What is Claimed is:

1. A storage system comprising:

a host system; and

a plurality of storage sets configured to interface through two different protocols with the host system, and

wherein at least one of the plurality of storage sets comprises:

a first memory region;

a second memory region; and

a third memory region,

wherein the at least one of the plurality of storage sets is configured to classify data stored in the third memory region as corresponding to the first memory region, the second memory region or the third memory region based on a data access feature, move the data stored in the third memory region to the first memory region based on the data being classified as corresponding to the first memory region, move the data to the second memory region based on the data being classified as corresponding to the second memory region, and maintain the data in the third memory region based on the data being classified as corresponding to the third memory region, and

wherein the at least one of the plurality of storage sets is further configured to classify the data stored in the third memory region as corresponding to the third memory region based on the data access feature indicating the data should not be lost.

2. The storage system of claim 1, wherein the at least one of the plurality of storage sets comprises:

an accelerator configured to support a calculation operation; and

a storage controller comprising a plurality of nonvolatile memories,

wherein a calculation result of the accelerator is stored in the first memory region, and

wherein the storage controller comprises the second memory region and the third memory region.

3. The storage system of claim 2, wherein the storage controller further comprises a mapping table configured to manage addresses associated with data stored in the third memory region.

4. The storage system of claim 2, wherein the at least one of the plurality of storage sets further comprises a data pattern analyzer configured to obtain the data access feature by analyzing a pattern of data received from the host system.

5. The storage system of claim 2, wherein the at least one of the plurality of storage sets further comprises a pre-fetching order scheduler configured to adjust an execution order of pre-fetching commands received from the host system based on an operation state of the third memory region.

6. The storage system of claim 5, wherein the pre-fetching order scheduler is further configured to adjust the execution order based on at least one of a data storage method, a garbage collection, a wear leveling, and an ECC protection code with respect to a memory block in which a pre-fetching operation is to be performed in the third memory region.

7. The storage system of claim 1, wherein the host system is configured to generate the data access feature and transmit the data access feature to the at least one of the plurality of storage sets.

8. The storage system of claim 1, wherein the host system and the plurality of storage sets are configured to communicate with each other through a CXL interface and a PCIe interface.

9. The storage system of claim 1, wherein the first memory region and the second memory region each comprise a volatile memory, and the third memory region comprises a nonvolatile memory.

10. The storage system of claim 1, wherein the first memory region, the second memory region, and the third memory region form a memory hierarchical structure.

11. The storage system of claim 1, further comprising a battery circuit configured to provide power to the plurality of storage sets based on a level of a main power provided from the host system being less than or equal to that of a reference power.

12. A storage set comprising:

a first memory region comprising a first volatile memory;

a second memory region comprising a second volatile memory;

a third memory region comprising a nonvolatile memory;

a controller configured to control the first memory region, the second memory region and the third memory region; and

a bridge configured to provide an interface between the storage set and a host system,

wherein the controller is further configured to classify data stored in the third memory region as corresponding to the first memory region, the second memory region or the third memory region based on a data access feature, move the data stored in the third memory region to the first memory region based on the data being classified as corresponding to the first memory region, move the data to the second memory region based on the data being classified as corresponding to the second memory region, and maintain the data in the third memory region based on the data being classified as corresponding to the third memory region,

wherein the bridge is further configured to communicate with the host system using two different interface protocols, and

wherein the controller is further configured to classify the data stored in the third memory region as corresponding to the third memory region based on the data access feature indicating the data should not be lost.

13. The storage set of claim 12, further comprising an accelerator configured to support a calculation operation, and store a calculation result in the first memory region.

14. The storage set of claim 12, further comprising a data pattern analysis circuit configured to obtain the data access feature by analyzing a pattern of data received from the host system.

15. The storage set of claim 12, further comprising a pre-fetching order scheduler configured to adjust an order of pre-fetching operations, based on an operation state of the third memory region.

16. The storage set of claim 12, wherein the first memory region, the second memory region, and the third memory region form a memory hierarchical structure.

17. A method of operating a storage set that includes a plurality of memory regions and is communicably coupled with a host system through at least two different protocols, the plurality of memory regions including a first memory region with a nonvolatile memory, a second memory region with a volatile memory and a third memory region with a volatile memory, the method comprising:

identifying a memory region from among the plurality of memory regions corresponding to data stored in the first memory region, based on a data access feature associated with the data;

checking whether the data is stored in the identified memory region;

maintaining the data in the first memory region, based on the identified memory region being the first memory region;

moving the data from the first memory region to the second memory region, based on the identified memory region being the second memory region; and

moving the data from the first memory region to the third memory region, based on the identified memory region being the third memory region,

wherein the memory region is identified as the first memory region based on the data access feature indicating the data should not be lost.

18. The method of claim 17, further comprising receiving information indicating the data access feature from the host system.

19. The method of claim 17, further comprising identifying the data access feature by analyzing a pattern of data received from the host system.

20. The method of claim 17, further comprising:

checking an operation state of the first memory region; and

adjusting an execution order of pre-fetched commands received from the host system, based on the operation state of the first memory region.