Simplified Multicast Forwarding (SMF) Progress/Issues

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SMF -02 Draft Review

- Version -02 has been posted
- Text changes throughout but several key updates/changes
- Additional specification and references for dynamic optimized relay set algorithms
- Initial specification of an optional Neighborhood Discovery protocol
Review of Goals and Approach

• Build off existing knowledge and work
  – Specify a simplified MANET multicast routing approach
  – Integrate lessons from optimized MANET Flooding/Broadcast experience
    • MPR-F, other RFCs, IDs looked at in the past

• Consensus-based Approach
  – Present Design Team Contributors listed in ID

• Develop a specification targeting initial EXP RFC
  – Progress work to STD track later if positive experience using this protocol is gained

Feedback from previous version

• Specification was less complete in -01
  – No neighborhood discovery
  – CDS algorithms where mentioned but not discussed in detail

• Actions taken
  – Further discussed CDS algorithm behavior and packet formats, improved references
  – Began specification of neighborhood discovery using packetbb ID based messaging and added TLVs to support CDS
Key Design/Implementation Issues

• Forwarding Method
• Duplicate Packet Detection Mechanism
• Supports a variety of CDS algorithms
• Optional Neighborhood Discovery

Relay Set Algorithms in SMF-02

• Classical Flooding
  – No neighborhood knowledge needed
• S-MPR
  – As in RFC 3626
  – 2-hop, symmetric knowledge
  – Forwarding is previous hop dependent
• Essential CDS (E-CDS)
  – Richard Ogier presented core algorithm for manet-ospf
  – 2-hop, symmetric knowledge
  – Previous hop independent
• MPR-CDS
  – INRIA presented core algorithm as extension of S-MPR
  – 2-hop, symmetric knowledge
  – Previous hop independent
Neighborhood Discovery in SMF

-02 begins to specify optional packet formats and approach
- Compliant with BB ID
- Intended to be optional when SMF is operating without additional manet protocols

Running Code Prototype

- [http://pf.itd.nrl.navy.mil](http://pf.itd.nrl.navy.mil)
- Tested for win32, linux, ns2, OPNET
- Presently uses NRLOLSR neighborhood discovery (ND) for various CDS algorithms
  - Not needed for CF
  - Used for E-CDS, S-MPR, MPR-CDS
- Newer SMF ND
- Would anyone like to announce additional work?