PayPal™

Order Management Integration Guide

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P Preface

This Document

This release of the *PayPal Order Management Integration Guide*, a document that describes the PayPal features for managing orders, such as Payment Data Transfer (PDT), Instant Payment Notification (IPN), and Downloadbale History Log, replaces the version released in December, 2005.

This document replaces portions of the Merchant User Manual and Integration Guide issued in April, 2005.

Intended Audience

This document is written for merchants who use PayPal to manage order information.

Organization of This Document

Chapter 1, "Introduction," gives a brief overview of the PayPal features for order management discussed in this guide.

Chapter 2, "Payment Data Transfer," describes how PDT works and how to set it up.

Chapter 3, "Instant Payment Notification (IPN)," describes how IPN works and how to set it up.

Chapter 4, "Transaction History and Reporting Tools," describes monthly account statements, online transaction search, the Downloadable History Log, and dispute reports.

Appendix A, "IPN and PDT Variables," is a detailed description of all variables and values returned by IPN or PDT.

Appendix B, "Downloadable History Log Columns and Values," describes the columns and values that can be included in the Downloadable History Log.

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

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.

Documentation Problems

If you discover any errors in or have any problems with this documentation, please email us by following the instructions below. Describe the error or problem as completely as possible and give us the document title, the date of the document (located at the foot of every page), and the page number or page range.

To contact Customer Service about documentation problems:

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. Choose **Help by Email**.

5. Complete the form.

Revision History

Revision history for *PayPal Order Management Integration Guide*.

***TABLE* P.1 Revision History**

Date	Description
October 2006	Details about the Downloadable Dispute Report. Minor additions and corrections to some variables in Appendix A.
July 2006	Minor correction to values of payment_status IPN variable.
May 2006	Description of the programmatically retrievable Disput Report. Additional IPN variable values for txn_type: merch-pmt for the Website Payments Pro monthly fee and adjustment for a resolved dispute requiring a chargeback.
October 2006	Adaptation to specifics for Germany.

1 Introduction

PayPal offers four payment notification methods for backend integration:

- Email
- Reporting Tools
- Instant Payment Notification (IPN)
- Payment Data Transfer (PDT)

Email

You will receive an email notification in the following cases:

- Successful Payment
- Pending Payment
- Cancelled Payment

If you do not want to receive payment notifications via email:

1. Click the **Profile** subtab of the **My Account** tab.

2. Click the **Notifications** link in the **Account Information** column.

3. Find the **Payment Notifications** heading and clear the **I receive PayPal Website Payments and Instant Purchase** checkbox.

4. Click **Save**.

Reporting

PayPal's Reporting Tools provide you with the information you need to effectively measure and manage your business. With PayPal's Reporting Tools, you can:

- Analyze your revenue sources to better understand your customers' buying behavior
- Automate time-consuming bookkeeping tasks
- Accurately settle and reconcile transactions

Available reports:

- **Monthly Account Statements:** View a summary of all credits and debits that have affected your account balance each month.

- **Merchant Sales Reports:**
  - **Settlement Report (STL):** Contains only the records of all balance-effecting daily transactions. Can be coordinated with Settlement System or created independently of the moving of money.
  - **Transactions Detail Report (TDR):** Status of all transactions (including non-complete transactions such as eCheck) in the account in a 24 hour period. A super set of data contained in Settlement Report including buyer and auction data.
  - **Order Report (ODR):** List all orders created in a 24-hr period with the order ID. Only appropriate for those merchants using the order functionality on their website.
  - **Dispute Resolution Report (DRR):** List all cases that changed in status or were created in a 24-hr period. Allows a merchant to reconcile cases against money moving transactions.
- **History Log:** View an online record of your received and sent payments.
- **Downloadable Logs:** Keep track of your transaction history by downloading it into various file formats (suitable for financial settlements).

For more information about PayPal's reports, see http://www.paypal.com/cgi-bin/webscr?cmd=p/xcl/rec/reports-intro-outside.

Differences between Instant Payment Notification (IPN) and Payment Data Transfer (PDT)

PDT's primary function is to display payment transaction details to buyers when they are automatically redirected back to your site upon payment completion; however, there are cases where you will not receive notification of all transactions, such as with pending transactions, refunds, and reversals. For these reasons, or if you are using this data to fulfill orders, PayPal strongly recommends that you also enable Instant Payment Notification (IPN).

Both IPN and PDT send back the same data; however, there are several important differences.

PDT:

- Requires Auto Return to be enabled.
- Auto Return will include an ID that can be used to query PayPal for the complete transaction details.
- It is possible to miss a notification if the user closes the browser before the redirection is complete.

IPN:

- Does not require Auto Return to be enabled.
- At the end of the website payment flow, PayPal POSTs the IPN data asynchronously (i.e. not as part of the website payment flow).
- IPNs will also POST for EFT completions, reversals, and refunds.

SSL Not Required for IPN

Because credit card and bank information is not transmitted in Instant Payment Notification (IPN), PayPal does not require Secure Sockets Layer (SSL) to encrypt IPN transmissions.

PayPal-Supported Transactional Currencies

The following currencies are supported by PayPal for use in transactions.

TABLE 1.1 PayPal-Supported Currencies and Currency Codes for Transactions

ISO-4217 Code	Currency
AUD	Australian Dollar
CAD	Canadian Dollar
CHF	Swiss Franc
CZK	Czech Koruna
DKK	Danish Krone
EUR	Euro
GBP	Pound Sterling
HKD	Hong Kong Dollar
HUF	Hungarian Forint
JPY	Japanese Yen
NOK	Norwegian Krone
NZD	New Zealand Dollar
PLN	Polish Zloty
SEK	Swedish Krona
SGD	Singapore Dollar
USD	U.S. Dollar

2 Payment Data Transfer

Payment Data Transfer (PDT) provides merchants with the ability to display transaction details to buyers who are redirected back to their site upon payment completion.

NOTE: You must enable Auto Return for Website Payments to use Payment Data Transfer. Auto Return brings your buyers back to your website immediately after payment completion. Auto Return applies to PayPal Website Payments, including Buy Now, Donations, Subscriptions, and Shopping Cart. For more information about Auto Return, see the *PayPal Website Payments Standard Integration Guide*.

How PDT Works

Bob is going to purchase a widget from the Widget Warehouse.

Step 1: Bob goes to the Widget Warehouse website, finds the widget he wants, and clicks **Buy Now**.
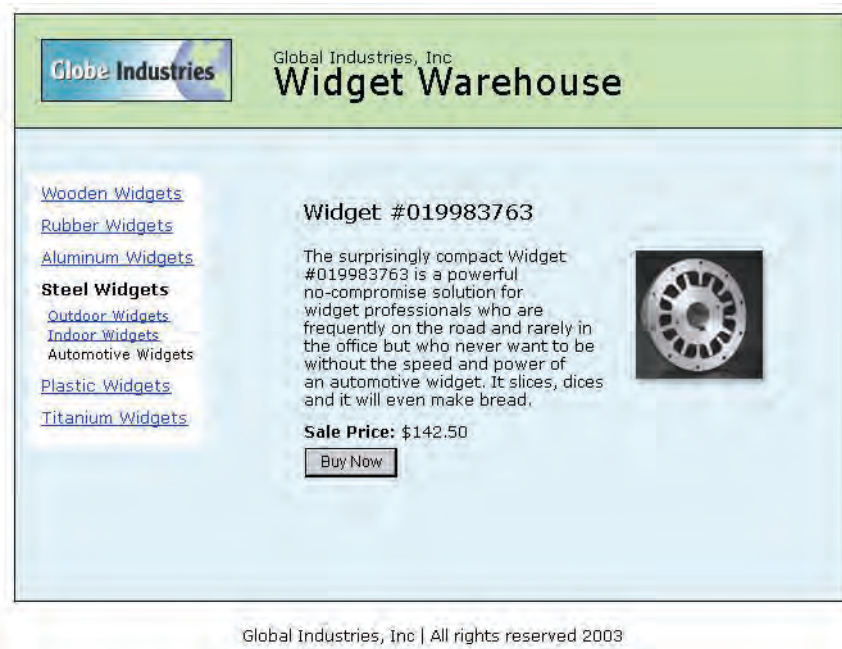
Step 2: Bob is taken to a PayPal **Payment Details** page which displays the details of the payment he is about to make.

Step 3: Bob enters his PayPal account information into the PayPal Login fields.

Step 4: Bob is then taken to a confirmation page that displays the details of his selection, information about how his automatic payments will be funded, and his shipping information. He clicks **Pay** to complete the payment.

Step 5: A payment confirmation page appears that informs Bob that his payment has been completed and that he is being redirected back to the Widget Warehouse website.

Step 6: A transaction token is passed to the return URL provided by the Widget Warehouse. The Widget Warehouse fetches the transaction token and retrieves the transaction details from PayPal via an HTTP POST. Included in the HTTP post is the identity token that was given to the Widget Warehouse when PDT was enabled.

For more information about the PDT identity token, see "Getting and Using the Identity Token" on page 24. For more information about the HTTP POST, see "PDT Notification Synch" on page 25.

Step 7: The Widget Warehouse's Thank You page appears and displays the transaction information, again informing Bob that his transaction has been completed and a receipt for the purchase has been emailed to him. The page also displays payment details, a link to PayPal that Bob can use to view more transaction details if necessary, as well as links that he can use to continue shopping.

For example, as shown in the following diagram: Thank you for your payment. Your transaction has been completed, and a receipt for your purchase has been emailed to you. You may log into your account at www.paypal.com to view details of this transaction.
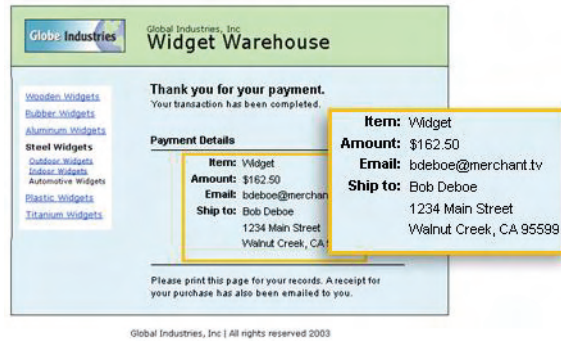
Step 8: Bob receives an email receipt for this transaction, confirming his purchase and including a copy of the payment details, the Widget Warehouse's business information, and his confirmed shipping address.
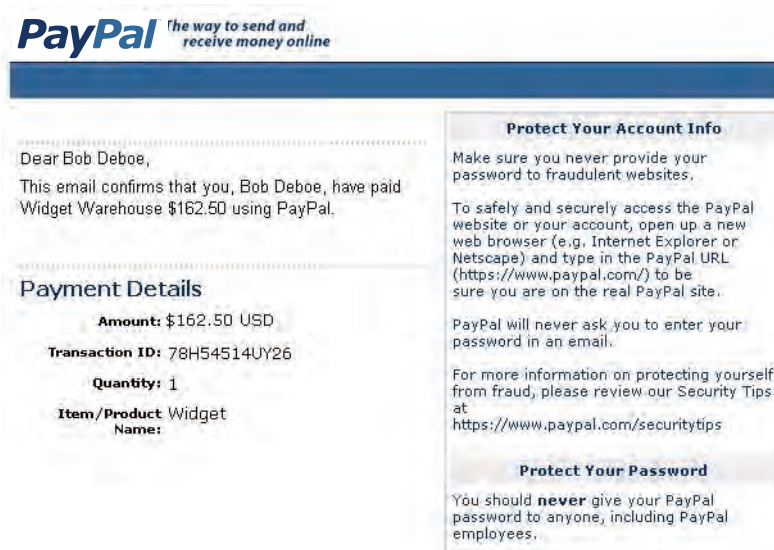
Enabling Payment Data Transfer

To enable PDT:

1. Click the **My Account** tab.

2. Click the **Profile** subtab.

3. Click the **Website Payment Preferences** link, as shown in the following snapshot.
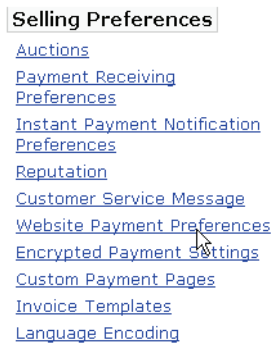
The **Website Payment Preferences** page opens.

4. Click the Payment Data Transfer **On** radio button, as shown in the following diagram.
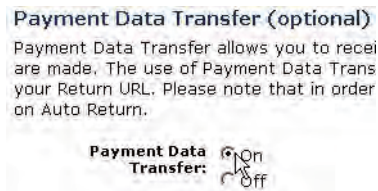
You *must* enable Auto Return in order to use Payment Data Transfer. Auto Return can also be enabled from the **Website Payment Preferences** page.

5. Click **Save**.

Getting and Using the Identity Token

When you click **Save** and save your PDT preferences, a message appears at the top of the page indicating that you have successfully saved your preferences. Your identity token also appears in this message.

You will need to pass this identity token, along with the transaction token, to PayPal in order to receive information that confirms that a payment is complete.

For security, the identity token is not sent to you; however, once you have enabled PDT, it permanently appears below the Payment Data Transfer On/Off radio buttons on the **Website Payments Preferences** page.

PDT Notification Synch

After you have activated PDT, every time a buyer makes a website payment and is redirected to your return URL, a transaction token is sent via a FORM GET variable to this return URL.

To properly use PDT and display transaction details to your customer, you should read the transaction token from the variable `tx` and retrieve transaction details from PayPal by constructing an HTTPS POST to PayPal. This is called *notification synch* or synchronization.

Constructing the POST

Here are the guidelines for constructing the PDT HTTPS POST to PayPal for notification synch:

1. Your POST must be sent to https://www.paypal.com/cgi-bin/webscr.

2. You must include the cmd variable with the value `_notify-synch`:

cmd=_notify-synch

3. You must include the transaction token in the variable `tx` and the value of the transaction token received via PayPal's GET:

tx=*value_of_transaction_token*

4. You must post your identity token using the variable at and the value of your PDT identity token:

at=*your_identity_token*

For information about the identity token, see "Getting and Using the Identity Token" on page 24.

PayPal Response to POST

PayPal responds to the post with a single word on one line in the body of the response: SUCCESS or FAIL. When you receive a SUCCESS response, the rest of the body of the response is the transaction details, one per line, in the format *key=value* where *key* and *value* are both be URL-encoded strings. This response data needs to be parsed appropriately and then URL-decoded.

Example successful response:

```
SUCCESS
first_name=Jane+Doe
last_name=Smith
payment_status=Completed
payer_email=janedoesmith%40hotmail.com
payment_gross=3.99
mc_currency=USD
custom=For+the+purchase+of+the+rare+book+Green+Eggs+%26+Ham
...
```

If the response is FAIL, PayPal recommends making sure that:

- The Transaction token is not bad.

- The ID token is not bad.

- The tokens have not expired.

PDT and Auto Return: Messaging to Buyer

When Auto Return, you must display a message on the page displayed by the Return URL that helps the buyer understand that the payment has been made, that the transaction has been completed, and that payment transaction details will be emailed to the buyer. You can display to your customer whatever payment details you feel are appropriate; however, PayPal recommends including the following:

- Item name

- Amount paid

- Payer email

- Shipping address

If you are using PDT to determine when to fulfill an order automatically, confirm that the payment_status is **Completed**, since the buyer could use methods such as EFT that do not immediately clear.

For a list of PDT variables, see Appendix A, "IPN and PDT Variables."

Preventing Fraud

In order to prevent fraud, PayPal recommends that your programs verify the following:

- `txn_id` is not a duplicate to prevent someone from reusing an old, completed transaction.
- `receiver_email` is an email address registered in your PayPal account, to prevent the payment from being sent to a fraudulent account.
- Other transaction details, such as the item number and price, to confirm that the price has not been changed.

Code Samples

PayPal has made available code samples that you can use to set up PDT. These samples are available at https://www.paypal.com/us/cgi-bin/webscr?cmd=p/xcl/rec/pdt-code.

There are code samples for the following development environments:

- ASP/VBScript
- ColdFusion
- PERL
- PHP

3 Instant Payment Notification (IPN)

Instant Payment Notification (IPN) allows you to integrate PayPal payments with your website's back-end operations. IPN provides immediate notification and confirmation of PayPal payments you receive.

This chapter details IPN in the following sections:

About IPN

Instant Payment Notification consists of three parts:

1. A customer pays you.

2. PayPal `POST`s `FORM` variables to a URL you specify that runs a program to process the variables.

3. You validate the notification.

FIGURE 3.1 How IPN Works: Three General Steps
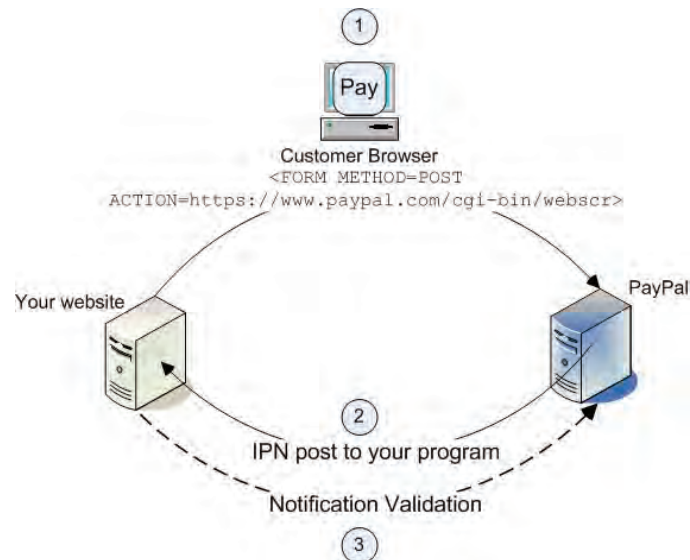
1. A customer payment or a refund triggers IPN. This payment can be via Website Payments Standard FORMs or via the PayPal Web Services APIs for Express Checkout, MassPay, or RefundTransaction. If the payment has a "Pending" status, you receive another IPN when the payment completes, fails, or is denied.

2. PayPal posts HTML FORM variables to a program at a URL you specify. You can specify this URL either in your Profile or with the notify_url variable on each transaction. This post is the heart of IPN. Included in the notification is the customer's payment information (such as customer name, payment amount). All possible variables in IPN posts are detailed in this guide. When your server receives a notification, it must process the incoming data.

3. Your server must then validate the notification to ensure that it is legitimate.

Setting Up IPN

Setting up IPN has two parts:

1. Activating IPN for your PayPal account

2. Setting up a program on your website to process the IPN FORM variables

Activating IPN

To activate IPN, you can either change a setting in your PayPal Profile or include the notify_url variable in the payment FORMs on your website.

Profile Setting

1. Log in to your Business or Premier PayPal account.

2. Click the **Profile** subtab.

3. Under **Selling Preferences**, click **Instant Payment Notification Preferences**.

4. Click **Edit**.

5. Click the checkbox and enter the URL of the program that will process the IPN posts.

6. Click **Save**.

notify_url

Alternatively, you can activate IPN by including the notify_url variable in your PayPal button HTML. This field specifies the URL of a program that can process the IPN. For more details, see "IPN Notification Validation: Preventing Fraud" on page 31.

Setting Up an IPN-Processing Program

The data sent to you by IPN is in the form of HTML FORM name/value pairs. At a minimum, your program must process these pairs. What other processing might be required depends on your order management needs, what kinds of database you use, and other factors outside the scope of this guide.

Code samples for the following development environments are available on the PayPal website at http://www.paypal.com/de/cgi-bin/webscr?cmd=p/xcl/rec/ipn-code-outside:

- ASP.Net/C#
- ASP/VBScript
- ColdFusion
- Java/JSP
- Perl
- PHP

IPN Notification Validation: Preventing Fraud

After your server receives Instant Payment Notification, you must confirm that you received it. This is known as *notification validation*, which is a means for PayPal to help you prevent spoofing or "man-in-the-middle" attacks.

IMPORTANT: If you do not use Encrypted Website Payments (EWP) or shared secret validation, you must check the price, transaction ID, PayPal receiver email address and other data sent to you by IPN to ensure that they are correct. By examining these the data you can be sure that you are not being spoofed.

You have two methods by which you can validate the notification:

1. Sending a shared secret that only you know, described in "Shared Secret Validation" on page 32. PayPal recommends this method because it ensures the validity of the data and decreases network traffic to and from your website. Shared secret validation is appropriate:

   – if you are *not* using a shared website hosting service.
   – if you have enabled SSL on your web server.
   – if you are using PayPal Encrypted Website Payments.
   – if you use the `notify_url` variable on each individual payment transaction.

2. Sending a POST back to PayPal after you receive the IPN and verify the correctness of the data, described in "Your HTTPS Postback to PayPal" on page 33. Postback is appropriate:

   – if you rely on a shared website hosting service
   – if you do not have SSL enabled on your web server

Both methods rely on the concept of a notification URL, which is described in the next section.

Shared Secret Per Transaction or by Profile Setting

The URL to which PayPal posts IPN data is called the *notification URL*. It can be set either with each individual payment transaction or globally in your Profile for all transactions:

- **Per Transaction:** If you want to receive payment notifications for different payments at different URLs (for example, if you need to separate payments to different websites you run), use the notify_url variable to pass the notification URL. With each payment PayPal saves the value of the `notify_url` for a specific payment, and any subsequent updates to that payment (such as a cleared eCheck) are sent to that `notify_url`. When you pass a `notify_url` in your post, it overrides the setting in your Profile.

  NOTE: The value of `notify_url` must be URL-encoded.

- **Profile Setting.** If you want to receive your IPNs at only a single URL, enter that URL in the **Preferences** section of your Profile.

Likewise, the shared secret you can use to validate that you have received an IPN can be set either with each individual payment transaction or globally in your Profile for all transactions:

- **Per Transaction:** If you want a distinct shared secret for each notification for each payment, append a FORM variable name and a shared secret value to the value of the `notify_url` variable. When you pass a shared secret in your payment post, it overrides the setting in your Profile.

- **Profile Setting.** If you want the same shared secret for each and every transaction, enter that shared secret in the **Preferences** section of your Profile.

Shared Secret Validation

The recommended method for notification validation is to use a shared secret on individual payment transactions. Add a shared secret variable and value to the value of the notify_url

variable to which the IPN data is posted after a payment is made. The shared secret consists of the following:

`notify_url=`*yourIPNnotificationURL*`?`*shared_secret_variable_name*`=`*shared_secret_value*

where:

yourIPNNotificationURL is a URL on your website at which you want to receive notification.

shared_secret_variable_name is any variable name you want.

shared_secret_value is the shared secret itself.

For example, the value of notify_url variable might look like this:

`notify_url=https%3A//www.mysite.com/PP-IPN-Validate.cfm?`**secret=shhhhhh**

Security Considerations with Shared Secret Validation

To ensure the security of your shared secret, you should use Encrypted Website Payments (EWP). For information about EWP, see the *PayPal Website Payments Standard Checkout Integration Guide*.

The value of the shared secret is not encrypted; it is in clear text for easier processing. Therefore, the shared secret value is recorded in your web server's access log. Be sure to practice proper security for your server access logs. If you use a web server hosting service, ensure that your provider practices proper security of your data.

NOTE: Your notification URL should check the validity of the returned shared secret and flag for investigation any transaction that does not have the correct shared secret.

Your HTTPS Postback to PayPal

The second method for validating your receipt of an IPN is to post back to PayPal the exact variables and values you received in the IPN.

Constructing the POST

Here are the guidelines for constructing the IPN HTTPS POST to PayPal for notification validation.

NOTE: You can implement IPN without SSL, but PayPal recommends against doing so.

1. Your POST must be sent to https://www.paypal.com/cgi-bin/webscr.

2. You must include the variable `cmd` with the value `_notify-validate`:

   `cmd=_notify-validate`

3. You must post all the form variables you received exactly as you received them.

PayPal Response to Postback

PayPal responds to the postback with a single word in the body of the response: `VERIFIED` or `INVALID`.

When you receive a `VERIFIED` response, perform the following checks:

1. Check that the payment_status is **Completed**.

2. If the `payment_status` is **Completed**, check the `txn_id` against the previous PayPal transaction you have processed to ensure it is not a duplicate.

3. After you have checked the `payment_status` and `txn_id`, make sure the `receiver_email` is an email address registered in your PayPal account.

4. Check that the price, `mc_gross`, and currency, `mc_currency`, are correct for the item, `item_name` or `item_number`.

5. Check the the shared secret returned to you is correct.

Once you have completed the above checks, you can update your database based on the information provided.

If you receive an `INVALID` response, you should investigate. In some cases, this response is caused by an IPN error, possibly from a change in the IPN format. To determine if it is an IPN error, first examine your code. If you need further assistance, go to http://www.paypal.com/wf/, click the **Seller Tools** topic, and click **Instant Payment Notification (IPN)**.

Using IPN with Multiple Currencies

With multiple currencies, you can accept payments in any of the PayPal-supported currencies (see "PayPal-Supported Transactional Currencies" on page 17). As a result, your IPNs will then include information about the currency of the payment. The following overview explains how IPN interacts with multiple currencies.

NOTE: If you are using one of PayPal's Website Payments solutions (e.g. PayPal Shopping Cart), and would like to be paid in a currency other than Euro, you will need to set up your buttons for your currency of choice.

mc_gross and mc_fee

These variables reflect the amount received and corresponding fee of your payments. In order to see those variables IPN has to use the `payment_gross` variable.

- `mc_gross:`Full amount of payment received, before transaction fee.

- `mc_fee:` Transaction fee associated with the payment.

    NOTE: `mc_fee` is not always present in IPNs, such as when a payment is pending.

- For subscription IPNs, such as signup, cancel, modify, failed, and eot, `mc_currency` is the currency of the subscription, rather than the currency of the payment.

    NOTE: The variables `mc_gross` and `mc_fee` will not be added to IPNs with `txn_type`: `subscr_signup`, `subscr_cancel`, `subscr_modify`, `subscr_failed`, or `subscr_eot`.

mc_currency

This variable reflects the currency of mc_gross, mc_fee, payment_gross, and payment_fee amounts.

Possible values are detailed in "PayPal-Supported Transactional Currencies" on page 17.

payment_gross and payment_fee

These variables reflect the amount received and corresponding fee of US Dollar (USD) payments. If the amount received and fee deducted are in a currency other than USD, the variables will still appear in your IPN, but will have no values in them.

Examples of Multi-currency IPN Variables

Example 1

If a user with a EUR balance receives a €100 EUR payment, the following variables will be used for the payment:

- `mc_gross` and `mc_fee` have values.

- `payment_gross` and `payment_fee` are blank.

EXAMPLE 3.1 Multi-currency IPN: EUR Payment

```
payment_status = Completed
payment_gross =
payment_fee =
mc_gross = 100
mc_fee = 3.00
mc_currency = EUR
```

Example 2

f a user with a USD balance receives a $100 USD payment, the following variables will be used for the payment:

- `mc_gross` = `payment_gross`

- `mc_fee` = `payment_fee`

EXAMPLE 3.2 Multi-currency IPN: USD Payment

```
payment_status = Completed
payment_gross = 100
payment_fee = 3.00
mc_gross = 100
mc_fee = 3.00
mc_currency = USD
```

Example 3

If the account is set to automatically convert payments, these variables will be used to show the conversion. This example is for a user with a EUR balance who receives a payment of 100 GBP:

EXAMPLE 3.3 Mutli-currency IPN: Automatic Conversion of GBP Payment

```
payment_status = Completed
payment_gross =
payment_fee =
mc_gross = 100
mc_fee = 3.00
mc_currency = GBP
settle_amount = 145.5
settle_currency = EUR
exchange_rate = 1.5
```

Example 4

If a payment received is pending due to pending_reason = multi_currency, the first IPN received would not have the settle_amount, settle_currency, or exchange_rate.

EXAMPLE 3.4 Mutli-currency IPN: Pending Payment

```
payment_status = Pending
pending_reason = multi_currency
payment_gross = mc_gross = 100
mc_currency = GBP
```

The second IPN contains information about settling the payment. If the payment is accepted into the account's primary currency, which is EUR in the following example:

EXAMPLE 3.5 Pending - Convert to Primary Currency

```
payment_status = Completed
payment_gross =
payment_fee =
mc_gross = 100
mc_fee = 3.00
mc_currency = GBP
settle_amount = 145.5
settle_currency = EUR
exchange_rate = 1.5
```

If the payment is accepted into a balance of the same currency:

EXAMPLE 3.6 Pending - Accept to Currency Balance

```
payment_status = Completed
payment_gross =
payment_fee =
mc_gross = 100
mc_fee = 3.00
```

```
mc_currency = GBP
```

If the payment is denied:

EXAMPLE 3.7 Pending - Denied

```
payment_status = Denied
payment_gross =
mc_gross = 100
mc_currency = GBP
```

NOTE: If a user receives a payment into a currency balance and later converts this amount into another currency balance, the corresponding currency conversion transaction has no IPN.

Transaction History and Reporting Tools

With transaction history and reporting tools, you can access monthly account statements, search specific time periods for transaction records or customer disputes, and download these search results to your local computer.

To access these features:

1. Log in to your PayPal Business or Premier account.

2. Click the **History** subtab.

   The **History** page is shown in Figure 4.1, "The History Page."

FIGURE 4.1 **The History Page**
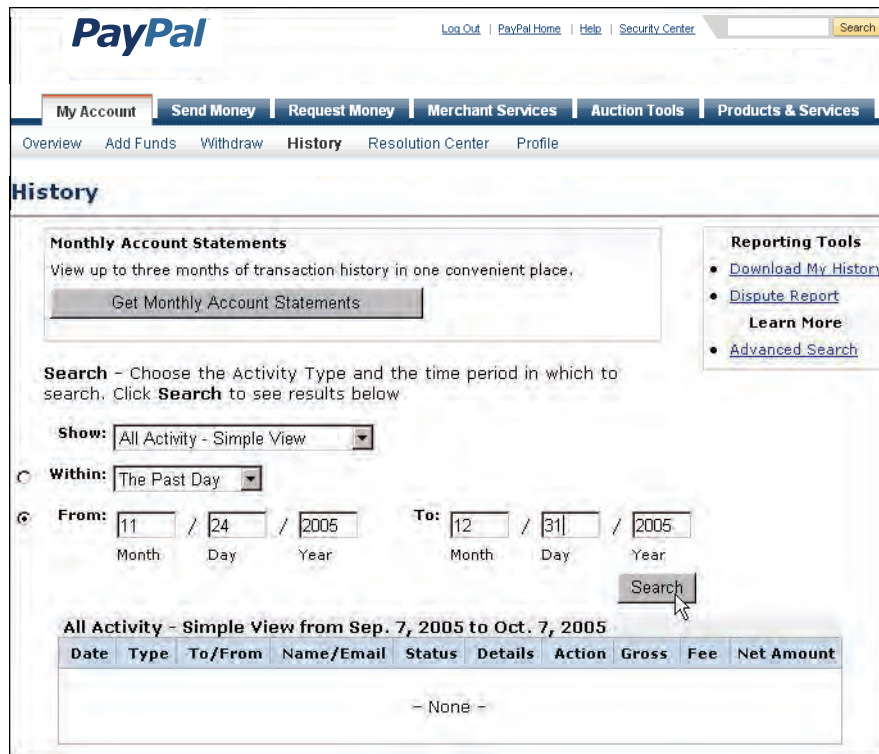
Monthly Account Statements

After you activate this feature, you can view

monthly account statements of your transaction records. New statements become available on the 15th of each month, and the statements are retained online for up to three months.

To activate monthly account statements:

1. Click **Get Monthly Account Statements** on the **History** page.

2. On the displayed page, click the **Yes** radio button.
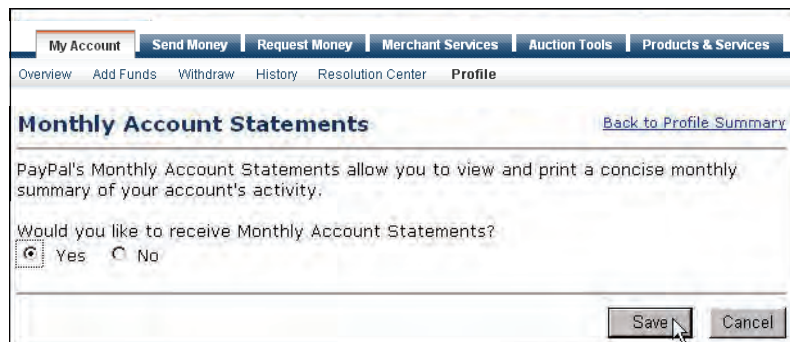
3. Click **Save**.

Online History Searching

The **History** page gives you many options for searching the transaction records viewable online.

There are two types of searches: basic and advanced.

- With basic search, you specify the date range and type of activity you're interested in.
- With advanced search, you specify the date range and a pattern you want to find in certain fields of the transaction records.

Basic Search: Time Periods

You have two ways to narrow the search.

1. You can select a pre-determined date range:

   – The Past Day
   – The Past Week
   – The Past Month
   – The Past Year

2. You can select an exact **From** and **To** range of day, month, and year.

IMPORTANT: The length of time of the date range affects how quickly you see the results. The longer the time, the slower the search. For the speediest results, try to make the range as narrow as possible.

Basic Search: Activity Types

The default set of transactions (also called "activities") is **All Activity- Simple View**. The selectable activity types are listed in Table 4.1, "Online Search: Selectable Activity Types."

TABLE 4.1 Online Search: Selectable Activity Types

All Activity -Advanced View	Fee	Reversals	Open Authorizations: Sent or Received
All Activity Simple View	Subscriptions	Shipping	PayPal Buyer Credit
Payments Sent or Received	BillPay Transactions	Balance Affecting Transactions	
Mass Payments	Refunds	eChecks	
Money Requests	Currency Conversions	Preapproved Payments	
Funds Added or Withdrawn	Balance Transfer	Gift Certificates	

All Activity - Advanced View is the same as **All Activity - Simple View** except it also includes a Balance column. The Balance column can show "..." in some instances, which indicates that showing a balance is not appropriate for these kinds of transaction.

Advanced Search: Key Fields

For an advanced search, specify the dates in the same manner as you do for basic search, as detailed in "Basic Search: Time Periods" on page 40.

You can limit your search to the following fields.

TABLE 4.2 Advanced Transaction Search: Key Fields

Field	Matching Criteria
Email	The text you enter must exactly match an email address.
Transaction ID	Exact match.
Last Name	Any part of the text you enter can match. For example, the text `mit` matches `Smith` and `Mitty`.
Last Name, First Name	Any part of text can match.
Receipt ID	Exact match.
Item Number	Exact match.

Download My History

Download My History gives you many options for selecting the transactions and fields to save to your local computer.

To access the **Download My History** page:

1. In the upper right corner of the **History** page, click **Download My History**.

FIGURE 4.2 Download My History

Choosing a Date Range

To download your history, specify the dates in the same manner as you do for basic search, as detailed in "Basic Search: Time Periods" on page 40.

Selecting a File Format and Transaction Categories

You can choose among four file formats. Each file format can include all activity, but the comma-delimited and tab-delimited formats are limited to either completed or balance-affecting payments.

1. Comma-delimited:

    – All activity

    – Completed payments

    – Balance-affecting payments

2. Tab-delimited:

    – All activity

    – Completed payments

    – Balance-affecting payments

3. Intuit Quicken (.qif file format)

4. Intuit QuickBooks (.iif file format)

Completed Transactions Since Last Download

You can use the **Last Download to Present** feature to coincide with your consecutive accounting periods. It includes only completed transactions in either comma-delimited or tab-delimited format.

Customizing the Download: Selecting Transaction Fields

You can also include any of the fields shown in Figure 4.3, "Customize My History Download" on page 44. Which of these fields you include in the downloaded file depends on what you want to do with the downloaded data.

The transaction history always contains the default fields listed below. The meanings of these fields are described in Appendix B, "Downloadable History Log Columns and Values."

- Date, Time, and Timezone
- Name
- Type, Status and Currency
- Gross, Fee, and Net
- From Email Address and To Email Address
- Transaction ID and Reference Transaction ID
- Receipt ID
- Balance

FIGURE 4.3 **Customize My History Download**

Transaction Reconciliation with the Balance Impact Column

The Balance Impact column shows the word "Credit" for a positive effect or the word "Debit" for a negative effect on your PayPal account balance.

Credit

When you receive an instant payment or credit card transaction, the Balance Impact column indicates a credit. Other possible credits to your account are refunds, reversals and payments sent but never claimed.

In some cases, a credit line-item can update a debit for a transaction.. For example, if you send a payment initially indicated as a debit, but it is denied by the recipient, a new line-item for that transaction will indicate a credit.

Debit

Debits are transactions that reduce your available balance. For example, refunded transactions are recorded as a debit in the Balance Impact column and as completed in the Status column.

Memo Entries

The Balance Impact column can display a Memo entry for transactions that do not affect your balance, such as unclaimed or uncleared transactions. These kinds of transactions have no impact on your balance since neither transaction ever becomes a completed transaction.

Lifecycle of a Transaction: Status

Every transaction in your History Log shows the transaction a status at the time the data were downloaded and its corresponding impact on your balance.

Various types of transaction statuses and scenarios can have a negative, positive, or neutral balance impact. These statuses include:

- Pending
- Held
- Completed
- Denied
- Cancelled
- Reversed

For a complete list of possible transaction statuses, see "Status" on page 73.

Pending to Completed or Cancelled

When a pending payment, such as an EFT, completes after the he buyer has sent the money from his bank, the transaction status changes from Pending to Completed.

Status of Disputed Transactions

Transactions with a Placed status (for temporary holds) usually involve a customer dispute.

If you are found in favor in a dispute, the transaction will be updated with a new line-item to indicate a Credit. However, if the opposite is true, the Balance Impact column will not change from the Debit status for that transaction.

You can generate a dispute report that correlates the transaction to the customer and the reason for the dispute. For more information, see .

Net Amount Column

The Net Amount of a transaction can aid in faster reconciliation.

In most cases, the Net Amount is the Gross minus Fee. When a History entry is updated (for example, in the case of a refund), the Net Amount column indicates the current net value of the transaction on a separate line-item.

FIGURE 4.4 Gross, Fee and Net Amount Calculations from History Log

	Status	Details	Action	Gross	Fee	Net Amount
	Pending	Details	(Remind) (Cancel)	€1.00 EUR	€0.00 EUR	€1.00 EUR
	Completed	Details		-$0.50 USD	$0.00 USD	-$0.50 USD
nal Interiors	Unclaimed	Details		-$1.00 CAD	$0.00 CAD	-$1.00 CAD
	Completed	Details		-$1.00 USD	$0.00 USD	-$1.00 USD
	Unclaimed	Details		-$1.00 CAD	$0.00 CAD	-$1.00 CAD

Dispute Report

Buyers can register claims about payments; such claims are called cases. PayPal notifies merchants about new cases with email and with IPN.

There are two kinds of cases:

● Complaint: A buyer has used the PayPal Resolution Center to register a claim about a payment to a merchant.

> **NOTE:** After notification about a complaint claim, merchants must log in to PayPal to use the Resolution Center to respond to the case.

● Chargeback: A buyer has filed a complaint with a credit card company that has resulted in a chargeback. The credit card company notifies PayPal about the reason for the chargeback. After investigating the case, PayPal notifies the merchant of any action required.

> **NOTE:** The IPN messages for chargebacks resulting from a complaint are asynchronous: the IPN message for the chargeback can be sent to the merchant before the IPN message relating to the complaint. You should compare the IPN variable parent_txn_id of all IPN messages to match the chargeback with the complaint.

IPN variables for cases include the type of case, the reason, and other information about the case. For details about all variables and their possible values, see "Dispute Notification Variables" on page 68.

With the dispute report, you can focus only on transactions that are disputed by customers for some reason.

FIGURE 4.5 **Dispute Report**

Programmatic Access to Dispute Report

The Downloadable Dispute Report (DDR) provides merchants with a regular report of newly created disputes and changes in the status of those cases that are already open and are in the midst of processing.

The report is designed for the merchant that processes large volumes of payments. Thus, while the report resembles the Dispute Report available via the Resolution Center within the PayPal site, the DDR differs in that it contains all open records and the invoice ID which can be used to track dispute cases based on your transactional identifiers. The DDR cannot filter on open records.

NOTE: To use this feature, you must sign up for the report through your PayPal Account Manager.

Content of the Report

The report contains information about all chargebacks and buyer complaints generated for your account. This report does not contain information about ACH returns of PayPal unauthorized complaints.

First DDR Report

When you first sign up for the DDR, the report contains:

- All open chargebacks, regardless of the date the case was created or the current status of the case

- All open buyer complaints, regardless of the date the case was created or the current status of the case

Use this report as a starting point against which you will read future DDR reports.

NOTE: If you need to regenerate the first report, contact your PayPal Account Manager and ask them to generate a first day DDR report for you.

Subsequent Daily DDR Reports

Following the first DDR report, reports are generated daily and contain information about dispute activity for your account in the past 24 hours, or since the last report was generated, including:

- New cases created

- Cases that were modified, including cases that were closed

Frequency / Archiving

The DDR is generated every day based on activity for the previous day. Days with no activity will generate an empty report.

PayPal will maintain DDR reports for seven days after which the report will not longer be available.

Report Set Up

To use the DDR you must:

1. Sign up for the report through your PayPal Account Manager

2. Create a unique user to download the report

3. Write code to download the report from a PayPal server

Step 1. Sign up for the report via PayPal Account Management. Contact your PayPal Account Manager to sign up for the Downloadable Dispute Report.

Step 2. Create a Unique User on PayPal to Download the Report. To use the DDR, you must use PayPal's Multi-User Access feature to create a unique user for downloading reports.

1. Login to your PayPal account.

2. Select the **Profile** subtab.

3. Click the **Multi-User Access** link under the Account Information column to open the **Multi-User Access** page.

4. Click the **Add** button. On the **Multi-User Access** page, enter the requested information into the fields provided.

5. Select the checkboxes next to each of the choices that you want the alias to have.

6. Click **Save**.

Your new user and alias appear on the **Multi-User Access** page along with a confirmation message that you have successfully added a new user to your account.

Step 3. Write Code to Download the Report from the PayPal Server. Write code to request the report from a PayPal server. The code must send an HTTP POST to the PayPal server. The POST must be sent from a secure server that uses HTTPS. PayPal does not accept requests from servers using HTTP.

You can automate which details you want to be prioritized in your Settlement File reports by assigning values as depicted in the sample HTML code.

The HTML code below is an example of the values that your DDR may contain. In the following example, the uname value is the alias created using the Multi-User Access feature.

```
<FORM ACTION="https://www.paypal.com/us/DISPUTE-REPORT-SCHED-LOGIN"
METHOD="post">
     <INPUT TYPE="hidden" NAME="day" VALUE="16">
     <INPUT TYPE="hidden" NAME="month" VALUE="09">
     <INPUT TYPE="hidden" NAME="year" VALUE="2006">
     <INPUT TYPE="hidden" NAME="uname" VALUE="queuealias2">
     <INPUT TYPE="hidden" NAME="pword" VALUE="22222222">
     <INPUT TYPE="image" VALUE="Submit">
</FORM>
```

View the Report

You will receive an email when the report is ready. This email contains a link to the report which can you access via a browser.

You can also use the email as a trigger for your code to programmatically access the report.

A IPN and PDT Variables

IPN and PDT variables are case-sensitive. All values are lowercase, except those for `payment_status`, which have an initial capital letter.

In addition, values posted by IPN are URL-encoded. For example, a colon in `http://` is encoded as `%3A` in the IPN post: `http%3A//`

About These Tables of Variables

The tables in this appendix group IPN variables by different characteristics:

Transaction-Specifc Variable Values

Unless otherwise indicated in the table column labeled **Possible Values**, the value of an IPN or PDT variable is always specific to the transaction whose information is being posted.

test_ipn Variable in Sandbox

In the Sandbox environment, IPN includes the additional variable `test_ipn` with a value of `1` (one). The purpose of `test_ipn` is to provide testing programs a means to differentiate between Sandbox IPN and live IPN.

IPN Variables in All Posts

IPN Version: notify_version

The value of the `notify_version` variable is the version number of Instant Payment Notification that makes the post.

NOTE: The value `notify_version` is a means for PayPal to track versions of IPN. There is no need for your programs to store this value or query it.

Security Information: verify_sign

The value of of `verify_sign` is an encrypted string used to validate the authenticity of the transaction.

Buyer Information

TABLE A.1   IPN and PDT Variables: Buyer Information

Variable Name	Possible Values	Description	Character Length
address_ city		City of customer's address.	40
address_ country		Country of customer's address.	64
address_ country_ code		Two-character ISO 3166 country code	2
address_ name		Name used with address (included when the customer provides a Gift Address)	128
address_ state		State of customer's address	40
address_ status	confirmed unconfirmed	Customer provided a confirmed address. Customer provided an unconfirmed address.	
address_ street		Customer's street address.	200
address_zip		Zip code of customer's address.	20
first_name		Customer's first name	64

TABLE *A.1* **IPN and PDT Variables: Buyer Information**

Variable Name	Possible Values	Description	Character Length
last_name		Customer's last name	64
payer_ business_ name		Customer's company name, if customer represents a business	127
payer_email		Customer's primary email address. Use this email to provide any credits.	127
payer_id		Unique customer ID.	13
payer_ status	verified unverified	Customer has a Verified PayPal account. Customer has an Unverified PayPal account.	
residence_ country		Two-character ISO 3166 country code	2

Basic Information

TABLE *A.2* **IPN and PDT Variables: Basic Information**

Variable Name	Possible Values	Description	Character Length
business		Email address or account ID of the payment recipient (that is, the merchant). Equivalent to the values of receiver_email (if payment is sent to primary account) and business set in the Website Payment HTML. **NOTE:** The value of this variable is normalized to lowercase characters.	127
item_name		Item name as passed by you, the merchant. Or, if not passed by you, as entered by your customer. If this is a shopping cart transaction, PayPal will append the number of the item (e.g., item_name_1, item_name_2, and so forth).	127
item_number		Pass-through variable for you to track purchases. It will get passed back to you at the completion of the payment. If omitted, no variable will be passed back to you.	127
quantity		Quantity as entered by your customer or as passed by you, the merchant. If this is a shopping cart transaction, PayPal appends the number of the item (e.g. quantity1, quantity2).	

TABLE A.2   IPN and PDT Variables: Basic Information

Variable Name	Possible Values	Description	Character Length
receiver_ email		Primary email address of the payment recipient (that is, the merchant). If the payment is sent to a non-primary email address on your PayPal account, the receiver_email is still your primary email. NOTE: The value of this variable is normalized to lowercase characters.	127
receiver_id		Unique account ID of the payment recipient (i.e., the merchant). This is the same as the recipient's referral ID.	13

Advanced and Custom Information

TABLE A.3   IPN and PDT Variables: Advanced and Custom Information

Variable Name	Possible Values	Description	Character Length
custom		Custom value as passed by you, the merchant. These are pass-through variables that are never presented to your customer	255
invoice		Passthrough variable you can use to identify your Invoice Number for this purchase. If omittted, no variable is passed back.	127
memo		Memo as entered by your customer in PayPal Website Payments note field.	255
option_ name_1		Option 1 name as requested by you. If this is a shopping cart transaction, see Table A.4, "IPN and PDT Variables: Website Payments Standard and Refund Information," on page 55 for more information.	64
option_ name_2		Option 2 name as requested by you. If this is a shopping cart transaction, see Table A.4, "IPN and PDT Variables: Website Payments Standard and Refund Information," on page 55 for more information.	64
option_ selection1		Option 1 choice as entered by your customer. If this is a shopping cart transaction, see Table A.4, "IPN and PDT Variables: Website Payments Standard and Refund Information," on page 55 for more information.	200

TABLE A.3 **IPN and PDT Variables: Advanced and Custom Information**

Variable Name	Possible Values	Description	Character Length
option_ selection2		Option 2 choice as entered by your customer. If this is a shopping cart transaction, see Table A.4, "IPN and PDT Variables: Website Payments Standard and Refund Information," on page 55 for more information.	200
tax		Amount of tax charged on payment. If this is a shopping cart transaction, see Table A.4, "IPN and PDT Variables: Website Payments Standard and Refund Information," on page 55 for more information.	

Website Payments Standard and Refund Information

TABLE A.4 **IPN and PDT Variables: Website Payments Standard and Refund Information**

Variable Name	Possible Values	Description	Character Length
auth_id	Transaction-specific	Authorization identification number	19
auth_exp	Transaction-specific	Authorization expiration date and time, in the following format: HH:MM:SS DD Mmm YY, YYYY PST	28
auth_amount	Transaction-specific	Authorization amount	
auth_status	Completed Pending Voided	Status of authorization	
mc_gross_x	Transaction-specific for multiple currencies	The amount is in the currency of mc_currency, where x is the shopping cart detail item number. The sum of mc_gross_x should total mc_gross.	
mc_ handling_x	Transaction-specific for multiple currencies	The x is the shopping cart detail item number. The handling_cart cart-wide Website Payments variable is also included in the mc_handling variable; for this reason, the sum of mc_handling_x might not be equal to mc_handling	

*TABLE **A.4*** ***IPN and PDT Variables: Website Payments Standard and Refund Information***

Variable Name	Possible Values	Description	Character Length
mc_ shipping_x	Transaction-specific for multiple currencies	This is the combined total of shipping and shipping2 WebsitePayments variables, where x is the shopping cart detail item number. The shippingx variable is only shown when the merchant applies a shipping amount for a specific item. Because profile shipping might apply, the sum of shippingx might not be equal to shipping.	
num_cart_ items		If this is a PayPal Shopping Cart transaction, number of items in cart.	
option_ name1		PayPal appends the number of the item where x represents the number of the shopping cart detail item (e.g., option_name1, option_name2).	64
option_ name2		PayPal appends the number of the item where x represents the number of the shopping cart detail item (e.g., option_name2, option_name2).	64
option_ selection1_ x		PayPal appends the number of the item (e.g., option_selection1, option_selection2), where x represents the number of the shopping cart detail item.	200
option_ selection2_ x		PayPal appends the number of the item where x represents the number of the shopping cart detail item (e.g., option_selection1, option_selection2).	200
parent_txn_ id		In the case of a refund, reversal, or canceled reversal, this variable contains the txn_id of the original transaction, while txn_id contains a new ID for the new transaction.	19
payment_ date		Time/Date stamp generated by PayPal, in the following format: HH:MM:SS DD Mmm YY, YYYY PST	28

TABLE A.4 **IPN and PDT Variables: Website Payments Standard and Refund Information**

Variable Name	Possible Values	Description	Character Length
payment_ status	Canceled_ Reversal Completed Denied Expired Failed Pending Processed Refunded Reversed Voided	The status of the payment: `Canceled_Reversal`: A reversal has been canceled. For example, you won a dispute with the customer, and the funds for the transaction that was reversed have been returned to you. `Completed`: The payment has been completed, and the funds have been added successfully to your account balance. `Denied`: You denied the payment. This happens only if the payment was previously pending because of possible reasons described for the PendingReason element. `Expired`: This authorization has expired and cannot be captured. `Failed`: The payment has failed. This happens only if the payment was made from your customer's bank account. `Pending`: The payment is pending. See pending_reason for more information. `Refunded`: You refunded the payment. `Reversed`: A payment was reversed due to a chargeback or other type of reversal. The funds have been removed from your account balance and returned to the buyer. The reason for the reversal is specified in the `ReasonCode` element. `Processed`: A payment has been accepted. `Voided`: This authorization has been voided.	
payment_ type	echeck instant	`echeck`: This payment was funded with an eCheck or EFT. `instant`: This payment was funded with PayPal balance, ELV, giropay, credit card, or Instant Transfer.	

TABLE A.4   IPN and PDT Variables: Website Payments Standard and Refund Information

Variable Name	Possible Values	Description	Character Length
pending_ reason	address authorization echeck intl multi-currency unilateral upgrade verify other	This variable is set only if payment_status = Pending. address: The payment is pending because your customer did not include a confirmed shipping address and your Payment Receiving Preferences is set yo allow you to manually accept or deny each of these payments. To change your preference, go to the **Preferences** section of your **Profile**. authorization: You set <PaymentAction> Authorization</PaymentAction> on SetExpressCheckoutRequest and have not yet captured funds. echeck: The payment is pending because it was made by mEFT and PayPal hasn't received the funds yet or an eCheck that has not yet cleared. intl: The payment is pending because you hold a non-U.S. account and do not have a withdrawal mechanism. You must manually accept or deny this payment from your **Account Overview**. multi-currency: You do not have a balance in the currency sent, and you do not have your **Payment Receiving Preferences** set to automatically convert and accept this payment. You must manually accept or deny this payment. unilateral: The payment is pending because it was made to an email address that is not yet registered or confirmed. upgrade: The payment is pending because it was made via credit card and you must upgrade your account to Business or Premier status in order to receive the funds. upgrade can also mean that you have reached the monthly limit for transactions on your account. verify: The payment is pending because you are not yet verified. You must verify your account before you can accept this payment. other: The payment is pending for a reason other than those listed above. For more information, contact PayPal Customer Service.	

TABLE A.4 **IPN and PDT Variables: Website Payments Standard and Refund Information**

Variable Name	Possible Values	Description	Character Length
reason_code	chargeback guarantee buyer_ complaint refund other	This variable is set if payment_status =Reversed , Refunded, or Cancelled_Reversal chargeback: A reversal has occurred on this transaction due to a chargeback by your customer. guarantee: A reversal has occurred on this transaction due to your customer triggering a money-back guarantee. buyer-complaint: A reversal has occurred on this transaction due to a complaint about the transaction from your customer. refund: A reversal has occurred on this transaction because you have given the customer a refund. other: A reversal has occurred on this transaction due to a reason not listed above.	
remaining_settle	Transaction-specific	Remaining amount that can be captured with Authorization and Capture	
shipping	Transaction-specific	Shipping charges associated with this transaction. Format: unsigned, no currency symbol, two decimal places.	
tax		PayPal appends the number of the item (e.g., item_name1, item_name2). The tax_x variable is included only if there was a specific tax amount applied to a particular shopping cart item. Because profile tax may apply to other items in the cart, the sum of tax_x might not total to tax.	
transaction_entity	auth reauth order payment	Authorization and Capture transaction entity	
txn_id		A unique transaction ID generated by PayPal.	19
txn_type	cart express_ checkout send_money virtual_ terminal web-accept	cart: Transaction created by a customer: • Via the PayPal Shopping Cart feature. • Via Express Checkout when the cart contains multiple items. express_checkout: Transaction created by Express Checkout when the customer's cart contains a single item. send-money: Transaction created by customer from the **Send Money** tab on the PayPal website. virtual_terminal: Transaction created with Virtual Terminal. web-accept: Transaction created by customer via Buy Now, Donation, or Auction Smart Logos.	

Currency and Currency Exchange

TABLE A.5 IPN and PDT Variables: Currency and Currency Exchange Information

Variable Name	Possible Values	Description	Character Length
exchange_rate		Exchange rate used if a currency conversion occurred.	
mc_currency	Three-character currency code. See table of supported currencies.	For payment IPNs, this is the currency of the payment. For non-payment subscription IPNs, this is the currency of the subscription.	
mc_fee		Transaction fee associated with the payment. mc_gross minus mc_fee equals the amount deposited into the receiver_email account. Equivalent to payment_fee for USD payments. If this amount is negative, it signifies a refund or reversal, and either of those payment statuses can be for the full or partial amount of the original transaction fee.	
mc_gross		Full amount of the customer's payment, before transaction fee is subtracted. Equivalent to payment_gross for USD payments. If this amount is negative, it signifies a refund or reversal, and either of those payment statuses can be for the full or partial amount of the original transaction.	
mc_handling#		Total handling amount associated with the transaction. If this is a shopping cart transaction, see Table A.4, "IPN and PDT Variables: Website Payments Standard and Refund Information," on page 55 for more information.	
mc_shipping#		Total shipping amount associated with the transaction. If this is a shopping cart transaction, see Table A.4, "IPN and PDT Variables: Website Payments Standard and Refund Information," on page 55 for more information.	
payment_fee	Transaction-specific for USD payments only	USD transaction fee associated with the payment. payment_gross minus payment_fee equals the amount deposited into the receiver email account. Is empty for non-USD payments. If this amount is negative, it signifies a refund or reversal, and either of those payment statuses can be for the full or partial amount of the original transaction fee. NOTE: This is a deprecated field. Use mc_fee instead.	

TABLE A.5   IPN and PDT Variables: Currency and Currency Exchange Information

Variable Name	Possible Values	Description	Character Length
payment_ gross	Transaction-specific for USD payments only	Full USD amount of the customer's payment, before transaction fee is subtracted. Will be empty for non-USD payments. This is a legacy field replaced by mc_gross. If this amount is negative, it signifies a refund or reversal, and either of those payment statuses can be for the full or partial amount of the original transaction.	
settle_ amount		Amount that is deposited into the account's primary balance after a currency conversion from automatic conversion (through your Payment Receiving Preferences) or manual conversion (through manually accepting a payment).	
settle_ currency	Three-character currency code. See table of supported currencies.	Currency of settle_amount.	

Auctions

TABLE A.6   IPN and PDT Variables: Auctions

Variable Name	Possible Values	Description	Character Length
auction_ buyer_id		The customer's auction ID.	64
auction_ closing_ date		The auction's close date, in the following format: HH:MM:SS DD Mmm YY, YYYY PST	28
auction_ multi_item		The number of items purchased in multi-item auction payments. It allows you to count the mc_gross or payment_gross for the first IPN you receive from a multi-item auction (auction_multi_item), since each item from the auction will generate an Instant Payment Notification showing the amount for the entire auction.	
for_auction	true	This is an auction payment—payments made using Pay for eBay Items or Smart Logos—as well as Send Money/Money Request payments with the type **eBay items** or **Auction Goods (non-eBay)**.	

Mass Payment

TABLE A.7   IPN and PDT Variables: Mass Payment

Variable Name	Possible Values	Description	Character Length
masspay_txn_id_x		For Mass Payments, a unique transaction ID generated by the PayPal system, where x is the record number of the mass pay item	19
mc_currency_x	Transaction-specific for multiple currencies	For Mass Payments, the currency of the amount and fee, where x is the record number the mass pay item	
mc_fee_x	Transaction-specific for multiple Currencies	For Mass Payments, the transaction fee associated with the payment, where x is the record number the mass pay item	
mc_gross_x	Transaction-specific for Multiple Currencies	The gross amount for the amount, where x is the record number the mass pay item	
payment_date		For Mass Payments, the first IPN is the date/time when the record set is processed and the second IPN is the date/time when all payments are completed/returned. Format: HH:MM:SS DD Mmm YY, YYYY PST	28
payment_fee_x	Transaction-specific for EUR payments only	If the payment is EUR, then the value is the same as that for mc_fee_x, where x is the record number; if the currency is not EUR, then this is an empty string. **NOTE:** This is a deprecated field. Use mc_fee_x instead.	
payment_gross_x	Transaction-specific for USD payments only	If the payment is USD, then the value for this is the same as that for the mc_gross_x, where x is the record number the mass pay item. If the currency is not USD, this is an empty string. **NOTE:** This is a deprecated field. Use mc_gross_x instead.	
payment_status	Completed Denied Processed	Completed: For Mass Payments, this means that all of your payments have been claimed, or after a period of 30 days, unclaimed payments have been returned to you. Denied: For Mass Payments, this means that your funds were not sent and the Mass Payment was not initiated. This may have been caused by lack of funds. Processed: Your Mass Payment has been processed and all payments have been sent.	

TABLE A.7 IPN and PDT Variables: Mass Payment

Variable Name	Possible Values	Description	Character Length
reason_code	1001 1003 1004	This variable is only set if status = Failed. 1001: Invalid UserID. 1003: Country of Residence check failure 1004: Country of Funding Source check failure	
receiver_ email_x		For Mass Payments, the primary email address of the payment recipient, where x is the record number of the mass pay item	127
status_x	Completed Failed Reversed Unclaimed	For Mass Payments, the status of the payment, where x is the record number Completed: The payment has been processed, regardless of whether this was originally a unilateral payment Failed: The payment failed because of insufficient PayPal balance. Reversed: This is for unilateral payments that were not claimed after 30 days and have been returned to the sender. Or the funds have been returned because the Receiver's account was locked. Unclaimed: This is for unilateral payments that are unclaimed.	
txn_type	masspay	This payment was sent via Mass Payment	
unique_id_x		For Mass Payments, the unique ID from input, where x is the record number. This allows the merchant to cross-reference the payment	13

Subscriptions Variables

Along with other IPN variables, the following variables are included in Subscriptions IPNs.

TABLE A.8   Subscriptions Variables

Variable	Possible Values	Description	Character Limit
txn_type	subscr-failed subscr-cancel subscr-payment subscr-signup subscr-eot subscr-modify	subscr_signup: subscription sign-up. subscr_cancel: subscription cancellation. subscr_failed: subscription payment failure. subscr_payment: subscription payment. subscr_eot: subscription's end-of-term. subscr_modify: subscription modification.	
subscr_date		Start date or cancellation date depending on whether transaction is subscr_signupor subscr_cancel. Time/Date stamp generated by PayPal , in the following format: HH:MM:SS DD Mmm YY, YYYY PST	
subscr_effective		Date when the subscription modification will be effective (only for txn_type = subscr_modify). Time/Date stamp generated by PayPal , in the following format: HH:MM:SS DD Mmm YY, YYYY PST	
period1		(optional) Trial subscription interval in days, weeks, months, years (example: a 4 day interval is "period1: 4 D").	
period2		(optional) Trial subscription interval in days, weeks, months, or years.	
period3		Regular subscription interval in days, weeks, months, or years.	
amount1		Amount of payment for trial period 1 for USD payments; otherwise blank (optional).	
amount2		Amount of payment for trial period 2 for USD payments; otherwise blank (optional).	
amount3		Amount of payment for regular subscription period for USD payments; otherwise blank.	
mc_amount1		Amount of payment for trial period 1, regardless of currency (optional).	
mc_amount2		Amount of payment for trial period 2, regardless of currency (optional).	

TABLE A.8   Subscriptions Variables

Variable	Possible Values	Description	Character Limit
mc_amount3		Amount of payment for regular subscription period, regardless of currency.	
mc_currency	See table of supported currencies.	For non-payment subscriptions IPNs (i.e., txn_type= signup, cancel, failed, eot, or modify), this is the currency of the subscription. For payment IPNs, it is the currency of the payment (i.e., txn_type = subscr_payment)	
recurring		Indicates whether regular rate recurs (1 is yes, blank is no).	
reattempt		Indicates whether reattempts should occur upon payment failures (1 is yes, blank is no).	
retry_at		Date PayPal will retry a failed subscription payment.	
recur_times		The number of payment installments that will occur at the regular rate.	
username		(optional) Username generated by PayPal and given to subscriber to access the subscription.	64
password		(optional) Password generated by PayPal and given to subscriber to access the subscription (password will be encrypted).	24
subscr_id		ID generated by PayPal for the subscriber.	19

Variables for Each Subscription Event

The following table shows which variables are associated and can be included in IPN posts with each subscription event type.

About payment_status and txn_type with Subscription IPN. In IPN messages posted by Subscription events, the payment_status variable is sent when a payment or refund occurs. For all other events, the pertinent variable is txn_type.

TABLE A.9   IPN Variables with Each Subscription Event

Variable	Signup	Cancel	Modify	Payment (USD)	Payment (Multi-Currency)	Refund	Failed	EOT
Basic Information								
business	X	X	X	X	X		X	X
receiver_email	X	X	X	X	X		X	X
receiver_id				X	X			
item_name	X	X	X	X	X		X	X

TABLE A.9   IPN Variables with Each Subscription Event

Variable	Signup	Cancel	Modify	Payment (USD)	Payment (Multi-Currency)	Refund	Failed	EOT
item_number	X	X	X	X	X		X	X
Advanced and Custom Information								
invoice	X	X	X	X	X		X	X
custom	X	X	X	X	X		X	X
option_name1	X	X	X	X	X		X	X
option_selection1	X	X	X	X	X		X	X
option_name2	X	X	X	X	X		X	X
option_selection2	X	X	X	X	X		X	X
Transaction Information								
payment_status				X	X	X		
pending_reason				X	X			
reason_code				X	X			
payment_date				X	X			
txn_id				X	X			
parent_txn_id				X	X			
txn_type	subscr_ signup	subscr_ cancel	subscr_ modify	subscr_payment			subscr_ failed	subscr_ eot
Currency and Exchange information								
mc_gross				X	X			
mc_fee				X	X			
mc_currency	X	X	X	X	X		X	X
settle_amount				X	X			
exchange_rate				X	X			
payment_gross				X			X	X
payment_fee				X				
Buyer Information								
first_name	X	X	X	X	X		X	X

TABLE A.9   IPN Variables with Each Subscription Event

Variable	Signup	Cancel	Modify	Payment (USD)	Payment (Multi-Currency)	Refund	Failed	EOT
last_name	X	X	X	X	X		X	X
payer_business_name	X	X	X	X	X		X	
address_name	X	X	X	X	X		X	
address_street	X	X	X	X	X		X	
address_city	X	X	X	X	X		X	
address_state	X	X	X	X	X		X	
address_zip	X	X	X	X	X		X	
address_country	X	X	X	X	X		X	
payer_email	X	X	X	X	X		X	X
payer_id	X	X	X	X	X		X	X
payer_status	X	X	X	X	X		X	X
payment_type				X	X			
Subscription Information								
subscr_date	X	X	X					
subscr_effective			X					
period1	X	X	X					
period2	X	X	X					
period3	X	X	X					
amount1	X	X	X					
amount2	X	X	X					
amount3	X	X	X					
mc_amount1	X	X	X					
mc_amount2	X	X	X					
recurring	X	X	X					
reattempt	X	X	X					
retry_at							X	

***TABLE** A.9   IPN Variables with Each Subscription Event*

Variable	Signup	Cancel	Modify	Payment (USD)	Payment (Multi-Currency)	Refund	Failed	EOT
recur_times	X	X	X					
username	X	X	X	X	X		X	X
password	X	X	X	X	X		X	X
subscr_id	X	X	X	X	X		X	X

Dispute Notification Variables

***TABLE** A.10 Dispute Notification Variables*

Variable	Possible Values	Description
txn_type	new_case	A new case has been registered.
txn_type	adjustment	A case has been resolved and closed.
txn_id		The merchant's original transaction identification number for the payment from the buyer, against which the case was registered.
case_id		Case identification number. Format: PP-nnn-nnn-nnn where n is any numeric character.
case_type	complaint chargeback	• complaint: A buyer has logged a complaint through the PayPal Resolution Center. • chargeback: A buyer has filed a chargeback with his credit card company, which has notified PayPal of the reason for the chargeback.
case_creation_date	Transaction-specific	Date and time case was registered, in the following format: HH:MM:SS DD Mmm YY, YYYY PST
reason_code	Depends on value of case_type	Reason for the case.
reason_code Values for case_type complaint		
	non_receipt	Buyer claims that he did not receive goods or service.

TABLE A.10 Dispute Notification Variables

Variable	Possible Values	Description
	`not_as_ described`	Buyer claims that the goods or service received differ from merchant's description of the goods or service.
reason_code Values for case_type chargeback		
	`unauthorized`	
	`adjustment_ reimburse`	A case that has been resolved and close requires a reimbursement.
	`non_receipt`	Buyer claims that he did not receive goods or service.
	`duplicate`	Buyer claims that a possible duplicate payment was made to the merchant.
	`merchandise`	Buyer claims that the received merchandise is unsatisfactory, defective, or damaged.
	`special`	Some other reason. Usually, special indicates a credit card processing error for which the merchant is not responsible and for which no debit to the merchant will result. PayPal must review the documentation from the credit card company to determine the nature of the dispute and possibly contact the merchant to resolve it.

PDT-Specific Variables

The following variables apply *only* to PDT.

TABLE A.11 PDT-Specific Variables

Variable	Description
`amt`	Amount of the transaction
`cc`	Currency code
`cm`	Custom message
`st`	Transaction status
`tx`	Transaction ID/PDT token

B

Downloadable History Log Columns and Values

TABLE B.1   Downloadable History Log Columns and Values

Column Heading	Description	Format	Payment Button Variable	Related IPN Variable
Date	Date transaction was initiated (according to PayPal system time, US-Pacific time zone). Log sorted in reverse chronological order by Date (most recent first)	[M]M/[D]D/YYYY		`payment_date` `subscr_date`
Time	Time transaction was initiated (according to PayPal system time, US-Pacific time zone).	HH:MM:SS		
Timezone	The time zone used for recording transactions in your PayPal account.	Alphanumeric; three-character codes		
Name	Name of counterparty. If counterparty is a PayPal verified user, this field will contain the user's first and last name. If counterparty is not a verified user, field will contain the user's email address.	alphanumeric; 128-character limit	`first_namel ast_name`	

TABLE B.1 *Downloadable History Log Columns and Values*

Column Heading	Description	Format	Payment Button Variable	Related IPN Variable
Type	Type of transaction: Add Funds from a Bank Account ATM Withdrawal ATM Withdrawal Reversal Auction Payment Received Auction Payment Sent Canceled Fee Canceled Payment Canceled Transfer Chargeback Settlement Check Withdrawal from PayPal Currency Conversion Debit Card Cash Advance Debit Card Purchase Dividend From PayPal Money Market eCheck Received eCheck Sent Funds Added with a Personal Check Guarantee Reimbursement Payment Received Payment Sent PayPal PayPal Balance Adjustment Referral Bonus Refund Shopping Cart Payment Received Shopping Cart Payment Sent Subscription Payment Received Subscription Payment Sent Transfer Update to Add Funds from a Bank Account Update to Debit Card Credit Update to eCheck Received Update to Payment Received Update to Payment Sent continued...	alphanumeric; 39-character limit		`txn_type`

TABLE B.1 Downloadable History Log Columns and Values

Column Heading	Description	Format	Payment Button Variable	Related IPN Variable
Type (continued)	Update to Reversal Update to Web Accept Payment Received Virtual Debit Card Authorization Virtual Debit Card Credit Received Virtual Debit Card Purchase Virtual Debt Card Credit Received Web Accept Payment Received Web Accept Payment Sent Withdraw Funds to a Bank Account			
Status	Status of transaction at time of download: Canceled Cleared Completed Denied Expired Failed Pending Refunded Returned Reversed Unclaimed Uncleared	alphanumeric; 10-character limit		`payment_status` `pending_reason`
Subject	Subject of transaction as entered by counterparty	alphanumeric; 256-character limit		

Currency	Currency of transaction	alphanumeric; three character limit	`currency_code`	`mc_currency`
				`settle_currency`
				`exchange_rate`
				`mc_gross`

TABLE B.1   Downloadable History Log Columns and Values

Column Heading	Description	Format	Payment Button Variable	Related IPN Variable
Gross	Gross amount of transaction	signed decimal	amount	payment_ gross settle_ amount amount1 amount2 amount3
Fee	Fee (if applicable) for transaction	signed decimal		payment_fee mc_fee
Net	Net amount of transaction	signed decimal		
Note	Note for transaction as entered by counterparty	alphanumeric; 2000-character limit		
From Email Address	Email address of transaction sender	alphanumeric; 128-character limit		payer_email
To Email Address	Email address of transaction recipient	alphanumeric; 128-character limit	business	receiver_ email
Transaction ID	PayPal-generated unique transaction ID	alphanumeric; 17-character limit		txn_id
Payment Type	Payment type used for transaction: eCheck Instant PayPal Funds	alphanumeric; 27-character limit		payment_typ e
Counterparty Status	Account status of buyer: International – Unverified International – Verified Unverified Verified	alphanumeric; 27-character limit		payer_statu s
Address Status	Status of counterparty's Shipping Address. Confirmed Non-confirmed	alphanumeric; 14-character limit		address_ status

TABLE B.1 Downloadable History Log Columns and Values

Column Heading	Description	Format	Payment Button Variable	Related IPN Variable
Item Title	Specified by buyer in the website field: • Auction/Item Title Or by seller in any of the following button-creation fields: • PayPal Shopping Cart Item Name • Buy Now Item Name • Donations Item Name • Subscriptions Name	alphanumeric; 128-character limit	`item_name`	`item_name`
Item ID	Specified by buyer in the website field: • Auction/Item Number Or by seller in any of the following button-creation fields: • PayPal Shopping Cart Item Number • Buy Now ID Number • Donations ID Number • Subscription Reference Number	alphanumeric; 256-character limit	`item_number`	`item_number`

Shipping Amount	Specified by buyer in the website field:
	• eBay/Auction Shipping amount
	Or by seller in any of the following button-creation fields:
	• PayPal Shopping Cart Shipping amount
	• Buy Now Shipping amount
		unsigned decimal	`shipping`
			`shipping2`
			`handling`	

Insurance Amount	Specified by buyer in the website field: • eBay/Auction Insurance amount	unsigned decimal		
Sales Tax	Sales Tax Amount specified in seller's button-creation process and Profile preferences	unsigned decimal	`tax`	
Option 1 Name	Specified by seller in any of the following button-creation fields: • PayPal Shopping Cart Option 1 Name • Buy Now Option 1 Name • Subscription Option 1 Name	alphanumeric; 60-character limit	`on0`	`option_name 1`

TABLE B.1 ***Downloadable History Log Columns and Values***

Column Heading	Description	Format	Payment Button Variable	Related IPN Variable
Option 1 Value	Entered by buyer in any of the following website fields: • PayPal Shopping Cart Option 1 Value • Buy Now Option 1 Value • Subscription Option 1 Value Or specified by seller in any of the following button-creation fields: • PayPal Shopping Cart Value 1 Choices • Buy Now Value 1 Choices • Subscription Value 1 Choices	`alphanumeric; 30-character limit`	`on1`	`option_name 2`
Option 2 Name	Specified by seller in any of the following button-creation fields: • PayPal Shopping Cart Option 2 Name • Buy Now Option 2 Name • Subscription Option 2 Name	alphanumeric; 60-character limit	`on1`	`option_ selection1`
Option 2 Value	Entered by buyer in any of the following website fields: • PayPal Shopping Cart Option 2 Value • Buy Now Option 2 Value • Subscription Option 2 Value Or specified by seller in any of the following button-creation fields: • PayPal Shopping Cart Value 2 Choices • Buy Now Value 2 Choices • Subscription Value 2 Choices	alphanumeric; 30-character limit	`os1`	`option_ selection2`
Auction Site	Name of Auction Site: • eBay • Yahoo! Auctions • uBid.com • Amazon.com Auctions • MSN Auctions • BidVille • Other	alphanumeric; 20-character limit		
Item URL	URL of eBay/Auction Item (eBay/Auction-specific)	alphanumeric; 256-character limit		

TABLE B.1   *Downloadable History Log Columns and Values*

Column Heading	Description	Format	Payment Button Variable	Related IPN Variable
Closing Date	Close date of eBay/Auction Item (eBay/Auction-specific)	[M]M/[D]D/YYYY		
Reference Txn ID	Transaction ID of parent transaction	alphanumeric; 17-character limit		
Invoice Number	Specified by seller in any of the following button-creation fields: • PayPal Shopping Cart Invoice Number • Buy Now Invoice Number • Subscription Invoice Number	alphanumeric	`invoice`	`invoice`
Subscription Number	PayPal-generated Subscription Transaction ID Number S-xxxxxxxxxxxxxxxx where x is the transaction ID.	alphanumeric; 19-character limit		`subscr_id`
Custom Number	Specified by seller in any of the following button-creation fields: • PayPal Shopping Cart Custom Number • Buy Now Custom Number • Subscription Custom Number	alphanumeric	`custom`	`custom`
Shipping Address Line 1	First line of shipping address as specified by counterparty	alphanumeric; 395-character limit		`address_street1`
Shipping Address Line 2	Second line of shipping address as specified by counterparty (if applicable)	alphanumeric; 395-character limit		`address_street2`
Town/City	Town/City of shipping address as specified by counterparty	alphanumeric		`address_city`
State/Province/Region/County/Territory/Prefecture/Republic	State/Province/Region/Territory/Prefecture/Republic of shipping address as specified by counterparty			`address_state`
Zip/Postal Code	Zip/Postal Code of shipping address as specified by counterparty			`address_zip`
Country	Country of shipping address as specified by counterparty			`address_country`

TABLE B.1 **Downloadable History Log Columns and Values**

Column Heading	Description	Format	Payment Button Variable	Related IPN Variable
Balance	Account balance at time of transaction. Balance is reported in the currency of the transaction. The Balance column can show "..." in some instances, which indicates that showing a balance is not appropriate for these kinds of transaction.	signed decimal		

C Country Codes

Table 1: Country Codes

Country	Code
AFGHANISTAN	AF
ÅLAND ISLANDS	AX
ALBANIA	AL
ALGERIA	DZ
AMERICAN SAMOA	AS
ANDORRA	AD
ANGOLA	AO
ANGUILLA	AI
ANTARCTICA	AQ
ANTIGUA AND BAR-BUDA	AG
ARGENTINA	AR
ARMENIA	AM
ARUBA	AW
AUSTRALIA	AU
AUSTRIA	AT
AZERBAIJAN	AZ
BAHAMAS	BS
BAHRAIN	BH
BANGLADESH	BD
BARBADOS	BB

Country	Code
BELARUS	BY
BELGIUM	BE
BELIZE	BZ
BENIN	BJ
BERMUDA	BM
BHUTAN	BT
BOLIVIA	BO
BOSNIA AND HERZE-GOVINA	BA
BOTSWANA	BW
BOUVET ISLAND	BV
BRAZIL	BR
BRITISH INDIAN OCEAN TERRITORY	IO
BRUNEI DARUSSALAM	BN
BULGARIA	BG
BURKINA FASO	BF
BURUNDI	BI
CAMBODIA	KH
CAMEROON	CM
CANADA	CA
CAPE VERDE	CV
CAYMAN ISLANDS	KY

Country	Code
CENTRAL AFRICAN REPUBLIC	CF
CHAD	TD
CHILE	CL
CHINA	CN
CHRISTMAS ISLAND	CX
COCOS (KEELING) ISLANDS	CC
COLOMBIA	CO
COMOROS	KM
CONGO	CG
CONGO, THE DEMO-CRATIC REPUBLIC OF THE	CD
COOK ISLANDS	CK
COSTA RICA	CR
COTE D'IVOIRE	CI
CROATIA	HR
CUBA	CU
CYPRUS	CY
CZECH REPUBLIC	CZ
DENMARK	DK
DJIBOUTI	DJ
DOMINICA	DM
DOMINICAN REPUBLIC	DO
ECUADOR	EC
EGYPT	EG
EL SALVADOR	SV

Country	Code
EQUATORIAL GUINEA	GQ
ERITREA	ER
ESTONIA	EE
ETHIOPIA	ET
FALKLAND ISLANDS (MALVINAS)	FK
FAROE ISLANDS	FO
FIJI	FJ
FINLAND	FI
FRANCE	FR
FRENCH GUIANA	GF
FRENCH POLYNESIA	PF
FRENCH SOUTHERN TERRITORIES	TF
GABON	GA
GAMBIA	GM
GEORGIA	GE
GERMANY	DE
GHANA	GH
GIBRALTAR	GI
GREECE	GR
GREENLAND	GL
GRENADA	GD
GUADELOUPE	GP
GUAM	GU
GUATEMALA	GT
GUERNSEY	GG

Country	Code	Country	Code
GUINEA	GN	KOREA, REPUBLIC OF	KR
GUINEA-BISSAU	GW	KUWAIT	KW
GUYANA	GY	KYRGYZSTAN	KG
HAITI	HT	LAO PEOPLE'S DEMO-CRATIC REPUBLIC	LA
HEARD ISLAND AND MCDONALD ISLANDS	HM	LATVIA	LV
HOLY SEE (VATICAN CITY STATE)	VA	LEBANON	LB
		LESOTHO	LS
HONDURAS	HN	LIBERIA	LR
HONG KONG	HK	LIBYAN ARAB JAMA-HIRIYA	LY
HUNGARY	HU		
ICELAND	IS	LIECHTENSTEIN	LI
INDIA	IN	LITHUANIA	LT
INDONESIA	ID	LUXEMBOURG	LU
IRAN, ISLAMIC REPUB-LIC OF	IR	MACAO	MO
IRAQ	IQ	MACEDONIA, THE FORMER YUGOSLAV REPUBLIC OF	MK
IRELAND	IE		
ISLE OF MAN	IM	MADAGASCAR	MG
ISRAEL	IL	MALAWI	MW
ITALY	IT	MALAYSIA	MY
JAMAICA	JM	MALDIVES	MV
JAPAN	JP	MALI	ML
JERSEY	JE	MALTA	MT
JORDAN	JO	MARSHALL ISLANDS	MH
KAZAKHSTAN	KZ	MARTINIQUE	MQ
KENYA	KE	MAURITANIA	MR
KIRIBATI	KI	MAURITIUS	MU
KOREA, DEMOCRATIC PEOPLE'S REPUBLIC OF	KP	MAYOTTE	YT
		MEXICO	MX

Country	Code
MICRONESIA, FEDER-ATED STATES OF	FM
MOLDOVA, REPUBLIC OF	MD
MONACO	MC
MONGOLIA	MN
MONTSERRAT	MS
MOROCCO	MA
MOZAMBIQUE	MZ
MYANMAR	MM
NAMIBIA	NA
NAURU	NR
NEPAL	NP
NETHERLANDS	NL
NETHERLANDS ANTI-LLES	AN
NEW CALEDONIA	NC
NEW ZEALAND	NZ
NICARAGUA	NI
NIGER	NE
NIGERIA	NG
NIUE	NU
NORFOLK ISLAND	NF
NORTHERN MARIANA ISLANDS	MP
NORWAY	NO
OMAN	OM
PAKISTAN	PK

Country	Code
PALAU	PW
PALESTINIAN TERRI-TORY, OCCUPIED	PS
PANAMA	PA
PAPUA NEW GUINEA	PG
PARAGUAY	PY
PERU	PE
PHILIPPINES	PH
PITCAIRN	PN
POLAND	PL
PORTUGAL	PT
PUERTO RICO	PR
QATAR	QA
REUNION	RE
ROMANIA	RO
RUSSIAN FEDERATION	RU
RWANDA	RW
SAINT HELENA	SH
SAINT KITTS AND NEVIS	KN
SAINT LUCIA	LC
SAINT PIERRE AND MIQUELON	PM
SAINT VINCENT AND THE GRENADINES	VC
SAMOA	WS
SAN MARINO	SM

Country	Code	Country	Code
SAO TOME AND PRINCIPE	ST	TANZANIA, UNITED REPUBLIC OF	TZ
SAUDI ARABIA	SA	THAILAND	TH
SENEGAL	SN	TIMOR-LESTE	TL
SERBIA AND MONTENEGRO	CS	TOGO	TG
		TOKELAU	TK
SEYCHELLES	SC	TONGA	TO
SIERRA LEONE	SL	TRINIDAD AND TOBAGO	TT
SINGAPORE	SG		
SLOVAKIA	SK	TUNISIA	TN
SLOVENIA	SI	TURKEY	TR
SOLOMON ISLANDS	SB	TURKMENISTAN	TM
SOMALIA	SO	TURKS AND CAICOS ISLANDS	TC
SOUTH AFRICA	ZA		
SOUTH GEORGIA AND THE SOUTH SANDWICH ISLANDS	GS	TUVALU	TV
		UGANDA	UG
		UKRAINE	UA
SPAIN	ES	UNITED ARAB EMIRATES	AE
SRI LANKA	LK		
SUDAN	SD	UNITED KINGDOM	GB
SURINAME	SR	UNITED STATES	US
SVALBARD AND JAN MAYEN	SJ	UNITED STATES MINOR OUTLYING ISLANDS	UM
SWAZILAND	SZ	URUGUAY	UY
SWEDEN	SE	UZBEKISTAN	UZ
SWITZERLAND	CH	VANUATU	VU
SYRIAN ARAB REPUBLIC	SY	VENEZUELA	VE
		VIET NAM	VN
TAIWAN, PROVINCE OF CHINA	TW	VIRGIN ISLANDS, BRITISH	VG
TAJIKISTAN	TJ		

Country	Code
VIRGIN ISLANDS, U.S.	VI
WALLIS AND FUTUNA	WF
WESTERN SAHARA	EH
YEMEN	YE
ZAMBIA	ZM
ZIMBABWE	ZW

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