**WHAT IS CLAIMED IS:**

1. A method performed by a computing device with at least one processor and at least one storage device, the method comprising:

generating a plurality of data blocks based on data to be stored;

determining a target storage layer for the plurality of data blocks in a storage pool of the at least one storage device, wherein the storage pool has a multi-layer architecture including a plurality of storage layers, each of the plurality of storage layers in the storage pool corresponds to a plurality of storage units, each storage unit in each storage layer contains a plurality of storage units in a next storage layer of the storage layer, the target storage layer is a storage layer in the storage pool that satisfies a first preset condition, and the first preset condition is related to a count of storage units in the storage pool and a count of the data blocks;

determining a plurality of target storage units from the storage pool based on the target storage layer; and

storing the plurality of data blocks based on the plurality of target storage units.

2. The method of claim 1, wherein in the multi-layer architecture of the storage pool, the plurality of storage layers from top to bottom include a first layer, a second layer, a third layer, and a fourth layer.

3. The method of claim 2, wherein the storage pool is one of a plurality of candidate storage pools of a resource pool, the resource pool being configured to store data of a same type.

4. The method of claim 3, wherein the determining a target storage layer for the plurality of data blocks in a storage pool includes:

determining whether there is at least one candidate storage pool that satisfies a second preset condition in the plurality of candidate storage pools;

in response to that there is the at least one candidate storage pool that satisfies the second preset condition in the plurality of candidate storage pools,

determining the storage pool from the at least one candidate storage pool that satisfies the second preset condition; and

taking the first layer of the storage pool as the target storage layer.

5. The method of claim 4, wherein the storage pool is a candidate storage pool with a lowest load among the at least one candidate storage pool that satisfies the second preset condition.

6. The method of claim 4 or 5, wherein the determining a target storage layer for the plurality of data blocks in a storage pool further includes:

in response to that there is no candidate storage pool that satisfies the second preset condition in the plurality of candidate storage pools,

determining at least one available storage pool from the plurality of candidate storage pools;

determining the storage pool from the at least one available storage pool; and

determining the target storage layer from the second layer and layers below the second layer of the storage pool.

7. The method of claim 6, wherein the storage pool is an available storage pool with a lowest load among the at least one available storage pool.

8. The method of any one of claims 4-7, wherein the second preset condition is related to a count of storage units in the first layer of the storage pool and the count of the data blocks.

9. The method of claim 6 or 7, wherein the determining the target storage layer from the second layer and layers below the second layer of the storage pool includes:

taking the second layer as a current layer;

determining whether the current layer satisfies a third preset condition;

in response to that the current layer satisfies the third preset condition, designating the current layer as the target storage layer; and

in response to that the current layer does not satisfy the third preset condition, determining a next layer of the current layer as a new current layer, and re-determining whether the new current layer satisfies the third preset condition until the target storage layer is determined.

10. The method of claim 9, wherein the third preset condition is related to a count of storage units in the current layer and the count of the data blocks.

11. The method of any one of claims 1-10, wherein the determining a plurality of target storage units from the storage pool based on the target storage layer includes:

selecting a plurality of storage units from the storage pool as the plurality of target storage units based on the target storage layer using a first selection strategy, wherein

the first selection strategy includes at least one of a first sub-strategy or a second sub-strategy, and

the first sub-strategy includes that:

in a situation where an upper layer of the target storage layer does not satisfy a fourth preset condition, the plurality of target storage units are distributed in all the storage units corresponding to the upper layer of the target storage layer; and

in a situation where the upper layer of the target storage layer satisfies the fourth preset condition, the plurality of target storage units are distributed in a first count of storage units corresponding to the upper layer of the target storage layer, the first count being equal to the count of the data blocks, and

the second sub-strategy includes that:

a difference of a count of target storage units between each two of a plurality of distributed storage units is less than a preset count, and the plurality of distributed storage units are storage units of the upper layer of the target storage layer and contain the plurality of target storage units.

12. The method of claim 11, wherein the fourth preset condition is related to a count of storage units in the upper layer of the target storage layer and the count of the data blocks.

13. The method of any one of claims 1-12, wherein the storing the plurality of data blocks based on the plurality of target storage units includes:

in response to that the target storage layer is not a last layer in the multi-layer architecture of the storage pool, for each of the plurality of target storage units,

taking the target storage unit as a write storage unit;

determining whether a layer corresponding to the write storage unit is the last layer;

in response to that the layer corresponding to the write storage unit is not the last layer, selecting, based on a second selection strategy, a new write storage unit from storage units in a next layer contained in the write storage unit;

determining whether a layer corresponding to the new write storage unit is the last layer until the layer corresponding to the new write storage unit is determined to be the last layer; and

respectively storing the plurality of data blocks in write storage units corresponding to the plurality of target storage units.

14. The method of claim 13, wherein the selecting, based on a second selection strategy, a new write storage unit from storage units in a next layer contained in the write storage unit includes:

determining a plurality of candidate queues from the storage units in the next layer contained in the write storage unit, the plurality of candidate queues being consist of a plurality of updatable storage units;

determining a target candidate queue from the plurality of candidate queues; and

determining the new write storage unit from a plurality of storage units of the target candidate queue.

15. The method of claim 14, wherein the determining a target candidate queue from the plurality of candidate queues includes:

determining, based on load information of each of the plurality of candidate queues, a queue priority of at least one of the plurality of candidate queues, the load information at least including a count of free storage units in the corresponding candidate queue; and

determining the target candidate queue based on the queue priority of the at least one candidate queue.

16. A system including at least one processor and at least one storage device storing computer instructions, when the computer instructions are executed by the at least one processor, the at least one processor is configured to perform operations including:

generating a plurality of data blocks based on data to be stored;

determining a target storage layer for the plurality of data blocks in a storage pool of the at least one storage device, wherein the storage pool has a multi-layer architecture including a plurality of storage layers, each of the plurality of storage layers in the storage pool corresponds to a plurality of storage units, each

storage unit in each storage layer contains a plurality of storage units in a next storage layer of the storage layer, the target storage layer is a storage layer in the storage pool that satisfies a first preset condition, and the first preset condition is related to a count of storage units in the storage pool and a count of the data blocks;

determining a plurality of target storage units from the storage pool based on the target storage layer; and

storing the plurality of data in blocks based on the plurality of target storage units.

17. The system of claim 16, wherein the determining a plurality of target storage units from the storage pool based on the target storage layer includes:

selecting a plurality of storage units from the storage pool as the plurality of target storage units based on the target storage layer using a first selection strategy, wherein

the first selection strategy includes at least one of a first sub-strategy or a second sub-strategy, and

the first sub-strategy includes:

in a situation where an upper layer of the target storage layer does not satisfy a fourth preset condition, the plurality of target storage units are distributed in all the storage units corresponding to the upper layer of the target storage layer, wherein the fourth preset condition is related to a count of storage units in the upper layer of the target storage layer and the count of the data blocks; and

in a situation where the upper layer of the target storage layer satisfies the fourth preset condition, the plurality of target storage units are distributed in a first count of storage units corresponding to the upper layer of the target storage layer, the first count being equal to the count of the data blocks, and

the second sub-strategy includes:

a difference of a count of target storage units between each two of a plurality of distributed storage units is less than a preset count, and the plurality of distributed storage units are storage units of the upper layer of the target storage layer and contain the plurality of target storage units.

18. The system of claim 16, wherein the storing the plurality of data blocks based on the plurality of target storage units includes:

in response to that the target storage layer is not a last layer in the multi-layer architecture of the storage pool, for each of the plurality of target storage units,

taking the target storage unit as a write storage unit;

determining whether a layer corresponding to the write storage unit is the last layer;

in response to that the layer corresponding to the write storage unit is not the last layer, selecting, based on a second selection strategy, a new write storage unit from storage units in a next layer contained in the write storage unit;

determining whether a layer corresponding to the new write storage unit is the last layer until the layer corresponding to the new write storage unit is determined to be the last layer; and

respectively storing the plurality of data blocks in write storage units corresponding to the plurality of target storage units.

19. A system, including a data block generation module, a storage layer determination module, a storage unit determination module, and a data block storage module, wherein

the data block generation module is configured to generate a plurality of data blocks based on data to be stored;

the storage layer determination module is configured to determine a target storage layer for the plurality of data blocks in a storage pool of at least one storage device, wherein the storage pool has a multi-layer architecture including a plurality of storage layers, each of the plurality of storage layers in the storage pool corresponds to a plurality of storage units, and each storage unit in each storage layer contains a plurality of storage units in a next storage layer of the storage layer, the target storage layer is a storage layer in the storage pool that satisfies a first preset condition, and the first preset condition is related to a count of storage units in the storage pool and a count of the data blocks;

the storage unit determining module is configured to determine a plurality of target storage units from the storage pool based on the target storage layer;

the data block storage module is configured to store the plurality of data blocks based on the plurality of target storage units.

20. A non-transitory computer-readable storage medium, the storage medium storing computer instructions, wherein when reading the computer instructions in the storage medium, a computer performs the method of any one of claims 1-15.