FIRST
ATLANTIC
COMMERCE
Powering Payments. Mitigating Risk.

First Atlantic Commerce
Hosted Page
Integration Guide for Developers

Version 1.3, 24th July, 2013

Contents

Change Log

Document Version	Description	Release Date
V1.0	Initial version	20th Jan 2012
V1.1	Web service name updated	9th Jan 2013
V1.2	Fraud Control and other Enhancements	18th April 2013
V1.3	Updated formatting, clarified several sections, added appendices	24th July 2013

Introduction

This document will guide a developer through the integration process required to use First Atlantic Commerce's (FAC) Payment Gateway (PG) Hosted Page (HP) Service and additional operations for managing your transactions.

Using a Hosted Page, a merchant never needs to never have access to or know the Card Number (PAN) used by the Cardholder. Merchants should be aware that the FAC implementation of Hosted Page is not a way of reducing the work required to integrate to the Payment Gateway. The integration using a Hosted Page is just as complex as straight Authentication via our Web Services. A payment page could be as simple or complex as a merchant would like it to be. Although FAC's servers are hosting the merchant's payment page, the creation, coding and management of the page is of the responsibility of the merchant or merchant's developer(s).

It is also important to note that to integrate a merchant's site or payment module to FAC's gateway, a developer must be able to provide client side security to be able to connect to FAC using HTTPS as to pass data via SSL.

The advantages in using Hosted Pages can be great, especially when you consider the PCI Audit requirements that come into scope when you store Card Numbers on your servers.

This document will guide you through the integration process, general steps in generating/publishing a payment page to FAC's servers along with requirements for implementing your Hosted Payment Hosted Page. The Hosted Payment Page transaction specifications within the document include the following:

- Standard Authorization Only or Authorization with Capture (with or without Address Verification)
- 3D Secure Authentication with Authorization or Authorization With Capture (with or without Address Verification)
- Tokenized Authorization Transactions
- Recurring Transactions
- Fraud Control (with Kount®)

Additional web services and operations outside of the Hosted Payment Page that can be used to manage your transactions include:

- Transaction Modification (for Captures, Reversals or Refunds)
- TransactionStatus
- Notifications

Integration Process Overview

It is important to note that every integration differs in requirements, complexity, resources allocated to the integration and the expertise of the technical person(s) working on the implementation. That being said, integrations can take anywhere from 2-3 weeks to 2-3 months.

The technical integration process is usually initiated once the merchant's acquiring bank issues a Merchant ID number or a merchant is granted bank approval. Regardless of the payment processing requirements or payment gateway services needed here is the standard set of steps for a FAC integration:

1. **Technical Integration Guide Review** – FAC will provide the merchant and/or their technical team FAC's integration guide for the technical team to review.

2. **Completion of FAC's Processing Questionnaire** – FAC's business team will have provided you with FAC's processing questionnaire to gain an initial understanding of the merchant's processing requirements.

3. **Integration Call** – Once the integration guide has been reviewed and FAC's processing questionnaire has been completed and returned for FAC, FAC will request an integration call with the technical and business teams. The purpose of the call will serve as an introduction to all the relevant parties involved in the integration project, to discuss the merchant's processing requirements, provide an overview of the integration process and provide a forum to go over any initial questions anyone may have. The call is not always technical in nature but it ensure that both business and technical teams of FAC and the merchant are all understanding the requirements and how to proceed with the integration.

4. **Provision of Test Account** – After the integration call, FAC will set up a test account based on the processing needs of the merchant as indicated on the processing questionnaire and discussed in the integration call. Here the merchant will be able to begin testing their technical integration to FAC.

5. **Testing on FAC Test Platform** - Testing on the test environment will allow you to test your code thoroughly without performing live transactions. This platform mimics the live environment. It is highly recommended to also perform data validation on the data fields on the payment page prior to transaction submission to FAC. Testing should also include the handling of approvals, declines and failed transactions. Additionally, in this environment cards will not be charged as the transactions do not go out to interchange. It is recommended that you review the following section within this document on testing considerations to help guide you through your testing phase.

6. **Provision of Production Account** – Provided FAC has been given the bank issued Merchant ID (Merchant Number) and after a merchant has successfully tested to their satisfaction in the test environment FAC will then

provide the merchant with their live account credentials.

7. **Testing on FAC Production Platform** - Production testing is restricted to FAC core business hours which are Monday through Friday 8:30 AM ADT – 5:30 PM ADT. Again, it is highly advisable to verify that the data fields on the payment page are validated prior to transaction submission. Testing should also include the handling of approvals, declines and failed transactions.

8. **FAC End-to-End Testing** - FAC will conduct a site review and an end-to-end test from your site. It is usually asked that you set up a test product with a value of $1.00 USD for FAC to use in their site review and end-to-end test. The end-to-end test validates the full transaction cycle from payment on a merchant’s site all the way to validating that the funds of the test transactions are confirmed deposited by the bank in the merchant’s account. This process can take up to 5 days depending on the processor and bank.

9. **FAC Business Team Go-Live Approval** - Provided all prior steps have been completed, your FAC Business Development representative will arrange an approved go-live date for the new site. It is important to note that FAC has a strict no go-live policy for Fridays, weekends and Bermuda public holidays.

Testing Considerations

When testing your payment page and payment process it is important that you consider testing for the following:

- ✓ **Data Validation**

FAC performs basic data validation on parameter values submitted for credit card payments. The information that will be provided to FAC from the Hosted Payment Page should be validates or rendered to the proper format prior to payment submission as to avoid rejected transactions. If the formatting is improper, it will be processed as is (is not modified) therefore if invalid data is supplied or does not meet FAC's specifications the transaction will fail or be rejected outright. It is highly recommended that you implement data validation to ensure the data passed is valid, scrubbed or rendered to the proper format. Parameters and their specifications are all outlined in this integration guide and it includes a quick reference table in the Appendix.

As an example: The 'CardNumber' specifications are that it be a 16 digit numeric value. FAC will not accept spaces, dashes, alpha characters or other symbols. If submitted the transaction will result in failure. In the event a Cardholder enters an invalid card number like 4111-1111-1111-1111, how do you want to handle this? Will the Cardholder see a message on the screen asking them to check their card number and allow them to try again? Will information be provided on the screen to the cardholder to advise them of the acceptable format? Will the Cardholder be restricted from entering anything but numbers?

NOTE: If you are utilizing Address Verification (AVS), it very important that you follow the guidelines for data formats. Issuers only validate standard alpha and numeric values. Ensuring that you are passing the appropriate data formats will not only reduce or eliminate rejections but you will get a more accurate AVS result.

- ✓ **Transaction Approvals**

Testing approvals seems quite simple however you may want to consider any of your processes that are initiated by an approval. As an example is there any additional customer validations that need to take place? Does the Cardholder receive an email confirmation or a receipt? Will an internal process be initiated internally with the business administrative staff or trigger a change in inventory?

✓ Transaction Declines

When testing Issuer/Processor declines you will want to be certain that your system is handling these according to the businesses requirements. Depending on the returned 'ReasonCode' you may want to display a particular message to the Cardholder. You may want to restrict how many times a Cardholder reattempt a transaction or notify them to contact a customer service agent to assist with their payment on the website. Your team may want to receive a notification when a Cardholder reaches a threshold of attempts.

✓ Transaction Errors

Once a transaction has been processed it can have one of three statuses. It can be approved by the Issuer, declined by the Issuer/Processor and lastly it could have failed. In case of a transaction failure there is a problem with processing the transaction. It could be for a number of reasons but in all cases FAC will respond with a 'ResponseCode' of 3. In these cases you will want to check that your payment module is handling these as you require. As an example in a live real-time environment, you may choose to display a message to the Cardholder to try again later and initiate a notification to your team for investigation.

✓ Page Errors

The Hosted Payment Page has a life cycle of 5 minutes, so you may want to consider how your site will handle cases where the Cardholder takes more than 5 minutes to complete their payment details and submit a payment. Perhaps in this circumstance you may want to display a message stating that their payment session expired and to try again or maybe also bring the Cardholder back to the payment page or home page.

✓ Payment Page Browser Rendering (Page Format)

You can design your payment page how you wish. It can be very simple and basic or you can add a lot more complexity to it. This can have an effect on how different browsers display your page and the functionality of buttons, fields or drop-downs (if used). Assuming the merchant's customers will be using other browsers other than Internet Explorer it may be wise to test your payment page from different internet browsers to validate how they are rendered.

✓ Captures, Refunds and Reversals

If you are using the 'TransactionModification' method for processing capturing (in a two-pass processing method), reversing or refunding transactions you will want to test that this is functional especially within the production environment. You will want to test cases where the requests are not only approved but denied as to ensure your system is handling them as deemed necessary by the business.

As an example, should a refund be denied because the refund cutoff period on your merchant account has expired, how will your system handle this? Will notification be sent out to the technical team? Will the person that processed the refund see on their screen a message stating that the refund did not go through?

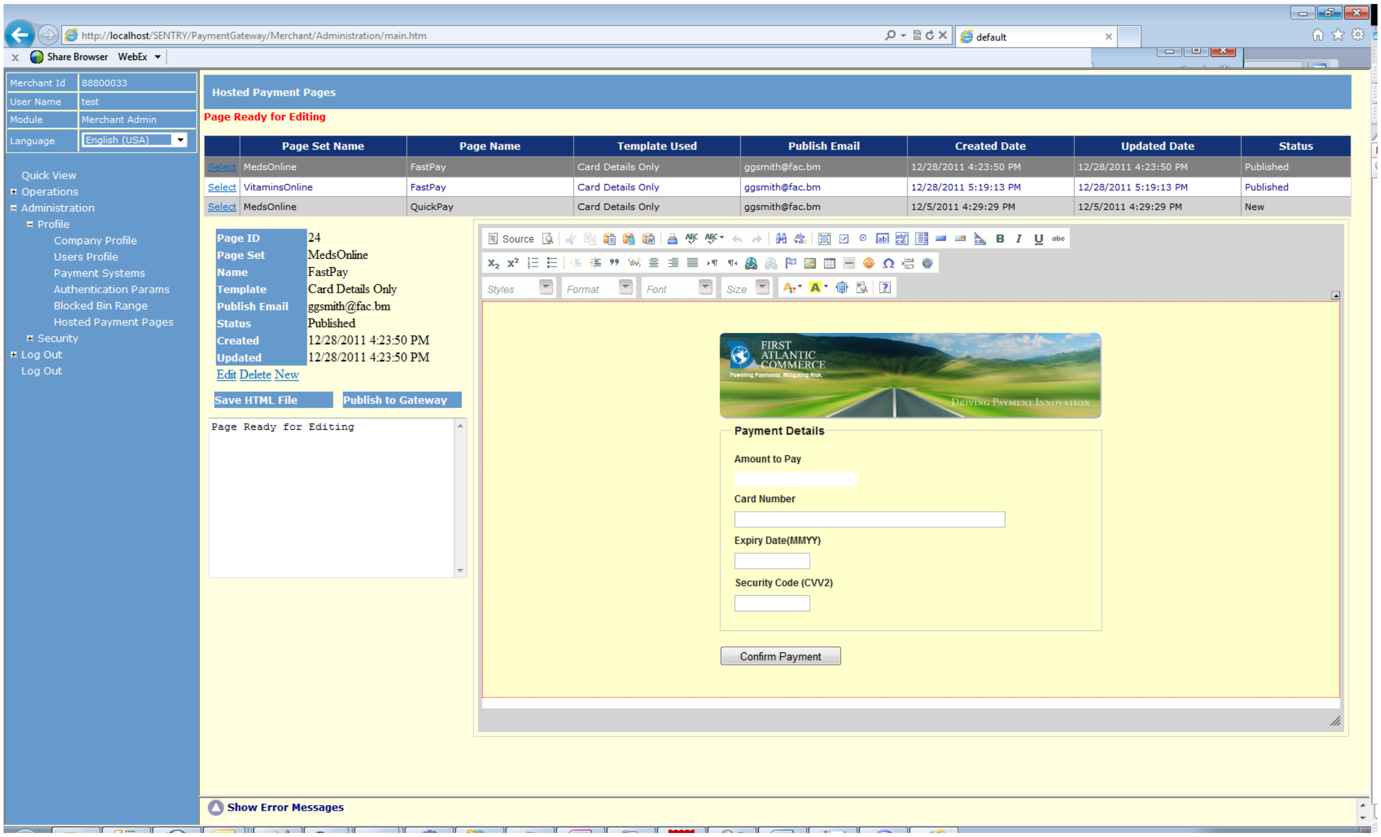
As a second example, if you have implemented or are using address verification (AVS), depending on the AVS result, you may want to reverse a transaction to cancel it or capture a transaction if you wish to proceed with the payment.

✓ Overall Cardholder Payment Experience

It is up to the merchant and the business to determine how they want to represent themselves, products, and services to their customers and how they want the overall customer experience to be when making a credit card payment on their site including your Hosted Payment Page. Although this is outside the scope of FAC we recommend that ample quality assurance be done on our site to satisfy the needs of the business and that it supports their required functions of the site/payment process.

Hosted Pages Overview

Hosted pages are complete pages of HTML that reside on servers at FAC. They are designed and maintained by the Merchant via an administration interface as follows:


http://localhost/SENTRY/PaymentGateway/Merchant/Administration/main.htm

Merchant Id	88800033
User Name	test
Module	Merchant Admin
Language	English (USA)

Hosted Payment Pages

Page Ready for Editing

	Page Set Name	Page Name	Template Used	Publish Email	Created Date	Updated Date	Status
Select	MedsOnline	FastPay	Card Details Only	ggsmith@fac.bm	12/28/2011 4:23:50 PM	12/28/2011 4:23:50 PM	Published
Select	VitaminsOnline	FastPay	Card Details Only	ggsmith@fac.bm	12/28/2011 5:19:13 PM	12/28/2011 5:19:13 PM	Published
Select	MedsOnline	QuickPay	Card Details Only	ggsmith@fac.bm	12/5/2011 4:29:29 PM	12/5/2011 4:29:29 PM	New

Page ID	24
Page Set	MedsOnline
Name	FastPay
Template	Card Details Only
Publish Email	ggsmith@fac.bm
Status	Published
Created	12/28/2011 4:23:50 PM
Updated	12/28/2011 4:23:50 PM

```
Page Ready for Editing
```

(Please treat all data shown here as fictitious. All screenshots are for exemplary purposes only.)

Once the page has been created and published, the merchant then needs to integrate with the FAC Payment Gateway v2.0 (FACPG2) in order to use the page in a live environment.

It's useful to note that the page can be presented to the user within an iframe on a merchant's web page if so desired, so the hosted page then becomes minimal, with just the Card fields required and no extra formatting except for perhaps some color matching with the host site.

Before a Cardholder can use a hosted page, the merchant must obtain a HPP security token (SingleUseToken) from our server and pass this as part of the URL for the page.

The reasons behind this are security:

1) Sensitive information is passed with the request for a HPP security token (SingleUseToken) and therefore does not need to be included in the page. This includes the amount to pay, merchant details etc.
2) It stops just anyone executing a hosted page without a valid token as without the HPP security token (SingleUseToken) the URL is invalid.
3) The HPP security token (SingleUseToken) has a limited lifespan of 5 minutes (by default) and cannot be used twice adding another level of security.

Transaction Steps

A single transaction using a hosted page involves several steps as follows:

- The Merchant gets a request to pay from the Cardholder (they navigate to the payment page).

- To initialize the payment page, the Merchant calls a SOAP method called HostedPageAuthorize on the FACPG2 Gateway Service, passing in some of the transaction details and receiving a HPP security token (SingleUseToken).

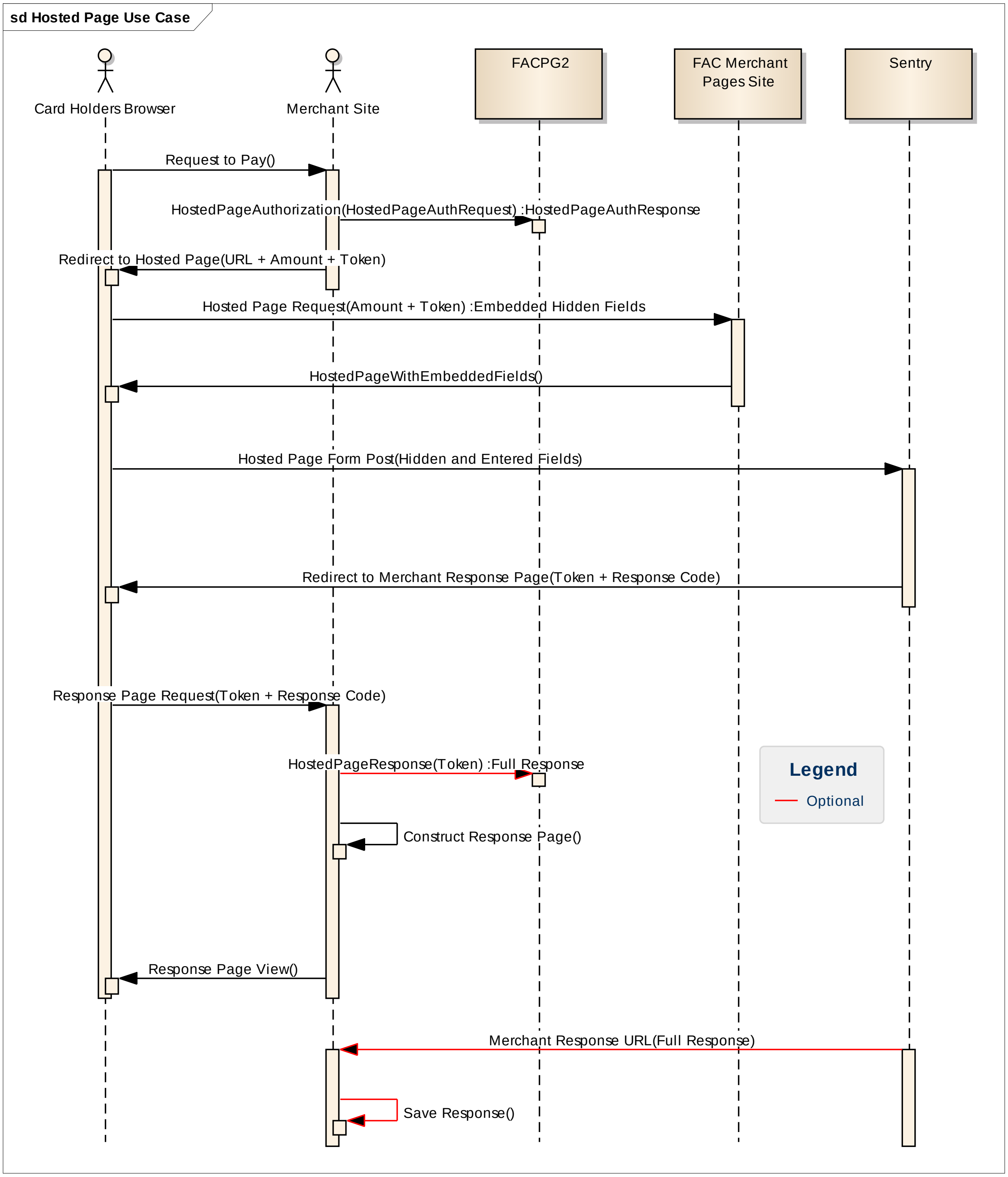
- The Merchant site constructs the URL to access the hosted page using the Merchant Pages Site Domain, Page Set name, the Page name and the HPP security token (SingleUseToken).

- The Cardholder is re-directed to this page or shown this page in an iframe.

- The Cardholder enters the Card Data and Posts the page. It is posted DIRECTLY to the FAC Payment Gateway and does not pass through the Merchants Site.

- The basic response code and token is passed as parameters and sent to a “Card Holder Response URL”, a page on the Merchants site that will process the response code returned and present a suitable message to the Cardholder.

The following diagram shows the communication between all the entities involved.


sd Hosted Page Use Case
Card Holders Browser
Merchant Site
FACPG2
FAC Merchant Pages Site
Sentry
Request to Pay()
HostedPageAuthorization(HostedPageAuthRequest) :HostedPageAuthResponse
Redirect to Hosted Page(URL + Amount + Token)
Hosted Page Request(Amount + Token) :Embedded Hidden Fields
HostedPageWithEmbeddedFields()
Hosted Page Form Post(Hidden and Entered Fields)
Redirect to Merchant Response Page(Token + Response Code)
Response Page Request(Token + Response Code)
HostedPageResponse(Token) :Full Response
Construct Response Page()
Response Page View()
Merchant Response URL(Full Response)
Save Response()
Legend
Optional

Creating a Payment Page (Deep Dive Example)

Implementing the Page

Page HTML Format

The HTML page must adhere to a certain format as the POST to the FAC Payment Gateway expects to see a Form (and ONLY One form) on the page. Here is what a page should look like before fields are added:

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en-GB">
<head>
<title></title>
<link rel="stylesheet" href="css/blueprint/screen.css" type="text/css" media="screen, projection"/>
<meta http-equiv="Content-Type" content="application/xhtml+xml; charset=utf-8" />
</head>
<body>
<form id="FrmCheckout" method="post" action="" style="background-color: #FFFFCC" class="span-24">
    <div class="container">
            <div class="span-24">
                <p></p>
            </div>

            <div class="span-24">
                <p>
                <br />
                Content Goes Here
                <br />
                </p>
            </div>

            <div class="span-24">
                <p></p>
            </div>
    </div>
</form>
</body>
</html>
```

Note that we allow the use of the CSS library “Blueprint”. This is for convenience and allows the use of div elements in a tabular format without too much CSS programming. It keeps your HTML clean of embedded STYLE elements. For more information on Blueprint, please see:

http://blueprintcss.org/

And, specifically, this tutorial is the most useful:

http://net.tutsplus.com/tutorials/html-css-techniques/a-closer-look-at-the-blueprint-css-framework/

Page Rules:

- The Page must start with an HTML element
- It must include a HEAD element with the links as shown above
- It must include a FORM element called “FrmCheckout”
- All the fields added must be one of the permitted fields (see the next section)
- All fields must be INPUT element fields
- There must be a button or mechanism that submits (POSTS) the Form.
- INPUT id and name attributes must be the same.

Permitted Fields

The FAC Payment Gateway expects to see fields with specific names and descriptions. Also, it is recommended that validation is added to restrict the data entered to only the data required in line with OWASP standards.

Some fields can be processed either by passing into the call to HostedPageAuthorize or by including on the form. If included on the form, the value of these fields take precedence over any values passed into HostedPageAuthorize. In this case you should ensure that values on the form are valid and completed by the user before being processed.

Here is a Table of all INPUT fields of type TEXT allowed on hosted payment pages, with validation rules:

Category	Input “id”/”name”	Format	Notes
Card Details	Amount	N(4-10) “#0.00”	Optional. For displaying of amount to user. If added to the form will be auto-populated with Amount passed in call to HostedPageAuthorize. Will not be processed by hosted page. If edited by the user should be used to populate the (hidden) PurchaseAmt field in Currency unit format (see below).
	CardNo	N(16 – 19)	Mandatory. Max 16 for non Amex, 19 for Amex. Numeric only except where using a Card Token (ask FAC About card Tokenization).
	CardExpDate	N(4)	Mandatory. MMYY Format
	CardCVV2	N(3 - 4)	Conditional. May be required depending on processor. Usually 3 digits.
	IssueNumber	N(2)	Required for Debit Cards Only where applicable (e.g. UK Debit cards)
	StartDate	N(4)	MMYY Format. Debit Cards only and is usually required if Issue number is not mandatory.
	PurchaseAmt	N(12) or N(4-10) Decimal “#0.00” format.	Optional. Transaction Amount in Currency units or Decimal format. Currency unit format is padded left with Zeros. E.g.: 10.00 = 000000001000. If included in Form will override what has been passed into HostedPageAuthorize. Decimal format (“#0.00”) will be converted to Currency Unit format when hosted page is posted.
	PurchaseCurrency	N(3)	Optional. ISO Numeric Currency code. E.g. 840 for US Dollars
	PurchaseCurrency Exponent	N(1)	Optional. Number of decimal places. Usually 2 for most currencies
	SessionId	AN(30)	Optional. A Unique ID for Kount Fraud Control Processing. See the Fraud Control Section for more information.
Billing Details (all optional)	BillToFirstName	AN(30)	
	BillToMiddleName	AN(30)	

	BillToLastName	AN(30)	
	BillToAddress1	AN(50)	
	BillToAddress2	AN(50)	
	BillToCity	AN(30)	
	BillToState	AN(2)	State Code. Max A(2) if USA only. You could hide this field and use a drop down to set the value. Max A(3) for non US.
	BillToCounty	AN(15)	County Name
	BillToPostCode	AN(10)	Or Zip Code. Strictly Alpha-Numeric only.
	BillToCountry	N(3)	Country Code. Hide this field and use a drop down to set the value.
	BillToTelephone		
	BillToEmail		
	BillToFax	AN(30)	
	BillToMobile	AN(30)	
Shipping Details (all optional)	ShipToFirstName	AN(30)	
	ShipToMiddleName	AN(30)	
	ShipToLastName	AN(30)	
	ShipToAddress1	AN(50)	
	ShipToAddress2	AN(50)	
	ShipToCity	AN(30)	
	ShipToState	A(3)	State Code. Max A(2) if USA only. You could hide this field and use a drop down to set the value. Max A(3) for non US.
	ShipToCounty	AN(15)	County Name
	ShipToPostCode	AN(10)	Strictly Alpha-Numeric only.
	ShipToCountry	N(3)	Country Code. Hide this field and use a drop down to set the value.
	ShipToTelephone	AN(30)	
	ShipToEmail	AN(50)	
	ShipToFax	AN(30)	
	ShipToMobile	AN(30)	

Address Text Validation Rules (for a full list, see the Appendix):

- No special characters
- No accents
- No special Symbols
- Avoid all unnecessary symbols
- Standard punctuation is OK
- Mandatory fields MUST have values

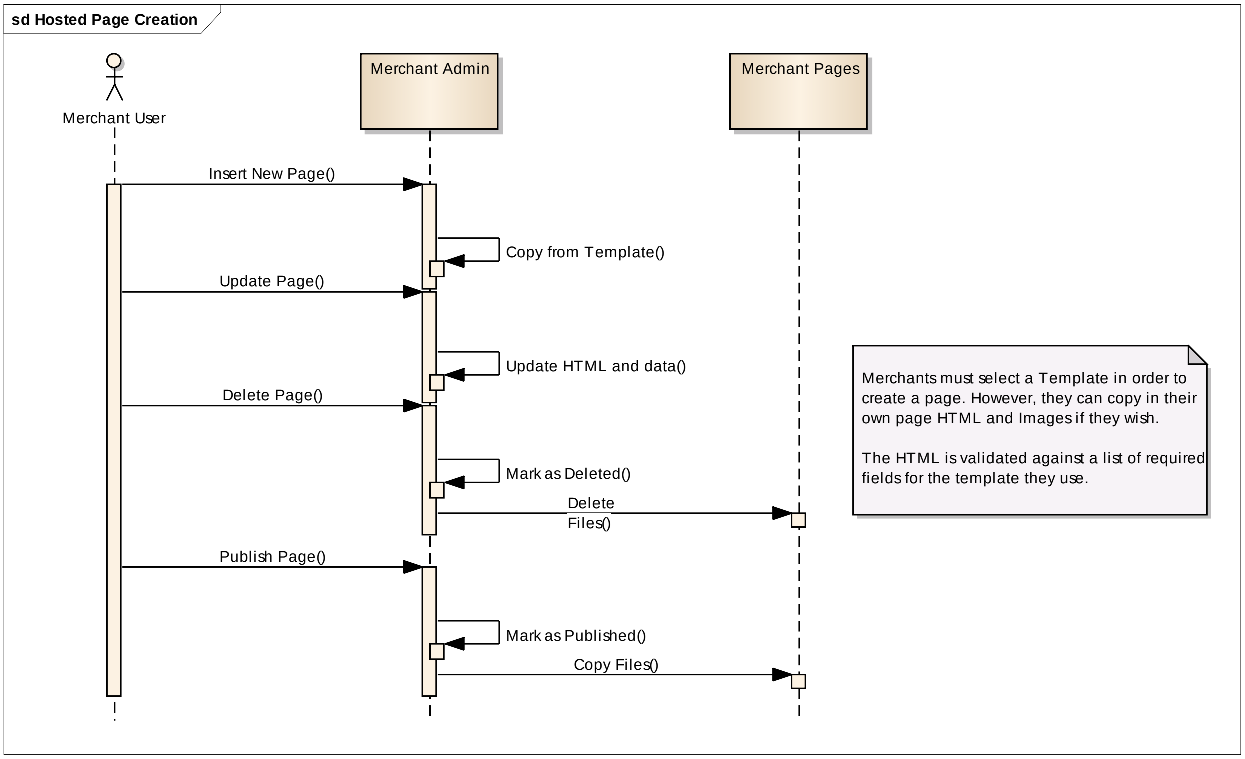
Using Merchant Administration Portal to Create your Hosted Page

While it is possible to create a Page from scratch, it is advisable to use a template from our Merchant Hosted Page Administration App as a starting point for the Page implementation. This is accessible via FAC's Merchant Administration online portal.

You will need to use the Hosted Page Administration Application in Merchant Administration to publish the page on the FAC's Merchant Pages site.

To create a page, the developer/designer must follow some steps within the Hosted Page Administrator.

These are as follows:



Merchants must select a Template in order to create a page. However, they can copy in their own page HTML and Images if they wish.

The HTML is validated against a list of required fields for the template they use.

FAC will provide you with access and login credentials to the Merchant Administration Online Portal. Here you will be able to create and manage your page(s).

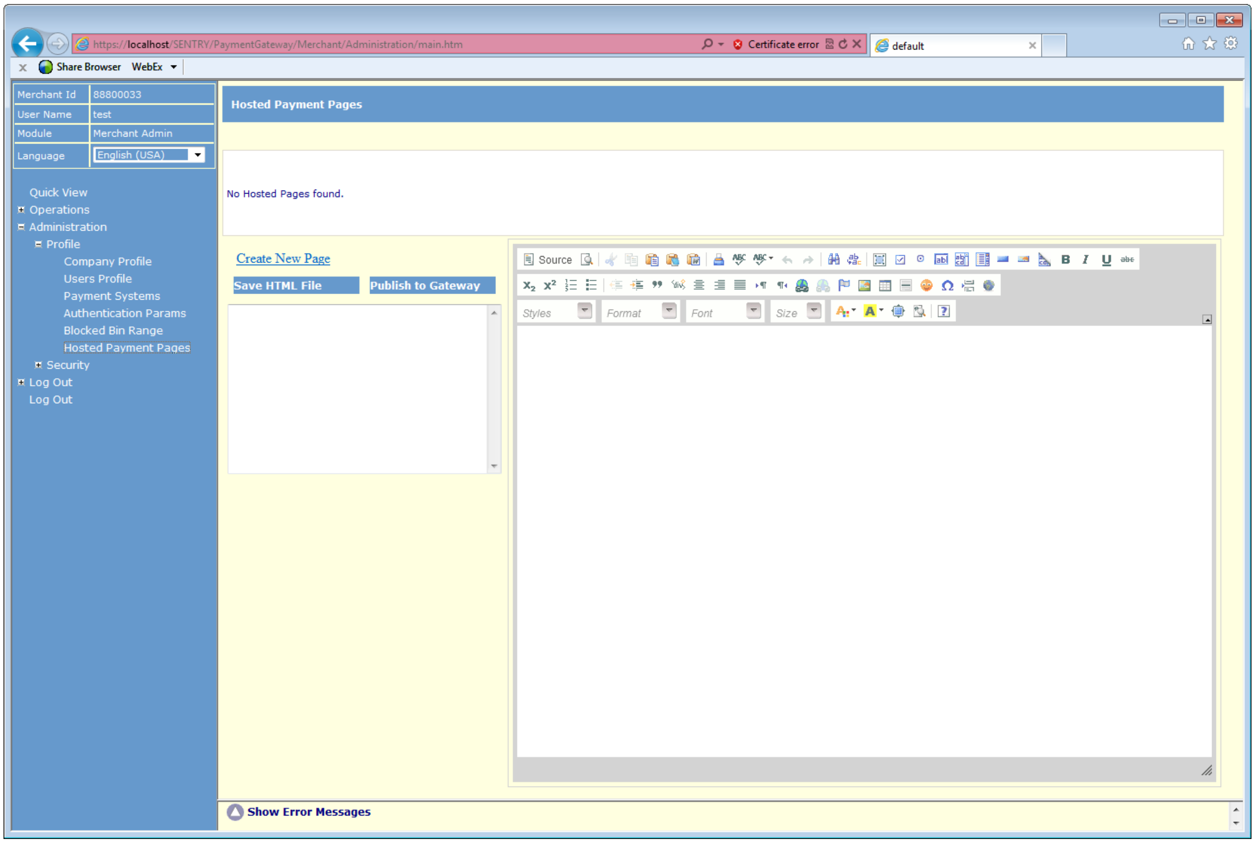
The URL to the Merchant Administration portal:

Test environment -
https://ecm.firstatlanticcommerce.com/sentry/paymentgateway/merchant/administration/WFrmLogin.aspx

Production environment -
https://marlin.firstatlanticcommerce.com/sentry/paymentgateway/merchant/administration/WFrmLogin.aspx

Once you are logged in you can navigate to the Hosted Pages Administration Application under the left hand side menu.

As you can see, there are no pages defined for your MID. Select “Create New Page” and complete the form that displays:

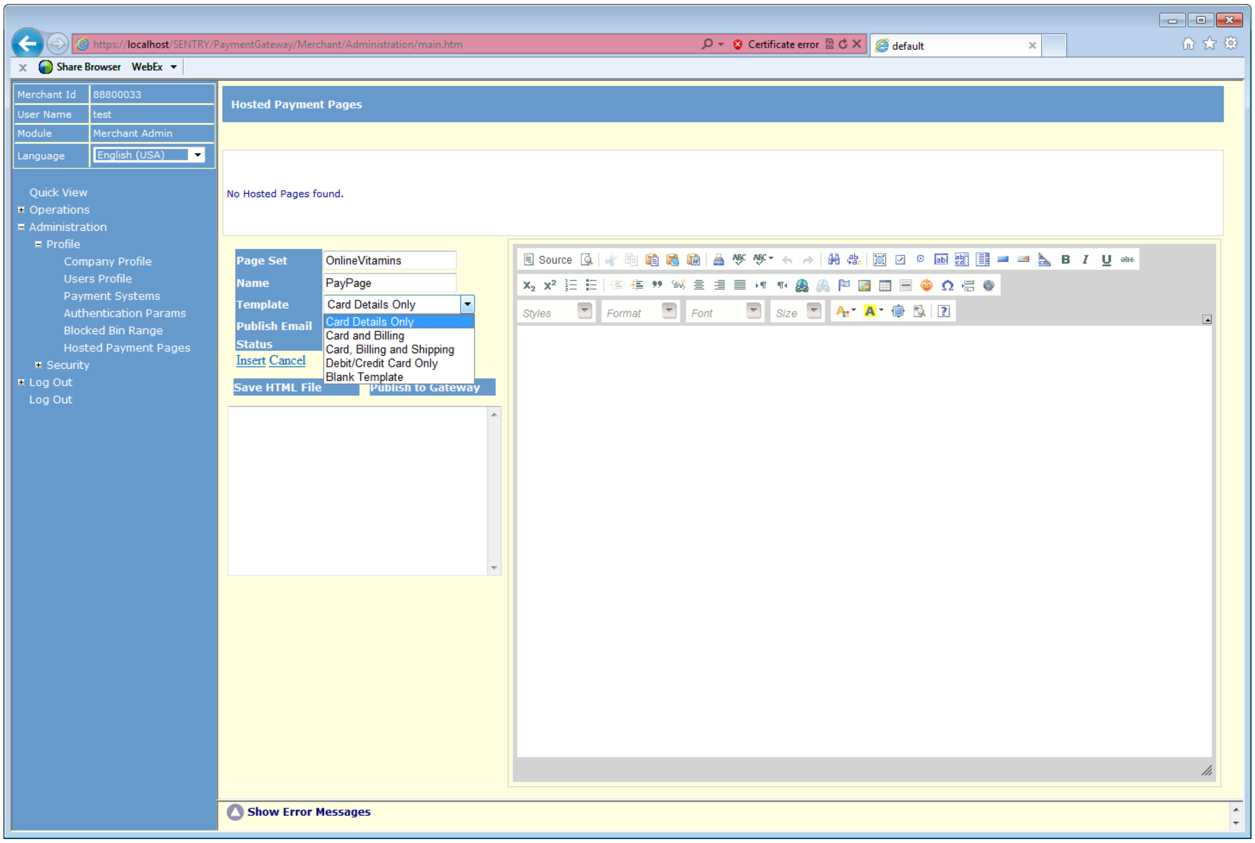


https://localhost/SENTRY/PaymentGateway/Merchant/Administration/main.htm

Merchant Id	88800033
User Name	test
Module	Merchant Admin
Language	English (USA)

Hosted Payment Pages

No Hosted Pages found.



Merchant Id	88800033
User Name	test
Module	Merchant Admin
Language	English (USA)

Hosted Payment Pages

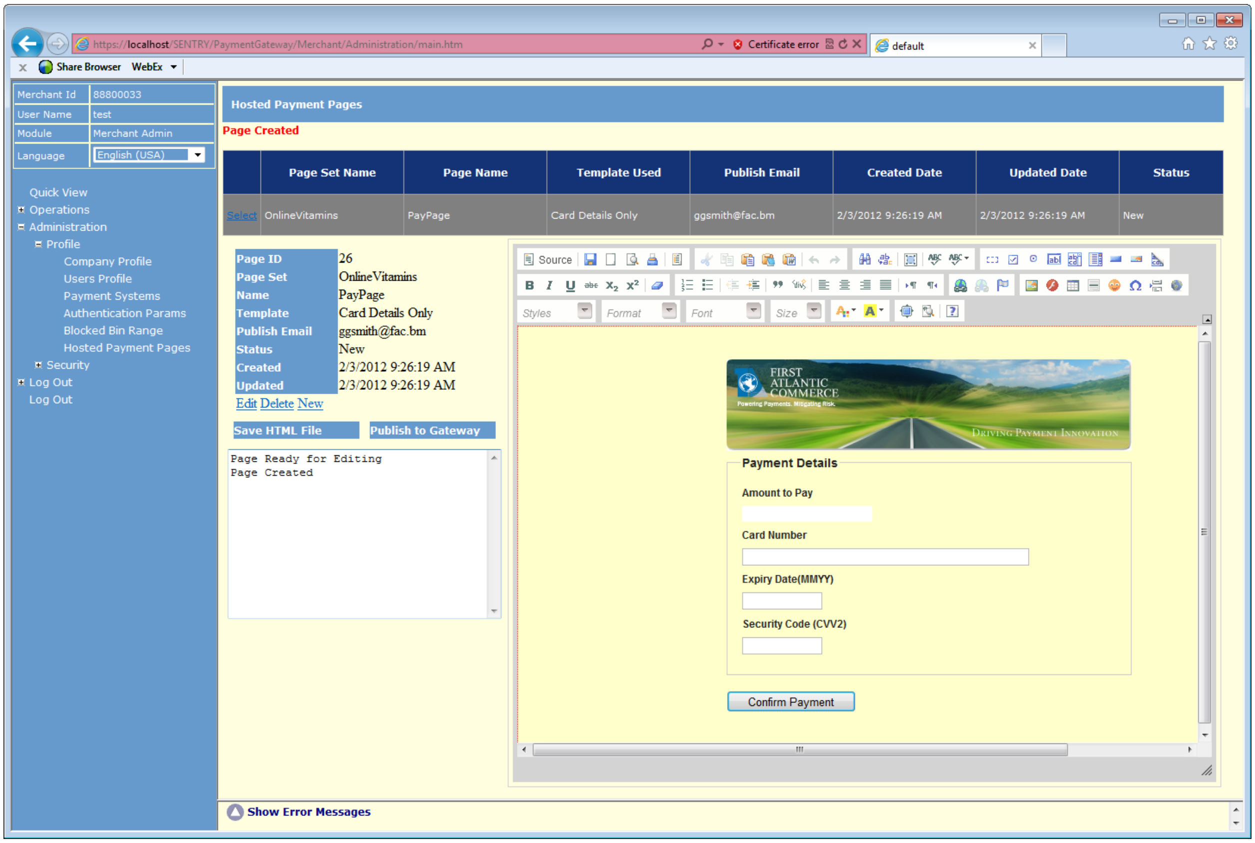
No Hosted Pages found.

Page Set	OnlineVitamins
Name	PayPage
Template	Card Details Only
Publish Email	
Status	

The fields have the following meanings:

1. Page Set – The Name of a Set of Pages. This can be anything but should be your business division name. This gives assurance to Cardholders that they are dealing with Merchant even when paying directly to FAC. Note: **Do not put any spaces in the name** as it forms part of the URL for the Page.
2. Page Name – The Name of the page. E.g.: PayPage, PayNow. Can be whatever you decide. Again, **do not use any spaces, as it is part of the Page URL**.
3. Template – Choose a template. If you are starting from scratch, choose the Blank Template. Templates also enforce validation of the fields so the template with Billing and Shipping will check that you have address line 1 and postcode as a minimum for the address. So choose the template carefully as it could cause issues later.
4. Publish Email - The email address of the Author is a good candidate here. If there are any issues with the Page we will contact the Author by using this email address.
5. Status – a Read only field that shows the state of the page.

Once completed, select the “Insert” link. The page will be added and the default template will appear in the editor:



Merchant Id	88800033
User Name	test
Module	Merchant Admin
Language	English (USA)

Hosted Payment Pages

Page Created

	Page Set Name	Page Name	Template Used	Publish Email	Created Date	Updated Date	Status
Select	OnlineVitamins	PayPage	Card Details Only	ggsmith@fac.bm	2/3/2012 9:26:19 AM	2/3/2012 9:26:19 AM	New

Page ID	26
Page Set	OnlineVitamins
Name	PayPage
Template	Card Details Only
Publish Email	ggsmith@fac.bm
Status	New
Created	2/3/2012 9:26:19 AM
Updated	2/3/2012 9:26:19 AM

Edit Delete New

Save HTML File   Publish to Gateway

```
Page Ready for Editing
Page Created
```

Payment Details

Amount to Pay

Card Number

Expiry Date(MMYY)

Security Code (CVV2)

Confirm Payment

This page is not set in stone. You are able to edit the page in any way you see fit. You can even use JavaScript libraries (from a CDN source) to enhance the page with UI widgets not available in plain HTML. However, the minimum you will need to do is enhance the page to look like one of your own.

The templates use the following concepts by default:

1. A form set to the “post” method
2. A fieldset element to group “text” type input elements.
3. A label element related to each “text” input
4. Simple 3-column layout using Blueprint CSS
5. A single input with submit type for posting the form.

You are free to use any of the templates elements as they are or change them for your own. However, the input fields posted with the form must exist in our “Permitted Fields” list.

The editor on the form is a standard HTML editor that has many features. It is called CKEditor and you can get a lot of information on this editor by looking at these links:

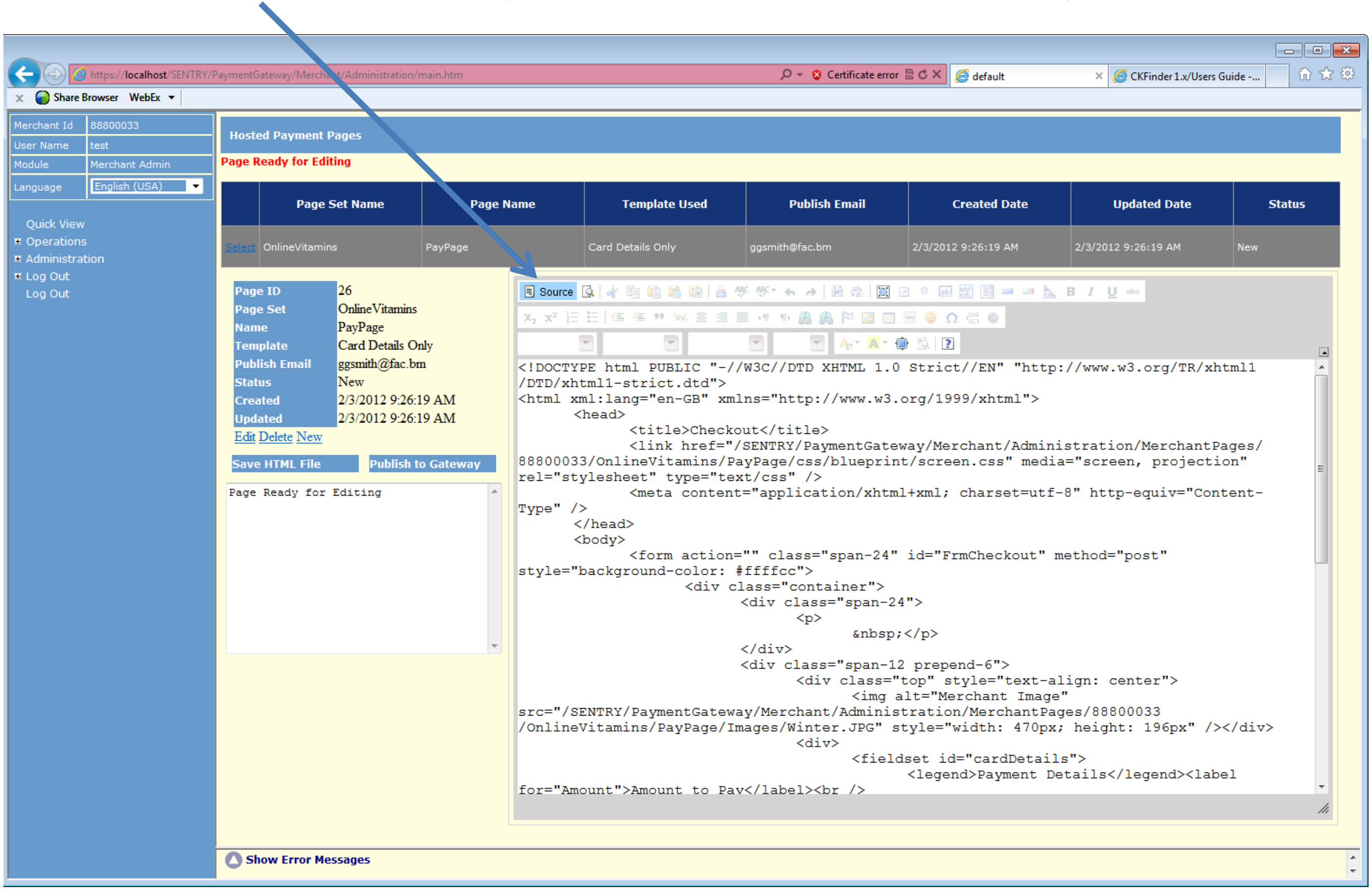
The CKEditor itself: http://docs.cksource.com/CKEditor_3.x/Users_Guide

The CKFinder image explorer and uploader: http://docs.cksource.com/CKFinder_1.x/Users_Guide

These are also linked to from the application via the help buttons on the editor and image uploader.

Editing HTML directly

You can use the editor WYSIWYG facilities to edit the page or you can edit the HTML "in-situ" by using the "Source" view. Select the "Source" button to the top left of the editor to enable direct HTML editing.



Merchant Id	88800033
User Name	test
Module	Merchant Admin
Language	English (USA)

Hosted Payment Pages

Page Ready for Editing

	Page Set Name	Page Name	Template Used	Publish Email	Created Date	Updated Date	Status
Select	OnlineVitamins	PayPage	Card Details Only	ggsmith@fac.bm	2/3/2012 9:26:19 AM	2/3/2012 9:26:19 AM	New

Page ID	26
Page Set	OnlineVitamins
Name	PayPage
Template	Card Details Only
Publish Email	ggsmith@fac.bm
Status	New
Created	2/3/2012 9:26:19 AM
Updated	2/3/2012 9:26:19 AM

Edit Delete New

```
Page Ready for Editing
```

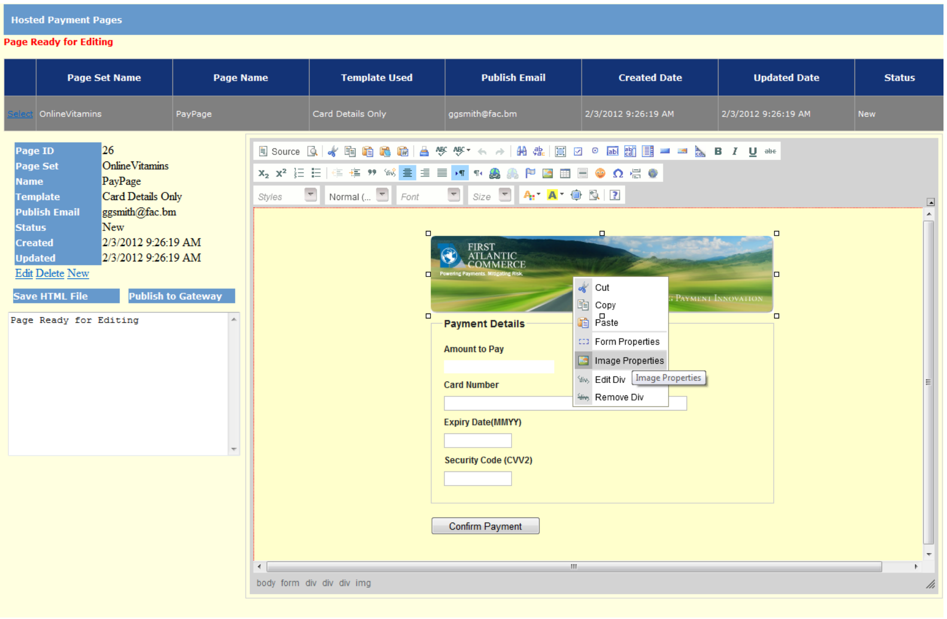
```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN" "http://www.w3.org/TR/xhtml1
/DTD/xhtml1-strict.dtd">
<html xml:lang="en-GB" xmlns="http://www.w3.org/1999/xhtml">
	<head>
		<title>Checkout</title>
		<link href="/SENTRY/PaymentGateway/Merchant/Administration/MerchantPages/
88800033/OnlineVitamins/PayPage/css/blueprint/screen.css" media="screen, projection"
rel="stylesheet" type="text/css" />
		<meta content="application/xhtml+xml; charset=utf-8" http-equiv="Content-
Type" />
	</head>
	<body>
		<form action="" class="span-24" id="FrmCheckout" method="post"
style="background-color: #ffffcc">
			<div class="container">
				<div class="span-24">
					<p>
						&nbsp;</p>
				</div>
				<div class="span-12 prepend-6">
					<div class="top" style="text-align: center">
						<img alt="Merchant Image"
src="/SENTRY/PaymentGateway/Merchant/Administration/MerchantPages/88800033
/OnlineVitamins/PayPage/Images/Winter.JPG" style="width: 470px; height: 196px" /></div>
					<div>
						<fieldset id="cardDetails">
							<legend>Payment Details</legend><label
for="Amount">Amount to Pay</label><br />
```

Note that the Source view is not syntax highlighted, a feature we will be hoping to add in version 2.0. You may want to copy the source text and paste it into your favorite editor, and then paste it back once edited.

Uploading Images

One thing you will definitely need to do is change the image on the Template page from the FAC default image to something related to your business. Of course, you can also delete the image. Hosted Pages allow you upload many image files for inclusion on your pages for, say, the company logo, card types accepted icons, etc.

To change the image, click and select the image in the editor, then right click and select “Image Properties”



Hosted Payment Pages

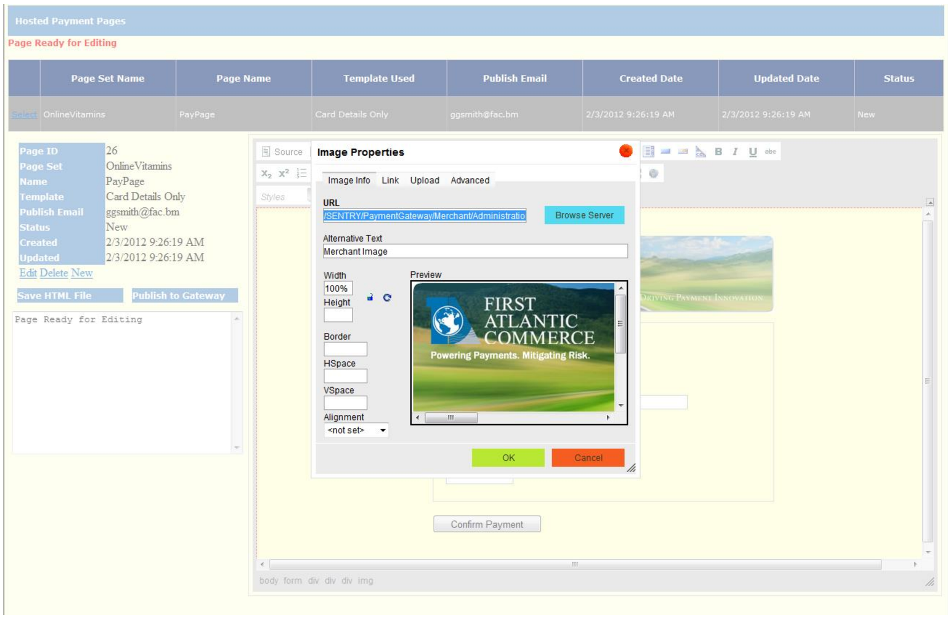
Page Ready for Editing

	Page Set Name	Page Name	Template Used	Publish Email	Created Date	Updated Date	Status
Select	OnlineVitamins	PayPage	Card Details Only	ggsmith@fac.bm	2/3/2012 9:26:19 AM	2/3/2012 9:26:19 AM	New

Page ID	26
Page Set	OnlineVitamins
Name	PayPage
Template	Card Details Only
Publish Email	ggsmith@fac.bm
Status	New
Created	2/3/2012 9:26:19 AM
Updated	2/3/2012 9:26:19 AM

Page Ready for Editing

You will then see an Image Properties dialog.



Hosted Payment Pages

Page Ready for Editing

	Page Set Name	Page Name	Template Used	Publish Email	Created Date	Updated Date	Status
Select	OnlineVitamins	PayPage	Card Details Only	ggsmith@fac.bm	2/3/2012 9:26:19 AM	2/3/2012 9:26:19 AM	New

Page ID	26
Page Set	OnlineVitamins
Name	PayPage
Template	Card Details Only
Publish Email	ggsmith@fac.bm
Status	New
Created	2/3/2012 9:26:19 AM
Updated	2/3/2012 9:26:19 AM

Page Ready for Editing

Image Properties

URL: /SENTRY/PaymentGateway/Merchant/Administratio

Alternative Text: Merchant Image

Width: 100%

Height:

Border:

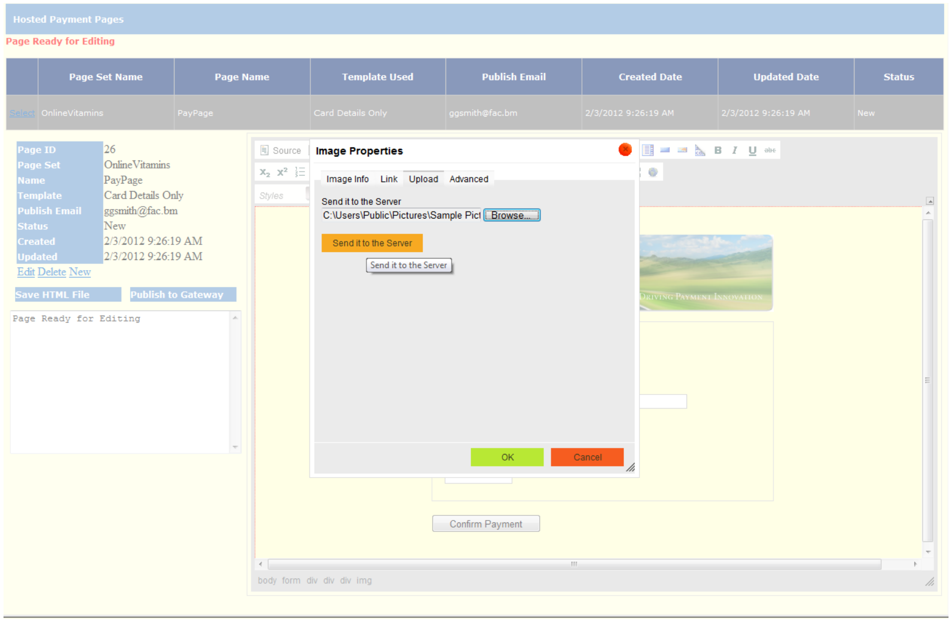
HSpace:

VSpace:

Alignment: <not set>

You have two choices here, for a single file upload, use the "Upload" tab. For uploading multiple files, use the Server Browser.

For a single file upload, browse to the file and then "Send to Server" as follows:



Hosted Payment Pages

Page Ready for Editing

	Page Set Name	Page Name	Template Used	Publish Email	Created Date	Updated Date	Status
Select	OnlineVitamins	PayPage	Card Details Only	ggsmith@fac.bm	2/3/2012 9:26:19 AM	2/3/2012 9:26:19 AM	New

Page ID	26
Page Set	Online Vitamins
Name	PayPage
Template	Card Details Only
Publish Email	ggsmith@fac.bm
Status	New
Created	2/3/2012 9:26:19 AM
Updated	2/3/2012 9:26:19 AM

Edit Delete New

Save HTML File   Publish to Gateway

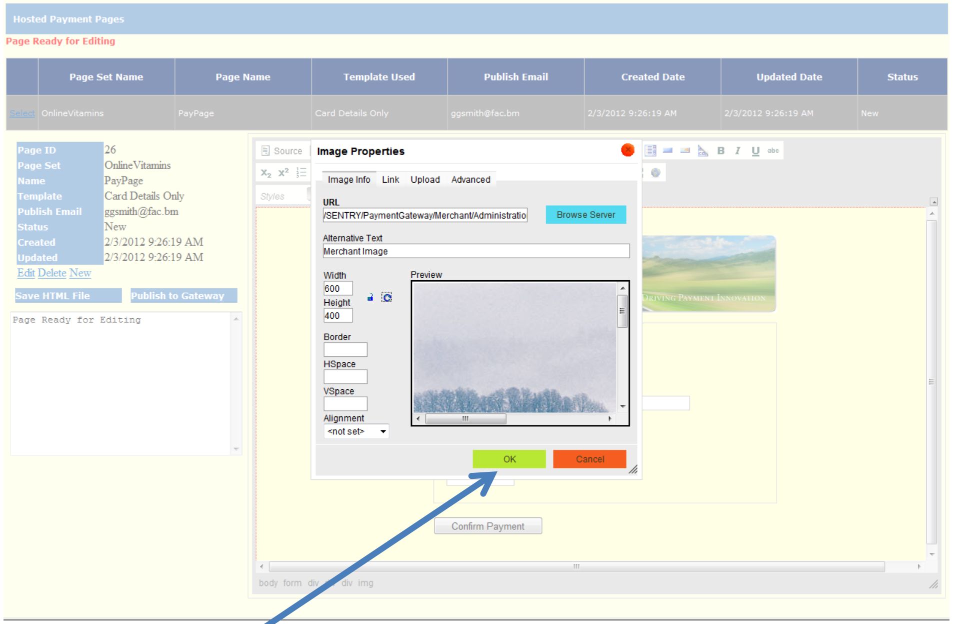
Page Ready for Editing

Image Properties

Image Info   Link   Upload   Advanced

Send it to the Server
C:\Users\Public\Pictures\Sample Pict

It will put the Image in the "Image Properties" dialog.



Hosted Payment Pages

Page Ready for Editing

	Page Set Name	Page Name	Template Used	Publish Email	Created Date	Updated Date	Status
Select	OnlineVitamins	PayPage	Card Details Only	ggsmith@fac.bm	2/3/2012 9:26:19 AM	2/3/2012 9:26:19 AM	New

Page ID	26
Page Set	Online Vitamins
Name	PayPage
Template	Card Details Only
Publish Email	ggsmith@fac.bm
Status	New
Created	2/3/2012 9:26:19 AM
Updated	2/3/2012 9:26:19 AM

Edit Delete New

Save HTML File   Publish to Gateway

Page Ready for Editing

Image Properties

Image Info   Link   Upload   Advanced

URL: /SENTRY/PaymentGateway/Merchant/Administratio

Alternative Text: Merchant Image

Width: 600

Height: 400

Border:

HSpace:

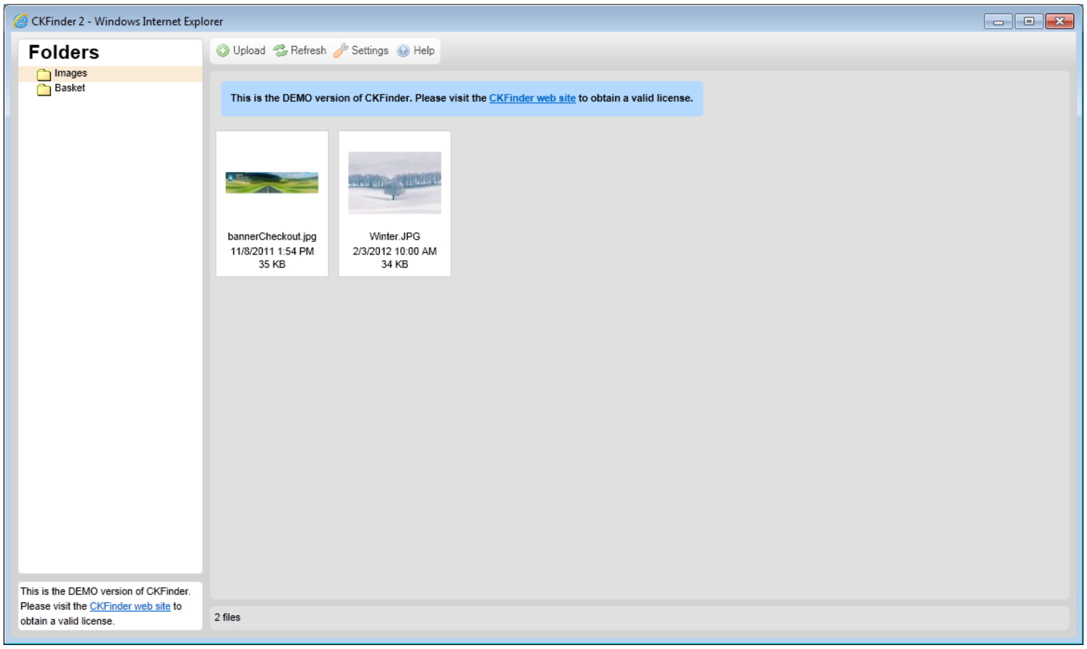
VSpace:

Alignment: <not set>

Then if you select "OK" it will replace the image in the Page.

For Multiple file uploads or purely to use a nicer browsing interface, choose “Browse Server”, this will invoke the CKFinder image explorer and uploader.

This has an upload button at the top left of the icon screen.



This is the DEMO version of CKFinder. Please visit the CKFinder web site to obtain a valid license.

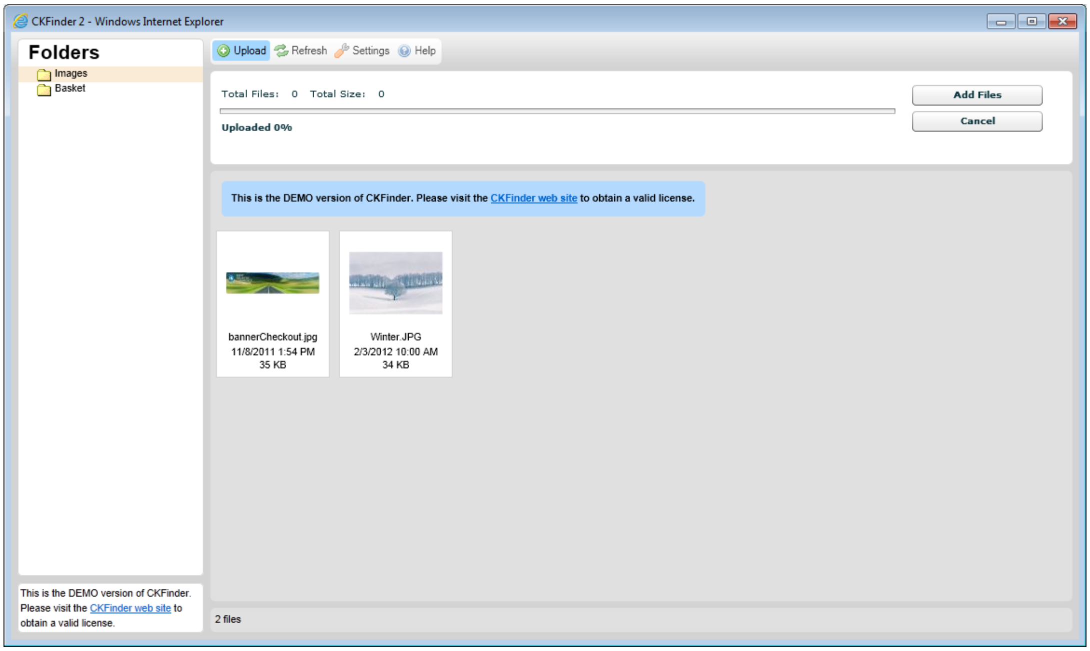
bannerCheckout.jpg
11/8/2011 1:54 PM
35 KB

Winter.JPG
2/3/2012 10:00 AM
34 KB

This is the DEMO version of CKFinder. Please visit the CKFinder web site to obtain a valid license.

2 files

Select this and you will see the upload panel.



Total Files: 0 Total Size: 0

Uploaded 0%

This is the DEMO version of CKFinder. Please visit the CKFinder web site to obtain a valid license.

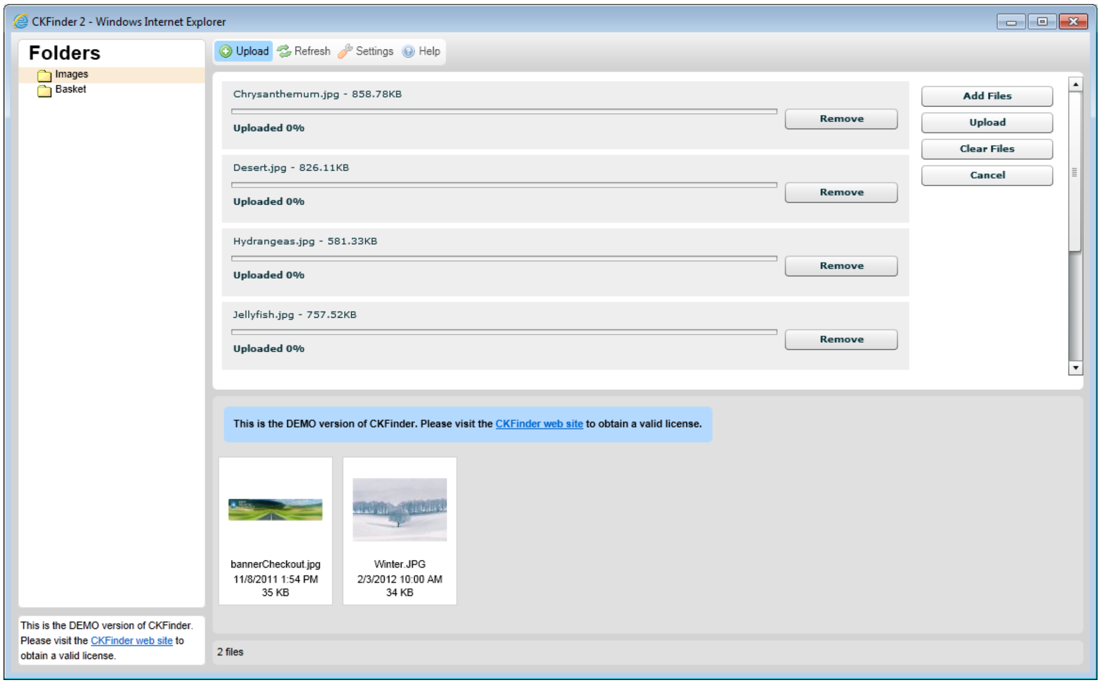
bannerCheckout.jpg
11/8/2011 1:54 PM
35 KB

Winter.JPG
2/3/2012 10:00 AM
34 KB

This is the DEMO version of CKFinder. Please visit the CKFinder web site to obtain a valid license.

2 files

Select “Add Files” and this will launch a File dialog. Select multiple files and select “Open” and you will see the files listed in the Upload Panel. Select the “Upload” button to upload to the FAC server.



Chrysanthemum.jpg - 858.78KB
Uploaded 0%

Desert.jpg - 826.11KB
Uploaded 0%

Hydrangeas.jpg - 581.33KB
Uploaded 0%

Jellyfish.jpg - 757.52KB
Uploaded 0%

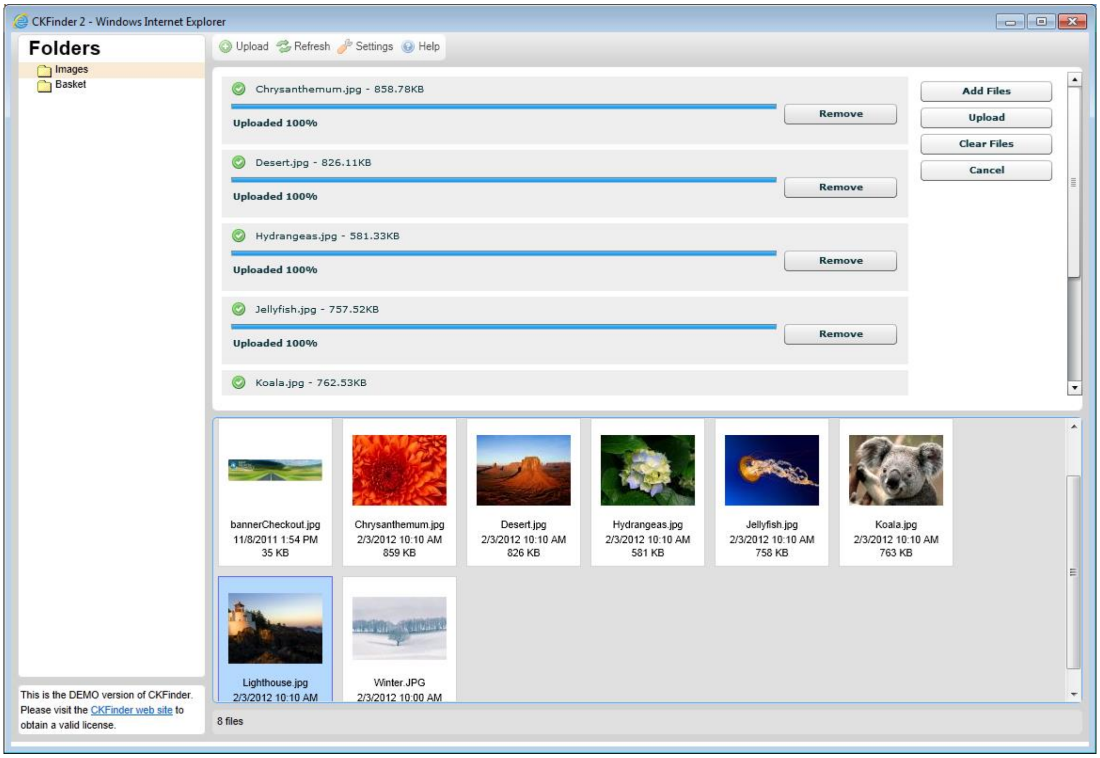
This is the DEMO version of CKFinder. Please visit the CKFinder web site to obtain a valid license.

bannerCheckout.jpg
11/8/2011 1:54 PM
35 KB

Winter.JPG
2/3/2012 10:00 AM
34 KB

This is the DEMO version of CKFinder. Please visit the CKFinder web site to obtain a valid license.

2 files



Chrysanthemum.jpg - 858.78KB
Uploaded 100%

Desert.jpg - 826.11KB
Uploaded 100%

Hydrangeas.jpg - 581.33KB
Uploaded 100%

Jellyfish.jpg - 757.52KB
Uploaded 100%

Koala.jpg - 762.53KB

bannerCheckout.jpg
11/8/2011 1:54 PM
35 KB

Chrysanthemum.jpg
2/3/2012 10:10 AM
859 KB

Desert.jpg
2/3/2012 10:10 AM
826 KB

Hydrangeas.jpg
2/3/2012 10:10 AM
581 KB

Jellyfish.jpg
2/3/2012 10:10 AM
758 KB

Koala.jpg
2/3/2012 10:10 AM
763 KB

Lighthouse.jpg
2/3/2012 10:10 AM

Winter.JPG
2/3/2012 10:00 AM

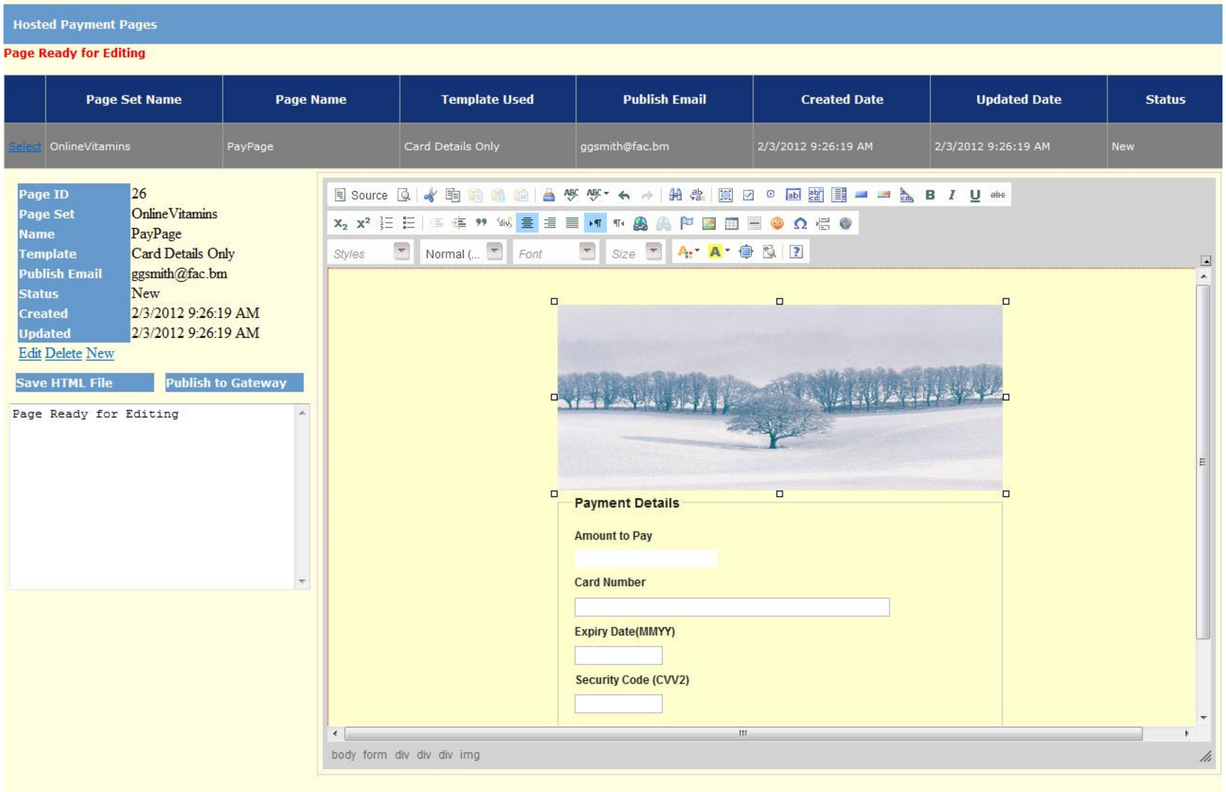
This is the DEMO version of CKFinder. Please visit the CKFinder web site to obtain a valid license.

8 files

It is important to note at this stage that each Page created is “Sandboxed” and separate from any other page. All images uploaded are only available for current Page being edited.

This is necessary, as it safeguards other pages when an image or page is deleted.

By clicking on any of the uploaded images, the image will be displayed in the opened “Image Properties” dialog. Press “OK” on the dialog to commit the image to the Page.



Hosted Payment Pages

Page Ready for Editing

	Page Set Name	Page Name	Template Used	Publish Email	Created Date	Updated Date	Status
Select	OnlineVitamins	PayPage	Card Details Only	ggsmith@fac.bm	2/3/2012 9:26:19 AM	2/3/2012 9:26:19 AM	New

Page ID	26
Page Set	OnlineVitamins
Name	PayPage
Template	Card Details Only
Publish Email	ggsmith@fac.bm
Status	New
Created	2/3/2012 9:26:19 AM
Updated	2/3/2012 9:26:19 AM

Edit Delete New

Save HTML File

Publish to Gateway

Page Ready for Editing

Payment Details

Amount to Pay

Card Number

Expiry Date(MMYY)

Security Code (CVV2)

While the image is selected you can re-size it as you wish.

Saving and Publishing the Page

Once you are happy with your edits it is important that you select the “Save HTML File” highlighted link to the left of the editor. If you do not do this you will lose all your HTML edits.

Once the page is saved and you are happy to release the page, select the “Publish to Gateway” link. This will validate the page and may fail if it finds issues. This will usually be a misspelt input name or id and you may need to edit and re-publish. Once published, you are free to use this page as a Hosted Page on your e-commerce transactions. How you integrate this page is covered in the next section.

Integrating your Hosted Payment Page to your System

Understanding the Integration Process

As described in the overview, the integration of a Hosted Page is not trivial. This is to ensure the use of the page is securely validated.

You will need to implement the following software assets:

1. Code that calls our SOAP method HostedPageAuthorize on our payment gateway passing in transaction and merchant data for the transaction.
2. A HPP security token (SingleUseToken) is returned from this method and this must be stored for use in the transaction at various stages of the process.
3. A page that redirect the Cardholder to the payment page URL constructed from the FAC Merchant Pages App Domain, Page Set, Page Name and HPP security token (SingleUseToken) returned from HostedPageAuthorize (step 2).
4. A response page to display to the user with the results of the transaction.
5. A call to our SOAP method “HostedPageResults” to get the full results data securely direct from our site. This is only available for the lifetime of the HPP security token (SingleUseToken) which is around 5 minutes.

Integrating with the HostedPage SOAP methods

This section describes the interfaces to the two SOAP methods connected with Hosted Page execution, HostedPageAuthorize and HostedPageResults.

For general information on integrating with our Payment Gateway v2 please refer to our Guide ***“First Atlantic Commerce Payment Gateway 2 Integration Guide for Developers”***. This guide explains Authorization and 3DS Authentication in more detail and has definitions for Response codes and other useful information for integration.

Service Operation (SOAP)	Description	XML POST URL	Request Data Type	Response Data Type
HostedPage Authorize	Used to register for using a Hosted Page for a transaction. Returns a single-use Token to be used in the URL to the hosted page	<Base>/HostedPageAuthorize	HostedPage Authorization Request	HostedPage Authorization Response
HostedPage Results	Allows the retrieval of the Full Authorize Response data directly from the FAC Gateway.	<Base>/HostedPageResults	HostedPage Results Request	HostedPage Results Response

HostedPageAuthorize Operation

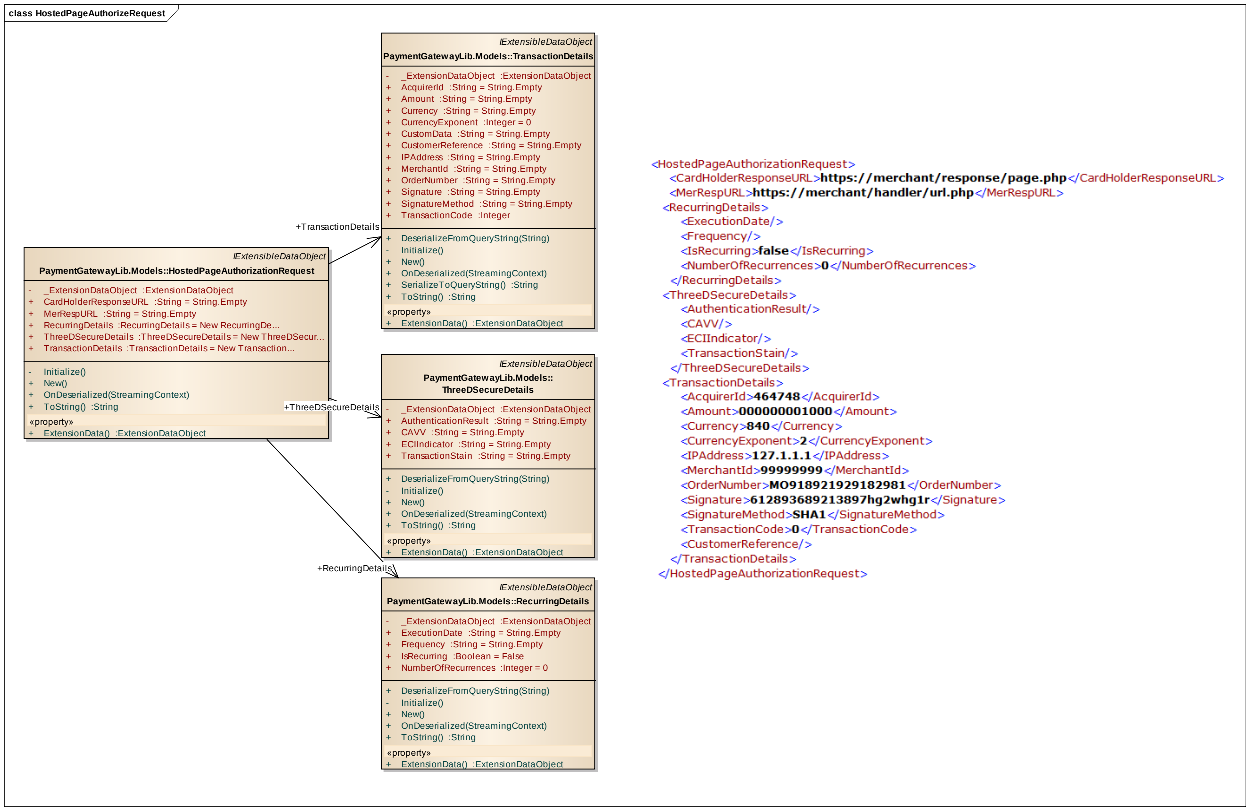
This operation is in Request/Response format and has calling semantics as follows:

HostedPageAuthorizeResponse := HostedPageAuthorize(HostedPageAuthorizeRequest)

So you will need to create the request message and then call the SOAP method accordingly. Usually there are frameworks available to create the SOAP envelope for you. In the code samples section we will show how PHP enables this via the SoapClient class library.

If you do not have access to a SOAP client library or Service Proxy, we have XML handlers that can accept plain **XML posted directly to a URL**. See the main integration guide for details.

HostedPageAuthorizationRequest


class HostedPageAuthorizeRequest
IExtensibleDataObject
PaymentGatewayLib.Models::HostedPageAuthorizationRequest
- _ExtensionDataObject :ExtensionDataObject
+ CardHolderResponseURL :String = String.Empty
+ MerRespURL :String = String.Empty
+ RecurringDetails :RecurringDetails = New RecurringDe...
+ ThreeDSecureDetails :ThreeDSecureDetails = New ThreeDSecur...
+ TransactionDetails :TransactionDetails = New Transaction...
- Initialize()
+ New()
+ OnDeserialized(StreamingContext)
+ ToString() :String
«property»
+ ExtensionData() :ExtensionDataObject
+TransactionDetails
IExtensibleDataObject
PaymentGatewayLib.Models::TransactionDetails
- _ExtensionDataObject :ExtensionDataObject
+ AcquirerId :String = String.Empty
+ Amount :String = String.Empty
+ Currency :String = String.Empty
+ CurrencyExponent :Integer = 0
+ CustomData :String = String.Empty
+ CustomerReference :String = String.Empty
+ IPAddress :String = String.Empty
+ MerchantId :String = String.Empty
+ OrderNumber :String = String.Empty
+ Signature :String = String.Empty
+ SignatureMethod :String = String.Empty
+ TransactionCode :Integer
+ DeserializeFromQueryString(String)
- Initialize()
+ New()
+ OnDeserialized(StreamingContext)
+ SerializeToQueryString() :String
+ ToString() :String
«property»
+ ExtensionData() :ExtensionDataObject
+ThreeDSecureDetails
IExtensibleDataObject
PaymentGatewayLib.Models::
ThreeDSecureDetails
- _ExtensionDataObject :ExtensionDataObject
+ AuthenticationResult :String = String.Empty
+ CAVV :String = String.Empty
+ ECIIndicator :String = String.Empty
+ TransactionStain :String = String.Empty
+ DeserializeFromQueryString(String)
- Initialize()
+ New()
+ OnDeserialized(StreamingContext)
+ ToString() :String
«property»
+ ExtensionData() :ExtensionDataObject
+RecurringDetails
IExtensibleDataObject
PaymentGatewayLib.Models::RecurringDetails
- _ExtensionDataObject :ExtensionDataObject
+ ExecutionDate :String = String.Empty
+ Frequency :String = String.Empty
+ IsRecurring :Boolean = False
+ NumberOfRecurrences :Integer = 0
+ DeserializeFromQueryString(String)
- Initialize()
+ New()
+ OnDeserialized(StreamingContext)
+ ToString() :String
«property»
+ ExtensionData() :ExtensionDataObject

```xml
<HostedPageAuthorizationRequest>
   <CardHolderResponseURL>https://merchant/response/page.php</CardHolderResponseURL>
   <MerRespURL>https://merchant/handler/url.php</MerRespURL>
  <RecurringDetails>
     <ExecutionDate/>
     <Frequency/>
     <IsRecurring>false</IsRecurring>
     <NumberOfRecurrences>0</NumberOfRecurrences>
   </RecurringDetails>
  <ThreeDSecureDetails>
     <AuthenticationResult/>
     <CAVV/>
     <ECIIndicator/>
     <TransactionStain/>
   </ThreeDSecureDetails>
  <TransactionDetails>
     <AcquirerId>464748</AcquirerId>
     <Amount>000000001000</Amount>
     <Currency>840</Currency>
     <CurrencyExponent>2</CurrencyExponent>
     <IPAddress>127.1.1.1</IPAddress>
     <MerchantId>99999999</MerchantId>
     <OrderNumber>MO918921929182981</OrderNumber>
     <Signature>612893689213897hg2whg1r</Signature>
     <SignatureMethod>SHA1</SignatureMethod>
     <TransactionCode>0</TransactionCode>
     <CustomerReference/>
   </TransactionDetails>
 </HostedPageAuthorizationRequest>
```

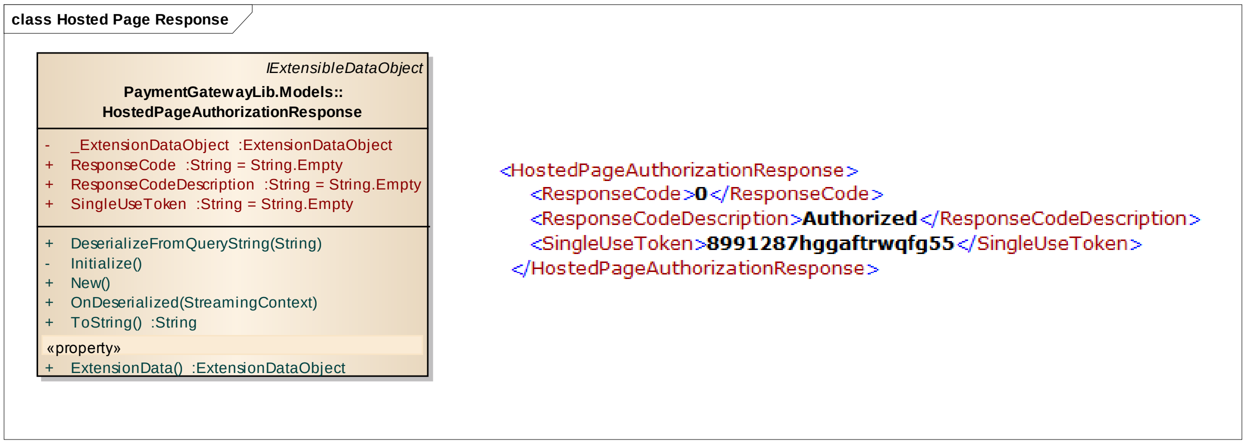
The HostedPageAuthorizationRequest message is like an AuthorizeRequest message (see standard integration guide) but without the fields the user could enter as part of the Hosted Page transaction. These fields are the Card Details, the Billing Details and the Shipping Details (see Permitted Fields).

Detailed Field Descriptions

Section	Field	Format	Presence	Value
Main Message Body	CardHolderResponseURL	AN(150)	R	Required for Response to Cardholder. Should be the response Page. Cardholder is redirected here after transaction completion.
TransactionDetails	AcquirerId	N(11)	R	ALWAYS "464748"
	MerchantId	N(15)	R	Merchant ID provided by FAC
	OrderNumber	AN(150)	R	A unique identifier assigned by the merchant for the transaction. Must be unique.
	TransactionCode	N(4)	R	The transaction code is a numeric value that allows any combinations of the flags listed below to be included with the transaction request by summing their corresponding value. For example, to include AVS in the transaction and to tokenize the card number, assign the sum of the corresponding values 1 and 128 to the transaction code. The valid codes for an Authorization request are: 0 - Standard basic Authorization 1 - Include an AVS check in the transaction 2 - Flag as a $0 AVS verification only transaction 4 - Transaction has been previously 3D Secure Authenticated the 3D Secure results will be included in the transaction. 8 - Flag as a single pass transaction (Authorization and Capture as a single transaction) 64 – 3DS Only (N/A) 128 – Tokenize PAN 256 – Hosted Page Auth + 3DS
	Amount	N(12)	R	Total amount of purchase. Note: The purchase amount must be presented as a character string that is 12 characters long. (i.e. $12.00 would be provided as "000000001200"). Can be excluded if PurchaseAmt field is on the form.
	Currency	N(3)	R	The purchase currency ISO 4217 numeric currency code (ex: USD = 840). See Appendix
	CurrencyExponent	N(1)	R	The number of digits after the decimal point in the purchase amount (i.e. $12.00 = 2)
	SignatureMethod	AN(4)	R	ALWAYS "SHA1"
	Signature	AN(28)	R	See the section on information and sample code for on creating the SHA1 signature hash
	IPAddress	AN(15)	C	Cardholder's IP Address
	CustomData	AN(n)	O	Reserved for future use
	CustomerReference	AN(256)	O	Used with Tokenization Request to associate a Token with a Customer
	StartDate		C	Cardholder's credit/debit card start date formatted as (MMYY format). Required for some debit cards.
ThreeDSecure Details	ECIIndicator	N(2)	C	This value is only needed for pre-authenticated 3D Secure transactions and the transaction code must include the value 4 in its summed value. Possible values include: Visa: "05" - Full 3D Secure authentication "06" - Issuer and/or cardholder are not enrolled for 3D

				Secure “07” - 3D Secure authentication attempt failed (numerous possible reasons) MasterCard: “01” - Issuer and/or cardholder are not enrolled for 3D Secure “02” - Full 3D Secure authentication
	AuthenticationResult	A(1)	C	This value is only needed for pre-authenticated 3D Secure transactions and the transaction code must include the value 4 in its summed value. Possible values include: “A” = An attempt at authentication was performed (ECIIndicator: V=06, MC=01) “N” = Authentication attempt not supported (ECIIndicator: V=06, MC=01) “U” = Unable to authenticate (ECIIndicator: V=07, MC=01) “Y” = Authentication attempted and succeeded (ECIIndicator: V=05, MC=02)
	TransactionStain	AN(28)	O	A hashed version of the Transaction ID (XID). The XID is a unique tracking number assigned to the authentication request that prevents replay or resubmission of the same transaction.
	CAVV	AN(28)	O	This is a cryptographic value derived by the issuer during payment authentication that provides evidence of the results of the payment authentication process. Note that for MasterCard this field is referred to as UCAF but the field name will still be CAVV.
Recurring	IsRecurring	A(5)	C	Set to “True” or “False” depending on whether a Recurring transaction is required.
	ExecutionDate	AN(28)	C	When to initially execute the first authorization. Example Date format is “YYYYY-MM-DD”
	Frequency	A(1)	C	Flag to determine how frequently to execute the recurring authorization. Possible values are: “D” – Daily “W” – Weekly “F” – Fortnightly/Every 2 weeks “M” – Monthly “E” – Bi-Monthly “Q” – Quarterly “Y” - Yearly
	NumberOfRecurrences	N(3)	C	How many times in total to execute. For example, Frequency = “D”, NumberOfRecurrences = 7 will execute every day for a week.

HostedPageAuthorizationResponse


class Hosted Page Response
IExtensibleDataObject
PaymentGatewayLib.Models::
HostedPageAuthorizationResponse
- _ExtensionDataObject :ExtensionDataObject
+ ResponseCode :String = String.Empty
+ ResponseCodeDescription :String = String.Empty
+ SingleUseToken :String = String.Empty
+ DeserializeFromQueryString(String)
- Initialize()
+ New()
+ OnDeserialized(StreamingContext)
+ ToString() :String
«property»
+ ExtensionData() :ExtensionDataObject

```
<HostedPageAuthorizationResponse>
   <ResponseCode>0</ResponseCode>
   <ResponseCodeDescription>Authorized</ResponseCodeDescription>
   <SingleUseToken>8991287hggaftrwqfg55</SingleUseToken>
 </HostedPageAuthorizationResponse>
```

Detailed Field Descriptions

Section	Field	Format	Value
Main Message Body	ResponseCode	N(2)	0 – Preprocessing Successful 01 – Request is empty 02 –Missing transaction details 03 – Missing parameters 04 - Amount Invalid 05 – Preprocessing System Error 06 – Missing CardholderResponseURL
	ResponseCode Description	AN(150)	Example : “Preprocessing successful” when response = 0, otherwise the reason for failure.
	SingleUseToken	AN(40)	Token GUID when Response = 0, else null

HostedPageResults Operation

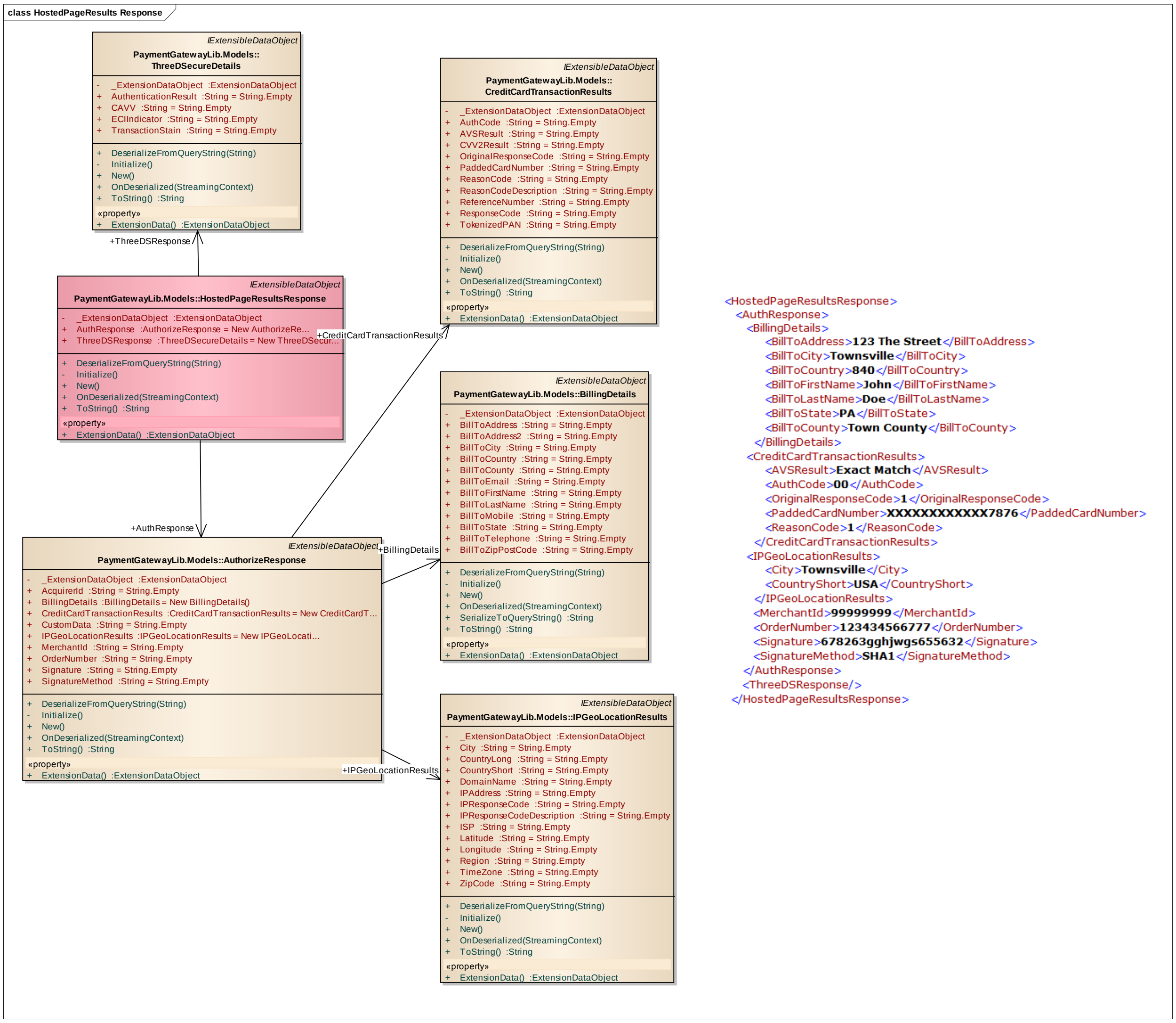
The HostedPageResults operation is there for Merchant to use to retrieve the full response data. It is only possible to use this operation during the lifetime of the transaction as limited by the single use token expiry time (currently 5 minutes).

The semantics of the operation are as follows:

HostedPageResultsResponse := HostedPageResults(token As String)

The input parameter is simple the single-use Token returned from the HostedPageAuthorize operation. The results are more detailed and structured as described in the following section:

HostedPageResultsResponse


class HostedPageResults Response
IExtensibleDataObject
PaymentGatewayLib.Models::ThreeDSecureDetails
- _ExtensionDataObject :ExtensionDataObject
+ AuthenticationResult :String = String.Empty
+ CAVV :String = String.Empty
+ ECIIndicator :String = String.Empty
+ TransactionStain :String = String.Empty
+ DeserializeFromQueryString(String)
- Initialize()
+ New()
+ OnDeserialized(StreamingContext)
+ ToString() :String
«property»
+ ExtensionData() :ExtensionDataObject
+ThreeDSResponse
IExtensibleDataObject
PaymentGatewayLib.Models::HostedPageResultsResponse
- _ExtensionDataObject :ExtensionDataObject
+ AuthResponse :AuthorizeResponse = New AuthorizeRe...
+ ThreeDSResponse :ThreeDSecureDetails = New ThreeDSecur...
+ DeserializeFromQueryString(String)
- Initialize()
+ New()
+ OnDeserialized(StreamingContext)
+ ToString() :String
«property»
+ ExtensionData() :ExtensionDataObject
+CreditCardTransactionResults
+AuthResponse
IExtensibleDataObject
PaymentGatewayLib.Models::AuthorizeResponse
- _ExtensionDataObject :ExtensionDataObject
+ AcquirerId :String = String.Empty
+ BillingDetails :BillingDetails = New BillingDetails()
+ CreditCardTransactionResults :CreditCardTransactionResults = New CreditCardT...
+ CustomData :String = String.Empty
+ IPGeoLocationResults :IPGeoLocationResults = New IPGeoLocati...
+ MerchantId :String = String.Empty
+ OrderNumber :String = String.Empty
+ Signature :String = String.Empty
+ SignatureMethod :String = String.Empty
+ DeserializeFromQueryString(String)
- Initialize()
+ New()
+ OnDeserialized(StreamingContext)
+ ToString() :String
«property»
+ ExtensionData() :ExtensionDataObject
+BillingDetails
+IPGeoLocationResults
IExtensibleDataObject
PaymentGatewayLib.Models::CreditCardTransactionResults
- _ExtensionDataObject :ExtensionDataObject
+ AuthCode :String = String.Empty
+ AVSResult :String = String.Empty
+ CVV2Result :String = String.Empty
+ OriginalResponseCode :String = String.Empty
+ PaddedCardNumber :String = String.Empty
+ ReasonCode :String = String.Empty
+ ReasonCodeDescription :String = String.Empty
+ ReferenceNumber :String = String.Empty
+ ResponseCode :String = String.Empty
+ TokenizedPAN :String = String.Empty
+ DeserializeFromQueryString(String)
- Initialize()
+ New()
+ OnDeserialized(StreamingContext)
+ ToString() :String
«property»
+ ExtensionData() :ExtensionDataObject
IExtensibleDataObject
PaymentGatewayLib.Models::BillingDetails
- _ExtensionDataObject :ExtensionDataObject
+ BillToAddress :String = String.Empty
+ BillToAddress2 :String = String.Empty
+ BillToCity :String = String.Empty
+ BillToCountry :String = String.Empty
+ BillToCounty :String = String.Empty
+ BillToEmail :String = String.Empty
+ BillToFirstName :String = String.Empty
+ BillToLastName :String = String.Empty
+ BillToMobile :String = String.Empty
+ BillToState :String = String.Empty
+ BillToTelephone :String = String.Empty
+ BillToZipPostCode :String = String.Empty
+ DeserializeFromQueryString(String)
- Initialize()
+ New()
+ OnDeserialized(StreamingContext)
+ SerializeToQueryString() :String
+ ToString() :String
«property»
+ ExtensionData() :ExtensionDataObject
IExtensibleDataObject
PaymentGatewayLib.Models::IPGeoLocationResults
- _ExtensionDataObject :ExtensionDataObject
+ City :String = String.Empty
+ CountryLong :String = String.Empty
+ CountryShort :String = String.Empty
+ DomainName :String = String.Empty
+ IPAddress :String = String.Empty
+ IPResponseCode :String = String.Empty
+ IPResponseCodeDescription :String = String.Empty
+ ISP :String = String.Empty
+ Latitude :String = String.Empty
+ Longitude :String = String.Empty
+ Region :String = String.Empty
+ TimeZone :String = String.Empty
+ ZipCode :String = String.Empty
+ DeserializeFromQueryString(String)
- Initialize()
+ New()
+ OnDeserialized(StreamingContext)
+ ToString() :String
«property»
+ ExtensionData() :ExtensionDataObject

```xml
<HostedPageResultsResponse>
  <AuthResponse>
    <BillingDetails>
        <BillToAddress>123 The Street</BillToAddress>
        <BillToCity>Townsville</BillToCity>
        <BillToCountry>840</BillToCountry>
        <BillToFirstName>John</BillToFirstName>
        <BillToLastName>Doe</BillToLastName>
        <BillToState>PA</BillToState>
        <BillToCounty>Town County</BillToCounty>
      </BillingDetails>
    <CreditCardTransactionResults>
        <AVSResult>Exact Match</AVSResult>
        <AuthCode>00</AuthCode>
        <OriginalResponseCode>1</OriginalResponseCode>
        <PaddedCardNumber>XXXXXXXXXXXX7876</PaddedCardNumber>
        <ReasonCode>1</ReasonCode>
      </CreditCardTransactionResults>
    <IPGeoLocationResults>
        <City>Townsville</City>
        <CountryShort>USA</CountryShort>
      </IPGeoLocationResults>
      <MerchantId>99999999</MerchantId>
      <OrderNumber>123434566777</OrderNumber>
      <Signature>678263gghjwgs655632</Signature>
      <SignatureMethod>SHA1</SignatureMethod>
    </AuthResponse>
    <ThreeDSResponse/>
  </HostedPageResultsResponse>
```

The response is made up of the AuthorizeResponse fields and ThreeDSResponse fields. These are described in full in our standard integration guide.

Letting the Cardholder Enter the Amount

The standard use-case for Hosted Payment Page is to let the user enter only the card details as these are the fields Merchants do not want to save on their systems. However, it is possible to implement a Hosted Payment Page with a payment amount (named PurchaseAmt) on the form.

There are rules for including this on the form:

- The PurchaseAmt format must comply with the currency's number of decimal places and be a properly formed decimal number.
- Do not include currency symbols in PurchaseAmt.
- If you want to give the ability to choose a currency then you must include an input with the PurchaseCurrency field and the PurchaseCurrencyExponent field on the Hosted Page.
- The signature you create and pass to the HostedPageAuthorize method will not be the same. Because you are putting the PurchaseAmt field on the form, the signature must not include the data of the amount or currency fields.

Kount Fraud Control Integration

Fraud Control integration has been included in Hosted Page functionality but a small amount of extra code is required to enable it.

However, it's a lot less work than would be required in your own pages as we've done some of the work for you. Fraud requires that you integrate the page to their Data Collector.

Here's an example of how this can be done with Hosted Payment Page:

First, get your FAC ID enabled for Kount Fraud Integration.

Then, include these script imports in the <head> element of your page.

```
<script src="//ajax.googleapis.com/ajax/libs/jquery/1.8.1/jquery.min.js"></script>
<script src="//ajax.aspnetcdn.com/ajax/jquery.validate/1.9/jquery.validate.min.js"></script>
```

Finally, include this script towards the end of the <form> element in the Hosted Page **:**

```
  $(document).ready(function(){
      var uuid = $("#HPPKey").val();
      var merchantId = "240000";
      var frame = '<iframe width=1 height=1 frameborder=0 scrolling=no src="{0}"><img width=1 height=1
src="{1}"></iframe>';
      var input = '<input type="hidden" name="SessionID" id="SessionID" value="{0}" />';
      var logoHtml = "/MerchantPages/logo.aspx?m=" + merchantId + "&s=" + uuid;
      var logoGif = "/MerchantPages/logo_gif.aspx?m=" + merchantId + "&s=" + uuid;
      var frameHtml = $.validator.format(frame, logoHtml, logoGif);
      var inputHtml = $.validator.format(input, uuid);
      $('#frmHtmlCheckout').append(inputHtml);
      $(document.body).append(frameHtml);
  });
```

What does this do exactly? Well to integrate to Kount you must include an iframe in your page with references to images that are in fact scripts. These images redirect the cardholder to the Kount site and back again. During this process certain data on the cardholder's browser is collected by a process on the Kount site called the "Data Collector". At the same time a unique identifier is passed into Kount to create an ID for the data. This ID is then passed to FAC in the Authorization data. The above script does this dynamically using JavaScript and JQuery. Note that the script requires your Merchant ID. This is your Kount Merchant ID, not your FAC Merchant ID.

When you do an Authorization with Fraud enabled, the authorization data is passed to Kount via the FAC Gateway and Kount use this and the Data Collector data to provide a fraud check score is added to the response. You can then use this to decide if a transaction is fraudulent or not and act accordingly (by stopping shipment of goods for example).

In Hosted Payment page, we have already included the "logo" image files on our Merchant Pages site and integrated the Authorization data to Kount, so all you need to do is add the code above to implement the iframe "Data Collector" functionality. The code above does the job and can be used as a template or as-is. It all depends on your platform; you might want to use PHP or Java for example.

For more detailed description of Kount Fraud Control Integration, our support and business development staff will be able to help.

PHP Code Samples

These are code snippets from our Test Merchant Site, and should not be used as-is without adding sufficient error handling and production safeguards.

Calling the Hosted Page Service Methods

To call the hosted page service methods you must use SOAP 1.1 or higher protocol. This is usually done using some kind of proxy object or library. In PHP this is called the SoapClient.

Calling HostedPageAuthorize within a Page

This commented example is a PHP script called from another page, say your checkout page. It does the following:

- Initializes the SoapClient options array
- Initializes the SoapClient with the FACPG2 URL and options array
- Builds the HostedPageAuthorizeRequest using associative arrays in PHP
- Calls the HostedPageAuthorize service operation
- Builds the hosted page URL
- Redirects the user to the hosted page

```php
<?php

// Useful for generation of test Order numbers
// You would use REAL order numbers in an Integration
function msTimeStamp()
{
    return (string)round(microtime(1) * 1000);
}

// How to sign an FAC Authorize message in PHP
function Sign($passwd, $facId, $acquirerId, $orderNumber, $amount, $currency)
{
    $stringtohash = $passwd.$facId.$acquirerId.$orderNumber.$amount.$currency;
    $hash = sha1($stringtohash, true);
    $signature = base64_encode($hash);

    return $signature;
}

// FAC Integration Domain
$domain = ‘ecm.firstatlanticcommerce.com’;

// Ensure you append the ?wsdl query string to the URL
$wsdlurl = 'https://' . $domain . '/PGService/HostedPage.svc?wsdl';
$soapUrl = 'https://' . $domain . '/PGService/HostedPage.svc';
```

```
// Set up client to use SOAP 1.1 and NO CACHE for WSDL. You can choose between
// exceptions or status checking. Here we use status checking. Trace is for Debug only
// Works better with MS Web Services where
// WSDL is split into several files. Will fetch all the WSDL up front.
$options = array(
         'location' => $soapUrl,
                'soap_version'=>SOAP_1_1,
                'exceptions'=>0,
                'trace'=>1,
                'cache_wsdl'=>WSDL_CACHE_NONE
            );

// WSDL Based calls use a proxy, so this is the best way
// to call FAC PG Operations.
$client = new SoapClient($wsdlurl, $options);

// This should not be in your code in plain text!
$password = '<YOUR PASSWORD HERE>';
// Use your own FAC ID
$facId = '<YOUR MERCHANT ID>';
//$facId = '70700001';
// Acquirer is always this
$acquirerId = '464748';
// Must be Unique per order. Put your own format here
$orderNumber = 'VITSONLINE' . msTimeStamp();

// THESE next variables COME FROM THE PREVIOUS PAGE (hence $_POST) but you could drive
these from
// any source such as config files, server cache etc.

// Passed in as a decimal but 12 chars is required
$amount = $_POST["Amount"];
// Page Set
$pageset = $_POST["PageSet"];
// Page Name
$pagename = $_POST["PageName"];
// TransCode
$transCode = $_POST["TransCode"];

// Formatted Amount. Must be in twelve charecter, no decimal place, zero padded format
$amountFormatted = str_pad(''.($amount*100), 12, "0", STR_PAD_LEFT);

// 840 = USD, put your currency code here
$currency = '840';

// Each call must have a signature with the password as the shared secret
$signature = Sign($password, $facId, $acquirerId, $orderNumber, $amountFormatted, $curren
cy);

// You only need to initialise the message sections you need. So for a basic Auth
// only Credit Cards and Transaction details are required.

// Transaction Details.
$TransactionDetails = array('AcquirerId' => $acquirerId,
                            'Amount' => $amountFormatted,
                            'Currency' => $currency,
                            'CurrencyExponent' => 2,
                            'IPAddress' => '',
                            'MerchantId' => $facId,
                            'OrderNumber' => $orderNumber,
                            'Signature' => $signature,
                            'SignatureMethod' => 'SHA1',
                            'TransactionCode' => $transCode);

// Where the response will end up. SHould be a page your site and will get two parameters
// ID = Single Use Key passed to payment page and RespCode = normal response code for Aut
h
$CardHolderResponseUrl = 'https://<YOUR DOMAIN>/<YOUR RESPONSE PAGE>.php';

// The request data is named 'Request' for reasons that are not clear!
$HostedPageRequest = array('Request' => array('TransactionDetails' => $TransactionDetails
,
                            'CardHolderResponseURL' => $CardHolderResponseUrl));

// Call the Authorize through the Soap Client
$result = $client->HostedPageAuthorize($HostedPageRequest);

// You should CHECK the results here!!!
// Extract Token
$token = $result->HostedPageAuthorizeResult->SingleUseToken;

// Construct the URL. This may be different for Production. Check with FAC
$PaymentPageUrl = 'https://' . $domain . '/MerchantPages/' . $pageset . '/' . $pagename .
 '/';

// Create the location header to effect a redirect. Add token required by page
$RedirectURL = 'Location: ' . $PaymentPageUrl . $token;

// Redirect user to the Payment page
header($RedirectURL);
?>
```

Calling HostedPageResults within a Page

This code snippet shows how to call the results operation. You may do this within for example the response page passed in the call to HostedPageAuthorize (CardHolderResponseURL). The response page is passed the Token as a parameter called "ID" so is available to use.

```
<?php
// IMPORTANT: Convert URL Parameters to variables
parse_str($_SERVER['QUERY_STRING']);

$host = 'ecm.firstatlanticcommerce.com';

// Ensure you append the ?wsdl query string to the URL for WSDL URL
$wsdlurl = 'https://' . $host . '/PGService/HostedPage.svc?wsdl';
// No WSDL parameter for location URL
$loclurl = 'https://' . $host . '/PGService/HostedPage.svc';

// Set up client to use SOAP 1.1 and NO CACHE for WSDL. You can choose between
// exceptions or status checking. Here we use status checking. Trace is for Debug only
// Works better with MS Web Services where
// WSDL is split into several files. Will fetch all the WSDL up front.
$options = array(
      'location' => $loclurl,
      'soap_version'=>SOAP_1_1,
      'exceptions'=>0,
      'trace'=>1,
      'cache_wsdl'=>WSDL_CACHE_NONE
      );

// WSDL Based calls use a proxy, so this is the best way
// to call FAC PG Operations as it creates the methods for you
$client = new SoapClient($wsdlurl, $options);

// Call the HostedPageResults through the Client. Note the param
// name is case sensitive, so 'Key' does not work.
$result = $client->HostedPageResults(array('key' => $ID));

// NOW: You have access to all the response fields and can evaluate as you want to
// and use them to display something to the user in an HTML page like the HTML snippet
// below. It's very simple and you have not had any exposure to the card number at all.


// While it is not necessary to make this soap call, it is advisable that you implement t
his
// and get the full response details to ensure the correct amount has been charged etc.
// You should also store the results in case of any chargeback issues and to check the re
sponse
// code has not been tampered with.
?>
```

```
<html>
<head>
<title>Cart</title>
        <style type="text/css">
                .label
                        {
                                width: 200px;
                                height: 30px;
                                margin-left: 10px;
                        }
                .labelHeading
                        {
                                width: 200px;
                                height: 30px;
                                margin-left: 10px;
                                font-family: @Arial Unicode MS;
                                font-weight: bold;
                        }
        </style>
</head>
<body>
<form action="">
<br/>

// EXAMPLE CODE ONLY SHOWING HOW YOU CAN ACCESS THE RESULTS WITHIN THE HTML PAGE
        <label class="labelHeading">Payment Processed</label><br />
        <br />
        <label class="label">Status: <?php echo $result->HostedPageResultsResult->AuthResponse-
>CreditCardTransactionResults->ReasonCodeDescription;  ?> </label><br/>
        <label class="label">Payment Reference: <?php echo $result->HostedPageResultsResult->AuthResponse-
>CreditCardTransactionResults->ReferenceNumber;  ?> </label><br/><br/>
        <label class="label">All Response Fields: <?php echo print_r($result);  ?> </label><br/>
<br/>
</form>
</body>
</html>
```

Putting it All Together

For a full end-to-end sample, please contact FAC integration support. We are happy to provide help and assistance and demonstrate an end-to-end implementation to your technical staff.

APPENDICES

Appendix 1 – FAC Processing Questionnaire

Processing Information	
Transaction processing flow – Do you process one pass transactions (full sale transaction) or two pass (authorization followed by separate capture transaction)? □ One Pass □ Two Pass	
If two pass, please describe the capture process. Will you batch capture at specified times or throughout the day? Please provide details:	
If two pass, does your sales method require settlement of a partial amount of the original auth?	□ Yes □ No
If you answered "yes" to Partial Captures, please take note of the following. All partially captured transactions MUST be completed and closed for settlement to take place. For each successful authorization response from FAC's system, you have the option to capture all of the funds OR capture a partial amount less than the original authorization amount. To partially capture funds you must send the required amount to be captured followed by a reversal for the remaining amount. The reversal closes the transaction and must be completed for your customer to be charged and for funds to be credited to your account. By default, the ability to process partial captures is disabled. If this is a business requirement, FAC Support will train you on the correct way to handle this process.	
Do you need to support card testing or transaction authorizations for less than 1.00 in currency value?	□ Yes □ No
Does your processing pattern include Repeat Transactions **or Recurring Payment**, i.e. monthly memberships:	□ Yes □ No
Do you perform refunds? Estimated # per month:	□ Yes □ No #:
Do you perform reversals (voids)? Estimated # per month:	□ Yes □ No #:
Estimated % declines:	%
What are the peak days and times for transaction processing?	
Do you have a peak season or change in processing patterns and volumes throughout the year? Please provide details.	
Do you plan on submitting AVS data as part of the authorization (select one):	□ Yes □ No

Do you plan on processing AVS with $0 authorization requests and/or CVV2 data?	□ Yes □ No
Has your acquiring bank capped your processing levels for your MID(s)?	□ Yes □ No

If yes what is the processing (settlement) Limit?	#:
Do you intend to pass us the CVV2/CVC2 value for each Repeat Transactions:	□ Yes □ No
If you answered "yes" for the above, please take note of the following important information. The CVV2/CVC2 data is not to be stored on the merchant server in any way. In addition, the CVV2/CVC2 value is only required for the first transaction.	
Please provide any additional details and/or requirements in regards to your processing pattern:	

3D Secure Information (Verified by Visa and MasterCard SecureCode)	
If you are implementing 3DS as part of your integration please review and answer the following:	
Would you like to accept or reject 3D Secure authentication attempts for the following situations? Please note: If you choose to accept either scenario above, the transaction will then continue and proceed to be authorized. Such transactions will be deemed standard e-commerce non-3DS transactions and will not be eligible for any chargeback liability shift regardless of the chargeback reason code.	
The MasterCard or Visa directory servers are not available (select one):	□ Accept □ Reject
There is an error building part of the authentication message (select one):	□ Accept □ Reject

Technical Information

Web Server Browser: ____

Server Operating System: ____

Programming Languages: ____

Shopping Cart Software: ____

Technical Contacts

Primary Technical Contact: _________________________________ • Title: ____ • Email: ____ • Contact Number(s): _________________________________ • Time Zone/Availability: ____________________________ • In House/ Contracted Developer: ___________________ • Any previous e-commerce integrations? If so, please provide details: ____	Secondary Technical Contact: ______________________________ • Title: ____ • Email: ____ • Contact Number(s): ________________________________ • Time Zone/Availability: ___________________________ • In House/ Contracted Developer: __________________ • Any previous e-commerce integrations? If so, please provide details: ____

Business Contacts

Primary Business Contact: ________________________________

- Title: ____
- Email: ____
- Contact Number(s): _______________________________
- Time Zone/Availability: ____________________________

Secondary Business Contact: ______________________________

- Title: ____
- Email: ____
- Contact Number(s): _______________________________
- Time Zone/Availability: ____________________________

This questionnaire must be completed, signed and returned prior to the integrations call. Please do not hesitate to contact us at support@fac.bm if you require any additional information to assist you in answering these questions.

Completed By: ________________________________ Date: _________
Signature: ____
Received By (FAC): _____________________________ Date: ________
Signature: ____

Appendix 2 – Data Field Validation

Category	Input "id"/"name"	Format	Notes
Card Details	Amount	N(4-10) "#0.00"	Optional. For displaying of amount to user. If added to the form will be auto-populated with Amount passed in call to HostedPageAuthorize. Will not be processed by hosted page. If edited by the user should be used to populate the (hidden) PurchaseAmt field in Currency unit format (see below).
	CardNo	N(16 – 19)	Mandatory. Max 16 for non Amex, 19 for Amex. Numeric only except where using a Card Token (ask FAC About card Tokenization).
	CardExpDate	N(4)	Mandatory. MMYY Format
	CardCVV2	N(3 - 4)	Conditional. May be required depending on processor. Usually 3 digits.
	IssueNumber	N(2)	Required for Debit Cards Only where applicable (e.g. UK Debit cards)
	StartDate	N(4)	MMYY Format. Debit Cards only and is usually required if Issue number is not mandatory.
	PurchaseAmt	N(12) or N(4-10) Decimal "#0.00" format.	Optional. Transaction Amount in Currency units or Decimal format. Currency unit format is padded left with Zeros. E.g.: 10.00 = 0000000001000. If included in Form will override what has been passed into HostedPageAuthorize. Decimal format ("#0.00") will be converted to Currency Unit format when hosted page is posted.

	PurchaseCurrency	N(3)	Optional. ISO Numeric Currency code. E.g. 840 for US Dollars
	PurchaseCurrency Exponent	N(1)	Optional. Number of decimal places. Usually 2 for most currencies
	SessionId	AN(30)	Optional. A Unique ID for Kount Fraud Control Processing. See the Fraud Control Section for more information.
Billing Details (all optional)	BillToFirstName	AN(30)	
	BillToMiddleName	AN(30)	
	BillToLastName	AN(30)	
	BillToAddress1	AN(50)	
	BillToAddress2	AN(50)	
	BillToCity	AN(30)	
	BillToState	AN(2)	State Code. Max A(2) if USA only. You could hide this field and use a drop down to set the value. Max A(3) for non US.
	BillToCounty	AN(15)	County Name
	BillToPostCode	AN(10)	Or Zip Code. Strictly Alpha-Numeric only.
	BillToCountry	N(3)	Country Code. Hide this field and use a drop down to set the value.
	BillToTelephone		
	BillToEmail		
	BillToFax	AN(30)	
	BillToMobile	AN(30)	
Shipping Details (all optional)	ShipToFirstName	AN(30)	
	ShipToMiddleName	AN(30)	
	ShipToLastName	AN(30)	
	ShipToAddress1	AN(50)	
	ShipToAddress2	AN(50)	
	ShipToCity	AN(30)	
	ShipToState	A(3)	State Code. Max A(2) if USA only. You could hide this field and use a drop down to set the value. Max A(3) for non US.
	ShipToCounty	AN(15)	County Name
	ShipToPostCode	AN(10)	Strictly Alpha-Numeric only.
	ShipToCountry	N(3)	Country Code. Hide this field and use a drop down to set the value.
	ShipToTelephone	AN(30)	
	ShipToEmail	AN(50)	
	ShipToFax	AN(30)	
	ShipToMobile	AN(30)	

Appendix 3 – AVS Field Requirements

The following table lays out the field requirements for Address Verification checks. These requirements may vary somewhat by processor; however, this is the standard across the board:

Field Name	Required or Optional Field	Allowable Character Format	Character Limit	Special Considerations - Restrictions
BillToFirstName	Optional	alphanumeric (a-z, A-Z, 0-9)	up to 30 maximum	**No special characters, no accents, no special symbols** (Example: æ é à ñ * + & : ;) and **best to avoid all symbols** but basic punctuation is acceptable such as periods and dashes (. and -)
BillToLastName	Optional	alphanumeric (a-z, A-Z, 0-9)	up to 30 maximum	**No special characters, no accents, no special symbols** (Example: æ é à ñ * + & : ;) and **best to avoid all symbols** but basic punctuation is acceptable such as periods and dashes (. and -)
BillToAddress1	**Required**	alphanumeric (a-z, A-Z, 0-9)	up to 50 maximum	**No special characters, no accents, no special symbols** (Example: æ é à ñ * + & : ;) and **best to avoid all symbols** but basic punctuation is acceptable such as periods and dashes (. and -)
BillToAddress2	Optional	alphanumeric (a-z, A-Z, 0-9)	up to 50 maximum	**No special characters, no accents, no special symbols** (Example: æ é à ñ * + & : ;) and **best to avoid all symbols** but basic punctuation is acceptable such as periods and dashes (. and -)
BillToCity	Optional	alphanumeric (a-z, A-Z, 0-9)	up to 30 maximum	**No special characters, no accents, no symbols** (Example : æ é à ñ * + & : ;)
BillToState	Optional	alphanumeric (a-z, A-Z, 0-9)	2 minimum to 5 maximum	**Ideally use the 2 alpha character ISO State Code OR a 3 numeric digit ISO country code if necessary for customers where 'State' would not be applicable OR this field can be omitted.** Strictly Alpha numeric. No special characters, no accents, no spaces, no symbols
BillToZipPostCode	**Required**	alphanumeric (a-z, A-Z, 0-9)	up to 10 maximum	**Strictly Alphanumeric only - No special characters, no accents, no spaces, no dashes…etc.**
BillToCountry	Optional	Numeric (0-9)	must be 3 digits	This must be 3 digit country code
BillToTelephone	Optional	Numeric (0-9)	up to 20 maximum	Strictly numeric. No special characters, no accents, no spaces, no symbols
BillToEmail	Optional	Alphanumeric (a-z, A-Z, 0-9)	up to 50 maximum	Standard email format (name@domain.com). Basic punctuation is acceptable such as periods and dashes (. and -). **No special characters, no accents, no spaces**

Appendix 4 – ISO 3166 US State Codes

The parameter BillToState is only valid for U.S. based addresses. The allowable values for this parameter are as follows:

Abbreviation	State Name	Abbreviation	State Name
AK	Alaska	**MS**	Mississippi
AL	Alabama	**MT**	Montana
AR	Arkansas	**NC**	North Carolina
AS	American Samoa	**ND**	North Dakota
AZ	Arizona	**NE**	Nebraska
CA	California	**NH**	New Hampshire
CO	Colorado	**NJ**	New Jersey
CT	Connecticut	**NM**	New Mexico
DC	District of Columbia	**NV**	Nevada
DE	Delaware	**NY**	New York
FL	Florida	**OH**	Ohio
FM	Federate States Of Micronesia	**OK**	Oklahoma
GA	Georgia	**OR**	Oregon
GU	Guam	**PA**	Pennsylvania
HI	Hawaii	**PR**	Puerto Rico
IA	Iowa	**PW**	Palau
ID	Idaho	**RI**	Rhode Island
IL	Illinois	**SC**	South Carolina
IN	Indiana	**SD**	South Dakota
KS	Kansas	**TN**	Tennessee
KY	Kentucky	**TX**	Texas
LA	Louisiana	**UT**	Utah
MA	Massachusetts	**VA**	Virginia
MD	Maryland	**VI**	U.S. Virgin Islands
ME	Maine	**VT**	Vermont
MH	Marshall Islands	**WA**	Washington
MI	Michigan	**WI**	Wisconsin
MN	Minnesota	**WV**	West Virginia
MO	Missouri	**WY**	Wyoming
MP	Northern Mariana Islands		

Appendix 5 – Test Cards for FAC Test Environment

The following is a list of test cards you can use to receive specific responses for testing purposes.

It is important to note the following:

- These test cards do not apply to $0 AVS-Only testing. For this type of transaction use real credit cards so as to get valid AVSResult data.
- Any valid expiry date and any 3 digit CVV2 value will work for these test cards
- Note: “Normal Approval” means ResponseCode=1, ReasonCode=1 and “Normal Decline” means ResponseCode=2, ReasonCode=2 in the web responses returned for Auth only and Auth/Capture transactions.
- All card numbers not listed above are defaulted to Normal Approval.
- For every approved transaction you will receive the same dummy authorization ID of 123456.
- These cards are **only to be used in the test environment** (ecm.firstatlanticcommerce.com). Once you are on the production platform, **live** cards must be used.

Visa

Card Number	Response
4111111111111111	Normal Approval, CVV2Result=M
4111111111112222	Normal Approval, CVV2Result=N
4333333333332222	Normal Approval, CVV2Result=U
4444444444442222	Normal Approval, CVV2Result=P
4555555555552222	Normal Approval, CVV2Result=S
4666666666662222	Normal Decline, OriginalResponseCode=05, CVV2Result=N
4111111111113333	Normal Decline, OriginalResponseCode=05
4111111111114444	Normal Approval, AVSResult=M
4111111111115555	Normal Approval, AVSResult=A
4111111111116666	Normal Approval, AVSResult=Z
4111111111117777	Normal Approval, AVSResult=N
4111111111118888	Normal Approval, AVSResult=G
4111111111119999	Normal Decline, OriginalResponseCode=98
4111111111110000	Normal Decline, OriginalResponseCode=91
4222222222222222	Normal Approval, CVV2Result=M, AVSResult=N

MasterCard

Card Number	Response
5111111111111111	Normal Approval, CVV2Result=M
5111111111112222	Normal Approval, CVV2Result=N
5333333333332222	Normal Approval, CVV2Result=U
5444444444442222	Normal Approval, CVV2Result=P
5555555555552222	Normal Approval, CVV2Result=S
5555666666662222	Normal Decline, OriginalResponseCode=05, CVV2Result=N
5111111111113333	Normal Decline, OriginalResponseCode=05
5111111111114444	Normal Approval, AVSResult=Y
5111111111115555	Normal Approval, AVSResult=A
5111111111116666	Normal Approval, CVV2Result=M, AVSResult=Z
5111111111117777	Normal Approval, CVV2Result=M, AVSResult=N
5111111111118888	Normal Approval, CVV2Result=N, AVSResult=U
5111111111119999	Normal Decline, OriginalResponseCode=98
5111111111110000	Normal Decline, OriginalResponseCode=91
5222222222222222	Normal Approval, CVV2Result=N, AVSResult=U

Appendix 6 – Response Codes

Appendix 6.1 – System Response Codes and Reason Codes

The ResponseCode, ReasonCode and ReasonCodeDescription fields of the AuthorizeResponse and TransactionStatusResponse messages can hold the following code combinations.

NOTE: If you are using Fraud Control services there will be additional potential ReasonCodes and ReasonCodeDescriptions than described below (refer to Fraud Response and Reason Codes).

ResponseCode Values

Response Code	Description
1	Approved
2	Declined
3	Error

Reason Code for "Approved" Response Code (1)

Reason Code	Reason Text (ReasonCodeDescription)	Note
1	Transaction is approved.	Normal Approval.

Reason Codes for "Decline" Response Code (2)

Reason Code	Reason Text (ReasonCodeDescription)	Note
2	Transaction is declined.	Normal Decline.
3	Transaction is declined.	Referral. Call for further details on this transaction.
4	Transaction is declined.	Pick up card (if possible) or report to authorities.
35	Unable to process your request. Please try again later.	Merchant exceeds allowed limit.
38	Transaction processing terminated. Please try again later.	Transaction is not permitted to merchant.
39	Issuer or switch not available. Please try again later	Issuing bank or switch not available. Transaction has timed-out.

Reason Codes for "Error" Response Code (3)

Reason Code	Reason Text (ReasonCodeDescription)	Note
5	Connection not secured.	Connection was not secured.
6	HTTP Method not POST.	HTTP Method not POST.
7	"Field" is missing.	Named field is missing.
8	"Field" format is invalid.	Named field format is invalid.
10	Invalid Merchant.	Not such merchant.
11	Failed Authentication (Signature computed incorrectly).	Merchant was found but computed signature does not match one included in the request.
12	Merchant is inactive.	Merchant is not enabled for processing.
14	Merchant is not allowed to process this currency.	Currency supplied is not permitted.
15	Merchant settings are not valid.	Merchant record is not correctly setup in the system.
16	Unable to process transaction.	Unable to authenticate merchant now. Try later.
36	Credit Cardholder canceled the request.	Credit Cardholder canceled the request.
37	Card Entry Retry Count exited allowed limit.	Card Entry Retry Count exited allowed limit.
40	Duplicate Order Not Allowed	Merchant order identification numbers must be unique
42	Illegal Operation by Card Holder. Check Order Status.	Cardholder Pressed the back button while the transaction was processing. Check the status of that order.
60	Duplicate Order Not Allowed.	A transaction for the same card number and same amount was processed previously and thus this transaction has been blocked (optional setting)
90	General Error during processing. Please try again later.	An unexpected error occurred in the system.
98	System is temporarily down. Try later.	System is temporarily down. Try later.
401	Cycle interrupted by the user or client/browser connection not available.	Client Browser connection not available or card holder referred in the process (Back/F5).
994	FACPGWS BeginTransactionStatus Failure	Error while attempting to run the TransactionStatus Operation Try again. If this persists, contact FAC support at support@fac.bm for assistance.
995	FACPGWS EndTransactionStatus Failure	Error while attempting to run TransactionStatus Operation. Try again. If this persists, contact FAC support at support@fac.bm for assistance.

996	Not a web-based transaction	The transaction for which you are requesting the response data is not a web-based transaction. It is a MOTO transaction and as such there is no web-based response data for this transaction.
997	FACPGAppWS Failure	Error while attempting to run the TransactionStatus Operation. Try again. If this persists, contact FAC support at support@fac.bm for assistance.
998	Missing Parameter	One of the parameters required by the TransactionStatus Operation was not supplied.
999	No Response	There is no response data for the Order ID provided.
1001	FACPGWS Invalid Protocol. Only HTTPS Allowed	The request was sent via HTTP not HTTPS.
1002	Missing Parameter(s)	One or more of the required parameters is missing in the web method you have called.
1003	Invalid Parameter Settings	Both “AVS Only” and “PreAuthenticated” flags have been included in the TransactionCode when calling the Authorize web method. This is not allowed.
1004	Invalid Amount. Not 12 characters in length	Amount must be exactly 12 characters in length, right-aligned, left-padded with zeros. For example, $12.00 = 000000001200
1010	FACPGWS Authorize HTTP Response Not OK	Error while attempting to run the Authorize Operation. Try again. If this persists, contact FAC support at support@fac.bm for assistance.
1020	FACPGWS Authorize Failure	Error while attempting to run the Authorize web method. Try again. If this persists, contact FAC support at support@fac.bm for assistance.
1030	FACPG BeginCRRError	Error while attempting to run either the Capture, Reversal or Refund web methods. Try again. If this persists, contact FAC support at support@fac.bm for assistance.
1031	FACPG EndCRRError	Error while attempting to run either the Capture, Reversal or Refund web methods. Try again. If this persists, contact FAC support at support@fac.bm for assistance.

Appendix 6.2 – ISO Response Codes

The response codes for an Authorization are returned in the OriginalResponseCode field of the Response. See also AuthorizeResponse, TransactionModificationResponse, or TransactionStatusResponse (see main FACPG2 Integration Guide). They are specific to the Card Issuer.

VISA

Response Code & Description		Response Code & Description	
00	Approved	53	No savings account
01	Refer to issuer	54	Expired card
02	Refer to issuer (special)	55	Incorrect PIN
03	Invalid merchant	56	No card record
04	Pick-up card	57	Transaction not permitted to card
05	Do not honor	58	Transaction not permitted to card
06	Error	59	Suspected fraud
07	Pick-up card (special)	60	Card acceptor contact acquirer
08	Honor with identification	61	Exceeds withdrawal limit
09	Request in progress	62	Restricted card
10	Approved for partial amount	63	Security violation
11	VIP Approval	64	Original amount incorrect
12	Invalid transaction	65	Activity count exceeded
13	Invalid amount	66	Card acceptor call acquirer
14	Card number does not exist	67	Card pick up at ATM
15	No such issuer	68	Response received too late
16	Approved, update track 3	75	Too many wrong PIN tries
17	Customer cancellation	76	Previous message not found
18	Customer dispute	77	Data does not match original message
19	Re-enter transaction	80	Invalid date
20	Invalid response	81	Cryptographic error in PIN
21	No action taken (no match)	82	Incorrect CVV
22	Suspected malfunction	83	Unable to verify PIN
23	Unacceptable transaction fee	84	Invalid authorization life cycle
24	File update not supported by receiver	85	No reason to decline
25	Unable to locate record	86	PIN validation not possible
26	Duplicate file update record	88	Cryptographic failure
27	File update field edit error	89	Authentication failure
28	File temporarily unavailable	90	Cutoff is in process
29	File update not successful	91	Issuer or switch inoperative
30	Format error	92	No routing path
31	Issuer sign-off	93	Violation of law
32	Completed partially	94	Duplicate transmission

33	Expired card	95	Reconcile error
34	Suspected fraud	96	System malfunction
35	Card acceptor contact acquirer	97	Format Error
36	Restricted card	98	Host Unreachable
37	Card acceptor call acquirer	99	Errored Transaction
38	Allowable PIN tries exceeded	N0	Force STIP
39	No credit account	N3	Cash Service Not Available
40	Function not supported	N4	Cash request exceeds issuer limit
41	Pick-up card (lost card)	N7	Decline for CVV2 failure
42	No universal account	P2	Invalid biller information
43	Pick-up card (stolen card)	P5	PIN Change Unblock Declined
44	No investment account	P6	Unsafe PIN
51	Not sufficient funds	XA	Forward to issuer
52	No checking account	XD	Forward to issuer

MasterCard

Response Code & Description		Response Code & Description	
00	Approved	44	No investment account
01	Refer to issuer	51	Not sufficient funds
02	Refer to issuer (special)	52	No checking account
03	Invalid merchant	53	No savings account
04	Pick-up card	54	Expired card
05	Do not honor	55	Incorrect PIN
06	Error	56	No card record
07	Pick-up card (special)	57	Transaction not permitted to card
08	Honor with identification	58	Transaction not permitted to card
09	Request in progress	59	Suspected fraud
10	Approved for partial amount	60	Card acceptor contact acquirer
11	VIP Approval	61	Exceeds withdrawal limit
12	Invalid transaction	62	Restricted card
13	Invalid amount	63	Security violation
14	Card number does not exist	64	Original amount incorrect
15	No such issuer	65	Activity count exceeded
16	Approved, update track 3	66	Card acceptor call acquirer
17	Customer cancellation	67	Card pick up at ATM
18	Customer dispute	68	Response received too late
19	Re-enter transaction	75	Too many wrong PIN tries
20	Invalid response	76	Previous message not found
21	No action taken (no match)	77	Data does not match original message

22	Suspected malfunction	80	Invalid date
23	Unacceptable transaction fee	81	Cryptographic error in PIN
24	File update not supported by receiver	82	Incorrect CVV
25	Unable to locate record	83	Unable to verify PIN
26	Duplicate file update record	84	Invalid authorization life cycle
27	File update field edit error	85	No reason to decline
28	File temporarily unavailable	86	PIN validation not possible
29	File update not successful	88	Cryptographic failure
30	Format error	89	Authentication failure
31	Issuer sign-off	90	Cutoff is in process
32	Completed partially	91	Issuer or switch inoperative
33	Expired card	92	No routing path
34	Suspected fraud	93	Violation of law
35	Card acceptor contact acquirer	94	Duplicate transmission
36	Restricted card	95	Reconcile error
37	Card acceptor call acquirer	96	System malfunction
38	Allowable PIN tries exceeded	97	Format Error
39	No credit account	98	Issuer Unreachable
40	Function not supported	99	Errored Transaction
41	Pick-up card (lost card)	XA	Forward to issuer
42	No universal account	XD	Forward to issuer
43	Pick-up card (stolen card)		

AMEX

Response Code & Description	
000	Approved
001	Approved with ID
100	Deny
101	Expired Card
106	PIN tries Exceeded
107	Please Call Issuer
109	Invalid Service Establishment
110	Invalid Amount
111	Invalid Account
115	Requested Function Not Support
117	Incorrect PIN
121	Limit Exceeded
122	Invalid Manually Entered 4DBC
183	Invalid Currency Code

199	Valid PIN
200	Deny - Pick up Card
290	Refused, Retain Card
300	Successful
301	Not supported by receiver
302	Unable to locate record
303	Duplicate record
304	Field edit error
380	File update not accepted, high
400	Reversal Accepted
800	Accepted
880	File Fully Accepted
881	File Partially Accepted
882	File Fully Rejected
899	Table not found. Default used
900	Advice Accepted

Appendix 6.3 – 3D-Secure Response Codes

Reason Code	Reason Text (ReasonCodeDescription)	Note
13	Merchant is not allowed to process cards in this Payment system.	Merchant is blocked.
17	Unable to process transaction.	System cannot process a Card Range Request.
18	Unable to process transaction.	System cannot build a Verify Enrollment Request.
19	Unable to process transaction.	System cannot contact Visa Directory.
20	Unable to process transaction.	System cannot build a Payment Authentication.
21	Unable to process transaction.	System could not contact Issuer ACS Server
22	Unable to process transaction.	Issuer ACS responded with invalid data or returned data failed.
23	Unable to process transaction.	System cannot process a Verify Enrollment Request.
31	Authentication successful.	3-D Secure Payment Authentication successful.
32	Authentication failed.	3-D Secure Payment Authentication failed.
33	Authentication successful with attempt.	Attempt authentication was performed.
34	Authentication failed with error.	Authentication result not expected.
41	Card Holder Session Expired.	Cardholder's Session expired while performing a 3DS Transaction. Possibly because he/she closed the window, or pressed the back button in the middle of the transaction.
42	Illegal Operation by Card Holder. Check Order Status.	Cardholder Pressed the back button while the transaction was processing. Check the status of that order.
50	Verify Enrollment response unavailable.	The VeRes message came back from the MPI as "U".
51	BIN Not Enrolled.	The VeRes message came back from the MPI as "N"
52	Card Not Enrolled.	The VeRes message came back from the MPI as "N"
53	Payer Authentication Response Unavailable	The PaRes message came back from the MPI as "U".
96	Merchant URL is Missing	Merchant URL is Missing
98	System is temporarily down. Try later.	System is temporarily down. Try later.
401	Cycle interrupted by the user or client/browser connection not available.	Client Browser connection not available or cardholder referred in the process (Back/F5).
1001	FACPGWS Invalid Protocol. Only HTTPS Allowed	The request was sent via HTTP not HTTPS.
1002	Missing Parameter or Parameters	One or more of the required parameters is missing in the web method you have called.
1004	Invalid Amount. Not 12 characters in length	Amount must be exactly 12 characters in length, right-aligned, left-padded with zeros. For example, $12.00 = 000000001200
1005	Invalid Capture Flag value provided	The CaptureFlag parameter must be set to either "M" for manual capture (authorize only) or "A" for automatic (authorize/capture)

Appendix 6.4 – AVS Response Codes

AVS Codes are returned in the AVSResult field in the Response message of the Operation concerned; one of AuthorizeResponse, TransactionModificationResponse, or TransactionStatusResponse (see main FACPG2 Integration Guide). There are different codes depending on the card type.

Visa

Code	Definition
A	Address matches, Zip code does not match.
B	Street addresses match for international transaction. Postal code not verified due to incompatible formats. (Acquirer sent street address and postal code.)
C	Street address and postal code not verified for international transaction due to incompatible formats. (Acquirer sent street address and postal code.)
D	Street addresses and postal codes match for international transaction.
E	Error response for Merchant Category Code.
F	Address does compare and five-digit ZIP codes does compare (UK only)
G	Address information is unavailable for international transaction; non-AVS participant.
I	Address information not verified for international transaction.
M	Street addresses and postal codes match for international transaction.
N	Address and ZIP code do not match.
P	Postal codes match for international transaction. Street address not verified due to incompatible formats. (Acquirer sent street address and postal code.)
R	Retry; system unavailable or timed out.
S	Service not supported by issuer.
U	Address information is unavailable; domestic transactions.
W	Nine-digit ZIP code matches, but address does not match.
X	Exact match, address, and nine-digit ZIP code match.
Y	Address and five-digit ZIP code match.
Z	Five-digit ZIP code matches, but address does not match.
5*	Invalid AVS response (from VISA).
9*	Address Verification Data contains EDIT ERROR.
0	Issuer has chosen not to perform Address Verification for an authorization that was declined.

MasterCard

Code	Definition
A	Address matches, postal code does not.
N	Neither address nor postal code matches.
R	Retry, system unable to process.
S	AVS currently not supported
U	No data from issuer/Authorization System.

W	For U.S. addresses, nine-digit postal code matches, address does not; for address outside the U.S., postal code matches, address does not.
X	For U.S. addresses, nine-digit postal code and address matches; for addresses outside the U.S., postal code and address match.
Y	For U.S. addresses, five-digit postal code and address matches.
Z	For U.S. addresses, five-digit postal code matches, address does not.
5*	Invalid AVS response (from MasterCard)
9*	Address Verification Data contains EDIT ERROR.
0	Issuer has chosen not to perform Address Verification for an authorization that was declined.

Note: For MasterCard, if a 5 digit zip code is sent and a 9 digit zip code is on the cardholder file (and address matches) a response of 'Y' is returned.

Amex

Code	Definition
A	ADDRESS: Address correct, zip code incorrect
N	NO: Address and zip code are no correct.
R	Retry, system unavailable or timeout.
S	Address Verification Service not valid.
U	Address information is unavailable, account number is not US or Canadian.
Y	YES: Address and zip code are correct.
Z	Zip code correct; address incorrect.
5*	Invalid AVS response (from American Express).
9*	Address Verification Data contains EDIT ERROR.

* These responses (5 & 9) for all credit card types are processor generated responses. Response Code 9 means the record was not sent out for Address Verification. This response will also be returned when address verification has not been requested.

Appendix 6.5 – CVV Response Codes

After checking a CVV2/CVC2, values are returned in the CVV2Result field as follows:

Code	Definition
M	Match
N	No match.
P	Not Processed
S	Should be on card but was not provided. (Visa only)
U	Issuer not participating or certified.

Appendix 6.6 – Fraud Control Response Codes

ResponseCode

Response Code	Description
1	Fraud Check Successful
2	Decline
3	Error

ReasonCode

There are only ReasonCodes for decline and errors (ReponseCode 2 and 3).

Response Code	ReasonCode	Description		Details
2	**2020**	FraudControl Decline		FraudControl query succeeded without error but the transaction declined as it did not pass the fraud check rules based on Kount response code.
2	**2021**	BinCheck Decline		BinCheck was successful but the transaction declined as it did not pass the bincheck rules based on BIN data.
3	**321**	BAD_EMAL		The email address does not meet required format or is
3	**2001**	Merchant Not Enabled		FraudControl is not enabled for this merchant.
3	**2002**	Invalid Fraud Profile		Merchant setings do not specify a valid fraud profile
3	**2003**	Missing MerchantId		Could not find fraud-specific merchantid for this merchant
3	**2004**	Invalid Fraud Response		Response from Fraud system was invalid
3	**2005**	FraudCheckOnly Not Supported		FraudCheckOnly transactions are not supported with the current merchant configuration.
3	**2006**	Simulated Fraud Response		Fraud Response Codes and Score are simulated. For testing only.
3	**2007**	BinCheck System Error		BinCheck System Error
3	**2091**	Response Timeout		Timeout waiting for Fraud System Response or communications error
3	**2097**	Format Error (Various)		Various format errors. Details will be in the description.
3	**2096**	FraudControl		FraudControl System Exception

		System Error		
3	**2099**	FraudControl System Error		FraudControl Internal Error

* - ResponseCode 1 has no ReasonCode or ReasonCodeDesc

FraudResponseCode (OriginalResponseCode)

These are only if you are subscribed to FAC's fraud service which includes Kount or PayTrue services. These are the actual response codes returned by the Fraud System (third party)

Code	System	Description
A	Kount	Authorize
D	Kount	Decline
R	Kount	Review
E	Kount	Escalate
[Various]	PayTrue	See PayTrue Documentation
B	BinCheck	BinCheck decline based on merchant rules and BinCheck data
91	All	Timeout
12	All	Invalid transaction - FraudControl is not enabled for merchant (FCOnly)
99	All	Error

Glossary of Terms

3D Secure

3D Secure encompasses both Visa's *Verified by Visa* and MasterCard's *SecureCode* security solutions for online e-commerce transactions. These solutions use personal passwords to help protect cardholders' card numbers against unauthorized use.

Authentication

The process of authenticating is used in 3D Secure transactions to verify that the person attempting a transaction with a given credit card number is the actual cardholder by requiring them to enter a personal password they set up when enrolling in the 3D Secure program (either *Verify by Visa* or *SecureCode*).

Authorization

The process of checking that the credit card being used in a transaction contains sufficient funds to cover the amount of the transaction. Note that if sufficient funds are found, the amount is held for a given period of time, waiting to be withdrawn when settlement occurs (the period of time varies based on the issuing bank of the credit card).

Authorization/Capture

An Authorize/Capture not only checks that the credit card being used in a transaction contains sufficient funds to cover the amount of the transaction, it also flags the transaction as captured meaning it is to be sent for settlement in the next settlement period.

AVS (Address Verification System)

AVS is used as an extra level of security for online credit card transactions that takes the first line of the billing address and the zip/postal code of the cardholder and checks if they are valid as compared to what is stored on file for the given credit card number.

CID (Card Identification Digits)

The 4-digit code found on the front of AMEX cards, the CID is used as an extra security step to help to verify that the person using the credit card is the actual cardholder.

CVC2 (Card Verification Code)

The 3-digit code found on the back of MasterCard cards, the CVC2 is used as an extra security step to help to verify that the person using the credit card is the actual cardholder.

CVV2 (Card Verification Value)

The 3-digit code found on the back of Visa cards, the CVV2 is used as an extra security step to help to verify that the person using the credit card is the actual cardholder.

Capture

When a capture is performed (either in an Authorize/Capture or Capture only transaction) it is the process of flagging an already authorized transaction to be settled in the next settlement period.

Hosted Page

A payment page hosted on the servers at FAC.

IP Geo-location

The geographic place of the end-user's computer, derived from its Internet Protocol (IP) address which is communicated to a website during a browsing session.

One-Pass Transaction

A one-pass transaction (also called an authorize/capture transaction in this document) is a transaction that is both authorized and captured (flagged for settlement) at the same time, in a single transaction request.

FACPG and FACPG2

The First Atlantic Commerce Payment Gateway Services. These services support and enable the FAC products cGate® Secure Real-Time and cGate® Secure Verify.

Refund

A refund is the process of refunding a previously settled transaction. This will appear as a credit on the cardholder's credit card statement.

Reversal

A reversal is the process of reversing a previously captured, but not yet settled, transaction. It means that the transaction will never appear on the cardholder's credit card statement.

Settle/Settled/Settlement

The process of settling a transaction is when the money is taken from the cardholder's account and put into the merchant's account. Once a transaction is settled, it will appear as a charge on the cardholder's credit card statement.

SHA1

Secure Hash Algorithm 1. A message digest (hash) function defined in RFC 3174.

Single-Use Token

A token used to identify a transaction without revealing the details of that transaction and can only be used during the transaction time-frame itself. After that, the token is unusable and meaningless.

Used in conjunction with shared secret validation it ensures a safe transaction is performed on a Hosted Page.

Transaction

A transaction is any e-commerce request made by you, the merchant, to FAC. This includes Authorizations (both 3D and Non-3D Secure), Authorization & Captures (both 3D and Non-3D Secure), Captures only, Reversals, Refunds, 3D Secure Authentication Only transactions and AVS Verification Only transactions.

Two-Pass Transaction

A two-pass transaction is a transaction that is processed in two separate transaction requests. The first transaction is the authorization only request and the second transaction (which can come seconds, minutes, hours or even days after the first transaction) captures this transaction and flags it for settlement.