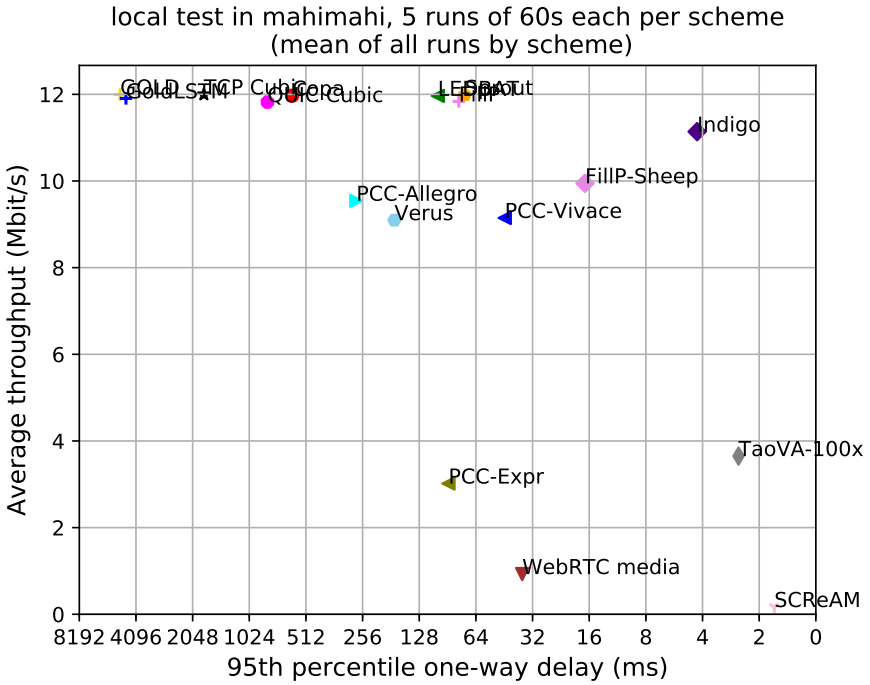
Pantheon Report

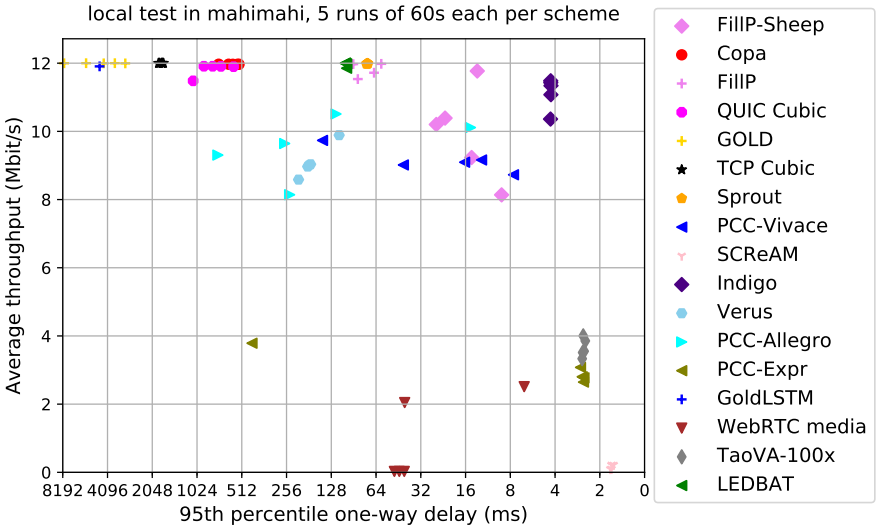
Generated at 2019-06-28 19:53:11 (UTC).
Tested in mahimahi: `mm-link 12mbps.trace 12mbps.trace`
Repeated the test of 19 congestion control schemes 5 times.
Each test lasted for 60 seconds running 1 flow.

```
System info:
Linux 4.15.0-52-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 87380 6291456
net.ipv4.tcp_wmem = 4096 16384 4194304
```

```
Git summary:
branch: master @ 5b9d3ed4091e9621ba94bcb93492be992ad28fd8
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/gold @ b6948a72b216f2705f13bf3b588bc5ab5ff8ff9a
 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/environment.py
 M environment/learner.py
 M environment/logs.txt
 M environment/run_receiver.py
 M model
third_party/goldLSTM @ 990886762be451b8f9c117e3eaa22d42692d7abb
 M sender-receiver/sender_receiver/envs/sender_receiver_env.py
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
```


local test in mahimahi, 5 runs of 60s each per scheme
(mean of all runs by scheme)
Average throughput (Mbit/s)
95th percentile one-way delay (ms)
Indigo
FillP-Sheep
PCC-Allegro
Verus
PCC-Vivace
TaoVA-100x
PCC-Expr
WebRTC media
SCReAM


local test in mahimahi, 5 runs of 60s each per scheme
Average throughput (Mbit/s)
95th percentile one-way delay (ms)
FillP-Sheep
Copa
FillP
QUIC Cubic
GOLD
TCP Cubic
Sprout
PCC-Vivace
SCReAM
Indigo
Verus
PCC-Allegro
PCC-Expr
GoldLSTM
WebRTC media
TaoVA-100x
LEDBAT

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
Copa	5	11.97	606.31	0.66
TCP Cubic	5	12.00	1785.47	1.78
FillP	5	11.83	78.90	0.13
FillP-Sheep	5	9.95	16.84	0.02
GOLD	5	12.00	4967.01	9.24
GoldLSTM	1	11.91	4630.46	2.53
Indigo	5	11.14	4.27	0.01
LEDBAT	5	11.97	102.03	0.17
PCC-Allegro	5	9.54	276.38	0.11
PCC-Expr	5	3.02	89.55	0.01
QUIC Cubic	5	11.82	820.12	1.48
SCReAM	5	0.17	1.47	0.00
Sprout	5	11.99	73.29	0.11
TaoVA-100x	5	3.65	2.58	0.01
TCP Vegas	0	N/A	N/A	N/A
Verus	5	9.10	173.50	0.03
PCC-Vivace	5	9.15	44.99	0.00
WebRTC media	5	0.93	36.33	0.00

```
Run 1: Statistics of TCP BBR

Start at: 2019-06-28 18:13:56
End at: 2019-06-28 18:14:56
```

Run 1: Report of TCP BBR — Data Link

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```
Run 2: Statistics of TCP BBR

Start at: 2019-06-28 18:34:24
End at: 2019-06-28 18:35:24
```

Run 2: Report of TCP BBR — Data Link

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Figure is missing

```
Run 3: Statistics of TCP BBR

Start at: 2019-06-28 18:54:52
End at: 2019-06-28 18:55:52
```

Run 3: Report of TCP BBR — Data Link

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Figure is missing

```
Run 4: Statistics of TCP BBR

Start at: 2019-06-28 19:15:19
End at: 2019-06-28 19:16:19
```

Run 4: Report of TCP BBR — Data Link

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```
Run 5: Statistics of TCP BBR

Start at: 2019-06-28 19:35:47
End at: 2019-06-28 19:36:47
```

Run 5: Report of TCP BBR — Data Link

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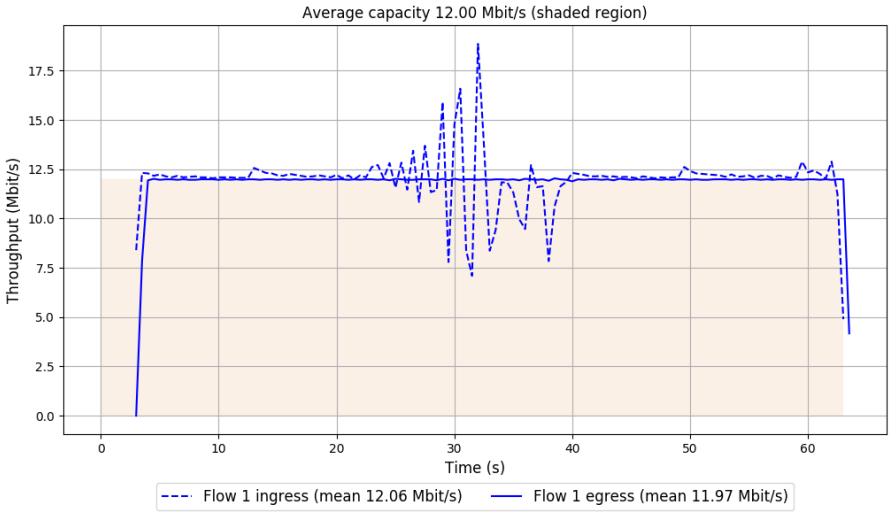
Figure is missing

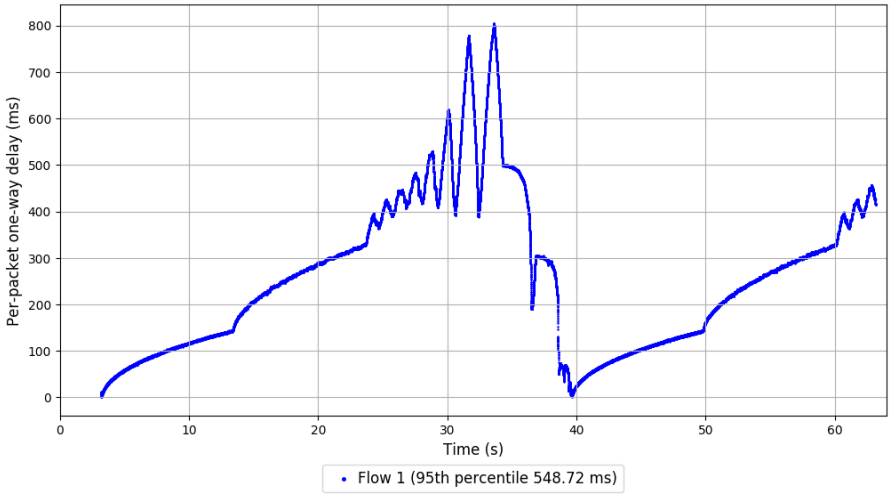
```
Run 1: Statistics of Copa

Start at: 2019-06-28 18:05:17
End at: 2019-06-28 18:06:17

# Below is generated by plot.py at 2019-06-28 19:48:22
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 11.97 Mbit/s (99.7% utilization)
95th percentile per-packet one-way delay: 548.722 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 11.97 Mbit/s
95th percentile per-packet one-way delay: 548.722 ms
Loss rate: 0.74%
```

Run 1: Report of Copa — Data Link



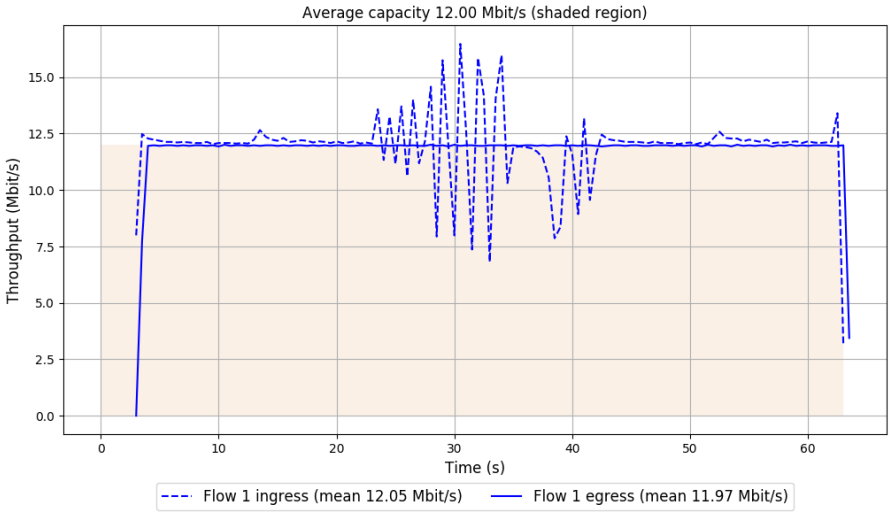


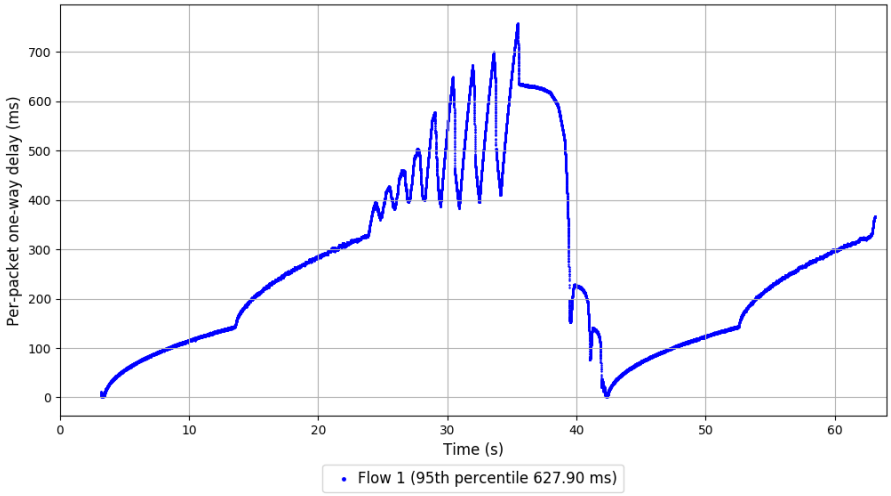
```
Run 2: Statistics of Copa

Start at: 2019-06-28 18:25:45
End at: 2019-06-28 18:26:45

# Below is generated by plot.py at 2019-06-28 19:48:22
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 11.97 Mbit/s (99.7% utilization)
95th percentile per-packet one-way delay: 627.902 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 11.97 Mbit/s
95th percentile per-packet one-way delay: 627.902 ms
Loss rate: 0.63%
```

Run 2: Report of Copa — Data Link



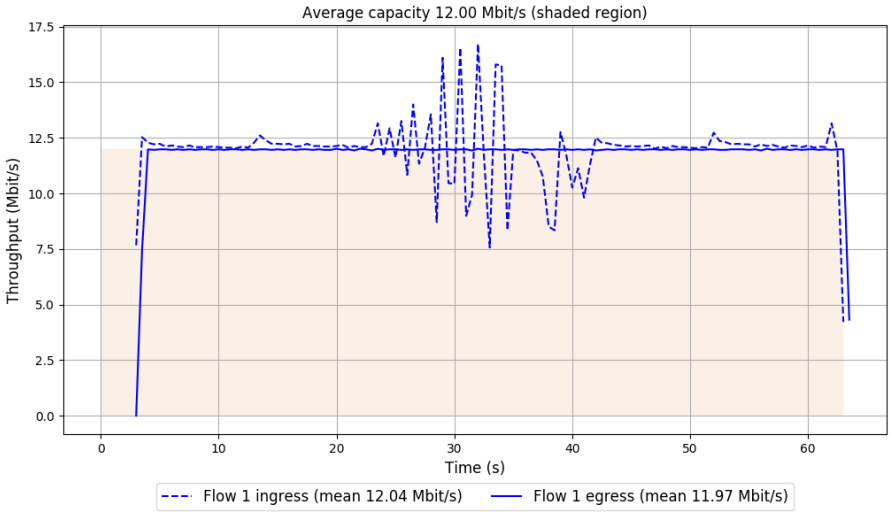


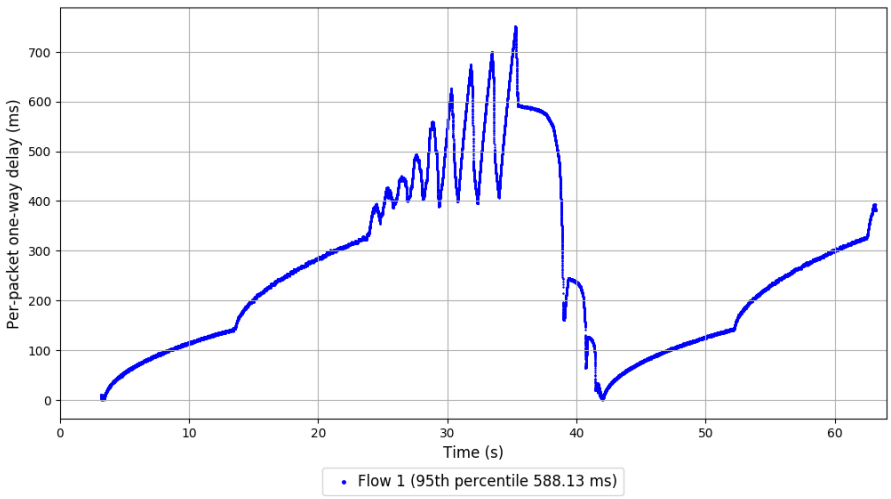
```
Run 3: Statistics of Copa

Start at: 2019-06-28 18:46:13
End at: 2019-06-28 18:47:13

# Below is generated by plot.py at 2019-06-28 19:48:23
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 11.97 Mbit/s (99.7% utilization)
95th percentile per-packet one-way delay: 588.129 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 11.97 Mbit/s
95th percentile per-packet one-way delay: 588.129 ms
Loss rate: 0.61%
```

Run 3: Report of Copa — Data Link



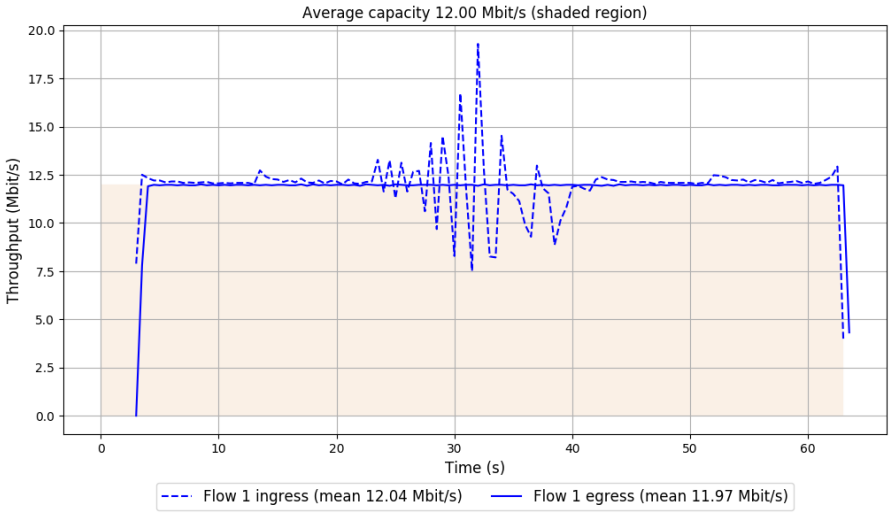


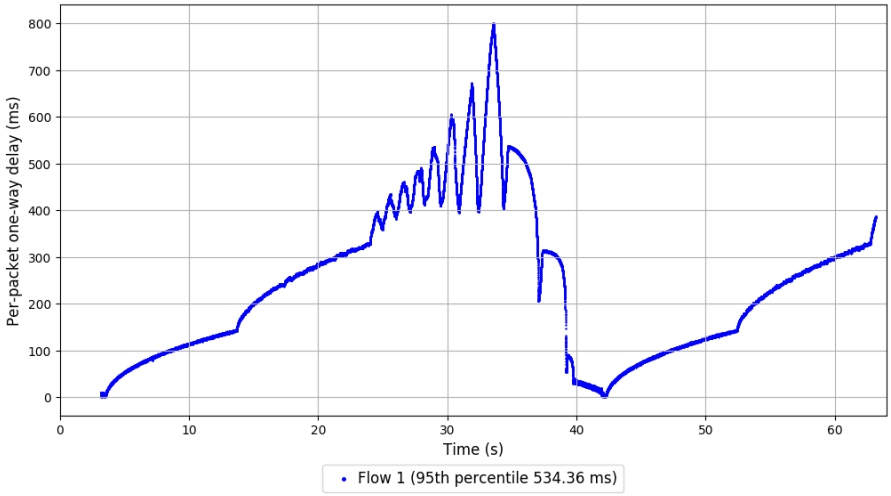
```
Run 4: Statistics of Copa

Start at: 2019-06-28 19:06:40
End at: 2019-06-28 19:07:40

# Below is generated by plot.py at 2019-06-28 19:48:23
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 11.97 Mbit/s (99.7% utilization)
95th percentile per-packet one-way delay: 534.358 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 11.97 Mbit/s
95th percentile per-packet one-way delay: 534.358 ms
Loss rate: 0.61%
```

Run 4: Report of Copa — Data Link



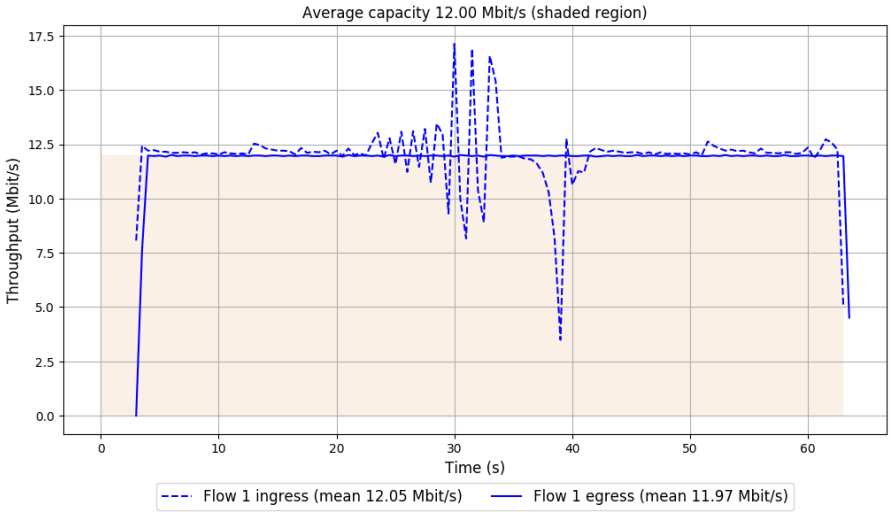


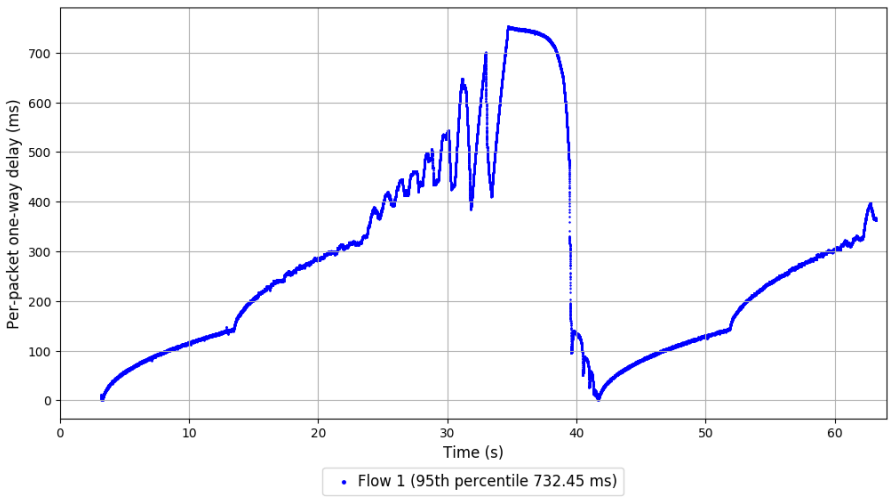
```
Run 5: Statistics of Copa

Start at: 2019-06-28 19:27:08
End at: 2019-06-28 19:28:08

# Below is generated by plot.py at 2019-06-28 19:48:45
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 11.97 Mbit/s (99.7% utilization)
95th percentile per-packet one-way delay: 732.452 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 11.97 Mbit/s
95th percentile per-packet one-way delay: 732.452 ms
Loss rate: 0.69%
```

Run 5: Report of Copa — Data Link



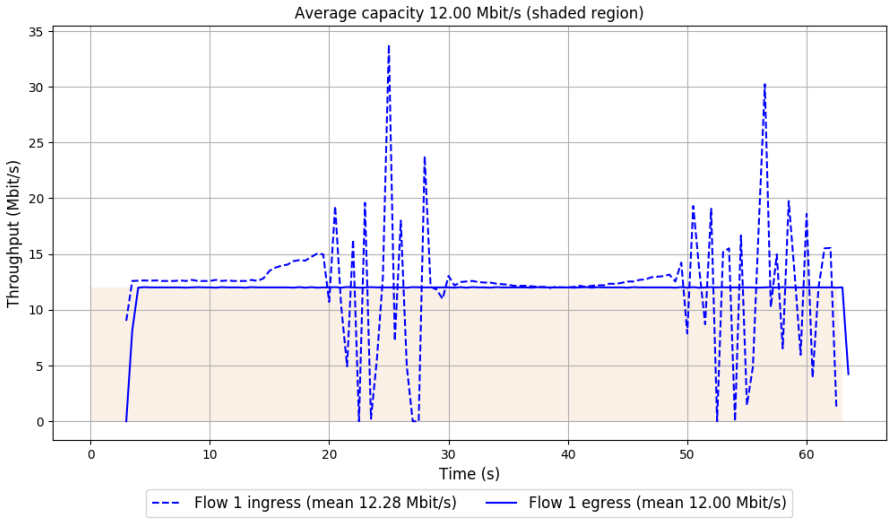


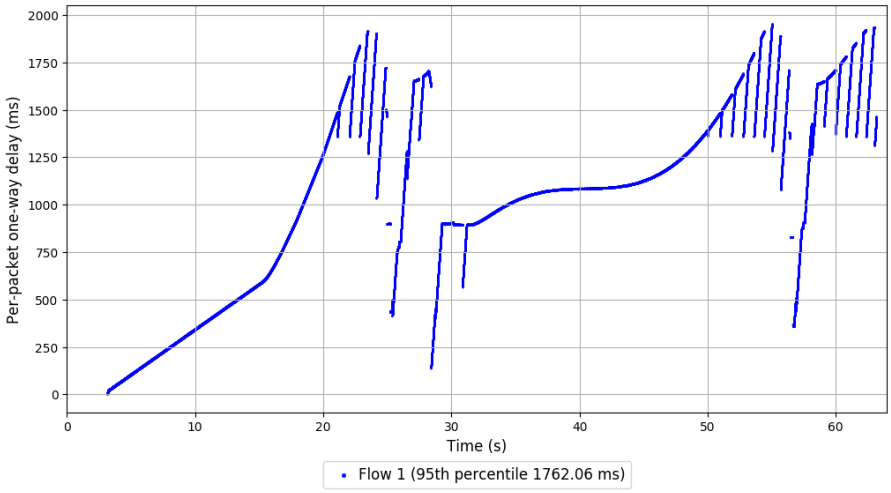
```
Run 1: Statistics of TCP Cubic

Start at: 2019-06-28 18:09:38
End at: 2019-06-28 18:10:38

# Below is generated by plot.py at 2019-06-28 19:48:45
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 12.00 Mbit/s (100.0% utilization)
95th percentile per-packet one-way delay: 1762.060 ms
Loss rate: 1.93%
-- Flow 1:
Average throughput: 12.00 Mbit/s
95th percentile per-packet one-way delay: 1762.060 ms
Loss rate: 1.93%
```

Run 1: Report of TCP Cubic — Data Link



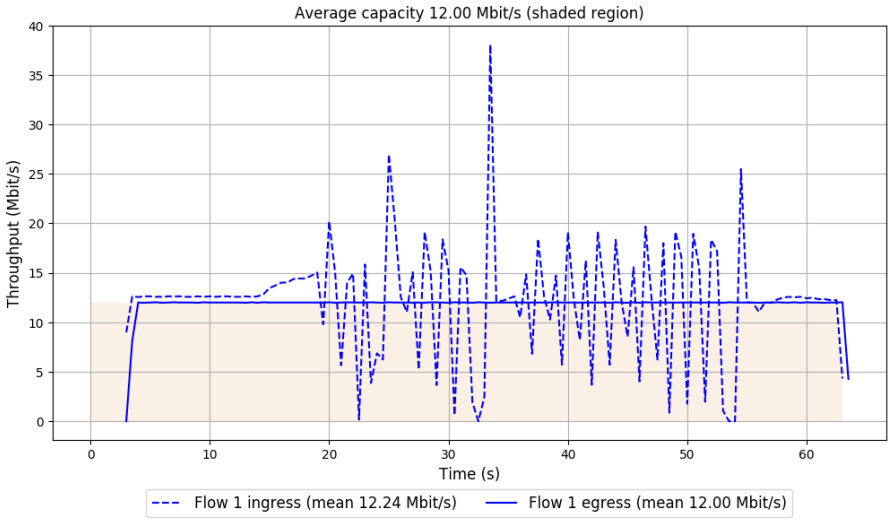


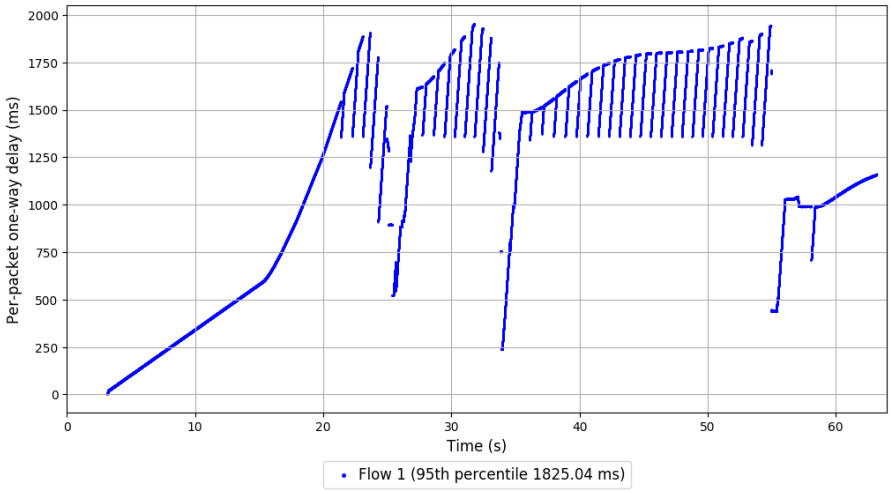
```
Run 2: Statistics of TCP Cubic

Start at: 2019-06-28 18:30:05
End at: 2019-06-28 18:31:05

# Below is generated by plot.py at 2019-06-28 19:48:45
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 12.00 Mbit/s (100.0% utilization)
95th percentile per-packet one-way delay: 1825.037 ms
Loss rate: 1.93%
-- Flow 1:
Average throughput: 12.00 Mbit/s
95th percentile per-packet one-way delay: 1825.037 ms
Loss rate: 1.93%
```

Run 2: Report of TCP Cubic — Data Link



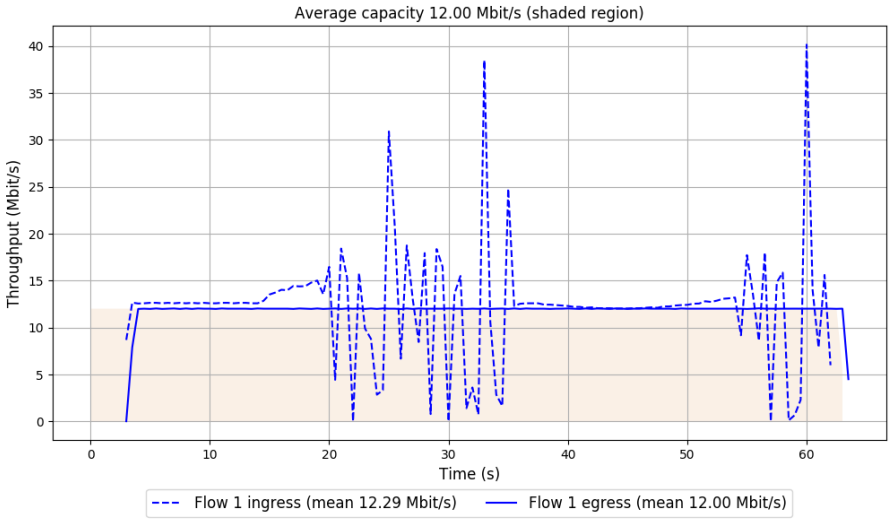


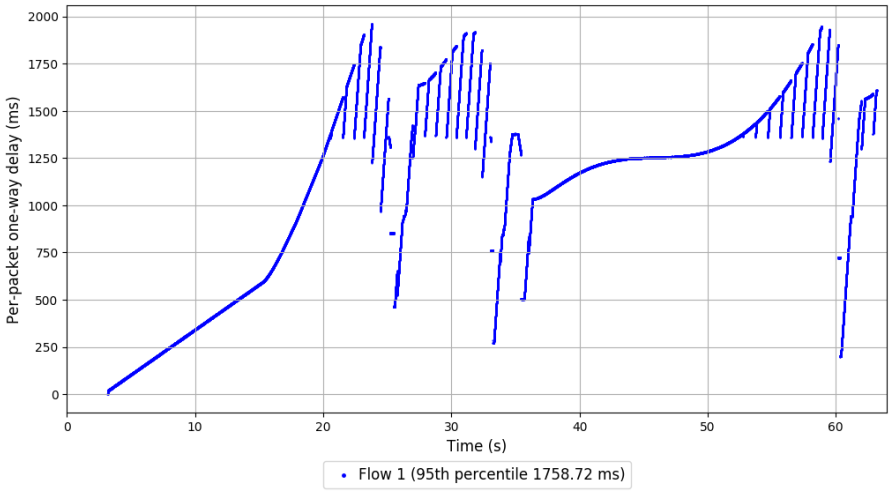
```
Run 3: Statistics of TCP Cubic

Start at: 2019-06-28 18:50:34
End at: 2019-06-28 18:51:34

# Below is generated by plot.py at 2019-06-28 19:48:45
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 12.00 Mbit/s (100.0% utilization)
95th percentile per-packet one-way delay: 1758.720 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 12.00 Mbit/s
95th percentile per-packet one-way delay: 1758.720 ms
Loss rate: 1.01%
```

Run 3: Report of TCP Cubic — Data Link



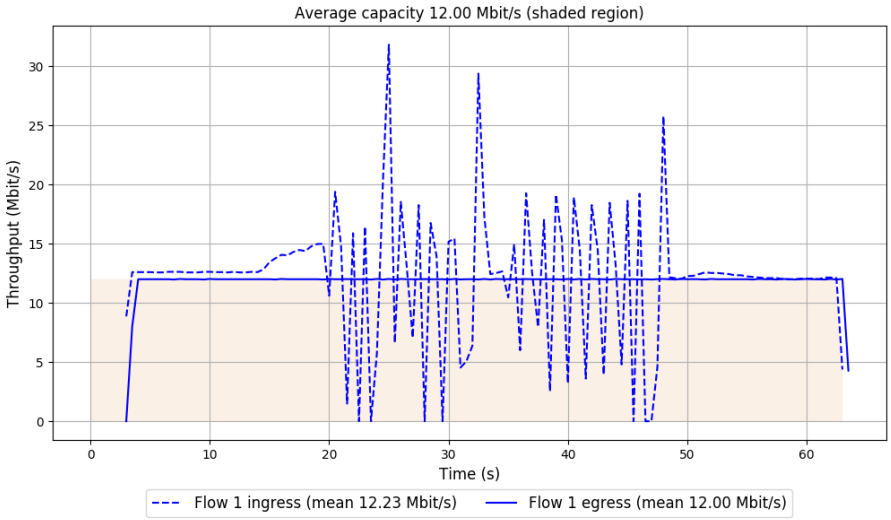


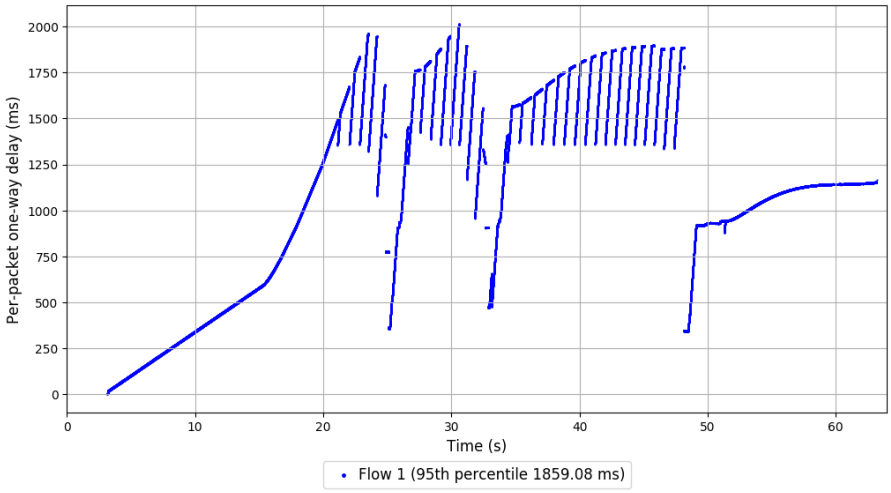
```
Run 4: Statistics of TCP Cubic

Start at: 2019-06-28 19:11:01
End at: 2019-06-28 19:12:01

# Below is generated by plot.py at 2019-06-28 19:48:54
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 12.00 Mbit/s (100.0% utilization)
95th percentile per-packet one-way delay: 1859.084 ms
Loss rate: 1.91%
-- Flow 1:
Average throughput: 12.00 Mbit/s
95th percentile per-packet one-way delay: 1859.084 ms
Loss rate: 1.91%
```

Run 4: Report of TCP Cubic — Data Link



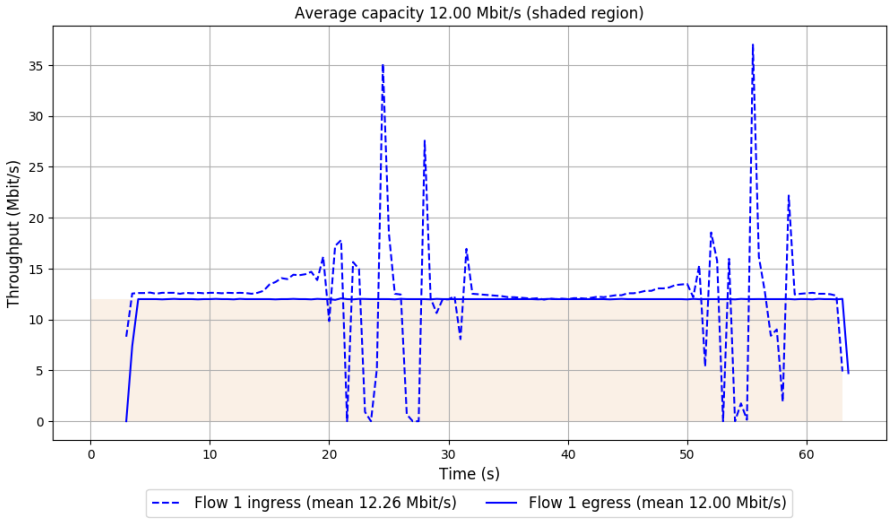


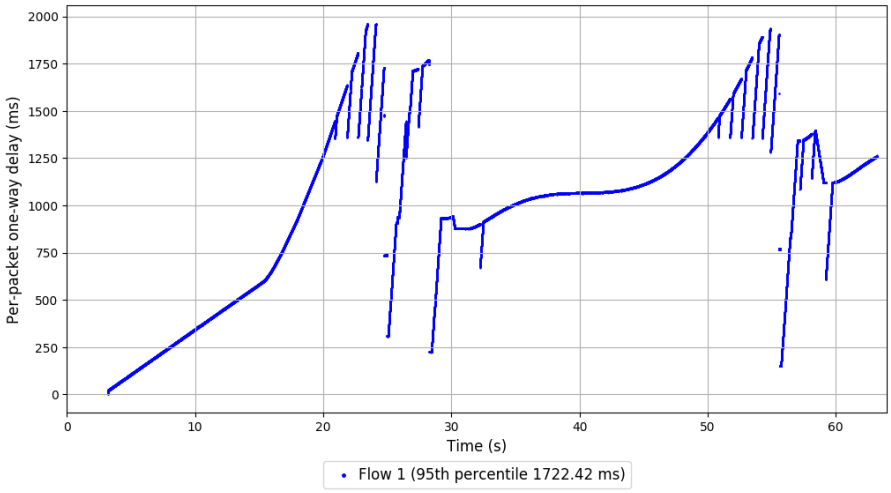
```
Run 5: Statistics of TCP Cubic

Start at: 2019-06-28 19:31:29
End at: 2019-06-28 19:32:29

# Below is generated by plot.py at 2019-06-28 19:48:54
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 12.00 Mbit/s (100.0% utilization)
95th percentile per-packet one-way delay: 1722.424 ms
Loss rate: 2.13%
-- Flow 1:
Average throughput: 12.00 Mbit/s
95th percentile per-packet one-way delay: 1722.424 ms
Loss rate: 2.13%
```

Run 5: Report of TCP Cubic — Data Link



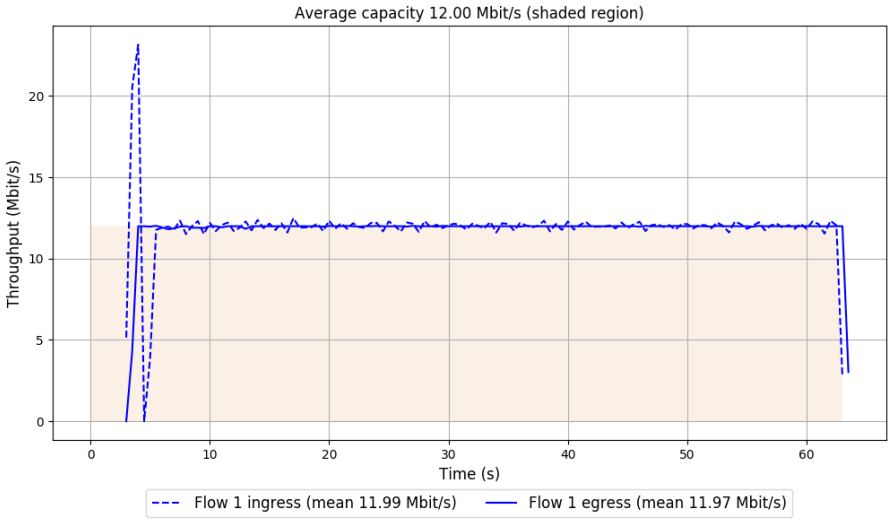


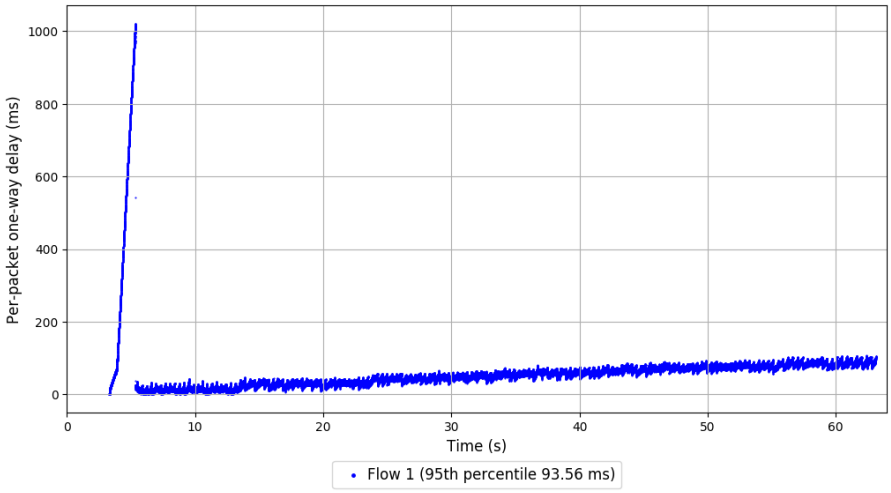
```
Run 1: Statistics of FillP

Start at: 2019-06-28 18:17:09
End at: 2019-06-28 18:18:09

# Below is generated by plot.py at 2019-06-28 19:48:59
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 11.97 Mbit/s (99.8% utilization)
95th percentile per-packet one-way delay: 93.556 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 11.97 Mbit/s
95th percentile per-packet one-way delay: 93.556 ms
Loss rate: 0.14%
```

Run 1: Report of FillP — Data Link



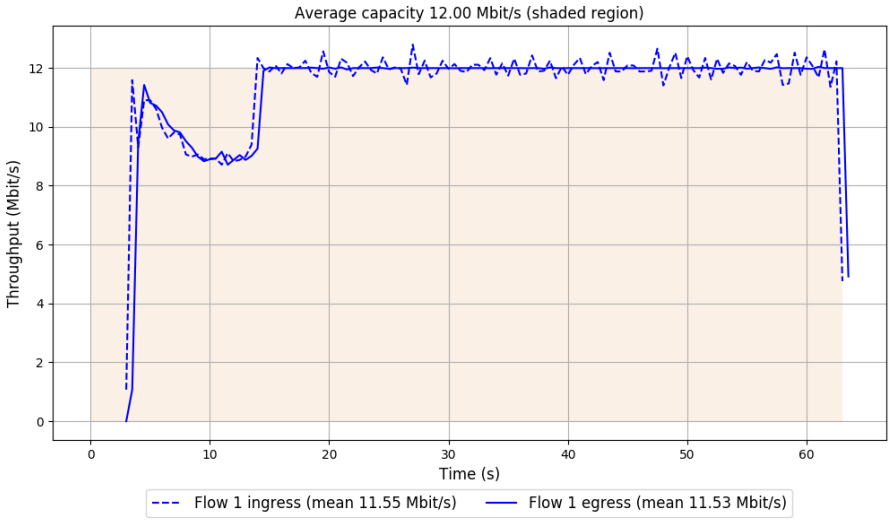


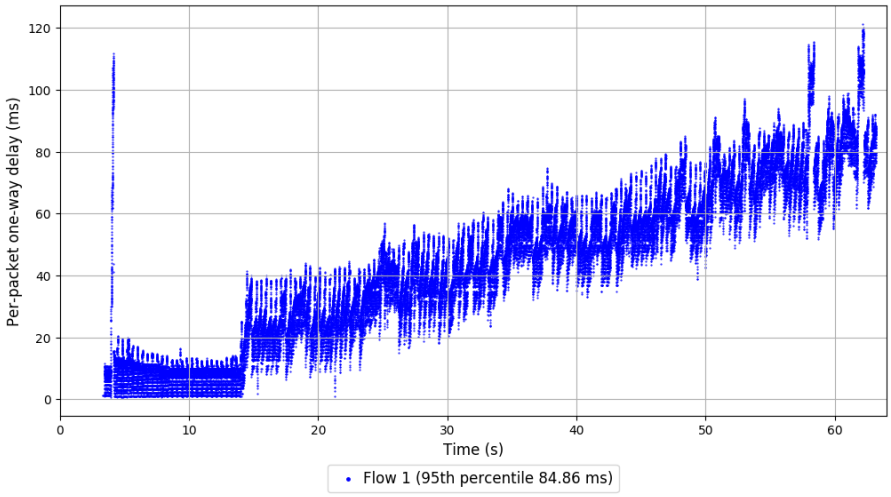
```
Run 2: Statistics of FillP

Start at: 2019-06-28 18:37:36
End at: 2019-06-28 18:38:36

# Below is generated by plot.py at 2019-06-28 19:49:04
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 11.53 Mbit/s (96.1% utilization)
95th percentile per-packet one-way delay: 84.859 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 11.53 Mbit/s
95th percentile per-packet one-way delay: 84.859 ms
Loss rate: 0.14%
```

Run 2: Report of FillP — Data Link



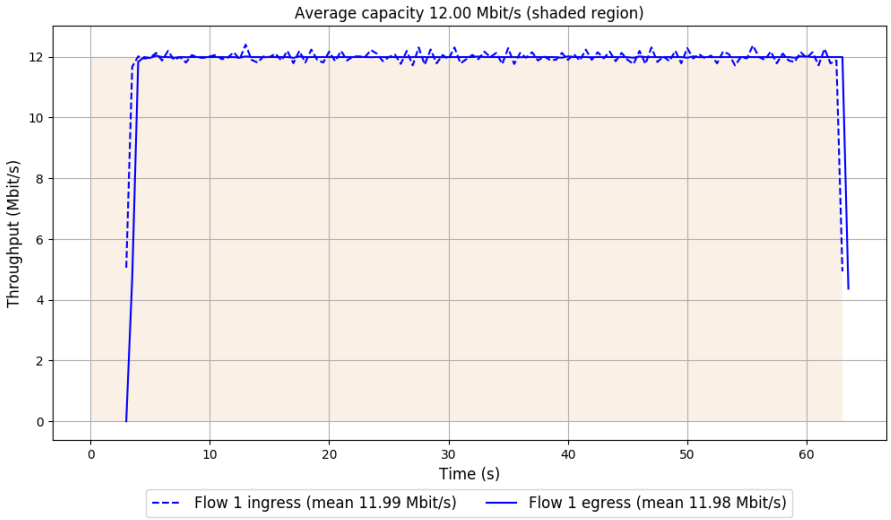


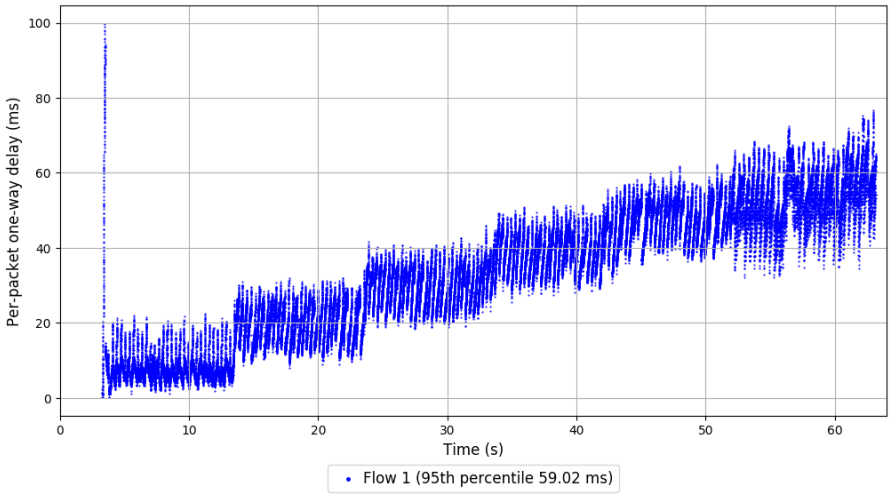
```
Run 3: Statistics of FillP

Start at: 2019-06-28 18:58:04
End at: 2019-06-28 18:59:04

# Below is generated by plot.py at 2019-06-28 19:49:15
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 11.98 Mbit/s (99.8% utilization)
95th percentile per-packet one-way delay: 59.022 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 11.98 Mbit/s
95th percentile per-packet one-way delay: 59.022 ms
Loss rate: 0.12%
```

Run 3: Report of FillP — Data Link



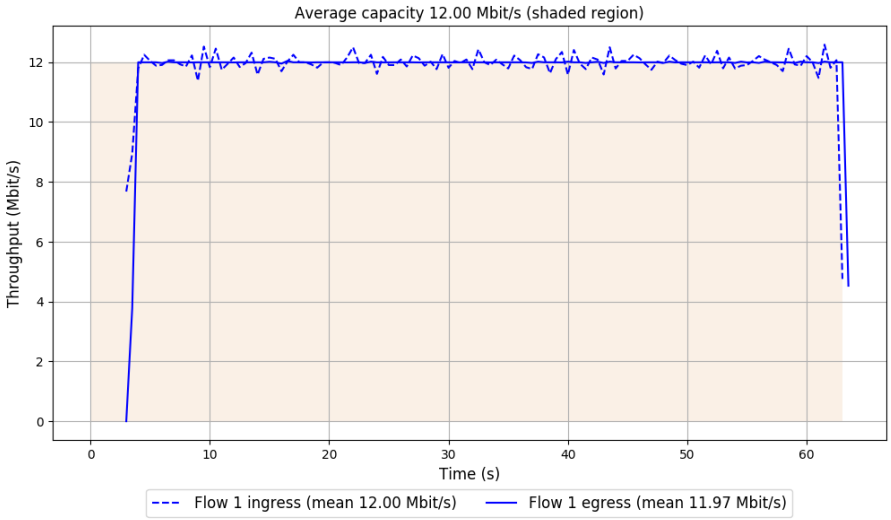


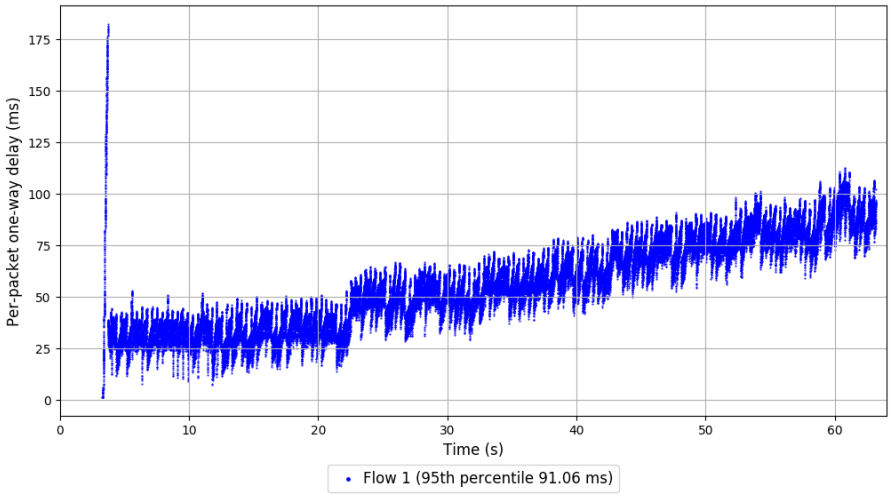
```
Run 4: Statistics of FillP

Start at: 2019-06-28 19:18:31
End at: 2019-06-28 19:19:31

# Below is generated by plot.py at 2019-06-28 19:49:15
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 11.97 Mbit/s (99.8% utilization)
95th percentile per-packet one-way delay: 91.058 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 11.97 Mbit/s
95th percentile per-packet one-way delay: 91.058 ms
Loss rate: 0.17%
```

Run 4: Report of FillP — Data Link



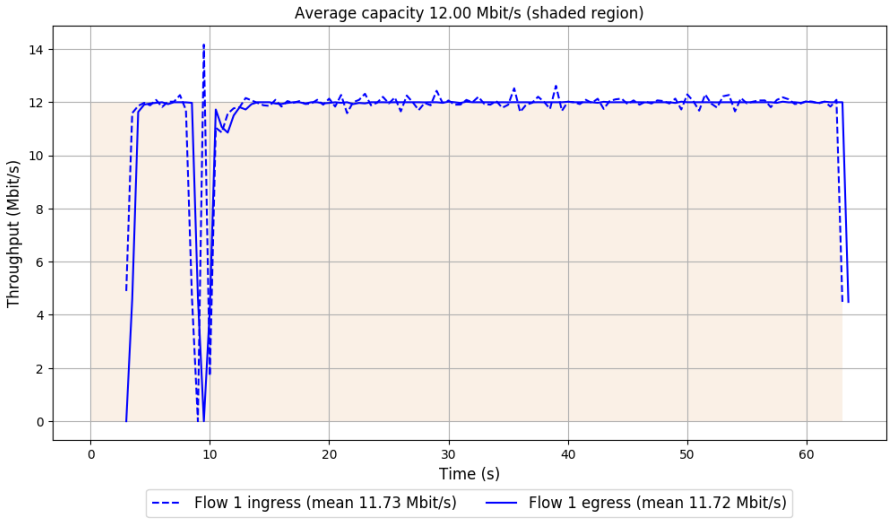


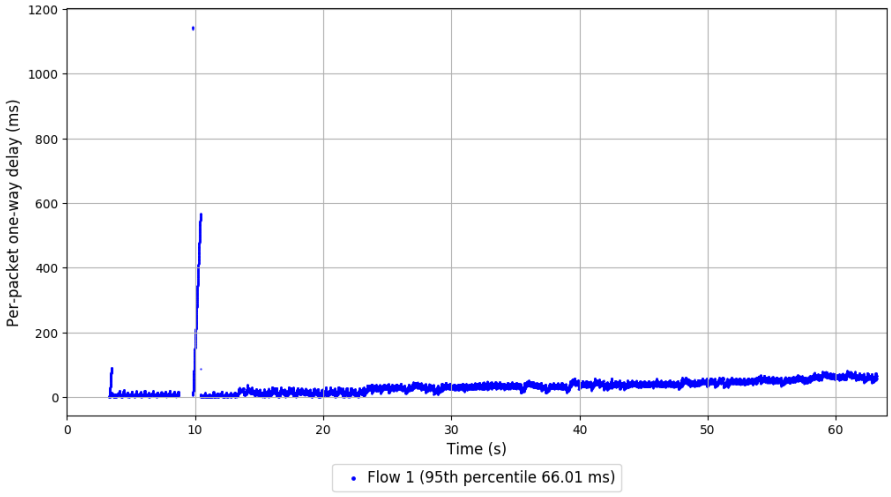
```
Run 5: Statistics of FillP

Start at: 2019-06-28 19:38:59
End at: 2019-06-28 19:40:00

# Below is generated by plot.py at 2019-06-28 19:49:18
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 11.72 Mbit/s (97.7% utilization)
95th percentile per-packet one-way delay: 66.008 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 11.72 Mbit/s
95th percentile per-packet one-way delay: 66.008 ms
Loss rate: 0.10%
```

Run 5: Report of FillP — Data Link



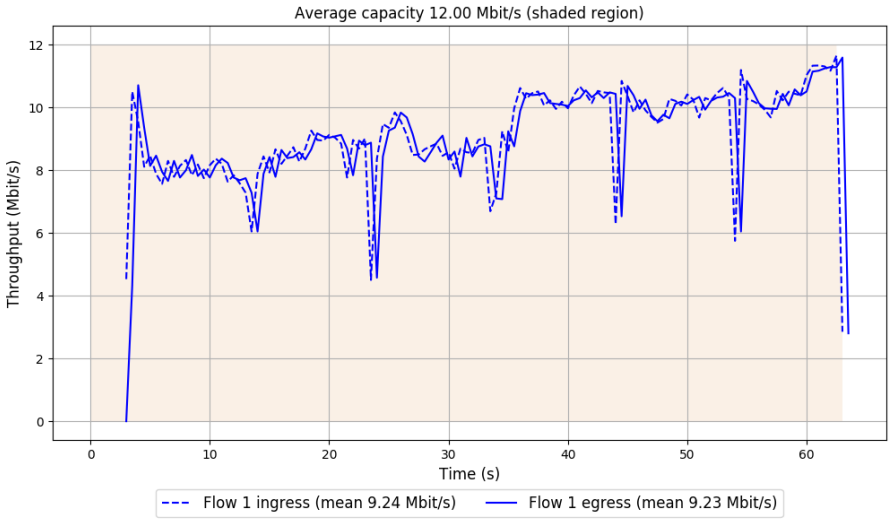


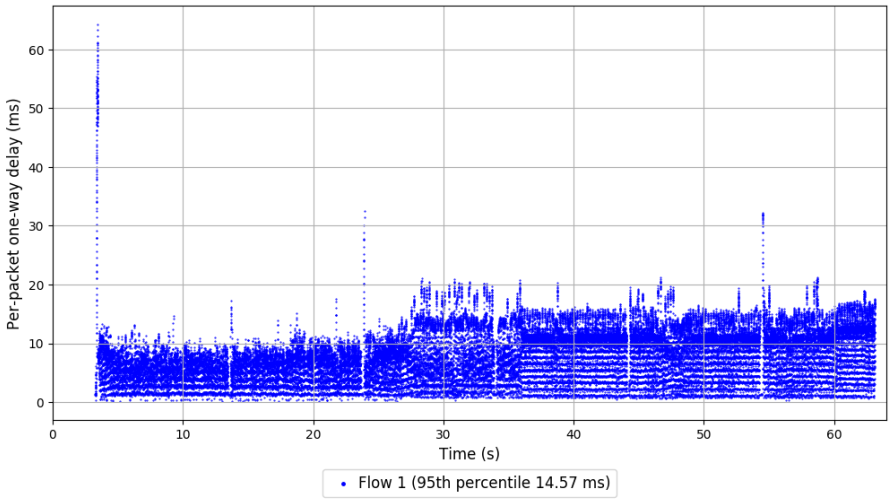
```
Run 1: Statistics of FillP-Sheep

Start at: 2019-06-28 18:04:13
End at: 2019-06-28 18:05:13

# Below is generated by plot.py at 2019-06-28 19:49:20
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 9.23 Mbit/s (76.9% utilization)
95th percentile per-packet one-way delay: 14.566 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 9.23 Mbit/s
95th percentile per-packet one-way delay: 14.566 ms
Loss rate: 0.02%
```

Run 1: Report of FillP-Sheep — Data Link



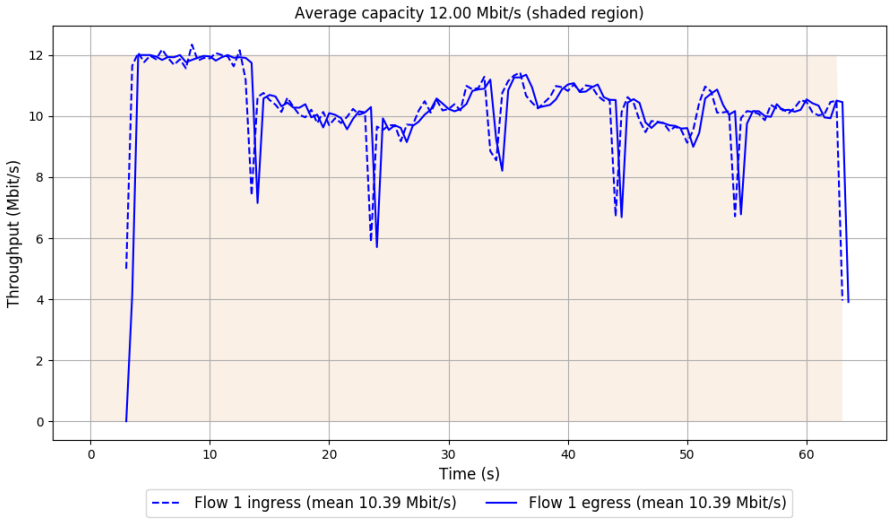


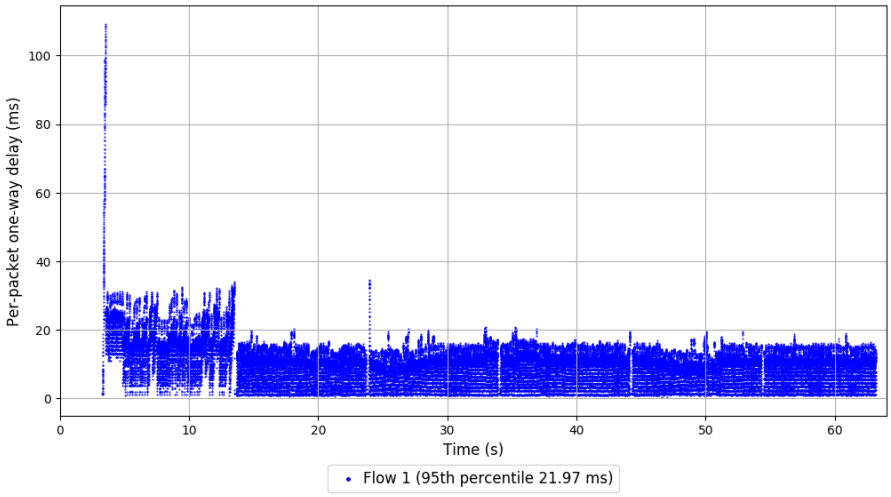
```
Run 2: Statistics of FillP-Sheep

Start at: 2019-06-28 18:24:40
End at: 2019-06-28 18:25:40

# Below is generated by plot.py at 2019-06-28 19:49:30
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 10.39 Mbit/s (86.6% utilization)
95th percentile per-packet one-way delay: 21.973 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 10.39 Mbit/s
95th percentile per-packet one-way delay: 21.973 ms
Loss rate: 0.02%
```

Run 2: Report of FillP-Sheep — Data Link



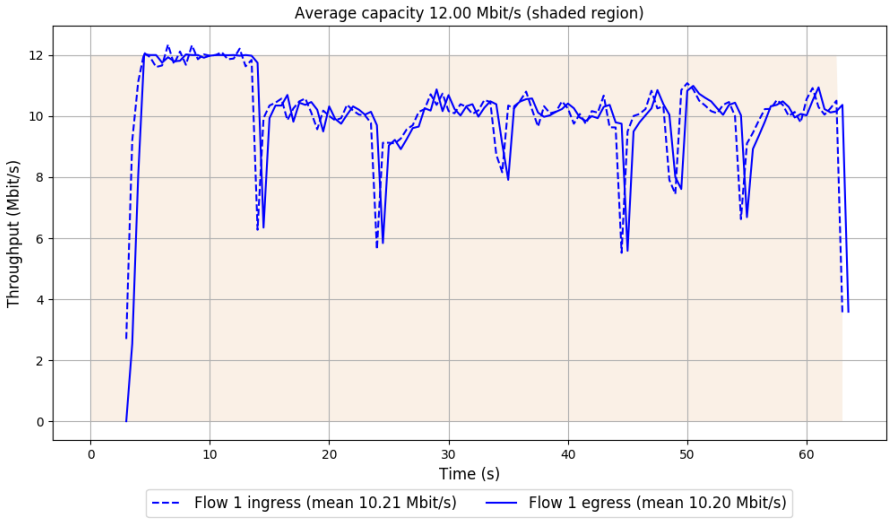


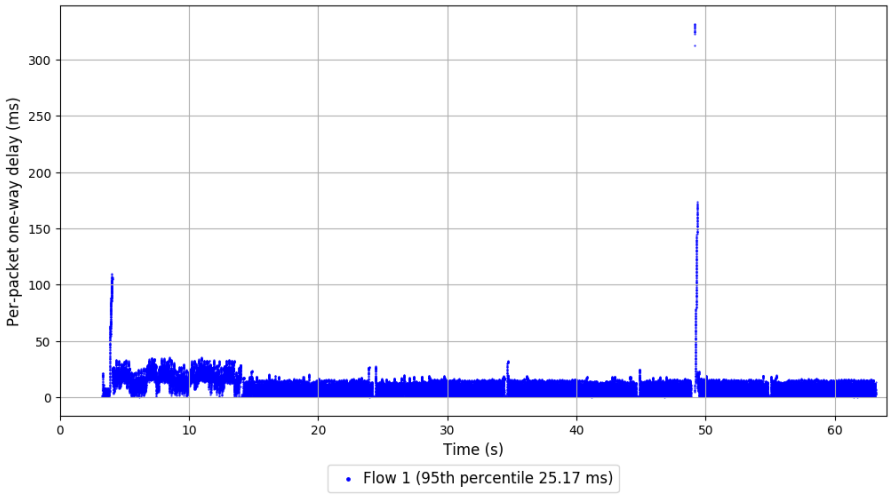
```
Run 3: Statistics of FillP-Sheep

Start at: 2019-06-28 18:45:08
End at: 2019-06-28 18:46:08

# Below is generated by plot.py at 2019-06-28 19:49:31
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 10.20 Mbit/s (85.0% utilization)
95th percentile per-packet one-way delay: 25.168 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 10.20 Mbit/s
95th percentile per-packet one-way delay: 25.168 ms
Loss rate: 0.02%
```

Run 3: Report of FillP-Sheep — Data Link



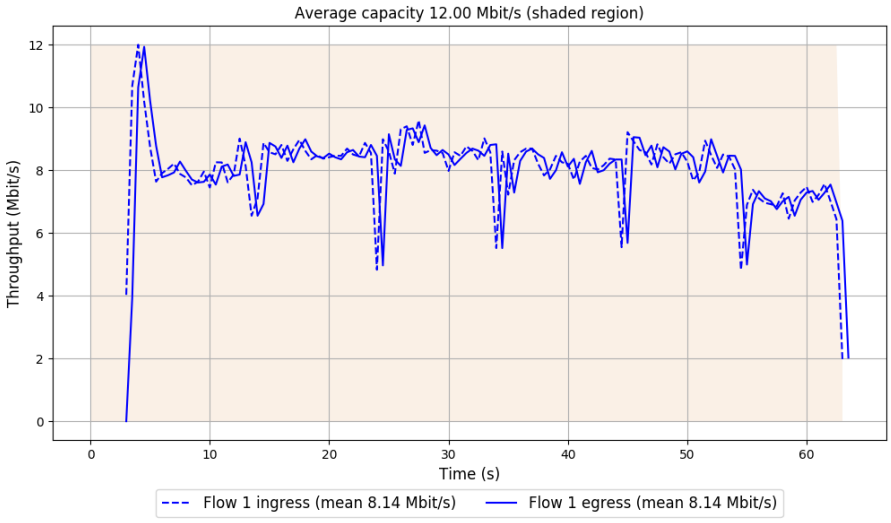


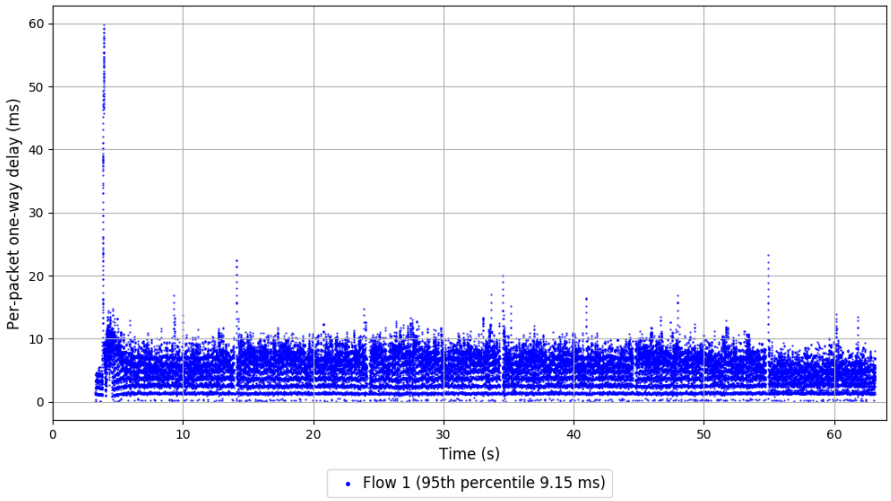
```
Run 4: Statistics of FillP-Sheep

Start at: 2019-06-28 19:05:36
End at: 2019-06-28 19:06:36

# Below is generated by plot.py at 2019-06-28 19:49:33
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 8.14 Mbit/s (67.8% utilization)
95th percentile per-packet one-way delay: 9.155 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 8.14 Mbit/s
95th percentile per-packet one-way delay: 9.155 ms
Loss rate: 0.01%
```

Run 4: Report of FillP-Sheep — Data Link



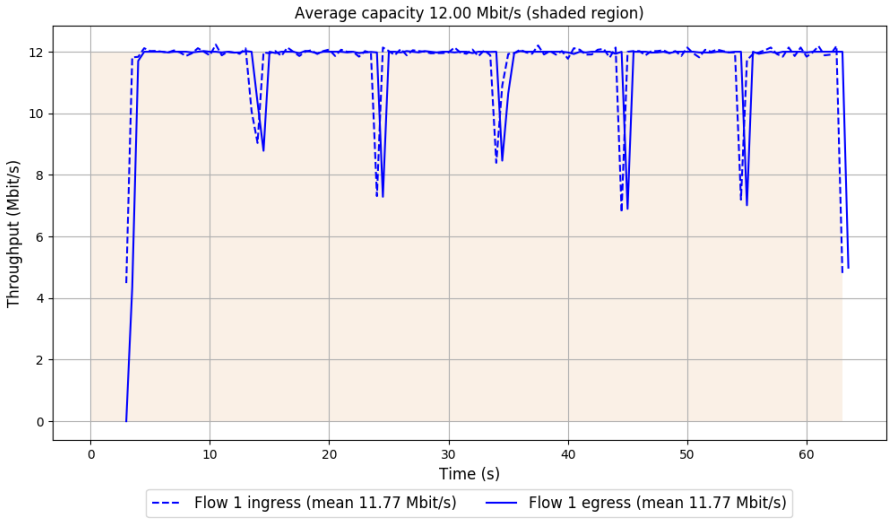


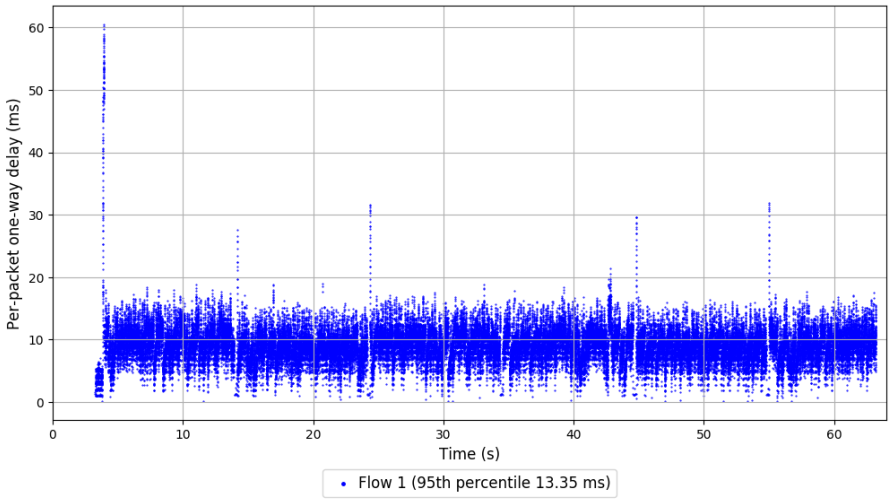
```
Run 5: Statistics of FillP-Sheep

Start at: 2019-06-28 19:26:04
End at: 2019-06-28 19:27:04

# Below is generated by plot.py at 2019-06-28 19:49:38
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 11.77 Mbit/s (98.1% utilization)
95th percentile per-packet one-way delay: 13.346 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 11.77 Mbit/s
95th percentile per-packet one-way delay: 13.346 ms
Loss rate: 0.01%
```

Run 5: Report of FillP-Sheep — Data Link



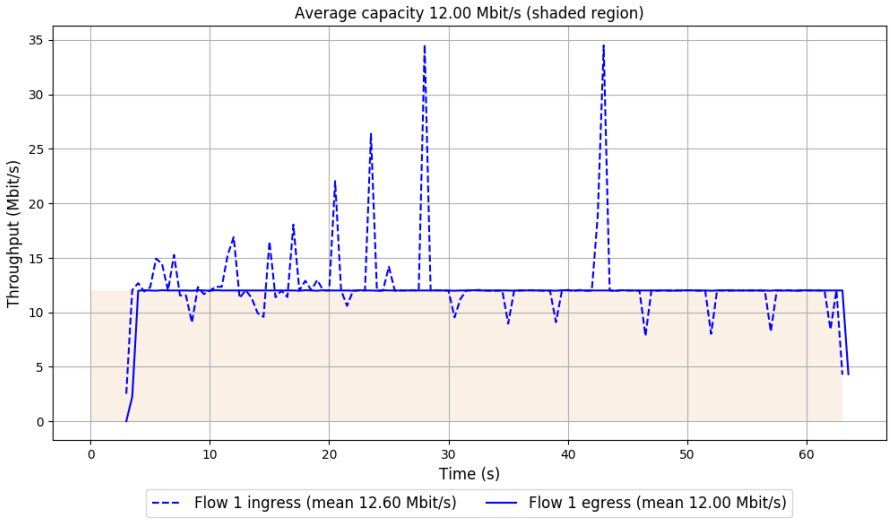


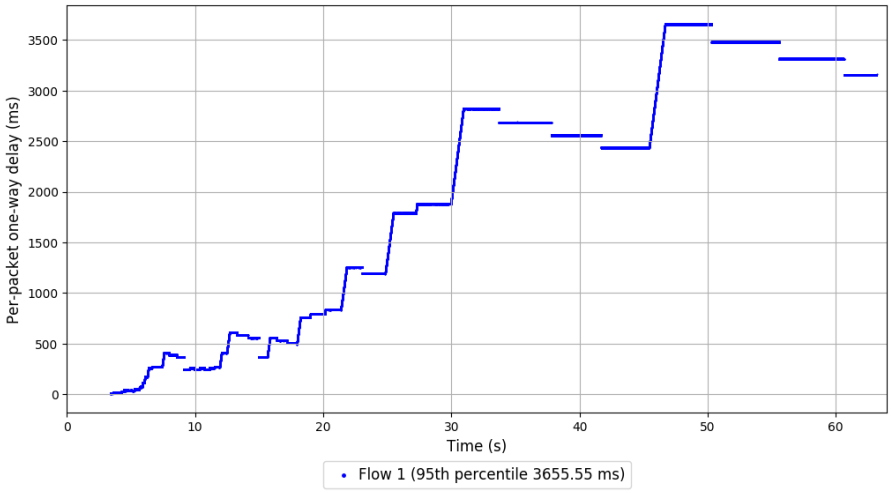
```
Run 1: Statistics of GOLD

Start at: 2019-06-28 18:08:33
End at: 2019-06-28 18:09:33

# Below is generated by plot.py at 2019-06-28 19:49:47
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 12.00 Mbit/s (100.0% utilization)
95th percentile per-packet one-way delay: 3655.549 ms
Loss rate: 4.79%
-- Flow 1:
Average throughput: 12.00 Mbit/s
95th percentile per-packet one-way delay: 3655.549 ms
Loss rate: 4.79%
```

Run 1: Report of GOLD — Data Link



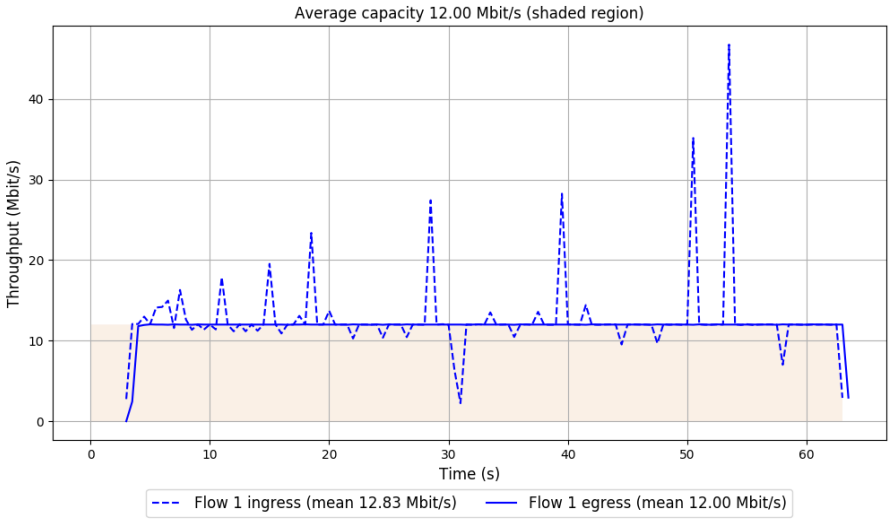


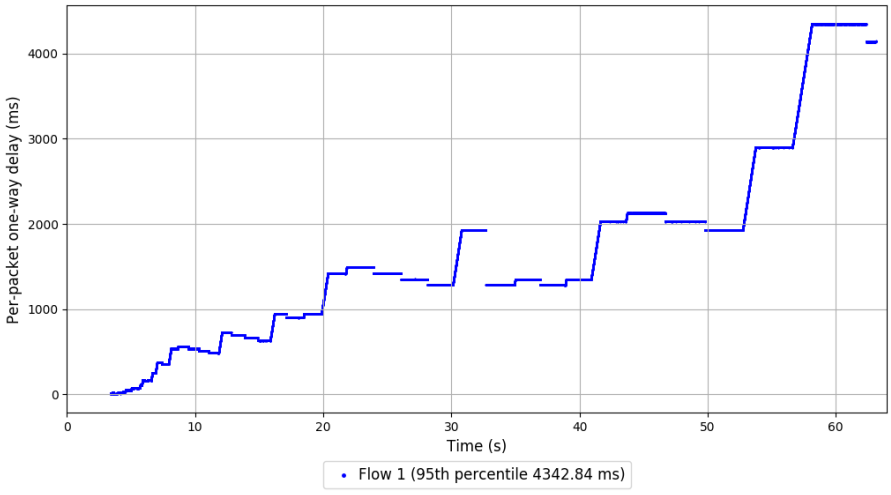
```
Run 2: Statistics of GOLD

Start at: 2019-06-28 18:29:00
End at: 2019-06-28 18:30:00

# Below is generated by plot.py at 2019-06-28 19:49:49
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 12.00 Mbit/s (100.0% utilization)
95th percentile per-packet one-way delay: 4342.844 ms
Loss rate: 6.48%
-- Flow 1:
Average throughput: 12.00 Mbit/s
95th percentile per-packet one-way delay: 4342.844 ms
Loss rate: 6.48%
```

Run 2: Report of GOLD — Data Link



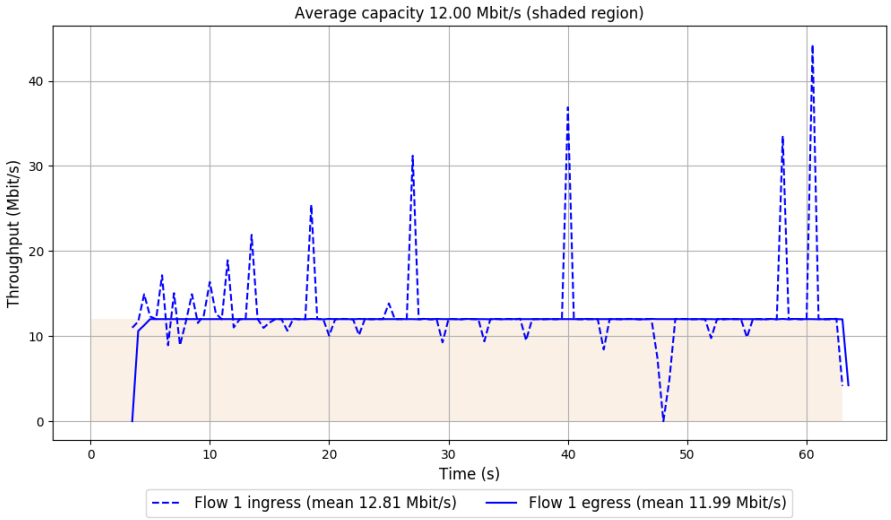


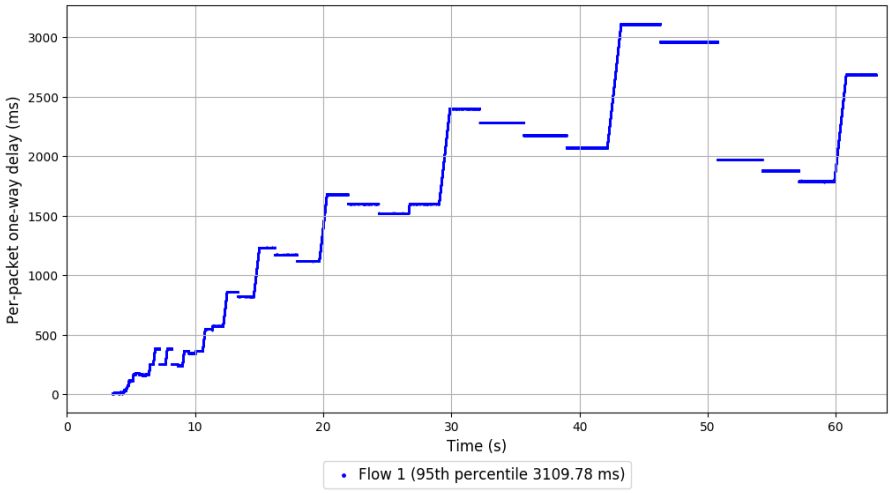
```
Run 3: Statistics of GOLD

Start at: 2019-06-28 18:49:29
End at: 2019-06-28 18:50:29

# Below is generated by plot.py at 2019-06-28 19:49:49
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 11.99 Mbit/s (99.9% utilization)
95th percentile per-packet one-way delay: 3109.785 ms
Loss rate: 6.33%
-- Flow 1:
Average throughput: 11.99 Mbit/s
95th percentile per-packet one-way delay: 3109.785 ms
Loss rate: 6.33%
```

Run 3: Report of GOLD — Data Link



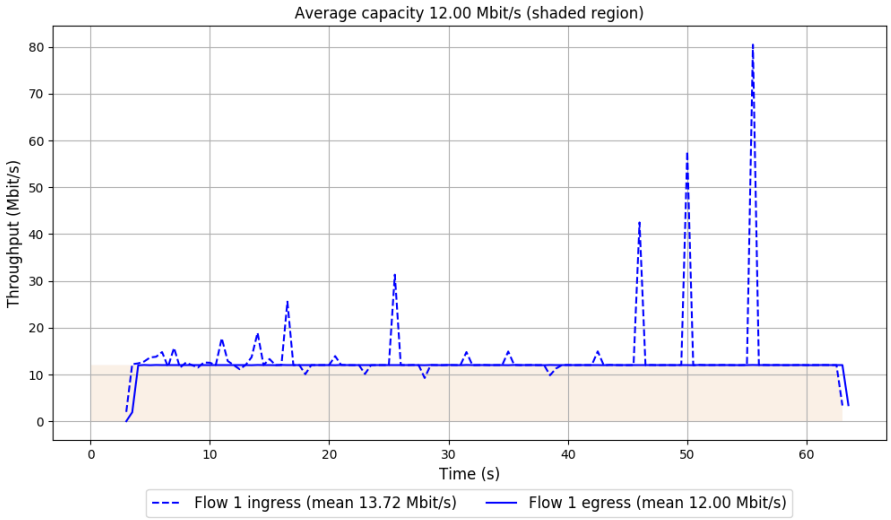


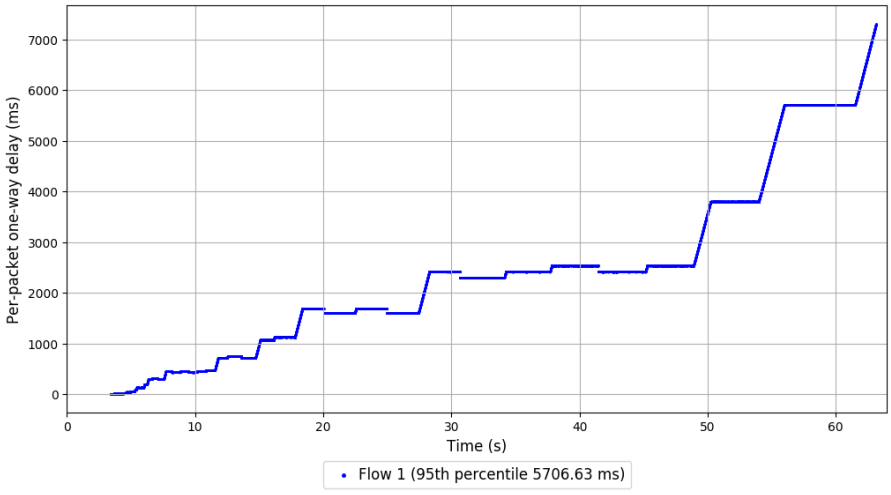
```
Run 4: Statistics of GOLD

Start at: 2019-06-28 19:09:56
End at: 2019-06-28 19:10:56

# Below is generated by plot.py at 2019-06-28 19:49:53
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 12.00 Mbit/s (100.0% utilization)
95th percentile per-packet one-way delay: 5706.626 ms
Loss rate: 12.53%
-- Flow 1:
Average throughput: 12.00 Mbit/s
95th percentile per-packet one-way delay: 5706.626 ms
Loss rate: 12.53%
```

Run 4: Report of GOLD — Data Link



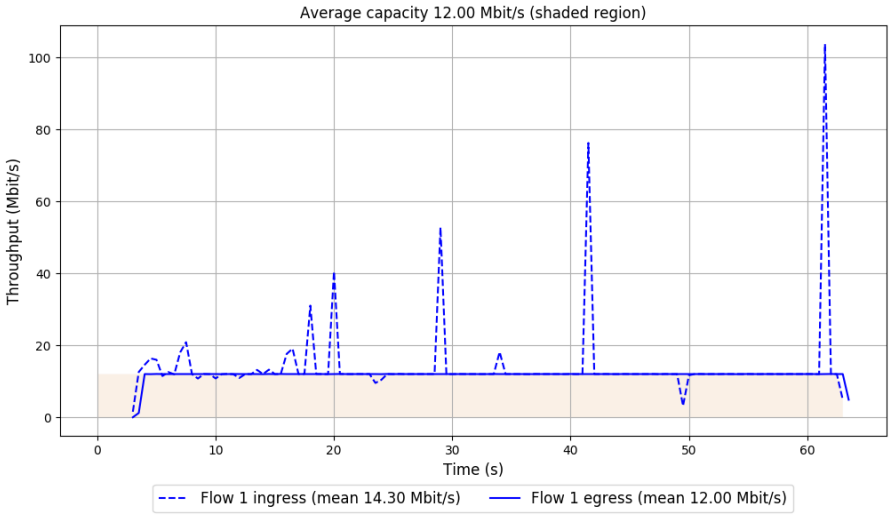


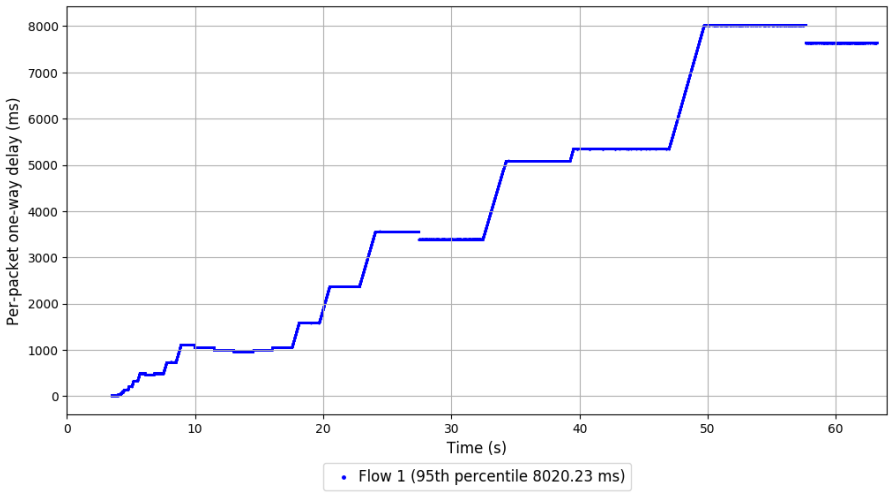
```
Run 5: Statistics of GOLD

Start at: 2019-06-28 19:30:24
End at: 2019-06-28 19:31:24

# Below is generated by plot.py at 2019-06-28 19:50:05
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 12.00 Mbit/s (100.0% utilization)
95th percentile per-packet one-way delay: 8020.226 ms
Loss rate: 16.09%
-- Flow 1:
Average throughput: 12.00 Mbit/s
95th percentile per-packet one-way delay: 8020.226 ms
Loss rate: 16.09%
```

Run 5: Report of GOLD — Data Link



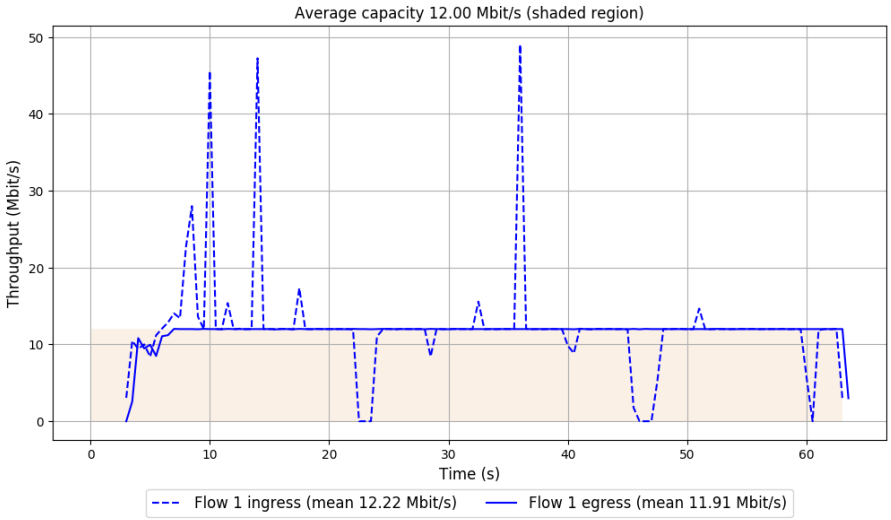


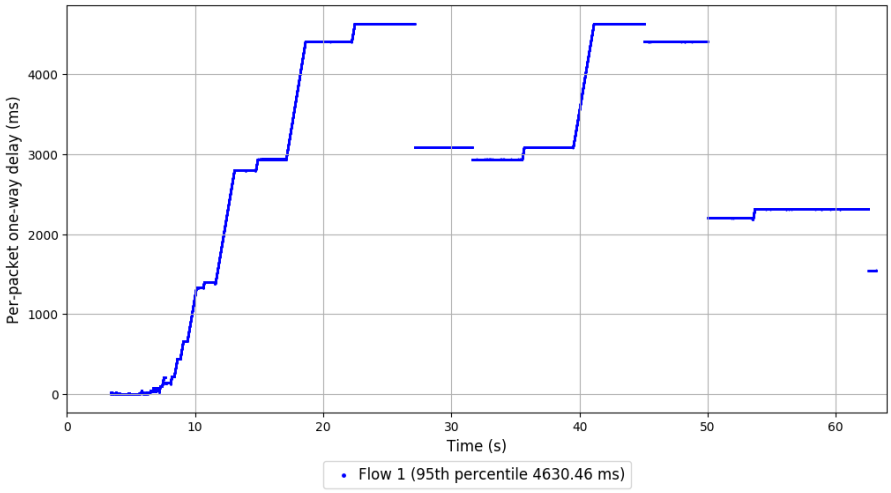
```
Run 1: Statistics of GoldLSTM

Start at: 2019-06-28 18:14:59
End at: 2019-06-28 18:15:59

# Below is generated by plot.py at 2019-06-28 19:50:06
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 11.91 Mbit/s (99.2% utilization)
95th percentile per-packet one-way delay: 4630.457 ms
Loss rate: 2.53%
-- Flow 1:
Average throughput: 11.91 Mbit/s
95th percentile per-packet one-way delay: 4630.457 ms
Loss rate: 2.53%
```

Run 1: Report of GoldLSTM — Data Link

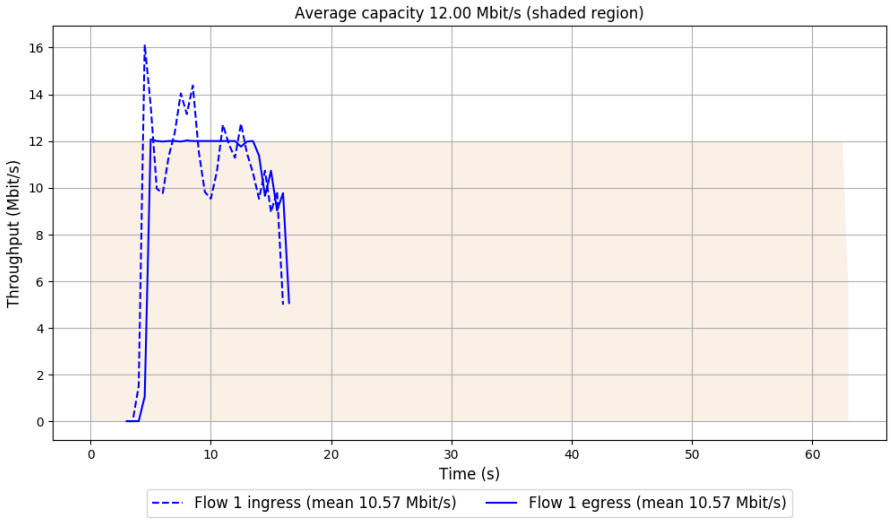


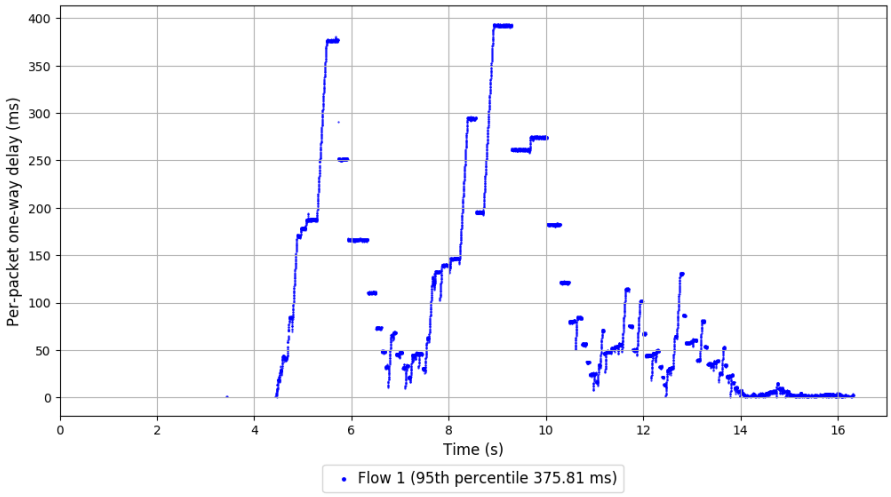


```
Run 2: Statistics of GoldLSTM

Start at: 2019-06-28 18:35:27
End at: 2019-06-28 18:36:27
```

Run 2: Report of GoldLSTM — Data Link

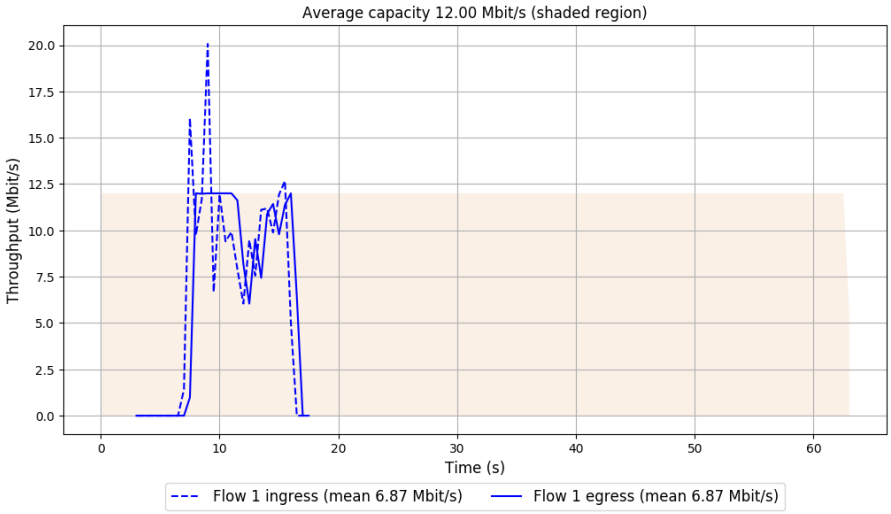


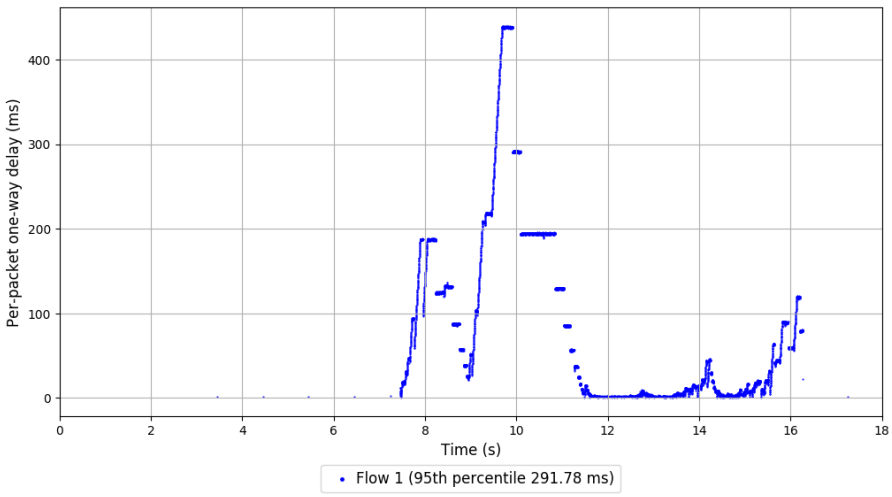


```
Run 3: Statistics of GoldLSTM

Start at: 2019-06-28 18:55:56
End at: 2019-06-28 18:56:56
```

Run 3: Report of GoldLSTM — Data Link

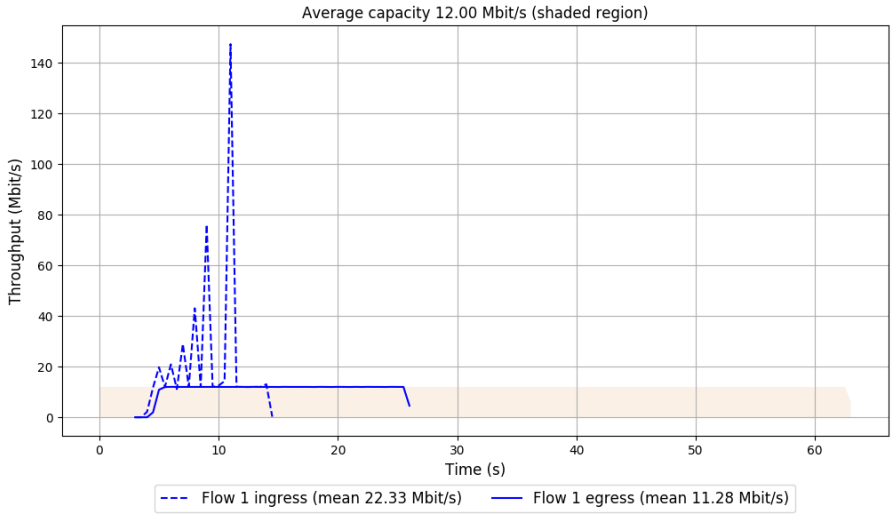


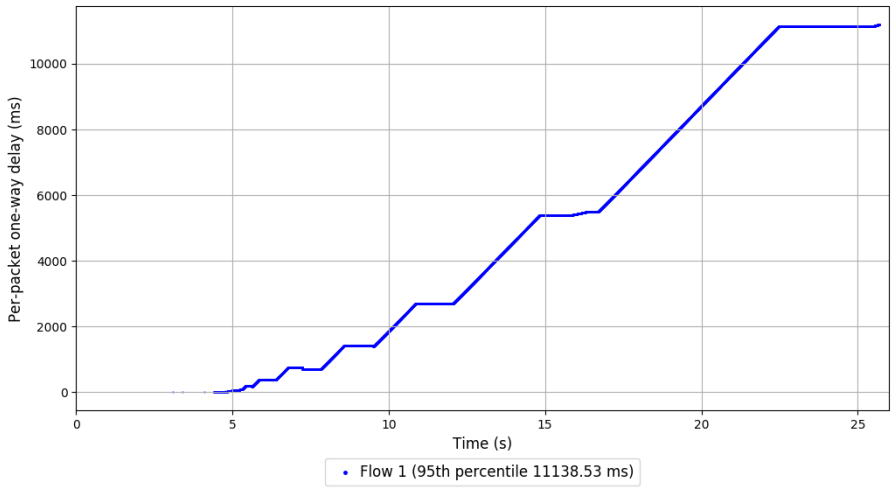


```
Run 4: Statistics of GoldLSTM

Start at: 2019-06-28 19:16:22
End at: 2019-06-28 19:17:23
```

Run 4: Report of GoldLSTM — Data Link

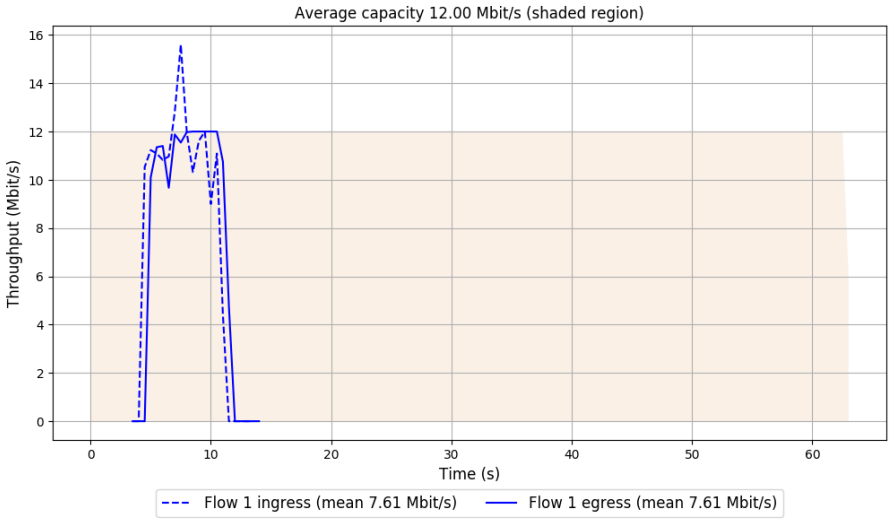


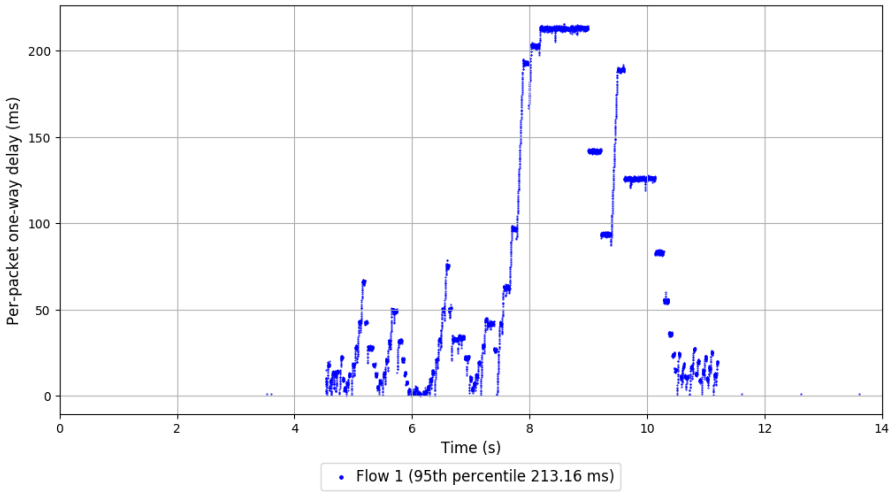


```
Run 5: Statistics of GoldLSTM

Start at: 2019-06-28 19:36:51
End at: 2019-06-28 19:37:51
```

Run 5: Report of GoldLSTM — Data Link



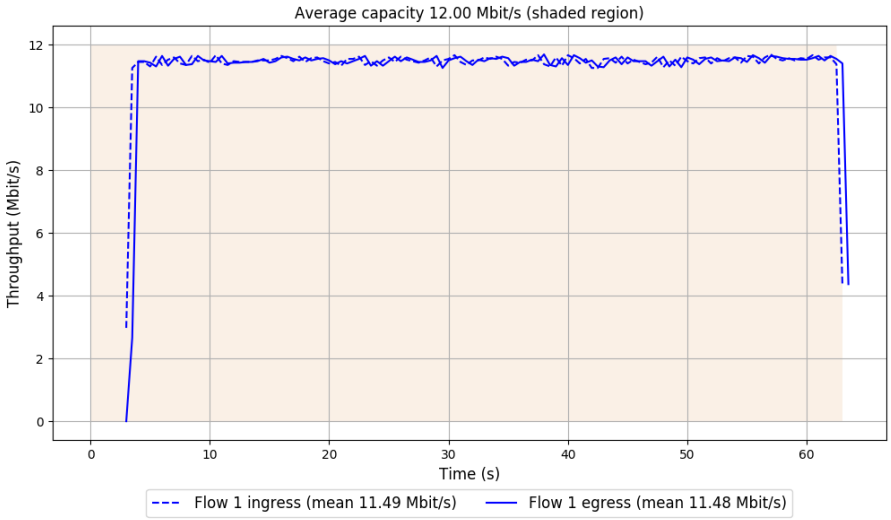


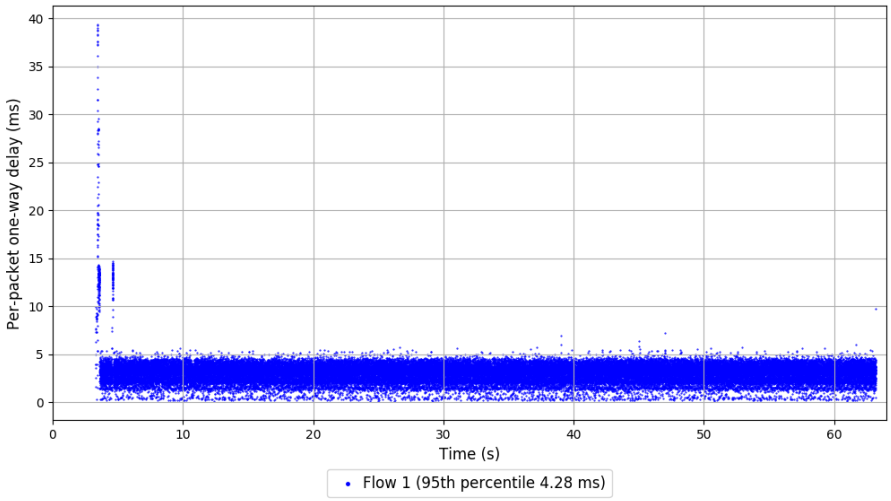
```
Run 1: Statistics of Indigo

Start at: 2019-06-28 18:06:23
End at: 2019-06-28 18:07:23

# Below is generated by plot.py at 2019-06-28 19:50:23
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 11.48 Mbit/s (95.7% utilization)
95th percentile per-packet one-way delay: 4.279 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 11.48 Mbit/s
95th percentile per-packet one-way delay: 4.279 ms
Loss rate: 0.00%
```

Run 1: Report of Indigo — Data Link



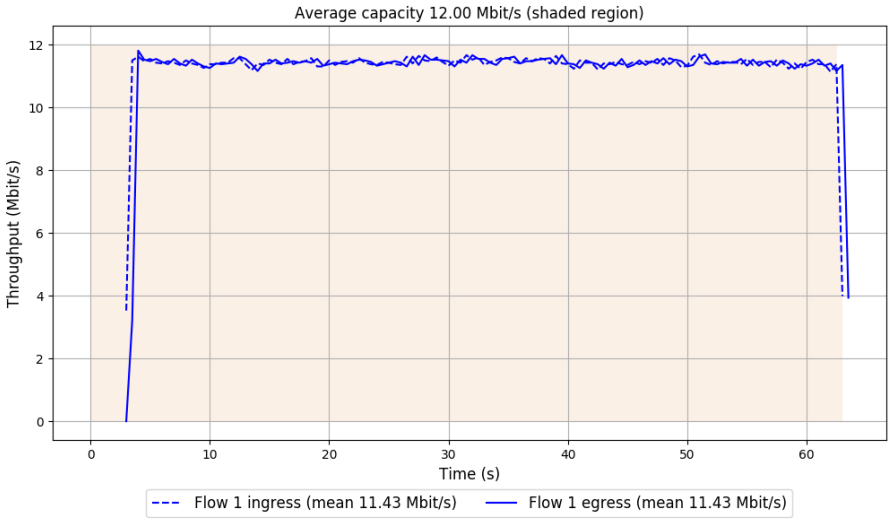


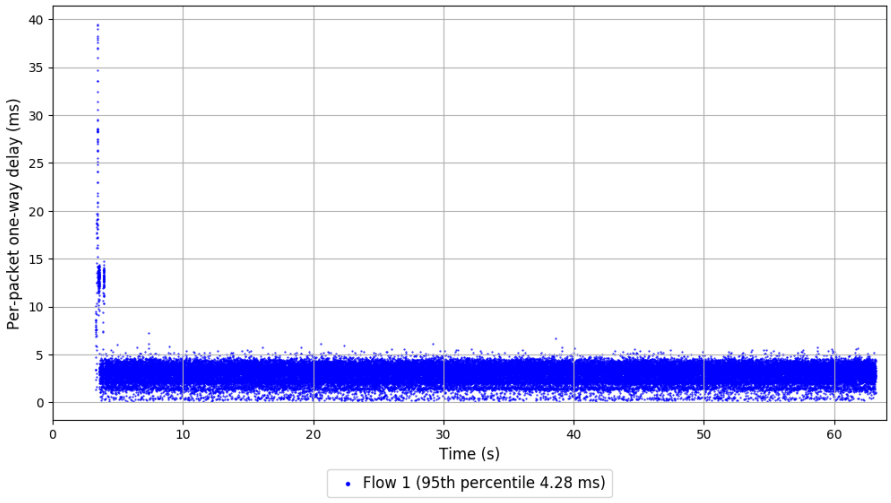
```
Run 2: Statistics of Indigo

Start at: 2019-06-28 18:26:50
End at: 2019-06-28 18:27:50

# Below is generated by plot.py at 2019-06-28 19:50:23
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 11.43 Mbit/s (95.3% utilization)
95th percentile per-packet one-way delay: 4.275 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 11.43 Mbit/s
95th percentile per-packet one-way delay: 4.275 ms
Loss rate: 0.01%
```

Run 2: Report of Indigo — Data Link



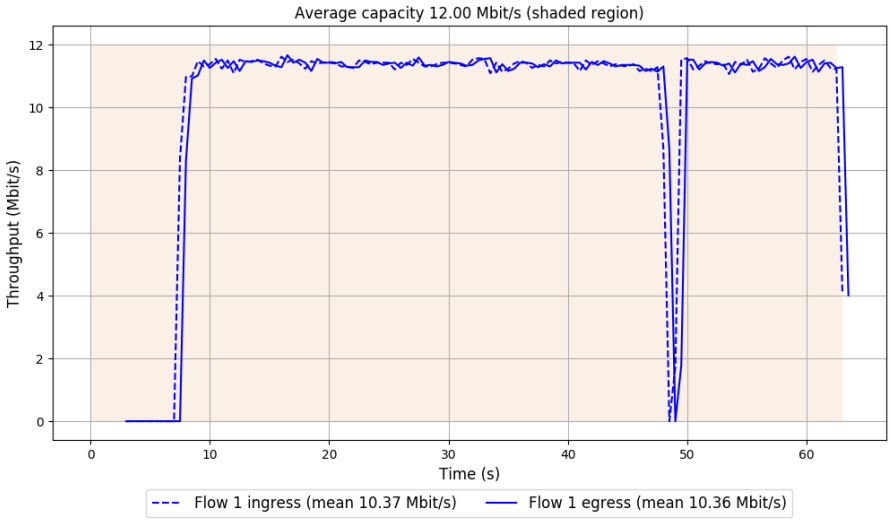


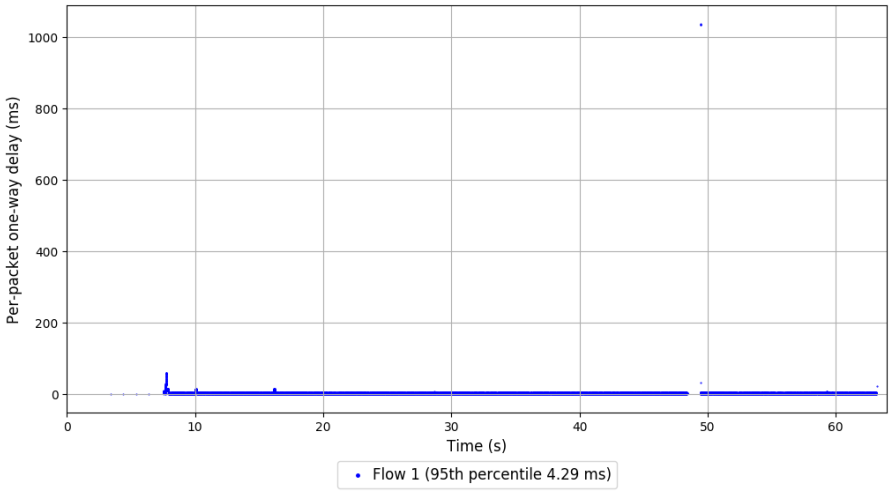
```
Run 3: Statistics of Indigo

Start at: 2019-06-28 18:47:19
End at: 2019-06-28 18:48:19

# Below is generated by plot.py at 2019-06-28 19:50:23
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 10.36 Mbit/s (86.3% utilization)
95th percentile per-packet one-way delay: 4.291 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 10.36 Mbit/s
95th percentile per-packet one-way delay: 4.291 ms
Loss rate: 0.01%
```

Run 3: Report of Indigo — Data Link



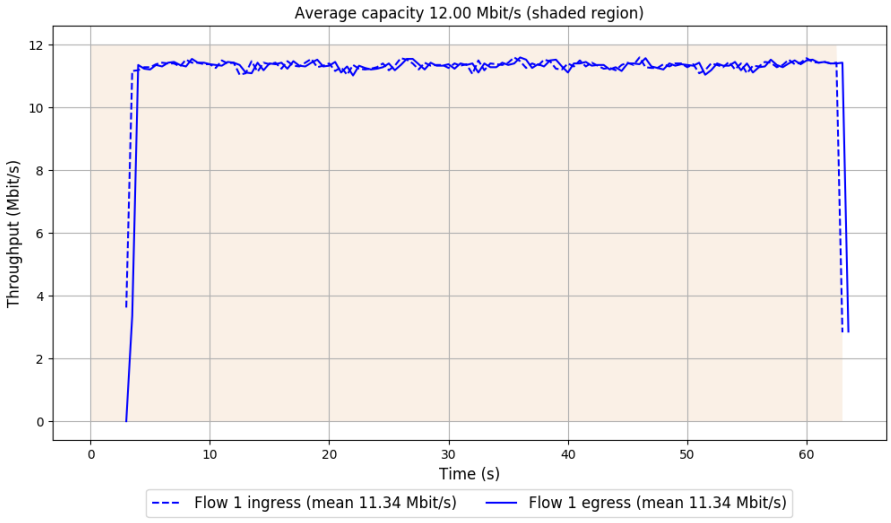


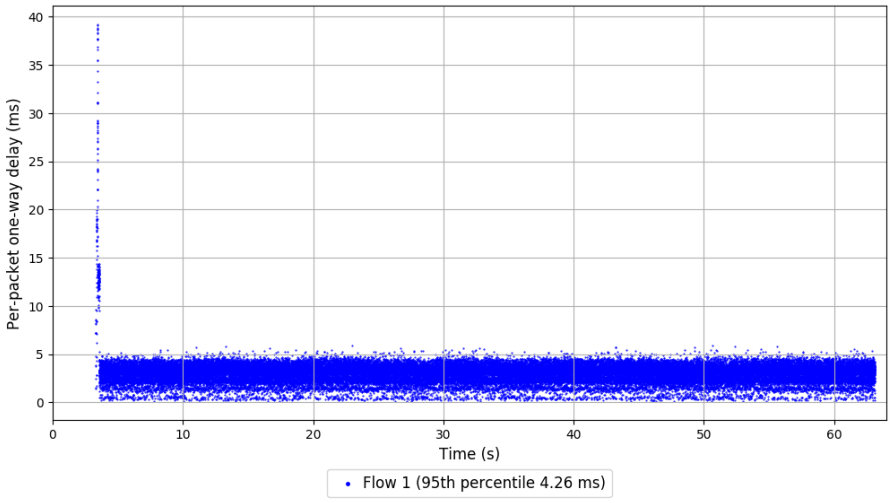
```
Run 4: Statistics of Indigo

Start at: 2019-06-28 19:07:46
End at: 2019-06-28 19:08:46

# Below is generated by plot.py at 2019-06-28 19:50:24
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 11.34 Mbit/s (94.5% utilization)
95th percentile per-packet one-way delay: 4.261 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 11.34 Mbit/s
95th percentile per-packet one-way delay: 4.261 ms
Loss rate: 0.01%
```

Run 4: Report of Indigo — Data Link



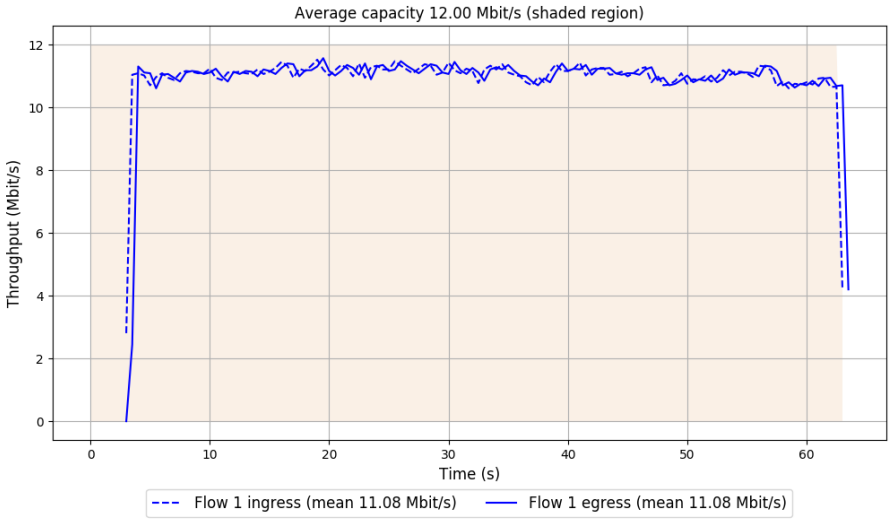


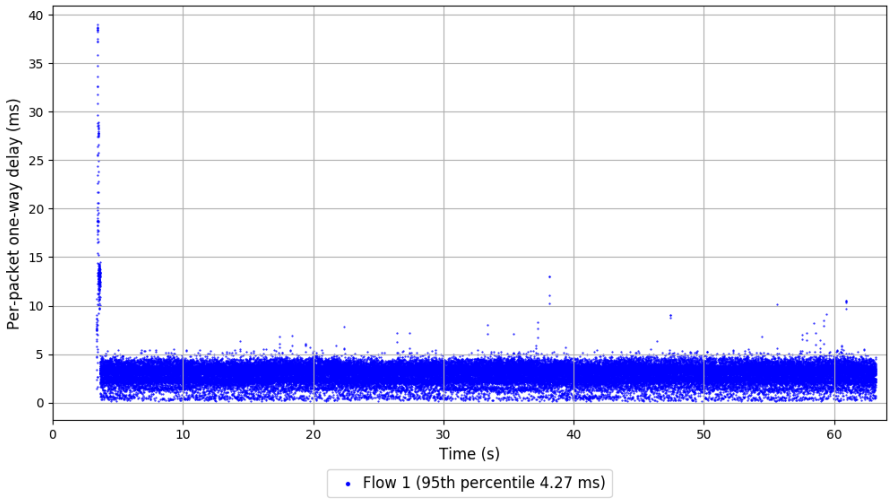
```
Run 5: Statistics of Indigo

Start at: 2019-06-28 19:28:14
End at: 2019-06-28 19:29:14

# Below is generated by plot.py at 2019-06-28 19:50:39
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 11.08 Mbit/s (92.3% utilization)
95th percentile per-packet one-way delay: 4.266 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 11.08 Mbit/s
95th percentile per-packet one-way delay: 4.266 ms
Loss rate: 0.00%
```

Run 5: Report of Indigo — Data Link



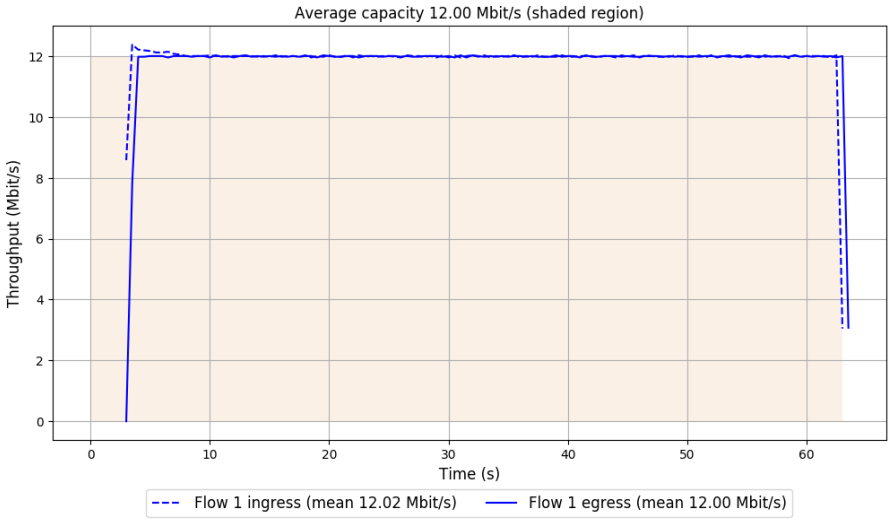


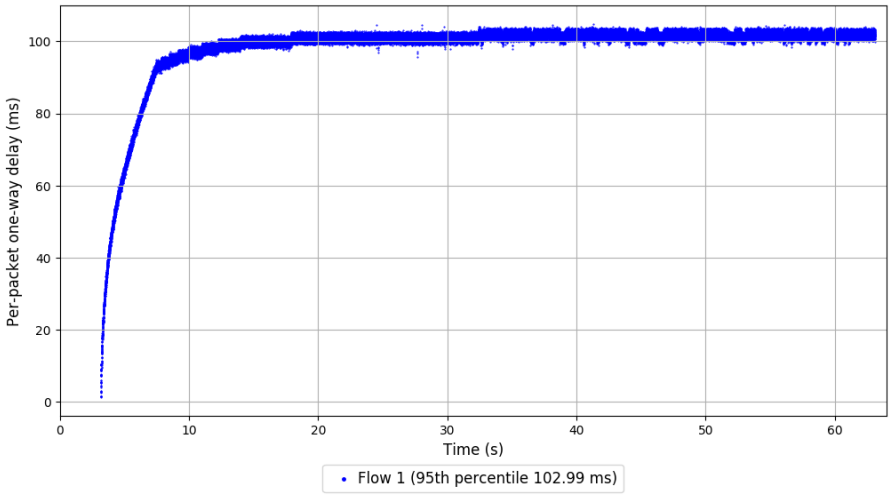
```
Run 1: Statistics of LEDBAT

Start at: 2019-06-28 18:22:31
End at: 2019-06-28 18:23:31

# Below is generated by plot.py at 2019-06-28 19:50:39
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 12.00 Mbit/s (100.0% utilization)
95th percentile per-packet one-way delay: 102.987 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 12.00 Mbit/s
95th percentile per-packet one-way delay: 102.987 ms
Loss rate: 0.17%
```

Run 1: Report of LEDBAT — Data Link



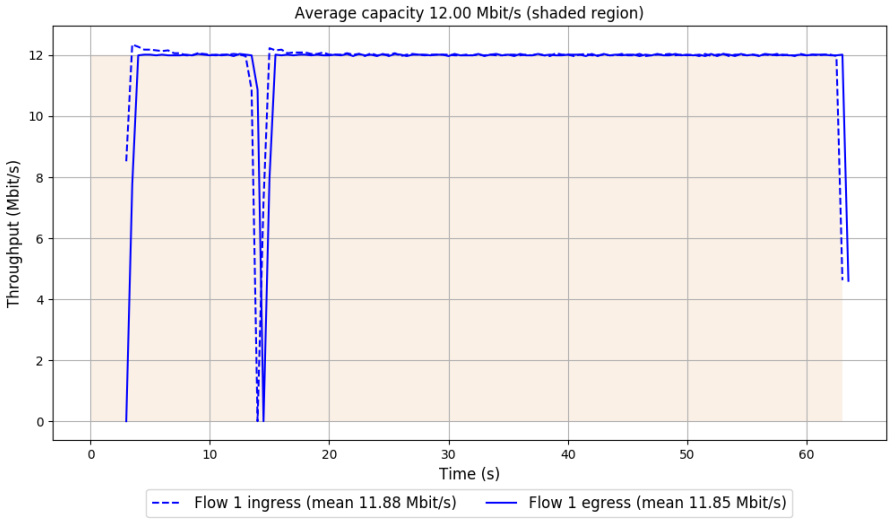


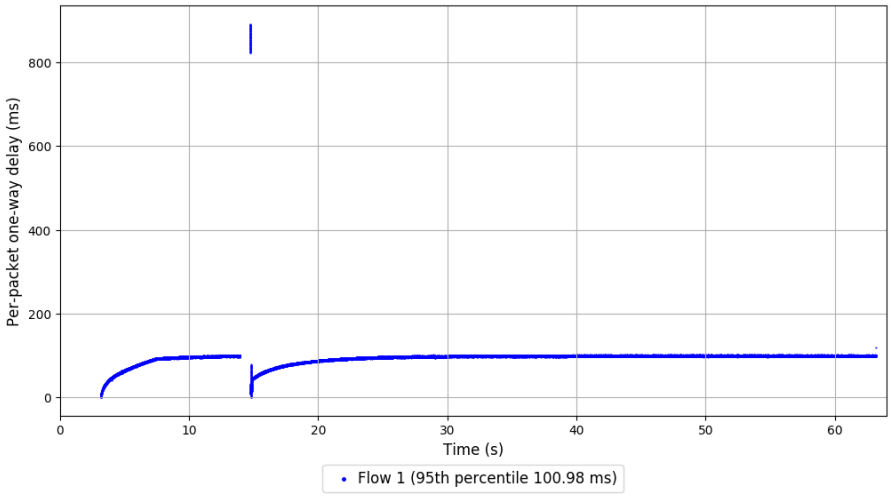
```
Run 2: Statistics of LEDBAT

Start at: 2019-06-28 18:42:59
End at: 2019-06-28 18:43:59

# Below is generated by plot.py at 2019-06-28 19:50:40
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 11.85 Mbit/s (98.8% utilization)
95th percentile per-packet one-way delay: 100.984 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 11.85 Mbit/s
95th percentile per-packet one-way delay: 100.984 ms
Loss rate: 0.20%
```

Run 2: Report of LEDBAT — Data Link



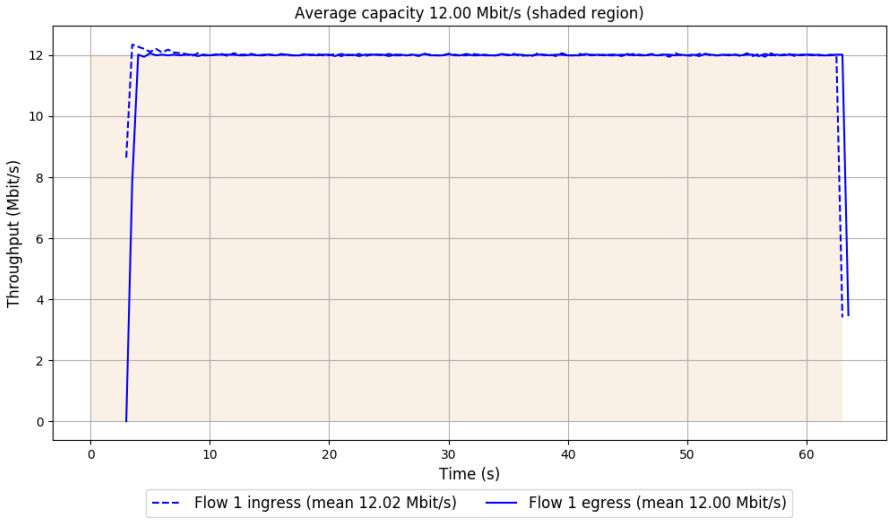


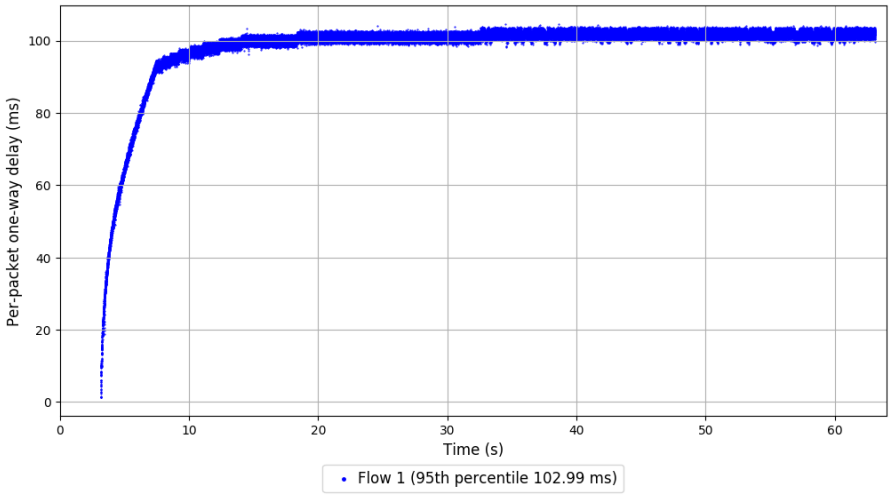
```
Run 3: Statistics of LEDBAT

Start at: 2019-06-28 19:03:26
End at: 2019-06-28 19:04:26

# Below is generated by plot.py at 2019-06-28 19:50:40
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 12.00 Mbit/s (100.0% utilization)
95th percentile per-packet one-way delay: 102.988 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 12.00 Mbit/s
95th percentile per-packet one-way delay: 102.988 ms
Loss rate: 0.16%
```

Run 3: Report of LEDBAT — Data Link



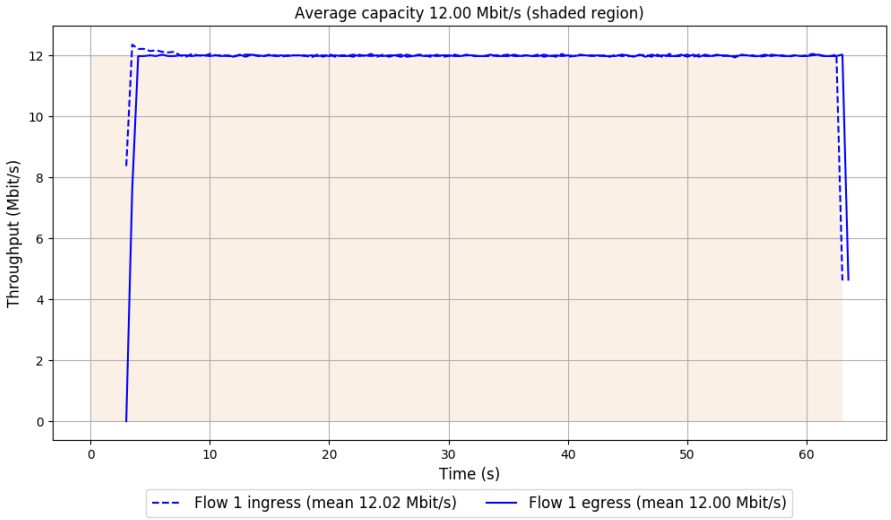


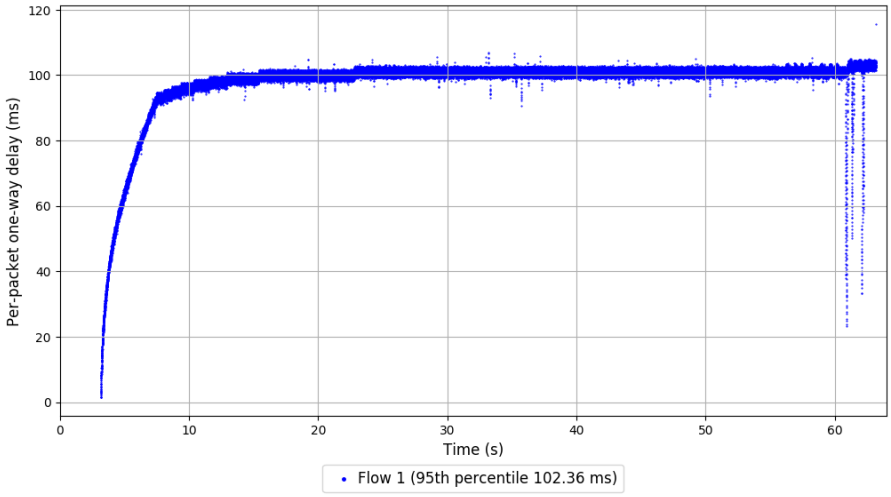
```
Run 4: Statistics of LEDBAT

Start at: 2019-06-28 19:23:54
End at: 2019-06-28 19:24:54

# Below is generated by plot.py at 2019-06-28 19:50:57
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 12.00 Mbit/s (100.0% utilization)
95th percentile per-packet one-way delay: 102.365 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 12.00 Mbit/s
95th percentile per-packet one-way delay: 102.365 ms
Loss rate: 0.17%
```

Run 4: Report of LEDBAT — Data Link



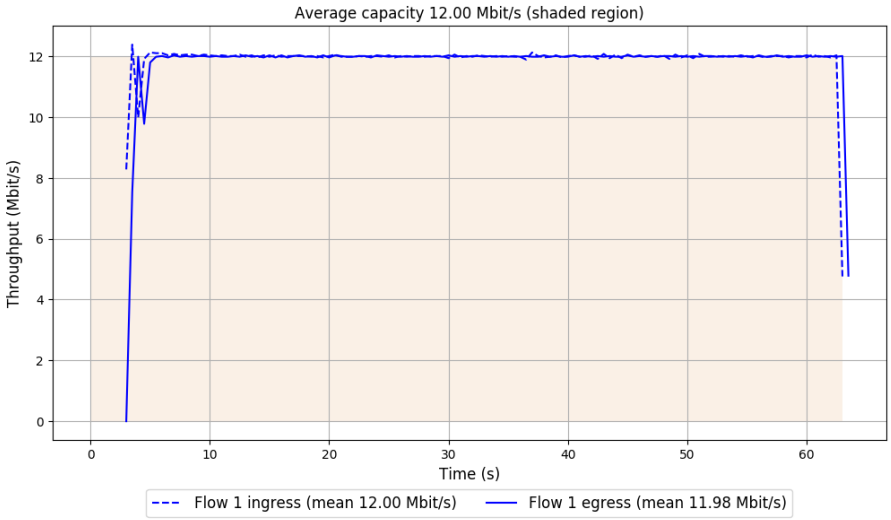


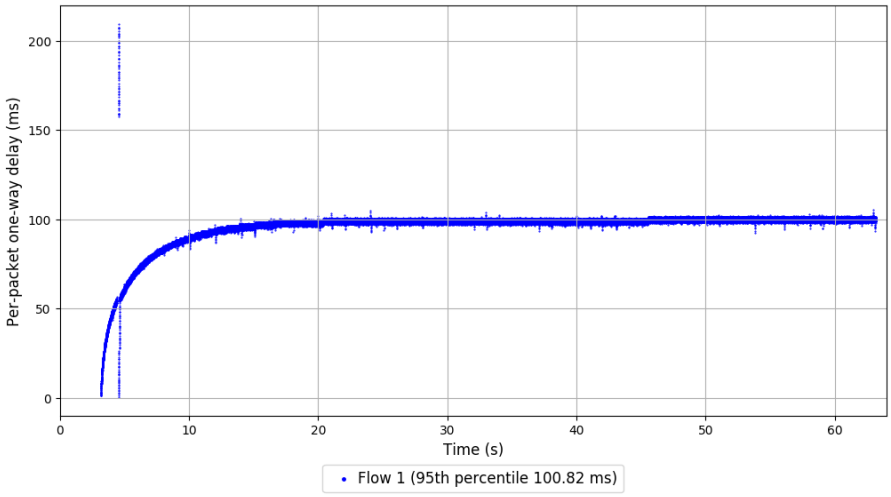
```
Run 5: Statistics of LEDBAT

Start at: 2019-06-28 19:44:22
End at: 2019-06-28 19:45:22

# Below is generated by plot.py at 2019-06-28 19:50:57
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 11.98 Mbit/s (99.8% utilization)
95th percentile per-packet one-way delay: 100.822 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 11.98 Mbit/s
95th percentile per-packet one-way delay: 100.822 ms
Loss rate: 0.17%
```

Run 5: Report of LEDBAT — Data Link



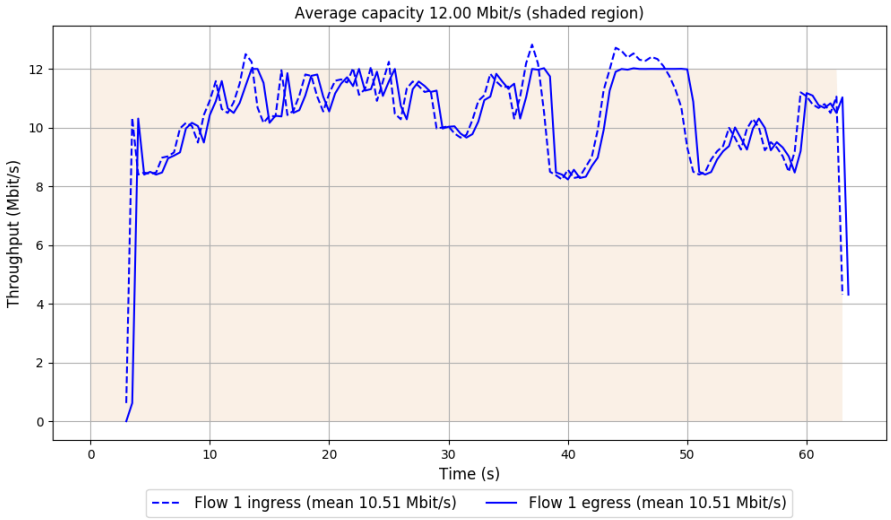


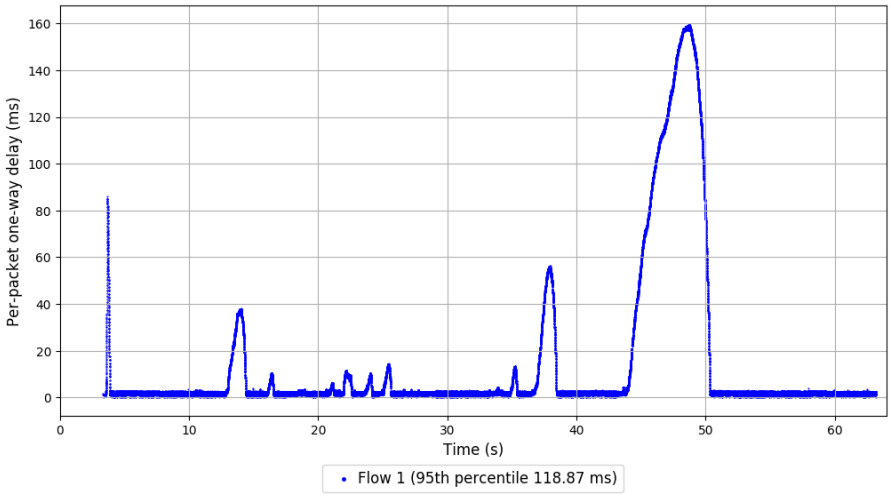
```
Run 1: Statistics of PCC-Allegro

Start at: 2019-06-28 18:20:22
End at: 2019-06-28 18:21:22

# Below is generated by plot.py at 2019-06-28 19:50:57
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 10.51 Mbit/s (87.6% utilization)
95th percentile per-packet one-way delay: 118.869 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 10.51 Mbit/s
95th percentile per-packet one-way delay: 118.869 ms
Loss rate: 0.00%
```

Run 1: Report of PCC-Allegro — Data Link



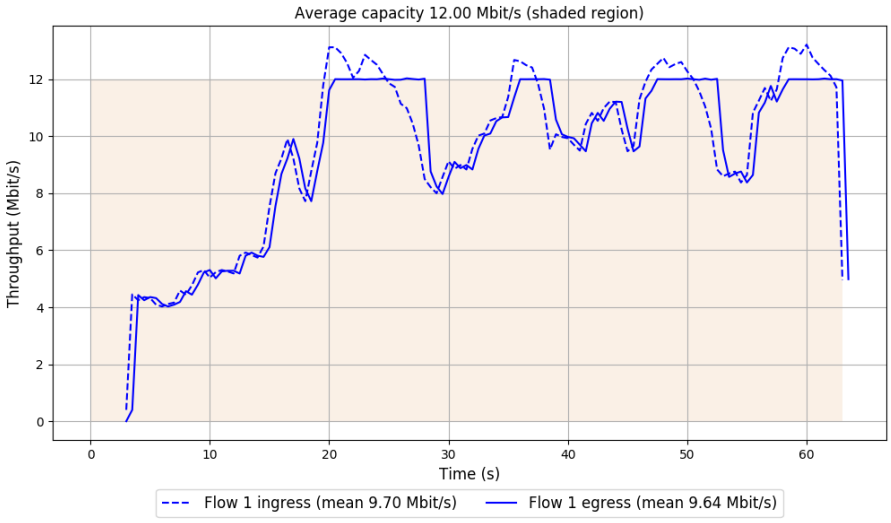


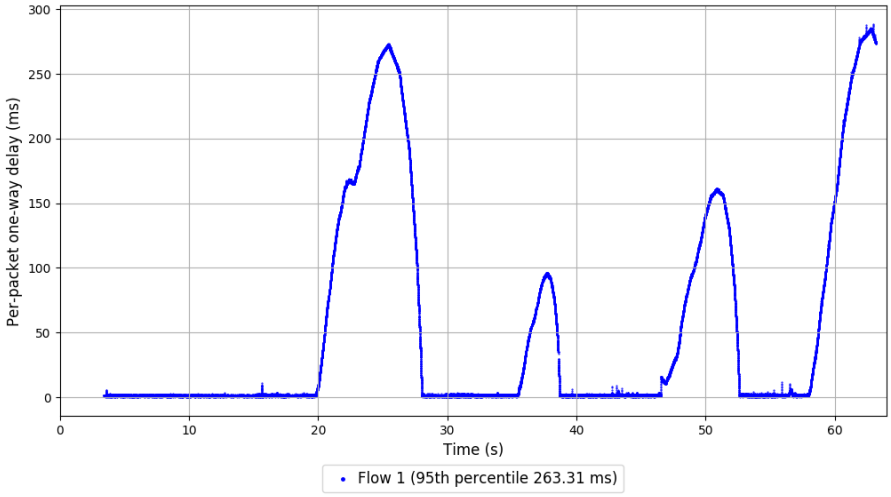
```
Run 2: Statistics of PCC-Allegro

Start at: 2019-06-28 18:40:50
End at: 2019-06-28 18:41:50

# Below is generated by plot.py at 2019-06-28 19:50:57
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 9.64 Mbit/s (80.4% utilization)
95th percentile per-packet one-way delay: 263.305 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 9.64 Mbit/s
95th percentile per-packet one-way delay: 263.305 ms
Loss rate: 0.56%
```

Run 2: Report of PCC-Allegro — Data Link



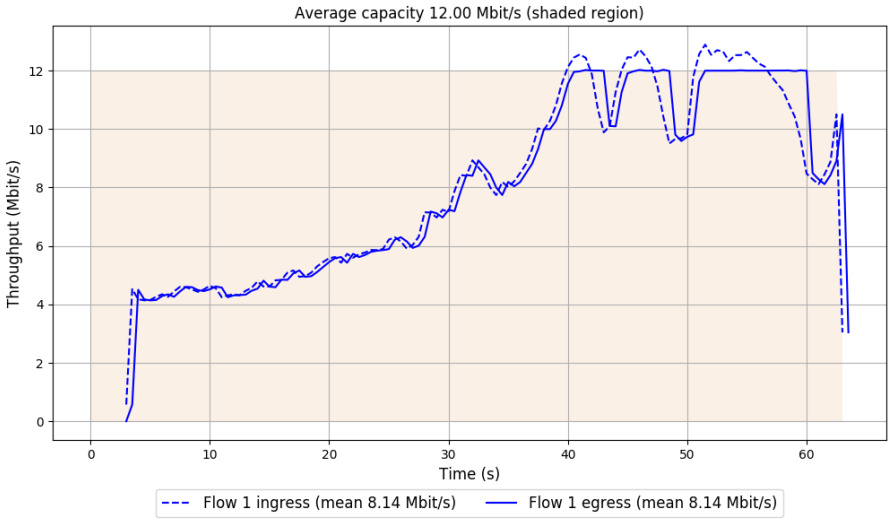


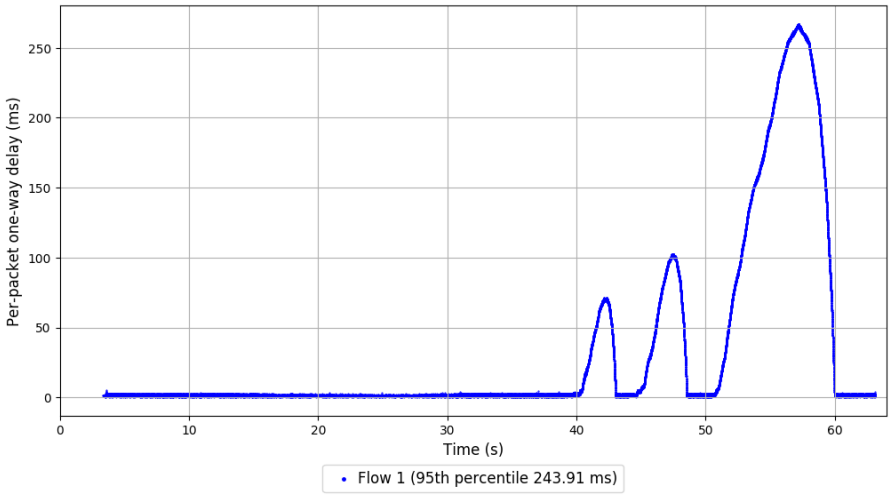
```
Run 3: Statistics of PCC-Allegro

Start at: 2019-06-28 19:01:18
End at: 2019-06-28 19:02:18

# Below is generated by plot.py at 2019-06-28 19:51:06
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 8.14 Mbit/s (67.8% utilization)
95th percentile per-packet one-way delay: 243.909 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 8.14 Mbit/s
95th percentile per-packet one-way delay: 243.909 ms
Loss rate: 0.00%
```

Run 3: Report of PCC-Allegro — Data Link



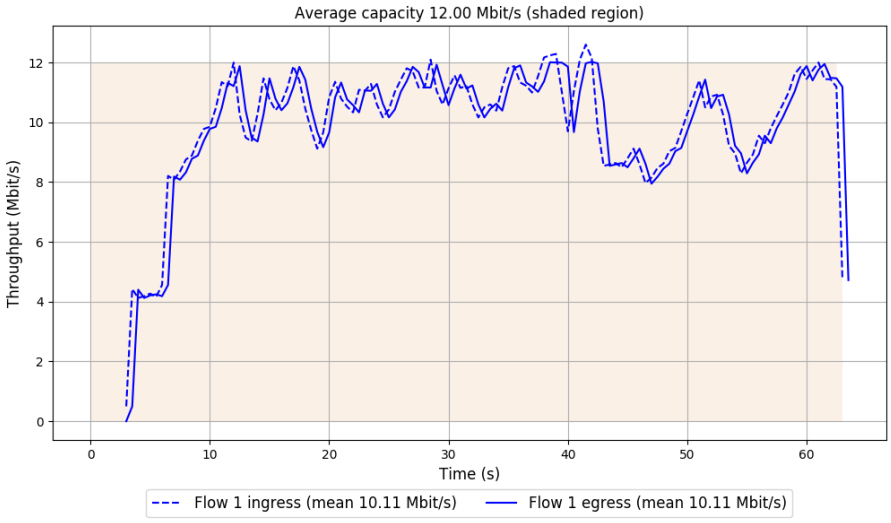


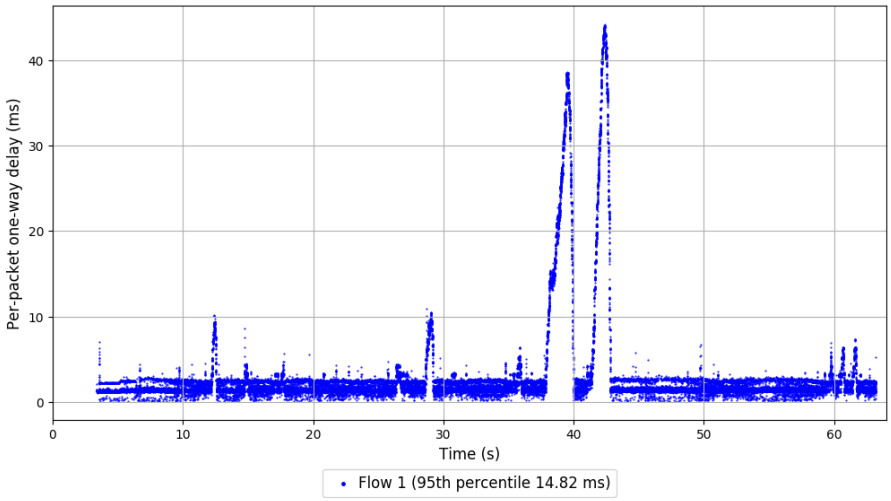
```
Run 4: Statistics of PCC-Allegro

Start at: 2019-06-28 19:21:45
End at: 2019-06-28 19:22:45

# Below is generated by plot.py at 2019-06-28 19:51:10
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 10.11 Mbit/s (84.3% utilization)
95th percentile per-packet one-way delay: 14.823 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 10.11 Mbit/s
95th percentile per-packet one-way delay: 14.823 ms
Loss rate: 0.00%
```

Run 4: Report of PCC-Allegro — Data Link



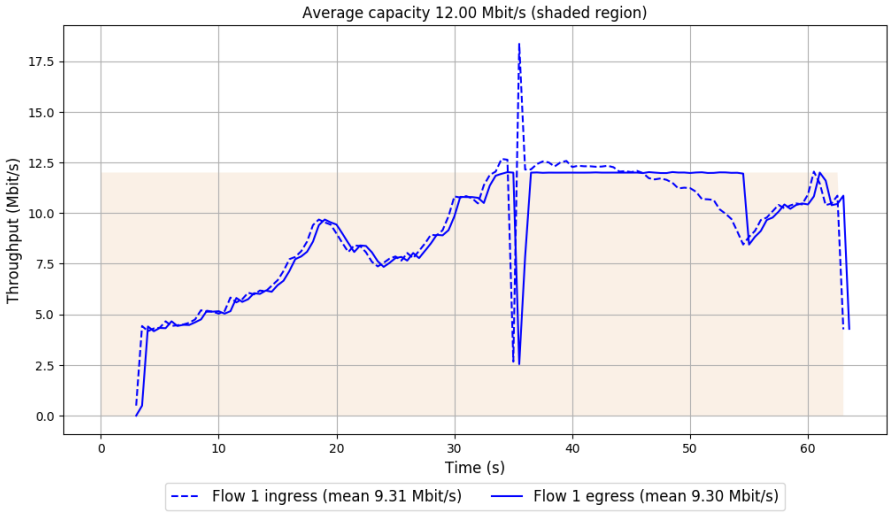


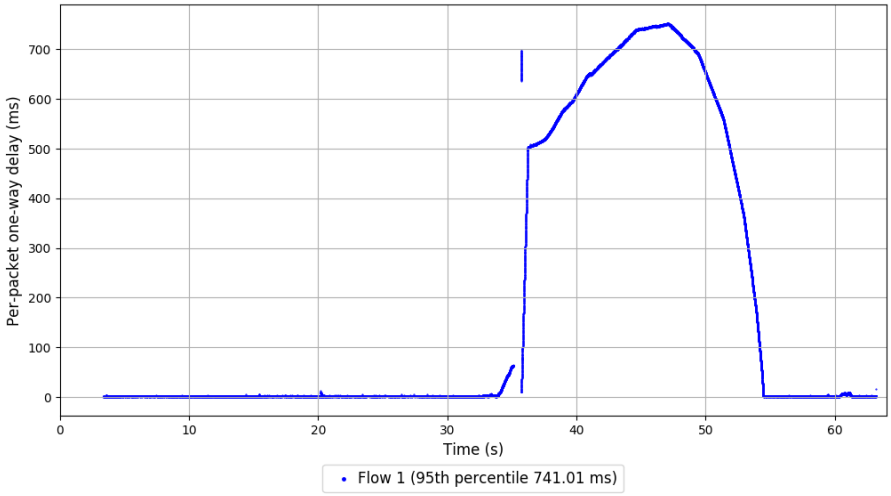
```
Run 5: Statistics of PCC-Allegro

Start at: 2019-06-28 19:42:13
End at: 2019-06-28 19:43:13

# Below is generated by plot.py at 2019-06-28 19:51:10
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 9.30 Mbit/s (77.5% utilization)
95th percentile per-packet one-way delay: 741.012 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 9.30 Mbit/s
95th percentile per-packet one-way delay: 741.012 ms
Loss rate: 0.00%
```

Run 5: Report of PCC-Allegro — Data Link



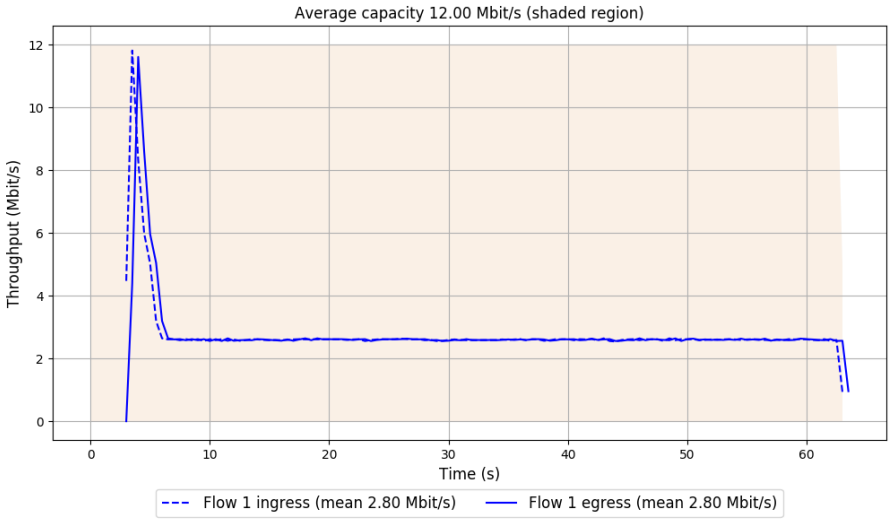


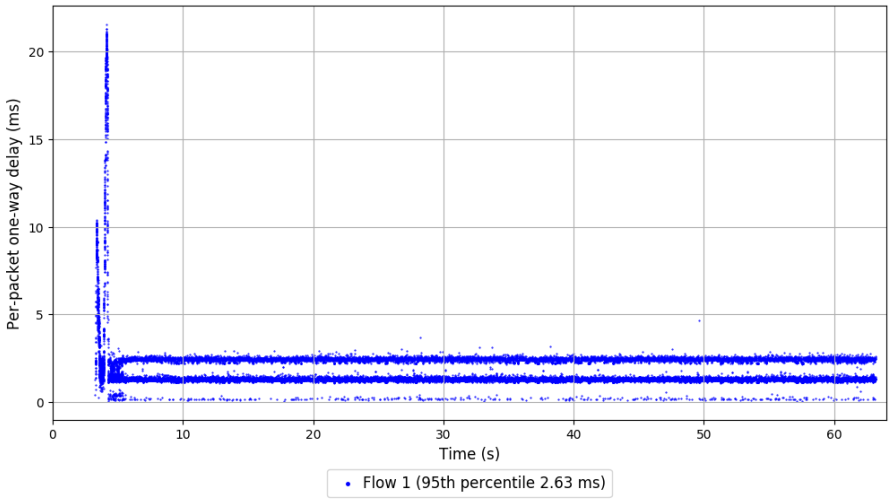
```
Run 1: Statistics of PCC-Expr

Start at: 2019-06-28 18:23:36
End at: 2019-06-28 18:24:36

# Below is generated by plot.py at 2019-06-28 19:51:10
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 2.80 Mbit/s (23.4% utilization)
95th percentile per-packet one-way delay: 2.630 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.80 Mbit/s
95th percentile per-packet one-way delay: 2.630 ms
Loss rate: 0.00%
```

Run 1: Report of PCC-Expr — Data Link



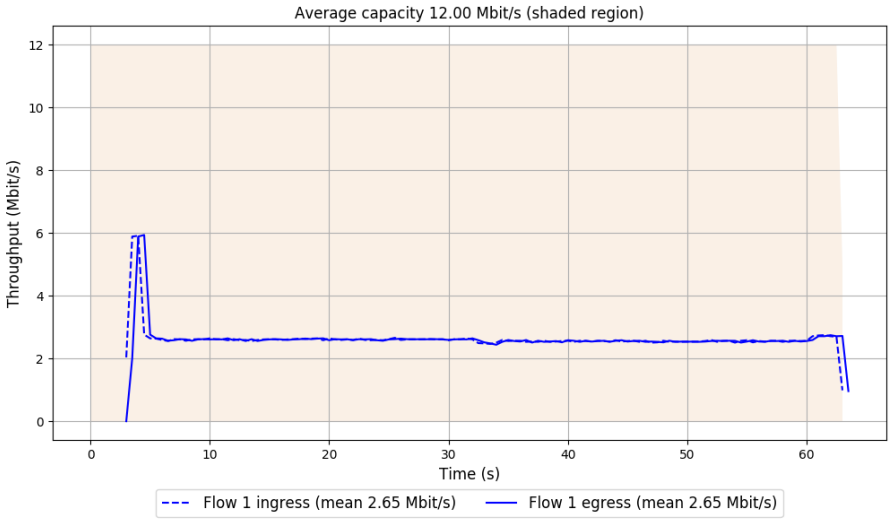


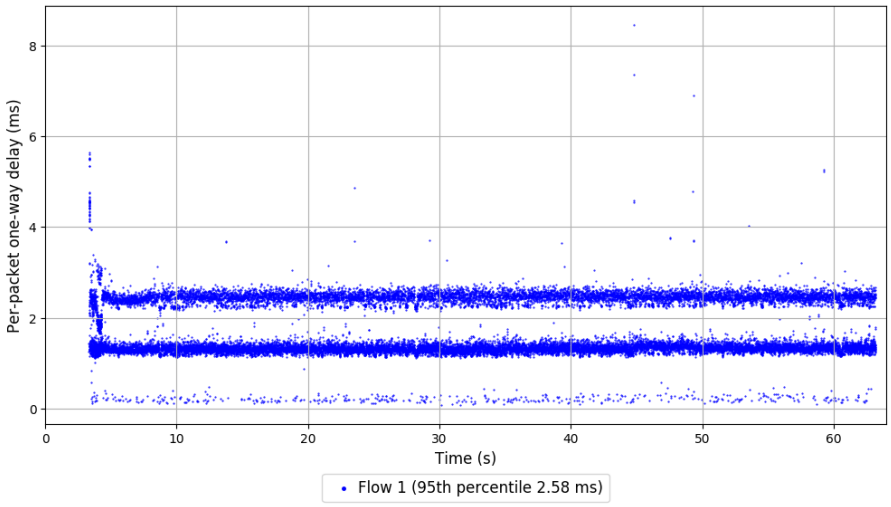
```
Run 2: Statistics of PCC-Expr

Start at: 2019-06-28 18:44:04
End at: 2019-06-28 18:45:04

# Below is generated by plot.py at 2019-06-28 19:51:20
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 2.65 Mbit/s (22.1% utilization)
95th percentile per-packet one-way delay: 2.577 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 2.65 Mbit/s
95th percentile per-packet one-way delay: 2.577 ms
Loss rate: 0.01%
```

Run 2: Report of PCC-Expr — Data Link



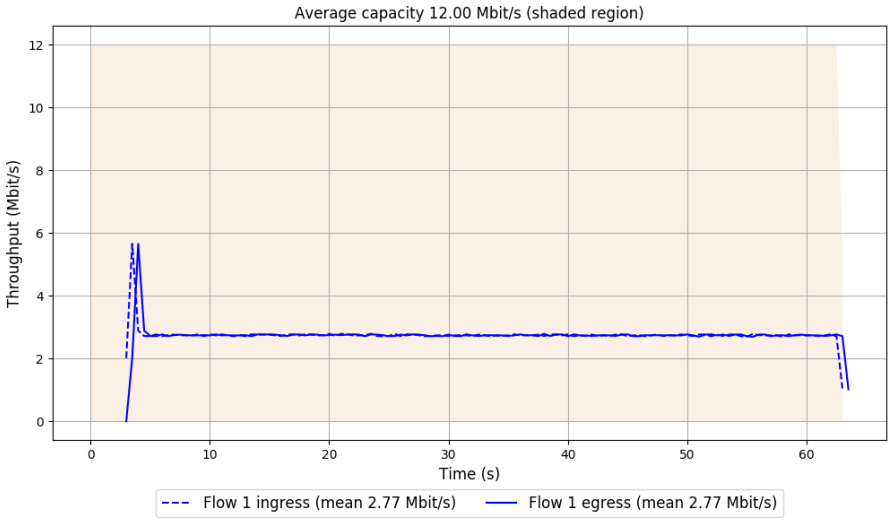


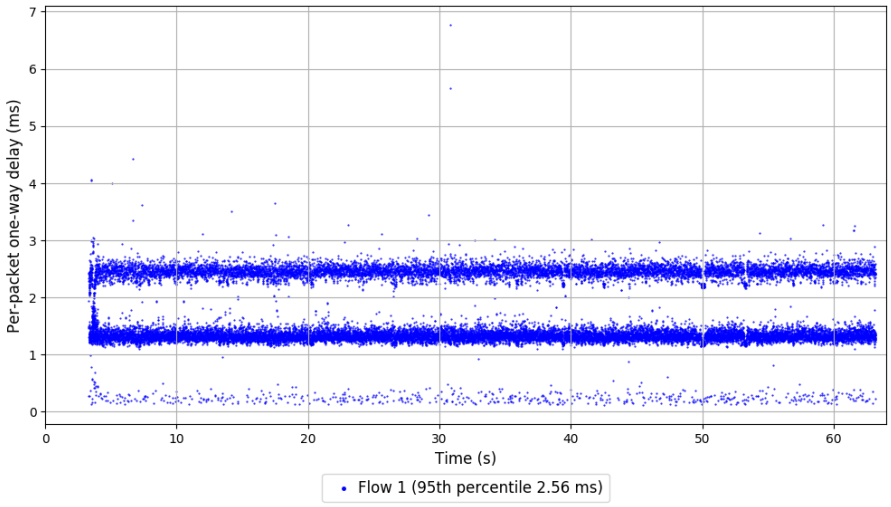
```
Run 3: Statistics of PCC-Expr

Start at: 2019-06-28 19:04:31
End at: 2019-06-28 19:05:31

# Below is generated by plot.py at 2019-06-28 19:51:20
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 2.77 Mbit/s (23.1% utilization)
95th percentile per-packet one-way delay: 2.558 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 2.77 Mbit/s
95th percentile per-packet one-way delay: 2.558 ms
Loss rate: 0.01%
```

Run 3: Report of PCC-Expr — Data Link



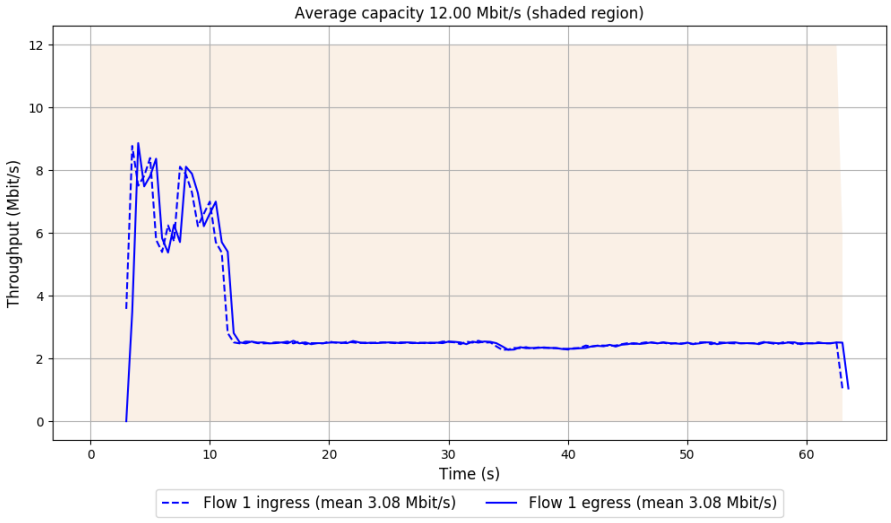


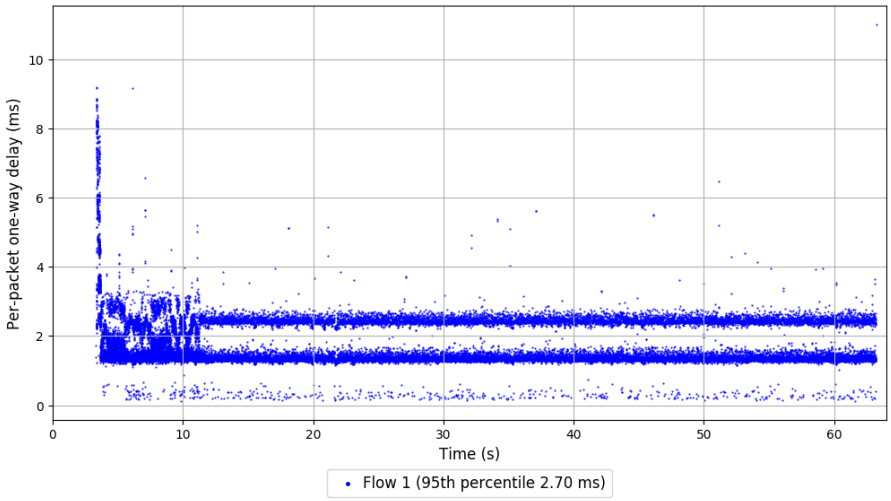
```
Run 4: Statistics of PCC-Expr

Start at: 2019-06-28 19:24:59
End at: 2019-06-28 19:25:59

# Below is generated by plot.py at 2019-06-28 19:51:20
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 3.08 Mbit/s (25.6% utilization)
95th percentile per-packet one-way delay: 2.699 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 3.08 Mbit/s
95th percentile per-packet one-way delay: 2.699 ms
Loss rate: 0.00%
```

Run 4: Report of PCC-Expr — Data Link



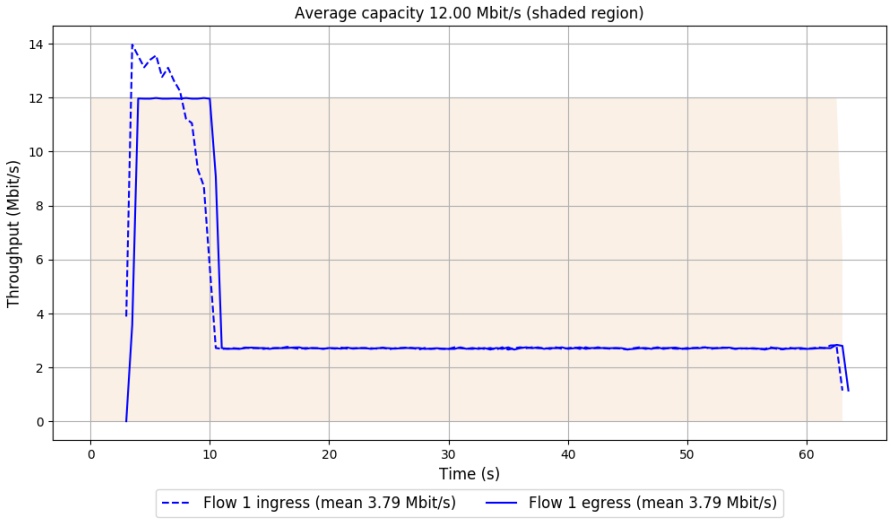


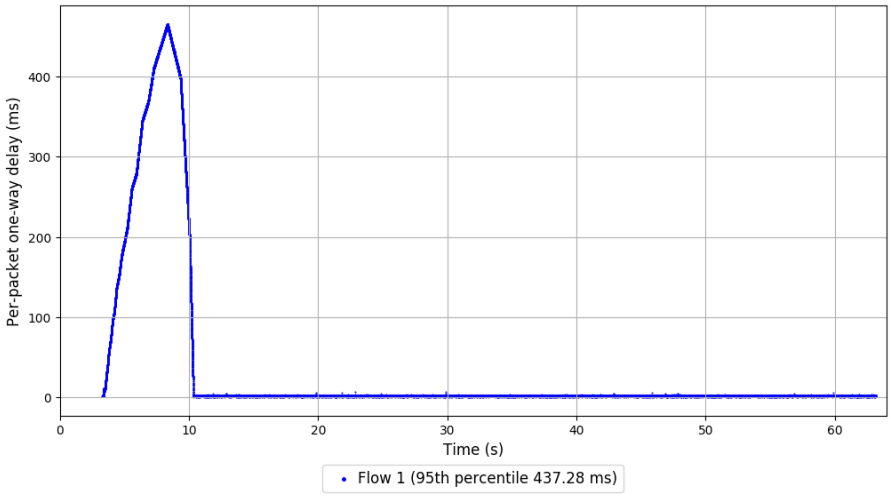
```
Run 5: Statistics of PCC-Expr

Start at: 2019-06-28 19:45:27
End at: 2019-06-28 19:46:27

# Below is generated by plot.py at 2019-06-28 19:51:21
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 3.79 Mbit/s (31.6% utilization)
95th percentile per-packet one-way delay: 437.277 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 3.79 Mbit/s
95th percentile per-packet one-way delay: 437.277 ms
Loss rate: 0.01%
```

Run 5: Report of PCC-Expr — Data Link



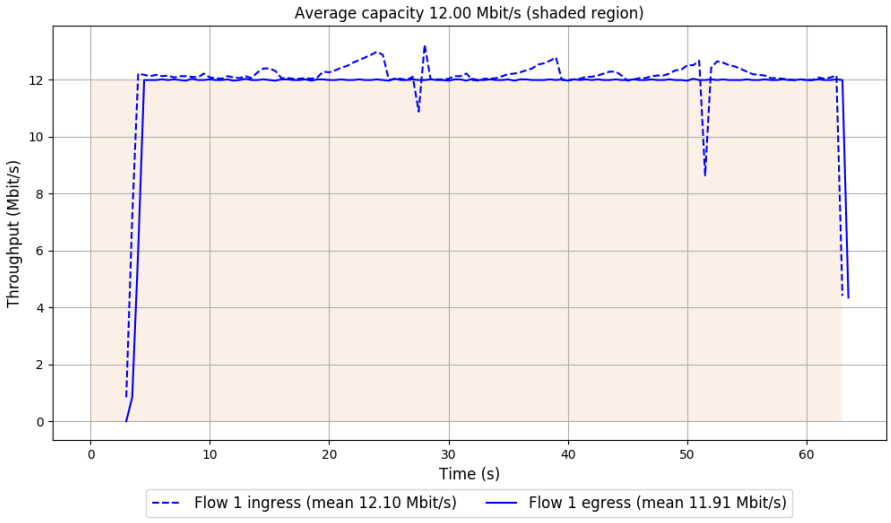


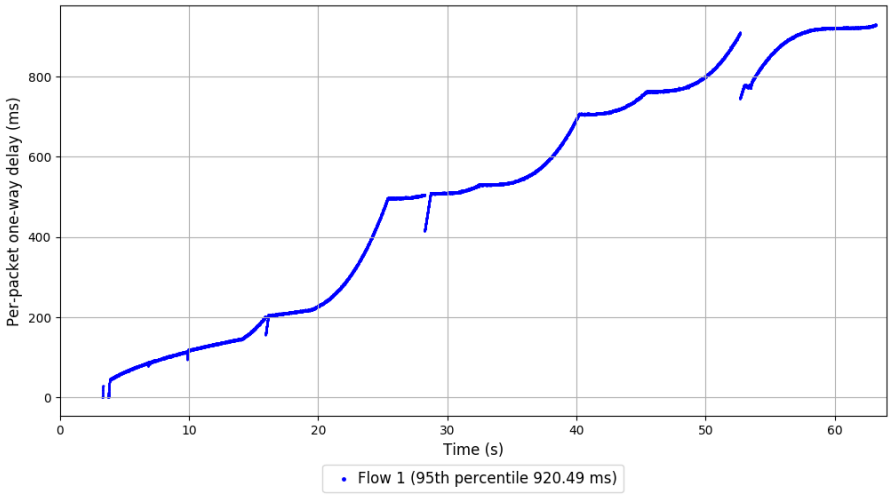
```
Run 1: Statistics of QUIC Cubic

Start at: 2019-06-28 18:19:17
End at: 2019-06-28 18:20:17

# Below is generated by plot.py at 2019-06-28 19:51:31
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 11.91 Mbit/s (99.3% utilization)
95th percentile per-packet one-way delay: 920.494 ms
Loss rate: 1.55%
-- Flow 1:
Average throughput: 11.91 Mbit/s
95th percentile per-packet one-way delay: 920.494 ms
Loss rate: 1.55%
```

Run 1: Report of QUIC Cubic — Data Link



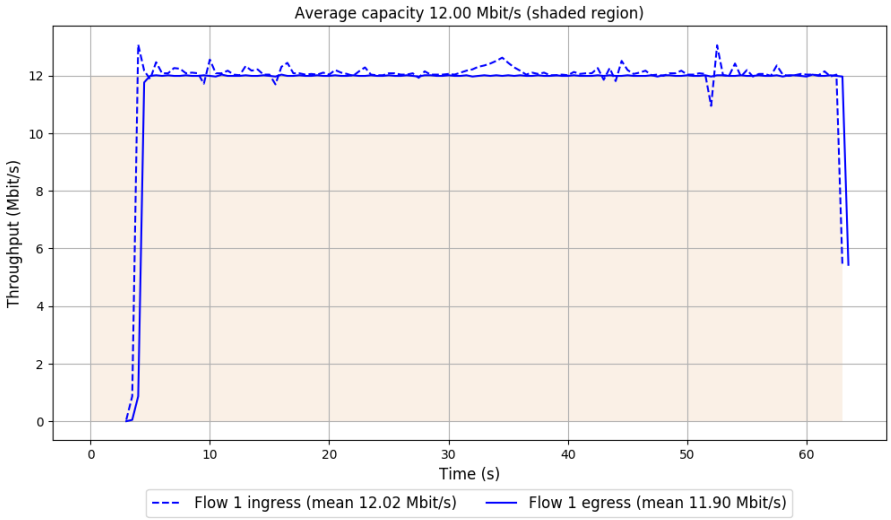


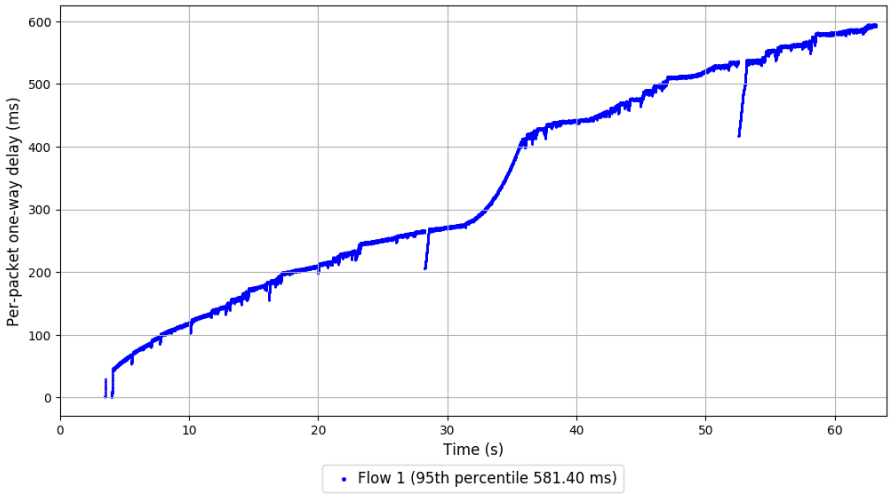
```
Run 2: Statistics of QUIC Cubic

Start at: 2019-06-28 18:39:44
End at: 2019-06-28 18:40:44

# Below is generated by plot.py at 2019-06-28 19:51:34
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 11.90 Mbit/s (99.1% utilization)
95th percentile per-packet one-way delay: 581.403 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 11.90 Mbit/s
95th percentile per-packet one-way delay: 581.403 ms
Loss rate: 0.99%
```

Run 2: Report of QUIC Cubic — Data Link



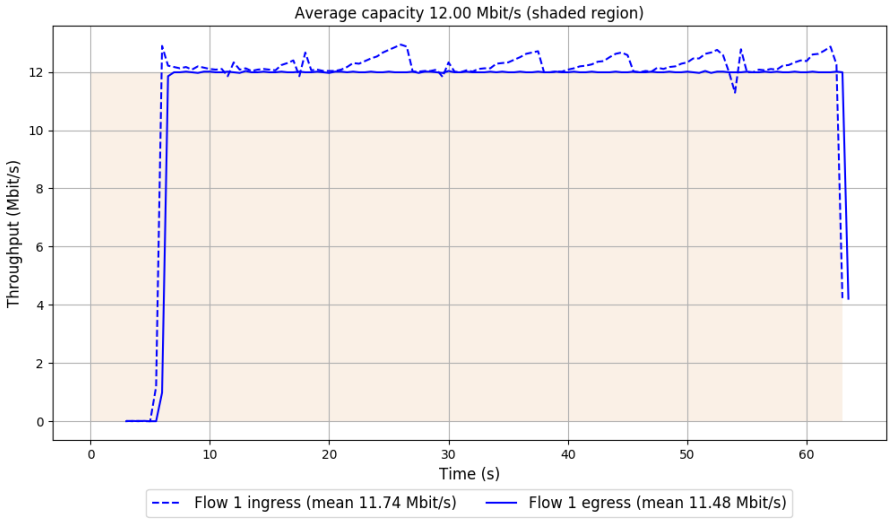


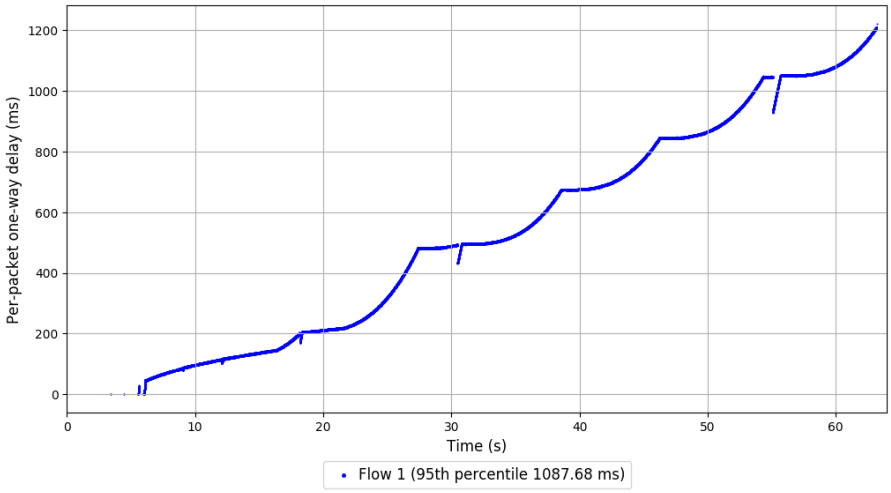
```
Run 3: Statistics of QUIC Cubic

Start at: 2019-06-28 19:00:13
End at: 2019-06-28 19:01:13

# Below is generated by plot.py at 2019-06-28 19:51:38
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 11.48 Mbit/s (95.7% utilization)
95th percentile per-packet one-way delay: 1087.683 ms
Loss rate: 2.15%
-- Flow 1:
Average throughput: 11.48 Mbit/s
95th percentile per-packet one-way delay: 1087.683 ms
Loss rate: 2.15%
```

Run 3: Report of QUIC Cubic — Data Link



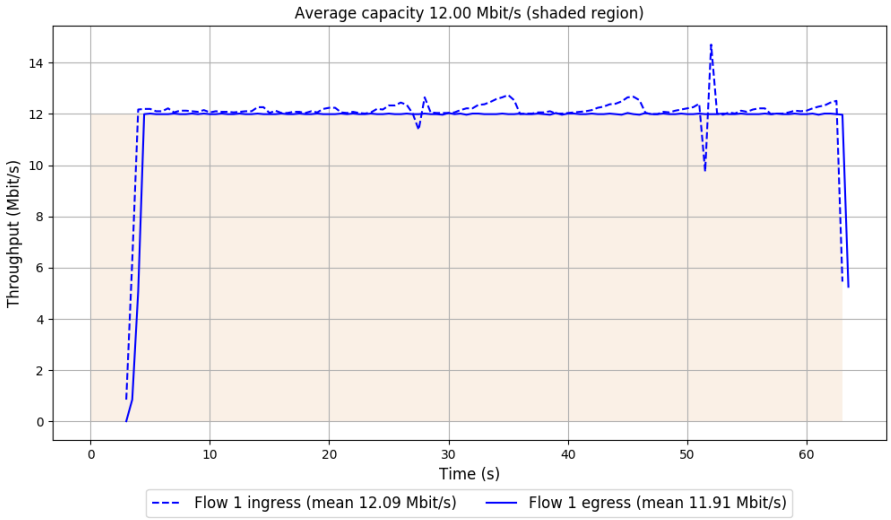


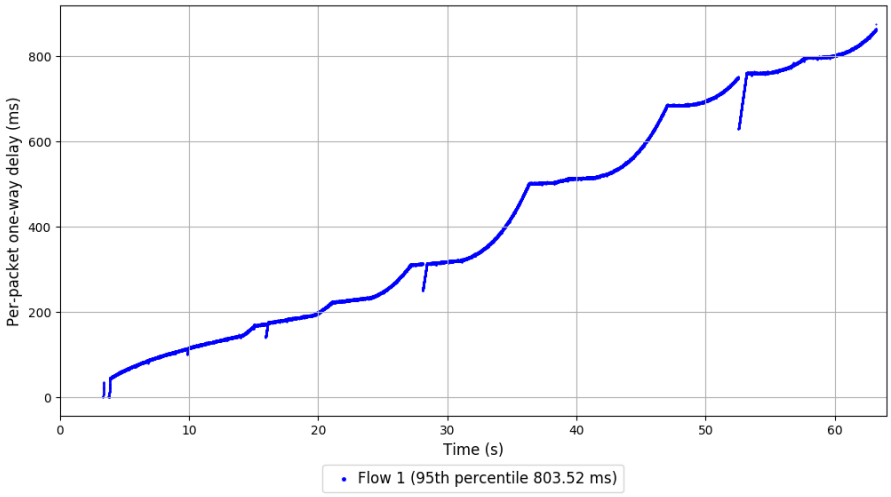
```
Run 4: Statistics of QUIC Cubic

Start at: 2019-06-28 19:20:40
End at: 2019-06-28 19:21:40

# Below is generated by plot.py at 2019-06-28 19:51:38
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 11.91 Mbit/s (99.2% utilization)
95th percentile per-packet one-way delay: 803.522 ms
Loss rate: 1.49%
-- Flow 1:
Average throughput: 11.91 Mbit/s
95th percentile per-packet one-way delay: 803.522 ms
Loss rate: 1.49%
```

Run 4: Report of QUIC Cubic — Data Link



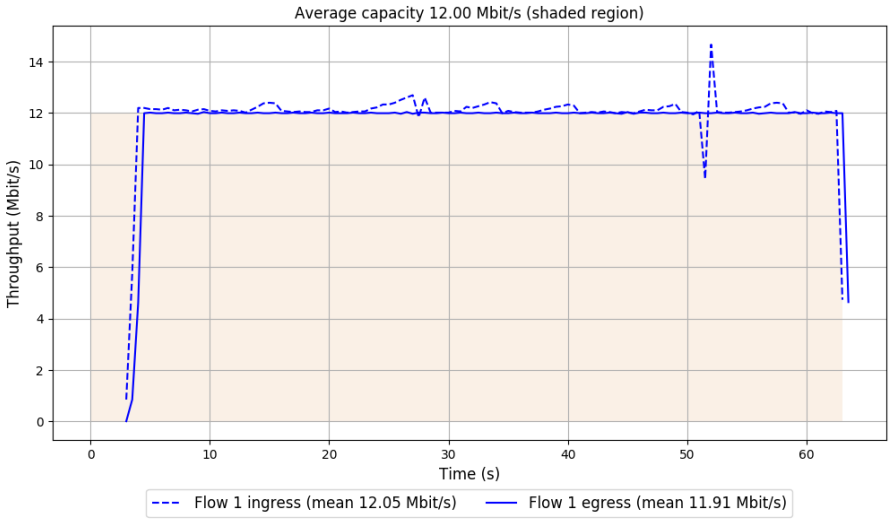


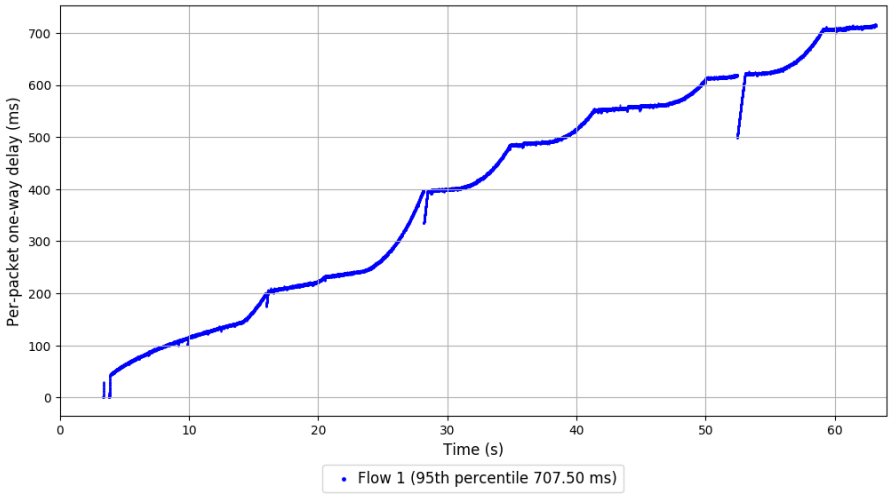
```
Run 5: Statistics of QUIC Cubic

Start at: 2019-06-28 19:41:08
End at: 2019-06-28 19:42:08

# Below is generated by plot.py at 2019-06-28 19:51:51
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 11.91 Mbit/s (99.2% utilization)
95th percentile per-packet one-way delay: 707.503 ms
Loss rate: 1.20%
-- Flow 1:
Average throughput: 11.91 Mbit/s
95th percentile per-packet one-way delay: 707.503 ms
Loss rate: 1.20%
```

Run 5: Report of QUIC Cubic — Data Link



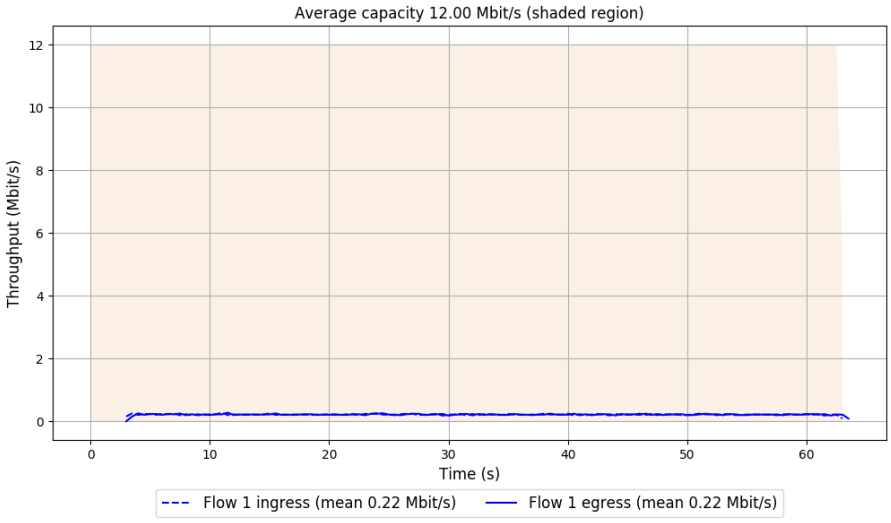


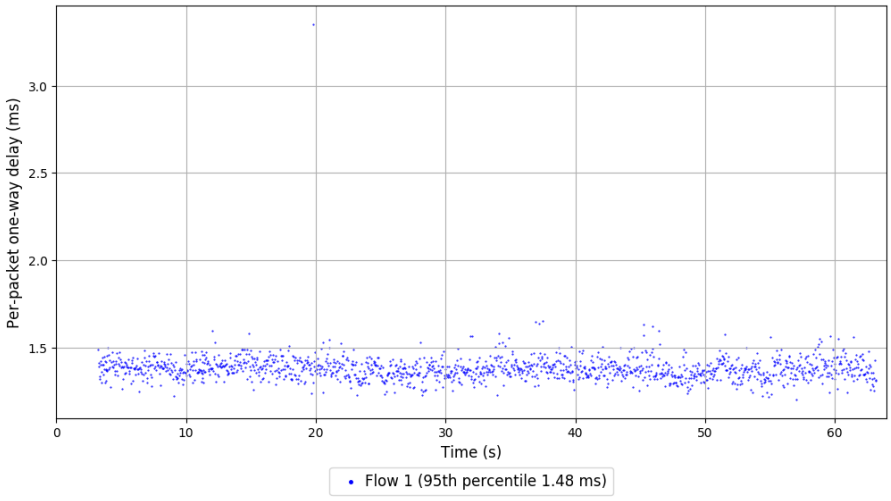
```
Run 1: Statistics of SCReAM

Start at: 2019-06-28 18:18:13
End at: 2019-06-28 18:19:14

# Below is generated by plot.py at 2019-06-28 19:51:51
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 0.22 Mbit/s (1.8% utilization)
95th percentile per-packet one-way delay: 1.475 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.475 ms
Loss rate: 0.00%
```

Run 1: Report of SCReAM — Data Link



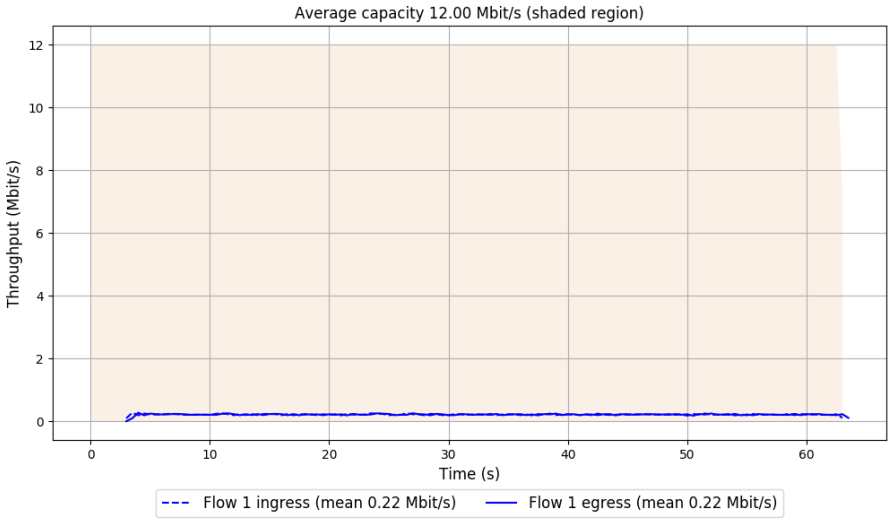


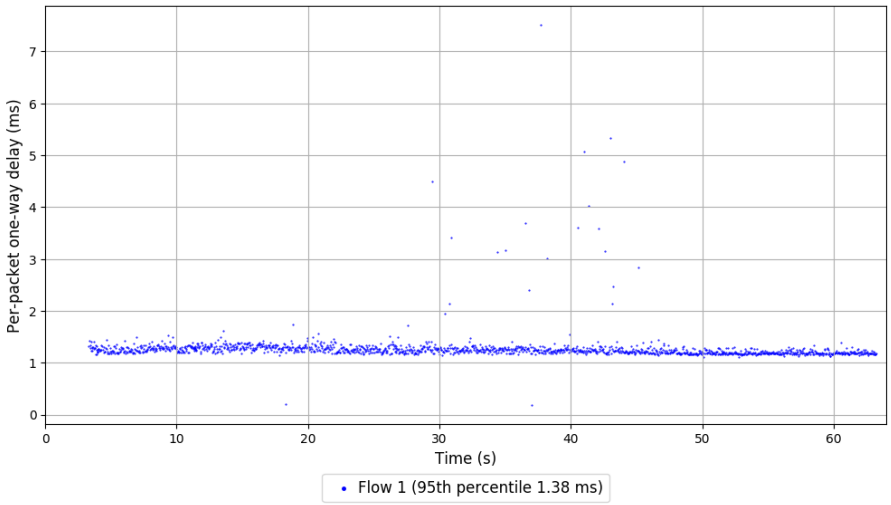
```
Run 2: Statistics of SCReAM

Start at: 2019-06-28 18:38:40
End at: 2019-06-28 18:39:40

# Below is generated by plot.py at 2019-06-28 19:51:51
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 0.22 Mbit/s (1.8% utilization)
95th percentile per-packet one-way delay: 1.379 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.379 ms
Loss rate: 0.00%
```

Run 2: Report of SCReAM — Data Link



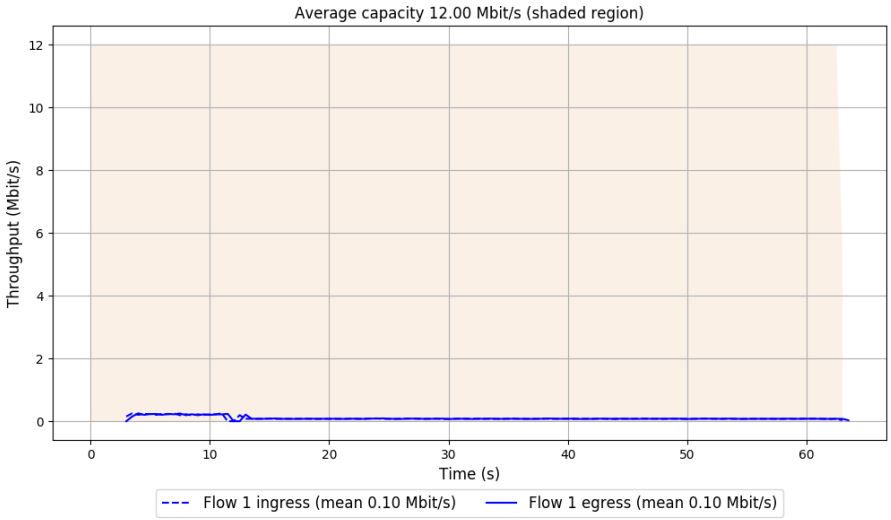


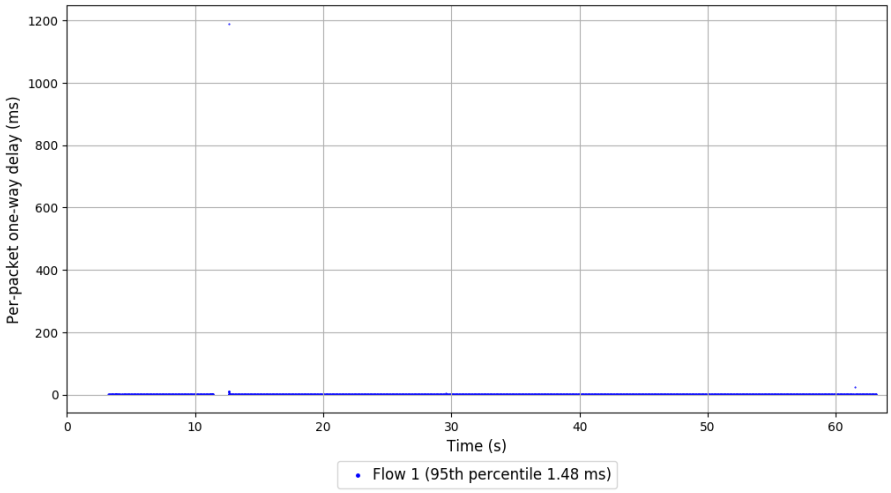
```
Run 3: Statistics of SCReAM

Start at: 2019-06-28 18:59:09
End at: 2019-06-28 19:00:09

# Below is generated by plot.py at 2019-06-28 19:51:51
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 0.10 Mbit/s (0.8% utilization)
95th percentile per-packet one-way delay: 1.478 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 1.478 ms
Loss rate: 0.00%
```

Run 3: Report of SCReAM — Data Link



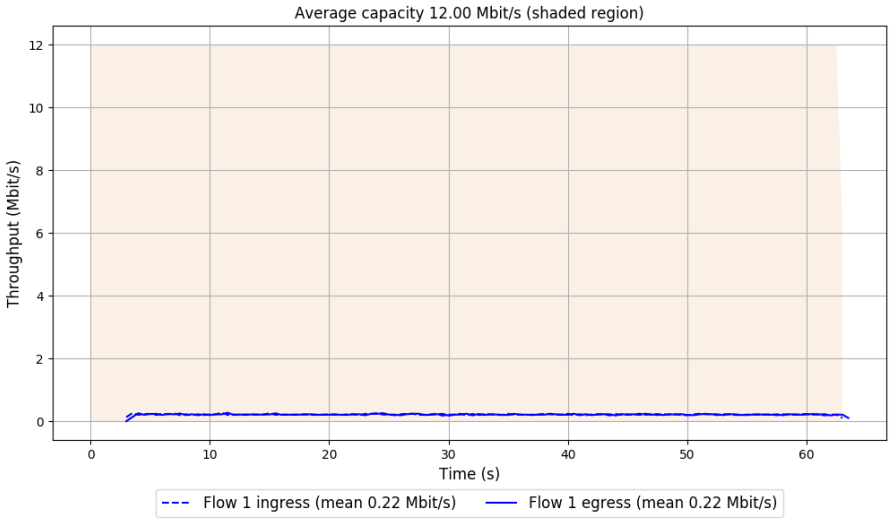


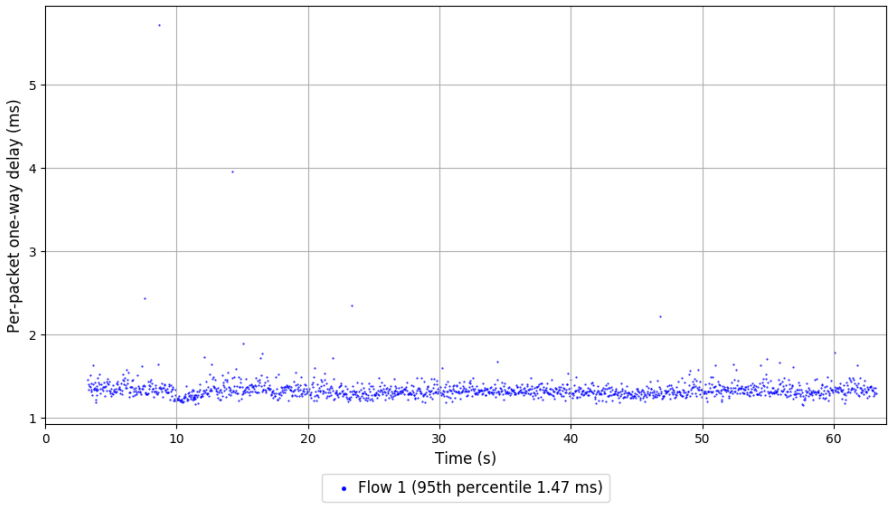
```
Run 4: Statistics of SCReAM

Start at: 2019-06-28 19:19:36
End at: 2019-06-28 19:20:36

# Below is generated by plot.py at 2019-06-28 19:51:51
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 0.22 Mbit/s (1.8% utilization)
95th percentile per-packet one-way delay: 1.470 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1.470 ms
Loss rate: 0.00%
```

Run 4: Report of SCReAM — Data Link



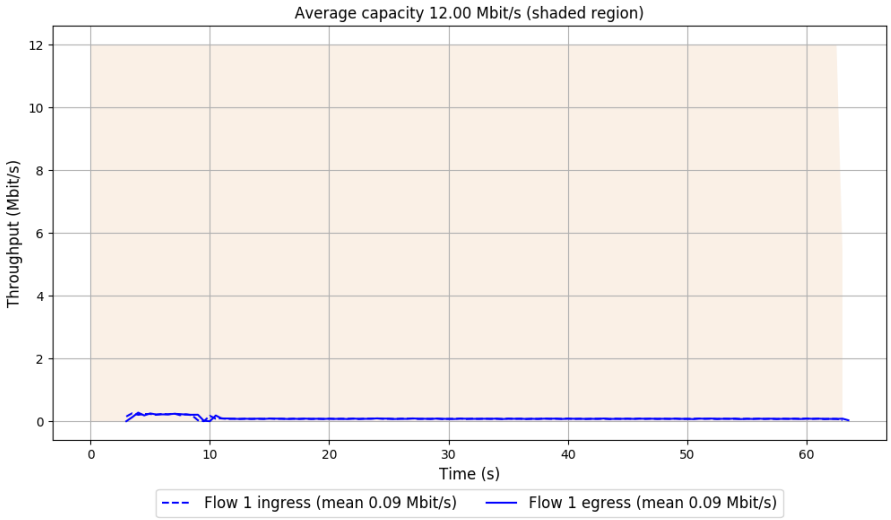


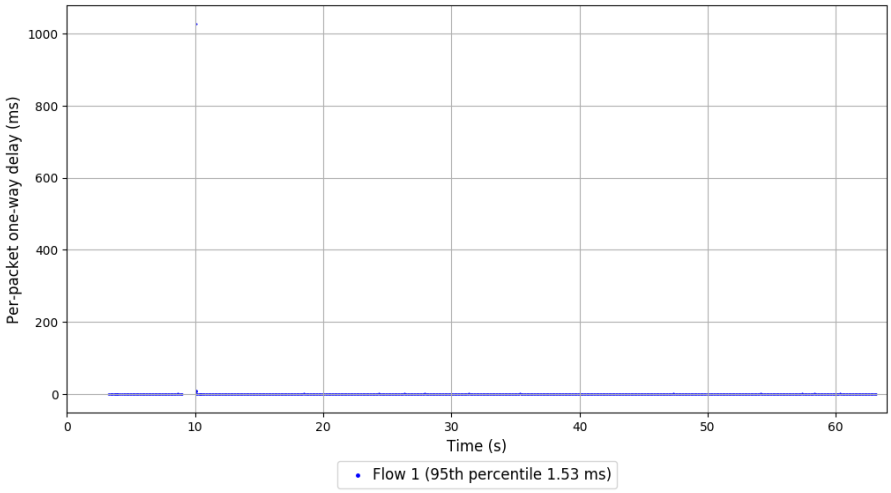
```
Run 5: Statistics of SCReAM

Start at: 2019-06-28 19:40:04
End at: 2019-06-28 19:41:04

# Below is generated by plot.py at 2019-06-28 19:51:51
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 0.09 Mbit/s (0.8% utilization)
95th percentile per-packet one-way delay: 1.530 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 1.530 ms
Loss rate: 0.00%
```

Run 5: Report of SCReAM — Data Link



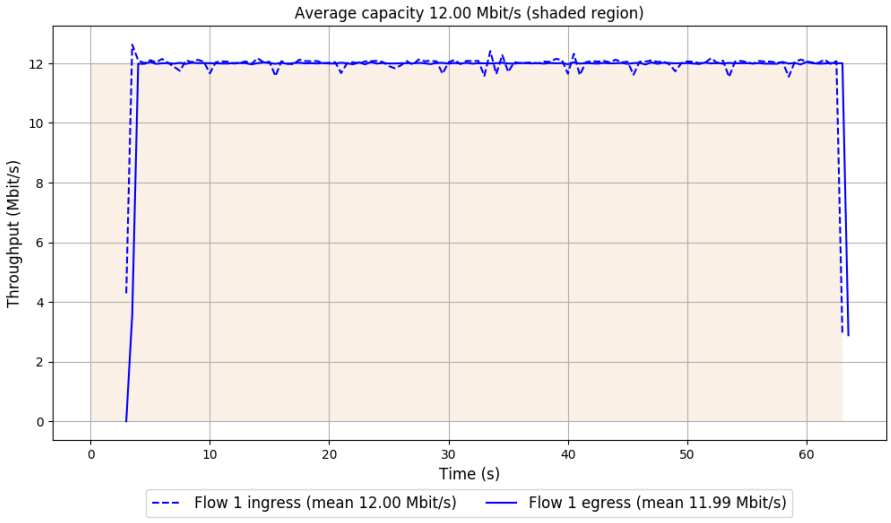


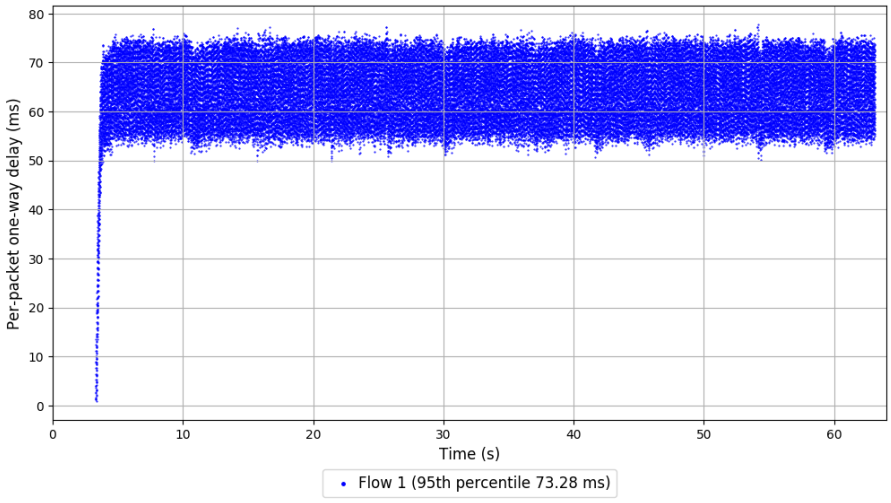
```
Run 1: Statistics of Sprout

Start at: 2019-06-28 18:10:43
End at: 2019-06-28 18:11:43

# Below is generated by plot.py at 2019-06-28 19:51:58
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 11.99 Mbit/s (99.9% utilization)
95th percentile per-packet one-way delay: 73.283 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 11.99 Mbit/s
95th percentile per-packet one-way delay: 73.283 ms
Loss rate: 0.12%
```

Run 1: Report of Sprout — Data Link



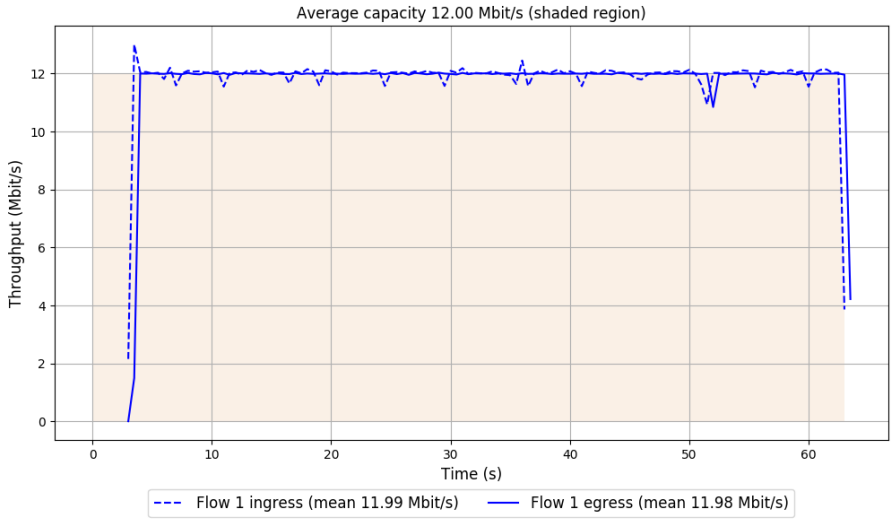


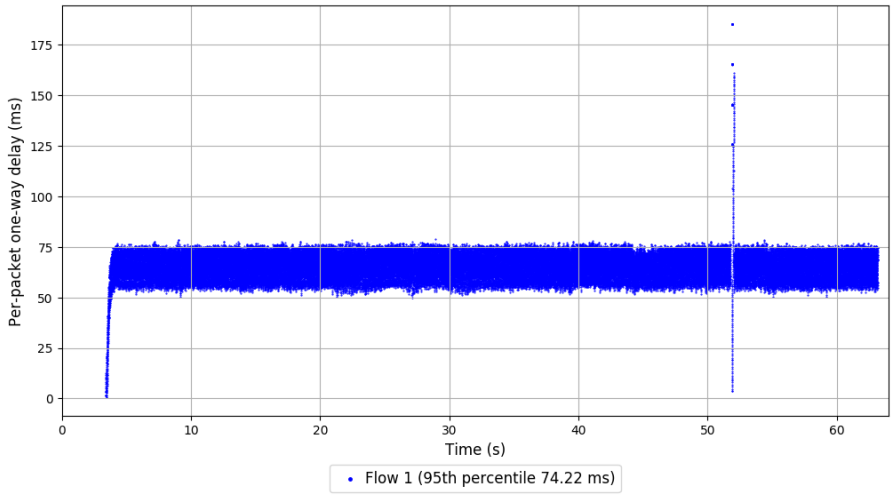
```
Run 2: Statistics of Sprout

Start at: 2019-06-28 18:31:10
End at: 2019-06-28 18:32:10

# Below is generated by plot.py at 2019-06-28 19:51:58
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 11.98 Mbit/s (99.8% utilization)
95th percentile per-packet one-way delay: 74.217 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 11.98 Mbit/s
95th percentile per-packet one-way delay: 74.217 ms
Loss rate: 0.10%
```

Run 2: Report of Sprout — Data Link



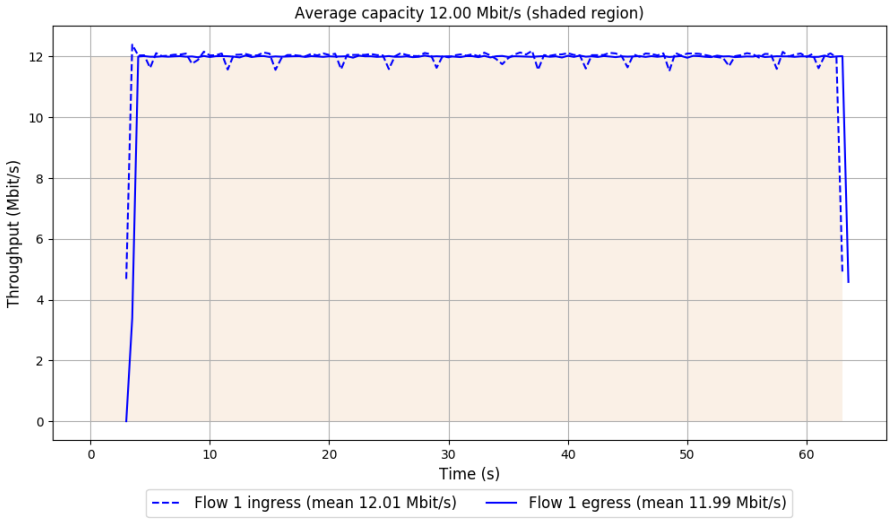


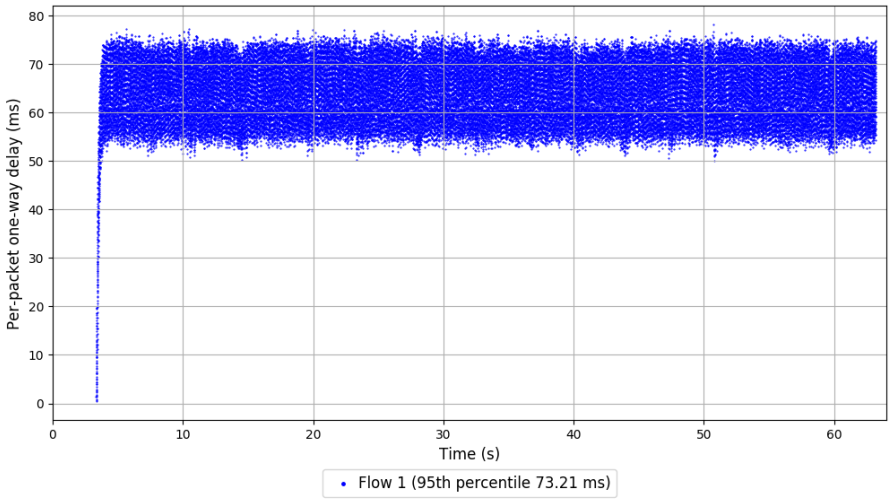
```
Run 3: Statistics of Sprout

Start at: 2019-06-28 18:51:39
End at: 2019-06-28 18:52:39

# Below is generated by plot.py at 2019-06-28 19:52:05
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 11.99 Mbit/s (99.9% utilization)
95th percentile per-packet one-way delay: 73.212 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 11.99 Mbit/s
95th percentile per-packet one-way delay: 73.212 ms
Loss rate: 0.12%
```

Run 3: Report of Sprout — Data Link



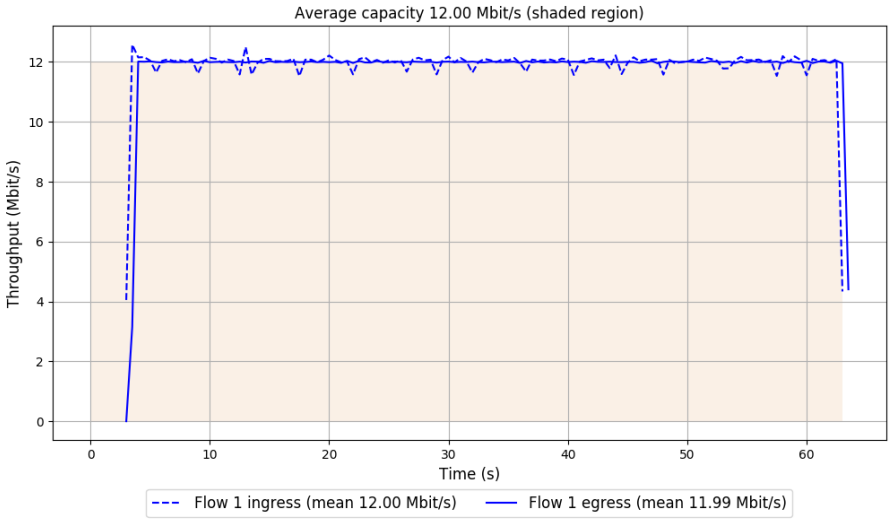


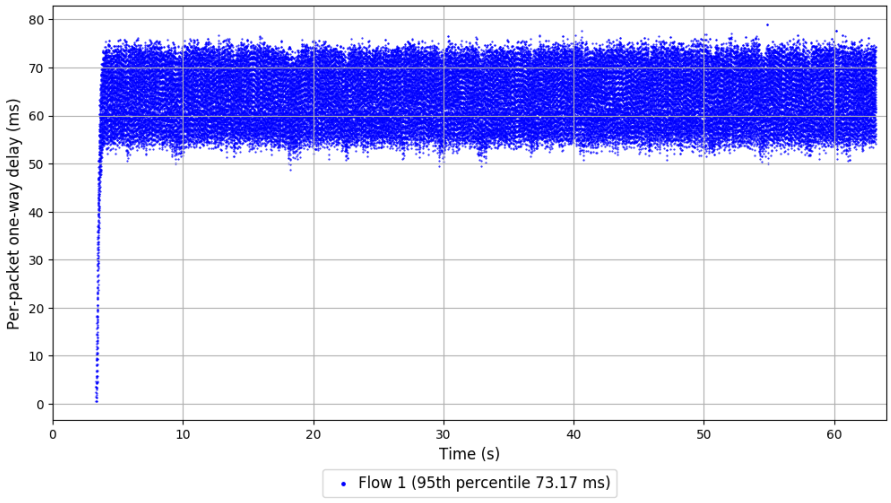
```
Run 4: Statistics of Sprout

Start at: 2019-06-28 19:12:06
End at: 2019-06-28 19:13:06

# Below is generated by plot.py at 2019-06-28 19:52:08
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 11.99 Mbit/s (99.9% utilization)
95th percentile per-packet one-way delay: 73.174 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 11.99 Mbit/s
95th percentile per-packet one-way delay: 73.174 ms
Loss rate: 0.11%
```

Run 4: Report of Sprout — Data Link



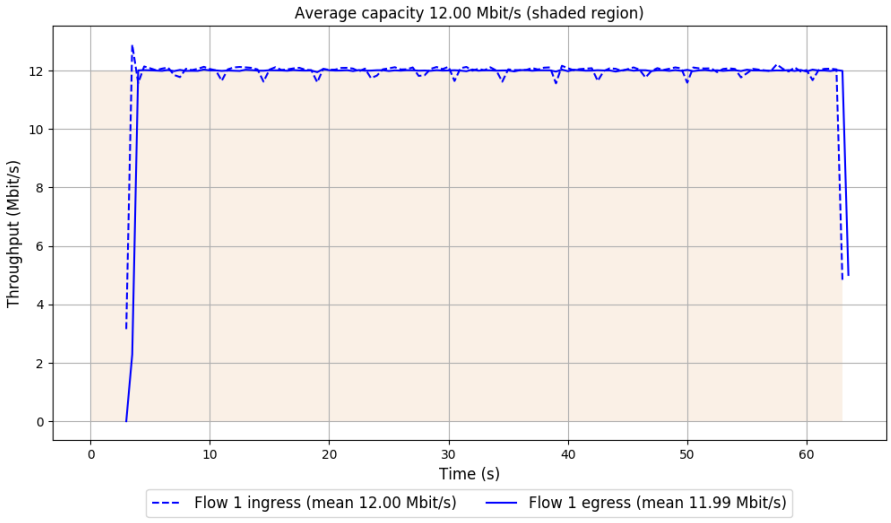


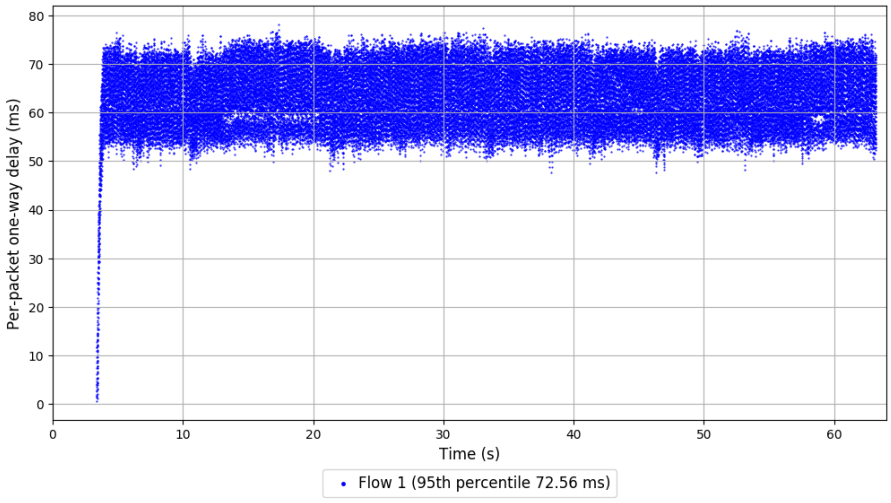
```
Run 5: Statistics of Sprout

Start at: 2019-06-28 19:32:34
End at: 2019-06-28 19:33:34

# Below is generated by plot.py at 2019-06-28 19:52:16
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 11.99 Mbit/s (99.9% utilization)
95th percentile per-packet one-way delay: 72.565 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 11.99 Mbit/s
95th percentile per-packet one-way delay: 72.565 ms
Loss rate: 0.10%
```

Run 5: Report of Sprout — Data Link



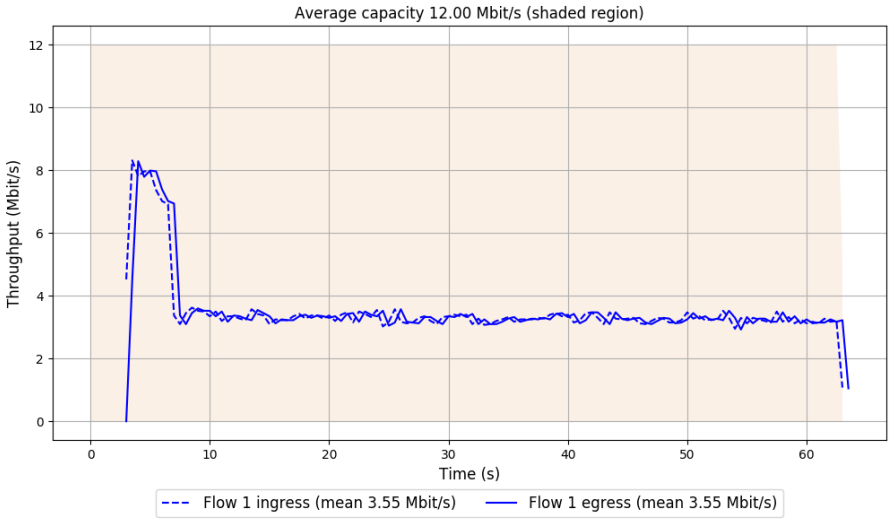


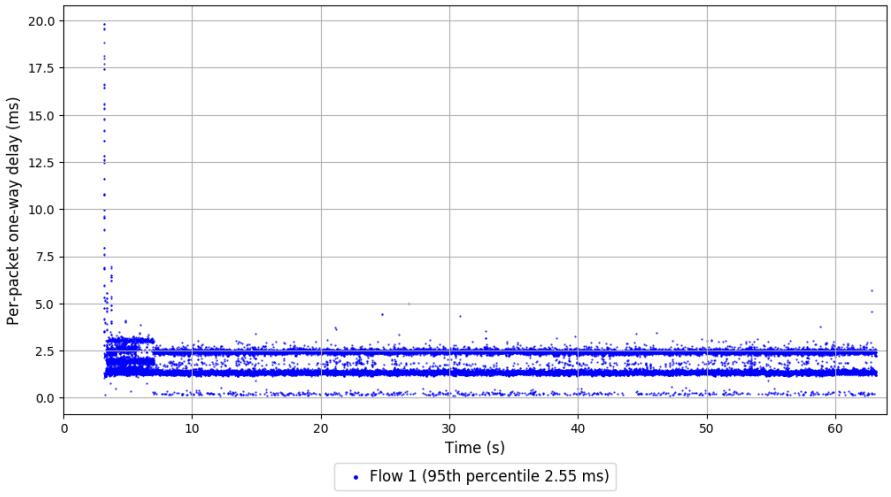
```
Run 1: Statistics of TaoVA-100x

Start at: 2019-06-28 18:16:04
End at: 2019-06-28 18:17:04

# Below is generated by plot.py at 2019-06-28 19:52:16
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 3.55 Mbit/s (29.6% utilization)
95th percentile per-packet one-way delay: 2.550 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 3.55 Mbit/s
95th percentile per-packet one-way delay: 2.550 ms
Loss rate: 0.01%
```

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



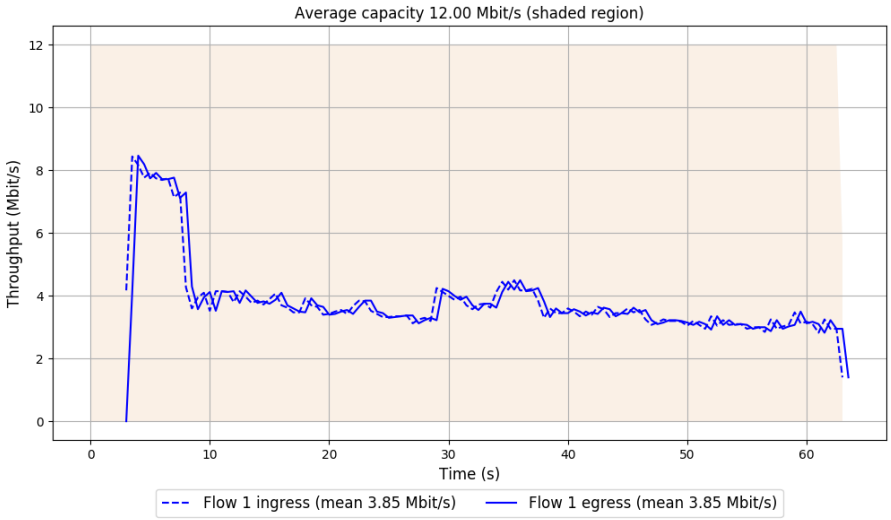


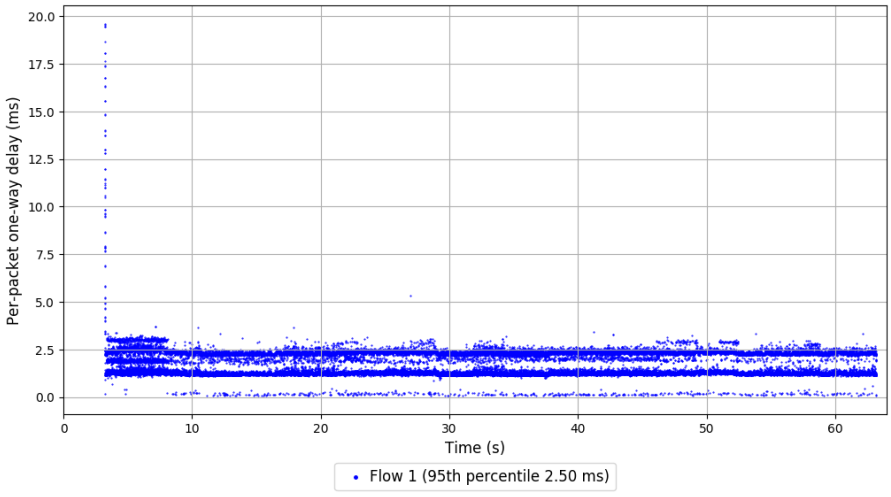
```
Run 2: Statistics of TaoVA-100x

Start at: 2019-06-28 18:36:31
End at: 2019-06-28 18:37:31

# Below is generated by plot.py at 2019-06-28 19:52:19
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 3.85 Mbit/s (32.1% utilization)
95th percentile per-packet one-way delay: 2.504 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 3.85 Mbit/s
95th percentile per-packet one-way delay: 2.504 ms
Loss rate: 0.01%
```

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



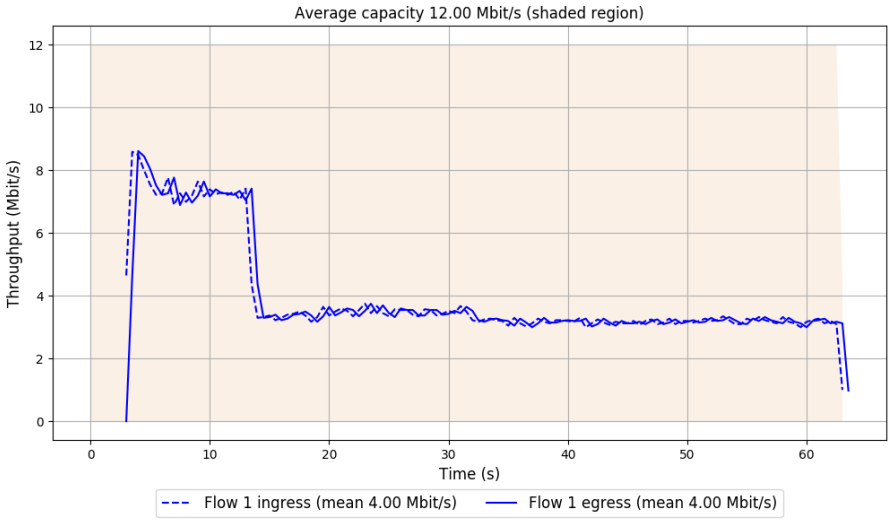


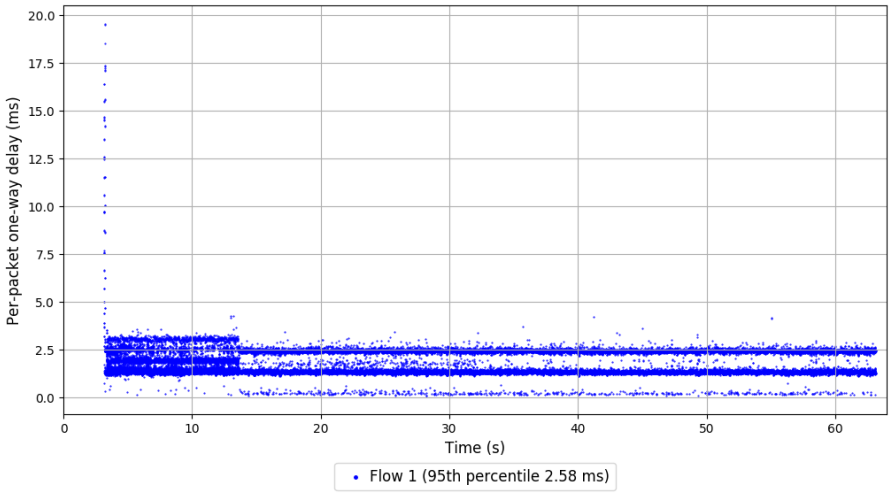
```
Run 3: Statistics of TaoVA-100x

Start at: 2019-06-28 18:57:00
End at: 2019-06-28 18:58:00

# Below is generated by plot.py at 2019-06-28 19:52:22
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 4.00 Mbit/s (33.4% utilization)
95th percentile per-packet one-way delay: 2.585 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 4.00 Mbit/s
95th percentile per-packet one-way delay: 2.585 ms
Loss rate: 0.01%
```

Run 3: Report of TaoVA-100x — Data Link



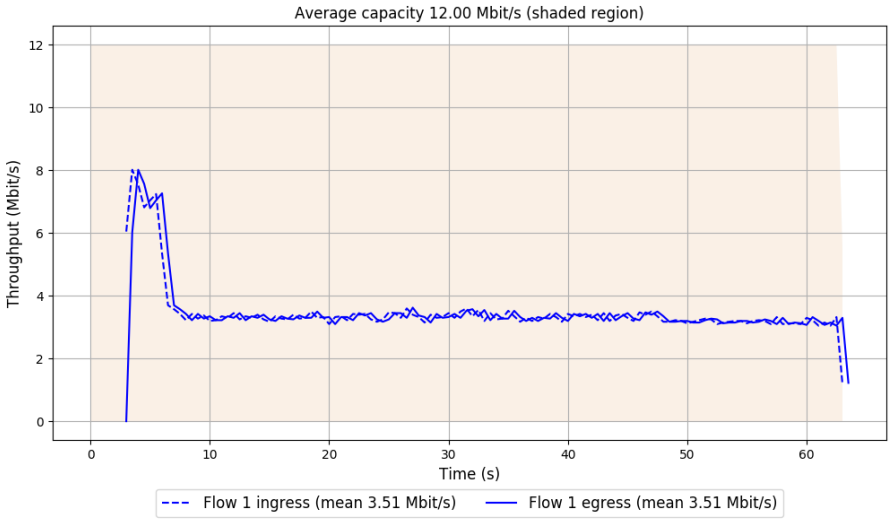


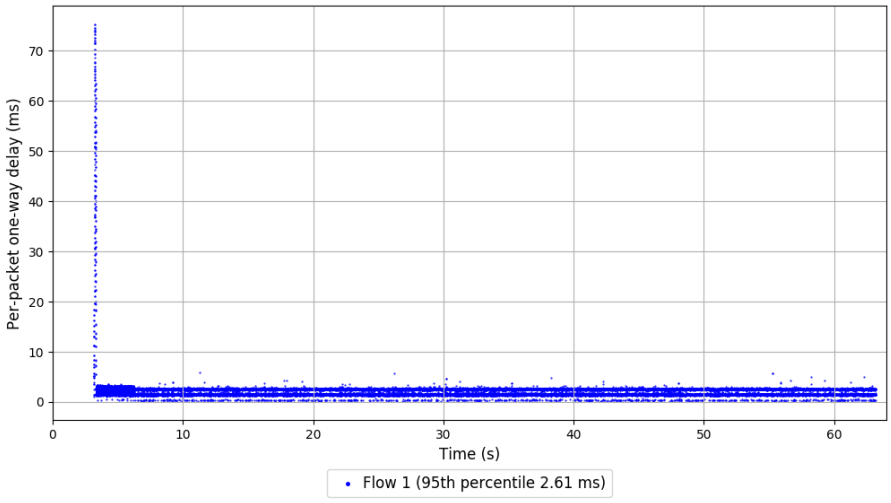
```
Run 4: Statistics of TaoVA-100x

Start at: 2019-06-28 19:17:27
End at: 2019-06-28 19:18:27

# Below is generated by plot.py at 2019-06-28 19:52:22
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 3.51 Mbit/s (29.3% utilization)
95th percentile per-packet one-way delay: 2.609 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 3.51 Mbit/s
95th percentile per-packet one-way delay: 2.609 ms
Loss rate: 0.00%
```

Run 4: Report of TaoVA-100x — Data Link



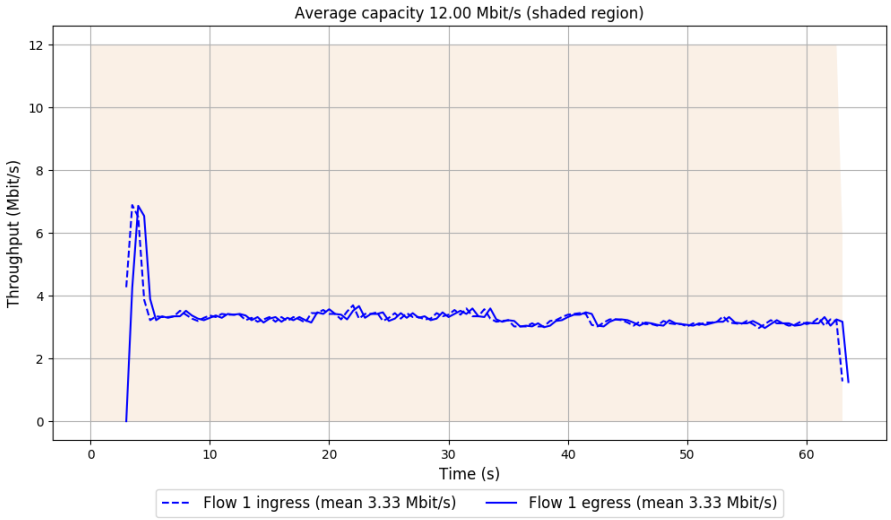


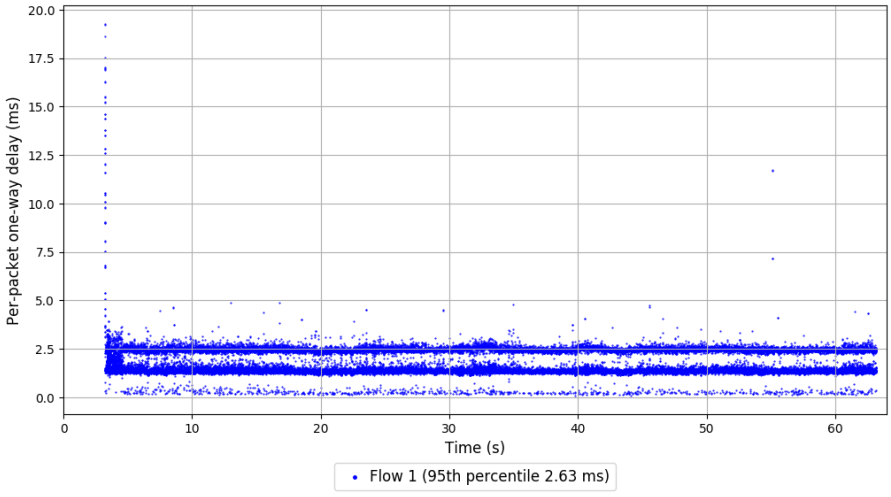
```
Run 5: Statistics of TaoVA-100x

Start at: 2019-06-28 19:37:55
End at: 2019-06-28 19:38:55

# Below is generated by plot.py at 2019-06-28 19:52:26
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 3.33 Mbit/s (27.8% utilization)
95th percentile per-packet one-way delay: 2.628 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 3.33 Mbit/s
95th percentile per-packet one-way delay: 2.628 ms
Loss rate: 0.01%
```

Run 5: Report of TaoVA-100x — Data Link





```
Run 1: Statistics of TCP Vegas

Start at: 2019-06-28 18:12:52
End at: 2019-06-28 18:13:52
```

Run 1: Report of TCP Vegas — Data Link

Figure is missing

Figure is missing

```
Run 2: Statistics of TCP Vegas

Start at: 2019-06-28 18:33:20
End at: 2019-06-28 18:34:20
```

Run 2: Report of TCP Vegas — Data Link

Figure is missing

Figure is missing

```
Run 3: Statistics of TCP Vegas

Start at: 2019-06-28 18:53:49
End at: 2019-06-28 18:54:49
```

Run 3: Report of TCP Vegas — Data Link

Figure is missing

Figure is missing

```
Run 4: Statistics of TCP Vegas

Start at: 2019-06-28 19:14:15
End at: 2019-06-28 19:15:15
```

Run 4: Report of TCP Vegas — Data Link

Figure is missing

Figure is missing

```
Run 5: Statistics of TCP Vegas

Start at: 2019-06-28 19:34:44
End at: 2019-06-28 19:35:44
```

Run 5: Report of TCP Vegas — Data Link

Figure is missing

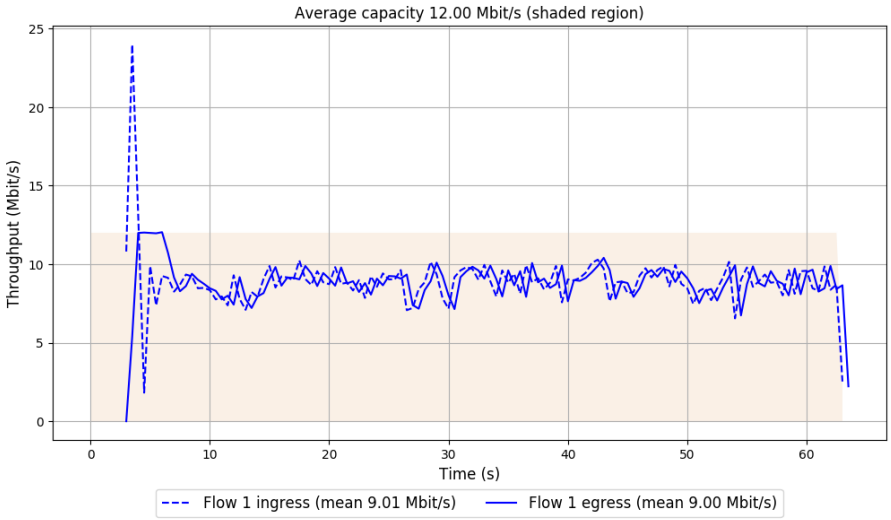
Figure is missing

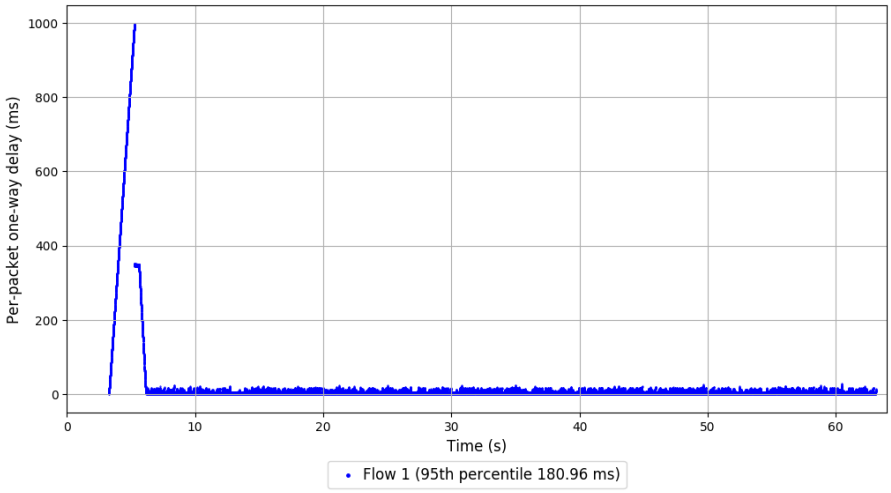
```
Run 1: Statistics of Verus

Start at: 2019-06-28 18:07:28
End at: 2019-06-28 18:08:28

# Below is generated by plot.py at 2019-06-28 19:52:34
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 9.00 Mbit/s (75.0% utilization)
95th percentile per-packet one-way delay: 180.964 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 9.00 Mbit/s
95th percentile per-packet one-way delay: 180.964 ms
Loss rate: 0.04%
```

Run 1: Report of Verus — Data Link



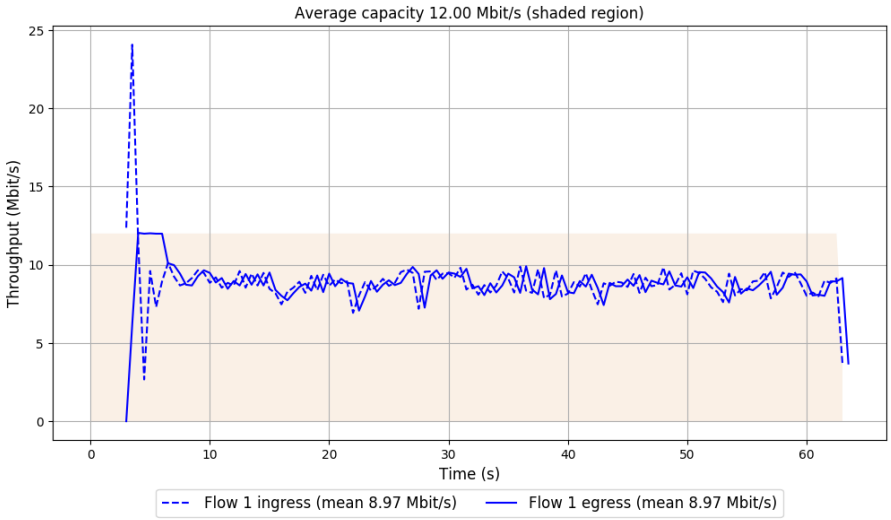


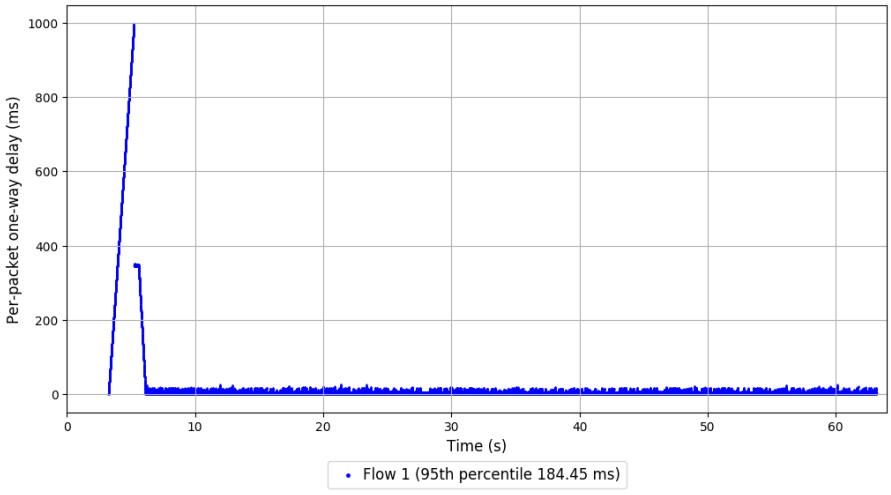
```
Run 2: Statistics of Verus

Start at: 2019-06-28 18:27:55
End at: 2019-06-28 18:28:55

# Below is generated by plot.py at 2019-06-28 19:52:34
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 8.97 Mbit/s (74.7% utilization)
95th percentile per-packet one-way delay: 184.449 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 8.97 Mbit/s
95th percentile per-packet one-way delay: 184.449 ms
Loss rate: 0.01%
```

Run 2: Report of Verus — Data Link



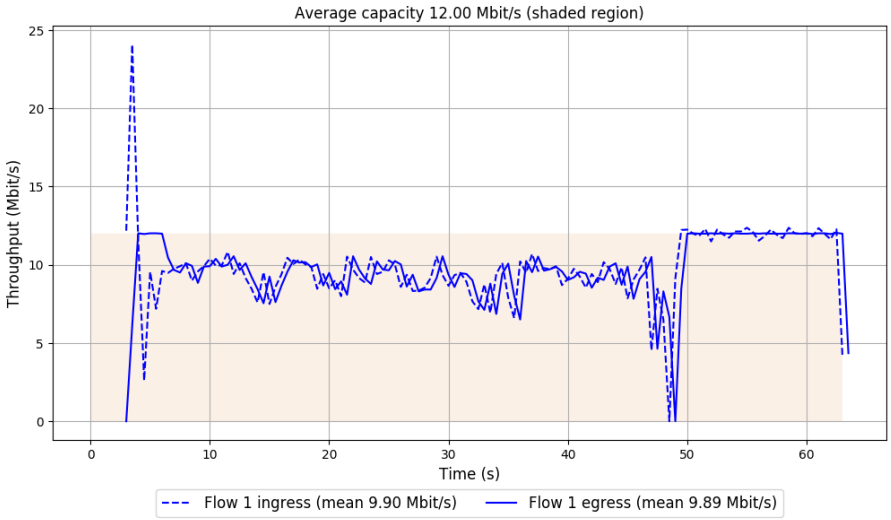


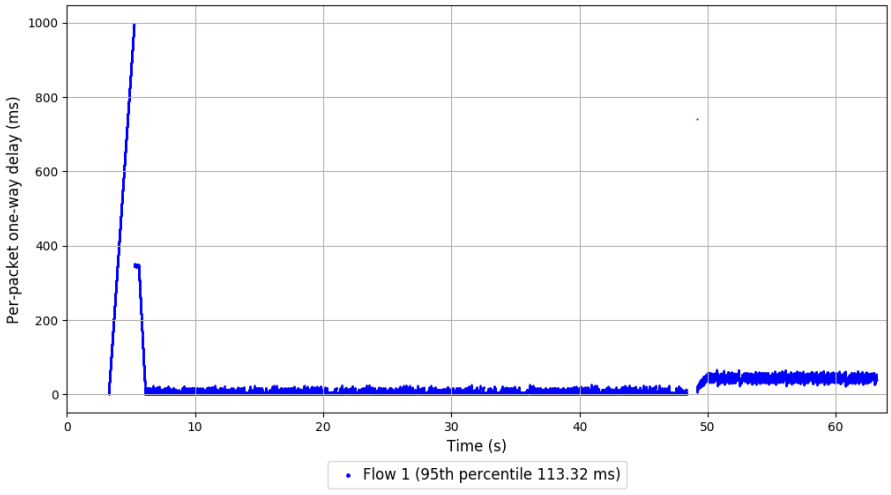
```
Run 3: Statistics of Verus

Start at: 2019-06-28 18:48:24
End at: 2019-06-28 18:49:24

# Below is generated by plot.py at 2019-06-28 19:52:37
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 9.89 Mbit/s (82.4% utilization)
95th percentile per-packet one-way delay: 113.317 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 9.89 Mbit/s
95th percentile per-packet one-way delay: 113.317 ms
Loss rate: 0.08%
```

Run 3: Report of Verus — Data Link



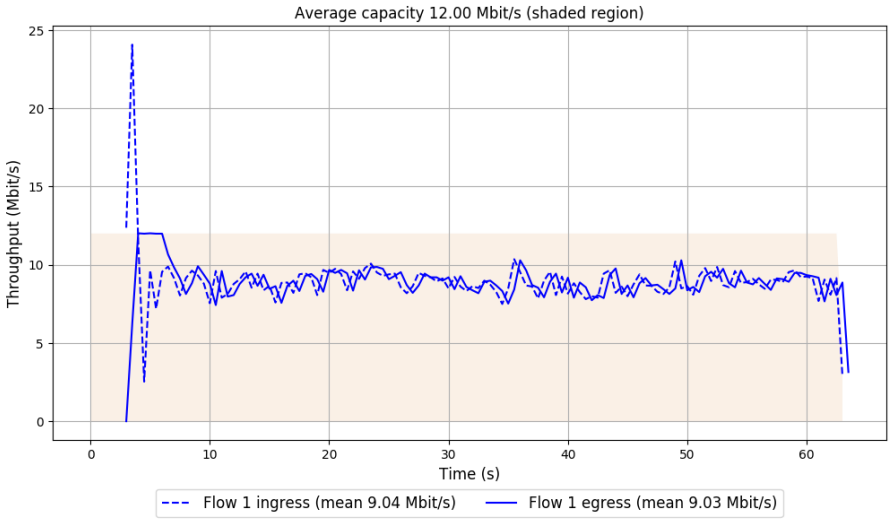


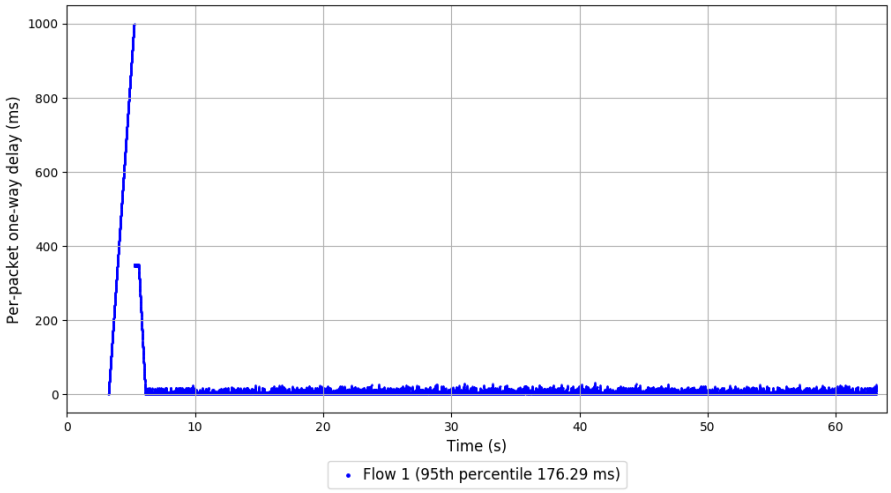
```
Run 4: Statistics of Verus

Start at: 2019-06-28 19:08:51
End at: 2019-06-28 19:09:51

# Below is generated by plot.py at 2019-06-28 19:52:41
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 9.03 Mbit/s (75.3% utilization)
95th percentile per-packet one-way delay: 176.290 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 9.03 Mbit/s
95th percentile per-packet one-way delay: 176.290 ms
Loss rate: 0.01%
```

Run 4: Report of Verus — Data Link



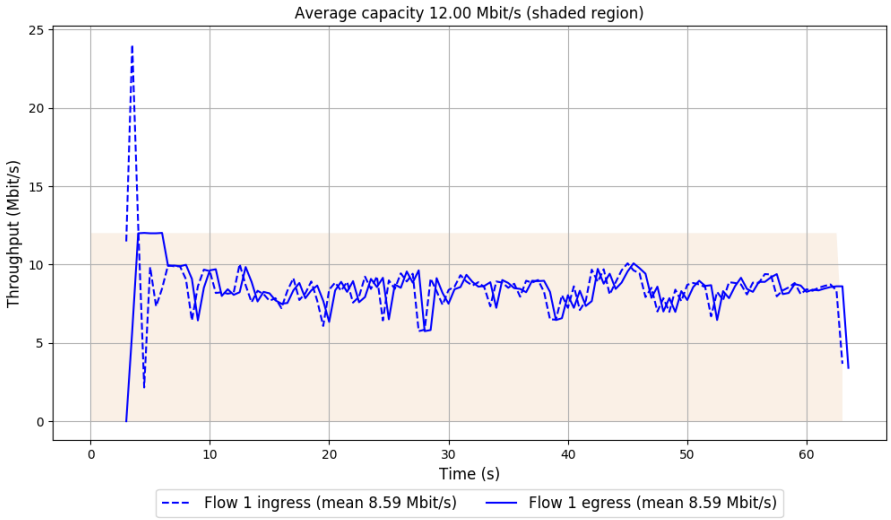


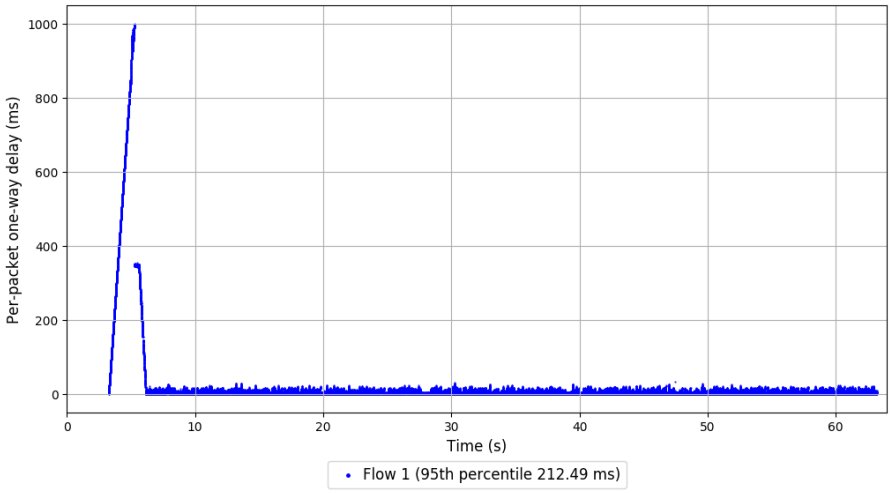
```
Run 5: Statistics of Verus

Start at: 2019-06-28 19:29:19
End at: 2019-06-28 19:30:19

# Below is generated by plot.py at 2019-06-28 19:52:47
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 8.59 Mbit/s (71.5% utilization)
95th percentile per-packet one-way delay: 212.492 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 8.59 Mbit/s
95th percentile per-packet one-way delay: 212.492 ms
Loss rate: 0.03%
```

Run 5: Report of Verus — Data Link



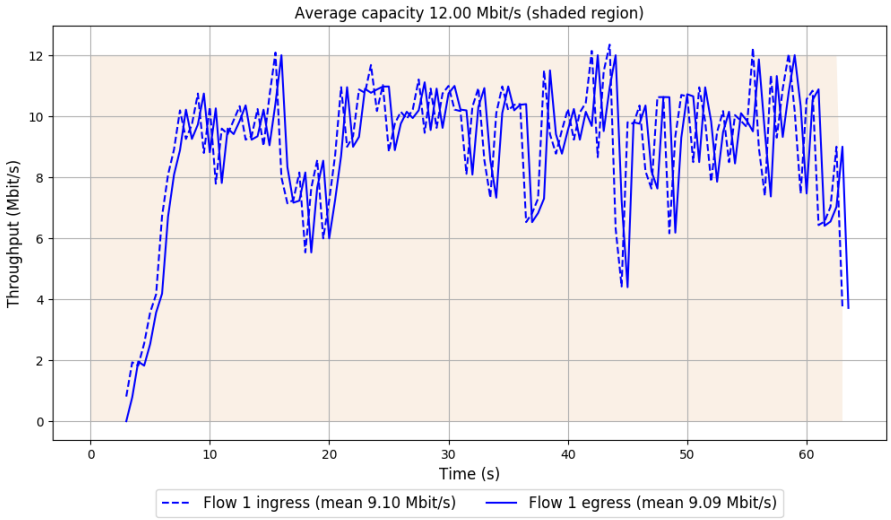


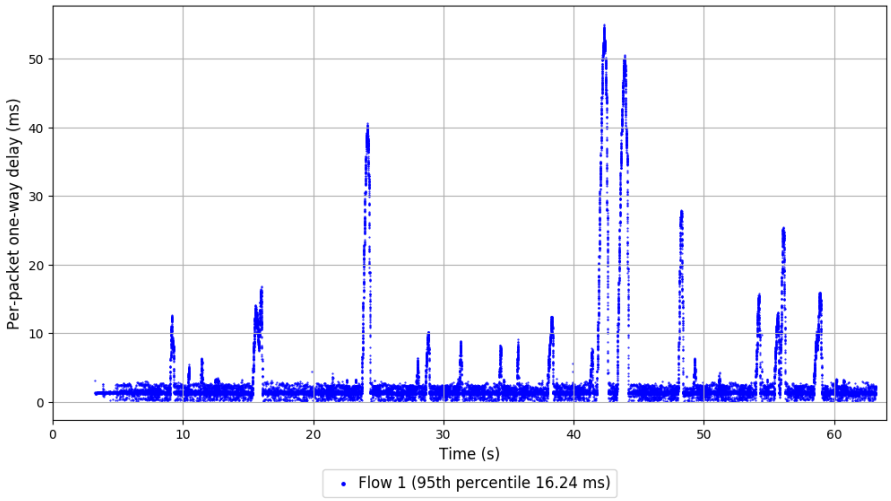
```
Run 1: Statistics of PCC-Vivace

Start at: 2019-06-28 18:11:47
End at: 2019-06-28 18:12:47

# Below is generated by plot.py at 2019-06-28 19:52:50
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 9.09 Mbit/s (75.8% utilization)
95th percentile per-packet one-way delay: 16.239 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 9.09 Mbit/s
95th percentile per-packet one-way delay: 16.239 ms
Loss rate: 0.00%
```

Run 1: Report of PCC-Vivace — Data Link



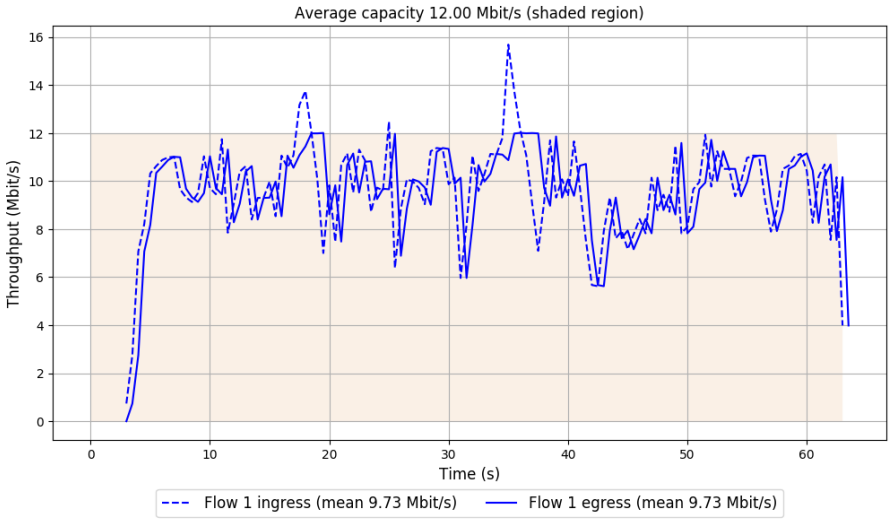


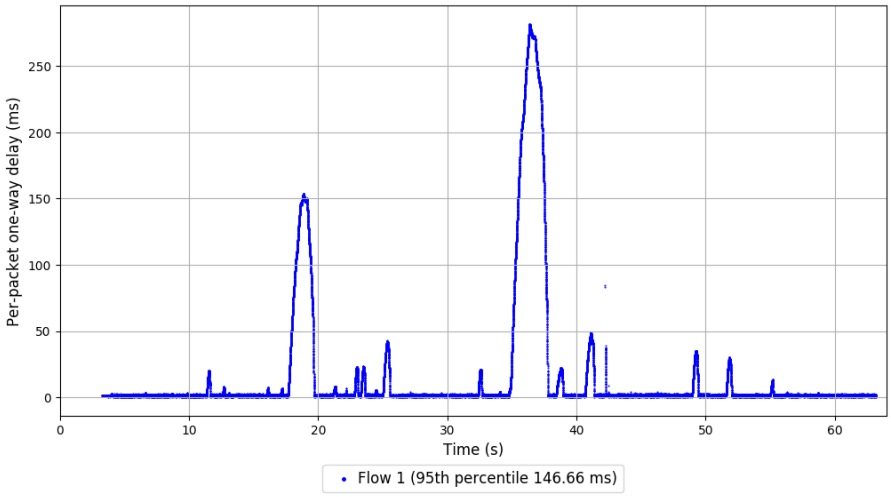
```
Run 2: Statistics of PCC-Vivace

Start at: 2019-06-28 18:32:15
End at: 2019-06-28 18:33:15

# Below is generated by plot.py at 2019-06-28 19:52:52
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 9.73 Mbit/s (81.1% utilization)
95th percentile per-packet one-way delay: 146.659 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 9.73 Mbit/s
95th percentile per-packet one-way delay: 146.659 ms
Loss rate: 0.00%
```

Run 2: Report of PCC-Vivace — Data Link



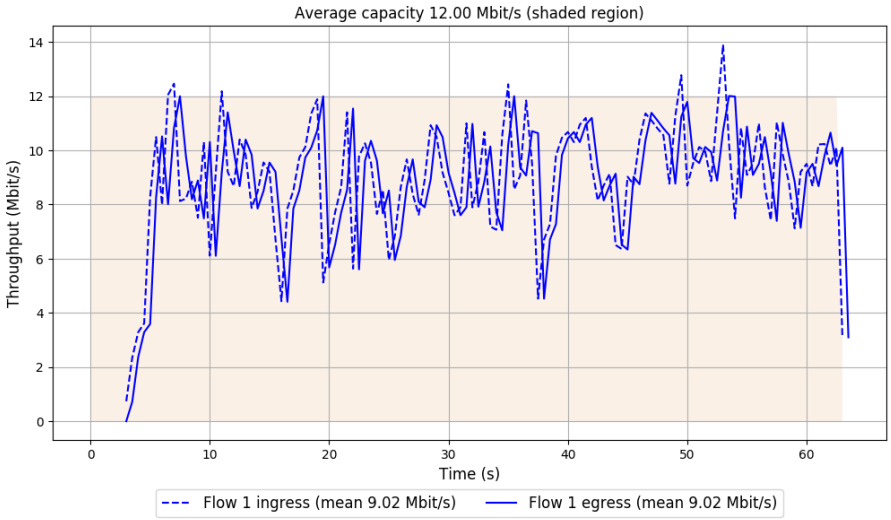


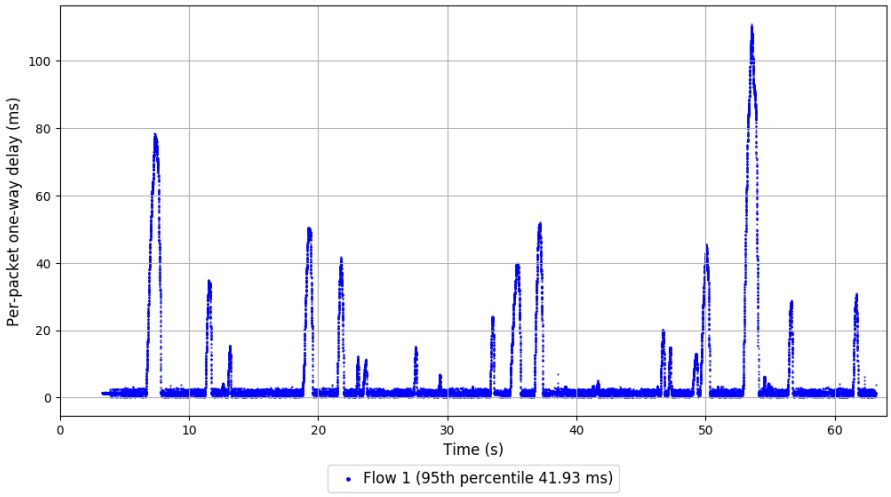
```
Run 3: Statistics of PCC-Vivace

Start at: 2019-06-28 18:52:44
End at: 2019-06-28 18:53:44

# Below is generated by plot.py at 2019-06-28 19:52:55
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 9.02 Mbit/s (75.1% utilization)
95th percentile per-packet one-way delay: 41.933 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 9.02 Mbit/s
95th percentile per-packet one-way delay: 41.933 ms
Loss rate: 0.00%
```

Run 3: Report of PCC-Vivace — Data Link



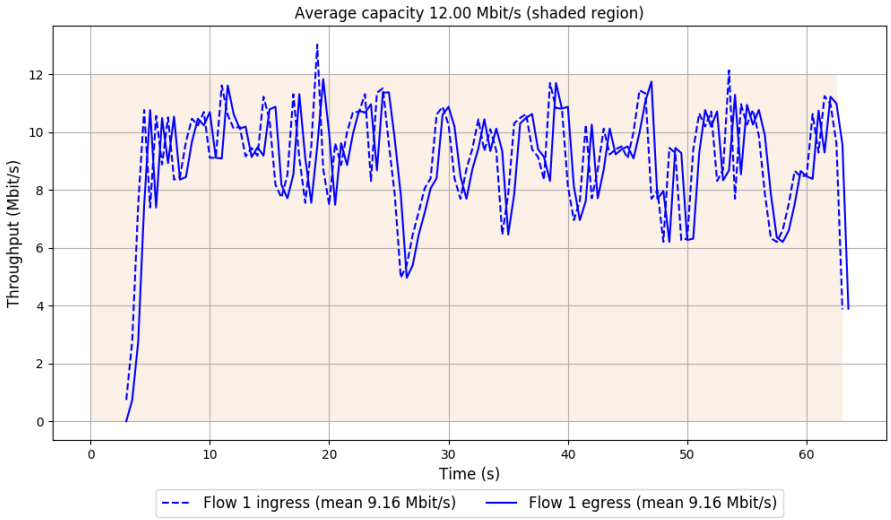


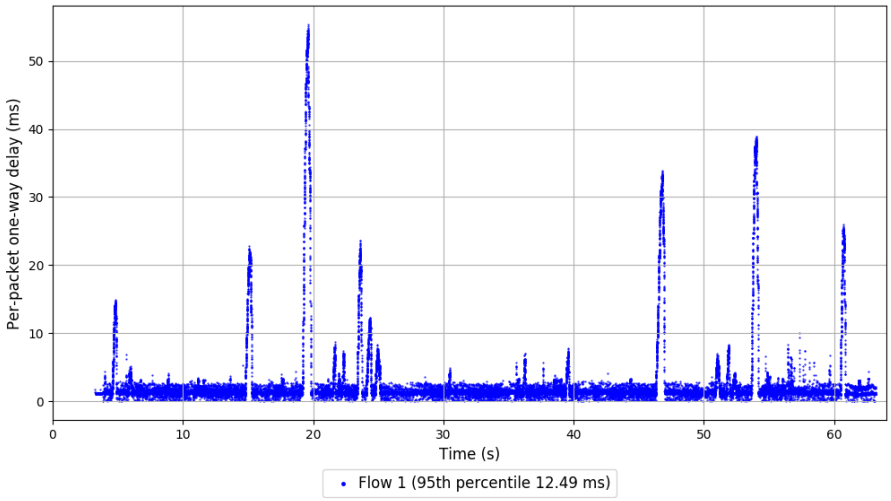
```
Run 4: Statistics of PCC-Vivace

Start at: 2019-06-28 19:13:10
End at: 2019-06-28 19:14:10

# Below is generated by plot.py at 2019-06-28 19:53:05
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 9.16 Mbit/s (76.3% utilization)
95th percentile per-packet one-way delay: 12.490 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 9.16 Mbit/s
95th percentile per-packet one-way delay: 12.490 ms
Loss rate: 0.00%
```

Run 4: Report of PCC-Vivace — Data Link



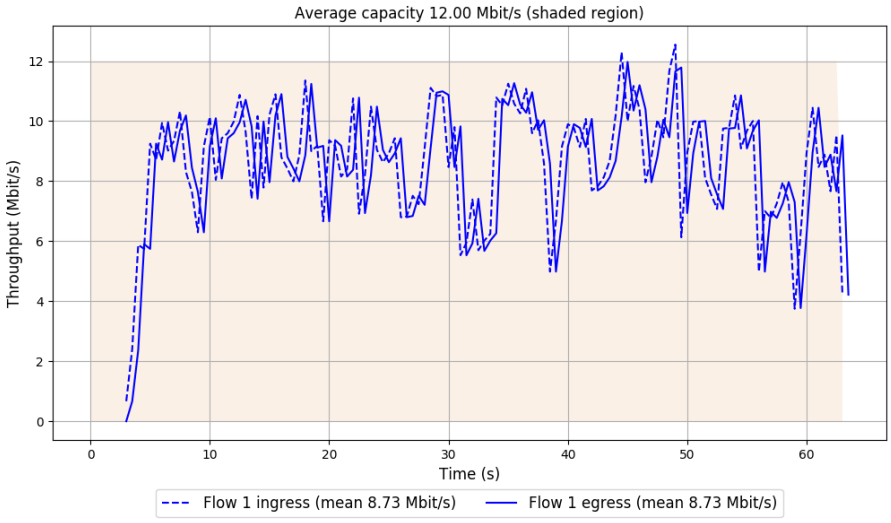


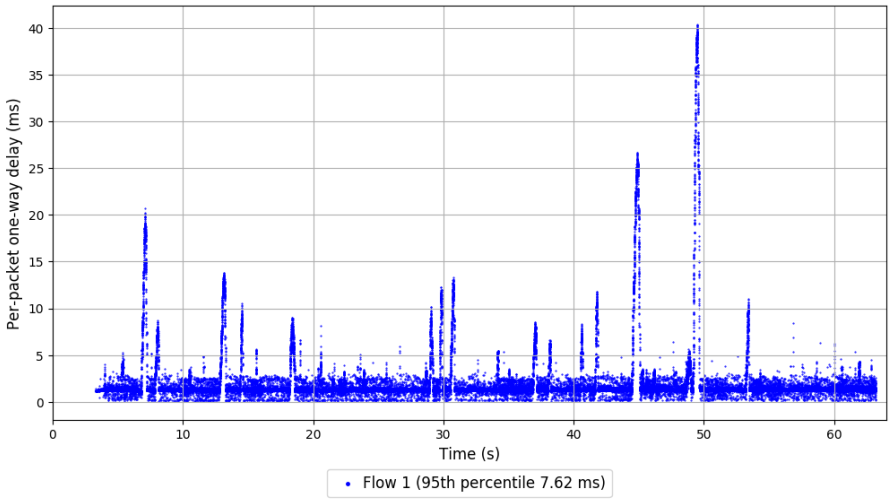
```
Run 5: Statistics of PCC-Vivace

Start at: 2019-06-28 19:33:39
End at: 2019-06-28 19:34:39

# Below is generated by plot.py at 2019-06-28 19:53:05
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 8.73 Mbit/s (72.7% utilization)
95th percentile per-packet one-way delay: 7.618 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 8.73 Mbit/s
95th percentile per-packet one-way delay: 7.618 ms
Loss rate: 0.00%
```

Run 5: Report of PCC-Vivace — Data Link



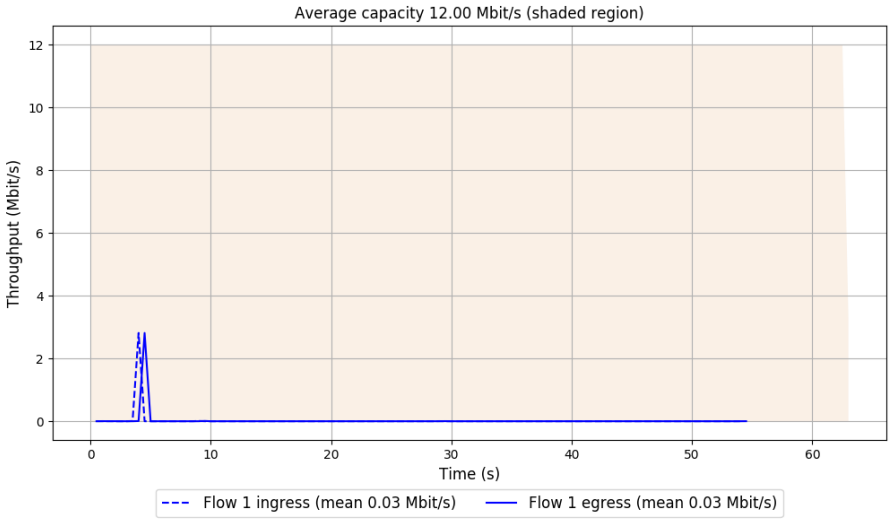


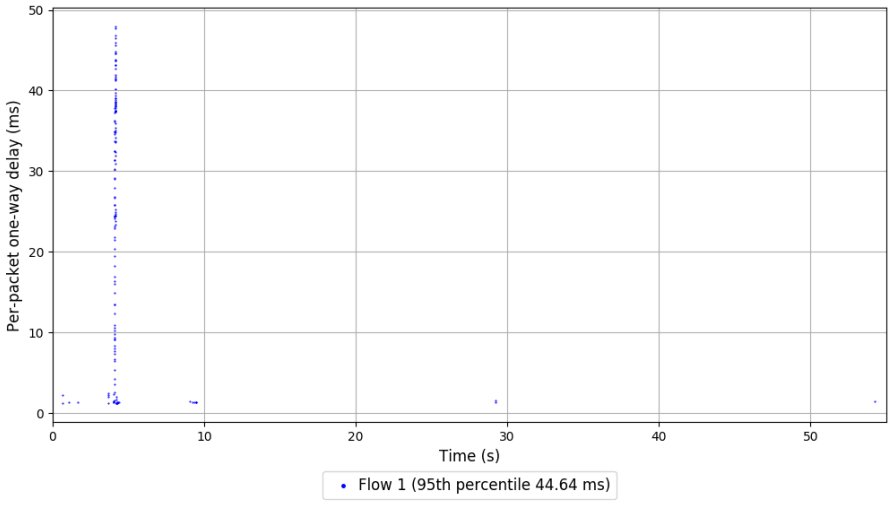
```
Run 1: Statistics of WebRTC media

Start at: 2019-06-28 18:21:27
End at: 2019-06-28 18:22:27

# Below is generated by plot.py at 2019-06-28 19:53:05
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 0.03 Mbit/s (0.2% utilization)
95th percentile per-packet one-way delay: 44.641 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.03 Mbit/s
95th percentile per-packet one-way delay: 44.641 ms
Loss rate: 0.00%
```

Run 1: Report of WebRTC media — Data Link



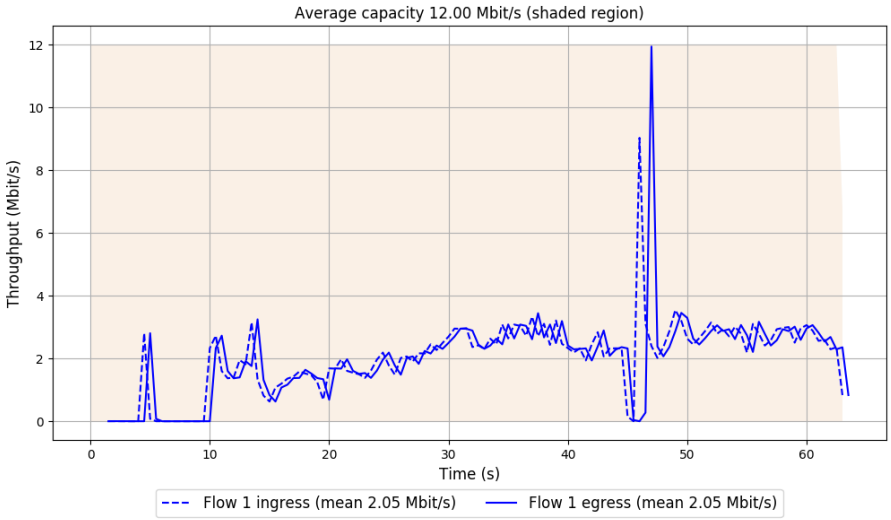


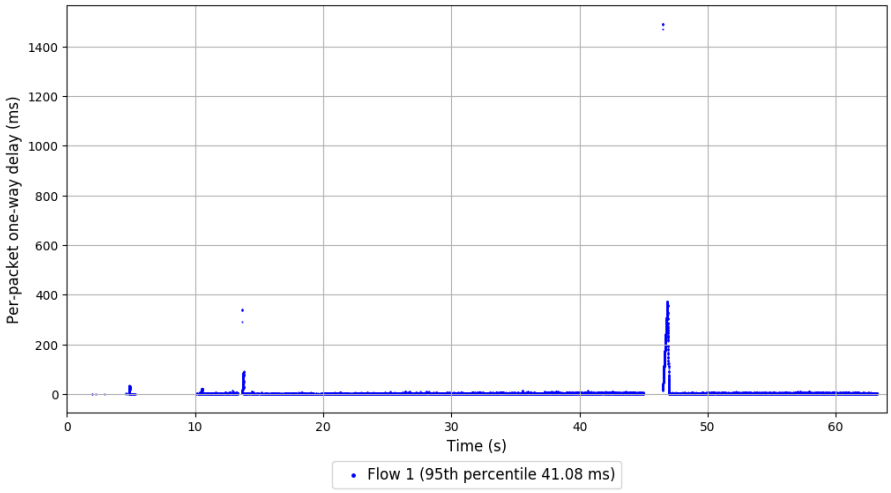
```
Run 2: Statistics of WebRTC media

Start at: 2019-06-28 18:41:55
End at: 2019-06-28 18:42:55

# Below is generated by plot.py at 2019-06-28 19:53:05
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 2.05 Mbit/s (17.0% utilization)
95th percentile per-packet one-way delay: 41.078 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.05 Mbit/s
95th percentile per-packet one-way delay: 41.078 ms
Loss rate: 0.00%
```

Run 2: Report of WebRTC media — Data Link



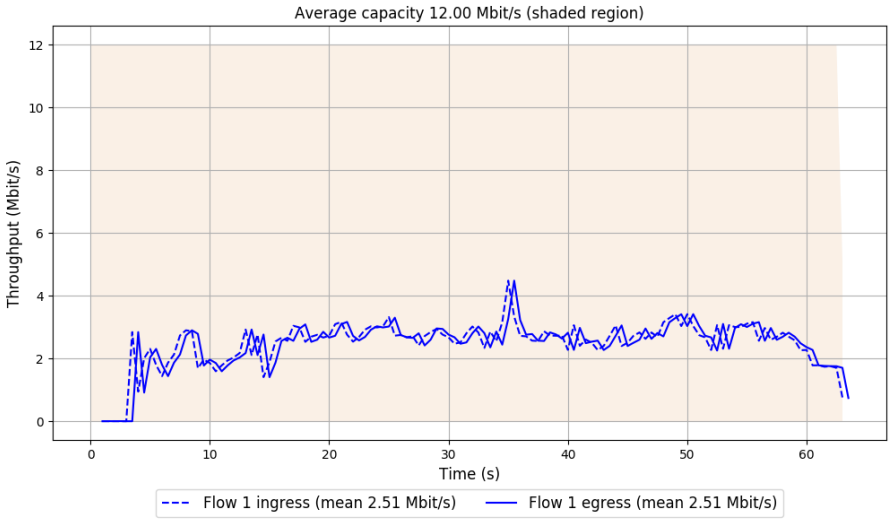


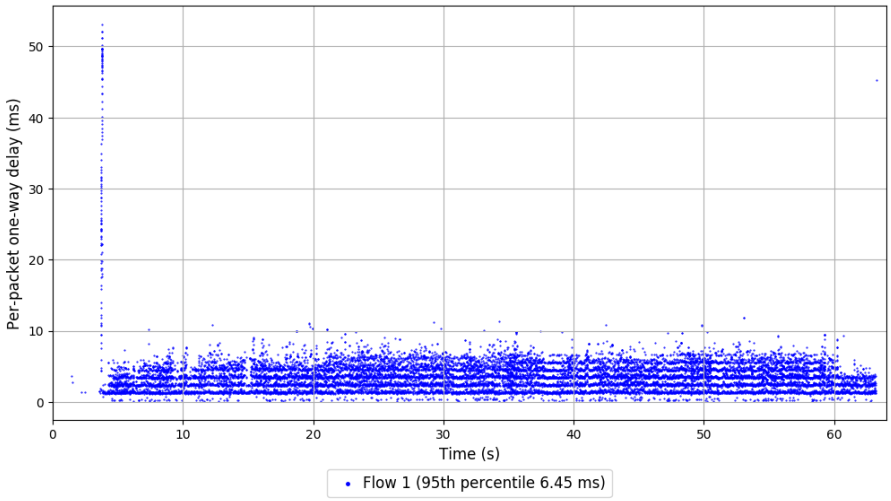
```
Run 3: Statistics of WebRTC media

Start at: 2019-06-28 19:02:22
End at: 2019-06-28 19:03:22

# Below is generated by plot.py at 2019-06-28 19:53:07
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 2.51 Mbit/s (20.9% utilization)
95th percentile per-packet one-way delay: 6.451 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 2.51 Mbit/s
95th percentile per-packet one-way delay: 6.451 ms
Loss rate: 0.01%
```

Run 3: Report of WebRTC media — Data Link



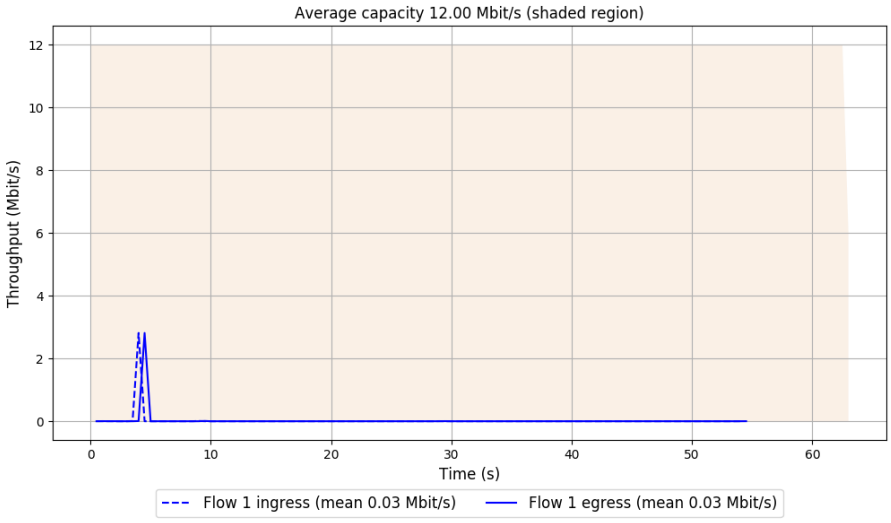


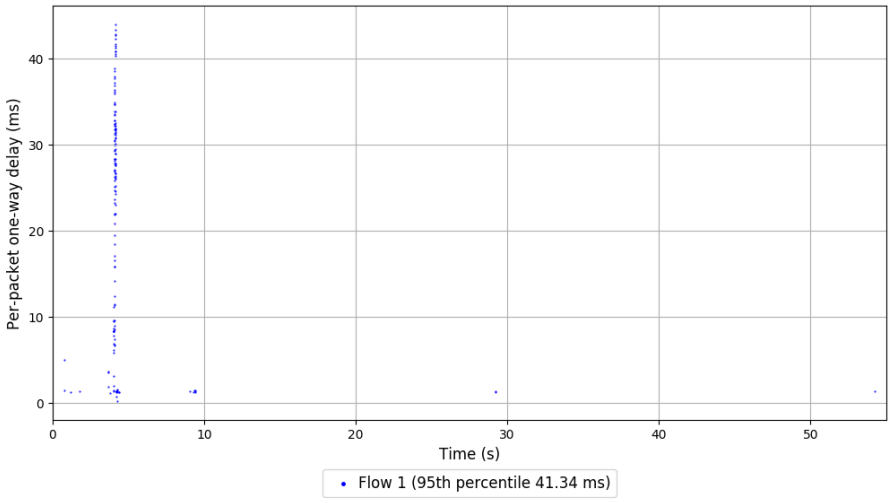
```
Run 4: Statistics of WebRTC media

Start at: 2019-06-28 19:22:50
End at: 2019-06-28 19:23:50

# Below is generated by plot.py at 2019-06-28 19:53:08
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 0.03 Mbit/s (0.2% utilization)
95th percentile per-packet one-way delay: 41.336 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.03 Mbit/s
95th percentile per-packet one-way delay: 41.336 ms
Loss rate: 0.00%
```

Run 4: Report of WebRTC media — Data Link





```
Run 5: Statistics of WebRTC media

Start at: 2019-06-28 19:43:18
End at: 2019-06-28 19:44:18

# Below is generated by plot.py at 2019-06-28 19:53:08
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 0.03 Mbit/s (0.2% utilization)
95th percentile per-packet one-way delay: 48.162 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.03 Mbit/s
95th percentile per-packet one-way delay: 48.162 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link