



Website Payments Pro Developer's Guide

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Website Payments Pro Developer's Guide

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Preface

Website Payments Pro Developer's Guide describes Website Payments Pro and how to integrate it into your website using the Payflow SDK. The product offers two website payment solutions: PayPal Direct Payment and PayPal Express Checkout.

Intended Audience

This guide is written for merchants who have signed up through PayPal Manager to use PayPal as their processor and Website Payments Pro as their solution 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

Scope

This guide describes the Payflow SDK programming interfaces needed to integrate Website Payments Pro into your website, along with guidelines and best practices for presenting these payment offerings.

Organisation of This Document

The guide is organised into the following chapters and appendices:

- [Chapter 1, “Website Payments Pro Overview”](#), provides a brief overview of the product.
- [Chapter 2, “Installing and Configuring the Payflow SDK”](#), describes where to get the Payflow SDK and how to install it.
- [Chapter 3, “Creating a Simple Transaction Request”](#), identifies a common set of transaction data required in all transactions and provides syntax guidelines on how to format it so that it can be understood by the Payflow server.
- [Chapter 4, “Performing Direct Payment Credit Card Transactions”](#), describes how you can implement Direct Payment credit card processing. The chapter provides a basic set of data parameters typically used in transaction requests.
- [Chapter 5, “Testing Credit Card Transactions”](#),

- [Chapter 6, “PayPal Express Checkout Transaction Processing”](#), explains how PayPal Express Checkout works and describes additional (optional) parameters you can send in PayPal Express Checkout transaction requests.
- [Chapter 7, “PayPal Button Placement and Page Designs”](#),
- [Chapter 8, “Responses to Transaction Requests”](#), describes parameters returned in transaction responses.
- [Appendix A, “Verbosity: Viewing Processor-Specific Transaction Results”](#), describes how you can use the VERBOSITY parameter to control the kind and level of information you want returned in a transaction response
- [Appendix B, “ISO Country Codes”](#), lists the country codes you provide as transaction data in certain transactions.

Where to Go for More Information

PayPal Manager Online Help describes the use of PayPal Manager — the web-based administration tool that you can use to process transactions manually, issue credits and generate reports. PayPal Manager provides links to the PayPal website, where you can perform additional tasks such as resolving disputes. See the Manager Online Help for details.

Getting Started with PayPal Manager contains instructions on how to use PayPal Manager, including testing credit card numbers and Direct Payments.

For answers to specific questions about Payflow products, search PayPal’s Knowledge Base at the following URL: <http://knowledge.paypal.com/>.

How to Contact Customer Service

For problems with transaction processing or your connection to the server, contact Customer Service at business-support@paypal.co.uk.

1

Website Payments Pro Overview

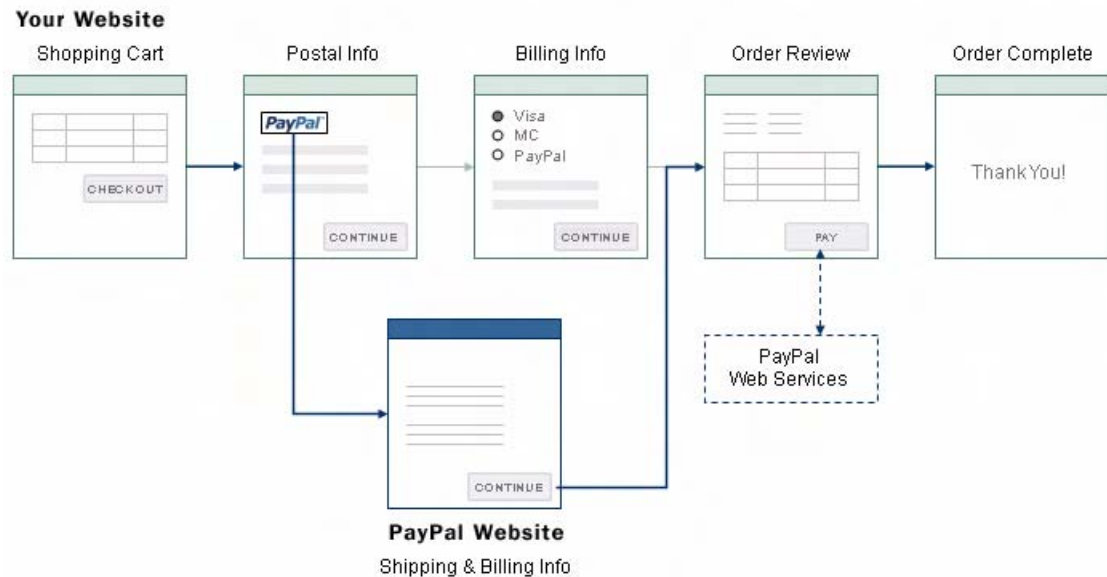
With Website Payments Pro, you get the payment processing capabilities of a merchant account and gateway – plus much more. It is an all-in-one payment solution that includes:

- **Direct Payment.** Direct Payment enables you to accept credit card payments directly on your website. PayPal remains invisible, so you control the customer experience.
- **PayPal Express Checkout.** PayPal Express Checkout 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.

How Website Payments Pro Works

Figure 1.1, “High-Level View”, is an example of a standard checkout process. Website Payments Pro has the flexibility to work with your unique checkout process, whether it is one page or has multiple steps.

FIGURE 1.1 High-Level View



After selecting products to purchase, your customer chooses whether they want to pay using PayPal or pay using credit cards directly on your website.

If your customer pays using credit cards on your website, PayPal processes them in the background.

If your customer chooses to use PayPal, your customer is transferred to PayPal to log in and select a postal address and payment method, and is returned to your website to complete their purchase.

Once the buyer completes their order, you receive your payment.

Supported Transactions

Website Payments Pro supports the following transaction types:

- Sale
- Authorisation
- Void
- Delayed Capture
- Credit

[Chapter 4, “Performing Direct Payment Credit Card Transactions”](#), describes the transaction types in detail and identifies the minimum parameters that you must send for each.

Supported Currencies

Website Payments Pro supports the following currencies:

- USD (US dollar)
- EUR (Euro)
- GBP (UK pound)
- CAD (Canadian dollar)
- JPY (Japanese Yen)
- AUD (Australian dollar)

Unlike other processors that require you to set up a separate account for each currency, PayPal allows you to run transactions using any of the six currencies with a single account.

Direct Payment Overview

Direct Payment offers you direct credit card payment processing capability through PayPal. For credit card transactions, customers can stay on your website as PayPal processes the payment in the background.

For each payment, Direct Payment takes the billing address, transaction amount, credit card information and item information as inputs. Within seconds, PayPal returns a confirmation that the transaction has been processed. If you have signed up for Fraud Protection Services, Direct Payment lets you flag potentially fraudulent transactions, and provides you with industry-standard Address Verification Service and card security code (CVV2) responses for each transaction.

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

IMPORTANT: *Direct Payment is not a standalone product. You are required to use Direct Payment and PayPal Express Checkout together as part of the Website Payments Pro solution. See “Business Rules” on page 12.*

Direct Payment is not covered by the PayPal Seller Protection Policy (SPP).

PayPal Express Checkout Overview

With PayPal Express Checkout, a customer selects their products and completes their orders on your website. Payment method along with postage and billing details are managed on PayPal’s website. PayPal automatically gives you the postal address and other customer information to fulfil the order.

The more convenient it is for your customers to buy from you, the more they'll buy. PayPal Express Checkout allows customers the option to pay quickly through PayPal and gives your business more benefits.

PayPal Express Checkout provides these advantages to your customers:

- Gives buyers more convenience, and gets more sales. Since your customers simply log in to use information they've already entered with PayPal, they save time by completing transactions in fewer steps.
- Helps buyers feel safer, so they buy more. Buyers prefer to pay with PayPal because their customer information is kept safe. When they're confident about the security of their information, they purchase more.

With this design, you have these advantages:

- Real-time notification of successful payments.
- Automation of your internal business processes.
- More advertising opportunities as buyers finish their orders on your website.
- Notification that the buyer's address is confirmed.
- Eligibility for coverage under PayPal’s Seller Protection Policy.

Additional Services

If you have signed up for the Recurring Billing Service, see the *Payflow Pro Recurring Billing Service User's Guide*. It is downloadable from the PayPal Manager Documentation page.

Business Rules

Website Payments Pro must be integrated on your website in the following ways. You must:

- Present the PayPal Express Checkout button and associated messaging before requesting postal address, billing address and financial information. PayPal account holders should not be required to enter any of this information on your website, because the information is available from their PayPal accounts.
- Display PayPal as an option together with other payment methods, wherever other payment methods are offered.
- Present the PayPal mark graphic wherever other payment marks are displayed.

For details on displaying PayPal graphics on your website, see [Chapter 7, “Integrating PayPal Button Graphics”](#).

Testing For details on testing, see the documentation at the following URL:

<https://test-expresscheckout.paypal.com/documentation/>

About the PayPal SDK

The SDK is available from the PayPal Manager Downloads page.

2

Installing and Configuring the Payflow SDK

The Payflow SDK is available either as a standalone client that you can integrate with your web shop using CGI scripts or as a set of APIs for direct integration with your application.

This chapter provides instructions for downloading the SDK appropriate to your platform.

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

Supported Platforms

The PayPal SDK is available on all major web server platforms in a variety of formats to support your integration requirements. It is available as a C library (.dll/.so), binary executable, Java library, COM object, Java Native Interface and Perl Module Interface.

TABLE 2.1 *Supported platforms*

Windows NT 4.0, 2000, 2003	Linux - libc6 / glibc2 / ELF kernels 2.0.36 and above
Solaris 2.6 - Intel	Linux (Redhat 9.x)
Solaris 2.7/2.8 - Sparc	Pure Java Any JDK 1.2, 1.4
BSDI 4.0	SGI IRIX 6.2
HP UX 11.0	AIX 4.3
	FreeBSD 5.x

Preparing the Payflow Client Application

Follow these steps to download and install:

Step 1 Download the Payflow SDK

From the Download page in PayPal Manager (<https://manager.paypal.com>), download the Payflow SDK appropriate for your platform.

Step 2 Extract the files to a local directory

Step 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 Website Payments Pro, while inbound permits the response from PayPal.

Step 4 Set the certificate path

To enable the client to authenticate the Payflow server, you must set the path to include the **certs** directory (included with the SDK that you downloaded).

For specific information on setting the certificate path, see the `readme.txt` file and example applications in the SDK.

Step 5 Read the `readme.txt` file

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

3

Creating a Simple Transaction Request

This chapter describes how to create a simple Sale transaction request.

The chapter focuses on the common set of parameters required in all transactions and how you set up these parameters using name-value pair strings. 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 normalised information if you are looking for this kind of information.

In This Chapter

- [“Transaction Request” on page 15](#)
- [“Sale Transaction Example” on page 18](#)
- [“How to Format a Transaction” on page 19](#)

Transaction Request

Request Contents

A transaction request includes the following:

- Connection parameters.
- Parameters required by all transactions. This list includes 'user information' parameters.
- Additional parameters required by the type of transaction.

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 16](#).

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 to the Payflow server XML documents based on the XMLPay 2.0 schema. For details on XMLPay, see the *Website Payments Pro — XMLPay Developer’s Guide*. It is available from the Documentation page in PayPal Manager.

Connection Parameters

Table 3.1 describes the connection parameters. 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*

Argument	Required	Description
HOSTADDRESS	Yes	Payflow host name. For live transactions, use payflowpro.verisign.com For testing purposes use pilot-payflowpro.verisign.com
HOSTPORT	Yes	Use port 443.
PARMLIST	Yes	The PARMLIST is the 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: "TRXTYPE=S&TENDER=C&PARTNER=PayPalUK&VENDOR=SuperMerchant&USER=SuperMerchant&PWD=SuperUserPassword&AMT=123.00" 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.
TIMEOUT	Yes	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	No	Proxy server address. Use the PROXY parameters for servers behind a firewall. Your network administrator can provide the values.
PROXYPORT	No	Proxy server port.
PROXYLOGON	No	Proxy server logon ID.
PROXYPASSWORD	No	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 (&).
- ⊕ Payflow SDKSet 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.

Values Required by All Transaction Types

All Payflow SDK transactions require the parameters described in [Table 3.2](#).

TABLE 3.2 Required transaction parameters

Parameter	Description	Required	Type	Max. Length
USER	If you set up one or more additional users on the account, this value is the ID of the user authorised to process transactions. If, however, you have not set up additional users on the account, USER has the same value as VENDOR. The examples in this document use USER=SuperMerchant. Limitations: This value is case-sensitive.	Yes	Alphanumeric	64
VENDOR	Your merchant login ID that you created when you registered for the Website Payments Pro account. The examples in this document use VENDOR=SuperMerchant. Limitations: This value is case-sensitive.	Yes	Alphanumeric	64
PARTNER	The ID provided to you by the authorised PayPal Reseller who registered you for the Payflow SDK. If you purchased your account directly from PayPal, use PayPalUK. The examples in this document use PARTNER=PayPalUK Limitations: This value is case-sensitive.	Yes	Alphanumeric	12

TABLE 3.2 Required transaction parameters(Continued)

Parameter	Description	Required	Type	Max. Length
PWD	The 6 to 32-character password that you defined while registering for the account. The examples in this document use PWD=SuperUserPassword. This value is case-sensitive.	Yes	Alphanumeric	32
TENDER	The tender type (method of payment). Values are: <ul style="list-style-type: none"> • C = Credit card for Direct Payment transactions • P = PayPal for PayPal Express Checkout transactions 	Yes	Alpha	1
TRXTYPE	A single character indicating the type of transaction to perform. Website Payments Pro supports the following values: S = Sale transaction A = Authorisation C = Credit D = Delayed Capture V = Void	Yes	Alpha	1

Sale Transaction Example

In addition to the connection parameters and the required parameters in [Table 3.2](#), each transaction type (TRXTYPE) has additional parameter requirements and can use a number of optional ones as well.

For example, to perform a Direct Payment credit card Sale transaction, you are required to pass the following parameters:

- ACCT - The payer's credit card number
- AMT - The amount of the sale
- EXPDATE - The expiry date of the credit card

Typical Sale Transaction PARMLIST

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

```
"TRXTYPE=S&TENDER=C&USER=SuperMerchant&PWD=SuperUserPassword&PARTNER=PayPalUK&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"
```

Note that, besides the required Sale transaction parameters, this string includes other typical Website Payments Pro Payflow Edition parameters. These parameters are described in [Chapter 4, "Performing Direct Payment Credit Card Transactions"](#). and in [Chapter 6, "PayPal Express Checkout Transaction Processing"](#).

How to Format a Transaction

For details on how to format a transaction based on the above information, refer to 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 is not a standalone feature. You must use Direct Payment together with PayPal Express Checkout. See [Chapter 7, “PayPal Button Placement and Page Designs,”](#) for guidelines on how to display the PayPal mark logo with credit card logos.

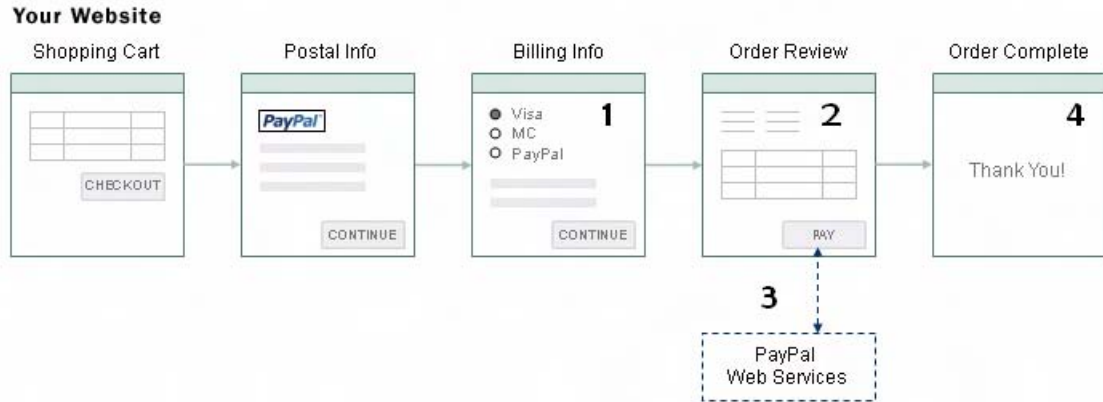
With the exception of a few optional PayPal Express Checkout transaction parameters not covered here, this chapter describes all required Website Payments Pro Payflow Edition request parameters. Differences exist in PayPal Express Checkout transactions, however, and these are explained in [Chapter 6, “PayPal Express Checkout Transaction Processing.”](#)

In This Chapter

- [“How Direct Payment Works”](#) on page 22
- [“About Direct Payment Credit Card Processing”](#) on page 22
- [“Parameters Used in Transactions”](#) on page 23
- [“Additional Parameters by Transaction Type”](#) on page 29
- [“Submitting Sale Transactions”](#) on page 29
- [“Submitting Authorisation/Delayed Capture Transactions”](#) on page 31
- [“Submitting Credit Transactions”](#) on page 35
- [“Submitting Void Transactions”](#) on page 36
- [“Recharging to the Same Credit Card \(Reference Transactions\)”](#) on page 37
- [“Using Address Verification Service”](#) on page 39
- [“Card Security Code Validation”](#) on page 40

How Direct Payment Works

Figure 3-1 shows the general flow of customer checkout with Direct Payment.



The numbered steps in the figure are described below:

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 perform a transaction to request payment, and the payment transaction is initiated.
4. You transfer your customer to your order confirmation page.

The “Pay” button on your website sends the payment request to the server, including required information you collected from the customer, such as the amount of the transaction, the buyer’s credit card number, expiry date, browser IP address, and an element that specifies whether this transaction is a final sale (complete transaction amount including postage, packing and tax) or an authorisation for a final amount that you must capture later with a Delayed Capture transaction.

About Direct Payment Credit Card Processing

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

For an Authorisation, 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 39
- “Card Security Code Validation” on page 40

You receive the response shortly after you submit the transaction to PayPal. If the Authorisation is approved, the bank temporarily reserves credit for the amount of the transaction to prepare to capture (fulfil) 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. At least once a day, the Payflow server gathers all transactions that are flagged to be settled and sends them in a batch file to PayPal. PayPal charges the issuing bank and transfers the funds to your PayPal account. It typically takes a few days before the money is actually available 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 postal 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 fulfilment, customer service, and so on, you may want to connect these systems directly to Website Payments Pro for capturing funds, issuing refunds/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 4.1](#). The table indicates whether the parameters are required or optional.

NOTE: Unless otherwise noted, the parameters in [Table 4.1](#) can be used in Direct Payment and PayPal Express Checkout transactions. See [Chapter 6, “PayPal Express Checkout Transaction Processing,”](#) for additional (optional) PayPal Express Checkout parameters.

TABLE 4.1 Transaction parameters

Parameter	Description	Required	Type	Max. Length
ACCT	Payer’s credit card or account number. It may not contain spaces, non-numeric characters, or dashes. For example, ACCT=5555555555554444	Yes ^a	Numeric	19
ACCTTYPE	Credit card type. The following card types are supported: 0 = Visa 1 = MasterCard 8 = Other 9 = Switch S = Solo	No	Alpha	10
AMT	Total of this order. NOTE: 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. No currency symbol. Decimal separator must be a period (.). Do not use comma separators. Use 1199.95, not 1,199.95.	Yes	Decimal	10
BILL-TO Address (Next five table entries)				
STREET	Cardholder’s bill-to postal address (number and street name). The STREET value is verified by Address Verification System (described on page 39).	No	Alpha-numeric	100
CITY	Name of bill-to city.	No	String	40
STATE	Name of bill-to county or province.	No	String	40
COUNTRY	Bill-to country code. See Appendix B, “ISO Country Codes.”	No	Alpha	2

TABLE 4.1 Transaction parameters (Continued)

Parameter	Description	Required	Type	Max. Length
ZIP	Account holder's five to nine-digit bill-to ZIP code or other country-specific bill-to postcode. Do not use spaces, dashes or non-numeric characters. ZIP is verified by Address Verification System and the International Address Verification System (described on page 39).	No	String	20
BUTTONSOURCE	Identification code for use by third-party applications to identify transactions.	No	Alpha-numeric	32
CARDISSUE	Issue number of Switch or Solo card. NOTE: For a Switch or Solo transaction to be approved, either CARDISSUE or CARDSTART must be present.	No	Numeric	2
CARDSTART	Date that Switch or Solo card was issued in mmyy format. For example, 0308 represents March 2008. NOTE: For a Switch or Solo transaction to be approved, either CARDISSUE or CARDSTART must be present.	No	Numeric	4
CLIENTIP	IP address of payer's browser as recorded in its HTTP request to your website. NOTE: PayPal records this IP address as a means to detect possible fraud. Limitations: This value is in dotted quad format: xxx.xxx.xxx.xxx	No, but is recommended	String	15
COMMENT1	Merchant-defined value for reporting and auditing purposes. See "Using Address Verification Service" on page 39.	No	Alpha-numeric	128
COMMENT2	Merchant-defined value for reporting and auditing purposes.	No	Alpha-numeric	128
CAPTURECOMPLETE	Indicates if this Delayed Capture transaction is the last capture you intend to make. The values are: <ul style="list-style-type: none"> • Y (default) • N NOTE: If CAPTURECOMPLETE is Y, any remaining amount of the original reauthorised transaction is automatically voided.	No	Alpha-numeric	12

TABLE 4.1 Transaction parameters (Continued)

Parameter	Description	Required	Type	Max. Length
CURRENCY	One of the following three-character currency codes: <ul style="list-style-type: none"> • USD (US dollar) • EUR (Euro) • GBP (UK pound) • CAD (Canadian dollar) • JPY (Japanese Yen) • AUD (Australian dollar) 	No	Alpha	3
CUSTOM	A free-form field for your own use.	No	Alpha-numeric	256
CUSTREF	Merchant-defined identifier for reporting and auditing purposes. For example, you can set CUSTREF to INVNUM.	No	Alpha-numeric	12
CVV2	A three of four-digit code that is printed (not imprinted) on the back of a credit card. Used as partial assurance that the card is in the buyer's possession. For details, see “Card Security Code Validation” on page 40. NOTE: CVV2 values are normalised to Y, N and X values. The PayPal processor values are returned when you set VERBOSITY parameter to MEDIUM. For details on VERBOSITY, see Appendix A, “Verbosity: Viewing Processor-Specific Transaction Results.”	No	Alpha-numeric	4
EMAIL	Email address of payer.	No	Alpha-numeric	127
EXPDATE	Expiry date of the credit card in mmyy format. For example, 0308 represents March 2008.	Yes ^a	Numeric	4
FREIGHTAMT	Total postage costs for this order. NOTE: You must set CURRENCY to one of the three-character currency codes for any of the supported PayPal currencies. See the CURRENCY entry in this table for details. Limitations: Must not exceed \$10,000 USD in any currency. No currency symbol. Decimal separator must be a period (.). Do not use comma separators. Use 1199.95, not 1,199.95.	No	Decimal	10

TABLE 4.1 Transaction parameters (Continued)

Parameter	Description	Required	Type	Max. Length
HANDLINGAMT	Total packing costs for this order. NOTE: You must set CURRENCY to one of the three-character currency codes for any of the supported PayPal currencies. See the CURRENCY entry in this table for details. Limitations: Must not exceed \$10,000 USD in any currency. No currency symbol. Decimal separator must be a period (.). Do not use comma separators. Use 1199.95, not 1,199.95.	No	Decimal	10
INVNUM	Your own unique invoice or tracking number.	No	Alpha-numeric	127
ITEMAMT	Sum of cost of all items in this order. Limitations: Must not exceed \$10,000 USD in any currency. No currency symbol. Decimal separator must be a period (.). Do not use comma separators. Use 1199.95, not 1,199.95.	No	Decimal	127
L_DESCn	Line item name. NOTE: You can view line item information in the Transaction Details report in your PayPal merchant account.	No	String	127
L_AMTn	Cost of line item. NOTE: You must set CURRENCY to one of the three-character currency codes for any of the supported PayPal currencies. See the CURRENCY entry in this table for details. Limitations: Must not exceed \$10,000 USD in any currency. No currency symbol. Decimal separator must be a period (.). Do not use comma separators. Use 1199.95, not 1,199.95.	No	Decimal	See description
L_QTYn	Line item quantity.	No	String	Any positive integer
L_TAXAMTn	Line item tax amount. Limitations: Any valid currency amount; CURRENCY value must be set the same as for AMT.	No	Decimal	See description

TABLE 4.1 Transaction parameters (Continued)

Parameter	Description	Required	Type	Max. Length
MERCHANTSESSIONID	Your customer Direct Payment session identification token. PayPal records this session token as an additional means to detect possible fraud.	No	String	64
NAME Information (Next two table entries)				
FIRSTNAME	Account holder's first name.	No, but recommended	Alpha	25
LASTNAME	Account holder's last name.	No, but recommended	Alpha	25
NOTIFYURL	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.	No	Alpha-numeric	2048
ORDERDESC	Description of items the customer is purchasing.	No	Alpha-numeric	127
ORIGID	ID of the original Direct Payment transaction that is being referenced. This ID is returned by the PNREF parameter and appears as the Transaction ID in PayPal Manager reports. Limitations: This value is case-sensitive.	Yes ^a	Alpha-numeric	12
RECURRINGTYPE	Type of transaction occurrence. The values are: F = First occurrence S = Subsequent occurrence (default)	No	Alpha	1
SHIP-TO Address Information (Next five table entries)				
SHIPTOSTREET	Post-to postal address.	No ^b	String	30
SHIPTOCITY	Name of post-to city.	No ^b	String	40
SHIPTOSTATE	Name of post-to county or province.	No ^b	String	10
SHIPTOCOUNTRY	Post-to country code. See Appendix B, "ISO Country Codes."	No ^b	Alpha	2
SHIPTOZIP	US post-to ZIP code or other country-specific postcode.	No ^b	String	20

TABLE 4.1 Transaction parameters (Continued)

Parameter	Description	Required	Type	Max. Length
TAXAMT	Sum of tax for all items in this order. NOTE: You must set CURRENCY to one of the three-character currency codes for any of the supported PayPal currencies. See the CURRENCY entry in this table for details. Limitations: Must not exceed \$10,000 USD in any currency. No currency symbol. Decimal separator must be a period (.). Do not use comma separators. Use 1199.95, not 1,199.95.	No	Decimal	10
VERBOSITY	Either of two values: LOW or MEDIUM. LOW is the default setting — normalised values. MEDIUM returns the PayPal processor’s raw response values. See Appendix A, “Verbosity: Viewing Processor-Specific Transaction Results.”	No	Alpha	

- a. Some transaction types do not require this parameter. See [“Values Required by All Transaction Types” on page 17](#).
- b. If you pass in any of the post-to address parameters such as SHIPTOCITY or SHIPTOSTATE, you must pass in the complete set (that is, SHIPTOSTREET, SHIPTOCITY, SHIPTOSTATE, SHIPTOCOUNTRY and SHIPTOZIP).

Additional Parameters by Transaction Type

Each Direct Payment credit card transaction type has its own request parameter requirements. These are in addition to the parameters required by all transactions described in the following tables in [Chapter 3, “Creating a Simple Transaction Request.”](#)

- [Table 3.1, “Connection parameters”](#)
- [Table 3.2, “Required transaction parameters”](#)

Transaction responses are described in [Chapter 8, “Responses to Transaction Requests.”](#)

Submitting Sale Transactions

The Sale transaction (TRXTYPE=S) charges the specified amount 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 fulfilment for their products or services. Electronic goods merchants, for example, who fulfil orders immediately can use Sale transactions. If your business does not provide immediate fulfilment, then credit card association rules recommend that you use the Authorisation and Delayed Capture model. For details, see [“Submitting Authorisation/Delayed Capture Transactions” on page 31](#). 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 37](#).

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.

EXAMPLE 4.1 Typical Sale transaction parameter string

```
"TRXTYPE=S&TENDER=C&USER=SuperMerchant&PWD=SuperUserPassword&PARTNER=PayPalUK&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"
```

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 CLIENTIP to help detect possible fraud. The COMMENT1 field helps to track transaction information. The customer's postal address (STREET) and ZIP (postcode) should be passed to use the Address Verification Service (AVS). CVV2 is needed for card security code validation. For details on AVS and card security code, see the following sections:

- [“Using Address Verification Service” on page 39](#)
- [“Card Security Code Validation” on page 40](#)

The following is a typical set of Response parameters. See [Chapter 8, “Responses to Transaction Requests,”](#) for details on response parameters.

EXAMPLE 4.2 Typical response parameters

```
RESULT=0&PNREF=EFIP0D391C30&RESPMSG=Approved&AVSADDR=N&AVSZIP=Y&CVV2MATCH=X&PPREF=7XX11903GL026951F&CORRELATIONID=3a5df0066697a
```

Submitting Authorisation/Delayed Capture Transactions

An Authorisation (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 Authorisation to capture the original Authorisation amount. You can perform up to ten partial captures for a single authorisation 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 been sent to the buyer, most processing networks implement an Authorisation transaction followed by one or more Delayed Capture transactions.

When to Use Authorisation/Delayed Capture Transactions

If your business does not provide immediate fulfilment of products or services, you should use this two-stage transaction model, 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 fulfilment, you can use a simple Sale transaction instead. For details, see “[Submitting Sale Transactions](#)” on page 29. 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 37.

Required Authorisation Transaction Parameters

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

- ACCT
- AMT
- EXPDATE

Typical Authorisation Transaction Parameter String

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

EXAMPLE 4.3 Typical Authorisation parameter string

```
"TRXTYPE=A&TENDER=C&USER=SuperMerchant&PWD=SuperUserPassword&PARTNER=PayPalUK&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 transaction, you are required to pass the following parameter:

ORIGID

Set ORIGID to the PNREF (Transaction ID in PayPal Manager reports) value returned from the original transaction. (For details on PNREF, see [Chapter 8, “Responses to Transaction Requests.”](#)) In addition, if the amount of the capture differs from the amount of the Authorisation, you also must pass a value for AMT.

Fields Copied from the Authorisation Transaction into the Delayed Capture Transaction

The following fields are copied from the Authorisation transaction into a 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.)

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

Step 1 Perform the Authorisation transaction

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

The return data for an Authorisation transaction is the same as for a Sale transaction. To capture the authorised funds, perform a Delayed Capture transaction that includes the value returned for PNREF, as described in [Step 2 on page 33](#).

EXAMPLE 4.4 Authorisation transaction parameter string

Issue Authorisation-only Transaction

```
"TRXTYPE=A&TENDER=C&USER=SuperMerchant&VENDOR=SuperMerchant&PARTNER=PayPalUK&PWD=SuperUserPassword&ACCT=5105105105105100&EXPDATE=1209&AMT=9.06COMMENT1=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"
```


EXAMPLE 4.5 Authorisation response

(For details on response parameters, see [Chapter 8, “Responses to Transaction Requests.”](#))

```
RESULT=0&PNREF=EFHP0D426838&RESPMSG=Approved&AVSADDR=N&AVSZIP=Y&CVV2MATCH=X  
&PPREF=68W3371331353001F&CORRELATIONID=2e52df7ddf292
```

Step 2 Perform a Delayed Capture transaction

Set ORIGID to the PNREF value returned in the original Authorisation 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 Sale 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 4.6 Delayed Capture transaction parameter string

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

EXAMPLE 4.7 Delayed Capture response

```
RESULT=0&PNREF=EFHP0D42687C&RESPMSG=Approved&PPREF=1F987159809825103&CORREL  
ATIONID=b5689409e279f&FEEAMT=0.56&PAYMENTTYPE=instant&PENDINGREASON=complete  
d
```

Delayed Capture Transaction: Capturing Transactions for Lower Amounts

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

You can also perform Authorisations and Delayed Captures through PayPal Manager. For details, see PayPal Manager Online Help.

Example Partial Capture Transaction

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

Step 1 Submit the Initial transaction (Authorisation in this example)

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

EXAMPLE 4.8 Authorisation for the full amount of the purchase

```
"TRXTYPE=A&TENDER=C&PWD=SuperUserPassword&PARTNER=PayPalUK&VENDOR=SuperMerchant&USER=SuperMerchant&ACCT=5555555555554444&EXPDATE=0308&AMT=100.00&INVNUM=123456789&FIRSTNAME=John&LASTNAME=Jones&STREET=5199 MAPLE&ZIP=94588"
```

Note the value of the PNREF in the response.

EXAMPLE 4.9 Response to the Authorisation

```
RESULT=0&PNREF=EFHP0D426A51&RESPMSG=Approved&AVSADDR=N&AVSZIP=Y&CVV2MATCH=X&PPREF=6FS950632E172331R&CORRELATIONID=3c1a7c1c411a
```

Step 2 Capture the authorised funds for a partial delivery 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 Authorisation and set CAPTURECOMPLETE to N.

EXAMPLE 4.10 Delayed Capture with CAPTURECOMPLETE=N

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

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

Step 3 Capture the \$34 balance for the rest of the consignment

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

EXAMPLE 4.11 Delayed Capture with CAPTURECOMPLETE=Y

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

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

Delayed Capture Transaction: Capturing Transactions for Higher Amounts

You can perform a Delayed Capture transaction for an amount higher than the original Authorisation amount, however, you are charged for an extra transaction. In addition, the cardholder's open-to-buy is reduced by the sum of the original Authorisation-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 server to successfully process it. Conversely, if a capture for a previous Authorisation 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

Credit transactions are permitted only against existing Sale and Delayed Capture transactions. To submit a Credit transaction, you must pass the following parameter:

ORIGID

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. For details on PNREF, see [Chapter 8, “Responses to Transaction Requests.”](#)) If you do not specify an amount, then the amount of the original transaction is credited to the cardholder.

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 and EXPDATE. These parameters retain their original values.)

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

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

Credit Transaction Parameter Strings

This is an example Credit transaction string.

```
"TRXTYPE=C&TENDER=C&PARTNER=PayPalUK&VENDOR=SuperMerchant&USER=SuperMerchant&PWD=SuperUserPassword&ORIGID=EFHP0D426A62"
```

Submitting Void Transactions

The Void transaction (TRXTYPE=V) prevents a transaction from being settled but does not release the Authorisation (hold on funds) on the cardholder's account.

When to Use a Void Transaction

Follow these guidelines:

- You can only void Authorisation transactions.
- 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

Set ORIGID to the PNREF (Transaction ID in PayPal Manager reports) value returned for the original transaction. (For details on PNREF, see [Chapter 8, "Responses to Transaction Requests."](#))

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 and EXPDATE. These parameters retain their original values.)

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

Example Void Transaction Parameter String

This is an example Void transaction parameter string.

EXAMPLE 4.12 Void transaction parameter string

```
"TRXTYPE=V&TENDER=C&PARTNER=PayPalUK&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 website shop 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 postage 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.

CAUTION! *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 code 117 is returned. See PayPal Manager online help for instructions on setting reference transactions and other security features.*

Sale and Authorisation 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 Authorisation transaction.

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 any of the supported transaction types shown below to supply data for a new Sale or Authorisation transaction:

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

NOTE: PayPal Express Checkout does not support reference transactions for Authorisations or Sales. Reference transactions are only supported for Voids, Delayed Captures and Credits. For details on PayPal Express Checkout, see [Chapter 6, “PayPal Express Checkout Transaction Processing.”](#)

Fields Copied from Reference Transactions

The following fields are copied from the reference transaction into the new Sale or Authorisation 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.

ACCTTYPE	STREET
ACCT	CITY
EXPDATE	STATE
FIRSTNAME	ZIP
LASTNAME	COUNTRY

Example Reference Transaction

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

Step 1 Submit the Initial transaction (Authorisation in this example)

You use an Authorisation transaction for the full amount of the purchase of \$100.

EXAMPLE 4.13 Authorisation for the full amount of the purchase

```
"TRXTYPE=A&TENDER=C&PWD=SuperUserPassword&PARTNER=PayPalUK&VENDOR=SuperMerchant&USER=SuperMerchant&ACCT=555555555554444&EXPDATE=0308&AMT=100.00&INVNUM=123456789&FIRSTNAME=John&LASTNAME=Jones&STREET=5199 MAPLE&ZIP=94588"
```

Note the value of the PNREF in the response.

EXAMPLE 4.14 Response to the Authorisation

```
RESULT=0&PNREF=EFHP0D426A51&RESPMSG=Approved&AVSADDR=N&AVSZIP=Y&CVV2MATCH=X  
&PPREF=6FS950632E172331R&CORRELATIONID=3c1a7c1c411a
```

Step 2 Capture the authorised funds for a partial delivery 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 Authorisation.

EXAMPLE 4.15 Partial capture of the purchase amount

```
"TRXTYPE=D&TENDER=C&PWD=SuperUserPassword&PARTNER=PayPalUK&VENDOR=SuperMerc  
hant&USER=SuperMerchant&ORIGID=EFHP0D426A51&AMT=66.00"
```

```
RESULT=0&PNREF=VXYZ01234568&AUTHCODE=25TEST&AVSADDR=Y&AVSZIP=N&CORRELATIONI  
D=2dc60e253495e
```

Step 3 Submit a new Sale transaction of \$34 for the rest of the delivery

Once you have sent the remainder of the product, you can collect the remaining \$34 in a Sale transaction that uses the initial Authorisation as a reference transaction.

EXAMPLE 4.16 New Sale transaction for the balance

```
"TRXTYPE=S&TENDER=C&PWD=SuperUserPassword&PARTNER=PayPalUK&VENDOR=SuperMerc  
hant&USER=SuperMerchant&ORIGID=EFHP0D426A51&AMT=34.00"
```

```
RESULT=0&PNREF=EFHP0D426A53&AUTHCODE=25TEST&AVSADDR=Y&AVSZIP=N&CORRELATIONI  
D=2dc60e253495e
```

NOTE: In the case that your business model uses Authorisation/Delayed Capture for all transactions, you could have chosen to use partial captures to collect the \$34. For an example, see [“Delayed Capture Transaction: Capturing Transactions for Lower Amounts”](#) on page 33.

Using Address Verification Service

Address Verification Service (AVS) consists of the information — postal address and postcode.

AVS compares the submitted billing postal address and postcode 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 postal address and postcode. Y = match, N = no match, X = cardholder’s bank does not support AVS. The AVS result is for advice only. Banks do not decline transactions based on the AVS result — the merchant makes the decision to approve or decline a transaction. AVS is supported by most US banks and some international banks.

NOTE: AVS 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 response indicates whether the AVS response is international (**Y**), USA (**N**), or cannot be determined (**X**). SDK version 3.06 or later is required.

Example AVS Request Parameter String

This example request includes the AVS request parameters STREET and ZIP.

EXAMPLE 4.17 Request string with AVS request parameters

```
"TRXTYPE=A&TENDER=C&PWD=SuperUserPassword&PARTNER=PayPalUK&VENDOR=SuperMerchant&USER=SuperMerchant&ACCT=55555555554444&EXPDATE=0308&AMT=123.00&STREET=5199 Maple&ZIP=98765"
```

Example AVS Response

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

EXAMPLE 4.18 AVS response parameters

```
RESULT=0&PNREF=EFHP0D426A56&RESPMSG=APPROVED&AVSADDR=Y&AVSZIP=N&IAVS=X&CORRELATIONID=2dc60e253496a
```

For details on Address Verification responses, see [“Address Verification Responses from PayPal” on page 71](#).

Card Security Code Validation

The card security code is a three or four-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.

NOTE: This fraud prevention tool has various names, depending on the payment network. Visa calls it CVV2 while 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, MasterCard, Switch, and Solo cards.

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

American Express Card Security Code Enhancements

In a card-not-present environment, American Express recommends that you include the following information in your authorisation message:

- Card member billing name
- Postal information (SHIPTO* parameters) such as:
 - Address
 - Name
 - Postage method
- Customer information such as:
 - Email address
 - IP address
 - Host name
 - Browser type
- Order information (such as product SKU)

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 details on PayPal processor card security code responses, see [“Card Security Code Results” on page 72](#).



Example CVV2 Request Parameter String

This example request parameter string includes the CVV2 parameter.

EXAMPLE 4.19 CVV2 request parameter string

```
"TRXTYPE=A&TENDER=C&PWD=SuperUserPassword&PARTNER=PayPalUK&VENDOR=SuperMerchant&USER=SuperMerchant&&ACCT=555555555554444&EXPDATE=0308&AMT=123.00&CVV2=567"
```

Example CVV2 Response

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

EXAMPLE 4.20 CVV2 response

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

5

Testing Credit Card Transactions

To test your application, direct all transactions to **pilot-payflowpro.verisign.com**. Transactions directed to this URL are processed through PayPal’s simulated payment network, enabling you to test the configuration and operation of your application or shopfront — 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.
- ⌘ **Expiry Date** must be a valid date in the future (use the **mmyy** 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 5.1 *Test credit card numbers*

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
MasterCard	555555555554444

TABLE 5.1 Test credit card numbers (Continued)

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. [Table 5.2](#) lists the general guidelines for specifying amounts.

TABLE 5.2 Result codes resulting from amount submitted

Amount	Result (RESPMSG)
\$0 – \$10000	0 (Approved)
\$10001 or greater	Certain amounts in this range return specific PayPal result codes. If the amount is in this range but does not correspond to a PayPal result code supported by this testing mechanism, result 1000 is returned.

[Table 5.3](#) shows amounts that return specific PayPal result codes.

TABLE 5.3 Obtaining PayPal result code

Result	Definition	How to test using Website Payments Pro Payflow Edition
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: 10400 10401 10403 10414
5	Invalid merchant information	Use any of these as AMOUNT: 10548 10549

TABLE 5.3 *Obtaining PayPal result code (Continued)*

Result	Definition	How to test using Website Payments Pro Payflow Edition
7	Field format error	Use any of these as AMOUNT: 10405 10406 10407 10408 10409 10410 10412 10413 10416 10419 10420 10421 10509 10512 10513 10514 10515 10516 10517 10518 10540 10542
12	Declined	Use any of these as AMOUNT: 10417 15002 15005 10506 10528 10539 10544 10545 10546
13	Referral	Use the AMOUNT 10422

TABLE 5.3 *Obtaining PayPal result code (Continued)*

Result	Definition	How to test using Website Payments Pro Payflow Edition
23	Invalid account number	Use any of these as AMOUNT: 10519 10521 10522 10527 10535 10541 10543
24	Invalid expiry date	Use any of these as AMOUNT: 10502 10508
30	Duplicate Transaction	Use the AMOUNT 10536
105	Credit error	Attempt to credit an authorisation
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

6

PayPal Express Checkout Transaction Processing

This chapter provides guidelines on how to implement PayPal Express Checkout. The chapter introduces you to this feature and provides the information you need to get started integrating it into your website application.

NOTE: If you also plan to use PayPal Direct Payments described in [Chapter 4, “Performing Direct Payment Credit Card Transactions,”](#) to process credit cards, you must use PayPal Express Checkout together with Direct Payments. Direct Payments is not a standalone feature.

In this Chapter

- “What Is PayPal Express Checkout?” on page 47
- “How PayPal Express Checkout Works” on page 48
- “Sale and Authorisation Transactions” on page 49
- “PayPal Express Checkout Sale Transaction Example” on page 50
- “PayPal Express Checkout Transaction Parameter Descriptions” on page 53

What Is PayPal Express Checkout?

PayPal Express Checkout offers your customers an easy, convenient checkout experience. It lets them use postal and billing information stored securely at PayPal to check out, so they don’t have to re-enter it on your site.

From the perspective of website development, PayPal Express Checkout works like other Website Payments Pro features. You submit transaction information to the server as name-value pair parameter strings.

NOTE: This chapter assumes that you are familiar with the following:

- The basic transaction parameters required in all Website Payments Pro transactions, as described in [Chapter 3, “Creating a Simple Transaction Request”](#)
- The parameters for each transaction type, as described in [Chapter 4, “Performing Direct Payment Credit Card Transactions”](#)

How PayPal Express Checkout Works

Figure 6.1 summarises the PayPal Express Checkout process.

FIGURE 6.1 Customer checkout sequence

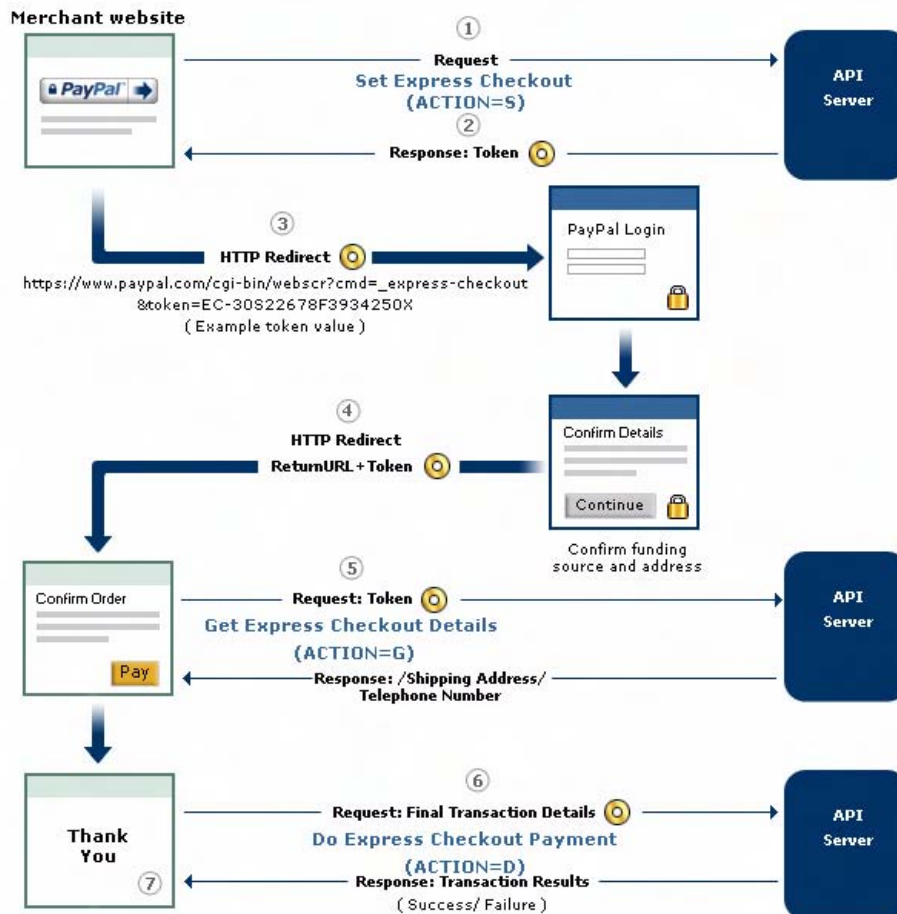


Figure 6.1 shows a typical set of web pages representing your merchant website. The PayPal logo is used by the customer to choose PayPal as their method of payment. PayPal Express Checkout gives you the flexibility to put this PayPal button graphic first in your checkout process — or on your billing page with other payment options. These guidelines are discussed in detail in [Chapter 7, “PayPal Button Placement and Page Designs.”](#)

The web page layout may differ somewhat from your own web design, but the points at which the PayPal Express Checkout API calls are made and when the customer is redirected to PayPal and back to your website are important to understand. The events that take place at each numbered step in the figure are described below:

1. On your website when your customer chooses to pay with PayPal, you submit a Set Express Checkout request.
2. The server sends back a token, a string value to track your customer throughout the checkout process.
3. You direct your customer to the PayPal site, where they log in, select a funding source, and confirm contact and postal information. PayPal Express Checkout includes parameters that you can use to customise the PayPal pages so they match characteristics of your own website. For example, you can provide your own logo and colours. These parameters are described in [“Set Express Checkout Request Parameters” on page 53](#).
4. When your customer clicks the “Continue” button, PayPal sends them back to your site at the return URL you specified in the Set Express Checkout request. The token is appended to the URL to identify the customer.
5. Optionally you can send the Get Express Checkout Details request to obtain details about your customer such as the customer’s telephone number and postal address. You send the token to identify the customer. The server returns the requested information.
6. When your customer clicks the “Pay” button, you submit the Do Express Checkout Payment request to perform the actual payment transaction. The server returns the transaction result.

Sale and Authorisation Transactions

PayPal Express Checkout Sale and Authorisation transactions are handled a little differently than described in [Chapter 4, “Performing Direct Payment Credit Card Transactions.”](#) Unlike a Direct Payment credit card Sale or Authorisation transaction request, which is submitted as a single request, a PayPal Express Checkout Sale or Authorisation requires that you submit at least two requests:

- Set Express Checkout
- Do Express Checkout

(A third request, Get Express Checkout Details, is optional.)

Do Express Checkout performs the actual money transfer. The Set Express Checkout and Get Express Checkout Details requests provide supporting data. To distinguish between a Sale or Authorisation request, you must pass an additional ACTION parameter with the respective value, S or G. [Table 6.1](#) summarises the ACTION values and transaction types.

NOTE: PayPal Express Checkout does not support reference transactions for Sales and Authorisations.

TABLE 6.1 Mapping PayPal Express Checkout requests to ACTION values

Request	TRXTYPE	ACTION
Set Express Checkout	Identifies the transaction. S = Sale A = Authorisation	Is S (for Set Express Checkout)
Get Express Checkout Details	Identifies the transaction. S = Sale A = Authorisation	Is G (for Get Express Checkout Details)
Do Express Checkout Payment	Identifies the transaction. S = Sale A = Authorisation	Is D (for Do Express Checkout Payment)

Void, Delayed Capture and Credit Transactions

You perform Void, Delayed Capture and Credit transactions as described in [Chapter 4, “Performing Direct Payment Credit Card Transactions”](#), using the PayPal tender type P. Additional PayPal Express Checkout data parameters that you can use in these transaction types with PayPal Express Checkout are described in the following sections:

- [“Void Transaction Parameters” on page 62](#)
- [“Delayed Capture Transaction Parameters” on page 62](#)
- [“Credit Transaction Parameters” on page 63](#)

NOTE: PayPal Express Checkout supports reference transactions for Void, Delayed Capture and Credit transactions.

PayPal Express Checkout Sale Transaction Example

This section provides an example of a Sale transaction.

All required transaction parameters are described in [Chapter 4, “Performing Direct Payment Credit Card Transactions.”](#)

Set Express Checkout (ACTION=S)

The Set Express Checkout request passes the transaction details from your website to PayPal when a customer chooses to pay with PayPal.

In addition to the parameter values required by all transaction types described in [Chapter 3, “Creating a Simple Transaction Request,”](#) and the minimum required parameters for a Sale transaction described in [Chapter 4, “Performing Direct Payment Credit Card Transactions,”](#) Set Express Checkout requires that you pass data for the following parameters.

ACTION
AMT
RETURNURL
CANCELURL

EXAMPLE 6.1 Set Express Checkout request parameter string for a Sale transaction

```
"TRXTYPE=S&ACTION=S&AMT=35.00&CANCELURL=http://www.order_page.com&PARTNER=PayPalUK&PWD=SuperUserPassword&RETURNURL=http://www.confirmation_page.com&TE  
NDER=P&USER=SuperMerchant&VENDOR=SuperMerchant"
```

It is strongly recommended that RETURNURL be the URL of the final review page on your website, where the customer confirms the order and payment. Likewise, CANCELURL should be the URL of the original page on your website where the customer initially chose to use PayPal.

EXAMPLE 6.2 Set Express Checkout response

```
RESULT=0&RESPMSG=Approved&TOKEN=EC-17C76533PL706494P
```

You use the TOKEN value in the response to refer to this particular transaction in the following requests to PayPal (as shown in [Figure 6.1 on page 48](#)).

- In the HTTP request to redirect the customer’s browser to the PayPal website (described in [“Redirecting the Customer to PayPal Example” on page 51](#)).
- In the Get Express Checkout Details request to obtain the customer’s billing information (described in [“Redirecting the Customer to PayPal Example” on page 51](#)).
- In the Do Express Checkout Payment request to carry out the transaction (described in [“Do Express Checkout Payment \(ACTION=D\)” on page 53](#)).

Redirecting the Customer to PayPal Example

After your buyer clicks the PayPal button and you submit the Set Express Checkout request, you will want to automatically direct your customer to the PayPal website. The redirect URL for this is:

```
"https://www.paypal.com/cgi-bin/webscr?cmd=_express-checkout&token=<TOKEN>"
```

where TOKEN is the value returned in the Set Express Checkout response.

PayPal recommends that you use the HTTPS response 302 “Object Moved” with your URL as the value of the Location header in the HTTPS response. Alternatively, you can generate a web page for your buyer that includes a META REFRESH tag in the header. An example is shown below. Remember to replace <TOKEN> with the token value that you received in the Set Express Checkout response.

EXAMPLE 6.3 *Generating a web page with a META REFRESH tag*

```

<html>
<head>
  <META HTTP-EQUIV="Refresh"CONTENT="0;URL=https://www.paypal.com/cgi-
bin/webscr?cmd=_express-checkout&token=<TOKEN>">
</head>

<body>
  <!-- Most buyers will see the text below for less than a second. -->
  <!-- Some browser types (example, mobile phone) do not support META refresh tags. -
->

  <a href="https://www.paypal.com/cgi-bin/webscr?cmd=_express-
checkout&token=<TOKEN>"Click here if you are not redirected to PayPal within 5
seconds.</a>
</body>
</html>

```

Get Express Checkout Details (ACTION=G)

The Get Express Checkout Details request enables you to retrieve the customer's billing information, such as the postal address and email address. In addition to the parameters required by all transaction types described in [Chapter 3, "Creating a Simple Transaction Request,"](#) Get Express Checkout Details requires that you pass data for these parameters.

ACTION
TOKEN

EXAMPLE 6.4 *Get Express Checkout Details request parameter string*

```
"TRXTYPE=S&VENDOR=SuperMerchant&USER=SuperMerchant&PWD=SuperUserPassword&TE
NDER=P&PARTNER=PayPalUK&ACTION=G&TOKEN=EC-17C76533PL706494P"
```

EXAMPLE 6.5 *Get Express Checkout Details response*

```
RESULT=0&RESPMSG=Approved&AVSADDR=Y&TOKEN=EC-
17C76533PL706494P&PAYERID=PHY4JXY7CV9PG&EMAIL=buyer_name@aol.com&PAYERSTATU
S=verified&CUSTOM=TRVV14459&FIRSTNAME=Chris&LASTNAME=Alexander&BUSINESS=Mon
roe Creek Regional Interiors&SHIPTOSTREET=5262 Green Street
#8&SHIPTOCITY=San Jose&SHIPTOSTATE=CA&SHIPTOZIP=95148&SHIPTOCOUNTRY=US
```

Redirecting the Customer to Your Website Example

PayPal redirects the customer back to your website at the location you specified in the RETURNURL parameter to Get Express Checkout request. PayPal appends the PAYERID name-value pair to the URL string, as shown below:

```
http:// [RETURNURL] /?PayerID=<PAYERID>
```

You need to pass the PAYERID in the Do Express Checkout Payment request, described next.

Do Express Checkout Payment (ACTION=D)

The Do Express Checkout Payment request performs the actual money transfer of the Sale transaction.

In addition to the parameters required by all transaction types described in [Chapter 3, “Creating a Simple Transaction Request,”](#) Do Express Checkout Payment request requires that you pass data for these parameters.

ACTION
TOKEN
PAYERID
AMT

EXAMPLE 6.6 Do Express Checkout Payment request parameter string

```
"TRXTYPE=S&VENDOR=SuperMerchant&USER=SuperMerchant&PWD=SuperUserPassword&TE  
NDER=P&PARTNER=PayPalUK&ACTION=D&TOKEN=EC-  
17C76533PL706494P&PAYERID=FHY4JXY7CV9PG&AMT=35.00"
```

EXAMPLE 6.7 Do Express Checkout Payment response

```
RESULT=0&PNREF=EFHP0CDBF5C7&RESPMSG=Approved&AVSADDR=Y&TOKEN=EC-  
17C76533PL706494P&PAYERID=FHY4JXY7CV9PG&PPREF=2P599077L3553652G&PAYMENTTYPE  
=instant
```

The response returns a 12-character PNREF (Payflow Manager Transaction ID) that is used by PayPal to identify this transaction in PayPal Manager reports. The PPREF value (maximum of 17 characters) is used by PayPal only to identify this transaction. For details on response parameters, see [Chapter 8, “Responses to Transaction Requests.”](#)

PayPal Express Checkout Transaction Parameter Descriptions

Sale and Authorisation Transaction Parameters

Set Express Checkout Request Parameters

The Set Express Checkout request parameters include the following:

- The parameters required by all transaction types described in [Chapter 3, “Creating a Simple Transaction Request”](#)
- The following required parameters described in [“PayPal Express Checkout Sale Transaction Example”](#) on page 50

ACTION
AMT
RETURNURL
CANCELURL

- The following optional request parameters listed below.

CURRENCY
 EMAIL
 ORDERDESC
 INVNUM
 SHIPTOSTREET
 SHIPTOCITY
 SHIPTOCOUNTRY
 SHIPTOSTATE
 SHIPTOZIP

- The parameters and described in [Table 6.2](#).

TABLE 6.2 Set Express Checkout request parameters

Parameter Name	Description	Type	Max. Length
TOKEN	Include this parameter to modify an existing Sale or Authorisation request. The value is returned in a previous Set Express Checkout response.	String	20
MAXAMT	The expected maximum total amount of the complete order, including postage and tax charges.	Decimal	9
CUSTOM	Free-form field for your own use such as a tracking number or other value you want PayPal to return in the Get Express Checkout Details response.	Alpha-numeric	256
RETURNURL	URL to which the customer's browser is returned after choosing to pay with PayPal. NOTE: PayPal recommends that the value of RETURNURL be the final review page on which the customer confirms the order and payment.	String	No max length
CANCELURL	URL to which the customer is returned if the customer does not approve the use of PayPal to pay you. NOTE: PayPal recommends that the value of CANCELURL be the original page on which the customer chose to pay with PayPal.	String	No max length
REQCONFIRMSHIPPING	Is 1 or 0. The value 1 indicates that you require that the customer's postal address on file with PayPal be a confirmed address. Setting this element overrides the setting you have specified in your Merchant Account Profile.	String	1

TABLE 6.2 Set Express Checkout request parameters (Continued)

Parameter Name	Description	Type	Max. Length
NOSHIPPING	Is 1 or 0. The value 1 indicates that on the PayPal pages, no postal address fields should be displayed whatsoever.	String	4
ADDROVERRIDE	Is 1 or 0. The value 1 indicates that the PayPal pages should display the postal address set by you in the postal address (SHIPTO* parameters) passed to this Set Express Checkout request, not the postal address on file with PayPal for this customer. Displaying the PayPal postal address on file does not allow the customer to edit that address.	String	4
LOCALECODE	Locale of pages displayed by PayPal during PayPal Express Checkout.	Alpha upper-case or lower-case AU or en_AU DE or de_DE FR or fr_FR GB or en_GB IT or it_IT JP or ja_JP US or en_US	5
PAGESTYLE	Sets the Custom Payment Page Style for payment pages associated with this button/link. PageStyle corresponds to the HTML variable page_style for customising payment pages. The value is the same as the Page Style Name you chose when adding or editing the page style from the Profile subtab of the My Account tab of your PayPal account.	Alpha	30
HDRIMG	A URL for the image you want to appear at the top left of the payment page. The image has a maximum size of 750 pixels wide by 90 pixels high. PayPal recommends that you provide an image that is stored on a secure (https) server.	String	127
HDRBORDERCOLOR	Sets the border colour around the header of the payment page. The border is a two-pixel perimeter around the header space, which is 750 pixels wide by 90 pixels high.	String HTML hexadecimal colour code in ASCII	6

TABLE 6.2 Set Express Checkout request parameters (Continued)

Parameter Name	Description	Type	Max. Length
HDRBACKCOLOR	Sets the background colour for the header of the payment page.	String HTML hexadecimal colour code in ASCII	6
PAYFLOWCOLOR	Sets the background colour for the payment page.	String HTML hexadecimal colour code in ASCII	6
ACTION	Is S to indicate this is a Set Express Checkout request.	Alpha	1

Set Express Checkout Response Parameters

Set Express Checkout response parameters include the RESULT and RESPMSG described in [Chapter 8, “Responses to Transaction Requests,”](#) as well as the TOKEN parameter described in [Table 6.3](#).

TABLE 6.3 Set Express Checkout response parameters

Parameter Name	Description	Type	Max. Length
TOKEN	A time-stamped token by which you identify to PayPal that you are processing this payment with PayPal Express Checkout. The token expires after three hours. If you set TOKEN in the Set Express Checkout request, the value of TOKEN in the response is identical to the value in the request.	String	20

Get Express Checkout Details Request Parameters

Get Express Checkout Details request parameters are described in [Table 6.4](#).

TABLE 6.4 *Get Express Checkout Details request parameters*

Parameter Name	Description	Required	Type	Max. Length
ACTION	Is G to indicate this is a Get Express Checkout Details request	Yes	Alpha	1
TOKEN	String value returned by the Set Express Checkout response.	Yes	String	20

Get Express Checkout Details Response Parameters

Get Express Checkout Details response parameters include RESULT and RESPMSG described in [Chapter 8, “Responses to Transaction Requests](#), the parameters listed below, and the parameters described in [Table 6.5](#).

- EMAIL
- INVNUM
- SHIPTOCITY
- SHIPTOCOUNTRY
- SHIPTOSTATE
- SHIPTOZIP

TABLE 6.5 *Get Express Checkout Details response parameters*

Parameter Name	Description	Type	Max. Length
TOKEN	String value returned by Set Express Checkout response.	String	20
SHIPTOSTREET	Postal Address. NOTE: If you include a postal address and provide a value for the AddressOverride (ADDROVERRIDE) parameter, PayPal returns this same address in the Get Express Checkout Details response.	String	30
SHIPTOSTREET2	Extended postal address. Example: Bldg. 6, Flat 3.	String	30
SHIPTOBUSINESS	Customer’s business name.	String	127

TABLE 6.5 Get Express Checkout Details response parameters (Continued)

Parameter Name	Description	Type	Max. Length
SHIPTOCOUNTRYCODE	Customer's country of residence in the form of ISO standard 3166 two-character country codes. NOTE: Currently US is the only country code supported.	String	2
PAYERID	Unique PayPal customer account identification number.	String	13
PAYERSTATUS	Status of customer. Values are: verified unverified	Alpha	10
CUSTOM	Free-form field for your own use as set by you in the Set Express Checkout request.	Alpha-numeric	256
PHONENUM	Account holder's telephone number. See "Obtaining the Customer's Telephone Number During PayPal Checkout" on page 58. The field mask is xxx-xxx-xxxx (US numbers) +xxxxxxxxxxx (international numbers)	String	20

Obtaining the Customer's Telephone Number During PayPal Checkout

You can request the buyer's phone number from within the PayPal checkout. You have three options:

- Not request the telephone number (default)
- Request the telephone number as an optional field
- Require that the buyer enter his or her telephone number to proceed

To set these options, log in to your PayPal account, click **Profile**, and then click **Website Payment Preferences**. The section to change the default is located at the bottom of the screen.

Do Express Checkout Payment Request Parameters

In addition to the parameters required by all transaction types described in [Chapter 3, “Creating a Simple Transaction Request,”](#) the Do Express Checkout Payment request parameters include:

- The parameters listed below and described in [Table 4.1, “Transaction parameters.”](#)

BUTTONSOURCE
 CUSTOM
 FREIGHTAMT
 HANDLINGAMT
 INVNUM
 ITEMAMT
 L_AMTn
 L_DESCn
 L_QTYn
 L_TAXAMTn
 NOTIFYURL
 ORDERDESC
 SHIPTOCITY
 SHIPTOCOUNTRY
 SHIPTOSTATE
 SHIPTOSTREET
 SHIPTOZIP

- The required parameters described in [Table 6.6.](#)

TABLE 6.6 Do Express Checkout Payment request parameters

Parameter Name	Description	Required	Type	Max. Length
TOKEN	String value returned by Set Express Checkout response.	Yes	String	20
ACTION	Is D to indicate this is a Do Express Checkout Payment request.	Yes	Alpha	1
PAYERID	Unique PayPal customer account identification number. This value is returned in the URL when the customer is redirected to your website.	Yes	String	13

TABLE 6.6 Do Express Checkout Payment request parameters (Continued)

Parameter Name	Description	Required	Type	Max. Length
TAXAMT	Sum of tax for all items in this order. NOTE: You must set CURRENCY to one of the three-character currency codes for any of the supported PayPal currencies. CURRENCY is described in Table 4.1 . Limitations: Must not exceed \$10,000 USD in any currency. No currency symbol. Decimal separator must be a period (.). Do not use comma separators. Use 1199.95, not 1,199.95.	No	Decimal	6

Do Express Checkout Payment Response Parameters

The Do Express Checkout Payment response parameters include:

- RESULT, RESPMSG, PNREF, and PPREF described in [Chapter 8, “Responses to Transaction Requests”](#)
- The parameters described in [Table 6.7](#)

TABLE 6.7 Do Express Checkout Payment response parameters

Parameter Name	Description	Type	Max. Length
TOKEN	The time-stamped token value that was returned in the Set Express Checkout response.	String	20
FEEAMT	PayPal fee amount charged for the transaction. NOTE: You must set CURRENCY to one of the three-character currency codes for any of the supported PayPal currencies. CURRENCY is described in Table 4.1 . Limitations: Must not exceed \$10,000 USD in any currency. No currency symbol. Decimal separator must be a period (.). Do not use comma separators. Use 1199.95, not 1,199.95.	Decimal	9
PAYMENTTYPE	Returns instant if the payment is instant or eCheque if the payment is delayed.	Alpha	7

TABLE 6.7 Do Express Checkout Payment response parameters (Continued)

Parameter Name	Description	Type	Max. Length
TAXAMT	<p>Sum of tax for all items in this order.</p> <p>NOTE: You must set CURRENCY to one of the three-character currency codes for any of the supported PayPal currencies. CURRENCY is described in Table 4.1.</p> <p>Limitations: Must not exceed \$10,000 USD in any currency. No currency symbol. Decimal separator must be a period (.). Do not use comma separators. Use 1199.95, not 1,199.95.</p>	Decimal	6
PENDINGREASON	<p>The reason the payment is pending. Values are:</p> <p>none = No pending reason</p> <p>address = The payment is pending because your customer did not include a confirmed postal address and your Payment Receiving Preferences is set such that you want to manually accept or refuse each of these payments. To change your preference, go to the Preferences section of your Profile.</p> <p>echeque = The payment is pending because it was made by an eCheque that has not yet cleared.</p> <p>intl = The payment is pending because you hold a non-US account and do not have a withdrawal mechanism. You must manually accept or refuse this payment from your Account Overview.</p> <p>multi-currency = You do not have a balance in the currency sent, and you do not have your Payment Receiving Preferences set to automatically convert and accept this payment. You must manually accept or refuse this payment.</p> <p>verify = The payment is pending because you are not yet verified. You must verify your account before you can accept this payment.</p> <p>other = The payment is pending for a reason other than those listed above. For more information, contact PayPal customer service.</p> <p>completed = The payment has been completed, and the funds have been added successfully to your account balance.</p>	String	

Pending Payments. If the Do Express Checkout Payment PENDINGREASON response is a value other than none or Completed, the payment is pending. Typically, the customer has paid with an eCheque. In such a case, funds are not guaranteed, and you should not send or deliver items or services until the payment has successfully completed. To find out the status of a pending payment, sign up for PayPal’s instant payment notification service (IPN). You can also check the status using PayPal Manager. See PayPal Manager Online Help for details.

Void Transaction Parameters

In addition to the parameters required by all transaction types described in [Chapter 3, “Creating a Simple Transaction Request,”](#) and the Void transaction parameters described in [Chapter 4, “Performing Direct Payment Credit Card Transactions,”](#) the following NOTE parameter can be used in PayPal Express Checkout Void transactions.

TABLE 6.8 Void transaction optional request parameters

Parameter Name	Description	Required	Type	Max. Length
NOTE	An informal note about this settlement that is displayed to the customer in an email and in the customer’s transaction history.	No	String	255

Delayed Capture Transaction Parameters

In addition to the parameters required by all transaction types described in [Chapter 3, “Creating a Simple Transaction Request,”](#) and the Delayed Capture transaction parameters described in [Chapter 4, “Performing Direct Payment Credit Card Transactions,”](#) the following NOTE parameter can be used in PayPal Express Checkout Delayed Capture transactions.

TABLE 6.9 Delayed Capture transaction optional request parameters

Parameter Name	Description	Required	Type	Max. Length
NOTE	An informal note about this settlement that is displayed to the customer in an email and in the customer’s transaction history.	No	String	255

In addition to the response parameters described in [Chapter 8, “Responses to Transaction Requests,”](#) the following PAYMENTTYPE parameter can be returned in PayPal Express Checkout Delayed Capture responses.

TABLE 6.10 *Delayed Capture transaction response parameters*

Parameter Name	Description	Type	Max. Length
PAYMENTTYPE	Returns instant if the payment is instant or eCheque if the payment is delayed.	String	7

Credit Transaction Parameters

In addition to the parameters required by all transaction types described in [Chapter 3, “Creating a Simple Transaction Request,”](#) and the parameters described in [Table 4.1, “Transaction parameters,”](#) the following MEMO parameter can be used in PayPal Express Checkout Credit transactions.

NOTE: PayPal Express Checkout only supports reference transactions for Credits.

TABLE 6.11 *Credit transaction request parameters*

Parameter Name	Description	Required	Type	Max. Length
MEMO	Custom memo about the credit.	No	Alphanumeric	255

7

PayPal Button Placement and Page Designs

IMPORTANT: *When you offer PayPal Express Checkout to your customers, you are required to display it in two forms, for your customers' best buying experience:*

1. PayPal as a Checkout Choice on your shopping cart page
2. PayPal as a Payment Method

TABLE 7.1 *PayPal Button Placement and Rules*

Placement	PayPal Button Graphic	Requirements
1. PayPal as a Checkout Choice		Place the PayPal Checkout button on your cart page, aligned with any other checkout buttons.
2. PayPal as a Payment Method		Place the PayPal Acceptance Mark graphic 1. On your Payment Billing page. 2. On your home page, along with credit card logos, if applicable.

HTML for PayPal Button Graphics

You can get HTML for the PayPal Express Checkout button and PayPal Acceptance Mark from the following location:

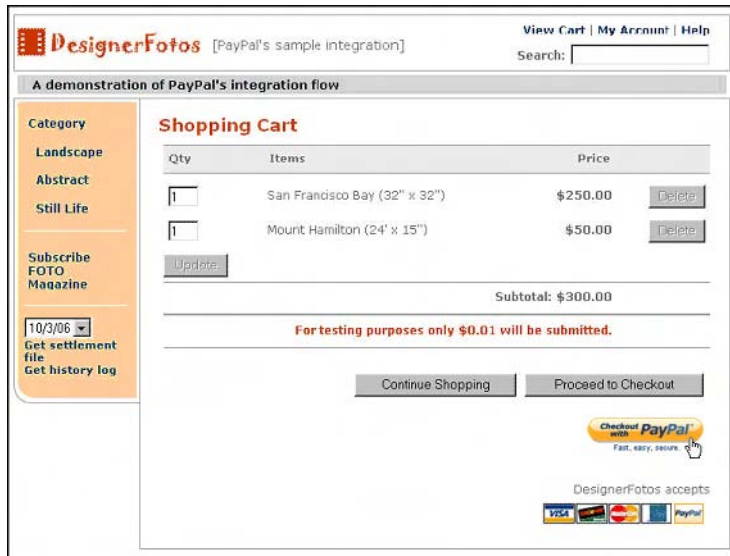
<https://www.paypal.com/express-checkout-buttons>

IMPORTANT: *Rather than storing the button graphics on your own server, use the PayPal-provided image paths for the graphics to reassure your customers that the checkout is secure and that you are displaying the most up-to-date logos from PayPal.*

Examples of Button Placement

Here are some examples of proper placement:

1. PayPal as a Checkout Choice and as a Payment Method



2. PayPal as a Payment Method

You can choose from several design variations for PayPal as a Payment Method. See [“Payment Method Page Layout Recommendations”](#).

Payment Method Page Layout Recommendations

When you display the PayPal Acceptance Mark with other payment methods, you have several designs to choose from:

- As a radio button
- As horizontal fields
- In a pulldown SELECT list

IMPORTANT: Do not preselect any payment method. Allow the customer to make a choice without any default.

As a radio button:

FIGURE 7.1 Payment.ds: PayPal as Unique Choice



As horizontal option fields:

FIGURE 7.2 Payment Methods: Horizontal Design



As a pulldown SELECT list:

FIGURE 7.3 Payment Methods: Pulldown SELECT List



8

Responses to Transaction Requests

This chapter describes the contents of a response to a transaction request. When a transaction finishes, the Payflow server returns a response string made up of name-value pairs. For example, this is a response to a credit card Sale transaction request:

```
RESULT=0&PNREF=VXYZ01234567&RESPMSG=APPROVED&AUTHCODE=123456
&AVSADDR=Y&AVSZIP=N&IAVS=Y&CVV2MATCH=Y
```

Contents of a Transaction Response

All transaction responses include values for RESULT, PNREF and RESPMSG. Values for AVSADDR and AVSZIP are included if you use AVS. [Table 8.1](#) describes the values returned in a response string.

TABLE 8.1 Transaction response values

Field	Description	Type	Length
PNREF	Reference ID, a unique number that identifies the transaction. PNREF is described in “ PNREF Format ” on page 73 .	Alphanumeric	12
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 codes are described in “ RESULT Codes and RESPMSG Values ” on page 74 .	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 For details on PayPal-specific responses, also see “ Card Security Code Results ,” in this chapter.	1

TABLE 8.1 Transaction response values (Continued)

Field	Description	Type	Length
PPREF	Unique transaction ID of the payment. If the TRXTYPE of the request is A, then you will need the value of PPREF for use with Authorisation and Delayed Capture transactions.	string	17
RESPMSG	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 Codes and RESPMSG Values” on page 74.	Alphanumeric	Variable
AVSADDR	AVS address responses are for advice only. This process does not affect the outcome of the authorisation. See “Using Address Verification Service” on page 39. For details on PayPal-specific responses, also see “Address Verification Responses from PayPal,” in this chapter.	Alpha Y, N, X, or no response.	1
AVSZIP	AVS postcode responses are for advice only. This process does not affect the outcome of the authorisation. See “Using Address Verification Service” on page 39. For details on PayPal-specific responses, also see “Address Verification Responses from PayPal,” in this chapter.	Alpha Y, N, X, or no response	1
PROCAVS	AVS response from the processor when the merchant sends a VERBOSITY request parameter value of MEDIUM. See Appendix A, “Verbosity: Viewing Processor-Specific Transaction Results,” for details.	Char	1
PROCCVV2	CVV2 response from the processor when the merchant sends a VERBOSITY request parameter value of MEDIUM. See Appendix A, “Verbosity: Viewing Processor-Specific Transaction Results,” for details.	Char	1

TABLE 8.1 Transaction response values (Continued)

Field	Description	Type	Length
IAMS	International AVS address responses are for advice only. This value does not affect the outcome of the transaction. Indicates whether AVS response is international (Y), US (N), or cannot be determined (X). Client version 3.06 or later is required. See “Using Address Verification Service” on page 39.	Alpha Y, N, X, or no response	1
PAYMENTTYPE	Returns instant if the payment is instant or eCheque if the payment is delayed.	String	7
CORRELATIONID	Value used for tracking this Direct Payment transaction.	Alphanumeric	13

Address Verification Responses from PayPal

Table 8.2, “Address verification response value mapping,” compares the detailed response returned by the PayPal processor for address verification to the normalised 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 A, “Verbosity: Viewing Processor-Specific Transaction Results.”](#)

TABLE 8.2 Address verification response value mapping

PayPal Processor AVSCode	PayPal Processor AVSCode 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

TABLE 8.2 Address verification response value mapping (Continued)

PayPal Processor AVSCode	PayPal Processor AVSCode Meaning	AVSADDR	AVSZIP
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 Postcode	N	Y
X	Exact Match	Y	Y
Y	Yes	Y	Y
Z	Zip (postcode)	N	Y
All other		X	X

Card Security Code Results

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

Normalised Results

If you submit the transaction request parameter for card security code (that is, the CVV2 parameter), the cardholder’s bank returns a normalised Yes/No response in the CVV2MATCH response parameter, as described in [Table 8.3](#).

TABLE 8.3 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 8.4, “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 A, “Verbosity: Viewing Processor-Specific Transaction Results.”](#)

TABLE 8.4 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 the Payflow server 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 authorisation (TRXTYPE=A) and Sale (TRXTYPE=S).

NOTE: The PNREF is also referred to as the Transaction ID in Payflow Link documentation.

PNREF Format

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

- EFHP0D42687C
- 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. Historically, the contents of a PNREF indicated a test or a live transaction:

- For test servers, the first and fourth characters were alpha characters (letters), and the second and third characters were numeric, for example: V53A17230645.
- For live servers, the first four characters were alpha characters (letters), for example: VPNE12564395.

However, this is not always the case, and as a rule, you should not place any meaning on the contents of a PNREF.

RESULT Codes and RESPMSG Values

RESULT is the first value returned in the server response string. The value of the RESULT parameter 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.

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

RESULT Values for Transaction Declines or Errors

For non-zero Results, 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.

TABLE 8.5 *Payflow transaction RESULT values and RESPMSG text*

RESULT	RESPMSG and Explanation
0	Approved
1	User authentication failed. Error is caused by one or more of the following: <ul style="list-style-type: none"> • Invalid Processor information entered. Contact merchant bank to verify. • '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. • You are using a test (not active) account to submit a transaction to the live PayPal servers. Change the URL from pilot-payflowpro.verisign.com to payflowpro.verisign.com.
2	Invalid tender type. Your merchant bank account does not support the following credit card type that was submitted.
3	Invalid transaction type. Transaction type is not appropriate for this transaction. For example, you cannot credit an authorisation-only transaction.

TABLE 8.5 Payflow transaction RESULT values and RESPMSG text (Continued)

RESULT	RESPMSG and Explanation
4	Invalid amount format. Use the format: “#####.##” Do not include currency symbols or commas.
5	Invalid merchant information. Processor does not recognise your merchant account information. Contact your bank account acquirer to resolve this problem.
6	Invalid or unsupported currency code
7	Field format error. Invalid information entered. See RESPMSG.
8	Not a transaction server
9	Too many parameters or invalid stream
10	Too many line items
11	Client time-out waiting for response
12	Declined. Check the credit card number, expiry 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	Referral. Transaction cannot be approved electronically but can be approved with a verbal authorisation. Contact your merchant bank to obtain an authorisation and submit a manual Voice Authorisation transaction.
14	Invalid Client Certification ID. Check the HTTP header. If the tag, X-VPS-VIT-CLIENT-CERTIFICATION-ID, is missing, RESULT code 14 is returned.
19	Original transaction ID not found. The transaction ID you entered for this transaction is not valid. See RESPMSG.
20	Cannot find the customer reference number
22	Invalid ABA number
23	Invalid account number. Check credit card number and re-submit.
24	Invalid expiry date. Check and re-submit.
25	Invalid Host Mapping. 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.
26	Invalid vendor account
27	Insufficient partner permissions
28	Insufficient user permissions
29	Invalid XML document. This could be caused by an unrecognised XML tag or a bad XML format that cannot be parsed by the system.
30	Duplicate transaction

TABLE 8.5 Payflow transaction RESULT values and RESPMSG text (Continued)

RESULT	RESPMSG and Explanation
31	Error in adding the recurring profile
32	Error in modifying the recurring profile
33	Error in cancelling the recurring profile
34	Error in forcing the recurring profile
35	Error in reactivating the recurring profile
36	OLTP Transaction failed
37	Invalid recurring profile ID
50	Insufficient funds available in account
51	Exceeds per transaction limit
99	General error. See RESPMSG.
100	Transaction type not supported by host
101	Time-out value too small
102	Processor not available
103	Error reading response from host
104	Timeout waiting for processor response. Try your transaction again.
105	Credit error. 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 authorisation.)
106	Host not available
107	Duplicate suppression time-out
108	Void error. 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	Time-out waiting for host response
110	Referenced auth (against order) Error
111	Capture error. Either an attempt to capture a transaction that is not an authorisation transaction type, or an attempt to capture an authorisation transaction that has already been captured.
112	Failed AVS check. Address and ZIP code do not match. An authorisation may still exist on the cardholder's account.

TABLE 8.5 Payflow transaction RESULT values and RESPMSG text (Continued)

RESULT	RESPMSG and Explanation
113	Merchant sale total will exceed the sales cap with current transaction. ACH transactions only.
114	Card Security Code (CSC) Mismatch. An authorisation may still exist on the cardholder's account.
115	System busy, try again later
116	VPS Internal error. Failed to lock terminal number
117	Failed merchant rule check. 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	Invalid keywords found in string fields
119	General failure within PIM Adapter
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	Fraud Protection Services Filter — Flagged for review by filters Important Note: 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 authorised but requires you to review and manually accept the transaction before it will be allowed to settle. 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. To eliminate result 126, turn the filters off. For more information, see the Fraud Protection Services documentation for your payments solution. It is available on the PayPal Manager Documentation page.
127	Fraud Protection Services Filter — Not processed by filters
128	Fraud Protection Services Filter — Declined by merchant after being flagged for review by filters
131	Version 1 Website Payments Pro SDK client no longer supported. Upgrade to the most recent version of the Website Payments Pro client.
132	Card has not been submitted for update

TABLE 8.5 Payflow transaction RESULT values and RESPMSG text (Continued)

RESULT	RESPMSG and Explanation
133	Data mismatch in HTTP retry request
150	Issuing bank timed out
151	Issuing bank unavailable
200	Reauth error
201	Order error
402	PIM Adapter Unavailable
403	PIM Adapter stream error
404	PIM Adapter Timeout
600	Cybercash Batch Error
601	Cybercash Query Error
1000	Generic host error. This is a generic message returned by your credit card processor. The RESPMSG will contain more information describing the error.
1001	Buyer Authentication Service unavailable
1002	Buyer Authentication Service — Transaction timeout
1003	Buyer Authentication Service — Invalid client version
1004	Buyer Authentication Service — Invalid timeout value
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

TABLE 8.5 Payflow transaction RESULT values and RESPMSG text (Continued)

RESULT	RESPMSG and Explanation
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 Enrolment
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
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 value for RESULT 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.

NOTE: Details of the response message may vary slightly depending on your SDK integration.

TABLE 8.6 *RESULT values for communications errors*

RESULT	Description
-1	Failed to connect to host
-2	Failed to resolve hostname
-5	Failed to initialise 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 authorisation failed
-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 initialise SSL certificate
-23	Host address not specified
-24	Invalid transaction type
-25	Failed to create a socket
-26	Failed to initialise socket layer
-27	Parameter list format error: invalid [] name length clause

TABLE 8.6 *RESULT values for communications errors (Continued)*

RESULT	Description
-28	Parameter list format error: name
-29	Failed to initialise 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 initialisation 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
-111	The following error occurred while initialising from message file: <Details of the error message>
-113	Unable to round and truncate the currency value simultaneously



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 normalise the transaction result values. Normalising the values limits them to a standardised set of values and simplifies the process of integrating Website Payments Pro.

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 Website Payments Pro accounts. The following values are returned: {RESULT, PNREF, RESPMSG, AUTHCODE, AVSADDR, AVSZIP, CVV2MATCH, IAVS, CARDSECURE}
- **MEDIUM:** All 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
HOSTCODE	char	7	Response code returned by the PayPal processor. This value is not normalised.
RESPTEXT	char	17	Text corresponding to the response code returned by the PayPal processor. This text is not normalised.
PROCAVS	char	1	AVS response from the PayPal processor
PROCCVV2	char	1	CVV2 response from the PayPal processor
PROCCARDSECURE	char	1	VPAS/SPA response from the PayPal processor.
ADDLMSGS	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 = Authorisation 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 = Authorisation captured (once an authorisation type transaction is captured, its TRANSSTATE becomes 9) 10 = Capture failed (an error occurred while trying to capture an authorisation 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 chargeback. 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	No client acknowledgment (ACK) is received (=status 0 in V2), for example, 106 is TRANSSTATE 6. 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. See PayPal Manager Online Help for details on using PayPal Manager.
+200	The host process never receives ACK from the transaction broker (or backend payment server). A transaction with a TRANSSTATE of +200 is basically in limbo and will not be settled.
+1000	Voided transactions. Any TRANSSTATE of +1000 (for example, 1006) means the transaction was settle pending. However, it was voided either through the API, PayPal Manager or PayPal Customer Service.

Changing the Verbosity Setting

Setting the Default Verbosity Level for All Transactions

Contact PayPal Customer Service to set your account's VERBOSITY setting to LOW or MEDIUM for all transaction requests.

Setting the Verbosity Level on a Per-Transaction Basis

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.

B

ISO Country Codes

The following International Standards Organisation (ISO) country codes are used when filling the order fields BILLTOCOUNTRY and POSTTOCOUNTRY.

TABLE B.1 Country codes

Country	Code
ALBANIA	AL
ALGERIA	DZ
AMERICAN SAMOA	AS
ANDORRA	AD
ANGUILLA	AI
ANTIGUA AND BARBUDA	AG
ARGENTINA	AR
ARMENIA	AM
ARUBA	AW
AUSTRALIA	AU
AUSTRIA	AT
AZERBAIJAN	AZ
BAHAMAS	BS
BAHRAIN	BH
BANGLADESH	BD
BARBADOS	BB
BELARUS	BY
BELGIUM	BE
BELIZE	BZ
BENIN	BJ
BERMUDA	BM

TABLE B.1 *Country codes*

Country	Code
BOLIVIA	BO
BOSNIA AND HERZEGOVINA	BA
BOTSWANA	BW
BRAZIL	BR
BRITISH VIRGIN ISLANDS	VG
BRUNEI	BN
BULGARIA	BG
BURKINA FASO	BF
CAMBODIA	KH
CAMEROON	CM
CANADA	CA
CAPE VERDE	CV
CAYMAN ISLANDS	KY
CHILE	CL
CHINA	CN
COLOMBIA	CO
COOK ISLANDS	CK
COSTA RICA	CR
CÔTE D'IVOIRE	CI
CROATIA	HR
CYPRUS	CY
CZECH REPUBLIC	CZ
DENMARK	DK
DJIBOUTI	DJ
DOMINICA	DM
DOMINICAN REPUBLIC	DO
EAST TIMOR	TP
ECUADOR	EC

TABLE B.1 Country codes

Country	Code
EGYPT	EG
EL SALVADOR	SV
ESTONIA	EE
FIJI	FJ
FINLAND	FI
FRANCE	FR
FRENCH GUIANA	GF
FRENCH POLYNESIA	PF
GABON	GA
GEORGIA	GE
GERMANY	DE
GHANA	GH
GIBRALTAR	GI
GREECE	GR
GRENADA	GD
GUADELOUPE	GP
GUAM	GU
GUATEMALA	GT
GUINEA	GN
GUYANA	GY
HAITI	HT
HONDURAS	HN
HONG KONG	HK
HUNGARY	HU
ICELAND	IS
INDIA	IN
INDONESIA	ID
IRELAND	IE

TABLE B.1 *Country codes*

Country	Code
ISRAEL	IL
ITALY	IT
JAMAICA	JM
JAPAN	JP
JORDAN	JO
KAZAKHSTAN	KZ
KENYA	KE
KUWAIT	KW
LAO PEOPLE'S DEMOCRATIC REPUBLIC	LA
LATVIA	LV
LEBANON	LB
LESOTHO	LS
LITHUANIA	LT
LUXEMBOURG	LU
MACAO	MO
MACEDONIA	MK
MADAGASCAR	MG
MALAYSIA	MY
MALDIVES	MV
MALI	ML
MALTA	MT
MARSHALL ISLANDS	MH
MARTINIQUE	MQ
MAURITIUS	MU
MEXICO	MX
MICRONESIA, FEDERATED STATES OF	FM
MOLDOVA	MD
MONGOLIA	MN

TABLE B.1 Country codes

Country	Code
MONTSERRAT	MS
MOROCCO	MA
MOZAMBIQUE	MZ
NAMIBIA	NA
NEPAL	NP
NETHERLANDS	NL
NETHERLANDS ANTILLES	AN
NEW ZEALAND	NZ
NICARAGUA	NI
NORTHERN MARIANA ISLANDS	MP
NORWAY	NO
OMAN	OM
PAKISTAN	PK
PALAU	PW
PALESTINE	PS
PANAMA	PA
PAPUA NEW GUINEA	PG
PARAGUAY	PY
PERU	PE
PHILIPPINES, REPUBLIC OF	PH
POLAND	PL
PORTUGAL	PT
PUERTO RICO	PR
QATAR	QA
ROMANIA	RO
RUSSIAN FEDERATION	RU
RWANDA	RW
SAINT KITTS AND NEVIS	KN

TABLE B.1 *Country codes*

Country	Code
SAINT LUCIA	LC
SAINT VINCENT AND THE GRENADINES	VC
SAMOA	WS
SAUDI ARABIA	SA
SENEGAL	SN
SERBIA AND MONTENEGRO	CS
SEYCHELLES	SC
SINGAPORE	SG
SLOVAKIA	SK
SLOVENIA	SI
SOLOMON ISLANDS	SB
SOUTH AFRICA	ZA
SOUTH KOREA	KR
SPAIN	ES
SRI LANKA	LK
SWAZILAND	SZ
SWEDEN	SE
SWITZERLAND	CH
TAIWAN	TW
TANZANIA, UNITED REPUBLIC OF	TZ
THAILAND	TH
TOGO	TG
TONGA	TO
TRINIDAD AND TOBAGO	TT
TUNISIA	TN
TURKEY	TR
TURKMENISTAN	TM
TURKS AND CAICOS ISLANDS	TC

TABLE B.1 Country codes

Country	Code
UGANDA	UG
UKRAINE	UA
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URUGUAY	UY
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VENEZUELA	VE
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