



Solution Brief

NetApp Solutions for Media and Entertainment

Key Benefits

Reduce Costs and Complexity Across All Media Workflows by Consolidating Storage Silos

Moving to a NetApp consolidated data fabric approach simplifies IT infrastructure and administration, reduces redundant data, and speeds access to assets for all departments.

The Right Tool for the Job

Regardless of the challenge, NetApp provides highly configurable and tunable storage and data management to fit the requirements.

Lower Overhead and Increase Reliability with Efficient, Automated Data Management

NetApp storage systems work together with external resources like the industry's best cloud and media application providers to optimize and automate data management throughout your business to increase efficiency, protect valuable assets, and free up human resources to be more effective.

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 new era of content viewing: the participation age.

The content business has changed, and so has the way you need to think about producing and delivering the content, and also about transacting, measuring, and analyzing your business. Because data is at the core of all these processes, you need to rethink your storage strategy too. You want a storage company behind you that has not only the storage platforms and data management software but also the media workflow, database, virtualization, and cloud expertise to help you 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, playout, and so on. As applications and the number of operators proliferated, silos of storage did as well.

Buying silos of storage was initially expedient, but it 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 often does not result in overall enterprise efficiency.

This storage silo approach can result in additional capital expense and management overhead and, most significantly, more file transfers and therefore more file copies, for the following reasons:

- **Additional capital equipment expense.** IT equipment required for storage interconnectivity and additional storage for copies of files.
- **Increased storage management overhead.** Networked storage administrative management, as well as 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 media enterprise and therefore the storage infrastructure that supports it has never been so important.

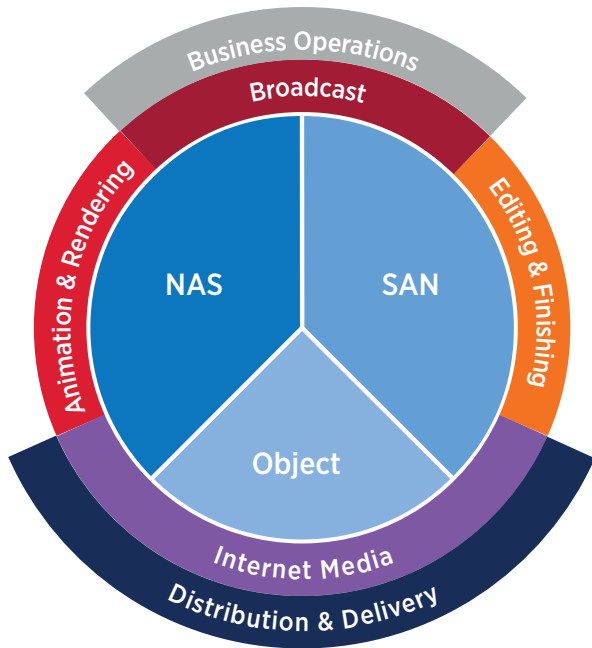


Figure 1) The most common choices for storage typically depend on the primary workflow of the organization. Some workflows are well supported by multiple platform types, others are best served by a particular personality.

Comprehensive Workflow Support

Storage personalities: a critical design consideration

Professional media production encompasses many different tasks, combining to form multidisciplinary workflows. In many cases, the workflow includes tasks that have very different storage requirements. Although high-resolution editing and finishing tasks are best served by a system that prioritizes large-file bandwidth over small-file operations, the workflow may also include large numbers of rendering engines where file transactions far outweigh streaming needs. And when the workflow calls for multisite access to content or global distribution, the production workspace is probably not the best system to burden with those tasks.

Achieving the proper balance between storage optimization and storage consolidation is one of the key benefits of the NetApp® solution portfolio.

“NetApp has managed data for every CG animated film that’s been produced at DreamWorks.”

Skottie Miller, Technology Fellow
DreamWorks

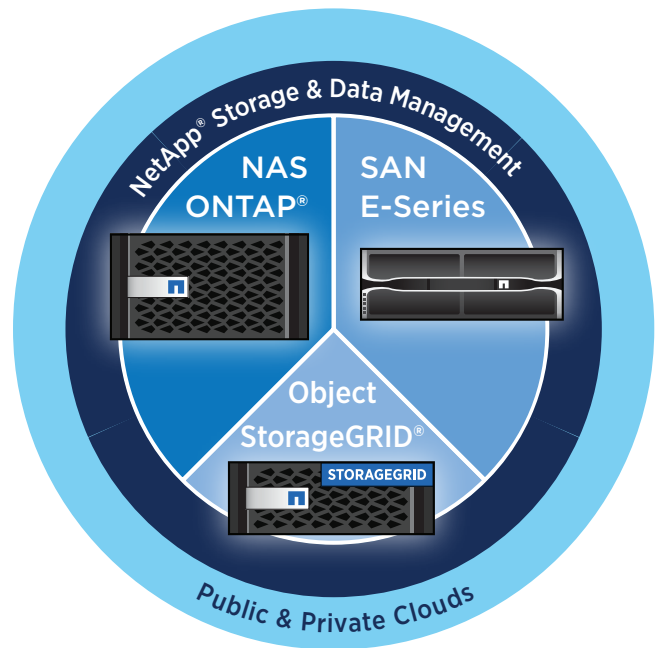


Figure 2) NetApp storage and data management products offer a complete portfolio of storage personalities to match the requirements of media workflows.

Flexible Systems

Media workflows are typically governed by the key applications selected for the job. Editing software, media asset management systems, transcoding and rendering environments, and even transaction and delivery systems can have specific integration requirements for storage. Physical connectivity, network and file system protocols, file type and containers, and even cloud access can be dictated by the applications selected for the workflow. It’s vitally important for the storage you select to be capable and configurable to accommodate these requirements as a normal circumstance.

With the broadest range of configurations and supported applications and protocols, NetApp storage systems fit the specific requirements of the workflow and scale to meet the current needs of the organization and those that arise in the future.

Optimized Media Solutions

Animation and rendering

2D and 3D animation and visual effects production (VFX) generate a massive amount of data in the form of hundreds of thousands of individual files, which must be passed to processor farms for rendering into digital images. With the goal of rendering images as quickly as possible, storage systems must be able to keep the render farm working 100% of the time, which requires tremendous IOPS performance.

NetApp ONTAP® is extremely fast software for highly parallel compute applications such as feature animation and VFX rendering, where thousands of compute nodes might need to access the same computer graphics and texture elements. ONTAP is tuned for high I/O performance and cache flexibility, with several flash options available, from NetApp Flash Cache™ directly in the controller to NetApp Flash Pool™ and all-flash arrays. These options allow NetApp to balance performance, capacity, and cost to meet your budget. Animation studios with many thousands of render cores trust NetApp to provide industry-leading performance for their 24/7 render farms.

Editing and finishing

With video resolutions, frame rates, and color depths multiplying with each next-generation format, the demands on storage to ingest, store, retrieve, and deliver content are constantly increasing. What used to be one editor working at a single workstation with dedicated storage might now be a globally distributed team of people sharing a single pool of content that spans the globe.

“In VR, we are seeing more requirements for complicated and resource-hungry projects. With the PixStor and NetApp solution in place, Framestore is positioned to bid on and deliver large projects with confidence.”

Beren Lewis, Global Head of Technology, Integrated Advertising Framestore

NetApp E-Series storage arrays set the standard for bandwidth and configurability, meeting the needs of a broad range of facilities and workgroups. Because of its modular scalability of both capacity and bandwidth, E-Series can be configured cost effectively to support editing and postproduction operations ranging from small corporate and college video departments working in HD to multinational television and film studios generating 4K and beyond.

Broadcast

The demands of modern broadcast operations go beyond the challenges of live multicamera ingest and quick-turn production cycles, to include content preparation for hundreds of distribution partners and tightly coupled content and financial transaction operations.

Complex workflows can be difficult to manage and maintain. This is particularly true in organizations that have disparate storage systems deployed throughout a facility—or the world. Comprehensive data infrastructure management with central monitoring and control is a requirement that few application providers consider and fewer storage providers offer. NetApp provides seamless data management to broadcasters for both their business and production operations based on NetApp E-Series and ONTAP systems, along with NetApp OnCommand® Unified Manager.

Without an efficient and effective way to manage data and storage systems throughout the organization, the cost benefits of improved workflow performance can be quickly negated by management overhead and reduced productivity.

Delivery and distribution

Over the decades, the process of creating and supplying media has changed from a hand-crafted process to content factories. The challenges of managing, moving, and monetizing media assets are overwhelming. The cost of managing exponentially growing media repositories is outstripping the cost of data storage. Multiple sites with separate media asset management, production, and distribution applications cause a proliferation of file copies, with little or no coordination among workflows.

Media companies are being forced to reevaluate how to effectively manage and migrate large amounts of content spread over many locations. They need to confirm that content is stored on the right tier at the right time, to reduce duplication of content files, and to identify and delete copies that are no longer needed.

“The Unified Content Platform will not merely replace existing systems, but actually improve our content production and delivery workflows.”

Jan Ekman, Senior System Engineer
ProSiebenSat.1

NetApp StorageGRID® is an object storage system that can house, replicate, and protect content in a facility or across continents. StorageGRID includes a policy engine that programmatically copies, moves, and distributes content across multiple nodes regardless of their location. When used in conjunction with E-Series or ONTAP, media files can be moved to StorageGRID and stored as objects that include both the file data and metadata about the file. This allows data portability among systems and futureproofing as new operating systems and file systems are developed. Also, StorageGRID is infinitely scalable and self-healing. From a single hard drive failing to a disaster at a facility, there's no impact on the availability of data to the rest of the StorageGRID storage.

Internet media

Massive repositories of video, audio, and image media are proliferating throughout the internet. Many media companies are deploying systems to monetize their own intellectual property, while others are creating services that allow users to submit content. Regardless of the business model, these operators face significant challenges. First, there's the constant need for more capacity. In the ever-growing world of media on the internet, it's not enough to overprovision and then wait to scale later. Constant growth must be built into the design of the storage environment. Second, there's the issue of commercial transactions. Opening a business on the internet means giving billions of people the opportunity to interact with it. When every interaction means potential revenue, the speed and capacity of the system to keep up with demand becomes crucial.

“By deploying NetApp, our new OpenStack-based private cloud has enabled us to operate an AI-based recommendation engine, “Wisteria,” while meeting its strict I/O requirements. Now we can bring other services, which had required dedicated servers, into the private cloud. This allows our infrastructure staff, including development engineers, to focus more on their primary duties.”

Takashi Fukuda, Infrastructure Section, Infrastructure Department
Excite Japan Co., Ltd.

NetApp ONTAP and StorageGRID address both concerns. ONTAP not only provides incredibly fast software on which to store and serve media, it's also the superior choice for database, analytics, and machine-learning applications. StorageGRID offers a way to maintain content anywhere and everywhere, with limitless scalability and self-healing data protection.

As content ages, policies can move it to tape or to the cloud automatically. This procedure eliminates cloud vendor lock-in and the need to manually move or delete millions of files, greatly improving the economics of your media repository.

Business operations

At the end of the day, media businesses are still businesses. They have all the same functional and operational requirements as any other organization. But when it comes to IT infrastructure, they may have an advantage. Unlike other companies, where the “factory floor” is populated by specialized equipment like assembly lines, medical equipment, or transportation systems, media companies can reduce IT infrastructure and overhead costs by leveraging the same storage provider for both business operations and the media operations.

“It’s actually changing the way we work and the services we offer. Because we can rely on the NetApp technology without hesitation, it is allowing us to actually refine the services we offer because we know we are not going to be hit by outages.”

Philip Buckley-Mellor, BT TV Designer
BT TV

NetApp ONTAP has a complete suite of enterprise features, including data management, protection, security, resiliency, scalability, and cloud integration. The largest companies in the world use ONTAP to support their databases, DevOps environments, AI and machine-learning initiatives, and much more. Using NetApp on both sides of the house means streamlined IT management and operations, tighter integration between media production and its monetization, and a more strategic approach to storage and data management.

NetApp OnCommand Unified Manager delivers a unified experience to manage physical and virtual storage environments by 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, on the premises, in the cloud, or in a hybrid configuration.

Regardless of your workflow, scale, or geographic scope, NetApp’s experts are always available to discuss the complete range of choices to address any media storage and data management challenge. Contact us at +1 877 263 8277.

About NetApp

NetApp is the data authority for hybrid cloud. We provide a full range of hybrid cloud data services that simplify management of applications and data across cloud and on-premises environments to accelerate digital transformation. Together with our partners, we empower global organizations to unleash the full potential of their data to expand customer touchpoints, foster greater innovation and optimize their operations. For more information, visit www.netapp.com. #DataDriven