

**[0048]** In an embodiment, the magnetic disk database includes a primary magnetic disk database and a secondary magnetic disk database. The blockchain data is written into the primary magnetic disk database for storage, and synchronization of the blockchain data between the primary magnetic disk database and the secondary magnetic disk database is maintained. When the node reads the blockchain data, the blockchain data is read from the secondary magnetic disk database.

**[0049]** The magnetic disk database provides permanent storage for the blockchain data, and the magnetic disk database is divided into a primary magnetic disk database and a secondary magnetic disk database in order to effectively improve the reading and writing performance of the magnetic disk database. The primary magnetic disk database is configured to receive the blockchain data written by the node to store the blockchain data, and may further be configured for the node to read the blockchain data. The secondary magnetic disk database is configured for the node to read the blockchain data. When the node reads data from the magnetic disk database, the node may read from the secondary magnetic disk database. If reading from the secondary magnetic disk database fails, the reading may be performed in the primary magnetic disk database. By separating the reading and writing functions of the primary magnetic disk database and the secondary magnetic disk database, the storing efficiency of the magnetic disk database can be effectively improved.

**[0050]** Further, a plurality of primary magnetic disk databases are provided, and a plurality of secondary magnetic disk databases are provided. The node performs reading and writing in the plurality of primary magnetic disk databases through a magnetic disk database interface layer, a data routing, a sharding middleware and a primary database connection pool. The node performs reading in the plurality of secondary magnetic disk databases through a magnetic disk database interface layer, a data routing, a sharding middleware and a secondary database connection pool.

**[0051]** In one of the embodiments, a schematic diagram of the connections of a node to a memory database and a magnetic disk database is shown in FIG. 2. The node connects with the memory database through a database interface layer and a

5. The system according to claim 4, wherein a plurality of primary magnetic disk databases are provided, and the node performs reading and writing in the plurality of primary magnetic disk databases through a magnetic disk database interface layer, a data routing, a sharding middleware and a primary database connection pool.

6. The system according to claim 4 or 5, wherein a plurality of secondary magnetic disk databases are provided, and the node performs reading in the plurality of secondary magnetic disk databases through a magnetic disk database interface layer, a data routing, a sharding middleware and a secondary database connection pool.

7. The system according to claim 1, wherein after the node is restarted, the node first reads the blockchain data from the magnetic disk database and loads the read blockchain data into the memory database, and synchronization between the magnetic disk database and the memory database is performed at a predetermined frequency.

8. A method for storing blockchain data, comprising:  
acquiring blockchain data;  
writing the blockchain data into a memory database and a magnetic disk database for storage, respectively; and  
reading the blockchain data first from the memory database during reading of the blockchain data, and reading the blockchain data from the magnetic disk database if the reading fails, and synchronizing the read blockchain data to the memory database.

9. The method according to claim 8, wherein the memory database has a corresponding first memory mapping file; the method further comprises:  
acquiring the first memory mapping file when writing of the blockchain data into the memory database fails, and writing the blockchain data into the first memory mapping file; and  
writing the blockchain data to the memory database through the first memory