

# Payment Tokenization Using the Simple Order API

Supplement to *Credit Card Services*  
*Using the Simple Order API*

February 2017



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# Recent Revisions to This Document

Release	Changes
February 2017	Added CyberSource through VisaNet information taken from <i>Payment Network Tokenization for CyberSource through VisaNet Using the Simple Order API</i> . That guide no longer exists.
September 2016	Added the “Supported Processors, Optional Features, and Card Types” section. See <a href="#">page 7</a> .
June 2016	Added supported acquirers for OmniPay Direct. See <a href="#">page 7</a> . Added support for Streamline. See <a href="#">page 10</a> .
May 2016	Added the <b>paymentNetworkToken_deviceTechType</b> field. See <a href="#">page 15</a> .
April 2016	Added the following reply fields (see ): <ul style="list-style-type: none"> <li>■ ccAuthReply_paymentCardService</li> <li>■ ccAuthReply_paymentCardServiceResult</li> <li>■ ccAuthReply_transactionQualification</li> <li>■ ccAuthReversalReply_paymentCardService</li> <li>■ ccAuthReversalReply_paymentCardServiceResult</li> </ul> Updated the description of the <b>ccAuthService_commerceIndicator</b> field. See <a href="#">page 15</a> .
March 2016	<ul style="list-style-type: none"> <li>■ Added the “Relaxed Requirements for Address Data and Expiration Date” section. See .</li> <li>■ Updated the values for the <b>ccAuthService_commerceIndicator</b> field. See <a href="#">page 15</a>.</li> </ul>

# About This Guide

## Audience and Purpose

This document is written for application developers who want to add payment network tokenization functionality to an order management system that already uses CyberSource credit card services. This document assumes that you are already familiar with the CyberSource credit card services as described in [Credit Card Services Using the Simple Order API](#) or *Credit Card Services for CyberSource through VisaNet Using the Simple Order API*.

Updating the CyberSource credit card services requires software development skills. You must write code that uses the API request and reply fields to integrate the payment network tokenization functionality into your existing order management system.

## Conventions

The following special statement is used in this document:



### Note

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

The following text conventions are used in this document:

**Table 1**     **Text Conventions**

Convention	Meaning
<b>bold</b>	Field and service names in text; for example: Include the <b>ccAuthService_run</b> field.
Screen text	<ul style="list-style-type: none"><li>■ XML elements.</li><li>■ Code examples.</li><li>■ Values for API fields; for example: Set the <b>ccAuthService_run</b> field to <code>true</code>.</li></ul>

## Related Documents

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- *Android Pay Using the Simple Order API* ([PDF](#) | [HTML](#))
- *Apple Pay Using the Simple Order API* ([PDF](#) | [HTML](#))
- *Card-Present Processing Using the Simple Order API* ([PDF](#) | [HTML](#))
- *Credit Card Services Using the Simple Order API* ([PDF](#) | [HTML](#))
- *Credit Card Services for CyberSource through VisaNet Using the Simple Order API*—contact CyberSource Customer Support to obtain this guide.
- *Getting Started with CyberSource Advanced for the Simple Order API* ([PDF](#) | [HTML](#))
- *Samsung Pay Using the Simple Order API* ([PDF](#) | [HTML](#))

Refer to the Support Center for complete CyberSource technical documentation:

[http://www.cybersource.com/support\\_center/support\\_documentation](http://www.cybersource.com/support_center/support_documentation)

## Customer Support

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# Payment Network Tokenization

Payment network tokenization enables you to request an authorization with a token instead of a primary account number (PAN). This guide explains how to use payment network tokenization in credit card transactions. For information about payment network tokenization for PIN debit transactions, see *PIN Debit Processing Using the Simple Order API*.

**Note**

The Payment Network Tokenization document describes how to integrate the pass-through processing of tokens into your order management system. It does not describe token provisioning. For information about token provisioning, contact your token service provider.

**Note**

*Payment network tokenization* and *CyberSource payment tokenization* are not the same feature.

- With payment network tokenization, the token is created by a token service provider and can be used throughout the financial network.
- With CyberSource payment tokenization, the token is created by CyberSource and can be used only with CyberSource services.

## Supported Processors, Optional Features, and Card Types

**Table 2 Processors and Card Types**

Processor	Card Types	Optional Features
American Express Direct	American Express	<ul style="list-style-type: none"><li>■ Multiple captures. See <a href="#">Credit Card Services Using the Simple Order API</a> or <a href="#">Credit Card Services for CyberSource through VisaNet Using the Simple Order API</a>.</li><li>■ Recurring payments (see <a href="#">page 12</a>).</li></ul>

**Table 2 Processors and Card Types (Continued)**

Processor	Card Types	Optional Features
Barclays	<ul style="list-style-type: none"> <li>■ Visa</li> <li>■ Mastercard</li> <li>■ American Express</li> </ul>	
Chase Paymentech Solutions	<ul style="list-style-type: none"> <li>■ Visa</li> <li>■ Mastercard</li> <li>■ American Express</li> </ul>	<ul style="list-style-type: none"> <li>■ Multiple captures. See <a href="#">Credit Card Services Using the Simple Order API</a> or <i>Credit Card Services for CyberSource through VisaNet Using the Simple Order API</i>.</li> <li>■ Recurring payments (see <a href="#">page 12</a>).</li> </ul>
CyberSource through VisaNet. The supported acquirers are: <ul style="list-style-type: none"> <li>■ Australia and New Zealand Banking Group Ltd. (ANZ)</li> <li>■ CitiBank Singapore Ltd.</li> <li>■ Global Payment Asia Pacific</li> <li>■ Westpac</li> </ul>	<ul style="list-style-type: none"> <li>■ Visa</li> <li>■ Mastercard</li> </ul>	<ul style="list-style-type: none"> <li>■ Split shipments. See. <a href="#">Credit Card Services Using the Simple Order API</a>.</li> <li>■ Recurring payments (see <a href="#">page 12</a>).</li> </ul>
FDC Compass	<ul style="list-style-type: none"> <li>■ Visa</li> <li>■ Mastercard</li> <li>■ American Express</li> </ul>	<ul style="list-style-type: none"> <li>■ Multiple captures. See <a href="#">Credit Card Services Using the Simple Order API</a> or <i>Credit Card Services for CyberSource through VisaNet Using the Simple Order API</i>.</li> <li>■ Recurring payments (see <a href="#">page 12</a>).</li> </ul>
FDC Nashville Global	<ul style="list-style-type: none"> <li>■ Visa</li> <li>■ Mastercard</li> <li>■ American Express</li> </ul>	Recurring payments (see <a href="#">page 12</a> ).
GPN	<ul style="list-style-type: none"> <li>■ Visa</li> <li>■ Mastercard</li> <li>■ American Express</li> </ul>	<ul style="list-style-type: none"> <li>■ Multiple captures. See <a href="#">Credit Card Services Using the Simple Order API</a> or <i>Credit Card Services for CyberSource through VisaNet Using the Simple Order API</i>.</li> <li>■ Split shipments. See <a href="#">Credit Card Services Using the Simple Order API</a>.</li> <li>■ Recurring payments (see <a href="#">page 12</a>).</li> </ul>



**Table 2 Processors and Card Types (Continued)**

Processor	Card Types	Optional Features
Moneris	<ul style="list-style-type: none"> <li>■ Visa</li> <li>■ Mastercard</li> <li>■ American Express</li> </ul>	Recurring payments (see <a href="#">page 12</a> ).
OmniPay Direct. The supported acquirers are: <ul style="list-style-type: none"> <li>■ First Data Merchant Solutions (Europe)</li> <li>■ Global Payments International Acquiring</li> </ul>	<ul style="list-style-type: none"> <li>■ Visa</li> <li>■ Mastercard</li> </ul>	<ul style="list-style-type: none"> <li>■ Multiple captures. See <a href="#">Credit Card Services Using the Simple Order API</a> or <a href="#">Credit Card Services for CyberSource through VisaNet Using the Simple Order API</a>.</li> <li>■ Recurring payments (see <a href="#">page 12</a>).</li> </ul>
Streamline	<ul style="list-style-type: none"> <li>■ Visa</li> <li>■ Mastercard</li> </ul>	<ul style="list-style-type: none"> <li>■ Recurring payments (see <a href="#">page 12</a>).</li> <li>■ Multiple captures. See <a href="#">Credit Card Services Using the Simple Order API</a> or <a href="#">Credit Card Services for CyberSource through VisaNet Using the Simple Order API</a>.</li> </ul>
TSYS Acquiring Solutions	<ul style="list-style-type: none"> <li>■ Visa</li> <li>■ Mastercard</li> <li>■ American Express</li> </ul>	<ul style="list-style-type: none"> <li>■ Recurring payments (see <a href="#">page 12</a>).</li> <li>■ Multiple captures. See <a href="#">Credit Card Services Using the Simple Order API</a> or <a href="#">Credit Card Services for CyberSource through VisaNet Using the Simple Order API</a>.</li> </ul>

## In-App Transactions

For in-app transactions, payment network tokenization uses some of the payer authentication request fields. This approach to payment network tokenization simplifies your implementation if your order management system already uses payer authentication.

In the authorization request:

- Set the account number field to the token value instead of to the customer's PAN. Obtain the token value from the token service provider. The account number field is **card\_accountNumber**.
- Set the expiration date fields to the token expiration date instead of to the credit card expiration date. Obtain the token expiration date from the token service provider. The expiration date fields are **card\_expirationMonth** and **card\_expirationYear**.
- Include the transaction type field, which is **paymentNetworkToken\_transactionType**.
- On CyberSource through VisaNet you can choose to include the requestor ID field, which is **paymentNetworkToken\_requestorID**.
- Include the following payer authentication fields:

For Visa requests:

- ccAuthService\_commerceIndicator=vbv or internet
- ccAuthService\_cavv=cryptogram
- ccAuthService\_xid=cryptogram

For Mastercard requests:

- ccAuthService\_commerceIndicator=spa
- ucaf\_authenticationData=cryptogram
- ucaf\_collectionIndicator=2

For American Express requests:

For the American Express card type, the cryptogram is a 20-byte or 40-byte binary value.



On some processors, American Express SafeKey is not supported, but you can use the American Express SafeKey fields for payment network tokenization.

For a 20-byte cryptogram, send the cryptogram in the cardholder authentication verification value (CAVV) field.

- ccAuthService\_commerceIndicator=aesK
- ccAuthService\_cavv=block A of the cryptogram

For a 40-byte cryptogram, split the cryptogram into two 20-byte binary values (block A and block B). Send the first 20-byte value (block A) in the cardholder authentication verification value (CAVV) field. Send the second 20-byte value (block B) in the transaction ID (XID) field.

- ccAuthService\_commerceIndicator=aesK
- ccAuthService\_cavv=block A of the cryptogram
- ccAuthService\_xid=block B of the cryptogram

■ Include the basic fields required for every authorization request:

- billTo\_city
- billTo\_country
- billTo\_email
- billTo\_firstName
- billTo\_lastName
- billTo\_postalCode—required only for transactions in the U.S. and Canada.
- billTo\_state—required only for transactions in the U.S. and Canada.
- billTo\_street1
- card\_cardType
- card\_cardType—CyberSource strongly recommends that you send the card type even if it is optional for your processor. Omitting the card type can cause the transaction to be processed with the wrong card type.
- ccAuthService\_run
- merchantID
- merchantReferenceCode
- purchaseTotals\_currency
- purchaseTotals\_grandTotalAmount or item\_#\_unitPrice

For descriptions of these fields, see ["API Request Fields," page 15](#).

After a successful authorization request, the rest of the credit card processing proceeds as described in [Credit Card Services Using the Simple Order API](#) or *Credit Card Services for CyberSource through VisaNet Using the Simple Order API* (contact CyberSource Customer Support to obtain this guide.)

## Recurring Payments

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### To request a recurring payment:

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#### Step 1 In the first authorization request:

- FDC Nashville Global—for Mastercard and American Express transactions, include the following fields and values:
  - `e_commerce_indicator=recurring`
  - `auth_first_recurring_payment=y`
- OmniPay Direct—for all card types include `auth_first_recurring_payment=y`
- All other supported processors—do not include the following fields in the request:
  - `e_commerce_indicator`
  - `auth_first_recurring_payment`

#### Step 2 In each subsequent authorization request, include the following fields and values:

- `e_commerce_indicator=recurring`
- `payment_network_token_transaction_type=1`

On CyberSource through VisaNet, your authorization request must include subsequent authorization fields as described in “Merchant-Initiated Transactions” in [Credit Card Services Using the Simple Order API](#) or *Credit Card Services for CyberSource through VisaNet Using the Simple Order API* (contact CyberSource Customer Support to obtain this guide.)

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# API Fields

## Formatting Restrictions

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

**Note**

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 specification](#).

Data Type	Description
Integer	Whole number {..., -3, -2, -1, 0, 1, 2, 3, ...}
String	Sequence of letters, numbers, spaces, and special characters

# Relaxed AVS Requirements

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## Processors:

- American Express Direct
- Chase Paymentech Solutions
- CyberSource through VisaNet
- FDC Compass
- FDC Nashville Global
- GPN
- OmniPay Direct

To enable relaxed requirements for address data and expiration date, contact CyberSource Customer Support to have your account configured for this feature.

Historically, this data was mandated by CyberSource. With the advent of digital payments and an increasingly global e-commerce environment, CyberSource decided to relax the requirements for address data and expiration date.

Relaxed requirements for address data and expiration date make the following fields optional for payment processing:

- billTo\_city
- billTo\_country
- billTo\_email
- billTo\_firstname
- billTo\_lastname
- billTo\_postalCode: if you include this field in your request, you must also include **billTo\_country**.
- billTo\_state
- billTo\_street1



**Important**

When relaxed requirements for address data and expiration date are enabled for your CyberSource account, and your service request does not include one or more of the fields in the preceding list, you increase the risk of declined transactions and fraud depending on your location, your processor, and the cardholder's issuing bank.

It is your responsibility to determine whether a field is required for the transaction you are requesting. For example, effective October 2014, an issuing bank can decline an authorization request for a recurring transaction with a Visa Europe card if the expiration date is incorrect, invalid, or missing. If you do not provide the correct expiration date for a recurring transaction the authorization request may be declined.

# API Request Fields



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

**Table 3** API Request Fields

Field	Description	Used By: Required (R) or Optional (O)	Data Type (Length)
billTo_city	City of the billing address. See <a href="#">"Relaxed AVS Requirements," page 14.</a>	ccAuthService (See description)	String (50)
billTo_country	Country of the billing address. Use the two-character <a href="#">ISO Standard Country Codes</a> . See <a href="#">"Relaxed AVS Requirements," page 14.</a>	ccAuthService (See description)	String (2)
billTo_email	Customer's email address. See <a href="#">"Relaxed AVS Requirements," page 14.</a>	ccAuthService (See description)	String (255)
billTo_firstName	Customer's first name. For a credit card transaction, this name must match the name on the card. See <a href="#">"Relaxed AVS Requirements," page 14.</a>	ccAuthService (See description)	String (60)
billTo_lastName	Customer's last name. For a credit card transaction, this name must match the name on the card. See <a href="#">"Relaxed AVS Requirements," page 14.</a>	ccAuthService (See description)	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.	ccAuthService (O)	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] <b>Example</b> 12345-6789  When the billing country is Canada, the 6-digit postal code must follow this format: [alpha][numeric][alpha][space] [numeric][alpha][numeric] <b>Example</b> A1B 2C3  See <a href="#">"Relaxed AVS Requirements," page 14.</a>	ccAuthService (See description)	String (9)

**Table 3** API Request Fields

Field	Description	Used By: Required (R) or Optional (O)	Data Type (Length)
billTo_state	State or province of the billing address. Use the <a href="#">State, Province, and Territory Codes for the United States and Canada</a> .  See "Relaxed AVS Requirements," page 14.	ccAuthService (See description)	String (2)
billTo_street1	First line of the billing street address.  See "Relaxed AVS Requirements," page 14.	ccAuthService (See description)	String (60)
billTo_street2	Additional address information. Example: Attention: Accounts Payable	ccAuthService (R)	String (60)
card_accountNumber	The payment network token value.	ccAuthService (R)	Nonnegative integer (20)
card_cardType	Type of card to authorize. Possible values: <ul style="list-style-type: none"> <li>■ 001: Visa</li> <li>■ 002: Mastercard</li> <li>■ 003: American Express</li> </ul>	ccAuthService (R)	String (3)
card_cvNumber	CVN.	ccAuthService (R)	Nonnegative integer (4)
card_expirationMonth	Two-digit month in which the payment network token expires. Format: MM. Possible values: 01 through 12.	ccAuthService (R)	String (2)
card_expirationYear	Four-digit year in which the payment network token expires. Format: YYYY.	ccAuthService (R)	Nonnegative integer (4)



Table 3 API Request Fields

Field	Description	Used By: Required (R) or Optional (O)	Data Type (Length)
ccAuthService_cavv	<p><b>Visa</b> Cryptogram for payment network tokenization transactions. The value for this field must be 28-character base64 or 40-character hex binary. All cryptograms use one of these formats.</p> <p><b>American Express</b> For a 20-byte cryptogram, set this field to the cryptogram for payment network tokenization transactions. For a 40-byte cryptogram, set this field to block A of the cryptogram for payment network tokenization transactions. The value for this field must be 28-character base64 or 40-character hex binary. All cryptograms use one of these formats.</p> <p><b>CyberSource through VisaNet</b> The value for this field corresponds to the following data in the TC 33 capture file:</p> <ul style="list-style-type: none"> <li>Record: CP01 TCR8</li> <li>Position: 77-78</li> <li>Field: CAVV version and authentication action.</li> </ul>	ccAuthService (R)	String (40)
ccAuthService_commerceIndicator	<p>For a payment network tokenization transaction.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>aesk: American Express card type</li> <li>spa: Mastercard card type</li> <li>internet: Visa card type</li> <li>recurring: see <a href="#">"Recurring Payments," page 12.</a></li> </ul> <p><b>Important</b> For Visa in-app transactions, the <code>internet</code> value is mapped to the Visa ECI value 7.</p> <p><b>Note</b> For recurring payments, set this field to a value from the preceding list for the first payment and set this field to <code>recurring</code> for subsequent payments.</p>	ccAuthService (See description)	String (20)

**Table 3 API Request Fields**

Field	Description	Used By: Required (R) or Optional (O)	Data Type (Length)
ccAuthService_ firstRecurringPayment	<p>Flag that indicates whether this transaction is the first in a series of recurring payments. See <a href="#">"Recurring Payments,"</a> page 12.</p> <p><b>OmniPay Direct</b></p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ Y: Yes, this is the first payment in a series of recurring payments.</li> <li>■ N (default): No, this is not the first payment in a series of recurring payments.</li> </ul> <p><b>FDC Nashville Global</b></p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ TRUE: Yes, this is the first payment in a series of recurring payments.</li> <li>■ FALSE (default): No, this is not the first payment in a series of recurring payments.</li> </ul>	ccAuthService (See description)	String (1)
ccAuthService_run	<p>Whether to include <b>ccAuthService</b> in your request.</p> <p>Possible values:</p> <ul style="list-style-type: none"> <li>■ TRUE: Include the service in your request.</li> <li>■ FALSE (default): Do not include the service in your request.</li> </ul>	ccAuthService (R)	
ccAuthService_xid	<p><b>Visa</b></p> <p>Cryptogram for payment network tokenization transactions. The value for this field must be 28-character base64 or 40-character hex binary. All cryptograms use one of these formats.</p> <p><b>American Express</b></p> <p>For a 20-byte cryptogram, set this field to the cryptogram for payment network tokenization transactions. For a 40-byte cryptogram, set this field to block A of the cryptogram for payment network tokenization transactions. The value for this field must be 28-character base64 or 40-character hex binary. All cryptograms use one of these formats.</p>	ccAuthService (R)	String (40)
merchantID	Your CyberSource merchant ID. Use the same merchant ID for evaluation, testing, and production.	ccAuthService (R)	String (30)

**Table 3 API Request Fields**

Field	Description	Used By: Required (R) or Optional (O)	Data Type (Length)
merchantReferenceCode	Merchant-generated order reference 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, see <a href="#">Getting Started with CyberSource Advanced for the Simple Order API</a> .	ccAuthService (R)	String (50)
paymentNetworkToken_assuranceLevel	Confidence level of the tokenization. This value is assigned by the token service provider.  <b>Note</b> This field is supported only for CyberSource through VisaNet and FDC Nashville Global.	ccAuthService (O)	String (2)
paymentNetworkToken_deviceTechType	Type of technology used in the device to store token data. Possible values:  <ul style="list-style-type: none"> <li>001: Secure element (SE) Smart card or memory with restricted access and strong encryption, which prevents tampering. To store payment credentials, an SE is tested against a set of requirements defined by the payment networks. Apple Pay uses this technology.</li> <li>002: Host card emulation (HCE) Emulation of a smart card by using software to create a virtual and exact representation of the card. Sensitive data is stored in a database that is hosted in the cloud. To store payment credentials, a database must meet very high level security requirements that exceed PCI DSS. Android Pay uses this technology.</li> </ul> <b>Note</b> This field is supported only for FDC Compass.	ccAuthService (O)	Integer (3)
paymentNetworkToken_requestorID	Value that identifies your business and indicates that the cardholder's account number is tokenized. This value is assigned by the token service provider and is unique within the token service provider's database.  <b>Note</b> This field is supported only for CyberSource through VisaNet and FDC Nashville Global.	ccAuthService (O)	String (11)
paymentNetworkToken_transactionType	Type of transaction that provided the token data. This value does not specify the token service provider; it specifies the entity that provided you with information about the token.  Set the value for this field to 1.	ccAuthService (R)	String (1)

**Table 3 API Request Fields**

Field	Description	Used By: Required (R) or Optional (O)	Data Type (Length)
pos_environment	<p>Operating environment. Possible values:</p> <ul style="list-style-type: none"> <li>0: No terminal used or unknown environment.</li> <li>1: On merchant premises, attended.</li> <li>2: On merchant premises, unattended, or cardholder terminal. Examples: oil, kiosks, self-checkout, home computer, mobile telephone, personal digital assistant (PDA). Cardholder terminal is supported only for Mastercard transactions on CyberSource through VisaNet.</li> <li>3: Off merchant premises, attended. Examples: portable POS devices at trade shows, at service calls, or in taxis.</li> <li>4: Off merchant premises, unattended, or cardholder terminal. Examples: vending machines, home computer, mobile telephone, PDA. Cardholder terminal is supported only for Mastercard transactions on CyberSource through VisaNet.</li> <li>5: On premises of cardholder, unattended.</li> <li>9: Unknown delivery mode.</li> <li>S: Electronic delivery of product. Examples: music, software, or eTickets that are downloaded over the internet.</li> <li>T: Physical delivery of product. Examples: music or software that is delivered by mail or by a courier.</li> </ul> <p><b>Note</b> This field is supported only for American Express Direct and CyberSource through VisaNet.</p> <p><b>CyberSource through VisaNet</b> For Mastercard transactions, the only valid values are 2 and 4.</p>	ccAuthService (Optional for in-app payment network tokenization transactions.)	String (1)
purchaseTotals_currency	Currency used for the order: USD	ccAuthService (R)	String (5)
purchaseTotals_grandTotalAmount	Grand total for the order. 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.	ccAuthService (R)	Decimal (60)
ucaf_authenticationData	Cryptogram for payment network tokenization transactions with Mastercard.	ccAuthService (R)	String (32)
ucaf_collectionIndicator	<p>Required field for payment network tokenization transactions with Mastercard.</p> <p>Set the value for this field to 2.</p>	ccAuthService (R)	String with numbers only (1)

# API Reply Fields



## Important

Because CyberSource can add reply fields and reason codes at any time:

- You must parse the reply data according to the names of the fields instead of the field order in the reply. For more information about parsing reply fields, see the documentation for your client.
- Your error handler should be able to process new reason codes without problems.
- Your error handler should use the **decision** field to determine the result if it receives a reply flag that it does not recognize.



## Note

Your payment processor can include additional API reply fields that are not documented in this guide. See [Credit Card Services Using the Simple Order API](#) for detailed descriptions of additional API reply fields.

**Table 4** API Reply Fields

Field	Description	Returned By	Data Type & Length
card_suffix	<p>Last four digits of the cardholder's account number. This field is returned only for tokenized transactions. You can use this value on the receipt that you give to the cardholder.</p> <p><b>Note</b> This field is returned only for CyberSource through VisaNet and FDC Nashville Global.</p> <p><b>CyberSource through VisaNet</b> The value for this field corresponds to the following data in the TC 33 capture file:</p> <ul style="list-style-type: none"> <li>■ Record: CP01 TCRB</li> <li>■ Position: 85</li> <li>■ Field: American Express last 4 PAN return indicator.</li> </ul>	ccAuthReply	String (4)
ccAuthReply_paymentCardService	<p>Mastercard service that was used for the transaction. Mastercard provides this value to CyberSource. Possible value:</p> <p>53: Mastercard card-on-file token service</p> <p><b>Note</b> This field is returned only for CyberSource through VisaNet.</p>	ccAuthReply	String (2)

**Table 4 API Reply Fields (Continued)**

Field	Description	Returned By	Data Type & Length
ccAuthReply_ paymentCardService Result	<p>Result of the Mastercard card-on-file token service. Mastercard provides this value to CyberSource. Possible values:</p> <ul style="list-style-type: none"> <li>■ C: Service completed successfully.</li> <li>■ F: One of the following: <ul style="list-style-type: none"> <li>• Incorrect Mastercard POS entry mode. The Mastercard POS entry mode should be 81 for an authorization or authorization reversal.</li> <li>• Incorrect Mastercard POS entry mode. The Mastercard POS entry mode should be 01 for a tokenized request.</li> <li>• Token requestor ID is missing or formatted incorrectly.</li> </ul> </li> <li>■ I: One of the following: <ul style="list-style-type: none"> <li>• Invalid token requestor ID.</li> <li>• Suspended or deactivated token.</li> <li>• Invalid token (not in mapping table).</li> </ul> </li> <li>■ T: Invalid combination of token requestor ID and token.</li> <li>■ U: Expired token.</li> <li>■ W: Primary account number (PAN) listed in electronic warning bulletin.</li> </ul> <p><b>Note</b> This field is returned only for CyberSource through VisaNet.</p>	ccAuthReply	String (1)
ccAuthReply_ transactionQualification	<p>Type of authentication for which the transaction qualifies as determined by the Mastercard authentication service, which confirms the identity of the cardholder. Mastercard provides this value to CyberSource. Possible values:</p> <ul style="list-style-type: none"> <li>■ 1: Transaction qualifies for Mastercard authentication type 1.</li> <li>■ 2: Transaction qualifies for Mastercard authentication type 2.</li> </ul> <p><b>Note</b> This field is returned only for CyberSource through VisaNet.</p>	ccAuthReply	String (1)
ccAuthReversalReply_ paymentCardService	<p>Mastercard service that was used for the transaction. Mastercard provides this value to CyberSource. Possible value:</p> <p>53: Mastercard card-on-file token service</p> <p><b>Note</b> This field is returned only for CyberSource through VisaNet.</p>	ccAuthReversalReply	String (2)

**Table 4 API Reply Fields (Continued)**

Field	Description	Returned By	Data Type & Length
ccAuthReversalReply_paymentCardServiceResult	<p>Result of the Mastercard card-on-file token service. Mastercard provides this value to CyberSource. Possible values:</p> <ul style="list-style-type: none"> <li>■ C: Service completed successfully.</li> <li>■ F: One of the following: <ul style="list-style-type: none"> <li>● Incorrect Mastercard POS entry mode. The Mastercard POS entry mode should be 81 for an authorization or authorization reversal.</li> <li>● Incorrect Mastercard POS entry mode. The Mastercard POS entry mode should be 01 for a tokenized request.</li> <li>● Token requestor ID is missing or formatted incorrectly.</li> </ul> </li> <li>■ I: One of the following: <ul style="list-style-type: none"> <li>● Invalid token requestor ID.</li> <li>● Suspended or deactivated token.</li> <li>● Invalid token (not in mapping table).</li> </ul> </li> <li>■ T: Invalid combination of token requestor ID and token.</li> <li>■ U: Expired token.</li> <li>■ W: Primary account number (PAN) listed in electronic warning bulletin.</li> </ul> <p><b>Note</b> This field is returned only for CyberSource through VisaNet.</p>	ccAuthReversalReply	String (1)
ccAuthReply_amount	Amount that was authorized.	ccAuthReply	String (15)
ccAuthReply_authorizationCode	Authorization code. Returned only when the processor returns this value.	ccAuthReply	String (7)
ccAuthReply_authorizedDateTime	<p>Time of authorization.</p> <p>Format: YYYY-MM-DDThh:mm:ssZ</p> <p>Example: 2016-08-11T22:47:57Z equals August 11, 2016, at 22:47 (10:47:57 p.m.). The T separates the date and the time. The Z indicates UTC.</p>	ccAuthReply	String (20)
ccAuthReply_avsCode	AVS results. See <a href="#">Credit Card Services Using the Simple Order API</a> for a detailed list of AVS codes.	ccAuthReply	String (1)
ccAuthReply_avsCodeRaw	AVS result code sent directly from the processor. Returned only when the processor returns this value.	ccAuthReply	String (10)
ccAuthReply_cvCode	CVN result code. See <a href="#">Credit Card Services Using the Simple Order API</a> for a detailed list of CVN codes.	ccAuthReply	String (1)

**Table 4 API Reply Fields (Continued)**

Field	Description	Returned By	Data Type & Length
ccAuthReply_ cvCodeRaw	CVN result code sent directly from the processor. Returned only when the processor returns this value.	ccAuthReply	String (10)
ccAuthReply_ processorResponse	For most processors, this is the error message sent directly from the bank. Returned only when the processor returns this value.	ccAuthReply	String (10)
ccAuthReply_ reasonCode	Numeric value corresponding to the result of the credit card authorization request. See <a href="#">Credit Card Services Using the Simple Order API</a> for a detailed list of reason codes.	ccAuthReply	Integer (5)
ccAuthReply_ reconciliationID	Reference number for the transaction. This value is not returned for all processors.	ccAuthReply	String (60)
decision	Summarizes the result of the overall request. Possible values: <ul style="list-style-type: none"> <li>■ ACCEPT</li> <li>■ ERROR</li> <li>■ REJECT</li> <li>■ REVIEW: Returned only when you use CyberSource Decision Manager.</li> </ul>	ccAuthReply	String (6)
invalidField_0...N	Fields in the request that contained invalid data. For information about missing or invalid fields, see <a href="#">Getting Started with CyberSource Advanced for the Simple Order API</a> .	ccAuthReply	String (100)
merchantReferenceCode	Order reference or tracking number that you provided in the request. If you included multi-byte characters in this field in the request, the returned value might include corrupted characters.	ccAuthReply	String (50)
missingField_0...N	Required fields that were missing from the request. For information about missing or invalid fields, see <a href="#">Getting Started with CyberSource Advanced for the Simple Order API</a> .	ccAuthReply	String (100)
paymentNetworkToken_ accountStatus	Possible values: <ul style="list-style-type: none"> <li>■ N: Nonregulated</li> <li>■ R: Regulated</li> </ul> <b>Note</b> This field is returned only for CyberSource through VisaNet.	ccAuthReply	String (1)
paymentNetworkToken_ assuranceLevel	Confidence level of the tokenization. This value is assigned by the token service provider. <b>Note</b> This field is returned only for CyberSource through VisaNet and FDC Nashville Global.	ccAuthReply	String (2)



**Table 4 API Reply Fields (Continued)**

Field	Description	Returned By	Data Type & Length
paymentNetworkToken_ originalCardCategory	<p>Mastercard product ID associated with the primary account number (PAN). For the possible values, see <a href="#">“Mastercard Product IDs”</a> in <i>Credit Card Services Using the Simple Order API</i> or <a href="#">“Mastercard Product IDs”</a> in <i>Credit Card Services for CyberSource through VisaNet Using the Simple Order API</i>.</p> <p><b>Note</b> This field is returned only for Mastercard transactions on CyberSource through VisaNet.</p>	ccAuthReply	String (3)
paymentNetworkToken_ requestorID	<p>Value that identifies your business and indicates that the cardholder’s account number is tokenized. This value is assigned by the token service provider and is unique within the token service provider’s database. This value is returned only if the processor provides it.</p> <p><b>Note</b> This field is supported only for CyberSource through VisaNet and FDC Nashville Global.</p>	ccAuthService	String (11)
purchaseTotals_currency	Currency used for the order. For the possible values, see the <a href="#">ISO Standard Currency Codes</a> .	ccAuthReply	String (5)
reasonCode	Numeric value corresponding to the result of the overall request. See <a href="#">Credit Card Services Using the Simple Order API</a> for a detailed list of reason codes.	ccAuthReply	Integer (5)
requestID	Identifier for the request generated by the client.	ccAuthReply	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.	ccAuthReply	String (256)
token_expirationMonth	<p>Month in which the token expires. CyberSource includes this field in the reply message when it decrypts the payment blob for the tokenized transaction.</p> <p>Format: MM.</p> <p>Possible values: 01 through 12.</p>	ccAuthReply	String (2)
token_expirationYear	<p>Year in which the token expires. CyberSource includes this field in the reply message when it decrypts the payment blob for the tokenized transaction.</p> <p>Format: YYYY.</p>	ccAuthReply	String (4)

**Table 4     API Reply Fields (Continued)**

<b>Field</b>	<b>Description</b>	<b>Returned By</b>	<b>Data Type &amp; Length</b>
token_prefix	First six digits of token. CyberSource includes this field in the reply message when it decrypts the payment blob for the tokenized transaction.	ccAuthReply	String (6)
token_suffix	Last four digits of token. CyberSource includes this field in the reply message when it decrypts the payment blob for the tokenized transaction.	ccAuthReply	String (4)

# Examples

## Name-Value Pair Examples

---

### Example 1 In-App Authorization Request for Visa

---

```
merchantID=Foster_City_Flowers
merchantReferenceCode=12345678
billTo_firstName=Jane
billTo_lastName=Smith
billTo_street1=100 Main Street
billTo_street2=Suite 1234
billTo_city=Foster City
billTo_state=CA
billTo_postalCode=94404
billTo_country=US
billTo_email=jsmith@example.com
purchaseTotals_currency=USD
purchaseTotals_grandTotalAmount=16.00
card_accountNumber=4650100000000839
card_expirationMonth=12
card_expirationYear=2031
ccAuthService_run=true
ccAuthService_cavv=EHuWW9PiBkWvqE5juRwDzAUFBAk=
ccAuthService_commerceIndicator=vbv
ccAuthService_xid=EHuWW9PiBkWvqE5juRwDzAUFBAk=
paymentNetworkToken_transactionType=1
```

---

**Example 2 In-App Authorization Request for Mastercard**


---

```

merchantID=Foster_City_Flowers
merchantReferenceCode=12345678
billTo_firstName=Jane
billTo_lastName=Smith
billTo_street1=100 Main Street
billTo_street2=Suite 1234
billTo_city=Foster City
billTo_state=CA
billTo_postalCode=94404
billTo_country=US
billTo_email=jsmith@example.com
purchaseTotals_currency=USD
purchaseTotals_grandTotalAmount=16.00
card_accountNumber=4650100000000839
card_expirationMonth=12
card_expirationYear=2031
ucsf_authenticationData=EHuWW9PiBkWvqE5juRwDzAUFBAk=
ucsf_collectionIndicator=2
ccAuthService_run=true
ccAuthService_commerceIndicator=spa
paymentNetworkToken_transactionType=1

```

---

**Example 3 In-App Authorization Request for American Express**


---

```

merchantID=Foster_City_Flowers
merchantReferenceCode=12345678
billTo_firstName=Jane
billTo_lastName=Smith
billTo_street1=100 Main Street
billTo_street2=Suite 1234
billTo_city=Foster City
billTo_state=CA
billTo_postalCode=94404
billTo_country=US
billTo_email=jsmith@example.com
purchaseTotals_currency=USD
purchaseTotals_grandTotalAmount=16.00
card_accountNumber=4650100000000839
card_expirationMonth=12
card_expirationYear=2031
ccAuthService_run=true
ccAuthService_cavv=EHuWW9PiBkWvqE5juRwD
ccAuthService_commerceIndicator=aesk
ccAuthService_xid=BkWvqE5juRwDzAUFBAk=
paymentNetworkToken_transactionType=1

```

---

# XML Examples

---

## Example 4 In-App Authorization Request for Visa

---

```
<requestMessage xmlns="urn:schemas-cybersource-com:transaction-data-1.104">
  <merchantID>Foster_City_Flowers</merchantID>
  <merchantReferenceCode>12345678</merchantReferenceCode>
  <billTo>
    <firstName>Jane</firstName>
    <lastName>Smith</lastName>
    <street1>100 Main Street</street1>
    <street2>Suite 1234</street2>
    <city>Foster City</city>
    <state>CA</state>
    <postalCode>94404</postalCode>
    <country>US</country>
    <email>jsmith@example.com</email>
  </billTo>
  <purchaseTotals>
    <currency>USD</currency>
    <grandTotalAmount>16.00</grandTotalAmount>
  </purchaseTotals>
  <card>
    <accountNumber>4650100000000839</accountNumber>
    <expirationMonth>12</expirationMonth>
    <expirationYear>2031</expirationYear>
  </card>
  <ccAuthService run="true">
    <cavv>EHuWW9PiBkWvqE5juRwDzAUFBAk=</cavv>
    <commerceIndicator>vbv</commerceIndicator>
    <xid>EHuWW9PiBkWvqE5juRwDzAUFBAk=</xid>
  </ccAuthService>
  <paymentNetworkToken>
    <transactionType>1</transactionType>
  </paymentNetworkToken>
</requestMessage>
```

---

**Example 5 In-App Authorization Request for Mastercard**


---

```

<requestMessage xmlns="urn:schemas-cybersource-com:transaction-data-1.104">
  <merchantID>Foster_City_Flowers</merchantID>
  <merchantReferenceCode>12345678</merchantReferenceCode>
  <billTo>
    <firstName>Jane</firstName>
    <lastName>Smith</lastName>
    <street1>100 Main Street</street1>
    <street2>Suite 1234</street2>
    <city>Foster City</city>
    <state>CA</state>
    <postalCode>94404</postalCode>
    <country>US</country>
    <email>jsmith@example.com</email>
  </billTo>
  <purchaseTotals>
    <currency>USD</currency>
    <grandTotalAmount>16.00</grandTotalAmount>
  </purchaseTotals>
  <card>
    <accountNumber>4650100000000839</accountNumber>
    <expirationMonth>12</expirationMonth>
    <expirationYear>2031</expirationYear>
  </card>
  <ucaf>
    <authenticationData>EHuWW9PiBkVwqE5juRwDzAUFBAk=</authenticationData>
    <collectionIndicator>2</collectionIndicator>
  </ucaf>
  <ccAuthService run="true">
    <commerceIndicator>spa</commerceIndicator>
  </ccAuthService>
  <paymentNetworkToken>
    <transactionType>1</transactionType>
  </paymentNetworkToken>
</requestMessage>

```

---

**Example 6 In-App Authorization Request for American Express**


---

```

<requestMessage xmlns="urn:schemas-cybersource-com:transaction-data-1.104">
  <merchantID>Foster_City_Flowers</merchantID>
  <merchantReferenceCode>12345678</merchantReferenceCode>
  <billTo>
    <firstName>Jane</firstName>
    <lastName>Smith</lastName>
    <street1>100 Main Street</street1>
    <street2>Suite 1234</street2>
    <city>Foster City</city>
    <state>CA</state>
    <postalCode>94404</postalCode>
    <country>US</country>
    <email>jsmith@example.com</email>
  </billTo>
  <purchaseTotals>
    <currency>USD</currency>
    <grandTotalAmount>16.00</grandTotalAmount>
  </purchaseTotals>
  <card>
    <accountNumber>4650100000000839</accountNumber>
    <expirationMonth>12</expirationMonth>
    <expirationYear>2031</expirationYear>
  </card>
  <ccAuthService run="true">
    <cavv>EHuWW9PiBkWvqE5juRwD</cavv>
    <commerceIndicator>aesk</commerceIndicator>
    <xid>BkWvqE5juRwDzAUFBAk=</xid>
  </ccAuthService>
  <paymentNetworkToken>
    <transactionType>1</transactionType>
  </paymentNetworkToken>
</requestMessage>

```

---