

# AssuredSAN™ PRO 5000 SERIES

SMART.SIMPLE.STORAGE. – Tiering in ‘Real-time’

With the advent of Dot Hill’s new RealStor™ technology, the AssuredSAN™ Pro 5000 Series adds storage virtualization capabilities to our smart, simple, SAN line-up. With RealStor, IT managers can improve data responsiveness, remove provisioning and allocation guesswork, and simplify storage management and expansion. The AssuredSAN Pro Series is the most responsive and dynamic automated tiered storage platform available, using powerful algorithms to automatically pinpoint ‘hot’ data and move it in real-time to the right storage tier for maximum responsiveness.



The AssuredSAN Pro 5000 makes it easy to monitor performance through a menu-driven web console.

In common with all AssuredSAN storage arrays, the AssuredSAN Pro Series boasts 99.999% availability due to stringent design standards, testing, and diagnostics.

Because we are committed to making our storage simple to use, the AssuredSAN Pro Series features are easy to implement, monitor, and manage through our intuitive web user interface. Designed to minimize training and streamline installation, the AssuredSAN Pro Series allows you to readily adopt a more agile, efficient, and cost effective storage infrastructure.



# AssuredSAN™ PRO 5000 SERIES

## Real-time Tiering for the IT Professional

### RealTier™ Automated Tiering

RealTier technology automatically measures data usage, identifies 'hot' spots as they occur, and continuously moves data to the best tier in real time, even as that data changes minute by minute.

An AssuredSAN Pro Series uses up to three available tiers – a high performance SSD tier, a SAS tier, and an archive Nearline SAS tier - to organize data according to data access patterns. Patent pending software dynamically assesses data demands within the storage system and automatically manages tiers to accelerate data access and improve the user experience. AssuredSAN Pro systems constantly monitor data usage and respond minute by minute to workload demands, delivering a highly responsive storage infrastructure. The most heavily accessed data reside on the SSD-based performance tier, for fastest response time. Commonly used data reside on the SAS tier, and 'colder' data reside on high capacity Nearline SAS drives.

The AssuredSAN Pro Series consists of modular storage systems with two or three tiers depending on system design. The systems feature flexible expansion so that if any tier runs out of space, more can be easily added to increase either responsiveness, capacity, or both.

### RealPool™ Automatic Pooling

RealPool embedded software automatically creates pools of storage, eliminating the need to specify RAID level and assign storage to pools, freeing IT managers from complex storage administration tasks.

### RealThin™ Provisioning

The thin provisioning feature of the AssuredSAN Pro Series streamlines the tasks of provisioning and modifying volumes, allowing IT managers to respond to data growth as needed. User friendly reporting provides constant feedback on volumes, approaching thresholds, allocation, and over-allocation. IT managers can add storage when needed, easily expanding volumes non-disruptively.



RealStor monitors data usage constantly and responds minute by minute to workload demands.

### RealQuick™ Rebuild Function

Within each collection of disk drives that make up a storage pool, data is further protected with RAID redundancy within each tier. In a typical RAID system, rebuilding a drive can take a long time, especially with high capacity drives, because each sector requires rebuilding. The intelligent RealQuick software in the AssuredSAN Pro 5000 delivers an accelerated rebuild operation, because only the sectors that contain actual data are rebuilt, resulting in faster restoration of the RAID set.

The AssuredSAN Pro Series automates many of the complexities of managing RAID sets and levels, which minimizes training and support.

### Built-in Data Protection Software

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 1024 snapshots per storage array.

With two AssuredSAN arrays and built-in replication software you can easily implement an affordable disaster recovery or centralized backup solution. The AssuredSAN Pro Series supports VMware's Site Recovery Manager, SRM, allowing automatic site failover to occur.

The AssuredSAN Pro Series also supports snapshot and volume copy software for point-in-time and complete volume copies.

For assistance, call 800-872-2783, ext 3575  
or visit [www.dothill.com](http://www.dothill.com)



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## Storage at the Speed of Business

Customers and employees create and alter data ‘hot spots’ continuously as projects heat up, collaboration occurs, and promotions begin and end. With the AssuredSAN Pro Series, your storage infrastructure can easily keep pace with ‘up to the moment’ demands and changing business priorities.

## What Creates Data Hot Spots?

Users, applications, business events and virtualization all can create hot spots which can stress a storage system.

Virtual Desktop	‘Boot’ storms
Virtual Server	Multiple VMs increase storage workloads
Databases	Quarter end, year end, order processing, PO’s
Accounting	Tax prep deadlines, quarterly reporting, audits
Email	Today’s email
Online Retail	Promotions, ticket sales, holidays
Online Media	Breaking news, weather events
Insurance	Regional disasters, claim processing
Higher Ed	Online courses, class enrollment, grades, testing

## Smart, Simple Management

The AssuredSAN Pro Series contains many features that streamline storage management, including:

- A dashboard for provisioning and storage tiering
- Automatic definition of RAID sets and levels
- ‘Add Storage’ feature automatically adds new capacity to tiers
- Provisioning reports by volume
- Configuration, Installation, Replication Provisioning Wizards
- Automated ‘Set and Forget’ scheduler for snapshots, copies and replication

## Modular Expansion of Storage Tiers

You can add more capacity to any tier within the system with matching Pro Series expansion arrays. The embedded software will automatically add the additional capacity to the correct tier based on drive type.

The AssuredSAN Pro Series can support up to 8 additional expansion units beyond the base for a maximum of 96 large form factor drives or 240 small form factor drives in the system.

## Read Cache Configuration

The AssuredSAN Pro 5000 Series can also support a unique configuration that dramatically increases the amount of read-cache available to the storage system. A specific storage configuration allows two 200GB or 400GB SSDs to be allocated as read-cache which can improve the overall improvement of some applications.

## International Language Support

International localization will be available for Spanish, Japanese and simplified Chinese including translated online help.

## Ordering Information

An AssuredSAN Pro 5000 system starts with a base unit that includes the RealStor software, dual RAID controllers, and tiered storage. The base unit supports several configurations of the tiered storage to meet customer requirements for performance and capacity. An additional DMS package can be added to access data protection capabilities.

Building the flexible, responsive storage infrastructure your company needs is as easy as talking to a Dot Hill sales person or authorized partner.

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## Features

### SOFTWARE INCLUDED

Automated Tiered Storage  
Automated Pooling  
Thin Provisioning  
Management GUI

### SOFTWARE OPTIONS

DMS package - Snapshots, Volume Copies, Remote Replication, VSS, VDS, SRA

### HIGH-AVAILABILITY FEATURES

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

### HOSTS

External Ports 4 per controller/8 maximum

#### Fibre Channel

Host Speed 8Gb Fibre Channel  
Interface Type FCP

#### iSCSI

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

### DRIVE SUPPORT

5000 Series 200GB, 400GB SSD  
600GB 10K RPM SAS  
1TB SFF Nearline SAS drives  
3TB LFF Nearline SAS drives

### EXPANSION

The 5000 Series can be easily expanded with specially configured expansion SKUs configured to increase read-cache, expand performance tiers, or expand capacity.

### SUPPORT

Software Warranty 90 days  
RealStor Support 3 year support contract required  
DMS Support 3 year support contract required with DMS package  
Standard Hardware Warranty 3 years

### CERTIFICATIONS (pending)

Microsoft, Citrix certified  
VMware certified with support for VAAI and Site Recovery Manager (SRM)

### SYSTEMS CONFIGURATION

Cache Memory 4GB per controller  
Volumes per System 1024  
Mirrored Cache Yes - SimulCache™  
Super Capacitor 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  
Remote Diagnostics  
Non-disruptive Updates  
Volume Expansion

### 5000 SERIES BASE UNIT WITH 24 DRIVES DIMENSIONS

Depth (excluding cables) 20.46 Inches / 51.9 cm  
Height 3.5 Inches / 8.9 cm  
Width 17.6 Inches / 44.7cm  
Chassis Weight 36.4 lbs / 16.5 kg  
w/ drives 51.8 lbs / 23.5 kg

## Detailed Specifications

### COMPLIANCE AND STANDARDS

NEBS Level 3, MIL SPEC 810G  
IP (RFC, 894, 1092) SCSI-2 and SCSI-3

### POWER REQUIREMENTS - AC INPUT

Input Power Requirements 100-240VAC 50/60Hz  
Max Input Power 400W maximum continuous  
Heat Dissipation 1488 BTUs/hour

### TEMPERATURE AND HUMIDITY RANGES

Operating Temperature 41°F to 104°F (5°C to 40°C)  
Shipping Temperature -40°F to 158°F (-40°C to 70°C)  
Note: Derate 2°C for every km, up to 3000 meters  
Operating Humidity 10% to 90% RH @ 104°F (40°C), non-condensing  
Non-Operating Humidity Up to 93% RH @ 104°F (40°C), non-condensing

### DECLARED ACOUSTIC NOISE LEVELS

Sound Power LWAd=6,75 B  
Sound Pressure LpAm - 55dB<sub>A</sub>

### SHOCK AND VIBRATION

Shock, Operational 5G's for 10 ms  
Shock, Non-Operational 15G 11ms, half sine  
Vibration, Operational 5Hz to 500Hz, 0.21Grms fl at spectrum  
Vibration, Non-Operational 3-365-3Hz, 1.22 Grms, z-axis, 0.85 Grms, X&Y axis shaped spectrum

### REGULATORY

Safety UL 60950-1, 2nd edition, 2007-03-27 (USA)  
CAN/CSA-C22.2 No.60950-1-07, 2nd edition, 2007-03  
EN 60950-1:2006, A11 (2009), 2nd edition (EU)  
IEC 60950-1:2005, 2nd edition (International)  
EN 60950-1:2006 +A11:2009 (GS Mark, Germany)  
CCC Mark (power supply only, China PRC)

Electromagnetic Compatibility  
*Emissions* CFR 47 Part 15 Subpart B Class A (U.S.A.)  
ICES-003:2004 Class A (Canada)  
EN 55022:2006 +A1:2007 Class A (EU)  
EN 300 386 V1.4.1:2008 Class A (EU Telco)  
AS/NZS CISPR 22:2009 Class A (Australia, New Zealand)  
VCCI:2010-04 Class A (Japan)  
GOST R 51318.22-99 Class A (Russia)  
KN 22 Class A (S. Korea)  
CNS 13438:2006 Class A (Taiwan)

*Harmonics* EN61000-3-2:2006 (EU)

*Flicker* EN 61000-3-3:2008 (EU)

*Immunity* EN 55024:1998 +A1:2001+A2:2003 (EU)  
EN 300 386 V1.4.1:2008 (EU Telco)  
GOST R 51318.24-99 (Russia)  
KN 24 (S. Korea)

*RoHS and WEEE* RoHS-5/6 Compliance, China RoHS, WEEE

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



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details.

