



ATTO Technology, Inc.

## Product Release Notes

# Celerity 16Gb Gen 5 and 16Gb/32Gb Gen 6 Fibre Channel Multipath Director™ Release V2.26MP – macOS®

## 1. General Release Information

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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 2.26MP, which was released on April 16<sup>th</sup>, 2018. This information pertains to macOS® 10.11 and later.

## 2. Changes

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- **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 3/13/2015)**
  - **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 Issues/Advisements

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- Multiple direct connections to a Xyratex drive array are not supported
- 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

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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

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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](mailto:techsupport@attotech.com)