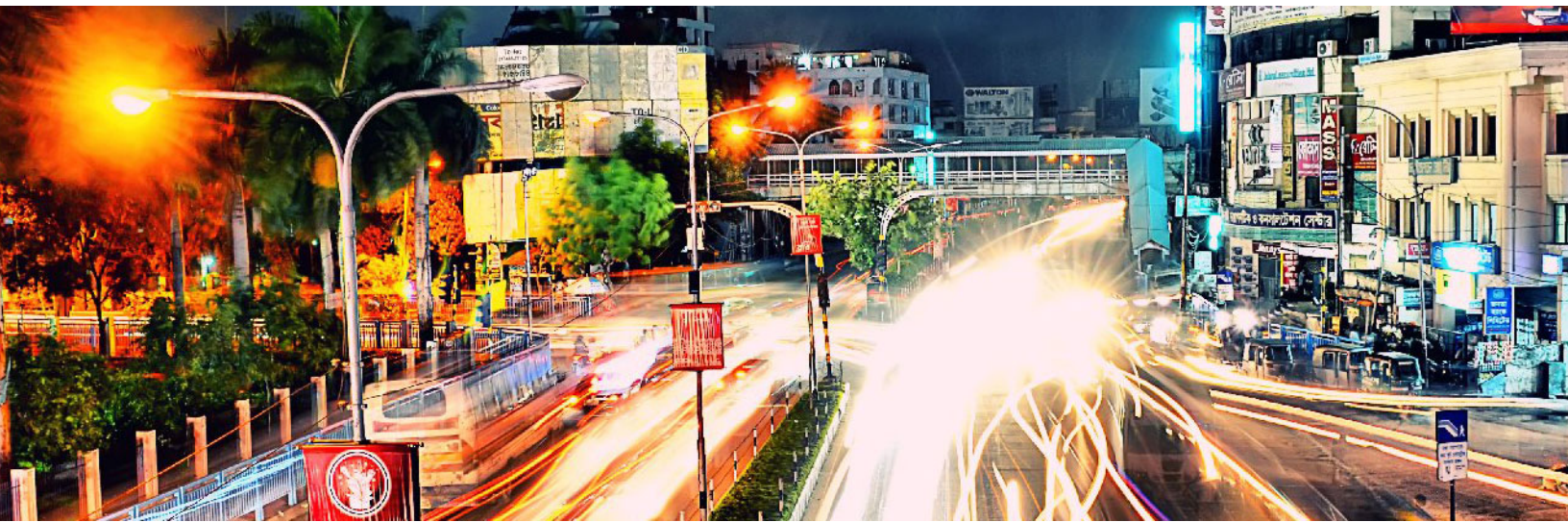# Affirm Services

Using the Simple Order API

cybersource
A Visa Solution

Cybersource Contact Information

For general information about our company, products, and services, go to http://www.cybersource.com.

For sales questions about any Cybersource service, email sales@cybersource.com or call 650-432-7350 or 888-330-2300 (toll free in the United States).

For support information about any Cybersource service, visit the Support Center: http://www.cybersource.com/support

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Contents

Recent Revisions to This Document

Release	Changes
August 2020	Added **merchantDefinedData** field examples and information to Chapter 2, Creating a Session and Appendix A, API Fields.
September 2019	Added new information about Affirm, product benefits, and going live. See Chapter 1, "Integrating with Affirm," on page 8.
August 2019	Added information about multibyte character strings. See "Working with Multibyte Character Strings," page 30.
April 2019	Initial generally available version.
December 2017	Initial beta release version.

About This Guide

Audience and Purpose

This guide is written for merchants who want to offer Affirm payments to customers.

Implementing Cybersource payment processing services requires software development skills. You must write code that uses the Cybersource API request and reply fields to integrate the services into your existing order management system.

This guide describes tasks you must complete to integrate the Cybersource services and Affirm into your existing order management system.

Conventions

Note and Important Statements

A *Note* contains helpful suggestions or references to material not contained in the document.

An *Important* statement contains information essential to successfully completing a task or learning a concept.

Text and Command Conventions

Convention	Usage
bold	Field and service names in text; for example:
	Include the **ccAuthService_run** field.
`Screen text`	■ XML elements
	■ Code examples
	■ Values for API fields; for example:
	Set the **ccAuthService_run** field to `true`.

Related Documents

■ *Getting Started with Cybersource Advanced for the Simple Order API* (PDF | HTML)—describes how to start using your Cybersource advanced account.

■ Simple Order API and SOAP Toolkit API Documentation and Downloads page.

Refer to the Support Center for complete Cybersource technical documentation:

http://www.cybersource.com/support_center/support_documentation

Customer Support

For support information about any Cybersource service, visit the Support Center:

http://www.cybersource.com/support

Integrating with Affirm

Introduction

Affirm is a real-time financing solution that you can offer to your customers.

Affirm integrates seamlessly in your existing checkout flow, enabling your customers to split their purchases into easy monthly payments. Because there are no gimmicks or hidden fees, what your customers see at checkout is exactly what they will pay, on a payment schedule of their choosing.

Benefits

Affirm optimizes financing for an offline environment, with the following benefits:

- Improved customer choice and experience
- Transparent and flexible monthly payments
- Improved customer conversion, average return on value, and revenue per visitor
- Affirm takes on all risk of fraud and default after shipment
- Affirm supports payment authorization, capture and settlement, and refunds just like a credit card

Requirements

You must obtain an account ID from Affirm and provide it to Cybersource Customer Support.

Transaction Flow

Figure 1   **Affirm Transaction Flow**
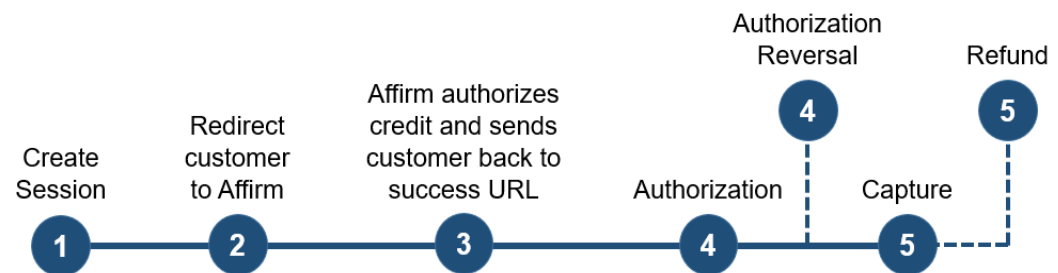
1   When the customer chooses the Affirm payment method, send the sessions service request. Cybersource returns a redirection URL to the Affirm site. See Chapter 2, "Creating a Session," on page 11.

2   Using the redirection URL, redirect the customer to the Affirm site where the customer requests credit approval.

3   Affirm authorizes credit for the customer, creates a checkout token, and sends the customer back to the success URL that you sent in the sessions service request. This URL is appended with the checkout token that you extract and use in subsequent service requests.

4   Request the authorization service and include the checkout token in the request. See Chapter 3, "Authorizing a Payment," on page 16.

   To reverse an authorization, use the authorization reversal service. See Chapter 4, "Reversing an Authorization," on page 19.

5   Request the capture service. See Chapter 5, "Capturing an Authorization," on page 22.

   To request a refund, use the refund service. See Chapter 6, "Refunding a Payment," on page 25.

Testing

For test transactions, send requests to the Cybersource test server:

   https://ics2wstesta.ic3.com/commerce/1.x/transactionProcessor

To perform a test:

Step 1 Request the sessions service to initiate a checkout.

Step 2 Redirect the client using the redirection URL returned in sessions service response.

Step 3 When you are redirected to Affirm checkout, use a valid U.S. phone number to go through the Affirm checkout.

Step 4 Enter `1234` as the PIN. (For production, the PIN is sent to the customer's phone number.)

Step 5 Upon a successful credit confirmation, the checkout token is returned by the GET method to the success URL.

Step 6 Loan declination can be simulated by clicking the `X` in the Affirm checkout flow to cancel the loan. Both cancellations and declinations are sent to the cancel URL.

Step 7 Retrieve the checkout token from the front end, and send an authorization request.

Step 8 Use the request ID from the authorization reply to send follow-on calls for authorization reversal and captures.

Step 9 Use the request ID of the capture to send a partial or full refund.

Going Live

For information about going live, see *Getting Started with Cybersource Advanced for the SCMP API* (PDF | HTML).

For information about endpoints, see the *Endpoints* document. For the Affirm services, use the Akamai endpoints.

Creating a Session

The sessions service:

■ Creates a session.

■ Responds with the redirection URL, the web page to which you redirect the customer where the customer applies for credit from Affirm.

> Affirm includes the values that you send for the item-level fields on the invoice that Affirm sends to the customer.

Include the following required fields:

■ apPaymentType—set to `AFM`.

■ apSessionsService_cancelURL—set to your web site URL that the customer is directed to after canceling the Affirm payment.

■ apSessionsService_successURL—set to your web site URL that the customer is directed to after successfully completing the Affirm payment.

■ apSessionsService_run—set to `true`.

■ billTo_city

■ billTo_country

■ billTo_email

■ billTo_firstName

■ billTo_lastName

■ billTo_phoneNumber

■ billTo_postalCode

■ billTo_state

- billTo_street1

- billTo_street2

- item_#_productName

- item_#_productSKU

- item_#_quantity

- item_#_totalAmount

- item_#_unitPrice

- merchantID

- merchantReferenceCode

- purchaseTotals_currency

- shipTo_city

- shipTo_country

- shipTo_email

- shipTo_firstName

- shipTo_lastName

- shipTo_postalCode

- shipTo_state

- shipTo_street1

- shipTo_street2

Cybersource recommends that you include the **purchaseTotals_taxAmount** field when you request the sessions service.

For descriptions of these fields, see Appendix A, "API Fields," on page 28.

XML Example

Example 1   Sessions Request

This example contains some optional fields.

```xml
<requestMessage xmlns="urn:schemas-cybersource-com:transaction-data-1.142">
    <merchantID>mid12345</merchantID>
    <merchantReferenceCode>ref1234</merchantReferenceCode>
    <billTo>
        <firstName>Jane</firstName>
        <lastName>Smith</lastName>
        <street1>123 Main Street</street1>
        <street2>#1060</street2>
        <city>Small Town</city>
        <state>CA</state>
        <country>US</country>
        <postalCode>98765</postalCode>
        <email>jsmith@example.com</email>
        <phoneNumber>19876543210</phoneNumber>
    </billTo>
    <shipTo>
        <firstName>Jane</firstName>
        <lastName>Smith</lastName>
        <street1>123 Main Street</street1>
        <street2>Apt 123</street2>
        <city>Small Town</city>
        <state>CA</state>
        <country>US</country>
        <postalCode>98765</postalCode>
        <email>jsmith@example.com</email>
        <phoneNumber>19876543210</phoneNumber>
    </shipTo>
    <purchaseTotals>
        <currency>USD</currency>
    </purchaseTotals>
    <item>
        <totalAmount>52.00</totalAmount>
        <quantity>5</quantity>
        <unitPrice>10.00</unitPrice>
        <productName>Skirt on the sky</productName>
        <productSKU>skirtonsky$bluegreen</productSKU>
    </item>
    <merchantDefinedData>
        <field1>abcdef</field1>
    </merchantDefinedData>
    <apSessionsService run="true">
        <cancelURL>http://cancel.example.com</cancelURL>
        <successURL>http://success.example.com</successURL>
    </apSessionsService>
    <apPaymentType>AFM</apPaymentType>
</requestMessage>
```

Example 2   Sessions Reply

```
<c:replyMessage xmlns:c="urn:schemas-cybersource-com:transaction-data-1.142">
    <c:merchantReferenceCode>ref1234</c:merchantReferenceCode>
    <c:requestID>5064077031526017003012</c:requestID>
    <c:requestToken>AhjnrwSTEoYvvYr63+4EwhjWjLmR29VxBptJqXDsBae08gv6D</c:requestToken>
    <c:apSessionsReply>
        <c:merchantURL>https://sandbox.affirm.com/checkout/GVFEH5P3AKUH1RRU/new/
2QCH8HLF3JBKGRT6/</c:merchantURL>
        <c:reasonCode>100</c:reasonCode>
        <c:status>COMPLETED</c:status>
        <c:responseCode>00000</c:responseCode>
        <c:amount>52.00</c:amount>
    </c:apSessionsReply>
    <c:decision>ACCEPT</c:decision>
    <c:reasonCode>100</c:reasonCode>
</c:replyMessage>
```

Name-Value Pair Example

Example 3   Sessions Request

```
merchantID=mid12345
merchantReferenceCode=ref1234
billTo_firstName=Jane
billTo_lastName=Smith
billTo_street1=123 Main Street
billTo_street2=#1060
billTo_city=Small Town
billTo_state=CA
billTo_country=US
billTo_postalCode=98765
billTo_email=jsmith@example.com
billTo_phoneNumber=19876543210
shipTo_firstName=Jane
shipTo_lastName=Smith
shipTo_street1=123 Main Street
shipTo_street2=Apt 123
shipTo_city=Small Town
shipTo_state=CA
shipTo_country=US
shipTo_postalCode=98765
shipTo_email=jsmith@example.com
shipTo_phoneNumber=19876543210
purchaseTotals_currency=USD
item_0_totalAmount=52.00
item_0_quantity=5
item_0_unitPrice=10.00
item_0_productName=Skirt on the sky
item_0_productSKU=skirtonsky$bluegreen
merchantDefinedData_field1=abcdef
ap_sessions_cancel_url=http://cancel.example.com
ap_sessions_success_url=http://success.example.com
ap_payment_type=AFM
apSessionsService_run=true
```

Example 4   Sessions Reply

```
merchantReferenceCode=ref1234
requestID=5064077031526017003012
requestToken=AhjnrwSTEoYvvYr63+4EwhjWjLmR29VxBptJqXDsBae08gv6DjJD
apSessionsReply_reasonCode=100
apSessionsReply_status=COMPLETED
apSessionsReply_responseCode=00000
apSessionsReply_merchantURL=https://sandbox.affirm.com/checkout/
GVFEH5P3AKUH1RRU/new/2QCH8HLF3JBKGRT6/
decision=ACCEPT
reasonCode=100
apSessionsReply_amount=52.00
```

Authorizing a Payment

The authorization service responds with an Affirm URL that you direct the customer to after the transaction is completed.

Include the following required fields:

- apAuthService_preapprovalToken—set to the checkout token generated by Affirm. When Affirm authorizes credit, Affirm generates the checkout token and sends it to the browser.

- apAuthService_run—set to `true`.

- apPaymentType—set to `AFM`.

- billTo_city

- billTo_country

- billTo_email

- billTo_firstName

- billTo_lastName

- billTo_phoneNumber

- billTo_postalCode

- billTo_state

- billTo_street1

- merchantID

- merchantReferenceCode

- purchaseTotals_currency

- purchaseTotals_grandTotalAmount—set to the same grand total amount that was used in the sessions request.

For descriptions of these fields, see Appendix A, "API Fields."

XML Example

Example 5   Authorization Request

```xml
<requestMessage xmlns="urn:schemas-cybersource-com:transaction-data-1.142">
    <merchantID>mid12345</merchantID>
    <merchantReferenceCode>ref1234</merchantReferenceCode>
    <billTo>
        <firstName>Jane</firstName>
        <lastName>Smith</lastName>
        <street1>123 Main Street</street1>
        <city>Small Town</city>
        <state>CA</state>
        <country>US</country>
        <postalCode>98765</postalCode>
        <email>jsmith@example.com</email>
        <phoneNumber>19876543210</phoneNumber>
    </billTo>
<purchaseTotals>
        <currency>USD</currency>
        <grandTotalAmount>52.00</grandTotalAmount>
    </purchaseTotals>
    <apAuthService run="true">
        <preapprovalToken>QVA6DL4OFY7EJM26</preapprovalToken>
    </apAuthService>
    <apPaymentType>AFM</apPaymentType>
</requestMessage>
```

Example 6   Authorization Reply

```xml
<c:replyMessage xmlns:c="urn:schemas-cybersource-com:transaction-data-1.142">
    <c:merchantReferenceCode>ref1234</c:merchantReferenceCode>
    <c:requestID>5022171547236631601541</c:requestID>
    <c:requestToken>AhjnrwSTEoYvvYr63+4EwhjWjLmR29VxBptJqXDsBae08gv6D</c:requestToken>
    <c:apAuthReply>
        <c:reasonCode>100</c:reasonCode>
        <c:status>AUTHORIZED</c:status>
        <c:responseCode>00003</c:responseCode>
        <c:processorTransactionID>A8S0G2N3V5I1ESMD</c:processorTransactionID>
        <c:amount>52.00</c:amount>
    </c:apAuthReply>
    <c:decision>ACCEPT</c:decision>
    <c:reasonCode>100</c:reasonCode>
</c:replyMessage>
```

Name-Value Pair Example

Example 7   **Authorization Request**

```
apAuthService_run=true
merchantID=mid12345
merchantReferenceCode=ref1234
billTo_firstName=Jane
billTo_lastName=Smith
billTo_street1=123 Main Street
billTo_city=Small Town
billTo_state=CA
billTo_country=US
billTo_postalCode=98765
billTo_email=jsmith@example.com
billTo_phoneNumber=19876543210
purchaseTotals_currency=USD
purchaseTotals_grandTotalAmount=52.00
apAuthService_preapprovalToken=QVA6DL4OFY7EJM26
apPaymentType=AFM
```

Example 8   **Authorization Reply**

```
merchantReferenceCode=ref1234
requestID=5022171547236631601541
requestToken=Ahjn7wSTEEChjZtBWGGFjxFSG4aMWDBinUvA+kEsNP3DSGTb
apAuthReply_reasonCode=100
apAuthReply_status=AUTHORIZED
apAuthReply_responseCode=00003
apAuthReply_amount=52.00
apAuthReply_processorTransactionID=A8S0G2N3V5I1ESMD
decision=ACCEPT
reasonCode=100
```

Reversing an Authorization

The authorization reversal service enables you to reverse the amount that was authorized.

Include the following required fields:

- apAuthReversalService_authRequestID—set to the request ID that was included in the authorization reply message.

- apAuthReversalService_run—set to `true`.

- apPaymentType—set to `AFM`.

- merchantID

- merchantReferenceCode

For descriptions of these fields, see Appendix A, "API Fields," on page 28.

XML Example

Example 9   Authorization Reversal Request

```
<requestMessage xmlns="urn:schemas-cybersource-com:transaction-data-1.142">
    <merchantID>mid12345</merchantID>
    <merchantReferenceCode>ref1234</merchantReferenceCode>
    <apAuthReversalService run="true">
        <authRequestID>5022171254726545401541</authRequestID>
    </apAuthReversalService>
    <apPaymentType>AFM</apPaymentType>
</requestMessage>
```

Example 10   Authorization Reversal Reply

```
<c:replyMessage xmlns:c="urn:schemas-cybersource-com:transaction-data-1.142">
    <c:merchantReferenceCode>ref1234</c:merchantReferenceCode>
    <c:requestID>5022171547236631601541</c:requestID>
    <c:requestToken>AhjnrwSTEoYvvYr63+4EwhjWjLmR29VxBptJqXDsBae08gv6D</c:requestToken>
    <c:apAuthReversalReply>
        <c:reasonCode>100</c:reasonCode>
        <c:status>AUTH_REVERSED</c:status>
        <c:responseCode>00007</c:responseCode>
        <c:reconciliationID>A8S0G2N3V5I1ESMD</c:reconciliationID>
    </c:apAuthReversalReply>
    <c:decision>ACCEPT</c:decision>
    <c:reasonCode>100</c:reasonCode>
</c:replyMessage>
```

Name-Value Pair Example

Example 11   Authorization Reversal Request

```
merchantID=mid12345
merchantReferenceCode=ref1234
apAuthReversalService_authRequestID=5022171254726545401541
apPaymentType=AFM
apAuthReversalService_run=true
```

Example 12   Authorization Reversal Reply

```
merchantReferenceCode=ref1234
requestID=5022171547236631601541
decision=ACCEPT
reasonCode=100
requestToken=Ahjn7wSTEEChjZtBWGGFjxFSG4aMWDBinUvA+kEsNP3DSGTb
apAuthReversalReply_status=AUTH_REVERSED
apAuthReversalReply_responseCode=00007
apAuthReversalReply_reconciliationID=A8S0G2N3V5I1ESMD
```

Capturing an Authorization

The capture service enables you to capture only the entire authorized amount. Partial and multiple captures are not supported.

Include the following required fields:

- apCaptureService_authRequestID—set to the request ID that was included in the authorization reply message.

- apCaptureService_run—set to `true`.

- apPaymentType—set to `AFM`.

- merchantID

- merchantReferenceCode

- purchaseTotals_currency

- purchaseTotals_grandTotalAmount

Cybersource recommends that you include the following optional fields when you request the capture service:
- item_#_productName
- item_#_quantity
- item_#_totalAmount
- item_#_unitPrice

For descriptions of these fields, see .

XML Example

Example 13 Capture Request

```
<requestMessage xmlns="urn:schemas-cybersource-com:transaction-data-1.142">
    <merchantID>mid12345</merchantID>
    <merchantReferenceCode>ref1234</merchantReferenceCode>
    <purchaseTotals>
        <currency>USD</currency>
        <grandTotalAmount>52.00</grandTotalAmount>
    </purchaseTotals>
    <apCaptureService run="true">
        <authRequestID>5090279157766055601540</authRequestID>
    </apCaptureService>
    <apPaymentType>AFM</apPaymentType>
</requestMessage>
```

Example 14 Capture Reply

```
<c:replyMessage xmlns:c="urn:schemas-cybersource-com:transaction-data-1.142">
    <c:merchantReferenceCode>ref1234</c:merchantReferenceCode>
    <c:requestID>5022171547236631601541</c:requestID>
    <c:requestToken>AhjnrwSTEoYvvYr63+4EwhjWjLmR29VxBptJqXDsBae08gv6D</c:requestToken>
    <c:apCaptureReply>
        <c:reasonCode>100</c:reasonCode>
        <c:status>SETTLED</c:status>
        <c:responseCode>00004</c:responseCode>
        <c:amount>52.00</c:amount>
    </c:apCaptureReply>
    <c:decision>ACCEPT</c:decision>
    <c:reasonCode>100</c:reasonCode>
</c:replyMessage>
```

Name-Value Pair Example

Example 15   **Capture Request**

```
merchantID=mid12345
merchantReferenceCode=ref1234
purchaseTotals_currency=USD
purchaseTotals_grandTotalAmount=52.00
apCaptureService_authRequestID=5090279157766055601540
apPaymentType=AFM
apCaptureService_run=true
```

Example 16   **Capture Reply**

```
merchantReferenceCode=ref1234
requestID=5022171547236631601541
requestToken=Ahjn7wSTEEChjZtBWGGFjxFSG4aMWDBinUvA+kEsNP3DSGTb
apCaptureReply_reasonCode=100
apCaptureReply_status=SETTLED
apCaptureReply_responseCode=00004
apCaptureReply_amount=52.00
decision=ACCEPT
reasonCode=100
```

Refunding a Payment

The refund service enables you to refund the entire captured amount or part of the captured amount. Partial and multiple refunds are supported when the sum of all refunds is less than or equal to the total captured amount.

Include the following required fields:

- apPaymentType—set to `AFM`.

- apRefundService_refundRequestID—set to the request ID that was included in the capture reply message.

- apRefundService_run—set to `true`.

- merchantID

- merchantReferenceCode

- purchaseTotals_currency

- purchaseTotals_grandTotalAmount

Cybersource recommends that you include the following fields when you request the refund service:
- billTo_email
- billTo_firstName
- billTo_lastName
- item_#_productName
- item_#_quantity
- item_#_totalAmount
- item_#_unitPrice

For descriptions of these fields, see Appendix A, "API Fields," on page 28.

XML Example

Example 17 Refund Request

```xml
<requestMessage xmlns="urn:schemas-cybersource-com:transaction-data-1.142">
    <merchantID>mid12345</merchantID>
    <merchantReferenceCode>ref1234</merchantReferenceCode>
    <purchaseTotals>
        <currency>USD</currency>
        <grandTotalAmount>52.00</grandTotalAmount>
    </purchaseTotals>
    <apRefundService run="true">
        <refundRequestID>5090279157766055601540</refundRequestID>
    </apRefundService>
    <apPaymentType>AFM</apPaymentType>
</requestMessage>
```

Example 18 Refund Reply

```xml
<c:replyMessage xmlns:c="urn:schemas-cybersource-com:transaction-data-1.142">
    <c:merchantReferenceCode>ref1234</c:merchantReferenceCode>
    <c:requestID>5022171547236631601541</c:requestID>
    <c:requestToken>AhjnrwSTEoYvvYr63+4EwhjWjLmR29VxBptJqXDsBae08gv6D</c:requestToken>
    <c:apRefundReply>
        <c:reasonCode>100</c:reasonCode>
        <c:status>REFUNDED</c:status>
        <c:responseCode>00006</c:responseCode>
        <c:transactionID>6IWYH3XH5XR7DP2A</c:transactionID>
    </c:apRefundReply>
    <c:decision>ACCEPT</c:decision>
    <c:reasonCode>100</c:reasonCode>
</c:replyMessage>
```

Name-Value Pair Example

Example 19   Refund Request

```
merchantID=mid12345
merchantReferenceCode=ref1234
purchaseTotals_currency=USD
purchaseTotals_grandTotalAmount=52.00
apRefundService_refundRequestID=5090279157766055601540
apPaymentType=AFM
apRefundService_run=true
```

Example 20   Refund Reply

```
merchantReferenceCode=ref1234
requestID=5022171547236631601541
requestToken=Ahjn7wSTEEChjZtBWGGFjxFSG4aMWDBinUvA+kEsNP3DSGTb
apRefundReply_reasonCode=100
apRefundReply_status=REFUNDED
apRefundReply_responseCode=00006
apRefundReply_transactionID=6IWYH3XH5XR7DP2A
decision=ACCEPT
reasonCode=100
```

API Fields

Formatting Restrictions

Unless otherwise noted, all field names are case sensitive and all fields accept special characters such as @, #, and %.

> The values of the **item_#_** fields must not contain carets (^) or colons (:) because these characters are reserved for use by the Cybersource services.
>
> Values for request-level and item-level fields must not contain new lines or carriage returns. However, they can contain embedded spaces and any other printable characters. Cybersource removes all leading and trailing spaces.

Data Type Definitions

For more information about these data types, see the World Wide Web Consortium (W3C) XML Schema Part 2: Datatypes Second Edition.

Table 1   Data Type Definitions

Data Type	Description
Date and time	Format is YYYY-MM-DDThh:mm:ssZ, where: ■ T separates the date and the time ■ Z indicates Coordinated Universal Time (UTC), also known as Greenwich Mean Time (GMT) **Example** 2020-01-11T22:47:57Z equals January 11, 2020, at 22:47:57 (10:47:57 p.m.).
Integer	Whole number {..., -3, -2, -1, 0, 1, 2, 3, ...}
String	Sequence of letters, numbers, spaces, and special characters

Numbered Elements

The Cybersource XML schema includes several numbered elements. You can include these complex elements more than once in a request. For example, when a customer order includes more than one item, you must include multiple `<item>` elements in your request. Each item is numbered, starting with `0`. The XML schema uses an `id` attribute in the item's opening tag to indicate the number. For example:

```
<item id="0">
```

As a name-value pair field name, this tag is called `item_0`. In this portion of the field name, the underscore before the number does not indicate hierarchy in the XML schema. The item fields are generically referred to as `item_#_<element name>` in the documentation.

Below is an example of the numbered `<item>` element and the corresponding name-value pair field names. If you are using the Simple Object Access Protocol (SOAP), the client contains a corresponding `Item` class.

Example 21   Numbered XML Schema Element Names and
Name-Value Pair Field Names

XML Schema Element Names	Corresponding Name-Value Pair Field Names

`<item id="0">`
  `<unitPrice>`
  `<quantity>`
`</item>`
	`item_0_unitPrice`
	`item_0_quantity`

`<item id="1">`
  `<unitPrice>`
  `<quantity>`
`</item>`
	`item_1_unitPrice`
	`item_1_quantity`

When a request in XML format includes an `<item>` element, the element must include an `id` attribute. For example: `<item id="0">`.

Working with Multibyte Character Strings

Some languages—such as Korean, Chinese, and Russian—require more than one ASCII byte per character. Therefore, a string of multibyte characters can exceed the allotted string length of some Cybersource API fields.

In some languages, a short name that visually has only three or four characters might be equivalent to 10 or 15 bytes in UTF-8. Therefore, it is important to consider the overall length of a multibyte string to be sure it fits into the allotted ASCII string length.

For best success when working with languages, make sure the total length of a multibyte string does not exceed the ASCII string length for a specific API field.

Request Fields

Table 2   Request Fields

Field	Description	Required (R) / Optional (O)	Data Type & Length
apAuthReversalService_ authRequestID	Request ID of the authorization that you want to reverse. Set the value of this field to the value of the request ID that was returned in the authorization reply message.	Authorization Reversal (R)	String (26)
apAuthReversalService_ run	Whether to include **apAuthReversalService** in the request. Possible values: ■ `true`: Include the service in the request. ■ `false` (default): Do not include the service in the request.	Authorization Reversal (R)	String (5)
apAuthService_ preapprovalToken	Token generated by Affirm. When Affirm authorizes the order, Affirm generates a preapproval token and sends it to the browser. See "Transaction Flow," page 9.	Authorization (R)	String (60)
apAuthService_run	Whether to include **apAuthService** in the request. Possible values: ■ `true`: Include the service in the request. ■ `false` (default): Do not include the service in the request.	Authorization (R)	String (5)

Table 2   Request Fields (Continued)

Field	Description	Required (R) / Optional (O)	Data Type & Length
apCaptureService_ authRequestID	Request ID of the authorization that you want to capture. Set the value of this field to the value of the request ID that was returned in the authorization reply message.	Capture (R)	String (26)
apCaptureService_run	Whether to include **apCaptureService** in the request. Possible values: ■ true: Include the service in the request. ■ false (default): Do not include the service in the request.	Capture (R)	String (5)
apPaymentType	Identifier for the payment type. Set the value for this field to AFM.	Required for all services.	String (3)
apRefundService_ refundRequestID	Request ID of the capture that you want to refund. Set the value of this field to the value of the request ID that was returned in the capture reply message.	Refund (R)	String (26)
apRefundService_run	Whether to include **apRefundService** in the request. Possible values: ■ true: Include the service in the request. ■ false (default): Do not include the service in the request.	Refund (R)	String (5)
apSessionsService_ cancelURL	Your web site URL that the customer is directed to after canceling the Affirm payment: 1 You direct the customer to the Affirm URL that is included in the authorization response. 2 If the customer cancels the payment, Affirm directs the customer to this cancel URL.	Sessions (R)	String (255)
apSessionsService_run	Whether to include **apsService** in the request. Possible values: ■ true: Include the service in the request. ■ false (default): Do not include the service in the request.	Sessions (R)	String (5)
apSessionsService_ successURL	Your web site URL that the customer is directed to after successfully completing the Affirm payment: 1 You direct the customer to the Affirm URL that is included in the authorization request. 2 If the customer successfully completes the payment, Affirm directs the customer to this success URL.	Sessions (R)	String (255)
billTo_city	City of the billing address.	Authorization (R) Sessions (R)	String (50)

Table 2   Request Fields (Continued)

Field	Description	Required (R) / Optional (O)	Data Type & Length
billTo_country	Country of the billing address. Use the two-character *ISO Standard Country Codes*. ***For Authorization requests:*** You must use the same value for this field that was sent in the **billTo_country** field of the Sessions request.	Authorization (R) Sessions (R)	String (2)
billTo_email	Customer's email address.	Authorization (R) Refund (O but recommended) Sessions (R)	String (255)
billTo_firstName	Customer's first name.	Authorization (R) Refund (O but recommended) Sessions (R)	String (60)
billTo_lastName	Customer's last name.	Authorization (R) Refund (O but recommended) Sessions (R)	String (60)
billTo_phoneNumber	Customer's phone number. Cybersource recommends that you include the country code when the order is from outside the U.S.	Authorization (R) Sessions (R)	String (15)
billTo_postalCode	Postal code for the billing address. The postal code must consist of 5 to 9 digits. When the billing country is the U.S., the 9-digit postal code must follow this format: [5 digits][dash][4 digits] **Example** 12345-6789	Authorization (R) Sessions (R)	String (10)
billTo_state	State of the billing address. Use the *State, Province, and Territory Codes for the United States and Canada*.	Authorization (R) Sessions (R)	String (2)
billTo_street1	First line of the billing street address.	Authorization (R) Sessions (R)	String (60)
billTo_street2	Additional address information. **Example** Attention: Accounts Payable	Authorization (O) Sessions (R)	String (60)

Table 2   Request Fields (Continued)

Field	Description	Required (R) / Optional (O)	Data Type & Length
item_#_discountAmount	Item-level discount amount. If the item quantity is 1, then this value is the discount for the item. If the item quantity is more than 1, then this value is the discount for the entire quantity of the item. See "Numbered Elements," page 29.	Authorization (O) Sessions (O)	String (15)
item_#_productCode	Type of product. This value is used to determine the category that the product is in: electronic, handling, physical, service, or shipping. The default value is default. See Table 4, "Product Codes," on page 39, for a list of valid values. See "Numbered Elements," page 29.	Authorization (O) Sessions (O)	String (255)
item_#_productName	Product name. **Note** To include a shipping amount in a request, set the value of this field to shipping and include the **item_#_unitPrice**, **item_#_totalAmount**, and **item_#_quantity** fields for the shipping item. See "Numbered Elements," page 29.	Authorization (O) Capture (O but recommended) Refund (O but recommended) Sessions (R)	String (255)
item_#_productSKU	Identification code for the product. See "Numbered Elements," page 29.	Authorization (O) Sessions (R)	String (255)
item_#_quantity	The default is 1. See "Numbered Elements," page 29.	Authorization (O) Capture (O but recommended) Refund (O but recommended) Sessions (R)	Integer (10)
item_#_taxRate	Tax rate for the item. See "Numbered Elements," page 29.	Authorization (O) Sessions (O)	String (15)
item_#_totalAmount	Item-level total amount. If the item quantity is 1, then this value is the total amount for the item. If the item quantity is more than 1, then this value is the total amount for the entire quantity of the item. See "Numbered Elements," page 29.	Authorization (O) Capture (O but recommended) Refund (O but recommended) Sessions (R)	String (15)

Table 2   Request Fields (Continued)

Field	Description	Required (R) / Optional (O)	Data Type & Length
item_#_unitPrice	Per-item price of the product. This value cannot be negative. You can include a decimal point (.), but you cannot include any other special characters. Cybersource truncates the amount to the correct number of decimal places. ***Authorization and Sessions*** If a discount applies to the cost of the item, this value includes the discount amount. For example, if the original (pre-discount) price is 10.00 and the discount amount is 5.00, the price of the item is 15.00. Do not include the tax amount in this value. See "Numbered Elements," page 29.	Authorization (O) Capture (O but recommended) Refund (O but recommended) Sessions (R)	String (15)
merchantDefinedData_ field1	The unique ID that identifies a particular merchant to Affirm for transactions in a Cybersource integration.	Sessions (O)	String (255)
merchantID	Your Cybersource merchant ID. Use the same merchant ID for evaluation, testing, and production.	Required for all services.	String (30)
merchantReferenceCode	Merchant-generated transaction number or tracking number. Cybersource recommends that you send a unique value for each transaction so that you can perform meaningful searches for the transaction. For information about tracking orders and transactions, see *Getting Started with CyberSource Advanced for the SCMP API*.	Required for all services.	String (50)
purchaseTotals_currency	Currency for the transaction. Use the three-character *ISO Standard Currency Codes*.	Authorization (R) Authorization reversal (O) Capture (R) Refund (R) Sessions (R)	String (5)
purchaseTotals_ discountAmount	Total discount for the entire order.	Sessions (O)	String (15)

Table 2   Request Fields (Continued)

Field	Description	Required (R) / Optional (O)	Data Type & Length
purchaseTotals_ grandTotalAmount	Grand total for the transaction. This value cannot be negative. You can include a decimal point (.), but you cannot include any other special characters. Cybersource truncates the amount to the correct number of decimal places.	Authorization (R) Authorization reversal (O) Capture (O but recommended) Refund (O but recommended) Sessions (O)	String (15)
purchaseTotals_ taxAmount	Total tax amount for the order.	Authorization (O) Sessions (O but recommended)	String (15)
shipTo_city	City of the shipping address.	Authorization (O) Sessions (R)	String (40)
shipTo_country	Country of the shipping address. Use the two-character *ISO Standard Country Codes*.	Authorization (O) Sessions (R)	String (2)
shipTo_email	Email of the recipient.	Authorization (O) Sessions (R)	String (255)
shipTo_firstName	First name of the recipient.	Authorization (O) Sessions (R)	String (60)
shipTo_lastName	Last name of the recipient.	Authorization (O) Sessions (R)	String (60)
shipTo_phoneNumber	Phone number for the shipping address.	Authorization (O) Sessions (O)	String (20)
shipTo_postalCode	Postal code for the shipping address. The postal code must consist of 5 to 9 digits. When the shipping country is the U.S., the 9-digit postal code must follow this format: [5 digits][dash][4 digits] **Example** 12345-6789	Authorization (O) Sessions (R)	String (20)
shipTo_state	State of the shipping address. Use the *State, Province, and Territory Codes for the United States and Canada*.	Authorization (O) Sessions (R)	String (40)
shipTo_street1	First line of the shipping address.	Authorization (O) Sessions (R)	String (100)
shipTo_street2	Second line of the shipping address.	Authorization (O) Sessions (R)	String (100)

Reply Fields

Table 3   Reply Fields

Field	Description	Returned By	Data Type & Length
apAuthReply_amount	Authorized amount.	Authorization	String (15)
apAuthReply_dateTime	Date and time when the service was requested.	Authorization	String (20)
apAuthReply_ processorTransactionID	Affirm-generated transaction identifier.	Authorization	String (15)
apAuthReply_ reasonCode	Numeric value corresponding to the result of the authorization request. See "Reason Codes and Affirm Response Codes," page 40.	Authorization	Integer (5)
apAuthReply_ responseCode	Affirm response code. See "Reason Codes and Affirm Response Codes," page 40.	Authorization	String (5)
apAuthReply_status	Affirm authorization status. Possible values: ■ AUTHORIZED: Payment successfully authorized. ■ FAILED: Request failed.	Authorization	String (15)
apAuthReversalReply_ dateTime	Date and time when the service was requested.	Authorization Reversal	String (20)
apAuthReversalReply_ reasonCode	Numeric value corresponding to the result of the authorization reversal request. See "Reason Codes and Affirm Response Codes," page 40.	Authorization Reversal	Integer (5)
apAuthReversalReply_ reconciliationID	Cybersource-generated reference number. You can use this value to reconcile your transactions with information from Affirm and information in Cybersource reports.	Authorization Reversal	String (60)
apAuthReversalReply_ responseCode	Affirm response code. See "Reason Codes and Affirm Response Codes," page 40.	Authorization Reversal	String (5)
apAuthReversalReply_ status	Affirm authorization reversal status. Possible values: ■ AUTH_REVERSED: Authorization successfully reversed. ■ FAILED: Request failed.	Authorization Reversal	String (15)
apCaptureReply_amount	Amount that was captured.	Capture	String (15)
apCaptureReply_ dateTime	Date and time when the service was requested.	Capture	String (20)
apCaptureReply_ reasonCode	Numeric value corresponding to the result of the capture request. See "Reason Codes and Affirm Response Codes," page 40.	Capture	Integer (5)

Table 3   Reply Fields (Continued)

Field	Description	Returned By	Data Type & Length
apCaptureReply_ responseCode	Affirm response code. See "Reason Codes and Affirm Response Codes," page 40.	Capture	String (5)
apCaptureReply_status	Affirm capture status. Possible values: ▪ CAPTURED: Payment successfully captured. ▪ FAILED: Request failed.	Capture	String (15)
apRefundReply_dateTime	Date and time when the service was requested.	Refund	String (20)
apRefundReply_ transactionID	Affirm identifier of the refund transaction.	Refund	String (50)
apRefundReply_ reasonCode	Numeric value corresponding to the result of the refund request. See "Reason Codes and Affirm Response Codes," page 40.	Refund	Integer (5)
apRefundReply_ responseCode	Affirm response code. See "Reason Codes and Affirm Response Codes," page 40.	Refund	String (5)
apRefundReply_status	Affirm refund status. Possible values: ▪ REFUNDED: Payment successfully refunded. ▪ FAILED: Request failed.	Refund	String (15)
apSessionsReply_amount	Total amount charged from the payer to the payee. Ten characters max with support for two decimal places.	Sessions	String (15)
apSessionsReply_ merchantURL	Affirm URL. Direct the customer to this URL after the transaction is completed.	Sessions	String (2048)
apSessionsReply_ reasonCode	Numeric value corresponding to the result of the Sessions request. See "Reason Codes and Affirm Response Codes," page 40.	Sessions	Integer (5)
apSessionsReply_ responseCode	Affirm response code. See "Reason Codes and Affirm Response Codes," page 40.	Sessions	String (5)
apSessionsReply_status	Status of the sessions request. Possible values: ▪ COMPLETED: Sessions request successfully completed. ▪ FAILED: Request failed.	Sessions	String (15)

Table 3   Reply Fields (Continued)

Field	Description	Returned By	Data Type & Length
decision	Summarizes the result of the overall request. Possible values: ■ ACCEPT ■ ERROR ■ REJECT For details about these values, see the information about handling replies in *Getting Started with CyberSource Advanced for the SCMP API*.Getting Started with CyberSource Essentials	All services	String (6)
merchantReferenceCode	Merchant-generated transaction number or tracking number. Cybersource recommends that you send a unique value for each transaction so that you can perform meaningful searches for the transaction. For information about tracking orders and transactions, see *Getting Started with CyberSource Advanced for the SCMP API*.	All services	String (50)
reasonCode	Numeric value corresponding to the result of the overall request. See "Reason Codes and Affirm Response Codes," page 40.	All services	Integer (5)
requestID	Identifier for the request.	All services	String (26)
requestToken	Request token data created by Cybersource for each reply. The field is an encoded string that contains no confidential information such as an account or card verification number. The string can contain a maximum of 256 characters.	All services	String (256)

Product Codes

The following table lists the values you can use for the product code in the **item_#_
productCode** request field.

Table 4   Product Codes

Product Code	Definition
adult_content	Adult content.
coupon	Coupon applied to the entire order.
default	Default value for the product code. Cybersource uses `default` when a request message does not include a value for the product code.
electronic_good	Electronic product other than software.
electronic_software	Software distributed electronically rather than on disks or other media.
gift_certificate	Gift certificate.
handling_only	Fee that you charge your customer to cover your administrative selling costs.
service	Service that you perform for your customer.
shipping_and_handling	The shipping portion is the charge for shipping the product to your customer. The handling portion is the fee you charge your customer to cover your administrative selling costs.
shipping_only	Charge for transporting tangible personal property from your location to your customer. You must maintain documentation that clearly establishes the location where the title to the property passed from you to your customer.
subscription	Subscription to a web site or other content.

Reason Codes and Affirm Response Codes

⚠️ Cybersource recommends using the reason code value and the Affirm response code to determine the transaction result.

Table 5   Reason Codes and Affirm Response Codes

Reason Code	Affirm Response Codes	Description
100	▪ 00000—status: completed. ▪ 00001—status: pending. ▪ 00002—status: abandoned. ▪ 00003—status: authorized. ▪ 00004—status: settled. ▪ 00006—status: refunded.	Successful transaction.
102	10000—status: failed.	One or more fields in the request contain invalid data.
150	▪ 20000—status: failed. ▪ 20001—status: failed. ▪ 20002—status: failed. ▪ 30000—status: failed. ▪ 30100—status: failed.	Possible reasons: ▪ The signature was not included in the HTTP header. ▪ The signature in the HTTP header has expired, or is not a valid signature. ▪ The API version in the HTTP header was missing or is not supported.
203	▪ 30200—status: failed. ▪ 30400—status: failed. ▪ 30500—status: failed.	Affirm declined the transaction because of funding source problems, or the transaction was flagged as high risk.
204	30350—status: failed.	Payment declined because of insufficient funds in the account.
233	▪ 30600—status: failed. ▪ 30700—status: failed.	Affirm declined the transaction because of tax errors or government compliance errors.