

Solution Brief

Clustered Data ONTAP for Media and Your Business

NetApp at the center of media throughout your company

Key Benefits

- Infinite incremental growth
- Nondisruptive upgrades and scale-out
- Intelligent data migrations
- Agile infrastructure for shared applications
- Storage efficiency through NetApp® Snapshot® copies
- Five-9s availability and Integrated Data Protection
- Hybrid flash architectures for balancing performance and capacity

What Happened to My TV?

The collision of show business and social media has changed everything. Viewers today don't want a passive "lean-back" experience. They expect to be able to select content from a huge library and get just what they want to watch, when they want to watch it—on any device. They expect to share clips, add commentary, and rate content. Audiences even want to contribute content to your service. All of these expectations are ushering in a whole new era of content viewing.

The content business has changed, and so has the way you need to think about not only producing and delivering content, but also about transacting, measuring, and analyzing the business. Because storage is at the very core of all of these processes, you need to rethink your storage strategy too. You want a storage company behind you that has the storage platforms and data management software you need. You also want the media workflow, database, virtualization, and cloud expertise you need to get to the next level of content production and distribution.

From Silos to Shared IT

Storage is an integral part of media production, distribution, and business today. Traditionally, storage was installed in media facilities as a dedicated part of a specific application, such as editing, compositing, color correction, graphics creation, play-out, and so on. As applications and the number of operators exploded, "silos of storage" proliferated.

Buying silos of storage was expedient initially, but doing so created inefficiencies in the long run. In this random infrastructure scenario, applications and operators can function efficiently individually; however, in a nonlinear collaborative environment, efficiency in individual applications or processes might not result in overall workflow efficiency. This storage silo approach certainly results in additional capital expense and management overhead and, most significantly, more file transfers—and therefore file copies.

APPLICATION	HISTORICAL STORAGE APPROACH
Ingest	High-end SAN
Editing and compositing	High-end SAN
Animation rendering	NAS with cache
Transcode and distribute	NAS
Archive	Tape backup
Broadcast play-out	Proprietary solutions

Disadvantages of the Silo Approach

- **Additional capital equipment expense.** IT equipment required for storage interconnectivity and additional storage for copies of files.
- **Greater storage management overhead.** Networked storage administrative management and additional expertise and time related to managing multiple storage file systems and storage subsystems.
- **Operational inefficiency.** Production “wait time” while files are transferred.

Building flexibility and agility into your production environment and therefore the storage infrastructure that supports it has never been so important.

Multiprotocol Support: a Critical Design Consideration

As you grow your media enterprise storage solution, consider the various protocols necessary to support your operation. Employing a storage system that can support Fibre Channel, iSCSI, SAN, and NAS protocols simplifies your storage environment and reduces connectivity costs and overhead.

Windows clients use CIFS to access network storage, while Linux and UNIX clients use NFS to access the same files. You no longer need emulation products such as SAMBA or PC-NFS to allow different platforms to share network files, so management of client systems is simpler and performance is improved.

One File System Can't Do Everything

It is true that high-resolution, real-time production represents a dedicated workflow that is still best supported with a SAN solution focused on sequential I/O performance. For these tasks—for example, editing, compositing, and coloring—the dense, high-bandwidth, modular NetApp E-Series excels (www.netapp.com/us/products/storage-systems/e5600/index.aspx).

For the majority of your media workflow needs, however, especially media processing and distribution-related operations, and for all of your media business needs, use the NetApp clustered Data ONTAP® operating system (www.netapp.com/us/solutions/industry/media-entertainment/index.aspx). This system has the necessary breadth of performance, storage efficiency features, and nondisruptive operations to best support your media and your business in a unified environment.

Not All Scale-Out NAS Solutions Are Equal

Improving your operational workflow can deliver more efficiency. Your storage solution, which forms the heart of your production environment, must also perform its tasks more efficiently. NetApp FAS systems consistently outperform the competition in SPEC sfs2008 testing. However, the performance differentiation doesn't stop there. Application performance is what really matters—for your applications. In video transcode application testing, clustered Data ONTAP beat the legacy scale-out NAS offering by a factor of three to one—which translates to one-third the storage expense with NetApp for the same performance.

“The challenge was to design a system to manage content for multiplatform distribution to satisfy the needs of the business, not only for our traditional TV and radio audience but also for new viewers who want a more personalized program.”

José María Casaos, Technical Director
Grupo Antena3

The potential savings don't stop at the capital investment; consider the energy savings and reduced HVAC costs achieved from having fewer spinning disks. Solid-state disks can be deployed in high-performance workloads to reduce the strain on hard disk drives even further.

Workflow Optimization

In the media landscape, from production to distribution to transaction to analysis, some data needs to be accessed repeatedly and with very little latency. That is why NetApp has not one flash solution but a suite of flash technologies that can work together or separately to enable groundbreaking results. By caching where it is most applicable—at the host, in band, at the array controller, or in SSDs—a NetApp architecture can balance cost, cache capacity, and latency.

Storage Efficiency

NetApp storage efficiency includes integrated compression and deduplication, which can shrink your capacity needs even in media workflows. You can run the NetApp compression and deduplication simulation tool against your existing datasets to determine how much efficiency your operation can expect. And yes, there is significant storage efficiency to be had, even in compressed video workflows.

Integrated Data Protection

NetApp Integrated Data Protection delivers high availability, backup, compliance, and disaster recovery services directly from clustered Data ONTAP storage systems. The solution scales across applications and virtual infrastructures because it runs in the storage, where data lives.

Most data protection implementations are complex and costly and require a number of specialty products to be “bolted” onto your environment. The NetApp Integrated Data Protection solution is robust and efficient, and it requires fewer server, storage, and network resources. It is simple enough that you can activate and roll out services in minutes.

NetApp also provides NetApp RAID DP® technology, which delivers double-parity data protection with no performance degradation to protect against two disk failures in a stripe group, not just one.



Figure 1) FAS8000 series running clustered Data ONTAP.

As you consider the cost and workflow efficiency advantages of centralized shared storage, data protection becomes more important, and the complexity can become a challenge. Storage subsystem capabilities that deliver resiliency, protection against data loss, and proactive monitoring and maintenance are key to securing your intellectual capital. You should expect your storage solution to deliver five-9s availability.

Storage Management

Many storage management products are limited to a single class of storage or a specific capability—or they separate management of physical and virtual resources. But to keep pace with 50% or greater data growth without adding staff, media operations need tools that drive storage management efficiency.

NetApp OnCommand® Unified Manager delivers a unified experience to manage physical and virtual storage environments using integrated workflows and policy-driven automation. From a single dashboard, Unified Manager simplifies shared IT storage management, delivering efficiency at scale across the largest media operations.

The Bottom Line

You need a solution that eliminates planned downtime, scales nondisruptively as your business grows, and quickly adapts to changing business environments. And you need a solution that is easy to manage and enables you to stay ahead of your competition.

Not all storage systems are built the same, and this becomes even more apparent when dealing with the file size and storage growth needs of media applications. Storage efficiency, flexibility, and agility are the prominent considerations for media companies today.

Because NetApp FAS running clustered Data ONTAP is flexible, you need fewer storage systems, and you get more from each system deployed. Fundamentally, this storage and management approach reduces storage management overhead as well as data center floor space, power, and cooling needs. Ultimately, your next storage purchase can solve a short-term problem but add complexity to your already overburdened operation—or it can simplify and unify your media business infrastructure. The choice is yours.

Animation and Effects Rendering

Clustered Data ONTAP is an extremely fast platform for highly parallel compute applications. These applications include feature animation and special effects rendering in which thousands of compute nodes might need to access the same computer graphics and texture elements. FAS is tuned for high-I/O performance and cache flexibility with NetApp Flash Cache™ intelligent caching or third-party memory management solutions. Animation studios with many thousands of render cores trust NetApp to provide industry-leading performance for their 24/7 render farms.

Active Archive, Central Repository

Studios, broadcasters, cable, and Internet media operations can now consolidate their storage tiers with clustered Data ONTAP. The operating system provides access from all major operating systems and storage protocols and enables tiering across storage device types within a single file system. This capability streamlines the storage management effort, enabling operations to manage more terabytes and even petabytes with less engineering overhead.

Transcode and Distribute

Support large-scale adaptive bit-rate and trick-play video-on-demand transcoding operations with a greatly reduced storage infrastructure. NetApp clustered Data ONTAP is tuned for the small file writes inherent in these workflows. This feature enables up to a three-times increase in transcode operations with the same amount of storage versus that of other scale-out NAS storage infrastructures.

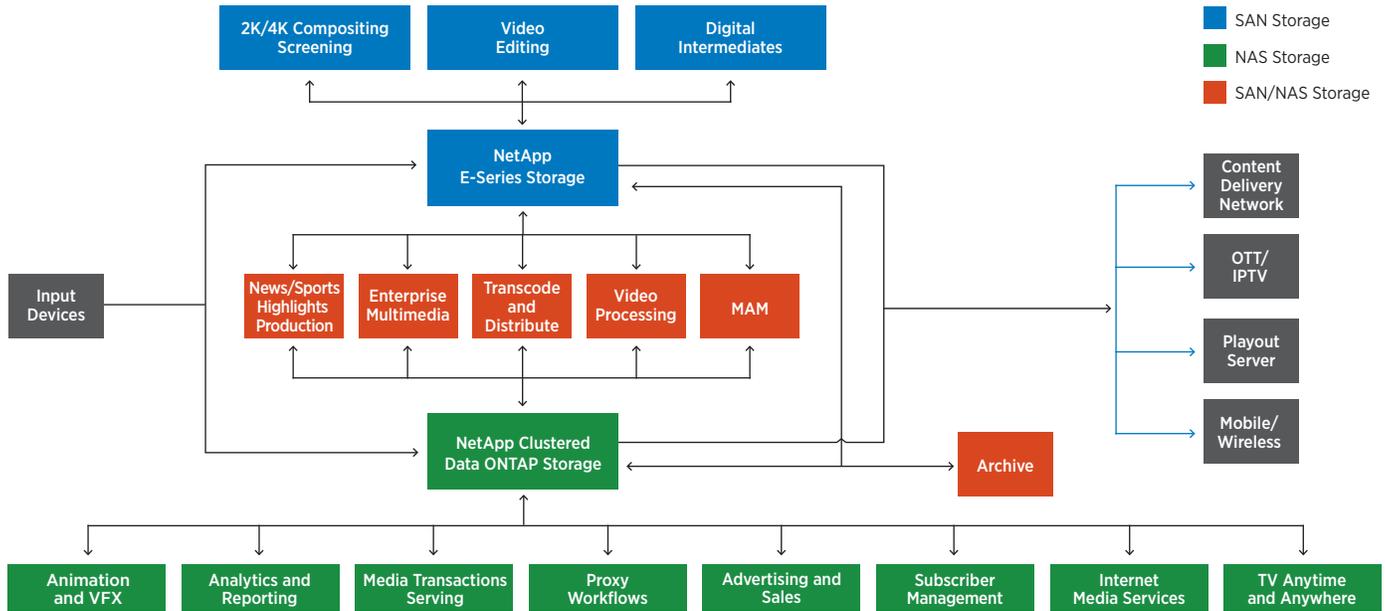


Figure 2) Clustered Data ONTAP provides an agile infrastructure for animation and effects rendering, active archiving, transcoding, distribution, Internet media services, and TV, anywhere, anytime. The system also provides an agile infrastructure for shared IT to run the business. The extremely high-bandwidth E-Series is deployed for real-time high-bitrate production. Both platforms provide superior performance for media operations.

Internet Media Services

Maintain large-scale media repositories, support massively scaled over-the-top streaming services, transact millions of queries a day, and analyze user patterns, all with one storage infrastructure: the world's #1 branded storage operating system, Data ONTAP. Internet media services, with their vast capacity needs and massive user base, strain the bounds of an infrastructure's capacity and throughput. Having one storage OS intelligently spanning flash, SSDs, SAS, and SATA allows providers to best leverage the cost and latency characteristics of all available storage technologies, even on a dynamic basis.

TV Anywhere, Anytime

Digital television delivery services are increasing their on-demand, personal recording, and second-screen streaming and downloading offerings. FAS clustered Data ONTAP is at the center of R&D and operations at major tier 1 providers in these areas.

About NetApp

Leading organizations worldwide count on NetApp for software, systems and services to manage and store their data. Customers value our teamwork, expertise and passion for helping them succeed now and into the future.

www.netapp.com