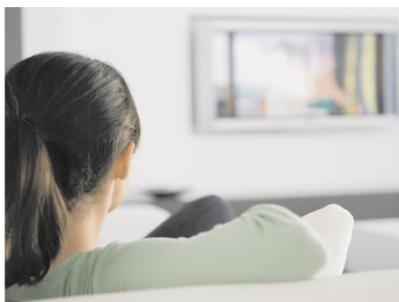# Solution Brief: ASG-Digital Archive and Oracle's StorageTek Digital Tape for Media and Entertainment

Today, media and entertainment organizations must manage more critical data than ever before—and data volumes continue to grow at an explosive pace as video formats move to 2 K, 4 K, and even 8 K. Traditional backup and recovery solutions have proven ill-equipped to keep up with these demands. To ensure these increasing volumes of critical information are always available when needed, organizations require advanced new archiving capabilities. ASG-Digital Archive and Oracle's StorageTek digital tape libraries are the perfect match for large digital asset environments such as media pre- and post-production. This archive solution dramatically improves the scope and economics of your storage, while providing flexibility, robustness, and scalability.

ASG-Digital Archive

ASG-Digital Archive is an open archive software solution that moves and preserves massive volumes of digital content with automatic, end-user, and workflow-triggered archiving for rich media content. ASG-Digital Archive migrates content from primary storage to nearline and deep archives, whether digital tape, disk, or cloud storage.

ASG's solutions have been integrated and tested with industry-leading media and entertainment applications to handle digital asset transfer to and from the archive. Storing and accessing files with the ASG-Digital Archive may be done several different ways:

- **Drag-and-drop archiving**. Integrated into the user desktop, the ASG-Digital Archive user interface enables you to archive fixed content data by simply dragging it into the archive folder of your choice.
- **Application-triggered archiving**. The interface is integrated with applications and complex workflows (i.e., through the application programming interface (API), web services, command line interface, or XML ingest).
- **Automatic archiving of watch folder contents by scheduled tasks.** The interface enables the automatic association of metadata with files through XML ingest automatic archiving tasks.
- **Automated archiving based on policy.** You can migrate files from disk to tape automatically, leveraging user-defined criteria such as file creation date, file type, file metadata attributes, and more.
- **Advanced archiving option.** The interface enables partial retrieval of a media asset from tape storage. ASG-Digital Archive permits retrieval, from a friendly user interface or from the C++ API (in Material eXchange Format, or .MXF, and in QuickTime or .mov format), of a short clip as a subset of a much larger archived media asset. Information supporting this capacity is collected during the archiving (i.e., the asset is scanned to collect metadata such as timecode references, to generate a new asset in the form of a shorter clip). This feature is used directly by digital asset managers (DAMs) or media asset managers (MAMs) that offer partial retrieval and are integrated with ASG-Digital Archive.

ASG Digital Archive and Oracle's StorageTek Tape Libraries

This solution ensures that an organization's most valuable data is organized and easily accessible, while at the same time freeing expensive disk space, lowering storage costs, and reducing the backup window for data that is infrequently accessed.

ASG-Digital Archive: Critical for Digital Workflows

End-User Interface Operating Systems:
Microsoft® Windows®, Mac OS®, Java® for UNIX, and Linux® Platforms

ASG-Digital Archive Server Operating Systems:
Microsoft Windows, Mac OS, Linux, and UNIX

Application Support:

- Avid Interplay
- CatDV
- EVS MediArchive Director
- Primestream FORK
- Proconsultant Louise
- Apple Final Cut Server
- Levels Beyond Reach Engine
- DataFrameworks ClarityNow!
- Empress eMAM

Solution Overview

User-Oriented Archiving

A user-oriented digital archive solution provides a simple interface that abstracts the underlying hardware (servers, disk, flash, digital tape, and cloud storage). The user-oriented architecture simplifies file retrieval through search features that have access to asset metadata and file names.

Open Archiving

As an open archive solution, ASG-Digital Archive preserves digital assets on disk (with the whole tree structure if needed) or on tape (tape archive [TAR/PAX] or linear tape file system [LTFS])

An open archive eliminates dependencies on application and hardware providers, enabling users to retrieve files in the future leveraging different applications, operating systems, and hardware. You can transparently retrieve archived files written with one operating system and read on a different operating system. Data may be archived in LTFS format or TAR/PAX format, for long-term retention and compatibility. Both LTFS and TAR/PAX ensure that your assets remain readable in the long term. In addition to the data, ASG-Digital Archive preserves the media asset manager metadata and file metadata on disk and tape through the TAR/PAX format.

Intelligent Metadata Management

ASG-Digital Archive provides the option to automatically import metadata from graphical file formats or from production applications such Avid Interplay, EVS MediaArchive Director, CatDV, and others. Users also may manually add custom metadata at the moment of archiving automatically through XML ingest tasks, or through the C++ application interface. The solution offers full content and metadata indexing with sophisticated cataloging of metadata for multiple file types.

Central Administration

You can use the single interface to enable license keys, manage storage, create users and groups, and manage your archiving policies. The entire archive system may be managed locally or remotely through the interface.

Data Lifecycle Management

The ASG-Digital Archive provides data lifecycle management features to reorganize, transfer, and share archive assets according to the changes experienced within an organization.

Advanced Tape Management

ASG-Digital Archive provides advanced tape management features to help controlling the grouping of archived data on tape – Data can be archived per archive project, per archive job, per custom group, etc.

ASG-Digital Archive offers multiple parameters to control file allocation on tape and automatize the archiving to best fit specific needs –Splitting of a file between tapes can be allowed or be prevented thus allowing the archive of a file larger than one tape on several tapes (tape-spanning). ASG-Digital Archive can make it a priority to minimize the number of tapes used (bestfit), or on the opposite, make it a priority to maximize the number of tape used in order to maximize the speed of parallel data retrieval (worstfit).

Oracle's StorageTek T10000 Tape Drives

The world's highest capacity tape drives—the latest generation supports 8.5 TB native on a single cartridge, which is more than three times the capacity per cartridge than LTO 6.

Oracle's StorageTek SL3000 Modular Tape Library

Scales from 200 digital cartridge slots to just under 6,000 slots and from 1 to 56 drives in a footprint that grows linearly in a rack environment.

Selecting an Archive Format

Both digital tape and disk hardware systems are leveraged in media and entertainment archive environments, but the mix between digital tape and disk is evolving. Over the past several years, digital tape capacities have grown rapidly while increases in disk capacities have slowed. Today the highest capacity digital tape is 8.5TB while disk capacities are around half of that. Additionally, disk systems consume more power and are refreshed more frequently than digital tape, leading to a high total cost of ownership. These changes in the storage market have disrupted archive deployments and organizations are increasing their digital tape investments while reducing their expenditures on disk storage. For a detailed analysis of disk versus digital tape costs, there is a public report available from one of the leading industry analysts on storage, The Clipper Group. The Clipper Group report can be accessed at the following link: http://www.clipper.com/research/TCG2010054.pdf

Oracle's StorageTek Digital Archive

Oracle's StorageTek portfolio is engineered for digital archiving. Oracle offers the world highest capacity digital tape technology, the StorageTek T10000 tape drive series, as well as the highest performing and most scalable digital tape libraries in the world. With ASG-Digital Archive, you have access to the StorageTek T10000 tape drives, as well as the midrange drives from LTO. In addition, ASG-Digital Archive has been tested with Oracle's StorageTek SL8500 modular library system, the world's largest digital tape library, as well as the StorageTek SL3000 modular library system and StorageTek SL150 modular tape library.

Digital Tape Libraries	Digital Tape Drives
StorageTek SL8500 Modular Library System	StorageTek T10000C, T10000D LTO 4, LTO 5, LTO 6 (HP and IBM) Fibre Channel Only
StorageTek SL3000 Modular Library System	StorageTek T10000C, T10000D LTO 4, LTO 5, LTO 6 (HP and IBM) Fibre Channel Only
StorageTek SL150 Modular Tape Library	LTO 5, LTO 6 (HP HH only) Fibre Channel and SAS

The ASG-Digital Archive Media Manager component is installed in environments where the target archiving device is tape. It is the component that enables ASG-Digital Archive to access tape libraries and tape devices. ASG-Digital Archive offers agents (software components that allow tape drive attach) for most major operating systems on multiple versions. Please refer to the ASG-Digital Archive Compatibility Guide for detailed information.

CONTACT US

For additional details on ASG software solutions, please visit www.asg.com.

For additional details on Oracle's archive solutions, please visit www.oracle.com/goto/tape.