

WHAT IS CLAIMED IS:

1. A cloud storage interval updating method, comprising:

determining a cloud storage interval to be updated in a cloud storage system;

determining a target cloud storage interval in the cloud storage system; and

replicating data in the cloud storage interval to be updated to the target cloud storage interval based on a content verification, wherein replicating data in the cloud storage interval to be updated to the target cloud storage interval based on the content verification further comprises:

calculating a first content check value of the target cloud storage interval obtained after the data in the cloud storage interval to be updated is replicated;

locking an input/output index address ring data component, wherein the input/output index address ring data component stores an index address pointing to a physical address corresponding to the cloud storage interval;

detecting whether an address of the target cloud storage interval is in an inbound direction of the input/output index address ring data component; and

when the address of the target cloud storage interval is not in the inbound direction of the input/output index address ring data component, unlocking the input/output index address ring data component to enter a sleep state.

2. The method according to claim 1, wherein after detecting whether the address of the target cloud storage interval is in the inbound direction of the input/output index address ring data component, the method further comprises:

when the address of the target cloud storage interval is in the inbound direction of the input/output index address ring data component, locking the cloud storage interval to be updated, and calculating a second content check value of the cloud storage interval to be updated; and

sending information of the target cloud storage interval to a memory management unit when the first content check value matches the second content check value.

3. The method according to claim 2, wherein after locking the cloud storage interval to be updated, and calculating the second content check value of the cloud storage interval to be updated, the method further comprises:

when the first content check value does not match the second content check value, returning to replicate the data in the cloud storage interval to be updated to the target cloud storage interval again.

4. The method according to claim 2, wherein sending information of the target cloud storage interval to the memory management unit when the first content check value matches the second content check value is implemented as:

sending the information of the target cloud storage interval to the memory management unit when the first content check value matches the second content check value; and

unlocking the input/output index address ring data component.

5. The method according to claim 1, wherein replicating data in the cloud storage interval to be updated to the target cloud storage interval based on the content verification further comprises:

clearing data directory information of the cloud storage interval to be updated; and

replicating the data in the cloud storage interval to be updated to the target cloud storage interval.

6. The method according to claim 5, wherein after unlocking the input/output index address ring data component to enter the sleep state, the method further comprises:

returning to clear the data directory information of the cloud storage interval to be updated again after a preset time.

7. A cloud storage interval updating apparatus, comprising:

- a memory figured to store instructions; and
- one or more processors configured to execute the instructions to cause the apparatus to perform operations comprising:
 - determining a cloud storage interval to be updated in a cloud storage system;
 - determining a target cloud storage interval in the cloud storage system; and
 - replicating data in the cloud storage interval to be updated to the target cloud storage interval based on a content verification, wherein replicating data in the cloud storage interval to be updated to the target cloud storage interval based on the content verification further comprises:
 - calculating a first content check value of the target cloud storage interval obtained after the data in the cloud storage interval to be updated is replicated;
 - locking an input/output index address ring data component, wherein the input/output index address ring data component stores an index address pointing to a physical address corresponding to the cloud storage interval;
 - detecting whether an address of the target cloud storage interval is in an inbound direction of the input/output index address ring data component; and
 - when the address of the target cloud storage interval is not in the inbound direction of the input/output index address ring data component, unlocking the input/output index address ring data component to enter a sleep state.

8. The apparatus according to claim 7, wherein after detecting whether the address of the target cloud storage interval is in the inbound direction of the input/output index address ring data component, the operations further comprise:

when the address of the target cloud storage interval is in the inbound direction of the input/output index address ring data component, locking the cloud storage interval to be updated, and calculating a second content check value of the cloud storage interval to be updated; and

sending information of the target cloud storage interval to a memory management unit when the first content check value matches the second content check value.

9. The apparatus according to claim 8, wherein after locking the cloud storage interval to be updated, and calculating the second content check value of the cloud storage interval to be updated, the operations further comprise:

when the first content check value does not match the second content check value, returning to replicate the data in the cloud storage interval to be updated to the target cloud storage interval again.

10. The apparatus according to claim 8, wherein sending information of the target cloud storage interval to the memory management unit when the first content check value matches the second content check value is implemented as:

sending the information of the target cloud storage interval to the memory management unit when the first content check value matches the second content check value; and

unlocking the input/output index address ring data component.

11. The apparatus according to claim 7, wherein replicating data in the cloud storage interval to be updated to the target cloud storage interval based on the content verification further comprises:

clearing data directory information of the cloud storage interval to be updated; and

replicating the data in the cloud storage interval to be updated to the target cloud storage interval.

12. The apparatus according to claim 11, wherein after unlocking the input/output index address ring data component to enter the sleep state, the operations further comprise:

returning to clear the data directory information of the cloud storage interval to be updated again after a preset time.

13. A computer-readable storage medium that stores a set of instructions that is executable by one or more processors of an apparatus to cause the apparatus to initiate a method for cloud storage interval updating, the method comprising:

determining a cloud storage interval to be updated in a cloud storage system;

determining a target cloud storage interval in the cloud storage system; and

replicating data in the cloud storage interval to be updated to the target cloud storage interval based on a content verification, wherein replicating data in the cloud storage interval to be updated to the target cloud storage interval based on the content verification further comprises:

calculating a first content check value of the target cloud storage interval obtained after the data in the cloud storage interval to be updated is replicated;

locking an input/output index address ring data component, wherein the input/output index address ring data component stores an index address pointing to a physical address corresponding to the cloud storage interval;

detecting whether an address of the target cloud storage interval is in an inbound direction of the input/output index address ring data component; and

when the address of the target cloud storage interval is not in the inbound direction of the input/output index address ring data component, unlocking the input/output index address ring data component to enter a sleep state.

14. The computer-readable storage medium according to claim 13, wherein after detecting whether the address of the target cloud storage interval is in the inbound direction of the input/output index address ring data component, the method further comprises:

when the address of the target cloud storage interval is in the inbound direction of the input/output index address ring data component, locking the cloud storage interval to be updated, and calculating a second content check value of the cloud storage interval to be updated; and

sending information of the target cloud storage interval to a memory management unit when the first content check value matches the second content check value.

15. The computer-readable storage medium according to claim 14, wherein after locking the cloud storage interval to be updated, and calculating the second content check value of the cloud storage interval to be updated, the method further comprises:

when the first content check value does not match the second content check value, returning to replicate the data in the cloud storage interval to be updated to the target cloud storage interval again.

16. The computer-readable storage medium according to claim 14, wherein sending information of the target cloud storage interval to the memory management unit when the first content check value matches the second content check value is implemented as:

sending the information of the target cloud storage interval to the memory management unit when the first content check value matches the second content check value; and

unlocking the input/output index address ring data component.

17. The computer-readable storage medium according to claim 13, wherein replicating data in the cloud storage interval to be updated to the target cloud storage interval based on the content verification further comprises:

clearing data directory information of the cloud storage interval to be updated; and
replicating the data in the cloud storage interval to be updated to the target cloud
storage interval.

18. The computer-readable storage medium according to claim 17, wherein after
unlocking the input/output index address ring data component to enter the sleep state, the
method further comprises:

returning to clear the data directory information of the cloud storage interval to be
updated again after a preset time.