

Pantheon Report

Generated at 2018-12-11 10:58:18 (UTC).
Data path: AWS California 2 on `ens5` (*local*) → Mexico on `em1` (*remote*).
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:

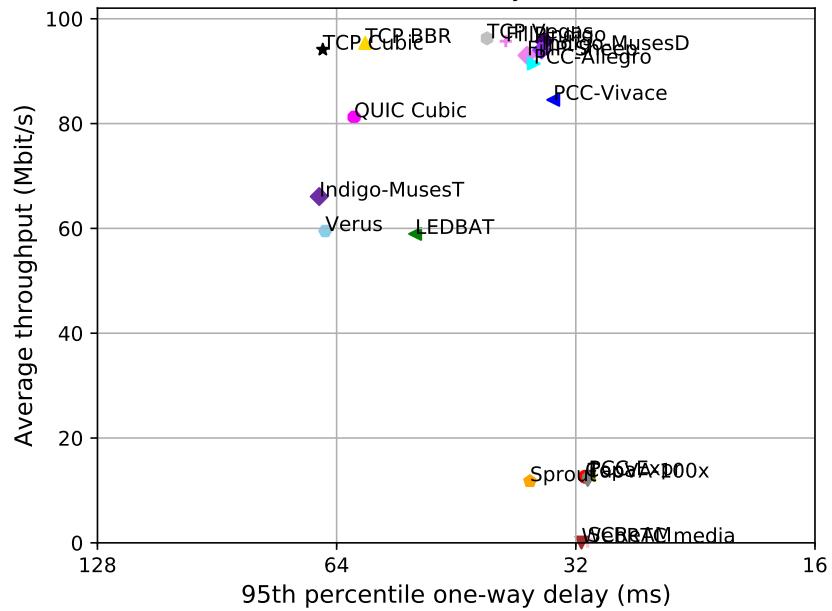
```
Linux 4.15.0-1029-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

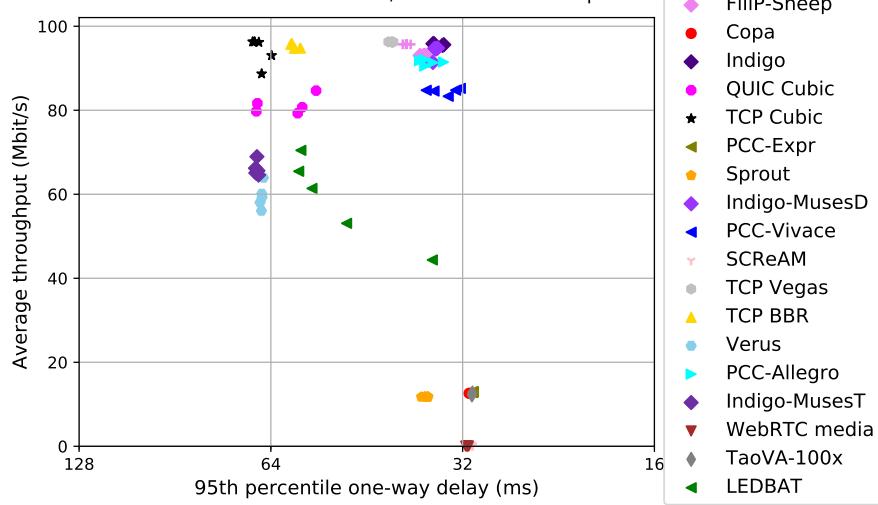
```
branch: muses @ c654af0b7d59d4ef4b914cfac404e1fc2e96dc68
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fc45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
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

test from AWS California 2 to Mexico, 5 runs of 30s each per scheme
(mean of all runs by scheme)



test from AWS California 2 to Mexico, 5 runs of 30s each per scheme



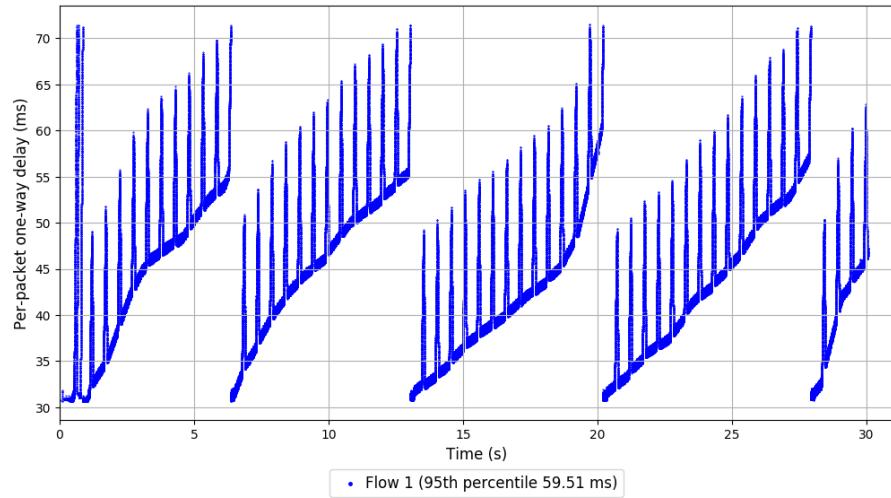
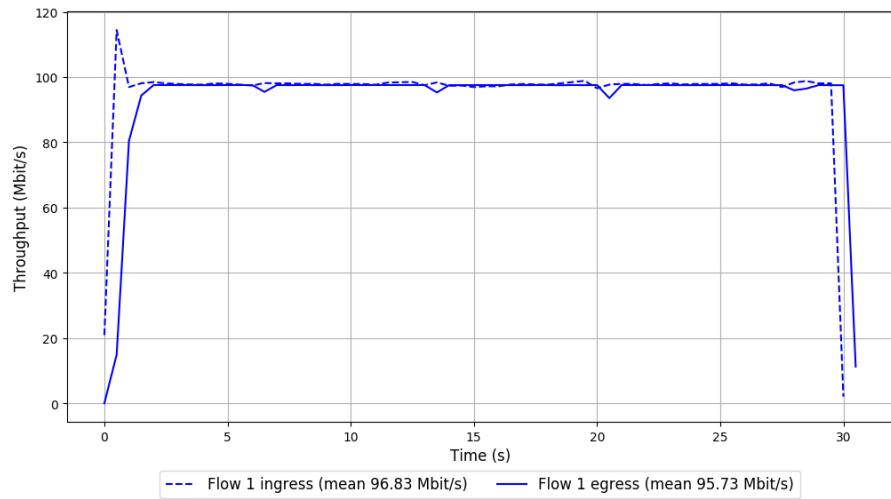
| scheme | # runs | mean avg tput (Mbit/s) flow 1 | mean 95th-%ile delay (ms) flow 1 | mean loss rate (%) flow 1 |
|---------------|--------|----------------------------------|-------------------------------------|------------------------------|
| TCP BBR | 5 | 95.38 | 58.91 | 1.06 |
| Copa | 2 | 12.61 | 31.15 | 71.91 |
| TCP Cubic | 5 | 94.11 | 66.62 | 0.46 |
| FillP | 5 | 95.72 | 39.20 | 0.68 |
| FillP-Sheep | 5 | 93.02 | 36.87 | 0.59 |
| Indigo | 5 | 95.70 | 35.06 | 0.01 |
| Indigo-MusesD | 5 | 94.04 | 35.34 | 0.40 |
| Indigo-MusesT | 5 | 66.08 | 67.31 | 38.10 |
| LEDBAT | 5 | 58.95 | 50.98 | 0.03 |
| PCC-Allegro | 5 | 91.44 | 36.15 | 0.69 |
| PCC-Expr | 3 | 12.91 | 30.83 | 50.51 |
| QUIC Cubic | 5 | 81.22 | 60.84 | 1.38 |
| SCReAM | 5 | 0.21 | 30.91 | 0.00 |
| Sprout | 5 | 11.77 | 36.55 | 0.04 |
| TaoVA-100x | 2 | 12.46 | 30.91 | 70.70 |
| TCP Vegas | 5 | 96.26 | 41.39 | 0.27 |
| Verus | 5 | 59.50 | 66.15 | 26.44 |
| PCC-Vivace | 5 | 84.53 | 34.16 | 0.00 |
| WebRTC media | 5 | 0.05 | 31.48 | 0.00 |

Run 1: Statistics of TCP BBR

```
Start at: 2018-12-11 09:00:17
End at: 2018-12-11 09:00:47
Local clock offset: 2.248 ms
Remote clock offset: -3.719 ms

# Below is generated by plot.py at 2018-12-11 10:50:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.73 Mbit/s
95th percentile per-packet one-way delay: 59.507 ms
Loss rate: 1.09%
-- Flow 1:
Average throughput: 95.73 Mbit/s
95th percentile per-packet one-way delay: 59.507 ms
Loss rate: 1.09%
```

Run 1: Report of TCP BBR — Data Link

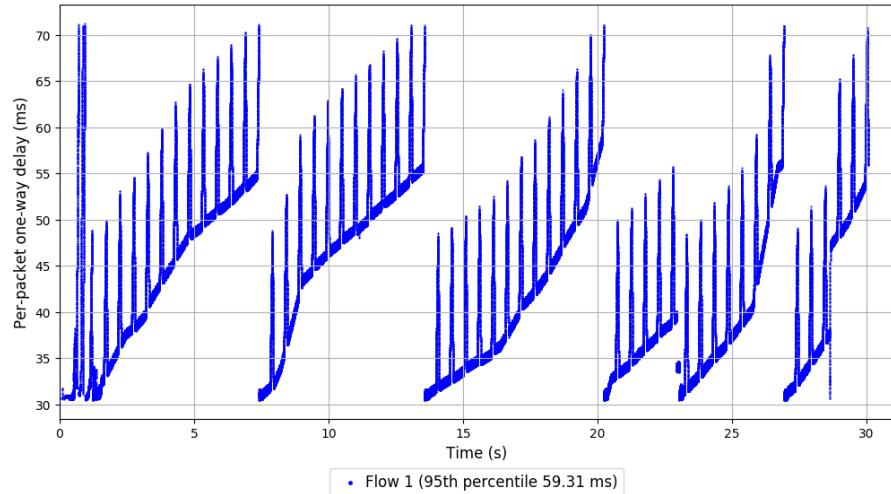
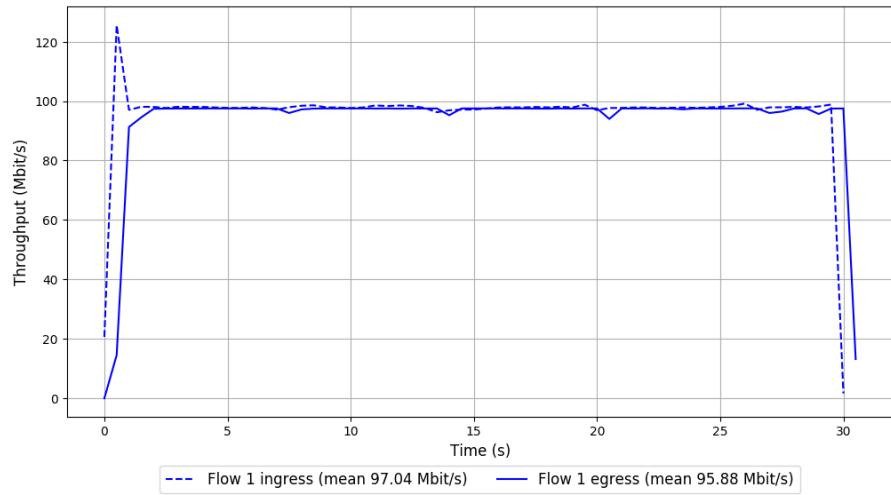


Run 2: Statistics of TCP BBR

```
Start at: 2018-12-11 09:22:01
End at: 2018-12-11 09:22:31
Local clock offset: 1.275 ms
Remote clock offset: -3.051 ms

# Below is generated by plot.py at 2018-12-11 10:50:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.88 Mbit/s
95th percentile per-packet one-way delay: 59.312 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 95.88 Mbit/s
95th percentile per-packet one-way delay: 59.312 ms
Loss rate: 1.11%
```

Run 2: Report of TCP BBR — Data Link

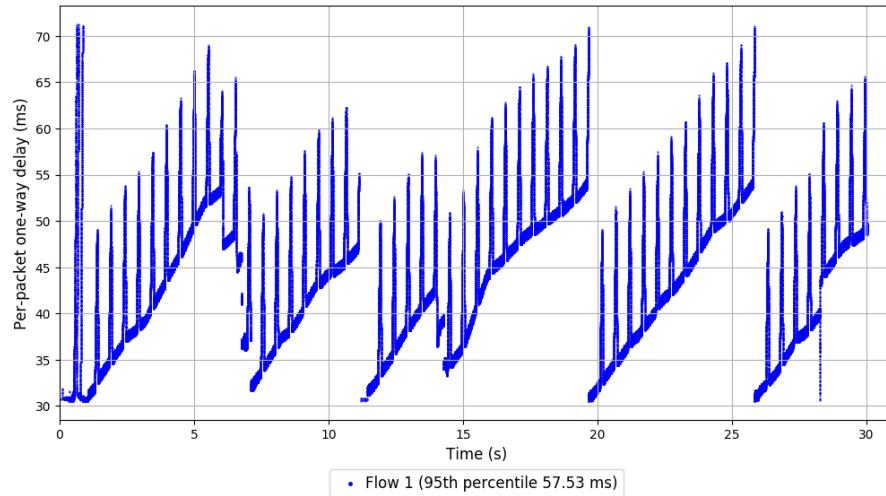
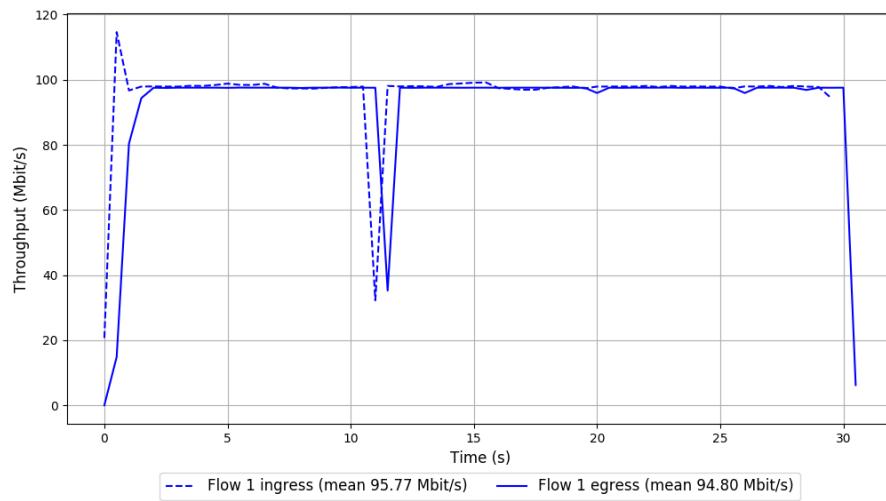


Run 3: Statistics of TCP BBR

```
Start at: 2018-12-11 09:43:50
End at: 2018-12-11 09:44:20
Local clock offset: 0.711 ms
Remote clock offset: -2.157 ms

# Below is generated by plot.py at 2018-12-11 10:50:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.80 Mbit/s
95th percentile per-packet one-way delay: 57.527 ms
Loss rate: 0.94%
-- Flow 1:
Average throughput: 94.80 Mbit/s
95th percentile per-packet one-way delay: 57.527 ms
Loss rate: 0.94%
```

Run 3: Report of TCP BBR — Data Link

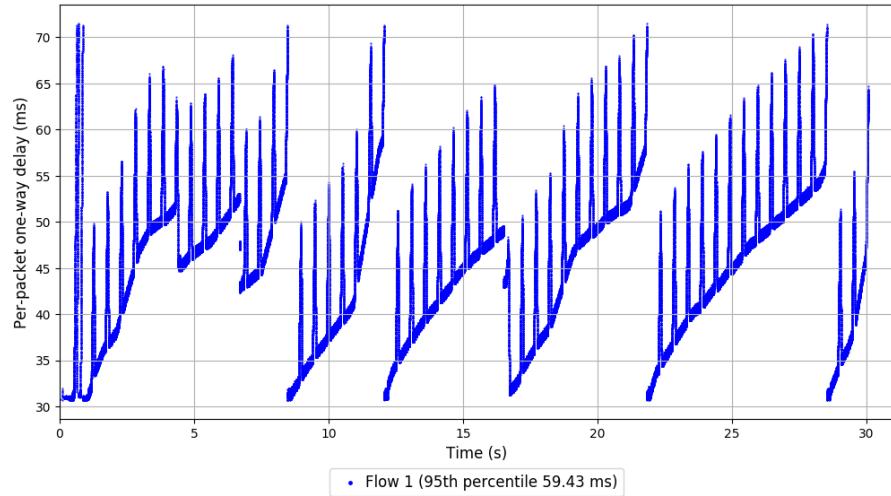
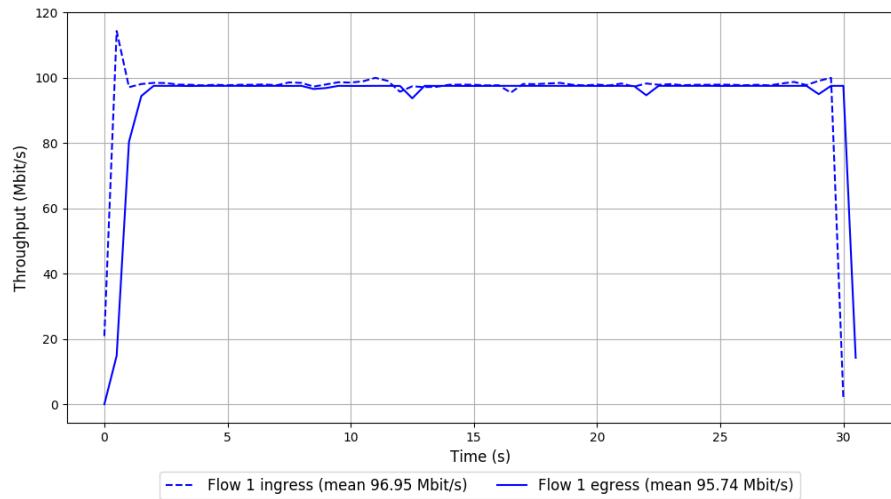


Run 4: Statistics of TCP BBR

```
Start at: 2018-12-11 10:05:50
End at: 2018-12-11 10:06:20
Local clock offset: 0.504 ms
Remote clock offset: -1.339 ms

# Below is generated by plot.py at 2018-12-11 10:50:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.74 Mbit/s
95th percentile per-packet one-way delay: 59.431 ms
Loss rate: 1.15%
-- Flow 1:
Average throughput: 95.74 Mbit/s
95th percentile per-packet one-way delay: 59.431 ms
Loss rate: 1.15%
```

Run 4: Report of TCP BBR — Data Link

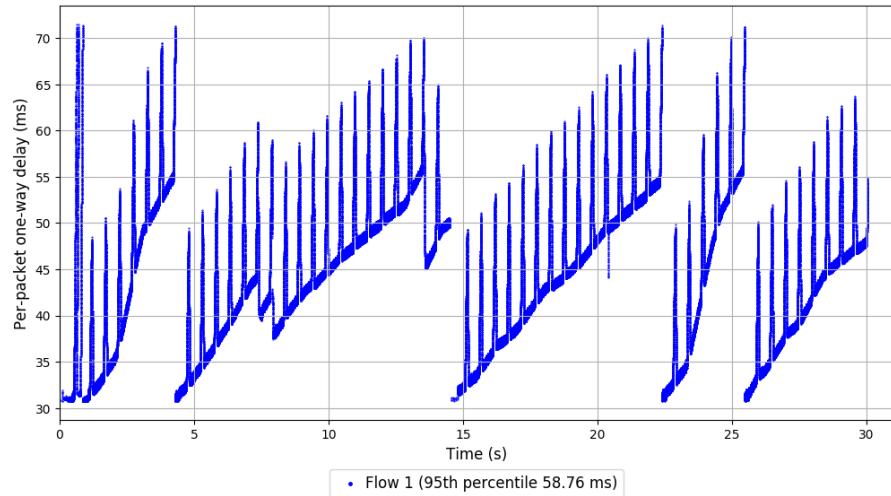
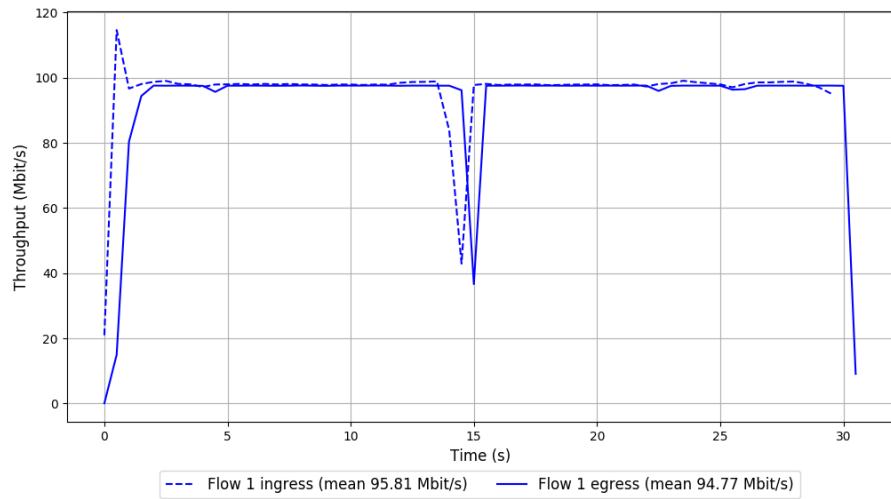


Run 5: Statistics of TCP BBR

```
Start at: 2018-12-11 10:27:47
End at: 2018-12-11 10:28:17
Local clock offset: 0.437 ms
Remote clock offset: -1.292 ms

# Below is generated by plot.py at 2018-12-11 10:50:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.77 Mbit/s
95th percentile per-packet one-way delay: 58.756 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 94.77 Mbit/s
95th percentile per-packet one-way delay: 58.756 ms
Loss rate: 1.01%
```

Run 5: Report of TCP BBR — Data Link



Run 1: Statistics of Copa

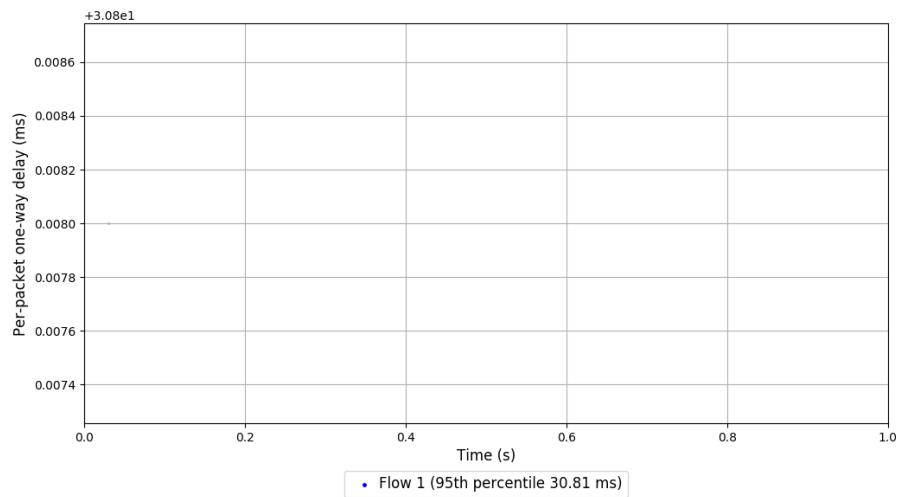
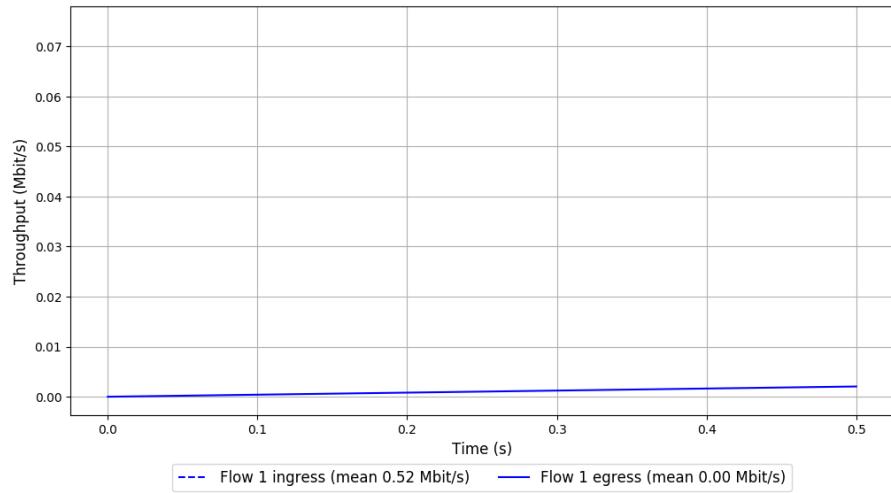
Start at: 2018-12-11 09:17:25

End at: 2018-12-11 09:17:55

Local clock offset: 1.661 ms

Remote clock offset: -2.963 ms

Run 1: Report of Copa — Data Link

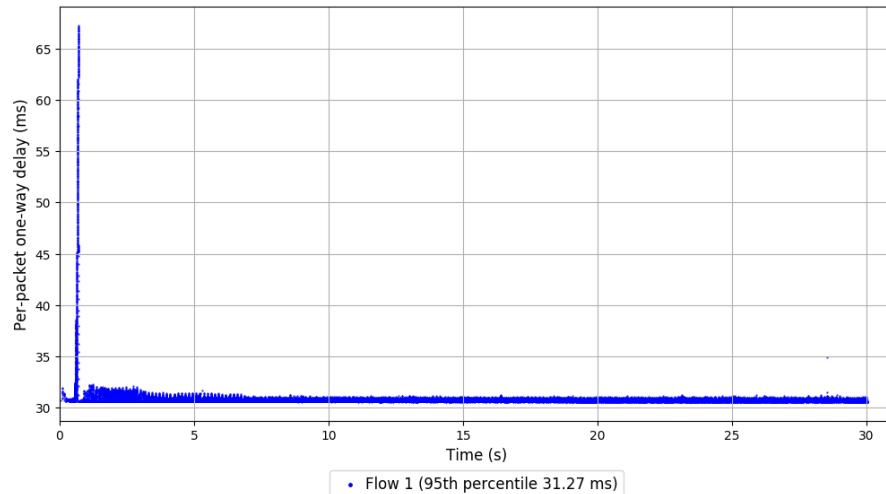
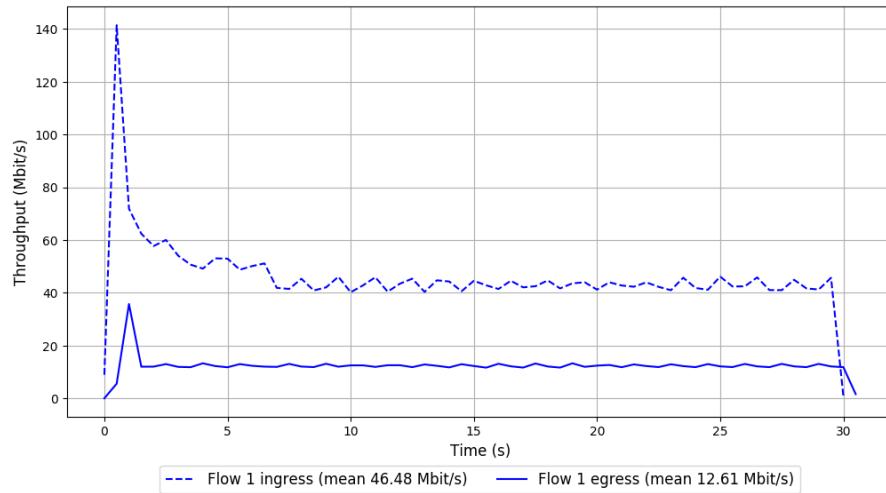


Run 2: Statistics of Copa

```
Start at: 2018-12-11 09:39:14
End at: 2018-12-11 09:39:44
Local clock offset: 1.044 ms
Remote clock offset: -2.229 ms

# Below is generated by plot.py at 2018-12-11 10:50:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.61 Mbit/s
95th percentile per-packet one-way delay: 31.269 ms
Loss rate: 72.87%
-- Flow 1:
Average throughput: 12.61 Mbit/s
95th percentile per-packet one-way delay: 31.269 ms
Loss rate: 72.87%
```

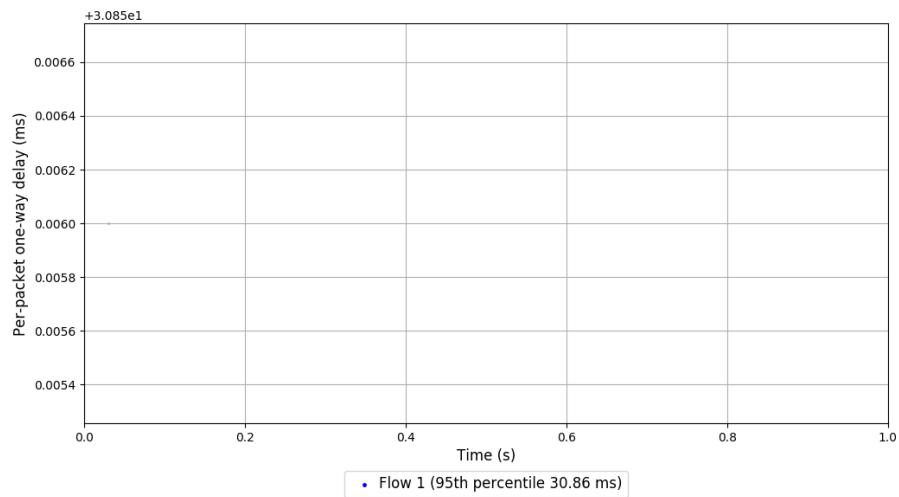
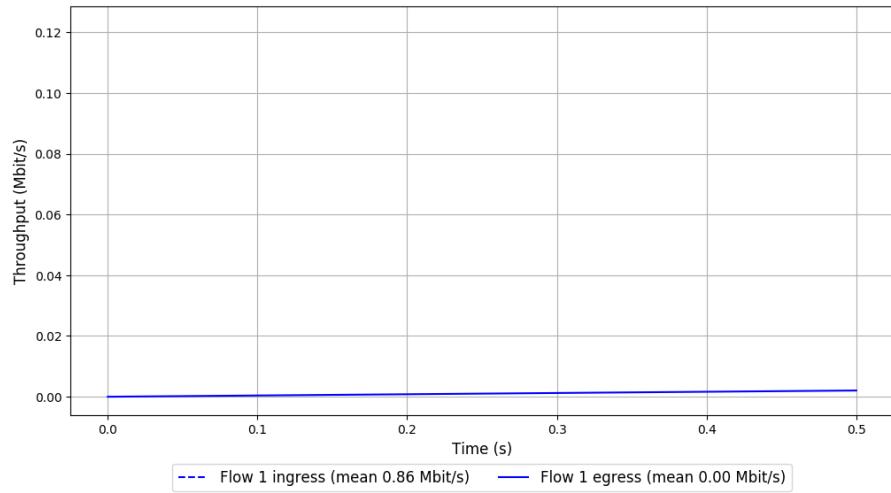
Run 2: Report of Copa — Data Link



Run 3: Statistics of Copa

Start at: 2018-12-11 10:01:12
End at: 2018-12-11 10:01:42
Local clock offset: 0.469 ms
Remote clock offset: -1.389 ms

Run 3: Report of Copa — Data Link

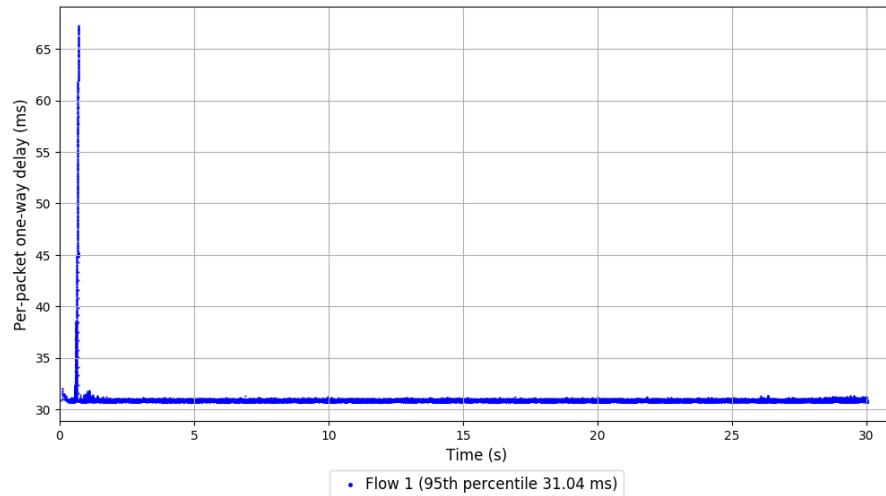
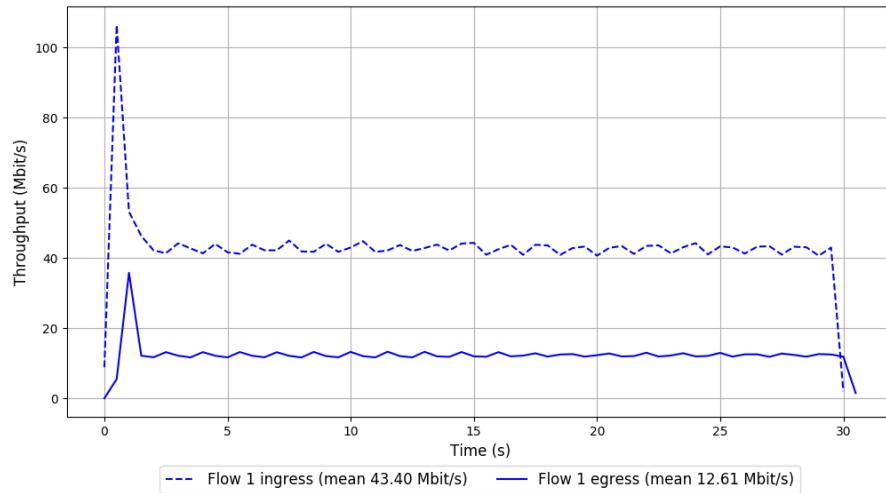


Run 4: Statistics of Copa

```
Start at: 2018-12-11 10:23:09
End at: 2018-12-11 10:23:39
Local clock offset: 0.416 ms
Remote clock offset: -1.258 ms

# Below is generated by plot.py at 2018-12-11 10:50:23
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.61 Mbit/s
95th percentile per-packet one-way delay: 31.035 ms
Loss rate: 70.94%
-- Flow 1:
Average throughput: 12.61 Mbit/s
95th percentile per-packet one-way delay: 31.035 ms
Loss rate: 70.94%
```

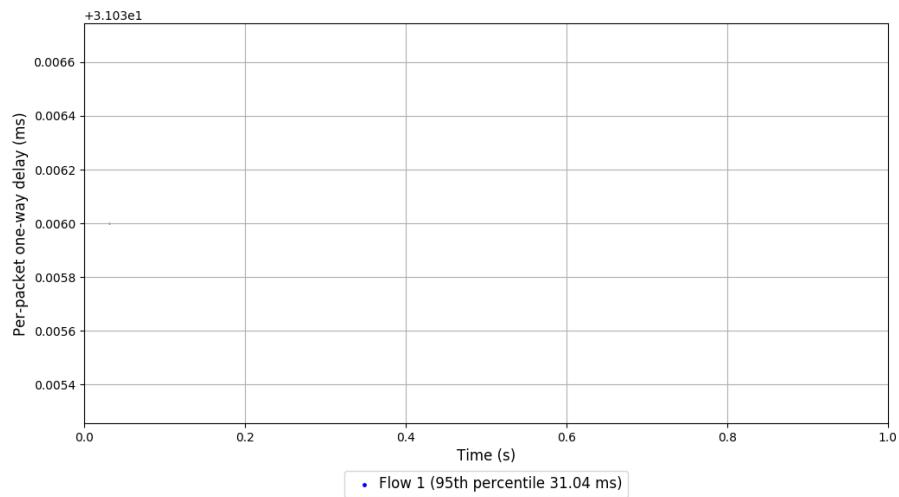
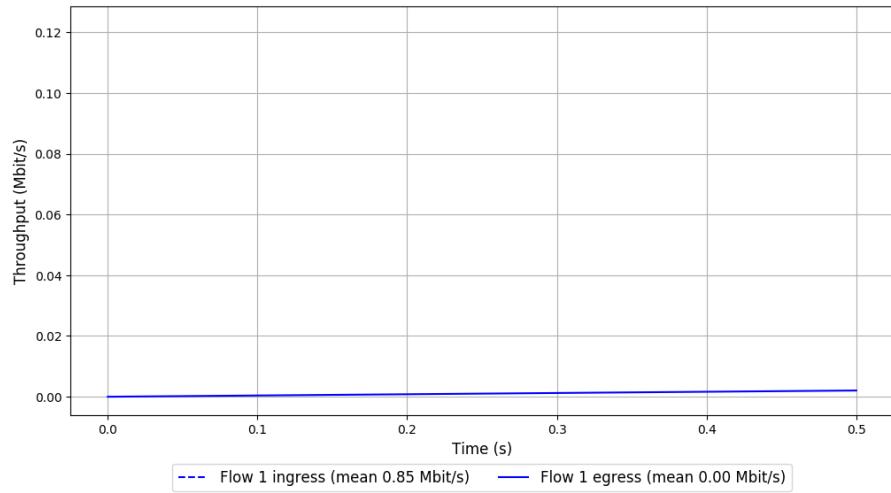
Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-12-11 10:45:06
End at: 2018-12-11 10:45:36
Local clock offset: 2.158 ms
Remote clock offset: -1.418 ms

Run 5: Report of Copa — Data Link

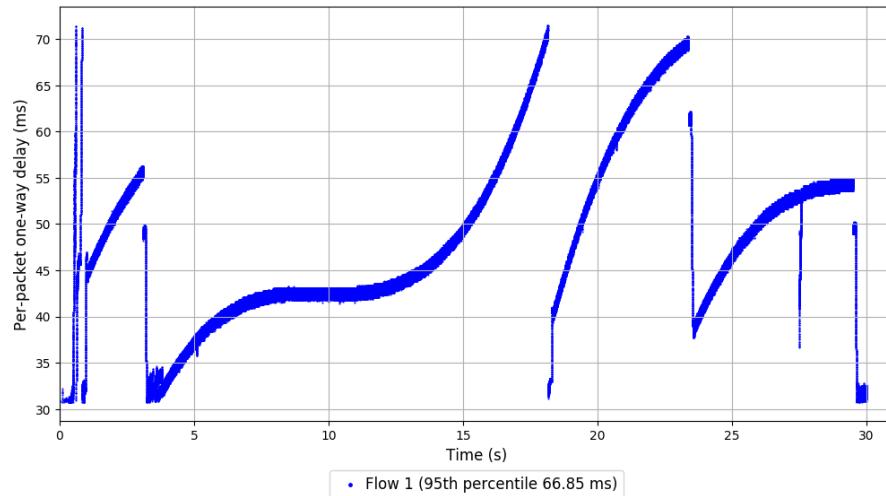
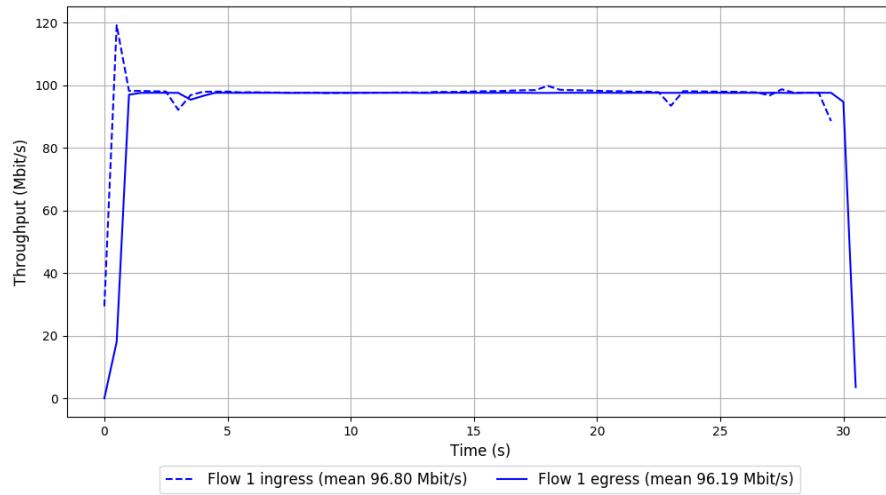


```
Run 1: Statistics of TCP Cubic
```

```
Start at: 2018-12-11 09:05:59
End at: 2018-12-11 09:06:29
Local clock offset: 3.388 ms
Remote clock offset: -3.457 ms

# Below is generated by plot.py at 2018-12-11 10:50:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.19 Mbit/s
95th percentile per-packet one-way delay: 66.854 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 96.19 Mbit/s
95th percentile per-packet one-way delay: 66.854 ms
Loss rate: 0.63%
```

Run 1: Report of TCP Cubic — Data Link

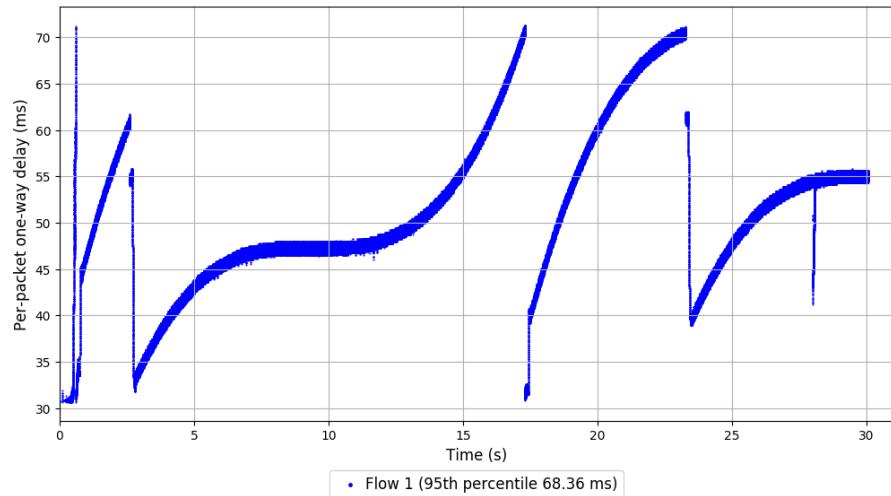
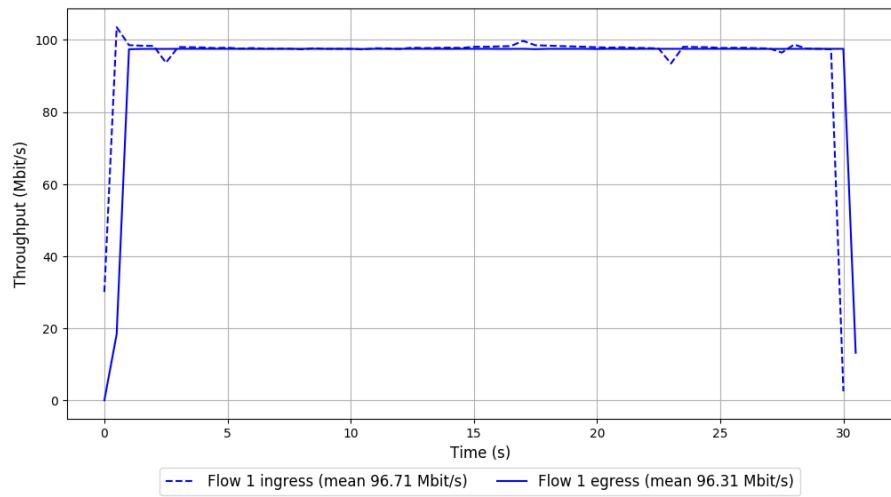


Run 2: Statistics of TCP Cubic

```
Start at: 2018-12-11 09:27:45
End at: 2018-12-11 09:28:15
Local clock offset: 1.063 ms
Remote clock offset: -2.625 ms

# Below is generated by plot.py at 2018-12-11 10:50:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.31 Mbit/s
95th percentile per-packet one-way delay: 68.356 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 96.31 Mbit/s
95th percentile per-packet one-way delay: 68.356 ms
Loss rate: 0.34%
```

Run 2: Report of TCP Cubic — Data Link

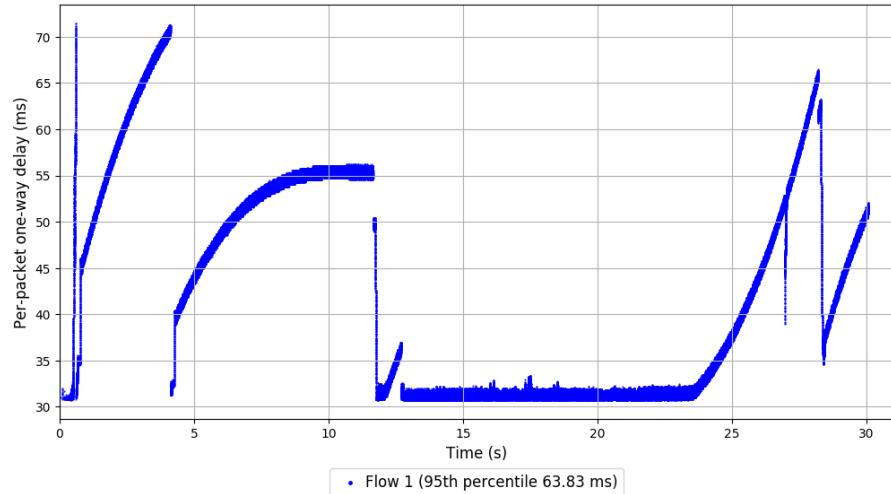
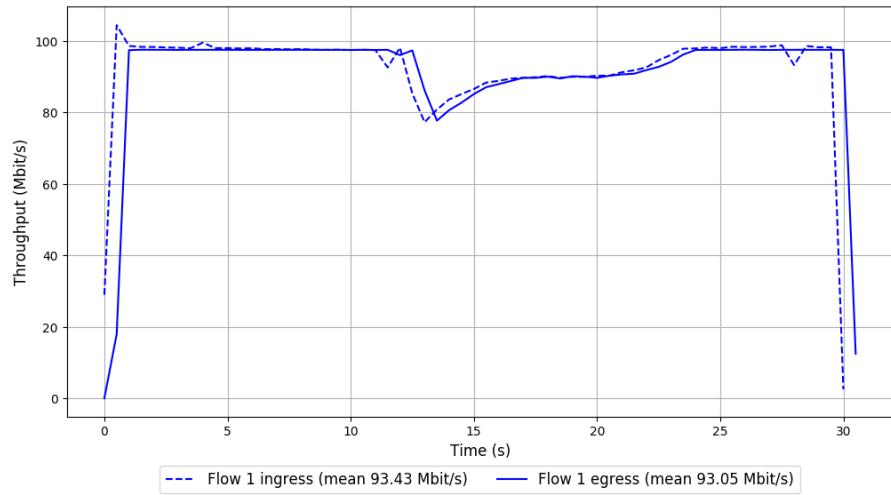


Run 3: Statistics of TCP Cubic

```
Start at: 2018-12-11 09:49:35
End at: 2018-12-11 09:50:05
Local clock offset: 0.544 ms
Remote clock offset: -1.751 ms

# Below is generated by plot.py at 2018-12-11 10:50:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.05 Mbit/s
95th percentile per-packet one-way delay: 63.831 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 93.05 Mbit/s
95th percentile per-packet one-way delay: 63.831 ms
Loss rate: 0.35%
```

Run 3: Report of TCP Cubic — Data Link

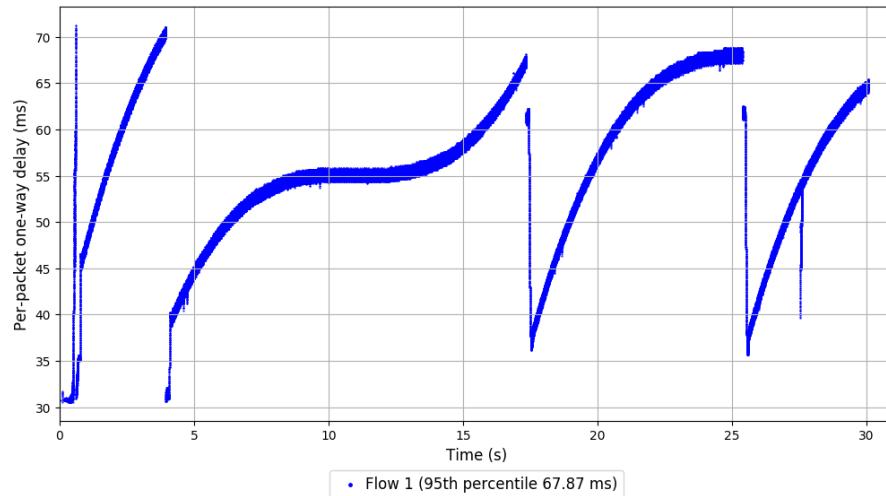
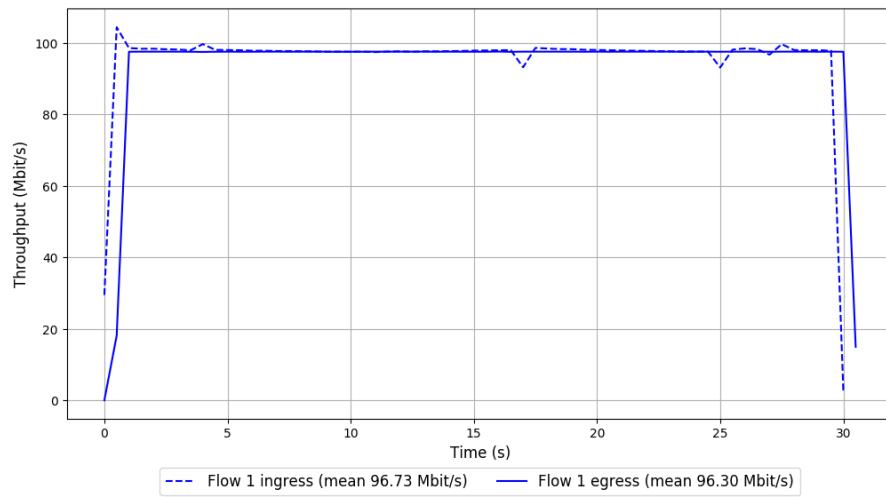


Run 4: Statistics of TCP Cubic

```
Start at: 2018-12-11 10:11:42
End at: 2018-12-11 10:12:12
Local clock offset: 0.48 ms
Remote clock offset: -1.441 ms

# Below is generated by plot.py at 2018-12-11 10:51:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.30 Mbit/s
95th percentile per-packet one-way delay: 67.866 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 96.30 Mbit/s
95th percentile per-packet one-way delay: 67.866 ms
Loss rate: 0.33%
```

Run 4: Report of TCP Cubic — Data Link

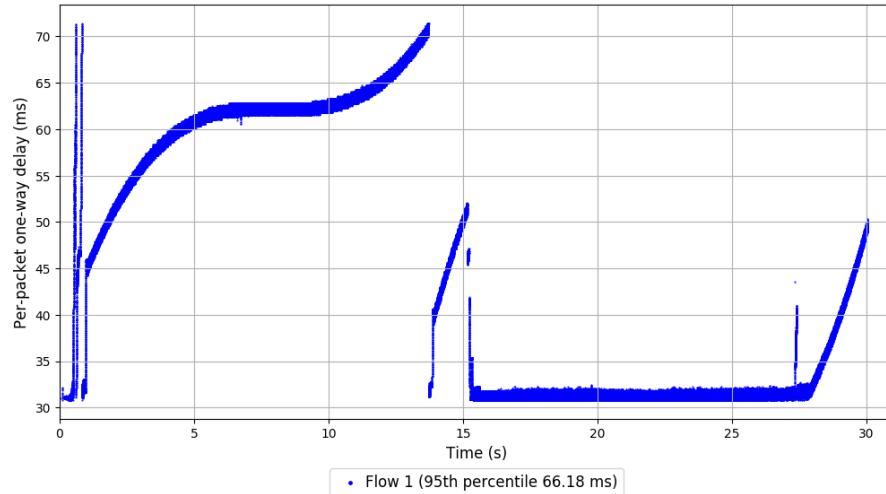
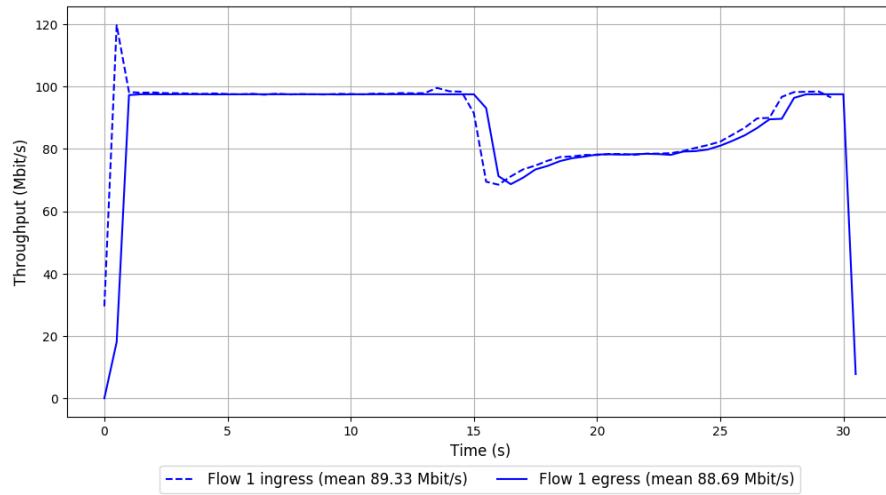


Run 5: Statistics of TCP Cubic

```
Start at: 2018-12-11 10:33:33
End at: 2018-12-11 10:34:03
Local clock offset: 0.464 ms
Remote clock offset: -1.318 ms

# Below is generated by plot.py at 2018-12-11 10:51:24
# Datalink statistics
-- Total of 1 flow:
Average throughput: 88.69 Mbit/s
95th percentile per-packet one-way delay: 66.176 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 88.69 Mbit/s
95th percentile per-packet one-way delay: 66.176 ms
Loss rate: 0.65%
```

Run 5: Report of TCP Cubic — Data Link

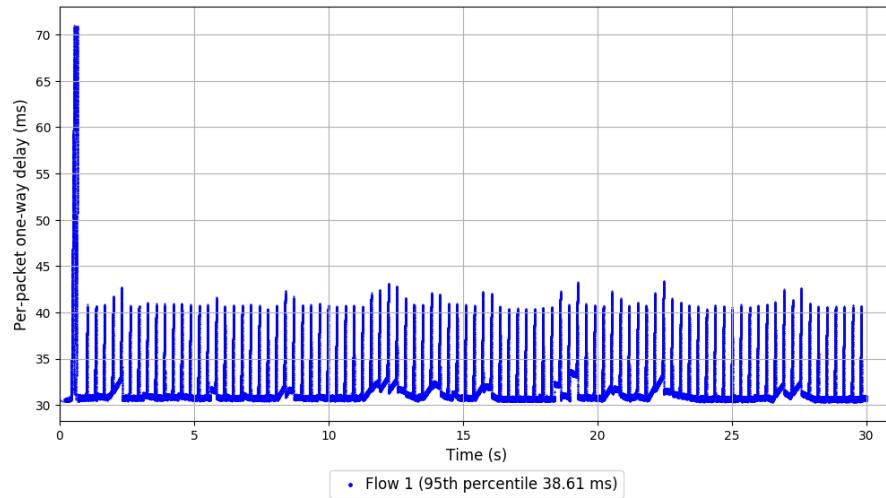
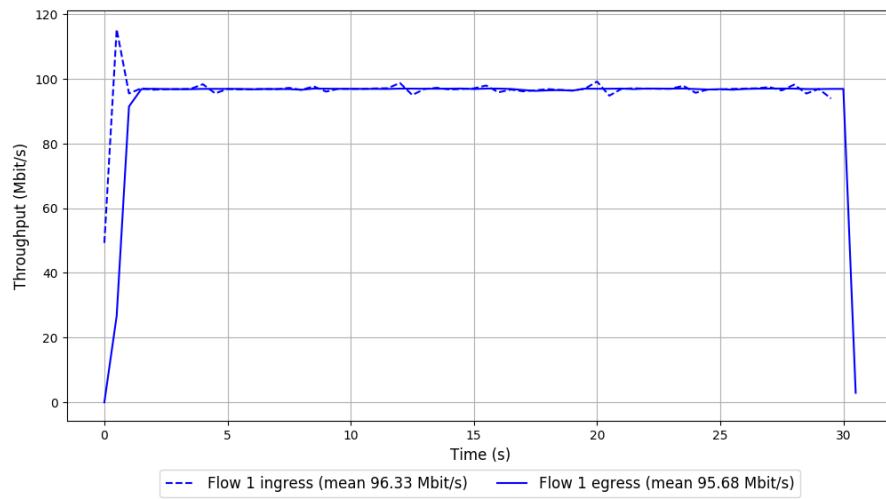


```
Run 1: Statistics of FillP

Start at: 2018-12-11 09:10:31
End at: 2018-12-11 09:11:01
Local clock offset: 2.999 ms
Remote clock offset: -3.258 ms

# Below is generated by plot.py at 2018-12-11 10:51:40
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.68 Mbit/s
95th percentile per-packet one-way delay: 38.613 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 95.68 Mbit/s
95th percentile per-packet one-way delay: 38.613 ms
Loss rate: 0.68%
```

Run 1: Report of FillP — Data Link

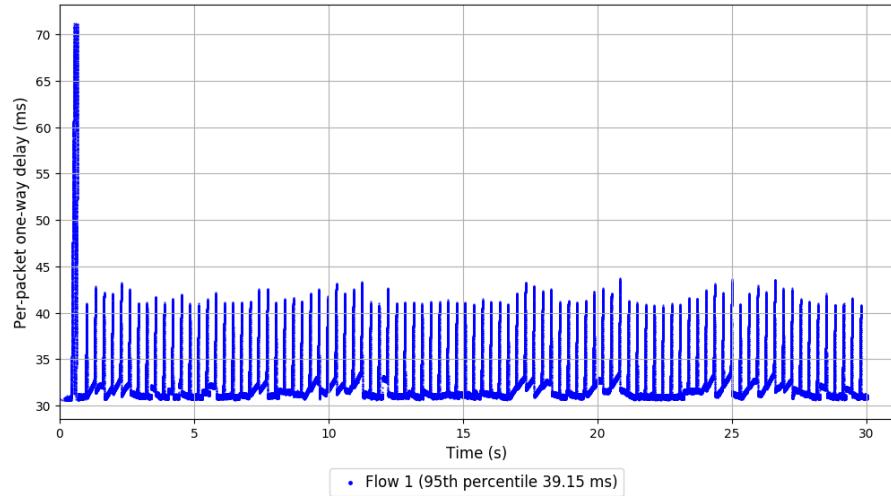
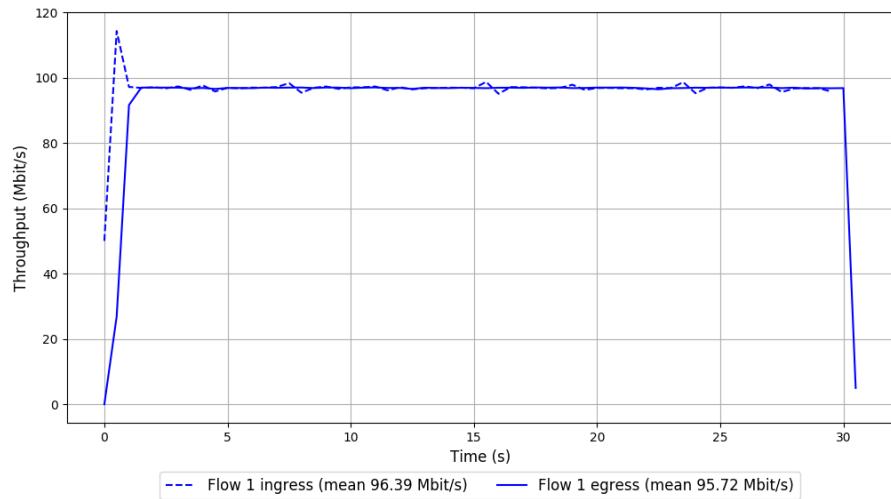


Run 2: Statistics of FillP

```
Start at: 2018-12-11 09:32:22
End at: 2018-12-11 09:32:52
Local clock offset: 1.047 ms
Remote clock offset: -2.432 ms

# Below is generated by plot.py at 2018-12-11 10:51:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.72 Mbit/s
95th percentile per-packet one-way delay: 39.147 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 95.72 Mbit/s
95th percentile per-packet one-way delay: 39.147 ms
Loss rate: 0.69%
```

Run 2: Report of FillP — Data Link

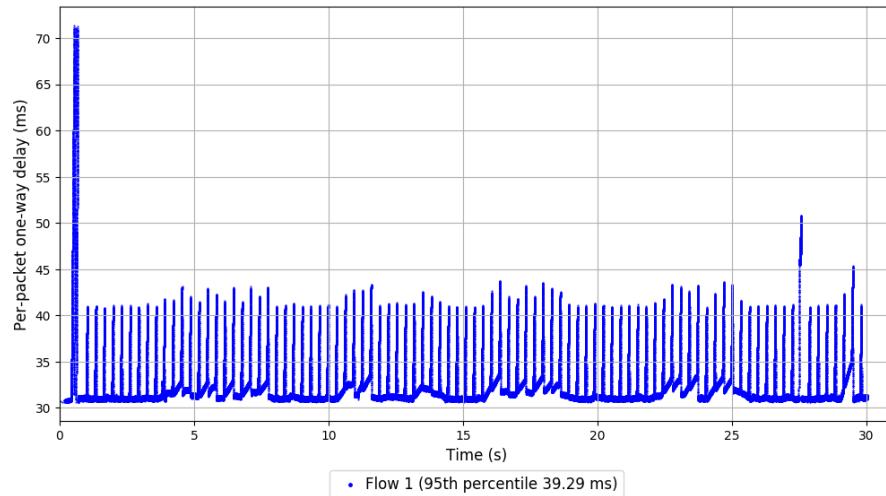
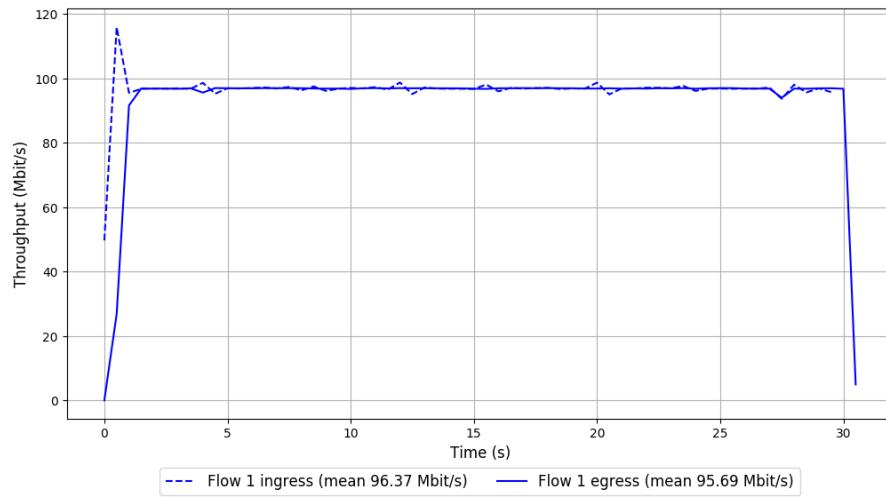


Run 3: Statistics of FillP

```
Start at: 2018-12-11 09:54:11
End at: 2018-12-11 09:54:41
Local clock offset: 0.452 ms
Remote clock offset: -1.571 ms

# Below is generated by plot.py at 2018-12-11 10:51:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.69 Mbit/s
95th percentile per-packet one-way delay: 39.293 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 95.69 Mbit/s
95th percentile per-packet one-way delay: 39.293 ms
Loss rate: 0.71%
```

Run 3: Report of FillP — Data Link

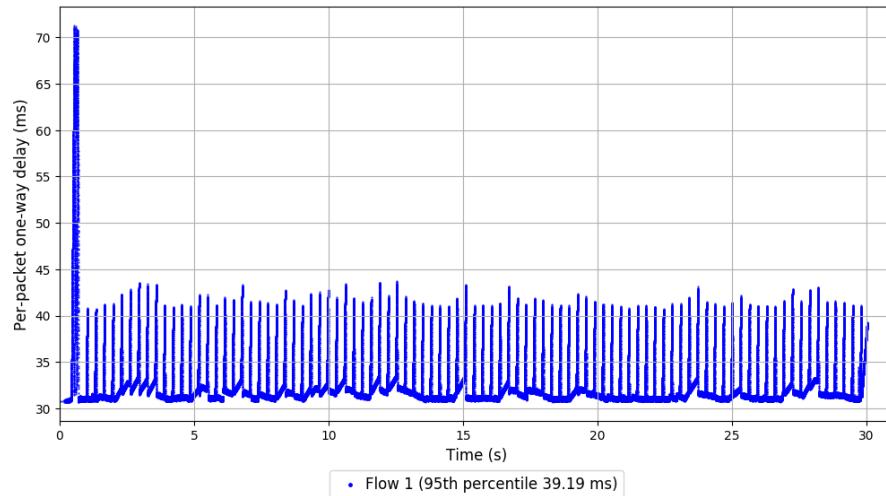
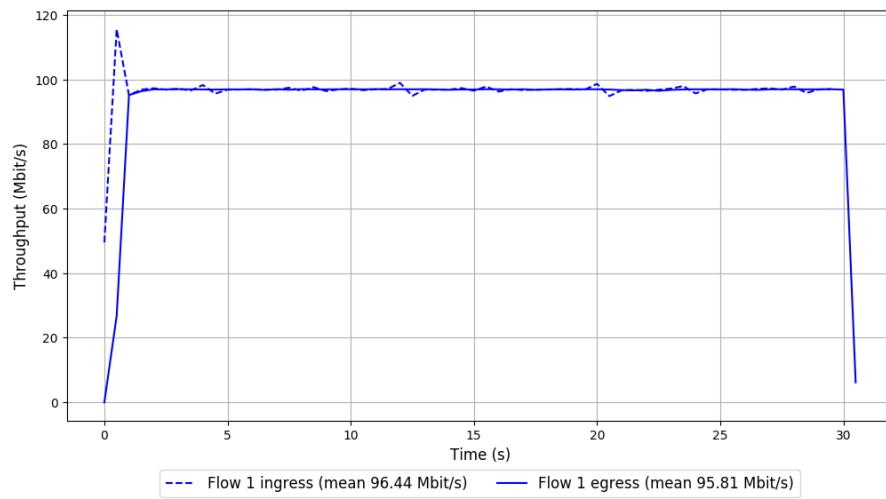


Run 4: Statistics of FillP

```
Start at: 2018-12-11 10:16:14
End at: 2018-12-11 10:16:44
Local clock offset: 0.424 ms
Remote clock offset: -1.092 ms

# Below is generated by plot.py at 2018-12-11 10:51:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.81 Mbit/s
95th percentile per-packet one-way delay: 39.194 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 95.81 Mbit/s
95th percentile per-packet one-way delay: 39.194 ms
Loss rate: 0.62%
```

Run 4: Report of FillP — Data Link

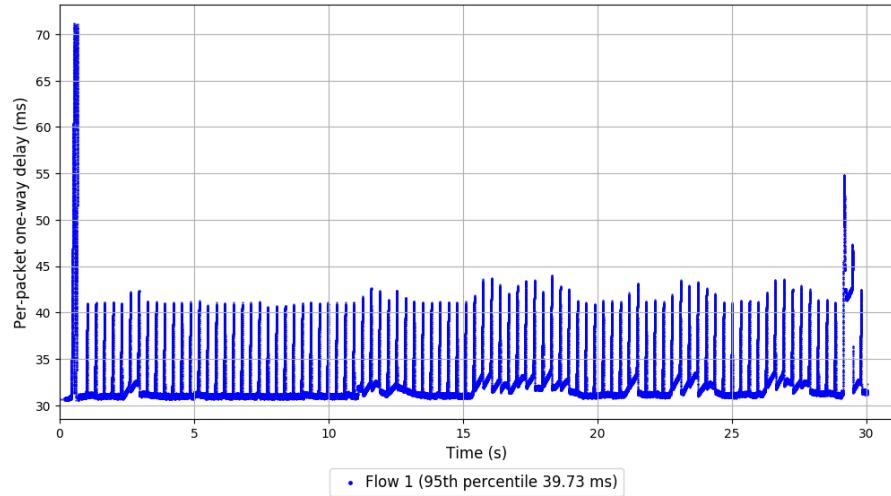
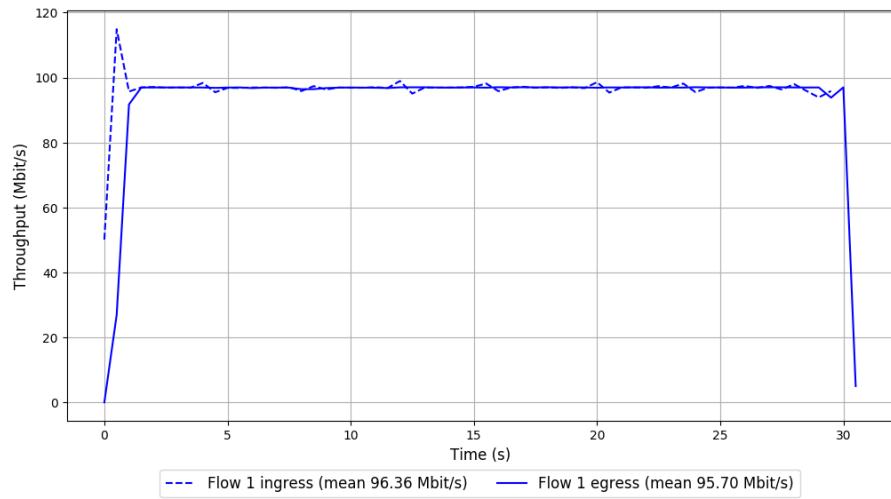


Run 5: Statistics of FillP

```
Start at: 2018-12-11 10:38:08
End at: 2018-12-11 10:38:38
Local clock offset: 0.503 ms
Remote clock offset: -1.418 ms

# Below is generated by plot.py at 2018-12-11 10:51:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.70 Mbit/s
95th percentile per-packet one-way delay: 39.732 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 95.70 Mbit/s
95th percentile per-packet one-way delay: 39.732 ms
Loss rate: 0.68%
```

Run 5: Report of FillP — Data Link

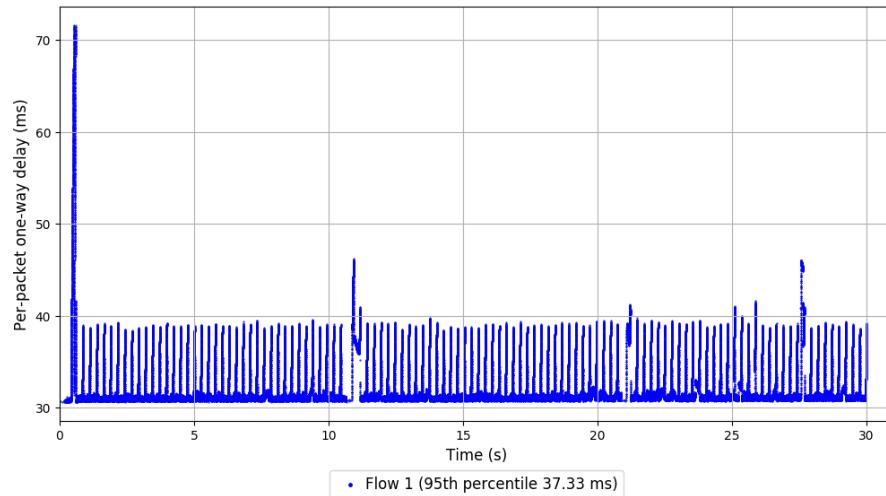
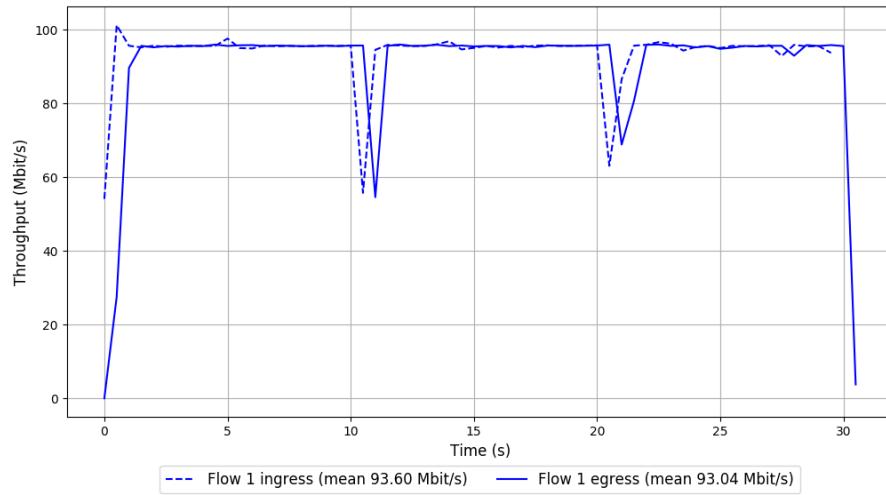


Run 1: Statistics of FillP-Sheep

```
Start at: 2018-12-11 09:01:27
End at: 2018-12-11 09:01:57
Local clock offset: 2.532 ms
Remote clock offset: -3.579 ms

# Below is generated by plot.py at 2018-12-11 10:51:53
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.04 Mbit/s
95th percentile per-packet one-way delay: 37.331 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 93.04 Mbit/s
95th percentile per-packet one-way delay: 37.331 ms
Loss rate: 0.59%
```

Run 1: Report of FillP-Sheep — Data Link

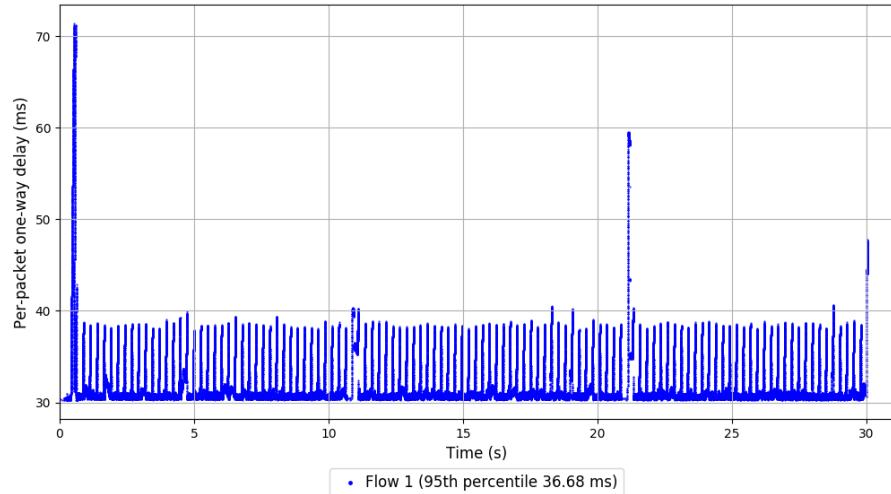
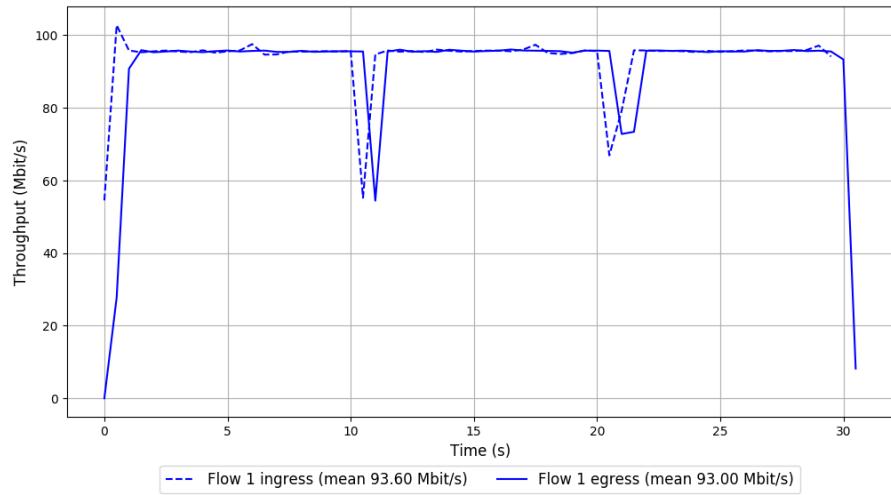


Run 2: Statistics of FillP-Sheep

```
Start at: 2018-12-11 09:23:11
End at: 2018-12-11 09:23:41
Local clock offset: 1.213 ms
Remote clock offset: -2.991 ms

# Below is generated by plot.py at 2018-12-11 10:52:39
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.00 Mbit/s
95th percentile per-packet one-way delay: 36.682 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 93.00 Mbit/s
95th percentile per-packet one-way delay: 36.682 ms
Loss rate: 0.58%
```

Run 2: Report of FillP-Sheep — Data Link

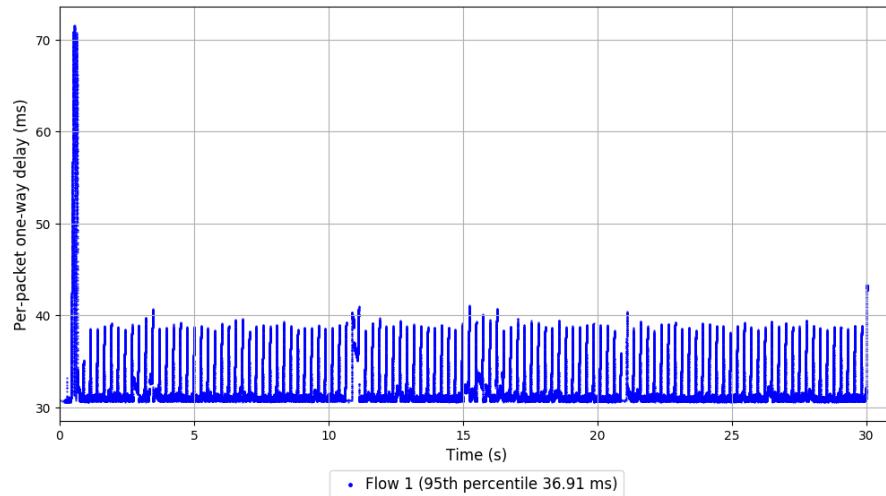
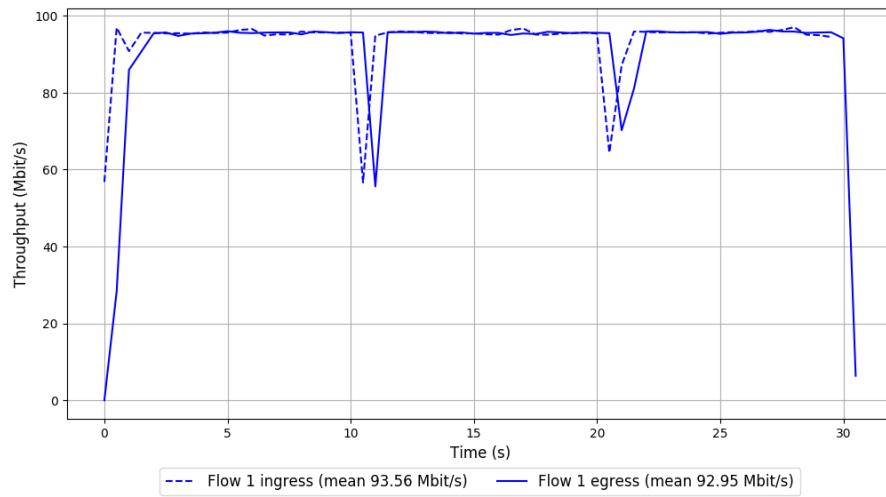


Run 3: Statistics of FillP-Sheep

```
Start at: 2018-12-11 09:45:00
End at: 2018-12-11 09:45:30
Local clock offset: 0.66 ms
Remote clock offset: -1.945 ms

# Below is generated by plot.py at 2018-12-11 10:52:41
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.95 Mbit/s
95th percentile per-packet one-way delay: 36.910 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 92.95 Mbit/s
95th percentile per-packet one-way delay: 36.910 ms
Loss rate: 0.62%
```

Run 3: Report of FillP-Sheep — Data Link

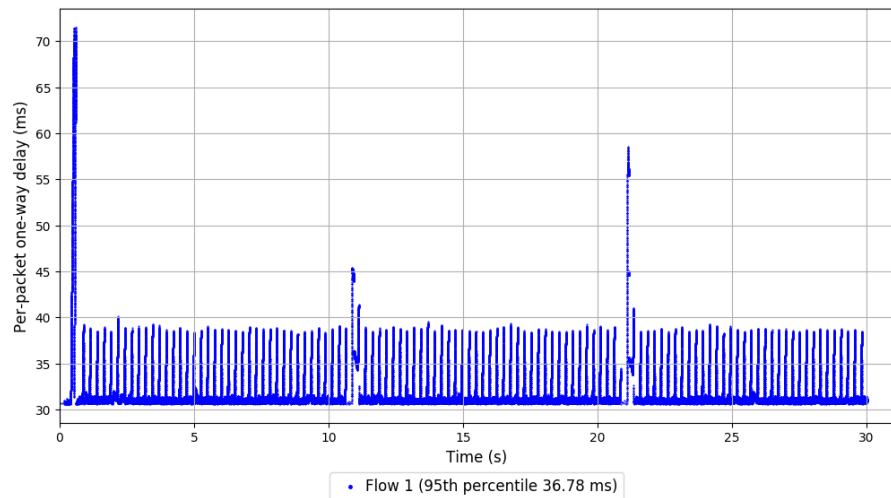
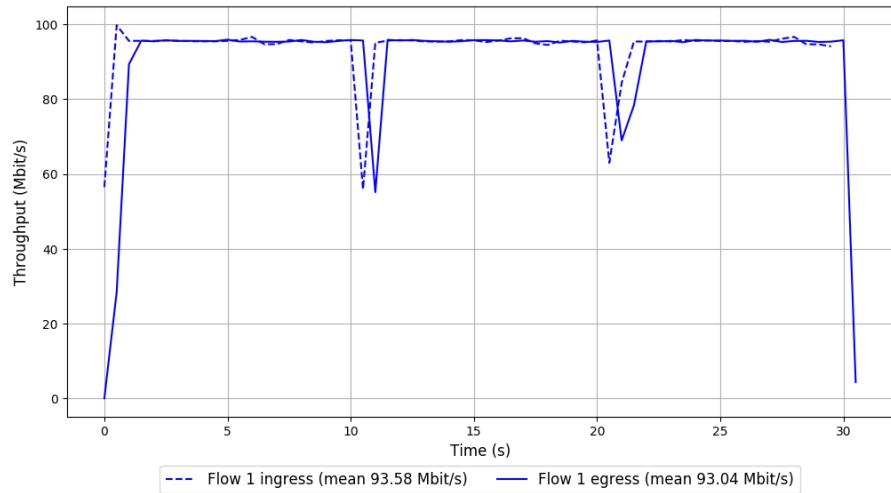


Run 4: Statistics of FillP-Sheep

```
Start at: 2018-12-11 10:07:05
End at: 2018-12-11 10:07:35
Local clock offset: 0.523 ms
Remote clock offset: -1.319 ms

# Below is generated by plot.py at 2018-12-11 10:52:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.04 Mbit/s
95th percentile per-packet one-way delay: 36.785 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 93.04 Mbit/s
95th percentile per-packet one-way delay: 36.785 ms
Loss rate: 0.58%
```

Run 4: Report of FillP-Sheep — Data Link

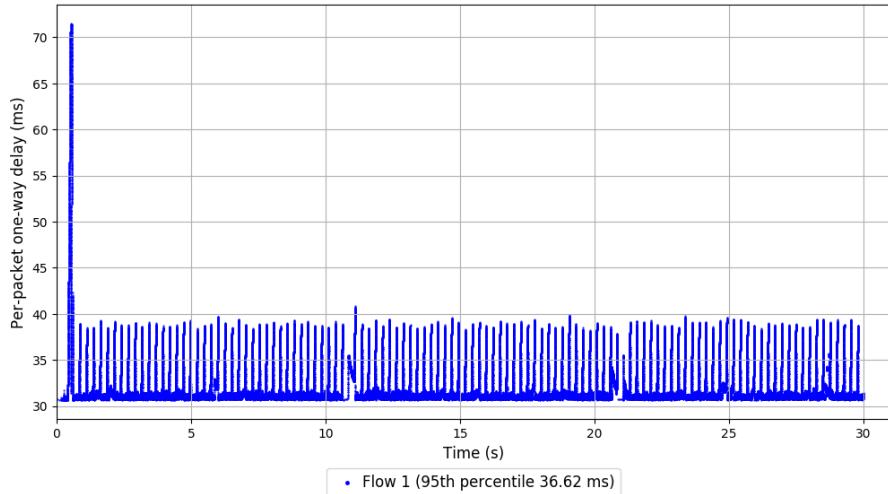
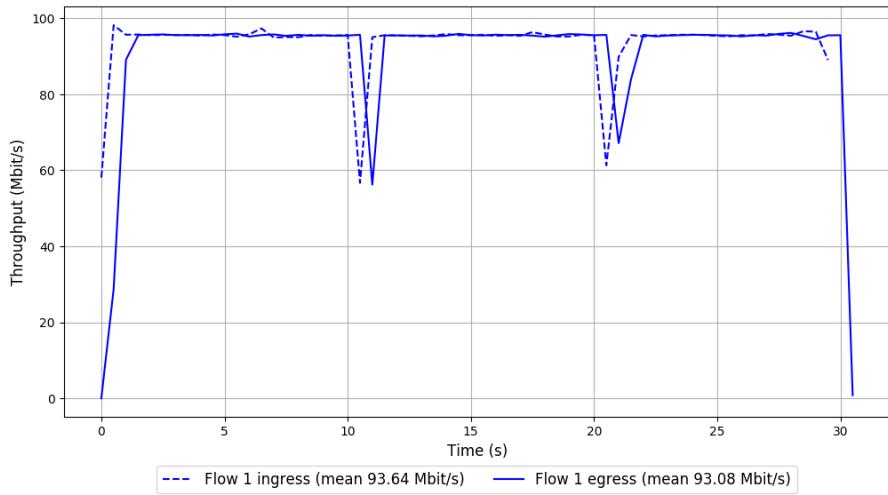


Run 5: Statistics of FillP-Sheep

```
Start at: 2018-12-11 10:28:58
End at: 2018-12-11 10:29:28
Local clock offset: 0.437 ms
Remote clock offset: -1.258 ms

# Below is generated by plot.py at 2018-12-11 10:52:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 93.08 Mbit/s
95th percentile per-packet one-way delay: 36.619 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 93.08 Mbit/s
95th percentile per-packet one-way delay: 36.619 ms
Loss rate: 0.60%
```

Run 5: Report of FillP-Sheep — Data Link

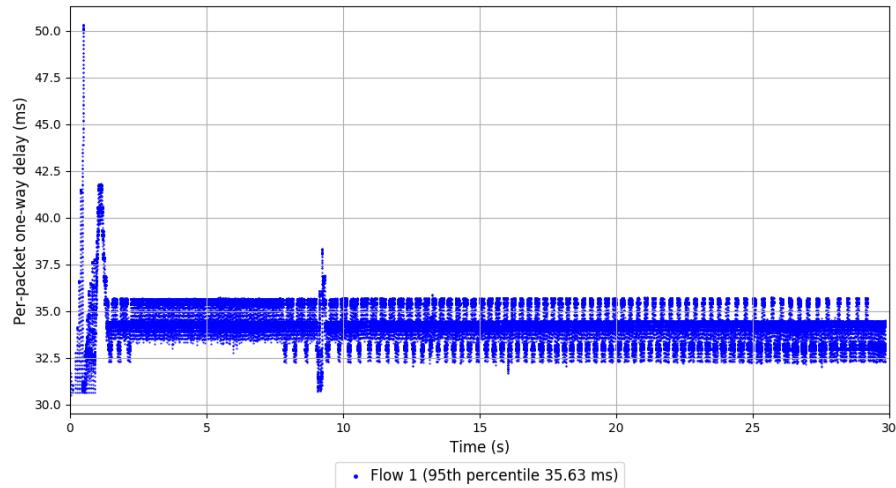
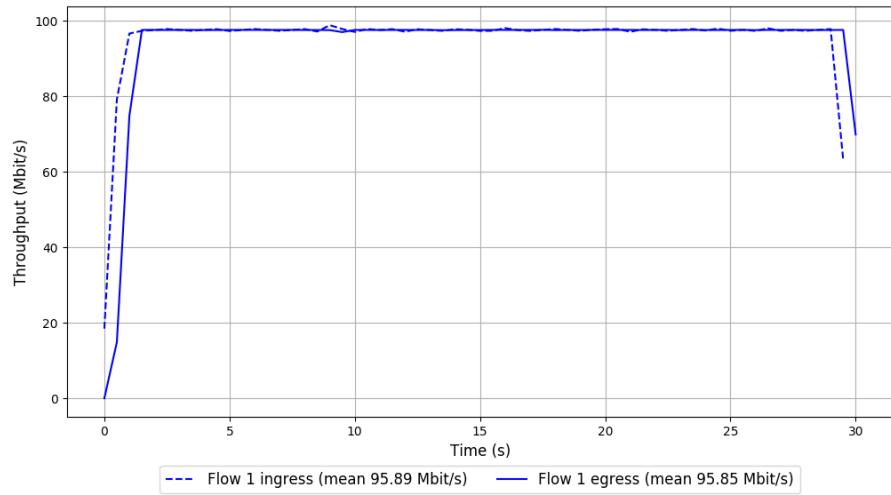


Run 1: Statistics of Indigo

```
Start at: 2018-12-11 09:04:48
End at: 2018-12-11 09:05:18
Local clock offset: 3.215 ms
Remote clock offset: -3.558 ms

# Below is generated by plot.py at 2018-12-11 10:52:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.85 Mbit/s
95th percentile per-packet one-way delay: 35.627 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 95.85 Mbit/s
95th percentile per-packet one-way delay: 35.627 ms
Loss rate: 0.03%
```

Run 1: Report of Indigo — Data Link

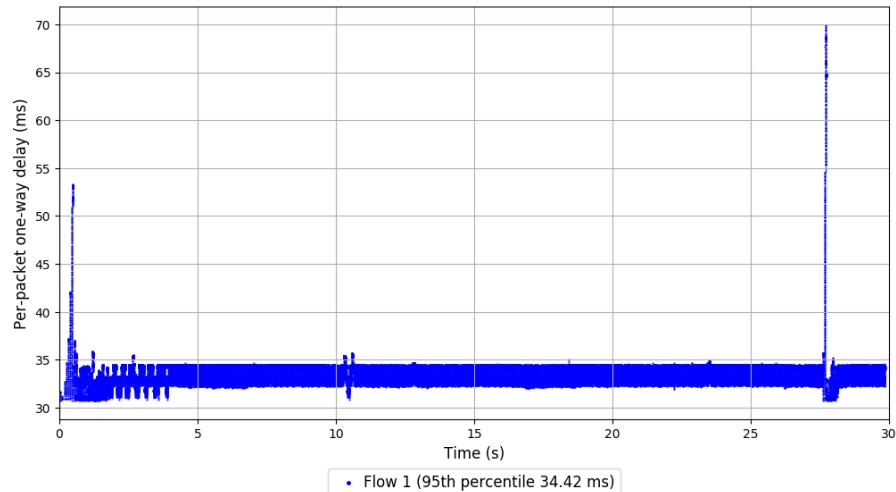
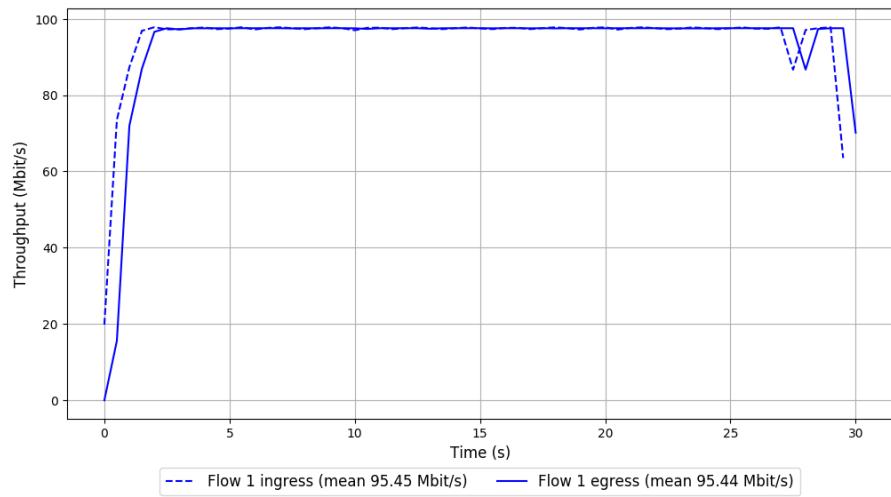


Run 2: Statistics of Indigo

```
Start at: 2018-12-11 09:26:33
End at: 2018-12-11 09:27:03
Local clock offset: 1.088 ms
Remote clock offset: -2.644 ms

# Below is generated by plot.py at 2018-12-11 10:52:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.44 Mbit/s
95th percentile per-packet one-way delay: 34.420 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 95.44 Mbit/s
95th percentile per-packet one-way delay: 34.420 ms
Loss rate: 0.00%
```

Run 2: Report of Indigo — Data Link

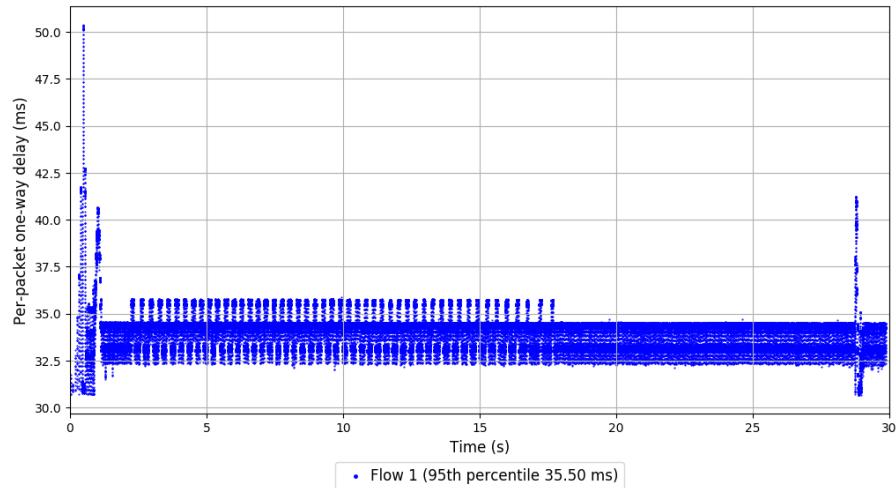
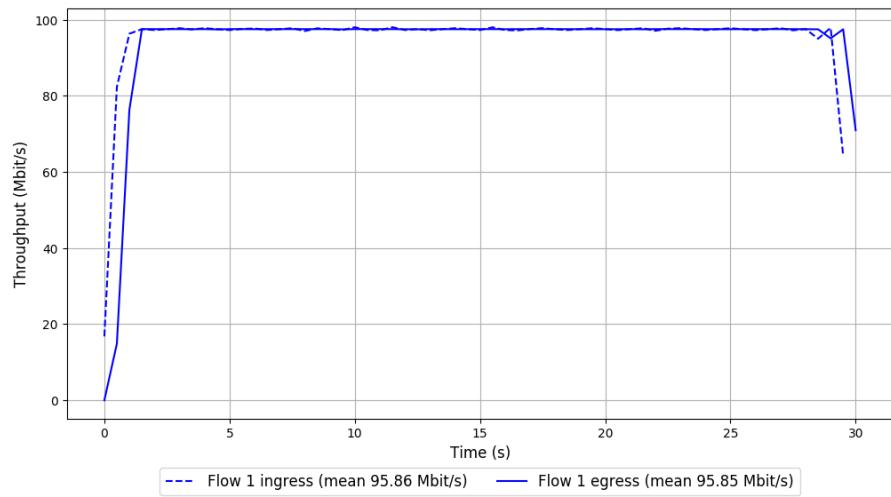


Run 3: Statistics of Indigo

```
Start at: 2018-12-11 09:48:22
End at: 2018-12-11 09:48:52
Local clock offset: 0.558 ms
Remote clock offset: -1.792 ms

# Below is generated by plot.py at 2018-12-11 10:53:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.85 Mbit/s
95th percentile per-packet one-way delay: 35.500 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 95.85 Mbit/s
95th percentile per-packet one-way delay: 35.500 ms
Loss rate: 0.00%
```

Run 3: Report of Indigo — Data Link

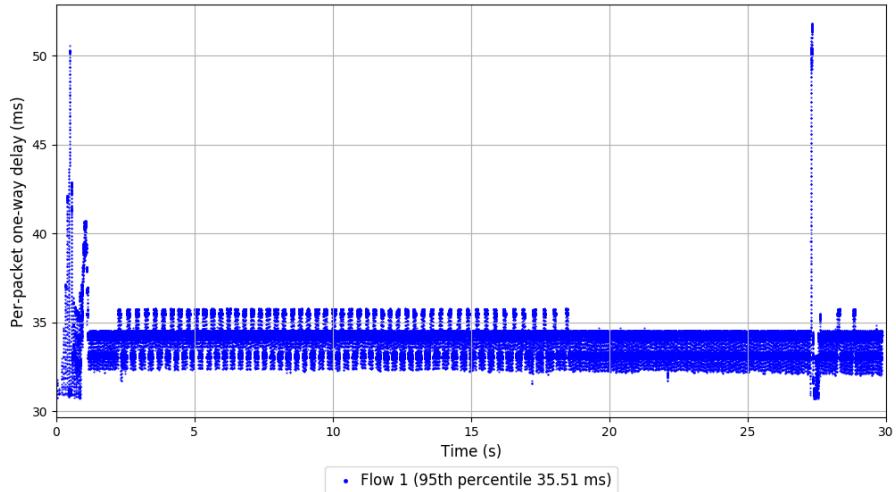
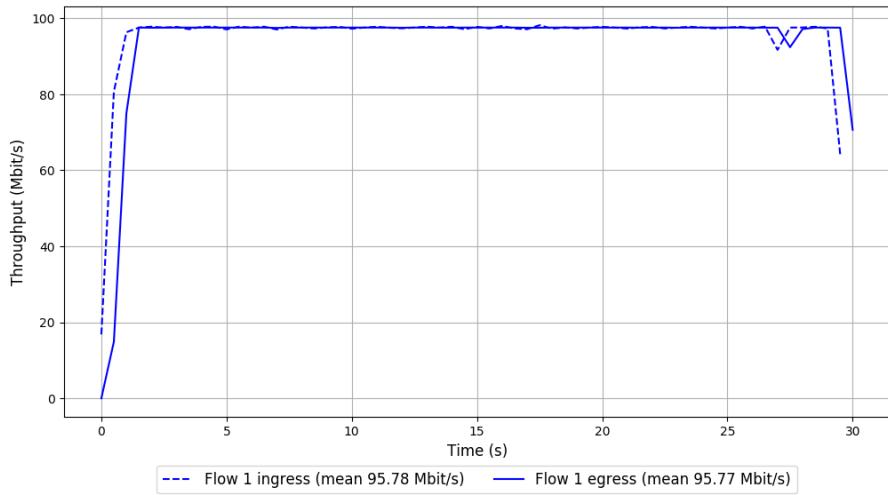


Run 4: Statistics of Indigo

```
Start at: 2018-12-11 10:10:30
End at: 2018-12-11 10:11:00
Local clock offset: 0.498 ms
Remote clock offset: -1.249 ms

# Below is generated by plot.py at 2018-12-11 10:53:02
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.77 Mbit/s
95th percentile per-packet one-way delay: 35.505 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 95.77 Mbit/s
95th percentile per-packet one-way delay: 35.505 ms
Loss rate: 0.00%
```

Run 4: Report of Indigo — Data Link

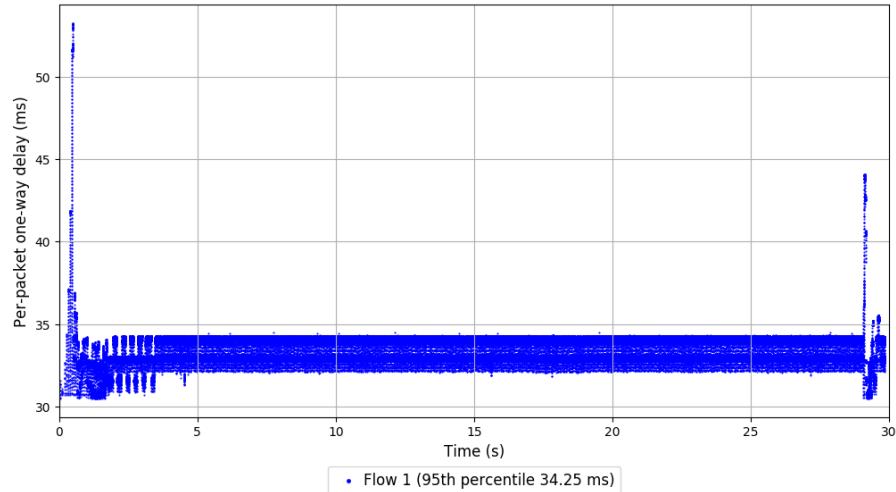
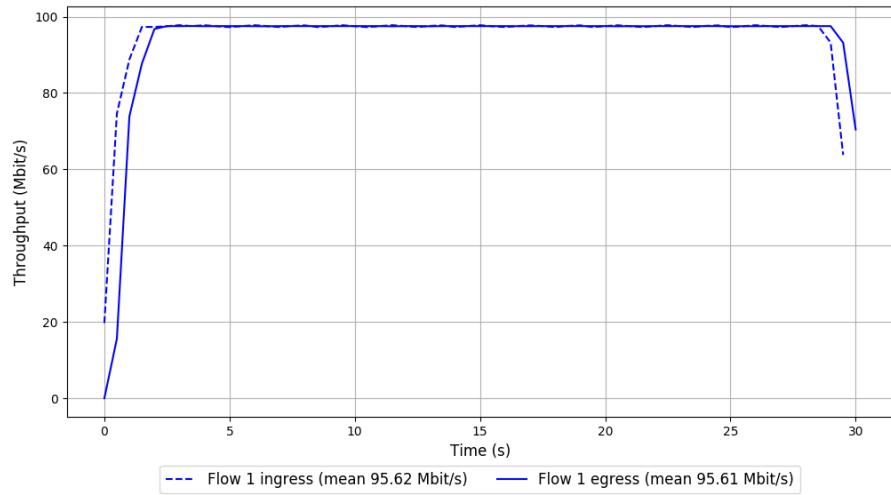


Run 5: Statistics of Indigo

```
Start at: 2018-12-11 10:32:20
End at: 2018-12-11 10:32:50
Local clock offset: 0.453 ms
Remote clock offset: -1.553 ms

# Below is generated by plot.py at 2018-12-11 10:53:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 95.61 Mbit/s
95th percentile per-packet one-way delay: 34.254 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 95.61 Mbit/s
95th percentile per-packet one-way delay: 34.254 ms
Loss rate: 0.00%
```

Run 5: Report of Indigo — Data Link

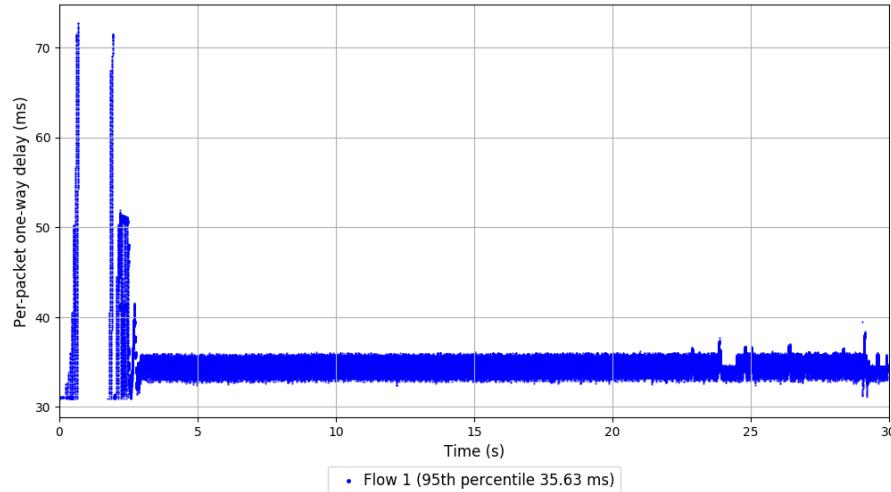
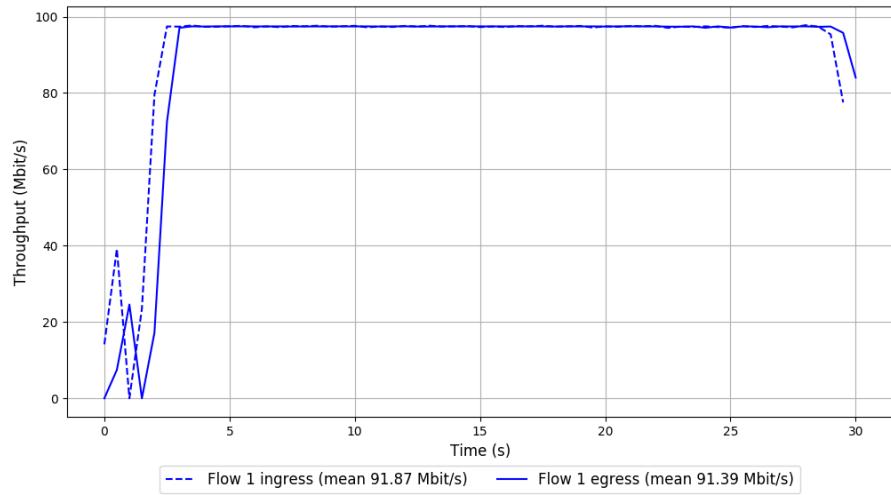


Run 1: Statistics of Indigo-MusesD

```
Start at: 2018-12-11 08:59:07
End at: 2018-12-11 08:59:38
Local clock offset: 1.785 ms
Remote clock offset: -3.582 ms

# Below is generated by plot.py at 2018-12-11 10:53:50
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.39 Mbit/s
95th percentile per-packet one-way delay: 35.633 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 91.39 Mbit/s
95th percentile per-packet one-way delay: 35.633 ms
Loss rate: 0.52%
```

Run 1: Report of Indigo-MusesD — Data Link

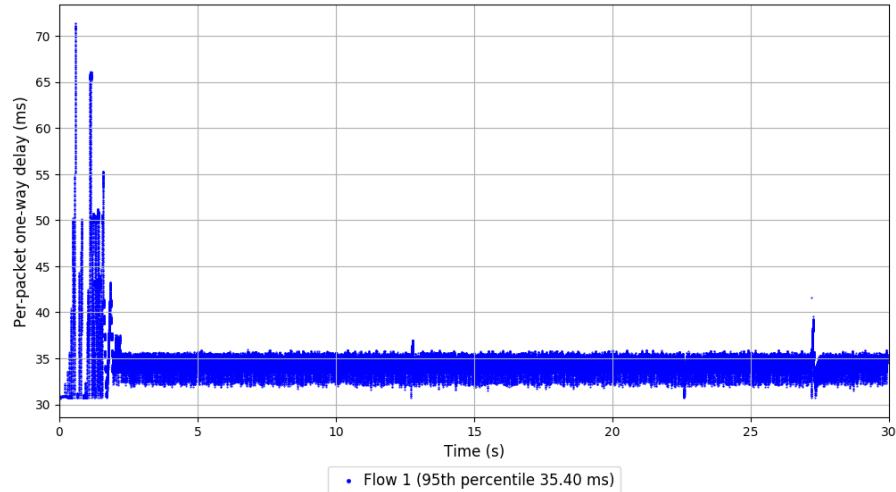
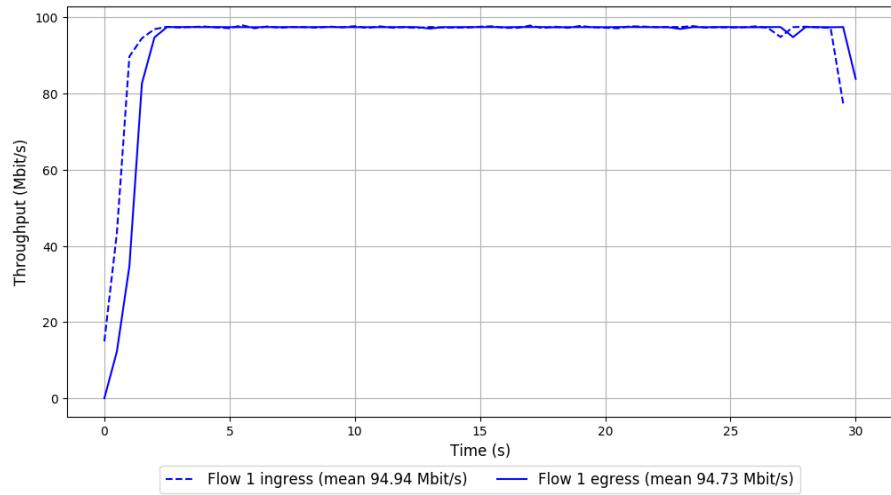


Run 2: Statistics of Indigo-MusesD

```
Start at: 2018-12-11 09:20:50
End at: 2018-12-11 09:21:20
Local clock offset: 1.357 ms
Remote clock offset: -2.801 ms

# Below is generated by plot.py at 2018-12-11 10:53:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.73 Mbit/s
95th percentile per-packet one-way delay: 35.401 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 94.73 Mbit/s
95th percentile per-packet one-way delay: 35.401 ms
Loss rate: 0.21%
```

Run 2: Report of Indigo-MusesD — Data Link

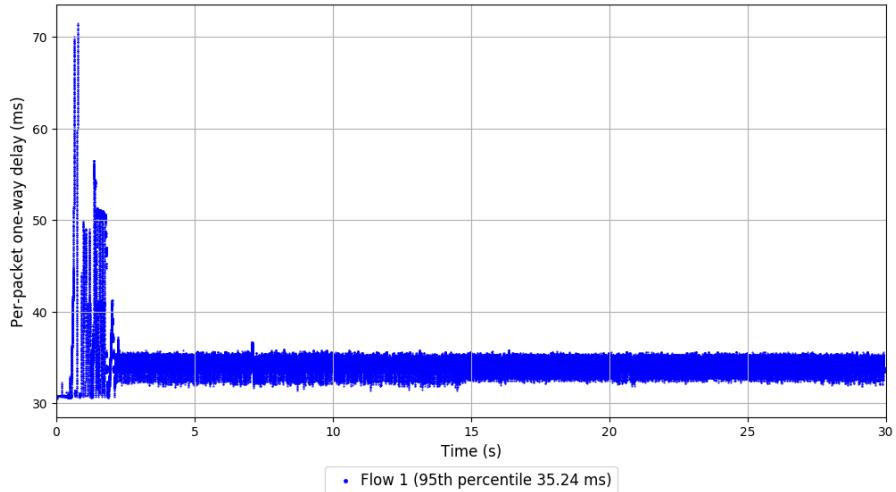
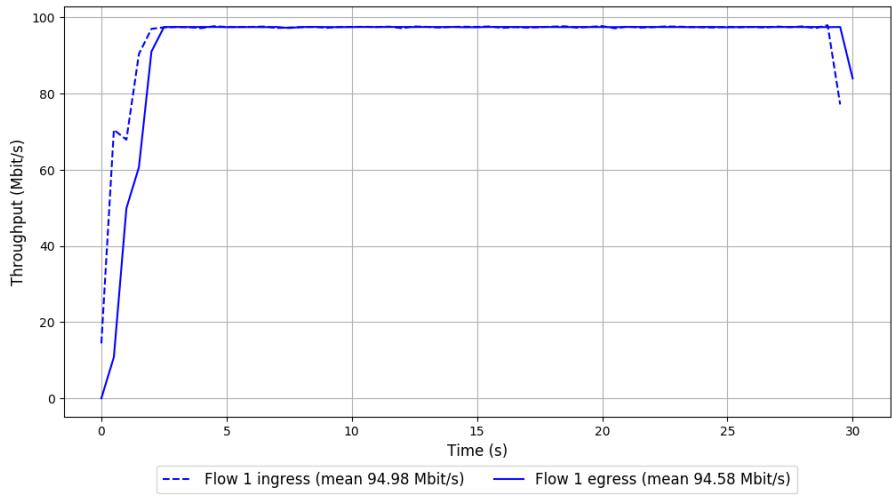


Run 3: Statistics of Indigo-MusesD

```
Start at: 2018-12-11 09:42:41
End at: 2018-12-11 09:43:11
Local clock offset: 0.769 ms
Remote clock offset: -2.066 ms

# Below is generated by plot.py at 2018-12-11 10:53:54
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.58 Mbit/s
95th percentile per-packet one-way delay: 35.241 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 94.58 Mbit/s
95th percentile per-packet one-way delay: 35.241 ms
Loss rate: 0.41%
```

Run 3: Report of Indigo-MusesD — Data Link

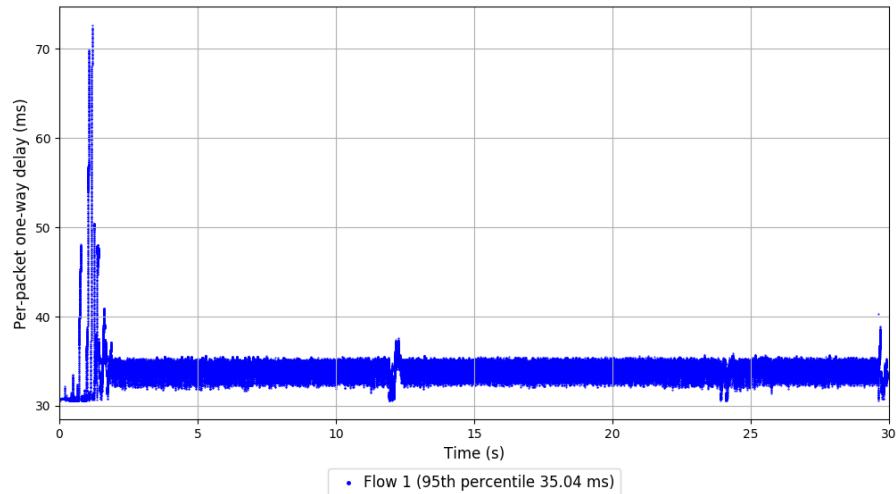
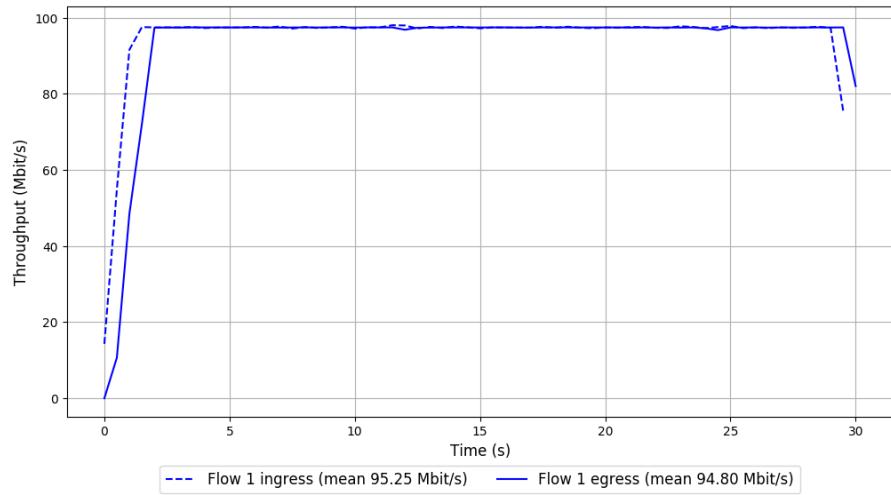


Run 4: Statistics of Indigo-MusesD

```
Start at: 2018-12-11 10:04:39
End at: 2018-12-11 10:05:09
Local clock offset: 0.51 ms
Remote clock offset: -1.539 ms

# Below is generated by plot.py at 2018-12-11 10:54:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.80 Mbit/s
95th percentile per-packet one-way delay: 35.043 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 94.80 Mbit/s
95th percentile per-packet one-way delay: 35.043 ms
Loss rate: 0.46%
```

Run 4: Report of Indigo-MusesD — Data Link

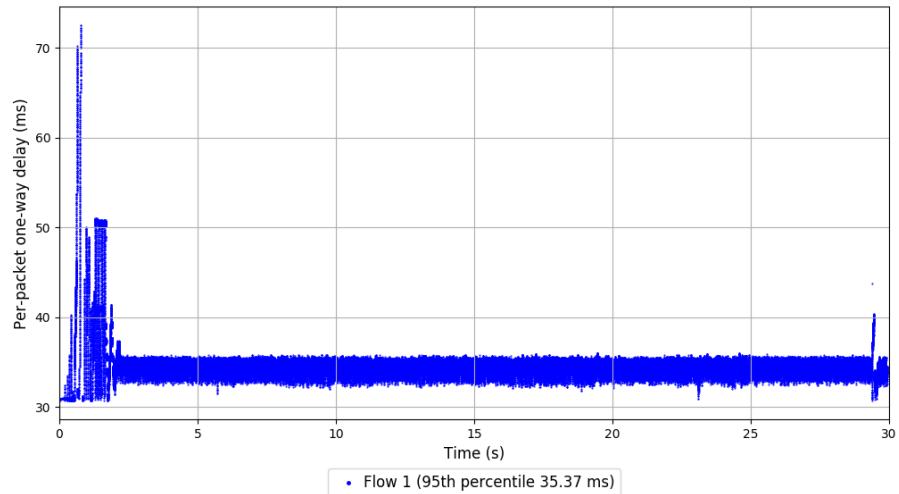
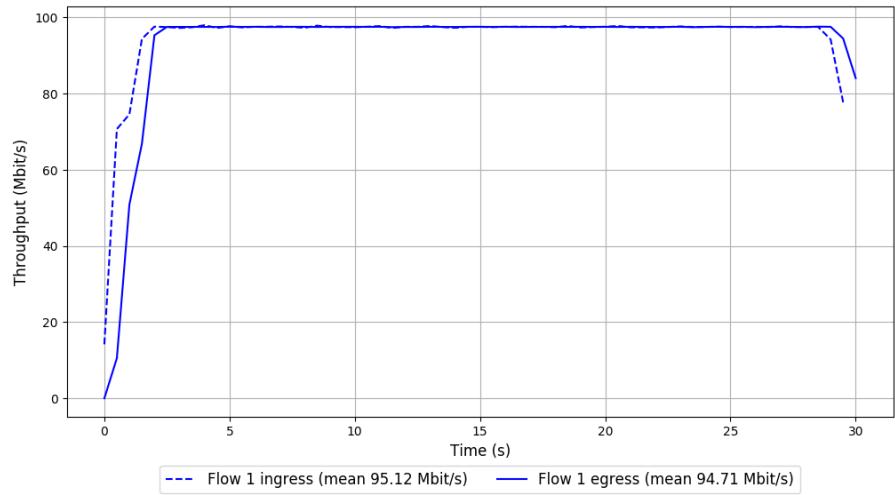


Run 5: Statistics of Indigo-MusesD

```
Start at: 2018-12-11 10:26:37
End at: 2018-12-11 10:27:07
Local clock offset: 0.427 ms
Remote clock offset: -1.266 ms

# Below is generated by plot.py at 2018-12-11 10:54:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 94.71 Mbit/s
95th percentile per-packet one-way delay: 35.367 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 94.71 Mbit/s
95th percentile per-packet one-way delay: 35.367 ms
Loss rate: 0.41%
```

Run 5: Report of Indigo-MusesD — Data Link

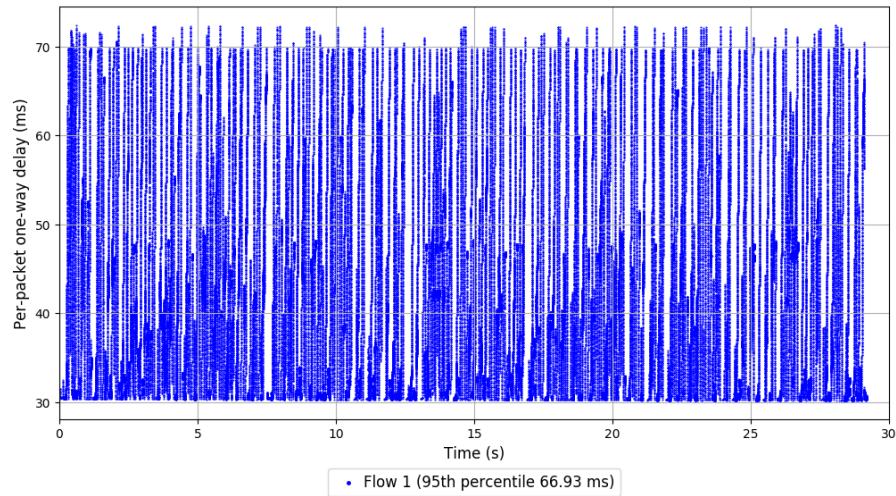
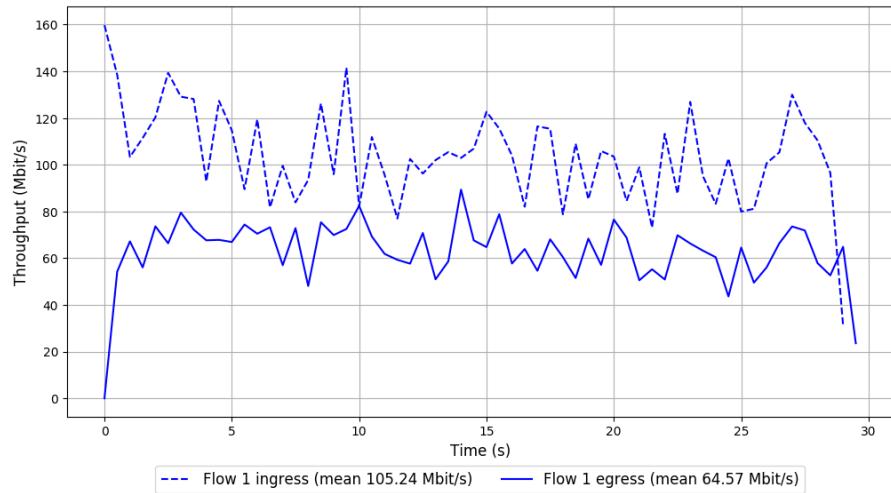


Run 1: Statistics of Indigo-MusesT

```
Start at: 2018-12-11 09:09:22
End at: 2018-12-11 09:09:52
Local clock offset: 3.382 ms
Remote clock offset: -3.469 ms

# Below is generated by plot.py at 2018-12-11 10:54:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 64.57 Mbit/s
95th percentile per-packet one-way delay: 66.929 ms
Loss rate: 38.65%
-- Flow 1:
Average throughput: 64.57 Mbit/s
95th percentile per-packet one-way delay: 66.929 ms
Loss rate: 38.65%
```

Run 1: Report of Indigo-MusesT — Data Link

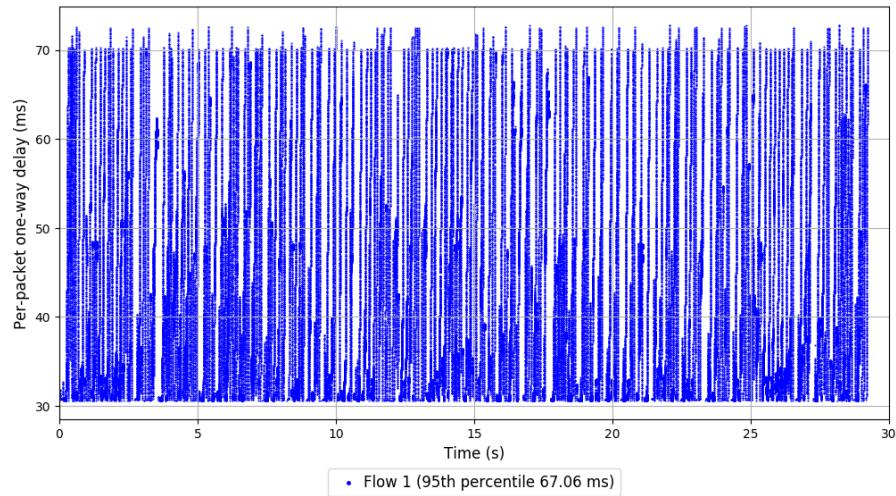
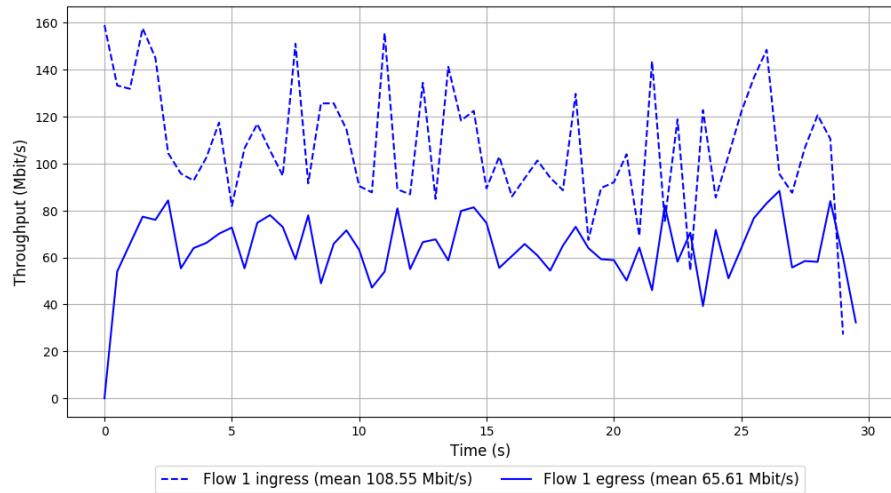


Run 2: Statistics of Indigo-MusesT

```
Start at: 2018-12-11 09:31:12
End at: 2018-12-11 09:31:42
Local clock offset: 1.034 ms
Remote clock offset: -2.695 ms

# Below is generated by plot.py at 2018-12-11 10:54:03
# Datalink statistics
-- Total of 1 flow:
Average throughput: 65.61 Mbit/s
95th percentile per-packet one-way delay: 67.059 ms
Loss rate: 39.49%
-- Flow 1:
Average throughput: 65.61 Mbit/s
95th percentile per-packet one-way delay: 67.059 ms
Loss rate: 39.49%
```

Run 2: Report of Indigo-MusesT — Data Link

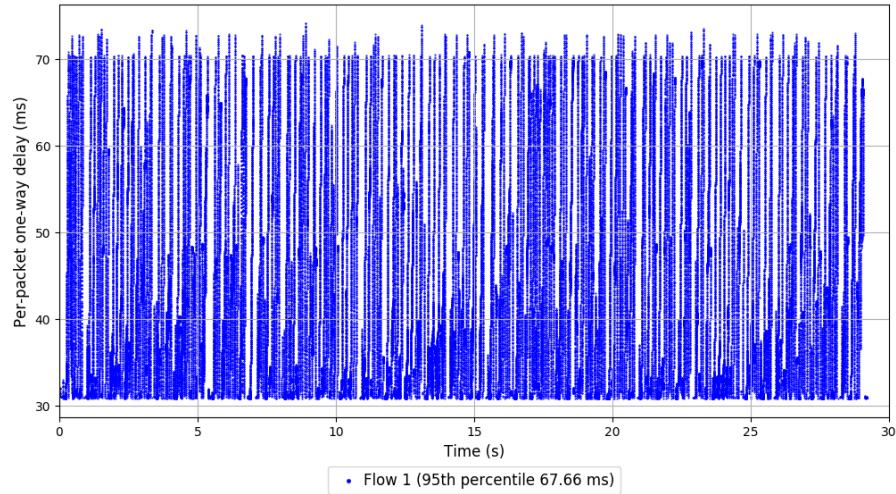
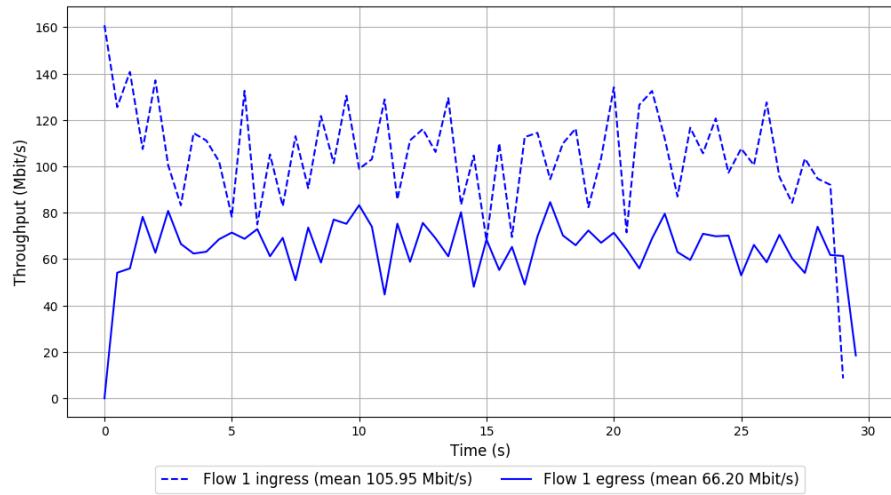


Run 3: Statistics of Indigo-MusesT

```
Start at: 2018-12-11 09:53:01
End at: 2018-12-11 09:53:31
Local clock offset: 0.481 ms
Remote clock offset: -1.534 ms

# Below is generated by plot.py at 2018-12-11 10:54:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 66.20 Mbit/s
95th percentile per-packet one-way delay: 67.657 ms
Loss rate: 37.52%
-- Flow 1:
Average throughput: 66.20 Mbit/s
95th percentile per-packet one-way delay: 67.657 ms
Loss rate: 37.52%
```

Run 3: Report of Indigo-MusesT — Data Link

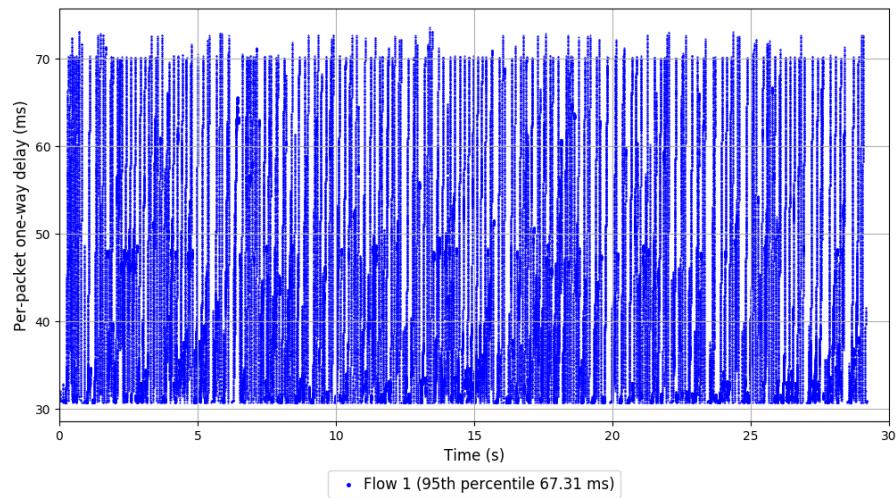
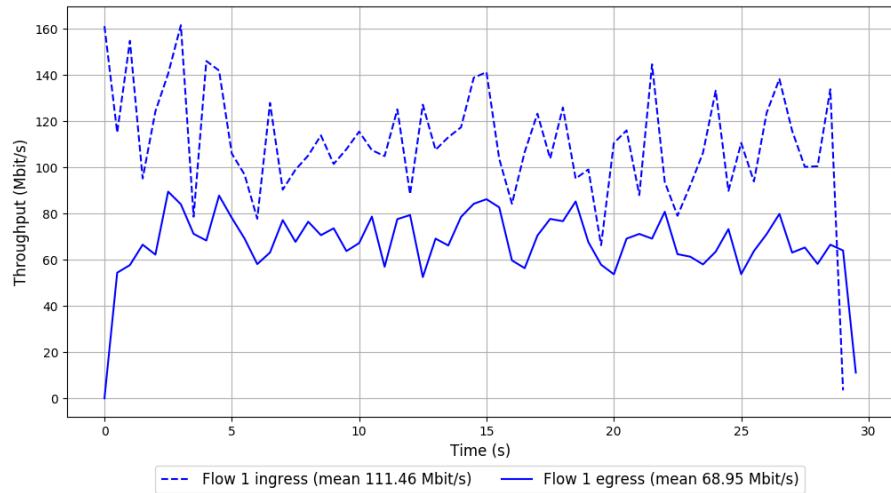


Run 4: Statistics of Indigo-MusesT

```
Start at: 2018-12-11 10:15:04
End at: 2018-12-11 10:15:34
Local clock offset: 0.44 ms
Remote clock offset: -1.185 ms

# Below is generated by plot.py at 2018-12-11 10:54:44
# Datalink statistics
-- Total of 1 flow:
Average throughput: 68.95 Mbit/s
95th percentile per-packet one-way delay: 67.306 ms
Loss rate: 38.13%
-- Flow 1:
Average throughput: 68.95 Mbit/s
95th percentile per-packet one-way delay: 67.306 ms
Loss rate: 38.13%
```

Run 4: Report of Indigo-MusesT — Data Link

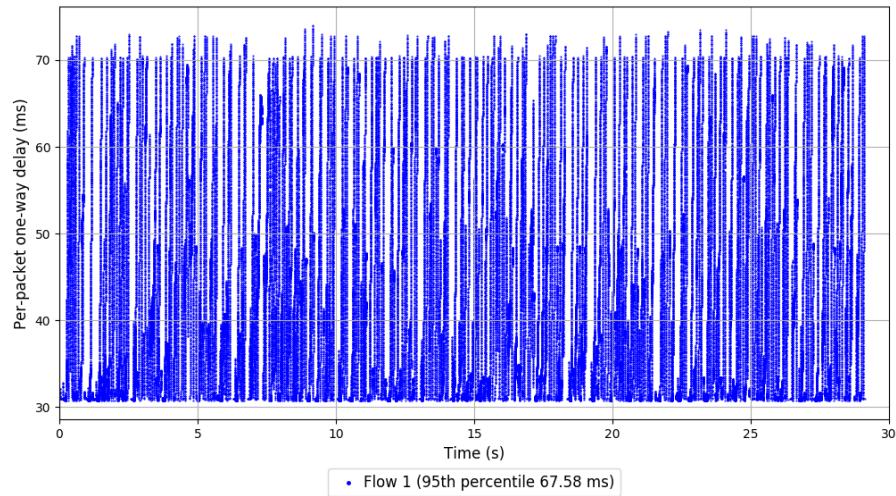
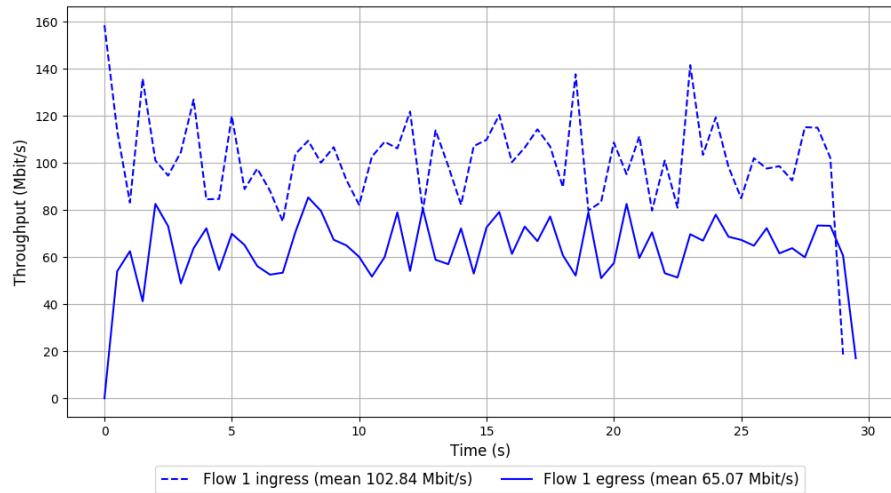


Run 5: Statistics of Indigo-MusesT

```
Start at: 2018-12-11 10:36:58
End at: 2018-12-11 10:37:28
Local clock offset: 0.501 ms
Remote clock offset: -1.389 ms

# Below is generated by plot.py at 2018-12-11 10:54:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 65.07 Mbit/s
95th percentile per-packet one-way delay: 67.582 ms
Loss rate: 36.72%
-- Flow 1:
Average throughput: 65.07 Mbit/s
95th percentile per-packet one-way delay: 67.582 ms
Loss rate: 36.72%
```

Run 5: Report of Indigo-MusesT — Data Link

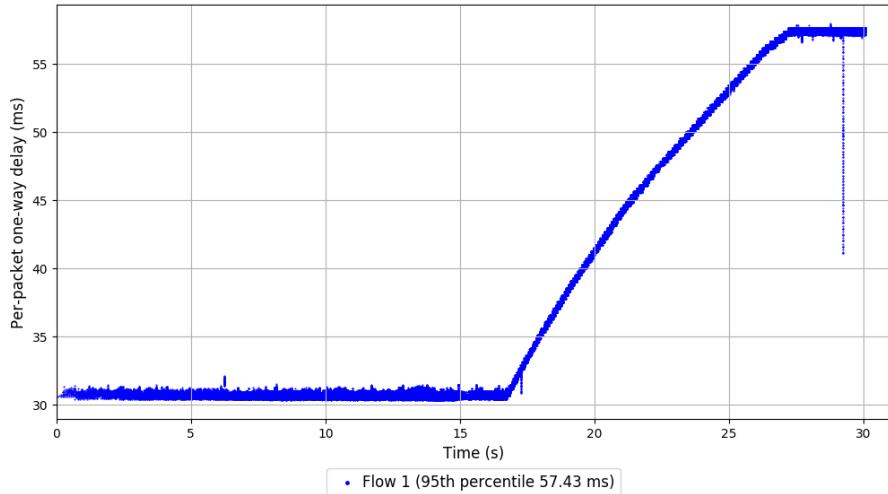
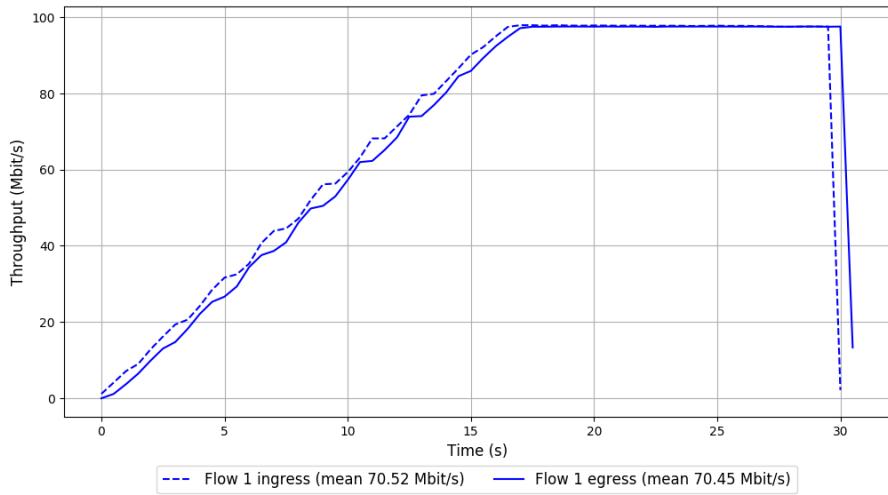


```
Run 1: Statistics of LEDBAT
```

```
Start at: 2018-12-11 09:11:40
End at: 2018-12-11 09:12:10
Local clock offset: 2.722 ms
Remote clock offset: -3.367 ms

# Below is generated by plot.py at 2018-12-11 10:54:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 70.45 Mbit/s
95th percentile per-packet one-way delay: 57.427 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 70.45 Mbit/s
95th percentile per-packet one-way delay: 57.427 ms
Loss rate: 0.00%
```

Run 1: Report of LEDBAT — Data Link

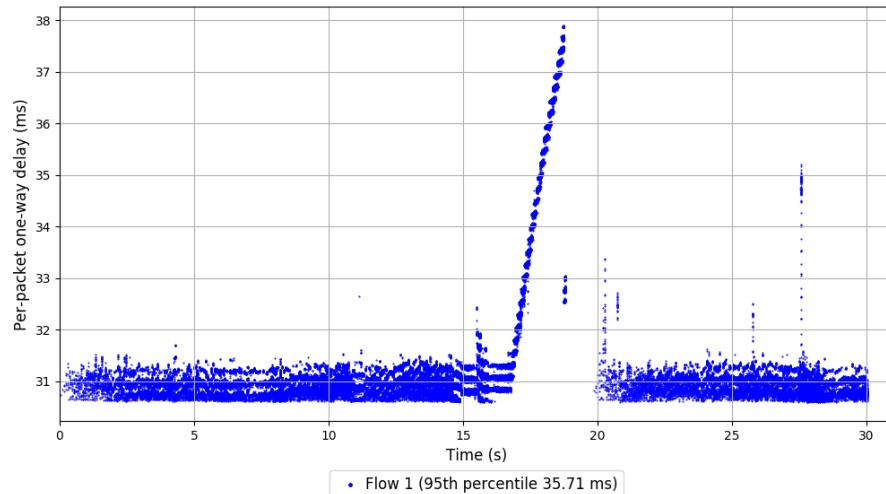
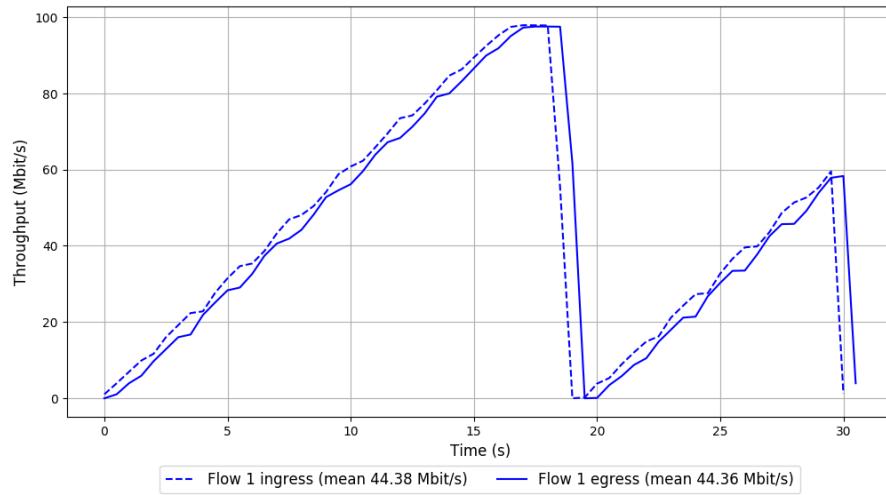


Run 2: Statistics of LEDBAT

```
Start at: 2018-12-11 09:33:31
End at: 2018-12-11 09:34:01
Local clock offset: 1.063 ms
Remote clock offset: -2.441 ms

# Below is generated by plot.py at 2018-12-11 10:54:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 44.36 Mbit/s
95th percentile per-packet one-way delay: 35.713 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 44.36 Mbit/s
95th percentile per-packet one-way delay: 35.713 ms
Loss rate: 0.04%
```

Run 2: Report of LEDBAT — Data Link

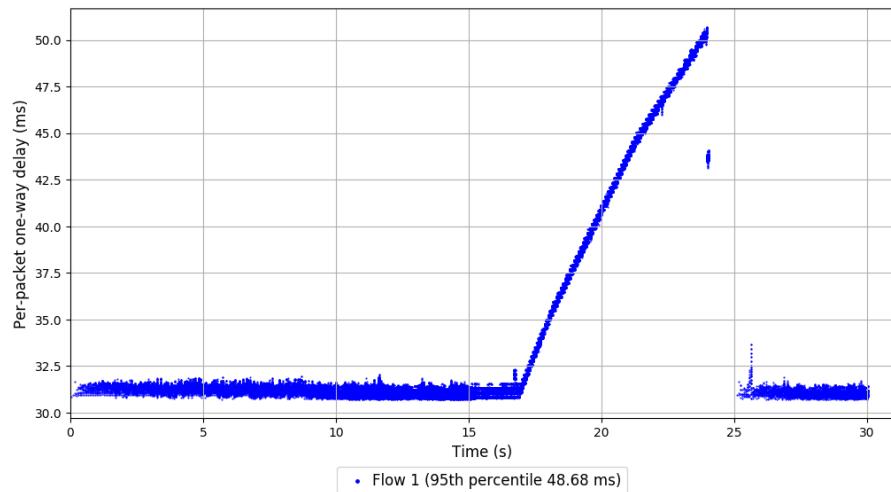
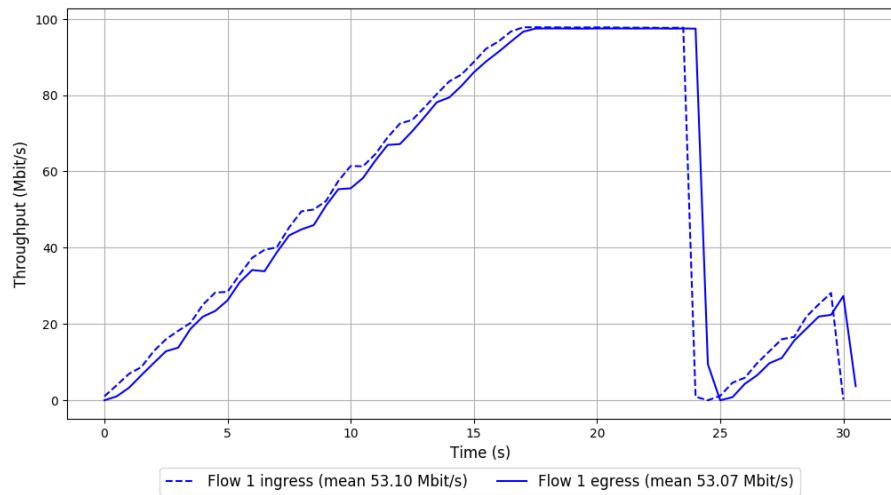


Run 3: Statistics of LEDBAT

```
Start at: 2018-12-11 09:55:22
End at: 2018-12-11 09:55:52
Local clock offset: 0.467 ms
Remote clock offset: -1.501 ms

# Below is generated by plot.py at 2018-12-11 10:54:46
# Datalink statistics
-- Total of 1 flow:
Average throughput: 53.07 Mbit/s
95th percentile per-packet one-way delay: 48.683 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 53.07 Mbit/s
95th percentile per-packet one-way delay: 48.683 ms
Loss rate: 0.04%
```

Run 3: Report of LEDBAT — Data Link

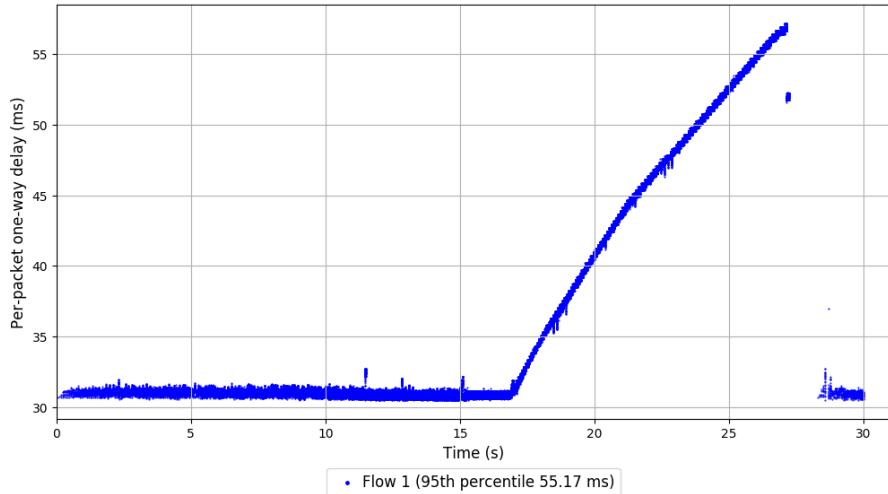
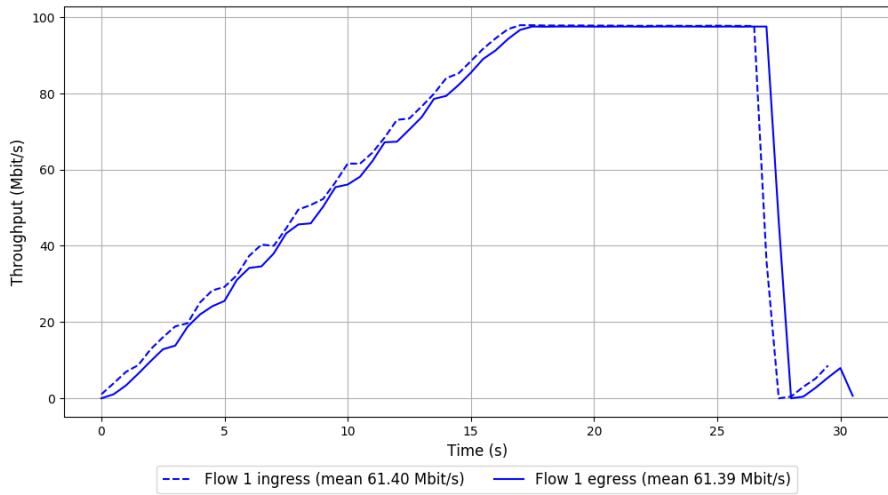


Run 4: Statistics of LEDBAT

```
Start at: 2018-12-11 10:17:24
End at: 2018-12-11 10:17:54
Local clock offset: 0.423 ms
Remote clock offset: -1.415 ms

# Below is generated by plot.py at 2018-12-11 10:54:48
# Datalink statistics
-- Total of 1 flow:
Average throughput: 61.39 Mbit/s
95th percentile per-packet one-way delay: 55.174 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 61.39 Mbit/s
95th percentile per-packet one-way delay: 55.174 ms
Loss rate: 0.03%
```

Run 4: Report of LEDBAT — Data Link

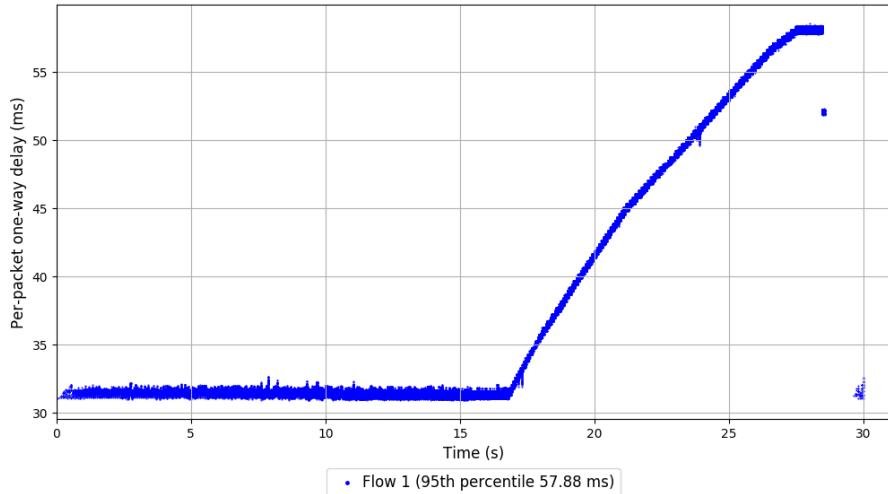
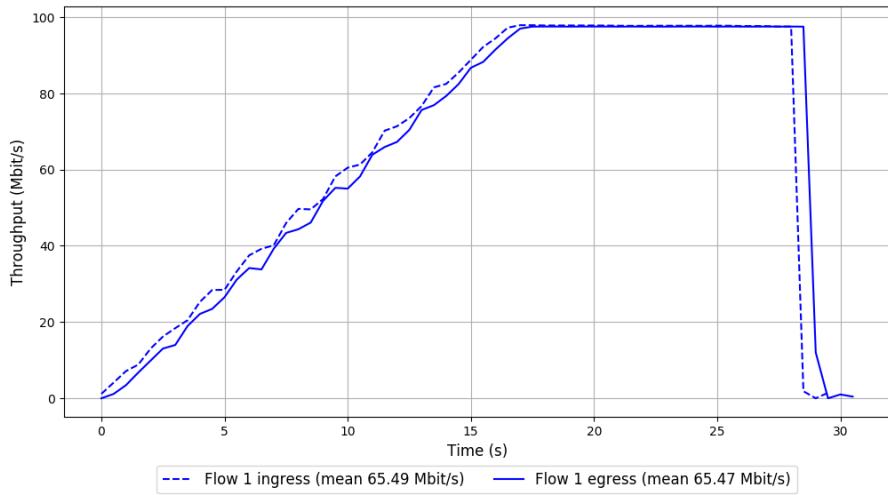


Run 5: Statistics of LEDBAT

```
Start at: 2018-12-11 10:39:18
End at: 2018-12-11 10:39:48
Local clock offset: 0.779 ms
Remote clock offset: -1.386 ms

# Below is generated by plot.py at 2018-12-11 10:54:52
# Datalink statistics
-- Total of 1 flow:
Average throughput: 65.47 Mbit/s
95th percentile per-packet one-way delay: 57.884 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 65.47 Mbit/s
95th percentile per-packet one-way delay: 57.884 ms
Loss rate: 0.03%
```

Run 5: Report of LEDBAT — Data Link

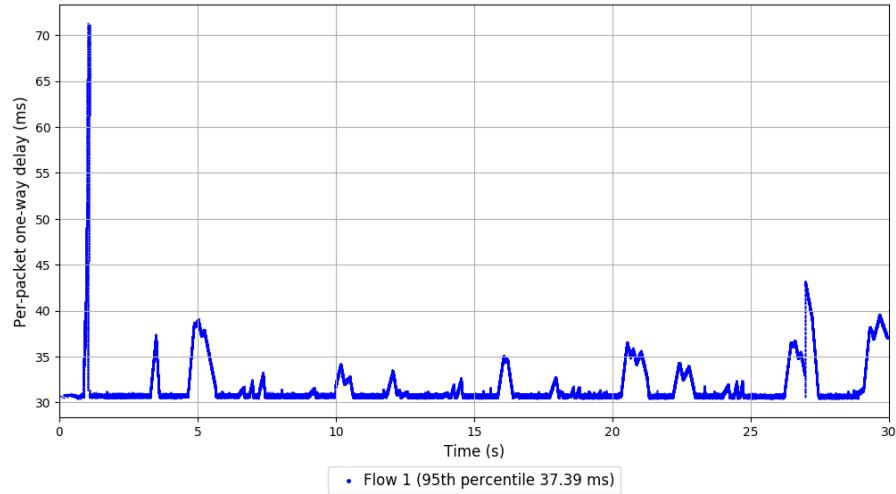
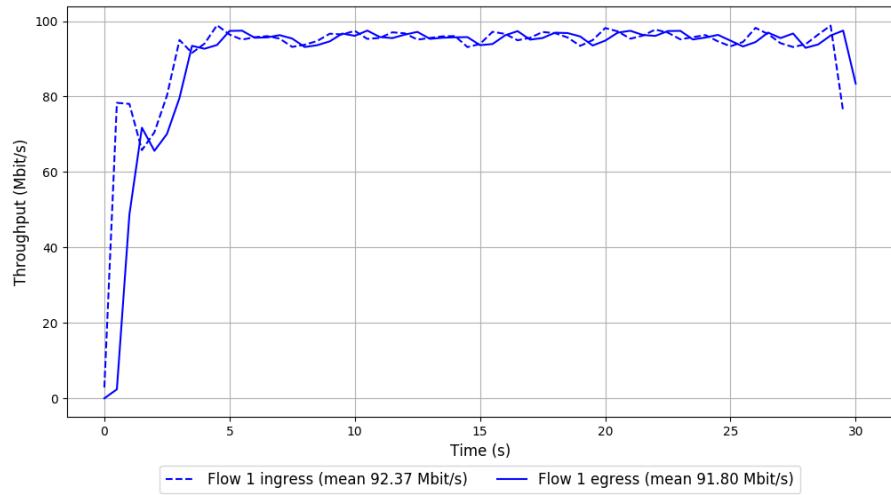


```
Run 1: Statistics of PCC-Allegro
```

```
Start at: 2018-12-11 09:13:56
End at: 2018-12-11 09:14:26
Local clock offset: 2.174 ms
Remote clock offset: -3.169 ms

# Below is generated by plot.py at 2018-12-11 10:55:34
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.80 Mbit/s
95th percentile per-packet one-way delay: 37.390 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 91.80 Mbit/s
95th percentile per-packet one-way delay: 37.390 ms
Loss rate: 0.59%
```

Run 1: Report of PCC-Allegro — Data Link

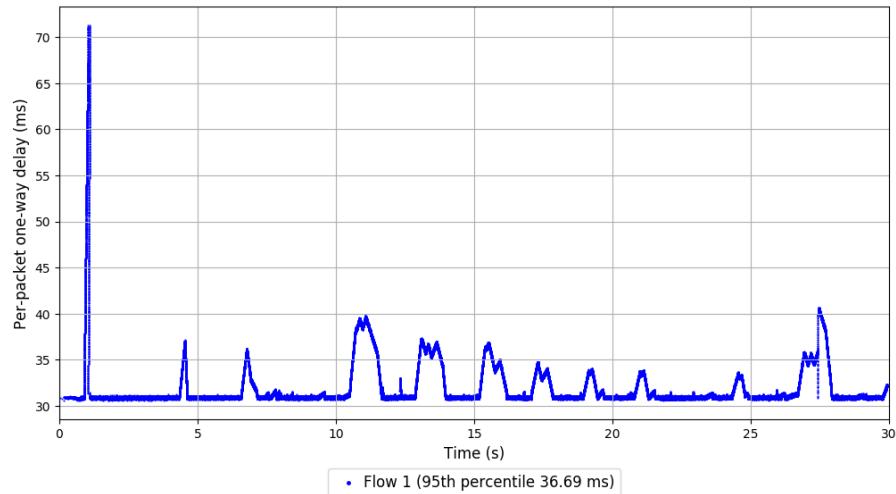
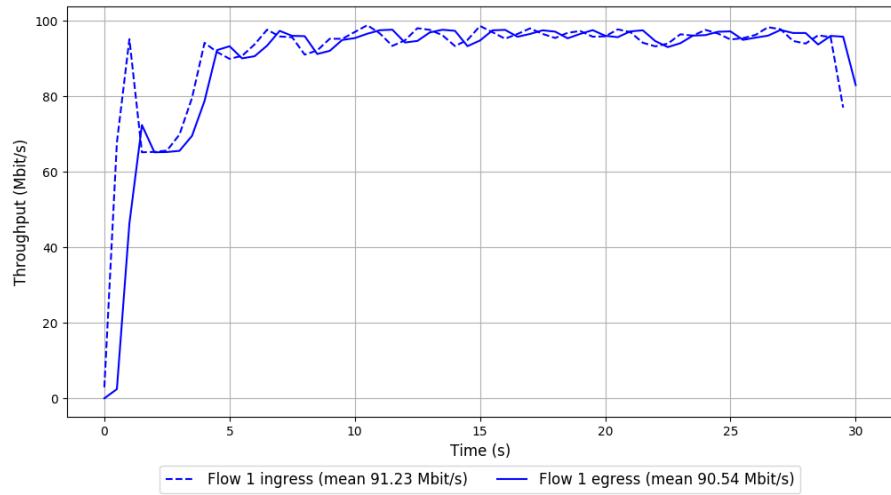


Run 2: Statistics of PCC-Allegro

```
Start at: 2018-12-11 09:35:45
End at: 2018-12-11 09:36:15
Local clock offset: 1.071 ms
Remote clock offset: -2.343 ms

# Below is generated by plot.py at 2018-12-11 10:55:42
# Datalink statistics
-- Total of 1 flow:
Average throughput: 90.54 Mbit/s
95th percentile per-packet one-way delay: 36.693 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 90.54 Mbit/s
95th percentile per-packet one-way delay: 36.693 ms
Loss rate: 0.74%
```

Run 2: Report of PCC-Allegro — Data Link

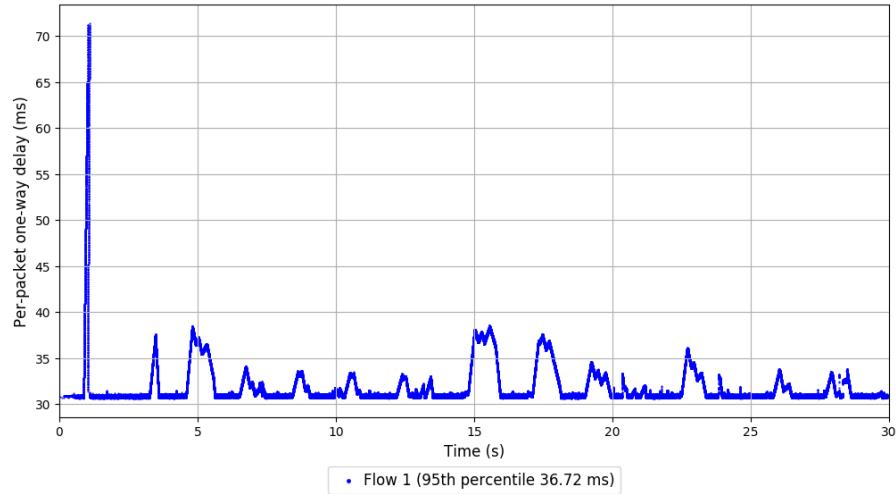
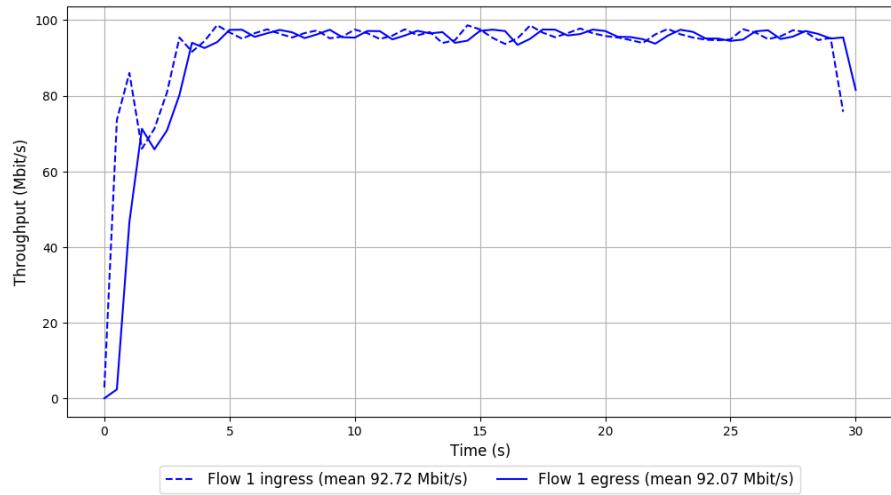


Run 3: Statistics of PCC-Allegro

```
Start at: 2018-12-11 09:57:38
End at: 2018-12-11 09:58:08
Local clock offset: 0.453 ms
Remote clock offset: -1.428 ms

# Below is generated by plot.py at 2018-12-11 10:55:47
# Datalink statistics
-- Total of 1 flow:
Average throughput: 92.07 Mbit/s
95th percentile per-packet one-way delay: 36.721 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 92.07 Mbit/s
95th percentile per-packet one-way delay: 36.721 ms
Loss rate: 0.70%
```

Run 3: Report of PCC-Allegro — Data Link

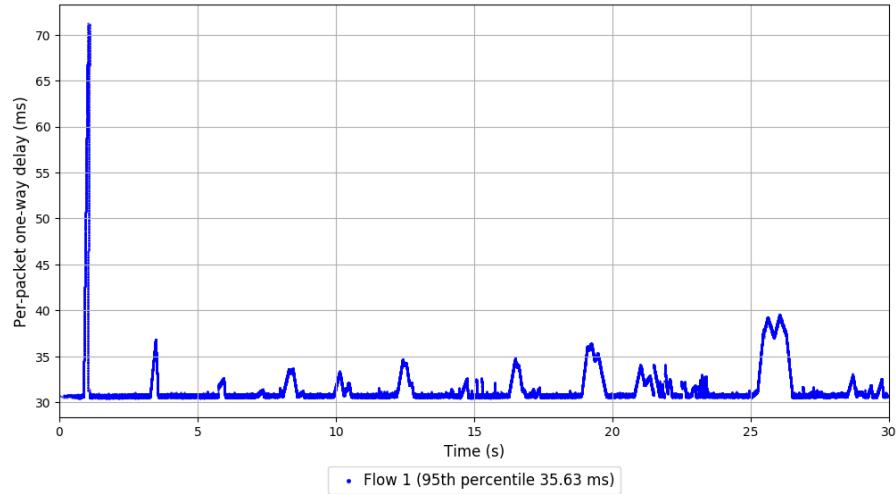
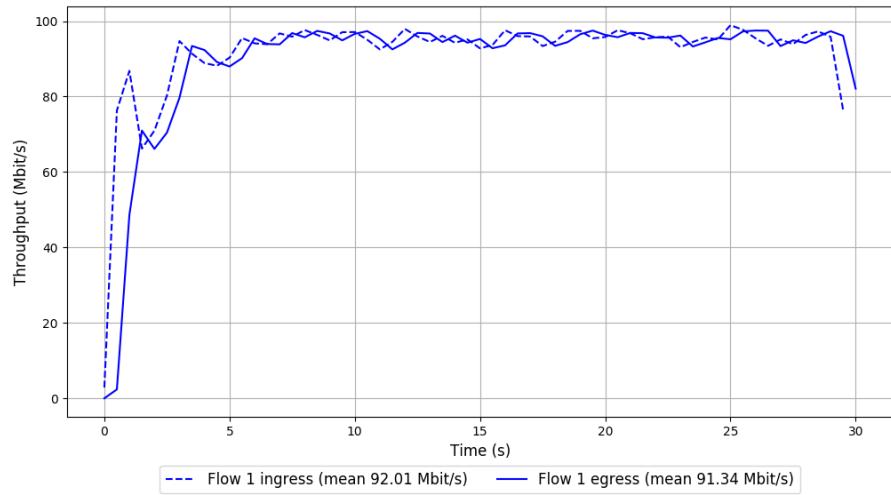


Run 4: Statistics of PCC-Allegro

```
Start at: 2018-12-11 10:19:39
End at: 2018-12-11 10:20:09
Local clock offset: 0.405 ms
Remote clock offset: -1.44 ms

# Below is generated by plot.py at 2018-12-11 10:55:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.34 Mbit/s
95th percentile per-packet one-way delay: 35.634 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 91.34 Mbit/s
95th percentile per-packet one-way delay: 35.634 ms
Loss rate: 0.73%
```

Run 4: Report of PCC-Allegro — Data Link

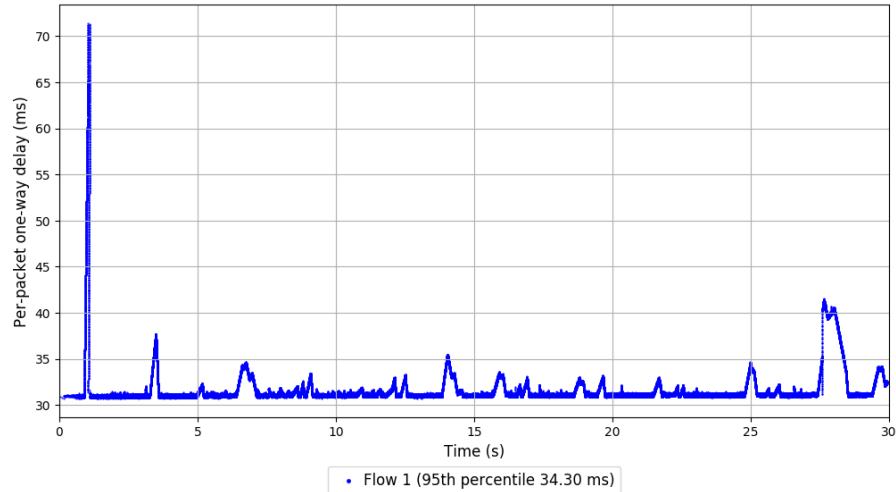
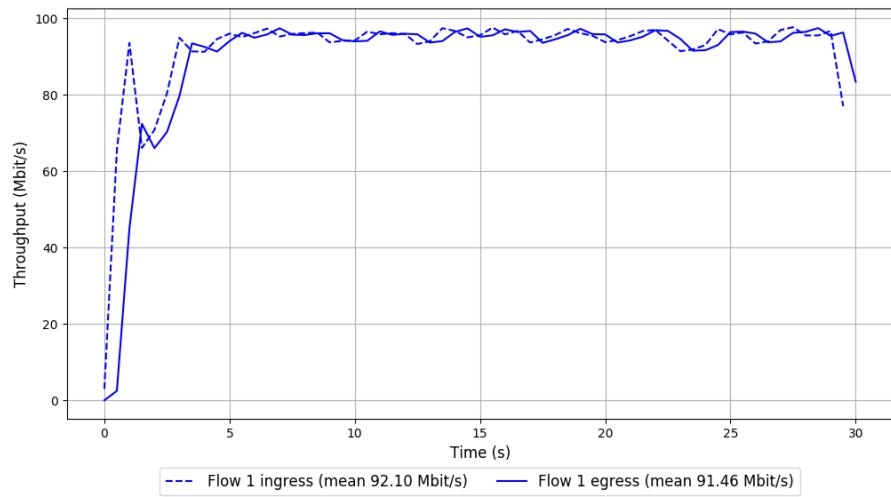


Run 5: Statistics of PCC-Allegro

```
Start at: 2018-12-11 10:41:34
End at: 2018-12-11 10:42:04
Local clock offset: 1.423 ms
Remote clock offset: -1.406 ms

# Below is generated by plot.py at 2018-12-11 10:55:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 91.46 Mbit/s
95th percentile per-packet one-way delay: 34.295 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 91.46 Mbit/s
95th percentile per-packet one-way delay: 34.295 ms
Loss rate: 0.69%
```

Run 5: Report of PCC-Allegro — Data Link

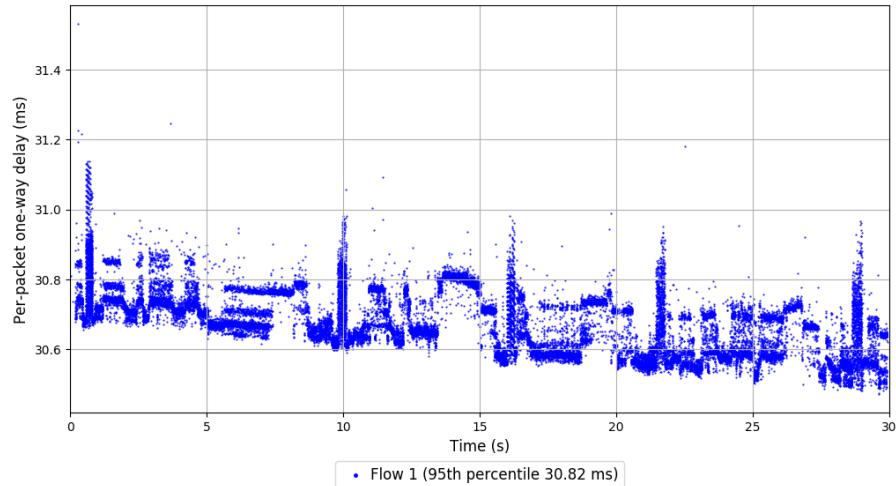
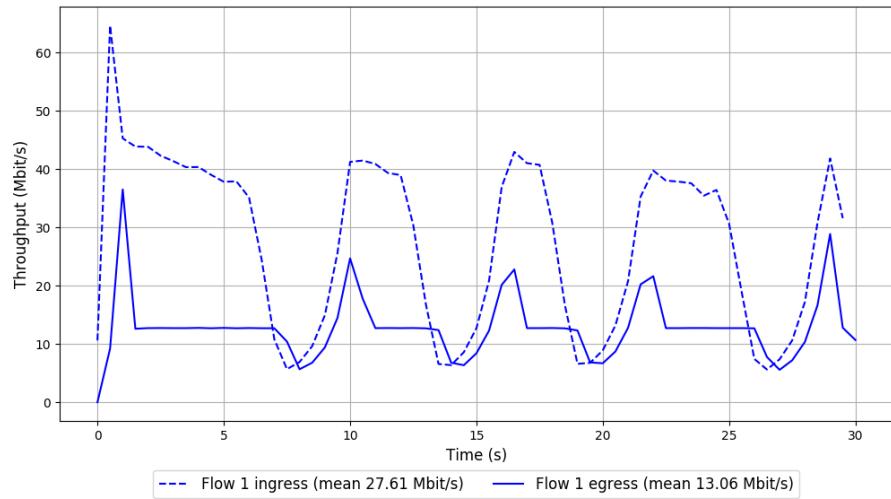


Run 1: Statistics of PCC-Expr

```
Start at: 2018-12-11 09:08:15
End at: 2018-12-11 09:08:45
Local clock offset: 3.646 ms
Remote clock offset: -3.3 ms

# Below is generated by plot.py at 2018-12-11 10:55:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 13.06 Mbit/s
95th percentile per-packet one-way delay: 30.819 ms
Loss rate: 52.69%
-- Flow 1:
Average throughput: 13.06 Mbit/s
95th percentile per-packet one-way delay: 30.819 ms
Loss rate: 52.69%
```

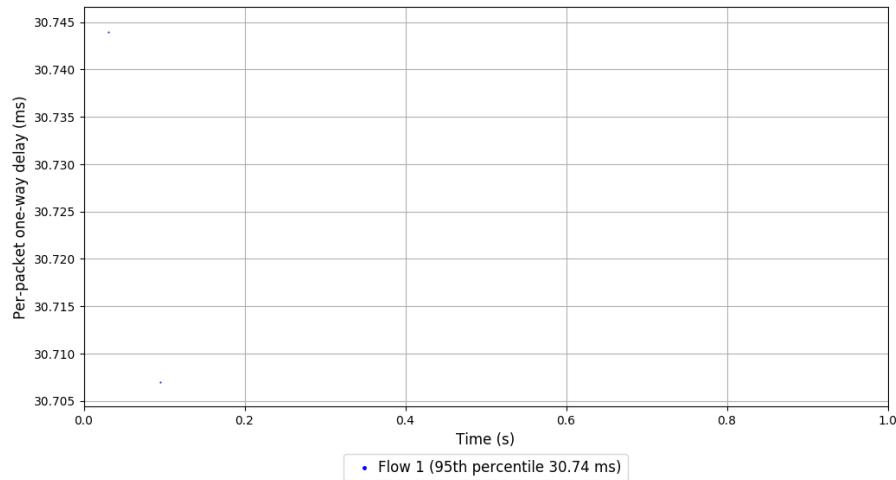
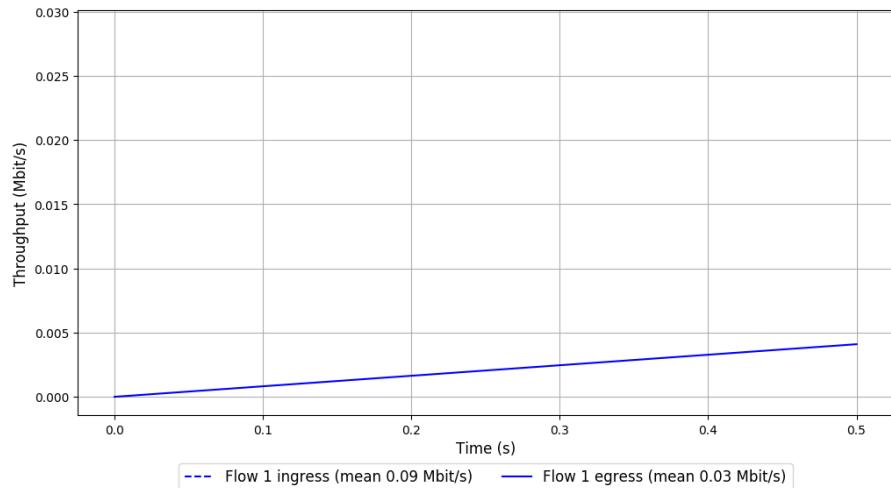
Run 1: Report of PCC-Expr — Data Link



Run 2: Statistics of PCC-Expr

Start at: 2018-12-11 09:30:06
End at: 2018-12-11 09:30:36
Local clock offset: 1.054 ms
Remote clock offset: -2.553 ms

Run 2: Report of PCC-Expr — Data Link

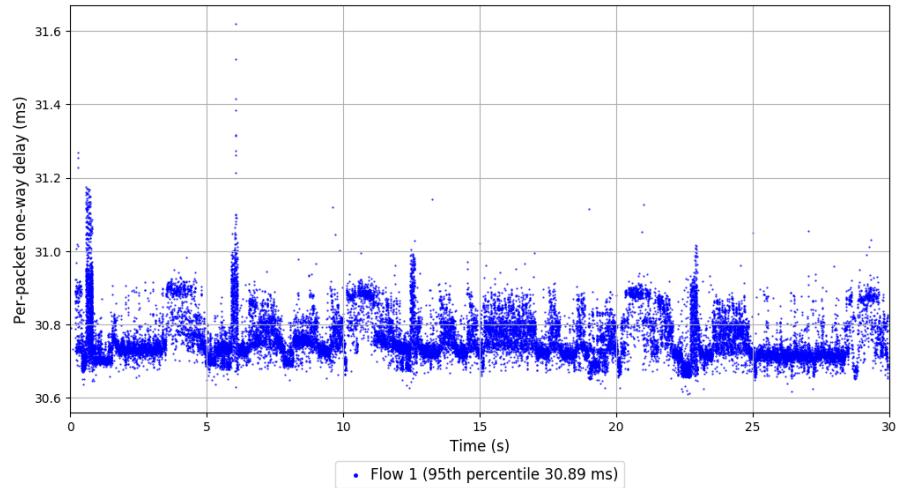
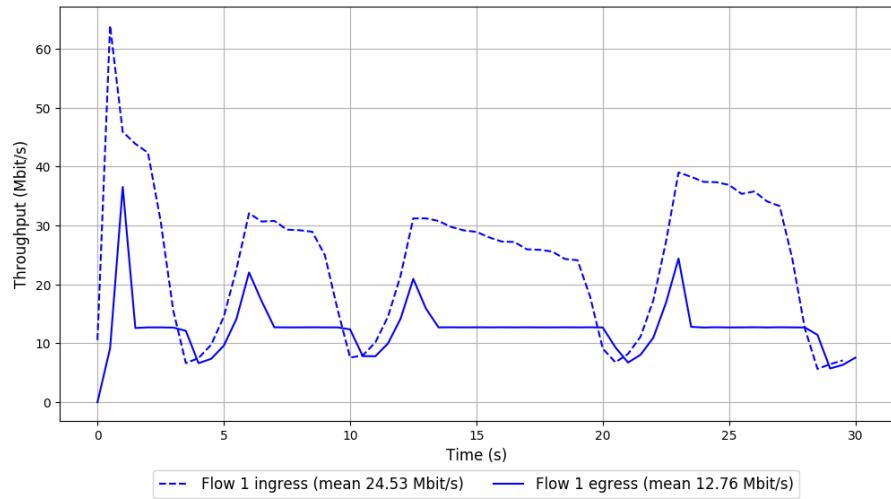


Run 3: Statistics of PCC-Expr

```
Start at: 2018-12-11 09:51:54
End at: 2018-12-11 09:52:24
Local clock offset: 0.494 ms
Remote clock offset: -1.667 ms

# Below is generated by plot.py at 2018-12-11 10:55:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.76 Mbit/s
95th percentile per-packet one-way delay: 30.887 ms
Loss rate: 48.01%
-- Flow 1:
Average throughput: 12.76 Mbit/s
95th percentile per-packet one-way delay: 30.887 ms
Loss rate: 48.01%
```

Run 3: Report of PCC-Expr — Data Link



Run 4: Statistics of PCC-Expr

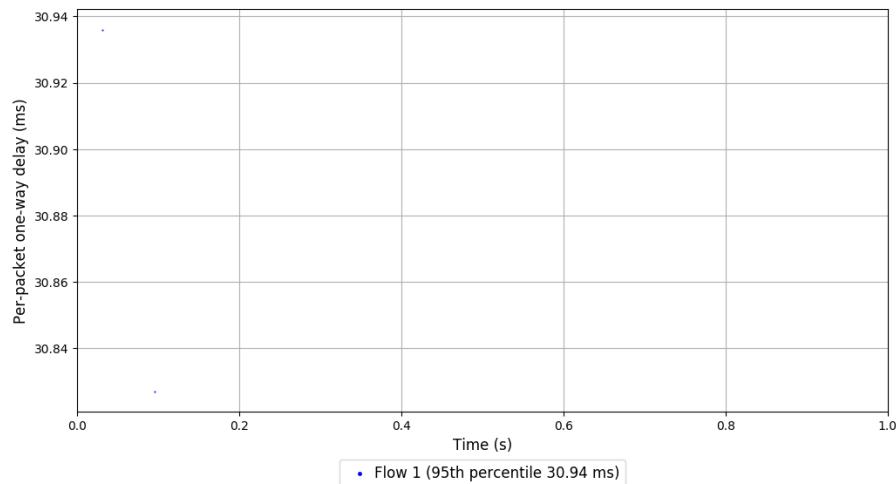
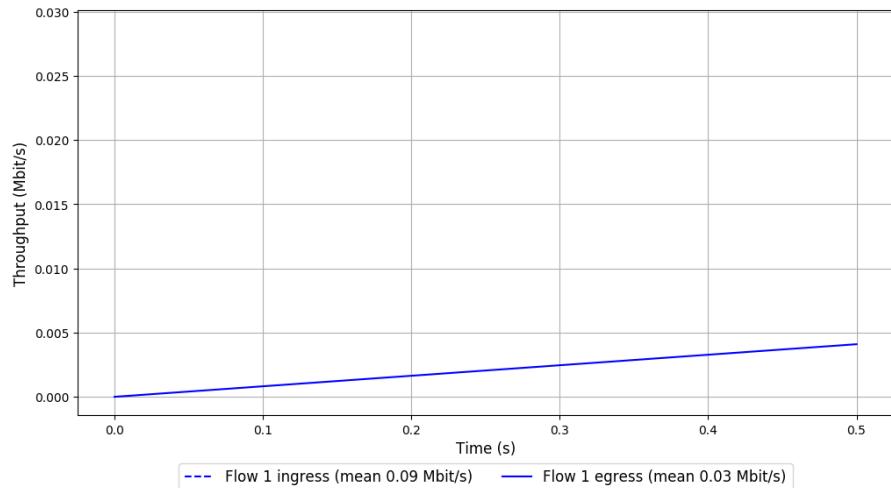
Start at: 2018-12-11 10:13:59

End at: 2018-12-11 10:14:29

Local clock offset: 0.435 ms

Remote clock offset: -1.2 ms

Run 4: Report of PCC-Expr — Data Link

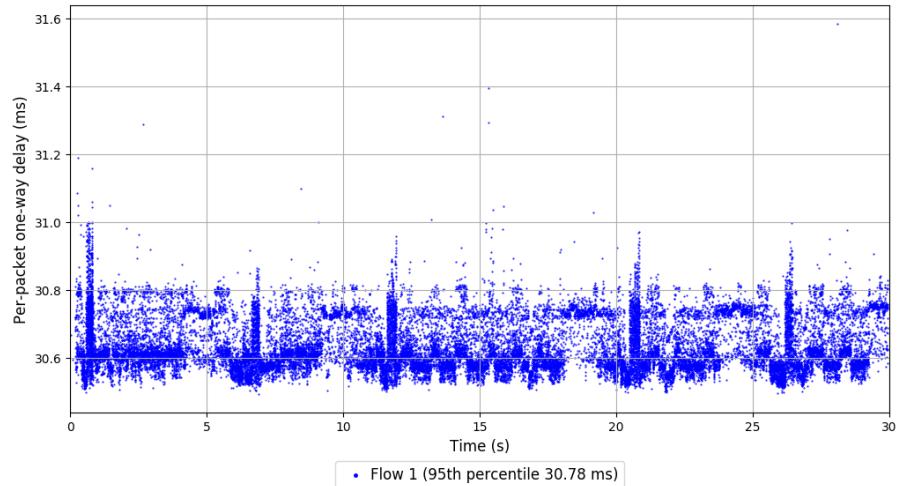
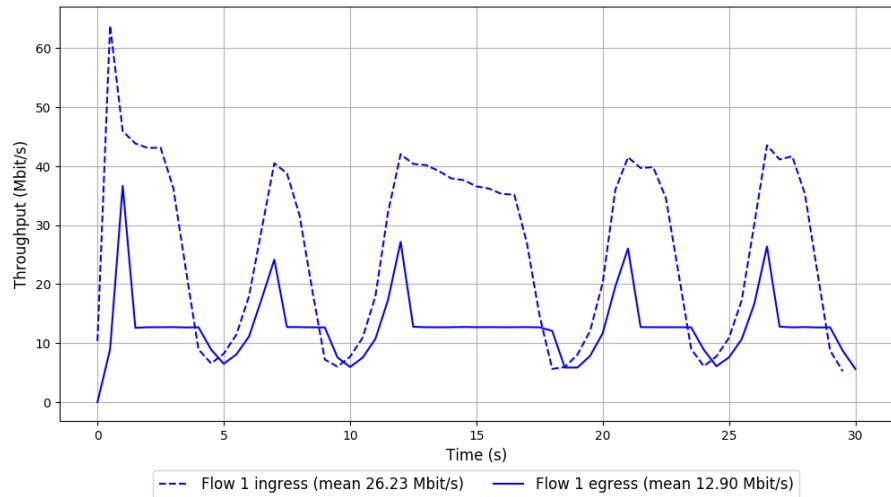


Run 5: Statistics of PCC-Expr

```
Start at: 2018-12-11 10:35:51
End at: 2018-12-11 10:36:21
Local clock offset: 0.474 ms
Remote clock offset: -1.581 ms

# Below is generated by plot.py at 2018-12-11 10:55:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.90 Mbit/s
95th percentile per-packet one-way delay: 30.781 ms
Loss rate: 50.82%
-- Flow 1:
Average throughput: 12.90 Mbit/s
95th percentile per-packet one-way delay: 30.781 ms
Loss rate: 50.82%
```

Run 5: Report of PCC-Expr — Data Link

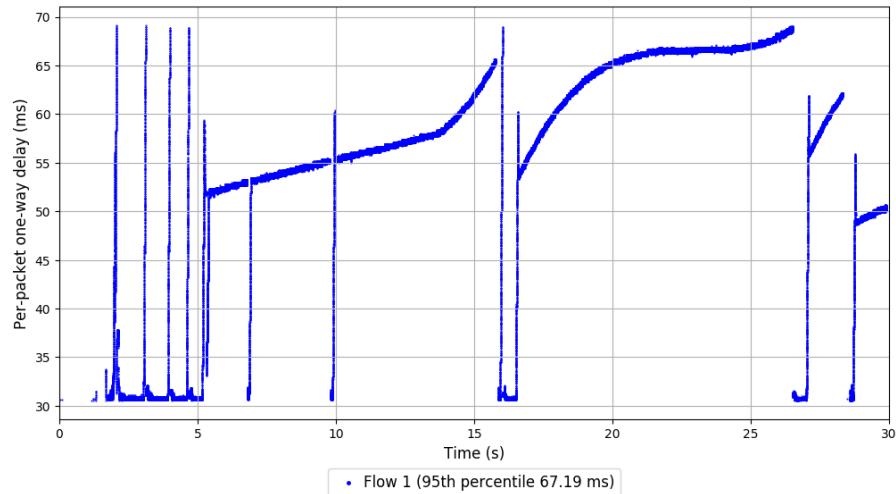
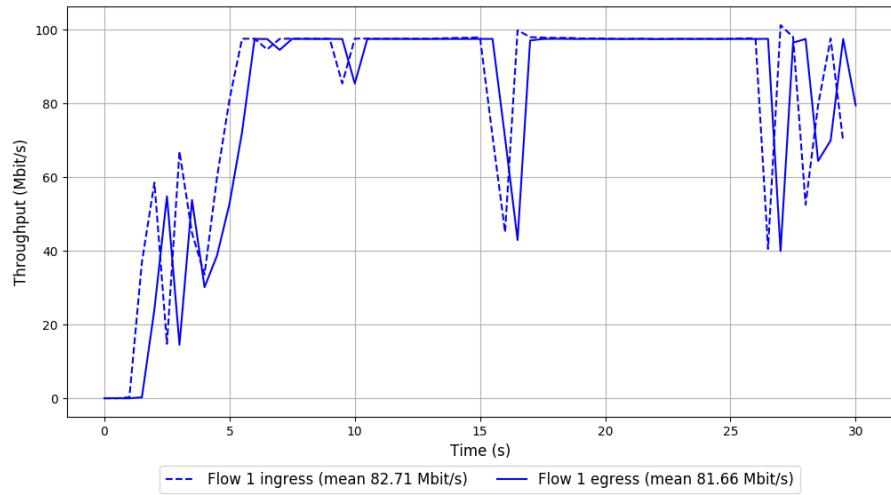


Run 1: Statistics of QUIC Cubic

```
Start at: 2018-12-11 09:16:15
End at: 2018-12-11 09:16:45
Local clock offset: 1.805 ms
Remote clock offset: -2.993 ms

# Below is generated by plot.py at 2018-12-11 10:56:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 81.66 Mbit/s
95th percentile per-packet one-way delay: 67.194 ms
Loss rate: 1.21%
-- Flow 1:
Average throughput: 81.66 Mbit/s
95th percentile per-packet one-way delay: 67.194 ms
Loss rate: 1.21%
```

Run 1: Report of QUIC Cubic — Data Link

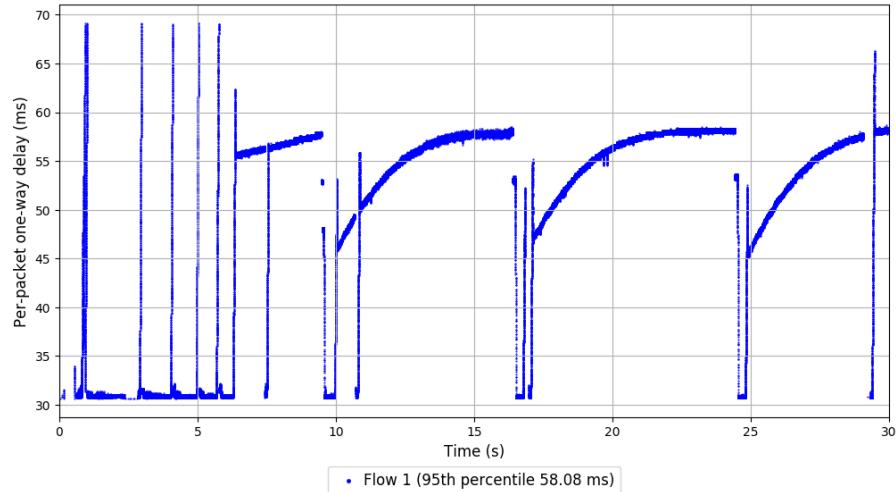
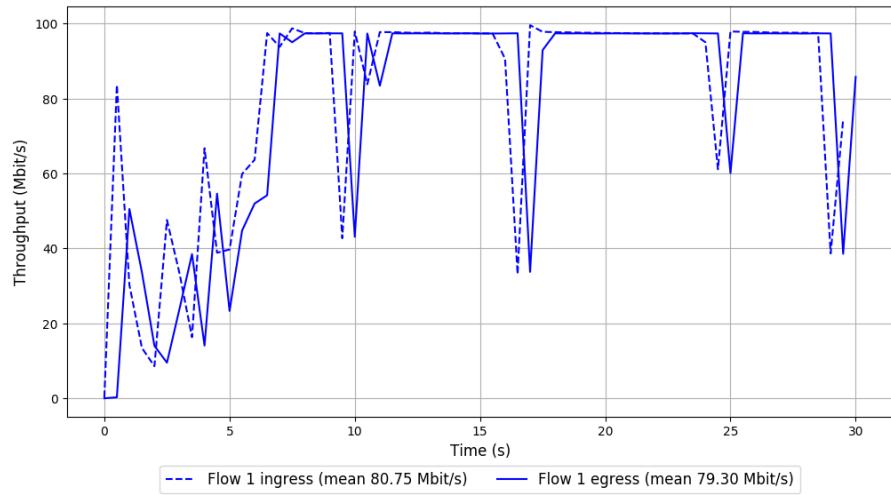


Run 2: Statistics of QUIC Cubic

```
Start at: 2018-12-11 09:38:04
End at: 2018-12-11 09:38:34
Local clock offset: 1.078 ms
Remote clock offset: -2.223 ms

# Below is generated by plot.py at 2018-12-11 10:56:04
# Datalink statistics
-- Total of 1 flow:
Average throughput: 79.30 Mbit/s
95th percentile per-packet one-way delay: 58.079 ms
Loss rate: 1.70%
-- Flow 1:
Average throughput: 79.30 Mbit/s
95th percentile per-packet one-way delay: 58.079 ms
Loss rate: 1.70%
```

Run 2: Report of QUIC Cubic — Data Link

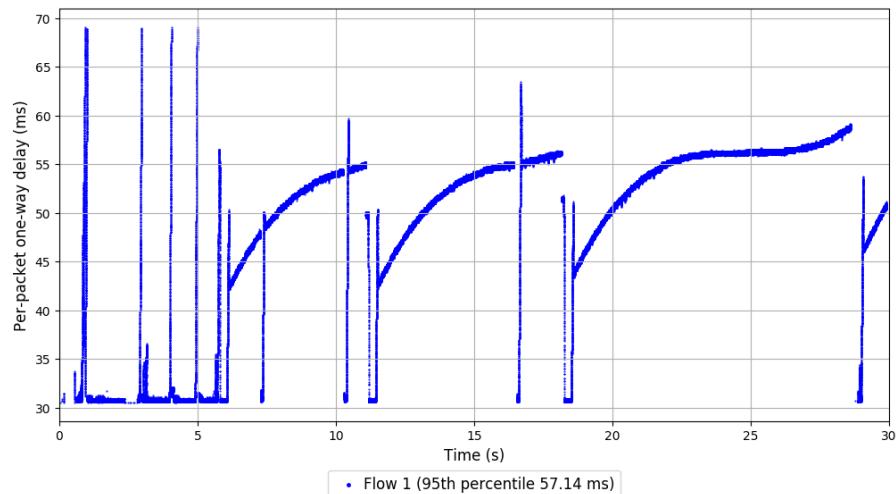
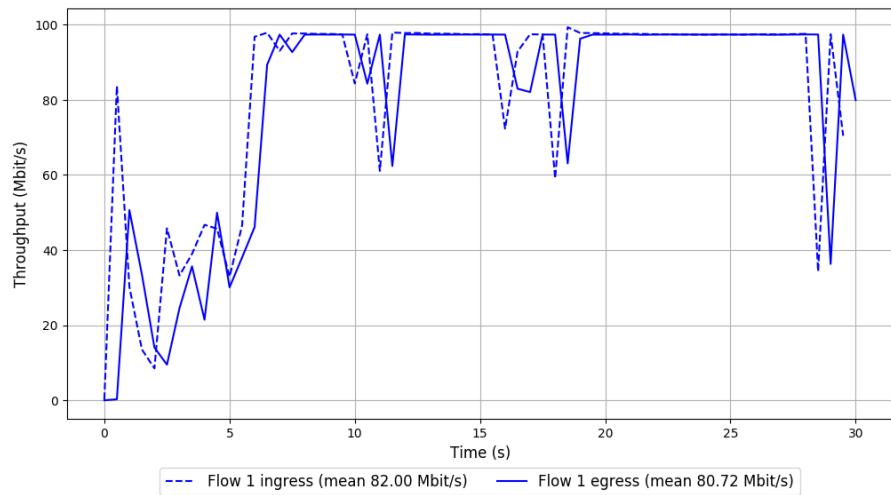


Run 3: Statistics of QUIC Cubic

```
Start at: 2018-12-11 10:00:01
End at: 2018-12-11 10:00:31
Local clock offset: 0.473 ms
Remote clock offset: -1.351 ms

# Below is generated by plot.py at 2018-12-11 10:56:11
# Datalink statistics
-- Total of 1 flow:
Average throughput: 80.72 Mbit/s
95th percentile per-packet one-way delay: 57.144 ms
Loss rate: 1.49%
-- Flow 1:
Average throughput: 80.72 Mbit/s
95th percentile per-packet one-way delay: 57.144 ms
Loss rate: 1.49%
```

Run 3: Report of QUIC Cubic — Data Link

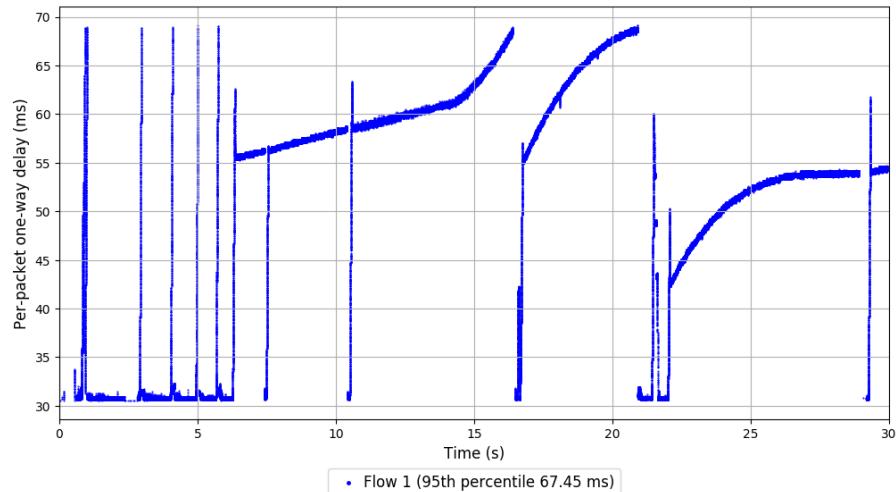
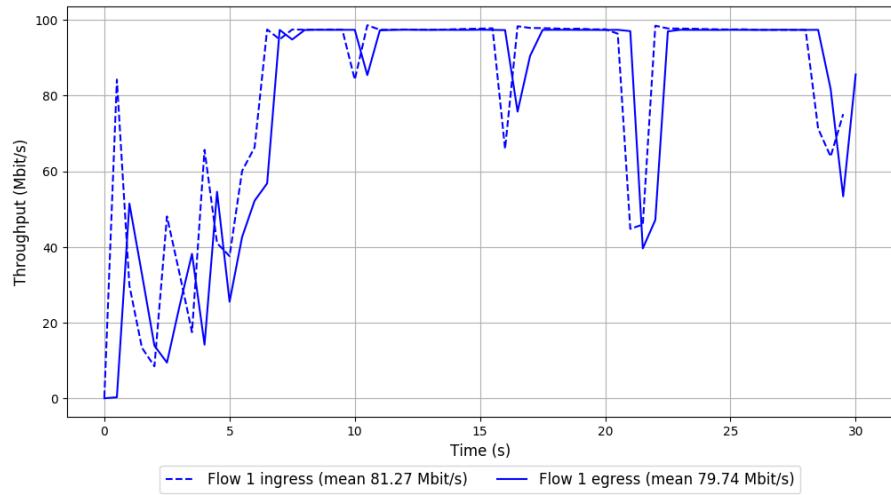


Run 4: Statistics of QUIC Cubic

```
Start at: 2018-12-11 10:22:00
End at: 2018-12-11 10:22:30
Local clock offset: 0.462 ms
Remote clock offset: -1.271 ms

# Below is generated by plot.py at 2018-12-11 10:56:38
# Datalink statistics
-- Total of 1 flow:
Average throughput: 79.74 Mbit/s
95th percentile per-packet one-way delay: 67.454 ms
Loss rate: 1.80%
-- Flow 1:
Average throughput: 79.74 Mbit/s
95th percentile per-packet one-way delay: 67.454 ms
Loss rate: 1.80%
```

Run 4: Report of QUIC Cubic — Data Link

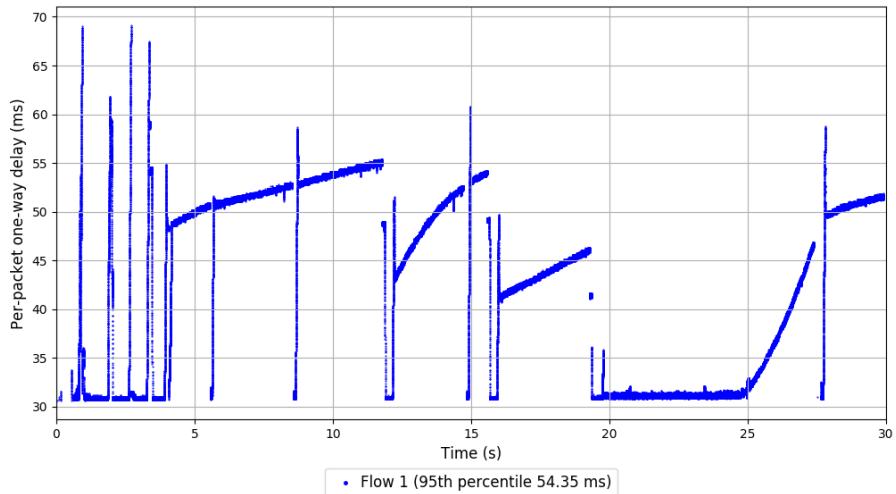
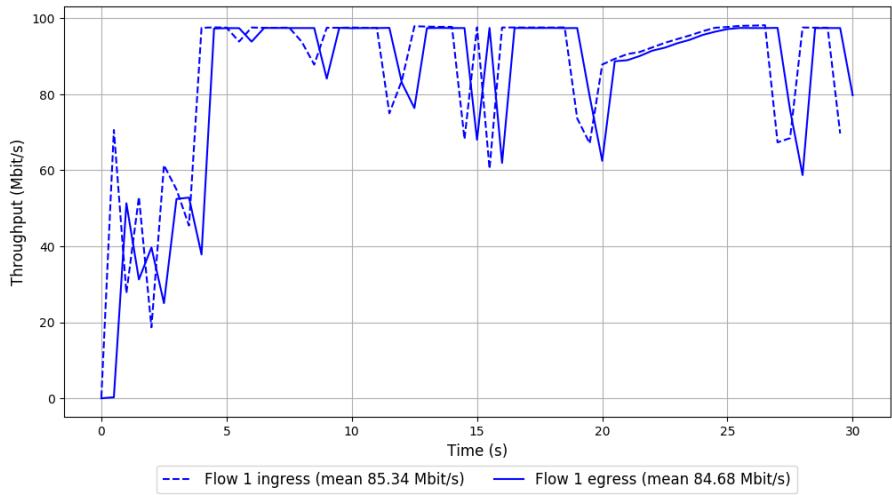


Run 5: Statistics of QUIC Cubic

```
Start at: 2018-12-11 10:43:56
End at: 2018-12-11 10:44:26
Local clock offset: 1.929 ms
Remote clock offset: -1.477 ms

# Below is generated by plot.py at 2018-12-11 10:56:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 84.68 Mbit/s
95th percentile per-packet one-way delay: 54.347 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 84.68 Mbit/s
95th percentile per-packet one-way delay: 54.347 ms
Loss rate: 0.70%
```

Run 5: Report of QUIC Cubic — Data Link

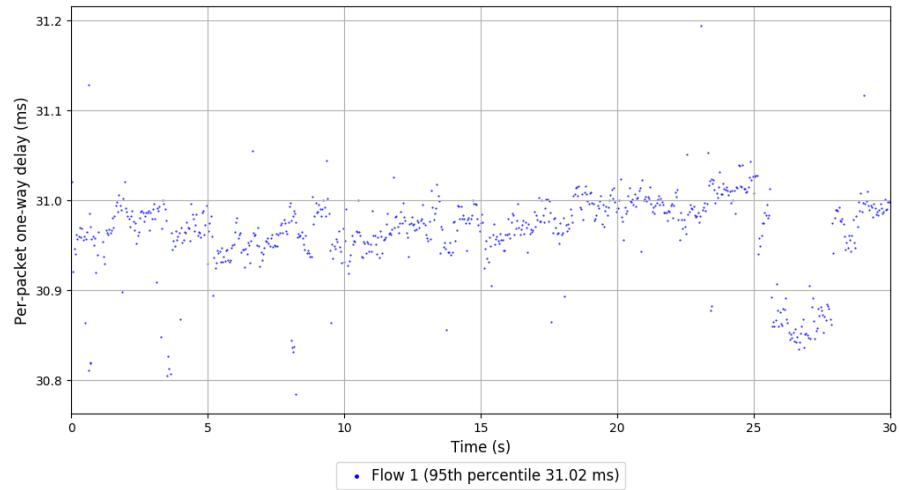
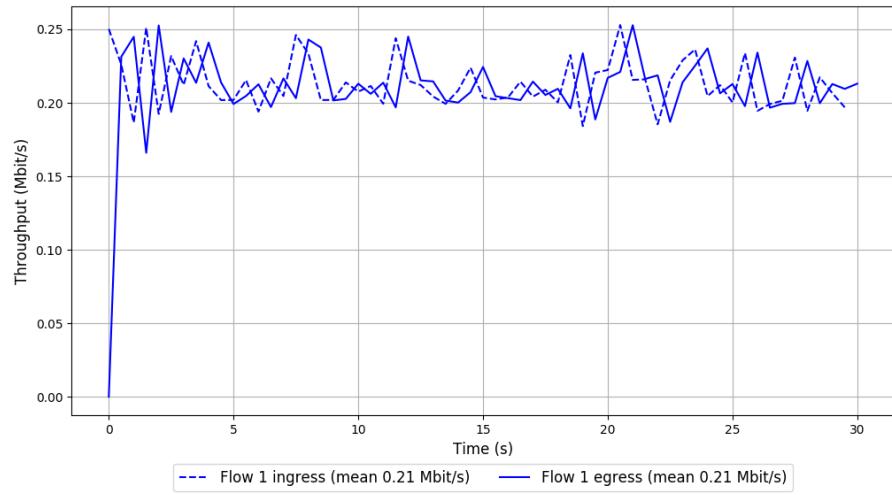


Run 1: Statistics of SCReAM

```
Start at: 2018-12-11 09:03:42
End at: 2018-12-11 09:04:12
Local clock offset: 3.02 ms
Remote clock offset: -3.411 ms

# Below is generated by plot.py at 2018-12-11 10:56:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 31.015 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 31.015 ms
Loss rate: 0.00%
```

Run 1: Report of SCReAM — Data Link

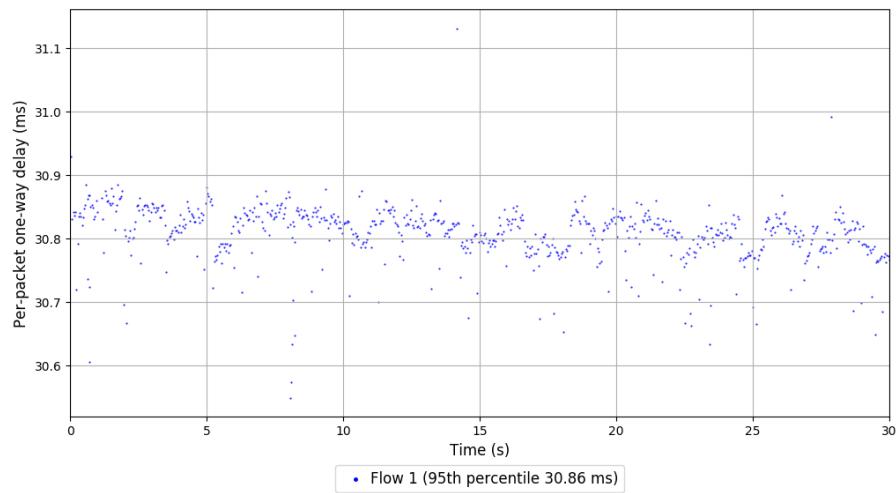
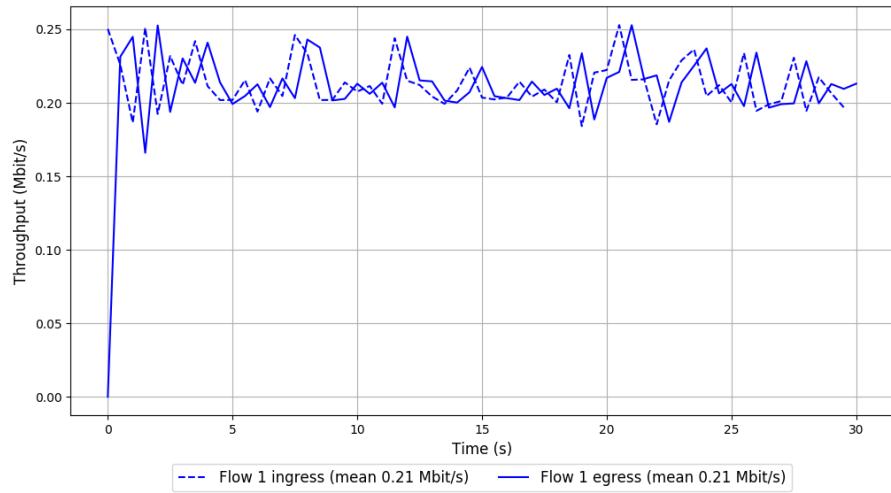


Run 2: Statistics of SCReAM

```
Start at: 2018-12-11 09:25:27
End at: 2018-12-11 09:25:57
Local clock offset: 1.127 ms
Remote clock offset: -2.646 ms

# Below is generated by plot.py at 2018-12-11 10:56:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 30.859 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 30.859 ms
Loss rate: 0.00%
```

Run 2: Report of SCReAM — Data Link

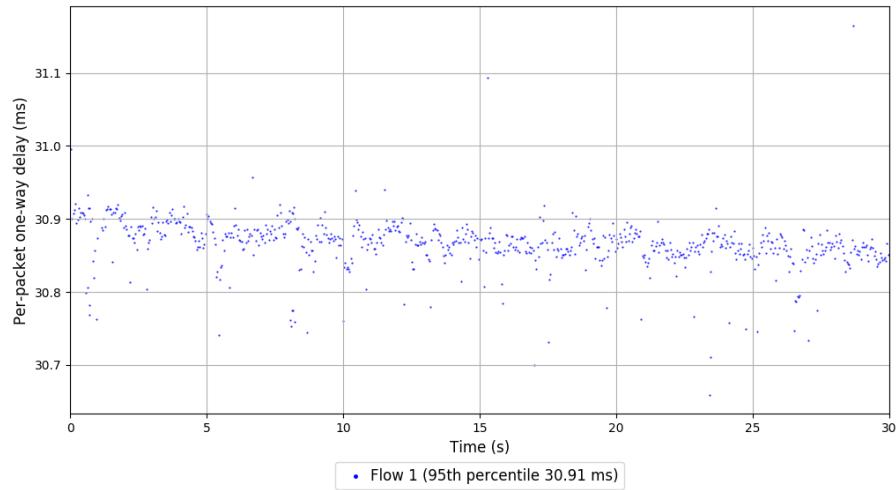
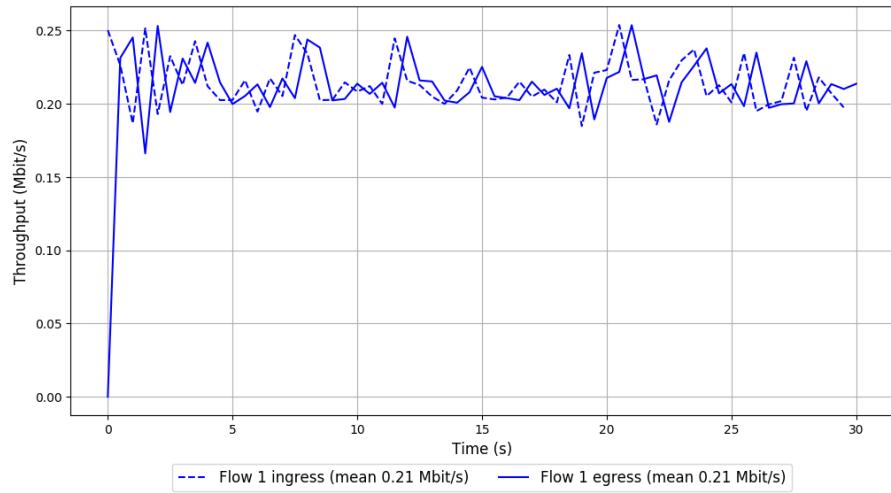


Run 3: Statistics of SCReAM

```
Start at: 2018-12-11 09:47:16
End at: 2018-12-11 09:47:46
Local clock offset: 0.579 ms
Remote clock offset: -1.842 ms

# Below is generated by plot.py at 2018-12-11 10:56:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 30.908 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 30.908 ms
Loss rate: 0.00%
```

Run 3: Report of SCReAM — Data Link

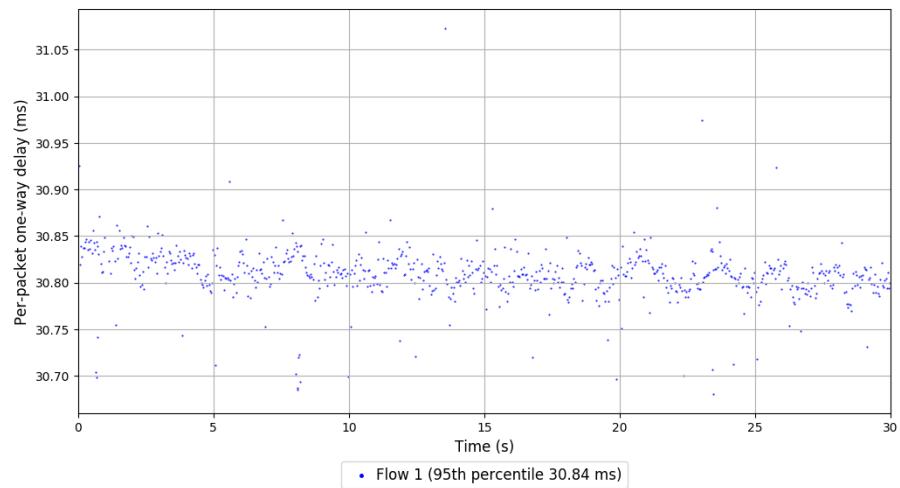
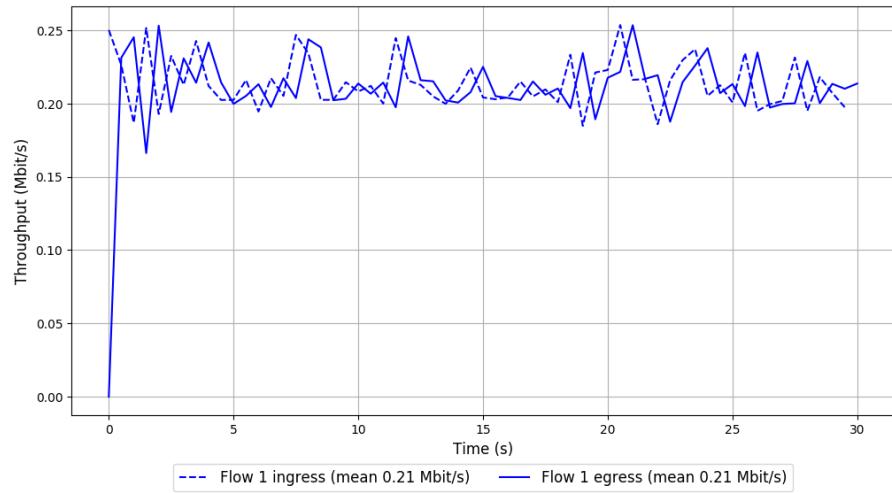


Run 4: Statistics of SCReAM

```
Start at: 2018-12-11 10:09:24
End at: 2018-12-11 10:09:54
Local clock offset: 0.513 ms
Remote clock offset: -1.283 ms

# Below is generated by plot.py at 2018-12-11 10:56:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 30.844 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 30.844 ms
Loss rate: 0.00%
```

Run 4: Report of SCReAM — Data Link

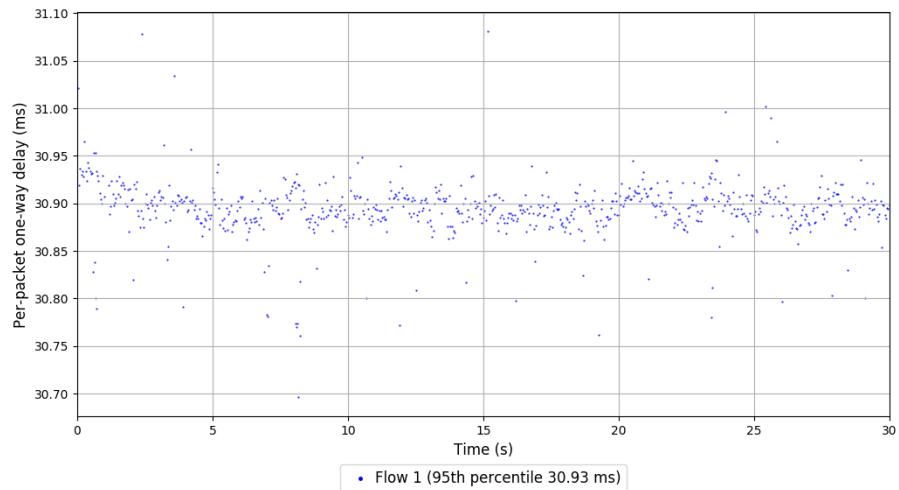
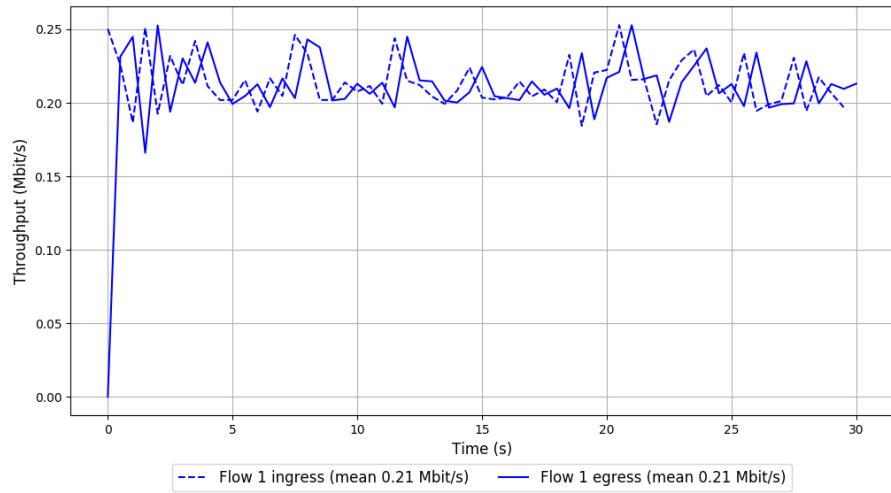


Run 5: Statistics of SCReAM

```
Start at: 2018-12-11 10:31:14
End at: 2018-12-11 10:31:44
Local clock offset: 0.457 ms
Remote clock offset: -1.317 ms

# Below is generated by plot.py at 2018-12-11 10:56:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 30.929 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 30.929 ms
Loss rate: 0.00%
```

Run 5: Report of SCReAM — Data Link

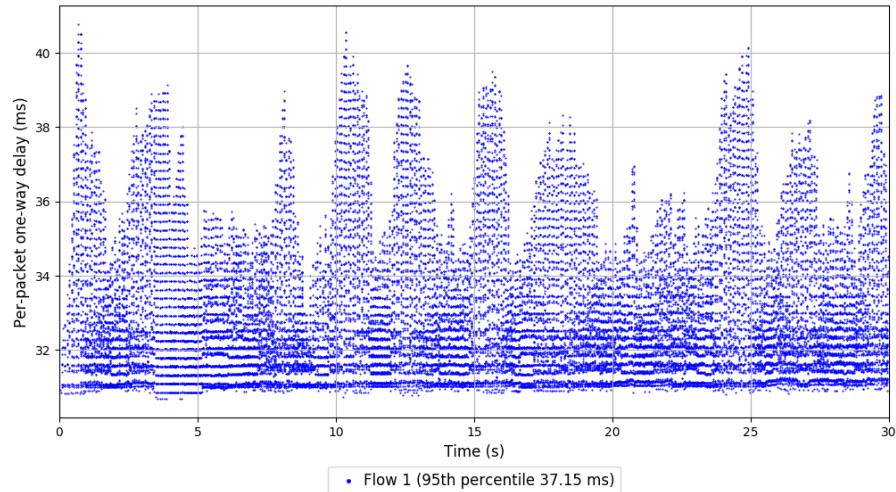
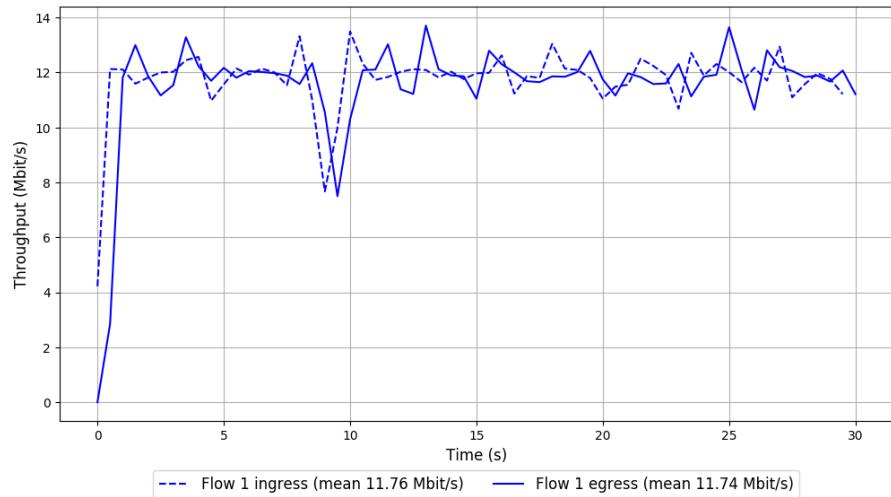


Run 1: Statistics of Sprout

```
Start at: 2018-12-11 09:07:09
End at: 2018-12-11 09:07:39
Local clock offset: 3.518 ms
Remote clock offset: -3.256 ms

# Below is generated by plot.py at 2018-12-11 10:56:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 11.74 Mbit/s
95th percentile per-packet one-way delay: 37.150 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 11.74 Mbit/s
95th percentile per-packet one-way delay: 37.150 ms
Loss rate: 0.17%
```

Run 1: Report of Sprout — Data Link

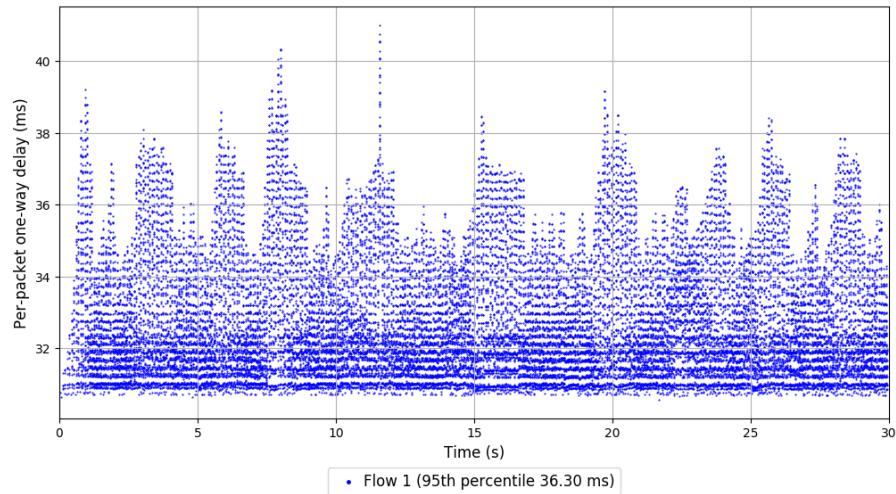
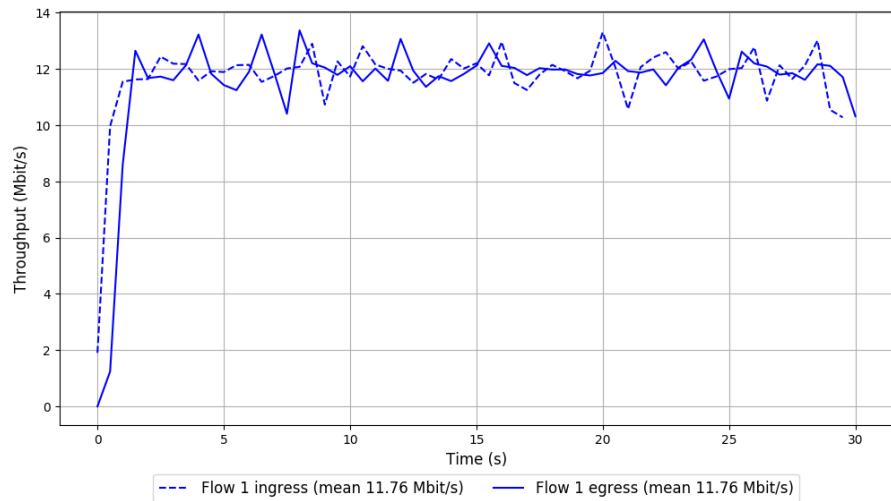


Run 2: Statistics of Sprout

```
Start at: 2018-12-11 09:28:55
End at: 2018-12-11 09:29:25
Local clock offset: 1.049 ms
Remote clock offset: -2.607 ms

# Below is generated by plot.py at 2018-12-11 10:56:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 11.76 Mbit/s
95th percentile per-packet one-way delay: 36.302 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 11.76 Mbit/s
95th percentile per-packet one-way delay: 36.302 ms
Loss rate: 0.00%
```

Run 2: Report of Sprout — Data Link

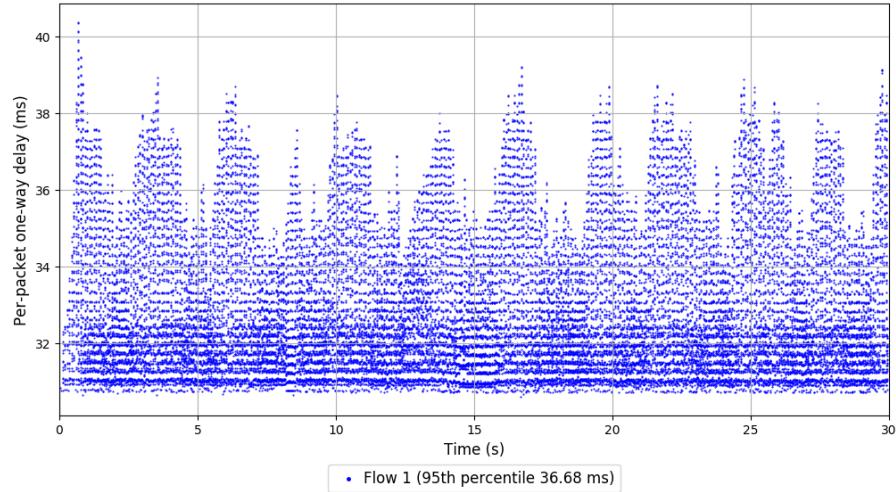
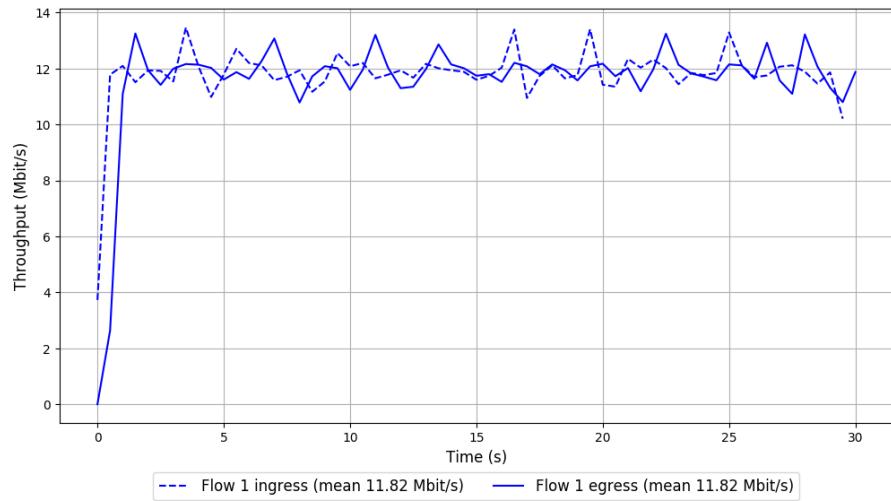


Run 3: Statistics of Sprout

```
Start at: 2018-12-11 09:50:47
End at: 2018-12-11 09:51:17
Local clock offset: 0.511 ms
Remote clock offset: -1.693 ms

# Below is generated by plot.py at 2018-12-11 10:56:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 11.82 Mbit/s
95th percentile per-packet one-way delay: 36.678 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 11.82 Mbit/s
95th percentile per-packet one-way delay: 36.678 ms
Loss rate: 0.00%
```

Run 3: Report of Sprout — Data Link

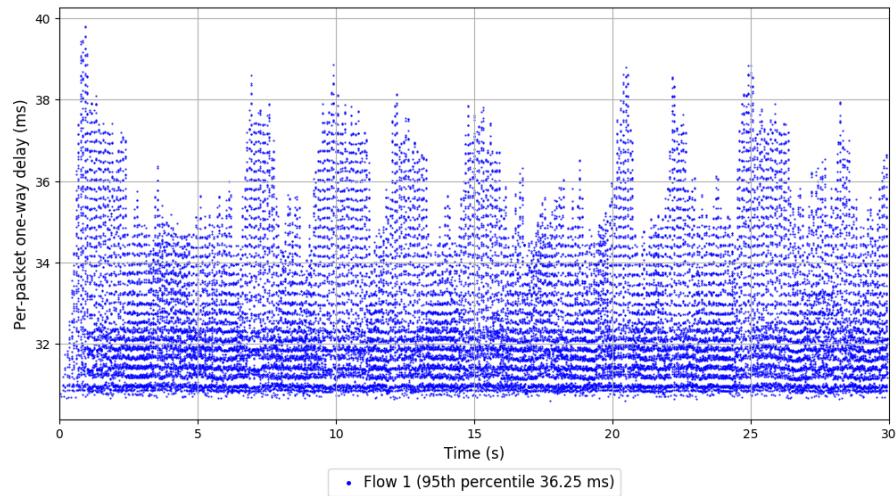
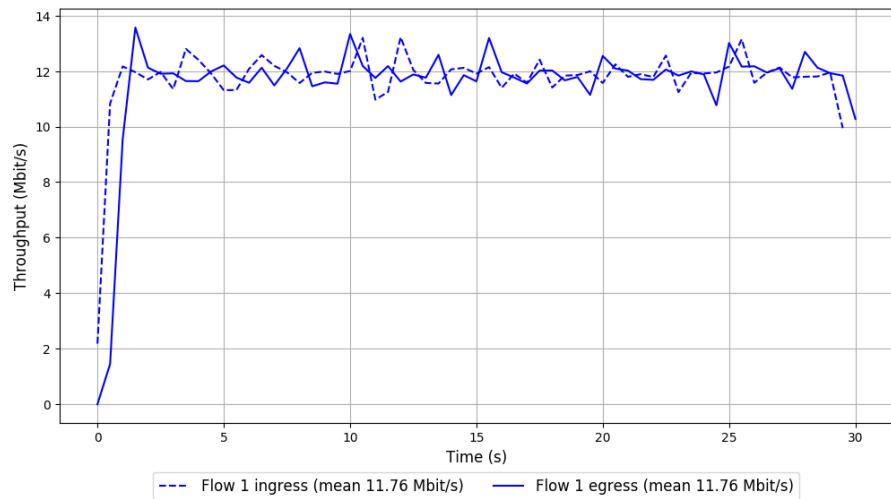


Run 4: Statistics of Sprout

```
Start at: 2018-12-11 10:12:52
End at: 2018-12-11 10:13:22
Local clock offset: 0.454 ms
Remote clock offset: -1.255 ms

# Below is generated by plot.py at 2018-12-11 10:56:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 11.76 Mbit/s
95th percentile per-packet one-way delay: 36.254 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 11.76 Mbit/s
95th percentile per-packet one-way delay: 36.254 ms
Loss rate: 0.00%
```

Run 4: Report of Sprout — Data Link

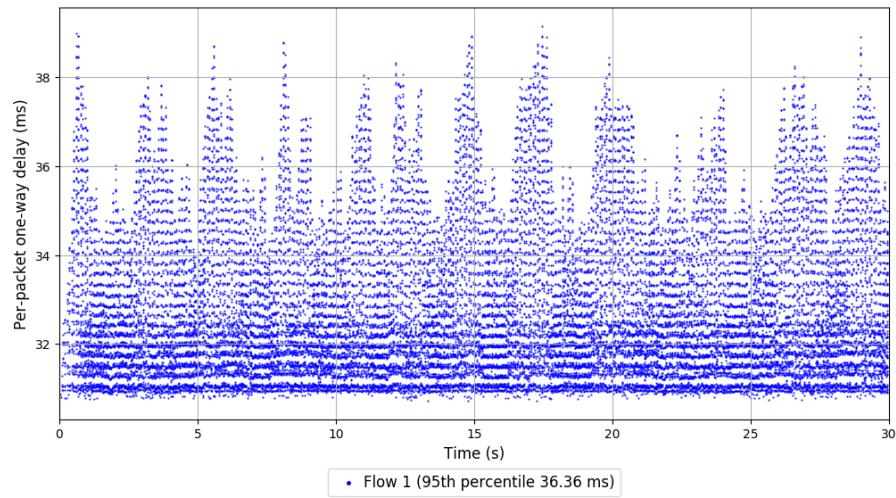
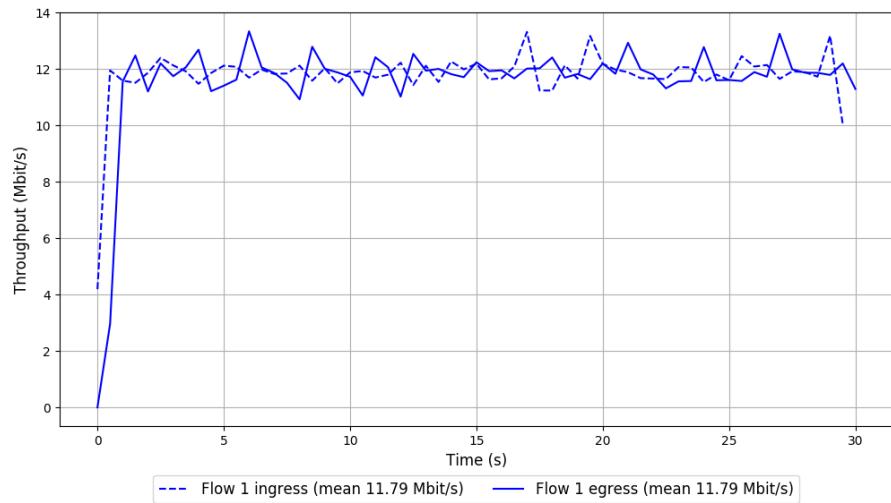


Run 5: Statistics of Sprout

```
Start at: 2018-12-11 10:34:44
End at: 2018-12-11 10:35:14
Local clock offset: 0.491 ms
Remote clock offset: -1.382 ms

# Below is generated by plot.py at 2018-12-11 10:56:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 11.79 Mbit/s
95th percentile per-packet one-way delay: 36.364 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 11.79 Mbit/s
95th percentile per-packet one-way delay: 36.364 ms
Loss rate: 0.03%
```

Run 5: Report of Sprout — Data Link



Run 1: Statistics of TaoVA-100x

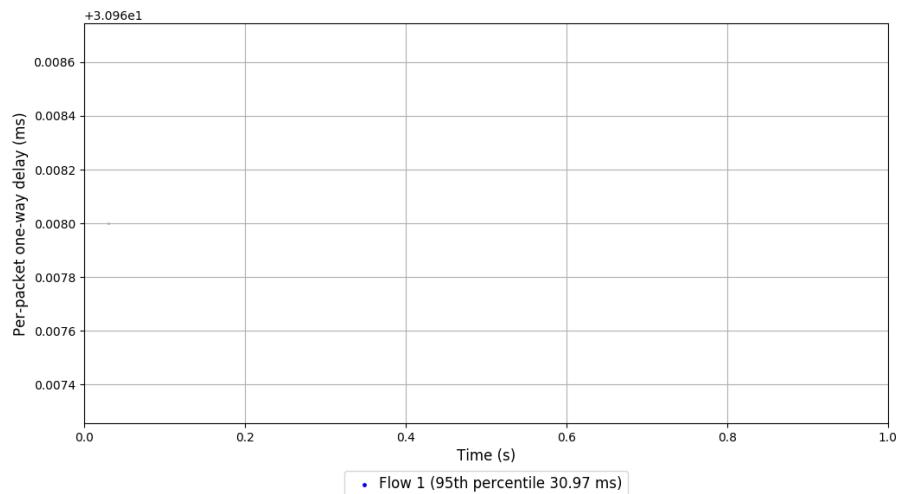
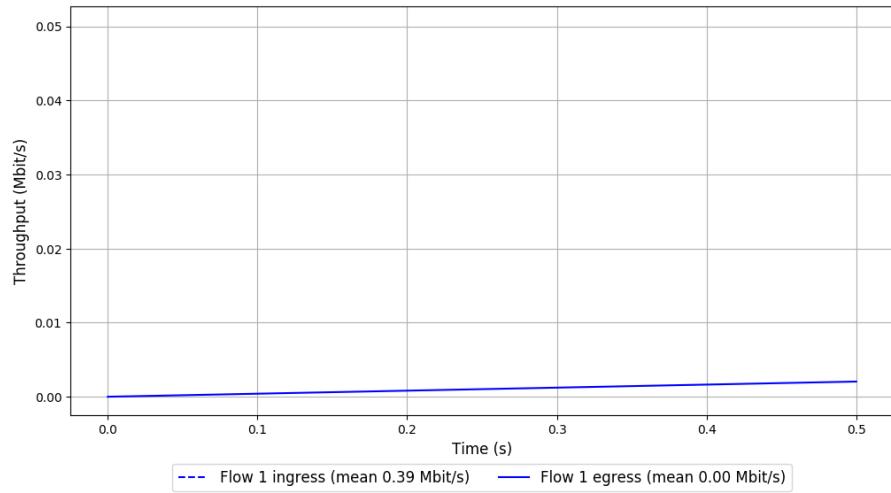
Start at: 2018-12-11 09:02:36

End at: 2018-12-11 09:03:06

Local clock offset: 2.852 ms

Remote clock offset: -3.464 ms

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

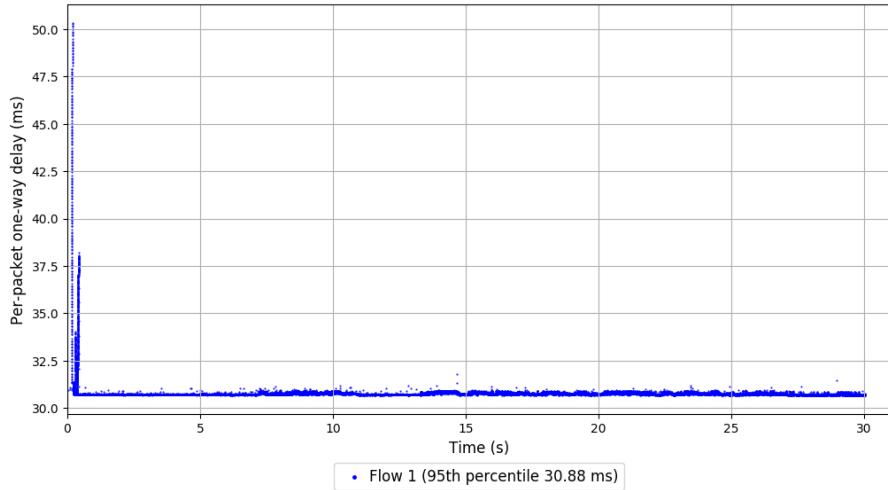
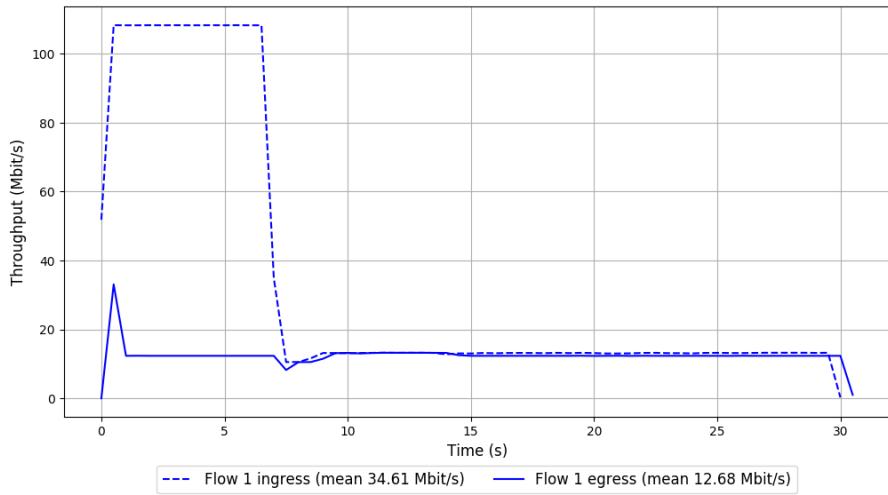


Run 2: Statistics of TaoVA-100x

```
Start at: 2018-12-11 09:24:20
End at: 2018-12-11 09:24:50
Local clock offset: 1.153 ms
Remote clock offset: -2.704 ms

# Below is generated by plot.py at 2018-12-11 10:56:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.68 Mbit/s
95th percentile per-packet one-way delay: 30.882 ms
Loss rate: 63.37%
-- Flow 1:
Average throughput: 12.68 Mbit/s
95th percentile per-packet one-way delay: 30.882 ms
Loss rate: 63.37%
```

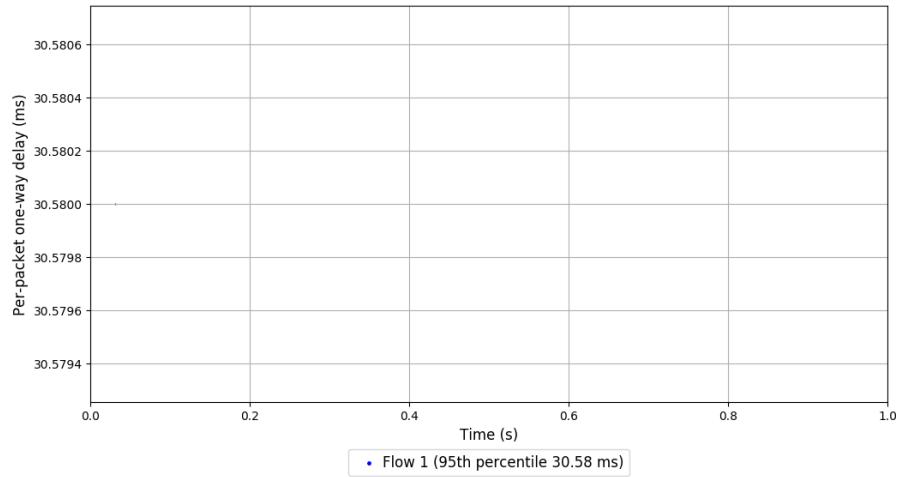
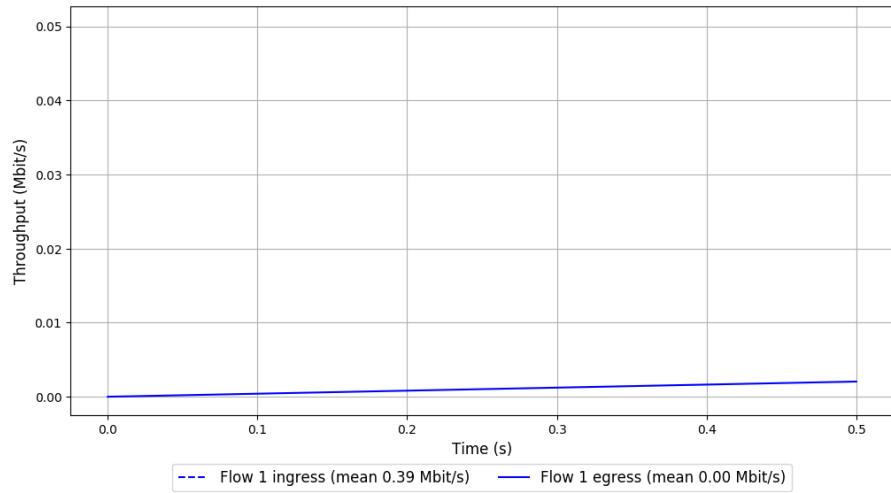
Run 2: Report of TaoVA-100x — Data Link



Run 3: Statistics of TaoVA-100x

Start at: 2018-12-11 09:46:10
End at: 2018-12-11 09:46:40
Local clock offset: 0.623 ms
Remote clock offset: -2.099 ms

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

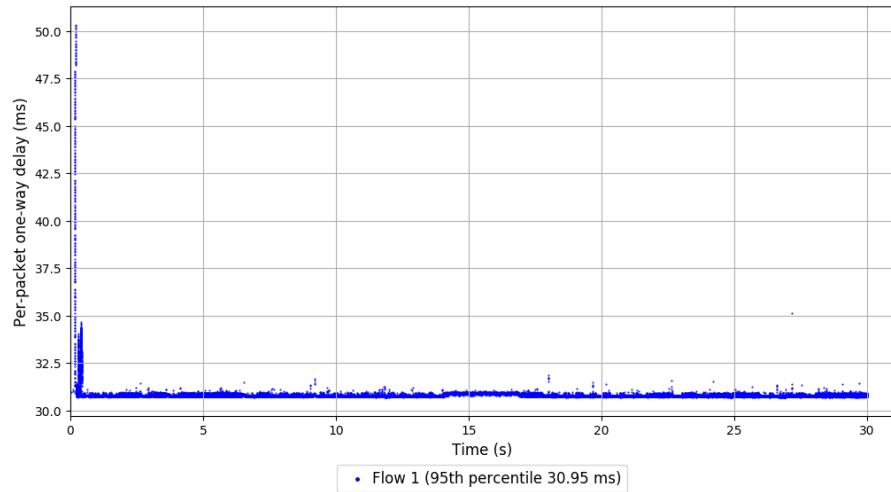
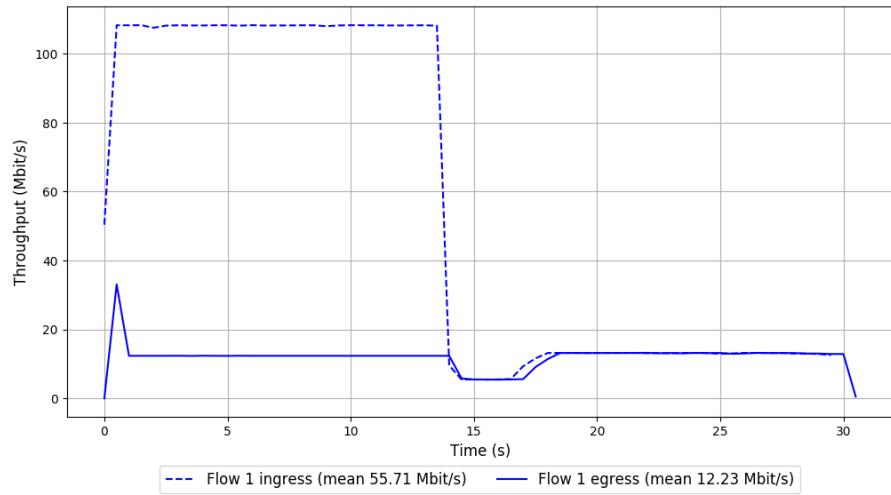


Run 4: Statistics of TaoVA-100x

```
Start at: 2018-12-11 10:08:16
End at: 2018-12-11 10:08:46
Local clock offset: 0.523 ms
Remote clock offset: -1.273 ms

# Below is generated by plot.py at 2018-12-11 10:56:45
# Datalink statistics
-- Total of 1 flow:
Average throughput: 12.23 Mbit/s
95th percentile per-packet one-way delay: 30.946 ms
Loss rate: 78.04%
-- Flow 1:
Average throughput: 12.23 Mbit/s
95th percentile per-packet one-way delay: 30.946 ms
Loss rate: 78.04%
```

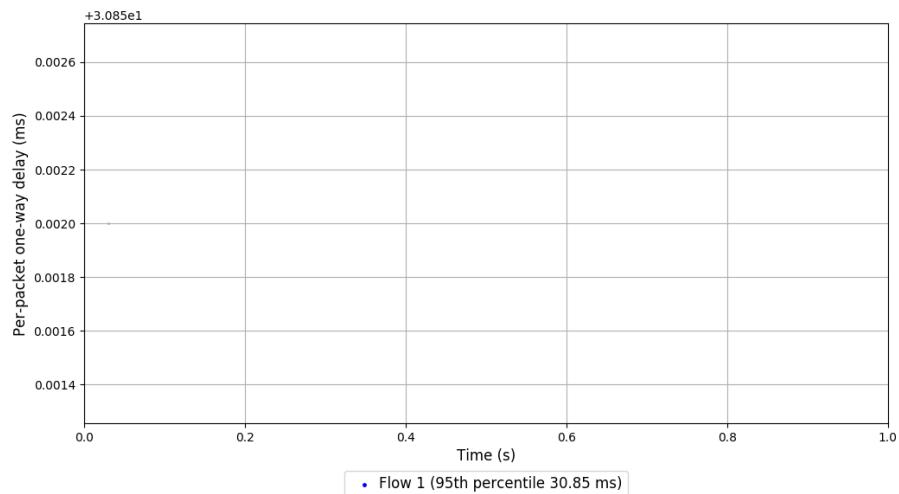
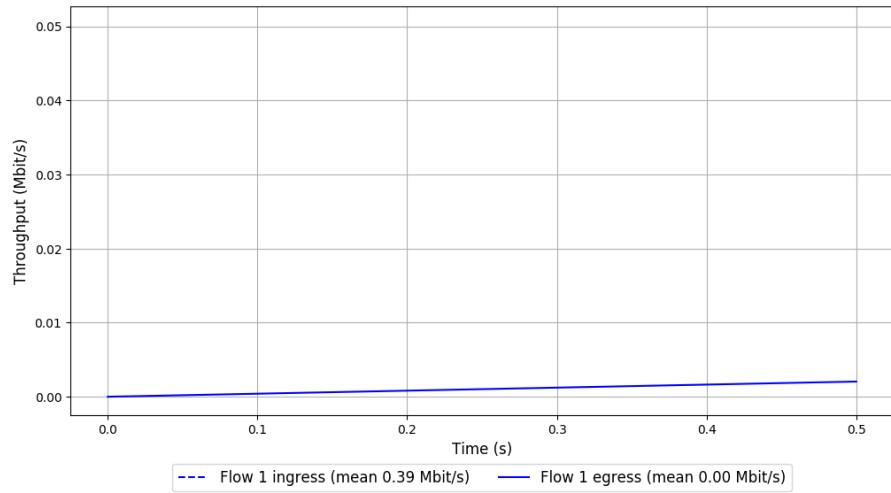
Run 4: Report of TaoVA-100x — Data Link



Run 5: Statistics of TaoVA-100x

Start at: 2018-12-11 10:30:08
End at: 2018-12-11 10:30:38
Local clock offset: 0.457 ms
Remote clock offset: -1.327 ms

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

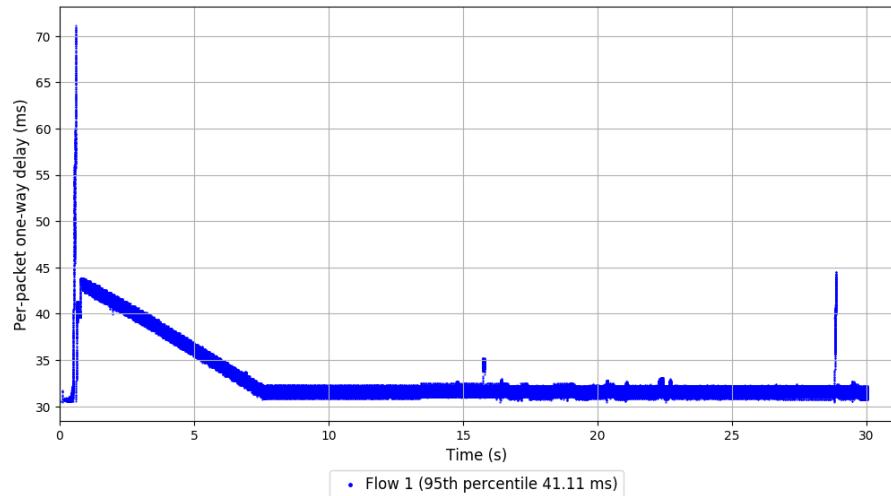
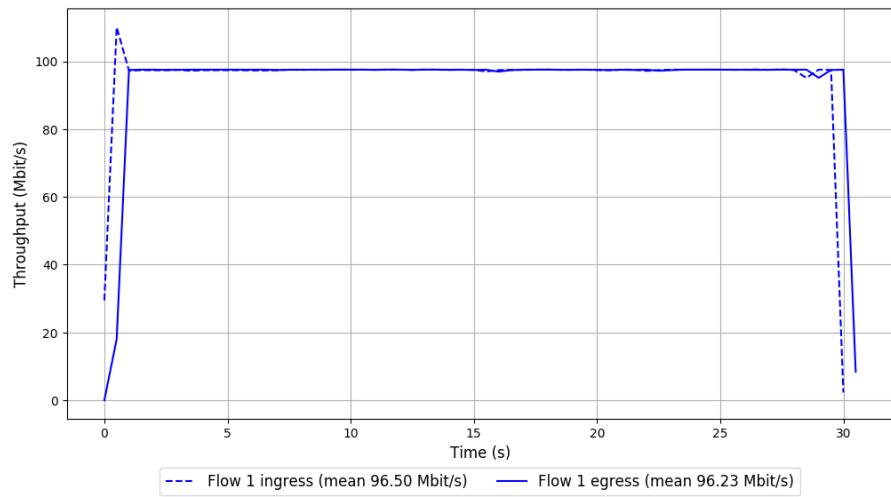


Run 1: Statistics of TCP Vegas

```
Start at: 2018-12-11 09:18:30
End at: 2018-12-11 09:19:00
Local clock offset: 1.545 ms
Remote clock offset: -3.154 ms

# Below is generated by plot.py at 2018-12-11 10:57:12
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.23 Mbit/s
95th percentile per-packet one-way delay: 41.107 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 96.23 Mbit/s
95th percentile per-packet one-way delay: 41.107 ms
Loss rate: 0.27%
```

Run 1: Report of TCP Vegas — Data Link

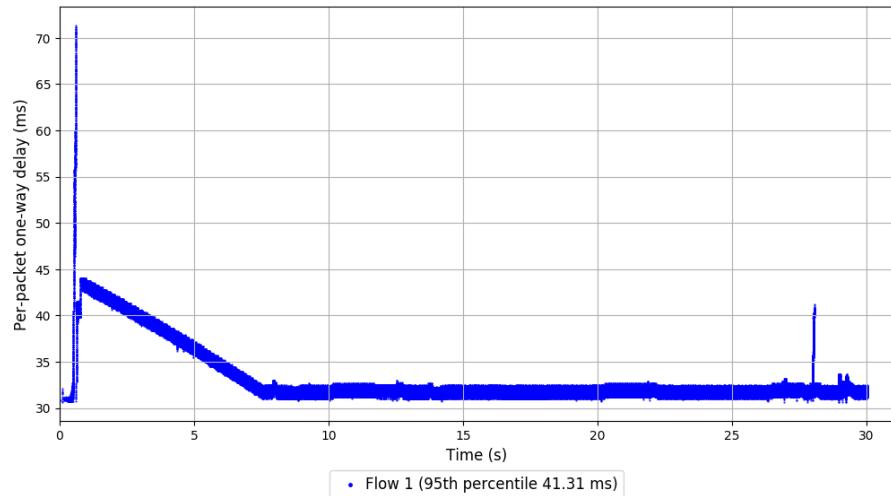
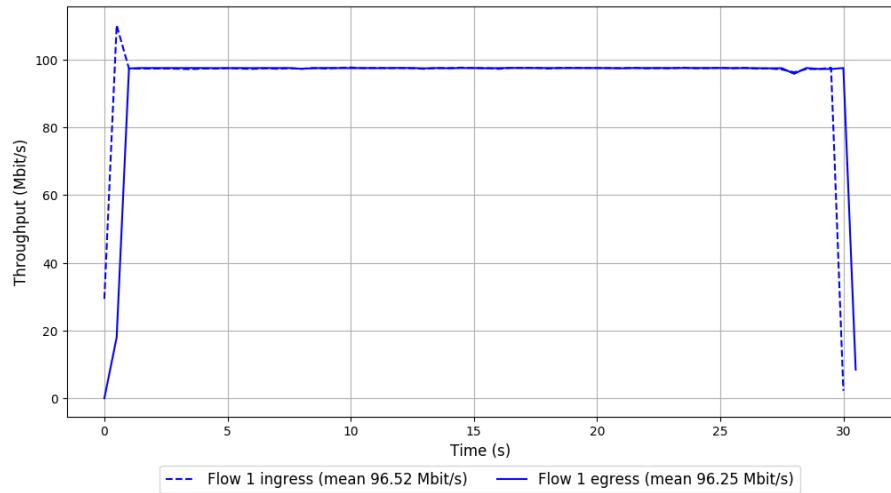


Run 2: Statistics of TCP Vegas

```
Start at: 2018-12-11 09:40:21
End at: 2018-12-11 09:40:51
Local clock offset: 0.932 ms
Remote clock offset: -2.158 ms

# Below is generated by plot.py at 2018-12-11 10:57:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.25 Mbit/s
95th percentile per-packet one-way delay: 41.306 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 96.25 Mbit/s
95th percentile per-packet one-way delay: 41.306 ms
Loss rate: 0.27%
```

Run 2: Report of TCP Vegas — Data Link

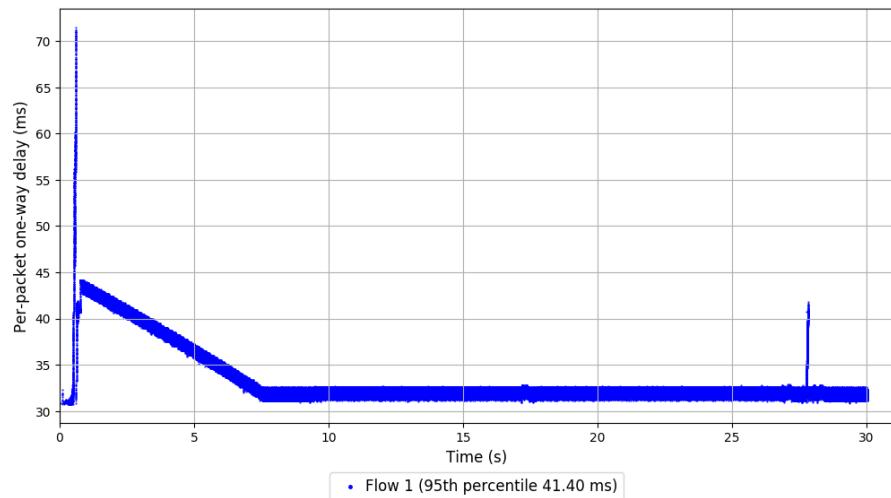
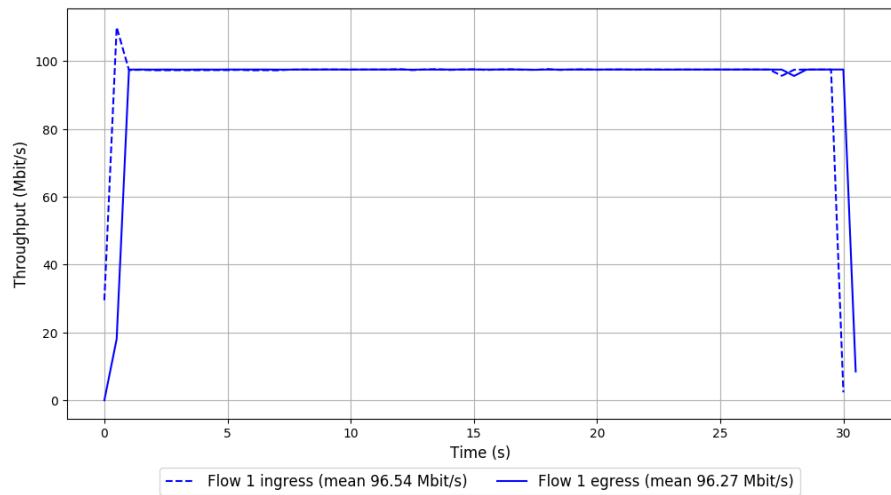


Run 3: Statistics of TCP Vegas

```
Start at: 2018-12-11 10:02:17
End at: 2018-12-11 10:02:47
Local clock offset: 0.483 ms
Remote clock offset: -1.356 ms

# Below is generated by plot.py at 2018-12-11 10:57:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.27 Mbit/s
95th percentile per-packet one-way delay: 41.403 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 96.27 Mbit/s
95th percentile per-packet one-way delay: 41.403 ms
Loss rate: 0.27%
```

Run 3: Report of TCP Vegas — Data Link

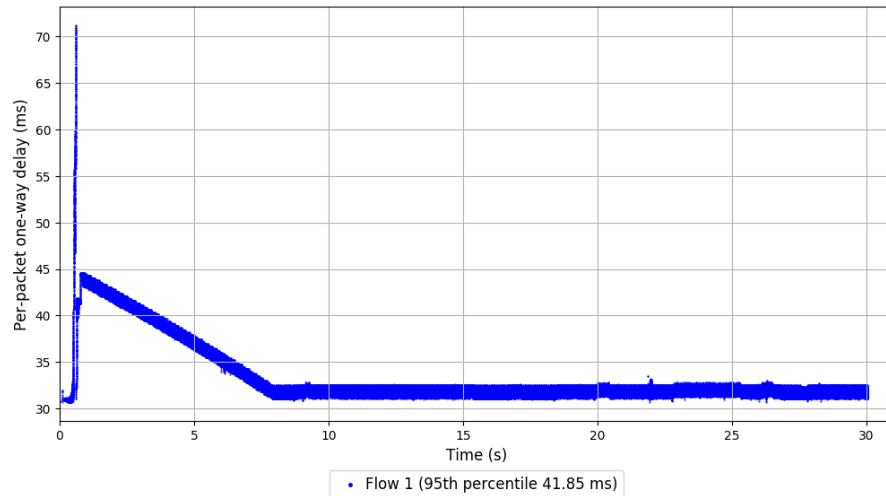
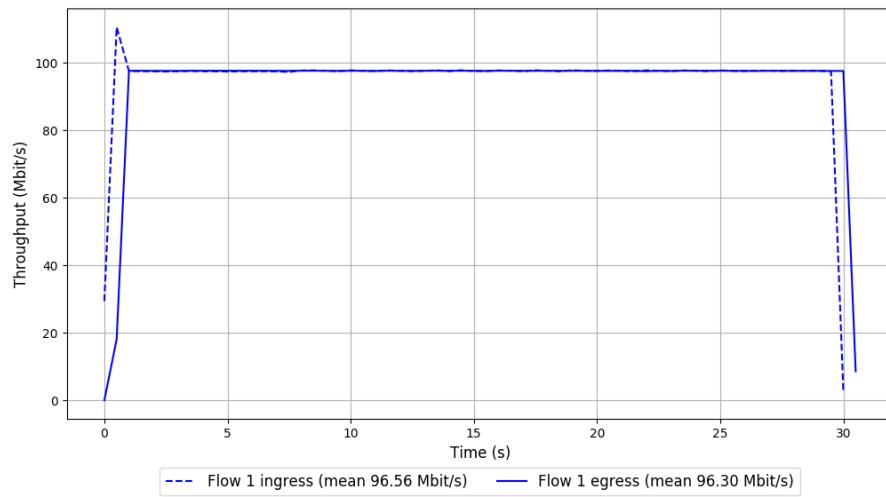


Run 4: Statistics of TCP Vegas

```
Start at: 2018-12-11 10:24:16
End at: 2018-12-11 10:24:46
Local clock offset: 0.414 ms
Remote clock offset: -1.293 ms

# Below is generated by plot.py at 2018-12-11 10:57:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.30 Mbit/s
95th percentile per-packet one-way delay: 41.850 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 96.30 Mbit/s
95th percentile per-packet one-way delay: 41.850 ms
Loss rate: 0.27%
```

Run 4: Report of TCP Vegas — Data Link

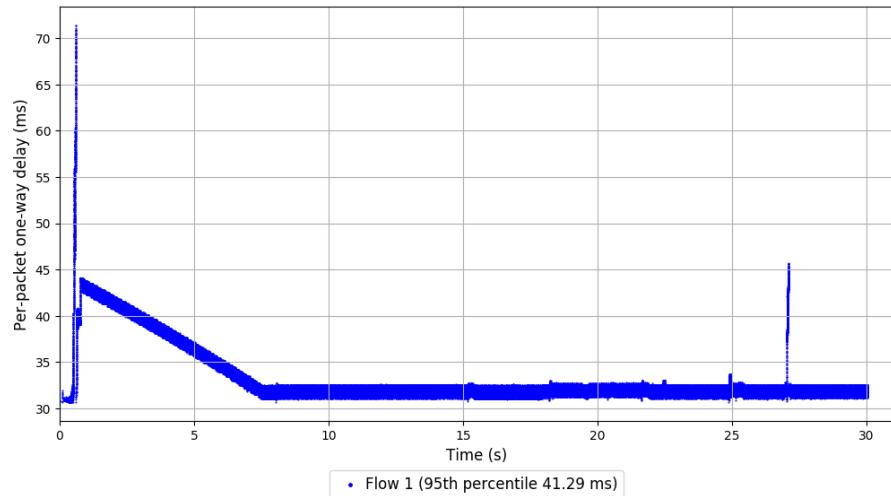
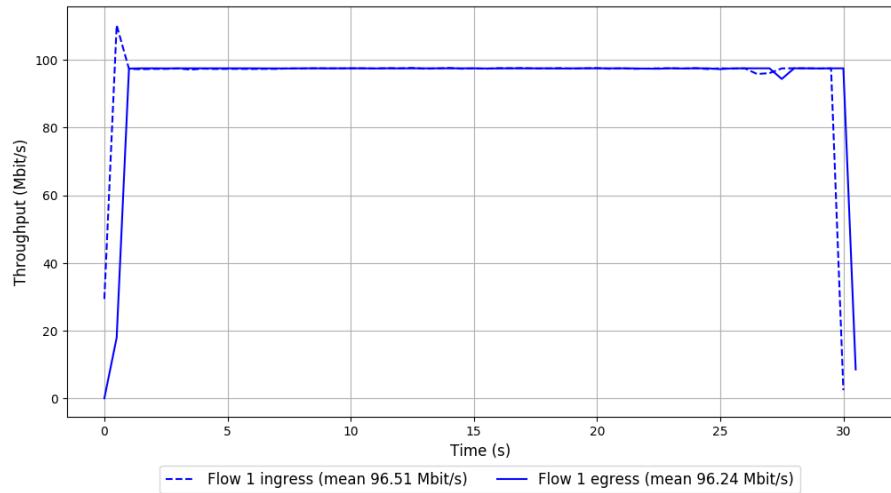


Run 5: Statistics of TCP Vegas

```
Start at: 2018-12-11 10:46:12
End at: 2018-12-11 10:46:42
Local clock offset: 2.373 ms
Remote clock offset: -1.601 ms

# Below is generated by plot.py at 2018-12-11 10:57:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 96.24 Mbit/s
95th percentile per-packet one-way delay: 41.289 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 96.24 Mbit/s
95th percentile per-packet one-way delay: 41.289 ms
Loss rate: 0.27%
```

Run 5: Report of TCP Vegas — Data Link

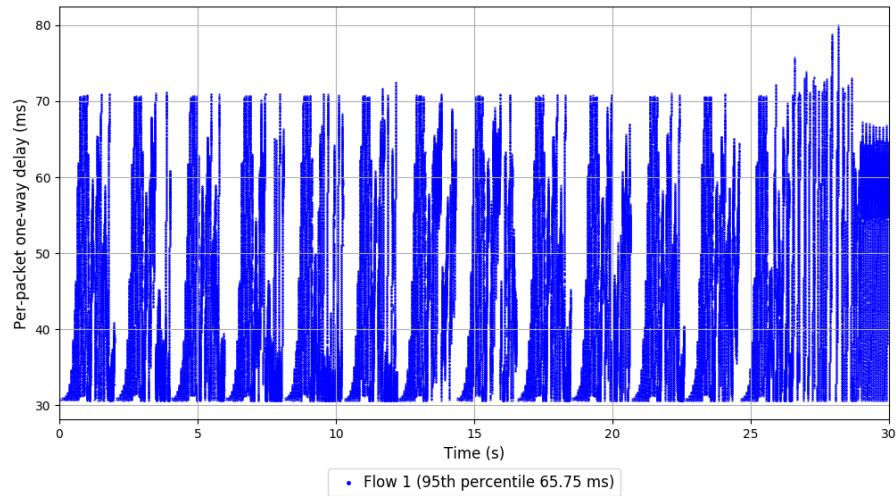
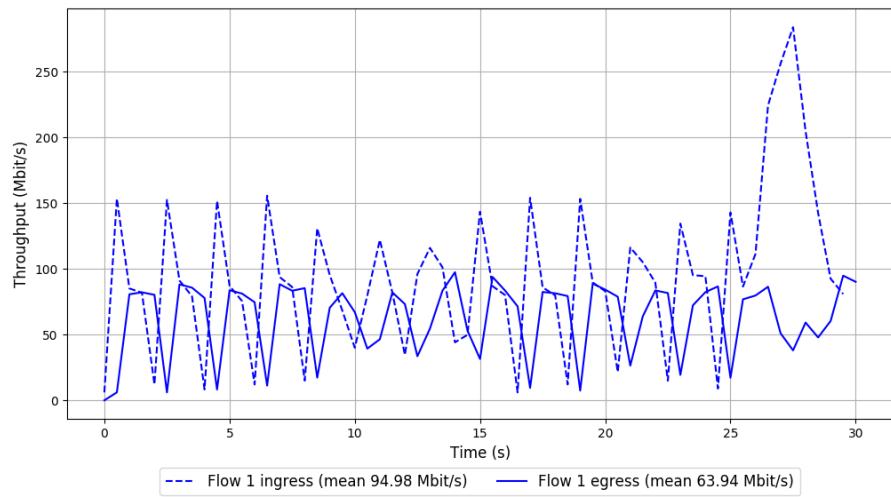


Run 1: Statistics of Verus

```
Start at: 2018-12-11 09:19:40
End at: 2018-12-11 09:20:10
Local clock offset: 1.434 ms
Remote clock offset: -2.91 ms

# Below is generated by plot.py at 2018-12-11 10:57:25
# Datalink statistics
-- Total of 1 flow:
Average throughput: 63.94 Mbit/s
95th percentile per-packet one-way delay: 65.747 ms
Loss rate: 32.62%
-- Flow 1:
Average throughput: 63.94 Mbit/s
95th percentile per-packet one-way delay: 65.747 ms
Loss rate: 32.62%
```

Run 1: Report of Verus — Data Link

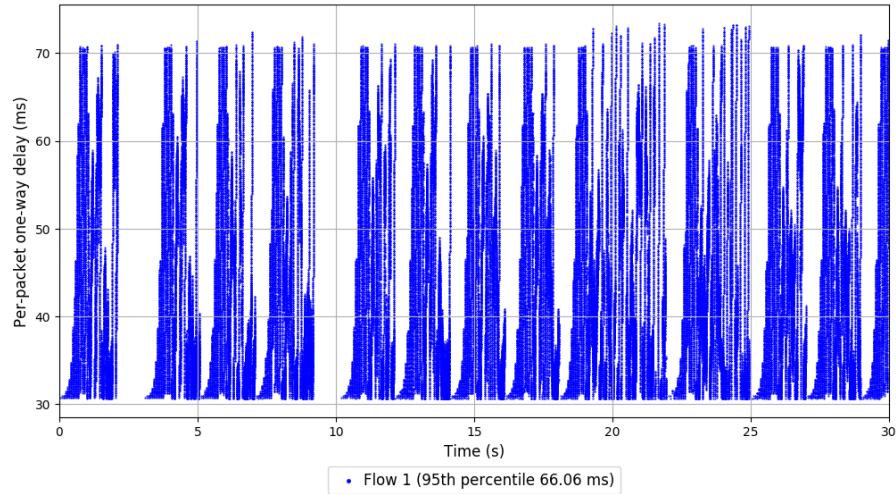
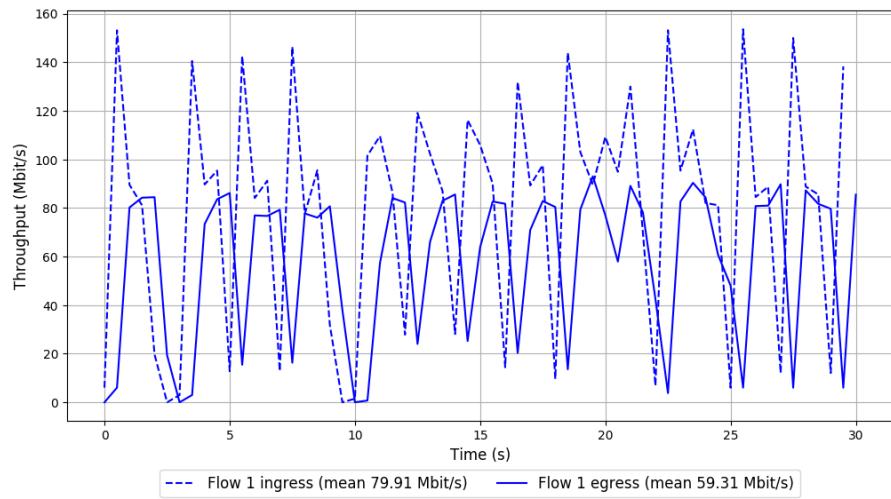


Run 2: Statistics of Verus

```
Start at: 2018-12-11 09:41:31
End at: 2018-12-11 09:42:01
Local clock offset: 0.84 ms
Remote clock offset: -2.079 ms

# Below is generated by plot.py at 2018-12-11 10:57:28
# Datalink statistics
-- Total of 1 flow:
Average throughput: 59.31 Mbit/s
95th percentile per-packet one-way delay: 66.063 ms
Loss rate: 25.70%
-- Flow 1:
Average throughput: 59.31 Mbit/s
95th percentile per-packet one-way delay: 66.063 ms
Loss rate: 25.70%
```

Run 2: Report of Verus — Data Link

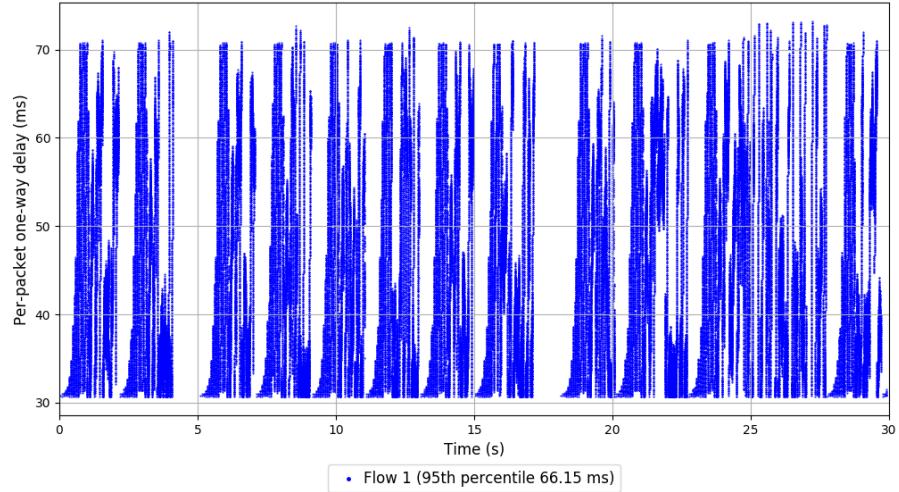
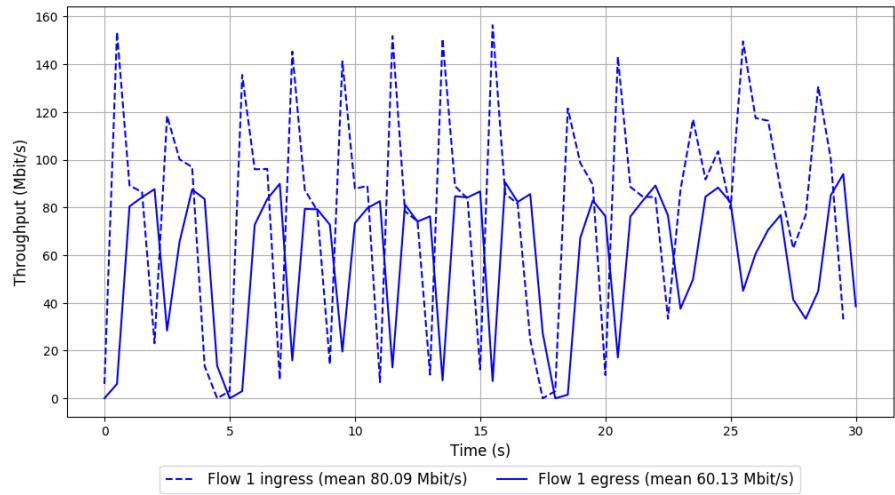


Run 3: Statistics of Verus

```
Start at: 2018-12-11 10:03:28
End at: 2018-12-11 10:03:58
Local clock offset: 0.491 ms
Remote clock offset: -1.329 ms

# Below is generated by plot.py at 2018-12-11 10:57:36
# Datalink statistics
-- Total of 1 flow:
Average throughput: 60.13 Mbit/s
95th percentile per-packet one-way delay: 66.146 ms
Loss rate: 24.92%
-- Flow 1:
Average throughput: 60.13 Mbit/s
95th percentile per-packet one-way delay: 66.146 ms
Loss rate: 24.92%
```

Run 3: Report of Verus — Data Link

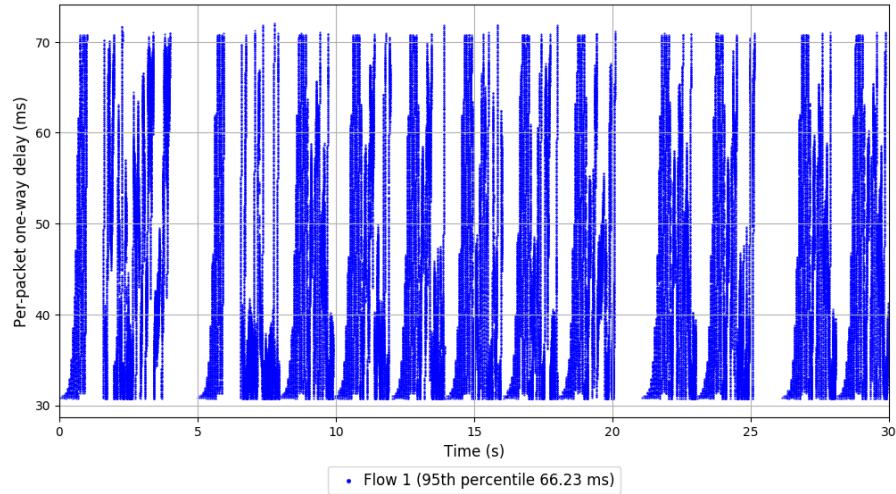
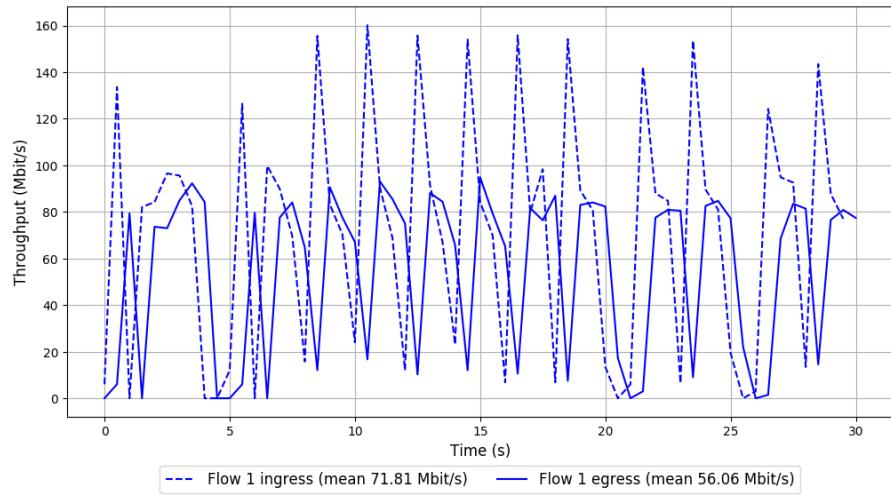


Run 4: Statistics of Verus

```
Start at: 2018-12-11 10:25:27
End at: 2018-12-11 10:25:57
Local clock offset: 0.418 ms
Remote clock offset: -1.277 ms

# Below is generated by plot.py at 2018-12-11 10:57:51
# Datalink statistics
-- Total of 1 flow:
Average throughput: 56.06 Mbit/s
95th percentile per-packet one-way delay: 66.226 ms
Loss rate: 21.90%
-- Flow 1:
Average throughput: 56.06 Mbit/s
95th percentile per-packet one-way delay: 66.226 ms
Loss rate: 21.90%
```

Run 4: Report of Verus — Data Link

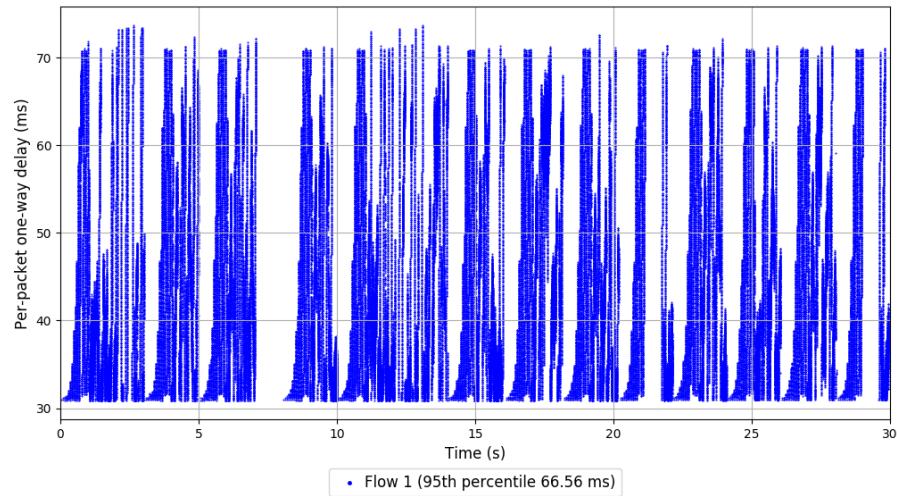
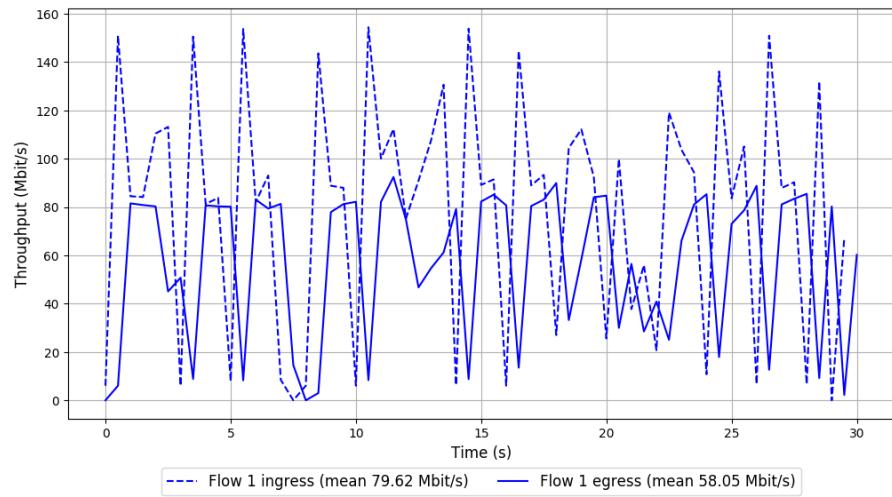


Run 5: Statistics of Verus

```
Start at: 2018-12-11 10:47:22
End at: 2018-12-11 10:47:52
Local clock offset: 2.528 ms
Remote clock offset: -1.464 ms

# Below is generated by plot.py at 2018-12-11 10:57:55
# Datalink statistics
-- Total of 1 flow:
Average throughput: 58.05 Mbit/s
95th percentile per-packet one-way delay: 66.558 ms
Loss rate: 27.06%
-- Flow 1:
Average throughput: 58.05 Mbit/s
95th percentile per-packet one-way delay: 66.558 ms
Loss rate: 27.06%
```

Run 5: Report of Verus — Data Link

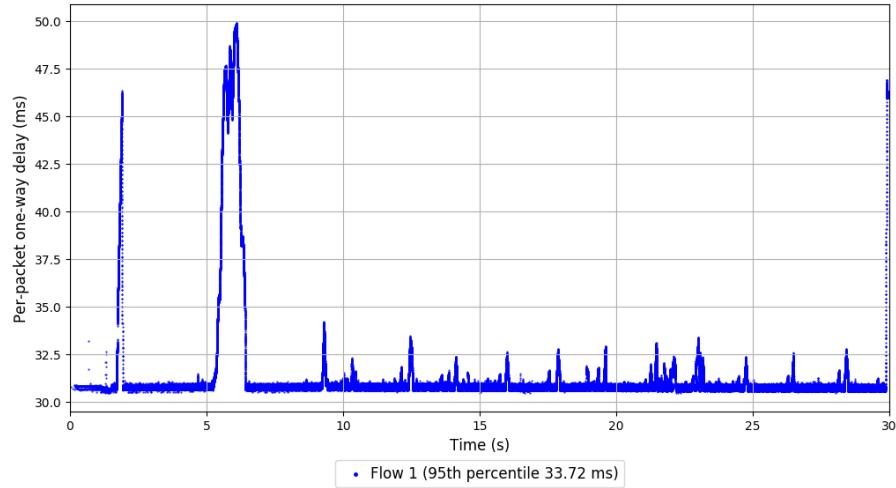
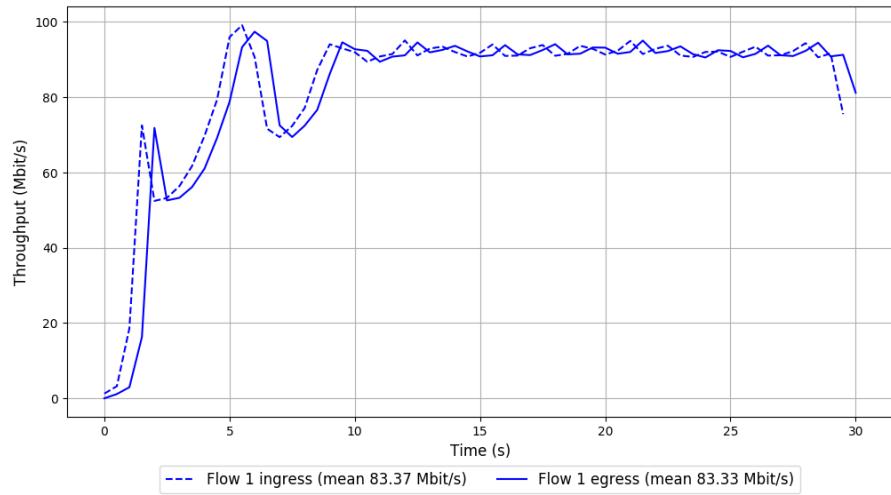


```
Run 1: Statistics of PCC-Vivace
```

```
Start at: 2018-12-11 09:15:04
End at: 2018-12-11 09:15:34
Local clock offset: 1.974 ms
Remote clock offset: -3.098 ms

# Below is generated by plot.py at 2018-12-11 10:58:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 83.33 Mbit/s
95th percentile per-packet one-way delay: 33.718 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 83.33 Mbit/s
95th percentile per-packet one-way delay: 33.718 ms
Loss rate: 0.00%
```

Run 1: Report of PCC-Vivace — Data Link

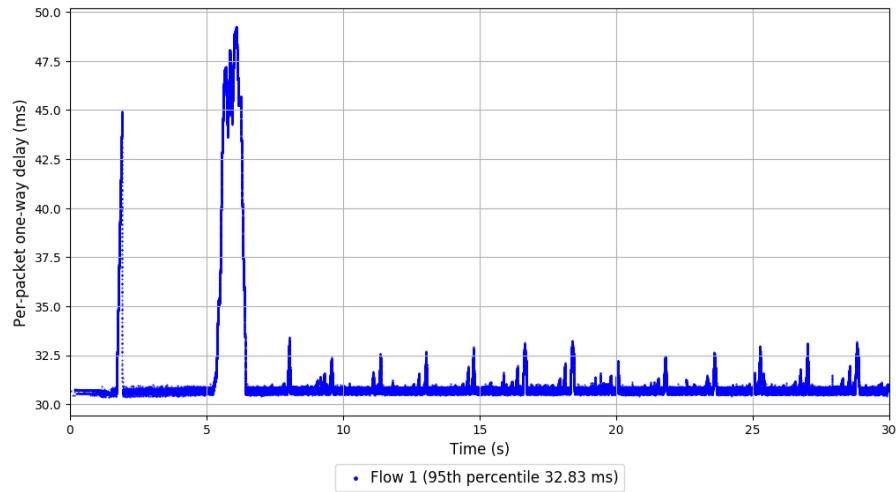
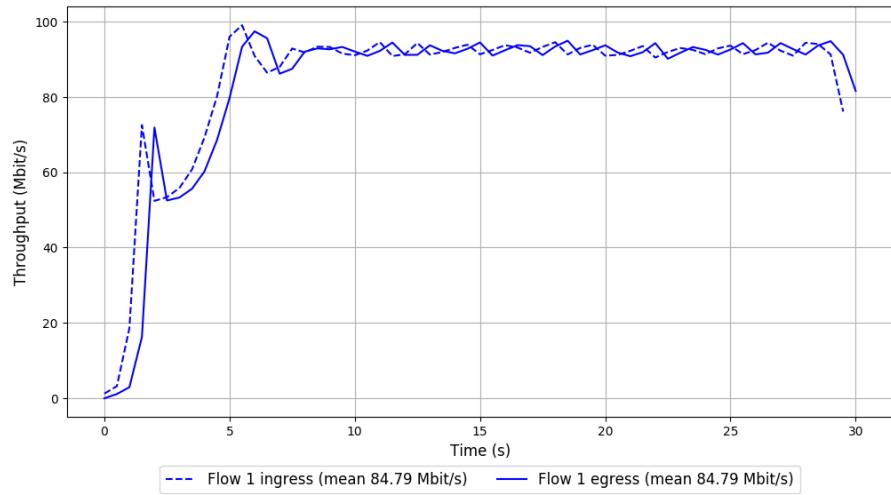


Run 2: Statistics of PCC-Vivace

```
Start at: 2018-12-11 09:36:54
End at: 2018-12-11 09:37:24
Local clock offset: 1.058 ms
Remote clock offset: -2.477 ms

# Below is generated by plot.py at 2018-12-11 10:58:14
# Datalink statistics
-- Total of 1 flow:
Average throughput: 84.79 Mbit/s
95th percentile per-packet one-way delay: 32.825 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 84.79 Mbit/s
95th percentile per-packet one-way delay: 32.825 ms
Loss rate: 0.00%
```

Run 2: Report of PCC-Vivace — Data Link

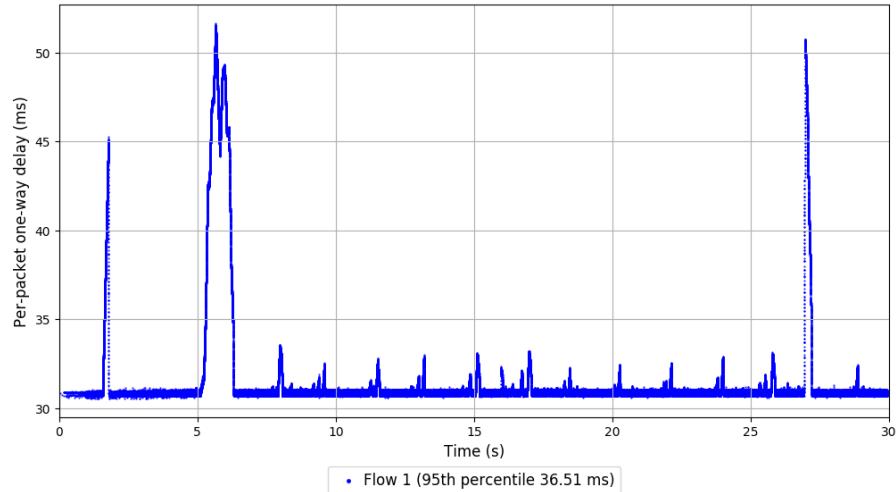
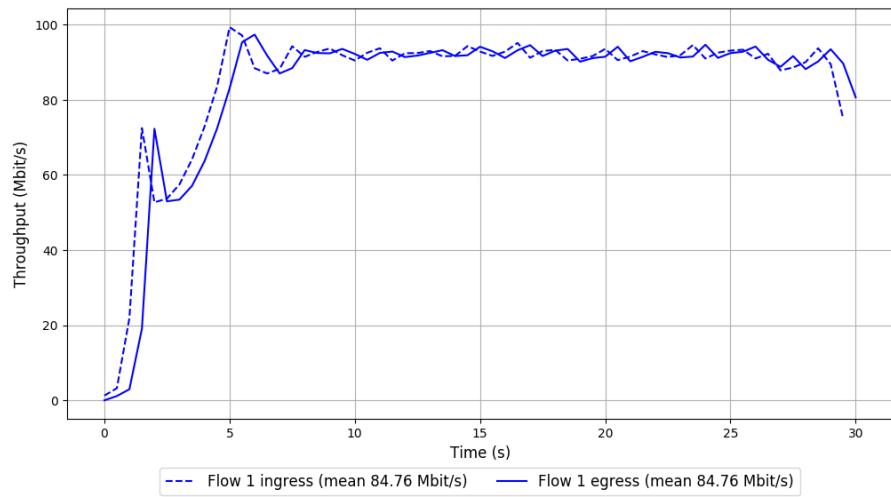


Run 3: Statistics of PCC-Vivace

```
Start at: 2018-12-11 09:58:48
End at: 2018-12-11 09:59:18
Local clock offset: 0.476 ms
Remote clock offset: -1.391 ms

# Below is generated by plot.py at 2018-12-11 10:58:15
# Datalink statistics
-- Total of 1 flow:
Average throughput: 84.76 Mbit/s
95th percentile per-packet one-way delay: 36.508 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 84.76 Mbit/s
95th percentile per-packet one-way delay: 36.508 ms
Loss rate: 0.00%
```

Run 3: Report of PCC-Vivace — Data Link

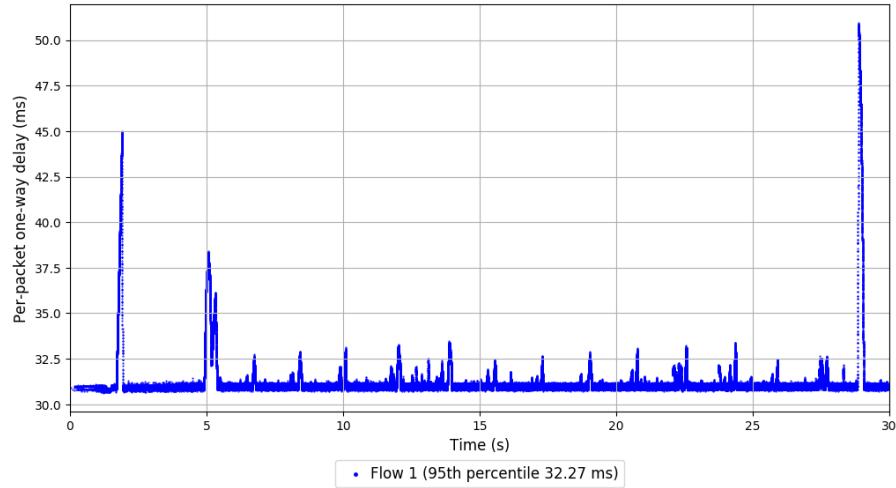
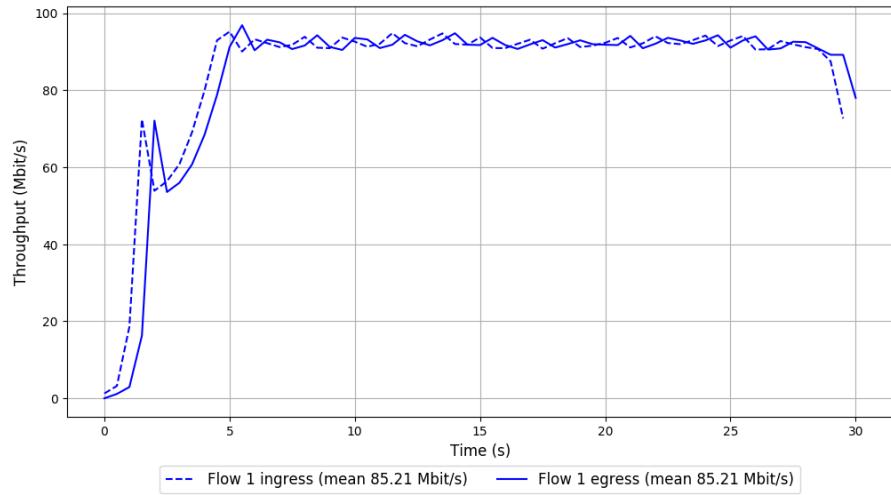


Run 4: Statistics of PCC-Vivace

```
Start at: 2018-12-11 10:20:48
End at: 2018-12-11 10:21:18
Local clock offset: 0.402 ms
Remote clock offset: -1.209 ms

# Below is generated by plot.py at 2018-12-11 10:58:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 85.21 Mbit/s
95th percentile per-packet one-way delay: 32.271 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 85.21 Mbit/s
95th percentile per-packet one-way delay: 32.271 ms
Loss rate: 0.00%
```

Run 4: Report of PCC-Vivace — Data Link

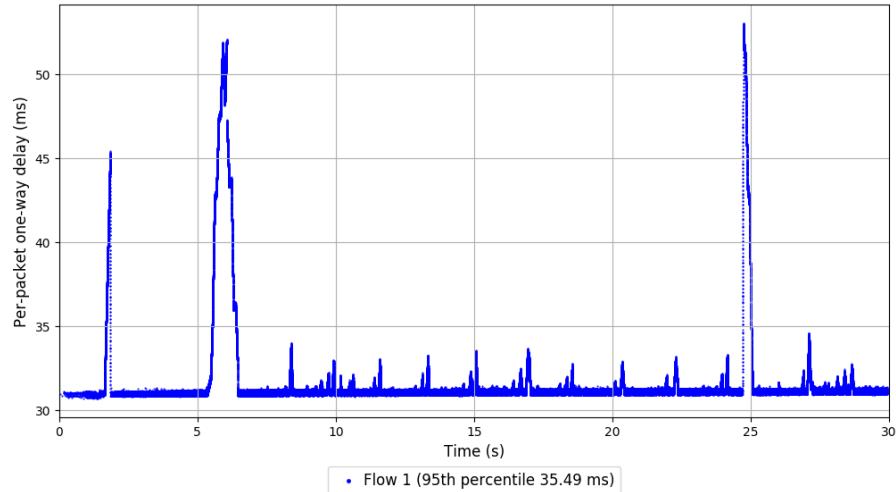
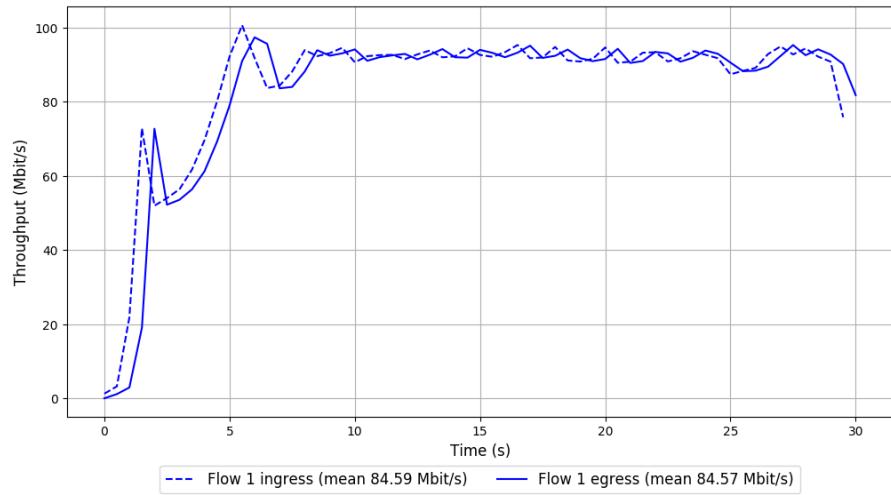


Run 5: Statistics of PCC-Vivace

```
Start at: 2018-12-11 10:42:44
End at: 2018-12-11 10:43:14
Local clock offset: 1.69 ms
Remote clock offset: -1.443 ms

# Below is generated by plot.py at 2018-12-11 10:58:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 84.57 Mbit/s
95th percentile per-packet one-way delay: 35.490 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 84.57 Mbit/s
95th percentile per-packet one-way delay: 35.490 ms
Loss rate: 0.02%
```

Run 5: Report of PCC-Vivace — Data Link

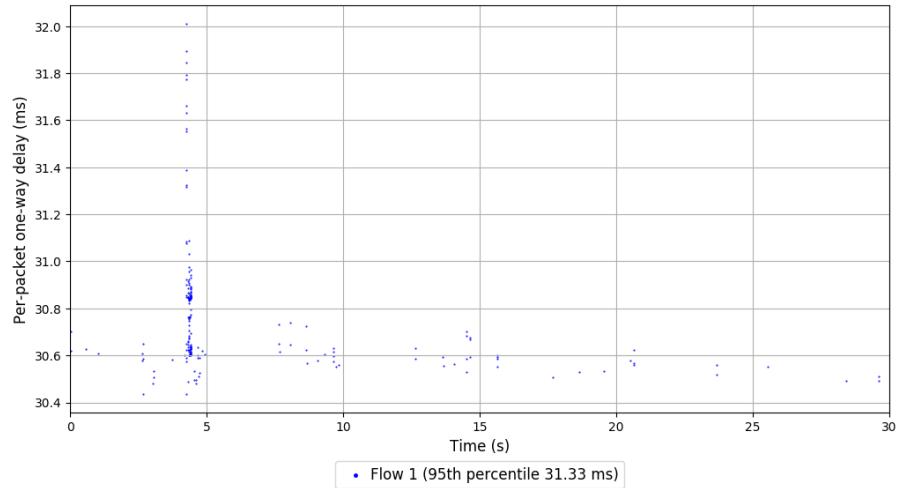
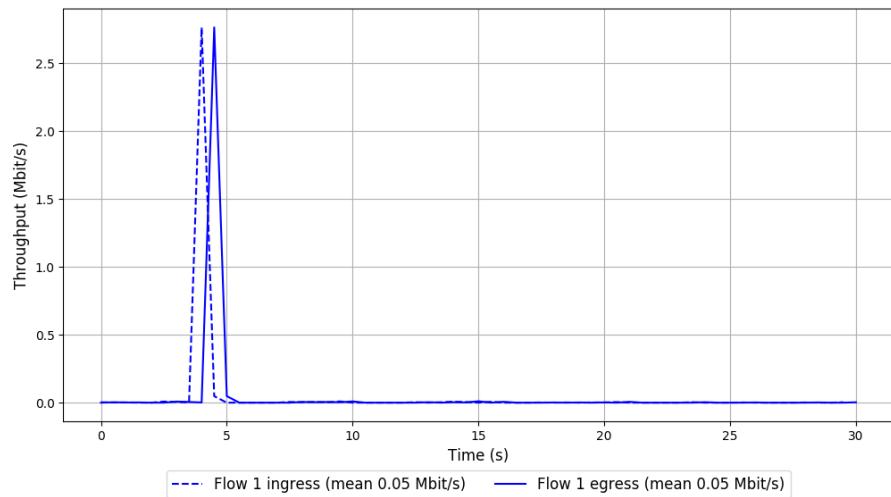


```
Run 1: Statistics of WebRTC media

Start at: 2018-12-11 09:12:50
End at: 2018-12-11 09:13:20
Local clock offset: 2.417 ms
Remote clock offset: -3.153 ms

# Below is generated by plot.py at 2018-12-11 10:58:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 31.326 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 31.326 ms
Loss rate: 0.00%
```

Run 1: Report of WebRTC media — Data Link

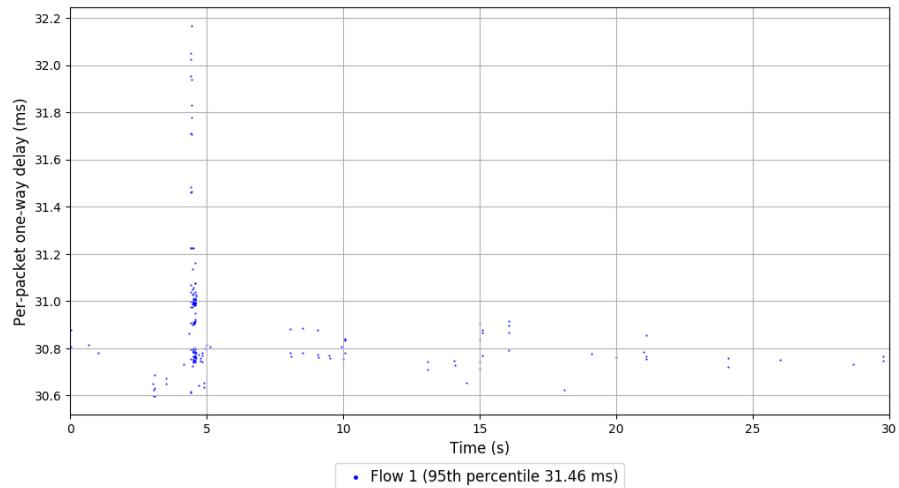
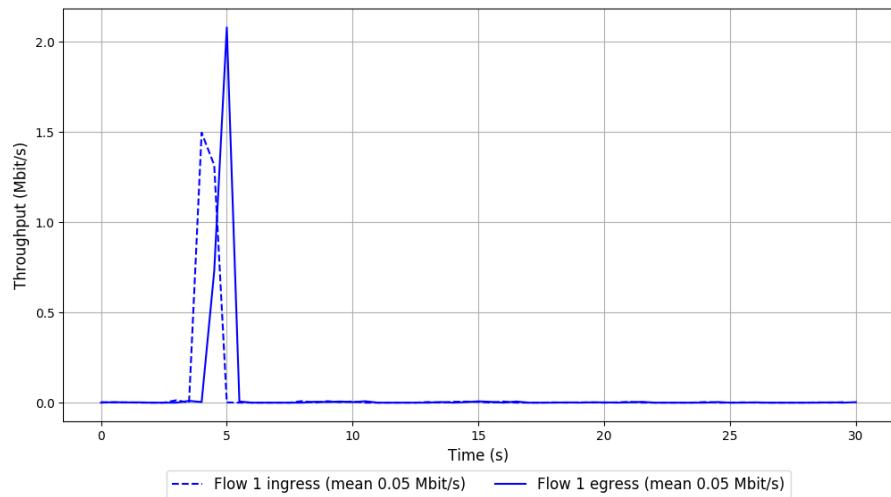


Run 2: Statistics of WebRTC media

```
Start at: 2018-12-11 09:34:39
End at: 2018-12-11 09:35:09
Local clock offset: 1.049 ms
Remote clock offset: -2.378 ms

# Below is generated by plot.py at 2018-12-11 10:58:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 31.464 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 31.464 ms
Loss rate: 0.00%
```

Run 2: Report of WebRTC media — Data Link

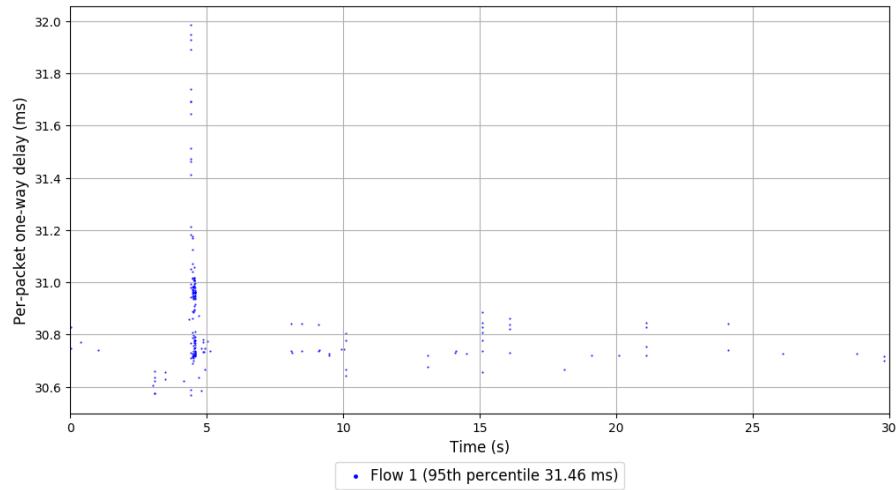
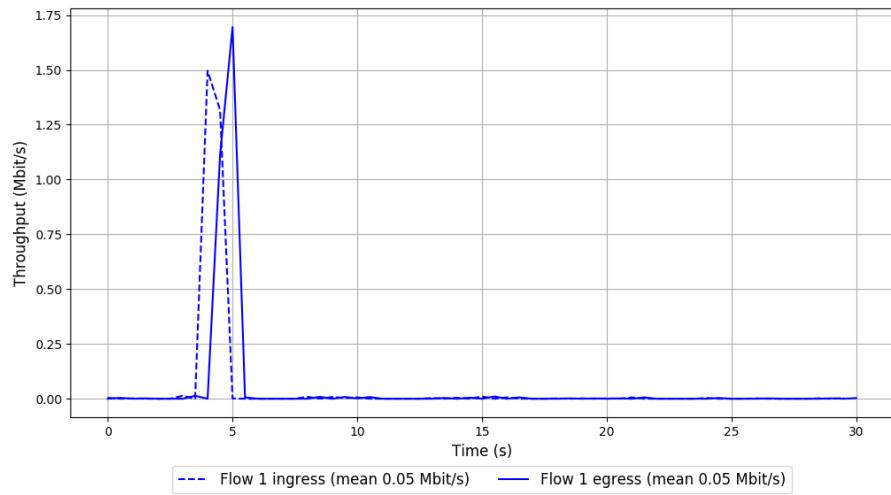


Run 3: Statistics of WebRTC media

```
Start at: 2018-12-11 09:56:32
End at: 2018-12-11 09:57:02
Local clock offset: 0.472 ms
Remote clock offset: -1.51 ms

# Below is generated by plot.py at 2018-12-11 10:58:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 31.463 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 31.463 ms
Loss rate: 0.00%
```

Run 3: Report of WebRTC media — Data Link

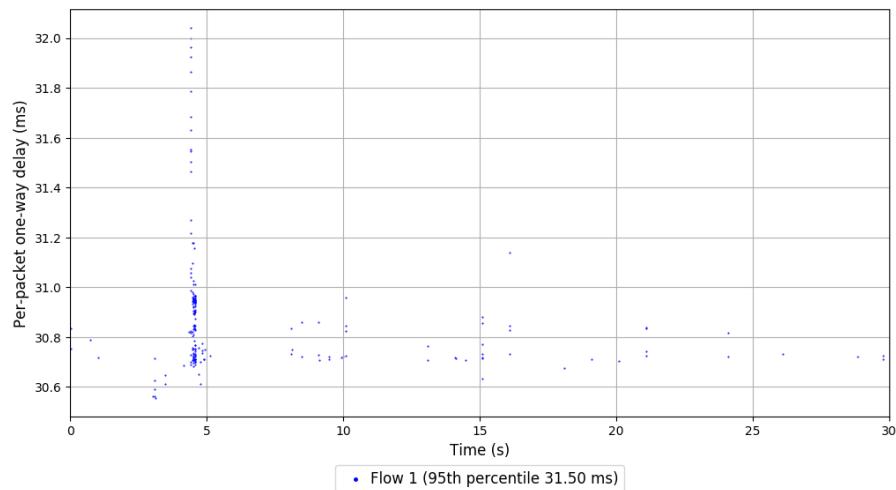
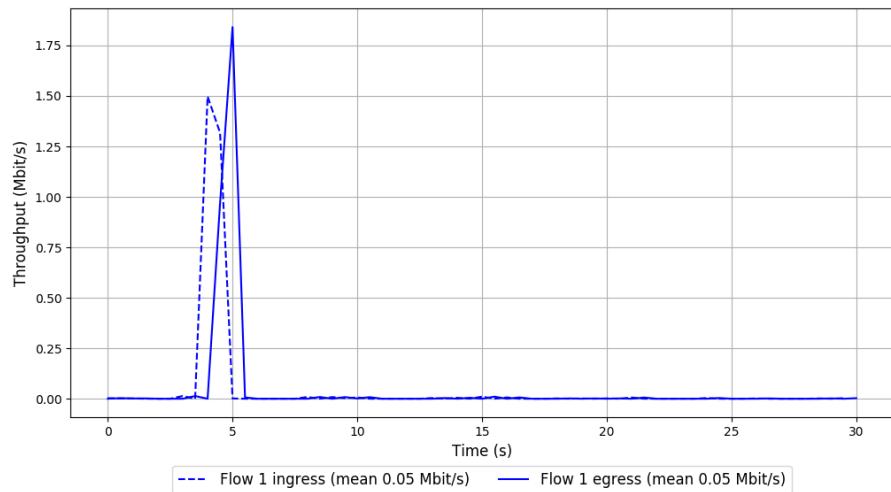


Run 4: Statistics of WebRTC media

```
Start at: 2018-12-11 10:18:33
End at: 2018-12-11 10:19:03
Local clock offset: 0.423 ms
Remote clock offset: -1.262 ms

# Below is generated by plot.py at 2018-12-11 10:58:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 31.502 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 31.502 ms
Loss rate: 0.00%
```

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

```
Start at: 2018-12-11 10:40:28
End at: 2018-12-11 10:40:58
Local clock offset: 1.076 ms
Remote clock offset: -1.421 ms

# Below is generated by plot.py at 2018-12-11 10:58:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 31.646 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 31.646 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link

