iPay88 Recurring Payment
Version 2.0.3

*iPay88 is an Online Payment Switching Gateway provided by
iPay88 Indonesia

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1. Introduction

This document describes the following functionalities of iPay88's recurring payment system.

1.1. Objective

Enable iPay88's merchant to register recurring payment transaction through HTTPS form post method.

2. URL

Subscription Request URL :
https://payment.ipay88.co.id/recurringpayment2.0/subscription.asp

Subscription Response URL : [provided by merchant before start the integration]

3. Parameters

3.1. Subscription Request Parameters (Request URL to subscription.asp)

Merchant HTTPS POST subscription request 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.	FirstPaymentDate	Datetime	M	First Payment date (DDMMYYYY)
4.	Currency	varchar(5)	M	IDR only
5.	Amount	Currency	M	Payment amount with two decimals. e.g. 188.50
6.	NumberofPayments	Int	M	e.g. 12
7.	Frequency	Int	M	Frequency type 1 = Weekly 2 = Monthly 3 = Quarterly 4 = Half-Yearly 5 = Yearly *Pass “2” for monthly frequency
8.	Desc	varchar(100)	M	Product description
9.	CC_Ic	varchar(50)	M	Credit card holder IC / passport no
10.	CC_Email	varchar(255)	M	Credit card holder email address
11.	CC_Phone	varchar(100)	M	Credit card phone number
12.	P_Name	varchar(100)	M	Subscriber name as printed in identity card / passport
13.	P_Email	varchar(255)	M	Subscriber email address
14.	P_Phone	varchar(100)	M	Subscriber phone number
15.	P_Addrl1	varchar(100)	M	Subscriber address line 1
16.	P_Addrl2	varchar(100)	O	Subscriber address line 2
17.	P_City	varchar(100)	M	Subscriber city
18.	P_State	varchar(100)	M	Subscriber state
19.	P_Zip	varchar(100)	M	Subscriber zip code
20.	P_Country	varchar(100)	M	Subscriber country
21.	BackendURL	Varchar(255)	M	Payment backend response page
22.	Signature	varchar(100)	M	SHA1 signature (refer to 4.2)
23.	Response URL	varchar(255)	M	Subscription response page

Note:
M : Mandatory field
O : Optional field, value can be empty but parameter must exists.

3.2. Subscription Response Parameters (iPay88 to Response URL)

HTTPS Post response from iPay88 after register recurring payment.

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.	SubscriptionNo	Varchar(20)	M	Unique iPay88 subscription number. **Note**: SubscriptionNo will be the **RefNo** that return back to merchant BackendURL when recurring payment success charged. e.g. **S00001701** (refer page 7)
4.	FirstPaymentDate	varchar(8)	M	Subscription first payment date (DDMMYYYY)
5.	Amount	Currency	M	Payment amount with two decimals
6.	Currency	varchar(3)	M	Payment currency
7.	NumberOfPayments	Int(10)	M	Subscription cycle, eg. 12
8.	Frequency	Int(10)	M	Subscription frequency, eg. Monthly
9.	TransId	varchar(30)	O	iPay88 transaction id
10.	AuthCode	varchar(10)	O	Bank's approval code
11.	Desc	varchar(100)	O	Subscription description
12.	Status	varchar(1)	M	Subscription status "00" – Success "01" – Fail
13.	ErrDesc	varchar(100)	O	Payment error description

Note:
M : Mandatory field
O : Optional field, value can be empty but parameter must exists.

3.3. Termination Request Parameters

Merchant HTTPS POST termination request 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 from merchant that initially use for Subscription Request.
3.	Signature	varchar(20)	M	SHA1 signature (refer to 4.3)

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

3.4. Termination Response Parameters

Termination response from 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.	Status	varchar(100)	M	Termination status “1” – Success “0” – Fail
4.	ErrDesc	varchar(100)		Error description

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

**Use XML parser to retrieve the Termination Response.

3.5. Backend URL Response Parameters

Introduction

a) This Backend post feature will trigger when there is a successful charge to your customer recurring payment. No posting will be trigger if payment is fail.

Implementation
On the merchant website, you need to create a page to accept response parameters as stated in the table below.
Example: http://www.abc.com/backend_response.asp

On the subscription request page, you can specify the backend post URL by using "BackendURL" parameter.
Example:
<input name="BackendURL" value="http://www.abc.com/backend_response.asp">

On the 'backend_response.asp' page you need to write out the word 'OK' only (without quote) if the backend page success get the payment status from iPay88 else iPay88 will re-try send the status to the 'backend_response.asp' page up to 3 times on different interval.
Example:
In ASP >> response.write "OK"
In PHP >> echo "OK";

HTTPS POST response from iPay88 after recurring payment charged.

No.	Field Name	Type (Size)	M/O	Description
1	MerchantCode	varchar(20)	M	Merchant code assigned by iPay88
2	PaymentId	integer	M	Default to **2** (credit card)
3	RefNo	varchar(20)	M	Unique transaction number for recurring payment that return by iPay88. e.g. **S00001701-1** (first recurring payment) **S00001701-2** (second recurring payment) **Note**: This RefNo is the **SubscriptionNo** return to merchant after register recurring payment. The return RefNo will have hyphen follow by 1 or 2 to indicate which installment.
4	RecurringRefno	varchar(20)	M	Unique merchant transaction number / Order ID Note: The return RecurringRefno is the Refno that send in by Merchant
5	Amount	currency	M	Payment amount with two decimals
6	Currency	varchar(5)	M	Default to **IDR**
7	Remark	varchar(100)	O	Merchant remarks
8	TransId	varchar(30)	O	iPay88 transaction id
9	AuthCode	varchar(10)	O	Bank’s approval code

10	Status	varchar(1)	M	Payment status “1” – Success “0” – Fail
11	ErrDesc	varchar(100)	O	Payment status description
12	Signature	varchar(100)	M	SHA1 signature (refer to 4.4)

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

3.5.1. *Sample HTML Source (Backend URL response)*

3.5.1.1. *ASP sample code*

```
<%
MerchantCode        = Request.Form("MerchantCode")
PaymentId           = Request.Form("PaymentId")
RefNo               = Request.Form("RefNo")
RecurringRefno      = Request.Form("RecurringRefno")
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>
```

3.5.1.2. *PHP sample code*

```
<?PHP
$merchantcode       = $_REQUEST["MerchantCode"];
$paymentid          = $_REQUEST["PaymentId"];
$refno              = $_REQUEST["RefNo"];
$recurringrefno     = $_REQUEST["RecurringRefno"];
$amount             = $_REQUEST["Amount"];
$ecurrency          = $_REQUEST["Currency"];
$remark             = $_REQUEST["Remark"];
$cctransid          = $_REQUEST["TransId"];
$authcode           = $_REQUEST["AuthCode"];
$estatus            = $_REQUEST["Status"];
$errdesc            = $_REQUEST["ErrDesc"];
$hashstring         = $_REQUEST["Signature"];
PHP?>
<Add your programming code here>
```

4. Security Control

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

4.1. 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 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.

4.2. Subscription 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 fields:

1. MerchantCode
2. MerchantKey (Supplied by iPay88 and share between iPay88 and the merchant only)
3. RefNo
4. Firstpaymentdate
5. Currency
6. Amount
7. NumberofPayments
8. Frequency

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

For example,
MerchantCode = “M00003”
MerchantKey = “apple”
RefNo = “A00000001”
FirstPaymentDate = “11112013”
Currency = “IDR”
Amount = “1.00” (You should take out the “.” And “,”)
NumberOfPayments = “12”
Frequency = “1”

The hash would be calculated on the following string:
M00003appleA00000001111112013IDR100121

The resulting has signature value equals to (using SHA1 algorithm)
eR9amDNDKTzlX3sE8ZTgx5lFZ8M=

To ensure the signature generated was correct, visit the link below for signature comparison.
http://www.mobile88.com/epayment/testing/testsignature.asp

4.3. Termination 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 fields:

1. MerchantCode
2. MerchantKey (Supplied by iPay88 and share between iPay88 and the merchant only)
3. RefNo

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

For example,
MerchantCode = “M00003”
MerchantKey = “apple”
RefNo = “A00000001”

The hash would be calculated on the following string:
M00003appleA00000001

The resulting has signature value equals to (using SHA1 algorithm)
4d3NplZBQx8cdm/b5sHZ2exSTS8=

To ensure the signature generated was correct, visit the link below for signature comparison.
http://www.mobile88.com/epayment/testing/testsignature.asp

4.4. Backend URL 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:

1. MerchantKey (Supplied 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 = “M00003”
PaymentId = “2”
RefNo = “S00001701-1”
Amount = “1.00” (You should take out the “.” And “,”)
Currency = “IDR”
Status = “1”

The hash would be calculated on the following string:
appleM000032S00001701-1100IDR1

The resulting has signature value equals to (using SHA1 algorithm)
kX7Icxcj2TtCbSL/wWw5haKaU4A=

To ensure the signature generated was correct, visit the link below for signature comparison.
http://www.mobile88.com/epayment/testing/testsignature_response.asp

When iPay88 receives the request or transaction order from the merchant, it will check the hash value it generates match with the value you as a merchant have included.

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 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.

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

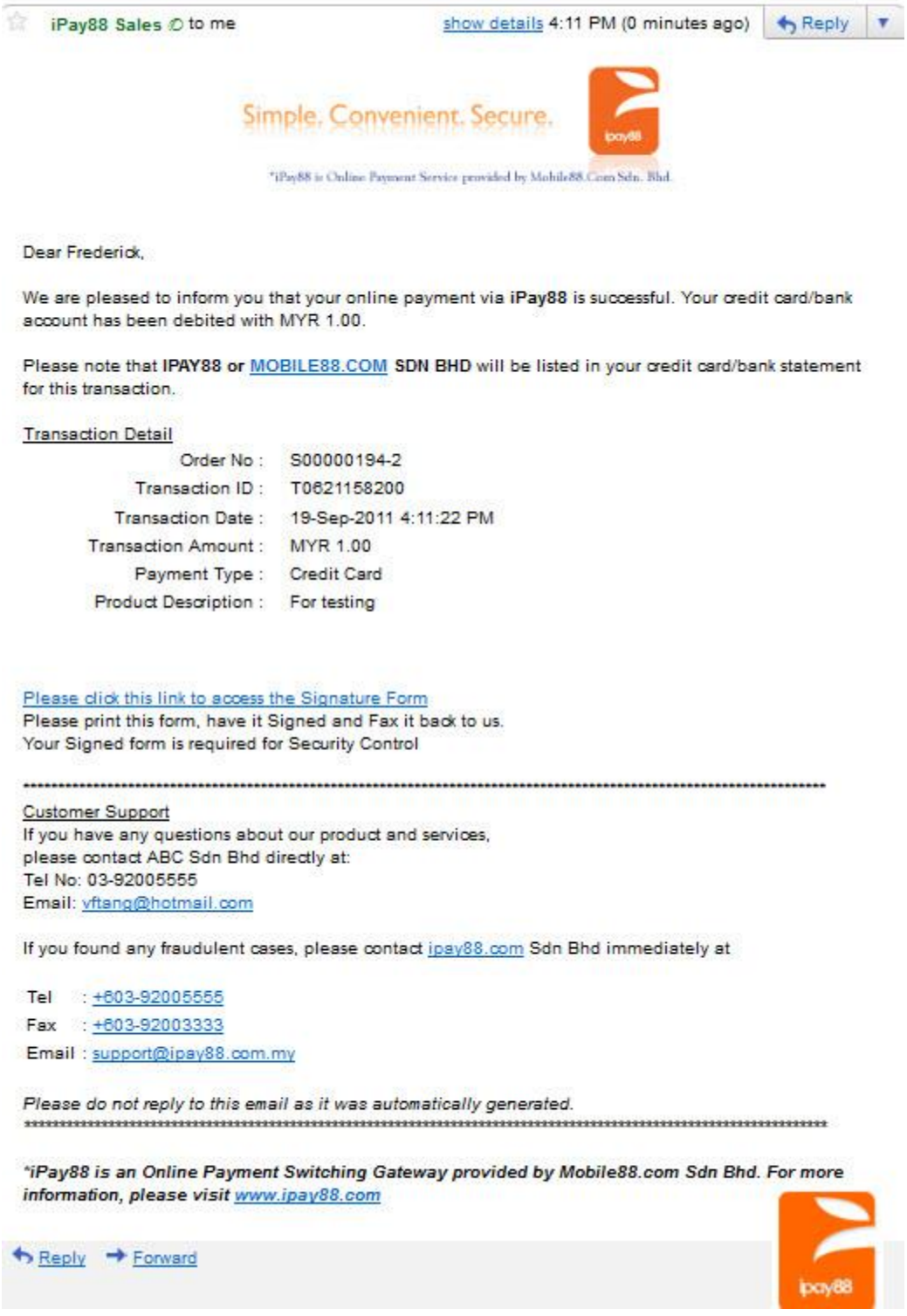
**** Sample code can be find in the sample code folder include***

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

You may utilize the web service at
http://www.mobile88.com/ePayment/Security/Security.asmx to fit into your system

5.0 Sample Email

5.0.1 Recurring successful charged



iPay88 Sales to me show details 4:11 PM (0 minutes ago) Reply

Simple. Convenient. Secure.

*iPay88 is Online Payment Service provided by Mobile88.Com Sdn. Bhd.

Dear Frederick,

We are pleased to inform you that your online payment via **iPay88** is successful. Your credit card/bank account has been debited with MYR 1.00.

Please note that **IPAY88 or MOBILE88.COM SDN BHD** will be listed in your credit card/bank statement for this transaction.

Transaction Detail

Order No :	S00000194-2
Transaction ID :	T0621158200
Transaction Date :	19-Sep-2011 4:11:22 PM
Transaction Amount :	MYR 1.00
Payment Type :	Credit Card
Product Description :	For testing

Please click this link to access the Signature Form
Please print this form, have it Signed and Fax it back to us.
Your Signed form is required for Security Control

****

Customer Support
If you have any questions about our product and services,
please contact ABC Sdn Bhd directly at:
Tel No: 03-92005555
Email: vftang@hotmail.com

If you found any fraudulent cases, please contact ipay88.com Sdn Bhd immediately at

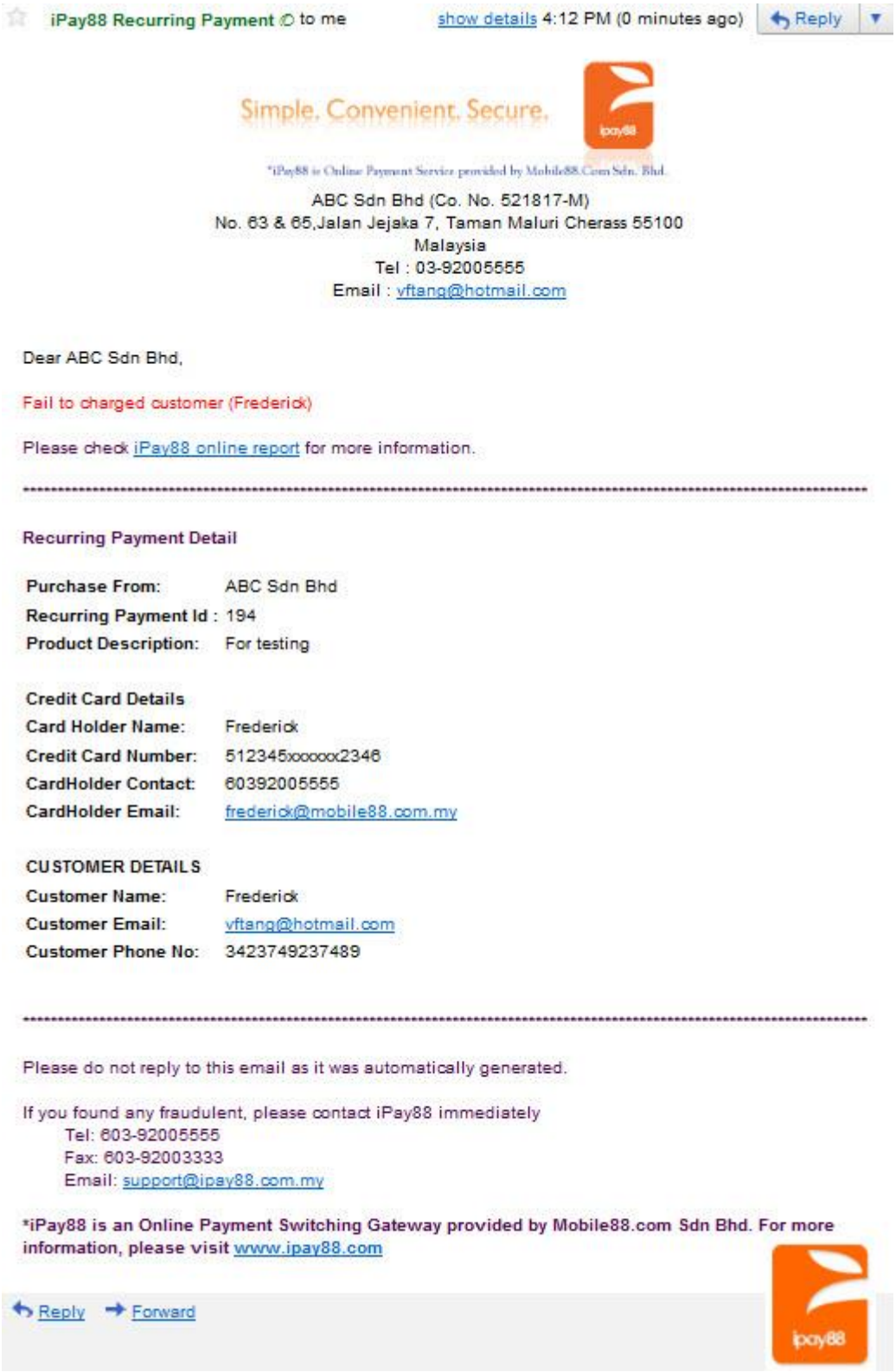
Tel : +603-92005555
Fax : +603-92003333
Email : support@ipay88.com.my

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

iPay88 is an Online Payment Switching Gateway provided by Mobile88.com Sdn Bhd. For more information, please visit www.ipay88.com

Reply Forward

5.0.2 Recurring failed to charged



iPay88 Recurring Payment to me show details 4:12 PM (0 minutes ago) Reply

Simple. Convenient. Secure.

*iPay88 is Online Payment Service provided by Mobile88.Com Sdn. Bhd.

ABC Sdn Bhd (Co. No. 521817-M)
No. 63 & 65,Jalan Jejaka 7, Taman Maluri Cherass 55100
Malaysia
Tel : 03-92005555
Email : vftang@hotmail.com

Dear ABC Sdn Bhd,

Fail to charged customer (Frederick)

Please check iPay88 online report for more information.

Recurring Payment Detail

Purchase From:	ABC Sdn Bhd
Recurring Payment Id :	194
Product Description:	For testing

Credit Card Details

Card Holder Name:	Frederick
Credit Card Number:	512345xxxxxx2346
CardHolder Contact:	60392005555
CardHolder Email:	frederick@mobile88.com.my

CUSTOMER DETAILS

Customer Name:	Frederick
Customer Email:	vftang@hotmail.com
Customer Phone No:	3423749237489

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

If you found any fraudulent, please contact iPay88 immediately
Tel: 603-92005555
Fax: 603-92003333
Email: support@ipay88.com.my

***iPay88 is an Online Payment Switching Gateway provided by Mobile88.com Sdn Bhd. For more information, please visit www.ipay88.com**

Reply Forward