Dynamic MANET On-demand Routing Protocol

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Goals

- Create a unicast route
- Simple, small
  - Easy to implement
- Extendable
  - Enhancements & optimizations
- IPv4 and IPv6
- Basic internet connectivity
- Use what we know
Fixed Element Header

- Generic element and packet handling
  - Extendible via new element types
  - Known behavior for unsupported elements
  - Simple implementation
Generic Processing

- Element handling - Type
  - M-bit, first bit in Type field
    - Notify unsupported element (UERR)
  - H-bits, 2nd and 3rd bits in Type field
    - Skip element and continue
    - Set ignored bit, skip and continue
    - Remove element and continue
    - Drop packet
Packet Transmission

- MANETcast
  - All MANET nodes, multicast or broadcast
  - IPv4 255.255.255.255
  - IPv6 ff02::2
- Hop-by-hop unicast
  - TargetAddress supplied in first element
Route Discovery

- Routing Element (RE)
  - Simple, common processing
  - REBlock
- RREQ => RE A=1 MANETcast
- RREP => RE A=0 Unicast hop-by-hop
- Path accumulation
  - Optional accumulation, processing and transmission
Route Maintenance

- Avoid expiring good routes
  - Update reverse route lifetime on data reception
  - Update forward route lifetime on data transmission
- Inform sources of broken routes quickly
  - Active links must be monitored
    - Several mechanisms available
  - Route Error (RERR)
    - Optional additional invalid routes
DYMO Short Term Goals

- dymo-00 available
  - Great comments already received
  - More comments please
  - dymo-01 in a few weeks
- MANET list discussion
- Simple, quick implementation
  - Looking for DYMO implementers
  - Simulators and various OS
  - Please contact us
Open Discussion

Questions
Comments

http://moment.cs.ucsb.edu/dymo