X S T A C K ®

Features

- Handles Over 80,000 I/Os per Second
- Battery Protected Cache Memory: 512MB Standard
- System Memory: 512MB standard
- 15 Hot-Swap SATA Hard Drive Bays
- Supports 30TB Capacity with 2TB Hard Drives
- SATA-II Support
- Supports Triple Redundant 760 Watt Power Supplies
- Industry Standard 3U 19-inch Chassis

RAID Support

- 0, 1, 1+0, and 5

High Performance iSCSI Interface

- DSN-3200-10: Eight 1GbE Data Ports
- DSN-3400-10: Single 10GbE Data Port

Storage Network Management

- IP SAN Device Manager (IDM)
- Remote Monitoring and Configuration
- CHAP Authentication Helps Halt Intruders
- SSL Security to Management Console

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Network Computing

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xStack Storage® 8x1GbE or 1x10GbE iSCSI SAN Array with 15 SATA Bays

Introduction
D-Link's DSN-3000 series (DSN-3200-10 and DSN-3400-10) iSCSI SAN array is a mid-range network storage solution in a 3U rackmount form factor, ideal for small to medium sized businesses. The heart of the DSN-3000 series is a powerful 10Gbit iSCSI System-on-a-Chip (SoC) capable of handling over 80,000 I/Os per second. The DSN-3000 series currently supports 30TB of raw capacity using 2TB drives. The DSN-3000 series can be easily implemented as nearline storage or as a supplemental backup platform for quick restores.

iSCSI for IP Networks
Storage Area Networks (SANs) have traditionally been reserved for complex Fibre Channel networks. The recent introduction of iSCSI has extended the powerful centralized storage capabilities of SAN technology to IP networks. By utilizing existing Ethernet technology, the costs associated with Fibre Channel switching, separate host bus adapters, expensive storage subsystems and administration is significantly reduced. iSCSI SANs leverage the Ethernet infrastructure and standards that are already familiar to most IT personnel.

A Choice of Host Interfaces – Eight 1GbE or One 10GbE
The DSN-3200-10 supports Multi-path I/O (MPIO), Multiple Connections per Session (MCS), and Link Aggregation Groups (LAG) for unmatched network flexibility, performance and resiliency, allowing its eight 1GbE data ports to be grouped together for up to 850MB/s bandwidth.

The DSN-3400-10 utilizes the industry's first built-in, fully integrated 10GbE interface as a high performance alternative to 4Gbps Fibre Channel, for up to 1160MB/s bandwidth.

System-on-a-Chip (SoC) Implementation
By utilizing a SoC design, the DSN-3000 series combines both networking and storage functions into a single specialized Application Specific Integrated Circuit (ASIC). This SoC combines 10Gbps iSCSI, TCP & IP offload, embedded processors and storage virtualization firmware onto a single chip. The tight integration of these functions eliminates interoperability, timing and support issues found in competitive products that offer a "discrete implementation" wherein various components are selected separately, then assembled.

RAID support
The DSN-3000 series features fifteen hot swappable Serial ATA (SATA) disk drive bays and is capable of supporting 30TB of raw capacity using 2TB drives in RAID level 0, 1, 1+0 and 5 configurations (striped sets, mirrored sets, striped mirrored sets and parity sets) for data protection and performance.

Embedded Centralized Storage Management
The embedded, user-friendly IP-SAN Device Manager (IDM) provides a comprehensive console for system management. Boasting a rich set of management features, this suite of utilities allows monitoring and control of the SAN array via the Storage Management Initiative-Specification (SMI-S) command set. With a secure server, users can remotely configure and monitor their SAN arrays over the Internet.
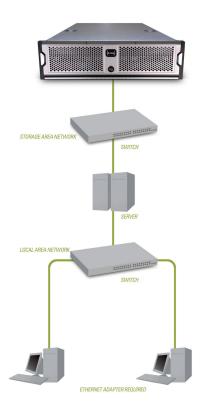
Advanced Management Features
The DSN-3000 series also provides an advanced set of features for efficient management and optimal storage performance.

For the fastest RAID performance offered in the industry, D-Link's adaptive cache management provides write coalescing and multi-stream

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STORAGE AREA NETWORK

SWITCH

SERVER

LOCAL AREA NETWORK

SWITCH

ETHERNET ADAPTER REQUIRED

xStack Storage® 8x1GbE or 1x10GbE iSCSI SAN Array with 15 SATA Bays

read-ahead on a volume basis, optimizing cache utilization and performance in an application-dependant manner. Volatile cache data protection is afforded via an on-board battery supporting cache memory for a minimum of 72 hours. A write-back or write-through cache memory policy can be selected manually or automatically, depending on the status of the battery's charge.

The DSN-3000 series supports jumbo frames and VLAN tagging to segregate traffic into isolated zones for secure access, improving network throughput and reducing CPU overhead.

D-Link's volume virtualization technology utilizes the concept of storage extents, which are the fundamental building blocks used to enable features such as RAID, online capacity expansion, volume reconfiguration and migration. Each disk drive can contain multiple and divergent RAID configurations

instead of requiring dedication to a single RAID set. This technology allows for the support of mixed disk drive capacities for volume creation. Volume capacity expansion, volume configuration, and RAID level migration are performed online with minimal impact to users. Users can quickly deploy a SAN using inexpensive SATA disk drives and simply add more drives as needed.

Micro rebuilds provide protection against unresponsive SATA commands by forcing a response within a preset time limit.

An iSCSI SAN array can prove to be a valuable tool to supplement a network storage foundation. Whether providing a low-cost block-based solution for data backup and recovery, replacement of Direct Attached Storage (DAS) or providing a nearline storage solution, the DSN-3000 series may provide the performance and functionality needed.

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Technical Specifications

DSN-3200-10	• Eight 1GbE Copper • Up to 850MB/s
DSN-3400-10	• One 10GbE (XFP adapter sold separately) • Up to 1160MB/s

Features

Drive Bays	• 15
Drive Interface Support	• SATA-II support
System Memory	• 512MB standard
Cache Memory	• 512MB standard
Battery Backup for Cache	• Standard (approximately 72 hours on full charge)
Storage Capacity	• 30TB Capacity with 2TB Hard Drives
Operating Systems Supported Please see support.dlink.com for latest support information	• Windows Vista® 32-bit & x64 (Ultimate & Enterprise) w/Built-in iSCSI initiator • Windows Server® 2003 R2	SP1 32 & 64-bit (Standard & Enterprise) with v2.07 iSCSI initiator or later • Windows Server 2008 Enterprise 32 & 64-bit with Built-in iSCSI initiator • Windows XP Pro® 32 & 64-bit with v2.07 iSCSI initiator or later • Windows 2000 Advanced Server – No MS iSCSI Initiator support, Qlogic HBA only • Red Hat® 7.3 • Red Hat Enterprise AS update 5 (64-bit) • Red Hat Enterprise 5 update 2 (64-bit) • SuSE® Professional 9.3 32-bit • SuSE Enterprise Server 10.2 32-bit • Sun Solaris® 10 build 6/06 • IBM AIX 5L • Microsoft Hyper-V • VMWare ESX Server® 3.02 & 3.5 • VMWare ESX Server 4.0 • Virtual Iron v4.2 • Citrix XenServer® v4 • Mac OS X® (10.4 & 10.5)
Supported NICs, iSCSI Accelerators and iSCSI HBAs Please see support.dlink.com for latest support information	• Intel® Pro 1000MT & XT [1GbE] • Intel Pro 10000 CX4 [10GbE] • Myricom 10G-PCIE-8A-C+E [10GbE] • Chelsio® S310X-SR-XFP [10GbE] • Neterion® Xframe® II & Xframe E [10GbE] • Alacritech® SES2104ET (drivers: SNP 9.1.0.1092 & 7.3.1.0) • Alacritech SES2102ET (drivers: SNP 9.1.0.1092 & 7.3.1.0) • QLogic® 4010C, 4052C, & 4062C

iSCSI Network Interface

Host Interface	• iSCSI Draft 20 compliant initiator
Connections	• 1,024 hosts
CHAP Authentication	• Yes
Access Control of Management	• Yes
iSCSI/TCP/IP Full HW Offload	• Yes
Jumbo Frames Support	• Yes
LAG Support (Link Aggregation)	• Up to eight LAGs with DSN-3200-10 (Static LAG)
VLAN Support	• Up to eight 1-to-1 mapping between IP subnet and VLAN. Multiple VLANs per physical port with VLAN tag. All physical ports in LAG belong to same VLAN (IEEE802.1Q Tag) (DSN-3200-10)
Flow Control	• Enabled by default

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Volume & RAID Support

RAID Controller	• Single- Integrated in ASIC
RAID Support	• RAID Levels 0, 1, 1+0 and 5 (Striped sets, mirrored sets, striped mirrored sets and parity sets) The maximum number of drive members on a volume is the following: RAID-1 and RAID-10: 32 HDDs RAID-5: 17 HDDs RAID-O: 16 HDDs
Volumes	• 1,024 Virtual Volumes (256 accessible per initiator)
Target Nodes	• 1,024
Online Capacity Expansion	• Yes
Hot Swappable Drives	• Yes
Instant Volume Access	• Yes
Free Space Defragmentation	• Yes
Auto-Detection Failed Drive	• Yes
Auto-Rebuild Spare Drive	• Yes
RAID Level Migration	• Yes
Drive Roaming in Power Off (configured drives are not bay-specific)	• Yes
Micro Rebuilds	• Yes

Storage Management

Embedded IP-Based Management GUI	• Create, manage, expand and monitor storage pool, volumes and RAID. • Event manager to view and persist events.
Firmware Field Upgradeable	• Yes
SMI-S Version 1.1	• Yes

Power

Supply Type	• Triple Redundant 3U 760 Watt
Input Voltage	• 90-264 VAC (auto-switching)
Input Frequency	• 47-63 Hz
Input Current	• 20A Maximum at 90VAC and 10A Maximum at 264VAC (maximum amps vs. voltage varies linearly throughout this voltage range)
Power Factor Correction	• 95%@110V, Full load
Power Consumption	• 570W (full configuration)
Thermal	• 2000 BTU / hour (full configuration)

Environmental

Operating Temperature	• 32° to 104°F (0° to 40°C)
Storage Temperature	• -4° to 158°F (-20° to 70°C)
Operating Humidity	• 20% ~ 90% (Non-condensing)
Storage Humidity	• 10% ~ 95% (Non-condensing)

Physical (approximate)

Form Factor	• 3U industry-standard 19-inch rack
Dimensions (W x D x H)	• 17.2in x 22.5in x 5.2in (438mm x 571mm x 133mm)
Weight	• 72.8 pounds / 33 kilograms (full configuration)

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International Approvals

Emissions	• CE Class A, FCC Class A, C-Tick Class A, VCCI Class A
Safety	• CSA 60950-1, UL60950-1, IEC 60950-1, EN 60950-1

Warranty and Support

Warranty	• 3 year limited[1] (Manufacturers warranty on Hard Drives)
Extended Warranty	• Available
Support	• 1 year (9 hours per day / 5 days per week Technical Support)

Ordering Information

Part Number	Description
DSN-3200-10	xStack Storage® 8x1GbE iSCSI SAN Array, 15 Bays, 3U, w/o Drives, with Trays
DSN-3400-10	xStack Storage® 1x10GbE iSCSI SAN Array, 15 Bays, 3U, w/o Drives, with Trays
DSN-210-SW	SureSync Replication & Synchronization Software
DSN-030	Power Supply Module for DSN-2100/3200/3400
DSN-040	Chassis Fan Module for DSN-2100/3200/3400
DNS-050	Lithium-Ion Battery for DSN-2100/3200/3400
DSN-3200-10-LW	Extended Warranty for DSN-3200-10
DSN-3400-10-LW	Extended Warranty for DSN-3400-10
DEM-421XT	10Gigabit XFP Adapter (DSN-3400-10)

Updated 1/25/13

[1] Available in the U.S.A and Canada only.

All references to speed are for comparison purposes only. Product specifications, size and shape are subject to change without notice, and actual product appearance may differ from that depicted. See inside package for warranty details.

business

For more information
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