

Pantheon Report

Generated at 2019-07-08 00:22:20 (UTC).

Tested in mahimahi: mm-delay 40 mm-link 5mbps.trace 5mbps.trace

Repeated the test of 19 congestion control schemes twice.

Each test lasted for 40 seconds running 1 flow.

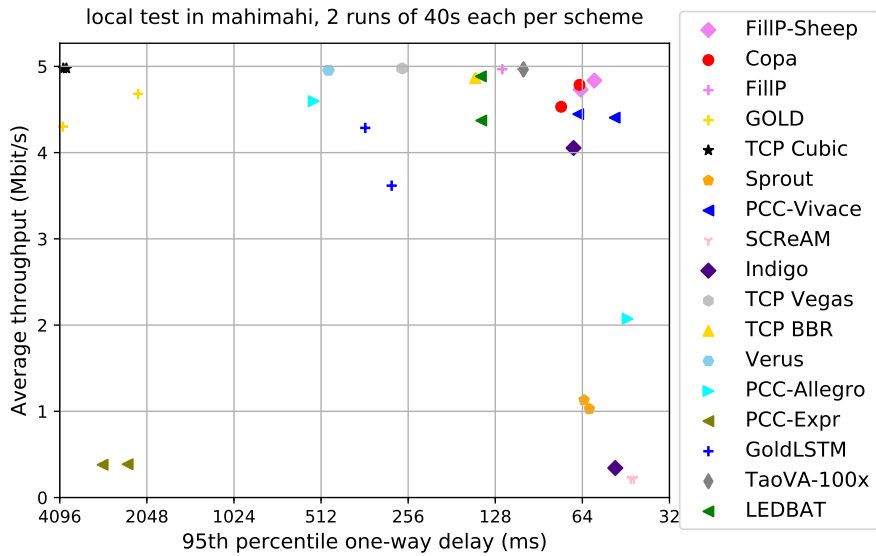
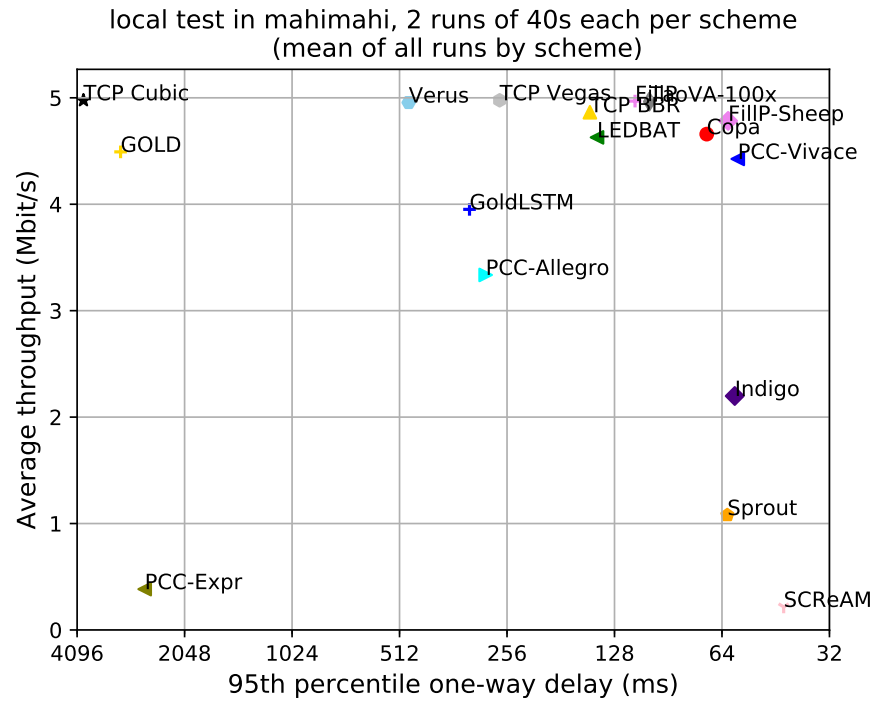
System info:

```
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 @ b9bd0b3e18abf7df899ad5041befaf55df4bbc73
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf5e58e562f4
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-quic @ 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/verus @ d4b447ea74c6c60a261149af2629562939f9a494
  M src/verus.hpp
  M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```



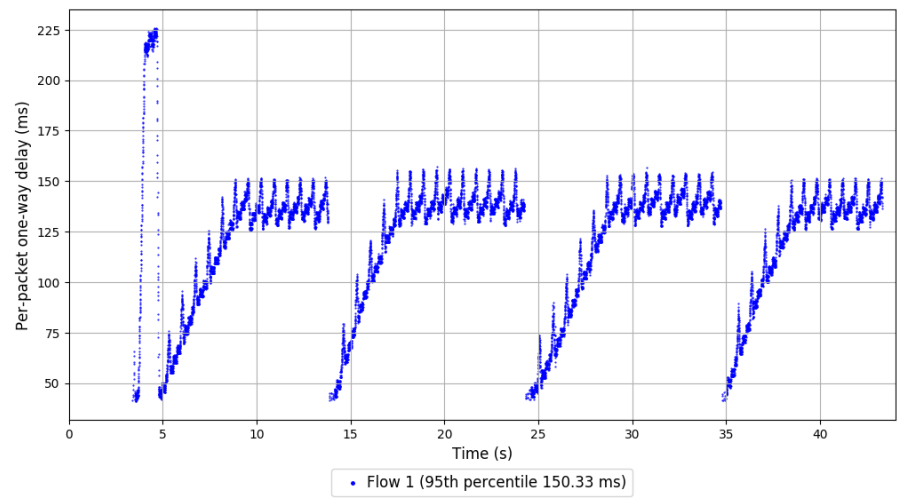
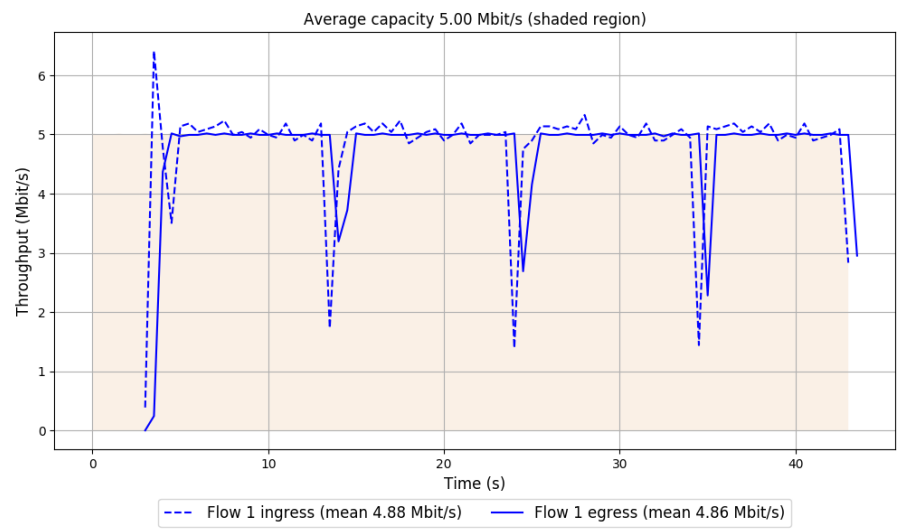
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	2	4.86	150.01	0.34
Copa	2	4.66	70.62	0.12
TCP Cubic	2	4.98	3932.20	8.04
FillP	2	4.97	112.12	0.28
FillP-Sheep	2	4.79	61.52	0.15
GOLD	2	4.49	3094.78	8.34
GoldLSTM	2	3.96	326.08	1.09
Indigo	2	2.19	58.95	0.14
LEDBAT	2	4.62	143.30	0.38
PCC-Allegro	2	3.33	293.80	0.11
PCC-Expr	2	0.39	2649.36	13.12
QUIC Cubic	0	N/A	N/A	N/A
SCReAM	2	0.22	42.99	0.10
Sprout	2	1.08	61.84	0.14
TaoVA-100x	2	4.96	102.27	0.22
TCP Vegas	2	4.98	268.49	0.13
Verus	2	4.96	482.67	1.13
PCC-Vivace	2	4.43	57.82	0.12
WebRTC media	0	N/A	N/A	N/A

```
Run 1: Statistics of TCP BBR

Start at: 2019-07-07 23:45:12
End at: 2019-07-07 23:45:52

# Below is generated by plot.py at 2019-07-08 00:21:09
# Datalink statistics
-- Total of 1 flow:
Average capacity: 5.00 Mbit/s
Average throughput: 4.86 Mbit/s (97.3% utilization)
95th percentile per-packet one-way delay: 150.332 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 4.86 Mbit/s
95th percentile per-packet one-way delay: 150.332 ms
Loss rate: 0.33%
```

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2019-07-07 23:59:21

End at: 2019-07-08 00:00:01

Below is generated by plot.py at 2019-07-08 00:21:11

Datalink statistics

-- Total of 1 flow:

Average capacity: 5.00 Mbit/s

Average throughput: 4.86 Mbit/s (97.3% utilization)

95th percentile per-packet one-way delay: 149.689 ms

Loss rate: 0.36%

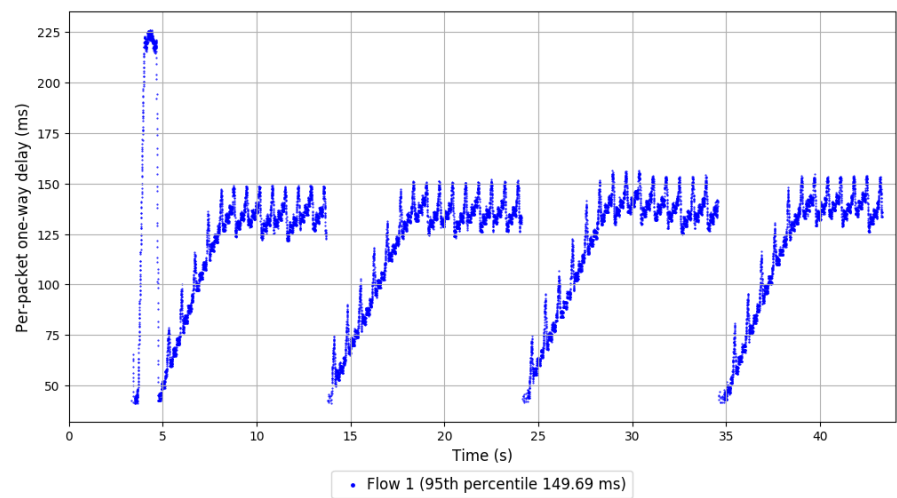
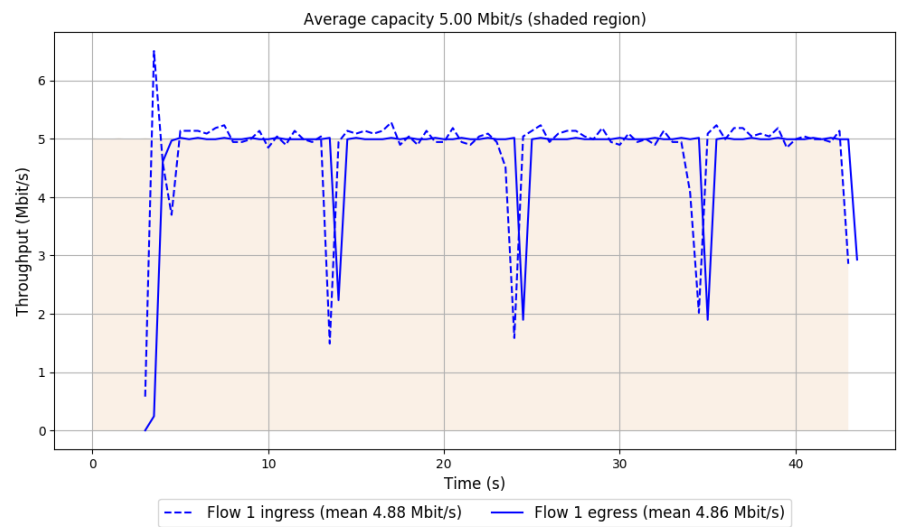
-- Flow 1:

Average throughput: 4.86 Mbit/s

95th percentile per-packet one-way delay: 149.689 ms

Loss rate: 0.36%

Run 2: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

Start at: 2019-07-07 23:39:14

End at: 2019-07-07 23:39:54

Below is generated by plot.py at 2019-07-08 00:21:16

Datalink statistics

-- Total of 1 flow:

Average capacity: 5.00 Mbit/s

Average throughput: 4.79 Mbit/s (95.7% utilization)

95th percentile per-packet one-way delay: 65.465 ms

Loss rate: 0.12%

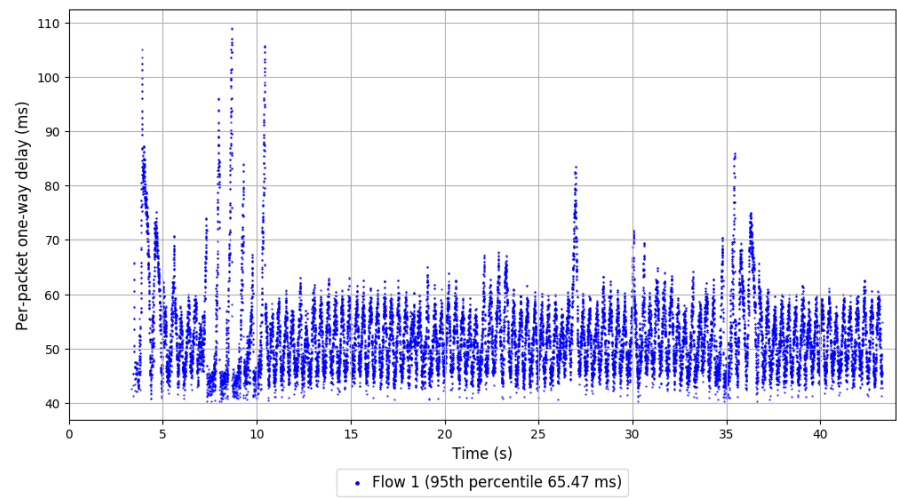
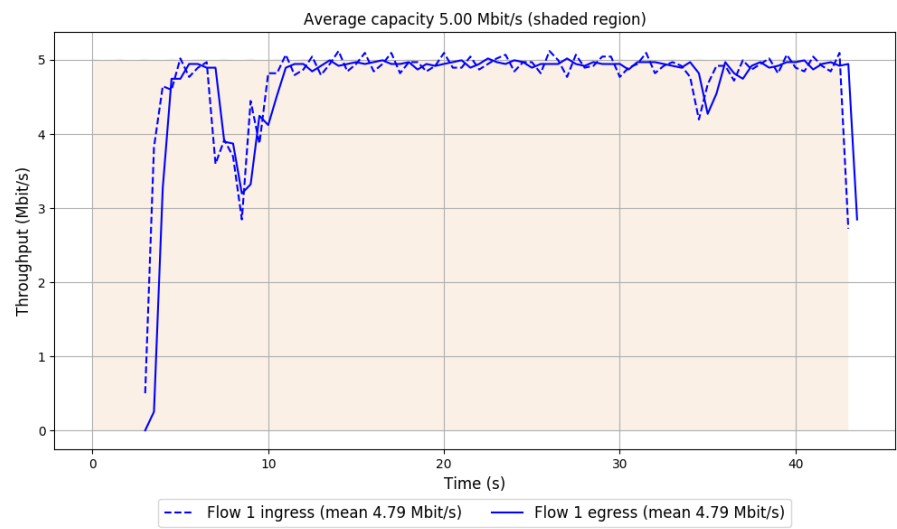
-- Flow 1:

Average throughput: 4.79 Mbit/s

95th percentile per-packet one-way delay: 65.465 ms

Loss rate: 0.12%

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

Start at: 2019-07-07 23:53:23

End at: 2019-07-07 23:54:03

Below is generated by plot.py at 2019-07-08 00:21:18

Datalink statistics

-- Total of 1 flow:

Average capacity: 5.00 Mbit/s

Average throughput: 4.53 Mbit/s (90.6% utilization)

95th percentile per-packet one-way delay: 75.768 ms

Loss rate: 0.12%

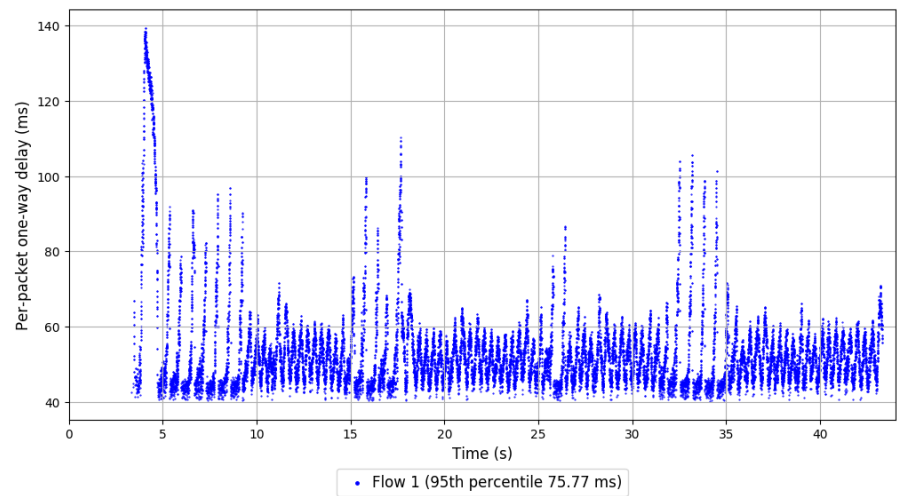
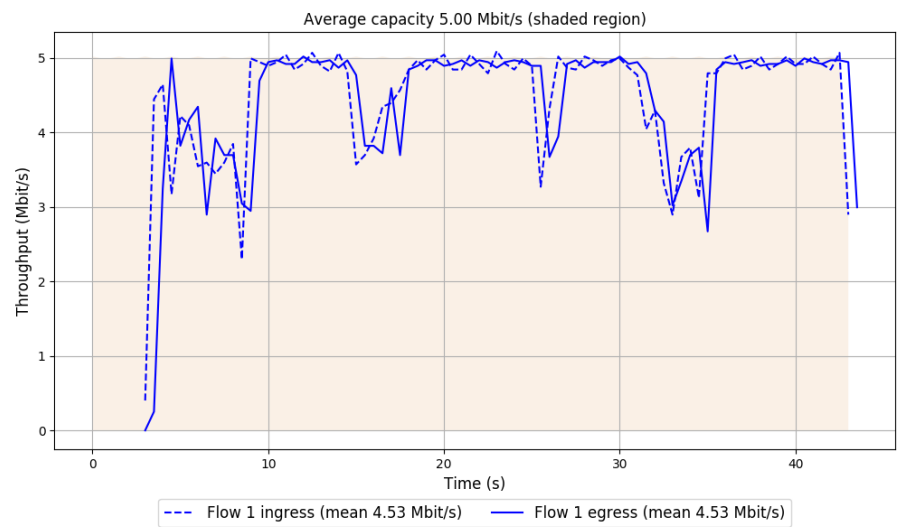
-- Flow 1:

Average throughput: 4.53 Mbit/s

95th percentile per-packet one-way delay: 75.768 ms

Loss rate: 0.12%

Run 2: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2019-07-07 23:42:14

End at: 2019-07-07 23:42:54

Below is generated by plot.py at 2019-07-08 00:21:18

Datalink statistics

-- Total of 1 flow:

Average capacity: 5.00 Mbit/s

Average throughput: 4.98 Mbit/s (99.5% utilization)

95th percentile per-packet one-way delay: 3979.784 ms

Loss rate: 8.20%

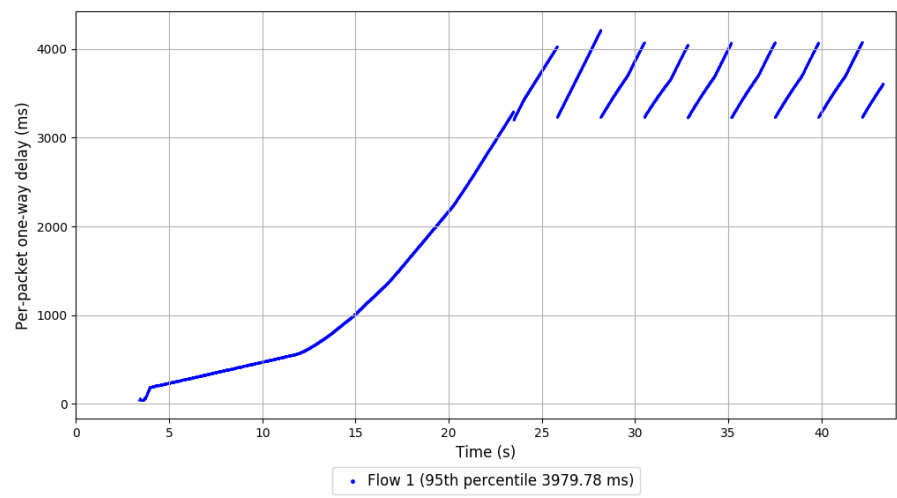
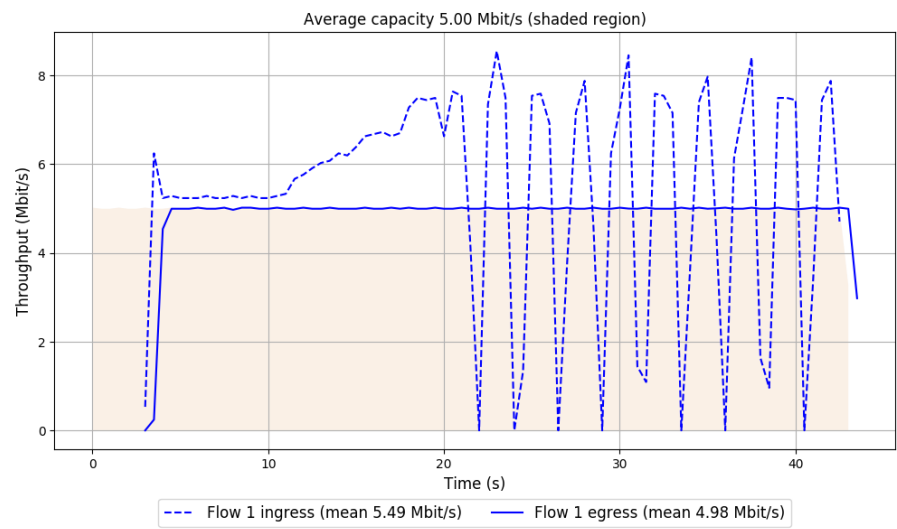
-- Flow 1:

Average throughput: 4.98 Mbit/s

95th percentile per-packet one-way delay: 3979.784 ms

Loss rate: 8.20%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2019-07-07 23:56:23

End at: 2019-07-07 23:57:03

Below is generated by plot.py at 2019-07-08 00:21:18

Datalink statistics

-- Total of 1 flow:

Average capacity: 5.00 Mbit/s

Average throughput: 4.98 Mbit/s (99.5% utilization)

95th percentile per-packet one-way delay: 3884.623 ms

Loss rate: 7.89%

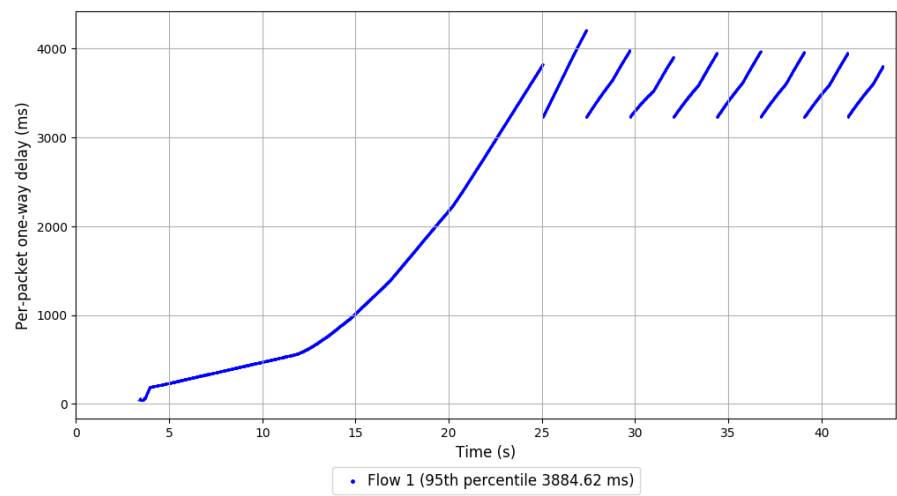
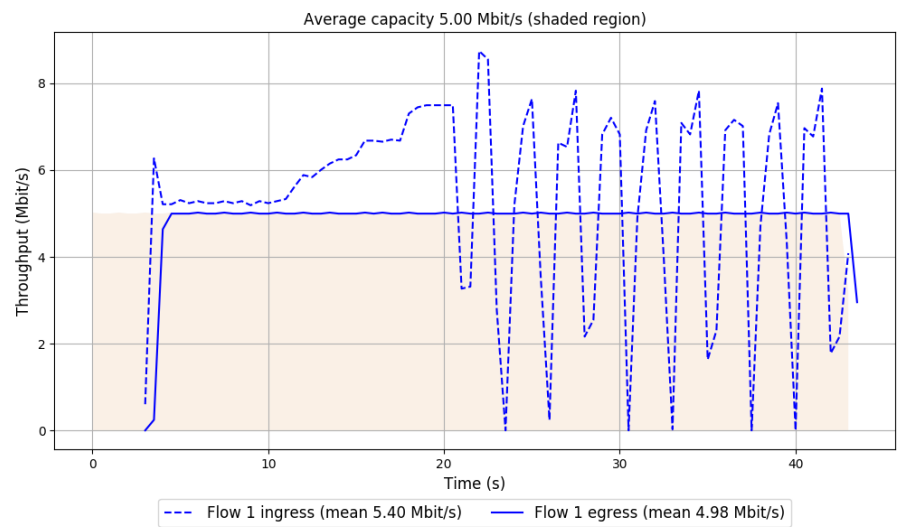
-- Flow 1:

Average throughput: 4.98 Mbit/s

95th percentile per-packet one-way delay: 3884.623 ms

Loss rate: 7.89%

Run 2: Report of TCP Cubic — Data Link



Run 1: Statistics of FillP

Start at: 2019-07-07 23:47:27

End at: 2019-07-07 23:48:07

Below is generated by plot.py at 2019-07-08 00:21:24

Datalink statistics

-- Total of 1 flow:

Average capacity: 5.00 Mbit/s

Average throughput: 4.97 Mbit/s (99.4% utilization)

95th percentile per-packet one-way delay: 103.277 ms

Loss rate: 0.25%

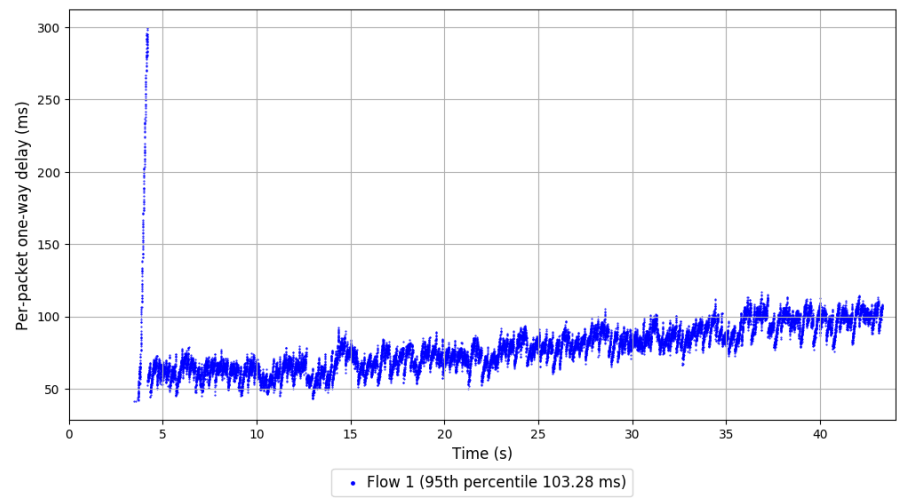
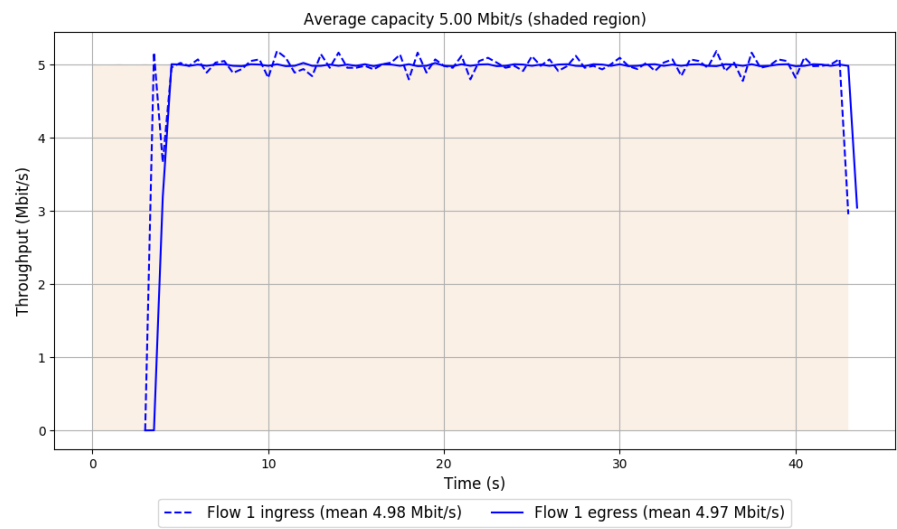
-- Flow 1:

Average throughput: 4.97 Mbit/s

95th percentile per-packet one-way delay: 103.277 ms

Loss rate: 0.25%

Run 1: Report of FillP — Data Link



Run 2: Statistics of FillP

Start at: 2019-07-08 00:01:36

End at: 2019-07-08 00:02:16

Below is generated by plot.py at 2019-07-08 00:21:29

Datalink statistics

-- Total of 1 flow:

Average capacity: 5.00 Mbit/s

Average throughput: 4.97 Mbit/s (99.3% utilization)

95th percentile per-packet one-way delay: 120.973 ms

Loss rate: 0.31%

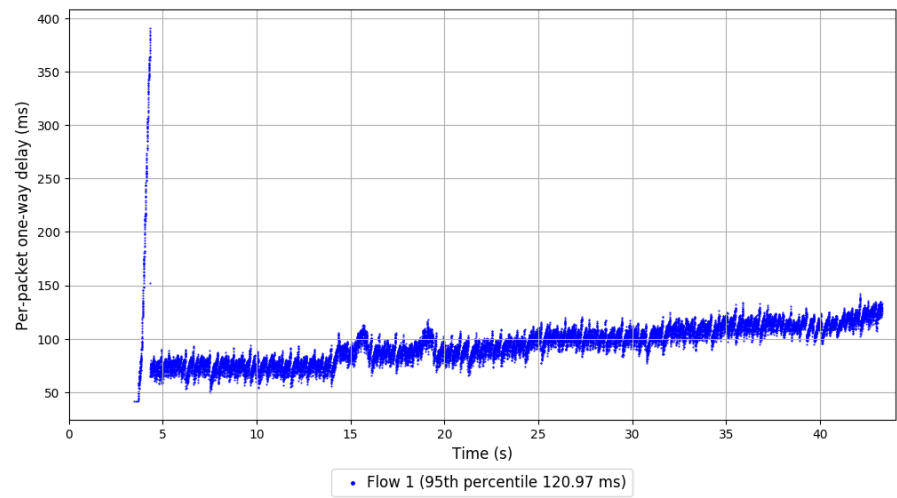
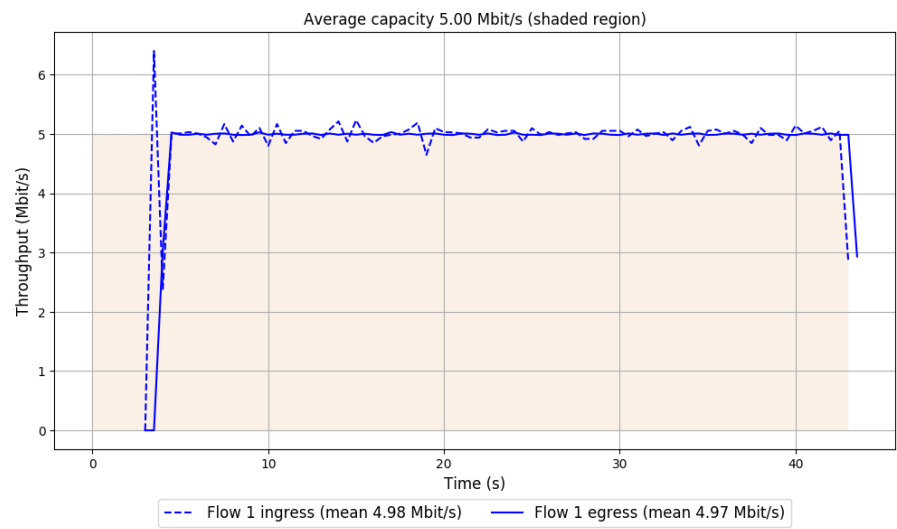
-- Flow 1:

Average throughput: 4.97 Mbit/s

95th percentile per-packet one-way delay: 120.973 ms

Loss rate: 0.31%

Run 2: Report of FillP — Data Link

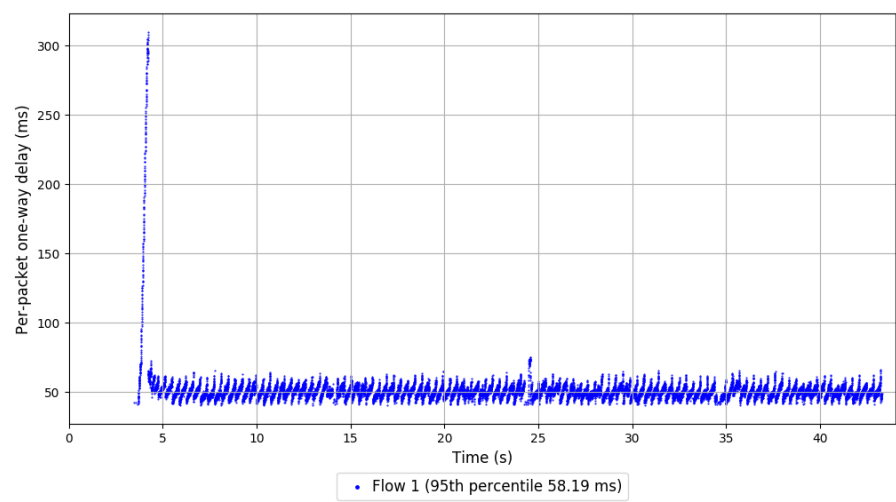
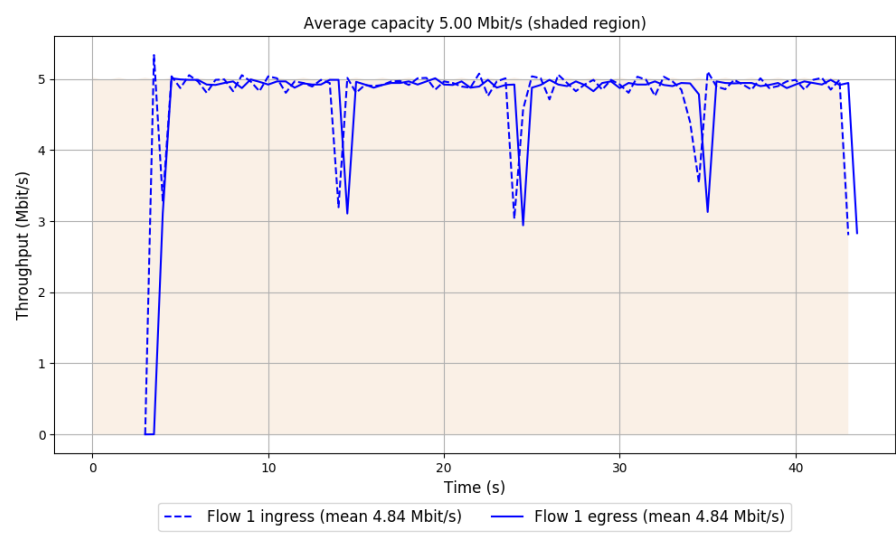


```
Run 1: Statistics of FillP-Sheep

Start at: 2019-07-07 23:38:30
End at: 2019-07-07 23:39:10

# Below is generated by plot.py at 2019-07-08 00:21:29
# Datalink statistics
-- Total of 1 flow:
Average capacity: 5.00 Mbit/s
Average throughput: 4.84 Mbit/s (96.7% utilization)
95th percentile per-packet one-way delay: 58.185 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 4.84 Mbit/s
95th percentile per-packet one-way delay: 58.185 ms
Loss rate: 0.13%
```

Run 1: Report of FillP-Sheep — Data Link



Run 2: Statistics of FillP-Sheep

Start at: 2019-07-07 23:52:39

End at: 2019-07-07 23:53:19

Below is generated by plot.py at 2019-07-08 00:21:29

Datalink statistics

-- Total of 1 flow:

Average capacity: 5.00 Mbit/s

Average throughput: 4.73 Mbit/s (94.6% utilization)

95th percentile per-packet one-way delay: 64.847 ms

Loss rate: 0.16%

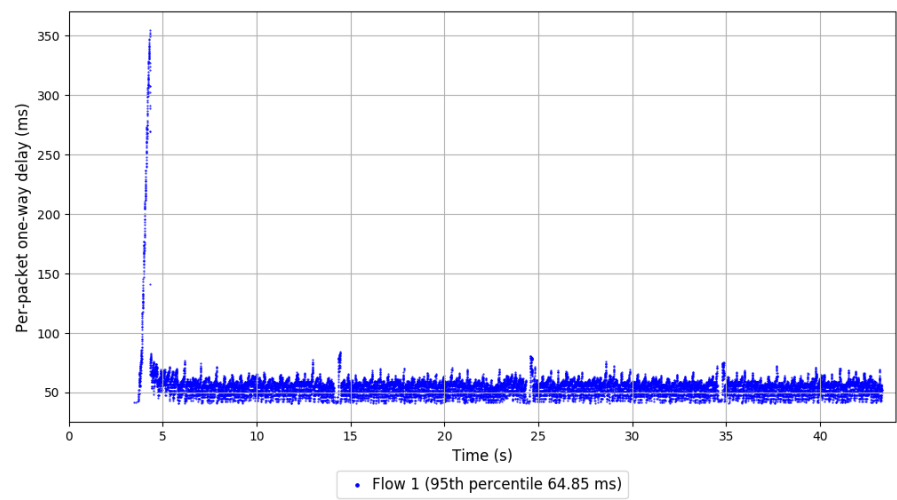
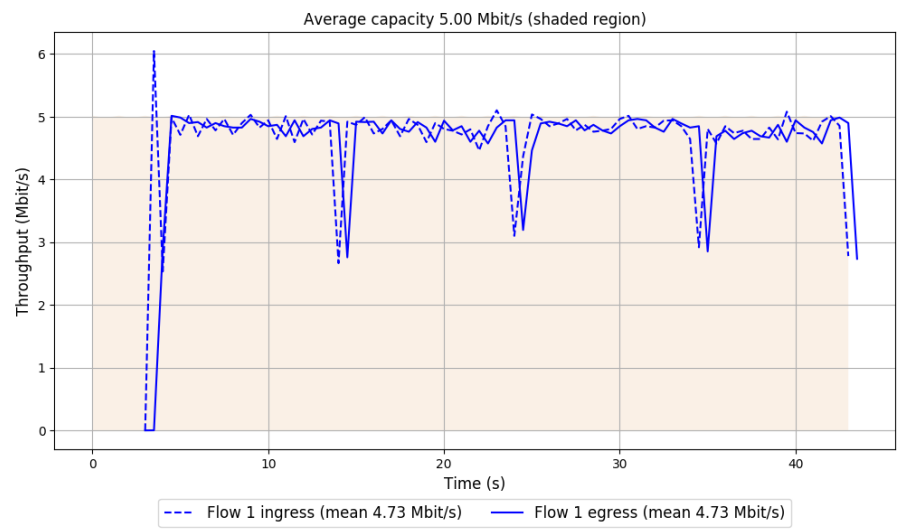
-- Flow 1:

Average throughput: 4.73 Mbit/s

95th percentile per-packet one-way delay: 64.847 ms

Loss rate: 0.16%

Run 2: Report of FillP-Sheep — Data Link

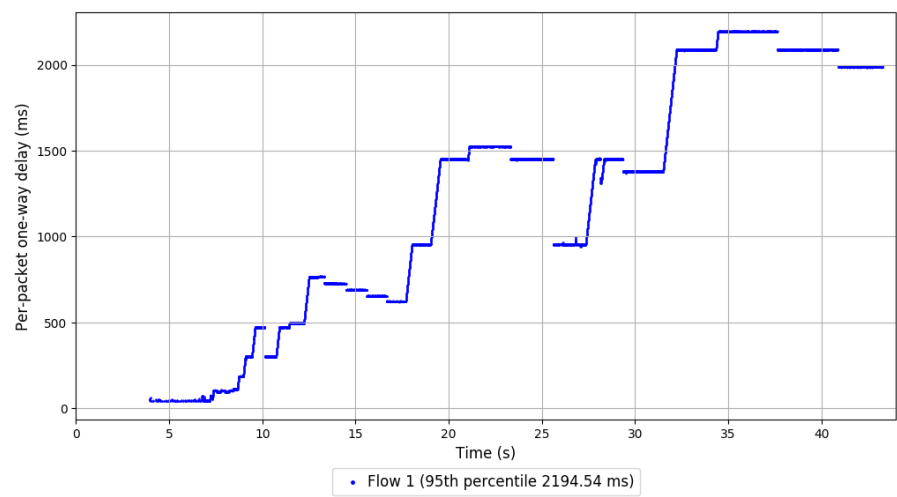
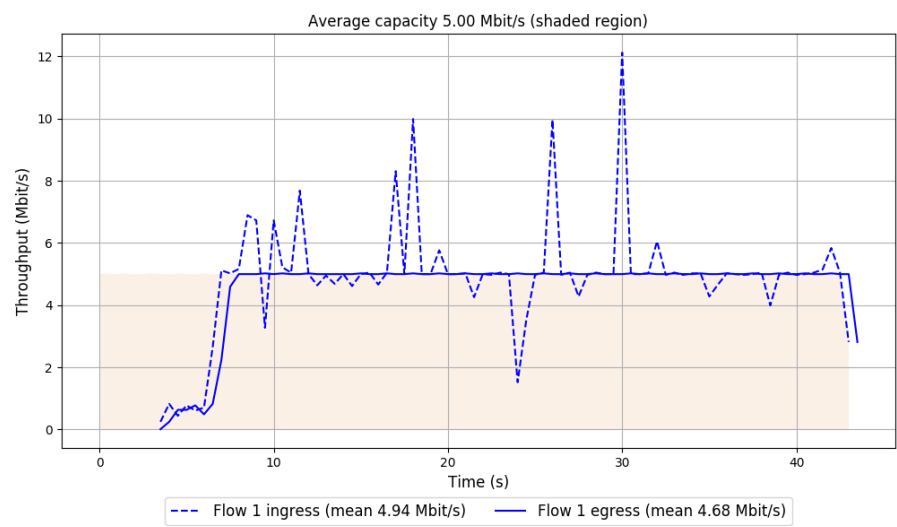



```
Run 1: Statistics of GOLD

Start at: 2019-07-07 23:41:29
End at: 2019-07-07 23:42:09

# Below is generated by plot.py at 2019-07-08 00:21:29
# Datalink statistics
-- Total of 1 flow:
Average capacity: 5.00 Mbit/s
Average throughput: 4.68 Mbit/s (93.6% utilization)
95th percentile per-packet one-way delay: 2194.544 ms
Loss rate: 5.37%
-- Flow 1:
Average throughput: 4.68 Mbit/s
95th percentile per-packet one-way delay: 2194.544 ms
Loss rate: 5.37%
```

Run 1: Report of GOLD — Data Link



Run 2: Statistics of GOLD

Start at: 2019-07-07 23:55:38

End at: 2019-07-07 23:56:18

Below is generated by plot.py at 2019-07-08 00:21:31

Datalink statistics

-- Total of 1 flow:

Average capacity: 5.00 Mbit/s

Average throughput: 4.30 Mbit/s (86.0% utilization)

95th percentile per-packet one-way delay: 3995.018 ms

Loss rate: 11.30%

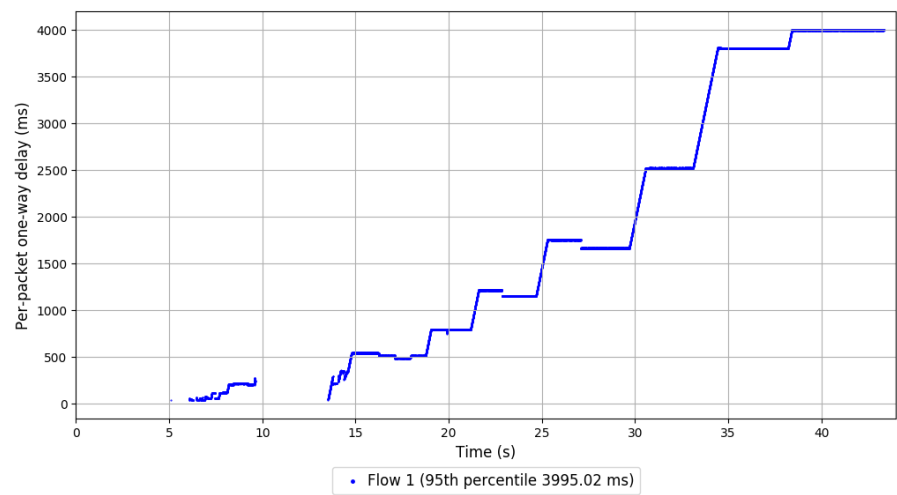
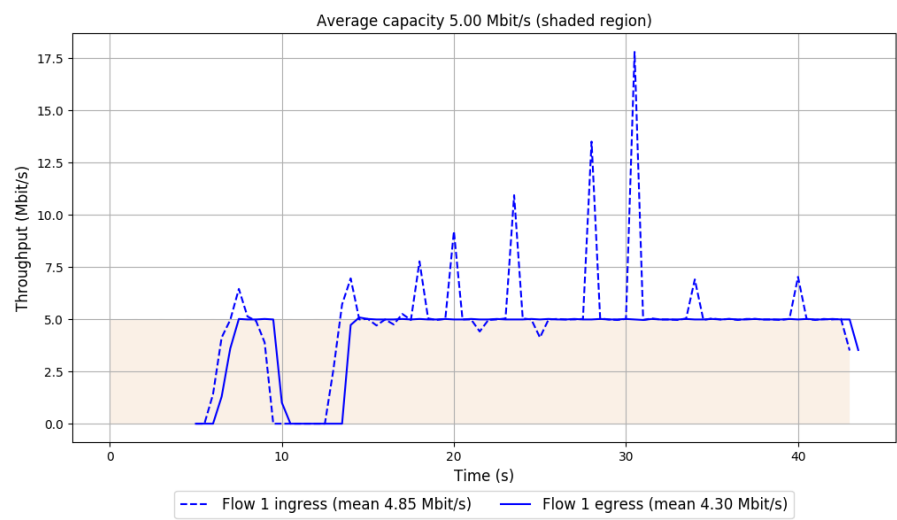
-- Flow 1:

Average throughput: 4.30 Mbit/s

95th percentile per-packet one-way delay: 3995.018 ms

Loss rate: 11.30%

Run 2: Report of GOLD — Data Link

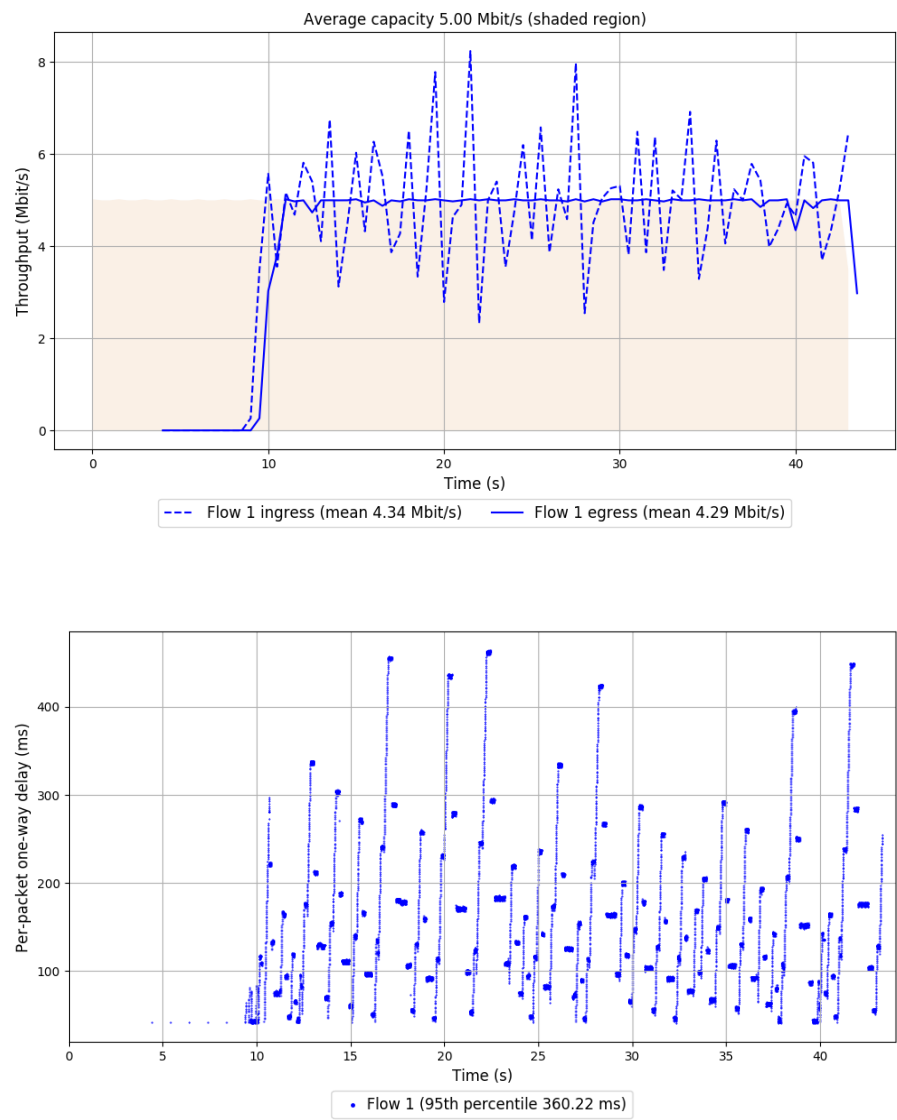


```
Run 1: Statistics of GoldLSTM

Start at: 2019-07-07 23:45:57
End at: 2019-07-07 23:46:37

# Below is generated by plot.py at 2019-07-08 00:21:36
# Datalink statistics
-- Total of 1 flow:
Average capacity: 5.00 Mbit/s
Average throughput: 4.29 Mbit/s (85.7% utilization)
95th percentile per-packet one-way delay: 360.220 ms
Loss rate: 1.41%
-- Flow 1:
Average throughput: 4.29 Mbit/s
95th percentile per-packet one-way delay: 360.220 ms
Loss rate: 1.41%
```

Run 1: Report of GoldLSTM — Data Link



Run 2: Statistics of GoldLSTM

Start at: 2019-07-08 00:00:06

End at: 2019-07-08 00:00:46

Below is generated by plot.py at 2019-07-08 00:21:38

Datalink statistics

-- Total of 1 flow:

Average capacity: 5.00 Mbit/s

Average throughput: 3.62 Mbit/s (72.3% utilization)

95th percentile per-packet one-way delay: 291.931 ms

Loss rate: 0.77%

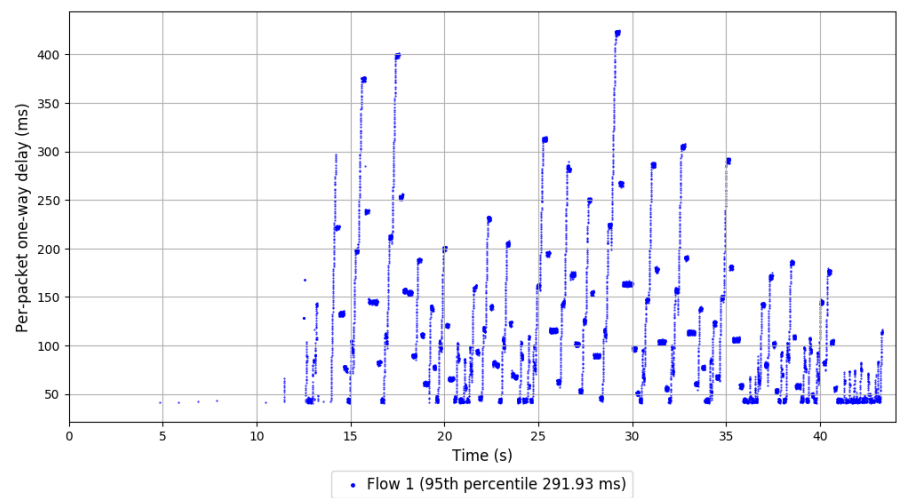
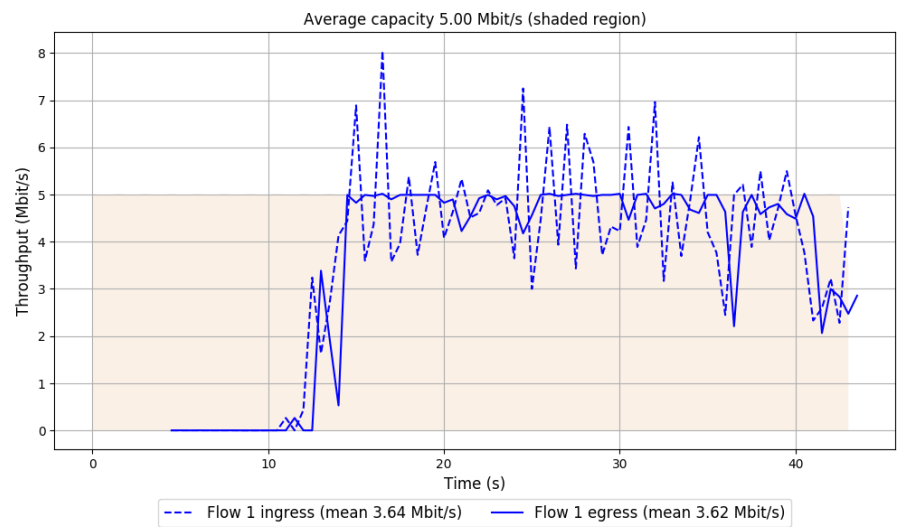
-- Flow 1:

Average throughput: 3.62 Mbit/s

95th percentile per-packet one-way delay: 291.931 ms

Loss rate: 0.77%

Run 2: Report of GoldLSTM — Data Link

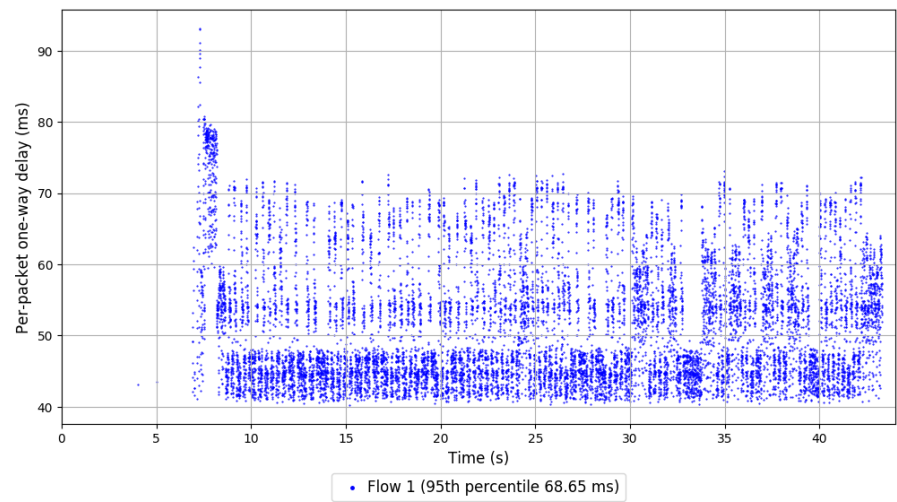
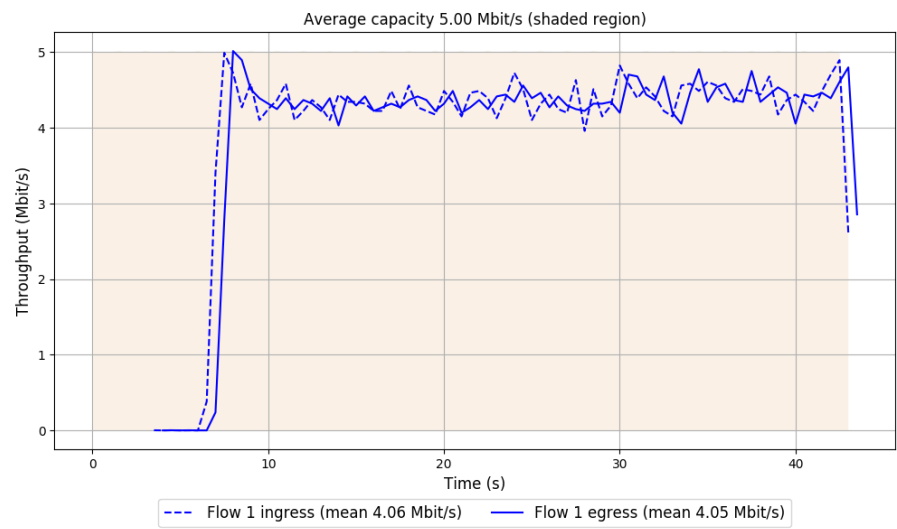



```
Run 1: Statistics of Indigo

Start at: 2019-07-07 23:39:59
End at: 2019-07-07 23:40:39

# Below is generated by plot.py at 2019-07-08 00:21:38
# Datalink statistics
-- Total of 1 flow:
Average capacity: 5.00 Mbit/s
Average throughput: 4.05 Mbit/s (81.1% utilization)
95th percentile per-packet one-way delay: 68.653 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 4.05 Mbit/s
95th percentile per-packet one-way delay: 68.653 ms
Loss rate: 0.11%
```

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2019-07-07 23:54:08

End at: 2019-07-07 23:54:48

Below is generated by plot.py at 2019-07-08 00:21:38

Datalink statistics

-- Total of 1 flow:

Average capacity: 5.00 Mbit/s

Average throughput: 0.34 Mbit/s (6.9% utilization)

95th percentile per-packet one-way delay: 49.242 ms

Loss rate: 0.18%

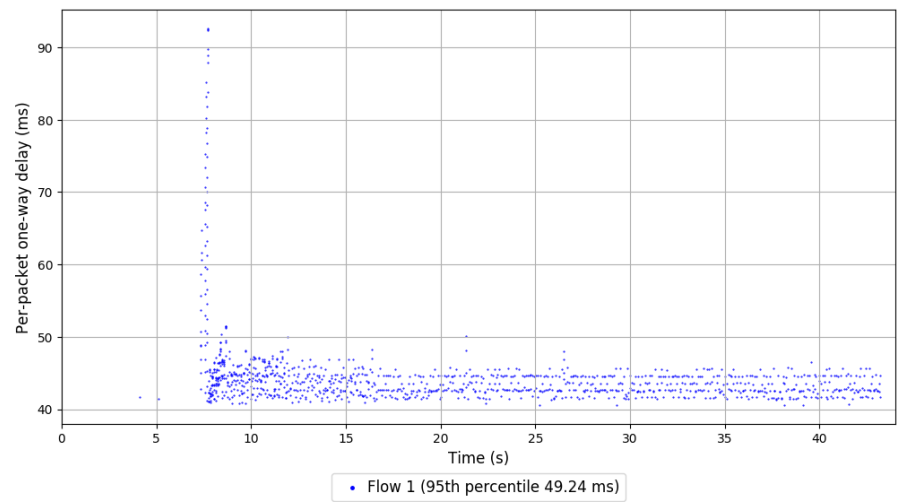
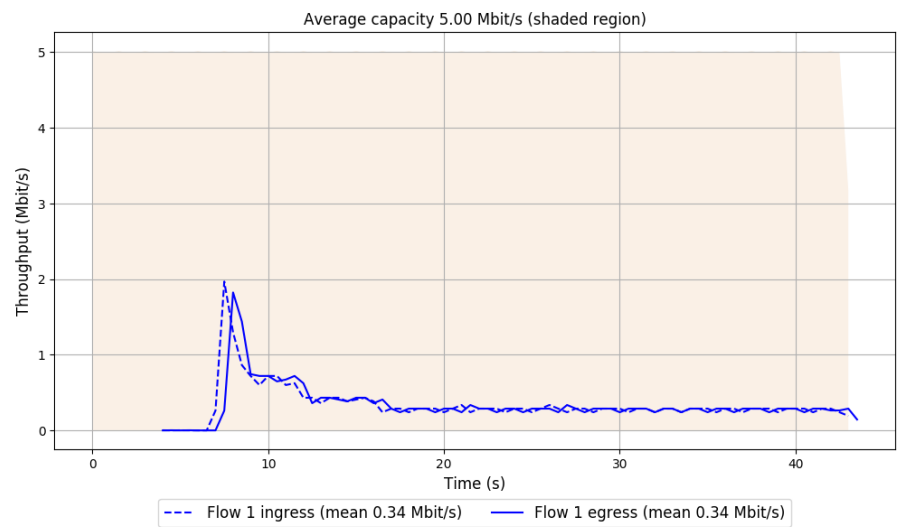
-- Flow 1:

Average throughput: 0.34 Mbit/s

95th percentile per-packet one-way delay: 49.242 ms

Loss rate: 0.18%

Run 2: Report of Indigo — Data Link

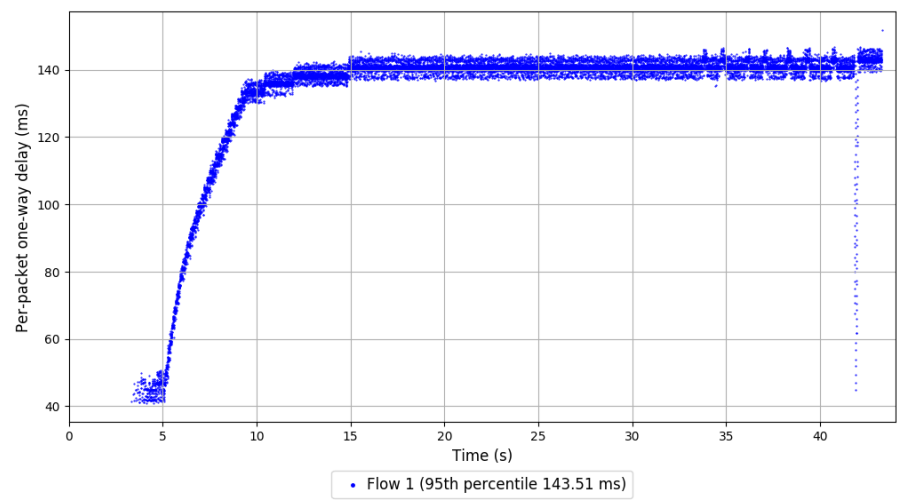
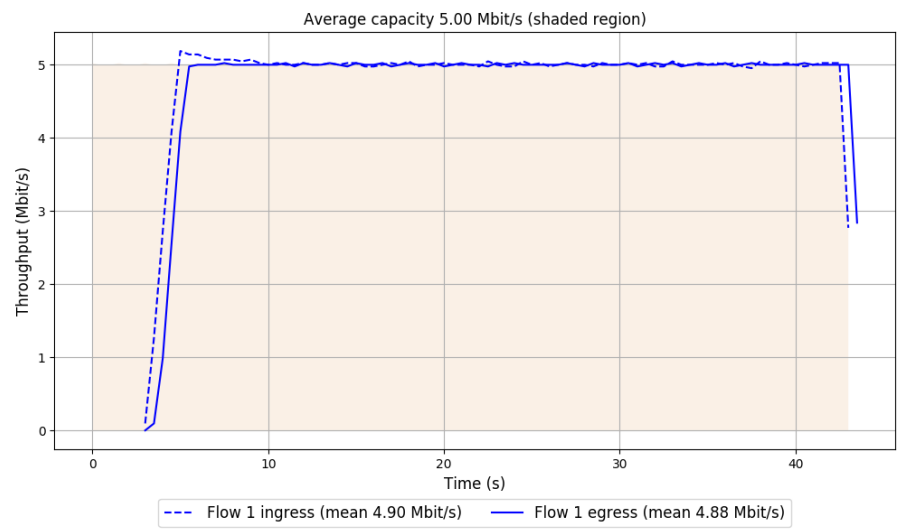


```
Run 1: Statistics of LEDBAT

Start at: 2019-07-07 23:51:09
End at: 2019-07-07 23:51:50

# Below is generated by plot.py at 2019-07-08 00:21:43
# Datalink statistics
-- Total of 1 flow:
Average capacity: 5.00 Mbit/s
Average throughput: 4.88 Mbit/s (97.7% utilization)
95th percentile per-packet one-way delay: 143.507 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 4.88 Mbit/s
95th percentile per-packet one-way delay: 143.507 ms
Loss rate: 0.35%
```

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2019-07-08 00:05:19

End at: 2019-07-08 00:05:59

Below is generated by plot.py at 2019-07-08 00:21:43

Datalink statistics

-- Total of 1 flow:

Average capacity: 5.00 Mbit/s

Average throughput: 4.37 Mbit/s (87.4% utilization)

95th percentile per-packet one-way delay: 143.088 ms

Loss rate: 0.40%

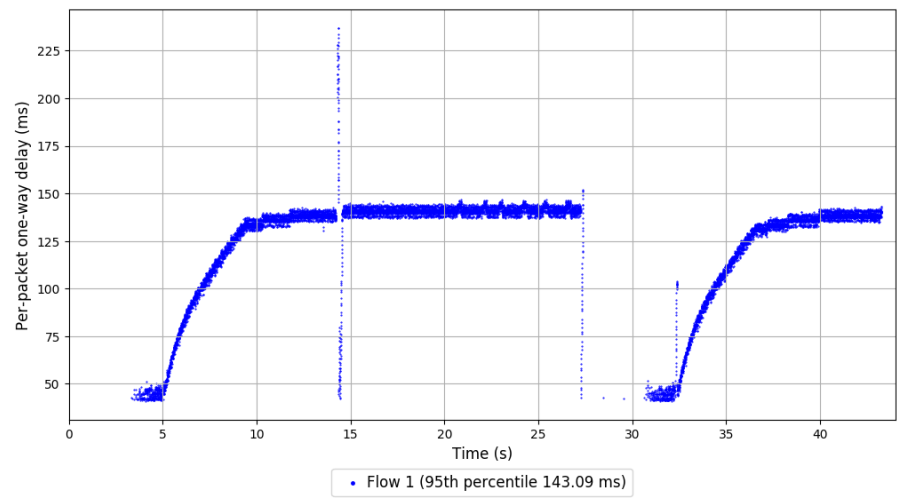
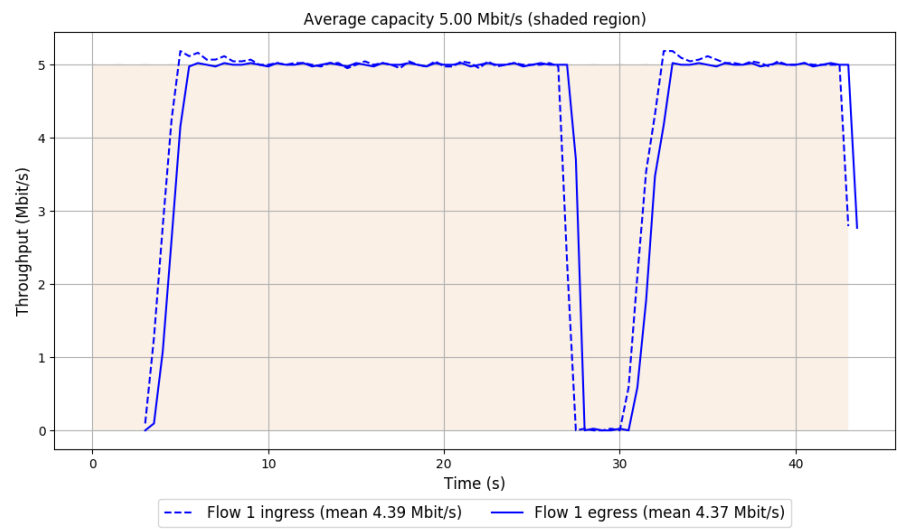
-- Flow 1:

Average throughput: 4.37 Mbit/s

95th percentile per-packet one-way delay: 143.088 ms

Loss rate: 0.40%

Run 2: Report of LEDBAT — Data Link

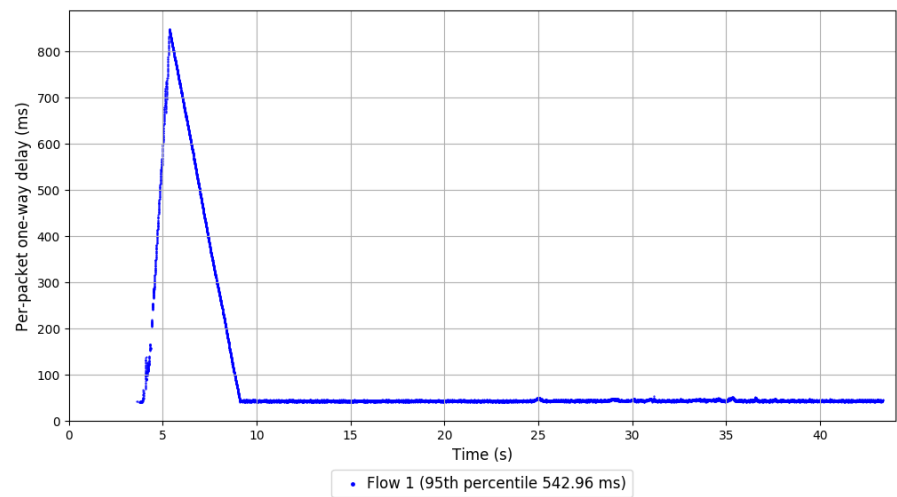
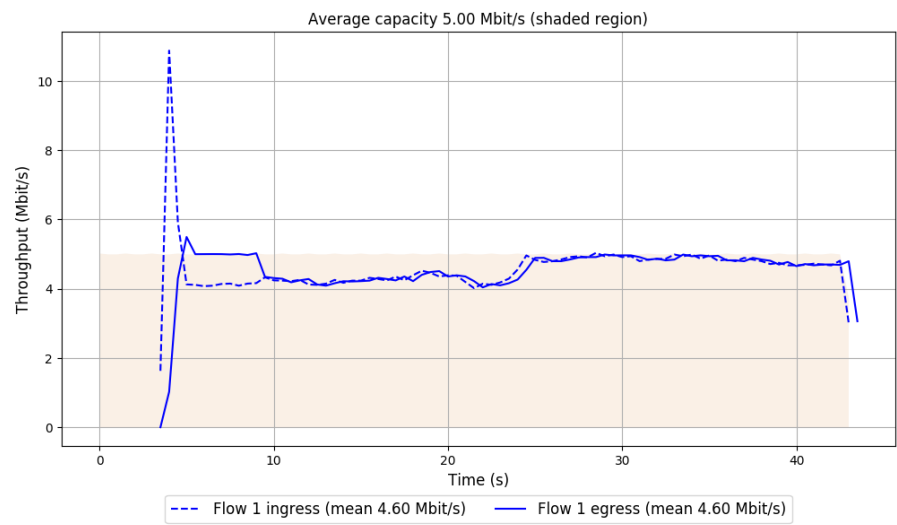



```
Run 1: Statistics of PCC-Allegro

Start at: 2019-07-07 23:49:40
End at: 2019-07-07 23:50:20

# Below is generated by plot.py at 2019-07-08 00:21:55
# Datalink statistics
-- Total of 1 flow:
Average capacity: 5.00 Mbit/s
Average throughput: 4.60 Mbit/s (91.9% utilization)
95th percentile per-packet one-way delay: 542.964 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 4.60 Mbit/s
95th percentile per-packet one-way delay: 542.964 ms
Loss rate: 0.11%
```

Run 1: Report of PCC-Allegro — Data Link



Run 2: Statistics of PCC-Allegro

Start at: 2019-07-08 00:03:49

End at: 2019-07-08 00:04:29

Below is generated by plot.py at 2019-07-08 00:21:55

Datalink statistics

-- Total of 1 flow:

Average capacity: 5.00 Mbit/s

Average throughput: 2.07 Mbit/s (41.5% utilization)

95th percentile per-packet one-way delay: 44.641 ms

Loss rate: 0.12%

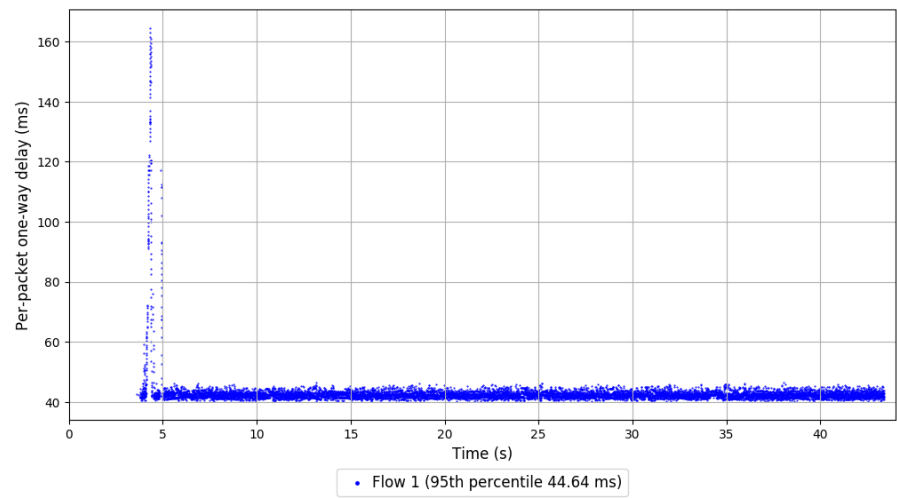
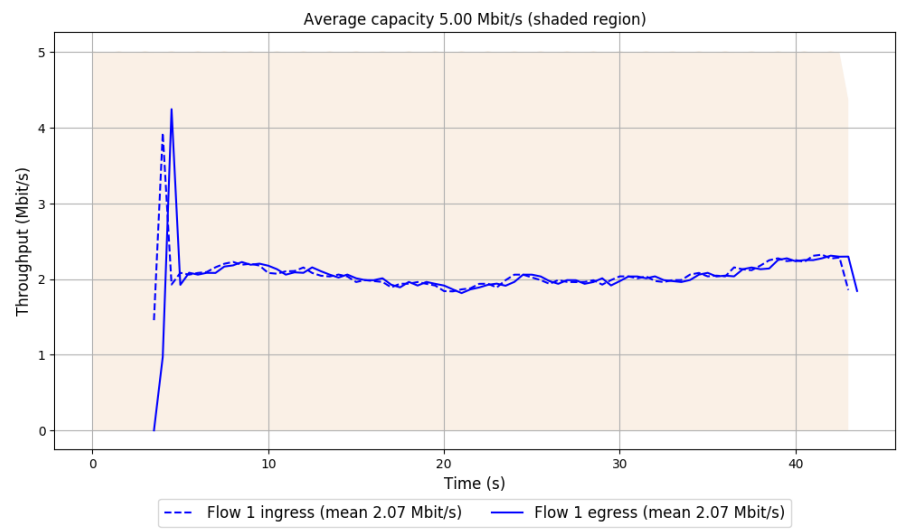
-- Flow 1:

Average throughput: 2.07 Mbit/s

95th percentile per-packet one-way delay: 44.641 ms

Loss rate: 0.12%

Run 2: Report of PCC-Allegro — Data Link

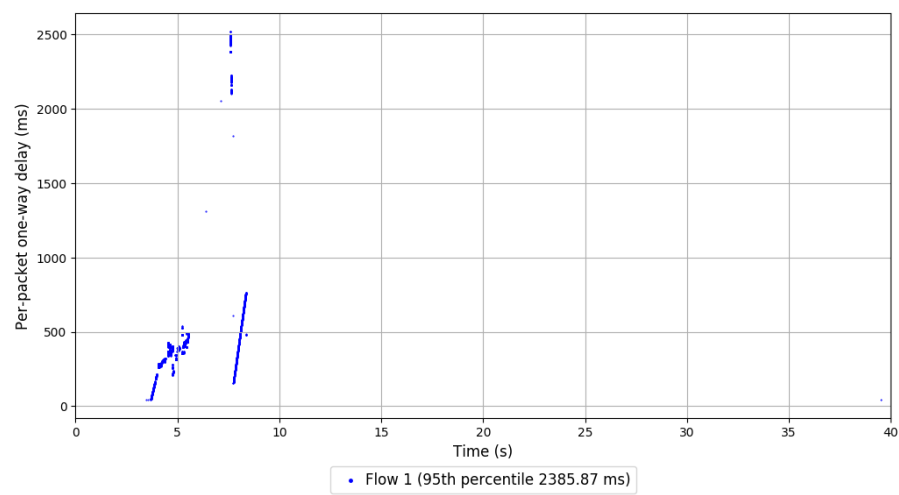
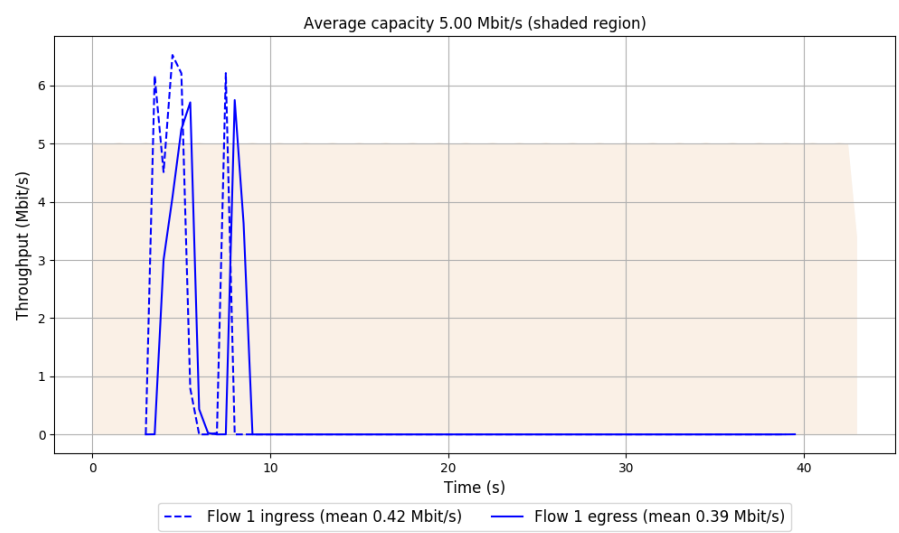


```
Run 1: Statistics of PCC-Expr

Start at: 2019-07-07 23:51:54
End at: 2019-07-07 23:52:34

# Below is generated by plot.py at 2019-07-08 00:21:55
# Datalink statistics
-- Total of 1 flow:
Average capacity: 5.00 Mbit/s
Average throughput: 0.39 Mbit/s (7.7% utilization)
95th percentile per-packet one-way delay: 2385.873 ms
Loss rate: 8.43%
-- Flow 1:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 2385.873 ms
Loss rate: 8.43%
```

Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

Start at: 2019-07-08 00:06:04

End at: 2019-07-08 00:06:44

Below is generated by plot.py at 2019-07-08 00:21:55

Datalink statistics

-- Total of 1 flow:

Average capacity: 5.00 Mbit/s

Average throughput: 0.38 Mbit/s (7.6% utilization)

95th percentile per-packet one-way delay: 2912.856 ms

Loss rate: 17.81%

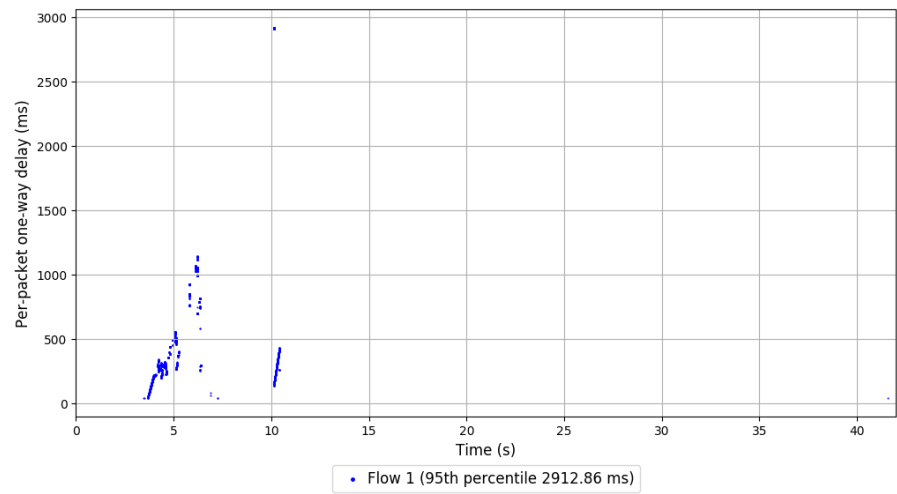
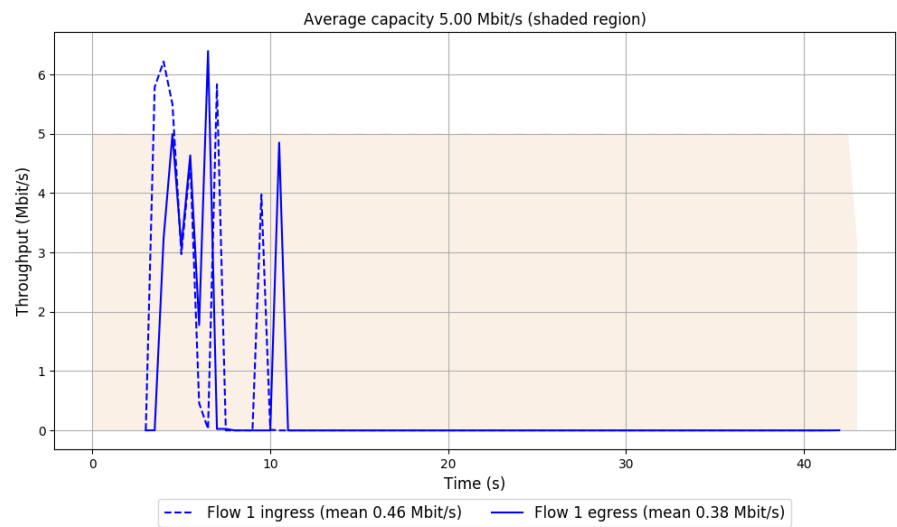
-- Flow 1:

Average throughput: 0.38 Mbit/s

95th percentile per-packet one-way delay: 2912.856 ms

Loss rate: 17.81%

Run 2: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2019-07-07 23:48:56

End at: 2019-07-07 23:49:36

Run 1: Report of QUIC Cubic — Data Link

Figure is missing

Figure is missing

Run 2: Statistics of QUIC Cubic

Start at: 2019-07-08 00:03:05

End at: 2019-07-08 00:03:45

Run 2: Report of QUIC Cubic — Data Link

Figure is missing

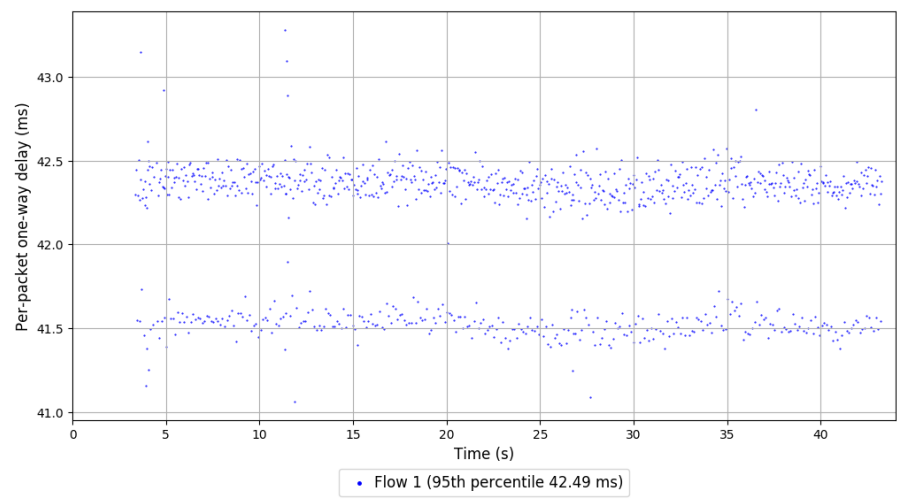
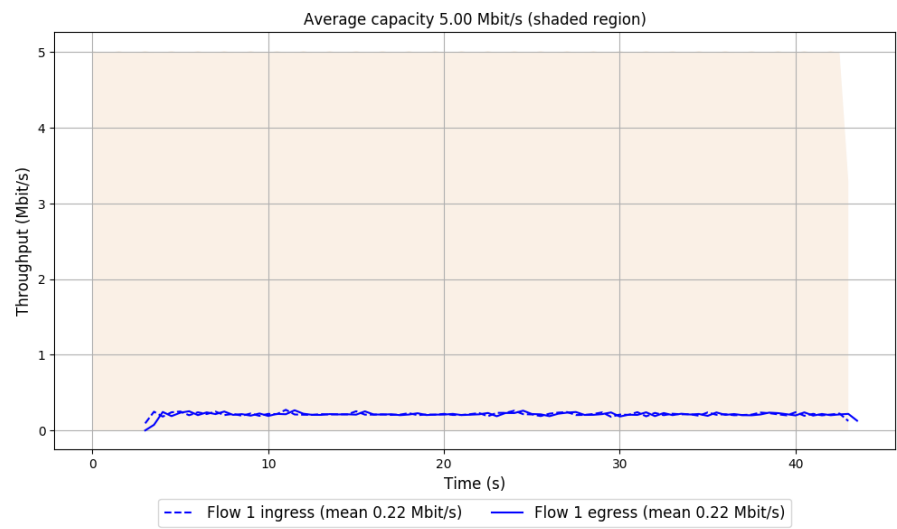
Figure is missing

```
Run 1: Statistics of SCReAM

Start at: 2019-07-07 23:48:11
End at: 2019-07-07 23:48:51

# Below is generated by plot.py at 2019-07-08 00:21:55
# Datalink statistics
-- Total of 1 flow:
Average capacity: 5.00 Mbit/s
Average throughput: 0.22 Mbit/s (4.3% utilization)
95th percentile per-packet one-way delay: 42.488 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 42.488 ms
Loss rate: 0.10%
```

Run 1: Report of SReAM — Data Link

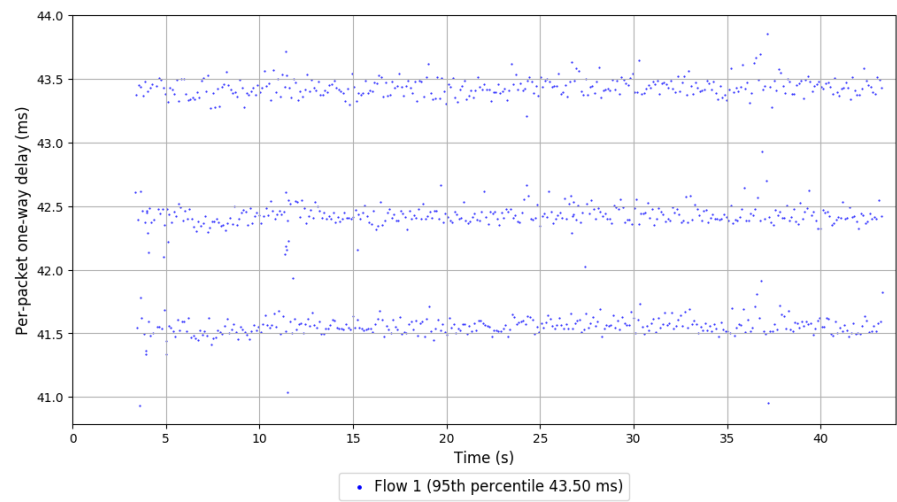
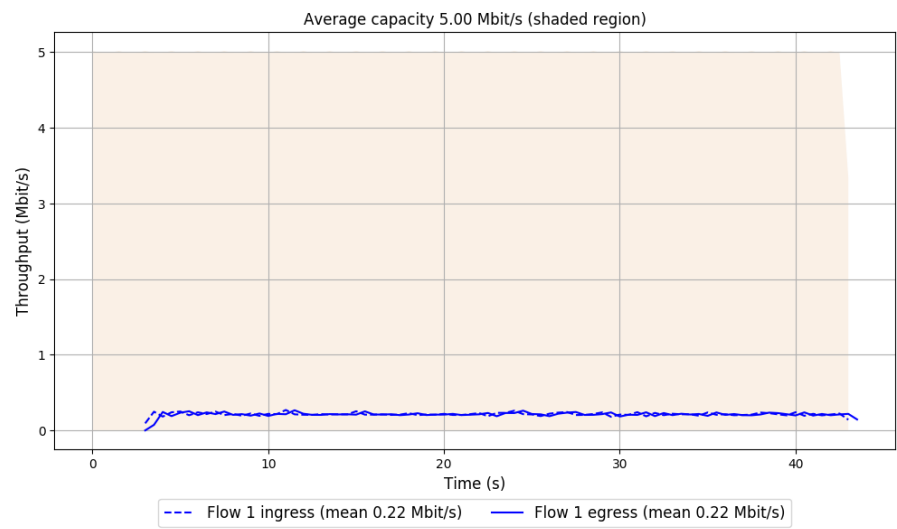


```
Run 2: Statistics of SCReAM

Start at: 2019-07-08 00:02:21
End at: 2019-07-08 00:03:01

# Below is generated by plot.py at 2019-07-08 00:21:55
# Datalink statistics
-- Total of 1 flow:
Average capacity: 5.00 Mbit/s
Average throughput: 0.22 Mbit/s (4.3% utilization)
95th percentile per-packet one-way delay: 43.500 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 43.500 ms
Loss rate: 0.10%
```

Run 2: Report of SReAM — Data Link



Run 1: Statistics of Sprout

Start at: 2019-07-07 23:42:58

End at: 2019-07-07 23:43:38

Below is generated by plot.py at 2019-07-08 00:21:55

Datalink statistics

-- Total of 1 flow:

Average capacity: 5.00 Mbit/s

Average throughput: 1.13 Mbit/s (22.6% utilization)

95th percentile per-packet one-way delay: 63.160 ms

Loss rate: 0.02%

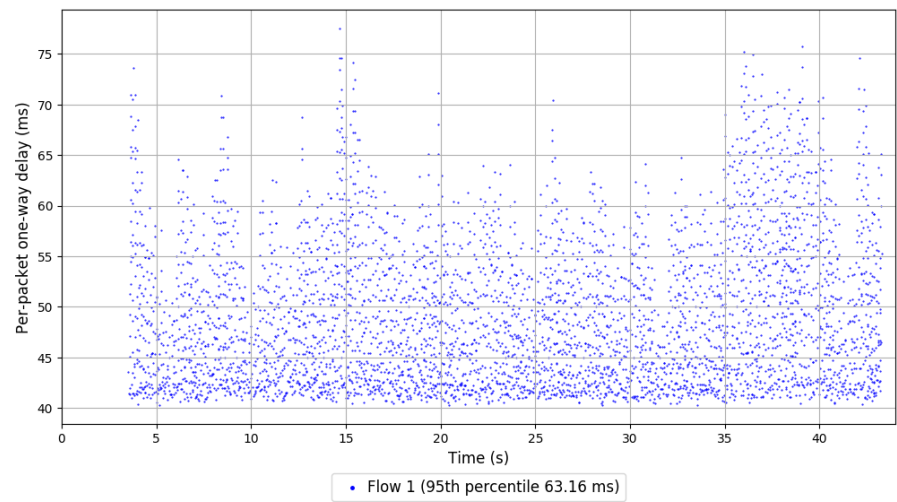
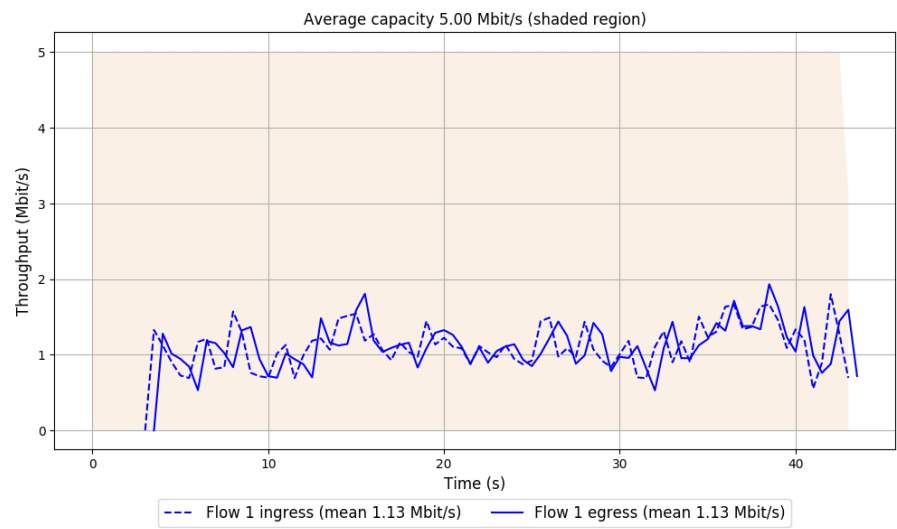
-- Flow 1:

Average throughput: 1.13 Mbit/s

95th percentile per-packet one-way delay: 63.160 ms

Loss rate: 0.02%

Run 1: Report of Sprout — Data Link



Run 2: Statistics of Sprout

Start at: 2019-07-07 23:57:08

End at: 2019-07-07 23:57:48

Below is generated by plot.py at 2019-07-08 00:21:57

Datalink statistics

-- Total of 1 flow:

Average capacity: 5.00 Mbit/s

Average throughput: 1.03 Mbit/s (20.6% utilization)

95th percentile per-packet one-way delay: 60.511 ms

Loss rate: 0.25%

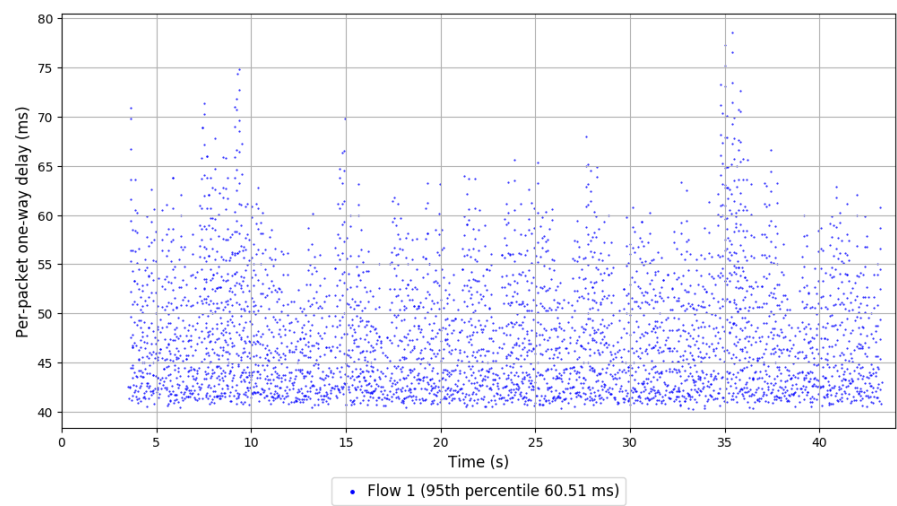
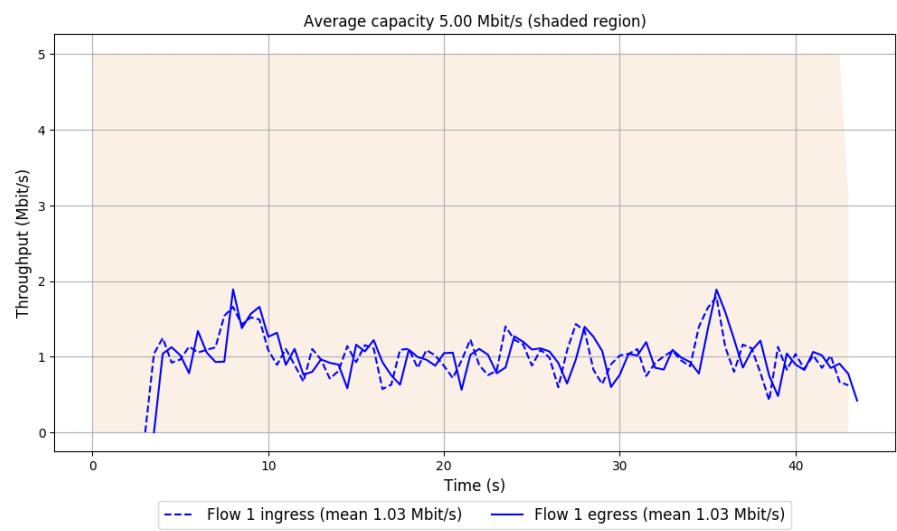
-- Flow 1:

Average throughput: 1.03 Mbit/s

95th percentile per-packet one-way delay: 60.511 ms

Loss rate: 0.25%

Run 2: Report of Sprout — Data Link

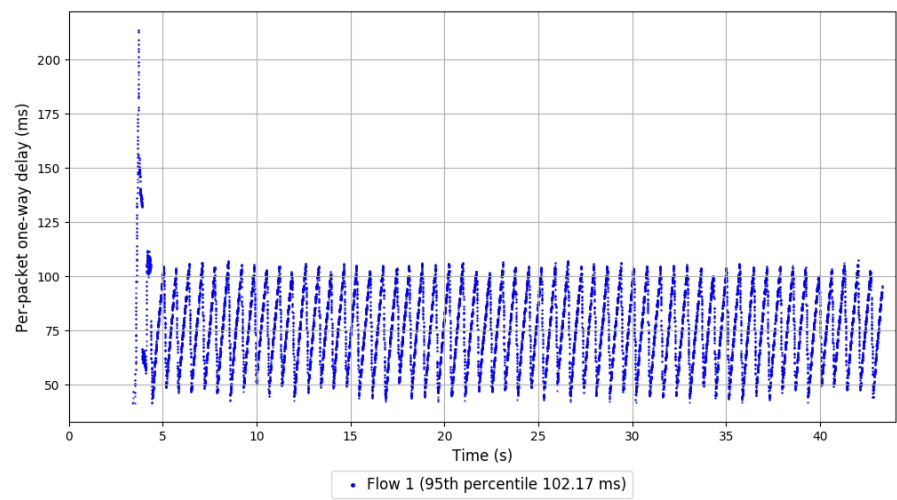
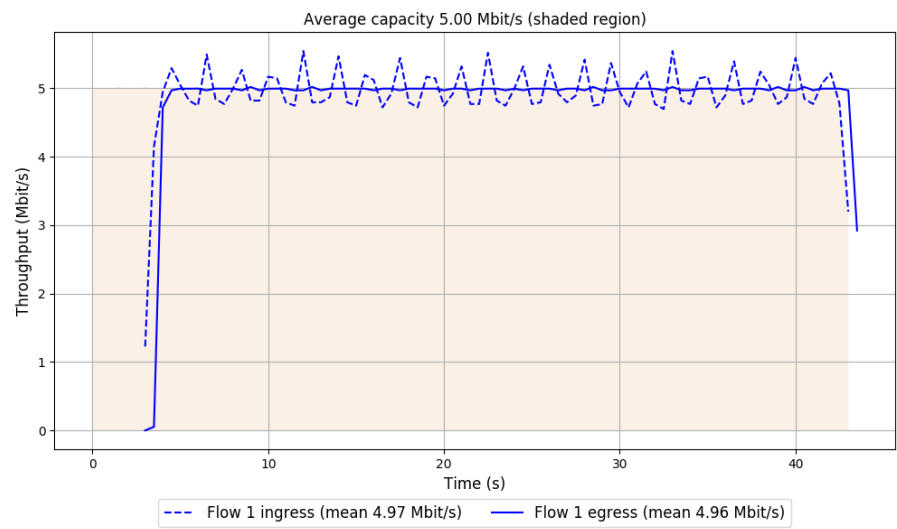


```
Run 1: Statistics of TaoVA-100x

Start at: 2019-07-07 23:46:42
End at: 2019-07-07 23:47:22

# Below is generated by plot.py at 2019-07-08 00:22:12
# Datalink statistics
-- Total of 1 flow:
Average capacity: 5.00 Mbit/s
Average throughput: 4.96 Mbit/s (99.3% utilization)
95th percentile per-packet one-way delay: 102.171 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 4.96 Mbit/s
95th percentile per-packet one-way delay: 102.171 ms
Loss rate: 0.26%
```

Run 1: Report of TaoVA-100x — Data Link



Run 2: Statistics of TaoVA-100x

Start at: 2019-07-08 00:00:51

End at: 2019-07-08 00:01:31

Below is generated by plot.py at 2019-07-08 00:22:12

Datalink statistics

-- Total of 1 flow:

Average capacity: 5.00 Mbit/s

Average throughput: 4.96 Mbit/s (99.3% utilization)

95th percentile per-packet one-way delay: 102.359 ms

Loss rate: 0.17%

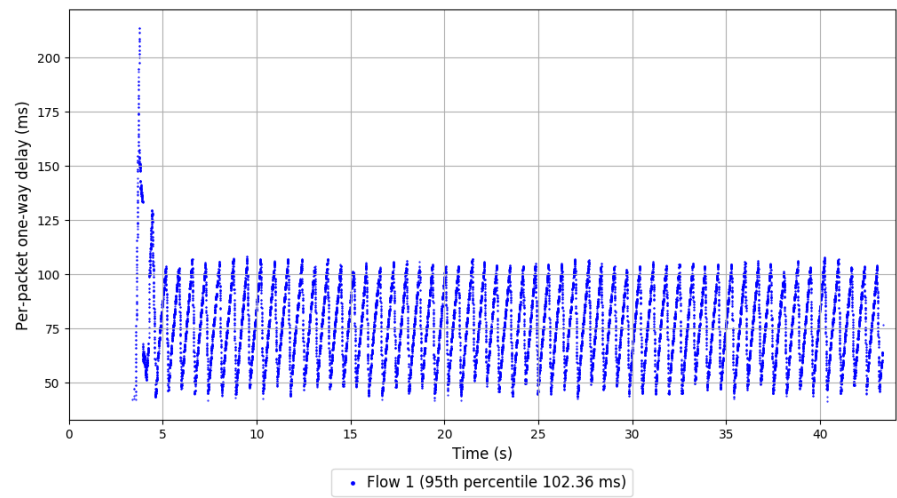
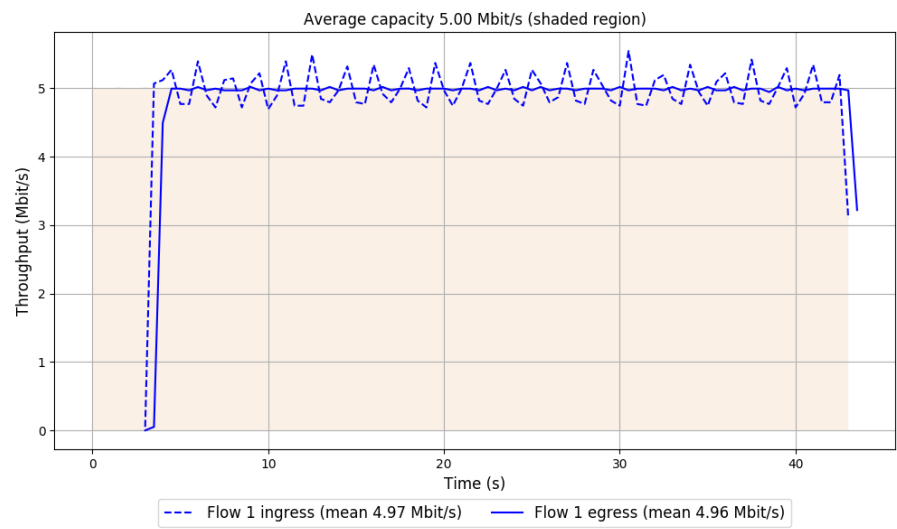
-- Flow 1:

Average throughput: 4.96 Mbit/s

95th percentile per-packet one-way delay: 102.359 ms

Loss rate: 0.17%

Run 2: Report of TaoVA-100x — Data Link



Run 1: Statistics of TCP Vegas

Start at: 2019-07-07 23:44:28

End at: 2019-07-07 23:45:08

Below is generated by plot.py at 2019-07-08 00:22:12

Datalink statistics

-- Total of 1 flow:

Average capacity: 5.00 Mbit/s

Average throughput: 4.98 Mbit/s (99.5% utilization)

95th percentile per-packet one-way delay: 267.284 ms

Loss rate: 0.12%

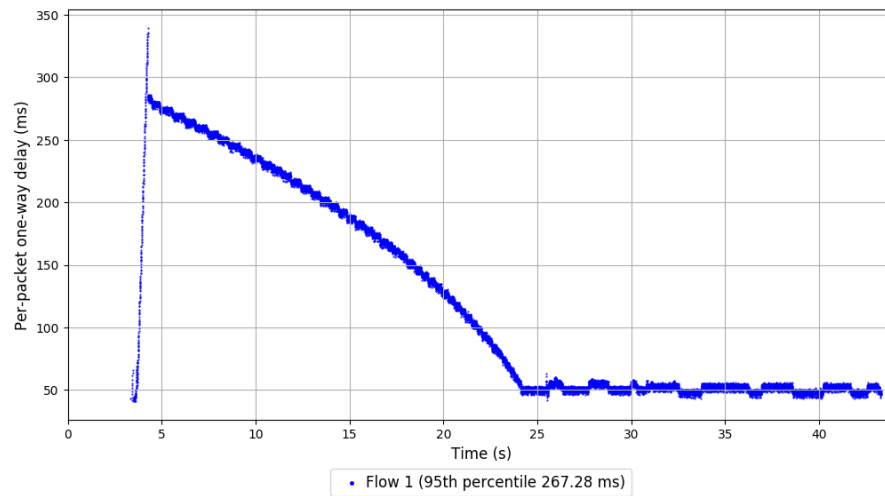
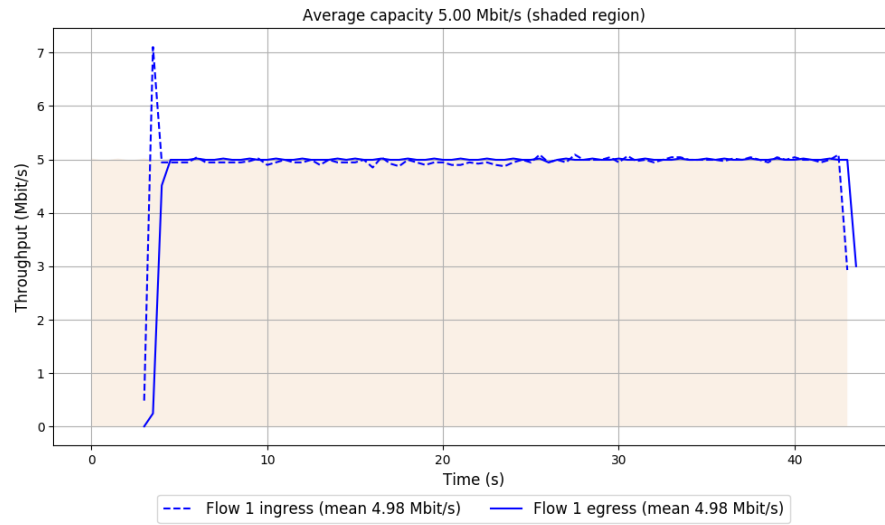
-- Flow 1:

Average throughput: 4.98 Mbit/s

95th percentile per-packet one-way delay: 267.284 ms

Loss rate: 0.12%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2019-07-07 23:58:37

End at: 2019-07-07 23:59:17

Below is generated by plot.py at 2019-07-08 00:22:12

Datalink statistics

-- Total of 1 flow:

Average capacity: 5.00 Mbit/s

Average throughput: 4.98 Mbit/s (99.5% utilization)

95th percentile per-packet one-way delay: 269.687 ms

Loss rate: 0.14%

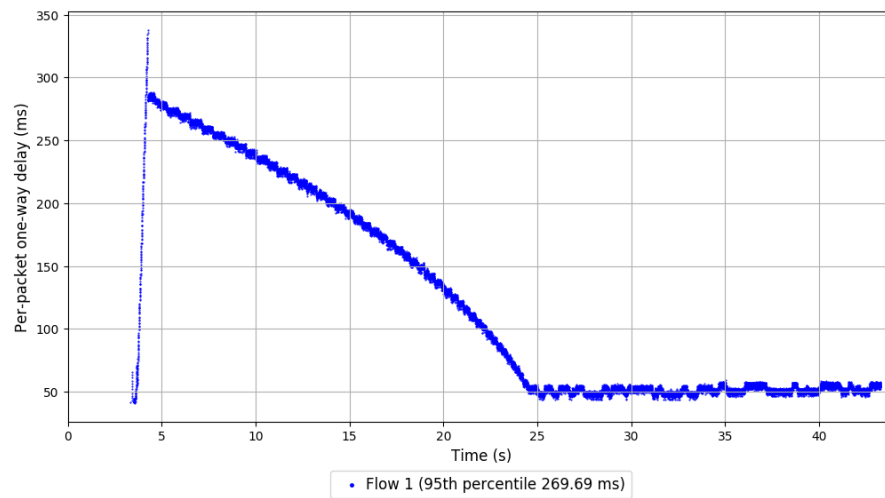
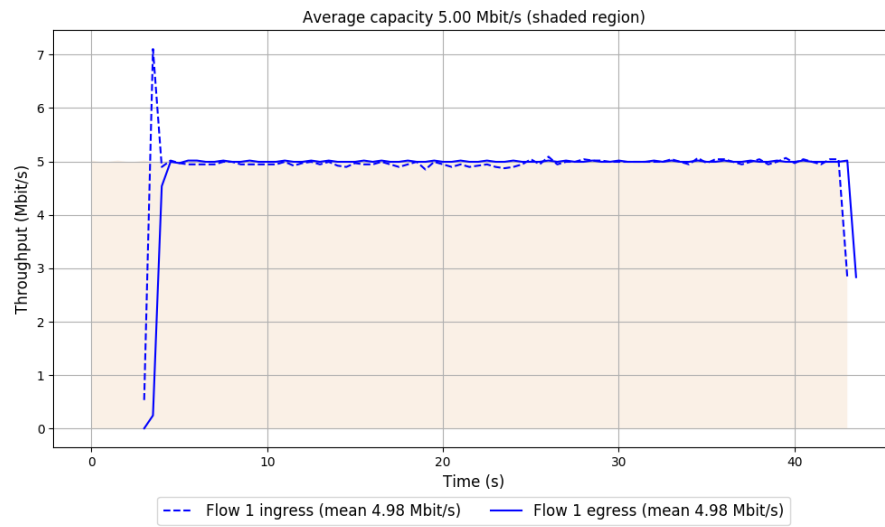
-- Flow 1:

Average throughput: 4.98 Mbit/s

95th percentile per-packet one-way delay: 269.687 ms

Loss rate: 0.14%

Run 2: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2019-07-07 23:40:44

End at: 2019-07-07 23:41:24

Below is generated by plot.py at 2019-07-08 00:22:12

Datalink statistics

-- Total of 1 flow:

Average capacity: 5.00 Mbit/s

Average throughput: 4.96 Mbit/s (99.1% utilization)

95th percentile per-packet one-way delay: 481.242 ms

Loss rate: 1.17%

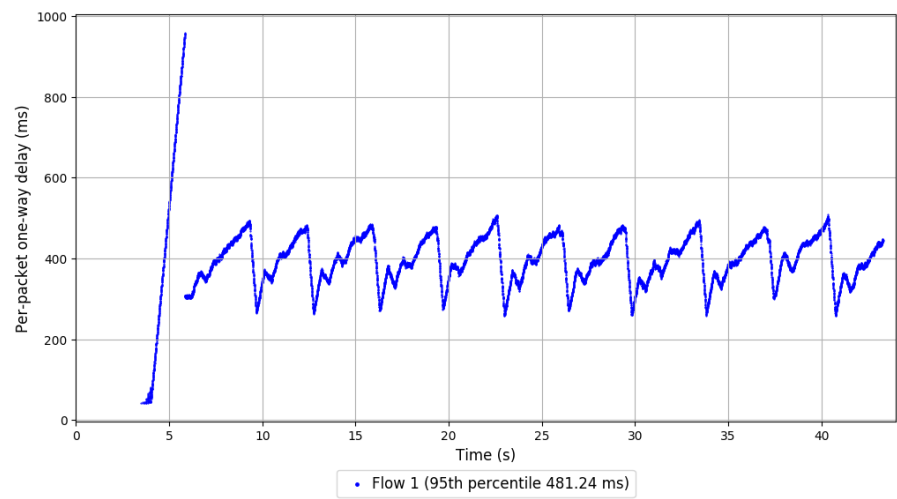
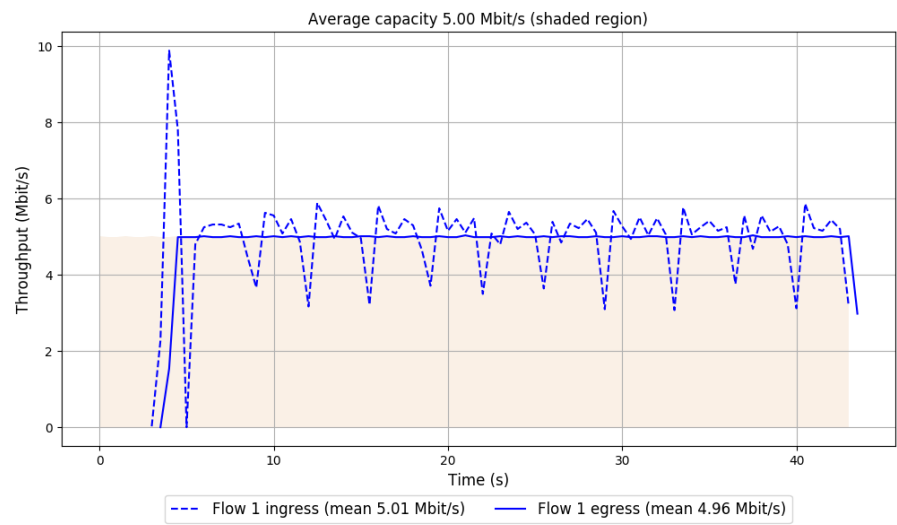
-- Flow 1:

Average throughput: 4.96 Mbit/s

95th percentile per-packet one-way delay: 481.242 ms

Loss rate: 1.17%

Run 1: Report of Verus — Data Link



Run 2: Statistics of Verus

Start at: 2019-07-07 23:54:53

End at: 2019-07-07 23:55:33

Below is generated by plot.py at 2019-07-08 00:22:12

Datalink statistics

-- Total of 1 flow:

Average capacity: 5.00 Mbit/s

Average throughput: 4.96 Mbit/s (99.1% utilization)

95th percentile per-packet one-way delay: 484.104 ms

Loss rate: 1.09%

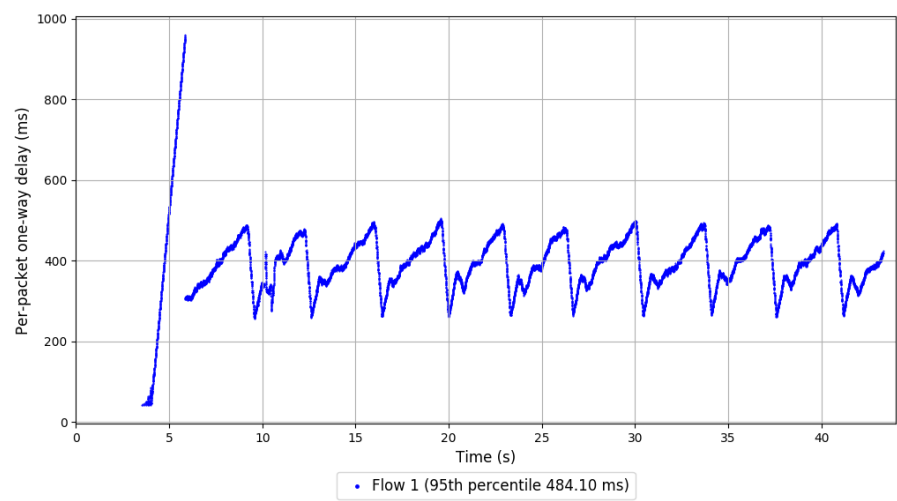
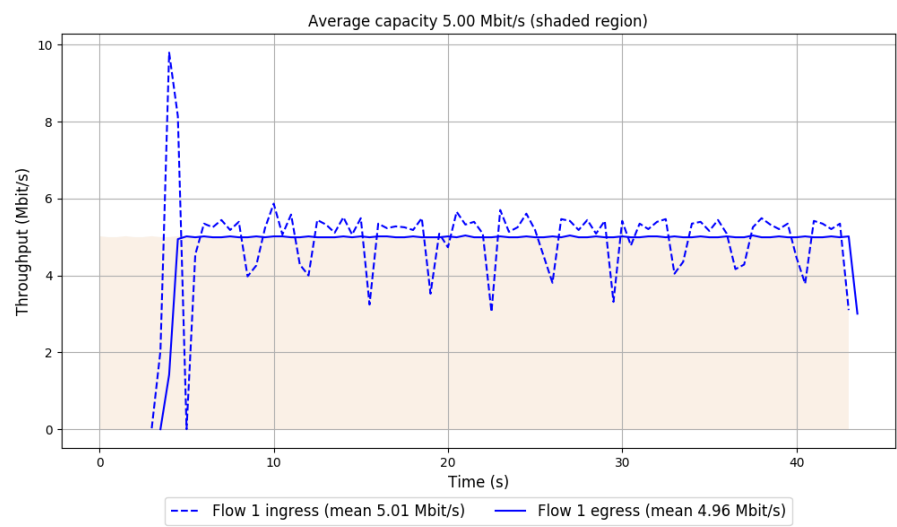
-- Flow 1:

Average throughput: 4.96 Mbit/s

95th percentile per-packet one-way delay: 484.104 ms

Loss rate: 1.09%

Run 2: Report of Verus — Data Link



Run 1: Statistics of PCC-Vivace

Start at: 2019-07-07 23:43:43

End at: 2019-07-07 23:44:23

Below is generated by plot.py at 2019-07-08 00:22:15

Datalink statistics

-- Total of 1 flow:

Average capacity: 5.00 Mbit/s

Average throughput: 4.45 Mbit/s (88.9% utilization)

95th percentile per-packet one-way delay: 66.149 ms

Loss rate: 0.11%

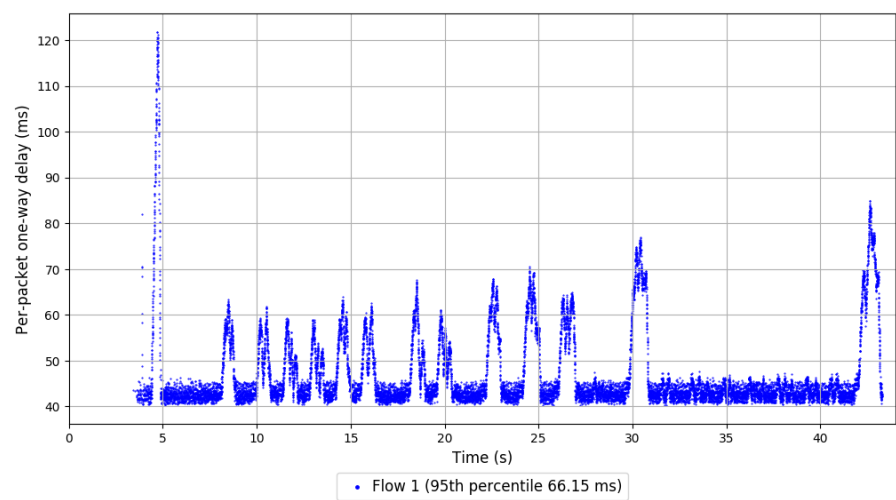
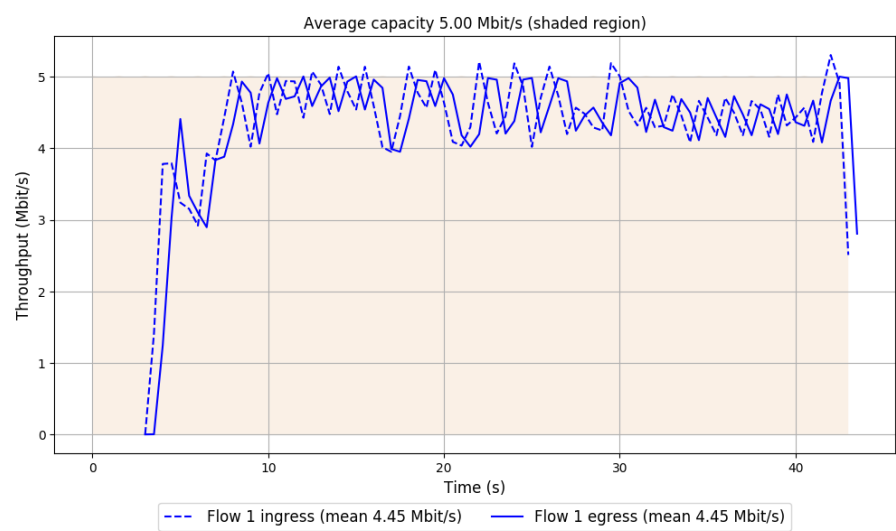
-- Flow 1:

Average throughput: 4.45 Mbit/s

95th percentile per-packet one-way delay: 66.149 ms

Loss rate: 0.11%

Run 1: Report of PCC-Vivace — Data Link



Run 2: Statistics of PCC-Vivace

Start at: 2019-07-07 23:57:52

End at: 2019-07-07 23:58:32

Below is generated by plot.py at 2019-07-08 00:22:16

Datalink statistics

-- Total of 1 flow:

Average capacity: 5.00 Mbit/s

Average throughput: 4.41 Mbit/s (88.1% utilization)

95th percentile per-packet one-way delay: 49.482 ms

Loss rate: 0.13%

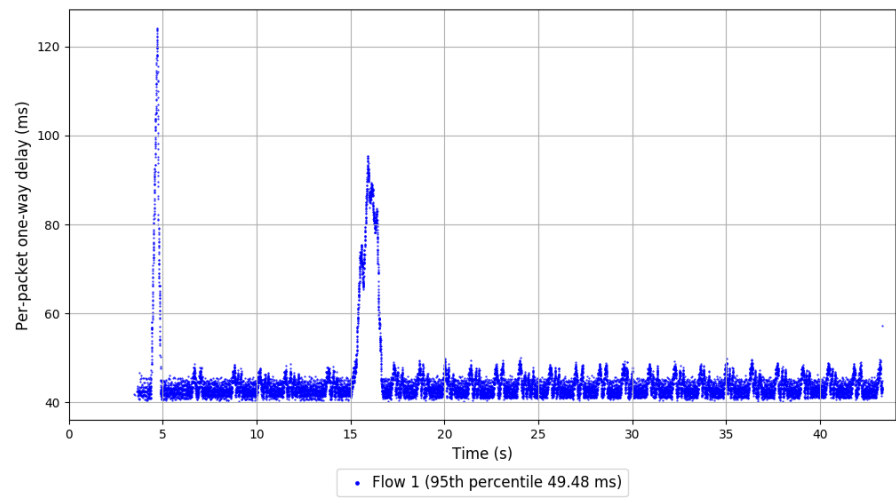
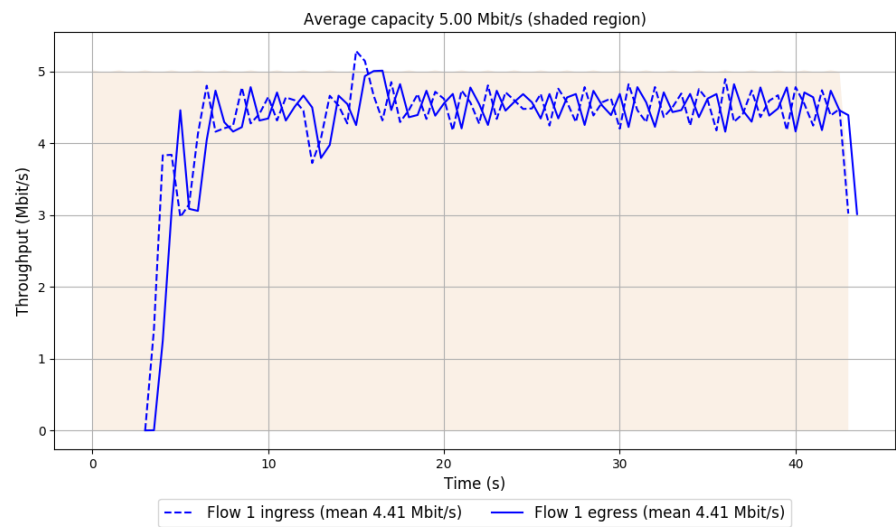
-- Flow 1:

Average throughput: 4.41 Mbit/s

95th percentile per-packet one-way delay: 49.482 ms

Loss rate: 0.13%

Run 2: Report of PCC-Vivace — Data Link

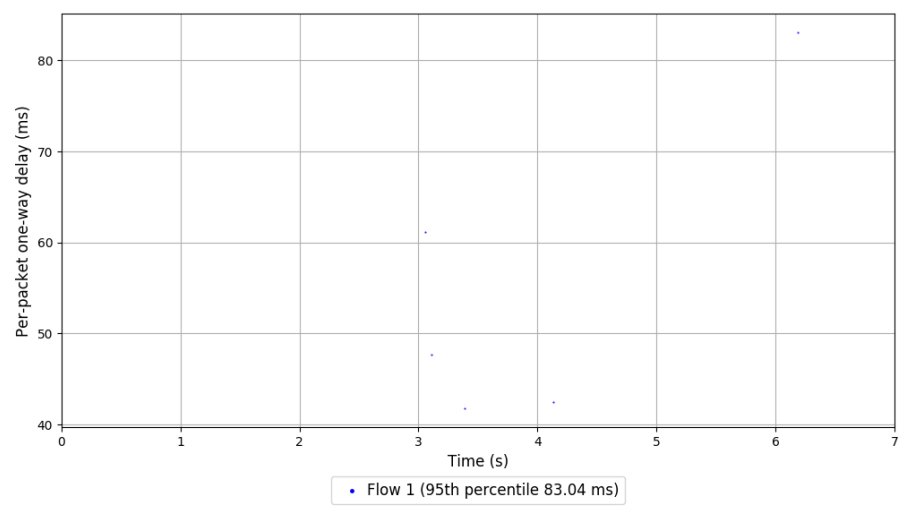
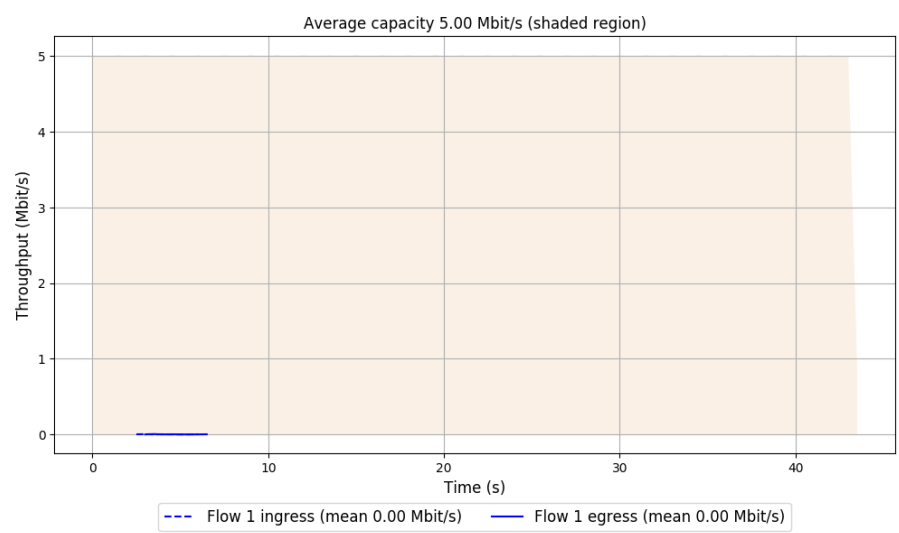


Run 1: Statistics of WebRTC media

Start at: 2019-07-07 23:50:25

End at: 2019-07-07 23:51:05

Run 1: Report of WebRTC media — Data Link



Run 2: Statistics of WebRTC media

Start at: 2019-07-08 00:04:34

End at: 2019-07-08 00:05:14

Run 2: Report of WebRTC media — Data Link

