



Interconnect Panel

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The Two Winners

- Ethernet
 - > 10 GbE acceptance will grow as prices fall
 - > iWARP with hardware RDMA support will extend Ethernet reach into HPC
- InfiniBand
 - > Finally – “The MPI of Interconnects”
 - > And, more important, starting to get traction with enterprise customers (e.g. Financial Services desire for high msg rates)
 - > Aggressive bandwidth roadmap, excellent latencies ensure IB longevity

Density Attributed to Connector Choice

- Sun's Datacenter Switch 3456
 - > 1152 physical CSFP connectors
 - > Yields 3456 4x DDR ports in single chassis (W48" x H62" x D28.5")
 - > Connects to CSFP enabled leaf switch (NEM) in each blade shelf



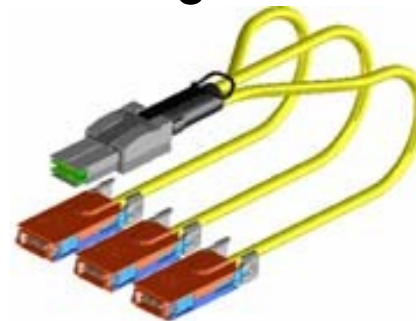
Not drawn to scale

IBTA 12X Standard Expected May/June 08

- Sun utilized 12x CSFP on the Magnum 3456 switch with straight thru and splitter copper cables
 - > Both passive and active designs, supporting lengths from 3M to 16M
 - > Cable reports S/N, length, & equalization parameters to switch
 - > Superior mechanical design to CX4 with 3:1 cable reduction
- IBTA defining a new 12x Multi-Source Agreement (MSA)
 - > Compact Small Form-Factor Pluggable (CSFP) Transceiver
 - > Dual-Channel CSFP has the same mechanical dimensions as the industry standard SFP transceiver
 - > Compatible with the standard SFP cage

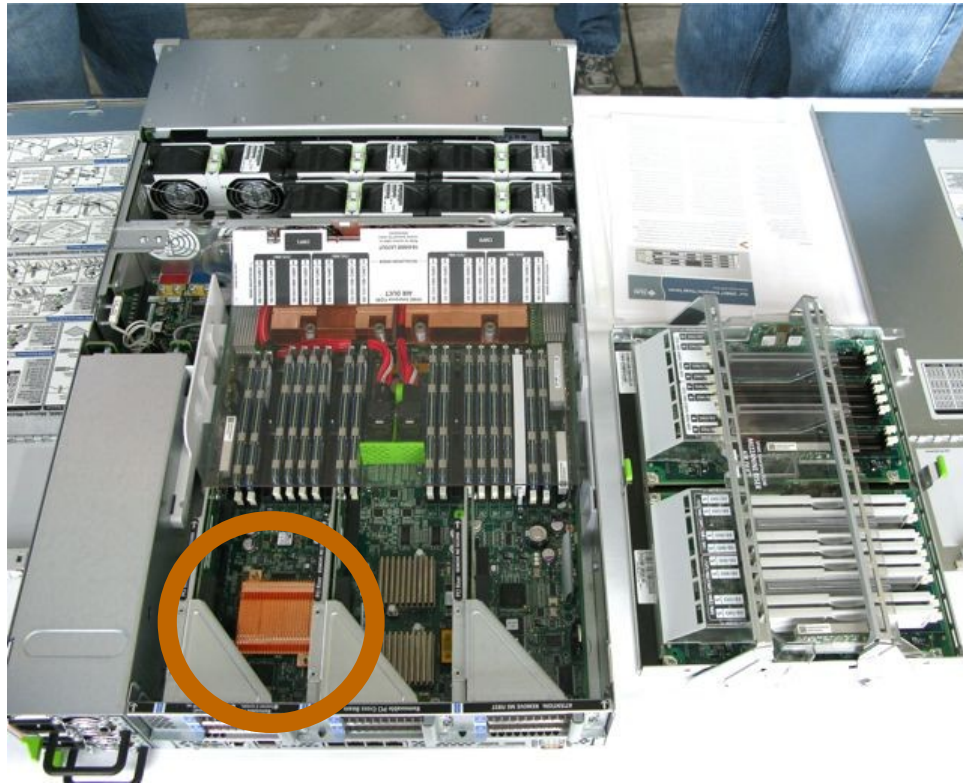


1 2 x C a b l e
Equivalent to 3 C X - 4 cables



1 2 x S p l i t t e r
Breaks out to 3 C X - 4 cables

Sun Multithreaded 10GbE



- Dual 10 GbE on-board
- Multithreaded to support CMT (24 TX; 16 RX DMA channels)
- On-chip version:
UltraSPARC T2 NIU
- Plug-in card available
- Crossbow network stack

Some Sun Interconnect Work

- System-on-a-Chip (SOC)
 - > On-silicon interconnect support (e.g. UltraSPARC T2 NIU)
- Possible semantics beyond current IB / RDMA
 - > MPI acceleration
 - > Support for new programming models (e.g. PGAS)
- UNIC – Ultraperformance Nanophotonic Intrachip Communications



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