Pantheon Report

Generated at 2019-11-28 14:29:23 (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 2 congestion control schemes 3 times.

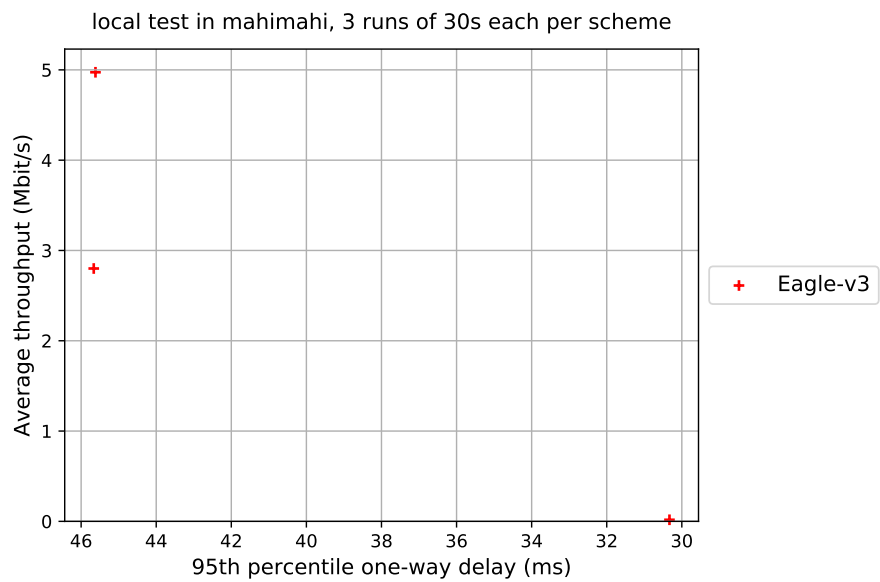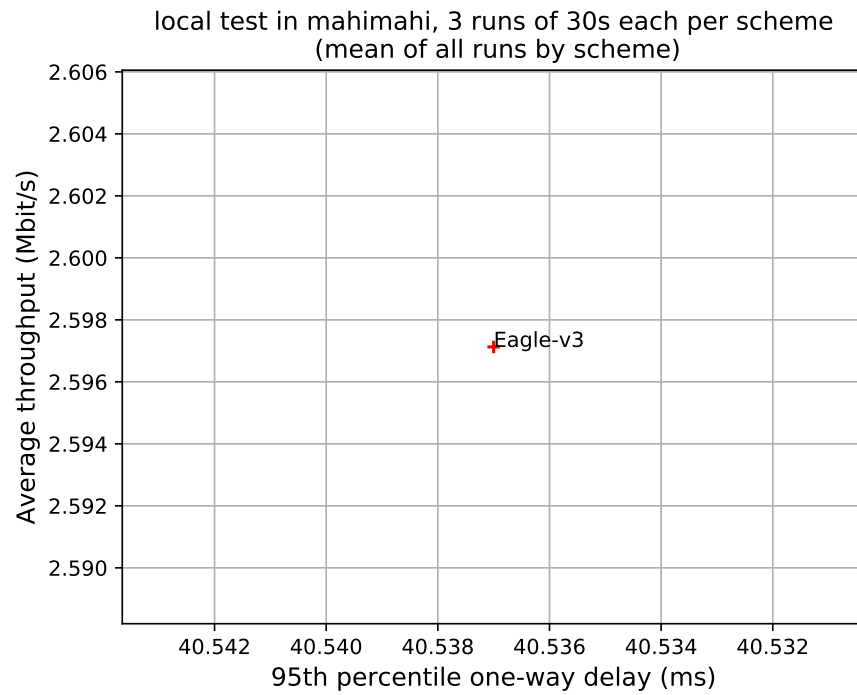Each test lasted for 30 seconds running 1 flow.

```
System info:
Linux 5.2.0-050200rc3-generic
net.core.default_qdisc = fq_codel
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 @ 85b61e7e20ce8f85c0e2698efe8c3dfd26e52baa
third_party/aurora @ f3e943d61015b39960854ba6391797e0c7984d74
third_party/aurora-model @ e292c316c23fb837255c4e142e40590d154bbe95
third_party/eagle-v1 @ c68d985e042be5c30704c0aee48c363861951a95
third_party/eagle-v2 @ c8a1737b3c84d7d49eada5b8785045d272a70120
third_party/eagle-v3 @ b366c35d3e76fb0d7d5c3a1bf8df2c54ed5158cd
 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.
 M sender-receiver/sender-receiver/sender_receiver/envs/__pycache__/helpers.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/__pycache__/sender_receiver_env.cpyt
 M sender-receiver/sender-receiver/sender_receiver/envs/example_xentropy.py
 M sender-receiver/sender-receiver/sender_receiver/envs/experts/python_bbr.py
 M sender-receiver/sender-receiver/sender_receiver/envs/logs/action_prob_logs.txt
 M sender-receiver/sender-receiver/sender_receiver/envs/logs/log.txt
 M sender-receiver/sender-receiver/sender_receiver/envs/models/training_models/model-xentrop
 M sender-receiver/sender-receiver/sender_receiver/envs/sender_receiver_env.py
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
```

```
third_party/proto-quic @ 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/verus @ d4b447ea74c6c60a261149af2629562939f9a494
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```
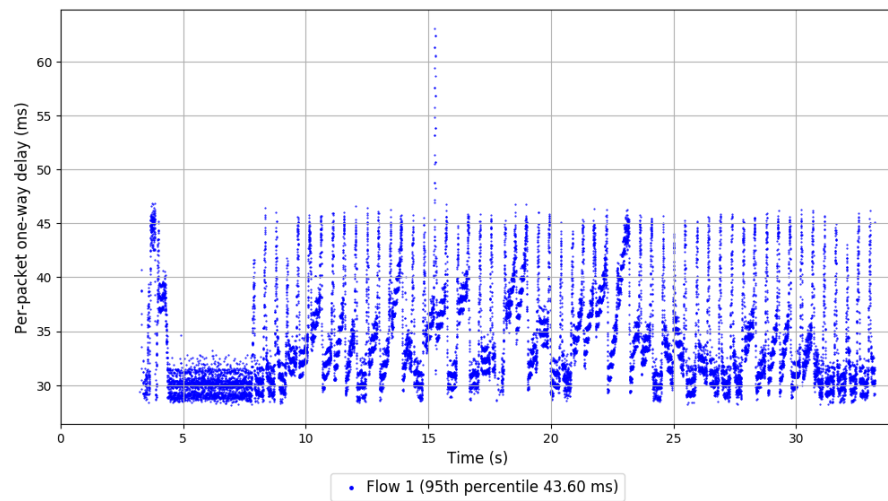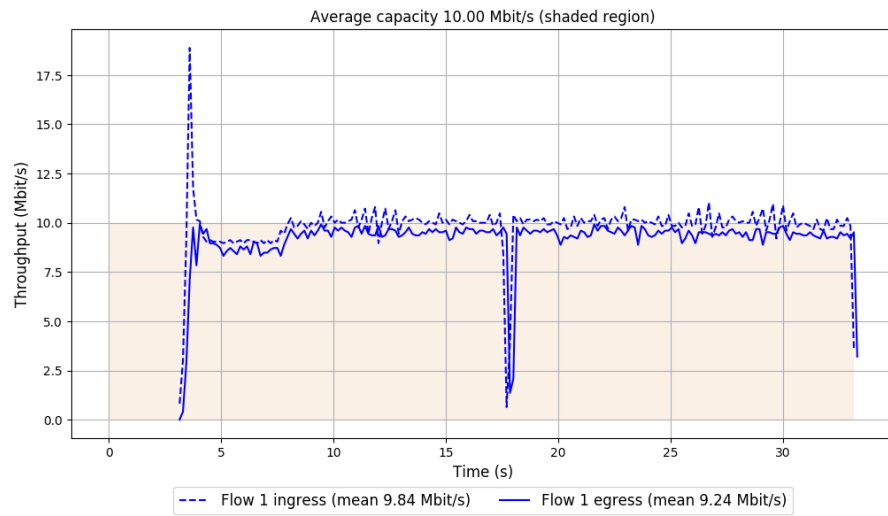
local test in mahimahi, 3 runs of 30s each per scheme
(mean of all runs by scheme)

local test in mahimahi, 3 runs of 30s each per scheme

scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	0	N/A	N/A	N/A
Eagle-v3	3	2.60	40.54	31.65

```
Run 1: Statistics of TCP BBR

Start at: 2019-11-28 14:25:52
End at: 2019-11-28 14:26:22
```

Run 1: Report of TCP BBR — Data Link

Average capacity 10.00 Mbit/s (shaded region)

--- Flow 1 ingress (mean 9.84 Mbit/s)   —— Flow 1 egress (mean 9.24 Mbit/s)

• Flow 1 (95th percentile 43.60 ms)

Run 2: Statistics of TCP BBR

Start at: 2019-11-28 14:26:59
End at: 2019-11-28 14:27:29

Run 2: Report of TCP BBR — Data Link

Figure is missing

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Run 3: Statistics of TCP BBR

Start at: 2019-11-28 14:28:08
End at: 2019-11-28 14:28:38

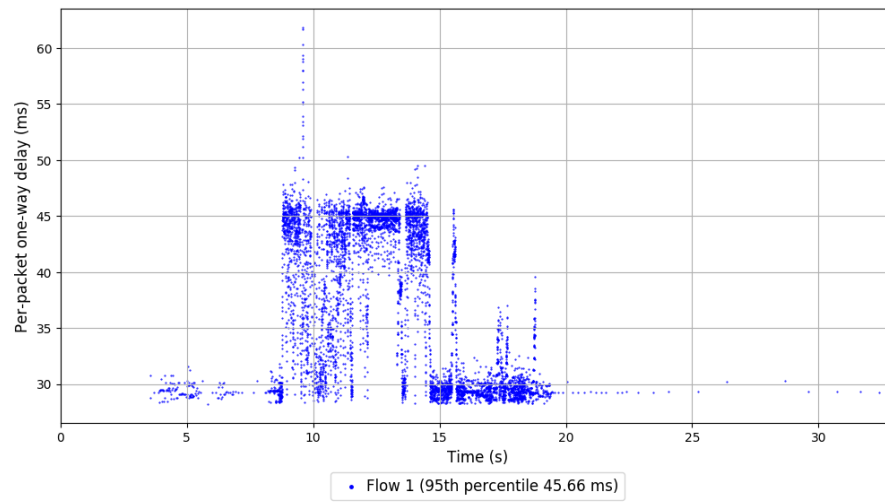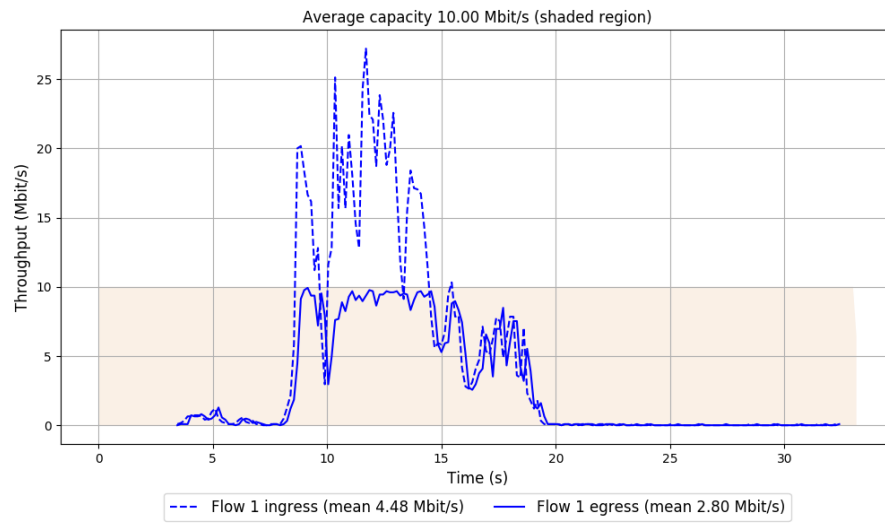Run 3: Report of TCP BBR — Data Link

Figure is missing

Figure is missing

```
Run 1: Statistics of Eagle-v3

Start at: 2019-11-28 14:25:18
End at: 2019-11-28 14:25:48

# Below is generated by plot.py at 2019-11-28 14:29:20
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 2.80 Mbit/s (28.0% utilization)
95th percentile per-packet one-way delay: 45.664 ms
Loss rate: 37.45%
-- Flow 1:
Average throughput: 2.80 Mbit/s
95th percentile per-packet one-way delay: 45.664 ms
Loss rate: 37.45%
```

Run 1: Report of Eagle-v3 — Data Link

Average capacity 10.00 Mbit/s (shaded region)

Flow 1 ingress (mean 4.48 Mbit/s)   Flow 1 egress (mean 2.80 Mbit/s)

Flow 1 (95th percentile 45.66 ms)

```
Run 2: Statistics of Eagle-v3

Start at: 2019-11-28 14:26:25
End at: 2019-11-28 14:26:55


# Below is generated by plot.py at 2019-11-28 14:29:22
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 4.97 Mbit/s (49.7% utilization)
95th percentile per-packet one-way delay: 45.618 ms
Loss rate: 53.06%
-- Flow 1:
Average throughput: 4.97 Mbit/s
95th percentile per-packet one-way delay: 45.618 ms
Loss rate: 53.06%
```
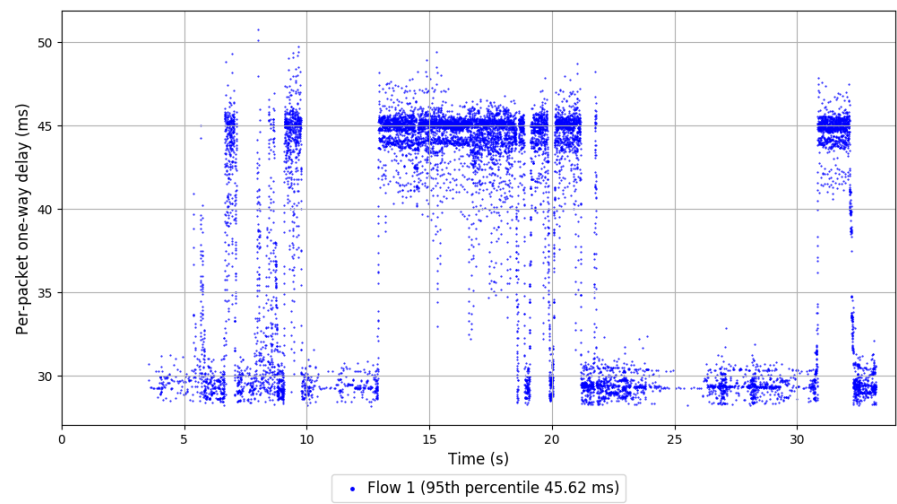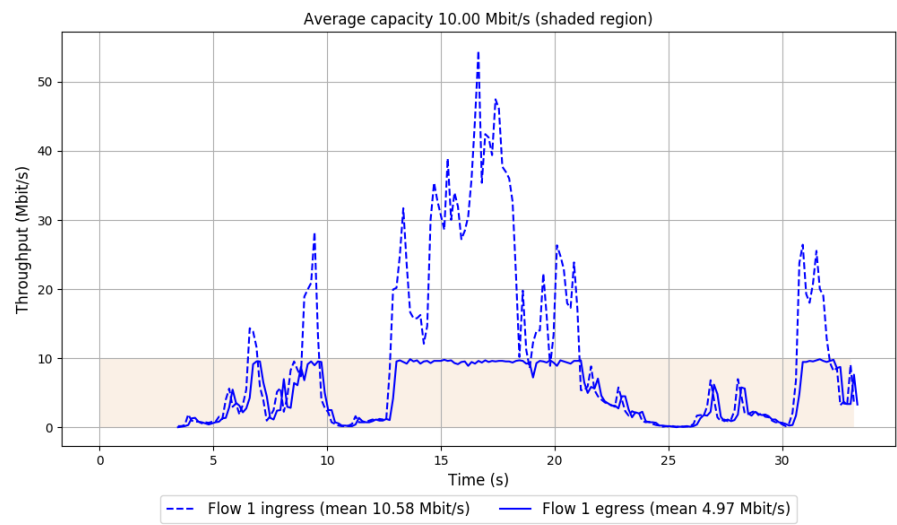
Run 2: Report of Eagle-v3 — Data Link

Average capacity 10.00 Mbit/s (shaded region)

Flow 1 ingress (mean 10.58 Mbit/s) — Flow 1 egress (mean 4.97 Mbit/s)

• Flow 1 (95th percentile 45.62 ms)

```
Run 3: Statistics of Eagle-v3

Start at: 2019-11-28 14:27:34
End at: 2019-11-28 14:28:04


# Below is generated by plot.py at 2019-11-28 14:29:22
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 0.02 Mbit/s (0.2% utilization)
95th percentile per-packet one-way delay: 30.329 ms
Loss rate: 4.44%
-- Flow 1:
Average throughput: 0.02 Mbit/s
95th percentile per-packet one-way delay: 30.329 ms
Loss rate: 4.44%
```

Run 3: Report of Eagle-v3 — Data Link

Average capacity 10.00 Mbit/s (shaded region)

- - - Flow 1 ingress (mean 0.02 Mbit/s) —— Flow 1 egress (mean 0.02 Mbit/s)

• Flow 1 (95th percentile 30.33 ms)