CLAIMS

What is claimed is:

1. A data compression method based on a key-value store, comprising:

generating a current dictionary based on a plurality of key-values in a storage system of a server;

receiving a key-value pair transmitted by a client device; and

performing data compression on a key-value in the key-value pair by using the current dictionary and storing the key-value in the storage system,

wherein the generating a current dictionary based on a plurality of key-values in a storage system of a server comprises:

selecting N key-values from the plurality of key-values in the storage system as training data, wherein N is an integer greater than 1;

setting a dictionary training parameter, and performing dictionary training based on the dictionary training parameter and the training data to obtain a plurality of candidate dictionaries; and

selecting a candidate dictionary with the highest compression efficiency from the plurality of candidate dictionaries as the current dictionary,

wherein the generating a current dictionary based on a plurality of key-values in a storage system of a server further comprises:

selecting M key-values from the plurality of key-values in the storage system as verification data, wherein M is an integer greater than 1; and

the selecting a candidate dictionary with the highest compression efficiency from the plurality of candidate dictionaries as the current dictionary comprises:

selecting the candidate dictionary with the highest compression efficiency from the plurality of candidate dictionaries as a target dictionary;

verifying compression efficiency of the target dictionary based on the verification data; and

using the target dictionary as the current dictionary.

2. The method according to claim 1, wherein the storage system comprises a cache storage system.

3. The method according to claim 1, wherein M is equal to N.

4. The method according to claim 1, further comprising:

determining that compression efficiency of the storage system decreases, and updating the current dictionary.

5. The method according to claim 4, wherein the determining that compression efficiency of the storage system decreases, and updating the current dictionary comprises:

calculating overall compression efficiency of the current dictionary for the storage system at a current moment;

determining that a decrease of the overall compression efficiency of the current dictionary for the storage system at the current moment relative to overall compression efficiency at a previous moment exceeds a target threshold; and

updating the current dictionary.

6. The method according to claim 5, wherein the updating the current dictionary comprises:

generating a candidate updated dictionary based on a plurality of key-values in the storage system of the server at the current moment;

compressing the plurality of key-values in the storage system by using the candidate updated dictionary;

determining that overall compression efficiency of the candidate updated dictionary for the storage system is higher than that of the current dictionary for the storage system at the current moment; and

using the candidate updated dictionary as the current dictionary.

7. The method according to claim 5, wherein the determining that compression efficiency of the storage system decreases, and updating the current dictionary further comprises:

decompressing a compressed key-value stored in the storage system by using a current dictionary before updating; and

compressing, by using a current dictionary after updating, the key-value decompressed by the current dictionary before updating to obtain an updated compressed key-value.

8. The method according to claim 1, further comprising:

reading a target key-value in the storage system.

9. The method according to claim 8, wherein the reading a target key-value in the storage system comprises:

receiving a reading request for the target key-value transmitted by a target client device, wherein the client device comprises the target client device, and the plurality of key-values comprise the target key-value;

decompressing a compressed key-value corresponding to the target key-value by using the current dictionary to obtain the target key-value; and

transmitting the target key-value to the target client device.

10. A data compression system based on a key-value store, comprising:

at least one storage medium, comprising at least one instruction set, configured for data compression based on a key-value store; and

at least one processor in communication connection with the at least one storage medium,

wherein when the system runs, the at least one processor reads the at least one instruction set, and implements, based on an indication of the at least one instruction set, the data compression method based on a key-value store according to any one of claims 1-9.