



### Features

- + Handles Over 80,000 I/Os per Second
- + Battery Protected Cache Memory: Up to 4GB
- + System Memory: Up to 512MB
- + 8 Hot-Swap SATA Hard Drive Bays
- + 8TB Capacity with 1TB Hard Drives (Supports higher capacity drives as they are introduced)
- + SATA-II Support
- + 400 Watt Redundant Power Supply
- + Industry Standard 2U 19-inch Chassis

### RAID Support

- + 0, 1, 1+0, and 5

### High Performance iSCSI Interface

- + Four 1GbE Ports

### Storage Network Management

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

## xStack Storage™ iSCSI SAN Arrays

The D-Link DSN-2100-10 xStack Storage Area Network (SAN) Array is designed to provide a smaller, more value oriented solution for entry-level and SMB customers. The heart of the DSN-2000 series SAN Array is based on the same powerful System-on-a-Chip (SoC) design found in larger arrays such as the DSN-3000 series of products, but housed in a smaller chassis. Utilizing a 10Gbit iSCSI SoC solution that can handle over 80,000 I/Os per second and capable of supporting 8TBs of raw capacity using 1TB hard drives (and even higher capacity hard drives as they are introduced), the DSN-2000 Series SAN Array can easily be implemented as nearline storage or as a supplement to your primary backup and recovery device. This evolutionary advancement in performance is a testament to the tightly integrated xStack Storage architecture and is a sharp contrast to the discrete implementation of competing products.

### iSCSI for IP Networks

SAN has been traditionally reserved for Fibre Channel networks until the recent introduction of iSCSI that extends this powerful yet simple centralized backend storage system to IP networks. By utilizing existing Ethernet technology, the cost associated with separate host bus adapters and the per-Gigabyte cost for storage is significantly reduced. iSCSI SANs can leverage the Ethernet infrastructure and standards which are quite familiar to your IT staff.

### Four 1GbE Interfaces

The DSN-2000 Series SAN Array implements four 1GbE ports and supports IEEE 802.3ad Link Aggregation Groups (LAG) for full offload capability so that all four ports can be grouped together, totaling up to 425MB/s bandwidth, for increased throughput and redundancy.

### System-on-a-Chip (SoC) Implementation

By utilizing a SoC design, the DSN-2000 Series SAN Arrays combine both networking and storage functions into a single specialized Application Specific Integrated Circuit (ASIC). The SoC solution combines 10Gbps iSCSI, TCP & IP offload,

embedded processors, and storage virtualization firmware onto a single chip. The tight integration of these functions eliminate interoperability, timing, and support issues found in competitive products that offer "discrete implementation" wherein a chassis, a main motherboard, a RAID storage controller, iSCSI software or controller, network interface cards, and operating system software are chosen separately and then assembled. The DSN-2000 Series SAN Array outperforms these discrete implementations and does so at a lower price point. It also delivers mission critical data quickly with state-of-the-art reliability.

### RAID for Efficiency

The DSN-2000 Series SAN Array platform features 8 hot swappable Serial ATA (SATA) disk drive bays supporting 8TB raw capacity using 1TB hard drives (and even higher capacity hard drives as they are introduced) in RAID level 0, 1, 1+0 and 5 configurations. You can quickly deploy a SAN using inexpensive SATA disk drives and, depending on your growing storage needs, you can simply add more drives as you go.

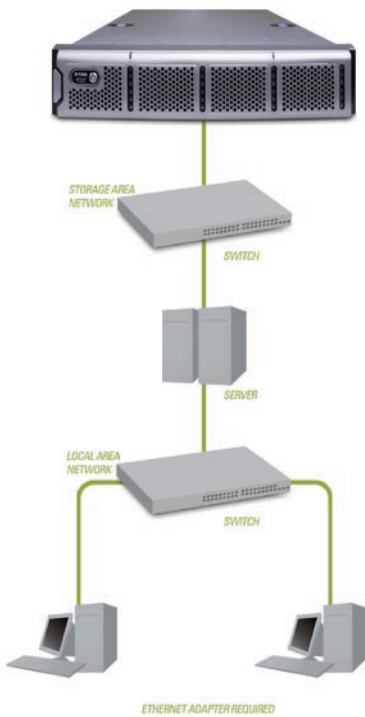
### Embedded Centralized Storage Management

The embedded user-friendly IP-SAN Device Manager (IDM) provides comprehensive storage network management. Boasting a rich set of management features, this suite of utilities allow monitoring and control of your SAN via the SMI-S (Storage Management Initiative) command set. Combined with an embedded secure server, users will be able to remotely configure and monitor their SAN storage subsystems.

### Advanced Management Features

The DSN-2000 Series SAN Array provides additional advanced features for efficient management of network storage and optimal performance.

**Cache Management:** Provides adaptive and persistent cache management. This provides write-back, write-through, write coalescing, and multi-stream read-ahead on a volume basis. This optimizes cache utilization and performance in an application dependent manner.



### xStack Storage™ iSCSI SAN Arrays

**VLAN Zoning:** Supports IEEE 802.1q VLAN tagging to segregate traffic into isolated zones for secure access and jumbo frames to improve the network throughput and reduce CPU overhead.

**Volume Virtualization:** The DSN-2000 Series has storage management software that provides volume virtualization features by utilizing the concept of storage Extents. Extents are the fundamental building blocks used to enable features such as RAID, online capacity expansion and volume migration. Drives of dissimilar size can be used to create volumes. Growth can occur without volume migration or reconstruction. Single drives can contain multiple and divergent RAID technologies.

**RAID Support:** RAID Levels 0, 1, 1+0 and 5 (striped sets, mirrored sets, striped mirrored sets, and parity sets) are supported, allowing different storage options.

**Online Capacity Expansion and RAID Level Migration:** Volumes can be expanded and/or migrated to other RAID levels while online and with minimal impact on users. For example, a mirror volume of two drives can easily be converted to a parity volume of three or more drives while users continue to access this storage.

**Micro Rebuilds:** Provides protection against unresponsive SATA commands by forcing a response within a preset time limit.

An iSCSI array can prove to be a valuable tool to supplement your network storage foundation. Whether providing a low-cost block-based solution for data backup and recovery, replacement of Direct-Attached Storage (DAS) drives, or providing a cost-effective entry-level nearline storage solution, the DSN-2000 Series xStack Storage Area Network (SAN) Array can meet your immediate needs.

### Technical Specifications

#### Features

|  |  |
|--|--|
| Drive Bays   | 8  |
| Drive Interface Support  | SATA-II support  |
| System Memory  | 256MB to 512MB (512MB standard)  |
| Cache Memory   | 256MB to 4GB (512MB standard)  |
| Battery Backup for Cache   | Standard (approximately 72 hours on full charge)   |
| Bandwidth  | Up to 425MB/s  |
| Storage Capacity   | 8TB capacity with 1TB hard drives (supports for higher capacity drives as they are introduced) |
| Operating Systems Supported<br>*Please see <a href="http://www.dlink.com">www.dlink.com</a> for latest support information | Windows Vista® 32-bit & x64 (Ultimate & Enterprise) with Built-in iSCSI initiator              |
|  | Windows® Server 2003® 32-bit & x64 SP1 (Standard & Enterprise) with v2.04 iSCSI initiator      |
|  | Windows Server 2003 R2 32-bit & x64 (Standard & Enterprise) with v2.04 iSCSI initiator         |
|  | Windows XP Pro 32-bit & x64 with v2.04 iSCSI initiator   |
|  | Windows 2000 Advanced Server with v1.6 & v2.01 iSCSI initiator                                 |
|  | Fedora® Core® 6 & 7  |
|  | Red Hat® 7.3   |
|  | Red Hat 9  |
|  | Red Hat Enterprise® WS 3 update 4  |
|  | Red Hat Enterprise ES 4 update 4 & 5 32-bit & x64  |
|  | Red Hat Enterprise AS update 4   |
|  | SuSE® Professional 9.3 32-bit & x64  |
|  | OS X® (10.4.7   10.4.8   10.4.10) with Intel® and Power PC CPUs                                |



### xStack Storage™ iSCSI SAN Arrays

Supported NICs, iSCSI Accelerators and iSCSI HBAs  
\*Please see [www.dlink.com](http://www.dlink.com) for latest support information

|   |
|---|
| Intel® Pro 1000MT & XT [1GbE]                             |
| Intel Pro 10000 CX4 [10GbE]                               |
| Chelsio® S210X-SR-XFP (S2iO) [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   |
| QLogic 4052C  |

#### iSCSI Network Interface

|                                |  |
|--------------------------------|--|
| iSCSI Network Interface        | Four (4) 1GbE Copper Ports   |
| 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) | Yes – Up to four (4) LAGs (IEEE802.3ad Link Aggregation Group)   |
| VLAN Support                   | Up to eight (8). 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) |

#### Volume & RAID Support

|   |  |
|---|--|
| RAID Controller   | Single- Integrated in ASIC                           |
| RAID Support  | RAID Levels 0, 1, 1+0 and 5                          |
| 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  |



## xStack Storage™ iSCSI SAN Arrays

### 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             | Redundant 2U 400 Watt   |
| Input Voltage           | 100-240 VAC   |
| Input Frequency         | 47-63 Hz  |
| Input Current           | 8A Maximum at 100VAC and 4A Maximum at 240VAC<br>(maximum amps vs. voltage varies linearly throughout this voltage range) |
| Power Factor Correction | 95%@110V, Full load   |
| Power Consumption       | 360W (full configuration)   |
| Thermal                 | 1260 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             | 2U industry-standard 19-inch rack   |
| Dimesnsions (D x W x H) | 25in x 17.25in x 3.5in (63.5cm x 43.8cm x 8.9cm) * 18.75in (47.6cm) wide at the mounting brackets |
| Weight                  | 45 lbs / 20.4 Kg (full configuration)   |

### 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       |

### Available Configurations

|             |   |
|-------------|---|
| DSN-2100-10 | xStack 4x1GbE iSCSI SAN Array, 8 Bays, 2U, w/o Drives, with Trays |
|-------------|---|

12/03/07

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 herein. See inside package for warranty details.