



# Firebase

Aksel Vincent Berg & Alex Buleon

# Summary

- What is Firebase?
- Features presentation
- Installation process
- Security
- Migration



# What is Firebase

## Cross-platform development environment



Android reference

[View full API now](#)



iOS reference

[View full API for Swift & Obj-C](#)



Web reference

[View full API for JS Client](#)



C++ reference

[View full API now](#)



Unity reference

[View full API now](#)

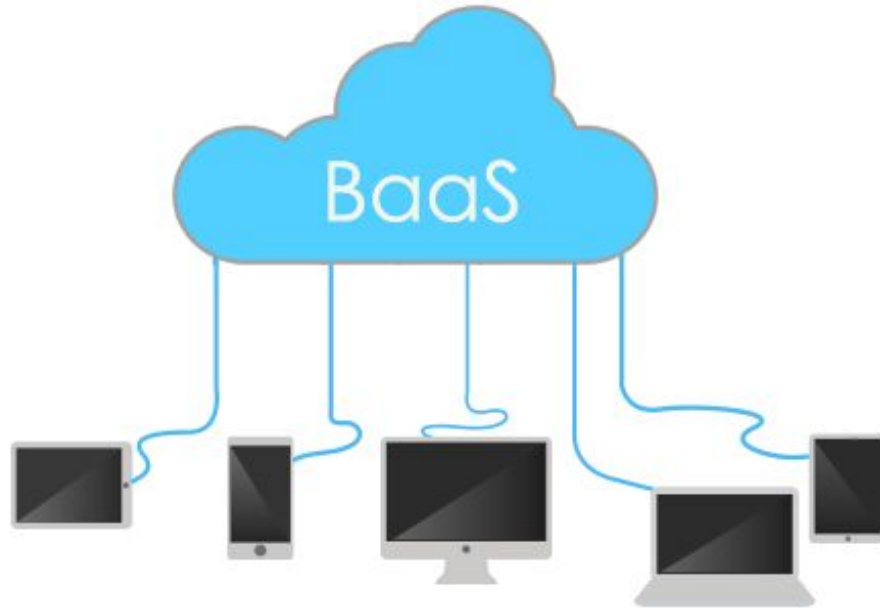


Admin reference

[View full API now](#)

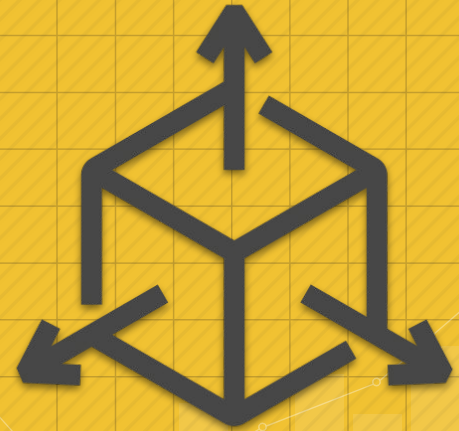
# What is Firebase

## Backend as a service



# What is Firebase

Focus on analytics and scalability



# Features

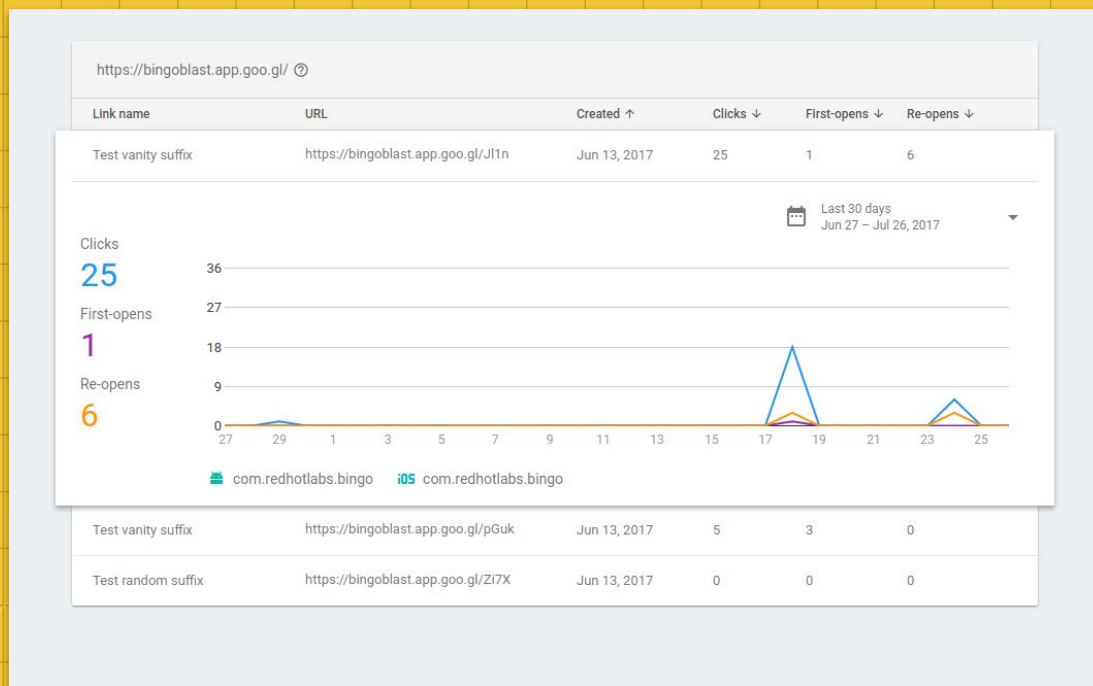
## Flexible pricing plans

- Free plan
- Fixed price plan
- Pay as you go model

RESET TO FREE USAGE			Projects are billed monthly
Realtime Database	GB stored	8 GB about 160 M chat messages	\$35
	GB transferred	170 GB about 3,400 M chat messages	\$160
Cloud Firestore	GB stored	360 GB about 7,200 M chat messages	\$64.62
	Document writes	46,200,000 writes number of times data is written	\$82.08
	Document reads	527,300,000 reads number of times data is read	\$315.48
	Document deletes	78,600,000 deletes number of times data is deleted	\$15.60
Don't forget to factor in Egress costs! See <a href="#">Google Cloud pricing</a>			
Storage	GB stored	125 GB about 62,500 high-res photos	\$3.12
	GB transferred	185 GB about 92,500 high-res photos	\$18.60
	Operations (uploads & downloads)	4,213,000 ops about 421,300 uploads & 3,791,700 downloads	\$1.82
	Invocations	2,000,000 invocations number of times a function is invoked	Free

# Features

## User-friendly web console



# Overview of the web console

**Project Overview**

**DEVELOP**  
Authentication, Database, Storage...

**STABILITY**  
Crashlytics  
Performance  
Test Lab

**ANALYTICS**  
Dashboard  
Events  
Audiences  
Attribution  
Funnels

**Blaze**  
Facturation à l'utilisation

Vous consultez le projet de démonstration Firebase. [En savoir plus](#) **CRÉER UN PROJET** QUITTER LA DÉMONSTRATION

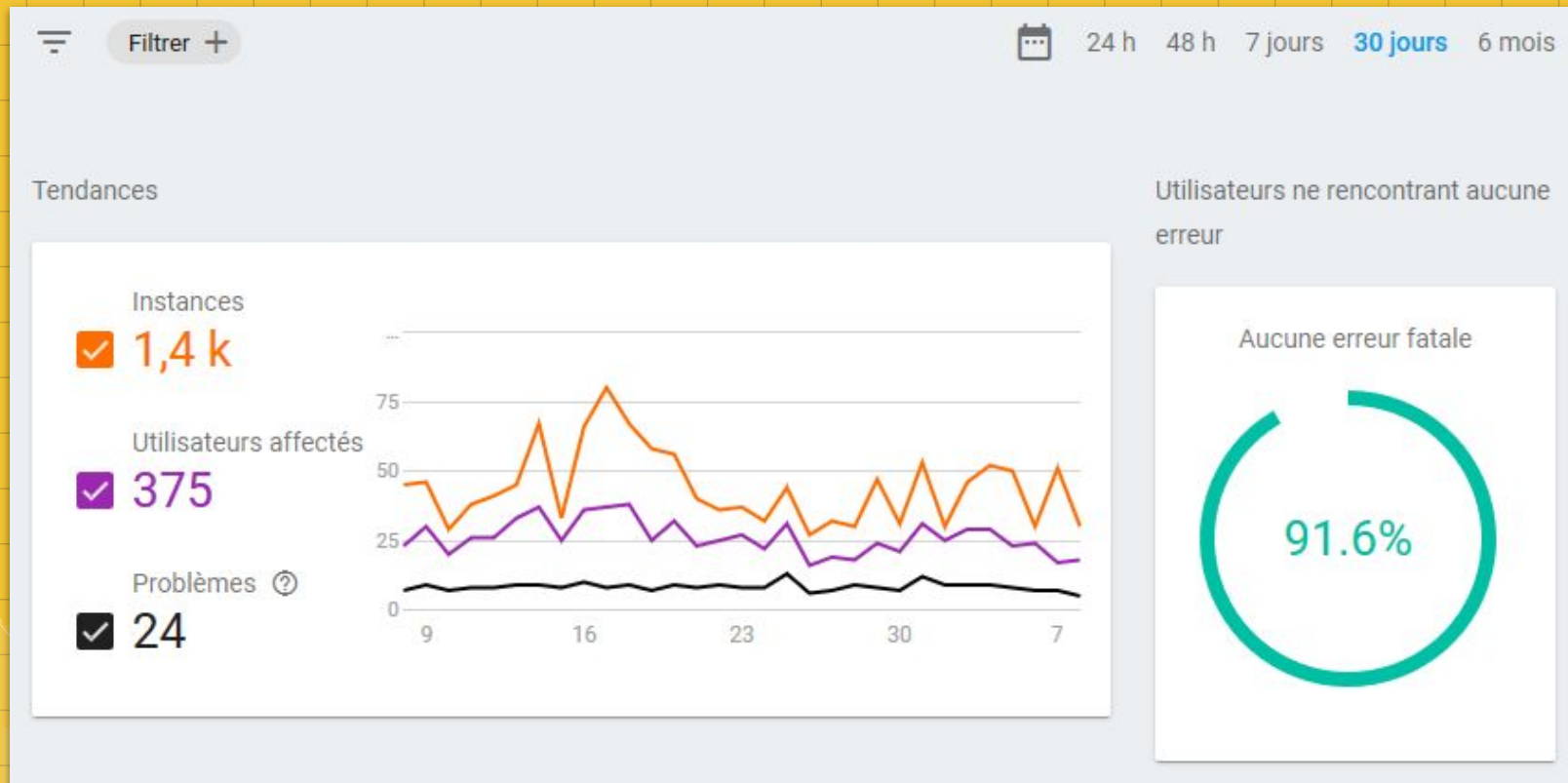
**Présentation**

2 applications dans le projet

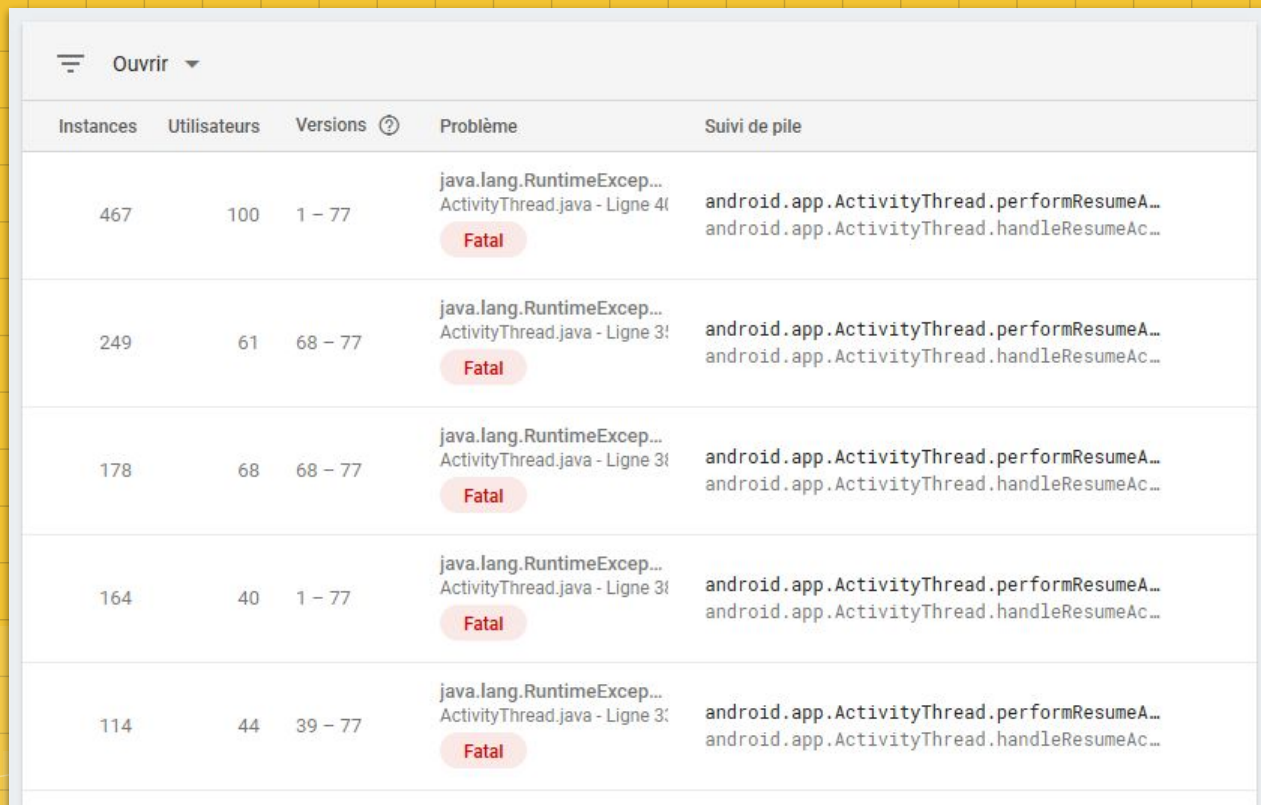
Application	Utilisateurs actifs par jour	Nombre d'utilisateurs actifs par mois	Utilisateurs n'ayant pas subi de plantage	Plantages
<b>Flood-It! Android</b> com.labpixies.flood 23 utilisateurs	402 <span>-2.4 %</span>	4,64 k <span>+2.9 %</span>	91,6 %	1,92 k
<b>Flood-It! iOS</b> com.google.flood2 55 utilisateurs	018	7.66 k		



# Crashlytics - App monitoring



# Crashlytics - Issues tracking



The image shows a screenshot of the Crashlytics 'Issues' page. At the top, there is a header bar with a menu icon and the text 'Ouvrir'. Below this is a table with five columns: 'Instances', 'Utilisateurs', 'Versions', 'Problème', and 'Suivi de pile'. The table contains five rows of crash data. Each row shows the number of instances, users, and versions affected, followed by a truncated stack trace and a 'Fatal' status indicator. The stack traces are truncated, showing only the first few lines of the exception.

Instances	Utilisateurs	Versions ?	Problème	Suivi de pile
467	100	1 - 77	java.lang.RuntimeExcep... ActivityThread.java - Ligne 4f <b>Fatal</b>	android.app.ActivityThread.performResumeA... android.app.ActivityThread.handleResumeAc...
249	61	68 - 77	java.lang.RuntimeExcep... ActivityThread.java - Ligne 3f <b>Fatal</b>	android.app.ActivityThread.performResumeA... android.app.ActivityThread.handleResumeAc...
178	68	68 - 77	java.lang.RuntimeExcep... ActivityThread.java - Ligne 3f <b>Fatal</b>	android.app.ActivityThread.performResumeA... android.app.ActivityThread.handleResumeAc...
164	40	1 - 77	java.lang.RuntimeExcep... ActivityThread.java - Ligne 3f <b>Fatal</b>	android.app.ActivityThread.performResumeA... android.app.ActivityThread.handleResumeAc...
114	44	39 - 77	java.lang.RuntimeExcep... ActivityThread.java - Ligne 3f <b>Fatal</b>	android.app.ActivityThread.performResumeA... android.app.ActivityThread.handleResumeAc...

# Authentication

## Facilitate authentication methods for apps

🔍 Search by email address, phone number, or user UID					ADD USER	↺	⋮
Identifier	Providers	Created	Signed In	User UID ↑			
testtest@test.com	✉	Mar 16, 2018	Mar 16, 2018	0DYyI5roMDRecpK9kan0N9iRx8J2			
molly@gmail.com	✉	Mar 18, 2018	Mar 22, 2018	3UNgU5WjJXc1Z0SGulfYvOvyLNp2			
email@gmail.com	✉	Mar 16, 2018	Mar 16, 2018	4wNoliabHTMWaCKlCMTJgPaeDOB3			
hallo@test.no	✉	Mar 19, 2018	Mar 19, 2018	5AT4ZwWitRRujOZ0rbefTeVMCLw1			
qwe@gmail.com	✉	Mar 16, 2018	Mar 16, 2018	5VisNbQYKLfU1ntpSIYzIE00REI3			
skammers@gmail.com	✉	Mar 20, 2018	Mar 20, 2018	5aNr9BKnoIWH0WPGDHZ9gY8VY...			

Fournisseur	État
✉ Adresse e-mail/Mot de passe	Désactivé
📞 Téléphone	Désactivé
🌐 Google	Désactivé
🎮 Play Jeux	Désactivé
📘 Facebook	Désactivé
🐦 Twitter	Désactivé
🔗 GitHub	Désactivé
👤 Anonyme	Désactivé

# Database and storage

NoSQL cloud database

Files stored as JSON

Synchronise in real-time with  
all the apps, offline ready



# Growths and performance

Firestore predictions: set of tools to predict the growth of users

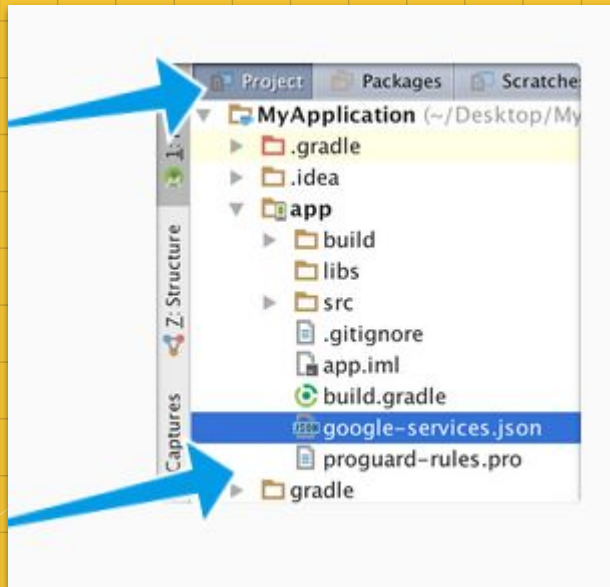
Cloud messaging optimizations

Remote Config: allows to deploy quickly

Dynamic links: allows deep links to work on every platforms

# Installation process

1: Register the app in the Firebase website



2: Add the json file to the project

# Installation process

## 3: Add dependencies in gradle

```
buildscript {  
    dependencies {  
        // Add this line  
        classpath 'com.google.gms:google-services:3.2.0'  
    }  
}
```

```
dependencies {  
    // Add this line  
    compile 'com.google.firebase:firebase-core:15.0.0'  
}  
...  
// Add to the bottom of the file  
apply plugin: 'com.google.gms.google-services'
```

## 4: Launch the app to verify the installation

# Security - Rules system

Datanodes protections

Permissions and privileges are granted to children nodes

Simulation support

```
{
  "rules": {
    "foo": {
      // /foo is readable by the world
      ".read": true,

      // /foo is writable by the world
      ".write": true,

      // data written to /foo must be a string less than 100 characters
      ".validate": "newData.isString() && newData.val().length < 100"
    }
  }
}
```



# Security - Encryption

Uses the Google Cloud  
Encryption

Native server-side encryption

Easier client-side encryption



# Data migration

Both importing & exporting are supported:

Importing: native (Android) and external tools

Exporting: available but limited



# Conclusion

Not an RDBMS replacement

Flexible, easy to setup, dynamic

Better for data-streaming structures,  
mobile applications and web projects



Thank you  
for your attention



**Firebase**