AXELLIO

Solution Brief

FabricXpress™

HIGH-PERFORMANCE STORAGE AND SERVER PLATFORM FOR HIGH-VOLUME DATA PROCESSING

HIGHLIGHTS

HIGH-PERFORMANCE
A dual-server design, with dual-ported NVMe SSDs and Axellio's Xpress Fabric based on a 160-lane flexible PCIe bus architecture, accelerates data processing. Delivering up to:

- 20 Million IOPS
- 240 Gigabytes throughput

DENSE FOOTPRINT
Storage and compute density designed for a compact footprint, and enterprise-grade performance and reliability. Scaling up to:

- 224 Logical Cores
- 725 Terabytes of storage via 48 hot-swappable NVMe SSD Drives
- 4 TB RAM
- 10 GPU/FPGA Accelerators

Available in just 3 rack units or in a mobile, carry-on suitcase format

MODULAR DESIGN
Deploy infrastructure that is designed for your data:

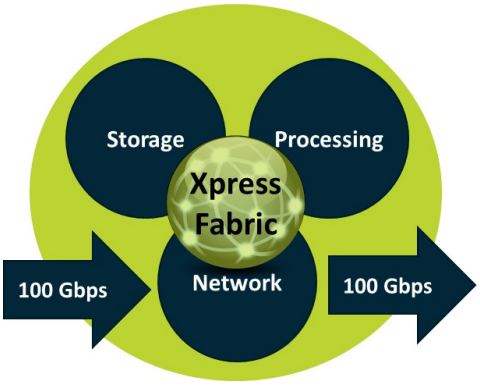
- Simple, flexible design
- Swap-in accelerators
- Optimal capacity and growth availability
- Adjustable processing and memory

IT operations in commercial enterprise, aerospace, and defense are challenged with exponential growth in data volume, growing cybersecurity threats, and compute power needs from core to edge.

Axellio's FabricXpress computing platforms deliver high-performance, high-density compute and storage for complex, high-volume, and high-velocity data. FabricXpress has been deployed for applications such as high-availability storage, high-speed streaming and analytics, as well as financial trading applications.

FabricXpress is designed for edge and data center applications, leveraging a unique NVMe and switched PCIe architecture providing unequaled, sustained throughput and low-latency response necessary to meet the most demanding applications.

High Performance Server and Storage Platform
FabricXpress provides sustained throughput and end-to-end low latency through its unique architecture and software design, optimized for high-performance computing:



- **Processing** – Up to 4 Intel Xeon Cascade Lake processors, with a total of 224 virtual cores providing high-speed interconnect and memory bandwidth with 48 PCIe lanes per CPU.
- **Storage** – Up to 48, high-speed NVMe solid-state-disk drives, dual-ported with PCIe direct connect.
- **Networking** – Supports up to 100 Gbps NICs for 12.5 Gigabytes per second of ingest and simultaneous distribution of stored data.
- **Xpress Fabric** – A switched PCIe fabric with 160 dynamically configurable PCIe lanes, allowing for 240 Gigabytes per second or 1920 Gigabits per second of total throughput for efficient communication between processor and peripherals.

FabricXpress' modular design allows for flexible configuration, optimizing its performance to the application requirements while maintaining the high-end performance that differentiates this offering.

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FabricXpress™

Axellio has integrated several vendor solutions into FabricXpress to customize the solution to the customer-specific requirements:

HARDWARE

Flexible configurations with 3rd party options:

NVIDIA, napatech, Mellanox, intel, Chelsio Communications

PLATFORM SOFTWARE

veeam, cassandra, Microsoft, vmware, Grafana, OpenShift, kafka, MySQL, Red Hat, TensorFlow, Hive, Hortonworks, redis, Spark

NETWORK OPERATIONS

solarwinds, WIRESHARK, PAESSLER THE NETWORK MONITORING COMPANY, dynatrace, splunk>, New Relic., ManageEngine, Nagios

SECURITY OPERATIONS

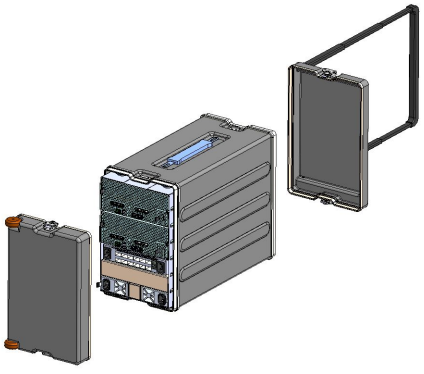
SURICATA, SNORT, OSSEC, Security Onion, splunk>, Elastic Search

FORM FACTORS

FabricXpress is made available on two distinct platforms addressing the need of fixed installed data center implementations as wells as field service and tactical mission deployments.

- **Rack Mountable – ARX Platform**
  3 standard rack units (3U) high, 30-inch deep for industry standard rack mounting with redundant power supplies. Axellio provides several different models based on performance demands, including the ARX-2000 and ARX-1500.

- **Mobile – AMX Platform**
  Portable high-performance computing platform for tactical, rapid field deployment, with data center level performance in a modular, rugged, and size, weight, and power (SWaP) optimized form factor. Its integrated rugged design in a TSA-approved carry-on size allows for easy deployment while offering field replaceable modules. In addition, the AMX platform is designed to quickly stack for deployment at scale.



ARX-2000 TECHNICAL SPECIFICATIONS

PROCESSING

- Two servers per chassis
- Each server:
  - Two Intel Xeon Cascade Lake Servers
  - Up to 56 cores/112 threads per server
- 20 Million IOPS
- 240 GBps system throughput

MEMORY

- 16 Memory Slots
- Max 2TB
- DDR4 RDIMM & LRDIMM

STORAGE

- Up to 725 Terabytes
- 48 slots
- Hot-swappable NVMe Solid State Drives, dual ported

NETWORK CONNECTIVITY

- Ethernet connectivity via two QSFP28 or QSFP+
- Link speed configurations: 8×10 Gbps, 2×10/25Gbps, 2×40 Gbps, or 2×100 Gbps
- Up to 16 streams of aggregated 100 Gbps for adaptive traffic distribution to feed external applications (onboard or offboard) across different interface configurations

TIME SYNC

- IEEE 1588-2008 PTP and PPS – PCAP and UNIX
- 1 ns time stamp resolution

PCIe CARDS & ACCELERATORS (optional)

Additional PCIe slots for GPUs, for NVMe SSDs, or other PCIe cards:

- Up to 8 Full Height Full Length (FHFL) Slots
- Up to 16 Half Height Half Length (HHHL) Slots

INSTALLATION OPTIONS

- Power Supply: N+2 Redundant
- Voltage - 120/240 VAC, 50-60 Hz
- BMC Management - Rack Mount Kit (optional)
- Operating Systems: Windows®, Linux®
- Hypervisors: Microsoft® Hyper-V, VMware® ESXi, KVM
- HCI Certifications: Microsoft Azure Stack HCI , Microsoft WSSD, VMware Horizon

FORM FACTOR

- 3RU high, 30-inch-deep for industry standard rack mounting
- Dimensions:
  - 5.25” H x 17.25” W x 30.0” L
  - 134mm H x 438mm W x 762mm L