What is claimed is:

1. A computer-implemented method for capturing a representation of data, comprising:

under control of one or more computer systems configured with executable instructions,

receiving a request from a client to capture the representation of the data at a point in time, the point in time based at least in part on a capture policy specified by the client;

issuing, to a storage interface and based at least in part on the request, a command to suspend acknowledgment of completion of a write operation the data operation including manipulation of a distributed data set;

at a time after receiving a notification that the processing of the acknowledgement of completion of write operation has been suspended, instructing a server operable to receive instructions from the storage interface to enqueue an instruction to capture a portion of the data stored in a physical storage device and subsequently resume acknowledging completion of subsequent write operations, the capture configured based at least in part on the capture policy; and

storing a representation of the data, the representation comprising the captured portion of the data.

2. The computer-implemented method of claim 1, further comprising:

receiving, from an application of the client, a request to perform the write operation; and

selecting, for the request, a physical storage device in which to perform a corresponding operation and performing the corresponding operation in the selected physical storage device.

3. The computer-implemented method of claim 1, wherein the client device includes a computer system different from the storage interface, the server, and the physical storage device.

4. The computer-implemented method of claim 1, wherein instructing the server to enqueue the instruction includes inserting at least one token into a request stream from the storage interface to the server.

5. The computer-implemented method of claim 1, further comprising communicating a request to perform the write operation to the storage interface.

6. The computer-implemented method of claim 5, wherein communicating the request to perform the write operation includes:

receiving the request from an application executed by the client; and

selecting the storage interface from a plurality of storage interfaces, wherein each of the plurality of storage interfaces are configured to instruct a corresponding server to cause, in a corresponding physical storage device, completion of an operation corresponding to the request.

7. A computer-implemented method for capturing a representation of data, comprising:

under control of one or more computer systems configured with executable instructions,

receiving an instruction from a client to capture the representation of the data based at least in part on a capture policy received from the client;

suspending, based at least in part on the instruction, acknowledgment of a data operation, the data operation including manipulation of a distributed data set; and

enabling a device to capture at least a portion of the data based at least in response to the suspension of the acknowledgment of the data operation, the capture further based at least in part on the capture policy.

8. The computer-implemented method of claim 7, further comprising resuming acknowledgment of at least a second data operation at a time after enabling the device to capture at least the portion of the data.

9. The computer-implemented method of claim 7, wherein a request to perform the data operation is originated on a computing device different from the client.

10. The computer-implemented method of claim 7, wherein the distributed data set is distributed among a plurality of partitions, each of the partitions being operated in accordance with operation of a corresponding server, and wherein the plurality of partitions are stored on a plurality of physical storage devices.

11. The computer-implemented method of claim 7, wherein the device is configured as a server, and wherein enabling the device to capture at least a portion of the data includes inserting at least one token into a request stream to the server.

12. The computer-implemented method of claim 7, further comprising generating, independent of operation of a user application from which requests to perform the data operation originates, an instruction to capture the data, wherein suspending the acknowledgment of the data operation is performed responsive to the generated instruction to capture the data set.

13. The computer-implemented method of claim 7, wherein the data operation is a first data operation, and wherein the storage interface is configured to cause completion of a second data operation while suspending the acknowledgement of performance of the first data operation.

14. The computer-implemented method of claim 7, wherein suspending the acknowledgment of completion of the data operation includes enabling suspension of issuing acknowledgments of completions of write operations.

15. The computer-implemented method of claim 7, wherein suspending the acknowledgment of completion of the data operation includes enabling postponement of issuance of write requests.

16. A system operable to direct capture of a representation of data, comprising:

one or more processors; and

memory including executable instructions that, when executed by the one or more processors, cause the system to:

receive an instruction from a client device to capture the representation of the data at a point in time, the point in time based at least in part on a capture policy received from the client device; and

implement a plurality of servers to perform data operations in a plurality of partitions;

enable a storage interface to block acknowledgment of completion of an activity in connection with the data; and

insert at least one token into a request stream from the storage interface to the plurality of servers, the at least one token being an indication to each server that receives the at least one token to perform a capture of a partition of the plurality of partitions based at least in part on the capture policy.

17. The system of claim 16, wherein the plurality of partitions are stored on a plurality of physical storage devices.

18. The system of claim 16, wherein the storage interface is configured to be in communication with the plurality of servers.

19. The system of claim 16, wherein the capture of the partition of the plurality of partitions is to be performed by each respective server upon processing the at least one token.

20. The system of claim 16, wherein the request stream comprises a collection of requests for performing data operations from a corresponding computing device associated with the storage interface to at least one of the plurality of servers.