Non Queue Building (NQB) Per Hop Behavior

draft-ietf-tsvwg-nqb-07

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Status

• Draft-05 published March 8, 2021
  • Discussed at IETF 110

• Draft-06 published July 12
  • Change of DSCPs to 45 & 5 (instead of 42 & 2) based on input from Ana Custura, Rüdiger Geib, Gorry Fairhurst and others (THANKS!!)
  • Edits resulting from detailed reviews by Stuart Cheshire, Bob Briscoe, David Black (THANKS!!)

• Draft-07 published July 28
  • Re-ordered several sections
  • Replaced para. on historical 3GPP networks, text provided by Kevin Smith (THANKS!!)
  • Additional edits from Bob Briscoe’s on-list review
  • Additional edits to address David Black’s comments

• Milestone: Submit as Proposed Standard RFC by Sept 2021
Significant Changes since draft-05

• Change of DSCP values, to 45 & 5

• §4.1: Added requirements on sender behavior, including packet/data rate (soft) limits (see next slide)

• Made it clear that marking traffic as NQB doesn’t let you off the hook on implementing a congestion response

• Re-organized WiFi section to make it clear that full support of the PHB is possible in future equipment (including RFC8325 gear).

• §4.3 Changed “SHOULD preserve a DSCP marking distinction” to “MUST preserve a DSCP marking distinction”
NQB Sender rate requirements (§4.1)

… at most, the equivalent of a few well-spaced packets per RTT, even if the packets are not actually RTT-clocked. In today's network this corresponds to an instantaneous data rate (packet size divided by packet inter-arrival time) of no more than about 1 Mbps (e.g. no more than one 1250 B packet every 10 ms), but there is no precise bound since it depends on the conditions in which the application is operating.

…

If the application's traffic exceeds a few packets per RTT, or exceeds approximately 1 Mbps on an instantaneous (inter-packet) basis, the application SHOULD NOT mark its traffic with the NQB DSCP.

Comment from Bob Briscoe: Can we provide guidance on how this scales in the future?
Other open questions

• Ok to request early allocation of DSCPs 5 & 45 from IANA?
• Draft includes a requirement for RFC8325 gear
  • Recommendation to treat NQB traffic as AC_VI:
    Similarly, systems that utilize [RFC8325] but that are unable to fully support the PHB requirements, SHOULD map the recommended NQB code point 45 (or the locally determined alternative) to UP_5 in the "Video" Access Category.
  • List RFC8325 as being updated by NQB?
• Thoughts on WGLC?