The Optimized Link State Routing Protocol version 2

`draft-ietf-manet-olsrv2-04`

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Status

- Functionally equivalent to -03
  - signaling, algorithms
  - normative reference to (now) WG I-Ds (iana, jitter, timetlv)

- Organizational
  - made explicit that everything can change
  - NHDP compatibility

- Robustness
  - guard against things that shouldn't happen
  - explicit constraints on permitted changes

Link Metrics for OLSRv2

draft-dearlove-olsrv2-metrics-00

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Status & Purpose

- Status
  - individual submission
- Purpose
  - present link metrics for OLSRv2
  - decide whether to include in OLSRv2
- Non-Purpose
  - delay WG progress
  - affect I-Ds other than OLSRv2
  - discuss measuring/calculating link metrics

Motivation

- Is min-hop routing good enough?

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- Is min-hop routing good enough?
  - two high-bandwidth links instead of one low-bandwidth link
  - routing around regions with high congestion/interference
  - "worst-path-first syndrome"

Can we do it?

- Technically
  - has been done in OLSR and elsewhere (MANET-OSPF)

- Organizationally
  - fairly straightforward update to OLSRv2

Future Extension?

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- Not a good idea
  - nodes using link metrics and nodes not recognizing link metrics cannot safely interwork

Link Metrics

- Proposed link metrics are
    - dimensionless
    - scalar
    - positive
    - directional
    - additive
- How to calculate link metrics from real-world information is not part of OLSRv2

Why directional?

- Links are naturally asymmetric
- No inconsistency
  - Link metrics defined without negotiation (lossy)
  - Proposed definition by receiving node

How are link metrics reported?

- HELLO messages
  - in both directions
- TC messages
  - outgoing only
- Using TLVs
  - default value - if you don't use it, you don't pay for it

MPRs

- Used for
  - relaying flooded messages
  - reduced topology advertisement

- For the latter, need a link metric aware calculation

Routing

- Build Routing Set
  - minimum distance algorithm
  - on Network Topology Graph

Routing

- Build Routing Set
  - minimum distance algorithm
  - on Network Topology Graph
    - with link metrics

Key Points

- If min-hop paths are not good enough
- Do it by introducing link metrics
- Calculating link metrics is NOT in OLSRv2
- Fairly straightforward addition to OLSRv2

- Discuss, decide - NOT DELAY OLSRv2