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
- 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?