CLAIMS

1. A method of processing a transaction based on a dedicated blockchain node device, wherein the dedicated blockchain node device comprises a Central Processing Unit, CPU, and a smart network card and is any node of a blockchain network, and the method comprises:

when the dedicated blockchain node device accepts a transaction through the smart network card, writing, (S300), by the smart network card, the accepted transaction into a network card cache;

performing, sending, by the smart network card, the accepted transaction to the CPU and writing, by the CPU, the accepted transaction into a CPU cache;

performing (S302), by the smart network card, a consensus interaction with other nodes of the blockchain network based on the transaction in the network card cache in a process that the dedicated blockchain node device participates in a blockchain consensus;

determining and sending, (S304), by the smart network card, a to-be-executed transaction list to the CPU based on a result of the consensus; and

executing, by the CPU, transaction based on the to-be-executed transaction list, and completing transaction chaining.

2. The method according to claim 1, wherein the dedicated blockchain node device accepts the transaction through the smart network card, the method further comprises:

sending, by the smart network card, the accepted transaction to the CPU; and

writing, by the CPU, the received transaction into a CPU cache;

consensus, wherein the to-be-executed transaction list comprises a transaction identifier of each to-be-executed transaction determined based on the present blockchain consensus.; and

executing (S306), by the CPU, transaction based on the to-be-executed transaction list and completing transaction chaining.

2. The method according to claim 1, wherein the to-be-executed transaction list includes a transaction hash of each to-be-executed transaction determined based on the present blockchain consensus and wherein, when the dedicated blockchain node device accepts the transaction through the smart network card, the smart network card sends the accepted transaction to the CPU while writing the accepted transaction into the network card cache.

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

in the process that the dedicated blockchain node device participates in the blockchain consensus, sending, by the smart network card, consensus configuration modification information to the CPU if receiving the consensus configuration modification information; and

modifying, by the CPU, a consensus configuration locally stored in the dedicated blockchain node device based on the consensus configuration modification information.

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

sending, by the CPU, an execution result generated by executing transaction based on the to-be-executed transaction list to the smart network card; and

receiving, by the smart network card, the execution result as reference information of a next blockchain consensus.

5. A dedicated blockchain node device, comprising a Central Processing Unit, CPU, and a smart network card, and the dedicated blockchain node device being any node of a blockchain network;, wherein,

when the dedicated blockchain node deviceaccepts a transaction through the smart network card, the smart network card writes the accepted transaction into a network card cache; the smart network card performs consensus interaction with other nodes of the blockchain network based on the transaction in the network card cache in a process that the dedicated blockchain node device participates in a blockchain consensus; the smart network card determines and sends a to-be-executed transaction list to the CPU based on a result of the consensus; and

the CPU executes transaction based on the to-be-executed transaction list and completes transaction chaining.

6. The dedicated blockchain node device according to claim 5, wherein in the process that the dedicated blockchain node device participates in the blockchain consensus, the smart network card sends consensus configuration modification information to the CPU if receiving the consensus configuration modification information; and

the CPU modifies a consensus configuration locally stored in the dedicated blockchain node device based on the consensus configuration modification information.

7. The dedicated blockchain node device according to claim 5, wherein the CPU, sends an execution result generated by executing transaction based on the to-be-executed transaction list to the smart network card; and

the smart network card receives the execution result as reference information of a next blockchain consensus.

8. A method of processing a transaction based on a dedicated blockchain node device, being applied to a smart network card of the dedicated blockchain node device, wherein the dedicated blockchain node device further comprises a Central Processing Unit CPU, and is any node of a blockchain network, and the method comprises:

when the dedicated blockchain node device accepts a transaction through the smart network card, writing the accepted transaction into a network card cache;

performing consensus interaction with other nodes of the blockchain network based on the transaction in the network card cache in a process that the dedicated blockchain node device participates in a blockchain consensus; and

determining and sending a to-be-executed transaction list to the CPU based on a result of the consensus.

9. A method of processing a transaction based on a dedicated blockchain node device, being applied to a Central Processing Unit CPU of the dedicated blockchain node device, wherein the dedicated blockchain node device further comprises a smart network card, and is any node of a blockchain network, and the method comprises:

executing, by the CPU, transaction based on a to-be-executed transaction list sent by the smart network card, and completing transaction chaining.

10. An apparatus for processing a transaction based on a dedicated blockchain node device, being applied to a smart network card of the dedicated blockchain node device, wherein the dedicated blockchain node device further comprises a Central Processing Unit CPU and is any node of a blockchain network, and the apparatus comprises:

a caching module, configured to, when the dedicated blockchain node device accepts a transaction through the smart network card, write the accepted transaction into a network card cache; carry out the method of any of the preceding claims.

a consensus interacting module, configured to perform consensus interaction with other nodes of the blockchain network based on the transaction in the network card cache in a process that the dedicated blockchain node device participates in a blockchain consensus; and

a sending module, configured to determine and send a to-be-executed transaction list to the CPU based on a result of the consensus.

11. An apparatus for processing a transaction based on a dedicated blockchain node device, being applied to a Central Processing Unit CPU of the dedicated blockchain node device,

~~wherein the dedicated blockchain node device further comprises a smart network card and is any node of a blockchain network, and the apparatus comprises:~~

~~a chaining executing module, configured to execute transaction based on a to-be-executed transaction list sent by the smart network card and complete transaction chaining.~~

~~12.~~

6. A blockchain system, comprising a blockchain network, wherein at least one node of the blockchain network is the dedicated blockchain node device according to ~~any one of claims~~claim 5~~ 7.~~

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