



ATTO Technology, Inc.

Product Release Notes

FastFrame™ 10GbE NIC Release v3.16.1 – macOS®

1. General Release Information

These product release notes define the new features, changes, known issues and release details that apply to the FastFrame Network Interface Card and ThunderLink Thunderbolt devices v3.16.1 that was released on 4/27/2022. This information pertains to macOS 10.11 and later.

2. Changes

- **Version 3.16.1 (Released 4/27/2022)**
 - **New Features**
 - Fixed issue causing Apple XGbE driver loading over FastFrame 1 driver.
- **Version 3.16.0 (Released 4/14/2022)**
 - **New Features**
 - Add Thunderbolt adapter support (Thunderbolt driver variant is EOL)
 - Fix logging priority order for errors and warnings
 - Address kernel panic during TBT unplug
- **Version 3.15.0 (Released 11/8/2021)**
 - **New Features**
 - Fixed logging service for Apple Silicon
 - Fixed issue causing the need to restart when installer completes, no longer required
 - Fixed issue causing driver settings to be incorrectly read on Apple Silicon devices
- **Version 3.14.1 (Released 7/1/2021)**
 - **New Features**
 - Update CLI tools for Apple Silicon
 - Disable system logging on Apple Silicon
 - Fix cache coherency issue between cores of Apple Silicon processors when using hardware interrupts.
 - Customize the installer summary screen
- **Version 3.14 (Released 1/14/2021)**
 - **New Features**
 - Add support for Apple Silicon M1 macs devices
 - Fix mbuf leak ▪ Rename atcnanvr to atnetnvr
 - Fix CLI tools installation path in readme
- **Version 3.13 (Released 12/10/2020)**
 - **New Features**
 - Fixed issue that would cause memory leaking in certain environments
 - Corrected link state reporting to address LACP and link speed issues
 - Added support for macOS notarization
 - Changed to notarize macOS installer package rather than DMG
 - (IR19331) Report driver version correctly
- **Version 3.12 (Released 12/4/2017)**

- **New Features**
 - Updated transmit functionality to improve efficiency and overall performance
 - Added support for setting TSO segment length to values up to 64K using atcnanvr CLI tool
 - Removed support for software Large Receive Offload (LRO) and replaced it with Receive Side Coalescing (RSC)
 - Sense data with a sense key of RECOVERED ERROR is reported correctly to the operating system
 - Changed the method for reporting device changes to macOS
- **Version 3.07 (Released 09/06/2016)**
 - **New Features**
 - Added support for macOS Sierra
 - Added rotational logging to limit the size of the event log.
 - Corrected a rare issue that could cause a transmit timeout to occur.
- **Version 3.05 (Released 09/30/15)**
 - **New Features**
 - Added support for Mac OS 10.11
- **Version 3.00 (Released 06/17/15)**
 - **New Features**
 - General performance improvements.
 - NS and NT adapters no longer support DCB by default. DCB can be enabled using the atcnanvr CLI tool, but enabling DCB disables support for link-level PAUSE.
 - When DCB is disabled on NS and NT adapters, link-level PAUSE is optionally supported.
 - Corrected an issue with chip reset functionality.
 - Expanded support for statistics reported by the atnetstat CLI tool.
 - Added support for disabling Receive Side Coalescing using the atcnanvr CLI tool.
 - Added support for fine grained control of interrupt coalescing settings using the atcnanvr CLI tool .
 - Added support for changing TSO segment length using the atcnanvr CLI tool.
 - Added support for disabling TSO using the atcnanvr CLI tool.
 - Added support for adjusting ring buffer lengths using the atcnanvr CLI tool.
 - Added support for adjusting transmit queue length using the atcnanvr CLI tool.
 - The atnetstat CLI tool is now included in the installer.
 - Adjusted packet memory allocation to improve performance.
 - Adjusted transmit functionality to reduce CPU utilization.
 - Fixed processing of the max transfer size values set by the Config Tool.
 - Fixed flow control and link speed settings viewed using the atcnanvr CLI tool to accurately reflect the settings the system is using.
 - SCSI status of task set full and busy are retried infinitely to circumvent OS X handling that can lead to I/O errors.
 - The event logging service has been improved to use less system resources.

- **Version 2.36 (Released 04/07/15)**
 - **New Features**
 - Improved performance by adjusting default transmit parameters and packet memory
 - Resolved an issue that could prevent the use of jumbo frames

- **Version 2.25 (Released 12/04/14)**
 - **New Features**
 - Added support for the atnetstat command line interface tool.
 - Corrected an issue with DCB receive packet handling.
 - Corrected an issue with transmit handling.

- **Version 2.22 (Released 6/30/14)**
 - **The following applies to driver v2.22**
 - **New Features**
 - Receive Side Coalescing (RSC) support
 - Installer option for applying system-wide network tuning settings

- **Version 2.21 (Released 10/15/2013)**
 - The following apply to driver v2.21
 - **New Features**
 - Mac OS X Mavericks (10.9) Support.
 - Corrected an issue when uninstalling the driver.

- **Version 2.20 (Released 08/15/2013)**
 - **New Features**
 - Optimized dynamic interrupt coalescing functionality.
 - Corrected an issue when disabling an Ethernet interface during periods of high network activity.
 - Corrected an issue when transmitting data residing in non-aligned memory.
 - Resolved a potential issue that could cause the driver to attempt to deactivate transmit rings that are already inactive.
 - Enhanced the chip reset procedure.
 - Improved handling of direct attach copper cables (NS and CS adapters only).
 - Improved logging and handling of DCBX errors (CS adapters only).
 - Improved handling of unexpected logout or login failures (CS adapters only).
 - Enhanced FCoE performance (CS adapters only).
 - Resolved an issue when using DCB with more than 2 traffic classes (CS adapters only).
 - Improved handling of DCBX settings (CS adapters only).
 - Updated '--m' option to work in OS X 10.7 and later (CS adapters only).

- **Version 2.12 (Released 10/11/2012)**
 - **New Features**
 - Updated the memory allocation for x64 platforms for compatibility with OS X 10.8.2 and later.
 - Corrected an issue with memory allocation that could cause the driver to not load.

- **Version 2.11 (Released 7/25/2012)**
 - **New Features**
 - Mac OS X Mountain Lion (10.8) Support.
 - Added support to display interrupt information in atinfo.
 - Added support for atrest.
 - **Supported OS**
 - Mac OS X 10.8
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- **Version 2.10 (Released 6/21/2012)**
 - **New Features**
 - Resolved a possible crash or hang during Thunderbolt hot plugging.
 - Corrected link speed selection for NT adapters.
 - Network connectivity is maintained when waking from sleep.
 - Enhanced initialization to better deal with fragmented system memory.

- **Version 2.00 (Released 4/23/2012)**
 - **New Features**
 - Initial release of Mac OS X drivers for the FastFrame 10GBASE-T Network Interface Card.
 - Added support for the temperature sensor for NT adapters.
 - Several enhancements to report errors and operate correctly in degraded mode.
 - Added support for two new checksum offloads included in OS X Lion, allowing IPv6 checksum calculation to take place in hardware for TCP and UDP. The checksum calculation covers the IPv6 pseudo header, TCP/UDP header and TCP/UDP data on both transmit and receive.
 - Added support for the NT11, and NT12 adapters. Changed link speed selection to account for additional link speeds supported by the Twinville chip.
 - VLAN discovery frames are no longer sent if the feature is disabled.
 - Erroneous data is now properly discarded in the event of a cable pull while reading from a Fibre Channel drive.
 - Features specific to CS adapters are confirmed to be disabled for NS and NT adapters during driver initialization.
 - When the frame size of a link aggregate is changed in System Preferences, connectivity is no longer lost.
 - Receipt of broadcast packets is confirmed to be enabled upon waking from sleep.
 - Fixed the mapping of User Priority to Traffic Class so Priority Flow Control (PFC) works correctly, preventing dropped FCoE packets.
 - Corrected several crashes and hangs that could occur during Thunderbolt hot plugging.

- **Version 1.10 (Released 9/1/2011)**
 - **New Features**
 - Initial release of Mac OS X drivers for the FastFrame 10GbE Converged Network Adapters
 - **Supported OS**
 - Mac OS X 10.6
 - Mac OS X 10.7

- **Version 1.00 (Released 7/20/2011)**
 - **New Features**
 - Initial release of Mac drivers for the FastFrame 10GbE Network Interface Card
 - **Supported OS**
 - Mac OS X 10.6
 - Mac OS X 10.7

Known Issues/Advisements

- 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>
- Intermittent performance drops may occur in isolated, high-bandwidth use cases where general IP network traffic is being heavily utilized. Please contact ATTO Support in these situations.

3. Affected Products

Product Name	SKU
FastFrame NT11	FFRM-NT11-000
FastFrame NT12	FFRM-NT12-000
FastFrame NS11	FFRM-NS11-000

FastFrame NS12	FFRM-NS12-000
FastFrame NS14	FFRM-NS14-000
ThunderLink NS2102	TLNS-2102
ThunderLink NT2102	TLNT-2102

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