

## ATTO Improves TOLIS Productivity by 40%

Advanced Data Streaming™ Technology solves data bursting and drop-out challenges



### Success In Brief

- Improved application and device performance by up to 40%
- Overall greater customer satisfaction with TOLIS' BRU products due to consistent and reliable backup
- Positive customer experience led to additional SAS installations at many high-profile film, TV and audio environments.
- The Express SAS HBAs optimized bandwidth limitations



***"We use ATTO because it works, it has consistently given us the best performance on any platform. When using ATTO's ESAS HBAs the performance was over 40% greater than the leading competitor's HBA. ATTO Technology is part of our business."***

- Tim Jones  
Co-founder & CTO  
TOLIS Group, Inc.

### ATTO Alleviates I/O Performance Problems

#### Challenge

TOLIS' customers were encountering problems with system compatibility and their tape systems were performing below specs or going offline during I/O operations resulting in intermittent backup failure and system reliability issues. TOLIS engineering was spending weeks analyzing compatibility issues with the bruAPP and BRU software on Mac OS X and other Unix/Linux platforms.

TOLIS technical support team members began tracking the mounting call issues and traced the problems to one point of failure in particular: the other HBAs that were used for connectivity seemed to have unstable system drivers that were causing inconsistent data throughput rates. The effect this has on backup environments ranges from failed backups in the worst instances, to burst and drop-outs, resulting in slower backups.

TOLIS engineers knew that they needed to come up with an alternate solution.

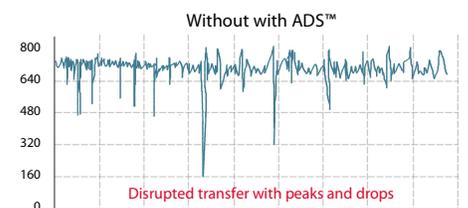
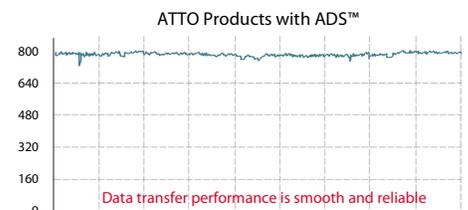
#### Solution

TOLIS began by testing ATTO's ExpressPCI SCSI Host Bus Adapters (HBAs) on Linux and Mac OS X systems. They immediately discovered that the "shoeshining" issue caused by data I/O bursting and drop-out and the intermittent connectivity failures disappeared. They found that incorporating ATTO HBAs, with Advanced Data Streaming (ADS™) Technology, a feature in all ATTO products designed to manage latency, helped to "smooth" the data stream to the tape drive. This alleviated the spiked burst effects while ATTO's tightly integrated OS driver support meant plug-and-forget compatibility with both the bruAPP appliances and general systems.

It became quickly apparent that the ADS Technology incorporated into ATTO HBAs lends itself to streaming environments like tape backup and video editing. Advanced Data Streaming manages latency by providing controlled acceleration for smooth data streaming to maintain the highest consistent performance.

TOLIS engineering was so pleased with the initial results, they began to test ATTO's Fibre

#### Advanced Data Streaming (ADS™)



Best in industry data transfers

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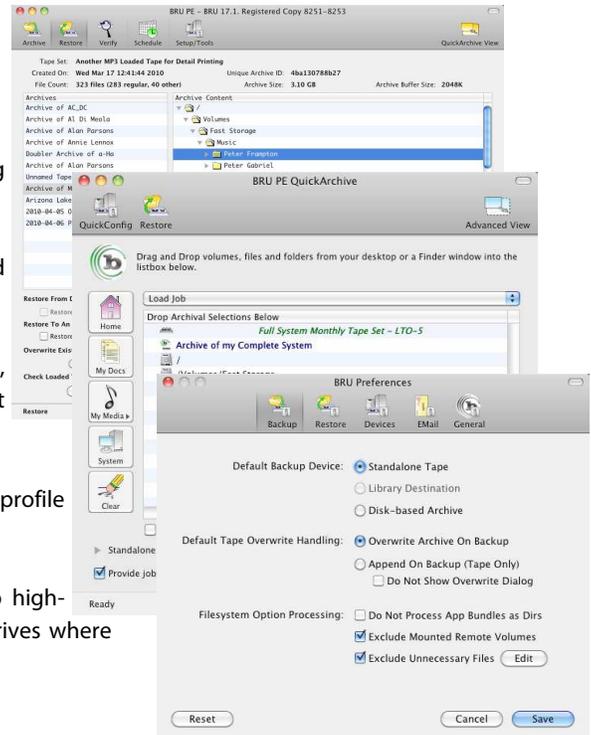
Channel and SAS HBAs as well. They found that all ATTO HBAs performed equally as well in the BRU backup environments.

After implementing and recommending ATTO HBAs, TOLIS management noticed that the volume of their non-application technical support calls rapidly declined. This allowed TOLIS to focus their engineering and support resource efforts on their core business - backup software solutions.

**40%**  
**Improvement**  
**Device and Application Performance**

### Benefits

- ✓ Consistent, high-speed data transfers were accomplished because of ATTO is Advanced Data Streaming (ADS™) Technology, a standard on all ATTO HBAs, that creates the smooth data stream to the tape drive to alleviate the spiked burst and drop-out effects that can starve a tape drive's input buffer.
- ✓ Improved application and device performance by up to 40% - eliminating starts and stops.
- ✓ TOLIS was able to realize engineering savings by reducing non-product related support calls and engineering analysis of reported failures.
- ✓ Overall greater customer satisfaction with TOLIS' BRU products under Linux, Mac OS X, and x86-based Solaris platforms thanks to compatibility testing at ATTO.
- ✓ Positive customer experience led to additional SAS installations at many high-profile film, TV, and audio studios.
- ✓ The ExpressSAS HBAs allowed a shift from overloaded SCSI subsystems to high-performance SAS solutions in support of multiple, high-speed LTO-4 tape drives where older infrastructures were subjected to SCSI shared bandwidth limitations.



### Conclusion

By incorporating ATTO Host Bus Adapters into both the bruAPP appliances and their bundled tape solution packages, TOLIS eliminated system incompatibility and the frustrating I/O performance problems. ADS technology resolved the tape subsystem performance issues while ATTO's proven driver technology resolved system compatibility issues. ATTO HBAs improved performance while providing the needed redundancy and latency required for the ultra-reliable backup and restore solutions for TOLIS' end users.

### Companies Involved

**ATTO Technology, Inc.** is a global leader of storage connectivity and infrastructure solutions for data-intensive computing environments. ATTO provides a wide range of end-to-end solutions to help customers better store, manage and deliver their data. With a focus toward markets that require high performance, ATTO manufactures host adapters, RAID adapters, bridges, RAID storage controllers, switches and management software. ATTO solutions are based on providing a high level of connectivity to all storage interfaces including SCSI, SATA, iSCSI, SAS and Fibre Channel.

**TOLIS Group** is dedicated to providing leading edge native Unix, Linux and Mac OS X data backup, archival and restore software and appliance solutions that deliver unparalleled reliability and excellent value to organizations and OEMs. The service mark of "Backup You Can Trust" guides every aspect of TOLIS' business.

### Products used

ExpressPCI SCSI HBAs  
ExpressSAS 3Gb and 6Gb HBAs  
Celerity 4Gb Fibre Channel HBAs  
Tolis bruAPP and BRU software  
Mac OS X and Unix/Linux platforms