



NetApp®



Public Sector Solution Brief

NetApp Full-Motion Video Solution for Processing, Exploitation, and Dissemination

Storage solutions for smarter mission-critical decisions

KEY FEATURES

High-Bandwidth Capture

Ingest hundreds of high-bandwidth video and imagery feeds simultaneously.

Rapid Analysis

Transfer data into real-time actionable intelligence.

Maximum Density for Longer Retention

Long-term data retention improves decision support with fast access to critical data.

Purpose Built for Rapid Deployment

Preconfigured for higher confidence.

Flexible Deployment Features

Portable to applications running on Windows®, Linux®, and OS-X across Fibre Channel, Ethernet, as well as NFS and CIFS.

Insatiable Demand for Speed. Nearly Infinite Data Growth. The Environment Gets More Challenging Every Day.

How can you make actionable, smart decisions at the right time—knowing that you have all of the information you need?

NetApp can transform your processing of sensor data and imagery to get you actionable intelligence in the most demanding environments.

Enhance Operations for Successful Missions

Government agencies ingest and stream tens of thousands of hours of sensor data every year. Agencies that span both strategic and tactical roles demand better tools that collect, analyze, and share sensor data to make informed decisions. Successful missions depend on the ability to quickly process, exploit, and disseminate (PED) information to make split-second decisions. This requires access to near-real-time analysis and distribution of relevant information collected from multiple sensor types and the growing use of motion imagery, radar, satellites, and unmanned aerial vehicles (UAVs).

Agencies need an effective storage and data management strategy to manage and maintain the growing volume of data generated by video, sensor data, and rich media workloads. The ability to use technology in a smarter way is a necessity, as is having access to tools that automate processes and make it easy to manage, retain, and retrieve time-sensitive information. This strategy must also address the network bandwidth issues presented by the size of these files. Agencies require storage that provides performance and can handle large block sequential read after write operations and will rely on high-bandwidth capture and analysis for big data that relies on PED for intelligence. Agencies also need to evaluate whether continuing with their current strategy can adequately meet both current needs and support projected workloads in the future.

Turn Data Into Intelligence

Getting the right information to the right people at the right time is crucial to ongoing government operations. NetApp helps government agencies manage projected video data growth with a highly efficient storage model for enhanced decision making.



Fierce About Data.

NetApp provides a scalable, modular, and flexible storage solution that efficiently handles the demanding workflow requirements of sophisticated ISR environments.

The NetApp® Full-Motion Video Solution, based on the E-Series storage platform, delivers an optimized storage solution for capturing and examining video feeds for better in-theatre decision making. With its ultra-dense form factor, data can be stored for longer periods of time, helping to improve decision support:

- **Bandwidth.** The solution handles the rigors of heavy computational workloads and bandwidth-sensitive streaming environments.
- **Reliability.** Advanced thermal and power features provide fast and confident deployment with preconfigured, pretested options.
- **Availability.** Standard redundant components provide the utmost availability of critical data.
- **Manageability.** Integrated Quantum StorNext data management software optimizes the solution for managing tens of petabytes of datasets.
- **Scalability.** Scale bandwidth and capacity independently within the same container. Start small and expand with 2U or 4U increments as demand changes.

High-Bandwidth Capture and Analysis

The Full-Motion Video Solution delivers big bandwidth support for simultaneous capture and examination of high-definition (HD) video streams. The preconfigured, pretested solution is designed to capture multiple high-speed feeds, such as sensor feeds from aerial surveillance and satellite systems. By enabling faster data ingest and exploitation, agencies have the information needed to make better-informed decisions across PED workflows:

- **Simultaneous capture and review.** Support hundreds of HD streams of video capture and simultaneous review.
- **Performance-tuned file system.** Optimized for large object sizes, specifically, video and rich images.
- **Read/write throughput.** Get up to 44GB/sec reads and 29GB/sec writes in an industry-standard 40U rack¹ for high-stream-count, high-definition video capture and analysis.

Maximum Density for Longer Retention

The Full-Motion Video Solution delivers the highest density using an industry-standard rack configuration:

- Stores 1.8PB in each industry-standard 40U rack to maximize availability of data center floor space.
- Allows faster access to critical data over a longer period to maintain continuity of operations.
- Adding the optional Quantum StorNext Storage Manager software automatically allows for policy-based data migration to lower tiers of storage while maintaining file-level accessibility, freeing up valuable space and reducing costs.
- Automated access to long-term archived data improves PED decision support.

Purpose Built for Rapid Deployment

Designed to meet the specific demands of full-motion video environments, the Full-Motion Video Solution is a preconfigured storage solution that enables rapid installation and reduces time to operation. Solution modularity and hot swappability allow for ease of support at remote facilities.

¹Based on sustained performance of a 5460 – 10 system rack

Accurate intelligence data forms the foundation for sound decision-making

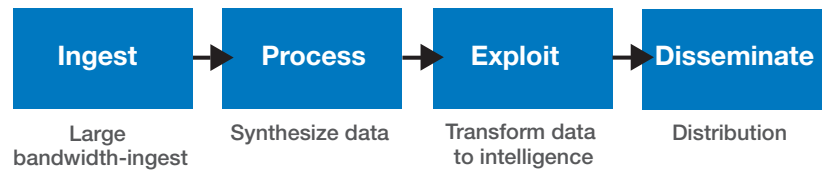


Figure 1) ISR workflow requirements.

NetApp E-Series Storage Platform

The NetApp E5400 meets the demanding performance and capacity requirements of rich video and imagery PED environments without sacrificing simplicity and efficiency.

E5424: Optimized for performance

The NetApp E5424 delivers both high bandwidth and high IOPS with leading price performance. The E5424 saves cost by consuming 50% less power using up to 24 2.5-inch SAS drives in a 2U form factor. A fully loaded rack delivers performance of up to 35GB/sec sustained disk read throughput, 30GB/sec sustained disk write throughput in a fully loaded rack and 350,000 sustained IOPS.

E5460: Delivers industry-leading density

The NetApp E5460 optimizes storage density for maximum capacity with excellent performance, supporting up to 60 drives in each 4U enclosure. The E5460 supports high-capacity near-line SAS disk options that are superior to SATA drives for high capacity and lower cost per MB/sec and are an excellent choice for throughput-intensive applications. The 4U enclosure holds 60 disk drives in five drawers, delivering up to 4.4GB/sec of read throughput and 2.9GB/sec of write throughput in one 40U.

E2624: Metadata storage

Best practices dictate a dedicated storage system for client access to file metadata (such as name, size, access times, and data locations). NetApp offers the E2624, a cost-effective SAS connected disk system that can be attached directly to the metadata server, delivering the maximum performance demanded by rich video applications.

Industry standard rack

The modular design of the E5400 allows you to mix drive types in a single enclosure to address different requirements with the same system. Conforming to an industry-standard rack enclosure allows easy data center installation and capacity expansion planning. A preconfigured solution means you can rapidly deploy with confidence. This allows you to create a storage deployment tailored to your PED requirements that can easily be expanded to address growing capacity needs for years to come.

Quantum StorNext Storage Manager

Agencies can create a centralized data repository for streamlined storage management by combining the benefits of Quantum StorNext data management software and NetApp storage systems.

Agencies benefit from an optimized solution designed to manage tens of petabytes of datasets, enable automated policies and tiering across a variety of disks (types/speed/capacity), and drive greater cost and archival efficiencies.

Quantum StorNext Distributed LAN Client

Adding the Distributed LAN Client (DLC) option adds additional design options and related data management benefits, including rapid file sharing between servers and cost-effective data retention. The DLC expands the capabilities of StorNext to customers who require performance increases, but without the infrastructure cost of a complete SAN implementation or the scalability limitations of other clustered NAS solutions.

Performance-Tuned File System Support

The Full-Motion Video Solution integrates the Quantum StorNext File System, a high-performance file system optimized for large, rich image object sizes:

- Optimizes performance for both SAN and NAS
- Delivers higher quality content in less time
- Highly scalable
- Creates a centralized storage repository for collaboration across agencies
- Eliminates time-consuming, hard-to-manage local file copies
- Portable across Windows, Linux, and even OS-X

Sensor Data Source

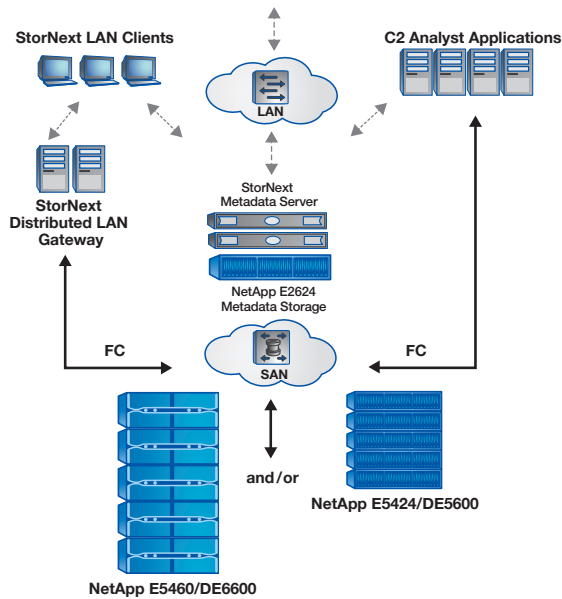


Figure 2) Full-Motion Video storage solution.

This file system dramatically streamlines workflow and improves productivity by creating a shared storage pool, allowing all servers to directly access the data in disk arrays. It offers flexible, high-performance streaming, even with extremely large file sizes (100GB to many terabytes) characteristic of rich video PED workflows:

- Eliminates the need for local file copies.
- Enables transparent data access, high performance, and high availability.
- Provides a policy-based data path that identifies where information should reside.

The StorNext distributed file system provides high-performance, shared access to files stored on disk resources over a switched fabric. By leveraging the SAN to access multiple network destinations, multiple copies can be created and moved through the fabric at the same time from a single master file. It can also give bandwidth priority to specific jobs, which is important for time-critical tasks. This allows concurrent, high-speed access to a common content pool by multiple agencies.

Team with the Experts

Accelerate your implementation and minimize risk by taking advantage of NetApp Professional Services. We enable successful deployments of the

NetApp Full-Motion Video Solution by designing, deploying, and integrating the solution to meet your specific business needs using industry best practices. You'll achieve the highest levels of efficiency, manageability, and agility, whether your project is large or small, on one site or across multiple locations.

With NetApp's Authorized Professional Services Delivery Partner network, your agency benefits from a market-leading solution with the technical expertise and support that our federal system integrators and federal VAR partners offer. The team's technical experts are authorized to work in secure environments and can test the solution, secure for delivery, and install in all parts of the world. Your organization gains exclusive access to the right resources at the right time to enable you to sustain the very high bandwidth and high density required for your multiple simultaneous full-motion video feeds within a high-performance, stable, and secure environment.

With hundreds of professionals worldwide and years of field experience, you can be confident that our expert teams will work diligently to bring you online with minimal time to production in a cost-effective manner from the initial discovery and planning phase to final solution deployment and acceptance.

Our portfolio of professional services includes use-case discovery, proof of concept, production pilot, solution design and implementation, and optimization.

Let's Get Started

To learn how the Full-Motion Video Solution enables your agency to make smart, informed decisions when and where you need to—whether your mission is protecting our homeland, fighting the war on terror, or advancing medical science, go to www.storagehawk.com/bigdata

About StorageHawk

StorageHawk provides the authoritative technical expertise agencies need to swiftly identify, then solve complex data management challenges. We go directly from requirements to results—because we're fierce about data.

About NetApp

NetApp creates innovative storage and data management solutions that deliver outstanding cost efficiency and accelerate business breakthroughs. Discover our passion for helping companies around the world go further, faster at www.netapp.com.

Go further, faster®

