



XstreamCORE FC 7500 Firmware Release v3.00

1. General Release Information

These product release notes define the features, known issues and release details that apply to the XstreamCORE FC 7500 Storage Controller version 3.00 firmware that was released on 10/18/2018.

2. Introduction

- **Version 3.00 (Released 10/18/2018)**

- **Release details**

- Synchronized all Fibre Channel XstreamCORE models to version 3.00 firmware

- **Release Upgrade Notice**

- This release contains Fibre Channel firmware updates.
- To apply the updates, follow the following steps:
 1. Stop all I/O
 2. Load the firmware zip bundle file (7500: X7500300.zbd)
 3. Restart the controller
 4. Repeat steps 2 and 3 (one time only)
 5. Confirm via the CLI Info command that the correct FC firmware has been applied (7500: 10.6.103.14)

- **New and updated features**

- Improved overlapped command and task management handling in tape environments.
- Improved the logging of critical errors.
- Shortened drive discovery time for systems with a large number of drives.
- Improved SNMP behavior in large drive configurations.
- Improved the Transport Layer Retry (TLR) error handling feature.

- **Version 2.25 (Released 6/7/18)**

- **Release details**

- Added hardware accelerated performance for SAS tape devices
- Added enhanced diagnostic capabilities
- Customer incident fixes
- General code updates & improvements

- **Release Upgrade Notice**

- This release contains Fibre Channel firmware updates.
- To apply the updates, follow the following steps:

1. Stop all I/O
 2. Load the firmware zip bundle file (7500: XC750225.zbd)
 3. Restart the controller
 4. Repeat steps 2 and 3 (one time only)
 5. Confirm via the CLI Info command that the correct FC firmware has been applied (7500: 10.6.103.14)
- **New and updated features**
 - I/O to tape drives is now accelerated, providing saturation of LTO tape devices
 - The SASEnclosures CLI command has been modified to display a full SAS topology map of all enclosure-based devices attached to the XstreamCORE FC
 - The SASTargets display has been reformatted to include drive capacity and more accurate drive identifiers (target and lun IDs)
 - The SASConnectorInfo CLI display has been reformatted for ease of viewing
 - The Host Group Mapping feature GUI display now offers more detailed drive information, and includes a more user-friendly display with better user dialog box interaction for creating host groups
 - Nexenta customer issues were fixed (see IRs: 16310, 18468, 18324, 18276).
 - A CLI event log was added to track user command execution (to assist with troubleshooting)
 - Event log improvements:
 - The number of event log messages has been reduced.
 - Event log messages have been made more consistent in content presentation.
 - Many event log messages have been reformatted/condensed to assist with troubleshooting.
 - All check conditions in both accelerated and un-accelerated I/O paths are now being logged.
 - **Version 2.20 (Released 10/19/17)**
 - **Release details**
 - *This release adds new improvements and fixes made during XstreamCORE product line development and testing. Increased stability and clean-up of incidents reported in the field are primary benefits of this release.*
 - **New and updated features**
 - *Added support for tape and optical (DVD) passthrough devices*
 - *Added legacy UVDA software SpeedWrite support for tape devices*
 - *Updated BAU 26 to BAU 27*
 - *Fixed ACB command count issue in the HCE for data/status phases of read completions with data and error status*
 - *Added disable error data response option to the TCE, allowing it to send error status with data directly to the BCE*
 - **Incident Fixes**
 - *Fixed command/SAS activity LED behavior in valid SAS dual-path scenarios (IR17354)*
 - *Fixed SNMPTrapAddress feature in GUI to allow only IPv4 addresses (IR17412)*
 - *Fixed CLI processing for displaying immediate command help text (UVDA IR17898) (IR17747)*
 - *Fixed intermittent ability to send CLI commands through KITTYY telnet client (UVDA IR17862) (IR17856)*

- Fixed robustness of in-band flash updates (UVDA IR17900) (IR17879)
 - Fixed admin password help text link on the GUI controller configuration page (IR17903)
 - Fixed SAS PHY link information display on GUI status page (IR17915)
 - Fixed username length validation during GUI login (IR17932)
 - Fixed location of tape device creation (IR17970)
 - Fixed task management processing with SpeedWrite enabled (IR17994)
- **Version 2.10 (Released 5/4/17)**
 - **Release details**
 - *This release adds new improvements and fixes made during XstreamCORE product line development and testing. Increased stability and clean-up of incidents reported in the field are primary benefits of this release.*
 - **New and updated features**
 - *Added ECC error synchronization*
 - *Added capability to see failure addresses during eCORE Control Engine timeout*
 - *Added true random number generator support*
 - *Added ability to pull-up board ID and NAND flash info*
 - *Updated SAS and Fibre Channel driver layers to latest available version*
 - *xCORE Acceleration Engine improvements*
 - *Added support for forcing FC and SAS chips into reset when ECC errors are detected*
 - *Improved DRAM handling and testing capabilities*
 - *Increased available command resources for xCORE*
 - *Reduced unnecessary resets of XstreamCORE board components*
 - *Enhanced performance monitoring features*
 - *Enhanced command handling*
 - *Improved PCIe read access handling and fixed PCIe streaming interface*
 - *Improved diagnostic for maximum delay tracking for PCIe read/write accesses.*
 - *Improved Fibre Channel routing*
 - *Fixed xCORE Acceleration Timeout errors*
 - *eCORE Control Engine improvements*
 - *Fixed temperature sensor issue*
 - **Incident Fixes**
 - *Added user configurable SNTP server addresses (IR14305)*
 - *Fixed the Stop Identify GUI button from acting as a submit button (IR15619)*
 - *Fixed issue with Extended Copy commands that would cause a LUN to go into a busy state when a drive pulled before command issued (IR16346)*
 - *Fixed lack of retries for mode sense/select of SAS port mode page and lack of support for SAS-3 spec SAS port mode page (IR16483)*
 - *Fixed management port 2 not receiving DHCP address when cable connected after POST (IR17324)*
 - *Fixed extended POST xCORE register test failure and controller hang during ECC test (IR17327)*
 - *Fix SNMP traps not being sent when only management port 2 is connected (IR17344)*
 - *Fixed bridge LUN from being deleted during DeleteAllMaps CLI command (IR17358)*
 - *Fixed controller from being reserved after RestoreConfiguration CLI command issued with invalid parameters (IR17376)*
 - *Fixed failure to retrieve configuration via FTP and read buffer in certain configurations (IR17387)*
 - *Fixed some event log messages not being logged during POST (IR17388)*
- **Version 2.00 (Released 7/26/16)**
 - **Release details**
 - *ATTO has been actively investing in our Storage Controller product line to add value and feature sets to increase the viability and usability of the ATTO Storage Controller in*

today's competitive and demanding storage environments. Storage is currently moving toward a more open and modular architecture requiring those that build products within this market to adapt and address customer needs. Our latest feature set continues the path forward of a feature-rich hardware accelerated, open XstreamCORE Storage Controller.

- **New Features**
 - XstreamVIEW Storage Manager GUI for configuration, management & monitoring
 - Update SasTargets to display SAS/SATA device firmware revision
 - Improved network traffic handling
 - Added "all" option to SASEnclosures output.
 - Improved Watchdog Timer functionality
 - Added additional diagnostic logging capabilities
 - Improved mode sense handling

- **Features**
 - **Hardware Data Mover support** - we implemented technology required for the storage controller to offload data movement between storage devices from host servers and networks using industry standard EXTENDED COPY (XCOPY) commands. This also enables the ability for the ATTO Storage Controller to move data between any storage.
 - Added support for WRITE SAME (10), WRITE SAME (16)
 - Added support for BLOCK COPY
 - Added support for SCSI COMPARE AND WRITE (attached storage must support SCSI COMPARE & WRITE)
 - ATTO's storage controller uses ATTO patented technology (US Patents #US7836225B2, US8291132B2, US7788324B2, US8504770B2).
 - **Data Mover Performance Metrics** – ATTO Storage Controllers feature the DataMoverStats CLI command to allow SysAdmins to monitor performance levels of the data mover component to verify functionality and plan storage bandwidth usage.
 - **VMware VAAI support** - Support Block Copy using SCSI EXTENDED COPY with support for Block Zeroing and Atomic Test and Set (ATS). The ATTO Storage Controller will automatically use VAAI when enabled in VMware environments.
 - **TargetAliasing** feature to support VAAI clone copies between storage from different vendors
 - **Host Group Mapping** - the ability to assign specific groups of hosts to access attached storage, this zoning feature provides access control security for storage. This feature has a graphical user interface to map host groups/initiators to storage LUNs by WWN. This feature is useful for many applications and also is required for booting multiple VMware ESXi hosts.
 - **Identify Storage LUNs** – ATTO Storage Controllers now give SysAdmins the ability to flash LEDs on all devices located in a specific LUN. This ability is available through IdentifyLUN and can be turned off via StopIdentifyLUN in CLI.

- **VMware Ready certification**
 - The ATTO XstreamCORE FC 7500 Storage Controller is VMware Ready certified with support for VAAI. This controller is listed on the VMware HCL located here: <http://www.vmware.com/resources/compatibility/search.php?deviceCategory=san>

- **Version 1.30**
 - **Release details**
 - This release adds support for multiple LUNs behind a target
 - The 7500 now supports connection to SAS/SATA RAID Arrays and SAS Target processor devices with multiple disk LUNs (SASMapByTopology disabled)
 - Enhanced performance monitoring capabilities
 - Added support for Supermicro 12Gb JBOD storage

- *Improved Fibre Channel support*
 - *Improved SAS/SATA device support*
 - *Added support for spinning up SATA drives with PUIS enabled*
 - *Improved SAS cable management error handling*
 - *Improved SAS device discovery*
 - *Several fixes for Customer IRs*
- **Version 1.20**
 - **Release details**
 - *This release supports new diagnostic features for the 7500 platform*
 - *Improved Debug Tools*
 - *Added Ethernet Trace Logging capability*
 - *Added Internal logging of SNMP requests*
 - *Added IPv6 support for SNMP*
 - *Extended Controller Name to allow 32 characters, hyphens and underscores*
 - *Added ability to disable the Storage Controller LUN to allow discovery to complete without mapping the Storage Controller LUN*
 - *Updated the maximum temperature threshold to 90C and default warning at 80C*
- **Version 1.10**
 - **Release details**
 - *This release supports new diagnostic features for the 7500 platform*
 - *Added Fibre Channel and SAS Dynamic Trace Logging*
 - *Ethernet Trace Logging*
 - *xCORE Acceleration Engine Trace Logging*
- **Version 1.01**
 - **Release details**
 - *Added support for a full 240-drive configuration, 10 shelves of 24 drives each.*
- **Version 1.00**
 - **Initial Release Features**
 - **xCORE™ Data Acceleration** - *features multiple parallel I/O acceleration engines, end to end I/O processing, hardware buffer allocation management and real-time performance and latency analytics*
 - **eCORE™ Control Engine** - *adds common, open storage services, industry standard APIs, handles reservations, storage routing and host and LUN mapping functions*
 - - *Supports SAS 3Gb, 6Gb and 12Gb disk storage devices*
 - *Supports SATA 3Gb and 6Gb disk storage devices*
 - *Supports connection to 4Gb, 8Gb and 16Gb Fibre Channel*
 - *Drive Map Director™ feature provides predictive enclosure-aware mapping scheme*
 - *ExpressNAV™ System Manager GUI, CLI, FTP and Telnet access*
 - *Available FC and SAS port statistics*
 - *Available in-band access*
 - *SNMP Support*
 - *SMTP Support*

3. Known Issues/Advisements

Issues with an IR at the beginning are logged and tracked in the ATTO IR reporting process. These items are in review for a resolution in a future product release.

Issues

- IR16688 – Changing the serial port baud-rate to a non-115200 bps speed will result in some boot up sequence messages to be corrupted.
- IR16982 – Issuing a Report Supported Operations Codes command may return duplicate op codes.

- IR17349 – Controller takes a long time to boot when a large number of drives are attached.
- IR17616 – Discovered chassis information is passed to an ESXi host, creating additional storage devices and LUN IDs in VMware.
- IR18684 – Pulling the SAS cables from the XstreamCORE or connected storage during operation may result in a controller crash requiring reboot.

Advisements

- In VMware environments, at least one drive must be present in the storage between the lun range of 0 – 7 (this can be confirmed by using RouteDisplay, visual confirmation of storage, or by using the IdentifyLun command). Otherwise, VMware will not continue its discovery scan to luns that are mapped above lun 7 and will not detect any drives. (This is a VMware issue and not an ATTO controller issue).
- Note that when you plug in a power cable to one of the power supplies on the 7500, power is immediately enabled on the controller, there is no power switch.
- The Drive Map Director™ feature requires that SAS enclosures support the SMP protocol, for specific information contact ATTO tech support, if enclosures do not support the SMP protocol then mapping occurs via the Automap feature.
- Controller crashes may occur when SNMP is enabled, when 256 or more connected drives or state device maps are connected/created (Maps for devices no longer connected to system) or when performing SAS cable pulls.

4. Affected Products

Product Name	SKU
XstreamCORE FC 7500	XCFC-7500-002

5. Contacting ATTO Support

ATTO Technology, Inc. is renowned for its technical support services. ATTO's goal is to provide you the quickest response possible for your technical support needs, and is available Monday-Friday, 8:00 AM to 8:00 PM EST (except holidays and plant closings).

ATTO Technical Support can be contacted via phone or email:

- Phone: 716.691.1999 ext. 242
- E-Mail: techsupport@attotech.com