



Support Document

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Version Control

Date	Version	Owner	Comments
15/10/18	V 1.0	Magnito	Initial Draft
16/10/18	V 1.1	Magnito	Final Draft

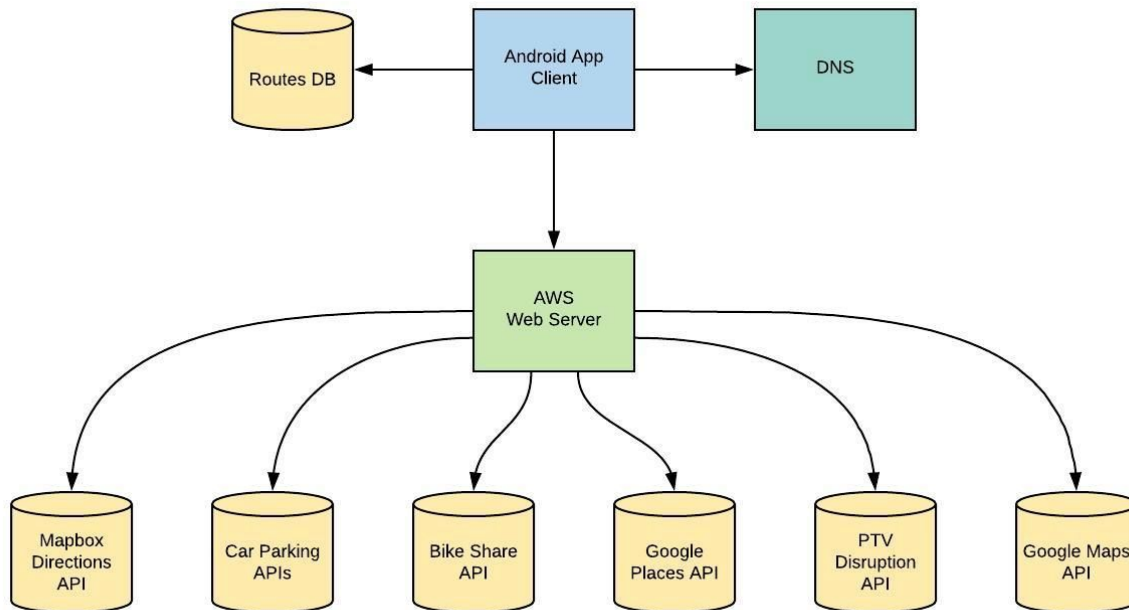
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1. Fundamentals of Proposed System

1.1 System Details

The system primarily consists of an Android app and a web server. The web server fetches the required data from the source APIs and delivers it to the app through a REST API. The overall system design is as follows:

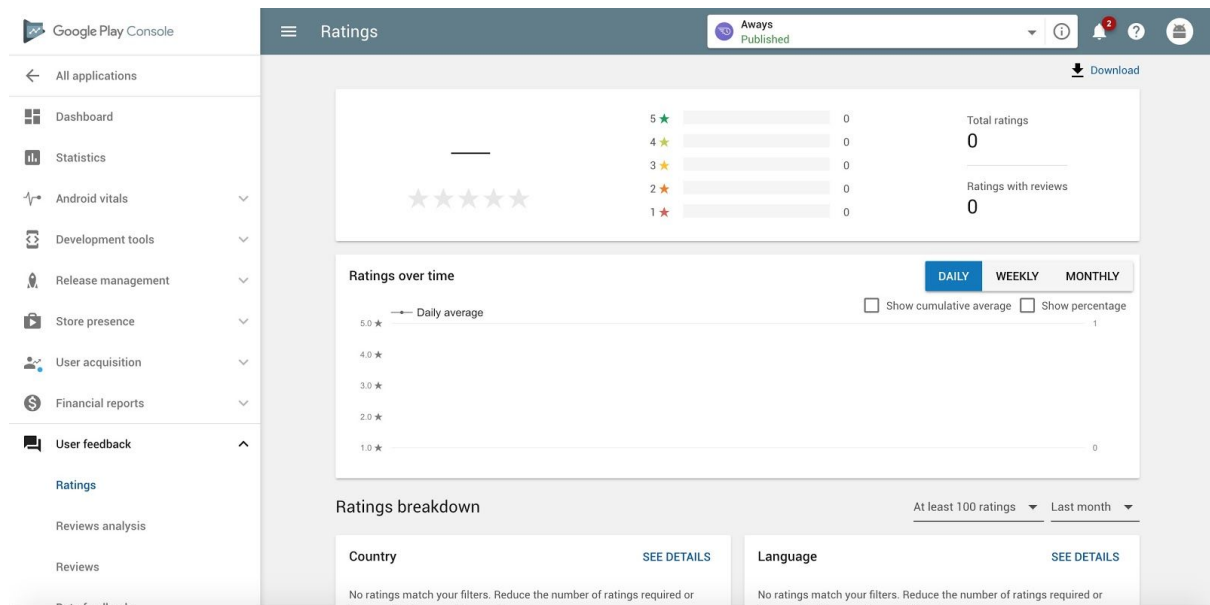


2. Day to day Procedures

Aways is designed to have minimal day-to-day operations by automating most of the works involved. However, to guarantee the proper functioning of the application with proper support, the team has to carry out these daily procedures:

2.1 App Reviews

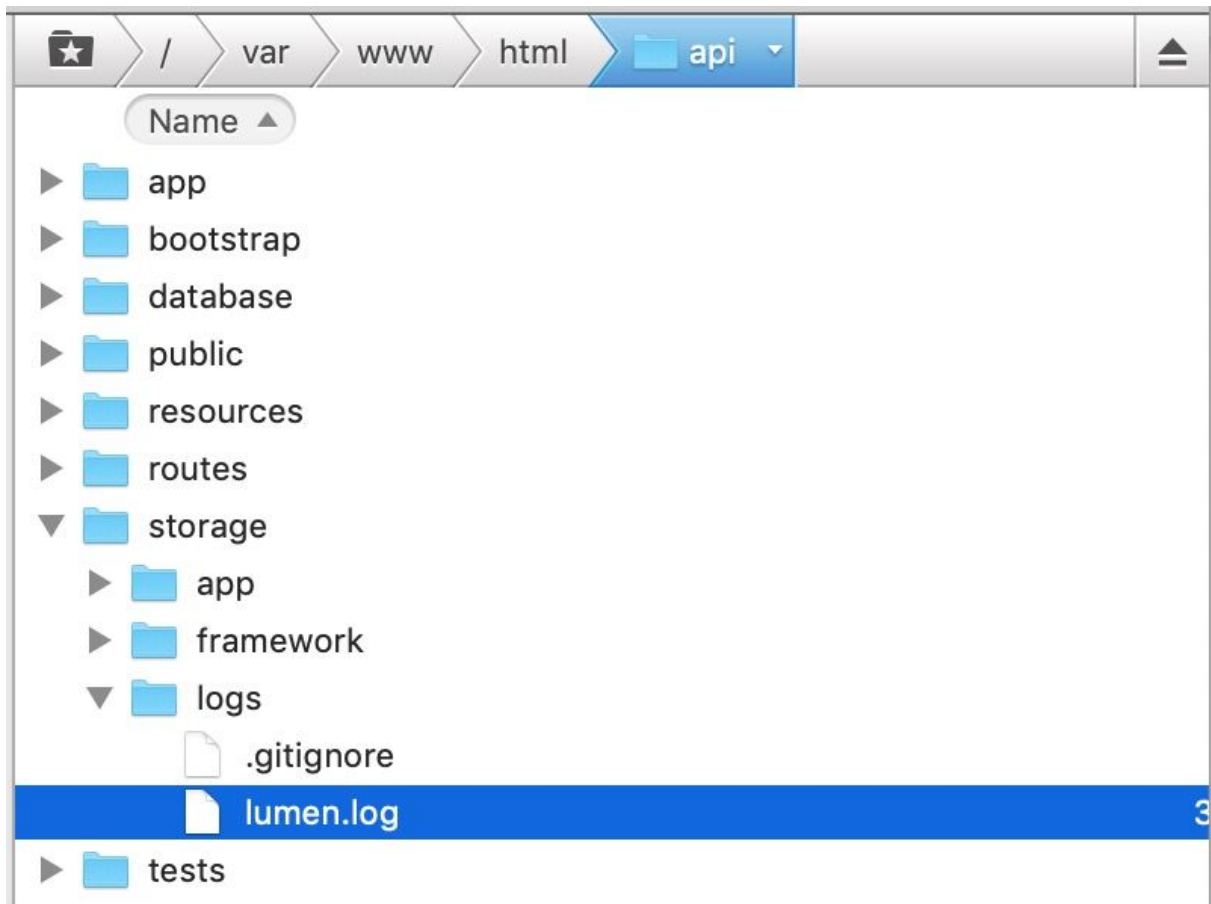
The app is made available on Google Playstore and accessible to all Android phone or tablet users in Australia. One of the main aspects of Google Playstore is that users are allowed to express their views on the application through Google Playstore Reviews. Users can rate an app version with five star rating and leave feedback on how they feel using the app on the playstore. These reviews will be visible publicly on the play store as well as on the playstore developer console. As a part of day-to-day support operations, the team is responsible to look into the feedback and respond back to the users based on the feedback. Ratings can be accessed by logging into the developer console and selecting **Ratings** option under **User Feedback**



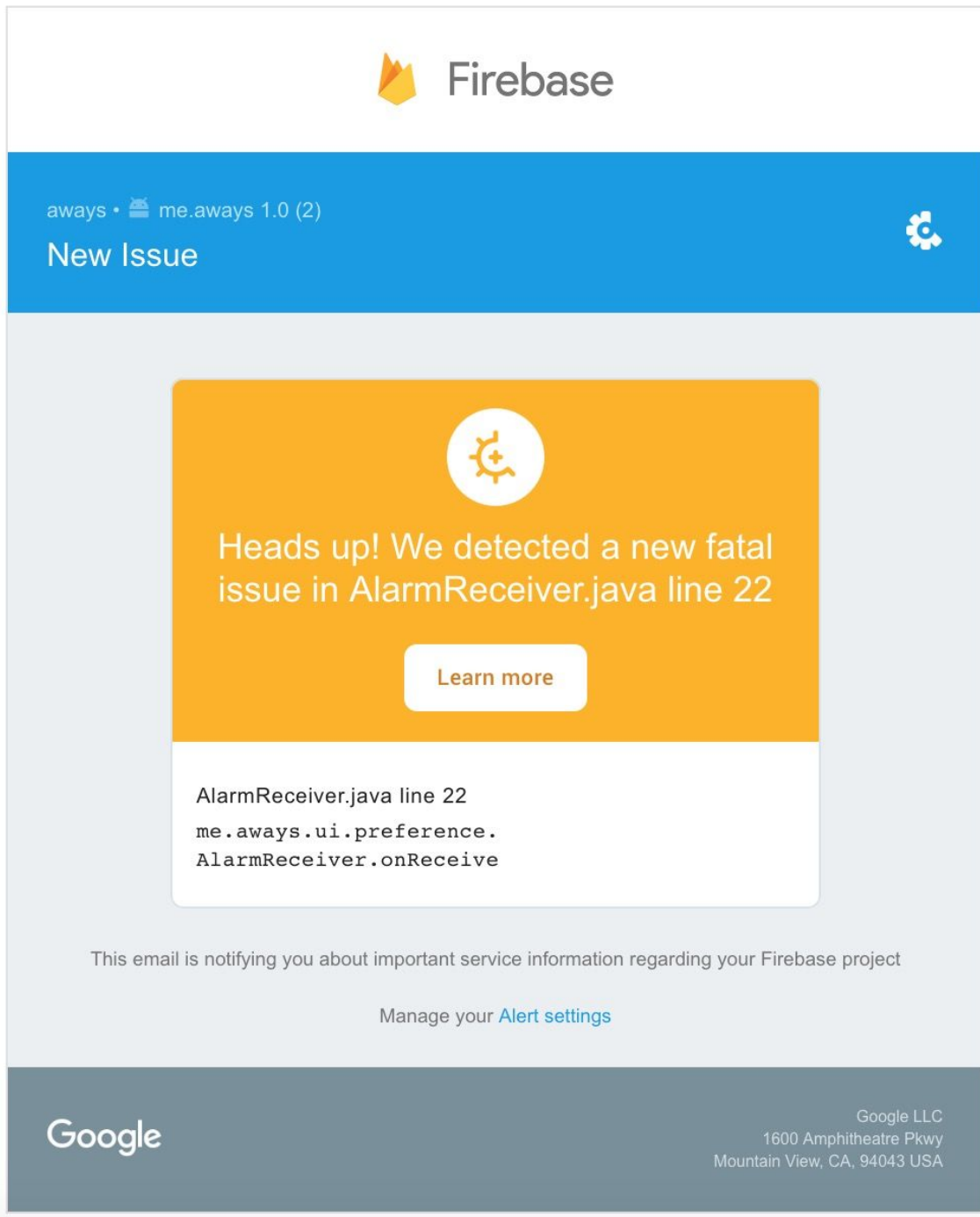
2.2 Server Logs and Crashlytics

Stack traces are vital in understanding and figuring out any potential bugs in the system. This was taken into consideration while we developed the Aways REST API. Aways uses Lumen framework and Lumen Server Logs for debugging.

The server log is stored under `/var/www/html/api/storage/logs/lumen.log` and you will need a FTP client to access the file. [Filezilla](https://filezilla-project.org/) (<https://filezilla-project.org/>) is a free FTP client you can use for this. Also, remember that you will need to use **SFTP** protocol with port **22** to access the files. As mentioned earlier, you need to use your private key instead of the plaintext password option.



Also, the app crashes are monitored using the Firebase Crashlytics SDK. The registered email will receive any crash reports with all the error stack trace.



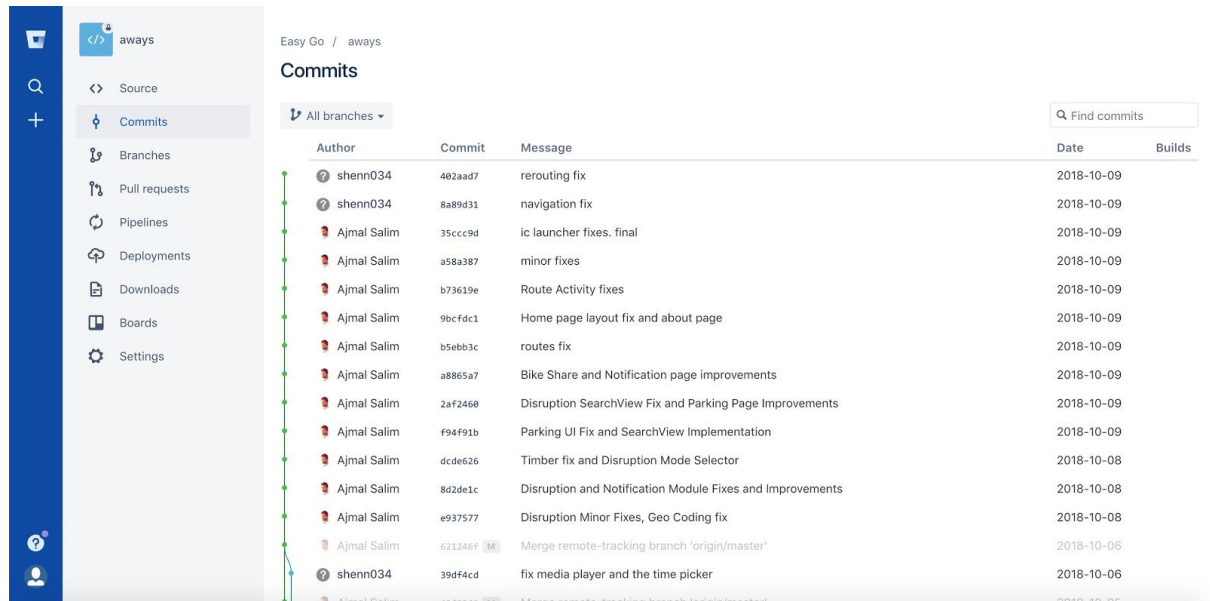
2.3 Commit Check

Aways uses [Bitbucket](#) for version controlling and is configured with Android Studio VCS tool for easy operations. In order to clone the repository, one can easily use the following command in their terminal or command prompt (provided that you have already installed [git](#) (<https://git-scm.com/downloads>) on your system) :

```
git clone
```

```
https://magnito-easygo@bitbucket.org/magnito-easygo/aways.git
```

Once the repository is cloned, the project can be opened in Android Studio and it will automatically configure the VCS. However, it is necessary to check if the code committed is actually on the bitbucket server everytime a commit operation is performed.



3. Security and Privacy

In terms of security, Aways considers a wide variety of security measures including but not limited to securing the transactions with SSL/TLS for transport layer protection, using ProGuard for code obfuscation, using JWT to avoid misuse of Aways REST API, and strict header validation for avoiding potential client side injection. More details can be found in the Maintenance Document.

In terms of Privacy, Aways uses users' location information (precise and coarse location) to find the nearby results without the user wanting to enter the current location details every time. Also, it is used in the navigation module to calculate the ETA (Estimated Time Arrival), calculate the total distance of the trip, and to draw the route on the Map.

Aways also uses users' device ID to register the device with the server for security purposes. This ID is used to generate the API ACCESS TOKEN hash value. This hash token is used to authenticate every request to and from the server. This is done to avoid unauthorized requests to the API and mitigate misuse of the resources including avoiding DDoS attacks.

4. Training Information

The purpose of the Training Plan is to identify the appropriate training strategies and activities for the 1) day to day runner and 2) training lead required to achieve the desired learning outcome during the implementation of the Aways Project. An instructor computer and one android phone for each trainee

should be supplied to implement the training.

4.1 Training Curriculum

The curriculum defines the training courses that will be developed and delivered, including the associated learning objectives, sourcing options, delivery methods and course owners.

No.	Curriculum Name	Module Name	Learning Objectives	Duration (mins.)
1	Technical training	Android Studio	Learning how to modify the codes using android studio	60 - 120
2	Technical training	REST API	Learning how to modify the API using PHP	60 - 120
3	Technical training	Web Server	Learning how to use a web server to manipulate the communications	60 - 120
4	Technical training	Datasets	Learning how to maintain the datasets to ensure the reliability	60 - 120

5. System Environment

The Android app is developed using native Java targeting Android SDK version 27 (Oreo) with a minimum SDK support from SDK 19 (KitKat). The web server is using LAMP (Linux Apache MySQL PHP) stack on an AWS EC2 server. Lumen framework is used to develop the REST API.

Software Requirements	Android Client: Android Studio 3.1.4, Java 1.8 Web Server: PHP, Apache, MySQL, Composer, Lumen
Hardware Requirements	Developer Machine: <i>Windows / Mac / Linux</i> 3 GB RAM minimum, 8 GB RAM recommended; plus 1 GB for the Android Emulator 4 GB of available disk space minimum, 1280 x 800 minimum screen resolution Minimum Web Server Requirements:

	1 GB Memory, 1 vCPU, 25 GB SSD Disk, 100 GB Bandwidth Transfer, CentOS/Ubuntu/Amazon Linux
Version Control	BitBucket
Continuous Integration	BitBucket Pipeline

6. Dataset Maintenance

As Aways is a real-time application serving real time data to its users, Aways relies mostly on APIs rather than static datasets. However, it is essential to check that these APIs are healthy all the time. The update frequency of these datasets varies from almost instant to 15 minutes. A detailed information about datasets used are provided in the maintenance document.

7. Software Maintenance

Aways mainly uses Android Studio to develop the application. All the updates for the Android Studio and other dependencies are managed by Java Gradle. These options are available inside the Android Studio itself and will prompt user whenever a new update is available.

8. Testing Information

Test Type	Result
Integrity Testing	Pass
Stress Testing	Pass
Unit Testing	Pass
Regression Testing	Pass

More details about Testing can be found in Maintenance Document.