



# ***Website Payments Pro Payflow Edition Developer's Guide***

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

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*PayPal Website Payments Pro Payflow Edition Developer's Guide*

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# Preface

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## About This Guide

Website Payments Pro Payflow Edition uses the Payflow gateway and Payflow Pro SDK to send transactions to PayPal for processing. This product offers two payment solutions: PayPal Direct Payment, to process credit card transactions, and PayPal Express Checkout, to process PayPal transactions.

*Website Payments Pro Payflow Edition Developer's Guide* introduces transaction processing through the Payflow gateway and describes how to integrate Direct Payment credit card processing.

**NOTE:** Direct Payment credit card processing is not a standalone feature. You must use Direct Payment together with Express Checkout. Use this guide along with the companion guide, *Express Checkout for Payflow Pro*, for details on integrating Express Checkout.

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## Intended Audience

This guide is written for merchants who have signed up through PayPal Manager to use PayPal as their processor for handling payment transactions on their website.

This guide assumes that its readers:

- Are experienced web or application developers
- Have a background in payments services

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## Related Documentation

For additional Payflow information, see the following related documentation:

- *Express Checkout for Payflow Pro*, for integrating Express Checkout as a payment solution. Use this guide in conjunction with the Express Checkout guide for complete information on Express Checkout transaction processing.
- PayPal Manager online help, for processing transactions manually, issuing credit cards, and generating reports
- For additional help, see the Help Center at the following URL:  
<https://www.paypal.com/us/cgi-bin/helpweb?cmd=help>

The Sample Code and Documentation section of the PayPal Developer Central home page provides a link to the Payflow documentation.

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## How to Contact Customer Support

For problems with transaction processing or your connection to the server, contact Customer Support by opening a ticket on the under Contact Support tab at <http://www.paypal.com/mts>.

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## Revision History

Revision history for *PayPal Website Payments Pro Payflow Edition Developer's Guide*.

**TABLE 1.1** Revision history

Date	Description
March 2009	Added credit card line-item details parameters to <a href="#">Chapter 4, “Performing Direct Payment Credit Card Transactions.”</a>
November 2008	<ul style="list-style-type: none"><li>• Moved coverage of Express Checkout, originally in this guide, to a separate document, <i>Express Checkout for Payflow Pro</i>.</li><li>• Removed Enroute and Jal from credit card ACCTTYPE description</li><li>• Added PPREF to transaction responses</li><li>• Updated table of RESULT values and RESPMSG text</li><li>• Added Currency Codes appendix</li></ul>
June 2008	Updated Preface. Made CURRENCY a required parameter.
March 2008	Added coverage of PayPal success with warning message, which can be returned by PayPal when RESULT=0.
February 2008	Added support for non-referenced credits. Updated test and live host URLs.
November 2007	Explains how merchant can determine what SDK version they are using. Explains more about VERBOSITY parameter. Explains how to eliminate TRANSSTATE 106 results. Updates Index to include an alphabetical listing of all Payflow parameters cited in the guide. Updated Figures 1.1 and 4.1 to show new PayPal logo. Adds new transaction type N. Includes other minor edits for technical accuracy.

# 1

## Introduction

This chapter introduces the Website Payments Pro Payflow Edition product and provides an overview of its Direct Payment credit card processing payment solution.

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### About Website Payments Pro Payflow Edition

Website Payments Pro Payflow Edition uses the Payflow gateway and Payflow Pro SDK to send transactions to PayPal for processing. It is available from the PayPal Manager Downloads page as a .NET or Java library, or you can build your own API by posting directly to the servers via HTTPS.

With Website Payments Pro Payflow Edition, you get the payment processing capabilities of a merchant account and gateway – plus much more. It is an all-in-one payment solution that includes:

- Express Checkout, which allows PayPal account holders to check out fast with saved information, and enables you to gain incremental sales from PayPal’s growing base of users.
- Direct Payment credit card processing, which enables you to accept credit card payments directly on your website. PayPal remains invisible, so you control the customer experience.

By integrating Direct Payment credit card processing with Express Checkout as part of the Website Payments Pro Payflow Edition solution, you can accept all major payment types, including PayPal, while working with a single provider that processes and manages all of your online payments.

### Payflow SDK Version

To determine the version of the Payflow SDK you are using, view a transaction in PayPal Manager. In Transaction Details, check the value of Client Version. A value of 3x means you are using a version 3 (V3) SDK; a value of 4x means you are using a version 4 (V4) SDK.

### Host Addresses

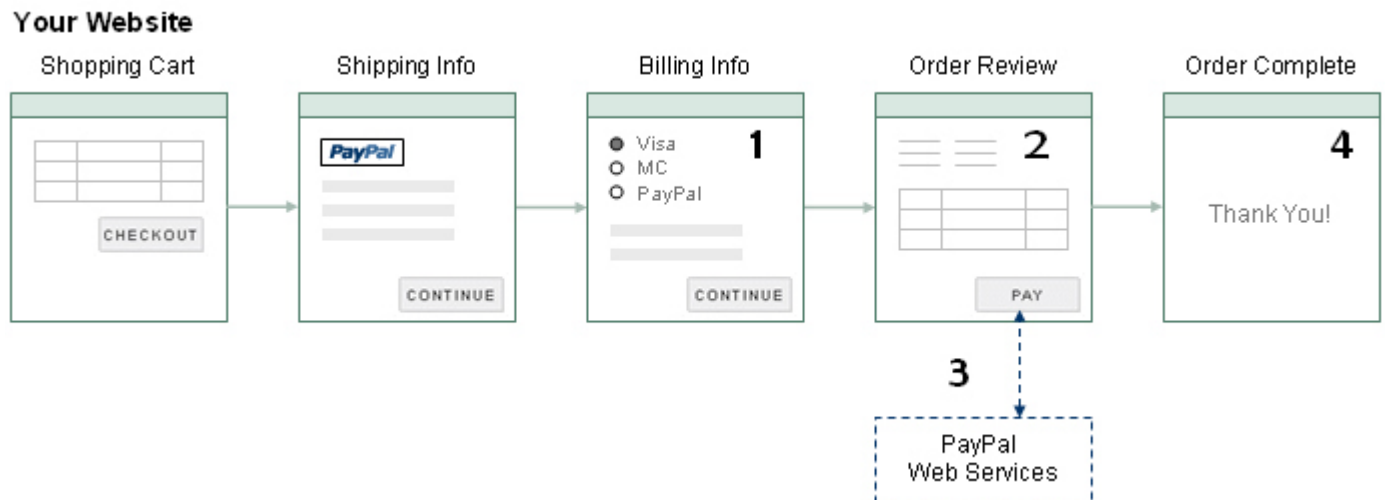
Use the following host addresses for the Payflow V4 SDK:

- For live transactions, use **payflowpro.paypal.com**
- For testing purposes, use **pilot-payflowpro.paypal.com**

## How Direct Payment Processing Works

Figure 1.1 illustrates the Direct Payment credit card processing flow. For credit card transactions, customers can stay on your website as PayPal processes the payment in the background.

**FIGURE 1.1** Direct Payment credit card processing



The numbers in the flow identify these events:

1. On your website, the customer chooses to pay with a credit card and enters the credit card number and other details.
2. The customer reviews the order.
3. When your customer clicks “Pay” to place the order, you send the Direct Payment request. Within seconds, you receive the response confirming that the transaction has been processed.
4. You transfer your customer to your order confirmation page.

The “Pay” button on your website sends the Direct Payment request over the Payflow gateway to the server. The request includes the required information you collected from the customer such as the amount of the transaction, the buyer’s credit card number, expiration date, browser IP address, and an element that specifies whether the transaction is a final sale or an authorization for a final amount that you capture in a subsequent transaction.

PayPal is completely invisible to your customer before, during, and after the purchase. PayPal does not send an email receipt to the customer, nor does the customer’s credit card statement indicate that PayPal processed the payment.

**NOTE:** Direct Payment credit card processing is not covered by the PayPal Seller Protection Policy (SPP).

# 2

## Downloading, Installing, and Activating

The Payflow Software Development Kit (SDK) is a set of APIs to allow you to integrate Website Payments Pro Payflow Edition (Payflow Pro) with your application or website.

**IMPORTANT:** *Full API documentation is included with each SDK.*

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### Supported Platforms

Payflow Pro is available on all major web server platforms in a variety of formats to support your integration requirements. Payflow Pro is available as a .NET or Java library, or you can build your own API by posting directly to the Payflow servers via HTTPS.

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### Preparing the Payflow Client Application

Unless you are building your own API and using HTTPS to post to the servers, you will need to obtain the Payflow SDK. Follow these steps.

1. Download the Payflow SDK.

From the SDKs and Downloads page linked to the Library tab on PayPal Developer Central, download the Payflow SDK appropriate for your platform.

2. Extract the files to a local directory.
3. Configure your firewall.

If you have a stateful firewall, enable outbound traffic for SSL (port 443). The firewall keeps state on the connection, and automatically permits the inbound response from PayPal.

If you do not have a stateful firewall, enable inbound and outbound traffic for SSL (port 443). Outbound traffic permits the initial request by Payflow Pro, while inbound permits the response from PayPal.

4. Read the Readme.txt file.

The Readme.txt file includes integration information and samples that illustrate how to use the Payflow client application in your development environment.

---

## Activating Your Payflow Pro Account

When you are ready to activate your Payflow Pro account to begin submitting live transactions, follow these steps:

1. Log in to PayPal Manager at <https://manager.paypal.com>.
2. Click **ActivateYour Account** and follow the on-screen instructions.
3. Change the URL within your web or desktop application to point to the live Payflow servers. For details on Payflow server URLs, see “[Host Addresses](#)” on page 9.

# 3

## Simple Payflow Transaction

All Payflow transactions include a common set of required parameters. Additional parameters are required depending on the transaction type. You can also provide many optional parameters, depending on the results you want returned. For example, you can set the `VERBOSITY` parameter to return PayPal processor-specific details rather than normalized information if you are looking for this kind of information. `VERBOSITY` is described in detail in [Appendix D, “VERBOSITY: Viewing Processor-Specific Transaction Results.”](#)

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### Transaction Requests

#### Request Contents

A transaction request includes:

- Connection parameters
- User parameters
- Parameters specific to the type of the transaction, such as a sale or an authorization

#### Data Modes for Sending

You can send parameter data in the transaction request to the Payflow server in either of two modes:

- Name-value pair
- XMLPay

The examples in this guide are presented in name-value pair format. Name-value pair syntax guidelines are described in [“PARMLIST Syntax Guidelines” on page 14.](#)

XMLPay is an XML syntax for payment requests and associated responses in a payment-processing network. Instead of using name-value pairs, you can send XML documents to the Payflow server based on the XMLPay 2.0 schema. For details on XMLPay, see *XMLPay Developer's Guide* in the Payflow Pro documentation on Developer Central.

## Connection Parameters

The connection parameters are described below. Pass them in the format and syntax required by the Payflow SDK and programming language that you are using. See your integration documentation for details.

**TABLE 3.1** Connection parameters

Parameter	Description
HOSTADDRESS	<i>(Required)</i> Payflow host name. See <a href="#">“Host Addresses” on page 13</a> for details on host addresses.
HOSTPORT	<i>(Required)</i> Use port 443.
PARMLIST	<p><i>(Required)</i> List of parameters that specify the payment information for the transaction. The quotation marks “ ” at the beginning and end are required. The following is an example:</p> <pre>TRXTYPE=S&amp;TENDER=C&amp;PARTNER=PayPal&amp;VENDOR=SuperMerchant&amp;USER=SuperMerchant&amp;PWD=SuperUserPassword&amp;ACCT=5555555555554444&amp;EXPDATE=0308&amp;AMT=123.00</pre> <p>The content of the PARMLIST varies by the type of transaction being processed. For example, a Void transaction requires a different set of parameters than a Sale.</p>
TIMEOUT	<i>(Required)</i> Time-out period for the transaction. The minimum recommended time-out value is 30 seconds. The client begins tracking from the time that it sends the transaction request to the server.
PROXYADDRESS	<i>(Optional)</i> Proxy server address. Use the PROXY parameters for servers behind a firewall. Your network administrator can provide the values.
PROXYPORT	<i>(Optional)</i> Proxy server port.
PROXYLOGON	<i>(Optional)</i> Proxy server logon ID.
PROXYPASSWORD	<i>(Optional)</i> Proxy server logon password.

### PARMLIST Syntax Guidelines

Follow these guidelines when creating the PARMLIST:

- Spaces are allowed in values.
- Enclose the PARMLIST in quotation marks (“”).
- Do not place quotation marks (“”) within the body of the PARMLIST.
- Separate all name-value pairs in the PARMLIST using an ampersand (&).
- Set the VERBOSITY transaction parameter to MEDIUM (default is LOW) if you want the response to return more detailed information. For details, see [Appendix A, “Verbosity: Viewing Processor-Specific Transaction Results.”](#)

### Using Special Characters in Values

Because the ampersand (&) and equal sign (=) characters have special meanings in the PARMLIST, name-value pairs like the following examples are not valid:

```
NAME=Ruff & Johnson  
COMMENT1=Level=5
```

To use special characters in the value of a name-value pair, use a *length tag*. The length tag specifies the exact number of characters and spaces that appear in the value. The following name-value pairs are valid.

```
NAME[14]=Ruff & Johnson  
COMMENT1 [7]=Level=5
```

**NOTE:** Quotation marks (“ ”) are not allowed even if you use a length tag.

## User Parameters

All Payflow Pro transactions require the user parameters described below.

**TABLE 3.2** User parameters

Parameter	Description
USER	<i>(Required)</i> The ID provided to you by the authorized PayPal Reseller who registered you for the Payflow SDK. If you purchased your account directly from PayPal, use PayPal. Limitations: Sixty-four alphanumeric, case-sensitive characters.
VENDOR	<i>(Required)</i> Your merchant login ID that you created when you registered for the account. Limitations: Sixty-four alphanumeric, case-sensitive characters.
PARTNER	<i>(Required)</i> The ID provided to you by the authorized PayPal Reseller who registered you for the Payflow SDK. If you purchased your account directly from PayPal, use PayPal. Limitations: Twelve alphanumeric, case-sensitive characters.
PWD	<i>(Required)</i> The password that you defined while registering for the account. Limitations: Six- to thirty-two alphanumeric, case-sensitive characters.

## Sale Transaction Example

In addition to the connection and user parameters, each transaction type has additional parameter requirements and can include a number of optional parameters as well. The transaction parameters common to all processors are described in detail in [Table 4.1 on page 26](#).

To perform a credit card Sale transaction, you are required to pass the following parameters:

- TRXTYPE - The type of the transaction, such as S for Sale
- TENDER - The method of payment, such as C for credit card
- ACCT - The buyer’s credit card number
- AMT - The amount of the sale
- EXPDATE - The expiration date of the credit card

## Typical Sale Transaction

The following is a typical request transaction string for a Sale transaction.

```
TRXTYPE=S&TENDER=C&USER=SuperMerchant&PWD=SuperUserPassword&PARTNER=PayPal&
ACCT=5105105105105100&EXPDATE=1209&AMT=99.06&COMMENT1=Reservation&FIRSTNAME
=John&LASTNAME=Jones&STREET=123 Main St.&CITY=San
Jose&STATE=CA&ZIP=123451234&COUNTRY=US&CVV2=123&CUSTIP=0.0.0.0
```

Note that, besides the required Sale transaction parameters, the above string includes other Payflow Pro parameters typically included in a credit card Sale transaction request.

When the transaction completes, the Payflow server returns a response string made up of name-value pair response parameters. If the transaction is successful, a `RESULT` value of 0 is returned. The value of `PNREF` identifies the transaction in future requests, and `RESPMSG` is a string indicating whether the transaction was approved. This is an example response to a credit card Sale transaction request:

```
RESULT=0&PNREF=VXYZ01234567&RESPMSG=APPROVED&AVSADDR=Y&AVSZIP=N&IAVS=Y&CVV2
MATCH=Y&PPREF=68W3371331353001F&CORRELATIONID=2dc60e253495e
```

---

## Formatting Transactions

For details on how to format a transaction based on the above information, see the examples and the supporting documentation provided with your SDK.

# 4

## Performing Direct Payment Credit Card Transactions

This chapter provides guidelines on how to implement PayPal Direct Payment transactions. Direct Payment offers you credit card payment processing capability through PayPal directly from the buyer's credit card.

**NOTE:** Direct Payment credit card processing is not a standalone feature. You must use Direct Payment together with Express Checkout. Use this guide along with the companion guide, *Express Checkout for Payflow Pro*, for details on integrating Express Checkout.

---

### About Direct Payment Credit Card Processing

Direct Payment credit card processing occurs in two steps — a real-time authorization and a capture (settlement) of the funds that were authorized. You perform these two steps either as a single Sale transaction or as two types of transactions, an Authorization and Delayed Capture, depending on your business model.

For an Authorization, PayPal sends the transaction information to the cardholder's issuing bank. The issuing bank checks whether the card is valid, evaluates whether sufficient credit exists, checks values such as Address Verification Service and card security codes, and returns a response: Approval, Decline, Referral, or others. For details on Address Verification Service and card security codes, see:

- [“Using Address Verification Service” on page 34](#)
- [“Card Security Code Validation” on page 35](#)

You receive the response shortly after you submit the transaction to PayPal. If the Authorization is approved, the bank temporarily reserves credit for the amount of the transaction to prepare to capture (fulfill) the transaction. The hold on funds typically lasts for about a week.

Capturing a transaction (also known as *settling* a transaction) actually transfers the funds to PayPal. Once the capture is approved, you will see the funds in your PayPal account.

### Considerations Regarding Your Website Integration

In the design of your website integration, you should consider whether you want to store information in your local database or use PayPal Manager reports to manage the data. You may want to store shipping information in your system, or you may prefer to send the information to PayPal with the transaction and report on it later.

**NOTE:** PayPal recommends that you do not store credit card numbers. If you must store numbers, encrypt and store them behind properly configured firewalls. You should also consider whether and how to use the merchant-defined fields `COMMENT1` and

COMMENT2 to help tie PayPal reports to your orders/customers or to report on other information about the transaction.

If you want to integrate with other systems, such as order fulfillment and customer service, you may want to connect these systems directly to your Payflow integration for capturing funds, issuing refunds or credits, and so on. Alternatively, you may prefer to perform these steps manually using PayPal Manager. Either way, PayPal recommends that you monitor transaction activity using PayPal Manager.

## Parameters Used in Transactions

PayPal accepts the parameters listed in table below. The table indicates whether the parameters are required or optional.

To enable line-item support, which includes the parameters below, you must contact Merchant Technical Support at <http://www.paypal.com/mts>.

- L\_NAME*n*
- L\_DESC*n*
- L\_COST*n*
- L\_TAXAMT*n*
- L\_QTY*n*

**TABLE 4.1** Credit card transaction request parameters

Parameter	Description
TENDER	<p><i>(Required)</i> The method of payment. Values are:</p> <ul style="list-style-type: none"> <li>• C = Credit card</li> <li>• P = PayPal</li> </ul> <p>Limitations: One alpha character.</p>
TRXTYPE	<p><i>(Required)</i> Indicates the type of transaction to perform. Values are:</p> <ul style="list-style-type: none"> <li>• S = Sale transaction</li> <li>• C = Credit</li> <li>• A = Authorization</li> <li>• D = Delayed Capture</li> <li>• V = Void</li> <li>• N = Duplicate transaction</li> </ul> <p><b>NOTE:</b> A type N transaction represents a duplicate transaction (version 4 SDK or HTTPS interface only) with a PNREF the same as the original. It appears only in the PayPal Manager user interface and will never settle.</p>
ACCT	<p><i>(Required)</i> Credit card or purchase card number.</p> <p>Limitations: A maximum of 19 numeric characters. This value may not contain spaces, non-numeric characters, or dashes. For example, ACCT=5555555555554444</p>

**TABLE 4.1** Credit card transaction request parameters

Parameter	Description
EXPDATE	<i>(Required)</i> Expiration date of the credit card. Limitations: Four numeric characters in mmyy format. For example, 1008 represents November 2008.
ACCTTYPE	<i>(Optional)</i> Credit card type. The following card types are supported: <ul style="list-style-type: none"> <li>• 0 = Visa</li> <li>• 1 = MasterCard</li> <li>• 2 = Discover</li> <li>• 3 = AMEX</li> <li>• 4 = DinersClub</li> <li>• 5 = JCB</li> <li>• 8 = Other</li> </ul>
AMT	<i>(Required)</i> Amount (US Dollars) U.S. based currency. AMT=ITEMAMT + TAXAMT + FREIGHTAMT + HANDLINGAMT + INSURANCEAMT - DISCOUNT <b>NOTE:</b> You must set CURRENCY to one of the three-character currency codes for any of the supported PayPal currencies. See CURRENCY in this table for details. Limitations: Must not exceed \$10,000 USD in any currency. Nine numeric characters plus decimal (.) character. No currency symbol. Specify the exact amount to the cent using a decimal point—use 34.00, not 34. Do not include comma separators—use 1199.95 not 1,199.95. Nine numeric characters plus decimal.
CURRENCY	<i>(Required)</i> The currency code. See <a href="#">Appendix B, “Currency Codes.”</a> <b>NOTE:</b> CURRENCY is applicable only to processors that support transaction-level currency. Limitations: Three characters.
BUTTONSOURCE	<i>(Optional)</i> Identification code for use by third-party applications to identify transactions. Limitations: 32 alphanumeric characters.
CUSTIP	<i>(Optional)</i> IP address of payer’s browser as recorded in its HTTP request to your website. This value is optional but recommended. <b>NOTE:</b> PayPal records this IP address as a means to detect possible fraud. Limitations: 15-character string in dotted quad format: xxx.xxx.xxx.xxx
COMMENT1	<i>(Optional)</i> Merchant-defined value for reporting and auditing purposes. Limitations: 128 alphanumeric characters.
COMMENT2	<i>(Optional)</i> Merchant-defined value for reporting and auditing purposes. Limitations: 128 alphanumeric characters.

**TABLE 4.1** Credit card transaction request parameters

Parameter	Description
CAPTURECOMPLETE	<p>(Optional) Indicates if this Delayed Capture transaction is the last capture you intend to make. The values are:</p> <ul style="list-style-type: none"> <li>• Y (default)</li> <li>• N</li> </ul> <p><b>NOTE:</b> If CAPTURECOMPLETE is Y, any remaining amount of the original reauthorized transaction is automatically voided.</p> <p>Limitations: 12-character alphanumeric string.</p>
CUSTOM	<p>(Optional) A free-form field for your own use.</p> <p>Limitations: 256-character alphanumeric string.</p>
CUSTREF	<p>(Optional) Merchant-defined identifier for reporting and auditing purposes. For example, you can set CUSTREF to INVNUM.</p> <p>Limitations: 12 alphanumeric characters.</p>
CVV2	<p>(Optional) A code that is printed (not imprinted) on the back of a credit card and used as partial assurance that the card is in the buyer's possession.</p> <p><b>NOTE:</b> CVV2 values are normalized to Y, N, and X values. The PayPal processor values are returned when you set VERBOSITY parameter to MEDIUM.</p> <p>Limitations: Four digits.</p>
EMAIL	<p>(Optional) Email address of payer.</p> <p>Limitations: 127 alphanumeric characters.</p>
INVNUM	<p>(Optional) Your own unique invoice or tracking number.</p> <p>Limitations: 127 alphanumeric characters.</p>
ITEMAMT	<p>(Required if L_COST<math>n</math> is specified) Sum of cost of all items in this order.</p> $\text{ITEMAMT} = \text{L\_QTY0} * \text{LCOST0} + \text{L\_QTY1} * \text{LCOST1} \dots \text{L\_QTY}n * \text{L\_COST}n$ <p>Limitations: Nine numeric characters plus decimal (.) character. No currency symbol. Specify the exact amount to the cent using a decimal point—use 34.00, not 34. Do not include comma separators—use 1199.95 not 1,199.95.</p> <p>Limitations: Nine numeric characters plus decimal.</p>
TAXAMT	<p>(Required if L_TAXAMT<math>n</math> is specified) Sum of tax for all items in this order.</p> $\text{TAXAMT} = \text{L\_QTY0} * \text{L\_TAXAMT0} + \text{L\_QTY1} * \text{L\_TAXAMT1} + \dots \text{L\_QTY}n * \text{L\_TAXAMT}n$ <p><b>NOTE:</b> You must set CURRENCY to one of the three-character currency codes for any of the supported PayPal currencies. See CURRENCY in this table for details.</p> <p>Limitations: Nine numeric characters plus decimal (.) character. No currency symbol. Specify the exact amount to the cent using a decimal point—use 34.00, not 34. Do not include comma separators—use 1199.95 not 1,199.95.</p> <p>Nine numeric characters plus decimal.</p>

**TABLE 4.1** Credit card transaction request parameters

Parameter	Description
FREIGHTAMT	<p><i>(Optional)</i> Total shipping costs for this order.</p> <p><b>NOTE:</b> You must set CURRENCY to one of the three-character currency codes for any of the supported PayPal currencies. See CURRENCY in this table for details.</p> <p>Limitations: Nine numeric characters plus decimal (.) character. No currency symbol. Specify the exact amount to the cent using a decimal point—use 34.00, not 34. Do not include comma separators—use 1199.95 not 1,199.95.</p> <p>Nine numeric characters plus decimal.</p>
HANDLINGAMT	<p><i>(Optional)</i> Total handling costs for this order.</p> <p><b>NOTE:</b> You must set CURRENCY to one of the three-character currency codes for any of the supported PayPal currencies. See CURRENCY in this table for details.</p> <p>Limitations: Nine numeric characters plus decimal (.) character. No currency symbol. Specify the exact amount to the cent using a decimal point—use 34.00, not 34. Do not include comma separators—use 1199.95 not 1,199.95.</p> <p>Nine numeric characters plus decimal.</p>
DISCOUNT	<p><i>(Optional)</i> Shipping discount for this order. Specify the discount as a positive amount.</p> <p>Limitations: Nine numeric characters plus decimal (.) character. No currency symbol. Specify the exact amount to the cent using a decimal point—use 34.00, not 34. Do not include comma separators—use 1199.95 not 1,199.95.</p>
INSURANCEAMT	<p><i>(Optional)</i> Total shipping insurance cost for this order.</p> <p>Limitations: Nine numeric characters plus decimal (.) character. No currency symbol. Specify the exact amount to the cent using a decimal point—use 34.00, not 34. Do not include comma separators—use 1199.95 not 1,199.95.</p>
L_NAME <i>n</i>	<p><i>(Optional)</i> Line-item name.</p> <p>Character length and limitations: 36 alphanumeric characters.</p>
L_DESC <i>n</i>	<p><i>(Optional)</i> Line-item description of the item purchased such as hiking boots or cooking utensils.</p> <p>Limitations: 127 alphanumeric characters.</p>
L_COST <i>n</i>	<p><i>(Required</i> if L_QTY<i>n</i> is supplied) Cost of the line item. The line-item unit price can be a positive or a negative value but not 0.</p> <p><b>NOTE:</b> You must set CURRENCY to one of the three-character currency codes for any of the supported PayPal currencies. See CURRENCY in this table for details.</p> <p>Limitations: Nine numeric characters plus decimal (.) character. No currency symbol. Specify the exact amount to the cent using a decimal point—use 34.00, not 34. Do not include comma separators—use 1199.95 not 1,199.95.</p> <p>Nine numeric characters plus decimal.</p>
L_QTY <i>n</i>	<p><i>(Required</i> if L_COST<i>n</i> is supplied) Line-item quantity.</p> <p>Limitations: 10-character integer.</p>

**TABLE 4.1** Credit card transaction request parameters

Parameter	Description
L_TAXAMT <i>n</i>	<i>(Optional)</i> Line-item tax amount. Limitations: Nine numeric characters plus decimal (.) character. No currency symbol. Specify the exact amount to the cent using a decimal point—use 34.00, not 34. Do not include comma separators—use 1199.95 not 1,199.95.
MERCHANTSESSIONID	<i>(Optional)</i> Your customer Direct Payment session identification token. PayPal records this session token as an additional means to detect possible fraud. Limitations: 64 characters.
NOTIFYURL	<i>(Optional)</i> Your URL for receiving Instant Payment Notification (IPN) about this transaction. If you do not specify NOTIFYURL in the request, the notification URL from your Merchant Profile is used, if one exists. Limitations: 2048 alphanumeric characters.
ORDERDESC	<i>(Optional)</i> Description of items the customer is purchasing. Limitations: 127 alphanumeric characters.
RECURRINGTYPE	<i>(Optional)</i> Type of transaction occurrence. The values are: <ul style="list-style-type: none"> <li>• F = First occurrence</li> <li>• S = Subsequent occurrence (default)</li> </ul> Limitations: One alpha character.
FIRSTNAME	<i>(Optional)</i> Account holder's first name. Limitations: 25 alpha characters.
LASTNAME	<i>(Optional)</i> Account holder's first name. Limitations: 25 alpha characters.
STREET	<i>(Optional)</i> The cardholder's bill-to street address (number and street name). The STREET address is verified by the address verification service. Limitations: 100 alphanumeric characters.
CITY	<i>(Optional)</i> Bill-to city address. Limitations: 40 alphanumeric characters.
STATE	<i>(Optional)</i> Bill-to state or province address. Limitations: 40 alphanumeric characters.
COUNTRY	<i>(Optional)</i> Bill-to country address. Limitations: 2 alphanumeric characters.
ZIP	<i>(Optional)</i> Bill-to postal code. Limitations: Nine characters maximum. Do not use spaces, dashes, or non-numeric characters.

**TABLE 4.1** Credit card transaction request parameters

Parameter	Description
SHIPTOSTREET	<p><i>(Optional)</i> Ship-to street address.</p> <p><b>NOTE:</b> If you pass in any of the ship-to address parameters such as SHIPTOCITY or SHIPTOSTATE, you must pass in the complete set (that is, SHIPTOSTREET, SHIPTOCITY, SHIPTOSTATE, SHIPTOCOUNTRY, and SHIPTOZIP).</p> <p>Limitations: 30-character string.</p>
SHIPTOCITY	<p><i>(Optional)</i> Ship-to city address.</p> <p><b>NOTE:</b> If you pass in any of the ship-to address parameters such as SHIPTOCITY or SHIPTOSTATE, you must pass in the complete set (that is, SHIPTOSTREET, SHIPTOCITY, SHIPTOSTATE, SHIPTOCOUNTRY, and SHIPTOZIP).</p> <p>Limitations: 40-character string.</p>
SHIPTOSTATE	<p><i>(Optional)</i> Ship-to state or province address.</p> <p><b>NOTE:</b> If you pass in any of the ship-to address parameters such as SHIPTOCITY or SHIPTOSTATE, you must pass in the complete set (that is, SHIPTOSTREET, SHIPTOCITY, SHIPTOSTATE, SHIPTOCOUNTRY, and SHIPTOZIP).</p> <p>Limitations: 10-character string.</p>
SHIPTOCOUNTRY	<p><i>(Optional)</i> Ship-to country code. See <a href="#">“Country Codes” on page 61</a>.</p> <p><b>NOTE:</b> If you pass in any of the ship-to address parameters such as SHIPTOCITY or SHIPTOSTATE, you must pass in the complete set (that is, SHIPTOSTREET, SHIPTOCITY, SHIPTOSTATE, SHIPTOCOUNTRY, and SHIPTOZIP).</p> <p>Limitations: Two alpha characters.</p>
SHIPTOZIP	<p><i>(Optional)</i> U.S. ship-to zip code or other country-specific postal code.</p> <p><b>NOTE:</b> If you pass in any of the ship-to address parameters such as SHIPTOCITY or SHIPTOSTATE, you must pass in the complete set (that is, SHIPTOSTREET, SHIPTOCITY, SHIPTOSTATE, SHIPTOCOUNTRY, and SHIPTOZIP).</p> <p>Limitations: 20-character string.</p>

## Submitting Sale Transactions

The Sale transaction (TRXTYPE=S) charges the specified amount (including shipping, handling, and tax) against the account, and marks the transaction for immediate fund transfer during the next settlement period. PayPal submits each merchant’s transactions for settlement on a daily basis.

## When To Use a Sale Transaction

A Sale transaction is best suited to businesses that provide immediate fulfillment for their products or services. If your business does not provide immediate fulfillment, then credit card

association rules recommend that you use an Authorization and a Delayed Capture transaction. For details, see [“Submitting Authorization/Delayed Capture Transactions” on page 24](#). If you need to recharge a credit card and you are not storing the credit card information in your local database, you can perform a new reference transaction based on a Sale transaction. For details, see [“Recharging to the Same Credit Card \(Reference Transactions\)” on page 32](#).

## Additional Parameters For Sale Transactions

To perform a Sale transaction, you are required to pass the following parameters:

- ACCT
- AMT
- EXPDATE

## Typical Sale Transaction Parameter String

The following is a typical PARMLIST string passed in a Sale transaction.

```
TRXTYPE=S&TENDER=C&USER=user&PWD=password&PARTNER=partner&ACCT=510510510510  
5100&EXPDATE=1209&AMT=99.06&COMMENT1=Reservation&FIRSTNAME=John&LASTNAME=Jo  
nes&STREET=123 Main St.&CITY=San  
Jose&STATE=CA&ZIP=123451234&COUNTRY=US&CVV2=123&CUSTIP=0.0.0.0
```

Note that, besides the required parameters that you pass in a Sale transaction, this string includes other typical parameters. PayPal recommends that you include the account holder’s `FIRSTNAME` and `LASTNAME`. PayPal also recommends including `CUSTIP` to help detect possible fraud. The `COMMENT1` field helps to track transaction information. The customer’s street address (`STREET`) and `ZIP` should be passed to use the Address Verification Service. `CVV2` is needed for card security code validation. For details on Address Verification Service and card security code, see the following sections:

- [“Using Address Verification Service” on page 34](#)
- [“Card Security Code Validation” on page 35](#)

---

## Submitting Authorization/Delayed Capture Transactions

An Authorization (`TRXTYPE=A`) transaction places a hold on the cardholder’s open-to-buy limit, lowering the cardholder’s limit by the amount of the transaction. It does not transfer funds.

One or more Delayed Capture (`TRXTYPE=D`) transactions are performed after an Authorization to capture the original Authorization amount. You can perform up to 10 partial captures for a single authorization provided the buyer is in good standing. A partial capture keeps the funds in a Pending status. A Delayed Capture is scheduled for settlement during the next settlement period.

Because Visa and MasterCard regulations prohibit capturing credit card transaction funds until a product or service has shipped to the buyer, most processing networks implement an Authorization transaction followed by a Delayed Capture transaction.

## When To Use Authorization/Delayed Capture Transactions

If your business does not provide immediate fulfillment of products or services, you should use this two-stage transaction solution, also known as *Delayed Capture processing*, because it enables you to capture credit card transaction funds when you are ready to collect them.

If your business provides immediate fulfillment, you can use a simple Sale transaction instead. For details, see [“Submitting Sale Transactions” on page 23](#). If you need to recharge a credit card and you are not storing the credit card information in your local database, you can perform a new reference transaction based on a Sale. For details, see [“Recharging to the Same Credit Card \(Reference Transactions\)” on page 32](#).

## Required Authorization Transaction Parameters

To perform an Authorization transaction, you are required to pass the following parameters:

- ACCT
- AMT
- EXPDATE

## Typical Authorization Transaction Parameter String

A typical parameter string passed in an Authorization transaction is the same as a Sale transaction string. The only difference is that the TRXTYPE value is A in an Authorization.

```
TRXTYPE=A&TENDER=C&USER=user&PWD=password&PARTNER=partner&ACCT=5105105105105100&EXPDATE=1209&AMT=99.06&COMMENT1=Reservation&FIRSTNAME=John&LASTNAME=Jones&STREET=123 Main St.&CITY=San Jose&STATE=CA&ZIP=123451234&COUNTRY=US&CVV2=123&CLIENTIP=0.0.0.0
```

## Required Delayed Capture Transaction Parameters

To perform a Delayed Capture (TRXTYPE=D) transaction, you are required to pass the following parameter:

ORIGID

**TABLE 4.2** Delayed Capture required parameter

Parameter	Description
ORIGID	(Required by some transaction types) ID of the original transaction that is being referenced. This ID is returned by the PNREF parameter and appears as the Transaction ID in PayPal Manager reports. Limitations: Case sensitive.

Set ORIGID to the PNREF (Transaction ID in PayPal Manager reports) value returned from the original transaction. In addition, if the amount of the capture differs from the amount of the Authorization, you also must pass a value for AMT.

### Fields Copied From the Authorization Transaction into the Delayed Capture Transaction

The following fields are copied from the Authorization transaction into the Delayed Capture transaction (if they exist in the original transaction). If you provide a new value for any of these parameters when submitting the Delayed Capture transaction, then the new value is used. (Exceptions are ACCT and EXPDATE. These parameters retain their original values.)

**TABLE 4.3** Fields copied from Authorization to Delayed Capture transaction

ACCT	AMT	CITY	COMMENT1
COMMENT2	COUNTRY	CUSTCODE	CUSTIP
EMAIL	EXPDATE	FIRSTNAME	FREIGHTAMT
INVNUM	LASTNAME	NOTE	PHONEUM
SHIPTOCITY	SHIPTOCOUNTRY	SHIPTOFIRSTNAME	SHIPTOLASTNAME
SHIPTOSTATE	SHIPTOSTREET	SHIPTOZIP	STATE
STREET	TAXAMT	ZIP	

To perform the Delayed Capture:

#### 1. Perform the Authorization transaction.

The Authorization transaction uses the same parameters as Sale transactions, except that the transaction type is A.

The return data for an Authorization transaction is the same as for a Sale transaction. To capture the authorized funds, perform a Delayed Capture transaction that includes the value returned for PNREF, as described in Step 2 below.

#### Example: Authorization-only Transaction

```
TRXTYPE=A&TENDER=C&USER=user&VENDOR=vendor&PARTNER=partner&PWD=password&
ACCT=5105105105105100&EXPDATE=1209&AMT=9.06COMMENT1=Reservation&FIRSTNAM
```

```
E=John&LASTNAME=Jones&STREET=123 Main St.&CITY=San
Jose&STATE=CA&ZIP=123451234&COUNTRY=US&CVV2=123&CLIENTIP=0.0.0.0
```

**Example: Authorization Response**

```
RESULT=0&PNREF=EFHP0D426838&RESPMSG=Approved&AVSADDR=N&AVSZIP=Y&CVV2MATC
H=X&PPREF=68W3371331353001F&CORRELATIONID=2e52df7ddf292
```

**2. Perform the Delayed Capture transaction.**

Set ORIGID to the PNREF value returned in the original Authorization transaction response string. (There is no need to retransmit the credit card or billing address information—it is stored at PayPal.)

If the capture succeeds, the amount of the Capture is transferred to the merchant's account during the daily settlement process. If the capture does not succeed, the hold on the cardholder's open-to-buy is still in effect.

**Example: Delayed Capture Transaction**

```
TRXTYPE=D&TENDER=C&USER=SuperMerchant&VENDOR=SuperMerchantPARTNER=PayPal
&PWD=SuperUserPassword&TENDER=C&COMMENT1=Reservation&ORIGID=EFHP0D426838
```

**Example: Delayed Capture Response**

```
RESULT=0&PNREF=EFHP0D42687C&RESPMSG=Approved&CORRELATIONID=b5689409e279f
&PPREF=68W3371331353001F&FEEAMT=0.56&PAYMENTTYPE=instant&PENDINGREASON=c
ompleted
```

**Delayed Capture Transaction: Capturing Transactions for Lower Amounts**

You can perform a Delayed Capture transaction for an amount lower than the original Authorization amount (useful, for example, when you make a partial shipment). To perform a partial capture programmatically using the Payflow SDK, set CAPTURECOMPLETE to N in the Delayed Capture transaction request. Setting CAPTURECOMPLETE to Y voids any remaining amount of the original authorized transaction

You can also perform Authorizations and Delayed Captures through through PayPal Manager. For details, see PayPal Manager online help.

**Example: Partial Capture Transaction**

In this example, you authorize an amount of \$100 for a shipment and charge \$66 for the first partial shipment using a Delayed Capture transaction. You charge the \$34 for the final part of the shipment using a second Delayed Capture transaction to draw credit card and shipping address information from the initial Authorization transaction.

**1. Submit the initial transaction (Authorization in this example).**

This example uses an Authorization transaction for the full amount of a purchase of \$100.

```
TRXTYPE=A&TENDER=C&PWD=SuperUserPassword&PARTNER=PayPal&VENDOR=SuperMerc
hant&USER=SuperMerchant&ACCT=5555555555554444&EXPDATE=0308&AMT=100.00&IN
VNUM=123456789&FIRSTNAME=John&LASTNAME=Jones&STREET=5199 MAPLE&ZIP=94588
```

Note the value of the PNREF in the response.

```
RESULT=0&PNREF=EFHP0D426A51&RESPMSG=Approved&AVSADDR=N&AVSZIP=Y&CVV2MATC
H=X&PPREF=6FS950632E172331R&CORRELATIONID=3c1a7c1c411a
```

## 2. Capture the authorized funds for a partial shipment of \$66.

When you deliver the first \$66 worth of product, you use a Delayed Capture transaction to collect the \$66. Set ORIGID to the value of PNREF in the original Authorization and set CAPTURECOMPLETE to N.

```
TRXTYPE=D&TENDER=C&PWD=SuperUserPassword&PARTNER=PayPal&VENDOR=SuperMerchant&USER=SuperMerchant&CAPTURECOMPLETE=N&ORIGID=EFHP0D426A51&AMT=66.00
```

This is the response.

```
RESULT=0&PNREF=VXYZ01234568&AUTHCODE=25TEST&AVSADDR=Y&AVSZIP=N&CORRELATIONID=2dc60e253492e&PPREF=68W3371331353001F
```

## 3. Capture the \$34 balance for the rest of the shipment.

Once you have shipped the remainder of the product, you can collect the remaining \$34 in a second Delayed Capture transaction, setting CAPTURECOMPLETE to Y.

```
TRXTYPE=D&TENDER=C&PWD=SuperUserPassword&PARTNER=PayPal&VENDOR=SuperMerchant&USER=SuperMerchant&CAPTURECOMPLETE=Y&ORIGID=EFHP0D426A51&AMT=34.00
```

This is the response.

```
RESULT=0&PNREF=VXYZ01234569&AUTHCODE=25TEST&AVSADDR=Y&AVSZIP=N&CORRELATIONID=2dc60e253493e&PPREF=68W3371331353001F
```

## Delayed Capture Transaction: Capturing Transactions for Higher Amounts

You can perform a Delayed Capture transaction for an amount higher than the original Authorization amount. The cardholder's open-to-buy could be reduced by the sum of the original Authorization-only amount and the final Delayed Capture amount.

## Delayed Capture Transaction: Error Handling and Retransmittal

If an error occurs while processing a Delayed Capture transaction, it is safe to retry the capture with values that allow the Payflow server to successfully process it. Conversely, if a capture for a previous Authorization succeeds, subsequent attempts to capture it again will return an error.

---

## Submitting Credit Transactions

The Credit transaction (TRXTYPE=C) refunds the specified amount to the cardholder.

## Required Credit Transaction Parameters

The required parameter data for a Credit transaction depends on the **Allow non-referenced credits** security setting for your Payflow Pro account. A non-referenced credit is a Credit transaction that does not use the credit card information from an existing transaction. Credit card information must be supplied. As an example, Sally Smith calls you on the telephone to

cancel an order from your business. To refund her money, you credit her credit card by submitting a non-referenced Credit transaction.

Guidelines and parameter requirements for Credit transactions differ depending on whether or not non-referenced credits are allowed.

### Non-Referenced Credits Not Allowed

When non-referenced credits are not allowed (the setting recommended by PayPal), then Credit transactions are permitted only against existing Sale, Delayed Capture, and Voice Authorization transactions. To submit a Credit transaction when non-referenced credits are not allowed, you must pass the following parameter:

ORIGID

**TABLE 4.4** Credit required parameter

Parameter	Description
ORIGID	<i>(Required by some transaction types)</i> ID of the original transaction that is being referenced. This ID is returned by the PNREF parameter and appears as the Transaction ID in PayPal Manager reports. Limitations: Case sensitive.

Set the value of ORIGID to the PNREF value returned for the original transaction. (PNREF is displayed as the Transaction ID in PayPal Manager reports. If you do not specify an amount, then the amount of the original transaction is credited to the cardholder.

### Non-Referenced Credits Allowed

When non-referenced credits are allowed, then Credit transactions are permitted in any amount up to the transaction limit for the credit card account that you specify. To submit a Credit transaction when non-referenced credits are not allowed, you must pass values for the following parameters:

- ACCT
- EXPDATE
- AMT

**IMPORTANT:** The default security setting for Payflow Pro accounts is Allow non-referenced credits = No, so sending the ORIGID is the preferred method for performing Credit transactions. Using the ACCT, EXPDATE, or AMT parameters for such accounts leads to RESULT value 117 (failed the security check). For information on setting the security settings, see PayPal Manager online help.

### Fields Copied From the Original Transaction into the Credit Transaction

The following fields are copied from the original transaction into the Credit transaction (if they exist in the original transaction). If you provide a new value for any of these parameters when submitting the Credit transaction, then the new value is used. (Exceptions are ACCT, EXPDATE, and SWIPE. These parameters retain their original values).

**NOTE:** TAXAMT and FREIGHTAMT are not copied for referenced credits.

**TABLE 4.5** Fields copied from original transaction into the Credit transaction

ACCT	AMT	CITY	COMMENT1
COMMENT2	COUNTRY	CUSTCODE	CUSTIP
EMAIL	EXPDATE	FIRSTNAME	INVNUM
LASTNAME	PHONEUM	SHIPTOCITY	SHIPTOCOUNTRY
SHIPTOFIRSTNAME	SHIPTOLASTNAME	SHIPTOSTATE	SHIPTOSTREET
SHIPTOZIP	STATE	STREET	ZIP

## Credit Transaction Parameter Strings

This is an example Credit transaction string (non-referenced credits not allowed):

```
TRXTYPE=C&TENDER=C&PARTNER=partner&VENDOR=vendor&USER=user&PWD=password&ORIGID=EFHP0D426A62
```

This is an example Credit transaction string (non-referenced credits allowed):

```
TRXTYPE=C&TENDER=C&PARTNER=partner&VENDOR=vendor&USER=user&PWD=password&ACCT=555555555554444&EXPDATE=0308&AMT=123.00
```

## Submitting Void Transactions

The Void transaction (TRXTYPE=V) prevents a transaction from being settled.

As part of its internal process, PayPal makes reasonable effort to process authorization reversals for void transactions for debit and credit cards.

**NOTE:** For more information on authorization reversals, see [http://en.wikipedia.org/wiki/Authorization\\_hold](http://en.wikipedia.org/wiki/Authorization_hold).

## When To Use a Void Transaction

Follow these guidelines:

- You void Delayed Capture and Authorization transactions. You cannot void a Void transaction.
- You can only use a Void transaction on a transaction that has not yet settled. To refund a customer's money for a settled transaction, you must submit a Credit transaction.

## Required Void Transaction Parameters

To submit a Void transaction, you must pass the following parameter:

ORIGID

**TABLE 4.6** Void required parameter

Parameter	Description
ORIGID	<i>(Required by some transaction types)</i> ID of the original transaction that is being referenced. This ID is returned by the PNREF parameter and appears as the Transaction ID in PayPal Manager reports. Limitations: Case sensitive.

Set ORIGID to the PNREF (Transaction ID in PayPal Manager reports) value returned for the original transaction.

### Fields Copied From the Original Transaction into the Void Transaction

The following fields are copied from the original transaction into the Void transaction (if they exist in the original transaction). If you provide a new value for any of these parameters when submitting the Void transaction, then the new value is used. (Exceptions are ACCT, EXPDATE, and SWIPE. These parameters retain their original values).

**TABLE 4.7** Fields copied from original transaction into the Void transaction

ACCT	AMT	CITY	COMMENT1
COMMENT2	COUNTRY	CUSTCODE	CUSTIP
EMAIL	EXPDATE	FIRSTNAME	FREIGHTAMT
INVNUM	LASTNAME	NOTE	PHONEUM
SHIPTOCITY	SHIPTOCOUNTRY	SHIPTOFIRSTNAME	SHIPTOLASTNAME
SHIPTOSTATE	SHIPTOSTREET	SHIPTOZIP	STATE
STREET	TAXAMT	ZIP	

## Example Void Transaction Parameter String

This is an example Void transaction parameter string:

```
"TRXTYPE=V&TENDER=C&PARTNER=PayPal&VENDOR=SuperMerchant&USER=SuperMerchant&PWD=SuperUserPassword&ORIGID=EFHP0D426A68"
```

---

## Recharging to the Same Credit Card (Reference Transactions)

If you need to recharge a credit card and you are not storing the credit card information in your local database, you can perform a *reference* transaction. A reference transaction takes the existing credit card information that is on file and reuses it.

### When To Use a Reference Transaction

Say that Joe Smith purchases a holiday gift from your web site store and requests that it be sent by UPS ground service. That evening, Joe becomes concerned that the item might not arrive in time for the holiday. So he calls you to upgrade shipping to second-day air. You obtain his approval for charging an extra \$10 for the upgrade. In this situation, you can create a reference transaction based on the original Sale and charge an additional \$10 to Joe's credit card without having to ask him again for his credit card information.

**IMPORTANT:** As a security measure, reference transactions are disallowed by default. Only your account administrator can enable reference transactions for your account. If you attempt to perform a reference transaction in an account for which reference transactions are disallowed, RESULT value 117 is returned. See PayPal Manager online help for instructions on setting reference transactions and other security features.

Sale and Authorization transactions can make use of a reference transaction as a source of transaction data. PayPal looks up the reference transaction and copies its transaction data into the new Sale or Authorization transaction. With the exception of dollar amount data, which triggers a filter if out of range, reference transactions are not screened by fraud filters.

**IMPORTANT:** When PayPal looks up the reference transaction, neither the transaction being referenced nor any other transaction in the database is changed in any way. That is, a reference transaction is a read-only operation—only the new transaction is populated with data and acted upon. No linkage is maintained between the reference transaction and the new transaction.

You can also initiate reference transactions from PayPal Manager. See *PayPal Manager online help* for details.

### Transaction Types that Can Be Used as the Original Transaction

You can reference the following transaction types to supply data for a new Sale or Authorization transaction:

- Sale
- Authorization (To capture the funds for an approved Authorization transaction, be sure to perform a Delayed Capture transaction—**not** a Reference transaction.)
- Void
- Delayed Capture

- Credit

## Fields Copied From Reference Transactions

The following fields are copied from the reference transaction into the new Sale or Authorization transaction (if they exist in the original transaction). If you provide a value for any of these parameters when submitting the new transaction, then the new value is used.

**TABLE 4.8** Fields copied to new transaction

ACCTTYPE	STREET
ACCT	CITY
EXPDATE	STATE
FIRSTNAME	ZIP
LASTNAME	COUNTRY

## Example Reference Transaction

In this example, you authorize an amount of \$100 for a shipment and charge \$66 for the first partial shipment using a normal Delayed Capture transaction. You charge the \$34 for the final part of the shipment using a reference transaction to draw credit card and shipping address information from the initial Authorization transaction.

This example procedure creates a reference transaction:

1. Submit the initial transaction, such as an Authorization.

You use an Authorization transaction for the full amount of the purchase of \$100:

```
TRXTYPE=A&TENDER=C&PWD=password&PARTNER=partner&VENDOR=vendor&USER=user&
ACCT=55555555555444&EXPDATE=0308&AMT=100.00&INNUM=123456789&STREET=51
99 MAPLE&ZIP=94588
```

Note the value of the PNREF in the response:

```
RESULT=0&PNREF=EFHP0D426A51&RESPMSG=Approved&AVSADDR=N&AVSZIP=Y&CVV2MATC
H=X&PPREF=6FS950632E172331R&CORRELATIONID=3c1a7c1c411a
```

2. Capture the authorized funds for a partial shipment of \$66.

When you deliver the first \$66 worth of product, you use a normal Delayed Capture transaction to collect the \$66. Set ORIGID to the value of PNREF in the original Authorization (See “Required Delayed Capture Transaction Parameters” on page 25):

```
TRXTYPE=D&TENDER=C&PWD=password&PARTNER=partner&VENDOR=vendor&USER=user&
ORIGID=VXYZ01234567&AMT=66.00
```

This is the response:

```
RESULT=0&PNREF=VXYZ01234568&AUTHCODE=25TEST&AVSADDR=Y&AVSZIP=N&CORRELATI
ONID=2dc60e253495e&PPREF=68W3371331353001F
```

- Submit a new Sale or Authorization/Delayed Capture transaction of \$34 for the rest of the shipment.

Once you have shipped the remainder of the product, you can collect the remaining \$34 in a Sale transaction that uses the initial Authorization as a reference transaction:

```
TRXTYPE=S&TENDER=C&PWD=password&PARTNER=partner&VENDOR=vendor&USER=user&
ORIGID=VXYZ01234567&AMT=34.00
```

This is the response:

```
RESULT=0&PNREF=EFHP0D426A53&AUTHCODE=25TEST&AVSADDR=Y&AVSZIP=N&CORRELATI
ONID=2dc60e253495e&PPREF=68W3371331353001F
```

---

## Using Address Verification Service

To qualify for the lowest bank rate, you must pass address verification service information—street address and ZIP (postal) code.

Address Verification Service compares the submitted billing street address and ZIP code with the values on file at the cardholder's bank. The response includes values for AVSADDR and AVSZIP: Y, N, or X for the match status of the customer's street address and ZIP code.

Y = match, N = no match, X = cardholder's bank does not support Address Verification Service. The Address Verification Service result is for advice only. Banks do not decline transactions based on the Address Verification Service result—the merchant makes the decision to approve or decline a transaction. Address Verification Service is supported by most U.S. banks and some international banks.

**NOTE:** Address Verification Service checks only for a street number match, not a street name match, so 123 Main Street returns the same response as 123 Elm Street.

The International Address Verification Service (IAVS) response indicates whether the Address Verification Service response is international (Y), USA (N), or cannot be determined (X). SDK version 3.06 or later is required.

### Example Address Verification Service Request

This example request include the address verification service request parameters STREET and ZIP:

```
TRXTYPE=A&TENDER=C&PWD=password&PARTNER=partner&VENDOR=vendor&USER=user&ACC
T=555555555554444&EXPDATE=0308&AMT=123.00&STREET=5199 Maple&ZIP=98765
```

### Example Address Verification Service Response

In this example, the address value matches the value in the bank's records, but the ZIP code does not. The IAVS response is X..

```
RESULT=0&PNREF=EFHP0D426A56&RESPMSG=APPROVED&AVSADDR=Y&AVSZIP=N&IAVS=X&CORR
ELATIONID=2dc60e253496a&PPREF=68W3371331353001F
```

## Card Security Code Validation

The card security code is a 3- or 4-digit number (not part of the credit card number) that is printed on the credit card. Because the card security code appears only on the card and not on receipts or statements, the card security code provides some assurance that the physical card is in the possession of the buyer.

This fraud prevention tool has various names, depending on the payment network. Visa calls it CVV2 and MasterCard calls it CVC2. To ensure that your customers see a consistent name, PayPal recommends use of the term *card security code* on all end-user materials.

You must provide a CVV2 value as a transaction parameter for those credit cards that use card security code validation. The value is required for Visa and MasterCard cards.

**IMPORTANT:** To comply with credit card association regulations, do not store the CVV2 value.

On most cards, the card security code is printed on the back of the card (usually in the signature field). All or part of the card number appears before the card security code (567 in the example). For American Express, the 4-digit number (1122 in the example) is printed on the front of the card, above and to the right of the embossed account number. Be sure to explain this to your customers.

For details on PayPal processor card security code responses, see “[Card Security Code Results](#)” on page 40.

**FIGURE 4.1** Card security code



### Example CVV2 Request

This example request parameter string includes the CVV2 parameter.

```
TRXTYPE=A&TENDER=C&PWD=SuperUserPassword&PARTNER=PayPal&VENDOR=SuperMerchant&USER=SuperMerchant&ACCT=5555555555554444&EXPDATE=0308&AMT=123.00&CVV2=5670
```

### Example CVV2 Response

In this example result, the card security code value matches the value in the bank’s records.

```
RESULT=0&PNREF=VXW412345678&RESPMSG=APPROVED&CVV2MATCH=Y&PPREF=68W3371331353001F&CORRELATIONID=2dc60e2534971&PPREF=68W3371331353001F
```

# 5

## Responses to Transaction Requests

When a transaction finishes, the Payflow server returns a response string made up of name-value pairs. This is an example response string.

```
RESULT=0&PNREF=EFHP0D426A53&RESPMSG=APPROVED&AUTHCODE=25TEST&AVSADDR=Y&AVSZ  
IP=N&CVV2MATCH=Y&PPREF=68W3371331353001F&CORRELATIONID=2dc60e253495e
```

---

### Contents of a Response to a Transaction Request

Table 5.1 describes values that can be returned in response strings.

**TABLE 5.1** Transaction response values

Field	Description	Type	Length
PNREF	Payflow Transaction ID, a unique number that identifies the transaction. PNREF is described in “PNREF Format” on page 42.	Alpha-numeric	12
PPREF	Unique transaction ID of the payment.	string	17
RESULT	The outcome of the attempted transaction. A result of 0 (zero) indicates the transaction was approved. Any other number indicates a decline or error. RESULT values are described in “RESULT Values and RESPMSG Text” on page 42.  <b>NOTE:</b> The PayPal processor may also return a warning message in the RESPMSG string when RESULT=0. For more information on corrective actions, see the PayPal developer documentation on the Integration Center: <a href="https://www.paypal.com/IntegrationCenter/ic_home.html">https://www.paypal.com/IntegrationCenter/ic_home.html</a>	Numeric	Variable
CVV2MATCH	Result of the card security code (CVV2) check. The issuing bank may decline the transaction if there is a mismatch. In other cases, the transaction may be approved despite a mismatch.	Alpha Y, N, X, or no response	1

**TABLE 5.1** Transaction response values(Continued)

Field	Description	Type	Length
RESPMSG	<p>The response message returned with the transaction result. Exact wording varies. Sometimes a colon appears after the initial RESPMSG followed by more detailed information. Response messages are described in “RESULT Values and RESPMSG Text” on page 42.</p> <p><b>NOTE:</b> The PayPal processor may also return a warning message in the RESPMSG string when RESULT=0. For more information on corrective actions, see the PayPal developer documentation on the Integration Center:  <a href="https://www.paypal.com/IntegrationCenter/ic_home.html">https://www.paypal.com/IntegrationCenter/ic_home.html</a></p>	Alpha-numeric	Variable
AUTHCODE	<p>Returned for Sale, Authorization, and Voice Authorization credit card transactions. AUTHCODE is the approval code obtained over the telephone from the processing network. AUTHCODE is required when submitting a Force (F) transaction.</p>	Alpha-numeric	6
AVSADDR	<p>Address Verification Service address response returned if you are using Address Verification Service. Address Verification Service address responses are for advice only. This process does not affect the outcome of the authorization. See “Using Address Verification Service” on page 34.</p>	Alpha Y, N, X, or no response	1
AVSZIP	<p>Address Verification Service zip code response returned if you are using Address Verification Service. AVSZIP responses are for advice only. This process does not affect the outcome of the authorization. See “Using Address Verification Service” on page 34.</p>	Alpha Y, N, X, or no response	1

**TABLE 5.1** Transaction response values(Continued)

Field	Description	Type	Length
IAMS	International Address Verification Service address responses may be returned if you are using Address Verification Service. IAMS responses are for advice only. This value does not affect the outcome of the transaction. Indicates whether Address Verification Service response is international (Y), US (N), or cannot be determined (X). Client version 3.06 or later is required. See <a href="#">“Using Address Verification Service” on page 34.</a>	Alpha Y, N, X, or no response	1
PROCAVS	Address Verification Service response from the processor when you use Address Verification Service and send a VERBOSITY request parameter value of MEDIUM. See <a href="#">Appendix D, “VERBOSITY: Viewing Processor-Specific Transaction Results,”</a> for details.	Char	1
PROCCVV2	CVV2 response from the processor when you send a VERBOSITY request parameter value of MEDIUM. See <a href="#">Appendix D, “VERBOSITY: Viewing Processor-Specific Transaction Results,”</a> for details.	Char	1
PAYMENTTYPE	Returns instant if the payment is instant or echeck if the payment is delayed. (DP)	String	7
CORRELATIONID	Value used for tracking this Direct Payment transaction.	Alphanumeric c	13

## Address Verification Service Responses From PayPal

Table 5.2, “Address Verification Service response value mapping,” compares the detailed response returned by the PayPal processor for address verification to the normalized response value (Y, N, or X) returned in the AVSADDR and AVSZIP response parameters. If you want to obtain the PayPal processor value, set the VERBOSITY parameter to MEDIUM. With this setting,

the processor value is returned in the PROCAVS response parameter. For details on VERBOSITY, see [Appendix D, “VERBOSITY: Viewing Processor-Specific Transaction Results.”](#)

**TABLE 5.2** Address Verification Service response value mapping

PayPal Processor Address Verification Service Code	Meaning	AVSADDR	AVSZIP
A	Address	Y	N
B	International “A”	Y	N
C	International “N”	N	N
D	International “X”	Y	Y
E	Not allowed for MOTO (Internet/Phone) transactions	X	X
F	UK-specific “X”	Y	Y
G	Global Unavailable	X	X
I	International Unavailable	X	X
N	No	N	N
P	Postal (International “Z”)	N	Y
R	Retry	X	X
S	Service not Supported	X	X
U	Unavailable	X	X
W	Whole Zip	N	Y
X	Exact Match	Y	Y
Y	Yes	Y	Y
Z	Zip	N	Y
All other		X	X

## Card Security Code Results

The CVV2MATCH parameter returns Y, N, or X.

The CVV2MATCH parameter returns Y, N, or X or a processor-specific response.

## Normalized Results

If you submit the transaction request parameter for card security code (that is, the `CVV2` parameter), the cardholder's bank returns a normalized Yes/No response in the `CVV2MATCH` response parameter, as described in [Table 5.3](#).

**TABLE 5.3** *CVV2MATCH response values*

CVV2MATCH Value	Description
Y	The submitted value matches the data on file for the card.
N	The submitted value does not match the data on file for the card.
X	The cardholder's bank does not support this service.

## PayPal Card Security Code Results

[Table 5.4, “Card security code response code mapping,”](#) shows the detailed results returned by the PayPal processor for card security codes. If you want to obtain the PayPal processor value, set the `VERBOSITY` parameter to `MEDIUM`. The processor value is returned in the `PROCCVV2` response parameter. For details on `VERBOSITY`, see [Appendix D, “VERBOSITY: Viewing Processor-Specific Transaction Results.”](#)

**TABLE 5.4** *Card security code response code mapping*

PayPal Processor CVV2 Code	PayPal Processor Code Description	PROCCVV2MATCH
M	Match	Y
N	No Match	N
P	Not Processed	X
S	Service Not Supported	X
U	Unavailable	X
X	No Response	X
All other		X

## PNREF Value

The `PNREF` is a unique transaction identification number issued by PayPal that identifies the transaction for billing, reporting, and transaction data purposes. The `PNREF` value appears in the Transaction ID column in PayPal Manager reports.

- The PNREF value is used as the ORIGID value (original transaction ID) in Delayed Capture transactions (TRXTYPE=D), Credits (TRXTYPE=C), Inquiries (TRXTYPE=I), and Voids (TRXTYPE=V).
- The PNREF value is used as the ORIGID value (original transaction ID) value in reference transactions for Authorization (TRXTYPE=A) and Sale (TRXTYPE=S).

**NOTE:** The PNREF is also referred to as the Transaction ID in PayPal Manager.

## PNREF Format

The PNREF is a 12-character string of printable characters, for example:

- VADE0B248932
- ACRAF23DB3C4

**NOTE:** Printable characters also include symbols other than letters and numbers such as the question mark (?). A PNREF typically contains letters and numbers only.

The PNREF in a transaction response tells you that your transaction is connecting to PayPal.

---

## RESULT Values and RESPMSG Text

The RESULT parameter and value is the first name-value pair returned in the response string. The value of RESULT indicates the overall status of the transaction attempt:

- A value of 0 (zero) indicates that no errors occurred and the transaction was approved.
- A value less than zero indicates that a communication error occurred. In this case, no transaction is attempted.
- A value greater than zero indicates a decline or error (except in the case of RESULT 104. See the table below).

The response message (RESPMSG) provides a brief description for decline or error results.

## RESULT Values for Transaction Declines or Errors

For non-zero RESULT values, the response string includes a RESPMSG name-value pair. The exact wording of the RESPMSG (shown in **bold**) may vary. Sometimes a colon appears after the initial RESPMSG followed by more detailed information.

When interpreting RESULT values for the PayPal processor, note the following:

- When RESULT=0, warning information may be returned that is useful to the request applicaton. See the PayPal API documentation on Developer Central for detailed information on corrective actions.

- When RESULT=104, you must log in to the PayPal website to determine if the transaction actually went through. If the transaction does not appear in the History section, you should retry it.

**TABLE 5.5** Payflow transaction RESULT values and RESPMSG text

RESULT	RESPMSG and Explanation
0	<b>Approved.</b>
1	<p><b>User authentication failed.</b> Error is caused by one or more of the following:</p> <ul style="list-style-type: none"> <li>• Login information is incorrect. Verify that USER, VENDOR, PARTNER, and PASSWORD have been entered correctly. VENDOR is your merchant ID and USER is the same as VENDOR unless you created a Payflow Pro user. All fields are case sensitive.</li> <li>• Invalid Processor information entered. Contact merchant bank to verify.</li> <li>• "Allowed IP Address" security feature implemented. The transaction is coming from an unknown IP address. See PayPal Manager online help for details on how to use Manager to update the allowed IP addresses.</li> <li>• You are using a test (not active) account to submit a transaction to the live PayPal servers. Change the host address from the test server URL to the live server URL.</li> </ul>
2	<b>Invalid tender type.</b> Your merchant bank account does not support the following credit card type that was submitted.
3	<b>Invalid transaction type.</b> Transaction type is not appropriate for this transaction. For example, you cannot credit an authorization-only transaction.
4	<b>Invalid amount format. Use the format: “#####.##” Do not include currency symbols or commas.</b>
5	<b>Invalid merchant information.</b> Processor does not recognize your merchant account information. Contact your bank account acquirer to resolve this problem.
6	Invalid or unsupported currency code
7	<b>Field format error.</b> Invalid information entered. See RESPMSG.
8	<b>Not a transaction server</b>
9	<b>Too many parameters or invalid stream</b>
10	<b>Too many line items</b>
11	<b>Client time-out waiting for response</b>
12	<b>Declined.</b> Check the credit card number, expiration date, and transaction information to make sure they were entered correctly. If this does not resolve the problem, have the customer call their card issuing bank to resolve.
13	<b>Referral.</b> Transaction cannot be approved electronically but can be approved with a verbal authorization. Contact your merchant bank to obtain an authorization and submit a manual Voice Authorization transaction.

**TABLE 5.5** Payflow transaction RESULT values and RESPMSG text (Continued)

RESULT	RESPMSG and Explanation
19	<b>Original transaction ID not found.</b> The transaction ID you entered for this transaction is not valid. See RESPMSG.
20	<b>Cannot find the customer reference number</b>
22	<b>Invalid ABA number</b>
23	<b>Invalid account number.</b> Check credit card number and re-submit.
24	<b>Invalid expiration date.</b> Check and re-submit.
25	<b>Invalid Host Mapping.</b> Error is caused by one or more of the following: <ul style="list-style-type: none"> <li>• You are trying to process a tender type such as Discover Card, but you are not set up with your merchant bank to accept this card type.</li> <li>• You are trying to process an Express Checkout transaction when your account is not set up to do so. Contact your account holder to have Express Checkout added to your account.</li> </ul>
26	<b>Invalid vendor account.</b> Login information is incorrect. Verify that USER, VENDOR, PARTNER, and PASSWORD have been entered correctly. VENDOR is your merchant ID and USER is the same as VENDOR unless you created a Payflow Pro user. All fields are case sensitive.
27	<b>Insufficient partner permissions</b>
28	<b>Insufficient user permissions</b>
29	<b>Invalid XML document.</b> This could be caused by an unrecognized XML tag or a bad XML format that cannot be parsed by the system.
30	<b>Duplicate transaction</b>
31	<b>Error in adding the recurring profile</b>
32	<b>Error in modifying the recurring profile</b>
33	<b>Error in canceling the recurring profile</b>
34	<b>Error in forcing the recurring profile</b>
35	<b>Error in reactivating the recurring profile</b>
36	<b>OLTP Transaction failed</b>
37	<b>Invalid recurring profile ID</b>
50	<b>Insufficient funds available in account</b>
51	<b>Exceeds per transaction limit</b>
99	<b>General error.</b> See RESPMSG.
100	<b>Transaction type not supported by host</b>

**TABLE 5.5** Payflow transaction RESULT values and RESPMSG text (Continued)

RESULT	RESPMSG and Explanation
101	<b>Time-out value too small</b>
102	<b>Processor not available</b>
103	<b>Error reading response from host</b>
104	<b>Timeout waiting for processor response.</b> Try your transaction again.
105	<b>Credit error.</b> Make sure you have not already credited this transaction, or that this transaction ID is for a creditable transaction. (For example, you cannot credit an authorization.)
106	<b>Host not available</b>
107	<b>Duplicate suppression time-out</b>
108	<b>Void error.</b> See RESPMSG. Make sure the transaction ID entered has not already been voided. If not, then look at the Transaction Detail screen for this transaction to see if it has settled. (The Batch field is set to a number greater than zero if the transaction has been settled). If the transaction has already settled, your only recourse is a reversal (credit a payment or submit a payment for a credit).
109	<b>Time-out waiting for host response</b>
110	<b>Referenced auth (against order) Error</b>
111	<b>Capture error.</b> Either an attempt to capture a transaction that is not an authorization transaction type, or an attempt to capture an authorization transaction that has already been captured.
112	<b>Failed AVS check.</b> Address and ZIP code do not match. An authorization may still exist on the cardholder's account.
113	<b>Merchant sale total will exceed the sales cap with current transaction.</b> ACH transactions only.
114	<b>Card Security Code (CSC) Mismatch.</b> An authorization may still exist on the cardholder's account.
115	<b>System busy, try again later</b>
116	<b>PayPal internal error. Failed to lock terminal number</b>
117	<b>Failed merchant rule check.</b> One or more of the following three failures occurred: An attempt was made to submit a transaction that failed to meet the security settings specified on the PayPal Manager <i>Security Settings</i> page. If the transaction exceeded the Maximum Amount security setting, then no values are returned for AVS or CSC. AVS validation failed. The AVS return value should appear in the RESPMSG. CSC validation failed. The CSC return value should appear in the RESPMSG.
118	<b>Invalid keywords found in string fields</b>

**TABLE 5.5** Payflow transaction RESULT values and RESPMSG text (Continued)

RESULT	RESPMSG and Explanation
120	Attempt to reference a failed transaction
121	Not enabled for feature
122	Merchant sale total will exceed the credit cap with current transaction. ACH transactions only.
125	Fraud Protection Services Filter — Declined by filters
126	<p><b>Fraud Protection Services Filter — Flagged for review by filters</b></p> <p><b>Important Note:</b> Result code 126 indicates that a transaction triggered a fraud filter. This is not an error, but a notice that the transaction is in a review status. The transaction has been authorized but requires you to review and to manually accept the transaction before it will be allowed to settle.</p> <p>Result code 126 is intended to give you an idea of the kind of transaction that is considered suspicious to enable you to evaluate whether you can benefit from using the Fraud Protection Services.</p> <p>To eliminate result 126, turn the filters off.</p> <p>For more information, see the Fraud Protection Services documentation for your payments solution. It is available on the PayPal Manager Documentation page.</p>
127	Fraud Protection Services Filter — Not processed by filters
128	Fraud Protection Services Filter — Declined by merchant after being flagged for review by filters
132	Card has not been submitted for update
133	Data mismatch in HTTP retry request
150	Issuing bank timed out
151	Issuing bank unavailable
200	Reauth error
201	Order error
600	Cybercash Batch Error
601	Cybercash Query Error
1000	<b>Generic host error.</b> This is a generic message returned by your credit card processor. The RESPMSG will contain more information describing the error.
1001	<b>Buyer Authentication Service unavailable</b>
1002	<b>Buyer Authentication Service — Transaction timeout</b>
1003	<b>Buyer Authentication Service — Invalid client version</b>
1004	<b>Buyer Authentication Service — Invalid timeout value</b>

**TABLE 5.5** Payflow transaction RESULT values and RESPMSG text (Continued)

RESULT	RESPMSG and Explanation
1011	Buyer Authentication Service unavailable
1012	Buyer Authentication Service unavailable
1013	Buyer Authentication Service unavailable
1014	Buyer Authentication Service — Merchant is not enrolled for Buyer Authentication Service (3-D Secure).
1016	Buyer Authentication Service — 3-D Secure error response received. Instead of receiving a PARES response to a Validate Authentication transaction, an error response was received.
1017	Buyer Authentication Service — 3-D Secure error response is invalid. An error response is received and the response is not well formed for a Validate Authentication transaction.
1021	Buyer Authentication Service — Invalid card type
1022	Buyer Authentication Service — Invalid or missing currency code
1023	Buyer Authentication Service — merchant status for 3D secure is invalid
1041	Buyer Authentication Service — Validate Authentication failed: missing or invalid PARES
1042	Buyer Authentication Service — Validate Authentication failed: PARES format is invalid
1043	Buyer Authentication Service — Validate Authentication failed: Cannot find successful Verify Enrollment
1044	Buyer Authentication Service — Validate Authentication failed: Signature validation failed for PARES
1045	Buyer Authentication Service — Validate Authentication failed: Mismatched or invalid amount in PARES
1046	Buyer Authentication Service — Validate Authentication failed: Mismatched or invalid acquirer in PARES
1047	Buyer Authentication Service — Validate Authentication failed: Mismatched or invalid Merchant ID in PARES
1048	Buyer Authentication Service — Validate Authentication failed: Mismatched or invalid card number in PARES
1049	Buyer Authentication Service — Validate Authentication failed: Mismatched or invalid currency code in PARES
1050	Buyer Authentication Service — Validate Authentication failed: Mismatched or invalid XID in PARES

**TABLE 5.5** Payflow transaction RESULT values and RESPMSG text (Continued)

RESULT	RESPMSG and Explanation
1051	Buyer Authentication Service — Validate Authentication failed: Mismatched or invalid order date in PARES
1052	Buyer Authentication Service — Validate Authentication failed: This PARES was already validated for a previous Validate Authentication transaction

## RESULT Values for Communications Errors

A RESULT value less than zero indicates that a communication error occurred. In this case, no transaction is attempted.

A value of -1 or -2 usually indicates a configuration error caused by an incorrect URL or by configuration issues with your firewall. A value of -1 or -2 can also be possible if the PayPal servers are unavailable, or an incorrect server/socket pair has been specified. A value of -1 can also result when there are internet connectivity errors. Contact customer support regarding any other errors.

For information on firewall configuration, see [Chapter , “Downloading, Installing, and Activating.”](#)

**NOTE:** To eliminate RESULT -31 and -108 errors described below, upgrade to a version 4 SDK or post directly to the Payflow servers via HTTPS. For details on determining the version of your SDK, see [“Payflow SDK Version” on page 9.](#)

Details of the response message may vary slightly from that shown in the table, depending on your SDK integration.

**TABLE 5.6** RESULT values for communications errors

RESULT	Description
-1	Failed to connect to host
-2	Failed to resolve hostname
-5	Failed to initialize SSL context
-6	Parameter list format error: & in name
-7	Parameter list format error: invalid [ ] name length clause
-8	SSL failed to connect to host
-9	SSL read failed
-10	SSL write failed
-11	Proxy authorization failed

**TABLE 5.6** *RESULT values for communications errors(Continued)*

<b>RESULT</b>	<b>Description</b>
-12	Timeout waiting for response
-13	Select failure
-14	Too many connections
-15	Failed to set socket options
-20	Proxy read failed
-21	Proxy write failed
-22	Failed to initialize SSL certificate
-23	Host address not specified
-24	Invalid transaction type
-25	Failed to create a socket
-26	Failed to initialize socket layer
-27	Parameter list format error: invalid [ ] name length clause
-28	Parameter list format error: name
-29	Failed to initialize SSL connection
-30	Invalid timeout value
-31	The certificate chain did not validate, no local certificate found
-32	The certificate chain did not validate, common name did not match URL
-40	Unexpected Request ID found in request.
-41	Required Request ID not found in request
-99	Out of memory
-100	Parameter list cannot be empty
-103	Context initialization failed
-104	Unexpected transaction state
-105	Invalid name value pair request
-106	Invalid response format
-107	This XMLPay version is not supported
-108	The server certificate chain did not validate
-109	Unable to do logging

**TABLE 5.6** *RESULT values for communications errors*(Continued)

<b>RESULT</b>	<b>Description</b>
-111	The following error occurred while initializing from message file: <Details of the error message>
-113	Unable to round and truncate the currency value simultaneously

# 6

## Testing Credit Card Transactions

To test your application, direct all transactions to the host address for testing. For details, see [“Host Addresses” on page 9](#). Transactions directed to the testing URL are processed through PayPal’s simulated payment network, enabling you to test the configuration and operation of your application or storefront — no money changes hands. (You must activate your account and configure your application for live transactions before accepting real orders.)

---

### Testing Guidelines

- While testing, use only the credit card numbers listed in this chapter. Other numbers produce an error.
- Expiration Date must be a valid date in the future (use the `mm/yy` format).
- To view the credit card processor that you have selected for testing, see **Account Info > Processor Info** in PayPal Manager.

---

### Credit Card Numbers Used for Testing

Use the following credit card numbers for testing. Any other card number produces a general failure.

**TABLE 6.1** *Testing credit card numbers*

Credit Card	Number
American Express	378282246310005
American Express	371449635398431
Amex Corporate	378734493671000
Australian BankCard	5610591081018250
Diners Club	30569309025904
Diners Club	38520000023237
Discover	6011111111111117
Discover	6011000990139424
JCB	3530111333300000
JCB	3566002020360505

**TABLE 6.1 Testing credit card numbers**

Credit Card	Number
MasterCard	5555555555554444
MasterCard	5105105105105100
Visa	4111111111111111
Visa	4012888888881881
Visa	422222222222

**NOTE:** Even though this number has a different character count than the other test numbers, it is the correct and functional number.

## Testing Result Code Responses

You can use the amount of the transaction to generate a particular result code. The table below lists the general guidelines for specifying amounts.

**TABLE 6.2 Obtaining PayPal result code**

Result	Definition	How to test
0	Approved	Use an AMOUNT of 10000 or less
3	Invalid transaction type	Use the AMOUNT 10402
4	Invalid amount	Use any of these as AMOUNT: <ul style="list-style-type: none"> <li>• 10400</li> <li>• 10401</li> <li>• 10403</li> <li>• 10404</li> </ul>
5	Invalid merchant information	Use any of these as AMOUNT: <ul style="list-style-type: none"> <li>• 10548</li> <li>• 10549</li> </ul>

**TABLE 6.2** Obtaining PayPal result code

Result	Definition	How to test
7	Field format error	Use any of these as AMOUNT: <ul style="list-style-type: none"> <li>• 10405</li> <li>• 10406</li> <li>• 10407</li> <li>• 10408</li> <li>• 10409</li> <li>• 10410</li> <li>• 10412</li> <li>• 10413</li> <li>• 10416</li> <li>• 10419</li> <li>• 10420</li> <li>• 10421</li> <li>• 10509</li> <li>• 10512</li> <li>• 10513</li> <li>• 10514</li> <li>• 10515</li> <li>• 10516</li> <li>• 10517</li> <li>• 10518</li> <li>• 10540</li> <li>• 10542</li> </ul>
12	Declined	Use any of these as AMOUNT: <ul style="list-style-type: none"> <li>• 10417</li> <li>• 15002</li> <li>• 15005</li> <li>• 15006</li> <li>• 15028</li> <li>• 15039</li> <li>• 10544</li> <li>• 10545</li> <li>• 10546</li> </ul>
13	Referral	Use the AMOUNT 10422
23	Invalid account number	Use any of these as AMOUNT: <ul style="list-style-type: none"> <li>• 10519</li> <li>• 10521</li> <li>• 10522</li> <li>• 10527</li> <li>• 10535</li> <li>• 10541</li> <li>• 10543</li> </ul>

**TABLE 6.2** Obtaining PayPal result code

Result	Definition	How to test
24	Invalid expiration date	Use any of these as AMOUNT: <ul style="list-style-type: none"><li>• 10502</li><li>• 10508</li></ul>
30	Duplicate Transaction	Use the AMOUNT 10536
105	Credit error	Attempt to credit an authorization
112	Failed AVS check	Use the AMOUNT 10505
114	CVV2 Mismatch	Use the AMOUNT 10504
1000	Generic Host (Processor) Error	Use an AMOUNT other than those listed in this column



# Verbosity: Viewing Processor-Specific Transaction Results

Transaction results (especially values for declines and error conditions) returned by the PayPal processor vary in detail level and in format. The `VERBOSITY` parameter enables you to control the kind and level of information you want returned.

By default, `VERBOSITY` is set to `LOW`. A `LOW` setting causes the server to normalize the transaction result values. Normalizing the values limits them to a standardized set of values and simplifies the process of integration.

By setting `VERBOSITY` to `MEDIUM`, you can view PayPal’s raw response values. This setting is more “verbose” than the `LOW` setting in that it returns more detailed, processor-specific information.

---

## Supported Verbosity Settings

PayPal supports the following `VERBOSITY` settings.

- `LOW`: This is the default setting for Payflow accounts. The following values are returned: {`RESULT`, `PNREF`, `RESPMSG`, `AUTHCODE`, `AVSADDR`, `AVSZIP`, `CVV2MATCH`, `IAVS`, `CARDSECURE`}
- `MEDIUM`: All of the values returned for a `LOW` setting, plus the following values:

**NOTE:** For information on interpreting the responses returned by the processor for the `MEDIUM` `VERBOSITY` setting, contact your processor directly.

**TABLE A.1** *Verbosity settings*

Field Name	Type	Length	Description
<code>HOSTCODE</code>	char	7	Response code returned by the PayPal processor. This value is not normalized.
<code>RESPTXT</code>	char	17	Text corresponding to the response code returned by the PayPal processor. This text is not normalized.
<code>PROCAVS</code>	char	1	AVS response from the PayPal processor
<code>PROCCVV2</code>	char	1	CVV2 response from the PayPal processor
<code>PROCCARDSECURE</code>	char	1	VPAS/SPA response from the PayPal processor.
<code>ADDLMSG</code>	char	Up to 1048 characters. Typically 50 characters.	Additional error message that indicates that the merchant used a feature that is disabled.

**TABLE A.1** *Verbosity settings (Continued)*

Field Name	Type	Length	Description
TRANSSTATE	Integer	10	State of the transaction. The values are: 0 = General succeed state 1 = General error state 3 = Authorization approved 6 = Settlement pending (transaction is scheduled to be settled) 7 = Settlement in progress (transaction involved in a currently ongoing settlement) 8 = Settled successfully 9 = Authorization captured (once an authorization type transaction is captured, its TRANSSTATE becomes 9) 10 = Capture failed (an error occurred while trying to capture an authorization because the transaction was already captured) 11 = Failed to settle (transactions fail settlement usually because of problems with the processor or because the card type is not set up with the processor) 12 = Unsettled transaction because of incorrect account information 14 = For various reasons, the batch containing this transaction failed settlement 15 = Settlement incomplete due to a charge back. 106 = Unknown Status Transaction - Transactions not settled. 206 = Transactions on hold pending customer intervention.
DATE_TO_SETTLE	Date format YYYY-MM-DD HH:MM:SS	19	Value available only before settlement has started.
BATCHID	Integer	10	Value available only after settlement has assigned a Batch ID.
SETTLE_DATE	Date format YYYY-MM-DD HH:MM:SS	19	Value available only after settlement has completed.

Table A.2 shows the increments that are possible on basic TRANSSTATE values.

**TABLE A.2** TRANSSTATE increments

Increment	Meaning
+100	The TRANSSTATE is incremented by 100 if no client acknowledgment (ACK) is received. For example, if the original TRANSSTATE is 6, the new TRANSSTATE is 106. Transactions in this range do not settle. For transactions in TRANSSTATE 106, use Auto Resettle in PayPal Manager's Transaction Terminal to submit them for settlement or void them using a manual Void.
+200	The host process never receives ACK from the transaction broker (or backend payment server). A transaction with a TRANSSTATE incremented by 200 is basically in limbo and will not be settled.
+1000	If a void is run against a successful Authorization or Sale transaction, the original TRANSSTATE is incremented by 1000. For example, if the original TRANSSTATE is 6, the new TRANSSTATE is 1006.

## Changing the Verbosity Setting

To specify a setting for VERBOSITY that differs from your account's current setting, include the VERBOSITY=<value> name-value pair in the transaction request, where <value> is LOW or MEDIUM.

This is an example response with no VERBOSITY defined:

```
RESULT=0&PNREF=E19P0F5A5B95&RESPMSG=Approved&AUTHCODE=111111&AVSADDR=Y&AVSZ
IP=Y&CVV2MATCH=Y&PPREF=70C67987W0761540M&CORRELATIONID=23795f89710e7&IAVS=N
```

This is an example response from the same request with VERBOSITY=MEDIUM:

```
RESULT=0&PNREF=E79P0E23873D&RESPMSG=Approved&AUTHCODE=111111&AVSADDR=Y&AVSZ
IP=Y&CVV2MATCH=Y&PPREF=71L65308H1608350J&CORRELATIONID=6e4bbbefabd69&PROCAV
S=X&PROCCVV2=M&IAVS=N
```





# Currency Codes

The following currencies are supported for use in transactions.

**TABLE B.1 Currencies and Currency Codes**

<b>Code</b>	<b>Currency</b>
36	Australian Dollar
124	Canadian Dollar
756	Swiss Franc
203	Czech Koruna
208	Danish Krone
978	Euro
826	Pound Sterling
344	Hong Kong Dollar
348	Hungarian Forint
376	Israeli New Sheqel
392	Japanese Yen
484	Mexican Peso
578	Norwegian Krone
554	New Zealand Dollar
985	Polish Zloty
752	Swedish Krona
702	Singapore Dollar
840	U.S. Dollar (default)





# Country Codes

**NOTE:** This table lists country codes defined by [ISO 3166-1](#).

**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 BARBUDA	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 HERZEGOVINA	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 Codes

Country	Code	Country	Code
CENTRAL AFRICAN REPUBLIC	CF	EQUATORIAL GUINEA	GQ
CHAD	TD	ERITREA	ER
CHILE	CL	ESTONIA	EE
CHINA	CN	ETHIOPIA	ET
CHRISTMAS ISLAND	CX	FALKLAND ISLANDS (MALVINAS)	FK
COCOS (KEELING) ISLANDS	CC	FAROE ISLANDS	FO
COLOMBIA	CO	FIJI	FJ
COMOROS	KM	FINLAND	FI
CONGO	CG	FRANCE	FR
CONGO, THE DEMO- CRATIC REPUBLIC OF THE	CD	FRENCH GUIANA	GF
COOK ISLANDS	CK	FRENCH POLYNESIA	PF
COSTA RICA	CR	FRENCH SOUTHERN TERRITORIES	TF
COTE D'IVOIRE	CI	GABON	GA
CROATIA	HR	GAMBIA	GM
CUBA	CU	GEORGIA	GE
CYPRUS	CY	GERMANY	DE
CZECH REPUBLIC	CZ	GHANA	GH
DENMARK	DK	GIBRALTAR	GI
DJIBOUTI	DJ	GREECE	GR
DOMINICA	DM	GREENLAND	GL
DOMINICAN REPUBLIC	DO	GRENADA	GD
ECUADOR	EC	GUADELOUPE	GP
EGYPT	EG	GUAM	GU
EL SALVADOR	SV	GUATEMALA	GT
		GUERNSEY	GG

<b>Country</b>	<b>Code</b>	<b>Country</b>	<b>Code</b>
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
HONDURAS	HN	LESOTHO	LS
HONG KONG	HK	LIBERIA	LR
HUNGARY	HU	LIBYAN ARAB JAMA- HIRIYA	LY
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	MADAGASCAR	MG
ISLE OF MAN	IM	MALAWI	MW
ISRAEL	IL	MALAYSIA	MY
ITALY	IT	MALDIVES	MV
JAMAICA	JM	MALI	ML
JAPAN	JP	MALTA	MT
JERSEY	JE	MARSHALL ISLANDS	MH
JORDAN	JO	MARTINIQUE	MQ
KAZAKHSTAN	KZ	MAURITANIA	MR
KENYA	KE	MAURITIUS	MU
KIRIBATI	KI	MAYOTTE	YT
KOREA, DEMOCRATIC PEOPLE'S REPUBLIC OF	KP	MEXICO	MX

## Country Codes

Country	Code	Country	Code
MICRONESIA, FEDERATED STATES OF	FM	PALAU	PW
MOLDOVA, REPUBLIC OF	MD	PALESTINIAN TERRITORY, OCCUPIED	PS
MONACO	MC	PANAMA	PA
MONGOLIA	MN	PAPUA NEW GUINEA	PG
MONTSERRAT	MS	PARAGUAY	PY
MOROCCO	MA	PERU	PE
MOZAMBIQUE	MZ	PHILIPPINES	PH
MYANMAR	MM	PITCAIRN	PN
NAMIBIA	NA	POLAND	PL
NAURU	NR	PORTUGAL	PT
NEPAL	NP	PUERTO RICO	PR
NETHERLANDS	NL	QATAR	QA
NETHERLANDS ANTILLES	AN	REUNION	RE
NEW CALEDONIA	NC	ROMANIA	RO
NEW ZEALAND	NZ	RUSSIAN FEDERATION	RU
NICARAGUA	NI	RWANDA	RW
NIGER	NE	SAINT HELENA	SH
NIGERIA	NG	SAINT KITTS AND NEVIS	KN
NIUE	NU	SAINT LUCIA	LC
NORFOLK ISLAND	NF	SAINT PIERRE AND MIQUELON	PM
NORTHERN MARIANA ISLANDS	MP	SAINT VINCENT AND THE GRENADINES	VC
NORWAY	NO	SAMOA	WS
OMAN	OM	SAN MARINO	SM
PAKISTAN	PK		

<b>Country</b>	<b>Code</b>	<b>Country</b>	<b>Code</b>
SAO TOME AND PRINC- IPE	ST	TANZANIA, UNITED REPUBLIC OF	TZ
SAUDI ARABIA	SA	THAILAND	TH
SENEGAL	SN	TIMOR-LESTE	TL
SERBIA AND MON- TENEGRO	CS	TOGO	TG
SEYCHELLES	SC	TOKELAU	TK
SIERRA LEONE	SL	TONGA	TO
SINGAPORE	SG	TRINIDAD AND TOBAGO	TT
SLOVAKIA	SK	TUNISIA	TN
SLOVENIA	SI	TURKEY	TR
SOLOMON ISLANDS	SB	TURKMENISTAN	TM
SOMALIA	SO	TURKS AND CAICOS ISLANDS	TC
SOUTH AFRICA	ZA	TUVALU	TV
SOUTH GEORGIA AND THE SOUTH SANDWICH ISLANDS	GS	UGANDA	UG
SPAIN	ES	UKRAINE	UA
SRI LANKA	LK	UNITED ARAB EMIR- ATES	AE
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 REPUB- LIC	SY	VENEZUELA	VE
TAIWAN, PROVINCE OF CHINA	TW	VIET NAM	VN
TAJKISTAN	TJ	VIRGIN ISLANDS, BRIT- ISH	VG

## Country Codes

---

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

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