CLAIMS

1. A method for configuring a blockchain network, comprising a node management step for

managing nodes, by a computer, by retaining information on nodes related to consensus building for adding data received via a P2P network to a blockchain, and determining nodes which are to sign based on a consensus algorithm,

wherein, the node management step

manages, by the computer, all nodes participating in the consensus building, and builds a virtual network consisting of these nodes connected in a ring-like manner,

wherein, the node management step comprises:

a signing node recording step for recording, by the computer, which node among the nodes constituting the virtual network was able to sign a block; and

a penalty step for determining, based on the record in the signing node recording step, a node that was not involved in block signing for certain threshold consecutive times and deleting the node from the nodes constituting the virtual network.

2. The method of Claim 1, wherein

the penalty step comprises:

a non-signing node recording step for checking, by the computer, at a predetermined timing, whether a predetermined node among the nodes constituting the virtual network was able to sign, and if the predetermined node was unable to sign, incrementing a counter value indicating that the node has not signed; and

a node deletion step for determining, by the computer, at a predetermined timing, whether the counter value indicating that a node has not signed exceeds a predetermined threshold for each node constituting the virtual network, and if it is determined that there is a node whose counter value exceeds the threshold, deleting that node from the nodes constituting the virtual network.

3. The method of Claim 2, wherein

the predetermined timing is a timing when a block is generated.

4. The method of Claim 2, wherein

each time a block is generated, the signing node recording step increments a counter value of a block signature counter of a node which generated the block, and records which node was able to sign the block based on the block signature counter value.

5. The method of Claim 4, wherein

the non-signing node recording step further comprises a step of adjusting a non-signing counter value at the time of checking by subtracting, by the predetermined node, the signature counter value from the non-signing counter value.

6. The method of Claim 1, wherein

the node management step

manages, by the computer, nodes participating in the consensus building by defining the participating nodes and distinguishing them between Voter nodes, which are operating in relatively stable environments, and Signer nodes, which are remaining non-Voter nodes, and connects these nodes among one another to thereby build a ring-like virtual network,

wherein the penalty step determines whether a node is a Voter node, and if it is a Voter node, the penalty step does not delete it from the nodes constituting the virtual network.

7. A computer software program for configuring a blockchain network

for causing a computer to execute a node management step by retaining information on nodes related to consensus building for adding data received via a P2P network to the blockchain, and determining nodes which are to sign based on a consensus algorithm,

the node management step

manages, by the computer, all nodes participating in the consensus algorithm, and builds a virtual network consisting of these nodes connected in a ring-like manner,

wherein, the node management step executes:

a signing node recording step for recording, by the computer, which node among the nodes constituting the virtual network was able to sign a block; and

a penalty step for determining, based on the record in the signing node recording step, a node that was not involved in block signing for certain threshold consecutive times and deleting the node from the nodes constituting the virtual network.

8. The computer software program of Claim 7, wherein

the penalty step executes:

a non-signing node recording step for checking, by the computer, at a predetermined timing, whether a predetermined node among the nodes constituting the virtual network was able to sign, and if the predetermined node was unable to sign, incrementing a counter value indicating that the predetermined node has not signed; and

a node deletion step for determining, by the computer, at a predetermined timing, whether the counter value indicating that a node has not signed exceeds a predetermined threshold for each node constituting the virtual network, and if it is determined that there is a node whose counter value exceeds the threshold, deleting that node from the nodes constituting the virtual network.

9. The computer software program of Claim 8, wherein

the predetermined timing is a timing when a block is generated.

10. The computer software program of Claim 8, wherein

each time a block is generated, the signing node recording step increments a counter value of a block signature counter of a node which generated the block, and records which node was able to sign the block based on the block signature counter value.

11. The computer software program of Claim 10, wherein

the non-signing node recording step further comprises a step of adjusting a non-signing counter value at the time of checking by subtracting, by the predetermined node, the signature counter value from the non-signing counter value.

12. The computer software program of Claim 7, wherein

the node management step

manages, by the computer, nodes participating in the consensus algorithm by defining the participating nodes and distinguishing them between Voter nodes, which are operating in relatively stable environments, and Signer nodes, which are remaining non-Voter nodes, and connects these nodes among one another to thereby build a ring-like virtual network,

wherein the penalty step determines whether a node is a Voter node, and if it is a Voter node, the penalty step does not delete it from the nodes constituting the virtual network.