



# Release Notes

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<b>Release</b>	Scalar i500 Library i9.1 (710G.GS007)
<b>Supported Web Browsers (Remote Web Client)</b>	<ul style="list-style-type: none"><li>• Microsoft® Internet Explorer 10 and above.</li><li>• Mozilla Firefox™ 16 and later versions</li></ul>
<b>Date</b>	February 2018

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## Purpose of this Release

Scalar i500 Library i9.1 (710G.GS007) is a maintenance release that adds the changes described below.

- Support was added for the M8 media type in LTO-7 drives.
  - The M8 media type is used with LTO-8 tape drives and LTO-7 media. When LTO-7 media is M8 formatted by an LTO-8 tape drive, the data capacity of the LTO-7 media is 9TB native, compared to 6TB for a standard formatted LTO-7 tape.
  - After the LTO-7 media has been re-labeled with an M8 barcode, the system recognizes M8 media moves from either host or library and configures the drive correctly so that any write/format from BOT will cause the tape to be up-formatted, based on recommendations from IBM on how a library should handle M8 media.
  - When the system recognizes M8 media in an LTO-7 drive as LTO-8 media, the LTO-8 media type rules are applied.
  - The correct capacity values are generated on M8 media based on whether it has been up-formatted or is still in the LTO7 format.

**i Note:** The LTO-7 media to be M8 formatted must be unused, and after M8 formatting the media can no longer be used in an LTO-7 drive.

- M8 support for EDLM was added.
- OpenSSL has been upgraded to OpenSSL 1.0.2m.

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## General Usage Notes

The following are important items not covered in the Known Issues section of this document.

- **Internet Browser "Back" Button** — The library Web client does not support using the Internet browser "back" buttons. Instead, use the **Back** and **Cancel** buttons provided in the user interface.
- **Internet Browser Menus** — The Web browser may intermittently fail to display menus properly. Alternatively, some elements on a few of the pages may obscure some menu items when viewing in Internet Explorer.
- **Library Configuration Changes Upon Downgrade** — After a firmware downgrade, library configuration (partition names, slot counts, I/E station slot count, etc.) may change. With each successive firmware release, new features are supported and represented in the current configuration file that may not be backward-compatible to previous releases. A necessary part of firmware downgrade is to automatically reset the unit to the default configuration. The library must be reconfigured to the user-defined settings when the firmware downgrade is complete.
- **Upgrading Library Firmware** — When planning to upgrade library firmware, upgrade drive firmware first before upgrading the library firmware. If you are planning to downgrade the library firmware, downgrade the drive firmware first before downgrading the library firmware.
- **SNMP MIB** — SNMP MIB walks on large library configurations (like a 41U) may time out at 5 seconds, but will pass at 10 seconds. When performing an SNMP MIB walk, make sure that your utility retrieves MIB information using a timeout of at least 15 seconds.
- **EDLM and StorNext Partitions (StorNext)** — Library partitions configured for EDLM and the StorNext Application Programming Interface (SNAPI) plug-in need to configure the partition Media Barcode Format to "Standard" (report media barcode label without the media identifier) so that any library-initiated media copy operations can succeed.
- **Changing the time or time zone by more than 2 hours** — If you change the time or time zone on the library by more than 2 hours from its current setting, it is recommended that you reboot the library. There are timers in the library firmware that are not updated by the time change and can cause unexpected behavior if large time changes occur without restarting the library.
- **Planning a Drive Firmware Upgrade** — When updating IBM LTO-6 or later tape drive firmware, an Ethernet connection is recommended. If an Ethernet connection is not used, the update process can take up to 2 hours to complete. Do not stop or interrupt the firmware upgrade process; plan your firmware upgrade accordingly.
- **Cookie Placement for Login** — The Web client places a cookie on the user's computer to provide the last user's credentials upon login. The cookie only collects the user's credentials to facilitate login, and does not collect any other user data.
- **Pop-Up Blocker and/or Ad Block Plus Add-On** — The library Web client displays Online Help topics in separate windows and needs to have the pop-up blocker disabled, or have an exception set, to allow such pop-ups to display properly. Additionally, various functionality displays confirmation windows which confirm or cancel an operation, and Ad Block Plus add-ons which suppress the display of advertisement can interfere and suppress such message windows. Disable Pop-Up Blockers and Ad Block Plus for proper Web client operation.
- **Library Firmware, Drive Firmware, Plugins, and Host Drivers** — Access the product support web site at [www.quantum.com](http://www.quantum.com) to download the latest released library and tape drive firmware as well as plugin and host device driver software.
- **Q-EKM Support with LTO-7 and LTO-8 Drives** — LTO-7 and LTO-8 drives are supported with the IBM TKLM/SKLM key server solution, but not supported with the Quantum Q-EKM Library Managed Encryption solution.

- **IBM and HP EDLM Drives and Media Classification** — Depending on the drive vendor (IBM or HP), an EDLM drive might differ when classifying a tape cartridge. For example, an EDLM drive from one vendor might identify the tape as failed, but an EDLM drive from the other vendor might identify the tape as still good.

## Security Scanners

Tenable Network Security® Nessus® security scanner was run against the library firmware and found no critical issues.

## Compatibility and Support

This section provides information on firmware and software compatibility.

## Encryption Key Management Tape Drive and Media Support

The library supports the following encryption systems:

Encryption System	Supported Tape Drives	Supported Media
Quantum Encryption Key Manager (Q-EKM)	IBM LTO-4 FC	LTO-4, LTO-5, and LTO-6 tape cartridges only
	IBM LTO-4 SAS	
	IBM LTO-5 FC	
	IBM LTO-5 SAS	
	IBM LTO-6 FC	
	IBM LTO-6 SAS	
	You must be running Q-EKM version 2.0 (or higher) to support IBM LTO-5 or LTO-6 tape drives.	

\* Support of IBM LTO-7 FC and IBM LTO-8 FC available with Q-EKM key migration to SKM.

Encryption System	Supported Tape Drives	Supported Media
Tivoli/Secure Key Lifecycle Manager (TKLM/SKLM)	IBM LTO-4 FC IBM LTO-4 SAS IBM LTO-5 FC IBM LTO-5 SAS IBM LTO-6 FC IBM LTO-6 SAS IBM LTO-7 FC IBM LTO-8 FC Encryption key management is supported via the IBM proprietary protocol (IPP) and not the KMIP communication protocol.	LTO-4, LTO-5, LTO-6, LTO-7 and LTO-8 tape cartridges only
Scalar Key Manager (SKM)	HP LTO-4 FC HP LTO-4 SAS HP LTO-5 FC HP LTO-5 SAS HP LTO-6 FC HP LTO-6 SAS IBM LTO-5 FC IBM LTO-5 SAS IBM LTO-6 FC IBM LTO-6 SAS IBM LTO-7 FC IBM LTO-8 FC	LTO-4, LTO-5, LTO-6, LTO-7 and LTO-8 tape cartridges only

Encryption System	Supported Tape Drives	Supported Media
KMIP-compliant key managers*	HP LTO-4 FC	LTO-4, LTO-5, LTO-6, LTO-7 and LTO-8 tape cartridges only
	HP LTO-4 SAS	
	HP LTO-5 FC	
	HP LTO-5 SAS	
	HP LTO-6 FC	
	HP LTO-6 SAS	
	IBM LTO-5 FC	
	IBM LTO-5 SAS	
	IBM LTO-6 FC	
	IBM LTO-6 SAS	
	IBM LTO-7 FC	
	IBM LTO-8 FC	

\* The Key Management Interoperability Protocol (KMIP®) is a specification developed by OASIS®. Its function is to standardize communication between enterprise key management systems and encryption systems. The Scalar i500 library provides a KMIP version 1.2 compliant encryption solution.

## Firmware Compatibility

The following table provides information about tape drive firmware compatibility with Scalar i500 Library i9.1 (710G.GS007). This information is current as of the publication date of these release notes. For the most recent firmware versions, check [www.quantum.com](http://www.quantum.com). For the most up to date information on Quantum Global Services, please visit: [www.quantum.com/support](http://www.quantum.com/support).

Drive Type	Firmware Version
HP LTO-4 FC	H64Z
HP LTO-4 SAS	A65Z
HP LTO-5 FC	I6RZ
HP LTO-5 SAS	X6KZ
HP LTO-6 FC	J5KZ
HP LTO-6 SAS	O5QZ
IBM LTO-3 FC	93GM

Drive Type	Firmware Version
IBM LTO-3 SCSI	93GM
IBM LTO-4 FC	C7QH*
IBM LTO-4 SAS	C7QH*
IBM LTO-4 SCSI	C7QH*
IBM LTO-5 FC	H970
IBM LTO-5 SAS	H970
IBM LTO-6 FC	H990
IBM LTO-6 SAS	H990
IBM LTO-7 FC	HB82
IBM LTO-8 FC	HB82

\* Due to security features, you cannot downgrade the IBM LTO-4 drive firmware to versions prior to 82FB without following specific instructions. If you must downgrade, contact Quantum Support for assistance.

## Fibre Channel Blade Compatibility

Attaching LTO-7 or LTO-8 fibre channel drives to Fibre Channel Blades (FCBs) is not supported.

## Software Compatibility

To view a list of backup software packages which have been tested for interoperability with the Scalar i500 Library i9.1 (710G.GS007), see the Quantum Software Compatibility Guide at <http://www.quantum.com/swcompguide.aspx>.

## Resolved Issues

This release of Scalar i500 Library i9.1 (710G.GS007) firmware does not include any resolved issues.

## Known Issues

This release of Scalar i500 Library i9.1 (710G.GS007), firmware has the following known issues.

Change Request Number	Service Request Number	Description	Workaround
25651		If a tape drive firmware update fails when using a firmware update method other than auto leveling, the library may incorrectly generate RAS ticket <b>T112 - Invalid Tape Drive Firmware Image</b> in addition to correctly generating RAS ticket <b>T109 - Tape Drive Firmware Update Failure</b> .	Ignore <b>T112</b> , and follow the resolution steps for <b>T109</b> .
25964	SR1070246	If a library is upgraded and fails to initialize upon reboot, the snapshot name will be incorrect.	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 - FC I/O Blade Information screen ( <b>Tools &gt; FC I/O Blade Info</b> ).	If the serial number ends with invalid characters, ignore the invalid characters. The rest of the serial number is correct.
28047		Cleaning counts are reported inconsistently when cleaning tape is used in tape drives from multiple vendors.	The problem only occurs if you use the same cleaning tape in both IBM and HP tape drives because each vendor reports cleaning count differently.



Change Request Number	Service Request Number	Description	Workaround
29140		E-mailing Advanced Reports via the Web client fails to complete. This only happens when you first “save” the report and then immediately try to “e-mail” the report using the <b>Save</b> and <b>E-mail</b> buttons in the report viewer.	There are two workarounds. Either: <ul style="list-style-type: none"> <li>• E-mail the report before saving it. or</li> <li>• Once you save the report, leave the report viewer page and go to another page in the Web client. Return to the report viewer page and then click the <b>E-mail</b> button to e-mail the report.</li> </ul>
29297	SR1148738	Picker issues cause the operator panel to remain in the “working” state.	Log on to the Web client, capture a snapshot, and contact Quantum Support for assistance.
31724		Cannot change drive topology setting after disabling data path failover.	Refresh the web browser page before attempting to change topology.
32239		EKM Path Diagnostics fails when you change the DNS host name of a primary or secondary EKM server ( <b>Setup &gt; Encryption &gt; System Configuration</b> ). This occurs when changing the DNS host name to another host name, or when changing an IP address to a DNS host name.	After you change the host name, restart the library.
32278		If both FC I/O blades and Ethernet Expansion blades are in the library, when you perform an operation that reboots all installed FC I/O blades, it will also reset all installed Ethernet Expansion blades. The EE blade reset may generate a RAS ticket <b>T177 - EEB lost Ethernet/CAN connectivity</b> .	Close the EEB RAS ticket. Verify that no other related RAS tickets were generated.

Change Request Number	Service Request Number	Description	Workaround
32352		Changing the library's internal IP address in the midst of a host-initiated backup/restore operation may cause the backup to fail.	Do not change the library's internal IP address during backup/restore operations. It is recommended practice to reboot the library after changing the internal IP address. Additionally, you may receive RAS tickets for loss of drive communication if you change the internal IP address. If this occurs, resolve any related RAS tickets, and then reboot the library.
37926		After restoring to a previous release version and then upgrading to i8, the following RAS messages were generated: <ul style="list-style-type: none"> <li>• <b>T084 - Missing Cleaning Tape</b></li> <li>• <b>T085 - Unknown Cartridge In Cleaning Slot</b></li> </ul>	Export all cleaning tapes and re-import them back into configured cleaning slots.
41384		On library firmware upgrades it is possible to see ticket <b>T074 – Drive Sled Auto-Leveling Failure</b> .	Close RAS ticket <b>T074 – Drive Sled Auto-Leveling Failure</b> . Power cycle the library.
40715		After upgrading the library from version i8.1.1 to i8.2, the library may display an error when accessing pages from the Web client menu.	Reboot the library.
50737		Using an invalid cleaning tape for Automatic Cleaning does not generate errors on the library.	Verify that only valid cleaning tapes are used for cleaning operations.
59625		<b>Tools &gt; EDLM Test Selection</b> page briefly displays "No Media Found" when "waiting for..." message appears.	Disregard message.

Change Request Number	Service Request Number	Description	Workaround
59816		After viewing one RAS Ticket Resolve window, a dialog box appears that states "A RAS Ticket Resolve is already open" for all subsequent RAS Ticket Resolve windows.	Do not close a RAS Ticket Resolve window by clicking the "x" button in the console. Use the <b>Close Ticket</b> button.
59821		Cannot retrieve HP LTO-5 Drive Ethernet Expansion Blade (EEB) drive log.	Use HP Library & Tape Tools for a host Fibre Channel/SAS interface to pull the drive logs.
59824		After replacing a non Enterprise Data Lifecycle Management (EDLM) drive into an EDLM drive slot, Library Configuration shows the drive status is online and EDLM = Yes.	Power cycle the library to get the correct status.
59919		i500 system does not detect if Ethernet Expansion Blade (EEB) connected to an Enterprise Data Lifecycle Management (EDLM) drive is also Fibre Channel or SAS connected to the Host.	If the Host has identified a drive that is unknown or not configurable for use, verify that the drive is EDLM and disconnect the Fibre Channel or SAS cables.
60160		Unknown error occurs when running diagnostics under <b>Tools - EDLM StorNext Configuration Diagnostics</b> .	Check the StorNext configuration. The library cannot communicate with StorNext.
66509		In an Advanced Path Failover configuration, a RAS ticket was not generated as expected after both ports to the control path drive failed.	

# 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
i9.1	710G.GS007	9.28	820Q.GU017 with 430A.GU001 boot	5.12.01.33
i9	700G.GS013	9.23	817Q.GU055 with 430A.GU001 boot	5.12.01.33
i8.6	690G.GS002	9.04	816Q.GU004 with 430A.GU001 boot	5.12.01.33
i8.5.1	681G.GS002	8.90	810Q.GU018 with 430A.GU001 boot	5.12.01.33
i8.5	680G.GS001	8.90	810Q.GU018 with 430A.GU001 boot	5.12.01.33
i8.4.1	671G.GS001	8.76	800Q.GU056 with 430A.GU001 boot	5.12.01.33
i8.4	670G.GS003	8.76	800Q.GU056 with 430A.GU001 boot	5.12.01.33
i8.3	660G.GS007	8.64	777Q.GU002 with 430A.GU001 boot	5.12.01.33
i8.2.3	648G.GS005	8.4	777Q.GU002 with 430A.GU001 boot	5.12.01.33
i8.2.2.1	646G.GS002	8.37	776Q.GU001 with 430A.GU001 boot	5.12.01.33
i8.2.1.1	643G.GS002	8.32	745Q.GU007 with 430A.GU001 boot	5.12.01.33
i8.2	640G.GS007	8.32	745Q.GU007 with 430A.GU001 boot	5.12.01.33
i8.1.2	636G.GS003	8.14	740Q.GU033 with 430A.GU001 boot	5.12.01.33
i8.1.1	635G.GS005	8.13	740Q.GU033 with 430A.GU001 boot	5.12.01.33
i8	630G.GS003	8.09	740Q.GU033 with 430A.GU001 boot	5.12.01.33
i7.3	620G.GS010	7.90	723Q.GU024 with 430A.GU001 boot	5.12.01.08
i7.2	607G.GS004	7.66	713Q.GU004 with 430A.GU001 boot	5.10.08.07
i7	600G.GS004	7.42	710Q.GU012 with 430A.GU001 boot	5.10.08.07
i6.1	585G.GS003	6.86	655Q.GU005 with 430A.GU001 boot	5.10.02.01
i6	580G.GS003	6.80	650Q.GU014 with 430A.GU001 boot	5.10.02.01
i5.1	571G.GS002	6.73	630Q.GU008 with 430A.GU001 boot	5.09.05.01

Release	Scalar i500 Library Firmware	Board Support Package (BSP)	UDS Firmware	Fibre-Channel I/O Blade Firmware
i5	570G.GS025	6.73	630Q.GU008 with 430A.GU001 boot	5.09.05.01
i4	520G.GS003	6.66	610Q.GU005 with 430A.GU001 boot	5.08.08.01
i3.1	500G.GS004	6.53	591Q.GU004 with 430A.GU001 boot	5.08.02.01
i3	500G.GS002	6.52	590Q.GU001 with 430A.GU001 boot	5.08.02.01
SP4.2	420G.GS005	6.42	570Q.GU002 with 430A.GU001 boot	5.07.11.01
	420G.GS006	6.42	570Q.GU002 with 430A.GU001 boot	5.07.11.02
SP4	410G.GS007	6.39	550A.GU003 with 430A.GU001 boot	5.07.09.01
i2	400G.GS010	6.32	530A.GU004 with 430A.GU001 boot	5.07.05.04

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## 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	Scalar i500 Site Planning Guide
6-01210-xx	Scalar i500 User's Guide
6-01741-xx	Scalar i500 Getting Started Guide
6-67926-xx	Scalar i500 Repackaging Instructions
6-01370-xx	Scalar i500 Basic SNMP Reference Guide
6-00423-xx	Quantum Intelligent Libraries SCSI Reference Guide
6-01317-xx	Quantum Intelligent Libraries SMI-S Reference Guide
6-01739-xx	Scalar i500 Library Firmware Upgrade Instructions
6-01740-xx	Scalar i500 Tape Drive Firmware Upgrade Instructions

## Documentation

Document Number	Document Title
6-01844-xx	Library Service Utility Installation Instructions
6-00618-xx	System, Safety, and Regulatory Information Guide

Documentation pertaining to the StorNext AEL500 product is located at:

<http://www.quantum.com/ServiceandSupport/SoftwareandDocumentationDownloads/AEL500/Index.aspx>

Document Number	Document Title
6-67853-xx	StorNext AEL500 Mini Essentials Guide

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# Contacting Quantum

More information about this product is available on the Service and Support website at <http://www.quantum.com/ServiceandSupport/Index.aspx>. 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 the Quantum Customer Support Center:

Region	Support Contact
North America	1-800-284-5101 (toll free) +1-720-249-5700
EMEA	+800-7826-8888 (toll free) +49 6131 324 185
Asia Pacific	+800-7826-8887 (toll free) +603-7953-3010

For worldwide support:

<http://www.quantum.com/serviceandsupport/get-help/index.aspx#contact-support>

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