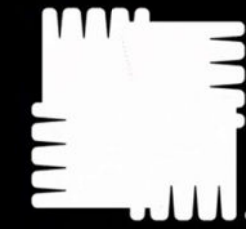


# A Crash Reporting Library for Android

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AVG



## The Problem

Programming is a human activity that is rather prone to errors. The most severe types of failure in any environment are unrecoverable failures, simply called crashes.

In most cases, in order to detect and remedy a fault in the source code, a developer needs an insight into the application's behaviour.

Fatal failures of Android applications are often caused by market fragmentation, vendor modifications and bugs introduced in Android APIs. Therefore, accurate reportings of the users's environment are a must.



## Analysis

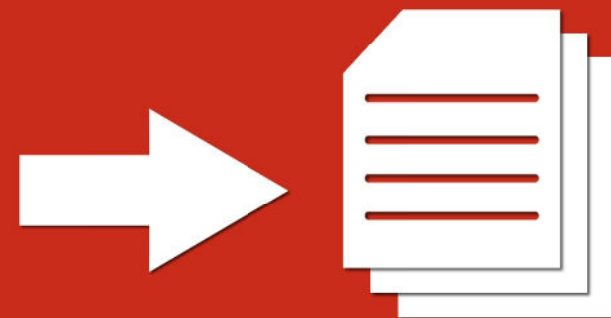
Besides the crash reporting solution provided by Google Play, there are both proprietary and open-source solutions available.

This thesis provides a comprehensive analysis of three of such solutions:

- ACRA,
- HockeyApp and
- Fabric/Crashlytics.

Unfortunately, none of these solutions provide the required level of universality, configurability, data security and privacy.

Therefore, a custom solution named the *Crash Reporting Library* was developed.



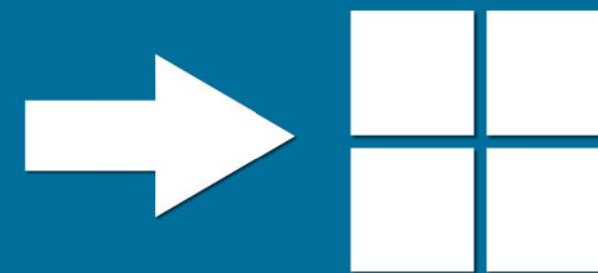
## Implementation

The *Crash Reporting Library* provides a universal, scalable and extensible solution supporting both apps written using *Android SDK* and *NDK*.

The data collection, messaging and UI can be customised by extending library classes and layout injection.

The reports can be send to multiple servers. The default configuration is set up to support AVG's proprietary *Crash Analysis Portal*.

The sending of the reports is scheduled by the library based on the library network configuration.



## Conclusion

The *Crash Reporting Library* supports all apps supporting API level 16 (Android 4.1, Jelly Bean) or newer.

The library also provides an easy out-of-the box configuration that collects commonly used crash data.

The implemented solution is thoroughly documented using UML and JavaDoc. The library also provides a comprehensive and fully automated testing solution.

The *Crash Reporting Library* is currently used by one application developed by AVG and is ready for further development and extensions.

