DriveAssure™ Technology

ATTO RAID PRODUCTS PROVIDE GUARANTEED LATENCY RESPONSE

WHAT IS LATENCY?

Latency is defined as the time between a request and a response. In a storage system utilizing an ATTO Technology Inc. RAID product, it is the time from when a workstation or server application issues a request for data from storage to the time that the ATTO RAID product returns a response from the drives.
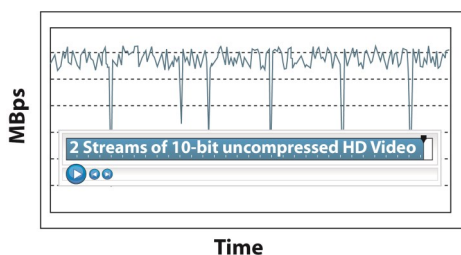

Figure 1: Latency Response without DriveAssure
Unmanaged drive latency results in lower realtime performance.

Latency is not throughput. Throughput, typically measured in MB/second, is concerned with how quickly data can be moved to and from the drives. Latency is concerned with how smoothly data can be transferred.

For example: if you transfer 1000MB of data in 100 seconds, the throughput is 10MB/sec. But this tells you nothing about how long it takes to read or write 1MB of data. Latency is measured by how long it takes to complete reads and writes to disk storage. Some may take several seconds, an eternity to many applications, while some may execute much faster.

LATENCY IMPACT

In a storage system, latency is impacted by all aspects of the network topology, from host adapters to the drives themselves. When ATTO RAID products are used, they not only minimize latency through pre-fetching, caching and early response technologies, ATTO also has proprietary algorithms to minimize the impact of drive latency.

ATTO RAID GUARANTEES LATENCY

Throughput alone is not an accurate indicator of system performance for video applications. Latency introduced via a slow drive or intermittently slow drive in a storage array if left unmanaged will lead to reduced system performance. Figure 1 is an example of how reads and writes with larger than usual delays dramatically reduce the total available stream count even though there is ample throughput.

ATTO ExpressSAS® RAID products with DriveAssure™ technology, for parity and redundant RAID levels compensate when one drive in a RAID group does not respond within a specified period of time. The data from a slow drive can be generated using the parity or redundancy information from the rest of the RAID group, with only a nominal change in throughput.
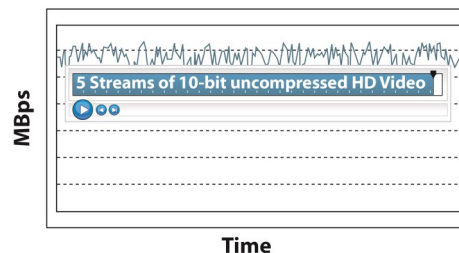

Figure 2: Latency Response with DriveAssure
ATTO RAID products have the ability to cap latency at a user specified level resulting in up to an 80% improvement in latency response when compared with the competition.

Figure 2 shows how ATTO RAID technology efficiently manages reads and writes, forgiving intermittent drive problems while keeping data moving smoothly.

ATTO DriveAssure with guaranteed latency enables the fastest low latency data transfers while preventing premature drive failures and slow downs, efficiently utilizing all available drive bandwidth. Enlist a good data management plan which includes ATTO RAID products.