

Pantheon Report

Generated at 2019-07-31 05:41:32 (UTC).

Tested in mahimahi: mm-delay 50 mm-link 10mbps.trace 10mbps.trace

Repeated the test of 6 congestion control schemes once.

Each test lasted for 15 seconds running 1 flow.

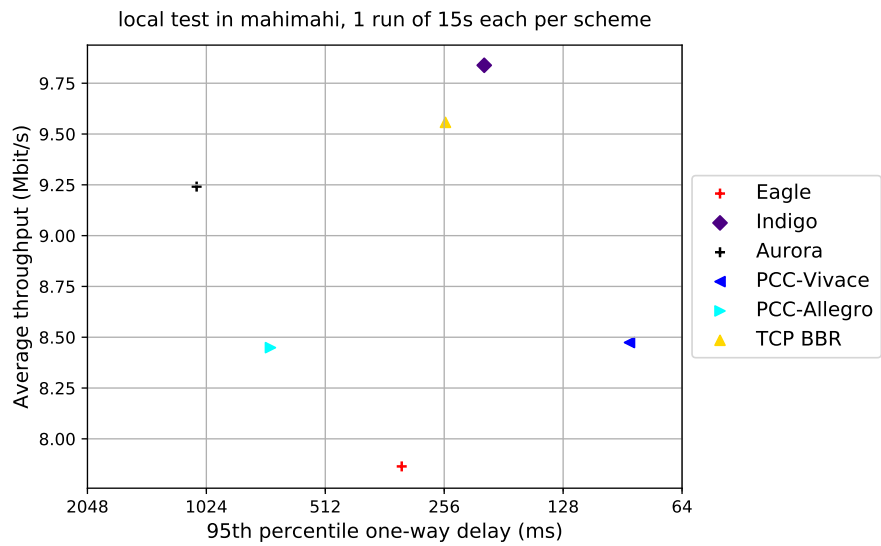
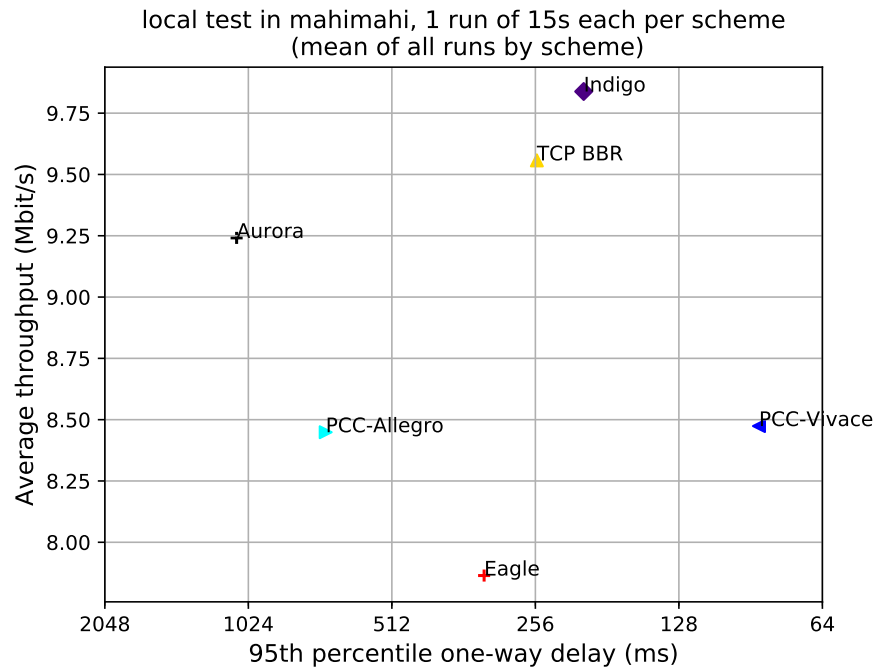
System info:

```
Linux 4.15.0-54-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 @ 470966ca5a414177cf7291231ede7f9fb214a951
third_party/aurora @ f3e943d61015b39960854ba6391797e0c7984d74
third_party/aurora-model @ e292c316c23fb837255c4e142e40590d154bbe95
third_party/eagle @ f66d3a824f0abdd3b1d0afc0cc323607b2c38eca
  M sender-receiver/sender-receiver/sender_receiver/envs/example-xentropy.py
  D sender-receiver/sender-receiver/sender_receiver/envs/model-xentropy.pt
third_party/illp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/illp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/gold @ e47bed6d7495aa223eec8de2c7a43035967074ef
  M environment/__pycache__/datagram_pb2.cpython-36.opt-1.pyc
  M environment/__pycache__/datagram_pb2.cpython-36.pyc
  M environment/__pycache__/environment.cpython-36.opt-1.pyc
  M environment/__pycache__/helpers.cpython-36.opt-1.pyc
  M environment/__pycache__/helpers.cpython-36.pyc
  M environment/__pycache__/mahimahi.cpython-36.opt-1.pyc
  M environment/__pycache__/project_root.cpython-36.opt-1.pyc
  M environment/__pycache__/project_root.cpython-36.pyc
  M environment/__pycache__/receiver.cpython-36.opt-1.pyc
  M environment/__pycache__/receiver.cpython-36.pyc
  M environment/logs.txt
  M model
third_party/goldLSTM @ 6b512ee75b163fd680d7bf3cde4cf6d6aa7102c4
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 @ f099118d1421aa3131bf11fff1964974e1da3bdb2
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
Aurora	1	9.24	1083.72	7.66
TCP BBR	1	9.56	254.16	0.85
Eagle	1	7.86	327.92	0.33
Indigo	1	9.84	202.72	0.37
PCC-Allegro	1	8.45	704.75	0.34
PCC-Vivace	1	8.47	86.95	0.40

Run 1: Statistics of Aurora

Start at: 2019-07-31 05:39:41

End at: 2019-07-31 05:39:56

Below is generated by plot.py at 2019-07-31 05:41:30

Datalink statistics

-- Total of 1 flow:

Average capacity: 10.00 Mbit/s

Average throughput: 9.24 Mbit/s (92.4% utilization)

95th percentile per-packet one-way delay: 1083.718 ms

Loss rate: 7.66%

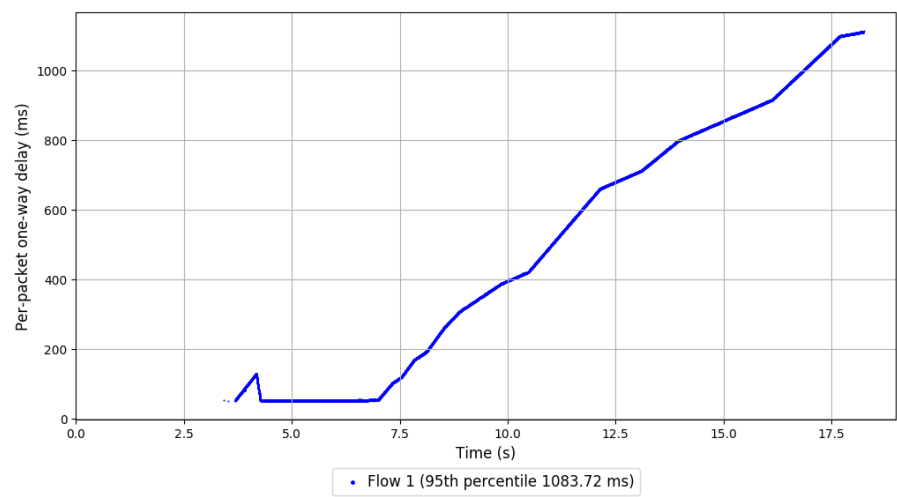
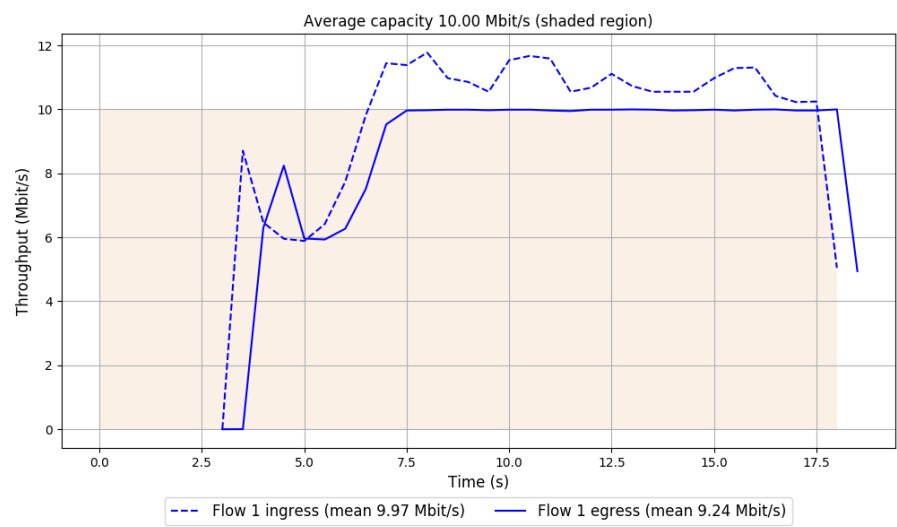
-- Flow 1:

Average throughput: 9.24 Mbit/s

95th percentile per-packet one-way delay: 1083.718 ms

Loss rate: 7.66%

Run 1: Report of Aurora — Data Link



Run 1: Statistics of TCP BBR

Start at: 2019-07-31 05:39:21

End at: 2019-07-31 05:39:36

Below is generated by plot.py at 2019-07-31 05:41:30

Datalink statistics

-- Total of 1 flow:

Average capacity: 10.00 Mbit/s

Average throughput: 9.56 Mbit/s (95.6% utilization)

95th percentile per-packet one-way delay: 254.165 ms

Loss rate: 0.85%

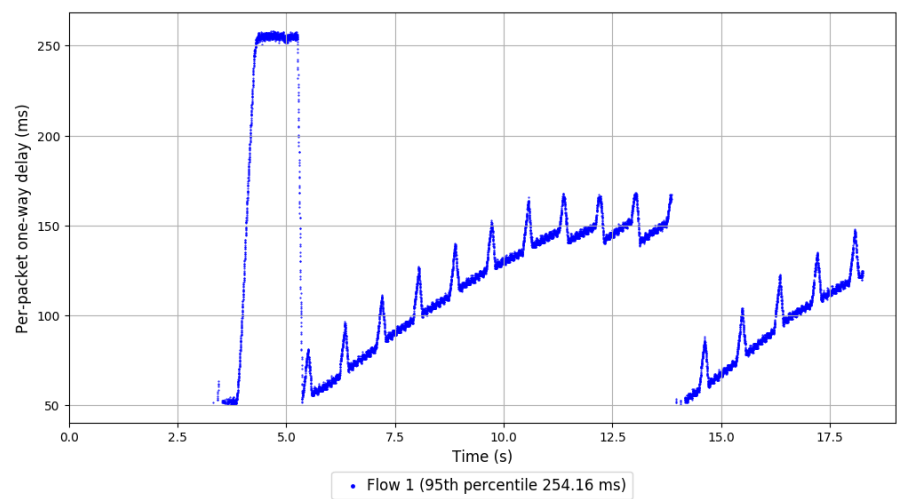
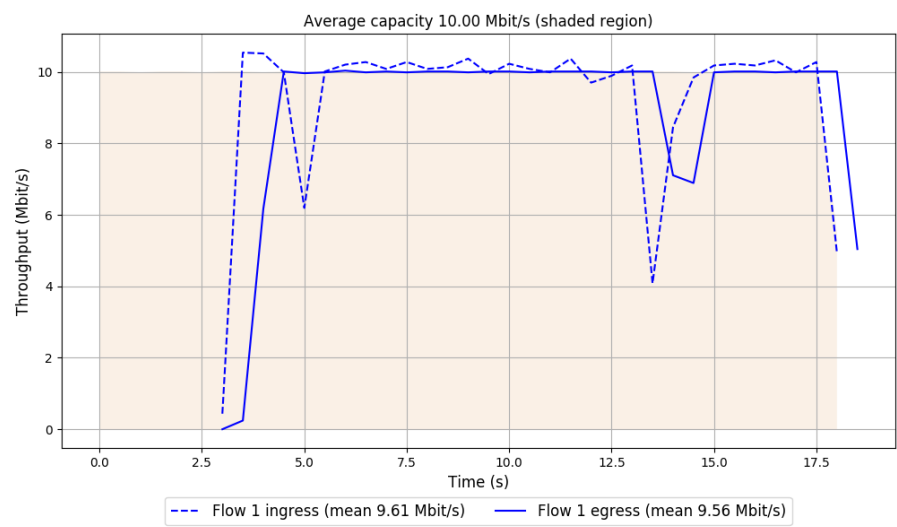
-- Flow 1:

Average throughput: 9.56 Mbit/s

95th percentile per-packet one-way delay: 254.165 ms

Loss rate: 0.85%

Run 1: Report of TCP BBR — Data Link



Run 1: Statistics of Eagle

Start at: 2019-07-31 05:39:02

End at: 2019-07-31 05:39:17

Below is generated by plot.py at 2019-07-31 05:41:30

Datalink statistics

-- Total of 1 flow:

Average capacity: 10.00 Mbit/s

Average throughput: 7.86 Mbit/s (78.6% utilization)

95th percentile per-packet one-way delay: 327.923 ms

Loss rate: 0.33%

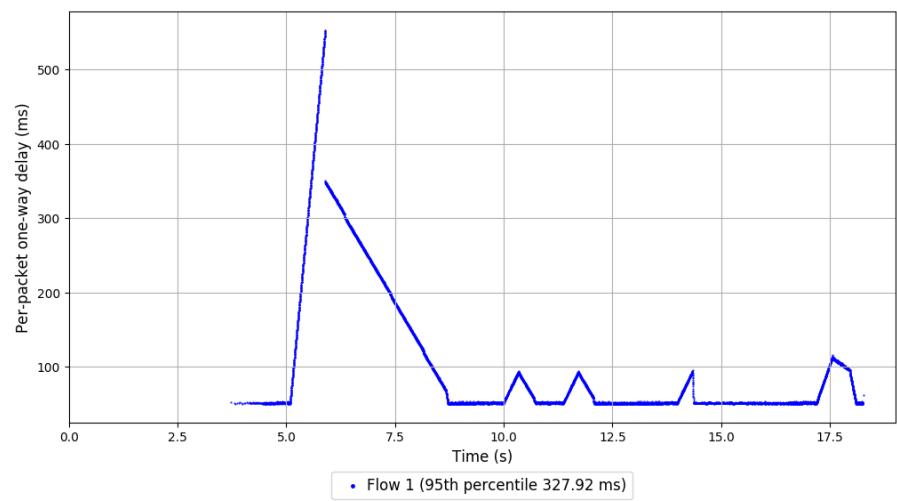
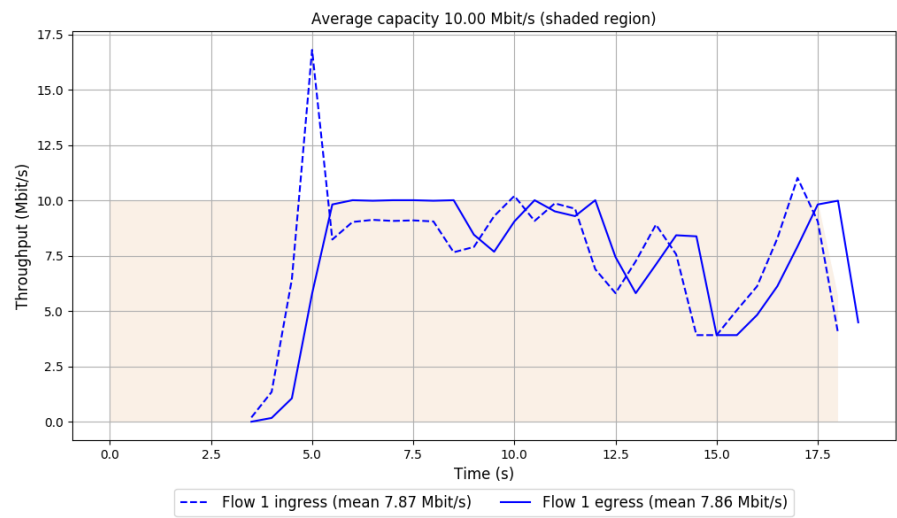
-- Flow 1:

Average throughput: 7.86 Mbit/s

95th percentile per-packet one-way delay: 327.923 ms

Loss rate: 0.33%

Run 1: Report of Eagle — Data Link



Run 1: Statistics of Indigo

Start at: 2019-07-31 05:40:00

End at: 2019-07-31 05:40:15

Below is generated by plot.py at 2019-07-31 05:41:30

Datalink statistics

-- Total of 1 flow:

Average capacity: 10.00 Mbit/s

Average throughput: 9.84 Mbit/s (98.4% utilization)

95th percentile per-packet one-way delay: 202.723 ms

Loss rate: 0.37%

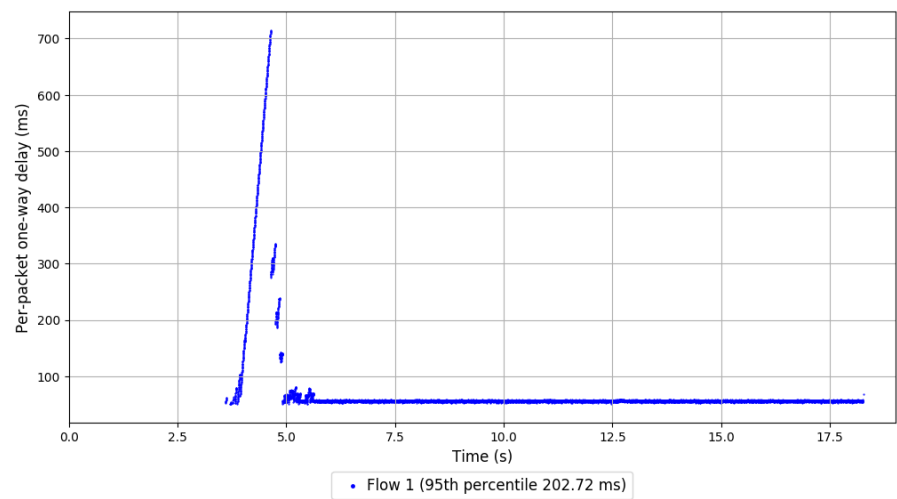
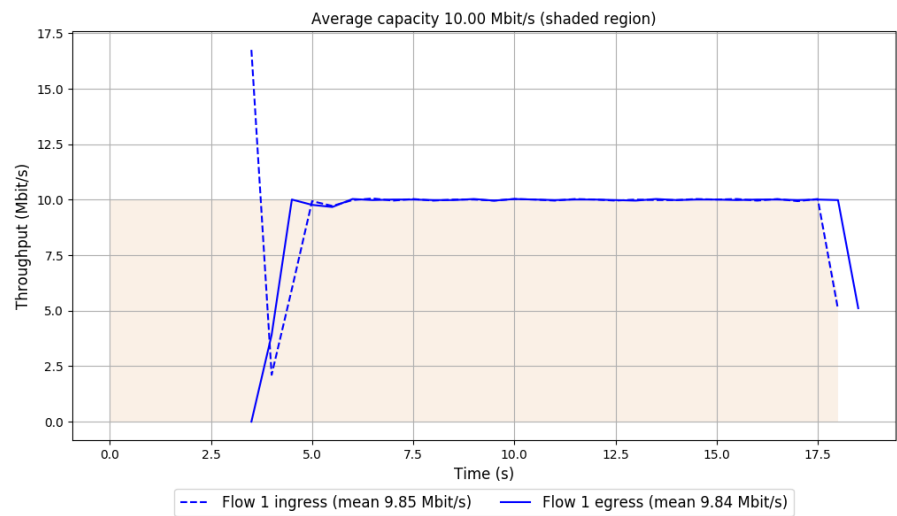
-- Flow 1:

Average throughput: 9.84 Mbit/s

95th percentile per-packet one-way delay: 202.723 ms

Loss rate: 0.37%

Run 1: Report of Indigo — Data Link

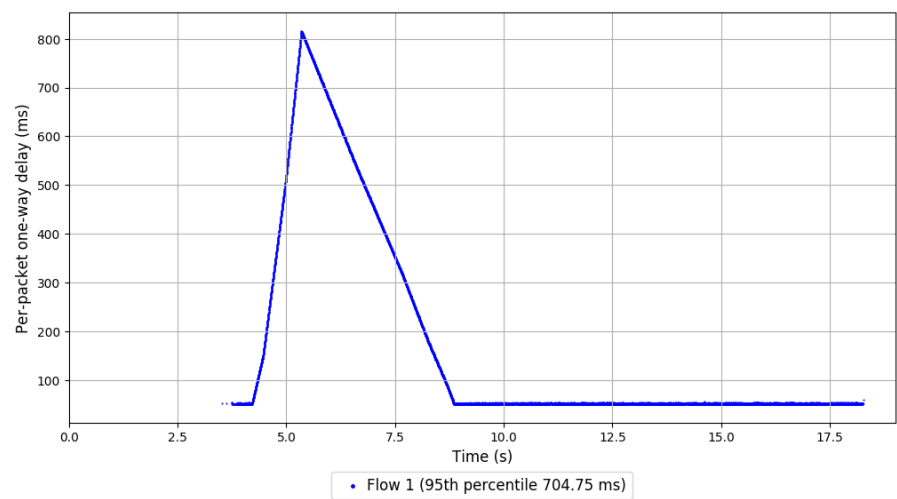
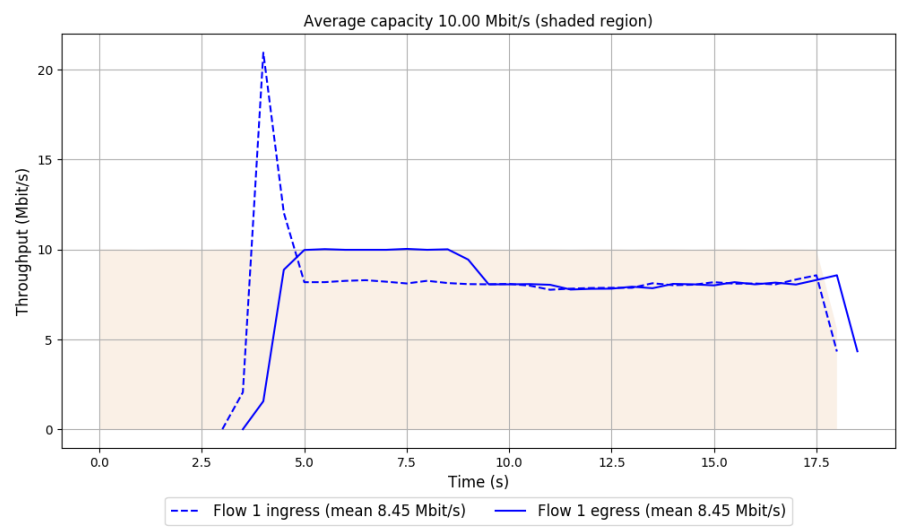


```
Run 1: Statistics of PCC-Allegro

Start at: 2019-07-31 05:40:20
End at: 2019-07-31 05:40:35

# Below is generated by plot.py at 2019-07-31 05:41:30
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 8.45 Mbit/s (84.5% utilization)
95th percentile per-packet one-way delay: 704.748 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 8.45 Mbit/s
95th percentile per-packet one-way delay: 704.748 ms
Loss rate: 0.34%
```

Run 1: Report of PCC-Allegro — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2019-07-31 05:40:39

End at: 2019-07-31 05:40:54

Below is generated by plot.py at 2019-07-31 05:41:30

Datalink statistics

-- Total of 1 flow:

Average capacity: 10.00 Mbit/s

Average throughput: 8.47 Mbit/s (84.7% utilization)

95th percentile per-packet one-way delay: 86.949 ms

Loss rate: 0.40%

-- Flow 1:

Average throughput: 8.47 Mbit/s

95th percentile per-packet one-way delay: 86.949 ms

Loss rate: 0.40%

Run 1: Report of PCC-Vivace — Data Link

