OSPF extension for MANET with MPR

draft-baccelli-ospf-mpr-ext-03.txt

Emmanuel Baccelli
Agenda

1. Overview of the extension for MANETs
2. Current Activity
3. GTNetS Simulations Report
4. Next steps
Overview of the Extension
Overview of the Extension
Overview of the Extension

MPR Selection
- Identifying important links
Overview of the Extension

MPR Selection

Overhead Reduction
- Flooding repeated only along important links (flooding reduction)
Overview of the Extension

MPR Selection

Overhead Reduction
- LSAs contain only important links (topology reduction)
Overview of the Extension

MPR Selection

Overhead Reduction
- Adjacencies formed only over important links (adjacency reduction)
Overview of the Extension

MPR Selection

Overhead Reduction

Quick Convergence
- Works for sparse/dense networks, low/high mobility
Overview of the Extension

MPR Selection

Overhead Reduction

Quick Convergence

OSPF legacy preserved
- Shortest path routing over adjacencies
Overview of the Extension

- MPR Selection
- Overhead Reduction
- Quick Convergence
- OSPF legacy preserved
- MANET legacy preserved
- Leverage of existing MANET protocols
Current Activity

• Simulation results with GTNetS


• Draft updated to -03

  minor updates/clarifications since -02
Simulation Results (20 nodes)

![Graph showing delivery ratio vs. range for different network configurations]

- Full LSA, Mcast
- LSA reduc, Mcast
- Adj reduc, LSA Reduc, Synch Node, Mcast

Overhead (kbps)

Range
Simulation Results (30 nodes)

![Graph showing delivery ratio and overhead vs. range]

- **Full LSA, Mcast**
- **LSA reduc, Mcast**
- **Adj reduc, LSA Reduc, Synch Node, Mcast**
Simulation Results (40 nodes)

![Graph showing overhead (kbps) versus range for different configurations: Full LSA, Mcast, LSA reduc, Mcast, Adj reduc, LSA Reduc, Synch Node, Mcast. The graph includes two subplots: one showing delivery ratio versus range, and another showing overhead (kbps) versus range.]
vel=3m/s pause=20s, MinLSInterval=2 s

<table>
<thead>
<tr>
<th>Nodes</th>
<th>lsu (kbps)</th>
<th>ls-ack (kbps)</th>
<th>dbsec (kbps)</th>
<th>delivery ratio</th>
<th>topology reduction factor</th>
<th>per node LSA interval</th>
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</thead>
<tbody>
<tr>
<td>60</td>
<td>43.95</td>
<td>116.33</td>
<td>49.45</td>
<td>0.936</td>
<td>7.39</td>
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<td>120.60</td>
<td>0.932</td>
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<td>355.29</td>
<td>191.52</td>
<td>0.934</td>
<td>10.94</td>
<td>5.33</td>
</tr>
</tbody>
</table>
Next Steps

- Specification is stable

- Ready to give control of the document to the WG