

CLAIMS

What is claimed is:

1. A blockchain-based set exchange method for available resource quotas, the method comprises:

issuing, by a management node of a blockchain computer network, virtual resources to a plurality of object nodes through a blockchain as transaction media, wherein the blockchain is on the blockchain computer network;

performing, by one or more blockchain nodes of the blockchain computer network, consensus verification on a smart contract, wherein the smart contract comprises computer code executable to select a target object, wherein the computer code comprises a selection rule;

storing, by the one or more blockchain nodes, the smart contract on the blockchain;

selecting, by the management node, a set of object nodes from the plurality of object nodes according to the selection rule by invoking the smart contract stored on the blockchain, wherein the target object comprises the set of object nodes;

determining, by the management node for each of the object nodes in the target object, an amount of designated remaining virtual resources of the issued virtual resources corresponding to the each object node stored on the blockchain;

determining, by the management node for the target object, an amount of designated remaining virtual resources by accumulating the amounts of designated remaining virtual resources corresponding to each of the object nodes in the target object;

determining, by the management node for the target object, a resource quota based on the amount of designated remaining virtual resources corresponding to the target object;

determining, by the management node for each of the object nodes in the target object, virtual resource decrements corresponding to each of the object nodes based on the resource quota for the target object;

constructing, by the management node, a quota exchange transaction comprising the determined virtual resource decrements corresponding to the object node;

sending, by the management node, the quota exchange transaction to the one or more blockchain nodes of the blockchain computer network;

performing, by the one or more blockchain nodes, consensus verification on the quota exchange transaction;

determining, by the one or more blockchain nodes, that the consensus verification on the quota exchange transaction succeeds; and

based on the determination that the consensus verification on the quota exchange transaction succeeds, deducting, by the one or more blockchain nodes of the blockchain network, the determined virtual resource decrements by executing the quota exchange transaction.

2. The method according to claim 1, wherein the determining resource quota comprises:
determining a total resource quota for the set of object nodes;
obtaining an earning ratio corresponding to each of the object nodes in the target object;
and
obtaining, according to the earning ratio, the resource quota for each of the object nodes in the target object.

3. The method according to claim 2, wherein the determining resource quota comprises:
determining the amount of designated remaining virtual resources corresponding to the target object as the total resource quota;
the amount of designated remaining virtual resources corresponding to the target object is a sum of amounts of designated remaining virtual resources corresponding to the object nodes in the target object;
for the each of the object nodes in the target object, the amount of designated remaining virtual resources is preassigned by a user corresponding to the each of the object nodes.

4. The method according to claim 2, wherein the obtaining the earning ratio comprises:
determining, for each of the object nodes in the target object, a ratio of the amount of designated remaining virtual resources corresponding to the each of the object nodes to the amount of designated remaining virtual resources corresponding to the target object, as the earning ratio corresponding to the each of the object nodes in the target object.

5. The method according to claim 1, wherein:
each of the plurality of object nodes are configured to receive virtual resource increments through copyright use transactions.

6. The method according to claim 1, wherein:

the selection rule comprises a competitiveness representation value algorithm;
selecting the set of object nodes as the target object according to the selection rule
comprises:
determining, by the management node for each of the object nodes, a
competitiveness representation value by using the competitiveness representation value
algorithm, and
selecting a preset quantity of object nodes as the target object according to the
competitiveness representation value respectively corresponding to each of the object
nodes; and
for each of the object nodes, a larger competitiveness representation value increases a
chance of being selected.

7. A blockchain-based set exchange apparatus for available resource quotas, comprising
one or more processors and one or more non-transitory computer-readable storage media
storing instructions executable by the one or more processors, wherein execution of the
instructions causes the one or more processors to perform operations comprising::

issuing virtual resources to a plurality of object nodes through a blockchain as
transaction media;

performing consensus verification on a smart contract, wherein the smart contract
comprises computer code executable to select a target object, wherein the computer code
comprises a selection rule;

storing the smart contract on the blockchain;

selecting a set of object nodes from the plurality of object nodes according to the
selection rule by invoking the smart contract stored on the blockchain, wherein the target
object comprises the set of object nodes;

determining, for each of the object nodes in the target object, an amount of designated
remaining virtual resources of the issued virtual resources corresponding to the each object
node stored on the blockchain;

determining, for the target object, an amount of designated remaining virtual resources
by accumulating the amounts of designated remaining virtual resources corresponding to
each of the object nodes in the target object;

determining, for the target object, a resource quota based on the amount of designated
remaining virtual resources corresponding to the target object;

determining, for each of the object nodes in the target object, virtual resource

decrements corresponding to each of the object nodes based on the resource quota for the target object;

constructing a quota exchange transaction comprising the determined virtual resource decrements corresponding to each of the object nodes;

sending the quota exchange transaction to one or more blockchain nodes;

performing consensus verification on the quota exchange transaction;

determining that the consensus verification on the quota exchange transaction succeeds;

and

based on the determination that the consensus verification on the quota exchange transaction succeeds, deducting the determined virtual resource decrements by executing the quota exchange transaction.

8. The apparatus according to claim 7, wherein when determining the resource quota, the one or more processors are configured to perform operations comprising:

determining a total resource quota for the set of object nodes;

obtaining an earning ratio corresponding to each of the object nodes in the target object;

and

obtaining, according to the earning ratio, the resource quota for the each of the object nodes in the target object.

9. The apparatus according to claim 8, wherein when determining the resource quota, the one or more processors are configured to perform operations comprising:

determining the amount of designated remaining virtual resources corresponding to the target object as the total resource quota;

the amount of designated remaining virtual resources corresponding to the target object is a sum of amounts of designated remaining virtual resources corresponding to the object nodes in the target object; and

for each of the object nodes in the target object, the amount of designated remaining virtual resources is preassigned by a user corresponding to the each of the object nodes.

10. The apparatus according to claim 8, wherein when obtaining the earning ratio, the one or more processors are configured to perform operations comprising:

determining, for each of the object nodes in the target object, a ratio of the amount of designated remaining virtual resources corresponding to each of the object nodes to the

amount of designated remaining virtual resources corresponding to the target object, as the earning ratio corresponding to the each of the object nodes in the target object.

11. The apparatus according to claim 7, wherein:

the selection rule comprises a competitiveness representation value algorithm;

wherein when selecting the set of object nodes as the target object according to the selection rule, the one or more processors are configured to perform operations comprising:

determining, for each of the object nodes, a competitiveness representation value by using the competitiveness representation value algorithm, and

selecting a preset quantity of object nodes as the target node object according to the competitiveness representation value respectively corresponding to each of the object nodes; and

for each of the object nodes, a larger competitiveness representation value increases a chance of being selected.

12. A blockchain-based set exchange system for available resource quotas, comprising a management node and several object nodes, wherein

the management node is configured to:

issue virtual resources to a plurality of object nodes through a blockchain as transaction media;

perform consensus verification on a smart contract, wherein the smart contract comprises computer code executable to select a target object, wherein the computer code comprises a selection rule;

store the smart contract on the blockchain;

select a set of object nodes from the plurality of object nodes according to the selection rule by invoking the smart contract stored on the blockchain, wherein the target object comprises the set of object nodes;

determining, for each of the object nodes in the target object, an amount of designated remaining virtual resources of the issued virtual resources corresponding to the each object node stored on the blockchain;

determining, for the target object, an amount of designated remaining virtual resources by accumulating the amounts of designated remaining virtual resources corresponding to each of the object nodes in the target object;

determining, for the target object, a resource quota based on the amount of designated

remaining virtual resources corresponding to the target object;

determining, for each of the object nodes in the target object, virtual resource decrements corresponding to each of the object nodes based on the resource quota for the target object;

constructing a quota exchange transaction comprising the determined virtual resource decrements corresponding to each of the object nodes,

sending the quota exchange transaction to one or more blockchain nodes;

performing consensus verification on the quota exchange transaction;

determining that the consensus verification on the quota exchange transaction succeeds; and

based on the determination that the consensus verification on the quota exchange transaction succeeds, deducting the determined virtual resource decrements by executing the quota exchange transaction.

13. A computer device comprising a memory, a processor, and a computer program stored in the memory and executable on the processor, wherein when the processor executes the program, the blockchain-based exchange method for available resource quotas according to any one of claims 1 to 6 is implemented.