

# DSA-N2B40 iSCSI Disk Array Series

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The DSDA iSCSI series represent the second generation of Bosch Digital Video Disk Arrays and are designed for the security industries most demanding digital video storage applications to manage the relentlessly growing digital video data.

The DSA-N2B40 provides the utmost scalability and performance within the Bosch iSCSI disk array portfolio.

## Functions

The DSA-N2B40 is the co-branded FAS Series FAS 2040 from NetApp which provides a scale-out network storage solution that provides security, high “in-the-box” scalability, peace-of-mind data protection, and simplified management of all your video data. NetApp’s FAS Series are based on a 16-year enterprise proven and well tested OS—Data ONTAP. NetApp pioneered the iSCSI protocol years ago and remains the market leader.

Designed as a scale-out system, the DSA-N2B40 allows connecting up to six disk shelf expansion units to one base unit. The base unit provides a maximum of 12 x 1 TB SATA-II hard disk drives and each disk shelf expansion unit will provide a maximum of 14 x 1 TB hard disk drives.

- ▶ Scale-out network storage solution: base unit with up to six disk shelf expansion units
- ▶ Configurable RAID-4 or RAID-DP (Double Parity) data protection
- ▶ Redundant hot-swappable power supplies and cooling fans
- ▶ Four Gigabit Ethernet ports for high speed iSCSI connectivity
- ▶ Modular design for ease of service

The DSA-N2B40 is a fully featured RAID protected disk array which provides RAID-4 protection for capacity-oriented environments and RAID-DP protection for availability oriented environments. RAID-DP (Double Parity) is a form of RAID-6 without any performance penalty. RAID-DP is strongly recommended if the system will be used with disk shelf expansion units.

## High Reliability and Availability

With redundant hot-swap power and cooling, four Gigabit Ethernet ports, NVRAM, and protection from double-disk failure and single bit errors during RAID rebuilds with RAID-DP, the DSA-N2B40 keeps your data safe and available.

## Monitoring

Full SNMP support with agents compatible with SNMP version 1 as well as MIB-II and NetApp custom MIBs supported. In case of component failures SNMP, e-mails (Autosupport Mails) or HTTP (HTTPS) messages will be generated.

## Features

The intelligent combination of battery backed up nonvolatile RAM (NVRAM), the NetApp RAID-DP technology and the Write Anywhere File Layout (WAFL) all contribute to data reliability and recoverability and provide superior system performance.

The RAID-4 or the RAID-DP protection allows for capacity expansion on the fly, with no RAID rebuilt or interruption to users. This is getting more and more important as HDD capacities are getting bigger and bigger.

All Bosch NetApp systems come with a 3 years Next Business Day Parts Delivery warranty and with a 3 years software warranty.

### Certifications and Approvals

Region	Certification	
Europe	CE	DSA-N2B40
	CE	DSX-N2X00
USA	UL	DSA-N2B40
Canada	CSA	DSA-N2B40
Global	RoHS	DSA-N2B40
	CB	DSA-N2B40
Australia	CTICK	DSA-N2B40
South Africa	SABS	DSA-N2B40
Nigeria	SON-CAP	DSA-N2B40
China	BSMI-DoC	DSA-N2B40
Korea	KCC	DSA-N2B40
Japan	VCCI	DSA-N2B40
Russia	GOST	DSA-N2B40
Argentina	IRAM	DSA-N2B40

### Installation/Configuration Notes

Central management is provided by a Web GUI administration tool. There is no additional software necessary to be installed on peripheral devices. In addition the system provides a powerful Command Line Interface (CLI) which is fully remote accessible either by telnet, ssh or rsh. The co-branded Bosch NetApp DSA-N2B40 comes with the Data ONTAP 7.3.2P3 OS version. The DSA-N2B40 provides a maximum bandwidth of 400 Mbps with a maximum of 256 concurrent iSCSI connections. The net capacity available is shown in the following table.

Configuration information (RAID-4)	Net capacity (GB)
1 x FAS 2040 base unit	6968
Configuration information (RAID-DP)	Net capacity (GB)
1 x FAS 2040 base unit	6334
1 x FAS 2040 base unit	

- plus 1 x extension shelf 13935
- plus 2 x extension shelf 21536
- plus 4 x extension shelf 36738
- plus 6 x extension shelf 51940

1 x extension shelf 7601

If a base unit plus a disk shelf expansion unit is ordered, the technical specifications given below simply add.



### Technical Specifications

#### Base Unit—DSA-N2B40-12AT

##### Electrical requirements—one controller module

Input voltage: 100 to 120 V	Worst case, single PSU	System, two PSUs
• input current measured	3.62 A	3.53 A
• input power measured	357 W	345 W
• thermal dissipation	1217 BTU/h	1177 BTU/h
Input voltage: 200 to 240 V	Worst case, single PSU	System, two PSUs
• input current measured	1.81 A	1.8 A
• input power measured	347 W	337 W
• thermal dissipation	1183 BTU/h	1149 BTU/h
Input power frequency	50 to 60 Hz	50 to 60 Hz

##### System hardware specifications

Chassis	87.6 mm (3.45"), fits into 2U space, 19" IEC rack-compliant (449 mm, 17.6")
Power supplies	Dual redundant, hot pluggable

Max disk drives	12 x 1 TB SATA-II drives
Max net capacity	~7000 GB (RAID-4 configuration)
DDR2 memory (system RAM)	4096 MB
Nonvolatile SDRAM (NVRAM)	256 MB—protects “in flight” transactions for 3 days in the event of a power loss
Integrated I/O	4 x 10/100/1000 Gigabit Ethernet, copper
Remote management (via LAN)	Yes

**Mechanical**

Dimensions (H x W x D)	89 x 447 x 572 mm (3.5 x 17.6 x 22.5 in)
Weight	27.215 kg (60 lb), full

**Space requirements**

Front—cooling	152 mm (6 in)
Rear—cooling	305 mm (12 in)
Front of chassis—maintenance	762 mm (30 in)
Rear of chassis—maintenance	914 mm (36 in)

**Environmental**

Operating temperature	+10 °C to +40 °C (+50 °F to +104 °F)
Non-operating temperature	-40 °C to +60 °C (-40 °F to +140 °F)
Relative humidity	20 to 80%, non-condensing
Acoustic level	N/A

**Disk Shelf Expansion Unit—DSX-N2X00-14AT****Electrical requirements**

Input voltage: 100 to 120 V	Worst case, single PSU	System, two PSUs
• input current measured	3.42 A	3.22 A
• input power measured	341 W	321 W
• thermal dissipation	1163 BTU/h	1095 BTU/h
Input voltage: 200 to 240 V	Worst case, single PSU	System, two PSUs
• input current measured	1.63 A	1.60 A
• input power measured	323 W	309 W

• thermal dissipation	1103 BTU/h	1054 BTU/h
Input power frequency	50 to 60 Hz	50 to 60 Hz

**System hardware specifications**

Chassis	3U, 19”-rack-mountable
Power supplies	Dual redundant, hot pluggable
Max disk drives	14 x 1 TB SATA-II drives
Max net capacity	~7600 GB
Shelf connectivity	Fibre Channel: <ul style="list-style-type: none"> <li>• copper</li> <li>• fiber</li> </ul>

**Mechanical**

Dimensions (H x W x D)	133 x 447 x 552 mm (5.25 x 17.6 x 22 in)
Weight	30.8 kg (68 lb), fully loaded

**Space requirements**

Front—cooling	153 mm (6 in)
Rear—cooling	305 mm (12 in)
Front of chassis—maintenance	559 mm (25 in)
Rear of chassis—maintenance	305 mm (12 in)

**Environmental**

Operating temperature	+5 °C to +40 °C (+41 °F to +104 °F)
Non-operating temperature	-40 °C to +60 °C (-40 °F to +140 °F)
Relative humidity	20 to 80%, non-condensing
Acoustic level	58 dBA at +23 °C

**Notes:**

- General technical specifications for the RAID system are provided in the NetApp Site Requirements Guide (Part number 215-04823\_A0, August 2009) and on <http://www.netapp.com/us/products/storage-systems/fas2000/fas2000-tech-specs.html> (last access September 17, 2009).

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**Ordering Information****DSA-N2B40-12AT**

iSCSI disk array, base unit with 12 x 1 TB SATA hard disk

Order number **DSA-N2B40-12AT**

**DSX-N2X00-14AT**

Shelf expansion unit, 14 x 1 TB hard disk  
Order number **DSX-N2X00-14AT**

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**DSA-NDTK-100A**

1 TB hard disk drive  
Order number **DSA-NDTK-100A**

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**DSA-N2B40-AUG**

Second controller upgrade  
Order number **DSA-N2B40-AUG**

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**DSA-N2B40-26AT**

Base unit + 1 x shelf expansion unit, 26 x 1 TB hard disk  
Order number **DSA-N2B40-26AT**

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**DSA-N2B40-40AT**

Base unit + 2 x shelf expansion unit, 40 x 1 TB hard disk  
Order number **DSA-N2B40-40AT**

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**DSA-N2B40-68AT**

Base unit + 4 x shelf expansion unit, 68 x 1 TB hard disk  
Order number **DSA-N2B40-68AT**

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**DSA-N2B40-96AT**

Base unit + 6 x shelf expansion unit, 96 x 1 TB hard disk  
Order number **DSA-N2B40-96AT**

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**DSX-N2X00-14AT**

Shelf expansion unit, 14 x 1 TB hard disk  
Order number **DSX-N2X00-14AT**

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