

# Mobile Application Development

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Produced  
by

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# Android & Firebase Part 4

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## Firebase Integration





# Agenda

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- ❑ Firebase history
- ❑ The all new Firebase
- ❑ Real-time database
- ❑ Authentication
- ❑ Storage
- ❑ Remote config
- ❑ Hosting
- ❑ Crash reporting
- ❑ Test lab
- ❑ Firebase cloud messaging
- ❑ Dynamic links
- ❑ App indexing
- ❑ Analytics
- ❑ CoffeeMate Highlights & Demos along the way...



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# Crash Reporting

And finding the root  
cause



# Crash Reporting

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- ❑ Monitor fatal and non-fatal errors.
- ❑ Errors are grouped into clusters of similar stack traces.
- ❑ Find bug cause easily - Report consists of stack trace, device characteristics, performance etc.
- ❑ Enable email alerts to be notified of a new crash anytime.
- ❑ Integrate with analytics to find order of events that caused the crash.
- ❑ Seamless across android and iOS.



# Implement Crash Reporting

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- ❑ Connect your app with firebase console.
- ❑ Add firebase dependency into gradle.
- ❑ Add custom logs wherever required.
  - `FirebaseCrash.log("SQLite syntax error");`
- ❑ Report server side errors with [Google Stackdriver Error reporting](#).



cloud.google.com/error-reporting/

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S R T CoffeeMateFBI - Hosting - Firebase console https://coffeematefbi.firebaseio.com Stackdriver Error Reporting | Google Cloud Platform

Google Cloud Platform

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# STACKDRIVER ERROR REPORTING

Identify and understand your application errors.

[VIEW STACKDRIVER ERROR REPORTING DOCS](#) [VIEW CONSOLE](#)

## Real-time Exception Monitoring and Alerting

Stackdriver Error Reporting **counts, analyzes and aggregates the crashes** in your running cloud services. A **centralized error management interface** displays the results with sorting and filtering capabilities. A dedicated view shows the error details: **time chart**, occurrences, affected user count, first and last seen dates and a **cleaned exception stack trace**. Opt-in to receive **email and mobile alerts** on new errors.

The screenshot shows the Stackdriver Error Reporting interface. It features a bar chart titled 'Errors' with a y-axis ranging from 0 to 8000 and an x-axis showing dates from Oct 2 to Oct 25, 4:12 PM. Above the chart is a detailed view of a specific error, including a title, error type, and a cleaned exception stack trace.



# Crash reporting with proguard

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- ❑ In **proguarded** apps the stack trace is not sufficient to identify the root cause.
- ❑ Usually we view the mapping files and try to make sense out of it.
- ❑ All of this is done by firebase. Just upload the mapping files and you will see meaningful stack traces.



▼ Exception java.io.FileNotFoundException: /non-existent/file: open failed: ENOENT (No such file or directory)

```
libcore.io.IoBridge.open (IoBridge.java:452)
java.io.FileInputStream.<init> (FileInputStream.java:76)
java.io.FileInputStream.<init> (FileInputStream.java:103)
com.tutsplus.myfirebaseapp.MainActivity.onCreate (MainActivity.java:22)
android.app.Activity.performCreate (Activity.java:6237)
android.app.Instrumentation.callActivityOnCreate (Instrumentation.java:1107)
android.app.ActivityThread.performLaunchActivity (ActivityThread.java:2369)
android.app.ActivityThread.handleLaunchActivity (ActivityThread.java:2476)
android.app.ActivityThread.-wrap11 (ActivityThread.java)
android.app.ActivityThread$H.handleMessage (ActivityThread.java:1344)
android.os.Handler.dispatchMessage (Handler.java:102)
android.os.Looper.loop (Looper.java:148)
android.app.ActivityThread.main (ActivityThread.java:5417)
java.lang.reflect.Method.invoke (Method.java)
com.android.internal.os.ZygoteInit$MethodAndArgsCaller.run (ZygoteInit.java:726)
com.android.internal.os.ZygoteInit.main (ZygoteInit.java:616)
```

► Caused by android.system.ErrnoException: open failed: ENOENT (No such file or directory)

### Data



#### User data

Country Code: 360  
Carrier Code: 260  
Carrier: Android  
Locale: -



#### Performance data

VM free: 746.07KB  
VM total: 5.16MB  
VM max: 64MB  
Battery level: -  
Charging state:  
Charging AC  
Connection State:  
Wwan



#### Device data

Manufacturer:  
Unknown  
Model:  
Android SDK built for  
x86  
Board: Unknown  
Android API: 23  
Android OS: 6.0  
Brand: Android  
RAM: 880.51MB  
Available on disk: -



#### Error data

Date:  
Sep 2, 2016, 10:56:09  
PM  
App Version: 1



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Thanks!

A simple line drawing of a smiling person with their arms raised in a gesture of thanks. The person has a round face with a wide smile, two dots for eyes, and a few strands of hair. Their arms are raised, with hands open. A small '©' symbol is visible at the bottom right of the drawing.



# Some important points though....

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- ❑ Do not think RDBMS, think JSON. How data should be structured is very important.
- ❑ Firebase has a recycler view, that integrates with real time database smoothly without any listeners.
- ❑ Test lab which is available in paid plan (Blaze), is an amazing feature for testing your app on different real and virtual devices.
- ❑ Set developer mode to true when testing remote config.



# References & Links

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- ❑ [Presentation by Kaushal Dhruw & Shakti Moyal 2016](#)
- ❑ <https://firebase.google.com>
- ❑ Demo app available at <https://goo.gl/WBP5fR>



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# Questions?