

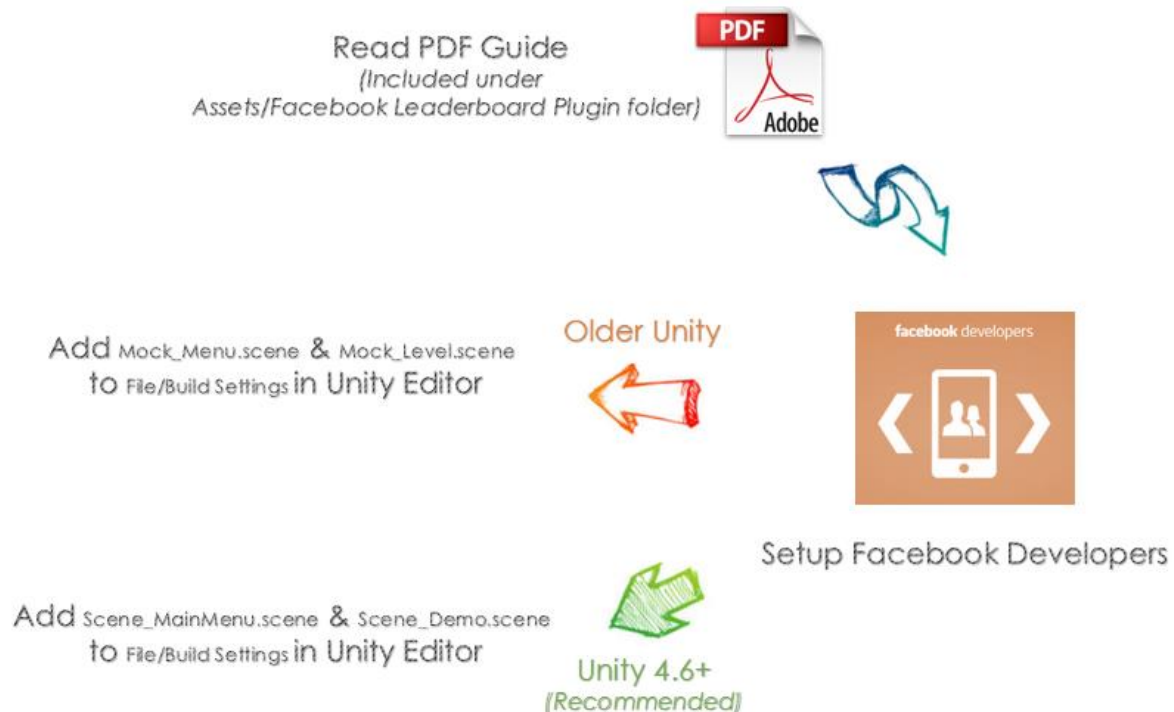
Facebook Leaderboard Plugin

Unity – Android Facebook Leaderboard Solution

Updated March 2015

CONTENT

1. Introduction
2. Basic/Essential Information
 - a. Plugin features overview
 - b. Setup Facebook Developers for the first time
3. Frequently Asked Questions and Solutions
4. Contact Info



1 INTRODUCTION

This plugin integrates Facebook to your Unity Android App seamlessly. It mainly focuses on creating a score board based entirely on users' Facebook friends, but the plugin also contains useful features like real-time next ranking display, invite friends to play, and posting to user's wall.

The plugin v2.0 now fully supports Unity 4.6's New UI system. It is much cleaner, flexible and powerful compared to the old GUI system (plugin v1.0). Old demo is still included for backward compatibility for older Unity versions.

2 BASIC/ESSENTIAL INFORMATION

A) Plugin Features Overview

- Facebook Leaderboard

Log users into their Facebook, and load their friends' information. If their friends were already using/playing the game, their scores will be loaded as well. All these information will then be organized and compiled into a scoring leaderboard. Each leaderboard entry displays a rank, the friend's profile picture, name and score. Arrangement of ranking is done locally.



Figure 1 Facebook Leaderboard Plugin v1.0 (pre-March 2015 update) (Game shown: [Chase Him Down](#) on Google Play)

- Real-time Next Ranking Display
Able to display an in-game 'next rank' profile as shown in the image below.



Figure 2 Real-time Next Ranking Display ([Chase Him Down](#))

- Invite Friends
Click a button to invite user's Facebook friends to download and play App.
- Post-to-wall Button
Click a button to post something to user's Facebook wall with editable text (Title, picture and description editable at FacebookManager.cs under PostToWall() method) and privacy settings.

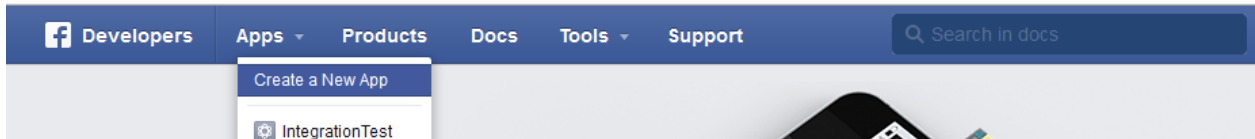


Figure 3 Post to wall feature

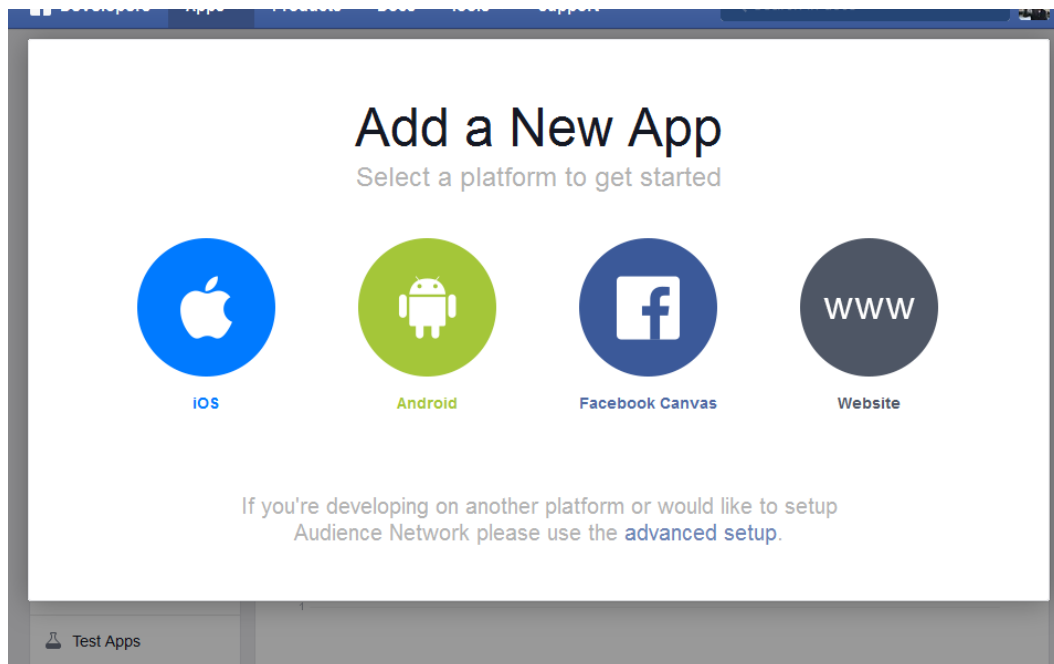
B) Setup Facebook Developers for the First Time

Step 1: Join [Facebook Developers](#) .

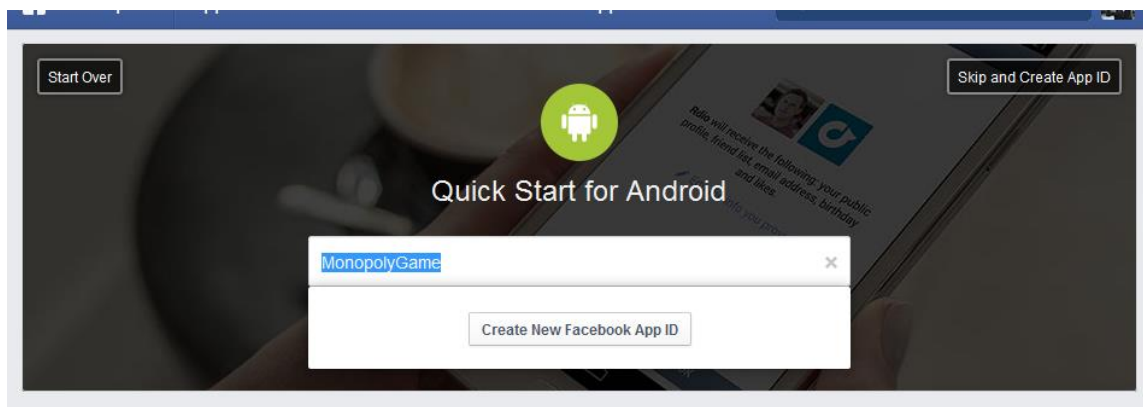
Step 2: Add new App.

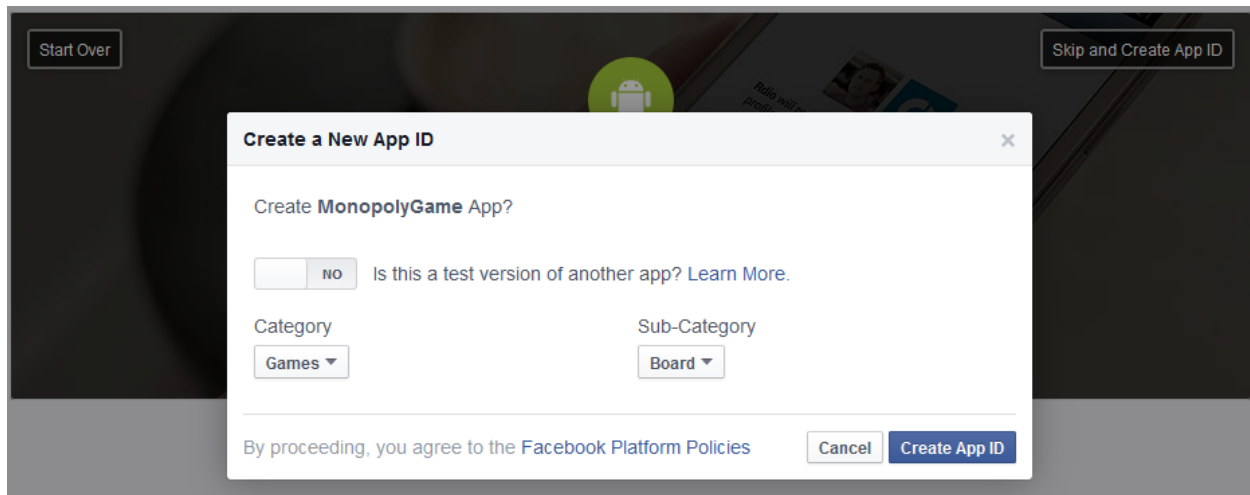


Step 3: Select platform - Android.

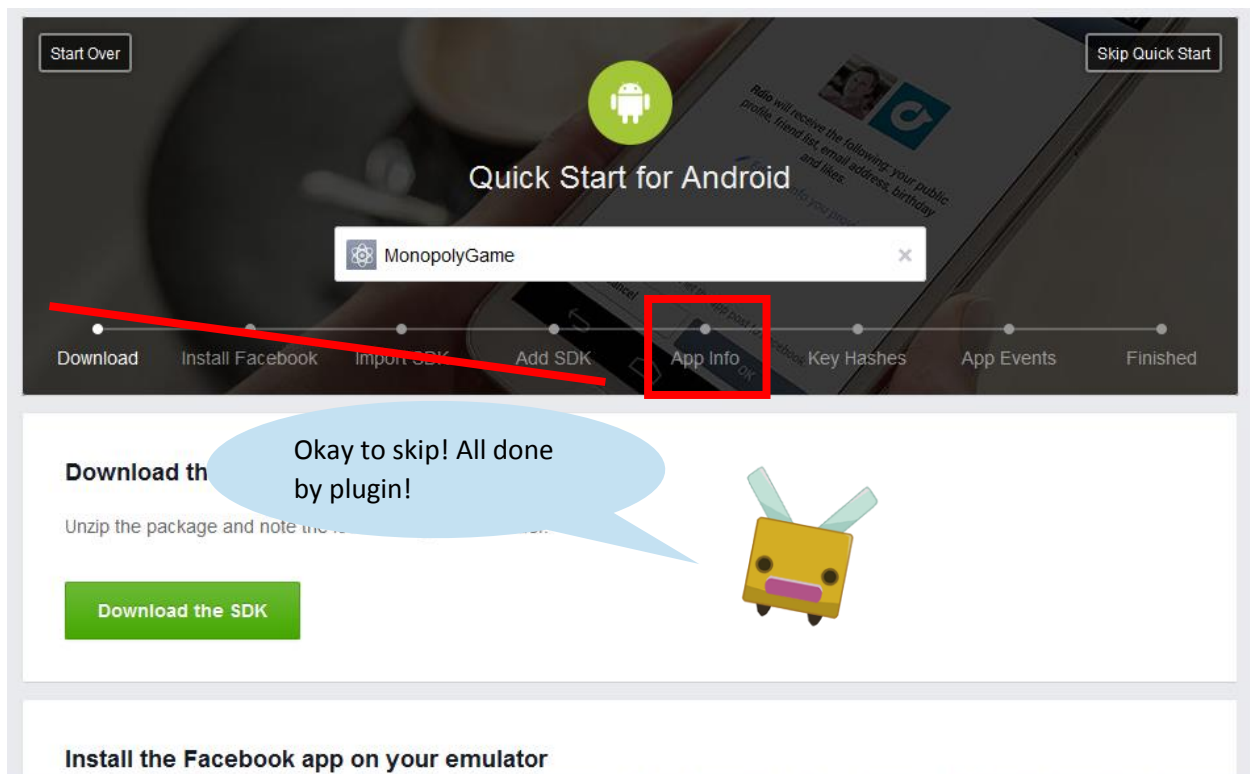


Step 4: Type name and create new ID.





Step 5: Skip directly to App Info.



Step 6: Enter package name (*your App package*) and activity name (*exactly as below*).

Tell us about your Android project

Package Name
Your package name uniquely identifies your Android app. We use this to let people download your app from Google Play if they don't have it installed. You can find this in your [Android Manifest](#)

Default Activity Class Name
This is the fully qualified class name of the activity your app launches by default. We use this when we deep link into your app from the Facebook app. You can also find this in your [Android Manifest](#)

[Next](#)

Step 7: Enter development key hash (*Steps next page. Revisit later for release key hash*).

Add your development and release key hashes

To ensure the authenticity of the interactions between your app and Facebook, you need to supply us with the Android key hash for your development environment. If your app has already been published, you should add your release key hash too.

[Show how to generate a development key hash](#)

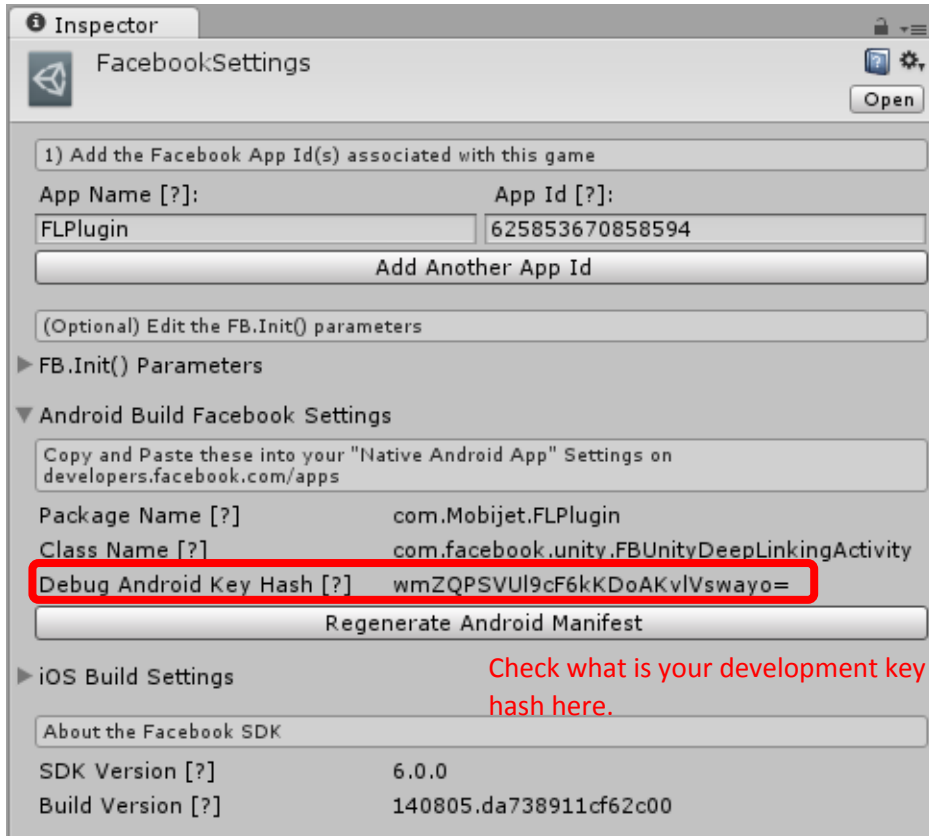
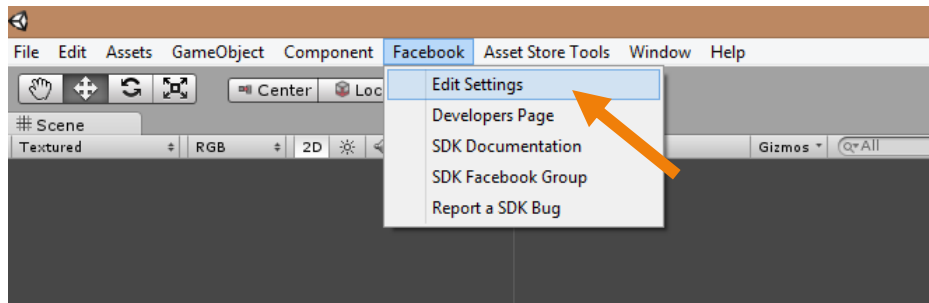
Development Key Hashes

If your app has already been published, you should also add a hash of your release key.

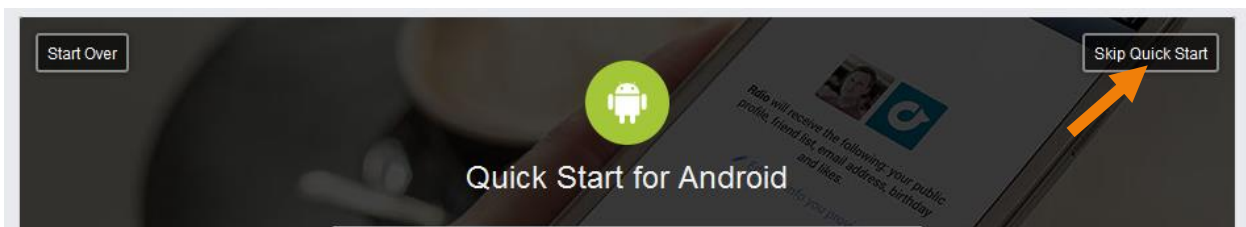
[Show how to generate a release key hash](#)

Release Key Hash

[Next](#)



Step 8: Scroll up and click skip quick start.



Step 9: The following page will load. Copy your App ID, and update Unity Facebook Settings

The image shows two screenshots. The top screenshot is the Facebook Developer Dashboard for an app named "MonopolyGame". It displays the App ID as 309441619244364. An orange arrow points from this App ID to the bottom screenshot. The bottom screenshot is the Unity Inspector window showing the "FacebookSettings" component. The "App Name" field is set to "IntegrationTest" and the "App Id" field is set to "278043179026860". Both fields are highlighted with red rectangles. A blue speech bubble points to the "App Id" field with the text: "Right now it doesn't match. Change this to match Developer page!". The "Inspector" window also shows other settings like "Package Name", "Class Name", and "Debug Android Key Hash".

Facebook Developer Dashboard (MonopolyGame):

- App ID: 309441619244364
- App Secret: [Redacted]

Unity Inspector (FacebookSettings):

- App Name [?]: IntegrationTest
- App Id [?]: 278043179026860
- Package Name [?]: com.facebook.unity.integrationtest
- Class Name [?]: com.facebook.unity.FBUnityDeepLinkingActivity
- Debug Android Key Hash [?]: wmZQPSVUI9cF6kKDoAKvIVsway0=

Right now it doesn't match. Change this to match Developer page!

Step 10: Click Settings, enter contact email and double check if key hash is already entered (Facebook has a common error of not saving the key hash entered in Step 7).

Step 11: Add all your test accounts as 'Testers'

Initial setup complete! You can start developing and testing unsigned APK now! Come back once you are ready to publish the signed APK.

Step 12: Generate Release Key Hash.

There are several methods to generate this key hash. Facebook has a short documentation on this (<https://developers.facebook.com/docs/android/getting-started/#release-key-hash>), but if you follow my methods below, there should be no problems.

Download OpenSSL from: <http://code.google.com/p/openssl-for-windows/downloads/list>, and extract to a folder (eg. c:\openssl).

Navigate to your JAVA jdk folder, where the keytool.exe is. (Eg. c:\Program Files(x86)\Java\jdk 1.6.0_24\bin) Note that this location may differ.

Copy your debug.keystore to there from the c:\Users\MyUserName\.android folder (Folder may differ depending on where is your keystore file). In the jdk/bin folder, open a command prompt, and execute the following:

```
keytool -exportcert -alias androiddebugkey -keystore debug.keystore >
c:\openssl\bin\debug.txt
```

(Use your openssl folder, and hit enter when asking password)

Navigate to the openssl/bin folder, and we have a debug.txt here, which contains the keystore values, but not in the expected format! Open a command prompt from there, and execute the following commands:

```
1. openssl sha1 -binary debug.txt > debug_sha.txt
2. openssl base64 -in debug_sha.txt > debug_base64.txt
```

And now we are DONE! The **debug_base64.txt** contains the hash value. Copy that code to your Facebook Developer settings page in Step 10, which should already has your development key hash. You will now have two keys.

Step 13: Enter App Details and submit for Facebook review.

Some Facebook integrations require approval before public usage. You can read more about their guidelines here: <https://developers.facebook.com/docs/apps/review/login>.

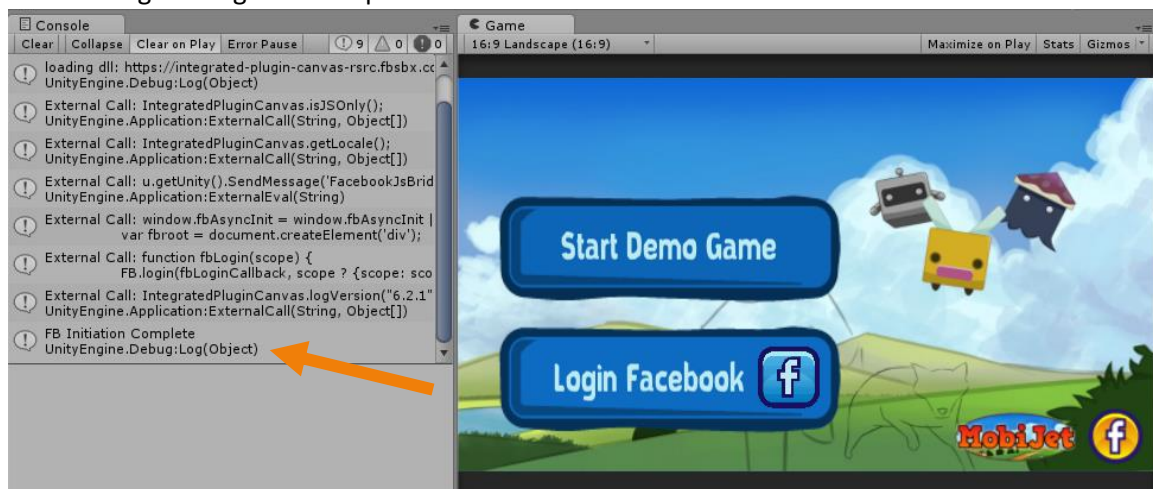
Our plugin requests three Facebook permissions from users:

- public_profile
- user_friends
- publish_actions *(Requires review submission. Permission is used to upload scores to server only.)*

Congratulations! The setup is now complete!

3 FREQUENTLY ASKED QUESTIONS AND SOLUTIONS

- iOS support?**
 Please register your interest by emailing me; if gathered enough interest, I may consider porting.
- How to test on Unity Editor?**
 You would need to go to Facebook Developer page, navigate to Tools & Support -> Access Token Debugger. Paste User Token of the App you created to the Unity editor Facebook login popup.
- My User Access Token is not accepted?**
 Please make sure Facebook is initialized completely before you log in. One way to easily check is if the debug message shows up in the Console.



- Scores showing 0 when using Unity Editor.**
 Unity user access token allows you to log in, but not accepting Facebook permissions. Without accepting the *publish_actions* permission, you would not be able to upload score to Facebook servers. Publish scenes to APK and run on actual mobile devices at least once. Accept the permissions, and then you can test on Unity Editor normally.
- Scores still showing 0 regardless.**
 Accept *all* permission popups when first logged in to Facebook on your device. Add all other accounts as 'Testers' (See Step 11 above).
- I can click through Facebook popup dialogs and accidentally click other UI buttons behind!**
 Only happens on Unity Editor runtime; unknown Unity bug. They work fine on actual devices.
- Friends not showing up on leaderboard?**
 Add all Testers on Facebook Developer page. Also check if you selected 'Friends' when asked 'Who can see posts made by App'. Do not select 'Only Me'. If happened, remove App from Facebook account (not Developer site, but actual account under 'Manage App Settings') and retry accepting permissions.

- **Other users unable to use Facebook functions.**

If still in development mode, see above answer. If published for public, please submit App to Facebook for review (See Step 13 above). This is a Facebook imposed review policy (<https://developers.facebook.com/docs/apps/review/login>); quoted from Facebook: In order for your app to access additional elements of a person's Facebook profile (read permissions) or to publish content to Facebook on their behalf (**write permissions**), you will need to submit for review. Scores uploading is unfortunately catagorised under 'write permissions', so until Facebook reviewed and approved your App, public access would be restricted.

- **OpenSSL not found**

Download and install OpenSSL. (It is **very** important that all the versions match correctly:

Windows, Unity and OpenSSL) Links: [Windows x32](#) [Windows x64](#)

Add OpenSSL path:

- Control Panel > System > Advanced system settings > Environment Variables
- Select variable "Path" in "System variables" window and click Edit
- At end of the "Variable value" text, add the path/location. **Example only:** ";C:\Program Files\OpenSSL-Win64\bin". Do not forget to add semi-colon ";"
- Restart Unity

- **Keytool not found**

Add Java JDK path:

- Control Panel > System > Advanced system settings > Environment Variables
- Select variable "Path" in "System variables" window and click Edit
- At end of the "Variable value" text, add the path/location. Example only: ";C:\Program Files (x86)\Java\jdk1.7.0_51\bin". Do not forget to add semi-colon ";"
- Restart Unity

4 CONTACT INFO

Please send me an email should you encounter a problem. Sometimes I may not respond extremely fast due to other workloads, but know that I will strive to get back to you! Thank you for supporting the plugin.

mobijet.studio@gmail.com