

Account Updater

User Guide

August 2017



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Recent Revisions to This Document

Release	Changes
August 2017	<ul style="list-style-type: none">■ Added customer ID and payment instrument information to the “Batch Payload” section. See Table 9, page 23.
May 2017	<ul style="list-style-type: none">■ Updated the “Retrieve OAuth Token” section. See page 14.■ Added instrument identifier information to the “Batch Payload” section. See page 15.■ Updated the Batch Report fields. See Table 3, page 15.
January 2017	Removed the note from the CCH entry in Table 22, page 45 .
October 2016	Added the 852 reason code. See page 45 .
September 2016	Updated the card_expiry_year field. See page 24 .
July 2016	This revision contains only editorial changes and no technical updates.

About This Guide

Audience

This guide is written for merchants who want to decrease the cost of manually updating customer account information. Account Updater enables merchants to manually or automatically incorporate changes made to a customer's payment card data: expiration date, new card number, account closures, and brand migrations between Visa and Mastercard.

Purpose

This guide describes tasks that a merchant must complete in order to submit a batch of tokens using the REST API (see "[REST API Batch Updates](#)," page 12), automatically update customer subscriptions or profiles with the latest credit card data (see "[Harvest Updates](#)," page 28), or upload request files with new customer PANs (see "[PAN Upload Updates](#)," page 33). It is intended to help the merchant reduce the number of authorization declines to retain revenue and reduce the cost of manually updating payment data.

Conventions



Note

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



Important

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

Text and Command Conventions

Convention	Usage
bold	Items that you are instructed to act upon; for example: Click Certificates .
<code>monospace</code>	Code examples and samples.

Related Documents

- *Getting Started with CyberSource Advanced for the SCMP API* ([PDF](#) | [HTML](#)) or *Getting Started with CyberSource Advanced for the Simple Order API* ([PDF](#) | [HTML](#)) describes how to get started using your CyberSource account.
- *Business Center Overview* ([PDF](#) | [HTML](#)) describes the features and options available with your CyberSource account using the Business Center.
- *Payment Tokenization Using the Business Center* ([PDF](#) | [HTML](#)) describes how to create and use on-demand customer profiles.
- *Recurring Billing Using the Business Center* ([PDF](#) | [HTML](#)) describes how to create and use customer recurring subscriptions.

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:

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Introduction

Account Updater notifies you of changes to stored customer credit card data. Such changes could affect expiration date, credit card number, or a brand. If you use CyberSource Recurring Billing, Payment Tokenization, or Token Management Services (TMS), Account Updater automatically updates the stored card data on your behalf. Account Updater obtains credit card information from both the Visa INC's Account Updater Service and the Mastercard's Automatic Billing Updater Service.

Options

REST API Batch Updates

If you use CyberSource Recurring Billing, Payment Tokenization, or Token Management Services (TMS), you can submit a batch of tokens using the REST API to be processed by the Account Updater service. See ["REST API Batch Updates," page 12](#).

Harvest Updates

If you use CyberSource Recurring Billing or Payment Tokenization services, you can configure Account Updater to automatically update all your customer subscriptions or profiles with the latest credit card data. CyberSource creates a report detailing the updates made, including new expiry dates, masked primary account numbers (PANs), and card brands. See ["Harvest Updates," page 28](#).

PAN Upload Updates

If you directly manage your customer's card data, you can create a file containing PANs, which CyberSource updates. Create a request file containing new PANs and POST it to the Account Updater URL. Download the response file using the Business Center or a client application. See ["PAN Upload Updates," page 33](#).

Enrollment

Contact your account representative to enroll in Account Updater. CyberSource submits enrollment forms on your behalf to both Mastercard and Visa. The enrollment process can take up to 10 business days.



Important

If you are going to process Account Updater requests on behalf of merchants for whom you are not the merchant of record, you must enroll in Account Updater as a billing aggregator.

Billing aggregators can participate in Account Updater (see "[PAN Upload Updates](#)," [page 33](#)), but they must indicate in the Account Updater request files the merchant for whom the request is made. If you are a billing aggregator and fail to include the proper data in a record, CyberSource rejects the record and does not process your Account Updater requests.

Business Center Permissions

As part of the enrollment process, an administrator must grant you permission in the Business Center to perform the actions below. If you are an administrator, you already have these permissions.

- View the status of a request file.
- Add and activate a PGP Security Key for PAN upload updates (see [page 33](#)).
- Create OAuth credentials for REST API batch updates (see [page 12](#)).
- Access downloadable response files.

Terms of Use

By using the CyberSource Account Updater service, you agree to comply with the Visa U.S.A. Operating Regulations, Visa Account Updater Terms of Use, Mastercard rules and regulations, and all other applicable rules and regulations issued by any card association.



Note

If you are receiving Harvest updates (see [page 28](#)), your subscription is updated once every 30 days to ensure that you meet this requirement.

In addition, you must:

- Request an update for every participating Visa account in your customer database at least:
 - Once every 180 calendar days if you bill daily, weekly, monthly, quarterly, or bi-annually.
 - Once every 365 calendar days if you bill annually.
- Submit inquiries only for those accounts with which you have an ongoing customer relationship.
- Update your customer account database within 5 business days of receiving an update.
- Ensure that all update information you receive is properly, completely, and accurately incorporated into your data store for use in future transactions.
- Correct erroneous account information within 5 business days of receipt of error notification from CyberSource.

You may not:

- Request updates on accounts that have returned a response of *Contact Card Holder*. You must check your response file for CCH responses and take appropriate action such as removing the customer record from your billing cycle until you have contacted the cardholder.
- Submit update inquiries on behalf of any other entity unless you have enrolled in Account Updater as a billing aggregator.

REST API Batch Updates

The Account Updater REST API enables you to POST a batch of tokens or instrument identifiers (subscription IDs) to the Account Updater service to be processed and updated. You must retrieve an OAuth token before creating the batch of tokens to be updated.

Retrieve OAuth Token

The AU REST API uses OAuth 2.0 for authentication. The client ID and client secret credentials are required in order to create the access token that is used to authenticate each Account Updater REST API request.

To create OAuth client credentials:

- Step 1** Log in to the Business Center:
- Live transactions: <https://ebc.cybersource.com>
 - Test transactions: <https://ebctest.cybersource.com>
- Step 2** In the left navigation panel, choose **Tools & Settings > Credit Card Account Updater > OAuth Credentials**.
- Step 3** Click **Create**.



Make note of the generated values; the OAuth client credentials are displayed only once.

Endpoints

To access endpoints, use an HTTP POST request with valid `x-www-form-urlencoded` authentication data:

- Test endpoint: <https://authtest.ic3.com/apiauth/v1/oauth/token>
- Live endpoint: <https://auth.ic3.com/apiauth/v1/oauth/token>

POST Authentication Payload



Note

Generate the OAuth client credentials to create the access token that is used to authenticate each Account Updater REST API request. See [page 12](#).

Table 1 Required Authentication Payload

Variable	Description
platform	Defines the Visa merchant platform. Value: 1.
client_id	A merchant reference assigned to your account. Created in the CyberSource Business Center. See page 12 .
grant_type	Method by which the OAuth token is granted. Value: <code>client_credentials</code>
client_secret	Secret assigned to your account. Created in the CyberSource Business Center. See page 12 .
merchant_id	Your CyberSource Merchant ID (MID)
client_type	Defines the client connection type. Value: <code>confidential</code>
content-Encoding	Indicates to the server that you are sending a zipped request for a large payload. Value: <code>gzip</code>

URL Encoded POST Example

Example 1 Header

```
POST /apiauth/v1/oauth/token HTTP/1.1
Host: authtest.ic3.com
Cache-Control: no-cache
Content-Type: application/x-www-form-urlencoded
```

Example 2 **Body**

```
platform=1&client_id=gfK2f0d552&grant_type=client_credentials&client_secret=d2dfdc225891fa719abe589b25afc2&merchant_id=myMID&client_type=confidential
```

Response Example

Parse the `access_token` value from the response and use it within five minutes of being generated. CyberSource recommends generating a new OAuth token for each AU REST API request.

The access token expires in two ways after it is generated:

- 1 It expires when it is not used every five minutes.
- 2 The value of the **expire_in** parameter represents in seconds when the access token expires after it is generated. The value defaults to 28799 seconds. If you use the access token every five minutes it eventually expires after 28799 seconds.

Example 3 **Response**

```
{
  "access_token": "00add7ee-9523-45b6-ac52-90f3e86962dd",
  "token_type": "bearer",
  "expires_in": 28799,
  "scope": "<comma_separated_list_of_scopes>",
  "client_status": "active"
}
```

POST Batch Payload

Create a batch of tokens (subscription IDs) and POST it to the Account Updater service to be processed and updated.

Endpoints

To access endpoints, use an HTTP POST request with a valid JSON payload:

- Test endpoint: <https://api.accountupdatertest.cybersource.com/v1/batch>
- Live endpoint: <https://api.accountupdater.cybersource.com/v1/batch>

Batch Payload

Headers

Table 2 Request Headers

Variable	Description	Validation
Authorization	Bearer \${ACCESS_TOKEN}	The requests should be populated with a valid OAuth token. See " Retrieve OAuth Token ," page 12.
Content-Type	Defines the content type. JSON is supported by this API.	Use <code>application/json</code>

Batch Payload

Table 3 Batch Payload

Variable	Description	Required	Validation
notification_email	Email address to which batch status updates will be sent.	Yes	Valid email address
merchant_reference	Your reference to identify the batch.	No	Min = 0 Max 255 characters
included	Elements to be included. Possible values: <ul style="list-style-type: none"> tokens instrument_identifier 	Yes	—
tokens	A Recurring Billing or Payment Tokenization generated token assigned to the tokenized PAN. This is also known as the subscription ID. See Example 4, "Tokens Batch Payload."	Yes	If the array is present, then it should not be empty (min length = 1) or contain null values. Maximum number of tokens is 10 million.
instrument_identifiers	A Token Management Service (TMS) instrument identifier assigned to the tokenized PAN. See Example 5, "Instrument Identifiers Batch Payload."		
id	ID for the instrument identifier token.	Yes (TMS-only)	String (32)
expiration_month	Two-digit month in which the card expires.	Yes (TMS-only)	String (2)
expiration_year	Four-digit year in which the card expires.	Yes (TMS-only)	String (4)

Batch Payload Examples

Example 4 Tokens Batch Payload

```
{
  "notification_email": "test@cybersource.com",
  "merchant_reference": "Merchant Name",
  "included": {
    "tokens": [ "321354654", "986546546" ]
  }
}
```

Example 5 Instrument Identifiers Batch Payload

```
{
  "notification_email": "test@cybersource.com",
  "merchant_reference": "Merchant Name",
  "included": {
    "instrument_identifiers": [
      {
        "id": "7040000000000185479",
        "expiration_month": "11",
        "expiration_year": "2020"
      },
      {
        "id": "7040000000000293589",
        "expiration_month": "10",
        "expiration_year": "2021"
      }
    ]
  }
}
```

Successful Response Data

A successful response returns a 202 response code to the client along with the following payload.

Table 4 Response Payload

Variable	Description	Always Returned?	Format
batch_id	When the request is successful a batch ID is returned to the user.	N	Alphanumeric (26)
batch_item_count	When the request is successful this value is the number of items that were included in the request. When the request is unsuccessful the value of this field is 0.	Y	Numeric (9)

Table 4 Response Payload

Variable	Description	Always Returned?	Format
_links	JSON object containing link elements relating to the request. Successful requests return the URI of the batch status.	Y	
self	The resource address that was requested. Element within _links .	Y	URL
status	URI of the batch status resource. Do not hard-code the link to the batch status resource. Use the returned value to avoid errors if the URI structure changes.		URL
correlation_id	Returned when an error occurs. Provide this ID to Customer Support to help identify your transaction.	N	Alphanumeric
code	Returned when an error occurs. See "Unsuccessful Response Codes," page 18 .	N	Alphanumeric
detail	Returned when an error occurs. Detailed description of the error. See "Error Message Codes," page 20 .	N	Alphanumeric
fields	Returned when an error occurs. The array contains elements that describe the erroneous fields. See "Field Validation Messages," page 21 .	N	Alphanumeric
path	Returned when an error occurs. Element within the fields. Path of field name. See "Error Message Codes," page 20 .	N	Alphanumeric
message	Returned when an error occurs. This is a plain text error message and can be an element within the fields. This field can also appear with the fields JSON object.	N	Alphanumeric
localizationKey	Returned when an error occurs. An unique key which represents the error message and can be an element within fields. See "Error Message Codes," page 20 . This field can also appear with the JSON object.	N	Alphanumeric

Successful Response Example

Example 6 Successful Response

```
{
  "_links": {
    "self": {
      "href": "https://api.accountupdatertest.cybersource.com/v1/batch"
    },
    "status": [
      {
        "href": "https://api.accountupdatertest.cybersource.com/v1/batch/14558965083280000539584782/status"
      }
    ]
  },
  "batch_id": "14558965083280000539584782",
  "batch_item_count": 2
}
```

Unsuccessful Response Codes

If the response is unsuccessful, the client receives one of several different HTTP response codes to indicate an error. The body of the response contains an error message that specifically indicates what went wrong.

Table 5 Response Codes

HTTP Response Code	Description	Error Message Code
400 Bad Request	A problem occurred during parsing of the request body.	MALFORMED_PAYLOAD_ERROR
401 Unauthorized	The token passed in the header by calling client is not valid.	INVALID_OAUTH_TOKEN
403 Forbidden	The client does not have the required permissions to access the requested resource. This error can occur when the role returned from the OAuth service is different from the role required to access the specified resource.	FORBIDDEN_RESPONSE
404 Not Found	The requested URI is not valid.	RESOURCE_NOT_FOUND
405 Method Not Allowed	The URI is valid, but the http operation is not permitted. You might get this error when you try to perform a GET operation on an endpoint that only supports PUT, for example.	UNSUPPORTED_HTTP_METHOD

Table 5 Response Codes (Continued)

HTTP Response Code	Description	Error Message Code
415 Unsupported Media Type	<p>The Client has set a content type in the header which is not supported by the endpoint.</p> <p>You may get this if, for example, you've set the content type to "application/xml" but the endpoint only supports "application/json".</p>	UNSUPPORTED_MEDIA_TYPE
422 Unprocessable Entity	Invalid data sent in payload	VALIDATION_ERROR See Table 7, "Field Validation Messages," on page 21.
500 Internal Server Error	<p>Server error. This is normally thrown when something has happened on the server side which the calling client has no control over.</p> <p>An example of this might be where a database connection is not working.</p>	SERVER_ERROR
502 Bad Gateway	There is an issue with a 3rd party system.	REMOTE_SERVER_ERROR

Error Response Example

Example 7 Error Response

```

{
  "_links": {
    "self": {
      "href": "http://localhost:8080/"
    }
  },
  "code": "VALIDATION_ERROR",
  "correlationId": "98e30964397e49898a982a59b9338f5a",
  "detail": null,
  "fields": [
    {
      "path": "merchant_reference",
      "message": "Merchant reference cannot be null",
      "localizationKey": "cybsapi.ondemand.batch.merchantRef.notNull"
    }
  ],
  "localizationKey": "cybsapi.validation.errors",
  "message": "Field validation error"
}

```

Error Message Codes

Table 6 Response Level Error Messages

Code	Message	Localization Key	Detail
VALIDATION_ERROR	Field validation error	cybsapi.validation.error	One or more fields failed validation.
MALFORMED_PAYLOAD_ERROR	Unable to parse payload	cybsapi.payload.error	The payload could not be parsed.
RESOURCE_NOT_FOUND	Requested Resource Not Found	cybsapi.resource.notfound	The requested resource is not found. Please try again later.
SERVER_ERROR	Error encountered while processing request	cybsapi.server.error	Internal Server Error. Contact the customer support.
REMOTE_SERVER_ERROR	Error encountered while processing request	cybsapi.server.error	Remote Server Error. Contact CyberSource customer support.
FORBIDDEN_RESPONSE	Unauthorized Access	cybsapi.forbidden.response	You are not authorized to access this resource.
INVALID_OAUTH_TOKEN	Unauthorized Access. Invalid OAUTH token	cybsapi.oauthtoken.invalid	You are not authorized to access this resource. The request header should contain a valid OAuth token.
OAUTH_TOKEN_NOT_PRESENT	Unauthorized Access. OAUTH token not present	cybsapi.oauthtoken.notpresent	The request header should contain a valid OAuth token.
UNSUPPORTED_MEDIA_TYPE	Unsupported media type	cybsapi.media.notsupported	The header value for Content-type is not supported for the specified resource.
UNSUPPORTED_HTTP_METHOD	Method not allowed	cybsapi.method.notallowed	The specified http method is not allowed. See the http response header for a list of permitted methods.

Field Validation Messages

If the error code is `VALIDATION_ERROR`, the field array is populated with one or more of the following validation errors.

Table 7 Field Validation Messages

Path	Message	Localization Key
notification_email	Email Address is invalid	cybsapi.ondemand.batch.email.invalid
merchant_reference	Merchant reference value should not exceed 255 characters	cybsapi.ondemand.batch.merchantRef.maxLength
included.tokens	Token array should not be empty	cybsapi.ondemand.batch.tokens.notEmpty

GET Batch Status

The Batch Status endpoint provides status information for the batch you created. The information is provided in JSON format.

Endpoint

The URI is returned in the `_links` variable of the create batch response (see [page 16](#)), and CyberSource recommends using the dynamic link rather than hard-coding it. Access the status resource by sending a HTTP GET request to the endpoint. You need to authenticate the request with an OAuth `access_token` value in the Authorization header (see [page 12](#)).

Status Responses

Table 8 Status Responses

Status	Description
Received	The batch was received and is being checked for errors.
Processing	The batch was sent to the card association(s) to be updated.
Updating	CyberSource has received a response from the card association(s) and is updating the tokens.
Complete	Updates have been applied to the tokens. A URI to view the batch report is now available.
Failed	/{specific error message}

Response Example

Example 8 Response

```
{
  "_links": {
    "self": {
      "href": "https://api.accountupdatertest.cybersource.com/v1/batch/{batchId}/status"
    },
    "report": [
      {
        "href": "https://api.accountupdatertest.cybersource.com/v1/batch/{batchId}/report"
      }
    ]
  },
  "version": "1.0",
  "status": "COMPLETE",
  "description": "Updates have been applied to your tokens. A batch report is available.",
  "batch_id": "14546840036390000725214624",
  "batch_source": "TOKEN_API",
  "batch_ca_endpoints": "VISA,Mastercard",
  "batch_created_date": "2016-04-23T18:25:43.511Z",
  "report_created_date": "2016-04-25T19:35:47.511Z",
  "merchant_reference": "acc7089",
  "totals": {
    "accepted_records": 10000,
    "rejected_records": 50,
    "updated_records": 487,
    "ca_responses": 500,
    "ca_responses_omitted": 13
  },
  "billing": {
    "nan": 175,
    "ned": 126,
    "acl": 124,
    "cch": 75
  }
}
```

GET Batch Report

The Batch Report is in JSON format and contains details of the tokens that have been updated, such as new masked PANs and expiry details. If you are using format-preserving tokens (contain the last four digits of the PAN), the report also contains the new token (subscription ID) values.

To reduce the file size of the JSON report, CyberSource recommends that you specify Accept-Encoding: gzip in the header of the GET request.

Endpoint

The URI is returned in the report link of the batch status response (see [page 21](#)) and CyberSource recommends using the dynamic link rather than hard-coding it. Access the endpoint by using an HTTP GET request with valid `x-www-form-urlencoded` authentication data to:

```
https://api.accountupdater.cybersource.com/batch/<batch_id>/status
```

Report Fields

Table 9 Batch Report Fields

Field Name	Description
version	The version of the report. For example, v1.4-1 is the major version of the API used to create the batch and 4 is the minor version of the report. Note You always receive the latest minor version of the report for the API you used to create the batch.
batch_id	The batch ID assigned by Account Updater.
batch_source	The method used to create the batch. For example, token_api
batch_ca_endpoints	The endpoints to which the card numbers were sent. Possible values: VISA,Mastercard
batch_created_date	The date on which the batch was created. Format: ISO_8601 UTC date.
report_created_date	The date on which the report was created. Format: ISO_8601 UTC date.
merchant_reference	The merchant reference (if present in the request).

Table 9 Batch Report Fields (Continued)

Field Name	Description
totals	JSON object containing the high-level summary of the batch:
accepted_records	The number of tokens that were identified and retrieved for the merchant ID.
rejected_records	The number of tokens that were not identified or retrieved.
updated_records	The number of updates that were applied to a token.
ca_responses	The number of updates that were received from the card associations. This value represents updates that may have or have not been applied to a token.
ca_responses_omitted	The number of updates that were not applied to a token. For example, a response is returned by more than one card association.
billing	JSON object containing the billing summary information:
nan/ned/acl/cch	The number of each billed response type.
records	JSON object containing additional objects that relate to the original tokens and the updates or errors that occurred:
id	The CyberSource generated ID for the record.
source_record	JSON object containing details from the source token:
token	The subscription ID included in the request.
card_number	Masked card number before an update. First six digits and the last four digits are not masked.
card_expiry_month	Two-digit month in which the card expires.
card_expiry_year	Four-digit month in which the card expires.
card_type	Type of card.
customer_id	The value of the customer assigned to the tokenized shipping information and merchant defined data. This is for TMS only. See Example 9, page 25 .
payment_instrument_id	The value of the payment instrument assigned to the tokenized billing information and card expiry dates. This is for TMS only. See Example 9, page 25 .
instrument_identifier_id	The value of the instrument identifier assigned to the tokenized PAN. This is for TMS only. See Example 9, page 25 .
response_record	JSON object containing the details that were made to the token:
response	The type of response. See Table 22, "Response Codes and Reason Codes," on page 45 .

Table 9 Batch Report Fields (Continued)

Field Name	Description
reason	Reason code for the response. See Table 22, "Response Codes and Reason Codes," on page 45.
token	If last-four-digit format-preserving tokens are used, a new token (subscription ID) can be returned that replaces the source record token. See Example 10, page 26.
card_number	Masked card number. First six and last four digits are not masked.
card_expiry_month	Two-digit month in which the card expires.
card_expiry_year	Four-digit year in which the card expires.
card_type	Type of card associated with the updated token.
instrument_identifier_id	The value of the instrument identifier assigned to the tokenized PAN. This is for TMS only. See Example 9, page 25.
instrument_identifier_created	Indicates whether this is the first time the PAN has been tokenized for the merchant. See Example 9, page 25. Possible values: <ul style="list-style-type: none"> ■ true—this is the first time the PAN has been tokenized and assigned an instrument identifier. ■ false—the PAN has previously been tokenized and assigned an instrument identifier.

Report Examples

Example 9 Batch Report

```

"records": [
  {
    "id": "29472",
    "source_record": {
      "token": "9502000000629506",
      "card_number": "411111xxxxxx1111",
      "card_expiry_month": "03",
      "card_expiry_year": "2017",
      "card_type": "001"
      "customer_id": "9502000000629506"
      "payment_instrument_id": "9502000000624021"
      "instrument_identifier_id": "9502000000622910"
    }
  },

```

```

    "response_record": {
      "response": "NAN",
      "reason": "800",
      "token": "9502000000629506",
      "card_number": "511111xxxxxx9741",
      "card_type": "002"
      "instrument_identifier_id": "9502000000623012"
      "instrument_identifier_created": "true"
      "card_expiry_month": "07",
      "card_expiry_year": "2019"
    }
  }
]

```

Example 10 Updated Token

```

"records": [
  {
    "id": "58398",
    "source_record": {
      "token": "1234567890121111",
      "card_number": "411111xxxxxx1111",
      "card_expiry_month": "05",
      "card_expiry_year": "2017",
      "card_type": "001"
    },
    "response_record": {
      "response": "NAN",
      "reason": "800",
      "token": "5234567890124444",
      "card_number": "511111xxxxxx9741",
      "card_expiry_month": "07",
      "card_expiry_year": "2019"
      "card_type": "002"
    }
  }
]

```

Testing

Before you submit files to the production server, CyberSource recommends that you first test your request files. See ["Testing," page 48](#).

Profile Update Report

The Account Updater Profile Update report is available for download 24 to 48 hours after your scheduled updates. You can download the report from the Business Center or with a client application. See "[Profile Update Report](#)," page 29.

Harvest Updates

**Important**

You must enroll in Account Updater and comply with the Terms of Use (see [page 11](#)).

CyberSource Account Updater is integrated with the Recurring Billing and Payment Tokenization functionality so that your customer subscriptions or profiles are automatically kept up to date with the latest credit card data changes.

After your enrollment forms are processed, CyberSource:

- 1 Configures your account to automatically update your customer subscriptions or profiles once per month with updated credit card data. These updates can include a new expiration date, a new credit card number, or a brand change such as a change from Visa to Mastercard.
- 2 Requests updates only for customer subscriptions or profiles with a status of *active* or *on-hold*. Updates for customer subscriptions or profiles with a status of *completed* or *cancelled* are not requested.
- 3 Generates the Profile Update Report (see [page 29](#)), which can be downloaded by logging in to the Business Center or by using a client application.

To have your customer subscriptions or profiles updated on a particular day of the month to coincide with your billing cycle, contact Customer Support.

**Note**

It is best practice to request updates for your customer subscriptions or profiles 3 to 5 days before your billing cycle begins. You can choose any calendar day, 1 through 28.

Profile Update Report

The Account Updater Profile Update report is available for download 24 to 48 hours after your scheduled updates. You can download the report from the Business Center or with a client application.

To download the Profile Update report:

- Step 1** Log in to the Business Center:
- Live transactions: <https://ebc.cybersource.com>
 - Test transactions: <https://ebctest.cybersource.com>
- Step 2** In the left navigation panel, choose **Reports > Report Search**. The Report Search window appears.
- Step 3** From the Report drop-down list, choose **All**.
- Step 4** From the Frequency drop-down list, choose **Daily**.
- Step 5** Choose the day that your reports were processed.
- Step 6** Click **Submit**. The report is listed in the Downloadable Reports table.
- Step 7** Click the **Download** link next to the report name.
-

To connect to the report server, your client application must support HTTPS connections:

- HTTP/1.0 or HTTP/1.1
- TLS 1.2 or later

Your client application must use Basic Access Authentication to send the username and password. Many HTTPS client libraries implement this authentication method. For more information about Basic Access Authentication, see:

<http://www.ietf.org/rfc/rfc2617.txt>

To request a report, your client application must send an HTTP GET message to the report server. Use this URL format for the request:

```
https://<server_name>/DownloadReport/YYYY/MM/DD/<merchant_ID>/  
<report_name>.<report_format>
```

Table 10 Report URL Values

Variable	Description
<server_name>	Name of the server from which to download the report. Use one of these values: <ul style="list-style-type: none"> ■ Test: ebctest.cybersource.com/ebctest ■ Live: ebc.cybersource.com/ebc
YYYY	Four-digit year.
MM	Two-digit month.
DD	Two-digit day.
<merchant_id>	CyberSource merchant ID.
<report_name>	Name of the report to download: <merchant_id>au.response.ss
<report_format>	Report format to download: csv

Profile Update Report Records

Header Records

Table 11 Header Records

Order	Field Name	Description	Max. No. of Characters
1	Record Identifier	Constant value indicating the record type. Format: H	1
2	File Classification	Indicates file type. Format: cybs.au.response.ss	30
3	Merchant ID	CyberSource Merchant ID. Format: Alphanumeric	30
4	Batch ID	Unique identifier for the batch, generated by CyberSource. Format: Numeric	30

Details Records

Table 12 Details Records

Order	Field Name	Description	Max. No. of Characters
1	Record Identifier	Constant value indicating the record type. Format: D	1
2	Account Updater Request ID	Unique CyberSource identifier for the record. Format: Numeric	30
3	Profile ID	The value that identifies the customer subscription or profile. CyberSource returned this value when the subscription or profile was created. Format: Numeric	16 or 22
4	New Card Number	New card number with eight digits masked. Format: Alphanumeric If no new card number is available, this field is populated with the current card number.	19
5	Response Code	Return code for the record (see Table 22, "Response Codes and Reason Codes," on page 45). Customer subscriptions or profiles with a response code of ACL are moved to a <i>cancelled</i> state. Format: Alphabetic	3
6	Reason Code	Reason code for the record (see Table 22, "Response Codes and Reason Codes," on page 45). Format: Numeric	3
7	Old Card Number	Old card number with eight digits masked. Format: Alphanumeric	19
8	Old Card Expiry Month	Expiration month of the old card. Format: MM	2
9	Old Card Expiry Year	Expiration year of the old card. Format: YY	2
10	New Card Expiry Month	Expiration date of the new card. Format: MM	2
11	New Card Expiry Year	Expiration year of the new card. Format: YY	2
12	New Profile ID	The new value that identifies the customer subscription or profile. This value supersedes the previous subscription ID. CyberSource returns this value when the profile is updated. Format: Numeric	16

Footer Records

Table 13 Footer Records

Order	Field Name	Description	Max. No. of Characters
1	Record Identifier	Constant value indicating the record type. Format: F	1
2	Record Count	The number of detail records in the file. Format: Numeric	—
3	Response Code	Indicates the overall response (see Table 23, "Response Codes and Reason Codes," on page 46). Format: Alphabetic Possible value: COM: Completed	3
4	Reason Code	Indicates the overall reason for the response code (see Table 23, "Response Codes and Reason Codes," on page 46). Format: Numeric	3

PAN Upload Updates

**Important**

You must enroll in Account Updater and comply with the Terms of Use. See ["Terms of Use," page 11](#).

After the syntax of the request file is validated, CyberSource begins processing the file.

Account Updater files are processed once per day. You can expect your response file to be available 24-48 hours after you submit your request file. CyberSource recommends sending your Account Updater request file 3 to 5 days before your billing cycle starts to ensure that your file completes processing and that you have enough time to update your data store.

Responses from Visa and Mastercard are consolidated and returned in an encrypted response file. See ["Response File Records," page 41](#).

Creating Security Keys

To upload PAN updates you must create two types of security keys: a transaction security key and a PGP public/private key pair.

Transaction Security Key

You must use the transaction security key to programmatically connect to CyberSource and upload request files.

If you use the Simple Order API to process transactions, you can use the same key for Account Updater.

If you have been using the SCMP API to process transactions, you must create a transaction security key that works with the Simple Order API. See "Simple Order API Security Keys" in [Creating and Using Security Keys](#).

PGP Public/Private Key Pair

PGP public/private key pair is used to protect, by encryption, credit card data contained in the response files. The key pair contains both a public and a private key. You exchange the public part of this key pair with CyberSource, who uses it to encrypt the response files. You maintain the private part of the key pair to decrypt the response file.

To create a PGP key pair for encrypting and decrypting credit card data, see “PGP Security Keys” in *Creating and Using Security Keys*.

Formatting a Request File

Account Updater request files must be in CSV format with a maximum file size of 12 MB.

The format for a request file consists of:

- A header record.
- A detail record with one or more data records, each on a separate line.
- A footer record, which indicates the end of the file.

Header Record

The header record consists of comma-separated values and uses the fields listed in the following table:

Table 14 Header Record Fields

Field Name	Description	Required or Optional	Data Type (length)
Record Identifier	Constant value indicating the record type. Format: H	Required	Alpha (1)
File Classification	Indicates whether this is a request or response file. Format: cybs.au.request.pan	Required	Alpha (30)
merchantID	Your CyberSource merchant ID. Format: sampleID2	Required	Alphanumeric (30)
batchID	File (batch) identifier that you assign. The batch ID must be unique. If you send a file that contains a previously submitted batch ID, the file is rejected. Format: 12345	Required	Numeric (30)

Table 14 Header Record Fields (Continued)

Field Name	Description	Required or Optional	Data Type (length)
recordCount	The number of detail records in the file. Format: 12345	Required	Numeric
statusEmail	Email address to which status emails for the request are sent. Format: aaa@aaa.aaa	Required	Alphanumeric (100)
creationDate	Optional field that can be passed by merchant for reference. If present, it appears in the Business Center Account Updater View Status window. Format: YYYY-MM-DD	Optional	(10)
Batch Info	Optional field that can be passed by the merchant for reference. Format: sample12	Optional	Alphanumeric (50)

Detail Record

Each file must contain at least one detail record.

Table 15 Detail Record Fields

Field Name	Description	Required or Optional	Data Type (length)
Record Identifier	Constant value indicating the record type. Format: D	Required	Alpha (1)
Card Number	Card number to process. Format: Numeric	Required	Numeric (19)
Card Expiry Month	Expiration month of the card. Format: MM	Required	Alphanumeric (2)
Card Expiry Year	Expiration year of the card. Format: YY	Required	Numeric (2)
Merchant Reference ID	You can use this field to track your Account Updater request records. If this field is populated, the same value will be returned in the Account Updater response file. Format: sampleID2	Optional	Alphanumeric (50)

Table 15 Detail Record Fields (Continued)

BA Sub Merchant ID*	This field is required for billing aggregator merchants only. Format: sampleID2	Optional	Alphanumeric (10)
---------------------	--	----------	-------------------

Footer Record

Each file should contain only one footer record.

Table 16 Footer Record Field

Field Name	Description	Required or Optional	Data Type (length)
Record Identifier	Constant value indicating the record type. Format: F	Required	Alpha (1)

Request File Examples

Example 11 Request File for Non-Billing Aggregator Merchants

```
H,cybs.au.request.pan,merchant1,001,2,notify@yourcompany.com,2009-03-23,My Jan Batch
D,1111222233334444,11,09,0001
D,2222333344445555,11,09,0002
F
```

Example 12 Request File for Billing Aggregator Merchants

```
H,cybs.au.request.pan,merchant1,001,2,notify@yourcompany.com,2009-03-23,My Jan Batch
D,1111222233334444,11,09,0001,subId01
D,2222333344445555,11,09,0002,subId02
F
```

Uploading a Request File



For each PAN you upload, you can receive multiple responses. For example, if you upload one Visa card for an update, you can receive both a Mastercard and Visa response, or two Visa responses.

To upload the request file, use HTTPS. Your client application must support HTTP/1.0 or HTTP/1.1 and TLS 1.2 or later.

To access the Account Updater URL, you must provide the same Simple Order API client certificate that you use to request regular individual ICS Simple Order API transactions. The client certificate is stored in a PKCS12 file named `<merchantID>.p12` and is protected by a single password.

Before you submit files to the production server, CyberSource recommends that you first test your request files. Follow the instructions in ["Testing," page 48](#).

Use the following URLs for submitting test and live Account Updater request files:

- Testing:
`https://accountupdatertest.cybersource.com/upload/UploadAccountUpdaterFile`
- Live:
`https://accountupdater.cybersource.com/upload/UploadAccountUpdaterFile`

See ["Sample Java Code for Uploading Files," page 51](#), for more information on creating a client certificate to upload request files.

Email Notification

After you upload the request file, CyberSource validates the syntax and sends you a confirmation email indicating whether the file passed this stage of validation. You must specify an email address in the **statusEmail** header field in order to receive this confirmation email. If this field is left blank, you do not receive an email confirmation and you must go to the Business Center to view the status (see ["Viewing the Batch File Status," page 38](#)). CyberSource sends the email notification within 30 minutes of receipt of the request file. However, actual timing depends on the system load at the time of file submission.

The table below lists possible subject lines of the email notifications.

Table 17 Email Notifications

Subject Line	Reason
Received	The Account Updater request file was received. CyberSource processes the requests in the file. No action is required. You can view the status of this request file in the Business Center. See page 38 .
Rejected	The file was rejected. Read the contents of the email and follow the suggested remedy. You cannot view the status of this request file in the Business Center.
Validated	The file passed validation. You can view the status of this request file in the Business Center. See page 38 .
Declined	The file did not pass validation checks. All records are declined. Read the contents of the email and follow the suggested remedy. You can view the status of this request file in the Business Center. See page 38 .
Processing	The request file is being processed by Account Updater. You can view the status of this request file in the Business Center. See page 38 .
Completed	The response file has been generated and is ready for download. You can view the status of this request file in the Business Center. See page 38 .

Viewing the Batch File Status

To view the status of a batch file in the Business Center:

- Step 1** Log in to the Business Center:
 - Live transactions: <https://ebc.cybersource.com>
 - Test transactions: <https://ebctest.cybersource.com>
- Step 2** In the navigation pane, choose **Tools & Settings > Credit Card Account Updater > Status**. The Account Updater Status Search window appears.
- Step 3** Choose the type of search: **batch ID** or **date**.

**Note**

You specified the batch ID search type in the request file.

- Step 4** Choose the number of batches that you want displayed on each page of results (50 to 100) and the sort order (newest results or oldest results first).
- Step 5** Click **Search**.
The Status Results window appears.

Account Updater Status Results

[Page help](#)
[Page feedback](#)

Batch ID	Date of Request	Status	Origin	Records In Request
197713050006	May 14 2009 06:49:59 AM	Declined	File Upload	2
1976120509003	May 12 2009 06:42:01 AM	Processing	File Upload	3
1976120509002	May 12 2009 03:17:01 AM	Processing	File Upload	3
1976120509001	May 12 2009 01:31:04 AM	Processing	File Upload	3
1976080509002	May 08 2009 03:56:55 AM	Validated	File Upload	3
1976080509001	May 08 2009 01:23:04 AM	Received	File Upload	3
2966002	May 07 2009 07:12:27 AM	Validated	File Upload	7
1976070509004	May 07 2009 03:51:39 AM	Received	File Upload	3
1976070509003	May 07 2009 03:51:18 AM	Received	File Upload	3
2966001	May 07 2009 03:42:11 AM	Validated	File Upload	7

- Step 6** To view the completed files, choose **Reports > Report Search** in the navigation pane.

Downloading a Response File

You can download response files with a status of *Complete* from the Business Center or with a client application.

To download a response file:

- Step 1** Log in to the Business Center.
- Step 2** In the left navigation pane, choose **Reports > Report Search**. The Report Search window appears.
- Step 3** Chose **All** from the Report menu and **Daily** from the Frequency menu.

Step 4 Choose the day that your files were processed.

Step 5 Click **Submit**.

The file appears in the **Downloadable Reports** table.

Step 6 Click the **download** link next to your file.

Depending on your browser settings, the file either opens in your browser window, or you are prompted to save the file.

Step 7 You must use the private PGP key to decrypt files. You can do it using the same third-party software you used to create the keys.



Note

If you do not activate the PGP public key in your CyberSource merchant account profile, the response file is not generated. See *Creating and Using Security Keys* ([PDF](#) | [HTML](#)).

To connect to the report server, your client application must support HTTPS connections:

- HTTP/1.0 or HTTP/1.1
- TLS 1.2 or later

Your client application must use Basic Access Authentication to send the username and password. Many HTTPS client libraries implement this authentication method. For more information about Basic Access Authentication, see:

<http://www.ietf.org/rfc/rfc2617.txt>

To send an API request with an HTML form or any script, include this endpoint:

`https://ebc.cybersource.com/ebc/DownloadReports`

To request a response file, your client application must send an HTTP GET message to the report server. The URL that you specify in your message indicates which report you want to download.

Use the following format for the URL:

`https://<server_name>/DownloadReport/YYYY/MM/DD/<merchant_ID>/<report_name>.<report_format>`

For example, if your merchant ID is *sample*, you would use the following URL to download the February 1, 2010 response file from the production system:

`https://ebc.cybersource.com/ebc/DownloadReport/2010/02/01/sample/sample.1234.au.response.pan.csv`

The following table describes each value in the URL.

Table 18 Report URL Values

Value	Description
<server_name>	Name of the server from which to download the report. Use one of these values: <ul style="list-style-type: none"> ■ Test server: ebctest.cybersource.com/ebctest ■ Production server: ebc.cybersource.com/ebc ■ Test reports server: downloadreportstest.cybersource.com ■ Production reports server: downloadreports.cybersource.com
YYYY	Four-digit year
MM	Two-digit month
DD	Two-digit day
<merchant_id>	CyberSource merchant ID
<report_name>	Name of the report to download: merchantID.batchID.au.response.pan
<report_format>	Report format: csv

Response File Records

The response file is encrypted with the public part of the PGP Key that you generated and uploaded to CyberSource. To read a response file, you must decrypt it using the private part of the PGP key pair. You can do so with the same third-party software you used to create the keys.

The format for a request file consists of:

- A header record.
- A detail record with one or more data records, each on a separate line.
- A footer record, which indicates the end of the file.

Header Record

The header record consists of comma-separated values and uses the fields listed in the following table:

Table 19 Header Record Fields

Field Name	Description	Required or Optional	Data Type (length)
Record Identifier	Constant value indicating the record type. Format: H	Required	Alpha (1)
File Classification	Indicates whether this is a request or response file, and the type of service. Formats: cybs.au.response.pan	Required	Alphanumeric (30)
MerchantID	Your CyberSource merchant ID. Format: Alphanumeric	Required	Alphanumeric (30)
BatchID	File (batch) identifier sent in the request file. Format: Numeric	Required	Numeric (30)

Detail Record

Each file contains at least one detail record.

Table 20 Detail Record Fields

Field Name	Description	Data Type (length)
Record Identifier	Constant value indicating the record type. Format: D	Alpha (1)
Request ID	Unique CyberSource identifier for the record. Format: Numeric	Numeric (30)
Old Card Number	Old card number with eight digits masked. Format: Numeric	Numeric (19)
Old Card Expiration Month	Old expiration month. Format: MM	Numeric (2)
Old Card Expiration Year	Old expiration year. Format: YY	Numeric (2)
New Card Number	New card number with eight digits masked. Format: Numeric	Numeric (19)
New Card Expiration Month	New expiration month. Format: MM	Numeric (2)

Table 20 Detail Record Fields (Continued)

Field Name	Description	Data Type (length)
New Card Expiration Year	New expiration year. Format: YY	Numeric (2)
Merchant Reference ID	This field is optional and is returned in the response if present in the request file. Format: Alphanumeric	Alphanumeric (50)
BA Sub Merchant ID	This field is returned in the response if sent in the request file. Format: Alphanumeric	Alphanumeric (10)
Response Code	Response code for the record. See Table 22, "Response Codes and Reason Codes," on page 45. Format: Alpha	Alpha (3)
Reason Code	Reason code for the record. See Table 22, "Response Codes and Reason Codes," on page 45. Format: Numeric	Numeric (3)

Footer Record

Each file contains only one footer record.

Table 21 Footer Record Fields

Field Name	Description	Data Type (length)
Record Identifier	Constant value indicating the record type. Format: F	Alpha (1)
Record Count	The number of detail records in the file. Format: Numeric	Numeric (10)
Response Code	Response code for the file. See Table 23, "Response Codes and Reason Codes," on page 46. Format: Alpha	Alpha (3)
Reason Code	Reason code for the file. See Table 23, "Response Codes and Reason Codes," on page 46. Format: Numeric	Numeric (3)

File Examples

Example 13 Non-Billing Aggregator Response File

```
H,cybs.au.response.pan,merchant1,001  
D,10000000000000000001,1111222233334444,11,09,,,,0001,,NUP,800  
D,10000000000000000002,2222333344445555,11,09,6666777788889999,11,11,0002,,NAN,800  
F,2,COM,800
```

Example 14 Billing Aggregator Response File

```
H,cybs.au.response.pan,merchant1,001  
D,10000000000000000001,1111222233334444,11,09,,,,0001,subId01,NUP,800  
D,10000000000000000002,2222333344445555,11,09,6666777788889999,11,11,0002,subId02,NAN,  
800  
F,2,COM,800
```

Response Codes and Reason Codes

Record Level

The response code and the reason code for the record appear in the details record of the request file.

Example 15 Details Record

```
D,10000000000000000002,2222333344445555,11,09,6666777788889999,11,11,0002,,NAN,800
```

Table 22 Response Codes and Reason Codes

Response Code	Response Code Description	Reason Code	Reason Code Description	Billable or Non-Billable Code
ACL	Match: account closed. Note The status of the customer subscription changes to <i>cancelled</i> and all recurring billing payments stop.	800	Success.	Billable.
CCH	Contact card holder.	800	Success.	Billable.
CUR	Card data current.	800	Success.	Non-billable.
DEC	—	801	Invalid card number.	Non-billable.
DEC	—	802	Invalid check digit.	Non-billable.
DEC	—	803	Invalid expiration date.	Non-billable.
DEC	—	804	Unsupported card type.	Non-billable.
DEC	—	805	Invalid card type length.	Non-billable.
DEC	—	806	Unknown card type.	Non-billable.
DEC	—	810	Invalid BA sub merchant ID.	Non-billable.
DEC	—	852	Unknown token. This token does not exist or is not associated with your account.	Non-billable.
ERR	—	801	Invalid card number.	Non-billable.

Table 22 Response Codes and Reason Codes (Continued)

Response Code	Response Code Description	Reason Code	Reason Code Description	Billable or Non-Billable Code
ERR	—	802	Invalid check digit.	Non-billable.
ERR	—	803	Invalid expiration date.	Non-billable.
ERR	—	804	Unsupported card type.	Non-billable.
ERR	—	807	Merchant not enrolled properly in Account Updater.	Non-billable.
ERR	—	808	Incorrect record indicator.	Non-billable.
ERR	—	809	Unknown error code received during processing.	Non-billable.
ERR	—	811	New account number failed MOD-10 check.	Non-billable.
NAN	New account number. It may also include a new expiration date.	800	Success.	Billable.
NED	New expiration date.	800	Success.	Billable.
NUP	No match, no update.	800	Success.	Non-billable.
UNA	Inconsistent update received, not applicable.	800	Inconsistent update received, not applicable.	Non-billable.

Request File Level

The response code and the reason code for the request file appear in the footer record of the request file.

Example 16 Footer Record

F, 2, COM, 800

Table 23 Response Codes and Reason Codes

Response Code	Response Code Description	Reason Code	Reason Code Description
COM	The merchant request file has been validated by CyberSource, processed, and the response received.	800	Success.

Table 23 Response Codes and Reason Codes (Continued)

Response Code	Response Code Description	Reason Code	Reason Code Description
DEC	The merchant request file was not processed because each record failed record-level validation.	801	All records within the request file failed record-level validation.

The CyberSource CAS environment provides a simulator in which the response from the card association can be triggered using card numbers listed in [Table 24, "Visa Card Test Numbers," on page 48](#) and [Table 25, "Mastercard Card Test Numbers," on page 49](#). This simulator ensures you can handle the possible response combinations when connecting to multiple card associations.



Note

The CAS environment typically completes the process in a matter of minutes rather than the 24+ hour duration of the live environment when updates are sent to the actual card associations.

Visa Card Numbers

The bold fields represent the token updates for Recurring Billing and Payment Tokenization merchants using the REST API batch update and harvest update. For a description of each response code, see [Table 22, "Response Codes and Reason Codes," on page 45](#).

Table 24 Visa Card Test Numbers

Card Number (Remove spaces when sending to CyberSource.)	Response
4000 0071 0951 9220	Visa Response: NAN Mastercard Response: NAN
4000 0015 3919 2096	Visa Response: NAN Mastercard Response: ACL
4000 0018 6481 0239	Visa Response: NAN Mastercard Response: CUR
4000 0091 9582 8465	Visa Response: NED Mastercard Response: NAN
4000 0027 5765 7455	Visa Response: NED Mastercard Response: ACL
4000 0071 1311 2087	Visa Response: NED Mastercard Response: CUR
4000 0021 1752 4874	Visa Response: ACL Mastercard Response: NAN
4000 0071 1629 4650	Visa Response: ACL Mastercard Response: ACL
4000 0020 5548 7183	Visa Response: ACL Mastercard Response: CUR

Table 24 Visa Card Test Numbers (Continued)

Card Number (Remove spaces when sending to CyberSource.)	Response
4000 0052 8063 4792	Visa Response: CUR Mastercard Response: NAN
4000 0024 0631 2635	Visa Response: CUR Mastercard Response: ACL
4000 0089 2339 9344	Visa Response: CUR Mastercard Response: CUR
4000 0055 7908 8940	Visa Response: NUP Mastercard Response: NAN
4000 0057 9875 5634	Visa Response: NUP Mastercard Response: ACL
4000 0080 9110 0706	Visa Response: CCH Mastercard Response: NAN
4000 0026 9567 5155	Visa Response: CCH Mastercard Response: ACL
4000 0035 8627 6236	Visa Response: CCH Mastercard Response: CUR

Mastercard Card Numbers

The bold fields represent the token updates for Recurring Billing and Payment Tokenization merchants using the REST API batch update and harvest update. For a description of each response code, see [Table 22, "Response Codes and Reason Codes," on page 45.](#)

Table 25 Mastercard Card Test Numbers

Card Number (Remove spaces when sending to CyberSource.)	Response
5111 1110 4714 3086	Visa Response: NAN Mastercard Response: NAN
5111 1110 2999 7178	Visa Response: ACL Mastercard Response: NAN
5111 1110 1548 6814	Visa Response: CUR Mastercard Response: NAN
5111 1110 5459 2548	Visa Response: NUP Mastercard Response: NAN
5111 1110 4871 8571	Visa Response: CCH Mastercard Response: NAN
5111 1110 5798 7356	Visa Response: NAN Mastercard Response: NED
5111 1110 7450 2964	Visa Response: ACL Mastercard Response: NED
5111 1110 6971 3154	Visa Response: CUR Mastercard Response: NED
5111 1110 2030 4416	Visa Response: NUP Mastercard Response: NED
5111 1110 4733 5823	Visa Response: CCH Mastercard Response: NED
5111 1110 3135 3600	Visa Response: NAN Mastercard Response: ACL
5111 1110 4816 3604	Visa Response: ACL Mastercard Response: ACL
5111 1110 1867 3020	Visa Response: CUR Mastercard Response: ACL

Table 25 Mastercard Card Test Numbers (Continued)

Card Number (Remove spaces when sending to CyberSource.)	Response
5111 1110 3056 0627	Visa Response: NUP Mastercard Response: ACL
5111 1110 0270 8865	Visa Response: CCH Mastercard Response: ACL
5111 1110 6646 9396	Visa Response: NAN Mastercard Response: CUR
5111 1110 5787 1816	Visa Response: ACL Mastercard Response: CUR
5111 1110 7350 8855	Visa Response: CCH Mastercard Response: CUR

Sample Java Code for Uploading Files

Requirements

- J2SE 1.5 or later.
- Unlimited Strength Jurisdiction Policy files from Oracle (*US_export_policy.jar* and *local_policy.jar*):
<http://www.oracle.com/technetwork/java/javase/documentation/index.html>
- Bouncy Castle, which includes *bcmail*.jar*, *bcpg*.jar*, *bcprov*.jar*, and *bctest*.jar*.
www.bouncycastle.org
- Click [here](#) to view Cybersource's sample code package.

Using the Sample Code

**Note**

The sample code was developed and tested on a Solaris platform.

-
- Step 1** Replace your Java installation's existing security policy files with the new ones you downloaded from Oracle's site:
- a Find your existing *US_export_policy.jar* and *local_policy.jar* files in the `$JAVA_HOME/jre/lib/security` directory.
 - b Rename or move your existing files to another directory.
 - c Copy the new *US_export_policy.jar* and *local_policy.jar* files that you downloaded from Oracle to the `$JAVA_HOME/jre/lib/security` directory.
- Step 2** Copy the Bouncy Castle **.jar* files to the `$JAVA_HOME/jre/lib/ext` directory.

Step 3 Edit the `$JAVA_HOME/jre/lib/security/java.security` file and insert the security provider immediately after the Oracle provider. Be sure to increment the numbers of the other providers in the list.

Insert this line:

```
security.provider.2=org.bouncycastle.jce.provider.BouncyCastleProvider
```

Your list of security providers will now look like this:

```
security.provider.1=sun.security.provider.Sun
security.provider.2=org.bouncycastle.jce.provider.BouncyCastleProvider
security.provider.3=com.sun.net.ssl.internal.ssl.Provider
security.provider.4=com.sun.rsa.jca.Provider
security.provider.5=com.sun.crypto.provider.SunJCE
security.provider.6=sun.security.jgss.SunProvider
```

Step 4 Import your CyberSource Simple Order API .p12 security key into Internet Explorer:

- a** Open Internet Explorer, and choose **Tools > Internet Options**.
- b** Click the **Content** tab.
- c** Click **Certificates**.
- d** Click **Import** to open the Certificate Import Wizard, and click **Next** to start the Wizard.
- e** Browse to the location of your .p12 security key, and click **Next**.
- f** For the password for the private key, enter your CyberSource merchant ID. For example, if your key is infodev.p12, enter **infodev** as the password.
- g** On this page, check the box for **Mark this key as exportable**, and click **Next**.
- h** Click **Next** on the Certificate Store page.
- i** Click **Finish**. A confirmation message appears indicating that the import was successful.

Step 5 Create a key store file to contain your CyberSource Simple Order API .p12 security key:

- a** Browse to one of the following URLs:
 - If the system is in test mode and is not live with CyberSource Account Updater:
<https://accountupdater.test.cybersource.com/upload/UploadAccountUpdaterFile>
 - If the system is live with CyberSource Account Updater:
<https://accountupdater.cybersource.com/upload/UploadAccountUpdaterFile>

- b** Choose **File > Properties**.
- c** Click **Certificates**.
- d** Click the **Certification Path** tab.
- e** Click **Entrust.net Secure Server Certification Authority**.
- f** Click **View Certificate**.
- g** Click the **Details** tab.
- h** Click **Copy to File** and then **Next**.
- i** Click **Browse** and navigate to a location to save the file.
- j** Enter a name for the file, such as *MyCert*. Click **Save** and click **Next**.
- k** Click **Finish**.

Your file (*MyCert.cer*) has been created in the location you specified.

- l** Go to the `$JAVA_HOME/bin/keytool` file and use the J2SE keytool program to create a keystore file that contains this newly created certificate. You must provide a pass phrase for the keystore. You **MUST** use the same password that you used in [Step 5](#). For example, if your p12 key is *infodev.p12*, the pass phrase must be *infodev*.

To create the keystore, enter this command:

```
$JAVA_HOME/bin/keytool -import -file <path to certificate>/<name of certificate file> -keystore <name of keystore file>.jks -storepass <pass phrase of keystore>
```

Example Request: Creating the Keystore

```
$JAVA_HOME/bin/keytool -import -file /home/bluu/MyCert.cer  
-keystore MyKeystore.jks -storepass myMerchantID
```

The output looks like this example:

Example 17 Response: Creating the Keystore

```

Owner: CN=accountupdatertest.cybersource.com, OU=Operations,
O=Cybersource Corporation, L=Mountain View, ST=California, C=US
Issuer: CN=Entrust.net Secure Server Certification Authority, OU=(c)
1999 Entrust.net Limited, OU=www.entrust.net/CPS incorp. by ref.
(limits liab.), O=Entrust.net, C=US
Serial number: 374e1b7b
Valid from: Thu Nov 18 17:15:34 PST 2004 until: Tue Jan 31 17:51:24
PST 2006
Certificate fingerprints:
MD5: BE:BF:B0:91:69:C4:7B:10:45:EC:D6:0F:16:AA:3D:77
SHA1: 07:F8:41:DC:B2:FC:F5:DA:FC:EE:09:7A:33:B8:29:15:31:18
Trust this certificate? [no]: yes
Certificate was added to keystore

```

Step 6 Modify the *SSLFileTransfer.props* file with your settings. The file is part of the CyberSource download package and looks similar to this example:

Example 18 Modifying the SSLFileTransfer.props File

```

# Upload host
host=accountupdatertest.cybersource.com
# Upload port
port=<upload port>
# Username to log into the Business Center
bcUserName=<Business Center login name>
# Password to log into the Business Center
bcPassword=<Business Center login password>
# File to upload
uploadFile=<path to your file>/<file name>
# Path where to upload the file (provided by CyberSource)
path=/upload/UploadAccountUpdaterFile
# Your CyberSource security key
key=<key location path>/<key file name>
# New key store you just created that contains the certificate
keyStore=<key store location>/<new key store name>
# pass phrase is the string you used in -storepass option when you #
created the key store file earlier
passPhrase=<pass phrase>

```

Step 7 Set the JAVA_HOME environment variable to the location in which you installed J2SE.

Example 19 Java Home Environment

```
JAVA_HOME=/home/j2se
```

Step 8 Include \$JAVA_HOME/bin in the PATH.

Step 9 Compile and run the sample:

- a** Change to the directory containing the CyberSource sample files.

- b** Enter the following:

```
javac SSLFileTransfer.java
```

```
java SSLFileTransfer <path to props file>/SSLFileTransfer.props
```

If the upload is successful, the output will look similar to this example:

Example 20 Upload Response

```
HTTP/1.1 200 OK  
Date: Wed, 26 Jan 2005 17:26:31 GMT  
Server: Apache Coyote/1.0  
Content-Type: text/plain  
Content-Length: 0  
X-Cache: MISS from <your host>  
Connection: close  
UPLOAD FILE SUCCESSFUL
```
