

# BENCHMARK



## Competitive Benchmark – 100GbE ATTO FastFrame™ Gen 4 N412 SmartNIC vs. Mellanox in an Apple® Mac Pro®

### Overview

When choosing a product for high-speed Ethernet connectivity, it's important to consider factors such as performance, stability, reliability, ease of use and support. ATTO Technology provides solutions that exceed these requirements in multiple ways.

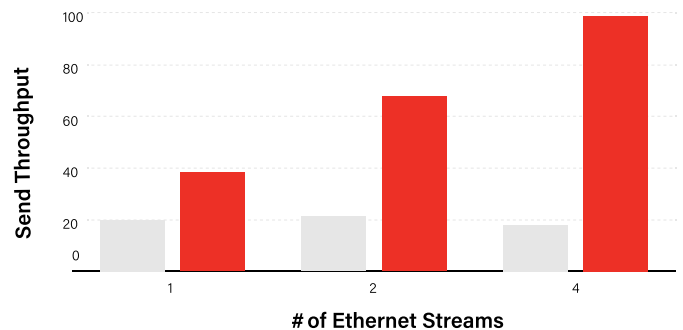
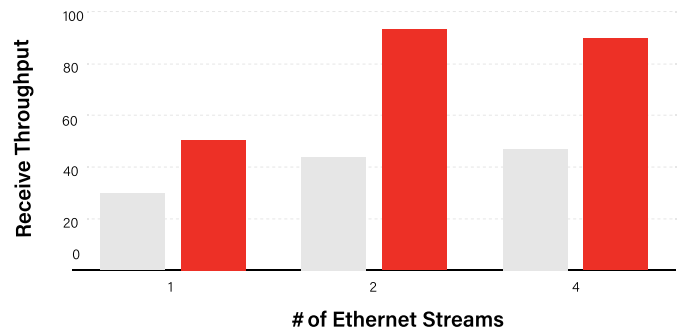
With ATTO you are not just buying a product – you are purchasing a technology.

### Performance

As the capacity for a server or workstation to do work increases so does the demand for I/O bandwidth. Choosing a product that optimizes bandwidth without taxing the CPU and memory is the goal. The ability to minimize latency is the key to achieving the best possible performance. Latency must be carefully managed by the Ethernet drivers as the data passes across the PCIe bus, CPU cores, system memory and the TCP/IP stacks. ATTO has years of experience in developing these drivers to achieve the best possible performance.

We ran 100Gb benchmarks against a Mellanox PCIe Network Adapter to highlight the differences in the ATTO FastFrame N412 driver for macOS® Sonoma.

### Ethernet NIC Receive & Send Performance



■ Mellanox ■ ATTO

**Test setup:** NIC under test installed in a 2023 Mac Pro M2 Ultra connected to an ATTO Fast Frame N412 installed in a Linux Server running iPerf. MTU = 1500. No tuning.

You can see that ATTO achieves near line speed where the Mellanox driver struggles, especially as the number of streams (workload) increases.

### About ATTO

For over 35 years ATTO Technology, Inc. has been a global leader specializing in network and storage connectivity and infrastructure solutions for the most data-intensive computing environments. ATTO works closely with its partners to create the world's best end-to-end data delivery, management and storage solutions. ATTO manufactures host adapters, SmartNICs, storage appliances and controllers, intelligent bridges, Thunderbolt™ adapters, and software. ATTO solutions enable high-performance connectivity to all storage interfaces, including Fibre Channel, SAS, SATA, iSCSI, Ethernet, NVMe and Thunderbolt. ATTO is the Power Behind the Storage.

## Stability

When streaming video, stability is crucial. Transmitting Ethernet frames is fairly indeterministic by nature. That's where ATTO's Advanced Data Streaming Technology™ (ADS) comes in. It helps manage the bursty nature of data transmissions from apps. You can see the benefits in the consistent performance levels for both reads and writes in the graphs above. In addition to higher, more stable throughput, the ATTO driver utilizes noticeably less CPU resources streaming data.

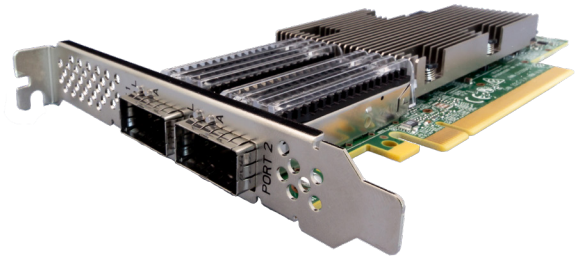
## Reliability

ATTO has been designing and manufacturing host adapters since 1988. Years of experience result in best-in-class design and manufacturing with the highest level of quality.

## Ease of Use & Support

Total cost of ownership includes time to install and configure as well as the effects of downtime. Identifying problems and determining the best resolution in a timely fashion is critical. ATTO FastFrame and Thunderbolt solutions come with ATTO 360™ Tuning, Monitoring and Analytics Software, an all-purpose tool for Ethernet network optimization and management. In addition to the OS drivers, there are numerous parameters that can be used to fine tune the movement of data and achieve peak performance. Not everyone can be an expert and know which settings to adjust. ATTO 360 makes it easy by Integrating "1-Click-Setup" user configurations for Media & Entertainment, high throughput and low latency workflows. ATTO 360 provides analytics where it scans for frequently recorded and troublesome errors that are not always obvious. This allows you to fix problems before they occur. It also provides monitoring of all traffic and key parameters from a simple interface.

ATTO FastFrame and Thunderbolt Adapters are an easy-to-use, comprehensive portfolio of products designed to provide high-performance Ethernet while minimizing utilization of both power and CPU cycles.



### ATTO Ethernet Gen 4 Smart NICs for macOS

FFRM-N412	2-port QFP28	100 Gb/s
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## How to Buy

Channel Sales	+1 716 691 1999	Ext. 240
International Sales	+1 716 691 1999	Ext. 239
OEM Sales	+1 716 691 1999	Ext. 241
VAR & System Integrators	<a href="http://oem.atto.com/howtobuy/">oem.atto.com/howtobuy/</a>	
Direct Sales	<a href="http://shop.atto.com">shop.atto.com</a>	