XSTACK™

FEATURES

Hardware

+ Handles over 65,000 I/Os per Second
+ Battery Protected Cache Memory: Up to 4GB
+ System Memory: Up to 512MB
+ Over 11TB capacity with 750GB hard drives. (Support for higher capacity drives as they are introduced)
+ SATA-II Support
+ 760 Watt Redundant Power Supply
+ Industry Standard 3U 19-inch Chassis

RAID Support

+ 0, 1, 1+0, 5 and JBOD

High Performance iSCSI Interface

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

Storage Network Management

+ IP SAN Device Manager (IDM)
+ Remote Monitoring and Configuration
+ CHAP Authentication helps Halt Intruders

xStack Storage iSCSI SAN Arrays

The D-Link xStack Storage Area Network (SAN) Arrays (DSN-3200 & DSN-3400) are designed to provide a reliable network data storage solution for customers in entry-level and SMB segments. Utilizing a 10Gbit iSCSI System-on-a-Chip (SoC) solution that can handle over 65,000 I/Os per second and capable of supporting over 11TB raw capacity using 750GB hard drives (and even higher capacity hard drives as they are introduced), the DSN-3000 Arrays can easily be implemented as nearline storage to supplement your primary IP network storage solution or be used as a basic 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.

System-on-a-Chip (SoC) Implementation

By utilizing a SoC design, the DSN-3000 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 a storage virtualization firmware stack 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 picked separately and then assembled. The DSN-3000 line 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.

iSCSI for IP Networks

SAN has been traditionally reserved for Fiber Channel networks until the recent introduction of iSCSI that extends this powerful yet simple centralized backend (behind server-based) 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. IP SANs based on iSCSI technology can leverage existing and familiar Ethernet standards to provide speeds of up to 1160MBytes bandwidth with the DSN-3400.

RAID for Efficiency

The DSN-3000 Series SAN Array platform features 15 hot swappable Serial ATA (SATA) disk drive bays supporting over 11TB raw capacity using 750GB 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.

A Choice of Host Interfaces – 1GbE or 10GbE

The DSN-3200 provides eight 1GbE ports and supports IEEE 802.3ad Link Aggregation Groups (LAG) for full offload capability so that all eight ports can be grouped together, totaling up to 850MBytes bandwidth, for increased throughput and redundancy.

The DSN-3400 provides the industry's first built-in, fully integrated 10GbE interface in the XStack cost effective solution. Providing up to 1160MBytes bandwidth and providing a high performance alternative to the 4Gbps Fiber Channel.

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 allows 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 sub-systems.

xStack Storage iSCSI SAN Arrays

Advanced Management Features

The DSN-3000 Series SAN Arrays provide 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.

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.

QoS: Supports IEEE 802.1p Quality of Service (QoS) to efficiently handle time sensitive network packets.

Volume Virtualization: The DSN-3000 family has a storage management software stack 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, 5 and JBOD (striped sets, mirrored sets, striped mirrored sets, parity sets and JBOD)

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

Whether you are looking for a low-cost block-based solution for data backup and recovery, replacement of some of your inefficient Direct-Attached Storage (DAS) drives, or provide cost-effective centralized storage for your servers, the DSN-3000 line has a solution for you.

Technical Specifications

Model	DNS-3200	DNS-3400
Features		
Drive Bays	15	15
Drive Interface Support	SATA-II support	SATA-II support
System Memory	256MB to 512MB (256MB standard)	256MB to 512MB (256MB standard)
Cache Memory	256MB to 4GB (256MB standard)	256MB to 4GB (256MB standard)
Battery Backup for Cache	Standard (minimum 72 hours on full charge)	Standard (minimum 72 hours on full charge)
Bandwidth	Up to 850Mbytes	Up to 1,160Mbytes
Storage Capacity	Over 11TB capacity with 750GB hard drives. (Support for higher capacity drives as they are introduced)	Over 11TB capacity with 750GB hard drives. (Support for higher capacity drives as they are introduced)
Operating Systems Supported	Windows 2000 SP3, Windows XP, Windows XP PRO, Windows Server 2003 (future: Linux-iSCSI, Mac-OS, Solaris)	Windows 2000 SP3, Windows XP, Windows XP PRO, Windows Server 2003 (future: Linux-iSCSI, Mac-OS, Solaris)
Supported iSCSI Ethernet Host Bus Adapters	+ QLogic QLA4010C iSCSI PCI-X Adapter + Adaptec 7211C 1Gb iSCSI PCI-X Adapter + Intel PRO/1000T IP Storage Adapter + Alacritech iSCSI Accelerator	+ QLogic QLA4010C iSCSI PCI-X Adapter + Adaptec 7211C 1Gb iSCSI PCI-X Adapter + Intel PRO/1000T IP Storage Adapter + Alacritech iSCSI Accelerator

xStack Storage iSCSI SAN Arrays

Model	DNS-3200	DNS-3400
iSCSI Network Interface		
iSCSI Network Interface	Eight (8) 1GbE Copper	One (1) 10GbE Fiber (XFP transceiver sold separately)
Host Interface	iSCSI Draft 20 compliant initiator	iSCSI Draft 20 compliant initiator
Connections	1,024 hosts	1,024 hosts
CHAP Authentication	Yes	Yes
Access Control of Management	Yes	Yes
iSCSI/TCP/IP Full HW Offload	Yes	Yes
Jumbo Frames Support	Yes	Yes
LAG Support (Link Aggregation)	Yes – Up to eight (8) LAGs	Not Applicable
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.	Up to eight (8). 1-to-1 mapping between IP subnet and VLAN. Multiple VLANs per physical port with VLAN tag.
QoS Support	Yes (IETF DiffServ and IEEE 802.1P tag)	Yes (IETF DiffServ and IEEE 802.1P tag)
Volume & RAID Support		
RAID Controller	Single-Integrated in ASIC	Single-Integrated in ASIC
RAID Support	RAID Levels 0, 1, 1+0, 5 and JBOD (Striped sets, mirrored sets, striped mirrored sets, parity sets and JBOD)	RAID Levels 0, 1, 1+0, 5 and JBOD (Striped sets, mirrored sets, striped mirrored sets, parity sets and JBOD)
Volumes	1,024 Virtual Volumes (256 accessible per initiator)	1,024 Virtual Volumes (256 accessible per initiator)
Target Nodes	1,024	1,024
Online Capacity Expansion	Yes	Yes
Hot Swappable Drives	Yes	Yes
Instant Volume Access	Yes	Yes
Free Space Defragmentation	Yes	Yes
Auto-Detection Failed Drive	Yes	Yes
Auto-Rebuild Spare Drive	Yes	Yes
RAID Level Migration	Yes	Yes
Drive Roaming in Power Off (configured drives are not bay-specific)	Yes	Yes
Micro Rebuilds	Yes	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.	+ Create, manage, expand and monitor storage pool, volumes and RAID. + Event manager to view and persist events.
Firmware Field Upgradeable	Yes	Yes
SMI-S Version 1.1	Yes	Yes

xStack Storage iSCSI SAN Arrays

Model	DNS-3200	DNS-3400
Power		
Supply Type	Redundant 3U 2+1 760 Watt .	Redundant 3U 2+1 760 Watt
Input Voltage	90-264 VAC (auto-switching)	90-264 VAC (auto-switching)
Input Frequency	47 to 63 Hz	47 to 63 Hz
Input Current	20A Maximum at 90VAC and 10A Maximum at 264VAC (maximum amps vs. voltage varies linearly throughout this voltage range).	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 .	95% @ 110V, Full load
Power Consumption	570W (full configuration).	570W (full configuration)
Thermal	2000 BTU / hour (full configuration).	2000 BTU / hour (full configuration)
Environmental		
Operating Temperature	0˚ to 40˚ C (32˚ to 104˚ F).	0˚ to 40˚ C (32˚ to 104˚ F).
Storage Temperature	-20˚ to 70˚ C (-4˚ to 158˚ F)	-20˚ to 70˚ C (-4˚ to 158˚ F)
Operating Humidity	20% to 90% non-condensing.	20% to 90% non-condensing
Storage Humidity	10% to 95% non-condensing.	10% to 95% non-condensing
Physical (approximate)		
Form Factor	3U industry-standard 19-inch rack.	3U industry-standard 19-inch rack
Dimensions	430 (W) x 558 (D) x 132 (H) mm (16.9 x 22 x 5.2 inches).	430 (W) x 558 (D) x 132 (H) mm (16.9 x 22 x 5.2 inches)
Weight	33 kg (73 lbs) (full configuration).	33 kg (73 lbs) (full configuration)
Certifications		
Emissions	CE Class A, FCC Class A, C-Tick Class A, VCCI Class A	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	CSA 60950-1, UL60950-1, IEC 60950-1, EN 60950-1

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.

BUSINESS

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