



## ePDQ Cardholder Payment Interface (CPI)

### Integration Enhancements

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Software Version: 5.9 ePDQ Payment Engine & Internet Authentication

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5.0	August 07	Maestro changes
		Delivery page options
		Additional currencies accepted

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## Introduction

This document will provide instructions on how to enhance the level of integration between the ePDQ CPI and your storefront in order to improve the overall shopping experience.

This document is designed to compliment the accompanying document “ePDQ Cardholder Payment Interface, Integration Guide”. The instructions provided in this document are optional and may be used in addition to, not instead of, the Integration Guide.

If you are using the Internet Authentication service with the ePDQ CPI there are no additional integration requirements. You should refer to the document above for information on how the CPI handles Internet Authentication transactions.

## Audience

This document is intended for use by:

- Merchants integrating the ePDQ CPI
- ePDQ Merchant Development Partners.
- Web Developers

A working knowledge of HTML and scripting/programming languages is required to integrate ePDQ and understand this document.

## Contacting us

Contact us on 0870 60 80 355\*

Monday to Friday:           8.00am to 8.00pm  
Saturday:                     9.00am to 5.00pm.

Alternatively you can email us at: [ecomm.support@barclaycard.co.uk](mailto:ecomm.support@barclaycard.co.uk)

*\* Calls may be monitored and recorded.*

## Extended CPI Information

Your web site may supply additional information to enhance the customer experience at the ePDQ checkout. If incorrect information is provided a suitable error message may appear.

For example, you may prefer to request some information on your own web site using traditional HTML form elements:

Please enter your email address: `<input type="text" name="email">`

Hidden form elements can also be used to supply additional details, whether dynamically generated, preset, or derived from a database. Examples include:

```
<input type="hidden" name="cpi_textcolor" value="black">
<input type="hidden" name="cpi_bgcolor" value="white">

<input type="hidden" name="baddr1" value="12 High Street">
<input type="hidden" name="bcity" value="Northampton">
<input type="hidden" name="bcountyprovince" value="Northants">
```

A detailed list of supported additional fields is shown below. Please note that customer delivery name are not supported values due to privacy concerns. Fields marked with an \* are mandatory capture fields on the Cardholder Payment Interface. They must either be supplied by your storefront or entered by your customer at the CPI.

These are the only additional values supported by the ePDQ CPI. You **must not** submit values created by yourself (i.e. billingname). These will be ignored by the CPI or may cause processing errors.

All fields **must be validated** prior to submission to ePDQ. For example, a badly formatted email address submitted to ePDQ will result in an error. The same will occur if the country code you supply is too long, or invalid. Please also ensure all address fields are submitted as alpha/numeric fields only. See Common Formatting Problems for further details.

**If you do not validate all the fields prior to submission the transaction will be rejected if the formatting is incorrect. It is your responsibility to ensure the fields are correctly formatted.**

CPI Parameter	Description
baddr1 *	Text string for the customers billing address – line 1 Size: up to 60 characters
baddr2	Text string for the customers billing address – line 2 Size: up to 60 characters
baddr3	Text string for the customers billing address – line 3 Size: up to 60 characters

CPI Parameter	Description
bcity *	Text string for the customers billing city/town  Size: up to 25 characters
bcountyprovince	Text string for the customers billing county or province (note: US customers must complete bstate)  Size: up to 25 characters
bcountry *	Text string for the customers billing country code. This can be defined by either the 2 character alpha code (UK) or the 3 digit numeric code (826).  The currency and country code list can be found in the main ePDQ Administration and Operating Guide.  Size: Up to 3 characters
bpostalcode *	Text string for the customers billing postal code  Size: up to 9 characters
bstate	State code (this is mandatory where the bcountry is US)  Size: 2 characters
cpi_textcolor	Text string that specifies the text colour. The string can be a colour hexadecimal value (for example #000000) or the name of a colour (for example "black"). Note that the use of colour names is not supported by some browsers
cpi_bgcolor	Text string that specifies the background colour. The string can be a colour hexadecimal value (for example #FFFFFF) or the name of a colour (for example "white"). Note that some browsers do not support the use of colour names.
cpi_logo	Text string that specifies the location (URL) of a graphical file in GIF or JPG format. This Parameter can be used to include a store's logo on the ePDQ CPI pages  Your logo will need to meet the following dimensions, WIDTH=500 HEIGHT=100. Failure to do this will stretch or shrink your logo.  The graphical file must reside on a secure server (with an <a href="https://">https://</a> URL). If this is not practical then you can show your storename instead. (see CPI Integration guide for details of 'merchantdisplayname')
btelephonenumber	Numeric telephone number for billing address  Size: up to 30 characters
email *	A string for the customer's e-mail address  Size: up to 64 characters

CPI Parameter	Description
saddr1 *	Text string for the customers delivery address – line 1 Size: up to 60 characters
saddr2	Text string for the customers delivery address – line 2 Size: up to 60 characters
saddr3	Text string for the customers delivery address – line 3 Size: up to 60 characters
scity *	Text string for the customers delivery city Size: up to 25 characters
scountyprovince*	Text string for the customers delivery county or province (note: US customers should complete sstate) Size: up to 25 characters
scountry *	Text string for the customers' delivery country code. This can be defined by either the 2 character alpha code (UK) or the 3 digit numeric code (826).  The currency and country code list can be found in the main ePDQ Administration and Operating Guide. Size: Up to 3 characters
postalcode *	Text string for the customers delivery postal code Size: up to 9 characters
sstate	State code (this is mandatory where the scountry is US) Size: 2 characters
stelephonenumber	Numeric telephone number for delivery address Size: up to 30 characters

## Colour schemes

The default colour and the preferred choice of colour for the payment page background is white.  
The default colour and the preferred choice of colour for the payment page text is black.

**The Verified by Visa and SecureCode logos are best viewed on a white background.**

If you choose to change the default settings we strongly recommend that you check the payment pages to ensure that the card scheme logos and the text are clearly visible with your choice of text and background colour.

## Common Formatting Problems

### Email format checking:

Emails should be formatted customer.email@isp.extension

'customer.email' can be any combination of characters – numbers, letters (upper or lower case) or other symbols.

'isp' can be numbers, letters (upper or lower case), underscores or dots.

'extension' must start with a dot and there must be letters (upper or lower case) after the dot.

There can only be a maximum of 10 letters after the final dot. Common examples are '.com', '.co.uk', '.net' or '.org'.

Emails may also have square brackets after the @

customer.email@[255.255.255.0]

Checks **do not** allow:

More than one @ in the email [ customer@email@isp.extension is not allowed]

.. – two dots in a row [customer..email@isp.extension is not allowed]

.@ -dot just before @ [customeremail.@isp.extension is not allowed]

@. –dot just after @ [customeremail@.isp.extension is not allowed]

@ as the first or last character in the email [customer.email@ is not allowed]

In addition there **must** be a dot before the last set of letters [customer.email@ispextension is not allowed].

### Country code checking:

We only accept either the ISO numeric 3 digit codes or the 2 character alpha codes. These must be valid codes and of the correct length. No additional characters may be submitted and will cause a transaction to fail.

### Address checking:

The address fields must only be alpha/numeric. It must not include any additional characters, including apostrophises and inverted commas.

It is essential you collect the 'billing address' fields individually. Use of the HTML 'textarea' to collect more than one line of the address may lead to errors on the CPI. These errors are caused by the inclusion of the 'Enter' button and other control characters in any data captured in a Textarea as opposed to a single Text Input line.

**Note:** The supply of blank fields (i.e. if the cardholder simply hits the space bar) may cause ePDQ to reject the transaction. The CPI will display the data in the exact format received. This may have implications if you use the Address Verification fraud rules.

## **Customers Returning from the ePDQ CPI Checkout**

The ePDQ CPI will automatically direct customers back to your online store using the return URL value passed to the CPI from your checkout page. No additional information is returned beyond that described in the “ePDQ Cardholder Payment Interface, Integration Guide” document.

## **Suggested Test Procedures**

In general it is advisable to limit the number of test transactions as these may incur charges. The following suggestions can aid evaluation of your store’s ePDQ CPI integration.

Test orders can be submitted to ePDQ to validate the supplied CPI information, where a suitable Payment Page should be generated. In general it is not necessary to proceed beyond this point, although a “full” transaction may be performed to validate ePDQ Administration Service reports. Please refer to the “ePDQ Cardholder Payment Interface, Integration Guide” document, Suggested Test Procedures Section for further details.

## **Transaction Reconciliation**

With all transactions processed via your ePDQ store, you should employ a robust method of reconciling orders. ePDQ offers you three ways with which you can ensure that orders received via the ePDQ CPI match the order ID and transaction price as supplied by your shopping basket page / storefront.

You must ensure that you are able to reconcile the transaction details of each order. You are able to view the details at your Store Admin, the data returned by ePDQ to your stores CGI program, or the transaction email confirmation. For information on running the reconciliation reports in the Store Admin, you can reference the “ePDQ User Guide”, Using Reports for Reconciliation Section.

Should you have any reconciliation problems with any particular order you should not dispatch the goods. If you distribute soft goods, you should ensure that you employ a real time method of reconciling order details by reconciling information passed back to your store.

## Processing Multi-currency Transactions

The following currencies can be processed via ePDQ:

Currency	Numeric Code	Alpha Code	Decimal Places
Australian Dollar	036	AUD	2
Canadian Dollar	124	CAD	2
China Yuan Renimbi	156	CNY	2
Cyprus Pound	196	CYR	2
Czech Koruna	203	CZK	2
Danish Krone	208	DKK	2
Estonian Kroon	233	EEK	2
Euro	978	EUR	2
Hong Kong Dollar	344	HKD	2
Hungarian Forint	348	HUF	2
Iceland Krona	352	ISK	2
Indian Rupee	356	INR	2
Israel New Shequel	376	ILS	2
Japanese Yen	392	JPY	0
Latvian Lat	428	LVL	2
Lithuanian Litas	440	LTL	2
Maltese Lira	470	MTL	2
Moroccan Dinah	504	MAL	2
New Zealand Dollar	554	NZD	2
Norwegian Krone	578	NOK	2
Polish Zlotych	985	PLN	2
Russian Ruble	643	RUB	2
Singapore Dollar	702	SGD	2
Slovak Koruna	703	SKK	2
South Korean Won	410	KRW	0
Swedish Krona	752	SEK	2
Swiss Francs	756	CHF	2
Sterling	826	GBP	2
US Dollars	840	USD	2
Saudi Riyal	682	SAR	2
South African Rand	710	ZAR	2
Thai Baht	764	THB	2
United Arab Emirates dirham	784	AED	2

In order to process multiple currencies, you must be set up to do so by the Barclaycard Business Multicurrency Team. We will assign you a specific store and clientid for each currency you accept. By doing this, you will be able to access each store individually for reconciliation purposes. Each store will have a separate clientid, username and password, but can share the same Multicurrency merchant number.

ePDQ will not provide you with exchange rates, so you must ensure that your web site is displaying the appropriate prices at all times.

When submitting a multi-currency transaction to the ePDQ CPI you must ensure that the correct numeric “currencycode” is submitted with the transaction and that you are correctly set up to do so. Failure to do this will result in the transaction being declined, or incorrectly processed. When submitting the numeric currency code, ePDQ will look up the relevant currency symbol and display this on the CPI payment page.

The Internet Authentication service is suitable for sterling and Multicurrency transactions, where the card used is a Visa, MasterCard or Maestro card. Liability shift will only be provided if the transaction meets the conditions as set out in the Internet Authentication Procedure Guide.

If you wish to process Multi-currency transactions you should contact the Multicurrency team on 0870 2430950.

## Delivery Address Options

The CPI allows you to pass a value to indicate whether or not the page to collect the “Delivery Information” should be displayed. This option may be used in cases where a delivery address is not appropriate for the product/service concerned. (e.g. downloadable products, or where the CPI is collecting payment information for services or products that have already been delivered)

If this option is used, you may still pre-supply the delivery address (as saddr1, saddr2 etc.. as described above), however, this address will not then appear on a “Delivery Information” page greyed-out as it would if this option was not used.

If delivery information is pre-supplied, the Payment Status page will display delivery information, otherwise, the cardholder details will be displayed instead.

The data item is sent to the CPI as an HTML hidden field, and is defined as follows.

CPI Parameter	Description	Example Code
collectdeliveryaddress	<p>This is a value which can turn on and off the “Delivery Information” page of the CPI.</p> <p>“0” indicates “do not show the page to collect the delivery information”</p> <p>“1” indicates “show the page that collects the delivery information” (CPI normal behavior)</p> <p>If no value, or any other value is supplied, the CPI defaults to it’s normal behavior where it does display the “Delivery Information” page</p>	<p><b>To remove</b> the Delivery Information page from the CPI sequence of pages:</p> <pre>&lt;INPUT type="HIDDEN" NAME="collectdeliveryaddress" VALUE="0"&gt;</pre> <p><b>To display</b> the Delivery Information page in the CPI sequence of pages:</p> <pre>&lt;INPUT type="HIDDEN" NAME="collectdeliveryaddress" VALUE="1"&gt;</pre> <p>Any non-zero value will result in the display of the Delivery Information page</p> <p>(alternatively, you may not send the “collectdeliveryaddress” parameter at all)</p>

## Supported Card Types

The CPI allows you to pass a value to indicate which card types your ePDQ store is configured to accept, and therefore which card scheme logos are appropriate for your store's CPI payment page.

Please note, the value you pass across to identify accepted card types will not affect which cards you can actually process. The supported card type's variable only relates to the logo that appears on the payment page, and which card types appear in the drop down selection box on the CPI. For example, you may only process American Express cards if you have an agreement with them to process their cards.

The data item is sent to the CPI as a HTML hidden field, and is defined as follows.

CPI Parameter	Description	Example code
supportedcardtypes	<p>The value describing which card scheme logos appear on the payment page, and which card types appear in the drop down card type selection box.</p> <p>For example, if you accept all cards supported by ePDQ then you would submit the value 127. All combinations appear below.</p> <p>All Cards – 127            All Cards except Amex – 125            All cards except Maestro – 119            All cards except Maestro and Amex – 117            All cards except Maestro, Solo and Amex - 113            All cards except Maestro and Solo - 115            Visa &amp; Electron - 65</p>	<pre data-bbox="867 674 1365 737">&lt;input type="hidden" name="supportedcardtypes" value="code"&gt;</pre> <p data-bbox="867 772 1398 835">Where value is enter either 65, 113, 115, 117, 119, 127 or 125</p>

## Tax and Shipping

The ePDQ CPI has the ability to allow you to split the transaction total up for tax and shipping purposes. You would still submit the Total amount as per the Integration guide, but you can also submit the delivery costs and tax amount for inclusion on your Store Admin database, and to display on the digital receipts generated by ePDQ.

The shipping and tax value will have no bearing on the transaction amount processed by the CPI. It is merely intended for information purposes, and for a more intuitive breakdown of the transaction costs on the digital receipt. However, the total amount of the shipping and tax combined should not exceed the total amount of the transaction. Failure to comply will lead to error messages on the CPI advising your customer there is disparity in the transaction amount.

The data item is sent to the CPI as a HTML hidden field, and is defined as follows.

CPI Parameter	Description	Example code
tax	The transaction tax amount to 2 decimal places, e.g. 1.50	<code>&lt;input type="hidden" name="tax" value="value"&gt;</code>
shipping	The transaction shipping/delivery amount to 2 decimal points, e.g. 1.50	<code>&lt;input type="hidden" name="shipping" value="value"&gt;</code>

**Note:** The tax field relates to State tax and not VAT. It can be used however to display the VAT charge.

An example is:

```
<INPUT name=epdqdata type=hidden value="otx7cGHs8od9G3ZAsjO7gw3fleTJ3O"> (includes the encrypted Total Value of £10)  
< input type="hidden" name="tax" value="2.00">  
< input type="hidden" name="shipping" value="2.00">
```

In this example the total of £10.00 is made up of £6.00 product cost, £2.00 tax and £2.00 shipping. We will authorise the total value of £10.00. We will not add the tax and shipping values to the total.

## Periodic Billing Transaction Processing

If you wish to perform this type of transaction you must be aware of the best practice guidelines.

- You must gain your customers consent to the periodic billing payment. This can be in the form of an email or an 'I agree' option on your site, which can be recorded and provided in the event of a dispute or chargeback.
- You must make customers aware of the terms of the periodic billing payment.
- You must display clear cancellation instructions on your web site.
- Periodic Billing transactions **MUST NOT** be submitted for Solo or Maestro cards.

The ePDQ CPI processes periodic billing transactions by submitting additional data as part of the HTML that is posted to the CPI.

This data simply defines the conditions of the periodic billing transaction, and allows the ePDQ processing engine to repeatedly charge the card in line with the billing requirements specified by you. The data items are sent to the CPI as HTML hidden fields and are defined as follows.

Field Name	Description	Example code
orderfrequencycycle	The unit of time for subsequent periodic billing charges:  D – Days (24 hours) W – Weeks (7 Days) M – Months	<input type="hidden" name="orderfrequencycycle" value="value">  Where value is either D, W or M. (Please note, values must be entered as upper case).  If you select M (Month) the transaction will be processed on the same day each month.
orderfrequencyinterval	A number that, when combined with the OrderFrequencyCycle, indicates how often the periodic billing should be run. For example, if OrderFrequencyCycle is set to M and OrderFrequencyInterval is set to 3, periodic billing will take place every 3 months. The default value is 1.	<input type="hidden" name="orderfrequencyinterval" value="value">  Where value is a numeric indicator.
ordertype  (See note below)	0 - This is a recurring periodic billing order. This is the default value.  1 - This is an instalment periodic billing order.	<input type="hidden" name="ordertype" value="value">  Where value is either 0 or 1.
totalnumberpayments	The number of periodic billing payments. The minimum value is 2, and the maximum is 999.	<input type="hidden" name="totalnumberpayments" value="value">  Where value is between 2 and 999. (Use 999 for infinite or extended billing periods)

**Note:** The following definitions are provided for the purposes of ePDQ Periodic Billing transactions:

- Recurring (value 0) – will charge the Cardholders account on a periodic basis (i.e. daily, weekly, monthly) for a specified duration or until the order is cancelled, or the full amount is paid. (e.g. an ongoing membership). These must have a **totalnumberpayments** value of 999 set.
- Instalment (value 1) – will charge the Cardholders account until the full amount of the purchase has been paid. Typically these will have an end date set (**totalnumberpayments**). (e.g. a 12 month subscription)

The data items are sent to the CPI as HTML hidden fields.

```
<html>
<head><title>My Store</title></head>
<body>
<form action="https://secure2.epdq.co.uk/cgi-bin/CcxBarclaysEpdq.e" method="post">

<!-- place encrypted ePDQ code between the form tags -->
<!--for details on encryption see mandatory fields document -->

<input type="hidden" name="returnurl" value="http://www.store.com/thankyou.html">
<input type="hidden" name="merchantdisplayname" value="My Store">
<input type="hidden" name="orderfrequencycycle" value="M">
<input type="hidden" name="orderfrequencyinterval" value="3">
<input type="hidden" name="ordertype" value="0">
<input type="hidden" name="totalnumberpayments" value="12">
<input type="submit" value="purchase">
</form>
</body>
</html>
```

Each periodic billing transaction is associated to the CPI user ID and password. You must ensure that this is generic user ID used for processing only and that it is not allocated to a staff member. In the event that you need to remove staff members' user details, the transaction processing is not affected.

#### **IMPORTANT:**

The ePDQ CPI will only display the value of the first transaction being authorised. For example, if you send the CPI a recurring order of £10, to be applied 6 times, the CPI will display £10, NOT £60. You must ensure that you provide your customer with sufficient information relating to the amount to be charged to their card, and billing arrangements. In addition, the final transaction response page on the CPI will confirm to the customer that the transaction is a 'regular payment'.

Full details of how to work with Periodic Billing Transactions can be found in the ePDQ User Guide. This guide is available on-line via the ePDQ next steps web pages, or can be requested by contacting the eCommerce Support Team.

## **Periodic Billing Transactions and Internet Authentication**

Visa and MasterCard have mandated that only the first periodic billing transaction is covered by the chargeback liability shift. You may still be charged back for the subsequent transactions. Authentication can only be obtained when the cardholder can enter their password at the time of the transaction. As periodic billing transactions are submitted without cardholder intervention this is not possible.

## Putting Your ePDQ Store “Live”

Techniques described in this and the ePDQ CPI Integration Guide indicate how you can integrate and test your storefront with a “live” ePDQ account with minimal transaction charges.

When you are ready to put your store “Live” please inform us to activate your account. You should not need to make any further changes to your ePDQ CPI interface in order to put your store live.

To go live please fill out the ePDQ Account Activation form on the ePDQ CPI next steps web pages. This form will require your client/store ID. Please note that we cannot accept telephone requests for security and audit reasons.

Once your account has been activated you will be notified by return email within 24 hours of receipt of your email. Please be aware that upon activation, all authorised transactions passed through ePDQ will be debited from the cardholder’s available spend, and any transactions previously processed on a valid card may well be settled, so ensure you void any test transactions outstanding in the ePDQ database.

**IMPORTANT.** If you perform “test” transactions when your store is live, and refund so that the balance is zero you will still be **charged a processing fee** for the original **authorised transactions**, and **charged for the refund** (please refer to the Barclaycard Business Merchant Agreement, and Terms and Conditions.).

All live transactions from the Store Admin Point of Sale must be submitted in **Processing Mode of Production**. If the transactions are not submitted in Production, you will not receive payment for these transactions.