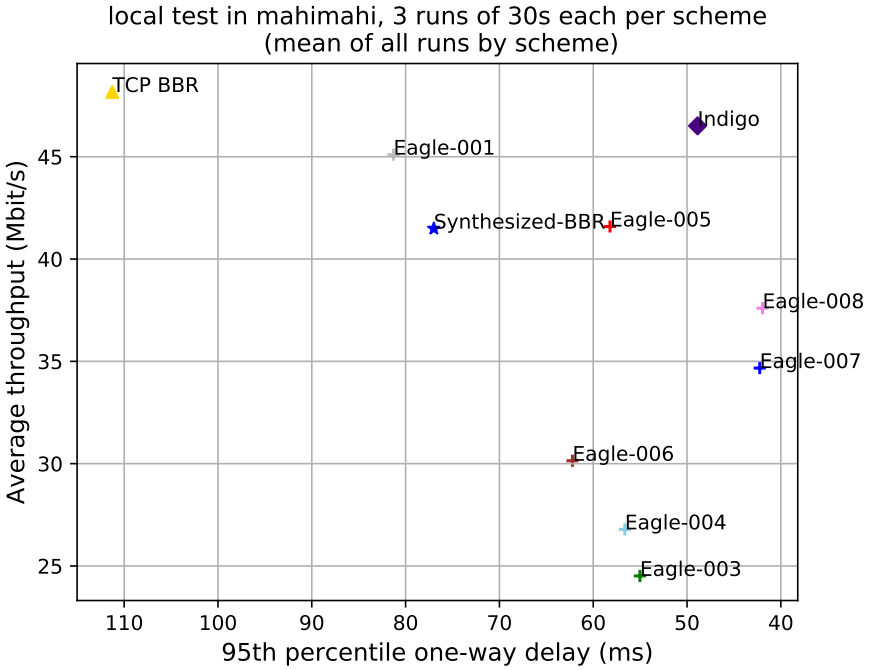
Pantheon Report

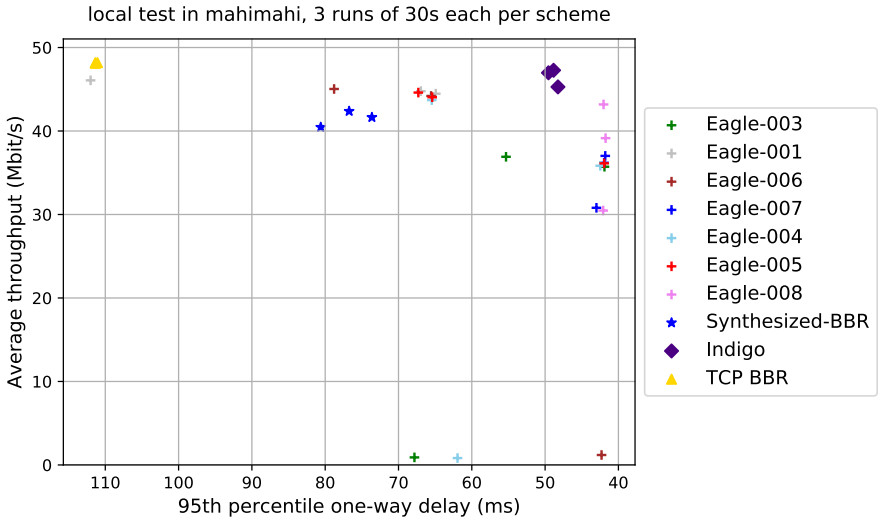
Generated at 2019-10-27 04:58:35 (UTC).
Tested in mahimahi: `mm-delay 40 mm-link 50mbps.trace 50mbps.trace --uplink-queue=droptail --uplink-queue-args=packets=300`
Repeated the test of 10 congestion control schemes 3 times.
Each test lasted for 30 seconds running 1 flow.

```
System info:
Linux 4.15.0-65-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 @ b54fc866b3140559c1fa1782d26fa636f7a43a8d
third_party/aurora @ f3e943d61015b39960854ba6391797e0c7984d74
third_party/aurora-model @ e292c316c23fb837255c4e142e40590d154bbe95
third_party/eagle-v1 @ c68d985e042be5c30704c0aee48c363861951a95
third_party/eagle-v2 @ c8a1737b3c84d7d49eada5b8785045d272a70120
third_party/eagle-v3 @ d5f1ab4416fa417052ddc65de5dbdbd20955d293
 M sender-receiver/sender-receiver/sender_receiver/envs/__pycache__/datagram_pb2.cpython-36.
 M sender-receiver/sender-receiver/sender_receiver/envs/__pycache__/helpers.cpython-36.pyc
 M sender-receiver/sender-receiver/sender_receiver/envs/__pycache__/mahimahi.cpython-36.pyc
 M sender-receiver/sender-receiver/sender_receiver/envs/__pycache__/project_root.cpython-36.
 M sender-receiver/sender-receiver/sender_receiver/envs/__pycache__/receiver.cpython-36.pyc
 M sender-receiver/sender-receiver/sender_receiver/envs/example-xentropy-random-switch.py
 M sender-receiver/sender-receiver/sender_receiver/envs/example-xentropy.py
 D sender-receiver/sender-receiver/sender_receiver/envs/model-xentropy/model-xentropy-2.pt
 D sender-receiver/sender-receiver/sender_receiver/envs/model-xentropy/model-xentropy-240ite
 M sender-receiver/sender-receiver/sender_receiver/envs/model-xentropy/model-xentropy.pt
 M sender-receiver/sender-receiver/sender_receiver/logs.txt
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
 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/synthesizedBBR @ d5f1ab4416fa417052ddc65de5dbdbd20955d293
 M sender-receiver/sender-receiver/sender_receiver/__pycache__/__init__.cpython-36.pyc
 M sender-receiver/sender-receiver/sender_receiver/envs/__pycache__/__init__.cpython-36.pyc
 M sender-receiver/sender-receiver/sender_receiver/envs/__pycache__/datagram_pb2.cpython-36
 M sender-receiver/sender-receiver/sender_receiver/envs/__pycache__/helpers.cpython-36.pyc
 M sender-receiver/sender-receiver/sender_receiver/envs/__pycache__/mahimahi.cpython-36.pyc
 M sender-receiver/sender-receiver/sender_receiver/envs/__pycache__/project_root.cpython-36
 M sender-receiver/sender-receiver/sender_receiver/envs/__pycache__/receiver.cpython-36.pyc
 M sender-receiver/sender-receiver/sender_receiver/envs/__pycache__/sender_receiver_env.cpyt
 M sender-receiver/sender-receiver/sender_receiver/envs/example-xentropy.py
 M sender-receiver/sender-receiver/sender_receiver/logs.txt
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
 M src/verus.hpp
 M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```


local test in mahimahi, 3 runs of 30s each per scheme
(mean of all runs by scheme)
TCP BBR
Indigo
Eagle-001
Synthesized-BBR
Eagle-005
Eagle-008
Eagle-007
Eagle-006
Eagle-004
Eagle-003
Average throughput (Mbit/s)
95th percentile one-way delay (ms)
45
40
35
30
25
110
100
90
80
70
60
50
40


local test in mahimahi, 3 runs of 30s each per scheme
Average throughput (Mbit/s)
95th percentile one-way delay (ms)
50
40
30
20
10
0
110
100
90
80
70
60
50
40
Eagle-003
Eagle-001
Eagle-006
Eagle-007
Eagle-004
Eagle-005
Eagle-008
Synthesized-BBR
Indigo
TCP BBR

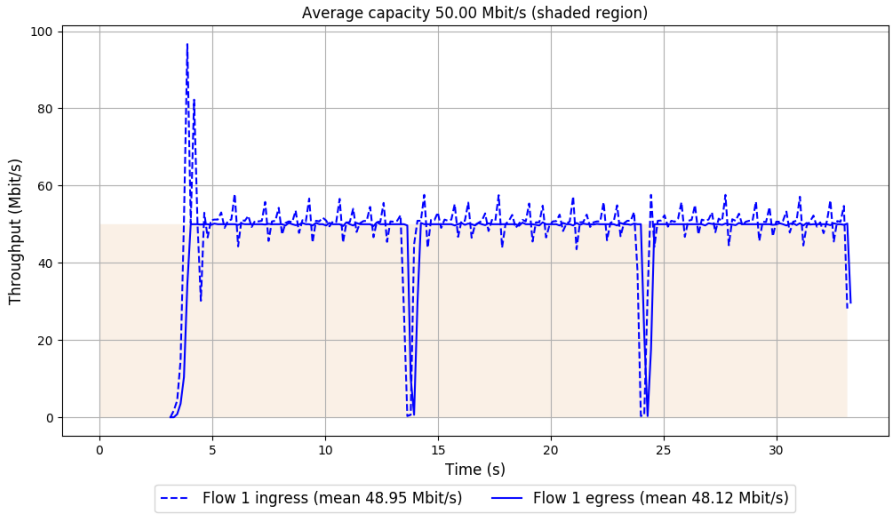
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	48.16	111.26	1.93
Eagle-001	3	45.10	81.29	1.30
Eagle-003	3	24.51	55.02	0.07
Eagle-004	3	26.79	56.63	0.12
Eagle-005	3	41.59	58.21	0.17
Eagle-006	3	30.14	62.21	0.15
Eagle-007	3	34.67	42.25	0.14
Eagle-008	3	37.60	41.95	0.15
Indigo	3	46.51	48.88	0.43
Synthesized-BBR	3	41.49	76.99	0.23

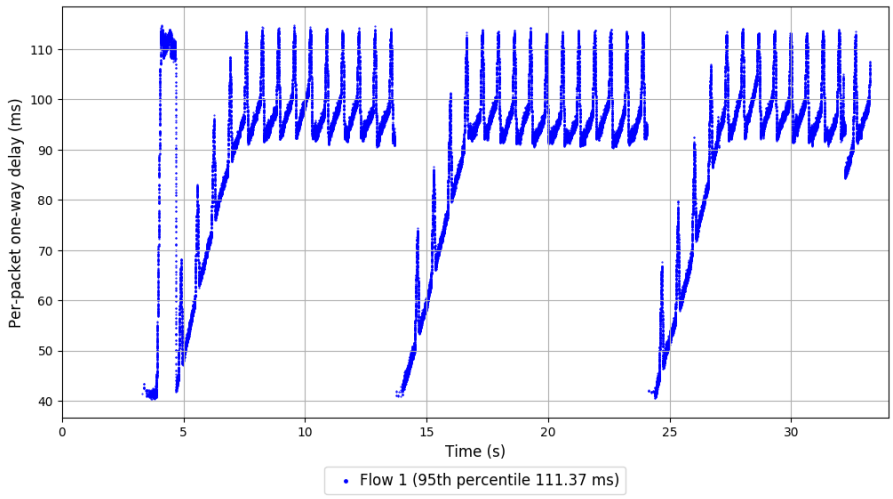
```
Run 1: Statistics of TCP BBR

Start at: 2019-10-27 04:32:27
End at: 2019-10-27 04:32:57

# Below is generated by plot.py at 2019-10-27 04:55:58
# Datalink statistics
-- Total of 1 flow:
Average capacity: 50.00 Mbit/s
Average throughput: 48.12 Mbit/s (96.2% utilization)
95th percentile per-packet one-way delay: 111.368 ms
Loss rate: 1.91%
-- Flow 1:
Average throughput: 48.12 Mbit/s
95th percentile per-packet one-way delay: 111.368 ms
Loss rate: 1.91%
```

Run 1: Report of TCP BBR — Data Link



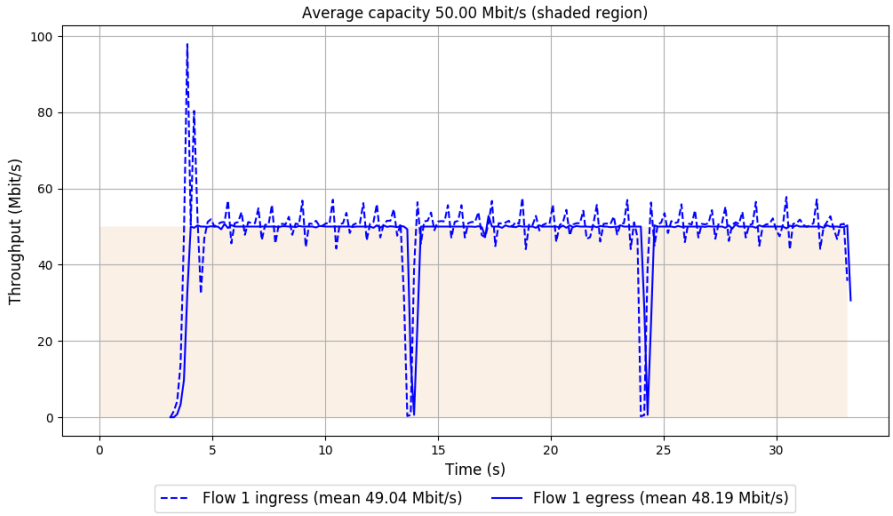


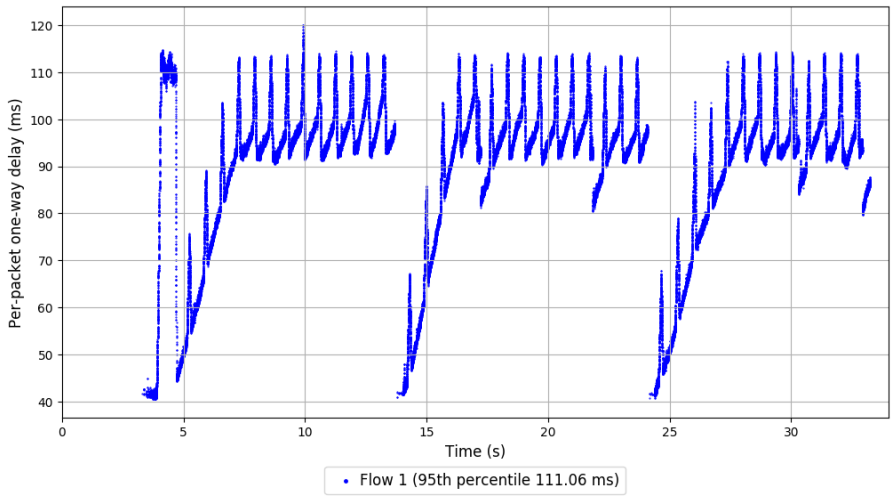
```
Run 2: Statistics of TCP BBR

Start at: 2019-10-27 04:38:30
End at: 2019-10-27 04:39:00

# Below is generated by plot.py at 2019-10-27 04:55:58
# Datalink statistics
-- Total of 1 flow:
Average capacity: 50.00 Mbit/s
Average throughput: 48.19 Mbit/s (96.4% utilization)
95th percentile per-packet one-way delay: 111.065 ms
Loss rate: 1.92%
-- Flow 1:
Average throughput: 48.19 Mbit/s
95th percentile per-packet one-way delay: 111.065 ms
Loss rate: 1.92%
```

Run 2: Report of TCP BBR — Data Link



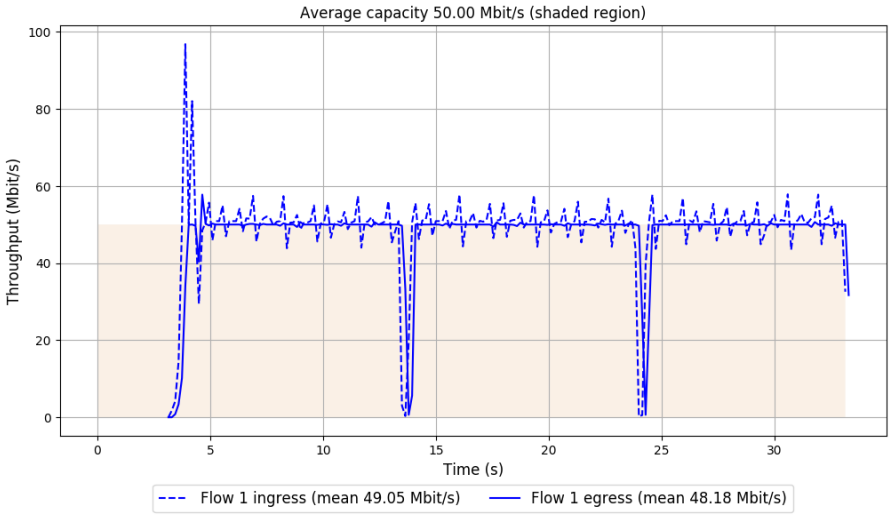


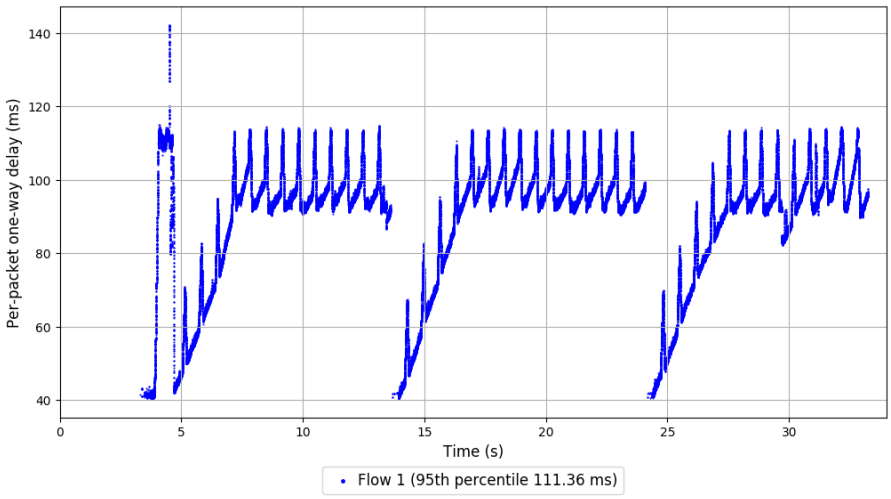
```
Run 3: Statistics of TCP BBR

Start at: 2019-10-27 04:44:31
End at: 2019-10-27 04:45:01

# Below is generated by plot.py at 2019-10-27 04:55:58
# Datalink statistics
-- Total of 1 flow:
Average capacity: 50.00 Mbit/s
Average throughput: 48.18 Mbit/s (96.3% utilization)
95th percentile per-packet one-way delay: 111.355 ms
Loss rate: 1.97%
-- Flow 1:
Average throughput: 48.18 Mbit/s
95th percentile per-packet one-way delay: 111.355 ms
Loss rate: 1.97%
```

Run 3: Report of TCP BBR — Data Link



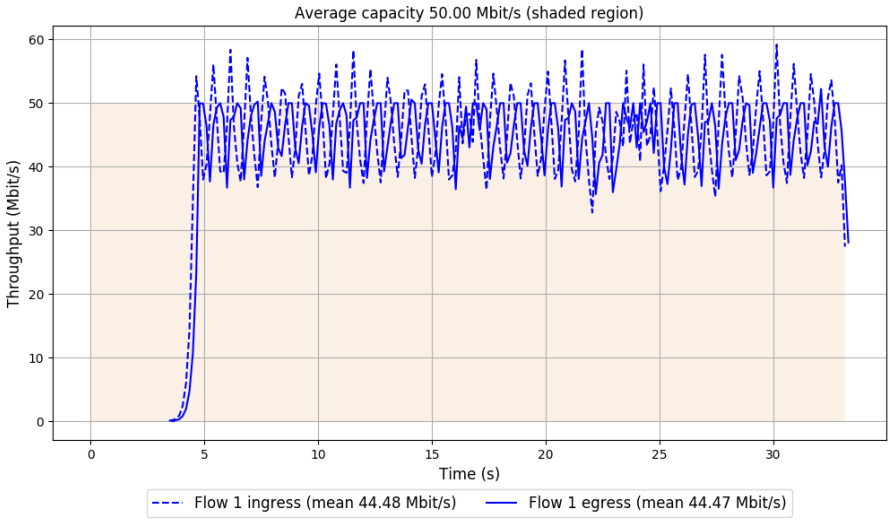


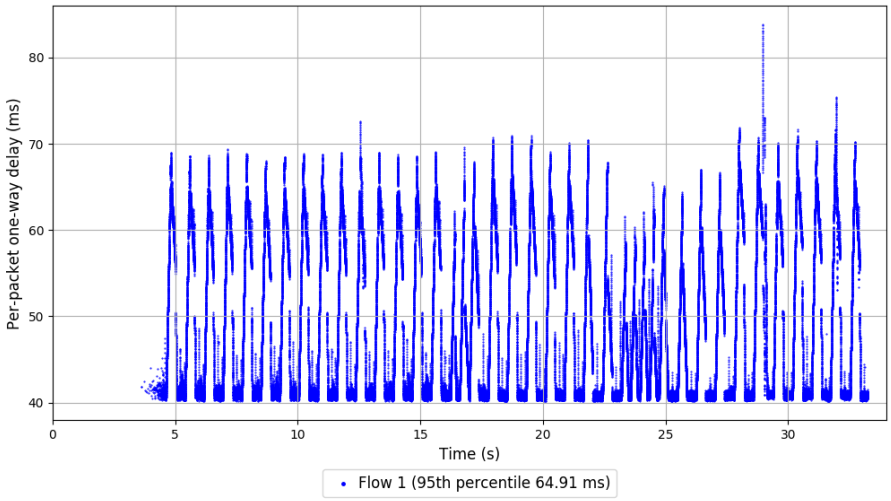
```
Run 1: Statistics of Eagle-001

Start at: 2019-10-27 04:27:35
End at: 2019-10-27 04:28:05

# Below is generated by plot.py at 2019-10-27 04:55:58
# Datalink statistics
-- Total of 1 flow:
Average capacity: 50.00 Mbit/s
Average throughput: 44.47 Mbit/s (88.9% utilization)
95th percentile per-packet one-way delay: 64.912 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 44.47 Mbit/s
95th percentile per-packet one-way delay: 64.912 ms
Loss rate: 0.17%
```

Run 1: Report of Eagle-001 — Data Link



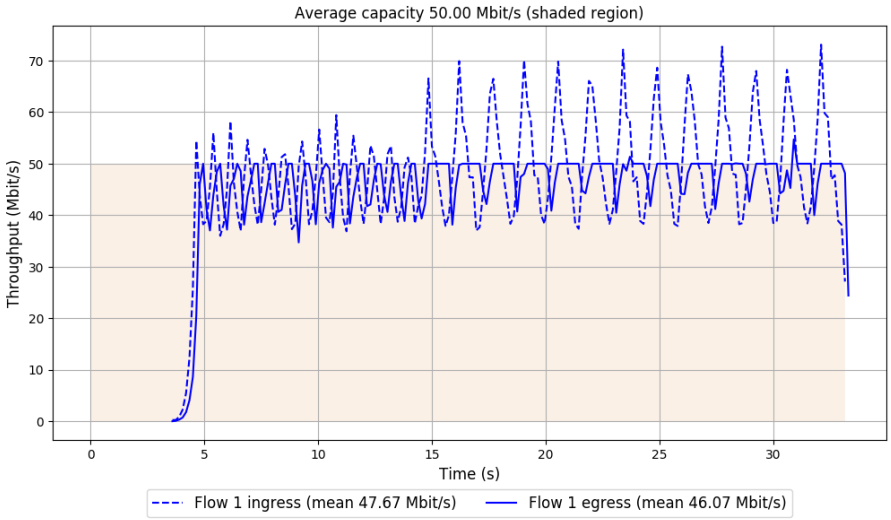


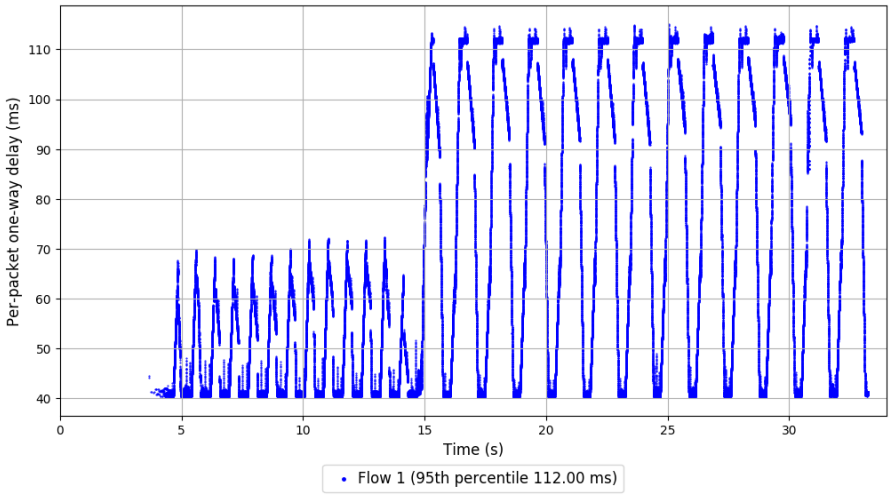
```
Run 2: Statistics of Eagle-001

Start at: 2019-10-27 04:33:40
End at: 2019-10-27 04:34:10

# Below is generated by plot.py at 2019-10-27 04:56:16
# Datalink statistics
-- Total of 1 flow:
Average capacity: 50.00 Mbit/s
Average throughput: 46.07 Mbit/s (92.1% utilization)
95th percentile per-packet one-way delay: 112.004 ms
Loss rate: 3.51%
-- Flow 1:
Average throughput: 46.07 Mbit/s
95th percentile per-packet one-way delay: 112.004 ms
Loss rate: 3.51%
```

Run 2: Report of Eagle-001 — Data Link



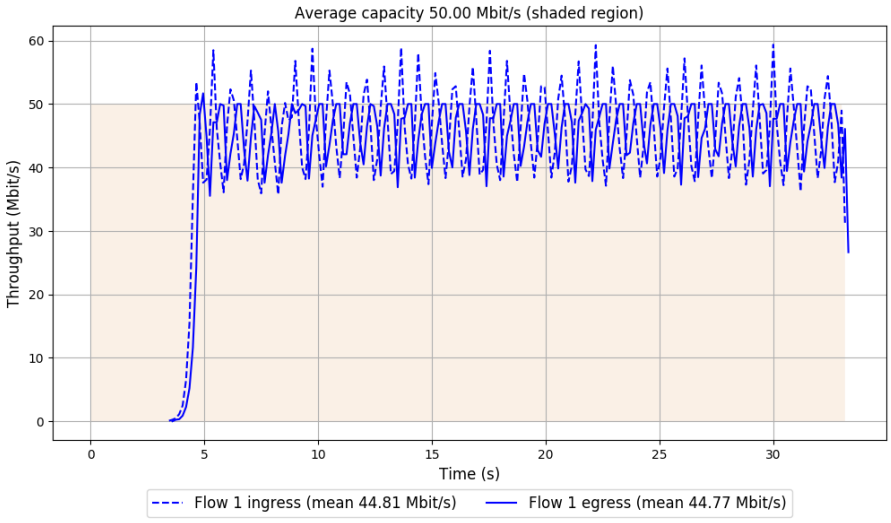


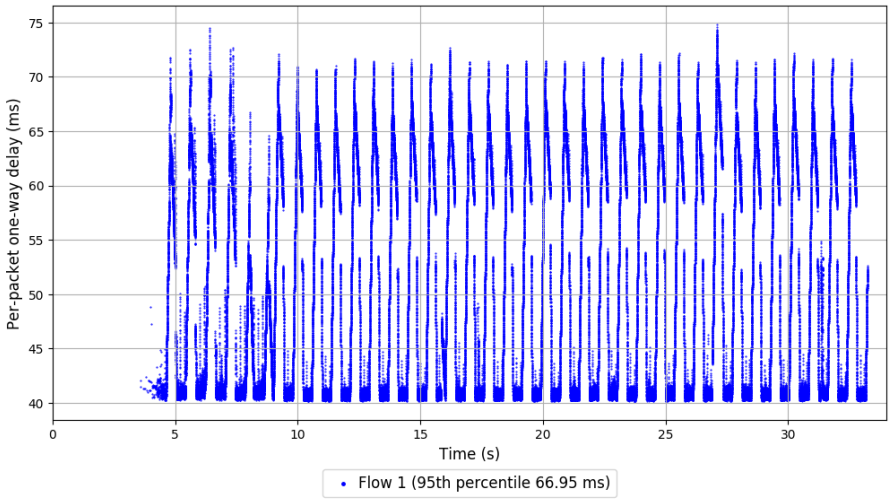
```
Run 3: Statistics of Eagle-001

Start at: 2019-10-27 04:39:44
End at: 2019-10-27 04:40:14

# Below is generated by plot.py at 2019-10-27 04:56:25
# Datalink statistics
-- Total of 1 flow:
Average capacity: 50.00 Mbit/s
Average throughput: 44.77 Mbit/s (89.5% utilization)
95th percentile per-packet one-way delay: 66.954 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 44.77 Mbit/s
95th percentile per-packet one-way delay: 66.954 ms
Loss rate: 0.23%
```

Run 3: Report of Eagle-001 — Data Link



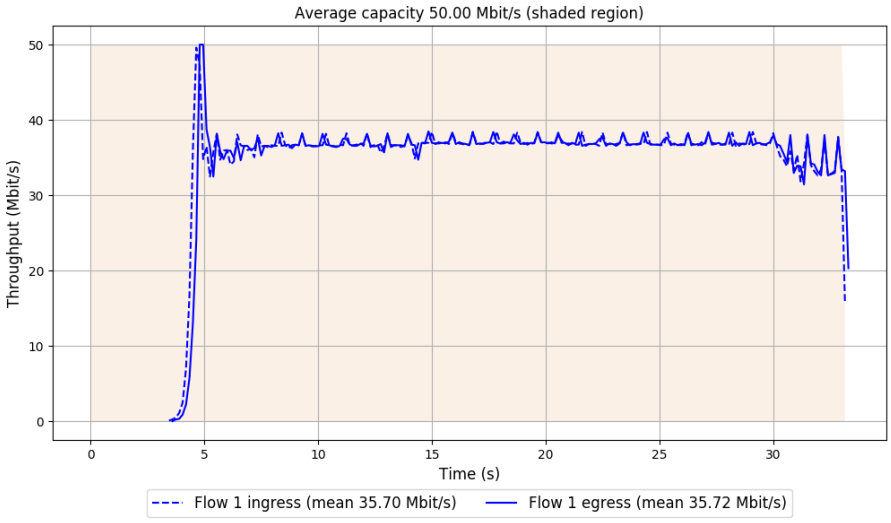


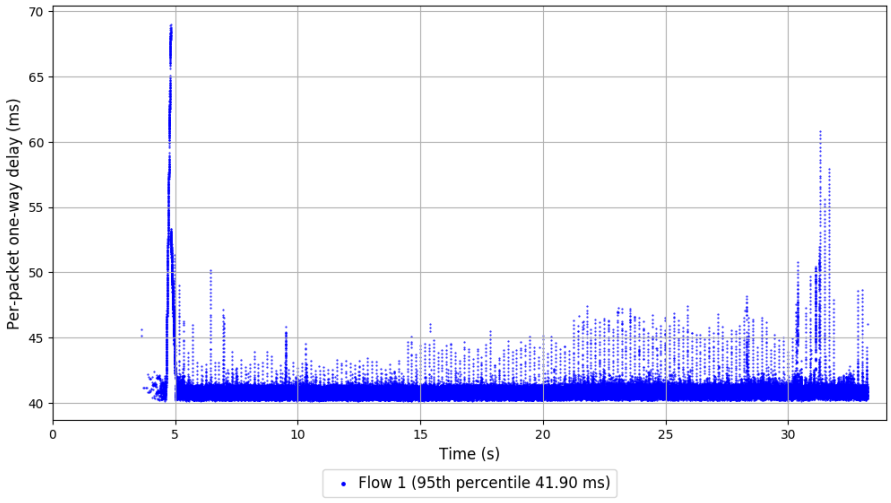
```
Run 1: Statistics of Eagle-003

Start at: 2019-10-27 04:28:11
End at: 2019-10-27 04:28:41

# Below is generated by plot.py at 2019-10-27 04:56:25
# Datalink statistics
-- Total of 1 flow:
Average capacity: 50.00 Mbit/s
Average throughput: 35.72 Mbit/s (71.4% utilization)
95th percentile per-packet one-way delay: 41.903 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 35.72 Mbit/s
95th percentile per-packet one-way delay: 41.903 ms
Loss rate: 0.08%
```

Run 1: Report of Eagle-003 — Data Link



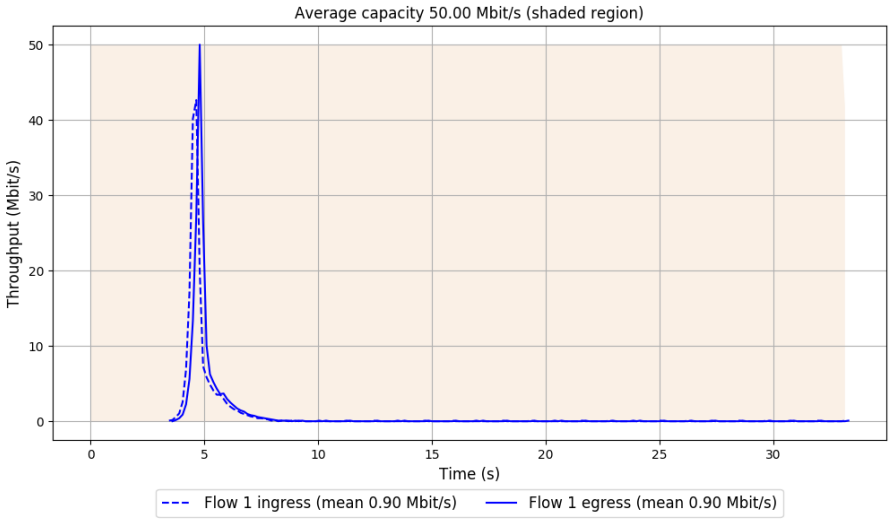


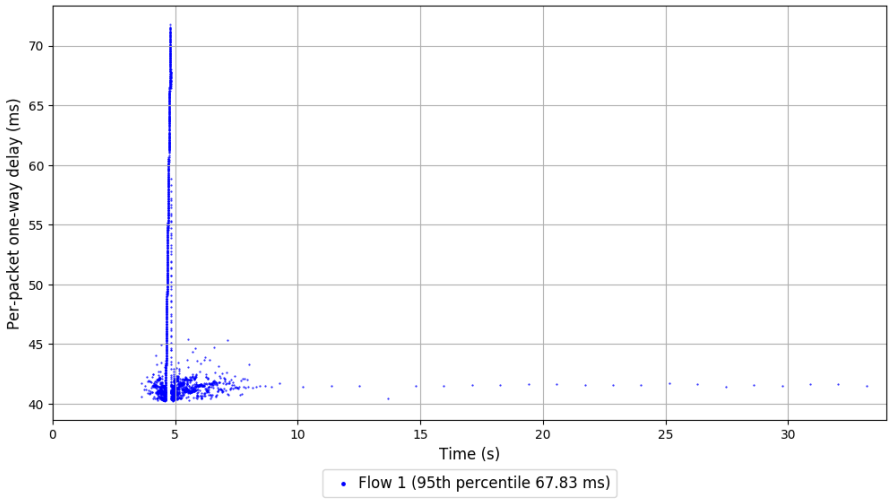
```
Run 2: Statistics of Eagle-003

Start at: 2019-10-27 04:34:17
End at: 2019-10-27 04:34:47

# Below is generated by plot.py at 2019-10-27 04:56:25
# Datalink statistics
-- Total of 1 flow:
Average capacity: 50.00 Mbit/s
Average throughput: 0.90 Mbit/s (1.8% utilization)
95th percentile per-packet one-way delay: 67.826 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.90 Mbit/s
95th percentile per-packet one-way delay: 67.826 ms
Loss rate: 0.00%
```

Run 2: Report of Eagle-003 — Data Link



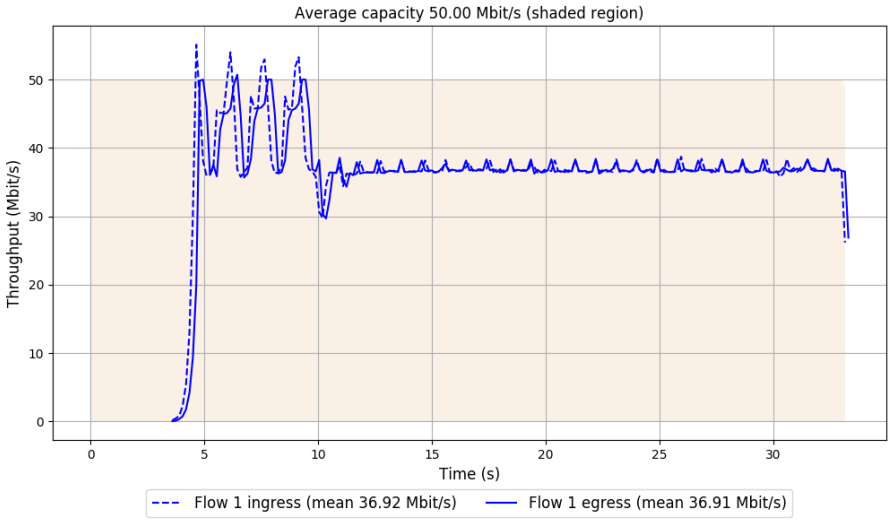


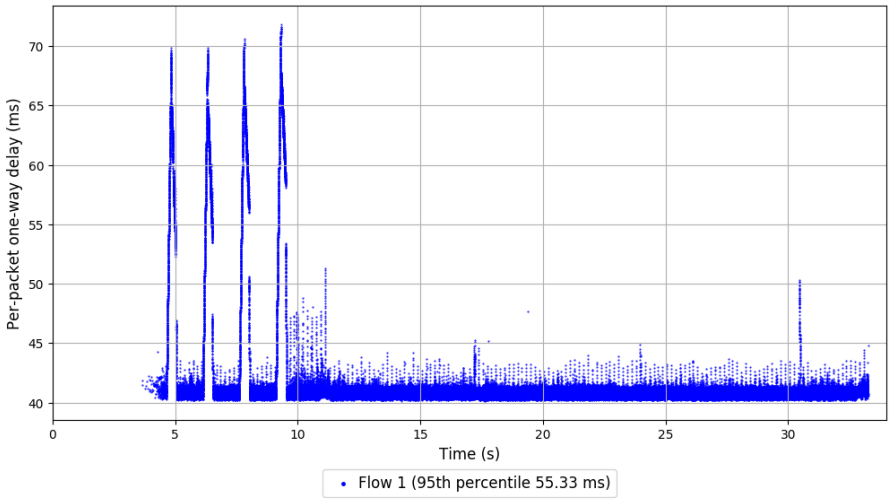
```
Run 3: Statistics of Eagle-003

Start at: 2019-10-27 04:40:20
End at: 2019-10-27 04:40:50

# Below is generated by plot.py at 2019-10-27 04:56:30
# Datalink statistics
-- Total of 1 flow:
Average capacity: 50.00 Mbit/s
Average throughput: 36.91 Mbit/s (73.8% utilization)
95th percentile per-packet one-way delay: 55.332 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 36.91 Mbit/s
95th percentile per-packet one-way delay: 55.332 ms
Loss rate: 0.13%
```

Run 3: Report of Eagle-003 — Data Link



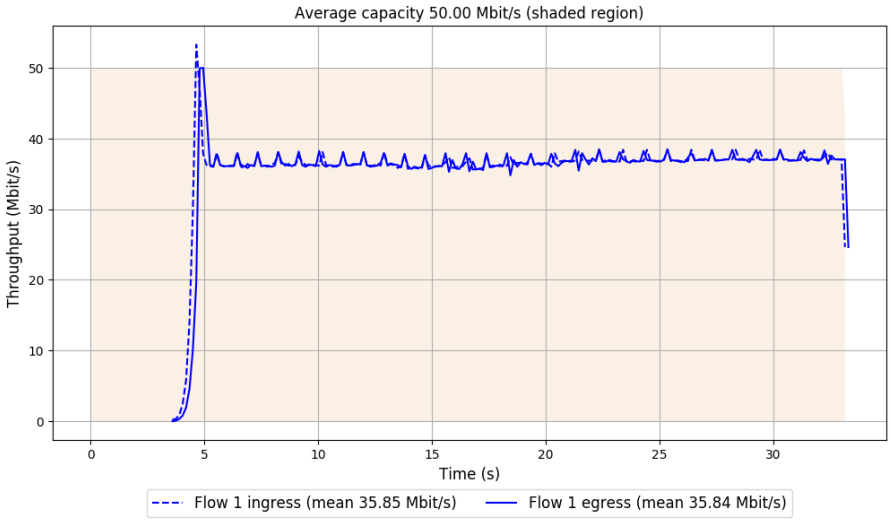


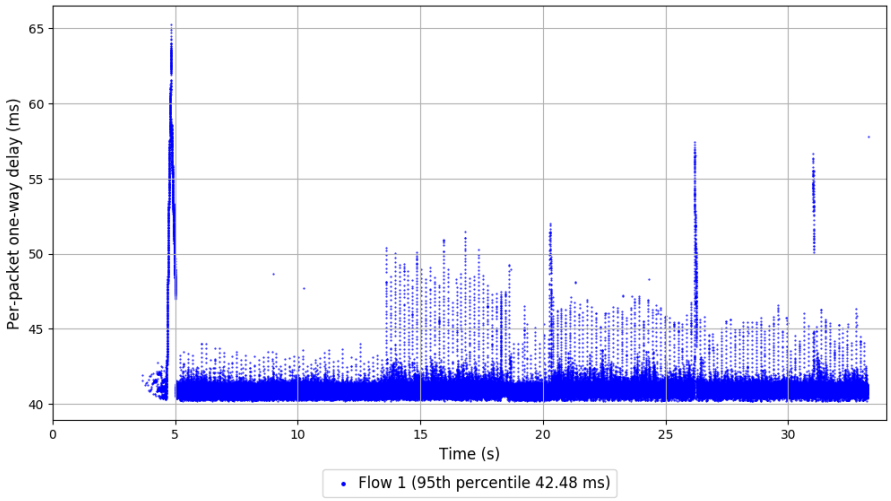
```
Run 1: Statistics of Eagle-004

Start at: 2019-10-27 04:28:48
End at: 2019-10-27 04:29:18

# Below is generated by plot.py at 2019-10-27 04:56:38
# Datalink statistics
-- Total of 1 flow:
Average capacity: 50.00 Mbit/s
Average throughput: 35.84 Mbit/s (71.7% utilization)
95th percentile per-packet one-way delay: 42.478 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 35.84 Mbit/s
95th percentile per-packet one-way delay: 42.478 ms
Loss rate: 0.15%
```

Run 1: Report of Eagle-004 — Data Link



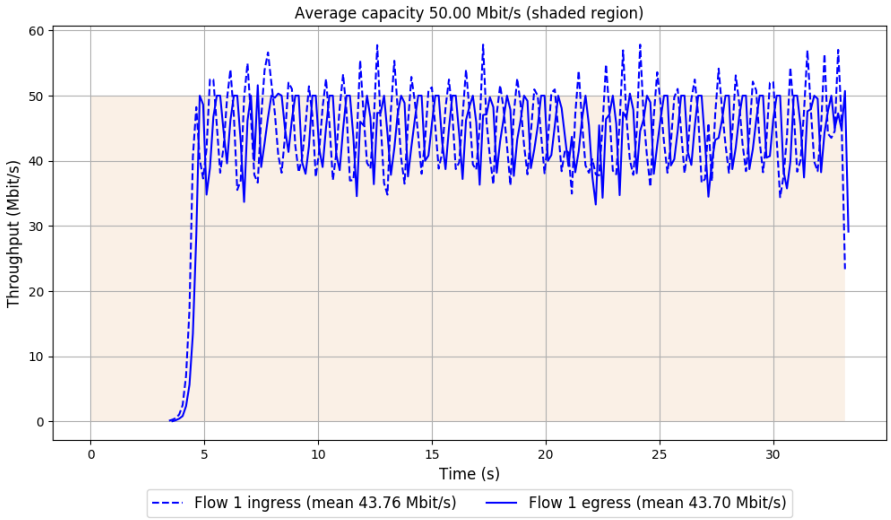


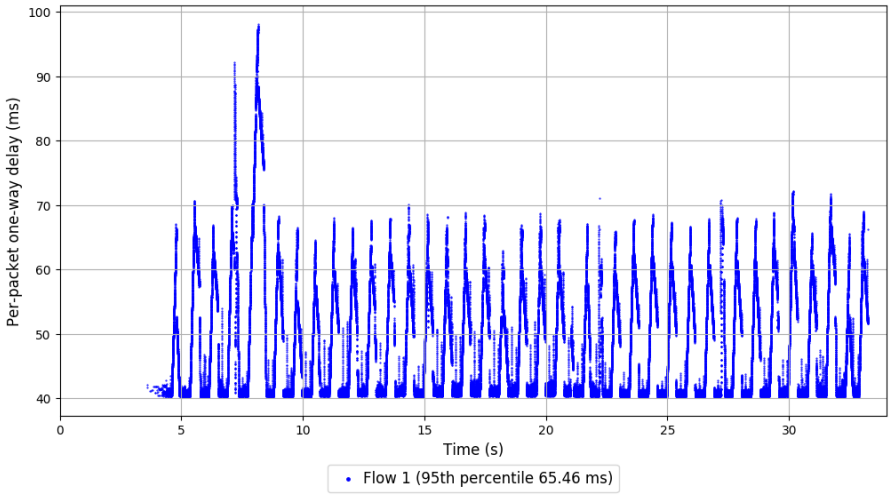
```
Run 2: Statistics of Eagle-004

Start at: 2019-10-27 04:34:51
End at: 2019-10-27 04:35:21

# Below is generated by plot.py at 2019-10-27 04:56:46
# Datalink statistics
-- Total of 1 flow:
Average capacity: 50.00 Mbit/s
Average throughput: 43.70 Mbit/s (87.4% utilization)
95th percentile per-packet one-way delay: 65.462 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 43.70 Mbit/s
95th percentile per-packet one-way delay: 65.462 ms
Loss rate: 0.22%
```

Run 2: Report of Eagle-004 — Data Link



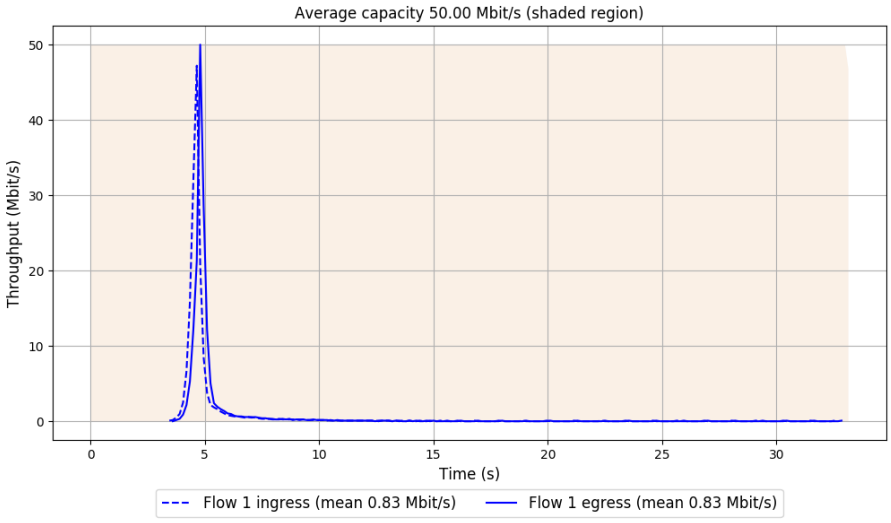


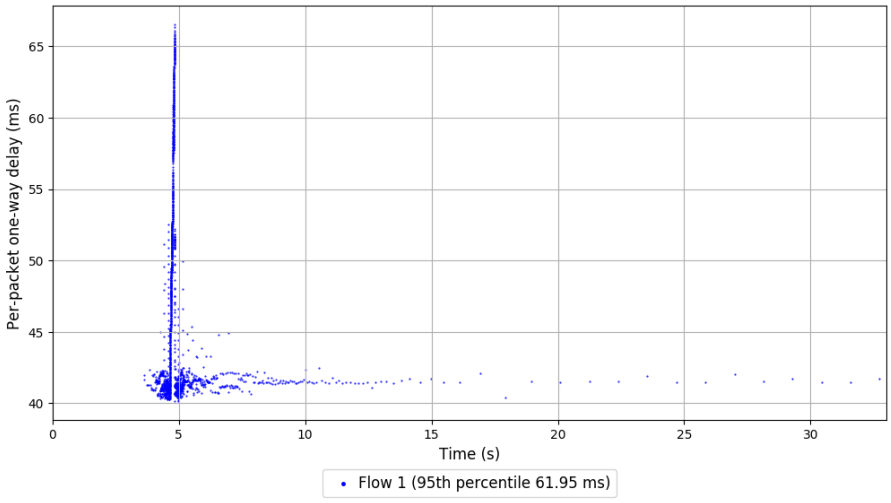
```
Run 3: Statistics of Eagle-004

Start at: 2019-10-27 04:40:56
End at: 2019-10-27 04:41:27

# Below is generated by plot.py at 2019-10-27 04:56:46
# Datalink statistics
-- Total of 1 flow:
Average capacity: 50.00 Mbit/s
Average throughput: 0.83 Mbit/s (1.7% utilization)
95th percentile per-packet one-way delay: 61.946 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.83 Mbit/s
95th percentile per-packet one-way delay: 61.946 ms
Loss rate: 0.00%
```

Run 3: Report of Eagle-004 — Data Link



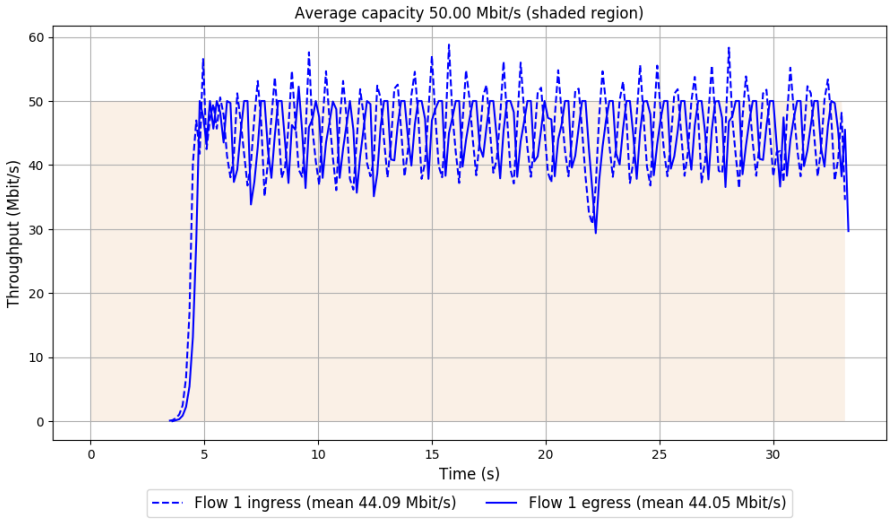


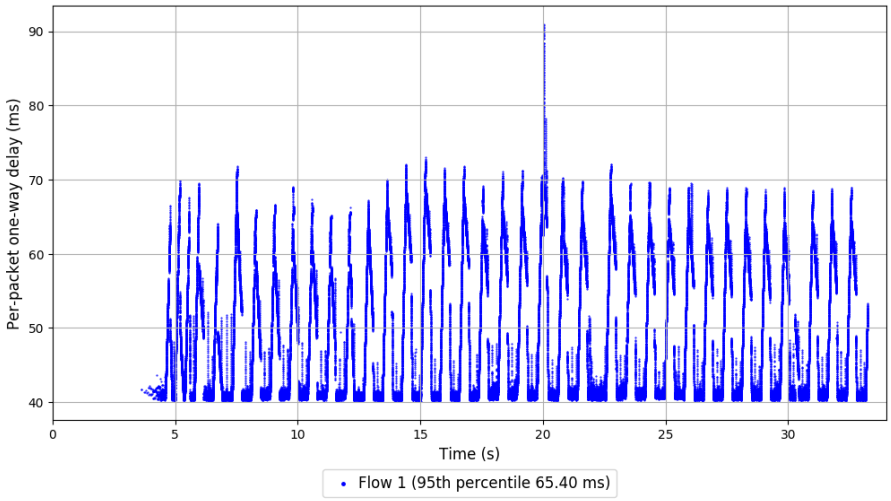
```
Run 1: Statistics of Eagle-005

Start at: 2019-10-27 04:29:24
End at: 2019-10-27 04:29:54

# Below is generated by plot.py at 2019-10-27 04:57:00
# Datalink statistics
-- Total of 1 flow:
Average capacity: 50.00 Mbit/s
Average throughput: 44.05 Mbit/s (88.1% utilization)
95th percentile per-packet one-way delay: 65.403 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 44.05 Mbit/s
95th percentile per-packet one-way delay: 65.403 ms
Loss rate: 0.24%
```

Run 1: Report of Eagle-005 — Data Link



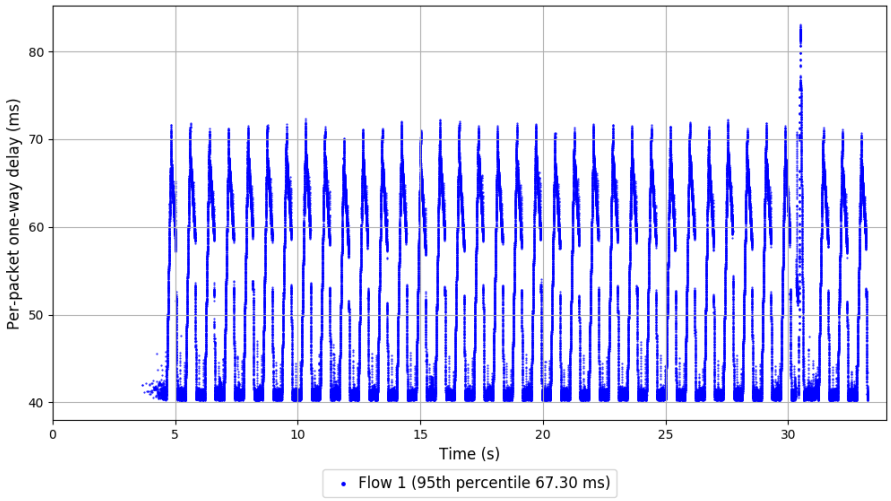


```
Run 2: Statistics of Eagle-005

Start at: 2019-10-27 04:35:28
End at: 2019-10-27 04:35:58

# Below is generated by plot.py at 2019-10-27 04:57:06
# Datalink statistics
-- Total of 1 flow:
Average capacity: 50.00 Mbit/s
Average throughput: 44.60 Mbit/s (89.2% utilization)
95th percentile per-packet one-way delay: 67.296 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 44.60 Mbit/s
95th percentile per-packet one-way delay: 67.296 ms
Loss rate: 0.12%
```

Run 2: Report of Eagle-005 — Data Link

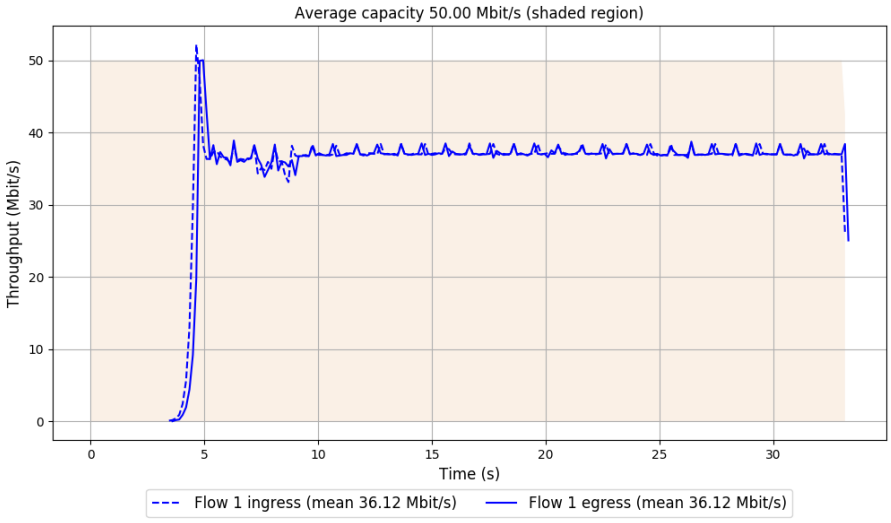


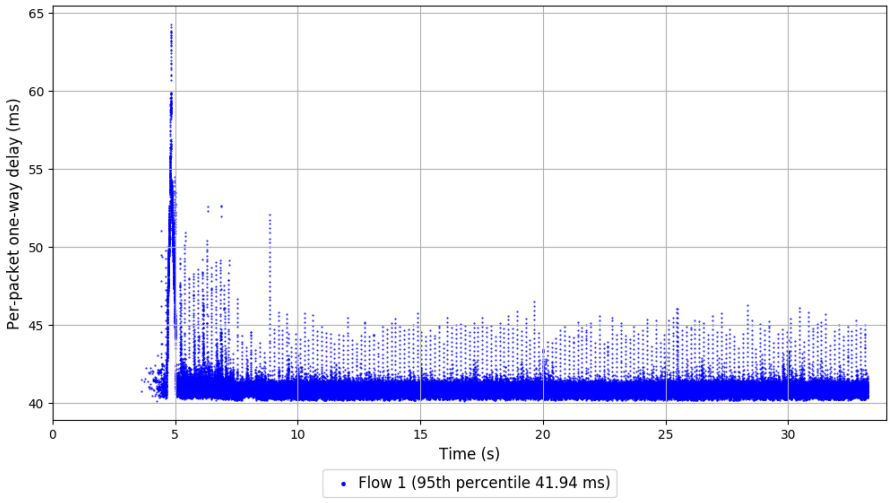
```
Run 3: Statistics of Eagle-005

Start at: 2019-10-27 04:41:31
End at: 2019-10-27 04:42:01

# Below is generated by plot.py at 2019-10-27 04:57:06
# Datalink statistics
-- Total of 1 flow:
Average capacity: 50.00 Mbit/s
Average throughput: 36.12 Mbit/s (72.2% utilization)
95th percentile per-packet one-way delay: 41.935 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 36.12 Mbit/s
95th percentile per-packet one-way delay: 41.935 ms
Loss rate: 0.14%
```

Run 3: Report of Eagle-005 — Data Link



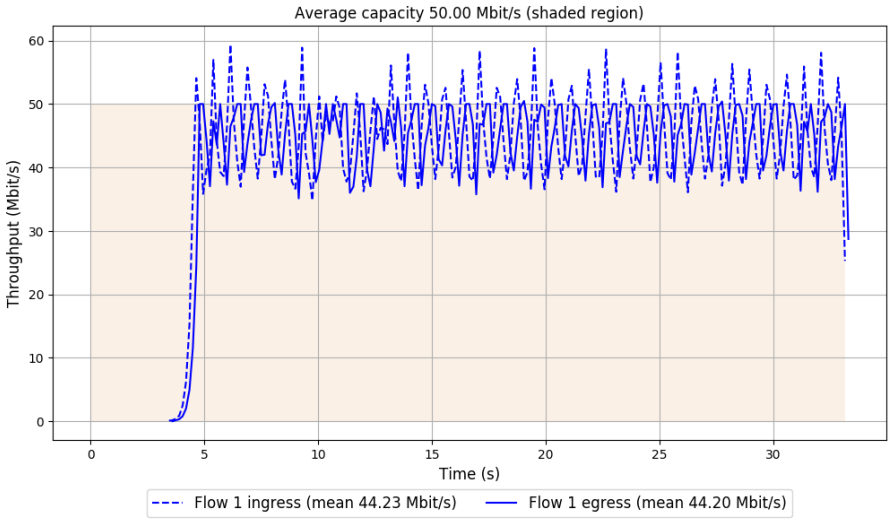


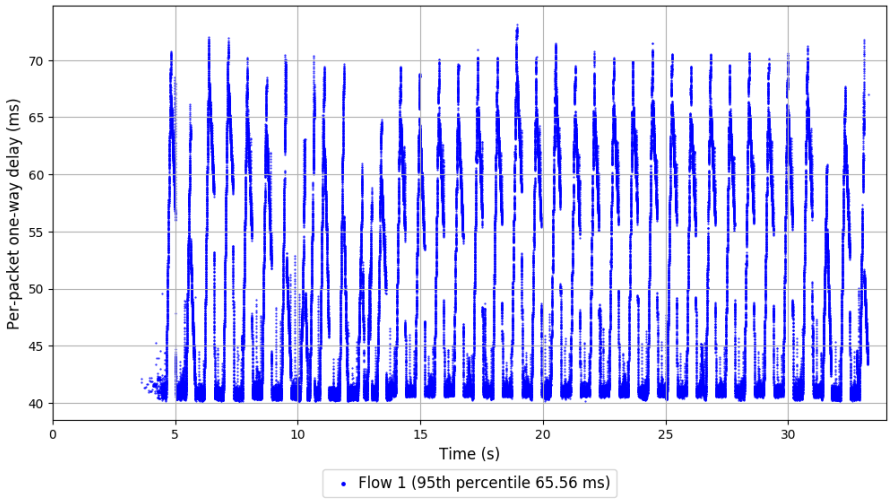
```
Run 1: Statistics of Eagle-006

Start at: 2019-10-27 04:30:01
End at: 2019-10-27 04:30:31

# Below is generated by plot.py at 2019-10-27 04:57:14
# Datalink statistics
-- Total of 1 flow:
Average capacity: 50.00 Mbit/s
Average throughput: 44.20 Mbit/s (88.4% utilization)
95th percentile per-packet one-way delay: 65.556 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 44.20 Mbit/s
95th percentile per-packet one-way delay: 65.556 ms
Loss rate: 0.14%
```

Run 1: Report of Eagle-006 — Data Link



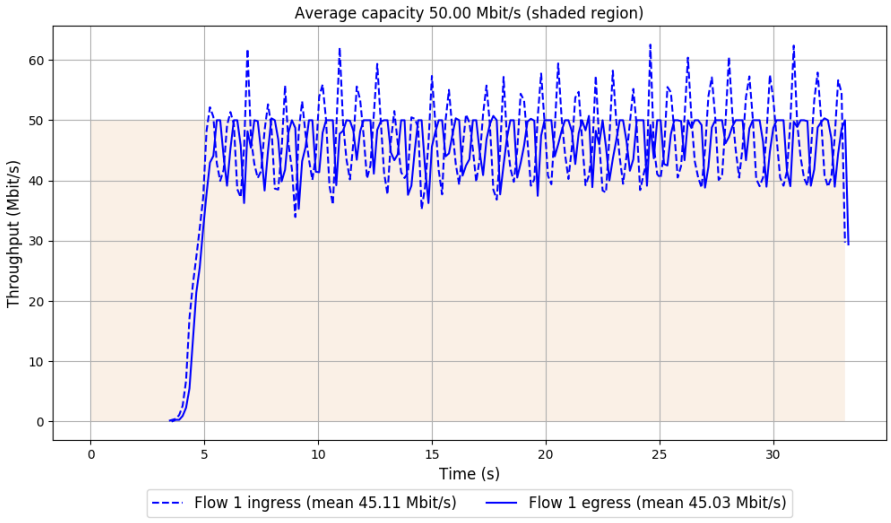


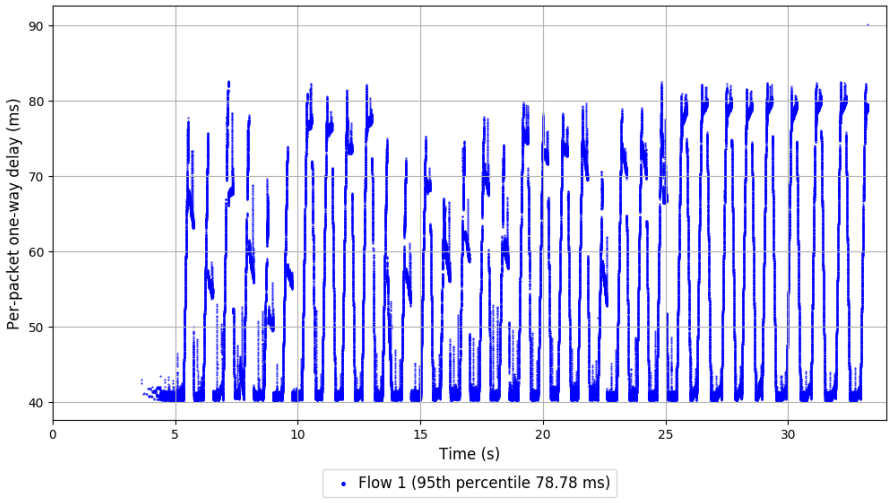
```
Run 2: Statistics of Eagle-006

Start at: 2019-10-27 04:36:05
End at: 2019-10-27 04:36:35

# Below is generated by plot.py at 2019-10-27 04:57:33
# Datalink statistics
-- Total of 1 flow:
Average capacity: 50.00 Mbit/s
Average throughput: 45.03 Mbit/s (90.1% utilization)
95th percentile per-packet one-way delay: 78.784 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 45.03 Mbit/s
95th percentile per-packet one-way delay: 78.784 ms
Loss rate: 0.30%
```

Run 2: Report of Eagle-006 — Data Link



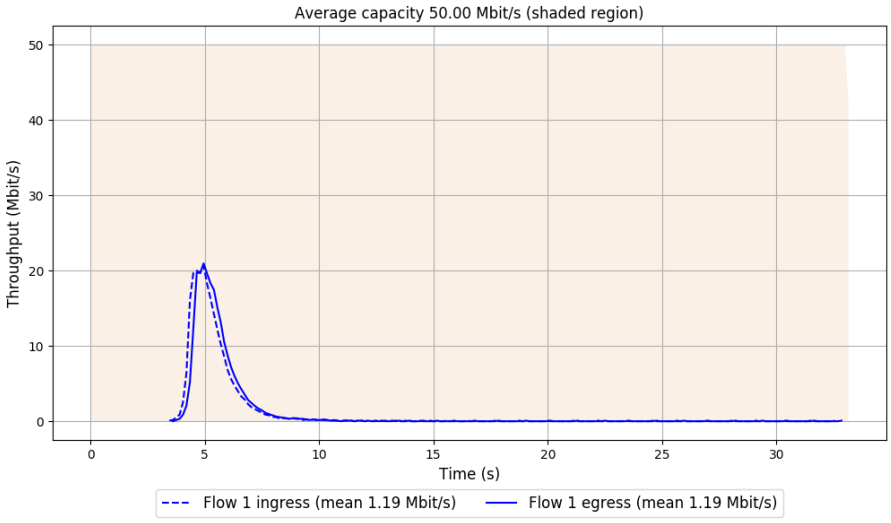


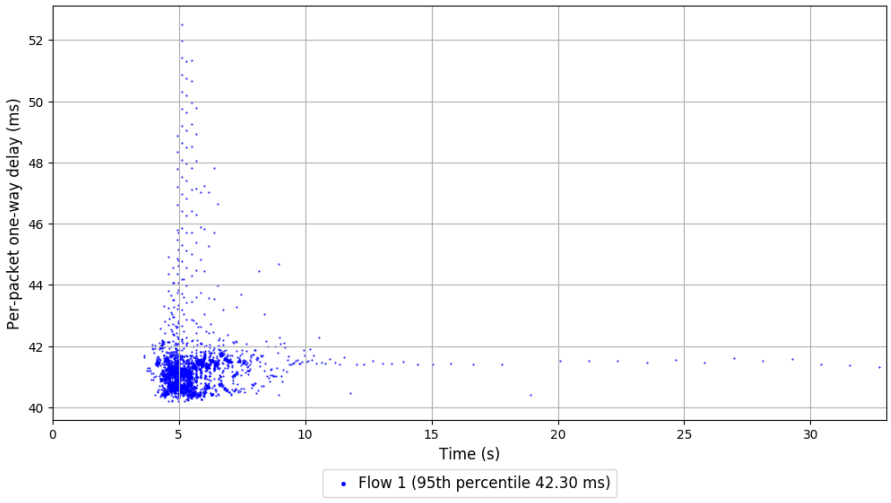
```
Run 3: Statistics of Eagle-006

Start at: 2019-10-27 04:42:07
End at: 2019-10-27 04:42:37

# Below is generated by plot.py at 2019-10-27 04:57:33
# Datalink statistics
-- Total of 1 flow:
Average capacity: 50.00 Mbit/s
Average throughput: 1.19 Mbit/s (2.4% utilization)
95th percentile per-packet one-way delay: 42.300 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.19 Mbit/s
95th percentile per-packet one-way delay: 42.300 ms
Loss rate: 0.00%
```

Run 3: Report of Eagle-006 — Data Link



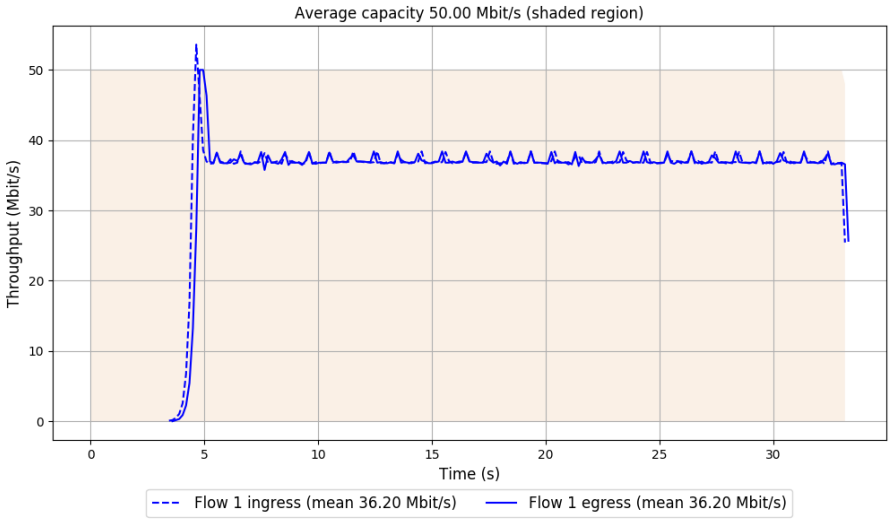


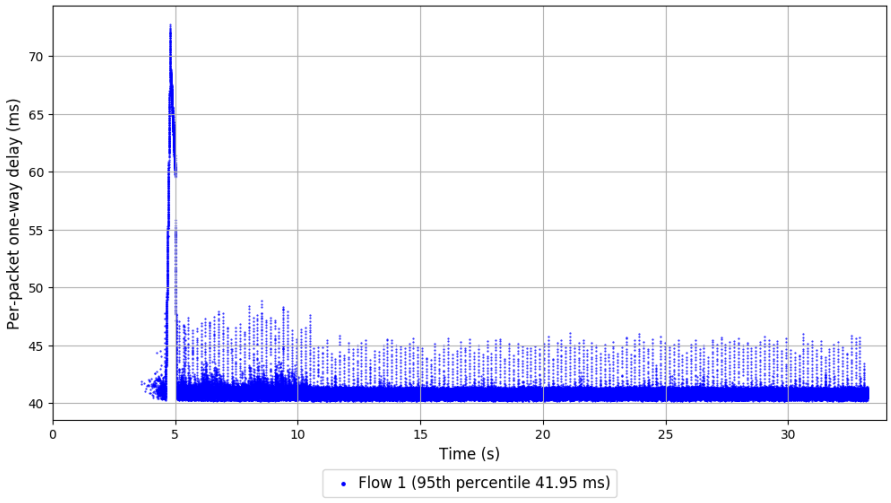
```
Run 1: Statistics of Eagle-007

Start at: 2019-10-27 04:30:37
End at: 2019-10-27 04:31:07

# Below is generated by plot.py at 2019-10-27 04:57:34
# Datalink statistics
-- Total of 1 flow:
Average capacity: 50.00 Mbit/s
Average throughput: 36.20 Mbit/s (72.4% utilization)
95th percentile per-packet one-way delay: 41.955 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 36.20 Mbit/s
95th percentile per-packet one-way delay: 41.955 ms
Loss rate: 0.14%
```

Run 1: Report of Eagle-007 — Data Link



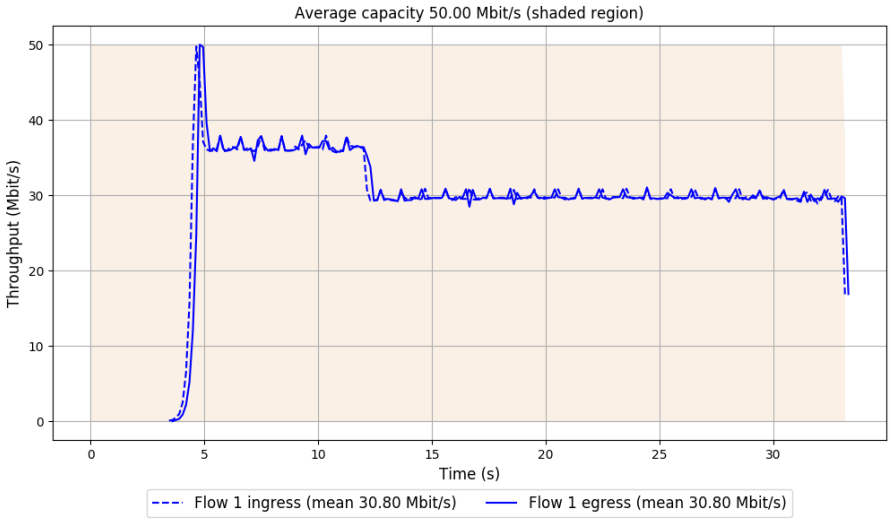


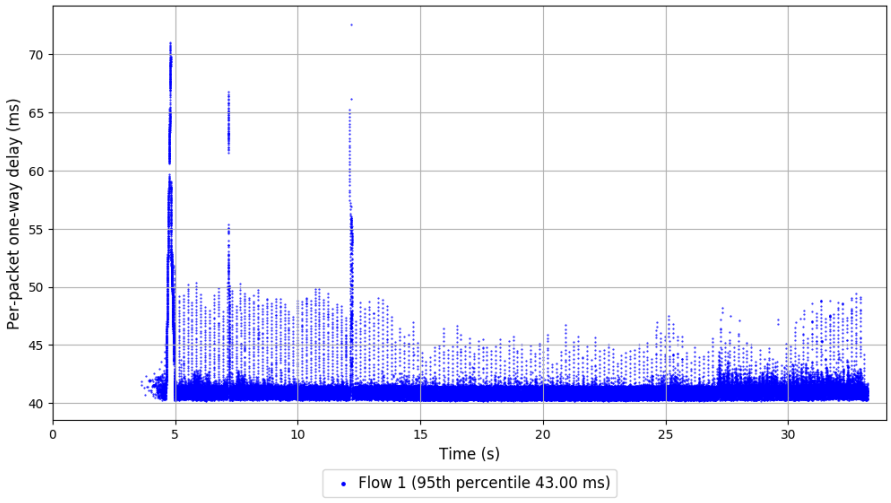
```
Run 2: Statistics of Eagle-007

Start at: 2019-10-27 04:36:41
End at: 2019-10-27 04:37:11

# Below is generated by plot.py at 2019-10-27 04:57:34
# Datalink statistics
-- Total of 1 flow:
Average capacity: 50.00 Mbit/s
Average throughput: 30.80 Mbit/s (61.6% utilization)
95th percentile per-packet one-way delay: 42.997 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 30.80 Mbit/s
95th percentile per-packet one-way delay: 42.997 ms
Loss rate: 0.14%
```

Run 2: Report of Eagle-007 — Data Link



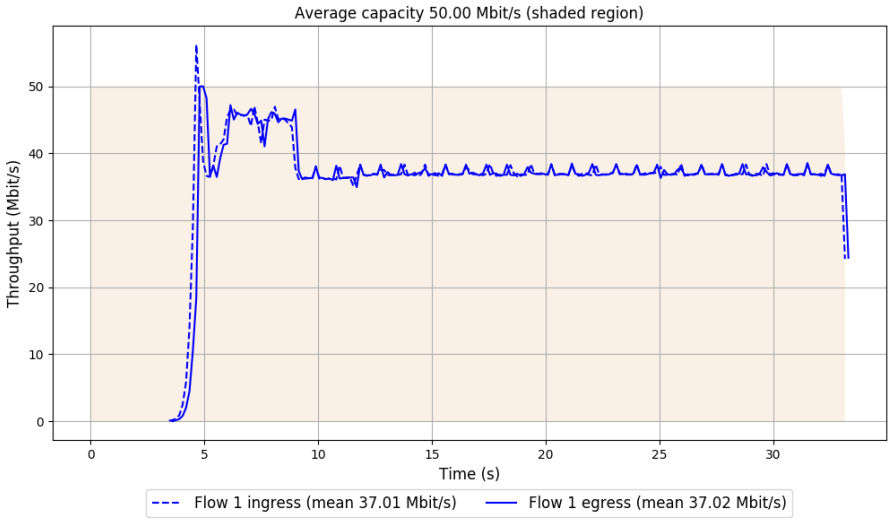


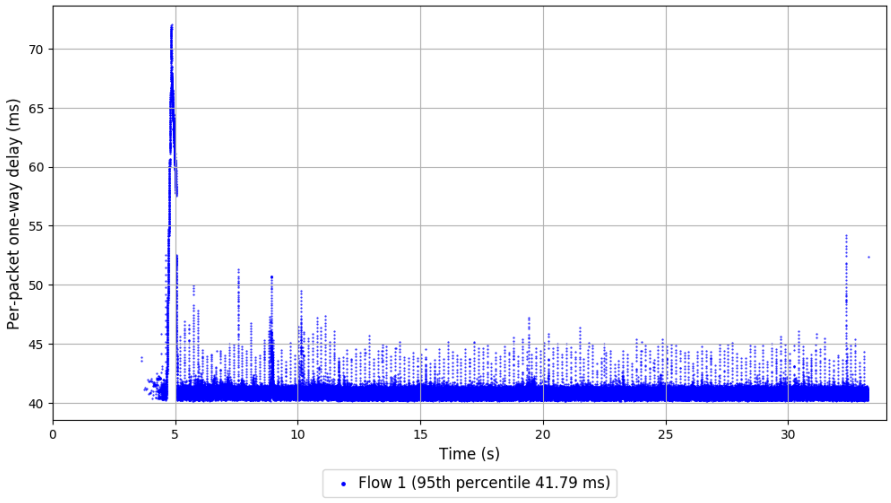
```
Run 3: Statistics of Eagle-007

Start at: 2019-10-27 04:42:42
End at: 2019-10-27 04:43:12

# Below is generated by plot.py at 2019-10-27 04:57:39
# Datalink statistics
-- Total of 1 flow:
Average capacity: 50.00 Mbit/s
Average throughput: 37.02 Mbit/s (74.0% utilization)
95th percentile per-packet one-way delay: 41.794 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 37.02 Mbit/s
95th percentile per-packet one-way delay: 41.794 ms
Loss rate: 0.14%
```

Run 3: Report of Eagle-007 — Data Link



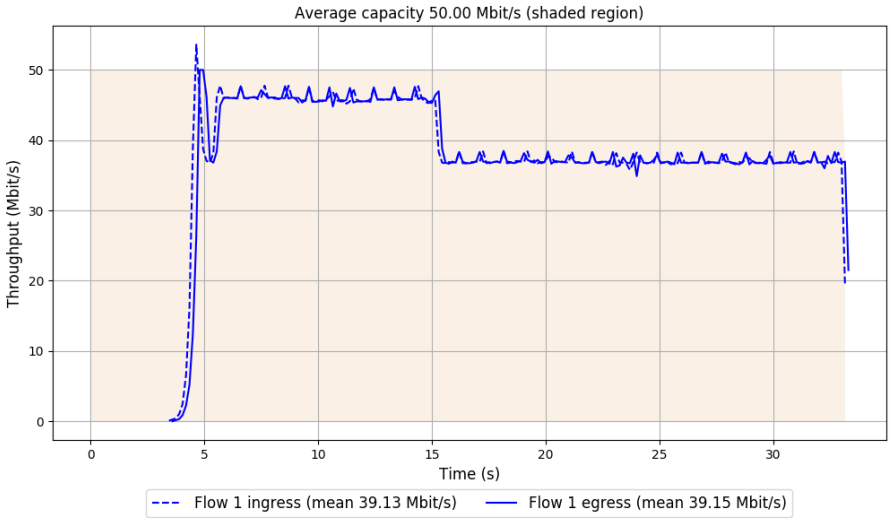


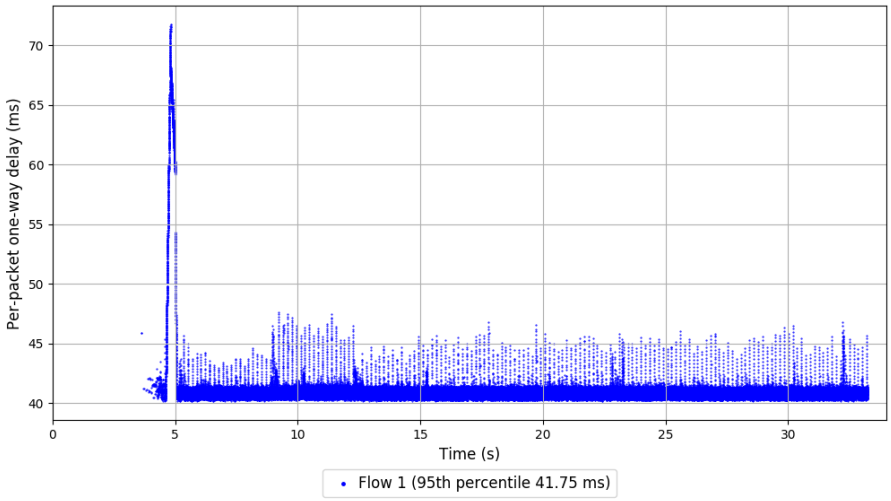
```
Run 1: Statistics of Eagle-008

Start at: 2019-10-27 04:31:14
End at: 2019-10-27 04:31:44

# Below is generated by plot.py at 2019-10-27 04:57:53
# Datalink statistics
-- Total of 1 flow:
Average capacity: 50.00 Mbit/s
Average throughput: 39.15 Mbit/s (78.3% utilization)
95th percentile per-packet one-way delay: 41.749 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 39.15 Mbit/s
95th percentile per-packet one-way delay: 41.749 ms
Loss rate: 0.11%
```

Run 1: Report of Eagle-008 — Data Link



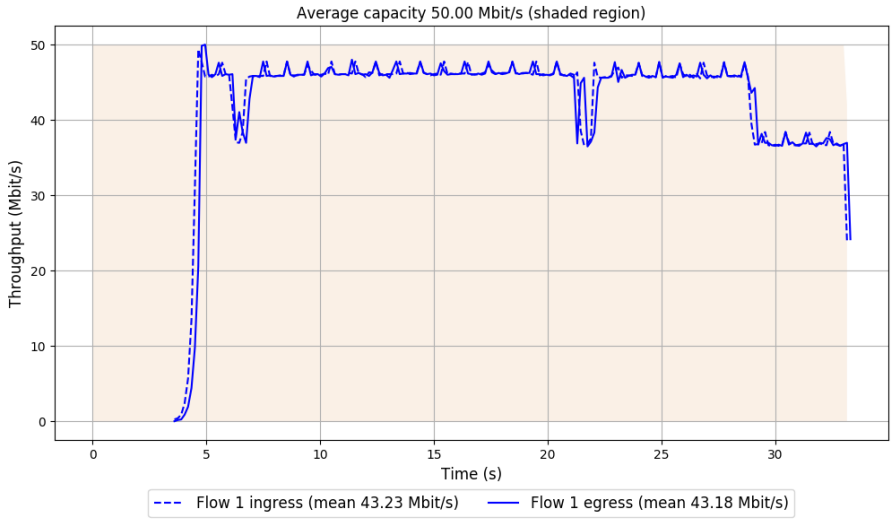


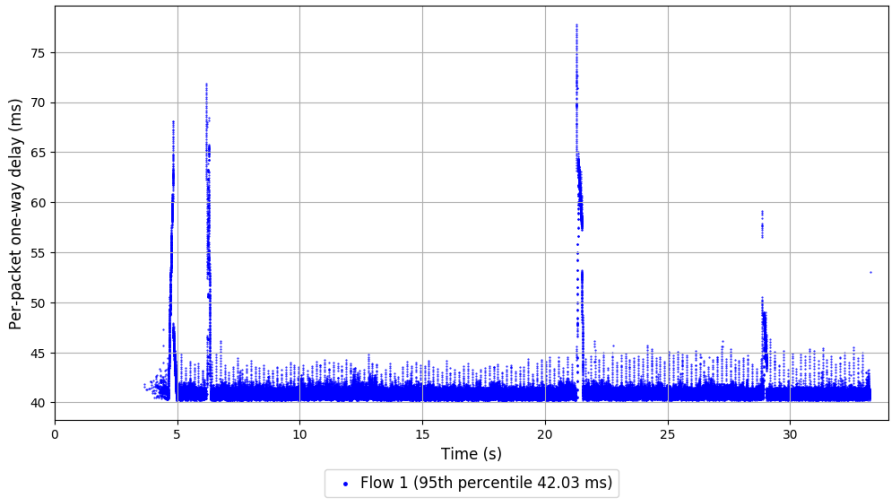
```
Run 2: Statistics of Eagle-008

Start at: 2019-10-27 04:37:17
End at: 2019-10-27 04:37:47

# Below is generated by plot.py at 2019-10-27 04:58:02
# Datalink statistics
-- Total of 1 flow:
Average capacity: 50.00 Mbit/s
Average throughput: 43.18 Mbit/s (86.4% utilization)
95th percentile per-packet one-way delay: 42.026 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 43.18 Mbit/s
95th percentile per-packet one-way delay: 42.026 ms
Loss rate: 0.22%
```

Run 2: Report of Eagle-008 — Data Link



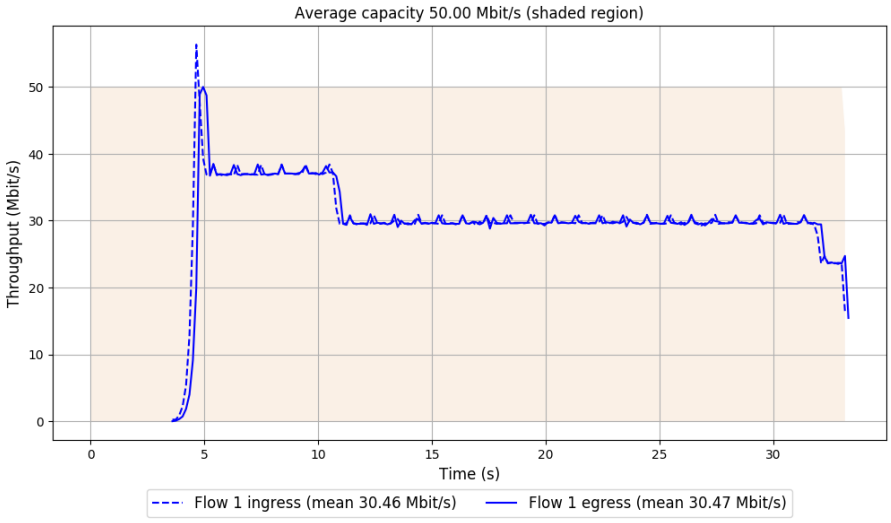


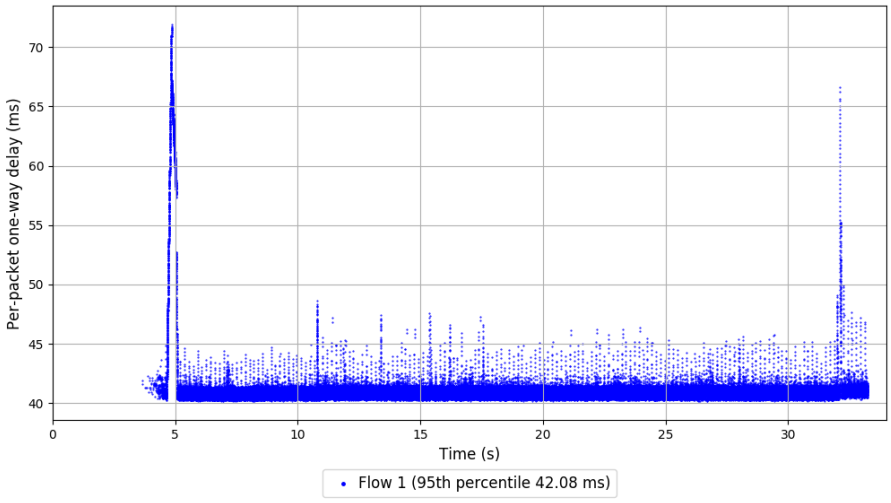
```
Run 3: Statistics of Eagle-008

Start at: 2019-10-27 04:43:18
End at: 2019-10-27 04:43:48

# Below is generated by plot.py at 2019-10-27 04:58:02
# Datalink statistics
-- Total of 1 flow:
Average capacity: 50.00 Mbit/s
Average throughput: 30.47 Mbit/s (60.9% utilization)
95th percentile per-packet one-way delay: 42.081 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 30.47 Mbit/s
95th percentile per-packet one-way delay: 42.081 ms
Loss rate: 0.11%
```

Run 3: Report of Eagle-008 — Data Link



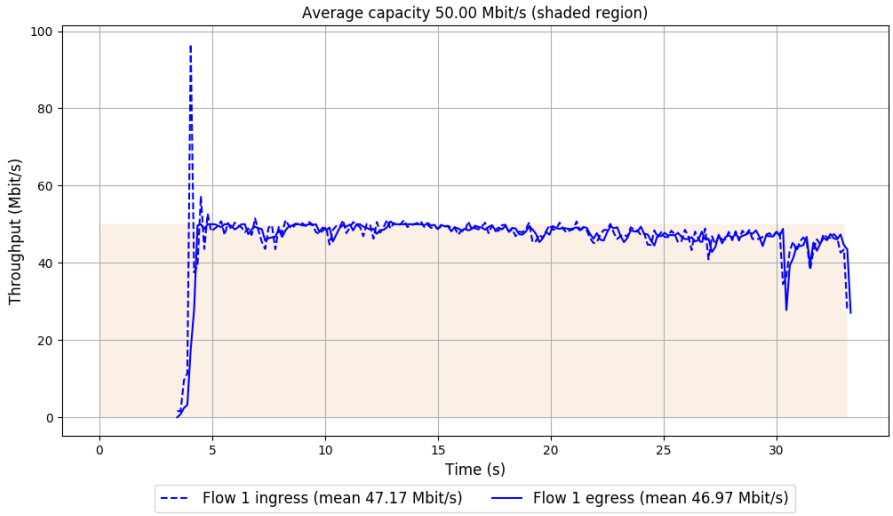


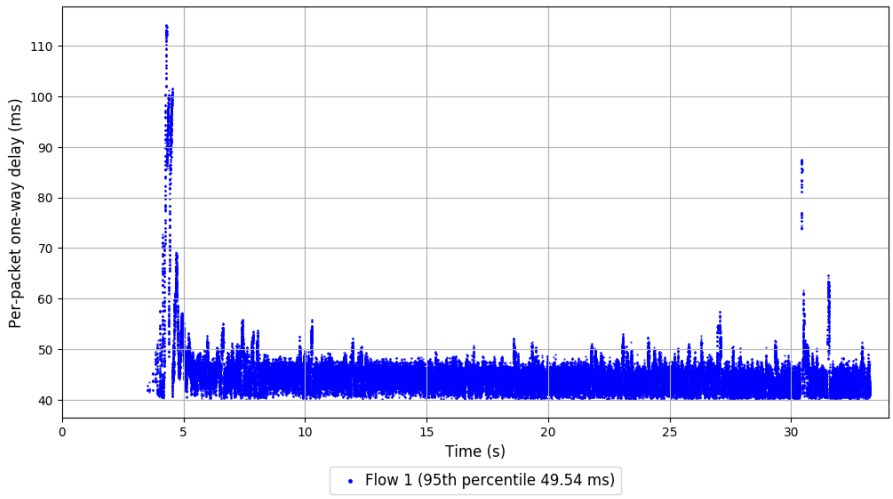
```
Run 1: Statistics of Indigo

Start at: 2019-10-27 04:33:03
End at: 2019-10-27 04:33:33

# Below is generated by plot.py at 2019-10-27 04:58:11
# Datalink statistics
-- Total of 1 flow:
Average capacity: 50.00 Mbit/s
Average throughput: 46.97 Mbit/s (93.9% utilization)
95th percentile per-packet one-way delay: 49.542 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 46.97 Mbit/s
95th percentile per-packet one-way delay: 49.542 ms
Loss rate: 0.55%
```

Run 1: Report of Indigo — Data Link



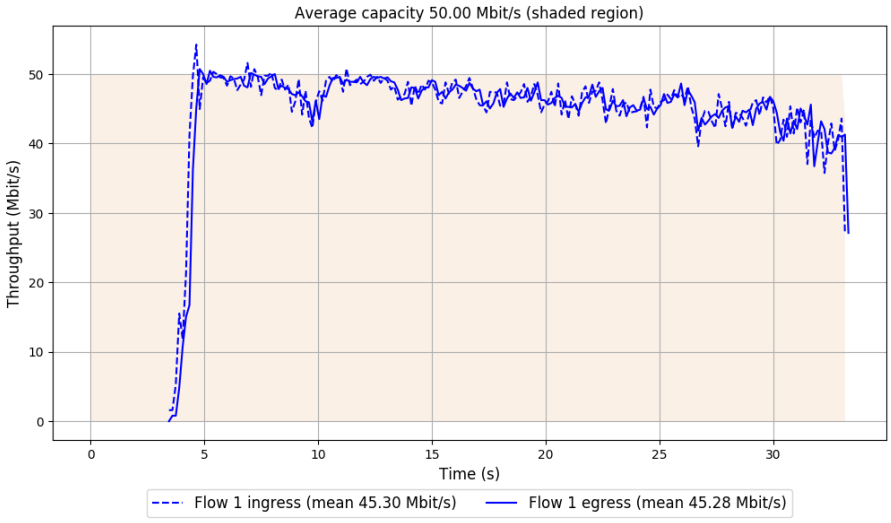


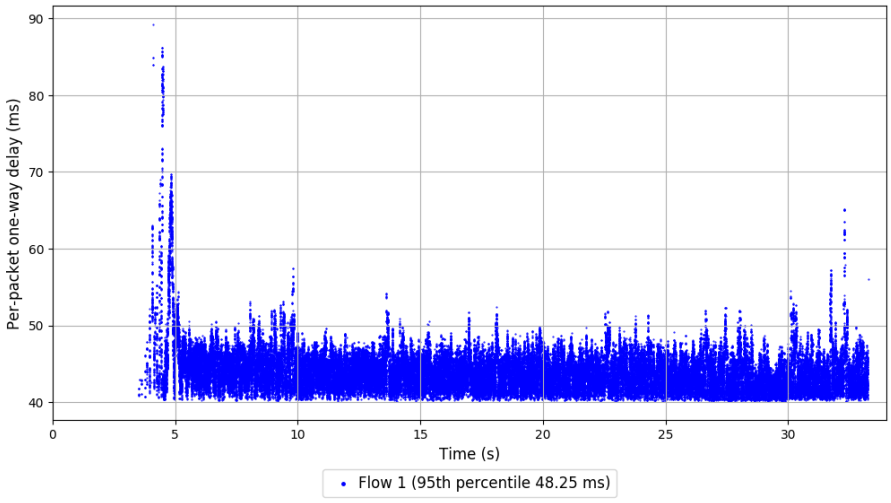
```
Run 2: Statistics of Indigo

Start at: 2019-10-27 04:39:07
End at: 2019-10-27 04:39:37

# Below is generated by plot.py at 2019-10-27 04:58:23
# Datalink statistics
-- Total of 1 flow:
Average capacity: 50.00 Mbit/s
Average throughput: 45.28 Mbit/s (90.6% utilization)
95th percentile per-packet one-way delay: 48.248 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 45.28 Mbit/s
95th percentile per-packet one-way delay: 48.248 ms
Loss rate: 0.16%
```

Run 2: Report of Indigo — Data Link



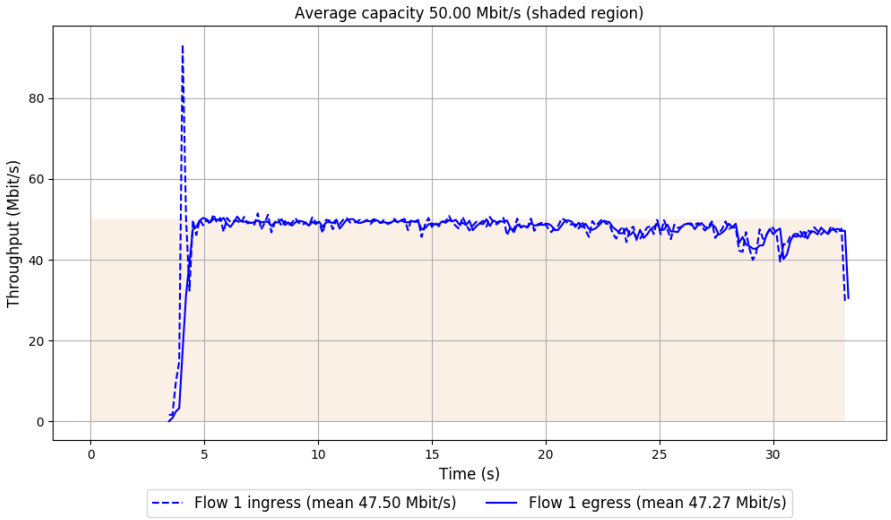


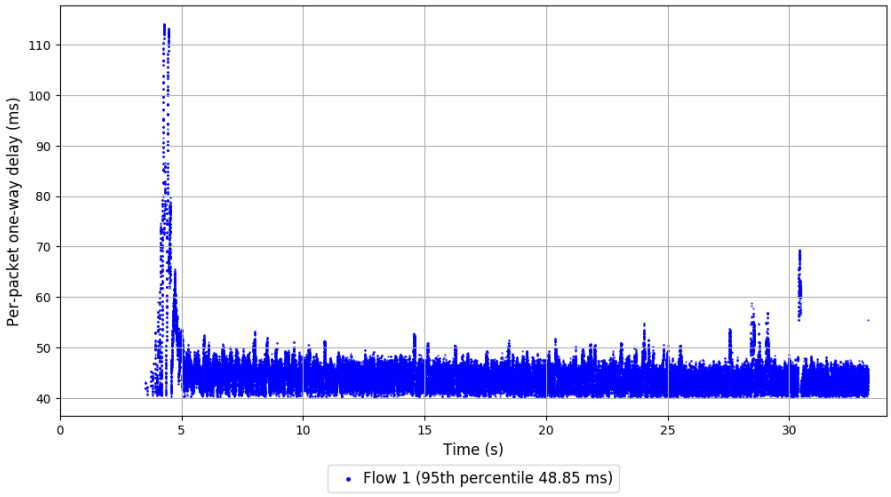
```
Run 3: Statistics of Indigo

Start at: 2019-10-27 04:45:07
End at: 2019-10-27 04:45:37

# Below is generated by plot.py at 2019-10-27 04:58:24
# Datalink statistics
-- Total of 1 flow:
Average capacity: 50.00 Mbit/s
Average throughput: 47.27 Mbit/s (94.5% utilization)
95th percentile per-packet one-way delay: 48.849 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 47.27 Mbit/s
95th percentile per-packet one-way delay: 48.849 ms
Loss rate: 0.59%
```

Run 3: Report of Indigo — Data Link



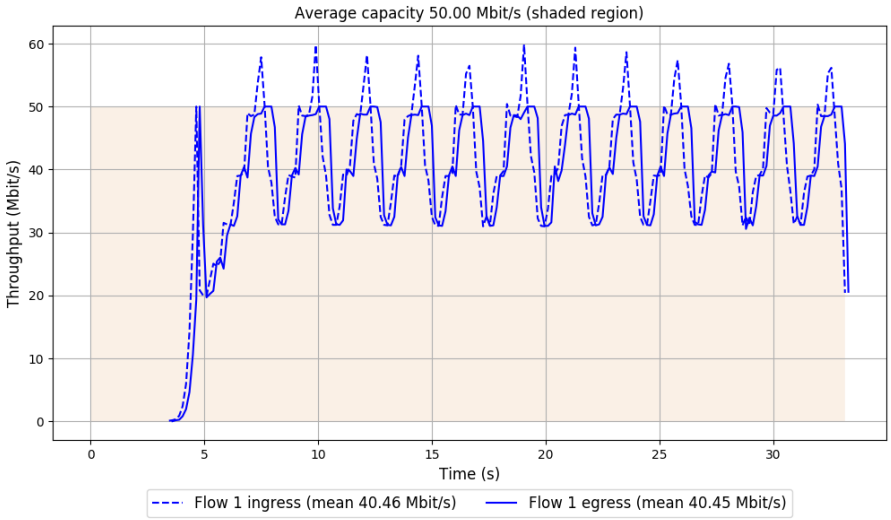


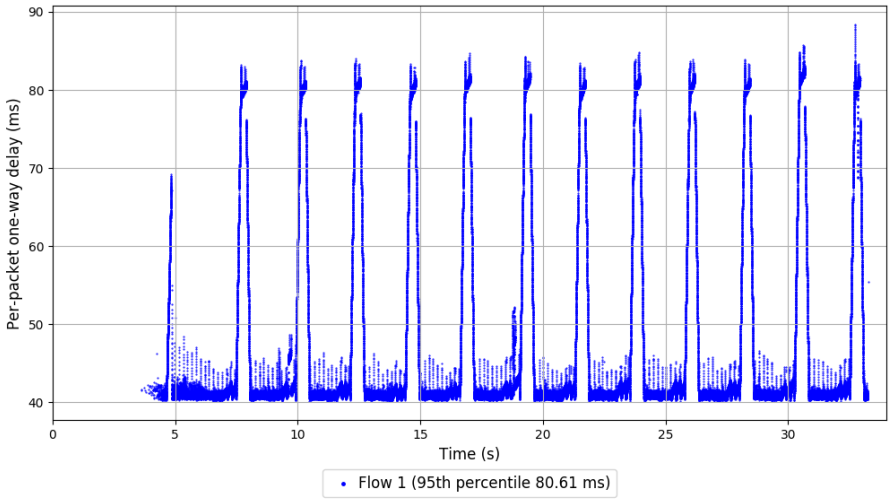
```
Run 1: Statistics of Synthesized-BBR

Start at: 2019-10-27 04:31:50
End at: 2019-10-27 04:32:20

# Below is generated by plot.py at 2019-10-27 04:58:27
# Datalink statistics
-- Total of 1 flow:
Average capacity: 50.00 Mbit/s
Average throughput: 40.45 Mbit/s (80.9% utilization)
95th percentile per-packet one-way delay: 80.611 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 40.45 Mbit/s
95th percentile per-packet one-way delay: 80.611 ms
Loss rate: 0.11%
```

Run 1: Report of Synthesized-BBR — Data Link



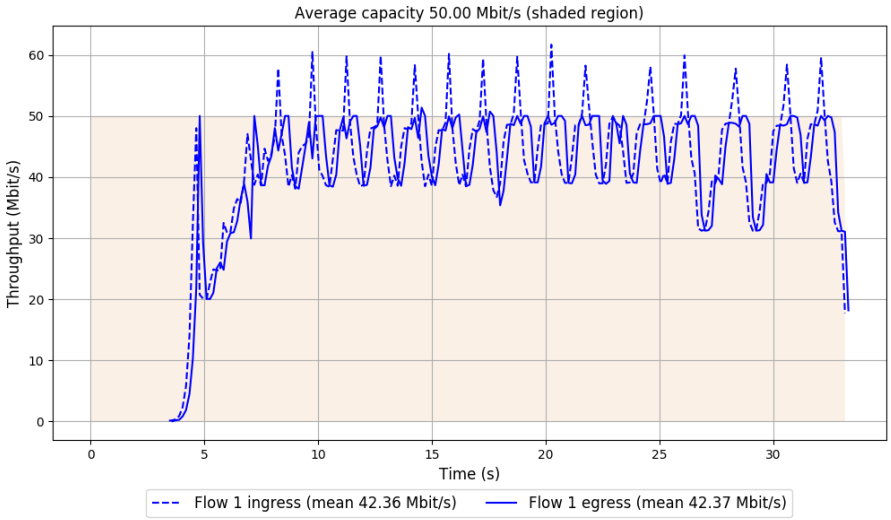


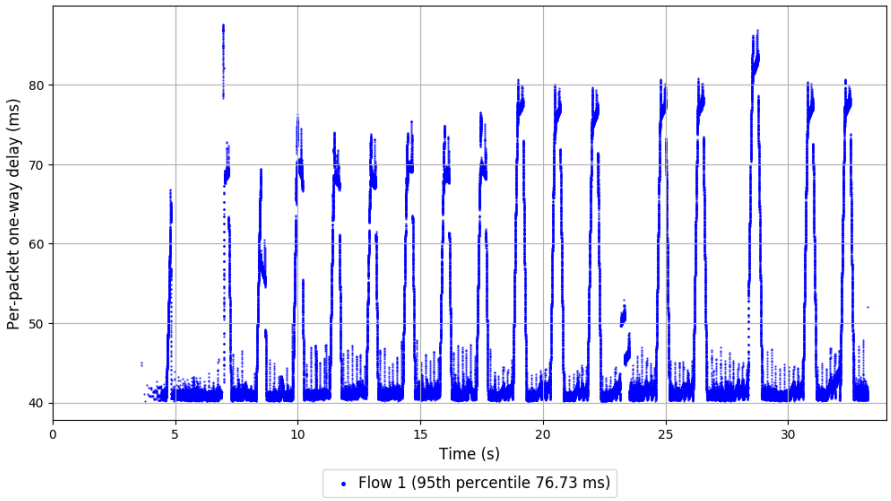
```
Run 2: Statistics of Synthesized-BBR

Start at: 2019-10-27 04:37:54
End at: 2019-10-27 04:38:24

# Below is generated by plot.py at 2019-10-27 04:58:32
# Datalink statistics
-- Total of 1 flow:
Average capacity: 50.00 Mbit/s
Average throughput: 42.37 Mbit/s (84.7% utilization)
95th percentile per-packet one-way delay: 76.730 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 42.37 Mbit/s
95th percentile per-packet one-way delay: 76.730 ms
Loss rate: 0.16%
```

Run 2: Report of Synthesized-BBR — Data Link





```
Run 3: Statistics of Synthesized-BBR

Start at: 2019-10-27 04:43:54
End at: 2019-10-27 04:44:24

# Below is generated by plot.py at 2019-10-27 04:58:34
# Datalink statistics
-- Total of 1 flow:
Average capacity: 50.00 Mbit/s
Average throughput: 41.64 Mbit/s (83.3% utilization)
95th percentile per-packet one-way delay: 73.632 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 41.64 Mbit/s
95th percentile per-packet one-way delay: 73.632 ms
Loss rate: 0.41%
```

Run 3: Report of Synthesized-BBR — Data Link