

CLAIMS

What is claimed is:

1. A method for multi-level storage of block data, the method comprising:
receiving latest block data of a blockchain;
storing the latest block data in a first-level storage system in a multi-level storage system, wherein the block data of the blockchain is stored in the multi-level storage system interconnected to the blockchain, the multi-level storage system comprising the first-level storage system configured to store the latest block data of the blockchain, and at least one lower-level storage system configured to archive block data stored in the first-level storage system;
determining whether a block data migration event for the first-level storage system is triggered; and
if yes, migrating at least a part of block data stored in the first-level storage system to the lower-level storage system.
2. The method according to claim 1, wherein a single-chain connection way is used between various storage systems in the multi-level storage system.
3. The method according to claim 1, wherein a first storage performance of a first storage medium corresponding to the first-level storage system is higher than a second storage performance of a second medium corresponding to the lower-level storage system.
4. The method according to claim 2, wherein storage performance of storage media corresponding to various levels of storage systems in the multi-level storage system decreases in a gradient from the first-level storage system.
5. The method according to claim 2, further comprising:
determining whether any one of the lower-level storage systems receives the at least a part of block data migrated from an upper-level storage system;
if yes, determining whether a block data migration event for any one of the lower-level storage systems is triggered; and
if yes, continuing migrating at least a part of block data stored in the any one of the lower-level storage systems to a lower-level storage system of the any one of the lower-level storage systems.

6. The method according to claim 1, wherein the block data migration event for the first-level storage system comprises:

a data capacity of the block data stored in the first-level storage system exceeds a predetermined threshold; or

a capacity ratio of a data capacity of the block data stored in the first-level storage system to a total data capacity of the first-level storage system exceeds a predetermined threshold.

7. The method according to claim 1, wherein the block data migration event for the any one of the lower-level storage systems comprises:

a data capacity of block data stored in the any one of the lower-level storage systems exceeds a predetermined threshold; or

a capacity ratio of a data capacity of block data stored in the any one of the lower-level storage systems to a total data capacity of the any one of the lower-level storage systems exceeds a predetermined threshold.

8. The method according to claim 1, wherein the blockchain comprises a peer-to-peer network.

9. The method according to claim 1, wherein the block data stored in the blockchain is backed up based on a plurality of consensus mechanisms.

10. The method according to claim 9, wherein the plurality of consensus mechanisms comprises a Proof of Work, a Proof of Stake, a Delegated Proof of Stake, or a Practical Byzantine Fault Tolerance.

11. An apparatus for multi-level storage of block data, the apparatus comprising a plurality of modules configured to perform the method of any one of claims 1 to 10.