



SANnet® II U320 SCSI Array Release Notes

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SANnet II U320 SCSI Array Release Notes

Read these release notes before attempting to install, upgrade, or use the SANnet II U320 SCSI array. This document provides important, late-breaking news and other required information to use your array successfully.

This document includes information for installing and upgrading software programs, SAF-TE firmware, and controller firmware for the SANnet II U320 SCSI array.

New Features in This Release

This release provides an upgrade to RAID controller firmware 4.14, SanNet II SANscape 4.11, and SanNet II Command-Line Interface (CLI) 2.11. It incorporates fixes to bugs and other known issues.

New SNMP Functionality

Simple Network Management Protocol (SNMP) has been enhanced in RAID controller firmware version 4.14. You can send trap messages through the controller agent using a Management Information Base (MIB) that defines what information can be obtained or changed. SNMP requests are made by the SET and GET messages using an SNMP package, such as NET-SNMP or HP OpenView. Refer to the SANnet II SNMP User's Guide for details on SNMP functionality.

LG Cache Policy is not changed after Controller Fail Over

The firmware along with SANscape/CLI v4.3 returns the cache policy in "show cache" and "View Controller Configuration," which shows the current cache policy.

Important Feature Changes in 4.1x RAID Controller Firmware and 4.11 Software

Table 1 highlights the features that are implemented in all software and in the firmware unless otherwise indicated.

Table 1 SANnet II U320 Features

Feature	Description
Default IP address assigned by a DHCP server	By default, each chassis has an IP address if your network uses a Dynamic Host Configuration Protocol (DHCP) server to automatically allocate IP addresses to attached devices. You can then access that IP address through the SANscape CLI, SANscape, or the firmware application. If you do not use a DHCP server and therefore have no IP address, you can set an IP address through serial connection to the firmware.
Logical Drive Capacity	The firmware allows up to 64TB per logical drive configuration with sequential optimization and up to 16TB per logical drive configuration with random optimization. These limits are further modified by available drive sizes and the maximum number of drives allowed per product.
Number of Logical Drives	You can configure up to 16 logical drives per configuration and are limited to a maximum of 32 partitions per logical drive.
Configurable Parameters per Logical Drive	You can configure stripe size and write (cache) policy individually for each logical drive with a maximum LUN limit of 128.
Optimization Mode and Stripe Size Change	This optimization mode applies to cache optimization, rather than stripe size. You can fine-tune performance by setting the most desirable stripe size for each logical drive to best match the application of that logical drive.
Media Scan	<p>The media scan feature sequentially checks each physical drive in a selected logical drive, block by block, for bad blocks. If a bad block is encountered, the controller rebuilds the data from the bad block onto a good block if one is available on the physical drive. If no good blocks are available on the physical drive, the controller designates the physical drive “Bad,” generates an event message, and if a spare drive is available, will begin rebuilding data from the bad physical drive onto the spare. By default, media scans are run continuously on all active drives and local spares in all logical drives.</p> <p>The media scan feature generates informational event messages for each drive that is part of a logical drive. The informational event messages are also generated each time a controller is reset or a logical drive is created. During the media scan, the green front-panel LEDs blink for every active drive.</p>
SNMP Traps	Similar to SANscape, the controller firmware can send SNMP traps to an SNMP management console, send email messages, and broadcast events to specified servers, as defined in a text file called agent.ini.

Table 1 SANnet II U320 Features (*Continued*)

Feature	Description
Network Protocol Access	For security reasons, you can restrict the network protocols you want to support, which limits access. Protocol access that can be enabled or disabled includes Telnet, HTTP, HTTPS, FTP, SSH, PriAgentAll, SNMP, DHCP, and ping.
Telnet Inactivity Timeout Time	Set this security measure so that any Telnet connection automatically disconnects after the connection has been idle for a configurable period of time. The current setting is displayed with the menu option.
Online Initialization and Online Expansion	If you enable the online initialization feature, you can use a logical drive while the logical drive is being initialized. Similarly, you can enable the online expansion feature and use a logical drive while it is being expanded with another drive. The completion of the initialization or the expansion, however, takes longer than if you had allowed the processes to complete without use of the logical drives.
Logical and Physical Drive Safeguards	There are safeguards against improperly combining physical drives of different types in logical drives with accompanying explanatory error messages.
Fault-Management Safeguards	Automatically switch to write-through cache mode based on: <ul style="list-style-type: none">• Low battery level• AC power loss• Fan failure• Power supply failure• High temperature in CPU/Enclosure• Failure of a redundant controller• Single-controller configuration• Automatic system shutdown based on critical environmental conditions
Ethernet and RS-232 Security	For added security, a password can be supplied for access to the array using a telnet session or tip session. If a password has not been established, pressing the RETURN key allows access to the firmware menu.
CLI Version Information	The <code>sccli about</code> command provides a CLI version 2.1.1 number with a “built” date and time such as 2005.05.18.20.08, which is year 2005, month 05, day 18, hour and minute 20.08. The build letter provides an additional identifier.
CLI Status Commands	The CLI <code>set led</code> and <code>show led-status</code> commands are supported.
SMART Feature Enabled by Default	The Self-Monitoring, Analysis and Reporting Technology (SMART) feature is enabled by default in the firmware, with the Detect and Clone+Replace option turned on.

Note – Important data integrity improvements in the 4.1x release included a substantial performance boost of up to 400% for small-block sequential writes on both RAID1 and RAID5 configurations. Additionally, RAID1 random write I/O performance could be impacted from 10 to 20%; RAID1 and RAID5 small-block sequential reads (typically used in benchmarks only) could be negatively impacted by up to 40%. Subsequent improvements in performance have been made for the 4.14 release.

Bug Fixes

The following sections contain the bugs that were fixed in version 4.14 of SANscape and SANscape CLI. Table 2 shows the fixes to the firmware bugs.

Table 2 Firmware Fixes for 4.14 Release

Bug Number	Description
4394	The Write Through (WT) Trigger feature in the 4.1x firmware will currently switch to WT whenever a battery is not “Fully Charged” instead of a battery failure. This results in a transition to WT whenever a battery is charging generating events and affecting performance. The 4.14 release fixes the bug by triggering WT only upon a battery failure.
4527	The firmware menu can hang if the user attempts to exit the current page by hitting the ESC key multiple times during the “saving NVRAM to disks in progress” pop-up. The 4.14 release fixes the bug by disabling the ESC key during the saving of the NVRAM.

SANscape Fixed Bugs

- The SANscape program currently cannot identify a disk drive by flashing disk drive LEDs on the array.
- The download of SAF-TE fw using SANscape interface says it succeeded even though it didn't.
- SANscape displays incorrect information about the status of the enclosure components. The correct information is displayed by the serial console.
- When array is connected to a host server, 'ssagent start' should not give the **Assertion failed: 0, file ../lnk/throw.cc, line 375** failed message.
- When both SANscape and CLI are sending out-of-band requests to the RAID controller at the same time, the RAID controller may return a response intended for one client to the other client. This mis-route response results in a core dump.
- The XML output report has two tags, **jbodsystem** and **jbobaseview**, out of order. This causes the XML parser to fail and makes the JBOD discovery and instrumentation fail.

- The CLI **map/unmap partition** command syntax is inconsistent between the user's guide and the help file and no error messages are given.
- Using the SANscape CLI to perform a parity check on a logical drive assigned to secondary gets error messages.
- The **shutdown logical-drive** command fails with a controller access error.
- Inconsistent information is displayed in the format of CLI **about** command when compared to previous releases.
- When the CLI **show config -x** command is run for the SCSI JBOD, all component information is missing. The SAF-TE version is 1168.
- The **show peripheral-device-status** command in 4.11E firmware reports "Bad" status to Battery (secondary) for the single controller configuration. It should report a "N/A" for the battery status because the secondary controller slot is empty.

Known Issues

- The 320 SCSI array is limited to 16 logical drives each with the capability of mapping a maximum of 128 LUNs. However the firmware permits customers to map more than 128 LUNs.
- **3922 - Cleared SNMP events re-appear after Primary controller failure.**
SNMP traps are replayed from the surviving controller upon a controller failure even if the event log is cleared prior to the failure.

Release Documentation

These release notes supplement the documents shown in the following table.

Title	Part Number
<i>SANnet II U320 SCSI Array Installation, Operation, and Service Manual</i>	83-00003498
<i>SANnet II U320 SCSI Array Best Practices Manual</i>	83-00003500
<i>SANnet II Family FRU Installation Guide</i>	83-00002708
<i>SANscape User's Guide, v4.0</i>	83-00003431
<i>SANscape Software Installation Guide, v4.0</i>	83-00003430
<i>SANscape Alert 4.0 User's Guide</i>	83-00003432
<i>SANscape CLI 2.0 User's Guide</i>	83-00003433
<i>SANnet II Family Rack Installation Guide for 2U Arrays</i>	83-00002365
<i>SANnet II Family Safety, Regulatory, and Compliance Manual</i>	83-00002666
<i>SANnet II Family RAID Firmware 4.1x User's Guide</i>	83-00003435
<i>SANnet II SNMP User's Guide</i>	83-00004131

You can download the documents listed in the preceding table from the following web site:

<http://www.dothill.com/support/productmanuals/index.htm>

Downloading and Installing Software Applications

Before installing the new firmware, you must upgrade the SANscape Agent, SANscape Console, SANscape Alert, and SANnet II Command-Line Interface (CLI) utility.

Because the communication protocol changes from version to version, you must install the SANscape package on all systems that manage the storage when upgrading.

Caution – If different versions of the agent and console co-exist, SANscape is not able to discover previously configured arrays.

To Download the Updated Software

To download the software from the Dot Hill's web site, perform the following steps.

1. Go to:
<http://www.dothill.com/support/downloads.htm>
2. If not previously registered, register.
 - a. On the registration page, enter applicable data in the required fields, and click Submit.
3. Log in.
 - a. Type your user name and Password in the left column, and click Login.
 - b. On the Terms of Use page, read the license agreement, click Yes next to Accept, and click the Continue button.
4. On the software download page, click the link for your array and operating system.
5. In the dialog box that is displayed, specify a destination directory and save the file.

Installing the Controller Firmware

This upgrade contains multiple firmware updates for the SANnet II U320 SCSI Array controller, including the following:

- Array controller firmware
- SAFTE processor firmware

Determining the Current Controller Firmware Version

To determine your current controller firmware version, use one of the following methods:

- Using the terminal interface, select the **View System Information** firmware menu option and then the **View Firmware Version** menu option.
- In the SANscape program, highlight any component of the desired SANnet II U320 SCSI array; click on the **View Menu** and the **View Controller** command.
- Check FW Rev.

Determining the Current SAF-TE-Device

- To determine your current SAF-TE device, use the **show safte-device** command.

Technical Support

For late-breaking *Release Notes* and all manuals for this product, go to the SANnet II U320 SCSI array section at:

<http://www.dothill.com/support/productmanuals/index.htm>

The following information may be required when contacting Technical Support:

- Dot Hill serial number and part number of hardware
- Version of Dot Hill supplied software
- Host computer platform and operating system version
- Description of the problem and any related error messages

Also supply the following information to facilitate our tracking system and improve our response time:

- Customer name
- Company name
- State and country
- Telephone number with area code
- Internet mail address
- Maintenance contract number, if applicable

Placing a Support Call

After obtaining the above information, a support call may be placed by Internet mail, fax, or telephone.

Phone: 1-877-DOT7X24 (877-368-7924)

URL: <http://www.dothill.com/support/index.htm>

Corporate Headquarters Contacts

United States (California) Corporate Headquarters

Tel: 1-760-931-5500 or 1-800-872-2783

Fax: 1-760-931-5527

E-mail: support@dothill.com

Netherlands: European Headquarters

Dot Hill Systems Corp., B.V. (Netherlands)

Tel: 31 (0) 53 428 4980; Fax: 31 (0) 53 428 0562

E-mail: bv@dothill.com

Japan: Japanese Headquarters

Nihon Dot Hill Systems Corp., Ltd.

Tel: 81-3-3251-1690; Fax: 81-3-3251-1691

E-mail: nihon@dothill.com

For additional sales offices in the U.K., China, Sweden, Germany, France, Israel, and Singapore, refer to:

<http://www.dothill.com/company/offices.htm>