BIOS IT

FABREX SWITCH

Extreme Flexibility, Performance and Efficiency

Through an all-new architecture, GigaIO offers a hyperperformance network that enables a unified, software-driven composable infrastructure. Disaggregation and composability meet the demands of new data-intensive applications and dynamically assigns resources to match changing workloads.

TRUE SOFTWARE DEFINED INFRASTRUCTURE (SDI)

The FabreX Switch is the fundamental building block of the FabreX network for true SDI.

The switch communicates with FabreX host drivers to identify and coordinate resources required by the hosts, then quickly connects the respective resources. Choose from a variety of switch software packages to provide the cluster configurations, management and control you need.

Connections between compute, storage and application accelerator resources in the GigaIO FabreX network are implemented with the rugged, packetized communication protocol of industry-standard PCI Express.

FabreX networking is administered using DMTF open-source Redfish® APIs that provide an easy-to-use interface for configuring computing clusters on-the-fly.

Choose your hardware: FabreX 24-port switch, FabreX Host Adapter, FabreX Cables, FabreX OS. Then pick the right software (see overleaf).

PERFORMANCE

The non-blocking ports feature latency values of 43nsec with x16 link width and 86nsec for x8 link width for higher throughput and the lowest latency in the industry.

The current implementation with PCIe Gen 3 delivers 256Gbits/sec transmission rates at full duplex, soon to scale up to 512Gbits/sec with PCIe Gen 4. Every port of the FabreX Switch interfacing with the Host is equipped with 4-channel DMA engines for full-duplex data traffic. Virtual channels and traffic classes with egress port arbitration contribute to QoS features of the FabreX network.

KEY FEATURES

True disaggregation with dynamic composability

Lowest latency and high bandwidth

Strips away conversion and overhead with 100% PCI Express interconnect

Less complexity, power, cooling, CAPEX, OPEX

GIGAIO

The Network is ***Finally*** the Computer

SOFTWARE PACKAGES

Composer Pack

Enables full disaggregation and dynamic composabliity for deep and wide IO tree configurations. Allows you to create pools of storage and accelerators of all kinds and types and share them betwen servers.

Leader Pack

In addition to composing, this pack provides you with true multi-host communication for small clusters engaged in parallel processing and distributed memory by integrating M{I, NVMe-oF, GDR and TCP-IP.

Network Pack

For true composability where you need larger clusters. You'll have all the benefits of the Leader Pack but also the ability to quickly scale your system and dynamically assign resource to meet changing workloads.

ABOUT BIOS IT

BIOS IT is a global design house, systems builder and integrated solution provider for enterprise performance computing. We construct bespoke clusters and appliances by hand picking the best components and newest technologies based on specific customer goals. We support well-known organisations at the top of their research fields, across science, engineering, academia and finance disciplines. Our comprehensive range of products and services include: high-performance enterprise servers, storage and networking, on-premise or in the cloud, with associated services, support, hosting and software.

FLEXIBILITY

Upgrade or add compute, storage and application accelerators at the component level that plugn-play with your environment. Ever major subsystem can now operate on its own upgrade cycle.

The Switch can unite a far greater variety of resources, connecting GPUs, TPUs, FPGAs and SoCs to other compute elements or PCI endpoint devices, such as NVMe, PCIe native storage, and other I/O resources. Span multiple servers and multiple racks to scale up single-host systems and scale out multi-host systems, all unified via the FabreX Switch

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The FabreX network allows for direct memory access by an individual server to system memories of all other servers in the cluster fabric, for the industry's first in-memory network. Use Load and Store memory semantics across the interconnect.

EFFICIENCY

Featuring 100% PCI-SIG compliance, the FabreX switch can integrate heterogenous computing, storage and accelerators into one symmetrical system-area cluster fabric, so you can do more with less. Patented GigaIO technology strips away unnecessary conversion, software layers and overheads that add network delay to legacy interconnects.

The result is lower CapEx and OpEx through less hardware, higher utilization of resources, lower power consumption, and less cooling. Avoid overprovisioning and add just the elements you need. Maximize utilization of the footprint of your data center and contribute to your bottom line.

	GIGAIO FABREX SWITCH
MANAGEMENT	Open systems FabreX OS with DTMF Redfish Composable APIs
ARCHITECTURE	Fully disaggregated with dynamic composability
PORTS	24 Ports non-blocking x4 PCIe Gen3 Link -- 19 inch, 1u rack mountable
CONNECTORS	Mini-SAS connectors – short and long range copper and photonics
LATENCY	NON-BLOCKING PORT TO PORT LATENCY FROM 43NS X16
BANDWIDTH	768 Gb/sec Half Duplex, 1,563 Gb/sec Full Duplex
FAIL OVER	N+1 with multi-switch topologies

For more information visit www.bios-it.com..

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