Multi-path Extension for OLSRv2

draft-ietf-manet-olsrv2-multipath-02

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Outline

• Status
• Changes
• Implementation experiences
• Next steps
Status

- WG adoption on August 15th, 2014
- draft-ietf-manet-olsrv2-multipath-00, 01, 02 out
- A lot of comments received — thanks very much!
- Main changes:
  - Experiments to be conducted
  - Relation with OLSR
  - Security considerations
Experiments to be conducted

- Parameter settings
  - Number of paths, cost functions, etc.
- Metrics other than hop count:
  - draft-ietf-manet-olsrv2-dat-metric
  - Using of multi-topology (metric? ^_^) information?
- Selection of “key” routers for source routing
- etc.
With OLSRv2...

• The multi-path extension can be applied to certain applications suitable for multi-path
  • Audio/video streaming
  • Extremely lossy links
  • etc…

• Based on information such as DiffServ Code
Security considerations

- Reference to:
  - RFC 7181 (OLSRv2)
  - RFC 7183 (nhdp-olsrv2-sec)
  - draft-clausen-manet-olsrv2-sec-threats
- Consideration of source routing
New Implementation Experiences

• Experimental performance comparison of single-path and multipath routing in VANETs

  • IEEE Global Information Infrastructure and Networking Symposium (GIIS), 2014
  • Macedo, Ricardo ; Melo, Robson ; Santos, Aldri ; Nogueira, Michele
  • NR2 - Federal University of Paraná (UFPR), Brazil ;
Static scenario

Mobile scenario
Packet loss ratio

[Bar chart showing packet loss ratio for OLSR and MP-OLSR in Static and Mobile scenarios.]

- Static:
  - OLSR: 41.02%
  - MP-OLSR: 10.81%

- Mobile:
  - OLSR: 30.39%
  - MP-OLSR: 13.69%
Jitter

![Graph showing jitter comparison between OLSR and MP-OLSR in static and mobile scenarios.]
Packet forward ratio

![Packet forward ratio graph](image)

- OLSR:
  - Node a: 9.42%
  - Node b: 36.2%
  - Node c: 54.37%

- MP-OLSR:
  - Node a: 30.02%
  - Node b: 36.60%
  - Node c: 33.37%
Ongoing Experiments

- Large-scale tests (200-300 nodes expected)
- FIT-IoT Lab, Rennes, France
What’s Next?

• Target:
  • Experimental RFC

• Ready for WGLC - NOW!
  • Comments appreciated
  • Suggest 3 week WGLC?