



Website Payments Pro Payflow Edition - Recurring Billing Service User's Guide

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Document Number: 200020.en_US-201001

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Preface

This Guide

This guide describes how to use the Payflow SDK to perform recurring billing transactions. The Recurring Billing Service is a scheduled payment solution that enables you to automatically bill your customers at regular intervals – for example, a monthly fee of \$42 for 36 months with an initial fee of \$129.

Audience

This guide assumes that its readers:

- Are experienced web or application developers
- Have a background in payments services
- Are familiar with the contents of *Payflow Pro Developer's Guide*

That document along with this guide are your primary sources of information on developing payments applications.

Purpose

This guide describes in detail how you can use the Payflow SDK to perform recurring billing transactions. For details on how to use PayPal Manager – the web-based administration tool for processing transactions manually, issuing credits, and generating reports, see PayPal Manager online help.

NOTE: PayPal Manager must be used to send customers email receipts and notifications of failed transactions.

Organization of This Guide

- [Chapter 1, “Managing Payflow Services,”](#) provides an overview of the Recurring Billing functionality available in PayPal Manager and in the Payflow SDK.
- [Chapter 2, “Using the SDK to Perform Recurring Tasks,”](#) describes the use of the Payflow SDK to perform recurring transactions.
- [Chapter 3, “Testing Recurring Billing,”](#) describes how to test recurring transactions.

- [Appendix A, “Obtaining Consent to Bill Customers Using Recurring Billing,”](#) outlines your responsibilities in obtaining prior authorization from the customer to bill on an automated schedule.

Where To Go For More Information

For more information, see the following:

- *Payflow Pro Developer’s Guide*
Describes Payflow Pro, a high performance TCP/IP-based Internet payment gateway solution. Payflow Pro is pre-integrated with leading e-commerce solutions and is also available as a downloadable SDK. This guide contains:
 - Detailed descriptions of the Payflow Pro transaction parameters
 - Error code information
 - Testing information
- See the *Payflow ACH Payment Service Guide* for details on ACH payment processing.

All of the above Payflow documentation can be found on the PayPal Developer Central website.

See PayPal Manager online help for details on how to use PayPal Manager to perform recurring tasks.

How to Contact Customer Service

For answers to specific questions about PayPal products:

- Contact Customer Service at payflow-support@paypal.com.

Revision History

TABLE P.1 Revision History

Date	Description
January 2010	Added using Inquiry to view recurring transaction and optional transaction details in a profile. Included example.
October 2009	Added support for optional transactions that are used to validate the buyer's account information. No amount is passed with this option.
August 2009	Added using a Billing Agreement ID to create a PayPal profile with ACTION=A.
December 2008	Removed RETRYING CURRENT PAYMENT value from STATUS parameter in Inquiry response.
October 2008	Removed incomplete and confusing list of parameters that can be modified in a profile. Added ACH as a recurring billing profile that is supported.
June 2008	Updated Preface. Updated description of ACCT parameter.
September 2007	Adapted for Australia

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Managing Payflow Services

This chapter provides a high-level overview of the tasks you can perform using PayPal Manager and the Payflow SDK.

IMPORTANT: *You must have prior authorization from the customer to bill on an automated schedule. See [Appendix A, “Obtaining Consent to Bill Customers Using Recurring Billing,”](#) for additional details.*

In This Chapter

- “About Payflow Services” on page 9
- “Recurring Billing Terms” on page 10
- “Overview of Recurring Billing Actions Using the Payflow SDK” on page 10
- “Overview of the Payflow Services Interface in PayPal Manager” on page 11

About Payflow Services

NOTE: You must obtain each customer’s consent to bill them on an automated schedule. [Appendix A, “Obtaining Consent to Bill Customers Using Recurring Billing”](#) presents the relevant sections from PayPal’s Merchant Services Agreement.

To configure a customer to be automatically billed on a schedule, you define a recurring billing *profile* for that customer. The profile specifies the account to bill, the associated contact information, the amount to charge each time, the payment period (monthly, weekly, and so on), and the term (the number of payments) of the agreement.

NOTE: Recurring billing supports credit card and ACH accounts. For details on ACH payment management, see the *Payflow ACH Payment Service Guide* on Developer Central.

When you submit the data, PayPal generates the new profile, activates it, and automatically performs the billing on the specified schedule. As time goes on, the profile stores both the configuration information that you supplied and the transaction and payment history for the account. When the term is complete, the profile is mature and no further automated transactions occur.

When defining the profile, you have the option to perform an initial transaction that differs from the recurring transaction, for example, to perform a no-charge transaction that validates the account information or to charge an initial fee. In addition, you can specify how to handle declined transactions.

You can perform most recurring billing tasks using either PayPal Manager or the Payflow SDK.

Recurring Billing Terms

[Table 1.1](#) describes terms you should be familiar with when using the Recurring Billing Service.

TABLE 1.1 *Recurring billing terms*

Term	Meaning
Payment	Sum that is transacted during each payment period. Payments differ from transactions. Several transactions may be required to successfully perform a payment for a payment period; for example, due to a lack of funds during the first transaction attempts. Once a transaction succeeds for a payment period, the payment is marked as successful.
Payment Period	One payment is made per payment period; for example, a \$42 payment on a monthly basis. In this example, the payment period is monthly.
Profile	Your definition of a recurring transaction for a single customer. The profile includes all information required to automatically bill the right person the right amount of money at the right time for the right period of time.
Profile ID	Twelve-character string (generated by PayPal) that uniquely identifies a recurring profile. Test profile IDs start with the characters RT and live profile IDs, with RP.
Term	Total number of payment periods over the duration of the agreement. For example, a three-year, monthly payment contract has a term of 36. Term defines the number of scheduled payment periods, not the payments actually made.
Mature Profile	Reference to a profile with a completed term (the total number of payment periods for the profile have occurred). The fact that a profile is mature does not necessarily mean that the customer has made all scheduled payments.

Overview of Recurring Billing Actions Using the Payflow SDK

The Payflow SDK supports several *actions* that enable you to manage recurring payment accounts. See [Chapter 2, “Using the SDK to Perform Recurring Tasks,”](#) for details on performing the following supported actions:

Add (ACTION=A)

Add a new recurring billing profile either by submitting the required data (credit card number or PayPal, payment amount, payment period, and so on) or by converting an existing transaction into a profile. Upon successful creation, PayPal activates the profile, performs the optional initial transaction if specified, initiates the payment cycle, and returns a Profile ID.

Modify (ACTION=M)

Modify any setting in the profile. You have the option to run an Optional Transaction.

Reactivate (ACTION=R)

Reactivate the specified inactive profile. You specify a new start date and have the option to alter any other profile parameter.

Cancel (ACTION=C)

Deactivate the recurring profile. PayPal records the cancellation date.

Inquiry (ACTION=I)

Inquire about the status of a profile and its payment and transaction history.

Payment (ACTION=P)

Perform a real-time retry on a previously failed transaction.

Overview of the Payflow Services Interface in PayPal Manager

PayPal Manager enables you to create and manage recurring billing tasks. See PayPal Manager online help for details on how to perform the following supported tasks:

- Adding a profile for a new recurring billing customer
- Managing profiles
- Configuring optional email messages
- Generating reports

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Using the SDK to Perform Recurring Tasks

NOTE: You should be familiar with the Payflow SDK to use the information presented in this chapter. See *Payflow Pro Developer's Guide* for full documentation of the SDK. The Payflow SDK operations described in this chapter are available only to merchants with the Payflow services.

This chapter describes the use of the Payflow SDK to perform recurring transactions. You have the option of performing most recurring billing tasks either from PayPal Manager or from your code using the Payflow SDK. You must, however, configure email settings using PayPal Manager, as described in PayPal Manager online help.

IMPORTANT: *You must have prior authorization from the customer to bill on a schedule. See [Appendix A, "Obtaining Consent to Bill Customers Using Recurring Billing,"](#) for additional details.*

In This Chapter

- “About Recurring Billing Profile Actions” on page 13
- “Using the Add Action” on page 14
- “Using the Modify and Reactivate Actions” on page 21
- “Using the Cancel Action” on page 26
- “Using the Inquiry Action to View Information for a Profile” on page 28
- “Using the Inquiry Action to View the Status of Payments” on page 31
- “Using the Payment Action” on page 34

About Recurring Billing Profile Actions

ACTION operations in the Payflow SDK manipulate profiles (add, modify, reactivate, cancel, and inquire about status) and submit manual retry requests for failed transactions.

Action and Parameter Definitions

Table 2.1 shows how ACTION values are defined in this document.

TABLE 2.1 Action value definitions

ACTION	Value	Description
Add	A	Create a new profile. See “ Using the Add Action ” on page 13.

TABLE 2.1 Action value definitions

ACTION	Value	Description
Modify	M	Make changes to an existing profile. If the profile is currently inactive, then the Modify action reactivates it. See “Using the Modify and Reactivate Actions” on page 19.
Reactivate	R	Reactivate an inactive profile. See “Using the Modify and Reactivate Actions” on page 19.
Cancel	C	Deactivate an existing profile. See “Using the Cancel Action” on page 25.
Inquiry	I	Each customer’s profile stores both the configuration information that you supplied with the Add or Modify action and the transaction and payment history for the customer’s account. The Inquiry action enables you to view either of the following sets of data about a customer: <ul style="list-style-type: none"> • Status of a customer’s profile (described on page 26) • Details of each payment for a profile (described on page 30)
Payment	P	Retry a previously failed payment. See “Using the Payment Action” on page 32.

Using the Add Action

You can Add (ACTION=A) a new recurring profile either by submitting the data that defines the profile or by converting an existing transaction into a profile.

Upon successful creation of a profile, PayPal activates the profile, performs the Optional Transaction if specified, initiates the payment cycle, and returns a Profile ID. Upon failure, PayPal does not generate the profile and returns an error message.

NOTE: If you change your processor information after you have created a profile, you must create a new profile for the new processor.

Adding a New Profile

To create a new profile:

Provide all required data and specify whether to perform an Optional Transaction. The Optional Transaction is either of the following:

- A Sale transaction for an amount that you specify (typically an account start-up fee)

- An Authorization transaction to validate the customer's account information before creating the profile. No amount is passed with this option. (This transaction option is also known as zero-dollar authorization.)

The recurring profile record keeps track of the total amount collected as a result of optional Sale transactions in addition to the normal recurring transactions.

To convert an existing transaction into a profile:

Specify the PNREF of the transaction to use as a template, and optionally supply additional payment data.

IMPORTANT: *You can use only a Sale or Delayed Capture transaction as a template for a profile.*

You can specify values for the following transaction parameters in an Add action:

CITY
COMMENT1
COMPANYNAME
COUNTRY
EMAIL
FIRSTNAME
LASTNAME
MIDDLENAME
NAME
PHONENUM
SHIPTOFIRSTNAME
SHIPTOMIDDLENAME
SHIPTOLASTNAME
SHIPTOSTREET
SHIPTOCITY
SHIPTOCOUNTRY
SHIPTOSTATE
SHIPTOZIP
STREET
ZIP

NOTE: Values of processor-specific parameters are forwarded and stored, but do not appear in reports.

Example Add Actions

Adding a New Profile for a Credit Card Account

The following example Payflow parameter string creates a recurring billing profile that bills a credit card account. Parameters are described in [“Required Parameters for the Add Action” on page 15](#) and [“Optional Parameters for the Add Action” on page 17](#).

```
"TRXTYPE=R&TENDER=C&PARTNER=PayPal&VENDOR=Acme&USER=Acme&PWD=a1b2c3d4&ACTION=A&PROFILENAME=RegularSubscription&AMT=42.00&ACCT=401288888881881&EXPDATE=0203&START=12012008&PAYPERIOD=WEEK&TERM=12&OPTIONALTRX=S&OPTIONALTRXAMT=2.00&COMMENT1=First-time customer"
```

Adding a New Profile for a PayPal Account

The following example Payflow parameter string creates a recurring billing profile that bills a PayPal account. Parameters are described in [“Required Parameters for the Add Action” on page 15](#) and [“Optional Parameters for the Add Action” on page 17](#).

```
"TRXTYPE=R&TENDER=P&PARTNER=PayPal&USER=Acme&PWD=test1234&ACTION=A&PROFILENAME=RegularSubscription&AMT=4.46&BAID=B-29X12812Y7908851G&START=09252009&PAYPERIOD=WEEK&TERM=12&OPTIONALTRX=A&MAXFAILLPAYMENTS=1&RETRYNUMDAYS=1&CURRENCY=USD"
```

Converting an Existing Transaction Into a Profile

The following example Payflow parameter string creates a profile for an original transaction that had a PNREF value of xyz123 and specifies a payment amount of \$42. You must set the ORIGID value to the original transaction’s PNREF value. Parameters are described in [“Required Parameters for the Add Action” on page 15](#) and [“Optional Parameters for the Add Action” on page 17](#).

```
"TRXTYPE=R&TENDER=C&PARTNER=PayPal&VENDOR=Acme&USER=Acme&PWD=a1b2c3d4&ACTION=A&PROFILENAME=RegularSubscription&ORIGID=XYZ123&START=12012002&PAYPERIOD=WEEK&TERM=12&OPTIONALTRX=S&OPTIONALTRXAMT=2.00&COMMENT1=First-time customer&AMT=42.00"
```

Example Response for the Add Action

The following is an example response for the Add Action. Returned values are described in [“Response Values for the Add Action” on page 18](#).

```
RESULT=0&RPREF=RWY504915344&PROFILEID=RP000000001234&RESPMSG=Approved&TRXSULT=0&TRXPREF=VWYA04915345&TRXRESPMSG=Approved&AUTHCODE=489PNI
```

Required Parameters for the Add Action

The following are required parameters for the Add action:

TABLE 2.2 Required recurring profile parameters for the Add action

Parameter	Description	Usage (Length)
TRXTYPE	Specifies a recurring profile request.	Must be “R”
TENDER	Tender type. Is one of the following values: <ul style="list-style-type: none"> • C = Credit card • P = PayPal • A = Automated Clearinghouse 	Must be “C”, “P”, or “A” (1)

TABLE 2.2 Required recurring profile parameters for the Add action (Continued)

Parameter	Description	Usage (Length)
ACTION	Specifies Add, Modify, Cancel, Reactivate, Inquiry, or Payment.	Must be “A” (1)
PROFILENAME	Name for the profile (user-specified). Can be used to search for a profile.	Non-unique identifying text name Alpha-numeric(128)
ACCT	Required when TENDER=C or TENDER=A. Can be used to search for a profile. NOTE: For a credit card profile, be sure to use a valid credit card number. If necessary, perform an Authorization with a zero-dollar amount to verify the credit card.	Alphaumeric (19)
BAID	Is the billing agreement ID returned in the Do Express Checkout Payment or Create Customer Billing Agreement response. See <i>Express Checkout for Payflow Pro</i> for details on obtaining and updating BAIDs. NOTE: Either a BAID or ORIGID (PNREF) returned from the original transaction used to create a new profile is required when TENDER=P.	Alphaumeric (19)
ORIGID	Is the PNREF value (length=12) returned from the original transaction used to create a new profile. NOTE: Either a BAID or ORIGID is required to create a new profile when TENDER=P.	Alphaumeric (19)
AMT	Dollar amount (US dollars) to be billed. Specify the exact amount to the cent using a decimal point—use 34.00, not 34. Do not include comma separators—use 1199.95 not 1,199.95.	Numeric (10 with decimal point)
START	Beginning date for the recurring billing cycle used to calculate when payments should be made. Use tomorrow’s date or a date in the future. Format: MMDDYYYY	Numeric (8)
TERM	Number of payments to be made over the life of the agreement. A value of 0 means that payments should continue until the profile is deactivated.	Numeric

TABLE 2.2 Required recurring profile parameters for the Add action (Continued)

Parameter	Description	Usage (Length)
PAYPERIOD	<p>Specifies how often the payment occurs:</p> <ul style="list-style-type: none"> • WEEK: Weekly - Every week on the same day of the week as the first payment. • BIWK: Every Two Weeks - Every other week on the same day of the week as the first payment. • SMMO: Twice Every Month - The 1st and 15th of the month. Results in 24 payments per year. SMMO can start on 1st to 15th of the month, second payment 15 days later or on the last day of the month. • FRWK: Every Four Weeks - Every 28 days from the previous payment date beginning with the first payment date. Results in 13 payments per year. • MONT: Monthly - Every month on the same date as the first payment. Results in 12 payments per year. • QTER: Quarterly - Every three months on the same date as the first payment. • SMYR: Twice Every Year - Every six months on the same date as the first payment. • YEAR: Yearly - Every 12 months on the same date as the first payment. 	Must be a value shown here, including all uppercase letters (4)

Optional Parameters for the Add Action

TABLE 2.3 *Optional recurring profile parameters for Add action*

Parameter	Description	Usage (Length)
ORIGID	PNREF value (length=12) of the original transaction used to create a new profile. NOTE: ORIGID is optional when TENDER=C or TENDER=A.	Alphaumeric (19)
MAXFAILPAYMENTS	The number of payment periods (as specified by PAYPERIOD) for which the transaction is allowed to fail before PayPal cancels a profile. These periods need not be consecutive (for example, if payments fail in January, March, and June, the profile is cancelled). For example, if you specify 3, then PayPal allows a maximum of three failed payment periods (possibly with multiple retries during each payment period, and possibly non-consecutive periods). If the transaction is not approved for any three periods (months in the example), then PayPal deactivates the profile. IMPORTANT: If you do not specify a value, the default value of 0 (zero) specifies no limit. Retry attempts occur until the term is complete.	Numeric Default = 0
RETRYNUMDAYS	The number of consecutive days that PayPal should attempt to process a failed transaction until Approved status is received.	Numeric
EMAIL	Customer email address. This value is used when sending email receipts to customers.	Alphanumeric (120)
DESC	Optional description of the goods or services being purchased. This parameter applies only for ACH_CCD accounts.	Alphanumeric (80)
COMPANYNAME	Company name associated with this profile.	Alphanumeric (64)
OPTIONALTRX	Defines an optional Authorization for validating the account information or for charging an initial fee. If this transaction fails, then the profile is not generated. The values are: <ul style="list-style-type: none"> • A: an optional Authorization transaction to verify the account. It applies to credit card transactions only. • S: a Sale transaction for an initial fee specified by OPTIONALTRXAMT. 	Alphanumeric (1)

TABLE 2.3 Optional recurring profile parameters for Add action (Continued)

Parameter	Description	Usage (Length)
OPTIONALTRXAMT	Amount of the Optional Transaction. Required only when OPTIONALTRX=S. NOTE: Do not specify an amount when OPTIONALTRX=A. The amount will be ignored.	
STREET	Billing street.	Alphanumeric (150)
ZIP	Billing postal code.	Alphanumeric (10)

Response Values for the Add Action

Response values are defined in detail in the *Payflow Pro Developer's Guide*.

TABLE 2.4 Response values for Add action

Field	Description
RESULT	Result value for the action.
PROFILEID	If RESULT = 0, then this value is the Profile ID. Profile IDs for test profiles start with the characters RT. Profile IDs for live profiles start with RP.
RESPMSG	Optional response message.
RPREF	Reference number to this particular action request.

Returned Values if You Specify an Optional Transaction

Table 2.5 lists values that are included in the response if the transaction involved an optional transaction. Other payment-related fields could also be returned, depending on your configuration (for example, verbosity level).

TABLE 2.5 Response fields returned if OPTIONALTRX is used

Field	Description
TRXPNREF	PNREF of the optional transaction.
TRXRESULT	RESULT of the optional transaction.
TRXRESPMSG	RESPMSG of the optional transaction.

Using the Modify and Reactivate Actions

You can Modify (ACTION=M) any profile value by sending any subset of the profile parameters. If the profile is currently inactive (because you deactivated it), then the Modify action reactivates it.

NOTE: The Modify action cannot reactivate a profile that PayPal canceled.

The Modify action is useful, for example, when an inactive customer wishes to restart payments using a new valid credit card. The Modify action changes a profile's STATUS to active but does not change the START date. To change the START date, use the Reactivate command. Profile STATUS is described in [Table 2.13](#).

You can Reactivate (ACTION=R) a profile with inactive STATUS. (Profiles can be deactivated for the following reasons: the term has completed, the profile reached maximum allowable payment failures, or you canceled the profile.) You have the option to alter any profile parameter, including an Optional Transaction, and you must specify a new start date.

NOTE: Values of processor-specific parameters are forwarded and stored, but do not appear in reports.

Example Modify Action

The following example Payflow parameter string uses the Modify (ACTION=M) action to change the amount of payment to \$42.00 (AMT=42.00) for profile ID number RP0000001234.

```
"TRXTYPE=R&TENDER=C&PARTNER=PayPal&VENDOR=Acme&USER=Acme&PWD=a1b2c3d4&ACTION=M&AMT=42.00&ORIGPROFILEID=RP0000001234"
```

Parameters are described in [“Required Parameters for the Modify and Reactivate Actions” on page 21](#).

Example Reactivate Action

IMPORTANT: *Payments missed while a profile is inactive are not re-tried if you reactivate the profile after the missed payment periods have passed. To submit the missed payment transactions, you must reactivate the profile and increase the value of either TERM or MAXFAILPAYMENTS. Alternatively, perform a manual payment using PayPal Manager – the profile is activated as a side effect of the manual payment.*

The following example Payflow parameter string performs a Reactivate action. Parameters are described in [“Required Parameters for the Modify and Reactivate Actions” on page 21](#).

```
"TRXTYPE=R&TENDER=C&PARTNER=PayPal&VENDOR=Acme&USER=Acme&PWD=a1b2c3d4&ACTION=R&ACCT=4012888888881881&START="
```

Example Response to a Modify or Reactivate Action

The following is an example response to a Modify or Reactivate action. Returned values are described in [“Returned Values for the Modify or Reactivate Actions”](#) on page 25.

```
RESULT=0&RPREF=RWY504915344&PROFILEID=RP000000001234&RESPMSG=Approved&TRXRESULT=0&TRXPNREF=VWYA04915345&TRXRESPMSG=Approved&AUTHCODE=489PNI
```

Required Parameters for the Modify and Reactivate Actions

TABLE 2.6 Required recurring profile fields for Modify and Reactivate actions

Parameter	Description	Usage (Length)
TRXTYPE	Specifies a recurring profile request.	Must be “R” (1)
ACTION	Specifies Action type: Modify (M) or Reactivate (R).	Must be “M” or “R” (1)
ORIGPROFILEID	Required for Modify action. Profile ID of the profile that gets the action. Profile IDs for test profiles start with RT. Profile IDs for live profiles start with RP.	

Optional Parameters for the Modify and Reactivate Actions

The following parameters do not need to be changed or added for a Modify or Reactivate action.

TABLE 2.7 Optional recurring profile fields for Modify and Reactivate actions

Parameter	Description	Usage (Length)
PROFILENAME	Name for the profile (you specify the name). Can be used to search for a profile.	Non-unique identifying text name Alphanumeric (128)
ACCT	Can be used to search for a profile.	Numeric (19)
CURRENCY	One of the following three-character currency codes listed in the your Payflow Developer’s Guide. NOTE: CURRENCY is applicable only to processors that support transaction-level currency.	Numeric (3)

TABLE 2.7 *Optional recurring profile fields for Modify and Reactivate*

Parameter	Description	Usage (Length)
ORIGPROFILEID	Required for Modify action. Profile ID of the profile that gets the action. Profile IDs for test profiles start with RT. Profile IDs for live profiles start with RP.	
AMT	Dollar amount to be billed. Can be used to search for a profile. Specify the exact amount to the cent using a decimal point – use 34.00, not 34. Do not include comma separators – use 1199.95 not 1,199.95.	Numeric (10 with decimal point)
START	Beginning (or restarting) date for the recurring billing cycle used to calculate when payments should be made. Use tomorrow's date or a date in the future. Format: MMDDYYYY For ACTION=Modify, this is used to speed up or delay only the next payment date. If a new PAYPERIOD is specified, then this is also the time that the next payment is made.	Numeric (8)
TERM	Number of payments to be made over the life of the agreement. A value of 0 means that payments should continue until the profile is deactivated.	Numeric

TABLE 2.7 Optional recurring profile fields for Modify and Reactivate

Parameter	Description	Usage (Length)
PAYPERIOD	<p>Specifies how often the payment occurs.</p> <p>Note: For ACTION=Modify, if START is not specified, then the next payment is calculated based on last payment date.</p> <p>All PAYPERIOD values must use capital letters, as shown here.</p> <ul style="list-style-type: none"> • WEEK: Weekly - Every week on the same day of the week as the first payment. • BIWK: Every Two Weeks - Every other week on the same day of the week as the first payment. • SMMO: Twice Every Month - The 1st and 15th of the month. Results in 24 payments per year. SMMO can start on 1st to 15th of the month, second payment 15 days later or on the last day of the month. • FRWK: Every Four Weeks - Every 28 days from the previous payment date beginning with the first payment date. Results in 13 payments per year. • MONT: Monthly - Every month on the same date as the first payment. Results in 12 payments per year. • QTER: Quarterly - Every three months on the same date as the first payment. • SMYR: Twice Every Year - Every six months on the same date as the first payment. • YEAR: Yearly - Every 12 months on the same date as the first payment. 	<p>Must be a value shown here, including all uppercase letters (4)</p>
MAXFAILPAYMENTS	<p>The number of payment periods (as specified by PAYPERIOD) for which the transaction is allowed to fail before PayPal cancels a profile. These periods need not be consecutive (for example, if payments fail in January, March, and June, the profile is cancelled).</p> <p>For example, if you specify 3, then PayPal allows a maximum of three failed payment periods (possibly with multiple retries during each payment period, and possibly non-consecutive periods). If the transaction is not approved for any three periods (months in the example), then PayPal deactivates the profile.</p> <p>IMPORTANT: Even though this parameter is optional, if you do not specify a value, the default value of 0 (zero) specifies that retry attempts should occur until the term is complete.</p>	<p>Numeric Default = 0</p>

TABLE 2.7 Optional recurring profile fields for Modify and Reactivate

Parameter	Description	Usage (Length)
EMAIL	Customer email address. This value is used when sending email receipts to customers. The presence of email address is the indicator that an email should be sent. IMPORTANT: You must specify additional text for the message using PayPal Manager. For details, see PayPal Manager online help.	Alphanumeric (120)
COMPANYNAME	Company name associated with this profile.	Alphanumeric (64)
OPTIONALTRX	Defines an optional Authorization for validating the account information or for charging an initial fee. If this transaction fails, then the profile is not generated. The values are: <ul style="list-style-type: none"> • A: an optional Authorization transaction to verify the account. It applies to credit card transactions only. • S: a Sale transaction for an initial fee specified by OPTIONALTRXAMT. 	Alphanumeric (1)
OPTIONALTRXAMT	Amount of the Optional Transaction. Required only when OPTIONALTRX=S. NOTE: Do not specify an amount when OPTIONALTRX=A. The amount will be ignored.	
STREET	Billing address.	Alphanumeric (150)
ZIP	Billing zip code.	Alphanumeric (10)

Returned Values for the Modify or Reactivate Actions

TABLE 2.8 *Response values for Modify and Reactivate actions*

Field	Description
RESULT	Result value for the action.
PROFILEID	The Profile ID of the original profile. Profile IDs for test profiles start with the characters RT. Profile IDs for live profiles start with RP.
RESPMSG	Optional response message.
RPREF	Reference number to this particular action request.

Returned Values if You Specify an Optional Transaction

Table 2.9 lists values that are included in the response if the transaction involved an Optional transaction. Other payment-related fields could also be returned, depending on your configuration (for example, verbosity level).

TABLE 2.9 *Response fields returned for Modify and Reactivate actions if OPTIONALTRX is used*

Field	Description
TRXPNREF	PNREF of the optional transaction.
TRXRESULT	RESULT of the optional transaction.
TRXRESPMSG	RESPMSG of the optional transaction.

Using the Cancel Action

You can Cancel (ACTION=C) the recurring profile to deactivate the profile from performing further transactions. The profile is marked as cancelled and the customer is no longer billed. PayPal records the cancellation date.

All parameters other than those listed in the example are ignored, and no profile settings are changed when you submit a Cancel action.

NOTE: If desired, you can use the Reactivate action to reactivate the profile.

Example Cancel Action

The following example Payflow parameter string performs a Cancel action. Parameters are described in “Required Parameters for the Cancel Action” on page 26.

```
"TRXTYPE=R&TENDER=C&PARTNER=PayPal&VENDOR=Acme&USER=Acme&PWD=a1b2c3d4&ACTION=C&ORIGPROFILEID=RP000000001234"
```

Example Response to the Cancel Action

Returned values are described in [“Returned Values for the Cancel Action”](#) on page 26.

RESULT=0&RPREF=RWY504915344&PROFILEID=RP000000001234&RESPMSG=Approved&TRXRESULT=0&TRXPREF=VWYA04915345&TRXRESPMSG=Approved&AUTHCODE=489PNI

Required Parameters for the Cancel Action

TABLE 2.10 Parameters required by the Cancel action

Parameter	Description	Usage (Length)
TRXTYPE	Specifies a recurring profile request.	Must be “R” (1)
ACTION	Specifies action to take.	Must be “C” (1)
ORIGPROFILEID	Profile ID of the profile to cancel. Profile IDs for test profiles start with RT. Profile IDs for live profiles start with RP.	

Returned Values for the Cancel Action

TABLE 2.11 Response values for a Cancel action

Field	Description
RESULT	Result value for the action.
PROFILEID	The Profile ID of the original profile. Profile IDs for test profiles start with the characters RT. Profile IDs for live profiles start with RP.
RESPMSG	Optional response message.
RPREF	Reference number to this particular action request.

Using the Inquiry Action to View Information for a Profile

You can use the Inquiry action to request two different sets of information for a profile:

- To view the full set of payment information (that is, the recurring and optional transaction details), you submit two separate Inquiry actions (see [“Using the Inquiry Action to View the Status of Payments”](#) on page 30):
 - To view the recurring transaction details, pass the PAYMENTHISTORY=Y name-value pair with the Inquiry action.

- To view the optional transaction details, pass the PAYMENTHISTORY=O name-value pair with the Inquiry action.
- To view the status of a customer's profile, submit an Inquiry action that does not include the PAYMENTHISTORY parameter (alternatively, submit PAYMENTHISTORY=N, the default value). This use is described in this section.

Using the Inquiry Action to View the Status of the Profile

Example Profile Status Inquiry Action

The following example Payflow parameter string performs a profile status Inquiry action. Parameters are described in [“Required Parameters for the Profile Status Inquiry Action”](#) on page 27.

```
"TRXTYPE=R&TENDER=C&PARTNER=PayPal&VENDOR=Acme&USER=Acme&PWD=a1b2c3d4&ACTION=I&ORIGPROFILEID=RP000000001234"
```

Example Response to a Profile Status Inquiry Action

The following is an example response to a profile status Inquiry action. Returned values are described in [“Response Values for the Profile Status Inquiry Action”](#) on page 27.

NOTE: Transactions sent after the buyer's account has expired return the expiration date or 0000 and will fail.

```
RESULT=0&RPREF=RJL500026884&PROFILEID=RP0000000001&STATUS=ACTIVE&PROFILENAME=test&START=01012005&TERM=12&NEXTPAYMENT=01012005&END=03192005&PAYPERIOD=WEEK&AMT=1.00&ACCT=4012XXXXXXXX1881&EXPDATE=0203&PAYMENTSLEFT=12&AGGREGATEAMT=0.00&AGGREGATEOPTIONALAMT=0.00&MAXFAILPAYMENTS=0&NUMFAILPAYMENTS=0&RETRYNUMDAYS=0
```

Required Parameters for the Profile Status Inquiry Action

TABLE 2.12 Required parameters for the Inquiry action

Parameter	Description	Usage (Length)
TRXTYPE	Specifies a recurring profile request.	Must be “R” (1)
ACTION	Specifies action to take.	Must be “I” (1)
ORIGPROFILEID	Profile ID of the profile to inquire about. Profile IDs for test profiles start with RT. Profile IDs for live profiles start with RP.	

Response Values for the Profile Status Inquiry Action

An Inquiry action for profile status can return any of the values listed in [Table 2.13](#). Inquiries echo only those name-value pairs sent to the recurring billing server. For example, if, while adding or modifying a profile, you do not assign a value to PHONENUM, inquiries about the profile do not return a value for PHONENUM.

NOTE: See *Payflow Pro Developer’s Guide* for a list of optional parameters that you can pass for reporting purposes.

TABLE 2.13 Response fields for Inquiry actions

Field	Description
RESULT	Result value of the profile request. This value represents the success or failure of the Inquiry transaction, not of the financial transaction.
PROFILEID	Request profile reference number. Profile IDs for test profiles start with the characters RT. Profile IDs for live profiles start with RP.
PROFILENAME	Name of the profile.
RESPMSG	Response message if result value is non-zero.
START	Date of beginning recurring billing cycle.
TERM	Total number of payments.
PAYPERIOD	Period of payment recurrence (weekly, monthly, and so on).
STATUS	Current status of the profile. One of the following: <ul style="list-style-type: none"> • VENDOR INACTIVE • DEACTIVATED BY MERCHANT • EXPIRED (if profile is expired, only limited profile data is returned) • TOO MANY FAILURES: PayPal cancelled the profile because it has too many failed transactions (for example, as would result with a bad credit card). • ACTIVE

TABLE 2.13 Response fields for Inquiry actions (Continued)

Field	Description
TENDER	Tender Type.
PAYMENTSLEFT	Number of payments left to be billed. NOTE: This value decreases by 1 after each payment period, regardless whether the payment failed or succeeded. To ensure that you receive funds for each payment period, you must monitor payments and follow up on any failed payments.
NEXTPAYMENT	Date that the next payment is due.
END	Date that the last payment is due. Present only if this is not an unlimited-term subscription.
AGGREGATEAMT	Amount collected so far for scheduled payments.
AGGREGATEOPTIONALAMT	Amount collected through sending optional transactions.
AMT	Base dollar amount to be billed.
MAXFAILPAYMENTS	The number of payment periods (specified by PAYPERIOD) for which the transaction is allowed to fail before PayPal cancels a profile. See RETRYNUMDAYS.
NUMFAILPAYMENTS	Number of payments that failed.
RETRYNUMDAYS	The number of consecutive days that PayPal should attempt to process a failed transaction until Approved status is received.
EMAIL	Customer email address email receipts (described in PayPal Manager online help).
COMPANYNAME	Recurring Profile Company Name.
NAME	Name of account holder.
FIRSTNAME	First name of card holder.
MIDDLENAME	Middle name of card holder.
LASTNAME	Last name of card holder.
STREET	Billing street.
CITY	Billing city.
STATE	Billing state.
ZIP	Billing postal code.
COUNTRY	Billing country.
PHONENUM	Telephone number.
SHIPTOFIRSTNAME	First name of the ship-to person.
SHIPTOMIDDLENAME	Middle name of the ship-to person.

TABLE 2.13 Response fields for Inquiry actions (Continued)

Field	Description
SHIPTOLASTNAME	Last name of the ship-to person.
SHIPTOSTREET	Shipping street.
SHIPTOCITY	Shipping city.
SHIPTOSTATE	Shipping state.
SHIPTOZIP	Shipping postal code.
SHIPTOCOUNTRY	Shipping country.

Using the Inquiry Action to View the Status of Payments

To view the full set of payment information (that is, the recurring and optional transaction details), you submit two separate Inquiry actions:

- To view the recurring transaction details, pass the PAYMENTHISTORY=Y name-value pair with the Inquiry action.
- To view the optional transaction details, pass the PAYMENTHISTORY=O name-value pair with the Inquiry action.

Using the Inquiry Action to view Recurring Transaction Details

Example Status for a Recurring Transaction Details Inquiry Action

The following example Payflow parameter string performs a recurring transaction details Inquiry action. Inquiry action parameters are described in [“Required Parameters for the Status of Payments Inquiry Action”](#) on page 31.

```
"TRXTYPE=R&PARTNER=PayPal&VENDOR=Acme&USER=Acme&PWD=a1b2c3d4&ACTION=I&PAYMENTHISTORY=Y&ORIGPROFILEID=RT0000001234"
```

Example Results for a Recurring Transaction Details Inquiry Action

The following is an example response to a recurring transaction details Inquiry action. The data includes only the final payment attempt for each payment period. The characters P_ are prepended to parameter names to indicate that they represent historical payment data. The number appended to parameter names is the payment number.

Returned values are described in [“Required Parameters for the Status of Payments Inquiry Action”](#) on page 31.

Using the SDK to Perform Recurring Tasks

Using the Inquiry Action to View the Status of Payments

```
RESULT=0&RPREF=RKM500141021&PROFILEID=RT0000000100&P_PNREF1=VWYA06156256&P_
TRANSTIME1=21-May-04 04:47
PM&P_RESULT1=0&P_TENDER1=C&P_AMT1=1.00&P_TRANSTATE1=8&P_PNREF2=VWYA06156269
&P_TRANSTIME2=27-May-04 01:19
PM&P_RESULT2=0&P_TENDER2=C&P_AMT2=1.00&P_TRANSTATE2=8&P_PNREF3=VWYA06157650
&P_TRANSTIME3=03-Jun-04 04:47
PM&P_RESULT3=0&P_TENDER3=C&P_AMT3=1.00&P_TRANSTATE3=8&P_PNREF4=VWYA06157668
&P_TRANSTIME4=10-Jun-04 04:47
PM&P_RESULT4=0&P_TENDER4=C&P_AMT4=1.00&P_TRANSTATE4=8&P_PNREF5=VWYA06158795
&P_TRANSTIME5=17-Jun-04 04:47
PM&P_RESULT5=0&P_TENDER5=C&P_AMT5=1.00&P_TRANSTATE5=8&P_PNREF6=VJLA00000060
&P_TRANSTIME6=05-Aug-04 05:54
PM&P_RESULT6=0&P_TENDER6=C&P_AMT6=1.00&P_TRANSTATE6=1
```

Using the Inquiry Action to View Optional Transaction Details

Example Status for an Optional Transaction Details Inquiry Action

The following example Payflow parameter string performs an optional transaction details Inquiry action. Inquiry action parameters are described in [“Required Parameters for the Status of Payments Inquiry Action”](#) on page 31.

```
"TRXTYPE=R&PARTNER=PayPal&USER=Acme&PWD=a1b2c3d5&ACTION=I&PAYMENTHISTORY=O&
ORIGPROFILEID=RP0000000176"
```

Example Results for an Optional Transaction Details Inquiry Action

The following is an example response to an optional transaction details Inquiry action. The data includes only the final payment attempt for each payment period. The characters P_ are prepended to parameter names to indicate that they represent historical payment data. The number appended to parameter names is the payment number.

Returned values are described in [“Required Parameters for the Status of Payments Inquiry Action”](#) on page 31.

```
RESULT=0&RPREF=RFH50DCFC123&PROFILEID=RP0000000176&P_PNREF3=VFHA0DC47259&P_
TRANSTIME3=11-May-09 12:16
PM&P_RESULT3=0&P_TENDER3=C&P_AMT3=1.97&P_TRANSTATE3=8&P_PNREF2=VFHA0DC47256
&P_TRANSTIME2=11-May-09 12:14
PM&P_RESULT2=0&P_TENDER2=C&P_AMT2=1.97&P_TRANSTATE2=8&P_PNREF1=VFHA0DC4724E
&P_TRANSTIME1=11-May-09 12:00
PM&P_RESULT1=0&P_TENDER1=C&P_AMT1=10.97&P_TRANSTATE1=8
```


Required Parameters for the Status of Payments Inquiry Action

TABLE 2.14 Required parameters for the Inquiry action

Parameter	Description	Usage (Length)
PAYMENTHISTORY	Recurring transaction details are returned when the value is Y. Optional transaction details, if any, are returned when the value is O.	Must be Y or O (1)
TRXTYPE	Specifies a recurring profile request.	Must be R (1)
ACTION	Specifies action to take.	Must be I (1)
ORIGPROFILEID	Profile ID of the profile to inquire about. Profile IDs for test profiles start with RT. Profile IDs for live profiles start with RP.	

Return Values for a Status of Payments Inquiry Action

The return parameter names have the format P_<parameter_name>n, where the index n reflects the payment number, starting at 1. The values listed in [Table 2.15](#) are returned for each payment:

TABLE 2.15 Return parameters for a Status of Payments Inquiry Action

Field	Description
P_RESULTn	Result value of the financial transaction. Note: Only the final result for each payment is returned, so payments that eventually succeed after being retried are returned with RESULT=0.
P_PNREFn	PNREF of the particular payment. The Payment Network Reference ID value (PNREF) is a unique transaction identification number issued by PayPal that identifies the transaction for billing, reporting, and transaction data purposes. The PNREF value appears in the Transaction ID column in PayPal Manager reports.
P_TRANSTATEn	TRANS_STATE of the particular payment. <ul style="list-style-type: none"> • 1: error • 6: settlement pending • 7: settlement in progress • 8: settlement completed/successfully • 11: settlement failed • 14: settlement incomplete
P_TENDERn	Tender type.

TABLE 2.15 Return parameters for a Status of Payments Inquiry Action (Continued)

Field	Description
P_TRANSTIME _n	The timestamp for the transaction in the dd-mmm-yy hh:mm AM/PM format, for example, 17-Jun-04 04:47 PM.
P_AMT _n	Amount in US dollars that was billed.

Using the Payment Action

The Payment action (ACTION=P) performs a real-time retry on a transaction that is in the retry state. The response string is similar to the string for Optional transactions, except that, upon approval, the profile is updated to reflect the successful retry.

If the transaction being retried is part of the current payment period, a successful Payment action causes the profile to flag the current payment as successful and to advance to the next payment at the scheduled time.

If the profile had been previously cancelled due to too many failed payments, then a successful Payment action decrements the failed payment count and re-activates the profile (thus re-starting the recurring payment cycle).

Example Payment Action

The following example Payflow parameter string performs a Payment action. Parameters are described in [“Required Parameters for the Payment Action” on page 33](#).

```
"TRXTYPE=R&TENDER=C&PARTNER=PayPal&VENDOR=Acme&USER=Acme&PWD=a1b2c3d4&ACTION=P&ORIGPROFILEID=RP000000001234&AMT=85.00&PAYMENTNUM=13"
```

Example Response to the Payment Action

The following is an example response to a Payment action. Returned values are described in [“Returned Values for the Payment Action” on page 33](#).

```
RESULT=0&RPREF=RWY504915344&PROFILEID=RP000000001234&RESPMSG=Approved&TRXRESULT=0&TRXPNREF=VWYA04915345&TRXRESPMSG=Approved&AUTHCODE=489PNI
```

Required Parameters for the Payment Action

TABLE 2.16 Parameters for the Payment action

Parameter	Description	Usage (Length)
TRXTYPE	Specifies a recurring profile request.	Must be “R” (1)
ACTION	Specifies action to take.	Must be “P” (1)
ORIGPROFILEID	Profile ID of the profile of the transaction to retry. Profile IDs for test profiles start with RT. Profile IDs for live profiles start with RP.	
PAYMENTNUM	Payment number identifying the failed payment to be retried.	Numeric
AMT	If specified, overwrites the original payment amount for this payment only. This value does not modify the AMT specified in the profile. This parameter is useful for catching up on failed past payments. Not required if retrying for the original amount.	Numeric (10 with decimal point)

Returned Values for the Payment Action

[Table 2.17](#) describes the return values for a profile with no Optional transaction. [Table 2.18](#) describes the return values for a profile that includes an Optional transaction.

TABLE 2.17 Response values for a Payment action

Field	Description
RESULT	Result value for the action.
RPREF	Reference number to this particular action request.
PROFILEID	The Profile ID of the original profile. Profile IDs for test profiles start with the characters RT. Profile IDs for live profiles start with RP.
RESPMSG	Optional response message.

Returned Values if You Specify an Optional Transaction

Table 2.18 lists values that are included in the response if the transaction involved is an Optional transaction. Other payment-related fields could also be returned, depending on your configuration (for example, verbosity level).

TABLE 2.18 *Response fields returned for Modify and Reactivate actions if OPTIONALTRX is used*

Field	Description
TRXPNREF	PNREF of the optional transaction.
TRXRESULT	RESULT of the optional transaction.
TRXRESPMSG	RESPMSG of the optional transaction.

3

Testing Recurring Billing

This chapter provides the information you need to test recurring billing.

In This Chapter

- “Testing Guidelines” on page 37
- “Credit Card Numbers Used for Testing” on page 37
- “Testing Result Value Responses” on page 38

Testing Guidelines

- PayPal provides test card numbers. Other numbers produce an error.
- **Expiration Date** must be a valid date in the future (use the **mm/yy** format).
- Use PayPal Manager to view the credit card processor that you have selected for testing.

Credit Card Numbers Used for Testing

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

TABLE 3.1 *Test credit card numbers*

American Express	378282246310005
American Express	371449635398431
American Express Corporate	378734493671000
Diners Club	30569309025904
Diners Club	38520000023237
Discover	6011111111111117
Discover	6011000990139424
JCB	3530111333300000
JCB	3566002020360505
MasterCard	5555555555554444
MasterCard	5105105105105100
Visa	4111111111111111

TABLE 3.1 Test credit card numbers

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 Value Responses

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

TABLE 3.2 Results generated by the amount submitted

Amount	RESULT (RESPMSG)
\$0 – \$1000	RESULT value 0 (Approved)
\$1001 – \$2000	Certain amounts in this range will return specific PayPal results, and can be generated by adding \$1000 to that RESULT value. For example, for RESULT value 13 (Referral), submit the amount 1013. If the amount is in this range but does not correspond to a PayPal result supported by this testing mechanism, RESULT value 12 (Declined) is returned.
\$2001+	RESULT value 12 (Declined)

A

Obtaining Consent to Bill Customers Using Recurring Billing

You must obtain each customer's consent to bill them on an automated schedule.

Here is the relevant section from PayPal's Merchant Services Agreement:

Merchant shall be solely responsible for:

- Obtaining all necessary approvals required from each customer authorizing Merchant to bill such customer's credit card account. Merchant hereby represents and warrants that Merchant has the authorization to bill its customers' credit card accounts in the manner, for the amounts and for the period of time indicated by Merchant at the time Merchant enrolls with PayPal.
- Complying with all applicable bank and credit card rules with respect to recurring billing of consumers' credit cards. Merchant hereby represents and warrants that Merchant has complied with all applicable bank and credit card rules in billing its customers' credit card and in its use of PayPal Merchant Services.
- Providing accurate information regarding the credit cards to be billed, the amounts, the billing cycles, billing period and any other information requested by PayPal that is necessary to properly process such Transactions.

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