



NetApp®



Datasheet

NetApp E2700 Storage System

Cost-effective, simple SAN storage

KEY BENEFITS

Easy to Use and Configure

The highly configurable architecture of the NetApp® E2700 storage system makes it easy to use and install. This system is well suited for any small, remote, or branch office, as well as any enterprise environment in which minimizing cost and complexity is critical.

Seamless Application Integration and Operations

The E2700 fits seamlessly into any application-driven storage environment, with multiple host interfaces, drive technologies, and disk shelf options. The E2700 incorporates worry-free technology to minimize ongoing management and maintenance.

Streamlined Performance

The streamlined design of the E2700 is well suited for a wide range of workloads. It provides high bandwidth and input/output operations per second (IOPS) levels for today's applications, with an architecture built to drive optimal performance.

The Challenge

Today the challenge for small businesses and remote and branch offices is to manage growing data requirements with minimal cost and maintenance. Consistent performance delivery is expected; managing data is becoming more complex; and resources, space, and power are limited.

The Solution

The NetApp E2700 storage system was designed to provide simple SAN storage that fits seamlessly into almost any application-driven storage environment, with a variety of host connectivity options, drive options, and multiple disk shelf options. This storage system provides optimal performance efficiency with high bandwidth and IOPS levels while minimizing complexity and maintenance, power, and space requirements. The intuitive interface of the E2700 simplifies installation and maintenance, and it provides enterprise-level storage capabilities to deliver consistent performance, data integrity, and security.

Simple Management and Configuration

The lightweight NetApp SANtricity® storage management software on the E2700 combines robustness and ease

of use. Full-time storage administrators appreciate the extensive configuration flexibility, which allows optimal performance tuning and complete control over data placement. Part-time system administrators appreciate the intuitive interface and wizards. The E2700 interface and wizards simplify tasks for busy administrators, allowing them to focus on business priorities rather than use resources to manage data storage. Extensive diagnostic features provide predictive analysis and help identify issues before they become problems.

The modular design of the E2700 enables easy scalability to increase capacity to support business growth. The SANtricity software supports on-the-fly expansion, reconfiguration, and maintenance without interrupting storage system I/O. Dynamic Disk Pools (DDPs) enable dynamic rebalancing of drive count changes, whether drives are added or a drive fails. DDPs greatly simplify traditional storage management with no idle spares to manage or reconfigure when drives are added or fail; thus the E2700 can automatically configure, expand, and scale storage. With the E2700, maintenance can be scheduled less often or eliminated altogether.

The intuitive interface of the E2700 simplifies installation and maintenance, and it provides enterprise-level storage capabilities to deliver consistent performance, data integrity, and security.

Seamless Application Integration

The E2700 offers the flexibility of multiple host connectivity interfaces, drive technologies, and disk shelf options to fit seamlessly into almost any environment for any workload.

The system supports the latest 16GB/s FC, 10GB/s iSCSI, and 12GB/s SAS host connectivity options. The FC and iSCSI interface options enable the E2700 to integrate seamlessly into existing data centers with established storage networks. The 12GB/s SAS interface provides a high-speed connection for high-performance direct-attached storage solutions.

The E2700 also supports the ability to intermix all drive types within a single system for even greater flexibility, which helps to meet overall objectives and protect investments in drives. This flexibility allows hybrid arrays, consisting of solid-state and NL-SAS drives, to deliver a combination of high performance and dense storage.

The different disk shelf options enable customers to easily meet performance, capacity, and cost requirements, with 12-, 24-, and 60-disk shelf options that support the E2700 controller. The 12-disk shelf is a great fit for cost-conscious organizations that need to deploy both performance and capacity drives. The 24-disk shelf maximizes performance per unit while minimizing power consumption. The 60-disk shelf maximizes rack density for capacity-hungry environments, with support for up to 240TB in just 4 units.

NetApp E-Series products have been deployed and used in today's most popular application environments, such as VMware® and Microsoft® Exchange, and databases such as Oracle® databases, Microsoft SQL Server®, and others. The system seamlessly integrates into any environment with its configurable options, and it meets the reliability and sustained performance demands of transactional applications, in which sustaining performance is critical.

Streamlined Performance for Efficiency

The E2700 delivers on price-to-performance efficiency with its ability to maximize disk I/O cost-effectively. The responsiveness and linear scalability from its architecture add benefits for database-driven transactional applications, which often demand sustained and continued performance. The architecture is built to sustain high read and write throughput even for intensive bandwidth applications.

Intelligent cache tiering, which uses the SSD Cache feature, enhances performance by leveraging the superior performance of solid-state drive (SSD) media for the most frequently accessed blocks of data. Customers have nothing to manage when they use the SSD Cache feature because the caching is data driven in real time. Users are not required to set up complicated policies to define the trigger for data movement between tiers. SSD Cache accelerates data access through the caching use of solid-state disks in the drive trays to enhance performance, and it is expandable to up to 5TB per storage system.

E2700 TECHNICAL SPECIFICATIONS

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

	E2760 (DE6600)		E2724 (DE5600)		E2712 (DE1600)	
Maximum raw capacity	240TB with expansion to 768TB		28.8TB w/expansion 700.8TB		48TB w/expansion 768TB	
Form factor	4U, 60 drives		2U, 24 drives		2U, 12 drives	
Maximum disk drives	180 by using only 60 drive shelves 192 with expansion shelves 75 SSDs		192 with expansion shelves 120 SSDs		192 with expansion shelves	
Drive types supported	2/3/4TB NL-SAS 7.2k FDE/non-FDE 600/900GB, 1.2TB SAS 10k FDE/non-FDE 400GB, 800GB, 1.6TB SSD non-FDE 800GB SSD FDE		600/900GB, 1.2TB SAS 10k FDE/non-FDE 400GB, 800GB, 1.6TB SSD non-FDE 800GB SSD FDE		2/3/4TB NL-SAS 7.2k FDE/non-FDE	
System ECC memory	4/8GB (standalone-simplex), 8/16GB (HA-duplex)					
Base ports for host I/O	Dual-port 12GB SAS (standalone-simplex), quad-port 12GB SAS (HA-duplex)					
Additional ports for host I/O	Dual-port 10GB iSCSI (standalone-simplex), quad-port 10GB iSCSI (HA-duplex) Dual/quad-port 16GB FC (standalone-simplex), quad/octal-port 16GB FC (HA-duplex) Dual/quad-port 12 GB SAS (standalone-simplex), quad/octal-port 12GB SAS (HA-duplex)					
Operating system	SANtricity 11.10					
High-availability features	Dual active controller with automated I/O path failover; supports Dynamic Disk Pools (DDPs) and traditional RAID levels 0, 1, 3, 5, 6, and 10; redundant, hot-swappable storage controllers, disk drives, power supplies, and cooling fans; automatic rebuild after a drive failure (DDP to spare capacity, traditional RAID to hot spare); mirrored data cache with battery backup and destage to flash SANtricity; Proactive Drive Health Monitoring to identify problem drives before they create issues					
Operating system support	Microsoft® Windows Server®, Red Hat Enterprise Linux®, Novell SUSE Linux Enterprise Server, VMware® ESX®, Oracle® Solaris, HP, HP-UX, Apple® Mac® OS					
Software features	Standard SANtricity Remote Mirroring SANtricity Volume Copy SANtricity Snapshot Dynamic Disk Pools Dynamic volume expansion Dynamic capacity expansion Dynamic RAID-level migration Dynamic segment-size migration SANtricity SSD Cache SANtricity Thin Provisioning SANtricity Data Assurance (T10-P1)			Optional Extended-Value Software SANtricity Encryption Services (Full Disk Encryption)		
Dimensions and weight	E2760 controller shelf DE6600 expansion shelf		E2724 controller shelf DE5600 expansion shelf		E2712 controller shelf DE1600 expansion shelf	
Height	7.0" (17.78 cm)		3.47" (8.81 cm)		3.4" (8.64 cm)	
Width	19" (48.26 cm)		19" (48.26 cm)		19" (48.26 cm)	
Depth	32.5" (82.55 cm)		19.6" (49.78 cm)		21.75" (55.25 cm)	
Weight	232 lb (105.2 kg)		57.32 lb (26 kg)		59.52 lb (27 kg)	
	E2760 system shelf		E2724 system shelf		E2712 system shelf	
	Typical	Maximum	Typical	Maximum	Typical	Maximum
KVA	0.976	1.186	0.411	0.561	0.357	0.507
Watts	967	1174	407	555	354	502
BTU	3298	4006	1388	1894	1207	1714
	DE6600 disk shelf		DE5600 disk shelf		DE1600 disk shelf	
	Typical	Maximum	Typical	Maximum	Typical	Maximum
KVA	0.782	0.992	0.225	0.375	0.172	0.322
Watts	774	982	223	371	170	318
BTU	2641	3350	761	1267	580	1086

Proven Data Replication and Disaster Recovery

The E2700 offers enterprise-level reliability, availability, and serviceability features.

- With NetApp E-Series SANtricity Remote Mirroring, customers have a proven and efficient disaster recovery solution for maintaining access to business-critical data in the event of site outages or unplanned downtime. SANtricity supports both FC- and IP-based remote replication for high availability across campuses, cities, or the world. The flexibility of FC- or IP-based remote mirroring enables IT departments to meet service-level agreements for any virtual or traditional application environment.
- Enhanced NetApp Snapshot™ capabilities enable the creation of near-instantaneous, point-in-time copies or volume images for backup and file restoration. The system supports up to 512 point-in-time copies of data volumes and takes advantage of copy-on-write technology so that only changed blocks are transferred between the mirroring systems. This feature minimizes network traffic while providing multiple Snapshot copies to improve recovery point objectives.
- Dynamic Disk Pools (DDPs) make management easy by dynamically rebalancing drives, and they provide added data protection with faster rebuild times during a drive failure. For better reliability and availability, DDPs promote sustained performance in the event of drive failures.

Thin Provisioning: Improve Storage Efficiency by Up to 33%

Thin Provisioning eliminates overprovisioning of storage by automatically allocating storage internally, only as

it is actually used, while reporting full allocations to hosts, significantly lowering storage use and future storage purchases.

The result is reduced storage TCO (capex and opex) by reducing initial acquisition capacity and improving utilization.

The key tenets of Thin Provisioning are:

- No more guessing how much storage an application really needs
- Elimination of initial storage purchases based on inflated estimate usages
- Eliminations of error-prone emergency out-of-space activities
- Significantly improved storage utilization rates, up to 33%
- Easy one-time single-click management at volume creation
- Autogrow to take care of usage expansion up to the maximum

Security and Data Integrity

Security is critical in storing data. Hard drives within a system can be taken out for maintenance or off-site repair, stolen, or disposed of. SANtricity software on the E2700 supports full-disk encryption (FDE), which provides data security for the hard drive. FDE protects against the many different vulnerabilities involved in securing data on hard drives by providing content encryption at the drive level. FDE helps protect data in the event of drive loss, theft, or retirement. The FDE engine performs encryption without affecting performance. Users get high levels of data security while retaining optimal performance.

The E2700 also offers data assurance, or support for the T10-PI protocol, to maintain data integrity during the transmission of data within the storage system.

Proven Reliability

The E2700 is based on a field-proven design to provide reliable SAN storage that is simple to install and use, seamless to fit into any application environment, and streamlined for performance efficiency. The installed base of more than 650,000 technology systems deployed is a testament to the reliability of the E-Series product line and of the E2700 system, which is designed for optimal price-to-performance benefit for small, remote, and branch offices, as well as workgroups within an enterprise.

ENERGY STAR Certified

All E-Series systems utilize “85% PLUS” power supplies exceeding the EPA ENERGY STAR requirements of 80% efficiency.

The modular E-Series can be configured in thousands of different configurations. For the latest EPA ENERGY STAR certified E-Series configurations see either:

<http://www.netapp.com/us/company/ourstory/sustainability/energy-star.aspx>

http://www.energystar.gov/certified-products/detail/data_center_storage

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.

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