Redundant NNI Connectivity

Thoughts on a protocol design

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Some goals

- Multiple links (not just pairs) between multiple nodes (not just two each side)
- Dynamic add. links and nodes, not just failure
- Nodes/links can fail, reappear, don’t remember current protocol state only initial config.
- Inter-nodes communication on arbitrary paths
- Arbitrary delay on communication paths
- VID (ISID?) allocation of traffic to links
Choosing the link

• Pecking order (per allocatable unit - au)
  – Node pecking order
  – Link pecking order (from pecking order of connected nodes)

• State for each link at each node (per au):
  – Released (not providing connectivity for this au)
  – Bid (want to provide connectivity)
  – Connected

• Liveness/acknowledgment:
  – follow the security protocol (MKA) design
State transitions

⇒ Released
  • if link down
  • if better link Bid or Connected

⇒ Bid
  • if all better links Released

⇒ Connected
  • if all other links have seen Bid, and are Released

Node at either end of link can report link State