

# Getting Started with CyberSource Essentials

February 2017

**CyberSource<sup>®</sup>**  
**the power of payment**

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For technical support questions, go to the Home page in the Business Center to see the contact information appropriate for your account.

Visit the Business Center, your central location for managing your online payment transactions, at <https://businesscenter.cybersource.com>.

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](mailto:sales@cybersource.com) or call 650-432-7350 or 888-330-2300 (toll free in the United States).

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# Contents

## **Recent Revisions to This Document** 5

### **About This Guide** 6

Audience and Purpose 6

Conventions 6

    Note and Important Statements 6

    Text and Command Conventions 6

Related Documents 7

Customer Support 7

---

## **Chapter 1** **Payment Processing with CyberSource** 8

    Understanding the Payment Industry 8

---

## **Chapter 2** **Getting Started** 9

    Steps for Getting Started 9

        Simple Order API Clients 11

        Third-Party Shopping Carts 11

        Simple Order API 11

    Contact Information 14

    Submitting an eTicket 14

---

## **Chapter 3** **Simple Order API Basics** 16

    Choosing a Client 16

        Choosing an API Version 16

    Name-Value Pairs or XML 17

        Name-Value Pairs 17

        XML 17

        Correlating XML Elements and Name-Value Pair Field Names 17

        Numbered Elements 18

    Constructing and Sending Requests 19

MultiByte Characters and Special Characters	20
Data Types	20
Using Items or a Grand Total in a Request	20
Items	21
Grand Total	22
Coupons	22
How Coupons are Processed	22
Coupon Constraints	23
Including a Coupon in the Request	23
Requesting a Follow-On Service	23
Request IDs and Request Tokens	23
Alternative Payment Methods and Processors	24
Working with Request Tokens	24
Merchants Who Have Not Implemented Request Tokens	25
Merchants Who Have Implemented Request Tokens	25
Sending Requests	26
Handling Replies	26
Decisions	27
Reason Codes	27
Missing or Invalid Fields	28
Request IDs	28

# Recent Revisions to This Document

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Release	Changes
January 2017	Added Ingenico ePayments information. See: <ul style="list-style-type: none"><li>• <a href="#">"Requesting a Follow-On Service," page 23.</a></li><li>• <a href="#">"Working with Request Tokens," page 24.</a></li><li>• <a href="#">"Request IDs and Request Tokens," page 23.</a></li></ul>
May 2016	Added URLs for supported payment methods and integration methods. See <a href="#">page 8.</a>
April 2013	This revision contains only editorial changes and no technical updates.
February 2013	Added a note about using separate keys in the Test and Live environments. See step 6 of <a href="#">"Steps for Getting Started," page 9.</a>
August 2012	This revision contains only editorial changes and no technical updates.
July 2011	Removed the <code>stored_value</code> product code from <a href="#">"Items," page 21.</a>

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# About This Guide

## Audience and Purpose

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This guide is written for application developers who want to use the CyberSource to integrate CyberSource services into their order management system. It describes the basic steps you must complete in order to get started with the Simple Order API.

Implementing the CyberSource services requires software development skills. You must use the request and reply fields to integrate the services into your existing order management system.

## Conventions

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### Note and Important Statements

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**Note**

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

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**Important**

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

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## Text and Command Conventions

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Convention	Usage
<b>Bold</b>	<ul style="list-style-type: none"> <li>■ Field and service names in text; for example: Include the <b>ics_applications</b> field.</li> <li>■ Items that you are instructed to act upon; for example: Click <b>Save</b>.</li> </ul>

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Convention	Usage
Screen text	<ul style="list-style-type: none"><li>■ XML elements.</li><li>■ Code examples and samples.</li><li>■ Text that you enter in an API environment; for example: Set the <b>ccAuthService_run</b> field to <code>true</code>.</li></ul>

## Related Documents

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- [Credit Card Services User Guide](#)
- [Electronic Check Services User Guide](#)
- [Getting Started with CyberSource Essentials](#)

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

<http://www.cybersource.com/support>

# Payment Processing with CyberSource

CyberSource Essentials is a payment solution that enables you to manage your payment transactions. CyberSource supports multiple payment methods and integration methods.

Supported payment methods:

[http://www.cybersource.com/developers/documentation/small\\_business\\_essentials/](http://www.cybersource.com/developers/documentation/small_business_essentials/)

Supported integration methods:

[http://www.cybersource.com/developers/integration\\_methods/](http://www.cybersource.com/developers/integration_methods/)

## Understanding the Payment Industry

In the e-commerce industry, multiple organizations work together to make online transactions possible. The following table describes some of the most important types of organizations in this industry.

**Table 1** Types of Organizations in the Payment Industry

Type of Organization	Description
Merchant	A person or company that sells goods or services.
Merchant (acquiring) bank	A bank that provides businesses with accounts to accept credit card or check payments.
Card association	Organizations, such as Visa, Mastercard, and Discover, that have business relationships with the banks that issue your customers' cards.
Payment processor	An organization that processes payment requests, such as credit card authorizations and settlements, and routes them to the appropriate card associations according to their guidelines. Your merchant bank's processor relationship determines which payment processor you use.
Payment gateway	An organization, such as CyberSource, that enables merchants to securely send order information to and receive it from payment processors in the appropriate format.



# Getting Started

## Steps for Getting Started

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The steps for getting started depend on how you want CyberSource to receive your customers' order information. If you choose the simplest connection method, the Virtual Terminal, you can get started within minutes. With other connection methods, such as the Hosted Order Page or the API clients, the steps for getting started take more time to complete. The following steps show you all of the options that you can choose.

### To get started with CyberSource Essentials:

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**Step 1** Log in to the Test Business Center at <https://ebctest.cybersource.com>

Shortly after registering with CyberSource, you receive two confirmation emails. One email contains your unique CyberSource merchant ID (username) and the other provides your temporary password for the CyberSource [Business Center](#). For most users, your CyberSource merchant ID and username are the same. The first time you log in to the Business Center, you are prompted to create a permanent password. If you don't receive these emails, contact Customer Support for further assistance.

**Step 2** Submit your billing and payment processor information.

The first time you log in to the Business Center, if prompted, submit your billing information. You may also need to submit details about your payment processor account. If CyberSource already has your payment processor information, you can proceed to Step 3.

For more information on how to submit your payment processor information, see the [Business Center User Guide](#).

If you encounter permission problems when submitting your payment processor information, send it to CyberSource by submitting an eTicket.

**Step 3** Get familiar with the Business Center.

Becoming familiar with the Business Center is crucial to managing your business payments efficiently. The CyberSource Business Center is a powerful and secure web

portal designed to help you manage your customers' orders. It also includes the Virtual Terminal, which enables you to manually enter customers' orders.

The CyberSource web site provides a series of short, self-paced tutorials about authorizing and capturing payments, issuing credits, and other important tasks in the Business Center:

[http://www.cybersource.com/support\\_center/implementation/downloads/tutorials/](http://www.cybersource.com/support_center/implementation/downloads/tutorials/)

While using the Business Center, you can get additional information by clicking the **Page help** link in the upper right area on each page. For more information on navigating the Business Center, see the *Business Center User Guide*.



**Note**

Initially, your Business Center account is in test mode, which enables you to become familiar with the Business Center settings and features by running test transactions. After you are familiar with the Business Center, you can request to go live, which enables you to begin processing transactions and orders for real currency. Even after your account is live, you can continue using the Test Business Center to run test transactions.

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#### Step 4 Choose Business Center settings.

The Business Center offers you several options to process your order information, reduce fraud, and customize your merchant account. You can adjust settings for the Virtual Terminal, Hosted Order Page, Subscriptions, as well as Smart Authorization (SmartAuth) to help reduce risks of fraud losses. In the Business Center, click on the **Virtual Terminal**, **Tools & Settings**, or **Account Management** tab to open the different settings pages.

The *Business Center User Guide* includes a chapter on configuring your Business Center settings.

#### Step 5 Choose a method for connecting to CyberSource.

After you select a connection method, you can review the documentation that explains how to use and test it.

#### Step 6 Generate security keys.

To ensure that you transmit information to CyberSource securely, and for CyberSource to identify your transactions as belonging to you, you must generate security keys (unless you opt to use only the Virtual Terminal; a security key is not needed for transactions processed with the Virtual Terminal).



**Important**

You must generate two transaction security keys—one for the CyberSource production environment and one for the test environment. For information about generating and using security keys, see *Creating and Using Security Keys* ([PDF](#) | [HTML](#)).

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## Simple Order API Clients

- a** In the Business Center, choose **Account Management**.
- b** Choose **Transaction Security Keys**.
- c** Follow the instructions on the **Transaction Security Keys** page in order to generate and manage your API key.

## Third-Party Shopping Carts

For third-party shopping carts with CyberSource services, contact your shopping cart provider to find out whether you need the .p12 security key or certificate files generated by the ECert application and for additional instructions on how to integrate them with the shopping cart.

- a** For the .p12 security key file, refer to the instructions above and download the key for Simple Order API clients.
- b** For certificate files generated by the ECert application, download and run the ECert application for your operating system from the Update to ECert Application page:

[http://apps.cybersource.com/cgi-bin/pages/additional.cgi?kit=Update\\_to\\_ECert\\_Application](http://apps.cybersource.com/cgi-bin/pages/additional.cgi?kit=Update_to_ECert_Application)

**Step 7** Implement and test your connection method.

## Simple Order API

- a** Download and install an API client based on your platform and level of programming experience. The clients can be found on the [Support Center](#).
- b** Run the samples included in the API to ensure that a connection can be established. Doing so will help you understand how the client works. After you are comfortable with the client samples, add code to integrate the API with your web store or call center that sends information to CyberSource.
- c** To ensure that you can communicate order information to CyberSource, send test orders to the CyberSource test server.

CyberSource strongly recommends that you test your connection method. You can request test transactions including authorizations, captures, and credits. You can use your own credit card or test credit card numbers provided in the following table with any future expiration date.

**Table 2 Test Credit Card Numbers**

Credit Card Type	Test Account Number <sup>1</sup>
Visa	4111 1111 1111 1111
Mastercard	5555 5555 5555 4444
American Express	3782 8224 6310 005
Discover	6011 1111 1111 1117
JCB	3566 1111 1111 1113
Diners Club	3800 000000 0006

<sup>1</sup> remove spaces when sending to CyberSource.

**Step 8** Go live.

Be sure to test your connection method thoroughly. After you successfully test your account and are ready to process real orders, you can take your account live.

In the Business Center, choose the **Account Management** tab and click **Merchant Information**. At the bottom of the **Account Information** page, click **Go Live**. In addition, make sure that you configure your API, HOP, SOP, or shopping cart settings to connect with the CyberSource production server. Even after you take your account live, you can continue testing your account in the Test Business Center:

<https://ebctest.cybersource.com>.

After your account is live, CyberSource recommends that you submit a real transaction for 1.00 USD for each card type you will be accepting. This ensures that your payment processor information is correct and that you receive funding into the expected bank account.

**Step 9** Manage your orders.

After you begin processing orders, you might need to review your orders. For example, you might need to view all the orders processed on a specific day, check order details, or verify whether orders were approved or declined. With the **Transaction Search** feature of the Business Center, you can:

- Capture authorizations
- Review, credit, or void sales
- Create subscriptions from your customer orders

The search feature provides results for transactions that occurred in the past 6 months, and the data results can be exported.

**Step 10** Track and reconcile your orders.

The following table describes the values that you can use to track and reconcile your orders.

**Table 3 Values for Tracking and Reconciling Orders**

Value	Description
Request ID	<p>The request ID is a unique identifier that CyberSource assigns to each request and returns in each reply message. You can use the request ID to do the following:</p> <ul style="list-style-type: none"> <li>■ Identify a transaction in a CyberSource report</li> <li>■ Search for a transaction in the Business Center</li> <li>■ Discuss a specific request with Customer Support</li> <li>■ Link a follow-on request to a primary request</li> </ul> <p>For specific field names, see the user guide for the payment method you are using.</p>
Merchant Reference Code	<p>The merchant reference code is an order tracking number that you generate and send in your requests so that you can track orders as they move through the phases of processing with CyberSource.</p> <p>CyberSource recommends that you use a unique merchant reference code for each order and use the same merchant reference code for all the requests associated with the order. This enables you to efficiently track the order in the CyberSource reports and on the Transaction Search pages on the <a href="#">Business Center</a>.</p> <p>For specific field names, see the user guide for the payment method you are using.</p>
Reconciliation ID	<p>For most CyberSource services, the reply message includes a unique reconciliation ID that is assigned by CyberSource. For most payment processors, you can use this value to reconcile the transactions in your CyberSource reports with the transactions in your processor reports.</p> <p>For details, such as specific field names and information about processors that do not support reconciliation, see the user guide for the payment method you are using.</p>
Additional Tracking Values	<p>A few services provide additional tracking values. See the order tracking information in the user guide for the payment method you are using.</p>

**Step 11** Access reports.

The Business Center offers a Transaction Search feature. In addition, CyberSource generates predefined and on-demand reports to help you manage your orders. The Capture Detail Report, for example, can help you reconcile the deposits you receive in your merchant account.

The following table lists the reports that are the most useful for reconciliation.

**Table 4 Reports to Use for Reconciling Orders**

Report	Description
Capture Detail Report	Provides information about your credit card transactions.
Payment Events Report	Provides information about events that occurred on the previous day for electronic check and PayPal transactions you submitted.

CyberSource recommends that you periodically download and save your reports for future reference. Your reports remain available for 16 months in the Business Center. For information about the formats of the reports and instructions for downloading them, see the [Business Center Reporting User Guide](#).

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## Contact Information

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If you have a question regarding CyberSource services, please review previously asked questions in the Knowledge base by clicking the Support Center link in the upper-left side of the Business Center. To have a CyberSource Customer Support representative answer your question, submit an eTicket.



**Note**

To ensure that you receive communications from CyberSource, add CyberSource to the approved list in your email system. Emails coming from CyberSource end with `@cybersource.com`. By placing CyberSource on your approved list, it should help ensure that CyberSource emails do not get filtered out as spam.

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## Submitting an eTicket

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To request assistance from Customer Support, you can submit an eTicket.

### To submit an eTicket:

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- Step 1** Log in to the [CyberSource Business Center](#).
- Step 2** Click **Support Center** near the top-left side of the page.  
The Support Center appears.
- Step 3** Click **Create eTicket**:

## Support Center

**Search Knowledgebase**

Enter questions, specific terms, or Document ID's? Search

All Content  KB Articles Only

My eTickets All eTickets for docteam\_1 Create eTicket

Open eTickets for

No.	Title	Priority	Status	RA	Submitter	Created Date (GMT)

**Step 4** Enter the following information on the Create eTicket screen:

- **First Name:** the first name of the person submitting the eTicket.
- **Last Name:** the last name of the person submitting the eTicket.
- **Phone Number:** the daytime phone number of the person submitting the eTicket.
- **Email Address:** the email address of the person submitting the eTicket.
- **Sensitive:** if you check this box, only the user submitting this eTicket and the Administrator on this account can to view this information.



Do not include personally identifiable information in your eTicket such as credit card numbers, card verification codes (CVV/CVC/CID), Social Security Numbers, or passwords.

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- **Issue Type:** choose the most appropriate issue.
- **Summary:** enter a summary of the problem or request.
- **Description:** enter a detailed description of the problem or request.

**Step 5** Click **Next**.

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# Simple Order API Basics

The CyberSource Simple Order API enables you to access CyberSource services using name-value pairs, XML, or SOAP toolkit. This document describes the name-value pairs and XML interfaces. For information about the SOAP interface, see the [SOAP Toolkits for Web Services Developer Guide](#).

## Choosing a Client

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The Simple Order API clients include the following components:

- Client libraries for communicating with CyberSource services
- Security libraries that digitally sign the messages
- Sample code that shows how to digitally sign the messages and use the client libraries
- SOAP proxy classes

The Simple Order API clients are available in various combinations of programming languages (ASP/COM, C/C++, Java, .NET, PHP, Perl), platforms (Windows, Solaris, Linux), and interfaces (name-value pairs, XML, SOAP). Choose a client SDK from the [Simple Order API Clients](#) page. After downloading an SDK, CyberSource recommends that you read the accompanying documentation, install the client, and test the client.

## Choosing an API Version

CyberSource updates the Simple Order API regularly with new API fields and new functionality. With each update, the API version number increases. For the latest version of the API, see the XML schema:

<https://ics2ws.ic3.com/commerce/1.x/transactionProcessor/>

CyberSource recommends that you use the latest version of the Simple Order API to take advantage of the full functionality of CyberSource services. See the [Simple Order API Release Notes](#) for information about updates to the API.



When you configure your Simple Order API client, you must indicate which version of the API to use. The documentation for your client explains how to do it.

## Name-Value Pairs or XML

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The name-value pair interface is based on the XML schema. Most of the CyberSource documentation uses name-value pairs when discussing the Simple Order API. If you are using XML, you can easily translate the name-value pairs to the corresponding XML elements as described in ["Correlating XML Elements and Name-Value Pair Field Names," page 17.](#)

### Name-Value Pairs

When you use name-value pairs, a request includes the required name-value pairs for the services that you are requesting. Your Simple Order API client digitally signs and sends your request. Then you parse the reply message, which consists of name-value pairs.

### XML

When you use XML, a request includes the required XML elements and attributes for the services that you are requesting. Your Simple Order API client digitally signs and sends your request. Then you parse the XML reply message.

## Correlating XML Elements and Name-Value Pair Field Names

XML element names and name-value pair field names are related in the following ways:

- Each name-value pair field name matches the corresponding XML element name.
- The XML schema shows hierarchy with an underscore ( \_ ) separating the name of the parent element from the name of the child element.



**Note**

In addition to separating the names of the parent elements from the names of the child elements, underscores can be included in the names of parent elements and child elements.

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For example, the XML schema has a `<billTo>` element with several child elements. The following table shows some of the `<billTo>` child element names in the XML schema and the corresponding name-value pair field names.

**Example XML Schema Names and Name-Value Pair Field Names**

XML Schema Names	Corresponding Name-Value Pair Field Names
<code>&lt;billTo&gt;</code>	
<code>&lt;city&gt;</code>	<b>billTo_city</b>
<code>&lt;country&gt;</code>	<b>billTo_country</b>
<code>&lt;postalCode&gt;</code>	<b>billTo_postalCode</b>
<code>&lt;/billTo&gt;</code>	



**Note**

If you are using SOAP, the complex types in the XML schema translate to classes of the same name. For example, the `<billTo>` complex type in the schema translates to a `BillTo` class in the SOAP client.

## Numbered Elements

The CyberSource XML schema includes several numbered elements. You can include these complex elements more than once in a request. For example, if 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">
```

For the name-value pair field names, this tag is represented as **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 SOAP, the client contains a corresponding `Item` class.

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

XML Schema ElementNames	Corresponding Name-Value Pair Field Names
<pre>&lt;item id="0"&gt;   &lt;unitPrice&gt;   &lt;quantity&gt; &lt;/item&gt;</pre>	<pre>item_0_unitPrice item_0_quantity</pre>
<pre>&lt;item id="1"&gt;   &lt;unitPrice&gt;   &lt;quantity&gt; &lt;/item&gt;</pre>	<pre>item_1_unitPrice item_1_quantity</pre>



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

## Constructing and Sending Requests

A request for a CyberSource service includes general information and information specific to the service that you are requesting. General information includes information about:

- You, the merchant
- The customer and the form of payment
- The items that the customer is buying

To indicate which service you are requesting, set the `run` attribute for the service to `true`. For example, to request the credit card authorization service, set the `run` attribute for the service as shown in the following table.

**Example    Setting the run Attribute for the Credit Card Authorization Service**

<b>Name-Value Pair:</b>	<code>ccAuthService_run=true</code>
<b>XML:</b>	<pre>&lt;ccAuthService run="true"&gt; . . . &lt;/ccAuthService&gt;</pre>

## MultiByte Characters and Special Characters

CyberSource supports multibyte characters for all services except Delivery Address Verification, Payment Tokenization, and Recurring Billing. Before implementing any of these services, contact Customer Support to discuss multibyte character support. All of the Simple Order API clients support UTF-8.

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 CyberSource services.

The values of all request fields must not contain new lines or carriage returns. However, they can contain embedded spaces and any other printable characters. All leading and trailing spaces are removed.

## Data Types

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

## Using Items or a Grand Total in a Request

For some services, you must specify the amount of the transaction. You can specify the amount either in a grand total for the entire transaction or in a separate amount for each product that the customer is purchasing.

## Items

Items are the products that your customers purchase from you. When you send a request for a service that requires an amount, you can send item-specific information, such as the quantity of each item ordered and the unit price for each item. The items are referred to as **item\_0**, **item\_1**, **item\_2**, and so on. CyberSource uses the information you provide for each item to calculate the grand total for the order.



The values for the **item\_#\_** fields must not contain carets (^) or colons (: ) because these characters are reserved for use by CyberSource services.

### Required Item-Level Fields

The value that you use for the **item\_#\_productCode** field determines which fields are required. If you omit the **item\_#\_productCode** field, its value defaults to `default`. If the value of the **item\_#\_productCode** field is one of the values in the bulleted list below, then the only required field is **item\_#\_unitPrice**:

- `default`
- a value related to shipping and handling

If you do not set the **item\_#\_quantity** field, it defaults to 1 .

If you do not set the **item\_#\_productCode** field to one of the values in the previous list, the following fields are required:

- `item_#_unitPrice`
- `item_#_quantity`
- `item_#_productName`
- `item_#_productSKU`

The **item\_#\_taxAmount** field is always optional.

### Specifying Tax

To include tax for an item, use the **item\_#\_taxAmount** field. This value is the total tax for the entire quantity of that item. In other words, its value is not multiplied by the value of **item\_#\_quantity**.

#### Example Specifying Tax

---

```
item_0_unitPrice=10.00
item_0_quantity=5
item_0_taxAmount=4.00
```

---

The grand total for this transaction is  $(10.00 * 5) + 4.00 = 54.00$ .

## Specifying Freight Charges

To include a shipping and handling charge for the order, you must include an additional item with the **item\_#\_productCode** field set to one of the following values:

- shipping\_only
- handling\_only
- shipping\_and\_handling

### Example Specifying Freight Charges

---

```

item_0_unitPrice=10.00
item_0_quantity=5
item_0_taxAmount=4.00
item_1_unitPrice=4.95
item_1_quantity=1
item_1_productCode=shipping_only

```

---

The grand total for this transaction is  $(10.00 * 5) + 4.00 + (4.95 * 1) = 58.95$ .

## Grand Total

Instead of using an itemized total, you can send a grand total for the order in the **purchaseTotals\_grandTotalAmount** field. If you provide item-level information in addition to the grand total, CyberSource uses the grand total amount for the order total; CyberSource does not use the item-level information to calculate the order total. The item-level information is displayed on the Transaction Details page on the [Business Center](#).

## Coupons

You can offer your customers virtual coupons at your web store. CyberSource defines a coupon as a non-taxable, fixed amount deducted from an order total. Some examples of coupons you might offer are:

- Register now and get \$100 off your purchase!
- Spring clearance! Get \$10 off any order!
- Thank you for ordering again within 30 days! We're taking \$5 off your order!

## How Coupons are Processed

This sequence summarizes how CyberSource processes a request that includes a coupon:

- 1 All items are totaled and then the coupon amounts are deducted, resulting in an order subtotal.

- 2 The order subtotal and order tax total are added to get an order grand total.
- 3 The order grand total is used by the services in your request.

For example, if you requested an electronic check debit in the request with the coupon, the electronic check debit service uses the order grand total as the amount to charge.

## Coupon Constraints

You cannot use coupons to do the following:

- Apply a discount to a specific item in a multi-item order
- Apply a discount to a specific item before tax is calculated
- Apply a percentage discount

The total coupon amount cannot be greater than the order grand total. Calculate your order totals before you send your requests to CyberSource so that you do not send orders with negative subtotals. CyberSource returns an error for orders with negative subtotals.

## Including a Coupon in the Request

To request a coupon with an order, include in the request an item with the product code set to `coupon`. For example, if your request contains two items, `item_0` and `item_1`, request a coupon by adding `item_2`. The following example shows how to specify a 10 USD coupon. The `quantity`, `productName`, and `productSKU` fields are required.

---

```
item_2_unitPrice=10.00
item_2_quantity=1
item_2_productCode=coupon
item_2_productName=Spring Clearance
item_2_productSKU=349209
```

---

## Requesting a Follow-On Service

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## Request IDs and Request Tokens



Request tokens are required in follow-on request messages only for PayPal Express Checkout, China Processing, the Ingenico ePayments processor and the Atos processor. If you are using other payment methods and processors, you are not required to include request tokens in your request messages.

---

Request IDs and request tokens are identifiers that CyberSource returns in the reply messages for all services. You need to store these values because you will need them when you send a request for a follow-on service. For the request ID, the field name depends on the names of the primary service and follow-on service.

**Important**

Although the name of the request token field that you receive is the same in each reply, the value for each field is different. Therefore, you must save each request token that you receive.

## Alternative Payment Methods and Processors

For PayPal Express Checkout, China Processing, the Ingenico ePayments processor, and the Atos processor, a request for a follow-on service must include a request ID and a request token. Save the request ID from the reply for the primary service and send this value in the follow-on request.

## Working with Request Tokens

**Important**

Request tokens are required in follow-on request messages only for PayPal Express Checkout, China Processing, the Ingenico ePayments processor, and the Atos processor. If you are using other payment methods and processors, you are not required to include request tokens in your request messages.

The request token is a unique identifier that CyberSource assigns to each request and returns to you in each reply. This field is an encoded string that does not contain any confidential information, such as account numbers or card verification numbers. For China Processing and Atos, you need to store this value, which is a string that can contain up to 256 characters. Depending on how you process follow-on requests, you might need to retrieve the request token value and include it in your follow-on service requests:

- If you process primary requests with an API, but process follow-on requests through the Business Center, you do not need to provide the request token data.
- If you process primary and follow-on requests with an API, you need to retrieve the request token from the primary reply message and include it in the follow-on request message:

Primary reply: `requestTokenrequest_token=AA4JUrwguaMUGwxSWVdPS5IM`

Follow-on request: `orderRequestTokenorder_request_token=AA4JUrwguaMUGwxSWVdPS5IM`



## Merchants Who Have Not Implemented Request Tokens

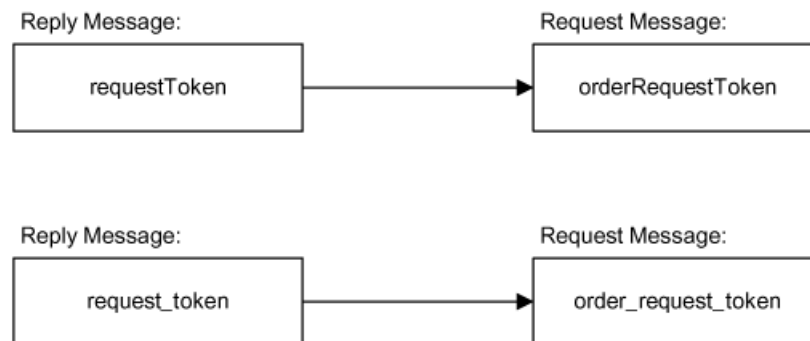
If you were a CyberSource merchant before July 2008 and never implemented request tokens, you have a choice:

- You can implement the request token as described in this document.
- You can let CyberSource store the request token data for you and retrieve it for you as necessary when you send follow-on requests.

## Merchants Who Have Implemented Request Tokens

If you were a CyberSource merchant before July 2008 and implemented request tokens, your implementation uses a different field name for the request token that is sent to each follow-on service. With the new implementation, you use the **orderRequestTokenord** field for all follow-on services. This approach makes it easier to manage the request token values. It also reduces the likelihood of submitting a duplicate request by accidentally sending in the wrong request token value. You have a choice:

- You can continue to use your current implementation at this time. It is still supported, but CyberSource recommends that you update your implementation to use the **orderRequestToken** field.
- You can update your implementation to store the latest request token for a transaction in one database field to return with all follow-on services for the transaction:



- You can update your implementation without changing your database. Store the latest request token for a transaction in all of your existing request token database fields so that any follow-on request for the transaction returns the latest request token value:



The following figure uses the request field names for the credit card services. If you are using a different set of services, substitute the request field names for the services you are using.

## Sending Requests

For live transactions, send requests to the location of the XML schema:

<https://ics2ws.ic3.com/commerce/1.x/transactionProcessor>

For test transactions, send requests to:

<https://ics2wstest.ic3.com/commerce/1.x/transactionProcessor>

## Handling Replies

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After receiving a request from you, CyberSource responds with a reply message containing the results of the request that must be integrated into your system and any other system that uses it. CyberSource recommends storing the data.

If you are using XML, you need to use an XML parser that supports namespaces because XML replies from CyberSource contain the namespace prefix **c:**.

Write an error handler to interpret the information in the reply message. Do not show the reply information directly to your customers. Instead, present an appropriate response that provides customers with the results of their transactions.



### Important

Because CyberSource can add reply fields and reason codes at any time, do the following:

- Parse the reply data according to the names of the fields instead of their order in the reply. For more information about parsing reply fields, see the documentation for your client.
  - Program your error handler to use the **decision** field to determine the result if it receives a reason code that it does not recognize.
-

## Decisions

Every reply message includes the **decision** field, which summarizes the overall result of your request. Look at this field first to decide your course of action. The following table describes the possible values for the **decision** field. You are charged for all accepted and rejected requests. You are not charged for requests that result in errors.

**Table 5 Possible Values for the Decision Field**

Value	Description
ACCEPT	The request succeeded.
ERROR	<p>A system error occurred. Errors that are caused by system problems are usually unrelated to the content of the request itself. You must design your transaction management system to correctly handle CyberSource system errors.</p> <p>Depending on which payment processor is handling the transaction, the error could indicate a valid CyberSource system error or it could indicate a processor rejection because of invalid data. CyberSource recommends that you do not design your system to endlessly resend transactions when a system occurs.</p> <p>Use the value of the <b>reasonCode</b> field to determine the reason for the ERROR decision. For more information about handling system errors and retries, see the documentation for your client.</p>
REJECT	<p>One or more of the service requests was declined. Requests can be rejected by CyberSource, the payment processor, or the issuing bank. For example:</p> <ul style="list-style-type: none"> <li>■ CyberSource rejects a request if required data is missing or invalid.</li> <li>■ The issuing bank rejects a request if the card limit is reached and funds are not available.</li> </ul> <p>This value can also be returned when an authorization transaction for a debit card or prepaid card is partially approved. See the information about debit cards and prepaid cards in the <a href="#">Credit Card Services User Guide</a>.</p> <p>Use the value of the <b>reasonCode</b> field value to determine the reason for the REJECT decision.</p>

## Reason Codes

After looking at the value of the **decision** field, use the value of the **reasonCode** field to determine the reason for the decision and decide if you want to take further action:

- If the decision was **ERROR**, the reason code indicates the type of error that occurred.
- If the decision was **REJECT**, the reason code indicates the reason for the rejection and whether you can take action that might result in a successful order.

The `<service>_reasonCode` fields indicate the result of each service that you requested. For example, if you request a credit card authorization, the reply message includes the `ccAuthReply_reasonCode` field.



CyberSource reserves the right to add new reason codes at any time. If your error handler receives a reason code that it does not recognize, it should use the `decision` field to determine the result.

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## Missing or Invalid Fields

You are responsible for ensuring that the data you send to CyberSource is complete (no missing fields) and correct (no invalid data). Verify the data entered on your web sites and point-of-sale applications before sending the information to CyberSource.

If you send a request with missing or invalid information, the reply message includes the appropriate reason codes and one or more reply fields, `invalidField_0...N` or `missingField_0...N`, which list the fields you need to correct. The nature of the missing or invalid information determines the number and the content of the reply fields. For example, if three required fields are missing from your request, the reply includes at least one and up to three fields named `missingField_0`, `missingField_1`, and `missingField_2`. You need to correct these fields and resubmit the request.

Because the API behavior pertaining to these reply fields is always subject to change, do not use these fields to communicate with customers.



For XML, the `<missingField>` and `<invalidField>` elements are not numbered. Instead, the reply includes multiple `<missingField>` or `<invalidField>` elements.

If you are using SOAP, the reply includes an array of the missing fields and an array of the invalid fields.

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## Request IDs

CyberSource returns a request ID in the reply for every service. You must store this value because you will need it when you send a request for a follow-on service as described in ["Requesting a Follow-On Service," page 26](#).



Although the name of the request ID field is the same in each reply, the value for the field is different in each reply. Therefore, you must save each request ID that you receive.

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