

Pixit Media and NetApp Joint Solution

Finally, high-bandwidth media production storage without proprietary cost and complexity

The Challenge

As a media and entertainment company, you don't get paid for buying storage and networking appliances. Your job is to capture, create, and deliver digital content, on budget and on time – whether your clients are internal or external. You want a robust infrastructure that does what you want with a minimum of management and maintenance.

The Solution

Pixit Media ushers in a new era of media storage by judiciously combining open, mature IT infrastructure components with extensive media expertise and the company's own modern approach to media storage analytics and data movement. PixStor, Pixit's software-defined NAS layer, combines what were once costly items—massive sustained video bandwidth; high-performance data caching, tiering, snapping, backup, and analytics functionality; and high-speed Ethernet connectivity—into surprisingly cost-effective configurations. It's a combination of the best that the IT industry has to offer with the invention

of tools and APIs that are specific to the challenges of media production and delivery workflows.

Whether working with uncompressed 4K files or compressed broadcast and delivery streams, PixStor provides flexible scalability and predictable performance. By using industry-standard Ethernet, PixStor provides the bandwidth to the desktop that is typically associated with Fibre Channel SANs. Even high-bandwidth uncompressed production clients can concurrently access files by using industry-standard protocols, such as SMB, NFS, and HTTP.

And unlike other media storage solutions that suffer from the effects of fragmentation at utilization levels as low as 70%, PixStor never has to overprovision storage to keep media workflows running efficiently. Its media-aware file layout design ensures minimal data file fragmentation. PixStor also allows content creators and distributors of any size to efficiently and granularly manage expansion and data retention costs as workflows change.

KEY FEATURES

- Support for multiuser workflows of up to stereoscopic 4K over Ethernet
- Tiering between flash, disk, object, cloud, and tape storage to optimize storage efficiency without introducing media management complexity
- Client-side, cloud, and remote site caching for burst rendering, remote ingest, and global workflows
- RAID 5, RAID 6, and Dynamic Disk Pool resiliency schemes to balance data access, storage overhead, and maintenance costs
- Up to 60% lower costs over proprietary, media-specific storage solutions

SOLUTION COMPONENTS

- Pixit Media PixStor software, storage nodes, and gateway nodes
- NetApp E-Series storage systems
- Mellanox Technologies Ethernet connectivity components

NetApp E-Series and EF-Series Storage

Incredibly reliable and cost-effective, NetApp E-Series and EF-Series arrays easily meet the performance and capacity requirements of media workflows. These arrays are preferred by large broadcast production workgroups and boutique 4K facilities because they are the only production storage arrays with 99.999% reliability. Part of this reliability is their “phone-home” feature that alerts NetApp of potential disk failures before a hard disk fails, encouraging replacement of drives before any impact on media workflows occurs.

And with E-Series, you can choose between RAID 5, RAID 6, or Dynamic Disk Pool technology, which dramatically reduces disk rebuild time, provides more consistent performance, and eliminates the need for hot or cold spares.

NetApp E-Series and EF-Series arrays offer granular yet scalable modular building blocks for PixStor deployments. They provide up to 12 uncompressed 4K frame-based video streams per array in a footprint as small as 2U.

Individual arrays scale from a few terabytes to half a petabyte of capacity.

Multiple E-Series and EF-Series arrays with different performance and capacity profiles can be mixed and aggregated within a single PixStor namespace, offering a hybrid, multipurpose solution without complicated media management workflows. By using flash in hybrid arrays, operations can optimize support for ancillary transcoding and for rendering workflows, even when they run concurrently with real-time edit clients.

Pixstor and NetApp E-Series shared storage solution brings together modular, high-bandwidth storage arrays with full-featured parallel file system, nonblocking Ethernet connectivity, and a truly modern analytics layer.

Key features of the joint solution include:

- Consistent performance that is not affected by fragmentation or capacity usage
- Data protection features: accelerated asynchronous replication, efficient snapshot copies, and asynchronous backup
- Built-in storage virtualization and information lifecycle management
- Always-on operation, even during capacity and performance expansion
- Customizable web-based management and file system analytics dashboards
- Quotas that provide fair-share and chargeback capabilities
- Support for Active Directory and LDAP
- Intelligent, dynamic networking that improves data flow efficiency and that reacts to network hotspots automatically
- Linux, Mac OS X, and Windows support
- Ability to encrypt data in flight and meet Motion Picture Association of America (MPAA) certifications

Ngenea

With Ngenea’s built-in capacity and performance analytics, you know what resources you’re consuming and can adjust them dynamically as your business needs dictate. You can use policy-based data management to build right-priced technology pools within the same overall namespace.

Ngenea tiers data from primary production storage to your active or deep archive whether it’s file, object, cloud, or tape storage. It automatically manages the data flow to each tier while providing seamless access to data. Your organization can adopt new and lower-cost storage technologies without requiring wholesale data migrations.

Ngenea provides:

- Policy-based data flow between primary and archival tiers
- A single view of all assets, whether they are work in process or archived
- An overall picture of data usage and storage costs
- Flexible adoption of object and cloud storage models, such as NetApp StorageGRID® object-based storage, Amazon Web Services (AWS), Google, and Microsoft Azure

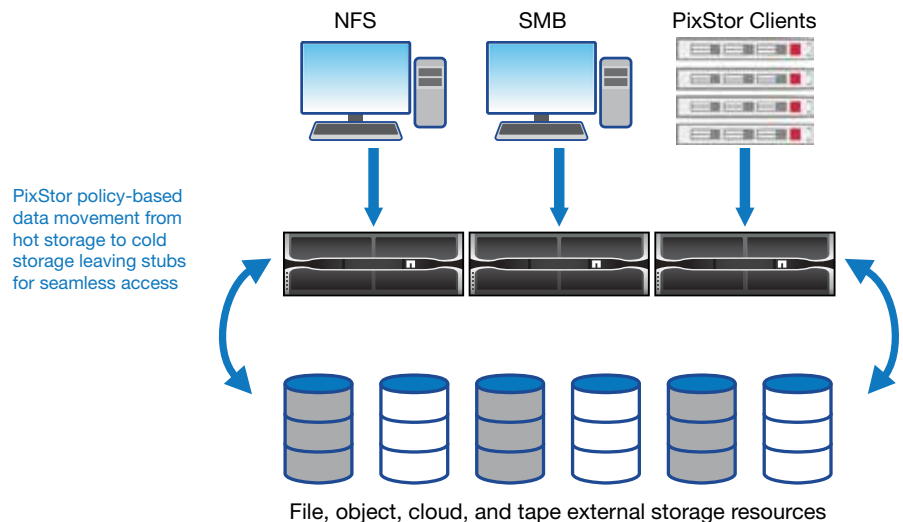


DIAGRAM 1: NGENEA TIERS DATA FROM PRIMARY STORAGE TO ACTIVE OR DEEP ARCHIVE.



SCREENSHOT 1: PIXSTOR ADVANCED ANALYTICS.

PixStor Analytics

PixStor offers simple, centralized management and the most advanced file system analytics platform that is available in the industry today. Customers are empowered to make informed data management and expansion decisions at the click of a button.

PixStor analytics abstract the power of an enterprise-class global parallel file system to:

- Track thousands of performance metrics for hotspot identification and historical analysis.
- Identify usage and capacity trends to support informed expansion and purchasing decisions.
- Calculate capacity usage across all storage resources by user, file type, and location.
- Let you extend the interface for your workflows with simple-to-use APIs.

PixCache

PixCache provides software-defined caching to remote storage for cloud or global workflows and:

- Simplifies data caching upon access to the cloud for burst rendering
- Presents an in-cloud NAS for computational resources

- Asynchronously flushes rendered files or processed clips back to on-premises storage
- Parallelizes WAN transfers
- Allows seamless, efficient, globally dispersed workflows across production sites

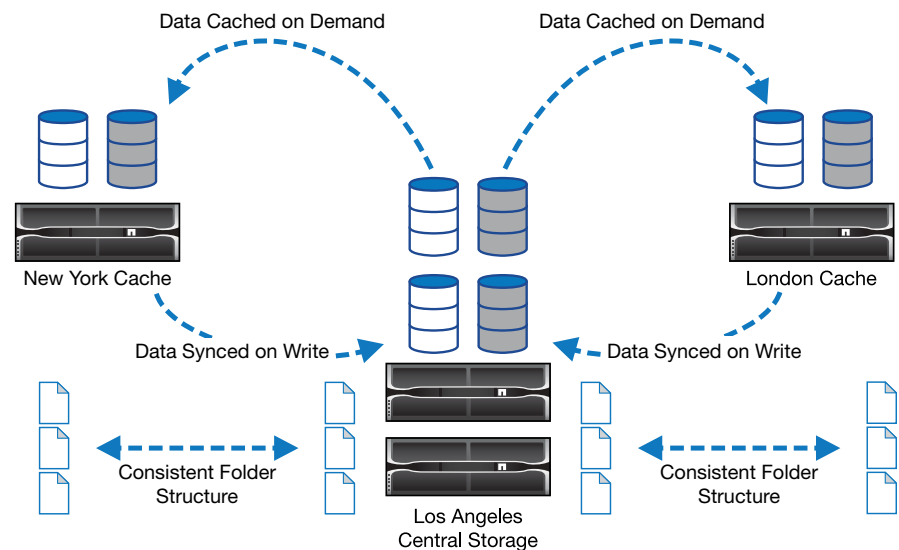


DIAGRAM 2: PIXCACHE REDUCES THE DATA-SHARING COMPLEXITY OF MULTI-SITE AND CLOUD WORKFLOWS.

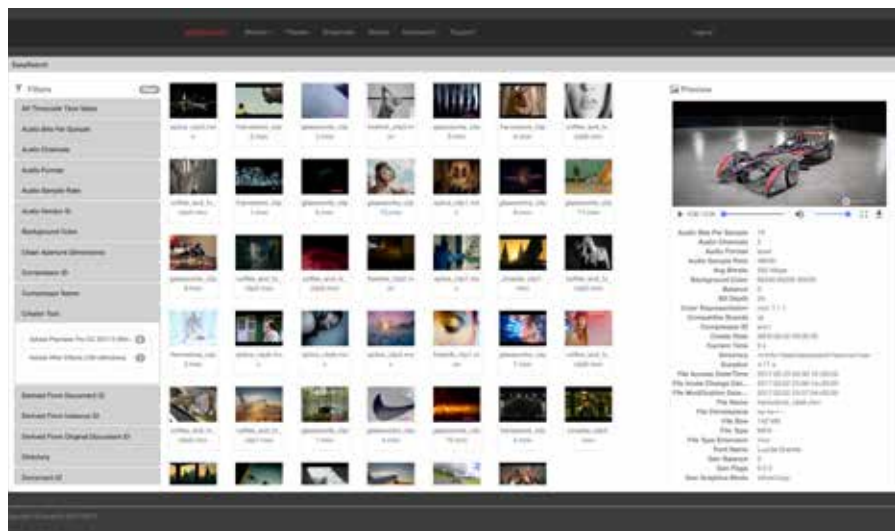
Easy Search

Easy Search is not a PAM, DAM, or MAM system. It is simply an elegant and intuitive media discovery UI that:

- Ingests media and associated metadata
- Generates proxies for quick browsing and result validation
- Harvests metadata directly from images, video clips, sequences, and documents
- Speeds media discovery and simplifies asset curating

Mellanox Technologies Ethernet Cluster and Client Connectivity

The Mellanox Technologies Spectrum series of nonblocking switches gives PixStor solutions an IP-based Ethernet interconnect that removes the complexity and propriety nature of SANs without sacrificing performance. By combining industry-leading bandwidth efficiency and the lowest latency on the market, Mellanox Spectrum switches excel at delivering lossless video, audio, and image content between PixStor nodes and media clients over simple, industry-standard protocols. And with the Mellanox NEO graphical fabric manager included, Mellanox Spectrum Ethernet fabrics can be deployed and managed with minimal training and significant ease.



SCREENSHOT 2: EASY SEARCH MEDIA DISCOVERY UI.

Business Benefits

PixStor, with NetApp E-Series IT industry pricing, can help your media operations cut costs by up to 60% over traditional media-specific storage solutions.

The NetApp and Pixit open ecosystem also enables seamless migration from one generation of technology to the next, so there's no need to worry about equipment lock-in or compatibility issues.

Pixit and NetApp offer world-class global product support 24/7 to assist with any problems or concerns that might arise. Pixit's professional services free up cycles for your IT staff by managing software and hardware maintenance, so you can focus on innovating and growing your business.

With PixStor and NetApp E-Series, you can get the right balance of what you need, including reliable performance, the ability to control hardware costs, and partners who understand media workflows and applications.

About Pixit Media

Founded in 2011, Pixit Media's team of innovators, designers, and developers continue to deploy the most advanced IP-based data storage platforms for the media and entertainment market. Pixit Media provides highly scalable, efficient and enterprise-class storage, network and archive solutions for the Post-Production and Broadcast industries. Featuring some of the top content creation and distribution customers in the world, Pixit Media is an ideal partner for the supply and support of media production and delivery workflow solutions.

www.pixitmedia.com

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