

# Web Payment Integration

## Web Payment Integration

This document describes how to initiate a payment request and process the payment notification after the payment has been executed by the payer.

Integration is a quick (I promise!) 2 step process :

1. Create a payment link
2. Handle instant payment notification (IPN)

## Environment URLs

Name	Console	WebPay
Test	<a href="https://dashboard.sandbox.centralbill.app">https://dashboard.sandbox.centralbill.app</a>	<a href="https://pay.sandbox.centralbill.app">https://pay.sandbox.centralbill.app</a>
Production	<a href="https://dashboard.centralbill.app">https://dashboard.centralbill.app</a>	<a href="https://pay.centralbill.app">https://pay.centralbill.app</a>

## Step 1: Create a payment link

The payment link is a URL that displays the web payment page. The base URL to invoke for process payment depends of environment used.

Below is an example of a URL that allows you to start a payment by your customer :

```
https://pay.centralbill.app/?applicationId=fbab3ccc-719e-11ed-93ad-02420a0003c1&invoice[id]=1&invoice[customerId]=johndoe%40example.com&invoice[totalAmount][amount]=100&invoice[totalAmount][currency]=XOF&invoice[issuedAt]=2022-12-12T00%3A00%3A00%2B00%3A00&invoice[dueDate]=1970-01-01T00%3A00%3A00%2B00%3A00&description=ACME+-+Facture+%23107285&signature=9407f193b8a53f68e6184ef28cfc7a7524cff81d6e6dd76a4c624b990a3e1cf&callbackUrl=https%3A%2F%2Facme.net%2Fmodules%2Fgateway.s%2Fcallback%2Fcentralbill.php&redirectUrl=https%3A%2F%2Facme.net%2Fviewinvoice.php%3Fid%3D1
```

## URL Query Fields

Include these fields in your URL query.

Name	Type	Description
applicationId	string	The identifier of the merchant application.

Name	Type	Description
invoice[id]	string	The invoice unique identifier.
invoice[customerId]	string	The invoice customer unique identifier.
invoice[totalAmount] [amount]	float	The total amount to be paid for the invoice.
invoice[totalAmount] [currency]	string	The currency of the total amount to be paid for the invoice. The currency must be in <a href="#">ISO 4217</a> format.
invoice[issuedAt]	string	The date on which the invoice was issued. The date must be in <a href="#">ISO 8601</a> format.
invoice[dueDate]	string	The date on which the invoice will be due. The date must be in <a href="#">ISO 8601</a> format.
description	string	Une description qui permettra à vos client de reconnaitre le paiement.
signature	string	The payment signature.
callbackUrl (Optional)	string	The callback URL where the payment notification is sent.
redirectUrl (Optional)	string	The URL where the customer is redirected after payment.

## Generate payment signature

To generate a payment signature you must combine the following payment informations:

`application.id`, `invoice.id`, `invoice.customerId`, `invoice.totalAmount.amount`,  
`invoice.totalAmount.currency` and `application.secret`.

The identifier and secret of the application can be retrieved from your administration console.

Below is an example code in [PHP](#) to generate a signature :

```
$applicationId = 'fbab3ccc-719e-11ed-93ad-02420a0003c1';
$applicationSecret = 'app!secret';
$invoiceId = '1';
$invoiceCustomerId = 'johndoe@example.com';
$invoiceTotalAmountAmount = 1000;
$invoiceTotalAmountCurrency = 'XOF';
```

```

$signature = hash('sha256', sprintf(
    '%s,%s,%s,%s,%s,%s',
    $applicationId,
    $invoiceId,
    $invoiceCustomerId,
    $invoiceTotalAmountAmount,
    $currency,
    $applicationSecret
));

```

## Step 2: Handle instant payment notification (IPN)

A payment notification is sent after each payment to a callback url configured either in your dashboard or defined in the payment link.

### Instant Payment Notification request

**POST** `callbackUrl` **Instant Payment Notification method**

#### Response codes

##### Success

Code	Reason
<code>200 - Ok</code>	Request was successful.
<code>204 - No Content</code>	Request was successful and has no content.

##### Error

Code	Reason
<code>400 - Bad Request</code>	Some content in the request was invalid.
<code>401 - Unauthorized</code>	User must authenticate before making a request.
<code>403 - Forbidden</code>	Policy does not allow current user to do this operation.

#### Request parameters

Name	In	Type	Description
id	body	string	The transaction unique identifier.
result	body	object	The transaction result.

Name	In	Type	Description
result.origin	body	object	The transaction result originator.
result.status	body	enum	The transaction result status. The available values are: <code>COMPLETED</code> , <code>NEEDS_MERCHANT_VALIDATION</code> , <code>CANCELED</code> , <code>REFUSED</code> , <code>FAILED</code> , and <code>REVERSED</code> .
result.statusReason	body	string	The transaction result status reason.
invoice	body	object	The information of the invoice paid.
<a href="#">invoice.id</a>	body	string	The invoice unique identifier.
invoice.customerId	body	string	The invoice customer unique identifier.
invoice.totalAmount.amount	body	float	The total amount paid for the invoice.
invoice.totalAmount.currency	body	string	The currency of the total amount paid for the invoice. The currency must be in <a href="#">ISO 4217</a> format.
invoice.issuedAt	body	string	The date on which the invoice was issued. The date must be in <a href="#">ISO 8601</a> format.
invoice.dueDate	body	string	The date on which the invoice will be due. The date must be in <a href="#">ISO 8601</a> format.
paymentFee.amount	body	float	The amount of payment fees applied to the transaction.
paymentFee.currency	body	string	The currency of payment fees applied to the transaction. The currency must be in <a href="#">ISO 4217</a> format.
Authorization	header	string	The request is secured by the HTTP Signature Authentication protocol.
Content-Type	header	string	Set the MIME type for the request.

## Transaction status

Name	Description
COMPLETED	The transaction was successful and the money is in the recipient's account.
NEEDS_MERCHANT_VALIDATION	Either you awaiting merchant validation.
CANCELED	You canceled your payment, and the money was credited back to your account.
REFUSED	The recipient didn't receive your payment. If you still want to make your payment, we recommend that you try again.
FAILED	Your payment didn't go through. We recommend that you try your payment again.
REVERSED	Either you canceled the transaction or we did.

## Request example with password authentication

```
curl -X POST -i 'callbackUrl' \  
-H 'Host: acme.org' \  
-H 'Content-Type: application/json' \  
-H 'Date: Thu, 01 Dec 2022 19:08:22 +0000' \  
-H 'Digest: SHA-256=NjQzMWNjYWwNjYTA5ZWFiZTJiZDMYMDU3NmQxOWEyM2RmNTYyMzMyMDcyOTliMTJmMzAxYjY1ZDZkOTYzMg==' \  
-H 'Signature: keyId="fbab3ccc-719e-11ed-93ad-02420a0003c1",algorithm="hmac-sha256",headers="(request-target) content-type date digest",signature="fiFBCK8NwWvhk6fJul8ezzpVXSh9q30VR08qn3XGxTQ="' \  
-H 'Authorization: Signature keyId="2bc56634-673c-11ed-acf4-0242ac13000e",algorithm="hmac-sha256",headers="(request-target) content-type date digest",signature="fiFBCK8NwWvhk6fJul8ezzpVXSh9q30VR08qn3XGxTQ="' \  
-d '{  
  "id": "63a368858622d5ded108e4b3",  
  "payment": {  
    "id": "63a368858622d5ded108e4b2",  
    "type": "full",  
    "application": {  
      "id": "b3695b9c-816b-11ed-8083-32706358435f",
```

```

        "name": "banking"
    },
    "invoice": {
        "id": "1",
        "customerId": "1",
        "totalAmount": {
            "amount": 1000,
            "currency": "XOF"
        },
        "issuedAt": "2022-12-21T20:11:49+00:00"
    },
    "extras": [],
    "totalAmountAlreadyPaid": {
        "amount": 1000,
        "currency": "XOF"
    }
},
"invoice": {
    "id": "1",
    "customerId": "1",
    "totalAmount": {
        "amount": 1000,
        "currency": "XOF"
    },
    "issuedAt": "2022-12-21T20:11:49+00:00"
},
"paymentFee": {
    "amount": 0,
    "currency": "XOF"
},
"result": {
    "origin": "processor",
    "status": "COMPLETED"
}
}'

```

## How validate Payment Notification request?

The Instant Payment Notification (IPN) request is secured from HTTP Signature Authentication. Below is an example code in [PHP](#) to handle payment notification request :

```

// Fetch application secret configuration parameters.
$applicationSecret = 'app!secret';

$body = json_decode(file_get_contents('php://input'), true);
$transactionId = $body['id'];
$transactionStatus = $body['result']['status'];
$invoiceId = $body['invoice']['id'];
$invoiceTotalAmount = $body['invoice']['totalAmount']['amount'];
$paymentFee = $body['paymentFee']['amount'];

/**
 * Validate callback authenticity.
 */
$components = [];
$headers = array_change_key_case(getallheaders(), \CASE_LOWER);

foreach (explode(',', $headers['signature'] ?? '') as $value) {
    if (!$component = explode('=', $value, 2)) {
        continue;
    }

    $components[$component[0]] = trim($component[1], '');
}

if (array_diff(['keyId', 'algorithm', 'headers', 'signature'],
array_keys($components))) {
    die('Payment failed');
}

if ('hmac-sha256' !== $components['algorithm']) {
    die('Payment failed');
}

$signature = [];

foreach (explode(' ', strtolower($components['headers'])) as $header) {
    $signature[] = sprintf('%s: %s', $header, '(request-target)' !== $header ?
$headers[$header] : sprintf('%s %s', strtolower($_SERVER['REQUEST_METHOD']),
$_SERVER['REQUEST_URI']));
}

```

```

if (false === hash_equals(base64_encode(hash_hmac('sha256', implode(\PHP_EOL,
$signature), applicationSecret, true)), $components['signature'])) {
    die('Payment failed');
}

/**
 * Validate transaction status.
 */
if ('COMPLETED' !== transactionStatus) {
    die('Payment failed');
}

// Busines Logic here
// ...

```

## Transaction Status

The transaction status value and description

Value	Description
PENDING	We're reviewing the transaction. We'll send your payment to the recipient after your payment source has been verified.
PROCESSING	We're processing your payment and the transaction should be completed shortly.
CANCELED	You canceled your payment, and the money was credited back to your account.
COMPLETED	The transaction was successful and the money is in the recipient's account.
REFUSED	The recipient didn't receive your payment. If you still want to make your payment, we recommend that you try again.
FAILED	Your payment didn't go through. We recommend that you try your payment again.
REVERSED	Either you canceled the transaction or we did.
NEEDS_MERCHANT_VALIDATION	Either you awaiting merchant validation.