

FMPay API

1. Communication

Interface messages are submitted to the FMPay interface via HTTPS Post.

Request method: POST

Content type: application/x-www-form-urlencoded

Code: UTF-8

The response data is in JSON format, for example:

```
{  
  "code": Response code,  
  "message": Response message,  
  "data": {} // Business data  
}
```

2. Digital signature

In order to ensure the authenticity and integrity of the data in the data transmission process, we need to digitally sign the data and verify the signature after receiving the signed data. The signature algorithm is MD5.

There are two steps in digital signature. First, the original string to be signed is spliced according to certain rules, and then the specific algorithm and key are selected to calculate the signature result. **Whether it is a request or a response, the original signature string is assembled into a string as follows:**

1、 Except for the sign field, all parameters are sorted according to the ascii code of the field name from small to large, and are stitched together using the format of QueryString (that is, key1=value1&key2=value2...). Null values are not passed and do not participate in the signature string.

2、 In the original signature string, the field name and field value are the original values, and URL Encode is not performed.

3、 The returned response or notification message may add parameters due to the upgrade. Please pay attention to allow this when verifying the response signature.

Examples:

It is assumed that the transmitted parameters are as follows:

body:product name

currency:USDT

mch_id:100186

nonce_str:5K8264ILTKCH16CQ2502SI8ZNM67VS

notify_url:http://xxx/pay/notify

out_trade_no:2020061910

total_fee:15

trade_type:App

The parameters are sorted according to the format of key=value and in ASCII dictionary order of the parameter names as follows:

body= product name

¤cy=USDT&mch_id=100186&nonce_str=5K8264ILTKCH16CQ2502SI8Z
NMTM67VS¬ify_url=http://xxx/pay/notify&out_trade_no=2020061910&total
_fee=15&trade_type=App

Currently only supports MD5 signature

MD5 signature

MD5 is a digest generation algorithm. By adding the content of the merchant's communication key after the original signature string, the MD5 operation is performed, and the resulting digest string is the signature result. For comparison, the signature results are converted to lowercase characters.

Note: The encoding character set specified when converting a string into a byte stream when signing should be consistent with the parameter charset.

MD5 signature calculation formula:

sign=Md5(Original string &key=merchant key) Such as:

Assume that the merchant key is:290982D3AF0C4A82B1EE9689A345CB5D

1: The string string1 after URL key-value sorting in the order of a is:

body= product name

¤cy=USDT&mch_id=100186&nonce_str=5K8264ILTKCH16CQ2502SI8Z
NMTM67VS¬ify_url=http://xxx/pay/notify&out_trade_no=2020061910&total
_fee=15&trade_type=App

2: After the b process, the sign is:

sign=md5(string1&key=290982D3AF0C4A82B1EE9689A345CB5D)

3. Unified order placement interface

Function Description

This interface creates an order interface for merchants and returns the payment address.

interface link:<https://api.fama.world/api/pay/unifiedorder>

Request data:

Parameter	Name	Must	Note
mch_id	Business number	Yes	FMPay merchant number
out_trade_no	Merchant order number	Yes	Merchant order number
body	product name	Yes	product name
notify_url	Asynchronous callback url	Yes	Receive asynchronous notification address
total_fee	order amount	Yes	Pre-order amount 0.001-50000 (highest precision 3 digits)
currency	Payment currency	Yes	FM or USDT
trade_type	Transaction Type	Yes	Scan/H5/App
nonce_str	Random string	Yes	Random string, no longer than 32 bits
sign	signature	Yes	MD5 signature results, see "Digital Signature" for details

Response data:

Parameter	Name	Note
prepay_id	Prepaid note number	Platform prepaid bill number
code_url	Payment link	When trade_type=Scan, this url is used to generate a QR code for payment, which is then provided to the user to scan the code for payment. When trade_type=H5 or App, please call in-app payment through shceme protocol, please determine whether the user has downloaded Famacoin APP
nonce_str	Random string	Random string, no longer than 32 bits
sign	signature	MD5 signature results, see "Digital Signature" for details

Function Description:

After the user pays, the platform will notify the merchant, and the merchant will return to "SUCCESS" after receiving the notification. If the response from the merchant is not received or it is not a success or timeout, the platform considers the notification to fail, and the platform will periodically re-initiate the notification through certain strategies to increase the success rate of the notification as much as possible, but the platform does not guarantee that the notification will eventually succeed. (Notification frequency is 15, 15, 30, 180, 600, 1200, 1800, 3600, 10800, unit: second)

Note: The same notification may be sent to the merchant system multiple times. The merchant system must be able to handle duplicate notifications correctly.

The recommended method is to check the status of the corresponding business

data when receiving the notification and process it, and determine whether the notification has been processed. If it has not been processed, process it again. If it is processed, return the result directly. Before performing status checking and processing on business data, data locks should be used for concurrency control to avoid data confusion caused by function reentry. If you have not received the asynchronous notification, please send the transaction query interface to get the latest status of the order.

Platform → Merchant

Output	Output name	Note
mch_id	business number	Merchant number assigned by the platform
prepay_id	Platform order number	Platform order number
out_trade_no	Merchant order number	Merchant order number
status	Order Status	0=not paid, 1=paid, 2=closed
currency	Payment currency	FM or USDT
total_fee	order amount	Payment amount
body	product name	product name
trade_type	Transaction Type	Scan/H5/App
nonce_str	Random string	Random string, no longer than 32 bits
paytime	Payment time	Payment timestamp
sign	signature	MD5 signature results, see "Digital Signature" for details

Merchant → Platform

SUCCESS				
---------	--	--	--	--

4. Order query interface

(1) Query a single order

Function Description

Through the order query interface, you can query the transaction status of the current order.

interface link: <https://api.fama.world/api/pay/query>

Request data:

Parameter	Name	Must	Note
mch_id	business number	Yes	Merchant number assigned by the platform
out_trade_no	Merchant order number	Yes	Merchant order number
sign	signature	Yes	MD5 signature results, see "Digital Signature" for details
nonce_str	Random string	Yes	Random string, no longer than 32 bits

Response data:

Output	Output name	Note
prepay_id	Prepaid note number	Platform order number
out_trade_no	Merchant order number	Merchant order number
status	Order Status	0=not paid, 1=paid, 2=closed
currency	Payment currency	FM or USDT
total_fee	order amount	Pre-order amount
body	product name	product name
trade_type	Transaction Type	Scan/H5/App
code_url	Payment link	When trade_type=Scan, this url is used to generate a QR code for payment, which is then provided to the user to scan the code for payment. When trade_type=H5 or App, please call in-app payment through shceme protocol, please determine whether the user has downloaded Famacoin APP
sign	signature	MD5 signature results, see "Digital Signature" for details
nonce_str	Random string	Random string, no longer than 32 bits

(2) Query historical orders

Function Description

Through the order query interface, historical order data can be queried.

interface link: <https://api.fama.world/api/pay/history>

Request data:

Parameter	Name	Must	Note
mch_id	business number	Yes	Merchant number assigned by the platform
out_trade_no	Merchant order number	Yes	Merchant order number
page	Pagination	Yes	Default 1, 20 data per page
start_time	Start time	Yes	Time stamp (eg: 1592071298)
end_time	End Time	Yes	Time stamp (eg: 1592071298)
sign	signature	Yes	MD5 signature results, see "Digital Signature" for details
nonce_str	Random string	Yes	Random string, no longer than 32 bits

Response data:

Output	Output name	Note
count	Total number of data	Total number of data in query period
out_trade_no	Merchant order number	Merchant order number
status	Order Status	0=not paid, 1=paid, 2=closed
currency	Payment currency	FM or USDT
total_fee	order amount	Pre-order amount
body	product name	product name
trade_type	Transaction Type	Scan/H5/App
prepay_id	Platform order number	Platform order number
paytime	Payment time	Payment time

5. Transaction return code

code	description	code	description
1	Successful operation		
100	Merchant does not exist	101	Merchant permission has expired
102	Merchant permission is disabled	103	Parameter error
104	Order number already exists	105	Wrong signature
106	Wrong amount (0.001-50000)	107	Payment currency error (USDT/FM)
108	Wrong transaction type (Scan, H5, App)	109	Order number does not exist
110	system error		