

# IETF AQM WG

# Active Queue Management and Packet Scheduling

IETF 96, Berlin, July 2016

# WG Status

Document	Status	Next Steps
draft-ietf-aqm-codel	Working Group Last Call	Editors and chairs to evaluate latest comments
draft-ietf-aqm-pie	In AD-Followup	?
draft-ietf-aqm-docsis-pie	In RFC Editor queue	N/A
draft-ietf-aqm-ecn-benefits	In RFC Editor queue	N/A
draft-ietf-aqm-eval-guidelines	In RFC Editor queue	N/A
draft-ietf-aqm-fq-codel	In RFC Editor queue	N/A
draft-ietf-aqm-fq-implementation	RFC 7806	N/A
draft-ietf-aqm-docsis-pie	RFC 7567	N/A

All WG documents are either completed or very near to completion

# Next Steps – Recharter or Close?

- Mailing list thread started 6/1/2016
  - Many ideas on rechartering; responses from:
    - Bob Briscoe, Wolfram Lautenschlaeger, David Lang, Grenville Armitage, Dave Taht, Fred Baker, Mirja Kuhlewind
    - Some may be interesting research topics; but this is not a research group (ICCRG is available for research topics)
  - Nobody clearly asked to close down the WG
- Need to determine if there are proposed charter items with:
  1. Common interest in the WG to use and review the technology
  2. Enough people with energy to do the work on documents
  3. Support from our ADs

Face-to-face time today is for discussion of rechartering ideas

# Candidate topics for work

- High-level topic areas:
  1. Advancing algorithm(s) to Standards Track
  2. Algorithm improvements
  3. New Algorithms
  4. Architecture topics
- These may not really be totally separate topics
  - For instance, we could advance algorithms to Standards Track while working in improvements.

# 1. Advancing algorithm(s) to Standards Track

- What more would need to be done here?
  - Are repeatable results from multiple groups necessary?
  - More deployment and measurement in the field?
  - Applicability assessments for different types of networks?
- Does anyone care?
  - There was not much of a community response about either CoDel or PIE being ready for Proposed Standard versus Experimental.
- One algorithm or both CoDel and PIE? Some other algorithm?

Chairs really need to understand people's expectations here

## 2. Algorithm Improvements

- Wolfram Lautenschlaeger ideas:
  - Heuristics on standing queue may misinterpret effects of bidirectional congestion
  - Tuning for small RTT
  - Small buffers (less than BDP) impact on FQ algorithms
- PI2 – improving scaling of PIE
- FQ-PIE (hybrid, not really a fundamental PIE change?)
- Are there “cake” improvements on FQ-CoDel?
- Dealing with “attacks against ECN”? (Dave Taht idea)

“Maintenance” of current algorithms should be in-scope for WG

# 3. New Algorithms

- DualQ?
- COBALT – BLUE + CoDel (mentioned by David Lang)

Not clear yet what the interest level or need for the Internet is

# 4. Architecture Topics

- Link layer support, expectations, etc
  - Dave Taht mentioned WiFi, 5G, 6LOWPAN, HOMEPLUG, etc.
  - Bob Briscoe seems to support this strongly
- Hardware/software implementation details
  - Dave Taht mentioned hardware multiqueue for multicore CPUs, BQL-like approaches at lower layers, and potential needs for hardware vs software support

Not clear yet what the WG would specifically do or produce in these areas outside of the algorithms



# Other Topics

- Anything else, not yet mentioned?