

Operational Guidance for Deployment of L4S in the Internet

[draft-ietf-tsvwg-l4sops-02](#)

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Scope & Status

- Addresses the concerns raised about possible rate-imbalance in shared-queue RFC3168 bottlenecks
 - Guidance for Operators of End-hosts, Operators of Networks, Researchers
- WG Draft Adopted on March 26
 - Draft-00 (May 2021)
 - Draft-01 (July 2021)
 - Draft-02 (October 2021)
 - No WG milestone identified

Outline

1. Introduction
2. Per-Flow Fairness
3. Flow Queuing Systems
4. Detection of Classic ECN Bottlenecks
 - 4.1. Recent Studies
 - 4.2. Future Experiments
5. Operator of an L4S host
 - 5.1 Server Type
 - 5.2 Server deployment environment
6. Operator of a Network Employing RFC3168 FIFO Bottlenecks
 - 6.1 Preferred Options
 - 6.2 Non-Preferred Options
 - 6.3 Last Resort Options
7. Operator of a Network Employing RFC3168 FQ Bottlenecks
8. Conclusion of the L4S experiment
 - 8.1. Termination of a successful L4S experiment
 - 8.2. Termination of an unsuccessful L4S experiment

ToDo in Section 5.2.2

- §5.2.2 provides suggestions for hosts that serve a wide variety of networks.
- Most recent study of RFC3168 AQM prevalence pointed to a small number of networks where it appeared to be deployed more heavily, and otherwise it was rare.

Therefore, it may be possible for a host to maintain a list of networks where L4S should not be enabled, and, for other networks, to cache a list of end host ip addresses where a RFC3168 bottleneck has been detected. Entries in such a cache would need to age-out after a period of time to account for IP address changes, path changes, equipment upgrades, etc.

- ToDo: provide more info on ways to cache/maintain such a list.
- Seeking input from the WG

Status / Next Steps

- No updates to the draft since last IETF
- No new contributions or comments received
 - WIP draft-03 has only typographical fixes
- Original plan was for this to remain a draft during the L4S experiment
 - Is this still the desired path forward?