Pantheon Report

Generated at 2019-10-27 04:21:40 (UTC).

Tested in mahimahi: `mm-delay 28 mm-link 10mbps.trace 50mbps.trace --uplink-queue=droptail --uplink-queue-args=packets=14`

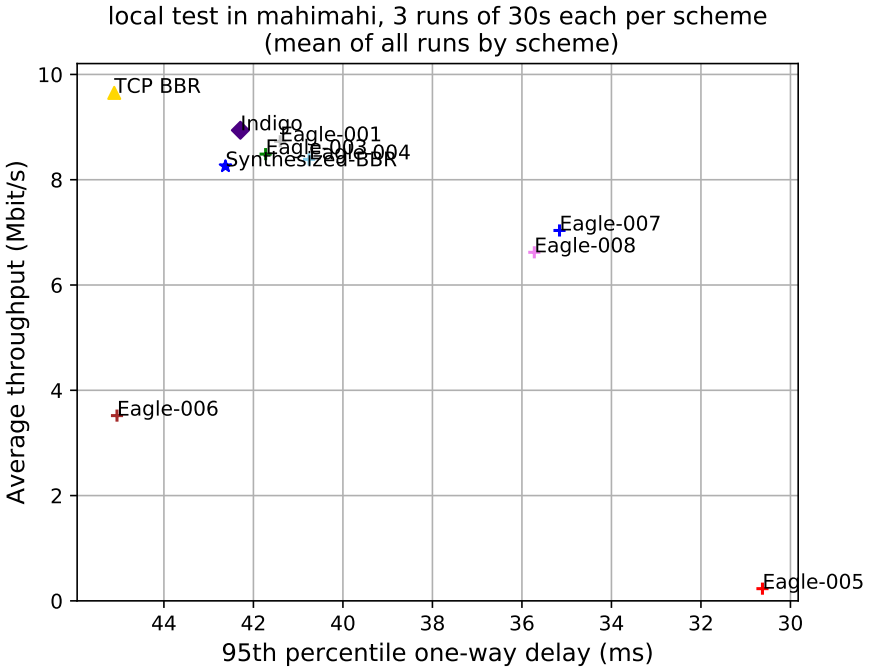
Repeated the test of 10 congestion control schemes 3 times.

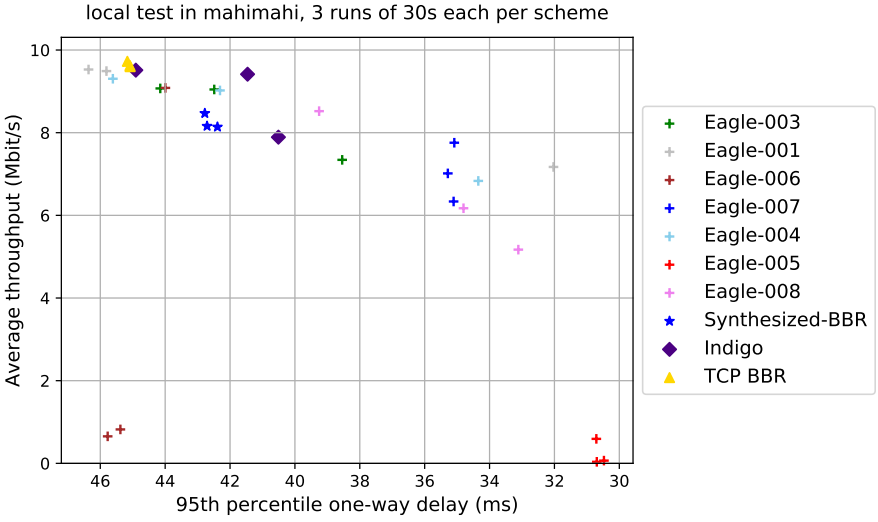
Each test lasted for 30 seconds running 1 flow.

```
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)
Average throughput (Mbit/s)
95th percentile one-way delay (ms)
TCP BBR
Indigo
Eagle-001
Eagle-003
Eagle-004
Synthesized-BBR
Eagle-007
Eagle-008
Eagle-006
Eagle-005
10
8
6
4
2
0
44
42
40
38
36
34
32
30


local test in mahimahi, 3 runs of 30s each per scheme
Average throughput (Mbit/s)
95th percentile one-way delay (ms)
Eagle-003
Eagle-001
Eagle-006
Eagle-007
Eagle-004
Eagle-005
Eagle-008
Synthesized-BBR
Indigo
TCP BBR
10
8
6
4
2
0
46
44
42
40
38
36
34
32
30

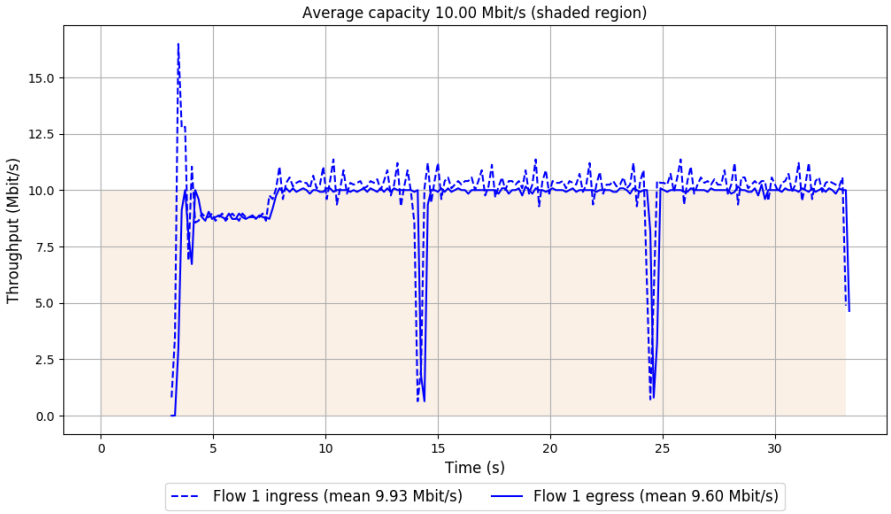
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	9.65	45.11	3.79
Eagle-001	3	8.73	41.40	5.28
Eagle-003	3	8.49	41.73	0.98
Eagle-004	3	8.39	40.76	2.39
Eagle-005	3	0.23	30.63	0.05
Eagle-006	3	3.52	45.05	7.93
Eagle-007	3	7.04	35.16	1.36
Eagle-008	3	6.62	35.72	1.50
Indigo	3	8.94	42.29	6.75
Synthesized-BBR	3	8.26	42.62	0.80

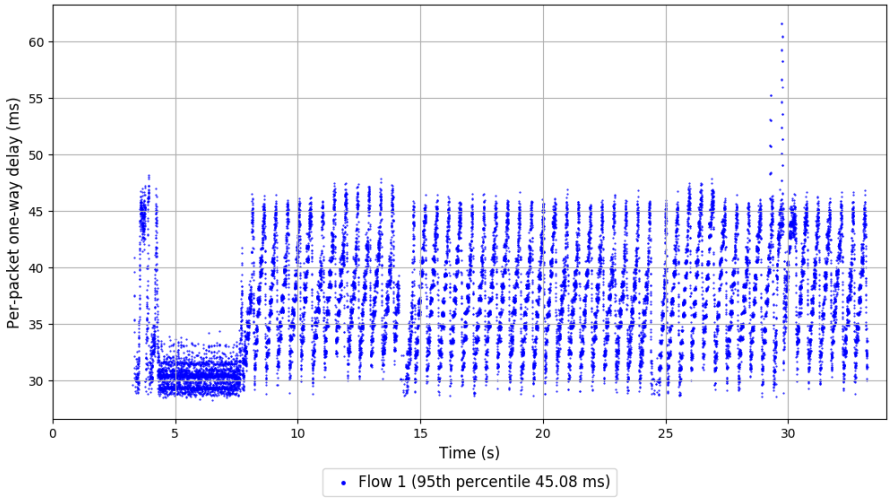
```
Run 1: Statistics of TCP BBR

Start at: 2019-10-27 04:04:26
End at: 2019-10-27 04:04:56

# Below is generated by plot.py at 2019-10-27 04:20:51
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 9.60 Mbit/s (96.0% utilization)
95th percentile per-packet one-way delay: 45.080 ms
Loss rate: 3.49%
-- Flow 1:
Average throughput: 9.60 Mbit/s
95th percentile per-packet one-way delay: 45.080 ms
Loss rate: 3.49%
```

Run 1: Report of TCP BBR — Data Link



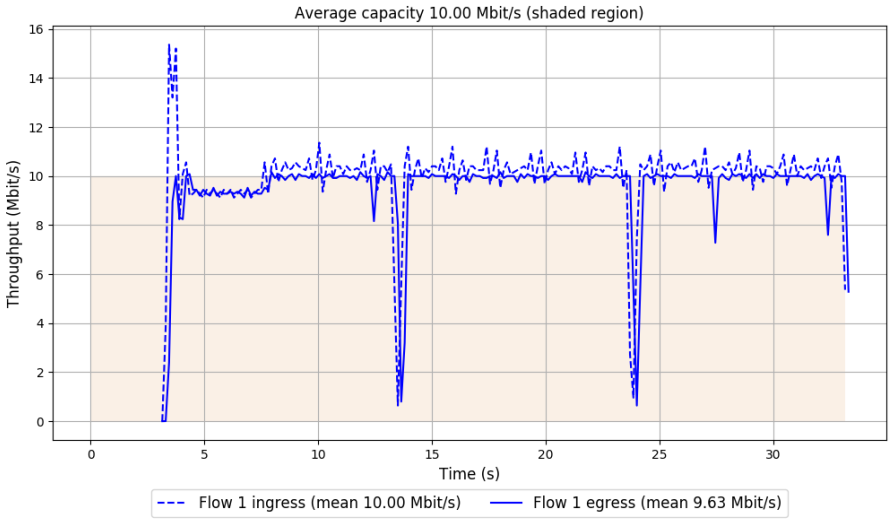


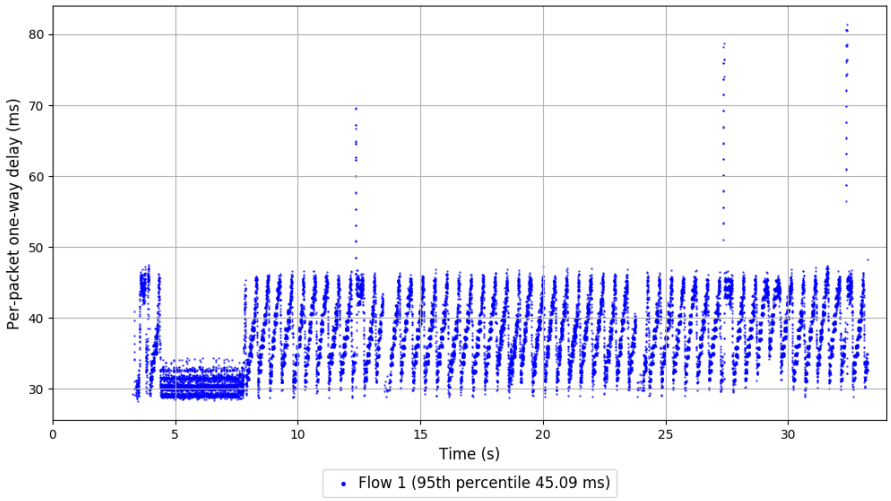
```
Run 2: Statistics of TCP BBR

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

# Below is generated by plot.py at 2019-10-27 04:20:53
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 9.63 Mbit/s (96.2% utilization)
95th percentile per-packet one-way delay: 45.085 ms
Loss rate: 3.81%
-- Flow 1:
Average throughput: 9.63 Mbit/s
95th percentile per-packet one-way delay: 45.085 ms
Loss rate: 3.81%
```

Run 2: Report of TCP BBR — Data Link



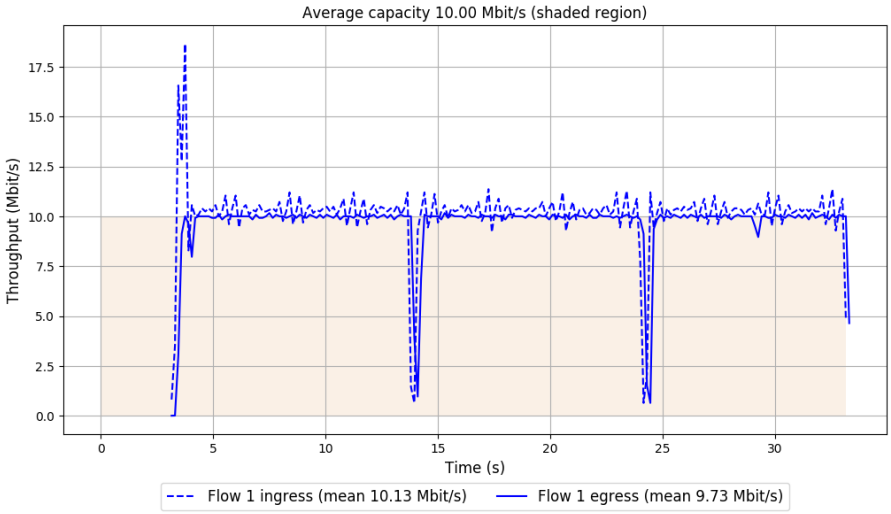


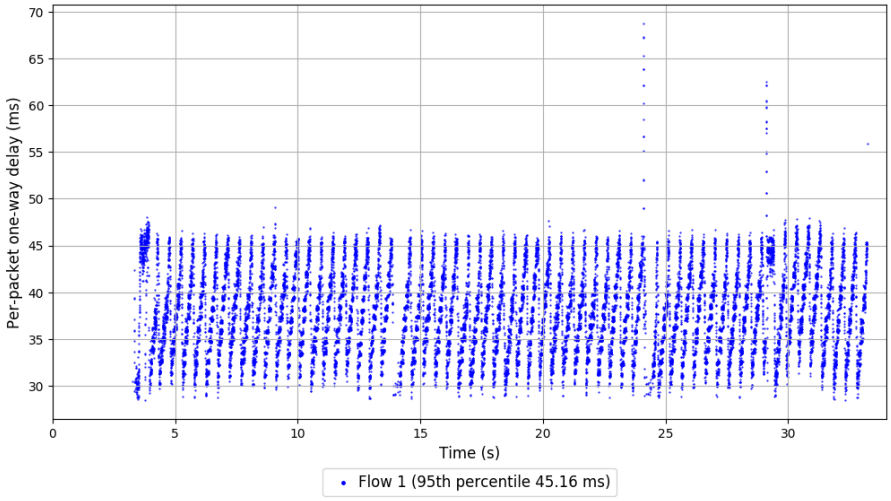
```
Run 3: Statistics of TCP BBR

Start at: 2019-10-27 04:15:57
End at: 2019-10-27 04:16:27

# Below is generated by plot.py at 2019-10-27 04:20:53
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 9.73 Mbit/s (97.3% utilization)
95th percentile per-packet one-way delay: 45.165 ms
Loss rate: 4.08%
-- Flow 1:
Average throughput: 9.73 Mbit/s
95th percentile per-packet one-way delay: 45.165 ms
Loss rate: 4.08%
```

Run 3: Report of TCP BBR — Data Link



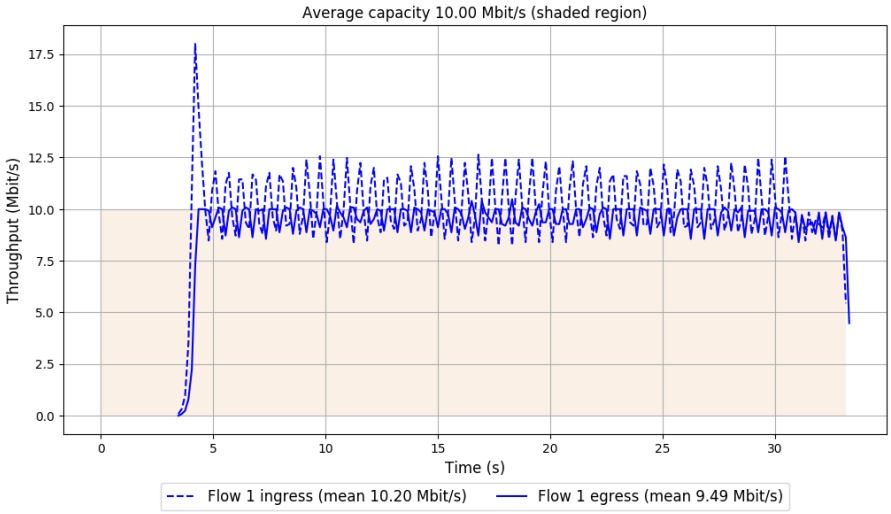


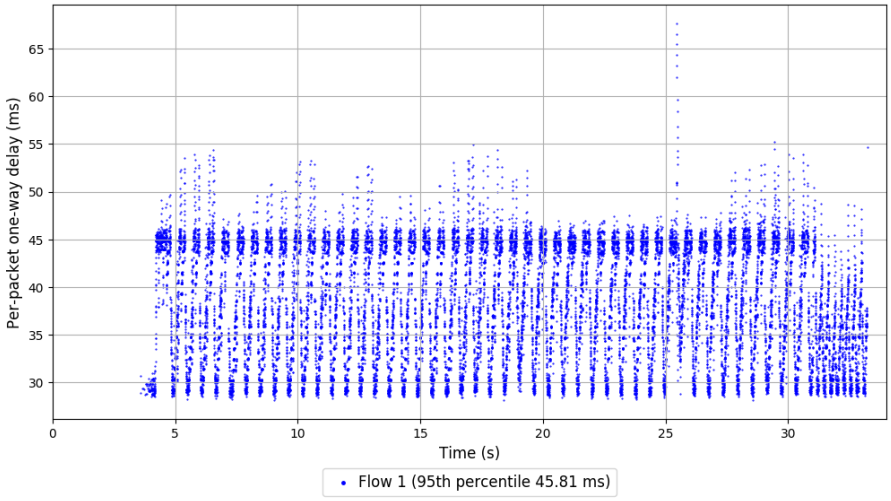
```
Run 1: Statistics of Eagle-001

Start at: 2019-10-27 03:59:49
End at: 2019-10-27 04:00:19

# Below is generated by plot.py at 2019-10-27 04:20:53
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 9.49 Mbit/s (94.9% utilization)
95th percentile per-packet one-way delay: 45.810 ms
Loss rate: 7.02%
-- Flow 1:
Average throughput: 9.49 Mbit/s
95th percentile per-packet one-way delay: 45.810 ms
Loss rate: 7.02%
```

Run 1: Report of Eagle-001 — Data Link



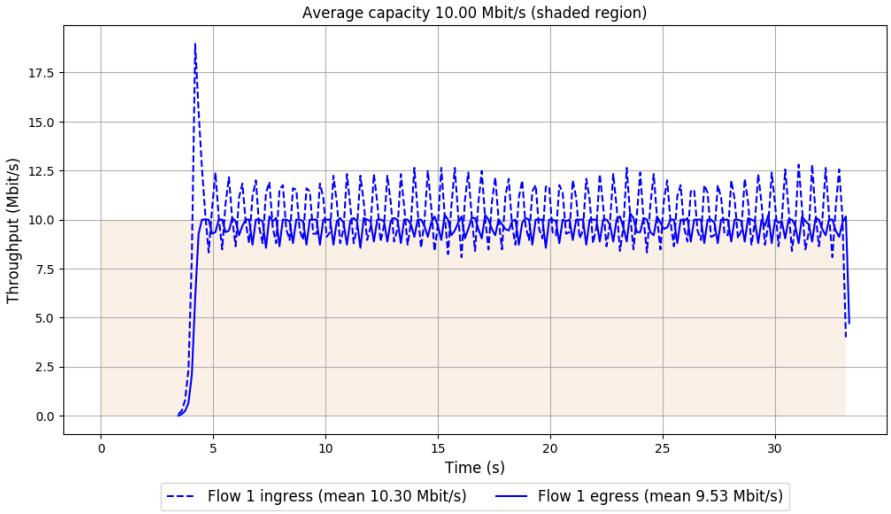


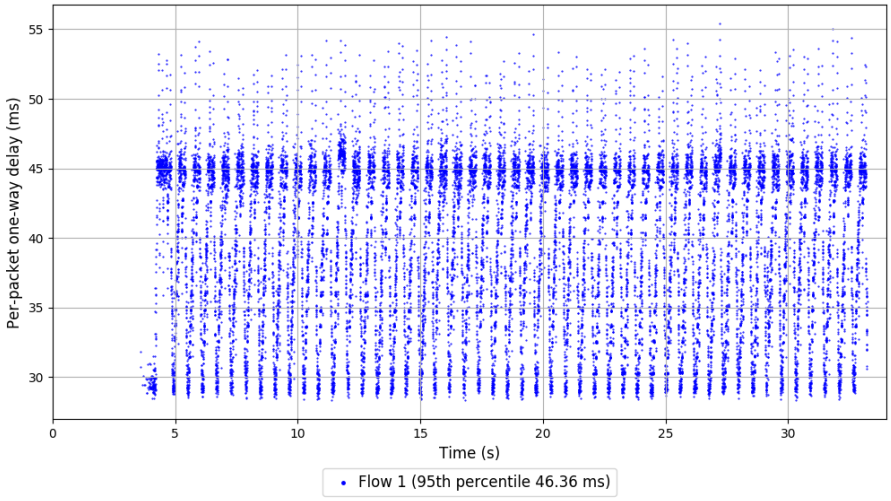
```
Run 2: Statistics of Eagle-001

Start at: 2019-10-27 04:05:35
End at: 2019-10-27 04:06:05

# Below is generated by plot.py at 2019-10-27 04:20:58
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 9.53 Mbit/s (95.3% utilization)
95th percentile per-packet one-way delay: 46.362 ms
Loss rate: 7.54%
-- Flow 1:
Average throughput: 9.53 Mbit/s
95th percentile per-packet one-way delay: 46.362 ms
Loss rate: 7.54%
```

Run 2: Report of Eagle-001 — Data Link



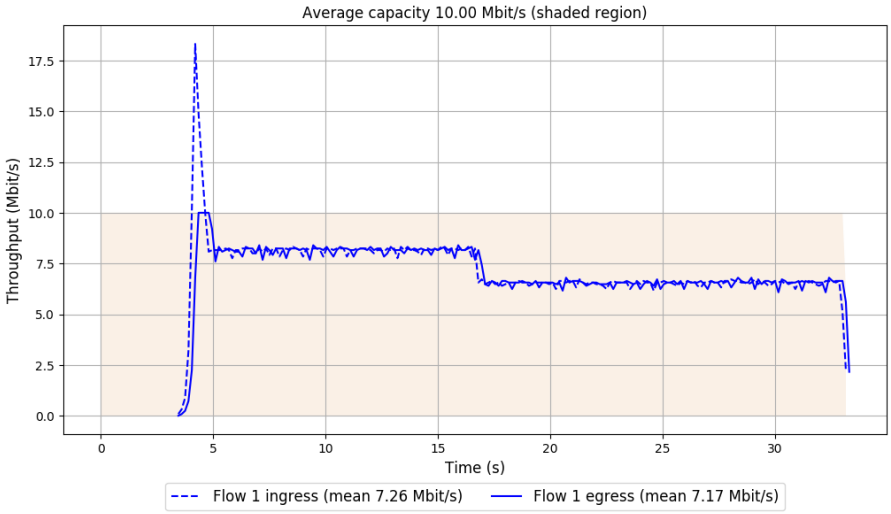


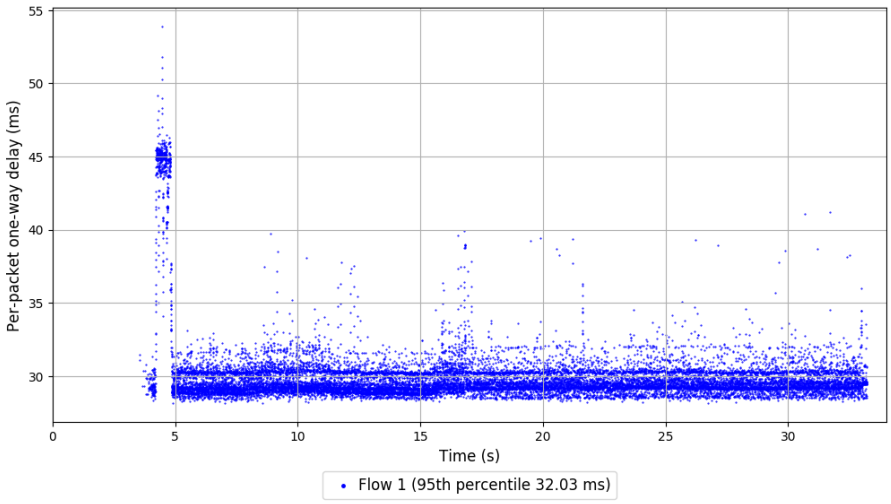
```
Run 3: Statistics of Eagle-001

Start at: 2019-10-27 04:11:20
End at: 2019-10-27 04:11:50

# Below is generated by plot.py at 2019-10-27 04:20:59
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 7.17 Mbit/s (71.7% utilization)
95th percentile per-packet one-way delay: 32.029 ms
Loss rate: 1.29%
-- Flow 1:
Average throughput: 7.17 Mbit/s
95th percentile per-packet one-way delay: 32.029 ms
Loss rate: 1.29%
```

Run 3: Report of Eagle-001 — Data Link



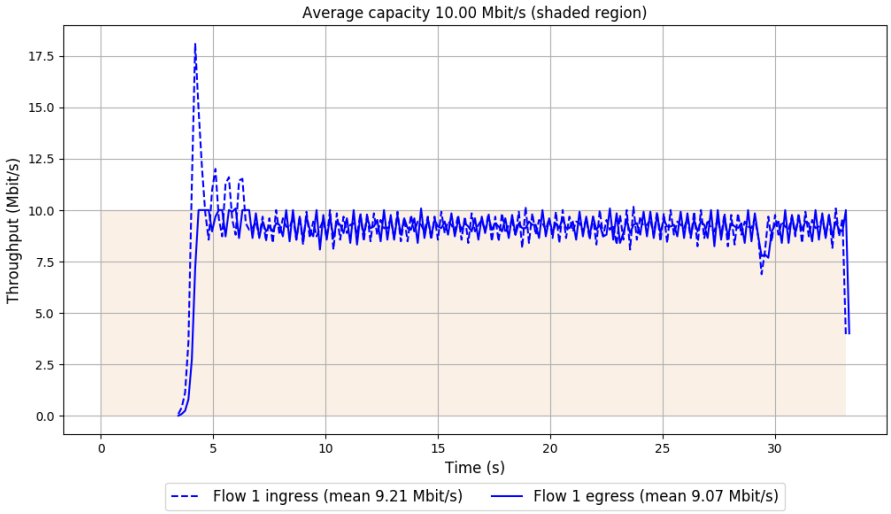


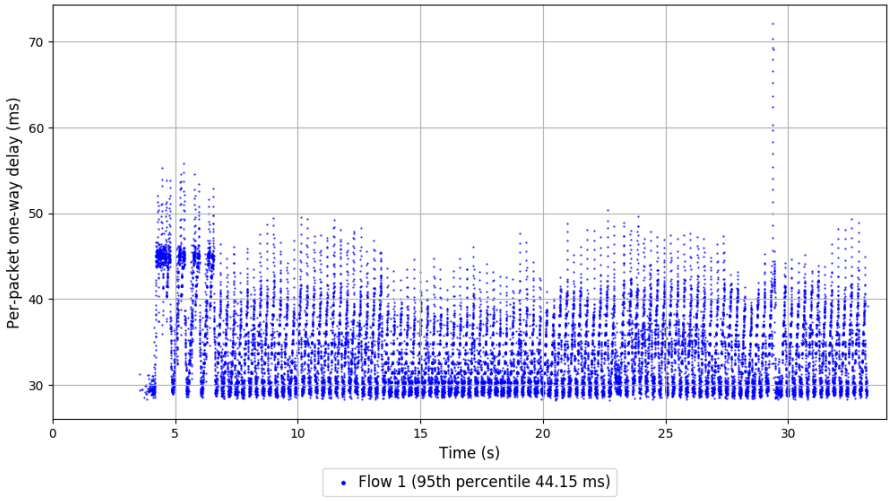
```
Run 1: Statistics of Eagle-003

Start at: 2019-10-27 04:00:24
End at: 2019-10-27 04:00:54

# Below is generated by plot.py at 2019-10-27 04:21:00
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 9.07 Mbit/s (90.7% utilization)
95th percentile per-packet one-way delay: 44.151 ms
Loss rate: 1.57%
-- Flow 1:
Average throughput: 9.07 Mbit/s
95th percentile per-packet one-way delay: 44.151 ms
Loss rate: 1.57%
```

Run 1: Report of Eagle-003 — Data Link



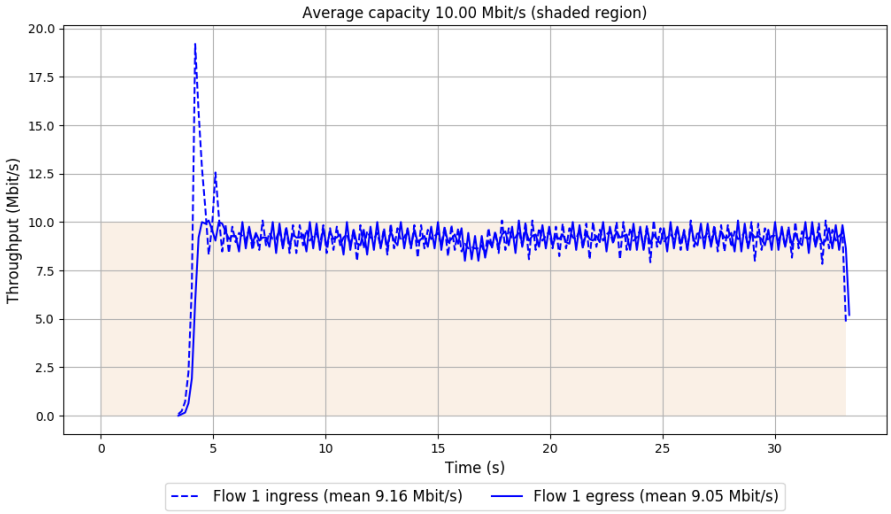


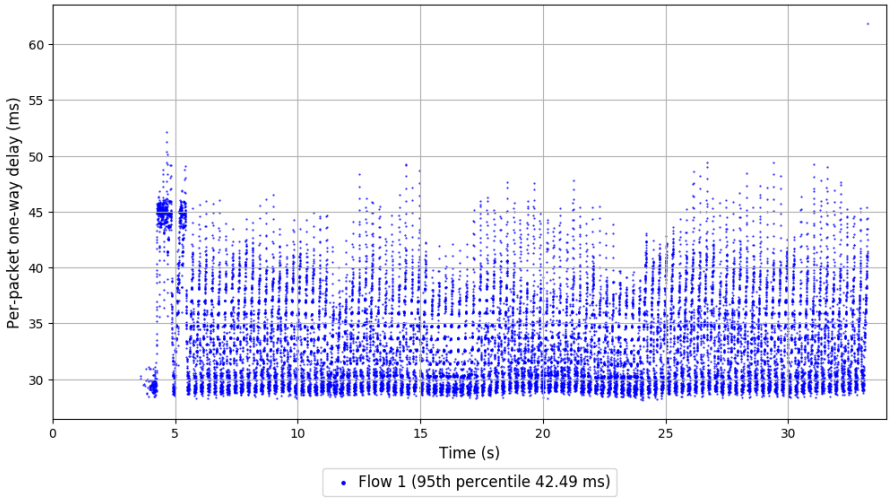
```
Run 2: Statistics of Eagle-003

Start at: 2019-10-27 04:06:10
End at: 2019-10-27 04:06:40

# Below is generated by plot.py at 2019-10-27 04:21:02
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 9.05 Mbit/s (90.5% utilization)
95th percentile per-packet one-way delay: 42.487 ms
Loss rate: 1.23%
-- Flow 1:
Average throughput: 9.05 Mbit/s
95th percentile per-packet one-way delay: 42.487 ms
Loss rate: 1.23%
```

Run 2: Report of Eagle-003 — Data Link



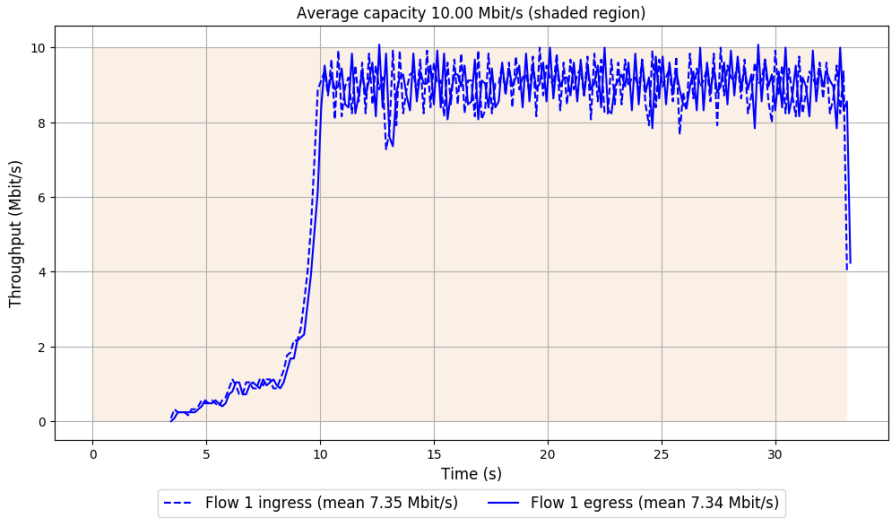


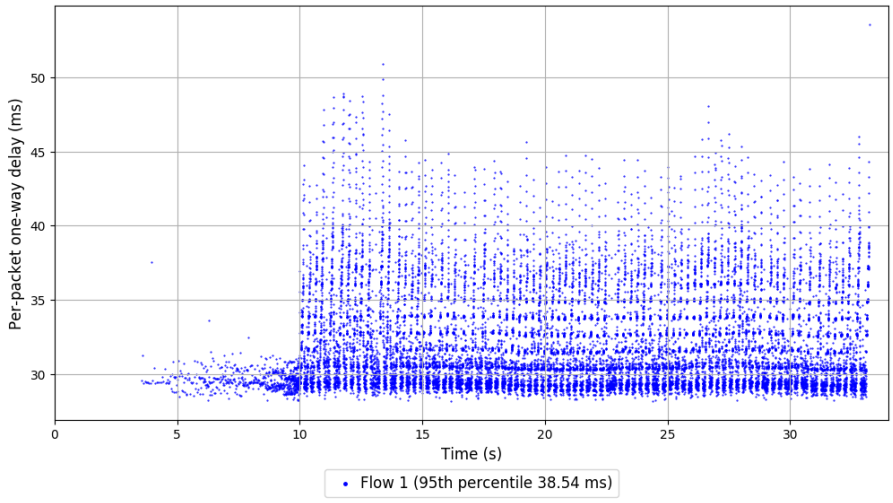
```
Run 3: Statistics of Eagle-003

Start at: 2019-10-27 04:11:55
End at: 2019-10-27 04:12:25

# Below is generated by plot.py at 2019-10-27 04:21:06
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 7.34 Mbit/s (73.4% utilization)
95th percentile per-packet one-way delay: 38.543 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 7.34 Mbit/s
95th percentile per-packet one-way delay: 38.543 ms
Loss rate: 0.15%
```

Run 3: Report of Eagle-003 — Data Link



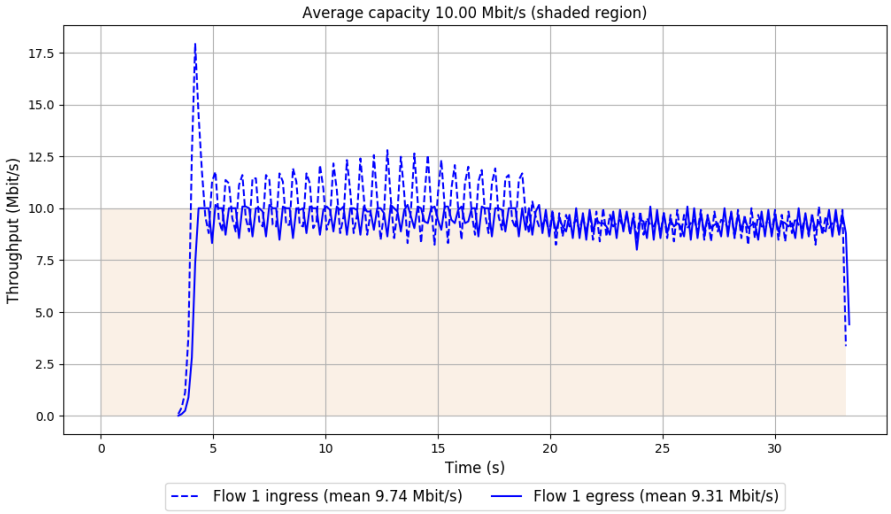


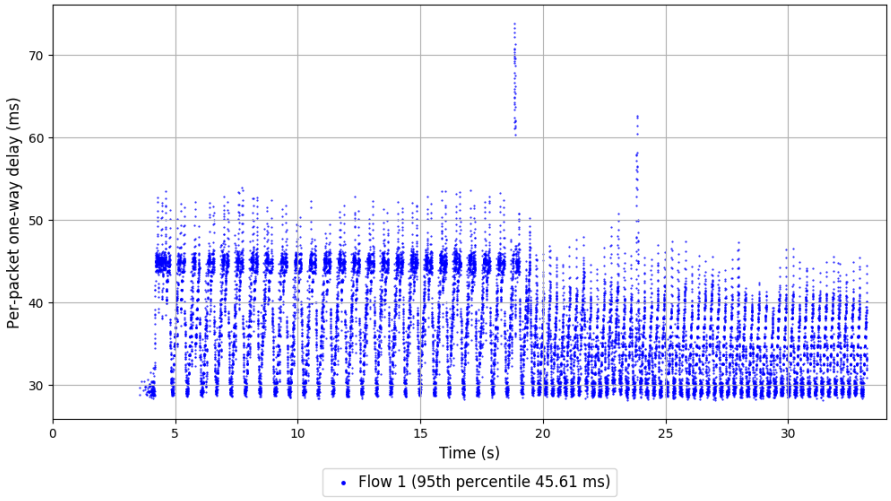
```
Run 1: Statistics of Eagle-004

Start at: 2019-10-27 04:00:59
End at: 2019-10-27 04:01:29

# Below is generated by plot.py at 2019-10-27 04:21:08
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 9.31 Mbit/s (93.0% utilization)
95th percentile per-packet one-way delay: 45.612 ms
Loss rate: 4.56%
-- Flow 1:
Average throughput: 9.31 Mbit/s
95th percentile per-packet one-way delay: 45.612 ms
Loss rate: 4.56%
```

Run 1: Report of Eagle-004 — Data Link



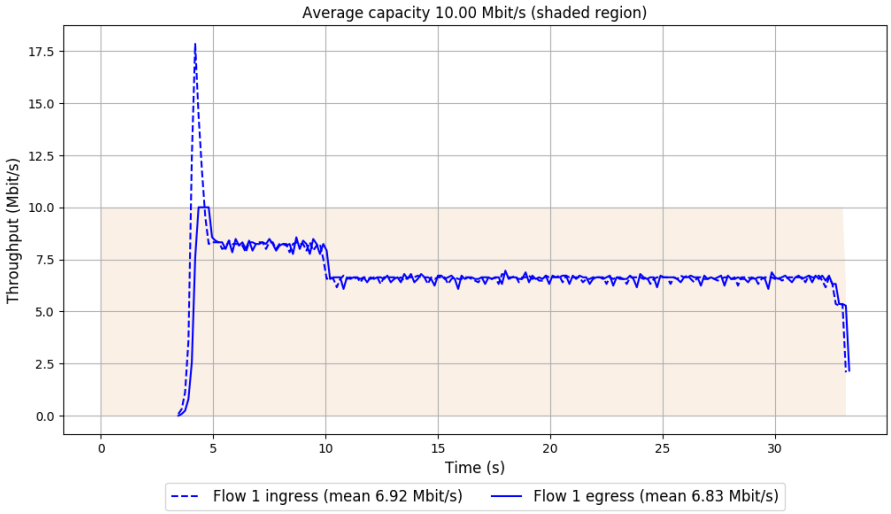


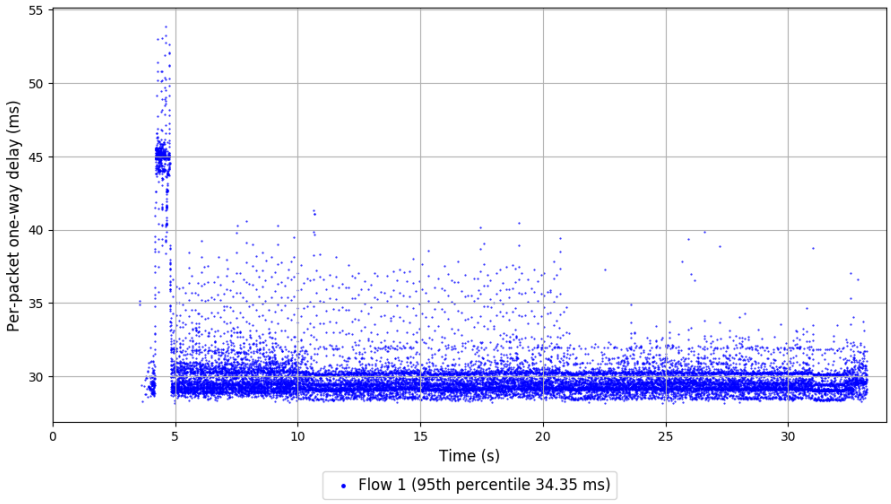
```
Run 2: Statistics of Eagle-004

Start at: 2019-10-27 04:06:44
End at: 2019-10-27 04:07:14

# Below is generated by plot.py at 2019-10-27 04:21:08
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 6.83 Mbit/s (68.3% utilization)
95th percentile per-packet one-way delay: 34.347 ms
Loss rate: 1.37%
-- Flow 1:
Average throughput: 6.83 Mbit/s
95th percentile per-packet one-way delay: 34.347 ms
Loss rate: 1.37%
```

Run 2: Report of Eagle-004 — Data Link



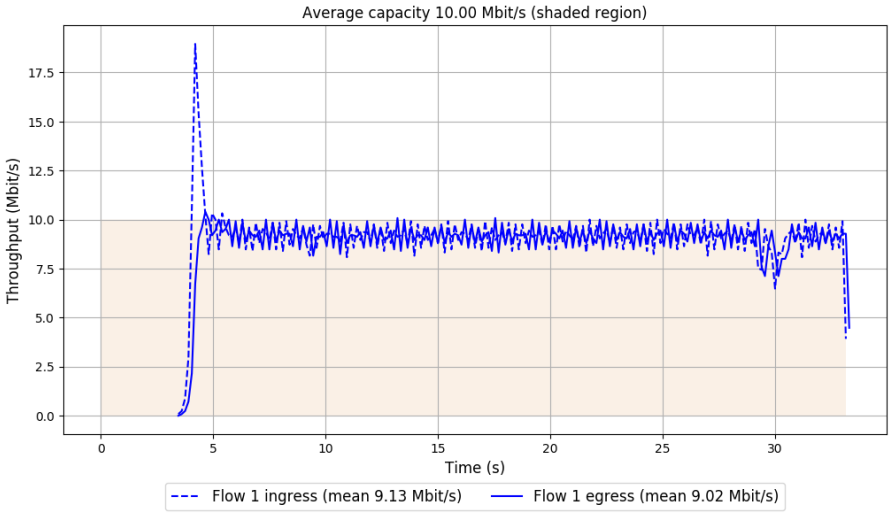


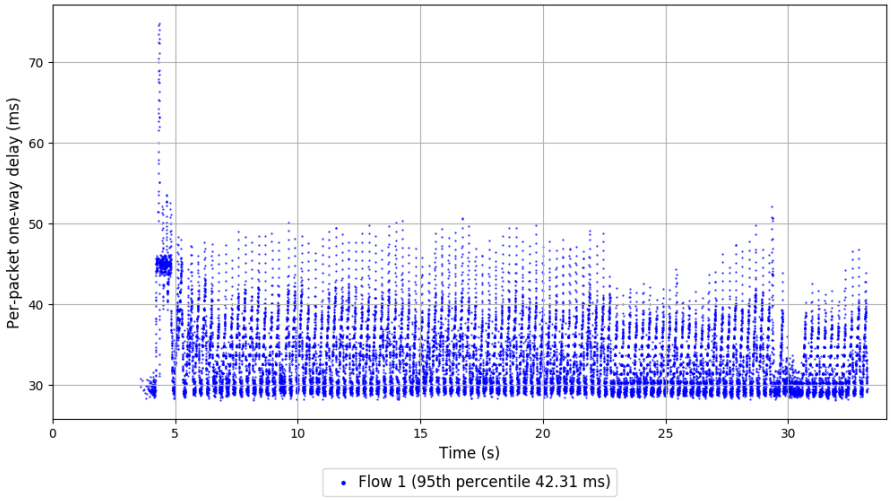
```
Run 3: Statistics of Eagle-004

Start at: 2019-10-27 04:12:30
End at: 2019-10-27 04:13:00

# Below is generated by plot.py at 2019-10-27 04:21:11
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 9.02 Mbit/s (90.2% utilization)
95th percentile per-packet one-way delay: 42.310 ms
Loss rate: 1.25%
-- Flow 1:
Average throughput: 9.02 Mbit/s
95th percentile per-packet one-way delay: 42.310 ms
Loss rate: 1.25%
```

Run 3: Report of Eagle-004 — Data Link



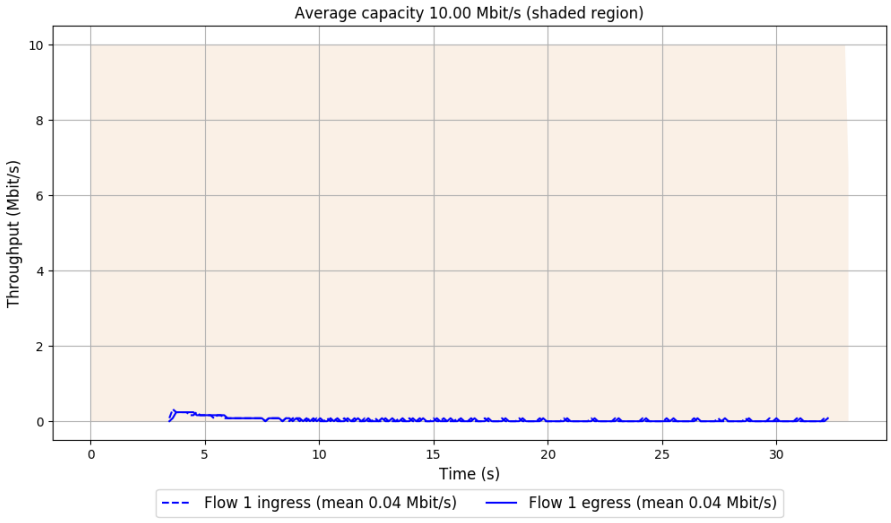


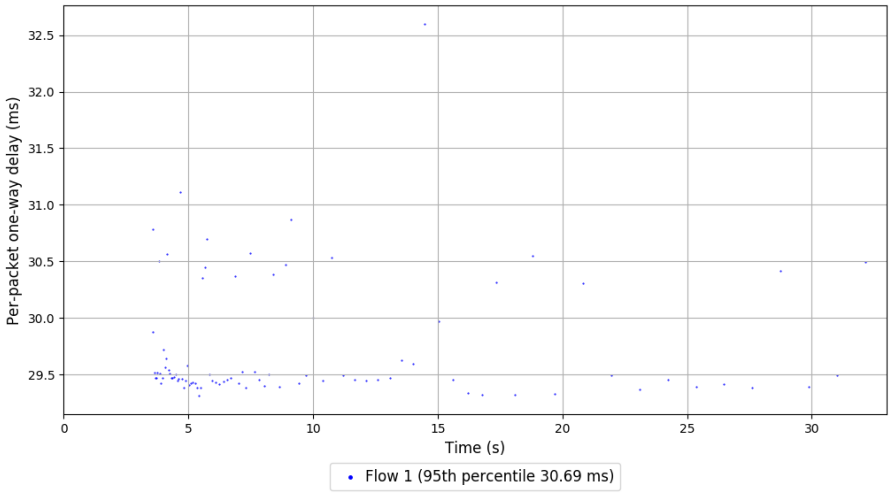
```
Run 1: Statistics of Eagle-005

Start at: 2019-10-27 04:01:33
End at: 2019-10-27 04:02:04

# Below is generated by plot.py at 2019-10-27 04:21:11
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 0.04 Mbit/s (0.4% utilization)
95th percentile per-packet one-way delay: 30.694 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 30.694 ms
Loss rate: 0.00%
```

Run 1: Report of Eagle-005 — Data Link



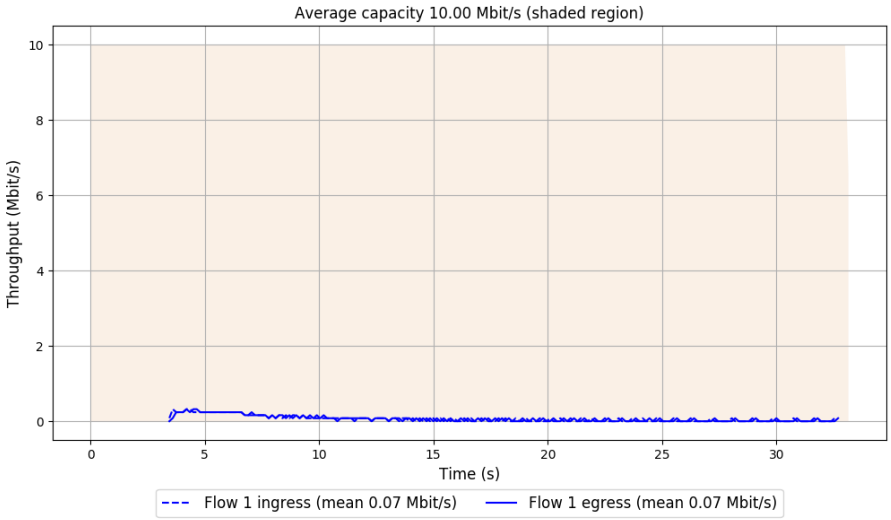


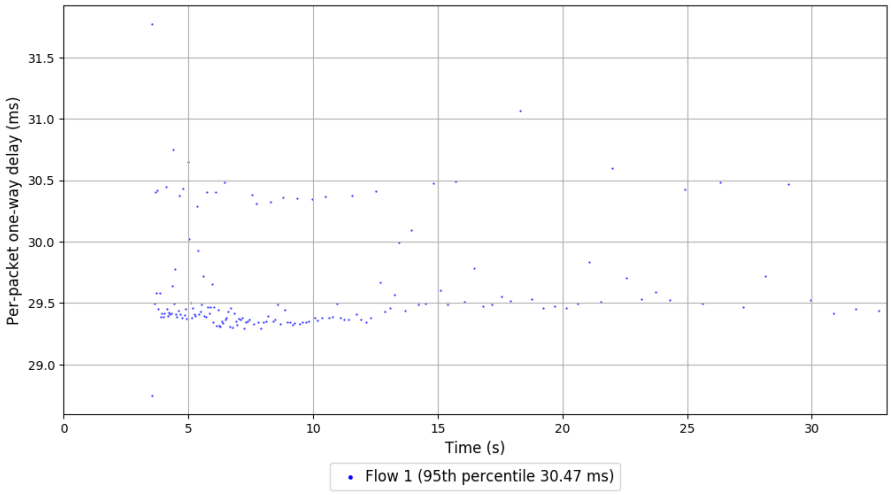
```
Run 2: Statistics of Eagle-005

Start at: 2019-10-27 04:07:19
End at: 2019-10-27 04:07:49

# Below is generated by plot.py at 2019-10-27 04:21:11
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 0.07 Mbit/s (0.7% utilization)
95th percentile per-packet one-way delay: 30.474 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 30.474 ms
Loss rate: 0.00%
```

Run 2: Report of Eagle-005 — Data Link



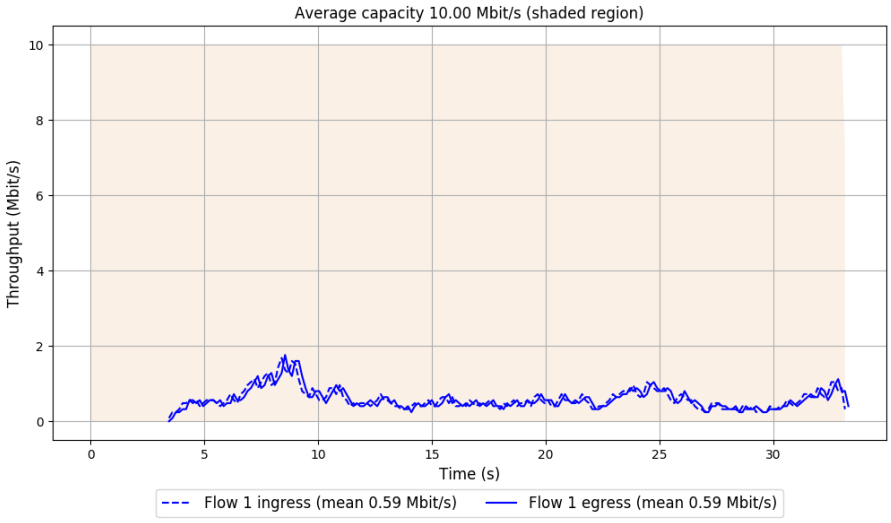


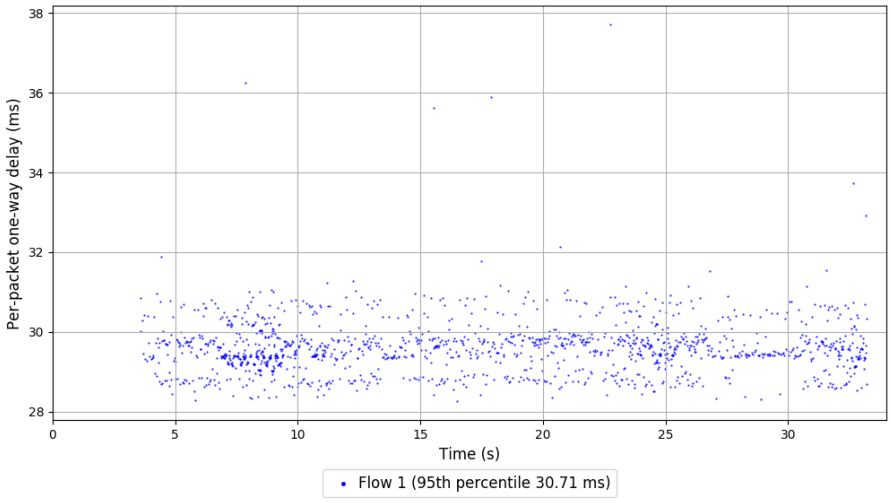
```
Run 3: Statistics of Eagle-005

Start at: 2019-10-27 04:13:04
End at: 2019-10-27 04:13:34

# Below is generated by plot.py at 2019-10-27 04:21:13
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 0.59 Mbit/s (5.9% utilization)
95th percentile per-packet one-way delay: 30.708 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 30.708 ms
Loss rate: 0.14%
```

Run 3: Report of Eagle-005 — Data Link



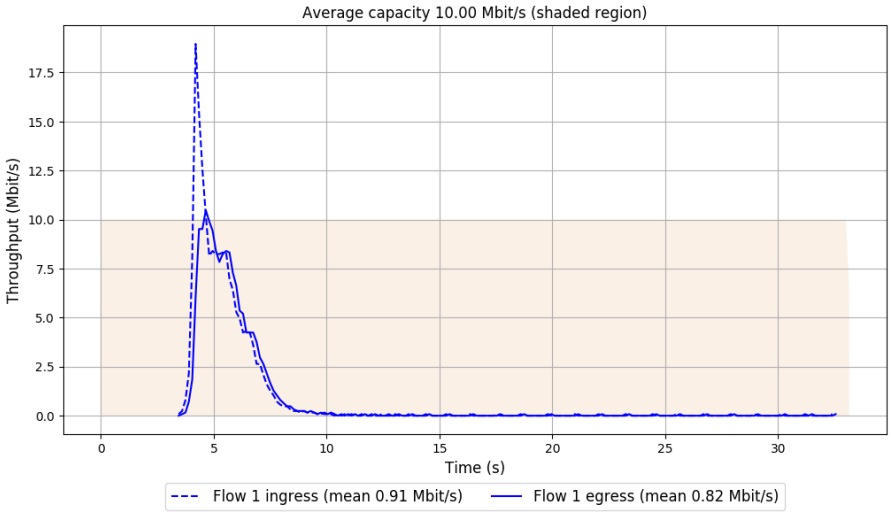


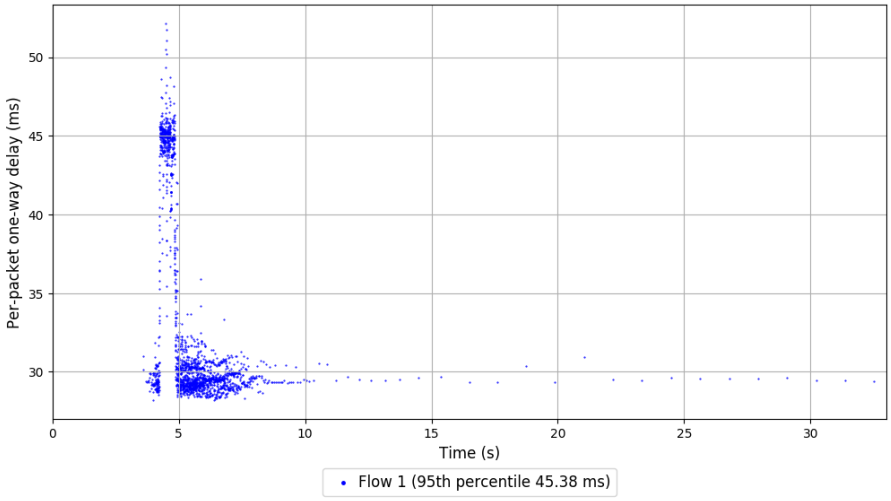
```
Run 1: Statistics of Eagle-006

Start at: 2019-10-27 04:02:08
End at: 2019-10-27 04:02:38

# Below is generated by plot.py at 2019-10-27 04:21:14
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 0.82 Mbit/s (8.2% utilization)
95th percentile per-packet one-way delay: 45.380 ms
Loss rate: 9.96%
-- Flow 1:
Average throughput: 0.82 Mbit/s
95th percentile per-packet one-way delay: 45.380 ms
Loss rate: 9.96%
```

Run 1: Report of Eagle-006 — Data Link



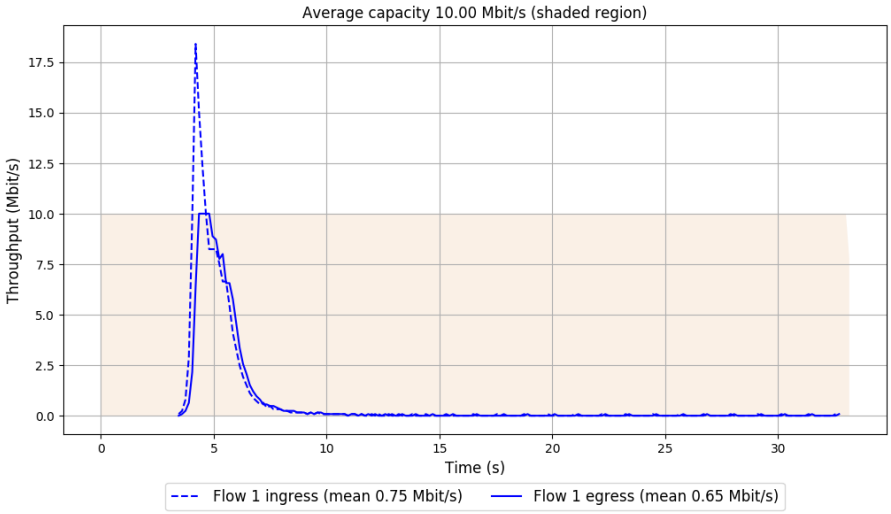


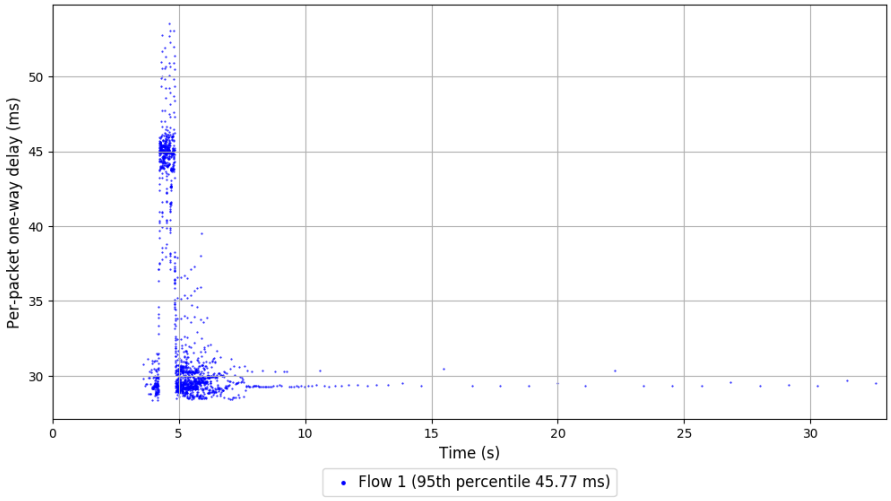
```
Run 2: Statistics of Eagle-006

Start at: 2019-10-27 04:07:53
End at: 2019-10-27 04:08:23

# Below is generated by plot.py at 2019-10-27 04:21:15
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 0.65 Mbit/s (6.5% utilization)
95th percentile per-packet one-way delay: 45.772 ms
Loss rate: 12.33%
-- Flow 1:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 45.772 ms
Loss rate: 12.33%
```

Run 2: Report of Eagle-006 — Data Link



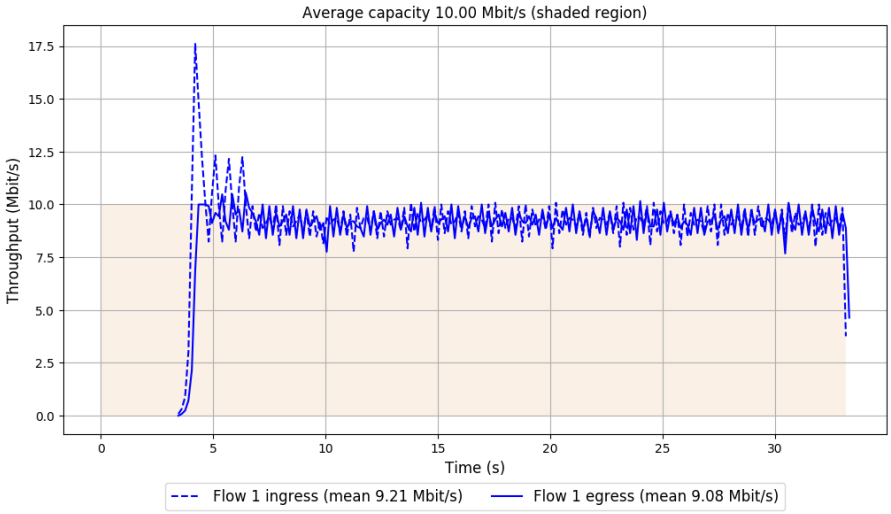


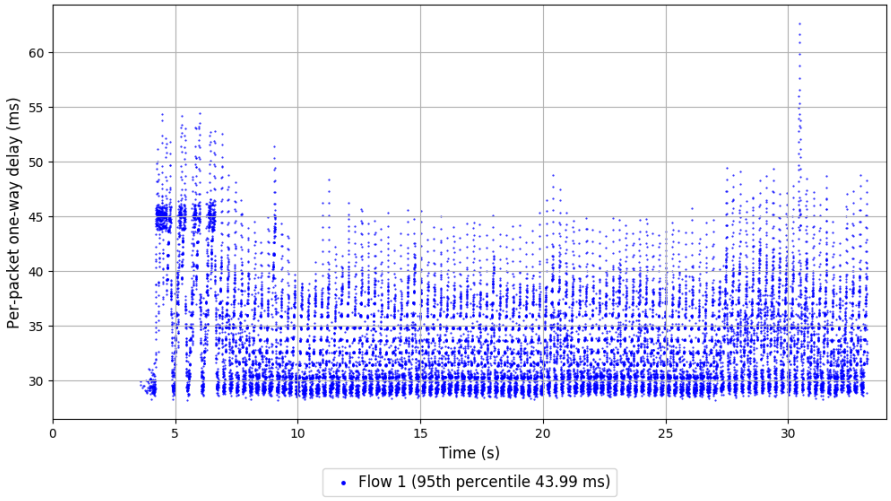
```
Run 3: Statistics of Eagle-006

Start at: 2019-10-27 04:13:38
End at: 2019-10-27 04:14:09

# Below is generated by plot.py at 2019-10-27 04:21:19
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 9.08 Mbit/s (90.8% utilization)
95th percentile per-packet one-way delay: 43.993 ms
Loss rate: 1.51%
-- Flow 1:
Average throughput: 9.08 Mbit/s
95th percentile per-packet one-way delay: 43.993 ms
Loss rate: 1.51%
```

Run 3: Report of Eagle-006 — Data Link



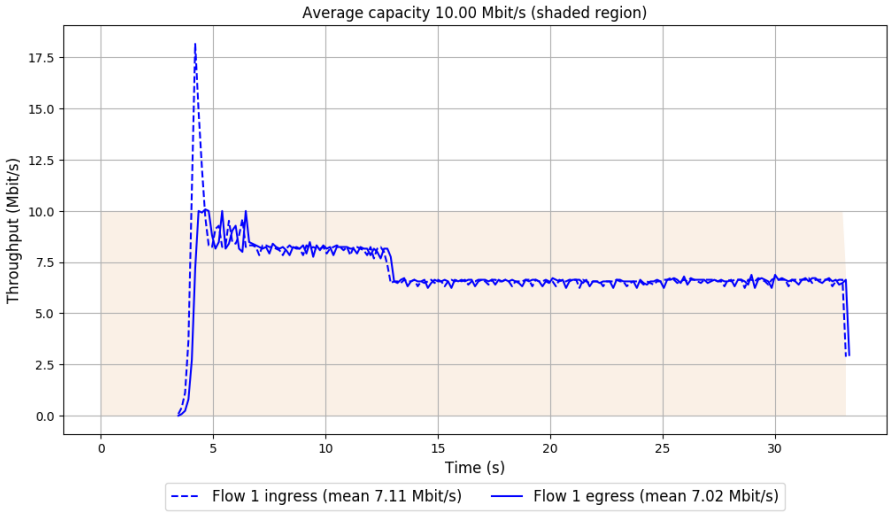


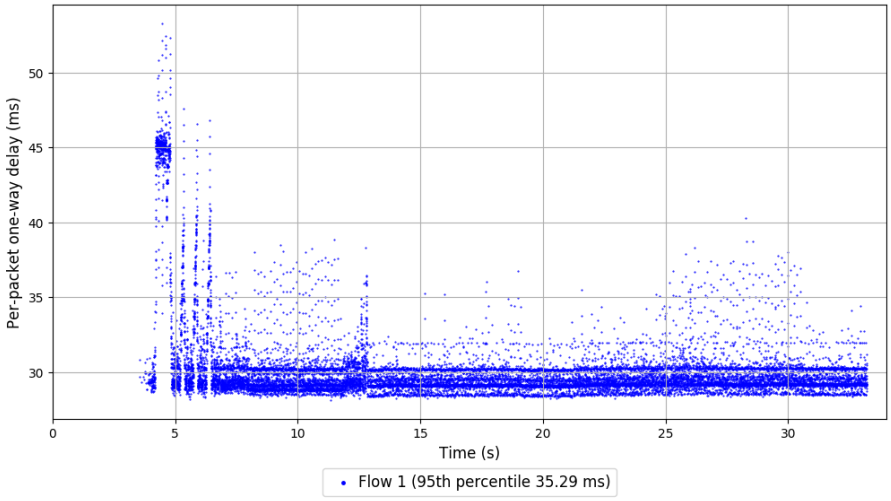
```
Run 1: Statistics of Eagle-007

Start at: 2019-10-27 04:02:42
End at: 2019-10-27 04:03:12

# Below is generated by plot.py at 2019-10-27 04:21:19
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 7.02 Mbit/s (70.1% utilization)
95th percentile per-packet one-way delay: 35.286 ms
Loss rate: 1.36%
-- Flow 1:
Average throughput: 7.02 Mbit/s
95th percentile per-packet one-way delay: 35.286 ms
Loss rate: 1.36%
```

Run 1: Report of Eagle-007 — Data Link



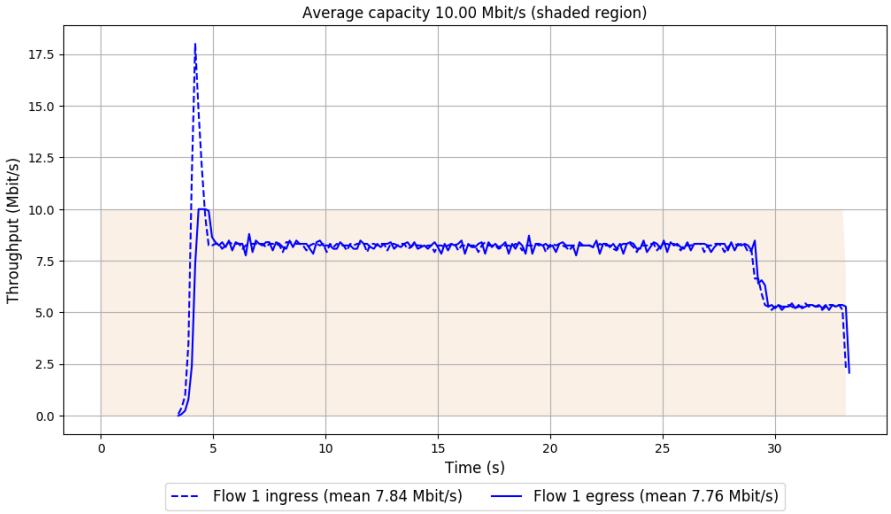


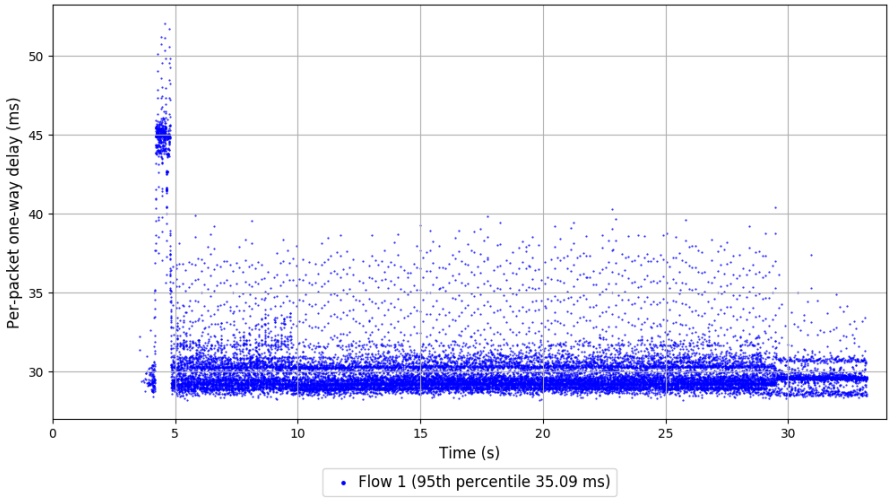
```
Run 2: Statistics of Eagle-007

Start at: 2019-10-27 04:08:27
End at: 2019-10-27 04:08:57

# Below is generated by plot.py at 2019-10-27 04:21:22
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 7.76 Mbit/s (77.6% utilization)
95th percentile per-packet one-way delay: 35.087 ms
Loss rate: 1.22%
-- Flow 1:
Average throughput: 7.76 Mbit/s
95th percentile per-packet one-way delay: 35.087 ms
Loss rate: 1.22%
```

Run 2: Report of Eagle-007 — Data Link



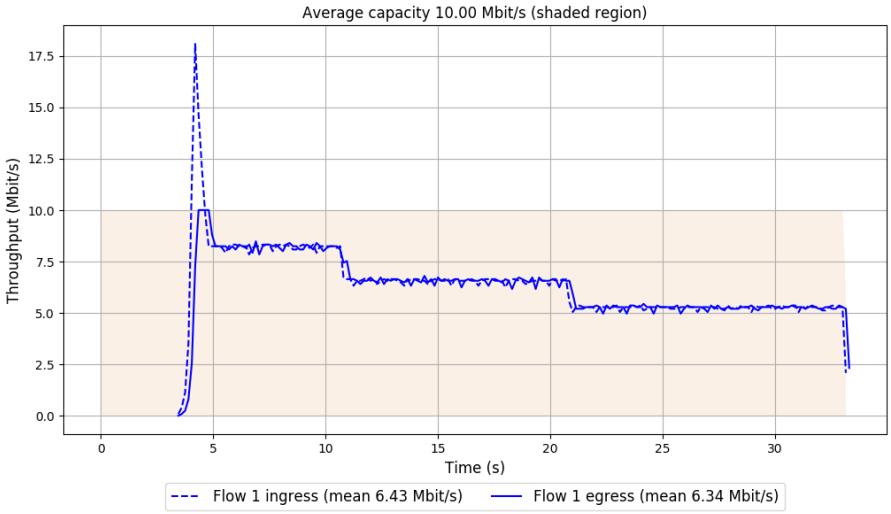


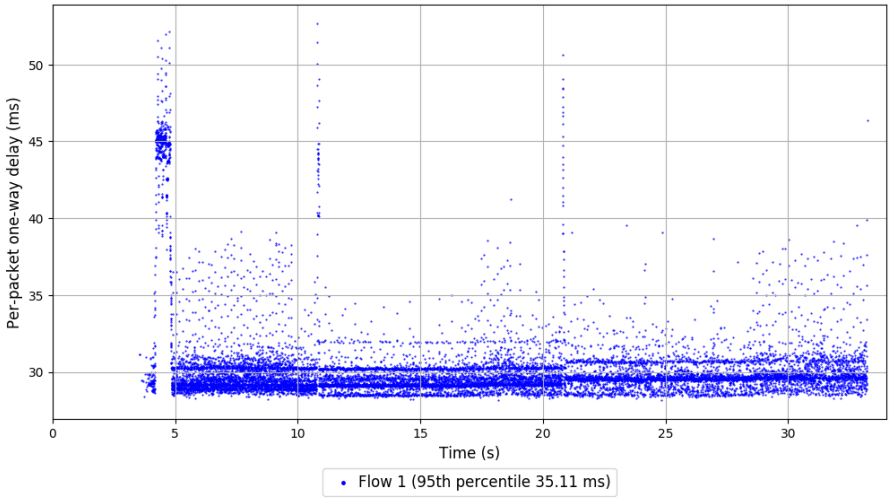
```
Run 3: Statistics of Eagle-007

Start at: 2019-10-27 04:14:13
End at: 2019-10-27 04:14:43

# Below is generated by plot.py at 2019-10-27 04:21:23
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 6.34 Mbit/s (63.4% utilization)
95th percentile per-packet one-way delay: 35.108 ms
Loss rate: 1.50%
-- Flow 1:
Average throughput: 6.34 Mbit/s
95th percentile per-packet one-way delay: 35.108 ms
Loss rate: 1.50%
```

Run 3: Report of Eagle-007 — Data Link



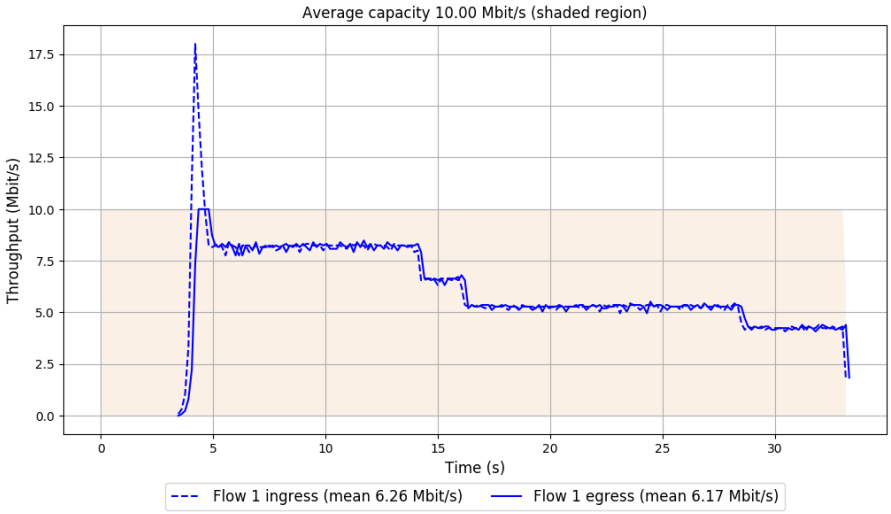


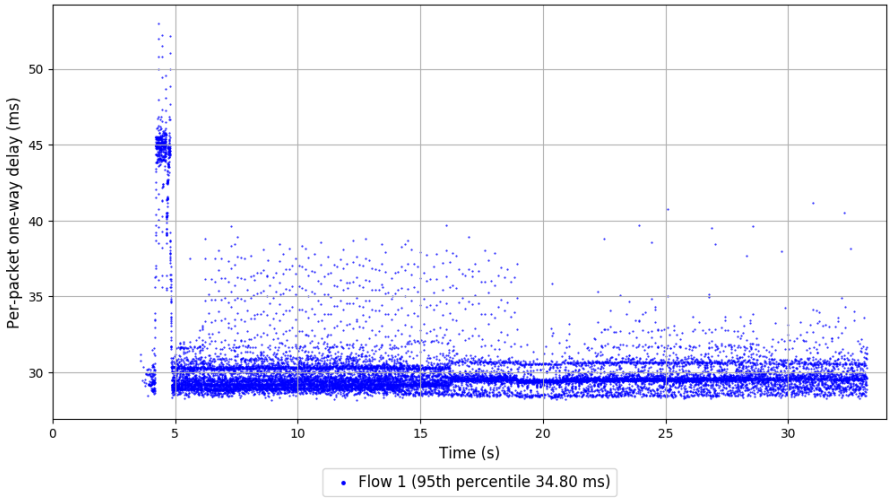
```
Run 1: Statistics of Eagle-008

Start at: 2019-10-27 04:03:17
End at: 2019-10-27 04:03:47

# Below is generated by plot.py at 2019-10-27 04:21:26
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 6.17 Mbit/s (61.7% utilization)
95th percentile per-packet one-way delay: 34.803 ms
Loss rate: 1.49%
-- Flow 1:
Average throughput: 6.17 Mbit/s
95th percentile per-packet one-way delay: 34.803 ms
Loss rate: 1.49%
```

Run 1: Report of Eagle-008 — Data Link



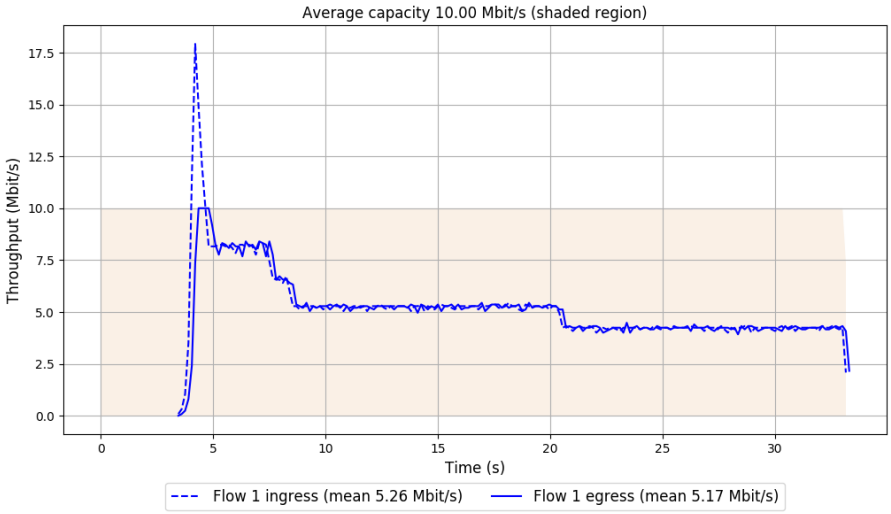


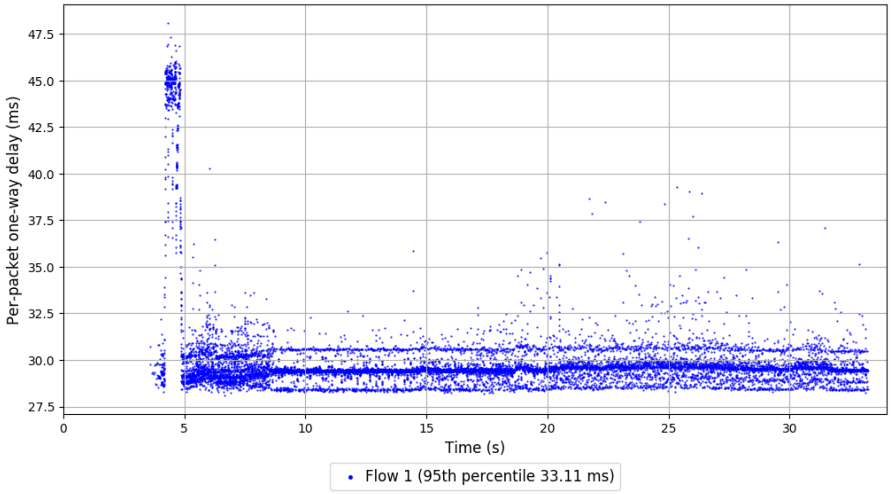
```
Run 2: Statistics of Eagle-008

Start at: 2019-10-27 04:09:02
End at: 2019-10-27 04:09:32

# Below is generated by plot.py at 2019-10-27 04:21:26
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 5.17 Mbit/s (51.7% utilization)
95th percentile per-packet one-way delay: 33.113 ms
Loss rate: 1.81%
-- Flow 1:
Average throughput: 5.17 Mbit/s
95th percentile per-packet one-way delay: 33.113 ms
Loss rate: 1.81%
```

Run 2: Report of Eagle-008 — Data Link



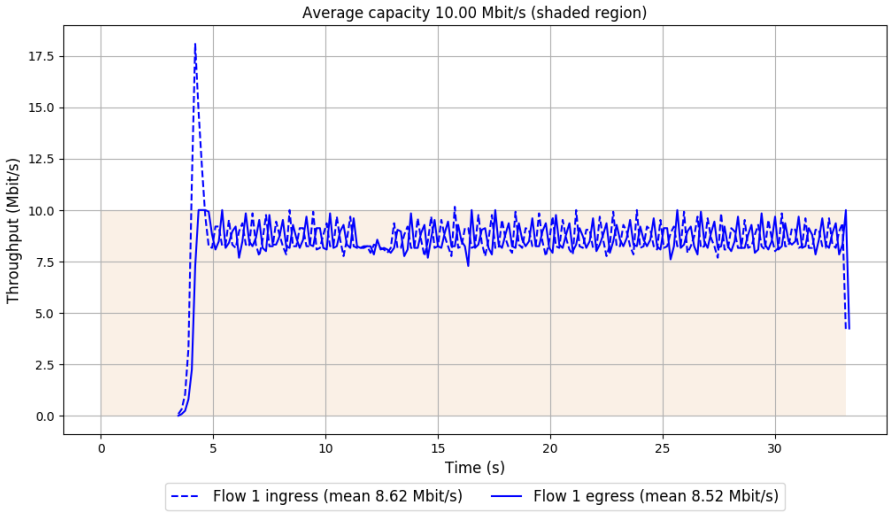


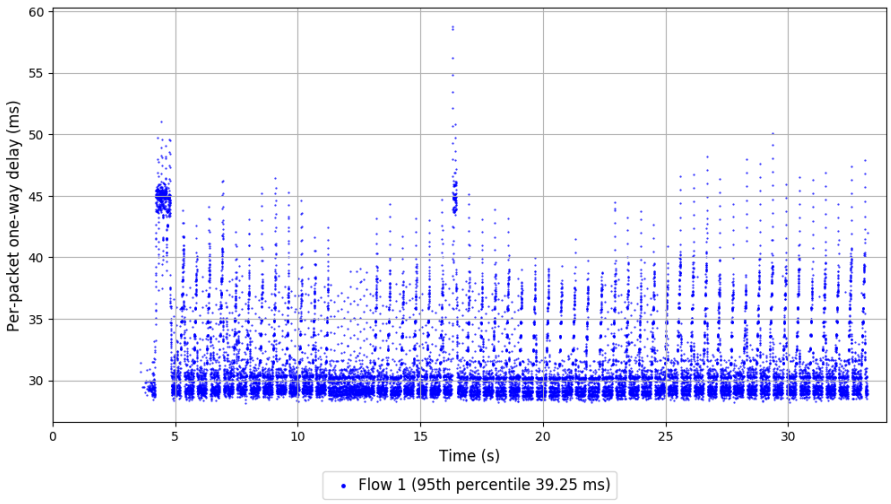
```
Run 3: Statistics of Eagle-008

Start at: 2019-10-27 04:14:48
End at: 2019-10-27 04:15:18

# Below is generated by plot.py at 2019-10-27 04:21:31
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 8.52 Mbit/s (85.2% utilization)
95th percentile per-packet one-way delay: 39.254 ms
Loss rate: 1.19%
-- Flow 1:
Average throughput: 8.52 Mbit/s
95th percentile per-packet one-way delay: 39.254 ms
Loss rate: 1.19%
```

Run 3: Report of Eagle-008 — Data Link



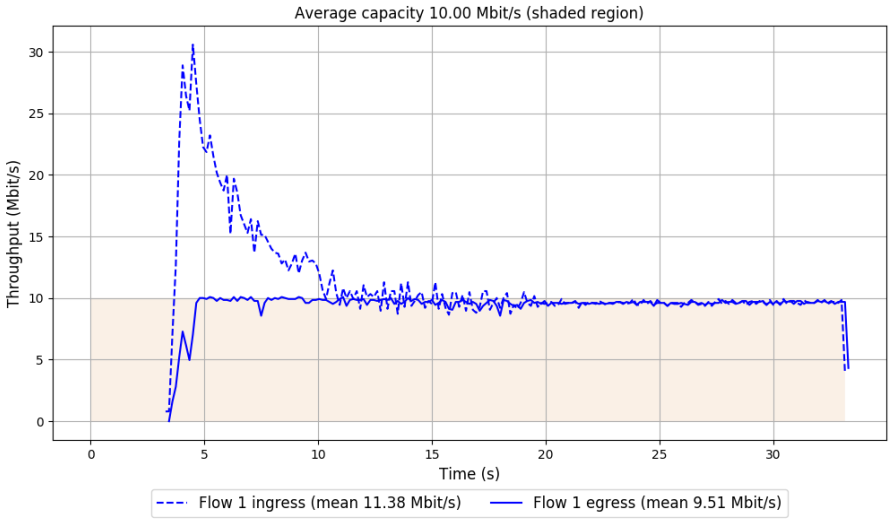


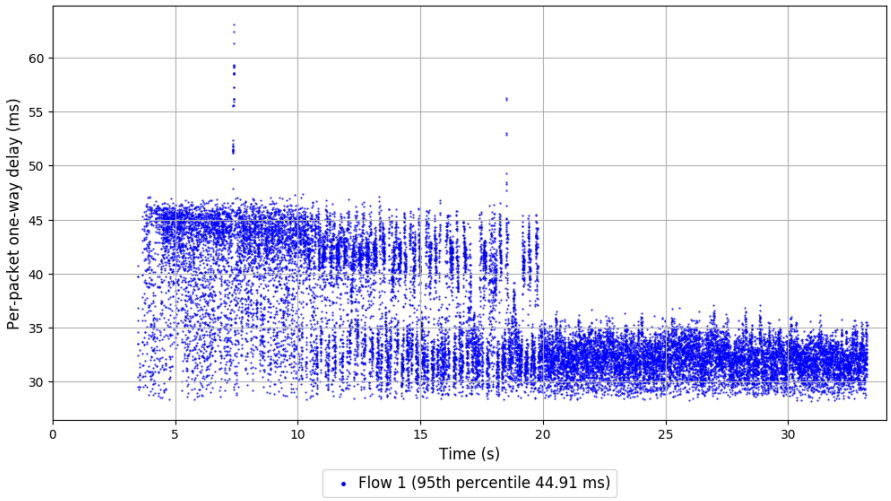
```
Run 1: Statistics of Indigo

Start at: 2019-10-27 04:05:00
End at: 2019-10-27 04:05:30

# Below is generated by plot.py at 2019-10-27 04:21:34
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 9.51 Mbit/s (95.1% utilization)
95th percentile per-packet one-way delay: 44.905 ms
Loss rate: 16.43%
-- Flow 1:
Average throughput: 9.51 Mbit/s
95th percentile per-packet one-way delay: 44.905 ms
Loss rate: 16.43%
```

Run 1: Report of Indigo — Data Link



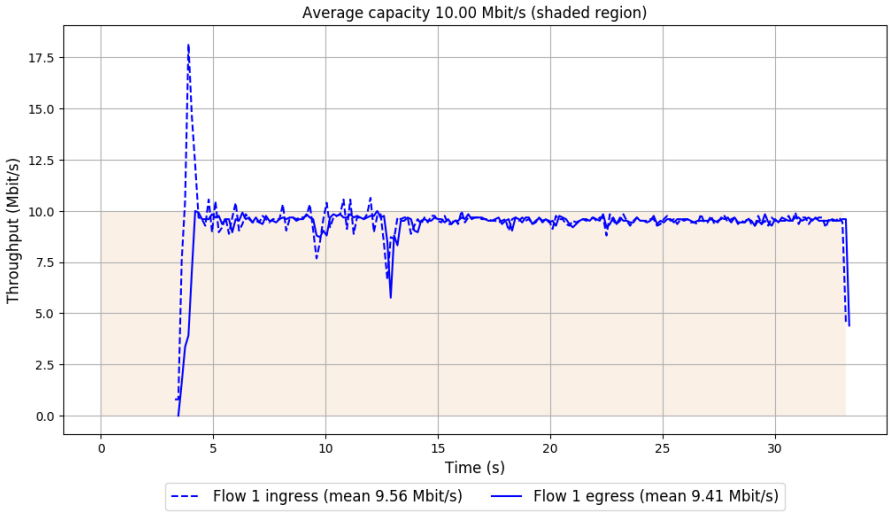


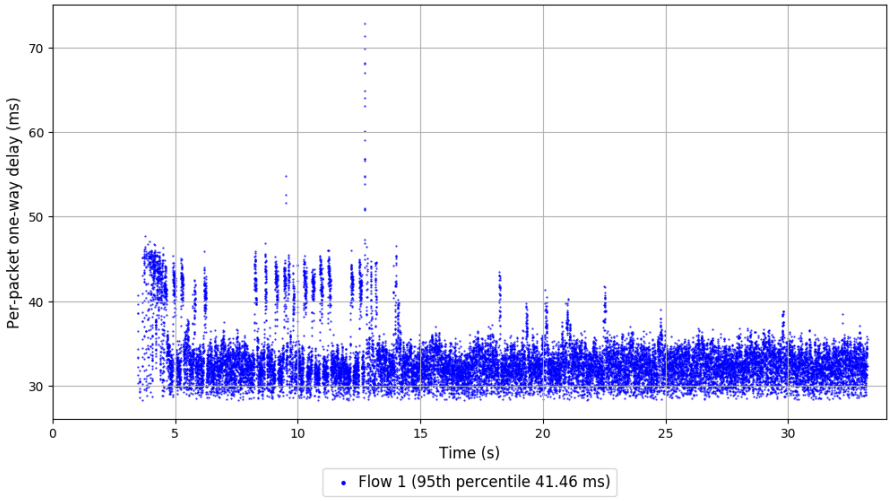
```
Run 2: Statistics of Indigo

Start at: 2019-10-27 04:10:46
End at: 2019-10-27 04:11:16

# Below is generated by plot.py at 2019-10-27 04:21:34
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 9.41 Mbit/s (94.1% utilization)
95th percentile per-packet one-way delay: 41.460 ms
Loss rate: 1.62%
-- Flow 1:
Average throughput: 9.41 Mbit/s
95th percentile per-packet one-way delay: 41.460 ms
Loss rate: 1.62%
```

Run 2: Report of Indigo — Data Link



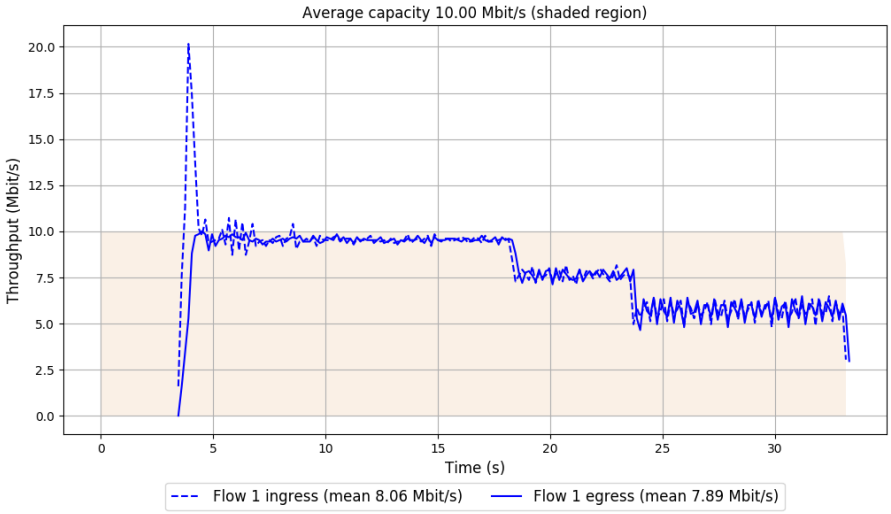


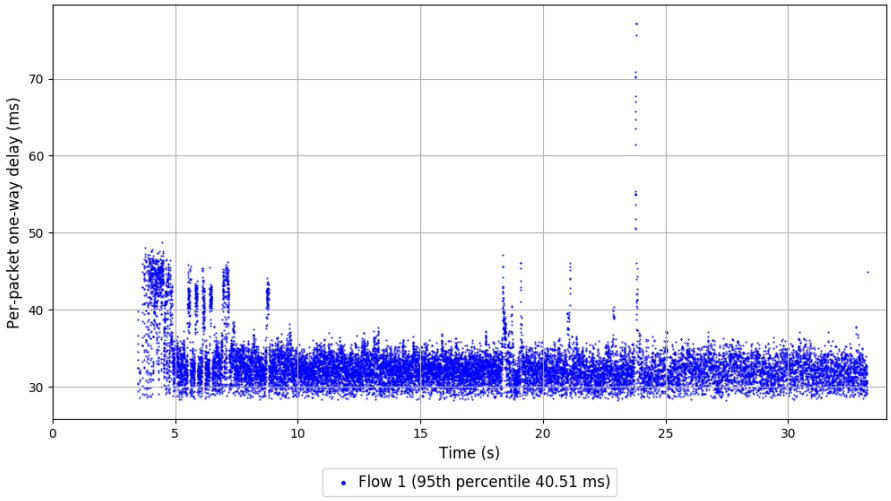
```
Run 3: Statistics of Indigo

Start at: 2019-10-27 04:16:32
End at: 2019-10-27 04:17:02

# Below is generated by plot.py at 2019-10-27 04:21:34
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 7.89 Mbit/s (78.9% utilization)
95th percentile per-packet one-way delay: 40.509 ms
Loss rate: 2.19%
-- Flow 1:
Average throughput: 7.89 Mbit/s
95th percentile per-packet one-way delay: 40.509 ms
Loss rate: 2.19%
```

Run 3: Report of Indigo — Data Link



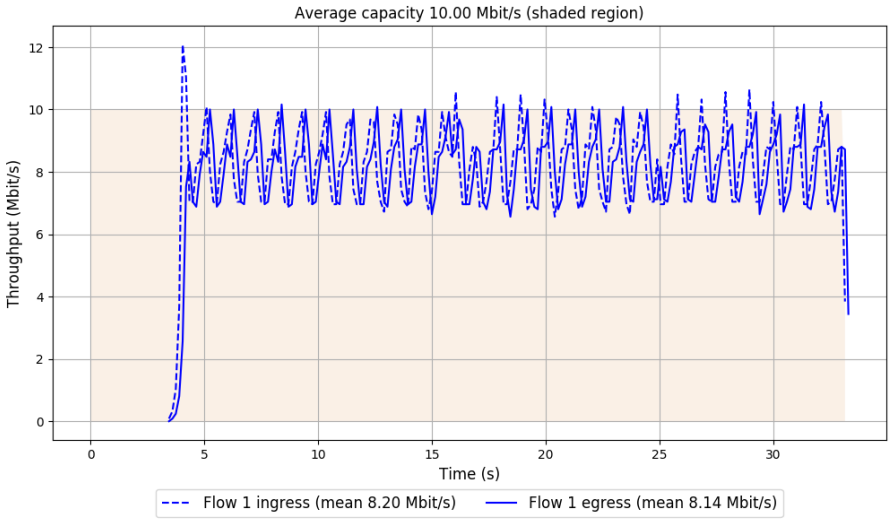


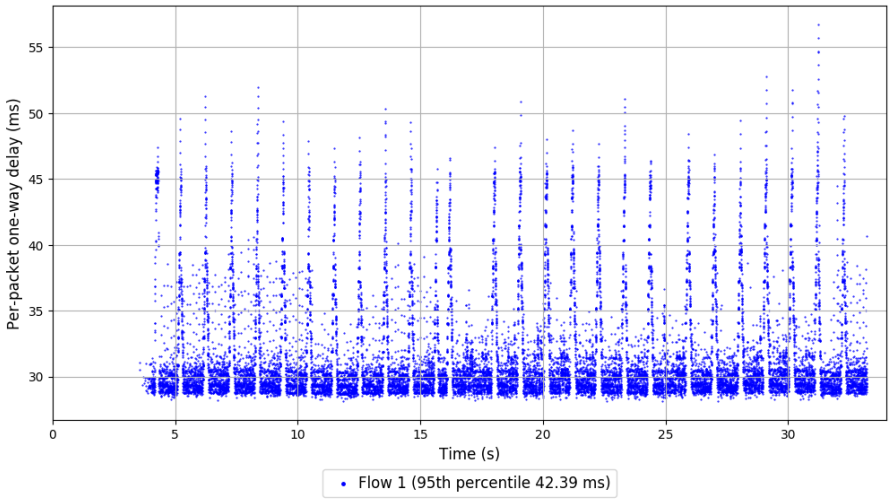
```
Run 1: Statistics of Synthesized-BBR

Start at: 2019-10-27 04:03:51
End at: 2019-10-27 04:04:21

# Below is generated by plot.py at 2019-10-27 04:21:38
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 8.14 Mbit/s (81.4% utilization)
95th percentile per-packet one-way delay: 42.388 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 8.14 Mbit/s
95th percentile per-packet one-way delay: 42.388 ms
Loss rate: 0.84%
```

Run 1: Report of Synthesized-BBR — Data Link



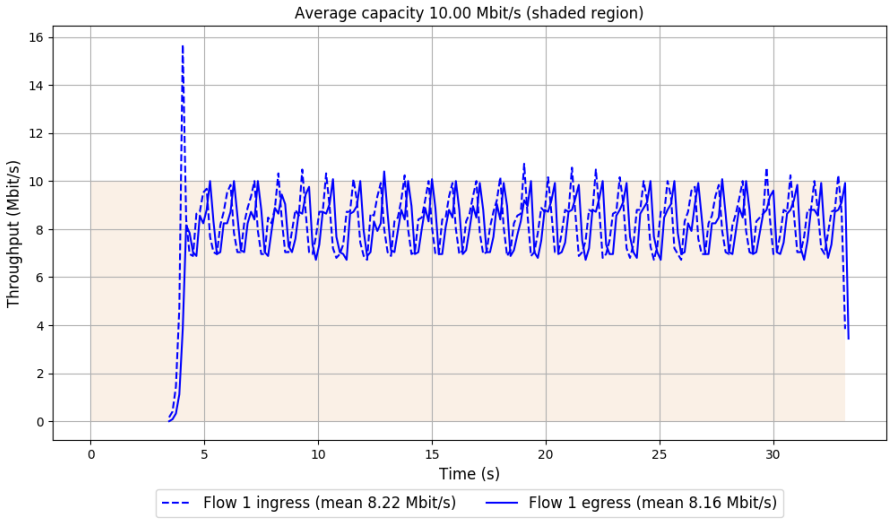


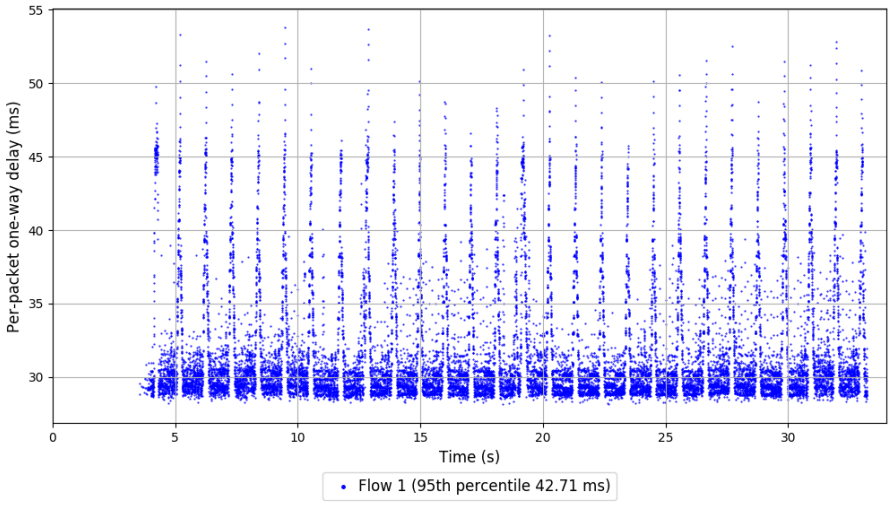
```
Run 2: Statistics of Synthesized-BBR

Start at: 2019-10-27 04:09:36
End at: 2019-10-27 04:10:06

# Below is generated by plot.py at 2019-10-27 04:21:38
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 8.16 Mbit/s (81.6% utilization)
95th percentile per-packet one-way delay: 42.708 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 8.16 Mbit/s
95th percentile per-packet one-way delay: 42.708 ms
Loss rate: 0.88%
```

Run 2: Report of Synthesized-BBR — Data Link





```
Run 3: Statistics of Synthesized-BBR

Start at: 2019-10-27 04:15:22
End at: 2019-10-27 04:15:52

# Below is generated by plot.py at 2019-10-27 04:21:38
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 8.47 Mbit/s (84.7% utilization)
95th percentile per-packet one-way delay: 42.778 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 8.47 Mbit/s
95th percentile per-packet one-way delay: 42.778 ms
Loss rate: 0.68%
```

Run 3: Report of Synthesized-BBR — Data Link