



ATTO Technology, Inc.

Product Release Notes

Celerity 16Gb Gen 5 and 16Gb/32Gb Gen 6 Fibre Channel Release v1.73 – Linux®

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 v1.73 that was released on November 5th, 2018. This information pertains to the following operating systems: Red Hat Enterprise Linux 6, 7; CentOS 6, 7; SUSE Linux Enterprise Server 11.4, 12.3; OpenSUSE Linux 42.2, 42.3; Ubuntu 16.04, 18.04 LTS. **Note:** It is recommended that the latest firmware available on the ATTO website be used with this driver release.

2. Changes

- **Version 1.73 (Released 11/05/2018)**
 - Stability improvements on 4.18 kernels
 - Improve target mode performance.
 - Enable NVMe-oF support in RHEL/CentOS 7.5
 - -Driver modules now install with DKMS (Dynamic Kernel Module Support). This allows the kernel module to be automatically rebuilt on kernel updates.
 - The 'io_time_out' module parameter has now been obsoleted in favor of the OS's IO timeout value. If manually setting the command timeout is desired, the following command can be used, where `#{value}` is the timeout in seconds. ``echo #{value} > /sys/block/#{device-name}/device/timeout``
 - Stability improvements while freeing memory with high system processor count
- **Version 1.71 (Released 04/16/2018)**
 - 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
 - Addressed timer API compatibility in kernel 4.15 and later
 - Improved interoperability with SLES 11.4 and SLES 12.3
 - Fixed support for atfcvnr to change the node WWN
 - Improved support with SCST target mode
 - Updated default module parameters for improved performance
 - Add support for balancing MSI-X interrupts across CPUs
 - Note: ATTO recommends setting the hint policy to exact in your irqbalance configuration for best results. See readme installation instructions for details.
- **Version 1.70 (Released 12/18/2017)**
 - New Features/Enhancements
 - Added ability to uninstall included CLI Tools and added additional CLI tools: atdevinfo, atfcinfo, and atlocate to the release package.
 - Enabled `atto_log_mask` based logging
 - Resolved compilation error on 4.12 and later kernels
 - Removed driver module parameters that have NVRAM equivalents
 - Added the Celerity FC 324E to the readme

- **Version 1.65 (Released 08/31/2017)**
 - **New Features/Enhancements**
 - Added support for the new quad port Celerity FC-324E adapter.
 - The 16Gb speed setting is now enforced in NVRAM.
 - Modified several default performance parameters for better out-of-box experience.
 - Fixed a potential error when doing extended link bounce testing.
 - Fixed crash when connected to an IBM LT07 tape device configured as PTP preferred.
- **Version 1.60 (Released 05/03/2017)**
 - **New Features/Enhancements**
 - Added support for *atinfo* to display the SFP transceiver serial number
 - Added support for Ubuntu 16.04 LTS
 - Updated builds for kernel 4.9, and later
- **Version 1.55 (Released 12/20/2016)**
 - **New Features/Enhancements**
 - Modified driver to automatically unload the *attocfg* driver when switching between the MP and standard drivers
 - Reworked *ioctl* code to directly access user memory instead of double-buffering
 - Resolved issue with 32-bit driver builds for 4.x kernels
- **Version 1.51 (Released 09/01/2016)**
 - **New Features/Enhancements**
 - General improvements
- **Version 1.50 (Released 06/30/2016)**
 - **New Features/Enhancements**
 - Added support for Celerity 16Gb/32Gb Gen 6 Fibre Channel Host Bus Adapters
 - Fixed a potential hang by offlining targets before removing them.
- **Version 1.45 (Released 01/21/2016)**
 - **New Features/Enhancements**
 - Updates to CLI tools and readme
- **Version 1.40 (Released 8/06/2015)**
 - **New Features/Enhancements**
 - Implemented T10-PI management improvements
 - Integrated miscellaneous bug-fixes
- **Version 1.35 (Released 3/19/2015)**
 - **New Features/Enhancements**
 - Added support for Fedora 21
 - Added support for SUSE Linux Enterprise Server 12
 - Addressed a timing issue when mounting volumes.
 - Fixed an issue of seeing LUNs in a direct attached environment.
- **Version 1.32 (Released 1/27/2015)**
 - **New Features/Enhancements**
 - Addressed an exchange leak in HwContPlogiReq
- **Version 1.30 (Released 10/30/2014)**
 - **New Features/Enhancements**
 - Added support for RHEL 7
 - Addressed a model description error
 - Addressed an issue where HBAs failed to properly recover from a controller reset.
- **Version 1.20 (Released 8/28/2014)**
 - **New Features/Enhancements**
 - Improved IO performance for transactional Linux SAN environments

- Increased default queue parameters from 128 to 512
 - Enhanced diagnostic capabilities with improved event logging
 - Added new display information for atmpinfo
 - Added support for atreset
 - Added support for device display in atinfo
- **Version 1.15 (Released 3/27/2014)**
 - **New Features/Enhancements**
 - Increased the maximum targets supported from 256 to 512
 - Added port speed to administrator reports.
 - Addressed performance issues for certain configurations
- **Version 1.05 (Released 6/27/2013)**
 - **New Features/Enhancements**
 - Added support for SCST – contact for SCST kit
- **Version 1.03 (Released 4/17/2013)**
 - **New Features/Enhancements**
 - Added support for Fedora 17 & 18
 - Added support for openSUSE 12.3
 - Sleep Mode Improvements
 - Fixed compile issue with kernel 3.7 and 3.8
- **Version 1.02 (Released 1/15/2013)**
 - **New Features/Enhancements**
 - Added support for the quad port Celerity 16Gb Fibre Channel Host Adapter (164E)
 - Changed the default Execution Throttle to 255 (disabled)
 - Implemented interrupt coalescing
 - Data transfer errors no longer cause the command to be aborted without allowing the upper layer to send a response in Target Mode
 - Fixed event Log messages so lost frames report with the correct error code
- **Version 1.01 (Released 11/08/2012)**
 - **New Features/Enhancements**
 - SAN Boot is now supported
 - T10 DIF now can be enabled in Linux
 - Fibre Channel Link Down Timeout is now operational
 - The Port Database is now sorted so devices show up in the same order across reboots
 - Enhanced the PCIe speed capability back up to Gen 3 if it had been lowered by placing the card in another platform
 - Fixed an issue where the HBA API Get Port Stats would hang
 - Fixed a kernel panic when loading driver.
 - Driver compiles with newer (3.4+) kernels.
- **Version 1.00 (Released 9/28/2012)**
 - **New Features/Enhancements**
 - Initial release of Linux drivers for the Celerity 16Gb FC adapters

3. Known Advisements

- *Arbitrated Loop is not supported by 16Gb Fibre Channel - the industry specification has not been finalized.*
- *If the card is placed in certain slots of an Intel Grosse Point machine, the system will not boot. Contact ATTO Tech Support for more information.*
- *Multiple direct connections to a Xyratex drive array is not supported. Contact ATTO Tech Support for more information.*

- *The system will not boot if the card is placed in an MSI 277A-GD80 motherboard and the System BIOS PCI ROM Priority is set for EFI Compatible ROM. The System BIOS is trying to run both the EFI and Legacy BIOS at the same time. To work around this issue, set the System BIOS PCI ROM Priority setting to Legacy ROM. Contact ATTO Tech Support for more information*

4. Affected Products

Product Name	SKU
Celerity FC 161E	CTFC-161E-000
Celerity FC 162E	CTFC-162E-000
Celerity FC 164E	CTFC-164E-000
Celerity FC 161P	CTFC-161P-000
Celerity FC 162P	CTFC-162P-000
Celerity FC 164P	CTFC-164P-000
Celerity FC 321E	CTFC-321E-000
Celerity FC 322E	CTFC-322E-000
Celerity FC 324E	CTFC-324E-000

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. Please visit <https://www.attotech.com/support/> for hours of operation.

ATTO Technical Support can be contacted via phone or email:

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