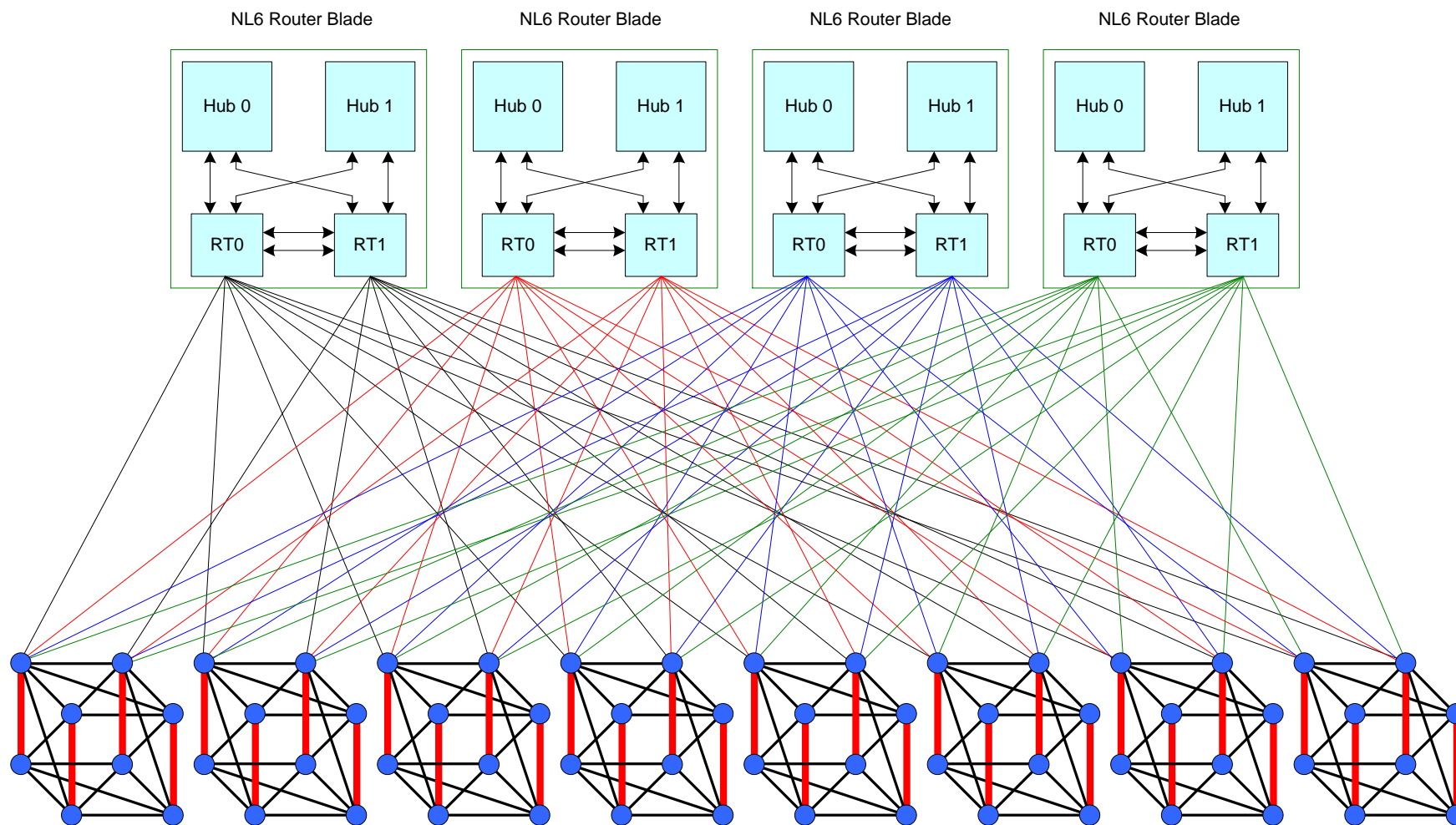


UV2000 8 IRU, 2 Rack – Full Bandwidth Crossbar-connected 3D Enhanced Hypercube Topology

12-08-2011

This drawing shows 1/4 of the topology.
Each vertex of the cube is connect to four router blades.



Each cube is an IRU.
Each blue circle of the cube is a HARP ASIC on a compute blade.
There is one HARP ASIC in each compute blade and in each router blade.
Each RT in the HARP ASIC is an 8-port router.
The HARP ASIC in the compute blade uses 6 of the 8 ports to create the 3D Enhanced Hypercube.
The remaining 2 ports from each RT are used to extend the topology.
The lines from the compute blades up to the NL6 router blades are color coded.
The black line originates from RT0 port 0 of the HARP ASIC in the compute blade.
The red line originates from RT1 port 0 of the HARP ASIC in the compute blade.
The blue line originates from RT0 port 1 of the HARP ASIC in the compute blade.
The green line originates from RT1 port 1 of the HARP ASCII in the compute blade.

Parts:
2 racks
8 IRUs
64 compute blades
16 router blades
256 cables

Bisection Bandwidth Specifications are based on:
1 cable = 6.7GB/s Peak Symmetric Payload bandwidth

Bisection Bandwidth = 6.7 GB/s/node
128 links @ 6.7 GB/s = 857.6 GB/s
857.6 GB/s divided by 128 nodes = 6.7 GB/s/node

4 hops maximum