

HYCON REST API Documentation

The Hycon REST API provides a simple and powerful interface for Users to programmatically interact with their wallet and the Hycon network. This API reference provides information on available endpoints and how to interact with it.

Installation

To use this API, you will need to run a small local service which will be responsible for managing your wallet. Your application interacts with this service locally via HTTP API calls.

// TODO: Section needs expanding

Errors

If a REST API request is invalid, you will receive a JSON object with the below response format. Please review the error table within each section to view specific return responses.

```
{
  "status": <See Table>,
  "timestamp": 1523517241,
  "error": <See Table>,
  "message": <See Table>
}
```

Exchange Featured

Wallet Management

Hycon wallets are represented on the network as addresses. You are able to create wallets, query information from them, and subscribe to transaction events in these wallets.

Generating a new address

The first step to be able to send and receive Hycon is by creating a new wallet.

~/api/v1/wallet/

Method: POST

Body (Content-Type: application/json):

Parameter	Type	Required	Description
\$mnemonic	string	Optional	A 12- to 24-word BIP39 phrase to seed your wallet's private key
\$language	string	Optional	Regional language to generate your wallet's mnemonic phrase

Please check [Appendix > Language Support](#) for more information. **\$language** is not case-sensitive.

Returned JSON Object

Parameter	Type	Description
mnemonic	string	A 12- to 24-word BIP39 phrase to seed your wallet's private key
privateKey	string	The generated private key from the mnemonic
address	string	The generated Hycon wallet address

Response (Success): 200 OK, application/json

```
{
  "mnemonic": "hobby roast engage access spot good join fancy carry primary auto easy",
  "privateKey": "f6b94a71827c2a02c9baa7b730fa3a9f2e5ec28d3ad46f8667c689b5326a3319",
  "address": "H2NgAMPXhkMhkQJQ4MEEqUfWbEXu2U5g"
}
```

Response (Error):

```
{
  "status": <See Table>,
  "timeStamp": 1523517241,
  "error": <See Table>,
  "message": <See Table>
}
```

Status	Error	Message
400	INVALID_PARAMETER	mnemonic or language is invalid/mismatched
404	NOT_FOUND	the resource cannot be found / currently unavailable

Querying an address

You can validate an address by looking up a Hycon wallet address, which can either return the wallet's balance or a list of transactions.

Getting the balance

~/api/v1/wallet/\$address/balance

Method: GET

Parameter:

Parameter	Type	Required	Description
\$address	string	Required	A Hycon wallet address to lookup

Returned JSON Object

Parameter	Type	Description
balance	string	The amount of HYC in the Hycon wallet address

Response (Success): 200 OK, application/json

```
{ "balance": "651651.1294" }
```

Status	Error	Message
400	INVALID_ADDRESS	invalid address
404	NOT_FOUND	the resource cannot be found / currently unavailable

Getting a list of transactions

To retrieve a list transactions sent to and received from the wallet. Providing the \$nonce parameter will retrieve a list of transactions after the \$nonce value.

~/api/v1/wallet/\$address/txs/\$nonce

Method: GET

Parameter(s):

Parameter	Type	Required	Description
\$address	string	Required	A Hycon wallet address to lookup

Parameter	Type	Required	Description
\$nonce	number	Optional	The transaction number sent from the address

Returned JSON Object

Parameter	Type	Description
txs	list	A list of transactions

Response (Success): 200 OK, application/json

```
{
  "txs": [
    {
      "hash": "3cR8vf1GDUAPvbBqHW7pmTBjZ2mCqX4Gic4QNiK7N6mj",
      "amount": "1437",
      "fee": "146",
      "from": "HjDCHX5ojm7boJcwXCms5BWPYFSsC98E",
      "to": "HhzTVoNd4RV6W8Vm4oXTr3NrZENA4cx9",
      "signature": "6Th7PrVsTM6vuGwsNSHNd9UYS4m8fnnv1baFrqy5Fochd",
      "estimated": "1583",
      "receiveTime": 1527387946066,
    },
    ...
  ]
}
```

Response (Error):

```
{
  "status": <See Table>,
  "timeStamp": 1523517241,
  "error": <See Table>,
  "message": <See Table>
}
```

Status	Error	Message
400	INVALID_NONCE	nonce value is too big
400	INVALID_ADDRESS	invalid address
404	NOT_FOUND	the resource cannot be found / currently unavailable

Creating a subscription

You can create a subscription that monitors an address for changes to its transaction attributes (events). Providing the `$nonce` parameter will retrieve a list of transactions after the `$nonce` value.

Note: In the event of a *blockchain reorganization*, similar to that in Bitcoin, subscriptions will receive one or more blocks. Please see [Appendix > Subscription](#) for more information.

`~/api/v1/wallet/$address/callback/`

Method: PUT

Body (Content-Type: application/json):

Param Type	Parameter	Type	Required	Description
hierarchial	\$address	string	Required	A Hycon wallet address to lookup
query	\$url	string	Required	A callback address when the notification is triggered
query	\$from	boolean	Optional	Sender's Hycon wallet address
query	\$to	boolean	Optional	Recipient's Hycon wallet address
query	\$conflict	boolean	Optional	Checks for transaction conflicts

Param Type	Parameter	Type	Required	Description
query	\$nonce	number	Optional	The transaction number sent from the address

Returned JSON Object

Parameter	Type	Description
ID	number	A unique identification of the created subscription

Response (Success): 200 OK, application/json

```
{ "id": 6 }
```

Response (Error):

```
{
  "status": <See Table>,
  "timeStamp": 1523517241,
  "error": <See Table>,
  "message": <See Table>
}
```

Status	Error	Message
400	INVALID_ADDRESS	address was not provided
400	NO_PARAMETERS	no query parameters were provided
404	NOT_FOUND	the resource cannot be found / currently unavailable
409	NON_UNIQUE	parameters result in non-unique subscription
500	INTERNAL_SERVER_ERROR	server cannot be reached at the moment

Deleting a subscription

You can delete a subscription that was created to monitor an address for changes to its transaction attributes (events).

~/api/v1/wallet/\$address/callback/\$id

Method: DELETE

Parameters:

Parameter	Type	Required	Description
\$address	string	Required	A Hycon wallet address to lookup
\$id	string	Required	The unique identification of the created subscription

Response (Success): 204 OK, application/json

Response (Error):

```
{
  "status": <See Table>,
  "timeStamp": 1523517241,
  "error": <See Table>,
  "message": <See Table>
}
```

Status	Error	Message
400	INVALID_PARAMETER	parameter(s) were not provided
404	NOT_FOUND	the resource cannot be found / currently unavailable
500	INTERNAL_SERVER_ERROR	server cannot be reached at the moment

Transaction Management

You can directly query transactions from their hashes or allow HYC to be withdrawn from a specified wallet's address.

Getting the details of a transaction

Retrieve the details of a single transaction.

~/api/v1/tx/\$hash

Method: GET

Parameter	Type	Required	Description
\$hash	string	Required	A hash string of a transaction to lookup

Returned JSON Object

Parameter	Type	Description
hash	string	Hash representation of the transaction
amount	string	Amount of Hycon transferred in the transaction
fee	string	Transaction fee, in Hycon, to complete the transaction
from	string	Sender Hycon address
to	string	Recipient Hycon address
blockHash	string	Hash representation of the block that contains the transaction
receiveTime	number	Timestamp when transaction is confirmed,
estimated	string	Amount of Hycon needed to complete the transaction
confirmation	number	Number of nodes that have processed and validated the transaction

Response (Success): 200 OK, application/json

```
{
  "hash": "3cR8vf1GDUAPvbBqHW7pmTBjZ2mCqX4Gic4QNiK7N6mj",
  "amount": "1437",
  "fee": "146",
  "from": "HjDCHX5ojm7boJcwXCms5BWPYFSsC98E",
  "to": "HhzTVoNd4RV6W8Vm4oXTr3NrZENA4cx9",
  "blockHash": "6Th7PrVsTM6vuGwsNSHNd9UYS4m8fnnv1baFrqy5Fochd",
  "receiveTime": 1527387946066,
  "estimated": "1538",
  "confirmation": 4,
}
```

Response (Error):

```
{
  "status": <See Table>,
  "timeStamp": 1523517241,
  "error": <See Table>,
  "message": <See Table>
}
```

Status	Error	Message
400	INVALID_PARAMETER	address was not provided
404	NOT_FOUND	the resource cannot be found / currently unavailable

Creating an outgoing transaction

Send Hycon from your wallet to another Hycon wallet. All transactions include a *n* HYC miner fee.

~/api/v1/signedtx/

Method: PUT

Body (Content-Type: application/json):

Parameter	Type	Required	Description
privateKey	string	Required	A Hycon wallet's private key of the sender
from	string	Required	A Hycon wallet address of the sender
to	string	Required	A Hycon wallet address of the receiver
amount	number	Required	Amount of Hycon to send to the recipient
fee	number	Required	Transaction fee, in Hycon, to complete the transaction

Returned JSON Object:

Parameter	Type	Description
txHash	string	A hash of the transaction after it is created

Response (Success): 200 OK, application/json

```
{ "txHash": "HhUCBDTzqyXVUo647LyQhKfWFXoTHa7onyoEkRdNUp8n" }
```

Response (Error):

```
{  
  "status": <See Table>,  
  "timeStamp": 6788766789,  
  "error": <See Table>,  
  "message": <See Table>  
}
```

Status	Error	Message
404	INVALID_PARAMETER	insufficient wallet balance to send transaction
404	NOT_FOUND	could not queue transaction

~/api/v1/tx/

Method: PUT

Body (Content-Type: application/json):

Parameter	Type	Required	Description
signature	string	Required	A Hycon wallet's private key of the sender
from	string	Required	A Hycon wallet address of the sender
to	string	Required	A Hycon wallet address of the receiver
amount	number	Required	Amount of Hycon to send to the recipient
fee	number	Required	Transaction fee, in Hycon, to complete the transaction
nonce	number	Required	The transaction number sent from the address
recovery	number	Optional	Transaction recovery value

Returned JSON Object:

Parameter	Type	Description
txHash	string	A hash of the transaction after it is created

Response (Success): 200 OK, application/json

```
{ "txHash": "HhUCBDTzqyXVUo647LyQhKfwFXoTHa7onyoEkRdNUp8n" }
```

Response (Error):

```
{  
  "status": <See Table>,  
  "timeStamp": 6788766789,  
  "error": <See Table>,  
  "message": <See Table>  
}
```

Status	Error	Message
404	INVALID_PARAMETER	transaction information or signature is incorrect
404	INVALID_PARAMETER	insufficient wallet balance to send transaction
404	NOT_FOUND	could not queue transaction

Appendix

Language Support

The Hycon wallet currently supports the following languages, and can generate valid BIP39 mnemonic phrases using any of these supported languages:

Language	\$language
CHINESE SIMPLIFIED	chinese_simplified
CHINESE TRADITIONAL	chinese_traditional
ENGLISH (default)	english
FRENCH	french
ITALIAN	italian
JAPANESE	japanese
KOREAN	korean
SPANISH	spanish

Subscription

Blockchain Reorganization

In the event of a *blockchain reorganization*, similar to that in Bitcoin, subscriptions will receive one or more blocks that were previously thought to be in the difficultywise-longest well-formed blockchain. These blocks will be returned as a result of a new difficultywise-longest well-formed blockchain.

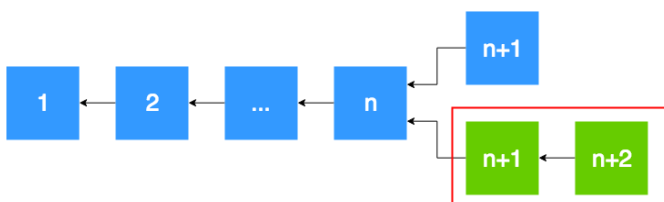


Figure 1 | In the event of a subscription trigger from a reorganization, the blocks inside the red box will be returned, wherein the height of the new difficultywise-longest well-formed blockchain is higher than the other.