

Pantheon Report

Generated at 2019-10-21 22:06:08 (UTC).

Tested in mahimahi: mm-delay 28 mm-loss uplink 0.0477 mm-link 10mbps.trace
10mbps.trace --uplink-queue=droptail --uplink-queue-args=packets=14

Repeated the test of 5 congestion control schemes once.

Each test lasted for 30 seconds running 1 flow.

System info:

Linux 4.15.0-65-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 87380 6291456
net.ipv4.tcp_wmem = 4096 16384 4194304

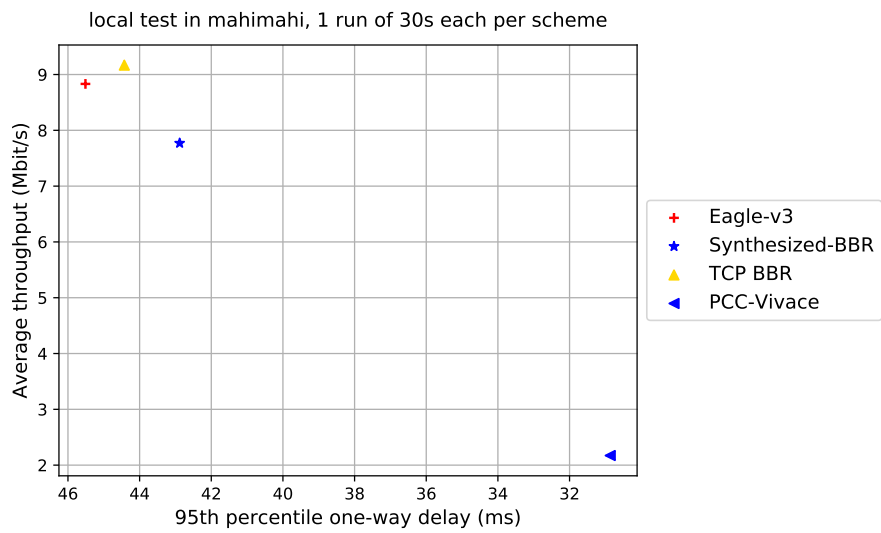
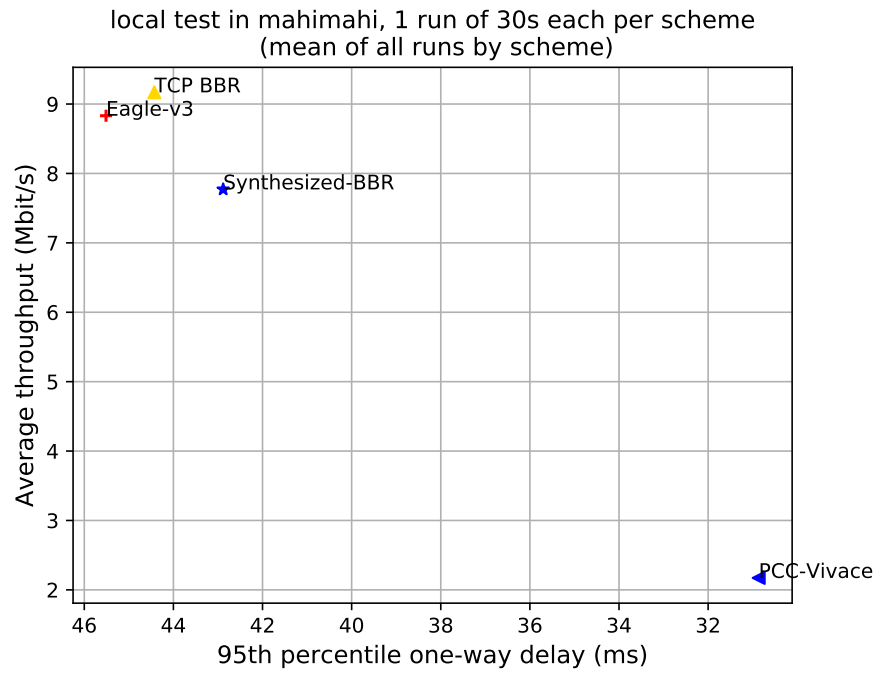
Git summary:

branch: master @ b54fc866b3140559c1fa1782d26fa636f7a43a8d
third_party/aurora @ f3e943d61015b39960854ba6391797e0c7984d74
third_party/aurora-model @ e292c316c23fb837255c4e142e40590d154bbe95
third_party/eagle-v1 @ c68d985e042be5c30704c0aee48c363861951a95
third_party/eagle-v2 @ c8a1737b3c84d7d49eada5b8785045d272a70120
third_party/eagle-v3 @ a63fea7809d9b57a6dbfc95c54181b54157c2b45
M sender-receiver/sender-receiver/sender_receiver/envs/__pycache__/datagram_pb2.cpython-36
M sender-receiver/sender-receiver/sender_receiver/envs/__pycache__/helpers.cpython-36.pyc
M sender-receiver/sender-receiver/sender_receiver/envs/__pycache__/mahimahi.cpython-36.pyc
M sender-receiver/sender-receiver/sender_receiver/envs/__pycache__/project_root.cpython-36
M sender-receiver/sender-receiver/sender_receiver/envs/__pycache__/receiver.cpython-36.pyc
M sender-receiver/sender-receiver/sender_receiver/envs/model-xentropy/model-xentropy.pt
M sender-receiver/sender-receiver/sender_receiver/logs.txt
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfc45e58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
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

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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/synthesizedBBR @ a63fea7809d9b57a6dbfc95c54181b54157c2b45
M sender-receiver/sender-receiver/sender_receiver/__pycache__/__init__.cpython-36.pyc
M sender-receiver/sender-receiver/sender_receiver/envs/__pycache__/__init__.cpython-36.pyc
M sender-receiver/sender-receiver/sender_receiver/envs/__pycache__/datagram_pb2.cpython-36.pyc
M sender-receiver/sender-receiver/sender_receiver/envs/__pycache__/helpers.cpython-36.pyc
M sender-receiver/sender-receiver/sender_receiver/envs/__pycache__/mahimahi.cpython-36.pyc
M sender-receiver/sender-receiver/sender_receiver/envs/__pycache__/project_root.cpython-36.pyc
M sender-receiver/sender-receiver/sender_receiver/envs/__pycache__/receiver.cpython-36.pyc
M sender-receiver/sender-receiver/sender_receiver/envs/__pycache__/sender_receiver_env.cpython-36.pyc
M sender-receiver/sender-receiver/sender_receiver/envs/model-xentropy/model-xentropy.py
M sender-receiver/sender-receiver/sender_receiver/envs/sender_receiver_env.py
M sender-receiver/sender-receiver/sender_receiver/logs.txt
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851

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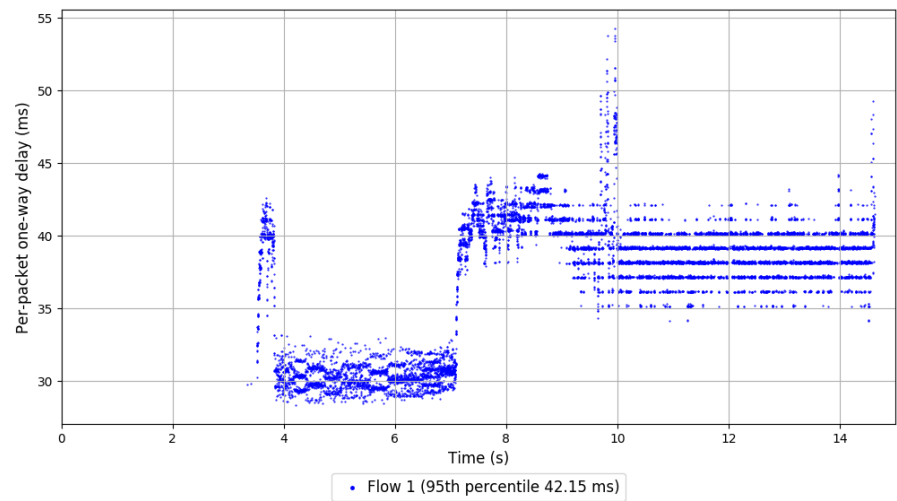
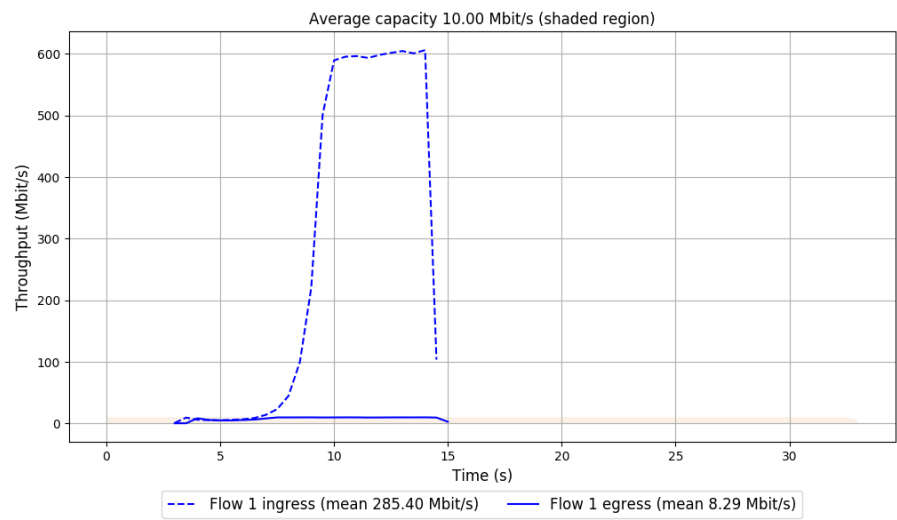
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
Aurora	0	N/A	N/A	N/A
TCP BBR	1	9.17	44.43	6.91
Eagle-v3	1	8.83	45.51	9.14
Synthesized-BBR	1	7.77	42.88	5.70
PCC-Vivace	1	2.17	30.87	5.06

Run 1: Statistics of Aurora

Start at: 2019-10-21 22:04:54

End at: 2019-10-21 22:05:24

Run 1: Report of Aurora — Data Link



Run 1: Statistics of TCP BBR

Start at: 2019-10-21 22:03:11

End at: 2019-10-21 22:03:41

Below is generated by plot.py at 2019-10-21 22:06:07

Datalink statistics

-- Total of 1 flow:

Average capacity: 10.00 Mbit/s

Average throughput: 9.17 Mbit/s (91.7% utilization)

95th percentile per-packet one-way delay: 44.427 ms

Loss rate: 6.91%

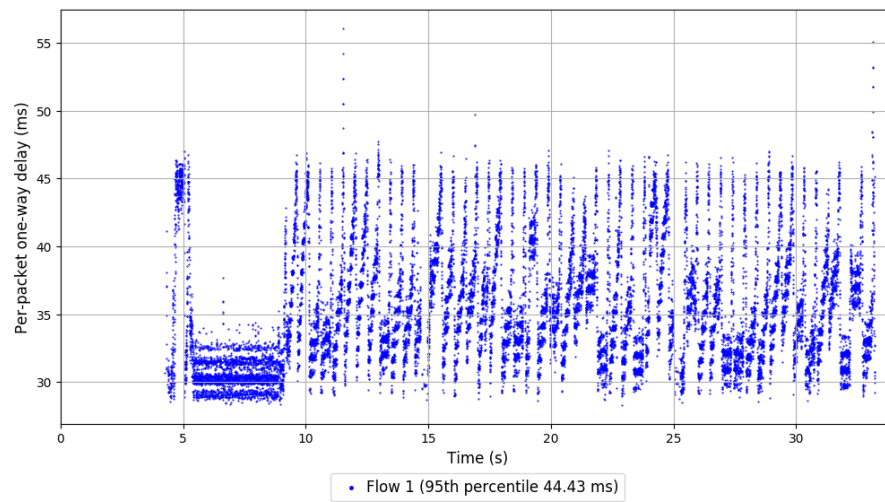
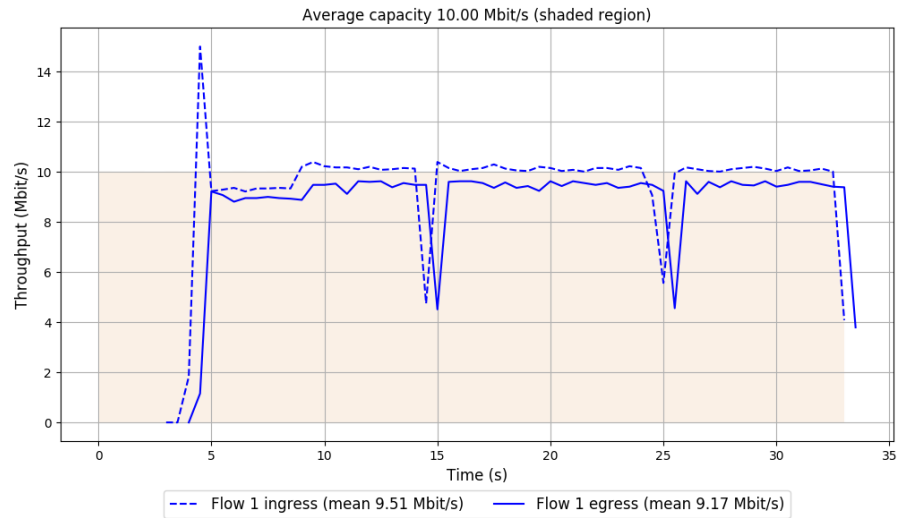
-- Flow 1:

Average throughput: 9.17 Mbit/s

95th percentile per-packet one-way delay: 44.427 ms

Loss rate: 6.91%

Run 1: Report of TCP BBR — Data Link



Run 1: Statistics of Eagle-v3

Start at: 2019-10-21 22:02:36

End at: 2019-10-21 22:03:06

Below is generated by plot.py at 2019-10-21 22:06:07

Datalink statistics

-- Total of 1 flow:

Average capacity: 10.00 Mbit/s

Average throughput: 8.83 Mbit/s (88.3% utilization)

95th percentile per-packet one-way delay: 45.512 ms

Loss rate: 9.14%

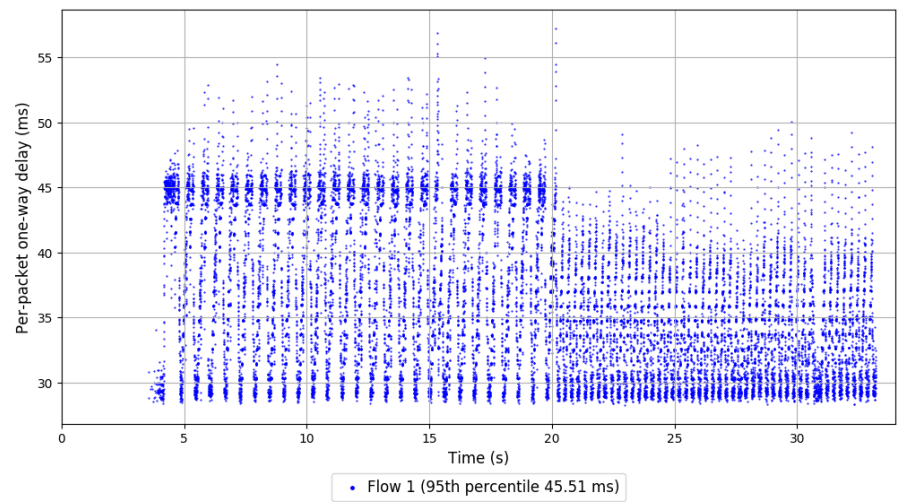
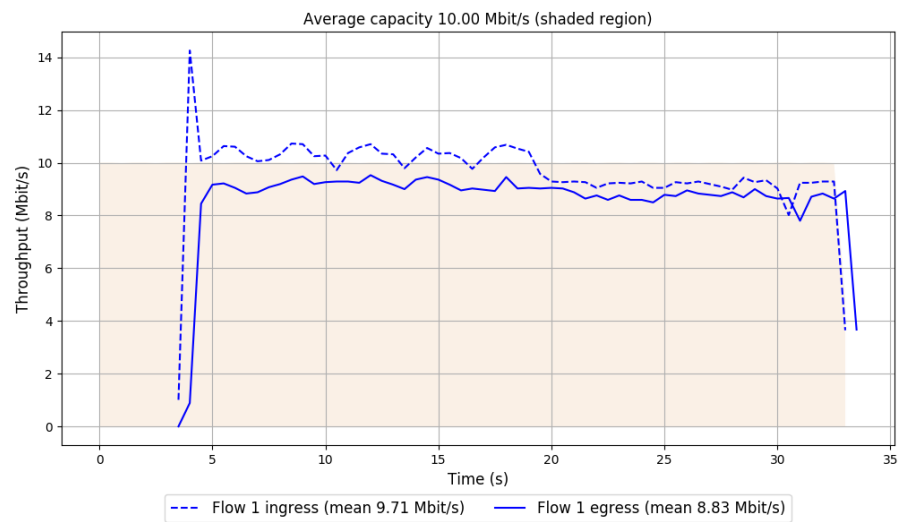
-- Flow 1:

Average throughput: 8.83 Mbit/s

95th percentile per-packet one-way delay: 45.512 ms

Loss rate: 9.14%

Run 1: Report of Eagle-v3 — Data Link



Run 1: Statistics of Synthesized-BBR

Start at: 2019-10-21 22:03:45

End at: 2019-10-21 22:04:15

Below is generated by plot.py at 2019-10-21 22:06:07

Datalink statistics

-- Total of 1 flow:

Average capacity: 10.00 Mbit/s

Average throughput: 7.77 Mbit/s (77.7% utilization)

95th percentile per-packet one-way delay: 42.883 ms

Loss rate: 5.70%

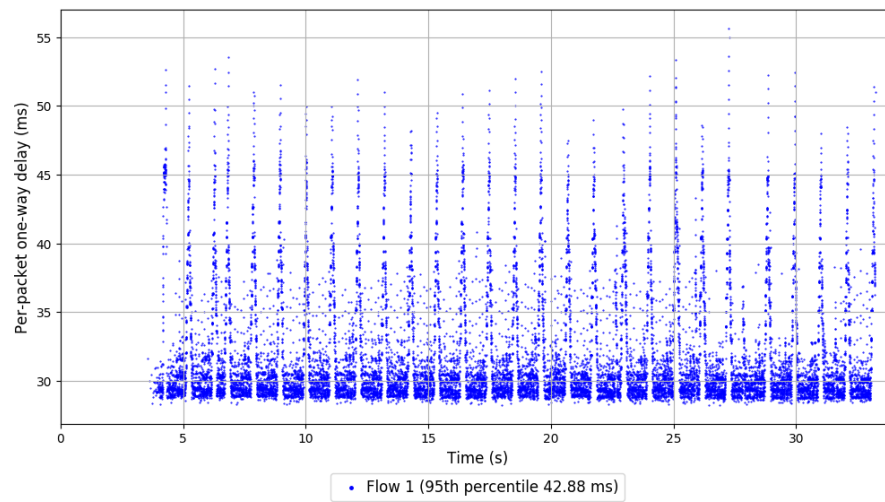
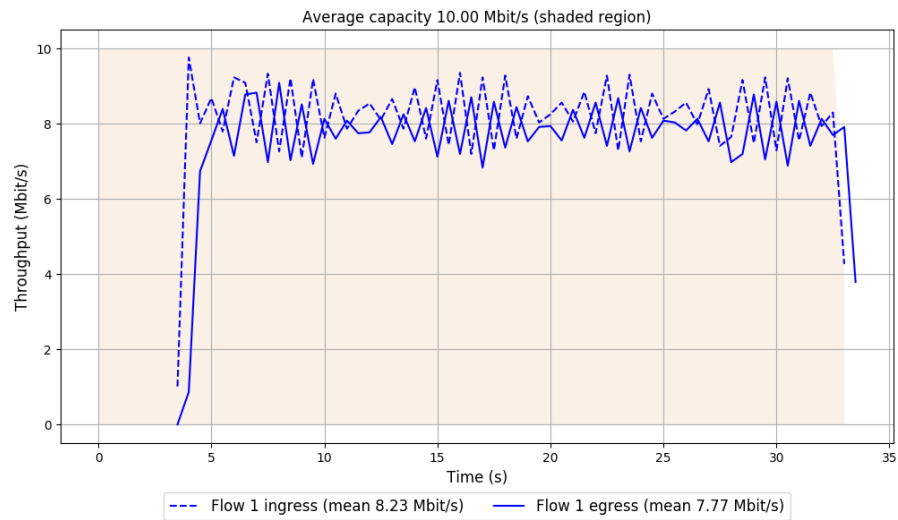
-- Flow 1:

Average throughput: 7.77 Mbit/s

95th percentile per-packet one-way delay: 42.883 ms

Loss rate: 5.70%

Run 1: Report of Synthesized-BBR — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2019-10-21 22:04:20

End at: 2019-10-21 22:04:50

Below is generated by plot.py at 2019-10-21 22:06:07

Datalink statistics

-- Total of 1 flow:

Average capacity: 10.00 Mbit/s

Average throughput: 2.17 Mbit/s (21.7% utilization)

95th percentile per-packet one-way delay: 30.866 ms

Loss rate: 5.06%

-- Flow 1:

Average throughput: 2.17 Mbit/s

95th percentile per-packet one-way delay: 30.866 ms

Loss rate: 5.06%

Run 1: Report of PCC-Vivace — Data Link

