



Ultra48

AssuredSAN™ 4004 Models

BENEFITS

Scalable Performance

- 6400 MB/s throughput and 100,000 IOPS from disk
- SimulCache™ - Low latency cache mirroring
- Data rates up to 16Gb/sec. FC, 10Gb/sec. iSCSI or 12Gb/sec. SAS
- Expands up to 4 expansion units per array
- Support for SAS, Nearline SAS, SSDs
- Max 192 drives - 4544, 4844

Built in Redundancy

- Dual RAID controller
- Redundant, hot swap components
- RAID 0, 1, 3, 5, 6, 10, 50

Assured Data Protection (optional)

- AssuredSnap™ - 1000 snapshots
- AssuredCopy™ - 1024 volume copies
- AssuredRemote™ - remote replication

Certifications Planned

- Citrix, Microsoft, VMware, StorNext, Data Core, Veeam

Green Features

- EcoStor™ battery-free cache backup
- Drive spin-down
- High-efficiency power supplies
- RoHS-6 and WEEE compliant

ULTRA HIGH-DENSITY MODELS

The Ultra48 AssuredSAN High-Density storage arrays are designed for datacenter professionals and supercomputing centers that require the very highest storage performance within a small footprint. By delivering an ultra high-density storage array with 48 drives in a two-rackunit form factor, IT managers maximize space, and deliver on performance, energy savings, ease-of-maintenance, ease-of-use, and reliability.

The Ultra48 Solutions provide high-density storage options for HPC, Cloud, and Big Data applications. Using high-performance SAS and SSD drives and ultra computing power to deliver 6.4 Gibabytes/second performance. The Ultra48 can house up to 48 drives, increasing storage performance density by 200 percent within a 2-rackunit space. These high-density solutions are ideal for IT managers in the Media and Entertainment, Oil & Gas, Research, Cloud Computing, and Telecommunications industries.

M&E Workflows

The Ultra48 models set a new storage standard for postproduction workflows. Offering 6400 megabytes per second sequential reads and 5300 megabytes per second sequential writes, this series is ideal for video editing, finishing, rendering and streaming, as well as broadcast.

Ultra48 models are shared storage systems that work with shared file systems like StorNext and Xsan to easily support multiple simultaneous streams of 2K, 4K, HD and 3D content, without dropping frames.

Similarly, the 4004 models have the high performance and low latency characteristics to meet data capture requirements for modern telecommunications digital networks and broadcast applications.

High Performance Computing

High performance computing (HPC) applications, cloud storage and virtual server environments require powerful storage with to deliver quick response to random workloads. The Ultra48 storage system delivers industry-leading sequential throughput, as well as an impressive 100,000 IOPS sustained from disk, for real time access to business critical data such as databases and business analytics.



Ultra48 AssuredSAN™ 4004

Redundant Architecture

AssuredSAN models ensure that there is no “single point of failure,” and automatic failover mechanisms facilitate the highest levels of data protection, service levels and disaster recovery. Support for industry high-availability software guarantees seamless integration with the rest of the enterprise.

Assured Data Protection (optional)

AssuredRemote™ - Easy Remote Replication for SMB's

Dot Hill's AssuredSAN™ solutions offer an innovative and comprehensive view of storage management — store, back up and restore instantly. Equipped with AssuredRemote™ remote replication software, these systems provide the easiest array-to-array remote replication solution on the market today, enabling disaster recovery protection and business continuity with support for up to 1000 snapshots per storage array.

By providing centralized, array-level replication, AssuredRemote offloads backup operations from critical application servers, and aids IT managers in complying with regulations such as the HIPAA and Sarbanes-Oxley acts.

With AssuredRemote replication software and VMware's Site Recovery Manager, you can implement a complete site failover solution.

AssuredCopy™ and AssuredSnap™

The AssuredSAN data protection and disaster recovery solution has optional licensing of AssuredSnap™ and AssuredCopy™ data protection software. With up to 1000 snapshots capability, AssuredSANs offer necessary protection for business critical applications such as email, databases, and file sharing.

AssuredSnap instantly takes volume snapshots, creating point-in-time backups that can be used to instantly restore your data after a system failure. In addition, AssuredCopy protects against disk failures.



Self Encrypting Drives

Need additional data security on your drives? Dot Hill offers self encrypting drive (SED) capability that protects your data when removed from their original array. Available in 1.2TB small form factor (2.5") drives, the SED drives provide instant data destruction via cryptographic erase. In normal use, you do not need to maintain authentication keys (otherwise known as credentials or passwords) in order to access the drive's data. The SED will encrypt data being written to the drive and decrypt data being read from it, all without requiring an authentication key from the owner.

When it's time to retire or repurpose the drive, the owner sends a command to the drive to perform a cryptographic erase. Cryptographic erase simply replaces the encryption key inside the encrypted drive, making it impossible to ever decrypt the data encrypted with the deleted key.

AssuredSAN Architecture

Environmentally Responsible

Utilizing Dot Hill's patented EcoStor™ technology, these systems have completely eliminated cache batteries, using instead supercapacitors and flash memory to provide infinite cache backup during a power loss, while being environmentally friendly.

AssuredSANs also features energy-saving drive spin-down. With the addition of drive spin-down, mixed drive type support and dual protocol interfaces, users can now combine both high performance primary volumes and secondary storage with different performance and energy usage profiles in the same physical unit.

Enhanced Performance

The storage systems leverage patented SimulCache™ technology that instantly and simultaneously mirrors cache between RAID controllers, leading to significant performance improvements over traditional implementations.

Storage Made Easy

AssuredSAN arrays are easy to configure and manage with RAIDar 2.0, our intuitive web based interface which provides storage setup and monitoring without the need for host based software. RAIDar 2.0 saves time with configuration and installation wizards, and schedulers.

- Easy to set up
- Configuration, Installation Wizards simplify management
- EcoStor™ eliminates routine battery maintenance
- Modular field replaceable power supplies, fans, and controllers



Ultra48 AssuredSAN™ 4004

support

Warranty

AssuredSANs come with a three year standard hardware warranty, a 90 day software warranty, and Bronze level support, which provides expert 24x7 technical telephone support, access to online support and the Customer Resource Center containing articles, product documentation, and firmware upgrades.

Gold and Platinum Support Programs

Gold and Platinum levels of support offer maximum responsiveness anywhere in the world. These programs include options for same day advance shipment, parts depot access, next business day, and 4-hour onsite service. Extended hardware warranties and extended software support packages are also available.

Ultra48 High Density Chassis

The Ultra48 is available as either a RAID controller or an expansion arrays. The Ultra48 chassis can also be used with other small form factor 4004 models.

Customers of the high density chassis option will find that it offers a much more dense footprint, allowing customers to have a total of 48 drives within a single 2U Rackspace. This space-saving chassis houses high performance 2.5-inch drives allowing customers to maximize storage capacity in space constrained datacenters.

The high-density Ultra48 chassis has been designed with specific features to make the system easy to manage. The three drive trays slide forward like a drawer exposing the drives. The drive trays all open toward the inside of the array so that drives are easily accessible even in a corner rack. The drive trays have a drive orientation map on the top of the tray so that drives can be accurately identified and replaced.

ordering information

Channel models described in this datasheet ship with the array, disk drives, a rail kit, cables, Installation Guide, and Bronze support. They come with AC Power.

Dot Hill branded SFP's are required for iSCSI and Fibre Channel and available in 4-packs. Two (2) 4-packs are needed for each RAID unit. Choose from 1G iSCSI, 10G iSCSI, 8G Fibre Channel, or 16G Fibre Channel.

For assistance, call 800-872-2783, extension 3575.

OEM Models

OEM models are available for volume OEM customers. For specific information on models, availability, and power supplies, contact our OEM sales team.



Ultra48 Models - 4844 Fibre Channel or iSCSI, 4544 SAS, and 4144 Expansion Array

With forty eight 2.5" Drives

Drives per chassis	up to 48
Max capacity per chassis	57.6TB

PHYSICAL

Depth (excluding cables)	30.6 Inches / 77.724 cm
Height	3.5 Inches / 8.9 cm
Width	17.6 Inches / 44.7 cm
Chassis weight	48 lb / 21.8 kg
w / drives	74.9 lb / 34 kg



For more information visit: www.dothill.com



Ultra48 AssuredSAN™ 4004

Features

HOSTS

External Ports 4 per controller/8 maximum

Fibre Channel

Host speed 16Gb Fibre Channel
Interface Type SFP+

iSCSI Models

Initiators 10Gb NIC or 10Gb iSCSI
Interface Type SFP+

SAS

Initiators 12Gb SAS 2.0 (Serial-attached SCSI)
Interface Type Mini-SAS (8643/8644)

DRIVE SUPPORT

4544, 4844 SAS, Nearline SAS, SSD

* For most current drive support information ,
visit <http://www.dothill.com/storage-arrays/drive-options/>

EXPANSION

4144 (1 RAID, 3 JBOD), 192 DRIVES

HIGH-AVAILABILITY FEATURES

Redundant Hot-Swap Controllers
Redundant Hot-Swap Disk, Fans, Power
Dual Power Cords
Hot Standby Spare
Automatic Failover
Multi-Path Support

PROTOCOLS AND STANDARDS

IP (RFC, 894, 1092) SCSI-2 and SCSI-3

SUPPORT

Software Warranty 90 days
Standard Hardware Warranty 3 years

RAID

Levels Supported 0, 1, 3, 5, 6, 10 and 50

SYSTEM CONFIGURATION

Cache Memory 6GB per controller
Virtual disks per System 32
Volumes per virtual disk 256
Volumes per System 1024
Mirrored Cache Yes - SimulCache™
Supercapacitor Cache Backup Yes
Cache Backup to Flash Yes - Non-volatile

MANAGEMENT

Interface Types 10/100 Ethernet, Mini USB
Protocols Supported SNMP, SSL, SSH, SMTP, SMI-S Provider,
HTTP(S)

Management Consoles WEB GUI, CLI
Management Software RAIDar 2.0

Remote Diagnostics
Non-disruptive Updates
Volume Expansion

Detailed Specifications

POWER REQUIREMENTS - AC INPUT

Input Power Requirements 100-240VAC 50/60Hz
Max Input Power 640W maximum continuous
Heat Dissipation 2245 BTUs/hour

Gold Rated - high efficiency
75% @ 10% load
88% @ 20% load
92% @ 50% load
88% @ 100% load

TEMPERATURE AND HUMIDITY RANGES

Operating Temperature 5°C to 35°C. Data Center
Environmental Conditions are Required
-5°C to 70°C
Non Operational
Shipping Temperature -23°F to 158°F (-5°C to 70°C)
Note: Derate 2°C for every km, up to 3000 meters
Operating Humidity 10% to 90%RH @ 35°C, non-condensing
Non-Operating Humidity Up to 93%RH @ 35°C, non-condensing

DECLARED ACOUSTIC NOISE LEVELS

This product will comply with applicable safety requirements:

OSHA Requirements

PART 1910 Occupational Safety and Health Standards
http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=standards&p_id=9735

SHOCK AND VIBRATION

Shock, Operational 3G's for 11 ms half-sine, 5 pulses each
direction. Rail mounted
Shock, Non-Operational 10Gs, 11ms, half-sine
Vibration, Operational 5Hz to 500Hz, 0.14 G rms flat spectrum,
test time 36 minutes. Rail mounted
Vibration, Non-Operational 3-365-3Hz, 1.22 Grms, z-axis,
test time 30 minutes. Direct mount

REGULATORY

Safety UL 60950-1, 1st edition (USA)
CAN/CSA-C22.2 No.60950-1 (Canada)
EN 60950-1 (European Union)
IEC 60950-1 (International)
EN 60950-1 (GS Mark,Germany)
CCC Mark (China PRC)

Electromagnetic Compatibility

Emissions CFR 47 Part 15 Subpart B Class A (U.S.A.)
ICES-003 Class A (Canada)
EN 55022 Class A (EU)
AS/NZS CISPR 22 Class A (Australia, New Zealand)
VCCI Class A (Japan)
GOST R 51318.22 Class A (Russia)
KN 22 Class A (S. Korea)
CNS 13438 Class A (Taiwan)

Harmonics

Flicker EN61000-3-2 (EU)
Immunity EN 61000-3-3 (EU)
EN 55024 (EU)
GOST R 51318.24 (Russia)
KN 24 (S. Korea)

RoHS and WEEE

RoHS-6/6 Compliance, China RoHS, WEEE

Country Approvals

United States, Canada, European Union (EU),
Australia/New Zealand, Japan, China (PRC) ,
Russia, Mexico, Germany, South Korea, Taiwan, India

Subject to change at any time.



© 2014 Copyright Dot Hill Systems Corporation. All rights reserved. Dot Hill Systems Corp., Dot Hill, the Dot Hill logo, and AssuredSAN are trademarks or registered trademarks of Dot Hill Systems. All other trademarks are the property of their respective companies in the United States and/or other countries. 3.4.14