Datasheet

NetApp E2800 Storage System for Video Surveillance

Dense and flexible storage solutions to keep pace with advances in video and analytic surveillance technology

Key Benefits

Support for High-Bandwidth Video Surveillance Environments
Dependable high-performance bandwidth supports high-definition and 4K environments.

High Efficiency Through World-Class Density and Scalability
The high-density modular block design helps support large-scale capacity and seamless expandability.

Extreme Flexibility with Modular Architecture
Standard 2U enclosures allow a small start, and standard 4U enclosures allow precise scaling and growth over time.

Ease of Use and Configuration
The powerful on-box browser-based NetApp® SANtricity® System Manager software provides an intuitive interface for administering NetApp E-Series storage systems. No storage expertise is required. Installation is easy with the help of the storage wizard.

Why Does Storage in Video Surveillance Matter?

From on-body police cameras to 24/7 monitoring of major transportation hubs, video has become a strategic source of information, insights, and intelligence. Major cities throughout the world are mounting video surveillance cameras to watch over streets, subways, mass transit, parks, and other public places. These new intelligent video surveillance cameras and analytical applications are capturing more evidence than ever, causing an increase in bandwidth requirements, write speeds, and storage capacities. The volume and size of media content are greatly expanding as resolution and retention requirements increase.

As a result, governments, retail enterprises, and other public entities are faced with serious challenges concerning media storage. Traditional storage architectures are not designed for massive amounts of big video content. Because of the increased number of cameras, longer retention periods, and higher camera bit rates, traditional standalone network video recorder (NVR) solutions have become inefficient and costly.

The NetApp video surveillance solution, combined with leading video management software, provides superior benefits to meet the new security surveillance challenges of data retrieval, retention, capture, and analysis.

NetApp E2800 Video Storage Solution

The NetApp E2800 system is designed as an enterprise-level storage system. It meets your business requirements by providing reliable storage that you can access whenever you need it. The modular architecture and pay-as-you-grow flexibility make the E2800 an excellent candidate for surveillance solutions that start small. Organizations with zero to 100 cameras can easily expand their system to several hundred cameras over time.

The E2800 delivers high bandwidth and performance while minimizing complexity and maintenance, power, and space requirements. The intuitive interface of the E2800 simplifies installation and maintenance.

The leading intelligent video security applications combined with E-Series storage can handle the heavy computational workloads and bandwidth-sensitive streaming environments of emerging video surveillance infrastructures and analytic surveillance technology.

■ NetApp®

With this combination, you get:

- Consistent high-performance bandwidth for media-intensive video streaming environments
- Performance-tuned solutions that deliver high-availability access for media content needs
- Superior performance to and from NVR for greater camera support and reduced NVR instances
- The capability to leverage your investment in video cameras and networks and maintain productivity with high-availability storage

Support for High-Bandwidth Video Surveillance Environments
Get validated and tested designs with video surveillance management application leaders

The NetApp video surveillance storage solution combines high-performance storage with leading video security management companies' solutions, so you can optimize your video infrastructure. IP video security management leaders such as Milestone, Genetec, AxxonSoft, and OnSSI have teamed with NetApp to offer increased file system optimization for large datasets. With NetApp E-Series storage, you get high-performance access to video content, including HD resolutions, and support for digital and analog video surveillance installations. In addition:

- E-Series systems offer high-bandwidth support; performance is optimized to support any number of video streams simultaneously.
- Each E2800 system can deliver up to 80Gbps reads and 29.6Gbps writes.
- Each E2800 system supports up to 1,674 cameras, recording at up to 2Mbps per camera and for a retention period of up to 30 days. (Note: The maximum number of camera recordings that each E2800 system supports depends on several factors, such as camera stream bit rate and retention period.)

High Efficiency Through World-Class Density and Scalability
Start small and grow big with E2800

The NetApp video storage solution delivers among the highest-density scale-out storage to support the unique requirements of large government and commercial video surveillance infrastructures. By using an industry-standard rack configuration, the solution can scale up to dozens of nodes with multiple gigabytes per second of throughput and petabytes of storage.

Modular design

The modular architecture allows non-disruptive scaling of performance and capacity so that applications and data are available when and where you need them. Your system can grow with minimal additional components, eliminating the need to over configure. Each E2800 modular block supports up to 1.8PB of raw capacity in just 12 standard rack units.

World-class density

Space and cooling efficiency are maximized in a standard 19-inch rack. NetApp E-Series storage uses 40% fewer drives and 25% less rack space and power than traditional rack mount storage.

Scalability of external storage system

Pay-as-you-grow scalability that starts at 24TB enables NVR consolidation and global data access. With each E2800 block, your system can start as small as 6 drives and grow seamlessly— without any downtime—to 180 drives in just 12 rack units. And you can add more blocks to the system whenever you need them. So, depending on the type and the number of cameras and the required retention period, you can start with as few as tens of cameras and expand to hundreds of cameras in the future.

Choice to grow by using 12-drive or 60-drive shelves or both

With the mix-and-match capability that NetApp offers, your organization can align its video storage infrastructure with the dramatically changing requirements of number of cameras, type of cameras, and even retention periods.

Optimized Solution for Increased Productivity
Deploy with confidence

The NetApp video storage solution is architected to provide industry-leading reliability and availability. By using seventh-generation controller technology, NetApp delivers field-proven technology in a tested and validated solution, with over 20 years of firmware development behind it for rapid deployment. By teaming with leading video security management software companies, NetApp offers a video storage solution that is optimized for managing tens of petabytes of video data, enabling rapid access to and retrieval of content.

Maximum serviceability and reliability

E-Series system hardware delivers 99.999% availability.

High availability with best-in-class redundancy

Dual redundant controllers, multipathing failover, and dynamic features provide high-availability access to video surveillance recordings.

Dynamic Disk Pools Technology

By distributing data parity information and spare capacity across a pool of drives, Dynamic Disk Pools (DDP) technology simplifies the management of traditional RAID groups. DDP technology enhances data protection by enabling faster rebuilds after a drive failure, protecting against potential data loss if more drives fail. DDP technology also generally provides better system performance under failure, during a drive rebuild, than traditional RAID does.

Dynamic Disk Pools technology eliminates complex RAID management. DDP technology has no idle spares to manage, requires no reconfiguring of RAID when expanding, and has a significantly reduced performance impact after failure of a drive or drives when compared with traditional RAID.

Proven Data Reliability, Availability, and Serviceability

The three main factors that make a storage system the best fit for video surveillance environments are Reliability, Availability, and Serviceability (RAS). The E2800 is based on a field-proven architecture that delivers high reliability and greater than 99.999% (five-9s) availability, often exceeding six-9s availability

when following NetApp best practices. The E2800 system offers excellent price to performance for small and medium video surveillance installations.

Video Surveillance Application Integration

NetApp E-Series products have been deployed and used with some of today's most popular video surveillance management applications, including Milestone, Genetec, AxxonSoft, OnSSI, and other leading video management software (VMS) providers. With its configurable options, the system integrates into almost any video surveillance environment that requires external storage. It also meets the reliability and sustained performance demands of IP video surveillance workloads, for which sustaining performance is critical.

ENERGY STAR Certification

All E-Series systems use "85% PLUS" power supplies, exceeding the EPA ENERGY STAR requirements of 80% efficiency.

The modular E-Series can be set up in tens of thousands of different energy-efficient configurations. The following configurations are EPA ENERGY STAR certified:

- E2812, up to 24 drives
- E2824, up to 48 drives
- E2860, up to 120 drives

For the latest EPA ENERGY STAR certified E-Series configurations, see either of the following:

- http://www.netapp.com/us/company/ourstory/sustainability/energy-star.aspx
- http://www.energystar.gov/certified-products/detail/data_center_storage

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

E2800 Technical Specifications

All the data in this table applies to dual-controller configurations.

NETAPP E2800 STORAGE SYSTEM FOR VIDEO SURVEILLANCE	
Maximum raw capacity	600TB system in 4U 1.8PB with disk shelves (using 10TB drives)
Maximum drives	Maximum 180 SAS, NL-SAS, and SSD (120 SSD limit) with mixed shelves (maximum of 4 shelves supported)
Drives supported	4/8/10TB NL-SAS 6/10TB NL-SAS FIPS 900GB, 1.2/1.8TB SAS 1.8TB SAS FIPS 800GB, 1.6/3.2TB SSD 1.6TB SSD FIPS
System memory	16GB/64GB
Included host I/O ports	4 ports 16Gb FC or 4 ports 10Gb iSCSI (optical) or 4 ports 10Gb iSCSI (copper)
Optional host I/O ports	4 or 8 ports 16Gb FC 4 or 8 ports 10Gb iSCSI (optical) 4 ports 10Gb iSCSI (copper) 4 or 8 ports 12Gb SAS
High-availability features	Dual active controller with automated I/O path failover Auto–load balancing and path connectivity monitoring Dynamic Disk Pools technology and traditional RAID levels 0, 1, 5, 6, and 10 Redundant, hot-swappable storage controllers, drives, power supplies, and fans Automatic rebuild after a drive failure Mirrored data cache with battery-backed destage to flash Proactive drive health monitoring Greater than 99.999% availability (with appropriate configuration and service plans)
Host operating systems	Microsoft Windows Server, Red Hat Enterprise Linux, Novell SUSE Linux Enterprise Server, Apple Mac OS, Oracle Solaris, HPE HP-UX, CentOS Linux, Oracle Linux, IBM AIX, VMware ESX
Included software features	SANtricity Snapshot copies SANtricity volume copy SANtricity synchronous and asynchronous mirroring SANtricity SSD cache SANtricity thin provisioning with UNMAP Dynamic Disk Pools technology SANtricity drive encryption
System capabilities	Data assurance (T10-PI) Dynamic volume expansion Dynamic capacity expansion and contraction Dynamic RAID-level migration Dynamic segment size migration System event monitor NetApp AutoSupport® system Online SANtricity OS upgrades and drive firmware upgrades VMware vSphere Storage APIs—Array Integration Microsoft Offloaded Data Transfer