

Traffic Management Benchmarking Framework

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draft-constantine-bmwg-traffic-management-01

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Traffic Management Benchmarking Overview

- Extends RFC 2544 benchmarking into traffic management functionality of network elements:
 - Classification / Prioritization
 - Policing
 - Queuing / Scheduling
 - Shaping
 - AQM

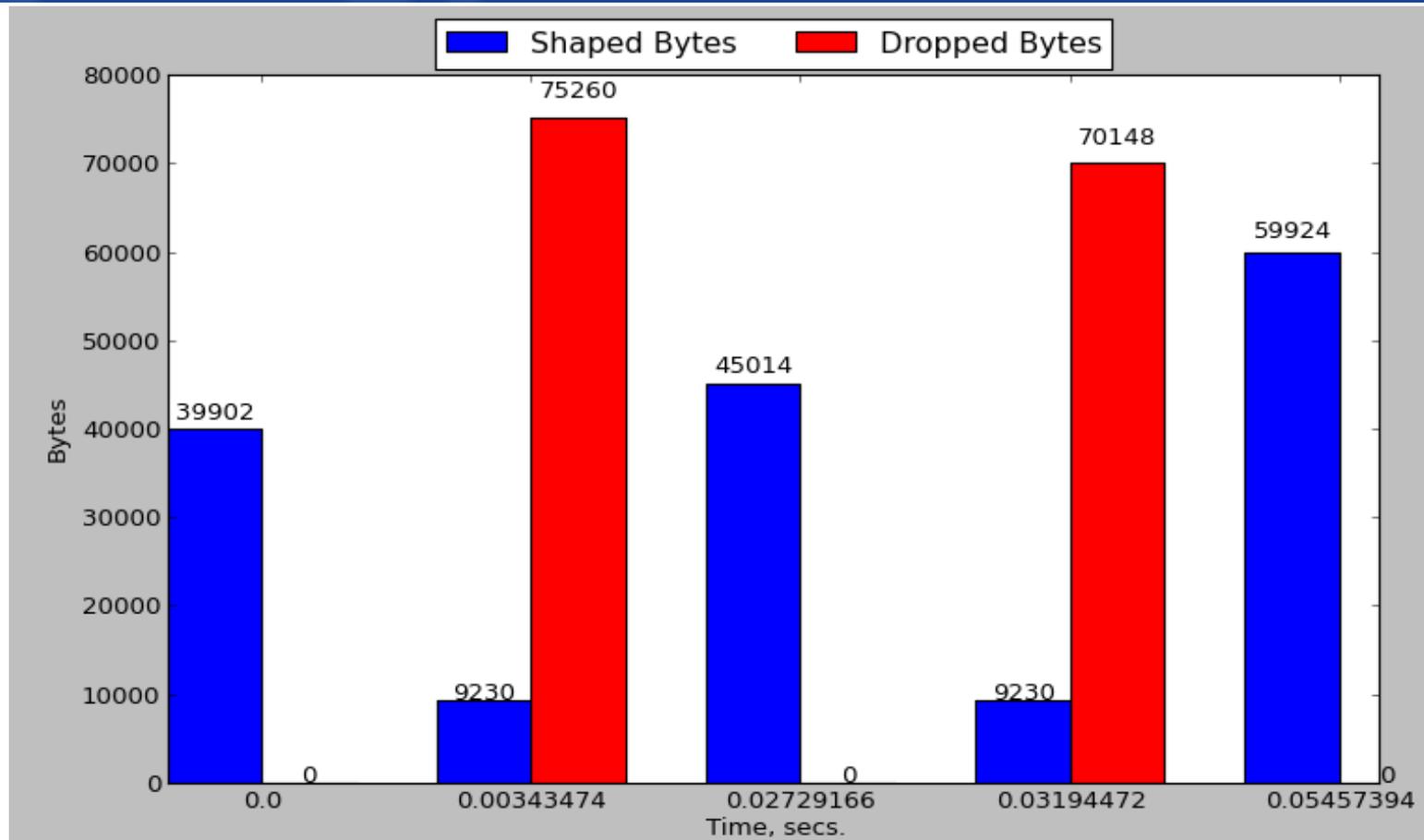
Revisions Incorporated into Draft-01

- This revision primarily augmented the verification focus of the first draft by adding capacity benchmarking for each traffic management area
- An example would include the area of traffic shapers; the capacity benchmarking section specifies various combinations of stress test including:
 - Single shaper per port, all ports active
 - Multiple shapers per port, single port active
 - Combination of the first two; multiple shapers per port and all ports active

Other Status on this Draft

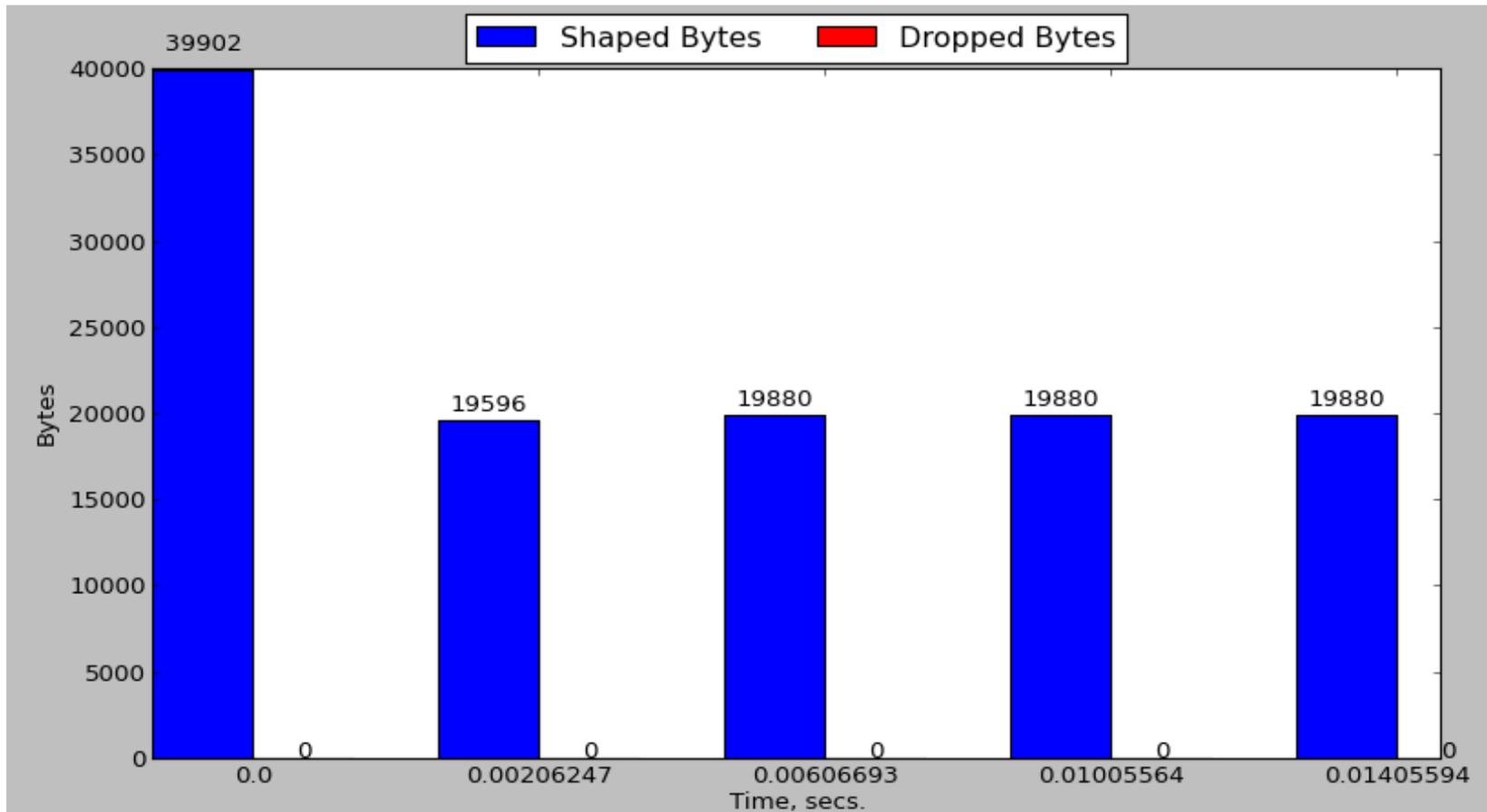
- In addition to stateless traffic tests, the draft proposes TCP stateful traffic (“TCP Test Patterns”) to emulate application traffic behavior
 - In addition to bulk file transfers, examples include HTTP web browsing, data base transactions, etc. which are chatty by nature
 - We researched and experimented with Flowgrind and Harpoon open source tools to study emulation techniques
- Conducted some basic traffic shaper and policer lab tests to study vendor behavior and developed test scripts to analyze packet capture files (next slides)

Traffic Shaper Lab Experiments (1)



- This is the output of a vendor's traffic shaper, configured for a CIR of 40 Mbps, 20KB CBS and shaper **default queue size of 64,000 bytes**.
 - Ingress Layer 2 traffic was configured for 128 KB bursts / 128 byte packets.

Traffic Shaper Lab Experiments (2)



- Same test configuration as first slide, but increased shaper queue to **131,072 bytes**

Next Steps for the Traffic Management Draft

- We seek the BMWG to formally adopt this personal submission as a chartered draft work
- Work on the next revision(s) to:
 - Incorporate the excellent comments that we received (thanks AI and Reinhard!)
 - Conduct laboratory testing to verify the core procedure(s)