

CLAIMS

1. A method for selecting a consensus node from multiple nodes on a blockchain, the method comprising:
 - 5 obtaining an equity interest voting result of a shareholder node for at least one expected node, wherein the shareholder node comprises a node that owns at least one of predetermined total shares and wherein an expected node comprises a node that the shareholder node votes for (S2);
 - determining, based on the equity interest voting result, a number of shares owned by each shareholder node after equity interest voting (S4); and
 - 10 determining a consensus node selection result based on the number of shares owned by each shareholder node after equity interest voting (S6), comprising, if the shareholder nodes comprise multiple nodes that own the same number of shares after equity interest voting:
 - selecting a consensus node from the multiple nodes that own the same number of shares based on a time sequence of generated root certificates for the multiple nodes that own the
 - 15 same number of shares after equity interest voting, wherein a root certificate for a node comprises:
 - data information used to prove the node is valid, and
 - information representing the time the root certificate was generated.
2. The method according to claim 1, wherein a root certificate for a node is generated in
20 response to the node applying for a root certificate to a specified certificate server.
3. The method according to any one of claims 1 to 2, wherein the equity interest voting result comprises:
 - an equity interest voting result generated after the shareholder node puts, by using a private
 - 25 key of the shareholder node, a signature on a voting result generated after equity interest voting for the expected node; and
 - correspondingly, after the obtaining an equity interest voting result, the method further comprises:
 - verifying the equity interest voting result by using a corresponding public key of the
 - 30 shareholder node (S20).

4. The method according to any one of claims 1 to 3, wherein the selected expected node comprises:
at least one node selected by the shareholder node based on a predetermined consensus node selection condition to vote a share for.
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5. The method according to claim 4, wherein the predetermined consensus node selection condition comprises at least one of a node service performance stability, a node service capacity, and a selection policy.
- 10 6. The method according to any one of claims 1 to 5, wherein:
the number of times that the share is validly transferred between nodes on a blockchain through voting is set to 1 in a single consensus node selection process.
- 15 7. The method according to claim 1, wherein selecting a consensus node from the multiple nodes that own the same number of shares based on a time sequence of generated root certificates for the multiple nodes that own the same number of shares after equity interest voting comprises:
selecting a node with an earliest generated root certificate as the consensus node.
- 20 8. An apparatus for selection of a consensus node, the apparatus comprising a plurality of modules configured to perform the method according to any one of claims 1 to 7.