

Multicurrency Service for Chase Paymentech Solutions

Using the SCMP API

Supplement to
Credit Card Services Using the SCMP API

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the power of payment

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Recent Revisions to This Document

Release	Changes
September 2012	Separated <i>Multi-Currency Service: Chase Paymentech Solutions</i> into two documents: <ul style="list-style-type: none">■ Multicurrency Service for Chase Paymentech Solutions Using the Simple Order API■ Multicurrency Service for Chase Paymentech Solutions Using the SCMP API
January 2011	This revision contains only editorial changes and no technical updates.
February 2010	Updated the processor name: Changed “Paymentech New Hampshire” to “Chase Paymentech Solutions.”

Multicurrency Service

Introduction

The CyberSource multicurrency service obtains current, guaranteed exchange rates. This service enables you to list your product prices in your customers' local currencies on your web site. It also enables your customers to pay using their local currencies, while allowing you to do business and settle transactions in your desired currency.

On your web site, you can present your customers with guaranteed localized prices. When the transaction is approved, the customer knows the exact amount that will be charged to their account in their local currency. Additionally, you know the exact amount that you will receive in your own funding currency.

Each exchange rate has an identifier called a quote ID that guarantees the rate between two currencies for a given period of time.

Requirements

Before you can use the multicurrency service, you must have your account configured with both CyberSource and E4X.

When you sign up to use the multicurrency service, you need to provide this information:

- Funding currencies to use with your merchant ID
- Currencies for which you want to obtain exchange rate quotes

Ways to Use the Multicurrency Service

You can use the multicurrency service in two ways: Variable Price Mode and Fixed Price Mode.

Variable Price Mode

In this mode, you can use the multicurrency service to dynamically display local prices on your web site. The local prices you display will vary with the exchange rates.

These are the general steps to follow:

- Step 1** Send a request at least once per hour to CyberSource to obtain the latest exchange rate information, which you store locally.
- Step 2** When a customer uses your web site, use your stored exchange rate information to display your product prices in the customer's local currency.
- Step 3** In your authorization request, include the relevant quote ID and the total authorization amount in the funding currency.

When converting prices and calculating the total authorization amount, use the procedure ["Calculating an Amount," page 6](#).

In the authorization reply, CyberSource returns the quote ID used for the transaction, the transaction amount in both currencies, and additional exchange rate information.

Fixed Price Mode

In this mode, you can show fixed local prices on your web site and determine on your own the fixed prices of your products in the local currencies.

If you are an existing CyberSource merchant, this mode does not require you to change your existing code to use any new API request fields or services. In your authorization request, the currency that you specify is the customer's local currency and the offer amounts that you specify are in the customer's local currency.

CyberSource determines the appropriate quote ID to use. In the authorization reply, CyberSource returns the quote ID that was used, the transaction amount in both currencies, and additional exchange rate information.

Funding Currency

With the multicurrency service, your business can use more than one funding currency. When you configure your account with E4X, you specify which funding currencies you want to use. The way you specify the funding currency for a particular order depends on the mode you are using:

- Variable Price Mode: The quote ID that you send in your authorization request specifies the funding currency to use for the order.
- Fixed Price Mode: By default, CyberSource uses the funding currency configured for your CyberSource account. You can override this currency by specifying in your authorization request the funding currency that you want to use for the order.

Captures and Credits

To perform a capture or credit of an authorization that used the multicurrency service, you do not need to send any additional fields in your request. For credits, you can override the funding currency configured for your merchant ID.

The quote ID used for the capture or credit is determined by E4X based on your agreement with them. Typically a capture that occurs within five to seven days after the authorization will use the same quote ID that was used for the authorization.

In the capture reply, CyberSource returns the quote ID used for the transaction, the transaction amount in both currencies, and additional exchange rate information.

In the credit reply, CyberSource returns the amount of the credit in the customer's currency.

Requesting Services

Variable Price Mode

In Variable Price Mode, use the **ics_fxrates** service to obtain current exchange rate quotes. See "[Multicurrency Service: ics_fxrates](#)," page 11 for the API information for the service. For each quote, **ics_fxrates** returns the quote ID and additional information.

In your authorization request:

- Set **fxrates_quote_id** to the relevant quote ID.
- The offer-level **amount** must be in the customer's local currency.
- Set **total_funding_amount** to the total amount of the authorization in the funding currency.

Use the guidelines in "[Calculating an Amount](#)," page 6 when calculating the amounts.

In the authorization reply, CyberSource returns:

- The quote information in several fields that begin with **auth_fxrates_**.
- The total amount of the authorization in both currencies:
 - **auth_auth_amount** is in the customer's local currency.
 - **auth_total_funding_amount** is in your funding currency.

Calculating an Amount

To calculate the product's amount in the customer's local currency:

Step 1 Multiply the amount in the funding currency by the exchange rate.

Step 2 Round up.

Round up when converting an amount to the customer's local currency. Rounding up prevents discrepancies with E4X.

For all the supported currencies except Japanese yen, round to the second digit after the decimal point. For Japanese yen, round to the next whole number.

Example Calculating a Product's Amount

Given values for the example:

- The product's amount in the funding currency (U.S. dollars) = \$2.00.
- The exchange rate (**auth_fxrates_quote_rate**) = 0.7523 British pound per U.S. dollar.

To calculate the product's amount in British pounds:

Step 1 Multiply the amount by the exchange rate:

$$2.00 * 0.7523 = 1.5046 \text{ British pounds.}$$

Step 2 Round up:

Round 1.5046 up to 1.51 British pounds.

Calculating the Total Funding Amount

To calculate the total funding amount (**total_funding_amount**) when you have multiple offers:

Step 1 Convert each offer amount to the customer's local currency.

Step 2 Sum the amounts of all the offers to get the total amount in the customer's local currency.

Step 3 Convert the total amount in the customer's local currency to the total amount in the funding currency.

Step 4 Round down.

Convert each offer amount separately before calculating the sum of the offers. Round down when converting an amount to the funding currency. Rounding down prevents calculation discrepancies with E4X.

Example Calculating the Total Funding Amount

Given values for the example:

- **Offer0** amount in U.S. dollars = \$2.00
- **Offer1** amount in U.S. dollars = \$9.00
- The exchange rate (**auth_fxrates_quote_rate**) = 0.7523 British pound per U.S. dollar.

To calculate the total funding amount:

Step 1 Convert each offer amount to the customer's local currency:

Offer0: $2.00 * 0.7523 = 1.5046$. Round up to 1.51 British pounds.

Offer1: $9.00 * 0.7523 = 6.7707$. Round up to 6.78 British pounds.

Step 2 Sum the amounts of all the offers to get the total amount in the customer's local currency:

$$1.51 + 6.78 = 8.29 \text{ British pounds.}$$

Step 3 Convert the total amount to the funding currency:
 $8.29 / 0.7523 = 11.0195$ U.S. dollars.

Step 4 Round down to get the total funding amount:
 Round 11.0195 down to 11.01 U.S. dollars.

Fixed Price Mode

In Fixed Price Mode, your authorization request does not need to include any new request fields specific to the multicurrency service. In your authorization request:

- Set **currency** to the customer's local currency.
- The offer-level **amount** must be in the customer's local currency.

CyberSource determines the appropriate quote ID based on the funding currency associated with your CyberSource merchant ID. If you are configured with E4X to use more than one funding currency, you can use the **fxrates_funding_currency** request field to specify a different funding currency for the order.

In the authorization reply, CyberSource returns:

- The quote information in several fields that begin with **auth_fxrates_**.
- The total amount of the authorization in both currencies:
 - **auth_auth_amount** is in the customer's local currency.
 - **auth_total_funding_amount** is in your funding currency.

Captures

To capture an authorization that used the multicurrency service, you do not need to send any additional fields in your capture request. The quote ID for the capture is determined by E4X based on your agreement with them. Typically, a capture that occurs within five to seven days after the authorization will use the same quote ID that was used for the authorization.

In the capture reply, CyberSource returns:

- The quote information in several fields that begin with **bill_fxrates_**.
- The total amount of the authorization in both currencies:
 - **bill_bill_amount** is in the customer's local currency.
 - **bill_total_funding_amount** is in your funding currency.

Credits

For stand-alone credits and follow-on credits, E4X determines the appropriate quote ID based on your agreement with them. The default funding currency is the one associated with your CyberSource merchant ID. If you are configured with E4X to use more than one funding currency, you can use the **fxrates_funding_currency** request field to specify a different funding currency for the transaction.

In the credit reply, CyberSource returns the credit amount in the customer's local currency in the **credit_credit_amount** field. The reply does not include the quote ID information or the credit amount in your funding currency.

API Fields for Authorizations, Captures, and Credits



Important

When you send an authorization, capture, or credit request with multicurrency or funding data, you must include the basic fields required for every authorization, capture, or credit request. For information about these fields, see [Credit Card Services Using the SCMP API](#).

Request Fields

Table 1 Request Fields for Authorizations, Captures, and Credits

Field Name	Description	Used By (Required/Optional)	Data Type & Length
currency	The customer's local currency.	ics_auth (R) ics_bill (R) ics_credit (R)	String (5)
fxrates_funding_currency	Funding currency for the request. Overrides the funding currency that is associated with your CyberSource merchant ID. Use the ISO currency codes .	ics_auth (O) ics_credit (O)	String (5)

Table 1 Request Fields for Authorizations, Captures, and Credits (Continued)

Field Name	Description	Used By (Required/Optional)	Data Type & Length
fxrates_quote_id	Exchange rate quote identifier that was returned by the multicurrency service. See "Multicurrency Service: ics_fxrates," page 11.	ics_auth (O)	String (30)
total_funding_amount	Total amount of the authorization in the funding currency. See "Calculating an Amount," page 6 for information about calculating this amount. This field is required if fxrates_quote_id is included in the request.	ics_auth (See description)	Decimal (15)

Reply Fields

Table 2 Reply Fields for Authorizations, Captures, and Credits

Field Name	Description	Returned By	Data Type & Length
auth_auth_amount	Total amount of the authorization in the customer's local currency.	ics_auth	Decimal (15)
auth_fxrates_funding_currency	Funding currency used for the authorization.	ics_auth	String (5)
auth_fxrates_quote_exp	Expiration date and time of the exchange rate quote. The format is YYYY-MM-DDThhmmssZ. For example, 2012-08-11T224757Z is August 11, 2012 at 10:47:57 P.M. The T separates the date and the time. The Z indicates Coordinated Universal Time (UTC), which is also known as Greenwich Mean Time.	ics_auth	Date and time (20)
auth_fxrates_quote_id	Exchange rate quote identifier associated with the authorization. See "Multicurrency Service: ics_fxrates," page 11 for more information.	ics_auth	String (30)
auth_fxrates_quote_rate	Exchange rate for the quote.	ics_auth	Decimal (30)
auth_fxrates_quote_type	Type of quote. Indicates a single use or recurring usage for a subscription.	ics_auth	String (10)
auth_total_funding_amount	Total amount of the authorization in your funding currency.	ics_auth	Decimal (15)
bill_bill_amount	Total amount of the capture in the customer's local currency.	ics_bill	Decimal (15)

Table 2 Reply Fields for Authorizations, Captures, and Credits (Continued)

Field Name	Description	Returned By	Data Type & Length
bill_fxrates_funding_currency	Funding currency used for the capture.	ics_bill	String (5)
bill_fxrates_quote_exp	Expiration date and time of the exchange rate quote. The format is YYYY-MM-DDThhmmssZ. For example, 2012-08-11T224757Z is August 11, 2012 at 10:47:57 P.M. The T separates the date and the time. The Z indicates Coordinated Universal Time (UTC), which is also known as Greenwich Mean Time.	ics_bill	Date and time (20)
bill_fxrates_quote_id	Exchange rate quote identifier associated with the capture.	ics_bill	String (30)
bill_fxrates_quote_rate	Exchange rate for the quote.	ics_bill	Decimal (30)
bill_fxrates_quote_type	Type of quote. Indicates a single use or recurring usage for a subscription.	ics_bill	String (10)
bill_total_funding_amount	Total amount of the capture in your funding currency.	ics_bill	Decimal (15)

Multicurrency Service: ics_fxrates

Use the **ics_fxrates** service if you are using the Variable Price Mode. The service returns the current guaranteed exchange rates between your funding currency and other local currencies. Request the service at least once per hour to obtain the latest exchange rate information, which you store locally.

In the multicurrency service reply, CyberSource returns quote information for each currency pair. The quotes are numbered from 0 to N. For example, if the reply returns quote information for three currency pairs, the reply fields for the quote IDs will be **fxrates_quote_id0**, **fxrates_quote_id1**, and **fxrates_quote_id2**.

When a customer places an order, include the relevant quote ID in your authorization request. See "[Variable Price Mode](#)," page 6 for additional information about what to include in your authorization request.

In your request for **ics_fxrates**, do not request any other CyberSource services. There are no offer-level fields for **ics_fxrates**.

Request-Level Fields for the Multicurrency Service

Table 3 Request-Level Fields for the Multicurrency Service

Field Name	Description	Required /Optional	Data Type & Length
ics_applications	ICS services to process for the request. To request the multicurrency service, set this value to <code>ics_fxrates</code> .	Required	String (255)
merchant_id	Your CyberSource merchant ID.	Required	String (30)
merchant_ref_number	Merchant-generated order reference number or tracking number.	Required	String (50)
timeout	Number of seconds the system waits before the transaction times out.	Optional	Positive integer (3)

Reply Fields for the Multicurrency Service

Table 4 Reply Fields for the Multicurrency Service

Field Name	Description	Data Type & Length
client_lib_version	Information about the client library used to request the transaction.	String (50)
fxrates_count	Number of quotes being returned in the reply.	Integer (5)
fxrates_currency0...N	Consumer's local currency that was used for the quote.	String (5)
fxrates_funding_currency0...N	Funding currency used for the quote.	String (5)
fxrates_quote_date0...N	Date and time when quote was received. The format is YYYY-MM-DDThhmmssZ. For example, 2012-08-11T224757Z is August 11, 2012 at 10:47:57 P.M. The T separates the date and the time. The Z indicates Coordinated Universal Time (UTC), which is also known as Greenwich Mean Time.	Date and time (20)
fxrates_quote_exp0...N	Expiration date and time of the quote. The format is YYYY-MM-DDThhmmssZ. For example, 2012-08-11T224757Z is August 11, 2012 at 10:47:57 P.M. The T separates the date and the time. The Z indicates Coordinated Universal Time (UTC), which is also known as Greenwich Mean Time.	Date and time (20)
fxrates_quote_id0...N	Quote ID for the currency pair.	String (30)
fxrates_quote_rate0...N	Exchange rate between the two currencies.	Decimal (30)
fxrates_quote_type0...N	Type of quote. Indicates a single use or recurring usage for a subscription.	String (10)

Table 4 Reply Fields for the Multicurrency Service (Continued)

Field Name	Description	Data Type & Length
fxrates_rcode	One-digit code that indicates the ics_fxrates result. Possible values: <ul style="list-style-type: none"> ■ -1: An error occurred ■ 0: The request was declined ■ 1: The request was successful 	Integer (1)
fxrates_rflag	One-word description of the ics_fxrates result.	String (50)
fxrates_rmsg	Message that explains the reply flag fxrates_rflag . Do not display this message to your customer and do not use this field to write an error handler.	String (255)
ics_rcode	One-digit code that indicates whether the entire request was successful. Possible values: <ul style="list-style-type: none"> ■ -1: An error occurred ■ 0: The request was declined ■ 1: The request was successful 	Integer (1)
ics_rflag	One-word description of the result of the entire request.	String (50)
ics_rmsg	Message that explains the reply flag ics_rflag . Do not display this message to your customer and do not use this field to write an error handler.	String (255)
merchant_ref_number	Order reference or tracking number that you provided in the request.	String (50)
request_id	Identifier for the request generated by the client.	String (26)

Reply Flags for the Multicurrency Service

Table 5 Reply Flags for the Multicurrency Service

Reply Flag	Description
DINVALIDDATA	Data provided is not consistent with the request.
DMISSINGFIELD	The request is missing a required field.
ESYSTEM	System error. See the documentation for your CyberSource client for important information about how to handle system errors and retries.
ETIMEOUT	The request timed out.
SOK	The transaction was successful.