

PUSH - NOTIFICATIONS

Publish-Subscribe approaches

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01

INTRODUCTION

Push-Notifications
What are they?

02

PUBLISH-SUBSCRIBE

Publish-Subscribe concept
Types
Pros and Cons

03

PRACTICAL ASPECTS

Different approaches
Firebase - Live Demo

04

CONCLUSION

Alternatives
Summary

**WHAT
ARE
THEY?**

01.



PUSH-NOTIFICATIONS AN INTRODUCTION

- Push notifications are an important part of the mobile experience.
- A push notification is a message that pops up on a mobile device.
- App publishers can send them at any time; users don't have to be in the app or using their devices to receive them.

Each mobile platform has support for push notifications — iOS, Android, Fire OS, Windows and BlackBerry all have their own services.

For example, Android provides **NotificationManager** class for this purpose.



HISTORY!



Blackberry Push Email - 2003

Apple Push Notification (APN) - 2009

Google introduces its own services - 2010

Google Cloud Messaging (GCM) - 2012

Android 4.2 ICS introduced with Rich Push - 2013

Apple included interactive Buttons - 2014

ANDROID NOTIFICATIONS CHANNELS

Starting in Android 8.0 (API level 26), all notifications must be assigned to a channel. For each channel, you can set the visual and auditory behavior that is applied to all notifications in that channel.

User-visible importance level	Importance (Android 8.0 and higher)	Priority (Android 7.1 and lower)
Urgent Makes a sound and appears as a heads-up notification	IMPORTANCE_HIGH	PRIORITY_HIGH or PRIORITY_MAX
High Makes a sound	IMPORTANCE_DEFAULT	PRIORITY_DEFAULT
Medium No sound	IMPORTANCE_LOW	PRIORITY_LOW
Low No sound and does not appear in the status bar	IMPORTANCE_MIN	PRIORITY_MIN

COMMUNICATION USES

- Sports scores and related updates on their lock screen
- Utility messages like climate, traffic and other important reports
- Complementary Communication Channels like flight status, change, and other related information
- Transactional notices
- Gathering client input
- Re-connecting with inactive clients
- Sales and Promotions (eg. Announcing limited-time sales, driving clients to the application to convert)
- Price drop notifications (eg. sending alerts to clients who are keeping an eye on price fluctuations on particular items and services)
- Notifying clients when applicable new items are accessible on the application
- New coupons
- Reminding clients about pending items in their shopping baskets
- 'Product back in stock' notifications, etc.



A large, irregular orange shape representing a sun or moon dominates the center of the image. Inside this shape, there are white, stylized clouds. The background is a solid light orange color.

**PUBLISH-
SUBSCRIBE .02**



PUBLISH-SUBSCRIBE



- messaging pattern
- publisher and the subscriber don't know about existence of one another
- How do they communicate?
 - another component named message broker
 - known by both publisher and subscriber

TYPES OF PUBLISH-SUBSCRIBE

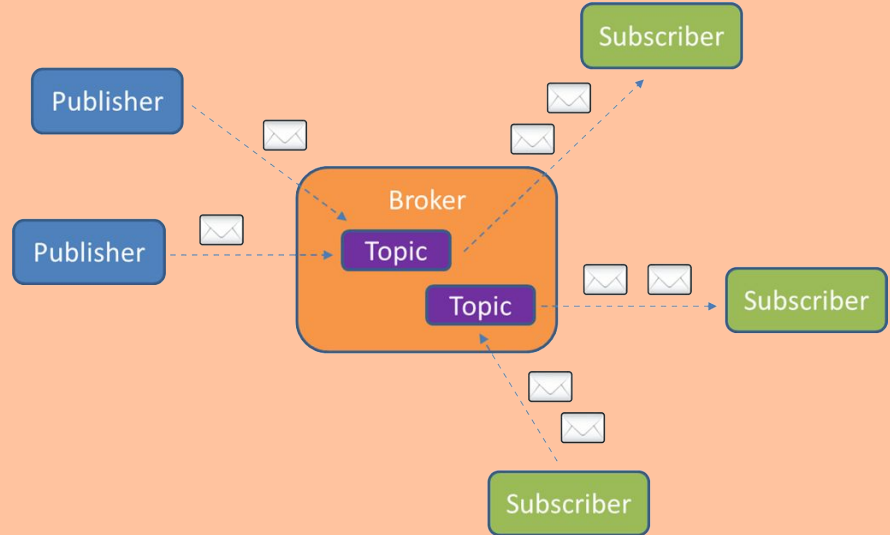
**TOPIC
BASED**

**CONTENT
BASED**

**TYPE
BASED**

TYPES OF PUBLISH-SUBSCRIBE

TOPIC BASED



TYPES OF PUBLISH-SUBSCRIBE

**TOPIC
BASED**

**CONTENT
BASED**

**TYPE
BASED**

ADVANTAGES

- Loose coupling
- Scalability
- Flexibility

DISADVANTAGES

Pub/Sub's greatest strength
— decoupling —
is also its biggest disadvantage

PRACTICAL

03. ASPECTS





DIFFERENT APPROACHES

FIREBASE CLOUD MESSAGING

Firebase is a mobile and web application development platform



Acquired by google in 2014

As of now, platform has 20 products

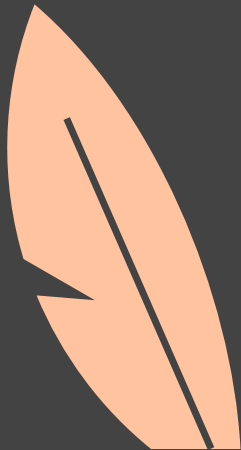
Firebase Cloud Messaging FCM:

cross-platform solution for messages and
notifications for Android, iOS, and web
applications



FIREBASE IMPLEMENTATION

LIVE DEMO





CONCLUSION

.04



SOME OTHER PUSH-NOTIFICATIONS SERVICE COMPANIES

- *Amazon Simple Notification Service (Amazon SNS)*
- *Pushwoosh*
- *Urban Airship*
- *Apple Push Notification*
- *OneSignal*
- *LeanPlum*
- *Pushbots*
- *PushCrew*



SUMMARY

- Push Notifications : Presentation, History, Uses...
- Android Notifications Channels
- Publisher and the subscriber don't know about existence of one another
- 3 Types of Pub/Sub:
 - For Push Notifications topics used
- Super quick to implement simple Push Notifications with Firebase

The background is a solid light orange color. In the upper half, there are three stylized orange clouds of varying shapes. In the lower half, there is a large, wavy orange shape representing a hill or dune. At the base of this hill, on the left and right sides, are two stylized dark blue plants with multiple pointed leaves.

QUESTIONS?