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