

CLAIMS

What is claimed is:

1. A blockchain-based node management method, wherein a node identity table is stored in a distributed database of a blockchain, and is used to record a certificate of a new blockchain node and a unique identifier that is of the new blockchain node and that corresponds to the certificate, and the method comprises the following:

receiving, by an existing node of the blockchain having a node identity table management permission in the blockchain, via an out-of-chain communication, a target transaction, wherein the target transaction comprises thea certificate of thea new blockchain node and thea unique identifier of the new blockchain node; and

verifying the target transaction, so that after the target transaction passes consensus verification of the blockchain, thea node identity table comprising the unique identifier and the certificate of the new blockchain node is correspondingly recorded to the distributed database of the blockchain.

2. The method according to claim 1, wherein the verifying the target transaction comprises the following:

verifying the certificate of the new blockchain node, and verifying whether a node identity certification authority corresponding to the certificate of the new blockchain node is a node identity certification authority approved by the blockchain.

3. The method according to claim 1, wherein the target transaction further comprises digital signatures created by endorsement nodes of the blockchain based on at least the certificate of the new blockchain node; and

the verifying the target transaction comprises the following:

verifying whether valid digital signatures created by the endorsement nodes of the blockchain based on at least the certificate of the new blockchain node meet a predetermined quantity.

4. The method according to any one of claims 1 to 3, further comprising the following:

invoking a smart contract corresponding to management of the node identity table, executing update logic of the node identity table stated in the smart contract, verifying the target transaction, and after the verification is passed, correspondingly recording the unique identifier and the certificate of the new blockchain node to the node identity table.

5. The method according to claim 1, further comprising the following:

receiving a network address of the new blockchain node, the unique identifier of the new blockchain node, and a digital signature created by the new blockchain node;

obtaining the node identity table from the distributed database of the blockchain, and obtaining the certificate of the new blockchain node based on the unique identifier;

verifying the digital signature based on the certificate of the new blockchain node; and

storing the network address in a local database of the existing node of the blockchain after the verification is passed.

6. The method according to claim 5, further comprising the following:

sending network addresses of other existing nodes of the blockchain stored in a local database of the blockchain node to the new blockchain node.

7. The method according to claim 5 or 6, further comprising the following:

sending data in the distributed database of the blockchain backed up by the existing node of the blockchain to the new blockchain node.

~~8. A blockchain-based node management apparatus, wherein a node identity table is stored in a distributed database of a blockchain, and is used to record a certificate of a blockchain node and a unique identifier that is of the blockchain node and that corresponds to the certificate, and the apparatus comprises the following:~~

~~a receiving unit, configured to receive, for an existing node of the blockchain, a target transaction, wherein the target transaction comprises a certificate of a new node and a unique identifier of the new node; and~~

~~a verifying unit, configured to verify the target transaction, so that after the target transaction passes consensus verification of the blockchain, a node identity table~~

comprising the unique identifier and the certificate of the new node is correspondingly recorded to the distributed database of the blockchain.

9. The apparatus according to claim 8, wherein the verifying unit is configured to:

~~verify the certificate of the new node, and verify whether a node identity certification authority corresponding to the certificate of the new node is a node identity certification authority approved by the blockchain.~~

10. The apparatus according to claim 8, wherein the target transaction further comprises digital signatures created by endorsement nodes of the blockchain based on at least the certificate of the new node; and

the verifying unit is configured to:

~~verify whether valid digital signatures created by the endorsement nodes of the blockchain based on at least the certificate of the new node meet a predetermined quantity.~~

11. The apparatus according to any one of claims 8 to 10, further comprising the following:

~~a smart contract execution unit, configured to invoke a smart contract corresponding to management of the node identity table, execute update logic of the node identity table stated in the smart contract, verify the target transaction, and after the verification is passed, correspondingly record the unique identifier and the certificate of the new node to the node identity table.~~

12. The apparatus according to claim 8, further comprising an obtaining unit and a storage unit, wherein

the receiving unit is configured to receive a network address of the new node, the unique identifier of the new node, and a digital signature created by the new node;

~~the obtaining unit is configured to obtain the node identity table from the distributed database of the blockchain, and obtain the certificate of the new node based on the unique identifier;~~

~~the verifying unit is configured to verify the digital signature based on the certificate of the new node; and~~

~~the storage unit is configured to store the network address in a local database of the existing node of the blockchain after the verification is passed.~~

13. The apparatus according to claim 12, further comprising the following:

~~a sending unit, configured to send network addresses of other existing nodes of the blockchain stored in a local database of the blockchain node to the new node.~~

~~14. The apparatus according to claim 12 or 13, further comprising the following:~~

~~a sending unit, configured to send data in the distributed database of the blockchain backed up by the existing node of the blockchain to the new node.~~

815. A computer device, comprising a memory and a processor, wherein the memory stores a computer program that can be executed by the processor, and the processor executes the computer program to perform the method according to any one of claims 1 to 7.

916. A computer readable storage medium, storing a computer program, wherein when the computer program is executed by a processor, the method according to any one of claims 1 to 7 is performed.