

Bandwidth aware multicast

IETF121 - MBONED

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Overview

- Bandwidth requirements of multicast senders often:
 - Known in advance
 - Constant
- Examples:
 - Sensors
 - Multimedia content
 - CCTV

Overview

- Bandwidth information not taking into consideration when creating multicast trees
- Could allow to give guarantees to senders that enough bandwidth will be available
- Could be used to optimise routing/ link utilization

Theoretical aspects

- Finding optimal multicast trees and setting link weights for them is NP-hard
- We have fast heuristics that is within 2 approximation of optimal (MILP) solution and strictly better than oblivious approach
- Useful in campus networks/ intra domain use cases

Practical aspects

- Extension to PIM to take bandwidth into consideration
- Works with detour search, pruning based flooding
- Works in inter-domain use cases
- Implementation exists (in Omnet)
- Works well for small topologies, becomes unfeasible with large ones

Questions

- Any previous experiences with trying to incorporate bandwidths?
- Is this in general a useful direction from a practical point of view?