



Sandbox User Guide

For Professional Use Only
Currently only available in English.

A usage Professional Uniquement
Disponible en Anglais uniquement pour l'instant.

PayPal Sandbox User Guide

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Preface

This Document

This document, which describes the PayPal virtual test environment called the Sandbox, replaces the *PayPal Sandbox User Guide* issued December, 2005.

Intended Audience

This document is written for merchants and developers who want to test their PayPal-based applications before using them in production.

Organization of This Document

[Chapter 1, “Overview to the PayPal Sandbox,”](#) describes the Sandbox in general and lists the differences between the Sandbox and the production PayPal services.

[Chapter 2, “Accessing the PayPal Sandbox and Email,”](#) describes how to gain access to the Sandbox and your Sandbox email.

[Chapter 3, “Setting up Test Users,”](#) describes the different kinds of business roles and corresponding test accounts you need to set up on the Sandbox for effective testing of your PayPal-based applications.

[Chapter 4, “Testing PayPal Website Features,”](#) describes how you can use the Sandbox (<https://www.sandbox.paypal.com>) to test features that correspond to the features on the main PayPal interactive site <https://www.paypal.com/>.

[Chapter 5, “Testing PayPal Web Services API Applications,”](#) is an overview of testing PayPal Web Services API applications with the Sandbox, API digital certificates, and other related information.

Notational Conventions

This document uses typefaces to identify the characteristics of text. These typefaces and the characteristics they imply are described below:

| Typeface | How Used |
|--------------------------|--|
| <i>serif italics</i> | <p>A document title.</p> <p>A term being discussed or defined. For example: A file is a readable or writable stream of characters ...</p> <p>Boolean values (not keywords). For example: The function returns true if it encounters an error.</p> |
| monospaced | <p>Pathnames or file names that appear in body text frames.</p> <p>Code-related names that appear in body text frames. Such names are used for functions, callbacks, arguments, data structures, and fields. For example: <code>AbstractResponseType</code> is the SOAP response type definition on which all PayPal API response methods are based.</p> <p>Components of Internet protocol requests and responses, such as HTTPS and FORM variables. For example: The PayPal system uses a <code>method=POST</code> request to return IPN status variables related to subscriptions, such as <code>txn_type</code>.</p> |
| Serif bold | <p>User interface names, such as window names or menu selections. For example: On the Profile page, click Email to confirm your email address.</p> |
| <i>San-serif oblique</i> | <p>Placeholders used in the context of a format or programming standard or formal descriptions of PayPal system syntax. Placeholders indicate values or names that the reader should provide. Example: For example, <code>amount</code> is the variable for a single-item shopping cart, but <code>amount_X</code> is the name of the variable for a multi-item shopping cart. <code>amount_3</code> is the item amount for the third item in a multiple-item shopping cart.</p> |

To convey additional information, this document may also apply color and underlining to words or phrases that use the typefaces described above. Such use is described below:

| Text attribute | How Used |
|------------------------|---|
| xxxxxx | Hypertext link to a page in the current document or to another document in the set. |
| xxxxxx | Hypertext link to a URL or that initiates a web action, such as sending mail. |

Revision History

Revision history for *PayPal Sandbox User Guide*.



TABLE P.1 Revision History

| Date | Description |
|---------------|---|
| June 2006 | Correction of Sort Code necessary to test UK accounts in Sandbox. Proper Sort Code is 609204. |
| December 2005 | Miscellaneous corrections. |

1

Overview to the PayPal Sandbox

The PayPal Sandbox is a self-contained environment within which you can prototype and test your PayPal applications. Before moving any PayPal-based application into production, you should test the application in the Sandbox to ensure that it functions as you intend and within the guidelines and standards set forth by the PayPal Developer Network (PDN).

The Sandbox is for use by developers of business solutions. Business solutions integrated with PayPal might involve the features of PayPal available through PayPal's main web site, <https://www.paypal.com>, or the business solutions might involve use of the PayPal Web Services API.

Get Started Quickly: Integration Center

PayPal's Integration Center at <https://www.paypal.com/integration> has step-by-step details for getting started with the PayPal Software Development Kits (SDKs), Website Payments Pro, Express Checkout, Website Payments Standard, Authorization & Capture, Instant Payment Notification, and more.

Visit the Integration Center at:

<https://www.paypal.com/integration>

At a Glance: Differences between the Sandbox and Live PayPal

The following table compares the Sandbox and Live PayPal. This is an at-a-glance view of the differences from the perspective of an in-house or third-party developer for a business.

You can also use this table as a checklist.

TABLE 1.1 Differences between Developer Central, Sandbox, and Live PayPal

| | PayPal Developer Central and Sandbox | Live PayPal Website and API Service |
|--------------------------------|---|--|
| Type of PayPal Accounts | Depending on the feature you want to develop and test, you need a Personal, Business, or Premier account. | Personal, Business, or Premier account |

Overview to the PayPal Sandbox

At a Glance: Differences between the Sandbox and Live PayPal

TABLE 1.1 Differences between Developer Central, Sandbox, and Live PayPal




| | PayPal Developer Central and Sandbox | Live PayPal Website and API Service |
|--|--|--|
| Developer Central: URL and site logo in upper left corner | https://developer.paypal.com  | |
| Site logos in upper left corner | https://www.sandbox.paypal.com  | https://www.paypal.com  |
| API Servers (SOAP service endpoints) | https://api.sandbox.paypal.com/2.0/ https://api-aa.sandbox.paypal.com/2.0/ | https://api.paypal.com/2.0/ https://api-aa.paypal.com/2.0/ |
| Business roles | You fill all roles you need to test: merchant, buyer, and seller. | Real-world people fill these roles. |
| Company and people's names and postal addresses | Completely fictitious. Before you begin working with the Sandbox, create the details for all the business roles you must fulfill. The Sandbox simulates verification of postal addresses and names. | Real companies' and people's names and postal addresses. |
| Email addresses and email inboxes | The Sandbox has a special-purpose email inbox for your testing, contained in the Sandbox itself. | Real email address and inbox for each business role |
| Bank account and credit card numbers | The Sandbox creates all fictitious bank accounts, credit card numbers, and CVV2 numbers you need in order to develop and test. The Sandbox simulates the verification of these numbers. | Actual verification of bank account numbers, credit card numbers, and CVV2 numbers |
| Social Security Number for Billing Agreements | 111- <i>nn-nnnn</i> | Real social security numbers |
| PayPal transactions | The Sandbox creates all fictitious bank accounts, credit card numbers, and CVV2 numbers you need for development and testing. The Sandbox simulates the verification of these numbers. | Live transactions, cleared by live PayPal processes |

TABLE 1.1 Differences between Developer Central, Sandbox, and Live PayPal

| | PayPal Developer Central and Sandbox | Live PayPal Website and API Service |
|---|--|---|
| Fraud detection | Fraud detection is not enabled for the Sandbox. | Full protection through PayPal's fraud detection |
| Digital certificates | After you request digital certificates for use with the PayPal Web Services API, the Sandbox automatically generates them. They are available for immediate downloading. | To safeguard your and your customers' security, requests for digital certificates for use with the Live PayPal Web Services API must be verified by PayPal before they are issued. You are notified in email when your request has been approved. |
| PayPal Merchant Features supported | All features of the live PayPal website, except closing an account, auction features, BillPay, Anything Points, monthly statements, shipping preferences, PayPal Shops, and Seller Protection Policy | |
| Technical Support | Developer Technical Support is available from Developer Central. No telephone support. | Customer Service is available either by email or by telephone. See “Contacting Customer Service for Live PayPal Website Help” on page 37. |



Overview to the PayPal Sandbox

At a Glance: Differences between the Sandbox and Live PayPal

2

Accessing the PayPal Sandbox and Email

To access the PayPal Sandbox, sign up for a Developer Central account. After becoming a member of PayPal Developer Central, you access the Sandbox either directly or by launching it after you log in to Developer Central.

Depending on the PayPal feature you want to test with an application, you need to set up different types of PayPal accounts: PayPal Personal, Business, or Premier account. See [“Planning the Types of Test Accounts You Need” on page 21.](#)

Signing Up for Developer Central

You do not need an existing, live PayPal account in order to sign up for Developer Central.

1. Go to <https://developer.paypal.com>
2. Click **Sign Up Now**.
3. Follow the on-screen instructions.
4. After you sign up, PayPal sends login instructions to the email address you used to sign-up. If you have mail filtering enabled in your mail software, the email sent by PayPal might be filtered out or stored in a folder where you are not expecting it to be. For instance, with Microsoft Outlook mail software, your filtering might cause the email to be stored in “Junk” or “Spam.”

Getting to the Sandbox

You have two ways to get to the PayPal Sandbox: direct access or logging in to Developer Central and then launching the Sandbox.

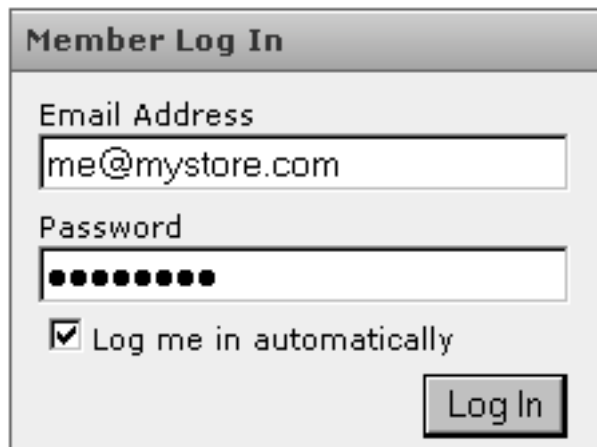
Regardless of whether you get to the Sandbox directly or by launching it, log in to the Sandbox as a test user of the necessary type to test the feature you want to test: Personal, Business, or Premier account.

Accessing the Sandbox Directly

When you log in to Developer Central, you have the option to get to the Sandbox directly at <https://www.sandbox.paypal.com/>. At the Developer Central login page, click **Log me in automatically**, as shown in [Figure 2.1, “Login for PayPal Developer Central” on page 18.](#)

NOTE: To access the Sandbox directly, you must enable cookies in your browser.

FIGURE 2.1 Login for PayPal Developer Central



The image shows a 'Member Log In' form with the following fields and options:

- Email Address:** A text input field containing 'me@mystore.com'.
- Password:** A password input field with ten black dots representing masked characters.
- Log me in automatically:** A checkbox that is checked.
- Log In:** A button located at the bottom right of the form.

Launching the Sandbox

To launch the Sandbox:

1. Log in to Developer Central.
1. Click the **Sandbox** tab.
2. Select the test user that represents the feature you want to test.
3. Click **Launch Sandbox**.

Managing Your Developer Central Profile

Except for your registered email address, you can change all the information associated with your Developer Central account, including your password. (Your email address is your login username.)

To manage your Developer Central profile:

1. Log in to Developer Central.
2. Click **profile** in the upper left of the main Developer Central page.
3. Change any of details, except your email address.
4. Click **Save**

Sandbox Email

When certain kinds of transactions occur in the live PayPal system, PayPal sends email messages to participants in the transaction. From these email messages, the recipient or initiator of an event or transaction can verify that the event took place and that the monetary amounts associated with the event are correct. With the live PayPal system, email messages are sent to the real email addresses of the participants.

PayPal Sandbox email, however, is a self-contained email system in the Sandbox itself. Each developer registered with PayPal Developer Central has a single inbox to which all email messages for test users are sent. See [Figure 2.2, “Sandbox Email Client.”](#) You see email messages addressed only to test users associated with your Developer Central account: the Sandbox test accounts you set up.

To access your email inbox in the Sandbox:

1. Log in to Developer Central.
2. Click the **Email** tab.

Up to 30 of the latest email messages are listed in your inbox. The subject line of email messages you have not read are in bold. Click a subject line to read the message.

FIGURE 2.2 *Sandbox Email Client*

The screenshot shows the PayPal Developer Central interface. At the top, there is a navigation bar with the following tabs: Home, Sandbox, Test Certificates, **Email**, Forums, and Help Center. Below the navigation bar, the page title is "Email". A message states: "To minimize confusion, Sandbox emails will not be sent to your personal email account. This will prevent these test emails from being confused with a real transaction. Below are the most recent emails sent from the Sandbox to your test accounts." Below this message is a table titled "Inbox" with the following data:

| To | From | Subject | Date |
|----------------------------|--------------------|---|----------------------------|
| ws_demo-buyer@sandbox.com | service@paypal.com | Receipt for your subscription payment | Oct. 21, 2004 03:00:37 PDT |
| ws_demo-seller@sandbox.com | service@paypal.com | You have received a subscription payment | Oct. 21, 2004 03:00:37 PDT |
| ws_demo-seller@sandbox.com | service@paypal.com | You have received a subscription payment | Oct. 20, 2004 03:00:56 PDT |
| ws_demo-buyer@sandbox.com | service@paypal.com | Receipt for your subscription payment | Oct. 20, 2004 03:00:55 PDT |
| ws_demo-buyer@sandbox.com | service@paypal.com | Receipt for your subscription payment | Oct. 19, 2004 03:00:57 PDT |

3

Setting up Test Users

Depending on the business application you are developing and testing, you need different types of test accounts. There are two types of test accounts: Personal and Business.

Planning the Types of Test Accounts You Need

Determine the types of test accounts you need to test the applications you are developing. In addition, determine the number of different accounts you need. You might need several different Personal or Business PayPal test accounts to test your application.

The information you need to supply when you create test accounts is as follows. The email address and password of a test account should never be those of a real account on the live PayPal site. The same applies to your answers to the security questions. All of this data should be fictional.

- Mailing address
- Email address and password for the test PayPal account. You can use the same password (not email address) for all your test accounts so that you can more easily remember it.
- Security questions and answers. You can use the same security questions and answers for all your test accounts so that you can more easily remember them.
- Personal or Business account
- Your agreement to the terms of using the Sandbox

For Business accounts, you also need to supply the following fictitious information for testing:

- Business name and address
- Customer service contact information
- Business owner contact information
- Business owner address
- Social Security Number to sign up for Website Payments Pro

Managing Test Accounts

In Developer Central, you can view, work with, or launch the Sandbox for all your test accounts. You can also create new accounts or remove test email addresses from your view.

- To work with test accounts, log in to Developer Central, and click the **Sandbox** tab.

- To create a new account, click the **Create Account** link in the upper left corner of the list of accounts.
- To work with the account, select the account by clicking the radio button associated with it on the left.

You can start the Sandbox for the selected account by clicking **Launch Sandbox**. When you logged in to Developer Central, you might have set the **Log me in automatically** checkbox to allow direct access to <https://www.sandbox.paypal.com/>, in which case you do not have to launch the Sandbox to access it.

NOTE: The **Delete** button does not delete the test account. It removes the test account from your list of accounts, but the email address for the test account is still on file for the Sandbox. You cannot reuse an email address that is still on file for the Sandbox.

Creating a Personal Account

To create a test user with a Personal account:

1. Log in to Developer Central.
2. Click the **Sandbox** tab.
3. Click the **Create Account** link.
4. On the next page, select the **Personal Account** radio button. Then click **Continue**.
5. Next, enter the account information for the new test user's PayPal Sandbox account. The email address entered on this page serves as the PayPal ID for that test user. Use a fictitious email address for each new test user, so that the PayPal ID is unique. Remember that passwords are case-sensitive.
6. Click the **Sign Up** button.
7. On the next page (confirming email address), click the **Continue** button. This goes to the **My Account > Overview** tab.

To confirm the email address for the new test user, see the steps in "[Confirming an Email Address](#)" on page 23.

Creating a Business Account

To create a test user with a Business account:

1. Log in to Developer Central.
2. Click the **Sandbox** tab.
3. Click the **Create Account** link.
4. On the next page, select the **Business Account** radio button. Then click the **Continue** button.

5. Next, enter account information for the business represented by the new PayPal account.
6. Click **Continue** when done.
7. Enter the user information for the new test user's PayPal Sandbox account.
Click the **Sign Up** button when done.
8. Click **Continue**. This takes you to the **My Account > Overview** tab.

Confirming an Email Address

To confirm an email address for a test user:

1. Log in to Developer Central.
2. Click the **Email** tab.
3. On the next page, click the email link to open the email window.
4. In the window that appears, find the email for the new test user with a subject line of "Activate Your PayPal Account!"
5. Open the email and click the confirmation link.

"Unverified" Account Status

At this point your new test users exist and have confirmed email addresses. However, they have an "Unverified" status. To set a user to a status of "Verified", add a bank account for it. For more information, see ["Adding a Bank Account" on page 23](#).

Adding a Bank Account

The next step in creating new test user and changing the status from "Unverified" to "Verified" is adding a bank account for the test user. The bank account is a source of funds for the test user's PayPal account, and thus for transactions between that test user and other test users. A test user can have multiple bank accounts, but at least one is required in order to verify the test user.

The Sandbox automatically generates bank account and sort code numbers when you add a bank account.

For Australia, Canada, Germany, or UK

Use the automatically generated bank account information only for test US bank accounts. To add test Canadian, German, or UK bank account information, follow these guidelines.

TABLE 3.1 Australian German, Canadian, and UK Test Bank Account Information

| Australia | Canada | Germany | UK |
|-----------------------------------|---|--|---|
| BSB Number: 242-200 | Transit Number: 00001 | Routing Number: 37020500 | Bank Account Number: Any 8-digit number |
| Account Number: any random number | Institution Number: 311 | Bank Account Number: Any 10-digit number | Sort Code: 609204 or 700709 |
| | Bank Account Number: Any one-digit to 12-digit number | Sort Code: Any 8-digit number | |

Steps for All Countries

To add a bank account for a new test user:

1. After logging into Developer Central, launch the Sandbox as the test user.
2. Navigate to **My Account > Overview**.
3. In the Overview window, click the **Add Bank Account** link in the Activate Account box on the left.
4. In the Add Bank Account window:
 - Enter a fictitious bank name. If you copy-and-paste the automatically generated bank account number as the name of the bank, that account number will be more visible to you for use in later testing.
 - Except for UK or German test bank accounts, leave all other automatically generated information as is.
 - Make a note of the test bank account number, because it will be handy to have when you do your testing.
 - Click **Add Bank Account**.
5. In the resulting success page, click **Continue** at the bottom.

The **My Account > Overview** page opens.
6. Click the **Confirm Bank Account** link in the **Activate Account** box at the left side.
7. In the Confirm Bank Account window, click **Submit**.

To create additional bank accounts for an existing test user:

1. After logging into Developer Central, launch the Sandbox as the test user.
2. Navigate to **My Account > Profile**.

3. Under the **Financial Information** header, click the **Bank Accounts** link.
4. In the **Bank Account** window, click **Add**.
5. In the **Add Bank Account** window:
 - Enter a fictitious bank name. Using the automatically generated bank account number as the name of the bank will make that account number visible to you for use in testing later.
 - Except for UK or German test bank accounts, leave all other automatically generated information as is.
 - Make a note of the test bank account number, because it will be handy to have when you do your testing.
 - Click **Add Bank Account**.
6. In the resulting success window, click the **Continue** button at the bottom.
The **My Account > Overview** page opens.
7. Click the **Confirm Bank Account** link in the **Activate Account** box at the left side.
8. In the **Confirm Bank Account** window, click **Submit**.

Adding a Credit Card Account

The final step in creating a new test user is adding a credit card account for the test user. The credit card account is a source of funds for the test user's PayPal account, and thus can be used for transactions between that test user and other test users. A test user can have multiple credit card accounts.

Test credit card numbers cannot be used to pay for real-world transactions.

Adding a Credit Card for a New Test User

To add a credit card account for a new test user:

1. After logging into Developer Central, launch the Sandbox as the test user.
2. Navigate to **My Account > Overview**.
3. In the **Overview** window, click the **Add Credit Card** link in the **Activate Account** box on the left.
4. In the **Add Credit Card** window, leave all information as it is (automatically generated) and click **Add Credit Card**.

Adding More Credit Cards for an Existing Test User

To create additional credit card accounts for an already existing test user:

Setting up Test Users

Signing Up for Website Payments Pro

1. Log in to the Sandbox as the test user.
2. Navigate to **My Account > Profile**.
3. Under the Financial Information header, click the Credit Cards link.
4. In the **Credit Cards** window, click the **Add** button.
5. In the **Add Credit Card** window, leave the automatically generated information as is.
6. Make a note of the credit card number for your use in later testing.
7. Click **Add Credit Card**.

Generating a Credit Card Number to Test PayPal Account Optional

To obtain a test credit card number for testing PayPal Account optional:

1. Log in to the Sandbox as the test user.
2. Navigate to **My Account > Profile**.
3. Under the **Financial Information** header, click the **Credit Cards** link.
4. Make a note of the credit card number for your use in later testing.

Signing Up for Website Payments Pro

To sign up for Website Payments Pro, create a Business account, as described in [“Creating a Business Account” on page 22.](#)”

To complete the application for Website Payments Pro, you must enter a Social Security Number. You can enter a Social Security Number in the following format:

111xxxxxx

where *x* is any digit.

NOTE: The SSN you enter must not have already been recorded for some other user of the Sandbox.

4

Testing PayPal Website Features

You can use the PayPal Sandbox to test your website features that do not rely on the PayPal Web Services API. The website features you can learn, develop, or test in the Sandbox are as follows:

- **Website Payments with Buy Now Buttons:** Use the Sandbox to test accepting PayPal as a payment mechanism on a website. For more information, refer to <https://www.paypal.com/pdn-item>.
- **Instant Payment Notification (IPN)**
- **Shopping Cart Purchases:** Use the Sandbox to test the purchase of multiple items in a single transaction using a single payment. For more information, refer to <https://www.paypal.com/shoppingcart>.
- **Subscriptions:** Use the Sandbox to test recurring payments. For more information, refer to <https://www.paypal.com/pdn-recurring>.
- **Refunds:** Use the Sandbox to test refunding payments from a test buyer.

Website Payments with Buy Now Button

You can use the Sandbox to familiarize yourself with the PayPal Buy Now button, with which you can associate PayPal with a specific item you sell on your website.

To create a test Buy Now Button:

1. After logging into Developer Central, launch the Sandbox as the test seller account.
2. Go to the **Merchant Services** tab.
3. Select the **Buy Now Buttons** link under the **Website Payments** heading to get to the Button Factory.
4. Follow the online instructions to create a Buy Now button. For more information, see the *PayPal Website Payments Standard Integration Guide*.
5. Copy and paste the code into your web page file wherever you would like the button image to appear. Typically, the button should be located next to the description of the item or service. Your web page does not have to be published to your web server for you to check the button placement; it can be on your own local hard drive.

Encrypted Website Payments

The Sandbox also supports Encrypted Website Payments (EWP), as does the PayPal SDK console.

Testing PayPal Website Features

Instant Payment Notification (IPN)

For information about what EWP is and how to use it, see the *PayPal Website Payments Standard Integration Guide*.

For information about using the PayPal SDK console to generate EWP HTML, see the *PayPal SDK Guide*.

Testing Payments with Buy Now Button

For the purposes of testing the Buy Now button, your web page does not need to be published to your web server. It can reside on your local hard drive. However, you do need to be logged in to the Sandbox.

1. Log in to Developer Central, click the **Sandbox** tab, select the desired test user, and click **Launch Sandbox**.
2. Open the HTML file containing the Buy Now Button.
3. Click the **Buy Now** Button.
4. Log in using your test buyer account.
5. Follow the on-screen instructions to complete your test payment.

Verifying a Test Payment

1. Log in to Developer Central.
2. Click the **Email** tab.

Your Sandbox inbox shows payment confirmation email messages for the seller and buyer.

3. To further verify that the payment was successful:
 - Check your web server for IPN notifications related to the payment.
 - Launch the Sandbox as your test buyer or seller account and navigate to **My Account > Overview** to see the transaction in your **Recent Activity**.

Instant Payment Notification (IPN)

You can use the Sandbox to test Instant Payment Notification, such as the PayPal Buy Now button or reversals.

Setting up IPN in the Sandbox

For information about implementing IPN, see the following:

- Technical overview at <https://www.paypal.com/cgi-bin/webscr?cmd=p/xcl/rec/ipn-techview-outside>

- *PayPal Order Management Integration Guide* at https://www.paypal.com/en_US/pdf/PP_OrderManagement_IntegrationGuide.pdf

ipn_test Variable

The Sandbox sets the variable `ipn_test` with a value of 1 in the HTTP response back to your IPN page. The purpose of this variable is to clearly differentiate between live and Sandbox IPN, so you can write your processing programs to work with either live or Sandbox IPN. If the `test_ipn` variable is not present in the HTTP response, you are working with Live PayPal.

To enable IPN for a test user:

1. Log in to Developer Central, click the **Sandbox** tab, select the desired test user, and click **Launch Sandbox**.
2. Click the **Profile** subtab.
3. Click the **Instant Payment Notification Preferences** link in the **Selling Preferences** column.
4. Click **Edit**.
5. Click the checkbox and enter the URL at which you would like to receive your IPN notifications.
6. Click **Save**.
7. Install IPN on your web server. You might want to start with one of PayPal's source code samples available at <https://www.paypal.com/ipn> under the **Code Samples** section. There are source code samples for the following programming languages and development environments.
 - ASP/VBScript
 - ColdFusion
 - Java/JSP
 - PERL
 - PHP

Verifying a Test Refund

To verify a test refund, you must have already made a test payment.

1. Log in to Developer Central.
2. Click the **Email** tab.

Your Sandbox inbox shows refund confirmation email messages for the seller and buyer.

3. To further verify that the refund was successful:
 - Check your Web server for IPN notifications related to the refund.

- Launch the Sandbox as your test buyer or seller account and navigate to **My Account > Overview** to see the transaction in your **Recent Activity**.

Transferring Funds to a Test Account

Before a test user can exchange funds with other test users in transactions, you must manually transfer funds to the test user's account.

To transfer funds to a test user's PayPal account:

1. After logging into Developer Central, launch the Sandbox as the test user.
2. Navigate to **My Account > Add Funds**.
3. Click the Transfer funds from a Bank Account link.
4. On the Add Funds by Electronic Funds Transfer page:
 - Select the bank account from which the funds are coming in the From drop-down list.
 - Enter the amount to transfer in the Amount box.
 - Click Continue.
5. On the resulting Add Funds Confirmation page, click **Submit**.
6. Navigate to **My Account > Overview** to see that the transfer transaction is listed.

Clearing or Failing Test eCheck Transactions

When you use eCheck to transfer funds or send payments, the transaction appears as pending until you manually clear or fail it. Manual clearing is only necessary in the Sandbox.

To clear or fail test eCheck transactions:

1. In the transactions log, click the **Details** link (in the Details column).
2. In the Transaction Detail window, there are two links to simulate actual bank clearing. These links appear only in the Sandbox:
 - **Clear Transaction:** Click to complete the transaction.
 - **Fail Transaction:** Click to cancel the transaction.
3. Click **Return to Log** to see the transfer completed and the money in the Sandbox account.
The **My Account > Overview** page opens.
4. Click the **View Limits** links on the **My Account > Overview** page to see the spending limits for the current test user.

Sending Funds to a Seller

To purchase goods or services, a PayPal user must send funds to a seller. In the PayPal Sandbox, you can simulate the actions of a buyer by manually initiating the payment of funds. You must use a Personal account that represents a paying customer.

To send funds from one test user to another:

1. Log in to Developer Central, click the **Sandbox** tab, select the desired test user, and click **Launch Sandbox**.
2. Navigate to the **Send Money** tab.
3. On the Send Money page, enter the email address (PayPal account name) for the test user in Recipient's Email box.
4. Enter the amount to send to the seller test user in the Amount box.
5. Select the currency for the funds in the **Currency** drop-down list. (Note: **Auction** is not an option in the drop-down list.)
6. Select the reason for sending the funds in the **Type** drop-down list.
7. Enter text in the Subject box, if you want to. This text is the subject of the email sent to the recipient about the transfer of funds.
8. Enter text in the **Note** memo box. This text appears in the body of the notification email.
9. Click **Continue**. This does not send the money; a confirmation step follows.
10. On the **Check Payment Details** page, review the transaction details for correctness. You can click **More Funding Options** to change the source of fund used for payment.
11. Click **Send Money**. This triggers the actual transfer of funds.
12. Your Sandbox email inbox contains all the email messages that are sent to the test user sending the money and the test user receiving the money. See "[Sandbox Email](#)" on page 19.

Log in as the seller test user and navigate to the My Account > Overview tab to see the transaction for the recipient's account.

Billing A Customer

PayPal Business users can bill another PayPal user for the purchase of goods or services. In PayPal terminology, the feature to bill a customer is called Request Money. In the PayPal Sandbox, you can manually initiate a request for funds from another test user. One test account is the biller. The other test account is the customer.

To request funds from another test user:

1. After logging into Developer Central, launch the Sandbox as the test user requesting the funds.
2. Navigate to the **Request Money** tab.
3. On the **Request Money** page, enter the email address (PayPal login name) for the test user being billed in the **Recipient's Email** box.
4. Enter the billed amount in the **Amount** box.
5. Select the currency for the funds in the **Currency** drop-down list.
6. Select the reason for the request for funds (billing) in the **Type** drop-down list. (Note: **Auction** is not an option in the drop-down list.)
7. Enter text in the **Subject** box. This text is the subject of the email sent to the recipient regarding the sent funds.
8. Enter text in the **Note** memo box. This text appears in the body of the notification email.
9. Click **Continue**.
10. On the **Request Money – Confirm** page, click **Request Money**. This triggers the actual request for funds.
11. Navigate to the **My Account > Overview** tab. The request for money should be listed.
12. Log in as the billed test user and navigate to the **My Account > Overview** tab to see the transaction for the billed user's account. The transaction for the request for money appears on the **My Account > Overview** tab with **Pay** and **Cancel** buttons. Click **Pay**, and in the confirmation window, click **Send Money**. This completes the transfer of requested funds.

To view the email messages sent to both test users, go to your Sandbox email. For details about your Sandbox email, see [“Sandbox Email” on page 19](#).

5

Testing PayPal Web Services API Applications

This chapter describes using the Sandbox for testing your PayPal Web Services API applications:

- Requesting and installing a PayPal-issued digital certificate and private key for use with the Sandbox
- The PayPal SDK console
- API Overview by business function and service endpoint

This chapter does not contain step-by-step procedures for every aspect of your own software environment for using the Sandbox or the live PayPal Web Services API.

PayPal WSDL/XSD Schema Definitions

The PayPal Web Services schema and its underlying eBay Business Language (eBL) base and core components are required for developing applications with the PayPal Web Services API. The following are the locations of the WSDL and XSD files.

TABLE 5.1 Location of PayPal WSDL and XSD Files

| Development and Test with the PayPal Sandbox API Service | |
|--|--|
| PayPal Schema | https://www.sandbox.paypal.com/wsdl/PayPalSvc.wsdl |
| eBL Base Components and Component Types | https://www.sandbox.paypal.com/wsdl/eBLBaseComponents.xsd https://www.sandbox.paypal.com/wsdl/CoreComponentTypes.xsd |
| Production with Live PayPal Web Services API Service | |
| PayPal Schema | https://www.paypal.com/wsdl/PayPalSvc.wsdl |
| eBL Base Components and Component Types | http://www.paypal.com/wsdl/eBLBaseComponents.xsd http://www.paypal.com/wsdl/CoreComponentTypes.xsd |

Requesting API Credentials from PayPal

API credentials consist of the following:

- API username that identifies you to the PayPal Web Services API service
- API password for that API username
- PayPal-issued digital certificate. To ensure security for your customers and your business, a public certificate and private key issued by PayPal are required for use of the PayPal Web Services API, SDK, and Sandbox. The certificate file is in PEM format, contains both your private key and your public certificate, and must be converted to PKCS12 format.

To obtain a PayPal Web Services API username, password, and digital certificate, you must first create a Business or Premier account and apply online in either the Sandbox or the live PayPal site, <https://www.paypal.com>.

To get a Sandbox certificate

PayPal automatically issues digital certificates for use with the Sandbox.

1. With your PayPal Business or Premier account email address, log in to Developer Central at <https://developer.paypal.com/>.
2. Launch the Sandbox.
3. Log in to the Sandbox
4. Navigate to **My Account > Profile**.
5. Click the **API Access** link.
6. Click the **API Certificate Request** link.
7. Follow the on-screen instructions to complete your certificate request.

To download your PayPal API test certificate:

1. Log in to Developer Central.
2. Click the **Test Certificates** tab.
3. Click **Download** at the lower right.
4. Save the file to your local disk.

To get a live PayPal certificate

The steps to get a live certificate are the same as those for a Sandbox certificate, except for Step 1, 2, and 3:

- Login to <https://www.paypal.com/> to request the certificate.

Follow the remaining steps beginning with Step 4.

Testing with the PayPal SDK Console

The PayPal SDK includes a self-contained console for testing basic features of the SDK. With the console, you can make actual PayPal Web Services API calls and is a good tool for checking that your environment is properly configured and for learning the API structures and elements.

For more information about the PayPal SDK, see the *PayPal SDK Guide* for any of the supported platforms: Java, Microsoft .NET Framework, and PHP with PEAR.

API Overview By Business Function and Service Endpoint

The PayPal Web Services API consists of individual APIs for specific business uses, and the individual APIs are grouped into two service endpoints.

TABLE 5.2 API Overview by Business Function and Service Endpoint

| Business Function | SOAP Request/Response | Service Endpoint: Production | Service Endpoint: Test |
|------------------------------------|---|-------------------------------------|--------------------------------|
| Authorization & Capture API | DoCaptureRequest DoCaptureResponse DoAuthorizationRequest DoAuthorizationResponse DoVoidRequest DoVoidResponse DoReauthorizationRequest DoReauthorizationResponse | api.paypal.com/2.0/ | api-aa.sandbox.paypal.com/2.0/ |
| Direct Payment API | DoDirectPaymentRequest DoDirectPaymentResponse | api.paypal.com/2.0/ | api-aa.sandbox.paypal.com/2.0/ |
| Express Checkout API | SetExpressCheckoutRequest SetExpressCheckoutResponse GetExpressCheckoutDetailsRequest GetExpressCheckoutDetailsResponse DoExpressCheckoutPaymentRequest DoExpressCheckoutPaymentResponse | api.paypal.com/2.0/ | api-aa.sandbox.paypal.com/2.0/ |

TABLE 5.2 API Overview by Business Function and Service Endpoint

| Business Function | SOAP Request/Response | Service Endpoint: Production | Service Endpoint: Test |
|----------------------------------|---|-------------------------------------|--------------------------------|
| GetTransactionDetails API | GetTransactionDetailsRequest GetTransactionDetailsResponse | api.paypal.com/2.0/ | api-aa.sandbox.paypal.com/2.0/ |
| MassPay API | MassPayRequest MassPayResponse | api.paypal.com/2.0/ | api-aa.sandbox.paypal.com/2.0/ |
| RefundTransaction API | RefundTransactionRequest RefundTransactionResponse | api.paypal.com/2.0/ | api-aa.sandbox.paypal.com/2.0/ |
| TransactionSearch API | TransactionSearchRequest TransactionSearchResponse | api.paypal.com/2.0/ | api-aa.sandbox.paypal.com/2.0/ |

6

Technical Support

Depending on the PayPal product you need assistance with, contact either Customer Service or Developer Technical Support.

Contacting Customer Service for Live PayPal Website Help

Use PayPal Help to find an answer to any problem you might encounter with live products such as Website Payments or Instant Payment Notification.

To contact Customer Service about issues with the Live PayPal website:

1. Go to <https://www.paypal.com/>
2. Click **Help** in the upper left corner of the page.
3. Click **Contact Us** in the lower left of the page.
4. Chose either **Help by Email** or **Help by Phone**.
5. Follow the remaining instructions.

Contacting Developer Technical Support for API Help

For information about PayPal Web Services API, Developer Central, and using the Sandbox, refer to the following resources:

- **Help Center:** In Developer Central, click **Help Center** to access developer manuals and links.
- **Forums:** In Developer Central, click **Forums** to share information with the PayPal developer community.
- **Online Developer Support Portal** at <https://ppdts.custhelp.com>

Use the **Forums** first to find answers about any questions or problems you might have. Another developer might have already posted information about your question or problem.

To contact Developer Technical Support about the PayPal Web Services API:

1. Log in to your account at <https://developer.paypal.com/> by entering your email address and password in the Member Log In box
2. Click **Help Center** at the bottom of the box on the right side of the page.
3. Click **Email PayPal Support**.

4. Complete the form.



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