Claims

1. A method for processing a transaction with a plurality of servers, the plurality of servers comprising a first server and a second server, the method comprising:

dividing account balance data of a user into a plurality of data sets;

storing each of the plurality of data sets separately in one server of the plurality of servers with mapping information, the mapping information indicating a distribution of the plurality of data sets among the plurality of servers;

receiving, by the first server, a transaction request, wherein the transaction request comprises a user identifier associated with the user and a data identifier of account balance data needed by the transaction;

determining that a first account balance associated with the user identifier is locally stored in the first server;

in response to determining that the first account balance is locally stored at the first server, determining, by the one or more processors, whether the first account balance is greater than or equal to the amount associated with the requested transaction; and

in response to determining that the first account balance is insufficient to process the amount,

applying, by the first server, the first account balance to the amount;

determining, by the one or more processors of the first server, a remaining amount associated with the requested transaction, the remaining amount representing a portion of the amount not covered by the first account balance;

determining, by the one or more processors of the first server, a second server storing a second account balance associated with the user identifier, wherein the second server is different than the first server;

determining, by the one or more processors of the first server, that the second server is faulty based on a detection of a server running error;

in response to determining the second server is faulty, determining, by the one or more processors of the first server, a third server storing a third account balance associated with the user identifier, wherein the third server is different than the first server and the second server,

determining, by the one or more processors of the first server, that the third server runs normally, and

in response to determining the third server runs normally, requesting, by the one or more processors of the first server, a portion of the third account balance from the server;

receiving, by the one or more processors of the first server, the portion of the third account balance from the third server, wherein the third server deducts the portion from the third account balance; and

applying, by the one or more processors of the first server, the portion of the third account balance to the amount associated with the requested transaction..

2. The method according to claim 1, wherein the data identifier of the data needed by the transaction comprises a data volume of the data needed by the transaction.

3. The method according to claim 1, wherein the method further comprises:

updating, by the first server, a total data volume of the data sets corresponding to the user identifier, the data volume of the data sets corresponding to the user identifier that is stored in the first server, and the data volumes of the data sets corresponding to the user identifier that is stored in the other servers in the plurality of servers.

4. The method according to any one of claims 1 to 3, wherein the data needed by the transaction comprises:

an amount of money and the data sets stored in the first server comprises a balance amount of a sub-balance corresponding to the user identifier.

5. The method according to claim 4, further comprising:

determining a difference between the amount of money and the balance amount of the sub-balance corresponding to the user identifier that is stored in the first server; and

obtaining the whole sub-balance corresponding to the user identifier that is stored in the first server, and obtaining a sub-balance with the balance amount being the difference from the second server.

6. The method according to claim 5, wherein the obtaining the sub-balance comprises:

sequentially obtaining sub-balances corresponding to the user identifier that are in other

servers in the plurality of servers in descending order of balance amounts of the sub-balances, until an obtained balance amount is the difference.

7. The method according to any one of claims 4 to 6, wherein the method further comprises:

updating, by the first server, a total balance corresponding to the user identifier, the balance amount of the sub-balance corresponding to the user identifier that is stored in the first server, and the balance amounts of the sub-balances corresponding to the user identifier that are stored in the other servers in the plurality of servers.

8. The method according to any one of claims 1 to 7, wherein the method further comprises:

dividing the data of the user into a plurality of data sets with the same data volume; and

separately storing the plurality of data sets on at least two servers, and storing, on each server, the user identifier of the user, a total data volume of the data of the user, a server identifier of each server, and a data volume of a data set stored on each server.

9. An apparatus for processing a transaction, the apparatus comprising a plurality of modules configured to perform the method of any one of claims 1 to 8.