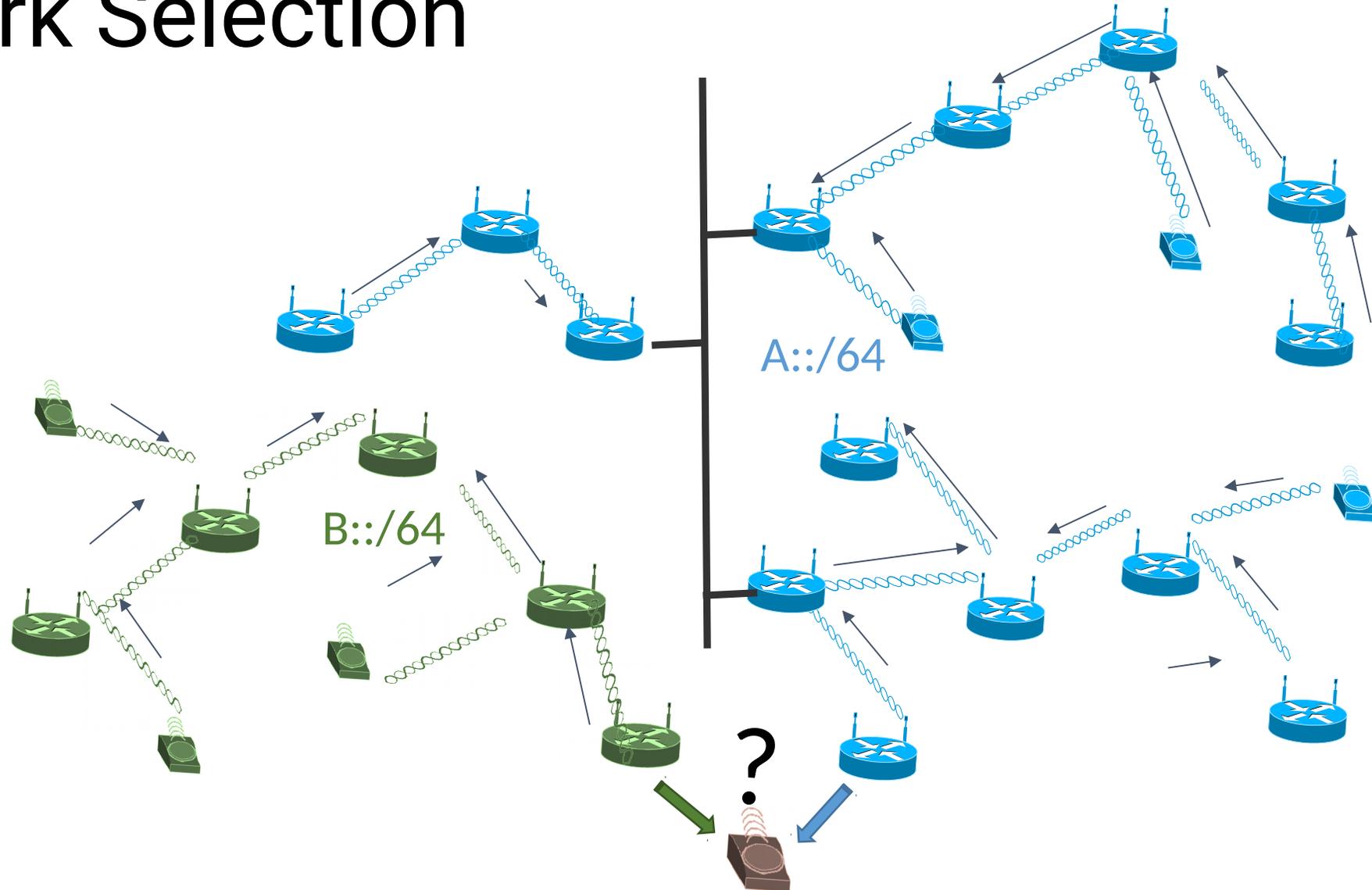


# 6tisch-roll-join-priority-01

And stuff

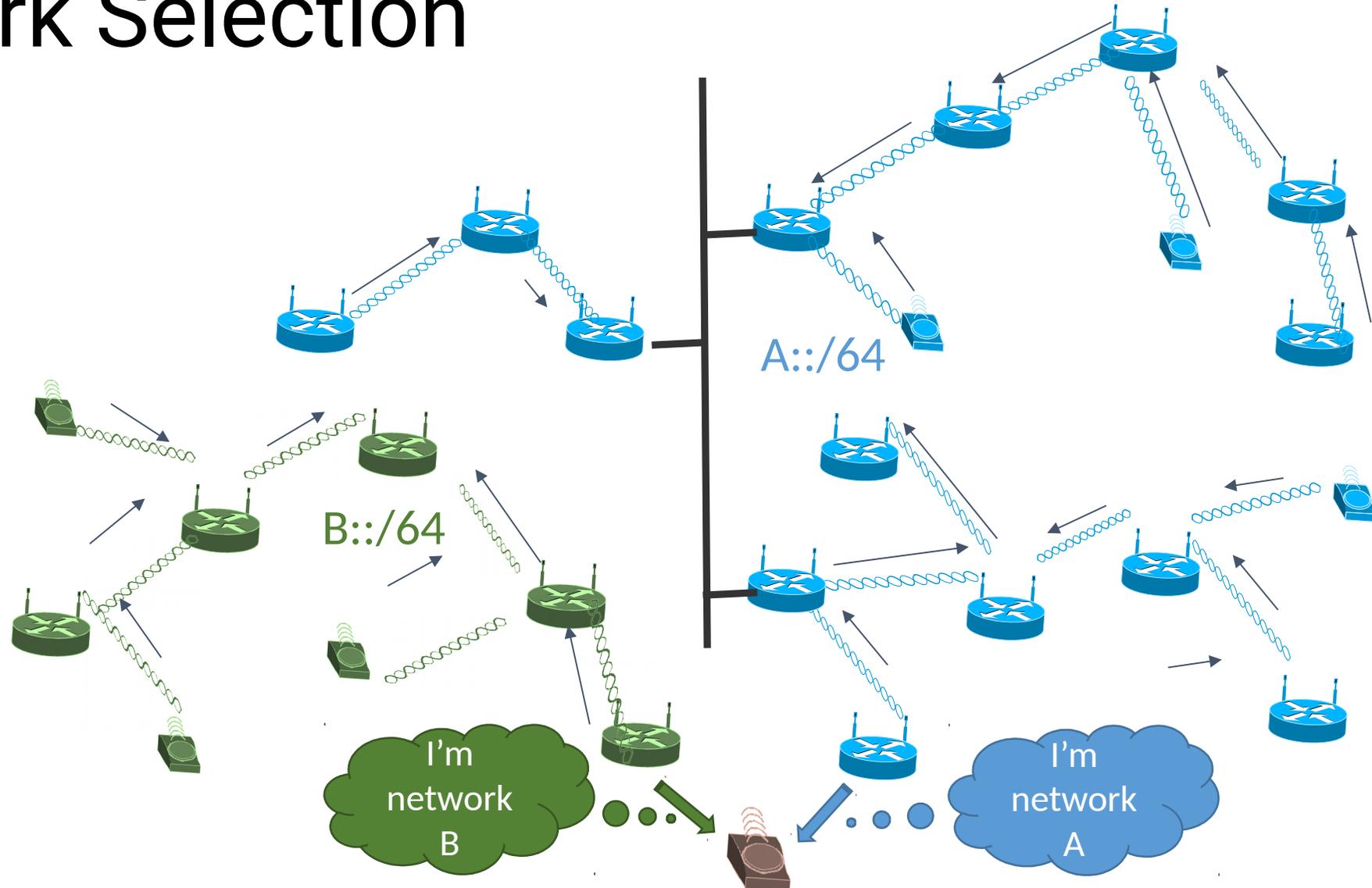
# Network Selection



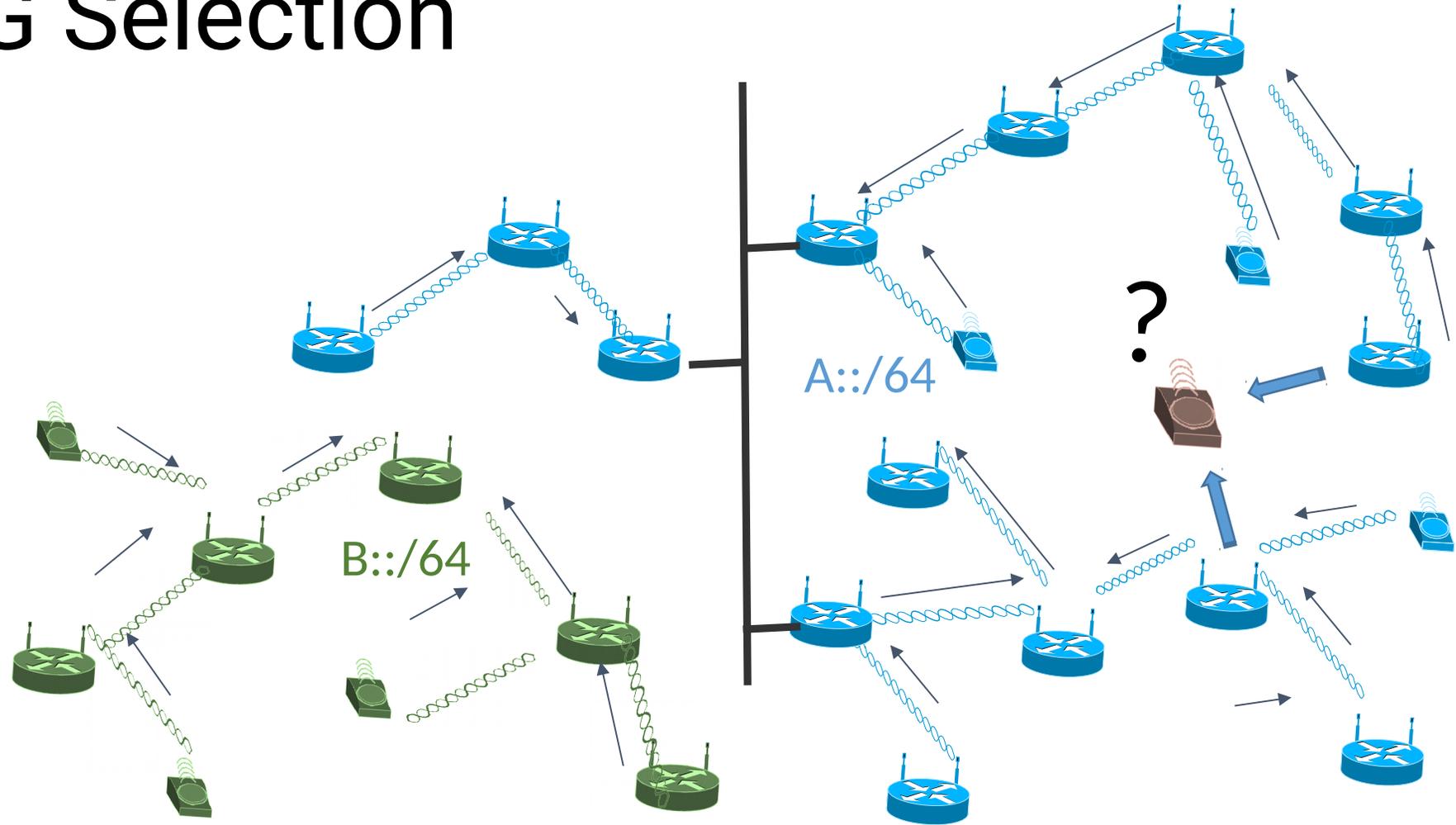
# Network Selection

- Join Performance in case of multiple networks (vs. blind trial and failure)
  - A join that fails for auth. reasons will probably fail again in a same network
  - Need to blacklist temporarily / place and end of trying queue if join failed
- With RPL a joinable network can match an IPv6 subnet
  - Identified by a /64 prefix
  - Single Instance, may comprise multiple roots/DODAGs
  - Single Administration,
  - Can be mapped into a PAN, to enable movement without renumbering
- Need a signature of the network in the beacon
  - Can use a compressed form of the prefix, e.g. bitwise XOR of the /64

# Network Selection



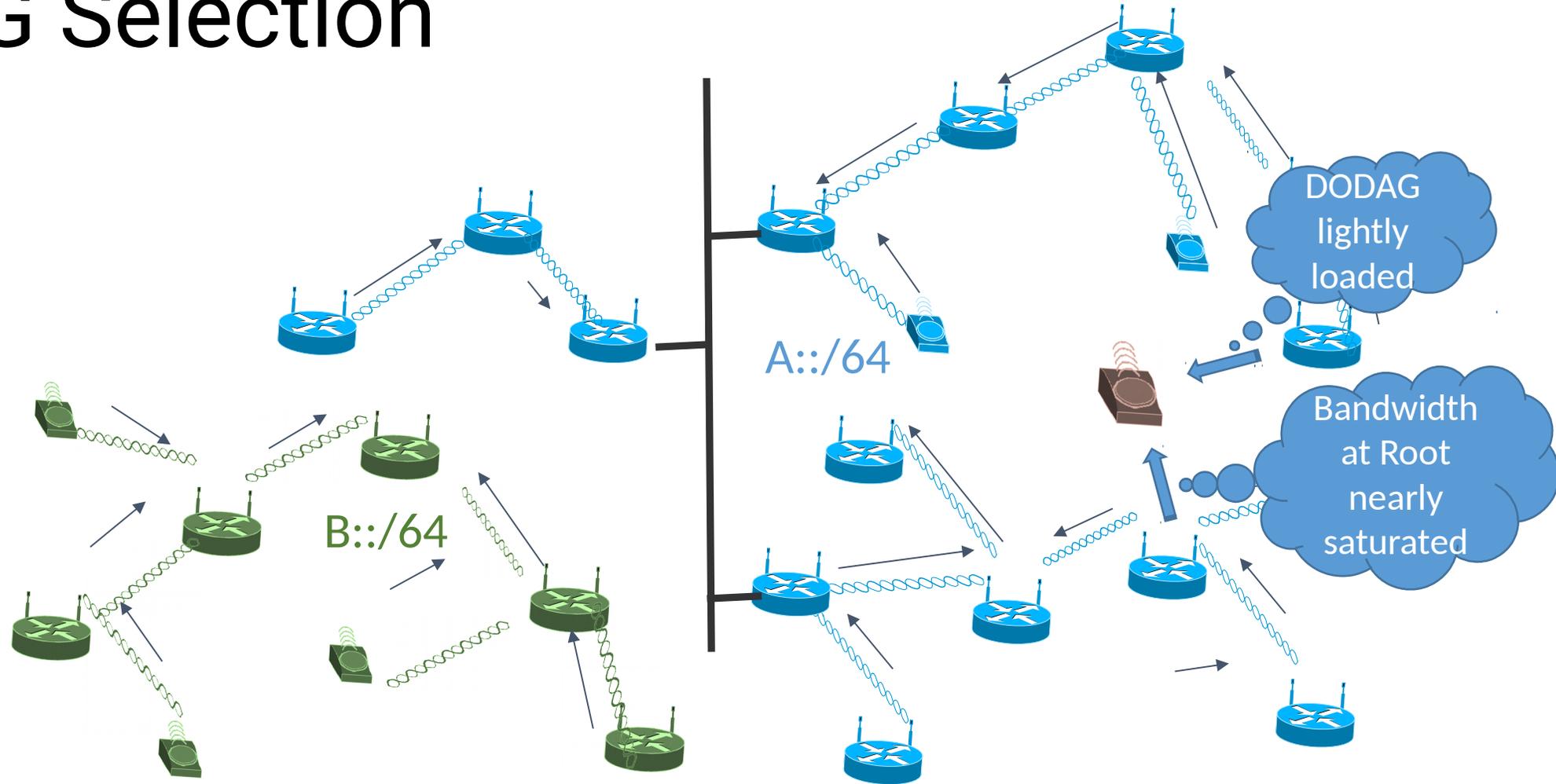
# DODAG Selection



# DODAG Selection

- Real world instabilities
  - Nodes moving to alternate DODAG and back (oscillation)
  - Many nodes moving (lack of throttle / convergence)
- Need awareness of DODAG-level conditions (as seen by Root)
  - Available entries in routing table
  - Available Bandwidth
  - Size of the DODAG, absolute and relative to root capabilities / bandwidth
- Need a preference of the DODAG in the beacon
  - Something similar to an OF
  - Computing DODAG preference based on the metrics above and more

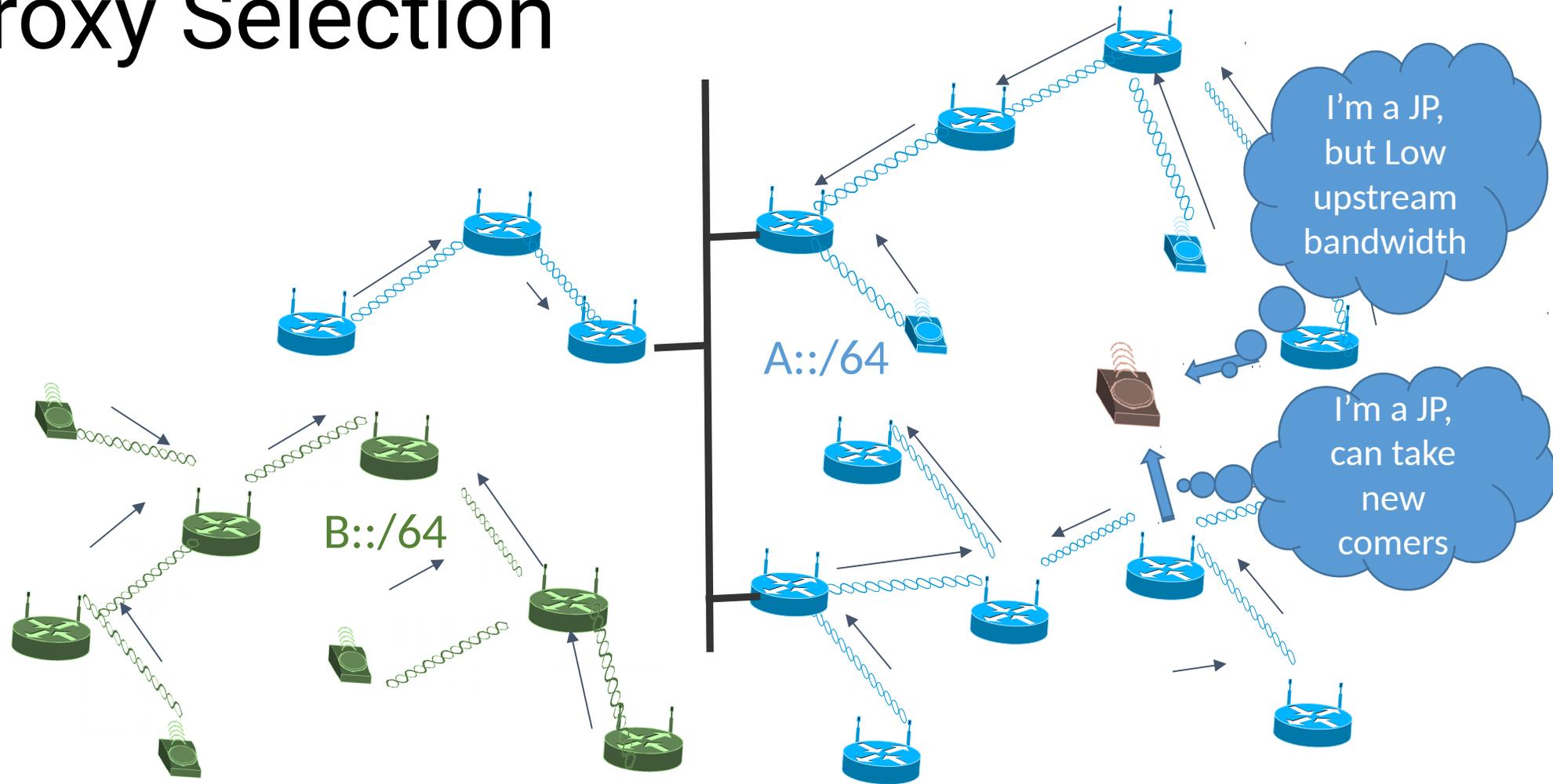
# DODAG Selection



# Join Proxy Selection

- Need awareness of Join Proxy capabilities
  - Available resources for parallel join flows
  - Available Bandwidth / latency to the root
  - Number of children
- Need a preference of the Join Proxy in the beacon
  - Something similar to an OF
  - Computing JP preference based on the metrics above and more

# Join Proxy Selection

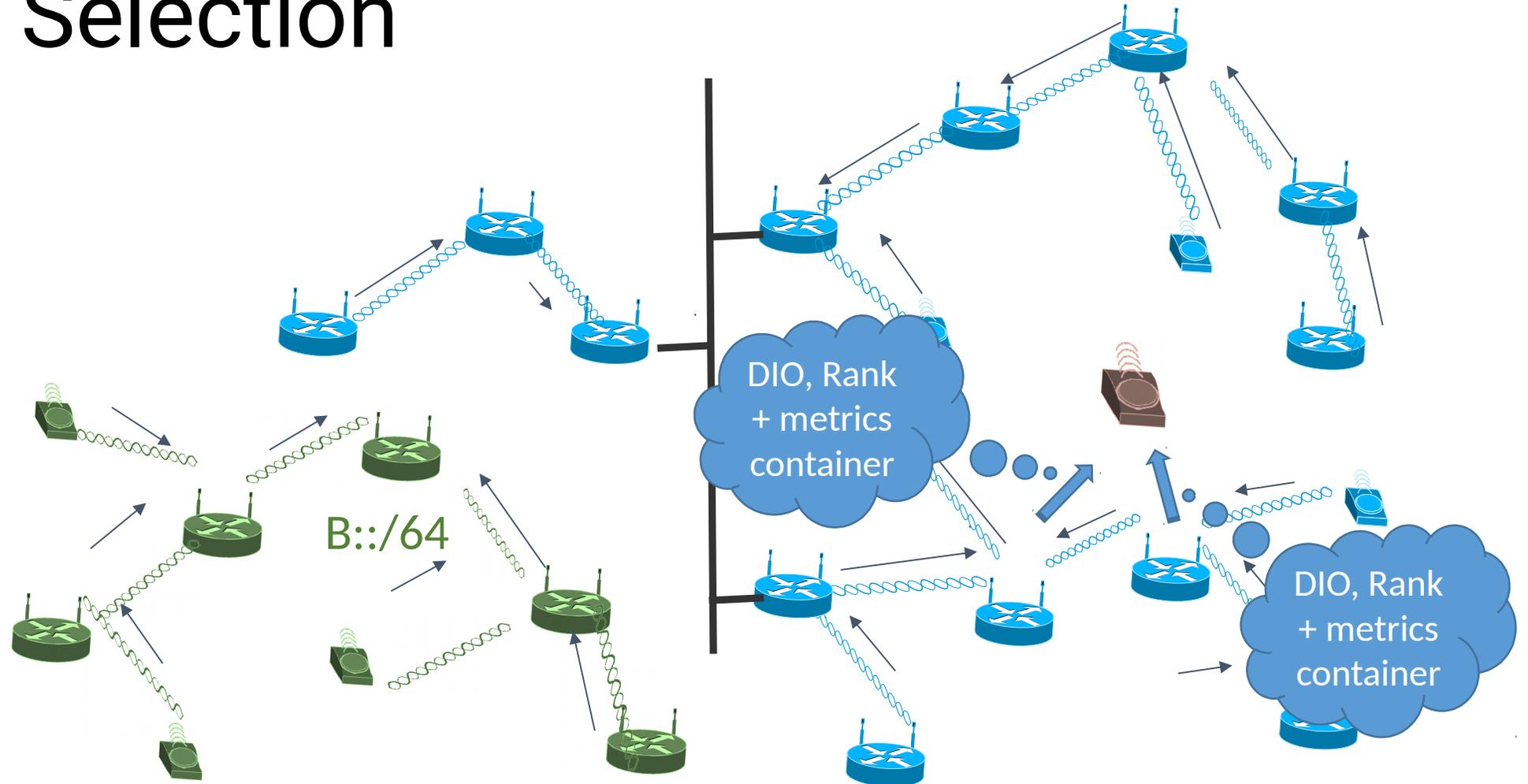


At join time

Sort the visible Join Proxies by

- Network Preference
  - DODAG Preference
    - Join proxy Preference
      - Join Proxy Rank

# Parent Selection



In run time

Sort the potential Parents by

- Network Preference (current preferred)
  - DODAG Preference
  - Parent Rank
- Can have some logic

Contradicting DODAG pref and Rank	Low DODAG Pref difference	High DODAG Pref difference
Low Rank difference	Pick best DODAG	Pick best DODAG
High Rank difference	Pick best Rank	Pick best DODAG