



Google  
Developers



# Building Android Applications that Use Web APIs

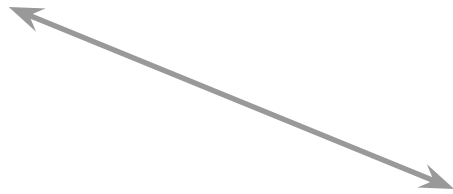
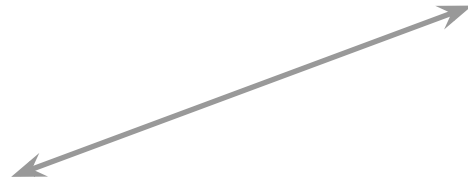
Yaniv Inbar, Senior Software Engineer, Google

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*#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](http://goo.gl/yV6R6))

**OAuth** ([goo.gl/dXFtZ](http://goo.gl/dXFtZ))

**HTTP** ([goo.gl/onpMx](http://goo.gl/onpMx))



# Client Library Architecture



# Google's Web APIs References

**Google APIs: Getting Started**

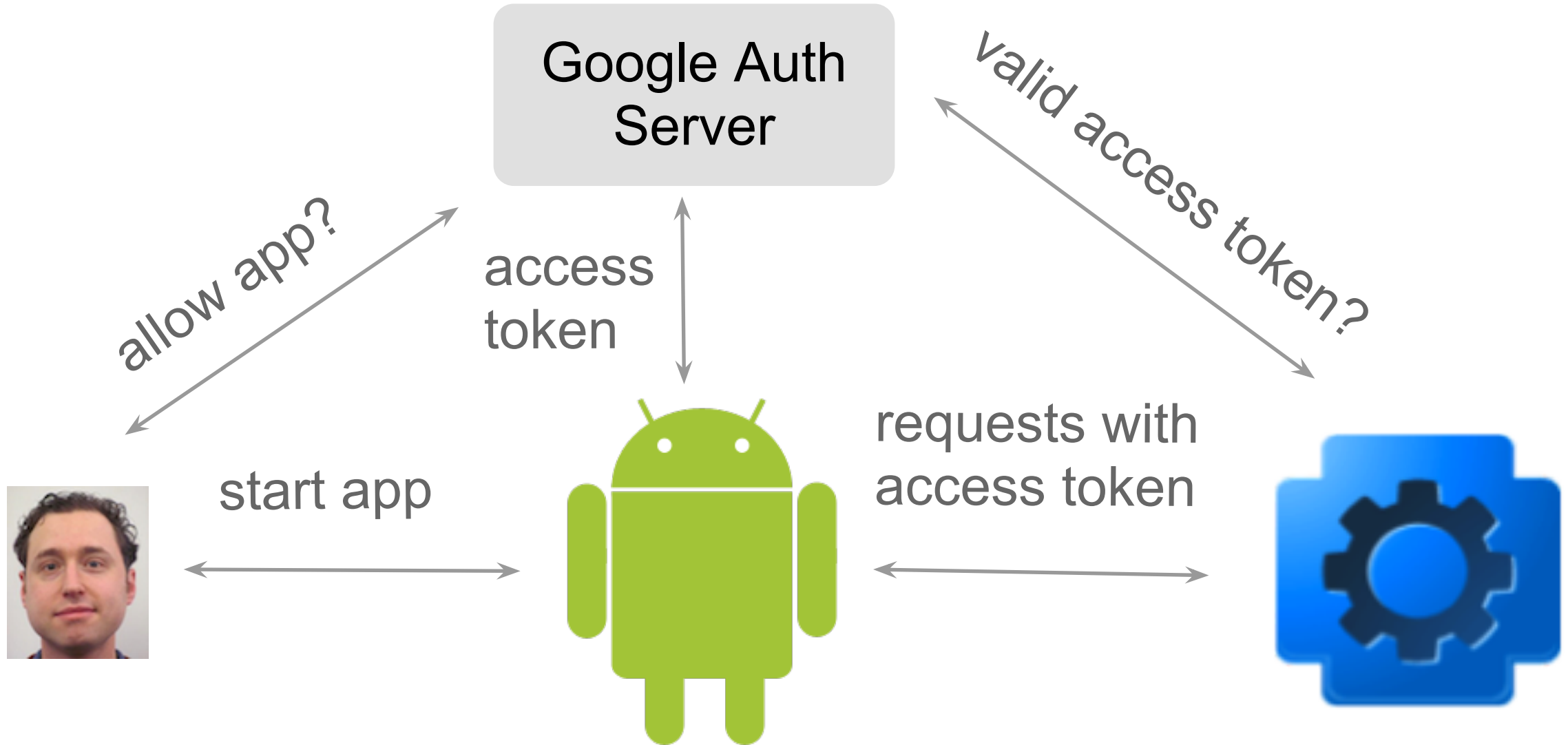
[youtu.be/SZj6rAYkYOg](https://youtu.be/SZj6rAYkYOg)

**Optimizing Your Code Using Features of Google APIs**

[goo.gl/dNwik](https://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](https://goo.gl/d7jFg)

**Using OAuth 2.0 to Access Google APIs**

[goo.gl/W1hUc](https://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

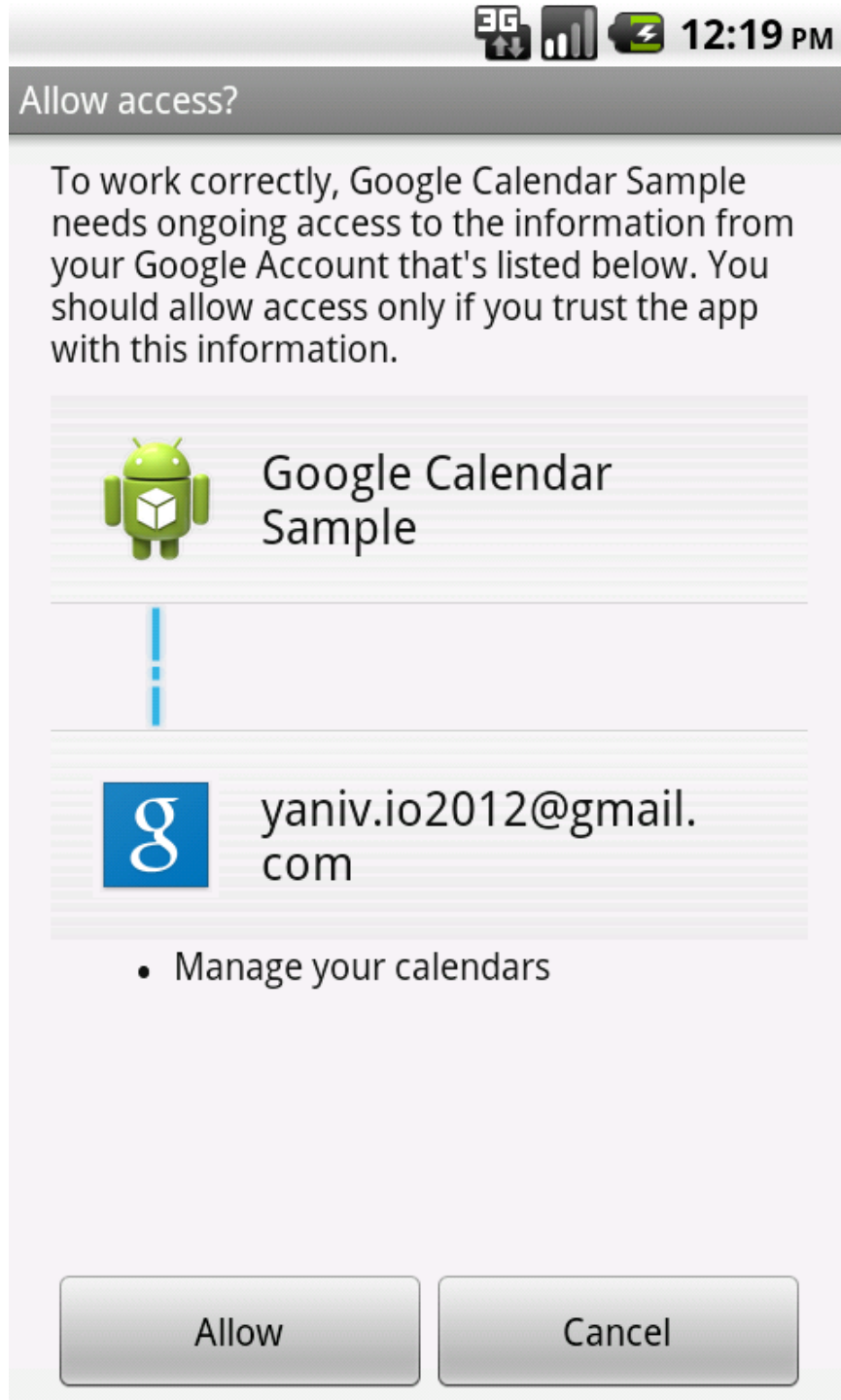
Deny



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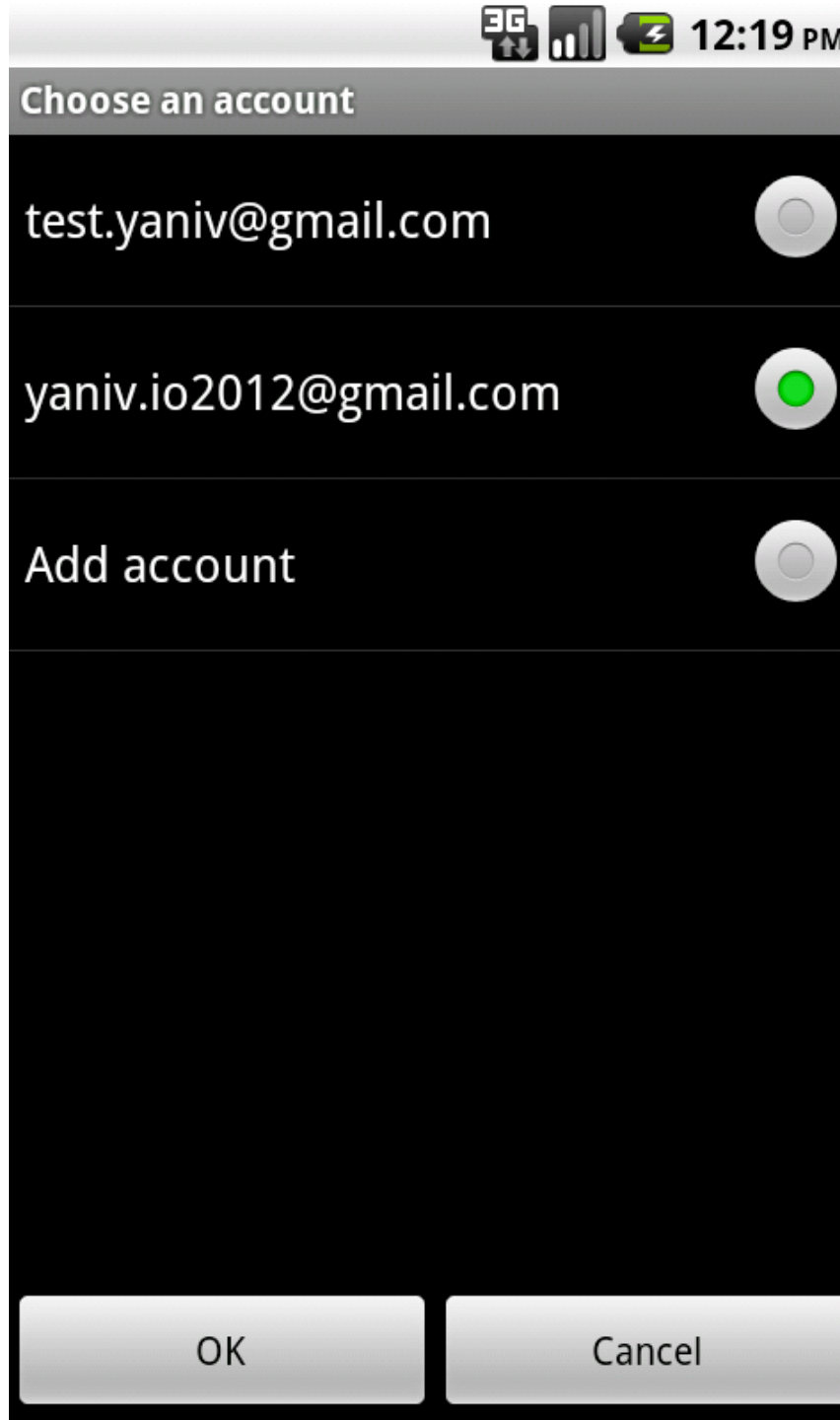
Coming Soon

# Google Play services (Froyo)



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](https://goo.gl/1WIY4)

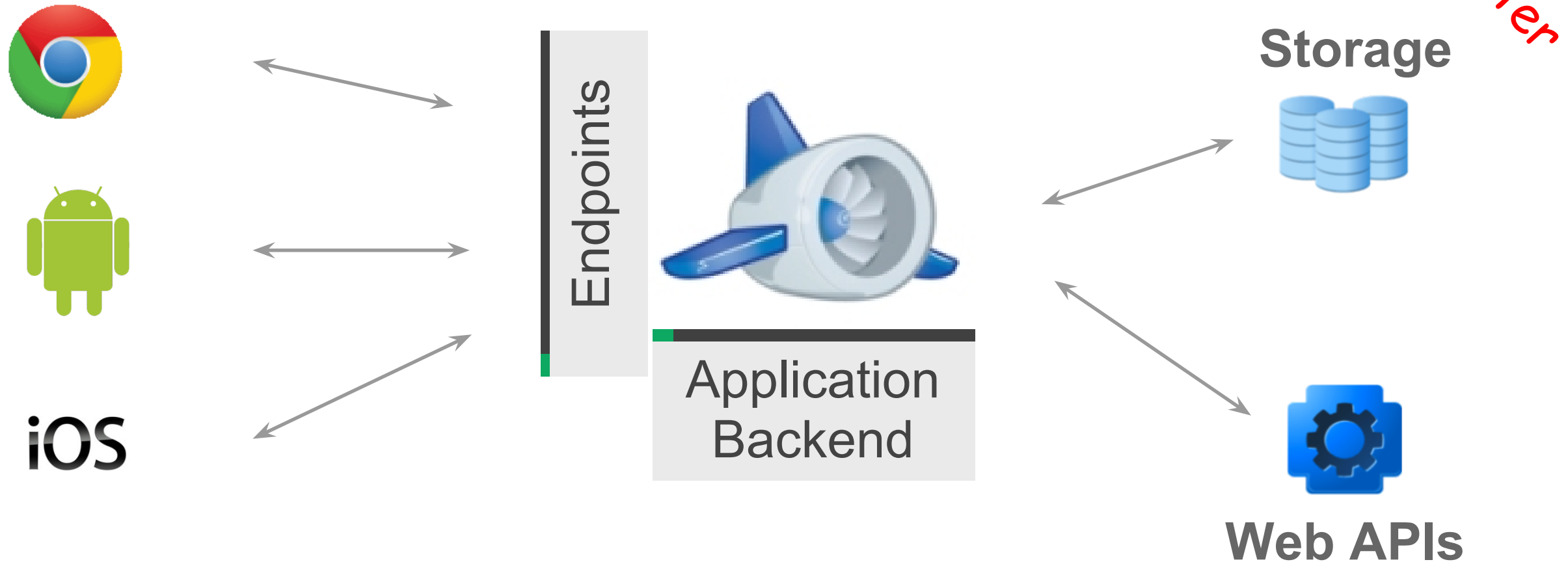




# Google Cloud Endpoints

# Google Cloud Endpoints:

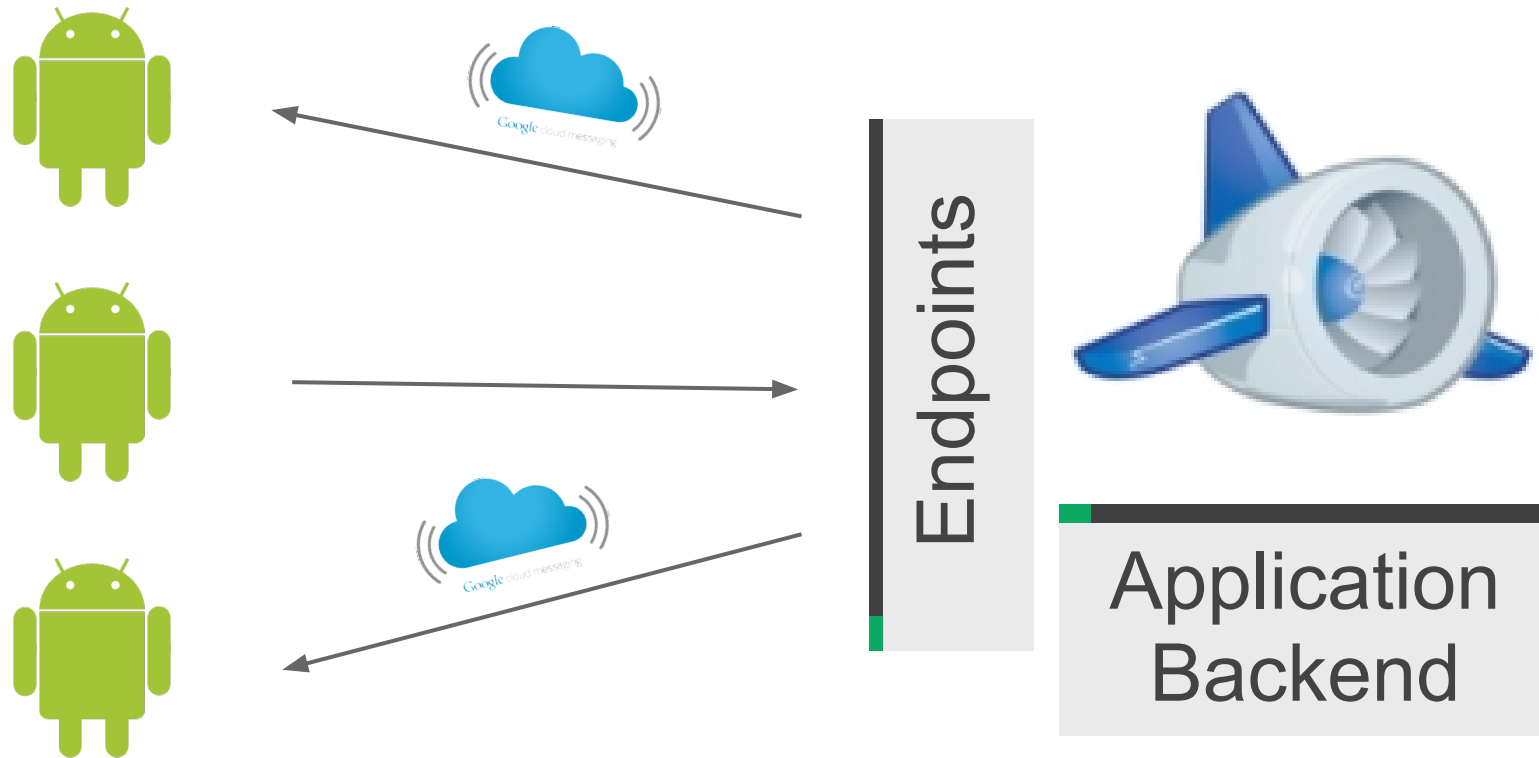
Backend for Mobile and Web Apps



# 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](https://goo.gl/ZIN2E)

# Google Cloud Endpoints References

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

**[goo.gl/AhPXd](https://goo.gl/AhPXd)**

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

**[goo.gl/U0zXy](https://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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