Simple IAP System

Documentation

V2.6

Thank you for buying Simple IAP System!
Your support is greatly appreciated.

Scripting Reference

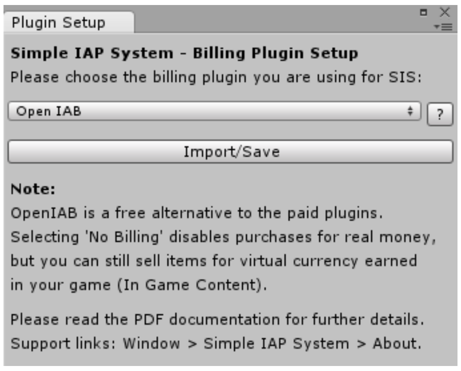
www.rebound-games.com/docs/sis

1 Getting Started

Simple IAP System (SIS) takes the complexity out of in app purchases (IAPs) in your apps and delivers an easy-to-use framework for player monetization, packed with effective editor widgets, shop item generation at runtime, advanced storage functionality and more.

Rather than reinventing the wheel, Simple IAP System makes use of 3rd party billing plugins for handling billing transactions. Virtual IAPs do not require 3rd party plugins.

1 This editor window asks you which billing plugin you want to use. If it does not show up, open it under Window > Simple IAP System > Plugin Setup.



Simple IAP System - Billing Plugin Setup
Please choose the billing plugin you are using for SIS:
Open IAB

Note:
OpenIAB is a free alternative to the paid plugins.
Selecting 'No Billing' disables purchases for real money, but you can still sell items for virtual currency earned in your game (In Game Content).

Please read the PDF documentation for further details.
Support links: Window > Simple IAP System > About.

2 Plugin-specific instructions:

- **OpenIAB**: Grab and import the latest release here.
- **Stan's Assets**: Import your Android/iOS Native plugins or Ultimate Mobile. Do not specify anything in its plugin billing settings.
- **Prime31**: Import your Android and/or iOS billing plugin or the combo package.
- **VoxelBuster**: Import your Android and/or iOS billing plugin or Cross Platform Ultra Pack.
- **Unibill**: Import your Unibill package. If you would like to use the IAP inventory that we used in this documentation, open and overwrite the default Unibill inventory with the contents of our "unibillInventory.txt" file located in SIS > Plugins.

If you don't want to charge your users (no billing), and only need virtual products and currency – such as buying a sword with coins earned in-game, you can select that too.

3 Drag the "IAP Manager" prefab from *SIS* > *Prefabs* > *Resources* into the very first scene of your game. Start from the 'AllSelection' scene if you want to run the example scenes of Simple IAP System.

For Android billing, enter your Google Play developer key in the IAP Manager prefab Exception: Unibill, in this case your key goes into Unibill's Inventory Editor. For VoxelBuster it goes in their native settings window.

4 Drag the "Shop Manager" prefab from *SIS* > *Prefabs* into the scene where you want to display in-app purchases (your own shop scene, or use one of the templates included).

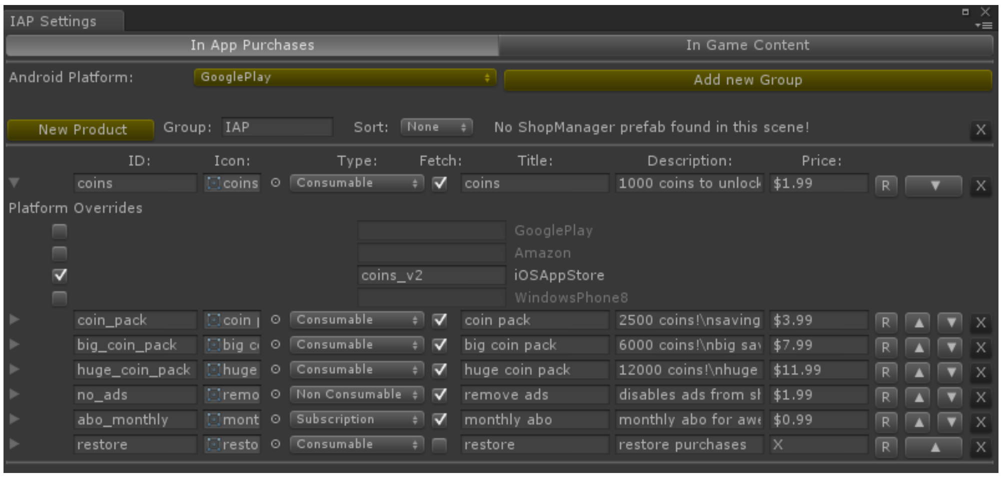
For video tutorials, please visit our YouTube channel.

2 Creating In-App Products in Unity

Before linking in-app products in Unity, you have to create them in the App Store portal first. If you don't know how to do this, you'll find a video tutorial for Android and iOS on our channel.

In Unity, the IAP Settings editor is your main spot for managing IAPs, be it for real or virtual money.

Please open it by navigating to Window > Simple IAP System.



Android Platform: GooglePlay

Group: IAP Sort: None No ShopManager prefab found in this scene!

ID:	Icon:	Type:	Fetch:	Title:	Description:	Price:
coins	coins	Consumable	✓	coins	1000 coins to unlock	$1.99
coin_pack	coin	Consumable	✓	coin pack	2500 coins!\nsaving	$3.99
big_coin_pack	big c	Consumable	✓	big coin pack	6000 coins!\nbig sa	$7.99
huge_coin_pack	huge	Consumable	✓	huge coin pack	12000 coins!\nhuge	$11.99
no_ads	remo	Non Consumable	✓	remove ads	disables ads from sl	$1.99
abo_monthly	mont	Subscription	✓	monthly abo	monthly abo for aw	$0.99
restore	resto	Consumable		restore	restore purchases	X

Platform Overrides

		GooglePlay
		Amazon
✓	coins_v2	iOSAppStore
		WindowsPhone8

In App Purchases: here you specify your IAPs for real money (must match your App Stores ids). If you have different identifiers for the same product per store, you can use platform overrides. **In Game Content**: here you create IAPs for virtual currency, depending on your game logic.

These are the variables which need to be defined in the editor:

- **Group:** unique name of the group you are adding products to
- **ID**: your unique product identifier (or platform-specific id, see above)
- **Icon**: the sprite texture you want to use as the icon
- **Type**: product type in the billing model
  - Consumables: can be purchased multiple times, for real money (e.g. coins)
  - Non-consumables: one time purchase for real money (e.g. bonus content)
  - Subscriptions: periodically bills the player, for real money (e.g. service-based content)
  - Virtual consumables: same as consumables, but for virtual currency
  - Virtual non-consumables: same non-consumables, but for virtual currency
- **Fetch**: whether local product data should be overwritten by fetched App Store data
- **Title**, **Description**: descriptive text for the product in your shop
- **Price**: product price (string value for real money, int value for virtual currency). Products in the 'In Game Content' tab will start as pre-purchased if their price is zero.
- **R**: opens the requirement window. The user has to meet this requirement in order to unlock the product first. See the 'Customizing IAP Item prefabs' section for more details.

Exception: 'restore'. For restoring real money purchases in your store, simply add a product with the id 'restore', set its type to Consumable and keep 'Fetch' unchecked. The IAP Manager will recognize this id and call the appropriate restore methods for you.

For products in the 'In Game Content' tab, you will have to specify one or more virtual currencies first. Set a name and default value the user should start with. It is not recommended to rename/remove currencies in production, as this could lead to inconsistency and loss in funds.

Side note: always keep the IAP Manager prefab in the Resources folder. When making changes to the IAP Settings editor, these changes are automatically saved to the prefab. Thus, if you are upgrading to a new version of SIS, make sure to keep a local copy of your IAP Manager prefab.

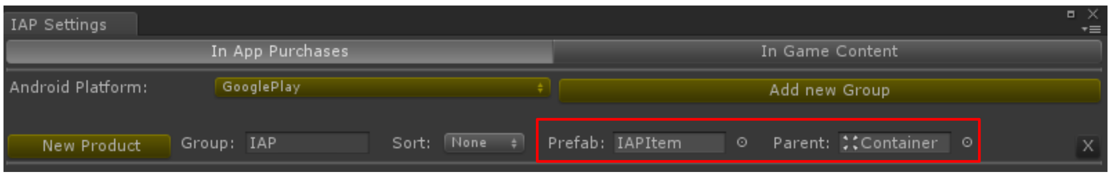
Unibill only: Instead of platform overrides, there is an additional button for importing items from Unibill. Items for real money must be defined in the Unibill Inventory Editor and then imported in the IAP Settings editor. Other items, such as virtual currency and virtual products, have to be defined in our window.

3 Instantiating Products in the Shop

The Shop Manager prefab in your shop scene will do all the work for you. Let's have a look at it.

Please open one of the example shop scenes, e.g. *SIS* > *Scenes* > *Vertical*

For each group in the IAP Settings editor, you only have to define what visual representation (**prefab**) and where (**parent**) you want to instantiate your products. There are several pre-defined IAP Item prefabs to choose from, located in the *SIS* > *Prefabs* > *Vertical*/*Horizontal* folder. When you play the scene, the Shop Manager instantiates this prefab for each item, parented to the container, and Unity's GridLayoutGroup component aligns them nicely in the scene.



Android Platform: GooglePlay

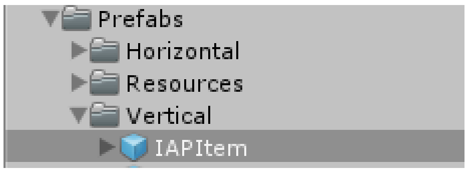
Group: IAP Sort: None Prefab: IAPItem Parent: Container

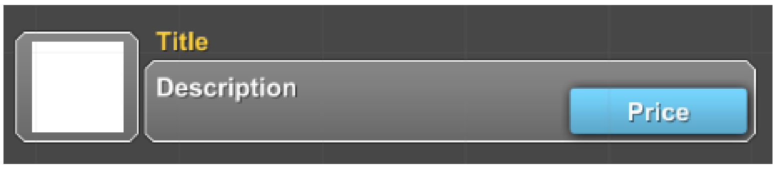
After instantiating your products as items in the scene, the Shop Manager also makes sure to set it to the correct state. This means that the shop item for a purchased product does not show the buy button anymore, or an equipped item has a button to deselect it again and so on.

As public variables, the Shop Manager exposes references to a game object and a Text, which are being used for showing the feedback window in case purchases succeed or fail.

4 Customizing IAP Item prefabs

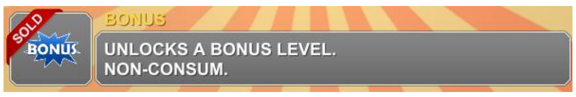
As mentioned in the last chapter, IAP Item prefabs visualize IAP products in your shop at runtime. These prefabs have an IAP Item component attached to them, that has references to every important aspect of the item, e.g. to descriptive labels, the buy button, icon texture and so forth. Based on the product's state, IAP Items show or hide different portions of their prefab instance.



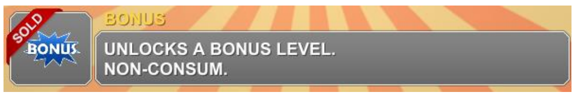


For variable descriptions, please refer to the IAPItem. The following item states are supported:

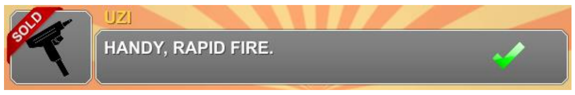
Default (initial state)



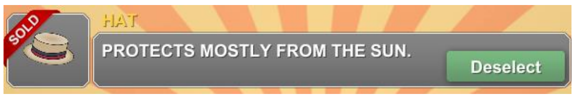
Purchased (user owns this product)



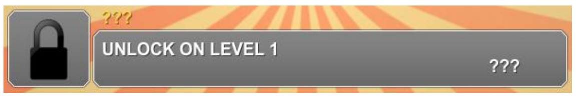
Single Select (unequips others)



Multi Select (does not unequip others)

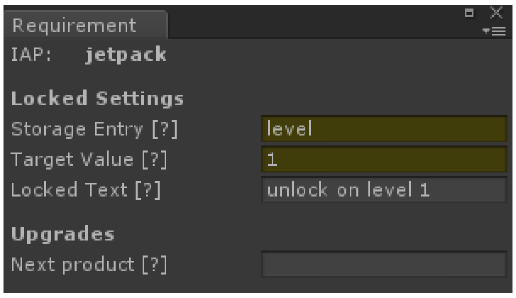


Locked (requirement not met)



Possible states for your item are specified by assigning references to the IAP Item component:

- **Default**: the item needs at least descriptive labels (title/description, price) and a buy button
- **Purchased**: assign a game object to the 'Sold' slot, which gets activated on sold products
- **Single Select:** assign the 'Select Button', but leave the 'Deselect Button' empty
- **Multi Select:** assign both 'Select Button' and 'Deselect Button'
- **Locked**: prepare your prefab for the locked state first by disabling the buy button, descriptive labels etc. and showing the 'Locked Label' and 'Hide On Unlock' game objects. If the item gets unlocked, it hides 'Hide On Unlock' and shows 'Show On Unlock' instead.



Requirement

IAP: **jetpack**

Locked Settings

Storage Entry [?]	level
Target Value [?]	1
Locked Text [?]	unlock on level 1

Upgrades

Next product [?]	

This is the requirement for the jetpack product, defined in the IAP Settings editor. Hover over the labels to see what they mean. For example, here we unlock the jetpack if the player reached level 1. The vertical/horizontal menu scenes showcase this product in the Custom sub menu.

Upgrades (multiple levels for one product) can be specified here too. Simply enter the product id that comes after this one, and the shop item gets replaced with the next level after the user bought it. Your upgrades do not need to be instantiated in the scene, thus you can leave their Prefab & Parent slot empty. The "speed" product is a sample, showcased in the Items section.

5 Handling IAP Callbacks

Product-specific events are defined in the **IAPListener** script and its 'HandleSuccessfulPurchase' method. If you want to add your own product events, simply add their global identifier (not the platform overrides) to the switch-case statement. This is the part where you say what happens when a user buys a product.

The **DBManager** manages our PlayerPrefs database and keeps track of purchases, selections, virtual currency and other player-related data using the JSON format in order save key-value pairs as a single string. Your app data is separated into three main categories: player-related data, content, selected products and currency.

The IAPListener has examples for increasing virtual currency and showing feedback messages:

```
DBManager.IncreaseFunds("coins", 1000); //increase coins by 1000
ShowMessage("1000 coins were added to your balance!"); //show feedback with text
```

In your game, you can check if a product is purchased by using:

```
DBManager.isPurchased("your product id"); //returns a boolean
```

If you want to save your own app-specific data, DBManager provides methods for this purpose:

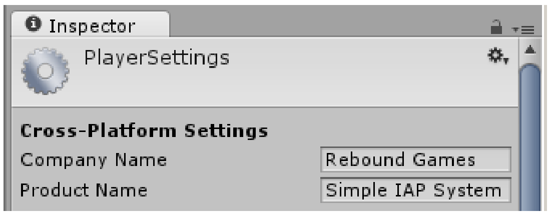
```
DBManager.SetPlayerData(string id, JSONData data);

DBManager.SetPlayerData("score", new SimpleJSON.JSONData(2250)); //store user's score
DBManager.IncrementPlayerData("level", 1); //increase current level by 1
DBManager.GetPlayerData("level").AsInt; //get the level value as integer
```

Note that you need to put `using SIS;` (C#) or `import SIS;` (UnityScript) at the top of your scripts to use the Simple IAP System namespace. For a full list of available methods, please visit the scripting reference.

6 Encrypting device storage

Optionally you can encrypt the values created by DBManager on the device. On the IAPManager prefab inspector, enable "encrypt" to do so. Also, do not forget to replace "obfuscKey" with your own encryption key (8 characters on iOS/Android, 16 characters on Windows Phone 8). While other techniques are more secure, many App Stores require an encryption registration number (ERN) when submitting your app with those standards. This technique does not require an ERN. If you are about to submit your app to Apple's App Store and Apple asks you whether your app contains encryption, click YES. If they ask you whether your app qualifies for any exemptions, click YES again and you're done.

In development stages you can look up the stored data by opening your registry. The exact location depends on your Unity Project Settings:

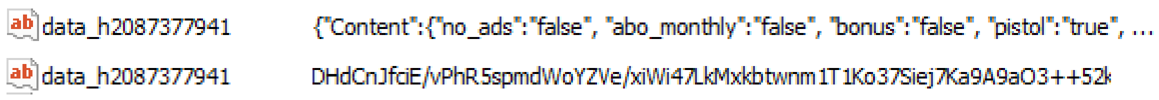


Cross-Platform Settings

Company Name	Rebound Games
Product Name	Simple IAP System

Open up your registry, then find the corresponding app entry (in this case it's under Rebound Games > Simple IAP System).

Not encrypted vs encrypted data:



```
data_h2087377941    {"Content":{"no_ads":"false", "abo_monthly":"false", "bonus":"false", "pistol":"true", ...
data_h2087377941    DHdCnJfciE/vPhR5spmdWoYZVe/xiWi47LkMxkbtwnm1T1Ko37Siej7Ka9A9aO3++52k
```

It is good practice to clean up that entry between IAP testing. Press the "Clear Database" button in the AllSelection scene to delete all app-specific data set by Simple IAP System.

WARNING: Please be aware that our PlayerPrefs database implementation (DB Manager) may require a one-time only setup of variables. If you change their values again in production (live) versions, you will have to implement some kind of data takeover for existing users of your app on your own. Otherwise you will risk possible data loss, resulting in dissatisfied customers. Examples:

- Renaming or removing a virtual currency in the IAP Editor
- Renaming or removing IAPs in the IAP Editor
- Renaming internal storage paths in the DB Manager
- Toggling the encryption option in the DB Manager

Rebound Games will not be liable for any damages whatsoever resulting from loss of use, data, or profits, arising out of or in connection with the use of Simple IAP System.

7 Shop Templates explained

For a unique design, it is highly recommended to import your own images and build shop scenes and IAP Item prefabs to match your game's style. This improves conversion rates (free to paid).

- **List** (example scene 'Vertical'/'Horizontal'): these are the most basic samples in SIS and only contain products for real money, no in-game content or currencies. They have a 'Window – IAP' game object with ScrollRects (?), as well our UIPanelStretch component attached to the container. UIPanelStretch dynamically adjusts the cell size of its GridLayoutGroup according to aspect ratios and resolutions of different devices, as well as the width/height of IAP Item prefabs in the scene. UIPanelStretch also allows you to set the max width/height of an item in case of higher resolutions.
- **Tabs** (example scene 'VerticalTabs'/'HorizontalTabs'): when a single ScrollRect is not enough, maybe several are! These scenes also contain some in-game content products and currencies. Each category has a separate window in the scene, which get activated once the corresponding button on the left side is triggered. For example, the button for Items enables 'Window – Items' but disables all others. These scenes also display amounts of the 'Coins' currency at the top, via the 'UpdateFunds' script attached to a Text component.
- **Menu** (example scene 'VerticalMenu'/'HorizontalMenu'): these are the most complex scenes in SIS and showcase all product types. Instead of just enabling windows, here they are animated. Each window has an Animator component that moves it in or off screen. For example, clicking on the Items button will animate 'Window – Main' off screen and 'Window – Items' will show up. This behavior is handled per button, via two events set up on them. The 'Button – Back' in each window does the exact opposite. Also, pressing 'Button – LevelUp' in the Custom sub menu increases the user level and Shop Manager tries to unlock new items.

8 Online Receipt Verification

With your IAPs set up, you may want to add an extra layer of security to your app, which prevents hackers to just unlock items by using IAP crackers and sending fake purchases. This feature sends the receipt to your external server, which forwards the transaction data to Apple or Google respectively and then returns a valid or invalid response to the application. Also, if you want to check subscription status and restrict content for expired ones, you will have to use online receipt verification! In order to use this option, you will have to configure some settings on your server, as well as in your iTunes/Google Developer account.

OpenIAB only: Receipt verification is currently not available on iOS due to missing receipts.

First, open the PHP script found under SIS > Scripts in the project panel. As values for "ios_bid" and "android_bid", fill in your corresponding application bundle identifier from Apple/Google in the form of com.yourcompany.appname.

iOS: Look for the "$secret" variable in the "verifyReceiptIOS" method. If you want to use and verify subscriptions in your game, you will have to set this key. Log into our iTunes Connect account (https://itunesconnect.apple.com/) to create one. Navigate to "Manage your Apps", select your existing app entry, click on "Manage In-App Purchases" and click on "View or generate a shared secret" at the bottom of this page. Generate a new shared secret, then copy-paste this value in the PHP script.

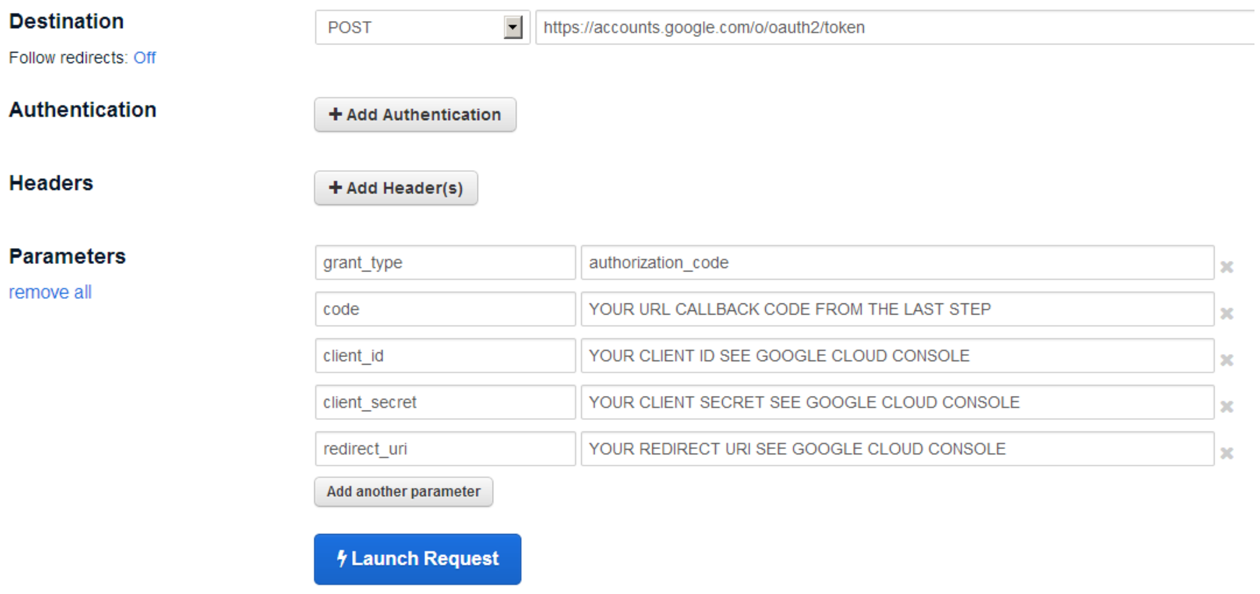
Android: In order to use receipt verification with Android (Google Play Android Developer API), Google requires you to set up an authorized application. For more information, please refer to this link: https://developers.google.com/android-publisher/authorization. Log into Google Cloud as stated there. In the new Google Cloud Console, create a new project. After creating it, select it and navigate to "APIs & auth" > "APIs" and enable the "Google Play Android Developer API". Go to "Registered apps" on the left side, then register a new web application. Now back to our PHP script, scroll down to the requestAccessTokenAndroid method and fill in your $client_id and $client_secret with the values from your newly registered application in Google Cloud.

Google uses an access token for verifying receipts that lasts one hour until expiration. Our PHP script will automatically request new access tokens before they get expired, but you will need a refresh token to request these. Still within your web application on Google Cloud, fill in your server URL and a callback parameter as value for "redirect URI", for example "https://www.your-domain-name.com/oauth2callback". Press "Generate".

After this step, open the following link and replace it with the values you've received earlier.

```
https://accounts.google.com/o/oauth2/auth?response_type=code&scope=https://www.googleapis.com/auth/androidpublisher&redirect_uri=YOUR_REDIRECT_URI&access_type=offline&client_id=YOUR_CLIENT_ID
```

This site will ask you for permission to use the Google Cloud services, click "Allow access" when prompted. The browser will redirect you to your redirect URI and potentially throw a 404 error, but the important thing to notice is the code parameter at the end of the address. Important: save this key for the next step, where we actually request the first access token and refresh token. Open up www.hurl.it for creating a POST request and enter the following:



Destination	POST https://accounts.google.com/o/oauth2/token
Follow redirects: Off	
Authentication	+ Add Authentication
Headers	+ Add Header(s)
Parameters	

grant_type	authorization_code
code	YOUR URL CALLBACK CODE FROM THE LAST STEP
client_id	YOUR CLIENT ID SEE GOOGLE CLOUD CONSOLE
client_secret	YOUR CLIENT SECRET SEE GOOGLE CLOUD CONSOLE
redirect_uri	YOUR REDIRECT URI SEE GOOGLE CLOUD CONSOLE

Important: this step will only work once. After pressing "Launch Request", scroll down and you will see a response that contains your refresh token. Now, copy its value and paste it as value for the $refresh variable in our PHP script. You're done!

Finally, upload the modified PHP script to your external server. It will create an additional file named "access_token.php" to save valid access tokens, make sure that your server grants write access in this directory. Back in Unity, select the IAP Manager and point the server URL and verification file name to your PHP script. Choose the verification type "onStart" to verify old purchases on game launch, "onPurchase" to verify new purchases, or both. Play-test your server verification process on the actual device with logging enabled.

9 Adjusting In Game Content remotely

Remotely hosted configuration files can be used to overwrite details of in-game content details, such as titles, descriptions or prices, without updating the app itself or to introduce temporary sales for products. The configuration file has to be defined in JSON format. See *SIS* > *Extensions* > *remote.txt* for a sample configuration. **Please note that if encryption is enabled, your hosted configuration will also be de-/encrypted.** After uploading the file to your server, enter the server url and file name to your configuration in the IAP Manager prefab. Supported remote types are:

- **Cached:** saves the new configuration on the device and loads it on the next app startup (permanent changes), which means that an internet connection is only required once
- **Overwrite:** only affects the current session (temporary changes), skipped on later startups

10 Localizing IAP data

If you've checked 'Fetch' in the IAP Settings editor, your IAP data will automatically be overwritten by the localized IAP details in the App Store. However, this only works for in-app purchases, not in-game content. Offline localization for all products is supported by integrating the free Smart Localization package. If you are unfamiliar with this package, please have a look at how it handles localization first. You'll find a short introduction here, or a quick video here.

1. Import the official Smart Localization package from the Asset Store.
2. Import our 'SmartLocalization' package found under *SIS* > *Extensions*.
3. If you haven't used Smart Localization before and would like to see a working configuration with examples, import the "SmartLocalizationWorkspace" package too.
4. Open the new 'Localization' scene in *SIS* > *Scene*. There's a special feature included: LanguageSelection.cs saves the active language between sessions in the storage.

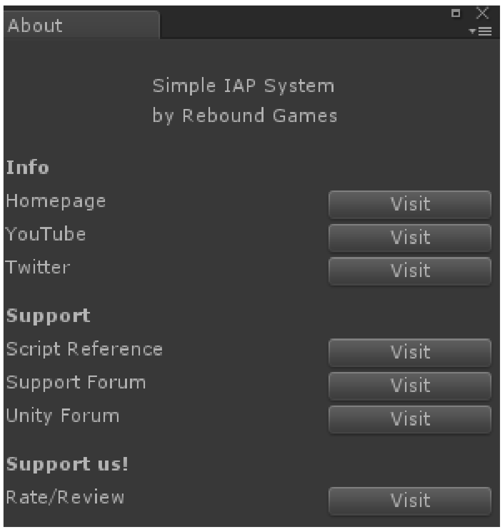
Localize: In order to add products of Simple IAP System to Smart Localization's Root Language File, open the **IAP Localization editor** under *Window* > *Simple IAP System*. Select the items and fields you want to localize, then press the add/update button. Your products have now been added to the root file. Don't forget to save your changes in the Root Language window. You can now translate your product values in Smart Localization (*Window* > *Smart Localization*).

The last step is to attach the 'LocalizeIAPItem' component to your IAP Item prefabs. Expand its 'Fields' dropdown in the inspector and toggle the fields which should pull localized values. Now it is time to see your localization in-game! You can switch languages with the methods provided by Smart Localization and your shop items will update their values accordingly.

11 Contact

As full source code is provided and every line is well-documented, please feel free to take a look at the scripts and modify them to fit your needs.

If you have any questions, comments, suggestions or other concerns about our product, do not hesitate to contact us. You will find all important links in our 'About' window, located under *Window > Simple IAP System*.



If there are any questions, maybe our FAQ and support forum or Unity thread has the answer!

For private and/or open questions, you can also email us at
info@rebound-games.com

If you would like to support us on the Unity Asset Store, please write a short review there so other developers can form an opinion. Again, thanks for your support, and good luck with your apps!

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