Status Update on NADA

draft-ietf-rmcat-nada-03

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Outline

• Draft update after Berlin (IETF-96)
• Minor algorithm update
• Example evaluation results
• Next steps
Draft Update from -02 to -03

• Minor algorithm update to a simpler form of non-linear warping in Eq. (1).
• Clarified criteria for invoking non-linear warping
• Per chairs’ request, added Section 8 on additional suggested experiments
• Corrected previous calculation errors on feedback message overhead (Sec. 5.3 and Sec. 6.3)
Algorithm Update on Non-Linear Warping

- Criteria for invoking non-linear warping:
  - if loss is observed within the previous time window of TEXPLOSS

- Updated non-linear warping equation:

\[ d_{\text{tilde}} = Q_{TH} e^{-\lambda \frac{d_{\text{queue}} - Q_{TH}}{Q_{TH}}} , \text{ if } d_{\text{queue}} > Q_{TH} \]

- Parameters:
  - QTH: reflection point of applying non-linear warping
  - LAMBDA: tunes shape of the non-linear warping function; affects how aggressively NADA competes against other loss-based flow (e.g., TCP)
Non-Linear Warping Function

![Graph showing Warped Delay vs Queuing Delay for different lambda values](image)

- **draft-02**
- **draft-03, lambda = 0.5**
- **draft-03, lambda = 1.0**
Updated Result in Competing with TCP

Total BW = 2Mbps, LAMBDA = 0.5
Updated Result in Competing with TCP

Total BW = 2Mbps, LAMBDA = 1.0

Rate (Mbps)
0.0 0.5 1.0 1.5 2.0
0 50 100 150 200 250 300

QDelay (ms)
0 50 100 150 200 250 300
0 100 200 300 400 500 600

PLR [%]
0 1 2 3 4 5 6
0 50 100 150 200 250 300

Time (s)
Next Steps

• Implementation of NADA, including the rate shaping buffer as part of a stand-alone module for the rmcat congestion control framework in ns3
• Update evaluation results for wired and wireless (over WiFi networks) test cases
• Explore other test scenarios: presence of AQM, ECN, driven by synthetic video traffic sources, etc.

• Draft now ready for WGLC