

Pantheon Report

Generated at 2019-10-13 20:58:44 (UTC).

Tested in mahimahi: mm-delay 50 mm-link 50mbps.trace 50mbps.trace

Repeated the test of 3 congestion control schemes once.

Each test lasted for 30 seconds running 1 flow.

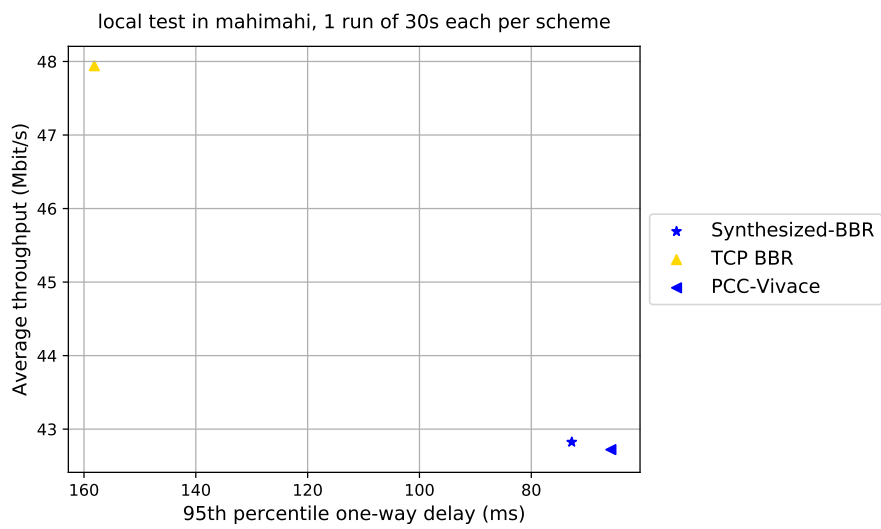
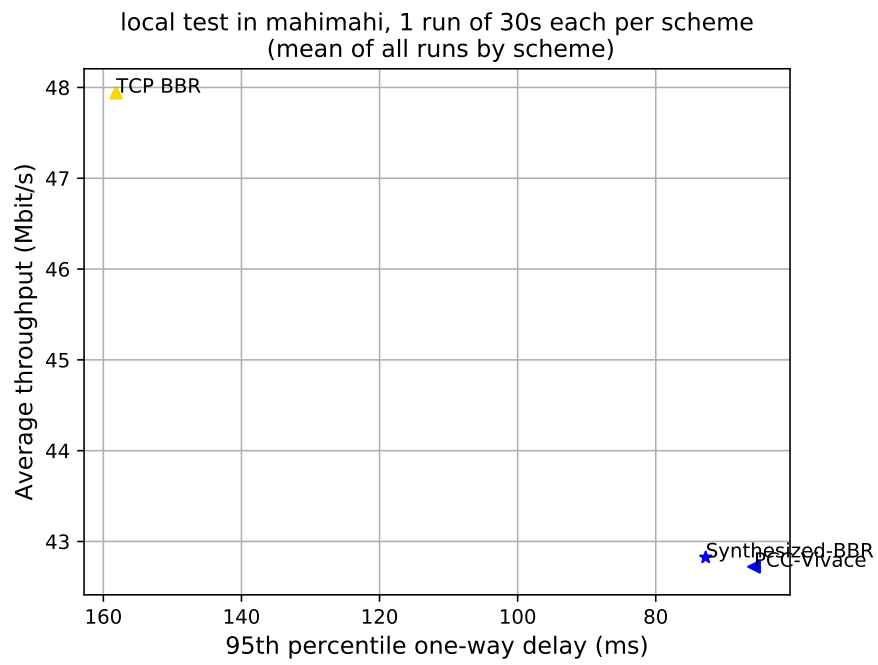
System info:

```
Linux 4.15.0-58-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 @ ecc544f4de69c28078006f9e5a0ab6cfdb497e21
third_party/aurora @ f3e943d61015b39960854ba6391797e0c7984d74
third_party/aurora-model @ e292c316c23fb837255c4e142e40590d154bbe95
third_party/eagle-v1 @ c68d985e042be5c30704c0aee48c363861951a95
third_party/eagle-v2 @ c8a1737b3c84d7d49eada5b8785045d272a70120
third_party/eagle-v3 @ 27045f2c9e7b63716dab4980f0a45a660dff3d51
third_party/illp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/illp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
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-quick @ 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/synthesizedBBR @ 27045f2c9e7b63716dab4980f0a45a660dff3d51
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	47.94	158.15	0.49
Synthesized-BBR	1	42.82	72.77	0.18
PCC-Vivace	1	42.72	65.77	0.22

Run 1: Statistics of TCP BBR

Start at: 2019-10-13 20:56:23

End at: 2019-10-13 20:56:53

Below is generated by plot.py at 2019-10-13 20:58:42

Datalink statistics

-- Total of 1 flow:

Average capacity: 50.00 Mbit/s

Average throughput: 47.94 Mbit/s (95.9% utilization)

95th percentile per-packet one-way delay: 158.149 ms

Loss rate: 0.49%

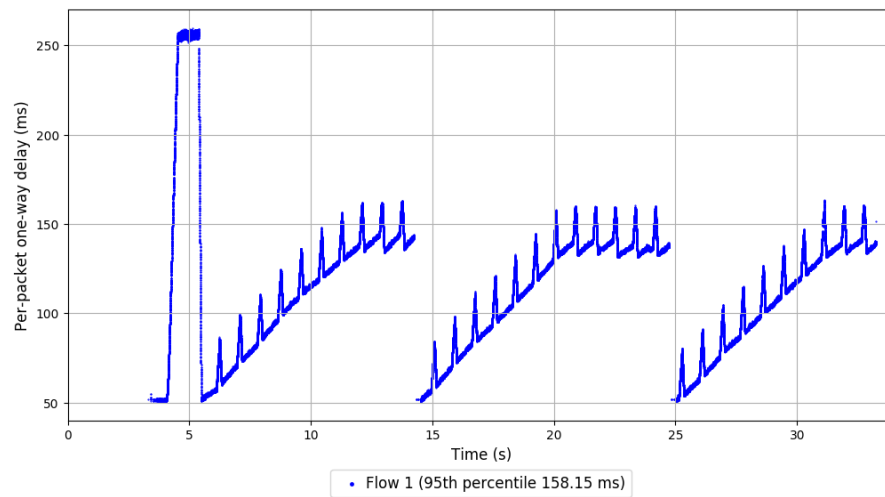
-- Flow 1:

Average throughput: 47.94 Mbit/s

95th percentile per-packet one-way delay: 158.149 ms

Loss rate: 0.49%

Run 1: Report of TCP BBR — Data Link



Run 1: Statistics of Synthesized-BBR

Start at: 2019-10-13 20:56:59

End at: 2019-10-13 20:57:29

Below is generated by plot.py at 2019-10-13 20:58:42

Datalink statistics

-- Total of 1 flow:

Average capacity: 50.00 Mbit/s

Average throughput: 42.82 Mbit/s (85.6% utilization)

95th percentile per-packet one-way delay: 72.766 ms

Loss rate: 0.18%

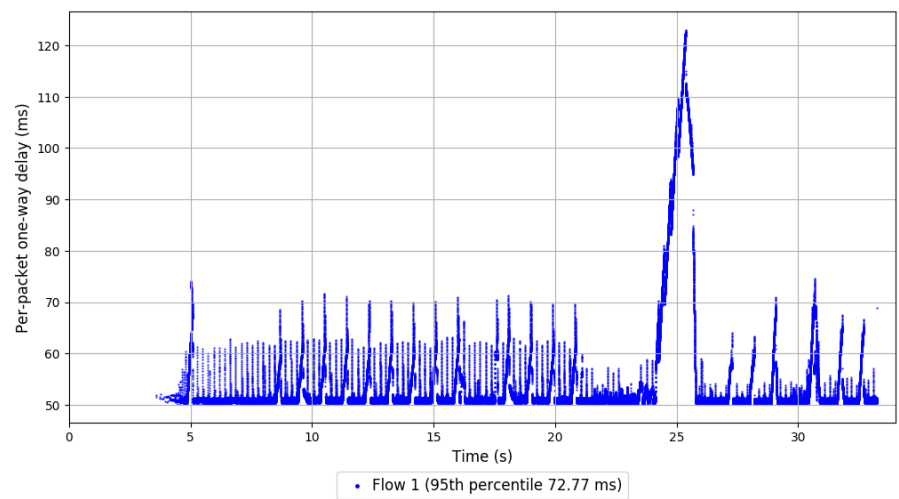
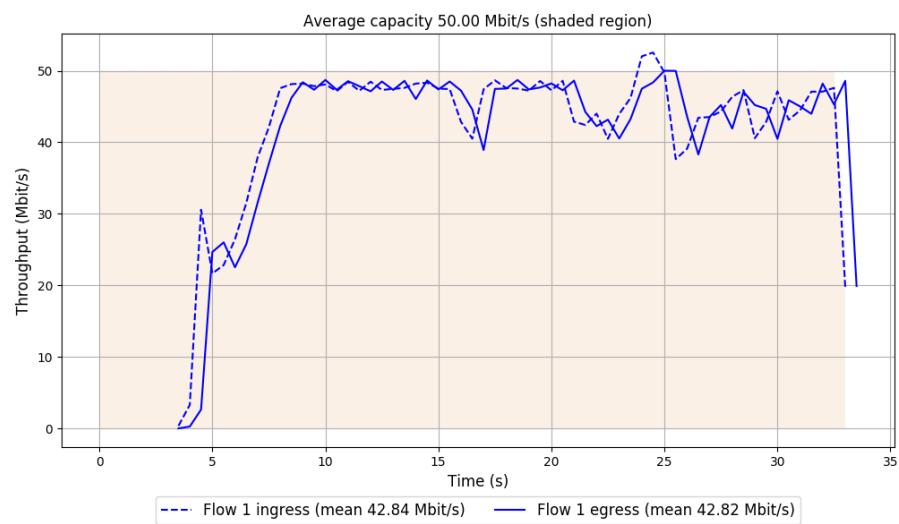
-- Flow 1:

Average throughput: 42.82 Mbit/s

95th percentile per-packet one-way delay: 72.766 ms

Loss rate: 0.18%

Run 1: Report of Synthesized-BBR — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2019-10-13 20:57:36

End at: 2019-10-13 20:58:06

Below is generated by plot.py at 2019-10-13 20:58:43

Datalink statistics

-- Total of 1 flow:

Average capacity: 50.00 Mbit/s

Average throughput: 42.72 Mbit/s (85.4% utilization)

95th percentile per-packet one-way delay: 65.768 ms

Loss rate: 0.22%

-- Flow 1:

Average throughput: 42.72 Mbit/s

95th percentile per-packet one-way delay: 65.768 ms

Loss rate: 0.22%

Run 1: Report of PCC-Vivace — Data Link

