

# Non Queue Building (NQB) Per Hop Behavior

[draft-ietf-tsvwg-nqb-19](#)

**Greg White**, CableLabs

Thomas Fossati, ARM

TSVWG @ IETF 117

July 27, 2023

# Status

- Draft-14 published October 24
- WGLC started November 2
- Draft-15 published January 11
- WGLC ended February 22
- Draft-16 published March 13
- Draft-17 published March 25
- Draft-18 published July 10
- Draft-19 published July 26
- Milestone: Submit as Proposed Standard RFC by September 2023

# Draft-17 status

- This draft included all agreed (as of March 25) changes arising from WGLC comments
- The remaining open topics were added to an issues tracker on GitHub: <https://github.com/gwhiteCL/NQBdraft/issues>
  - 13 Open issues - many were relatively uncontroversial
  - Others required reorganizing the document a bit (e.g. [24](#), [26](#), [29](#)) or drafting some new text (e.g. [22](#), [32](#))

<input type="checkbox"/>	<input checked="" type="radio"/> <b>What additional text is needed regarding non-compliant traffic marked as both NQB and ECT(1)?</b> <span style="float: right;">🗨️ 12</span> <span style="background-color: #90EE90; border-radius: 5px; padding: 2px;">resolution proposed</span> <span style="background-color: #4169E1; border-radius: 5px; padding: 2px;">WGLC1</span> <small>#33 opened on Mar 24 by gwhiteCL</small>
<input type="checkbox"/>	<input checked="" type="radio"/> <b>Need to better describe the differences between EF and NQB</b> <span style="float: right;">🗨️ 3</span> <span style="background-color: #90EE90; border-radius: 5px; padding: 2px;">resolution proposed</span> <span style="background-color: #4169E1; border-radius: 5px; padding: 2px;">WGLC1</span> <small>#32 opened on Mar 21 by gwhiteCL</small>
<input type="checkbox"/>	<input checked="" type="radio"/> <b>Should we more strongly encourage NQB applications to implement L4S?</b> <span style="float: right;">🗨️ 3</span> <span style="background-color: #90EE90; border-radius: 5px; padding: 2px;">resolution proposed</span> <span style="background-color: #4169E1; border-radius: 5px; padding: 2px;">WGLC1</span> <small>#31 opened on Mar 21 by gwhiteCL</small>
<input type="checkbox"/>	<input checked="" type="radio"/> <b>Why do we need more burst tolerance in TP functions on low-rate networks?</b> <span style="float: right;">🗨️ 2</span> <span style="background-color: #90EE90; border-radius: 5px; padding: 2px;">resolution proposed</span> <span style="background-color: #4169E1; border-radius: 5px; padding: 2px;">WGLC1</span> <small>#30 opened on Mar 21 by gwhiteCL</small>
<input type="checkbox"/>	<input checked="" type="radio"/> <b>Low-Rate links - combine with guidance for controlled environments?</b> <span style="float: right;">🗨️ 2</span> <span style="background-color: #90EE90; border-radius: 5px; padding: 2px;">resolution proposed</span> <span style="background-color: #4169E1; border-radius: 5px; padding: 2px;">WGLC1</span> <small>#29 by gwhiteCL was closed 2 weeks ago</small>
<input type="checkbox"/>	<input checked="" type="radio"/> <b>Traffic Protection requirements aren't concrete enough</b> <span style="float: right;">🗨️ 7</span> <span style="background-color: #90EE90; border-radius: 5px; padding: 2px;">resolution proposed</span> <span style="background-color: #4169E1; border-radius: 5px; padding: 2px;">WGLC1</span> <small>#28 opened on Mar 21 by gwhiteCL</small>
<input type="checkbox"/>	<input checked="" type="radio"/> <b>Review the recommendation to rate-shape NQB traffic to 5% on egress to a IP Precedence network</b> <span style="float: right;">🗨️ 2</span> <span style="background-color: #90EE90; border-radius: 5px; padding: 2px;">resolution proposed</span> <span style="background-color: #4169E1; border-radius: 5px; padding: 2px;">WGLC1</span> <small>#27 opened on Mar 21 by gwhiteCL</small>
<input type="checkbox"/>	<input checked="" type="radio"/> <b>Move non-compliance topics to a separate section or appendix</b> <span style="float: right;">🗨️ 9</span> <span style="background-color: #4169E1; border-radius: 5px; padding: 2px;">WGLC1</span> <small>#26 by gwhiteCL was closed 2 weeks ago</small>
<input type="checkbox"/>	<input checked="" type="radio"/> <b>Aggregate NQB-traffic with real-time, latency sensitive?</b> <span style="float: right;">🗨️ 1</span> <span style="background-color: #4169E1; border-radius: 5px; padding: 2px;">WGLC1</span> <small>#25 by gwhiteCL was closed on Mar 24</small>
<input type="checkbox"/>	<input checked="" type="radio"/> <b>Should we cover "controlled environments"?</b> <span style="float: right;">🗨️ 4</span> <span style="background-color: #90EE90; border-radius: 5px; padding: 2px;">resolution proposed</span> <span style="background-color: #4169E1; border-radius: 5px; padding: 2px;">WGLC1</span> <small>#24 opened on Mar 21 by gwhiteCL</small>
<input type="checkbox"/>	<input checked="" type="radio"/> <b>Are all of the example applications really paced?</b> <span style="float: right;">🗨️ 4</span> <span style="background-color: #4169E1; border-radius: 5px; padding: 2px;">WGLC1</span> <small>#23 by gwhiteCL was closed on May 23</small>
<input type="checkbox"/>	<input checked="" type="radio"/> <b>Ensure that the side effects of 45 being given priority in non-compliant networks is adequately covered</b> <span style="float: right;">🗨️ 6</span> <span style="background-color: #90EE90; border-radius: 5px; padding: 2px;">resolution proposed</span> <span style="background-color: #4169E1; border-radius: 5px; padding: 2px;">WGLC1</span> <small>#22 opened on Mar 21 by gwhiteCL</small>
<input type="checkbox"/>	<input checked="" type="radio"/> <b>What is the upper bound on application data rate to be compliant to NQB sending behavior?</b> <span style="float: right;">🗨️ 3</span> <span style="background-color: #90EE90; border-radius: 5px; padding: 2px;">resolution proposed</span> <span style="background-color: #4169E1; border-radius: 5px; padding: 2px;">WGLC1</span> <small>#21 opened on Mar 21 by gwhiteCL</small>

# Additional (post WGLC) comment

- Raised at the mic during IETF116
- #34 [Some WG participants have the impression that NQB marking means no congestion control](#)

# Draft-18 highlights

- Reworked text to remove the impression that NQB is a license to not use congestion control, added recommendation to implement L4S
  - Sections 1, 3.1 & 4.1
- Significantly more guidance on implementation of a traffic protection function
- Reduced the current recommendation on max data rate for NQB marking
  - was 1 Mbps, now 500 kbps
- Added Appendix with comparison to Expedited Forwarding
- Improved the recommendations on handling of traffic marked L4S and NQB.
- Reworked text on aggregation of NQB in another PHB to improve readability
  - section 4.2

# Draft-19 highlights

- Completed the discussion of handling of NQB traffic by an L4S node.
- Moved 'alternative DSCPs' text to an Appendix
- Several minor editorial clean-up and streamlining changes

# Status of issues

- All WGLC issues have been addressed and will be marked closed.
- Additional issue regarding lack of congestion control will be closed.
- One new (minor) issue raised:
  - #38: [NQB updates to RFC8325 should point to UPs not ACs](#)
    - Suggested text has been provided.
    - Needs some discussion with Wi-Fi experts.
    - Expect to close this soon

# Next Steps

- Resolve last open issue
- Begin final WGLC?