

Pantheon Report

Generated at 2019-10-29 00:38:30 (UTC).
Tested in mahimahi: mm-delay 28 mm-link 10mbps.trace 10mbps.trace
--uplink-queue=droptail --uplink-queue-args=packets=14
Repeated the test of 9 congestion control schemes 5 times.
Each test lasted for 30 seconds running 1 flow.

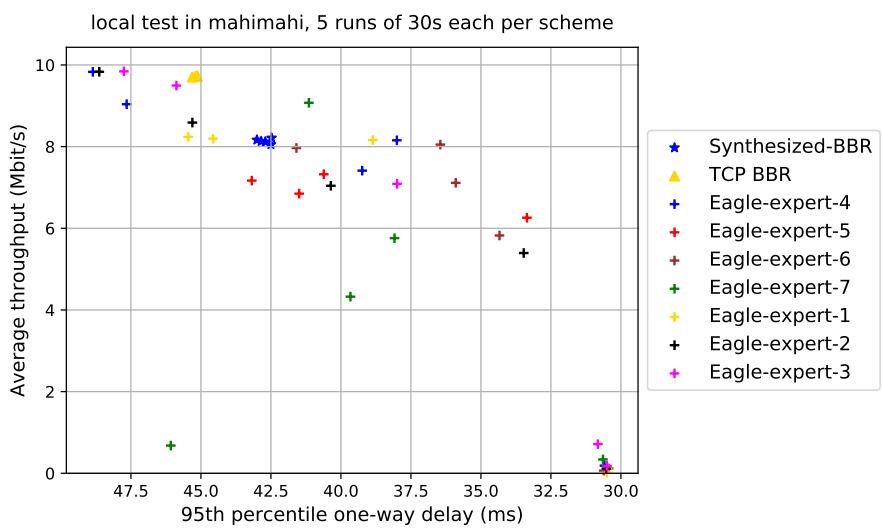
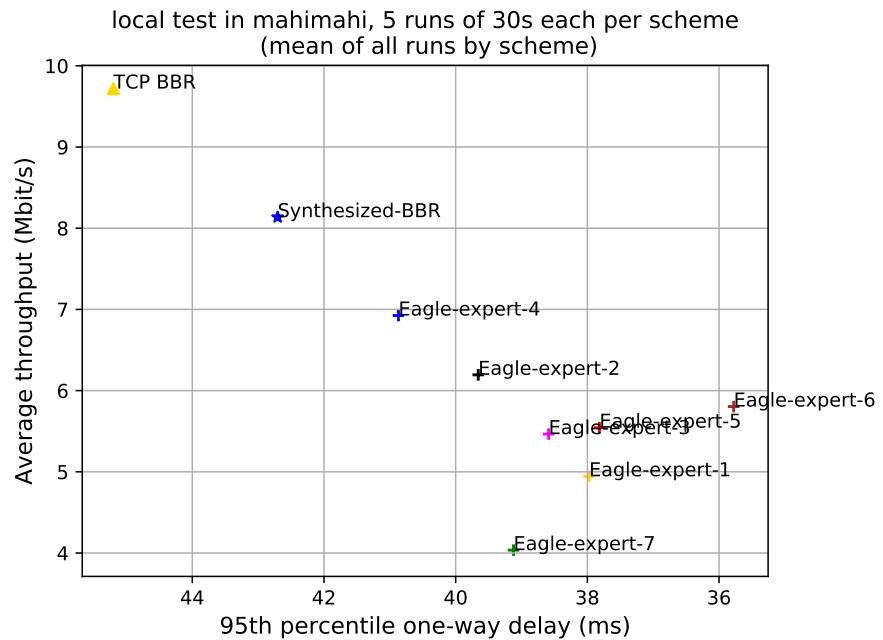
System info:

```
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 @ c8a1737b3c84d7d49eadab5b8785045d272a70120
third_party/eagle-v3 @ d5f1ab4416fa417052ddc65de5dbdbd20955d293
M sender-receiver/sender-receiver/sender_receiver/envs/_/pycache__/datagram_pb2.cpython-36.pyc
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.pyc
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-240it
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 @ d6da1459332fceef56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fc45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ f866d3f58d27af942717625ee3a354cc2e802bd
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.pyc
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.pyc
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.cpython-36.pyc
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
```



scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	9.72	45.20	3.93
Eagle-expert-1	5	4.95	37.97	0.83
Eagle-expert-2	5	6.19	39.66	5.52
Eagle-expert-3	5	5.46	38.59	20.07
Eagle-expert-4	5	6.92	40.87	2.07
Eagle-expert-5	5	5.54	37.82	1.17
Eagle-expert-6	5	5.80	35.78	1.12
Eagle-expert-7	5	4.04	39.12	3.40
Synthesized-BBR	5	8.13	42.70	0.85

Run 1: Statistics of TCP BBR

Start at: 2019-10-29 00:12:41

End at: 2019-10-29 00:13:11

Below is generated by plot.py at 2019-10-29 00:37:12

Datalink statistics

-- Total of 1 flow:

Average capacity: 10.00 Mbit/s

Average throughput: 9.70 Mbit/s (97.0% utilization)

95th percentile per-packet one-way delay: 45.311 ms

Loss rate: 3.88%

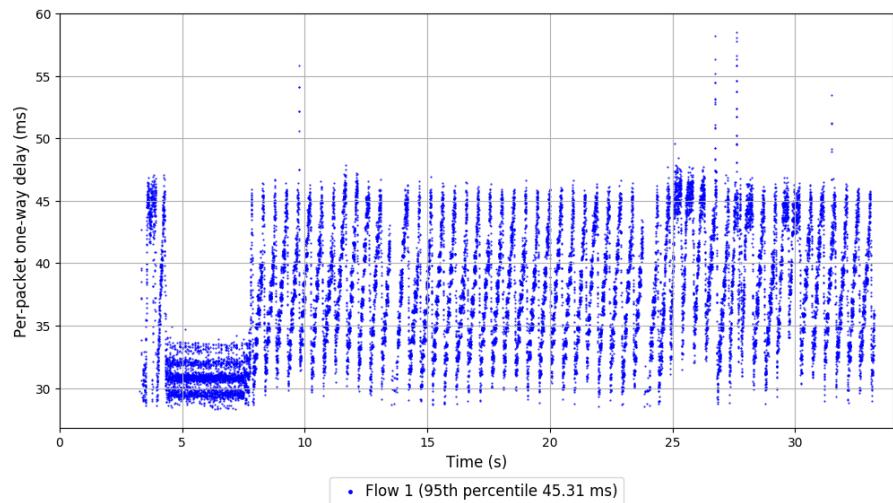
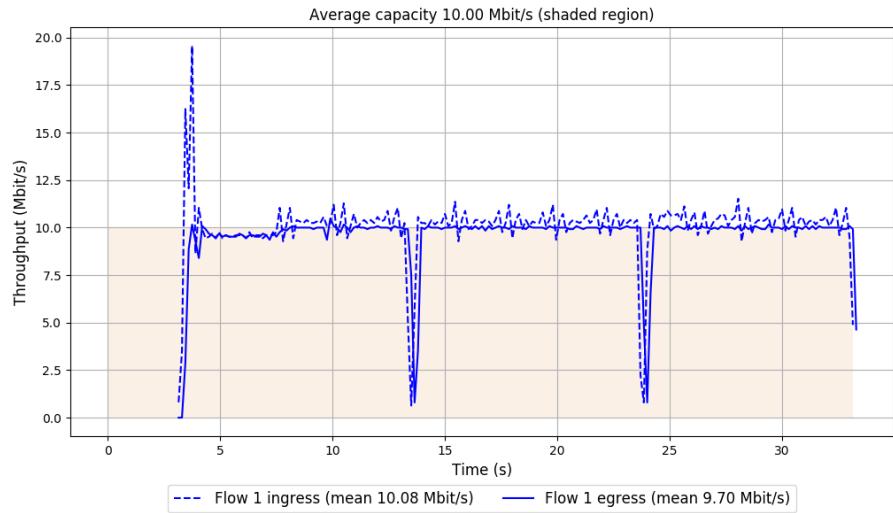
-- Flow 1:

Average throughput: 9.70 Mbit/s

95th percentile per-packet one-way delay: 45.311 ms

Loss rate: 3.88%

Run 1: Report of TCP BBR — Data Link



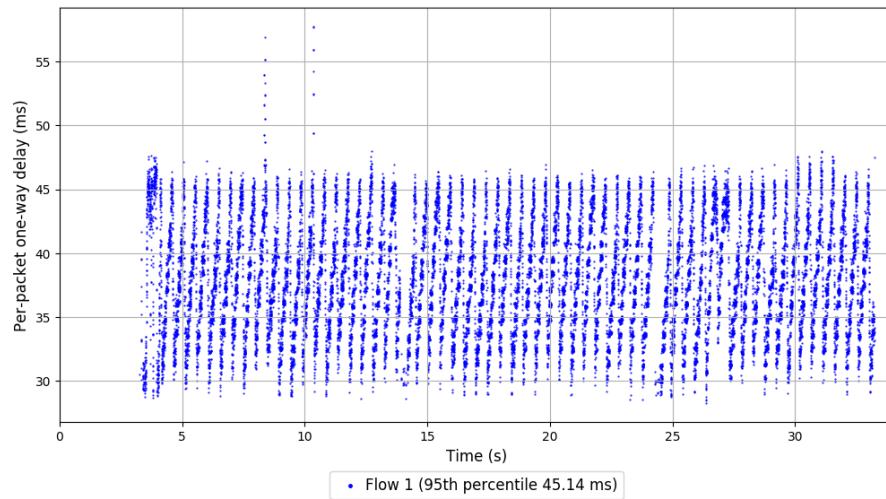
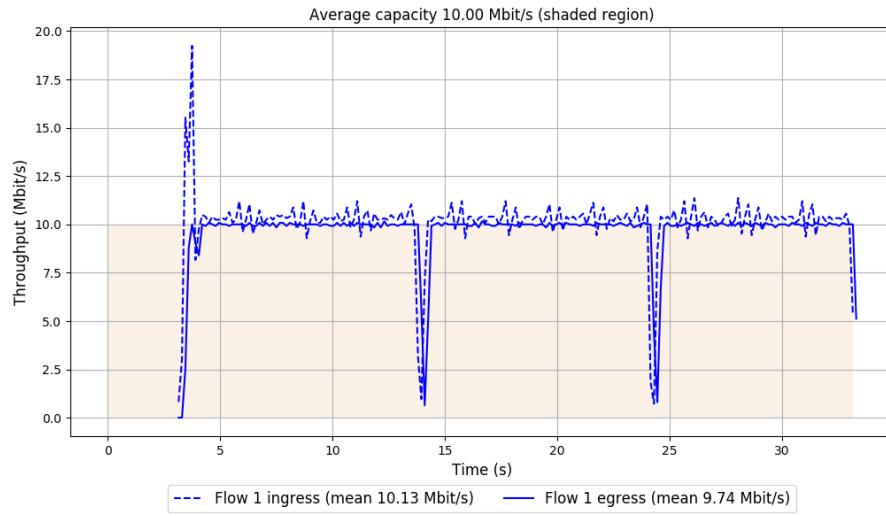
Run 2: Statistics of TCP BBR

Start at: 2019-10-29 00:17:52

End at: 2019-10-29 00:18:22

```
# Below is generated by plot.py at 2019-10-29 00:37:14
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 9.74 Mbit/s (97.4% utilization)
95th percentile per-packet one-way delay: 45.136 ms
Loss rate: 3.97%
-- Flow 1:
Average throughput: 9.74 Mbit/s
95th percentile per-packet one-way delay: 45.136 ms
Loss rate: 3.97%
```

Run 2: Report of TCP BBR — Data Link



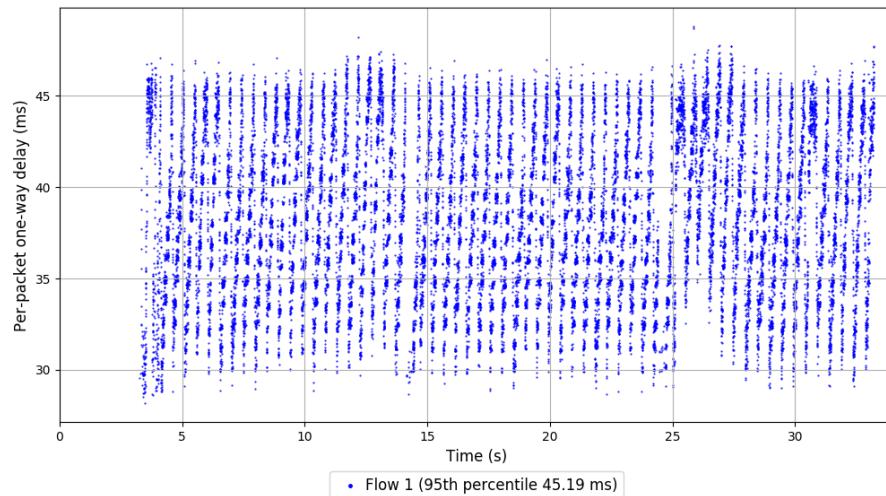
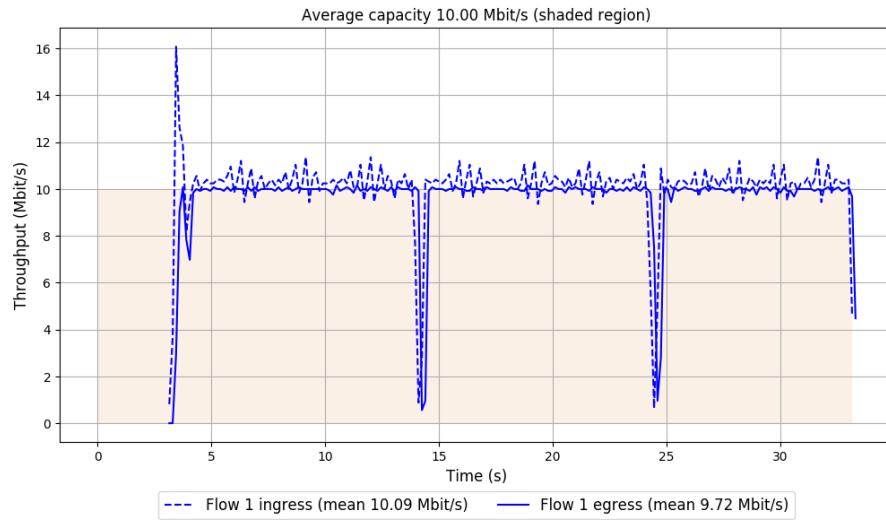
Run 3: Statistics of TCP BBR

Start at: 2019-10-29 00:23:04

End at: 2019-10-29 00:23:34

```
# Below is generated by plot.py at 2019-10-29 00:37:14
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 9.72 Mbit/s (97.2% utilization)
95th percentile per-packet one-way delay: 45.192 ms
Loss rate: 3.79%
-- Flow 1:
Average throughput: 9.72 Mbit/s
95th percentile per-packet one-way delay: 45.192 ms
Loss rate: 3.79%
```

Run 3: Report of TCP BBR — Data Link



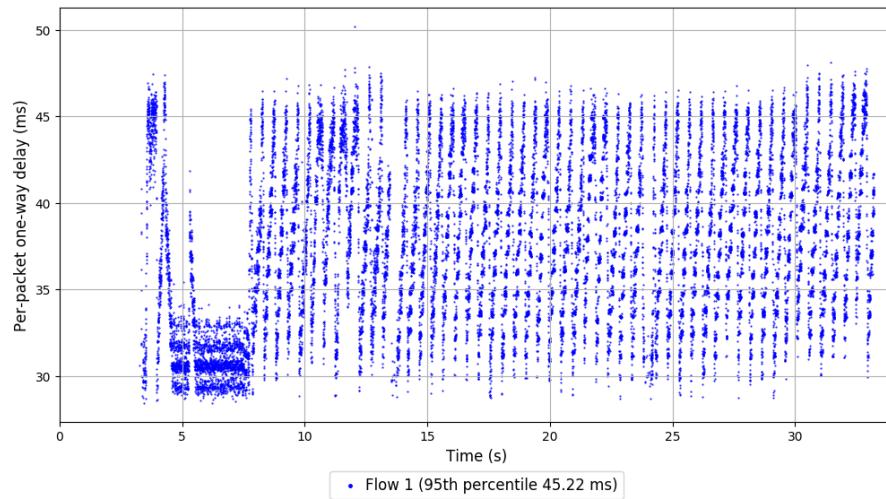
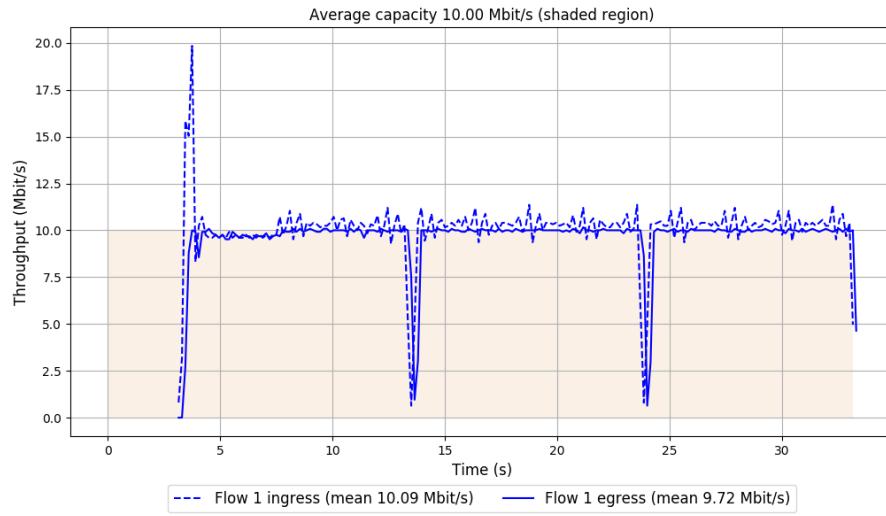
Run 4: Statistics of TCP BBR

Start at: 2019-10-29 00:28:12

End at: 2019-10-29 00:28:42

```
# Below is generated by plot.py at 2019-10-29 00:37:14
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 9.72 Mbit/s (97.2% utilization)
95th percentile per-packet one-way delay: 45.218 ms
Loss rate: 3.81%
-- Flow 1:
Average throughput: 9.72 Mbit/s
95th percentile per-packet one-way delay: 45.218 ms
Loss rate: 3.81%
```

Run 4: Report of TCP BBR — Data Link

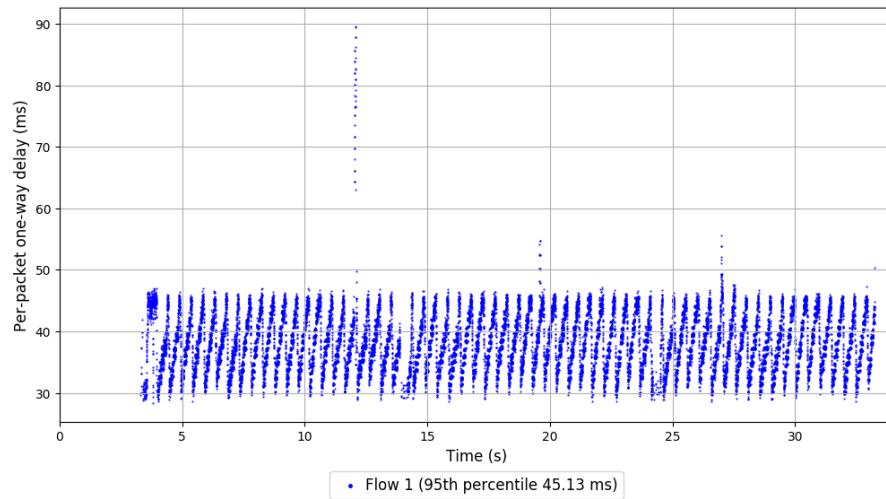
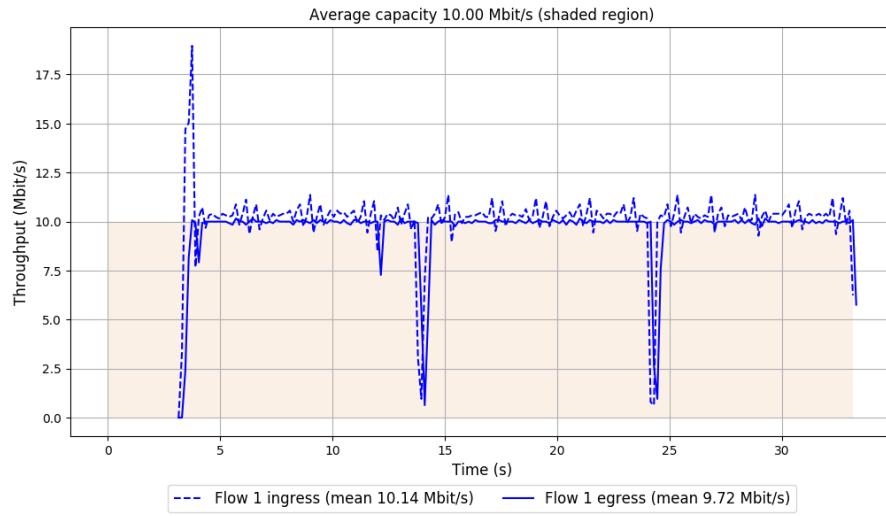


```
Run 5: Statistics of TCP BBR

Start at: 2019-10-29 00:33:21
End at: 2019-10-29 00:33:51

# Below is generated by plot.py at 2019-10-29 00:37:24
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 9.72 Mbit/s (97.2% utilization)
95th percentile per-packet one-way delay: 45.131 ms
Loss rate: 4.20%
-- Flow 1:
Average throughput: 9.72 Mbit/s
95th percentile per-packet one-way delay: 45.131 ms
Loss rate: 4.20%
```

Run 5: Report of TCP BBR — Data Link

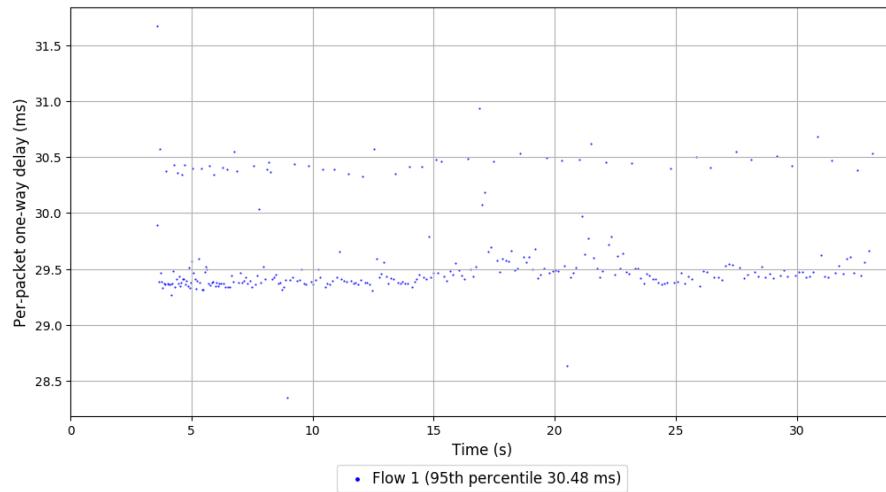
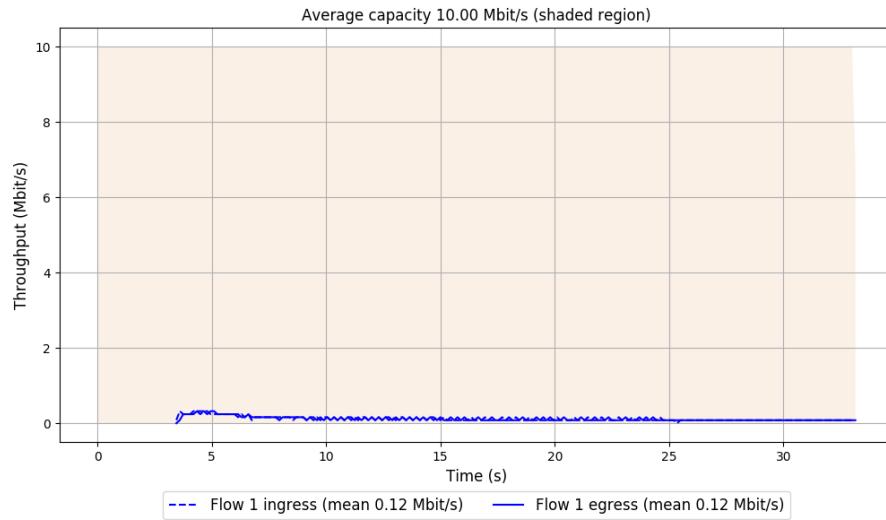


```
Run 1: Statistics of Eagle-expert-1

Start at: 2019-10-29 00:08:07
End at: 2019-10-29 00:08:37

# Below is generated by plot.py at 2019-10-29 00:37:24
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 0.12 Mbit/s (1.2% utilization)
95th percentile per-packet one-way delay: 30.476 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 30.476 ms
Loss rate: 0.00%
```

Run 1: Report of Eagle-expert-1 — Data Link



Run 2: Statistics of Eagle-expert-1

Start at: 2019-10-29 00:13:16

End at: 2019-10-29 00:13:46

Below is generated by plot.py at 2019-10-29 00:37:24

Datalink statistics

-- Total of 1 flow:

Average capacity: 10.00 Mbit/s

Average throughput: 8.20 Mbit/s (81.9% utilization)

95th percentile per-packet one-way delay: 44.567 ms

Loss rate: 1.44%

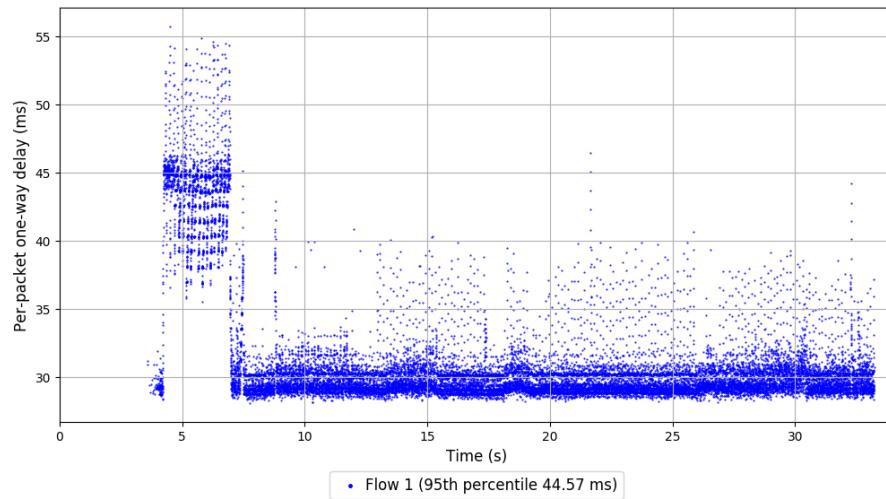
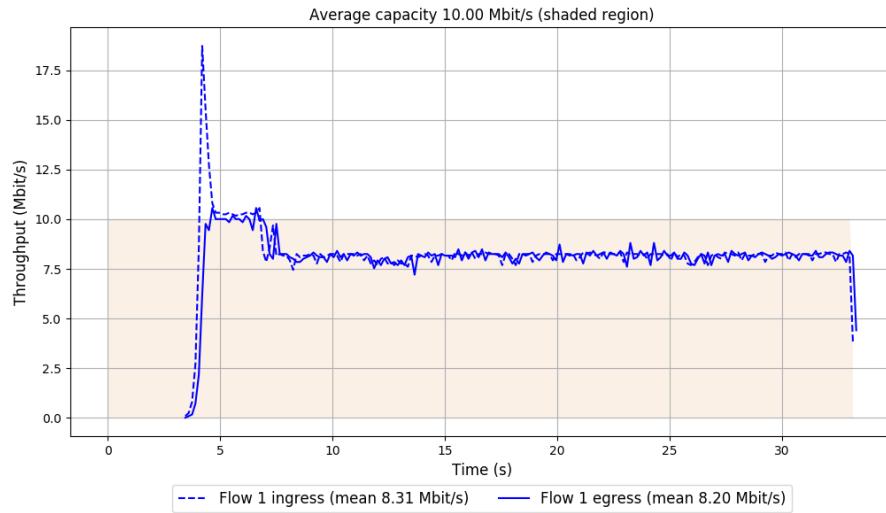
-- Flow 1:

Average throughput: 8.20 Mbit/s

95th percentile per-packet one-way delay: 44.567 ms

Loss rate: 1.44%

Run 2: Report of Eagle-expert-1 — Data Link



Run 3: Statistics of Eagle-expert-1

Start at: 2019-10-29 00:18:26

End at: 2019-10-29 00:18:56

Below is generated by plot.py at 2019-10-29 00:37:24

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: 38.862 ms

Loss rate: 1.22%

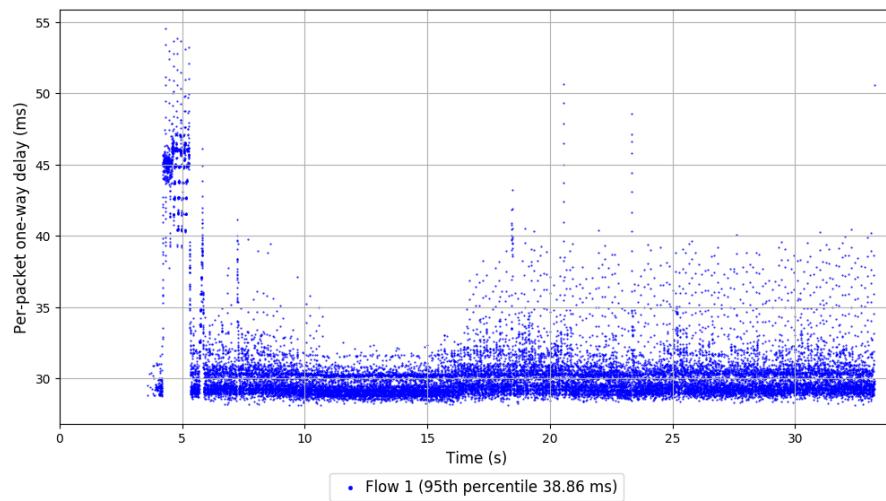
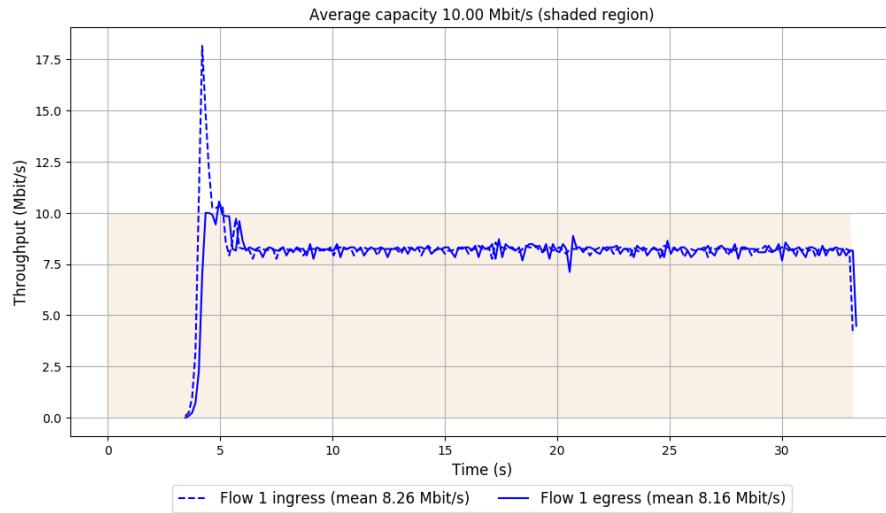
-- Flow 1:

Average throughput: 8.16 Mbit/s

95th percentile per-packet one-way delay: 38.862 ms

Loss rate: 1.22%

Run 3: Report of Eagle-expert-1 — Data Link



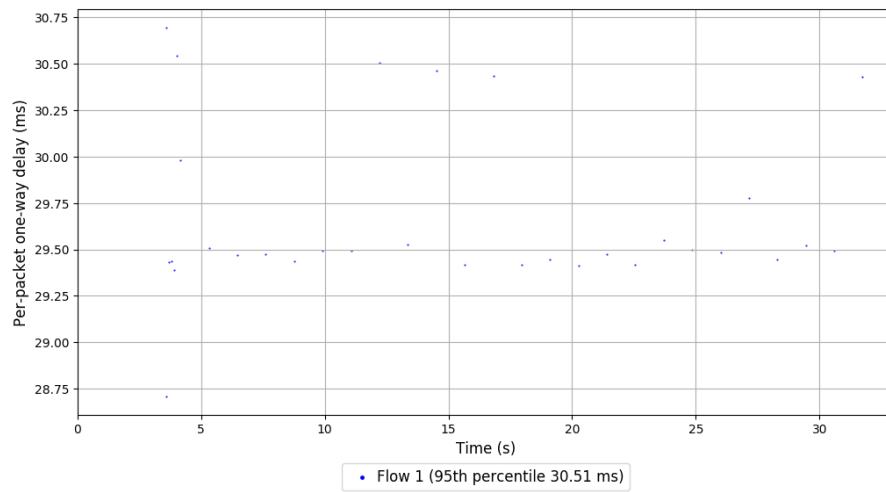
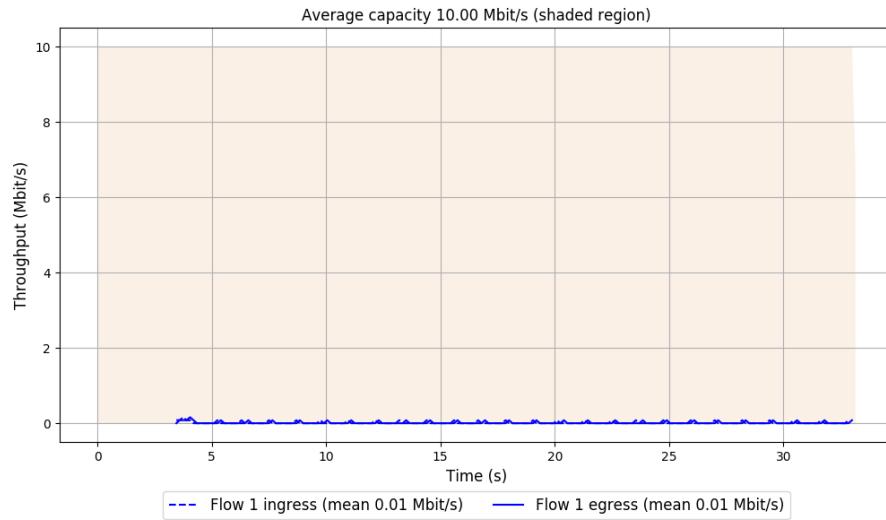
Run 4: Statistics of Eagle-expert-1

Start at: 2019-10-29 00:23:38

End at: 2019-10-29 00:24:08

```
# Below is generated by plot.py at 2019-10-29 00:37:24
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 0.01 Mbit/s (0.1% utilization)
95th percentile per-packet one-way delay: 30.506 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 30.506 ms
Loss rate: 0.00%
```

Run 4: Report of Eagle-expert-1 — Data Link

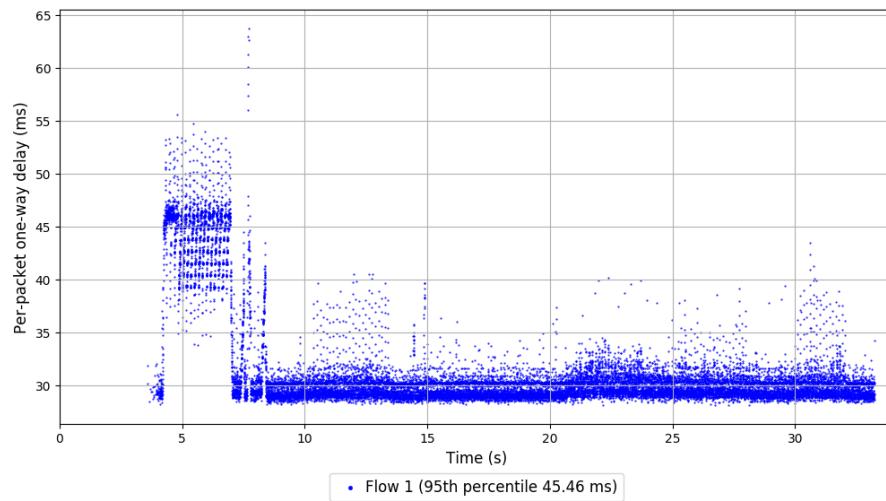
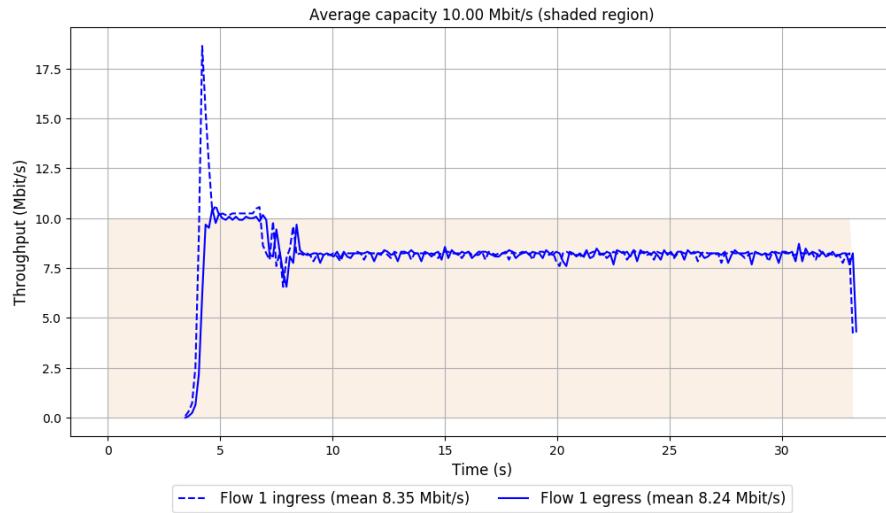


```
Run 5: Statistics of Eagle-expert-1

Start at: 2019-10-29 00:28:47
End at: 2019-10-29 00:29:17

# Below is generated by plot.py at 2019-10-29 00:37:27
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 8.24 Mbit/s (82.4% utilization)
95th percentile per-packet one-way delay: 45.458 ms
Loss rate: 1.47%
-- Flow 1:
Average throughput: 8.24 Mbit/s
95th percentile per-packet one-way delay: 45.458 ms
Loss rate: 1.47%
```

Run 5: Report of Eagle-expert-1 — Data Link

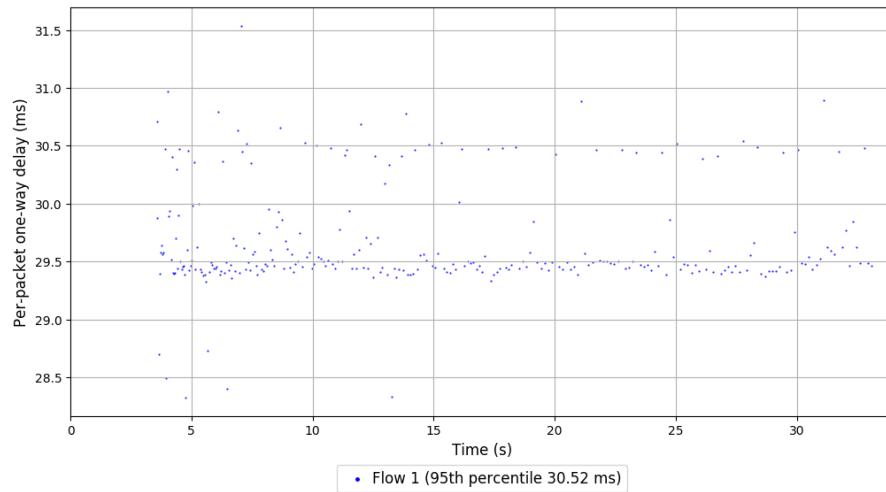
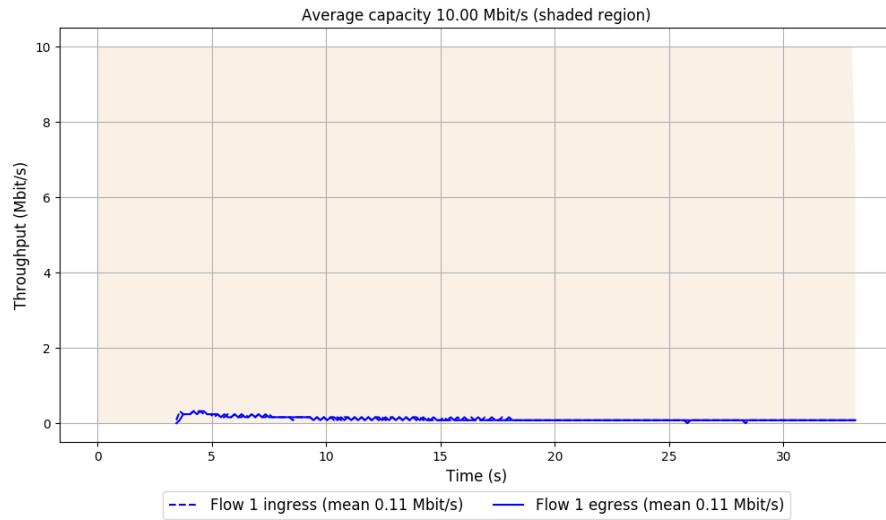


```
Run 1: Statistics of Eagle-expert-2

Start at: 2019-10-29 00:08:41
End at: 2019-10-29 00:09:11

# Below is generated by plot.py at 2019-10-29 00:37:27
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 0.11 Mbit/s (1.1% utilization)
95th percentile per-packet one-way delay: 30.519 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 30.519 ms
Loss rate: 0.36%
```

Run 1: Report of Eagle-expert-2 — Data Link



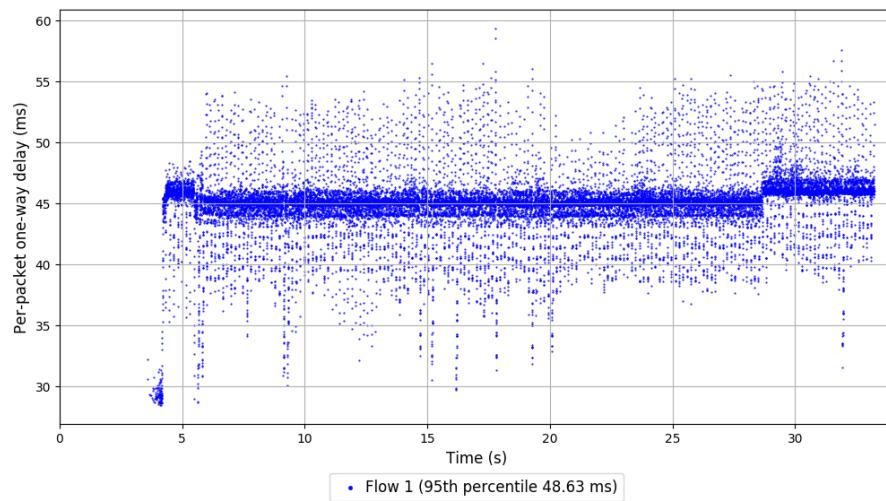
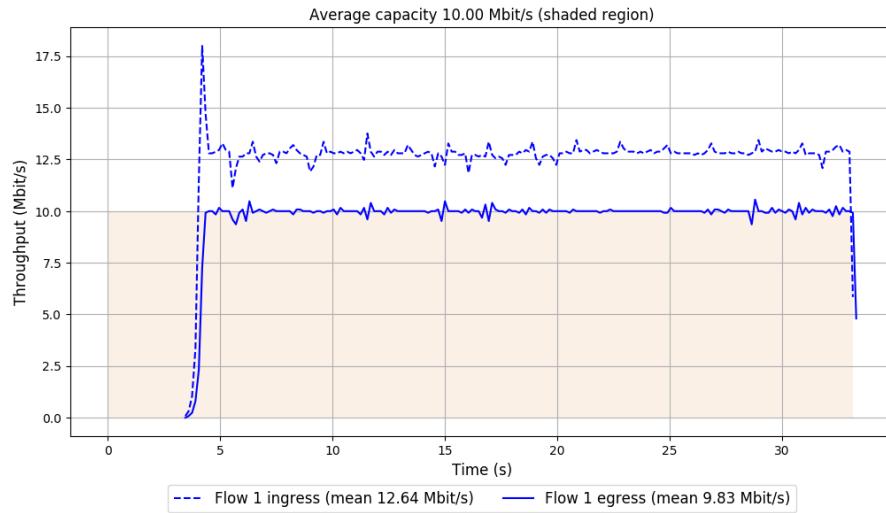
Run 2: Statistics of Eagle-expert-2

Start at: 2019-10-29 00:13:51

End at: 2019-10-29 00:14:21

```
# Below is generated by plot.py at 2019-10-29 00:37:32
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 9.83 Mbit/s (98.3% utilization)
95th percentile per-packet one-way delay: 48.630 ms
Loss rate: 22.28%
-- Flow 1:
Average throughput: 9.83 Mbit/s
95th percentile per-packet one-way delay: 48.630 ms
Loss rate: 22.28%
```

Run 2: Report of Eagle-expert-2 — Data Link



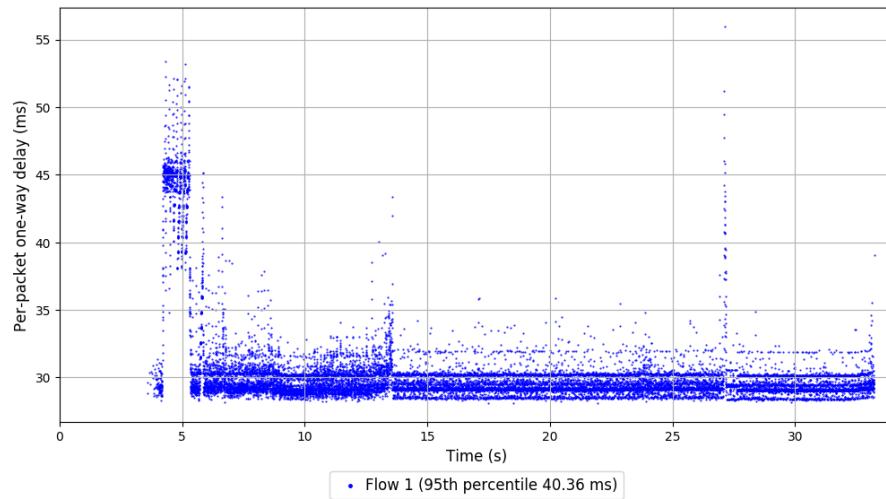
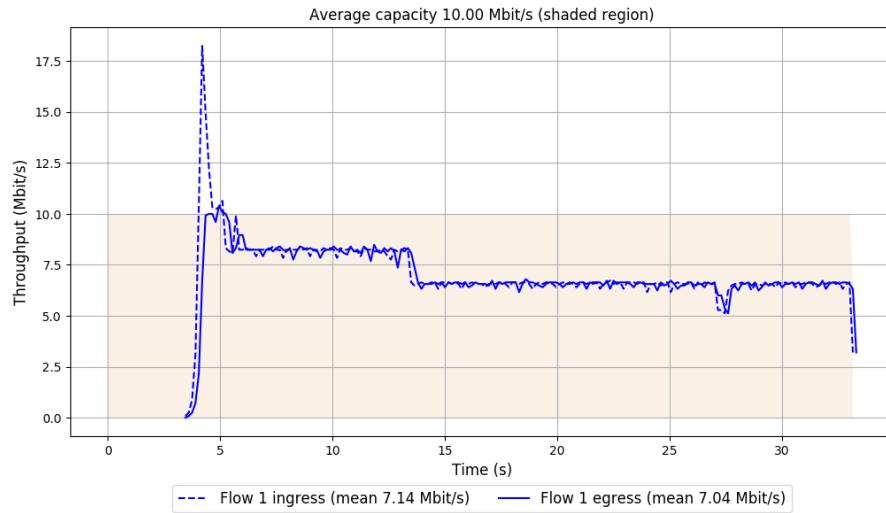
Run 3: Statistics of Eagle-expert-2

Start at: 2019-10-29 00:19:01

End at: 2019-10-29 00:19:31

```
# Below is generated by plot.py at 2019-10-29 00:37:32
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 7.04 Mbit/s (70.4% utilization)
95th percentile per-packet one-way delay: 40.360 ms
Loss rate: 1.44%
-- Flow 1:
Average throughput: 7.04 Mbit/s
95th percentile per-packet one-way delay: 40.360 ms
Loss rate: 1.44%
```

Run 3: Report of Eagle-expert-2 — Data Link

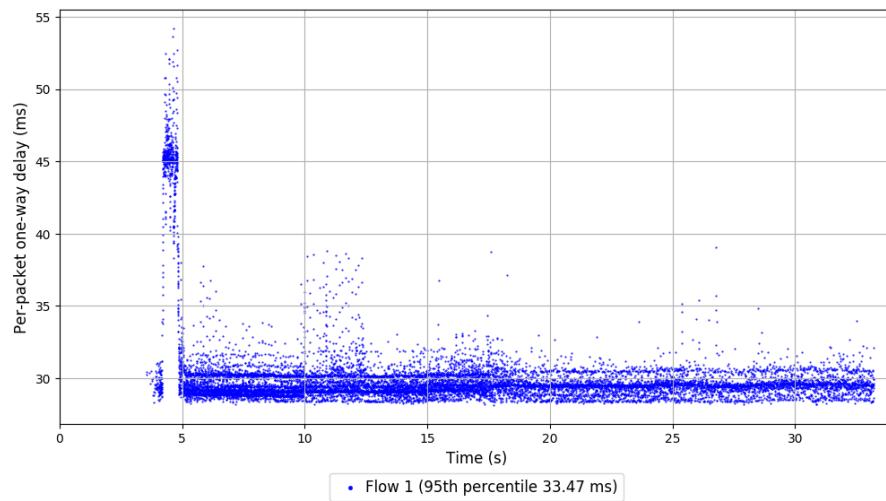
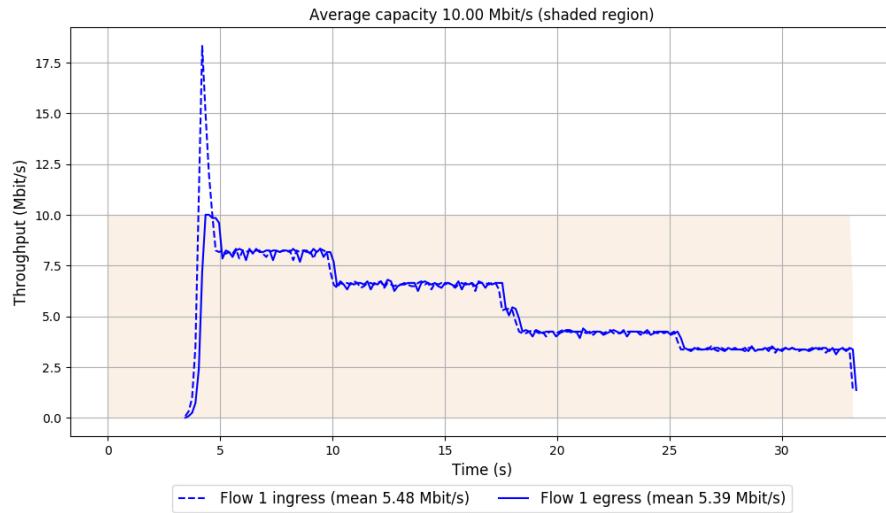


```
Run 4: Statistics of Eagle-expert-2

Start at: 2019-10-29 00:24:12
End at: 2019-10-29 00:24:42

# Below is generated by plot.py at 2019-10-29 00:37:32
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 5.39 Mbit/s (53.9% utilization)
95th percentile per-packet one-way delay: 33.471 ms
Loss rate: 1.72%
-- Flow 1:
Average throughput: 5.39 Mbit/s
95th percentile per-packet one-way delay: 33.471 ms
Loss rate: 1.72%
```

Run 4: Report of Eagle-expert-2 — Data Link

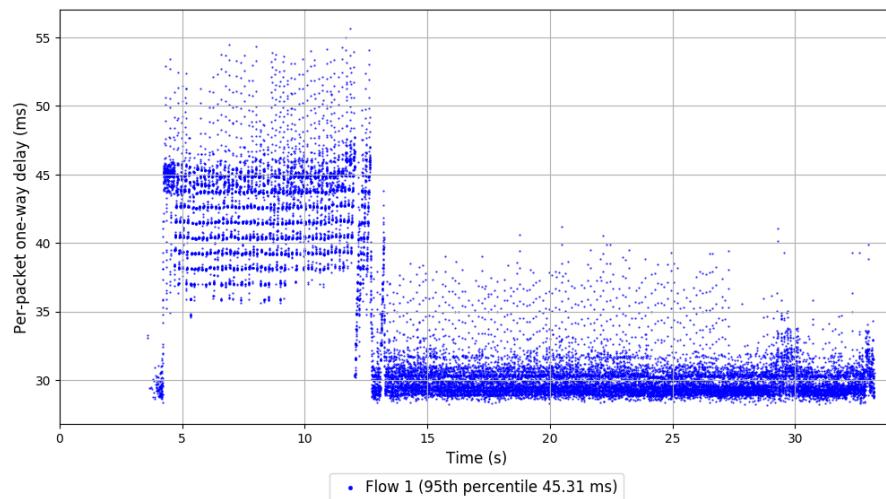
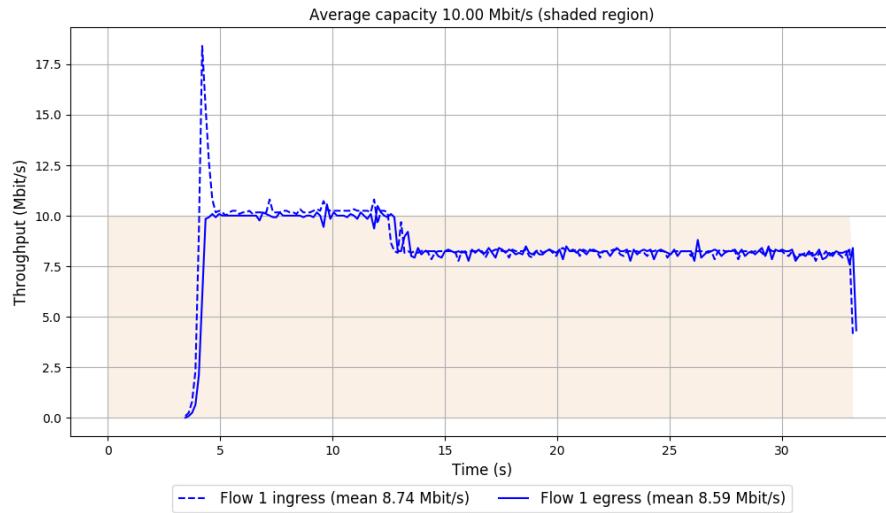


```
Run 5: Statistics of Eagle-expert-2

Start at: 2019-10-29 00:29:21
End at: 2019-10-29 00:29:51

# Below is generated by plot.py at 2019-10-29 00:37:35
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 8.59 Mbit/s (85.9% utilization)
95th percentile per-packet one-way delay: 45.306 ms
Loss rate: 1.79%
-- Flow 1:
Average throughput: 8.59 Mbit/s
95th percentile per-packet one-way delay: 45.306 ms
Loss rate: 1.79%
```

Run 5: Report of Eagle-expert-2 — Data Link

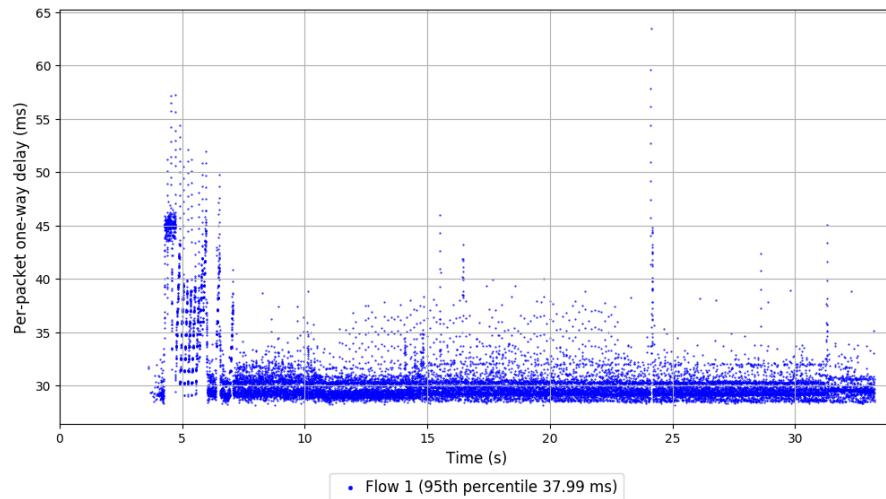
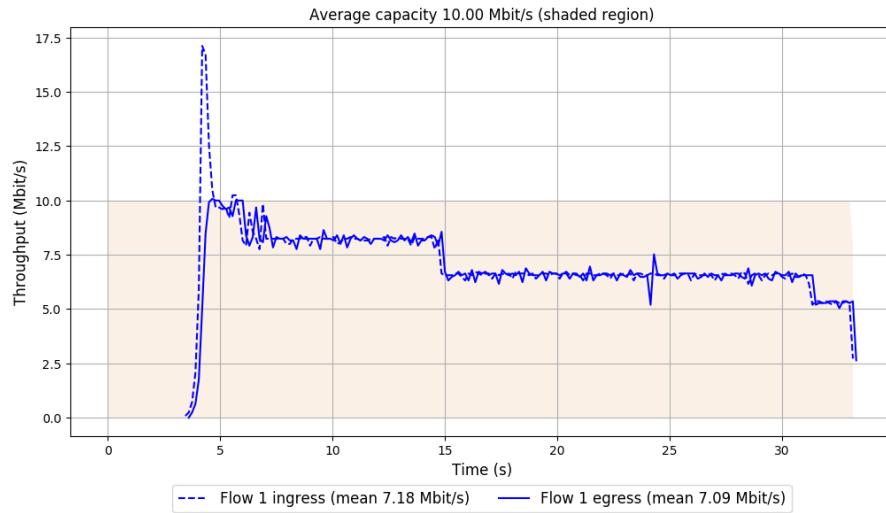


```
Run 1: Statistics of Eagle-expert-3

Start at: 2019-10-29 00:09:15
End at: 2019-10-29 00:09:45

# Below is generated by plot.py at 2019-10-29 00:37:38
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 7.09 Mbit/s (70.9% utilization)
95th percentile per-packet one-way delay: 37.994 ms
Loss rate: 1.33%
-- Flow 1:
Average throughput: 7.09 Mbit/s
95th percentile per-packet one-way delay: 37.994 ms
Loss rate: 1.33%
```

Run 1: Report of Eagle-expert-3 — Data Link



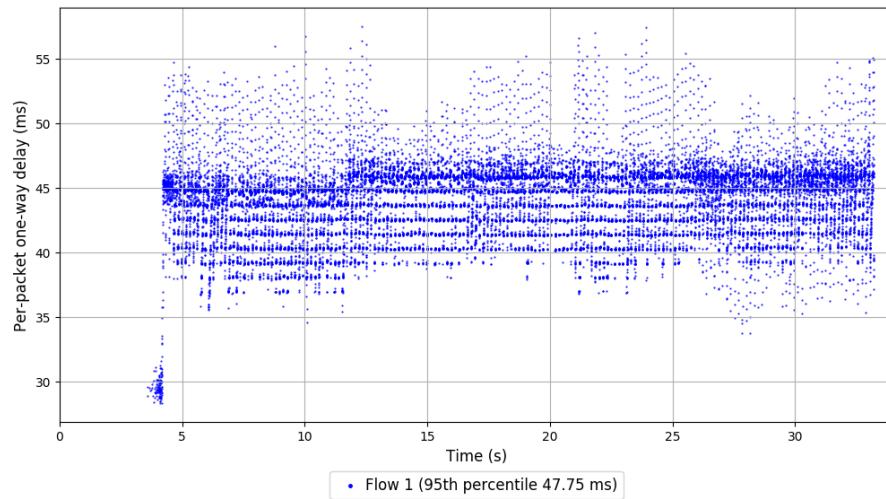
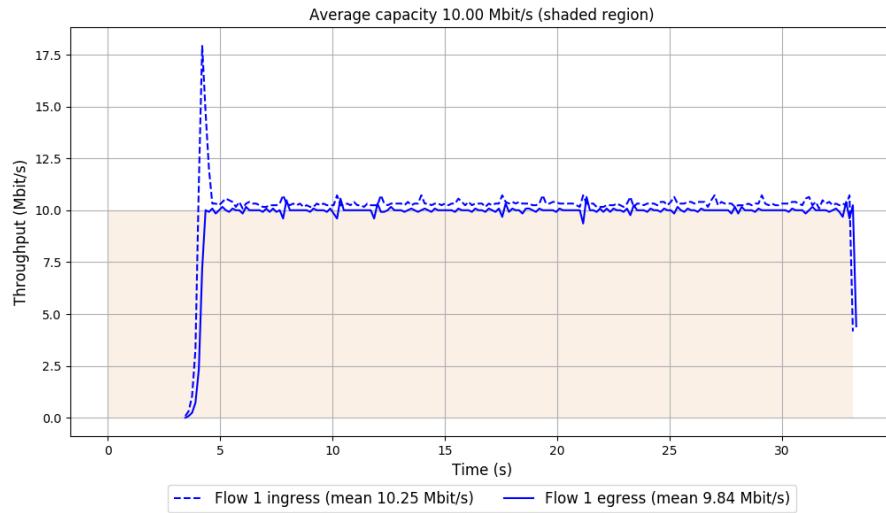
Run 2: Statistics of Eagle-expert-3

Start at: 2019-10-29 00:14:25

End at: 2019-10-29 00:14:55

```
# Below is generated by plot.py at 2019-10-29 00:37:41
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 9.84 Mbit/s (98.4% utilization)
95th percentile per-packet one-way delay: 47.751 ms
Loss rate: 4.04%
-- Flow 1:
Average throughput: 9.84 Mbit/s
95th percentile per-packet one-way delay: 47.751 ms
Loss rate: 4.04%
```

Run 2: Report of Eagle-expert-3 — Data Link



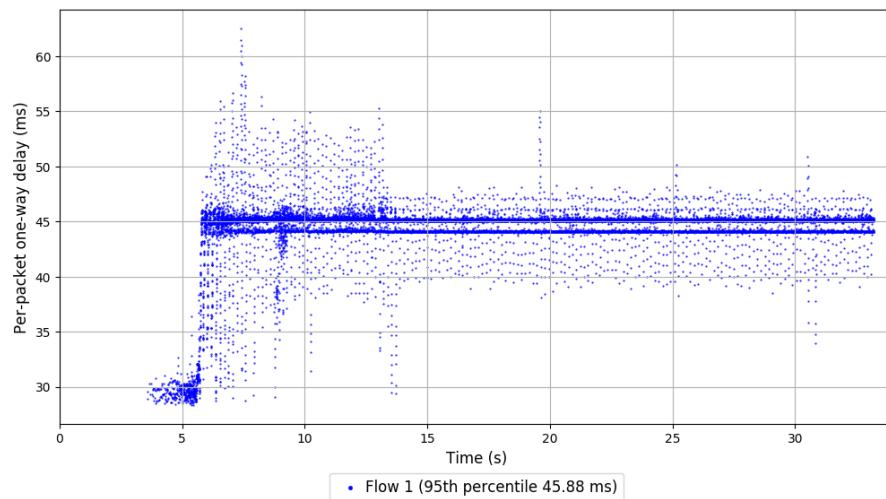
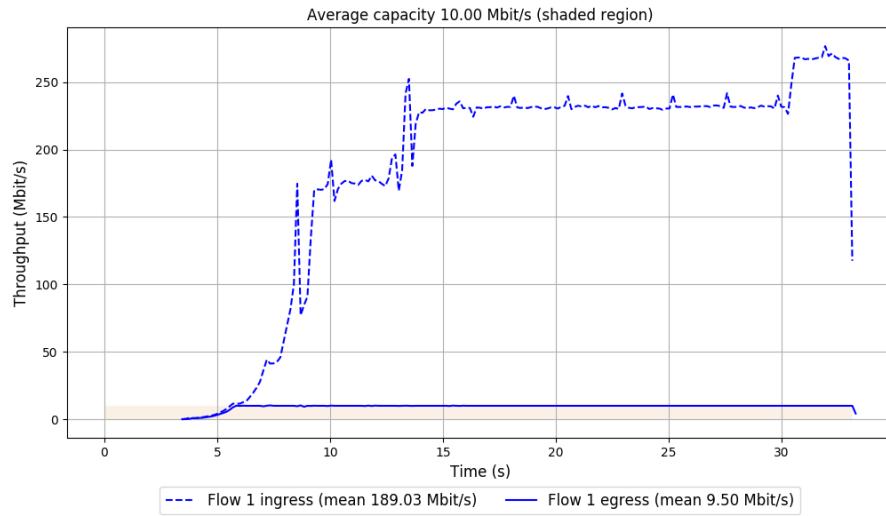
Run 3: Statistics of Eagle-expert-3

Start at: 2019-10-29 00:19:35

End at: 2019-10-29 00:20:05

```
# Below is generated by plot.py at 2019-10-29 00:38:12
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 9.50 Mbit/s (94.9% utilization)
95th percentile per-packet one-way delay: 45.876 ms
Loss rate: 94.98%
-- Flow 1:
Average throughput: 9.50 Mbit/s
95th percentile per-packet one-way delay: 45.876 ms
Loss rate: 94.98%
```

Run 3: Report of Eagle-expert-3 — Data Link



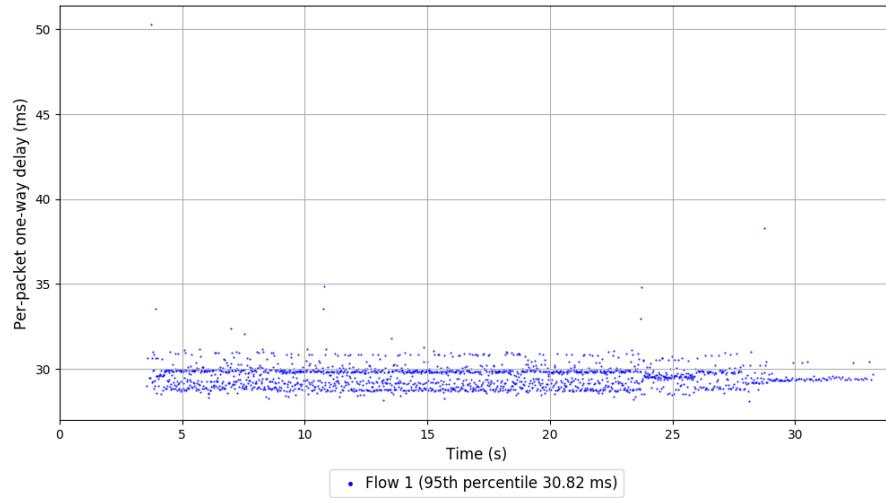
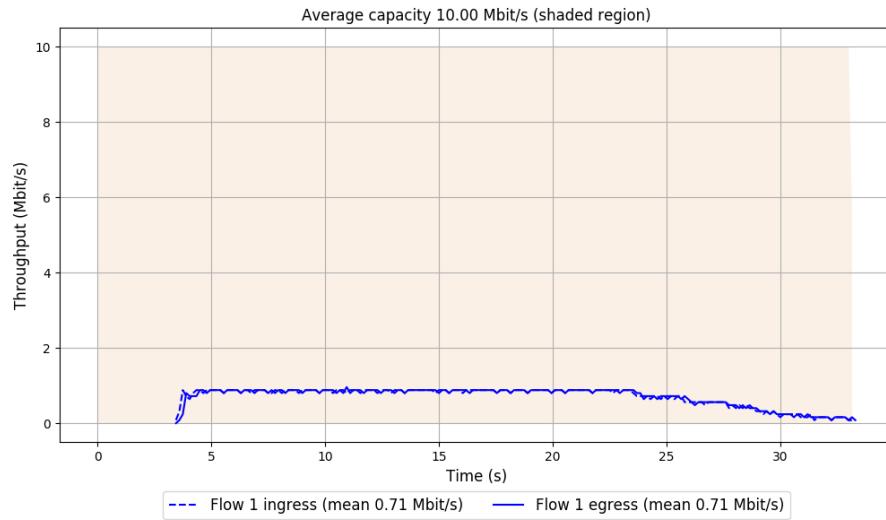
Run 4: Statistics of Eagle-expert-3

Start at: 2019-10-29 00:24:47

End at: 2019-10-29 00:25:17

```
# Below is generated by plot.py at 2019-10-29 00:38:12
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 0.71 Mbit/s (7.1% utilization)
95th percentile per-packet one-way delay: 30.822 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.71 Mbit/s
95th percentile per-packet one-way delay: 30.822 ms
Loss rate: 0.00%
```

Run 4: Report of Eagle-expert-3 — Data Link

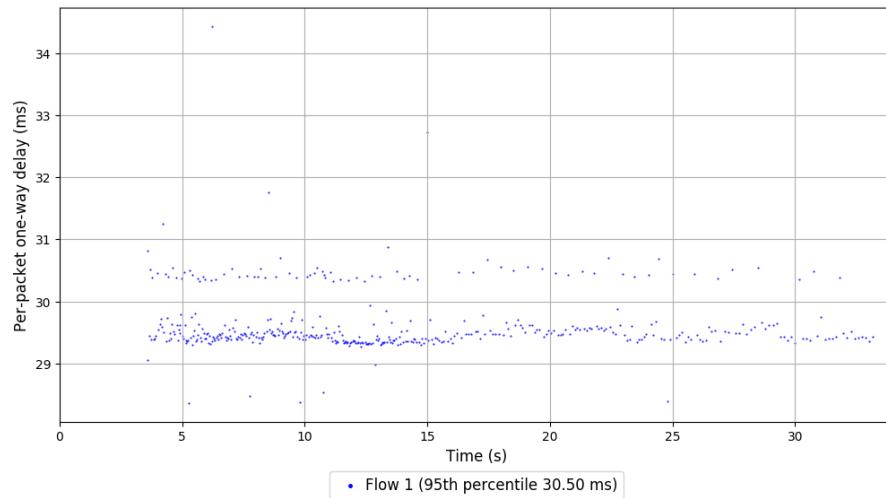
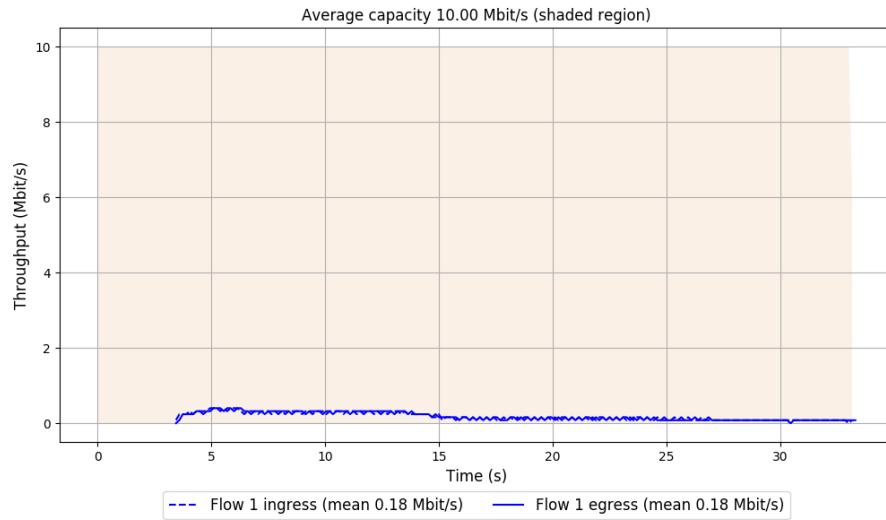


```
Run 5: Statistics of Eagle-expert-3

Start at: 2019-10-29 00:29:56
End at: 2019-10-29 00:30:26

# Below is generated by plot.py at 2019-10-29 00:38:12
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 0.18 Mbit/s (1.8% utilization)
95th percentile per-packet one-way delay: 30.497 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 30.497 ms
Loss rate: 0.00%
```

Run 5: Report of Eagle-expert-3 — Data Link

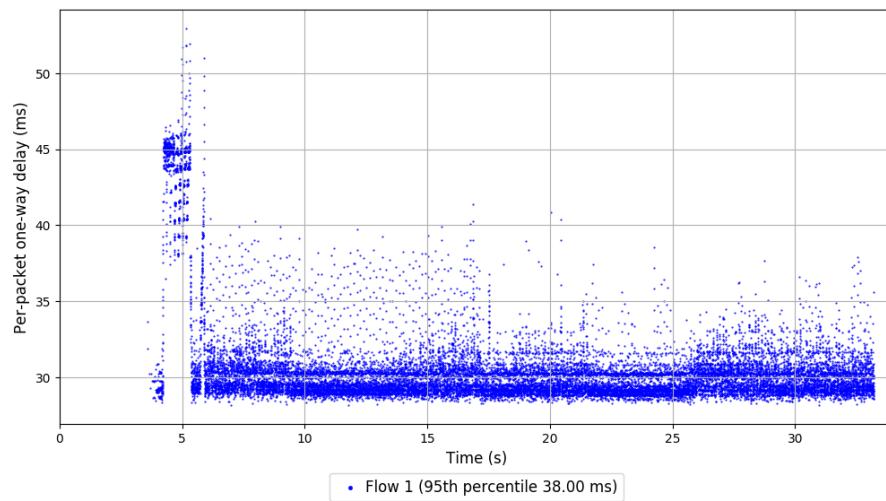
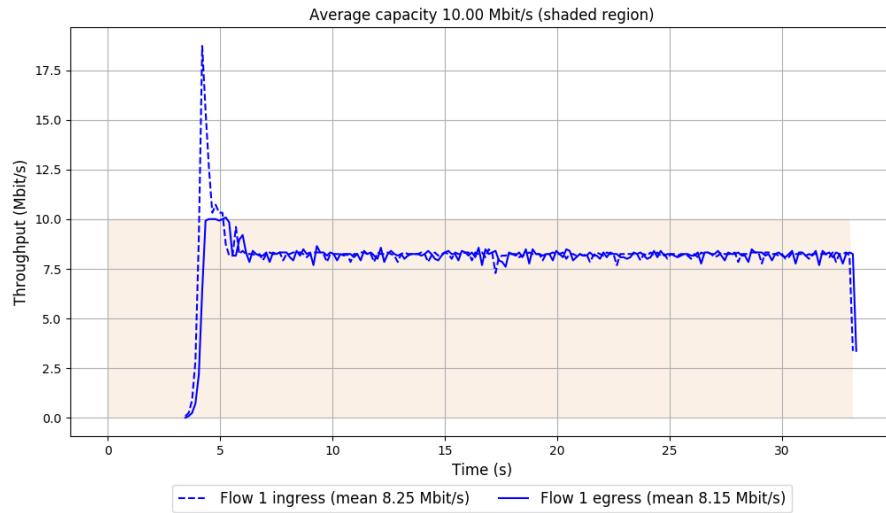


```
Run 1: Statistics of Eagle-expert-4

Start at: 2019-10-29 00:09:49
End at: 2019-10-29 00:10:19

# Below is generated by plot.py at 2019-10-29 00:38:12
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 8.15 Mbit/s (81.5% utilization)
95th percentile per-packet one-way delay: 38.002 ms
Loss rate: 1.28%
-- Flow 1:
Average throughput: 8.15 Mbit/s
95th percentile per-packet one-way delay: 38.002 ms
Loss rate: 1.28%
```

Run 1: Report of Eagle-expert-4 — Data Link

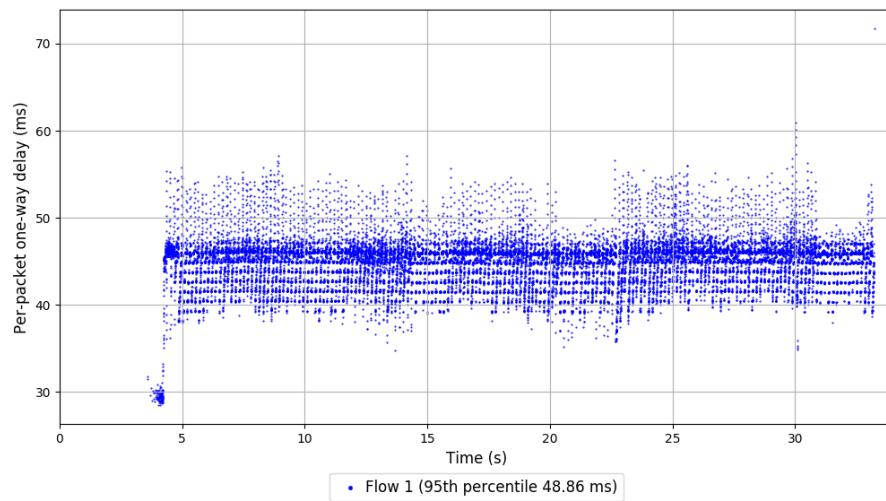
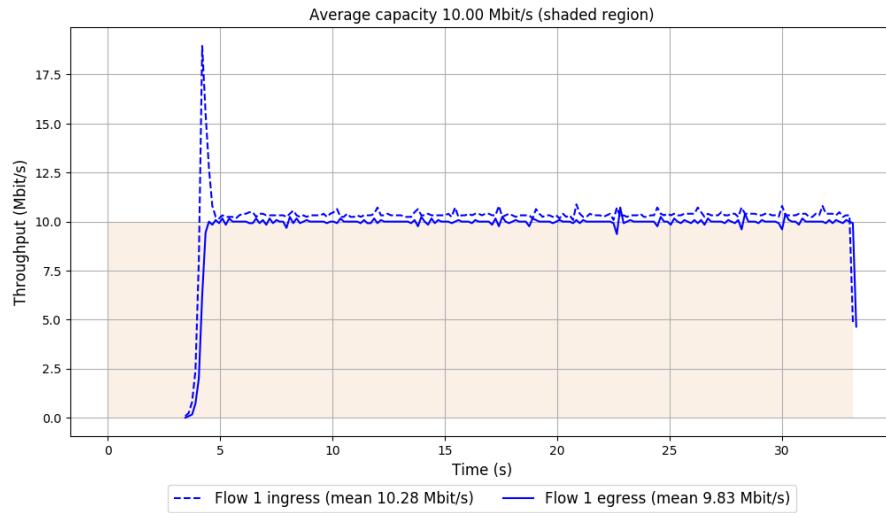


```
Run 2: Statistics of Eagle-expert-4

Start at: 2019-10-29 00:15:00
End at: 2019-10-29 00:15:30

# Below is generated by plot.py at 2019-10-29 00:38:12
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 9.83 Mbit/s (98.3% utilization)
95th percentile per-packet one-way delay: 48.860 ms
Loss rate: 4.34%
-- Flow 1:
Average throughput: 9.83 Mbit/s
95th percentile per-packet one-way delay: 48.860 ms
Loss rate: 4.34%
```

Run 2: Report of Eagle-expert-4 — Data Link

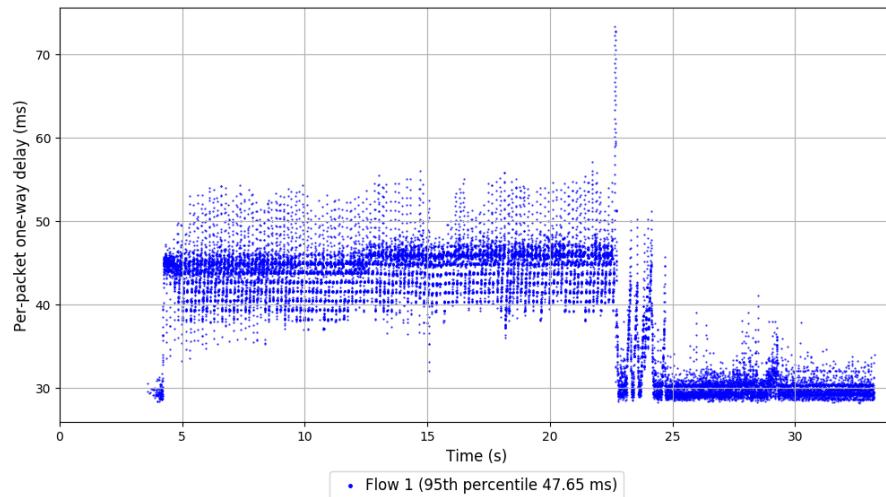
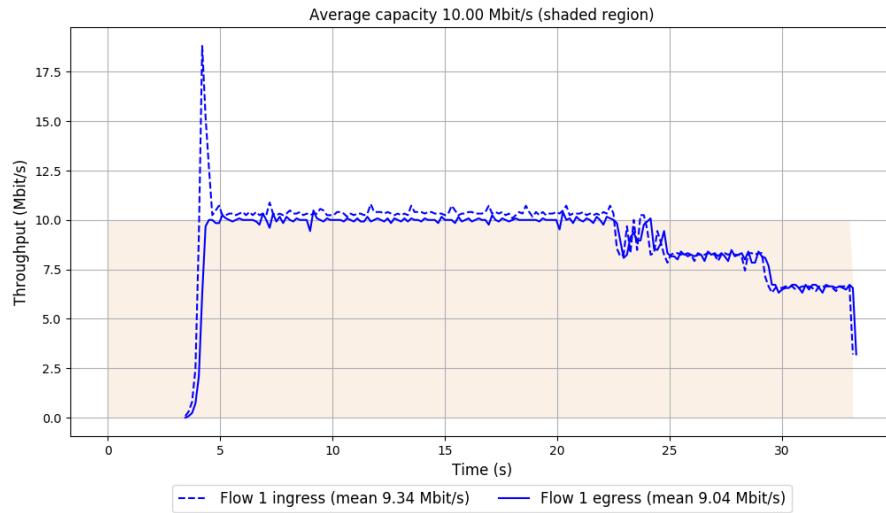


```
Run 3: Statistics of Eagle-expert-4

Start at: 2019-10-29 00:20:12
End at: 2019-10-29 00:20:42

# Below is generated by plot.py at 2019-10-29 00:38:12
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 9.04 Mbit/s (90.4% utilization)
95th percentile per-packet one-way delay: 47.653 ms
Loss rate: 3.37%
-- Flow 1:
Average throughput: 9.04 Mbit/s
95th percentile per-packet one-way delay: 47.653 ms
Loss rate: 3.37%
```

Run 3: Report of Eagle-expert-4 — Data Link



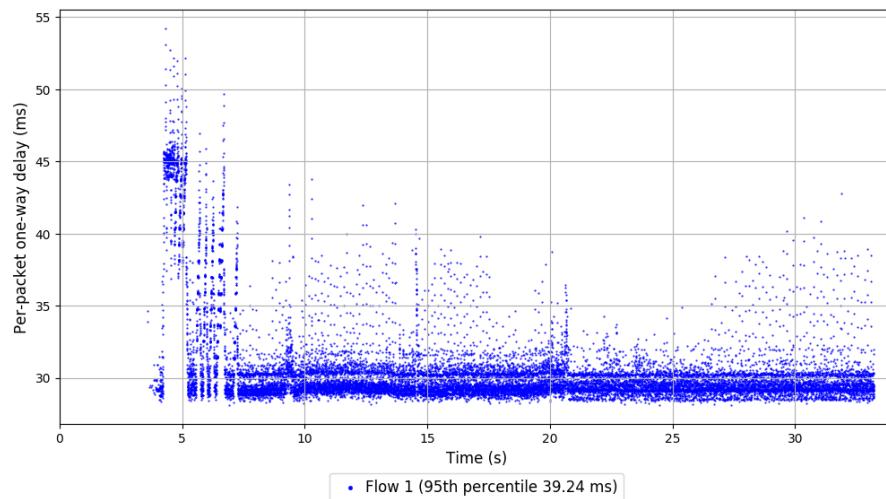
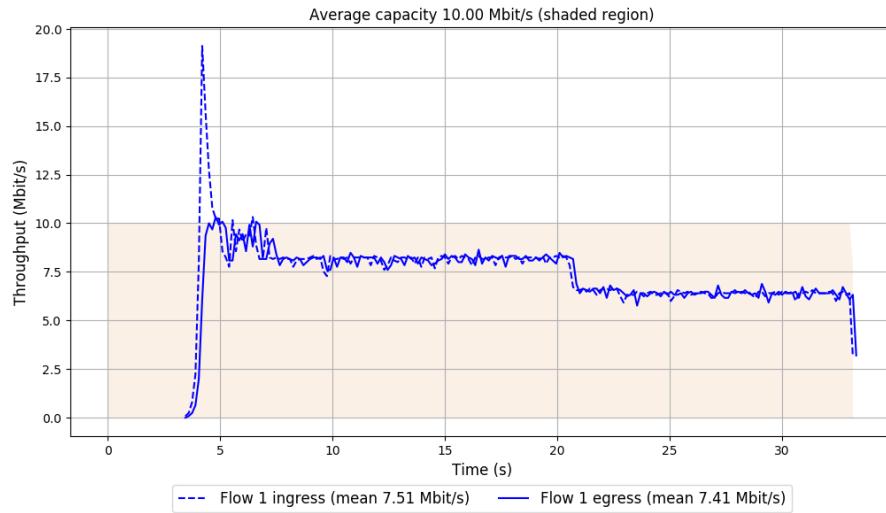
Run 4: Statistics of Eagle-expert-4

Start at: 2019-10-29 00:25:21

End at: 2019-10-29 00:25:51

```
# Below is generated by plot.py at 2019-10-29 00:38:12
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 7.41 Mbit/s (74.1% utilization)
95th percentile per-packet one-way delay: 39.240 ms
Loss rate: 1.36%
-- Flow 1:
Average throughput: 7.41 Mbit/s
95th percentile per-packet one-way delay: 39.240 ms
Loss rate: 1.36%
```

Run 4: Report of Eagle-expert-4 — Data Link

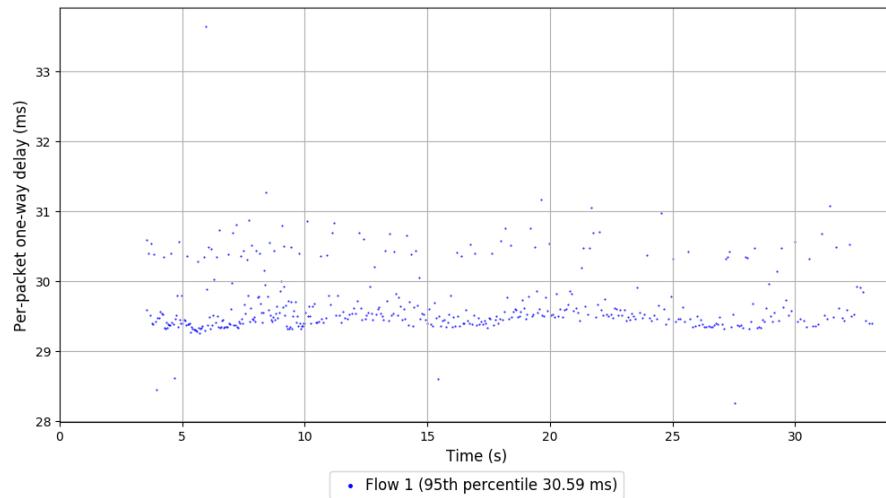
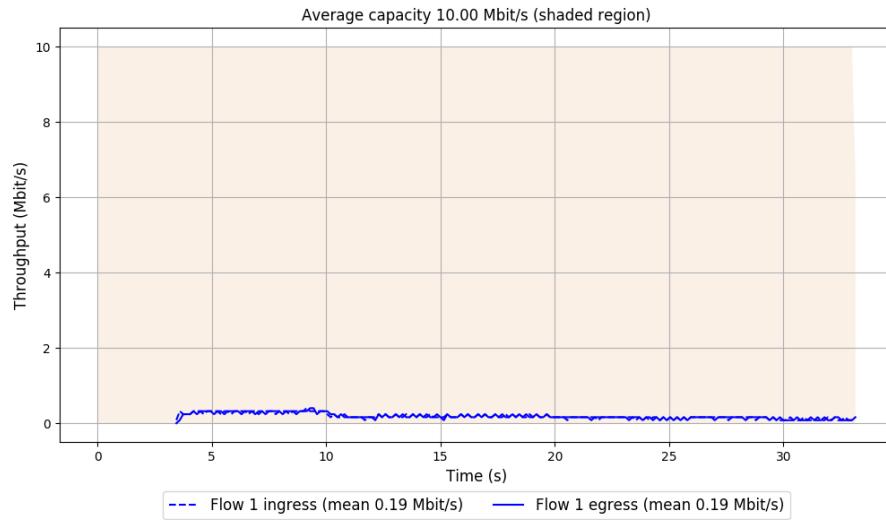


```
Run 5: Statistics of Eagle-expert-4

Start at: 2019-10-29 00:30:30
End at: 2019-10-29 00:31:00

# Below is generated by plot.py at 2019-10-29 00:38:12
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 0.19 Mbit/s (1.9% utilization)
95th percentile per-packet one-way delay: 30.588 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 30.588 ms
Loss rate: 0.00%
```

Run 5: Report of Eagle-expert-4 — Data Link

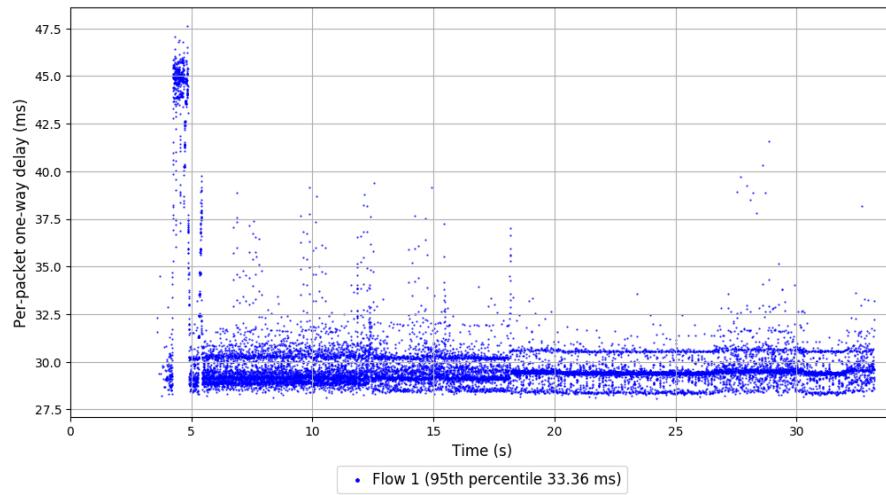
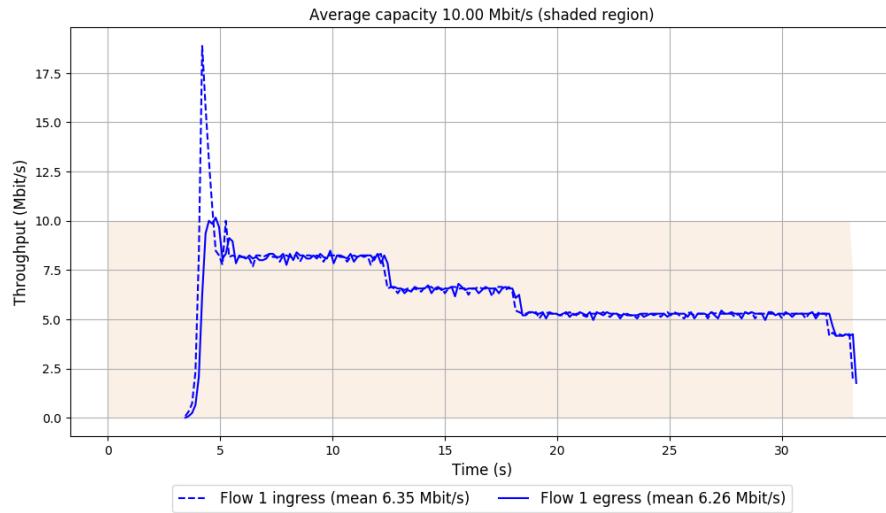


```
Run 1: Statistics of Eagle-expert-5

Start at: 2019-10-29 00:10:24
End at: 2019-10-29 00:10:54

# Below is generated by plot.py at 2019-10-29 00:38:12
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 6.26 Mbit/s (62.6% utilization)
95th percentile per-packet one-way delay: 33.357 ms
Loss rate: 1.55%
-- Flow 1:
Average throughput: 6.26 Mbit/s
95th percentile per-packet one-way delay: 33.357 ms
Loss rate: 1.55%
```

Run 1: Report of Eagle-expert-5 — Data Link



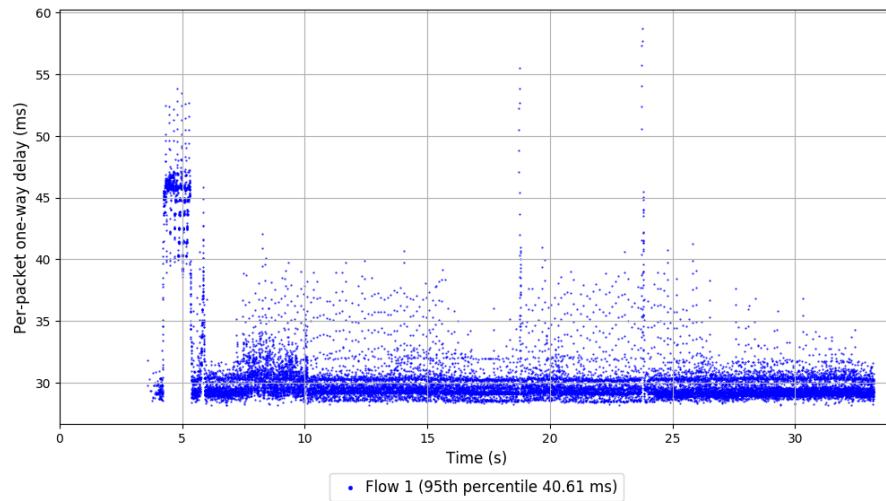
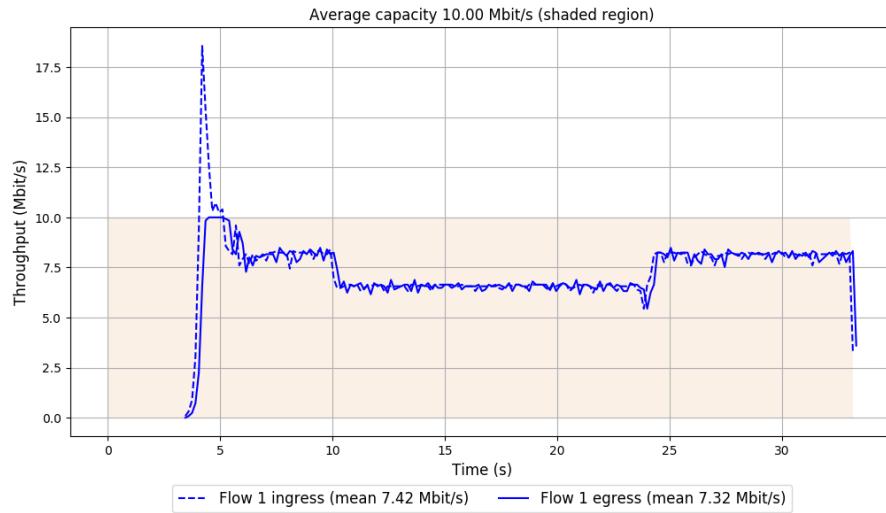
Run 2: Statistics of Eagle-expert-5

Start at: 2019-10-29 00:15:34

End at: 2019-10-29 00:16:04

```
# Below is generated by plot.py at 2019-10-29 00:38:12
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 7.32 Mbit/s (73.2% utilization)
95th percentile per-packet one-way delay: 40.613 ms
Loss rate: 1.42%
-- Flow 1:
Average throughput: 7.32 Mbit/s
95th percentile per-packet one-way delay: 40.613 ms
Loss rate: 1.42%
```

Run 2: Report of Eagle-expert-5 — Data Link

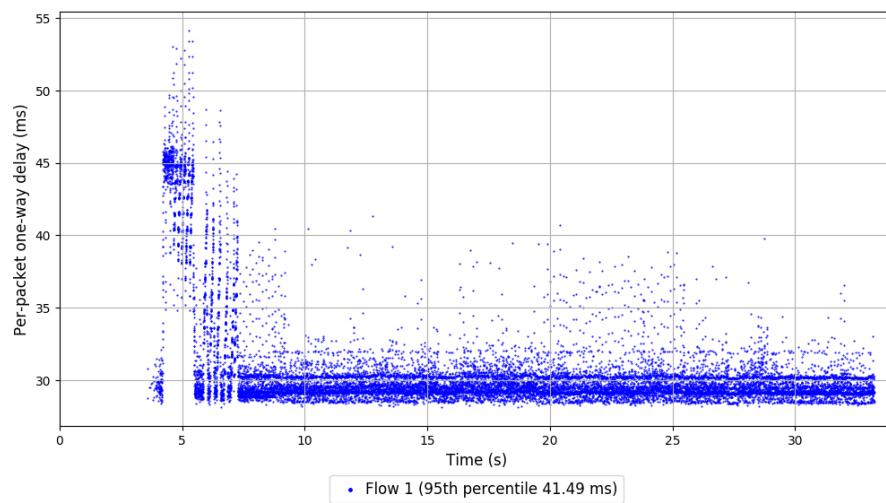
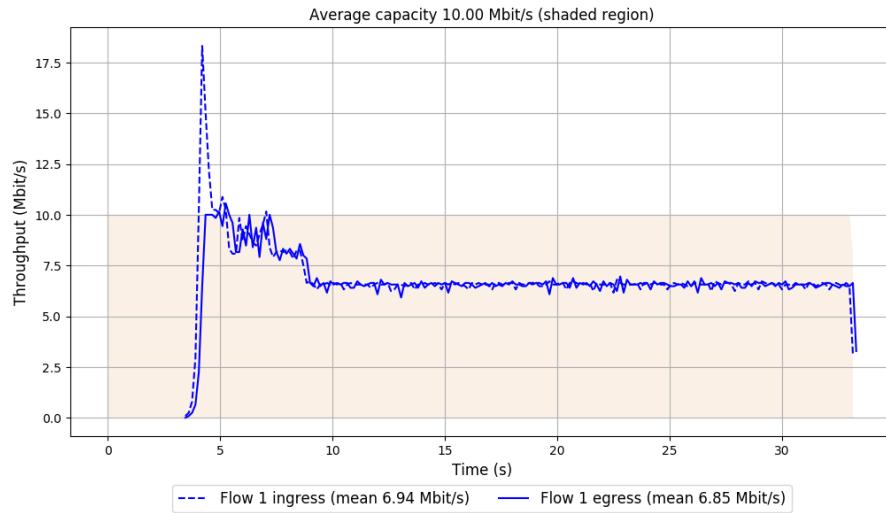


```
Run 3: Statistics of Eagle-expert-5

Start at: 2019-10-29 00:20:47
End at: 2019-10-29 00:21:17

# Below is generated by plot.py at 2019-10-29 00:38:12
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 6.85 Mbit/s (68.5% utilization)
95th percentile per-packet one-way delay: 41.492 ms
Loss rate: 1.46%
-- Flow 1:
Average throughput: 6.85 Mbit/s
95th percentile per-packet one-way delay: 41.492 ms
Loss rate: 1.46%
```

Run 3: Report of Eagle-expert-5 — Data Link



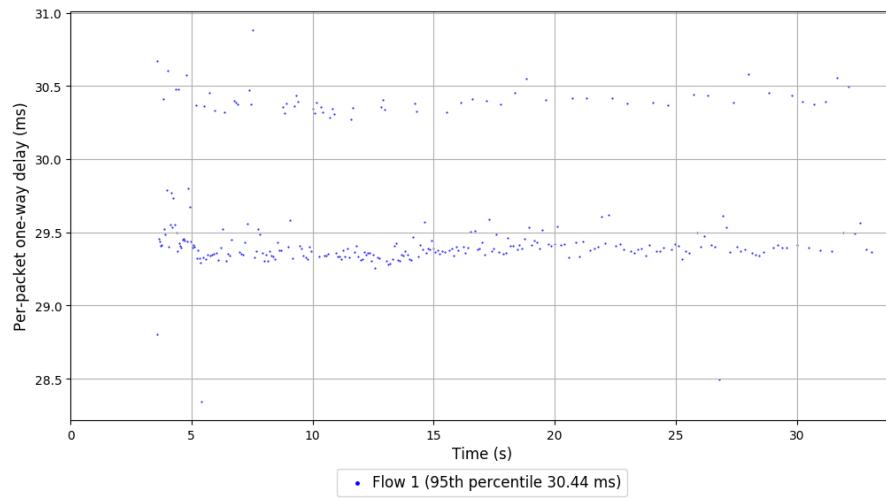
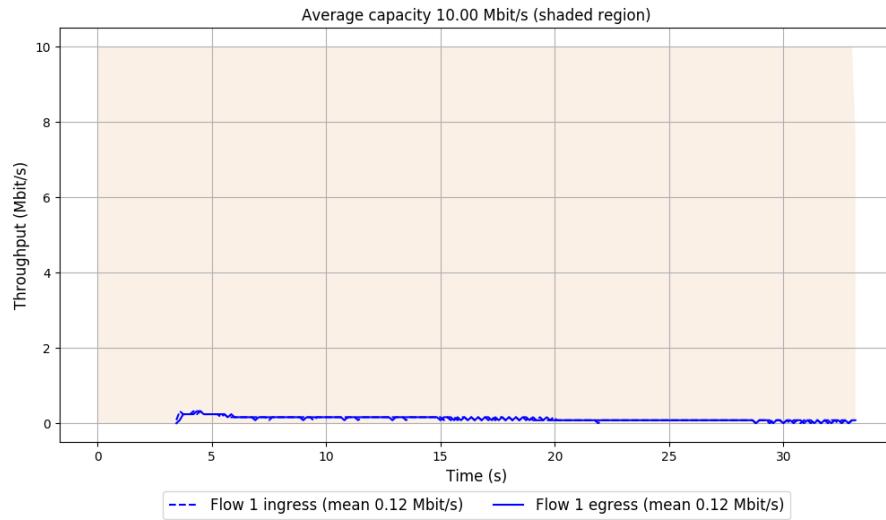
Run 4: Statistics of Eagle-expert-5

Start at: 2019-10-29 00:25:55

End at: 2019-10-29 00:26:25

```
# Below is generated by plot.py at 2019-10-29 00:38:12
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 0.12 Mbit/s (1.2% utilization)
95th percentile per-packet one-way delay: 30.438 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 30.438 ms
Loss rate: 0.00%
```

Run 4: Report of Eagle-expert-5 — Data Link

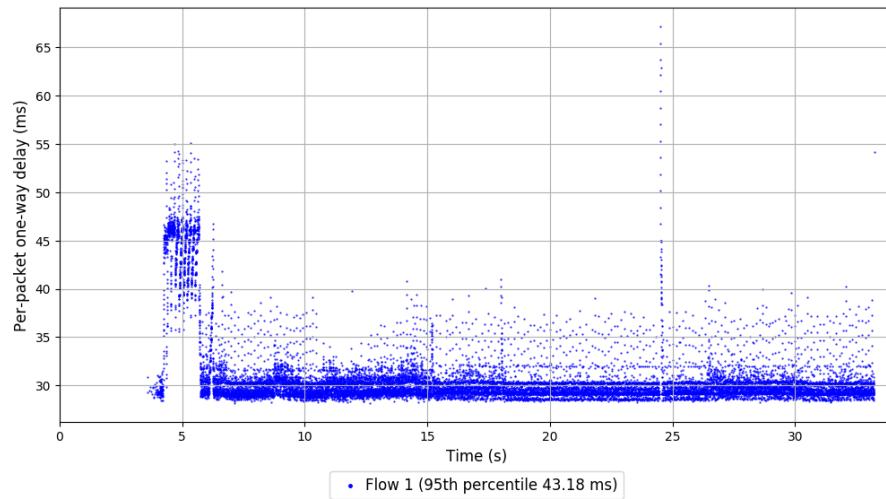
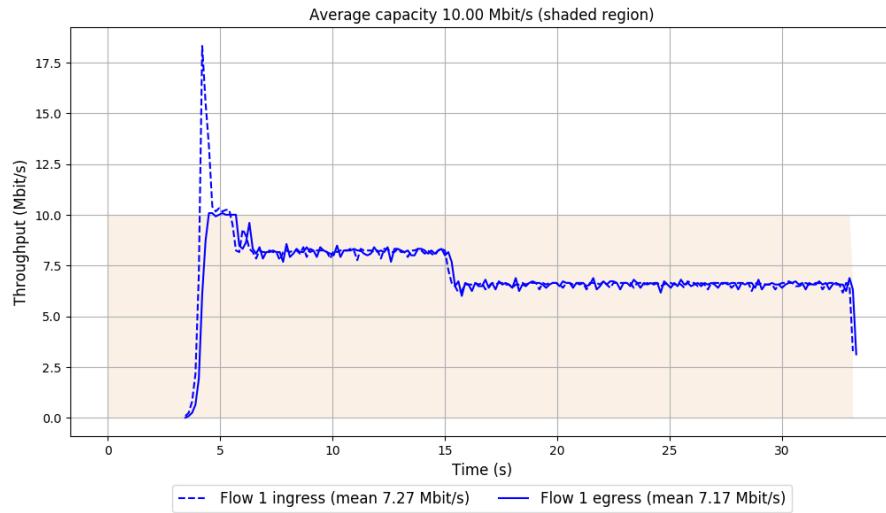


```
Run 5: Statistics of Eagle-expert-5

Start at: 2019-10-29 00:31:04
End at: 2019-10-29 00:31:34

# Below is generated by plot.py at 2019-10-29 00:38:12
# 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: 43.183 ms
Loss rate: 1.42%
-- Flow 1:
Average throughput: 7.17 Mbit/s
95th percentile per-packet one-way delay: 43.183 ms
Loss rate: 1.42%
```

Run 5: Report of Eagle-expert-5 — Data Link

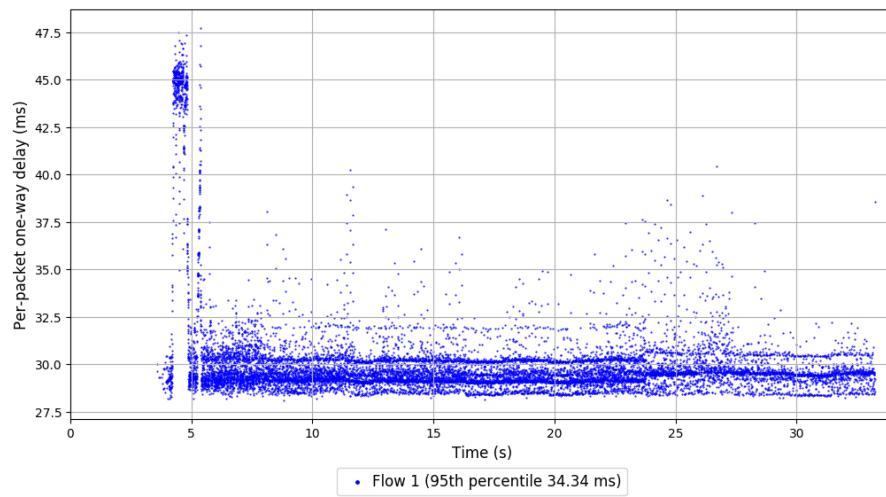
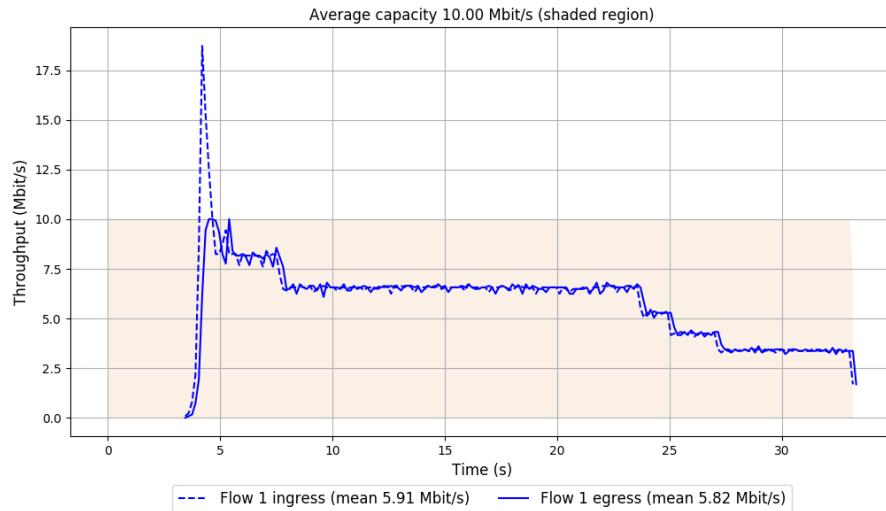


```
Run 1: Statistics of Eagle-expert-6

Start at: 2019-10-29 00:10:58
End at: 2019-10-29 00:11:28

# Below is generated by plot.py at 2019-10-29 00:38:12
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 5.82 Mbit/s (58.2% utilization)
95th percentile per-packet one-way delay: 34.337 ms
Loss rate: 1.55%
-- Flow 1:
Average throughput: 5.82 Mbit/s
95th percentile per-packet one-way delay: 34.337 ms
Loss rate: 1.55%
```

Run 1: Report of Eagle-expert-6 — Data Link



Run 2: Statistics of Eagle-expert-6

Start at: 2019-10-29 00:16:09

End at: 2019-10-29 00:16:39

Below is generated by plot.py at 2019-10-29 00:38:12

Datalink statistics

-- Total of 1 flow:

Average capacity: 10.00 Mbit/s

Average throughput: 7.11 Mbit/s (71.1% utilization)

95th percentile per-packet one-way delay: 35.899 ms

Loss rate: 1.34%

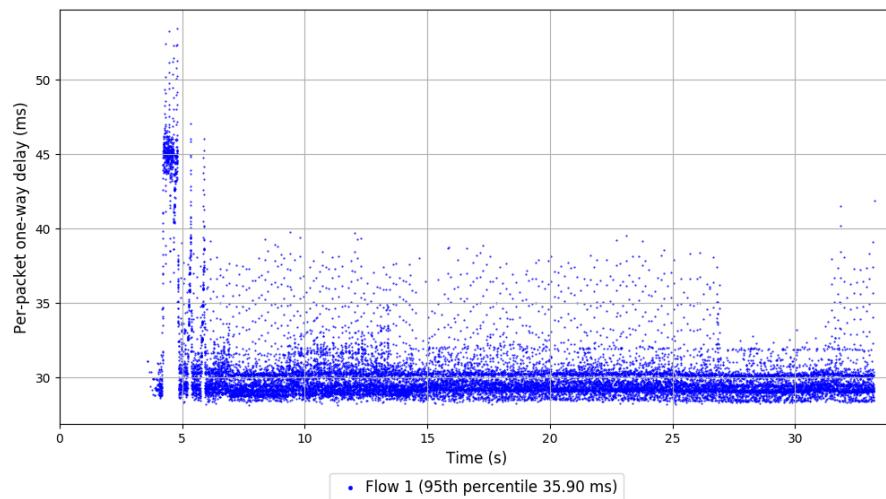
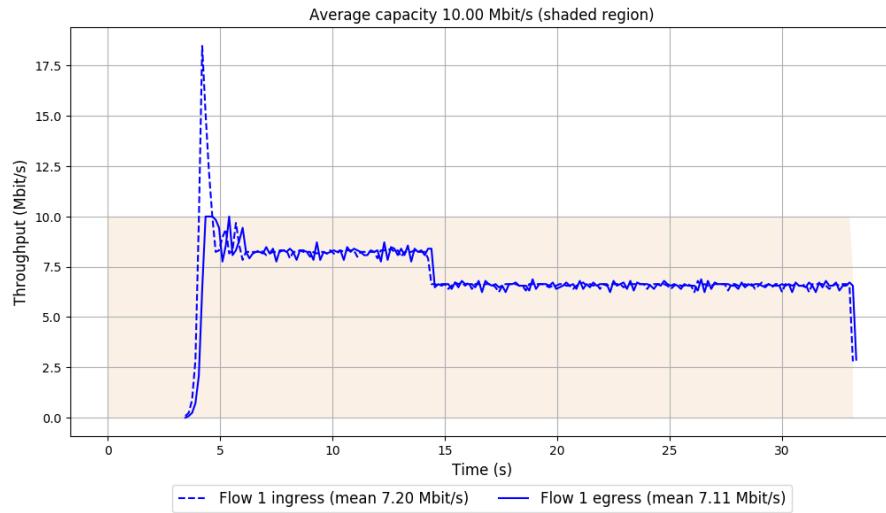
-- Flow 1:

Average throughput: 7.11 Mbit/s

95th percentile per-packet one-way delay: 35.899 ms

Loss rate: 1.34%

Run 2: Report of Eagle-expert-6 — Data Link

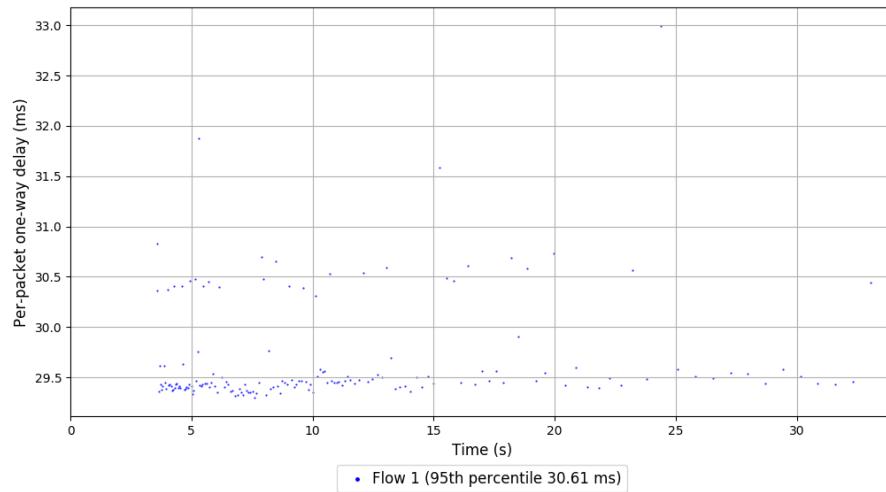
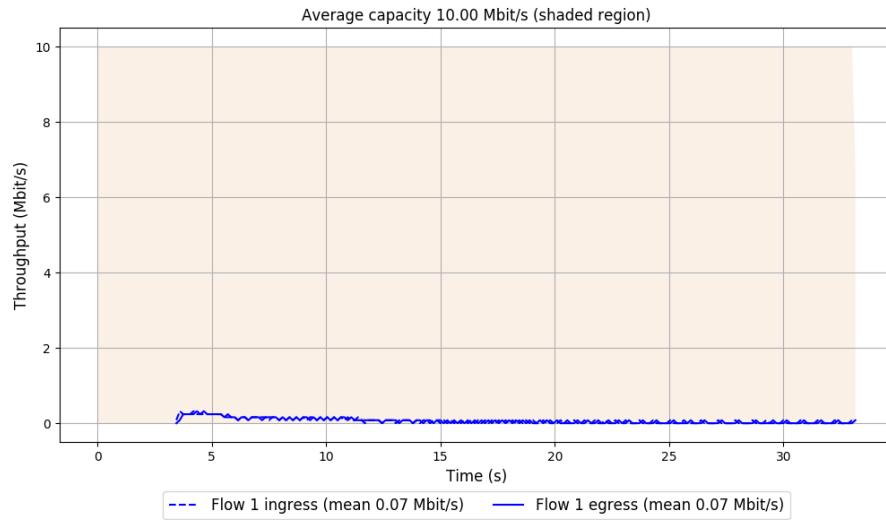


```
Run 3: Statistics of Eagle-expert-6

Start at: 2019-10-29 00:21:21
End at: 2019-10-29 00:21:51

# Below is generated by plot.py at 2019-10-29 00:38:12
# 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: 30.614 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 30.614 ms
Loss rate: 0.00%
```

Run 3: Report of Eagle-expert-6 — Data Link

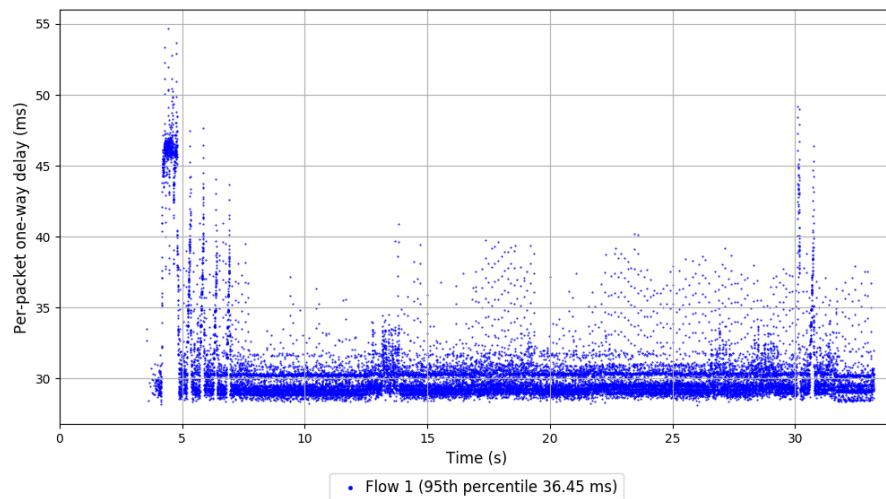
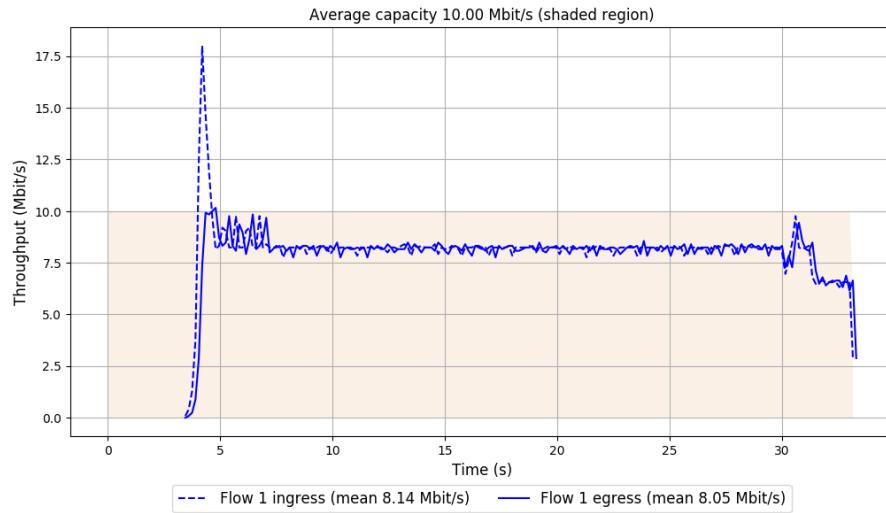


```
Run 4: Statistics of Eagle-expert-6

Start at: 2019-10-29 00:26:29
End at: 2019-10-29 00:26:59

# Below is generated by plot.py at 2019-10-29 00:38:13
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 8.05 Mbit/s (80.5% utilization)
95th percentile per-packet one-way delay: 36.449 ms
Loss rate: 1.25%
-- Flow 1:
Average throughput: 8.05 Mbit/s
95th percentile per-packet one-way delay: 36.449 ms
Loss rate: 1.25%
```

Run 4: Report of Eagle-expert-6 — Data Link

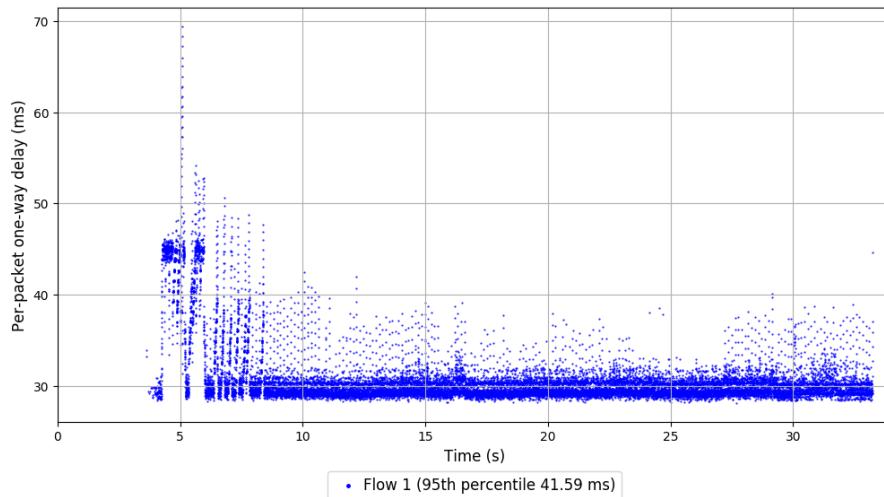
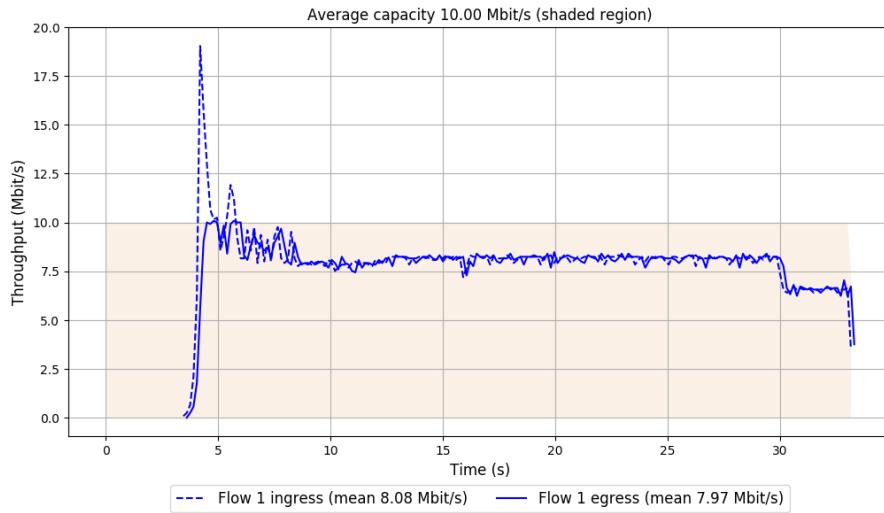


```
Run 5: Statistics of Eagle-expert-6

Start at: 2019-10-29 00:31:38
End at: 2019-10-29 00:32:08

# Below is generated by plot.py at 2019-10-29 00:38:14
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 7.97 Mbit/s (79.7% utilization)
95th percentile per-packet one-way delay: 41.589 ms
Loss rate: 1.45%
-- Flow 1:
Average throughput: 7.97 Mbit/s
95th percentile per-packet one-way delay: 41.589 ms
Loss rate: 1.45%
```

Run 5: Report of Eagle-expert-6 — Data Link

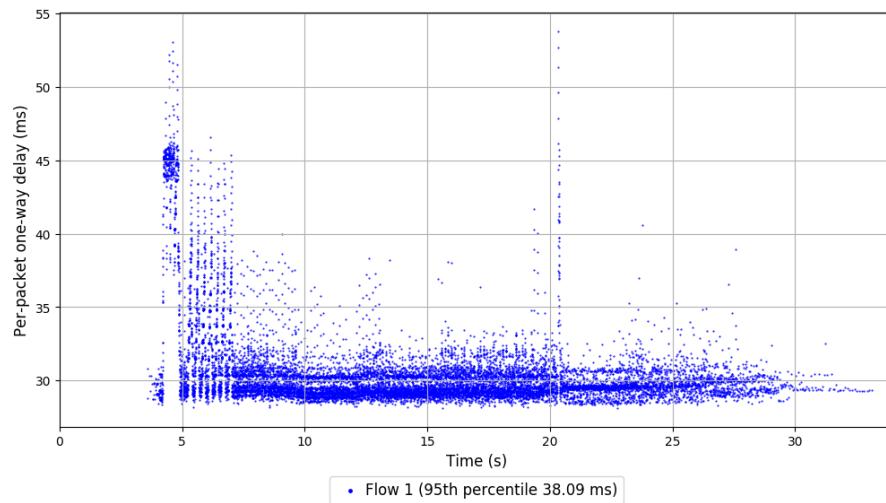
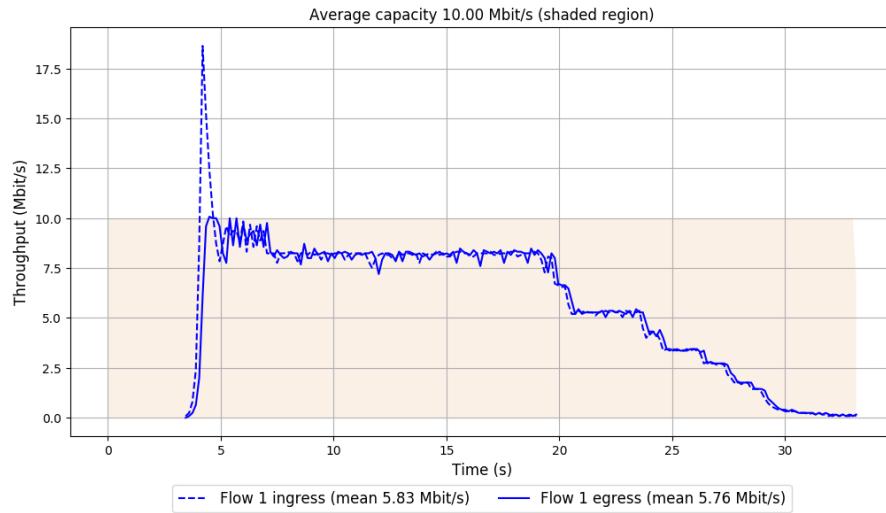


```
Run 1: Statistics of Eagle-expert-7

Start at: 2019-10-29 00:11:33
End at: 2019-10-29 00:12:03

# Below is generated by plot.py at 2019-10-29 00:38:14
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 5.76 Mbit/s (57.6% utilization)
95th percentile per-packet one-way delay: 38.086 ms
Loss rate: 1.53%
-- Flow 1:
Average throughput: 5.76 Mbit/s
95th percentile per-packet one-way delay: 38.086 ms
Loss rate: 1.53%
```

Run 1: Report of Eagle-expert-7 — Data Link

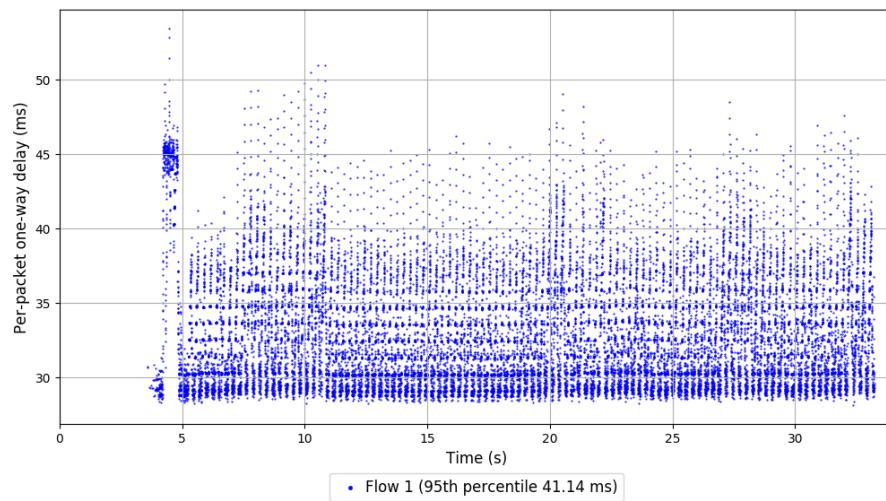
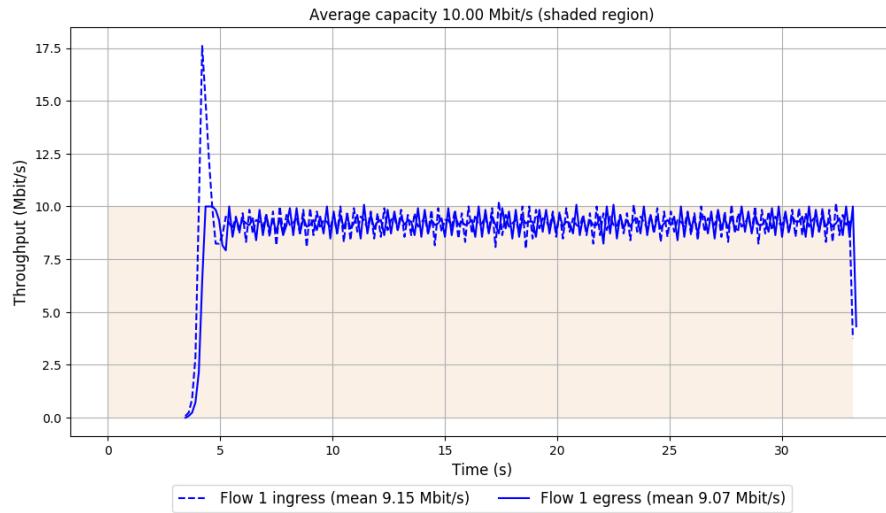


```
Run 2: Statistics of Eagle-expert-7

Start at: 2019-10-29 00:16:43
End at: 2019-10-29 00:17:13

# Below is generated by plot.py at 2019-10-29 00:38:21
# 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: 41.144 ms
Loss rate: 0.99%
-- Flow 1:
Average throughput: 9.07 Mbit/s
95th percentile per-packet one-way delay: 41.144 ms
Loss rate: 0.99%
```

Run 2: Report of Eagle-expert-7 — Data Link

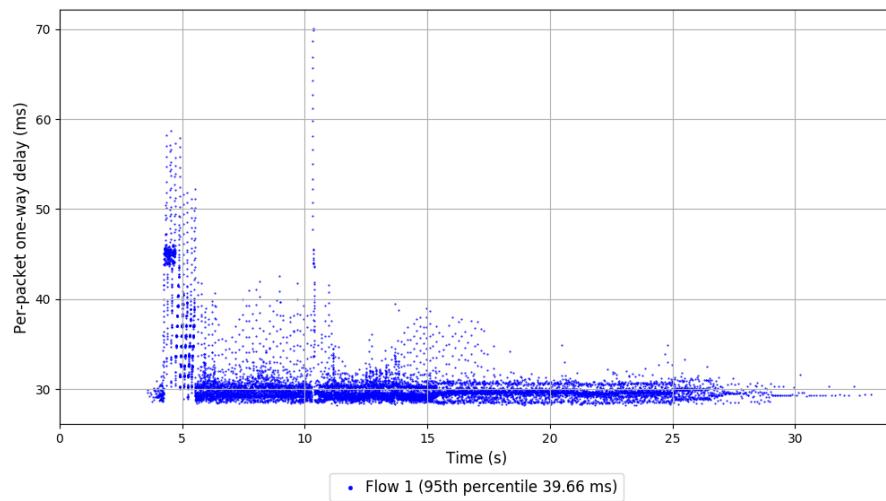
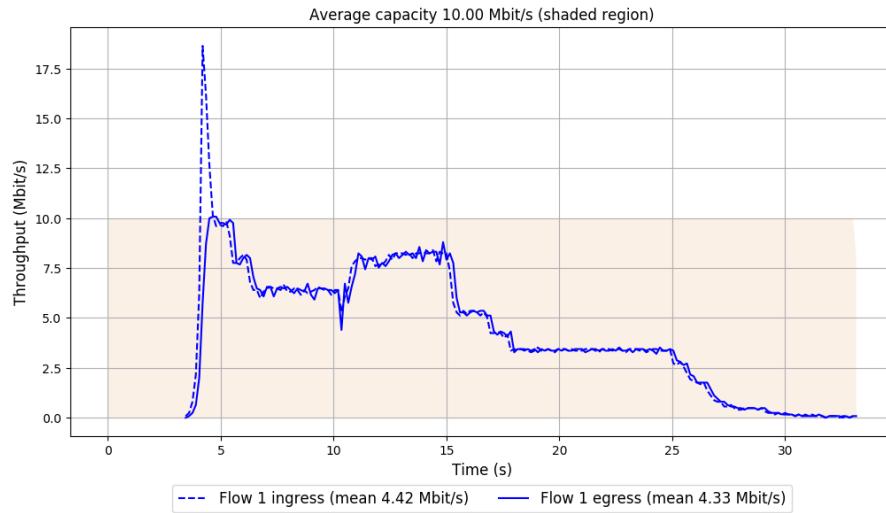


```
Run 3: Statistics of Eagle-expert-7

Start at: 2019-10-29 00:21:55
End at: 2019-10-29 00:22:25

# Below is generated by plot.py at 2019-10-29 00:38:21
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 4.33 Mbit/s (43.3% utilization)
95th percentile per-packet one-way delay: 39.660 ms
Loss rate: 2.03%
-- Flow 1:
Average throughput: 4.33 Mbit/s
95th percentile per-packet one-way delay: 39.660 ms
Loss rate: 2.03%
```

Run 3: Report of Eagle-expert-7 — Data Link

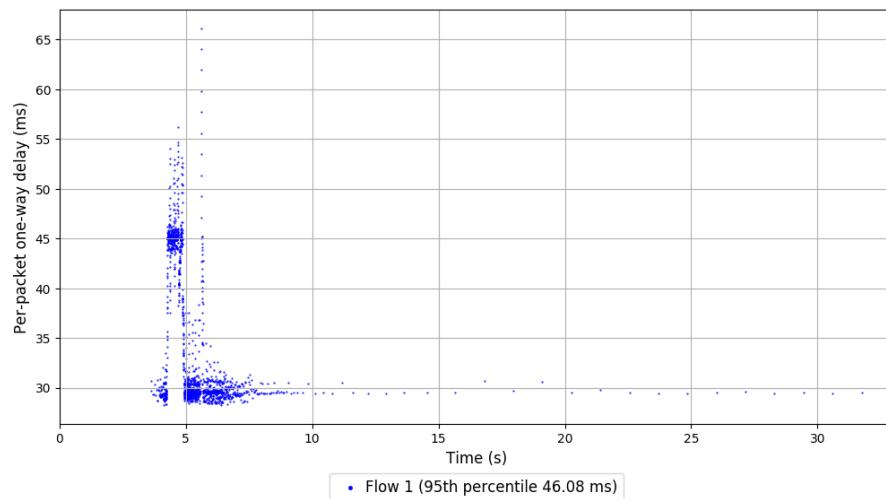
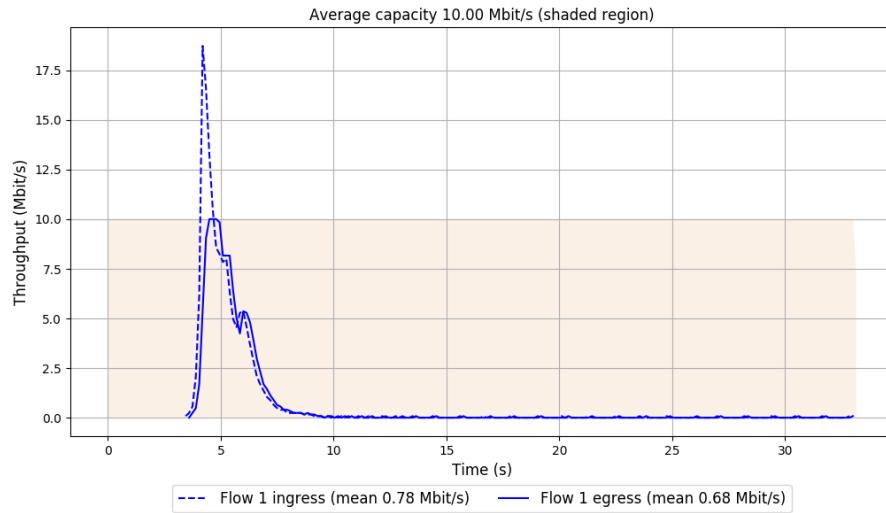


```
Run 4: Statistics of Eagle-expert-7

Start at: 2019-10-29 00:27:04
End at: 2019-10-29 00:27:34

# Below is generated by plot.py at 2019-10-29 00:38:21
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 0.68 Mbit/s (6.8% utilization)
95th percentile per-packet one-way delay: 46.076 ms
Loss rate: 12.32%
-- Flow 1:
Average throughput: 0.68 Mbit/s
95th percentile per-packet one-way delay: 46.076 ms
Loss rate: 12.32%
```

Run 4: Report of Eagle-expert-7 — Data Link

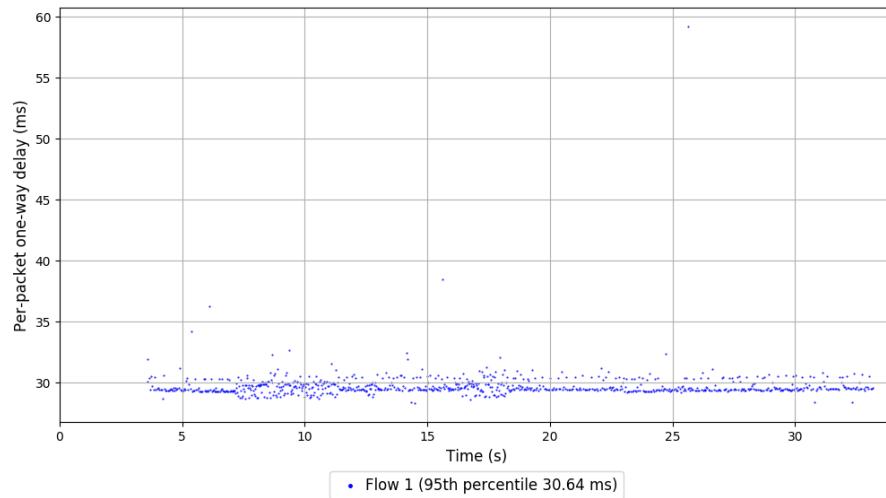
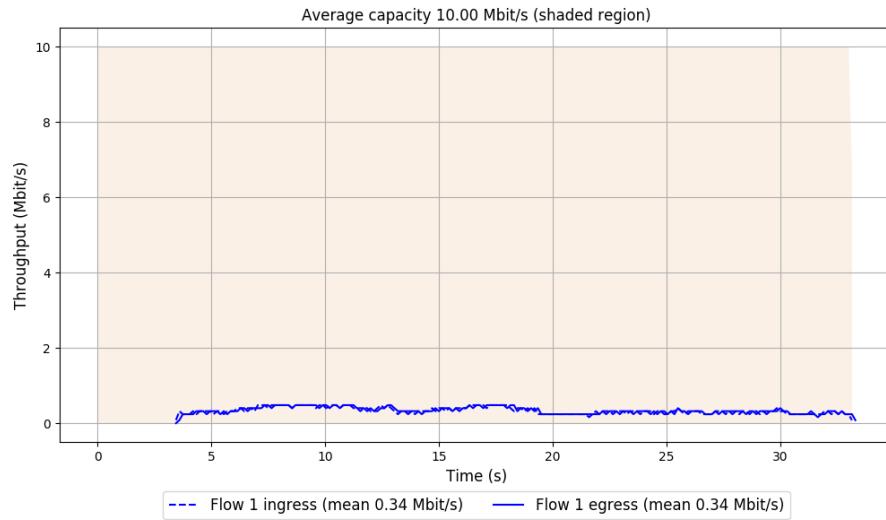


```
Run 5: Statistics of Eagle-expert-7

Start at: 2019-10-29 00:32:13
End at: 2019-10-29 00:32:43

# Below is generated by plot.py at 2019-10-29 00:38:21
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 0.34 Mbit/s (3.4% utilization)
95th percentile per-packet one-way delay: 30.640 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 0.34 Mbit/s
95th percentile per-packet one-way delay: 30.640 ms
Loss rate: 0.12%
```

Run 5: Report of Eagle-expert-7 — Data Link

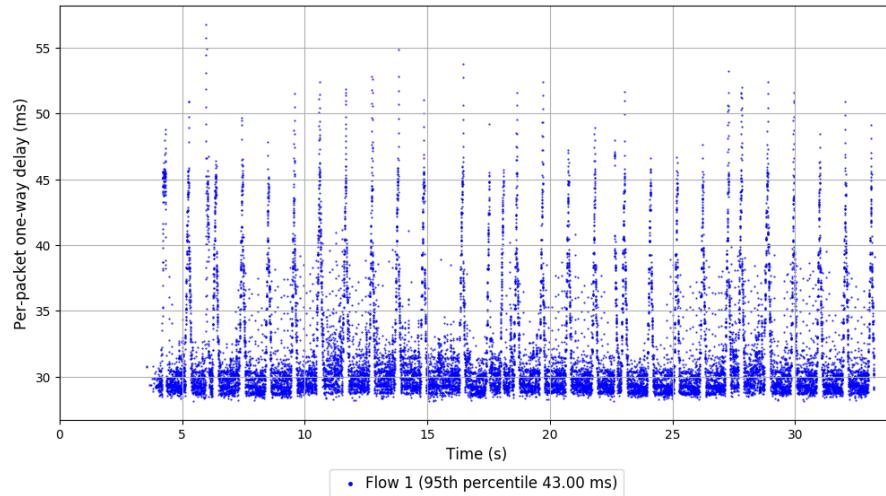
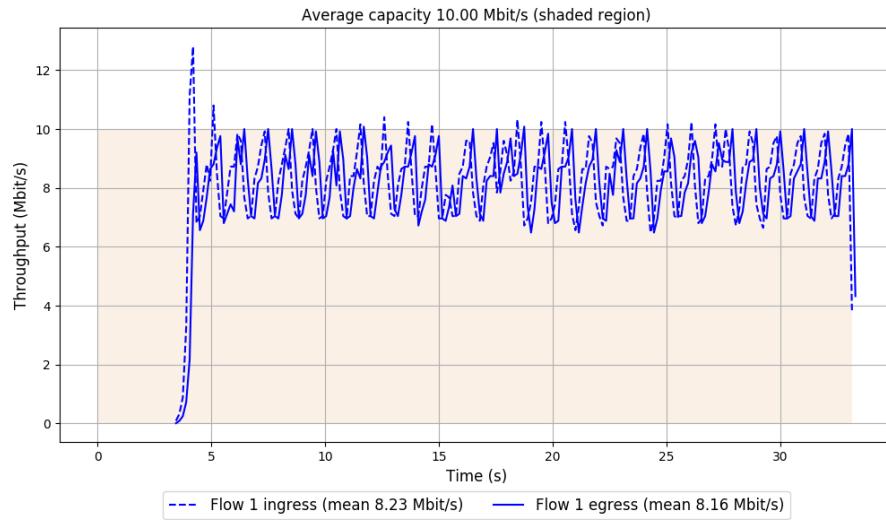


```
Run 1: Statistics of Synthesized-BBR

Start at: 2019-10-29 00:12:07
End at: 2019-10-29 00:12:37

# Below is generated by plot.py at 2019-10-29 00:38:25
# 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: 43.001 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 8.16 Mbit/s
95th percentile per-packet one-way delay: 43.001 ms
Loss rate: 0.88%
```

Run 1: Report of Synthesized-BBR — Data Link



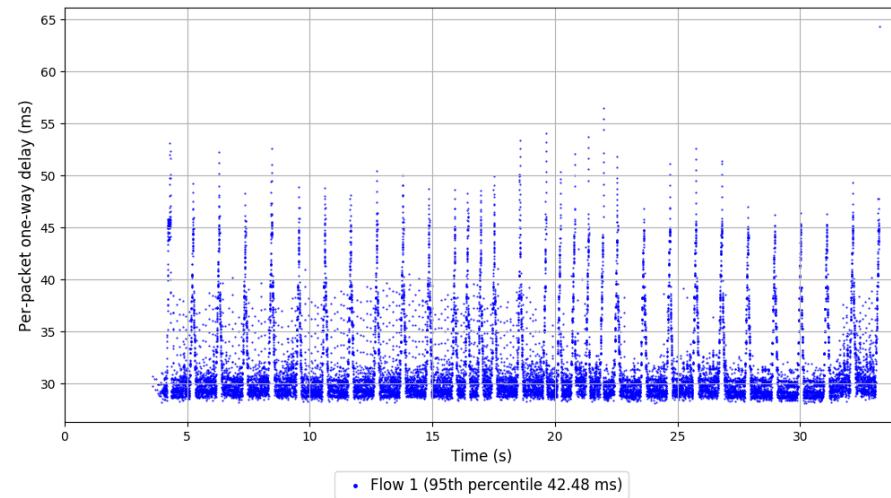
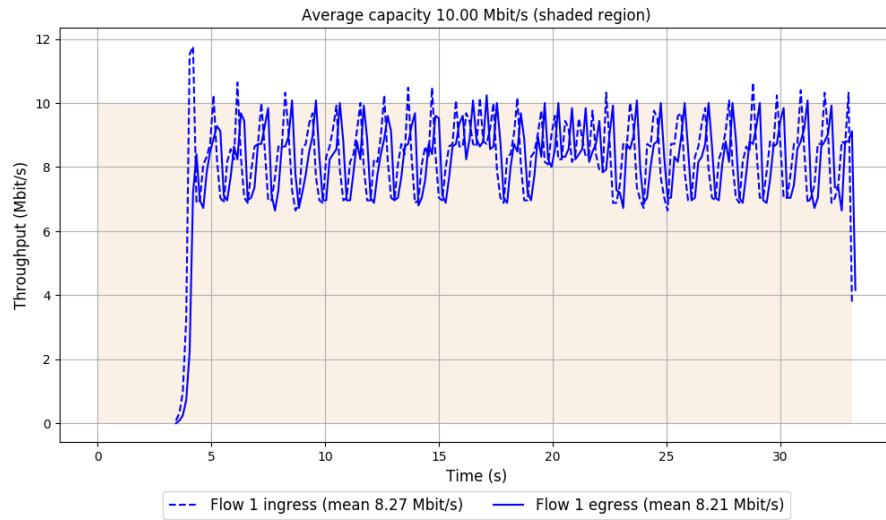
Run 2: Statistics of Synthesized-BBR

Start at: 2019-10-29 00:17:17

End at: 2019-10-29 00:17:48

```
# Below is generated by plot.py at 2019-10-29 00:38:25
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 8.21 Mbit/s (82.1% utilization)
95th percentile per-packet one-way delay: 42.476 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 8.21 Mbit/s
95th percentile per-packet one-way delay: 42.476 ms
Loss rate: 0.79%
```

Run 2: Report of Synthesized-BBR — Data Link



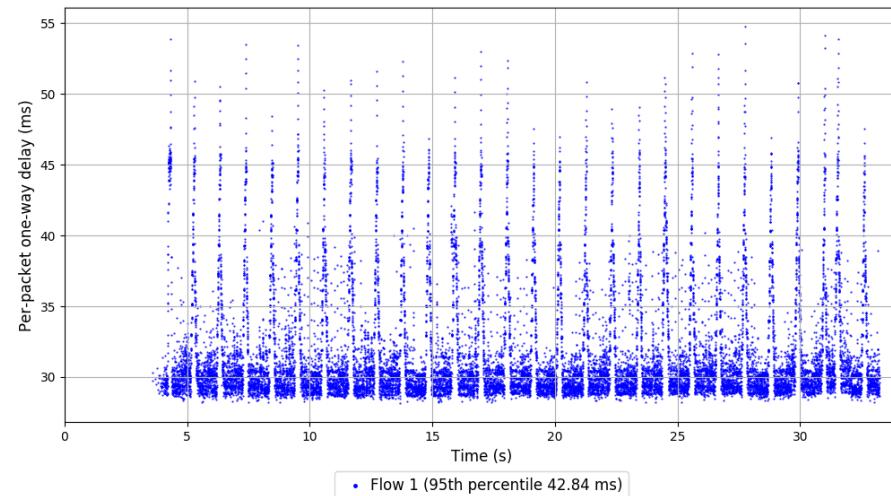
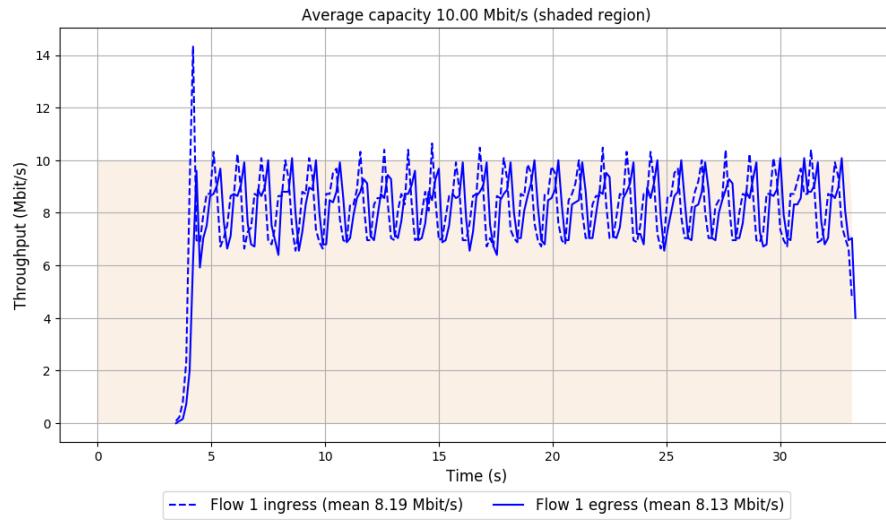
Run 3: Statistics of Synthesized-BBR

Start at: 2019-10-29 00:22:30

End at: 2019-10-29 00:23:00

```
# Below is generated by plot.py at 2019-10-29 00:38:26
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 8.13 Mbit/s (81.3% utilization)
95th percentile per-packet one-way delay: 42.845 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 8.13 Mbit/s
95th percentile per-packet one-way delay: 42.845 ms
Loss rate: 0.87%
```

Run 3: Report of Synthesized-BBR — Data Link



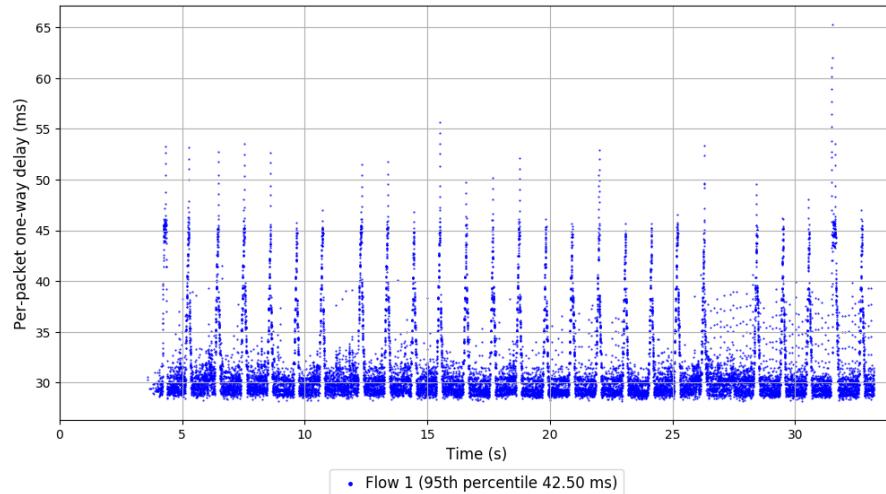
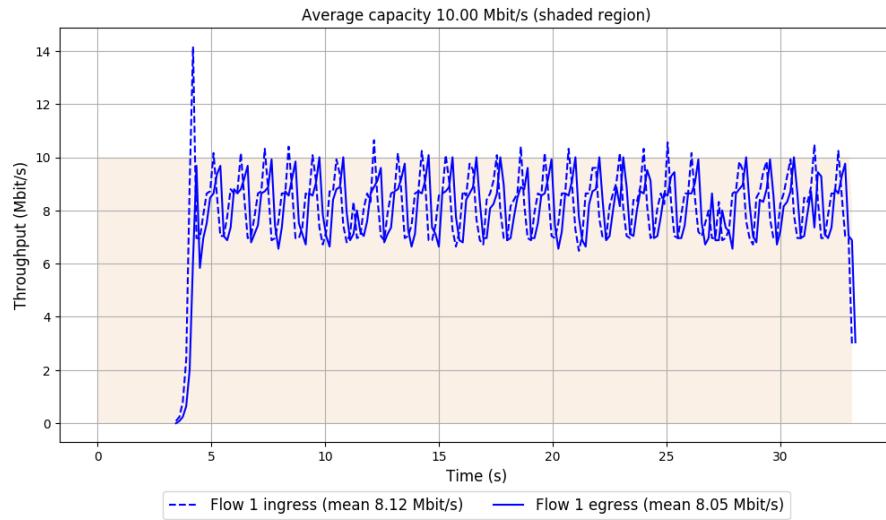
Run 4: Statistics of Synthesized-BBR

Start at: 2019-10-29 00:27:38

End at: 2019-10-29 00:28:08

```
# Below is generated by plot.py at 2019-10-29 00:38:27
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 8.05 Mbit/s (80.5% utilization)
95th percentile per-packet one-way delay: 42.499 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 8.05 Mbit/s
95th percentile per-packet one-way delay: 42.499 ms
Loss rate: 0.89%
```

Run 4: Report of Synthesized-BBR — Data Link



Run 5: Statistics of Synthesized-BBR

Start at: 2019-10-29 00:32:47

End at: 2019-10-29 00:33:17

```
# Below is generated by plot.py at 2019-10-29 00:38:28
# Datalink statistics
-- Total of 1 flow:
Average capacity: 10.00 Mbit/s
Average throughput: 8.12 Mbit/s (81.2% utilization)
95th percentile per-packet one-way delay: 42.700 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 8.12 Mbit/s
95th percentile per-packet one-way delay: 42.700 ms
Loss rate: 0.80%
```

Run 5: Report of Synthesized-BBR — Data Link

