



Generic Storage Operations

While data storage technologies and architectures showcase many complexities, their core operations boil down to a number of shared common features.

2



IOPS as a standard unit of measurement for data storage

To measure overall data storage performance and determine any latency present in the solution, vendors use IOPS (input/output operations, per second) as a frame of reference. Many factors influence storage operations and resultant solution performance, so IOPS is just one way to look at overall solution viability.

1



Writing and reading data

The entire purpose of data storage revolves around writing data to storage media (HDD, flash, or hybrid) for long-term retention, then reading that same data back for applications, workloads, and/or users needing to work with that information.

3



All IOPS are not the same

Certain data storage operations are more labor-intensive than others. Without question, the most resource-intensive operation involves writing data to disk. Did you know that even a high-level storage write IOP can actually trigger multiple lower-level IOPS with many disk writes?

4



Data integrity is key to the entire process

Storing data longer term to disk is pointless without effective data integrity assurance. If the solution reads or writes incorrectly—or if the data on disk becomes corrupt due to bit rot—the effect can be devastating to your operations. This is the reason that *checksum operations* are so important.

5



You can't have adequate data storage without automation

So many things are going on within an enterprise's shared storage solution that intelligent and time-saving automation is key. The point of robust enterprise storage is to have as little human intervention as possible, saving the company money while avoiding costly human-induced errors.

Network-Attached Storage

excels at multiple-client access to shared files while supporting the ability to scale both up and out to meet any enterprise's unique data challenges

“File-level storage offers simplicity when there is a common platform to place raw files. File-level storage is usually used in NAS devices, which offer comparatively more storage space.”

Markets and Markets, Next-Generation Data Storage Market to 2025, pg. 70.