

# An Alternative Edge Behavior for PCN-Based Admission Control and Flow Termination

Michael Menth

<http://www-kn.informatik.uni-tuebingen.de>



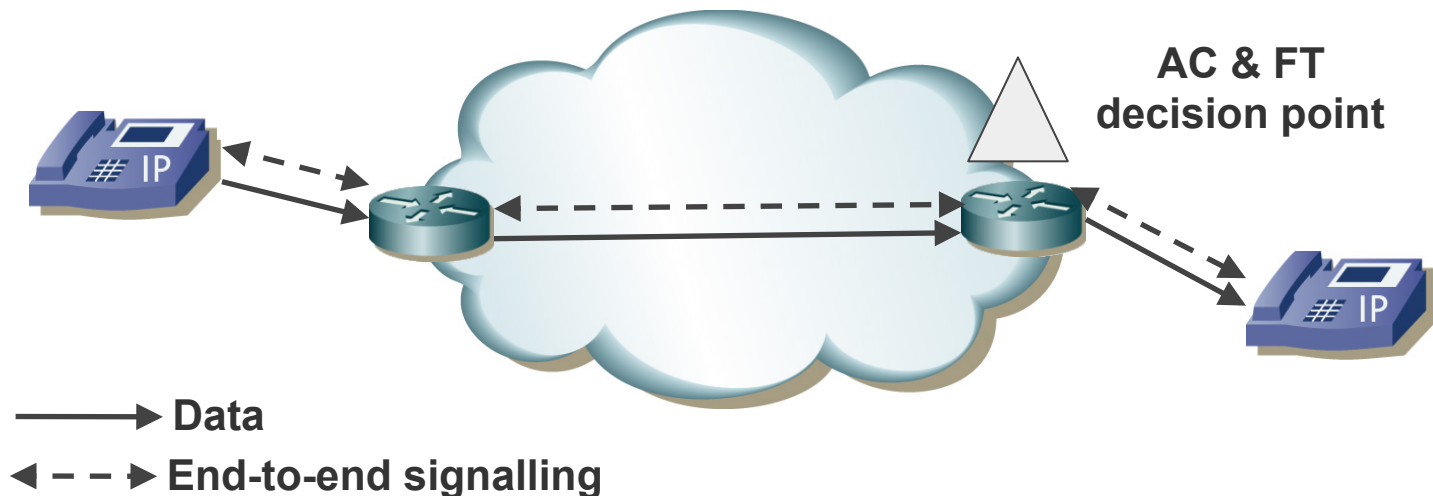
- ▶ Motivation
- ▶ Assumptions
- ▶ Admission control using PCN-marked signaling
- ▶ Regular check termination
- ▶ Conclusion



- ▶ Why another edge behavior?
  - CL does not work with legacy tunnels, requires RFC6040
  - SM requires significant traffic per ingress-egress-aggregate to work well
  - Both require additional signaling protocols
  - Both require ingress-egress-aggregates
    - Not defined how to realize them in different environments
    - Therefore, not clear how measurements can be performed
  - Both have problems with multipath routing



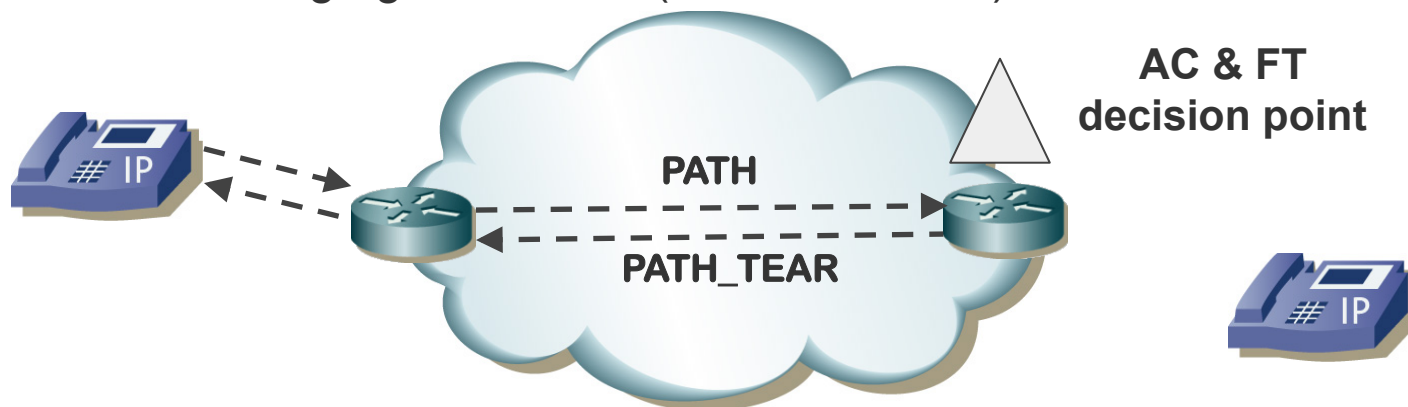
- ▶ Marking behavior: same as in CL
  - Threshold-marking configured with PCN-admissible-rate
  - Excess-traffic-marking configured with PCN-supportable-rate
- ▶ PCN encoding
  - Packet-specific dual marking (PSDM), works with legacy tunnels
  - Alternative: 3-in-1 encoding, requires RFC6040
- ▶ Path-coupled end-to-end signaling



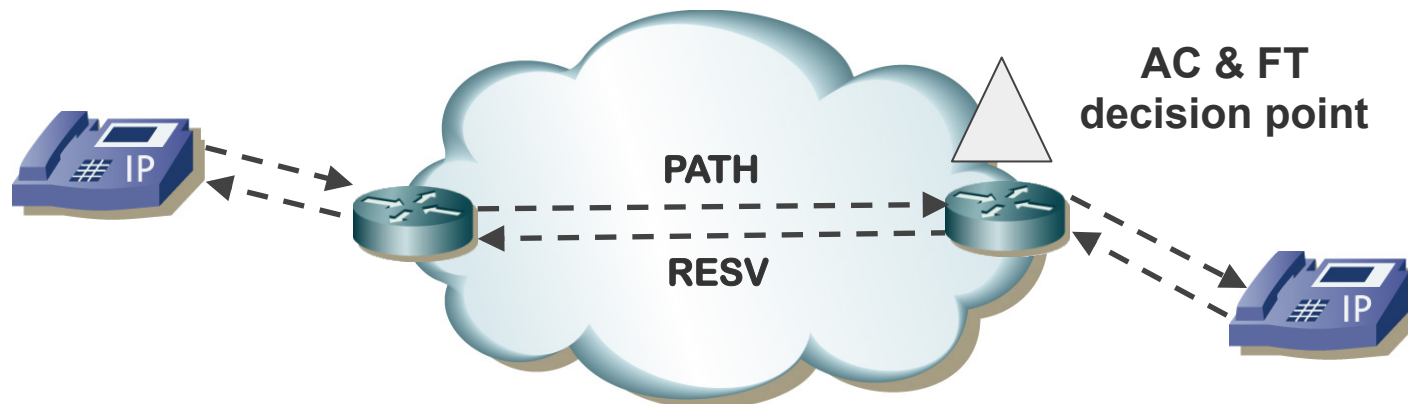


## Admission Control Using PCN-Marked Signalling

- ▶ <http://tools.ietf.org/html/draft-menth-pcn-marked-signaling-ac>  
(co-author Ruediger Geib)
- ▶ <http://atlas2.informatik.uni-tuebingen.de/menth/papers/Menth08-Sub-8.pdf>
- ▶ Initial PATH message gets marked (PM, ThM, ETM): block flow!



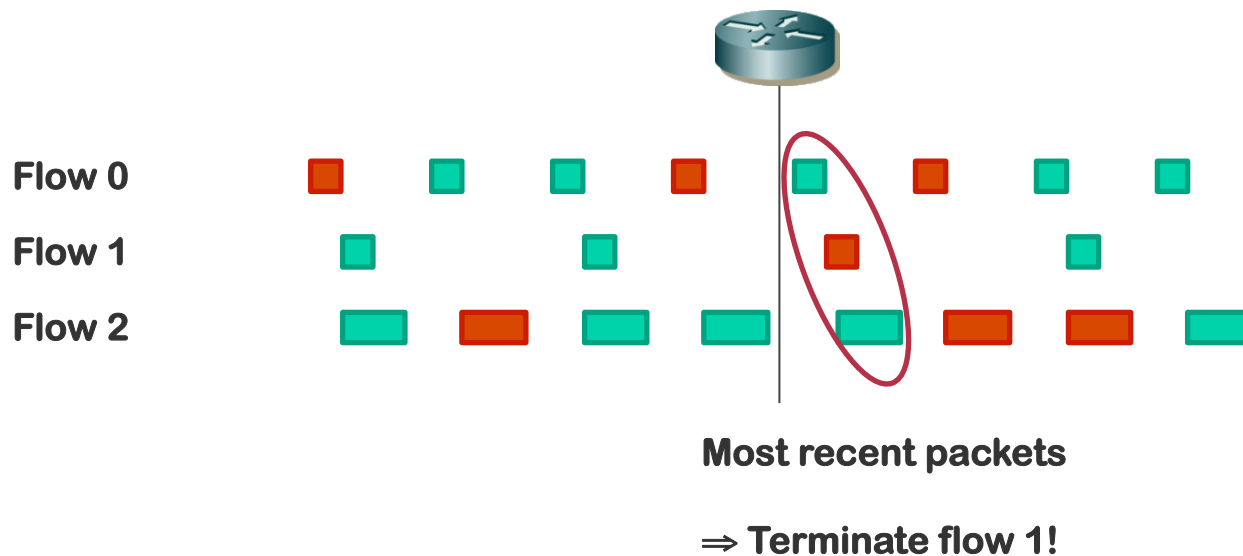
- ▶ Initial PATH message remains not-marked (NM): admit flow!





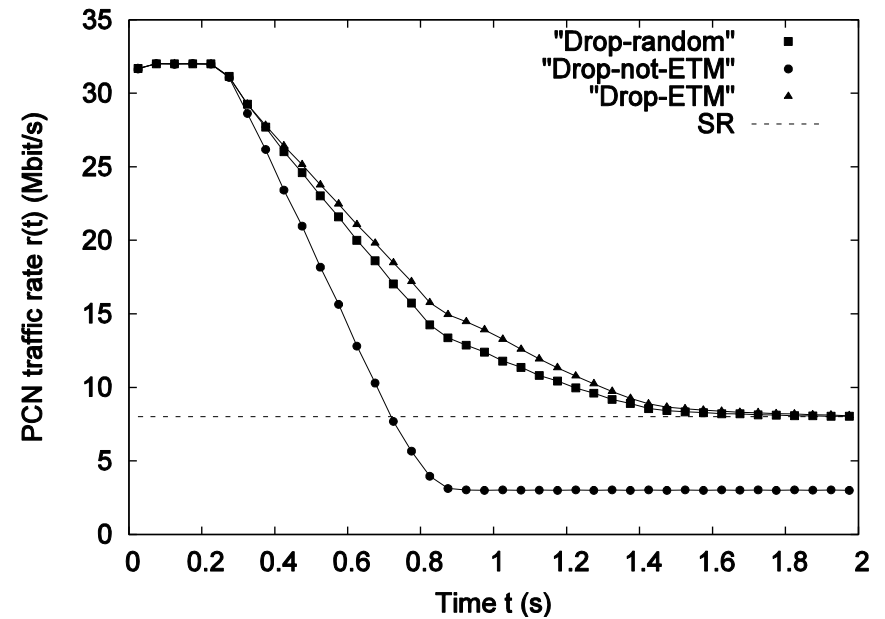
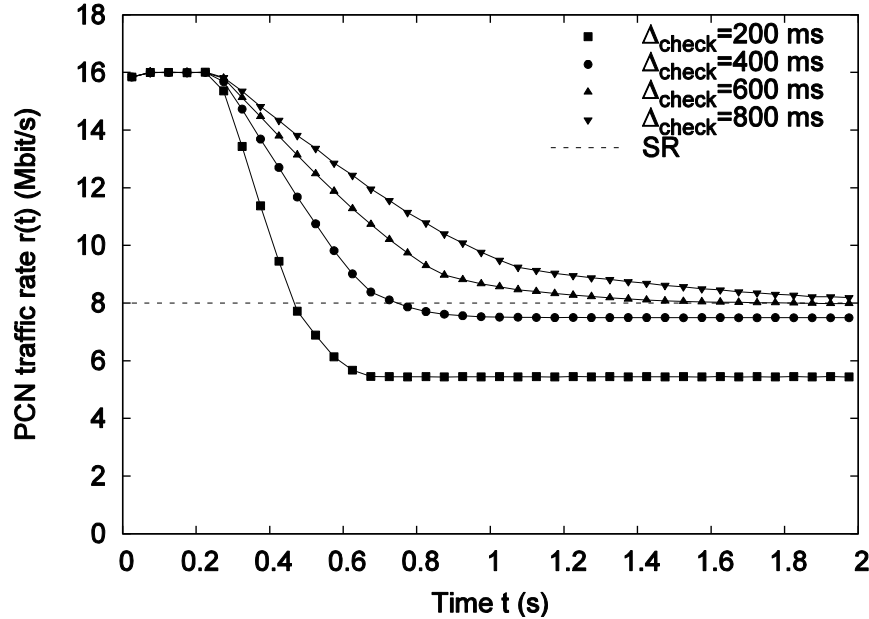
# Regular Check Termination – Mechanism

- ▶ <https://atlas2.informatik.uni-tuebingen.de/menth/papers/Menth10-Sub-8.pdf>  
(idea supported by Ruediger Geib)
- ▶ Egress node
  - Remembers marking of most recent packet for each admitted flow
  - Checks every flow in periodic intervals and sends RESV\_TEAR if most recent packet was marked





# Regular Check Termination – Performance



- ▶ Regular check interval  $\Delta \downarrow check = 3 \cdot D \downarrow T$ 
  - $D \downarrow T$ : Flow termination delay for PCN domain
- ▶ Termination behavior independent of packet inter-arrival time & packet size
- ▶ Fast termination
  - Even in the presence of packet loss
  - Does not need preferential packet drops
  - Works with preferential dropping of marked packets



- ▶ Proposed AC and FT method independent of each other
  - Only new “PCN-marked signaling” AC may be used in CL-like environment
  - Only new “regular check” FT may be used in CL-like environment
- ▶ Advantage of combination
  - No need for RFC6040 compliance
  - No need for additional PCN signaling protocol
  - No need for ingress-egress-aggregates
- ▶ What to do with
  - PSDM encoding (WG document)?
  - Admission control based on PCN-marked signaling?
  - Regular check termination?
- ▶ Options
  - Who supports ideas?
  - One or several informational docs?
  - If PCN is closed, may be finished in TSVWG