GigaPod Xtreme™

Portable Datacenter Performance for Any Mission — The First Modular AI Ready Composable Edge System

Growing numbers of sensors, with inexorably increasing resolutions and dimensions, are creating enormous amounts of data at the edge. And because of scarce edge computational capabilities, that raw data, in its entirety, has to be moved to a remote, central datacenter, across a wide area network, for data reduction and processing. This brute force dataflow must overcome bandwidth limitations and significant latency even before crucial processing can begin – delaying any kind of actionable response to intolerable levels, in addition to enduring unsustainable networking costs.

GigaIO addresses this problem head-on with GigaPod Xtreme - a ruggedized, composable AI platform in a modular and scalable form-factor that provides data center-level accelerated compute and storage performance for military, government, and public safety missions – the most computing power, and the most flexibility, available today in a ruggedized compact package.

Ruggedized Composable AI platform in a modular and scalable format for data center-level compute and storage performance for military, government, and public safety missions – the most computing power, and the most flexibility, available today in any carry-on tactical data center.

Build for the most demanding mission environments

Tactical edge demands are becoming increasingly complex with the rising number and sophistication of sensors, including cameras and geo-location tracking, generating large volumes of time-critical data demanding high-performance processing and storage.

Data center level performance

The need for fast decisions, often requiring delay-sensitive information, makes processing in the cloud or distant data centers not feasible when requiring communications across wide area network infrastructure that has speed, latency, or reliability issues. Those missions require local data center capabilities with space, weight, and power (SWaP) form factors for fast deployment and flexible configurations under tough operating conditions.

Portable – wherever the mission takes you

GigaIO's GigaPod Xtreme (GPX) provides an expeditionary compute platform through its high-density, converged server, flash-based storage, and accelerator platform in a portable form factor - small enough for your tactical mission, powerful enough to bring your data center along.

Your Carry-on Tactical Data Center

Maximum Compute Power – Custom for your mission

A unique interconnect fabric, FabreX™, increases the capacity and performance of common-off-the-shelf (COTS) components such as processing cores, memory, flash storage, and AI accelerators (GPUs, FPGAs, or custom ASICs), reducing latency and dramatically accelerating throughput, compute, and storage capabilities.
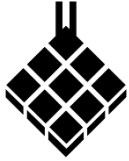
Modular Flexibility – Scale to your mission needs

Internal modularity and field-replaceable modules allow stacking multiple units for deployment at scale. With FabreX you can mix and match any component and compose them through software into otherwise impossible servers, all within the SWaP envelope your mission requires.

Unprecedented Density and Portability – For rapid, tactical field deployment

Composable compute, storage, and network with reduced system SWaP in a TSA carry-on portable size wherever you need compute power at scale for fast deployment and decision making.

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Example of Configuration

6 slots for expansion and flexible configuration

AI Accelerator slots supporting:
- **NVIDIA A100 40/80GB**
- NVIDIA A40 48GB
- NVIDIA A30 24GB
- NVIDIA A10 24GB
- Xilinx U55C FPGA

Compute servers supporting:
- AMD EPYC™ 7003 processor with up to 64 cores, 128 threads, and 2TB memory
- Removable boot drives
- PCIe slots for 100G data offload
- Dual 10GbT networking ports

Optional 100Gb Ethernet switch for data offloading
- Low latency layer 2 & 3 switch
- Up to 672Gb/s of non-blocking throughput
- Up to 48x10Gbe or 12x40/56GbE ports

Available resource slot for optional compute, storage, AI accelerator, or network.

2x 2500W power sharing, redundant for power config <2500W

Shock absorbing Mounting hardware

Rugged, lightweight carbon fiber enclosure; removable top and bottom lit with telescope handle and vibration reducing wheels.

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FabreX™ – the High-Speed Fabric

GigaIO developed a unique interconnect fabric, FabreX, providing a high-speed backplane to maximize throughput while minimizing delay between the compute modules.
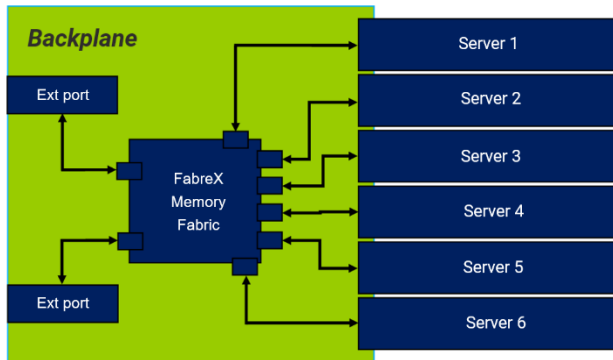
Servers connect over high-speed PCIe fabric using PCIe Non-Transparent Bridge technology to interconnect the servers. This enables a memory-mapped address window to directly access another server's memory and storage, creating an ultra-low latency communication layer for this high-performance computing solution. With this connectivity fabric directly built into the case and the use of expansion ports, no NICs or networking HW is needed for inter-server connectivity, freeing up space for additional compute hardware.

Increase Edge Agility While Eliminating Exposure to the Elements

Build edge solutions from disaggregated pools of compute, accelerators, and storage as workloads demand, without having to open the system and expose critical components to harsh environments. Stack Up to 5 GPXs together with any combination of servers, AI accelerators, or storage giving you up to 30 slots of agility at the edge.

# Unprecedented Density and Portability – For Rapid, Tactical Field Deployment

GigaPod Xtreme is a mobile fly-away kit for fast deployment and easy transportation built on a rugged, lightweight carbon fiber enclosure, in a TSA-standard carry-on size format with vibration isolating mechanical design.

Removable end caps with telescope handle and vibration-reducing wheels make for quick deployment while being stackable and extensible for deployment at scale.

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Stack your GPXs

Below is the logical view of three GigaPod Xtreme's interconnected across the FabreX fabric. This allows any server to access any other server or resource device within the fabric. These devices can be reconfigured real-time to meet mission requirements.
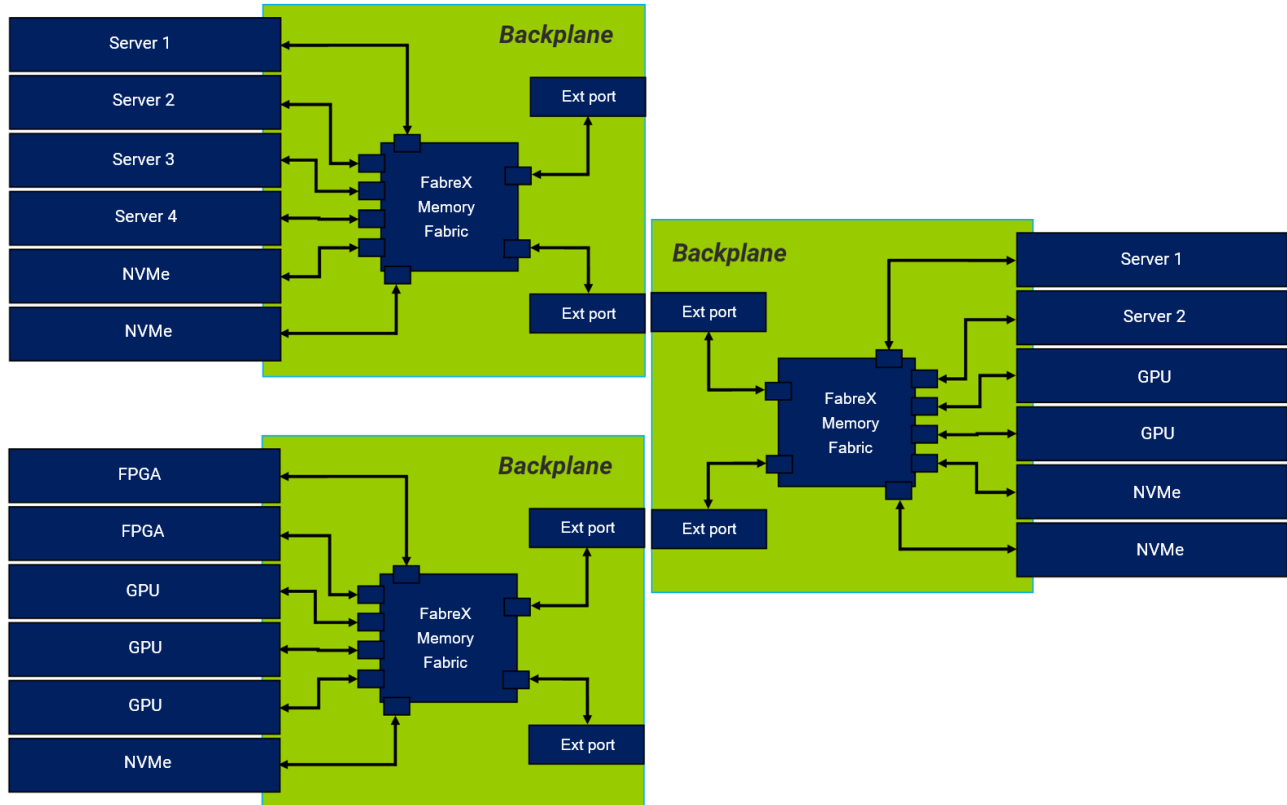
Equivalent to GigaPod Composable Rack

The configuration above gives you the same performance as the data-center class GigaPod depicted here. This is a fully composable AI platform designed to meet today's most demanding workloads. The GigaPod Xtreme delivers the same capabilities but can be configured in a building block fashion to allow you to right size to your mission needs

From GigaPod Xtreme to GigaCluster, GigaIO delivers the industry's most flexible, reconfigurable, and scalable solutions from edge to core to cloud, to dramatically shorten time-to-insight.

GigaIO. Everywhere you go.

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