

# Routed 20Gbits/s InfiniBand WAN storage

US Department of Defense stages an exhibit mirroring the JCTD-Large Data program - distributing very large data sets across WANs in an all-InfiniBand environment with Longbow XR routers

## LARGE DATA

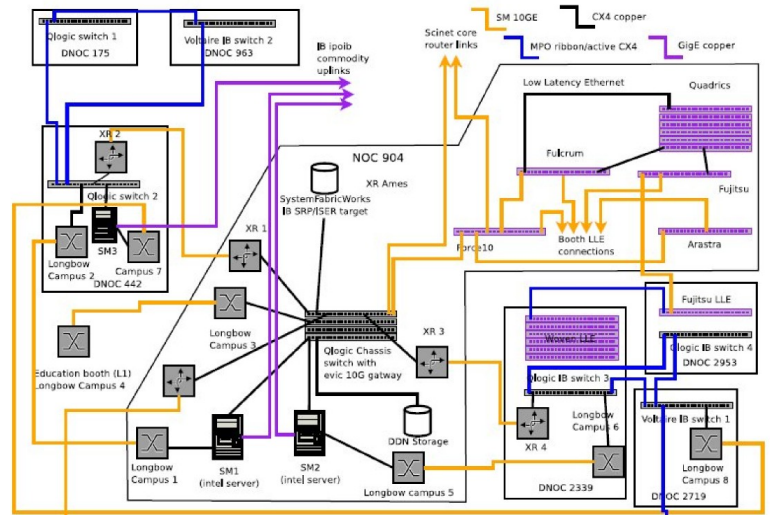
Joint Capabilities Technology Demonstration  
USSTRATCOM - NGA - NRL - DISA - INSCOM



Longbow XR - global InfiniBand range extender & router



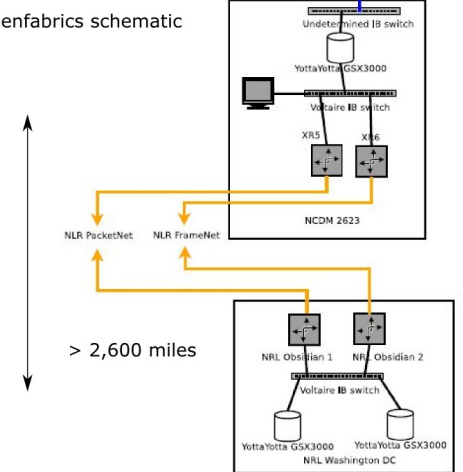
Longbow Campus - 10km/40km InfiniBand range extender for use over dark fiber



Routed InfiniBand storage network on showfloor at Supercomputing 2007 in Reno, NV

Routed InfiniBand storage traffic over a pair of 10 Gigabit Ethernet National Lambda Rail paths

Naval Research Laboratory, Washington D.C.



## Background

Architected and organized by Dr. Henry Dardy's team at the U.S. Naval Research Laboratory (NRL — Washington D.C.), this demonstration mirrors a small segment of an expanding inter-continental network behind the ongoing "Joint Capabilities Technology Demonstration — Large Data" (JCTD-LD) project.

The JCTD-LD is the pilot program of a future system comprising globally distributed InfiniBand storage, server farms and workstations gathering, archiving, processing and rendering very large datasets to support U.S. military and intelligence communities. InfiniBand was selected as the underlying System Area Network for reasons of performance and scalability, and Obsidian's routing range-extenders provide a means for multiple remote locations to be transparently connected in the InfiniBand domain.

## The Demonstration

In this demonstration, two 10Gigabit Ethernet links carried by National Lambda Rail (NLR) link four Longbow XR devices connecting to local InfiniBand subnets in Reno and Washington D.C., where InfiniBand storage equipment is located. Additional InfiniBand storage is directly connected in the National Center for Data Mining (NCDM) booth (#2623), from where a connection is made across SCinet's routed InfiniBand network — using a further pair of Longbow XR devices — to YottaYotta's booth (#703), reaching a third InfiniBand storage location.

Obsidian's Longbow XR integrates InfiniBand range extension and a full hardware InfiniBand routing implementation in a single low-power 1U device.

The implementation provides for multipathing over the dual 10 Gigabit Ethernet paths, and full InfiniBand routing support across the three storage sites (two on the show floor, and the third 2600 miles away at the Naval Research Laboratory, Washington D.C.



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