Drut FIC 1000

Key Benefits

Latency – Direct connect, all photonic fabric provides the lowest possible latency allowing valuable machine resources to be directly connected in a machine cluster

Distance – Photonics eliminates the distance and physical locality challenges in the data center

Complexity – Removing stacked hierarchies of switches, protocols and overlays is the most direct way to remove complexity

Efficiency – Grouping resources via direct connect around workloads resolves the stranded resource challenge

Security – Workloads do not transgress over racks, spines and cores.

OPEX – Increased resource efficiencies means getting more from less: Less power, less cooling, less space

Better TCO – By decoupling the resource upgrade path from server upgrade path, users have a better fidelity of choice when and what to upgrade.

Drut Fabric Interface Card 1000, is a first generation photonic fabric card designed for PCIe Gen 3. The card is designed to operate in one of two modes: Initiator Fabric Interface Card (iFIC) or Target Interface Fabric Card (tFIC).

In the iFIC mode the card is intended to be placed in the server. It requires a full length / half height PCIe Gen 3 slot. In the tFIC mode, the card is designed to be placed in Drut PRU 1000 or other compatible PCIe resource chassis. Each FIC has four QSPF28 pluggable optic cages supporting NxQSFP28.
Each fabric card will come programmed to be an iFIC or tFIC.

FIC 1000 Use Case Diagram

The following diagram illustrates how the iFIC 1000 is connected to the fabric and the existing network hierarchy. Each iFIC 1000 can use 1 to 4 optical ports. Best practice recommends using 2 or 4 of the optical ports. These ports will be connected to the photonic fabric using single mode fiber. The Photonic Resource Unit will have 1-2 tFICs connected to the photonic fabric. The Drut Fabric Manager will build a resource pool and allow for the creation of machines by attaching and detaching resources.

200 Innovative Way, Suite 1360
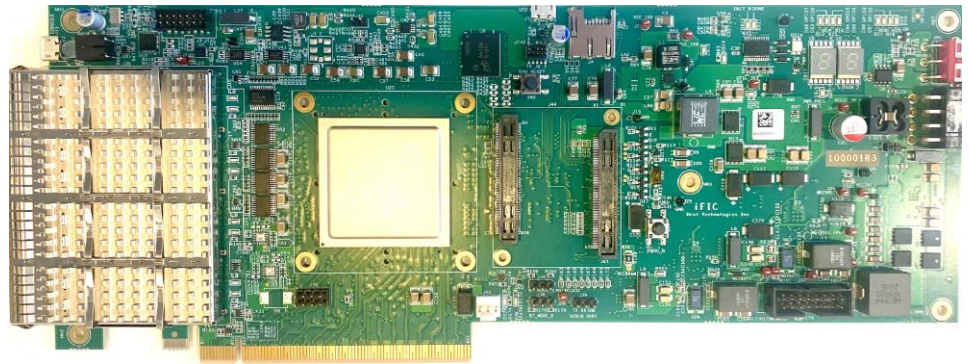Nashua, NH 0306
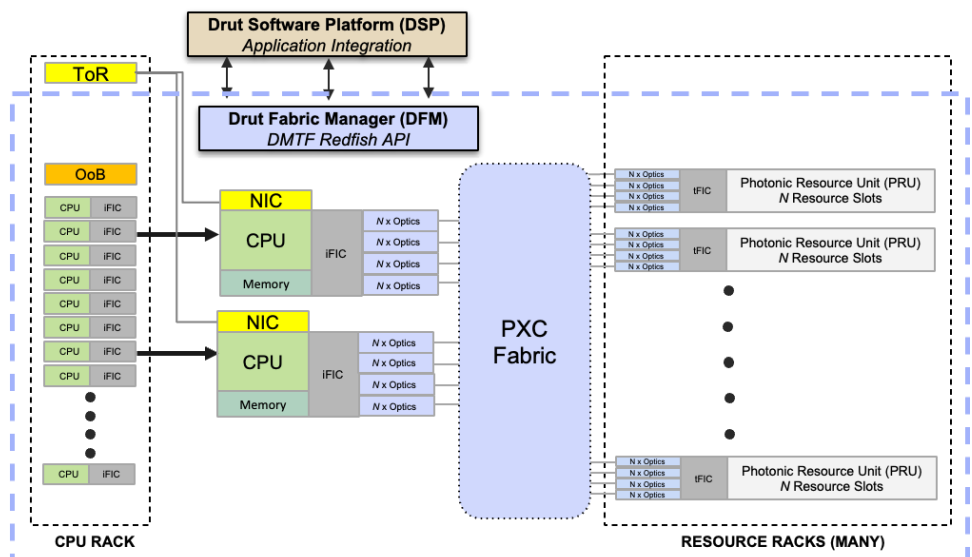
FIC 1000 Use Cases

The FIC 1000 can be used as the interface module, to build a Drut disaggregated photonic fabric.

Some of the more valuable use cases for this module are as follows:

- AI/ML Training Workloads
- Photonic HPC Clusters
- GPU Farms for Gaming
- FPGA Farms for Trading
- High performance private cloud for IaaS

FIC 1000 Specifications

PCIe Gen	3.0
Optical Interfaces	4xQSFP28 Pluggable Cages
Serdes Speeds	Configurable to 12.5G, 25G, 50G, 100G
Dimensions	Full length, full height PCIe Gen 3.0 slot, 10" length, 4" height
Power	75 W