



# Card Processing Document



## Card Processing Document V2.2

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Contents

Introduction.....5

    Overview .....5

Who Need to Read? .....5

Data Interaction.....6

    Data Format .....7

    Signature Instructions.....7

        Procedure .....7

        Algorithm.....8

    Encryption Instructions .....8

        Procedure .....8

        Algorithm: .....8

    Format Description.....9

    How To Set Public Key & Secret Key in PC Website.....9

1.Transactions ..... 11

    1.1 Create Order ..... 11

        Request Parameter List ..... 11

        Response Data..... 14

    1.2 Query Order..... 15

        Request Parameter List ..... 15

        Response Data..... 16

    1.3 Callback &Notice ..... 17

        1.3.1Callback..... 17

## Card Processing Document V2.2

<a href="#">Callback Parameters List</a> .....	17
1.3.2 Notice .....	19
<a href="#">Notice Parameters List</a> .....	19
1.4 Refund Order .....	20
<a href="#">Request parameter list</a> .....	20
<a href="#">Response data</a> .....	21
1.5 Refund Query Order .....	22
<a href="#">Request Parameter List</a> .....	22
<a href="#">Response Data</a> .....	22
1.6 Refund Cancel Order .....	23
Request Parameter List .....	23
Response Data .....	23
2.Remark .....	25
2.1 Timestamp .....	25
2.2 Language .....	25
2.3 Pay Model .....	25
2.4 Currency .....	26
2.5 Order status .....	27
2.6 System response code .....	27

# Introduction

## Overview

This document describes the function of global payments to partner merchants. The document introduces the development process of us from interaction mode, signature, interface, and precautions, which can help developers start quickly. It can also be used as a manual for interface parameters and parameter types.

Open **API** uses standard response codes to indicate the correctness or wrongness of the request result. All **API** requests are returned in a friendly **JSON** object format (including error messages). Each response contains [meta] information (the status of the request) and [data] information (business response data of the request).

```
{
  "meta": {
    "code": 0000,
    "message": ' Request Success',
    "success": true
  },
  "data": {
    // Response data
  }
}
```

## Who Need to Read?

Developers that have **WEB** development experience and understand the process of **HTTP** request and response.

## Data Interaction

1. Construct request parameters: The merchant generates the signature through program according to the interface rules.
2. Encryption: Assemble and transmit the data after encrypting the sensitive parameters.
3. Send request data: Send the data to the **Our System** through the **HTTP method** or **Form submission**.
4. Accepting the requested data: After receiving the data, **Our System** will perform a security check. After a series of verification passes, it will process this request.
5. Response: **Our System** will return the result data to the merchant system in the form of key-value pairs.
6. Response data process: The merchant should first decrypt the result, then verifies the signature, and finally performs data processing.
7. Callback: After the asynchronous processing, the **Our System** will notify the merchant system of the result through a callback method, and the data structure is the same with the synchronous response.
8. Callback response data process: The merchant should first decrypt the result, then verifies the signature, and finally performs data processing.

## Data Format

POST protocol, support HTTP and HTTPS

Standard **POST** protocol, during the API interface data interaction process, after signed and submitted to the **Our System** through the **POST** request method. After processing, it will also sign and processed in the **HTTP POST** method to response.

## Signature Instructions

To ensure the authenticity and integrity of the data during transmission, we need to sign the data and perform signature verification after receiving the signed data.

**Signature** has two steps. First, the original string to be signed should stitched according to rules and use the specific algorithm and key to calculate the signature result.

## Procedure

1. The data of the signature string are all before encrypted parameters.
2. The parameters are sorted from small to large using ASCII code.
3. The parameters are assembled into a signed original string with a fixed order and spliced with &. The order and format of the parameters are as follows:  
key1=value1&key2=value2...keyN=value

## Algorithm

1. Use **RSA** encryption.
2. After the merchant registered, the operator will configure the **RSA public key** for the merchant and inform the merchant of the **private key**.
3. RSA tools: **RsaUtil.Sign** (raw data string, private key)

## Encryption Instructions

To ensure the security of data during transmission and prevent the data breach, we need to encrypt the sensitive data and decrypt the data before signature verification.

## Procedure

1. Encrypt sensitive parameters, such as account name, account number, etc.
2. Chinese parameters requiring encryption.

## Algorithm:

1. Sensitive parameters are encrypted with AES.
2. The merchant needs to generate the merchant secret key by themselves and save it in the merchant system.
3. AES: **AesUtil.AESEncode**(parameter, merchant secret key).
4. Chinese parameters use **URLEncoder** to encode.
5. URLEncoder: **URLEncoder.encode**(parameter).

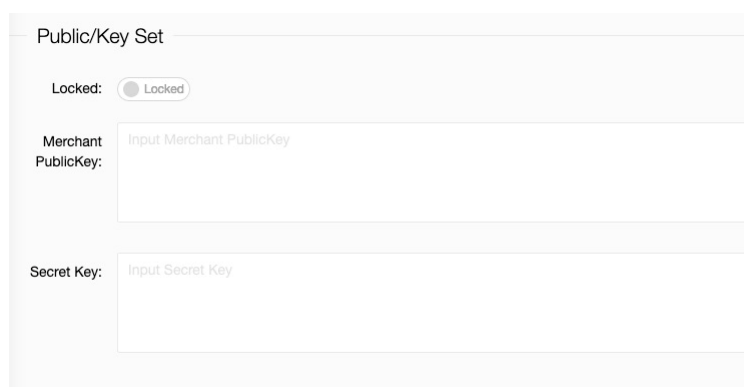


## Format Description

Symbol	description
R	The parameter is required
O	The parameter is optional
C	The parameter appears under certain conditions (Conditional)

## How To Set Public Key & Secret Key in PC Website

1. Login to the website and open the [Set]- [Merchant Key] page.



Public/Key Set

Locked:  Locked

Merchant  
PublicKey:

Secret Key:

2. Click [locked] to unlock the function
3. Click [Generate **PublicKey** and **PrivateKey**] to generate a pair of public and private keys.
4. Click [**Randomized Key**] to generate a **secret key**.
5. Click [update] (**must copy private key before closing this page**)

## Card Processing Document V2.2

Public/Key Set

Locked:  Edit

Merchant  
PublicKey: MIGfMA0GCSqGSIb3DQEBAQUAA4GNADCBiQKBgQDC2BJVir2P4BoM/HFQEpGIVvh7zrOeonSjP0lfujTmwWnmU6I137P303mcEO0xp+QJKqZUWY9BdC  
y0EP+D+JcuFYVn99IMyEC3p6xVT0CQKvK8HM2IVbKaltisnee/R1moGaNjKhcYXOg8m0cuawOvVRvoAGjXJ381mmxlm3c1wIDAQAB

PrivateKey: MIICeAIBADANBgkqhkiG9w0BAQEFAASCAmIwggJcAgEAAoGBAMLYEiWkVY/gGgZ8cVASKaVW+HvOs56idKM/SV+6NObBaeZTojXfs  
/TteZwQ7TGn5AkplRbL0FOLLQQ  
/4P4ly4XJWt32UziQLenrFVPQJCRWtWczaJVspol2Wyd579HWagZo2OQdxhc6DybRy5rA69VG+gAaMhePfzWabGWbdzXAgMBAEAgYAy8ixZEZ3fMMme  
+6LPPW4NbVjKfjtUa0Nwk59KUMLOybNgrC3RXbZJgJ2PDbb9Q07GFvFUtJYVvgVXRxydV2Ryhzxt+4WHjxgHwfvIMW2XzMhMEAUHs6q3N8QSiqCsqHX  
eWZb+qcRp7TOYLgE4IT1HL5/6OntXaq2GMqR2d/gQJBAPKp4ja/zdFBp8OvP54Up3OCnX3vwh4lUXJBmmSLFKMr4b  
/M7Uf7grRBkFHD29oCMOM6PGP/qwYLNQqMes7bsCQQDIMKYwFXBwYsl.97CKWzMo1XDslUE4wH4GTdYzc5U1Y4rC8  
/qtaNFLv7Edv5mbVzyvZZ5RpeU44gZe1HbQOTw2VAkEAgEinVocU4mvqg99kYVEBcoDKs//RM4NW4/wRE9AWD  
/6tIVUqe1RQTLNohA2hTdwDvyN7AH0CQ/1C0397ixNnZwJBAJvDhrv6Dm/T2KbcgjlV1QxZ3EUhuQSmrxq+ejJz1JARqrUTbt58EgBOI3MREfjQ  
/uxINMwwr9U1ulYbO4tapVUCQQCz06b6ijBDqxgfJCs2zhOaM5QGqHXrW7dPRDR9MfvKr78MdTHCWHtV1derGctWW3jDq4GAz0HJTBSiz+vuRP

The system only stores the public key, please copy the private key and keep it safe.

Copy PrivateKey

Generate PublicKey and PrivateKey Copy PublicKey

Secret Key: 5m17rrtoizbc803h8s57y9

Copy MerchantKey Randomized Key

Update

**Important: You must copy the private key & secret key and keep it safe. The private key only shows once in this page.**

# 1. Transactions

## 1.1 Create Order

Request URL: <https://gateway.xinpay.org/nh-gateway/card/payment>

### Request Parameter List

Parameter	Type	Required	Signed	AES	URL encode	Description
merchantNo	String	R	Y			The unique identifier that assigned by the system. E.g., XP022000001
timeStamp	String	R	Y			Current timestamp in Greenwich Mean Time (GMT). See remarks 2.1
language	String	O	N			Language type. See remarks 2.2
sign	String	R	N			Sign, generate encrypted string according to the signing step, and use the encryption method [RsaUtil. Sign].
merchantOrderNo	String	R	Y			Custom system order number (cannot be repeated, otherwise it will be rejected)
payModel	String	R	Y			See remarks 2.3
currency	String	R	Y			Currency. See remarks 2.4
orderAmount	String	R	Y			Order amount. positive integer, unit: cent
productDetail	String	R	Y		Y	The details of product
cardNo	String	C	C	C		The card code or card number of the bank card.

## Card Processing Document V2.2

						(*NOT APPLICABLE CREDIT CARD HOSTED PAGE METHOD)
cardType	String	R	Y			VISA or MASTERCARD or JCB or AMEX or UPI or DISCOVER or WEB
cardCcv	String	C	C	C		The CVV info of card (*NOT APPLICABLE CREDIT CARD HOSTED PAGE METHOD)
cardExpMonth	String	C	C			Format: mm (*NOT APPLICABLE CREDIT CARD HOSTED PAGE METHOD)
cardExpYear	String	C	C			Format: yyyy (*NOT APPLICABLE CREDIT CARD HOSTED PAGE METHOD)
firstName	String	R	Y		Y	
lastName	String	R	Y		Y	
phone	String	R	Y			
address	String	R	Y			
city	String	R	Y		Y	
state	String	R	N			If the country is Canada or American must send the 3166-2 2-digit code, other countries send full English names, if your country don't have state info, you can send the value the same as city value.
country	String	R	Y			ISO 3166 2-digit code
email	String	R	Y			

## Card Processing Document V2.2

postcode	String	R	N			Postcode or ZIP Code
userIp	String	R	N			User request IP e.g., 100.100.100.100
userAgent	String	R	N			The value of the user agent used by the browser for HTTP requests e.g., Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_5)
callbackUrl	String	R	Y			System asynchronous callback address. See remark 1.3.1
noticeUrl	String	O	N			If the payment needs 3D check, after payment we will redirect this URL E.g., <a href="https://www.amazon.com">https://www.amazon.com</a> The response of notice please see 1.3.2
customParam	String	O	N			When we need to redirect to the <b>Notice URL</b> , will bring this parameter back to you, max 500 bits E.g. <a href="https://www.amazon.com?customParam={customParam}">https://www.amazon.com?customParam={customParam}</a>
expandField	String	O	N			Can be empty temporarily
version	String	O	N			Can be empty temporarily

## Response Data

**【response data only show the result of [data] part】**

Parameter	Type	Signed	Description
merchantNo	String	Y	The unique identifier of the merchant in the system
merchantOrderNo	String	Y	Custom system order number (cannot be repeated, otherwise it will be rejected)
orderNo	String	Y	Business order number, the unique identifier of the system order
currency	String	Y	Currency. See remarks 2.4
orderAmount	Long	Y	Order amount. positive integer, unit: cent
orderFee	Long	Y	Order fee amount, positive integer, unit: cent
payModel	String	Y	See remarks 2.3
orderStatus	String	Y	Order status. See remarks 2.5
webUrl	String	Y	The URL that needs to visit/redirect
page	String	Y	The HTML page that shows to user
orderTime	Long	N	
finishTime	Long	N	
remark	String	N	This field records the return information of the transaction channel. E.g.: Descriptor
sign	String	Y	Sign, generate encrypted string according to the signing step, and use the encryption method [RsaUtil.Sign].

## 1.2 Query Order

Request URL: <https://gateway.xinpay.org/nh-gateway/card/query>

### Request Parameter List

Parameter	Type	Required	Signed	Description
merchantNo	String	R	Y	The unique identifier that assigned by the system. E.g., XP022000001
timeStamp	String	R	Y	Current timestamp in Greenwich Mean Time (GMT). See remarks 2.1
language	String	O	N	language type, See remarks 2.2
sign	String	R	N	Sign, generate encrypted string according to the signing step, and use the encryption method [RsaUtil. Sign].
merchantOrderNo	String	R	Y	Custom system order number (cannot be repeated, otherwise it will be rejected)

### Example:

```
{
  language=en,
  merchantOrderNo=1575203520668,
  sign=VgEc8YsqcFbiQRyE5PIDEonClj7oRrSv3eYBNSiQzw9WajDoOT1BB
  TrWd63eW6XmC0rSeg8bvHd06lTrtm2NnknAiFKtkUkSsFJWYFNB+1wO
  +5g+9hOkQ74TAweEXg/CpPLqNZnP+FSj5oqC2tcnw84hSAKM2Wt+U2rr
  kCoXHfo=,timeStamp=1575174775814,merchantNo=XP02200000001
}
```

### before signed:

```
merchantOrderNo=1575203520668&merchantNo=XP02200000001&timeStamp
=1575174775814
```

## Response Data

**【response data the same as create order】**



## 1.3 Callback & Notice

### 1.3.1 Callback

Description: The system will callback [**Callback URL**] if the merchant sends this parameter.

**Note:** The same notification may be sent to the merchant multiple times. Merchant system must be able to handle duplicate notifications correctly **【**After receiving the callback, you need to return [success]**】**

### Callback Parameters List

Parameter	Type	Signed	Description
merchantNo	String	Y	The unique identifier of the merchant in the system
merchantOrderNo	String	Y	Custom system order number (cannot be repeated, otherwise it will be rejected)
orderNo	String	Y	Business order number, the unique identifier of the system order.
currency	String	Y	Currency. See remarks 2.4
orderAmount	String	Y	Order amount. positive integer, unit: cent
orderFee	String	Y	Fee, positive integer, unit: cent
payModel	String	Y	
orderStatus	String	Y	Order status. See remarks 2.5
Sign	String	N	Sign, generate encrypted string according to the signing step, and use the encryption method [RsaUtil. Sign].

## Callback Example:

```
{
  meta=
    '{
      "code":"0000",
      "success":"true"
    }',
  data=
    ,
    {
      "finishTime":1596153841000,
      "orderNo":"Y10DF0200731160300620238972973",
      "orderAmount":4868,
      "orderTime":1596153781000,
      "fee":100,
      "sign":"D8KesqbAewfGnKUC0mgSrVIPS2dl0+Li7qcuNpP5/u0cHCr0AqV
z/BIFZv1K5pG9m8u05/Yu3WuZTdG4THfH/r33Tb0RSJBPH+m7bRjqOSRv4O
Hucx/keRQ5kJX6Kn0rlJTRPYytoOKjSrx+6uoOvlnC3FIZcoP/+XI30H5GA+U
VMKwFMeRA5bmW8sYjKKZl7F/+fCwq14L9d6/YOFzbeJiOTPtpJrGZC21uHJ
cemsbCryC67o5YIFZWrzvUny0hT8que3oVqc9qQFfx/dytqbkgZIV3S+/JbiIyTi
CgUXyv5oTttiKOB0a7ONgy0zG+8H4Ipeon6Aatl4pRZdHeYw\u003d\u003d",
      "orderStatus":"SUCCESS",
      "currency":"CNY",
      "merchantOrderNo":"FWF2007311601237137032990101",
      "merchantNo":"YYH1012004279496125"
    }
  ,
}
```

## 1.3.2 Notice

Description: If the payment need 3D check and you have sent the [Notice URL] when create order, The system will notice [Notice URL] after the user had finish the payment.

Note: The **Notice Result** cannot be the final result of the payment, don't judge a payment by this result.

### Notice Parameters List

Parameter	Type	Description
merchantOrderNo	String	Custom system order number (cannot be repeated, otherwise it will be rejected)
orderNo	String	Business order number, the unique identifier of the system order
currency	String	Currency. See remarks 2.4
orderAmount	String	Order amount
orderStatus	String	SUCCESS or FAIL, no other status.
customParam	String	The same as 2.1 customParam. It will be urlEncode.

### Callback Example:

<https://www.amazon.com/?orderNo=XP01OC0210507165741890600231509&orderAmount=12&orderTime=1620349062000&orderStatus=FAIL&currency=USD&merchantOrderNo=16203714690009995&customParam=testParam>

## 1.4 Refund Order

Request URL: <https://gateway.xinpay.org/nh-gateway/card/refund>

### Request parameter list

Parameter	Type	Required	Signed	Description
merchantNo	String	R	Y	The unique identifier that assigned by the system. E.g., XP022000001
timeStamp	String	R	Y	Current timestamp in Greenwich Mean Time (GMT). See remarks 2.1
language	String	O	N	Language type. See remarks 2.2
sign	String	R	N	Sign, generate encrypted string according to the signing step, and use the encryption method [RsaUtil. Sign].
merchantOrderNo	String	R	Y	Custom system order number (cannot be repeated, otherwise it will be rejected)
version	String	R	Y	Fixed value: 1.0
tradeOrderNo	String	R	Y	The original trade order No.
refundAmount	String	R	Y	Refund order amount. positive integer, unit: cent
currency	String	R	Y	Order Currency
reason	String	R	Y	The reason that why you apply for the refund

## Response data

**【response data only show the result of [data] part】**

**The meta code only means your application was approved; the real refund status must be based on the data. “orderStatus”.**

Parameter	Type	Signed	Description
merchantNo	String	Y	The unique identifier of the merchant in the system.
merchantOrderNo	String	Y	Custom system order number (cannot be repeated, otherwise it will be rejected)
refundOrderNo	String	Y	Business order number, the unique identifier of the system order This refundOrderNo will used for 2.6 [Refund Cancel]
tradeOrderNo	String	Y	The original trade order No
currency	String	Y	Order Currency
refundAmount	String	Y	Refund order amount. positive integer, unit: cent
refundFee	String	Y	Refund Fee. positive integer, unit: cent
refundStatus	String	Y	Refund order status SUCCESS: refund success FAIL: refund success PENDING: refund is pending CANCEL: refund was canceled
createTime	Long	N	The time that system receive the request
refundTime	Long	N	The time that refund finished
Sign	String	N	Sign, generate encrypted string according to the signing step, and use the encryption method [RsaUtil. Sign].

## 1.5 Refund Query Order

Request URL: <https://gateway.xinpay.org/nh-gateway/card/refundQuery>

### Request Parameter List

Parameter	Type	Required	Signed	Description
merchantNo	String	R	Y	The unique identifier that assigned by the system. E.g., XP022000001
timeStamp	String	R	Y	Current timestamp in Greenwich Mean Time (GMT). See remarks 2.1
language	String	O	N	Language type. See remarks 2.2
sign	String	R	N	Sign, generate encrypted string according to the signing step, and use the encryption method [RsaUtil. Sign].
merchantOrderNo	String	R	Y	Custom system order number (Cannot be repeated, otherwise it will be rejected)

### Response Data

**【response data only show the result of [data] part】**

The response is the same as 2.4[Refund Order].

The meta code only means your application was approved; the real refund status must be based on the data “orderStatus”.

## 1.6 Refund Cancel Order

Request URL: <https://gateway.xinpay.org/nh-gateway/card/refundCancel>

### Request Parameter List

Parameter	Type	Required	Signed	Description
merchantNo	String	R	Y	The unique identifier that assigned by the system. E.g., XP022000001
timeStamp	String	R	Y	Current timestamp in Greenwich Mean Time (GMT). See remarks 2.1
language	String	O	N	Language type. See remarks 2.2
sign	String	R	N	Sign, generate encrypted string according to the signing step, and use the encryption method [RsaUtil. Sign].
refundOrderNo	String	R	Y	Business order number, the unique identifier of the system order. See the response of 2.4

### Response Data

**【response data only show the result of [data] part】**

**The data “cancelStatus” only means your cancel result success of fail, cannot represent the final refund result! You must request 2.5 to get the real refund status.**

Parameter	Type	Signed	Description
refundOrderNo	String	Y	Business order number, the unique identifier of the system order This refundOrderNo will used for 2.6 [Refund Cancel]
cancelStatus	String	Y	CANCEL status. <b>Cannot represent the final refund result.</b>

## Card Processing Document V2.2

			SUCCESS: cancel success but need to request 2.4 to confirm the final refund status. FAIL: cancel fail
Sign	String	N	Sign is generate encrypted string according to the signing step, and use the encryption method [RsaUtil. Sign].



## 2.Remark

### 2.1 Timestamp

The time parameters received and returned by this system are based on Greenwich Mean Time (GMT) as the standard time stamp. The developers should transfer the information according to local time.

### 2.2 Language

The system will return results in different languages according to the request language parameter. Language of Chinese and English languages are currently supported. The default is English.

Enum	Description
zh	Chinese
en	English

### 2.3 Pay Model

Enum	Description
CREDIT_CARD	Credit Card
DEBIT_CARD	Debit Card

## 2.4 Currency

System use ISO-4217 currency code. The following currencies are currently supported:

Enum	Description
USD	dollar
TWD	Taiwan dollar
AUD	Australian dollar
KRW	South Korean Won
EUR	Euro
HKD	Hong Kong dollar
GBP	Pond
JPY	Japanese Yen
CAD	Canadian dollar
CHF	Swiss Franc
SGD	Singapore dollar
CNH	Offshore RMB
CNY	Onshore RMB

## 2.5 Order status

There are five order status. Please refer to the following description:

Enum	Description
PENDING	Pending payment
SUCCESS	Success
FAIL	Fail
CANCEL	Cancel

## 2.6 System response code

Code	Description
9999	System error
9031	TimeStamp expired
9030	Invalid timeStamp
9021	Token expired
9020	Invalid token
9010	Sign error
9000	Parameter error
8101	Duplicate request
8100	Request limit
8001	Requests exist in system

## Card Processing Document V2.2

8000	Request processing
7104	The order file is already uploaded
7103	File save error
7102	File request error
7101	The file is does not exist
7100	The order cannot accept file now
7002	Order is expired
7001	Order is expired
7000	Channel order is expired
6100	Channel return failed
6001	No available Channel
6000	Channel does not exist
5100	Account processing
5002	Account freeze
5001	Account not open
5000	Account error
4002	The bank account's currency is not match
4001	The bank account is temporarily unavailable
4000	Bank account number does not exist.
2001	Business not open
2000	Business error
1002	Merchant white IP error
1001	Merchant configuration error

## Card Processing Document V2.2

1000	Merchant does not exist
0000	Success