

Claims

1. A computer-implemented method for processing blockchain-based transactions, the method comprising:

acquiring a Nonce record from a Nonce list for a transaction initiated by a user account, wherein the Nonce list is maintained in a blockchain and is associated with the user account, the Nonce list comprises a plurality of Nonce records, wherein the number of Nonce records in the Nonce list indicates a transaction concurrency capacity of the user account, and a Nonce record comprises a Nonce value and a version identifier of the Nonce list, wherein the version identifier is configured to represent a current version of the Nonce list;

adding the acquired Nonce record to the transaction; and

submitting the transaction to the blockchain concurrently with a further transaction comprising a further Nonce record from the Nonce list, for a node in the blockchain to compare the Nonce record in the transaction with the plurality of Nonce records in the Nonce list, and to accept the transaction in response to the Nonce record matching any Nonce record in the Nonce list concurrently with the further transaction comprising the further Nonce record,

wherein the Nonce value in the matching Nonce record in the Nonce list is monotonically increased based on a preset increment in response to that the transaction is accepted.

2. The method according to claim 1, wherein the method is implementable by a client, and before acquiring a Nonce record from a Nonce list for a transaction initiated by a user account, the method further comprises:

acquiring the Nonce list maintained in the blockchain in response to an initialization instruction for the client; and

maintaining the acquired Nonce list at the client.

3. The method according to claim 2, wherein acquiring a Nonce record from a Nonce list for a transaction initiated by a user account comprises:

acquiring a Nonce record from a Nonce list maintained at the client for the transaction initiated by the user account.

4. The method according to any of the claims 2-3, wherein the Nonce records in the Nonce list maintained at the client is marked as available by default; and wherein

acquiring a Nonce record from a Nonce list for a transaction initiated by a user account comprises:

acquiring a Nonce record marked as available from the Nonce list maintained at the client for the transaction initiated by the user account; and

after acquiring the Nonce record marked as available from the Nonce list maintained at the client for the transaction, marking the acquired Nonce record as unavailable in the Nonce list.

5. The method according to any of the claims 2-4, further comprising:

determining whether a prompt message returned by the node is received that the transaction is accepted; and

in response to receiving the prompt message that the transaction is accepted, monotonically increasing the Nonce value in the acquired Nonce record by the preset increment, and re-marking the acquired Nonce record as available in the Nonce list after the Nonce value is monotonically increased.

6. The method according to any preceding claim, wherein the method is implementable by a client, and the client is a multi-threaded client.

~~7. The method according to any preceding claim, wherein the Nonce record further comprises a version identifier of the Nonce list.~~

~~87. The method according to any preceding claim, wherein the Nonce record further comprises an index identifier of the Nonce record.~~

~~98. A computer-implemented method for processing blockchain-based transactions, the method comprising:~~

~~receiving a transaction initiated by a user account, wherein the transaction comprises a Nonce record acquired from a Nonce list maintained in a blockchain and associated with the user account, the Nonce list comprises a plurality of Nonce records, wherein the number of Nonce records in the Nonce list indicates a transaction concurrency capacity of the user account, and the Nonce record comprises a Nonce value and a version identifier of the Nonce list, wherein the version identifier is configured to represent a current version of the Nonce list;~~

~~comparing the acquired Nonce record with the plurality of Nonce records in the Nonce list maintained in the blockchain and associated with the user account~~

concurrently with a further transaction comprising a further Nonce record from the Nonce list;

accepting the transaction in response to that the acquired Nonce record matches any Nonce record in the Nonce list concurrently with the further transaction comprising the further Nonce record; and

monotonically increasing the Nonce value of the matching Nonce record in the Nonce list based on a preset increment in response to that the acquired Nonce record matches any Nonce record in the Nonce list.

~~109~~9. The method according to claim ~~98~~8, wherein the method is implementable by a node of blockchain and a client submits the transaction to the blockchain, and the method further comprises:

returning a notification message to the client that the transaction is accepted.

~~11. The method according to any of the claims 9-10, wherein the Nonce record comprises a version identifier of the Nonce list.~~

~~1210~~10. A system for processing blockchain-based transactions, comprising:
one or more processors; and
one or more computer-readable memories coupled to the one or more processors and having instructions stored thereon that are executable by the one or more processors to perform the computer-implemented method of any of claims 1 to ~~109~~9.

~~1311~~11. An apparatus for processing blockchain-based transactions, comprising a plurality of modules for performing the computer-implemented method of any of claims 1 to ~~109~~9.

~~1412~~12. A non-transitory computer-readable storage medium configured with instructions executable by one or more processors to cause the one or more processors to perform the computer-implemented method of any of claims 1 to ~~109~~9.