

Non Queue Building (NQB) Per Hop Behavior

[draft-ietf-tsvwg-nqb-24](#)

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Status

- First WGLC November 2, 2022 – Feb 22, 2023
- Draft-23 Completed Second WGLC: June 10, 2024
- Intdir Early Review Received: June 23, 2024
- Milestone: Submit as Proposed Standard RFC by August 2024

- Deployment: Comcast started a Field Trial of the NQB PHB in October 2023 and announced NQB interconnection in Feb 2024

WGGLC outcome

- WGGLC period: May 20 – June 10, 2024
- Approx. 80 mailing list messages from more than 12 contributors
 - Thanks to everyone who did a review and sent comments!
- Several comments resulted in clarifications/refinements of the text
 - Draft-24 addresses all of the comments where a change was agreed during WGGLC
 - 5 remaining issues are being worked via the [GitHub Issue Tracker](#)

Draft-24 deltas

- Added new §3.4: “Applicability” to summarize the expected applicability of the PHB
- §4.1: Clarify that 500 kbps limit is an example, not a requirement. Use “MTU” instead of “1500B”.
- §4.5: Additional guidance on the use of reordering-sensitive tunneling protocols
- Added new §7.3.2: “The Updates to RFC 8325” to explicitly document the text changes needed in 8325.
- Other minor text cleanup items, reference updates, etc.

Remaining issues being resolved

- [Issue#45](#): Should RFC9330/9331 be listed as being updated?
 - RFCs 9330, 9331 & 9332 already contain text that covers the overlap of DSCP and ECN
 - There is one new requirement that is being introduced. This requirement only applies to equipment that supports ***both*** NQB and L4S. **Text proposed to make this more clear**
- [Issue#46](#): Usage of the term “higher-priority” in §3.2
 - Legacy Wi-Fi is an exception – **Proposal below + Issue#47 solves this**
 - “higher-priority” can mean different things. **Propose: “higher capacity”**
- [Issue#47](#): “Incentives”
 - §3.2 claims that the NQB structure is “designed to minimize any incentives” for mismarking
 - Is “minimize any” too strong?
 - **Propose: “designed to reduce the incentives”**
- [Issue#48](#): “Should traffic protection be mandatory to implement?”
 - One reviewer believes traffic protection needs to be mandatory
 - **Discussion taking place on GitHub & mailing list**
- [Issue#49](#): “Should we explicitly document the use of DSCP 5 in RFC8100 interconnections?”
 - Problematic to include a second DSCP in a standards-track RFC, **propose adding:**
 - **“If [RFC8100] is operational between interconnected domains, the receiving domain may prefer a different DSCP for NQB traffic that allows for a DSCP range-based classification for the Default / Elastic Treatment Aggregate.”**

Intdir Early Review by Benson Muite

- Result: “On the Right Track” (No Objection)
- Comments:
 - 500Kb/s is quite high on 4G mobile networks, typically what is used for video conferencing and can saturate end point link bandwidth. Would expect this to also be high for satellite links. For IoT applications and voice probably 50Kb/s is sufficient.
 - Referred the commenter to §6.1 which recommends that low rate links *not* implement NQB. Since 3GPP networks would need explicit configuration (a dedicated bearer) to support NQB, the default state is to not support it.
 - **Propose moving the sentence containing the 500kbps example, to remove the ambiguity.**
 - Informative reference [SA-5G] should point to the latest rev.
 - **DONE in draft-24**
 - Add references for Cubic and BBR in the introduction
 - **DONE in draft-24**

Next Steps

- Complete resolution of 5 remaining WGLC issues
- Publish draft-25
- Doc Shepherd (Gorry) review and write-up