

# iPay88's ePayment Technical Specification

## Version 1.5.9



\*iPay88 is an Online Payment Switching Gateway provided by **Mobile88.com Sdn Bhd.** For more information, please visit [www.iPay88.com](http://www.iPay88.com)

## Table of Contents

1.0	Introduction .....	3
1.1	ePayment.....	3
1.1.1	Objective .....	3
1.1.2	Transaction Flow Diagram .....	4
1.1.3	Transaction Processing Step .....	5
1.1.4	Rule, Limitation and Constraint.....	5
1.1.5	URL.....	5
1.1.6	Payment Request Parameters (Request URL to Entry.asp).....	6
1.1.7	Sample HTML Source .....	7
1.1.8	Payment Response Parameters (M88 to Response URL).....	8
1.1.9	Re-query Payment Status Parameters (Response URL to enquiry.asp) .....	9
1.1.10	Security Control .....	11
1.1.11	Data Integrity and Security using Hash Signature.....	11
1.2	Reports .....	14
1.2.1	Objective .....	14
1.2.2	Transaction Processing Step .....	14
1.2.3	URL and Account Detail .....	14
1.2.4	Customer Payment Receipt Email .....	14
1.2.5	Merchant Payment Notification Email .....	16

## 1.0 Introduction

This document describes the following functionalities of iPay88's ePayment system:

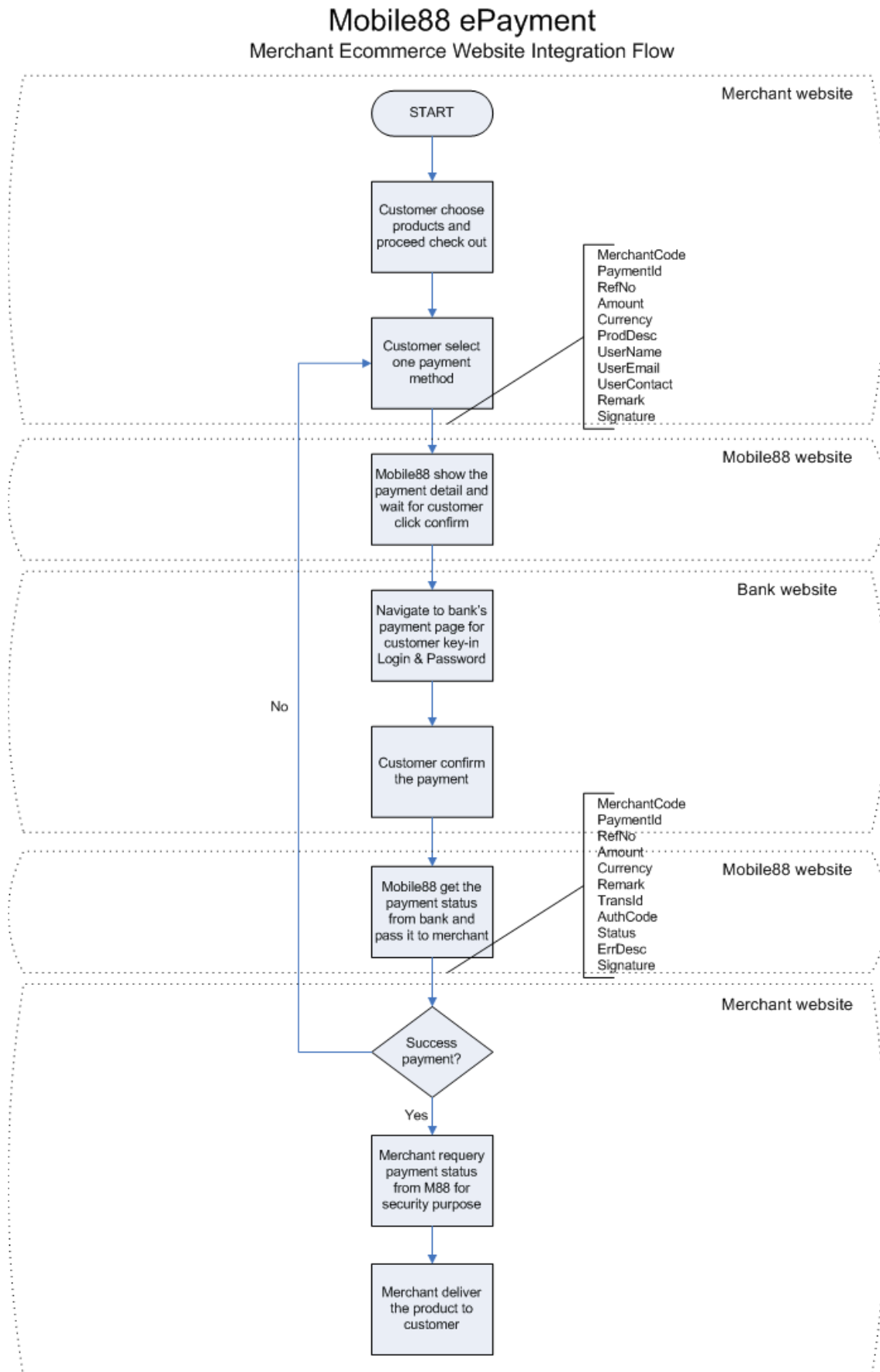
- ePayment : Multiple payment methods for merchant e-commerce website
- Reports : Online view transaction report

## 1.1 ePayment

### 1.1.1 Objective

Enable iPay88's merchant to perform multiple payment types for their customer make online purchase.

## 1.1.2 Transaction Flow Diagram



### 1.1.3 Transaction Processing Step

Step 1. Merchant sends HTTPs Post Request containing payment details to iPay88 e-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 1.1.11)

Step 2. User views and confirms payment details entered in Step 1. For credit card payment, user needs to key-in credit card information.

Step 3. User continues to fill in Username and Password at bank website (for non credit card payment)

Step 4. User selects the account to debit the payment. (for non credit card payment)

Step 5. User confirms the payment. If yes, go to next step. (for non credit card payment)

Step 6. User views and prints the payment detail. (for non credit card payment)

Step 7. Response is returned to the iPay88 website indicating a successful or failed transaction.

Step 8. Mobile88 response back the payment status to merchant with a signature

Step 9. For successful payment transaction, merchant need to re-query payment status from Mobile88 to double confirm (refer to 1.1.9) or compare the signature from iPay88

### 1.1.4 Rule, Limitation and Constraint

- Service Hours: 7x24 exclude host down time

### 1.1.5 URL

iPay88 ePayment **Entry.asp** : <https://www.mobile88.com/epayment/entry.asp>

iPay88 re-query payment status **enquiry.asp** :  
<https://www.mobile88.com/epayment/enquiry.asp>

iPay88 payment request **Request URL** : [provided by merchant]

iPay88 payment status receiving **Response URL** : [provided by merchant]

### 1.1.6 Payment Request Parameters (Request URL to Entry.asp)

Merchant HTTPS POST payment request parameters to iPay88

No.	Field Name	Type (Size)	M/O	Description
1	MerchantCode	varchar(20)	M	Merchant code assigned by iPay88
2	PaymentId	integer	M	Payment Method Id “2” – Credit Card “6” – Maybank2U “8” – Alliance Online Transfer “10” – AM Bank “14” – RHB “15” – Hong Leong Bank Transfer “16” – FPX “17” – Mobile Money “18” – Pospay “22” – Webcash
3	RefNo	varchar(20)	M	Unique merchant transaction number / Order ID
4	Amount	currency	M	Payment amount with two decimals
5	Currency	varchar(5)	M	Currency code. “MYR” only
6	ProdDesc	varchar(100)	M	Product description
7	UserName	varchar(100)	M	Customer name
8	UserEmail	varchar(100)	M	Customer email for receiving receipt
9	UserContact	varchar(20)	M	Customer contact
10	Remark	varchar(100)	O	Merchant remarks
11	Lang	Varchar(20)	O	Encoding type “ISO-8859-1” – English “UTF-8” – Unicode “GB2312” – Chinese Simplified “GD18030” – Chinese Simplified “BIG5” – Chinese Traditional
12	Signature	varchar(100)	O	SHA1 signature (refer to 1.1.11)

Note:

M : Mandatory field

O : Optional field, value can be empty but parameter must exists

## 1.1.7 Sample HTML Source

```
<HTML>
<BODY>

<FORM method="post" name="ePayment"
action="https://www.mobile88.com/ePayment/entry.asp">

<INPUT type="hidden" name="MerchantCode" value="M000123">
<INPUT type="hidden" name="PaymentId" value="6">
<INPUT type="hidden" name="RefNo" value="A00000001">
<INPUT type="hidden" name="Amount" value="45.00">
<INPUT type="hidden" name="Currency" value="MYR">
<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="iej3tXBrpAmfEpmtz6vG5FP7SGw=">
<INPUT type="submit" value="Proceed with Payment" name="Submit">

</FORM>
</BODY>
</HTML>
```

### 1.1.8 Payment Response Parameters (M88 to Response URL)

HTTPS POST response from iPay88 after performing payment

No.	Field Name	Type (Size)	M/O	Description
1	MerchantCode	varchar(20)	M	Merchant code assigned by iPay88
2	PaymentId	integer	M	Payment Method Id “2” – Credit Card “6” – Maybank2U “8” – Alliance Online Transfer “10” – AM Bank “14” – RHB “15” – Hong Leong Bank Transfer “16” – FPX “17” – Mobile Money “18” – Pospay “22” – Webcash
3	RefNo	varchar(20)	M	Unique merchant transaction number / Order ID
4	Amount	Currency	M	Payment amount with two decimals
5	Currency	varchar(5)	M	Currency code. “MYR” only
6	Remark	varchar(100)	O	Merchant remarks
7	TransId	varchar(30)	O	Mobile88 transaction id
8	AuthCode	varchar(10)	O	Bank’s approval code
9	Status	varchar(1)	M	Payment status “1” – Success “0” – Fail
10	ErrDesc	varchar(100)	O	Payment status description
11	Signature	varchar(100)	M	SHA1 signature (refer to 1.1.11)

Note:

M : Mandatory field

O : Optional field, value can be empty but parameter must exists



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

Merchant HTTPS POST re-query payment status parameters to iPay88

No.	Field Name	Type (Size)	M/O	Description
1	MerchantCode	varchar(20)	M	Merchant code assigned by iPay88
2	RefNo	varchar(20)	M	Unique merchant transaction number / Order ID
3	Amount	currency	M	Payment amount with two decimals

Note:

M : Mandatory field

O : Optional field, value can be empty but parameter must exists

Directly reply on the page from iPay88

Possible reply from iPay88	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
M88Admin	Payment status updated by Mobile88 Admin(Fail)

Sample source code for re-query function in ASP:

```
Function SendToPaymexInq(byval MerchantCode, byval RefNo,byval Amount)

    Dim QString, URL, strReturn

    QString="MerchantCode=" & MerchantCode & "&RefNo=" & RefNo & _
        "&Amount=" & Amount

    URL = "https://www.mobile88.com/epayment/enquiry.asp"

    strReturn = ""

    Set xobj = Server.CreateObject ("MSXML2.ServerXMLHTTP")
    xobj.open "POST", URL, false
    xobj.setRequestHeader "Content-Type", "application/x-www-form-
urlencoded"

    xobj.send QString

    strReturn = xobj.responseText
    Set xobj = nothing
    SendToPaymexInq = strReturn

End Function
```

### Sample source code for re-query function in PHP:

```
<?PHP

function Requery(){

$query = "http://www.mobile88.com/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 handling code here
}
return $Result;

}
?>
```

### 1.1.10 Security Control

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

1. Check HTTP\_REFERER is from https://www.mobile88.com
2. Check the payment amount from iPay88 is match with yours
3. Do re-query payment status for successful payment transaction to double confirm
4. Compare the Signature from Mobile88 with your own

### 1.1.11 Data Integrity and Security using Hash Signature

SHA1 hash is a security feature that enables your script to identify that the results of a transaction are actually from the appropriate authorization source and also for the iPay88 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.

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

1. MerchantKey (This is the key that supply by iPay88 and share between iPay88 and the merchant only)
2. MerchantCode
3. RefNo
4. Amount
5. Currency

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

For an example,

MerchantKey = "apple"

MerchantCode = "M000123"

RefNo = "A00000001"

Amount = "45.00" (You should take out the "." And ",")

Currency = "MYR"

The hash would be calculated on the following string:

appleM000123A000000014500MYR

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

eksWN1DmwZy+su9Lj5+E2QLmGUE=

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:

1. MerchantKey (This is the key that supply by iPay88 and share between iPay88 and the merchant only)
2. MerchantCode
3. PaymentId
4. RefNo
5. Amount
6. Currency
7. Status

There fields must be set in the following order,

(MerchantKey & MerchantCode & PaymentId & RefNo & Amount & Currency & Status)

For Example:

MerchantKey = "apple"

MerchantCode = "M000123"

PaymentId = "6"

RefNo = "A000000001"

Amount = "45.00" (You should take out the "." And ",")

Currency = "MYR"

Status = "1"

The hash would be calculated on the following string:

appleM001236A0000000014500MYR1

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

**greTHUgomKpw3CiAusqPsU2OvQQ=**

When iPay88 receives the request or transaction order from the merchant, it will check is the hash value it generates is match with the value you as a merchant have included. When your script receive the results of the transaction you can create as well the hash on your side and be sure it matches ours. You will already know your key and the Merchant Code, and will receive the Ref No as presented to us. Make a 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 take the results of the transaction AFTER it was 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 key is a shared secret (between you and iPay88), 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 key is generated by us that it's send to you. The key will only recreate if iPay88 suspect 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.

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

```
Public Shared Function ComputeHash(ByVal Key As String) As String
    Dim objSHA1 As New SHA1CryptoServiceProvider()
    objSHA1.ComputeHash(system.Text.Encoding.UTF8.GetBytes(Key.ToCharArray))
    Dim buffer() As Byte = objSHA1.Hash
    Dim HashValue As String = System.Convert.ToBase64String(buffer)

    Return HashValue
End Function
```

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

```
<?PHP
function iPay88_signature($source)
{
    return base64_encode(hex2bin(sha1($source)));
}

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

*\* Sample code can be find in the sample code folder include*

- **ASP**
- **VB.Net**
- **PHP**

*You may utilize the web service at <http://mobile88.com/ePayment/Security/Security.aspx> to fit into your system*

## 1.2 Reports

### 1.2.1 Objective

Allow merchants login to view the reports online

### 1.2.2 Transaction Processing Step

Step 1. Merchant visit iPay88 report page by key-in :

- Login
- Password

Step 2. After login, select transaction date

Step 3. The payment transaction report will show on the screen.

### 1.2.3 URL and Account Detail

Report URL : <http://www.mobile88.com/ePayment/report>

Login : [Login]

Password : [provided by iPay88]

### 1.2.4 Customer Payment Receipt Email

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

**Subject:** Mobile88 - Payment details (Ref# T0000006000)  
**From:** Mobile88 Support (sales@mobile88.com)  
**To:** John Tan (john@hotmail.com)

**Date:** Thu, 26 Jan 2006 09:59:30 GMT

Merchant  
Logo

Dear John Tan,

We are pleased to confirm your online payment via **iPay88** is successful and your **Maybank2u** has been debited with **RM 0.01**.

**Mobile88.Com** will be appeared in your payment statement.

\*\*\*\*\*  
**Transaction Detail**

<b>Purchase from:</b>	I & J Sdn Bhd
<b>Ref No:</b>	A0000000001
<b>Payment ID:</b>	T00000006000
<b>Payment Date Time:</b>	26-1-2006 09:59:30 AM
<b>Payment Amount:</b>	RM 1.00
<b>Payment Type:</b>	Maybank2u

**Product Description:** Photo Print

\*\*\*\*\*

TECHNICAL SUPPORT

If you have any content-related or technical question about the product,  
please contact I & J Sdn Bhd directly.

Tel No: 603-9999 0000

Fax No: 603-9999 0001

Email: [support@i&j.com](mailto:support@i&j.com)

\*\*\*\*\*

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

If you found any fraudulent, please call/email to [mobile88.com](http://mobile88.com) immediately

Tel: 603-9200 5555

Fax: 603-9200 3333

Email: [support@mobile88.com](mailto:support@mobile88.com)

**\*iPay88 is an Online Payment Switching Gateway provided by [Mobile88.com](http://Mobile88.com) Sdn  
Bhd. For more information, please visit [www.iPay88.com](http://www.iPay88.com)**



## 1.2.5 Merchant Payment Notification Email

Merchant will also receive a payment notification email immediate after successful payment.  
Below is the email sample:

**Subject:** Mobile88 - Payment details (Ref# A00000001)      **Date:** Thu, 26 Jan 2006 09:59:30 GMT  
**From:** Mobile88 Support (sales@mobile88.com)  
**To:** ABC Admin (admin@abc.com)

Dear ABC Admin,

RefNo : A00000001

One new payment has been collected for ABC Sdn Bhd.

Please check the payment report at <http://www.mobile88.com/ePayment/report>

Transaction Detail

-----  
Payment ID : T0000006000  
Payment Date Time : 26-1-2006 09:59:30 AM  
Payment Amount : RM 1.00  
Payment Type : Maybank2u  
Product Description : Photo Print

Sincerely,  
Your iPay88 Team

Tel: 603-92005555  
Fax: 603-92003333  
Email: support@mobile88.com  
Website: [www.mobile88.com](http://www.mobile88.com)

---