Photonic Resource Unit (PRU) 2500

KEY BENEFITS

Low Latency: Direct photonic connectivity minimizes latency, allowing for optimal machine resource utilization in clusters.

Extended Distance: Overcome data center distance constraints with photonics that eliminate physical locality limitations.

Simplified Complexity: Reduce data center complexity by eliminating stacked switch hierarchies, protocols, and overlays.

Enhanced Efficiency: Grouping resources around workloads via direct connect maximizes utilization, resolving stranded resource challenges.

Improved Security: Isolated workloads minimize transgression across racks, spines, and cores.

Redefining Data Center Efficiency with High-Density Resource Management

The **Drut Photonic Resource Unit (PRU) 2500** is a high-density, high-performance PCIe Gen 5-based resource chassis. Purpose-built for hosting PCIe devices, it supports up to **12 devices**, including **8 double-width GPUs**, and accommodates up to **four Drut Fabric Interface Cards (FICs)** for high-speed connectivity.

Leveraging Drut's photonic switching fabric, the PRU 2500 enables seamless connections to external servers and resources while delivering unmatched flexibility, scalability, and cost-effectiveness for modern data centers.

The PRU 2500 is not limited to GPUs; it supports a wide range of PCIe Gen 3-5 devices, such as FPGAs, SmartNICs, IPUs, TPUs, and NVMe storage cards. Its ability to mix and match device types and vendors ensures tailored solutions to meet specific workload requirements.

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USE CASES

Scalable GPU as a Service: Expand PRU capacity horizontally to meet growing demand.

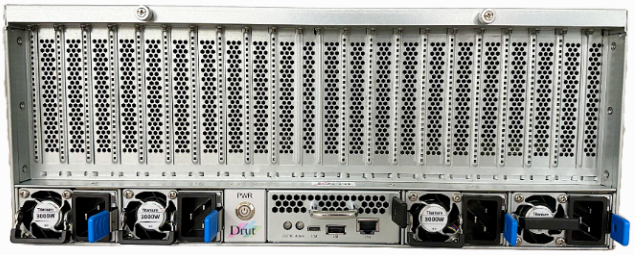
Storage Integration: Attach storage remotely to optimize workloads.

Multi-Vendor GPU Deployments: Build solutions with GPUs from different vendors.

Repurpose Existing Equipment: Leverage legacy or new servers and GPUs for cost efficiency.

Bandwidth Adaptability: Configure bandwidth to meet application-specific needs.

PRU 2500 Chassis Front View



PRU 2500 Chassis Rear View

PRU 2500 Advantages

High Density and Capacity: Contains total of 16 slots (12 PCIe Gen 5x16 Device slots + up to 4 PCIe gen 5x16 Host slots), enabling industry-leading resource density.

Exceptional Performance: Over 1Tb bandwidth per slot with up to four Drut (Fabric Interface Cards) FICs for balanced external and internal performance.

Device Diversity: Accommodates heterogeneous device types and vendors, empowering users to design versatile machine configurations.

Discreet Upgrade Paths: Isolated resource pools allow device upgrade independent of server/CPU complexes.

Optimized Utilization: Compose resources around workload requirements, achieving better utilization than traditional datacenter architectures.

Dynamic Attach/Detach: The PRU 2500 allows PCIe resources to be hosted and seamlessly connected or disconnected from servers in real-time, managed efficiently through Drut's Fabric Manager (DFM) software.

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Hardware Specifications

Component	Details
Main Board	2xBroadcom PEX 89144 (PCIe 5.0 Switch)
IO Card	BMC - Aspeed AST2500 Connectors - USB, LAN, LCD -
Device Slots	PCIe Single-Width Slots - Four (4) PCIe 5.0 x16 FHFL PCIe Double-width Slots - Eight (8) PCIe 5.0 x16 double-width FHFL (Up to 450W)
Host Slots	Up to four Drut Fabric Interface Cards (tFICs)
Power Supply	Four (4) 3000w Hot Swap Power Supplies
FANs	Six (8) 120mm x 38mm fans mounted to the front bezel of the chassis Hot-swap
Environmental Specifications	Temperature - 0°C ~ 35°C (32°F ~ 95°F) Non-operating Temperature: -20°C to 70°C (-4°F to 158°F) Operating Relative Humidity: 10% to 90% (non-condensing) Non-operating Relative Humidity: 0% to 95% (non-condensing)
Compliance Standards	AS/NZS CISPR32, Class A / EN 55032, Class A / EN 55024 / EN 61000-3-2 / EN 61000-3-3 / RoHS
Dimensions and Weight	650mm, Width 447mm, Height 175mm
Compatible Devices	TBD
System Management	Redfish®, RESTful API

Why Choose the PRU 2500?

By disaggregating data center resources through photonic fabric technology, the PRU 2500 empowers users to achieve unmatched performance, scalability, and efficiency. It transforms how data centers are architected by eliminating legacy design constraints, paving the way for modern, adaptable infrastructures.

Contact Information

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