Online Payment Switching Gateway Technical Specification
Version 1.6.2 (For Indonesia Only)

iPay88 Online Payment Switching Gateway (OPSG) is provided by iPay88 Indonesia. For more information, please visit www.ipay88.co.id

Copyright © 2017 iPay88 All Rights Reserved.

Document Change Control

Version	Update Date	Description	Author
1.6.1	21-May-2013	• Initial Release	
1.6.2	19-Dec-2017	• Added Pending Status and Xfield1 parameters on Payment Request • Update test signature URL • Update sample code for Payment Request and Payment Response • Added “Haven’t Paid (0)”, “Haven’t Paid (1)”, and “Payment Pending” possible reply for Re-Query • Update supported e-Commerce system with Backend Post • Update Request Page and Response Page Signature • Update Report URL	Andika
1.6.3	30-Mar-2022	• Menambah Backend Post Parameter baru. • Menambah Backend Post Sample baru. • Merapikan format dokumen.	Thoriq Vero

Table of Content

Introduction **4**
ePayment 4
Objective 4
Prerequisite of Merchant Integration 4
Transaction Flow Diagram 5
Transaction Processing Step 5
Rule, Limitation and Constraint 6

Merchant Integration **7**
URL 7
Logo 7
Payment Request Parameters 8
Sample HTML Source (Payment Request) 9
HTTP POST Method 9
Payment Response Parameters 10
Sample HTML Source (Payment response) 11
ASP sample code 11
PHP sample code 11
Backend Post Feature 12
Backend Post Parameter 12
Backend Post Sample 13
Backend Post Signature 13
Backend Post Response 14
Re-query Payment Status Parameters (Response URL to enquiry.asp) 14
Sample Source Code for Re-query Function in ASP 15
Sample Source Code for Re-query Function in PHP 16

Security Control **17**
Request page signature 17
Response Page Signature 18
Sample function code to generate iPay88 OPSG Signature 19

Reports and Notification **21**
Objective 21
Transaction Report 21
Email Notification Disclaimer 21
Customer Payment Receipt Email 22
Merchant Payment Notification Email 23

iPay88 OPSG Integration FAQs **24**

1. Introduction

1.1. ePayment

This document describes the following functionalities of iPay88's Online Payment Switching Gateway (OPSG) system:

ePayment: Multiple payment methods for merchant e-commerce website
Reports: Online view transaction report

1.2. Objective

Enable iPay88's OPSG merchant to perform multiple payment types for their customers to make online purchase(s).

1.3. Prerequisite of Merchant Integration

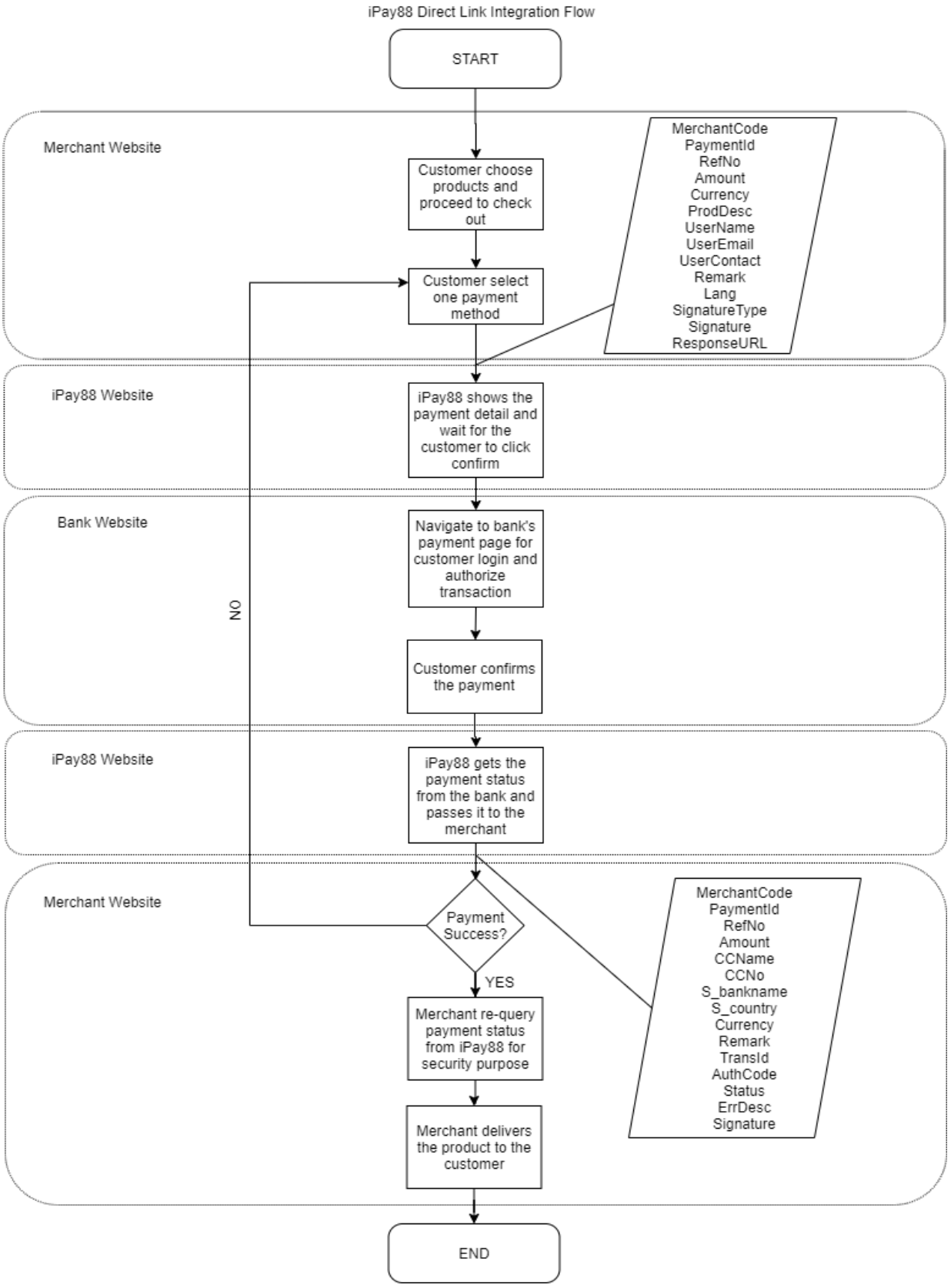
Follow the guidelines below before integration.

- Merchant Code and Merchant Key from iPay88 are required.
- Merchant to provide Request URL to iPay88 Support team.
- Registered Request URL must be either IP or domain based.
- Note: **LocalHost** is not allowed.

Important Notice

Test transaction must from registered **Request URL**.
Test transaction with amount **IDR 3.000,00**.
Test transaction limited to credit card **ONLY**.
Credit Card test transaction will be refund at the end of day.
Response URL can be set in request page with **ResponseURL** field.
Backend post URL can be set in request page with **BackendURL** field.
Email notification is **NOT** guarantee by iPay88 OPSG as it is ISP dependent. (Refer section **4.3 Email Notification Disclaimer**).
Email notification should not use as action identifier by merchant instead use **Online Report** to check for payment status.
Ensure a technical person is assigned by merchant before integration.
Merchant **must** notify iPay88 Support team the intended live date of merchant account minimum **3 working days** in advance.

1.4. Transaction Flow Diagram



1.5. Transaction Processing Step

a. Step 1: Merchant sends HTTPs Post Request containing payment details to iPay88 OPSG payment page. Payment Details contain the following fields:
   - Merchant Code
   - Payment Method
   - Merchant Reference Number
   - Payment Amount
   - Currency
   - Product Description
   - Customer Name
   - Customer Email
   - Customer Contact
   - Merchant Remark
   - Signature (refer to **3.1**)
   - Response URL
   - Backend URL

b. Step 2: User views and confirms payment details entered in Step 1. For credit card payment, the user will need to key-in credit card information.
c. Step 3: User continues to fill in Username and Password at bank website (for non-credit card payment).
d. Step 4: User selects the account to debit the payment (for non-credit card payment).
e. Step 5: User confirms the payment. If yes, go to next step (for non-credit card payment).
f. Step 6: User views and prints the payment detail (for non-credit card payment).
g. Step 7: Response is returned to the iPay88 OPSG website indicating a successful or failed transaction.
h. Step 8: iPay88 OPSG response back the payment status to merchant with a signature.
i. Step 9: For successful payment transaction, the merchant needs to compare the signature from iPay88 OPSG (Refer to **3.2**).

1.6. Rule, Limitation and Constraint

Service Hours: 7x24 exclude host down tim

2. Merchant Integration

2.1. URL

iPay88 OPSG SANDBOX posting URL (payment page)
URL: https://sandbox.ipay88.co.id/epayment/entry.asp

iPay88 OPSG PRODUCTION posting URL (payment page)
URL: https://payment.ipay88.co.id/epayment/entry.asp

iPay88 OPSG payment RE-QUERY
URL: https://payment.ipay88.co.id/epayment/enquiry.asp

Merchant **Request URL**: [provided by merchant before the integration]
Definition: Merchant Request URL is a checkout page at merchant website that submits the required parameter/value to iPay88 OPSG.

Merchant **Response URL**: [can be specify with **ResponseURL** in request page]
Definition: Response page URL is the page at merchant website that will receive payment status from iPay88 OPSG.

2.2. Logo

iPay88 OPSG allows merchant logo/banner to appear in payment page and email notifications.
Merchant can provide the logo to iPay88 Support team and upload to merchant account.
The maximum allowed size for the logo is 600 pixel (width) by 100 pixel (height) and the allowed formats are JPG, PNG, BMP, and GIF.

2.3. Payment Request Parameters

Merchant HTTPS POST payment request parameters to iPay88 OPSG

Field Name	Data Type	M/O	Description
MerchantCode	String(20)	M	The Merchant Code provided by iPay88 and use to uniquely identify the Merchant.
PaymentId	Integer	O	Refer to Appendix I.pdf file for IDR gateway.
RefNo	String(20)	M	Unique merchant transaction number / Order ID
Amount	Currency	M	The amount must not contain any decimal points, thousands separators or currency symbols. For example, Rp. 1.278,00 is expressed as 127800.
Currency	String(5)	M	Refer to Appendix I.pdf file for IDR gateway.
ProdDesc	String(100)	M	Product description
UserName	String(100)	M	Customer name
UserEmail	String(100)	M	Customer email for receiving receipt
UserContact	String(20)	M	Customer contact number
Remark	String(100)	O	Merchant remarks
Lang	String(20)	O	Encoding type “ISO-8859-1” – English “UTF-8” – Unicode “GB2312” – Chinese Simplified “GD18030” – Chinese Simplified “BIG5” – Chinese Traditional
Signature	String(100)	M	SHA1 signature (refer to 3.1)
ResponseURL	String(200)	M	Payment response page
BackendURL	String(200)	M	Backend response page URL (refer to 2.7)
xfield1	String(200)	O	To enable installment and discount payment.

Legend:
M: Mandatory field
O: Optional field, value can be empty but parameter must exist

2.4. Sample HTML Source (Payment Request)

2.4.1. HTTP POST Method

```
<HTML>
<BODY>
<FORM method="post" name="ePayment"
action="https://payment.ipay88.co.id/epayment/entr
y.asp">

<INPUT type="hidden" name="MerchantCode"      value="ID00001">
<INPUT type="hidden" name="PaymentId"   value="1">
<INPUT type="hidden" name="RefNo" value="A00000001">
<INPUT type="hidden" name="Amount"      value="300000">
<INPUT type="hidden" name="Currency"    value="IDR">
<INPUT type="hidden" name="ProdDesc"    value="Photo Print">
<INPUT type="hidden" name="UserName"    value="John Tan">
<INPUT type="hidden" name="UserEmail"   value="john@hotmail.com">
<INPUT type="hidden" name="UserContact" value="0126500100">
<INPUT type="hidden" name="Remark"      value="">
<INPUT type="hidden" name="Lang"  value="UTF-8">
<INPUT type="hidden" name="Signature"
value="Q/iIMzpjZCrhJ2Yt2dorlPaFEFI=">
<INPUT type="hidden" name="xfield1" value="||IPP:3||">
<INPUT type="hidden" name="ResponseURL"
value="http://www.abc.com/payment/response
.asp">
<INPUT type="hidden" name="BackendURL"
value="http://www.abc.com/payment/backend_respons
e.asp">

<INPUT type="submit" value="Proceed with Payment" name="Submit">
</FORM>
</BODY>
</HTML>
```

Note: Do not copy and paste the code above as it just a reference only

2.5. Payment Response Parameters

HTTPS POST response from iPay88 OPSG after performing payment

Field Name	Type (Size)	M/O	Description
MerchantCode	varchar(20)	M	The Merchant Code provided by iPay88 and use to uniquely identify the Merchant.
PaymentId	integer	O	Refer to Appendix I.pdf file for IDR gateway.
RefNo	varchar(20)	M	Unique merchant transaction number / Order ID
Amount	currency	M	The amount must not contain any decimal points, thousands separators or currency symbols. For example, Rp 1.278,00 is expressed as 127800.
Currency	varchar(5)	M	Refer to Appendix I.pdf file for IDR gateway.
Remark	varchar(100)	O	Merchant remarks
TransId	varchar(30)	O	iPay88 OPSG Transaction ID
AuthCode	varchar(20)	O	Bank's approval code
Status	varchar(1)	M	Payment status "1" – Success "0" – Fail "6" – Pending (Only available for ATM Transfer payment)
ErrDesc	varchar(100)	O	Payment status description (Refer to Appendix I.pdf file)
Signature	varchar(100)	M	SHA1 signature (refer to **3.2**)
xfield1	String	O	To enable installment and discount payment.

Legend:
M: Mandatory field
O: Optional field, value can be empty but parameter must exist

2.6. Sample HTML Source (Payment response)

2.6.1. ASP Sample Code

```
<%

MerchantCode= Request.Form("MerchantCode")
PaymentId          = Request.Form("PaymentId")
RefNo              = Request.Form("RefNo")
Amount       = Request.Form("Amount")
eCurrency          = Request.Form("Currency")
Remark       = Request.Form("Remark")
TransId            = Request.Form("TransId")
AuthCode           = Request.Form("AuthCode")
eStatus            = Request.Form("Status")
ErrDesc            = Request.Form("ErrDesc")
Signature          = Request.Form("Signature")

%>

<Add your programming code here>
```

2.6.2. PHP Sample Code

```
<?php

$merchantcode      = $_REQUEST["MerchantCode"];
$paymentid   = $_REQUEST["PaymentId"];
$refno       = $_REQUEST["RefNo"];
$amount      = $_REQUEST["Amount"];
$ecurrency   = $_REQUEST["Currency"];
$remark      = $_REQUEST["Remark"];
$transid     = $_REQUEST["TransId"];
$authcode    = $_REQUEST["AuthCode"];
$estatus     = $_REQUEST["Status"];
$errdesc     = $_REQUEST["ErrDesc"];
$signature   = $_REQUEST["Signature"];

?>

//Add your programming code here
```

2.7. Backend Post Feature

Backend post feature adalah teknologi antar server yang tidak bergantung pada web browser customer merchant. Fitur ini harus diimplementasikan pada website merchant dengan tujuan untuk mendapatkan status pembayaran dari iPay88 OPSG. Merchant bisa mendapatkan status pembayaran melalui halaman backend merchant. iPay88 OPSG dapat mengirim status pembayaran secara berulang walaupun halaman response merchant gagal mendapatkan status pembayaran tersebut yang disebabkan oleh customer web browser yang tertutup secara tidak sengaja, koneksi internet terputus, dan lain sebagainya.

Catatan Penting

- iPay88 OPSG **hanya** mengirim status pembayaran melalui halaman backend merchant apabila status pembayaran pada transaksi merchant telah sukses. Jika status pembayaran gagal, maka iPay88 OPSG tidak akan mengirimkan status melalui halaman backend merchant.
- Halaman backend merchant harus menerapkan beberapa **pengecekan** yang sama dengan halaman response seperti **pengecekan signature**, dan lain sebagainya untuk mencegah terjadi pembajakan pada sistem merchant.
- Halaman backend merchant **tidak boleh** memiliki kode session sehingga sistem merchant masih dapat menerima status pembayaran dari iPay88 OPSG bahkan jika customer telah keluar dari proses pembayaran atau session telah berakhir.
- Merchant perlu melakukan **validasi** untuk menentukan apakah proses update status transaksi melalui "halaman response" atau "halaman backend" sehingga tidak terjadinya proses update status transaksi **lebih dari satu kali**.
  Note: Setelah iPay88 OPSG menerima informasi dari bank atau principal bahwa status pembayaran pada transaksi merchant telah sukses, iPay88 OPSG secara bersamaan akan mengirimkan status pembayaran tersebut ke "halaman response" dan "halaman backend" merchant.
- Halaman backend **bukan** sebagai pengganti halaman response. Merchant tetap harus menggunakan halaman response untuk proses redirect kembali dari halaman pembayaran.

2.7.1. Backend Post Parameter

Field Name	Type	M/O	Description
MerchantCode	varchar(20)	M	Merchant Code disediakan oleh iPay88
PaymentID	integer	O	Payment ID untuk metode pembayaran yang dituju
Refno	string(20)	M	Nomor unik transaksi merchant
Amount	varchar(5)	M	Jumlah atau nominal transaksi dengan 2 nol di belakang koma .00
Currency	currency	M	Mata uang yang digunakan dalam transaksi
Remark	varchar(100)	O	Catatan merchant
TransId	varchar(30)	O	ID Transaksi iPay88 OPSG

AuthCode	varchar(20)	O	Kode persetujuan bank
Status	varchar(1)	M	Status Transaksi “1” – Success “0” – Fail “6” – Pending (Hanya tersedia pada metode pembayaran ATM Transfer)
ErrDesc	varchar(100)	O	Deskripsi transaksi gagal (lihat Referensi)
Signature	varchar(100)	M	SHA1 Signature (lihat Backend Post Signature)
PaymentDate	string	M	Tanggal dan Waktu Transaksi

2.7.2. Backend Post Sample


```
{
        "MerchantCode": "ID00001",
        "PaymentId": "35",
        "RefNo": "324202292135AM",
        "Amount": "1000000",
        "Currency": "IDR",
        "Remark": "",
        "TransId": "T0058006300",
        "AuthCode": "637096",
        "Status": "1",
        "ErrDesc": "",
        "Signature": "UEiWe+q62TdPef4vptlgMuGmtng=",
        "PaymentDate": "24-03-2022 16:22",
}
```


2.7.3. Backend Post Signature

iPay88 OPSG akan mengirimkan pesan *response* berisi signature hash SHA1 ke halaman backend merchant. Signature hash untuk response adalah hash berikut:

1. MerchantKey (Diberikan oleh iPay88 OPSG dan hanya dibagikan kepada merchant)
2. MerchantCode
3. PaymentId
4. RefNo
5. Amount
6. Currency
7. Status
8. Xfield1 (Opsional)

Field harus tersusun mengikuti aturan berikut:
(MerchantKey & MerchantCode & PaymentId & RefNo & Amount & Currency & Status)

Contoh:
MerchantKey = “apple”
MerchantCode = “ID00001”

PaymentId = “1”
RefNo = “A00000001”
Amount = “300000” (Note: 300000 represent amount as Rp 3.000,00)
Currency = “IDR”
Status = “1”
Xfield 1 = “||IPP:3||”

Hash akan dikalkulasi melalui string berikut:
applekeyID000011A00000001300000IDR1||IPP:3||

Hasilnya memiliki nilai signature (menggunakan algoritma SHA1) berikut:
LG6ywEKkZxBYnZjHcUcSKGO4gwQ=

Untuk memastikan signature yang dibuat sudah sesuai, kunjungi halaman di bawah ini untuk melakukan perbandingan signature:
https://payment.ipay88.co.id/epayment/testing/TestSignature.asp

2.7.4. Backend Post Response

Pada website merchant, buat satu halaman sebagai halaman backend untuk menerima parameter dari iPay88 OPSG. Parameter backend yang dikirim oleh iPay88 OPSG sama seperti parameter yang dikirim ke halaman response merchant.

Pada halaman request merchant, tentukan url backend melalui parameter "BackendURL".

Contoh:
<input name = "BackendURL" value = "http://www.abc.com/backend_response.asp">

Pada halaman 'backend_response.asp' Anda perlu menuliskan kata '**RECEIVEOK**' saja (tanpa tanda kutip) sebagai konfirmasi setelah halaman backend berhasil mendapatkan status pembayaran dari iPay88 OPSG.

iPay88 OPSG akan mencoba mengirim kembali status pembayaran ke halaman 'backend_response.asp' hingga 5 kali pada interval tertentu jika tidak mendapat konfirmasi '**RECEIVEOK**'.

2.7.5. Backend Post Response Sample

Contoh response ASP:

```
response.write "RECEIVEOK"
```

Contoh response PHP:

```
echo "RECEIVEOK";
```

Catatan: Pastikan hanya menuliskan kata '**RECEIVEOK**' saja pada halaman backend tanpa tag HTML apa pun.

2.8. Re-query Payment Status Parameters (Response URL to enquiry.asp)

Merchant HTTPS POST re-query payment status parameters to iPay88 OPSG

Field Name	Type (Size)	M/O	Description
MerchantCode	varchar(20)	M	Merchant Code assigned by iPay88
RefNo	varchar(20)	M	Unique merchant transaction number / Order ID
Amount	Currency	M	Payment amount with two decimals

Legend:
M: Mandatory field
O: Optional field, value can be empty but parameter must exist.

Possible message reply on the page from iPay88 OPSG

Possible reply from iPay88 OPSG	Description
00	Successful payment
Invalid parameters	Parameters pass in incorrect
Record not found	Cannot found the record
Incorrect amount	Amount different
Payment fail	Payment fail
Payment Pending	Payment is pending and need customer to pay at the ATM
Haven't Paid (0)	Payment is not paid yet or idle on iPay88 payment page
Haven't Paid (1)	Payment is not paid yet or idle on Bank page
M88Admin	Payment status updated by iPay88 Admin(Fail)

2.8.1. Sample Source Code for Re-query Function in ASP

```
<%
Function SendToiPayInq(byval MerchantCode, byval RefNo, byval Amount)

Dim TryNo, thenQString, URL, strReturn TryNo
= 0

QString = "MerchantCode=" & MerchantCode & "&RefNo=" & RefNo & _
"&Amount=" & Amount
URL = "https://payment.ipay88.co.id/epayment/enquiry.asp" On Error
Resume Next
Do
Set xobj = Server.CreateObject ("Msxml2.ServerXMLHTTP.3.0")
xobj.setTimeouts 30000, 60000, 60000, 60000
xobj.open "POST", URL, false
xobj.setRequestHeader "Content-Type", "application/x-www-form-urlencoded" xobj.send
QString
TryNo = TryNo + 1
Loop While xobj.status <> 200 and TryNo < 3

If xobj.status <> 200 Then
SendToiPayInq = Err.Description & "(" & Err.Number & ")"
Else
SendToiPayInq = xobj.responseText
End If
set xobj = nothing End
```

2.8.2. Sample Source Code for Re-query Function in PHP

```
<?PHP

function Requery($MerchantCode, $RefNo, $Amount){

$query = "https://payment.ipay88.co.id/epayment/enquiry.asp?MerchantCode=" .
$MerchantCode . "&RefNo=" . $RefNo . "&Amount=" . $Amount;

$url = parse_url($query);
$host = $url["host"];
$path = $url["path"] . "?" . $url["query"];
$timeout = 1;
$fp = fsockopen ($host, 80, $errno, $errstr,
$timeout); if ($fp) {
                fputs ($fp, "GET $path HTTP/1.0\nHost: " . $host .
      "\n\n"); while (!feof($fp)) {
                $buf .= fgets($fp, 128);
                }
                $lines = split("\n", $buf);
                $Result =
      $lines[count($lines)-1];
      fclose($fp);
                } else {
                        # enter error handing code here
      }
    return
   $Result;

}
?>
```

3. Security Control

To enhance security, please go through the following steps at the merchant's payment status receiving page (Response URL):

- Check the HTTP_REFERER value is from https://payment.ipay88.co.id (*only applicable if the merchant web site is working with SSL Certificate*).
- Check the payment amount from iPay88 OPSG is match with yours.
- Compare the Signature from iPay88 OPSG with your own generated Signature.

Data Integrity and Security using Hash Signature

SHA1 hash is a security feature that enables your script to identify the results of a transaction are actually from the appropriate authorization source and also for iPay88 OPSG to make sure the integrity of data received on a transaction request.

Using the SHA1 algorithm, a unique signature or fingerprint of the transaction can be created. This mathematical algorithm used to construct this signature is designed in such a way that any change to the information used in the calculation of the signature will cause a completely different signature to be created.

Also, the information used in the calculation of the signature cannot be discovered through any analysis of the signature itself.

This is done by using information from your account. Every transaction that is processed through the system has a corresponding hash signature of the transaction created during the transaction process.

3.1. Request page signature

This signature must be included in the request of every transaction. This hash signature for a request is a hash of the following five fields:

- MerchantKey (Provided by iPay88 Indonesia and share between iPay88 and merchant only)
- MerchantCode
- RefNo
- Amount
- Currency
- Xfield1 (Optional)

The fields must set in the following order,
(MerchantKey & MerchantCode & RefNo & Amount & Currency)

For Example
MerchantKey = "apple"
MerchantCode = "ID00001"
RefNo = "A00000001"
Amount = "300000" (Note: 300000 represent amount as Rp 3.000,00)
Currency = "IDR"
Xfield 1 = "||IPP:3||"

The hash would be calculated on the following string:
applekeyID00001A00000001300000IDR||IPP:3||

The resulting has signature value equals to (using SHA1 algorithm)
b/eldejzA5wUuhoHYAAB0utO5Qk=

To ensure the signature generated was correct, visit the link below for signature comparison.
https://payment.ipay88.co.id/epayment/testing/TestSignature.asp

3.2. Response Page Signature

If the Merchant request is successful, the response message will contain as SHA1 hashed signature.
The hash signature for the response is a hash of the following fields:

- MerchantKey (Provided by iPay88 OPSG and share between iPay88 and merchant only)
- MerchantCode
- PaymentId
- RefNo
- Amount
- Currency
- Status
- Xfield1 (Optional)

The fields must be set in the following order,
(MerchantKey & MerchantCode & PaymentId & RefNo & Amount & Currency & Status)

For Example
MerchantKey = “apple”
MerchantCode = “ID00001”
PaymentId = “1”
RefNo = “A00000001”
Amount = “300000” (Note: 300000 represent amount as Rp 3.000,00)
Currency = “IDR”
Status = “1”
Xfield 1 = “||IPP:3||”

The hash would be calculated on the following string:
applekeyID000011A00000001300000IDR1||IPP:3||

The resulting has signature value equals to (using SHA1 algorithm)
LG6ywEKkZxBYnZjHcUcSKGO4gwQ=

To ensure the signature generated was correct, visit the link below for signature comparison.
https://payment.ipay88.co.id/epayment/testing/TestSignature.asp

When iPay88 OPSG receives the request or transaction order from the merchant, it will check the hash value it generates to match with the value you as a merchant have included. When your script receives the results of the transaction, you can create the hash on your side and be sure that matches ours. As you will already know your Merchant Key and the Merchant Code, and will receive the Ref No which will then be presented to us. Do take note that the signature in the response will only be present if the transaction is not in error, that is, for approved and declined transactions.

A developer would then take the results of the transaction AFTER it has been returned to your site, and run the hash algorithm on the fields mentioned above. The only way that the results of a developer's procession can match the signature included with the transaction results is if the password used in the hash on the developer's end MATCHES the one used in the transaction.

The iPay88 OPSG Merchant Key is a shared secret (between merchant and iPay88 OPSG), and is one of the key pieces of information in the hash. One can be assured that if the signature generated on your end matched the one sent with the transaction, then the transaction has in fact been processed by our system, and has not been posted back to the merchant's server from any other location.

The iPay88 OPSG Merchant Key is generated by us that it's send to you. The key will only recreate if iPay88 OPSG suspects that the key is not secure or any fraud cases happen.
More information about the SHA1 hash algorithm, including sample implementation code, can be found in RFC 3174 in The Internet Engineering Task Force web site.

3.2.1. Sample function code to generate iPay88 OPSG Signature

Using .NET you can use the available libraries to perform this:

```
  Public       Shared
Function
ComputeHas(ByVal  Key
As String)
      Dim  objSHA1  As
New
SHA1CryptoServicesPr
ovider()

objSHA1.ComputeHas(s
ystem.Text.Encoding.
UTF8.GetBytes(Key.To
CharArray))
     Dim buffer() As
Byte = objSHA1.Hash
     DIm HashValue As
String              =
System.Convert.ToBas
e64String(buffer)

     Return HashValue
  End Function
```

Using PHP you can use the following code to perform this:

```php
<?php

function iPay88_signature($source)
{
    return base64_encode(hex2bin(sha1($source)));
}

function hex2bin($hexSource)
{
    for ($i=0;$i<strlen($hexSource);$i=$i+2)
    {
        $bin .= chr(hexdec(substr($hexSource,$i,2)));
    }

    return $bin;
}

?>
```

Sample code can be found in the sample code folder include

- ASP
- VB.Net
- PHP
- Javascript

4. Reports and Notification

4.1. Objective

Allow merchants to login and view the reports online

4.2. Transaction Report

Step 1. Merchant can visit iPay88 OPSG report page by keying-in: Report URL :

Production - https://payment.ipay88.co.id/epayment/report/index.asp
Sandbox - https://sandbox.ipay88.co.id/epayment/report/index.asp

Login Name : [provided by iPay88 OPSG]
Password : [provided by iPay88 OPSG]

Step 2. After login, select all transaction, filter transaction date, and click search. Step 3. The payment transaction report will display on the screen.

4.3. Email Notification Disclaimer

Note: Email notifications are NOT guaranteed by iPay88 OPSG as it is ISP dependent.
Online Report is the primary channel to obtain transaction status. Email notification should not be taken as a replacement of the primary channel.

E-mail transmissions cannot be guaranteed to be secure or error-free as information could be intercepted, corrupted, lost, destroyed, arrive late or incomplete, or contain viruses. The sender therefore does not accept liability for any errors or omissions in the contents of the email, which arise as a result of e-mail transmission. iPay88 accepts no liability for the content of the email, or for the consequences of any actions taken on the basis of the information provided, unless that information is subsequently confirmed in writing.

4.3.1. Customer Payment Receipt Email

Customers will receive a payment detail's email after successful payment. Below is the email sample:

Subject: iPay88 - Payment details (Ref# T0009378700) **Date:** Thu, 26 Jan 2009 09:59:30 GMT
From: iPay88 Sales (sales@ipay88.com.ph)
To: John Tan (john@hotmail.com)

I & J Boutique

Dear John Tan,

We are pleased to inform you that your online payment via **iPay88** is successful. Your credit card/bank account has been debited with **PHP 15.00.**

Please note that "**Merchant Name**" will be listed in your credit card/bank statement for this transaction.

Transaction Detail

Order No:	A00000001
Transaction ID:	T0009378700
Transaction Date:	26-1-2006 09:59:30 AM
Transaction Amount:	PHP 15.00
Payment Type:	Credit Card
Product Description:	Photo Print

****

Customer Support
If you have any questions about our product and services, please contact I & J Inc. directly at :
Tel No: 632-669 1120
Fax No: 632-669 1130
Email: support@i&j.com

****

Please do not reply to this email as it was automatically generated.

If you found any fraudulent cases, please contact iPay88 Philippines Inc. immediately at
Tel: 632-511 8688
Email: support@ipay88.com.ph

iPay88 OPSG is an Online Payment Switching Gateway provided by iPay88. For more information, please visit www.ipay88.com

4.3.2. Merchant Payment Notification Email

The Merchant will also receive a payment notification email after successful payment.
In order to ensure you are able received all our mail; do make sure you proceed with the following steps:

- From your mailbox, please white-list iPay88 OPSG mail address by adding **sales@ipay88.co.id** into your friend list.
- Also, please make sure your mailbox has not blacklisted our address which is the following **sales@ipay88.co.id**
- Allow us to serve you better by white listing our email address and domain **iPay88.co.id**. Please verify or allow your technical personnel (at the webhosting or email server) to verify the status of your email.

Below is the email sample:

Subject: iPay88 - Payment details (Ref# A00000001) **Date:** Thu, 26 Jan 2006 09:59:30 GMT
From: iPay88 Support (sales@ipay88.com.ph)
To: ABC Admin (admin@abc.com)

Dear I & J Admin,

RefNo : A00000001

One new payment has been collected for I & J Inc.

Please check the payment report at iPay88 Online Report

Customer Detail

Name	:	Ali
Email	:	ali@hotmail.com
Contact	:	632 3139155

Transaction Detail

Payment ID : T0009378700
Payment Date Time : 26-1-2006 09:59:30 AM
Payment Amount : PHP 15.00
Payment Type : Credit Card
Product Description : Photo Print
Remark :

Sincerely,
Your iPay88 Team

Tel: 632-511 8688
Email: support@ipay88.com.ph

5. iPay88 OPSG Integration FAQs

1. What method use to pass payment parameters value to iPay88 OPSG?
   By using the HTTP POST method.

2. What do I provide to iPay88 OPSG before the integration of a merchant account?
   Return a copy of completed Merchant Checklist to support@ipay88.co.id and provide both the Request URL and Response URLs' of merchant website.

3. What are the merchant Request URL and Response URL?
   Request URL is a checkout page at merchant website that passes in iPay88 OPSG parameters to request payment page.
   Response URL is a page at merchant website that accepts payment status from iPay88 OPSG after transaction.

4. How do I perform a payment testing during the integration stage?
   You can use any valid credit card for testing purpose. Details required are the credit card number, expiry date, CVV number and the card holder's name.

5. What transaction amount do I use for test payment?
   Use the following amount for the respective currency code.

Currency Code	Amount	Description
IDR	300000	The amount must not contain any decimal points, thousands separators or currency symbols. For example, Rp3.000,00 is expressed as 300000.

6. What if I get an error message and is unable to reach iPay88 OPSG payment page?
   Below are the common error messages returned and its respective description:

ERROR MESSAGE	DESCRIPTION
Permission not allow	Referrer URL of transaction request is not same as registered with iPay88 OPSG.
Signature not match	Signature on request page which pass to iPay88 OPSG is incorrectly generated. Refer section 3.1 in iPay88 OPSG Technical Specification for more information about Signature for request page.
Over limit per transaction	Payment amount exceeded the value per transaction that assigned to merchant account.
Duplicate reference number	Do not re-use Reference Number that previously payment success for transaction.
Payment not allowed	Payment method requested is not allowed for the merchant account.
Invalid parameters	Some parameter posted to iPay88 OPSG is invalid or empty.
Status not approved	Merchant account was suspended or not active.

7. Why do I get 'The return page URL not exist' message display on web browser and is unable to see the iPay88 OPSG payment page?
   - Make sure the correct merchant code is used.
   - Provide the Request URL to support@ipay88.co.id before the integration.
   - Make sure response URL is specify through Response URL field in request page or had updated in iPay88.

8. How do I ensure the integration is completed?
   - Make sure parameters are properly passed to iPay88 OPSG and success reach iPay88 OPSG payment page.
   - Success receives payment status from iPay88 OPSG after perform test transaction.
   - Make sure implemented security control on the merchant response page.
     Example:
   - Compare the Signature from iPay88 OPSG with the generated merchant response page.

9. How can I change the merchant information such as Request URL, contact number, company name, and bank account number?
   Send an email to support@ipay88.co.id to request for these changes.

10. What not to do after press "Proceed Payment" button at iPay88 OPSG payment page?
    - Do not disconnect your Internet connection.
    - Do not close the web browser while transaction being process.
    - Do not click "Back" button on web browser to avoid duplicate payment.

11. I am getting error description "Fail (Card issuing bank do not honor the transaction)" returned by iPay88 OPSG, what does it mean?
    Please contact credit card issuer bank to check whether the card can be used for online purchases.

12. Is there any function from iPay88 OPSG where I can query payment status if my system did not get payment status return from iPay88 OPSG?
    You can use the iPay88 OPSG Server Re-query function to query the transaction status.
    Please refer to 2.8 in iPay88 OPSG Technical Specification for more information about iPay88 server re-query.