

Pantheon Report

Generated at 2019-11-21 22:34:42 (UTC).

Tested in mahimahi: mm-delay 20 mm-link 100mbps.trace 100mbps.trace
--uplink-queue=droptail --uplink-queue-args=packets=300
Repeated the test of 3 congestion control schemes 3 times.
Each test lasted for 30 seconds running 1 flow.

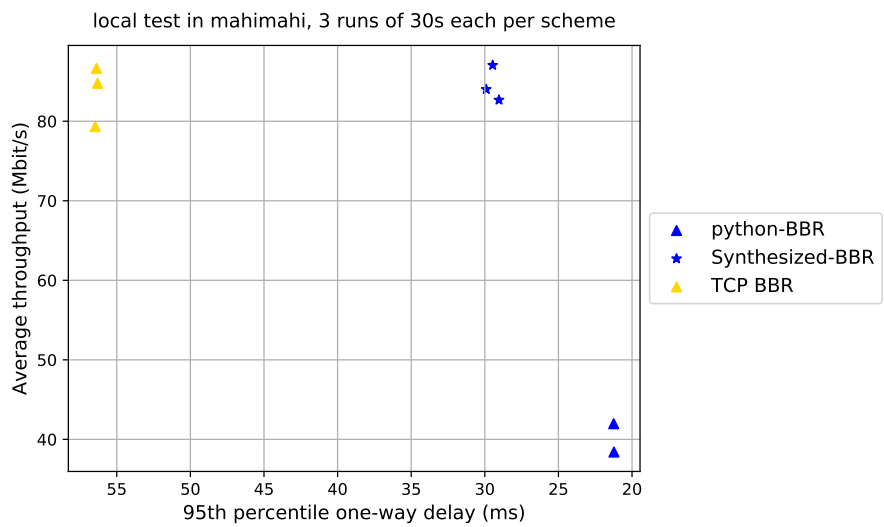
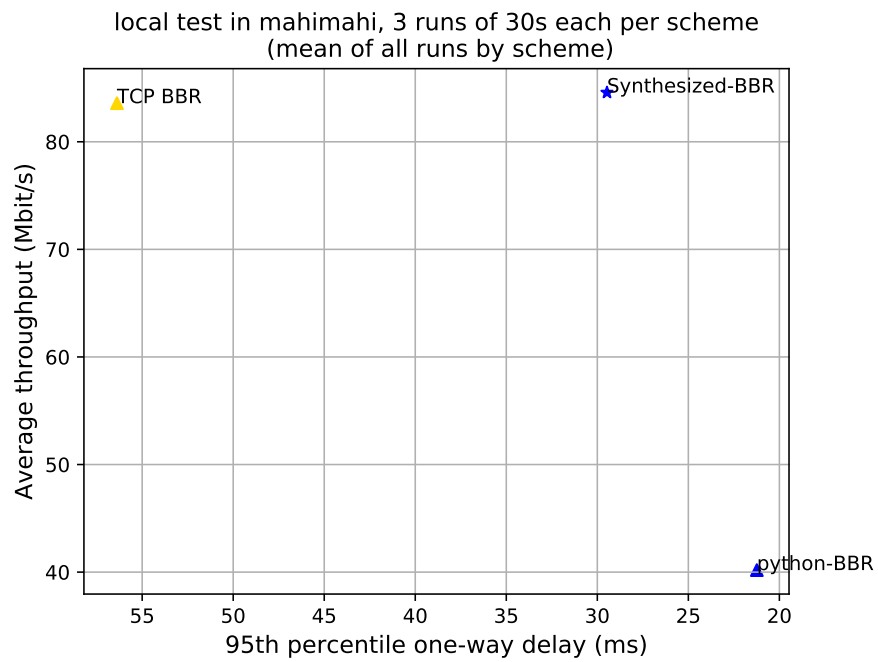
System info:

Linux 5.2.0-050200rc3-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 @ 64e53552c28b777354fd3a6f6cff402e2043cec4
third_party/aurora @ f3e943d61015b39960854ba6391797e0c7984d74
third_party/aurora-model @ e292c316c23fb837255c4e142e40590d154bbe95
third_party/eagle-v1 @ c68d985e042be5c30704c0aee48c363861951a95
third_party/eagle-v2 @ c8a1737b3c84d7d49eada5b8785045d272a70120
third_party/eagle-v3 @ c5e1b94dfefe2aedf6996540edb7810d0135e9e4
M sender-receiver/sender-receiver/sender_receiver/envs/__pycache__/helpers.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/experts/expert_bbr_meas.py
M sender-receiver/sender-receiver/sender_receiver/envs/logs/expert_log.txt
M sender-receiver/sender-receiver/sender_receiver/envs/logs/log.txt
third_party/illp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/illp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quick @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/synthesizedBBR @ 27045f2c9e7b63716dab4980f0a45a660dff3d51
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494

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	3	83.59	56.38	4.12
python-BBR	2	40.19	21.24	0.08
Synthesized-BBR	3	84.58	29.47	0.21

Run 1: Statistics of TCP BBR

Start at: 2019-11-21 22:25:59

End at: 2019-11-21 22:26:29

Below is generated by plot.py at 2019-11-21 22:34:36

Datalink statistics

-- Total of 1 flow:

Average capacity: 100.00 Mbit/s

Average throughput: 86.66 Mbit/s (86.7% utilization)

95th percentile per-packet one-way delay: 56.378 ms

Loss rate: 4.36%

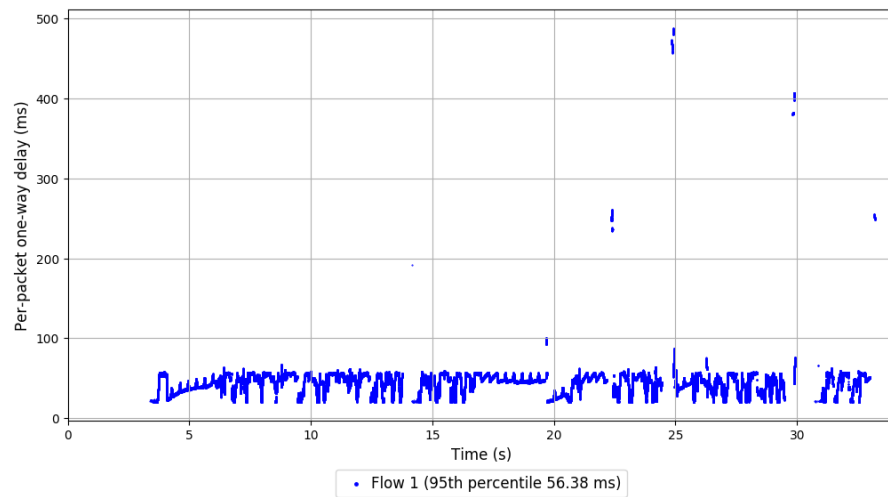
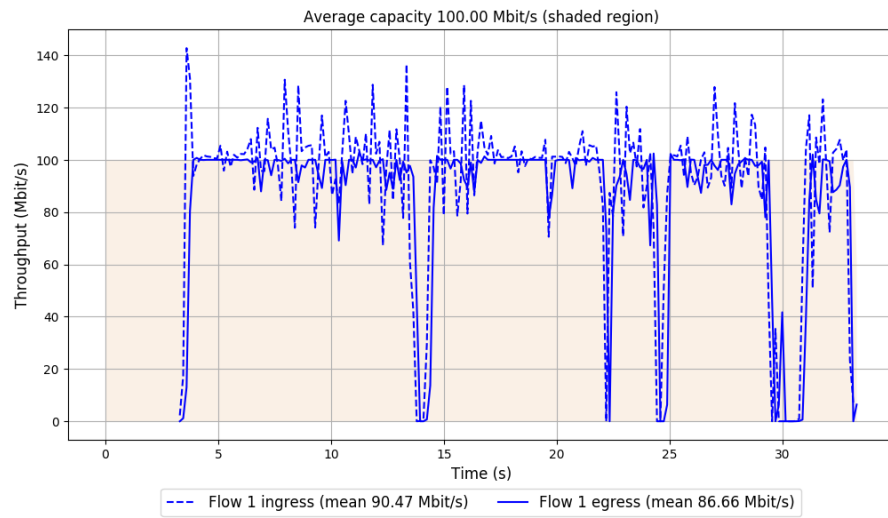
-- Flow 1:

Average throughput: 86.66 Mbit/s

95th percentile per-packet one-way delay: 56.378 ms

Loss rate: 4.36%

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2019-11-21 22:27:29

End at: 2019-11-21 22:27:59

Below is generated by plot.py at 2019-11-21 22:34:36

Datalink statistics

-- Total of 1 flow:

Average capacity: 100.00 Mbit/s

Average throughput: 84.78 Mbit/s (84.8% utilization)

95th percentile per-packet one-way delay: 56.307 ms

Loss rate: 3.33%

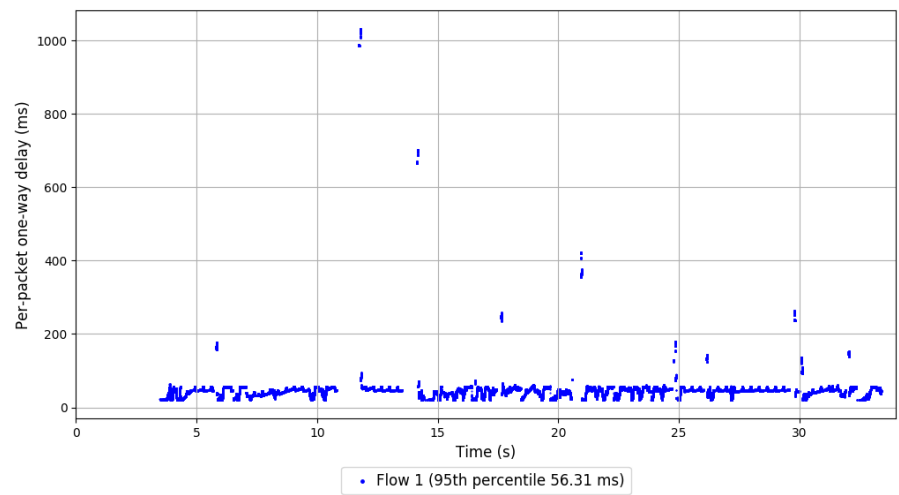
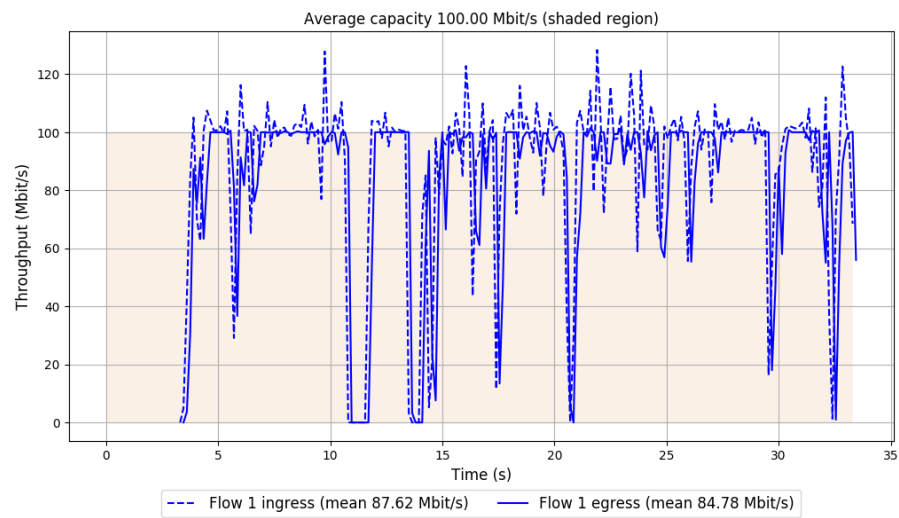
-- Flow 1:

Average throughput: 84.78 Mbit/s

95th percentile per-packet one-way delay: 56.307 ms

Loss rate: 3.33%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2019-11-21 22:28:56

End at: 2019-11-21 22:29:26

Below is generated by plot.py at 2019-11-21 22:34:36

Datalink statistics

-- Total of 1 flow:

Average capacity: 100.00 Mbit/s

Average throughput: 79.33 Mbit/s (79.3% utilization)

95th percentile per-packet one-way delay: 56.467 ms

Loss rate: 4.67%

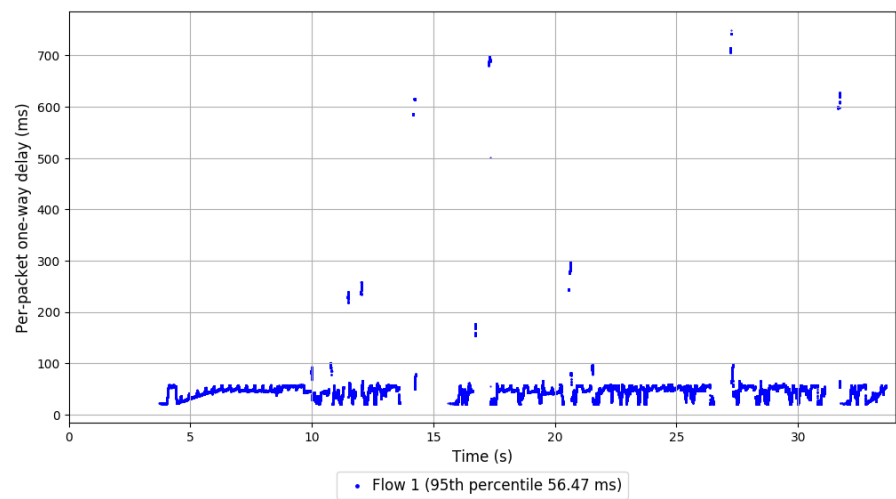
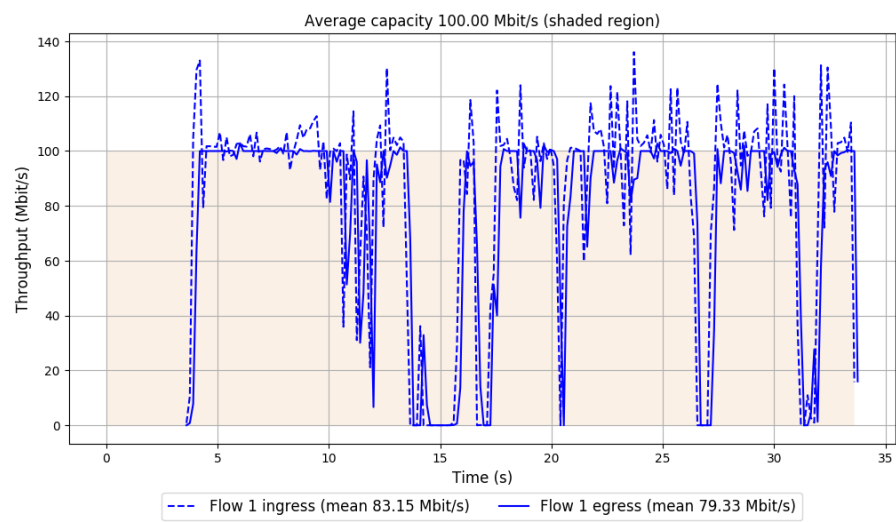
-- Flow 1:

Average throughput: 79.33 Mbit/s

95th percentile per-packet one-way delay: 56.467 ms

Loss rate: 4.67%

Run 3: Report of TCP BBR — Data Link



Run 1: Statistics of python-BBR

Start at: 2019-11-21 22:25:21

End at: 2019-11-21 22:25:51

Below is generated by plot.py at 2019-11-21 22:34:36

Datalink statistics

-- Total of 1 flow:

Average capacity: 100.00 Mbit/s

Average throughput: 41.97 Mbit/s (42.0% utilization)

95th percentile per-packet one-way delay: 21.246 ms

Loss rate: 0.08%

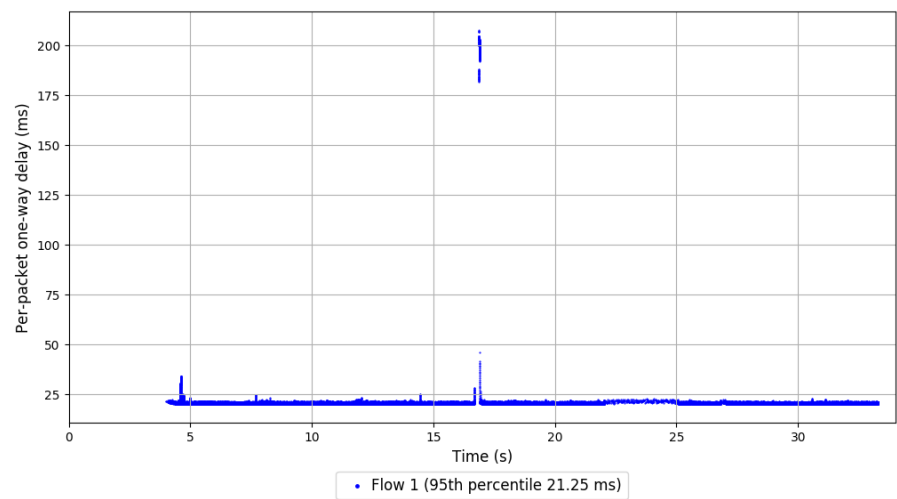
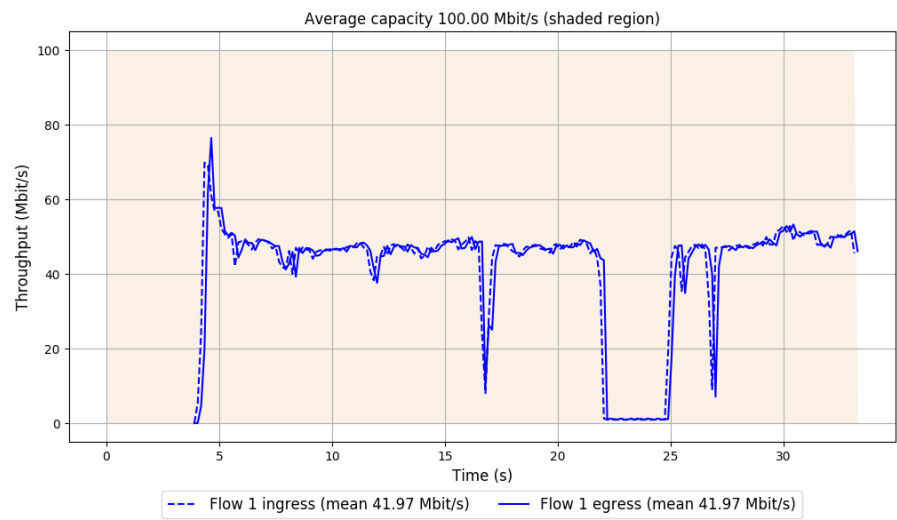
-- Flow 1:

Average throughput: 41.97 Mbit/s

95th percentile per-packet one-way delay: 21.246 ms

Loss rate: 0.08%

Run 1: Report of python-BBR — Data Link

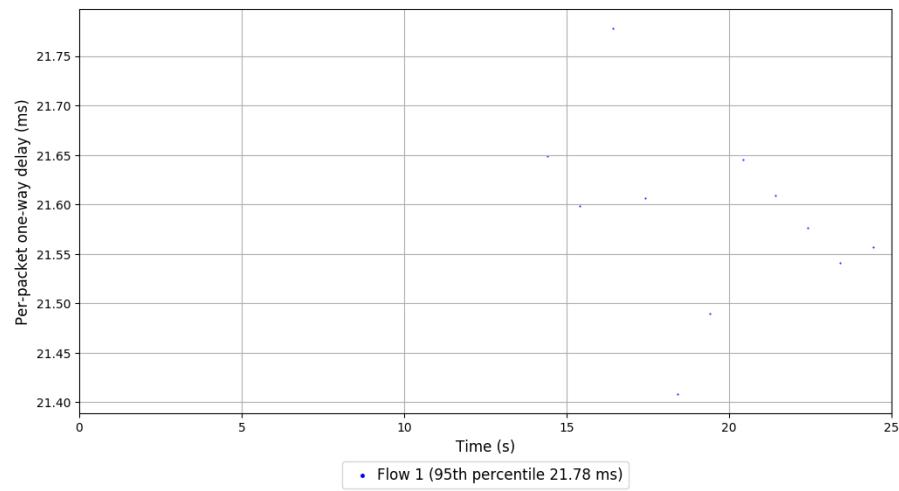
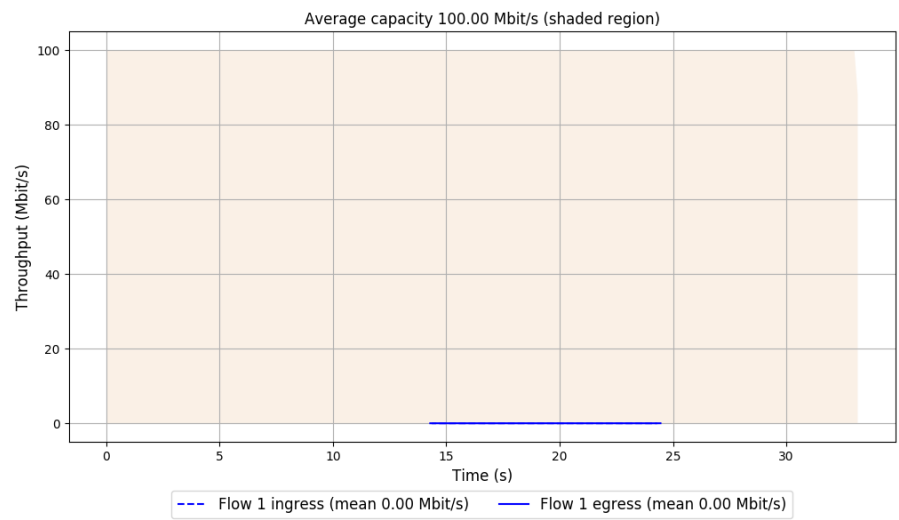


Run 2: Statistics of python-BBR

Start at: 2019-11-21 22:26:52

End at: 2019-11-21 22:27:23

Run 2: Report of python-BBR — Data Link



Run 3: Statistics of python-BBR

Start at: 2019-11-21 22:28:18

End at: 2019-11-21 22:28:48

Below is generated by plot.py at 2019-11-21 22:34:36

Datalink statistics

-- Total of 1 flow:

Average capacity: 100.00 Mbit/s

Average throughput: 38.41 Mbit/s (38.4% utilization)

95th percentile per-packet one-way delay: 21.228 ms

Loss rate: 0.09%

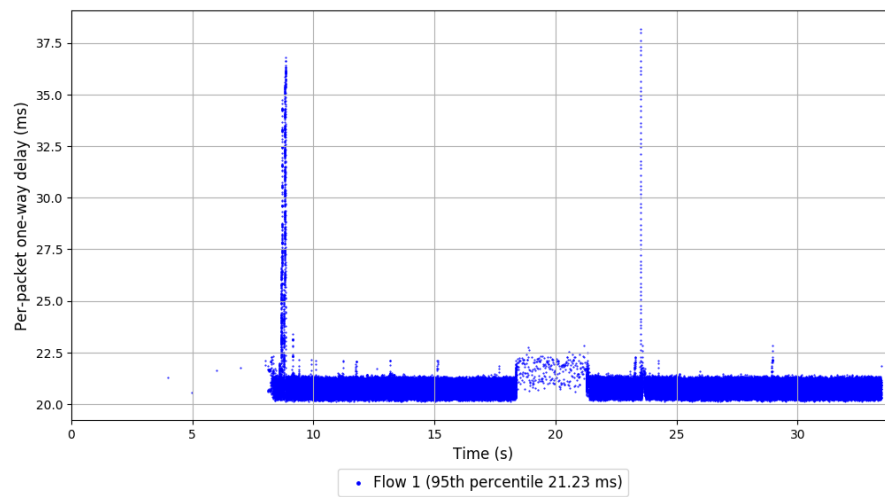
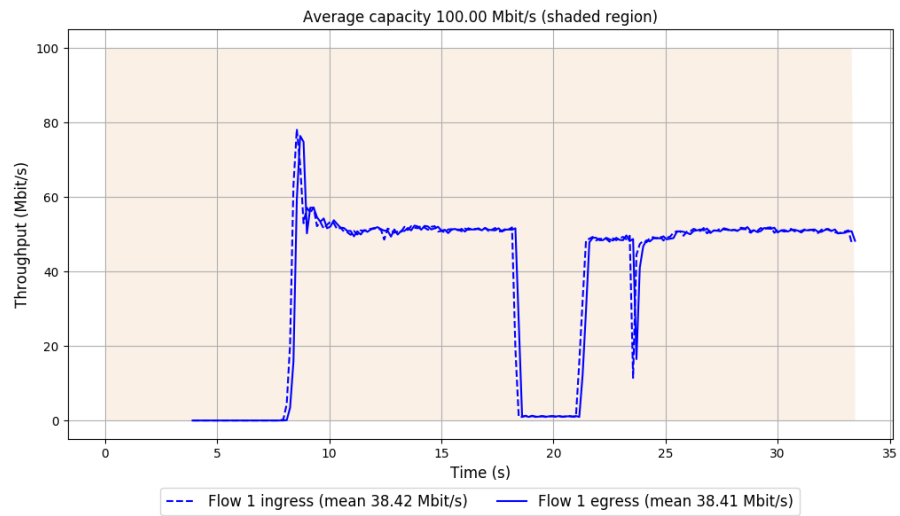
-- Flow 1:

Average throughput: 38.41 Mbit/s

95th percentile per-packet one-way delay: 21.228 ms

Loss rate: 0.09%

Run 3: Report of python-BBR — Data Link



Run 1: Statistics of Synthesized-BBR

Start at: 2019-11-01 06:14:19

End at: 2019-11-01 06:14:49

Below is generated by plot.py at 2019-11-21 22:34:36

Datalink statistics

-- Total of 1 flow:

Average capacity: 100.00 Mbit/s

Average throughput: 87.05 Mbit/s (87.0% utilization)

95th percentile per-packet one-way delay: 29.467 ms

Loss rate: 0.17%

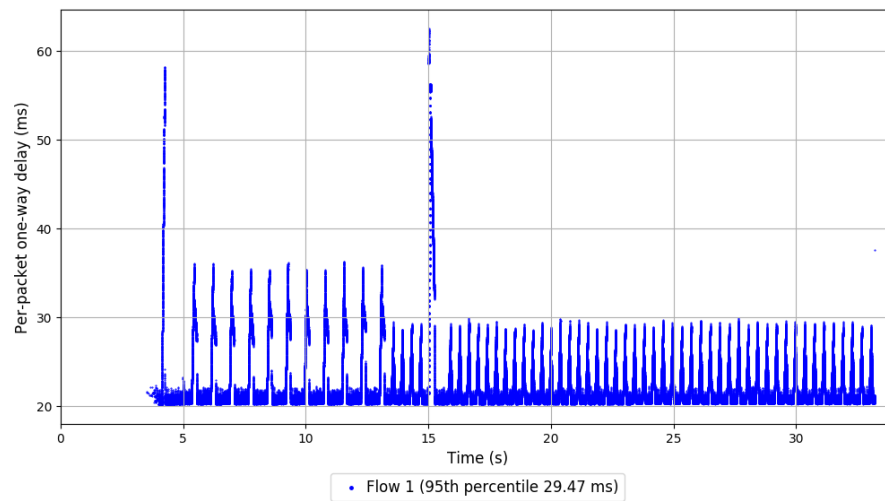
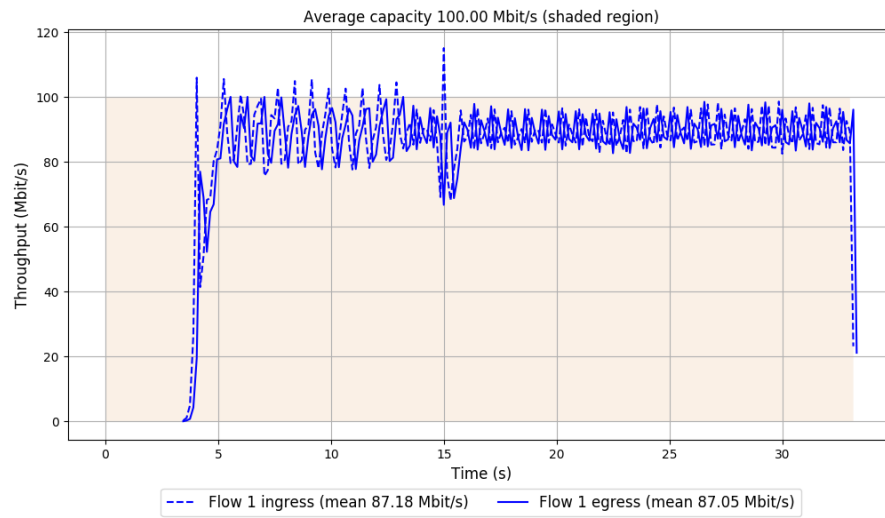
-- Flow 1:

Average throughput: 87.05 Mbit/s

95th percentile per-packet one-way delay: 29.467 ms

Loss rate: 0.17%

Run 1: Report of Synthesized-BBR — Data Link



Run 2: Statistics of Synthesized-BBR

Start at: 2019-11-01 06:20:47

End at: 2019-11-01 06:21:17

Below is generated by plot.py at 2019-11-21 22:34:36

Datalink statistics

-- Total of 1 flow:

Average capacity: 100.00 Mbit/s

Average throughput: 84.01 Mbit/s (84.0% utilization)

95th percentile per-packet one-way delay: 29.902 ms

Loss rate: 0.19%

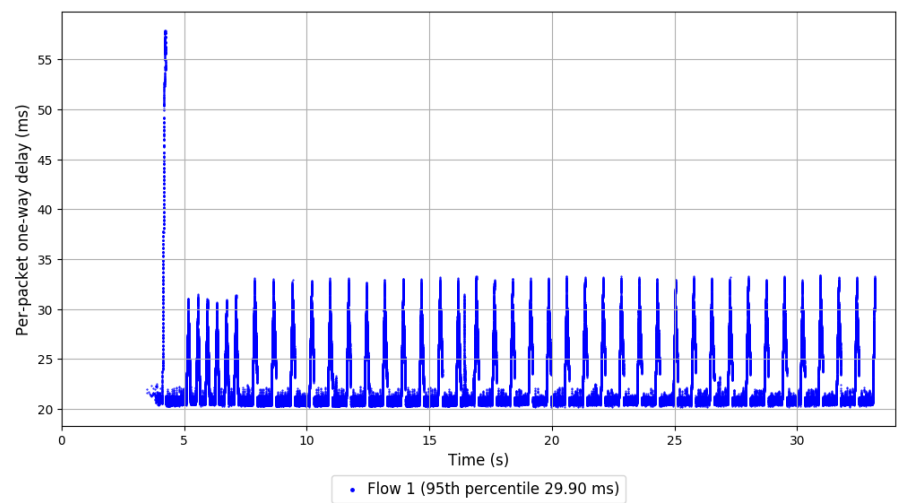
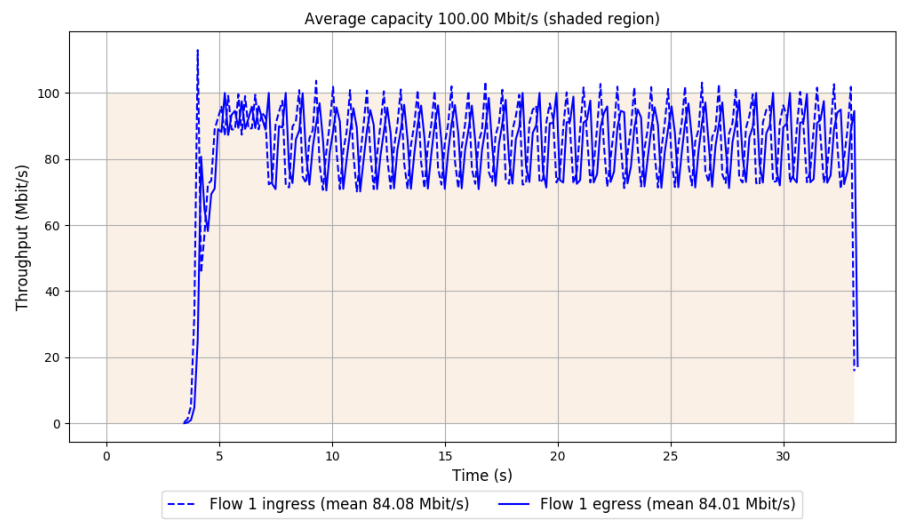
-- Flow 1:

Average throughput: 84.01 Mbit/s

95th percentile per-packet one-way delay: 29.902 ms

Loss rate: 0.19%

Run 2: Report of Synthesized-BBR — Data Link



Run 3: Statistics of Synthesized-BBR

Start at: 2019-11-01 06:27:13

End at: 2019-11-01 06:27:43

Below is generated by plot.py at 2019-11-21 22:34:39

Datalink statistics

-- Total of 1 flow:

Average capacity: 100.00 Mbit/s

Average throughput: 82.67 Mbit/s (82.7% utilization)

95th percentile per-packet one-way delay: 29.037 ms

Loss rate: 0.28%

-- Flow 1:

Average throughput: 82.67 Mbit/s

95th percentile per-packet one-way delay: 29.037 ms

Loss rate: 0.28%

Run 3: Report of Synthesized-BBR — Data Link

