Technische Universität München
Lehrstuhl für Netzarchitekturen und Netzdienste
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Thesis (B.Sc./M.Sc.)

Simulative Performance Evaluation of Dissemination Strategies in Wireless Networks

Motivation

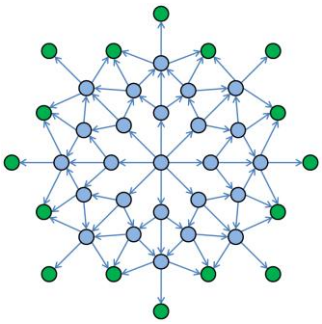
Wireless links between two nodes in a network are usually lossy due to interference or mobility. For this reason, the topology in a multi-hop wireless network changes frequently which requires periodic transmission of topology information in order to maintain connectivity. The first routing protocols applied simple flooding strategies where all nodes forwarded incoming routing messages which results in a large protocol overhead, bandwidth utilization and energy-consumption. New strategies, like MPR flooding, outperform pure flooding strategies in terms of protocol overhead. However, these strategies are strongly affected by topology changes which lead to poor performance in mobile networks. In this thesis, you will evaluate the performance of different dissemination strategies in various scenarios.

Your Task

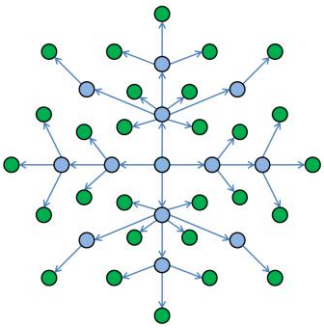
Your task consists of the following steps.

1) Collect information about existing dissemination strategies
2) Get familiar with OPNET and Matlab
3) Implement different dissemination strategies
4) Identify challenging test scenarios
5) Evaluate and compare the performance of the dissemination strategies

Depending on the project's scope, this part will be more (MSc, Diplom) or less in depth (BA)



Pure Flooding



MPR Forwarding

Requirements

Previous knowledge of wireless communication issues and computer networks is useful but not required since you will be provided with the corresponding information and tutorials. Some knowledge of C will give you a clear advantage.

Keywords

Simulation, Routing, Wireless, Network, Dissemination





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