CLAIMS

1. A transaction data processing method, executable by a first consensus node in a blockchain network, and the method comprising:

executing, in response to receiving a first transaction, the first transaction to obtain a first transaction execution record, adding the first transaction execution record to a first transaction execution data set, and adding the first transaction to a first transaction pool;

acquiring a transaction list containing one or more transactions including the first transaction from the first transaction pool, and obtaining transaction data associated with the transaction list from the first transaction execution data set, wherein the transaction data comprises transaction execution records of the one or more transactions in the transaction list; and

packing the transaction list and the transaction data to obtain a proposal block that is subject to block consensus with a second consensus node in the blockchain network, and performing block consensus on the proposal block to obtain a block consensus result of the proposal block.

2. The method according to claim 1, wherein the executing, in response to receiving the first transaction, the first transaction to obtain the first transaction execution record comprises:

acquiring, in response to receiving the first transaction, a first service contract for executing the first transaction;

reading a first read data set corresponding to the first transaction from the blockchain network based on the first service contract;

executing the first transaction based on the first read data set to obtain a first transaction execution result corresponding to the first transaction;

writing the first transaction execution result into a first write data set corresponding to the first transaction, and determining the first read data set and the first write data set as a first transaction read-write set corresponding to the first transaction;

determining a block that is acquired in response to executing the first transaction and that has a first maximum generation timestamp as a first target block, and determining a block height of the first target block as a first block height; and

determining the first transaction execution result, the first transaction read-write set, and the first block height as the first transaction execution record.

3. The method according to claim 1, wherein the packing the transaction list and the

transaction data to obtain the proposal block that is subject to block consensus with the second consensus node in the blockchain network comprises:

performing a hash operation on the one or more transactions and the transaction data to obtain a Merkle tree root;

acquiring a block having a second maximum generation timestamp from the blockchain network to obtain a second target block; and

generating the proposal block based on the one or more transactions, the transaction data, the Merkle tree root, and a block hash value of the second target block.

4. The method according to claim 1, wherein the performing block consensus on the proposal block to obtain the block consensus result of the proposal block comprises:

performing conflict detection on the proposal block based on a conflict detection policy to obtain a first consensus result;

broadcasting the proposal block to the second consensus node, wherein the second consensus node performs a conflict detection on the proposal block based on the conflict detection policy to obtain a second consensus result; and

receiving the second consensus result returned by the second consensus node, and determining the first consensus result and the second consensus result as the block consensus result of the proposal block.

5. The method according to claim 4, further comprising:

determining that a consensus on the proposal block is reached in a case that the block consensus result indicates a consensus success;

writing the proposal block after the consensus is reached into a blockchain corresponding to the blockchain network as a third target block; and

updating an account state version number corresponding to a transaction object associated with the transaction list.

6. The method according to claim 1, further comprising:

performing validity verification on the first transaction to obtain a validity verification result; and

in response to determining that the first transaction passes the validity verification in a case that the validity verification result indicates that the transaction is valid, broadcasting the first

transaction that passes the validity verification to the second consensus node, wherein the second consensus node executes the first transaction that passes the validity verification.

7. The method according to claim 6, the performing validity verification on the first transaction to obtain the validity verification result comprises:

acquiring transaction signature information of the first transaction and a device public key of a terminal device that transmits the first transaction, the transaction signature information being obtained after the terminal device signs the first transaction through a device private key corresponding to the device public key;

verifying the transaction signature information based on the device public key to obtain a transaction verification result;

performing double spending verification on the first transaction to obtain a double spending verification result; and

determining the transaction signature verification result and the double spending verification result as the validity verification result corresponding to the first transaction.

8. The method according to claim 7, further comprising:

determining that the validity verification result indicates that the transaction is valid when the transaction signature verification result indicates signature verification success and the double spending verification result indicates that there is no double spending attack.

9. A transaction data processing method, executable by a second consensus node in a blockchain network, and the method comprising:

receiving a first transaction broadcast by a first consensus node in the blockchain network;

executing the first transaction to obtain a second transaction execution record, and storing the second transaction execution record in a second transaction execution data set in the second consensus node;

receiving a proposal block broadcast by the first consensus node, the proposal block being generated by the first consensus node by packing a transaction list and transaction data associated with the transaction list; the transaction list being acquired by the first consensus node from a first transaction pool of the first consensus node, and the transaction list containing the first transaction; the transaction data comprising a first transaction execution record corresponding to the first transaction; and the first transaction execution record corresponding to the first transaction being obtained by the first consensus node by executing the first transaction in response to receiving the

first transaction; and

performing conflict detection on the proposal block based on a conflict detection policy and the second transaction execution record to obtain a second consensus result of the proposal block, and returning the second consensus result to the first consensus node.

10. The method according to claim 9, wherein the performing conflict detection on the proposal block based on a conflict detection policy and the second transaction execution record to obtain the second consensus result of the proposal block comprises:

obtaining the second transaction execution record from the second transaction execution data set;

verifying the transaction data in the proposal block based on the second transaction execution record to obtain a local verification result; and

determining the second consensus result corresponding to the proposal block based on the local verification result.

11. The method according to claim 10, wherein the first transaction execution record comprises a first transaction execution result corresponding to the first transaction, a first transaction read-write set, and a first block height; the first block height is a block height of a first block, and the first block is a block that is acquired from the blockchain network by the first consensus node in response to executing the first transaction and has a first maximum generation timestamp; the second transaction execution record comprises a second transaction execution result corresponding to the first transaction, a second transaction read-write set, and a second block height; the second block height is a block height of a second block, and the second block is a block that is acquired from the blockchain network by the second consensus node in response to executing the first transaction and has a second maximum generation timestamp;

the verifying the transaction data in the proposal block based on the second transaction execution record to obtain a local verification result comprises:

comparing the first transaction execution result with the second transaction execution result to obtain a first comparison result;

comparing, when the first comparison result indicates that the first transaction execution result is the same as the second transaction execution result, the first block height with the second block height to obtain a second comparison result; and

determining a local verification result corresponding to the proposal block based on the second

comparison result.

12. The method according to claim 11, wherein the first maximum generation timestamp is the same as the second maximum generation timestamp;

the determining the local verification result corresponding to the proposal block based on the second comparison result comprises:

comparing, when the second comparison result indicates that the first block height is the same as the second block height, the first transaction read-write set with the second transaction read-write set to obtain a third comparison result; and

determining the local verification result corresponding to the proposal block based on the third comparison result.

13. The method according to claim 11, wherein the first maximum generation timestamp is different from the second maximum generation timestamp; the first transaction read-write set comprises a first account state version number associated with the first transaction and having a first maximum update timestamp, and the first account state version number is acquired by the first consensus node from the blockchain network in response to executing the first transaction; the second transaction read-write set comprises a second account state version number associated with the first transaction and having a second maximum update timestamp, and the second account state version number is acquired by the second consensus node from the blockchain network in response to executing the first transaction;

the determining the local verification result corresponding to the proposal block based on the second comparison result comprises:

comparing, when the second comparison result indicates that the first block height is different from the second block height, the first account state version number with the second account state version number to obtain a fourth comparison result;

acquiring, when the fourth comparison result indicates that the first account state version number is different from the second account state version number, a third account state version number associated with the first transaction and having a third maximum update timestamp, and comparing the first account state version number with the third account state version number to obtain a fifth comparison result;

re-executing, when the fifth comparison result indicates that the third account state version number is lower than the first account state version number, the first transaction to obtain an

updated transaction execution result, and comparing the first transaction execution result with the updated transaction execution result to obtain a sixth comparison result; and

determining the local verification result corresponding to the proposal block based on the sixth comparison result.

14. The method according to claim 9, wherein the performing conflict detection on the proposal block based on the conflict detection policy and the second transaction execution record to obtain the second consensus result of the proposal block comprises:

performing association verification on the transaction list to obtain an association verification result;

acquiring at least two associated transactions having an association relationship from the transaction list based on the association verification result, and acquiring transaction read-write sets respectively corresponding to the at least two associated transactions from the transaction data;

performing read-write set conflict detection on each transaction read-write set based on transaction execution orders respectively corresponding to the at least two associated transactions to obtain a read-write set conflict detection result; and

determining the second consensus result corresponding to the proposal block based on the read-write set conflict detection result.

15. A transaction data processing apparatus, comprising:

an execution adding module, configured to, in response to receiving a first transaction, execute the first transaction to obtain a first transaction execution record, add the first transaction execution record to a first transaction execution data set, and add the first transaction to a first transaction pool;

a data acquisition module, configured to acquire a transaction list containing one or more transactions including the first transaction from the first transaction pool, and obtain transaction data associated with the transaction list from the first transaction execution data set, wherein the transaction data comprises transaction execution records corresponding to the one or more transactions in the transaction list; and

a packing consensus module, configured to pack the transaction list and the transaction data to obtain a proposal block that is subject to block consensus with a second consensus node in the blockchain network, and perform block consensus on the proposal block to obtain a block consensus result of the proposal block.

16. A transaction data processing apparatus, comprising:

a receiving module, configured to receiving a first transaction broadcast by a first consensus node in the blockchain network; execute the first transaction to obtain a second transaction execution record, and store the second transaction execution record in a second transaction data set in the second consensus node; receive a proposal block broadcast by the first consensus node, the proposal block being obtained by the first consensus node by packing a transaction list and transaction data associated with the transaction list; the transaction list being acquired by the first consensus node from a first transaction pool of the first consensus node, and the transaction list containing the first transaction; the transaction data comprising a first transaction execution record corresponding to the first transaction in the transaction list; and the first transaction execution record corresponding to the first transaction being obtained by the first consensus node by executing the first transaction in response to receiving the first transaction; and

a detection module, configured to perform conflict detection on the proposal block based on a conflict detection policy and the second transaction execution record to obtain a second consensus result of the proposal block, and return the second consensus result to the first consensus node.

17. A computer device, comprising a memory and one or more processors, the memory storing computer-readable instructions, the computer-readable instructions, when executed by the processor, enabling the one or more processors to perform operations of the method of any one of claims 1 to 14.

18. One or more non-volatile readable storage media, storing computer-readable instructions, the computer-readable instructions, when executed by one or more processors, enabling the one or more processors to implement operations of the method of any one of claims 1 to 14.

19. A computer program product, comprising computer-readable instructions, the computer readable instructions, when executed by a processor, implementing operations of the method of any one of claims 1 to 14.