



# Pyxpro Online Payment Integration Guide (Wechat Mini Program)

## 1 Introduction

### 1.1 Audience

The readers of this document would be technical engineers who will conduct integration work with Pyxpro payment platform, as well as people who want to learn the business scenarios of Pyxpro online payment services.

### 1.2 Change History

Date	Version	Comments
2020-02-10	1.0	First edition

## 2 Message Structure

### 2.1 Message Sample

All the messages communicated with Pyxpro must be sent over HTTPS with POST command and payload of the message is encoded by xml format. Message signature is required to secure the message transmission.

**See example in below:****Request Message**

```
<xml>
<service>pay.weixin.native.intl</service>
<charset>UTF-8</charset>
<version>2.0</version>
<sign_type>MD5</sign_type>
<mch_id>157590000059</mch_id>
<out_trade_no>Q3NL0000442503084402</out_trade_no>
<device_info>SN12345678</device_info>
<body><![CDATA[iPhone]]></body>
<total_fee>10</total_fee>
<mch_create_ip><![CDATA[103.218.216.123]]></mch_create_ip>
<notify_url><![CDATA[http://www.baidu.com]]></notify_url>
<time_start>20180526202310</time_start>
<time_expire>20180527202310</time_expire>
<op_user_id>10001</op_user_id>
<product_id>123456789</product_id>
<nonce_str>ibuaiVcKdpRxxkhJA</nonce_str>
<sign>2444D06685977A585F4C98D7C796BD92</sign>
</xml>
```

**Response Message, 'status' field indicates the result.**

**0 - success**

**others - failure**

**Both 'status' and 'result\_code' are 0 if success**

```
<xml>
<status>0</status>
```



```
<appid>wx2006c4c3da91e7b1</appid>
<charset>UTF-8</charset>
<code_img_url>https://pay.wepayez.com/pay/qrcode?uuid=weixin%3A%2F%2Fwxpa
y%2Fbizpayurl%3Fpr%3DUWAhBq5</code_img_url>
  <code_url>weixin://wxpay/bizpayurl?pr=UWAhBq5</code_url>
  <device_info>SN12345678</device_info>
  <mch_id>157590000059</mch_id>
  <nonce_str>ibuaiVcKdpRxkhJA</nonce_str>
  <result_code>0</result_code>
  <sign>93AFEEB54BCF4825547761CCB6CBF241</sign>
  <sign_type>MD5</sign_type>

  <uuid>0d0ef3f2d344e2cc2fbd679ed3aa19e71</uuid>
  <version>2.0</version>
</xml>
```

**Common error case 1:****Communication error, find details in 'message' field**

```
<xml>
  <version>2.0</version>
  <charset>UTF-8</charset>
  <status>400</status>
  <message>Signature error</message>
</xml>
```

**Common error case 2:****Business processing error, find details in 'err\_code\_des' field**

```
<xml>
  <status>0</status>
```



```
<message><![CDATA[OK]]></message>
<appid><![CDATA[wx2421b1c4370ec43b]]></appid>
<mch_id><![CDATA[10000100]]></mch_id>
<device_info><![CDATA[1000]]></device_info>
<nonce_str><![CDATA[sthBJ9QyUG6vkrjJ]]></nonce_str>
<sign><![CDATA[6277A96D7875D4FF23AA7B6A4C3046AB]]></sign>
<result_code>1</result_code>
<err_code><![CDATA[AUTHCODE_EXPIRE]]></err_code>

<err_code_des><![CDATA[QR code is expired, fresh QR Code]]></err_code_des>

</xml>
```

## 2.2 Test Information

Test server URL:

<https://pay.wepayez.com/pay/gateway>

Test merchant account:

157590000059

Signature key:

c43a467098af250171cd787e56d03979

# 3 Payment Interface Description

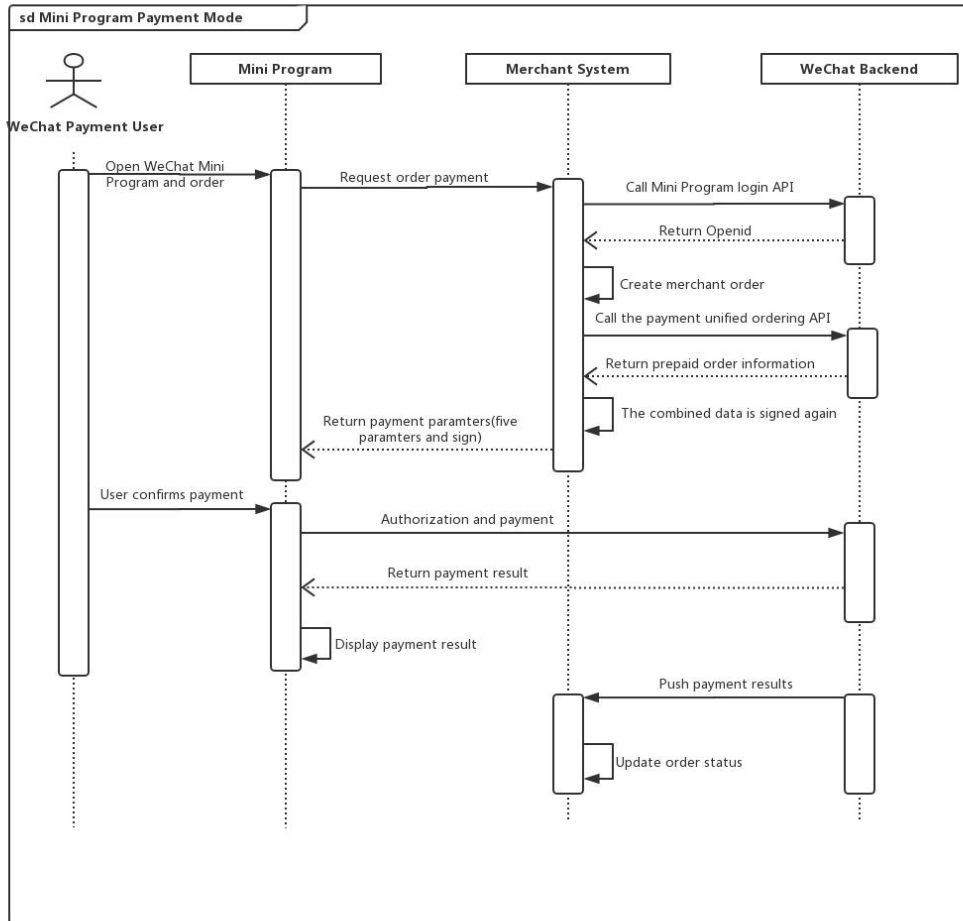
## 3.1 Mini Program Payment

### 3.1.1 Scenario

Applet payment refers to the payment initiated by the user in the applet after the merchant applies for the WeChat applet.



### 3.1.2 System interaction flow



### 3.1.3 Create Payment Order Interface

#### Request Message

Parameter	Is Mandatory	Data Type	Description
service	Y	String(32)	Service type: pay.weixin.native.intl
version	N	String(8)	Interface version, default is 2.0
charset	N	String(8)	Message encoding charset, fixed value: UTF-8



sign_type	N	String(8)	Signature algorithm fixed value: MD5
mch_id	Y	String(32)	Unique merchant id allocated by Pyxpro
is_raw	N	String(1)	1 - true 0 - false Default 0
out_trade_no	Y	String(32)	Unique payment order id generated by merchant system. Maximum is 32 characters, only alphabet, digit and underscore and mixture.
device_info	N	String(32)	Terminal number
body	Y	String(127)	Product/service
sub_openid	Y	String(128)	The openid corresponding to the merchant Mini Program that WeChat users follow ( <b>Note: This parameter needs to be passed only for official use, not for testing</b> )
sub_appid	Y	String(32)	WeChat Mini Program Platform AppID
attach	N	String(127)	Extension message for merchant system
total_fee	Y	Int	Value of payment amount Value unit is 1% of the currency. For example, If payment amount is HKD 10.00, the value of total_fee should be 1000
mch_create_ip	Y	String(16)	IP address of the merchant system (client)
notify_url	Y	String(255)	Callback url provided by merchant system to receive asynchronous notification of payment result from Pyxpro platform. Less than 255 characters, URL format as <a href="http://wap.tenpay.com/tenpay.asp">http://wap.tenpay.com/tenpay.asp</a> , can be accessed from public network



callback_url	N	String(255)	The merchant service address to which WeChat jumps after the transaction is completed, eg: <a href="http://wap.tenpay.com/callback.asp">http://wap.tenpay.com/callback.asp</a> Note: This address serves only as a jump to the front page and requires the notify_url notification result as the final payment result. This parameter is valid only in a non-native form.
time_start	N	String(14)	Time to initial payment order, format: yyyyMMddHHmmss, e.g. 25 <sup>th</sup> Sept, 2009, 9:10:10 value: 20091225091010 Time Zone: GMT+8 beijing
time_expire	N	String(14)	Expiry of payment order Same format as time_start
goods_tag	N	String(32)	Promotion flag supported by Wechat
nonce_str	Y	String(32)	Random string less than 32 characters
limit_credit_pay	N	String(32)	If credit card is supported, 1 - not allowed, other - allowed
sign	Y	String(32)	Message signature with MD5

## Response Message

Parameter	Is Mandatory	Data Type	Description
version	Y	String(8)	Default 2.0.
charset	Y	String(8)	Fixed :UTF-8
sign_type	Y	String(8)	Fixed:MD5
appid	Y	String(32)	The AppID of the Mini Program of Pyxpro payment platform service provider



status	Y	String(16)	0 - success other - failure this field indicates communication status of the request. Only 'result_code' 0 indicates request is successful.
message	N	String(128)	Error description of communication failure
Only return when 'status' is 0			
result_code	Y	String(16)	Request status 0 - success other - failure
mch_id	Y	String(32)	Unique merchant id allocated by Pyxpro
device_info	N	String(32)	Terminal number
nonce_str	Y	String(32)	Random string, less than 32 characters
err_code	N	String(32)	Error code
err_msg	N	String(128)	Error description
sign	Y	String(32)	Message signature
Only returns when both 'status' and 'result_code' are 0			
token_id	Y	String(64)	A platform-generated prepayment ID that is invoked in a subsequent interface
pay_info	Y	String	Returns a json format string when is_raw is 1, used for raw js payments

### 3.1.4 Native js payment interface

Interface needs attention, all request parameters are character types.

Request Message:

Parameter	Is Mandatory	Data Type	Description
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timeStamp	Y	String	The information in pay_info returned from the initialized request
nonceStr	Y	String	The information in pay_info returned from the initialized request
package	Y	String	The information in pay_info returned from the initialized request
signType	Y	String	The information in pay_info returned from the initialized request
paySign	Y	String	The information in pay_info returned from the initialized request

Refer to the following example:

```
wx.requestPayment({
  timeStamp: '1575015126345',
  nonceStr: '1575015126345',
  package: 'prepay_id=wx29161206313556c131600cd21132920600',
  signType: 'MD5',
  paySign: '4617B4C3272C9F852FBB2409615C3B90',
  success:(res) => {
  },fail:(res) => {
  }
})
```

### 3.1.5 Asynchronous Notification

#### Introduction

Asynchronous notification will be sent to 'notify\_url' which is past by merchant system in request message. Pyxpro will send payment result to this URL after consumers complete the payment on mobile. Merchant system should response plain text 'success' to Pyxpro platform in less than 5 seconds once receiving the notification. Otherwise Pyxpro regards the failure of this notification and retry to send the same message in the regular frequency (0/15/15/30/180/1800/1800/1800/1800/3600 unit: second) until receiving correct response.

#### Notes:

Merchant system should verify out\_trade\_no and total\_fee to be same as request message before updating order status.



Notification message is sent by POST command to notify\_url.

### Callback message

Parameter	Is Mandatory	Data Type	Description
version	Y	String(8)	Fixed:2.0
charset	Y	String(8)	Fixed:UTF-8.
sign_type	Y	String(8)	Fixed:MD5
status	Y	String(16)	0 - success other - failure
message	N	String(128)	Error message
Only return when 'status' is 0			
result_code	Y	String(16)	Payment request processing result 0 - success other - failure
mch_id	Y	String(32)	Unique merchant id allocated by Pyxpro
device_info	N	String(32)	Terminal Number
nonce_str	Y	String(32)	Random string less than 32 characters
err_code	N	String(32)	Error code
err_msg	N	String (128)	Error description
sign	Y	String(32)	Message signature in MD5
Only return when both 'status' and 'result_code' are 0			
openid	Y	String(128)	Unique id of Wechat user
trade_type	Y	String(32)	pay.weixin.native.intl
is_subscribe	Y	String(1)	Y - subscribed N - not subscribed



pay_result	Y	Int	0 - success Other - failure
pay_info	N	String(64)	Error message in failure case
transaction_id	Y	String(32)	Unique order id generated by Pyxpro
out_transaction_id	Y	String(32)	Unique order id generated by Wechat
sub_is_subscribe	N	String(1)	Y - subscribed N - not subscribed
sub_appid	N	String	Appid of the merchant
sub_openid	N	String(128)	Unique id of Wechat user associated with merchant Appid
out_trade_no	Y	String(32)	Unique order id generated by merchant system
total_fee	Y	Int	Amount of payment order
coupon_fee	N	Int	Consumer paid amount = total_fee - coupon fee, coupon fee<= total_fee
fee_type	Y	String(8)	Currency code of merchant collecting payment
attach	N	String(127)	Echo of the extension message added by merchant
bank_type	Y	String(16)	Bank name
bank_billno	N	String(32)	Bank order number
time_end	Y	String(14)	Transaction completed time, format: yyyyMMddHHmmss, time zone: GMT+8 beijing.
cash_fee	Y	Int	Amount paid by cash wallet, unit 1% of CNY
cash_fee_type	N	String(16)	Currency code of cash wallet, fixed CNY
rate	Y	String(16)	FX rate between CNY and merchant collecting currency

### Response to callback

Merchant should response plain text 'success' after receiving notification.



Return Parameter	Description
success	Not case sensitive Pyxpro will stop sending notification.
Fail or other string	Pyxpro will continue to re-send notification in the regular period.

### 3.1.6 Query Payment Order

#### Introduction

Merchant system can query order details by out\_trade\_no or Pyxpro transaction id.

Request message is sent over HTTPS POST command.

#### Request Message

Parameter	Is Mandatory	Data Type	Description
service	Y	String(32)	Service Type unified.trade.query
version	N	String(8)	Fixed: 2.0
charset	N	String(8)	Fixed:UTF-8
sign_type	N	String(8)	Fixed: MD5
mch_id	Y	String(32)	Unique merchant id allocated by Pyxpro
out_trade_no	N	String(32)	Unique order id generated by merchant system
transaction_id	N	String(32)	Unique order id generated by Pyxpro. Either 'out_trade_no' or 'transaction_id' should be filled
nonce_str	Y	String(32)	Random string, less than 32 characters
sign	Y	String(32)	Message Signature in MD5



## Response Message

Parameter	Is Mandatory	Data Type	Description
version	Y	String(8)	Interface version Fixed:2.0.
charset	Y	String(8)	Fixed:UTF-8.
sign_type	Y	String(8)	Fixed:MD5
status	Y	String(16)	Request message communication status. 0 - success other - failure
message	N	String(128)	Error message
Only return when 'status' is 0			
result_code	Y	String(16)	Request message processing status 0 - success other - failure
mch_id	Y	String(32)	Unique merchant id allocated by Pyxpro
device_info	N	String(32)	Terminal Number
nonce_str	Y	String(32)	Random string, less than 32 characters
err_code	N	String(32)	Error code
err_msg	N	String(128)	Error description
sign	Y	String(32)	Message signature in MD5
Only return when both 'status' and 'result_code' are 0			



trade_state	Y	String(32)	Payment order status: <b>SUCCESS</b> - success <b>REFUND</b> - payment is refunded <b>NOTPAY</b> - order is created but not paid <b>CLOSED</b> - payment order is closed <b>PAYERROR</b> - other errors, e.g. issuer bank reject
Only return when 'trade_state' is SUCCESS			
openid	Y	String(128)	Appid of Wechat user
appid	Y	String(32)	Payment SP Wechat official id
trade_type	Y	String(32)	pay.weixin.native.intl
is_subscribe	Y	String(1)	If subscribe Wechat Mini Program Y - subscribed N - no subscribed
transaction_id	Y	String(32)	Unique payment order id generated by Pyxpro
out_transaction_id	Y	String(32)	Unique transaction id generated by Wechat
out_trade_no	Y	String(32)	Unique payment order id generated by merchant system, only including alphabet, digit, underscore and mixture
total_fee	Y	Int	Total value of the payment Unit is 1% of the currency For example in HKD: 1000 indicates HKD 10.0,
coupon_fee	N	Int	Coupon amount Coupon amount <= total_fee Cash paid = total_fee - coupon amount
fee_type	Y	String(8)	Merchant payment collecting currency. Currency code compliant with ISO 4217 standard



attach	N	String(127)	Echo data from request message filled by merchant system
bank_type	Y	String(16)	Bank name
bank_billno	N	String(32)	bank bill number if available
time_end	Y	String(14)	Completed time of payment transaction Format: yyyyMMdHHmmss, Time Zone: GMT+8 beijing
cash_fee	Y	Int	Amount is paid by cash wallet, unit is 1% of the currency
cash_fee_type	N	String(16)	Currency code, Fixed: CNY
rate	Y	String(16)	FX rate between CNY and merchant payment collecting currency

### 3.1.7 Close Order

#### Introduction

Merchant system can close the unpaid order to prevent double pay.

#### Notes:

Payment order can only be closed at least 5 minutes after it is created.

#### Request Message

Parameter	Is Mandatory	Data Type	Description
service	Y	String(32)	Service Name: unified.trade.close
version	N	String(8)	Fixed: 2.0



charset	N	String(8)	Fixed: UTF-8
sign_type	N	String(8)	Fixed: MD5
mch_id	Y	String(32)	Unique merchant id allocated by Pyxpro
out_trade_no	Y	String(32)	Unique payment order id generated by merchant system
nonce_str	Y	String(32)	Random string, less than 32 characters
sign	Y	String(32)	Message signature in MD5

### Response Message

Parameter	Is Mandatory	Data Type	Description
version	Y	String(8)	Fixed: 2.0
charset	Y	String(8)	Fixed: UTF-8
sign_type	Y	String(8)	Fixed: MD5
status	Y	String(16)	Message communication status: 0 - success other - failure
message	N	String(128)	Error message
Only return when 'status' is 0			
result_code	Y	String(16)	Request processing status: 0 - success, payment order in closed status cannot be paid anymore. Other - failure, close payment order failed, you need try again
mch_id	Y	String(32)	Unique merchant id allocated by Pyxpro





nonce_str	Y	String(32)	Random string, less than 32 characters
err_code	N	String(32)	Error code
err_msg	N	String (128)	Error description
sign	Y	String(32)	Message signature in MD5

### 3.1.8 Refund

#### Introduction

Consumers may request to refund transactions if he/she does not satisfy goods and service merchants provide. And funds paid will be returned to the consumers' Alipay/Wechat pay wallet or bankcard linked to the wallets if merchants refund the original transactions.

Transaction status will be updated in 1-2 minutes once the refund call is completed.

#### Notes:

1. Refund should be initiated before 90 days of the completed time of the original transaction.
2. Funds may not return back to consumers' wallets or the linked bank accounts immediately and time of delay depends on business process of each bank. Usually, 1-3 days delay after the refund call is completed.
3. Input parameter 'out\_refund\_no' generated by merchant system should be unique.

Retry with the same 'out\_refund\_no' for unsuccessful refunds calls.

Partial refund is allowed unless the total refund amount reaches the original transaction amount. And coupon cannot be refunded.

4. Most banks in China allow refund transactions, but few banks may not support. Merchants have to find other way to return money back to consumers.

#### Request Message

Parameter	Is Mandatory	Data Type	Description
service	Y	String(32)	Interface type: unified.trade.refund



version	N	String(8)	Default is 2.0
charset	N	String(8)	Fixed: UTF-8
sign_type	N	String(8)	Fixed:MD5
mch_id	Y	String(32)	Merchant ID allocated by Pyxpro platform
out_trade_no	Y	String(32)	Unique id of the original transaction generated by merchant system, less than 32 characters
transaction_id	N	String(32)	Unique transaction id generated by Pyxpro platform  transaction_id has high priority if both 'out_trade_no' and 'transaction_id' are provided
out_refund_no	Y	String(32)	Unique id of the refund transaction generated by merchant system. One refund for multiple refund calls with the same 'out_refund_no'. Please retry with the same 'out_refund_no' for unsuccessful refund calls.
total_fee	Y	Int	Amount of the original order, unit is 1% of the currency, e.g. if collecting currency is EUR, 100 indicates 1EUR
refund_fee	Y	Int	Amount of the refund call, unit is 1% of the currency. Partial refund is supported, and the summary of the all refund transactions cannot exceed the original amount
op_user_id	Y	String(32)	Casher id



refund_channel	N	String(16)	ORIGINAL- refund to the same funds source of the original transaction Default value: ORIGINAL
nonce_str	Y	String(32)	Random string, less than 32 characters
sign	Y	String(32)	MD5 signature

**Response Message, XML encoding**

Parameter	Is Mandatory	Data Type	Description
version	Y	String(8)	Fixed: 2.0
charset	Y	String(8)	Fixed: UTF-8
sign_type	Y	String(8)	Fixed: MD5
status	Y	String(16)	Message communication status: 0 - success other - failure
message	N	String(128)	Error message, return when status is not 0
Only return when status is 0			
result_code	Y	String(16)	0 - success other - failure, please retry
mch_id	Y	String(32)	Merchant ID allocated by Pyxpro platform
device_info	N	String(32)	Device number
nonce_str	Y	String(32)	Random string, less than 32 characters
err_code	N	String(32)	Error code
err_msg	N	String (128)	Error description
sign	Y	String(32)	MD5 signature
Only return when both status and result_code is 0			
transaction_id	Y	String(32)	Order id generated by Pyxpro platform
out_trade_no	Y	String(32)	Unique order id of the original transaction generated by merchant system
out_refund_no	Y	String(32)	Unique refund transaction id generated by merchant system



refund_id	Y	String(32)	Refund transaction id generated by Pyxpro platform
refund_channel	Y	String(16)	Only support: ORIGINAL
refund_fee	Y	Int	Amount of this refund request, unit is 1% of the currency
coupon_refund_fee	N	Int	Amount of the coupon refunded, reserved.

### 3.1.9 Query Refund Order

#### Introduction

Merchant system can query refund order status after calling refund interface. The status of the refund transaction will delay several minutes and funds will return back in around 3 days.

#### Request Message

Parameter	Is Mandatory	Date Type	Description
service	Y	String(32)	Inteface Type: unified.trade.refundquery
version	N	String(8)	Fixed: 2.0
charset	N	String(8)	Fixed: UTF-8
sign_type	N	String(8)	Fixed: MD5
mch_id	Y	String(32)	Merchant ID allocated by Pyxpro platform
out_refund_no	N	String(32)	Unique ID of the refund transaction generated by merchant system
refund_id	N	String(32)	Unique ID of the refund transaction generated by Pyxpro platform. Refund_id has high priority if out_refund no is provided either.
nonce_str	Y	String(32)	Random string, less than 32 characters
sign	Y	String(32)	MD5 signature

**Response Message**

Parameter	Is Mandatory	Data Type	Description
version	Y	String(8)	Interface version, fixed: 2.0。
charset	Y	String(8)	Fixed: UTF-8。
sign_type	N	String(8)	Fixed: MD5
status	Y	String(16)	Message communication status: 0 - success other - failure
message	N	String(128)	Error message
Only returns when status is 0			
result_code	Y	String(16)	0 - success other - failure
mch_id	Y	String(32)	Merchant ID allocated by Pyxpro Platform
device_info	N	String(32)	Device number
nonce_str	Y	String(32)	Random string , less than 32 characters
err_code	N	String(32)	Error code
err_msg	N	String (128)	Error message
sign	Y	String(32)	MD5 signature
Only return when status and result_code is 0			
transaction_id	Y	String(32)	Unique id of the original transaction generated by Pyxpro platform
out_trade_no	Y	String(32)	Unique id of the original transaction generated by merchant system
refund_count	Y	Int	Refund counts
out_refund_no_\$n	Y	String(32)	Unique id of the refund transaction generated by merchant system
refund_id_\$n	Y	String(32)	Unique id of the refund transaction generated by Pyxpro platform
refund_channel_\$n	Y	String(16)	Only support:ORIGINAL



refund_fee_\$n	Y	Int	Amount of this refund request, unit is 1% of the currency
coupon_refund_fee_\$n	N	Int	Reserved, refund amount of coupon
refund_time_\$n	N	String(14)	yyyyMMddHHmmss
refund_status_\$n	Y	String(16)	Refund transaction status: SUCCESS FAIL PROCESSING NOTSURE— unknown status, please retry CHANGE— consumer' s bank rejected refund and funds remain in merchant account, should find other refund means

\$n index of the refund transaction number in case of multi-refund requests, value from 0 to (\$refund\_count-1), e.g if refund\_count has value:2, it means there are two partial refund transactions, 0 for 1<sup>st</sup> refund, "1" for 2<sup>nd</sup> refund

## 4 Signature Algorithm

### Step 1:

place all data sent or received into dataset M, then sort all non-null parameters in ascending order according to their ASCII codes, then assembling in key-value pair format (i.e. key1=value1&key2=value2...) and set as stringA. Keep key and value in raw value without URL encoding.

### Notes:

1. 'Sign' and null-value parameters should be excluded from signature string
2. Additional parameters may be introduced in later upgrading release, please consider this case in your design

### For example:

```
stringA="
```

```
body=iPhone&charset=UTF-8&device_info=SN12345678&mch_create_ip=103.218.216.123&mch_id=157590000059&nonce_str=ibuaiVcKdpRxxkhJA&notify_url=http://www.baidu.com&op_user_id=10001&out_trade_no=Q3NL0000442503084402&product_id=123456789&service=pay.weixin.native.intl&sign_type=MD5&time_expire=20180527202310&time_start=20180526202310&total_fee=10&version=2.0";
```

### Step 2:

Append "key=" + <merchant signature key> to stringA and then sign the new string in MD5 algorithm and covert the signed string in uppercase Hex format.



For example:

Merchant signature Key: c43a467098af250171cd787e56d03978,  
stringB=stringA + "&key= c43a467098af250171cd787e56d03978", then you get:  
"body=iPhone&charset=UTF-8&device\_info=SN12345678&mch\_create\_ip=103.218.216.123&mc  
h\_id=15759000059&nonce\_str=ibuaiVcKdpRxxkJA&notify\_url=http://www.baidu.com&op\_user  
\_id=10001&out\_trade\_no=Q3NL0000442503084402&product\_id=123456789&service=pay.weixi  
n.native.intl&sign\_type=MD5&time\_expire=20180527202310&time\_start=20180526202310&tot  
al\_fee=10&version=2.0&key=c43a467098af250171cd787e56d03978";

Sign in MD5:

Final Signature=MD5(stringSignTemp).toUpperCase()="2444D06685977A585F4C98D7C796BD92"