DyMO
Dynamic MANET On-demand Routing Protocol

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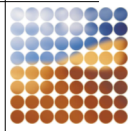


Goals

- Create a route
- Simple
- Extendable
  - Enhancements & optimizations
- IPv4 and IPv6
- Internet connectivity
- Use what we know

Route Discovery

- RREQ-RREP Destination-only
  - Hop-by-hop routing
  - No intermediate node RREP
  - Tradeoffs?
    - Sequence numbers
    - No unidirectional links
- Path accumulation?

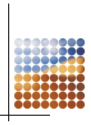
Path Accumulation

- During RREQ each node appends its address
- RREP reverses RREQ path
- Main advantages
  - No reverse route needed during RREQ
  - “free” information dissemination
- Main disadvantage
  - Overhead
    - IPv6 header - 40 bytes
    - IPv6 address - 16 bytes
    - 802.15.4 MTU - 104 byte payload

Route Maintenance

- RERR processing
- Routes timeout after inactivity
- Optional - link monitoring
  - Hello messages
  - Link layer feedback
  - Network layer ack
  - Passive ack

Extendable

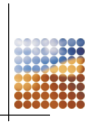


- IP option-like packet format
- Unknown option handling
  - RERR option-unsupported bit
  - Skip option and continue
  - Remove option and continue
  - Set option-ignored bit and continue
  - Drop packet

Extensions and Optimizations

- Intermediate node RREP
- Gratuitous RREP
- Local repair
- Path accumulation
- Expanding ring search
- Specifying length of routing prefix (if not in base)
- Specify timeout
- Compatibility considerations, if any, with improved flooding
- "pulse" style star-shaped routing regions (energy savings)
- Enabling utilization of alternate metrics
- Security
- QoS requirements
- Many more…

DyMO Short Term Future



- Initial document is being developed
- MANET list discussion on certain tradeoffs
- Simple, quick implementation
- Comments please…