



Mobile Express Checkout Library Developer Guide and Reference – Android Edition

PayPal Mobile Payments Developer Guide and Reference – Android Edition

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Preface

The PayPal Mobile Express Checkout Library lets you embed your mobile implementation of Express Checkout in mobile applications for Android devices.

Purpose

The PayPal Mobile Express Checkout Library lets you embed Express Checkout in Android applications. Download the library from x.com/mobile and include it in your application. You need only a few lines of code to integrate the library and your Express Checkout implementation in your mobile application.

Scope

This document describes how to use the PayPal Mobile Express Checkout Library to embed your mobile implementation of Express Checkout in your mobile application. It also describes how to provide your build to PayPal. We review your application so we can approve it to accept payments through the library.

Revision History

The following table lists revisions made to the *Mobile Express Checkout Library Developer Guide and Reference*.

Date Published	Description
January 2011	Created for version 1.0 of the Mobile Express Checkout Library

Where to Go for More Information

- [Express Checkout Integration Guide](#)
- [Mobile Payments Library Developer Guide and Reference – Android Edition](#)
- [Sandbox User Guide](#)
- [Merchant Setup and Administration Guide](#)
- [PayPal X Developer Network](#) (x.com)

1. PayPal Mobile Express Checkout Library

This section provides details about the Mobile Express Checkout Library. It provides instructions and examples for using the library to embed your mobile implementation of Express Checkout in your Android application.

Mobile Express Checkout Library API Reference

The library supports 2 programming flows. They differ in where you place the PayPal button that buyers click to begin checking out with PayPal.

Programming Flow with the PayPal Button in Your Mobile Application

Place the PayPal button in your mobile application if your checkout process begins and ends with screens in your mobile application. In this programming flow, you embed only the mobile Express Checkout payment pages in a web view.

1. Fetch a device token from the library, just before you display the mobile application screen where you show a PayPal button.
Include `PayPalListener` that receives the device token.
2. Get a PayPal button from the library, and place it on your mobile application screen.
3. When buyers select the PayPal button:
 - a. Call a routine on your mobile web server, passing the payment information.
 - b. On your mobile web server, send a `SetExpressCheckout` request with the payment information to PayPal.
 - c. Pass the checkout token returned in the `SetExpressCheckout` response from your mobile web server to your mobile application.
 - d. Open a web view, and redirect the browser to PayPal with the mobile command, the device token, and the checkout token as URL parameters.

```
https://www.paypal.com/cgi-bin/webscr?cmd=_express-checkout-mobile &drt=valueFromFetchDeviceReferenceTokenWithAppID &token=valueFromSetExpressCheckoutResponse
```
4. Monitor the web view for a redirect from PayPal to your return or cancel URL.
5. If PayPal redirects the web view to your return URL, call surrogate routines on your mobile web server that send `GetExpressCheckoutDetails` and `DoExpressCheckoutPayment` requests to PayPal to complete the payment.

IMPORTANT: Never send Express Checkout requests from your mobile application directly to PayPal. The requests require your PayPal API credentials. Placing your credentials on mobile devices exposes you and PayPal to unacceptable security risks. Send Express Checkout requests only from secure servers.

Programming Flow with the PayPal Button on Your Mobile Website

Place the PayPal button on your mobile website if your checkout process begins and ends with pages on your mobile website. In this programming flow, you embed your entire web based checkout implementation in a web view.

1. Fetch a device token from the library, just before you open a web view of your mobile Express Checkout implementation.
Include a `PayPalListener` that receives device tokens.
2. Open a web view of a page or routine on your mobile web server that begins your checkout process.

Include the device token as a URL parameter when you open the web view, along with the item details in the shopping cart.
3. Monitor the web view for a redirect from your web server to a well-known URL that signals the checkout process on your mobile website is complete.

Methods in the Mobile Express Checkout Library

`fetchDeviceReferenceTokenWithAppID` Method

The `fetchDeviceReferenceTokenWithAppID` method returns a device token. You must create a class that implements `PayPalListener` and then use an instance of it for `fetchDeviceReferenceTokenWithAppID`. The `receivedDeviceReferenceToken` function of that receives device tokens. Include the device token as the `&drt` parameter in the URL when you redirect the buyer's mobile browser to PayPal. Device tokens expire after 45 minutes.

In your programming flow, fetch the device token just before you get the PayPal button.

```
public static void fetchDeviceReferenceTokenWithAppID(Context context,
String appID, int server, PayPalListener listener);
```

Parameter	Description
context	The Context from your Activity.
appID	PayPal Application ID from X.com. For the Sandbox environment, use APP-80W284485P519543T.
server	Which PayPal servers the library uses Allowable values are: <ul style="list-style-type: none"> • ENV_LIVE • ENV_SANDBOX • ENV_NONE NOTE: The ENV_LIVE environment does not support simulators. NOTE: The ENV_NONE environment forgoes device interrogation for testing purposes.
listener	Your PayPalListener that receives device tokens

getCheckoutButton Method

If you place the PayPal button in your mobile application, get an instance from the Mobile Express Checkout Library. This method returns a `CheckoutButton` that you place on your mobile application screen.

```
public CheckoutButton getCheckoutButton(Context context, int style, int
textType);
```

Parameter	Description
context	The Context of your Activity.
style	Size and appearance of the PayPal button Allowable values are: <ul style="list-style-type: none"> • BUTTON_152x33 • BUTTON_194x37 • BUTTON_278x43 • BUTTON_294x45

Parameter	Description
textType	Type of text that will appear on the button. Allowable values are: <ul style="list-style-type: none"> TEXT_PAY TEXT_DONATE

getInstance Method

The library provides a singleton instance of the PayPal object. Use the `getInstance` method to set and access runtime properties of the library. For example, use the `isLibraryInitialized` function to determine whether your attempt to fetch a device token was successful.

```
public static PayPal getInstance();
```

The following table lists the functions of the PayPal object that you are most likely to use in your mobile application.

Property	Description
setLanguage	Pass in the locale code for the label of the PayPal button. By default, the library uses the locale of the device.
isLibraryInitialized	If your attempt to fetch a device token succeeded, the return value of this property is <code>true</code> .

Enumerated Values in the Mobile Express Checkout Library

The enumerated values supported by methods in the library are:

PAYPAL_ENVIRONMENT

- ENV_LIVE:** Use the PayPal production servers to obtain device tokens. This environment does not support simulators.
- ENV_SANDBOX:** Use the PayPal testing servers to obtain device tokens.
- ENV_NONE:** Do not use any PayPal servers to obtain device tokens.

PAYPAL_BUTTON_TYPE

PayPal displays the following images for buyers on the mobile device.

- **BUTTON_152x33:**



- **BUTTON_194x37:**



- **BUTTON_278x43:**



- **BUTTON_294x45:**



Localization Support in the Mobile Express Checkout Library

The Mobile Express Checkout Library supports many locales. Set the locale after you initialize the library. The default is the locale of the device. If the library does not support the device locale, the library uses `en_US`, instead.

How to Set the Language and the Region

Set the locale with the `setLanguage` method of the `PayPal` object. Set this property any time after you initialize the library, which occurs when you fetch a device token. Set the language before you call the `getCheckoutButton()` method to obtain a localized PayPal button.

Locales Supported by the Mobile Express Checkout Library

The `lang` property of the PayPal object allows these values.

Country or Region	Supported Locale Codes
Argentina	es_AR
Brazil	pt_BR
Australia	en_AU
Belgium	en_BE nl_BE fr_BE
Canada	en_CA fr_CA
France	fr_FR en_FR
Germany	de_DE en_DE
Hong Kong	zh_HK en_HK
India	en_IN
Italy	it_IT
Japan	ja_JP en_JP
Mexico	es_MX en_MX
Netherlands	nl_NL en_NL
Poland	pl_PL en_PL
Singapore	en_SG
Spain	es_ES en_ES
Switzerland	de_CH en_CH fr_CH
Taiwan	zh_TW en_TW
United States	en_US

Library Support for Devices and OS versions

The Mobile Express Checkout Library and the demo application fully support Android 2.0 and higher.

Adding the Mobile Express Checkout Library to Your Android Project

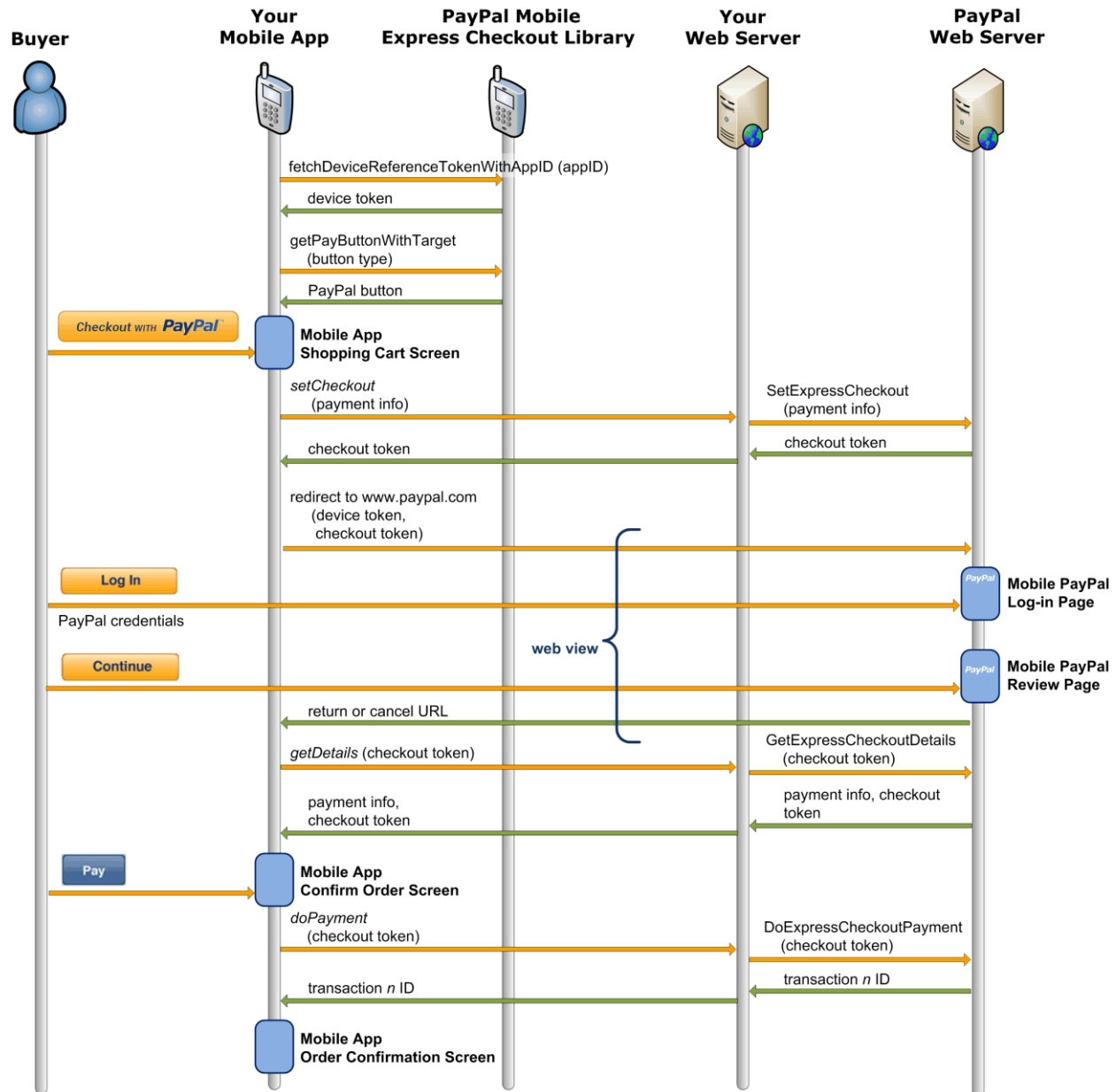
PayPal provides a package that contains the static library file `paypal_mec1.jar`.

1. Open your Eclipse Android project.
2. RIGHT-CLICK your project, and then select **Properties**.
3. Select Java Build Path on the left, then select Libraries on the top

4. Select Add JARs... on the right and select the paypal_mec1.jar.

Method Sequence with the PayPal Button in Your Mobile App

The following diagram illustrates the sequence of methods that embed only the mobile PayPal payment pages in a web view within your mobile application.

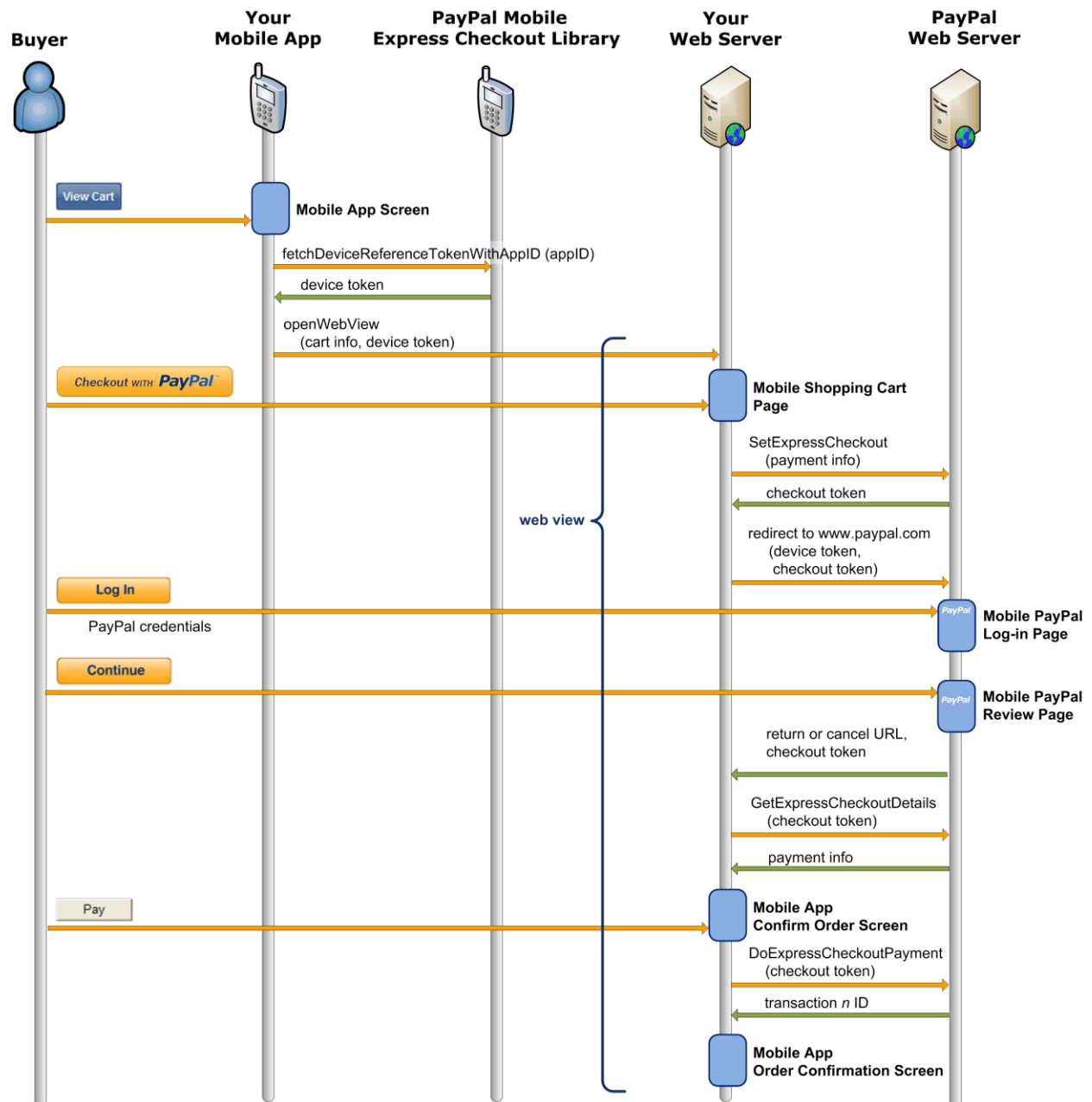


IMPORTANT: Never send Express Checkout requests from your mobile application directly to PayPal. The requests require your PayPal API credentials. Placing your credentials on mobile

devices exposes you and PayPal to unacceptable security risks. Send Express Checkout requests only from secure servers.

Method Sequence with the PayPal Button on Your Mobile Webpage

The following diagram illustrates the sequence of methods that embed your entire mobile Express Checkout implementation in a web view within your mobile application.



Sample Code

The sample code in this section comes from sample application code included with the download of Mobile Express Checkout Library. Get the download of the library from x.com/mobile.

Fetching the Device Token

Regardless where you place the PayPal button, you must fetch a device token from the library by calling `fetchDeviceReferenceTokenWithAppID()`. If you place the PayPal button in your mobile application, fetch a device token just before you get the PayPal button. If you place the PayPal button on your mobile website, fetch a device token before you open a web view of your mobile checkout pages.

```
PayPal.fetchDeviceReferenceTokenWithAppID(this, appID, server, new  
ResultDelegate());
```

The `ResultDelegate` class implements `PayPalListener`, so it implements the following methods of the `PayPalListener` interface.

```
@Override  
public void couldNotFetchDeviceReferenceToken() {  
    //Initialization failed and we didn't get a token  
    Pizza._deviceReferenceToken = null;  
}  
  
@Override  
public void receivedDeviceReferenceToken(String token) {  
    //Initialization was successful  
    Pizza._deviceReferenceToken = token;  
}
```

Your mobile application can proceed with a null device token.

Placing the PayPal Button in Your Mobile Application

To place the PayPal button in your mobile application, call the `getCheckoutButton()` method.

You can set an `OnClickListener` for the `CheckoutButton` to capture clicks on it.

Redirecting Buyers to PayPal

Whether you place the PayPal button in your mobile application or on your mobile website, use the same redirect to PayPal.

```
https://www.paypal.com/cgi-bin/webscr?cmd=_express-checkout-mobile  
&dt=valueFromFetchDeviceReferenceTokenWithAppID&token=valueFromSetExpr  
essCheckoutResponse
```

Completing the Payment

Whether you place the PayPal button in your mobile application or on your mobile website, complete the payment by sending `GetExpressCheckoutDetails` and `DoExpressCheckoutPayment` requests from your mobile website.

IMPORTANT: Never send Express Checkout requests from your mobile application directly to PayPal. The requests require your PayPal API credentials. Placing your credentials on mobile devices exposes you and PayPal to unacceptable security risks. Send Express Checkout requests only from secure servers.

If you place the PayPal button in your mobile application, monitor the web view for the redirect from PayPal to the `returnURL` or `cancelURL`. Set these URLs in your `SetExpressCheckout` request. Complete the payment only if PayPal redirects the buyer to the `returnURL`.

For more information on the Express Checkout API, see:

- [Express Checkout Integration Guide](#)
- [Name-Value Pair API Developer Guide and Reference](#)
- [SOAP API Reference](#)

2. The Checkout Experience with the Mobile Express Checkout Library

The screen shots that follow illustrate the checkout experience when you embed your mobile implementation of Express Checkout in your mobile application. The embedded checkout experience is the same whether you place the **Checkout with PayPal** button in your mobile application or on your mobile website.

Express Checkout Experience

Your Mobile Screen or Mobile Web Page



Mobile PayPal Log-in Page

A screenshot of the Mobile PayPal Log-in Page. At the top, it shows the time "12:34 PM" and a "Merchant's Name" field with a close button. Below this is a "My Total:" field showing "\$205.80" with a shopping cart icon. The "Login" section features the PayPal logo and a "Login with email and password:" label. There are two input fields: one for the email address "matt_smith@gmail.com" and another for a password represented by dots. A "Log In" button is at the bottom. Links for "Problem with Login?" and "Go to PayPal regular site" are at the very bottom.

Mobile PayPal Review Page

A screenshot of the Mobile PayPal Review Page. It shows the time "12:34 PM" and a "Merchant's Name" field. The "My Total:" field shows "\$205.80". The "Review" section includes the PayPal logo and a "Funding" section showing "PayPal Balance: \$9.99" and "Bank x2087: \$195.81". There is a "Ship To" section with the address "Matt Smith, 577 University Avenue, Palo Alto, CA 94301". An "Other Info" section shows "Phone: 415-555-1234" and a "Note: Need the item before Christmas". A "Continue" button is at the bottom, with the text "Continue to <merchant's name> to confirm payment." above it.

After buyers click **Checkout with PayPal**, call `SetExpressCheckout` to begin a PayPal payment. Then, redirect the buyer's browser to PayPal. Include the device token from the library and the checkout token from `SetExpressCheckout` as URL parameters.

PayPal displays the mobile PayPal log-in page with your redirect to PayPal. Buyers enter an email address and password or a mobile phone number and mobile PIN to log in to PayPal.

PayPal displays the mobile PayPal Review page after buyers log in successfully. The mobile Review page fully supports Express Checkout when you include a device token with your redirect to PayPal.

When satisfied with the payment information the Review page, buyers click **Continue** to complete the payment in your mobile application or on your mobile website. If buyers pay on PayPal in your implementation of Express Checkout, the button label on the review page reads, “Pay Now” instead of “Continue.”

3. Submitting Your Application to PayPal

Log in or sign up on PayPal's developer website www.x.com. From there, click the MyApps tab to submit your mobile application. PayPal reviews applications within 24 hours and responds by sending you your PayPal Application ID.

After you receive your live Application ID, make sure to change the following items in your demo code (if you choose to use it):

- **Application ID:** in `fetchDeviceReferenceTokenWithAppId`
- **Server:** in `fetchDeviceReferenceTokenWithAppId`
- **Recipient:** in `PAYMENTREQUEST_n_SELLERPAYPALACCOUNTID` field of the `SetExpressCheckout` request.