

DSA E-Series E4000 12-bay



DSA E4000 represents the next generation of DSA E-Series, the iSCSI-based digital video disk arrays. These are state-of-the-art platforms designed for the security industries most demanding digital video storage applications to manage relentlessly growing digital video data.

DSA E4000 is based on E4000 series from NetApp, with system performance optimized by NetApp for video surveillance storage applications. The storage volumes are conveniently configured via BVMS.

System overview

DSA E4000 is based on one 2U controller unit with 12 internal 3.5", 7.2 K, NL-SAS (Serial Attached SCSI), enterprise HDDs (Nearline SAS).

The controller unit is available as a standard single controller configuration and as a dual controller configuration for high availability requirements.

This storage system is a high-performance solution designed with robust flexibility that makes it a great fit for wide-ranging video surveillance requirements. Its balanced performance is designed for supporting high bandwidth and I/O intensive workloads.

The DSA E4000 fully redundant I/O paths, advanced protection features, and extensive diagnostic capabilities deliver high levels of availability, integrity, and security.



- ▶ Scale-up network storage solution: controller unit with 12 internal HDDs expandable via SAS interface-connected expansion units
- ▶ Configurable hardware-based RAID/DDP protection (RAID-5, RAID-6 or DDP)
- ▶ Two 10 Gigabit Ethernet ports for high speed iSCSI connectivity
- ▶ Multipathing solution (in dual-controller systems) with proprietary IP cameras and VRM to mitigate possible network and controller failures
- ▶ Protected by NetApp-fulfilled services, including three years next business day on-site support

Functions

DSA E4000 is a scale-up network storage solution that provides security, highest "in-the-box" scalability, peace-of-mind data protection, and simplified management of all your video data.

DSA E4000 in single or dual controller configuration allows connecting up to seven 12-bay expansion units (12 x HDDs per expansion shelf) to one single or dual controller base unit.

It is a fully featured hardware RAID/DDP protected disk array which provides RAID-5 protection for capacity-oriented environments and RAID-6/DDP protection for availability-oriented environments.

High reliability and availability

DSA E4000 keeps your data safe and available with redundant hot-swappable power supplies and fans, and protects from double-disk failure and single bit errors during rebuilds with high performance RAID-6 or DDP. Its redundant components, automated path failover, and online administration keep organizations productive 24 x 7 x 365.

Further high-availability features include:

- Automatic drive failover and detection and rebuild if using global hot spare drives
- Data cache with battery backup and de-stage to flash

- NetApp **SANtricity** proactive drive health monitoring identifies problem drives before they create issues

Monitoring

Full SNMP support with MIB-II and NetApp custom MIBs is provided. In case of component failures SNMP, e-mail alert notifications will be generated. Additionally, an event monitor for sending alert notifications to a central major event log is available.

If the device is connected to the Internet/Intranet automatically generated **AutoSupport** messages can be sent, which helps to prevent issues before they occur.

Management

NetApp SANtricity storage management software combines robustness and ease of use. With its dynamic capabilities, SANtricity software supports on-the-fly expansion, reconfiguration, and maintenance without interrupting storage system I/O.

Transceiver modules

Single controller system	2x 25GBASE-SR SFP (mini-GBIC, 850NM) transceiver module - IEEE 802.3ae -10Gb iSCSI - OM3 and OM4 support - LC-Duplex connection
Dual controller system	4x 25GBASE-SR SFP (mini-GBIC, 850NM) transceiver module - IEEE 802.3ae -10Gb iSCSI - OM3 and OM4 support - LC-Duplex connection

Installation/configuration notes

Storage volumes are configured via BVMS for an initial setup in a video surveillance environment.

In dual controller systems the iSCSI ports with the same number are tied together for redundancy purpose, while one of the ports is a fall-back path for an iSCSI port on the other controller.

Net capacity

The available net capacity is shown in the following tables:

Configuration Information (RAID-5)	Net Capacity (GB)
12-bay unit (12 x 4 TB)	40929
12-bay unit (12 x 10 TB)	100311

Configuration Information (RAID-6)	Net Capacity (GB)
12-bay unit (12 x 4 TB)	37212
12-bay unit (12 x 10 TB)	91187

Configuration Information (DDP)	Net Capacity (GB)
12-bay unit (12 x 4 TB)	29307
12-bay unit (12 x 10 TB)	71844

Performance data

Performance data per controller unit in a 10 Gbit/s network (in a 1 Gbit/s network the available network bandwidth is the limiting factor):

Network Uplink 10 GbE			
	IP cameras	RAID-5/-6 Bandwidth Mbps (write / read)	DDP Bandwidth Mbps (write / read)
Single port	400	2250 / 1000	2250 / 1000
Dual port	800 (400 per port)	2250 / 1000	2250 / 1000

i Notice

Number of IP cameras refers to default software configuration (no direct replay mode).

i Notice

DSA E4000 single controller systems support:

- BVMS version 13.0 with Cumulative patch 2 and later,
- VRM Video Recording Manager version 4.60.0028 and later,
- Configuration Manager version 7.77.89 and later,
- and corresponding camera firmware versions as indicated in the BVMS 13.0 Release notes, but not earlier than version 5.75.

i Notice

DSA E4000 dual controller systems support:

- BVMS version 13.0 with Cumulative patch 2 and later,
- VRM Video Recording Manager version 4.60.0028 and later,
- Configuration Manager version 7.77.89 and later,
- and corresponding camera firmware versions as indicated in the BVMS 13.0 Release notes, but not earlier than version 6.43.

i Notice

Hardware warranty

The next business day on-site service level can only be provided if the respective system has been registered immediately after receipt and installation. Otherwise, service will be provided based on best effort basis.

Information about registration details is available in every shipment and from the online product catalog. Next business day services cannot be provided in every country everywhere.

i Notice

Do not use any other accessories than specified in the data sheet!

Technical specifications**Electrical****Electrical requirements 12-bay controller units**

Parameter	Low range	High range
Nominal voltage	100 VAC	240 VAC
Frequency	50 to 60 Hz	50 to 60 Hz
Typical operating current	4.6 A	2.37 A
Maximum operating current	5.35 A	3.06 A

Electrical requirements 12-bay expansion units

Parameter	Low range	High range
Nominal voltage	100 VAC	240 VAC
Frequency	50 to 60 Hz	50 to 60 Hz
Typical operating current	2.49 A	1.16 A
Maximum operating current	5.3 A	2.1 A

Power consumption 12-bay controller units

Power consumption VAC (W) (typical)	454 W
Power consumption VAC (W) (maximum)	654 W
Typical heat loss (BTU/h)	1549 BTU/h
Maximum heat loss (BTU/h)	2128 BTU/h

Note: For detailed information, see the latest NetApp E-Series Site Preparation Guide.

Power consumption 12-bay expansion units

Power consumption VAC (W) (typical)	248.7 W
Power consumption VAC (W) (maximum)	343.7 W
Typical heat loss (BTU/h)	850.55 BTU/h
Maximum heat loss (BTU/h)	1175.5 BTU/h

Note: For detailed information, see the latest NetApp E-Series Site Preparation Guide.

Mechanical**Dimensions 12-bay unit**

Dimensions (H x W x D) (cm)	8.7 cm x 44.7 cm x 53.4 cm
Dimensions (H x W x D) (in)	3.42 in x 17.6 in x 21.02 in

Dimensions shipping carton

Dimensions (H x W x D) (cm)	34.3 cm x 65.8 cm x 76.6 cm
Dimensions (H x W x D) (in)	13.5 in x 25.9 in x 30.2 in

Weight controller unit

Weight (kg)	29.0 kg
Weight (lb)	63.9 lb

Weight expansion unit

Weight (kg)	27.12 kg
Weight (lb)	59.78 lb

Shipping weight

Shipping weight (kg)	36.2 kg
Shipping weight (lb)	80.0 lb

Space requirements

Minimum clearance in front of cabinet for cooling (mm)	812 mm
Minimum clearance in front of cabinet for cooling (in)	32.0 in
Minimum clearance behind cabinet for cooling (mm)	609 mm
Minimum clearance behind cabinet for cooling (in)	24.0 in

Environmental

Operating temperature (°C)	10 °C - 35 °C
Operating temperature (°F)	50 °F - 95 °F
Storage temperature (°C)	-40 °C - 70 °C
Storage temperature (°F)	-40 °F - 158 °F
Operating relative humidity non-condensing (%)	8 % - 80 %
Storage relative humidity (%)	10 % - 95 %
Installation altitude (m)	0 m - 3048 m
Installation altitude (ft)	0 ft - 10,000 ft
Storage altitude (m)	-304.8 m - 12,192 m
Storage altitude (ft)	-1000 ft - 40,000 ft
Sound pressure (normal operation)	68.4 dBA

Trademarks:

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Ordering information**DSA-N2E4X4-12AT Base unit 12x4TB**

High-performance and high-capacity storage system base unit with iSCSI disk arrays, single controller.

DSA E4000, 12 x 4 TB HDD

NDAA compliant

Order number **DSA-N2E4X4-12AT**

DSA-N2E4XA-12AT Base unit 12x10TB

High-performance and high-capacity storage system base unit with iSCSI disk arrays, single controller.

DSA E4000, 12 x 10 TB HDD

NDAA compliant

Order number **DSA-N2E4XA-12AT**

DSA-N2C4X4-12AT Dual controller unit 12x4TB

High-performance and high-capacity storage system base unit with iSCSI disk arrays, dual controller.

DSA E4000, 12 x 4 TB HDD

NDAA compliant

Order number **DSA-N2C4X4-12AT**

DSA-N2C4XA-12AT Dual controller unit 12x10TB

High-performance and high-capacity storage system base unit with iSCSI disk arrays, dual controller.

DSA E4000, 12 x 10 TB HDD

NDAA compliant

Order number **DSA-N2C4XA-12AT**

DSX-N1D4XA-12AT Expansion unit 12x10TB

High-performance and high-capacity storage expansion unit with iSCSI disk arrays for DSA E4000.

12 x 10 TB HDD

NDAA compliant

Order number **DSX-N1D4XA-12AT**

Accessories**DSA-EDTK4-4TB HDD 4TB for 12bay**

Hard disk storage expansion with a capacity of 4 TB for DSA E4000 12-bay expansion units.

Order number **DSA-EDTK4-4TB**

DSA-EDTK4-10TB HDD 10TB for 12bay

Hard disk storage expansion with a capacity of 10 TB for DSA E4000 12-bay expansion units.

Order number **DSA-EDTK4-10TB**

Services**EWE-S2E4X4-4PR DSA E4012 4TB 4h Prt Rpl 1yr IW**

4 hour part replacement service extension for one year, applicable to a DSA E4000 12-bay unit with 4 TB HDDs, if purchased during warranty period.

Order number **EWE-S2E4X4-4PR**

EWE-S2E4X4-NRD DSA E4012 4TB Non Ret DO 1yr IW

Non-returnable disk service extension for one year, applicable to a DSA E4000 12-bay unit with 4 TB HDDs, if purchased during warranty period.

Order number **EWE-S2E4X4-NRD**

EWE-S2E4X4-SLP DSA E4012 4TB SES Ext 1yr IW

Next business day on-site service extension for one additional year, applicable to a DSA E4000 12-bay unit with 4 TB HDDs, if purchased during warranty period.

Order number **EWE-S2E4X4-SLP**

EWE-S2E4XA-4PR DSA E4012 10TB 4h Prt Repl 1yr IW

4 hour part replacement service extension for one year, applicable to a DSA E4000 12-bay unit with 10 TB HDDs, if purchased during warranty period.

Order number **EWE-S2E4XA-4PR**

EWE-S2E4XA-NRD DSA E4012 10TB Non Ret DO 1yr IW

Non-returnable disk service extension for one year, applicable to a DSA E4000 12-bay unit with 10 TB HDDs, if purchased during warranty period.

Order number **EWE-S2E4XA-NRD**

EWE-S2E4XA-SLP DSA E4012 10TB SES Ext 1yr IW

Next business day on-site service extension for one additional year, applicable to a DSA E4000 12-bay unit with 10 TB HDDs, if purchased during warranty period.

Order number **EWE-S2E4XA-SLP**