



Big Data Workloads for Optimized SMR Storage Solutions with Western Digital and ATTO Technology

ATTO

Best Uses

- Web 2.0
- Cloud based Services
- Big Data workloads

Components

- Western Digital Ultrastar® DC HC620 SMR HDD
- ATTO ExpressSAS 12Gb Series Storage Host Bus Adapters

Western Digital's long collaboration with ATTO Technology is based on a shared insight into the storage and data infrastructure needs of today's complex enterprise environments. Together, we are preparing users for the next wave of performance challenges.

As data in-flight transitions to data-at-rest, storage becomes one of the key infrastructure components. However, the demand for scalable, cost-effective mass storage at an attractive economic price point continues to challenge the capabilities of the storage industry. The upshot is that in cases where the cost of storage exceeds the value of the data at hand, data is left unstored—and untapped.

The emergence of Big Data analytics and bulk storage have changed the way data architects view and approach data. With increased processing power and data analytics technologies, data that was previously in "deep archive" (data sitting offline on removable media) is migrating to an "active archive" (data kept online and accessible), where continuous value can be extracted from the data set. The simplistic notion of archived data as data written to the cheapest media available and rarely accessed – namely tape drives – is rapidly changing.

In addition, many hyperscale and cloud storage customers are now beginning to realize that their workloads are trending toward data that is written sequentially and rarely updated, then read randomly and frequently. In these instances, customers are seeking storage solutions with the lowest total cost-per-terabyte and the maximum capacity. These active, sequential workloads have the potential to create new opportunities for innovative storage solution providers.

With data and storage continuing to grow at unprecedented rates, the capacity enterprise market is starting to see an emergence of new storage segments that are predominately sequential, highly accessible, and at unprecedented capacity points. To effectively service these new segments requires a purpose-built solution that leverages innovation such as host managed Shingled Magnetic Recording (SMR). To capitalize on the capacity advantages of host managed SMR, customers need to make certain changes to their data ecosystem, including modifying the host software or host application, sequentializing data streams and incorporating new command sets. Because host based SMR is becoming more ubiquitous, the investment is fully leveraged for subsequent generations of SMR products and even recording technologies. By building today's highest-capacity SMR storage solutions on the helium-filled HDD platform, Western Digital is addressing the pressing need for true enterprise-grade mass storage at a compelling total cost of ownership (TCO).

Solution Description

Western Digital and ATTO are working together on opportunities that enhance how data can be stored and analyzed. This provides the basis for valuable business insights and new business opportunities for three macro forces impacting storage markets today – Web 2.0, Cloud-based Services, and Big Data. Western Digital SMR-based Ultrastar DC HC620 HDDs and ATTO Express SAS 12Gb HBAs take these applications to the next level.

Ultrastar DC HC620 SMR HDD

The Ultrastar DC HC620 delivers an unprecedented capacity point with a time-to-market advantage for customers who have invested in, and continue to take advantage of the benefits of SMR. The Ultrastar



DC HC620 is built on the proven and mature HelioSeal® platform to deliver an outstanding Watts/TB power footprint for online storage. Built for enterprise workloads up to 550TB/year, DC HC620 is ideal for ultra-dense scale-out storage systems, with uncompromising product reliability, necessary for private and public cloud enterprise applications. Industry-standard SATA 6Gb/s or SAS 12Gb/s interface options support a variety of data center configurations.

ATTO ExpressSAS® 12Gb/s SAS series HBAs



ATTO 12Gb SAS HBAs double the performance over previous generations of SAS/SATA cards and offer fresh new features that reduce downtime, improve efficiency and save money on the bottom line. They provide more flexibility for connecting storage, greatly decrease latency to SMR drives, make it easier to manage the overall storage infrastructure and improve connection diagnostic capabilities – all at a lower total cost of ownership. Additionally, ExpressSAS HBAs provide the highest and smoothest throughput for streaming applications such as tape backup and archiving, video post-production, geologic survey and video-on-demand applications.

ATTO ExpressSAS HBAs incorporate the exclusive, field-proven Advanced Data Streaming (ADSTM) Technology, which helps users meet the most demanding performance requirements of bandwidth-intensive applications. ADS achieves this performance increase by integrating a combination of features engineered to allow for the controlled acceleration of data transfers.

Learn more at <http://www.wdc.com/dc-hc620> and <https://www.atto.com/products/adapters>

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