# Pantheon Report

Generated at 2018-01-18 13:39:49 (UTC).

Data path: Colombia ppp0 (*remote*) →AWS Brazil 2 Ethernet (*local*).

Repeated the test of 17 congestion control schemes 3 times.

Each test lasted for 30 seconds running 3 flows with 10-second interval between two flows.

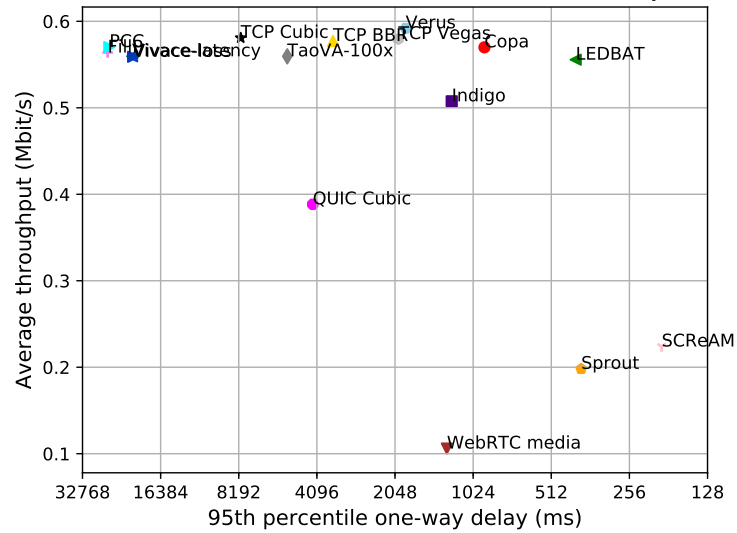Increased UDP receive buffer to 16 MB (default) and 32 MB (max).

Tested BBR with qdisc of Fair Queuing (`fq`), and other schemes with the default Linux qdisc (`pfifo_fast`).

NTP offsets were measured against `gps.ntp.br` and have been applied to correct the timestamps in logs.

```
Git summary:
branch: master @ 54510ce29f849c716ac5c8199ca1604b6abdfbc3
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
 M datagrump/sender.cc
third_party/fillp @ ec9585325218d5048c4d4152fa42240af54c6e67
third_party/genericCC @ 80b516c448f795fd6e9675f7177b69c622f07da8
third_party/indigo @ b19f3730105f9aa95452552af924e3719b03cc55
third_party/indigo-no-calib @ 7224f2202e8a044d8306fa0b983ad84360c53d89
third_party/koho_cc @ f0f2e693303aee82ea808e6928eac4f1083a6681
 M datagrump/sender.cc
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ fb1053193c2861da659ba9013db26744ccfcf993
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/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream @ c3370fd7bd17265a79aeb34e4016ad23f5965885
third_party/sourdough @ f1a14bffe749737437f61b1eaeeb30b267cde681
third_party/sprout @ 6f2efe6e088d91066a9f023df375eee2665089ce
 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 @ 423cbca3e8ea1d599e7b5cf725835e8a2b6bfac6
third_party/webrtc @ a488197ddd041ace68a42849b2540ad834825f42
```
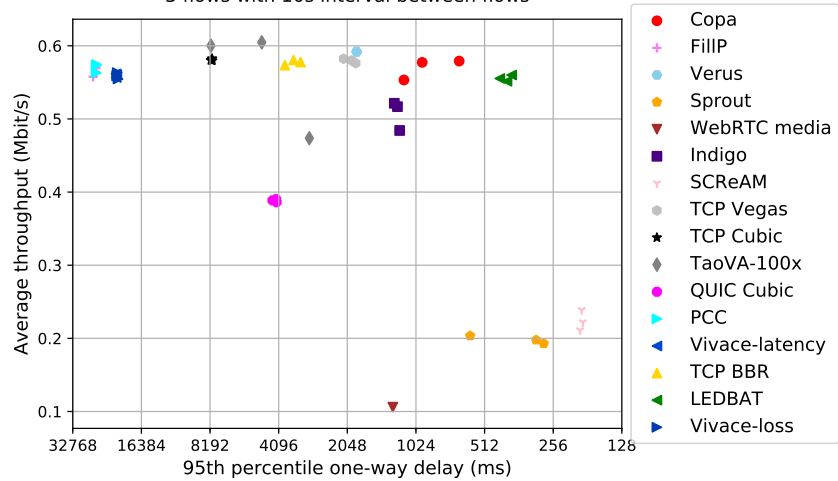
test from Colombia ppp0 to AWS Brazil 2 Ethernet, 3 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)



test from Colombia ppp0 to AWS Brazil 2 Ethernet, 3 runs of 30s each per scheme
3 flows with 10s interval between flows

| scheme | # runs | mean avg tput (Mbit/s) | | | mean 95th-%ile delay (ms) | | | mean loss rate (%) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | flow 1 | flow 2 | flow 3 | flow 1 | flow 2 | flow 3 | flow 1 | flow 2 | flow 3 |
| TCP BBR | 3 | 0.37 | 0.32 | 0.03 | 3533.94 | 3547.54 | 3187.49 | 3.12 | 5.54 | 50.71 |
| TCP Cubic | 3 | 0.57 | 0.03 | 0.00 | 8054.40 | 6411.43 | 8321.71 | 30.93 | 53.62 | 73.00 |
| LEDBAT | 3 | 0.26 | 0.33 | 0.25 | 348.55 | 422.85 | 430.63 | 0.00 | 1.08 | 7.05 |
| PCC | 3 | 0.57 | 0.00 | N/A | 25825.70 | N/A | N/A | 98.61 | N/A | N/A |
| QUIC Cubic | 3 | 0.06 | 0.57 | 0.05 | 328.14 | 4051.40 | 4636.52 | 0.00 | 24.75 | 51.19 |
| SCReAM | 3 | 0.08 | 0.12 | 0.17 | 178.14 | 192.01 | 210.90 | 0.84 | 1.20 | 2.27 |
| WebRTC media | 1 | 0.00 | 0.09 | 0.17 | 2081.35 | 844.28 | 893.18 | 0.00 | 0.00 | 0.00 |
| Sprout | 3 | 0.10 | 0.09 | 0.11 | 1289.22 | 219.97 | 285.66 | 2.18 | 1.88 | 3.93 |
| TaoVA-100x | 3 | 0.39 | 0.31 | 0.16 | 5505.69 | 4543.53 | 4736.21 | 14.97 | 20.77 | 75.60 |
| TCP Vegas | 3 | 0.40 | 0.21 | 0.18 | 1872.44 | 1956.74 | 2166.53 | 3.41 | 7.05 | 26.60 |
| Verus | 2 | 0.58 | 0.01 | 0.01 | 1864.20 | 1824.98 | 1707.69 | 6.22 | 5.00 | 10.00 |
| Copa | 3 | 0.38 | 0.25 | 0.09 | 870.05 | 945.62 | 1052.11 | 2.62 | 5.52 | 19.00 |
| FillP | 3 | 0.56 | 0.00 | N/A | 26216.89 | N/A | N/A | 98.44 | N/A | N/A |
| Indigo | 3 | 0.25 | 0.23 | 0.32 | 1349.26 | 1103.94 | 1005.91 | 8.38 | 4.81 | 8.41 |
| Vivace-latency | 3 | 0.56 | 0.00 | N/A | 21109.16 | N/A | N/A | 73.21 | N/A | N/A |
| Vivace-loss | 3 | 0.56 | 0.00 | N/A | 20902.08 | N/A | N/A | 89.33 | N/A | N/A |
| Vivace-LTE | 0 | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

```
Run 1: Statistics of TCP BBR

Start at: 2018-01-18 11:30:26
End at: 2018-01-18 11:30:56
Local clock offset: -0.199 ms
Remote clock offset: 2.448 ms


# Below is generated by plot.py at 2018-01-18 13:39:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 3846.863 ms
Loss rate: 4.88%
-- Flow 1:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 3827.657 ms
Loss rate: 3.59%
-- Flow 2:
Average throughput: 0.34 Mbit/s
95th percentile per-packet one-way delay: 3866.780 ms
Loss rate: 5.13%
-- Flow 3:
Average throughput: 0.02 Mbit/s
95th percentile per-packet one-way delay: 3640.922 ms
Loss rate: 56.55%
```
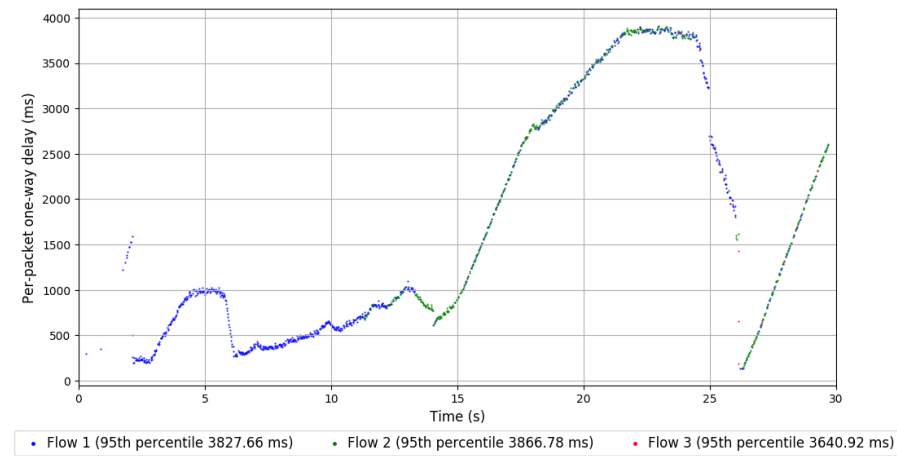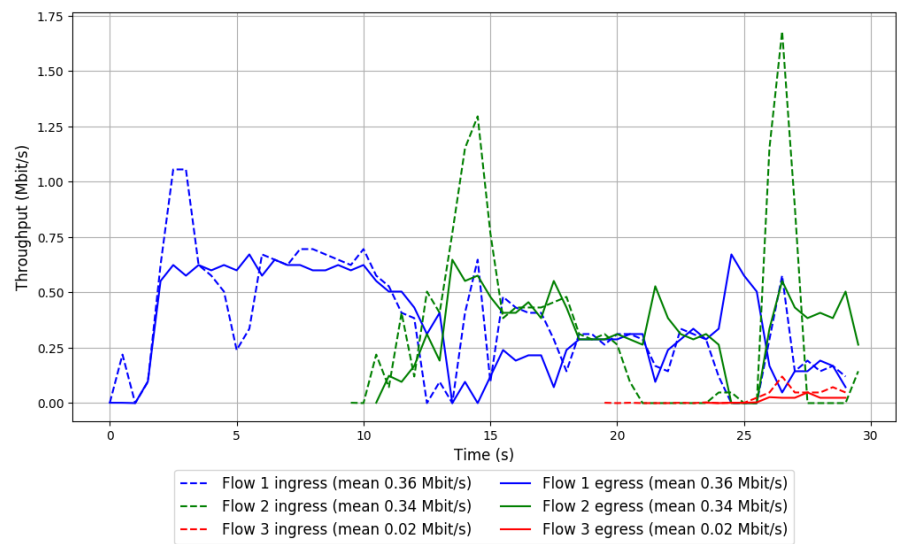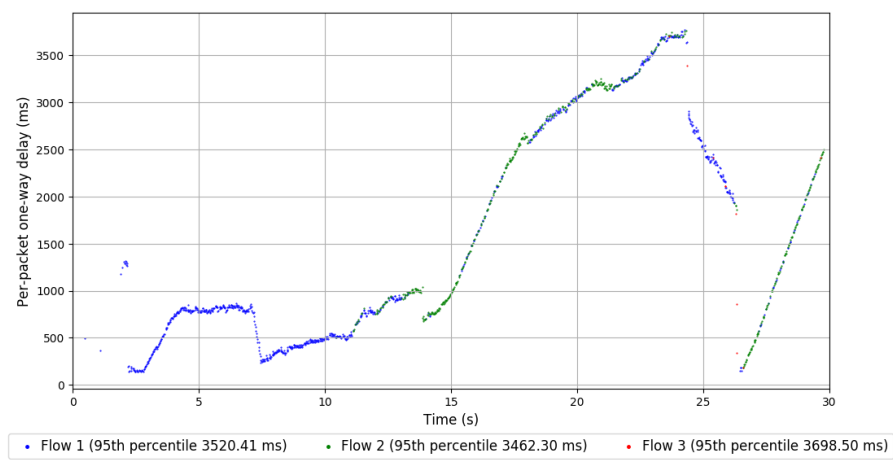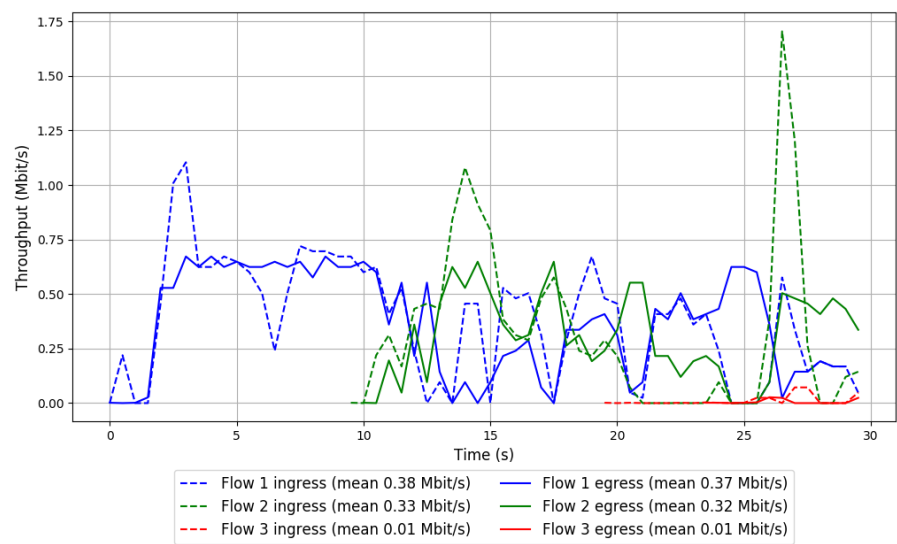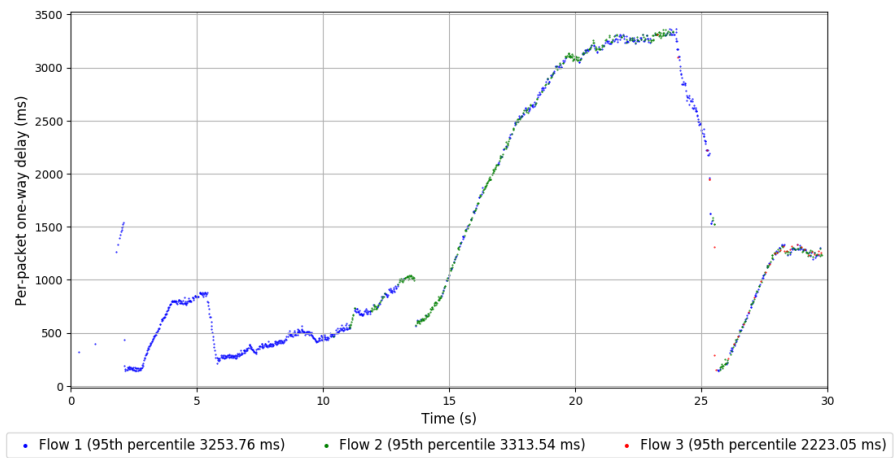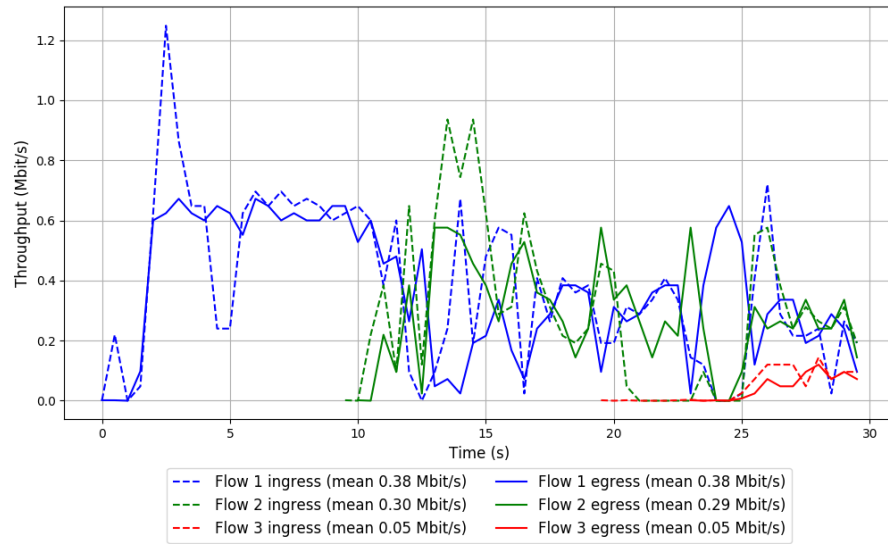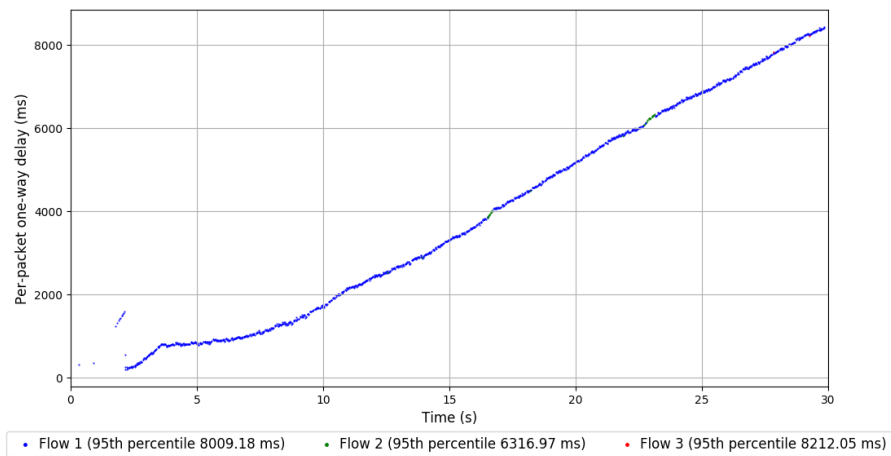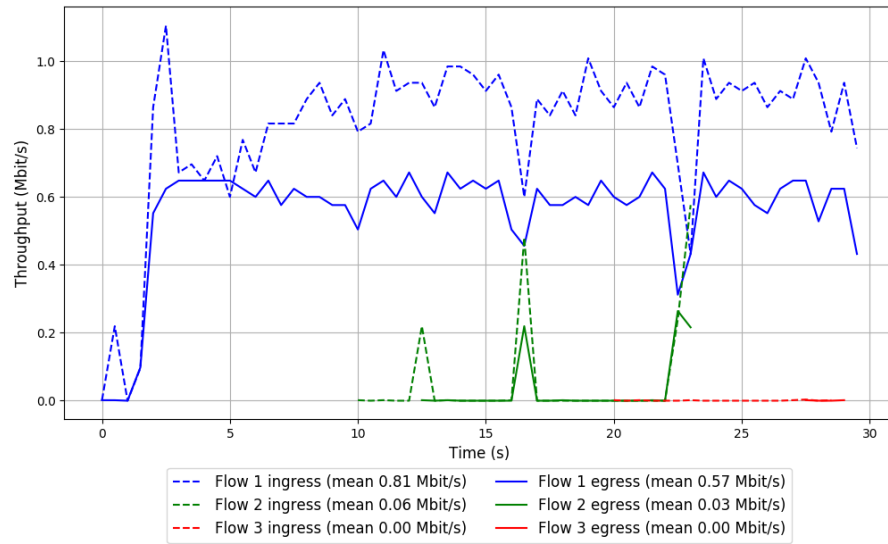
Run 1: Report of TCP BBR — Data Link



- - - - Flow 1 ingress (mean 0.36 Mbit/s) ——— Flow 1 egress (mean 0.36 Mbit/s)
- - - - Flow 2 ingress (mean 0.34 Mbit/s) ——— Flow 2 egress (mean 0.34 Mbit/s)
- - - - Flow 3 ingress (mean 0.02 Mbit/s) ——— Flow 3 egress (mean 0.02 Mbit/s)



• Flow 1 (95th percentile 3827.66 ms)   • Flow 2 (95th percentile 3866.78 ms)   • Flow 3 (95th percentile 3640.92 ms)

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```
Run 2: Statistics of TCP BBR

Start at: 2018-01-18 11:53:48
End at: 2018-01-18 11:54:18
Local clock offset: -0.577 ms
Remote clock offset: 2.336 ms

# Below is generated by plot.py at 2018-01-18 13:39:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 3524.199 ms
Loss rate: 4.77%
-- Flow 1:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 3520.413 ms
Loss rate: 3.64%
-- Flow 2:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 3462.297 ms
Loss rate: 5.51%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 3698.501 ms
Loss rate: 66.98%
```
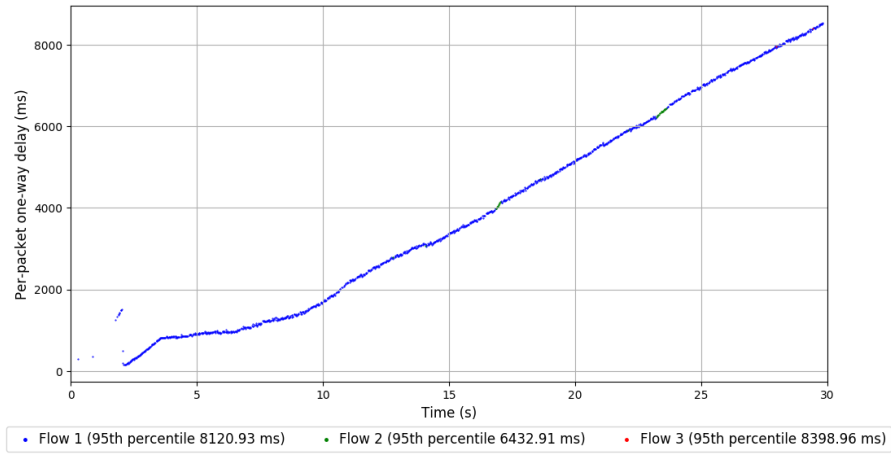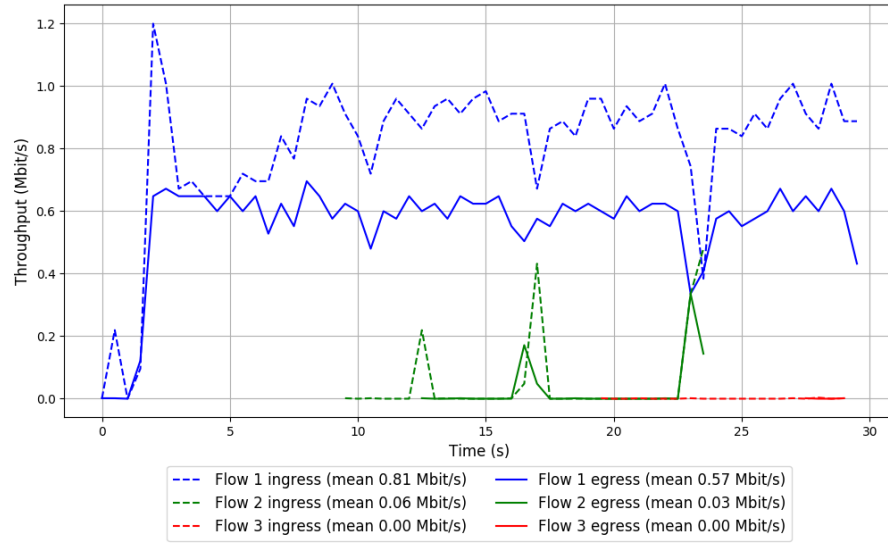
Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2018-01-18 12:16:47
End at: 2018-01-18 12:17:17
Local clock offset: -0.788 ms
Remote clock offset: -3.046 ms


# Below is generated by plot.py at 2018-01-18 13:39:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 3282.945 ms
Loss rate: 4.12%
-- Flow 1:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 3253.764 ms
Loss rate: 2.13%
-- Flow 2:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 3313.544 ms
Loss rate: 5.99%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 2223.046 ms
Loss rate: 28.61%
```

Run 3: Report of TCP BBR — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2018-01-18 11:23:37
End at: 2018-01-18 11:24:07
Local clock offset: -0.267 ms
Remote clock offset: -3.451 ms


# Below is generated by plot.py at 2018-01-18 13:39:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 8009.143 ms
Loss rate: 31.57%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 8009.177 ms
Loss rate: 30.87%
-- Flow 2:
Average throughput: 0.03 Mbit/s
95th percentile per-packet one-way delay: 6316.967 ms
Loss rate: 53.64%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 8212.048 ms
Loss rate: 71.93%
```
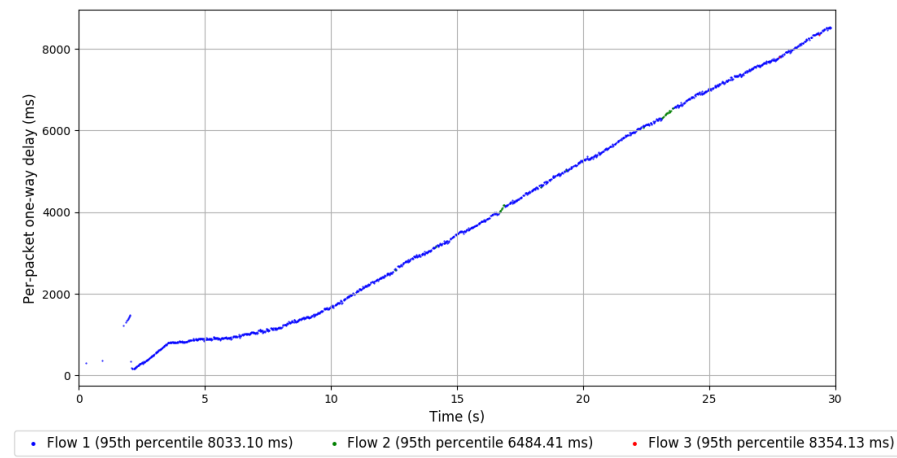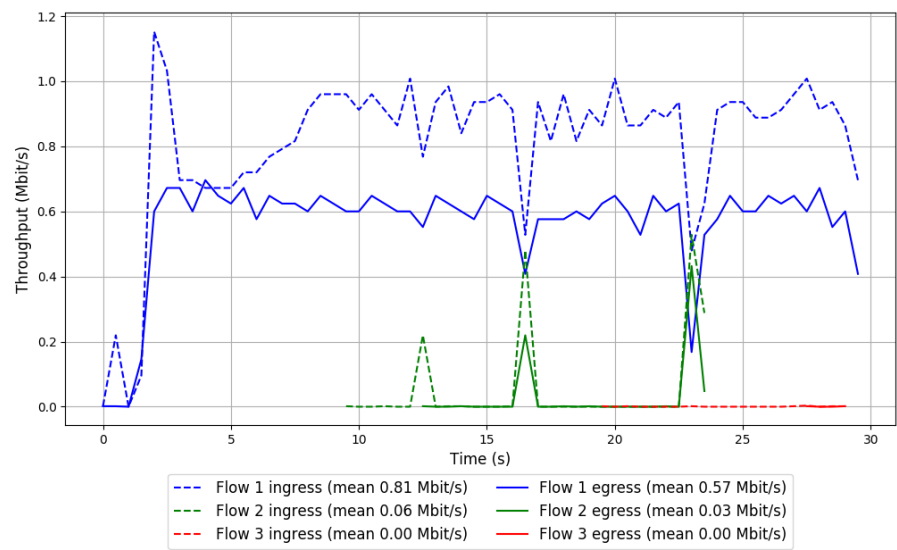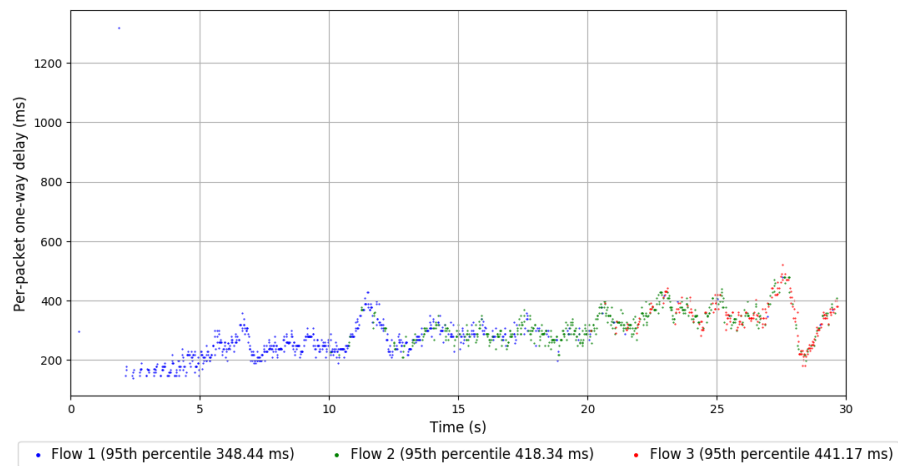
Run 1: Report of TCP Cubic — Data Link



Flow 1 ingress (mean 0.81 Mbit/s) --- Flow 1 egress (mean 0.57 Mbit/s)
Flow 2 ingress (mean 0.06 Mbit/s) --- Flow 2 egress (mean 0.03 Mbit/s)
Flow 3 ingress (mean 0.00 Mbit/s) --- Flow 3 egress (mean 0.00 Mbit/s)



Flow 1 (95th percentile 8009.18 ms)  Flow 2 (95th percentile 6316.97 ms)  Flow 3 (95th percentile 8212.05 ms)

```
Run 2: Statistics of TCP Cubic

Start at: 2018-01-18 11:46:42
End at: 2018-01-18 11:47:12
Local clock offset: -0.37 ms
Remote clock offset: -2.413 ms


# Below is generated by plot.py at 2018-01-18 13:39:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 8120.874 ms
Loss rate: 31.75%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 8120.934 ms
Loss rate: 31.06%
-- Flow 2:
Average throughput: 0.03 Mbit/s
95th percentile per-packet one-way delay: 6432.907 ms
Loss rate: 53.64%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 8398.956 ms
Loss rate: 71.93%
```

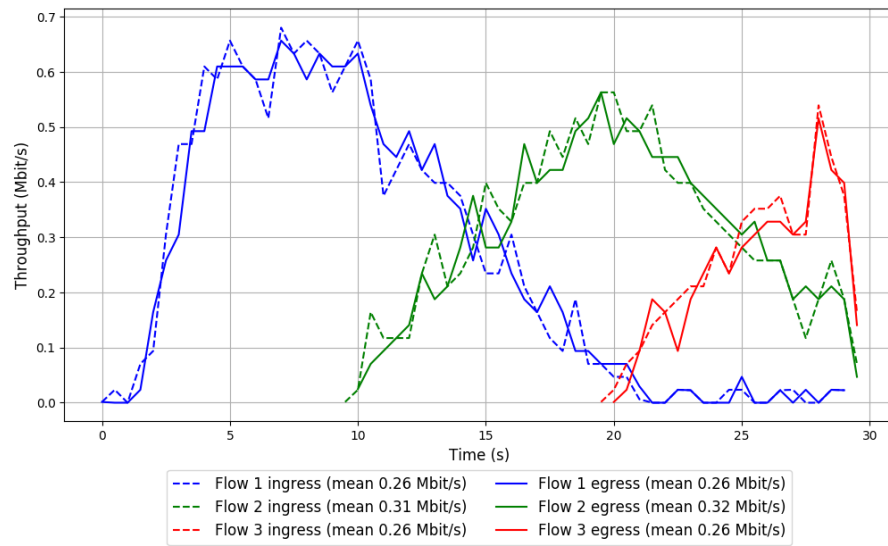Run 2: Report of TCP Cubic — Data Link



Flow 1 ingress (mean 0.81 Mbit/s) --- Flow 1 egress (mean 0.57 Mbit/s)
Flow 2 ingress (mean 0.06 Mbit/s) --- Flow 2 egress (mean 0.03 Mbit/s)
Flow 3 ingress (mean 0.00 Mbit/s) --- Flow 3 egress (mean 0.00 Mbit/s)



• Flow 1 (95th percentile 8120.93 ms)    • Flow 2 (95th percentile 6432.91 ms)    • Flow 3 (95th percentile 8398.96 ms)

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```
Run 3: Statistics of TCP Cubic

Start at: 2018-01-18 12:10:07
End at: 2018-01-18 12:10:37
Local clock offset: -0.721 ms
Remote clock offset: 1.936 ms


# Below is generated by plot.py at 2018-01-18 13:39:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 8023.230 ms
Loss rate: 31.55%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 8033.101 ms
Loss rate: 30.85%
-- Flow 2:
Average throughput: 0.03 Mbit/s
95th percentile per-packet one-way delay: 6484.410 ms
Loss rate: 53.59%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 8354.129 ms
Loss rate: 75.13%
```
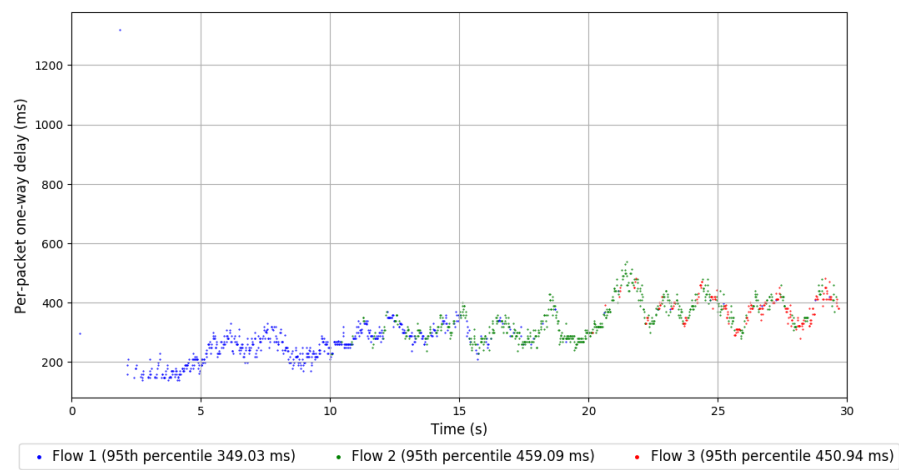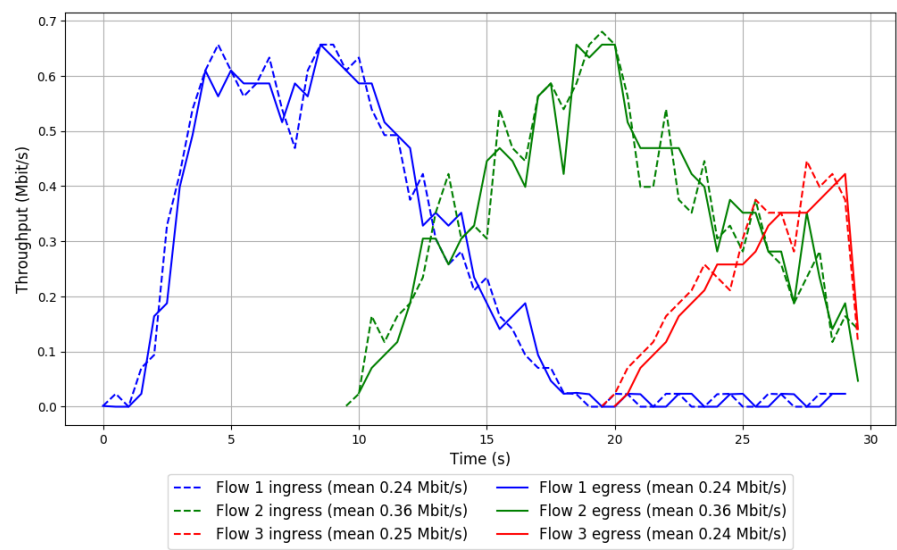
## Run 3: Report of TCP Cubic — Data Link



Flow 1 ingress (mean 0.81 Mbit/s)    Flow 1 egress (mean 0.57 Mbit/s)
Flow 2 ingress (mean 0.06 Mbit/s)    Flow 2 egress (mean 0.03 Mbit/s)
Flow 3 ingress (mean 0.00 Mbit/s)    Flow 3 egress (mean 0.00 Mbit/s)



Flow 1 (95th percentile 8033.10 ms)    Flow 2 (95th percentile 6484.41 ms)    Flow 3 (95th percentile 8354.13 ms)

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```
Run 1: Statistics of LEDBAT

Start at: 2018-01-18 11:37:57
End at: 2018-01-18 11:38:27
Local clock offset: -0.166 ms
Remote clock offset: 2.457 ms

# Below is generated by plot.py at 2018-01-18 13:39:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 408.376 ms
Loss rate: 1.43%
-- Flow 1:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 348.437 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 418.344 ms
Loss rate: 1.31%
-- Flow 3:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 441.166 ms
Loss rate: 5.91%
```
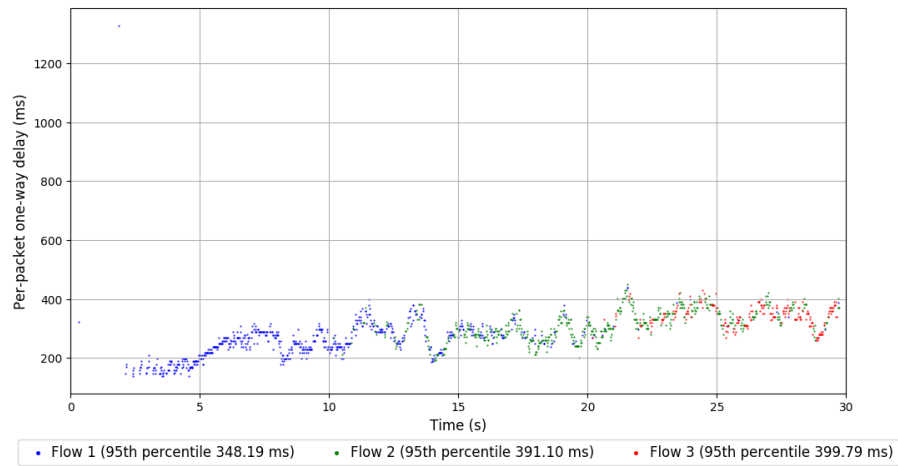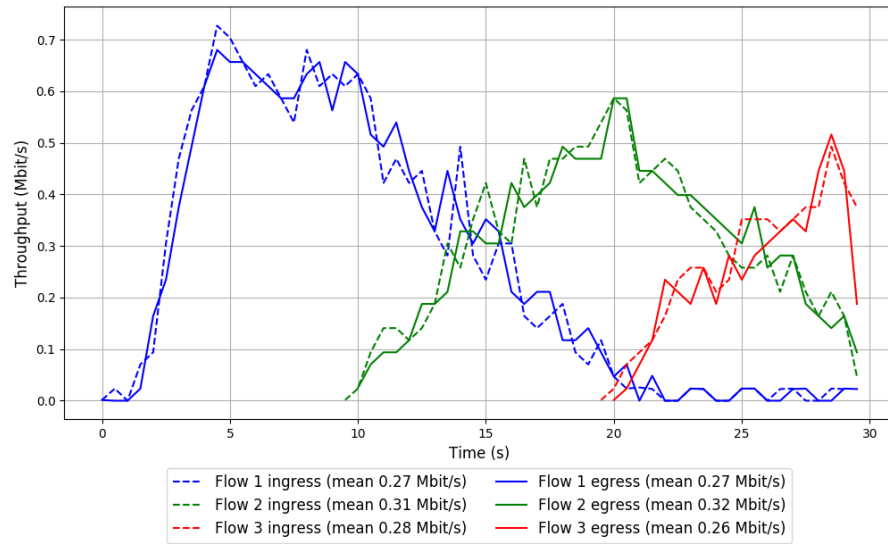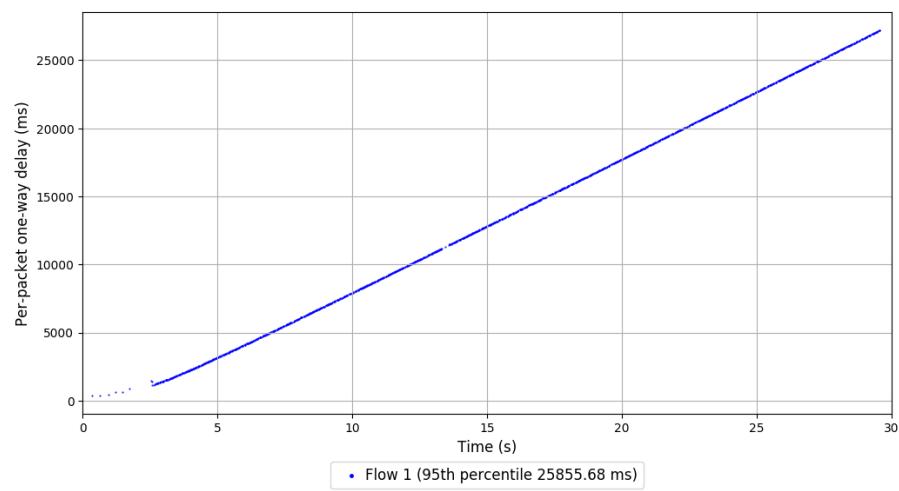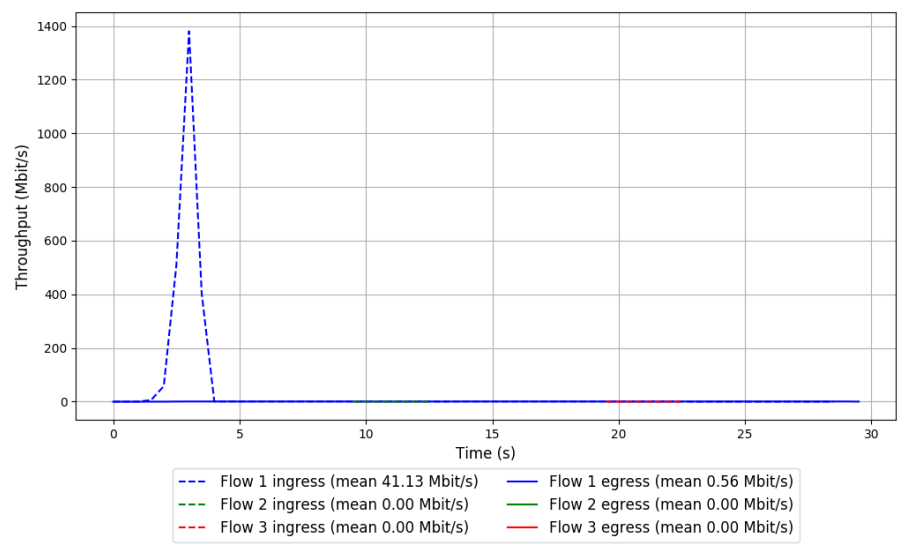
# Run 1: Report of LEDBAT — Data Link



Flow 1 ingress (mean 0.26 Mbit/s) — Flow 1 egress (mean 0.26 Mbit/s)
Flow 2 ingress (mean 0.31 Mbit/s) — Flow 2 egress (mean 0.32 Mbit/s)
Flow 3 ingress (mean 0.26 Mbit/s) — Flow 3 egress (mean 0.26 Mbit/s)



Flow 1 (95th percentile 348.44 ms) • Flow 2 (95th percentile 418.34 ms) • Flow 3 (95th percentile 441.17 ms)
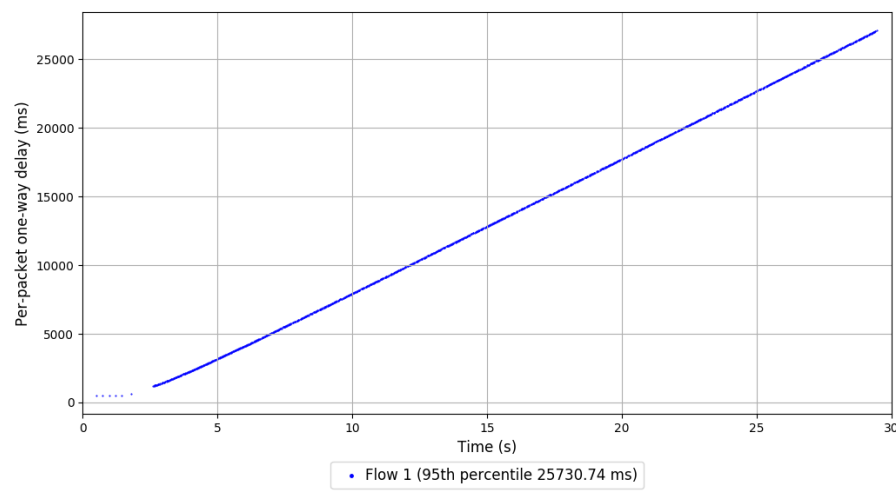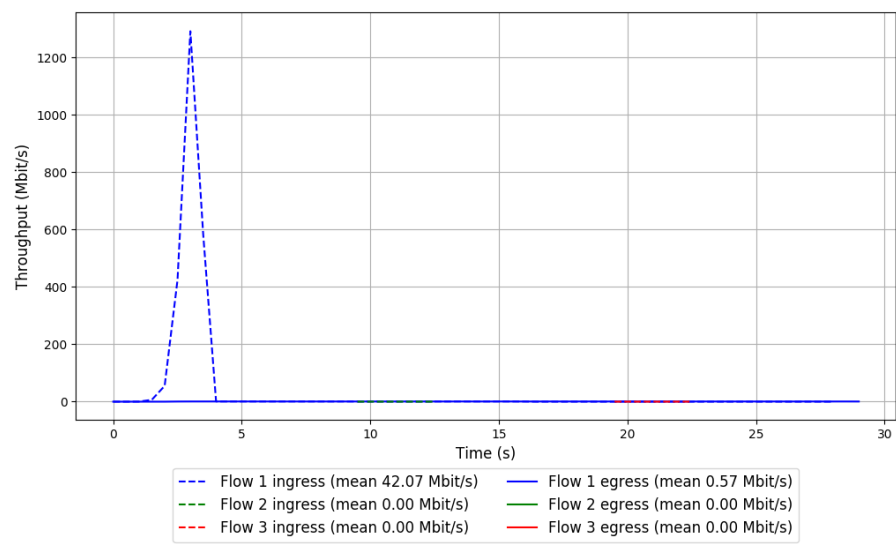
```
Run 2: Statistics of LEDBAT

Start at: 2018-01-18 12:01:19
End at: 2018-01-18 12:01:49
Local clock offset: -0.788 ms
Remote clock offset: 2.31 ms

# Below is generated by plot.py at 2018-01-18 13:39:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 439.121 ms
Loss rate: 1.49%
-- Flow 1:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 349.034 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 459.093 ms
Loss rate: 0.98%
-- Flow 3:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 450.936 ms
Loss rate: 7.04%
```

Run 2: Report of LEDBAT — Data Link



Flow 1 ingress (mean 0.24 Mbit/s)    Flow 1 egress (mean 0.24 Mbit/s)
Flow 2 ingress (mean 0.36 Mbit/s)    Flow 2 egress (mean 0.36 Mbit/s)
Flow 3 ingress (mean 0.25 Mbit/s)    Flow 3 egress (mean 0.24 Mbit/s)



Flow 1 (95th percentile 349.03 ms)    Flow 2 (95th percentile 459.09 ms)    Flow 3 (95th percentile 450.94 ms)

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```
Run 3: Statistics of LEDBAT

Start at: 2018-01-18 12:24:16
End at: 2018-01-18 12:24:46
Local clock offset: -0.894 ms
Remote clock offset: 1.592 ms

# Below is generated by plot.py at 2018-01-18 13:39:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 389.705 ms
Loss rate: 1.68%
-- Flow 1:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 348.187 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 391.103 ms
Loss rate: 0.94%
-- Flow 3:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 399.790 ms
Loss rate: 8.19%
```
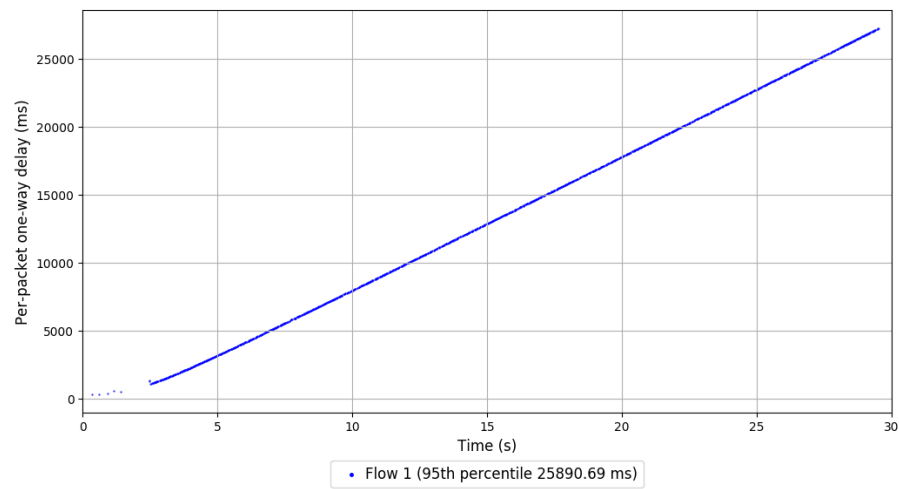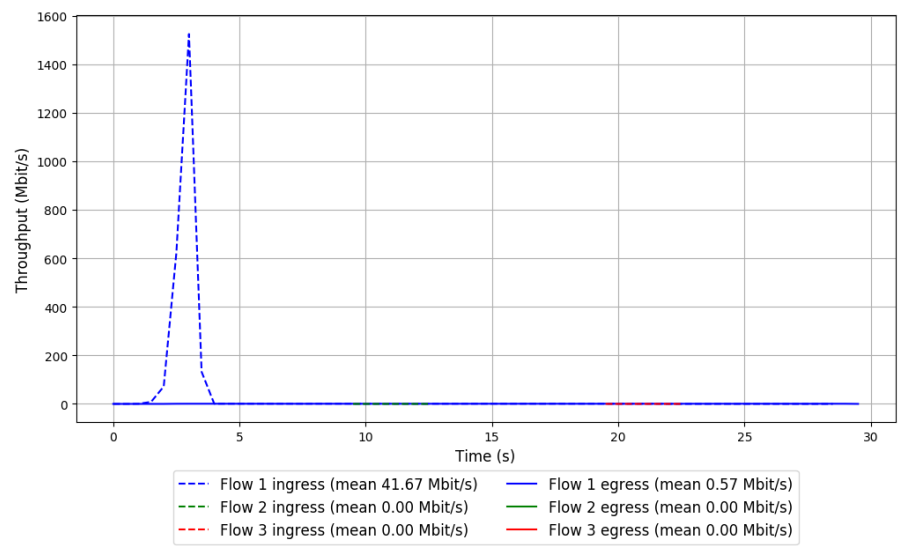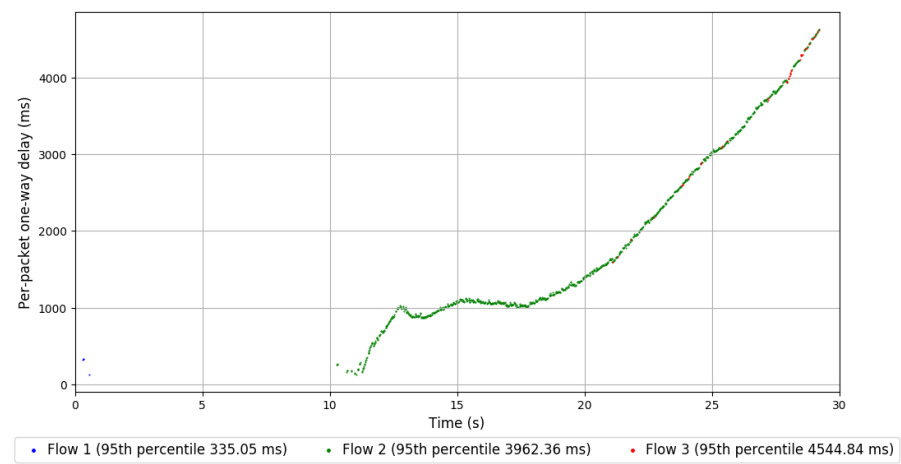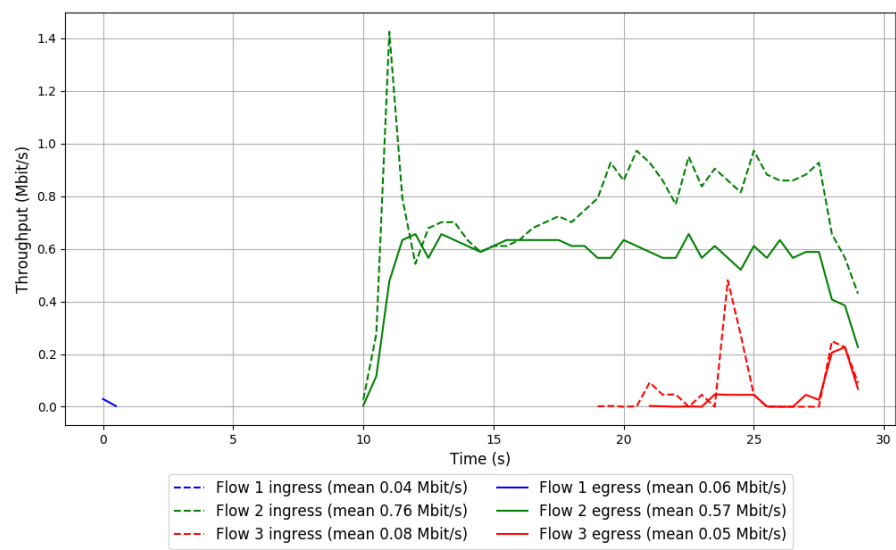
Run 3: Report of LEDBAT — Data Link

```
Run 1: Statistics of PCC

Start at: 2018-01-18 11:26:40
End at: 2018-01-18 11:27:10
Local clock offset: -0.24 ms
Remote clock offset: -3.246 ms


# Below is generated by plot.py at 2018-01-18 13:39:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 25855.677 ms
Loss rate: 98.62%
-- Flow 1:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 25855.677 ms
Loss rate: 98.62%
-- Flow 2:
Average throughput: 0.00 Mbit/s
-- Flow 3:
Average throughput: 0.00 Mbit/s
```

## Run 1: Report of PCC — Data Link





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```
Run 2: Statistics of PCC

Start at: 2018-01-18 11:49:59
End at: 2018-01-18 11:50:29
Local clock offset: -0.412 ms
Remote clock offset: -2.441 ms


# Below is generated by plot.py at 2018-01-18 13:39:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 25730.736 ms
Loss rate: 98.60%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 25730.736 ms
Loss rate: 98.60%
-- Flow 2:
Average throughput: 0.00 Mbit/s
-- Flow 3:
Average throughput: 0.00 Mbit/s
```
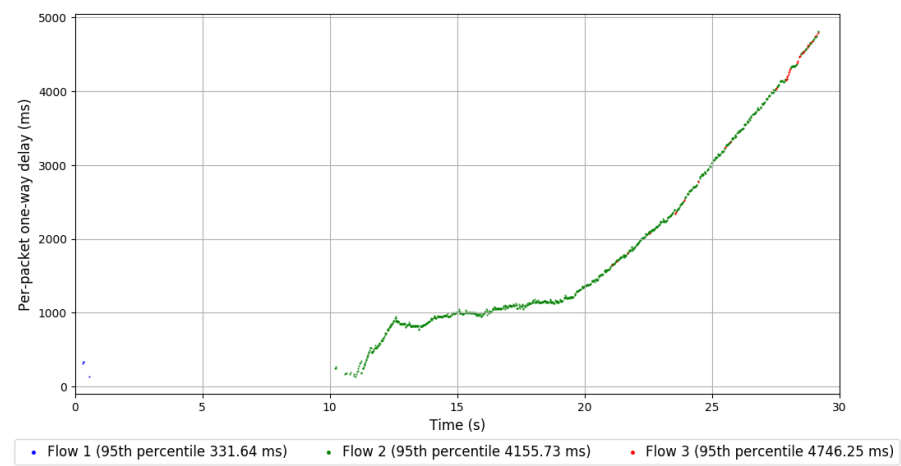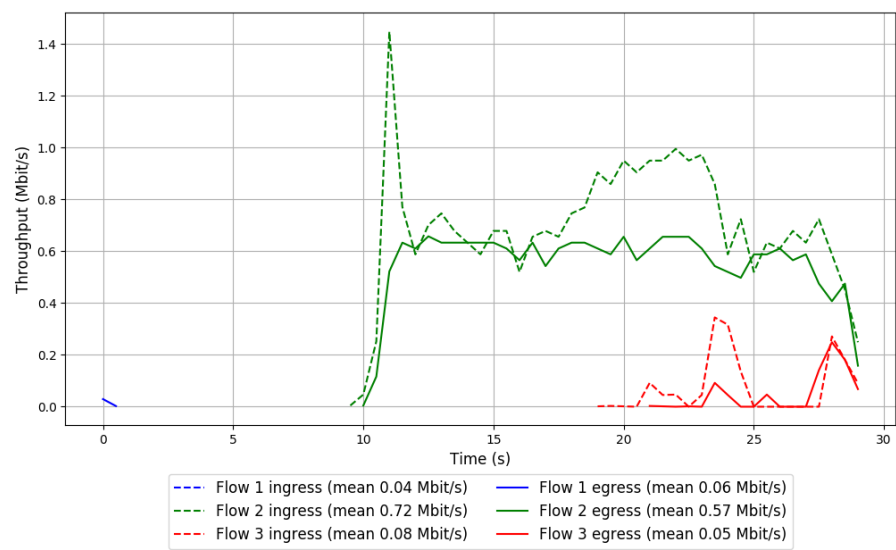
Run 2: Report of PCC — Data Link



Flow 1 ingress (mean 42.07 Mbit/s) --- Flow 1 egress (mean 0.57 Mbit/s) ───
Flow 2 ingress (mean 0.00 Mbit/s) --- Flow 2 egress (mean 0.00 Mbit/s) ───
Flow 3 ingress (mean 0.00 Mbit/s) --- Flow 3 egress (mean 0.00 Mbit/s) ───



• Flow 1 (95th percentile 25730.74 ms)

```
Run 3: Statistics of PCC

Start at: 2018-01-18 12:13:01
End at: 2018-01-18 12:13:31
Local clock offset: -0.718 ms
Remote clock offset: 1.737 ms


# Below is generated by plot.py at 2018-01-18 13:39:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 25890.687 ms
Loss rate: 98.60%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 25890.687 ms
Loss rate: 98.60%
-- Flow 2:
Average throughput: 0.00 Mbit/s
-- Flow 3:
Average throughput: 0.00 Mbit/s
```

# Run 3: Report of PCC — Data Link





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```
Run 1: Statistics of QUIC Cubic

Start at: 2018-01-18 11:35:27
End at: 2018-01-18 11:35:57
Local clock offset: -0.177 ms
Remote clock offset: 2.562 ms


# Below is generated by plot.py at 2018-01-18 13:39:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 4181.518 ms
Loss rate: 27.81%
-- Flow 1:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 335.050 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 3962.362 ms
Loss rate: 26.50%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 4544.835 ms
Loss rate: 52.38%
```
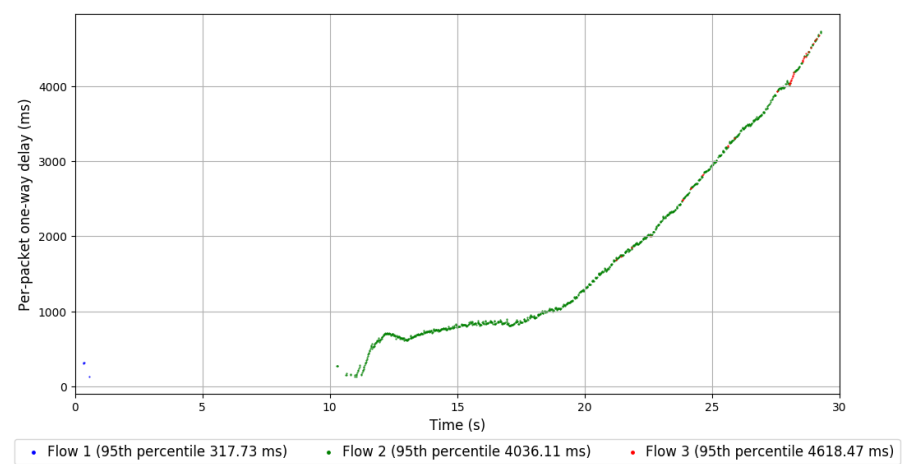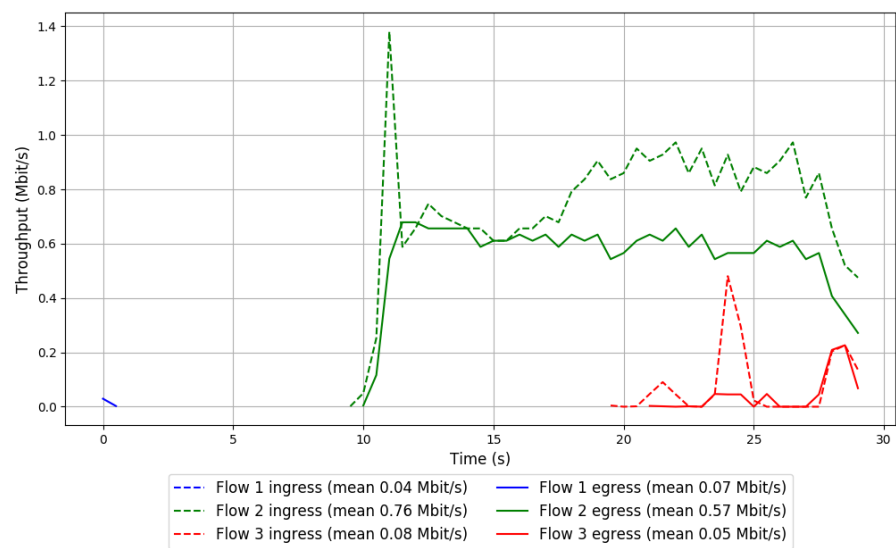
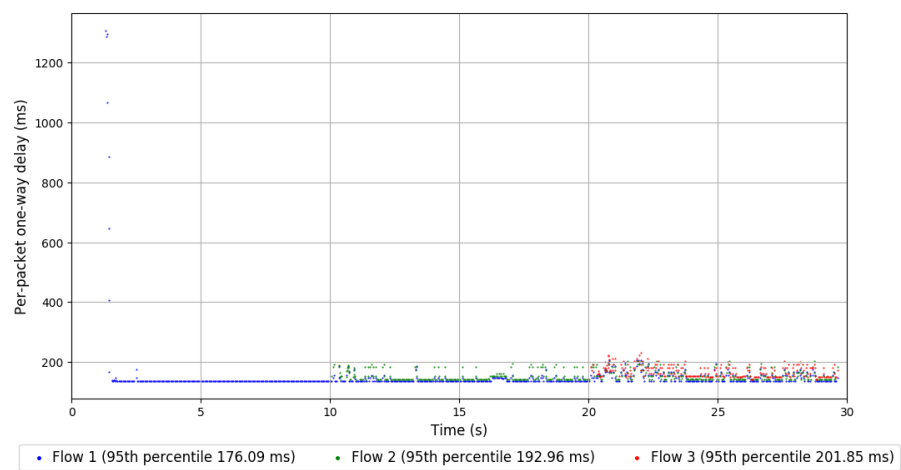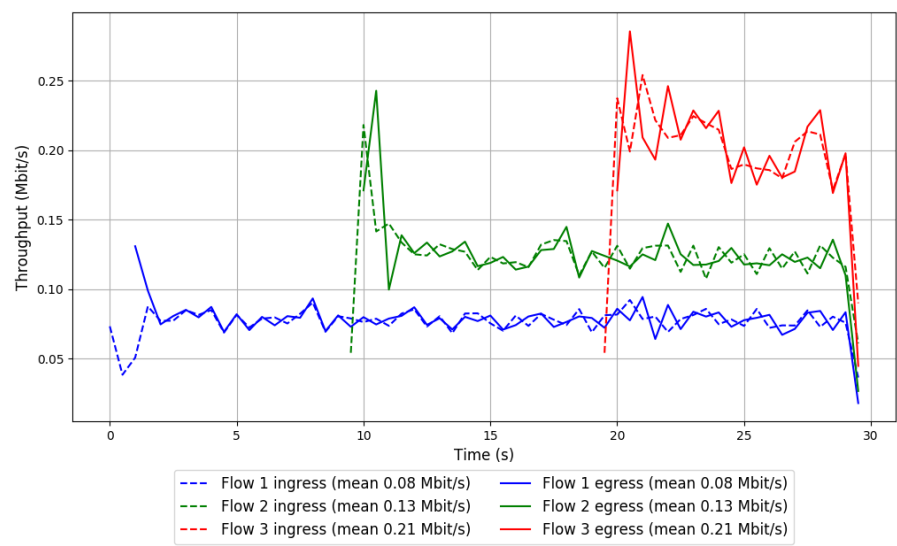# Run 1: Report of QUIC Cubic — Data Link



- Flow 1 ingress (mean 0.04 Mbit/s)
- Flow 1 egress (mean 0.06 Mbit/s)
- Flow 2 ingress (mean 0.76 Mbit/s)
- Flow 2 egress (mean 0.57 Mbit/s)
- Flow 3 ingress (mean 0.08 Mbit/s)
- Flow 3 egress (mean 0.05 Mbit/s)



- Flow 1 (95th percentile 335.05 ms)
- Flow 2 (95th percentile 3962.36 ms)
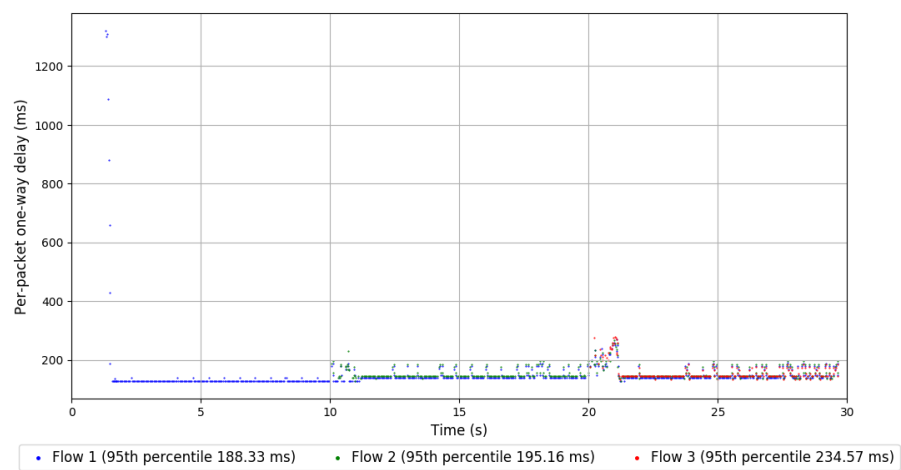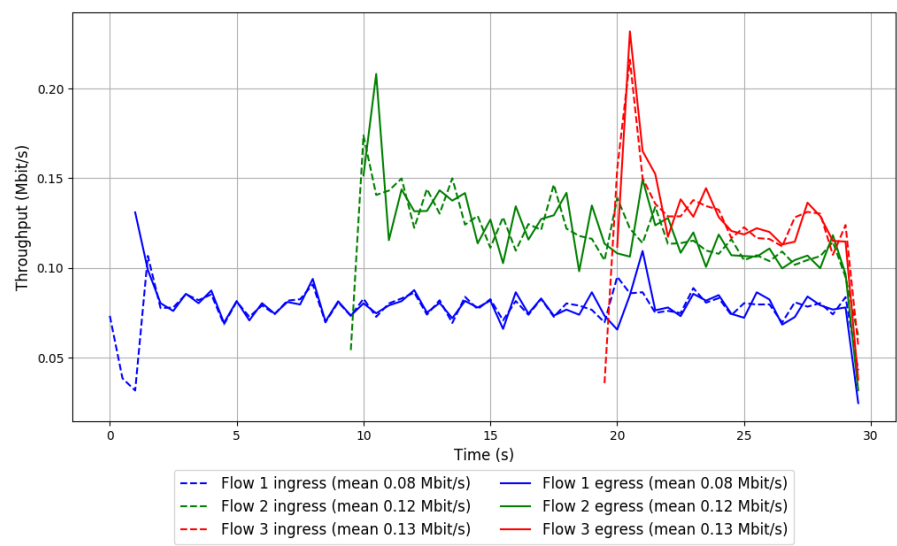- Flow 3 (95th percentile 4544.84 ms)

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```
Run 2: Statistics of QUIC Cubic

Start at: 2018-01-18 11:58:49
End at: 2018-01-18 11:59:19
Local clock offset: -0.734 ms
Remote clock offset: 2.268 ms


# Below is generated by plot.py at 2018-01-18 13:39:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 4360.863 ms
Loss rate: 23.05%
-- Flow 1:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 331.636 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 4155.731 ms
Loss rate: 21.68%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 4746.246 ms
Loss rate: 47.39%
```

## Run 2: Report of QUIC Cubic — Data Link



Flow 1 ingress (mean 0.04 Mbit/s) — — — Flow 1 egress (mean 0.06 Mbit/s)
Flow 2 ingress (mean 0.72 Mbit/s) — — — Flow 2 egress (mean 0.57 Mbit/s)
Flow 3 ingress (mean 0.08 Mbit/s) — — — Flow 3 egress (mean 0.05 Mbit/s)



Flow 1 (95th percentile 331.64 ms) • Flow 2 (95th percentile 4155.73 ms) • Flow 3 (95th percentile 4746.25 ms)

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```
Run 3: Statistics of QUIC Cubic

Start at: 2018-01-18 12:21:46
End at: 2018-01-18 12:22:16
Local clock offset: -0.882 ms
Remote clock offset: 1.675 ms


# Below is generated by plot.py at 2018-01-18 13:39:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 4205.399 ms
Loss rate: 27.46%
-- Flow 1:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 317.729 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 4036.114 ms
Loss rate: 26.06%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 4618.473 ms
Loss rate: 53.79%
```
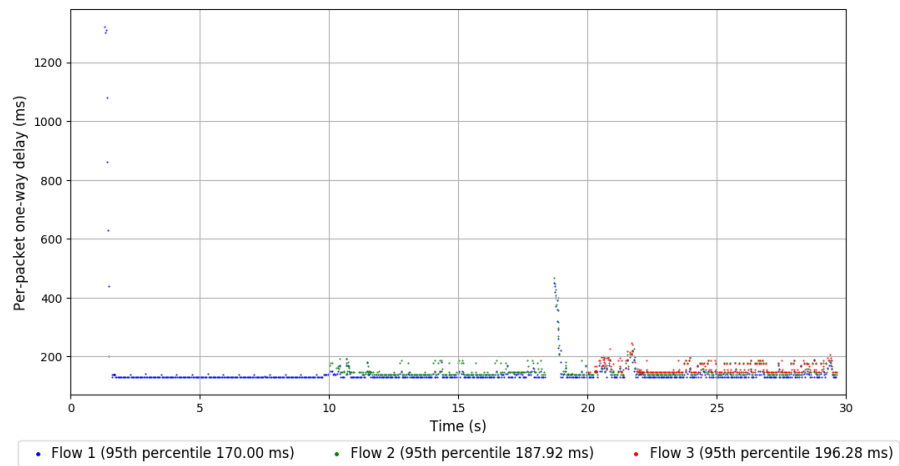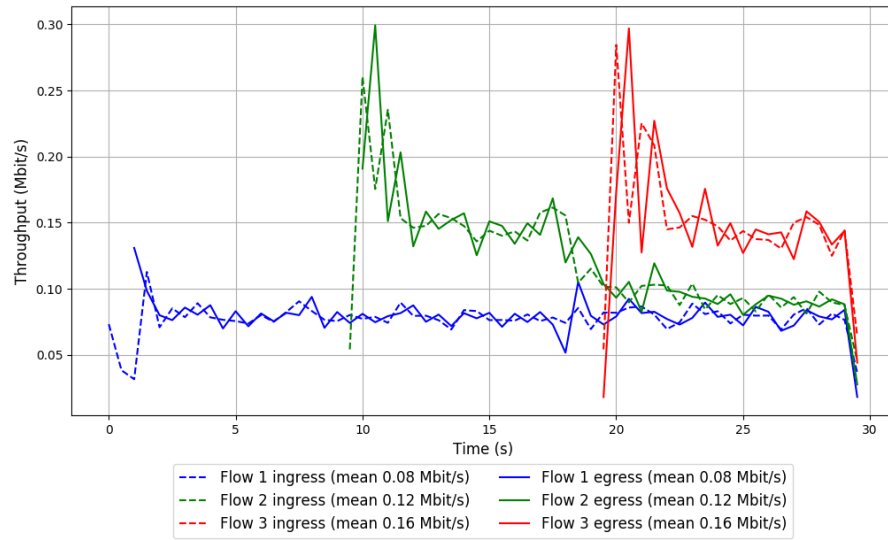
## Run 3: Report of QUIC Cubic — Data Link





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```
Run 1: Statistics of SCReAM

Start at: 2018-01-18 11:27:56
End at: 2018-01-18 11:28:26
Local clock offset: -0.285 ms
Remote clock offset: -3.218 ms


# Below is generated by plot.py at 2018-01-18 13:39:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 192.028 ms
Loss rate: 1.54%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 176.089 ms
Loss rate: 0.79%
-- Flow 2:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 192.956 ms
Loss rate: 1.39%
-- Flow 3:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 201.846 ms
Loss rate: 2.59%
```
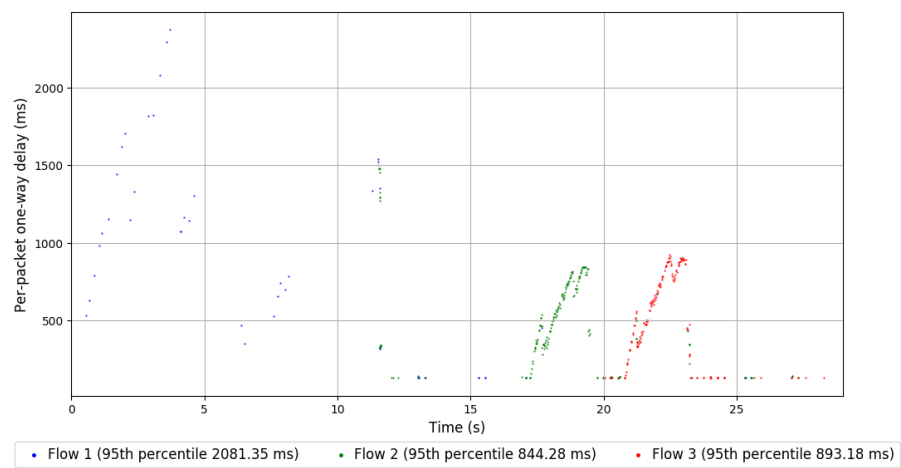
# Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2018-01-18 11:51:15
End at: 2018-01-18 11:51:45
Local clock offset: -0.565 ms
Remote clock offset: 2.3 ms


# Below is generated by plot.py at 2018-01-18 13:39:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 195.136 ms
Loss rate: 1.34%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 188.328 ms
Loss rate: 0.93%
-- Flow 2:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 195.157 ms
Loss rate: 1.28%
-- Flow 3:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 234.566 ms
Loss rate: 2.16%
```
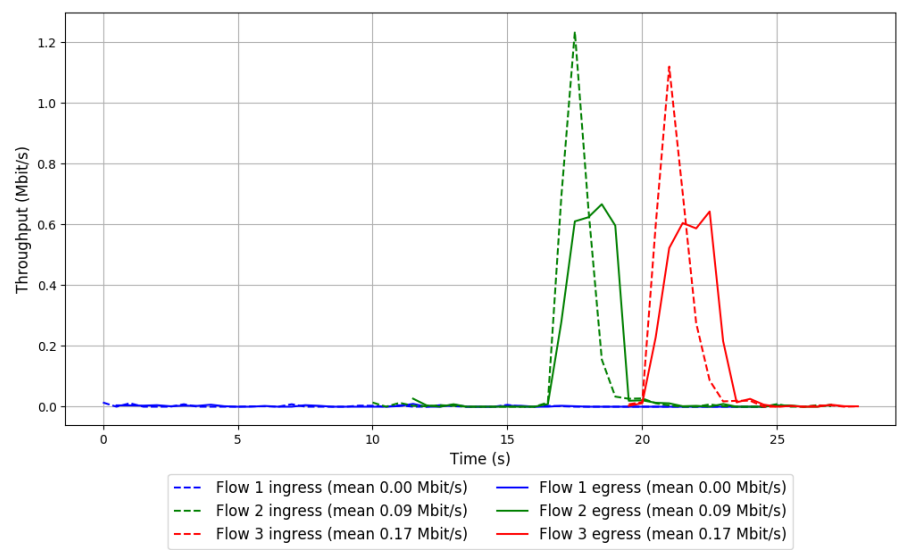
# Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2018-01-18 12:14:17
End at: 2018-01-18 12:14:47
Local clock offset: -0.724 ms
Remote clock offset: -3.01 ms

# Below is generated by plot.py at 2018-01-18 13:39:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 189.817 ms
Loss rate: 1.15%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 169.999 ms
Loss rate: 0.79%
-- Flow 2:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 187.923 ms
Loss rate: 0.92%
-- Flow 3:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 196.275 ms
Loss rate: 2.05%
```

## Run 3: Report of SCReAM — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2018-01-18 11:32:56
End at: 2018-01-18 11:33:26
Local clock offset: -0.23 ms
Remote clock offset: 2.466 ms


# Below is generated by plot.py at 2018-01-18 13:39:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 1293.299 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 2081.346 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 844.277 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 893.185 ms
Loss rate: 0.00%
```
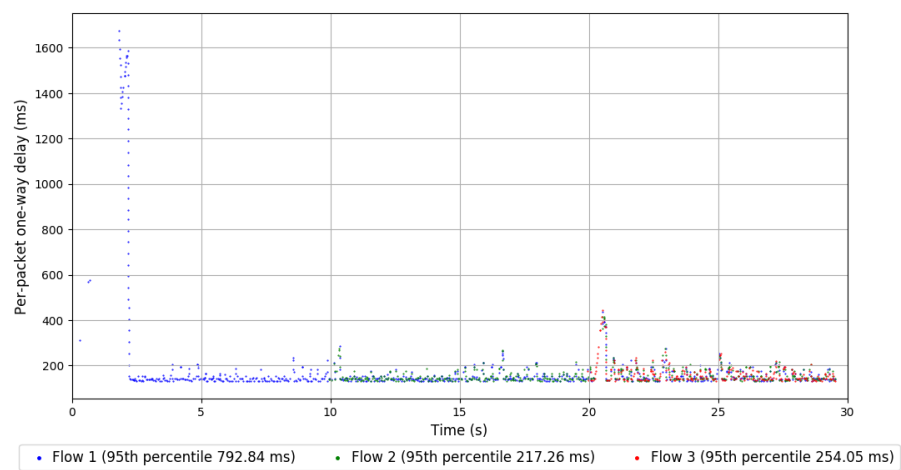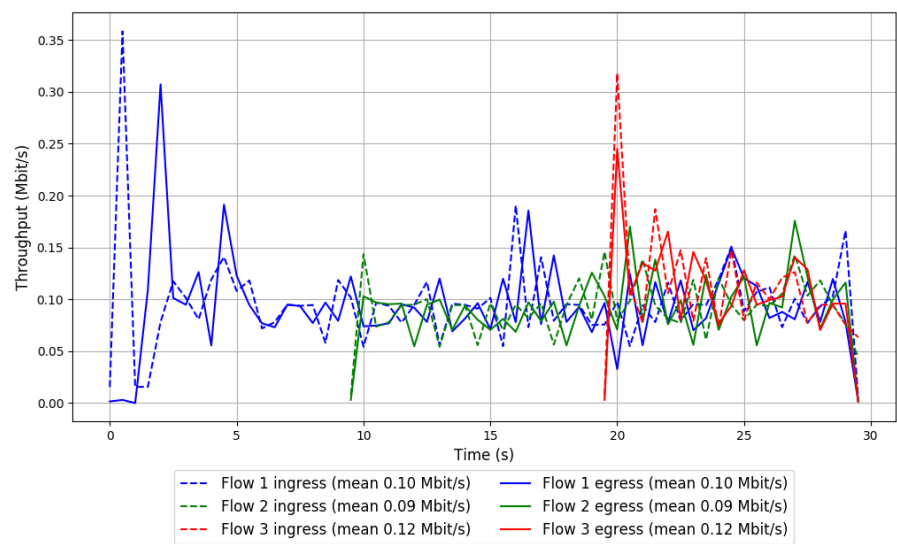
Run 1: Report of WebRTC media — Data Link



Flow 1 ingress (mean 0.00 Mbit/s) — — —
Flow 1 egress (mean 0.00 Mbit/s) —
Flow 2 ingress (mean 0.09 Mbit/s) — — —
Flow 2 egress (mean 0.09 Mbit/s) —
Flow 3 ingress (mean 0.17 Mbit/s) — — —
Flow 3 egress (mean 0.17 Mbit/s) —



Flow 1 (95th percentile 2081.35 ms)   Flow 2 (95th percentile 844.28 ms)   Flow 3 (95th percentile 893.18 ms)
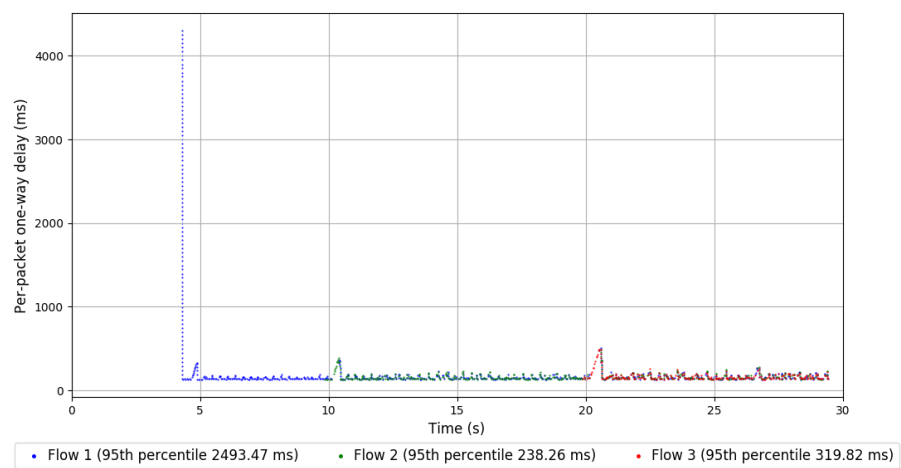
```
Run 2: Statistics of WebRTC media

Start at: 2018-01-18 11:56:18
End at: 2018-01-18 11:56:48
Local clock offset: -0.641 ms
Remote clock offset: 2.336 ms
```

Run 2: Report of WebRTC media — Data Link



Flow 1 ingress (mean 0.00 Mbit/s)   — Flow 1 egress (mean 0.00 Mbit/s)
Flow 2 ingress (mean 0.09 Mbit/s)   — Flow 2 egress (mean 0.08 Mbit/s)
Flow 3 ingress (mean 0.19 Mbit/s)   — Flow 3 egress (mean 0.18 Mbit/s)



Flow 1 (95th percentile 338.68 ms)   Flow 2 (95th percentile 820.13 ms)   Flow 3 (95th percentile 820.45 ms)
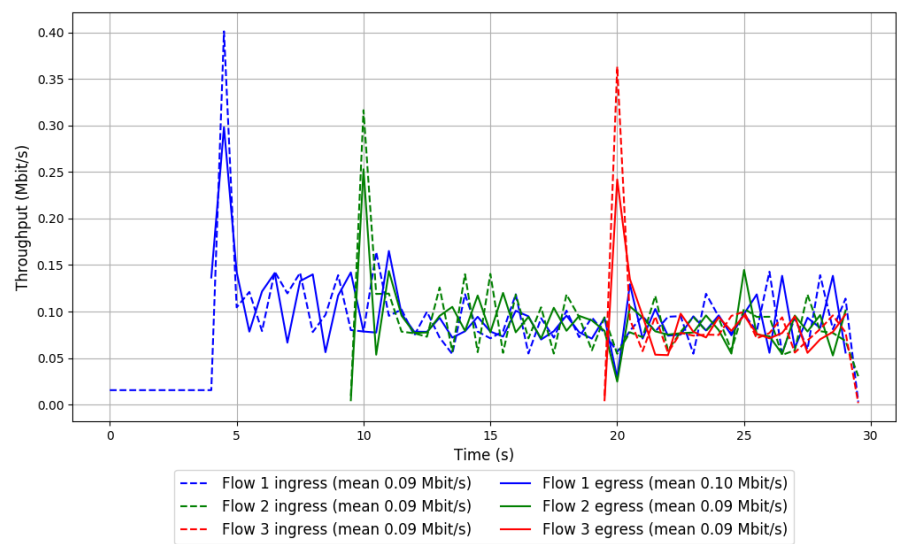
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```
Run 3: Statistics of WebRTC media

Start at: 2018-01-18 12:19:17
End at: 2018-01-18 12:19:47
Local clock offset: -0.764 ms
Remote clock offset: -3.16 ms
```

Run 3: Report of WebRTC media — Data Link

Figure is missing

Figure is missing

```
Run 1: Statistics of Sprout

Start at: 2018-01-18 11:29:11
End at: 2018-01-18 11:29:41
Local clock offset: -0.234 ms
Remote clock offset: -3.312 ms


# Below is generated by plot.py at 2018-01-18 13:39:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 281.764 ms
Loss rate: 2.00%
-- Flow 1:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 581.353 ms
Loss rate: 1.71%
-- Flow 2:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 204.399 ms
Loss rate: 1.26%
-- Flow 3:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 283.111 ms
Loss rate: 3.95%
```
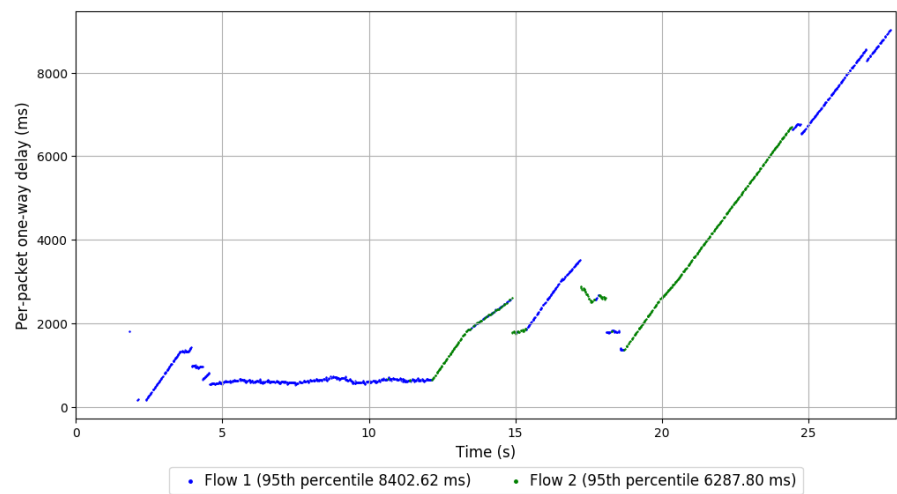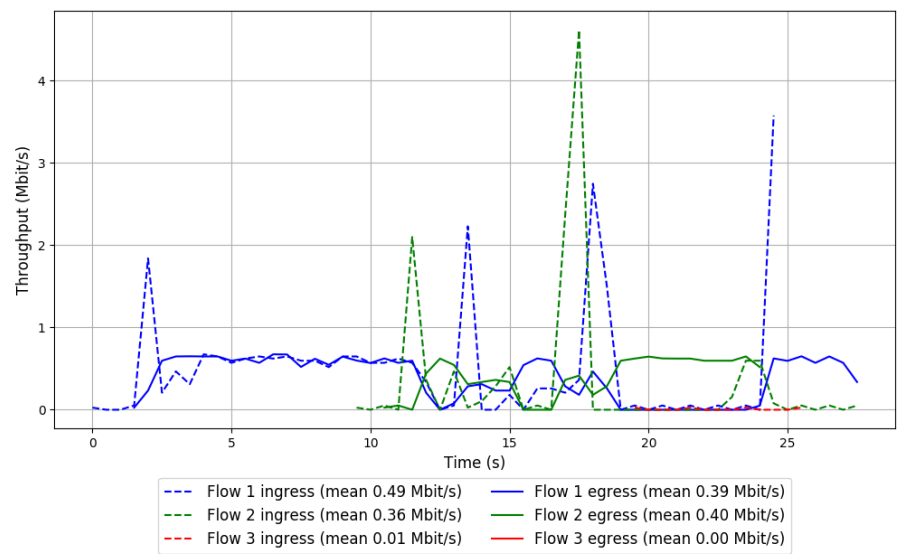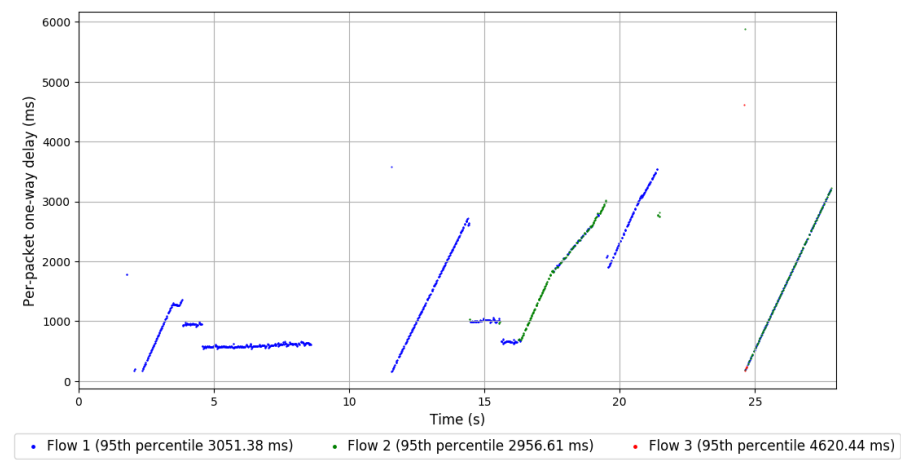
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2018-01-18 11:52:32
End at: 2018-01-18 11:53:02
Local clock offset: -0.491 ms
Remote clock offset: -2.458 ms


# Below is generated by plot.py at 2018-01-18 13:39:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 304.316 ms
Loss rate: 2.26%
-- Flow 1:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 792.839 ms
Loss rate: 2.25%
-- Flow 2:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 217.261 ms
Loss rate: 1.25%
-- Flow 3:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 254.048 ms
Loss rate: 3.90%
```

Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2018-01-18 12:15:31
End at: 2018-01-18 12:16:01
Local clock offset: -0.831 ms
Remote clock offset: -2.694 ms


# Below is generated by plot.py at 2018-01-18 13:39:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 592.266 ms
Loss rate: 3.00%
-- Flow 1:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 2493.472 ms
Loss rate: 2.59%
-- Flow 2:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 238.260 ms
Loss rate: 3.13%
-- Flow 3:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 319.817 ms
Loss rate: 3.93%
```
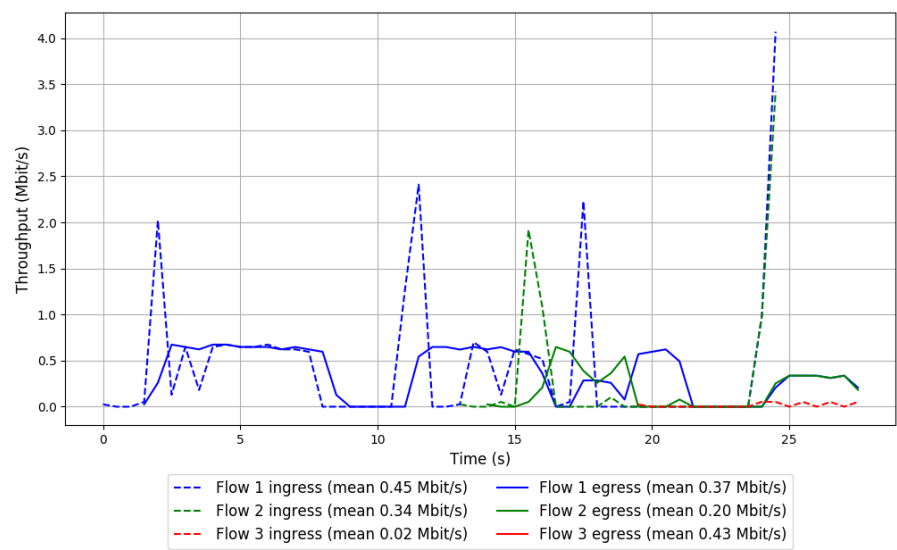
Run 3: Report of Sprout — Data Link

```
Run 1: Statistics of TaoVA-100x

Start at: 2018-01-18 11:41:41
End at: 2018-01-18 11:42:11
Local clock offset: -0.32 ms
Remote clock offset: 1.63 ms


# Below is generated by plot.py at 2018-01-18 13:39:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 8119.974 ms
Loss rate: 16.39%
-- Flow 1:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 8402.624 ms
Loss rate: 17.97%
-- Flow 2:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 6287.799 ms
Loss rate: 12.60%
-- Flow 3:
Average throughput: 0.00 Mbit/s
```
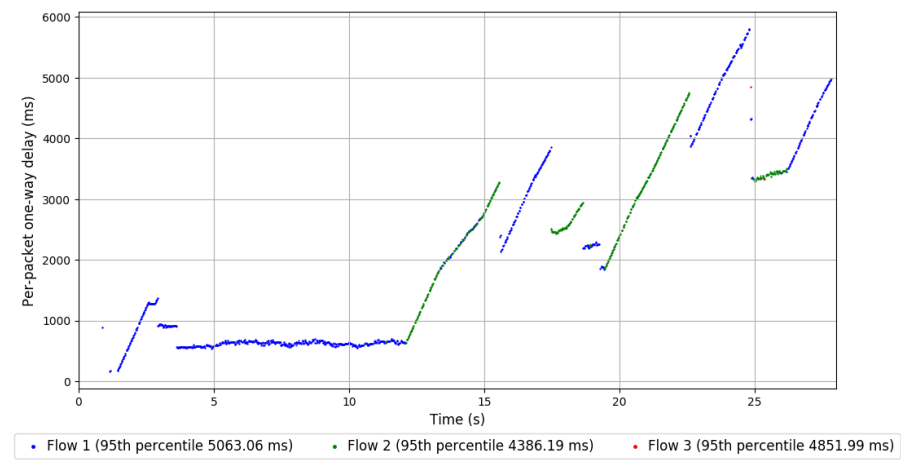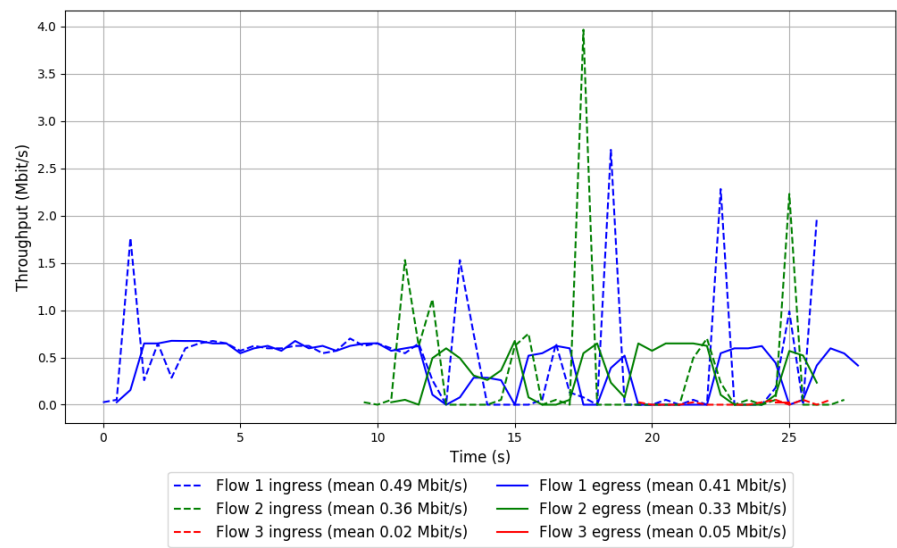
Run 1: Report of TaoVA-100x — Data Link

```
Run 2: Statistics of TaoVA-100x

Start at: 2018-01-18 12:05:03
End at: 2018-01-18 12:05:33
Local clock offset: -0.772 ms
Remote clock offset: -2.632 ms


# Below is generated by plot.py at 2018-01-18 13:39:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 3004.866 ms
Loss rate: 18.45%
-- Flow 1:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 3051.375 ms
Loss rate: 13.57%
-- Flow 2:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 2956.611 ms
Loss rate: 30.77%
-- Flow 3:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 4620.435 ms
Loss rate: 73.42%
```
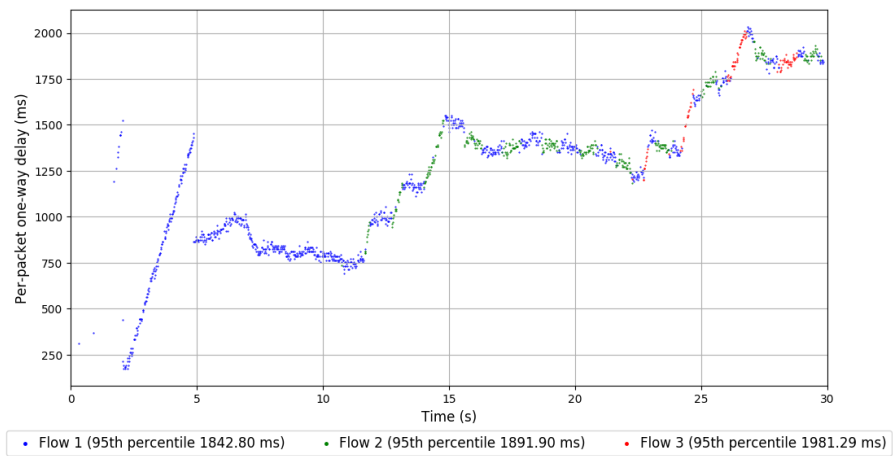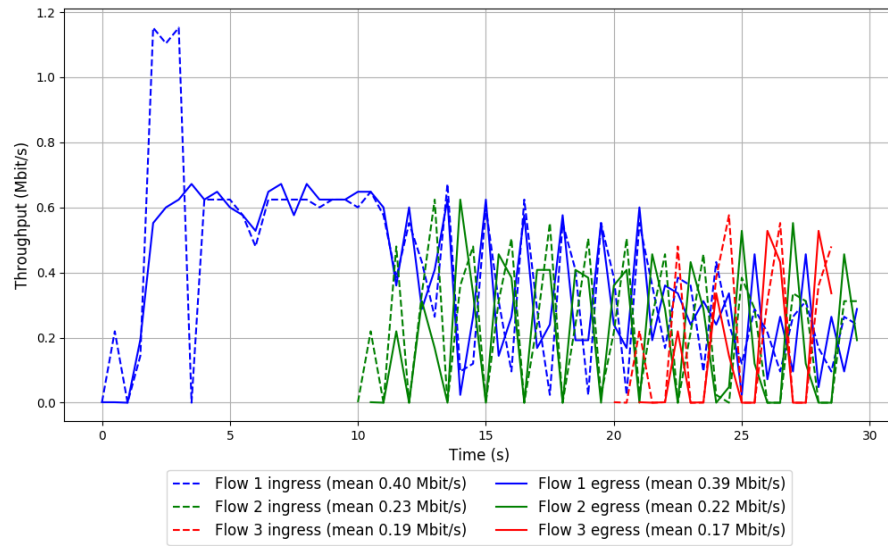
# Run 2: Report of TaoVA-100x — Data Link



- Flow 1 ingress (mean 0.45 Mbit/s)
- Flow 1 egress (mean 0.37 Mbit/s)
- Flow 2 ingress (mean 0.34 Mbit/s)
- Flow 2 egress (mean 0.20 Mbit/s)
- Flow 3 ingress (mean 0.02 Mbit/s)
- Flow 3 egress (mean 0.43 Mbit/s)



- Flow 1 (95th percentile 3051.38 ms)
- Flow 2 (95th percentile 2956.61 ms)
- Flow 3 (95th percentile 4620.44 ms)

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```
Run 3: Statistics of TaoVA-100x

Start at: 2018-01-18 12:28:00
End at: 2018-01-18 12:28:30
Local clock offset: -0.981 ms
Remote clock offset: -3.64 ms


# Below is generated by plot.py at 2018-01-18 13:39:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 4858.737 ms
Loss rate: 15.58%
-- Flow 1:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 5063.065 ms
Loss rate: 13.38%
-- Flow 2:
Average throughput: 0.33 Mbit/s
95th percentile per-packet one-way delay: 4386.195 ms
Loss rate: 18.93%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 4851.992 ms
Loss rate: 77.78%
```
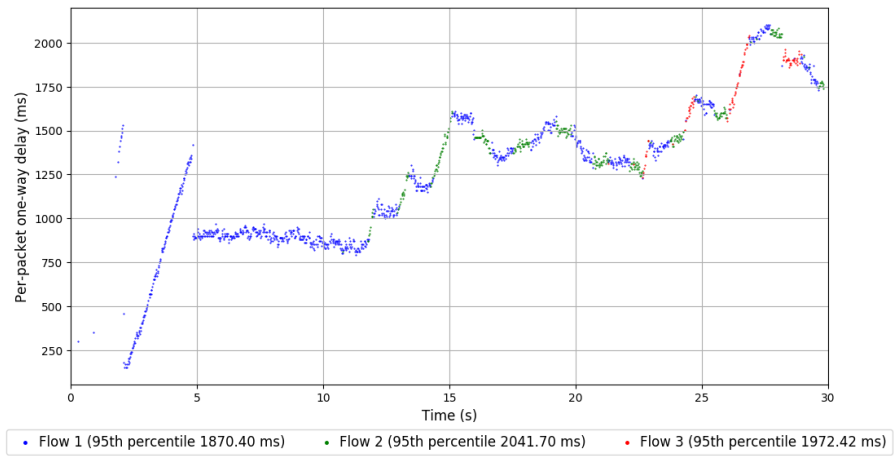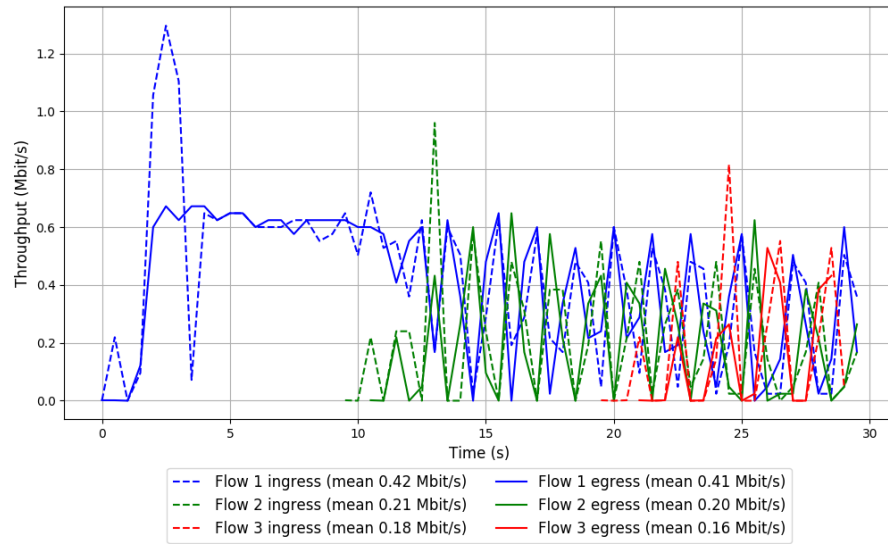
## Run 3: Report of TaoVA-100x — Data Link



Flow 1 ingress (mean 0.49 Mbit/s) — — —
Flow 1 egress (mean 0.41 Mbit/s) ———
Flow 2 ingress (mean 0.36 Mbit/s) — — —
Flow 2 egress (mean 0.33 Mbit/s) ———
Flow 3 ingress (mean 0.02 Mbit/s) — — —
Flow 3 egress (mean 0.05 Mbit/s) ———



Flow 1 (95th percentile 5063.06 ms)  •  Flow 2 (95th percentile 4386.19 ms)  •  Flow 3 (95th percentile 4851.99 ms)

```
Run 1: Statistics of TCP Vegas

Start at: 2018-01-18 11:22:23
End at: 2018-01-18 11:22:53
Local clock offset: -0.218 ms
Remote clock offset: 2.818 ms


# Below is generated by plot.py at 2018-01-18 13:39:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 1881.095 ms
Loss rate: 6.22%
-- Flow 1:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 1842.796 ms
Loss rate: 3.31%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1891.904 ms
Loss rate: 6.95%
-- Flow 3:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 1981.291 ms
Loss rate: 24.94%
```
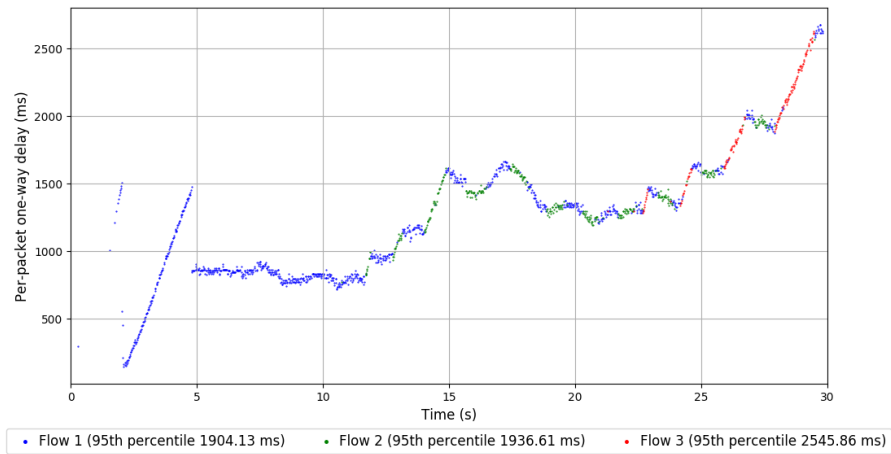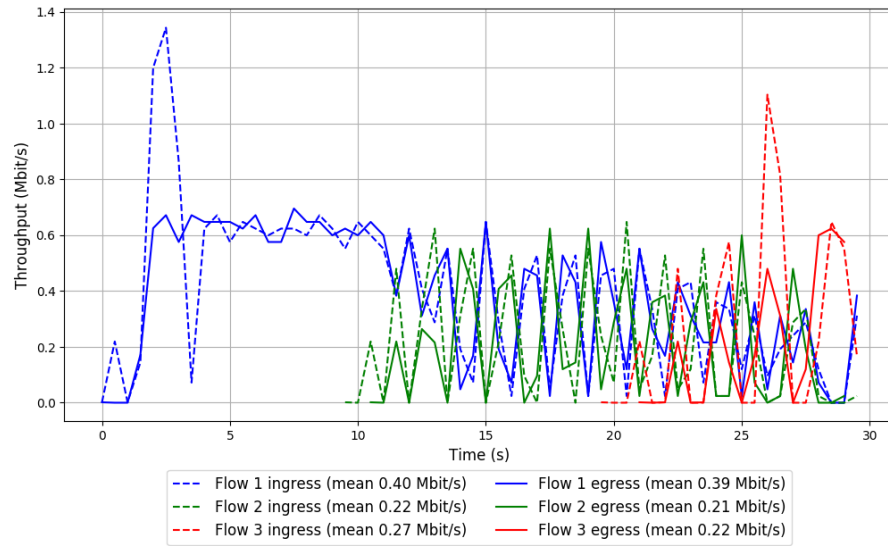
Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2018-01-18 11:45:27
End at: 2018-01-18 11:45:57
Local clock offset: -0.322 ms
Remote clock offset: 2.443 ms


# Below is generated by plot.py at 2018-01-18 13:39:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 1962.197 ms
Loss rate: 6.12%
-- Flow 1:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 1870.401 ms
Loss rate: 3.66%
-- Flow 2:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 2041.704 ms
Loss rate: 6.35%
-- Flow 3:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 1972.425 ms
Loss rate: 24.21%
```
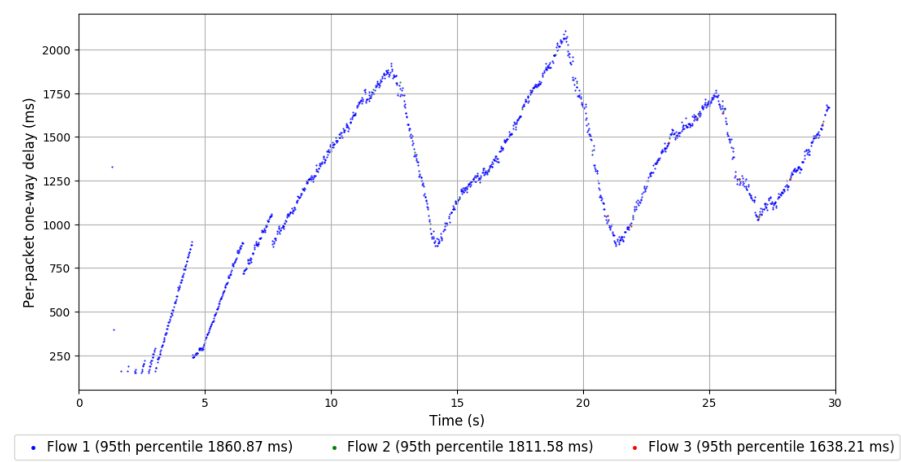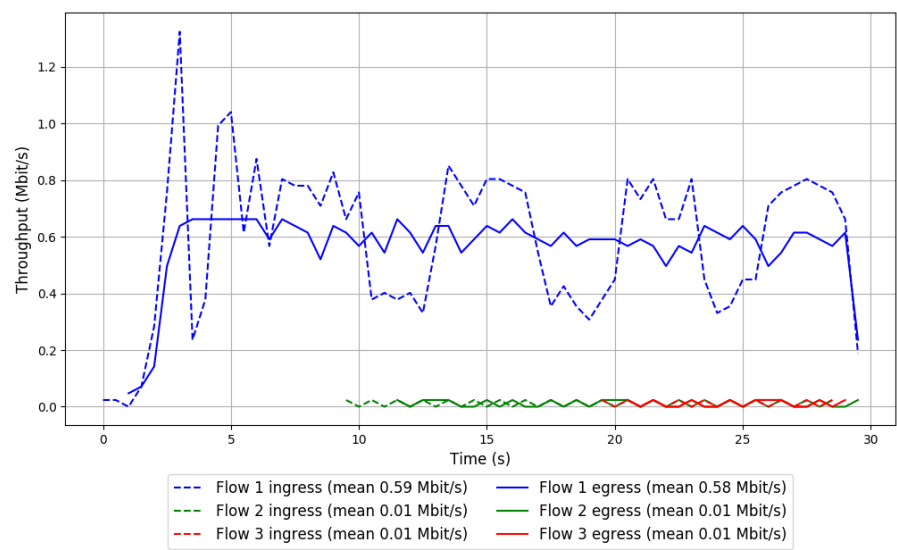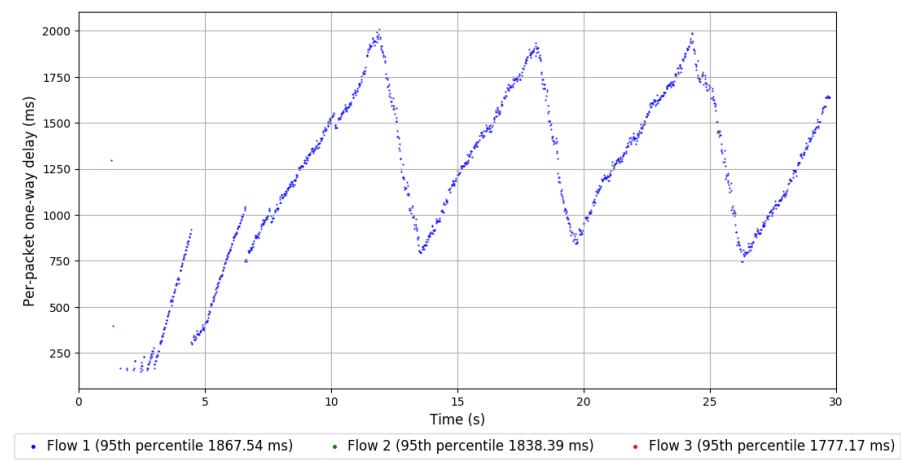
# Run 2: Report of TCP Vegas — Data Link



Flow 1 ingress (mean 0.42 Mbit/s) — Flow 1 egress (mean 0.41 Mbit/s)
Flow 2 ingress (mean 0.21 Mbit/s) — Flow 2 egress (mean 0.20 Mbit/s)
Flow 3 ingress (mean 0.18 Mbit/s) — Flow 3 egress (mean 0.16 Mbit/s)



Flow 1 (95th percentile 1870.40 ms) • Flow 2 (95th percentile 2041.70 ms) • Flow 3 (95th percentile 1972.42 ms)
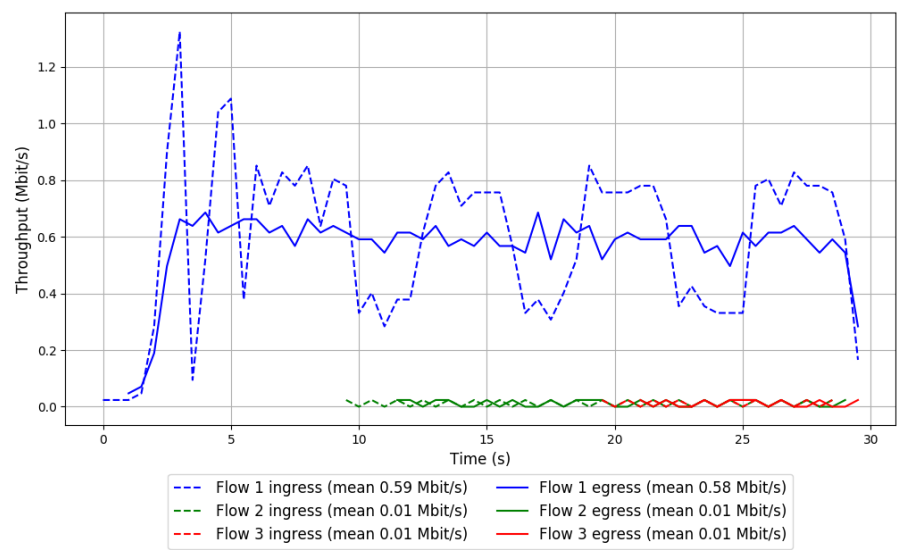
```
Run 3: Statistics of TCP Vegas

Start at: 2018-01-18 12:08:52
End at: 2018-01-18 12:09:22
Local clock offset: -0.714 ms
Remote clock offset: 1.938 ms


# Below is generated by plot.py at 2018-01-18 13:39:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 2125.706 ms
Loss rate: 8.09%
-- Flow 1:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 1904.132 ms
Loss rate: 3.25%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 1936.612 ms
Loss rate: 7.84%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 2545.865 ms
Loss rate: 30.65%
```

Run 3: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2018-01-18 11:34:12
End at: 2018-01-18 11:34:42
Local clock offset: -0.176 ms
Remote clock offset: 3.412 ms


# Below is generated by plot.py at 2018-01-18 13:39:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 1860.866 ms
Loss rate: 6.45%
-- Flow 1:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 1860.866 ms
Loss rate: 6.45%
-- Flow 2:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1811.578 ms
Loss rate: 5.00%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1638.208 ms
Loss rate: 10.00%
```
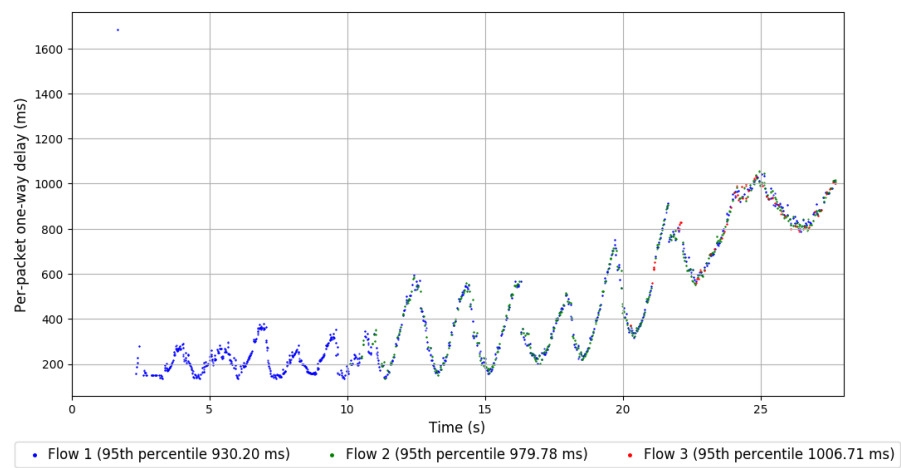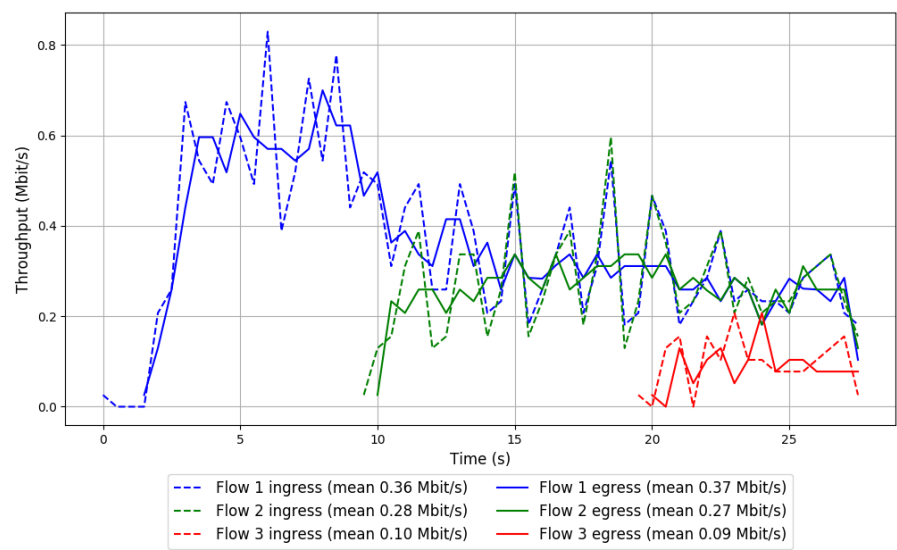
Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2018-01-18 11:57:35
End at: 2018-01-18 11:58:05
Local clock offset: -0.736 ms
Remote clock offset: -2.582 ms


# Below is generated by plot.py at 2018-01-18 13:39:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 1867.536 ms
Loss rate: 6.00%
-- Flow 1:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 1867.536 ms
Loss rate: 5.99%
-- Flow 2:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1838.386 ms
Loss rate: 5.00%
-- Flow 3:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 1777.169 ms
Loss rate: 10.00%
```
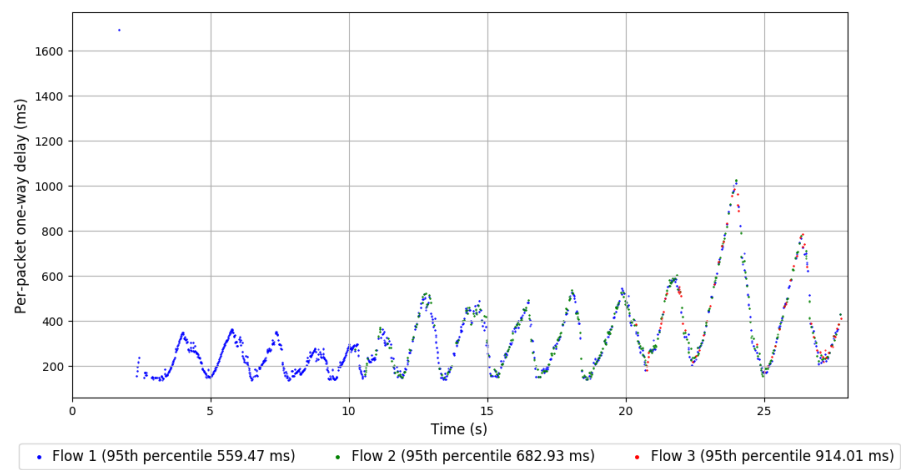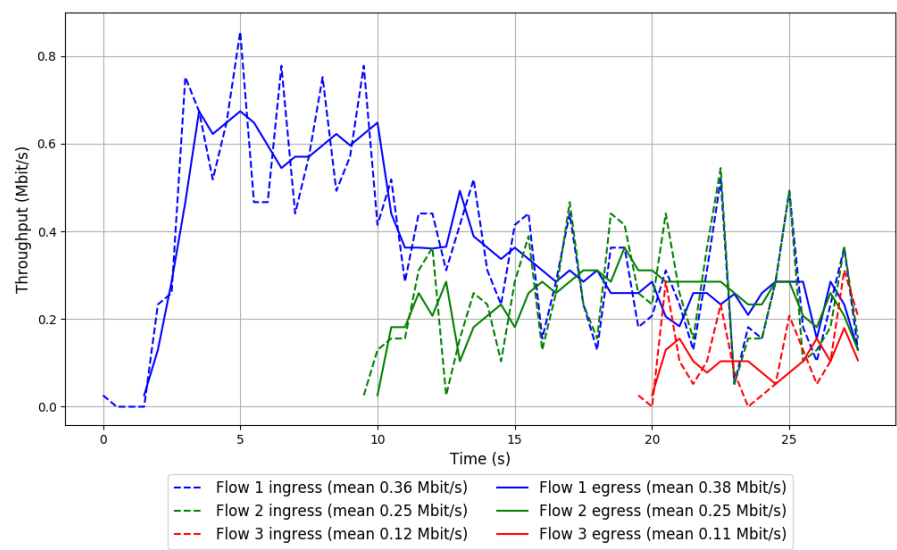
Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2018-01-18 12:20:32
End at: 2018-01-18 12:21:02
Local clock offset: -0.814 ms
Remote clock offset: -3.03 ms
```

# Run 3: Report of Verus — Data Link

```
Run 1: Statistics of Copa

Start at: 2018-01-18 11:39:11
End at: 2018-01-18 11:39:41
Local clock offset: -0.2 ms
Remote clock offset: 3.307 ms


# Below is generated by plot.py at 2018-01-18 13:39:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 961.244 ms
Loss rate: 4.45%
-- Flow 1:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 930.195 ms
Loss rate: 3.00%
-- Flow 2:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 979.782 ms
Loss rate: 5.73%
-- Flow 3:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 1006.708 ms
Loss rate: 14.29%
```
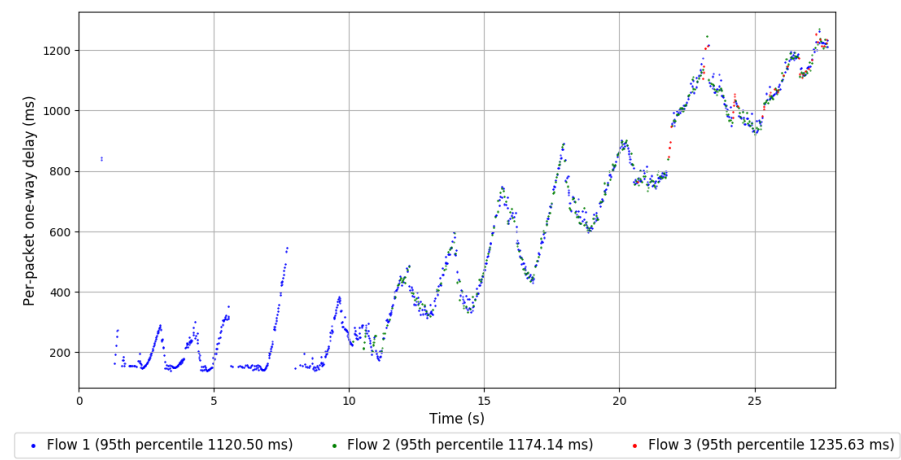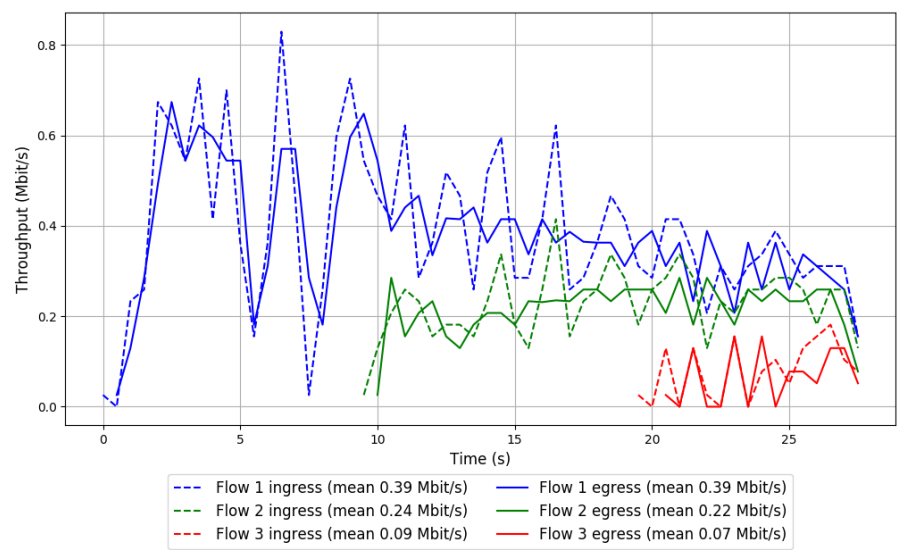
Run 1: Report of Copa — Data Link



Flow 1 ingress (mean 0.36 Mbit/s)   Flow 1 egress (mean 0.37 Mbit/s)
Flow 2 ingress (mean 0.28 Mbit/s)   Flow 2 egress (mean 0.27 Mbit/s)
Flow 3 ingress (mean 0.10 Mbit/s)   Flow 3 egress (mean 0.09 Mbit/s)



Flow 1 (95th percentile 930.20 ms)   Flow 2 (95th percentile 979.78 ms)   Flow 3 (95th percentile 1006.71 ms)

```
Run 2: Statistics of Copa

Start at: 2018-01-18 12:02:34
End at: 2018-01-18 12:03:04
Local clock offset: -0.817 ms
Remote clock offset: 2.174 ms


# Below is generated by plot.py at 2018-01-18 13:39:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 661.806 ms
Loss rate: 2.75%
-- Flow 1:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 559.466 ms
Loss rate: 1.29%
-- Flow 2:
Average throughput: 0.25 Mbit/s
95th percentile per-packet one-way delay: 682.928 ms
Loss rate: 3.16%
-- Flow 3:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 914.006 ms
Loss rate: 15.79%
```
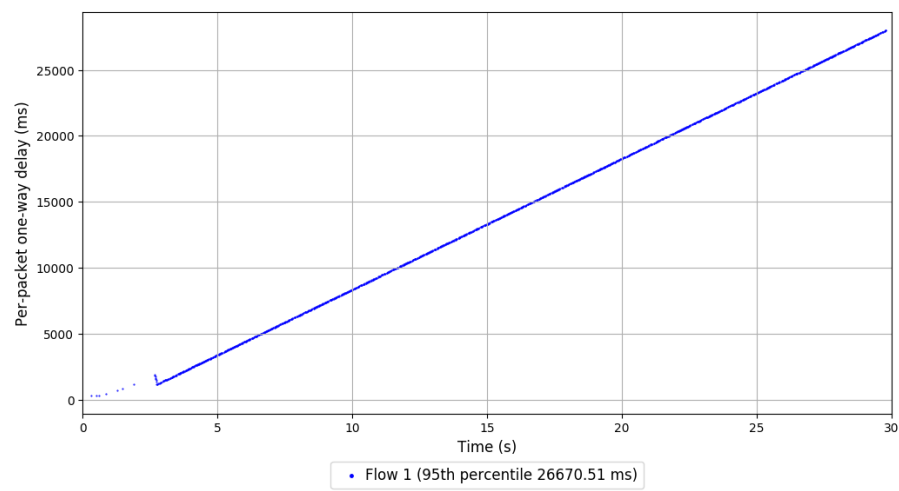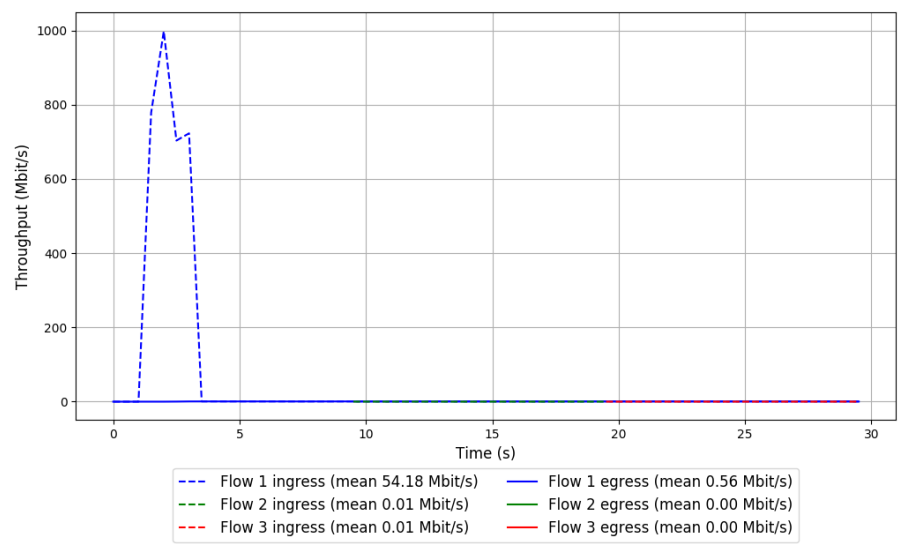
# Run 2: Report of Copa — Data Link



Legend:
- Flow 1 ingress (mean 0.36 Mbit/s)
- Flow 1 egress (mean 0.38 Mbit/s)
- Flow 2 ingress (mean 0.25 Mbit/s)
- Flow 2 egress (mean 0.25 Mbit/s)
- Flow 3 ingress (mean 0.12 Mbit/s)
- Flow 3 egress (mean 0.11 Mbit/s)



Legend:
- Flow 1 (95th percentile 559.47 ms)
- Flow 2 (95th percentile 682.93 ms)
- Flow 3 (95th percentile 914.01 ms)

```
Run 3: Statistics of Copa

Start at: 2018-01-18 12:25:30
End at: 2018-01-18 12:26:00
Local clock offset: -0.932 ms
Remote clock offset: 1.166 ms


# Below is generated by plot.py at 2018-01-18 13:39:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 1156.160 ms
Loss rate: 5.67%
-- Flow 1:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 1120.503 ms
Loss rate: 3.58%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1174.143 ms
Loss rate: 7.67%
-- Flow 3:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 1235.627 ms
Loss rate: 26.92%
```
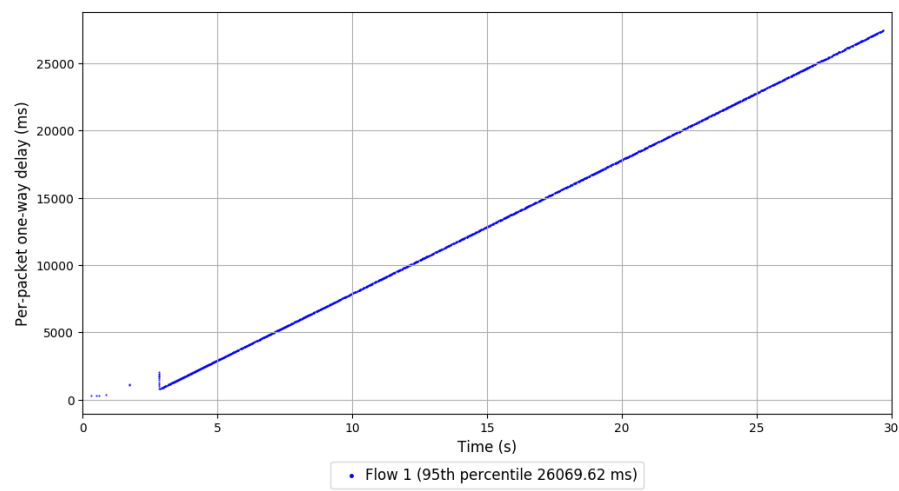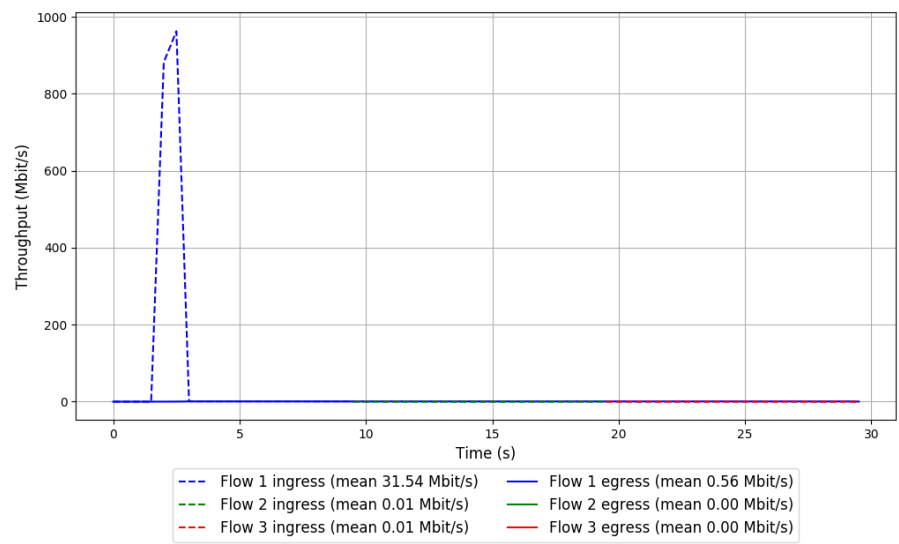
Run 3: Report of Copa — Data Link

```
Run 1: Statistics of FillP

Start at: 2018-01-18 11:42:55
End at: 2018-01-18 11:43:25
Local clock offset: -0.24 ms
Remote clock offset: -2.27 ms


# Below is generated by plot.py at 2018-01-18 13:39:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 26670.507 ms
Loss rate: 98.98%
-- Flow 1:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 26670.507 ms
Loss rate: 98.98%
-- Flow 2:
Average throughput: 0.00 Mbit/s
-- Flow 3:
Average throughput: 0.00 Mbit/s
```
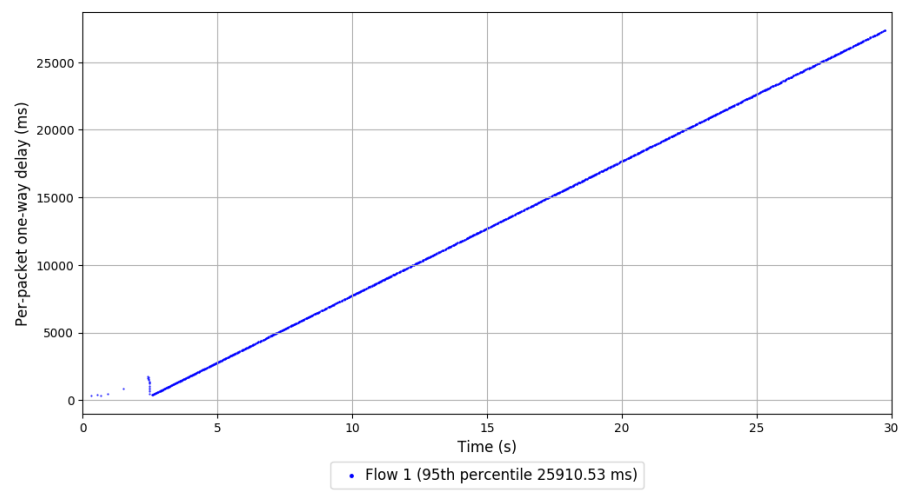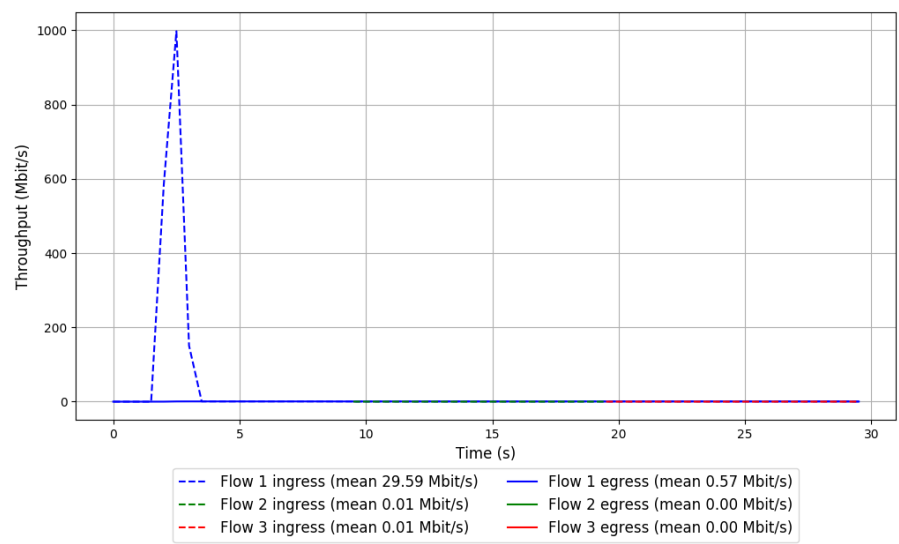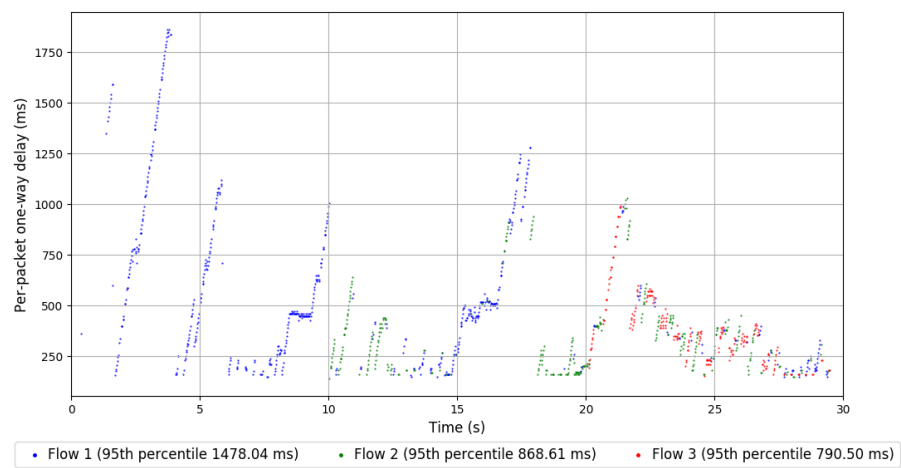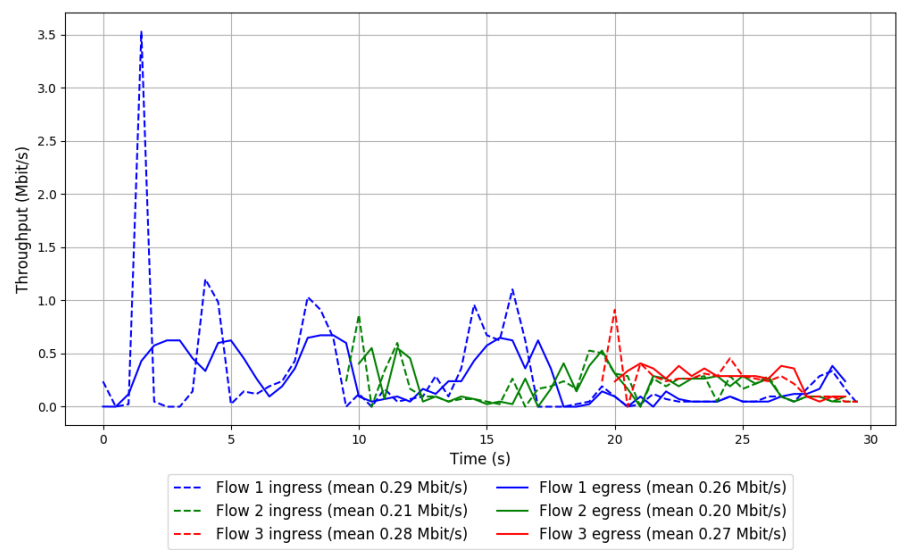
## Run 1: Report of FillP — Data Link

```
Run 2: Statistics of FillP

Start at: 2018-01-18 12:06:19
End at: 2018-01-18 12:06:49
Local clock offset: -0.743 ms
Remote clock offset: 2.035 ms


# Below is generated by plot.py at 2018-01-18 13:39:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 26069.624 ms
Loss rate: 98.23%
-- Flow 1:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 26069.624 ms
Loss rate: 98.23%
-- Flow 2:
Average throughput: 0.00 Mbit/s
-- Flow 3:
Average throughput: 0.00 Mbit/s
```

Run 2: Report of FillP — Data Link

```
Run 3: Statistics of FillP

Start at: 2018-01-18 12:29:14
End at: 2018-01-18 12:29:44
Local clock offset: -1.084 ms
Remote clock offset: 1.077 ms


# Below is generated by plot.py at 2018-01-18 13:39:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 25910.535 ms
Loss rate: 98.10%
-- Flow 1:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 25910.535 ms
Loss rate: 98.10%
-- Flow 2:
Average throughput: 0.00 Mbit/s
-- Flow 3:
Average throughput: 0.00 Mbit/s
```

## Run 3: Report of FillP — Data Link

```
Run 1: Statistics of Indigo

Start at: 2018-01-18 11:44:12
End at: 2018-01-18 11:44:42
Local clock offset: -0.295 ms
Remote clock offset: -2.345 ms


# Below is generated by plot.py at 2018-01-18 13:39:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 1207.312 ms
Loss rate: 8.35%
-- Flow 1:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 1478.035 ms
Loss rate: 12.33%
-- Flow 2:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 868.609 ms
Loss rate: 2.67%
-- Flow 3:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 790.496 ms
Loss rate: 4.04%
```
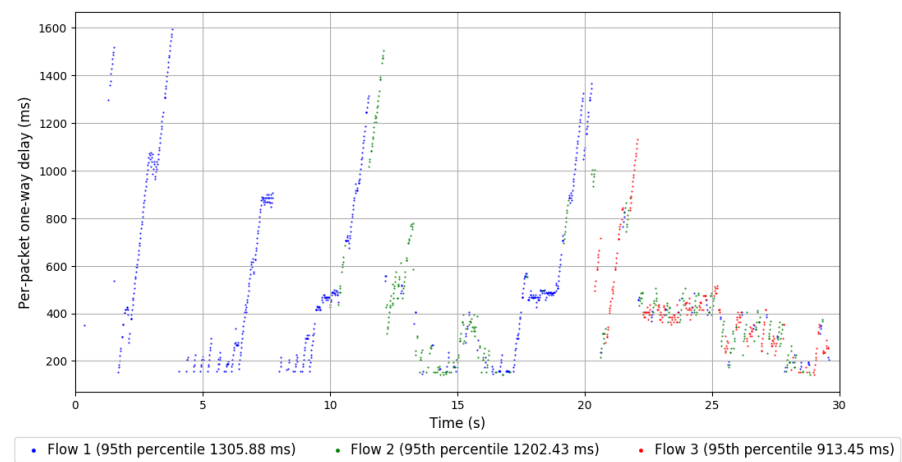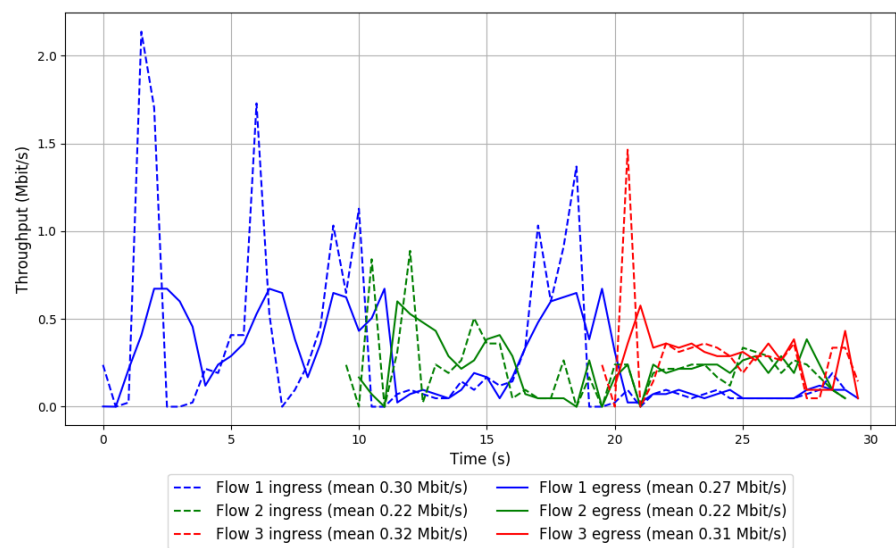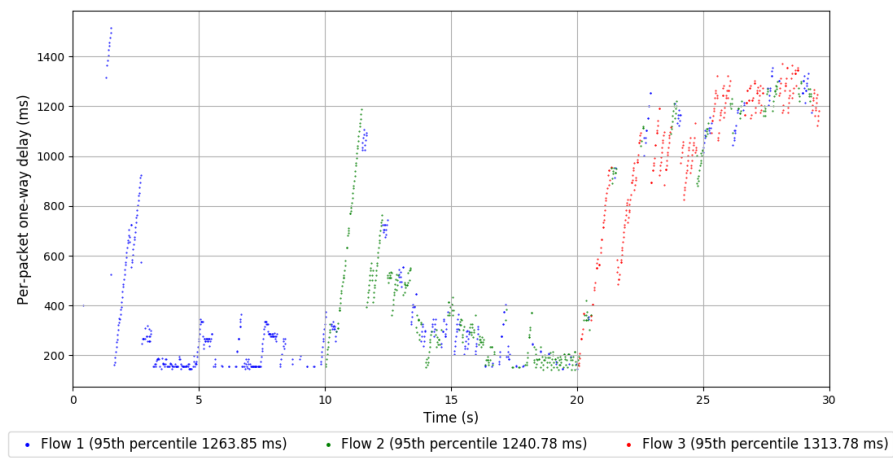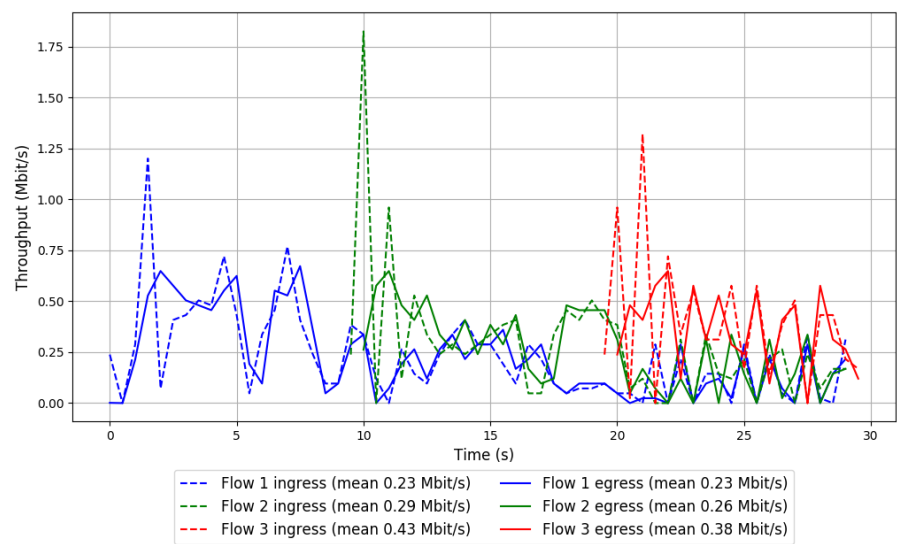
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2018-01-18 12:07:37
End at: 2018-01-18 12:08:07
Local clock offset: -0.727 ms
Remote clock offset: 1.955 ms


# Below is generated by plot.py at 2018-01-18 13:39:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.52 Mbit/s
95th percentile per-packet one-way delay: 1234.342 ms
Loss rate: 7.43%
-- Flow 1:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 1305.881 ms
Loss rate: 10.12%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 1202.431 ms
Loss rate: 1.93%
-- Flow 3:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 913.448 ms
Loss rate: 7.42%
```

Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2018-01-18 12:30:31
End at: 2018-01-18 12:31:01
Local clock offset: -0.972 ms
Remote clock offset: -3.763 ms


# Below is generated by plot.py at 2018-01-18 13:39:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.52 Mbit/s
95th percentile per-packet one-way delay: 1273.974 ms
Loss rate: 7.92%
-- Flow 1:
Average throughput: 0.23 Mbit/s
95th percentile per-packet one-way delay: 1263.854 ms
Loss rate: 2.68%
-- Flow 2:
Average throughput: 0.26 Mbit/s
95th percentile per-packet one-way delay: 1240.784 ms
Loss rate: 9.83%
-- Flow 3:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 1313.780 ms
Loss rate: 13.76%
```
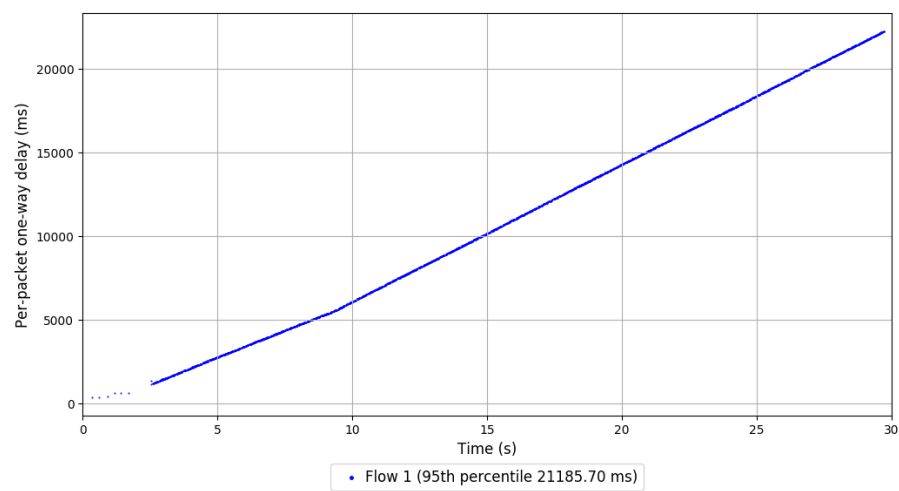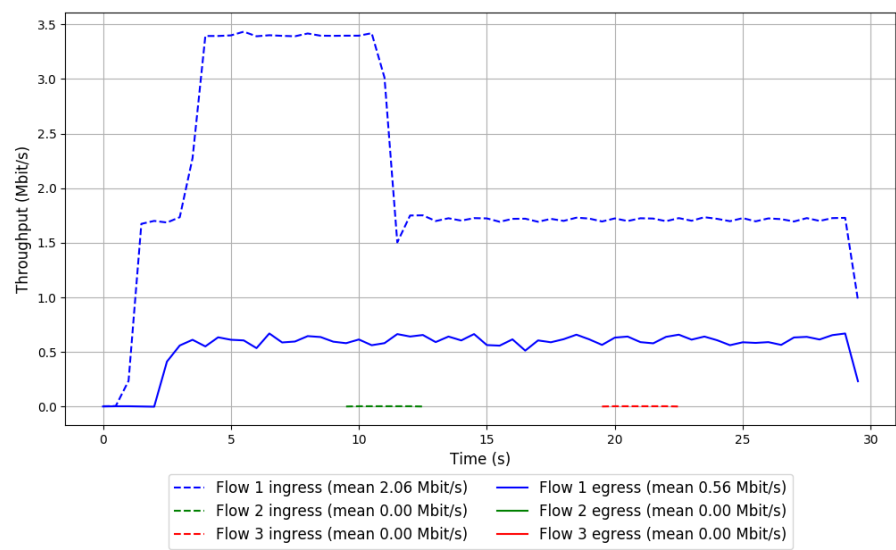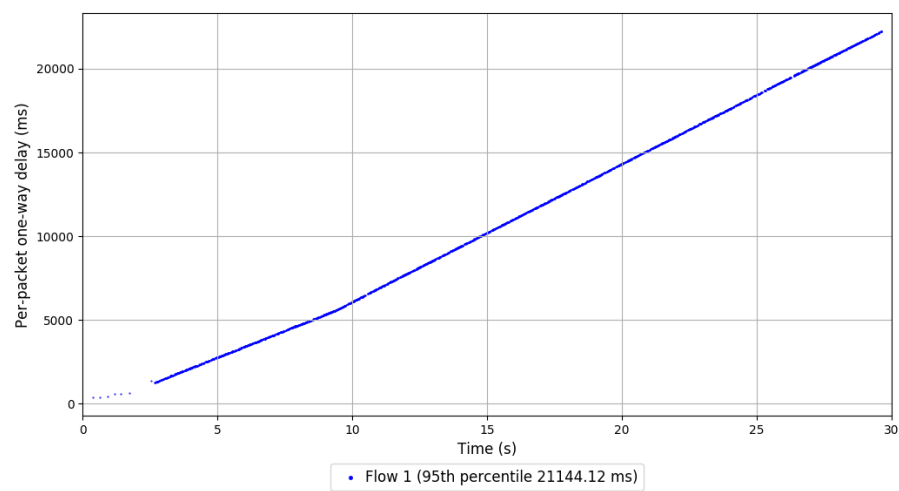
Run 3: Report of Indigo — Data Link

```
Run 1: Statistics of Vivace-latency

Start at: 2018-01-18 11:36:41
End at: 2018-01-18 11:37:11
Local clock offset: -0.161 ms
Remote clock offset: 2.526 ms


# Below is generated by plot.py at 2018-01-18 13:39:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 21185.703 ms
Loss rate: 73.12%
-- Flow 1:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 21185.703 ms
Loss rate: 73.10%
-- Flow 2:
Average throughput: 0.00 Mbit/s
-- Flow 3:
Average throughput: 0.00 Mbit/s
```

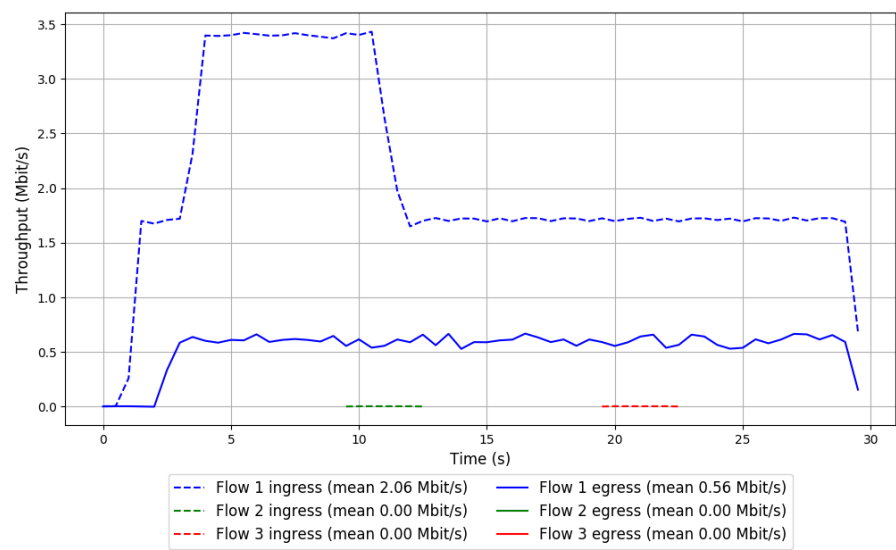Run 1: Report of Vivace-latency — Data Link

```
Run 2: Statistics of Vivace-latency

Start at: 2018-01-18 12:00:04
End at: 2018-01-18 12:00:34
Local clock offset: -0.768 ms
Remote clock offset: -2.519 ms


# Below is generated by plot.py at 2018-01-18 13:39:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 21144.115 ms
Loss rate: 73.40%
-- Flow 1:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 21144.115 ms
Loss rate: 73.39%
-- Flow 2:
Average throughput: 0.00 Mbit/s
-- Flow 3:
Average throughput: 0.00 Mbit/s
```
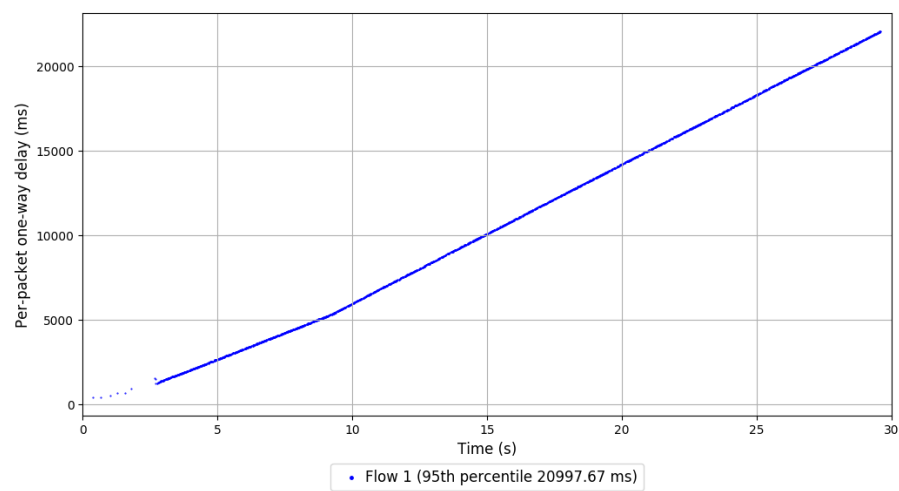
# Run 2: Report of Vivace-latency — Data Link

```
Run 3: Statistics of Vivace-latency

Start at: 2018-01-18 12:23:01
End at: 2018-01-18 12:23:31
Local clock offset: -0.915 ms
Remote clock offset: 1.675 ms


# Below is generated by plot.py at 2018-01-18 13:39:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 20997.665 ms
Loss rate: 73.16%
-- Flow 1:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 20997.665 ms
Loss rate: 73.15%
-- Flow 2:
Average throughput: 0.00 Mbit/s
-- Flow 3:
Average throughput: 0.00 Mbit/s
```
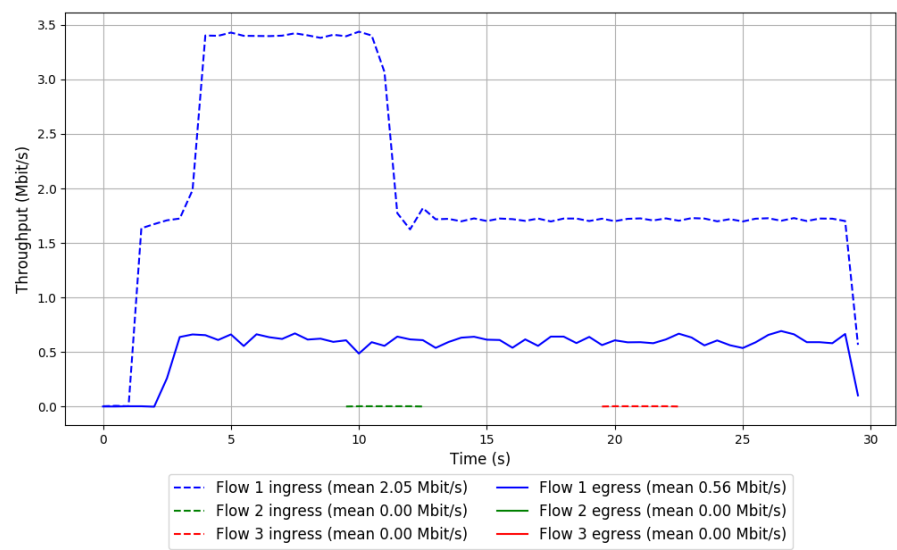
Run 3: Report of Vivace-latency — Data Link

```
Run 1: Statistics of Vivace-loss

Start at: 2018-01-18 11:31:40
End at: 2018-01-18 11:32:10
Local clock offset: -0.197 ms
Remote clock offset: 3.453 ms


# Below is generated by plot.py at 2018-01-18 13:39:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 20746.560 ms
Loss rate: 89.30%
-- Flow 1:
Average throughput: 0.55 Mbit/s
95th percentile per-packet one-way delay: 20746.560 ms
Loss rate: 89.30%
-- Flow 2:
Average throughput: 0.00 Mbit/s
-- Flow 3:
Average throughput: 0.00 Mbit/s
```
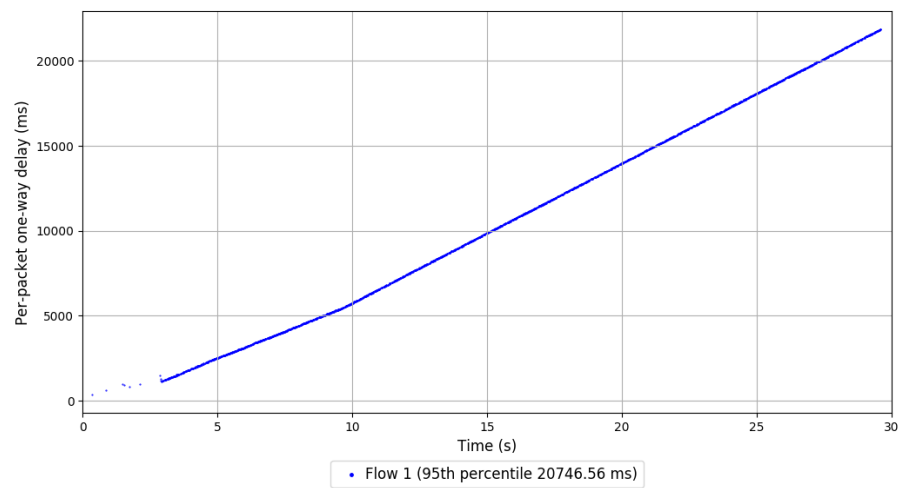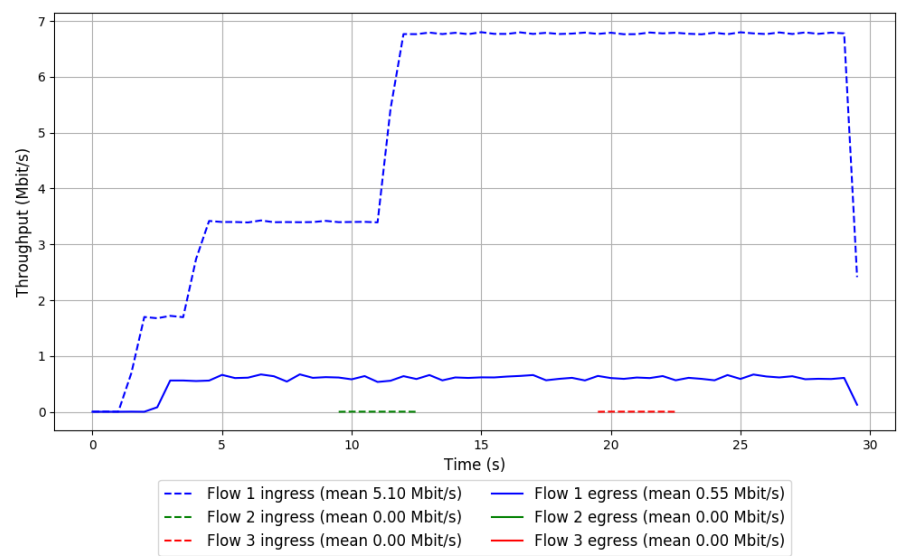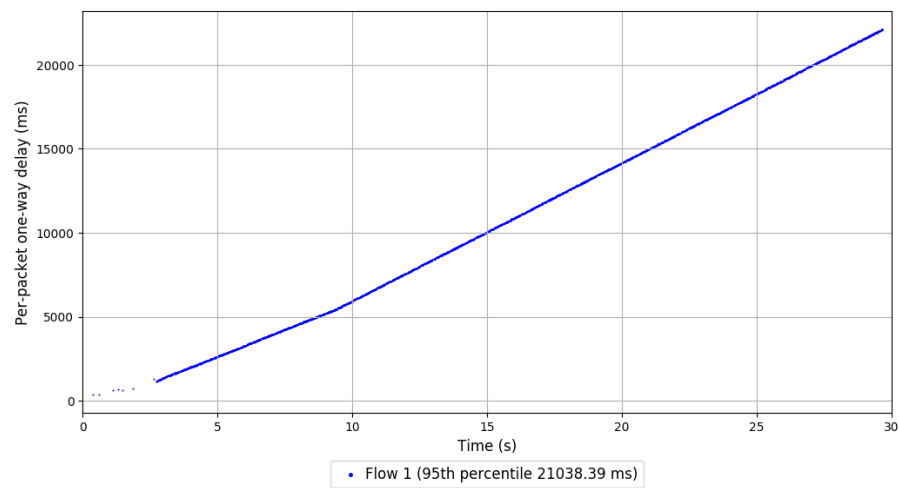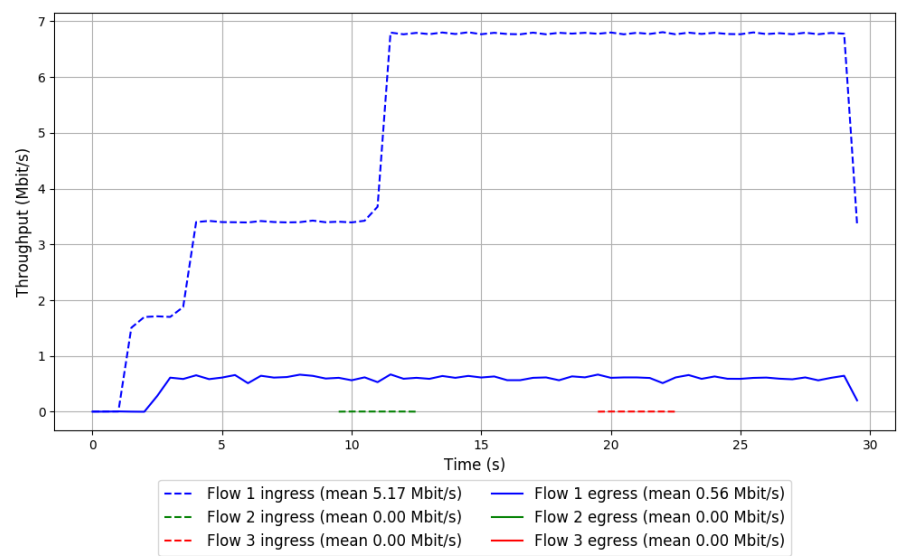
Run 1: Report of Vivace-loss — Data Link

```
Run 2: Statistics of Vivace-loss

Start at: 2018-01-18 11:55:03
End at: 2018-01-18 11:55:33
Local clock offset: -0.594 ms
Remote clock offset: -2.483 ms


# Below is generated by plot.py at 2018-01-18 13:39:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 21038.392 ms
Loss rate: 89.36%
-- Flow 1:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 21038.392 ms
Loss rate: 89.35%
-- Flow 2:
Average throughput: 0.00 Mbit/s
-- Flow 3:
Average throughput: 0.00 Mbit/s
```

Run 2: Report of Vivace-loss — Data Link

```
Run 3: Statistics of Vivace-loss

Start at: 2018-01-18 12:18:02
End at: 2018-01-18 12:18:32
Local clock offset: -0.782 ms
Remote clock offset: 1.75 ms


# Below is generated by plot.py at 2018-01-18 13:39:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 20921.291 ms
Loss rate: 89.34%
-- Flow 1:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 20921.291 ms
Loss rate: 89.34%
-- Flow 2:
Average throughput: 0.00 Mbit/s
-- Flow 3:
Average throughput: 0.00 Mbit/s
```
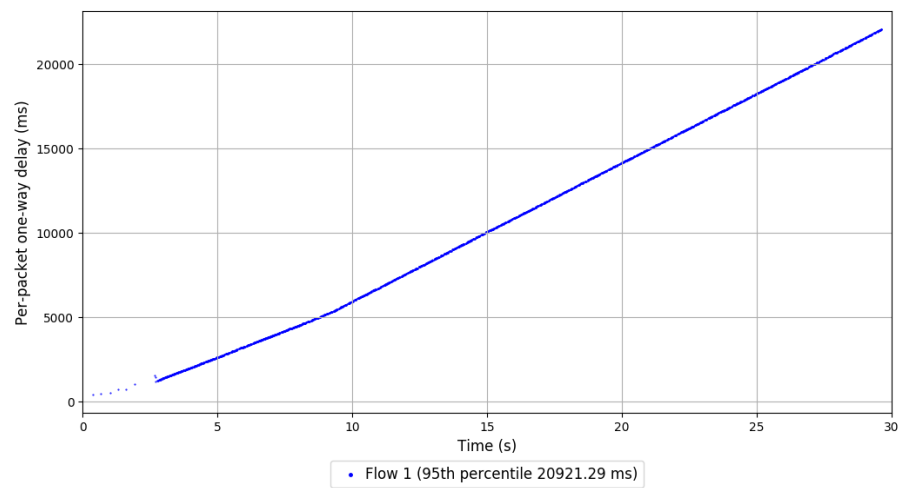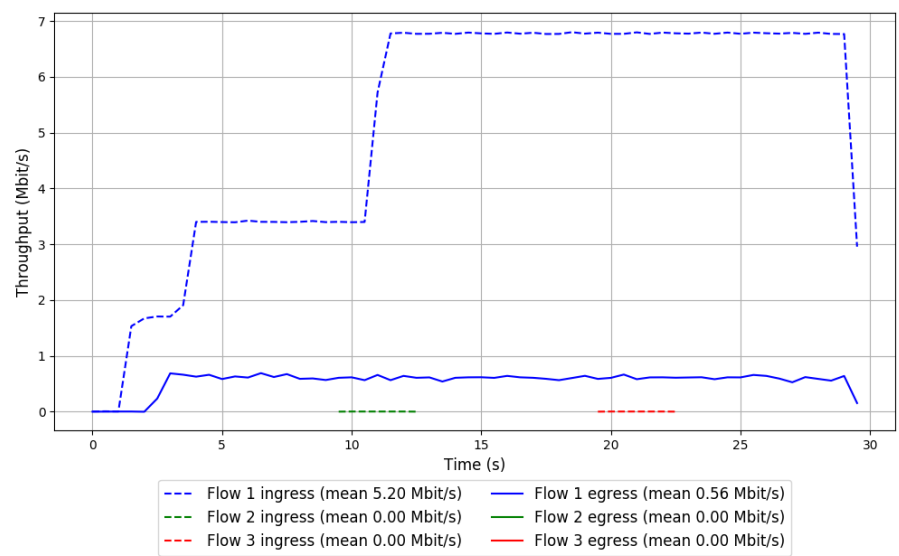
Run 3: Report of Vivace-loss — Data Link

```
Run 1: Statistics of Vivace-LTE

Start at: 2018-01-18 11:24:52
End at: 2018-01-18 11:25:22
Local clock offset: -0.298 ms
Remote clock offset: -3.315 ms
```

Run 1: Report of Vivace-LTE — Data Link

Figure is missing

Figure is missing

```
Run 2: Statistics of Vivace-LTE

Start at: 2018-01-18 11:47:56
End at: 2018-01-18 11:48:26
Local clock offset: -0.389 ms
Remote clock offset: 2.501 ms
```

Run 2: Report of Vivace-LTE — Data Link

Figure is missing

Figure is missing

```
Run 3: Statistics of Vivace-LTE

Start at: 2018-01-18 12:11:21
End at: 2018-01-18 12:11:51
Local clock offset: -0.729 ms
Remote clock offset: 1.911 ms
```

Run 3: Report of Vivace-LTE — Data Link

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