Implementation Manual

www.payu.ro

Contents

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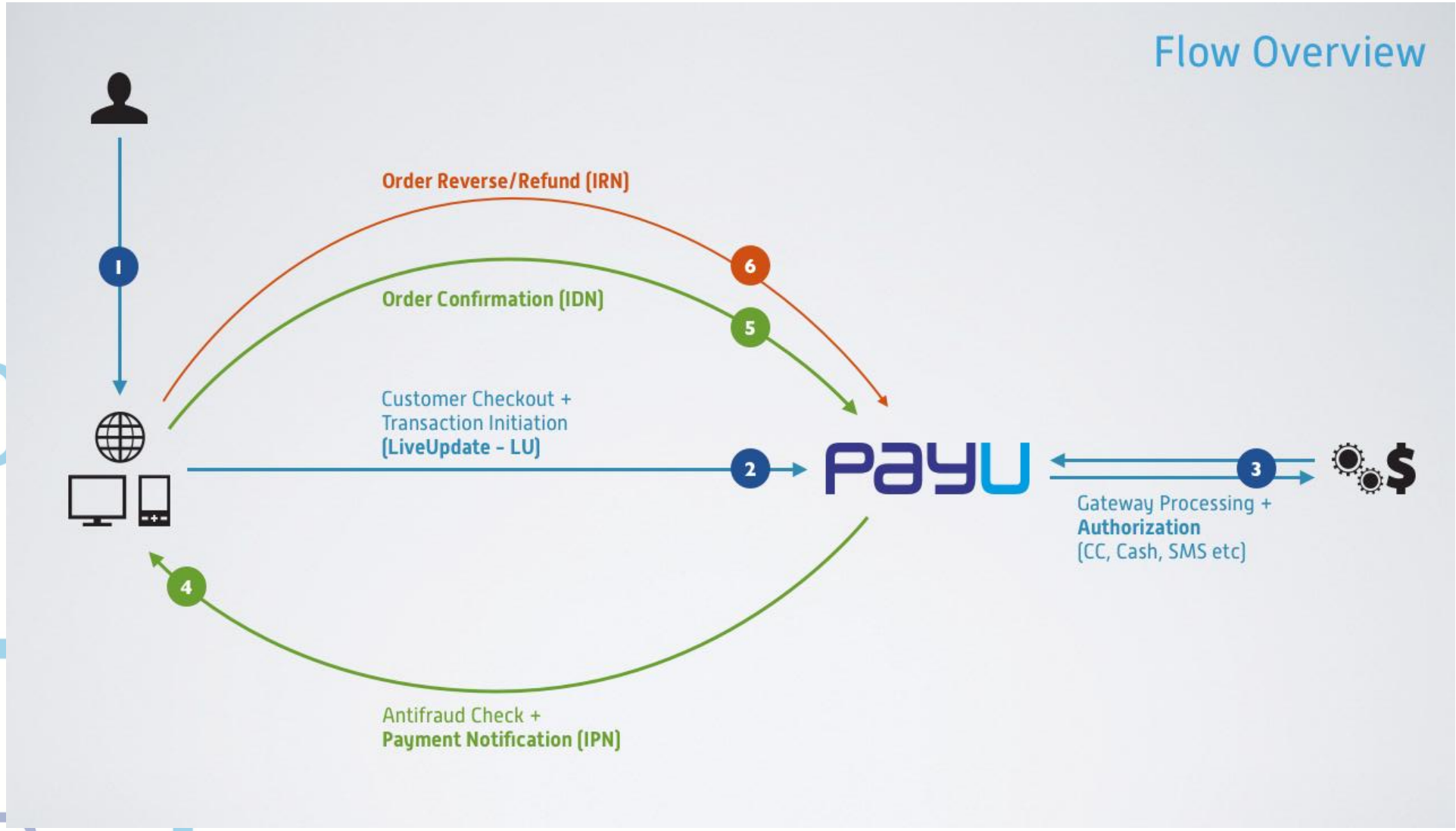
Please check for an updated version of the manual in the Resources section of your PayU cPanel account.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LiveUpdate Protocol

How does it work?

For each customer that clicks the "Checkout" button in the merchant's website (or mobile application), an HTTP POST must be initiated to https://secure.payu.ro/order/lu.php using the LiveUpdate (LU) API, in order for the order to get started.
The customer is then redirected to the PayU payment pages, where he has to enter the data required to authorize the transaction.

LiveUpdate Data

The LiveUpdate API is product-based, meaning that any order must contain at least one product, uniquely identified in the merchant's account through it's product code (recommended).
The PayU server expects data in the following structure and order:

General Data

MERCHANT	The merchant's ID, available in Control Panel (Account Management / Account Settings)
ORDER_REF	Order reference number in merchant's system (for easier order identification)
ORDER_DATE	The date when the order is initiated in the system, in YYYY-MM-DD HH:MM:SS format (e.g.: "2012-05-01 21:15:45")

Order Details (Shopping Cart Contents/Invoice)

ORDER_PNAME[]	Array with the product names (maximum length: 155 characters per product name)
ORDER_PGROUP[]	Array with the ID's of the product groups (optional, the group ID's managed in Control Panel - Products / Product Groups)
ORDER_PCODE[]	Array with the product codes. If multiple products are sent (in the same or subsequent transactions) with the same product code, PayU will update the product with the corresponding ORDER_PCODE (overwriting all the other product information - name, price, taxes).
ORDER_PINFO[]	Array with additional product info (optional, displayed in the payment pages under the product name)
ORDER_PRICE[]	Array with the product prices, positive number, with "." as a decimal separator.
ORDER_QTY[]	Array with the quantities for each product.
ORDER_VAT[]	Array with VAT values for each product in the order.
ORDER_PRICE_TYPE[]	Array that specifies if the ORDER_PRICE[] includes the VAT. Possible values: "GROSS" (VAT included) and "NET" (VAT will be added by PayU). The parameter is optional, but if not specified, the default value is "NET".
ORDER_SHIPPING	Shipping costs for the order.
PRICES_CURRENCY	The currency in which the prices, taxes, shipping costs and discounts are expressed. Accepted values: RON, EUR, USD. If the parameter is not specified, the default value is RON. *To transact a different currency than the one in which the prices are specified, use the CURRENCY parameter.
DISCOUNT	The discount value for the order, positive number, with "." as a decimal separator (optional)
DESTINATION_CITY	The city where the order delivery is to be made (optional) If the parameter is specified, the customer will not be able to change its value in the PayU payment pages
DESTINATION_STATE	The state (county) where the order delivery is to be made (optional) If the parameter is specified, the customer will not be able to change its value in the PayU payment pages. Possible values for validation are in the "State/County List", available in Control Panel.
PAY_METHOD	The payment method for the transaction (optional). If the parameter is specified, the customer will not be able to change its value in the PayU payment pages. If the parameter is not specified, the payment methods active* on the account will be displayed. **If you want to activate some of the payment methods presented below please contact your account manager.* Possible values: **CARD PAYMENTS** • CCVISAMC - VISA/MasterCard (default) • CCJCB – JCB Credit Card • CCDINERS – Diners Credit Card **INSTALLMENTS PAYMENTS** • BRDF – Payments with BRDFinance Installment Credit Cards • STAR_BT – Payments with Banca Transilvania's StarBT Installment Credit Cards • CARD_AVANTAJ – Payments with Credit Europe's CardAvantaj Installment Cards **ONLINE BANKING (iTransfer)** • ITRANSFER_ING – iTransfer via ING Home Bank

	• ITRANSFER_BCR – iTransfer via BCR Click24 • ITRANSFER_BT – iTransfer via BT24 **OTHER** • ZEBRA_PAY – cash collection at ZebraPay Self Service Terminals • PAYPAL - PayPal Payments • WIRE - Bank Wire
SELECTED_INSTALLMENTS_NO	Preselected number of installments (only for payments with installment cards)
ORDER_HASH	HMAC_MD5 signature for the sent data.(HMAC is defined in RFC 2104)

Additional Info

TESTORDER	Boolean parameter ("0" or "1"), used to initiate transactions in TEST MODE (optional) If the parameter is active, the PayU payment form will be pre-filled with test payment details (you don't need any credit card test numbers).
AUTOMODE	Boolean parameter ("TRUE" or "FALSE") used to automatically redirect the user to the final step of the payment process. This only works if all the required informations have been correctly submitted in the LiveUpdate protocol.
LANGUAGE	Allows setting a specific language for the payment interface (and overriding the language detected by the geolocation) (optional) Possible values: • RO – Romanian • EN – English • HU – Hungarian • RU – Russian • DE – German • FR – French • IT – Italian • ES – Spanish • BG – Bulgarian
ORDER_TIMEOUT	Sets the interval in which the order can be placed (optional, takes a number of seconds as a value)
TIMEOUT_URL	Sets the URL for the redirect of the customer, in case the ORDER_TIMEOUT expired (optional)
BACK_REF	URL used to redirect the customer after the transaction has been successfully completed.

Authenticating the transaction (HMAC MD5 Signature)

Let's construct a LiveUpdate request, for the following transaction information:

Information	Parameter, value(s) and length(s)
General Data	MERCHANT="PAYUDEMO" (8) ORDER_REF="112457" (6) ORDER_DATE="2012-05-01 15:51:35" (19)
Cart Contents	ORDER_PNAME[]="MacBook Air 13 inch", "iPhone 4S" (19, 9) ORDER_PCODE[]="MBA13", "IP4S" (5, 4) ORDER_PINFO[]="Extended Warranty - 5 Years", "" (27, 0) ORDER_PRICE[]="1750", "400" (4, 3) ORDER_PRICE_TYPE[]="GROSS", "NET" (5, 3) ORDER_QTY[]="1", "2" (1, 1) ORDER_VAT[]="24", "24" (2, 2) ORDER_SHIPPING="50" (2) PRICES_CURRENCY="RON" (3) DISCOUNT="10" (2) DESTINATION_CITY="București" (10) DESTINATION_STATE="Bucuresti" (10) DESTINATION_COUNTRY="RO" (2) PAY_METHOD="CCVISAMC" (8)
Additional Info	TESTORDER="1" (not included in HMAC MD5 signature) LANGUAGE="RO" (not included in HMAC MD5 signature)

To validate this information when the order is placed, an HMAC MD5 signature is required, as a value for the ORDER_HASH parameter. The calculation is made using the secret key of the merchant (or demo) account, available in Control Panel, in the Account Management/Account Settings section.
The signature is calculated on a string, composed of each of the values above, with their corresponding lengths prepended (in UTF-8 bytes).

For the information used as a sample order, the resulting string is:

8PAYUDEMO6112457192012-05-01 15:51:3519MacBook Air 13 inch9iPhone 4S5MBA134IP4S27Extended Warranty - 5 Years041750340011122242242503RON2109Bucuresti9Bucuresti2RO8CCVISAMC5GROSS3NET

NOTE that for the second product, there was no value for the ORDER_PINFO[] parameter, but because the parameter was specified, we have to take into account it's length (0) in the string composition.

The **TESTORDER** and **LANGUAGE** parameter are not taken into account for string composition and HMAC MD5 calculation.
The data has to be transported in UTF-8 format, in order to correctly calculate the lengths on both ends (your server and the PayU platform).

If the secret key for the merchant account is **1231234567890123**, the resulting HMAC MD5 (and value for the ORDER_HASH parameter) is **619f71e2a2ce92e5ededb30561a3ef2a**.

The resulting LiveUpdate HTTP POST request is:

```
<form method="post" action="https://secure.payu.ro/order/lu.php">
<input name="MERCHANT" value="PAYUDEMO" type="hidden">
<input name="ORDER_REF" value="112457" type="hidden">
<input name="ORDER_DATE" value="2012-05-01 15:51:35" type="hidden">
<input name="ORDER_PNAME[]" value="MacBook Air 13 inch" type="hidden">
<input name="ORDER_PNAME[]" value="iPhone 4S" type="hidden">
<input name="ORDER_PCODE[]" value="MBA13" type="hidden">
<input name="ORDER_PCODE[]" value="IP4S" type="hidden">
<input name="ORDER_PINFO[]" value="Extended Warranty - 5 Years" type="hidden">
<input name="ORDER_PINFO[]" value="" type="hidden">
<input name="ORDER_PRICE[]" value="1750" type="hidden">
<input name="ORDER_PRICE[]" value="400" type="hidden">
<input name="ORDER_PRICE_TYPE[]" value="GROSS" type="hidden">
<input name="ORDER_PRICE_TYPE[]" value="NET" type="hidden">
<input name="ORDER_QTY[]" value="1" type="hidden">
<input name="ORDER_QTY[]" value="2" type="hidden">
<input name="ORDER_VAT[]" value="24" type="hidden">
<input name="ORDER_VAT[]" value="24" type="hidden">
<input name="ORDER_SHIPPING" value="50" type="hidden">
<input name="PRICES_CURRENCY" value="RON" type="hidden">
<input name="DISCOUNT" value="10" type="hidden">
<input name="DESTINATION_CITY" value="Bucuresti" type="hidden">
<input name="DESTINATION_STATE" value="Bucuresti" type="hidden">
<input name="DESTINATION_COUNTRY" value="RO" type="hidden">
<input name="PAY_METHOD" value="CCVISAMC" type="hidden">
<input name="TESTORDER" value="1" type="hidden">
<input name="LANGUAGE" value="RO" type="hidden">
<input name="ORDER_HASH" value="619f71e2a2ce92e5ededb30561a3ef2a" type="hidden">
<input name="submit" value="Send!" type="submit">
</form>
```

Going further – Including Billing and Delivery Information

Merchant stores have the opportunity of including the billing and delivery information in the LiveUpdate requests made. This presents the advantage of pre-filling the sent information in the PayU payment pages, so that the customer doesn't have to.

The billing and delivery parameters are optional, not included in the HMAC MD5 calculation, and only the sent values in request will be pre-filled in the payment interface.

BILLING PARAMETER	DESCRIPTION	DELIVERY PARAMETER	DESCRIPTION
BILL_FNAME	Customer's first name	DELIVERY_FNAME	Customer's first name
BILL_LNAME	Customer's last name	DELIVERY_LNAME	Customer's last name
BILL_CISERIAL	ID Card Series (for RO residents)	-	-
BILL_CINUMBER	ID Card Number (for RO residents)	-	-
BILL_CIISSUER	ID Card Issuer (for RO residents)	-	-
BILL_CNP	Numeric Personal Code (for RO residents)	-	-
BILL_COMPANY	Legal company name for billing	DELIVERY_COMPANY	Company Legal Name
BILL_FISCALCODE	Company's Fiscal Code	-	-

	(CUI/VAT ID)		
BILL_REGNUMBER	Company's Registration Number at the Commerce Registry.	-	-
BILL_BANK	Company's bank	-	-
BILL_BANKACCOUNT	Company's bank account	-	-
BILL_EMAIL	Customer's email address	-	-
BILL_PHONE	Phone number	DELIVERY_PHONE	Phone number
BILL_FAX	Fax number	-	-
BILL_ADDRESS	Customer's/Company's address	DELIVERY_ADDRESS	Customer's/Company's Address
BILL_ADDRESS2	Customer's/Company's address (additional)	DELIVERY_ADDRESS2	Customer's/Company's Address (additional)
BILL_ZIPCODE	Customer's/Company's ZIP/Postal Code	DELIVERY_ZIPCODE	Customer's/Company's ZIP/Postal Code
BILL_CITY	City	DELIVERY_CITY	City
BILL_STATE	State/County	DELIVERY_STATE	State/County
BILL_COUNTRYCODE	Country Code (RO for Romania)	DELIVERY_COUNTRYCODE	Country Code (RO for Romania)

NOTE: If the parameters **DESTINATION_CITY, DESTINATION_STATE** or **DESTINATION_COUNTRY** are sent, these will override the values for the parameters **DELIVERY_CITY, DELIVERY_STATE**, **DELIVERY_COUNTRYCODE.**

Advanced – One step checkout and Redirect to merchant website

Merchants can configure the amount of personal data that is transited through the PayU system from the Control Panel, in the Account Management / Payment Form Settings section. The information set as mandatory there should be also sent through LiveUpdate, if we want to redirect the customer straight to the last step of the payment process.
As a minimum, if all the fields are set to optional/hidden, PayU requires for antifraud purposes the following fields: **BILL_FNAME, BILL_LNAME, BILL_EMAIL, BILL_PHONE** and **BILL_COUNTRYCODE**. The validation for the **BILL_PHONE** field is although relaxed (so if you, as a merchant, do not collect/use the phone number of the customer, you can use a dash "-" as a value).

If this information is sent through LiveUpdate, for the redirect to the final step of the order (e.g. card data entry, for **CCVISAMC**) the request must also contain the **AUTOMODE** parameter, with the value "1". NOTE: This parameter will function properly only if all the required fields are sent. Otherwise, the process will begin with the page in which the billing/delivery data are collected.

<input name="AUTOMODE" value="1" type="hidden">

In order to redirect the customer back to the website (her account or a customized thank you message), you can use the **BACK_REF** parameter with a URL. The **BACK_REF** redirect is, by default, made only if the used payment method is one with instant authorization (e.g. will be made for CCVISAMC, but not for regular WIRE transfer).

A merchant could use GET parameters in order to specify an order or customer identifier, as below:

<input name="BACK_REF" value="http://domain.com/process.php?order=123456" type="hidden">

To make sure that the redirect comes from PayU, a control variable is attached to the URL to which the redirect is made. The control variable (a GET parameter, **ctrl**)is also HMAC MD5, calculated on a string composed from **the URL (with all parameters)** to which PayU redirects, with **the length** of that URL (parameters included) **prepended**.

Sample:

http://www.yourdomain.com/process.php?order=123456&ctrl=741fcf35a297e256f4090c4dfc0ed65The source string for the ctrl HMAC MD5 calculation:

50http://www.yourdomain.com/process.php?order=123456

Installment Payments*

**If you wish to activate installment payments for your account, please contact your account manager*

The PayU Platform can also handle installment payments. This can be done using two different technical ways, based on the user's selection of the payment method. If the merchant is simply redirecting the user to the PayU pages then installment options will be available by default. This way, implementing additional payments is a seamless process for the merchant. The user will see all the payment options available in the first page of the payment process, below the personal details form.

If the user will select the payment method on the merchant's site, then the merchant will have to send to PayU the specific PAY_METHOD value. When the PAY_METHOD variable has a predefined value, then PayU will use the value received from the merchant and the user will be unable to change the payment method from the PayU pages.

```
<input name="PAY_METHOD" value="BRDF" type="radio"> BRDF
<input name="PAY_METHOD" value="STAR_BT" type="radio"> StarBT
<input name="PAY_METHOD" value="CARD_AVANTAJ" type="radio"> Card Avantaj
```

Additionally, the number of installments can be selected on the merchant's site and sent to PayU with the "**SELECTED_INSTALLMENTS_NO**" value, as shown below

```
<select name="SELECTED_INSTALLMENTS_NO">
<option value="1">Direct Payment</option>
<option value="3">3 Payments</option>
<option value="6">6 Payments</option>
<option value="12">12 Payments</option>
</select>
```

NOTE: If **AUTOMODE** is used then the use of the PAY_METHOD is MANDATORY since the user will no longer see the first page of the payment process

Error Messages

If you get errors when trying to transmit your data, see the list below for problem descriptions for each type of error:

Error	Description
ACCES DENIED	Your access to the PayU interface is not allowed. Please contact the PayU support team.
Invalid account	The MERCHANT parameter is incorrect or not specified.
Access not permitted	You access to the LiveUpdate feature is restricted. You should contact your PayU Account Manager.
Invalid Data	The data you have transmitted is not correctly formed. Please check the arrays.
Invalid product code	The ORDER_PCODE[] array is incorrectly formed
Invalid product name	The ORDER_PNAME[] array is incorrectly formed
Invalid product group	The ORDER_PGROUP[] array is incorrectly formed
Invalid Price	The ORDER_PRICE[] array is incorrectly formed
Invalid VAT	The ORDER_VAT[] array is incorrectly formed
Invalid price	The calculated total is incorrect. Check the DISCOUNT and ORDER_SHIPPING parameters
Invalid Signature	The HMAC_MD5 signature is incorrectly calculated for the sent data

Complete LiveUpdate Request

A request containing all the data above, placing a TEST transaction in the PayU demo account, and using both the AUTOMODE and BACK_REF features, is available in the Example.html file that you received with the manual. Both the Manual and the Example.html file are also available under the Resources section of your PayU Account.

Instant Payment Notification Protocol (IPN)

IPN makes possible the automated processing of each authorized order in the online payment system, being a link between the PayU servers and your servers. This notification method will allow the retrieval of transaction data in order to be processed in your own order management system.

How does it work?

After an order gets authorized and approved, the PayU server sends a data structure containing all the order-related info to a preset URL on your system. The data is sent throught HTTP POST. The data will also contain a signature to validate the information. The signature is obtained by applying an HMAC_MD5 function with a common PayU/Vendor key, on the entire dataset (HMAC is defined at RFC 2104)

Notes:

- in case there is no confirmation on the correct receival of the sent data, the PayU server will retry sending the HTTP POST every few minutes, until a valid response is obtained.
- the IPN communication is independent of the buyer's active connection and cannot be linked in any way to his session
- As extra security measure, acces to the script that receives the PayU notifications can be limited to allow only the following IP class: 91.194.189.67, 91.194.189.68, 91.194.189.69.
- To study or test IPN notifications, we recommend placing a TEST order (using the "TESTORDER" parameter).
- You can resend an IPN notification it as many times as you wish, using the following steps:
  - Locate the order in the PayU admin interface, in the "Orders and reports" section using the available filters
  - Click on the order's reference to open the pop-up with the order details;
  - In this pop-up, click on the "Re-send notification" link
  - check the "Debug IPN?" option and click the button "Continue". This way, you can see both the contents of the IPN request, and the response of your script.

The data sent via IPN is in the table below:

GENERAL DATA

SALEDATE	The order placement date, in the following format: Y-m-d H:i:s (2012-04-26 14:59:35)
PAYMENTDATE	The order authorization date, in the following format: Y-m-d H:i:s (2012-04-26 15:01:25)
COMPLETE_DATE	The order completion date, in the following format: Y-m-d H:i:s (2012-04-26 15:02:28)
REFNO	Global PayU reference for the order (maximum length: 9 characters)
REFNOEXT	Vendor reference number for the order (maximum length: 100 characters), provided by the Vendor
ORDERNO	Vendor order number (maximum length: 6 characters)
ORDERSTATUS	Current order status. Possible values: • PAYMENT_AUTHORIZED – card payment authorized • PAYMENT_RECEIVED – wire transfer payment has been collected • TEST – test order • CASH – cash payment order • COMPLETE – complete order (authorized/delivered) • REVERSED – reversed order • REFUND – refunded order (returned payment)
PAYMETHOD	Used payment method (maximum lentgh: 40 characters)
PAYMETHOD_CODE	Payment method code (ex: CCVISAMC)

BILLING DATA

FIRSTNAME	First name (maximum length: 40 characters)
LASTNAME	Name (maximum length: 40 characters)
IDENTITY_NO	Customer ID Card series and number (Series/Number – available only for Romanian customers)
IDENTITY_ISSUER	IDENTITY_NO ID Card issuer authority
IDENTITY_CNP	Customer's personal numeric code, available only for Romanian customers. This field is displayed only if you have activated the option to request this information from the customer
COMPANY	Company (maximum length: 40 characters)
REGISTRATIONNUMBER	Company's Commerce Registry registration number (maximum length: 40 characters)
FISCALCODE	Unique Registration Number / VAT ID (maximum length: 40 characters)
CBANKNAME	Company's Bank (maximum length: 40 characters)
CBANKACCOUNT	Company's Bank Account (maximum length: 50 characters)
ADDRESS1	Address (maximum length: 100 characters)
ADDRESS2	Additional Address info (maximum length: 100 characters)
CITY	City (maximum length: 30 characters)
STATE	State/Sector/County (maximum length: 30 characters)

ZIPCODE	ZIP/Postal Code (maximum length: 20 characters)
COUNTRY	Country (maximum length: 50 characters)
PHONE	Phone number (maximum length: 40 characters)
FAX	Fax number (maximum length: 40 characters)
CUSTOMEREMAIL	Customer's e-mail address (maximum length: 40 characters)

DELIVERY INFORMATION

FIRSTNAME_D	First name (maximum length: 40 characters)
LASTNAME_D	Last Name (maximum length: 40 characters)
COMPANY_D	Company (maximum length: 50 characters)
ADDRESS1_D	Address (maximum length: 100 characters)
ADDRESS2_D	Additional address info (maximum length: 100 characters)
CITY_D	City (maximum length: 30 characters)
STATE_D	State/Sector/County (maximum length: 30 characters)
ZIPCODE_D	ZIP/Postal Code (maximum length: 20 characters)
COUNTRY_D	Country (maximum length: 50 characters)
PHONE_D	Phone number (maximum length: 40 characters)
IPADDRESS	Client's IP Address (maximum length: 250 characters)

ORDERED PRODUCTS

CURRENCY	The currency in which the order has been processed. Possible values: RON, USD, EUR
IPN_PID[]	Array with the ID Codes of the ordered products, in the PayU database (PayU reference)
IPN_PNAME[]	Array with product names
IPN_PCODE[]	Array with the product codes assigned by the vendor in the system (vendor reference)
IPN_INFO[]	Array with additional information sent for each ordered product (if they have been sent to PayU).
IPN_QTY[]	Array with the product quantities
IPN_PRICE[]	Array with unit prices per product (without VAT), in RON, with period/full-stop (.) as decimal place separator
IPN_VAT[]	Array with VAT values per product, with period "." as decimal place separator
IPN_VER[]	Array with product versions (maximum length: 50 characters)
IPN_DISCOUNT[]	Array with the amounts with which there has been made a discount in a promotion. Including VAT.
IPN_PROMONAME[]	Array with the names of the promotions in which the discounts specified above have been made.
IPN_DELIVEREDCODES[]	Array with the codes delivered to the clients, if the PayU contract contains this feature. Each element in the array is represented by a string, having comma (,) as a separator for each sent code, in case the ordered quantity is greater than 1.
IPN_TOTAL[]	Partial total on order line (including VAT), cu period/full-stop (.) as a decimal place separator
IPN_TOTALGENERAL	Total transactioned amount, including VAT and shipping costs, with period/full-stop (.) as a decimal place separator
IPN_SHIPPING	Amount charged for shipping, with period "." as a decimal place separator
IPN_DATE	IPN POST's sending date in the following format: YmdHis (ex.: 20120426145935)
HASH	Request signature (MD5 HMAC on all the fields above)

How do I validate receiving the notification?

PayU expects an answer inline in the following format (anywhere in the page):

*<EPAYMENT>**DATE**|**HASH**</EPAYMENT>*

where:

DATE	The date of the answer return, in the YmdHis format (ex.:20120426145935)
HASH	Answer signature (MD5 HMAC on the initial fields IPN_PID[0], IPN_PNAME[0], IPN_DATE si DATE - previous field)

The HMAC calculation fields for the answer are:

IPN_PID[0]	Echo from the original IPN message – the ID of the first bought product
IPN_PNAME[0]	Echo from the original IPN message – The name of the first bought product
IPN_DATE	Echo from the original IPN message – The IPN date in the YmdHis format (20130101120001)
DATE	Date of the answer (your server's hour) in the YmdHis format (20130201120001)

How to calculate the signature (HASH) on a data series

We assume to have the following information:

Field name	Length	Field value
SALEDATE	19	2013-01-01 12:00:01
REFNO	7	1000037

REFNOEXT	0	
ORDERNO	2	13
ORDERSTATUS	8	AUTHRECEIVED
PAYMETHOD	8	CCVISAMC
FIRSTNAME	4	Test
LASTNAME	4	PayU
COMPANY	0	
REGISTRATIONNUMBER	0	
FISCALCODE	0	
CBANKNAME	0	
CBANKACCOUNT	0	
ADDRESS1	14	Some Street 21
ADDRESS2	0	
CITY	8	Bucharest
STATE	8	Bucharest
ZIPCODE	5	90210
COUNTRY	7	Romania
PHONE	11	0722.111.111
FAX	0	
CUSTOMEREMAIL	13	test@payu.com
FIRSTNAME_D	4	Test
LASTNAME_D	4	PayU
COMPANY_D	0	
ADDRESS1_D	14	Some Street 21
ADDRESS2_D	0	
CITY_D	6	Bucharest
STATE_D	6	Bucharest
ZIPCODE_D	5	90210
COUNTRY_D	6	Romania
PHONE_D	11	0268/121212
IPADDRESS	6	node11
CURRENCY	3	RON
IPN_PID[0]	1	1
IPN_PNAME[0]	25	Apple MacBook Air 13 inch
IPN_PCODE[0]	7	AMBA13I
IPN_INFO[0]	0	
IPN_QTY[0]	1	1
IPN_PRICE[0]	8	5000.00
IPN_VAT[0]	7	1200.00
IPN_VER[0]	0	
IPN_DISCOUNT[0]	4	0.00
IPN_PROMONAME[0]	0	
IPN_DELIVEREDCODES[0]	0	
IPN_TOTAL[0]	8	59500.00
IPN_TOTALGENERAL	8	6200.00
IPN_SHIPPING	6	300.00
IPN_DATE	14	20130101120001

The source string for the response is composed using the following data:

Field name	Length	Field value
IPN_PID[0]	1	1
IPN_PNAME[0]	25	Apple MacBook Air 13 inch
IPN_DATE	14	20120426123434
DATE	14	20120426123434

Resulting string: **1125Apple MacBook Air 13 inch142013010112000114201301011200 01**
The HMAC_MD5 signature value for validation is: **b06a68b1e9f2469d368f57ba0945e12a**
The HASH field characters can be lowercase/uppercase (hexadecimal string).
The response from the server to which the notification has been sent must be:

*<EPAYMENT>**20120426123434\|5e7457bd605c5fdd80b038b8e2d9d1d9**</EPAYMENT>*

In case the response is not valid, the notification is not confirmed. PayU will automatically resend the notification in a few minutes.

Instant Delivery Notification – IDN

How does it work?

The Instant Delivery Notification facilitates automatic delivery confirmations from your system directly to the PayU system which automatically registers these confirmations on the PayU servers. As soon as your orders made to the PayU system are confirmed, a POST must be sent through your administration system to a URL provided by PayU, containing the identification data for transaction about to be confirmed.
The URL where the delivery is automatically confirmed is: https://secure.payu.ro/order/idn.php

Notes:

- A separate HTTP POST needs to be sent for each order than needs to be confirmed within the PayU system
- Each HTTP POST will be authenticated by using a HMAC_MD5 signature, based on the identification data contained in the POST and a shared key (PayU / Merchant)

What data needs to be sent to PayU ?

The identification data contained in the HTTP POST is described in the following table and must be sent in the following exact order:

Code	Description
MERCHANT	Represents the merchant code from the PayU system
ORDER_REF	Represents the order reference code from the PayU system
ORDER_AMOUNT	Represents the total of the order about to be confirmed as it was received from the PayU system
ORDER_CURRENCY	Represents the currency in which the order was made
IDN_DATE	Represents the date on which the delivery confirmation request is transmitted. It has the <> format where: Y – Represent the year. 4 digit number. M – Represents the month. 2 digit number. D – Represents the day. 2 digit number. H – Represents the hour. Values from 00 to 24. 2 digit number. I – Represents the minute. 2 digit number. S – Represents the second. 2 digit number.
ORDER_HASH	Represents the requests signature. This signature is a HMAC_MD5 type signature built from all fields above (1-5).
REF_URL*	* This field is not mandatory. If this parameter is not sent or it is empty, the reply will be sent INLINE. Represents the URL address where the reply will be sent with the GET method. The URL address must begin with the <> syntax.

How to build the HASH signature?

This chapter shows how the HASH signature is calculated.
Input data example:

Filed Name	Length	Field's Value
MERCHANT	4	Test
ORDER_REF	7	1000500
ORDER_AMOUNT	4	1645
ORDER_CURRENCY	3	EUR
IDN_DATE	19	2012-04-26 17:46:56

The source string for the MAC calculation is given by adding the string length at the beginning of the field. Giving the input data, the source string is:
4TEST71000500416453EUR192012-04-26 17:46:56
The secret key for this example is: **1231234567890123**
The final MD5 value is: **a947feca8cebbe844cee4424919de56b**

How do I receive the confirmation from PayU ?

The PayU response is set to be INLINE (in the same page) and it has the following format (anywhere in the page):

<EPAYMENT>ORDER_REF|RESPONSE_CODE|RESPONSE_MSG|IDN_DATE|ORDER_HASH</EPAYMENT>

The meaning of the reply codes and their messages are as follows:

Response Code	Response Message
1	Confirmed.
2	ORDER_REF missing or incorrect.
3	ORDER_AMOUNT missing or incorrect.
4	ORDER_CURRENCY is missing or incorrect.
5	IDN_DATE is not in the correct format.
6	Error confirming order.
7	Order already confirmed.
8	Unknown error.
9	Invalid ORDER_REF.
10	Invalid ORDER_AMOUNT.
11	Invalid ORDER_CURRENCY.

Note: In case of invalid reply from PayU, the order is not confirmed.

How is the response HMAC MD5 signature calculated?

The response HASH signature for the HTTP POST request is calculated by using the following data:

Filed Name	**Length**	**Field's Value**
ORDER_REF	7	1000500
RESPONSE_CODE	1	1
RESPONSE_MSG	9	Confirmed
IDN_DATE	19	2012-04-26 17:46:58

Results:

String: **71000500119Confirmed192012-04-27 17:46:58**

MD5 HASH Value: **6f8dfe9da81d6ea51e8f5d63341f4902**

Note: The HASH fields can contain both lowercase and uppercase characters (hexadecimal string).

Instant Reverse/Refund Notification – IRN

How does it work?

Instant Refund/Reverse Notification (IRN) makes it possible for you to automate the sending of reverse/request requests for orders paid through PayU, directly from the order management application/platform.

The process requires the sending of the order information through HTTP POST, validated with a HMAC_MD5, to the following URL: https://secure.payu.ro/order/irn.php

This process has to be executed for each order where an order reversal, partial refund or total refund of the paid amount is required.

What is the data that must be sent to PayU?

The PayU server expects the data packed in the following structure, strictly adhering to the below specified order:

MERCHANT	Merchant's ID. Available in the PayU administration interface, in the "Account administrator" / "Account Settings" sections
ORDER_REF	Reference number for the order in the PayU system.
ORDER_AMOUNT	The order amount that is to be reversed/refunded as it was received by PayU. If this amount ORDER_AMOUNT is smaller than the total amount of the order, a PARTIAL REFUND will be requested.If the ORDER_AMOUNT is equal with the value of the order, a TOTAL REFUND/REQUEST will be issued.
ORDER_CURRENCY	The currency in which the order's amount was specified.
IRN_DATE	The date when the reverse/refund request is issued, in the following format: Y-m-d H:i:s(Ex: 2012-04-26 14:30:56)
ORDER_HASH	HMAC_MD5 signature for the sent data. (HMAC defined at: RFC 2104)
REF_URL(optional)	The URL to which the response is sent through HTTP GET (if wanted). If the parameter is not sent or it doesn't have a correct value, the response will be displayed inline.(Ex: http://www.my-website.com/irn.php)
PRODUCTS_IDS	Array with the products IDs for which the REVERSE/REFUND is issued.
PRODUCTS_QTY	Array with the quantities corresponding to the products in PRODUCTS_IDS
REGENERATE_CODES	Array with the codes that will be reallocated in the static list associated with the product
LICENSE_HANDLING	Array with the actions that are to be processed regarding the license. LICENSE_HANDLING can have the values 'CANCEL' or 'NONE'.
AMOUNT	Numeric value that states the value of the refund (sum of all the PRODUCTS_IDS*PRODUCTS_QTY element value). Must include VAT and taxes.

Note:

In case the PRODUCTS_IDS parameter is present, the following validations are performed:
PRODUCTS_IDS array is required not to be empty;
PRODUCTS_QTY array is required not to be empty;
PRODUCTS_QTY and PRODUCTS_IDS arrays have to have the same length;
The quantities in PRODUCTS_QTY have to be smaller or equal to those in the order;
The amount for products with the form PRODUCTS_IDS[i] * PRODUCTS_QTY[i] has to be equal with ORDER_AMOUNT.
The parameters LICENSE_HANDLING, REGENERATE_CODES, PRODUCTS_IDS, PRODUCTS_QTY are not required, but if they are sent, they are included in the HASH signature calculation.
The presence of the REGENERATE_CODES parameter doesn't generate an error if the key list assigned to the product is a dynamic one.

Sample array sent through POST:

```
$irn = array(
'MERCHANT'=>$_GET["MERCHANT"],
'ORDER_REF' => 3954142,
'ORDER_AMOUNT'=> 39.99,
'ORDER_CURRENCY'=> 'USD',
'PRODUCTS_IDS'=> array ( 35386, 35387 ),
'PRODUCTS_QTY'=> array ( 1,2 ),
'REGENERATE_CODES'=> array ( '1234-5678-9012-3456' ),
'LICENSE_HANDLING'=> array ( 'CANCEL' ),
'AMOUNT'=> '12.56',
'IRN_DATE'=> date( 'Y-m-d H:i:s' ),
'ORDER_HASH'=> 603ced7568f22d656937e8bf0b1b44a9);
```

What is the difference between REVERSE and REFUND?

REVERSE is the procedure to cancel an order before the moment when the delivery of the products has been confirmed by the Vendor and the products have been delivered to the final customer (Shopper).

In case of a REVERSE, the transaction amount that has been locked after the payment confirmation will get unlocked by PayU after approval by the financial department of the REVERSE procedure and the Vendor will not be charged with the PayU processing commission. The transaction will get a REVERSE status in the PayU administration interface and in the payment notifications.
A REFUND is the procedure through which an order is cancelled after the delivery confirmation has been made by the Vendor.

Once the REVERSE/REFUND procedure has been approved for a specific payment, an IPN/email confirmation will be sent to the Vendor, containing the status of the order that has been cancelled (e.g. REVERSE or REFUND) and the total amount that has been cancelled, displayed with a negative value.

How is the data structured to be sent to PayU?

We assume to have the following data:

Field name	Length (in bytes)	Field value
MERCHANT	4	TEST
ORDER_REF	7	1000500
ORDER_AMOUNT	4	22.5
ORDER_CURRENCY	3	RON
AMOUNT	5	12.56
IRN_DATE	19	2012-04-26 14:30:56

In order to validate the sent data, a HMAC_MD5 signature has to be calculated, that will be encoded with the secret key attached to your account. The Secret Key is available in Control Panel, at the "Account Administration" / "Account settings" section. [click here]
The source string for the HMAC_MD5 signature is creating by adding the field length at the beginning of each field value, without "new line" characters (for UTF-8 characters, the string length in bytes may be larger than the number of characters).
For the data above, the source string is: **4TEST71000500422.53RON512.56192012-04-26 14:30:56**
The secret key for data validation is: **1231234567890123**
The HMAC_MD5 signature calculated for the data above is: **8461d06f3653fba264b43c70c0606834**

How do I receive the PayU response?

PayU validates the successful receive of the information you sent by putting an answer inline in the page that receives the information, like below:
<EPAYMENT>ORDER_REF|RESPONSE_CODE|RESPONSE_MSG|IRN_DATE|ORDER_HASH </EPAYMENT>

The parameters in the validation response sent by PayU are:

ORDER_REF	Order reference in the PayU system received by IRN
RESPONSE_CODE	Response code for the reverse/refund request
RESPONSE_MSG	Response message for the reverse/refund request
IRN_DATE	The date when the order reverse/refund request response has been sent, in the following format: Y-m-d H:i:s (Ex: 2012-04-26 14:30:56)
ORDER_HASH	HMAC_MD5 signature for data validation

If the REF_URL parameter is sent through IRN and contains a valid URL, the response will be sent to the URL like below:
REF_URL = http://www.mysite.com/callback.php

Answer:
http://www.mysite.com/callback.php?ORDER_REF=valoare&RESPONSE_CODE= valoare
&RESPONSE_MSG=valoare&IRN_DATE=valoare&ORDER_HASH=valoare

What response do I receive from PayU ?

The answer codes meaning and messages are:

OK
ORDER_REF missing or format incorrect
ORDER_AMOUNT missing or format incorrect
PRODUCTS_IDS missing or format incorrect
PRODUCTS_QTY missing or format incorrect
ORDER_CURRENCY is missing or format incorrect
IRN_DATE is not in the correct format
Error cancelling order
Order already cancelled
Unknown error
Invalid ORDER_REF
Invalid ORDER_AMOUNT
Invalid ORDER_CURRENCY
Invalid PRODUCTS_QTY
Invalid REGENERATE_CODES
Invalid LICENSE_HANDLING
AMOUNT missing or format incorrect
Invalid AMOUNT

A journey of a thousand miles begins with a single step...

Welcome to PayU !

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