



Release Notes

Date	March 2010
Product and Release No.	Scalar i500® i6
Firmware Version	580G.GS003. (For instructions on updating library firmware, see the <i>Scalar i500 User's Guide</i> .)
Supported Web Browsers (Remote Web Client)	Microsoft® Internet Explorer 6.0 and 7.0 and Mozilla Firefox™ 1.0.6 and later versions

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Purpose

Scalar i500® i6 (580G.GS003) includes several new features and enhancements that extend its capabilities. These release notes describe these new features and enhancements, as well as currently known issues and issues that were resolved for this release of the product. These notes also provide tape drive and auxiliary firmware compatibility information. Visit <http://www.quantum.com> for additional information about Scalar i500 and previous releases.

New Features and Enhancements

Scalar i500® i6 (580G.GS003) firmware includes the following new features and enhancements:

- LTO-5 tape drives — This release adds support for HP LTO-5 Fibre Channel and SAS tape drives. LTO-5 tape drives provide speeds of 8 Gb/s. The library supports the following LTO-5 tape drives:
 - HP LTO-5 Dual Port Fibre Channel Tape Drive
 - HP LTO-5 Single Port SAS Tape Drive
- Storage Networking (SNW) — SNW allows you to configure control path failover and host access control on the 8 Gb/sec HP LTO-5 Fibre Channel tape drives without needing to connect them to an FC I/O blade.
- Scalar Key Manager (SKM) — This release provides a name change from Quantum Key Manager (QKM) and enhancements to the Automatic EKM Path Diagnosis feature.

This release also provides support for user-provided TLS certificates instead of having to use Quantum-provided certificates. It also supports using a VM configuration (using your own server(s) instead of SKM hardware). **Note:** These features are not supported by SKM 1.0. They will be supported by SKM 1.1, which will be available in the summer of 2010.

- Advanced Reporting — This release adds:
 - Media Usage Log, which lists information regarding data written and read on the medium and lists statistics pertaining to soft and hard read and write errors. This allows more predictive failure analysis of media- and drive- related issues. Available in the log viewer (**Reports > Log Viewer**).
 - Ability to automatically e-mail Advanced Reporting logs and reports to recipients on a daily or weekly schedule (**Setup > Notifications > Advanced Reporting > Receiver Addresses**).

Errata in Documentation

- **Control Path Failover** — The *Scalar i500 User's Guide* and online help is missing the following statement: Drives configured for control path failover must be connected to a host via an NPIV-enabled switch.
- The LTO-5 tape drive power consumption and heat output values listed in the *Scalar i500 User's Guide* are incorrect. The correct values are:

Tape Drive	Typical Power Consumption (Watts/hour while writing)	Typical Heat Output (BTU/hour while writing)
UDS3 HP LTO-5 Drive Sled Module (Fibre Channel)	40	135
UDS3 HP LTO-5 Drive Sled Module (SAS)	37	127

- **Automatic EKM Path Diagnostics** — The web client for the i6 release does not provide a means to specify the number of consecutive missed test intervals required before the library generates a RAS ticket informing you that the test could not be performed within the specified intervals. Instead, the library generates a RAS ticket after three consecutive missed test intervals.

General Usage Notes

The following are important items that you may notice that are not covered in the [Known Issues](#) section of this document.

- **Restoring the Library Configuration** — You cannot restore a saved configuration after removing or replacing a control module or expansion module. After removing and/or replacing the module, save the library configuration for future use.
- **Downgrading Library Firmware** — If a library is running firmware version 420G or higher, the following restrictions on downgrading apply:
 - **If your library is Quantum branded**, you can downgrade to firmware version 400G or higher. (There is no lower version of Quantum-branded firmware.)
 - **If your library is ADIC branded and has Fibre-Channel I/O blades installed**, you can downgrade to firmware version 400G or higher. You cannot downgrade to a lower version than 400G.

- **SAS Host Bus Adapter and Host Bus Adapter Drivers**—SAS host bus adapter and drivers (combined) must support SAS standard 1.1 or higher.
- **Library Service Utility**— You must run the Library Service Utility prior to upgrading firmware if you are currently running firmware version 320G.GS004 or 400G.GS006.
- **Firmware Update Tape Functionality**— This feature was removed in version SP4 in order to simplify the firmware update process and prevent errors. This includes creating and erasing firmware update tapes, and updating drive firmware via a firmware update tape.
- **Inventory Operations** — Do not perform user interface operations (for example, working with RAS tickets or creating/modifying/deleting partitions) while the library is performing an inventory.
- **Internet Explorer 7 Security Message**— Internet Explorer version 7 displays an informational message stating that the certificate issued by the library is not from a trusted source. This is normal behavior and does not affect library function. The library issues certificates based on local network data and is not a typical Web site that would be issued a certificate by a trusted source for public access via SSL. Accept the warning and continue.
- **Kerberos Limitation Issue** — When setting up the library to use Kerberos remote authentication, an error is generated if you try to use the IPv6 address for the **KDC (AD Server)** field. Instead of using the IPv6 address, use the fully qualified domain name (FQDN).
- **HP DataProtector 6 WORM Media Support** — The only WORM media supported by HP DataProtector 6 is HP-manufactured WORM media.

Compatibility Matrix

This section provides information on firmware and software compatibility.

Firmware Compatibility

The following table provides information about library and tape drive firmware compatibility with Scalar i500® i6 (580G.GS003). This information is current as of the publication date of these release notes. For the most recent firmware versions, check www.quantum.com.

Note: You must run the Library Service Utility prior to upgrading firmware if you are currently running firmware version 320G.GS004 or 400G.GS006.

Component	Firmware Version
Library Firmware	580G.GS003
Drive Types	
IBM LTO-2 (Fibre)	93T0
IBM LTO-2 (SCSI)	93T0
IBM LTO-3 (Fibre)	93G6
IBM LTO-3 (SCSI)	93G6
IBM LTO-4 (Fibre)	97FB*
IBM LTO-4 (SCSI)	97F0*
IBM LTO-4 (SAS)	97F0*
HP LTO-4 (Fibre)	H57Z
HP LTO-4 (SAS)	A54Z
HP LTO-5 FC	I24Z
HP LTO-5 SAS	X23Z

* Due to security features, you cannot downgrade the IBM LTO-4 drive with tape drive firmware version 82FB or later to previous code levels without following specific instructions. If you must downgrade, contact Technical Support for assistance.

Software Compatibility

To view a list of which backup software packages have been tested for interoperability with the Scalar i500, see the Quantum Software Compatibility Guide at <http://www.quantum.com/swcompguide.aspx>.

Resolved Issues

This release of Scalar i500® i6 (580G.GS003) firmware resolved the following issues.

Change Request Number	Service Request Number	Description	Solution
16528		When upgrading a library that contains HP drives with tapes loaded in them, you may receive RAS ticket T022 (sled lost communication with drive). The LED of the drive sled containing the loaded HP drive is illuminated, and the library reports the drive is present, but the loaded HP drive is not available.	Fixed.
16658		When cleaning an LTO-4 tape drive using application-managed cleaning (not library-managed cleaning), cleaning cartridges that have "L1" on the barcode label are not mounted into the tape drive.	Cleaning cartridges with "L1" on the barcode label will be usable as long as the barcode prefix is CLN or CLNU .
23211	SR840390, 1562	The Web server accepts low-grade encryption (56-bit) and the minimum acceptable key size is 128 bits. If a user's browser negotiates such a weak protocol, the whole communication can potentially be compromised by a cryptanalytic attack. Keys less than 128-bits are not approved by the ISLC.	Fixed (modified SSL configuration to exclude low-strength ciphers).
20583	SR877818	The syslocation and syscontact fields are marked as read-write in the MIB but customers are unable to change these values.	These fields are now read-writable.
22711	SR957330	RAS ticket T094 - Drive Bay Open is reported for a tape drive that is present in the drive bay but not completely electrically connected.	Fixed.
23258	SR992514	PHP security information is visible.	The security information is no longer visible.
24805	SR1033152	The operator panel resets when performing manual tape assignment via the operator panel.	Fixed.

Change Request Number	Service Request Number	Description	Solution
24887	SR1032076	Need to set RAS tickets T049 and T050 to Urgent.	Fixed.
25175	SR1042812	Bad logging by spld.	Fixed.
25474	SR840390	Security issues with Apache.	Fixed. Replaced Apache with lighttpd and PHP 4.4.9.
25579	SR1058578	Issues with the extended MIB-II support	Fixed.
25661	SR1058578	SNMP trap and MIB walk library IP is incorrect.	Fixed.
25667	SR1023342	Bad learned offsets caused calibration issue on drive replacement.	Fixed.
25798	SR1043506	Leaking file descriptors during EKM transaction failures.	Fixed.
25882	SR1065604	Uninitialized data issue on the LCB caused code to use up all the file descriptors.	Fixed.
25939	SR1069630 1598	The code allows IBM LTO-3 4 Gb/s and 2 Gb/s tape drives to be in the same partition but generates RAS ticket T135 when attempting to replace a 2 Gb/s drive with a 4 Gb/s drive.	Fixed.

Known Issues

This release of Scalar i500® i6 (580G.GS003) firmware has the following known issues.

Change Request Number	Service Request Number	Description	Workaround
19299		If you set the time and the time zone at the same time, the actual time reported by the library may be incorrect (it may be an hour off from the actual time).	Reset the time again (without resetting the time zone).
19390	1424	The log-in screen allows you to log in before the library finishes initializing after a firmware upgrade or powercycle.	This may occur intermittently. If it does, you can log in but you will only be able to view RAS tickets. You will not be able to access any other library functions.
20618		Tapes that were assigned to a partition and were in the I/E station during a firmware upgrade lost their partition assignment.	Make sure the I/E station is empty before performing a library firmware upgrade. If this happens, remove the tapes from the I/E station, place them back into the I/E station, and reassign.
20631	881498	Not all I/E station slots are available to all partitions. Tapes that are in these slots and assigned to a partition are seen by the library but may or may not be seen by the partition.	Make sure the I/E station is empty before performing a library firmware upgrade. To recover from this error, empty the I/E stations, change the number of I/E stations, then reset the number of I/E stations back to the number you want.
20982		The web browser may intermittently fail to build, resulting in no menu options. Alternatively, some elements on a few of the pages may obscure some menu items when viewing in Internet Explorer.	Refresh the browser.
22766		The library may log you off after you change the time or time zone.	Log back in.
22826		When trying to log in before the library has initialized, you may get the error message, "System has too many login sessions. No more logins allowed."	Wait until the library finishes initializing, then log in.

Change Request Number	Service Request Number	Description	Workaround
22967		<p>When upgrading a library with a Model 2 robot to firmware version 570G, the library may generate a RAS ticket T124 (Robotics Hardware Error - RCB).</p>	<p>Explanation: The problem has been fixed in the code for the 570G release, but because the problem resides in previous code versions, you may encounter this issue when upgrading from a previous version to this version.</p> <p>Workaround: Leave the library powered on for 20 minutes after the ticket was posted to allow the picker to recover. If you open a library door or power cycle the library during this time, the picker may become inoperable and require replacement.</p>
23407		<p>The library presents misleading I/E station failure messages in the following two instances:</p> <ul style="list-style-type: none"> • Using the web client, select a tape to export. Open the I/E station, or open and close the I/E station and click Apply before the rescan completes. The following failure message displays: "The Destination slot is Full." • Insert a cartridge into the I/E station and assign it to a partition. On the web client, go to the Import Media page and select the media to import. Open the I/E station and then click on the Apply button. The following failure message displays: "Command not completed. The library is Not Ready." <p>In both these cases, the problem is that the I/E slot is inaccessible, not the error message that is displayed.</p>	<p>When performing export/import media operations, do not interfere with the operation by opening and closing the I/E station.</p>
23786		<p>Diagnostic tests run on HP tape drives are invalid.</p>	<p>Do not run diagnostic tests on HP tape drives. These tests only apply to IBM tape drives.</p>

Change Request Number	Service Request Number	Description	Workaround
25651		If a tape drive firmware update fails when using a firmware update method other than autoleveling, the library may incorrectly generate RAS ticket T112 - Invalid Tape Drive Firmware Image in addition to correctly generating RAS ticket T109 - Tape Drive Firmware Update Failure .	Ignore T112, and follow T109.
25964	SR1070246	If a library is upgraded and fails to initialize upon reboot, the snapshot name will be incorrect.	Use the snapshot as-is. Snapshot information is correct other than the name. Correct the hardware issue that is causing library not to initialize.
27092		Occasionally the FC I/O blade serial number is reported incorrectly on the Tools - I/O Blade Information screen (Tools > I/O Blade Info).	If the serial number ends with "uADIC" ignore the "uADIC". The rest of the serial number is correct.
27320		The library user interface lacks a means to initiate a failover/failback operation to switch the current library control path back to the previously failing drive.	Toggle the control path failover settings as follows: 1) From the Web client, navigate to Setup > Control Path . 2) Set the current control path drive as the failover drive, and set the current failover drive as the control path drive. 3) Click Apply . 4) Switch the settings back to how they were originally. 5) Click Apply .
27679	SR1115098	The operator panel becomes unresponsive.	Reboot the library.
27906		The library user interface does not recognize LTO-5 WORM media barcodes ending in "LV". The library user interface allows imports and exports, but not move, load, or unload commands.	The ISV application recognizes these barcodes. Use the ISV to move, load, and unload these tape cartridges.

Firmware Versions

The table below lists firmware code for the last several releases.

Release	Scalar i500 Library Firmware	Board Support Package (BSP)	UDS Firmware	Fibre-Channel I/O Blade Firmware
i6	580G.GS003	6.80	650Q.GU014 with 430A.GU001 boot	V05100201
i5.1	571G.GS002	6.73	630Q.GU008 with 430A.GU001 boot	V05090501
i5	570G.GS025	6.73	630Q.GU008 with 430A.GU001 boot	V05090501
i4	520G.GS003	6.66	610Q.GU005 with 430A.GU001 boot	V05080801
i3.1	500G.GS004	6.53	591Q.GU004 with 430A.GU001 boot	V05080201
i3	500G.GS002	6.52	590Q.GU001 with 430A.GU001 boot	V05080201
SP4.2	420G.GS005	6.42	570Q.GU002 with 430A.GU001 boot	V05071101
	420G.GS006	6.42	570Q.GU002 with 430A.GU001 boot	V05071102
SP4	410G.GS007	6.39	550A.GU003 with 430A.GU001 boot	V05070901
i2	400G.GS010	6.32	530A.GU004 with 430A.GU001 boot	V05070504

Documentation

Documentation pertaining to this product is located at:

<http://www.quantum.com/ServiceandSupport/SoftwareandDocumentationDownloads/SI500/Index.aspx#Documentation>

Document Number	Document Title
6-01733-xx	<i>Scalar i500 Site Planning Guide</i>
6-01210-xx	<i>Scalar i500 User's Guide</i>
6-01811-xx	<i>Scalar i500 User's Guide Addendum</i>
6-01741-xx	<i>Scalar i500 Getting Started Guide</i>
6-01385-xx	<i>Scalar i500 Unpacking Instructions (5U)</i>
6-01524-xx	<i>Scalar i500 Unpacking Instructions (9U)</i>
6-01525-xx	<i>Scalar i500 Unpacking Instructions (14U)</i>
6-00423-xx	<i>Quantum Intelligent Libraries SCSI Reference Guide</i>
6-01370-xx	<i>Scalar i500 Basic SNMP Reference Guide</i>
6-01317-xx	<i>Quantum Intelligent Libraries SMI-S Reference Guide</i>
6-00676-xx	<i>Quantum SNC Firmware 4 and 5 User's Guide</i>
6-01739-xx	<i>Scalar i500 Library Firmware Upgrade Instructions</i>
6-01740-xx	<i>Scalar i500 Tape Drive Firmware Upgrade Instructions</i>
6-01844-xx	<i>Library Service Utility Installation Instructions</i>
6-00618-xx	<i>System, Safety, and Regulatory Information Guide</i>
6-66914-xx	<i>Scalar i500 Generic CRU Instruction Sheet</i>

To order a copy of the source code covered by the Open Source Licenses, contact the Quantum Technical Assistance Center. Refer to [Contacting Quantum](#) below.

The following documents were updated for this release:

- *Scalar i500 Site Planning Guide*
- *Scalar i500 User's Guide*
- *Scalar i500 Getting Started Guide*
- *Quantum Intelligent Libraries SCSI Reference Guide*
- *Scalar i500 Basic SNMP Reference Guide*
- *Quantum Intelligent Libraries SMI-S Reference Guide*

- *Scalar i500 Generic CRU Instruction Sheet*
- *Scalar i500 Library Firmware Upgrade Instructions*
- *Scalar i500 Tape Drive Firmware Upgrade Instructions*

Contacting Quantum

More information about this product is available on the Service and Support website at www.quantum.com/support. The Service and Support Website contains a collection of information, including answers to frequently asked questions (FAQs). You can also access software, firmware, and drivers through this site.

For further assistance, or if training is desired, contact Quantum:

North America and Mexico	1-800-827-3822
Europe, Middle East, and Africa	00800-9999-3822
Worldwide Support	http://www.quantum.com/ServiceandSupport/Contacts/worldwide/Index.aspx
To open a Service Request:	www.quantum.com/osr
Quantum Corporation	www.quantum.com