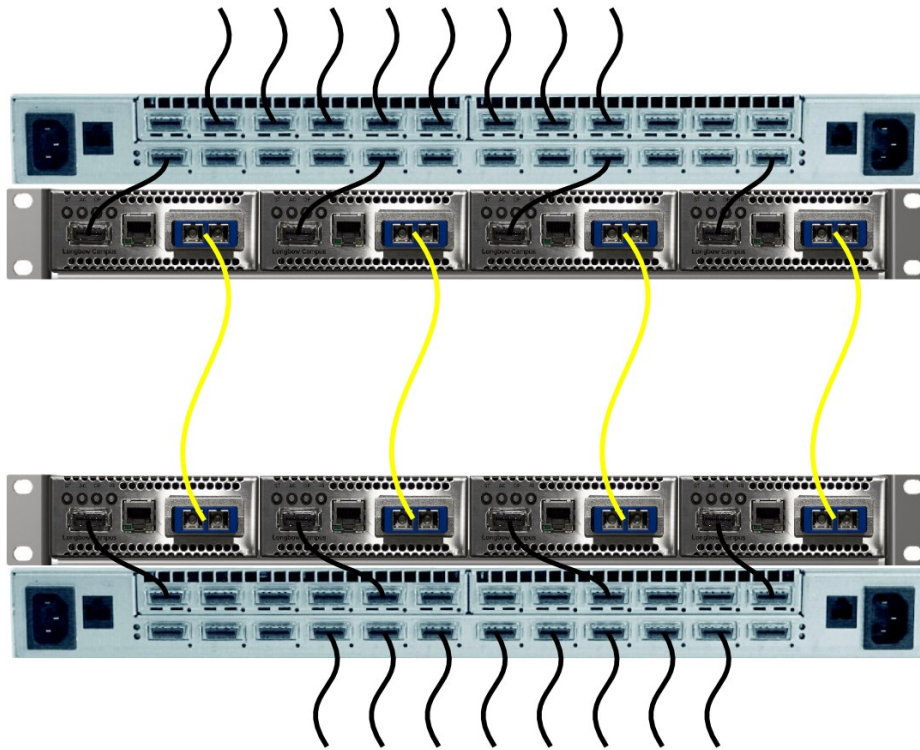


40km System Area InfiniBand @ 40Gbits/s

Qlogic and Obsidian Strategics team to demonstrate high bandwidth long reach InfiniBand connectivity using multipathing over parallel single mode fibers



Qlogic 9024 IB switch

Quad Longbow Campus

40Gbits/s, up to 10/40km single mode fiber

Quad Longbow Campus

Qlogic 9024 IB switch

Background

InfiniBand is emerging as an attractive System Area Network interconnect, providing the bandwidth, scalability and latency characteristics necessary for next-generation data centers, clusters, storage area networks and supercomputers.

Copper and parallel multi-mode optic fiber interconnects provide excellent intra- and inter-rack connectivity for conventional InfiniBand switches and HCAs, but are limited in reach to approximately 20m and 150m due to physical and buffer credit limitations, respectively.

Obsidian Strategics developed the "Longbow Campus" product as a means of transparently extending 4X SDR InfiniBand links over single-mode dark fiber at distances of up to 10km (or optionally up to 40km).

The Demonstration

Qlogic and Obsidian together showcase the capability of building Campus or short Metro-reach System Area Networks, using InfiniBand switches that multipath across parallel optic extensions. Bisection bandwidths can be scaled in 10Gbits/s increments as more ports on each switch are linked up via range-extenders. In this case, four links create an aggregate 40Gbits/s link.

This powerful combination of low latency, high bandwidth, system scalability and expanded physical network radius is unmatched, and together elevate InfiniBand as the ideal system area network technology.

Applications

Supercomputer expansion - NASA Ames' *Columbia* supercomputer uses 16 Longbow Campus devices to extend its main InfiniBand fabric to a second building **3km** from the primary site to access an additional 1,536 processors (three Altix SMPs) at **80Gbits/s**. Longbow Campus can be used in this way to expand large, otherwise "building bound" supercomputers.



Cluster aggregation - islands of compute resource scattered across a campus (or metro area) environment can be coupled with fast parallel Longbow Campus connections to dynamically recruit large CPU-count machines suitable for MPI applications. This application relies on Longbow Campus' very low latency and transparency.

InfiniBand SANs - Very high performance campus-area native InfiniBand Storage Area Networks.



www.obsidianstrategics.com



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