Samsung Pay
Using the SCMP API

June 2019
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</tbody>
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### Recent Revisions to This Document

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<tr>
<td>June 2019</td>
<td>Changed the name of Mastercard SecureCode to Mastercard Identity Check.</td>
</tr>
<tr>
<td>May 2019</td>
<td>This revision contains only editorial changes and no technical updates.</td>
</tr>
</tbody>
</table>
| April 2019 | Added support for tokenized transactions using a network token with 3D Secure or Identity Check. See "Merchant Decryption," page 23.  
Added the following request fields that support tokenized transactions using a network token with 3D Secure or Identity Check (see "API Request Fields," page 40):  
- directory_server_transaction_id  
- network_token_cryptogram  
- paspecification_version  
Added the following reply field that supports tokenized transactions using a network token with 3D Secure or Identity Check (see "API Reply Fields," page 48):  
- directory_server_transaction_id  
Added support for the processor Elavon Americas. See "Supported Processors, Card Types, and Optional Features," page 10.  
Added support for the following optional features by Elavon Americas (see "Supported Processors, Card Types, and Optional Features," page 10):  
- Merchant-Initiated transactions  
- Multiple partial captures  
- Recurring payments |
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</table>
Updated "Supported Processors, Card Types, and Optional Features," page 10 to remove erroneous content regarding Vantiv.  
Updated URLs for the following:  
- Samsung Pay Partner Portal (see "Related Documents," page 8)  
- Transaction Endpoints (see "Transaction Endpoints," page 12)  
- Samsung Pay registration (see "Registering with Samsung," page 13)  
- Decrypting payment credentials (see "Encrypted Payment Credential," page 22) |
About This Guide

Audience and Purpose

This document is written for merchants who want to enable customers to use Samsung Pay to pay for in-app purchases. This document provides an overview of integrating the Samsung Pay SDK and describes how to request the CyberSource API to process an authorization.

This document describes the Samsung Pay SDK and the CyberSource API. See "Using the Samsung Pay SDK," page 18, and "Authorizing a Payment," page 23. Merchants must use the Samsung Pay SDK to receive the customer’s encrypted payment data before requesting the CyberSource API to process the transaction.

Conventions

Notes and Important Statements

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

An Important statement contains information essential to successfully completing a task or learning a concept.
Text and Command Conventions

<table>
<thead>
<tr>
<th>Convention</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>bold</td>
<td>■ Field and service names in text; for example:</td>
</tr>
<tr>
<td></td>
<td>Include the <strong>customer_cc_number</strong> field.</td>
</tr>
<tr>
<td></td>
<td>■ Items that you are instructed to act upon; for example:</td>
</tr>
<tr>
<td></td>
<td>Click <strong>Save</strong>.</td>
</tr>
</tbody>
</table>

Screen text Code examples and samples.

Related Documents

CyberSource Documents:
- *Getting Started with CyberSource Advanced for the SCMP API* (PDF | HTML)
- SCMP API Documentation and Downloads page
- *Credit Card Services Using the SCMP API* (PDF | HTML)
- *Payment Network Tokenization Using the SCMP API* (PDF | HTML)

Samsung Pay documents:
- Samsung Pay Partner Portal

Refer to the Support Center for complete CyberSource technical documentation:
  http://www.cybersource.com/support_center/support_documentation

Customer Support

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

ProductName relies on payment network tokenization. You can sign up for ProductName only if both of the following statements are true:

- Your processor supports payment network tokenization.
- CyberSource supports payment network tokenization with your processor.

If one or both of the preceding statements are not true, you must take one of the following actions before you can sign up for ProductName:

- Obtain a new merchant account with a processor that supports payment network tokenization.
- Wait until your processor supports payment network tokenization.

You must create:

- A CyberSource account. If you do not already have a CyberSource account, contact your local CyberSource sales representative: [http://www.cybersource.com/locations/](http://www.cybersource.com/locations/)
- A merchant account with a supported processor. See "Supported Processors, Card Types, and Optional Features," page 10.

All optional features are described in *Payment Network Tokenization Using the SCMP API*. 
# Supported Processors, Card Types, and Optional Features

All optional features, except split shipments, are described in *Payment Network Tokenization Using the SCMP API* (PDF | HTML). Split shipments are described in *Credit Card Services Using the SCMP API* (PDF | HTML).

## Table 1  Supported Processors, Card Types, and Optional Features

<table>
<thead>
<tr>
<th>Processors</th>
<th>Card Types</th>
<th>Optional</th>
</tr>
</thead>
</table>
| American Express Direct | American Express | ■ Multiple partial captures  
■ Recurring Payments |
| Barclays | Visa, Mastercard, JCB,  
Maestro (International),  
Maestro (UK Domestic) | ■ Multiple partial captures  
■ Recurring Payments |
| If you support Maestro (UK Domestic), you must also support Maestro (International), and you must support Mastercard Identity Check for both card types. |
| Chase Paymentech Solutions | Visa, Mastercard,  
American Express,  
Discover, Diners Club,  
JCB, Carte Blanche,  
Maestro (International) | ■ Multiple partial captures  
■ Recurring Payments |
| CyberSource through VisaNet. The supported acquirer is:  
■ Vantiv  
CyberSource through VisaNet is a single processor with multiple acquirers. | Visa, Mastercard,  
American Express,  
Discover, JCB, Diners Club | ■ Split shipments.  
■ Recurring Payments. |
| Elavon Americas | Visa, Mastercard,  
American Express, JCB,  
Diners Club, Discover,  
China UnionPay | ■ Merchant-Initiated transactions  
■ Multiple partial captures  
■ Recurring payments |
| FDC Compass | Visa, Mastercard,  
American Express,  
Discover, Diners Club,  
JCB | ■ Multiple partial captures  
■ Recurring Payments |
Table 1  Supported Processors, Card Types, and Optional Features (Continued)

<table>
<thead>
<tr>
<th>Processors</th>
<th>Card Types</th>
<th>Optional</th>
</tr>
</thead>
</table>
| FDC Nashville Global        | Visa, Mastercard, American Express, Discover, Diners Club, JCB, China UnionPay | ■ Multiple partial captures.  
                              |                                                                             | ■ Recurring Payments       |
| GPN                         | Visa, Mastercard, American Express, Discover, Diners Club, JCB              | ■ Split shipments         | ■ Recurring Payments       |
| JCN Gateway                 | Visa, Mastercard, American Express, Diners Club, JCB, NICOS house card, ORICO house card | Multiple partial captures |
| OmniPay Direct              | Visa, Mastercard, Discover, Diners Club, Maestro (UK Domestic), Maestro (International) | ■ Multiple partial captures |
|                             | ■ Bank of America Merchant Services                                         | ■ Recurring Payments       |
|                             | ■ First Data Merchant Solutions (Europe)                                     |                           |
|                             | ■ Global Payments                                                           |                           |
|                             | International Acquiring                                                     |                           |
| Streamline                  | Visa, Mastercard                                                            | ■ Multiple partial captures |
|                             |                                                                             | ■ Recurring Payments       |
|                             |                                                                             | ■ Subsequent authorizations|
| TSYS Acquiring Solutions    | Visa, Mastercard, American Express                                          | ■ Multiple partial captures |
|                             |                                                                             | ■ Recurring Payments       |
Chapter 1  Introduction

Transaction Endpoints

CAS (test transactions):
- Akamai endpoints:
  - http://ics2testa.ic3.com
- Non-Akamai endpoints:
  - http://ics2test.ic3.com/

Production (live transactions):
- Akamai endpoints:
  - http://ics2a.ic3.com
- Non-Akamai endpoints
  - http://ics2.ic3.com/
Registering with Samsung

To register with Samsung:

**Step 1** Create a profile by completing the merchant application on the Samsung Pay Partner Portal.

---

*Note*

Samsung will contact you if clarifications are required.

**Step 2** After your merchant application is approved, you receive a unique partner ID. Include this ID in your application.

---

*Important*

You need the partner ID in order to generate the Certificate Signing Request (CSR) file in using the CyberSource Business Center. See "Registering with CyberSource," page 14. Samsung requires the CSR file in order to encrypt sensitive payment data; it contains an identifier and public key.

**Step 3** Using the Samsung Pay Partner Portal, upload the CSR file.

**Step 4** Enter an application name and a package name.

**Step 5** When you associate the CSR file with the application, Samsung generates a product ID.

**Step 6** Create login details for application developers on the Samsung Pay Partner Portal.

**Step 7** Download and integrate the Samsung Pay SDK into your application. See "Using the Samsung Pay SDK," page 18.

The SDK contains:
- A Javadoc
- The Samsung Pay SDK files `samsungpay.jar` and `sdk-v1.0.0.jar`
- A sample app
- The branding guide
- Image files

**Step 8** Register a Samsung account ID and request a *debug-api-key* file using the Samsung Pay Partner Portal. The *debug-api-key* file is valid for three months. See "Using the API Key," page 17.

The Samsung account ID, the *debug-api-key*, and the product ID are used to validate your application so that you can use the Samsung Pay SDK for testing purposes.

**Step 9** Submit your application for approval using the Samsung Pay Partner Portal. Upload the final version of the Android Application Package (APK) file using the Samsung Pay Partner Portal and include screenshots of your checkout page displaying the Samsung Pay logo.

---

### Registering with CyberSource

**To register with CyberSource:**

**Step 1** Log in to the Business Center:
- Create a CSR file for live transactions: https://ebc.cybersource.com
- Create a CSR file for test transactions: https://ebctest.cybersource.com

**Step 2** Under Account Management in the left navigation panel, click Digital Payment Solutions.

**Step 3** Click **Sign Up**. Follow the steps to verify your account information and accept the ProductName Merchant Services Agreement.
**Step 4**  Register with CyberSource:

a  Enter your Samsung partner ID that you obtained in Step 2.

b  Click **Generate CSR** to generate a Certificate Signing Request (CSR) file that is associated with your Samsung partner ID.

---

**Important**

Only one CSR is permitted for each unique Samsung partner ID. If you modify your Samsung partner ID you must generate a new CSR.

---

c  Submit the CSR file to Samsung.
Creating a Project

To create a new project using Android Studio:

**Step 1** Download Android Studio.

**Step 2** Open Android Studio and click **Start a new Android Studio project**.

**Step 3** In the New Project settings, enter the following:

- The name of your application.
- The company domain.
- To change the package name, click **Edit**. By default, Android Studio sets the last element of the project's package name to the name of your application.

**Step 4** Click **Next**.

**Step 5** In the Target Android Devices settings, choose the required API levels.

**Step 6** Click **Next**.

**Step 7** Choose the required activity and click **Finish**.
Integrating the Samsung Pay SDK

To integrate the Samsung Pay SDK:

**Step 1** Add the samsungpay.jar and sdk-v1.0.0.jar files to the libs folder of your Android project.

**Step 2** Choose Gradle Scripts > build.gradle and enter the dependencies shown below.

```java
dependencies {
    compile files('libs/samsungpay.jar')
    compile files('libs/sdk-v1.0.0.jar')
}
```

**Step 3** Import the package.

```java
import com.samsung.android.sdk.samsungpay;
```

Using the API Key

The API key is used to verify that your app (in debug mode or release mode) can use the Samsung Pay SDK APIs with the Samsung Pay application. To get the API key, you must create a debug-api-key file (Step 8) and include it in the manifest file.

To use the API key:

**Step 1** Include the API key in the manifest file with a custom tag. This enables the merchant app android manifest file to provide the DebugMode, spay_debug_api_key values as meta-data.

**Example 1** Debug Mode

```xml
<meta-data
    android:name="debug_mode"
    android:value="Y" />
<meta-data
    android:name="spay_debug_api_key"
    android:value="asdfggkndke1e17283094858" />
```

**Example 2** Release Mode

```xml
<meta-data
    android:name="debug_mode"
    android:value="N" />
```
CHAPTER 4

Using the Samsung Pay SDK

Eligibility

Initialize the SSamsungPay class to verify that your application is eligible for Samsung Pay and to display the Samsung Pay button to the customer (refer to branding guidelines).

The SSamsungPay class provides the following API methods:

- initialize()—initializes the Samsung Pay SDK and verifies eligibility for Samsung Pay, including the device, software, and business area.

Request the initialize() API method of the SSamsungPay class before using the Samsung Pay SDK.

- getVersionCode()—retrieves the version number of the Samsung Pay SDK as an integer.

- getVersionName()—retrieves the version name of the Samsung Pay SDK as a string.

After the initialize() API method request is successful, display the Samsung Pay button to the customer.

If the initialize() API method request fails, the method displays a SsdkUnsupportedException or NullPointerException error.

- SsdkUnsupportedException—the device is not a Samsung device or does not support the Samsung Pay package.

- NullPointerException—the context passed is null.
Example 3  Samsung Pay Class

```java
SSamsungPay spay = new SSamsungPay();
try {
    spay.initialize(mContext);
} catch (SsdkUnsupportedException e1) {
    e1.printStackTrace();
    pay_button.setVisibility(View.INVISIBLE);
}
```

Payment Request

Initiating a Payment

To initiate a payment:

**Step 1** Include the following fields in the PaymentInfo class:

- **Merchant Name**—the merchant name as it appears on the payment sheet of Samsung Pay and customer’s bank statement. This field is required.
- **Amount**—this field is required.
- **Payment Protocol**—3D Secure. This field is required.
- **Permitted Card Brands**—specify the card brands that are supported such as Visa, Mastercard, or American Express. This field is required.
- **Merchant ID**
- **Order Number**
- **Shipping Address**—this field is required if SEND_SHIPPING or NEED_BILLING_AND_SEND_SHIPPING is set for AddressVisibilityOption.
- **Address Visibility Option**
- **Card Holder Name**
- **Recurring Option**

If the required fields are not included, you receive a NullPointerException error.
Example 4  Transaction Request Structure

```java
private PaymentInfo makeTransactionDetails() {
    // Supported card brands
    ArrayList<CardInfo.Brand> brandList = new ArrayList<CardInfo.Brand>();
    if (visaBrand.isChecked())
        brandList.add(CardInfo.Brand.VISA);
    if (mcBrand.isChecked())
        brandList.add(CardInfo.Brand.Mastercard);
    if (amexBrand.isChecked())
        brandList.add(CardInfo.Brand.AMERICANEXPRESS);

    // Basic payment information
    PaymentInfo paymentReq = new PaymentInfo.Builder()
        .setMerchantId("merchantID")
        .setMerchantName("Test").setAmount(getAmount())
        .setShippingAddress(getShippingAddressInfo())
        .setOrderNumber(orderNoView.getText().toString())
        .setPaymentProtocol(PaymentProtocol.PROTOCOL_3DS)
        .setAddressInPaymentSheet(AddressInPaymentSheet.DO_NOT_SHOW)
        .setAllowedCardBrands(brandList).setRecurringEnabled(isRecurring)
        .setCardHolderNameEnabled(isCardHolderNameRequired)
        .build();
    return paymentReq;
}

// Add shipping address details
private Address getShippingAddressInfo() {
    Address address = new Address.Builder()
        .setAddressee(name.getText().toString())
        .setAddressLine1(addLine1.getText().toString())
        .setAddressLine2(addline2.getText().toString())
        .setCity(city.getText().toString())
        .setState(state.getText().toString())
        .setCountryCode(country.getSelectedItem().toString())
        .setPostalCode(zip.getText().toString()).build();
    return address;
}

// Add amount details private Amount getAmount() {
    Amount amount = new Amount.Builder()
        .setCurrencyCode(currencyType.getSelectedItem().toString())
        .setItemTotalPrice(productPrice.getText().toString())
        .setShippingPrice(shippingPrice.getText().toString())
        .setTax(taxPrice.getText().toString())
        .setTotalPrice(totalAmount.getText().toString()).build();
    return amount;
}
```
Chapter 4 Using the Samsung Pay SDK

Requesting a Payment

To request a payment:

Step 1 Use the startSamsungPay() API method in the PaymentManager class.

The PaymentManager class includes the following API methods:

- startSamsungPay() — requests to initiate payment with Samsung Pay.
- updateAmount() — updates the transaction amount if shipping address or card information is updated by Samsung Pay.
- updateAmountFailed() — returns an error code when the new amount cannot be updated because of a wrong address.

Step 2 Request the startSamsungPay() API method and include the following data:

- PaymentInfo — the paymentInfo structure, which contains payment information.
- StatusListener — the result of the payment request is delivered to StatusListener. This listener should be registered before calling the startSamsungPay() API method.

When you request the startSamsungPay() API method, the Samsung Pay online payment sheet is displayed on the screen of your application. The customer selects a registered card for payment and can also update the billing and shipping address.

The payment reply is delivered as one of the following events to StatusListener:

- onSuccess() — this event is requested when Samsung Pay confirms the payment. It includes encryptedPaymentCredential in JSON format. See Table 2, "Encrypted Payment Credential," on page 22.
- onFailure() — this event is requested when the transaction fails. It returns an error code and error message.
Example 5  Request startSamsungPay() API Method

```java
public void onPayButtonClicked(View v) {
    // Call startSamsungPay() method of PaymentManager class.
    // To create a transaction request for makeTransactionDetails() in
    // the following code, see Example 4, "Transaction Request Structure,"
    // on page 20.
    try {
        mPaymentManager.startSamsungPay(makeTransactionDetails(), "enter
        product ID",
        mStatusListener);
    } catch (NullPointerException e) {
        e.printStackTrace();
    }
}

private PaymentManager.StatusListener mStatusListener = new
PaymentManager.StatusListener() {
    @Override
    public void onFailure(int errCode, String msg) {
        Log.d(TAG, " onFailed ");
    }
    @Override
    public void onSuccess(PaymentInfo arg0, String result) {
        Log.d(TAG, "onSuccess ");
    }
};
```

Table 2  Encrypted Payment Credential

<table>
<thead>
<tr>
<th>Payment Credential</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>method</td>
<td>Payment protocol: 3D Secure.</td>
</tr>
<tr>
<td>merchant_ref</td>
<td>Merchant reference code.</td>
</tr>
<tr>
<td>billing_address.street</td>
<td>Number, street name.</td>
</tr>
<tr>
<td>billing_address.state_province</td>
<td>Two letter state code.</td>
</tr>
<tr>
<td>billing_address.zip_postal_code</td>
<td>Five character zip code.</td>
</tr>
<tr>
<td>billing_address.city</td>
<td>City name.</td>
</tr>
<tr>
<td>billing_address.county</td>
<td>Two letter country code.</td>
</tr>
<tr>
<td>3ds.type</td>
<td>S for Samsung Pay.</td>
</tr>
<tr>
<td></td>
<td>Encrypted.</td>
</tr>
<tr>
<td>3ds.version</td>
<td>Current version 100.</td>
</tr>
<tr>
<td></td>
<td>Encrypted.</td>
</tr>
<tr>
<td>3ds.data</td>
<td>Base64 encoded payment data.</td>
</tr>
<tr>
<td></td>
<td>Encrypted.</td>
</tr>
</tbody>
</table>

For information on how to decrypt the encrypted payment credential, see:

https://pay.samsung.com/developers
Authorizing a Payment

Merchant Decryption

Visa Transaction

To request an authorization for a Visa transaction:

- **Step 1**: Set the `customer_cc_number` field to the payment network token value.
- **Step 2**: Set the `customer_cc_expmo` and `customer_cc_expyr` values to the payment network token expiration date values.
- **Step 3**: Set the `cavv` field to the 3D Secure cryptogram of the payment network token.
- **Step 4**: Set the `network_token_cryptogram` field to the network token cryptogram.
- **Step 5**: Set the `payment_network_token_transaction_type` field to 1.
- **Step 6**: Set the `e_commerce_indicator` field to `internet`.
- **Step 7**: Set the `payment_solution` field to 008.

Note: Your payment processor can include additional API reply fields that are not documented in this guide. See Credit Card Services Using the SCMP API (PDF | HTML) for detailed descriptions of additional API reply fields.

Note: See "API Request Fields," page 40 and "API Reply Fields," page 48 for detailed field descriptions.
Example 6  Merchant Decryption Authorization Request (Visa)

```
bill_address1=111 S. Division St.
bill_address2=Suite 123
bill_city=Ann Arbor
bill_country=US
bill_state=MI
bill_zip=48104-2201
currency=usd
customer_cc_expmo=12
customer_cc_expyr=2021
customer_cc_number=xxxx10000000xxxx
customer_email=demo@example.com
customer_firstname=James
customer_ipaddress=66.123.123.2
customer_lastname=Smith
customer_phone=999-999-9999
e_commerce_indicator=internet
grand_total_amount=100.00
ics_applications=ics_auth
merchant_id=demomerchant
merchant_ref_number=demorefnum
cavv=ABCDEFabcdefABCDEFabcdef0987654321234567
xid=1234567890987654321ABCDEFabcdefABCDEF123
payment_network_token_transaction_type=1
solution_type=008
```

Example 7  Merchant Decryption Authorization Reply (Visa)

```
request_token=Ahj/7wSR5C/kX63O2hAKIKGLNkwcsmrSHH1U5tGHT/hHgzc8BT/hHgk
currency=usd
auth_rflag=SOK
ics_rmsg=Request was processed successfully.
auth_auth_amount=100.00
auth_rcode=1
auth_trans_ref_no=13209254CGJSMQCO
auth_auth_code=888888
auth_rmsg=Request was processed successfully.
ics_rflag=SOK
auth_auth_response=100
auth_avs_raw=I1
auth_auth_time=2015-11-03T204917Z
merchant_ref_number=demorefnum
ics_rcode=1
```
Mastercard Transaction

To request an authorization for a Mastercard transaction:

Step 1 Set the `customer_cc_number` field to the payment network token value.

Step 2 Set the `customer_cc_expmo` and `customer_cc_expyr` values to the payment network token expiration date values.

Step 3 Set the `ucaf_authentication_data` field to the 3D Secure cryptogram of the payment network token.

Step 4 Set the `network_token_cryptogram` field to the network token cryptogram.

Step 5 Set the `ucaf_collection_indicator` field to 2.

Step 6 Set the `payment_network_token_transaction_type` field to 1.

Step 7 Set the `e_commerce_indicator` field to `spa`.

Step 8 Set the `payment_solution` field to 008.

Note


**Example 8**  Merchant Decryption Authorization Request (Mastercard)

```plaintext
bill_address1=111 S. Division St.  
bill_address2=Suite 123  
bill_city=Ann Arbor  
bill_country=US  
bill_state=MI  
bill_zip=48104-2201  
currency=usd  
customer_cc_expmo=12  
customer_cc_expyr=2021  
customer_cc_number=xxxx55555555xxxx  
customer_email=demo@example.com  
customer_firstname=James  
customer_lastname=Smith  
customer_ipaddress=66.123.123.2  
customer_phone=999-999-9999  
grand_total_amount=100.00  
ics_applications=ics_auth  
merchant_id=demomerchant  
merchant_ref_number=demorefnum  
ucaf_authentication_data=ABCDEFabcdefABCDEFabcdef0987654321234567  
ucaf_collection_indicator=2  
payment_network_token_transaction_type=1  
solution_type=008
```

**Example 9**  Merchant Decryption Authorization Reply (Mastercard)

```plaintext
request_token=Ahj/7wSR5C/p6oJEy1gKIkGLNkwsrmrWHH1U5tGHST/hHgzdACT/hVB3c  
currency=usd  
request_id=4465838340055000001541  
auth_rflag=SOK  
ics_rmsg=Request was processed successfully.  
auth_auth_amount=100.00  
auth_rcode=1  
auth_trans_ref_no=13209255CGJSMQCR  
auth_auth_code=888888  
auth_rmsg=Request was processed successfully.  
ics_rflag=SOK  
auth_auth_response=100  
auth_avs_raw=I1  
auth_auth_time=2015-11-03T205035Z  
merchant_ref_number=demorefnum  
ics_rcode=1
```
American Express Transaction

To request an authorization for an American Express transaction:


Note

Step 1 Set the customer_cc_number field to the payment network token value.

Step 2 Set the customer_cc_expmo and customer_cc_expyr values to the payment network token expiration date values.

Step 3 Set the cavv field to the 3D Secure cryptogram of the payment network token.

Important Include the whole 20-byte cryptogram in the cavv field. For a 40-byte cryptogram, split the cryptogram into two 20-byte binary values (block A and block B). Set the cavv field to the block A value and set the xid field to the block B value.

Step 4 Set the network_token_cryptogram field to the network token cryptogram.

Step 5 Set the payment_network_token_transaction_type field to 1.

Step 6 Set the e_commerce_indicator field to aesk.

Step 7 Set the payment_solution field to 008.
Example 10  Merchant Decryption Authorization Request (American Express)

bill_address1=111 S. Division St.
bill_address2=Suite 123
bill_city=Ann Arbor
bill_country=US
bill_state=MI
bill_zip=48104-2201
currency=usd
customer_cc_expmo=12
customer_cc_expyr=2021
customer_cc_number=xxxx82246310xxxx
customer_email=demo@example.com
customer_firstname=James
customer_ipaddress=66.123.123.2
customer_lastname=Smith
customer_phone=999-999-9999
grand_total_amount=100.00
ics_applications=ics_auth
merchant_id=demomerchant
merchant_ref_number=demorefnum
cavv=ABCDEFabcdefABCDEFabcdef09876543210987654321
xid=1234567890987654321ABCDEFabcdefABCDEF123
payment_network_token_transaction_type=1
solution_type=008

Example 11  Merchant Decryption Authorization Reply (American Express)

request_token=Ahj/7wSR5C/wGXKw1xAKIkGLNkwsrmaHH1U5tGHaT/hHgzecDT/h6BBL
currency=usd
request_id=4465839210285000001541
auth_rflag=SOK
ics_rmsg=Request was processed successfully.
auth_auth_amount=100.00
auth_rcode=1
auth_trans_ref_no=13209256CGJSMQCZ
auth_auth_code=888888
auth_rmsg=Request was processed successfully.
ics_rflag=SOK
auth_auth_response=100
auth_avs_raw=I1
auth_auth_time=2015-11-03T205202Z
merchant_ref_number=demorefnum
ics_rcode=1
### JCB Transaction

To request an authorization for a JCB transaction:

1. Set the `customer_cc_number` field to the payment network token value.
2. Set the `customer_cc_expmo` and `customer_cc_expyr` fields to the payment network token expiration date values.
3. Set the `cavv` field to the 3D Secure cryptogram of the payment network token.
4. Set the `network_token_cryptogram` field to the network token cryptogram.
5. Set the `payment_network_token_transaction_type` field to 1.
6. Set the `eci_raw` field to the ECI value contained in the Samsung Pay response payload.
7. Set the `payment_solution` field to 008.

---

**Note**

Example 12  Merchant Decryption Authorization Request (JCB)

```
bill_address1=123 Main Street
bill_address2=Suite 12345
bill_city=Small Town
bill_country=US
bill_state=CA
bill_zip=98765
card_type=007
currency=usd
customer_cc_expmo=12
customer_cc_expyr=2031
customer_cc_number=xxxx11111111xxxx
customer_email=js@example.com
customer_firstname=Jane
customer_lastname=Smith
customer_phone=999-999-9999
eci_raw=05
grand_total_amount=100.00
ics_applications=ics_auth
merchant_id=med123
cavv=EHuWW9PiKwqE5juRwDzAUFBAk=
payment_network_token_transaction_type=1
payment_solution=008
```

Example 13  Merchant Decryption Authorization Reply (JCB)

```
auth_auth_amount=100.00
auth_auth_avs=X
auth_auth_code=888888
auth_auth_response=100
auth_avs_raw=I1
auth_crcode=1
auth_rflag=SOK
auth_rmsg=Request was processed successfully.
auth_trans_ref_no=15356268CR2XF23X
currency=USD
ics_crcode=1
ics_rflag=SOK
ics_rmsg=Request was processed successfully.
merchant_ref_number=ref123
request_id=4697369268106124601541
request_token=Ahj/7wSR/UoVm1bMmziHS2jMECT/h+KjMHSB04gwGA2dDjQoxQAAA6xdr
```
CyberSource Decryption

Visa Transaction

To request an authorization for a Visa transaction:

Step 1 Set the `encrypted_payment_data` field to the value that was returned from Samsung Pay in the 3ds.data block.

   a Retrieve the payment data from Samsung Pay in JSON Web Encryption (JWE) format.

   b Encode it in Base64.

   c Retrieve the corresponding Key ID (KID) with encryption and set the values as:

   ```
   
   
   
   
   
   
   ```

   d Encode the structure in Base64.

   e Add the value to the `encrypted_payment_data` field.

Step 2 Set the `encrypted_payment_descriptor` field to 
Rk1EPUNPTU1PTi5TQU1TVU5HLk1OQVBQLlBBWU1PT1Q=.

Step 3 Set the `payment_network_token_transaction_type` field to 1.

Step 4 Set the `e_commerce_indicator` field to `internet`.

Step 5 Set the `payment_solution` field to `008`.

Example 14  CyberSource Decryption Authorization Request (Visa)

```plaintext
bill_address1=111 S. Division St.
bill_address2=Suite 123
bill_city=Ann Arbor
bill_country=US
bill_state=MI
bill_zip=48104-2201
currency=usd
customer_email=demo@example.com
customer_firstname=James
customer_lastname=Smith
customer_ipaddress=66.123.123.2
customer_phone=999-999-9999
e_commerce_indicator=internet
grand_total_amount=100.00
ics_applications=ics_auth
merchant_id=demomerchant
merchant_ref_number=demorefnum
encrypted_payment_data=ABCDEFabcdefABCDEFabcdef0987654321234567
encrypted_payment_descriptor=RklEPUNPTU1PTi5TQU1TVU5HLklOQVBQL1BBWUIFT1Q=
payment_network_transaction_type=1
request_token=Ahj/7wSR5C/kX6302hAKIkGLNkwcsmrSHH1U5tGHRT/hHgzc8BT/hHgk
currency=usd
request_id=446583756004500001541
auth_rflag=SOK
auth_auth_amount=100.00
auth_rcode=1
auth_trans_ref_no=13209254CGJSMQCQ
auth_auth_code=888888
auth_rmsg=Request was processed successfully.
ics_rmsg=Request was processed successfully.
ics_rflag=SOK
merchant_ref_number=demorefnum
token_prefix=294672
token_suffix=4397
token_expirationMonth=08
token_expirationYear=2021
```

Example 15  CyberSource Decryption Authorization Reply (Visa)

```plaintext
request_token=Ahj/7wSR5C/kX6302hAKIkGLNkwcsmrSHH1U5tGHRT/hHgzc8BT/hHgk
currency=usd
request_id=446583756004500001541
auth_rflag=SOK
ics_rmsg=Request was processed successfully.
auth_auth_amount=100.00
auth_rcode=1
auth_trans_ref_no=13209254CGJSMQCQ
auth_auth_code=888888
auth_rmsg=Request was processed successfully.
ics_rflag=SOK
auth_auth_response=100
auth_avs_raw=I1
merchant_ref_number=demorefnum
ics_rcode=1
token_prefix=294672
token_suffix=4397
token_expirationMonth=08
token_expirationYear=2021
```
Mastercard Transaction

To request an authorization for a Mastercard transaction:

---


---

**Step 1** Set the `encrypted_payment_data` field to the value that was returned from Samsung Pay in the `3ds.data` block.

- **a** Retrieve the payment data from Samsung Pay in JSON Web Encryption (JWE) format.
- **b** Encode it in Base64.
- **c** Retrieve the corresponding Key ID (KID) with encryption and set the values as:

  ```json
  {
    "publicKeyHash": "kid",
    "version": "100",
    "data": "encoded data from step b above"
  }
  ```

- **d** Encode the structure in Base64.
- **e** Add the value to the `encrypted_payment_data` field.

**Step 2** Set the `encrypted_payment_descriptor` field to `Rk1EUNPTU1PTi5TQU1TVU5HLk1QVBQLlBBWU1FT1Q=`.

**Step 3** Set the `payment_network_token_transaction_type` field to `1`.

**Step 4** Set the `e_commerce_indicator` field to `spa`.

**Step 5** Set the `payment_solution` field to `008`.
Chapter 5  Authorizing a Payment

Example 16   CyberSource Decryption Authorization Request (Mastercard)

```
bill_address1=111 S. Division St.
bill_address2=Suite 123
bill_city=Ann Arbor
bill_country=US
bill_state=MI
bill_zip=48104-2201
currency=usd
customer_email=demo@example.com
customer_firstname=James
customer_ipaddress=66.123.123.2
customer_lastname=Smith
customer_phone=999-999-9999
e_commerce_indicator=spa
grand_total_amount=100.00
ics_applications=ics_auth
merchant_id=demomerchant
merchant_ref_number=demorefnum
encrypted_payment_data=ABCDEFGHIJKLMNOPQRSTUVWXYZabcdefghijklmnopqrstuvwxyz0123456789
encrypted_payment_descriptor=RklEPUNPTU1PTi5TQU1TVU5HLklOQVBQL1BBWUIFTU==
payment_network_transaction_type=1
request_token=Ahj/7wSR5C/p6oJEy1gKIkGLNkwcsMrWHHIU5tGHST/hHgdACT/hVB3c
request_id=4465838340055000001541
auth_rflag=SOK
auth_rmsg=Request was processed successfully.
auth_auth_amount=100.00
auth_rcode=1
auth_trans_ref_no=13209255CGJSMQCR
auth_auth_code=888888
auth_rmsg=Request was processed successfully.
ics_rflag=SOK
auth_auth_response=100
auth_avs_raw=11
auth_auth_time=2015-11-03T205035Z
merchant_ref_number=demorefnum
ics_rcode=1
token_prefix=128945
token_suffix=2398
token_expirationMonth=08
token_expirationYear=2021
```
American Express Transaction

To request an authorization for an American Express transaction:

Step 1 Set the `encrypted_payment_data` field to the value that was returned from Samsung Pay in the `3ds.data` block.

a Retrieve the payment data from Samsung Pay in JSON Web Encryption (JWE) format.

b Encode it in Base64.

c Retrieve the corresponding Key ID (KID) with encryption and set the values as:

```json
{
    "publicKeyHash": "kid",
    "version": "100",
    "data": "encoded data from step b above"
}
```

d Encode the structure in Base64.

e Add the value to the `encrypted_payment_data` field.

Step 2 Set the `encrypted_payment_descriptor` field to `Rk1EPUNPTU1PTi5TQU1TVU5HLklOQVBQLlBBWU1FTlQ=`.

Step 3 Set the `payment_network_token_transaction_type` field to `1`.

Step 4 Set the `e_commerce_indicator` field to `aesk`.

Step 5 Set the `payment_solution` field to `008`.

Example 18  CyberSource Decryption Authorization Request (American Express)

```plaintext
bill_address1=111 S. Division St.
bill_address2=Suite 123
bill_city=Ann Arbor
bill_country=US
bill_state=MI
bill_zip=48104-2201
card_type=003
currency=usd
customer_email=demo@example.com
customer_firstname=James
customer_ipaddress=66.123.123.2
customer_lastname=Smith
customer_phone=999-999-9999
e_commerce_indicator=aesk
grand_total_amount=100.00
ics_applications=ics_auth
merchant_id=demomerchant
merchant_ref_number=demorefnum
encrypted_payment_data=ABCDEFabcdefABCDEFabcdef0987654321234567
encrypted_payment_descriptor=RklEPUNPTU1PTi5TQU1TVU5HLklQVBQL1BBWU1FT1Q=
payment_network_transaction_type=1
solution_type=008
```

Example 19  CyberSource Decryption Authorization Reply (American Express)

```plaintext
request_token=Ahj/7wSR5C/wGXKw1xAKIkGLNkwsrmaHH1U5tGHaT/hHgzcDT/h6BBL
currency=usd
request_id=4465839210285000001541
auth_rflag=SOK
ics_rmsg=Request was processed successfully.
auth_auth_amount=100.00
auth_rcode=1
auth_trans_ref_no=13209256CGJSMQCZ
auth_auth_code=888888
auth_rmsg=Request was processed successfully.
ics_rflag=SOK
auth_auth_response=100
auth_avs_raw=I1
auth_auth_time=2015-11-03T205202Z
merchant_ref_number=demorefnum
ics_rcode=1
token_prefix=593056
token_suffix=0842
token_expirationMonth=08
token_expirationYear=2021
```
JCB Transaction

To request an authorization for a JCB transaction:

Step 1  Set the encrypted_payment_data field to the Base64 encoded value obtained from the paymentData property of the PKPaymentToken object.

Step 2  Set the encrypted_payment_descriptor field to Rk1EPUNPTU1PTi5TQU1TVU5HLk1QVBQlBBWU1PTiQ=.

Step 3  Set the payment_solution field to 008.

Example 20  CyberSource Decryption Authorization Request (JCB)

```
bill_address1=123 Main Street
bill_address2=Suite 12345
bill_city=Small Town
bill_country=US
bill_state=CA
bill_zip=98765
card_type=007
currency=usd
customer_cc_expmo=12
customer_cc_expyr=2031
customer_cc_number=xxxx55555555xxxx
customer_email=js@example.com
customer_firstname=Jane
customer_lastname=Smith
customer_phone=999-999-9999
ci_raw=05
grand_total_amount=100.00
gics_applications=ics_auth
merchant_id=med123
cavv=EHuWW9PiKvWgE5juRwDzAUFBAk=
payment_network_token_transaction_type=1
payment_solution=008
```
Example 21  CyberSource Decryption Authorization Reply (JCB)

```plaintext
auth_auth_amount=100.00
auth_auth_avs=X
auth_auth_code=888888
auth_auth_response=100
auth_avs_raw=I1
auth_rcode=1
auth_rflag=SOK
auth_rmsg=Request was processed successfully.
auth_trans_ref_no=15356268CR2XF23X
currency=USD
ics_rcode=1
ics_rflag=SOK
ics_rmsg=Request was processed successfully.
merchant_ref_number=ref123
request_id=4697369268106124601541
request_token=Ahn/7wSR/UoVm1bMmziHSZjMECT/h+KjMH5B04gwGA2dDjQoxQAAXA6xdr
```

Additional CyberSource Services

Refer to [Credit Card Services Using the SCMP API](#) for information on how to request these follow-on services.

Table 3  CyberSource Services

<table>
<thead>
<tr>
<th>CyberSource Service</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capture</td>
<td>A follow-on service that uses the request ID returned from the previous authorization. The request ID links the capture to the authorization. This service transfers funds from the customer's account to your bank and usually takes two to four days to complete.</td>
</tr>
<tr>
<td>Sale</td>
<td>A sale is a bundled authorization and capture. Request the authorization and capture services at the same time. CyberSource processes the capture immediately.</td>
</tr>
<tr>
<td>Authorization Reversal</td>
<td>A follow-on service that uses the request ID returned from the previous authorization. An authorization reversal releases the hold that the authorization placed on the customer's credit card funds. Use this service to reverse an unnecessary or undesired authorization.</td>
</tr>
</tbody>
</table>
Data Type Definitions

<table>
<thead>
<tr>
<th>Data Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date and time</td>
<td>Format is YYYY-MM-DDThhmmssZ, where:</td>
</tr>
<tr>
<td></td>
<td>■ T separates the date and the time.</td>
</tr>
<tr>
<td></td>
<td>■ Z indicates Coordinated Universal Time (UTC), which equals Greenwich Mean Time (GMT).</td>
</tr>
<tr>
<td>Decimal</td>
<td>Number that includes a decimal point</td>
</tr>
<tr>
<td></td>
<td>Examples: 23.45, -0.1, 4.0, 90809.0468</td>
</tr>
<tr>
<td>Integer</td>
<td>Whole number {..., -3, -2, -1, 0, 1, 2, 3, ...}</td>
</tr>
<tr>
<td>Nonnegative integer</td>
<td>Whole number greater than or equal to zero {0, 1, 2, 3, ...}</td>
</tr>
<tr>
<td>Positive integer</td>
<td>Whole number greater than zero {1, 2, 3, ...}</td>
</tr>
<tr>
<td>String</td>
<td>Sequence of letters, numbers, spaces, and special characters</td>
</tr>
</tbody>
</table>

Relaxed Requirements for Address Data

Contact CyberSource Customer Support to have your account enabled for relaxed requirements for address data and expiration date. For more information, see the Relaxed Requirements for Address Data and Expiration Date page.
## API Request Fields

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

### Table 4 API Request Fields

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Used By: Required (R) or Optional (O)</th>
<th>Data Type (Length)</th>
</tr>
</thead>
<tbody>
<tr>
<td>bill_address1</td>
<td>First line of the billing street address. Important It is your responsibility to determine whether a field is required for the transaction you are requesting.</td>
<td>ics_auth (See description)</td>
<td>String (60)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>bill_address2</td>
<td>Additional address information. Example Attention: Accounts Payable</td>
<td>ics_auth (R)</td>
<td>String (60)</td>
</tr>
<tr>
<td>bill_city</td>
<td>City of the billing address. Important It is your responsibility to determine whether a field is required for the transaction you are requesting.</td>
<td>ics_auth (See description)</td>
<td>String (50)</td>
</tr>
<tr>
<td>bill_country</td>
<td>Country of the billing address. Use the two-character ISO Standard Country Codes. Important It is your responsibility to determine whether a field is required for the transaction you are requesting.</td>
<td>ics_auth (See description)</td>
<td>String (2)</td>
</tr>
</tbody>
</table>

---

1. The TC 33 Capture file contains information about the purchases and refunds that a merchant submits to CyberSource. CyberSource through VisaNet creates the TC 33 Capture file at the end of the day and sends it to the merchant’s acquirer, who uses this information to facilitate end-of-day clearing processing with payment card companies.
### Table 4  API Request Fields (Continued)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Used By: Required (R) or Optional (O)</th>
<th>Data Type (Length)</th>
</tr>
</thead>
<tbody>
<tr>
<td>bill_state</td>
<td>State or province of the billing address. For an address in the U.S. or Canada, use the State, Province, and Territory Codes for the United States and Canada. <strong>Important</strong> It is your responsibility to determine whether a field is required for the transaction you are requesting. See &quot;Relaxed Requirements for Address Data,&quot; page 39.</td>
<td>ics_auth (See description)</td>
<td>String (2)</td>
</tr>
<tr>
<td>bill_zip</td>
<td>Postal code for the billing address. The postal code must consist of 5 to 9 digits. When the billing country is the U.S., the 9-digit postal code must follow this format: [5 digits][dash][4 digits] <strong>Example</strong> 12345-6789 When the billing country is Canada, the 6-digit postal code must follow this format: [alpha][numeric][alpha][space][numeric][alpha][numeric] <strong>Example</strong> A1B 2C3 <strong>Important</strong> It is your responsibility to determine whether a field is required for the transaction you are requesting. See &quot;Relaxed Requirements for Address Data,&quot; page 39.</td>
<td>ics_auth (See description)</td>
<td>String (9)</td>
</tr>
</tbody>
</table>

---

1 The TC 33 Capture file contains information about the purchases and refunds that a merchant submits to CyberSource. CyberSource through VisaNet creates the TC 33 Capture file at the end of the day and sends it to the merchant’s acquirer, who uses this information to facilitate end-of-day clearing processing with payment card companies.
### Table 4  API Request Fields (Continued)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Used By: Required (R) or Optional (O)</th>
<th>Data Type (Length)</th>
</tr>
</thead>
<tbody>
<tr>
<td>cavv</td>
<td>Visa Cryptogram for payment network tokenization transactions. The value for this field must be 28-character base64 or 40-character hex binary. All cryptograms use one of these formats.</td>
<td>ics_auth (R)</td>
<td>String (40)</td>
</tr>
<tr>
<td></td>
<td><strong>American Express</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>For a 20-byte cryptogram, set this field to the cryptogram for payment network tokenization transactions. For a 40-byte cryptogram, set this field to block A of the cryptogram for payment network tokenization transactions. The value for this field must be 28-character base64 or 40-character hex binary. All cryptograms use one of these formats.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>currency</td>
<td>Currency used for the order: USD</td>
<td>ics_auth (R)</td>
<td>String (5)</td>
</tr>
</tbody>
</table>
| customer_cc_expmo | Two-digit month in which the payment network token expires.  
|                 | Format: MM.  
|                 | Possible values: 01 through 12.                                             | ics_auth (R)                        | String (2)         |
| customer_cc_expyr | Four-digit year in which the payment network token expires.  
|                 | Format: YYYY.                                                               | ics_auth (R)                        | Nonnegative integer (4) |
| customer_cc_number | The payment network token value.  
|                 | This value is obtained by decrypting the customer’s encrypted payment data. | ics_auth (R)                        | Nonnegative integer (20) |
| customer_email | Customer’s email address.  
|                | **Important** It is your responsibility to determine whether a field is required for the transaction you are requesting.  
|                | See "Relaxed Requirements for Address Data," page 39.                      | ics_auth (See description)          | String (255)        |

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1 The TC 33 Capture file contains information about the purchases and refunds that a merchant submits to CyberSource. CyberSource through VisaNet creates the TC 33 Capture file at the end of the day and sends it to the merchant’s acquirer, who uses this information to facilitate end-of-day clearing processing with payment card companies.
### Table 4  API Request Fields (Continued)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Used By:</th>
<th>Data Type (Length)</th>
</tr>
</thead>
<tbody>
<tr>
<td>customer_firstname</td>
<td>Customer’s first name. For a credit card transaction, this name must match the name on the card.</td>
<td>ics_auth</td>
<td>String (60)</td>
</tr>
<tr>
<td></td>
<td><strong>Important</strong>  It is your responsibility to determine whether a field is required for the transaction you are requesting.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>See &quot;Relaxed Requirements for Address Data,&quot; page 39.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>customer_ipaddress</td>
<td>Customer’s IP address.</td>
<td>ics_auth (O)</td>
<td>String (15)</td>
</tr>
<tr>
<td>customer_lastname</td>
<td>Customer’s last name. For a credit card transaction, this name must match the name on the card.</td>
<td>ics_auth</td>
<td>String (60)</td>
</tr>
<tr>
<td></td>
<td><strong>Important</strong>  It is your responsibility to determine whether a field is required for the transaction you are requesting.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>See &quot;Relaxed Requirements for Address Data,&quot; page 39.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>customer_phone</td>
<td>Customer’s phone number. CyberSource recommends that you include the country code when the order is from outside the U.S.</td>
<td>ics_auth (O)</td>
<td>String (15)</td>
</tr>
<tr>
<td>eci_raw</td>
<td>Raw electronic commerce indicator (ECI).</td>
<td>ics_auth</td>
<td>String (2)</td>
</tr>
<tr>
<td>directory_server_</td>
<td>Identifier generated during the authentication transaction by the Mastercard Directory Server and passed back with the authentication results.</td>
<td>ics_auth (O)</td>
<td>String (36)</td>
</tr>
<tr>
<td>transaction_id</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e_commerce_indicator</td>
<td>For a payment network tokenization transaction. Possible values:</td>
<td>ics_auth (O)</td>
<td>String (20)</td>
</tr>
<tr>
<td></td>
<td>■ aesk:  American Express card type</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ spa:  Mastercard card type</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>■ internet:  Visa card type</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

1 The TC 33 Capture file contains information about the purchases and refunds that a merchant submits to CyberSource. CyberSource through VisaNet creates the TC 33 Capture file at the end of the day and sends it to the merchant’s acquirer, who uses this information to facilitate end-of-day clearing processing with payment card companies.
### API Request Fields (Continued)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Used By: Required (R) or Optional (O)</th>
<th>Data Type (Length)</th>
</tr>
</thead>
<tbody>
<tr>
<td>encrypted_payment_data</td>
<td>The encrypted payment data value. If you are using the CyberSource Decryption option, populate this field with the encrypted payment data value returned from Samsung Pay in the 3ds.data block. See &quot;CyberSource Decryption,&quot; page 31.</td>
<td>ics_auth (R)</td>
<td></td>
</tr>
<tr>
<td>encrypted_payment_descriptor</td>
<td>Format of the encrypted payment data. The value for Samsung Pay is Rk1EPUNPTU1PTi5TQU1TVU5HLk1O QVBQLlBBWU1FT1Q=</td>
<td>ics_auth (R)</td>
<td></td>
</tr>
<tr>
<td>grand_total_amount</td>
<td>Grand total for the order. This value cannot be negative. You can include a decimal point (.), but you cannot include any other special characters. CyberSource truncates the amount to the correct number of decimal places.</td>
<td>ics_auth (R)</td>
<td>Decimal (15)</td>
</tr>
<tr>
<td>ics_applications</td>
<td>CyberSource services to process for the request:</td>
<td>ics_auth (R)</td>
<td>String (255)</td>
</tr>
<tr>
<td>merchant_id</td>
<td>Your CyberSource merchant ID. Use the same merchant ID for evaluation, testing, and production.</td>
<td>ics_auth (R)</td>
<td>String (30)</td>
</tr>
<tr>
<td>merchant_ref_number</td>
<td>Merchant-generated order reference or tracking number. CyberSource recommends that you send a unique value for each transaction so that you can perform meaningful searches for the transaction. For information about tracking orders, see Getting Started with CyberSource Advanced for the SCMP API (PDF</td>
<td>HTML). Eden</td>
<td>ics_auth (R)</td>
</tr>
<tr>
<td>network_token_cryptogram</td>
<td>Token authentication verification value cryptogram. For token-based transactions with 3D Secure or Identity Check, you must submit both types of cryptograms: network token and 3D Secure/Identity Check. The value for this field must be 28-character Base64 or 40-character hex binary. All cryptograms use one of these formats.</td>
<td>ics_auth (O)</td>
<td>String (40)</td>
</tr>
</tbody>
</table>

---

1 The TC 33 Capture file contains information about the purchases and refunds that a merchant submits to CyberSource. CyberSource through VisaNet creates the TC 33 Capture file at the end of the day and sends it to the merchant’s acquirer, who uses this information to facilitate end-of-day clearing processing with payment card companies.
### Table 4  API Request Fields (Continued)

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<tr>
<th>Field</th>
<th>Description</th>
<th>Used By: Required (R) or Optional (O)</th>
<th>Data Type (Length)</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>pa_specification_version</code></td>
<td>The 3D Secure version that you used for Secured Consumer Authentication (SCA); for example, 3D Secure 1.0.2 or 2.0.0.</td>
<td><code>ics_auth (O)</code></td>
<td>String (20)</td>
</tr>
<tr>
<td><code>payment_network_token_</code></td>
<td>Confidence level of the tokenization. This value is assigned by the token service provider.</td>
<td><code>ics_auth (O)</code></td>
<td>String (2)</td>
</tr>
<tr>
<td><code>assurance_level</code></td>
<td></td>
<td>Note: This field is supported only for FDC Nashville Global.</td>
<td></td>
</tr>
<tr>
<td><code>payment_network_token_</code></td>
<td>Type of technology used in the device to store token data. Possible value: 002: Host card emulation (HCE) Emulation of a smart card by using software to create a virtual and exact representation of the card. Sensitive data is stored in a database that is hosted in the cloud. For storing payment credentials, a database must meet very stringent security requirements that exceed PCI DSS.</td>
<td><code>ics_auth (O)</code></td>
<td>Integer (3)</td>
</tr>
<tr>
<td><code>device_tech_type</code></td>
<td></td>
<td>Note: This field is supported only for FDC Compass.</td>
<td></td>
</tr>
<tr>
<td><code>payment_network_token_</code></td>
<td>Value that identifies your business and indicates that the cardholder’s account number is tokenized. This value is assigned by the token service provider and is unique within the token service provider’s database.</td>
<td><code>ics_auth (O)</code></td>
<td>Integer (1)</td>
</tr>
<tr>
<td><code>requestor_id</code></td>
<td></td>
<td>Note: This field is supported only for FDC Nashville Global and Chase Paymentech Solutions.</td>
<td></td>
</tr>
<tr>
<td><code>payment_network_token_</code></td>
<td>Type of transaction that provided the token data. This value does not specify the token service provider; it specifies the entity that provided you with information about the token. Set the value for this field to 1.</td>
<td><code>ics_auth (R)</code></td>
<td>String (1)</td>
</tr>
<tr>
<td><code>transaction_type</code></td>
<td></td>
<td>1 The TC 33 Capture file contains information about the purchases and refunds that a merchant submits to CyberSource. CyberSource through VisaNet creates the TC 33 Capture file at the end of the day and sends it to the merchant’s acquirer, who uses this information to facilitate end-of-day clearing processing with payment card companies.</td>
<td></td>
</tr>
</tbody>
</table>
### Table 4  API Request Fields (Continued)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Used By: Required (R) or Optional (O)</th>
<th>Data Type (Length)</th>
</tr>
</thead>
<tbody>
<tr>
<td>payment_solution</td>
<td>Identifies Samsung Pay as the payment solution that is being used for the transaction:</td>
<td>ics_auth (R)</td>
<td>String (3)</td>
</tr>
<tr>
<td></td>
<td>Set the value for this field to 008.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong>  This unique ID differentiates digital solution transactions within the CyberSource platform for reporting purposes.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ucaf_authentication_data</td>
<td>Cryptogram for payment network tokenization transactions with Mastercard.</td>
<td>ics_auth (R)</td>
<td>String (32)</td>
</tr>
<tr>
<td>ucaf_collection_indicator</td>
<td>Required field for payment network tokenization transactions with Mastercard.</td>
<td>ics_auth (R)</td>
<td>String with numbers only (1)</td>
</tr>
</tbody>
</table>
| xid                       | Visa  Cryptogram for payment network tokenization transactions. The value for this field must be 28-character base64 or 40-character hex binary. All cryptograms use one of these formats.  
                           | American Express  For a 20-byte cryptogram, set this field to the cryptogram for payment network tokenization transactions. For a 40-byte cryptogram, set this field to block A of the cryptogram for payment network tokenization transactions. See “Merchant Decryption,” page 23. The value for this field must be 28-character base64 or 40-character hex binary. All cryptograms use one of these formats. | ics_auth (R)                           | String (40)        |

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1 The TC 33 Capture file contains information about the purchases and refunds that a merchant submits to CyberSource. CyberSource through VisaNet creates the TC 33 Capture file at the end of the day and sends it to the merchant’s acquirer, who uses this information to facilitate end-of-day clearing processing with payment card companies.
# Offer-Level Fields

## Table 5  Offer-Level Fields

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Used By: Required (R) or Optional (O)</th>
<th>Data Type (Length)</th>
</tr>
</thead>
<tbody>
<tr>
<td>amount</td>
<td>Per-item price of the product. This value cannot be negative. You can include a decimal point (.), but you cannot include any other special characters.</td>
<td>ics_auth (See description)</td>
<td>Decimal (15)</td>
</tr>
<tr>
<td>merchant_product_sku</td>
<td>Identification code for the product. This field is required when the product_code value is not default or one of the values related to shipping and/or handling.</td>
<td>ics_auth (See description)</td>
<td>String (255)</td>
</tr>
<tr>
<td>product_code</td>
<td>Type of product. This value is used to determine the product category: electronic, handling, physical, service, or shipping. The default is default.</td>
<td>ics_auth (See description)</td>
<td>String (255)</td>
</tr>
<tr>
<td>product_name</td>
<td>Name of the product. This field is required when the product_code value is not default or one of the values related to shipping and/or handling.</td>
<td>ics_auth (See description)</td>
<td>String (255)</td>
</tr>
<tr>
<td>quantity</td>
<td>The default is 1. This field is required when the product_code value is not default or one of the values related to shipping and/or handling.</td>
<td>ics_auth (See description)</td>
<td>Integer (10)</td>
</tr>
<tr>
<td>tax_amount</td>
<td>Total tax to apply to the product. This value cannot be negative.</td>
<td>ics_auth (See description)</td>
<td>String (15)</td>
</tr>
</tbody>
</table>
API Reply Fields

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

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

Your payment processor can include additional API reply fields that are not documented in this guide. See Credit Card Services Using the SCMP API (PDF | HTML) for detailed descriptions of additional API reply fields.

Table 6  Reply Fields

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Returned By</th>
<th>Data Type &amp; Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>auth_auth_amount</td>
<td>Amount that was authorized.</td>
<td>ics_auth</td>
<td>Decimal (15)</td>
</tr>
<tr>
<td>auth_auth_avs</td>
<td>AVS result code. See Credit Card Services Using the SCMP API for a detailed list of AVS values.</td>
<td>ics_auth</td>
<td>String (1)</td>
</tr>
<tr>
<td>auth_auth_code</td>
<td>Authorization code. Returned only when the processor returns this value.</td>
<td>ics_auth</td>
<td>String (7)</td>
</tr>
<tr>
<td>auth_auth_response</td>
<td>For most processors, this value is the error message sent directly from the bank. Returned only when the processor returns this value.</td>
<td>ics_auth</td>
<td>String (10)</td>
</tr>
<tr>
<td>auth_auth_time</td>
<td>Time of authorization in UTC. See “Data Type Definitions,” page 39.</td>
<td>ics_auth</td>
<td>Date and time (20)</td>
</tr>
<tr>
<td>auth_avs_raw</td>
<td>AVS result code sent directly from the processor. Returned only when the processor returns this value.</td>
<td>ics_auth</td>
<td>String (10)</td>
</tr>
<tr>
<td>auth_rcode</td>
<td>Indicates whether the service request was successful. Possible values: -1: An error occurred. 0: The request was declined. 1: The request was successful.</td>
<td>ics_auth</td>
<td>Integer (1)</td>
</tr>
</tbody>
</table>
### Table 6  Reply Fields (Continued)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Returned By</th>
<th>Data Type &amp; Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>auth_rflag</td>
<td>One-word description of the result of the entire request. See Credit Card Services Using the SCMP API (PDF</td>
<td>ics_auth</td>
<td>String (50)</td>
</tr>
<tr>
<td></td>
<td>Services Using the SCMP API (PDF</td>
<td>HTML) for a detailed list of rflag values.</td>
<td></td>
</tr>
<tr>
<td>auth_rmsg</td>
<td>Message that explains the reply flag auth_rflag. Do not display this message to the customer, and do not use this field to write an error handler.</td>
<td>ics_auth</td>
<td>String (255)</td>
</tr>
<tr>
<td>auth_trans_ref_no</td>
<td>Reference number for the transaction. This value is not returned for all processors.</td>
<td>ics_auth</td>
<td>String (60)</td>
</tr>
<tr>
<td></td>
<td>This value is not returned for all processors.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>card_suffix</td>
<td>Last four digits of the cardholder’s account number. This field is returned only for tokenized transactions. You can use this value on the receipt that you give to the cardholder. This field is returned only for FDC Nashville Global.</td>
<td>ics_auth</td>
<td>String (4)</td>
</tr>
<tr>
<td>currency</td>
<td>Currency used for the order. For the possible values, see the ISO Standard Currency Codes.</td>
<td>ics_auth</td>
<td>String (5)</td>
</tr>
<tr>
<td>directory_server_transaction_id</td>
<td>Identifier generated during the authentication transaction by the Mastercard Directory Server and passed back with the authentication results.</td>
<td>pa_enroll (O)</td>
<td>String (36)</td>
</tr>
<tr>
<td></td>
<td>pa_validate (O)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ics_rcode</td>
<td>Indicates whether the service request was successful. Possible values:</td>
<td>ics_auth</td>
<td>Integer (1)</td>
</tr>
<tr>
<td></td>
<td>- 1: An error occurred.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 0: The request was declined.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>- 1: The request was successful.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ics_rflag</td>
<td>One-word description of the result of the entire request. See Credit Card Services Using the SCMP API (PDF</td>
<td>ics_auth</td>
<td>String (50)</td>
</tr>
<tr>
<td></td>
<td>Services Using the SCMP API (PDF</td>
<td>HTML) for a detailed list of rflag values.</td>
<td></td>
</tr>
<tr>
<td>ics_rmsg</td>
<td>Message that explains the reply flag ics_rflag. Do not display this message to the customer, and do not use this field to write an error handler.</td>
<td>ics_auth</td>
<td>String (255)</td>
</tr>
</tbody>
</table>
### Table 6  Reply Fields (Continued)

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Returned By</th>
<th>Data Type &amp; Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>merchant_ref_number</td>
<td>Order reference or tracking number that you provided in the request. If you included multi-byte characters in this field in the request, the returned value might include corrupted characters.</td>
<td>ics_auth</td>
<td>String (50)</td>
</tr>
<tr>
<td>request_id</td>
<td>Identifier for the request generated by the client.</td>
<td>ics_auth</td>
<td>String (26)</td>
</tr>
<tr>
<td>request_token</td>
<td>Request token data created by CyberSource for each reply. The field is an encoded string that contains no confidential information such as an account or card verification number. The string can contain a maximum of 256 characters.</td>
<td>ics_auth</td>
<td>String (256)</td>
</tr>
<tr>
<td>token_expiration_month</td>
<td>Month in which the token expires. CyberSource includes this field in the reply message when it decrypts the payment blob for the tokenized transaction. Format: MM. Possible values: 01 through 12.</td>
<td>ics_auth</td>
<td>String (2)</td>
</tr>
<tr>
<td>token_expiration_year</td>
<td>Year in which the token expires. CyberSource includes this field in the reply message when it decrypts the payment blob for the tokenized transaction. Format: YYYY.</td>
<td>ics_auth</td>
<td>String (4)</td>
</tr>
<tr>
<td>token_prefix</td>
<td>First six digits of token. CyberSource includes this field in the reply message when it decrypts the payment blob for the tokenized transaction.</td>
<td>ics_auth</td>
<td>String (6)</td>
</tr>
<tr>
<td>token_suffix</td>
<td>Last four digits of token. CyberSource includes this field in the reply message when it decrypts the payment blob for the tokenized transaction.</td>
<td>ics_auth</td>
<td>String (4)</td>
</tr>
</tbody>
</table>