

# Neighbor Mgmt Policy

Performance Report

- **Rahul**, Rabi, Simon, Joakim

IETF104, Prague

# Updates

- Text to highlight use of min-priority field in neighbor mgmt
  - Referenced Michael's enrollment draft
  - draft-richardson-6tisch-roll-enrollment-priority
- Clarifications on route cleanup and impact on neighbor cache
- Performance result added

# Performance test config

- Network stack
  - LWIP integrated with RPL
  - LWIP added with neighbor mgmt policy module
- Test tool
  - Whitefield-framework
    - With NS3 backend for wireless simulation
    - 64 nodes network, 8x8 grid, 80x80 sq. mtr
    - 802.15.4 in 2.4GHz, Unslotted CSMA with single channel
  - Data transmission
    - UDP data sent by each node at 10s interval to BR
    - BR echoes the packet

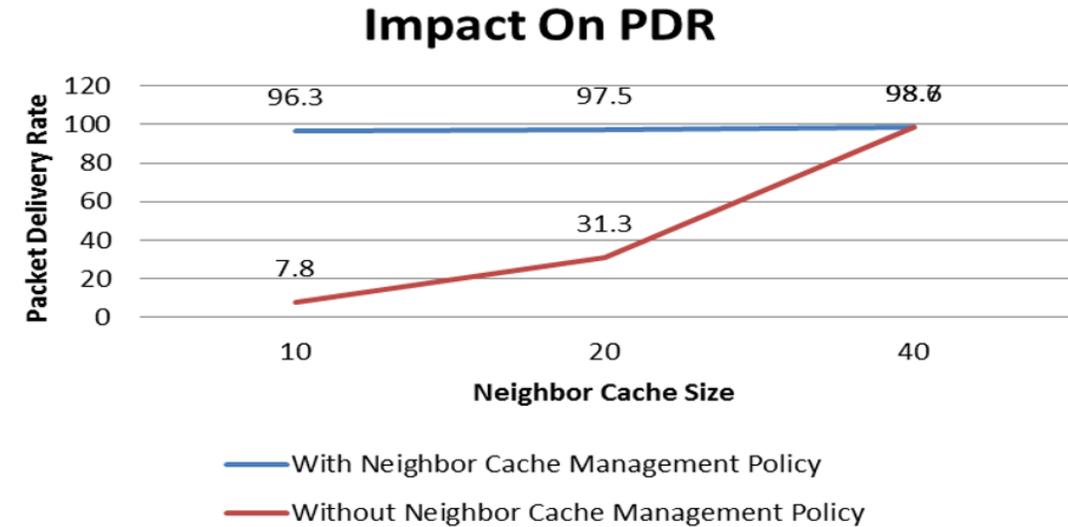
# What to measure?

- Packet Delivery Rate
  - How does neighbor management policy impact PDR?
- Network convergence time
  - How to define network convergence time in this context?

# Results

- PDR
  - >95% PDR achieved even with extremely constrained nbr-table
- Network convergence time

Nbr cache size	Without NBR-mgmt	With NBR-mgmt
10	No-convergence	94sec
20	No-convergence	51sec
40	24sec	25sec



# Observations

- RPL Control overhead with neighbor management was high
  - Because of proactive maintenance
  - Convergence time and control overhead is high with lower nbr cache size
- Without neighbor management
  - The BR could get all the routes but neighbor table size was not enough
  - Most of the UDP traffic was dropped at BR or en-route because of next-hop unavailability in neighbor table

# Next?

- We believe the document is ready for LC