

Pantheon Report

Generated at 2022-04-13 17:38:42 (UTC).

Tested in mahimahi: mm-delay 10 mm-link random.trace random.trace

Repeated the test of 5 congestion control schemes once.

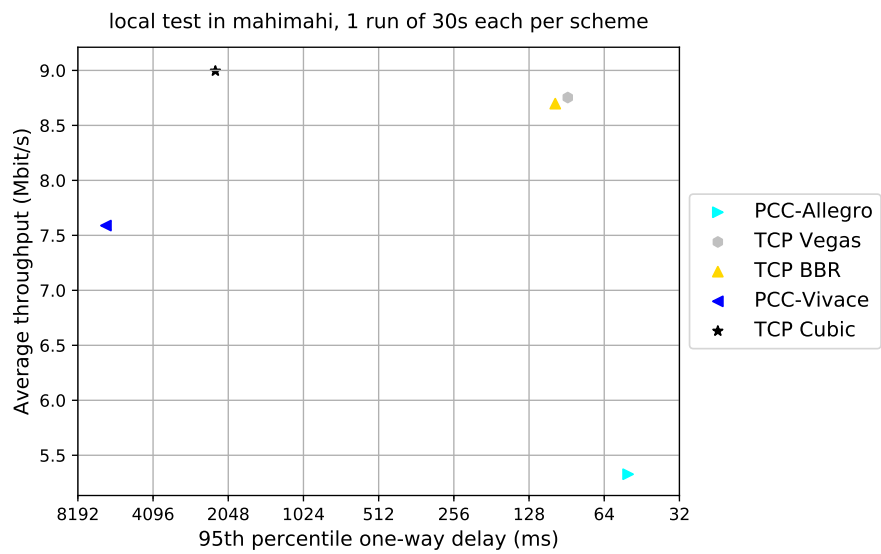
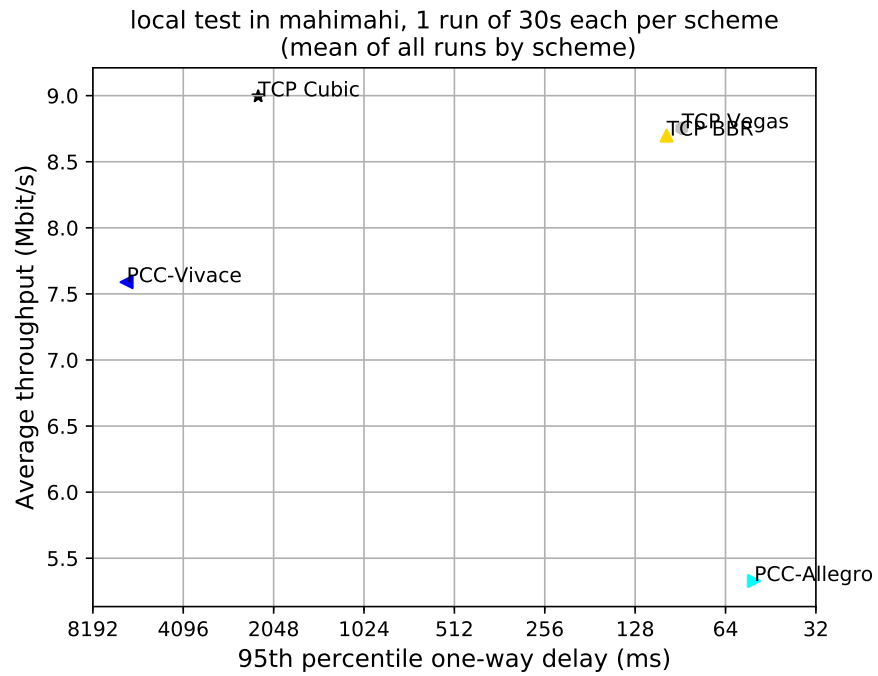
Each test lasted for 30 seconds running 1 flow.

System info:

Linux 4.15.0-175-generic
net.core.default_qdisc = fq
net.core.rmem_default = 212992
net.core.rmem_max = 212992
net.core.wmem_default = 212992
net.core.wmem_max = 212992
net.ipv4.tcp_rmem = 4096 131072 6291456
net.ipv4.tcp_wmem = 4096 16384 4194304

Git summary:

branch: master @ 99ce503a4b7f0c69e0a7c7e25dfa3753c361252a
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf5e58e562f4
third_party/indigo @ 463d89b09699a57bfdfbae351646df6a60040b90
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851



scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	1	8.70	100.53	0.05
TCP Cubic	1	8.99	2305.97	7.37
PCC-Allegro	1	5.33	51.36	0.19
TCP Vegas	1	8.75	89.57	0.04
PCC-Vivace	1	7.59	6326.12	30.36

Run 1: Statistics of TCP BBR

Start at: 2022-04-13 16:09:22

End at: 2022-04-13 16:09:52

Below is generated by plot.py at 2022-04-13 17:38:39

Datalink statistics

-- Total of 1 flow:

Average capacity: 8.93 Mbit/s

Average throughput: 8.70 Mbit/s (97.4% utilization)

95th percentile per-packet one-way delay: 100.529 ms

Loss rate: 0.05%

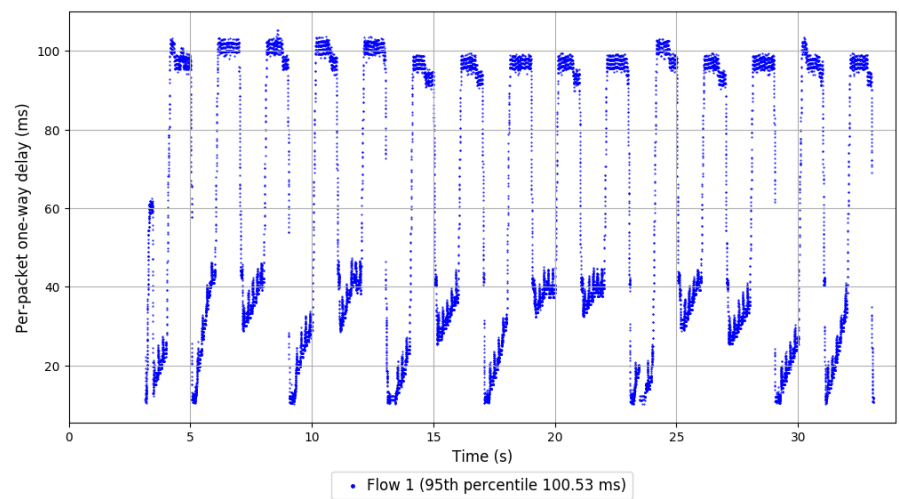
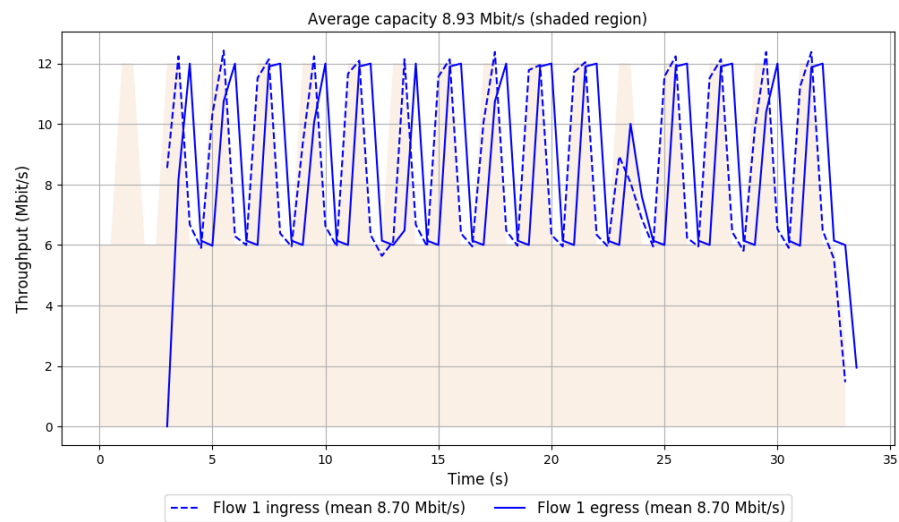
-- Flow 1:

Average throughput: 8.70 Mbit/s

95th percentile per-packet one-way delay: 100.529 ms

Loss rate: 0.05%

Run 1: Report of TCP BBR — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2022-04-13 16:10:31

End at: 2022-04-13 16:11:01

Below is generated by plot.py at 2022-04-13 17:38:40

Datalink statistics

-- Total of 1 flow:

Average capacity: 8.93 Mbit/s

Average throughput: 8.99 Mbit/s (100.7% utilization)

95th percentile per-packet one-way delay: 2305.970 ms

Loss rate: 7.37%

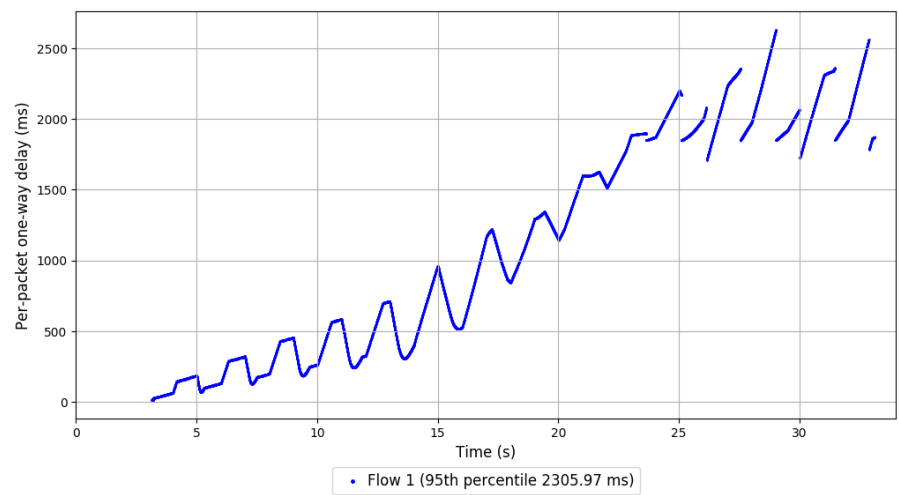
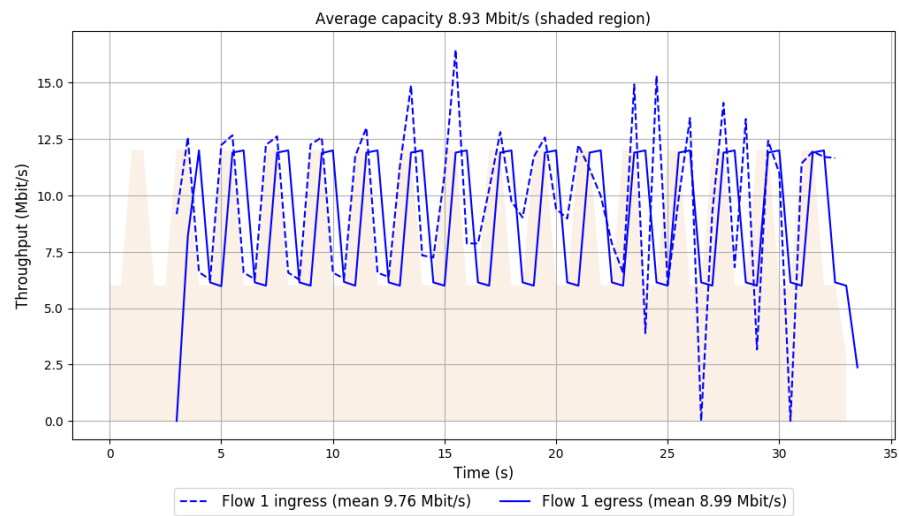
-- Flow 1:

Average throughput: 8.99 Mbit/s

95th percentile per-packet one-way delay: 2305.970 ms

Loss rate: 7.37%

Run 1: Report of TCP Cubic — Data Link



Run 1: Statistics of PCC-Allegro

Start at: 2022-04-13 16:08:14

End at: 2022-04-13 16:08:44

Below is generated by plot.py at 2022-04-13 17:38:40

Datalink statistics

-- Total of 1 flow:

Average capacity: 8.93 Mbit/s

Average throughput: 5.33 Mbit/s (59.6% utilization)

95th percentile per-packet one-way delay: 51.356 ms

Loss rate: 0.19%

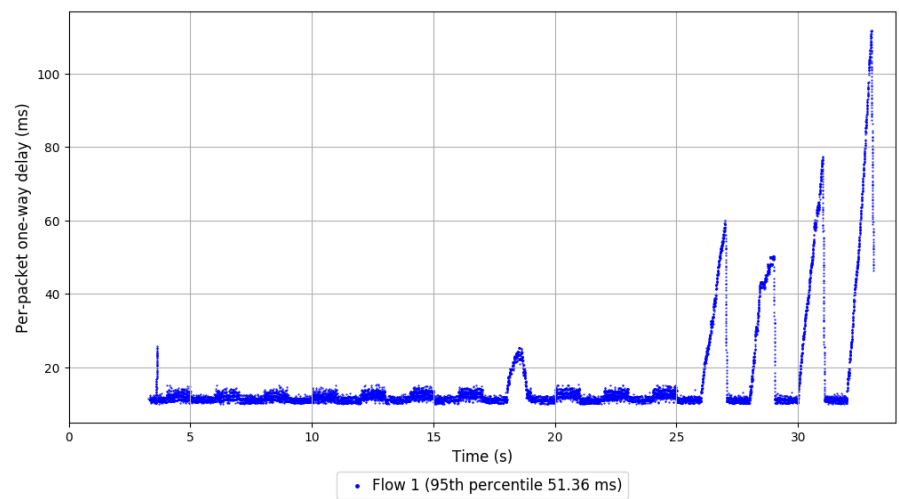
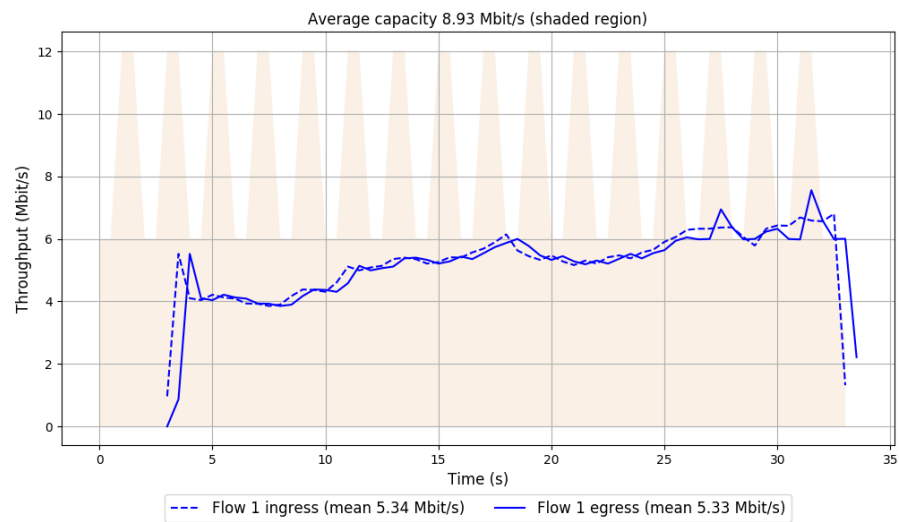
-- Flow 1:

Average throughput: 5.33 Mbit/s

95th percentile per-packet one-way delay: 51.356 ms

Loss rate: 0.19%

Run 1: Report of PCC-Allegro — Data Link



Run 1: Statistics of TCP Vegas

Start at: 2022-04-13 16:08:48

End at: 2022-04-13 16:09:18

Below is generated by plot.py at 2022-04-13 17:38:40

Datalink statistics

-- Total of 1 flow:

Average capacity: 8.93 Mbit/s

Average throughput: 8.75 Mbit/s (98.0% utilization)

95th percentile per-packet one-way delay: 89.573 ms

Loss rate: 0.04%

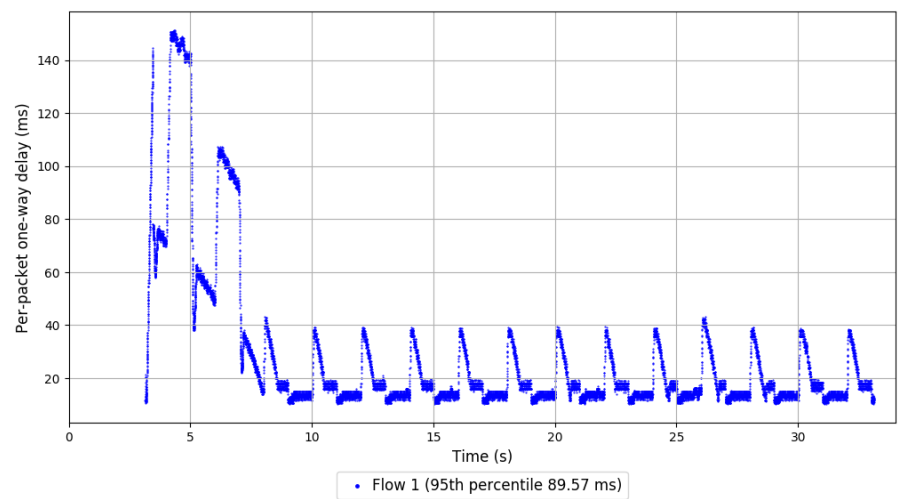
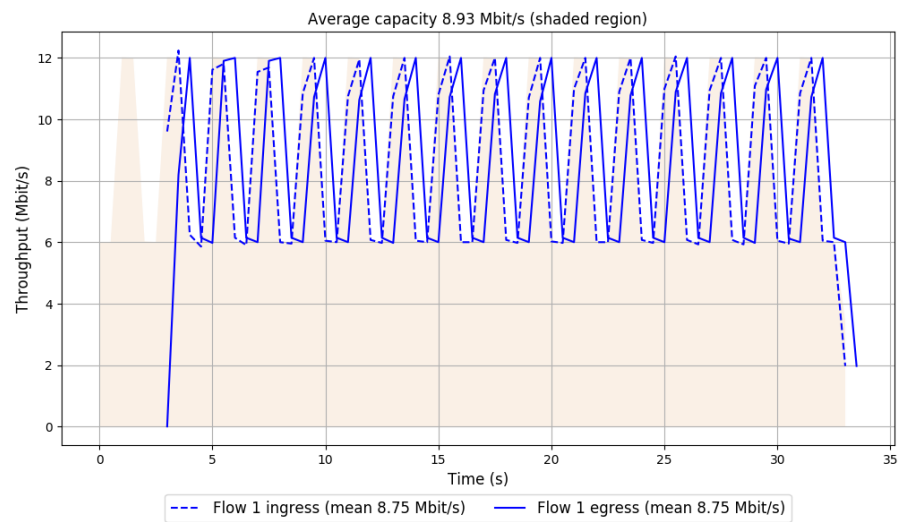
-- Flow 1:

Average throughput: 8.75 Mbit/s

95th percentile per-packet one-way delay: 89.573 ms

Loss rate: 0.04%

Run 1: Report of TCP Vegas — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2022-04-13 16:09:56

End at: 2022-04-13 16:10:26

Below is generated by plot.py at 2022-04-13 17:38:40

Datalink statistics

-- Total of 1 flow:

Average capacity: 8.93 Mbit/s

Average throughput: 7.59 Mbit/s (85.0% utilization)

95th percentile per-packet one-way delay: 6326.123 ms

Loss rate: 30.36%

-- Flow 1:

Average throughput: 7.59 Mbit/s

95th percentile per-packet one-way delay: 6326.123 ms

Loss rate: 30.36%

Run 1: Report of PCC-Vivace — Data Link

