Common Ancestor Objective Function and Parent Set DAG Metric Container Extension

draft-ietf-roll-nsa-extension-08

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Changes addressing feedback from Dominique, Rahul, Fabrice, Pascal, and Diego (thank you so much!)

- Lots of editorial work
  - Typos
  - Sentences rephrased for clarification
  - Added extra definitions in terminology
  - Reordered sections
  1. The 3 CA policies (Strict, Medium, Relaxed) + examples
  2. CA OF that uses policies
  3. PS NSA DIO extension
Version -08 : updates since -04 (2)

• CA OF and policies
  • 3 CA OFs → 1 CA OF with 3 (or more) policies
  • 3 OCPs → 1 OCP for 1 OF, same for all policies
• Explained restrictiveness order of policies
  • Strict > Medium > Relaxed
  • Described as allowing control of trade-off between
    • Energy-consumption
    • Reliability
• Explained that policies used are local to the node → nodes can use different policies
Version -08 : updates since -04 (3)

- Parent Set (PS) TLV in NSA object in DIO DAGMC
  - More details about format
    - IPv6 stored as 128bit addresses
    - One after the other, no separator
    - Address count from field size
    - Order of entries in decreasing order of preference
    - Number of reported parents left to implementation
Version -08 : updates since -04 (4)

• Use of NSA in DIO DAGMC
  • Changed usage of NSA as constraint → NSA as metric
    • Previously: as constraint requires corresponding metric
    • C=0 (Metric)
    • R=1 (Recorded because Aggregated makes no sense)
    • P=1 (Partial because each node only gets the PS of it’s neighbors, not of all the nodes up to the root)
  • Highlight that NSA metric is disregarded for the purposes of rank calculation
Version -08 : updates since -04 (5)

• Security Considerations
  • PS contains addresses of neighbors’ parents
• Issues
  1. Privacy / Network discovery
  • Interceptor can see one hop beyond own neighborhood
  2. Rerouting
  • Malicious DIO sender can reroute neighbors (but already possible with fake ranks)
Road Forward

- Addressed all issues
- WGLC?