



ATTO Technology, Inc.

Product Release Notes

Celerity 16Gb Gen 5 and 16Gb/32Gb Gen 6 Fibre Channel Multipath Director™ Release V2.28MP – macOS®

1. General Release Information

These product release notes define the new features, changes, known issues and release details that apply to the Celerity 16Gb Gen 5 Fibre Channel adapter product and 16Gb/32Gb Gen 6 Fibre Channel adapter product driver version 2.28MP, which was released on January 15th, 2019. This information pertains to macOS® 10.11 and later.

2. Changes

Version 2.28MP (Released 1/15/2019)

- **Note:** It is recommended that the latest flash bundle available on ATTO website be utilized with this driver release.
- **New Features/Enhancements**
 - Added macOS support for Gen 6 Fibre Channel quad port cards for Mac Pro 6,1 and later

Version 2.27MP (Released 11/05/2018)

- **Note:** It is recommended that the latest flash bundle available on ATTO website be utilized with this driver release.
- **New Features/Enhancements**
 - Change the multipathing method for the Active XSG1 and Quantum QXS storage array prevent saved configurations from being loaded incorrectly
 - Improvements made when hot plugging devices with I/O in flight

Version 2.26MP (Released 04/16/2018)

- **Note:** It is recommended that the latest flash bundle available on ATTO website be utilized with this driver release.
- **New Features/Enhancements**
 - Added support for a new flash bundle format that supports smaller download portions compatible with the maximum transfer size for the driver
 - Increased number of IO resources to improve performance
 - Fixed support for atfcvnr to change the node WWN
 - Additional support for Promise VTrak E630f and the DotHill DH3000
 - Improvements to displaying which offline devices are being presented to the OS (and displayed in ConfigTool)
 - Note: As a result of this change, previously saved configurations may need to be deleted and resaved to display correctly after reboot

- **Version 2.25MP (Released 12/18/2017)**

- **Note:** It is recommended that the latest flash bundle available on ATTO website be utilized with this driver release.
- **New Features/Enhancements**
 - Added atdevinfo, atfcinfo, and atlocate CLI tools to the release package
 - Added HP MSA 2050 support

- **Version 2.20MP (Released 09/25/2017)**
 - **Note:** It is recommended that the latest flash bundle available on ATTO website be utilized with this driver release.
 - **New Features/Enhancements**
 - Fixed a potential error when doing extended link bounce testing
 - Increased stability during tape I/O
 - Improvements to scheduling and processing device management
 - Changed the method for reporting device changes to macOS

- **Version 2.16MP (Released 05/03/2017)**
 - **Note:** It is recommended that the latest flash bundle available on ATTO website be used with this driver release.
 - **New Features/Enhancements**
 - Added support for *atinfo* to display the SFP transceiver serial number
 - Added support for the Seagate 5825 storage array

- **Version 2.10MP (Released 12/20/2016)**
 - **Note:** It is recommended that the latest flash bundle available on ATTO website be used with this driver release.
 - **New Features/Enhancements**
 - Added support for Dot Hill 6424 and 6844 storage.
 - Removed the 164E from the installer welcome screen.
 - Added link cable beacon feature.
 - Improved the speed of reporting devices to the OS.
 - Changed the default maximum transfer size to 512KB to improve third party storage controller performance.

- **Version 2.05MP (Released 09/20/2016)**
 - **Note:** It is recommended that the latest flash bundle available on ATTO website be used with this driver release.
 - **New Features/Enhancements**
 - Added support for macOS Sierra
 - Added '*-t <number>*' option to system NVRAM parameters to change the number of targets.
 - Enabled LU-based MP for Quantum QXS storage.
 - Resolved potential driver hang if I/O errors occur during OS device scanning.

- **Version 2.00MP (Released 06/30/2016)**
 - **Note:** It is recommended that the latest flash bundle available on ATTO website be used with this driver release.
 - **New Features/Enhancements**
 - Added support for Celerity Gen 6 16Gb/32Gb FC adapters.
 - Added support for LU-based multipathing.
 - Added support for configuring an alias.
 - Addressed a potential for failover to fail when large numbers of LUNs are present.
 - Addressed issues that could cause excessive completion times for failover or discovery.

- **Version 1.45MP (Released 01/21/2016)**
 - **Note:** It is recommended that the latest flash bundle available on ATTO website be used with this driver release.
 - **New Features/Enhancements**
 - Resolved a connection issue with previous versions of EMC storage

- **Version 1.40MP (Released 8/06/2015)**
 - **Note:** It is recommended that the latest flash bundle available on ATTO website be used with this driver release.
 - **New Features/Enhancements**
 - Added support for 10.11
 - Improved system resource utilization when using event logging services
 - Implemented T10-PI management improvements
 - Fixed a max transfer size processing issue

- Addressed a SCSI abort issue
 - Added support for Dot Hill arrays
- **Version 1.35 (Released 3/136/2015)**
 - **Note:** It is recommended that firmware dated 03/16/2015 be used with this driver release.
 - **New Features/Enhancements**
 - ALUA devices are now allowed to change the path mode from disabled to the default
 - For Thunderbolt topologies, addressed an issue to properly manage multipathing configurations across Thunderbolt cable pulls.
 - Addressed an event logging issue.
 - Active/non-optimized paths are activated in the same manner as standby path by default.
 - Corrected identifier determination for some storage. As a result, previously saved configuration will no longer be in effect for some arrays. The configuration must be resaved after upgrading.
 - Addressed a timing issue when mounting volumes.
 - Fixed an issue of seeing LUNs in a direct attached environment.
- **Version 1.31 (Released 1/27/2015)**
 - **Note:** It is recommended that firmware dated 08/14/2014 be used with this driver release.
 - **New Features/Enhancements**
 - Fixed a resource leak issue.
 - Addressed an I/O response underrun
- **Version 1.30 (Released 10/30/2014)**
 - **Note:** It is recommended that the latest firmware dated 08/14/2014 be used with this driver release.
 - **New Features/Enhancements**
 - Added support for Mac OS X 10.10
 - Addressed a firmware issue causing an error when querying a switch
 - Corrected an issue where HBAs failed to properly recover from a controller reset.
- **Version 1.25MP (Released 9/25/2014)**
 - **Note:** It is recommended that the latest flash bundle available on ATTO website be used with this driver release.
 - **New Features/Enhancements**
 - Enhanced diagnostic capabilities with improved event logging
 - Improved CLI management capabilities
 - Added support for atreset
 - Added support for device display in atinfo
 - Addressed a potential kernel panic when drivers run out of IO resources
 - Addressed a potential kernel panic when a FC ThunderLink is present
 - Addressed an issue where IO to a LUN could be stalled
 - Set default so that active/non-optimized paths are activated for IO in the same manner as standby paths
 - Corrected an issue where a cable pull could result in I/O failure
- **Version 1.20MP (Released 3/24/2014)**
 - **Note:** It is recommended that firmware dated 11/08/2012 be used with this driver release.
 - **New Features/Enhancements**
 - Expanded diagnostic output tools.
 - Feature added to allow user driven rescanning of all paths to devices.
 - Feature added allowing a path to be a member of two path sets at one time for devices that change identifiers in VPD. Supported with Config Tool 4.14 and later.
 - Corrected a kernel panic that may occur when unloading a driver.
 - Resolved issues with execution throttle.
- **Version 1.15MP (Released 2/06/2014)**
 - **Note:** It is recommended that firmware dated 11/08/2012 be used with this driver release.
 - **New Features/Enhancements**
 - Corrected an issue with path discovery for paths that are deactivated immediately after being found.

- Addressed an issue with deactivating paths that are disabled due to I/O errors.
 - Fixed an issue where discovery or failover of a path could be delayed by a transitioning asymmetric access state for a port group that did not apply to the path.
 - Resolved an issue where simultaneously reporting device changes on multiple HBA channels could result in the multipathed devices from being activated
 - Addressed an issue where path selection could prematurely fail an I/O when the last remaining path failed simultaneously
 - Corrected an issue where path rediscovery would not activate the path after the link down timeout previously expired
 - Paths that have a scan pending are considered retrying so I/O is suspended when no paths are active.
 - Feature added to allow path activations and deactivations during the link down timeout period to coordinate with other device events to prevent invalid path states.
 - Added PCIe pause support for Thunderbolt hot plugging in OS X 10.9.
- **Version 1.03MP (Released 6/27/2013)**
 - **Note:** It is recommended that firmware dated 11/08/2012 be used with this driver release.
 - **New Features/Enhancements**
 - Corrected an issue where I/O could be stopped to a device after a link goes down.
- **Version 1.02MP (Released 4/10/2013)**
 - **Note:** It is recommended that firmware dated 11/08/2012 be used with this driver release.
 - **New Features/Enhancements**
 - Added '—m' option with the same functionality as the standard driver.
 - Corrected out of resource processing when the mapped controller and destination controller for an I/O are different.
- **Version 1.01MP (Released 1/15/2013)**
 - **Note:** It is recommended that firmware dated 11/08/2012 be used with this driver release.
 - **New Features/Enhancements**
 - Changed the default Execution Throttle to 255 (disabled).
 - Implemented interrupt coalescing.
 - Fixed event Log messages so lost frames report with the correct error code.
 - Corrected an issue that could result in devices not being found after waking from sleep.
 - Corrected target identifier determination for certain arrays.
 - Disabled multipathing for certain arrays that do not report proper device identification.
- **Version 1.00MP (Released 11/08/2012)**
 - **Note:** It is recommended that firmware dated 11/08/2012 be used with this driver release.
 - **New Features/Enhancements**
 - Initial release of Mac OS multipathing drivers for the Celerity 16Gb FC adapters.

Known Advisements

- *Multiple direct connections to a Xyratex drive array are not supported. Contact ATTO Tech Support for more information.*
- *Celerity quad-channel (FC-164E and 324E) are not supported on macOS.*
- *macOS High Sierra has introduced User-Approved Kernel Extension Loading. For additional information on this update, please visit: <http://developer.apple.com/library/content/technotes/tn2459>*

3. Affected Products

Product Name	SKU
Celerity FC 164E	CTFC-164E-000
Celerity FC 162E	CTFC-162E-000
Celerity FC 161E	CTFC-161E-000
Celerity FC-164P	CTFC-164P-000
Celerity FC-162P	CTFC-162P-000
Celerity FC-161P	CTFC-161P-000

Celerity FC-322E	CTFC-322E-000
Celerity FC-321E	CTFC-321E-000
Celerity FC-324E	CTFC-324E-000

4. 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