globalonepay®

Merchant ACH Integration Guide

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1 Introduction

Automated Clearing House (ACH) is an electronic network for financial transactions in the United States. ACH credit transfers include direct deposit, payroll and vendor payments. ACH direct debit transfers include consumer payments on insurance premiums, mortgage loans, and other kinds of bills.

The GlobalOnePay system is a secure server-based transaction processing service that will enable your business to authorise and process ACH transactions online in real-time. The information needed to process the transactions is sent over a secure, encrypted internet connection.

Once the customer has completed the payment form, the GlobalOnePay server connects with the ACH processor for payment authorisation and if the sale is authorised, returns a receipt to the customer. GlobalOnePay settles the transactions automatically and the acquiring bank deposits the funds into your bank account. GlobalOnePay automatically archives sales that are finalised so that you can refer to them at a later date, if necessary.

This guide provides instructions on how to integrate a website or application into the system and take ACH payments.

2 Choosing Your Integration Method

There are two integration methods available, Hosted Payment Page and XML integration. You can use one or a combination of them as required, but you should consider the integration method carefully before starting any development planning.

3 Notes Before Continuing

3.1 HASH Parameters

Every request to and response from GlobalOnePay includes an SHA-512 HASH parameter. This is a security element to ensure that none of the sensitive request or response data has been modified by a "*man-in-the-middle*" attack. This is achieved by including all the sensitive fields into a string, which varies per request type, along with the shared secret, configured per terminal. This string is then used as the basis of an SHA-512 HASH.

When explaining the data structure for requests and responses, this document is also going to present for each feature the formation rule of its request and response HASH. Those rules are going to look like this:

> **TERMINALID:ORDERID:AMOUNT:DATETIME:SECRET**

The "**:**" (colon) symbols used in the example above are the elements' separators and they ALWAYS NEEDS TO BE ADDED to define the separation of two elements.

It's important to understand that the separator should only be used to separate two elements with values, therefore the following example are correct:

- element[1]value

- element[1]value:element[2]value

- element[1]value:element[2]value:element[n]value

If a HASH formation rule defines an element which your request doesn't have, you can't use the separator for that element.

Consider a HASH for the data below using the structure and rules presented above:

- **TERMINALID**: 678002

- **ORDERID**: 300145858

- **AMOUNT**: 325.56

- **DATETIME**: 15-3-2006:10:43:01:673

- **SECRET**: x4n35c32RT

Consider **sha512** your method to apply the SHA-512 encryption, which receives the string formed with the data elements separated by the colon.

> **String hash = sha512("678002:300145858:325.56:15-3-2006:10:43:01:673:x4n35c32RT");**

The final **hash** string variable would have the value of:

> **5B39821025C33A3C37560196F36AF68668E46E82AFC4017434D72E62DBC4C06781AFC6364 E992D5594656FB185C901ECE65ADF85E8822832B8985F602E533EBA**

Note that the **sha512** method should always use a character encoding of UTF-8 where appropriate, as should all data sent to the payment gateway.

Remember to implement the specific hash rule for each request and response you decide to use from our solutions, exactly as they are described in their features. A few of them may seem similar, but they can differ in small details.

3.2 Multi-currency Terminal IDs

ACH payments can be processed in USD only. However some GlobalOnePay Terminal IDs are classified as multi-currency for other tender types. To maintain compatibility with these other tender types some hash calculations for ACH requests & responses vary between single currency and multi-currency terminals.

3.3 Custom Fields

Custom Fields allow you to send data to our systems with transactions in name-value pairs so that it is stored and can be included in reports, receipts and for other uses. There are two different types of custom fields: Explicit and Implicit.

- **Explicit Custom Fields**: All the custom fields that are mentioned in this document are explicit custom fields, all custom fields in the XML gateway are also. They must be pre-configured in the SelfCare System (Setting -> Custom Fields) for the particular Terminal ID that you are sending the transaction through.

- **Implicit Custom Fields**: Any other fields that are sent to the Hosted Payment Page are considered to be implicit custom fields. These will be returned in the response to the Receipt Page, but will not be stored, sent to the Background Validation URL or available in any reporting features. Implicit custom fields are not supported by the XML gateway.

A Custom Field is set up to be one of three types:

1. **Boolean**: Accepted values are "0", "1", "true" or "false"

2. **Numeric**: Any numeric only value

3. **String**: Any value containing only alphanumeric characters, spaces or the following characters: '-&*()_+:;@#|.,/

3.3.1   Custom Fields with Subscriptions and Stored Subscriptions

For a Custom Field to be used with Subscriptions it has to be set up under the terminal AND then added under the relevant Stored Subscription.

3.4 SEC Code Parameter

The ACH Authorization Gateway uses the Standard Entry Class (SEC) codes to determine what information is required to be sent in the submission. The National Automated Clearing House Association (NACHA) requires the use of SEC Codes for each transaction settled through the Automated Clearing House (ACH). Each code identifies what type of transaction occurred. A definition of each of the

supported SEC codes used by the GlobalOnePay can be found below.

- Internet Initiated Entry (WEB): An internet initiated entry is a method of payment for goods or services made via the internet.

- Telephone Initiated Entry (TEL): A telephone initiated entry is a payment for goods or services made with a single entry debit with oral authorization obtained from the consumer via the telephone.

- Prearranged Payment and Deposit (PPD): A pre-authorized consumer payment

- Cash Concentration and Disbursement (CCD): A pre-authorized corporate payment.

3.5 Hosted Pages

GlobalOnePay provide Hosted Pages for the entry of some sensitive data so that the merchants servers do not have to be exposed to this data. This is advisable to reduce the security overhead of the integrated solution as GlobalOnePay is responsible for maintaining the security and integrity of the data sent to these pages. The payment is then processed by GlobalOnePay and the account holder is redirected to the merchant's receipt page.
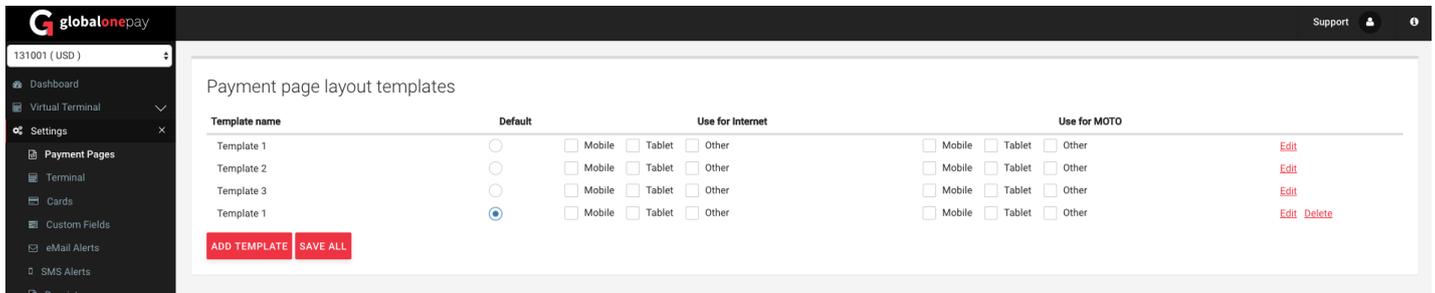
These pages can also be highly styled so that they look very appealing to the customers. This helps improve conversion rates and improves the customers overall payment experience.

3.5.1   Hosted Page Styling

The GlobalOnePay hosted pages can be heavily styled and are device aware, responsive and reactive, depending on the amount of effort the developer wants to put in to styling them.

As you can see from the image above it is simple to configure separate templates to be used for various devices. This is intended as a shortcut; a simple way of "cheating" the customer to think it's a responsive webpage, however a single template can be made totally responsive if desired.

As you can see different templated can also be used for Mail Order (TEL) and eCommerce transactions (WEB).

There are three permanent templates and they default to some sample styles. They do not all have to be used.

Images can be included but the image files must be hosted on the merchants website. The URL of the image will be required in the Payment Page styling.

Note: only users who have "Pay Pages" permissions will have access to this interface. It can be found once logged in by clicking "Settings" and then "Pay Pages" in the menu.

3.5.1.1   Basic Mode Styling

Basic template styling requires no knowledge of HTML or CSS. It can allow a merchant to style the page to an acceptable level. Previews of all hosted pages can be viewed on the right hand side.

All new templates created are basic. It's best to style as close as possible to what you are looking for in this mode before clicking "Advanced Mode" for more options.
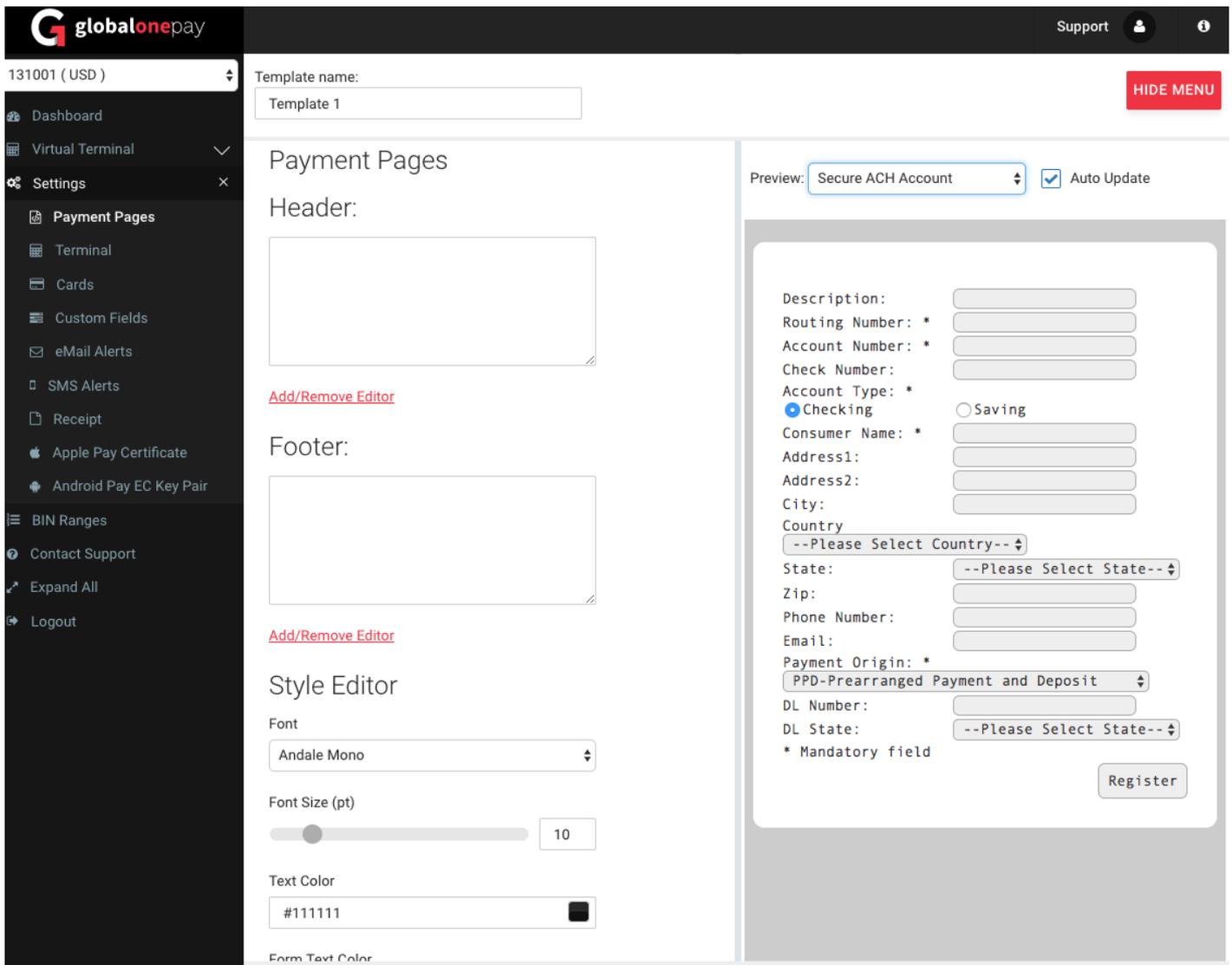
3.5.1.2   Advanced Mode Styling

Advanced mode allows you to directly edit the CSS of the page and also the HTML of the Header and

Footer. It is recommended not to use Auto Update in this mode.

Because of the custom CSS that can not be reverted to the same constraints as the Basic Mode, once you have entered Advanced mode you cannot go back to Basic Mode styling.

4 Payment Page

4.1 Hosted Payment Page

The redirecting to GlobalOnePay is accomplished by means of a simple HTML form post with a number of defined form fields (below). The following is the GlobalOnePay test payment page URL:

> **https://testpayments.globalone.me/merchant/paymentpage**

The live URL will be provided once merchant testing is complete.

The following table describes the form fields to be posted:

Field Name	Required	Description
TERMINALID	Y	A Terminal ID provided by GlobalOnePay. NB – Please contact GlobalOnePay to be issued with a test terminal ID.
ORDERID	Y	A unique identifier for the order created by the merchant. (Max 12 Characters).
CURRENCY	Y	Must be "USD".
AMOUNT	Y	The amount of the transaction as a 2 digit decimal or an Integer value for JPY amounts.
DATETIME	Y	Format: DD-MM-YYYY:HH:MM:SS:SSS.
RECEIPTPAGEURL	N	This is the URL of the page on your site that will display the result of the transaction. If sent this will override the terminal setting in the SelfCare System.
CARDHOLDERNAME	N	This will pre-populate the Account Name field on the payment page. This will be editable on the payment page. It should be as displayed on the front of the account.
DESCRIPTION	N	A description of the transaction.
EMAIL	N	An email address to send a confirmation email to. Normally this is account owner email address.
RECEIPTPAGEURL	N	This is the URL of the page on your site that will display the result of the transaction. If sent this will override the terminal setting in the SelfCare System.
VALIDATIONURL	N	This will overwrite the default Background Validation URL and will display an error if this feature is not enabled and sent. Highly recommended. See section 3.2.

Field Name	Required	Description
TERMINALTYPE	N	1 or 2 (default). Defines whether the transaction is to be processed as Mail Order/Telephone Order (1) or eCommerce (2 or not sent). Mail Order transactions can have a separate Payment Page Layout.
ADDRESS1	N	Will pre-populate the ADDRESS1 field on the Hosted Payment Page
ADDRESS2	N	The same handling as ADDRESS1.
POSTCODE	N	Zip/Postal Code associated with this account, characters 0-10
CITY	N	The same handling as ADDRESS1.
STATE	N	State/Region associated with this account .
PHONE	N	Customer phone number, to be stored against transaction. International format and numeric.
AnyOtherCustomField	N	Any other fields sent in the request will be treated as a custom field. It will be returned to the Receipt and Validation URLs also. Note that this is subject to the max length of a HTTP GET request which we would conservatively recommend considering to be 2000 characters.
HASH	Y	An SHA-512 HASH. See Note 1 below.

Notes:

1. The SHA-512 HASH is generated using the following as an input string:

> **TERMINALID:ORDERID:AMOUNT:DATETIME:RECEIPTPAGEURL:VALIDATIONURL:secret**

2. For multi-currency Terminal Ids (see section 2.2 above) this should be:

> **TERMINALID:ORDERID:CURRENCY:AMOUNT:DATETIME:RECEIPTPAGEURL:VALIDATIONURL:**
>
> **secret**

3. Any other fields that are sent to the HPP are considered to be 'extra fields'. These will be returned in the response to the Receipt Page URL, but will not be stored in the system or sent to the Validation URL.

The following HTML shows the minimum required to initiate a transaction.

```
<html>
  <body>
    <form action="https://testpayments.globalone.me/merchant/paymentpage" method="post">
      <input type="hidden" name="TERMINALID" value="6491002" />
      <input type="hidden" name="ORDERID" value="3281" />
      <input type="hidden" name="CURRENCY" value="USD" />
```

```
                <input type="hidden" name="AMOUNT" value="10.00" />
                <input type="hidden" name="DATETIME" value="15-3-2015:10:43:01:673" />
                <input type="hidden" name="HASH" value="3b41c01e592b396c91d70dead081c183" />
                <input type="submit" value="Pay Now" />
        </form>
    </body>
<html>
```

The URL where GlobalOnePay will send transaction processing results is set on the Terminal Setup screen (Receipt Page URL field) or is sent dynamically with the transaction as the RECEIPTPAGEURL parameter (see above). The following fields are returned in the response:

Field Name	Description
TERMINALID	The Terminal ID that the trans was processed under.
ORDERID	The original order ID of the transaction.
UNIQUEREF	Generated reference that should be stored for tracking and remote XML refunding.
AMOUNT	Transaction amount.
RESPONSECODE	E:Initial Approval or D:Declined. If E is received then final approval will be provided by background notification.
RESPONSETEXT	The text of the authorization.
DATETIME	The time of the transaction created by the bank. Format: YYYY-MM-DDTHH:MM:SS.
ACCOUNT_TYPE	CHECKING or SAVINGS
ROUTING_NUMBER	The ACH routing number
APPROVALCODE	Approval code of the operation
HASH	An SHA-512 HASH. See Note1 below.
Any other field	Any other fields sent in the request will be treated as a custom field. It will be returned to the Receipt Page URL also. Note that this is subject to the max length of a HTTP GET request which we would conservatively recommend considering to be 2000 characters.

Notes:

1. The SHA-512 HASH is generated using the following as an input string:

TERMINALID:ORDERID:AMOUNT:DATETIME:RESPONSECODE:RESPONSETEXT:secret

For multi-currency Terminal Ids (see section 2.2 above) this should be:

TERMINALID:ORDERID:CURRENCY:AMOUNT:DATETIME:RESPONSECODE:

RESPONSETEXT:secret

Many code examples on how to generate an SHA-512 HASH can be found on the Internet. For assistance, please contact GlobalOnePay.

2. Depending on your customer's browser definitions and if there's a language template defined for his/ her language priority, the Payment Gateway is going to send the payment receipt translated. If the language is not supported by the gateway, the receipt is going to be sent using the gateway's language.

4.2 Background Notification

Background notification is a method of providing the final results of transactions using a server side post. The Notification URL must be set for the terminal or sent in the payment request to the Payment Page, and GlobalOnePay will use this URL to send an HTTP POST request with transaction processing result and will expect to receive "OK" in the HTTP response body (2 characters only, no HTML). Any other response or connection issue will be considered as not-notified and a subsequent attempt to reach the notification URL will be made later, this process will repeat until our maximum allowed time for notification has passed. If the maximum allowed time has passed and the transaction was not successfully notified, the transaction will be marked as expired and the notification email address will be notified.

Send ACH JH background notification using the Background Validation process, result of sending notification does not impact on farther ACH JH transaction processing.

Notification sent in two cases:

• ACH JH transaction made from HPP (general flow)

• During Settlement process when transaction moving from open to closed transactions

To distinguish notification types on merchant side use response code, where 'E' means that transaction initially approved, 'A' transaction approved finally.

Use the same 'Validation URL' from Terminal Settings->Integration to notify merchant about ACH JH transactions result processing. Note: Validation must be enabled ('Enable Validation' checkbox on Terminal Settings->Integration page).

The following parameters are sent in the validation request:

Field Name	Description
TERMINALID	A Terminal ID provided by GlobalOnePay. NB – Please contact GlobalOnePay to be issued with a test terminal ID.
AMOUNT	Transaction amount.
ORDERID	Order ID supplied by merchant in request.

Field Name	Description
RESPONSETEXT	Text describing transaction state. This will be populated with an error message if there was an issue during processing.
RESPONSECODE	A:Approved or D:Declined.
DATETIME	Format: YYYY-MM-DDTHH:MM:SS.
UNIQUEREF	Generated reference that should be stored for tracking and remote XML refunding.
DESCRIPTION	PAYMENT or REVERSAL.
ACCOUNTNUMBER	Masked ACH account number, shows ~60% of characters.
HASH	An SHA-512 HASH. See Note 1 below.

Notes:

1. The SHA-512 HASH is generated using the following as an input string:

TERMINALID:ORDERID:UNIQUEREF:AMOUNT:DATETIME:RESPONSECODE:RESPONSETEXT:secret

2. For multi-currency Terminal Ids (see section 2.2 above) this should be:

TERMINALID:ORDERID:UNIQUEREF:CURRENCY:AMOUNT:DATETIME:RESPONSECODE:

RESPONSETEXT:secret

4.3 Hosted Pages in an iFrame

It is also possible to process transactions using an iFrame rather than a full redirect. All the same fields are required as the standard full redirect integration, but the implementation for the iFrame is slightly different. There are two methods of doing this:

1. Build and submit the form as with the standard integration, but within the iFrame.

2. Build the POST query string within the main page and then create an iFrame with that string as it's SRC value.

In either case you should also include this extra parameter:

Field Name	Required	Description
INIFRAME	Y	Ensures that all the redirects that our system performs don't break out of the iFrame.

5 XML Payments Integration

It is also possible to send XML directly to the GlobalOnePay payment server. This is useful in a scenario where your application needs full control of the payment process or where you wish to collect account details on your site.

The XML XSD description for all of the packet types below is available there:

https://testpayments.globalone.me/merchant/gateway.xsd

Note that all data sent to us should be correctly uncoded using UTF-8 as the character encoding.

5.1 Request Types

5.1.1   XML ACH Sale

The following is a simple example of a payment via an XML POST:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<PAYMENTACH>
      <ORDERID>3472151837</ORDERID>
      <TERMINALID>2366006</TERMINALID>
      <AMOUNT>2.09</AMOUNT>
      <CURRENCY>USD</CURRENCY>
      <DATETIME>22-02-2017:18:02:31:849</DATETIME>
      <TERMINALTYPE>2</TERMINALTYPE>
      <SEC_CODE>CCD</SEC_CODE>
      <ACCOUNT_TYPE>CHECKING</ACCOUNT_TYPE>
      <ACCOUNT_NUMBER>2387654376</ACCOUNT_NUMBER>
      <ROUTING_NUMBER>101000187</ROUTING_NUMBER>
      <ACCOUNT_NAME>Billy Joel</ACCOUNT_NAME>
      <CHECK_NUMBER>1234</CHECK_NUMBER>
      <ADDRESS1>7th Avenu, 77</ADDRESS1>
      <ADDRESS2>5th Avenu, 13</ADDRESS2>
      <CITY>New York</CITY>
      <REGION>A1</REGION>
      <POSTCODE>117898</POSTCODE>
      <COUNTRY>US</COUNTRY>
      <PHONE>9563343234</PHONE>
      <IPADDRESS>192.168.0.1</IPADDRESS>
      <EMAIL>asd@asd.org</EMAIL>
      <DESCRIPTION>test</DESCRIPTION>
      <DL_STATE>NY</DL_STATE>
      <DL_NUMBER>4353446</DL_NUMBER>
      <HASH>ceb3fded5144eec6a8e821014f2e66f5</HASH>
</PAYMENTACH>
```

Request fields:

Field Name	Required	Description
ORDERID	Y	A unique identifier for the order created by the merchant. (Max 12 Characters).
TERMINALID	Y	A Terminal ID provided by GlobalOnePay. NB – Please contact GlobalOnePay to be issued with a test terminal ID.
AMOUNT	Y	The amount of the transaction as a 2 digit decimal
CURRENCY	Y	Must be "USD".
DATETIME	Y	Format: DD-MM-YYYY:HH:MM:SS:SSS.
TERMINALTYPE	Y	The type of the terminal: • 1 - MOTO (Mail Order/Telephone Order) • 2 – eCommerce •
SEC_CODE	Y	See section 2.4 above.
ACCOUNT_TYPE	Y	CHECKING or SAVINGS. Required if ACH_SECURE=N.
ACCOUNT_NUMBER	Y	The ACH account number
ROUTING_NUMBER	Y	The ACH routing number.
ACCOUNT_NAME	Y	The customer's first and last name.
CHECK_NUMBER	N	Check number
ADDRESS1	N	First line of customer's address.
ADDRESS2	N	Second line of customer's address.
CITY	N	Customer's home city.
REGION	N	Customer's region.
POSTCODE	N	Customer's post code.
COUNTRY	N	Customer's country.
PHONE	N	Customer's phone number.
IPADDRESS	N	Customer's IP address.
EMAIL	N	Customer's e-mail address.
DESCRIPTION	N	Optional transaction description field.
DL_STATE	N	Customers driving licence state.
DL_NUMBER	N	Customers driving licence number.

Field Name	Required	Description
HASH	Y	An SHA-512 HASH. See Note 1 below.

For testing, this XML is posted to:

https://testpayments.globalone.me/merchant/xmlpayment

A response for this transaction would be:

```
<?xml version="1.0" encoding="UTF-8" ?>
<PAYMENTACHRESPONSE>
     <UNIQUEREF>G6VPOBK1E7</UNIQUEREF>
     <RESPONSECODE>E</RESPONSECODE>
     <RESPONSETEXT>ACCEPTED</RESPONSETEXT>
     <APPROVALCODE>Success</APPROVALCODE>
     <DATETIME>2017-03-22T17:19:38</DATETIME>
     <HASH>a6cd3355928183ccb82dd8185ffcfd39</HASH>
</PAYMENTACHRESPONSE>
```

Payment request fields description:

The following fields are returned in the response:

Field Name	Description
UNIQUEREF	Generated reference that should be stored for tracking and remote XML refunding.
RESPONSECODE	IA: Initial Approval or D: Declined. If IA is received, then final approval will be provided by background notification.
RESPONSETEXT	The text of the authorization.
APPROVALCODE	E:Initial Approval or D:Declined
DATETIME	The time of the transaction created by the bank. Format: YYYY-MM-DDTHH:MM:SS. Note that this is intentionally in a different format to the request timestamp to highlight the fact that it is a different time.
HASH	An SHA-512 HASH. See Note 2 below.

Notes:

1. The request SHA-512 HASH is generated using the following as an input string:

TERMINALID:ORDERID:AMOUNT:DATETIME:secret

For multi-currency Terminal IDs (see section 2.2 above) this should be:

TERMINALID:ORDERID:CURRENCY:AMOUNT:DATETIME:secret

2. The response SHA-512 HASH is generated using the following as an input string:

TERMINALID:ORDERID:UNIQUEREF:AMOUNT:DATETIME:RESPONSECODE:RESPONSETEXT: secret

For multi-currency Terminal IDs (see section 2.2 above) this should be:

TERMINALID:ORDERID:UNIQUEREF:CURRENCY:AMOUNT:DATETIME:RESPONSECODE: RESPONSETEXT:secret

Many code examples on how to generate an SHA-512 HASH can be found in the Internet. For assistance, please contact GlobalOnePay.

3. In case you desire to inform your customer's email and desire to provide his/ her receipt in another language, you can use the Accept-Language parameter of the request to set language the customer should receive the receipt in. If the language informed is not supported, the Payment Gateway will use its default language (EN). Possible values are 'fr-FR' or even 'fr,en-US;q=0.9,en;q=0.8,ru;q=0.7,de;q=0.6,ru-RU;q=0.5,de-DE;q=0.4'.

Error handling

If there is an error processing the transaction, the error string is returned in an XML message with the simple:

```
<ERROR>
     <ERRORCODE>E01</ERRORCODE>
     <ERRORSTRING>Invalid ACH Order ID</ERRORSTRING>
</ERROR>
```

5.1.2   Standard ACH Refunds

Standard refunds can be be performed on any ACH payments in the GlobalOnePay system, either in the Open Batch or Closed Batch. Partial refunds re not allowed.

The following is a simple example of a refund via an XML POST:

```
<?xml version="1.0" encoding="UTF-8"?>
<REFUND>
     <UNIQUEREF>LS2O5CO1XB</UNIQUEREF>
     <TERMINALID>2366006</TERMINALID>
     <AMOUNT>3.45</AMOUNT>
     <DATETIME>24-01-2017:15:23:14:422</DATETIME>
     <HASH>e71b02501e7eb9b4cedaa955e5b86e11</HASH>
     <OPERATOR>opr</OPERATOR>
     <REASON>reason</REASON>
</REFUND>
```

For testing, this XML is posted to:

https://testpayments.globalone.me/merchant/xmlpayment

A response for this transaction would be:

```
<REFUNDRESPONSE>
      <RESPONSECODE>E</RESPONSECODE>
      <RESPONSETEXT>ACCEPTED</RESPONSETEXT>
      <UNIQUEREF>KN5FQL15J6</UNIQUEREF>
      <DATETIME>24-01-2017:14:23:15:801</DATETIME>
      <HASH>c0b52adcce8a710df40bc68bf2dfe427</HASH>
</REFUNDRESPONSE>
```

The GlobalOnePay payment system then handles subsequent payment settlement and storage.

The following is a description of each field:

Field Name	Required	Description
UNIQUEREF	Y	The UNIQUEREF for the original payment.
TERMINALID	Y	A Terminal ID provided by GlobalOnePay. NB – Please contact GlobalOnePay to be issued with a test terminal ID.
AMOUNT	Y	The amount of the refund transaction as a 2 digits decimal or an Integer value for JPY amounts.
DATETIME	Y	Format: DD-MM-YYYY:HH:MM:SS:SSS.
HASH	Y	An SHA-512 HASH. See note 1 below.
OPERATOR	Y	An identifier for who executed this transaction.
REASON	Y	The reason for the refund.

The following fields are returned in the response:

Field Name	Description
RESPONSECODE	E: Initial Approval (final approval for voided transaction) or D: Declined. If E is received, then final approval will be provided by background notification (except voided transaction).
RESPONSETEXT	The text of the authorization.
UNIQUEREF	The UNIQUEREF for this refund.
DATETIME	Format DD-MM-YYYY:HH:MM:SS:SSS.
HASH	An SHA-512 HASH. See note 2 below.

Notes:

1. The request SHA-512 HASH is generated using the following as an input string:

TERMINALID:UNIQUEREF:AMOUNT:DATETIME:secret

For multi-currency Terminal IDs (see section 2.2 above) this should be:

> **TERMINALID:UNIQUEREF:CURRENCY:AMOUNT:DATETIME:secret**

2. The response SHA-512 HASH is generated using the following as an input string:

> **TERMINALID:ORDERID:UNIQUEREF:AMOUNT:DATETIME:RESPONSECODE:RESPONSETEXT:**
>
> **secret**

For multi-currency Terminal IDs (see section 2.2 above) this should be:

> **TERMINALID:ORDERID:UNIQUEREF:CURRENCY:AMOUNT:DATETIME:RESPONSECODE:**
>
> **RESPONSETEXT:secret**

n.b. The response UNIQUEREF is to be used here.

3. In case you desire to inform your customer's email to provide his/ her receipt in another language, you can use the Accept-Language parameter of the request to set language the customer should receive the receipt in. If the language informed is not supported, the Payment Gateway will use its default language (EN). Possible values are 'fr-FR' or even 'fr,en-US;q=0.9,en;q=0.8,ru;q=0.7,de;q=0.6,ru-RU;q=0.5,de-DE;q=0.4'.

6 SecureACH Storage

SecureACH Storage is the storage of sensitive account information in the GlobalOnePay system for use at a later date. It is a requirement for ACH Subscription processing. It is useful for merchants that are required to perform regular payments without the accountholder entering their information.

6.1 SecureACH Registration and Updating From the Hosted Page

SecureACH details can be registered or updated using the GlobalOnePay hosted page by the account holder, account details will be stored using GlobalOnePay SecureACH Storage.

To initiate a SecureACH registration or update a POST must be made to the following URL:

https://testpayments.globalone.me/merchant/securecardpage

The following table describes the form fields to be posted:

Field Name	Required	Description
ACTION	Y	• registerAch • updateAch
MERCHANTREF	Y	Unique Reference assigned by the merchants site/software to identify the stored account details. Length is limited to 48 chars.
DATETIME	Y	Format: DD-MM-YYYY:HH:MM:SS:SSS
TERMINALID	Y	A Terminal ID provided by GlobalOnePay. NB – Please contact GlobalOnePay to be issued with a test terminal ID.
RECEIPTPAGEURL	N	Overrides "Secure Card URL" terminal setting if sent.
PERMITTEDTERMINALS	N	Terminals which are permitted to process the request. The PERMITTEDTERMINALS string should be a comma separated list of the permitted terminals
HASH	Y	An SHA-512 HASH. See Note 1 below.

Notes:

1. The SHA-512 HASH is generated using the following as an input string

TERMINALID:MERCHANTREF:DATETIME:ACTION:RECEIPTPAGEURL:secret

Below is an example HTML form to open account details registration page.

<html>

```
    <body>
        <form action="https://testpayments.globalone.me/merchant/securecardpage" method="post">
            <input type="hidden" name="ACTION" value="registerAch" />
            <input type="hidden" name="TERMINALID" value="6491002" />
            <input type="hidden" name="MERCHANTREF" value="1234321" />
            <input type="hidden" name="DATETIME" value="15-03-2006:10:43:01:673" />
            <input type="hidden" name="HASH" value="d5d3441fb0e8318ce6d03976c2e93749" />
            <input type="submit" value="Register" />
        </form>
    </body>
<html>
```

To initiate account details updating, the value of the ACTION parameter should be changed to "updateAch". A SecureACH of MERCHANTREF 1234321 must be already existing under your account. Please note that the TERMINALID here is not valid and must be changed.

Assuming valid details were sent, the Hosted Registration or Update page will be displayed, clicking on "Register" or "Update" will save the account details, result GET parameters will be forwarded to the SecureACH URL that is configured on the Terminal Setup page.

Following parameters will be sent to the SecureACH Receipt URL:

Field Name	Description
RESPONSECODE	Response Code "A" - Approval, check the Response Codes table below for a full list of all supported codes.
RESPONSETEXT	Response Text.
MERCHANTREF	Original Merchant Reference.
ACHREFERENCE	Generated globally unique numeric account reference.
DATETIME	Format: DD-MM-YYYY:HH:MM:SS:SSS.
HASH	An SHA-512 HASH. See Note 1 below.
MASKED_ACH_ACCOUNT	Masked ACH account number, shows ~60% of characters.

Notes:

1. The SHA-512 HASH is generated using the following as an input string:

TERMINALID:RESPONSECODE:RESPONSETEXT:MERCHANTREF:ACHREFERENCE:DATETIME:

secret

6.2 XML SecureACH Integration

6.2.1   SecureACH Details Registration and Updating

The following is an example of a SecureACH Registration request for a terminal.

Note: The PERMITTEDTERMINALS string should be a comma separated list of the permitted terminals.

```xml
<?xml version="1.0" encoding="UTF-8"?>
<ACHSECUREREGISTRATION>
      <MERCHANTREF>CSV_73443623</MERCHANTREF>
      <TERMINALID>2366006</TERMINALID>
      <DATETIME>22-02-2017:18:24:03:638</DATETIME>
      <ACCOUNT_TYPE>CHECKING</ACCOUNT_TYPE>
      <ACCOUNT_NUMBER>2387654376</ACCOUNT_NUMBER>
      <ROUTING_NUMBER>123103729</ROUTING_NUMBER>
      <ACCOUNT_NAME>Billy Joel</ACCOUNT_NAME>
      <ADDRESS1>7th Avenu, 77</ADDRESS1>
      <ADDRESS2>5th Avenu, 14</ADDRESS2>
      <CITY>New York</CITY>
      <REGION>A1</REGION>
      <POSTCODE>117898</POSTCODE>
      <COUNTRY>US</COUNTRY>
      <PHONE>9563343234</PHONE>
      <IPADDRESS>192.168.0.1</IPADDRESS>
      <EMAIL>asd@asd.org</EMAIL>
      <DL_STATE>NY</DL_STATE>
      <DL_NUMBER>4353446</DL_NUMBER>
      <PERMITTEDTERMINALS>
            <TERMINALID>2366002</TERMINALID>
      </PERMITTEDTERMINALS>
      <HASH>ebdc9615f1c3e7ca3a01e28ad6ce04f4</HASH>
</ACHSECUREREGISTRATION>
```

The following is an example of a SecureACH Updating request:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<ACHSECUREUPDATE>
      <MERCHANTREF>CSV_73254705</MERCHANTREF>
      <TERMINALID>2366006</TERMINALID>
      <DATETIME>22-02-2017:18:50:51:008</DATETIME>
      <ACCOUNT_TYPE>SAVINGS</ACCOUNT_TYPE>
      <ACCOUNT_NUMBER>2387654376</ACCOUNT_NUMBER>
      <ROUTING_NUMBER>121122676</ROUTING_NUMBER>
      <ACCOUNT_NAME>Billy Joel</ACCOUNT_NAME>
      <ADDRESS1>7th Avenu, 77</ADDRESS1>
      <CITY>New York</CITY>
      <REGION>NY</REGION>
      <POSTCODE>-1</POSTCODE>
      <COUNTRY>US</COUNTRY>
      <PHONE>9563343234</PHONE>
      <IPADDRESS>192.168.0.2</IPADDRESS>
      <EMAIL>asd123@asd.org</EMAIL>
      <DL_STATE>NY</DL_STATE>
      <DL_NUMBER>4353446</DL_NUMBER>
      <PERMITTEDTERMINALS>
```

```
        <TERMINALID>2366002</TERMINALID>
    </PERMITTEDTERMINALS>
    <HASH>982f6c2b467401fccc765ebf4d16bd66</HASH>
</ACHSECUREUPDATE>
```

Fields description:

Field Name	REQ Register	REQ Update	Description
TERMINALID	Y	Y	A TerminalID provided by GlobalOnePay.
MERCHANTREF	Y	Y	Unique Merchant Reference. Length is limited to 48 chars.
ACCOUNT_NAME	Y	Y	The customers first and last names.
ACCOUNT_TYPE	Y	Y	CHECKING or SAVINGS.
ACCOUNT_NUMBER	Y	Y	Customers ACH account number.
ROUTING_NUMBER	Y	Y	Customers ACH routing number.
DESCRIPTION	N	N	Optional Description.
ADDRESS1	N	N	First line of customers address. For updateAch actions only submit this parameter if you want to set a new value. ('REMOVE' value clear that field)
ADDRESS2	N	N	Second line of customers address. For updateAch actions only submit this parameter if you want to set a new value. ('REMOVE' value clear that field)
CITY	N	N	Customers home city. For updateAch actions only submit this parameter if you want to set a new value. ('REMOVE' value clear that field)
REGION	N	N	Customers home state. For updateAch actions only submit this parameter if you want to set a new value. ('REMOVE' value clear that field)
POSTCODE	N	N	Customers ZIP code. For updateAch actions only submit this parameter if you want to set a new value. ('-1' value clear that field)
PHONE	N	N	Customers phone number. For updateAch actions only submit this parameter if you want to set a new value. ('REMOVE' value clear that field)
COUNTRY	N	N	Customers country. ('REMOVE' value clear that field)
IPADDRESS	N	N	Customer IP Address. ('REMOVE' value clear that field)
EMAIL	N	N	Customers email address. ('REMOVE' value clear that field)

Field Name	REQ Register	REQ Update	Description
DL_STATE	N	N	Customers driving licence state. ('-1' value clear that field)
DL_NUMBER	N	N	Customers driving licence number. ('REMOVE' value clear that field)
DATETIME	Y	Y	Format: DD-MM-YYYY:HH:MM:SS:SSS.
PERMITTED TERMINALS	N	N	Terminals which are permitted to process the request. The PERMITTEDTERMINALS string should be a comma separated list of the permitted terminals
HASH	Y	Y	An SHA-512 HASH. See note 1 below.

Notes:

1. The SHA-512 HASH is generated using the following as an input string:

> **TERMINALID:MERCHANTREF:DATETIME:ACCOUNT_NUMBER: ACCOUNT_NAME:**
>
> **ACCOUNT_TYPE:ROUTING_NUMBER:PERMITTEDTERMINALS : secret**

If the account details were successfully registered, response for registration request would be:

```
<ACHSECUREREGISTRATIONRESPONSE>
      <MERCHANTREF>CSV_73443623</MERCHANTREF>
      <ACHREFERENCE>2967530237009546</ACHREFERENCE>
      <DATETIME>22-02-2017:17:24:05:894</DATETIME>
      <HASH>eb3c878e6c304c086dd7ca186406584a</HASH>
</ACHSECUREREGISTRATIONRESPONSE>
```

Example of a successful account details updating response:

```
<ACHSECUREUPDATERESPONSE>
      <MERCHANTREF>CSV_73254705</MERCHANTREF>
       <ACHREFERENCE>2967539138333186</ACHREFERENCE>
      <DATETIME>22-02-2017:17:50:51:176</DATETIME>
      <HASH>4b8f045a2a5682a9af34ba4532e78dea</HASH>
</ACHSECUREUPDATERESPONSE>
```

The following fields will be returned in the response:

Field Name	Description
MERCHANTREF	Original Merchant Refernce sent in registration request.
ACHREFERENCE	Generated globally unique numeric account reference.
DATETIME	Format: DD-MM-YYYY:HH:MM:SS:SSS.
HASH	An SHA-512 HASH. See Note 1 below.

Notes:

1. The SHA-512 HASH is generated using the following as an input string:

TERMINALID:MERCHANTREF:ACHREFERENCE:DATETIME:secret

Error handling

If ACH Secure Account was not registered or updated, error code and error message will be returned:

```
<ERROR>
    <ERRORCODE>E21</ERRORCODE>
    <ERRORSTRING>Invalid First Name</ERRORSTRING>
</ERROR>
```

6.2.2   SecureACH Details Removal

Note that SecureACH MerchantRef's cannot be re-used after deletion. This is because they are tied to existing transactions in our system and are retained internally for data integrity and future refund functionality.

Card details removal request format:

```
<?xml version="1.0" encoding="UTF-8"?>
<ACHSECUREREMOVAL>
    <MERCHANTREF>CSV_73254705</MERCHANTREF>
    <ACHREFERENCE>2967539138333186</ACHREFERENCE>
    <TERMINALID>2366006</TERMINALID>
    <DATETIME>22-02-2017:19:10:31:114</DATETIME>
    <HASH>e632813057b4b7d80fa3556f78e16983</HASH>
</ACHSECUREREMOVAL>
```

Fields description:

Field Name	Required	Description
TERMINALID	Y	A TerminalID provided by GlobalOnePay.
MERCHANTREF	Y	Unique Merchant Reference. Length is limited to 48 chars.
ACHREFERENCE	Y	Generated globally unique numeric account reference.
DATETIME	Y	Format: DD-MM-YYYY:HH:MM:SS:SSS.
HASH	Y	An SHA-512 HASH. See note 1 below.

Notes:

1. The SHA-512 HASH is generated using the following as an input string:

TERMINALID:MERCHANTREF:DATETIME:ACHREFERENCE:secret

Account detail successful deletion response format:

```
<SECUREACHDELETIONRESPONSE>
    <MERCHANTREF>werg456343wf34fe</MERCHANTREF>
    <DATETIME>31-12-2008:23:59:59:002</DATETIME>
    <HASH>d04c3bab519095ecb046eff91722e8df</HASH>
</SECUREACHDELETIONRESPONSE>
```

The following fields will be returned in the response:

Field Name	Description
MERCHANTREF	Original Merchant Refernce sent in registration request.
DATETIME	Format: DD-MM-YYYY:HH:MM:SS:SSS.
HASH	An SHA-512 HASH. See Note 1 below.

Notes:

1. The SHA-512 HASH is generated using the following as an input string:

TERMINALID:MERCHANTREF:DATETIME:secret

Errors handling

If request was not successful, error code and error message will be returned:

```
<ERROR>
    <ERRORCODE>E08</ERRORCODE>
    <ERRORSTRING>INVALID MERCHANTREF</ERRORSTRING>
</ERROR>
```

6.2.3   SecureACH Details Search

SecureACH search by Merchant Reference can be performed as needed:

```
<?xml version="1.0" encoding="UTF-8"?>
<ACHSECURESEARCH>
    <MERCHANTREF>CSV_73254705</MERCHANTREF>
    <TERMINALID>2366006</TERMINALID>
    <PERMITTEDTERMINALSREQUIRED>Y</PERMITTEDTERMINALSREQUIRED>
    <DATETIME>22-02-2017:18:59:50:189</DATETIME>
    <HASH>efa7edfab30da38bdfbea8c67cb324cd</HASH>
</ACHSECURESEARCH>
```

Fields description:

Field Name	Required	Description
MERCHANTREF	Y	Unique Merchant Reference. Length is limited to 48 chars.
ACHREFERENCE	Y	Generated globally unique numeric account reference.

Field Name	Required	Description
TERMINALID	Y	A TerminalID provided by GlobalOnePay.
DATETIME	Y	Format: DD-MM-YYYY:HH:MM:SS:SSS.
HASH	Y	An SHA-512 HASH. See note 1 below.

Notes:

1. The SHA-512 HASH is generated using the following as an input string:

> **TERMINALID:MERCHANTREF:DATETIME:secret**

SecureACH detail successful deletion response format:

```
<?xml version="1.0" encoding="UTF-8"?>
<ACHSECURESEARCHRESPONSE>
      <MERCHANTREF>CSV_73254705</MERCHANTREF>
      <ACHREFERENCE>2967539138333186</ACHREFERENCE>
      <ACCOUNT_NAME>Billy Joel</ACCOUNT_NAME>
      <PERMITTEDTERMINALS>
            <TERMINALID>2366002</TERMINALID>
      </PERMITTEDTERMINALS>
      <DATETIME>22-02-2017:17:59:50:319</DATETIME>
      <HASH>5ffb7b446ef9c9bcd94b1c3500157c82</HASH>
</ACHSECURESEARCHRESPONSE>
```

The following fields will be returned in the response:

Field Name	Description
MERCHANTREF	The Merchant Reference from the request.
ACHREFERENCE	The SecureACH Reference from the request
ACCOUNT_NAME	Customers name
PERMITTEDTERMINALS	Terminals which are permitted to process the request. The PERMITTEDTERMINALS string should be a comma separated list of the permitted terminals
TERMINALID	A TerminalID provided by GlobalOnePay. NB – Please contact GlobalOnePay to be issued with a test terminal ID.
DATETIME	Format: DD-MM-YYYY:HH:MM:SS:SSS.
HASH	An SHA-512 HASH. See note 1 below.

Notes:

1. The SHA-512 HASH is generated using the following as an input string:

> **TERMINALID:MERCHANTREF:ACHREFERENCE:ACCOUNT_NAMEDATETIME:secret**

Errors handling

If request was not successful, error code and error message will be returned:

```
<ERROR>
     <ERRORCODE>E04</ERRORCODE>
     <ERRORSTRING>INVALID REFERENCE DETAILS</ERRORSTRING>
</ERROR>
```

6.2.4   XML Payments Using SecureACH Details

To send a payment transaction using stored ACH details, a standard ACHSALE request should be sent. The ACH_SECURE field should be set to 'Y' and the ACH_ACCOUNT field should be populated with the ACHREFERENCE for the account. These fields should then be ommitted from the request:

- ACH_ACCOUNT_TYPE

- ACH_FIRST_NAME

- ACH_LAST_NAME

- ACH_ADDRESS1

- ACH_ADDRESS2

- ACH_CITY

- ACH_STATE

- ACH_ZIP

- ACH_PHONE_NUMBER

7 Subscriptions

GlobalOnePay Subscriptions is a versatile and complete recurring payments solution. It can be used in two main ways:

1. Automatic payments - This is a fully automated solution that will manage the lifetime of a recurring payment once it is registered and notify the merchant of any issues that happen during it's lifetime.

2. Manual payments – With this solution, recurring payments are set up in our system just as they are for automatic payments. The main difference is that our system does not actually process payments automatically. Instead, when a payment is pending, the merchant should initiate the payment, either via and "XML Subscription ACH Payment" or through the SelfCare System. Another difference with this method is that you can modify the amount of the payment.

Subscriptions can only be set up on account details already stored in our system using the SecureACH feature above. Subscriptions are set up in two levels:

1. Stored Subscriptions – Stored subscriptions are not subscriptions in their own right, but instead are templates for multiple subscriptions that are registered under them. They define the period (weekly / monthly / quarterly / annually), the number of those periods (if it's a fixed number), setup price, recurring price, etc. They are intended to represent a product, for example.

2. Subscriptions – Every subscription set up has to be under a Stored Subscription. However some of the settings of the stored subscription can be overruled by the Subscription itself, as you will see below. Subscriptions are intended to represent a specific order of a product represented by the stored subscription that it's under.

7.1 Subscription Registration From the Hosted Page

New Subscription can be registered from the GlobalOnePay hosted page. When new subscription is created it name, description, set-up price, recurring price, length, period type and type are copied from the corresponding stored subscription,

To get Subscription Registration Page opened in a client browser a POST must be made to the following URL:

> **https://testpayments.globalone.me/merchant/subscriptionpage/register**

Subscription registration POST parameters description:

Field Name	Required	Description
MERCHANTREF	Y	Unique Merchant Reference. Length is limited to 48 chars.
TERMINALID	Y	A TerminalID provided by GlobalOnePay. NB – Please contact GlobalOnePay to be issued with a test terminal ID.
STOREDSUBSCRIPTIONREF	N	This field is required if new Subscription being created should be based on already existing Stored Subscription.
SECUREACHACCOUNTMERCHANTREF	Y	Merchant Reference of a SecureACH record which will be used to do set-up and recurring payments. (Only one of SECUREACHACCOUNTMERCHANTREF or ACHREFERENCE must be present)
ACHREFERENCE	Y	ACH Account secure reference generated by NetTraxion and provided to merchant during creation Secure ACH Account. (Only one of SECUREACHACCOUNTMERCHANTREF or ACHREFERENCE must be present)
SUBSCRIPTIONRECURRINGAMOUNT	N	The monthly recurring amount for Automatic subscriptions. Will override the Stored Subscription value if populated.
SUBSCRIPTIONINITIALAMOUNT	N	The setup payment amount. This will be authorised in real time and the usbscription will only be successfully set up if it approves. Will override the Stored Subscription value if populated.
DATETIME	Y	Format: DD-MM-YYYY:HH:MM:SS:SSS.
STARTDATE	Y	Subscription Start Date. Format: dd-MM-yyyy
ENDDATE	N	Subscription End Date, if it is not set subscription will continue until manually canceled or lenght reached (if it is set).
HASH	Y	An SHA-512 HASH. See Note 1 below.
Following parameters should be posted if new Stored Subscription should be created (STOREDSUBSCRIPTIONREF shouldn't be posted in such case).		
NEWSTOREDSUBSCRIPTIONREF	N	Merchant Ref to be assigned for new Stored Subscription being created.
NAME	Y	Display name for subscription.
DESCRIPTION	Y	Description explaining subscription.

Field Name	Required	Description
PERIODTYPE	Y	Integer code of Period Type, can be: • 2 – WEEKLY • 3 – FORTNIGHTLY • 4 – MONTHLY • 5 – QUARTERLY • 6 - YEARLY
LENGTH	Y	0 for non ending / multiplier of period. This does not take effect if (Subscription length * Period Type) > (End Date – Current Date).
RECURRINGAMOUNT	Y	Cost of each payment (will be ignored if manual).
INITIALAMOUNT	Y	Initial (set-up) payment to be taken off card. Payment will not be taken if it is 0. Setup fails if setup payment declines.
TYPE	Y	Integer code of subscription type: • 1 – AUTOMATIC • 2 – MANUAL • 3 – AUTOMATIC (WITHOUT AMOUNTS)
ONUPDATE	Y	Integer code of onupdate: • 1 – CONTINUE • 2 – UPDATE (Let all depending subscriptions finish their subscription prior to update / Update name, description, recurringprice, setupprice, subscriptionlength, periodtype, type for all subscriptions)
ONDELETE	Y	Integer code of ondelete: • 1 – CONTINUE • 2 – CANCEL (Continue subscriptions until cancelled manually or reach end date or length / Cancel all subscriptions)

Notes:

1. The SHA-512 HASH is generated using the following as an input string:

> **TERMINALID:MERCHANTREF:SECUREACHACCOUNTMERCHANTREF:DATETIME:STARTDATE:**
>
> **secret**

2. If "ACHREFERENCE " is used, the SHA-512 HASH is generated using the following as an input string:

> **TERMINALID:MERCHANTREF:ACHREFERENCE :DATETIME:STARTDATE:secret**

Below is an example HTML form to open subscription registration page.

```
<html>
  <body>
      <form action="https://testpayments.globalone.me/merchant/subscriptionpage/register"
method="post">
          <input type="hidden" name="TERMINALID" value="6491002">
          <input type="hidden" name="MERCHANTREF" value="26352">
          <input type="hidden" name="STOREDSUBSCRIPTIONREF" value="6523423">
          <input type="hidden" name="SECUREACHACCOUNTMERCHANTREF" value="237498">
          <input type="hidden" name="DATETIME" value="03-08-2009:17:32:18:329">
          <input type="hidden" name="STARTDATE" value="04-08-2009">
          <input type="hidden" name="ENDDATE" value="03-08-2010">
          <input type="hidden" name="HASH" value="b9a034421808a80dc8f1a5657da80f95">
          <input type="submit" value="Register">
      </form>
  </body>
<html>
```

Assuming valid details were sent, the Subscription Registration Hosted page will be displayed, clicking on "Accept & Subscribe" button will create the subscription only if the setup amount authorises successfully, and the resulting GET parameters will be forwarded to the Subscription Receipt URL that is configured on the Terminal Setup page.

Following parameters will be sent to the Subscription Receipt URL:

Field Name	Description
RESPONSECODE	Response Code: • A - Approval • C - Cancelled Check the Error: Reference source not found table for a full list of supported codes.
RESPONSETEXT	Response Text.
MERCHANTREF	Original Merchant Reference.
DATETIME	Format: DD-MM-YYYY:HH:MM:SS:SSS.
HASH	An SHA-512 HASH. See Note 1 below.

Notes:

1. The SHA-512 HASH is generated using the following as an input string:

TERMINALID:MERCHANTREF:DATETIME:RESPONSECODE:RESPONSETEXT:secret

If invalid parameter values will be sent, an Error Page will appear and the web browser will not be redirected to the Subscription Receipt Page. This should not happen in a production environment after integration is completed.

7.2 XML Subscriptions Integration

Stored Subscription and Subscriptions can be managed through XML Gateway.

7.2.1   Stored Subscription Creation Request

The following is an example of a Stored Subscription Registration request for a terminal:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<ADDSTOREDSUBSCRIPTION>
      <MERCHANTREF>MR001</MERCHANTREF>
      <TERMINALID>6491002</TERMINALID>
      <DATETIME>30-07-2009:15:26:38:027</DATETIME>
      <NAME>Animal Life</NAME>
      <DESCRIPTION>Magazine membership</DESCRIPTION>
      <PERIODTYPE>MONTHLY</PERIODTYPE>
      <LENGTH>12</LENGTH>
      <CURRENCY>EUR</CURRENCY>
      <RECURRINGAMOUNT>15.87</RECURRINGAMOUNT>
      <INITIALAMOUNT>10.99</INITIALAMOUNT>
      <TYPE>AUTOMATIC</TYPE>
      <ONUPDATE>CONTINUE</ONUPDATE>
      <ONDELETE>CANCEL</ONDELETE>
      <HASH>750f7c545a3d63ecaf3b48c149b95555</HASH>
      <CUSTOMFIELD NAME="ACCOUNTID"></CUSTOMFIELD>
      <CUSTOMFIELD NAME="EVENTID" />
</ADDSTOREDSUBSCRIPTION>
```

Example of a Stored Subscription Updating request:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<UPDATESTOREDSUBSCRIPTION>
      <MERCHANTREF>13231</MERCHANTREF>
      <TERMINALID>6491002</TERMINALID>
      <DATETIME>31-07-2009:16:07:21:000</DATETIME>
      <NAME>Animal Life</NAME>
      <DESCRIPTION>Magazine membership</DESCRIPTION>
      <LENGTH>12</LENGTH>
      <CURRENCY>EUR</CURRENCY>
      <RECURRINGAMOUNT>15.99</RECURRINGAMOUNT>
      <INITIALAMOUNT>10.99</INITIALAMOUNT>
      <TYPE>AUTOMATIC</TYPE>
      <ONUPDATE>CONTINUE</ONUPDATE>
      <ONDELETE>CANCEL</ONDELETE>
      <HASH>5023bbb6726d1b5d2dcb7c77fb11b94f</HASH>
      <CUSTOMFIELD NAME="ACCOUNTID"></CUSTOMFIELD>
      <CUSTOMFIELD NAME="EVENTID" />
</UPDATESTOREDSUBSCRIPTION>
```

Fields description:

Field Name	REQ Register	REQ Update	Description
MERCHANTREF	Y	Y	Unique merchant identifier per terminal. Length is limited to 48 chars.
TERMINALID	Y	Y	A TerminalID provided by GlobalOnePay.
DATETIME	Y	Y	Format: DD-MM-YYYY:HH:MM:SS:SSS.
NAME	Y	Y	Display name for subscription.
DESCRIPTION	Y	Y	Description explaining subscription.
PERIODTYPE	Y	N	Period Type, can be: WEEKLY, FORTNIGHTLY, MONTHLY, QUARTERLY, YEARLY. Only allowed for ADDSTOREDSUBSCRIPTION request.
LENGTH	Y	Y	0 for non ending / multiplier of period. This does not take effect if (Subscription length * Period Type) > (End Date – Current Date).
CURRENCY	Y	Y	Currency of subscription, this must either the base currency of the terminal or if supported, one of the configured allowed currencies.
RECURRINGAMOUNT	Y	Y	Cost of each payment (will be ignored if manual).
INITIALAMOUNT	Y	Y	Initial (set-up) payment to be taken off card. Payment will not be taken if it is 0.
TYPE	Y	Y	MANUAL / AUTOMATIC / AUTOMATIC (WITHOUT AMOUNTS).
ONUPDATE	Y	Y	UPDATE/CONTINUE (Update name, description, recurringprice, setupprice, subscriptionlength, periodtype, type for all subscriptions/Let them finish their subscription prior to update).
ONDELETE	Y	Y	CANCEL/CONTINUE (Cancel all subscriptions / Continue subscriptions until cancelled manually or reach end date or length).
HASH	Y	Y	An SHA-512 HASH. See note 1 below.
CUSTOMFIELD	N	N	Use the "NAME" xml attribute to assign the name of the custom field. See section 2.3 for more info. No value is required and any value sent will be ignored.

Notes:

1. The SHA-512 HASH is generated using the following as an input string:

> **TERMINALID:MERCHANTREF:DATETIME:TYPE:NAME:CURRENCY:RECURRINGAMOUNT:**
>
> **INITIALAMOUNT:LENGTH:secret**

If new stored subscription was successfully registered, response would be:

```
<ADDSTOREDSUBSCRIPTIONRESPONSE>
      <MERCHANTREF>13231</MERCHANTREF>
      <DATETIME>30-07-2009:15:26:39:745</DATETIME>
      <HASH>d04c3bab519095ecb046eff91722e8df</HASH>
</ADDSTOREDSUBSCRIPTIONRESPONSE>
```

Example of a successful stored subscription updating response:

```
<UPDATESTOREDSUBSCRIPTIONRESPONSE>
      <MERCHANTREF>13231</MERCHANTREF>
      <DATETIME>31-07-2009:16:07:21:329</DATETIME>
      <HASH>0af49616cad0fd1e19bc709de7d7c934</HASH>
</UPDATESTOREDSUBSCRIPTIONRESPONSE>
```

The following fields will be returned in the response:

Field Name	Description
MERCHANTREF	Original Merchant Reference sent in registration request
DATETIME	Format: DD-MM-YYYY:HH:MM:SS:SSS.
HASH	An SHA-512 HASH. See Note 1 below.

Notes:

1. The SHA-512 HASH is generated using the following as an input string:

> **TERMINALID:MERCHANTREF:DATETIME:secret**

Errors handling

If stored subscription was not registered or updated, error code and error message will be returned:

```
<ERROR>
      <ERRORCODE>E08</ERRORCODE>
      <ERRORSTRING>INVALID MERCHANTREF</ERRORSTRING>
</ERROR>
```

Stored Subscription creation and updating error codes:

Error Code	Description
E01	SYSTEM ERROR – TRY AGAIN
E03	OPERATION NOT ALLOWED
E06	INVALID TERMINALID

Error Code	Description
E07	METHOD NOT SUPPORTED
E08	INVALID MERCHANTREF
E09	INVALID DATETIME
E13	INVALID HASH
E20	INVALID LENGTH
E21	INVALID PERIOD TYPE
E22	INVALID NAME
E23	INVALID DESCRIPTION
E24	INVALID RECURRINGAMOUNT
E25	INVALID INITIALAMOUNT
E26	INVALID TYPE
E27	INVALID ONUPDATE
E28	INVALID ONDELETE
E29	INVALID TERMINAL CURRENCY

7.2.2   Stored Subscription Deletion Request

Note that Stored Subscription MerchantRef's cannot be re-used after deletion. This is because they are tied to existing transactions in our system and are retained internally for data integrity and issue tracing.

To delete stored subscription following XML Gateway request should be send:

```
<?xml version="1.0" encoding="UTF8"?>
<DELETESTOREDSUBSCRIPTION>
      <MERCHANTREF>13231</MERCHANTREF>
      <TERMINALID>6491002</TERMINALID>
      <DATETIME>31-07-2009:20:49:34:798</DATETIME>
      <HASH>efc5a04b5a98be9bd59ec5383abb9161</HASH>
</DELETESTOREDSUBSCRIPTION>
```

Fields description:

Field Name	Required	Description
MERCHANTREF	Y	Unique merchant identifier per terminal. Length is limited to 48 chars.

Field Name	Required	Description
TERMINALID	Y	A TerminalID provided by GlobalOnePay.
DATETIME	Y	Format: DD-MM-YYYY:HH:MM:SS:SSS.
HASH	Y	An SHA-512 HASH. See note 1 below.

Notes:

1. The SHA-512 HASH is generated using the following as an input string:

TERMINALID:MERCHANTREF:DATETIME:secret

Example of a successful stored subscription deletion response:

```
<DELETESTOREDSUBSCRIPTIONRESPONSE>
      <MERCHANTREF>13231</MERCHANTREF>
      <DATETIME>31-07-2009:20:49:35:381</DATETIME>
      <HASH>8a8f462278c730e9de5561d8f186d7dc</HASH>
</DELETESTOREDSUBSCRIPTIONRESPONSE>
```

The following fields will be returned in the response:

Field Name	Description
MERCHANTREF	Original Merchant Refernce sent in registration request.
DATETIME	Format: DD-MM-YYYY:HH:MM:SS:SSS.
HASH	An SHA-512 HASH. See Note 1 below.

Notes:

1. The SHA-512 HASH is generated using the following as an input string:

TERMINALID:MERCHANTREF:DATETIME:secret

Errors handling

If stored subscription was not registered or updated, error code and error message will be returned:

```
<ERROR>
      <ERRORCODE>E08</ERRORCODE>
      <ERRORSTRING>INVALID MERCHANTREF</ERRORSTRING>
</ERROR>
```

There is list of error codes and corresponding messages:

Error Code	Description
E01	SYSTEM ERROR – TRY AGAIN

7.2.3   Subscription Creation Request

Each subscription should be created based on some stored subscription. When new subscription is created it name, description, set-up price, recurring price, length, period type and type are copied from the corresponding stored subscription, most subscription fields can be changed by Subscription Updating request.

To create new subscription based on an existing Stored Subscription following XML Gateway request should be sent:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<ADD_ACH_SUBSCRIPTION>
     <MERCHANTREF>Sub_CSV_09344573</MERCHANTREF>
     <TERMINALID>2366006</TERMINALID>
     <ACHREFERENCE>2967530284987420</ACHREFERENCE> or
     <SECUREACHACCOUNTMERCHANTREF></SECUREACHACCOUNTMERCHANTREF>
     <SEC_CODE>TEL</SEC_CODE>
     <DATETIME>06-03-2017:18:09:04:583</DATETIME>
     <RECURRINGAMOUNT>2.0</RECURRINGAMOUNT>
     <INITIALAMOUNT>13.0</INITIALAMOUNT>
     <STARTDATE>06-03-2017</STARTDATE>
     <ENDDATE>17-05-2020</ENDDATE>
     <HASH>05b0f69a72dd7b25883c7b8ed3918ae9</HASH>
</ADD_ACH_SUBSCRIPTION>
```

If Stored Subscription doesn't yet exist it can be created putting all it details into the nested NEWSTOREDSUBSCRIPTIONINFO tag, STOREDSUBSCRIPTIONREF in such case should be omitted. There is example of such request:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<ADD_ACH_SUBSCRIPTION>
     <MERCHANTREF>Sub_CSV_09344573</MERCHANTREF>
     <TERMINALID>2366006</TERMINALID>
     <ACHREFERENCE>2967530284987420</ACHREFERENCE> or
     <SECUREACHACCOUNTMERCHANTREF></SECUREACHACCOUNTMERCHANTREF>
     <SEC_CODE>TEL</SEC_CODE>
     <DATETIME>06-03-2017:18:09:04:583</DATETIME>
     <RECURRINGAMOUNT>2.0</RECURRINGAMOUNT>
     <INITIALAMOUNT>13.0</INITIALAMOUNT>
     <STARTDATE>06-03-2017</STARTDATE>
     <ENDDATE>17-05-2020</ENDDATE>
     <NEWSTOREDSUBSCRIPTIONINFO>
          <MERCHANTREF>Sub_CSV_09344573</MERCHANTREF>
          <NAME>name</NAME>
          <DESCRIPTION>description test</DESCRIPTION>
          <PERIODTYPE>WEEKLY</PERIODTYPE>
          <LENGTH>12</LENGTH>
          <CURRENCY>USD</CURRENCY>
          <RECURRINGAMOUNT>3.0</RECURRINGAMOUNT>
          <INITIALAMOUNT>12.0</INITIALAMOUNT>
          <TYPE>AUTOMATIC</TYPE>
          <ONUPDATE>CONTINUE</ONUPDATE>
          <ONDELETE>CANCEL</ONDELETE>
     </NEWSTOREDSUBSCRIPTIONINFO>
```

```
    <HASH>05b0f69a72dd7b25883c7b8ed3918ae9</HASH>
</ADD_ACH_SUBSCRIPTION>
```

Fields description:

Field Name	Required	Description
MERCHANTREF	Y	Unique merchant identifier per terminal. Length is limited to 48 chars.
TERMINALID	Y	A TerminalID provided by GlobalOnePay.
STOREDSUBSCRIPTIONREF	N	Stored Subscription Merchant Reference, it is allowed only if *NEWSTOREDSUBSCRIPTIONINFO do not present.*
SECUREACHACCOUNTMERCHANTREF	N	Merchant Reference of a Secure ACH Account which will be used to do set-up and recurring payments.(Only one of SECUREACHACCOUNTMERCHANTREF or ACHREFERENCE must be present)
ACHREFERENCE	N	System-Generated ACH Reference (Secure ACH).(Only one of SECUREACHACCOUNTMERCHANTREF or ACHREFERENCE must be present)
DATETIME	Y	Format: DD-MM-YYYY:HH:MM:SS:SSS.
STARTDATE	Y	Subscription Start Date. Format: DD-MM-YYYY.
ENDDATE	N	Subscription End Date, if it is not set subscription will continue until manually canceled or lenght reached (if it is set). Format: DD-MM-YYYY.
NEWSTOREDSUBSCRIPTIONINFO	N	It is allowed only if *STOREDSUBSCRIPTIONREF is not set. This tag and all it children should be set if Stored Subscription on which new Subscription being added should be based doesn't exists yet and should be created. Please check NEWSTOREDSUBSCRIPTIONINFO fields description table for details.*
NOTIFICATIONLANGUAGE	N	Defines the language which is going to be used to send the customer's notification/ receipt. Acceptable values are 'EN' and 'FR' (case sensitive).
HASH	Y	An SHA-512 HASH. See note 1 below.

Notes:

1. The SHA-512 HASH is generated using the following as an input string: TERMINALID:MERCHANTREF:SECUREACHACCOUNTMERCHANTREF or ACHREFERENCE :DATETIME:STARTDATE:secret

2. STOREDSUBSCRIPTIONREF should be omitted if it is not set.

NEWSTOREDSUBSCRIPTIONINFO *fields description*:

Field Name	Required	Description
MERCHANTREF	Y	Unique merchant identifier per terminal. Length is limited to 48 chars.
NAME	Y	Display name for subscription.
DESCRIPTION	Y	Description explaining subscription.
PERIODTYPE	Y	Period Type, can be: WEEKLY, FORTNIGHTLY, MONTHLY, QUARTERLY or YEARLY.
LENGTH	Y	0 for non ending multiplier of period. This does not take effect if (Subscription length * Period Type) > (End Date – Current Date).
CURRENCY	Y	Currency of subscription, this must either the base currency of the terminal or if supported, one of the configured allowed currencies.
RECURRINGAMOUNT	N	Cost of each payment (should not be sent if TYPE is "MANUAL").
INITIALAMOUNT	Y	Initial (set-up) payment to be taken off card. Payment will not be taken if it is 0.
TYPE	Y	MANUAL or AUTOMATIC.
ONUPDATE	Y	UPDATE or CONTINUE (Update name, description, recurringprice, setupprice, subscriptionlength, periodtype, type for all subscriptions/Let them finish their subscription prior to update).
ONDELETE	Y	CANCEL/CONTINUE (Cancel all subscriptions / Continue subscriptions until cancelled manually or reach end date or length).

Example of a successful subscription creation response:

```
<ADDSUBSCRIPTIONRESPONSE>
     <MERCHANTREF>MR02-02</MERCHANTREF>
     <DATETIME>30-07-2009:15:34:24:305</DATETIME>
     <HASH>8bb39be67a1f05bf73fe334e12037257</HASH>
</ADDSUBSCRIPTIONRESPONSE>
```

The following fields will be returned in the response:

Field Name	Description
MERCHANTREF	Original Merchant Reference sent in registration request.
DATETIME	Format: DD-MM-YYYY:HH:MM:SS:SSS.
HASH	An SHA-512 HASH. See Note 1 below.

Notes:

1. The SHA-512 HASH is generated using the following as an input string:

TERMINALID:MERCHANTREF:DATETIME:secret

Errors handling

If new subscription was not registered, error code and error message will be returned:

```
<ERROR>
     <ERRORCODE>E08</ERRORCODE>
     <ERRORSTRING>INVALID MERCHANTREF</ERRORSTRING>
</ERROR>
```

7.2.4   Subscription Updating Request

The following is an example of a Subscription Updating request:

```
<?xml version="1.0" encoding="UTF-8"?>
<UPDATE_ACH_SUBSCRIPTION>
     <MERCHANTREF>Sub_CSV_09344573</MERCHANTREF>
     <TERMINALID>2366006</TERMINALID>
     <ACHREFERENCE>2967530284987420</ACHREFERENCE> or
     <SECUREACHACCOUNTMERCHANTREF></SECUREACHACCOUNTMERCHANTREF>
     <SEC_CODE>CCD</SEC_CODE>
     <DATETIME>06-03-2017:18:38:02:154</DATETIME>
     <NAME>NameUpdated_CSV_11082143</NAME>
     <LENGTH>10</LENGTH>
     <SKIPPERIODCOUNT>1</SKIPPERIODCOUNT>
     <RECURRINGAMOUNT>5.0</RECURRINGAMOUNT>
     <STARTDATE>06-03-2017</STARTDATE>
     <ENDDATE>06-11-2017</ENDDATE>
     <HASH>3cfc892047e5a1154e0f4c2e7cb29980</HASH>
</UPDATE_ACH_SUBSCRIPTION>
```

Fields description:

Field Name	Required	Description
MERCHANTREF	Y	Merchant Ref of subscription which should be updated.
TERMINALID	Y	A TerminalID provided by GlobalOnePay.
ACHREFERENCE	N	System-Generated ACH Reference (Secure ACH).(Only one of SECUREACHACCOUNTMERCHANTREF or ACHREFERENCE must be present)
SECUREACHACCOUNTME RCHANTREF	N	Merchant Reference of a Secure ACH which will be used to do recurring payments.(Only one of SECURECARDMERCHANTREF or ACHREFERENCE must be present)
SEC_CODE	Y	See section 2.4 above.

Field Name	Required	Description
DATETIME	Y	Format: DD-MM-YYYY:HH:MM:SS:SSS.
NAME	N	Subscription Name.
DESCRIPTION	N	Subscription Description.
LENGTH	N	Subscription Length.
RECURRINGAMOUNT	N	New Recurring Amount.
STARTDATE	N	Subscription Start Date.
ENDDATE	N	Subscription End Date, if it is not set subscription will continue until manually canceled or lenght reached (if it is set).
NOTIFICATIONLANGUAGE	N	Defines the language which is going to be used to send the customer's notification/ receipt. Acceptable values are 'EN' and 'FR' (case sensitive).
HASH	Y	An SHA-512 HASH. See note 1 below.

Notes:

1. The SHA-512 HASH is generated using the following as an input string:

TERMINALID:MERCHANTREF:SECUREACHACCOUNTMERCHANTREF:DATETIME:STARTDATE:secret

or

TERMINALID:MERCHANTREF:ACHREFERENCE :DATETIME:STARTDATE:secret

Example of a successful subscription updating response:

```
<UPDATE_ACH_SUBSCRIPTION_RESPONSE>
     <MERCHANTREF>Sub_CSV_09344573</MERCHANTREF>
     <DATETIME>06-03-2017:17:38:02:399</DATETIME>
     <HASH>e0f3de3996b57b1ac57b6cf92b5de046</HASH>
</UPDATE_ACH_SUBSCRIPTION_RESPONSE>
```

The following fields will be returned in the response:

Field Name	Description
MERCHANTREF	Original Merchant Reference sent in registration request
DATETIME	Format: DD-MM-YYYY:HH:MM:SS:SSS
HASH	An SHA-512 HASH. See Note 1 below.

Notes:

1. The SHA-512 HASH is generated using the following as an input string:

TERMINALID:MERCHANTREF:DATETIME:secret

Errors handling

If subscription was not updated, error code and error message will be returned:

```
<ERROR>
      <ERRORCODE>E08</ERRORCODE>
      <ERRORSTRING>INVALID MERCHANTREF</ERRORSTRING>
</ERROR>
```

7.2.5   Subscription Deletion Request

Note that Subscription MerchantRef's cannot be re-used after deletion. This is because they are tied to existing transactions in our system and are retained internally for data integrity and issue tracing. Deleted Subscriptions can still be viewed in the SelfCare System by using the Advanced Filter.

The following is an example of a Subscription Deletion request:

```
<?xml version="1.0" encoding="UTF8"?>
<DELETESUBSCRIPTIONACH>
      <MERCHANTREF>MR002</MERCHANTREF>
      <TERMINALID>6491002</TERMINALID>
      <DATETIME>31-07-2009:11:03:42:328</DATETIME>
      <HASH>53b6917aac8eb179e8b80f754c4afd5c</HASH>
</DELETESUBSCRIPTIONACH>
```

Fields description:

Field Name	Required	Description
MERCHANTREF	Y	Merchant Ref of subscription which should be deleted.
TERMINALID	Y	A TerminalID provided by GlobalOnePay.
DATETIME	Y	Format: DD-MM-YYYY:HH:MM:SS:SSS.
HASH	Y	An SHA-512 HASH. See note 1 below.

Notes:

1. The SHA-512 HASH is generated using the following as an input string:

TERMINALID:MERCHANTREF:DATETIME:secret

Example of a successful subscription deletion response:

```
<DELETESUBSCRIPTIONRESPONSE>
      <MERCHANTREF>MR002</MERCHANTREF>
      <DATETIME>30-07-2009:15:34:24:305</DATETIME>
```

```
    <HASH>8bb39be67a1f05bf73fe334e12037257</HASH>
</DELETESUBSCRIPTIONRESPONSE>
```

The following fields will be returned in the response:

Field Name	Description
MERCHANTREF	Original Merchant Reference sent in registration request.
DATETIME	Format: DD-MM-YYYY:HH:MM:SS:SSS.
HASH	An SHA-512 HASH. See Note 1 below.

Notes:

1. The SHA-512 HASH is generated using the following as an input string:

> **TERMINALID:MERCHANTREF:DATETIME:secret**

Errors handling

If subscription was not deleted, error code and error message will be returned:

```
<ERROR>
      <ERRORCODE>E08</ERRORCODE>
      <ERRORSTRING>INVALID MERCHANTREF</ERRORSTRING>
</ERROR>
```

7.2.6   Subscription Cancellation Request

Cancelling a subscription is exactly the same as deleting a subscription.

The following is an example of a Subscription Cancellation request:

```
<?xml version="1.0" encoding="UTF8"?>
<CANCELSUBSCRIPTIONACH>
      <MERCHANTREF>MR002</MERCHANTREF>
      <TERMINALID>6491002</TERMINALID>
      <DATETIME>31-07-2009:11:03:42:328</DATETIME>
      <HASH>53b6917aac8eb179e8b80f754c4afd5c</HASH>
</CANCELSUBSCRIPTIONACH>
```

Fields description:

Field Name	Required	Description
MERCHANTREF	Y	Merchant Ref of subscription which should be deleted.
TERMINALID	Y	A TerminalID provided by GlobalOnePay.
DATETIME	Y	Format: DD-MM-YYYY:HH:MM:SS:SSS.

Field Name	Required	Description
HASH	Y	An SHA-512 HASH. See note 1 below.

Notes:

1. The SHA-512 HASH is generated using the following as an input string:

TERMINALID:MERCHANTREF:DATETIME:secret

Example of a successful subscription cancellation response:

```
<CANCELSUBSCRIPTIONRESPONSE>
     <MERCHANTREF>MR002</MERCHANTREF>
     <DATETIME>30-07-2009:15:34:24:305</DATETIME>
     <HASH>8bb39be67a1f05bf73fe334e12037257</HASH>
</CANCELSUBSCRIPTIONRESPONSE>
```

The following fields will be returned in the response:

Field Name	Description
MERCHANTREF	Original Merchant Reference sent in registration request.
DATETIME	Format: DD-MM-YYYY:HH:MM:SS:SSS.
HASH	An SHA-512 HASH. See Note 1 below.

Notes:

1. The SHA-512 HASH is generated using the following as an input string:

TERMINALID:MERCHANTREF:DATETIME:secret

Errors handling

If subscription was not cancelled, error code and error message will be returned:

```
<ERROR>
     <ERRORCODE>E08</ERRORCODE>
     <ERRORSTRING>INVALID MERCHANTREF</ERRORSTRING>
</ERROR>
```

7.2.7   Subscription Payment Request

Manual subscription recurring payment can be done from the XML Gateway. If automatic subscription was not paid automatically because of ACH Account details expiration or other issue it also can be paid in the same way as manual after SecureACH issue was solved. The following is an example of a Subscription Payment request:

```xml
<?xml version="1.0" encoding="UTF-8"?>
<ACH_SUBSCRIPTION_PAYMENT>
      <ORDERID>CSV_95790073</ORDERID>
      <TERMINALID>2366006</TERMINALID>
      <AMOUNT>3.94</AMOUNT>
      <SUBSCRIPTIONREF>mRef102</SUBSCRIPTIONREF>
      <SEC_CODE>WEB</SEC_CODE>
      <DATETIME>07-03-2017:18:09:50:137</DATETIME>
      <HASH>e088efde331594ec2d881479735368c5</HASH>
</ACH_SUBSCRIPTION_PAYMENT>
```

Fields description:

Field Name	Required	Description
SUBSCRIPTIONREF	Y	Merchant reference of a subscription being paid.
ORDERID	Y	A unique identifier for the order created by the merchant. (Max 12 Characters).
TERMINALID	Y	A TerminalID provided by GlobalOnePay. NB – Please contact GlobalOnePay to be issued with a test terminal ID.
AMOUNT	Y	The amount of the transaction as a 2 digit decimal or an Integer value for JPY amounts.
SEC_CODE	Y	See section 2.4 above.
DATETIME	Y	Format: DD-MM-YYYY:HH:MM:SS:SSS
HASH	Y	An SHA-512 HASH. See note 1 below.

Notes:

1. The SHA-512 HASH is generated using the following as an input string:

TERMINALID:ORDERID:SUBSCRIPTIONREF:AMOUNT:DATETIME:secret

Example of a successful subscription payment response:

```xml
<ACH_SUBSCRIPTION_PAYMENT_RESPONSE>
      <UNIQUEREF>JIZDZ59H1D</UNIQUEREF>
      <RESPONSECODE>E</RESPONSECODE>
      <RESPONSETEXT>ACCEPTED</RESPONSETEXT>
      <APPROVALCODE>Success</APPROVALCODE>
```

```
        <DATETIME>2017-03-07T17:09:54</DATETIME>
        <HASH>50909e43de3161f884db589c66deaee3</HASH>
</ACH_SUBSCRIPTION_PAYMENT_RESPONSE>
```

The following fields are returned in the response:

Field Name	Description
APPROVALCODE	Six digit AuthCode.
UNIQUEREF	Generated reference that should be stored for tracking and remote XML refunding.
RESPONSECODE	A or D or R(Approved or Declined or Referral).
RESPONSETEXT	The text of the authorization.
DATETIME	The time of the transaction created by the bank. Format: DD-MM-YYYY:HH:MM:SS:SSS.
HASH	An SHA-512 HASH. See Note 1 below.

Notes:

1. The SHA-512 HASH is generated using the following as an input string:

TERMINALID:UNIQUEREF:AMOUNT:DATETIME:RESPONSECODE:RESPONSETEXT:secret

2. For multi-currency Terminal IDs (see section 3.2 above) this should be:

TERMINALID:ORDERID:UNIQUEREF:CURRENCY:AMOUNT:DATETIME:RESPONSECODE:

RESPONSETEXT:secret

n.b. The response UNIQUEREF is to be used here

Errors handling

If subscription payment was not accepted, error message will be returned:

```
<ERROR>
    <ERRORCODE>E41</ERRORCODE>
    <ERRORSTRING>Invalid HASH field</ERRORSTRING>
</ERROR>
```

7.3 Subscription Notifications

The Subscription Notification URL can be set in the Terminal Setup page of the SelfCare System. If this is set a POST notification will be sent to this URL each time automated activity happens on any active subscriptions. Note that manual changes applied to subscriptions via the SelfCare System will not generate these notifications.

The data sent to the Subscription Notification URL contains the normal subscription response fields as well as these extra fields:

The following fields are sent in the notification:

Field Name	Description
NOTIFICATIONTYPE	Possible values for subscriptions are: • SUBSCRIPTIONCREATION • SUBSCRIPTIONUPDATING • SUBSCRIPTIONDELETION • SUBSCRIPTIONSETUPPAYMENT • SUBSCRIPTIONRECURRINGPAYMENT Possible values for stored subscriptions are: • STOREDSUBSCRIPTIONCREATION • STOREDSUBSCRIPTIONUPDATING • STOREDSUBSCRIPTIONDELETION
TERMINALID	The Terminal ID that the subscription is set up on.
ORDERID	The Order ID that the system assigned to the Subscription payment. Only sent for SUBSCRIPTIONSETUPPAYMENT and SUBSCRIPTIONRECURRINGPAYMENT
AMOUNT	The amount of the subscription payment as a 2 digit decimal or an Integer value for JPY amounts. Only sent for SUBSCRIPTIONSETUPPAYMENT and SUBSCRIPTIONRECURRINGPAYMENT

Notes:

1. Subscription payments (SUBSCRIPTIONSETUPPAYMENT and SUBSCRIPTIONRECURRINGPAYMENT) SHA-512 hash is calculated using the following as an input string:

TERMINALID:MERCHANTREF:NOTIFICATIONTYPE:DATETIME:ORDERID: AMOUNT:

RESPONSECODE:RESPONSETEXT:secret

8 Re-Initiation

Re-Initiation process involves re-processing of initially approved transactions that have been identified as NSF.

There are 2 ways to process such transactions:

•   Automatic – A job is run at a set time which will process Re-Initiations automatically.

•   Manual – Re-Initiation can be processed manually via Selfcare.

Example of a Re-Initiation request:

```
<?xml version="1.0" encoding="UTF-8"?>
<ACHJHREINITIATION>
      <UNIQUEREF>LS2O5CO1XB</UNIQUEREF>
      <TERMINALID>2366006</TERMINALID>
      <DATETIME>24-01-2017:15:43:04:334</DATETIME>
      <HASH>1ecafefa8fead5c9db18daf8f6e75ba8</HASH>
</ACHJHREINITIATION>
```

Fields description:

Field Name	Required	Description
UNIQUEREF	Y	Generated reference that should be stored for tracking and remote XML refunding.
TERMINALID	Y	A TerminalID provided by GlobalOnePay. NB – Please contact GlobalOnePay to be issued with a test terminal ID.
DATETIME	Y	Format: DD-MM-YYYY:HH:MM:SS:SSS
HASH	Y	An SHA-512 HASH. See Note 1 below.

Notes:

1. The SHA-512 HASH is generated using the following as an input string:

TERMINALID:UNIQUEREF:DATETIME:secret

Example of a successful Re-Initiation response:

```
<ACHREINITIATIONRESPONSE>
      <RESPONSECODE>A</RESPONSECODE>
      <RESPONSETEXT>SUCCESS</RESPONSETEXT>
      <UNIQUEREF>LS2O5CO1XB</UNIQUEREF>
      <DATETIME>24-01-2017:14:43:05:940</DATETIME>
      <HASH>...</HASH>
</ACHREINITIATIONRESPONSE>
```

The following fields are returned in the response:

Field Name	Description
UNIQUEREF	Generated reference that should be stored for tracking and remote XML refunding.
RESPONSECODE	A or D or R(Approved or Declined or Referral).
RESPONSETEXT	The text of the authorization.
DATETIME	The time of the transaction created by the bank. Format: DD-MM-YYYY:HH:MM:SS:SSS.
HASH	An SHA-512 HASH. See Note 1 below.

Notes:

1. The SHA-512 HASH is generated using the following as an input string:

TERMINALID:RESPONSECODE:RESPONSETEXT:UNIQUEREF:DATETIME:secret

9 Appendix A: Error Codes

9.1 XML Gateway Secure ACH Error Codes

Error Code	Description
E01	SYSTEM ERROR – TRY AGAIN
E03	OPERATION NOT ALLOWED
E04	INVALID REFERENCE DETAILS
E06	INVALID TERMINALID
E07	METHOD NOT SUPPORTED
E08	INVALID MERCHANTREF
E09	INVALID DATETIME
E13	INVALID HASH
E23	INVALID PERMITTED TERMINALID
E24	Invalid Account Type

9.2 XML Gateway Subscription Error Codes

These are subscription specific error codes:

Error Code	Description
E01	SYSTEM ERROR – TRY AGAIN
E03	OPERATION NOT ALLOWED
E06	INVALID TERMINALID
E07	METHOD NOT SUPPORTED
E08	INVALID MERCHANTREF
E09	INVALID DATETIME
E13	INVALID HASH
E20	INVALID LENGTH
E21	INVALID PERIOD TYPE

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Error Code	Description
E22	INVALID NAME
E23	INVALID DESCRIPTION
E24	INVALID RECURRINGAMOUNT
E25	INVALID INITIALAMOUNT
E26	INVALID TYPE
E27	INVALID ONUPDATE
E28	INVALID ONDELETE
E29	INVALID TERMINAL CURRENCY
E30	INVALID STORED SUBSCRIPTION REF
E31	INVALID STORED SUBSCRIPTION MERCHANT REF
E32	INVALID SECURE CARD MERCHANT REF
E33	INVALID STARTDATE
E34	INVALID ENDDATE
E35	INVALID EDCCDECISION
E36	SETUP PAYMENT PROCESSING ERROR
E37	INVALID SUBSCRIPTIONRECURRINGAMOUNT
E38	INVALID SUBSCRIPTIONINITIALAMOUNT
E41	PASS ONLY ONE OF CARDREFERENCE OR SECURECARDMERCHANTREF OR SECUREACHACCOUNTMERCHANTREF OR ACHREFERENCE
E42	INVALID_SECUREACHACCOUNT_MERCHANTREF
E43	INVALID_PAYMENT_AMOUNT
E44	INVALID_ORDERID
E45	INVALID_MULTIPLE_PAYMENTS
E46	INVALID_PAYMENT_SKIP_PERIOD
E47	INVALID_BANK_IDENTIFIER
E60	INVALID_SECUREACH_MERCHANTREF
E61	INVALID_SECUREACH_ACHREFERENCE
E62	SECUREACHACCOUNTMERCHANTREF_ACHREFERENCE_ABSENT
E63	SECUREACHACCOUNTMERCHANTREF_ACHREFERENCE_BOTH_PRESENT

Error Code	Description
E64	INVALID_SEC_CODE
E65	INVALID_RECEIPT_SUBSCRIPTION_URL

10   Appendix B: Transaction Types/Statuses

Type:

- PAYMENT: a new Payment transaction

- REFUND: a new Refund transaction

- VOID: Temporary type using during send authorization request

Status:

- IN_PROGRESS: Initial approve got from the Gateway, NET Traxion is expecting the final result

- COMPLETE: the final result is approved

- DECLINED: the final result is declined or the Gateway declined transaction at authorization request, for instance check amount is more than acceptable value

- VOID: Gateway approved Void transaction

11   Appendix C: State Codes

Code	State Name
AB	Alberta
AK	Alaska
AL	Alabama
AR	Arkansas
AS	American Samoa
AZ	Arizona
BC	British Columbia
CA	California
CO	Colorado
CT	Connecticut
DC	District of Columbia
DE	Delaware
FL	Florida
GA	Georgia
GU	Guam
HI	Hawaii
IA	Iowa
ID	Idaho
IL	Illinois
IN	Indiana
KS	Kansas
KY	Kentucky
LA	Louisiana
MA	Massachusetts
MB	Manitoba
MD	Maryland

Code	State Name
ME	Maine
MI	Michigan
MN	Minnesota
MO	Missouri
MS	Mississippi
MT	Montana
NB	New Brunswick
NC	North Carolina
ND	North Dakota
NE	Nebraska
NF	Newfoundland
NH	New Hampshire
NJ	New Jersey
NM	New Mexico
NS	Nova Scotia
NT	Northwest Territories
NU	Nunavut
NV	Nevada
NY	New York
OH	Ohio
OK	Oklahoma
ON	Ontario
OR	Oregon
PA	Pennsylvania
PE	Prince Edward Island
PR	Puerto Rico
QC	Quebec
RI	Rhode Island

Code	State Name
SC	South Carolina
SD	South Dakota
SK	Seskatchewan
TN	Tennessee
TX	Texas
UT	Utah
VA	Virginia
VI	Virgin Islands
VT	Vermont
WA	Washington
WI	Wisconsin
WV	West Virginia
WY	Wyoming
YT	Yukon Territory

12   Glossary

ACH   Automated Clearing House

AVS   Address Verification System

HTML   Hypertext Mark Up Language

HTTPS   Hypertext Transfer Protocol Secure

MIS   Management Information System

TPS   Transaction Processing Services

URL   Universal Resource Locator