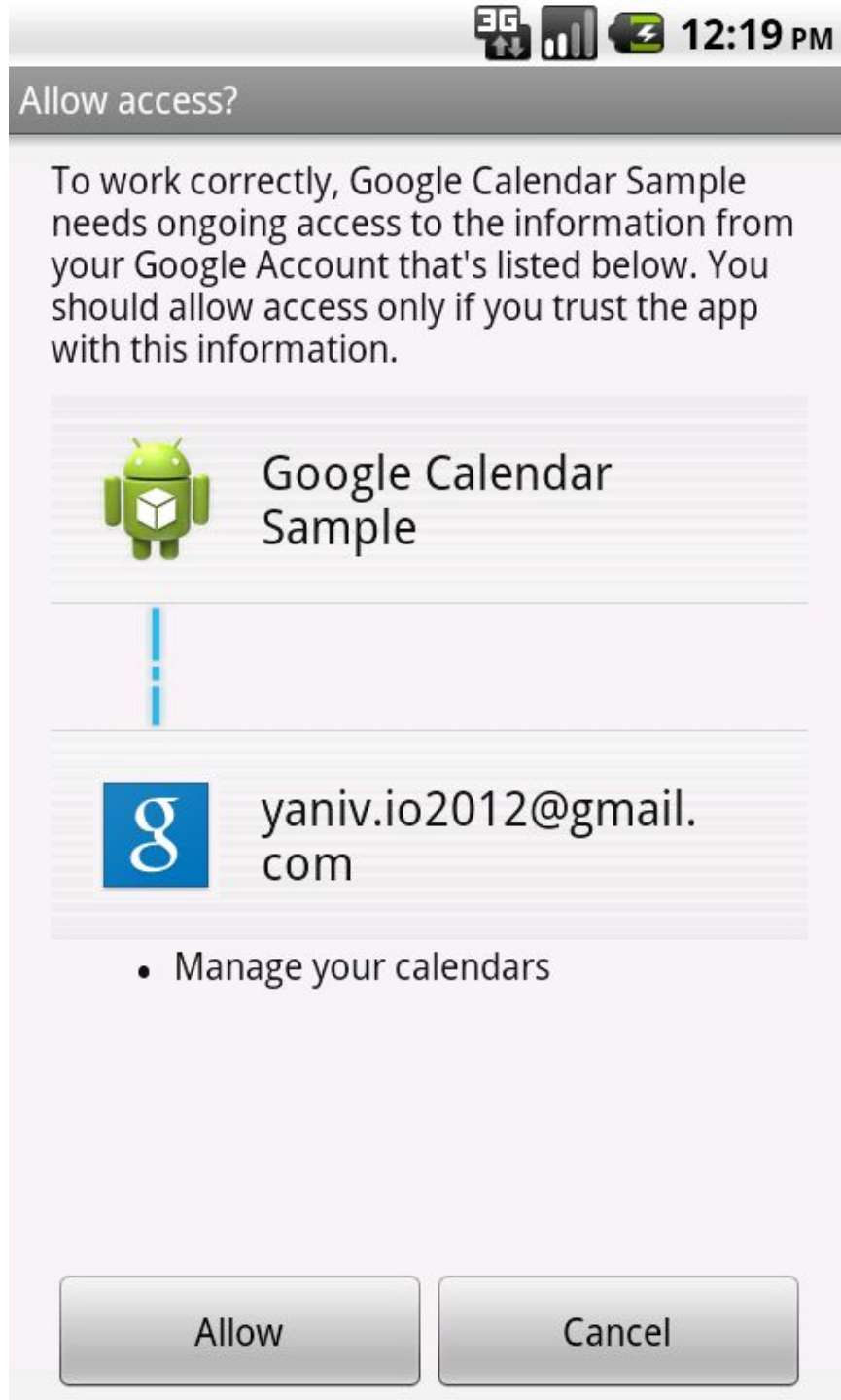
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Coming Soon

Google Play services (Froyo)

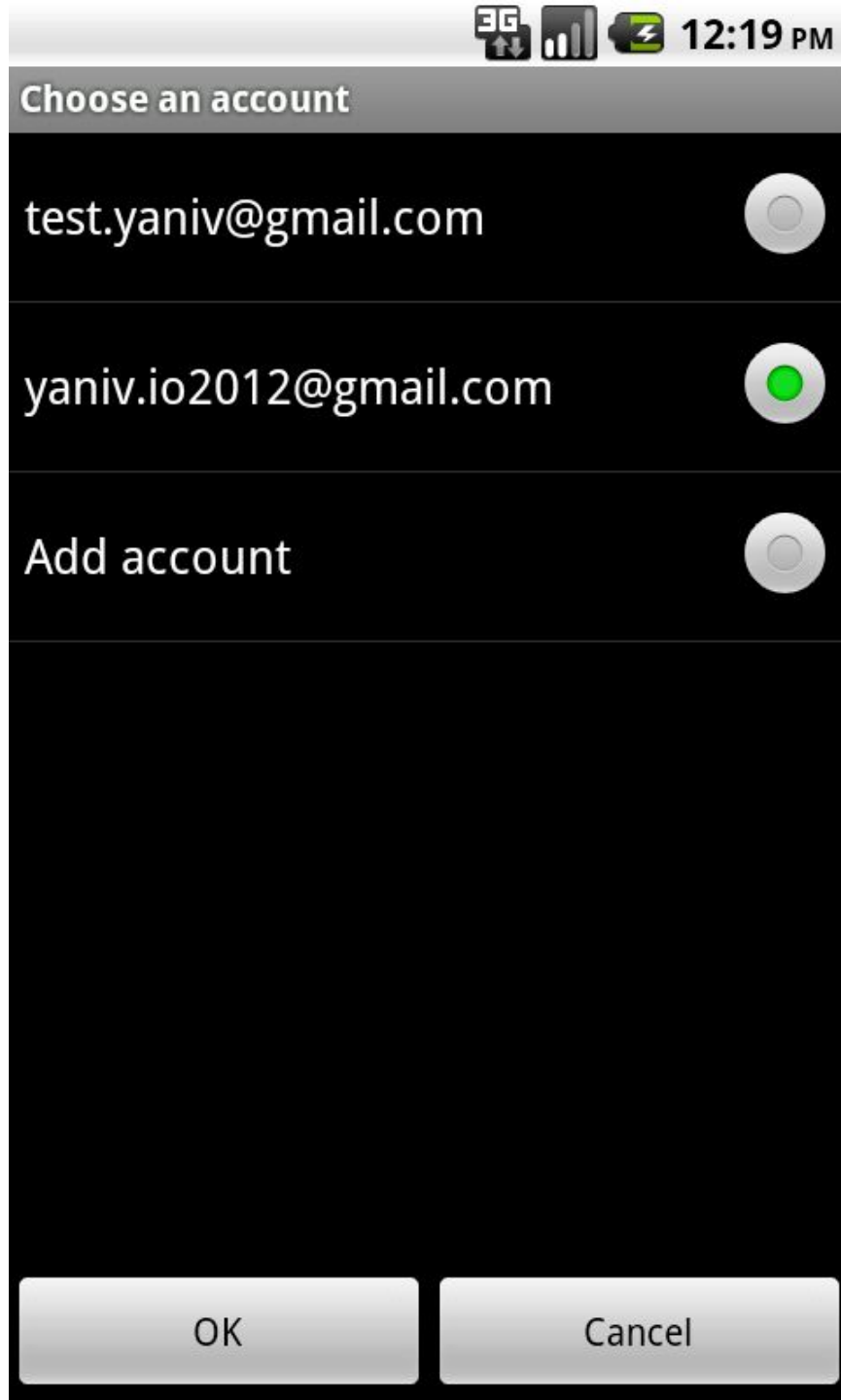


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Coming Soon

AccountPicker in Google Play services (Froyo)



Google Play services

Coming Soon

- Froyo or later
- Readable permissions
- AccountPicker
- Secure: application signature
 - No API key
- Token Caching
 - No expired tokens

<https://developers.google.com/android/google-play-services>





Demo: Calendar API Sample

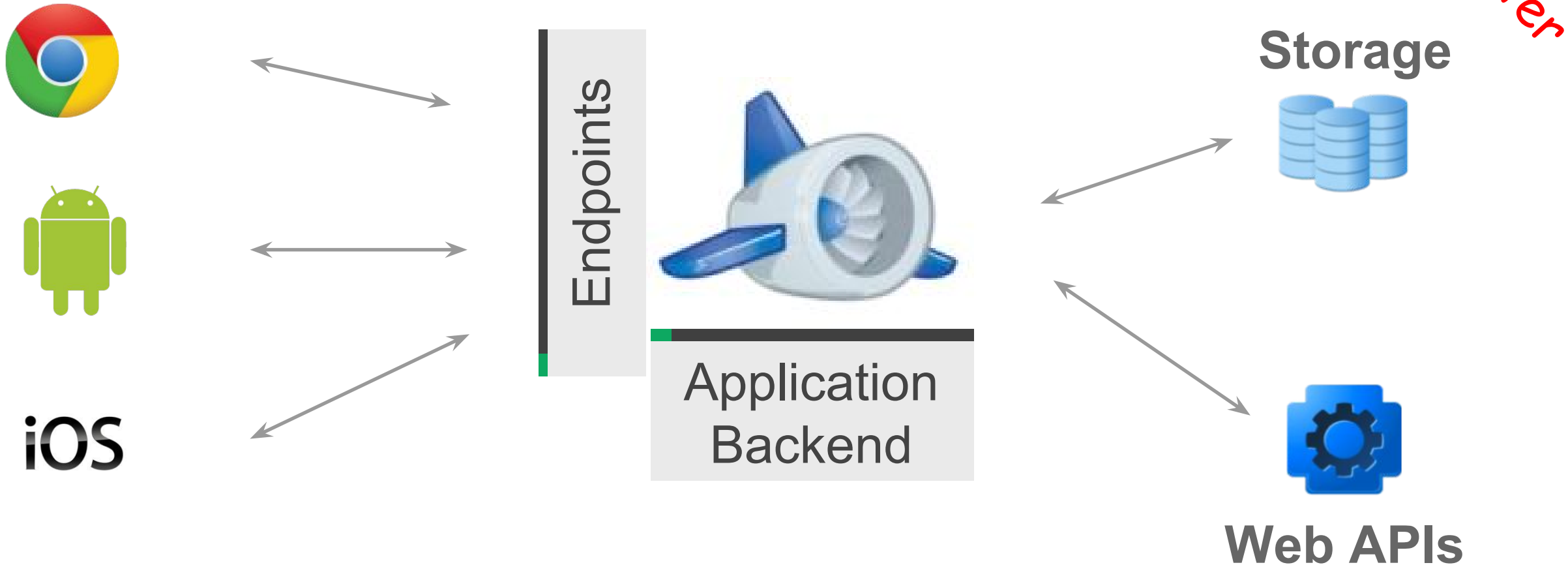
open source at goo.gl/1WIY4



Google Cloud Endpoints

Google Cloud Endpoints:

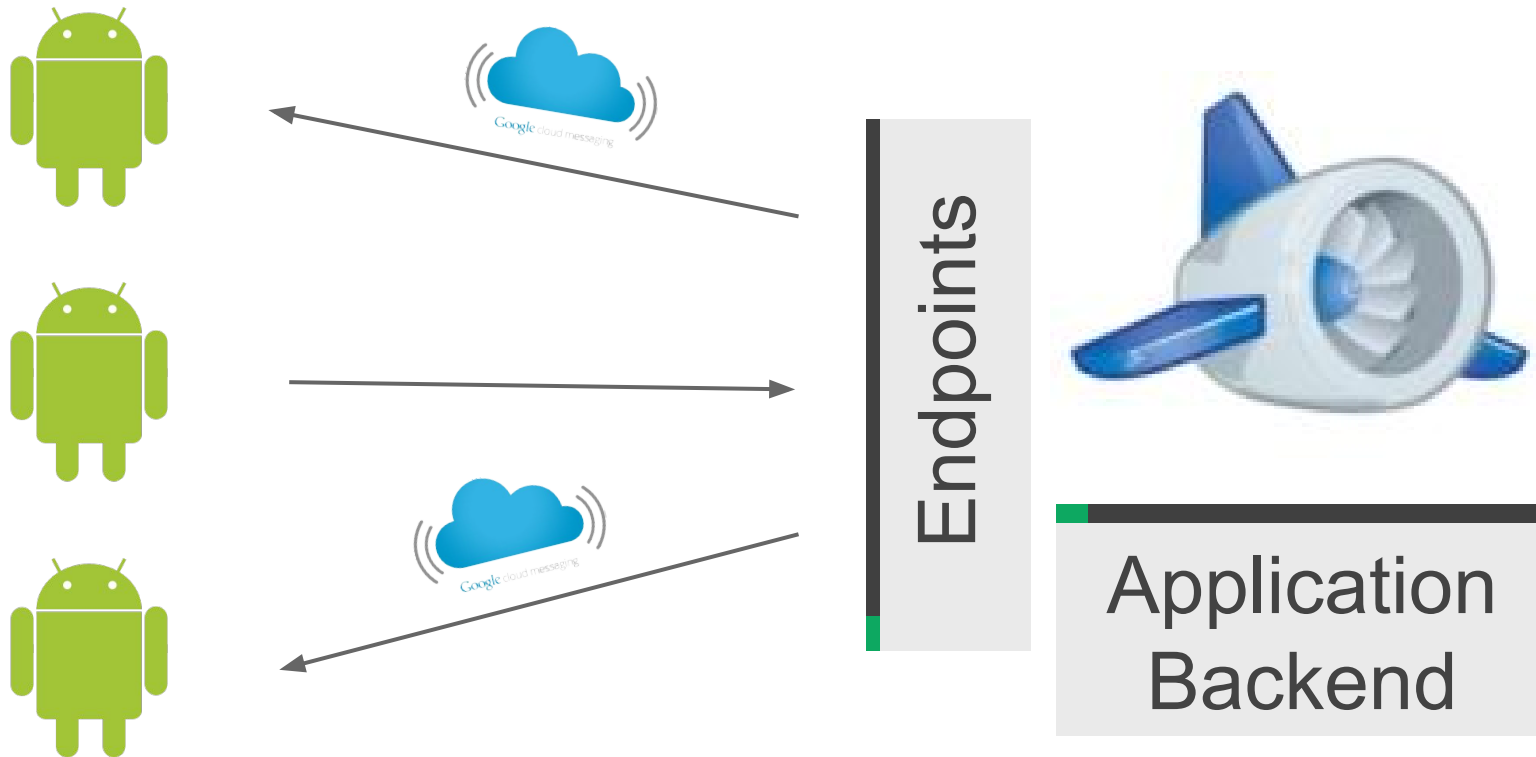
Backend for Mobile and Web Apps



Google Cloud Endpoints:

Google Cloud Messaging for Android

Trusted Tester



Endpoints Use Cases

- Centralize business logic, computation, and storage
- Share application state across devices
- Google Cloud Messaging to push notifications to devices

Trusted Tester

Sign Up

<http://endpoints-trusted-tester.appspot.com>





Demo: CloudNotes Endpoints Sample

open source at goo.gl/ZIN2E

Google Cloud Endpoints References

Building Mobile App Engine Backends for Android, iOS and the Web

goo.gl/AhPXd

HTML5 and App Engine: The Epic Tag Team Take on Modern Web Apps at Scale

goo.gl/U0zXy



Google I/O Codelabs

Building REST APIs for Mobile with App Engine

Friday, 11:00AM - 1:00PM

Building Android Applications that use Web APIs

Friday, 1:15PM - 3:15PM



Thank You!



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