

Pantheon Report

Generated at 2018-12-20 06:41:46 (UTC).
Data path: Mexico on `em1` (*remote*) → AWS California 2 on `ens5` (*local*).
Repeated the test of 19 congestion control schemes 5 times.
Each test lasted for 30 seconds running 1 flow.
NTP offsets were measured against `time.stanford.edu` and have been applied to correct the timestamps in logs.

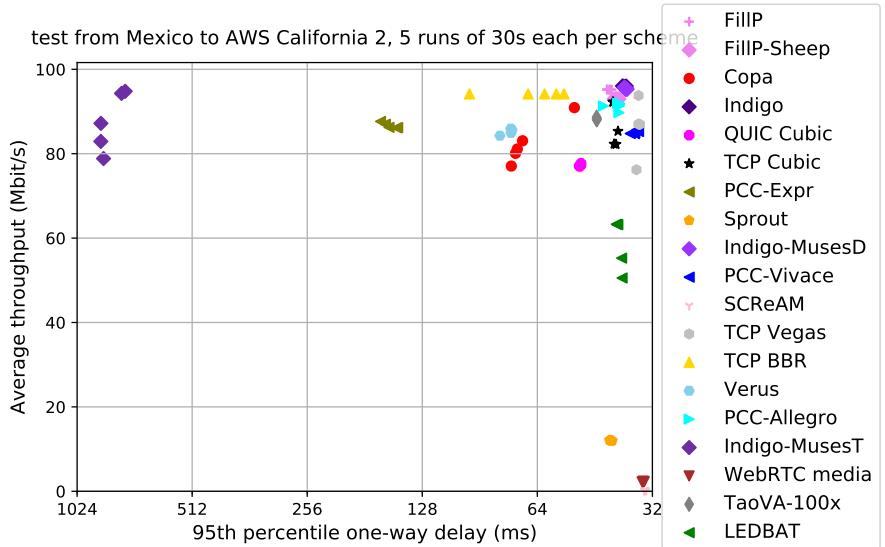
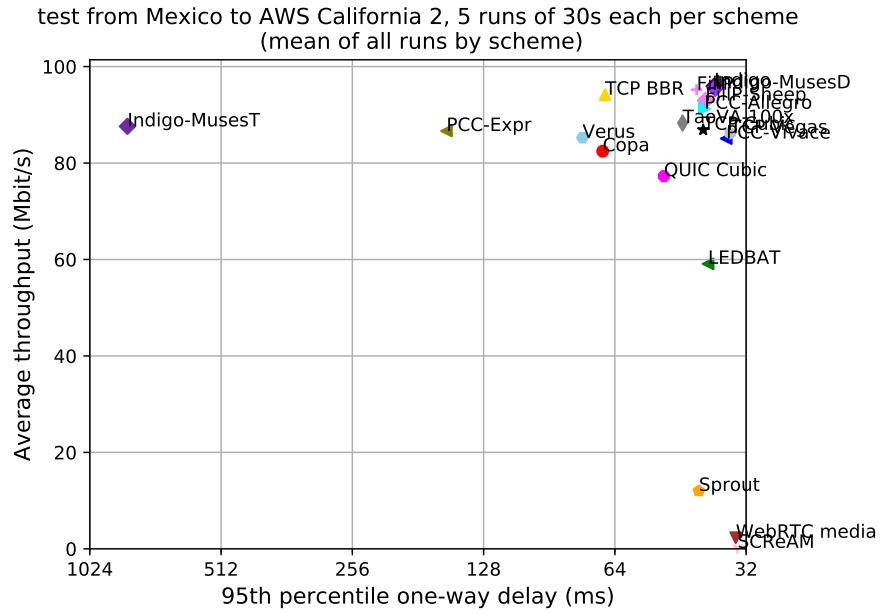
System info:

```
Linux 4.15.0-1029-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

```
branch: muses @ c654af0b7d59d4ef4b914cfac404e1fc2e96dc68
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fc45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbfed0c6349ae986009b4fa8643c40a
third_party/muses-refactored @ 31f8f0ba8ef8b1da76c2bc0cd0a7850c33ff64fb
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/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
```

third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851



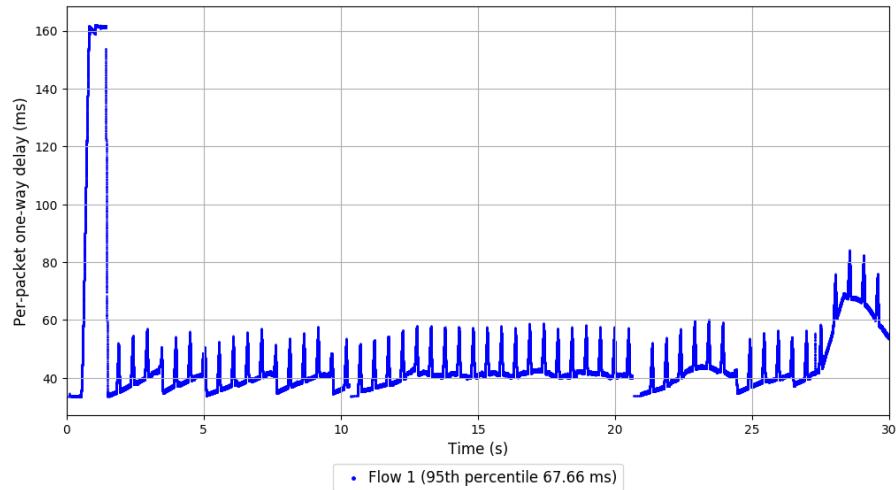
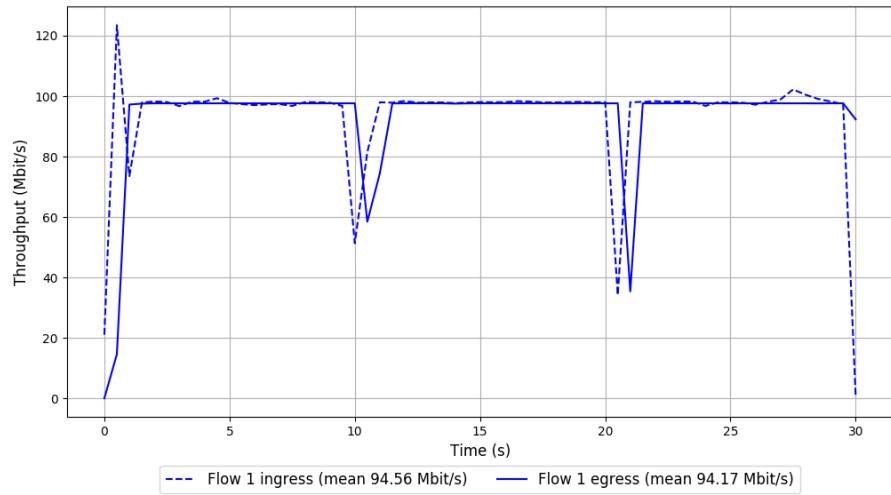
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	5	94.17	67.37	0.54
Copa	5	82.46	68.25	0.23
TCP Cubic	5	86.88	40.14	0.25
FillP	5	95.20	41.55	0.23
FillP-Sheep	5	92.95	39.69	0.24
Indigo	5	95.93	37.89	0.23
Indigo-MusesD	5	95.49	37.67	0.23
Indigo-MusesT	5	87.61	839.55	4.90
LEDBAT	5	59.10	39.14	0.25
PCC-Allegro	5	91.25	39.91	0.24
PCC-Expr	5	86.64	155.78	0.33
QUIC Cubic	5	77.29	49.40	0.18
SCReAM	5	0.21	33.48	0.23
Sprout	5	12.02	41.07	0.16
TaoVA-100x	5	88.29	44.76	0.23
TCP Vegas	5	86.19	34.81	0.25
Verus	5	85.24	75.95	0.44
PCC-Vivace	5	85.08	35.56	0.24
WebRTC media	5	2.30	33.81	0.24

Run 1: Statistics of TCP BBR

```
Start at: 2018-12-20 04:38:11
End at: 2018-12-20 04:38:41
Local clock offset: 0.035 ms
Remote clock offset: -4.22 ms

# Below is generated by plot.py at 2018-12-20 06:30:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.17 Mbit/s
95th percentile per-packet one-way delay: 67.664 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 94.17 Mbit/s
95th percentile per-packet one-way delay: 67.664 ms
Loss rate: 0.63%
```

Run 1: Report of TCP BBR — Data Link

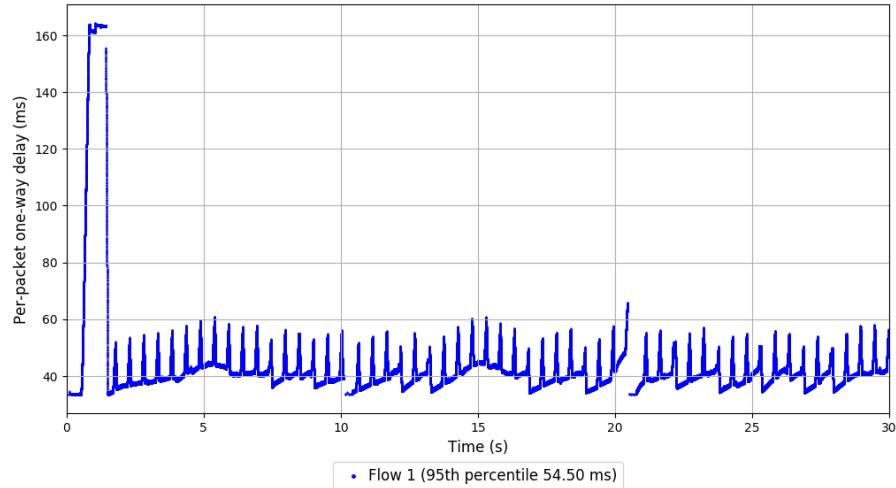
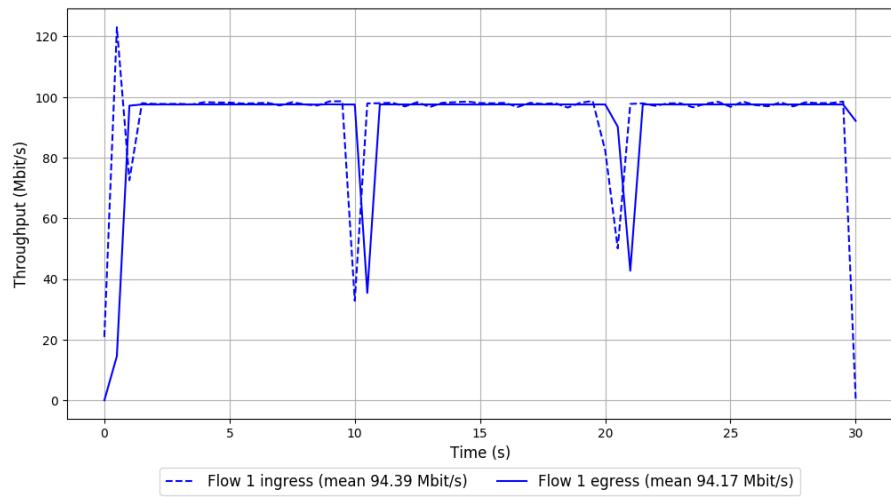


Run 2: Statistics of TCP BBR

```
Start at: 2018-12-20 05:00:30
End at: 2018-12-20 05:01:00
Local clock offset: -2.988 ms
Remote clock offset: -3.577 ms

# Below is generated by plot.py at 2018-12-20 06:30:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.17 Mbit/s
95th percentile per-packet one-way delay: 54.501 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 94.17 Mbit/s
95th percentile per-packet one-way delay: 54.501 ms
Loss rate: 0.44%
```

Run 2: Report of TCP BBR — Data Link

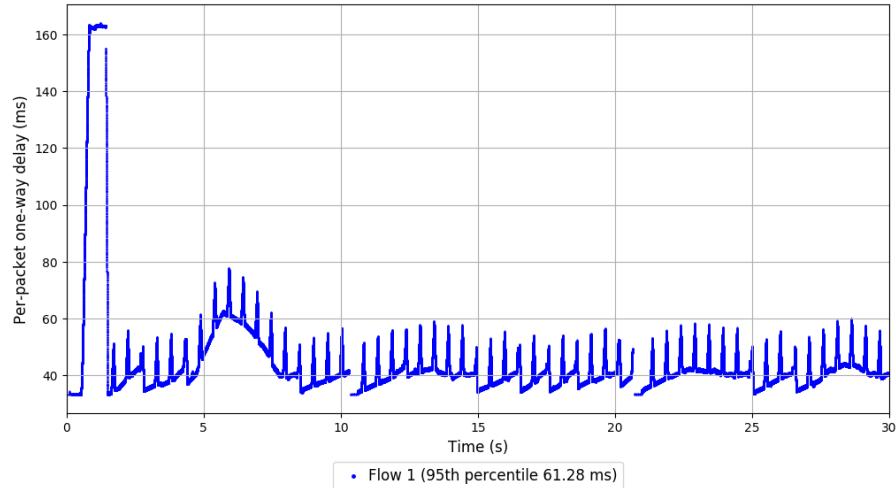
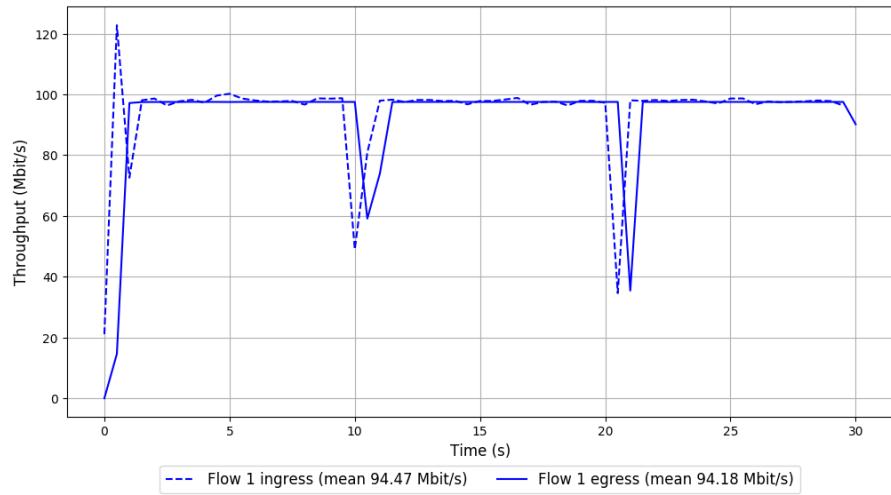


Run 3: Statistics of TCP BBR

```
Start at: 2018-12-20 05:22:46
End at: 2018-12-20 05:23:16
Local clock offset: -2.977 ms
Remote clock offset: -2.728 ms

# Below is generated by plot.py at 2018-12-20 06:30:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.18 Mbit/s
95th percentile per-packet one-way delay: 61.280 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 94.18 Mbit/s
95th percentile per-packet one-way delay: 61.280 ms
Loss rate: 0.52%
```

Run 3: Report of TCP BBR — Data Link

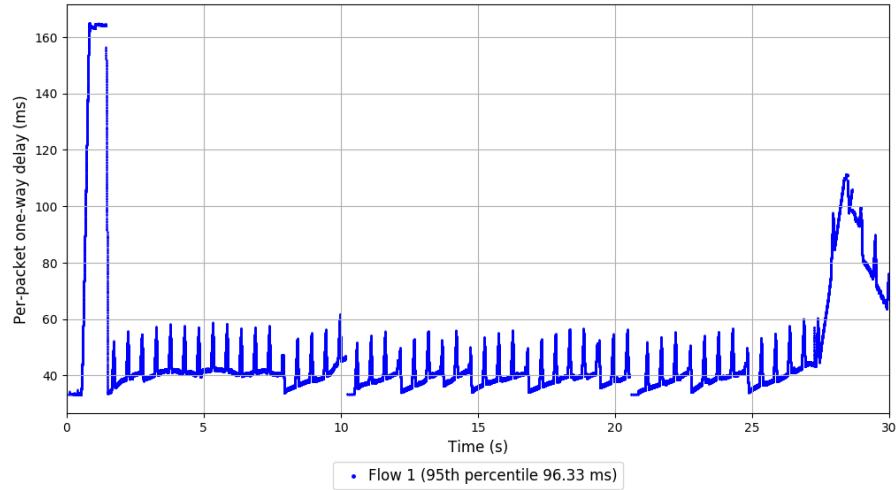
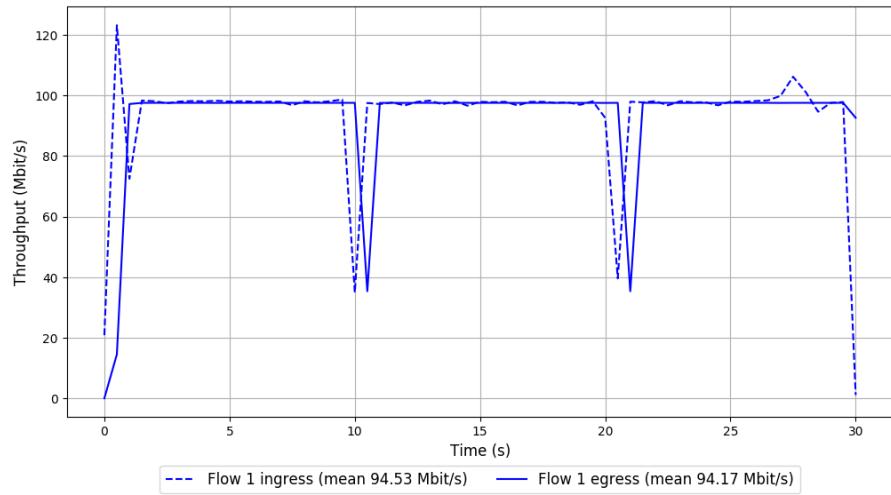


Run 4: Statistics of TCP BBR

```
Start at: 2018-12-20 05:44:55
End at: 2018-12-20 05:45:25
Local clock offset: -0.578 ms
Remote clock offset: -2.039 ms

# Below is generated by plot.py at 2018-12-20 06:30:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.17 Mbit/s
95th percentile per-packet one-way delay: 96.329 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 94.17 Mbit/s
95th percentile per-packet one-way delay: 96.329 ms
Loss rate: 0.60%
```

Run 4: Report of TCP BBR — Data Link

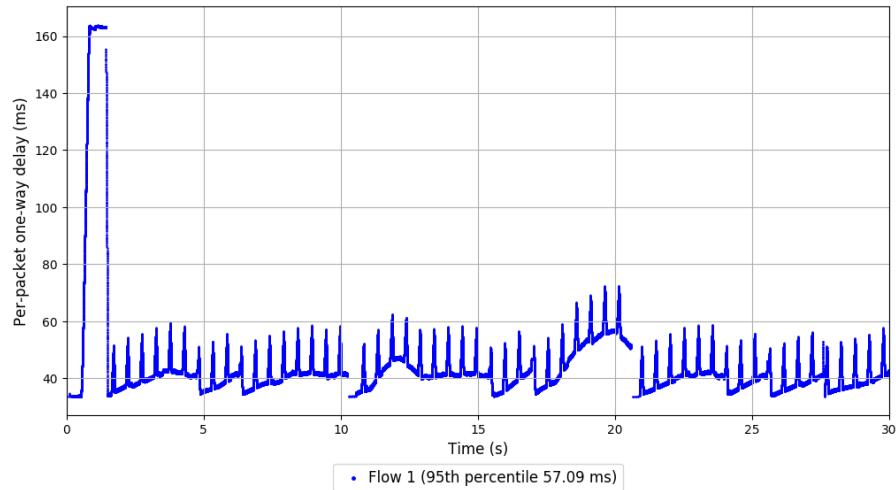
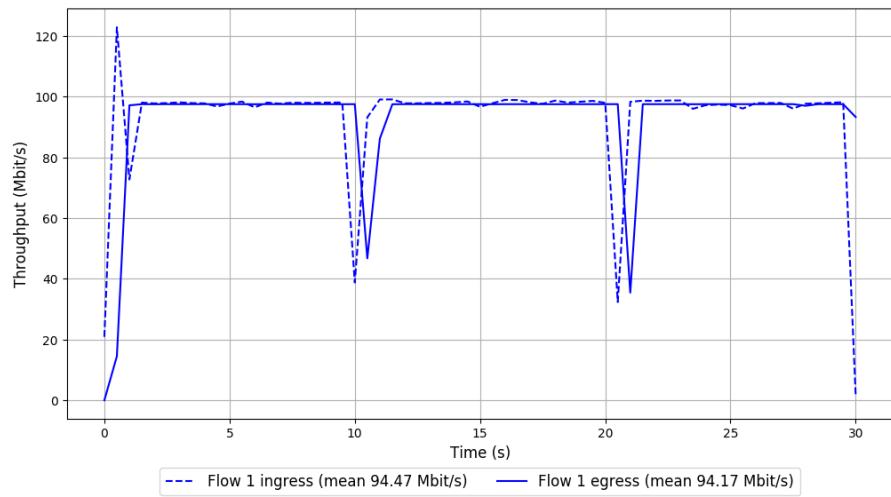


Run 5: Statistics of TCP BBR

```
Start at: 2018-12-20 06:07:11
End at: 2018-12-20 06:07:41
Local clock offset: 1.079 ms
Remote clock offset: -1.969 ms

# Below is generated by plot.py at 2018-12-20 06:30:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.17 Mbit/s
95th percentile per-packet one-way delay: 57.092 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 94.17 Mbit/s
95th percentile per-packet one-way delay: 57.092 ms
Loss rate: 0.53%
```

Run 5: Report of TCP BBR — Data Link

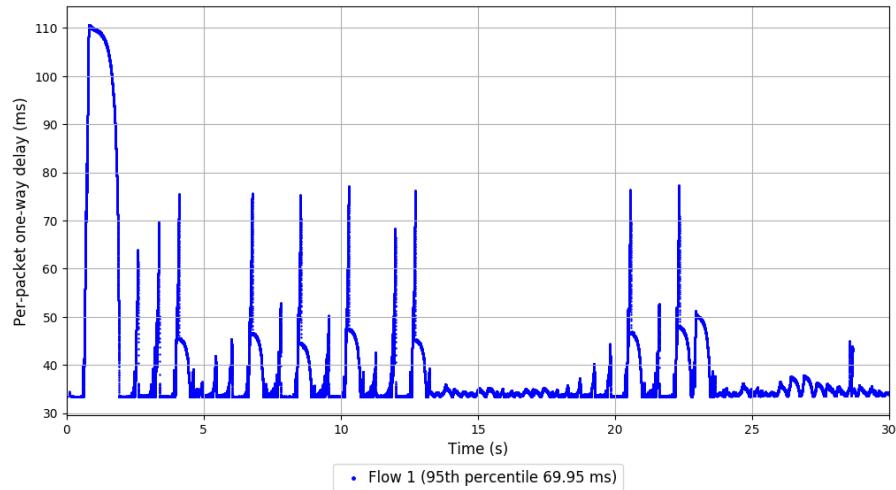
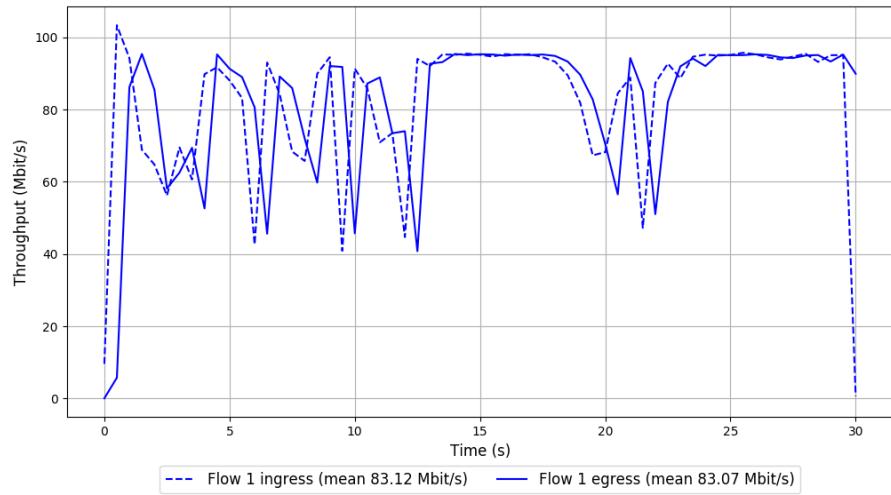


Run 1: Statistics of Copa

```
Start at: 2018-12-20 04:48:31
End at: 2018-12-20 04:49:01
Local clock offset: -2.127 ms
Remote clock offset: -4.065 ms

# Below is generated by plot.py at 2018-12-20 06:31:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 83.07 Mbit/s
95th percentile per-packet one-way delay: 69.953 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 83.07 Mbit/s
95th percentile per-packet one-way delay: 69.953 ms
Loss rate: 0.28%
```

Run 1: Report of Copa — Data Link

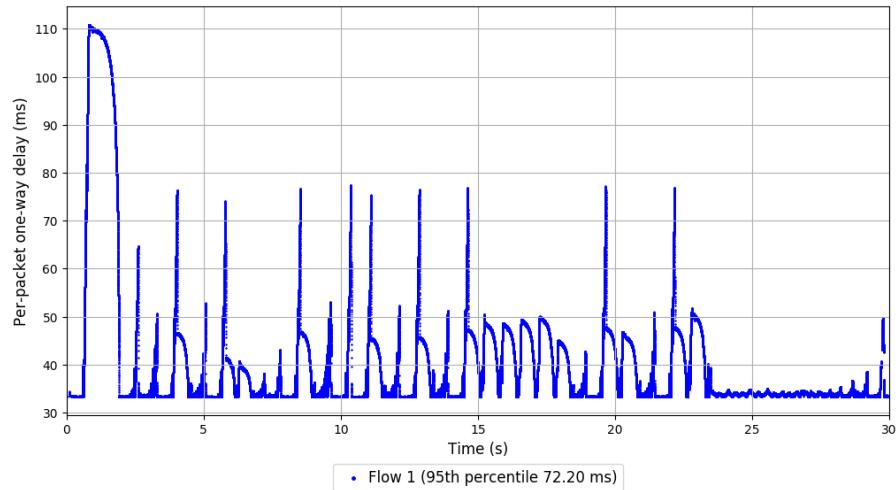
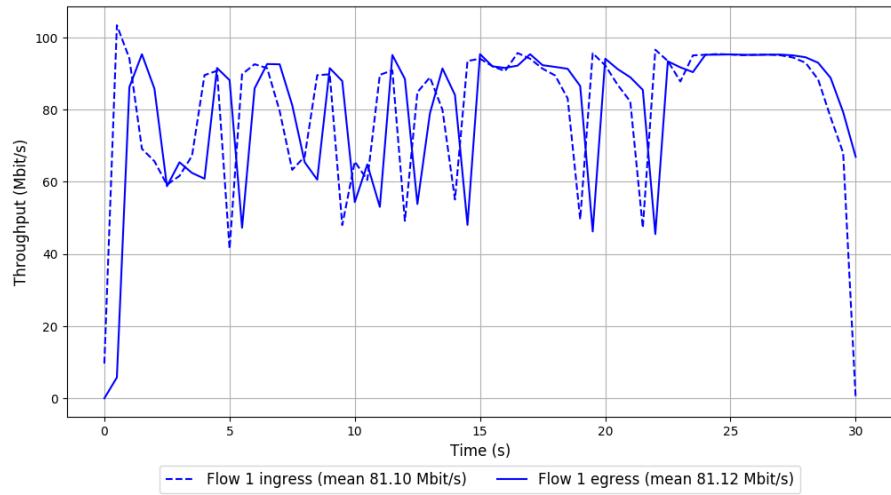


Run 2: Statistics of Copa

```
Start at: 2018-12-20 05:11:01
End at: 2018-12-20 05:11:31
Local clock offset: -3.033 ms
Remote clock offset: -3.244 ms

# Below is generated by plot.py at 2018-12-20 06:31:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 81.12 Mbit/s
95th percentile per-packet one-way delay: 72.205 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 81.12 Mbit/s
95th percentile per-packet one-way delay: 72.205 ms
Loss rate: 0.19%
```

Run 2: Report of Copa — Data Link

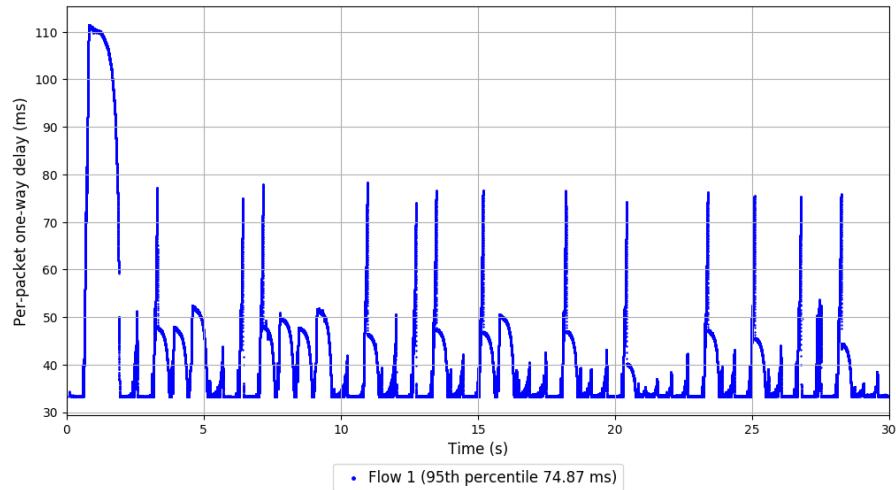
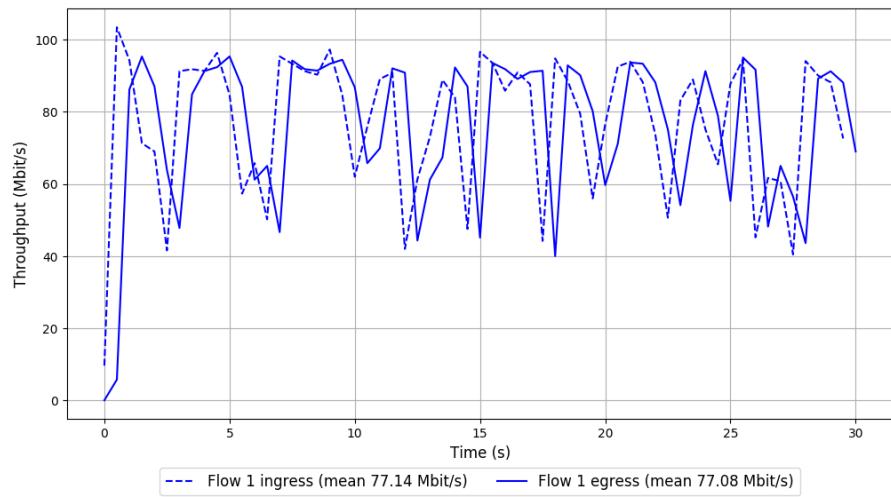


Run 3: Statistics of Copa

```
Start at: 2018-12-20 05:33:13
End at: 2018-12-20 05:33:43
Local clock offset: -3.096 ms
Remote clock offset: -2.382 ms

# Below is generated by plot.py at 2018-12-20 06:31:29
# Datalink statistics
-- Total of 1 flow:
Average throughput: 77.08 Mbit/s
95th percentile per-packet one-way delay: 74.872 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 77.08 Mbit/s
95th percentile per-packet one-way delay: 74.872 ms
Loss rate: 0.29%
```

Run 3: Report of Copa — Data Link

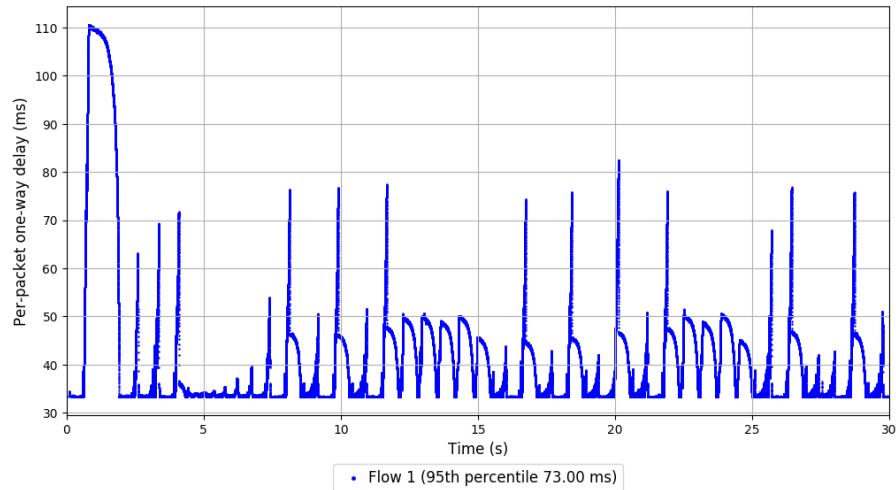
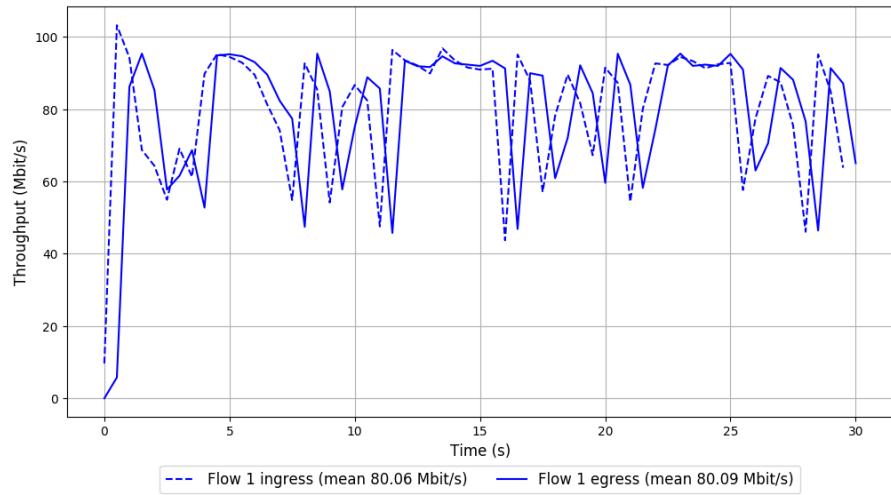


Run 4: Statistics of Copa

```
Start at: 2018-12-20 05:55:15
End at: 2018-12-20 05:55:45
Local clock offset: 0.579 ms
Remote clock offset: -1.897 ms

# Below is generated by plot.py at 2018-12-20 06:32:21
# Datalink statistics
-- Total of 1 flow:
Average throughput: 80.09 Mbit/s
95th percentile per-packet one-way delay: 73.003 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 80.09 Mbit/s
95th percentile per-packet one-way delay: 73.003 ms
Loss rate: 0.18%
```

Run 4: Report of Copa — Data Link

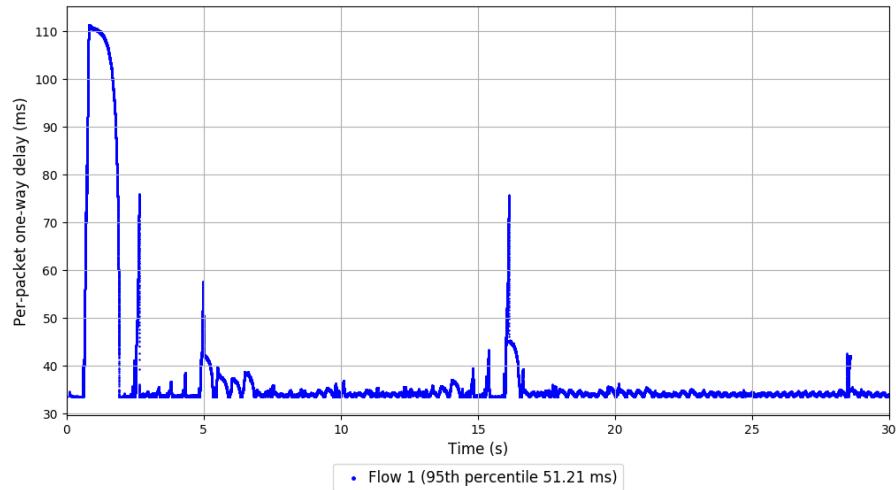
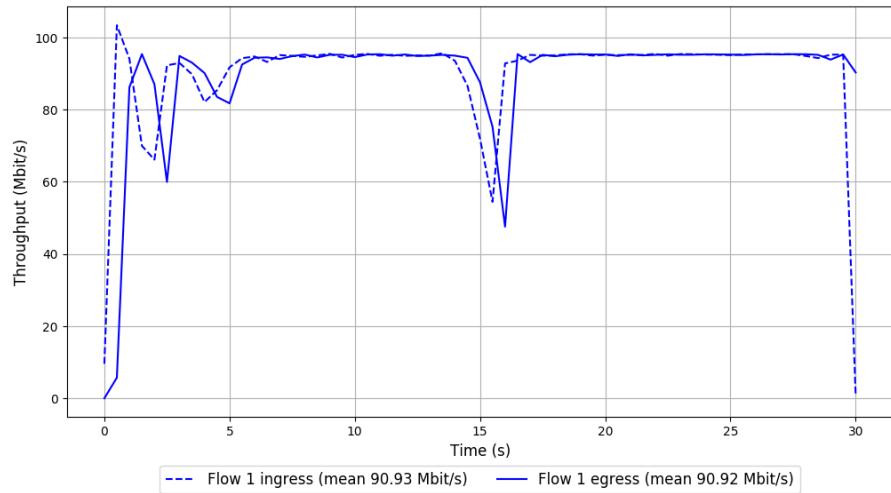


Run 5: Statistics of Copa

```
Start at: 2018-12-20 06:17:41
End at: 2018-12-20 06:18:11
Local clock offset: 0.709 ms
Remote clock offset: -1.688 ms

# Below is generated by plot.py at 2018-12-20 06:32:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 90.92 Mbit/s
95th percentile per-packet one-way delay: 51.210 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 90.92 Mbit/s
95th percentile per-packet one-way delay: 51.210 ms
Loss rate: 0.23%
```

Run 5: Report of Copa — Data Link

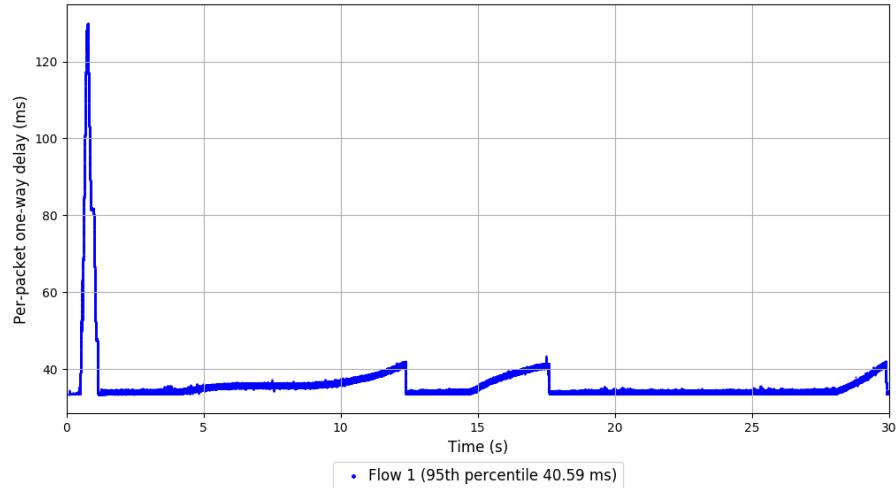
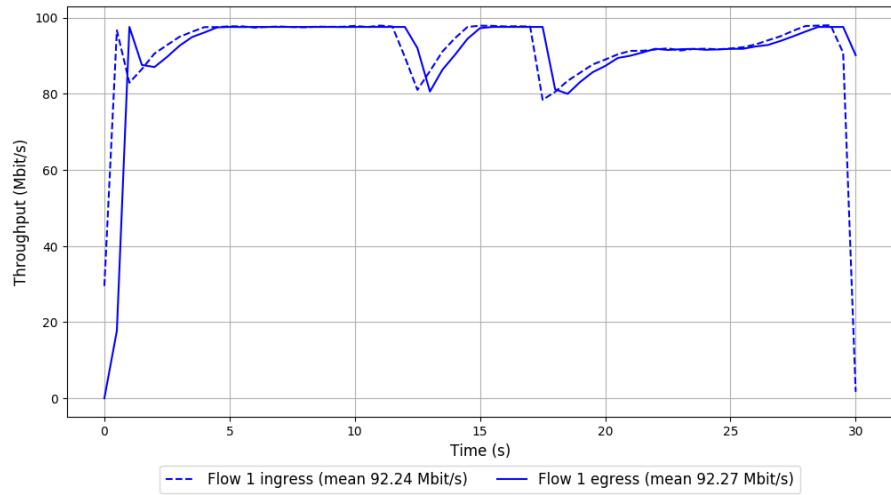


```
Run 1: Statistics of TCP Cubic
```

```
Start at: 2018-12-20 04:57:56
End at: 2018-12-20 04:58:26
Local clock offset: -2.873 ms
Remote clock offset: -3.678 ms

# Below is generated by plot.py at 2018-12-20 06:32:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.27 Mbit/s
95th percentile per-packet one-way delay: 40.590 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 92.27 Mbit/s
95th percentile per-packet one-way delay: 40.590 ms
Loss rate: 0.19%
```

Run 1: Report of TCP Cubic — Data Link

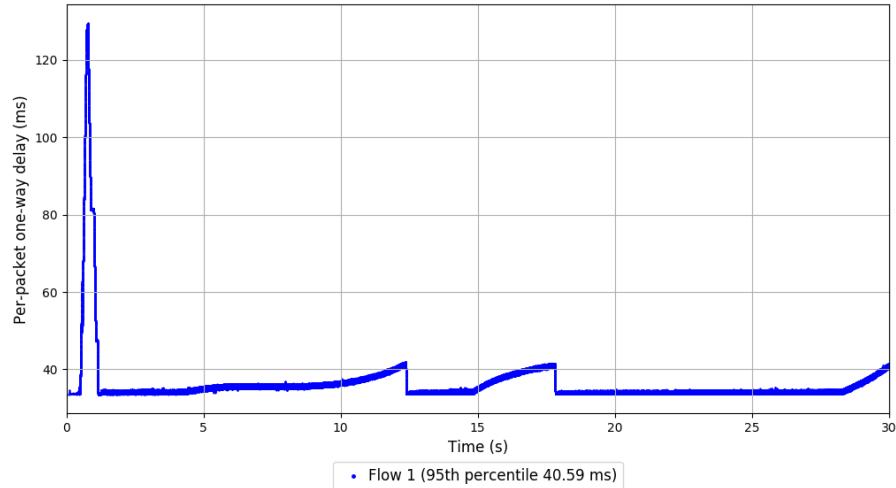
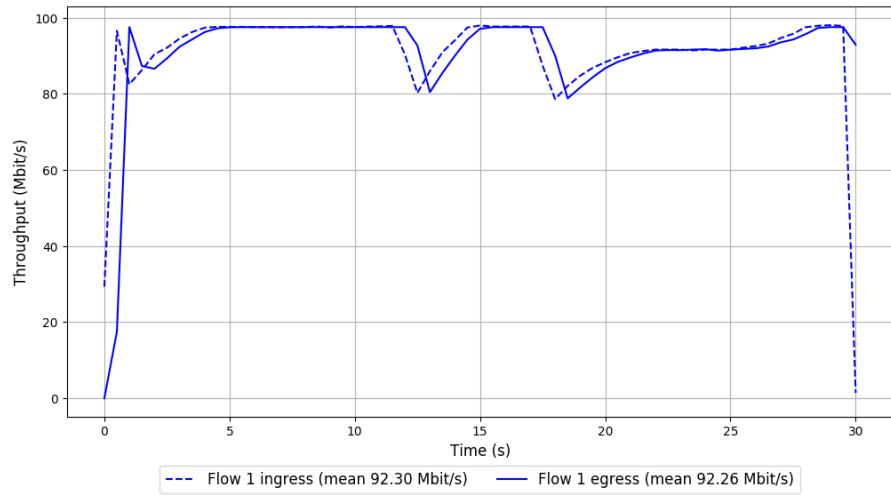


Run 2: Statistics of TCP Cubic

```
Start at: 2018-12-20 05:20:27
End at: 2018-12-20 05:20:57
Local clock offset: -2.959 ms
Remote clock offset: -2.989 ms

# Below is generated by plot.py at 2018-12-20 06:32:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.26 Mbit/s
95th percentile per-packet one-way delay: 40.595 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 92.26 Mbit/s
95th percentile per-packet one-way delay: 40.595 ms
Loss rate: 0.26%
```

Run 2: Report of TCP Cubic — Data Link

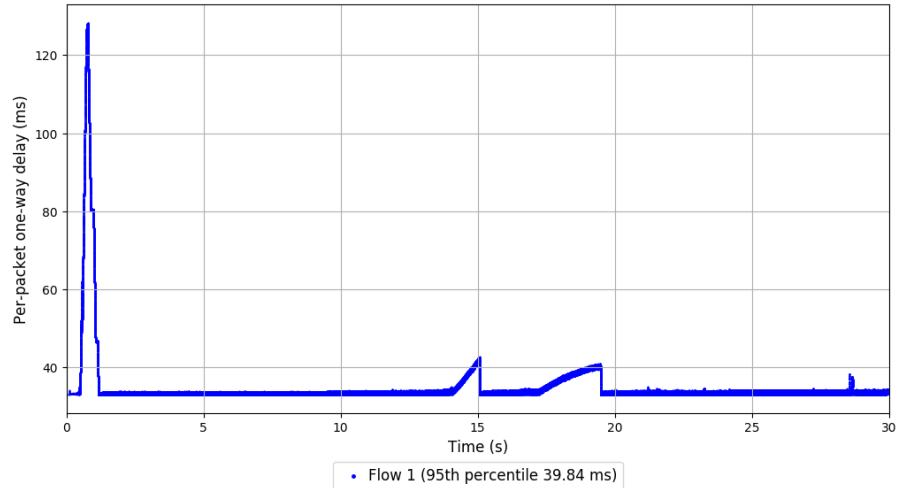
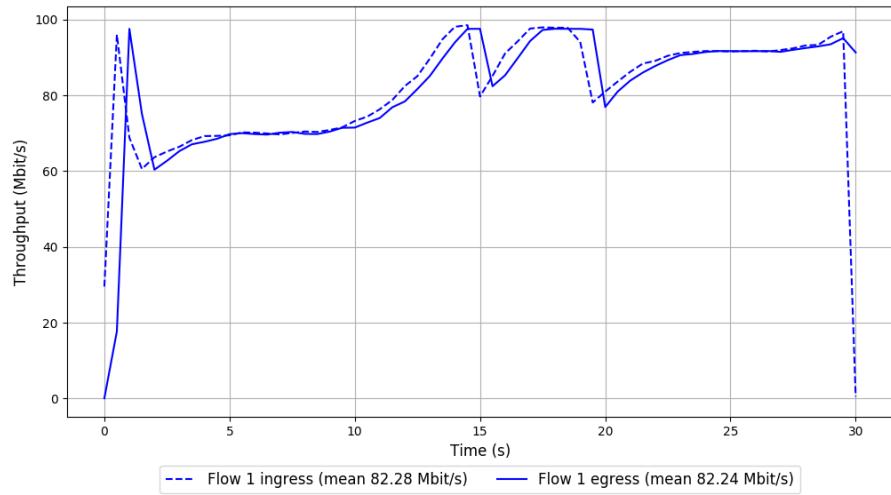


Run 3: Statistics of TCP Cubic

```
Start at: 2018-12-20 05:42:36
End at: 2018-12-20 05:43:06
Local clock offset: -1.034 ms
Remote clock offset: -2.074 ms

# Below is generated by plot.py at 2018-12-20 06:32:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 82.24 Mbit/s
95th percentile per-packet one-way delay: 39.842 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 82.24 Mbit/s
95th percentile per-packet one-way delay: 39.842 ms
Loss rate: 0.26%
```

Run 3: Report of TCP Cubic — Data Link

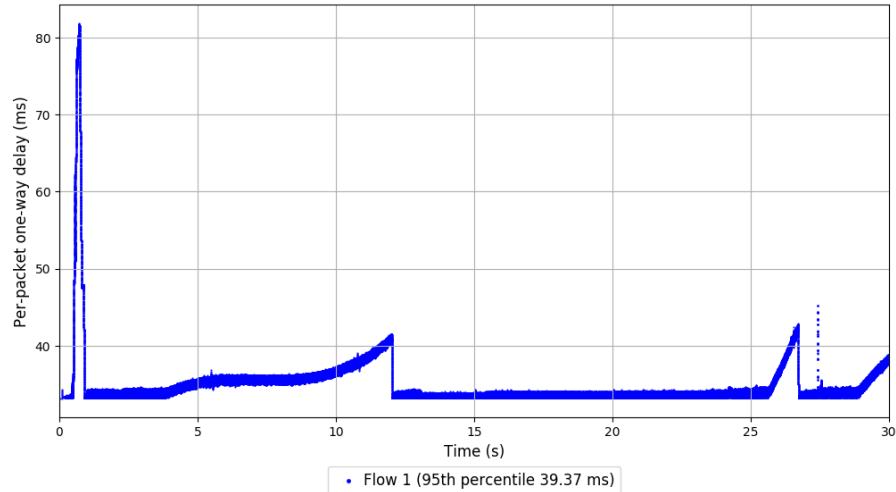
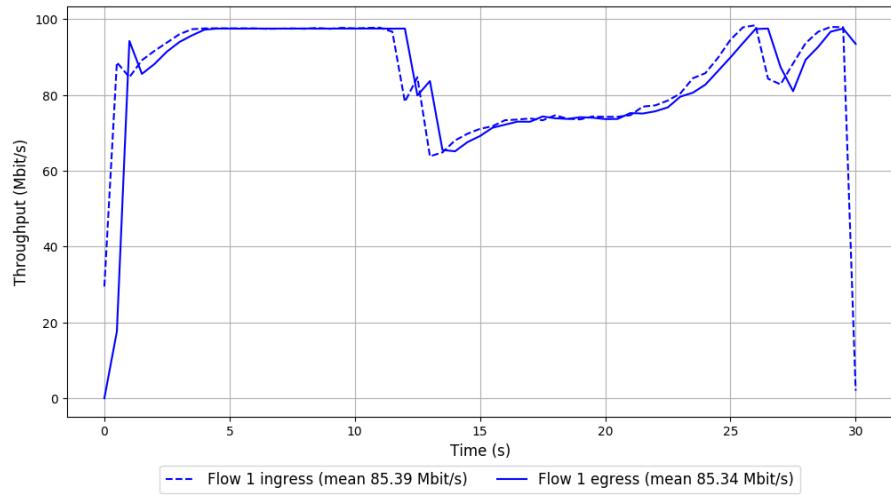


Run 4: Statistics of TCP Cubic

```
Start at: 2018-12-20 06:04:48
End at: 2018-12-20 06:05:18
Local clock offset: 1.145 ms
Remote clock offset: -1.647 ms

# Below is generated by plot.py at 2018-12-20 06:32:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 85.34 Mbit/s
95th percentile per-packet one-way delay: 39.373 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 85.34 Mbit/s
95th percentile per-packet one-way delay: 39.373 ms
Loss rate: 0.27%
```

Run 4: Report of TCP Cubic — Data Link

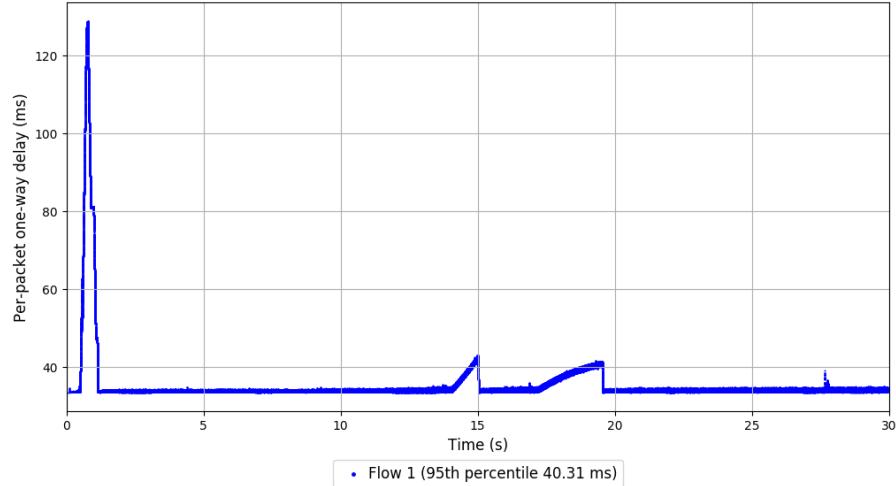
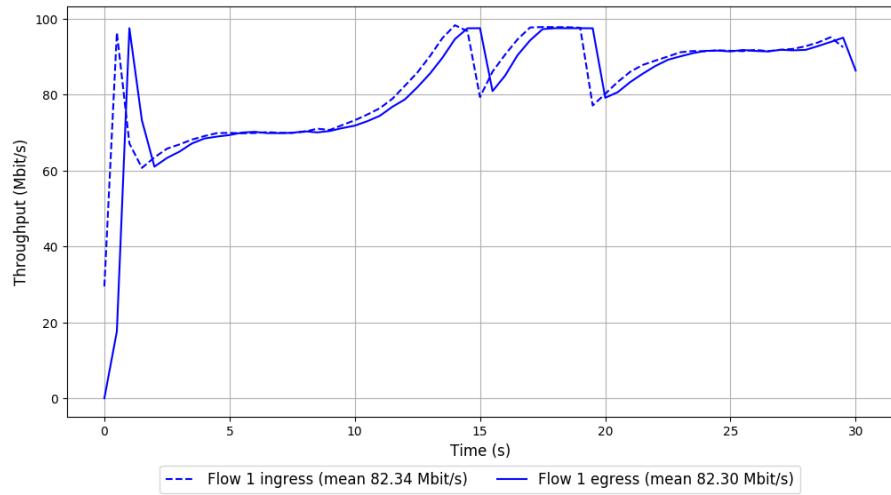


Run 5: Statistics of TCP Cubic

```
Start at: 2018-12-20 06:27:20
End at: 2018-12-20 06:27:50
Local clock offset: 0.743 ms
Remote clock offset: -1.683 ms

# Below is generated by plot.py at 2018-12-20 06:32:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 82.30 Mbit/s
95th percentile per-packet one-way delay: 40.307 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 82.30 Mbit/s
95th percentile per-packet one-way delay: 40.307 ms
Loss rate: 0.26%
```

Run 5: Report of TCP Cubic — Data Link

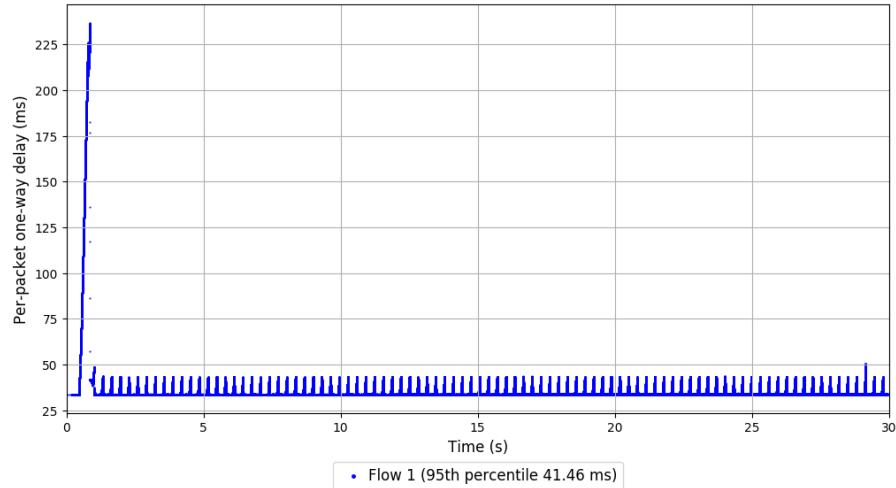
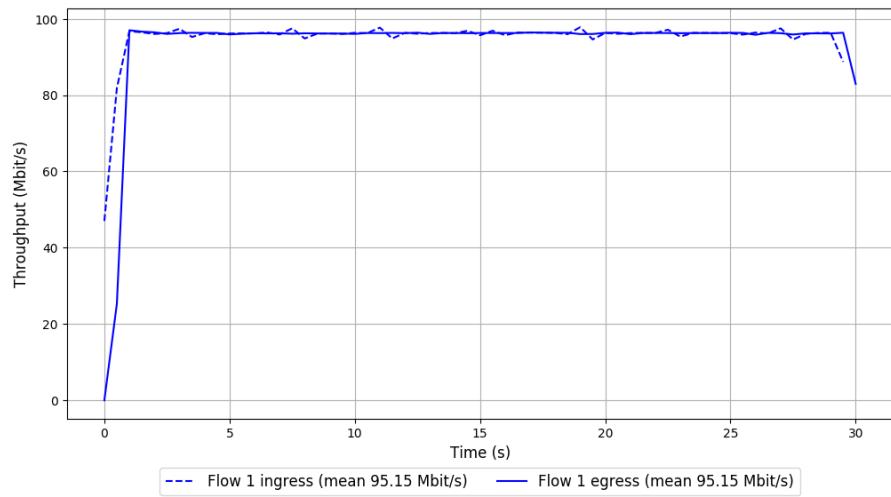


```
Run 1: Statistics of FillP
```

```
Start at: 2018-12-20 04:40:27
End at: 2018-12-20 04:40:57
Local clock offset: -0.601 ms
Remote clock offset: -4.265 ms

# Below is generated by plot.py at 2018-12-20 06:32:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.15 Mbit/s
95th percentile per-packet one-way delay: 41.463 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 95.15 Mbit/s
95th percentile per-packet one-way delay: 41.463 ms
Loss rate: 0.22%
```

Run 1: Report of FillP — Data Link

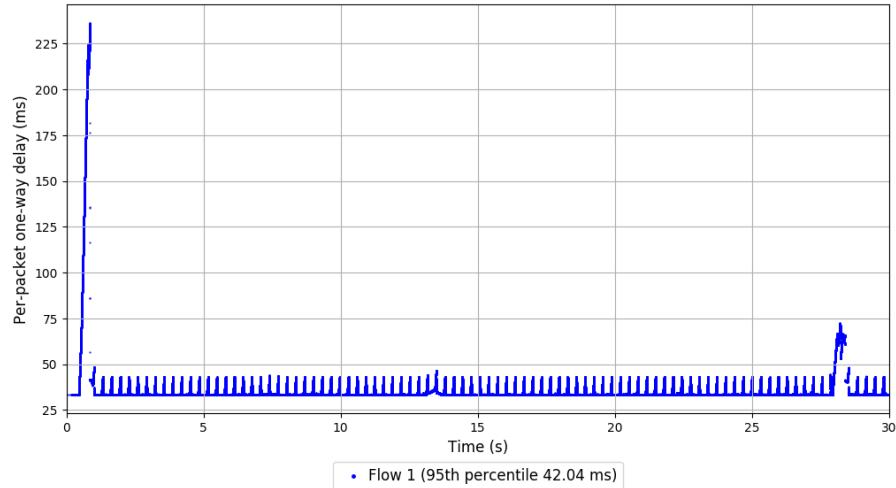
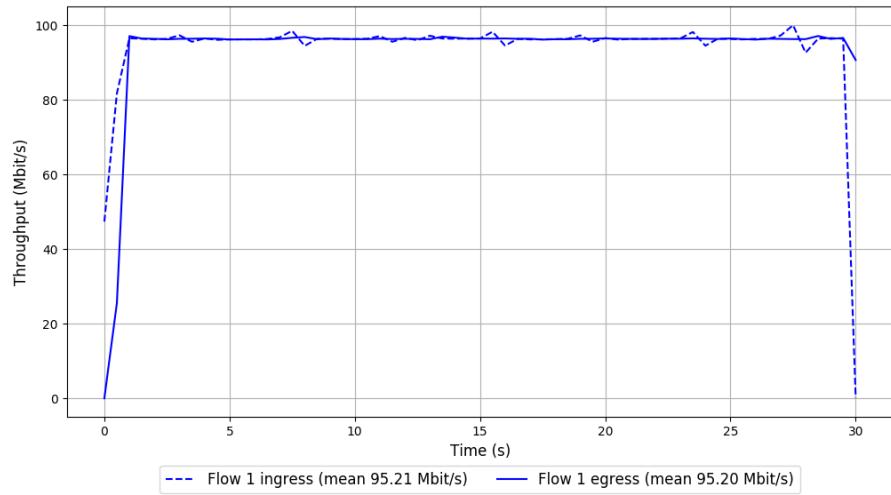


Run 2: Statistics of FillP

```
Start at: 2018-12-20 05:02:51
End at: 2018-12-20 05:03:21
Local clock offset: -3.11 ms
Remote clock offset: -3.529 ms

# Below is generated by plot.py at 2018-12-20 06:32:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.20 Mbit/s
95th percentile per-packet one-way delay: 42.041 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 95.20 Mbit/s
95th percentile per-packet one-way delay: 42.041 ms
Loss rate: 0.22%
```

Run 2: Report of FillP — Data Link

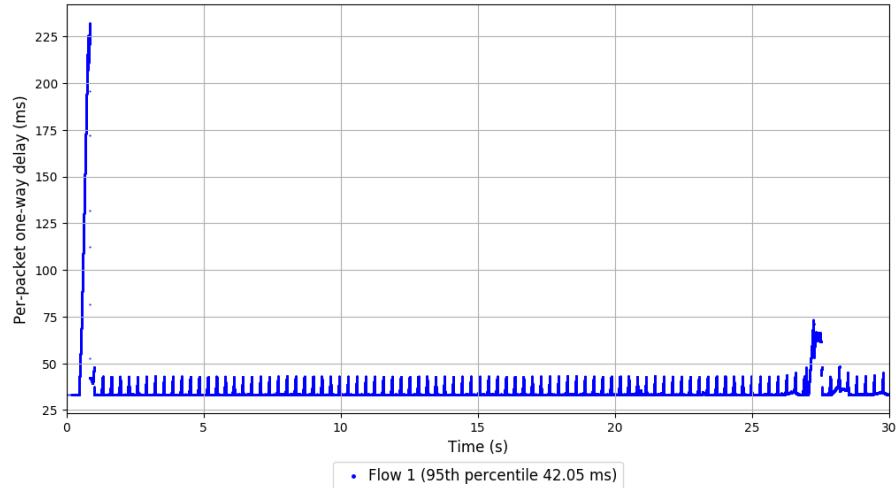
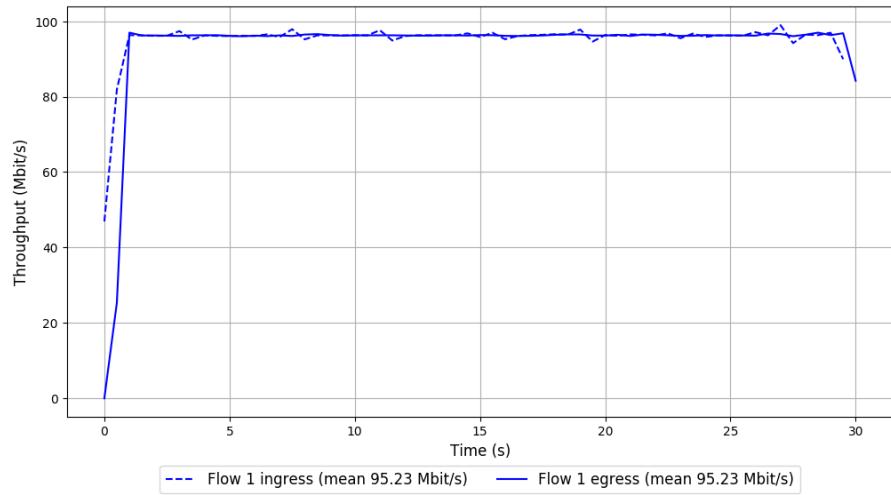


Run 3: Statistics of FillP

```
Start at: 2018-12-20 05:25:03
End at: 2018-12-20 05:25:33
Local clock offset: -3.001 ms
Remote clock offset: -2.647 ms

# Below is generated by plot.py at 2018-12-20 06:32:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.23 Mbit/s
95th percentile per-packet one-way delay: 42.046 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 95.23 Mbit/s
95th percentile per-packet one-way delay: 42.046 ms
Loss rate: 0.22%
```

Run 3: Report of FillP — Data Link

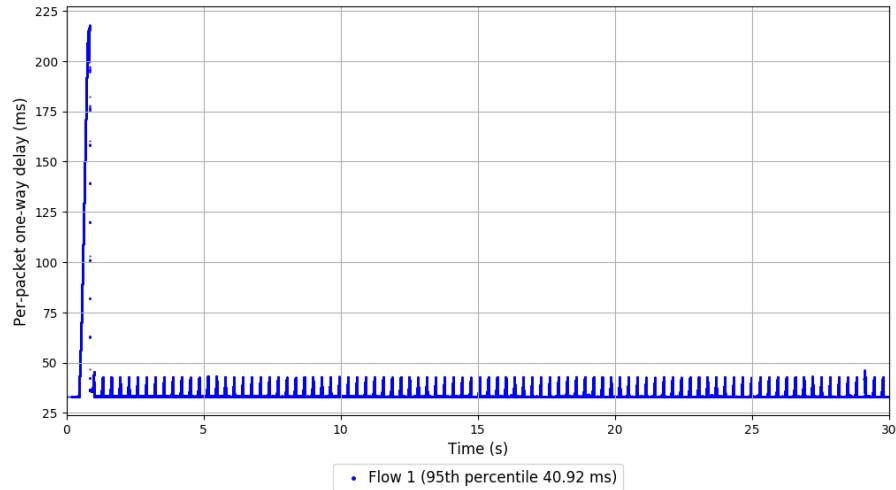
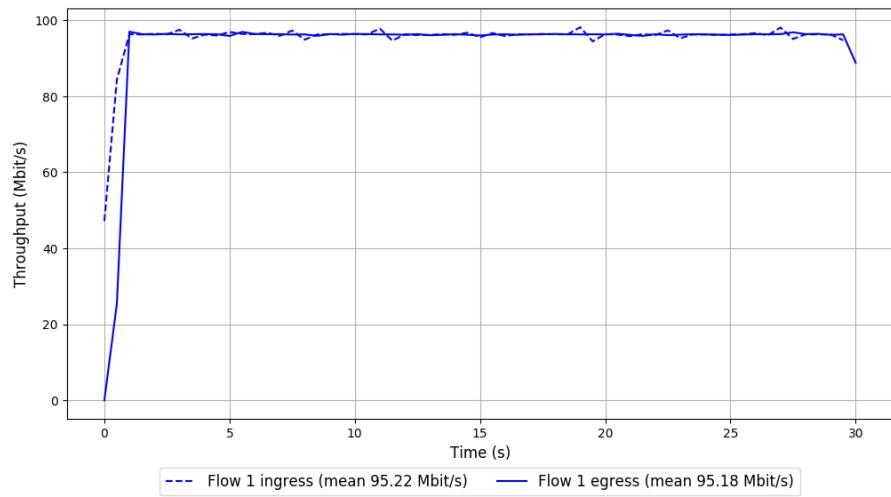


Run 4: Statistics of FillP

```
Start at: 2018-12-20 05:47:12
End at: 2018-12-20 05:47:42
Local clock offset: -0.233 ms
Remote clock offset: -2.015 ms

# Below is generated by plot.py at 2018-12-20 06:33:00
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.18 Mbit/s
95th percentile per-packet one-way delay: 40.922 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 95.18 Mbit/s
95th percentile per-packet one-way delay: 40.922 ms
Loss rate: 0.26%
```

Run 4: Report of FillP — Data Link

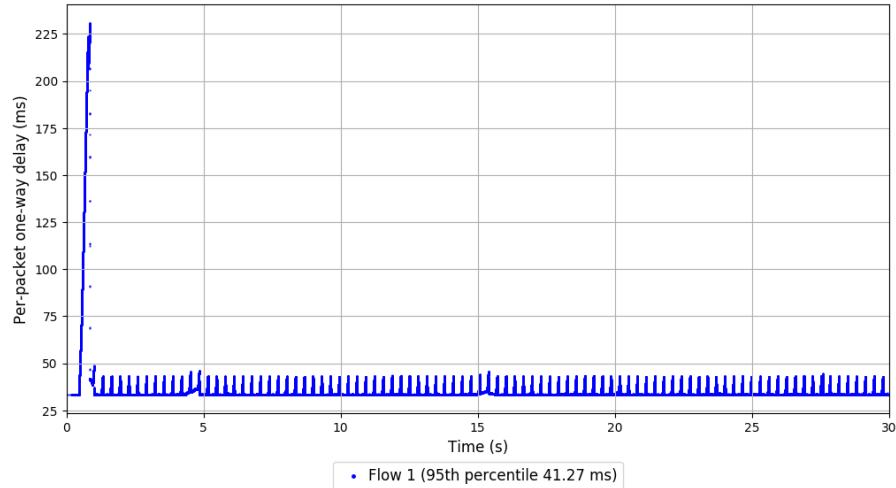
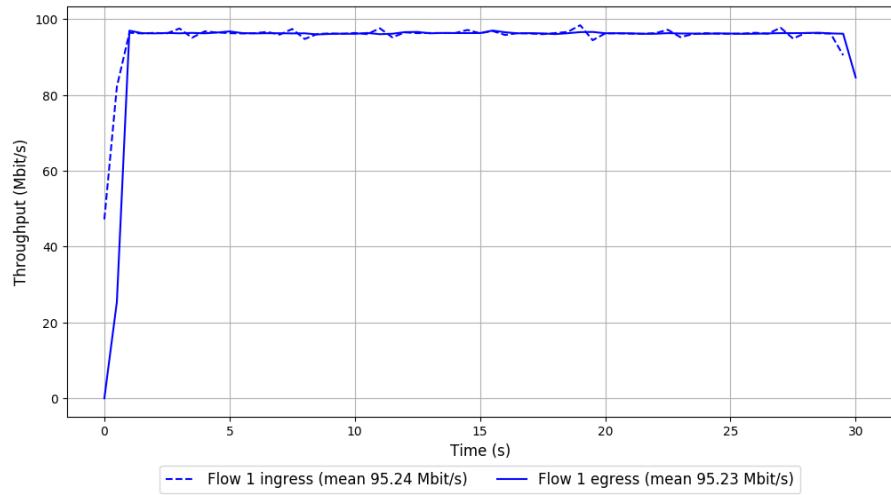


Run 5: Statistics of FillP

```
Start at: 2018-12-20 06:09:30
End at: 2018-12-20 06:10:00
Local clock offset: 0.935 ms
Remote clock offset: -1.715 ms

# Below is generated by plot.py at 2018-12-20 06:33:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.23 Mbit/s
95th percentile per-packet one-way delay: 41.275 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 95.23 Mbit/s
95th percentile per-packet one-way delay: 41.275 ms
Loss rate: 0.23%
```

Run 5: Report of FillP — Data Link

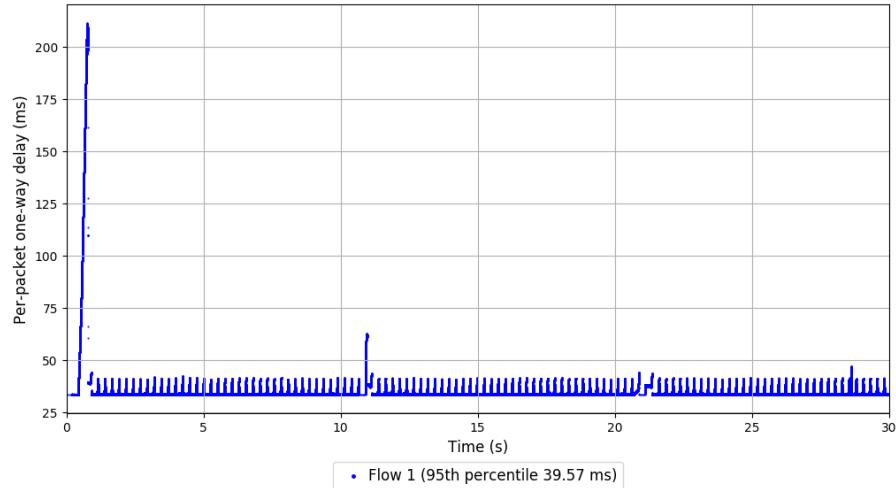
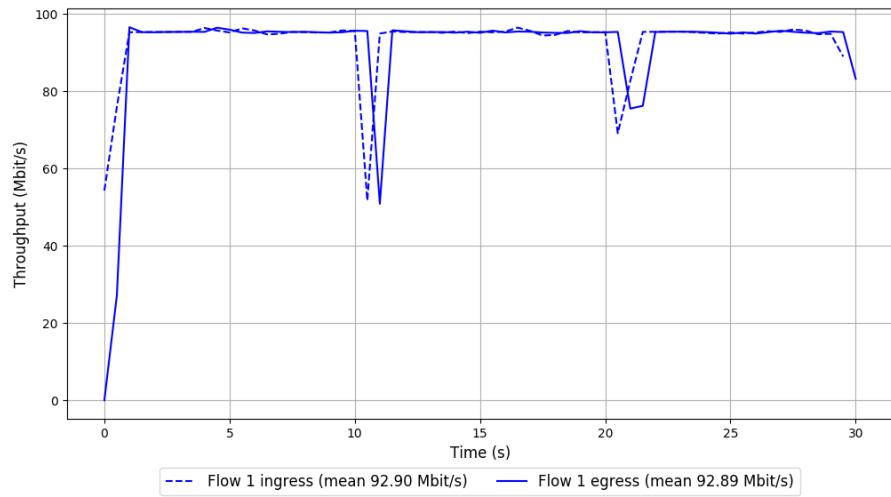


Run 1: Statistics of FillP-Sheep

```
Start at: 2018-12-20 04:46:13
End at: 2018-12-20 04:46:43
Local clock offset: -1.806 ms
Remote clock offset: -4.119 ms

# Below is generated by plot.py at 2018-12-20 06:33:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.89 Mbit/s
95th percentile per-packet one-way delay: 39.569 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 92.89 Mbit/s
95th percentile per-packet one-way delay: 39.569 ms
Loss rate: 0.22%
```

Run 1: Report of FillP-Sheep — Data Link

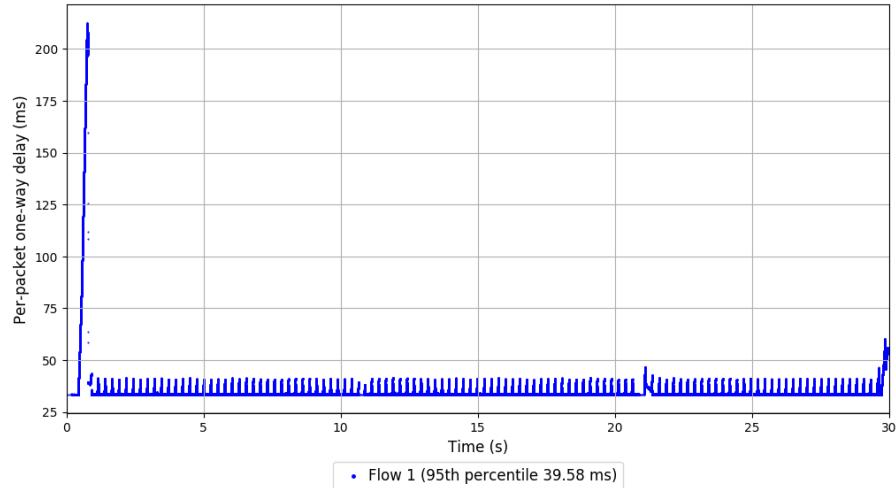
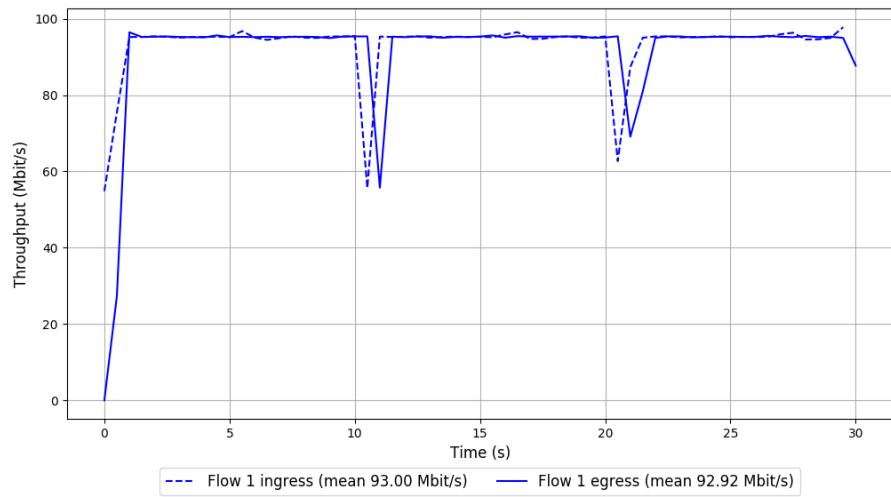


Run 2: Statistics of FillP-Sheep

```
Start at: 2018-12-20 05:08:42
End at: 2018-12-20 05:09:12
Local clock offset: -3.1 ms
Remote clock offset: -3.337 ms

# Below is generated by plot.py at 2018-12-20 06:33:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.92 Mbit/s
95th percentile per-packet one-way delay: 39.581 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 92.92 Mbit/s
95th percentile per-packet one-way delay: 39.581 ms
Loss rate: 0.30%
```

Run 2: Report of FillP-Sheep — Data Link

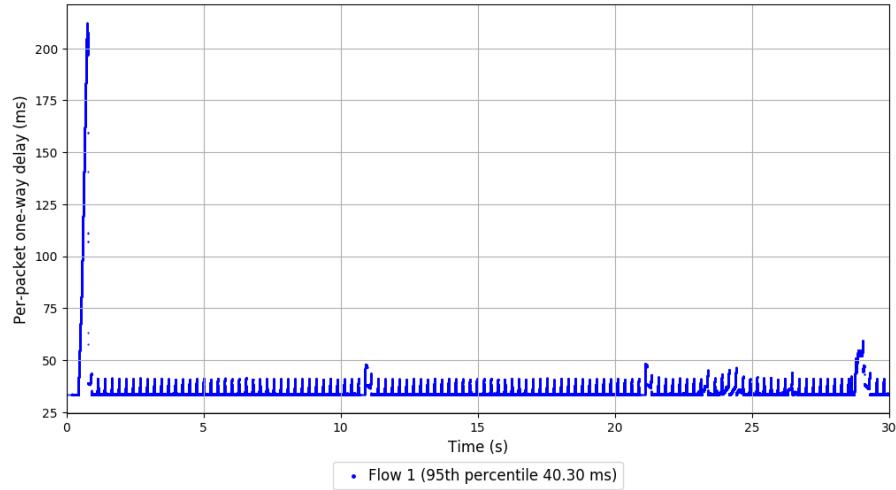
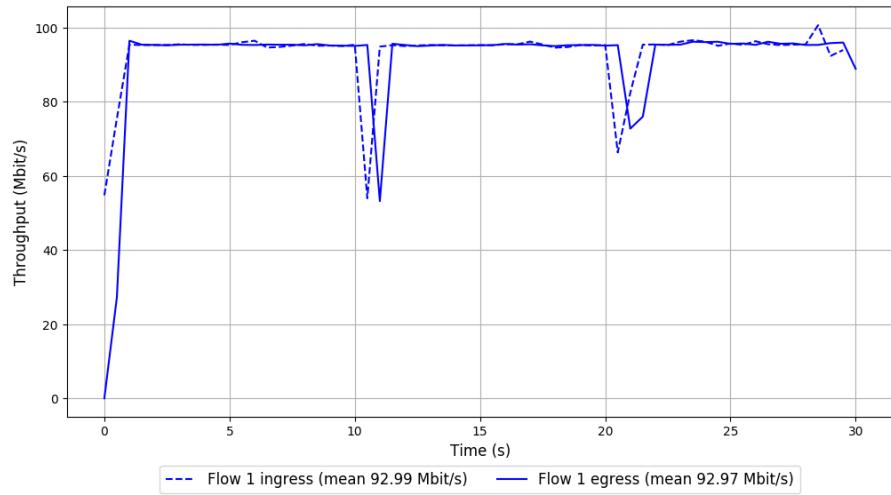


Run 3: Statistics of FillP-Sheep

```
Start at: 2018-12-20 05:30:54
End at: 2018-12-20 05:31:24
Local clock offset: -3.056 ms
Remote clock offset: -2.664 ms

# Below is generated by plot.py at 2018-12-20 06:33:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.97 Mbit/s
95th percentile per-packet one-way delay: 40.302 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 92.97 Mbit/s
95th percentile per-packet one-way delay: 40.302 ms
Loss rate: 0.23%
```

Run 3: Report of FillP-Sheep — Data Link

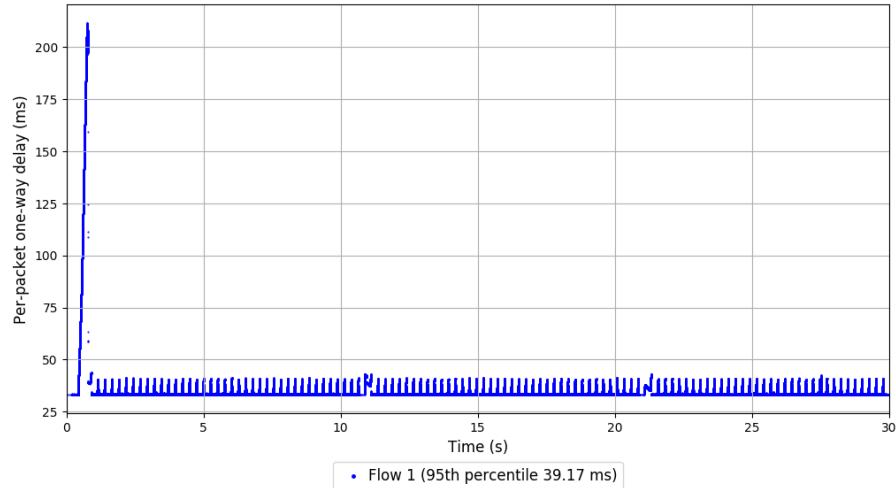
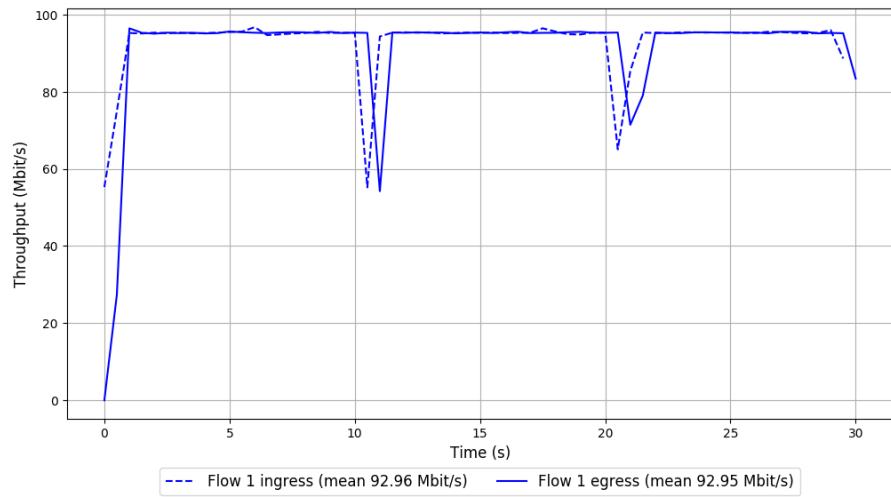


Run 4: Statistics of FillP-Sheep

```
Start at: 2018-12-20 05:52:57
End at: 2018-12-20 05:53:27
Local clock offset: 0.41 ms
Remote clock offset: -1.906 ms

# Below is generated by plot.py at 2018-12-20 06:34:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.95 Mbit/s
95th percentile per-packet one-way delay: 39.169 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 92.95 Mbit/s
95th percentile per-packet one-way delay: 39.169 ms
Loss rate: 0.22%
```

Run 4: Report of FillP-Sheep — Data Link

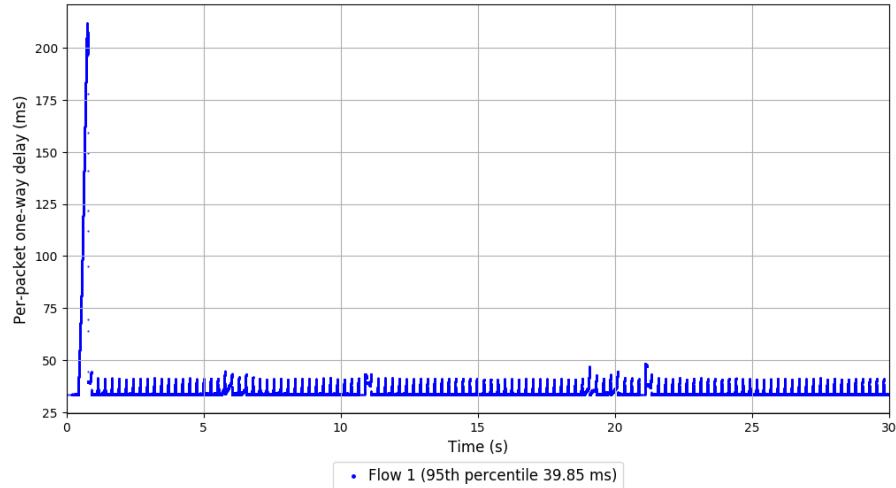
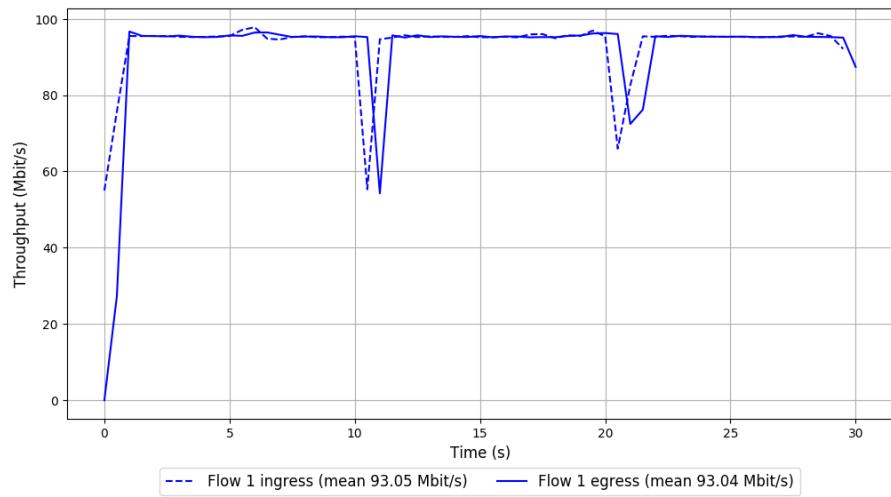


Run 5: Statistics of FillP-Sheep

```
Start at: 2018-12-20 06:15:19
End at: 2018-12-20 06:15:49
Local clock offset: 0.745 ms
Remote clock offset: -1.866 ms

# Below is generated by plot.py at 2018-12-20 06:34:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.04 Mbit/s
95th percentile per-packet one-way delay: 39.849 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 93.04 Mbit/s
95th percentile per-packet one-way delay: 39.849 ms
Loss rate: 0.22%
```

Run 5: Report of FillP-Sheep — Data Link

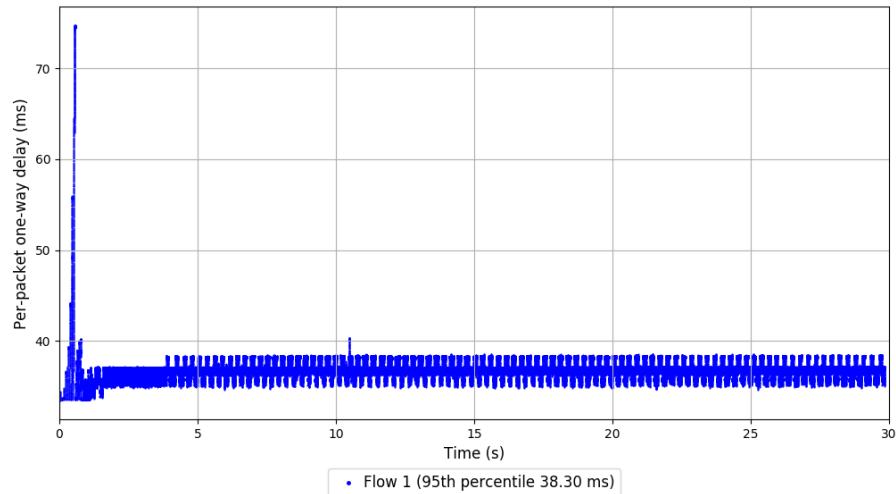
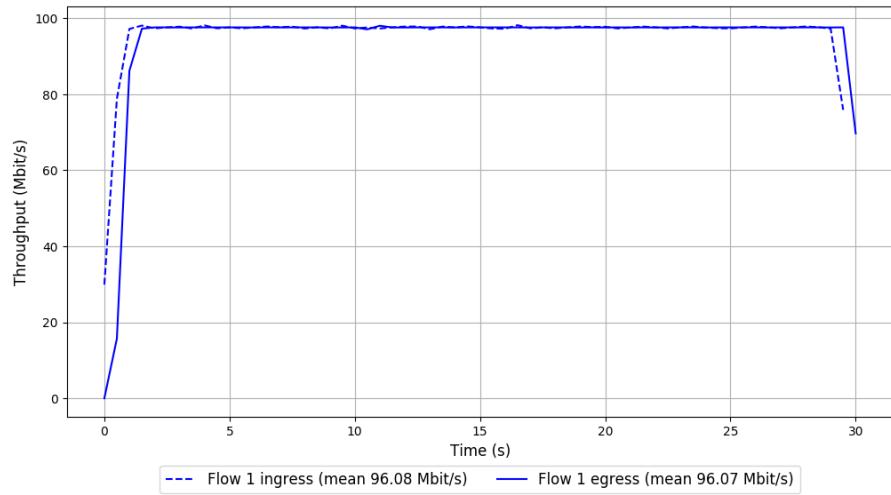


Run 1: Statistics of Indigo

```
Start at: 2018-12-20 04:42:45
End at: 2018-12-20 04:43:15
Local clock offset: -1.202 ms
Remote clock offset: -4.265 ms

# Below is generated by plot.py at 2018-12-20 06:34:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.07 Mbit/s
95th percentile per-packet one-way delay: 38.297 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 96.07 Mbit/s
95th percentile per-packet one-way delay: 38.297 ms
Loss rate: 0.23%
```

Run 1: Report of Indigo — Data Link

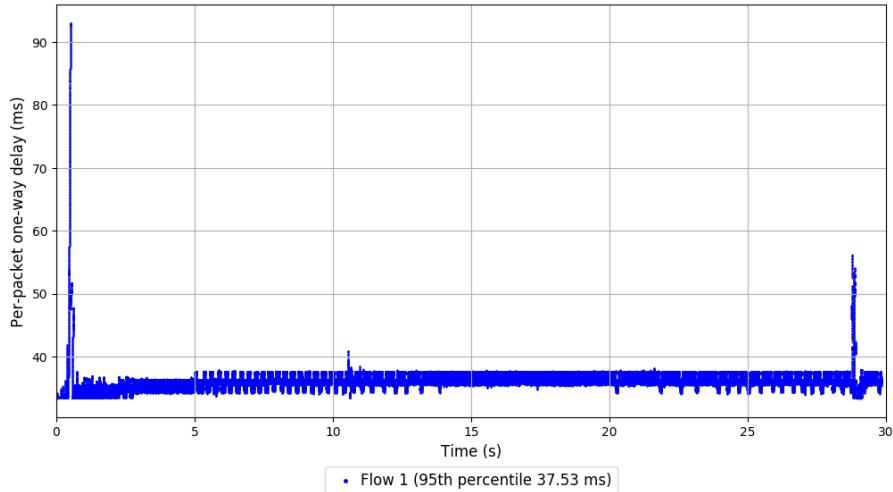
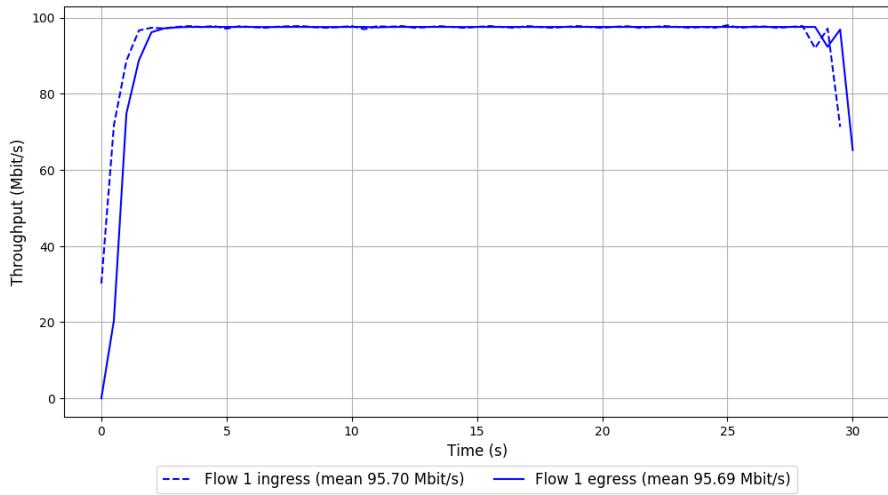


Run 2: Statistics of Indigo

```
Start at: 2018-12-20 05:05:13
End at: 2018-12-20 05:05:43
Local clock offset: -3.185 ms
Remote clock offset: -3.414 ms

# Below is generated by plot.py at 2018-12-20 06:34:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.69 Mbit/s
95th percentile per-packet one-way delay: 37.528 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 95.69 Mbit/s
95th percentile per-packet one-way delay: 37.528 ms
Loss rate: 0.23%
```

Run 2: Report of Indigo — Data Link

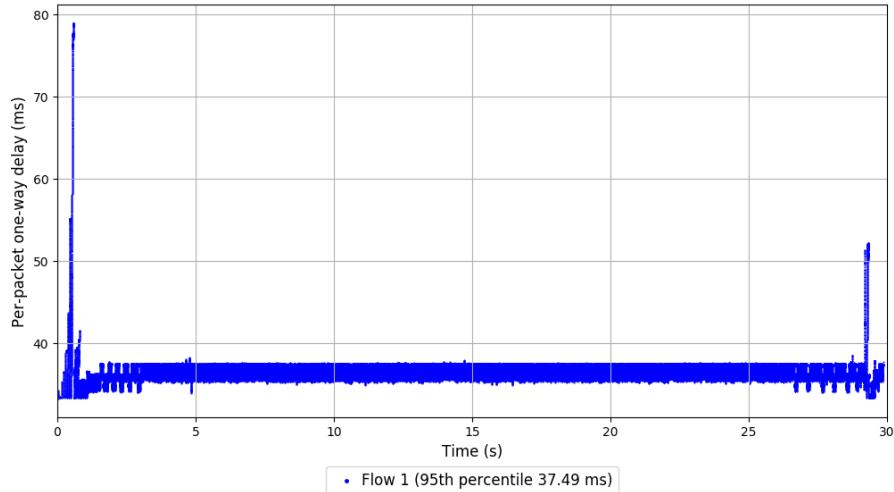
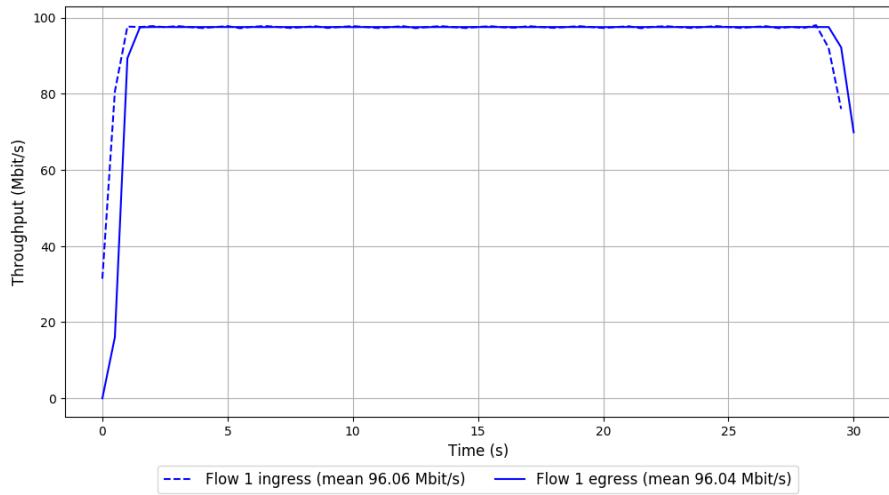


Run 3: Statistics of Indigo

```
Start at: 2018-12-20 05:27:24
End at: 2018-12-20 05:27:54
Local clock offset: -3.023 ms
Remote clock offset: -2.555 ms

# Below is generated by plot.py at 2018-12-20 06:34:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.04 Mbit/s
95th percentile per-packet one-way delay: 37.486 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 96.04 Mbit/s
95th percentile per-packet one-way delay: 37.486 ms
Loss rate: 0.23%
```

Run 3: Report of Indigo — Data Link

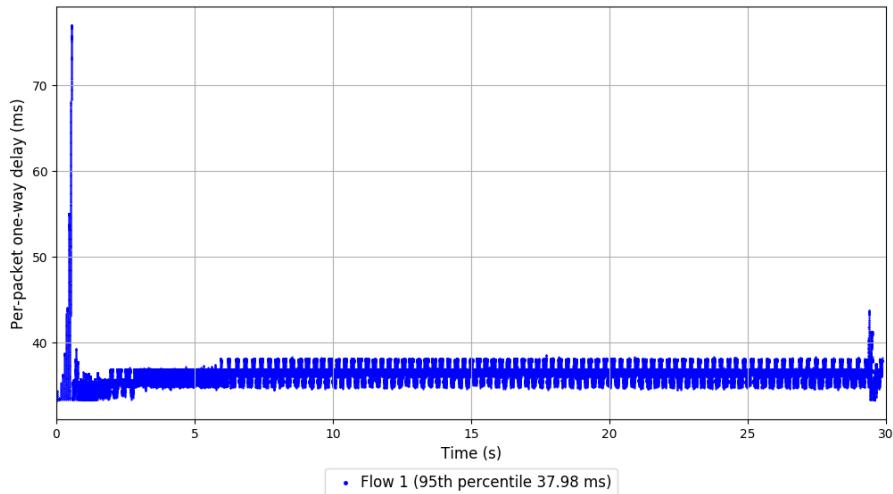
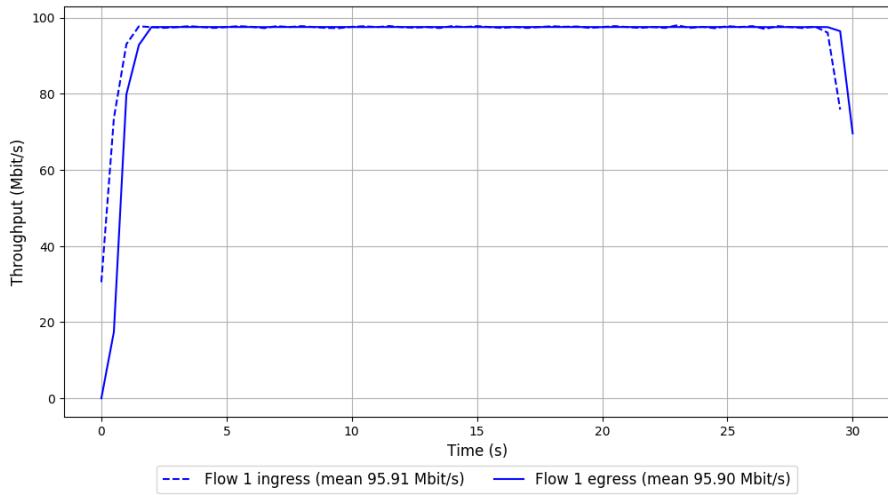


Run 4: Statistics of Indigo

```
Start at: 2018-12-20 05:49:30
End at: 2018-12-20 05:50:00
Local clock offset: 0.056 ms
Remote clock offset: -1.977 ms

# Below is generated by plot.py at 2018-12-20 06:34:37
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.90 Mbit/s
95th percentile per-packet one-way delay: 37.976 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 95.90 Mbit/s
95th percentile per-packet one-way delay: 37.976 ms
Loss rate: 0.22%
```

Run 4: Report of Indigo — Data Link

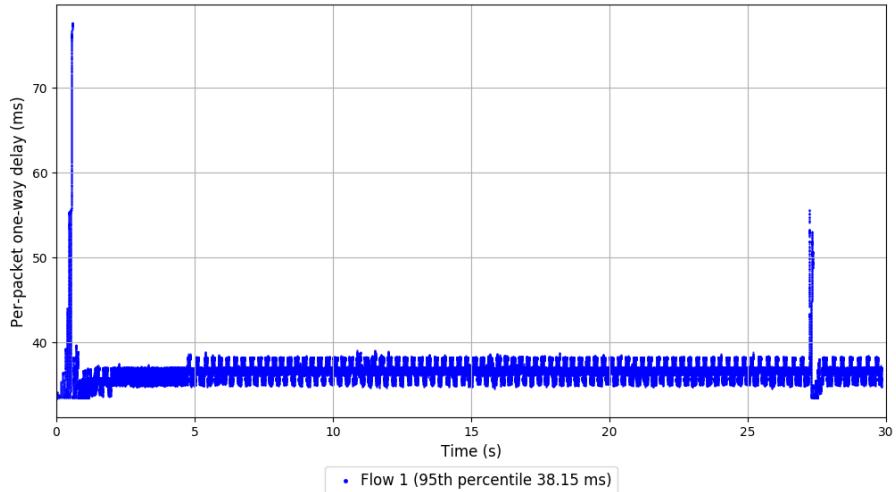
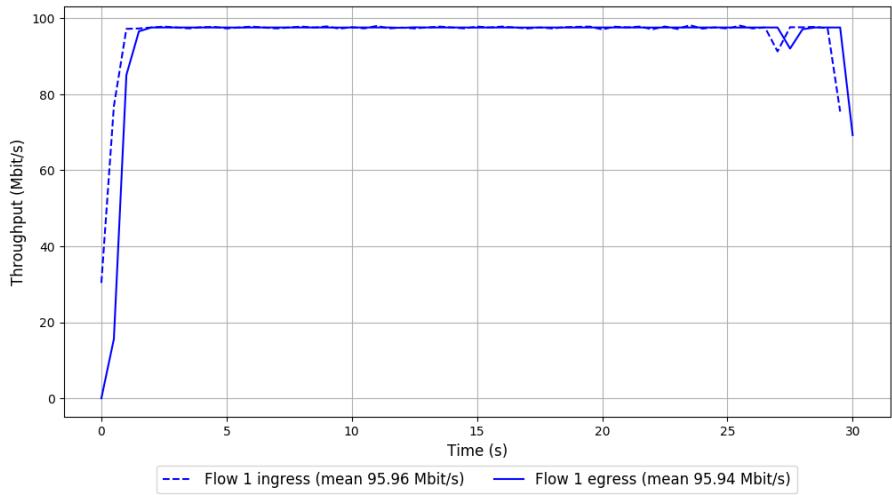


Run 5: Statistics of Indigo

```
Start at: 2018-12-20 06:11:48
End at: 2018-12-20 06:12:18
Local clock offset: 0.846 ms
Remote clock offset: -1.716 ms

# Below is generated by plot.py at 2018-12-20 06:34:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.94 Mbit/s
95th percentile per-packet one-way delay: 38.153 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 95.94 Mbit/s
95th percentile per-packet one-way delay: 38.153 ms
Loss rate: 0.23%
```

Run 5: Report of Indigo — Data Link

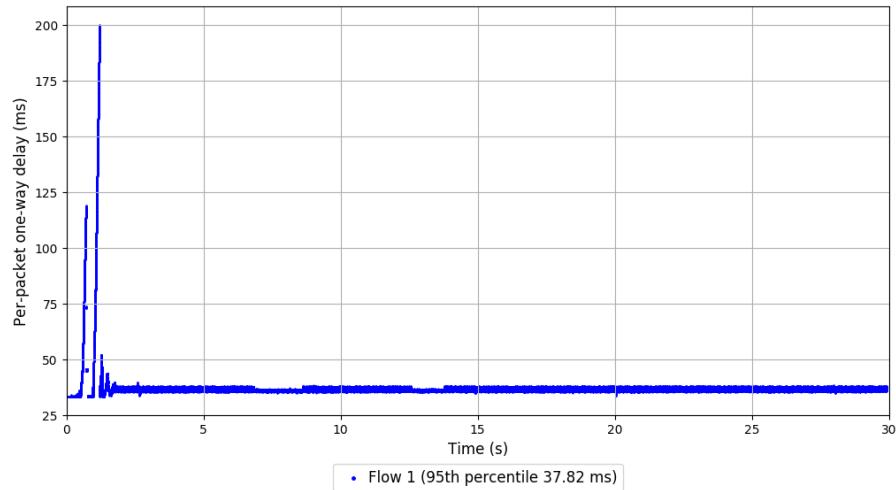
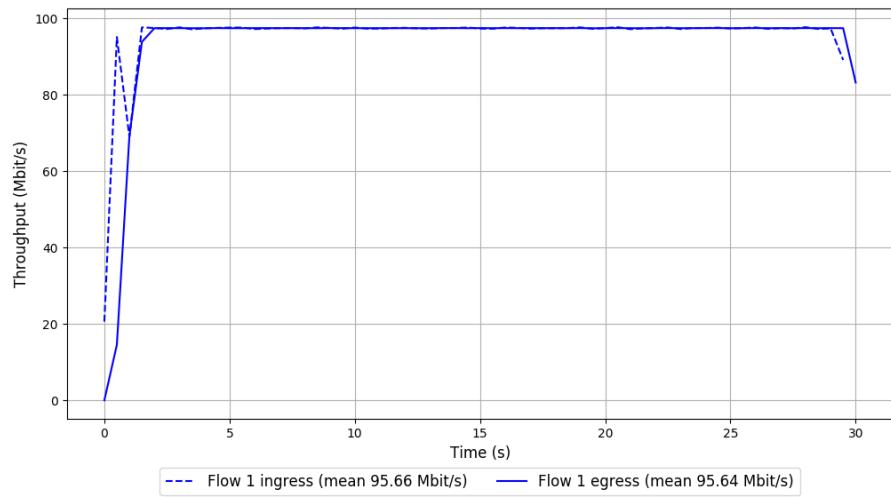


Run 1: Statistics of Indigo-MusesD

```
Start at: 2018-12-20 04:43:56
End at: 2018-12-20 04:44:26
Local clock offset: -1.453 ms
Remote clock offset: -4.175 ms

# Below is generated by plot.py at 2018-12-20 06:35:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.64 Mbit/s
95th percentile per-packet one-way delay: 37.821 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 95.64 Mbit/s
95th percentile per-packet one-way delay: 37.821 ms
Loss rate: 0.23%
```

Run 1: Report of Indigo-MusesD — Data Link

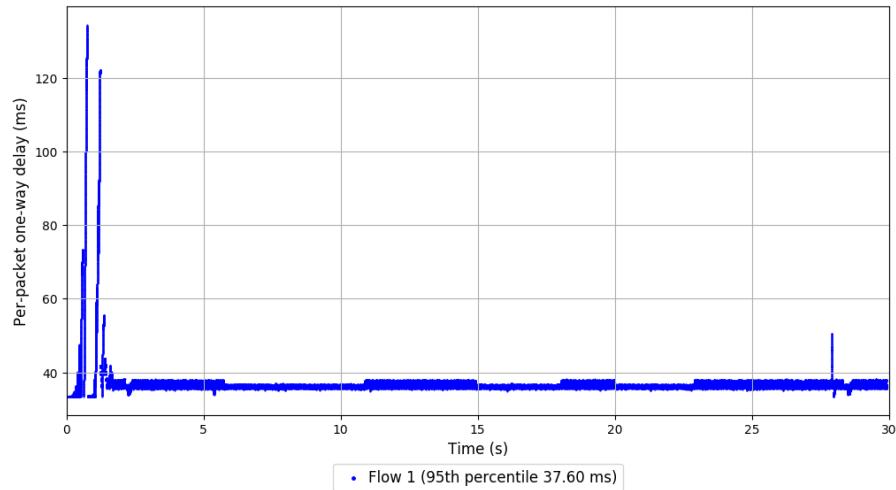
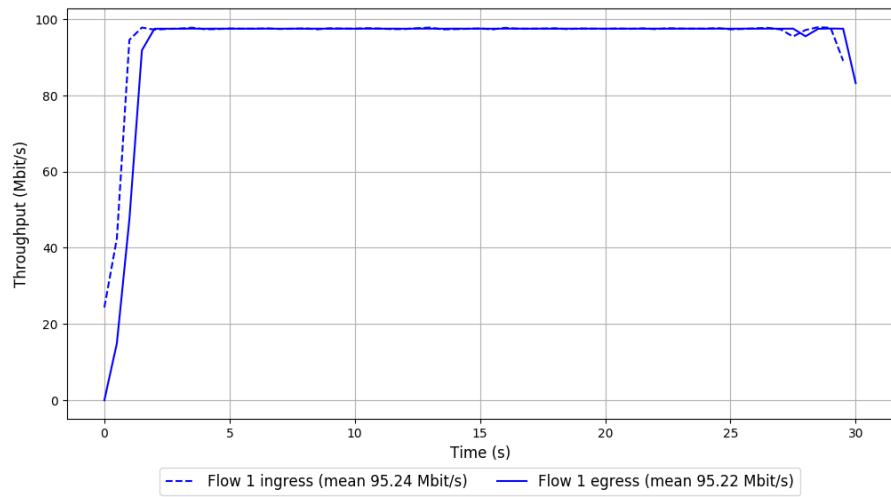


Run 2: Statistics of Indigo-MusesD

```
Start at: 2018-12-20 05:06:26
End at: 2018-12-20 05:06:56
Local clock offset: -3.172 ms
Remote clock offset: -3.419 ms

# Below is generated by plot.py at 2018-12-20 06:35:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.22 Mbit/s
95th percentile per-packet one-way delay: 37.605 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 95.22 Mbit/s
95th percentile per-packet one-way delay: 37.605 ms
Loss rate: 0.23%
```

Run 2: Report of Indigo-MusesD — Data Link

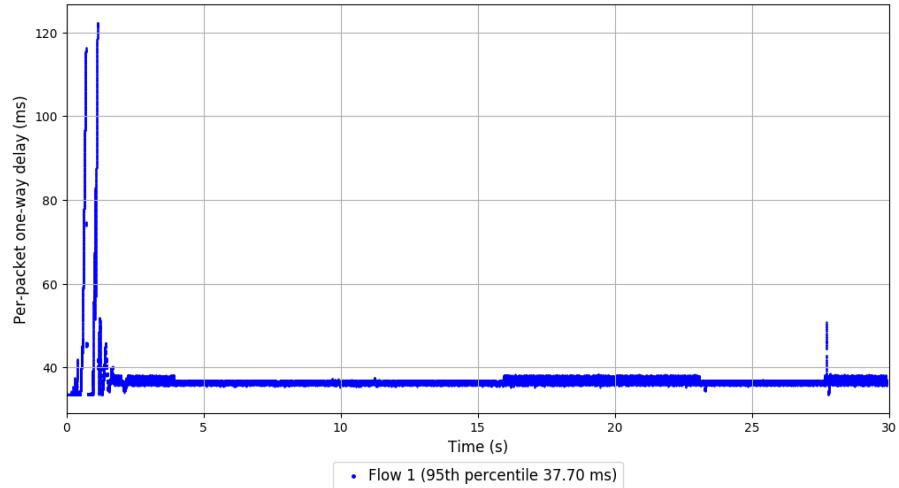
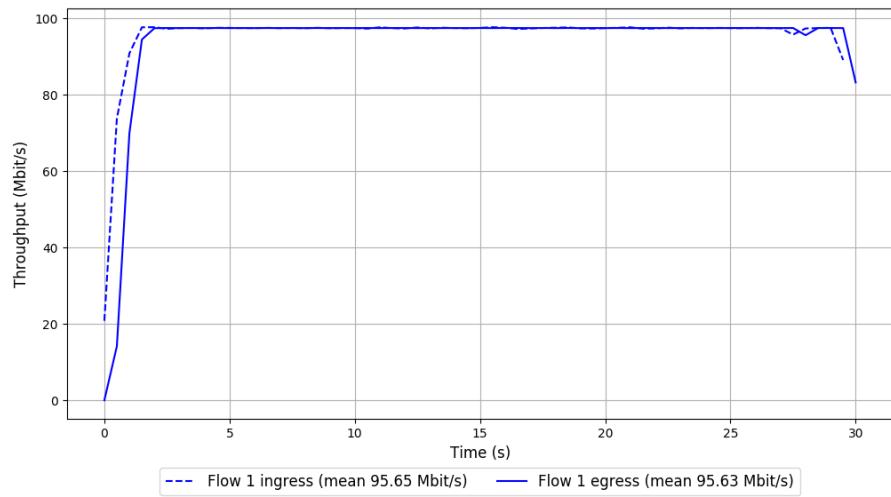


Run 3: Statistics of Indigo-MusesD

```
Start at: 2018-12-20 05:28:37
End at: 2018-12-20 05:29:07
Local clock offset: -3.033 ms
Remote clock offset: -2.736 ms

# Below is generated by plot.py at 2018-12-20 06:35:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.63 Mbit/s
95th percentile per-packet one-way delay: 37.698 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 95.63 Mbit/s
95th percentile per-packet one-way delay: 37.698 ms
Loss rate: 0.23%
```

Run 3: Report of Indigo-MusesD — Data Link

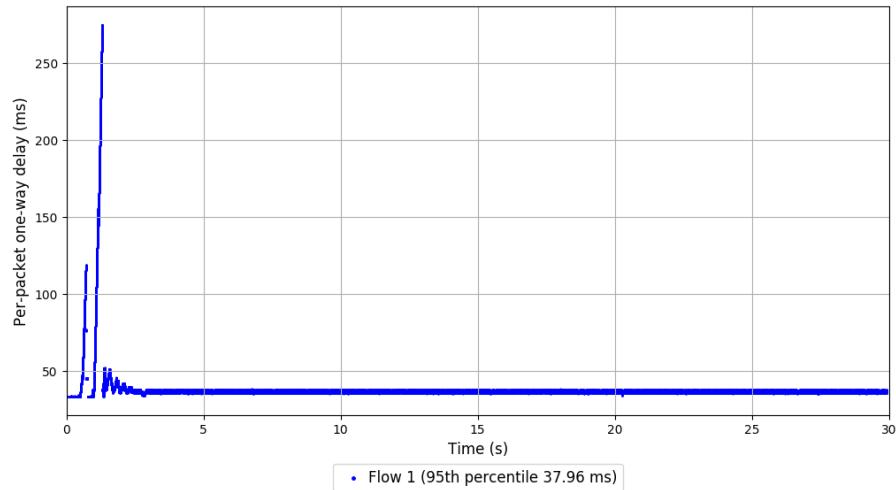
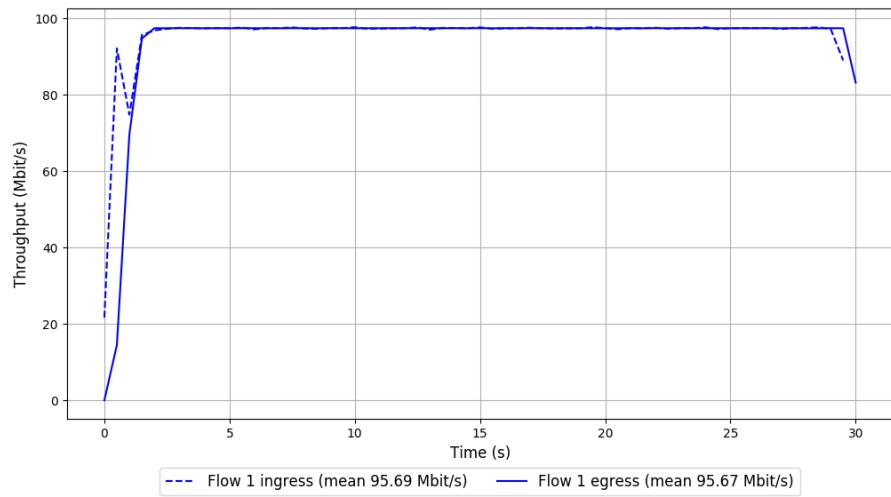


Run 4: Statistics of Indigo-MusesD

```
Start at: 2018-12-20 05:50:41
End at: 2018-12-20 05:51:11
Local clock offset: 0.193 ms
Remote clock offset: -2.124 ms

# Below is generated by plot.py at 2018-12-20 06:35:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.67 Mbit/s
95th percentile per-packet one-way delay: 37.956 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 95.67 Mbit/s
95th percentile per-packet one-way delay: 37.956 ms
Loss rate: 0.23%
```

Run 4: Report of Indigo-MusesD — Data Link

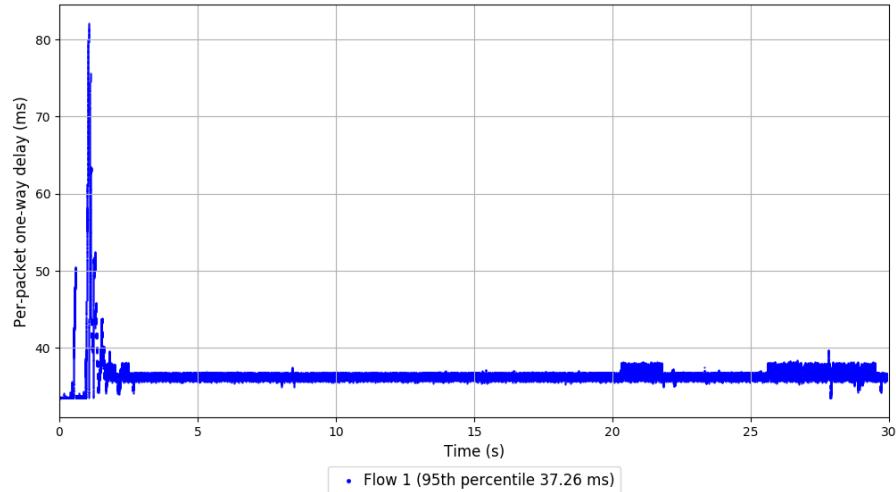
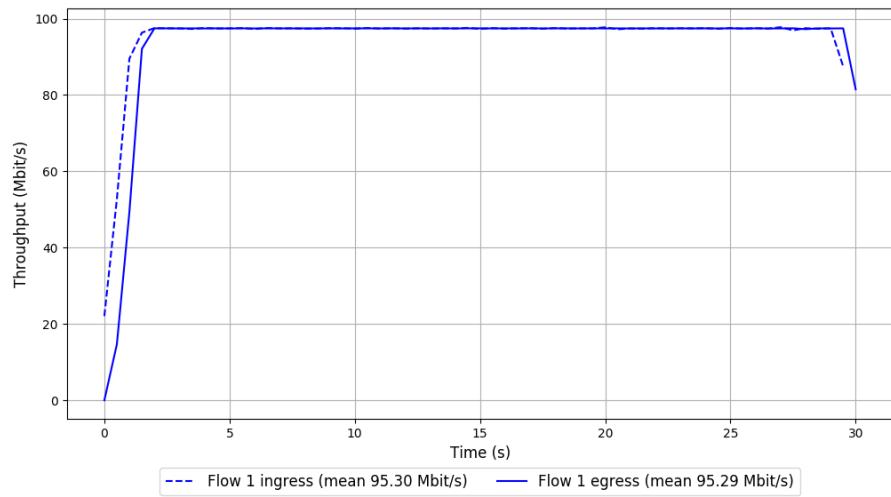


Run 5: Statistics of Indigo-MusesD

```
Start at: 2018-12-20 06:13:01
End at: 2018-12-20 06:13:31
Local clock offset: 0.797 ms
Remote clock offset: -1.713 ms

# Below is generated by plot.py at 2018-12-20 06:35:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.29 Mbit/s
95th percentile per-packet one-way delay: 37.264 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 95.29 Mbit/s
95th percentile per-packet one-way delay: 37.264 ms
Loss rate: 0.23%
```

Run 5: Report of Indigo-MusesD — Data Link

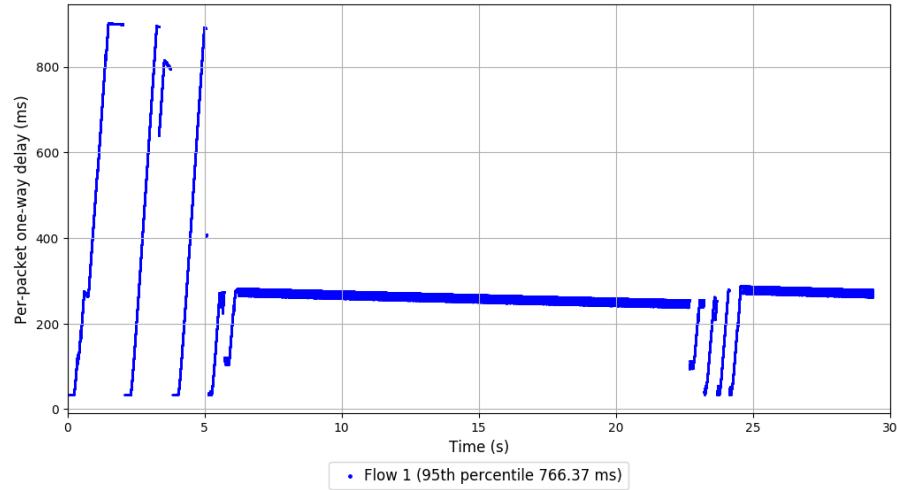
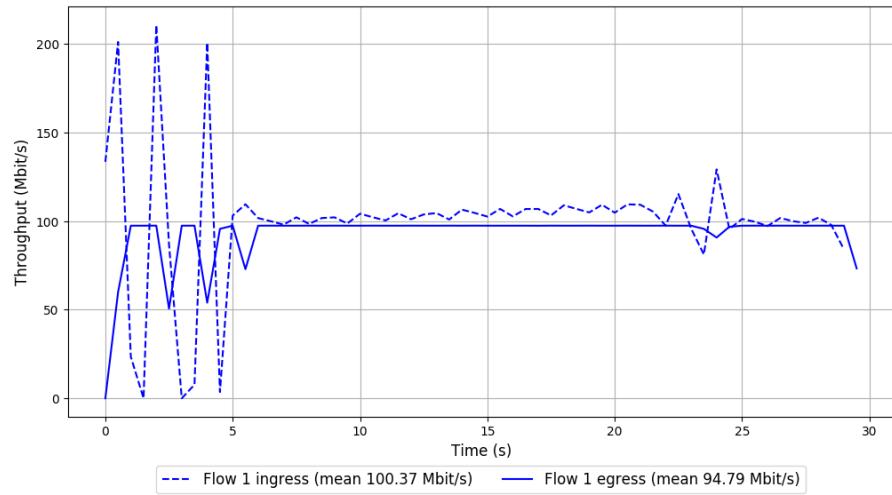


Run 1: Statistics of Indigo-MusesT

```
Start at: 2018-12-20 04:37:01
End at: 2018-12-20 04:37:31
Local clock offset: 0.381 ms
Remote clock offset: -4.224 ms

# Below is generated by plot.py at 2018-12-20 06:35:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.79 Mbit/s
95th percentile per-packet one-way delay: 766.371 ms
Loss rate: 5.74%
-- Flow 1:
Average throughput: 94.79 Mbit/s
95th percentile per-packet one-way delay: 766.371 ms
Loss rate: 5.74%
```

Run 1: Report of Indigo-MusesT — Data Link

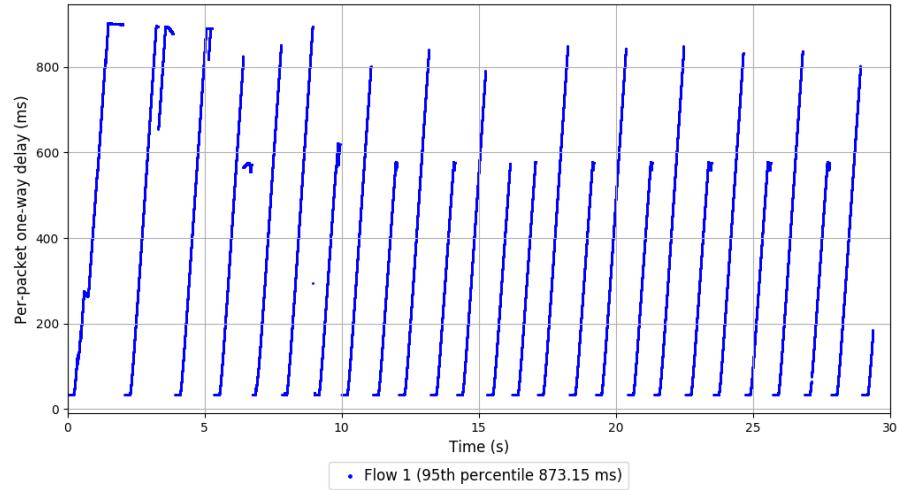
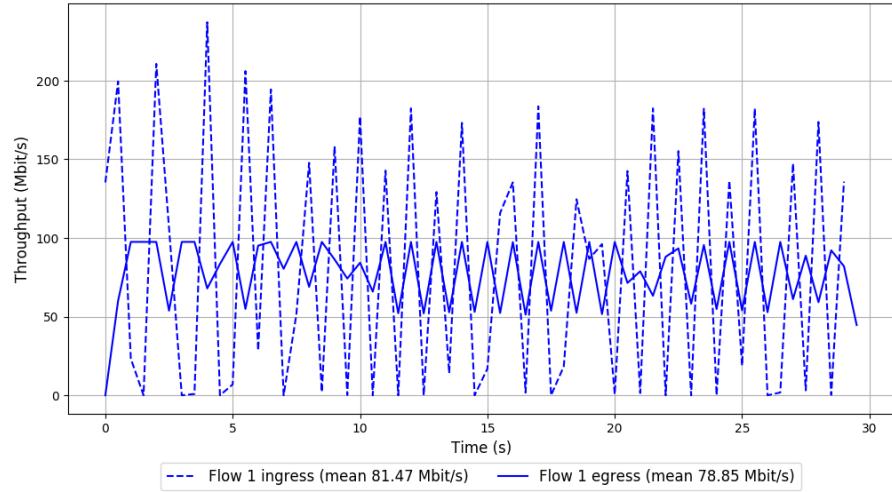


Run 2: Statistics of Indigo-MusesT

```
Start at: 2018-12-20 04:59:16
End at: 2018-12-20 04:59:46
Local clock offset: -2.953 ms
Remote clock offset: -3.613 ms

# Below is generated by plot.py at 2018-12-20 06:35:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 78.85 Mbit/s
95th percentile per-packet one-way delay: 873.154 ms
Loss rate: 2.96%
-- Flow 1:
Average throughput: 78.85 Mbit/s
95th percentile per-packet one-way delay: 873.154 ms
Loss rate: 2.96%
```

Run 2: Report of Indigo-MusesT — Data Link

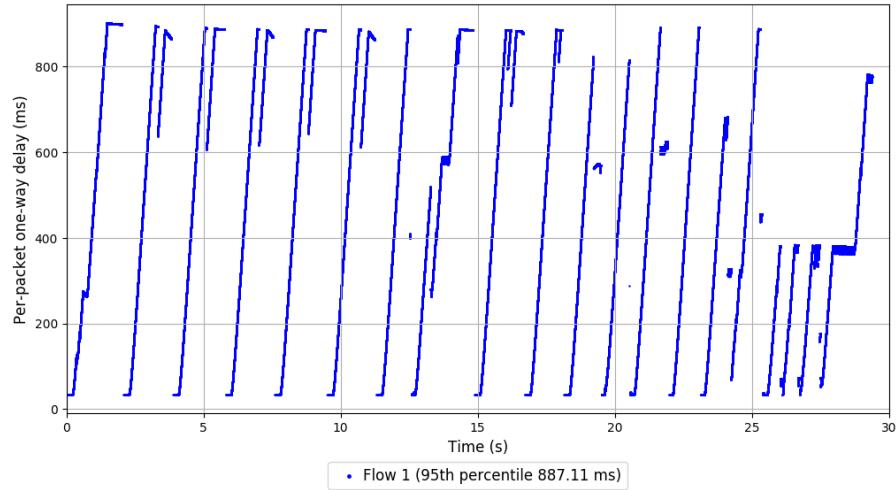
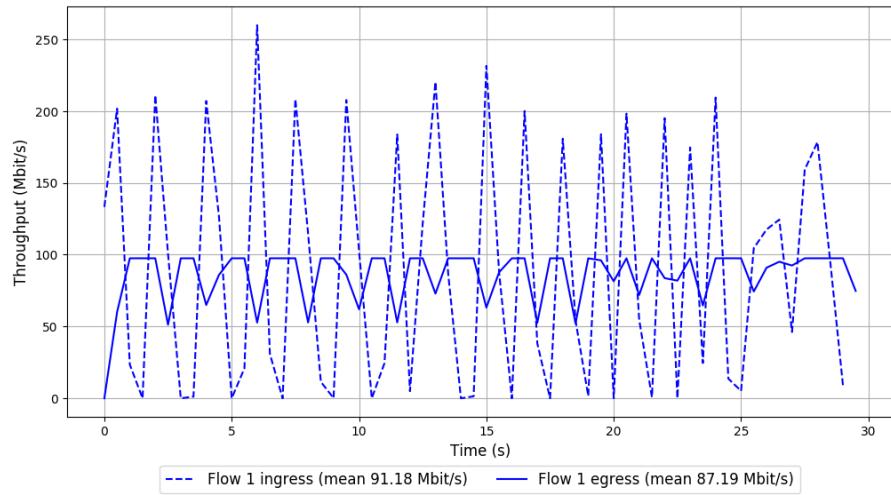


Run 3: Statistics of Indigo-MusesT

```
Start at: 2018-12-20 05:21:37
End at: 2018-12-20 05:22:07
Local clock offset: -2.963 ms
Remote clock offset: -2.693 ms

# Below is generated by plot.py at 2018-12-20 06:35:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 87.19 Mbit/s
95th percentile per-packet one-way delay: 887.114 ms
Loss rate: 3.29%
-- Flow 1:
Average throughput: 87.19 Mbit/s
95th percentile per-packet one-way delay: 887.114 ms
Loss rate: 3.29%
```

Run 3: Report of Indigo-MusesT — Data Link

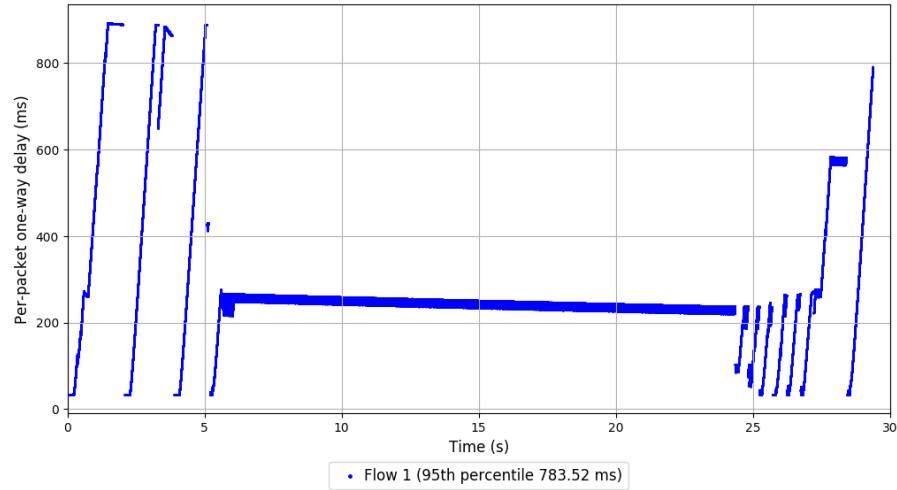
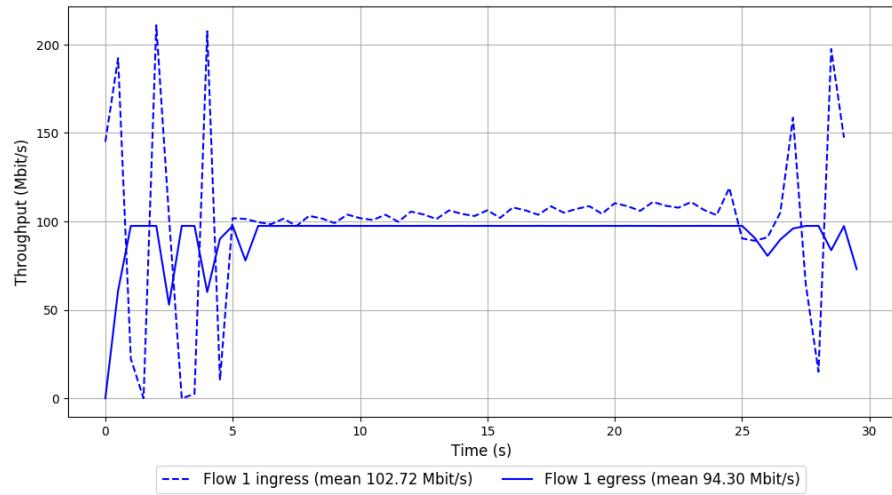


Run 4: Statistics of Indigo-MusesT

```
Start at: 2018-12-20 05:43:45
End at: 2018-12-20 05:44:15
Local clock offset: -0.775 ms
Remote clock offset: -2.086 ms

# Below is generated by plot.py at 2018-12-20 06:36:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.30 Mbit/s
95th percentile per-packet one-way delay: 783.517 ms
Loss rate: 8.40%
-- Flow 1:
Average throughput: 94.30 Mbit/s
95th percentile per-packet one-way delay: 783.517 ms
Loss rate: 8.40%
```

Run 4: Report of Indigo-MusesT — Data Link

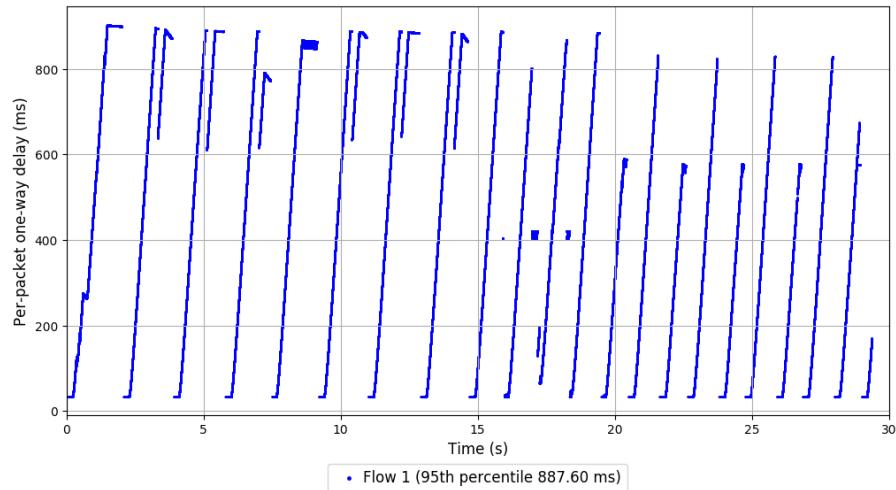
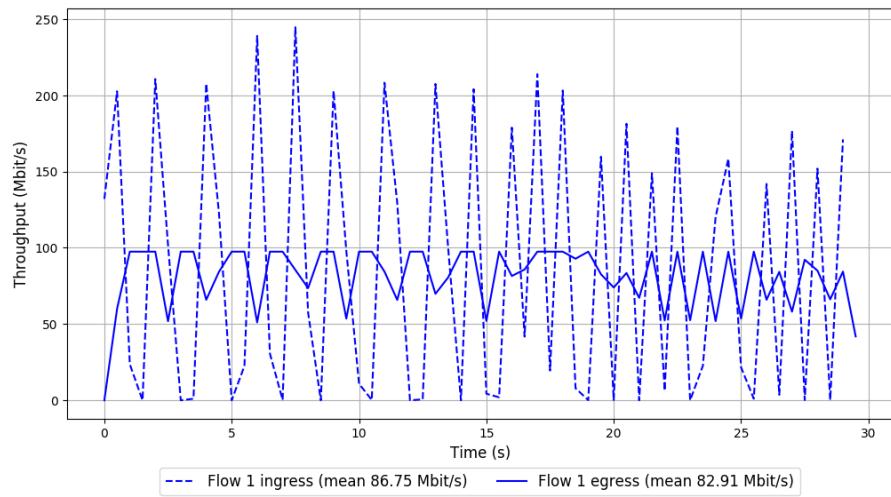


Run 5: Statistics of Indigo-MusesT

```
Start at: 2018-12-20 06:06:00
End at: 2018-12-20 06:06:30
Local clock offset: 1.18 ms
Remote clock offset: -1.787 ms

# Below is generated by plot.py at 2018-12-20 06:36:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 82.91 Mbit/s
95th percentile per-packet one-way delay: 887.597 ms
Loss rate: 4.12%
-- Flow 1:
Average throughput: 82.91 Mbit/s
95th percentile per-packet one-way delay: 887.597 ms
Loss rate: 4.12%
```

Run 5: Report of Indigo-MusesT — Data Link

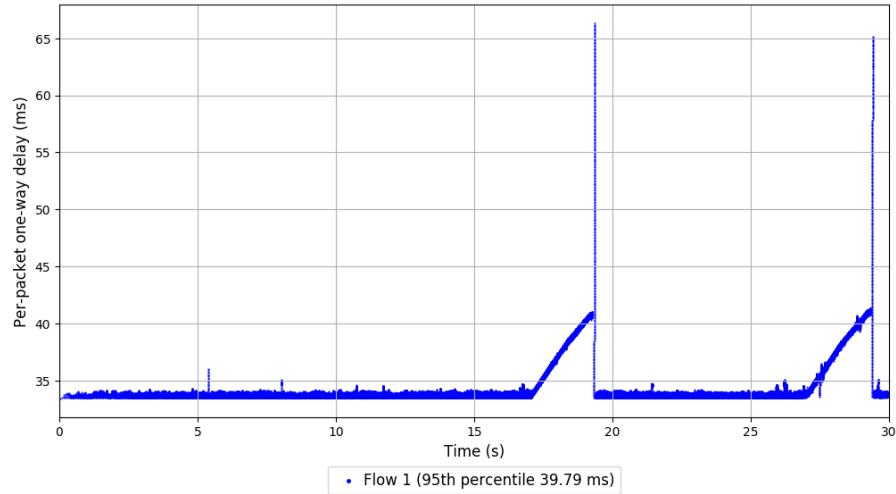
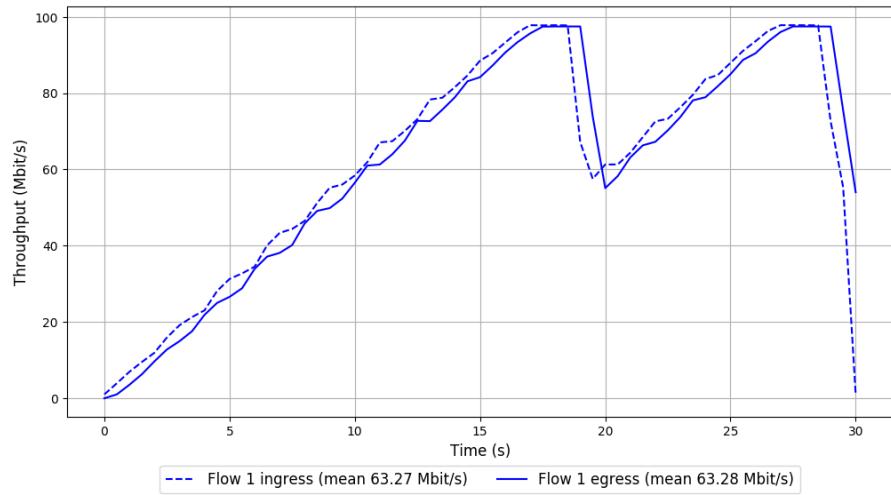


```
Run 1: Statistics of LEDBAT
```

```
Start at: 2018-12-20 04:54:31
End at: 2018-12-20 04:55:01
Local clock offset: -2.646 ms
Remote clock offset: -3.83 ms

# Below is generated by plot.py at 2018-12-20 06:36:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 63.28 Mbit/s
95th percentile per-packet one-way delay: 39.794 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 63.28 Mbit/s
95th percentile per-packet one-way delay: 39.794 ms
Loss rate: 0.20%
```

Run 1: Report of LEDBAT — Data Link

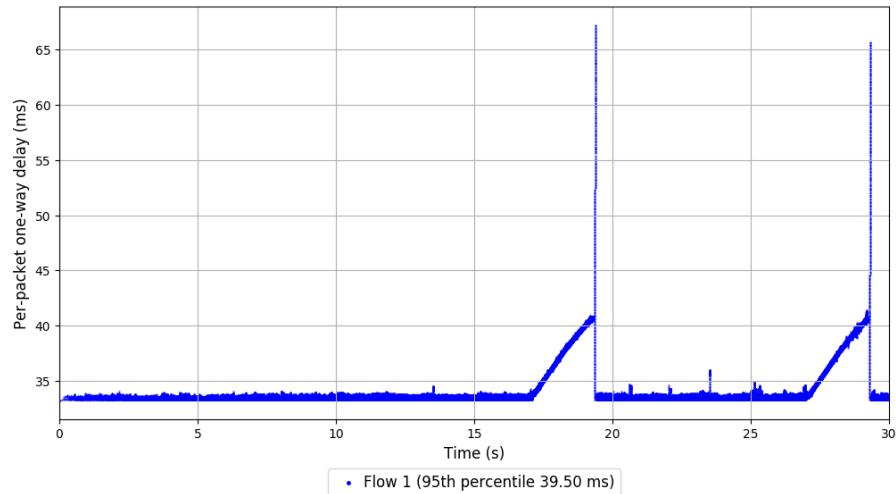
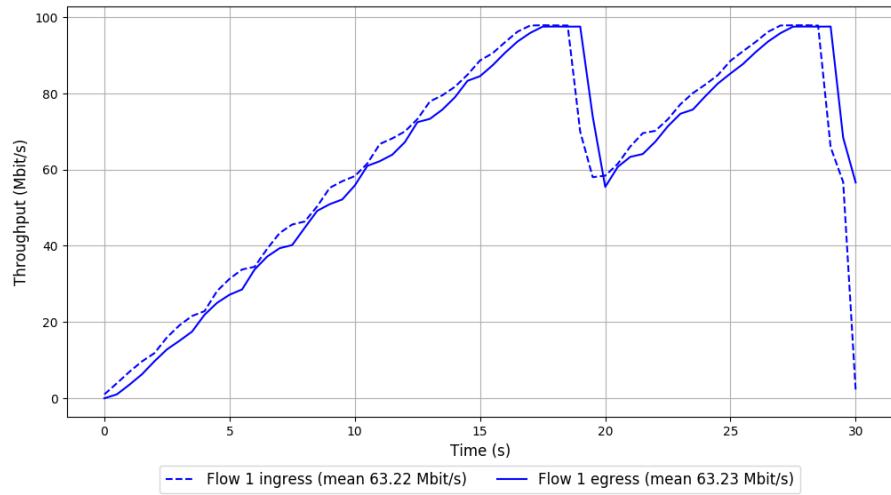


Run 2: Statistics of LEDBAT

```
Start at: 2018-12-20 05:17:02
End at: 2018-12-20 05:17:32
Local clock offset: -2.957 ms
Remote clock offset: -2.883 ms

# Below is generated by plot.py at 2018-12-20 06:36:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 63.23 Mbit/s
95th percentile per-packet one-way delay: 39.497 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 63.23 Mbit/s
95th percentile per-packet one-way delay: 39.497 ms
Loss rate: 0.20%
```

Run 2: Report of LEDBAT — Data Link

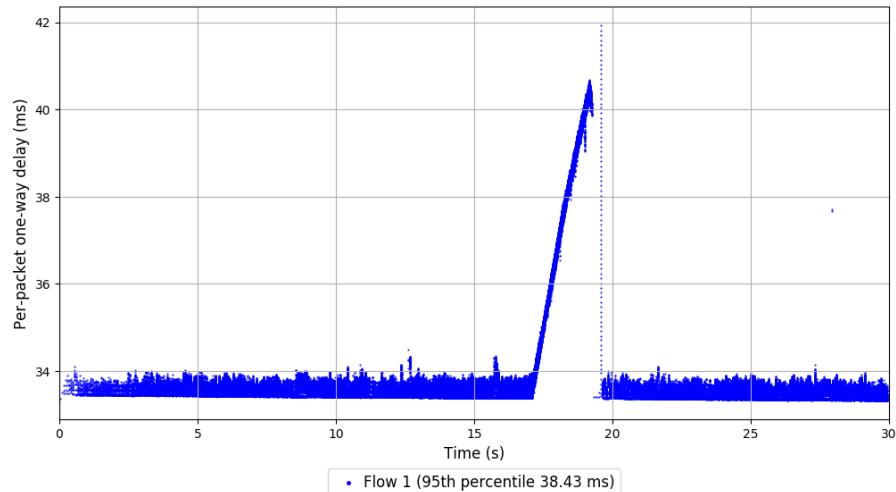
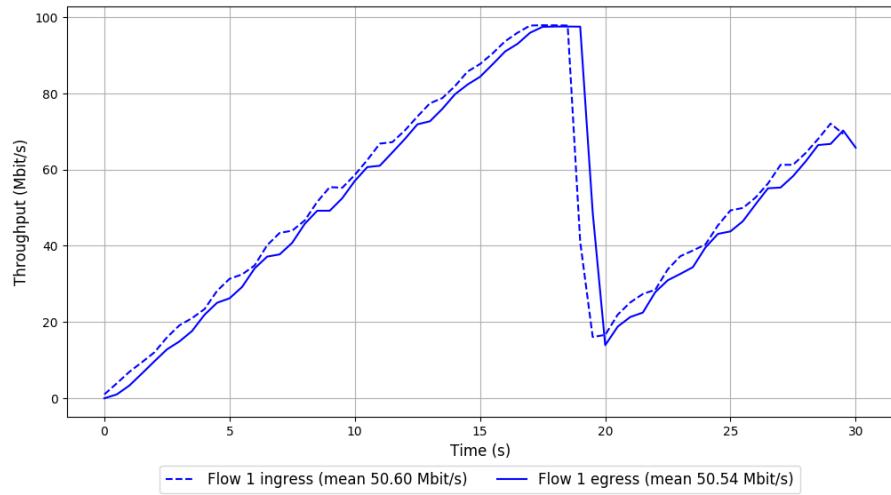


Run 3: Statistics of LEDBAT

```
Start at: 2018-12-20 05:39:12
End at: 2018-12-20 05:39:42
Local clock offset: -1.878 ms
Remote clock offset: -2.382 ms

# Below is generated by plot.py at 2018-12-20 06:36:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 50.54 Mbit/s
95th percentile per-packet one-way delay: 38.426 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 50.54 Mbit/s
95th percentile per-packet one-way delay: 38.426 ms
Loss rate: 0.32%
```

Run 3: Report of LEDBAT — Data Link

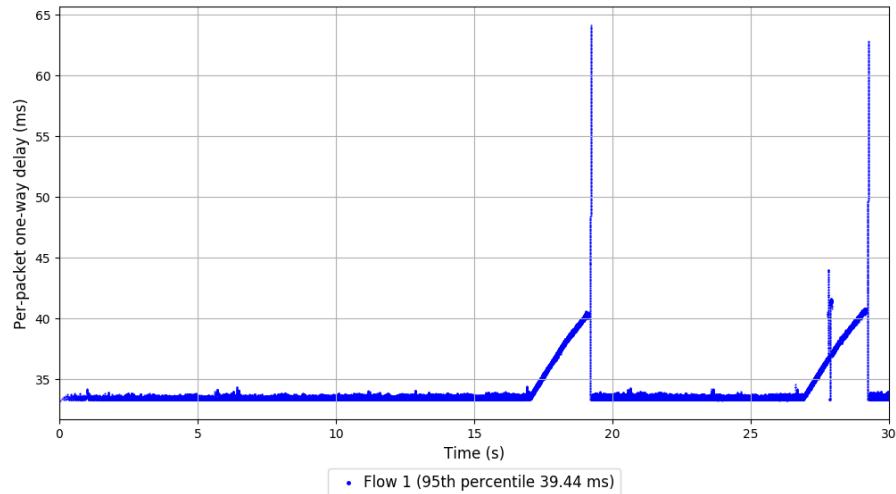
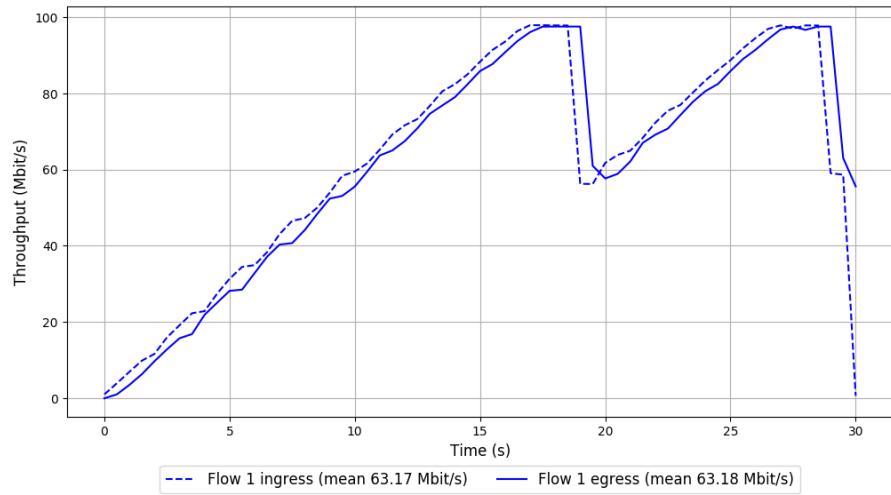


Run 4: Statistics of LEDBAT

```
Start at: 2018-12-20 06:01:19
End at: 2018-12-20 06:01:49
Local clock offset: 0.964 ms
Remote clock offset: -1.765 ms

# Below is generated by plot.py at 2018-12-20 06:36:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 63.18 Mbit/s
95th percentile per-packet one-way delay: 39.443 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 63.18 Mbit/s
95th percentile per-packet one-way delay: 39.443 ms
Loss rate: 0.20%
```

Run 4: Report of LEDBAT — Data Link

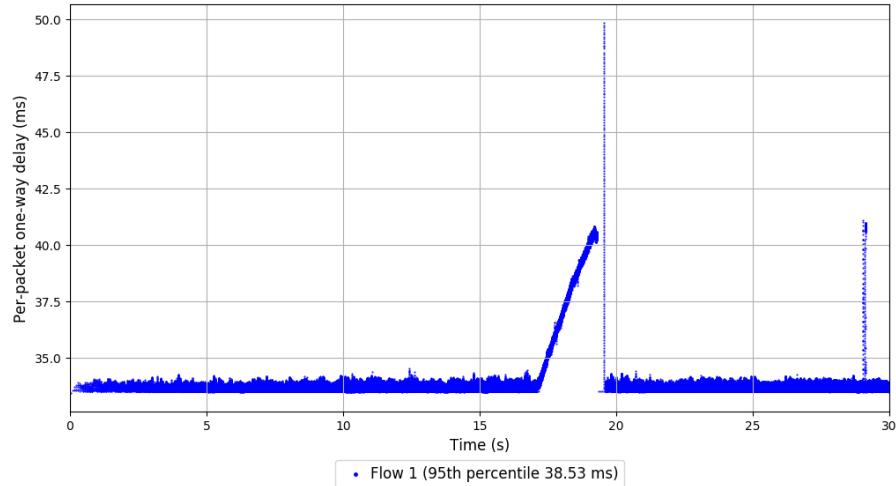
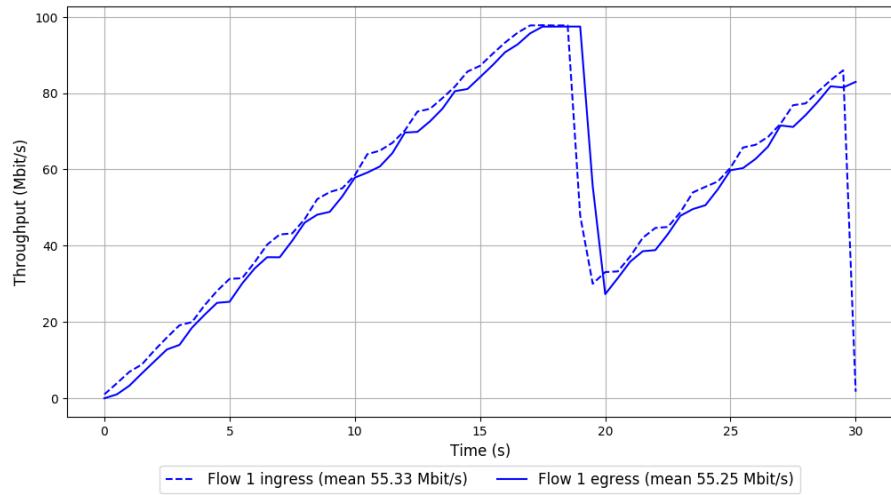


Run 5: Statistics of LEDBAT

```
Start at: 2018-12-20 06:23:54
End at: 2018-12-20 06:24:24
Local clock offset: 0.709 ms
Remote clock offset: -1.568 ms

# Below is generated by plot.py at 2018-12-20 06:36:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 55.25 Mbit/s
95th percentile per-packet one-way delay: 38.532 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 55.25 Mbit/s
95th percentile per-packet one-way delay: 38.532 ms
Loss rate: 0.34%
```

Run 5: Report of LEDBAT — Data Link

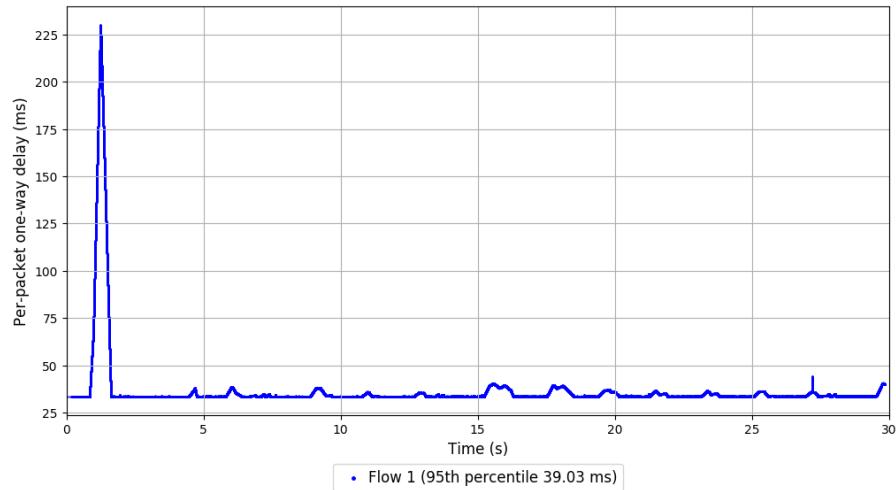
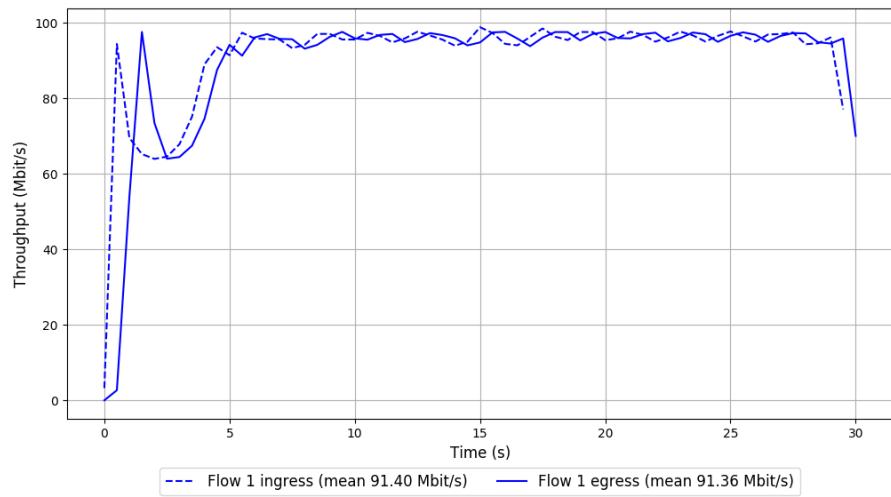


Run 1: Statistics of PCC-Allegro

```
Start at: 2018-12-20 04:41:37
End at: 2018-12-20 04:42:07
Local clock offset: -0.924 ms
Remote clock offset: -4.245 ms

# Below is generated by plot.py at 2018-12-20 06:36:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.36 Mbit/s
95th percentile per-packet one-way delay: 39.033 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 91.36 Mbit/s
95th percentile per-packet one-way delay: 39.033 ms
Loss rate: 0.26%
```

Run 1: Report of PCC-Allegro — Data Link

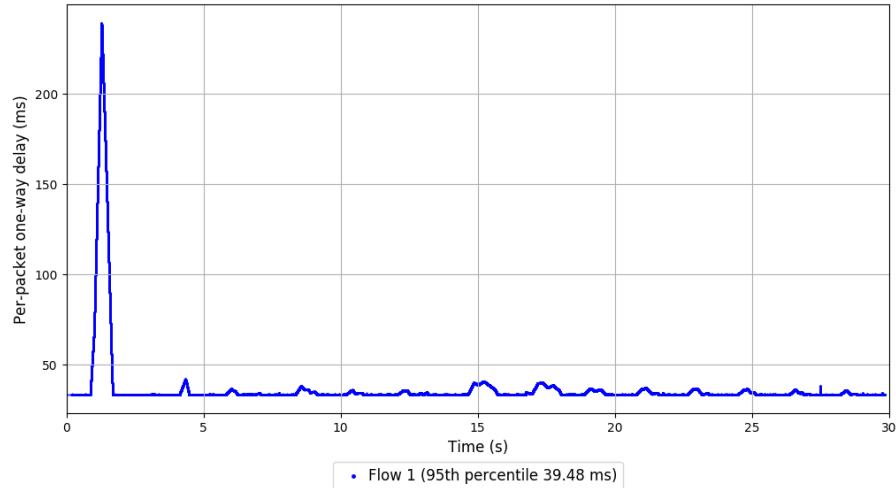
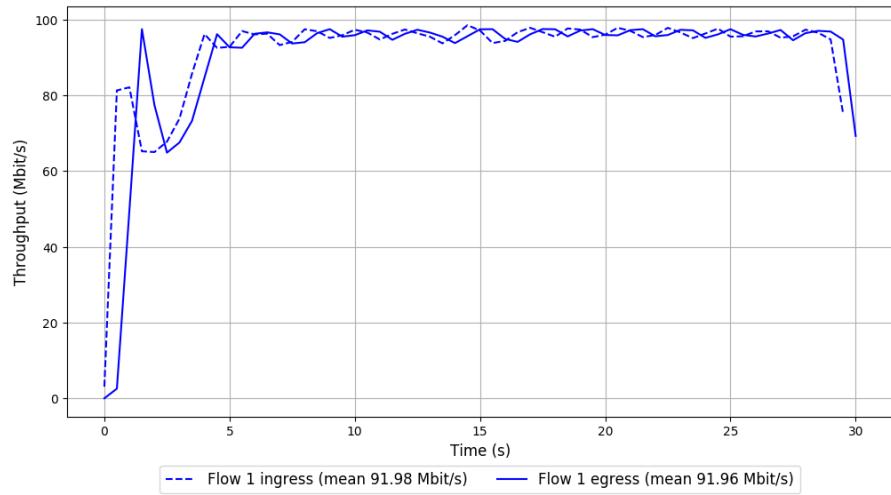


Run 2: Statistics of PCC-Allegro

```
Start at: 2018-12-20 05:04:03
End at: 2018-12-20 05:04:33
Local clock offset: -3.164 ms
Remote clock offset: -3.492 ms

# Below is generated by plot.py at 2018-12-20 06:36:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.96 Mbit/s
95th percentile per-packet one-way delay: 39.475 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 91.96 Mbit/s
95th percentile per-packet one-way delay: 39.475 ms
Loss rate: 0.23%
```

Run 2: Report of PCC-Allegro — Data Link

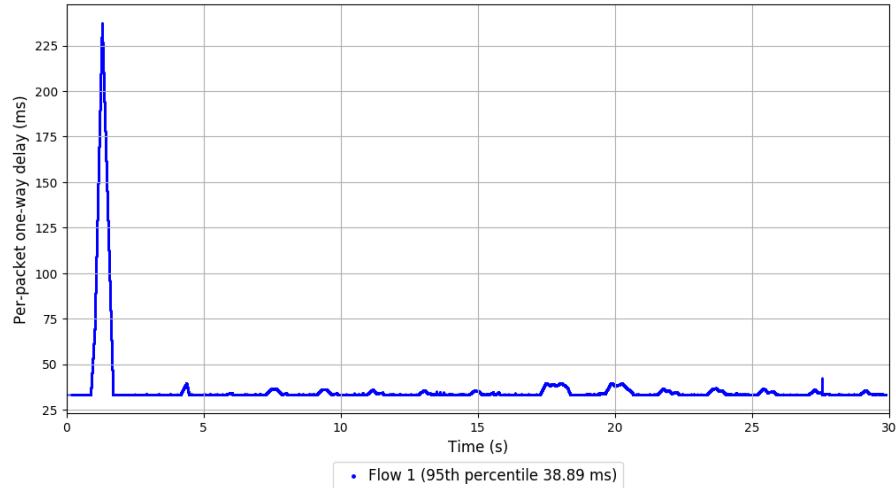
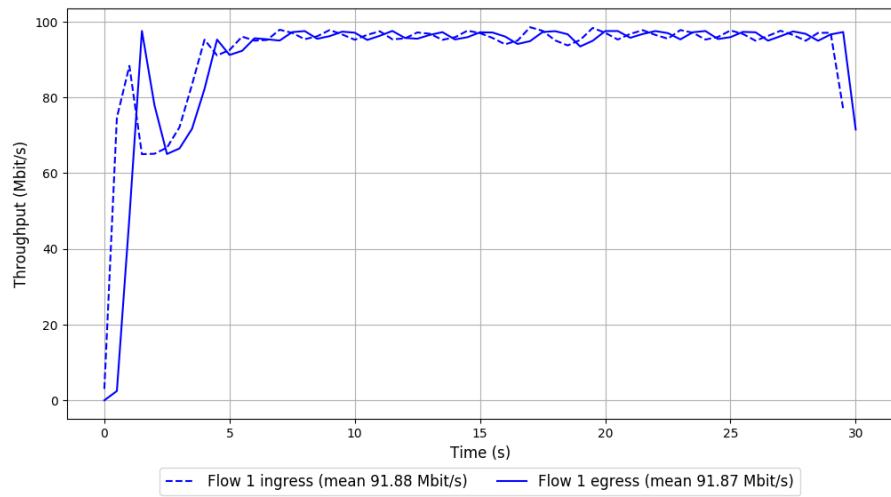


Run 3: Statistics of PCC-Allegro

```
Start at: 2018-12-20 05:26:14
End at: 2018-12-20 05:26:44
Local clock offset: -3.005 ms
Remote clock offset: -2.627 ms

# Below is generated by plot.py at 2018-12-20 06:36:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.87 Mbit/s
95th percentile per-packet one-way delay: 38.888 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 91.87 Mbit/s
95th percentile per-packet one-way delay: 38.888 ms
Loss rate: 0.23%
```

Run 3: Report of PCC-Allegro — Data Link

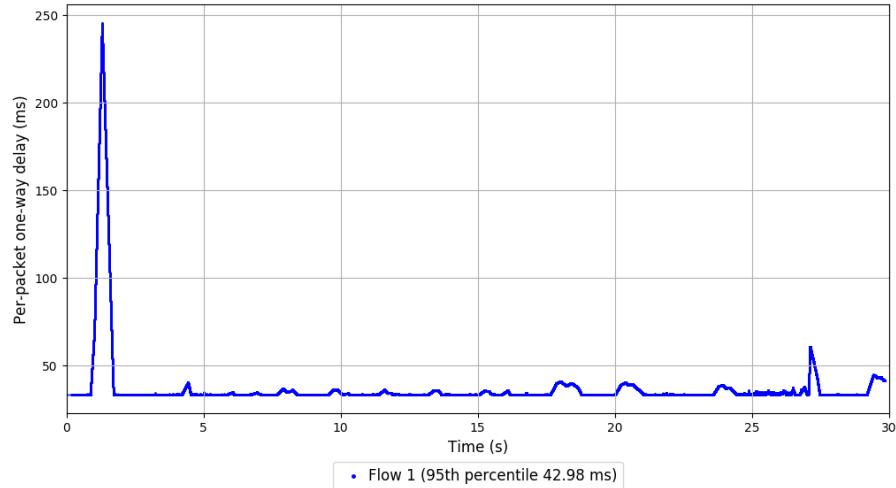
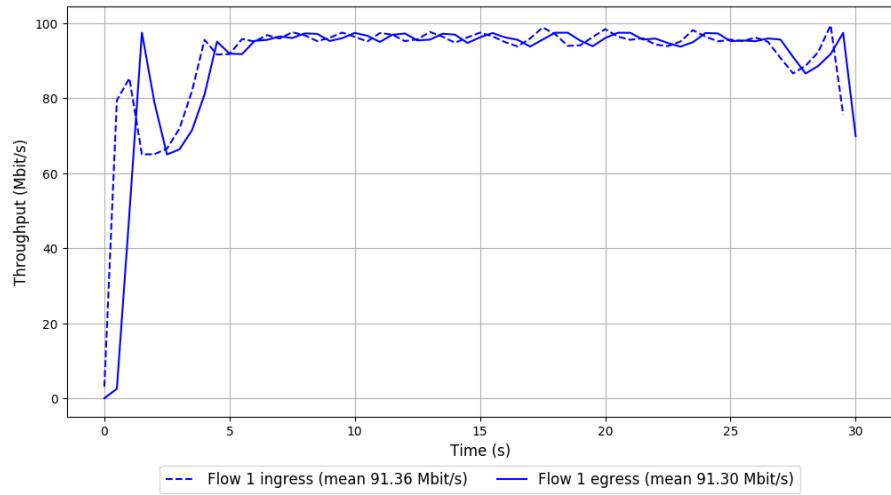


Run 4: Statistics of PCC-Allegro

```
Start at: 2018-12-20 05:48:21
End at: 2018-12-20 05:48:51
Local clock offset: -0.058 ms
Remote clock offset: -2.184 ms

# Below is generated by plot.py at 2018-12-20 06:36:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.30 Mbit/s
95th percentile per-packet one-way delay: 42.978 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 91.30 Mbit/s
95th percentile per-packet one-way delay: 42.978 ms
Loss rate: 0.27%
```

Run 4: Report of PCC-Allegro — Data Link

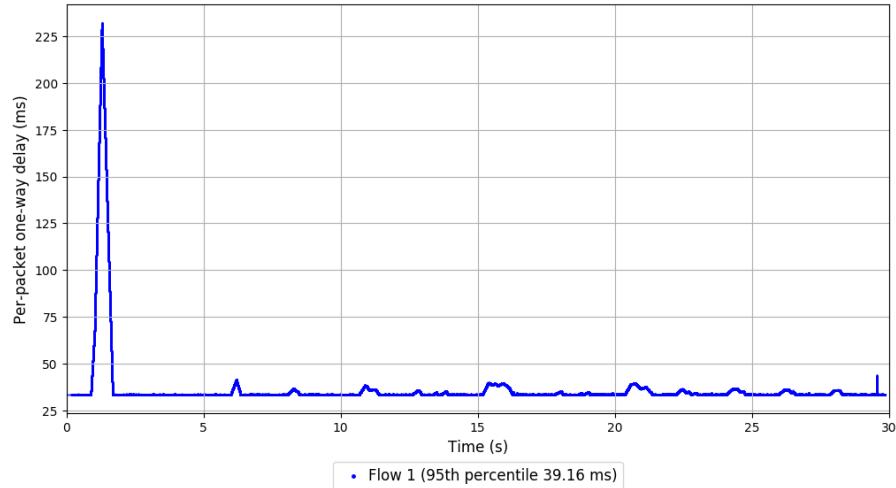
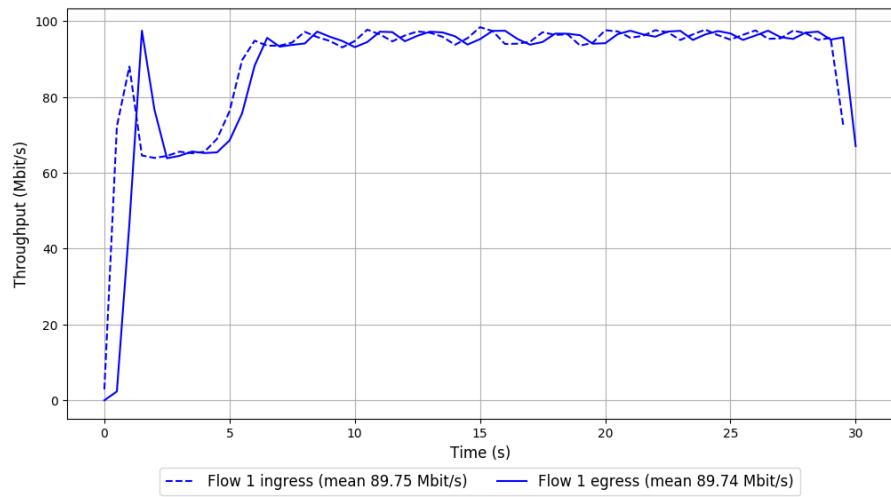


Run 5: Statistics of PCC-Allegro

```
Start at: 2018-12-20 06:10:39
End at: 2018-12-20 06:11:09
Local clock offset: 0.873 ms
Remote clock offset: -1.921 ms

# Below is generated by plot.py at 2018-12-20 06:37:07
# Datalink statistics
-- Total of 1 flow:
Average throughput: 89.74 Mbit/s
95th percentile per-packet one-way delay: 39.155 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 89.74 Mbit/s
95th percentile per-packet one-way delay: 39.155 ms
Loss rate: 0.23%
```

Run 5: Report of PCC-Allegro — Data Link

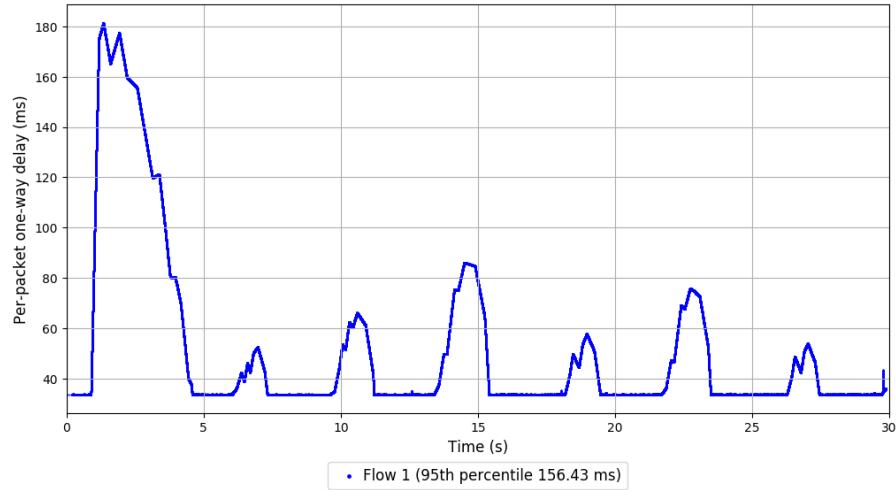
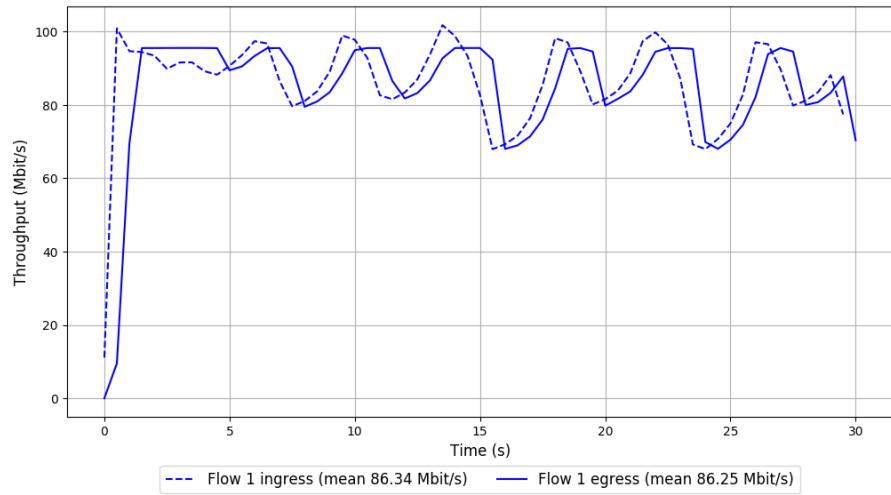


```
Run 1: Statistics of PCC-Expr
```

```
Start at: 2018-12-20 04:52:05
End at: 2018-12-20 04:52:35
Local clock offset: -2.462 ms
Remote clock offset: -4.124 ms

# Below is generated by plot.py at 2018-12-20 06:37:56
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.25 Mbit/s
95th percentile per-packet one-way delay: 156.426 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 86.25 Mbit/s
95th percentile per-packet one-way delay: 156.426 ms
Loss rate: 0.32%
```

Run 1: Report of PCC-Expr — Data Link

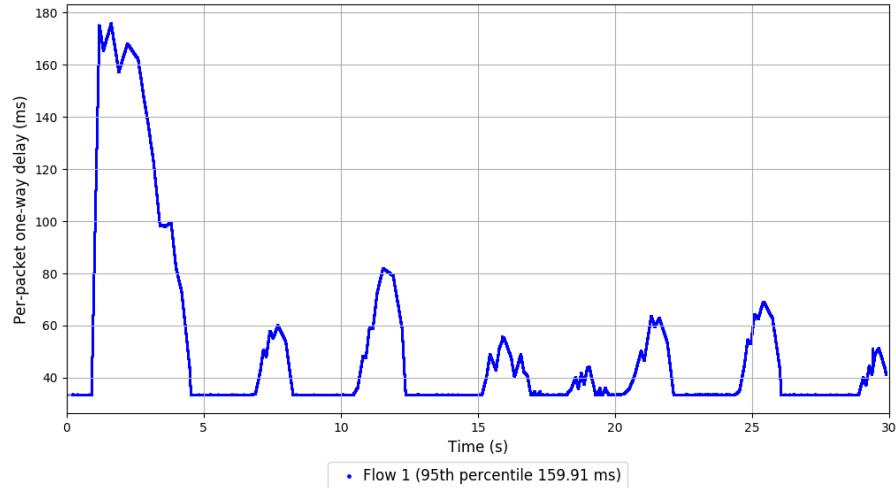
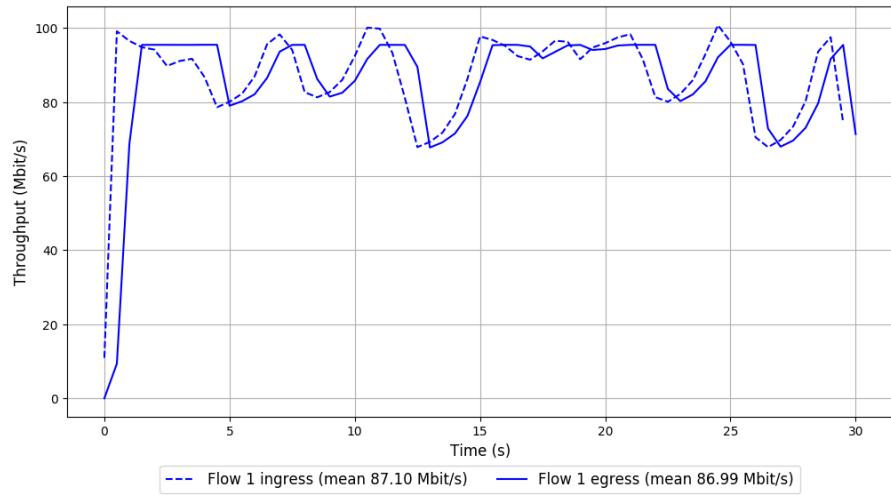


Run 2: Statistics of PCC-Expr

```
Start at: 2018-12-20 05:14:36
End at: 2018-12-20 05:15:06
Local clock offset: -2.981 ms
Remote clock offset: -3.128 ms

# Below is generated by plot.py at 2018-12-20 06:38:09
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.99 Mbit/s
95th percentile per-packet one-way delay: 159.905 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 86.99 Mbit/s
95th percentile per-packet one-way delay: 159.905 ms
Loss rate: 0.34%
```

Run 2: Report of PCC-Expr — Data Link

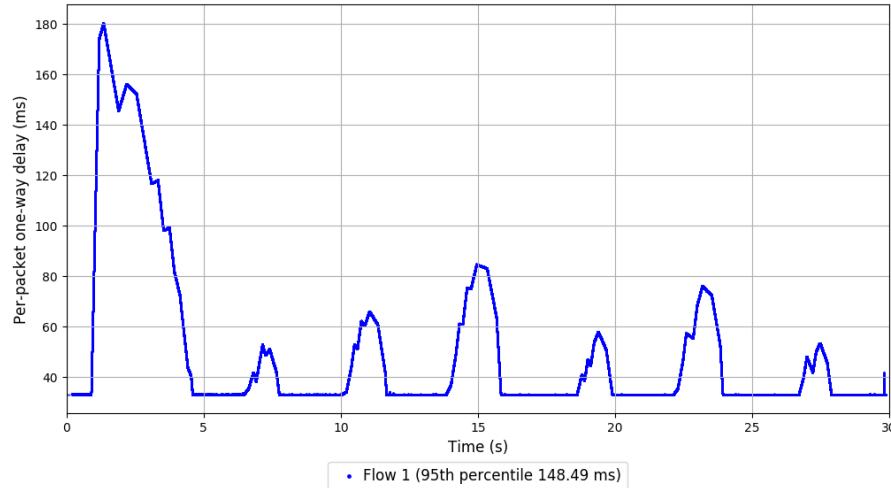
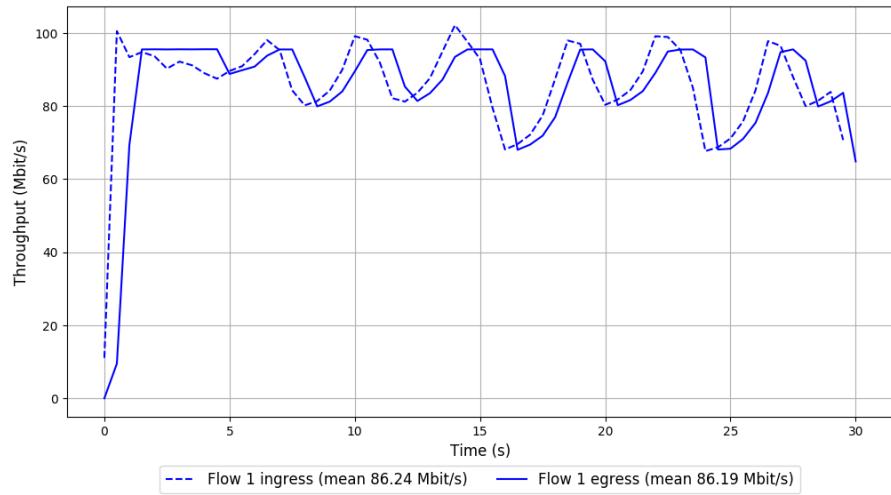


Run 3: Statistics of PCC-Expr

```
Start at: 2018-12-20 05:36:46
End at: 2018-12-20 05:37:16
Local clock offset: -2.702 ms
Remote clock offset: -2.272 ms

# Below is generated by plot.py at 2018-12-20 06:38:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.19 Mbit/s
95th percentile per-packet one-way delay: 148.487 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 86.19 Mbit/s
95th percentile per-packet one-way delay: 148.487 ms
Loss rate: 0.27%
```

Run 3: Report of PCC-Expr — Data Link

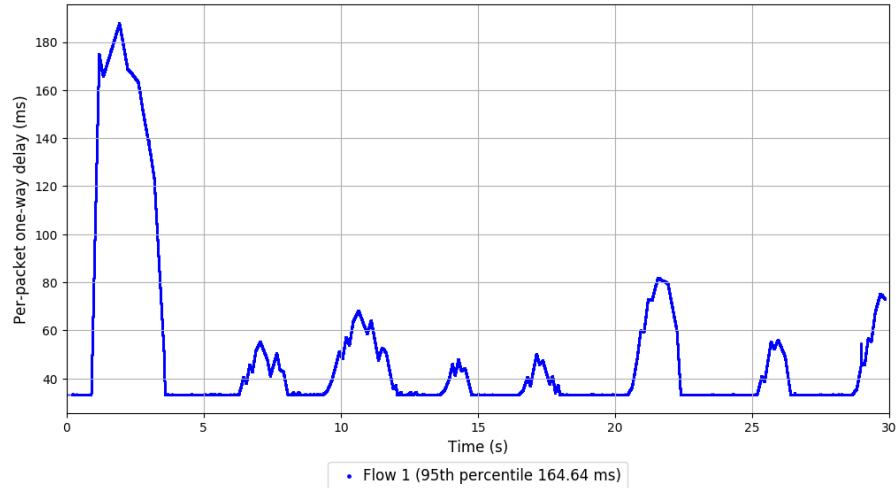
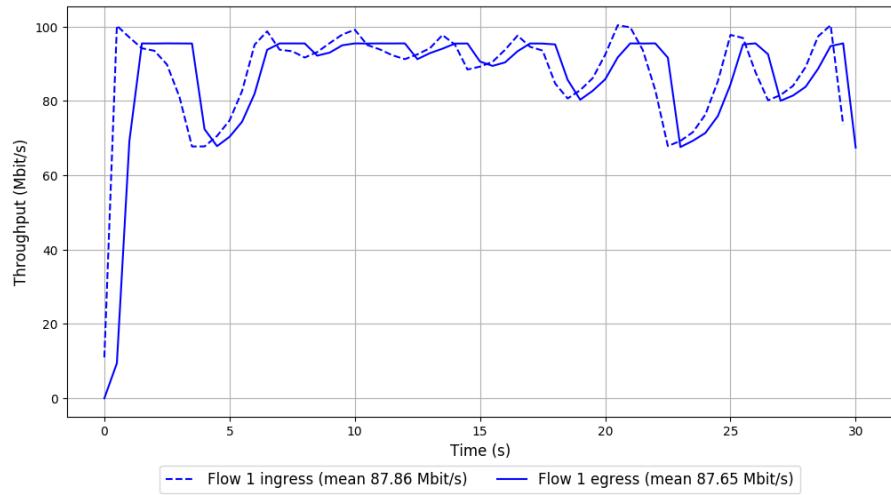


Run 4: Statistics of PCC-Expr

```
Start at: 2018-12-20 05:58:49
End at: 2018-12-20 05:59:19
Local clock offset: 0.846 ms
Remote clock offset: -1.785 ms

# Below is generated by plot.py at 2018-12-20 06:38:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 87.65 Mbit/s
95th percentile per-packet one-way delay: 164.643 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 87.65 Mbit/s
95th percentile per-packet one-way delay: 164.643 ms
Loss rate: 0.45%
```

Run 4: Report of PCC-Expr — Data Link

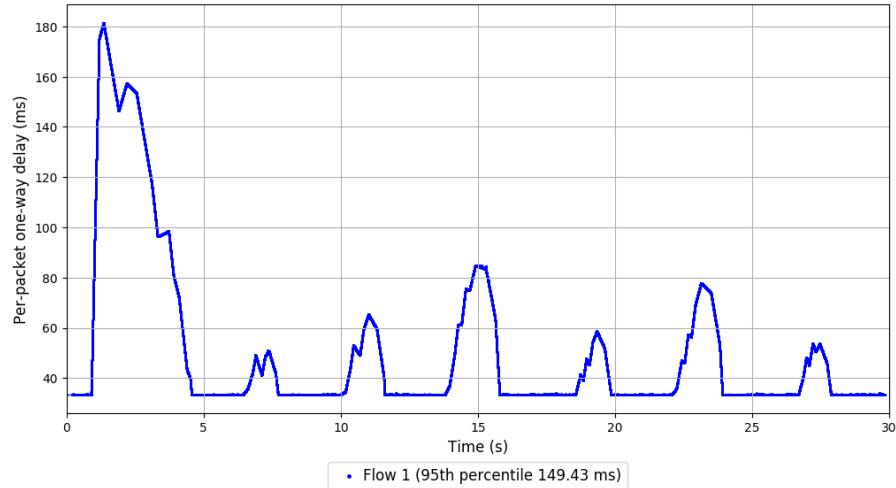
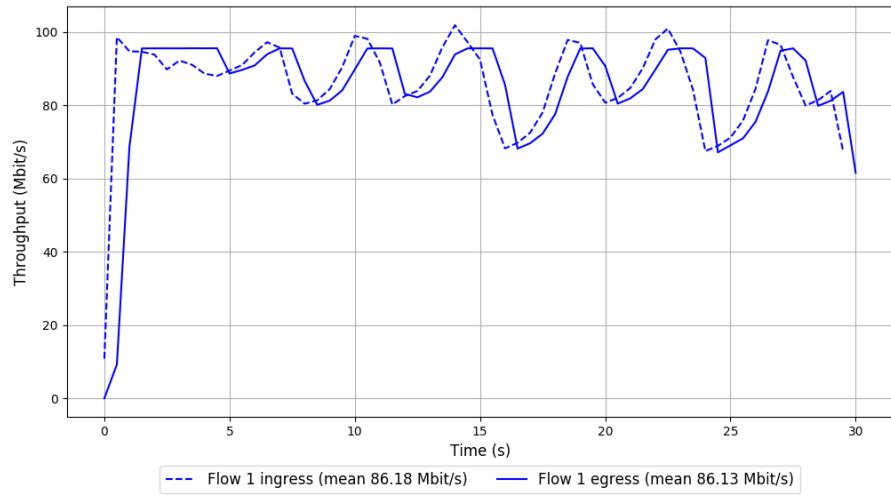


Run 5: Statistics of PCC-Expr

```
Start at: 2018-12-20 06:21:23
End at: 2018-12-20 06:21:53
Local clock offset: 0.685 ms
Remote clock offset: -1.61 ms

# Below is generated by plot.py at 2018-12-20 06:38:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.13 Mbit/s
95th percentile per-packet one-way delay: 149.426 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 86.13 Mbit/s
95th percentile per-packet one-way delay: 149.426 ms
Loss rate: 0.27%
```

Run 5: Report of PCC-Expr — Data Link

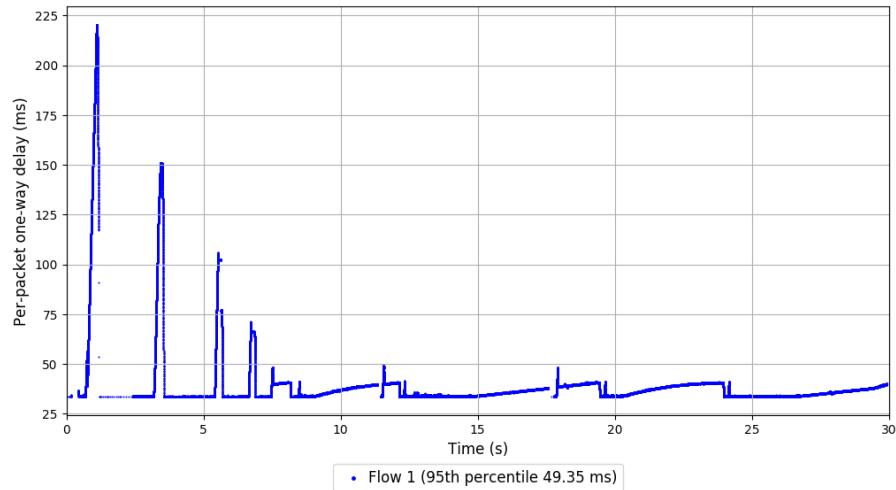
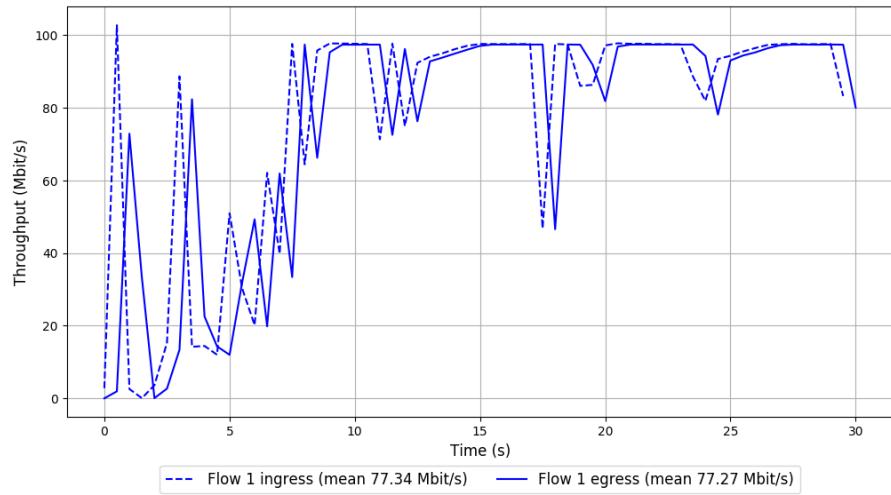


Run 1: Statistics of QUIC Cubic

```
Start at: 2018-12-20 04:47:22
End at: 2018-12-20 04:47:52
Local clock offset: -1.961 ms
Remote clock offset: -4.261 ms

# Below is generated by plot.py at 2018-12-20 06:38:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 77.27 Mbit/s
95th percentile per-packet one-way delay: 49.348 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 77.27 Mbit/s
95th percentile per-packet one-way delay: 49.348 ms
Loss rate: 0.24%
```

Run 1: Report of QUIC Cubic — Data Link

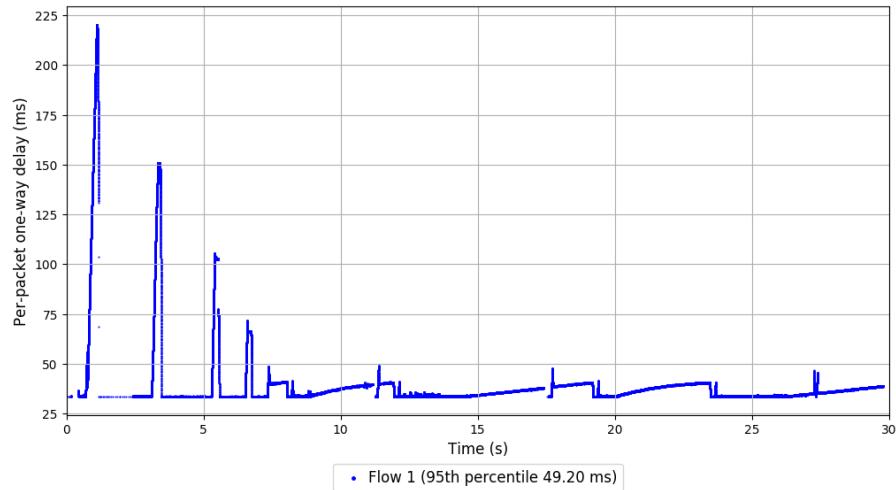
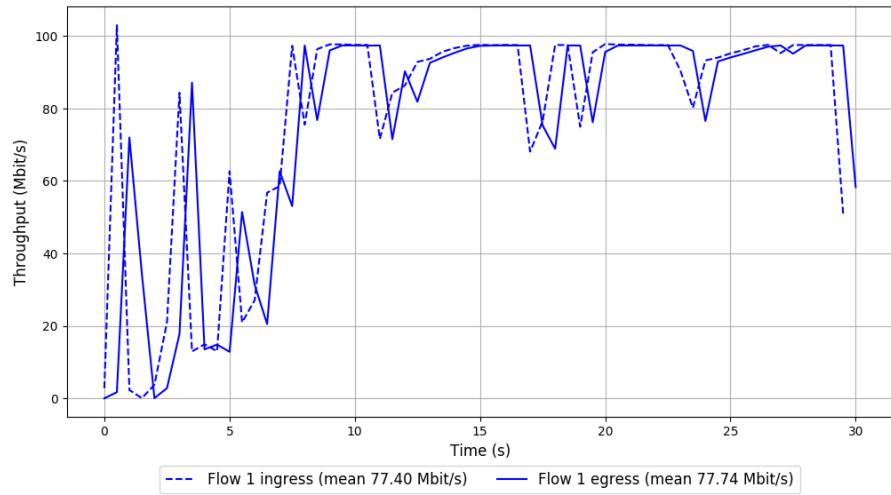


Run 2: Statistics of QUIC Cubic

```
Start at: 2018-12-20 05:09:52
End at: 2018-12-20 05:10:22
Local clock offset: -3.06 ms
Remote clock offset: -3.483 ms

# Below is generated by plot.py at 2018-12-20 06:38:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 77.74 Mbit/s
95th percentile per-packet one-way delay: 49.199 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 77.74 Mbit/s
95th percentile per-packet one-way delay: 49.199 ms
Loss rate: 0.01%
```

Run 2: Report of QUIC Cubic — Data Link

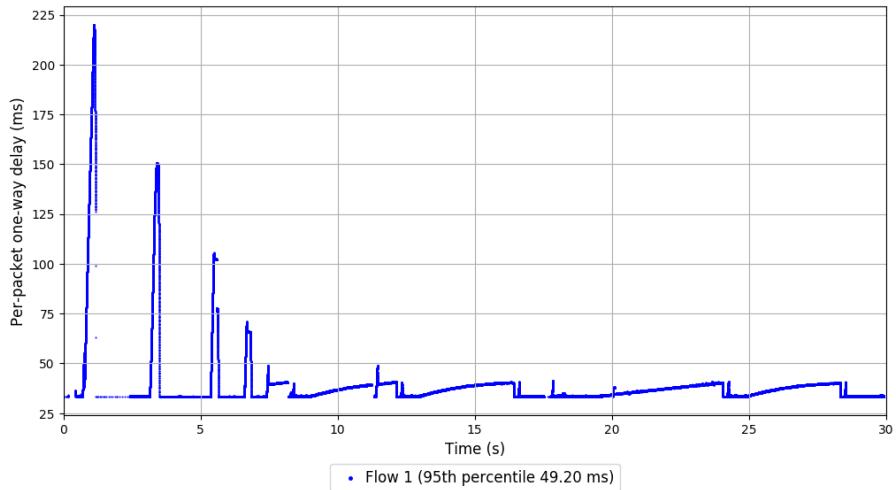
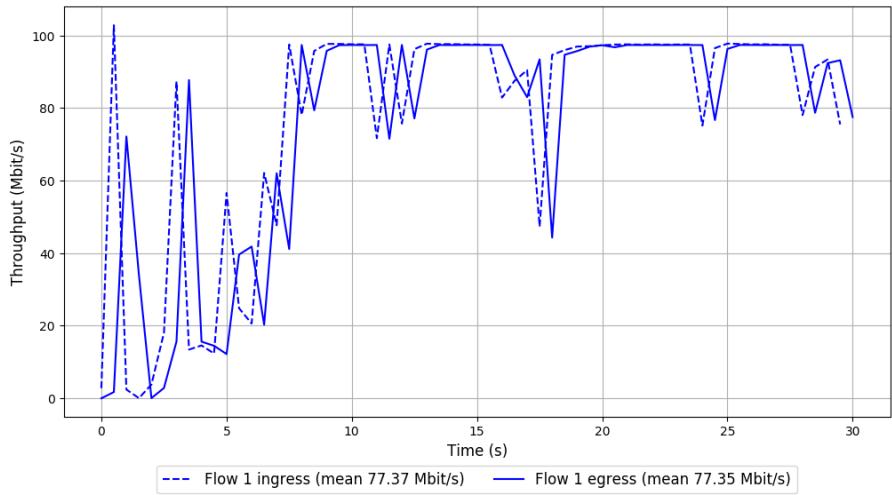


Run 3: Statistics of QUIC Cubic

```
Start at: 2018-12-20 05:32:04
End at: 2018-12-20 05:32:34
Local clock offset: -3.071 ms
Remote clock offset: -2.433 ms

# Below is generated by plot.py at 2018-12-20 06:38:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 77.35 Mbit/s
95th percentile per-packet one-way delay: 49.197 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 77.35 Mbit/s
95th percentile per-packet one-way delay: 49.197 ms
Loss rate: 0.10%
```

Run 3: Report of QUIC Cubic — Data Link

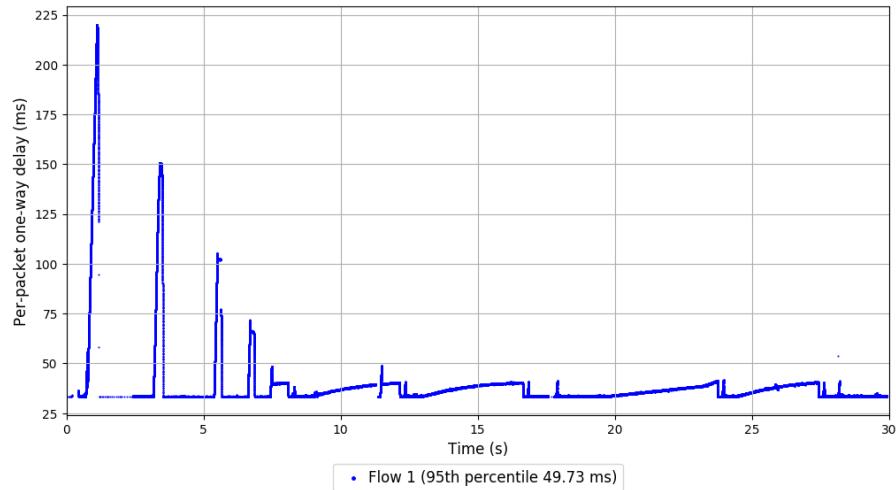
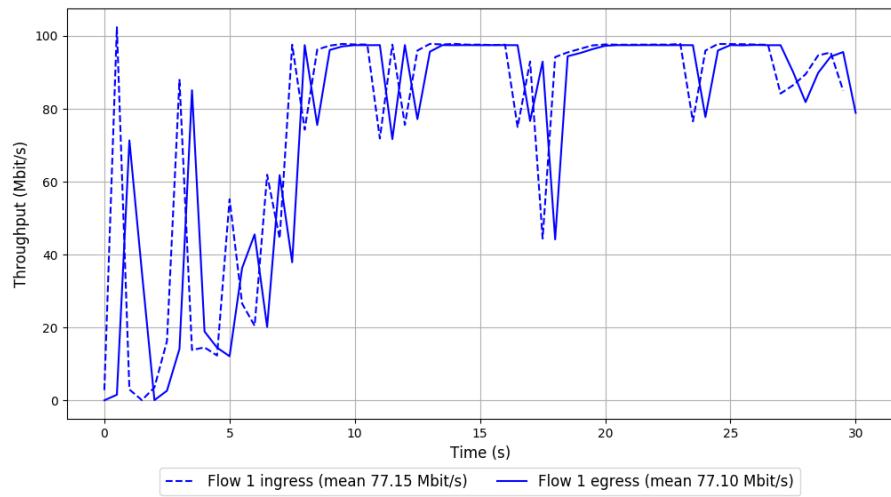


Run 4: Statistics of QUIC Cubic

```
Start at: 2018-12-20 05:54:06
End at: 2018-12-20 05:54:36
Local clock offset: 0.499 ms
Remote clock offset: -1.913 ms

# Below is generated by plot.py at 2018-12-20 06:38:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 77.10 Mbit/s
95th percentile per-packet one-way delay: 49.734 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 77.10 Mbit/s
95th percentile per-packet one-way delay: 49.734 ms
Loss rate: 0.28%
```

Run 4: Report of QUIC Cubic — Data Link

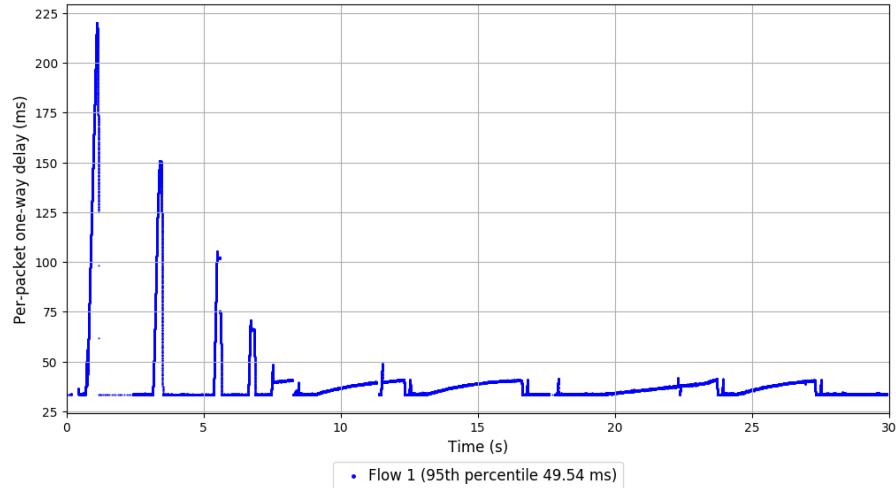
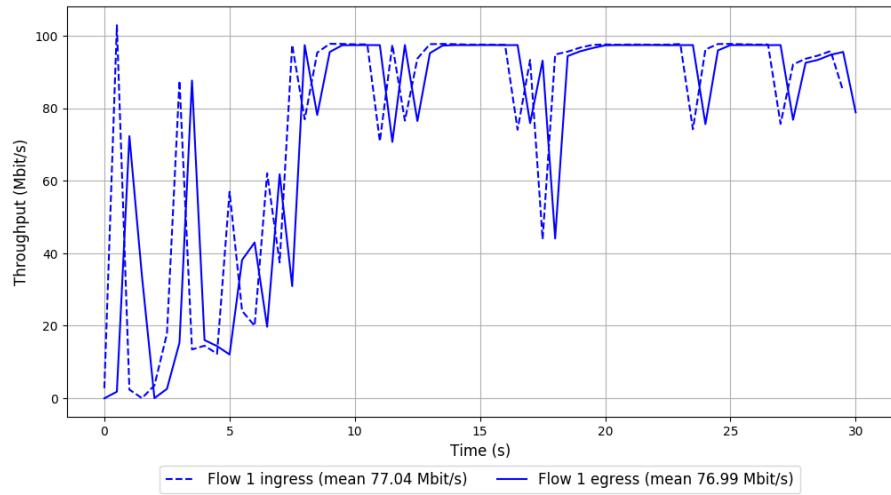


Run 5: Statistics of QUIC Cubic

```
Start at: 2018-12-20 06:16:30
End at: 2018-12-20 06:17:00
Local clock offset: 0.718 ms
Remote clock offset: -1.707 ms

# Below is generated by plot.py at 2018-12-20 06:38:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 76.99 Mbit/s
95th percentile per-packet one-way delay: 49.541 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 76.99 Mbit/s
95th percentile per-packet one-way delay: 49.541 ms
Loss rate: 0.28%
```

Run 5: Report of QUIC Cubic — Data Link

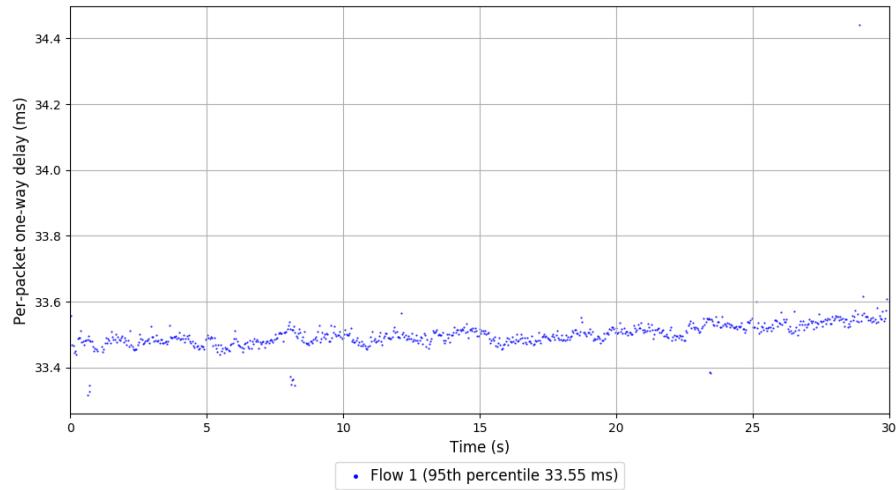
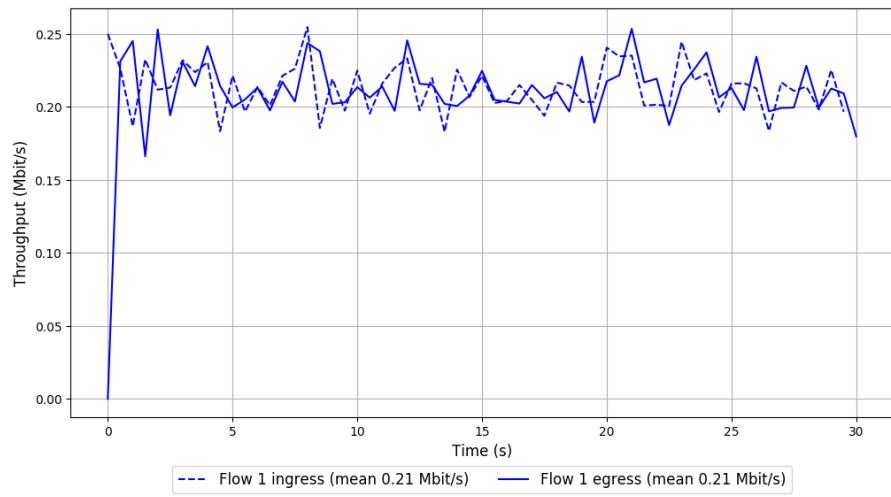


Run 1: Statistics of SCReAM

```
Start at: 2018-12-20 04:56:50
End at: 2018-12-20 04:57:20
Local clock offset: -2.813 ms
Remote clock offset: -3.785 ms

# Below is generated by plot.py at 2018-12-20 06:38:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.549 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.549 ms
Loss rate: 0.26%
```

Run 1: Report of SCReAM — Data Link

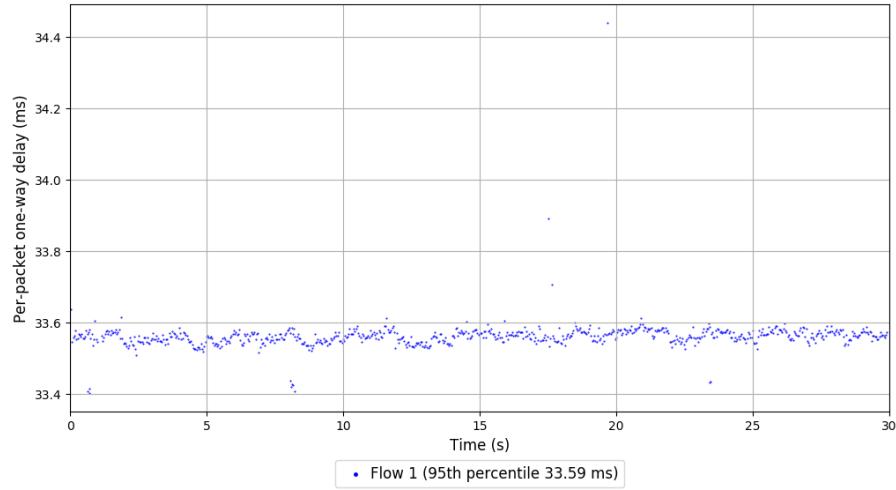
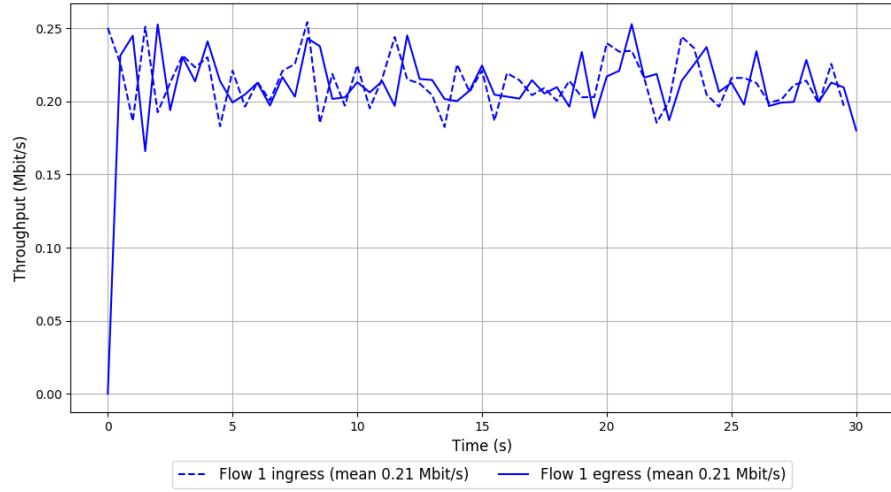


Run 2: Statistics of SCReAM

```
Start at: 2018-12-20 05:19:21
End at: 2018-12-20 05:19:51
Local clock offset: -2.962 ms
Remote clock offset: -3.017 ms

# Below is generated by plot.py at 2018-12-20 06:38:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.587 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.587 ms
Loss rate: 0.26%
```

Run 2: Report of SCReAM — Data Link

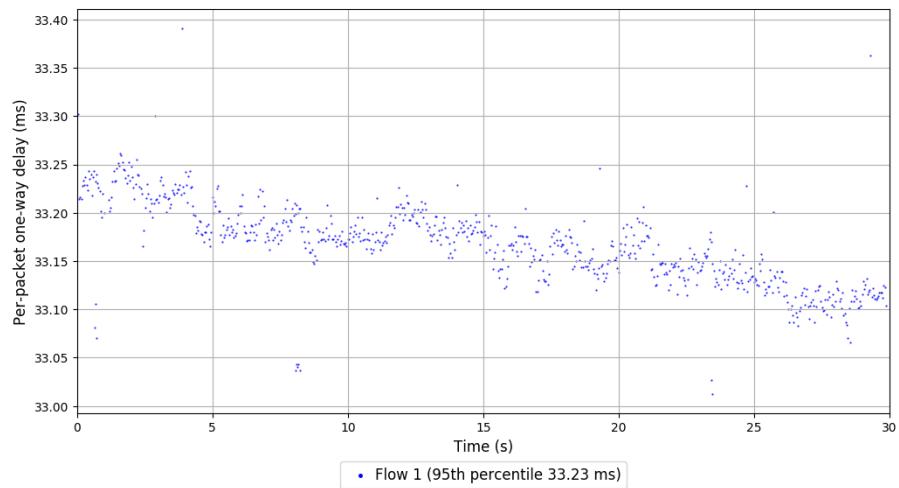
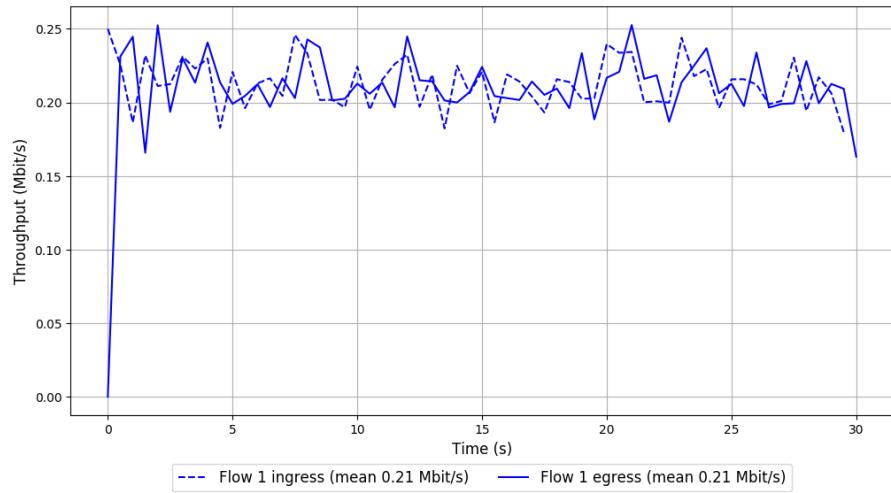


Run 3: Statistics of SCReAM

```
Start at: 2018-12-20 05:41:30
End at: 2018-12-20 05:42:00
Local clock offset: -1.279 ms
Remote clock offset: -2.106 ms

# Below is generated by plot.py at 2018-12-20 06:38:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.232 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.232 ms
Loss rate: 0.26%
```

Run 3: Report of SCReAM — Data Link

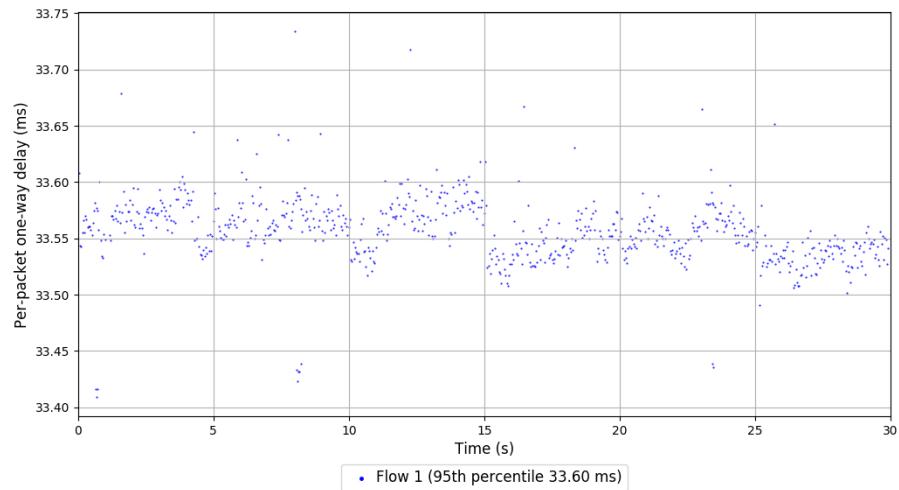
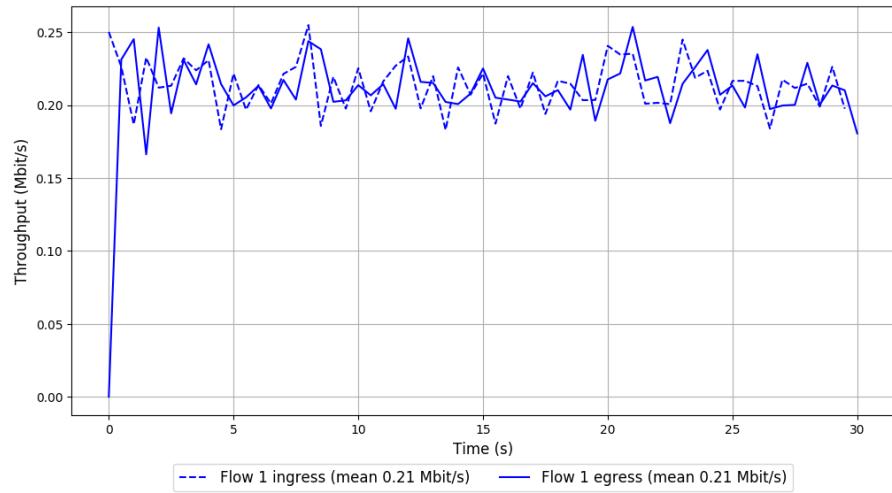


Run 4: Statistics of SCReAM

```
Start at: 2018-12-20 06:03:42
End at: 2018-12-20 06:04:12
Local clock offset: 1.105 ms
Remote clock offset: -1.913 ms

# Below is generated by plot.py at 2018-12-20 06:38:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.596 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.596 ms
Loss rate: 0.26%
```

Run 4: Report of SCReAM — Data Link

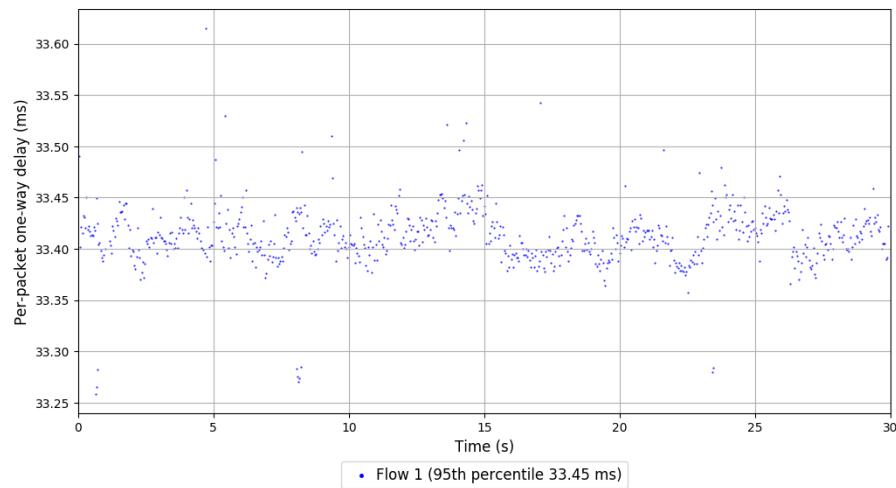
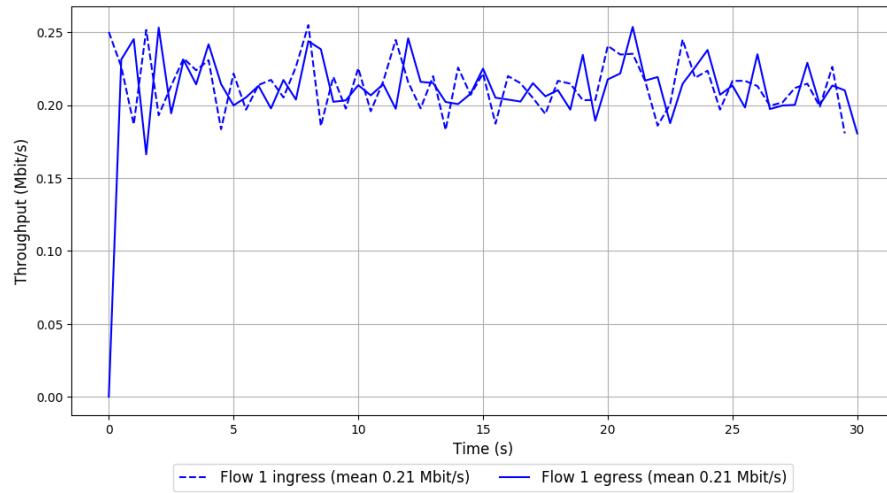


Run 5: Statistics of SCReAM

```
Start at: 2018-12-20 06:26:14
End at: 2018-12-20 06:26:44
Local clock offset: 0.725 ms
Remote clock offset: -1.465 ms

# Below is generated by plot.py at 2018-12-20 06:38:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.452 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 33.452 ms
Loss rate: 0.13%
```

Run 5: Report of SCReAM — Data Link

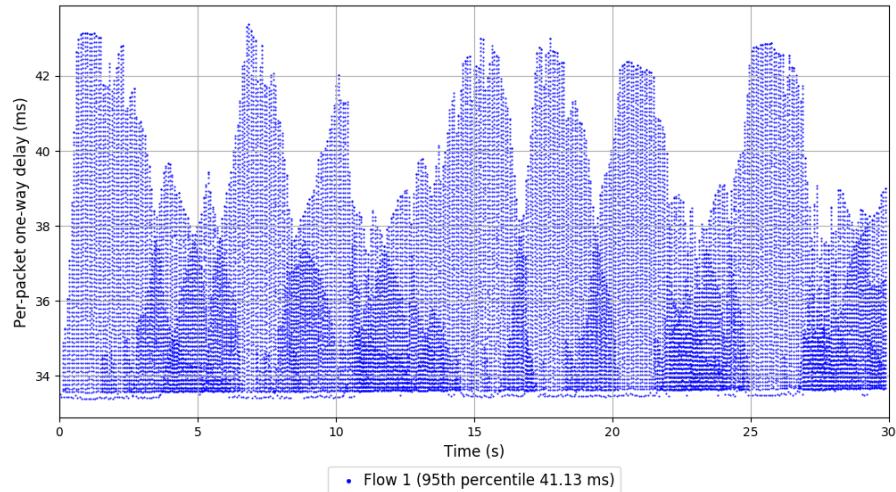
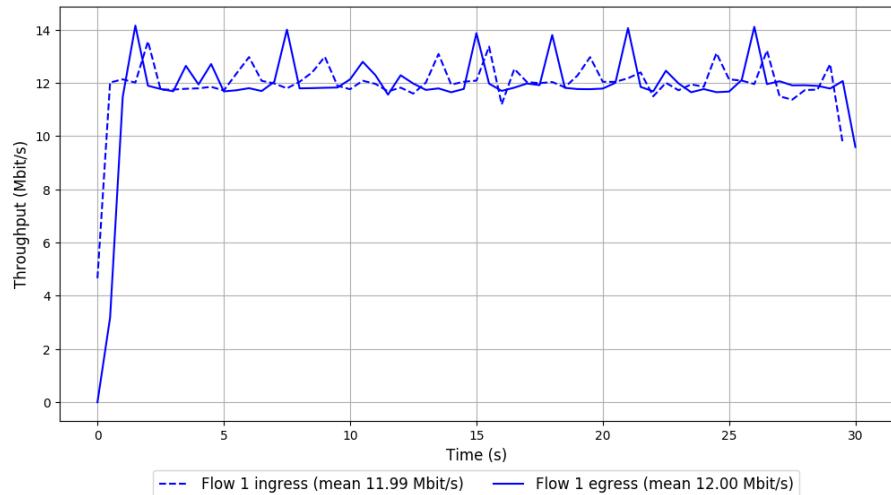


Run 1: Statistics of Sprout

```
Start at: 2018-12-20 04:45:06
End at: 2018-12-20 04:45:36
Local clock offset: -1.623 ms
Remote clock offset: -4.112 ms

# Below is generated by plot.py at 2018-12-20 06:38:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.00 Mbit/s
95th percentile per-packet one-way delay: 41.129 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 12.00 Mbit/s
95th percentile per-packet one-way delay: 41.129 ms
Loss rate: 0.11%
```

Run 1: Report of Sprout — Data Link

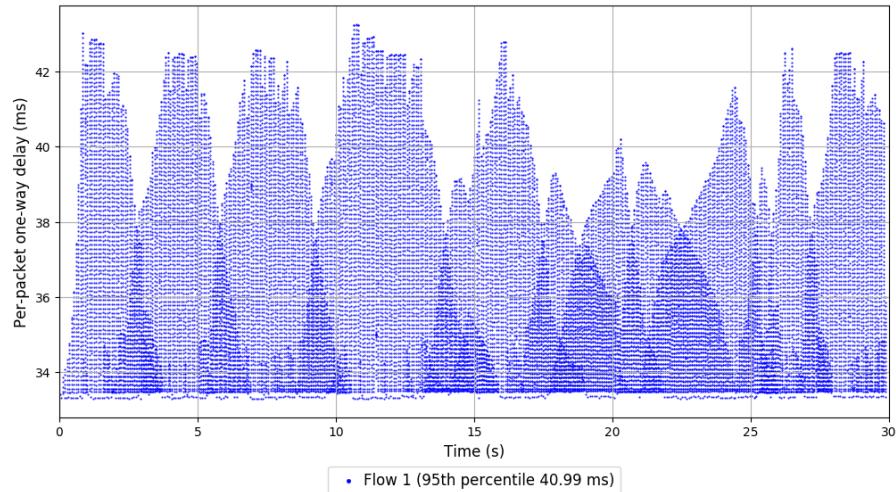
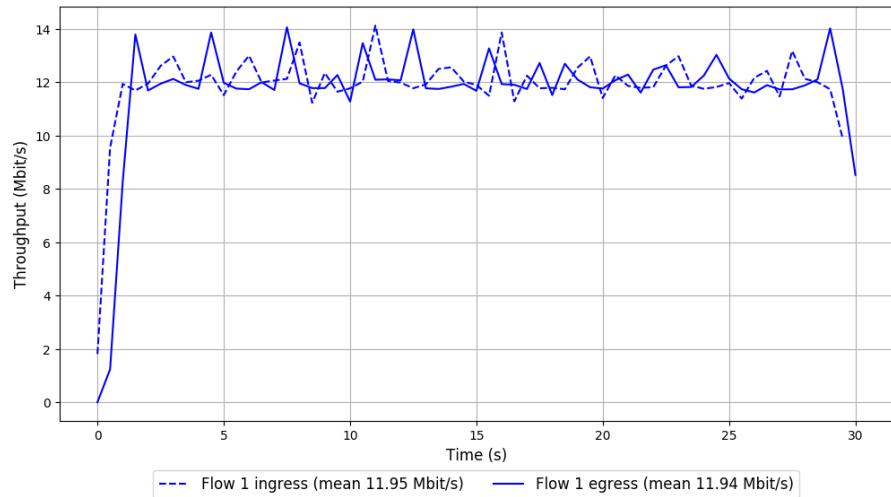


Run 2: Statistics of Sprout

```
Start at: 2018-12-20 05:07:36
End at: 2018-12-20 05:08:06
Local clock offset: -3.134 ms
Remote clock offset: -3.403 ms

# Below is generated by plot.py at 2018-12-20 06:38:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 11.94 Mbit/s
95th percentile per-packet one-way delay: 40.994 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 11.94 Mbit/s
95th percentile per-packet one-way delay: 40.994 ms
Loss rate: 0.19%
```

Run 2: Report of Sprout — Data Link

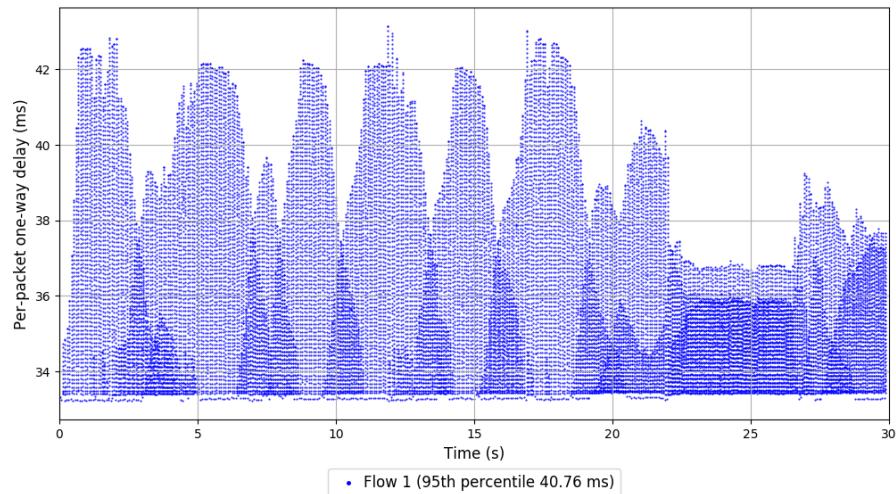
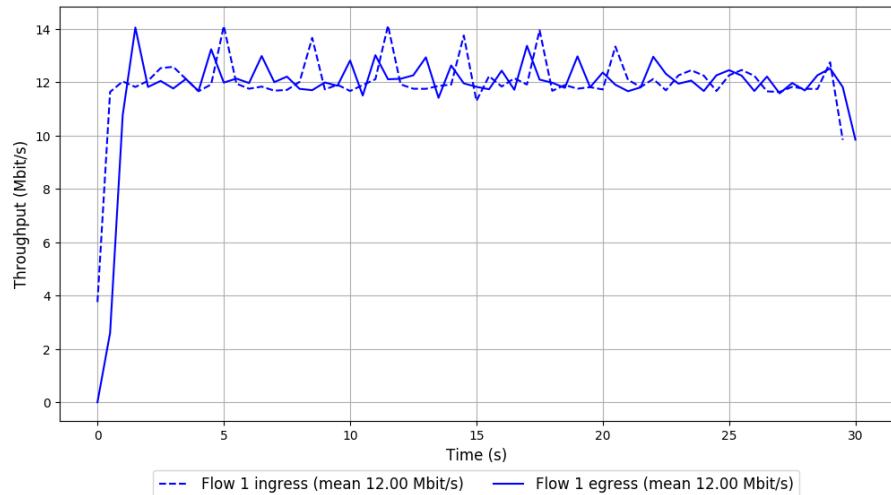


Run 3: Statistics of Sprout

```
Start at: 2018-12-20 05:29:48
End at: 2018-12-20 05:30:18
Local clock offset: -3.061 ms
Remote clock offset: -2.482 ms

# Below is generated by plot.py at 2018-12-20 06:38:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.00 Mbit/s
95th percentile per-packet one-way delay: 40.758 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 12.00 Mbit/s
95th percentile per-packet one-way delay: 40.758 ms
Loss rate: 0.13%
```

Run 3: Report of Sprout — Data Link

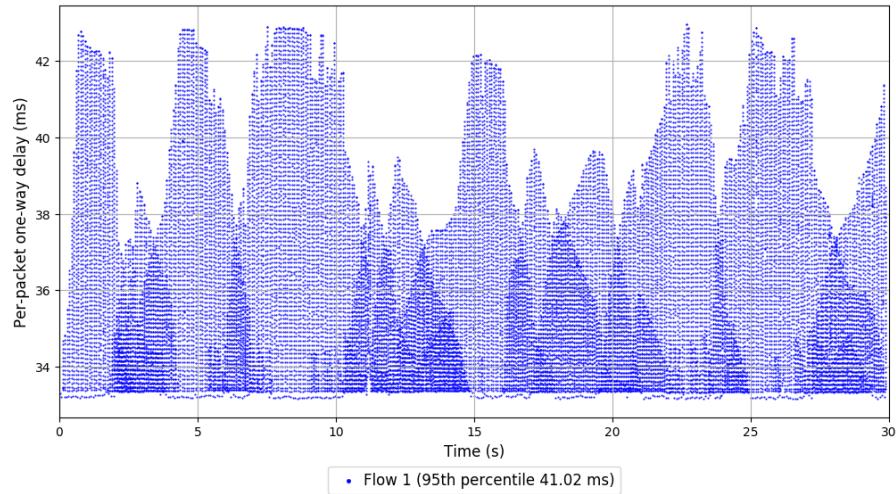
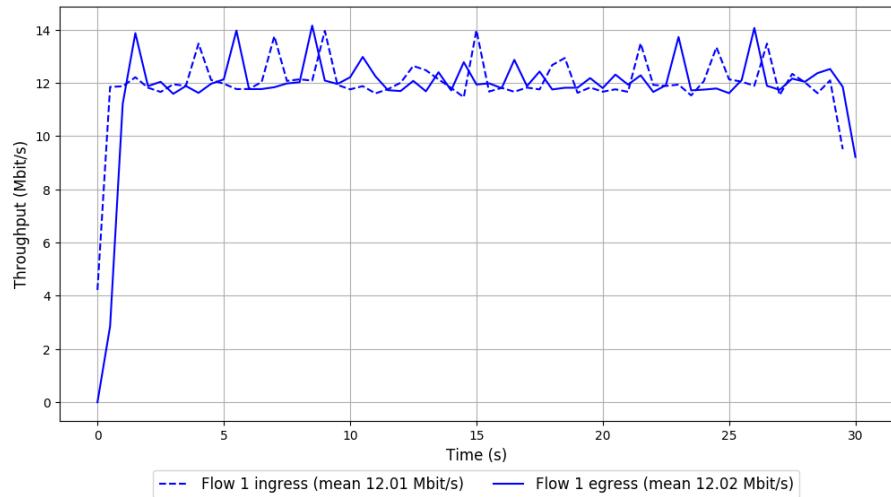


Run 4: Statistics of Sprout

```
Start at: 2018-12-20 05:51:51
End at: 2018-12-20 05:52:21
Local clock offset: 0.317 ms
Remote clock offset: -1.912 ms

# Below is generated by plot.py at 2018-12-20 06:38:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.02 Mbit/s
95th percentile per-packet one-way delay: 41.017 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 12.02 Mbit/s
95th percentile per-packet one-way delay: 41.017 ms
Loss rate: 0.10%
```

Run 4: Report of Sprout — Data Link

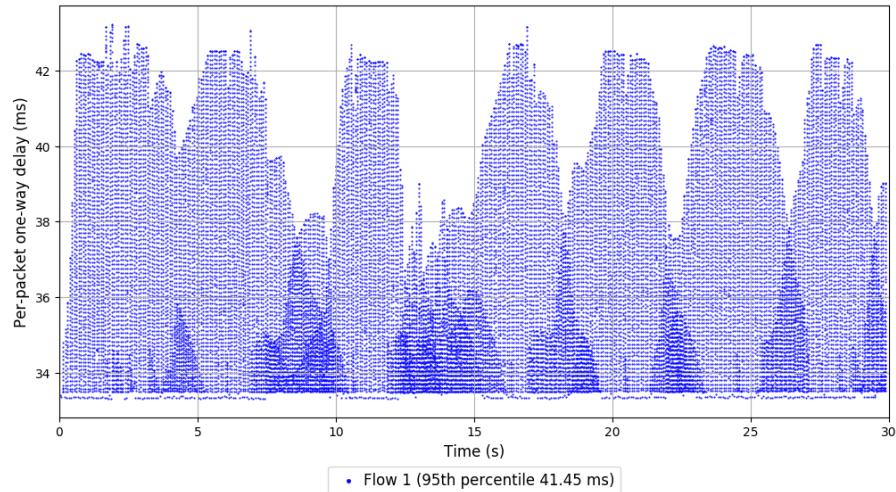
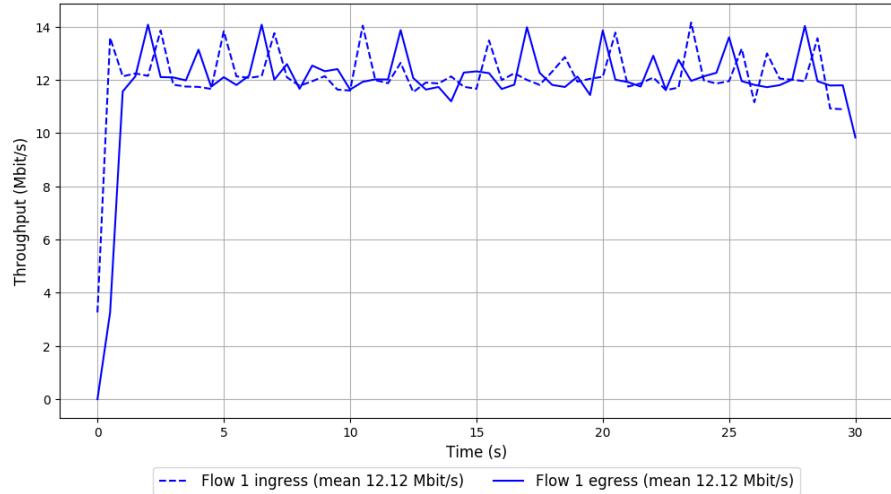


Run 5: Statistics of Sprout

```
Start at: 2018-12-20 06:14:13
End at: 2018-12-20 06:14:43
Local clock offset: 0.756 ms
Remote clock offset: -1.679 ms

# Below is generated by plot.py at 2018-12-20 06:38:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.12 Mbit/s
95th percentile per-packet one-way delay: 41.455 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 12.12 Mbit/s
95th percentile per-packet one-way delay: 41.455 ms
Loss rate: 0.27%
```

Run 5: Report of Sprout — Data Link

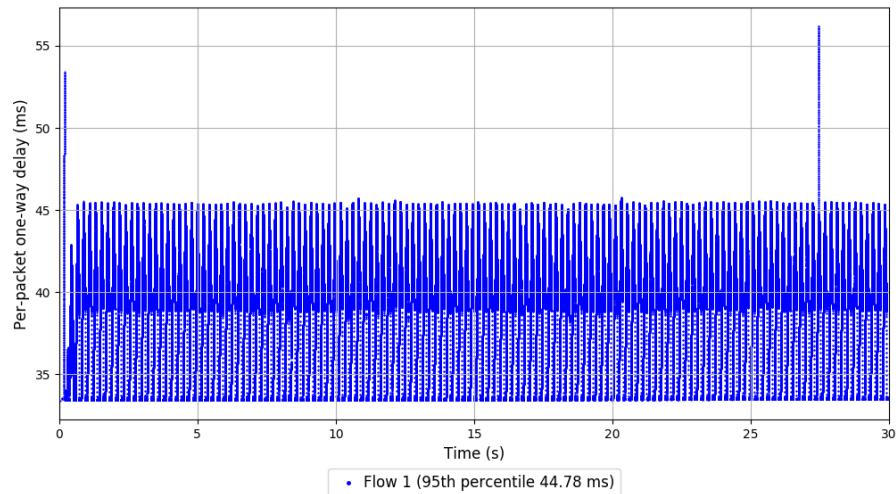
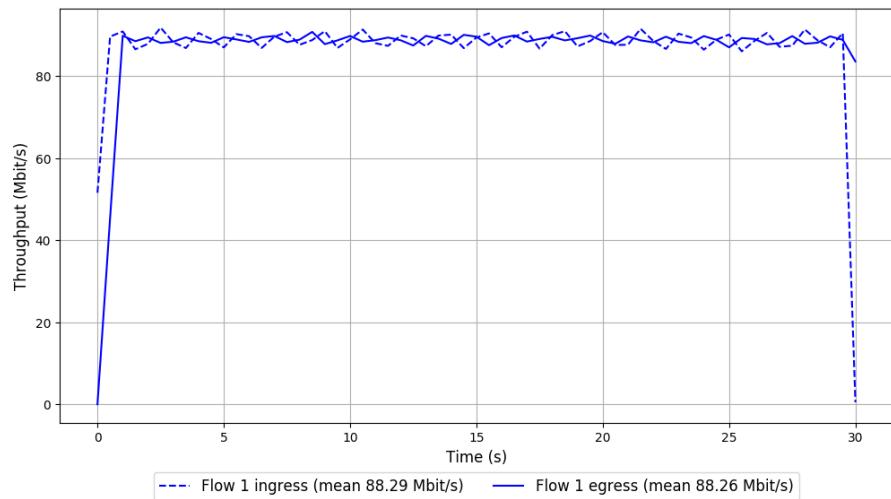


Run 1: Statistics of TaoVA-100x

```
Start at: 2018-12-20 04:53:17
End at: 2018-12-20 04:53:47
Local clock offset: -2.56 ms
Remote clock offset: -3.873 ms

# Below is generated by plot.py at 2018-12-20 06:40:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 88.26 Mbit/s
95th percentile per-packet one-way delay: 44.781 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 88.26 Mbit/s
95th percentile per-packet one-way delay: 44.781 ms
Loss rate: 0.25%
```

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

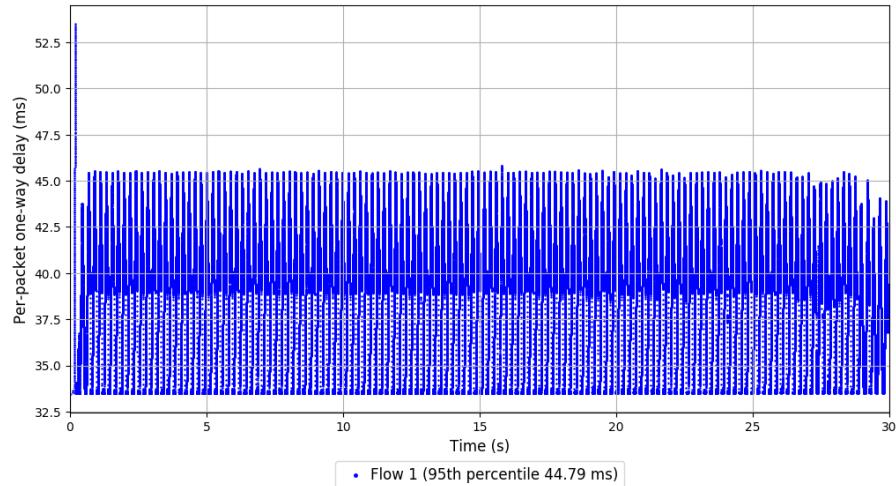
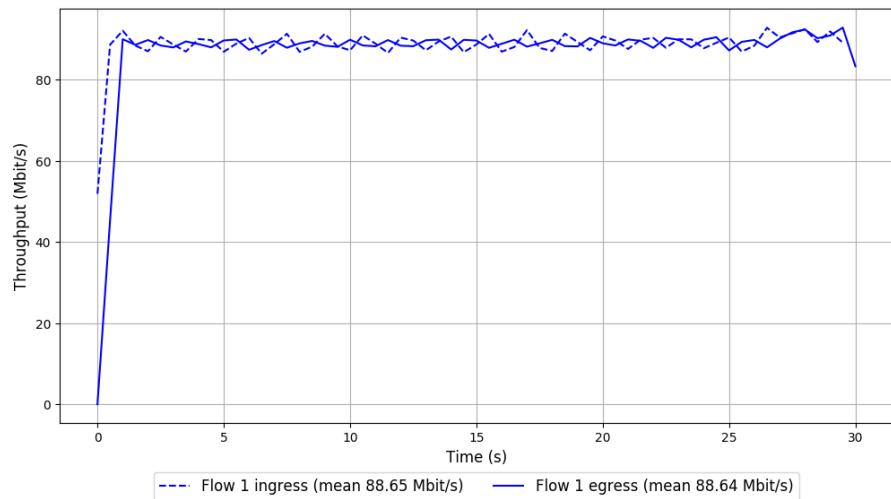


Run 2: Statistics of TaoVA-100x

```
Start at: 2018-12-20 05:15:49
End at: 2018-12-20 05:16:19
Local clock offset: -2.963 ms
Remote clock offset: -3.161 ms

# Below is generated by plot.py at 2018-12-20 06:40:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 88.64 Mbit/s
95th percentile per-packet one-way delay: 44.792 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 88.64 Mbit/s
95th percentile per-packet one-way delay: 44.792 ms
Loss rate: 0.22%
```

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

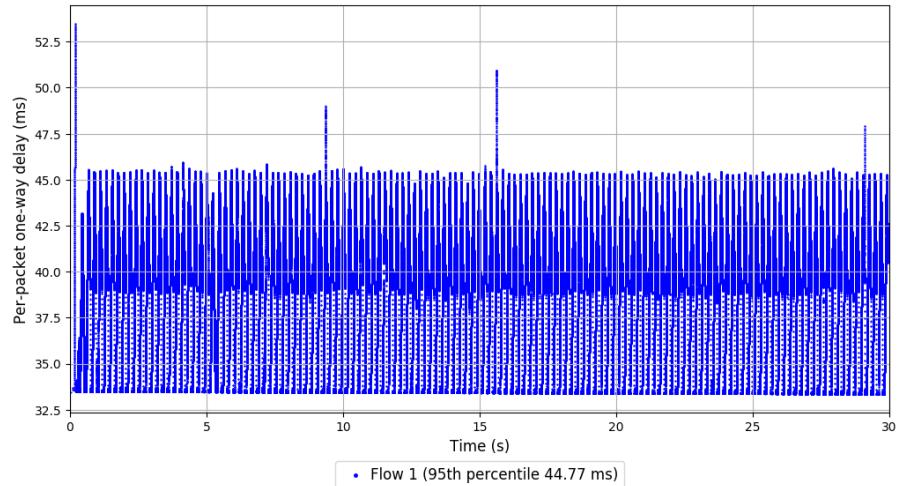
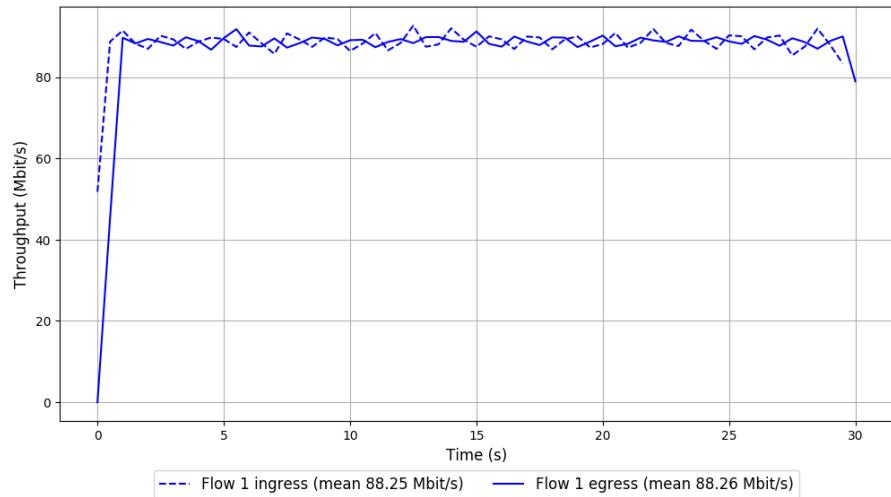


Run 3: Statistics of TaoVA-100x

```
Start at: 2018-12-20 05:37:59
End at: 2018-12-20 05:38:29
Local clock offset: -2.203 ms
Remote clock offset: -2.432 ms

# Below is generated by plot.py at 2018-12-20 06:40:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 88.26 Mbit/s
95th percentile per-packet one-way delay: 44.765 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 88.26 Mbit/s
95th percentile per-packet one-way delay: 44.765 ms
Loss rate: 0.20%
```

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

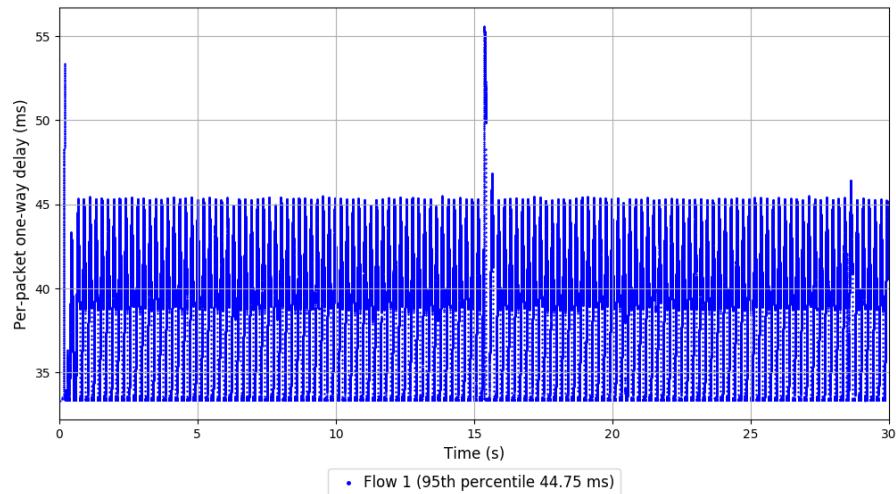
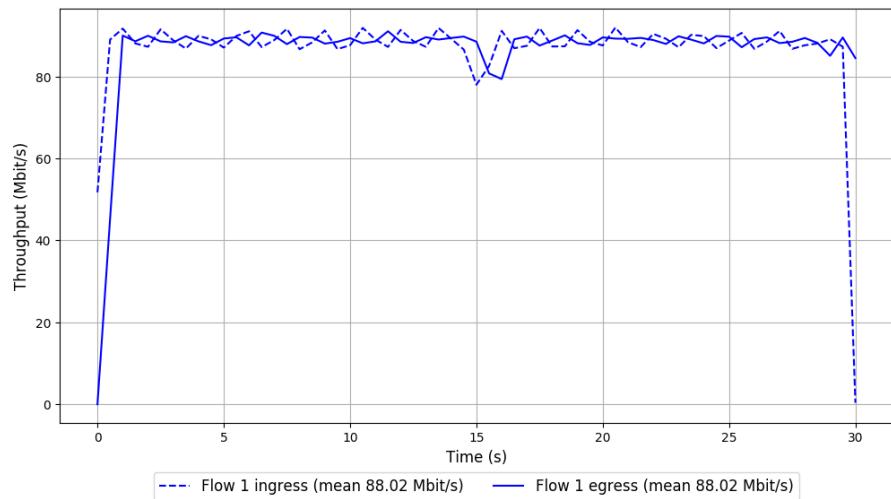


Run 4: Statistics of TaoVA-100x

```
Start at: 2018-12-20 06:00:01
End at: 2018-12-20 06:00:31
Local clock offset: 0.917 ms
Remote clock offset: -1.772 ms

# Below is generated by plot.py at 2018-12-20 06:40:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 88.02 Mbit/s
95th percentile per-packet one-way delay: 44.747 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 88.02 Mbit/s
95th percentile per-packet one-way delay: 44.747 ms
Loss rate: 0.21%
```

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

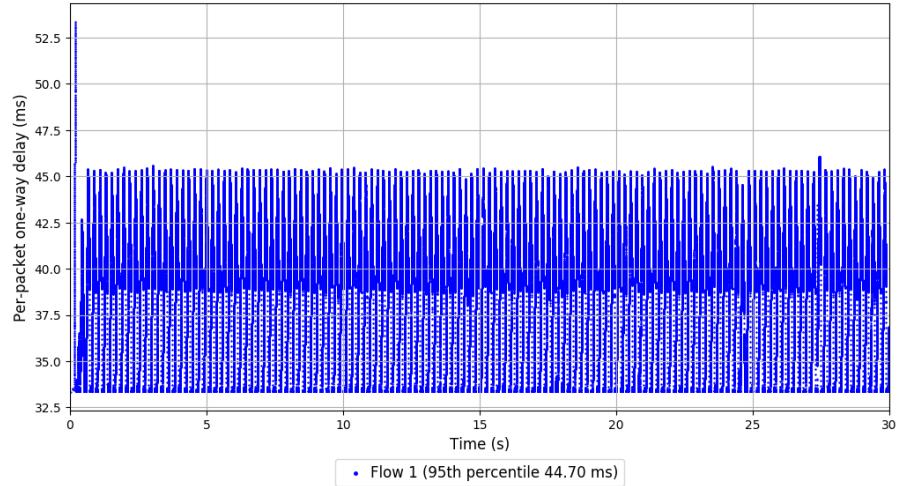
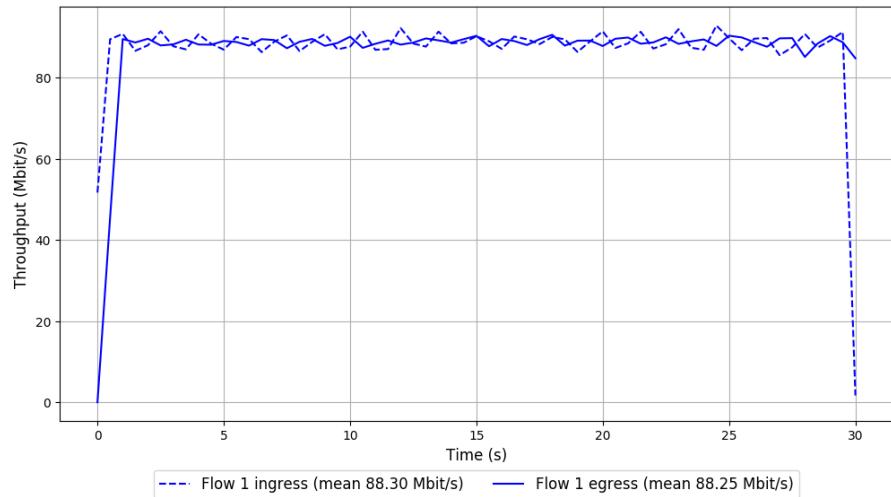


Run 5: Statistics of TaoVA-100x

```
Start at: 2018-12-20 06:22:39
End at: 2018-12-20 06:23:09
Local clock offset: 0.699 ms
Remote clock offset: -1.556 ms

# Below is generated by plot.py at 2018-12-20 06:40:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 88.25 Mbit/s
95th percentile per-packet one-way delay: 44.701 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 88.25 Mbit/s
95th percentile per-packet one-way delay: 44.701 ms
Loss rate: 0.27%
```

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

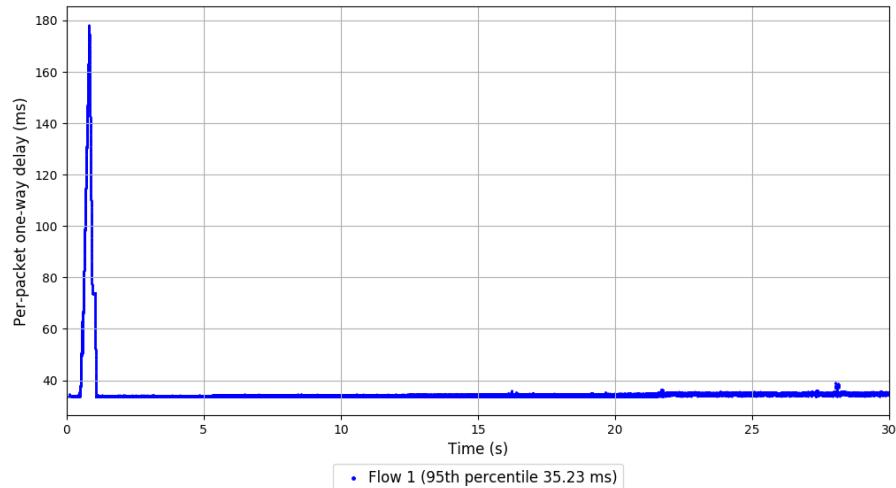
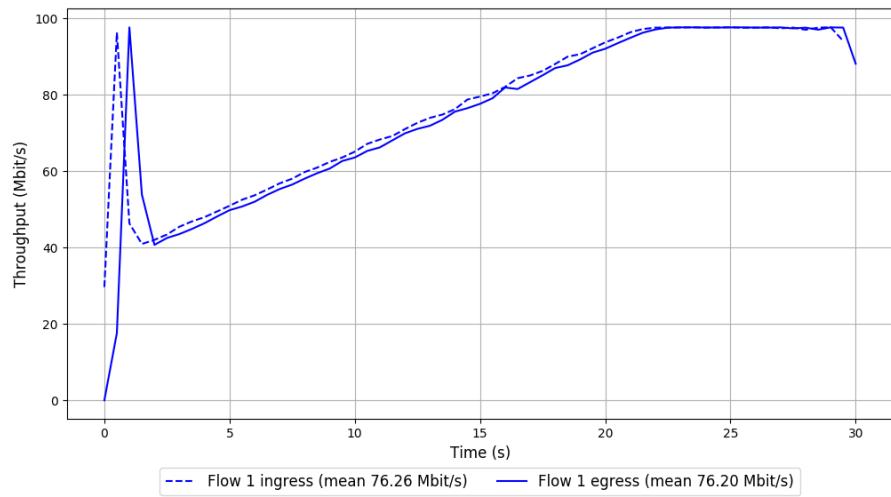


Run 1: Statistics of TCP Vegas

```
Start at: 2018-12-20 04:55:40
End at: 2018-12-20 04:56:10
Local clock offset: -2.743 ms
Remote clock offset: -4.009 ms

# Below is generated by plot.py at 2018-12-20 06:40:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 76.20 Mbit/s
95th percentile per-packet one-way delay: 35.229 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 76.20 Mbit/s
95th percentile per-packet one-way delay: 35.229 ms
Loss rate: 0.28%
```

Run 1: Report of TCP Vegas — Data Link

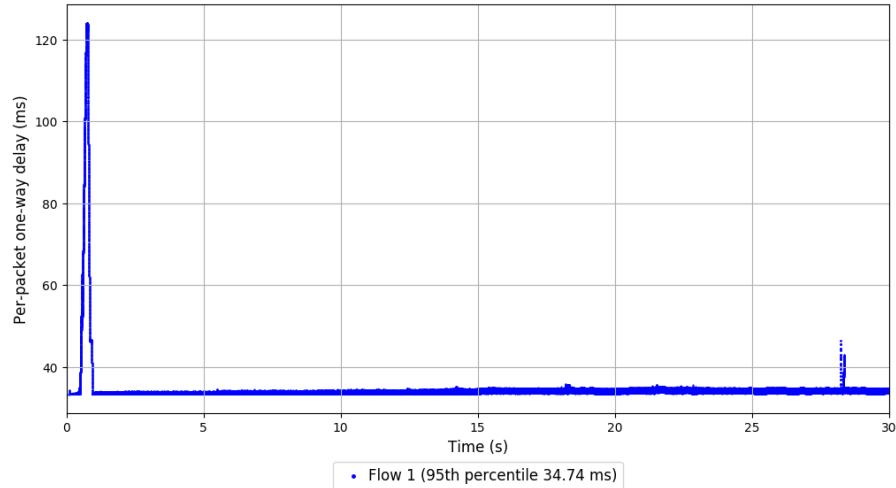
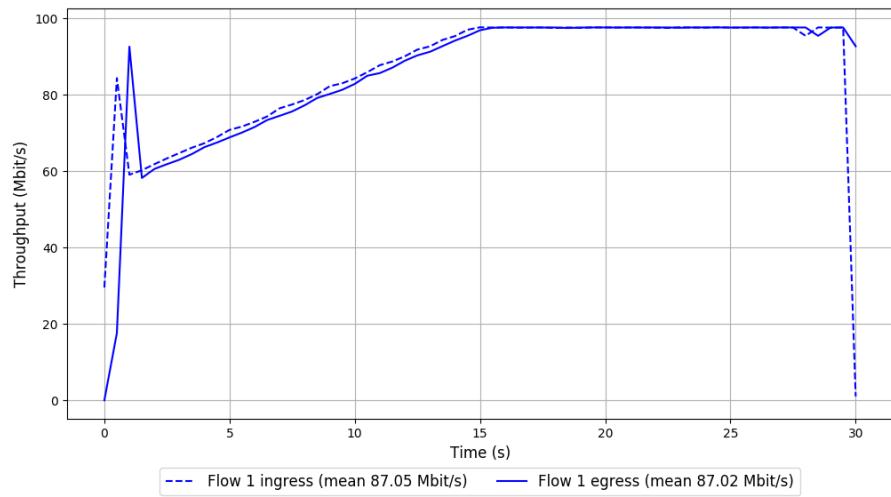


Run 2: Statistics of TCP Vegas

```
Start at: 2018-12-20 05:18:12
End at: 2018-12-20 05:18:42
Local clock offset: -2.953 ms
Remote clock offset: -2.893 ms

# Below is generated by plot.py at 2018-12-20 06:40:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 87.02 Mbit/s
95th percentile per-packet one-way delay: 34.742 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 87.02 Mbit/s
95th percentile per-packet one-way delay: 34.742 ms
Loss rate: 0.24%
```

Run 2: Report of TCP Vegas — Data Link

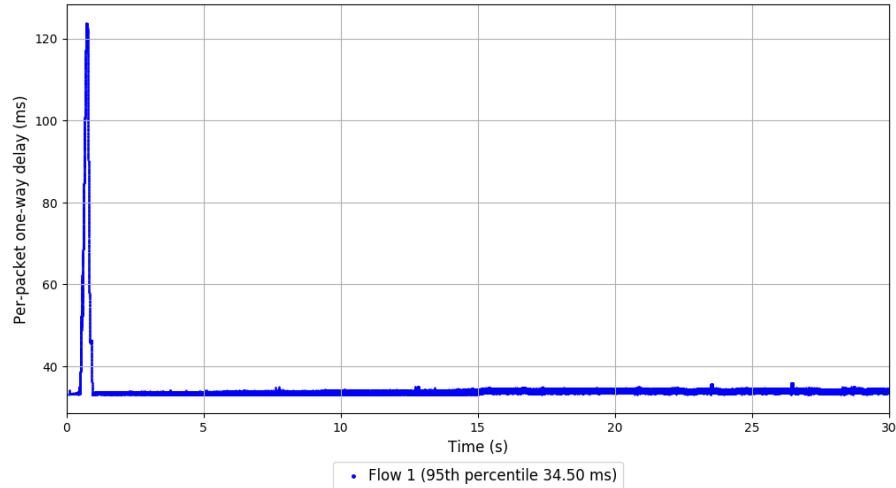
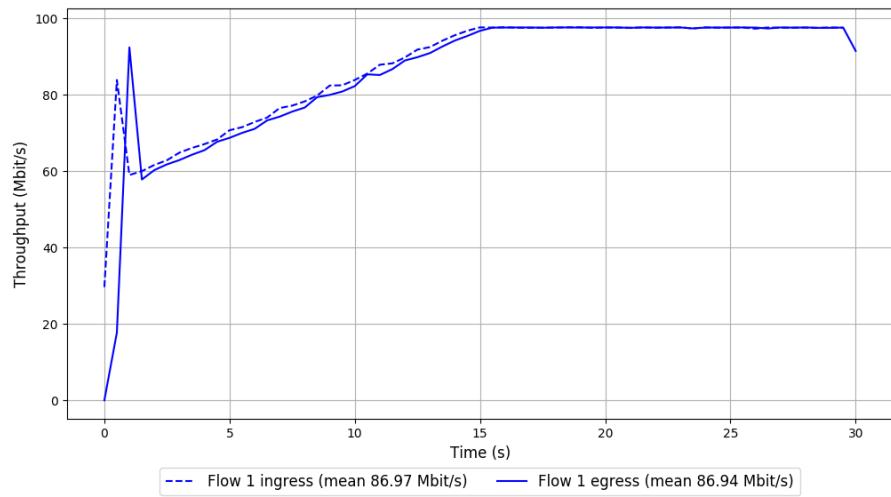


Run 3: Statistics of TCP Vegas

```
Start at: 2018-12-20 05:40:21
End at: 2018-12-20 05:40:51
Local clock offset: -1.554 ms
Remote clock offset: -2.109 ms

# Below is generated by plot.py at 2018-12-20 06:40:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 86.94 Mbit/s
95th percentile per-packet one-way delay: 34.496 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 86.94 Mbit/s
95th percentile per-packet one-way delay: 34.496 ms
Loss rate: 0.25%
```

Run 3: Report of TCP Vegas — Data Link

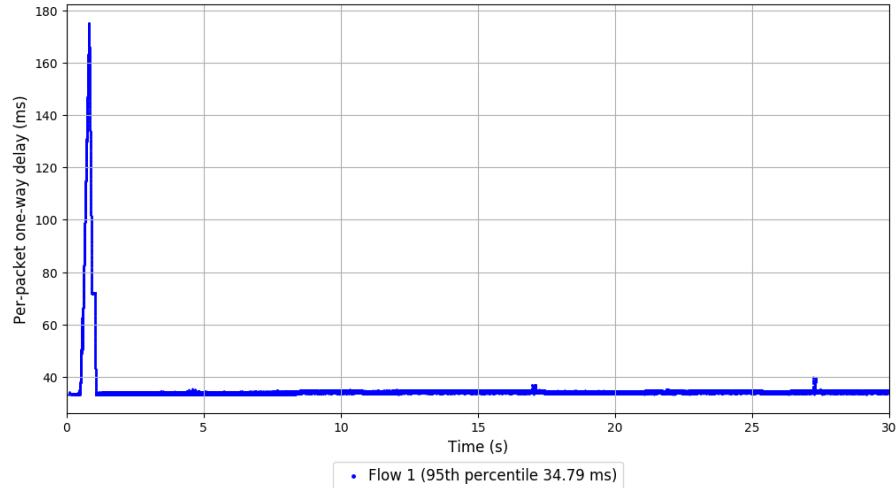
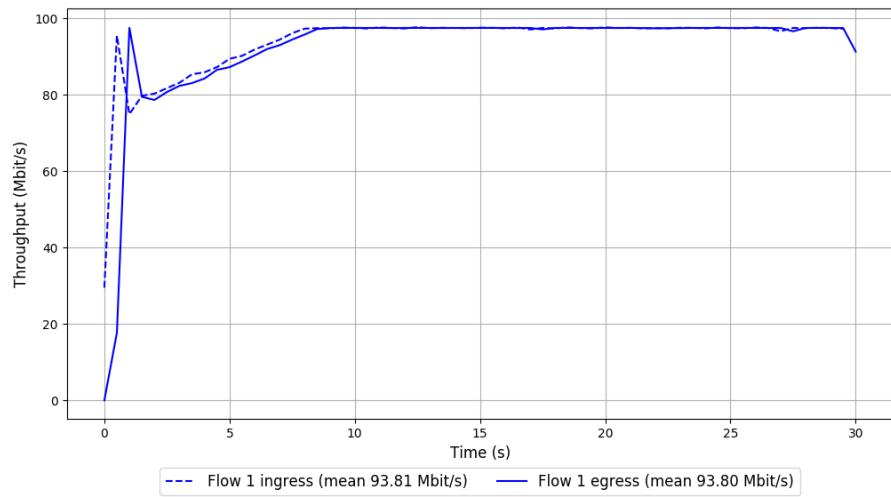


Run 4: Statistics of TCP Vegas

```
Start at: 2018-12-20 06:02:30
End at: 2018-12-20 06:03:00
Local clock offset: 1.037 ms
Remote clock offset: -1.755 ms

# Below is generated by plot.py at 2018-12-20 06:40:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.80 Mbit/s
95th percentile per-packet one-way delay: 34.787 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 93.80 Mbit/s
95th percentile per-packet one-way delay: 34.787 ms
Loss rate: 0.23%
```

Run 4: Report of TCP Vegas — Data Link

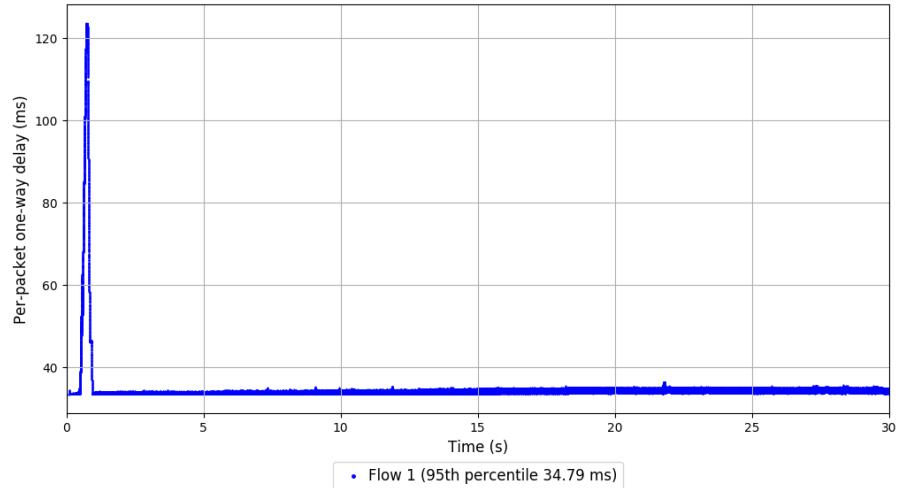
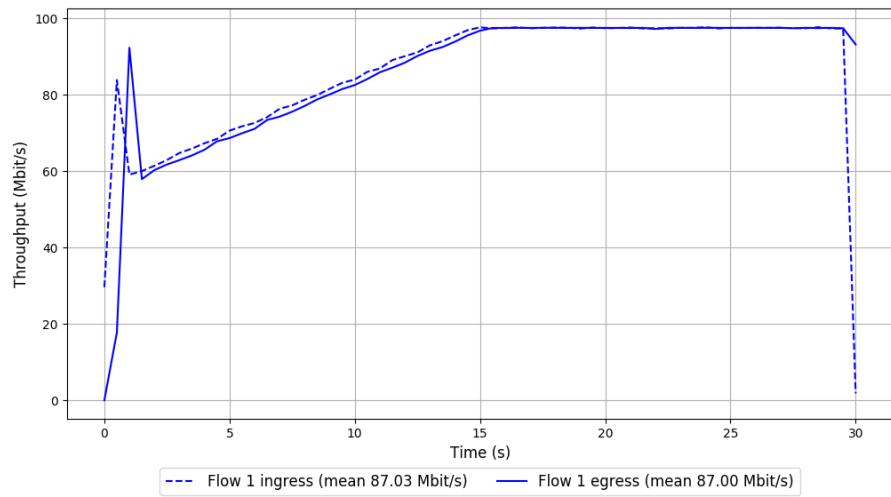


Run 5: Statistics of TCP Vegas

```
Start at: 2018-12-20 06:25:04
End at: 2018-12-20 06:25:34
Local clock offset: 0.724 ms
Remote clock offset: -1.508 ms

# Below is generated by plot.py at 2018-12-20 06:40:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 87.00 Mbit/s
95th percentile per-packet one-way delay: 34.794 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 87.00 Mbit/s
95th percentile per-packet one-way delay: 34.794 ms
Loss rate: 0.25%
```

Run 5: Report of TCP Vegas — Data Link

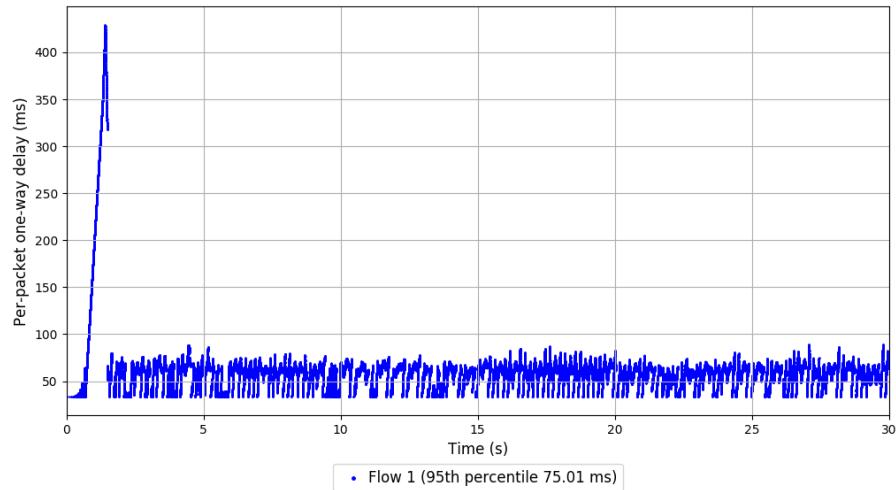
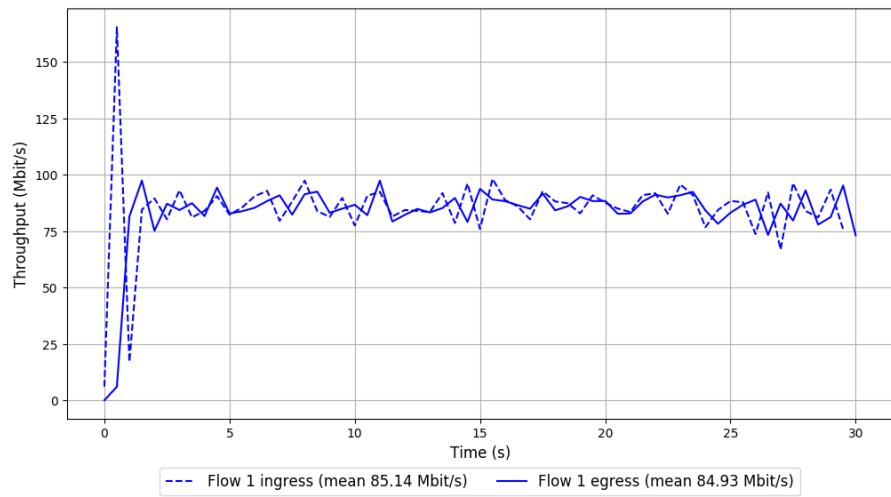


Run 1: Statistics of Verus

```
Start at: 2018-12-20 04:50:54
End at: 2018-12-20 04:51:24
Local clock offset: -2.368 ms
Remote clock offset: -3.888 ms

# Below is generated by plot.py at 2018-12-20 06:40:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 84.93 Mbit/s
95th percentile per-packet one-way delay: 75.013 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 84.93 Mbit/s
95th percentile per-packet one-way delay: 75.013 ms
Loss rate: 0.41%
```

Run 1: Report of Verus — Data Link

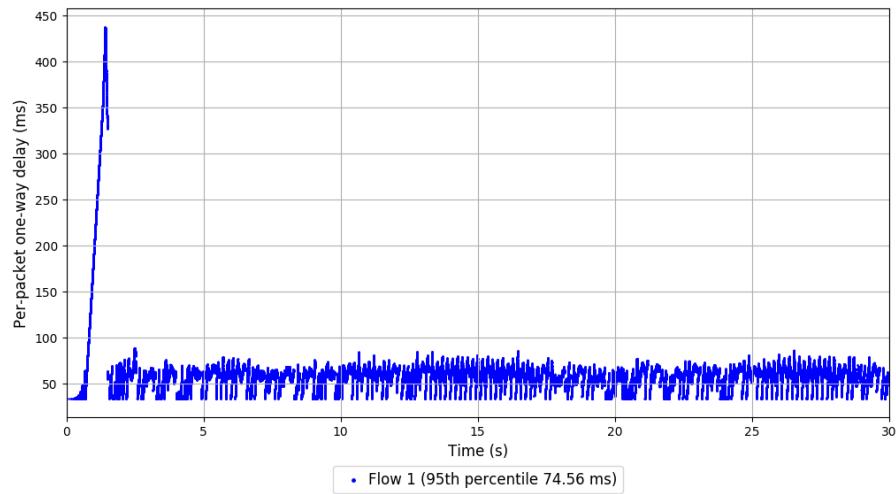
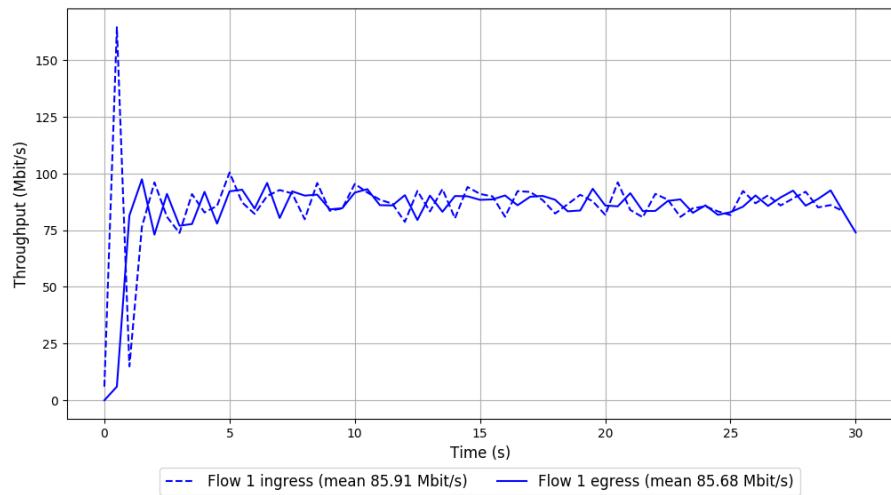


Run 2: Statistics of Verus

```
Start at: 2018-12-20 05:13:25
End at: 2018-12-20 05:13:55
Local clock offset: -2.986 ms
Remote clock offset: -3.176 ms

# Below is generated by plot.py at 2018-12-20 06:41:10
# Datalink statistics
-- Total of 1 flow:
Average throughput: 85.68 Mbit/s
95th percentile per-packet one-way delay: 74.559 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 85.68 Mbit/s
95th percentile per-packet one-way delay: 74.559 ms
Loss rate: 0.46%
```

Run 2: Report of Verus — Data Link

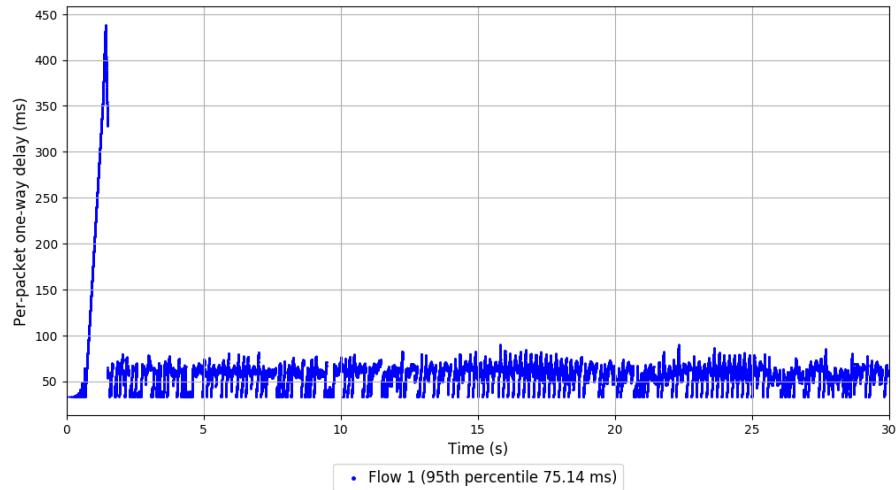
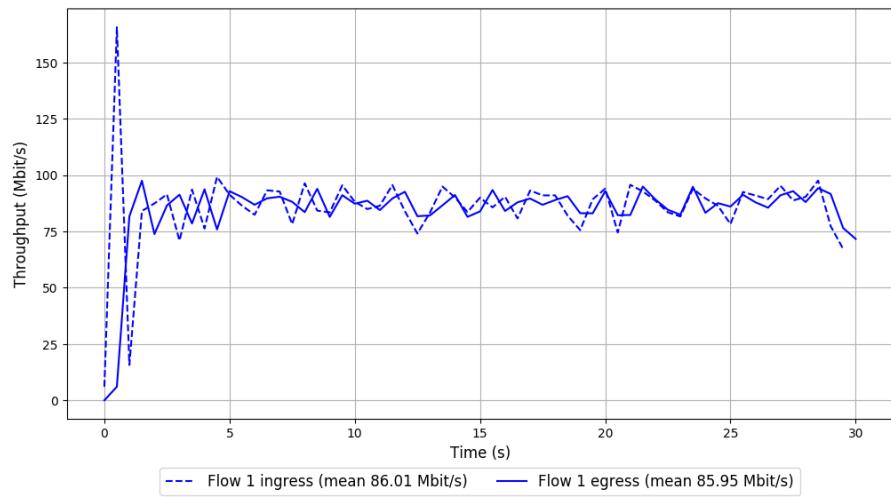


Run 3: Statistics of Verus

```
Start at: 2018-12-20 05:35:36
End at: 2018-12-20 05:36:06
Local clock offset: -3.117 ms
Remote clock offset: -2.332 ms

# Below is generated by plot.py at 2018-12-20 06:41:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 85.95 Mbit/s
95th percentile per-packet one-way delay: 75.136 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 85.95 Mbit/s
95th percentile per-packet one-way delay: 75.136 ms
Loss rate: 0.29%
```

Run 3: Report of Verus — Data Link

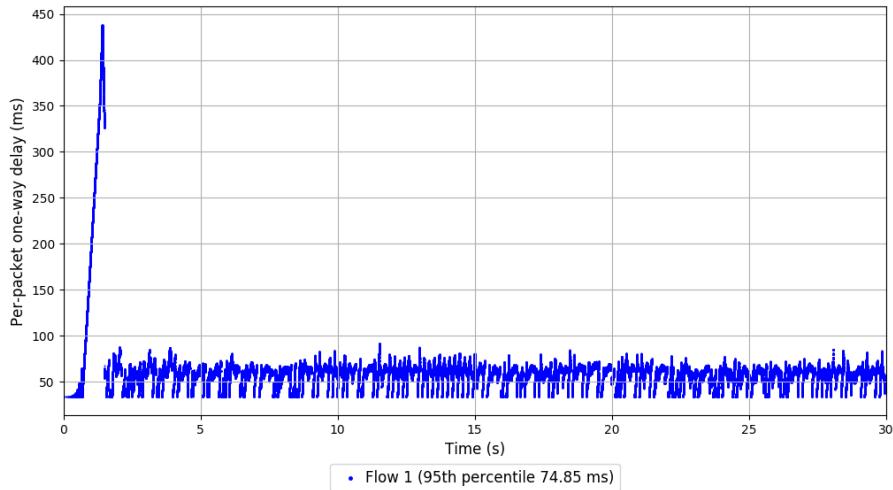
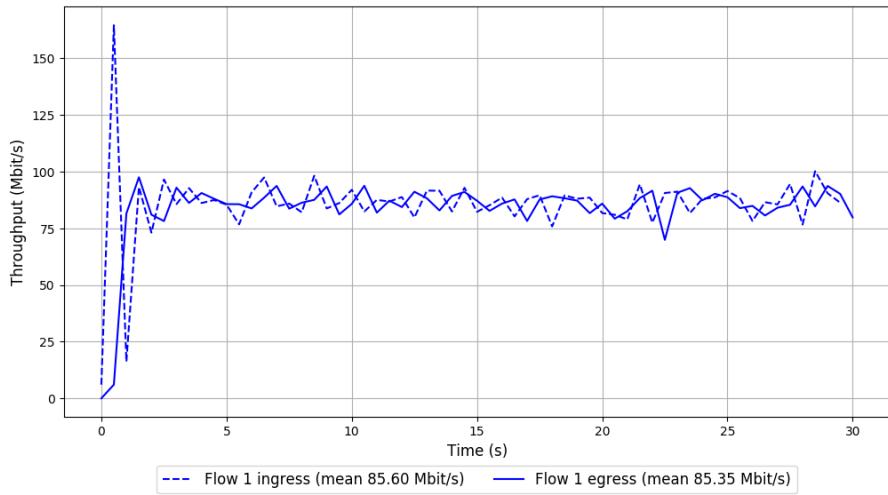


Run 4: Statistics of Verus

```
Start at: 2018-12-20 05:57:38
End at: 2018-12-20 05:58:08
Local clock offset: 0.768 ms
Remote clock offset: -2.033 ms

# Below is generated by plot.py at 2018-12-20 06:41:13
# Datalink statistics
-- Total of 1 flow:
Average throughput: 85.35 Mbit/s
95th percentile per-packet one-way delay: 74.846 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 85.35 Mbit/s
95th percentile per-packet one-way delay: 74.846 ms
Loss rate: 0.50%
```

Run 4: Report of Verus — Data Link

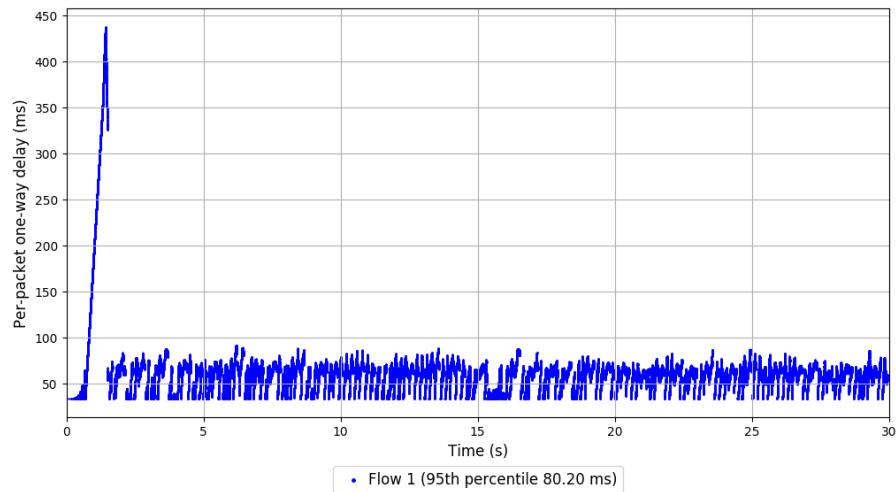
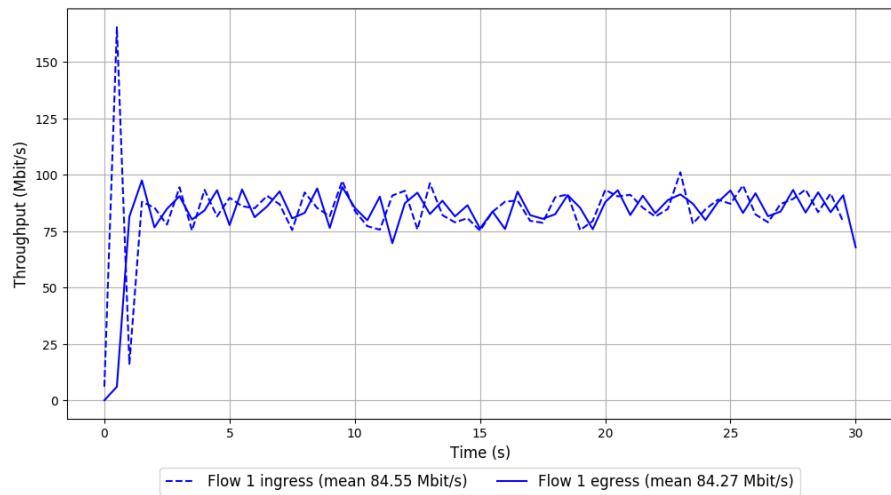


Run 5: Statistics of Verus

```
Start at: 2018-12-20 06:20:10
End at: 2018-12-20 06:20:40
Local clock offset: 0.717 ms
Remote clock offset: -1.791 ms

# Below is generated by plot.py at 2018-12-20 06:41:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 84.27 Mbit/s
95th percentile per-packet one-way delay: 80.202 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 84.27 Mbit/s
95th percentile per-packet one-way delay: 80.202 ms
Loss rate: 0.52%
```

Run 5: Report of Verus — Data Link

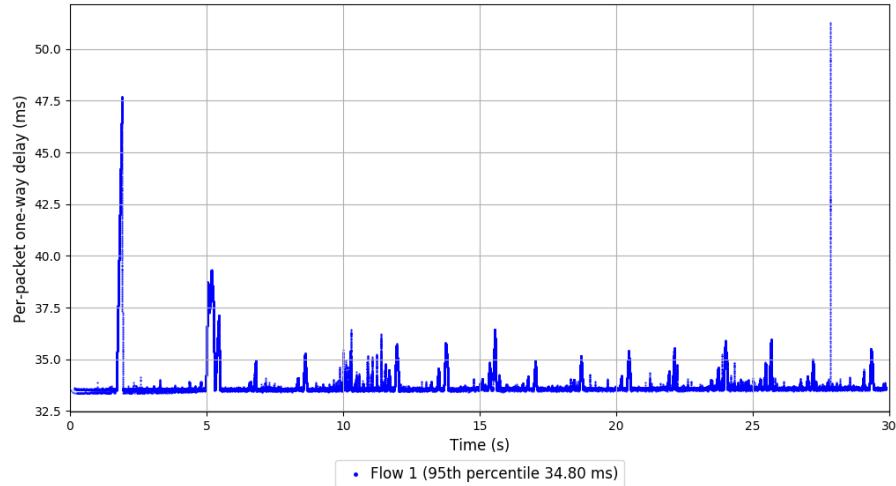
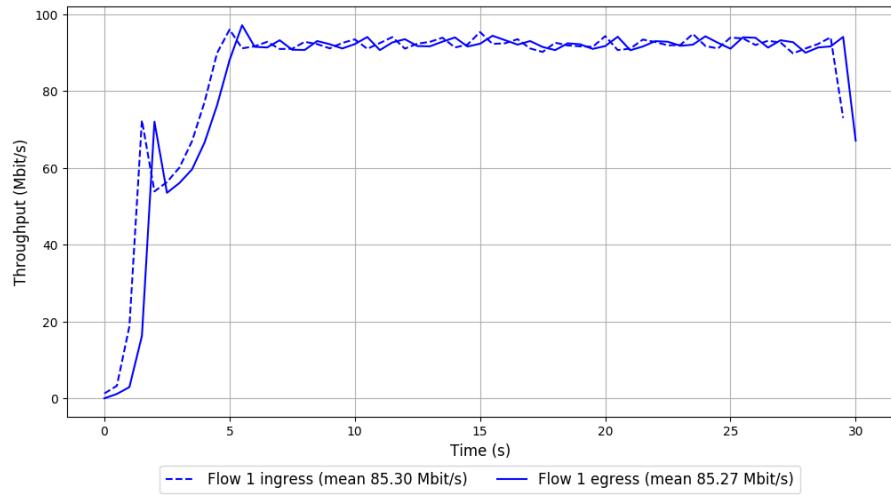


```
Run 1: Statistics of PCC-Vivace
```

```
Start at: 2018-12-20 04:49:43
End at: 2018-12-20 04:50:13
Local clock offset: -2.222 ms
Remote clock offset: -4.042 ms

# Below is generated by plot.py at 2018-12-20 06:41:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 85.27 Mbit/s
95th percentile per-packet one-way delay: 34.796 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 85.27 Mbit/s
95th percentile per-packet one-way delay: 34.796 ms
Loss rate: 0.24%
```

Run 1: Report of PCC-Vivace — Data Link

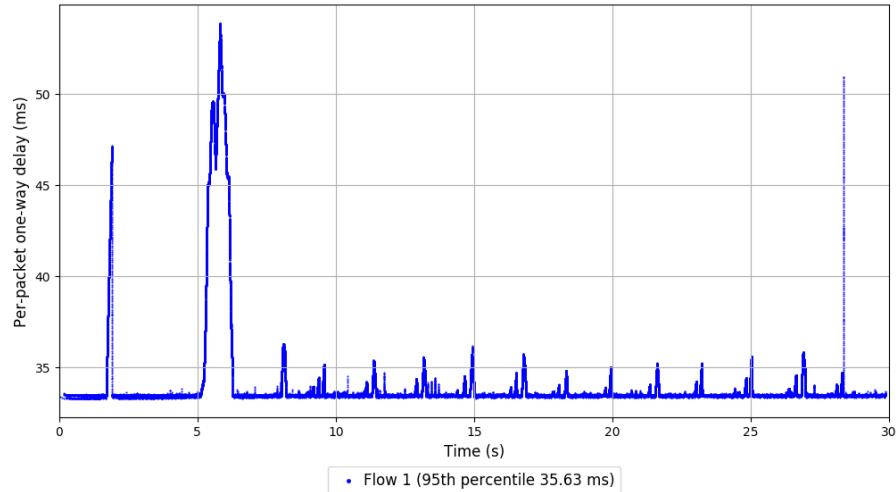
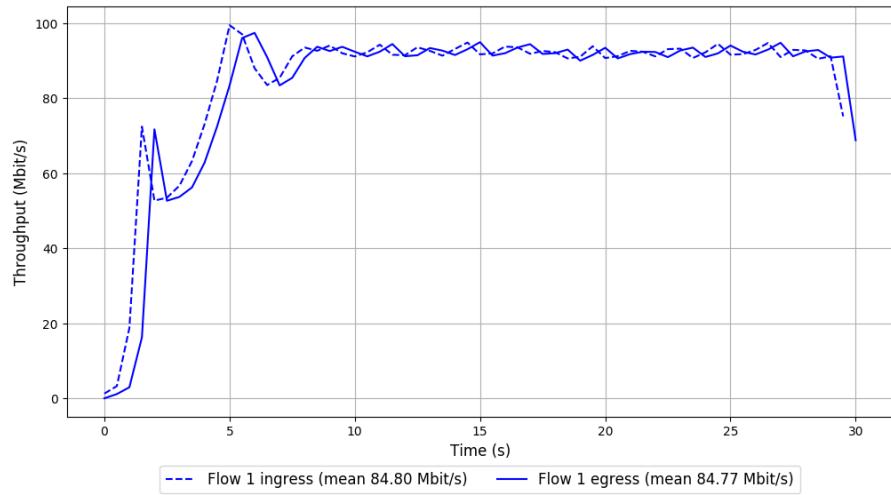


Run 2: Statistics of PCC-Vivace

```
Start at: 2018-12-20 05:12:14
End at: 2018-12-20 05:12:44
Local clock offset: -3.011 ms
Remote clock offset: -3.18 ms

# Below is generated by plot.py at 2018-12-20 06:41:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 84.77 Mbit/s
95th percentile per-packet one-way delay: 35.628 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 84.77 Mbit/s
95th percentile per-packet one-way delay: 35.628 ms
Loss rate: 0.25%
```

Run 2: Report of PCC-Vivace — Data Link

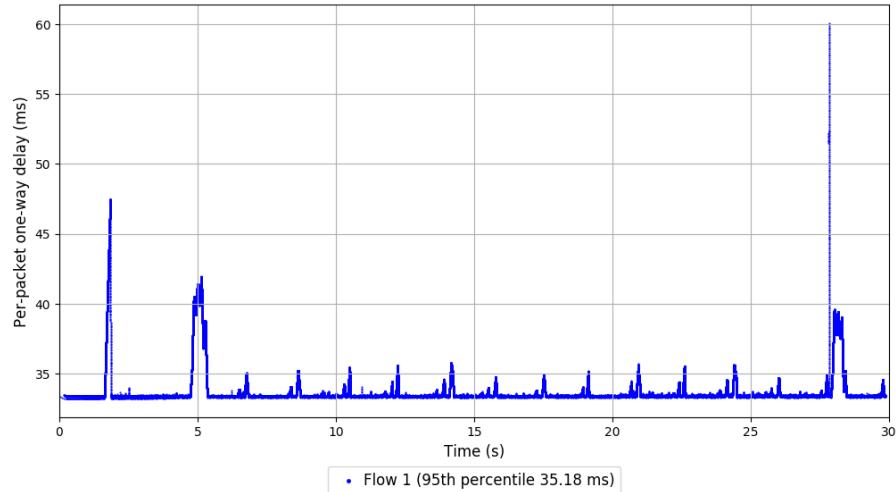
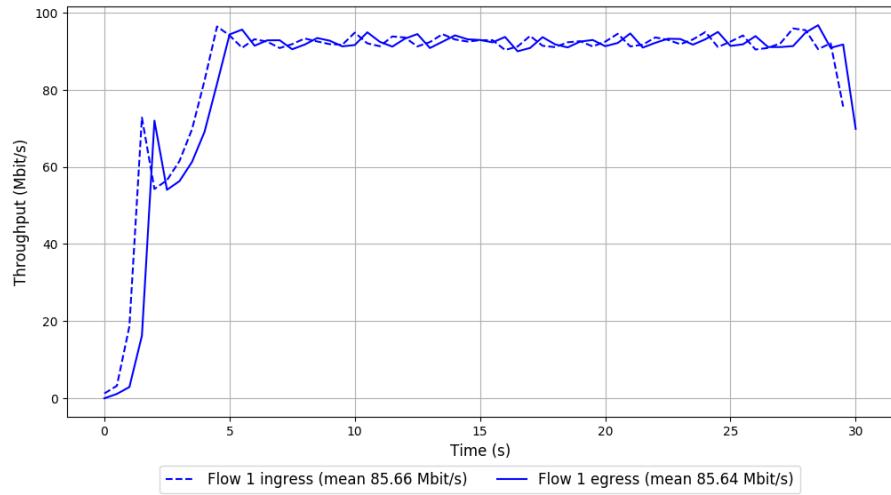


Run 3: Statistics of PCC-Vivace

```
Start at: 2018-12-20 05:34:25
End at: 2018-12-20 05:34:55
Local clock offset: -3.101 ms
Remote clock offset: -2.365 ms

# Below is generated by plot.py at 2018-12-20 06:41:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 85.64 Mbit/s
95th percentile per-packet one-way delay: 35.177 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 85.64 Mbit/s
95th percentile per-packet one-way delay: 35.177 ms
Loss rate: 0.24%
```

Run 3: Report of PCC-Vivace — Data Link

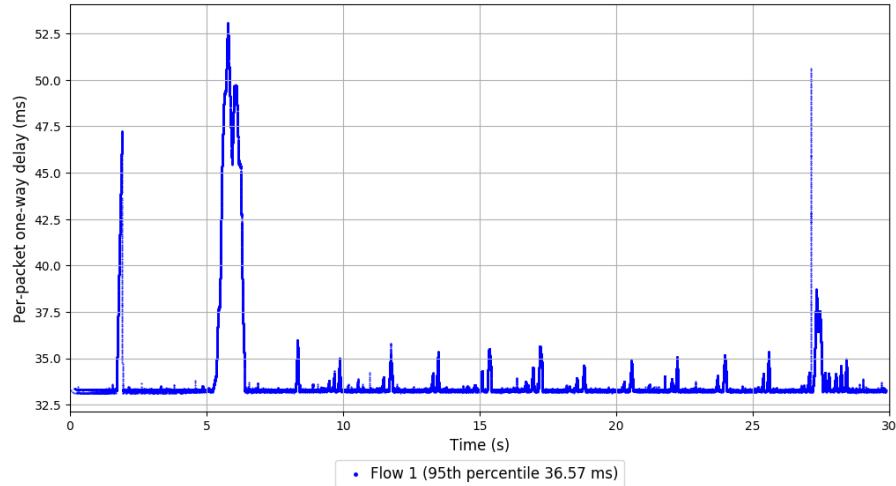
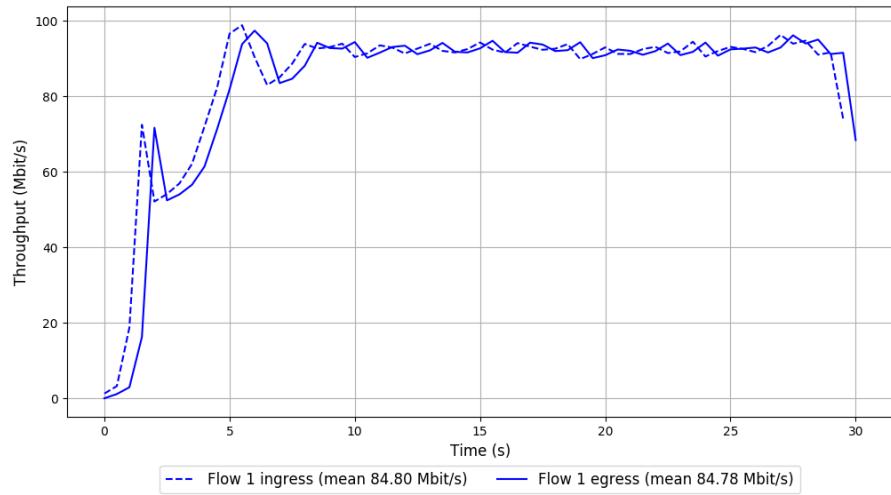


Run 4: Statistics of PCC-Vivace

```
Start at: 2018-12-20 05:56:27
End at: 2018-12-20 05:56:57
Local clock offset: 0.672 ms
Remote clock offset: -1.835 ms

# Below is generated by plot.py at 2018-12-20 06:41:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 84.78 Mbit/s
95th percentile per-packet one-way delay: 36.573 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 84.78 Mbit/s
95th percentile per-packet one-way delay: 36.573 ms
Loss rate: 0.24%
```

Run 4: Report of PCC-Vivace — Data Link

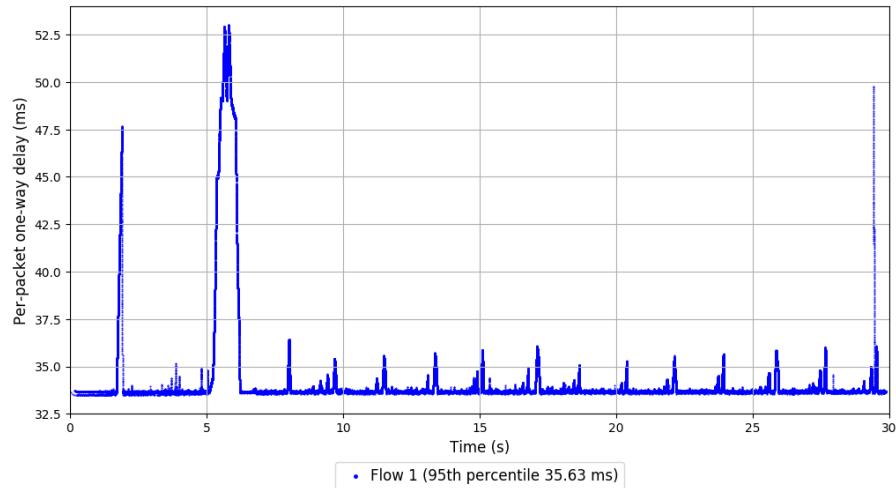
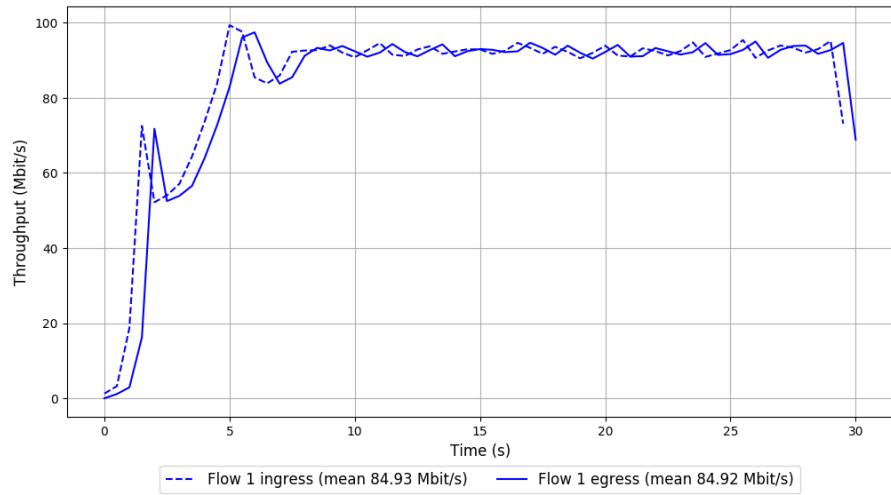


Run 5: Statistics of PCC-Vivace

```
Start at: 2018-12-20 06:18:56
End at: 2018-12-20 06:19:26
Local clock offset: 0.705 ms
Remote clock offset: -1.848 ms

# Below is generated by plot.py at 2018-12-20 06:41:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 84.92 Mbit/s
95th percentile per-packet one-way delay: 35.632 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 84.92 Mbit/s
95th percentile per-packet one-way delay: 35.632 ms
Loss rate: 0.23%
```

Run 5: Report of PCC-Vivace — Data Link

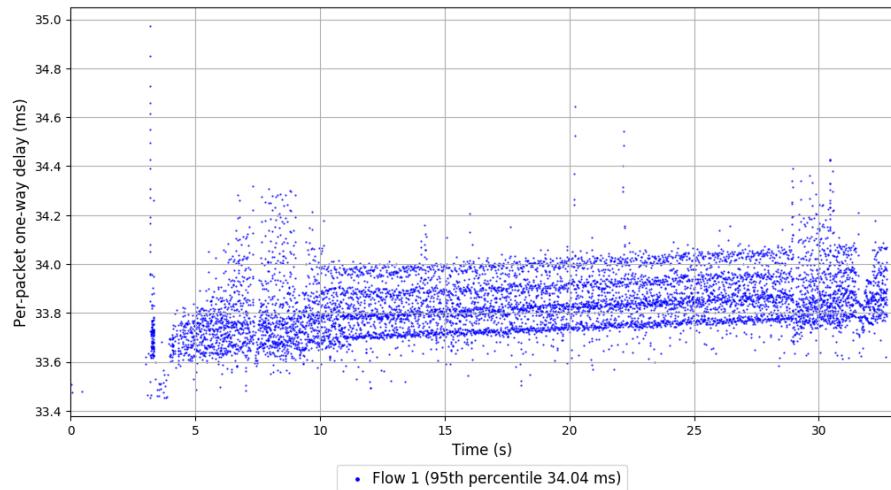
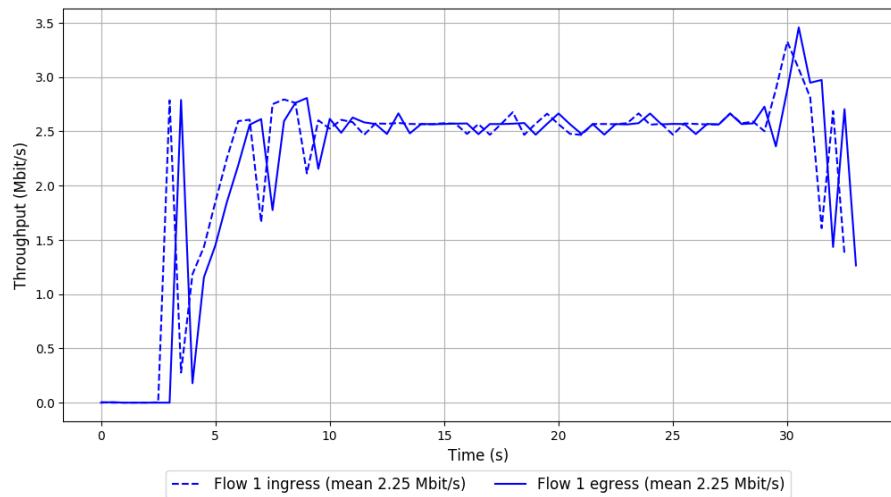


Run 1: Statistics of WebRTC media

```
Start at: 2018-12-20 04:39:21
End at: 2018-12-20 04:39:51
Local clock offset: -0.311 ms
Remote clock offset: -4.222 ms

# Below is generated by plot.py at 2018-12-20 06:41:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.25 Mbit/s
95th percentile per-packet one-way delay: 34.042 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 2.25 Mbit/s
95th percentile per-packet one-way delay: 34.042 ms
Loss rate: 0.20%
```

Run 1: Report of WebRTC media — Data Link

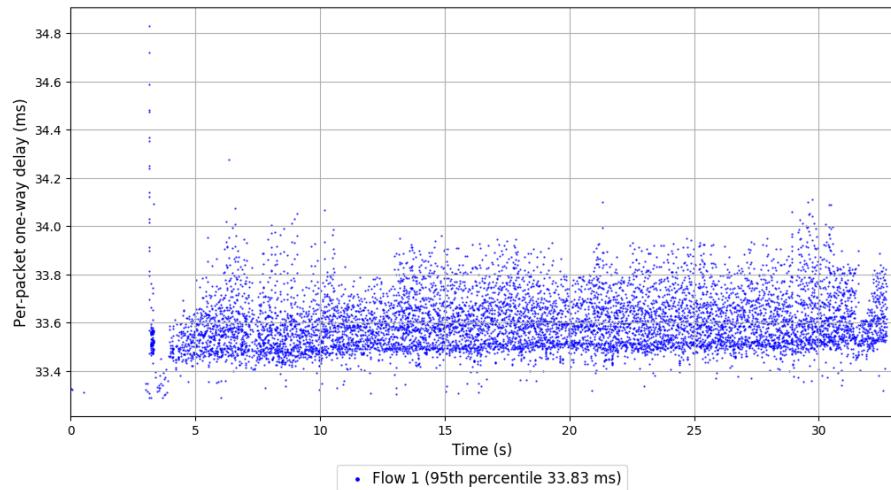
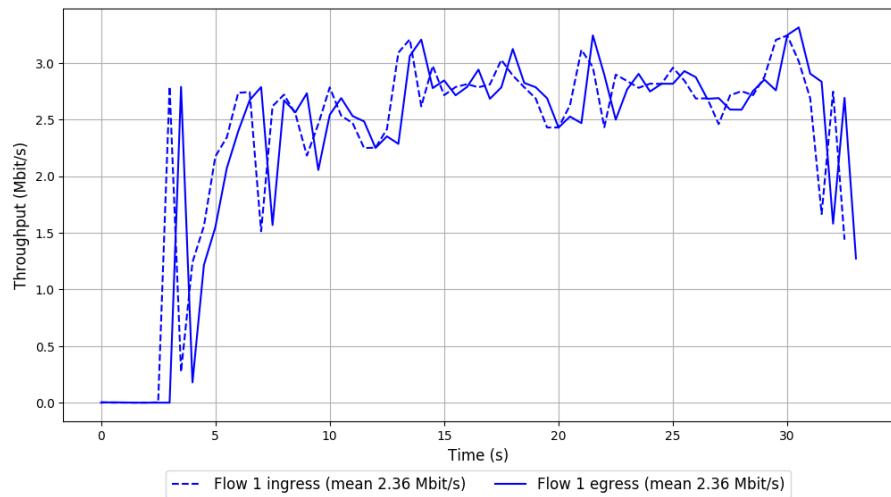


Run 2: Statistics of WebRTC media

```
Start at: 2018-12-20 05:01:45
End at: 2018-12-20 05:02:15
Local clock offset: -3.042 ms
Remote clock offset: -3.549 ms

# Below is generated by plot.py at 2018-12-20 06:41:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.36 Mbit/s
95th percentile per-packet one-way delay: 33.828 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 2.36 Mbit/s
95th percentile per-packet one-way delay: 33.828 ms
Loss rate: 0.23%
```

Run 2: Report of WebRTC media — Data Link

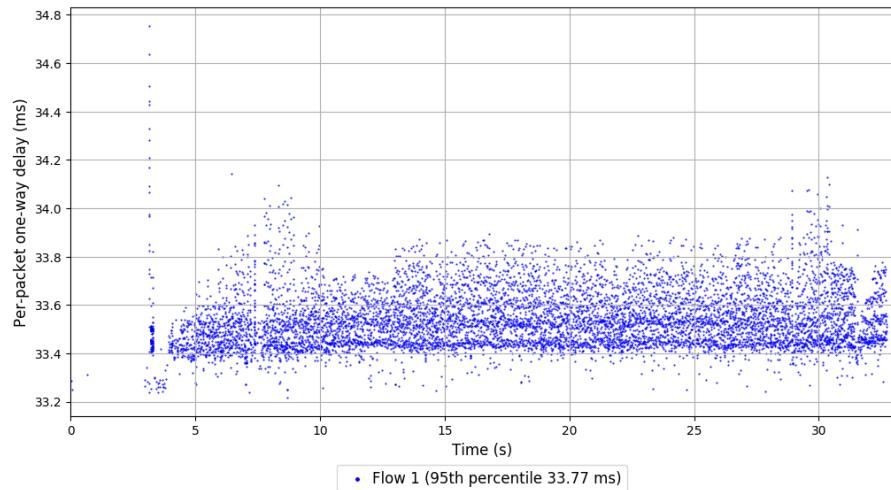
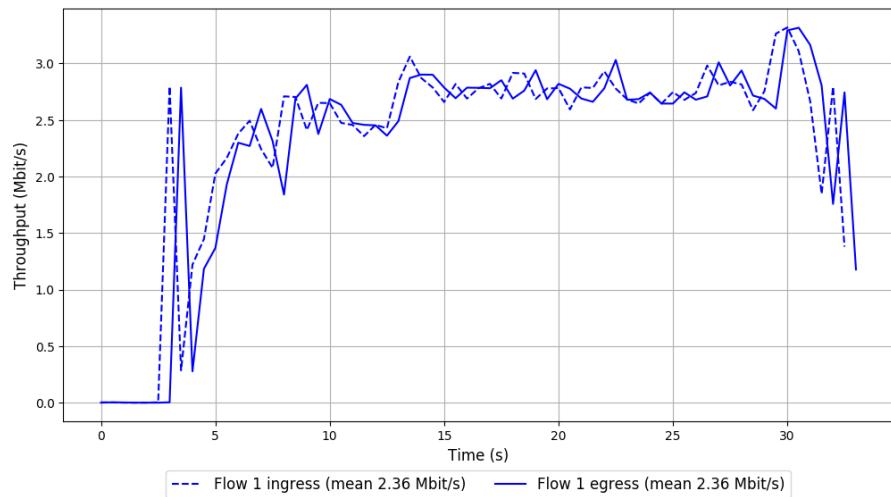


Run 3: Statistics of WebRTC media

```
Start at: 2018-12-20 05:23:57
End at: 2018-12-20 05:24:27
Local clock offset: -2.999 ms
Remote clock offset: -2.667 ms

# Below is generated by plot.py at 2018-12-20 06:41:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.36 Mbit/s
95th percentile per-packet one-way delay: 33.765 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 2.36 Mbit/s
95th percentile per-packet one-way delay: 33.765 ms
Loss rate: 0.26%
```

Run 3: Report of WebRTC media — Data Link

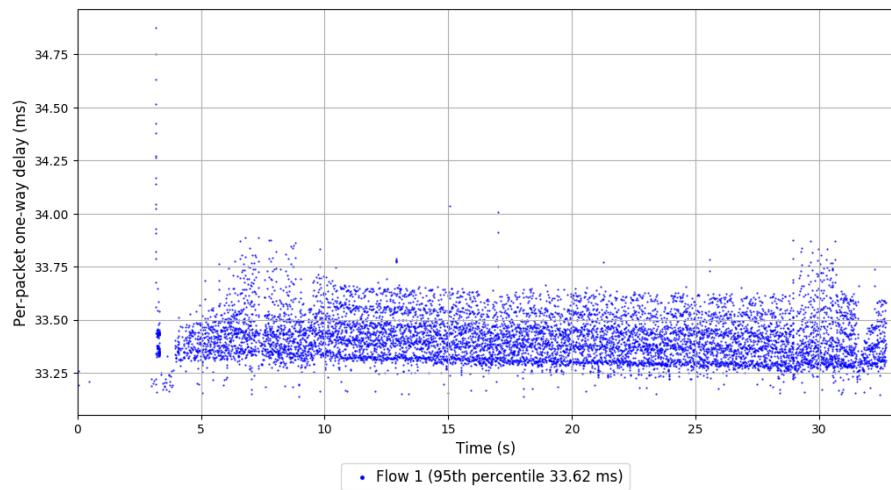
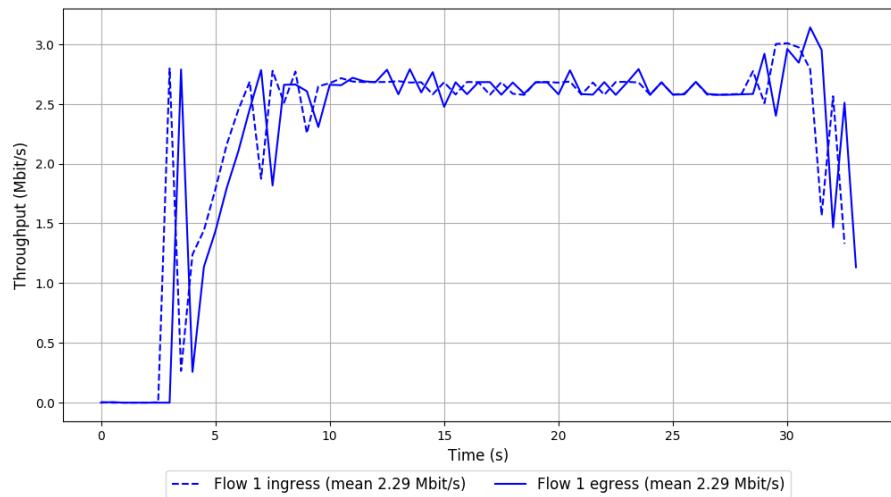


Run 4: Statistics of WebRTC media

```
Start at: 2018-12-20 05:46:06
End at: 2018-12-20 05:46:36
Local clock offset: -0.379 ms
Remote clock offset: -2.021 ms

# Below is generated by plot.py at 2018-12-20 06:41:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.29 Mbit/s
95th percentile per-packet one-way delay: 33.615 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 2.29 Mbit/s
95th percentile per-packet one-way delay: 33.615 ms
Loss rate: 0.26%
```

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

```
Start at: 2018-12-20 06:08:24
End at: 2018-12-20 06:08:54
Local clock offset: 0.999 ms
Remote clock offset: -1.759 ms

# Below is generated by plot.py at 2018-12-20 06:41:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.23 Mbit/s
95th percentile per-packet one-way delay: 33.797 ms
Loss rate: 0.25%
-- Flow 1:
Average throughput: 2.23 Mbit/s
95th percentile per-packet one-way delay: 33.797 ms
Loss rate: 0.25%
```

Run 5: Report of WebRTC media — Data Link

