# Pantheon Report

Generated at 2019-02-12 06:32:15 (UTC).

Data path: Mexico on `em1` (*remote*) →AWS California 2 on `ens5` (*local*).

Repeated the test of 21 congestion control schemes 5 times.

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

NTP offsets were measured against `time.stanford.edu` and have been applied to correct the timestamps in logs.

```
System info:
Linux 4.15.0-1031-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 @ 7a686f7c2ed0a333082c0bab1fa5c921ab47e6ee
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 5ce721187ad823da20955337730c746486ca4966
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
 M receiver/src/buffer.h
 M receiver/src/core.cpp
 M sender/src/buffer.h
 M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
 M src/ScreamClient
 M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
 M src/examples/cellsim.cc
 M src/examples/sproutbt2.cc
 M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
 M src/verus.hpp
 M tools/plot.py
```
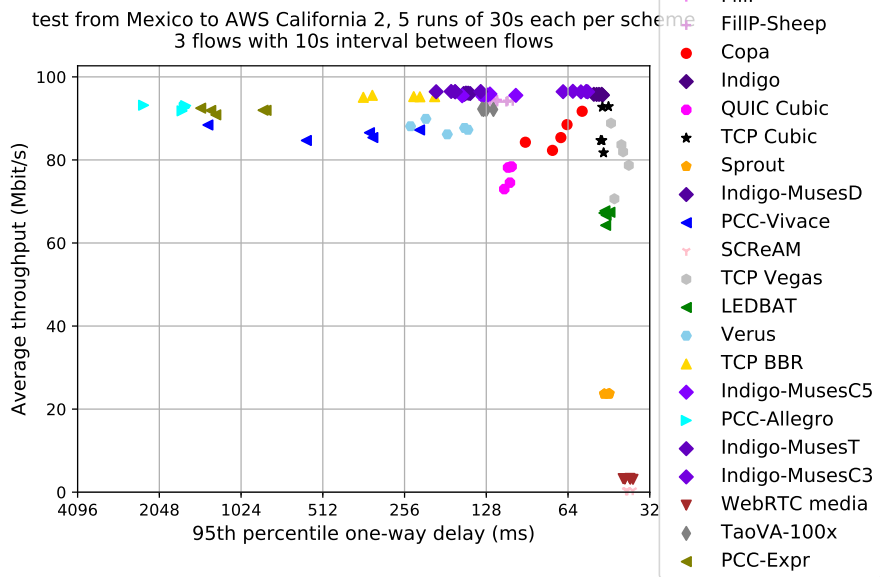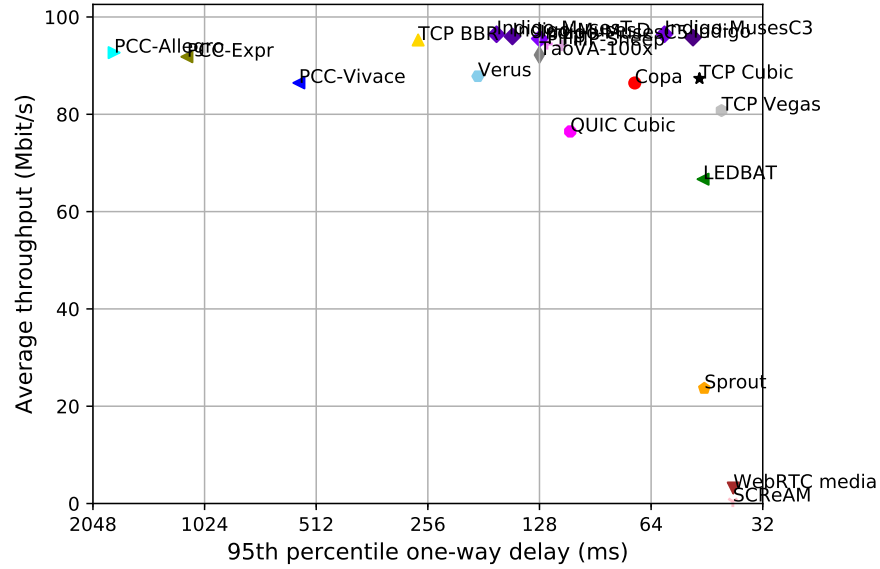
```
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

test from Mexico to AWS California 2, 5 runs of 30s each per scheme
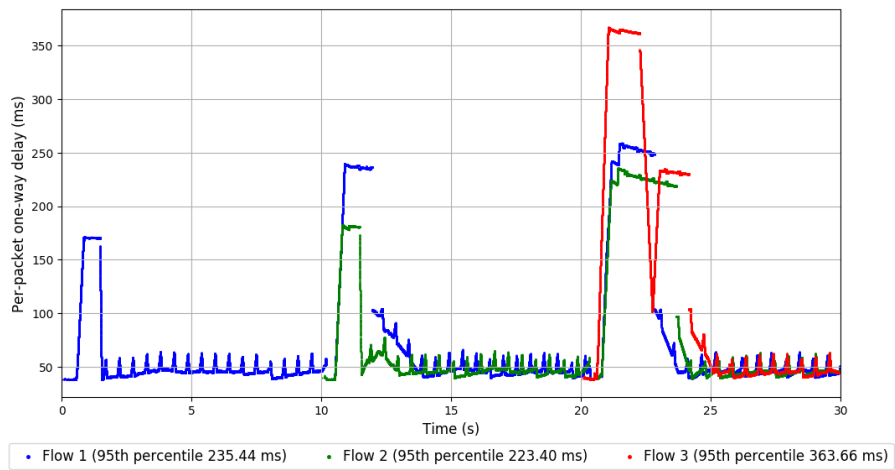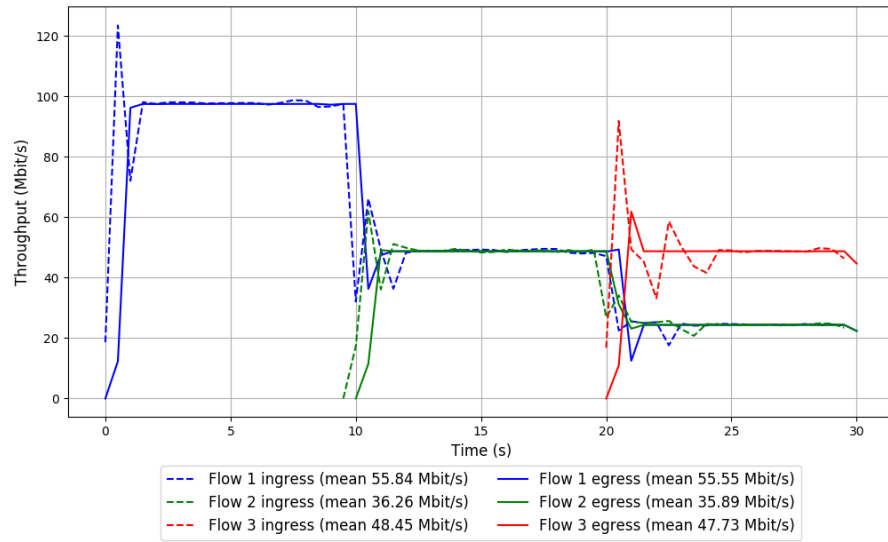3 flows with 10s interval between flows (mean of all runs by scheme)



test from Mexico to AWS California 2, 5 runs of 30s each per scheme
3 flows with 10s interval between flows

3

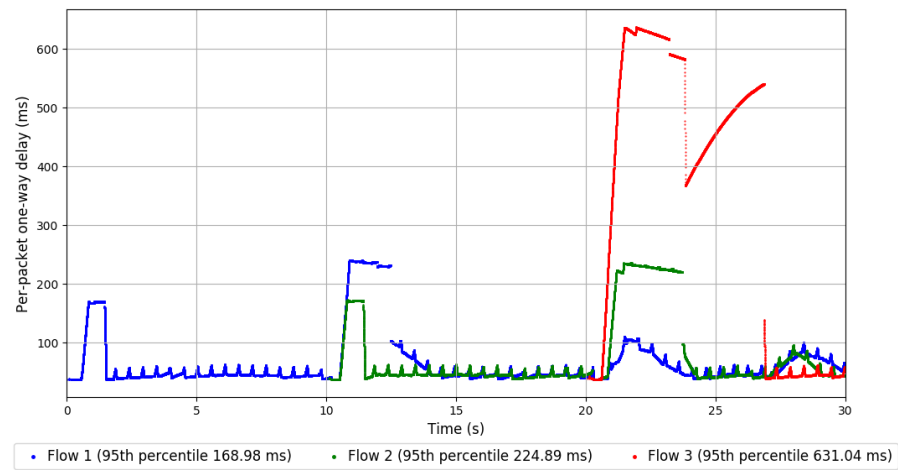| scheme | # runs | mean avg tput (Mbit/s) | | | mean 95th-%ile delay (ms) | | | mean loss rate (%) | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | flow 1 | flow 2 | flow 3 | flow 1 | flow 2 | flow 3 | flow 1 | flow 2 | flow 3 |
| TCP BBR | 5 | 59.53 | 37.44 | 32.71 | 182.58 | 235.86 | 503.36 | 0.80 | 1.60 | 5.88 |
| Copa | 5 | 52.15 | 36.09 | 30.99 | 105.96 | 52.68 | 62.79 | 0.12 | 0.23 | 0.74 |
| TCP Cubic | 5 | 50.48 | 36.25 | 38.48 | 48.38 | 46.31 | 47.28 | 0.14 | 0.33 | 0.71 |
| FillP | 5 | 54.73 | 44.14 | 31.33 | 113.33 | 120.58 | 125.11 | 0.40 | 2.71 | 2.95 |
| FillP-Sheep | 5 | 55.45 | 41.75 | 33.01 | 106.47 | 110.72 | 116.28 | 0.24 | 0.62 | 1.49 |
| Indigo | 5 | 59.02 | 36.02 | 39.07 | 48.96 | 51.89 | 46.65 | 0.17 | 0.38 | 0.74 |
| Indigo-MusesC3 | 5 | 61.00 | 39.69 | 32.70 | 55.72 | 64.88 | 54.87 | 0.22 | 0.42 | 1.00 |
| Indigo-MusesC5 | 5 | 57.07 | 43.95 | 33.35 | 122.82 | 118.97 | 124.33 | 1.62 | 2.81 | 4.11 |
| Indigo-MusesD | 5 | 61.86 | 39.71 | 28.26 | 153.65 | 96.45 | 83.39 | 5.76 | 5.30 | 3.71 |
| Indigo-MusesT | 5 | 61.66 | 38.11 | 34.03 | 134.27 | 226.86 | 199.32 | 1.67 | 5.55 | 7.63 |
| LEDBAT | 5 | 39.34 | 30.53 | 21.24 | 46.26 | 46.58 | 46.70 | 0.17 | 0.36 | 0.98 |
| PCC-Allegro | 5 | 57.68 | 37.37 | 30.93 | 1824.77 | 1407.97 | 285.46 | 20.68 | 14.33 | 2.71 |
| PCC-Expr | 5 | 58.18 | 37.43 | 26.67 | 909.23 | 1081.41 | 192.54 | 29.96 | 15.69 | 2.48 |
| QUIC Cubic | 5 | 42.62 | 37.97 | 26.20 | 99.77 | 109.23 | 129.64 | 0.24 | 0.40 | 1.09 |
| SCReAM | 5 | 0.21 | 0.21 | 0.22 | 38.49 | 38.53 | 38.50 | 0.16 | 0.39 | 0.71 |
| Sprout | 5 | 11.96 | 11.89 | 11.60 | 45.76 | 46.20 | 46.29 | 0.24 | 0.37 | 0.75 |
| TaoVA-100x | 5 | 54.69 | 40.01 | 32.82 | 122.10 | 128.95 | 142.08 | 0.78 | 1.39 | 3.54 |
| TCP Vegas | 5 | 47.30 | 33.32 | 34.11 | 44.95 | 40.97 | 41.56 | 0.17 | 0.28 | 0.75 |
| Verus | 5 | 56.26 | 33.27 | 28.56 | 153.70 | 195.99 | 507.92 | 0.55 | 0.72 | 1.10 |
| PCC-Vivace | 5 | 56.17 | 34.91 | 21.55 | 625.90 | 276.56 | 271.23 | 2.16 | 2.35 | 5.16 |
| WebRTC media | 5 | 1.77 | 0.99 | 0.43 | 38.33 | 38.41 | 38.71 | 0.11 | 0.13 | 0.32 |

```
Run 1: Statistics of TCP BBR

Start at: 2019-02-12 04:32:30
End at: 2019-02-12 04:33:00
Local clock offset: 4.119 ms
Remote clock offset: -9.536 ms


# Below is generated by plot.py at 2019-02-12 06:19:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.26 Mbit/s
95th percentile per-packet one-way delay: 236.813 ms
Loss rate: 1.13%
-- Flow 1:
Average throughput: 55.55 Mbit/s
95th percentile per-packet one-way delay: 235.440 ms
Loss rate: 0.73%
-- Flow 2:
Average throughput: 35.89 Mbit/s
95th percentile per-packet one-way delay: 223.403 ms
Loss rate: 1.37%
-- Flow 3:
Average throughput: 47.73 Mbit/s
95th percentile per-packet one-way delay: 363.657 ms
Loss rate: 2.14%
```
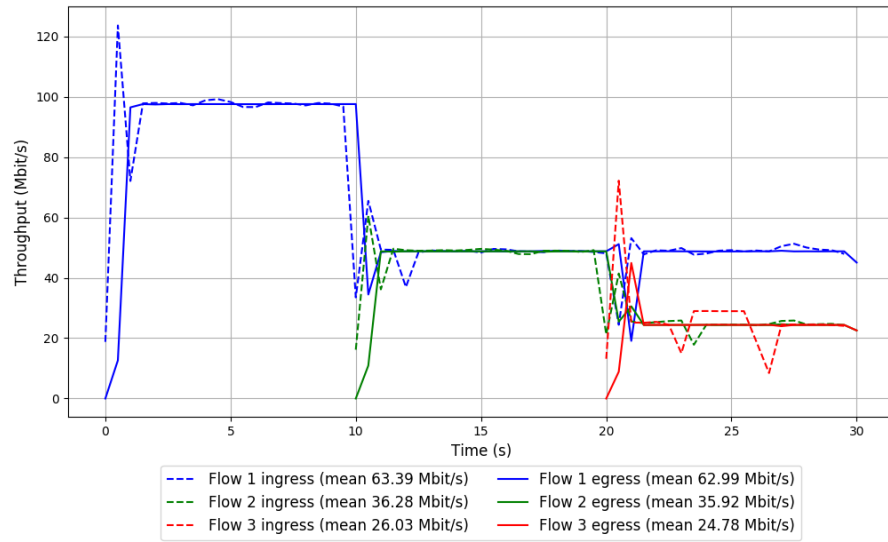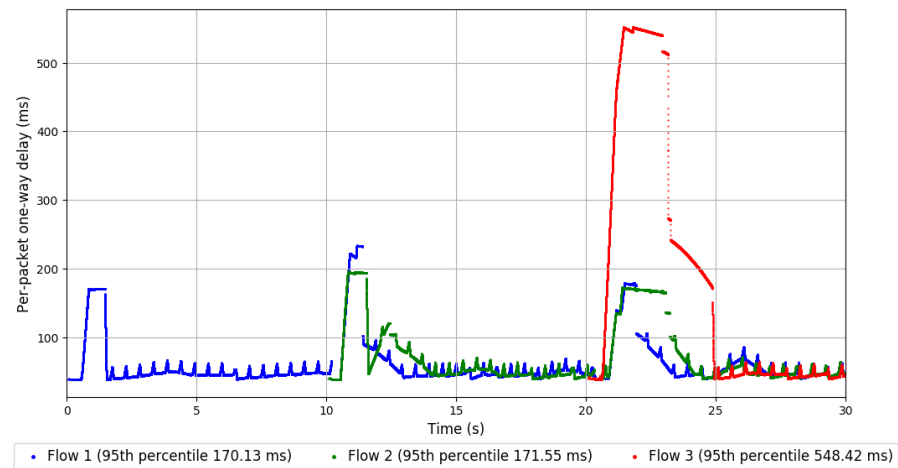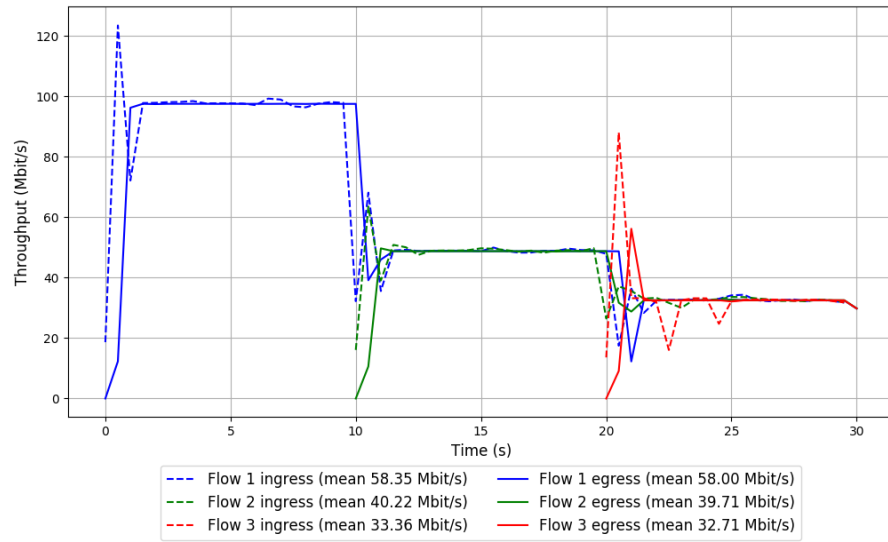
## Run 1: Report of TCP BBR — Data Link



Flow 1 ingress (mean 55.84 Mbit/s) --- Flow 1 egress (mean 55.55 Mbit/s)
Flow 2 ingress (mean 36.26 Mbit/s) --- Flow 2 egress (mean 35.89 Mbit/s)
Flow 3 ingress (mean 48.45 Mbit/s) --- Flow 3 egress (mean 47.73 Mbit/s)



Flow 1 (95th percentile 235.44 ms)  •  Flow 2 (95th percentile 223.40 ms)  •  Flow 3 (95th percentile 363.66 ms)

```
Run 2: Statistics of TCP BBR

Start at: 2019-02-12 04:58:11
End at: 2019-02-12 04:58:41
Local clock offset: 3.753 ms
Remote clock offset: -5.946 ms


# Below is generated by plot.py at 2019-02-12 06:19:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.08 Mbit/s
95th percentile per-packet one-way delay: 363.084 ms
Loss rate: 1.38%
-- Flow 1:
Average throughput: 62.99 Mbit/s
95th percentile per-packet one-way delay: 168.981 ms
Loss rate: 0.85%
-- Flow 2:
Average throughput: 35.92 Mbit/s
95th percentile per-packet one-way delay: 224.888 ms
Loss rate: 1.32%
-- Flow 3:
Average throughput: 24.78 Mbit/s
95th percentile per-packet one-way delay: 631.045 ms
Loss rate: 5.44%
```
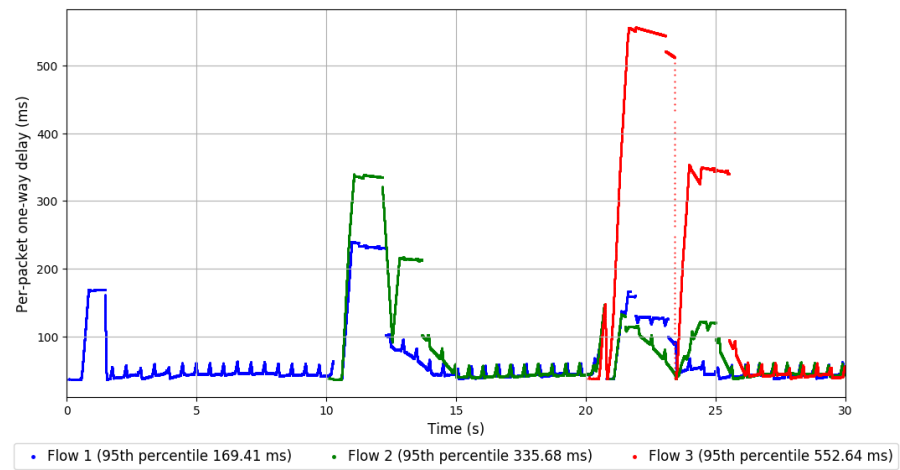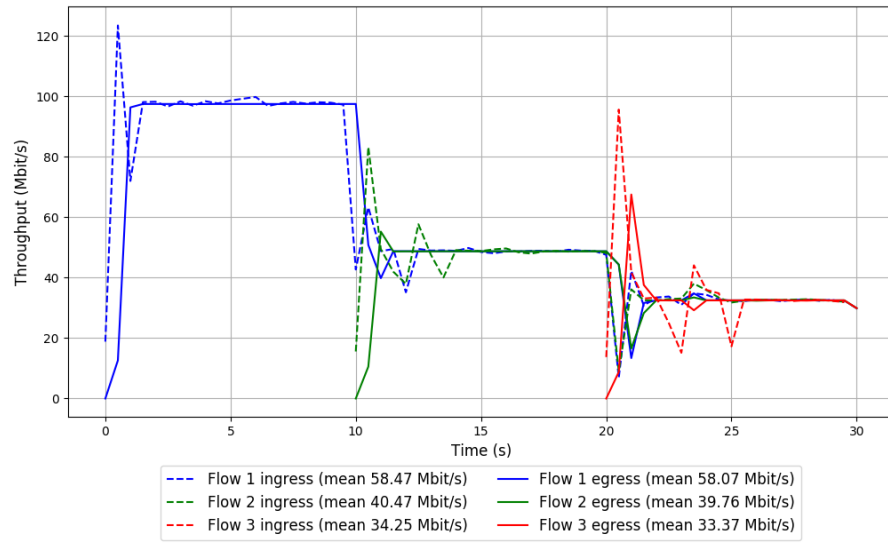
Run 2: Report of TCP BBR — Data Link



Flow 1 ingress (mean 63.39 Mbit/s) --- Flow 1 egress (mean 62.99 Mbit/s)
Flow 2 ingress (mean 36.28 Mbit/s) --- Flow 2 egress (mean 35.92 Mbit/s)
Flow 3 ingress (mean 26.03 Mbit/s) --- Flow 3 egress (mean 24.78 Mbit/s)



Flow 1 (95th percentile 168.98 ms)   Flow 2 (95th percentile 224.89 ms)   Flow 3 (95th percentile 631.04 ms)
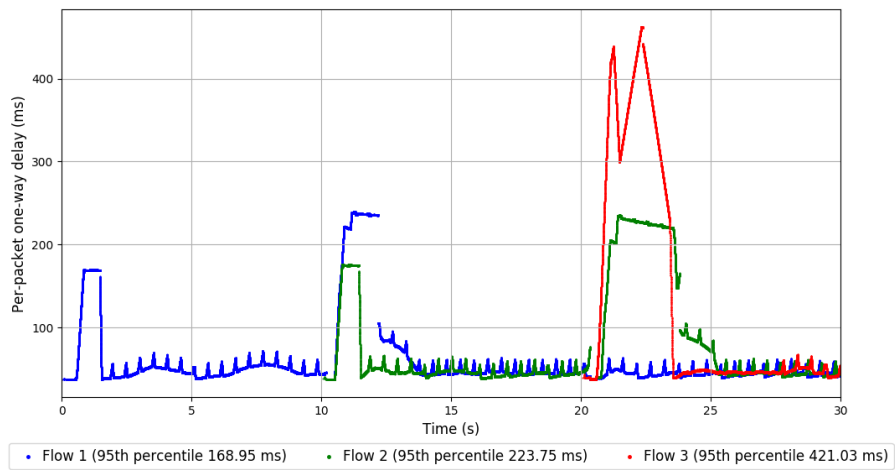
```
Run 3: Statistics of TCP BBR

Start at: 2019-02-12 05:23:57
End at: 2019-02-12 05:24:27
Local clock offset: 3.438 ms
Remote clock offset: -6.332 ms


# Below is generated by plot.py at 2019-02-12 06:19:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.24 Mbit/s
95th percentile per-packet one-way delay: 198.349 ms
Loss rate: 1.24%
-- Flow 1:
Average throughput: 58.00 Mbit/s
95th percentile per-packet one-way delay: 170.126 ms
Loss rate: 0.82%
-- Flow 2:
Average throughput: 39.71 Mbit/s
95th percentile per-packet one-way delay: 171.553 ms
Loss rate: 1.59%
-- Flow 3:
Average throughput: 32.71 Mbit/s
95th percentile per-packet one-way delay: 548.418 ms
Loss rate: 2.60%
```
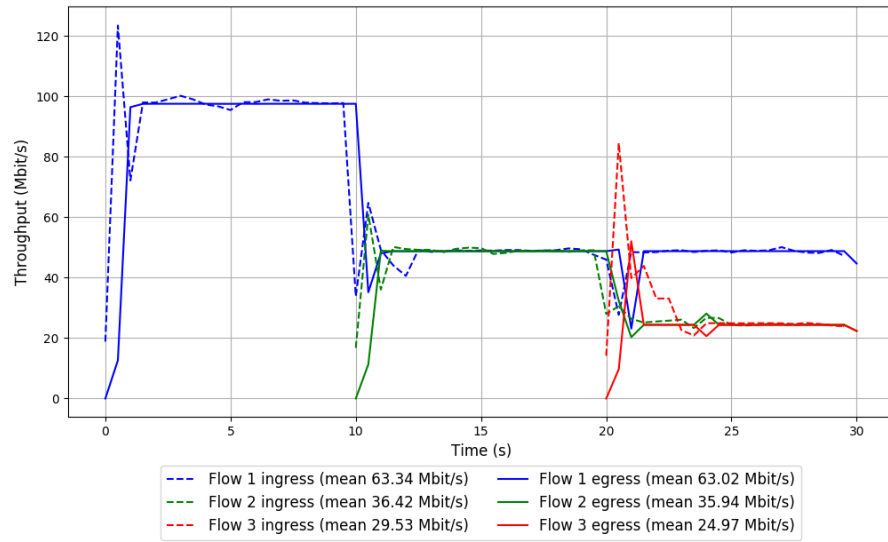
# Run 3: Report of TCP BBR — Data Link



- - - Flow 1 ingress (mean 58.35 Mbit/s) —— Flow 1 egress (mean 58.00 Mbit/s)
- - - Flow 2 ingress (mean 40.22 Mbit/s) —— Flow 2 egress (mean 39.71 Mbit/s)
- - - Flow 3 ingress (mean 33.36 Mbit/s) —— Flow 3 egress (mean 32.71 Mbit/s)



- Flow 1 (95th percentile 170.13 ms)  • Flow 2 (95th percentile 171.55 ms)  • Flow 3 (95th percentile 548.42 ms)

```
Run 4: Statistics of TCP BBR

Start at: 2019-02-12 05:49:40
End at: 2019-02-12 05:50:10
Local clock offset: 0.269 ms
Remote clock offset: -3.489 ms


# Below is generated by plot.py at 2019-02-12 06:19:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.57 Mbit/s
95th percentile per-packet one-way delay: 336.337 ms
Loss rate: 1.50%
-- Flow 1:
Average throughput: 58.07 Mbit/s
95th percentile per-packet one-way delay: 169.414 ms
Loss rate: 0.91%
-- Flow 2:
Average throughput: 39.76 Mbit/s
95th percentile per-packet one-way delay: 335.684 ms
Loss rate: 2.06%
-- Flow 3:
Average throughput: 33.37 Mbit/s
95th percentile per-packet one-way delay: 552.636 ms
Loss rate: 3.23%
```
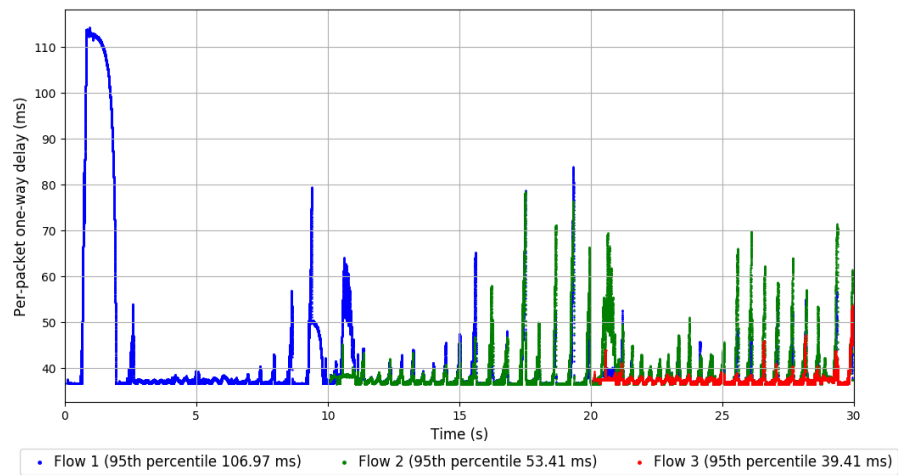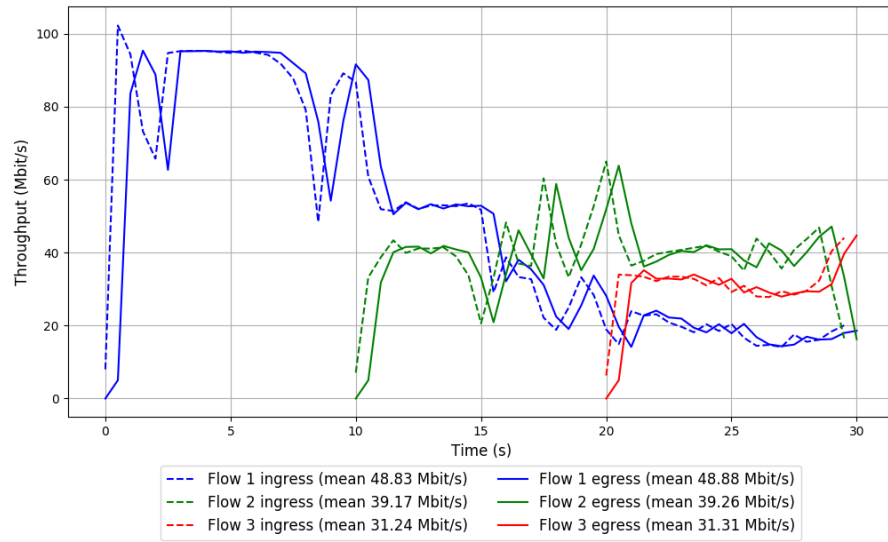
## Run 4: Report of TCP BBR — Data Link



Flow 1 ingress (mean 58.47 Mbit/s) — Flow 1 egress (mean 58.07 Mbit/s)
Flow 2 ingress (mean 40.47 Mbit/s) — Flow 2 egress (mean 39.76 Mbit/s)
Flow 3 ingress (mean 34.25 Mbit/s) — Flow 3 egress (mean 33.37 Mbit/s)



Flow 1 (95th percentile 169.41 ms)   Flow 2 (95th percentile 335.68 ms)   Flow 3 (95th percentile 552.64 ms)

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```
Run 5: Statistics of TCP BBR

Start at: 2019-02-12 06:15:27
End at: 2019-02-12 06:15:57
Local clock offset: -2.77 ms
Remote clock offset: -3.062 ms


# Below is generated by plot.py at 2019-02-12 06:19:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.21 Mbit/s
95th percentile per-packet one-way delay: 224.806 ms
Loss rate: 2.48%
-- Flow 1:
Average throughput: 63.02 Mbit/s
95th percentile per-packet one-way delay: 168.948 ms
Loss rate: 0.70%
-- Flow 2:
Average throughput: 35.94 Mbit/s
95th percentile per-packet one-way delay: 223.754 ms
Loss rate: 1.65%
-- Flow 3:
Average throughput: 24.97 Mbit/s
95th percentile per-packet one-way delay: 421.026 ms
Loss rate: 16.00%
```

# Run 5: Report of TCP BBR — Data Link



Flow 1 ingress (mean 63.34 Mbit/s) --- Flow 1 egress (mean 63.02 Mbit/s)
Flow 2 ingress (mean 36.42 Mbit/s) --- Flow 2 egress (mean 35.94 Mbit/s)
Flow 3 ingress (mean 29.53 Mbit/s) --- Flow 3 egress (mean 24.97 Mbit/s)



Flow 1 (95th percentile 168.95 ms)   Flow 2 (95th percentile 223.75 ms)   Flow 3 (95th percentile 421.03 ms)

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```
Run 1: Statistics of Copa

Start at: 2019-02-12 04:12:47
End at: 2019-02-12 04:13:17
Local clock offset: 2.33 ms
Remote clock offset: -8.719 ms


# Below is generated by plot.py at 2019-02-12 06:20:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.38 Mbit/s
95th percentile per-packet one-way delay: 68.005 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 48.88 Mbit/s
95th percentile per-packet one-way delay: 106.968 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 39.26 Mbit/s
95th percentile per-packet one-way delay: 53.408 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 31.31 Mbit/s
95th percentile per-packet one-way delay: 39.405 ms
Loss rate: 0.45%
```
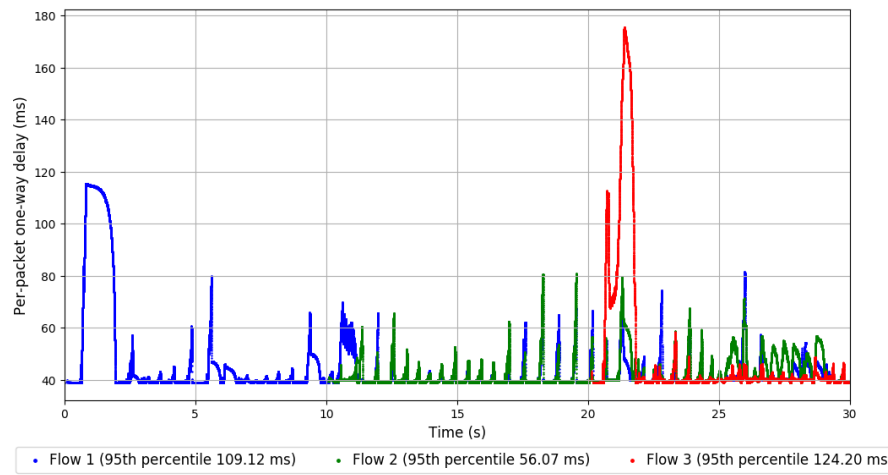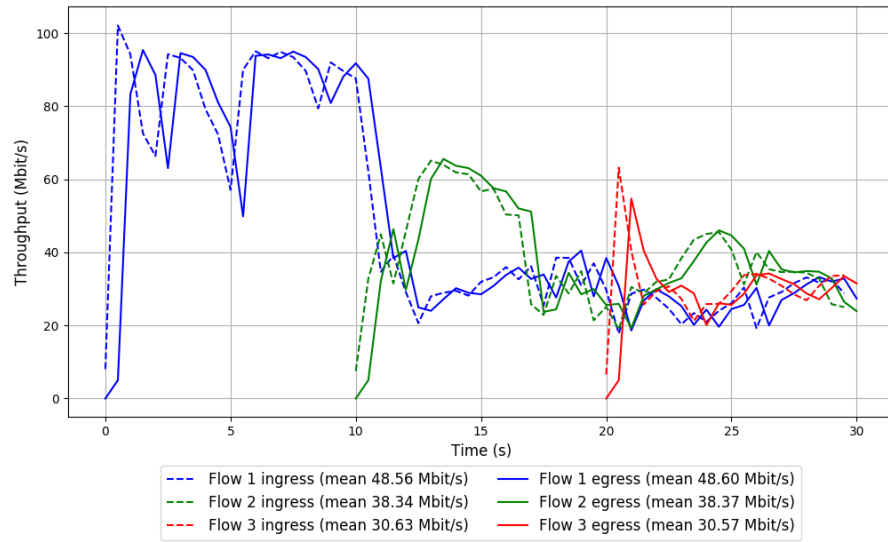
Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: 2019-02-12 04:38:46
End at: 2019-02-12 04:39:16
Local clock offset: 3.88 ms
Remote clock offset: -7.401 ms


# Below is generated by plot.py at 2019-02-12 06:20:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.50 Mbit/s
95th percentile per-packet one-way delay: 64.539 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 53.51 Mbit/s
95th percentile per-packet one-way delay: 105.287 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 40.91 Mbit/s
95th percentile per-packet one-way delay: 46.354 ms
Loss rate: 0.23%
-- Flow 3:
Average throughput: 23.47 Mbit/s
95th percentile per-packet one-way delay: 56.840 ms
Loss rate: 0.92%
```

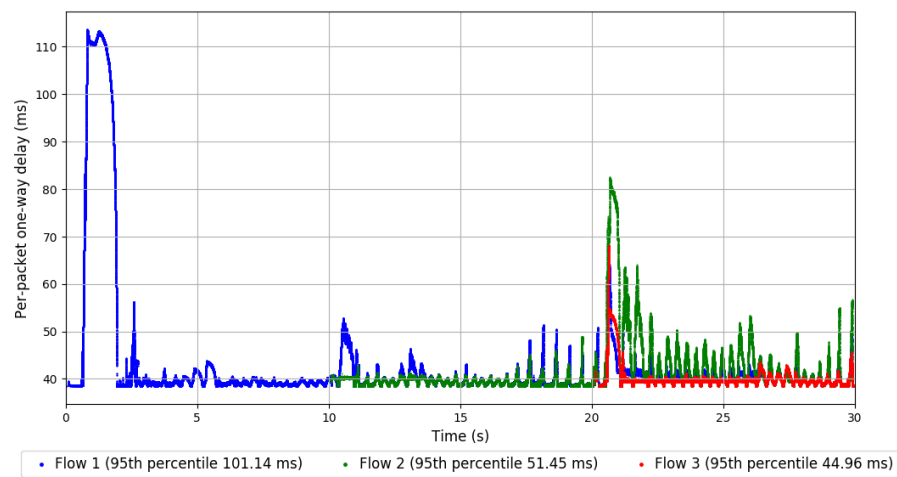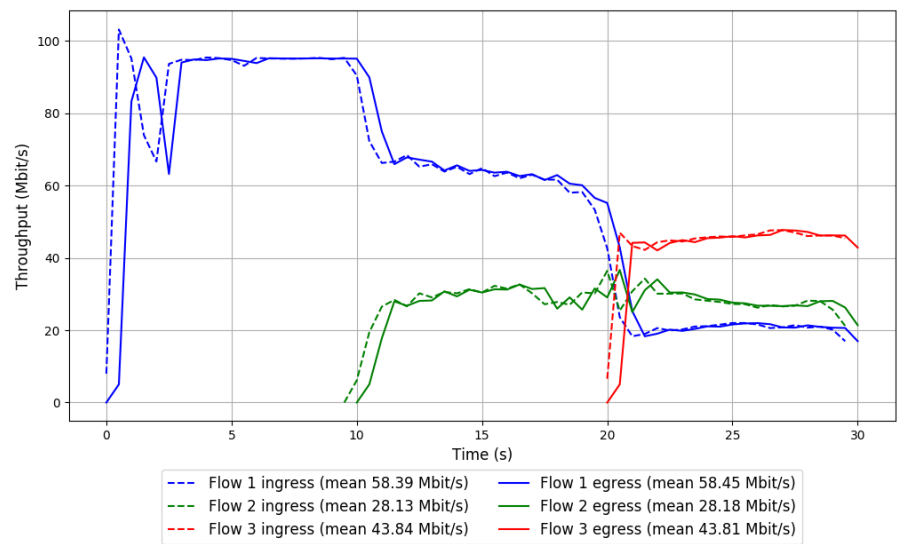Run 2: Report of Copa — Data Link





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```
Run 3: Statistics of Copa

Start at: 2019-02-12 05:04:24
End at: 2019-02-12 05:04:54
Local clock offset: 3.846 ms
Remote clock offset: -7.705 ms


# Below is generated by plot.py at 2019-02-12 06:20:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.26 Mbit/s
95th percentile per-packet one-way delay: 91.889 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 48.60 Mbit/s
95th percentile per-packet one-way delay: 109.125 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 38.37 Mbit/s
95th percentile per-packet one-way delay: 56.072 ms
Loss rate: 0.24%
-- Flow 3:
Average throughput: 30.57 Mbit/s
95th percentile per-packet one-way delay: 124.205 ms
Loss rate: 0.87%
```
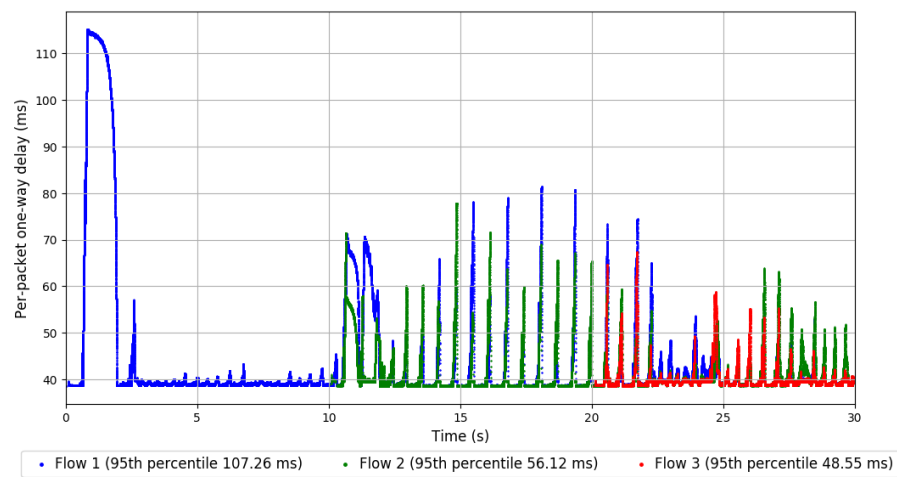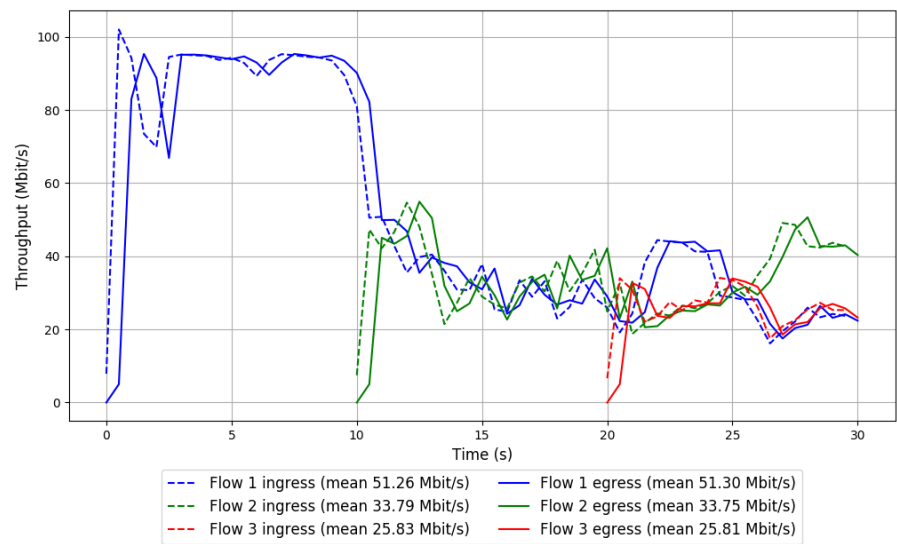
Run 3: Report of Copa — Data Link



Flow 1 ingress (mean 48.56 Mbit/s) --- Flow 1 egress (mean 48.60 Mbit/s)
Flow 2 ingress (mean 38.34 Mbit/s) --- Flow 2 egress (mean 38.37 Mbit/s)
Flow 3 ingress (mean 30.63 Mbit/s) --- Flow 3 egress (mean 30.57 Mbit/s)



Flow 1 (95th percentile 109.12 ms)   Flow 2 (95th percentile 56.07 ms)   Flow 3 (95th percentile 124.20 ms)

```
Run 4: Statistics of Copa

Start at: 2019-02-12 05:30:14
End at: 2019-02-12 05:30:44
Local clock offset: 3.474 ms
Remote clock offset: -6.108 ms


# Below is generated by plot.py at 2019-02-12 06:21:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.72 Mbit/s
95th percentile per-packet one-way delay: 56.769 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 58.45 Mbit/s
95th percentile per-packet one-way delay: 101.136 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 28.18 Mbit/s
95th percentile per-packet one-way delay: 51.455 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 43.81 Mbit/s
95th percentile per-packet one-way delay: 44.963 ms
Loss rate: 0.73%
```
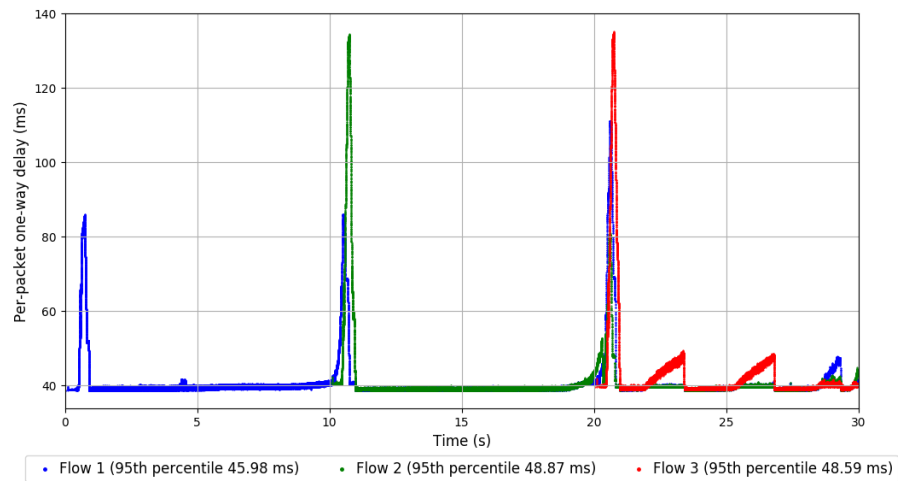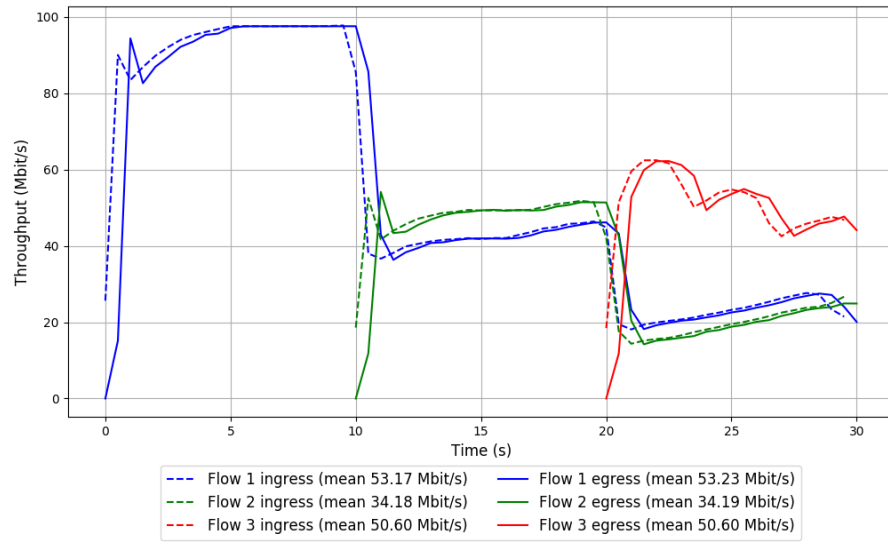
Run 4: Report of Copa — Data Link



Flow 1 ingress (mean 58.39 Mbit/s) ----    Flow 1 egress (mean 58.45 Mbit/s) ——
Flow 2 ingress (mean 28.13 Mbit/s) ----    Flow 2 egress (mean 28.18 Mbit/s) ——
Flow 3 ingress (mean 43.84 Mbit/s) ----    Flow 3 egress (mean 43.81 Mbit/s) ——



•  Flow 1 (95th percentile 101.14 ms)    •  Flow 2 (95th percentile 51.45 ms)    •  Flow 3 (95th percentile 44.96 ms)

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```
Run 5: Statistics of Copa

Start at: 2019-02-12 05:55:58
End at: 2019-02-12 05:56:28
Local clock offset: -0.245 ms
Remote clock offset: -5.118 ms


# Below is generated by plot.py at 2019-02-12 06:21:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 82.30 Mbit/s
95th percentile per-packet one-way delay: 73.005 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 51.30 Mbit/s
95th percentile per-packet one-way delay: 107.260 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 33.75 Mbit/s
95th percentile per-packet one-way delay: 56.119 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 25.81 Mbit/s
95th percentile per-packet one-way delay: 48.554 ms
Loss rate: 0.74%
```

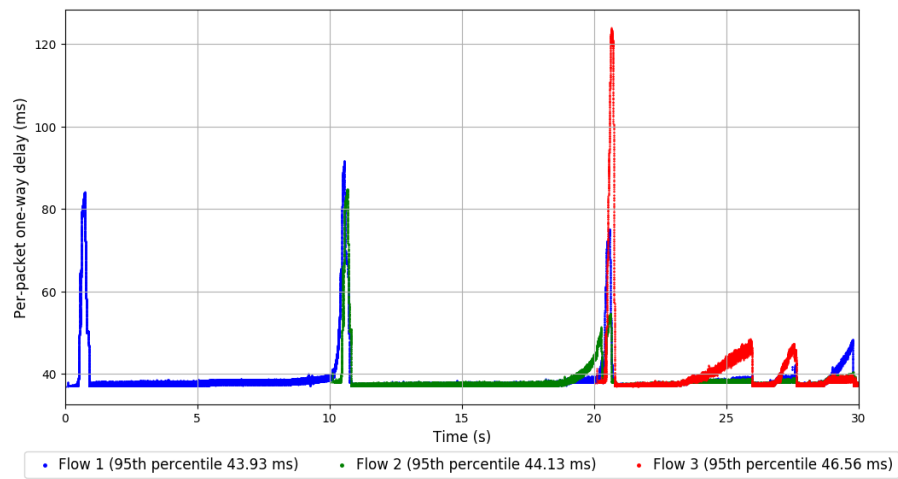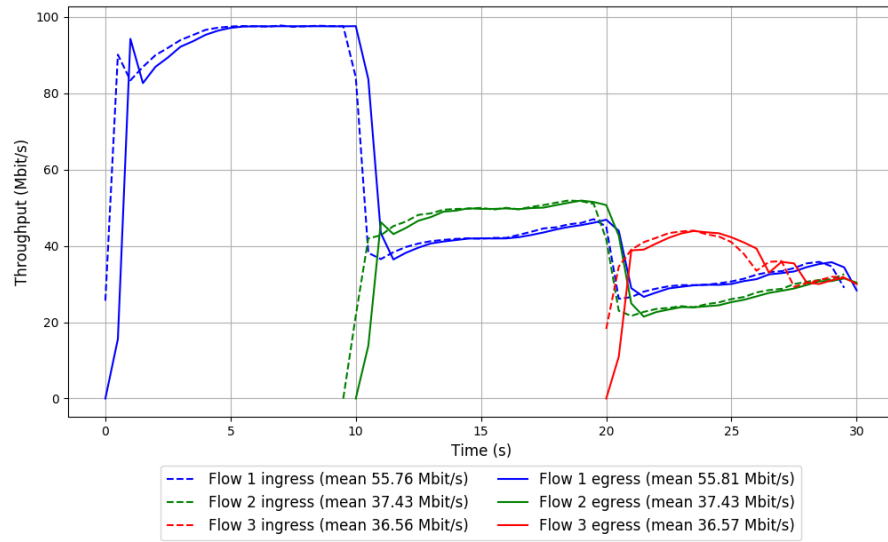# Run 5: Report of Copa — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2019-02-12 04:15:15
End at: 2019-02-12 04:15:45
Local clock offset: 2.706 ms
Remote clock offset: -10.863 ms


# Below is generated by plot.py at 2019-02-12 06:21:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.73 Mbit/s
95th percentile per-packet one-way delay: 47.801 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 53.23 Mbit/s
95th percentile per-packet one-way delay: 45.976 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 34.19 Mbit/s
95th percentile per-packet one-way delay: 48.874 ms
Loss rate: 0.31%
-- Flow 3:
Average throughput: 50.60 Mbit/s
95th percentile per-packet one-way delay: 48.587 ms
Loss rate: 0.66%
```
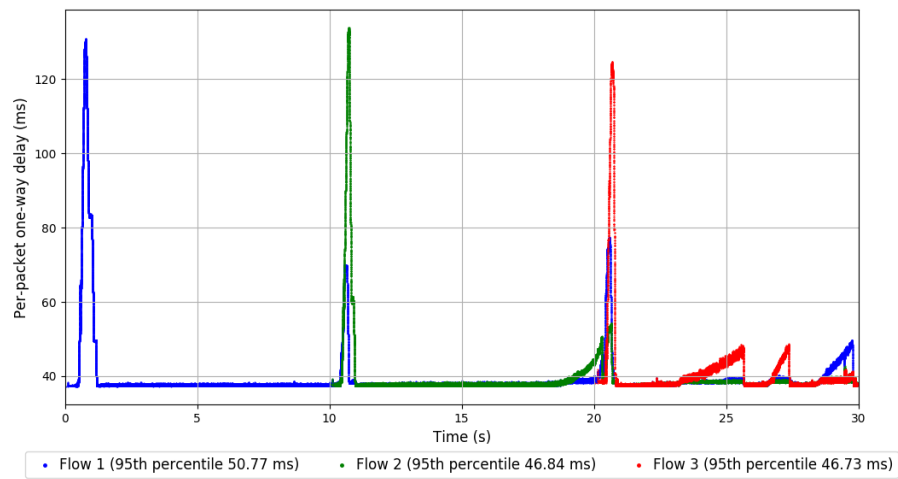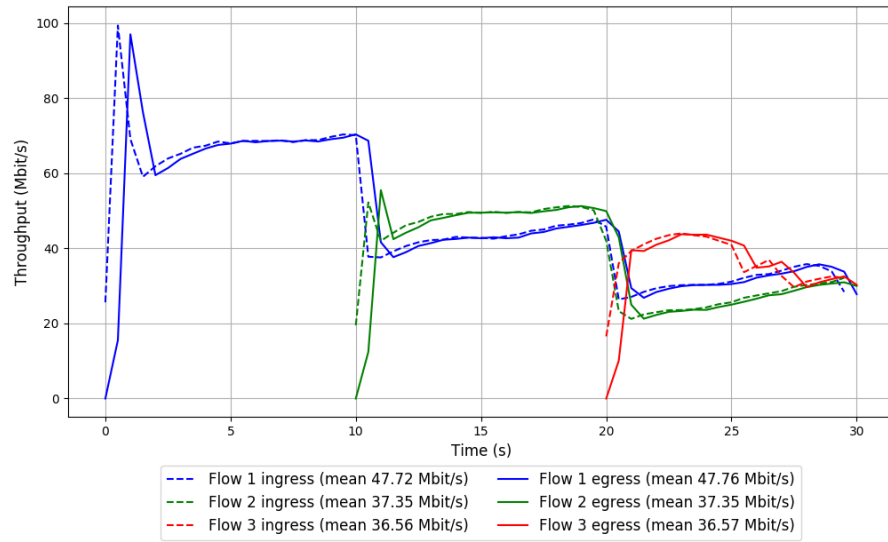
Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2019-02-12 04:41:11
End at: 2019-02-12 04:41:41
Local clock offset: 3.791 ms
Remote clock offset: -7.444 ms


# Below is generated by plot.py at 2019-02-12 06:21:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.86 Mbit/s
95th percentile per-packet one-way delay: 45.408 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 55.81 Mbit/s
95th percentile per-packet one-way delay: 43.933 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 37.43 Mbit/s
95th percentile per-packet one-way delay: 44.129 ms
Loss rate: 0.33%
-- Flow 3:
Average throughput: 36.57 Mbit/s
95th percentile per-packet one-way delay: 46.561 ms
Loss rate: 0.62%
```
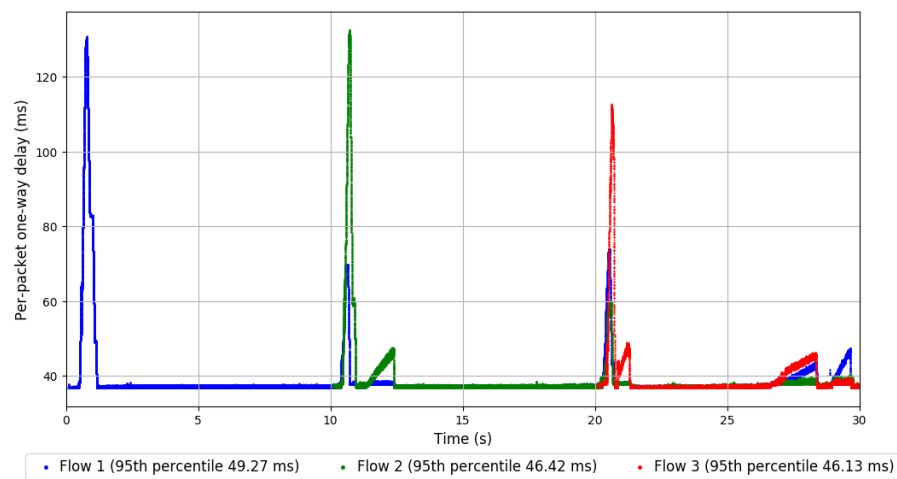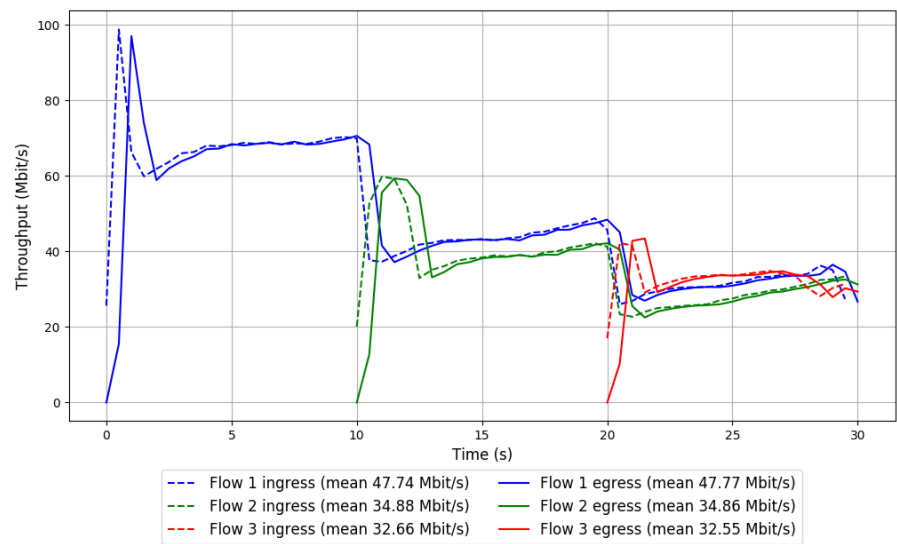
Run 2: Report of TCP Cubic — Data Link



- - - Flow 1 ingress (mean 55.76 Mbit/s) —— Flow 1 egress (mean 55.81 Mbit/s)
- - - Flow 2 ingress (mean 37.43 Mbit/s) —— Flow 2 egress (mean 37.43 Mbit/s)
- - - Flow 3 ingress (mean 36.56 Mbit/s) —— Flow 3 egress (mean 36.57 Mbit/s)



• Flow 1 (95th percentile 43.93 ms)    • Flow 2 (95th percentile 44.13 ms)    • Flow 3 (95th percentile 46.56 ms)

```
Run 3: Statistics of TCP Cubic

Start at: 2019-02-12 05:06:50
End at: 2019-02-12 05:07:20
Local clock offset: 3.703 ms
Remote clock offset: -5.722 ms


# Below is generated by plot.py at 2019-02-12 06:21:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.70 Mbit/s
95th percentile per-packet one-way delay: 48.497 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 47.76 Mbit/s
95th percentile per-packet one-way delay: 50.769 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 37.35 Mbit/s
95th percentile per-packet one-way delay: 46.835 ms
Loss rate: 0.32%
-- Flow 3:
Average throughput: 36.57 Mbit/s
95th percentile per-packet one-way delay: 46.729 ms
Loss rate: 0.63%
```
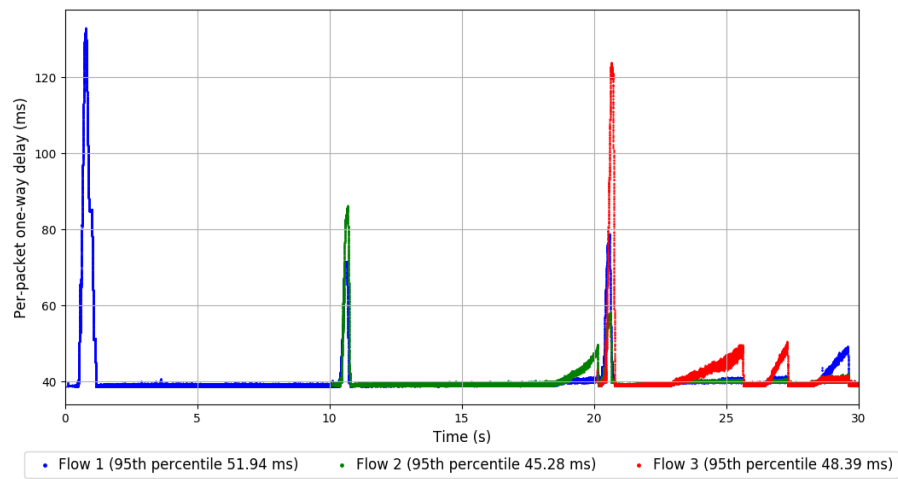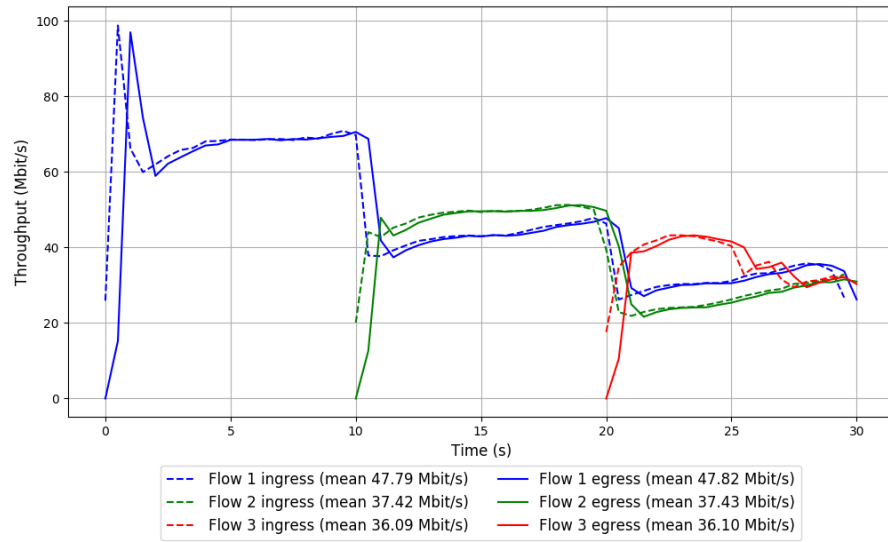
Run 3: Report of TCP Cubic — Data Link



Flow 1 ingress (mean 47.72 Mbit/s)  Flow 1 egress (mean 47.76 Mbit/s)
Flow 2 ingress (mean 37.35 Mbit/s)  Flow 2 egress (mean 37.35 Mbit/s)
Flow 3 ingress (mean 36.56 Mbit/s)  Flow 3 egress (mean 36.57 Mbit/s)



Flow 1 (95th percentile 50.77 ms)   Flow 2 (95th percentile 46.84 ms)   Flow 3 (95th percentile 46.73 ms)

```
Run 4: Statistics of TCP Cubic

Start at: 2019-02-12 05:32:39
End at: 2019-02-12 05:33:09
Local clock offset: 3.493 ms
Remote clock offset: -4.255 ms


# Below is generated by plot.py at 2019-02-12 06:21:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.74 Mbit/s
95th percentile per-packet one-way delay: 47.337 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 47.77 Mbit/s
95th percentile per-packet one-way delay: 49.275 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 34.86 Mbit/s
95th percentile per-packet one-way delay: 46.422 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 32.55 Mbit/s
95th percentile per-packet one-way delay: 46.130 ms
Loss rate: 1.00%
```
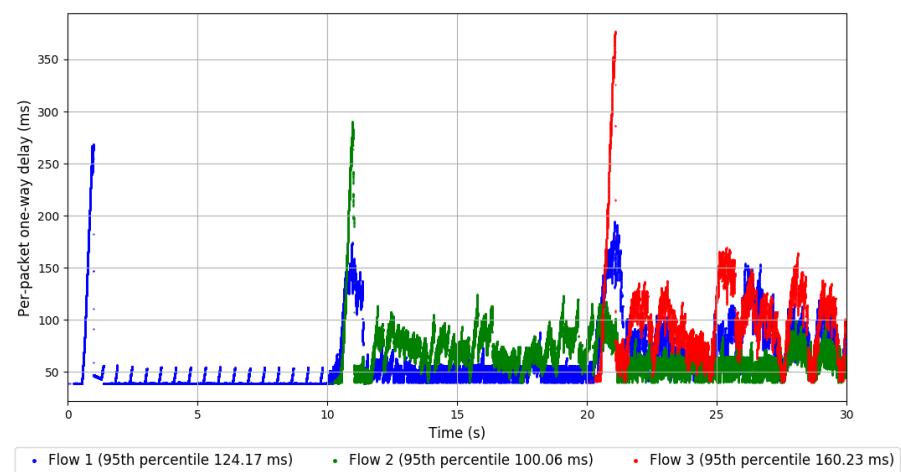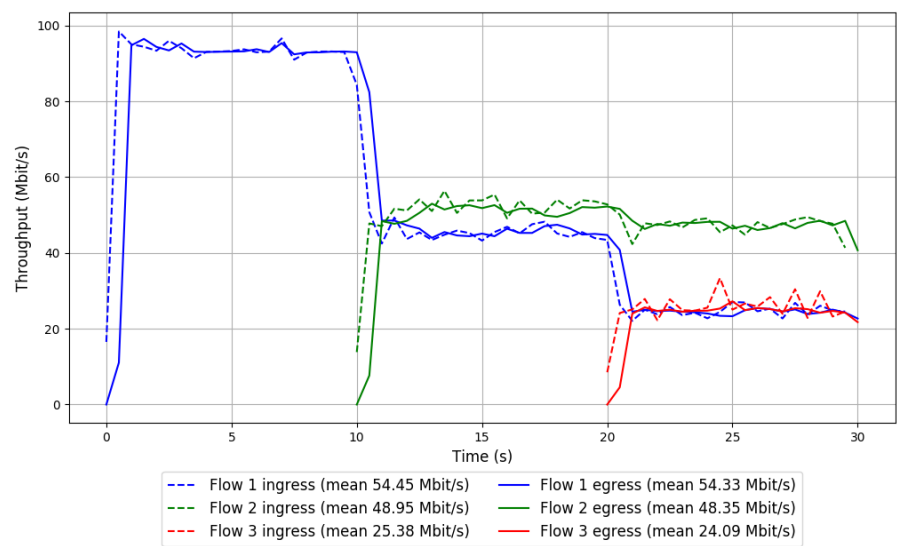
Run 4: Report of TCP Cubic — Data Link



Flow 1 ingress (mean 47.74 Mbit/s) --- Flow 1 egress (mean 47.77 Mbit/s) ——
Flow 2 ingress (mean 34.88 Mbit/s) --- Flow 2 egress (mean 34.86 Mbit/s) ——
Flow 3 ingress (mean 32.66 Mbit/s) --- Flow 3 egress (mean 32.55 Mbit/s) ——



Flow 1 (95th percentile 49.27 ms) • Flow 2 (95th percentile 46.42 ms) • Flow 3 (95th percentile 46.13 ms)
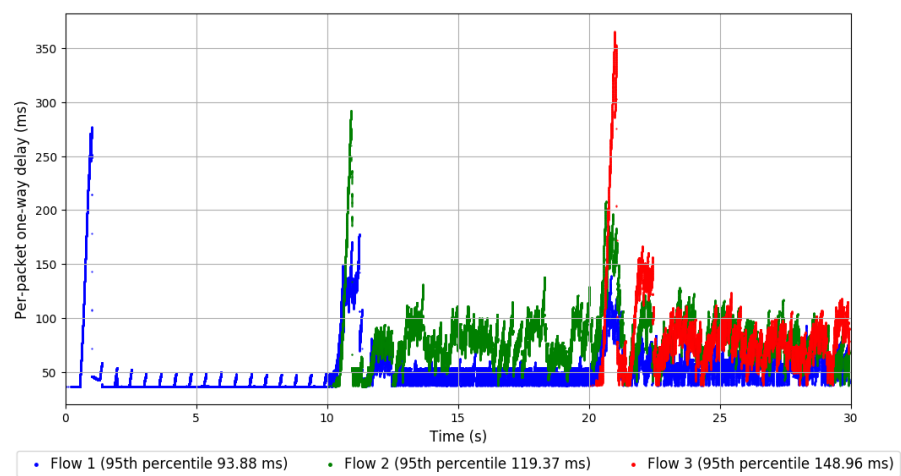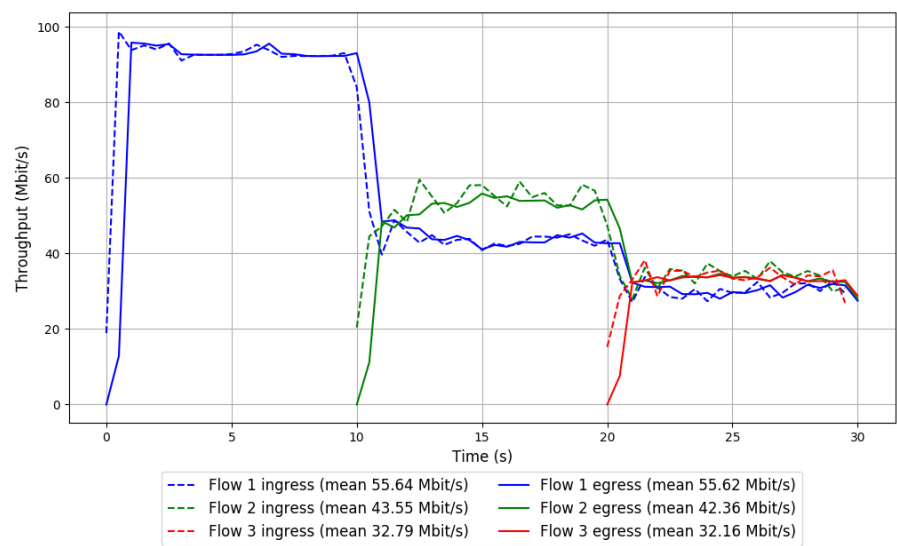
```
Run 5: Statistics of TCP Cubic

Start at: 2019-02-12 05:58:24
End at: 2019-02-12 05:58:54
Local clock offset: -0.398 ms
Remote clock offset: -5.391 ms


# Below is generated by plot.py at 2019-02-12 06:21:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.68 Mbit/s
95th percentile per-packet one-way delay: 47.979 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 47.82 Mbit/s
95th percentile per-packet one-way delay: 51.938 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 37.43 Mbit/s
95th percentile per-packet one-way delay: 45.277 ms
Loss rate: 0.32%
-- Flow 3:
Average throughput: 36.10 Mbit/s
95th percentile per-packet one-way delay: 48.393 ms
Loss rate: 0.63%
```

Run 5: Report of TCP Cubic — Data Link



- - - - Flow 1 ingress (mean 47.79 Mbit/s)      ——— Flow 1 egress (mean 47.82 Mbit/s)
- - - - Flow 2 ingress (mean 37.42 Mbit/s)      ——— Flow 2 egress (mean 37.43 Mbit/s)
- - - - Flow 3 ingress (mean 36.09 Mbit/s)      ——— Flow 3 egress (mean 36.10 Mbit/s)



• Flow 1 (95th percentile 51.94 ms)     • Flow 2 (95th percentile 45.28 ms)     • Flow 3 (95th percentile 48.39 ms)
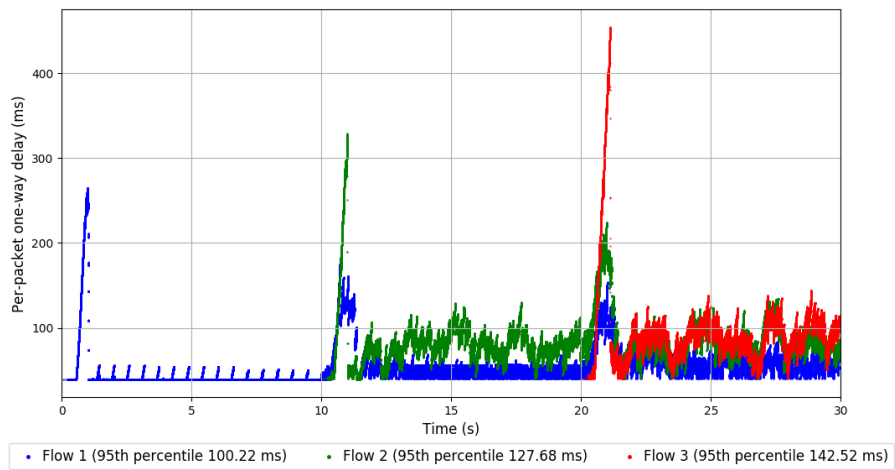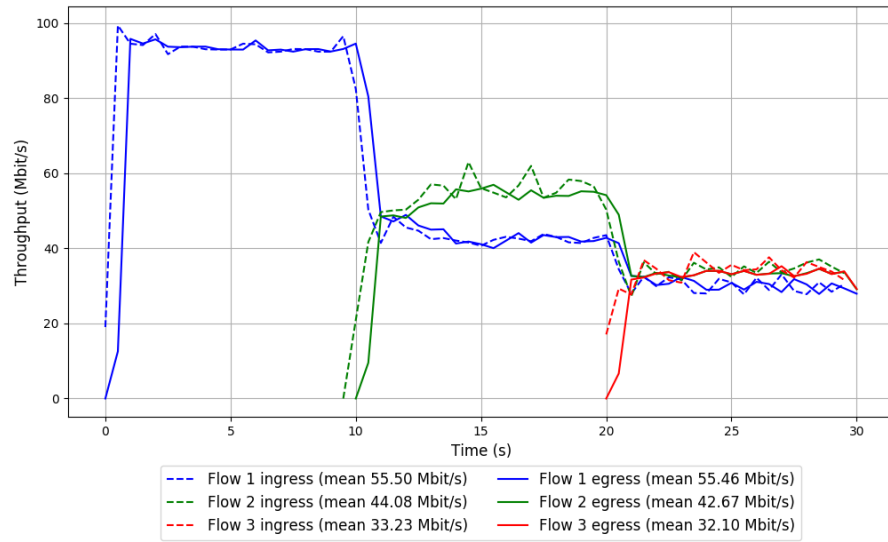
```
Run 1: Statistics of FillP

Start at: 2019-02-12 04:25:07
End at: 2019-02-12 04:25:37
Local clock offset: 3.706 ms
Remote clock offset: -10.68 ms


# Below is generated by plot.py at 2019-02-12 06:21:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.45 Mbit/s
95th percentile per-packet one-way delay: 125.658 ms
Loss rate: 1.26%
-- Flow 1:
Average throughput: 54.33 Mbit/s
95th percentile per-packet one-way delay: 124.174 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 48.35 Mbit/s
95th percentile per-packet one-way delay: 100.063 ms
Loss rate: 1.49%
-- Flow 3:
Average throughput: 24.09 Mbit/s
95th percentile per-packet one-way delay: 160.229 ms
Loss rate: 5.71%
```
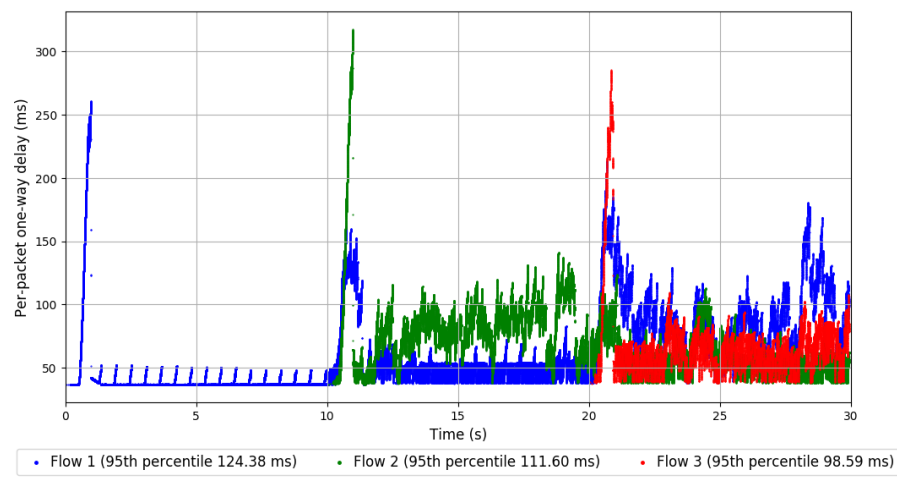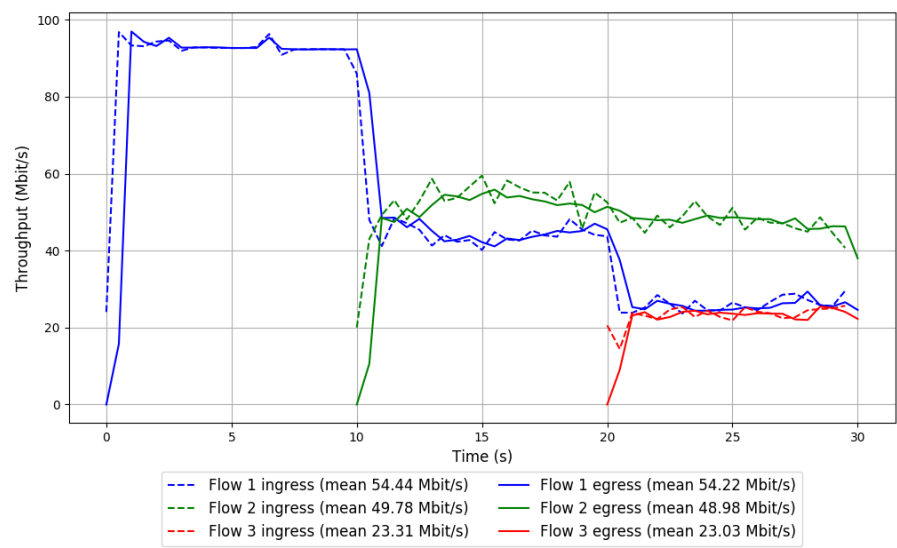
# Run 1: Report of FillP — Data Link



Flow 1 ingress (mean 54.45 Mbit/s) --- Flow 1 egress (mean 54.33 Mbit/s) ---
Flow 2 ingress (mean 48.95 Mbit/s) --- Flow 2 egress (mean 48.35 Mbit/s) ---
Flow 3 ingress (mean 25.38 Mbit/s) --- Flow 3 egress (mean 24.09 Mbit/s) ---



Flow 1 (95th percentile 124.17 ms) · Flow 2 (95th percentile 100.06 ms) · Flow 3 (95th percentile 160.23 ms)

```
Run 2: Statistics of FillP

Start at: 2019-02-12 04:50:55
End at: 2019-02-12 04:51:25
Local clock offset: 3.693 ms
Remote clock offset: -6.538 ms

# Below is generated by plot.py at 2019-02-12 06:21:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.43 Mbit/s
95th percentile per-packet one-way delay: 117.087 ms
Loss rate: 1.33%
-- Flow 1:
Average throughput: 55.62 Mbit/s
95th percentile per-packet one-way delay: 93.879 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 42.36 Mbit/s
95th percentile per-packet one-way delay: 119.369 ms
Loss rate: 2.99%
-- Flow 3:
Average throughput: 32.16 Mbit/s
95th percentile per-packet one-way delay: 148.962 ms
Loss rate: 2.42%
```

## Run 2: Report of FillP — Data Link



Flow 1 ingress (mean 55.64 Mbit/s)        Flow 1 egress (mean 55.62 Mbit/s)
Flow 2 ingress (mean 43.55 Mbit/s)        Flow 2 egress (mean 42.36 Mbit/s)
Flow 3 ingress (mean 32.79 Mbit/s)        Flow 3 egress (mean 32.16 Mbit/s)



Flow 1 (95th percentile 93.88 ms)    Flow 2 (95th percentile 119.37 ms)    Flow 3 (95th percentile 148.96 ms)
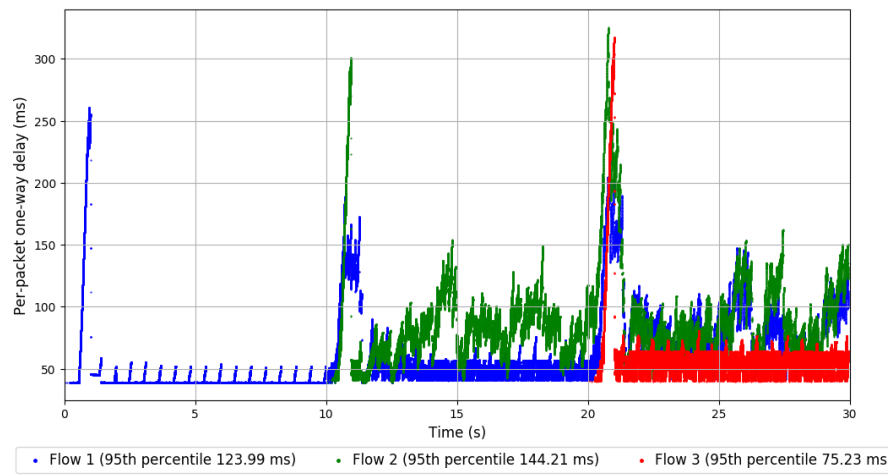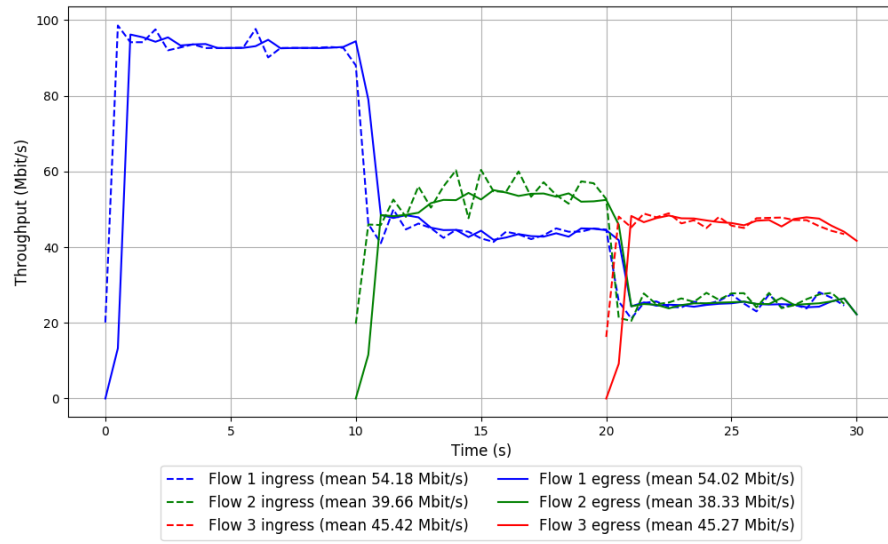
```
Run 3: Statistics of FillP

Start at: 2019-02-12 05:16:36
End at: 2019-02-12 05:17:06
Local clock offset: 3.44 ms
Remote clock offset: -7.376 ms


# Below is generated by plot.py at 2019-02-12 06:21:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.49 Mbit/s
95th percentile per-packet one-way delay: 119.671 ms
Loss rate: 1.69%
-- Flow 1:
Average throughput: 55.46 Mbit/s
95th percentile per-packet one-way delay: 100.220 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 42.67 Mbit/s
95th percentile per-packet one-way delay: 127.676 ms
Loss rate: 3.52%
-- Flow 3:
Average throughput: 32.10 Mbit/s
95th percentile per-packet one-way delay: 142.520 ms
Loss rate: 3.86%
```

Run 3: Report of FillP — Data Link



Flow 1 ingress (mean 55.50 Mbit/s) --- Flow 1 egress (mean 55.46 Mbit/s)
Flow 2 ingress (mean 44.08 Mbit/s) --- Flow 2 egress (mean 42.67 Mbit/s)
Flow 3 ingress (mean 33.23 Mbit/s) --- Flow 3 egress (mean 32.10 Mbit/s)



Flow 1 (95th percentile 100.22 ms)    Flow 2 (95th percentile 127.68 ms)    Flow 3 (95th percentile 142.52 ms)

```
Run 4: Statistics of FillP

Start at: 2019-02-12 05:42:22
End at: 2019-02-12 05:42:52
Local clock offset: 1.237 ms
Remote clock offset: -3.997 ms


# Below is generated by plot.py at 2019-02-12 06:21:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.43 Mbit/s
95th percentile per-packet one-way delay: 116.832 ms
Loss rate: 1.14%
-- Flow 1:
Average throughput: 54.22 Mbit/s
95th percentile per-packet one-way delay: 124.380 ms
Loss rate: 0.58%
-- Flow 2:
Average throughput: 48.98 Mbit/s
95th percentile per-packet one-way delay: 111.598 ms
Loss rate: 1.91%
-- Flow 3:
Average throughput: 23.03 Mbit/s
95th percentile per-packet one-way delay: 98.591 ms
Loss rate: 1.85%
```
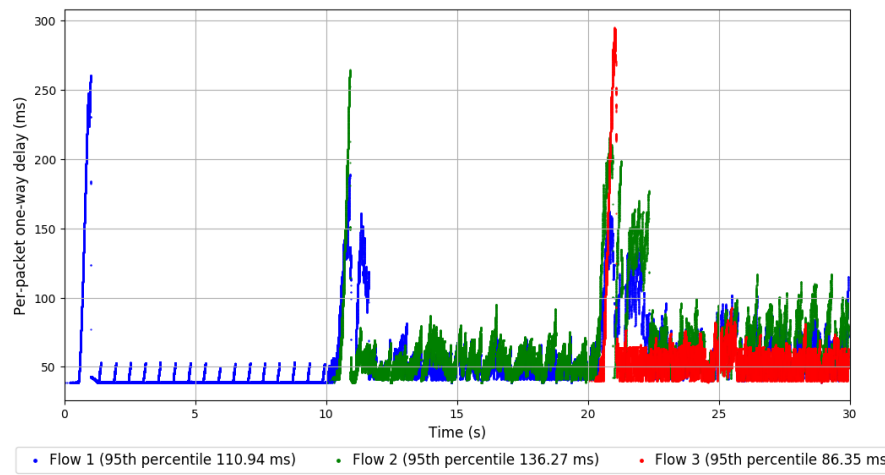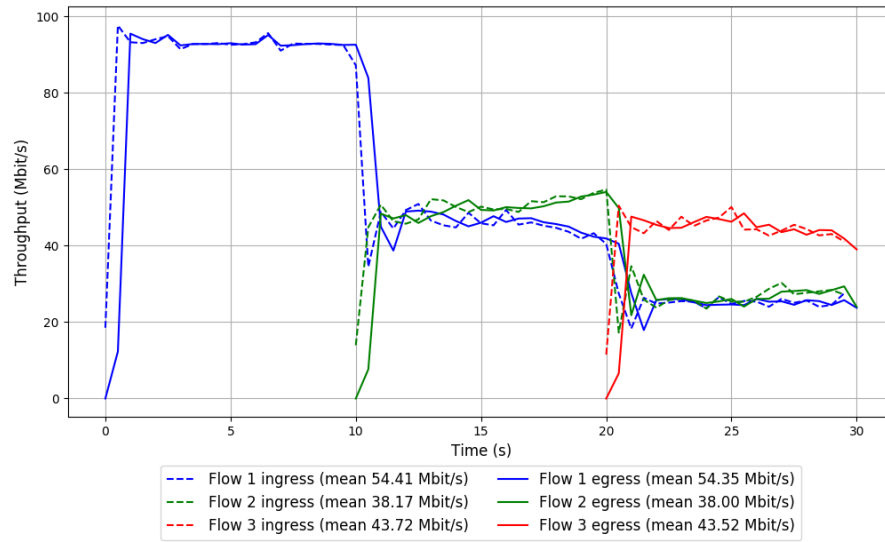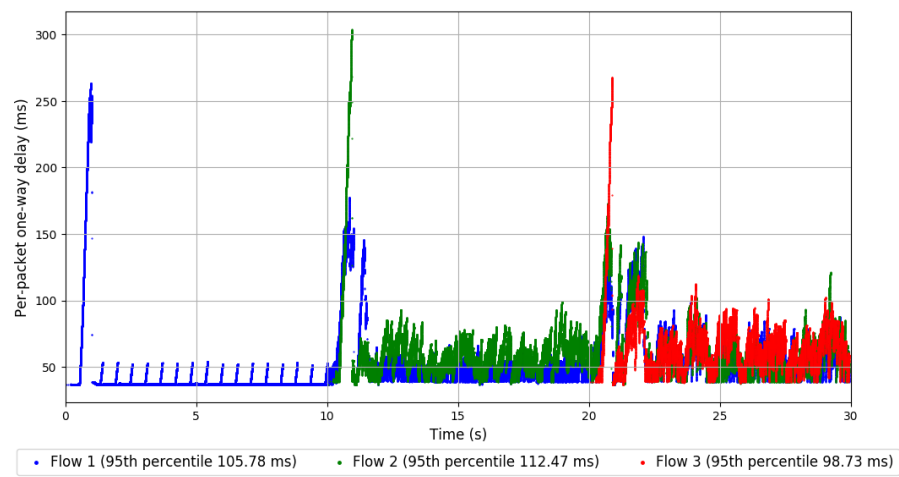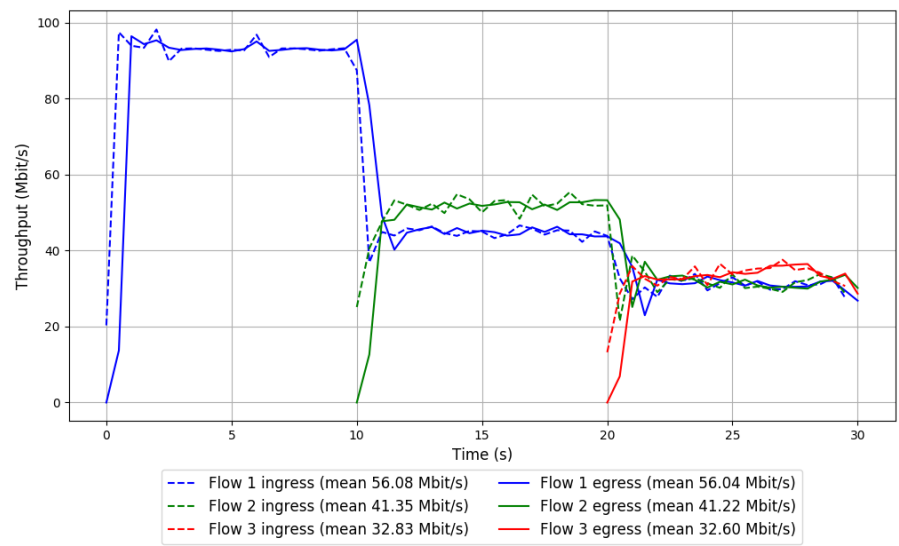
Run 4: Report of FillP — Data Link

```
Run 5: Statistics of FillP

Start at: 2019-02-12 06:08:10
End at: 2019-02-12 06:08:40
Local clock offset: -1.63 ms
Remote clock offset: -5.428 ms


# Below is generated by plot.py at 2019-02-12 06:22:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.49 Mbit/s
95th percentile per-packet one-way delay: 131.497 ms
Loss rate: 1.42%
-- Flow 1:
Average throughput: 54.02 Mbit/s
95th percentile per-packet one-way delay: 123.991 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 38.33 Mbit/s
95th percentile per-packet one-way delay: 144.211 ms
Loss rate: 3.66%
-- Flow 3:
Average throughput: 45.27 Mbit/s
95th percentile per-packet one-way delay: 75.228 ms
Loss rate: 0.92%
```
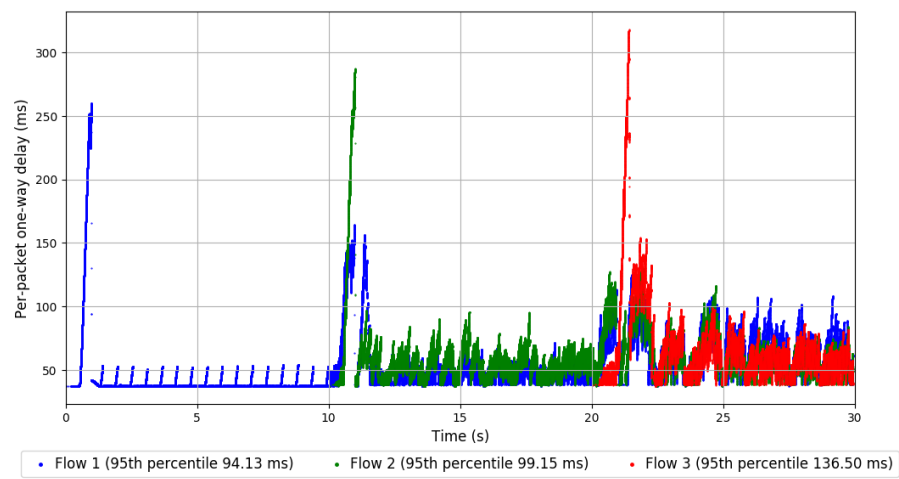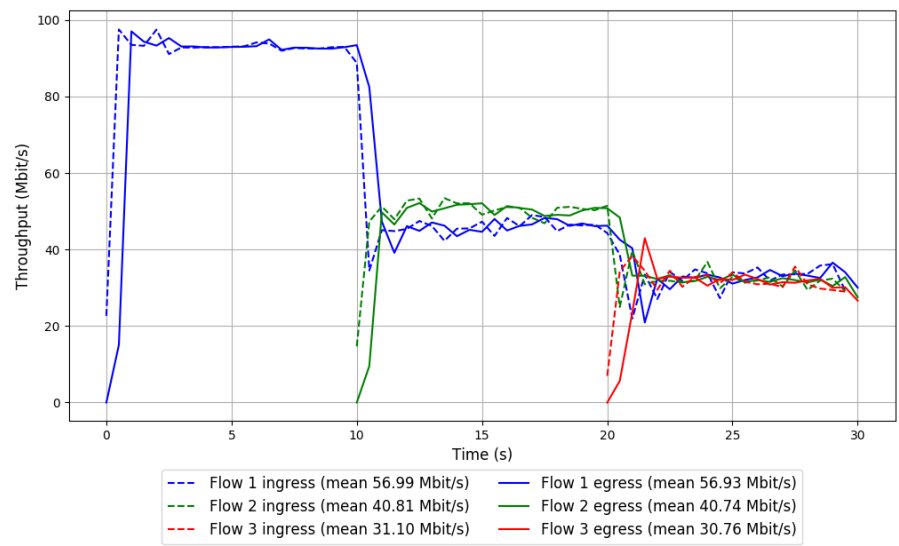
Run 5: Report of FillP — Data Link

```
Run 1: Statistics of FillP-Sheep

Start at: 2019-02-12 04:26:21
End at: 2019-02-12 04:26:51
Local clock offset: 3.777 ms
Remote clock offset: -10.441 ms


# Below is generated by plot.py at 2019-02-12 06:22:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.04 Mbit/s
95th percentile per-packet one-way delay: 116.710 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 54.35 Mbit/s
95th percentile per-packet one-way delay: 110.938 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 38.00 Mbit/s
95th percentile per-packet one-way delay: 136.274 ms
Loss rate: 0.75%
-- Flow 3:
Average throughput: 43.52 Mbit/s
95th percentile per-packet one-way delay: 86.351 ms
Loss rate: 0.94%
```

Run 1: Report of FillP-Sheep — Data Link



Flow 1 ingress (mean 54.41 Mbit/s) --- Flow 1 egress (mean 54.35 Mbit/s)
Flow 2 ingress (mean 38.17 Mbit/s) --- Flow 2 egress (mean 38.00 Mbit/s)
Flow 3 ingress (mean 43.72 Mbit/s) --- Flow 3 egress (mean 43.52 Mbit/s)



Flow 1 (95th percentile 110.94 ms)   Flow 2 (95th percentile 136.27 ms)   Flow 3 (95th percentile 86.35 ms)

```
Run 2: Statistics of FillP-Sheep

Start at: 2019-02-12 04:52:07
End at: 2019-02-12 04:52:37
Local clock offset: 3.692 ms
Remote clock offset: -6.539 ms


# Below is generated by plot.py at 2019-02-12 06:22:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.25 Mbit/s
95th percentile per-packet one-way delay: 106.829 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 56.04 Mbit/s
95th percentile per-packet one-way delay: 105.776 ms
Loss rate: 0.24%
-- Flow 2:
Average throughput: 41.22 Mbit/s
95th percentile per-packet one-way delay: 112.474 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 32.60 Mbit/s
95th percentile per-packet one-way delay: 98.728 ms
Loss rate: 1.38%
```
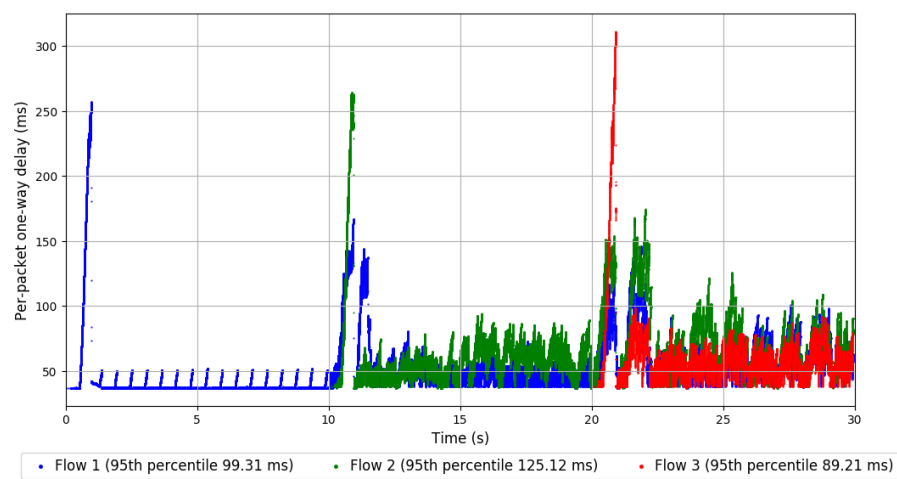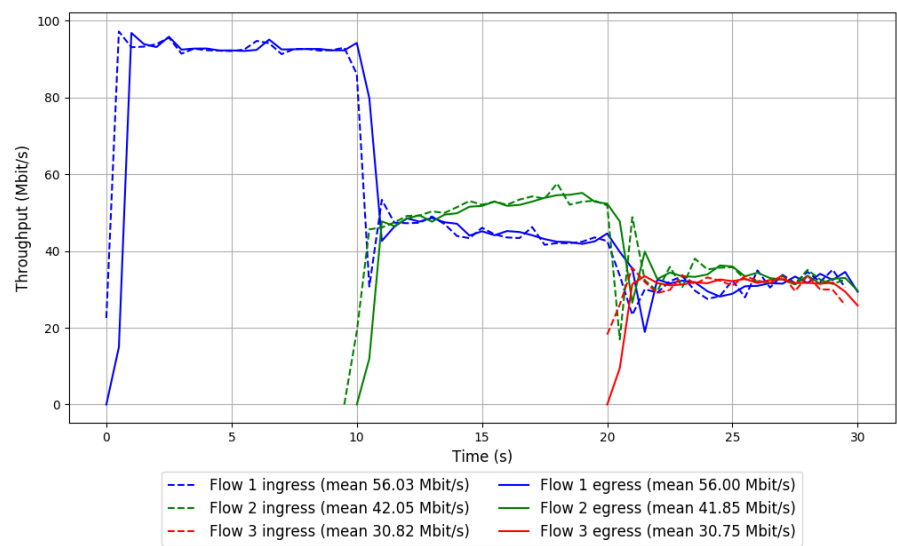
Run 2: Report of FillP-Sheep — Data Link

```
Run 3: Statistics of FillP-Sheep

Start at: 2019-02-12 05:17:49
End at: 2019-02-12 05:18:19
Local clock offset: 3.457 ms
Remote clock offset: -5.322 ms


# Below is generated by plot.py at 2019-02-12 06:22:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.21 Mbit/s
95th percentile per-packet one-way delay: 102.270 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 56.93 Mbit/s
95th percentile per-packet one-way delay: 94.130 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 40.74 Mbit/s
95th percentile per-packet one-way delay: 99.146 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 30.76 Mbit/s
95th percentile per-packet one-way delay: 136.502 ms
Loss rate: 1.61%
```
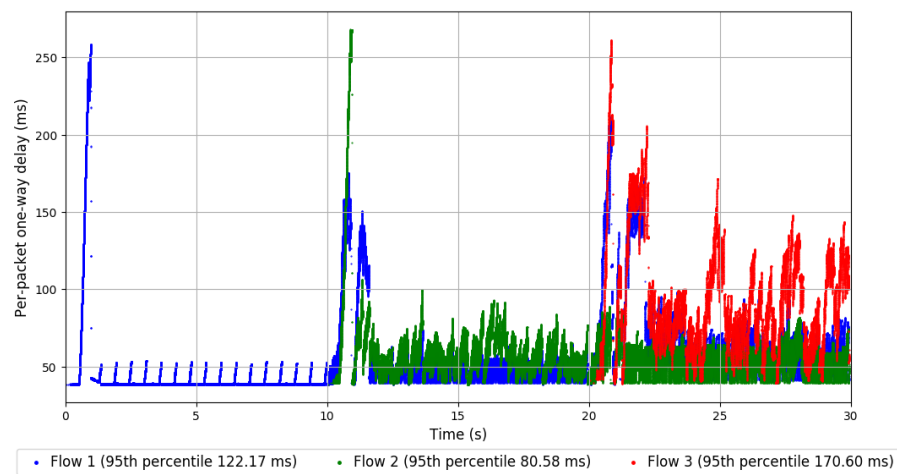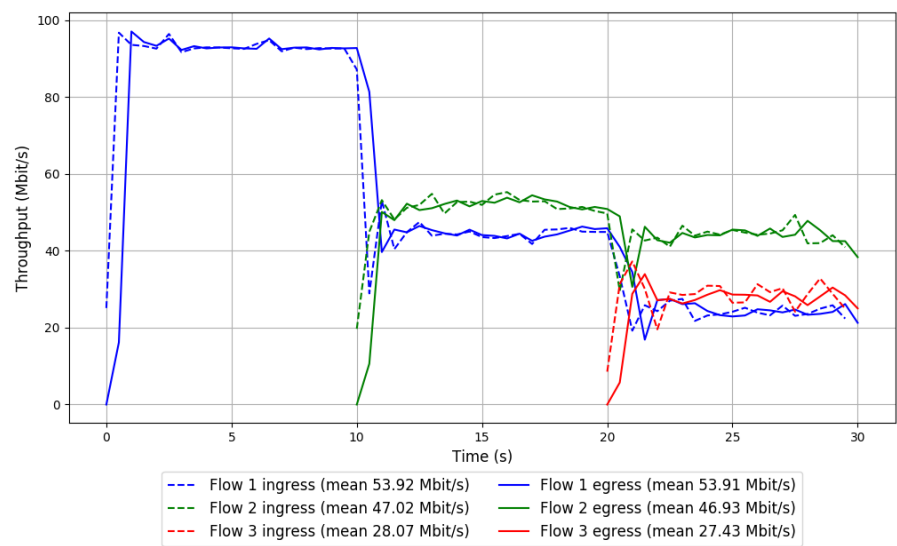
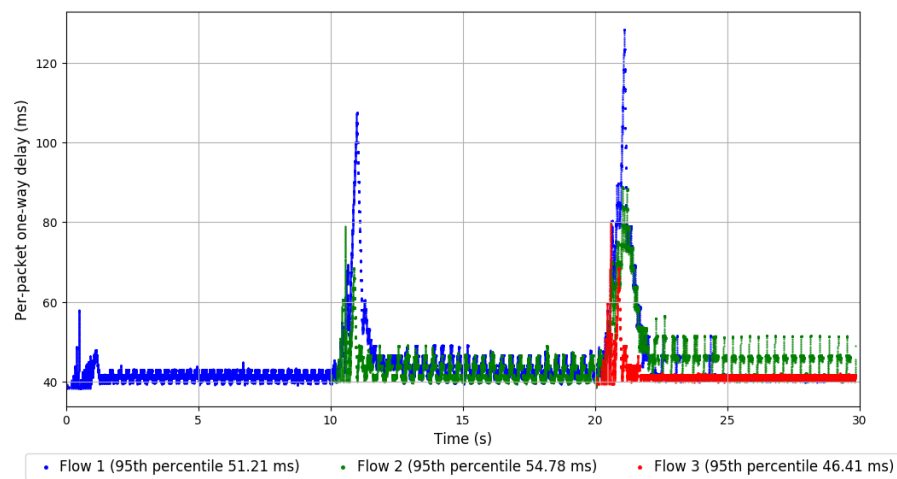Run 3: Report of FillP-Sheep — Data Link

```
Run 4: Statistics of FillP-Sheep

Start at: 2019-02-12 05:43:35
End at: 2019-02-12 05:44:05
Local clock offset: 1.045 ms
Remote clock offset: -4.01 ms


# Below is generated by plot.py at 2019-02-12 06:22:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.03 Mbit/s
95th percentile per-packet one-way delay: 107.939 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 56.00 Mbit/s
95th percentile per-packet one-way delay: 99.315 ms
Loss rate: 0.24%
-- Flow 2:
Average throughput: 41.85 Mbit/s
95th percentile per-packet one-way delay: 125.123 ms
Loss rate: 0.78%
-- Flow 3:
Average throughput: 30.75 Mbit/s
95th percentile per-packet one-way delay: 89.214 ms
Loss rate: 0.73%
```
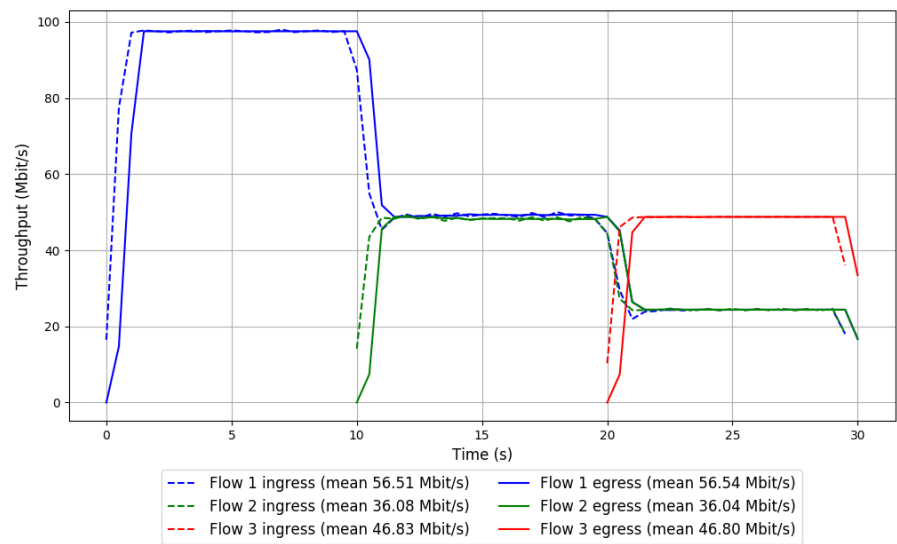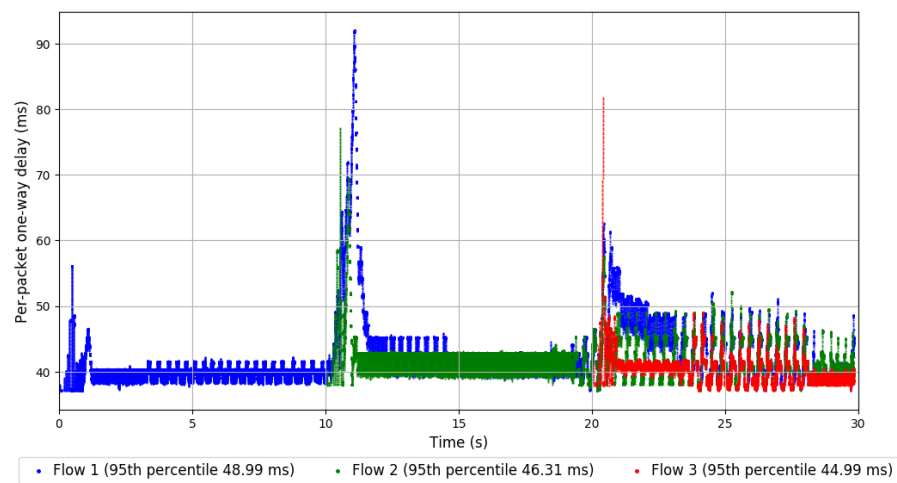
Run 4: Report of FillP-Sheep — Data Link



Flow 1 ingress (mean 56.03 Mbit/s) — — — Flow 1 egress (mean 56.00 Mbit/s)
Flow 2 ingress (mean 42.05 Mbit/s) — — — Flow 2 egress (mean 41.85 Mbit/s)
Flow 3 ingress (mean 30.82 Mbit/s) — — — Flow 3 egress (mean 30.75 Mbit/s)



Flow 1 (95th percentile 99.31 ms) • Flow 2 (95th percentile 125.12 ms) • Flow 3 (95th percentile 89.21 ms)

```
Run 5: Statistics of FillP-Sheep

Start at: 2019-02-12 06:09:23
End at: 2019-02-12 06:09:53
Local clock offset: -1.865 ms
Remote clock offset: -4.98 ms


# Below is generated by plot.py at 2019-02-12 06:22:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.21 Mbit/s
95th percentile per-packet one-way delay: 123.520 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 53.91 Mbit/s
95th percentile per-packet one-way delay: 122.168 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 46.93 Mbit/s
95th percentile per-packet one-way delay: 80.579 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 27.43 Mbit/s
95th percentile per-packet one-way delay: 170.598 ms
Loss rate: 2.81%
```

Run 5: Report of FillP-Sheep — Data Link



- - - Flow 1 ingress (mean 53.92 Mbit/s) —— Flow 1 egress (mean 53.91 Mbit/s)
- - - Flow 2 ingress (mean 47.02 Mbit/s) —— Flow 2 egress (mean 46.93 Mbit/s)
- - - Flow 3 ingress (mean 28.07 Mbit/s) —— Flow 3 egress (mean 27.43 Mbit/s)



• Flow 1 (95th percentile 122.17 ms)    • Flow 2 (95th percentile 80.58 ms)    • Flow 3 (95th percentile 170.60 ms)
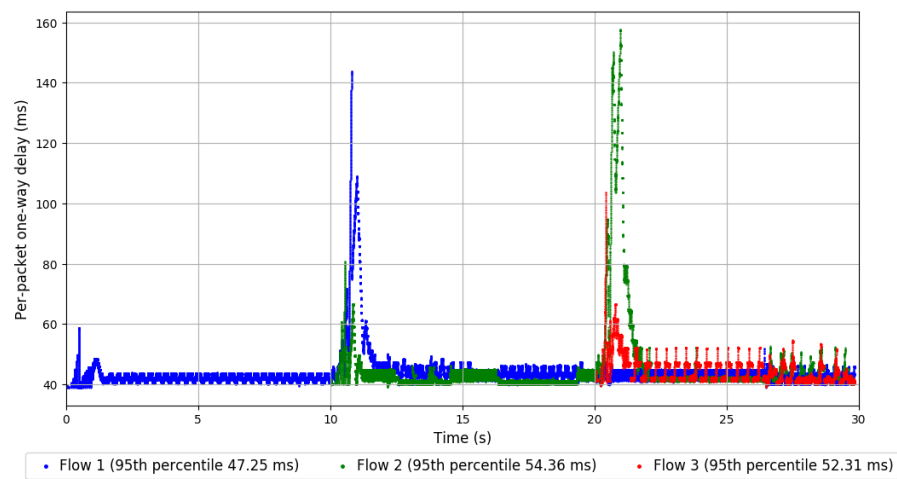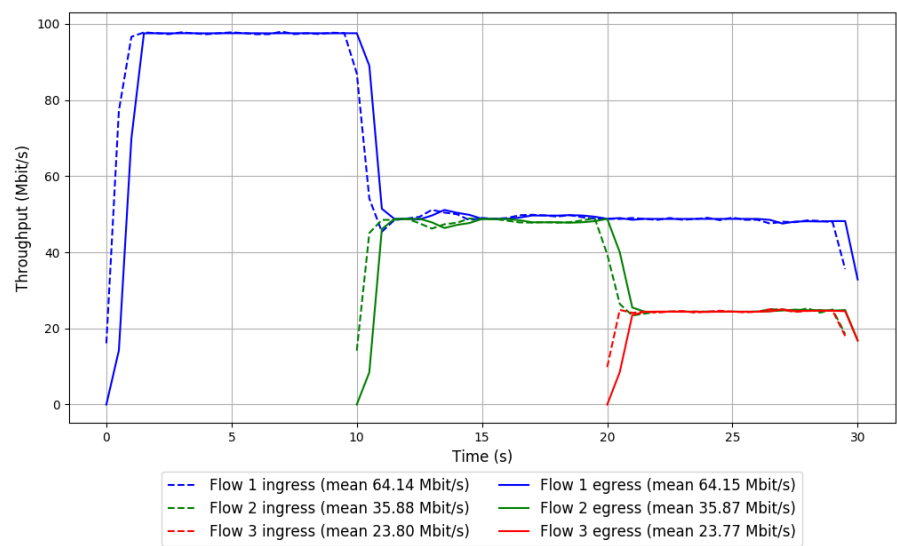
```
Run 1: Statistics of Indigo

Start at: 2019-02-12 04:11:29
End at: 2019-02-12 04:11:59
Local clock offset: 2.033 ms
Remote clock offset: -10.661 ms


# Below is generated by plot.py at 2019-02-12 06:22:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.80 Mbit/s
95th percentile per-packet one-way delay: 51.409 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 56.54 Mbit/s
95th percentile per-packet one-way delay: 51.209 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 36.04 Mbit/s
95th percentile per-packet one-way delay: 54.782 ms
Loss rate: 0.41%
-- Flow 3:
Average throughput: 46.80 Mbit/s
95th percentile per-packet one-way delay: 46.414 ms
Loss rate: 0.73%
```

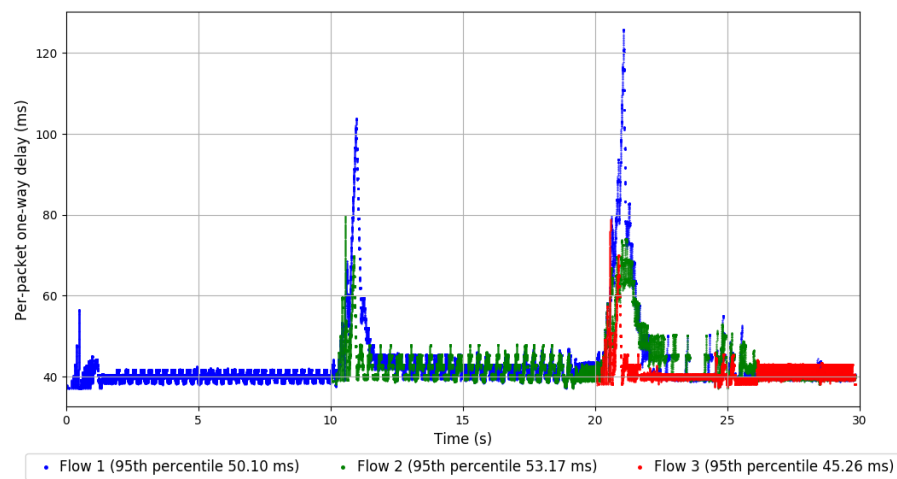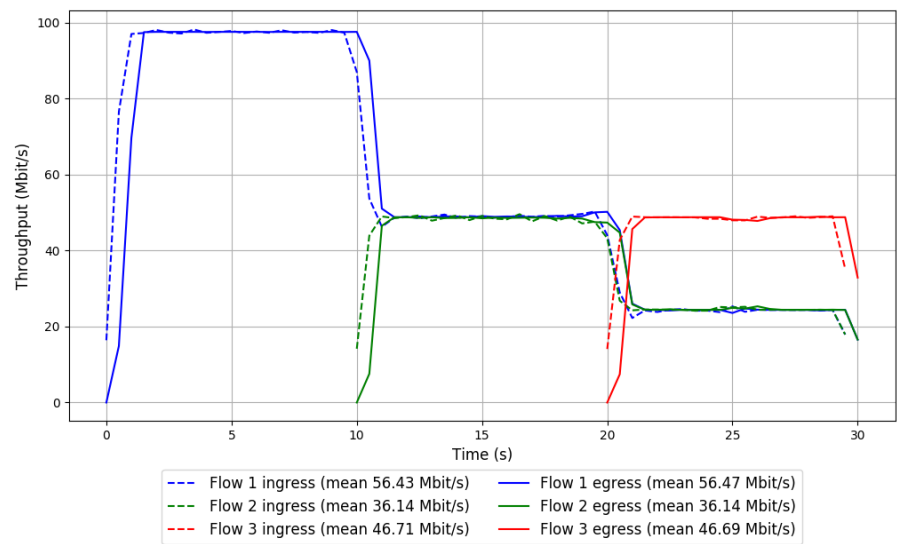## Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2019-02-12 04:37:31
End at: 2019-02-12 04:38:01
Local clock offset: 3.961 ms
Remote clock offset: -7.603 ms


# Below is generated by plot.py at 2019-02-12 06:22:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.81 Mbit/s
95th percentile per-packet one-way delay: 48.115 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 58.98 Mbit/s
95th percentile per-packet one-way delay: 48.989 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 40.01 Mbit/s
95th percentile per-packet one-way delay: 46.310 ms
Loss rate: 0.30%
-- Flow 3:
Average throughput: 31.26 Mbit/s
95th percentile per-packet one-way delay: 44.991 ms
Loss rate: 0.70%
```
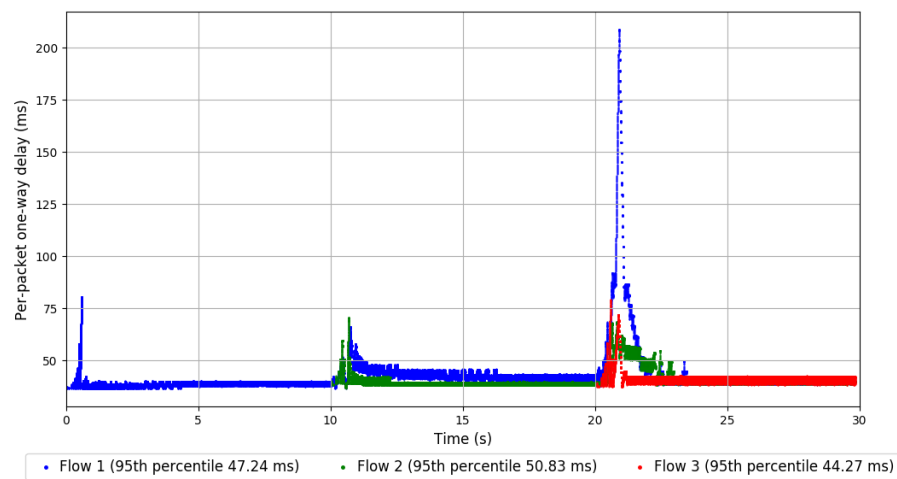
# Run 2: Report of Indigo — Data Link



Flow 1 ingress (mean 58.97 Mbit/s) — Flow 1 egress (mean 58.98 Mbit/s)
Flow 2 ingress (mean 40.00 Mbit/s) — Flow 2 egress (mean 40.01 Mbit/s)
Flow 3 ingress (mean 31.27 Mbit/s) — Flow 3 egress (mean 31.26 Mbit/s)



Flow 1 (95th percentile 48.99 ms) · Flow 2 (95th percentile 46.31 ms) · Flow 3 (95th percentile 44.99 ms)

```
Run 3: Statistics of Indigo

Start at: 2019-02-12 05:03:09
End at: 2019-02-12 05:03:39
Local clock offset: 3.825 ms
Remote clock offset: -7.823 ms


# Below is generated by plot.py at 2019-02-12 06:23:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.78 Mbit/s
95th percentile per-packet one-way delay: 49.208 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 64.15 Mbit/s
95th percentile per-packet one-way delay: 47.251 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 35.87 Mbit/s
95th percentile per-packet one-way delay: 54.362 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 23.77 Mbit/s
95th percentile per-packet one-way delay: 52.311 ms
Loss rate: 0.78%
```
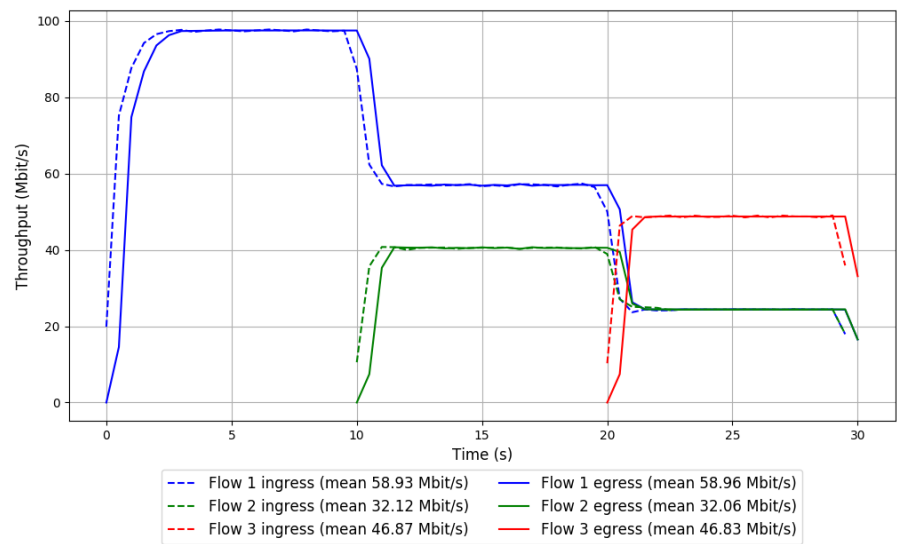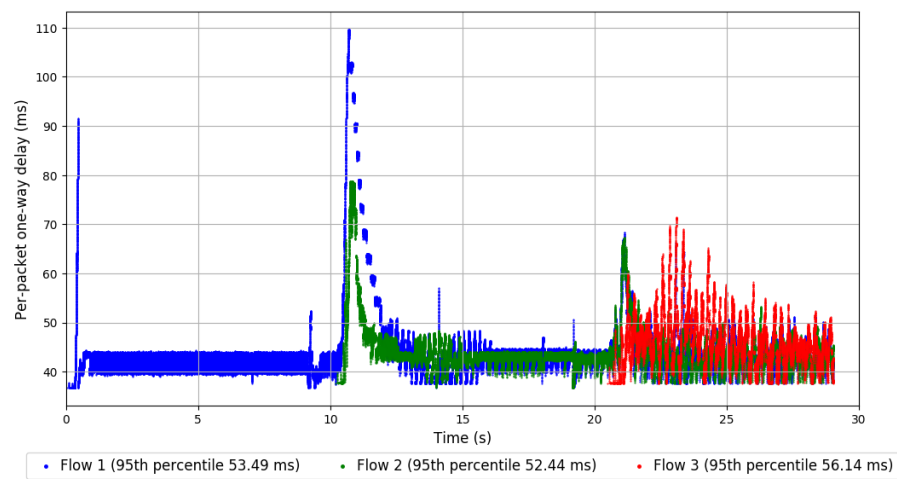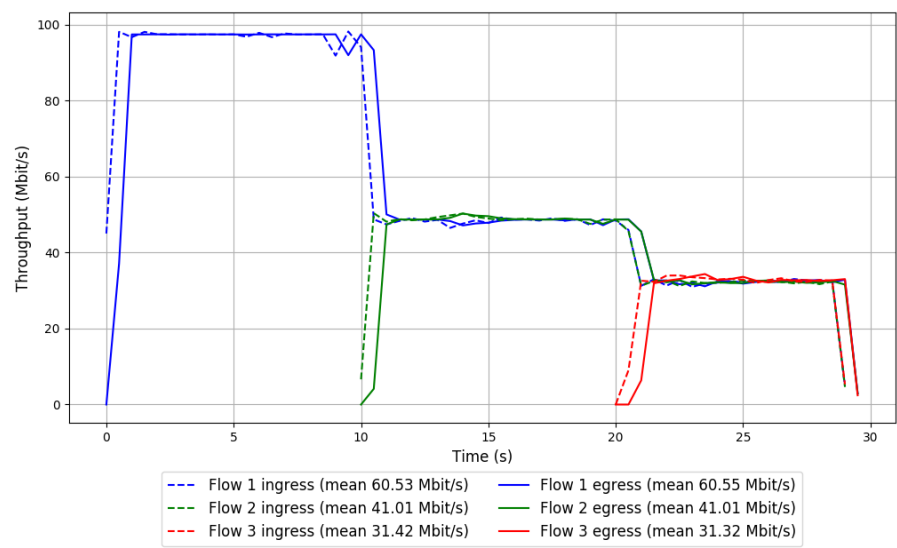
Run 3: Report of Indigo — Data Link



Flow 1 ingress (mean 64.14 Mbit/s) --- Flow 1 egress (mean 64.15 Mbit/s)
Flow 2 ingress (mean 35.88 Mbit/s) --- Flow 2 egress (mean 35.87 Mbit/s)
Flow 3 ingress (mean 23.80 Mbit/s) --- Flow 3 egress (mean 23.77 Mbit/s)



Flow 1 (95th percentile 47.25 ms)   Flow 2 (95th percentile 54.36 ms)   Flow 3 (95th percentile 52.31 ms)

```
Run 4: Statistics of Indigo

Start at: 2019-02-12 05:28:59
End at: 2019-02-12 05:29:29
Local clock offset: 3.446 ms
Remote clock offset: -4.811 ms


# Below is generated by plot.py at 2019-02-12 06:23:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.77 Mbit/s
95th percentile per-packet one-way delay: 50.220 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 56.47 Mbit/s
95th percentile per-packet one-way delay: 50.102 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 36.14 Mbit/s
95th percentile per-packet one-way delay: 53.166 ms
Loss rate: 0.32%
-- Flow 3:
Average throughput: 46.69 Mbit/s
95th percentile per-packet one-way delay: 45.259 ms
Loss rate: 0.71%
```

Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2019-02-12 05:54:42
End at: 2019-02-12 05:55:12
Local clock offset: -0.157 ms
Remote clock offset: -2.926 ms


# Below is generated by plot.py at 2019-02-12 06:23:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.60 Mbit/s
95th percentile per-packet one-way delay: 47.774 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 58.96 Mbit/s
95th percentile per-packet one-way delay: 47.239 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 32.06 Mbit/s
95th percentile per-packet one-way delay: 50.826 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 46.83 Mbit/s
95th percentile per-packet one-way delay: 44.265 ms
Loss rate: 0.76%
```
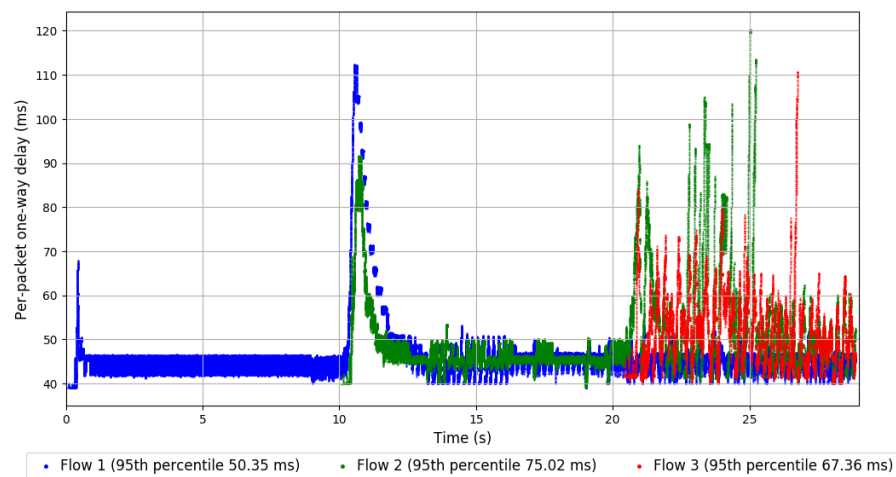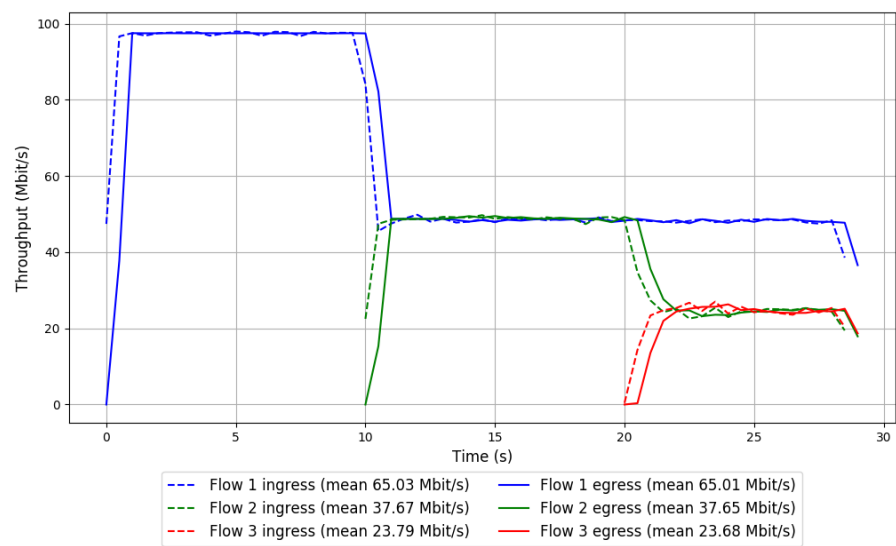
Run 5: Report of Indigo — Data Link



- - - Flow 1 ingress (mean 58.93 Mbit/s) —— Flow 1 egress (mean 58.96 Mbit/s)
- - - Flow 2 ingress (mean 32.12 Mbit/s) —— Flow 2 egress (mean 32.06 Mbit/s)
- - - Flow 3 ingress (mean 46.87 Mbit/s) —— Flow 3 egress (mean 46.83 Mbit/s)



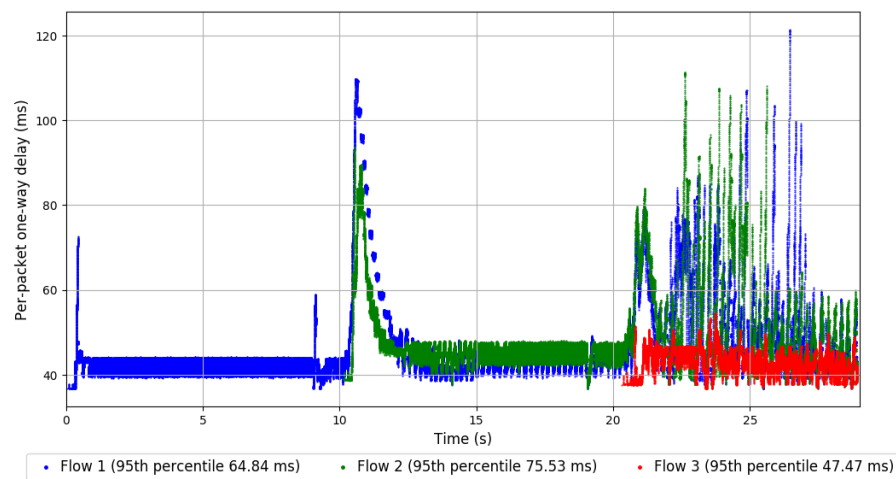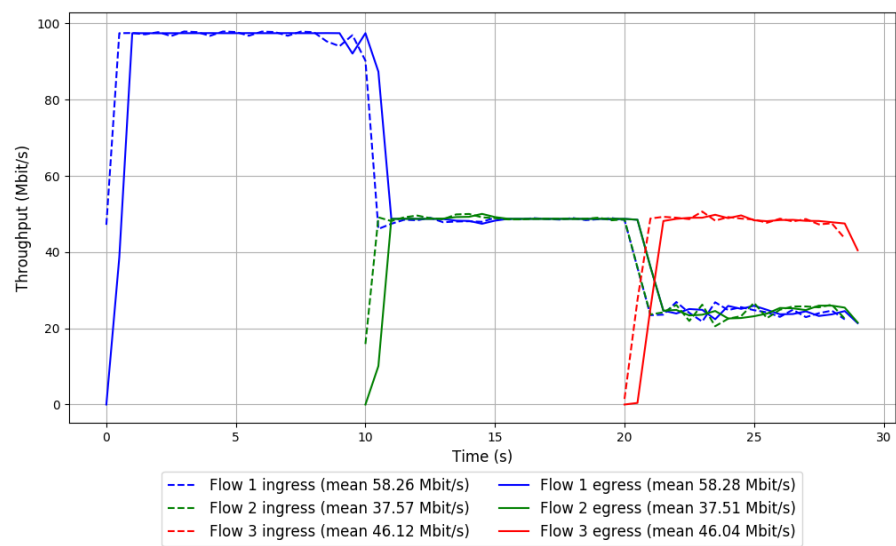- Flow 1 (95th percentile 47.24 ms)   • Flow 2 (95th percentile 50.83 ms)   • Flow 3 (95th percentile 44.27 ms)

```
Run 1: Statistics of Indigo-MusesC3

Start at: 2019-02-12 04:20:14
End at: 2019-02-12 04:20:44
Local clock offset: 3.33 ms
Remote clock offset: -8.567 ms


# Below is generated by plot.py at 2019-02-12 06:23:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.41 Mbit/s
95th percentile per-packet one-way delay: 54.204 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 60.55 Mbit/s
95th percentile per-packet one-way delay: 53.490 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 41.01 Mbit/s
95th percentile per-packet one-way delay: 52.438 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 31.32 Mbit/s
95th percentile per-packet one-way delay: 56.139 ms
Loss rate: 1.08%
```
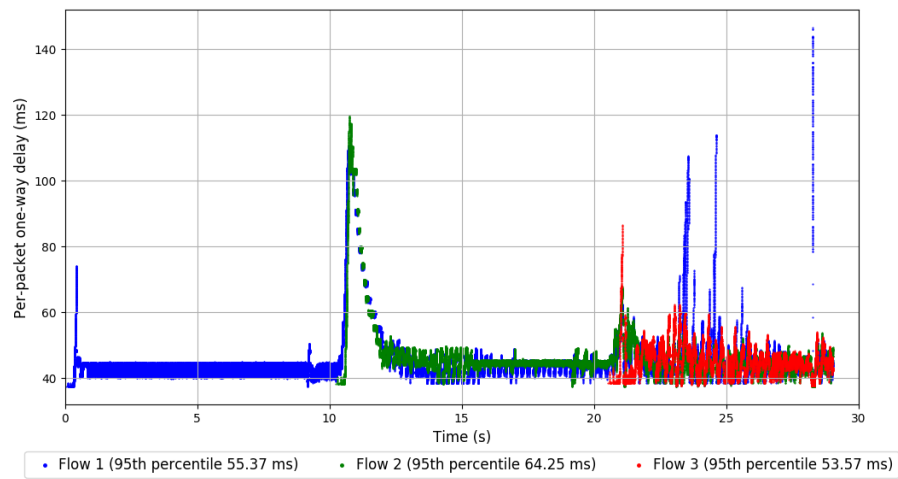
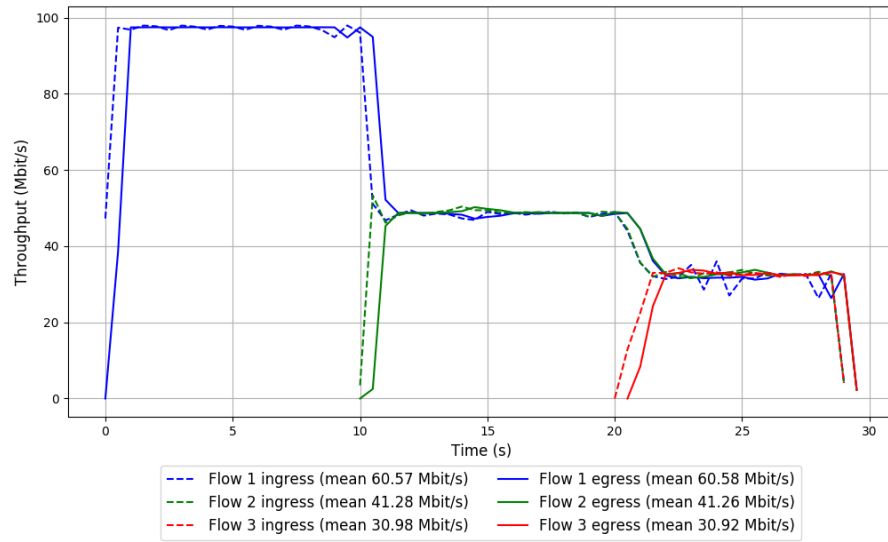Run 1: Report of Indigo-MusesC3 — Data Link

```
Run 2: Statistics of Indigo-MusesC3

Start at: 2019-02-12 04:46:04
End at: 2019-02-12 04:46:34
Local clock offset: 3.719 ms
Remote clock offset: -9.04 ms


# Below is generated by plot.py at 2019-02-12 06:23:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.53 Mbit/s
95th percentile per-packet one-way delay: 61.421 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 65.01 Mbit/s
95th percentile per-packet one-way delay: 50.351 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 37.65 Mbit/s
95th percentile per-packet one-way delay: 75.017 ms
Loss rate: 0.41%
-- Flow 3:
Average throughput: 23.68 Mbit/s
95th percentile per-packet one-way delay: 67.357 ms
Loss rate: 1.26%
```

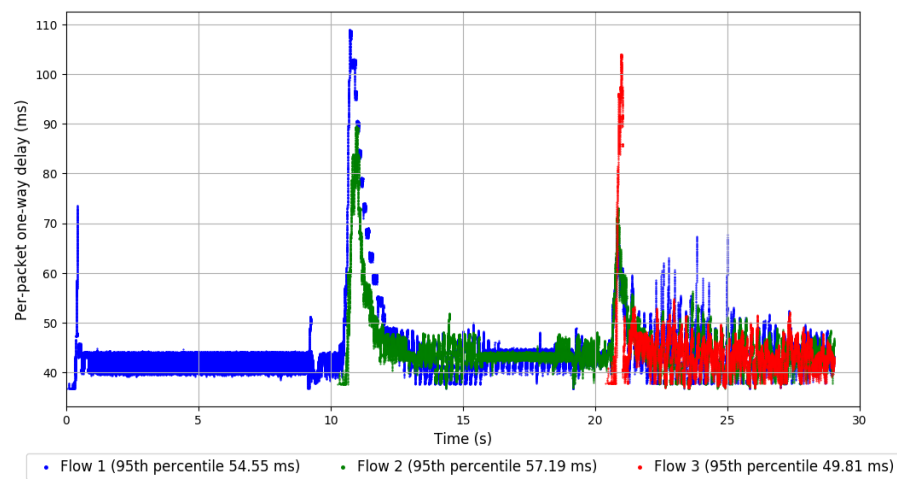Run 2: Report of Indigo-MusesC3 — Data Link

```
Run 3: Statistics of Indigo-MusesC3

Start at: 2019-02-12 05:11:44
End at: 2019-02-12 05:12:14
Local clock offset: 3.534 ms
Remote clock offset: -5.04 ms

# Below is generated by plot.py at 2019-02-12 06:23:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.44 Mbit/s
95th percentile per-packet one-way delay: 66.718 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 58.28 Mbit/s
95th percentile per-packet one-way delay: 64.838 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 37.51 Mbit/s
95th percentile per-packet one-way delay: 75.531 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 46.04 Mbit/s
95th percentile per-packet one-way delay: 47.471 ms
Loss rate: 0.91%
```

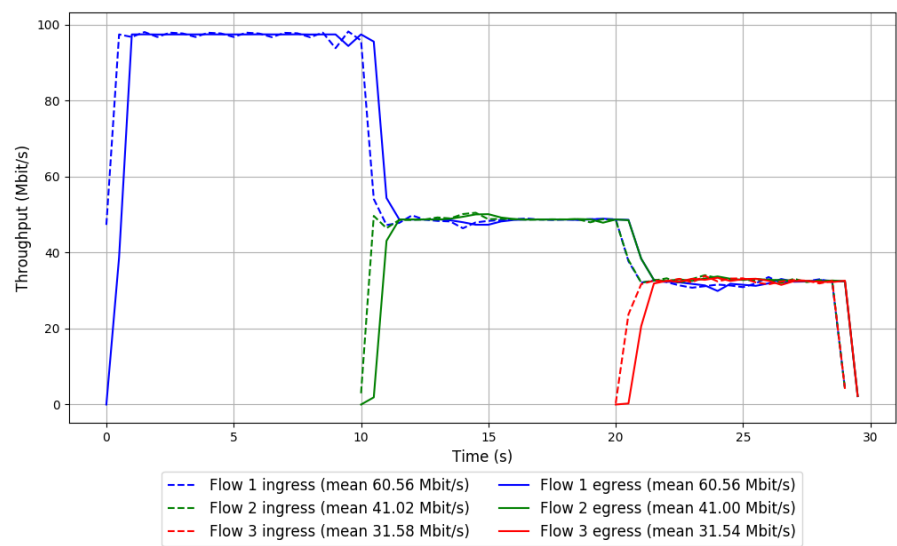Run 3: Report of Indigo-MusesC3 — Data Link



- - - Flow 1 ingress (mean 58.26 Mbit/s) ——— Flow 1 egress (mean 58.28 Mbit/s)
- - - Flow 2 ingress (mean 37.57 Mbit/s) ——— Flow 2 egress (mean 37.51 Mbit/s)
- - - Flow 3 ingress (mean 46.12 Mbit/s) ——— Flow 3 egress (mean 46.04 Mbit/s)



- Flow 1 (95th percentile 64.84 ms)    - Flow 2 (95th percentile 75.53 ms)    - Flow 3 (95th percentile 47.47 ms)
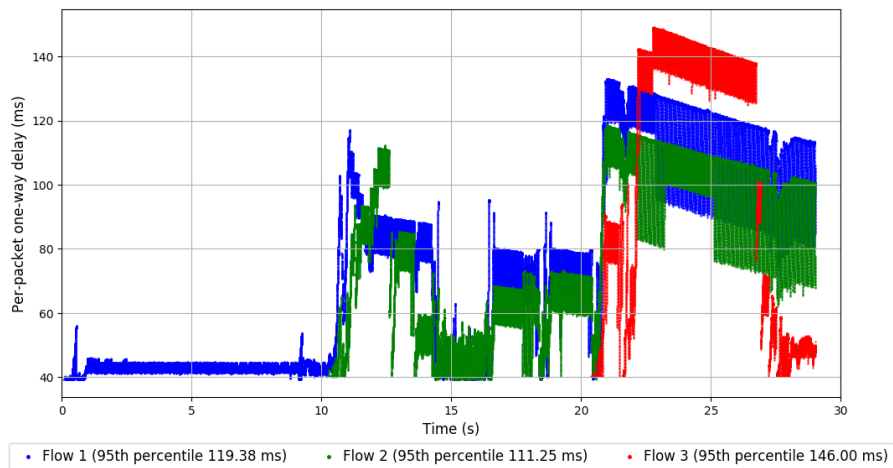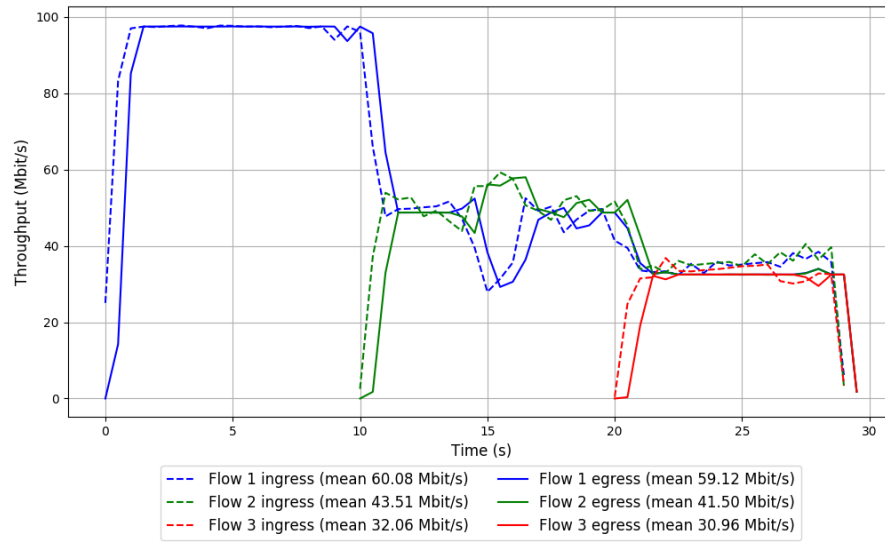
```
Run 4: Statistics of Indigo-MusesC3

Start at: 2019-02-12 05:37:31
End at: 2019-02-12 05:38:02
Local clock offset: 2.349 ms
Remote clock offset: -4.468 ms


# Below is generated by plot.py at 2019-02-12 06:23:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.40 Mbit/s
95th percentile per-packet one-way delay: 57.367 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 60.58 Mbit/s
95th percentile per-packet one-way delay: 55.373 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 41.26 Mbit/s
95th percentile per-packet one-way delay: 64.245 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 30.92 Mbit/s
95th percentile per-packet one-way delay: 53.566 ms
Loss rate: 0.90%
```
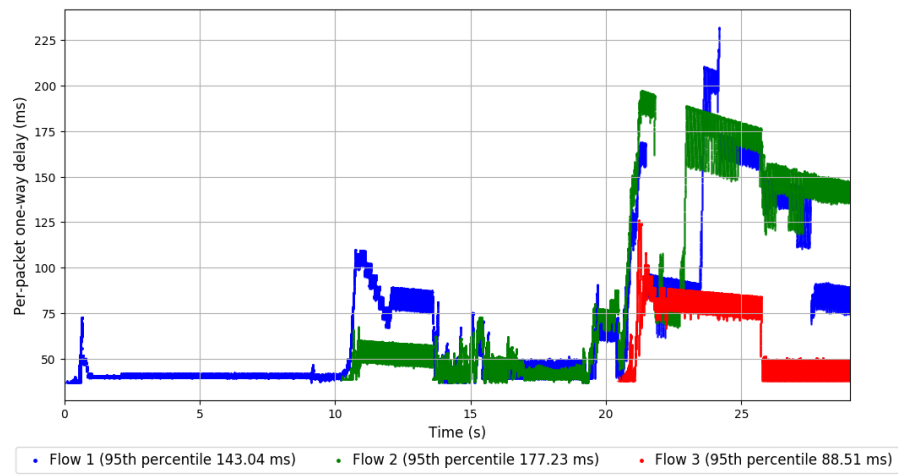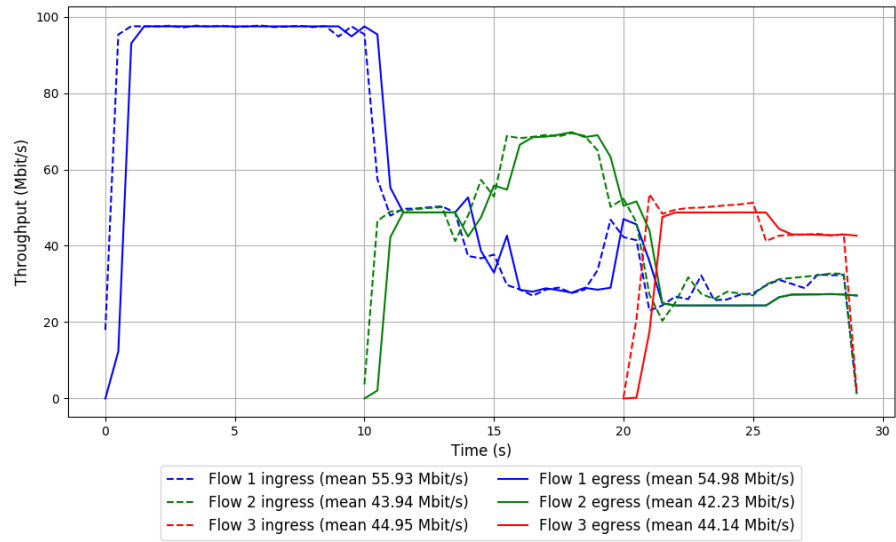
## Run 4: Report of Indigo-MusesC3 — Data Link



- - - - Flow 1 ingress (mean 60.57 Mbit/s) ——— Flow 1 egress (mean 60.58 Mbit/s)
- - - - Flow 2 ingress (mean 41.28 Mbit/s) ——— Flow 2 egress (mean 41.26 Mbit/s)
- - - - Flow 3 ingress (mean 30.98 Mbit/s) ——— Flow 3 egress (mean 30.92 Mbit/s)



- Flow 1 (95th percentile 55.37 ms)　　- Flow 2 (95th percentile 64.25 ms)　　- Flow 3 (95th percentile 53.57 ms)

```
Run 5: Statistics of Indigo-MusesC3

Start at: 2019-02-12 06:03:19
End at: 2019-02-12 06:03:49
Local clock offset: -0.684 ms
Remote clock offset: -3.261 ms


# Below is generated by plot.py at 2019-02-12 06:23:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.49 Mbit/s
95th percentile per-packet one-way delay: 54.849 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 60.56 Mbit/s
95th percentile per-packet one-way delay: 54.545 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 41.00 Mbit/s
95th percentile per-packet one-way delay: 57.192 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 31.54 Mbit/s
95th percentile per-packet one-way delay: 49.806 ms
Loss rate: 0.87%
```

Run 5: Report of Indigo-MusesC3 — Data Link

```
Run 1: Statistics of Indigo-MusesC5

Start at: 2019-02-12 04:30:01
End at: 2019-02-12 04:30:31
Local clock offset: 4.008 ms
Remote clock offset: -10.542 ms


# Below is generated by plot.py at 2019-02-12 06:24:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.31 Mbit/s
95th percentile per-packet one-way delay: 131.689 ms
Loss rate: 2.90%
-- Flow 1:
Average throughput: 59.12 Mbit/s
95th percentile per-packet one-way delay: 119.376 ms
Loss rate: 1.80%
-- Flow 2:
Average throughput: 41.50 Mbit/s
95th percentile per-packet one-way delay: 111.250 ms
Loss rate: 4.85%
-- Flow 3:
Average throughput: 30.96 Mbit/s
95th percentile per-packet one-way delay: 146.005 ms
Loss rate: 4.11%
```
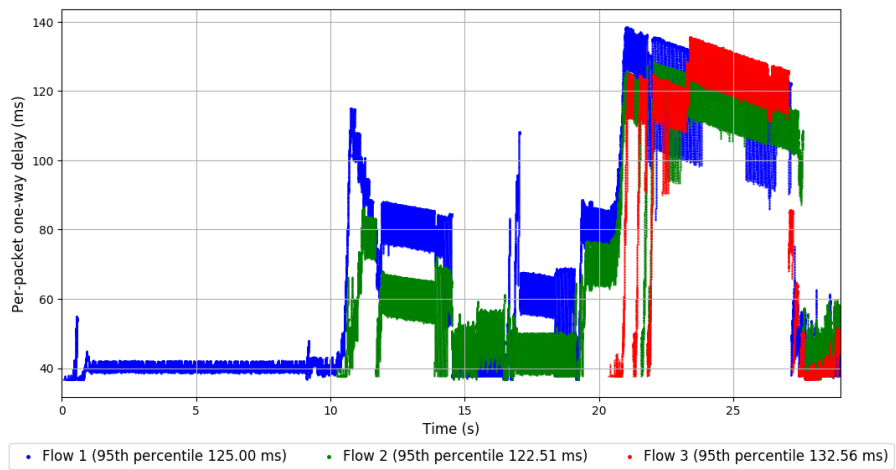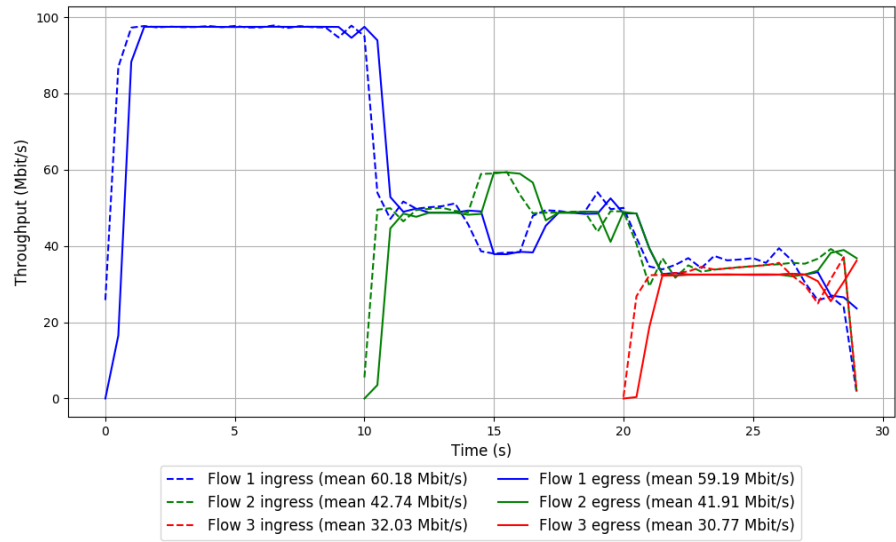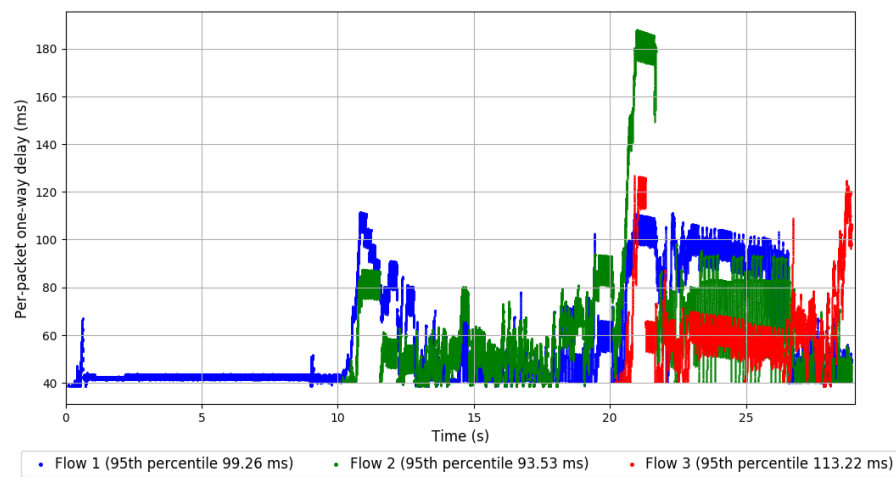
Run 1: Report of Indigo-MusesC5 — Data Link



Flow 1 ingress (mean 60.08 Mbit/s) --- Flow 1 egress (mean 59.12 Mbit/s)
Flow 2 ingress (mean 43.51 Mbit/s) --- Flow 2 egress (mean 41.50 Mbit/s)
Flow 3 ingress (mean 32.06 Mbit/s) --- Flow 3 egress (mean 30.96 Mbit/s)



Flow 1 (95th percentile 119.38 ms)   Flow 2 (95th percentile 111.25 ms)   Flow 3 (95th percentile 146.00 ms)

```
Run 2: Statistics of Indigo-MusesC5

Start at: 2019-02-12 04:55:45
End at: 2019-02-12 04:56:15
Local clock offset: 3.728 ms
Remote clock offset: -6.302 ms


# Below is generated by plot.py at 2019-02-12 06:24:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.46 Mbit/s
95th percentile per-packet one-way delay: 157.075 ms
Loss rate: 2.64%
-- Flow 1:
Average throughput: 54.98 Mbit/s
95th percentile per-packet one-way delay: 143.045 ms
Loss rate: 1.90%
-- Flow 2:
Average throughput: 42.23 Mbit/s
95th percentile per-packet one-way delay: 177.228 ms
Loss rate: 4.17%
-- Flow 3:
Average throughput: 44.14 Mbit/s
95th percentile per-packet one-way delay: 88.506 ms
Loss rate: 2.46%
```
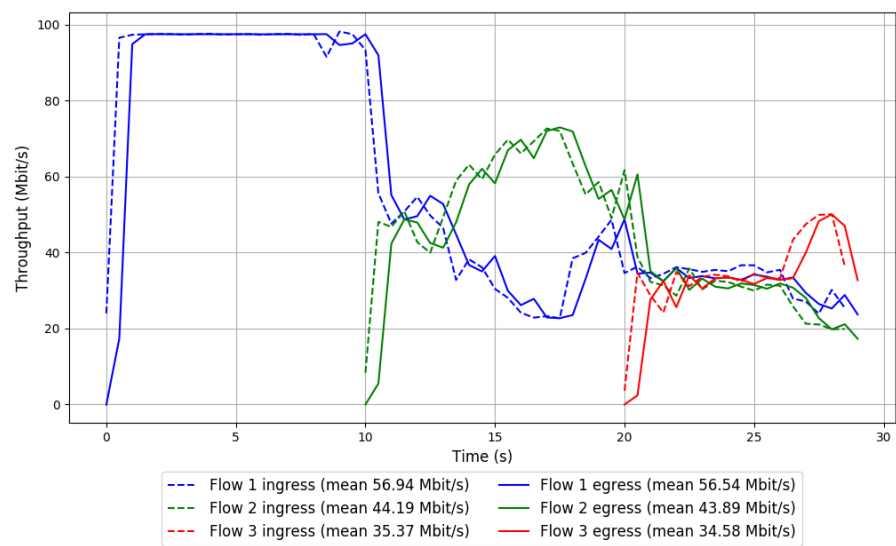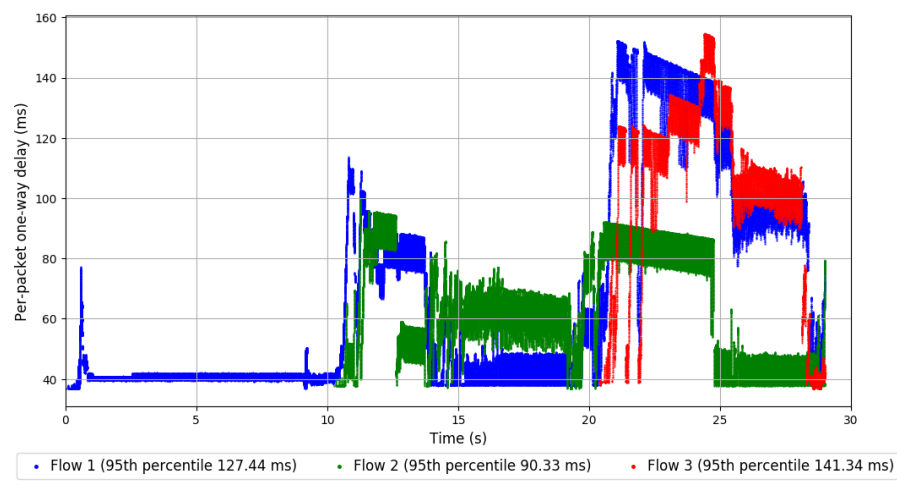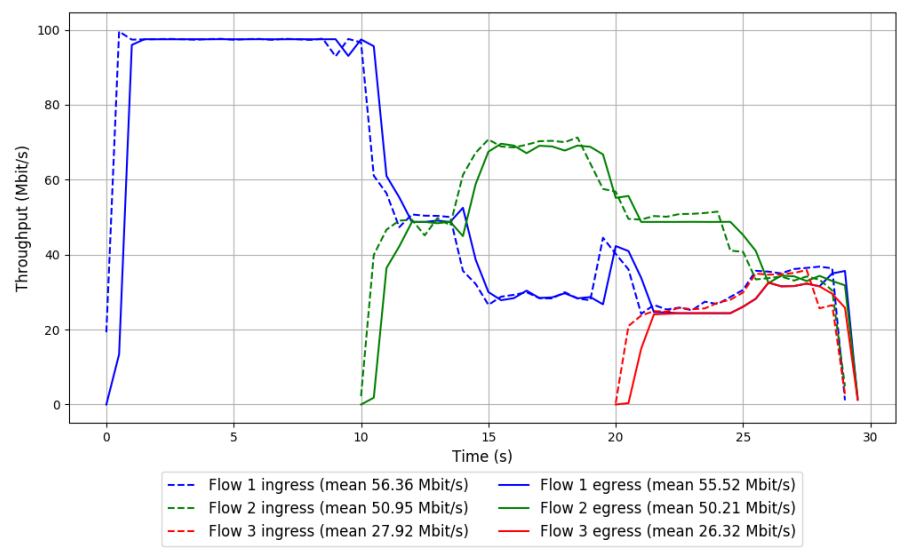
Run 2: Report of Indigo-MusesC5 — Data Link

```
Run 3: Statistics of Indigo-MusesC5

Start at: 2019-02-12 05:21:29
End at: 2019-02-12 05:21:59
Local clock offset: 3.448 ms
Remote clock offset: -4.63 ms

# Below is generated by plot.py at 2019-02-12 06:24:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.62 Mbit/s
95th percentile per-packet one-way delay: 126.597 ms
Loss rate: 2.25%
-- Flow 1:
Average throughput: 59.19 Mbit/s
95th percentile per-packet one-way delay: 124.998 ms
Loss rate: 1.87%
-- Flow 2:
Average throughput: 41.91 Mbit/s
95th percentile per-packet one-way delay: 122.514 ms
Loss rate: 2.27%
-- Flow 3:
Average throughput: 30.77 Mbit/s
95th percentile per-packet one-way delay: 132.564 ms
Loss rate: 4.62%
```
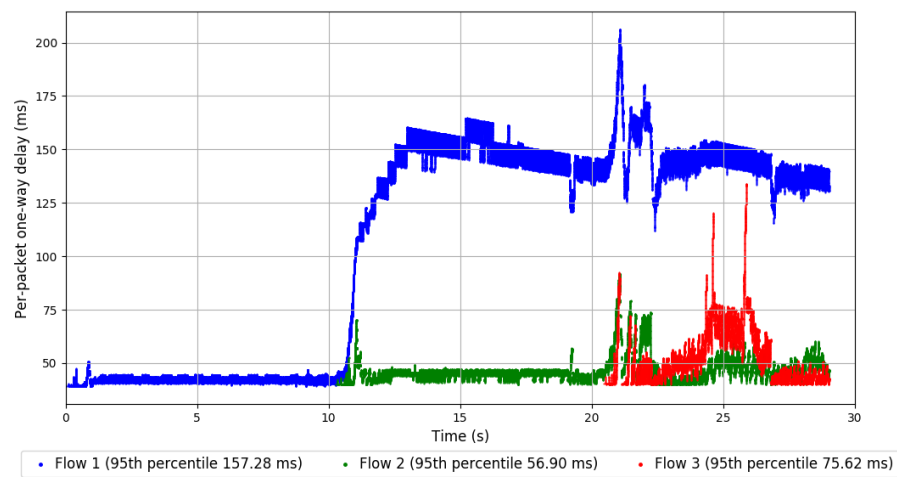
# Run 3: Report of Indigo-MusesC5 — Data Link



Flow 1 ingress (mean 60.18 Mbit/s) --- Flow 1 egress (mean 59.19 Mbit/s)
Flow 2 ingress (mean 42.74 Mbit/s) --- Flow 2 egress (mean 41.91 Mbit/s)
Flow 3 ingress (mean 32.03 Mbit/s) --- Flow 3 egress (mean 30.77 Mbit/s)



Flow 1 (95th percentile 125.00 ms) • Flow 2 (95th percentile 122.51 ms) • Flow 3 (95th percentile 132.56 ms)

```
Run 4: Statistics of Indigo-MusesC5

Start at: 2019-02-12 05:47:13
End at: 2019-02-12 05:47:43
Local clock offset: 0.518 ms
Remote clock offset: -5.351 ms


# Below is generated by plot.py at 2019-02-12 06:24:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.55 Mbit/s
95th percentile per-packet one-way delay: 99.626 ms
Loss rate: 1.15%
-- Flow 1:
Average throughput: 56.54 Mbit/s
95th percentile per-packet one-way delay: 99.262 ms
Loss rate: 0.92%
-- Flow 2:
Average throughput: 43.89 Mbit/s
95th percentile per-packet one-way delay: 93.527 ms
Loss rate: 0.94%
-- Flow 3:
Average throughput: 34.58 Mbit/s
95th percentile per-packet one-way delay: 113.216 ms
Loss rate: 2.93%
```

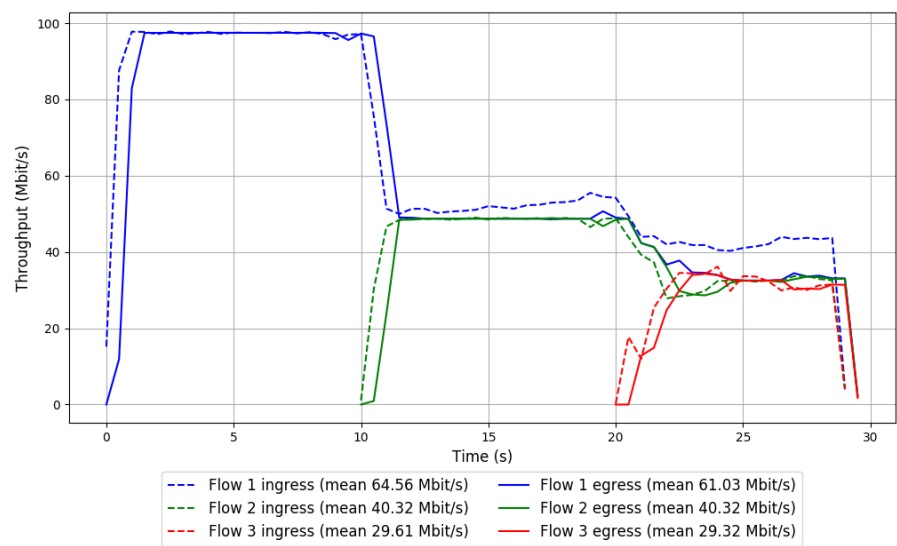Run 4: Report of Indigo-MusesC5 — Data Link

```
Run 5: Statistics of Indigo-MusesC5

Start at: 2019-02-12 06:13:00
End at: 2019-02-12 06:13:30
Local clock offset: -2.445 ms
Remote clock offset: -3.093 ms


# Below is generated by plot.py at 2019-02-12 06:24:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.88 Mbit/s
95th percentile per-packet one-way delay: 124.084 ms
Loss rate: 2.09%
-- Flow 1:
Average throughput: 55.52 Mbit/s
95th percentile per-packet one-way delay: 127.443 ms
Loss rate: 1.62%
-- Flow 2:
Average throughput: 50.21 Mbit/s
95th percentile per-packet one-way delay: 90.333 ms
Loss rate: 1.81%
-- Flow 3:
Average throughput: 26.32 Mbit/s
95th percentile per-packet one-way delay: 141.342 ms
Loss rate: 6.42%
```
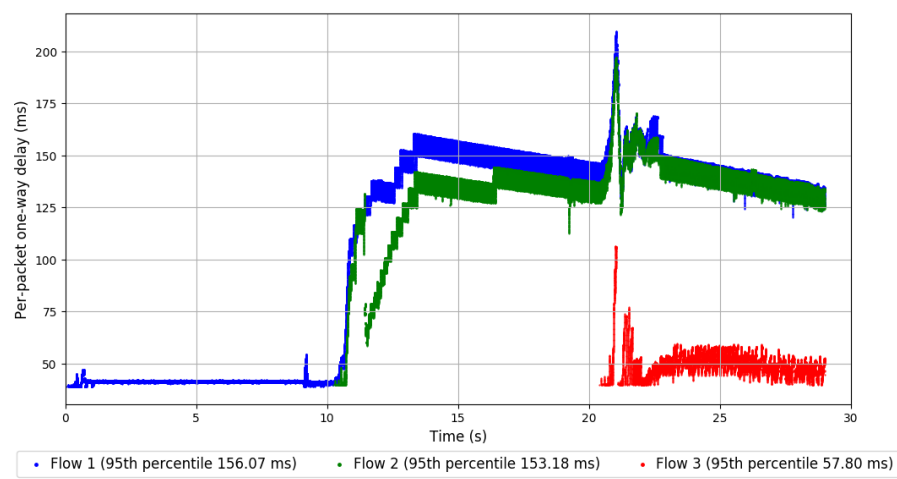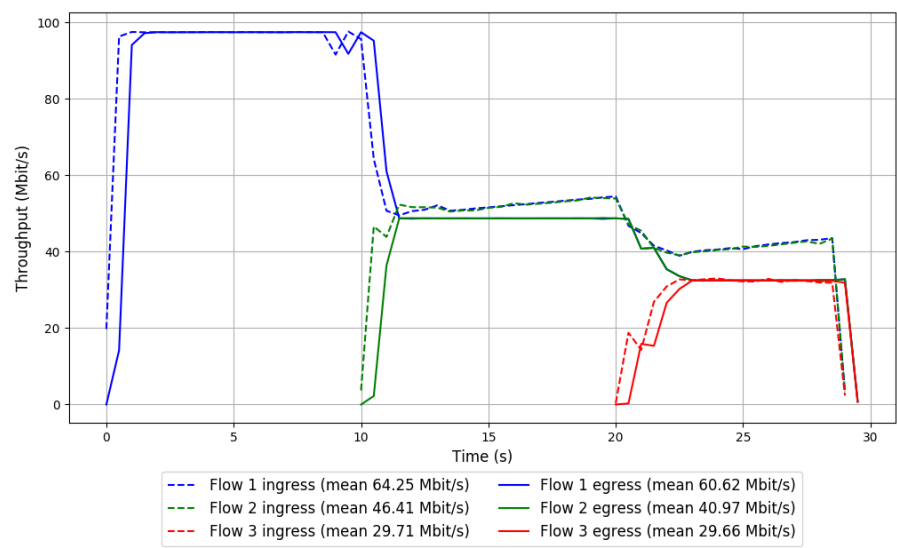
Run 5: Report of Indigo-MusesC5 — Data Link



- - - Flow 1 ingress (mean 56.36 Mbit/s)     —— Flow 1 egress (mean 55.52 Mbit/s)
- - - Flow 2 ingress (mean 50.95 Mbit/s)     —— Flow 2 egress (mean 50.21 Mbit/s)
- - - Flow 3 ingress (mean 27.92 Mbit/s)     —— Flow 3 egress (mean 26.32 Mbit/s)



- Flow 1 (95th percentile 127.44 ms)     • Flow 2 (95th percentile 90.33 ms)     • Flow 3 (95th percentile 141.34 ms)
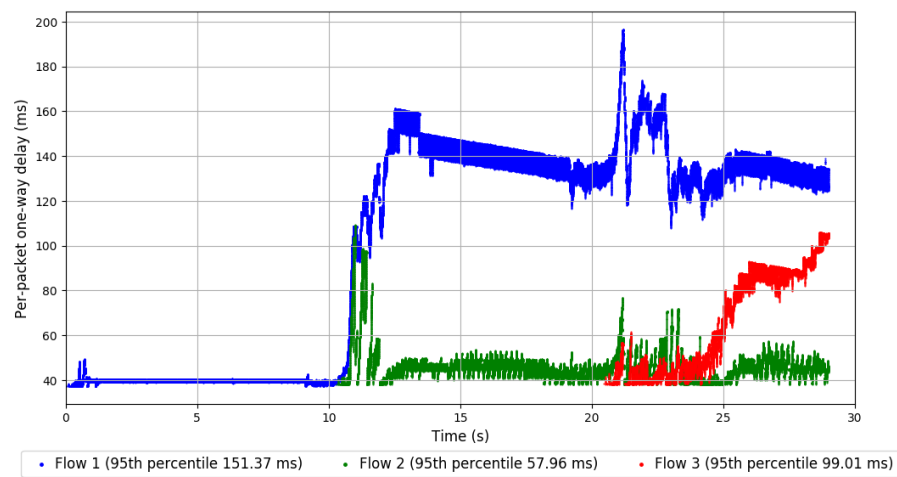
84

```
Run 1: Statistics of Indigo-MusesD

Start at: 2019-02-12 04:16:29
End at: 2019-02-12 04:16:59
Local clock offset: 2.867 ms
Remote clock offset: -11.201 ms


# Below is generated by plot.py at 2019-02-12 06:24:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.81 Mbit/s
95th percentile per-packet one-way delay: 154.005 ms
Loss rate: 3.91%
-- Flow 1:
Average throughput: 61.03 Mbit/s
95th percentile per-packet one-way delay: 157.278 ms
Loss rate: 5.64%
-- Flow 2:
Average throughput: 40.32 Mbit/s
95th percentile per-packet one-way delay: 56.895 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 29.32 Mbit/s
95th percentile per-packet one-way delay: 75.622 ms
Loss rate: 1.74%
```

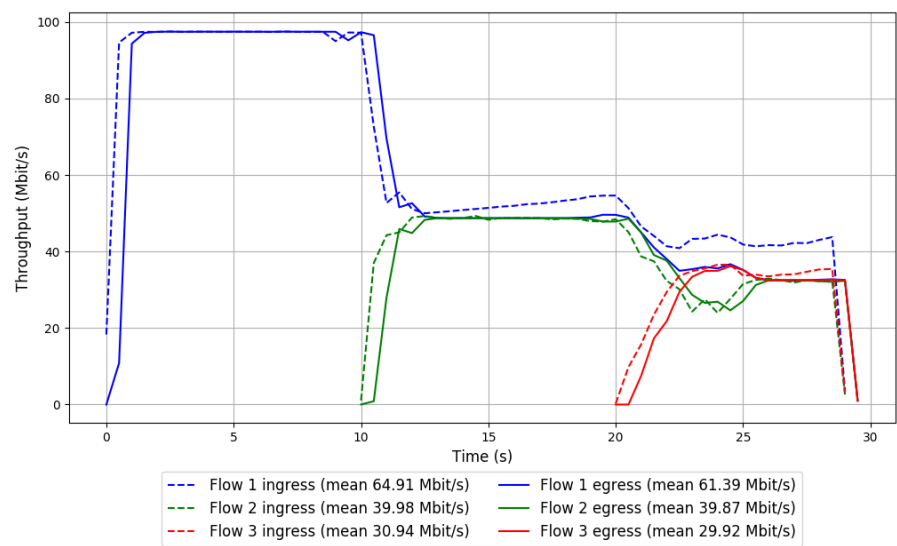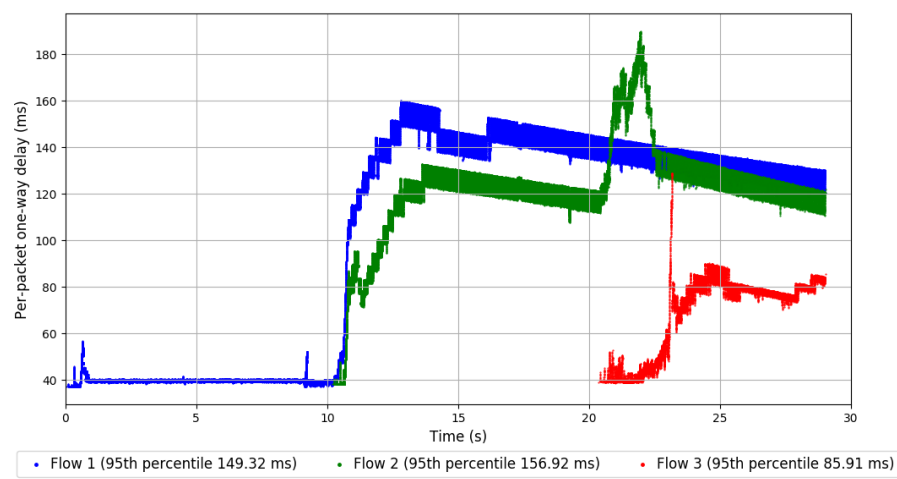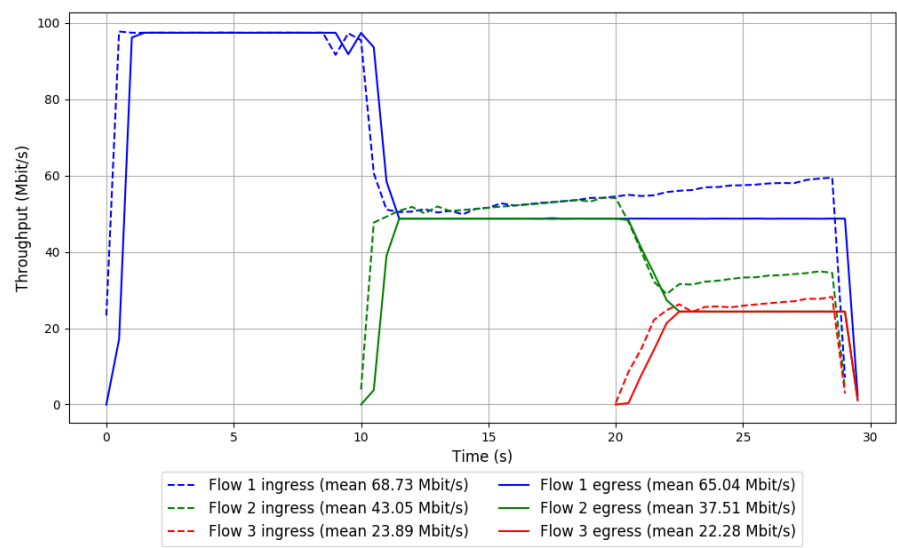Run 1: Report of Indigo-MusesD — Data Link



Flow 1 ingress (mean 64.56 Mbit/s) --- Flow 1 egress (mean 61.03 Mbit/s)
Flow 2 ingress (mean 40.32 Mbit/s) --- Flow 2 egress (mean 40.32 Mbit/s)
Flow 3 ingress (mean 29.61 Mbit/s) --- Flow 3 egress (mean 29.32 Mbit/s)



Flow 1 (95th percentile 157.28 ms)  Flow 2 (95th percentile 56.90 ms)  Flow 3 (95th percentile 75.62 ms)

```
Run 2: Statistics of Indigo-MusesD

Start at: 2019-02-12 04:42:24
End at: 2019-02-12 04:42:54
Local clock offset: 3.763 ms
Remote clock offset: -9.3 ms


# Below is generated by plot.py at 2019-02-12 06:24:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.00 Mbit/s
95th percentile per-packet one-way delay: 155.023 ms
Loss rate: 7.23%
-- Flow 1:
Average throughput: 60.62 Mbit/s
95th percentile per-packet one-way delay: 156.072 ms
Loss rate: 5.86%
-- Flow 2:
Average throughput: 40.97 Mbit/s
95th percentile per-packet one-way delay: 153.175 ms
Loss rate: 12.02%
-- Flow 3:
Average throughput: 29.66 Mbit/s
95th percentile per-packet one-way delay: 57.800 ms
Loss rate: 0.91%
```
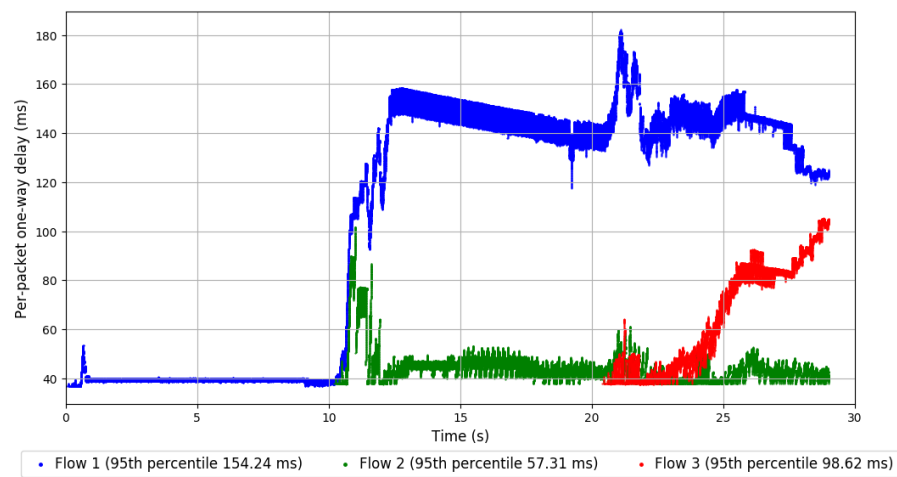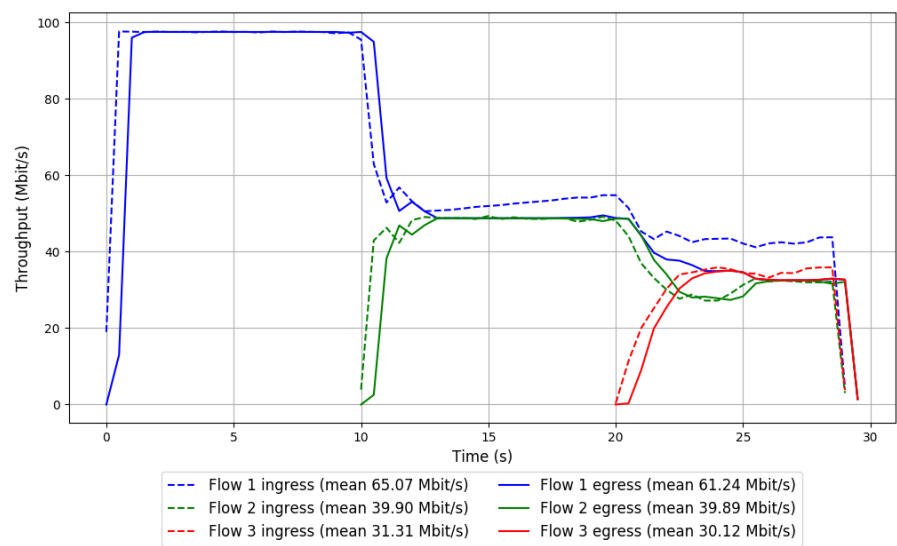
Run 2: Report of Indigo-MusesD — Data Link



- - - Flow 1 ingress (mean 64.25 Mbit/s)     —— Flow 1 egress (mean 60.62 Mbit/s)
- - - Flow 2 ingress (mean 46.41 Mbit/s)     —— Flow 2 egress (mean 40.97 Mbit/s)
- - - Flow 3 ingress (mean 29.71 Mbit/s)     —— Flow 3 egress (mean 29.66 Mbit/s)



• Flow 1 (95th percentile 156.07 ms)     • Flow 2 (95th percentile 153.18 ms)     • Flow 3 (95th percentile 57.80 ms)

```
Run 3: Statistics of Indigo-MusesD

Start at: 2019-02-12 05:08:03
End at: 2019-02-12 05:08:33
Local clock offset: 3.65 ms
Remote clock offset: -5.648 ms


# Below is generated by plot.py at 2019-02-12 06:25:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.99 Mbit/s
95th percentile per-packet one-way delay: 146.760 ms
Loss rate: 4.19%
-- Flow 1:
Average throughput: 61.39 Mbit/s
95th percentile per-packet one-way delay: 151.365 ms
Loss rate: 5.63%
-- Flow 2:
Average throughput: 39.87 Mbit/s
95th percentile per-packet one-way delay: 57.963 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 29.92 Mbit/s
95th percentile per-packet one-way delay: 99.007 ms
Loss rate: 3.99%
```
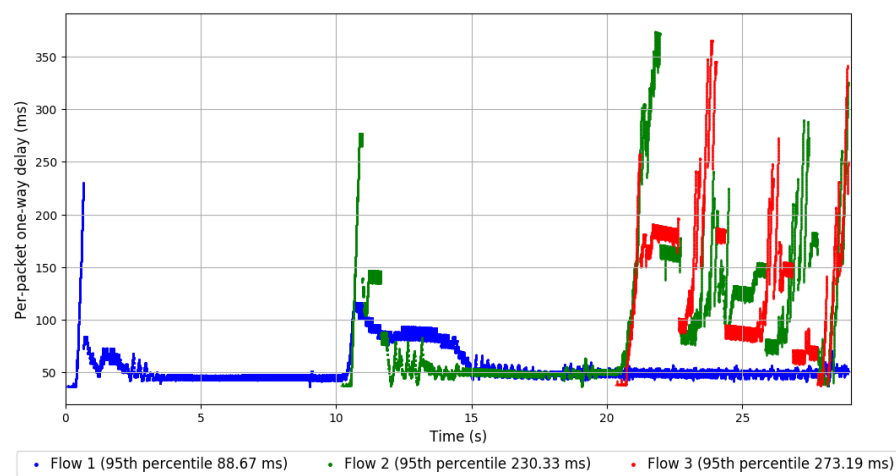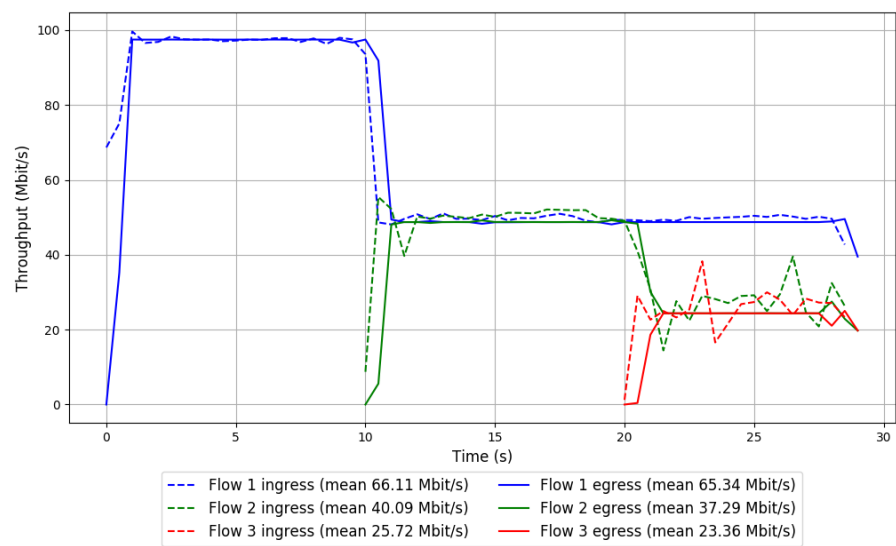
Run 3: Report of Indigo-MusesD — Data Link

```
Run 4: Statistics of Indigo-MusesD

Start at: 2019-02-12 05:33:52
End at: 2019-02-12 05:34:22
Local clock offset: 3.519 ms
Remote clock offset: -4.328 ms


# Below is generated by plot.py at 2019-02-12 06:25:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.08 Mbit/s
95th percentile per-packet one-way delay: 149.261 ms
Loss rate: 7.74%
-- Flow 1:
Average throughput: 65.04 Mbit/s
95th percentile per-packet one-way delay: 149.317 ms
Loss rate: 5.58%
-- Flow 2:
Average throughput: 37.51 Mbit/s
95th percentile per-packet one-way delay: 156.916 ms
Loss rate: 13.14%
-- Flow 3:
Average throughput: 22.28 Mbit/s
95th percentile per-packet one-way delay: 85.909 ms
Loss rate: 7.40%
```
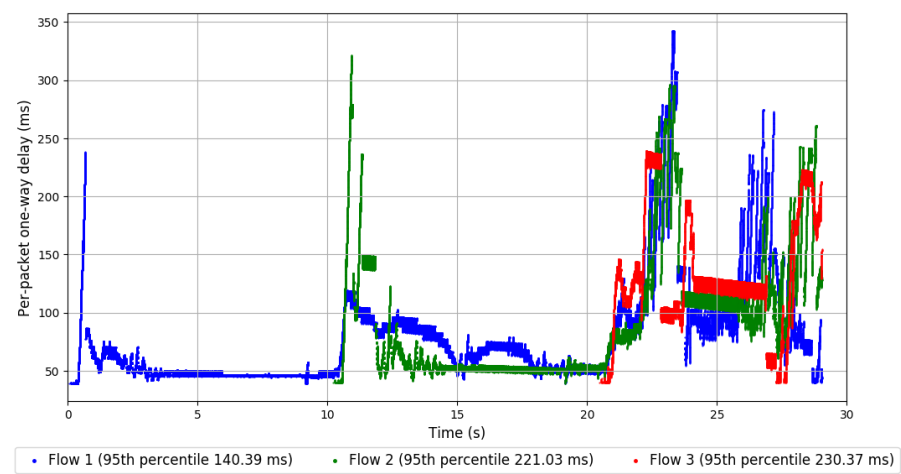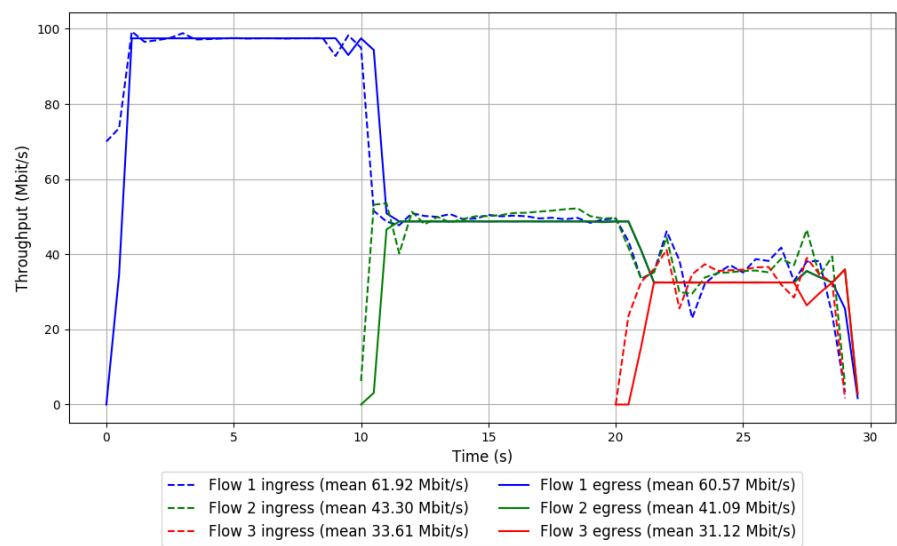
Run 4: Report of Indigo-MusesD — Data Link



- - - Flow 1 ingress (mean 68.73 Mbit/s) —— Flow 1 egress (mean 65.04 Mbit/s)
- - - Flow 2 ingress (mean 43.05 Mbit/s) —— Flow 2 egress (mean 37.51 Mbit/s)
- - - Flow 3 ingress (mean 23.89 Mbit/s) —— Flow 3 egress (mean 22.28 Mbit/s)



• Flow 1 (95th percentile 149.32 ms)    • Flow 2 (95th percentile 156.92 ms)    • Flow 3 (95th percentile 85.91 ms)

```
Run 5: Statistics of Indigo-MusesD

Start at: 2019-02-12 05:59:37
End at: 2019-02-12 06:00:07
Local clock offset: -0.484 ms
Remote clock offset: -3.305 ms


# Below is generated by plot.py at 2019-02-12 06:25:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.10 Mbit/s
95th percentile per-packet one-way delay: 152.066 ms
Loss rate: 4.46%
-- Flow 1:
Average throughput: 61.24 Mbit/s
95th percentile per-packet one-way delay: 154.241 ms
Loss rate: 6.09%
-- Flow 2:
Average throughput: 39.89 Mbit/s
95th percentile per-packet one-way delay: 57.313 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 30.12 Mbit/s
95th percentile per-packet one-way delay: 98.623 ms
Loss rate: 4.49%
```

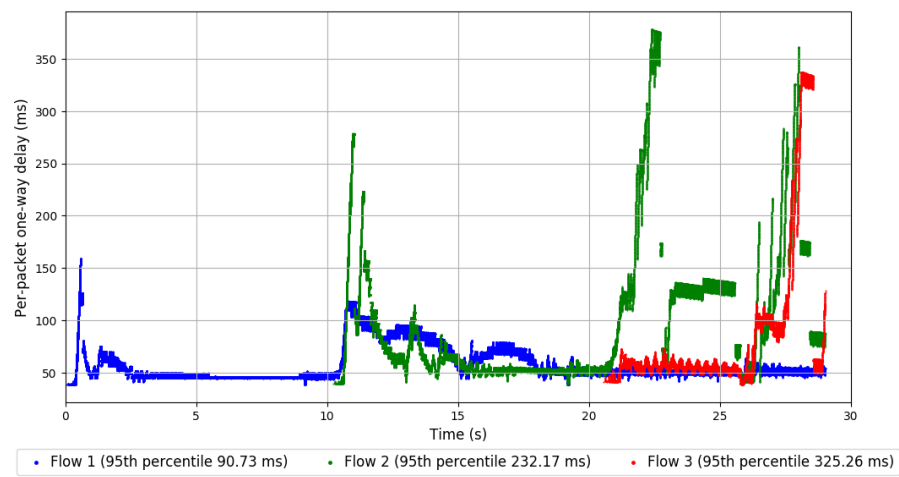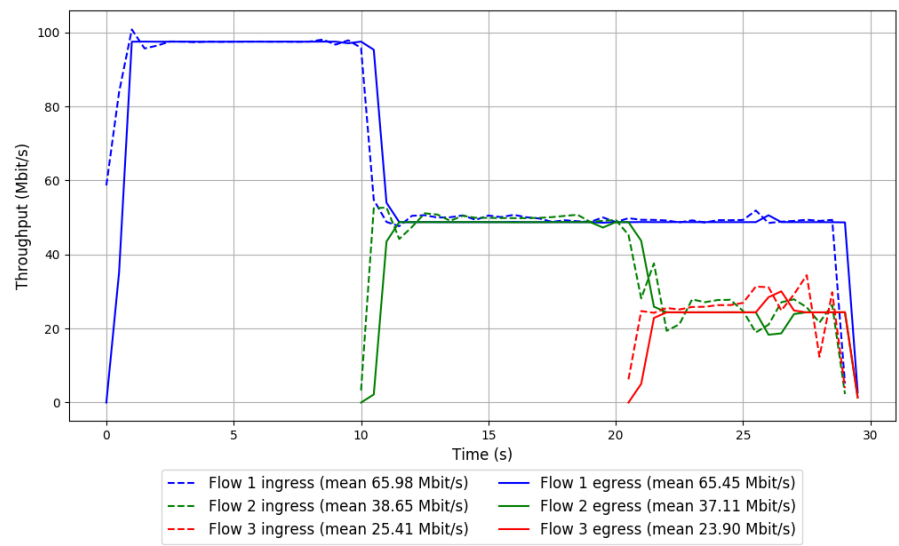Run 5: Report of Indigo-MusesD — Data Link



Flow 1 ingress (mean 65.07 Mbit/s) --- Flow 1 egress (mean 61.24 Mbit/s)
Flow 2 ingress (mean 39.90 Mbit/s) --- Flow 2 egress (mean 39.89 Mbit/s)
Flow 3 ingress (mean 31.31 Mbit/s) --- Flow 3 egress (mean 30.12 Mbit/s)



Flow 1 (95th percentile 154.24 ms)  Flow 2 (95th percentile 57.31 ms)  Flow 3 (95th percentile 98.62 ms)

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```
Run 1: Statistics of Indigo-MusesT

Start at: 2019-02-12 04:22:38
End at: 2019-02-12 04:23:08
Local clock offset: 3.519 ms
Remote clock offset: -8.397 ms

# Below is generated by plot.py at 2019-02-12 06:25:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.49 Mbit/s
95th percentile per-packet one-way delay: 172.382 ms
Loss rate: 3.35%
-- Flow 1:
Average throughput: 65.34 Mbit/s
95th percentile per-packet one-way delay: 88.670 ms
Loss rate: 1.38%
-- Flow 2:
Average throughput: 37.29 Mbit/s
95th percentile per-packet one-way delay: 230.334 ms
Loss rate: 6.50%
-- Flow 3:
Average throughput: 23.36 Mbit/s
95th percentile per-packet one-way delay: 273.195 ms
Loss rate: 9.75%
```

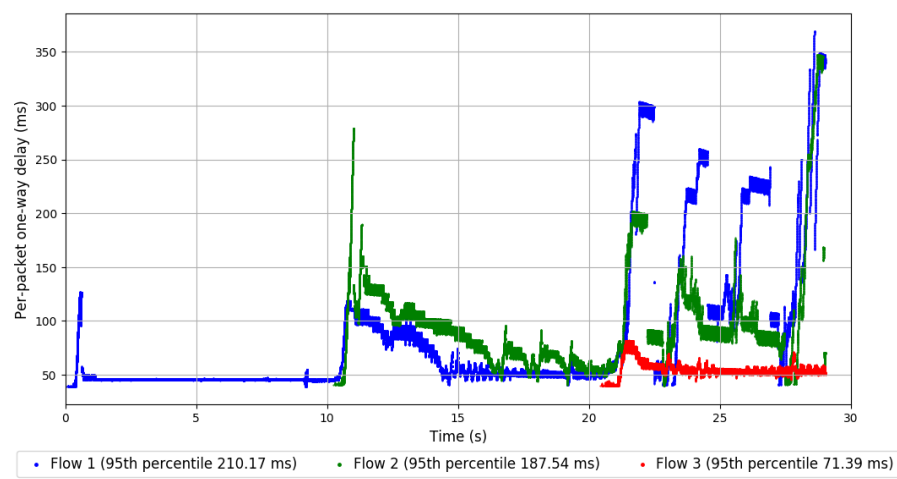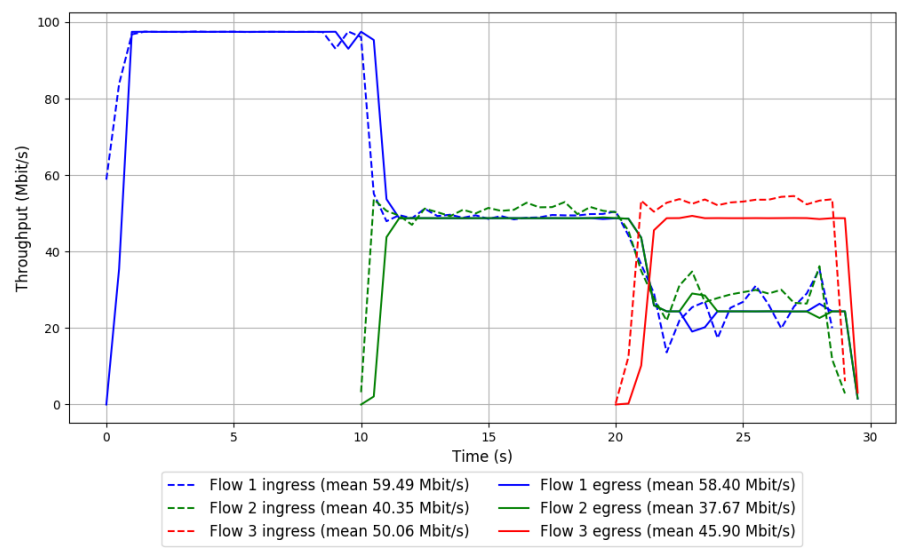Run 1: Report of Indigo-MusesT — Data Link

```
Run 2: Statistics of Indigo-MusesT

Start at: 2019-02-12 04:48:27
End at: 2019-02-12 04:48:57
Local clock offset: 3.689 ms
Remote clock offset: -8.877 ms


# Below is generated by plot.py at 2019-02-12 06:25:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.43 Mbit/s
95th percentile per-packet one-way delay: 195.762 ms
Loss rate: 3.81%
-- Flow 1:
Average throughput: 60.57 Mbit/s
95th percentile per-packet one-way delay: 140.394 ms
Loss rate: 2.39%
-- Flow 2:
Average throughput: 41.09 Mbit/s
95th percentile per-packet one-way delay: 221.034 ms
Loss rate: 5.39%
-- Flow 3:
Average throughput: 31.12 Mbit/s
95th percentile per-packet one-way delay: 230.370 ms
Loss rate: 8.13%
```

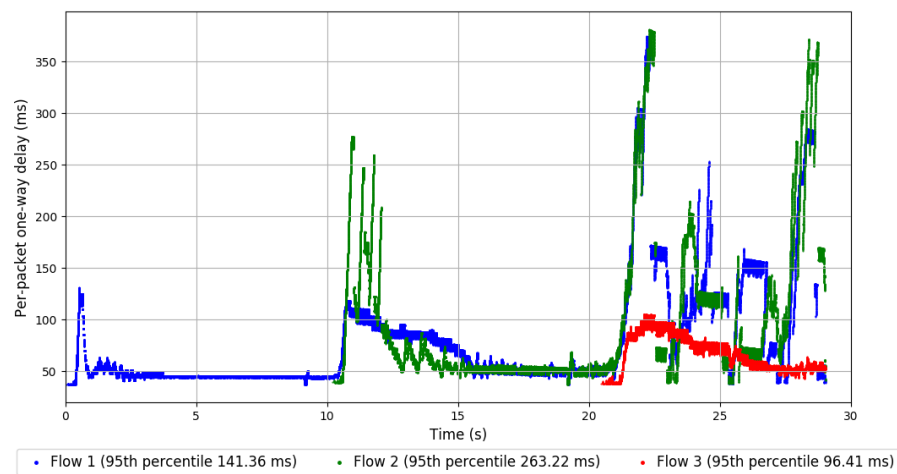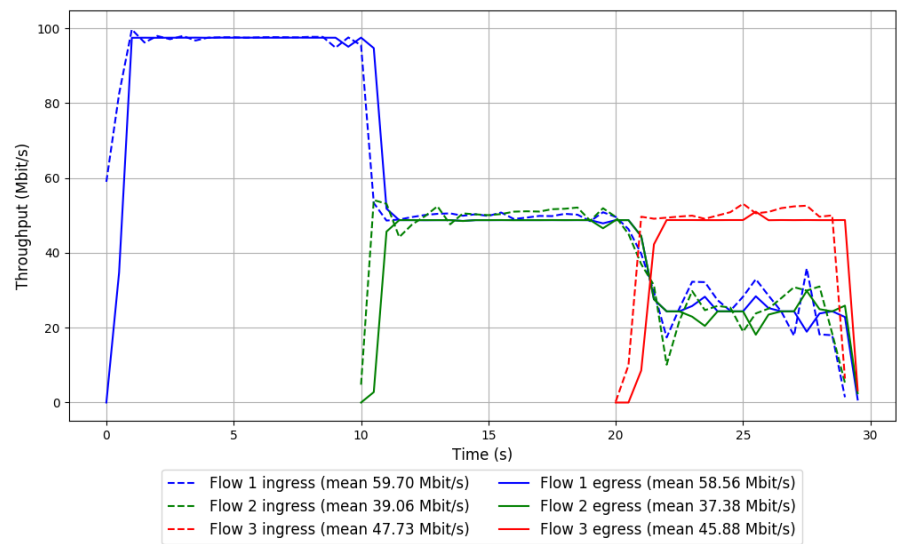Run 2: Report of Indigo-MusesT — Data Link

```
Run 3: Statistics of Indigo-MusesT

Start at: 2019-02-12 05:14:07
End at: 2019-02-12 05:14:37
Local clock offset: 3.483 ms
Remote clock offset: -6.759 ms


# Below is generated by plot.py at 2019-02-12 06:25:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.48 Mbit/s
95th percentile per-packet one-way delay: 134.174 ms
Loss rate: 2.28%
-- Flow 1:
Average throughput: 65.45 Mbit/s
95th percentile per-packet one-way delay: 90.733 ms
Loss rate: 1.03%
-- Flow 2:
Average throughput: 37.11 Mbit/s
95th percentile per-packet one-way delay: 232.173 ms
Loss rate: 4.27%
-- Flow 3:
Average throughput: 23.90 Mbit/s
95th percentile per-packet one-way delay: 325.257 ms
Loss rate: 6.70%
```
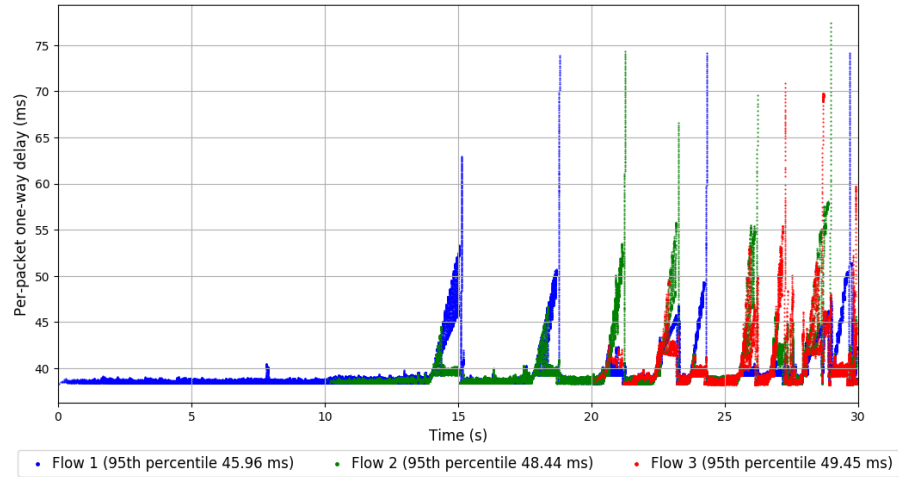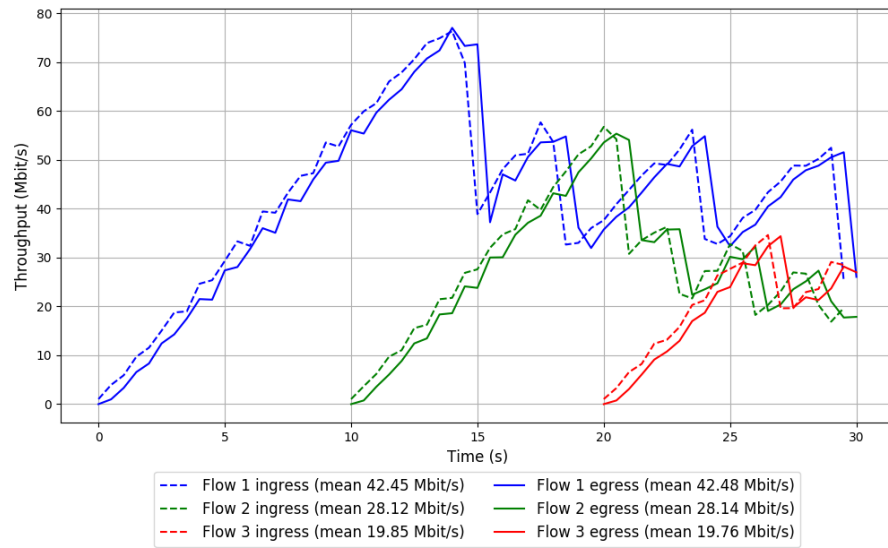
# Run 3: Report of Indigo-MusesT — Data Link



- - - Flow 1 ingress (mean 65.98 Mbit/s) — Flow 1 egress (mean 65.45 Mbit/s)
- - - Flow 2 ingress (mean 38.65 Mbit/s) — Flow 2 egress (mean 37.11 Mbit/s)
- - - Flow 3 ingress (mean 25.41 Mbit/s) — Flow 3 egress (mean 23.90 Mbit/s)



• Flow 1 (95th percentile 90.73 ms)   • Flow 2 (95th percentile 232.17 ms)   • Flow 3 (95th percentile 325.26 ms)

```
Run 4: Statistics of Indigo-MusesT

Start at: 2019-02-12 05:39:55
End at: 2019-02-12 05:40:25
Local clock offset: 1.737 ms
Remote clock offset: -5.989 ms

# Below is generated by plot.py at 2019-02-12 06:26:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.45 Mbit/s
95th percentile per-packet one-way delay: 166.733 ms
Loss rate: 3.99%
-- Flow 1:
Average throughput: 58.40 Mbit/s
95th percentile per-packet one-way delay: 210.171 ms
Loss rate: 1.41%
-- Flow 2:
Average throughput: 37.67 Mbit/s
95th percentile per-packet one-way delay: 187.538 ms
Loss rate: 6.97%
-- Flow 3:
Average throughput: 45.90 Mbit/s
95th percentile per-packet one-way delay: 71.395 ms
Loss rate: 8.98%
```

Run 4: Report of Indigo-MusesT — Data Link

```
Run 5: Statistics of Indigo-MusesT

Start at: 2019-02-12 06:05:42
End at: 2019-02-12 06:06:12
Local clock offset: -1.072 ms
Remote clock offset: -3.228 ms


# Below is generated by plot.py at 2019-02-12 06:26:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.40 Mbit/s
95th percentile per-packet one-way delay: 166.618 ms
Loss rate: 3.12%
-- Flow 1:
Average throughput: 58.56 Mbit/s
95th percentile per-packet one-way delay: 141.361 ms
Loss rate: 2.13%
-- Flow 2:
Average throughput: 37.38 Mbit/s
95th percentile per-packet one-way delay: 263.219 ms
Loss rate: 4.64%
-- Flow 3:
Average throughput: 45.88 Mbit/s
95th percentile per-packet one-way delay: 96.407 ms
Loss rate: 4.60%
```

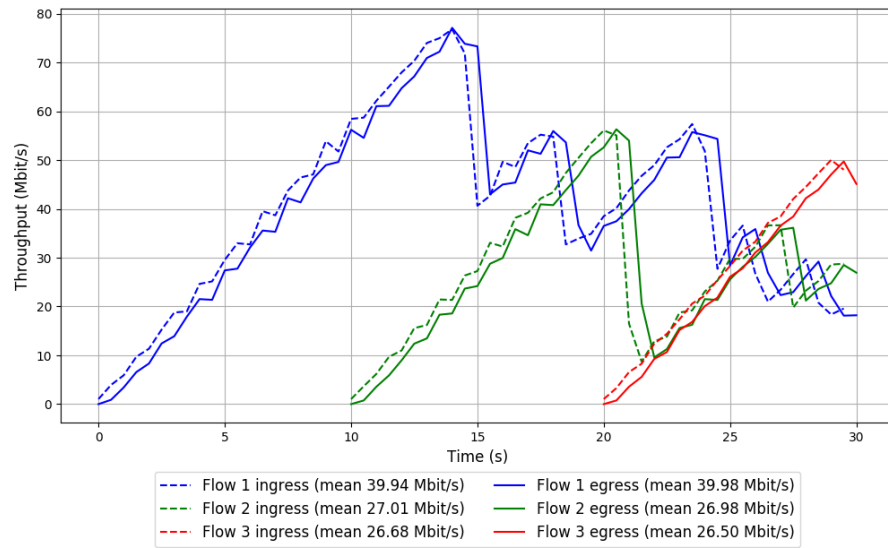Run 5: Report of Indigo-MusesT — Data Link

```
Run 1: Statistics of LEDBAT

Start at: 2019-02-12 04:10:13
End at: 2019-02-12 04:10:43
Local clock offset: 1.795 ms
Remote clock offset: -10.619 ms


# Below is generated by plot.py at 2019-02-12 06:26:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 67.74 Mbit/s
95th percentile per-packet one-way delay: 46.808 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 42.48 Mbit/s
95th percentile per-packet one-way delay: 45.957 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 28.14 Mbit/s
95th percentile per-packet one-way delay: 48.438 ms
Loss rate: 0.26%
-- Flow 3:
Average throughput: 19.76 Mbit/s
95th percentile per-packet one-way delay: 49.451 ms
Loss rate: 1.10%
```
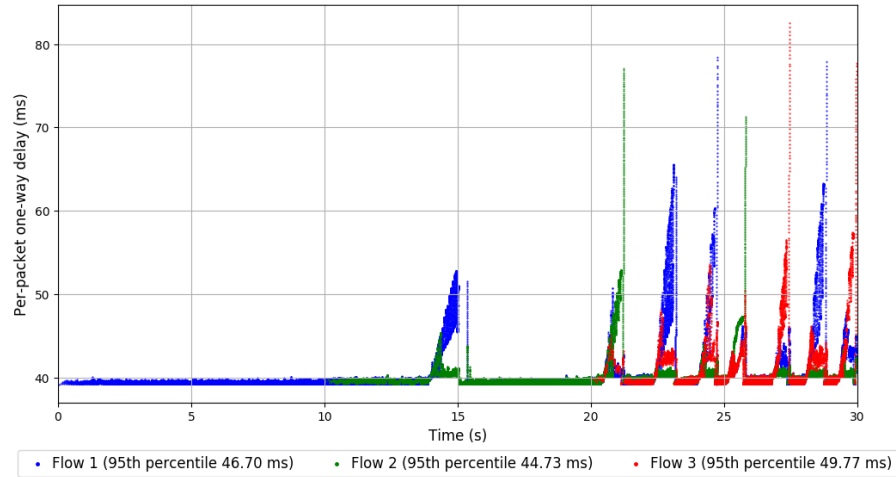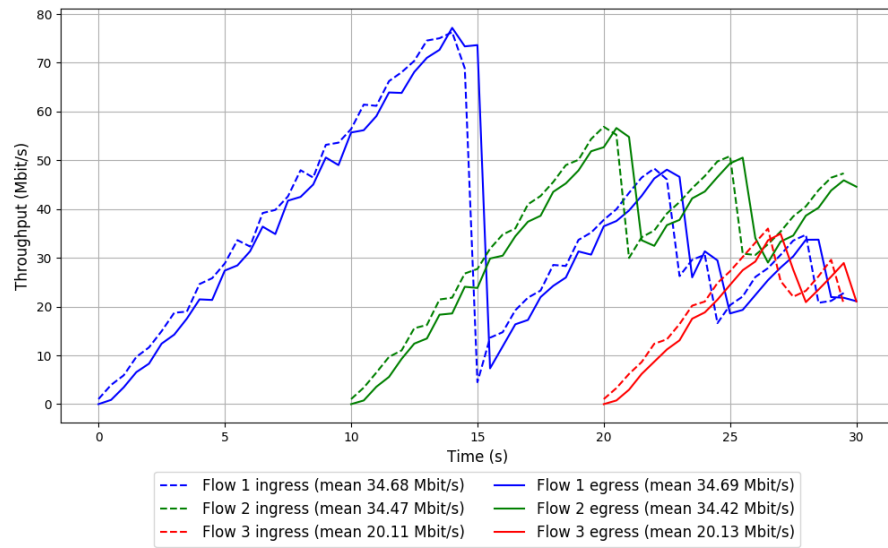
Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2019-02-12 04:36:19
End at: 2019-02-12 04:36:49
Local clock offset: 4.044 ms
Remote clock offset: -9.255 ms


# Below is generated by plot.py at 2019-02-12 06:26:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 66.70 Mbit/s
95th percentile per-packet one-way delay: 46.354 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 39.98 Mbit/s
95th percentile per-packet one-way delay: 46.962 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 26.98 Mbit/s
95th percentile per-packet one-way delay: 46.855 ms
Loss rate: 0.43%
-- Flow 3:
Average throughput: 26.50 Mbit/s
95th percentile per-packet one-way delay: 43.944 ms
Loss rate: 1.34%
```
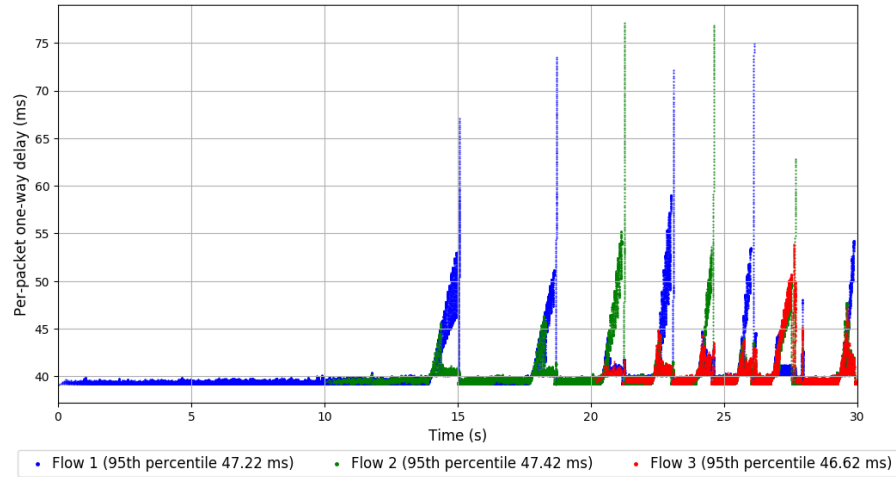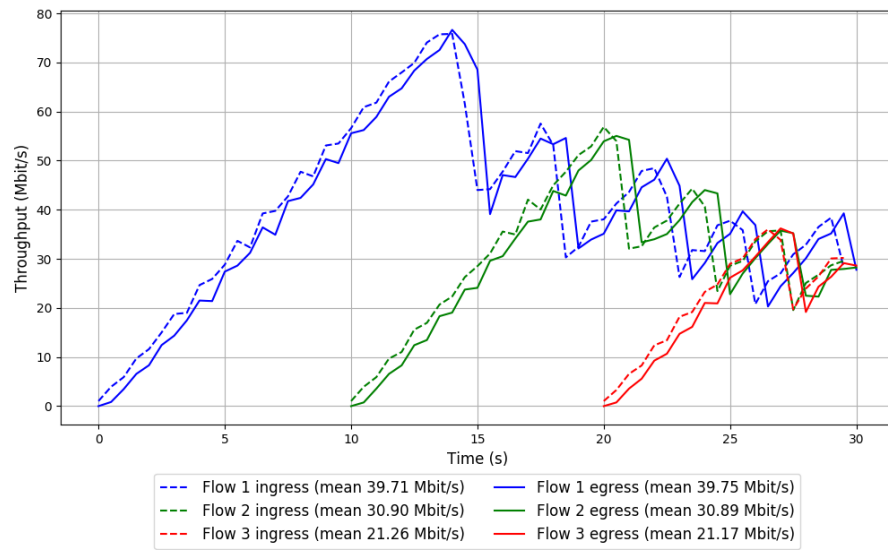
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2019-02-12 05:01:56
End at: 2019-02-12 05:02:26
Local clock offset: 3.807 ms
Remote clock offset: -8.14 ms


# Below is generated by plot.py at 2019-02-12 06:26:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 64.25 Mbit/s
95th percentile per-packet one-way delay: 46.532 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 34.69 Mbit/s
95th percentile per-packet one-way delay: 46.705 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 34.42 Mbit/s
95th percentile per-packet one-way delay: 44.728 ms
Loss rate: 0.48%
-- Flow 3:
Average throughput: 20.13 Mbit/s
95th percentile per-packet one-way delay: 49.766 ms
Loss rate: 0.56%
```
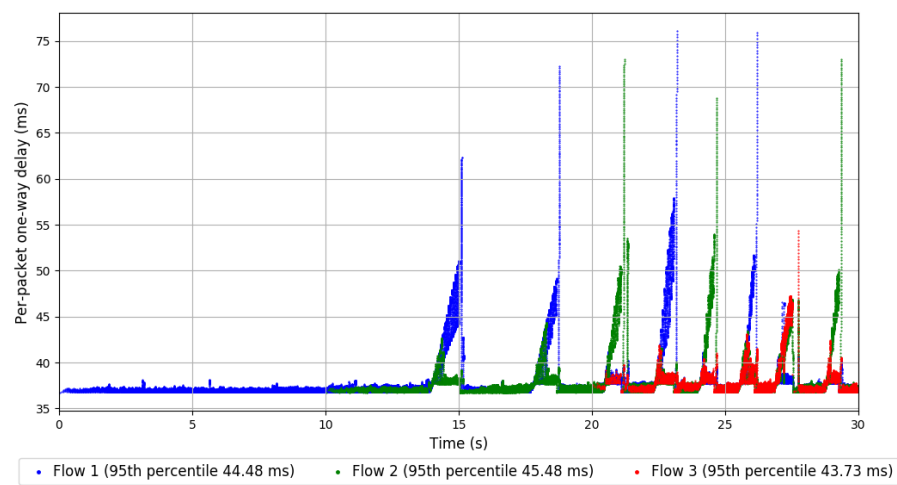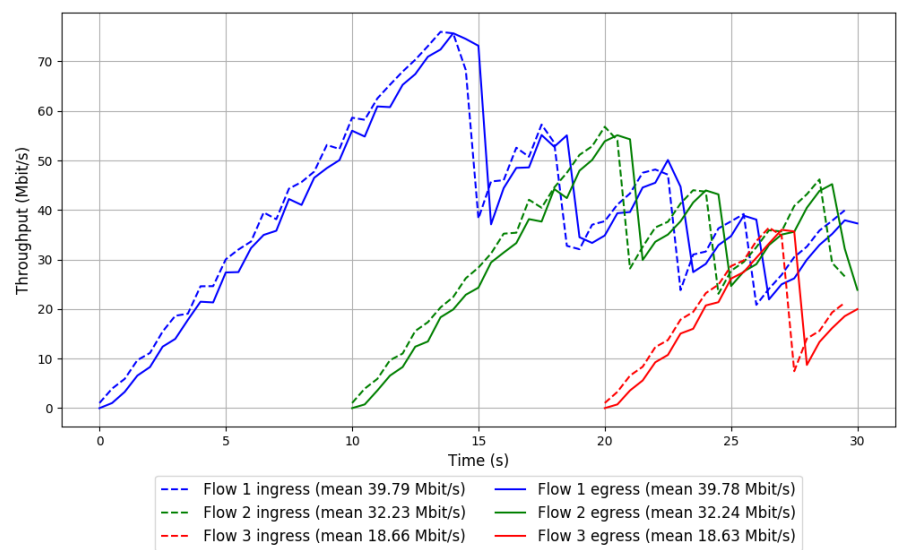
Run 3: Report of LEDBAT — Data Link



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```
Run 4: Statistics of LEDBAT

Start at: 2019-02-12 05:27:46
End at: 2019-02-12 05:28:16
Local clock offset: 3.466 ms
Remote clock offset: -6.864 ms


# Below is generated by plot.py at 2019-02-12 06:26:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 67.22 Mbit/s
95th percentile per-packet one-way delay: 47.228 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 39.75 Mbit/s
95th percentile per-packet one-way delay: 47.217 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 30.89 Mbit/s
95th percentile per-packet one-way delay: 47.416 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 21.17 Mbit/s
95th percentile per-packet one-way delay: 46.620 ms
Loss rate: 1.04%
```
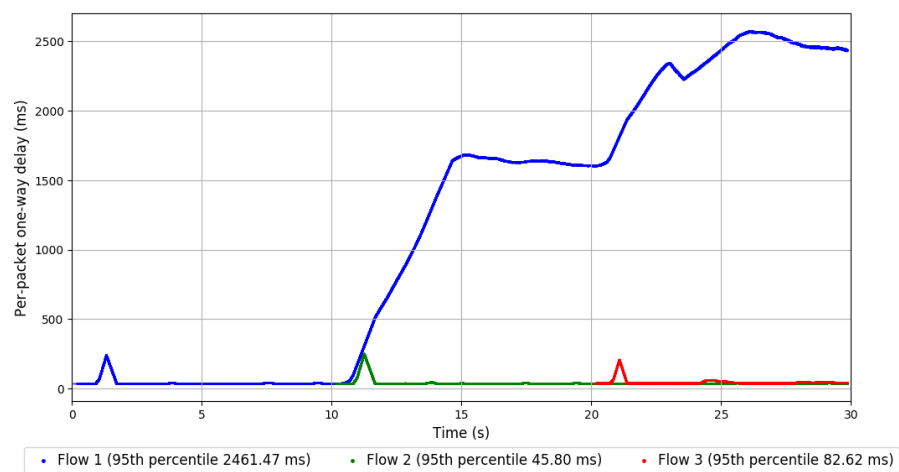
Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2019-02-12 05:53:28
End at: 2019-02-12 05:53:58
Local clock offset: -0.063 ms
Remote clock offset: -3.333 ms


# Below is generated by plot.py at 2019-02-12 06:26:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 67.40 Mbit/s
95th percentile per-packet one-way delay: 44.867 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 39.78 Mbit/s
95th percentile per-packet one-way delay: 44.483 ms
Loss rate: 0.24%
-- Flow 2:
Average throughput: 32.24 Mbit/s
95th percentile per-packet one-way delay: 45.476 ms
Loss rate: 0.29%
-- Flow 3:
Average throughput: 18.63 Mbit/s
95th percentile per-packet one-way delay: 43.726 ms
Loss rate: 0.85%
```
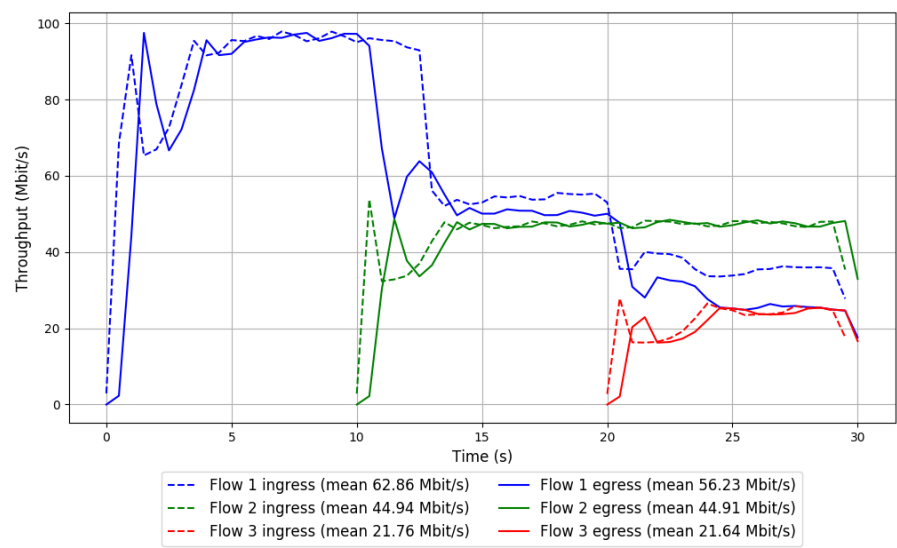
Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2019-02-12 04:31:15
End at: 2019-02-12 04:31:45
Local clock offset: 4.055 ms
Remote clock offset: -9.812 ms


# Below is generated by plot.py at 2019-02-12 06:27:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.17 Mbit/s
95th percentile per-packet one-way delay: 2340.818 ms
Loss rate: 6.96%
-- Flow 1:
Average throughput: 56.23 Mbit/s
95th percentile per-packet one-way delay: 2461.475 ms
Loss rate: 10.74%
-- Flow 2:
Average throughput: 44.91 Mbit/s
95th percentile per-packet one-way delay: 45.802 ms
Loss rate: 0.38%
-- Flow 3:
Average throughput: 21.64 Mbit/s
95th percentile per-packet one-way delay: 82.616 ms
Loss rate: 1.25%
```

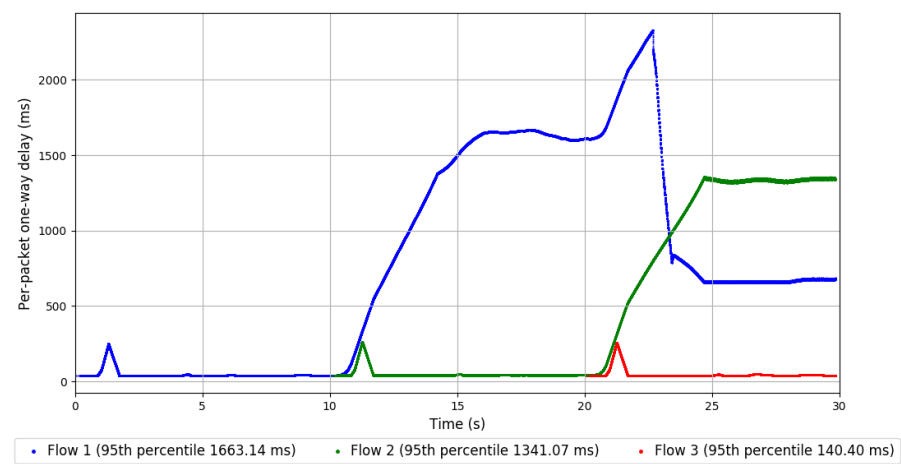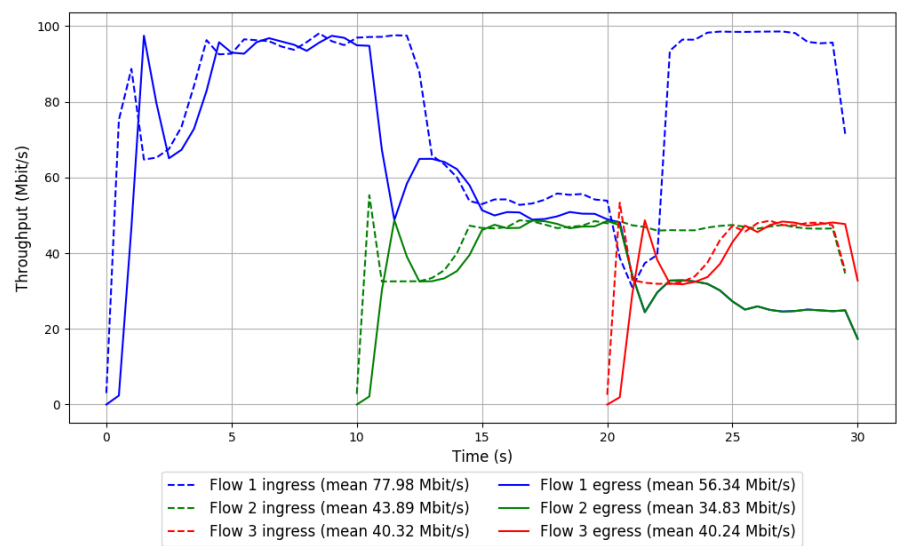Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2019-02-12 04:56:58
End at: 2019-02-12 04:57:28
Local clock offset: 3.748 ms
Remote clock offset: -8.448 ms


# Below is generated by plot.py at 2019-02-12 06:27:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.71 Mbit/s
95th percentile per-packet one-way delay: 1653.594 ms
Loss rate: 23.22%
-- Flow 1:
Average throughput: 56.34 Mbit/s
95th percentile per-packet one-way delay: 1663.145 ms
Loss rate: 27.90%
-- Flow 2:
Average throughput: 34.83 Mbit/s
95th percentile per-packet one-way delay: 1341.074 ms
Loss rate: 20.89%
-- Flow 3:
Average throughput: 40.24 Mbit/s
95th percentile per-packet one-way delay: 140.396 ms
Loss rate: 0.87%
```
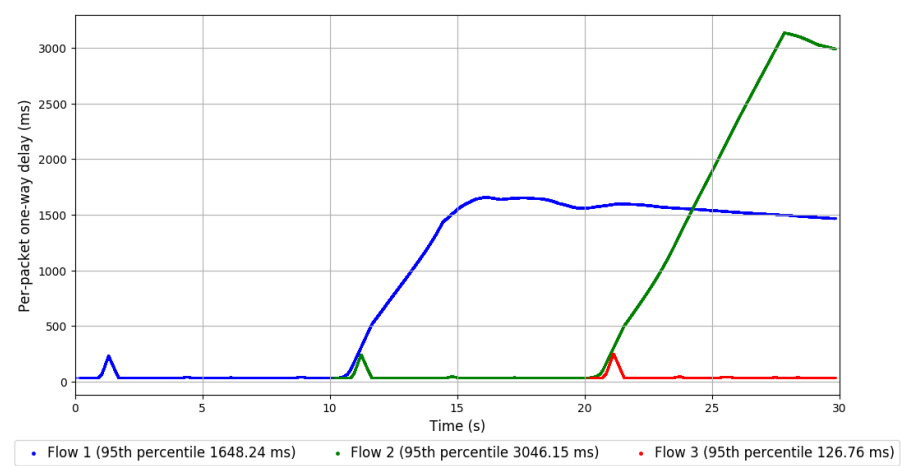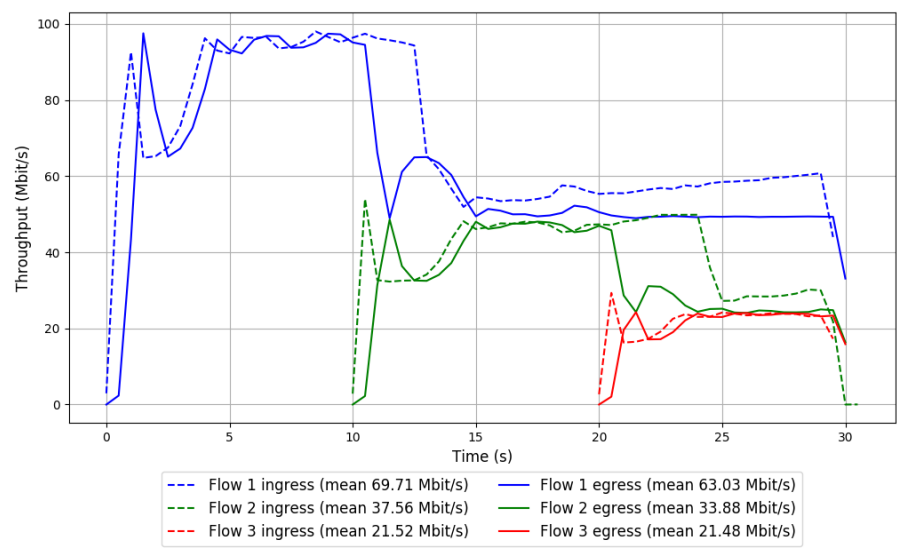
# Run 2: Report of PCC-Allegro — Data Link



Flow 1 ingress (mean 77.98 Mbit/s)  —  Flow 1 egress (mean 56.34 Mbit/s)
Flow 2 ingress (mean 43.89 Mbit/s)  —  Flow 2 egress (mean 34.83 Mbit/s)
Flow 3 ingress (mean 40.32 Mbit/s)  —  Flow 3 egress (mean 40.24 Mbit/s)



Flow 1 (95th percentile 1663.14 ms)    Flow 2 (95th percentile 1341.07 ms)    Flow 3 (95th percentile 140.40 ms)

```
Run 3: Statistics of PCC-Allegro

Start at: 2019-02-12 05:22:44
End at: 2019-02-12 05:23:14
Local clock offset: 3.459 ms
Remote clock offset: -4.737 ms


# Below is generated by plot.py at 2019-02-12 06:27:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.59 Mbit/s
95th percentile per-packet one-way delay: 1657.668 ms
Loss rate: 10.44%
-- Flow 1:
Average throughput: 63.03 Mbit/s
95th percentile per-packet one-way delay: 1648.237 ms
Loss rate: 9.77%
-- Flow 2:
Average throughput: 33.88 Mbit/s
95th percentile per-packet one-way delay: 3046.154 ms
Loss rate: 14.78%
-- Flow 3:
Average throughput: 21.48 Mbit/s
95th percentile per-packet one-way delay: 126.757 ms
Loss rate: 0.89%
```

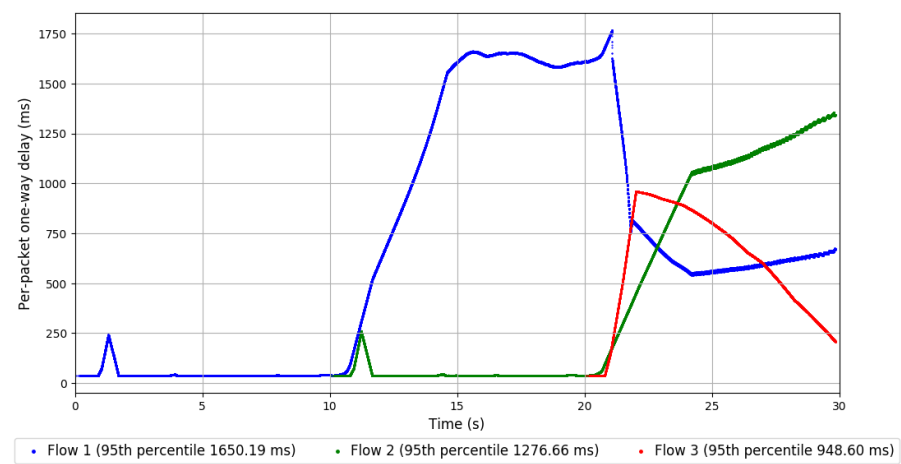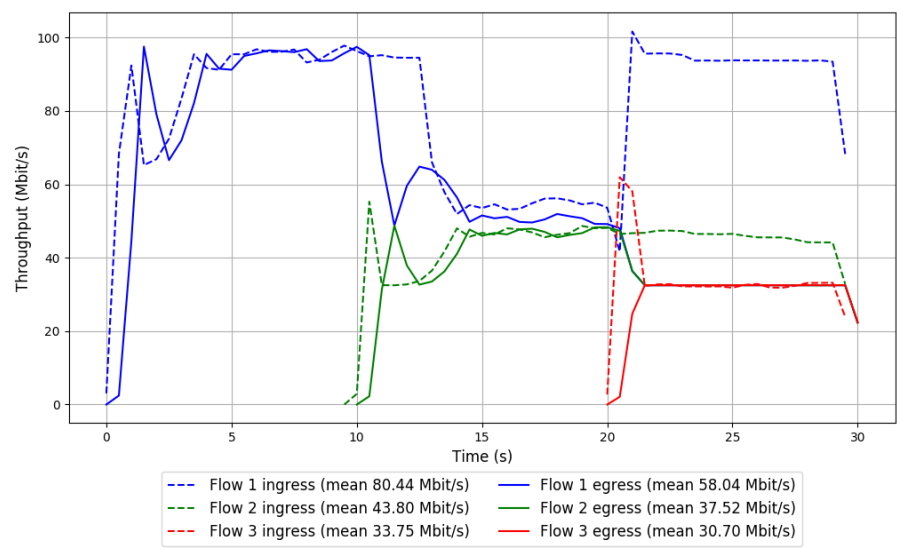## Run 3: Report of PCC-Allegro — Data Link



Flow 1 ingress (mean 69.71 Mbit/s) --- Flow 1 egress (mean 63.03 Mbit/s)
Flow 2 ingress (mean 37.56 Mbit/s) --- Flow 2 egress (mean 33.88 Mbit/s)
Flow 3 ingress (mean 21.52 Mbit/s) --- Flow 3 egress (mean 21.48 Mbit/s)



Flow 1 (95th percentile 1648.24 ms)  Flow 2 (95th percentile 3046.15 ms)  Flow 3 (95th percentile 126.76 ms)

120

```
Run 4: Statistics of PCC-Allegro

Start at: 2019-02-12 05:48:26
End at: 2019-02-12 05:48:56
Local clock offset: 0.387 ms
Remote clock offset: -3.908 ms


# Below is generated by plot.py at 2019-02-12 06:27:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.07 Mbit/s
95th percentile per-packet one-way delay: 1637.632 ms
Loss rate: 23.08%
-- Flow 1:
Average throughput: 58.04 Mbit/s
95th percentile per-packet one-way delay: 1650.187 ms
Loss rate: 28.00%
-- Flow 2:
Average throughput: 37.52 Mbit/s
95th percentile per-packet one-way delay: 1276.663 ms
Loss rate: 14.62%
-- Flow 3:
Average throughput: 30.70 Mbit/s
95th percentile per-packet one-way delay: 948.596 ms
Loss rate: 9.66%
```
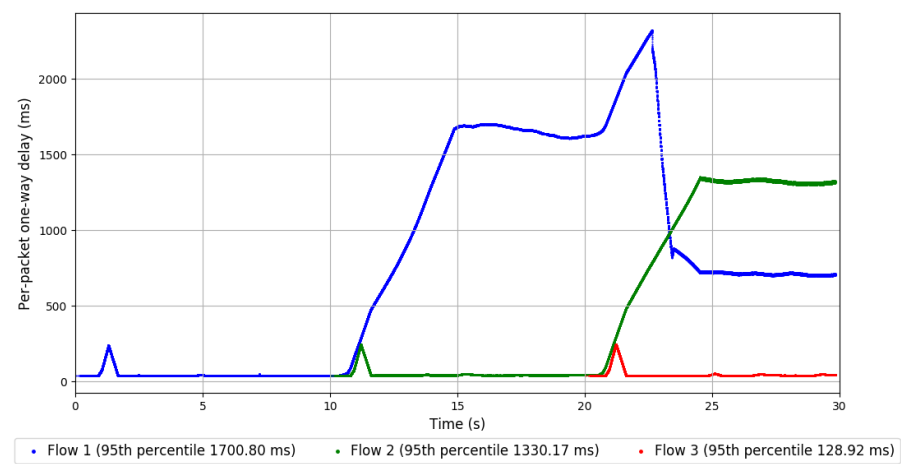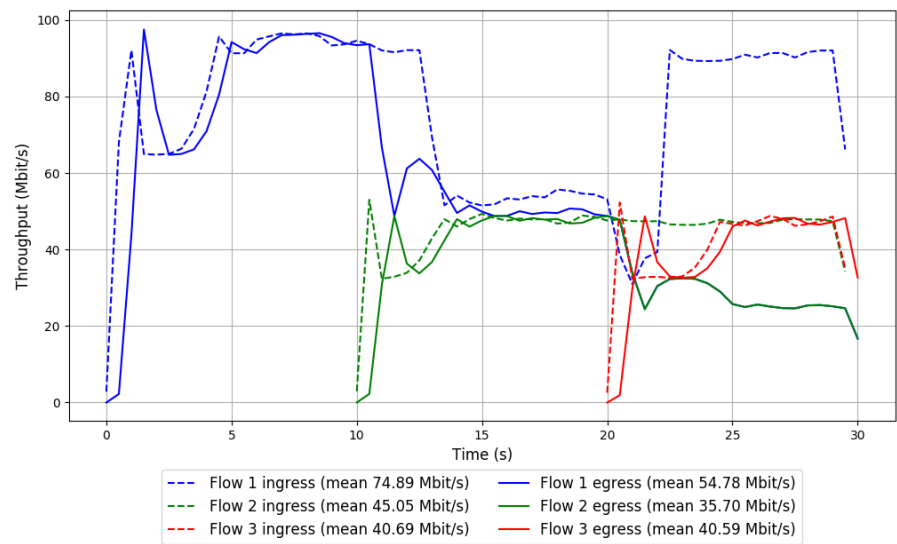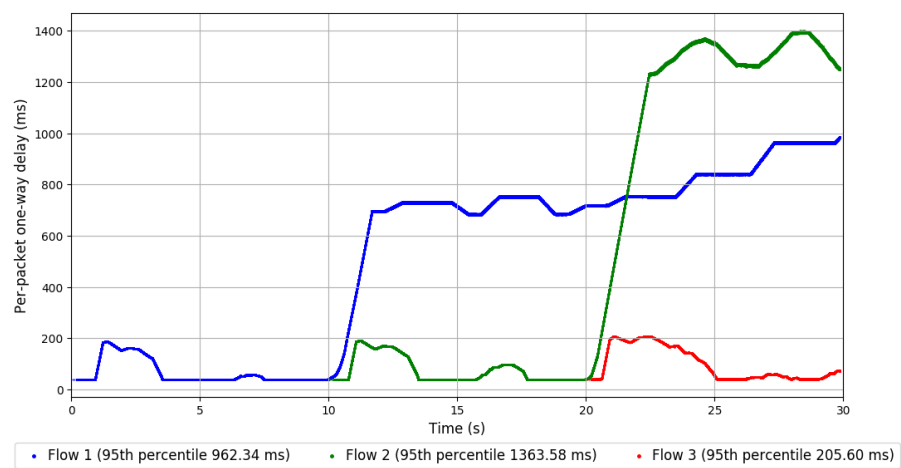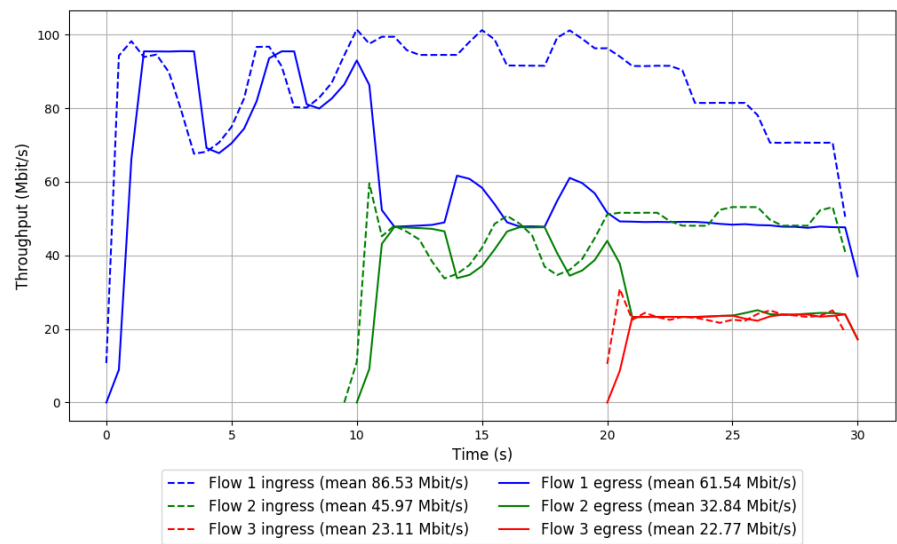
## Run 4: Report of PCC-Allegro — Data Link



- - - Flow 1 ingress (mean 80.44 Mbit/s) ——— Flow 1 egress (mean 58.04 Mbit/s)
- - - Flow 2 ingress (mean 43.80 Mbit/s) ——— Flow 2 egress (mean 37.52 Mbit/s)
- - - Flow 3 ingress (mean 33.75 Mbit/s) ——— Flow 3 egress (mean 30.70 Mbit/s)



• Flow 1 (95th percentile 1650.19 ms)   • Flow 2 (95th percentile 1276.66 ms)   • Flow 3 (95th percentile 948.60 ms)

```
Run 5: Statistics of PCC-Allegro

Start at: 2019-02-12 06:14:14
End at: 2019-02-12 06:14:44
Local clock offset: -2.622 ms
Remote clock offset: -5.47 ms


# Below is generated by plot.py at 2019-02-12 06:27:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.82 Mbit/s
95th percentile per-packet one-way delay: 1688.957 ms
Loss rate: 22.52%
-- Flow 1:
Average throughput: 54.78 Mbit/s
95th percentile per-packet one-way delay: 1700.798 ms
Loss rate: 27.01%
-- Flow 2:
Average throughput: 35.70 Mbit/s
95th percentile per-packet one-way delay: 1330.168 ms
Loss rate: 20.98%
-- Flow 3:
Average throughput: 40.59 Mbit/s
95th percentile per-packet one-way delay: 128.923 ms
Loss rate: 0.90%
```

Run 5: Report of PCC-Allegro — Data Link



Flow 1 ingress (mean 74.89 Mbit/s) --- Flow 1 egress (mean 54.78 Mbit/s)
Flow 2 ingress (mean 45.05 Mbit/s) --- Flow 2 egress (mean 35.70 Mbit/s)
Flow 3 ingress (mean 40.69 Mbit/s) --- Flow 3 egress (mean 40.59 Mbit/s)



Flow 1 (95th percentile 1700.80 ms)   Flow 2 (95th percentile 1330.17 ms)   Flow 3 (95th percentile 128.92 ms)
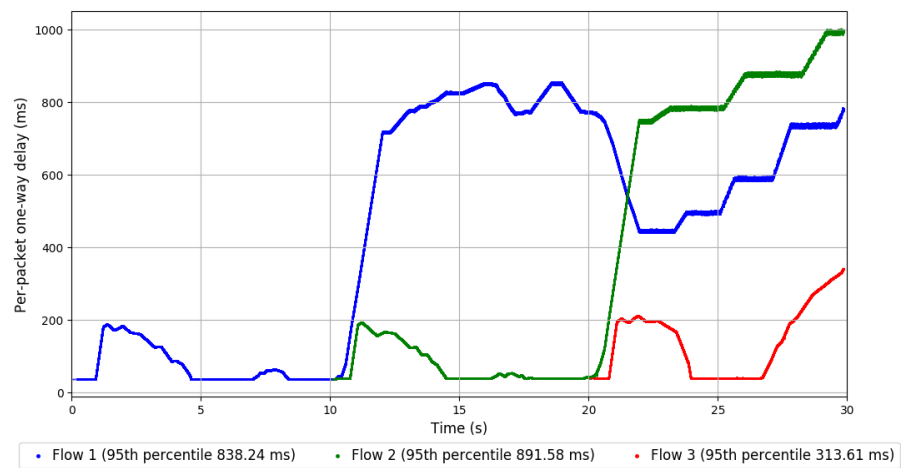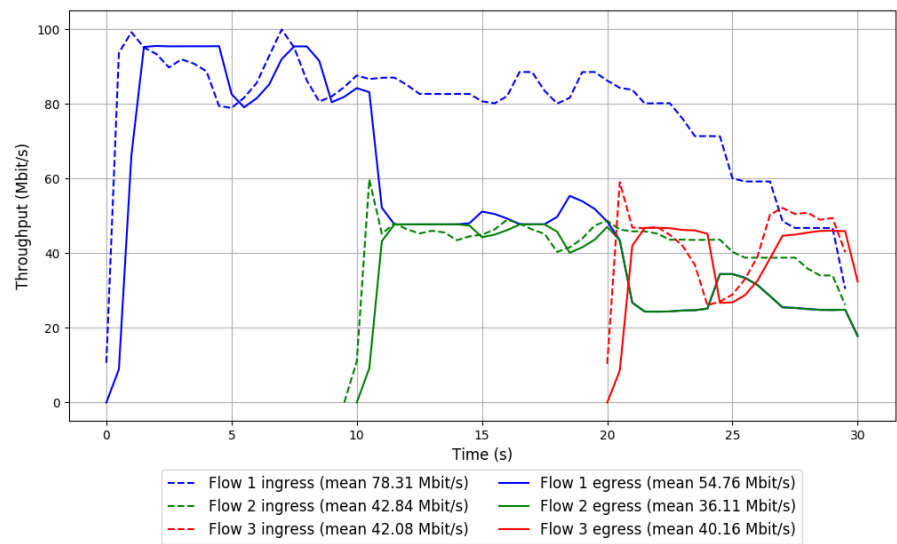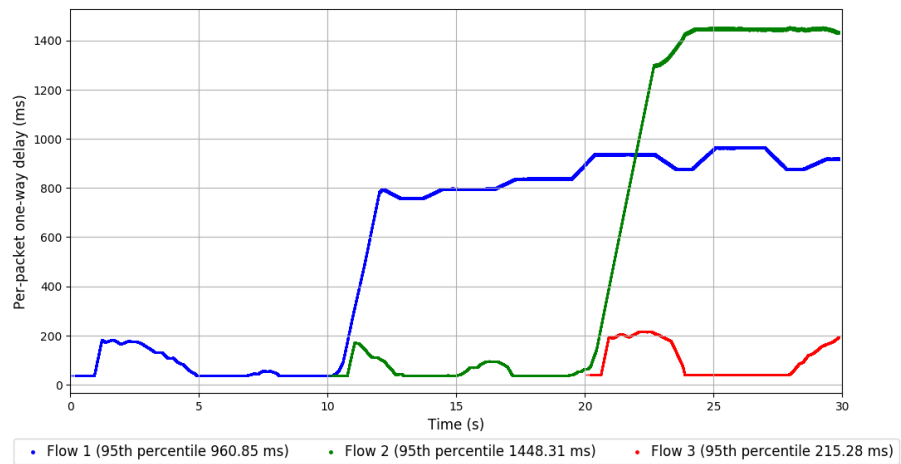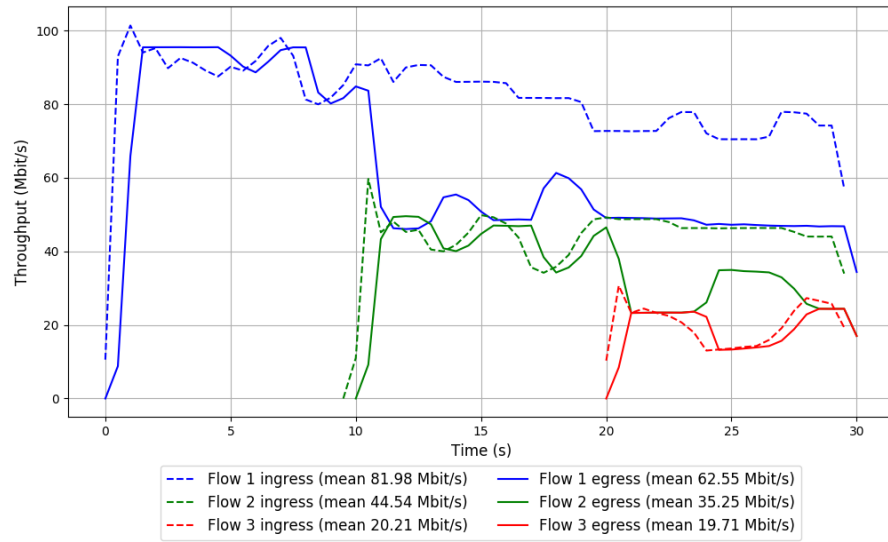
```
Run 1: Statistics of PCC-Expr

Start at: 2019-02-12 04:18:53
End at: 2019-02-12 04:19:23
Local clock offset: 3.155 ms
Remote clock offset: -11.021 ms


# Below is generated by plot.py at 2019-02-12 06:28:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.86 Mbit/s
95th percentile per-packet one-way delay: 1268.965 ms
Loss rate: 27.34%
-- Flow 1:
Average throughput: 61.54 Mbit/s
95th percentile per-packet one-way delay: 962.337 ms
Loss rate: 29.04%
-- Flow 2:
Average throughput: 32.84 Mbit/s
95th percentile per-packet one-way delay: 1363.583 ms
Loss rate: 28.80%
-- Flow 3:
Average throughput: 22.77 Mbit/s
95th percentile per-packet one-way delay: 205.598 ms
Loss rate: 2.13%
```

Run 1: Report of PCC-Expr — Data Link



- - - - Flow 1 ingress (mean 86.53 Mbit/s) ——— Flow 1 egress (mean 61.54 Mbit/s)
- - - - Flow 2 ingress (mean 45.97 Mbit/s) ——— Flow 2 egress (mean 32.84 Mbit/s)
- - - - Flow 3 ingress (mean 23.11 Mbit/s) ——— Flow 3 egress (mean 22.77 Mbit/s)



• Flow 1 (95th percentile 962.34 ms)    • Flow 2 (95th percentile 1363.58 ms)    • Flow 3 (95th percentile 205.60 ms)

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```
Run 2: Statistics of PCC-Expr

Start at: 2019-02-12 04:44:47
End at: 2019-02-12 04:45:17
Local clock offset: 3.715 ms
Remote clock offset: -7.332 ms


# Below is generated by plot.py at 2019-02-12 06:28:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.97 Mbit/s
95th percentile per-packet one-way delay: 850.008 ms
Loss rate: 23.97%
-- Flow 1:
Average throughput: 54.76 Mbit/s
95th percentile per-packet one-way delay: 838.238 ms
Loss rate: 30.22%
-- Flow 2:
Average throughput: 36.11 Mbit/s
95th percentile per-packet one-way delay: 891.580 ms
Loss rate: 15.96%
-- Flow 3:
Average throughput: 40.16 Mbit/s
95th percentile per-packet one-way delay: 313.612 ms
Loss rate: 5.18%
```

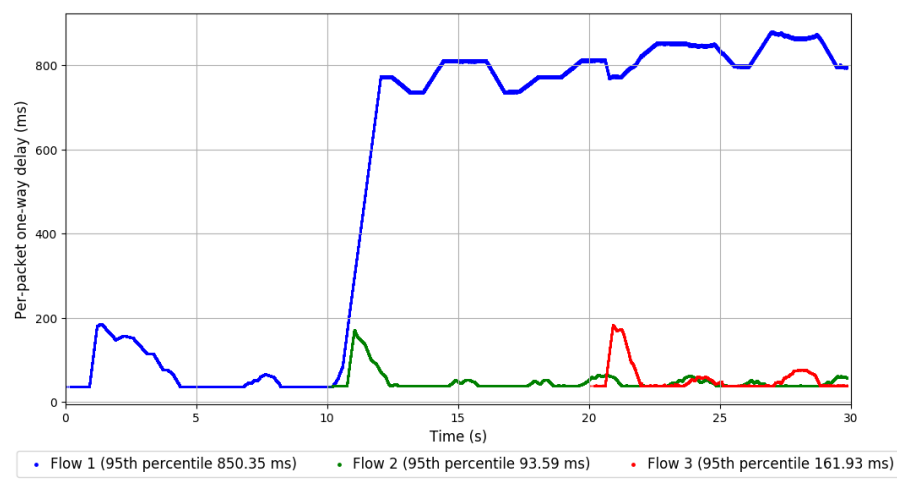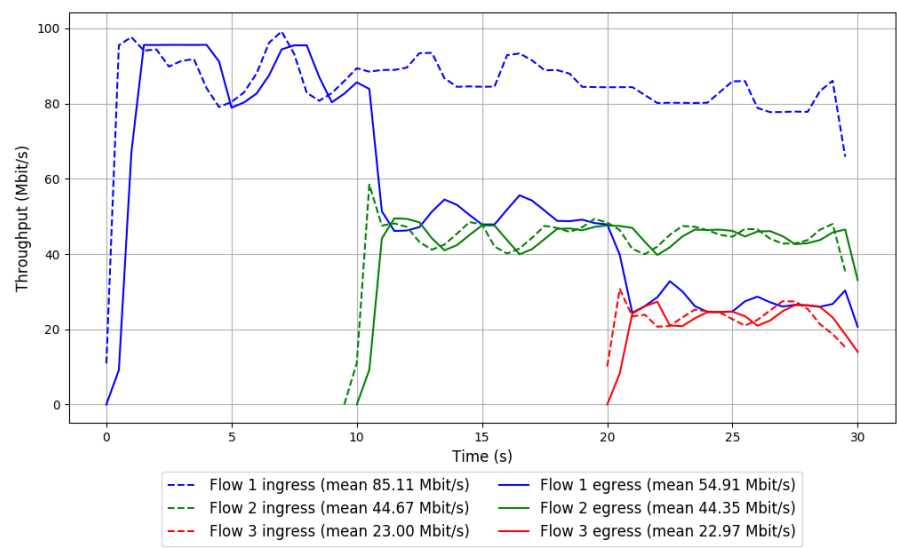# Run 2: Report of PCC-Expr — Data Link



Flow 1 ingress (mean 78.31 Mbit/s) --- Flow 1 egress (mean 54.76 Mbit/s)
Flow 2 ingress (mean 42.84 Mbit/s) --- Flow 2 egress (mean 36.11 Mbit/s)
Flow 3 ingress (mean 42.08 Mbit/s) --- Flow 3 egress (mean 40.16 Mbit/s)



Flow 1 (95th percentile 838.24 ms)    Flow 2 (95th percentile 891.58 ms)    Flow 3 (95th percentile 313.61 ms)
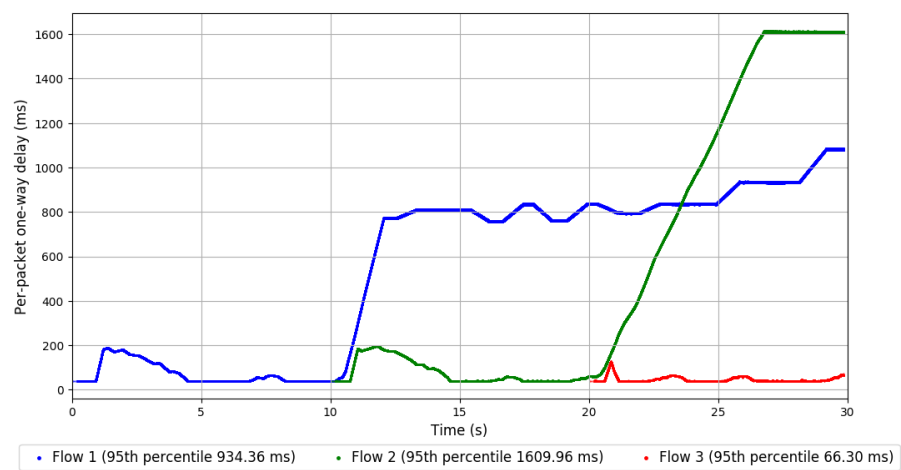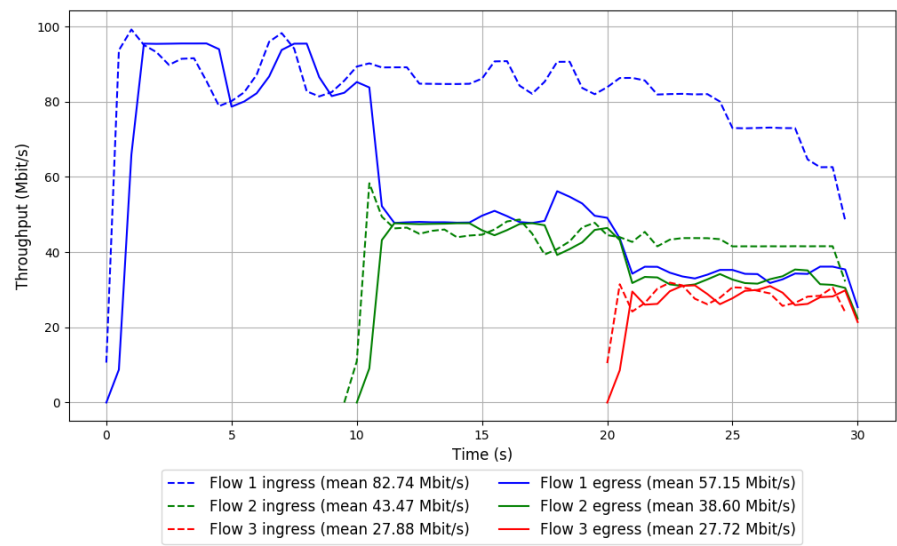
128

```
Run 3: Statistics of PCC-Expr

Start at: 2019-02-12 05:10:26
End at: 2019-02-12 05:10:56
Local clock offset: 3.56 ms
Remote clock offset: -5.544 ms


# Below is generated by plot.py at 2019-02-12 06:28:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.47 Mbit/s
95th percentile per-packet one-way delay: 1442.248 ms
Loss rate: 22.01%
-- Flow 1:
Average throughput: 62.55 Mbit/s
95th percentile per-packet one-way delay: 960.849 ms
Loss rate: 23.86%
-- Flow 2:
Average throughput: 35.25 Mbit/s
95th percentile per-packet one-way delay: 1448.311 ms
Loss rate: 21.13%
-- Flow 3:
Average throughput: 19.71 Mbit/s
95th percentile per-packet one-way delay: 215.284 ms
Loss rate: 3.13%
```

## Run 3: Report of PCC-Expr — Data Link



Flow 1 ingress (mean 81.98 Mbit/s) --- Flow 1 egress (mean 62.55 Mbit/s)
Flow 2 ingress (mean 44.54 Mbit/s) --- Flow 2 egress (mean 35.25 Mbit/s)
Flow 3 ingress (mean 20.21 Mbit/s) --- Flow 3 egress (mean 19.71 Mbit/s)



Flow 1 (95th percentile 960.85 ms) · Flow 2 (95th percentile 1448.31 ms) · Flow 3 (95th percentile 215.28 ms)

```
Run 4: Statistics of PCC-Expr

Start at: 2019-02-12 05:36:14
End at: 2019-02-12 05:36:44
Local clock offset: 2.775 ms
Remote clock offset: -4.461 ms


# Below is generated by plot.py at 2019-02-12 06:29:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.94 Mbit/s
95th percentile per-packet one-way delay: 828.804 ms
Loss rate: 25.06%
-- Flow 1:
Average throughput: 54.91 Mbit/s
95th percentile per-packet one-way delay: 850.354 ms
Loss rate: 35.62%
-- Flow 2:
Average throughput: 44.35 Mbit/s
95th percentile per-packet one-way delay: 93.595 ms
Loss rate: 1.05%
-- Flow 3:
Average throughput: 22.97 Mbit/s
95th percentile per-packet one-way delay: 161.927 ms
Loss rate: 0.78%
```
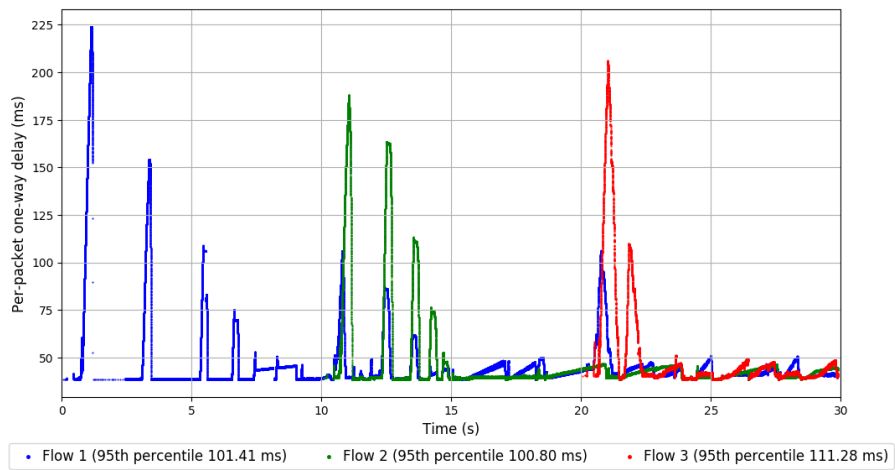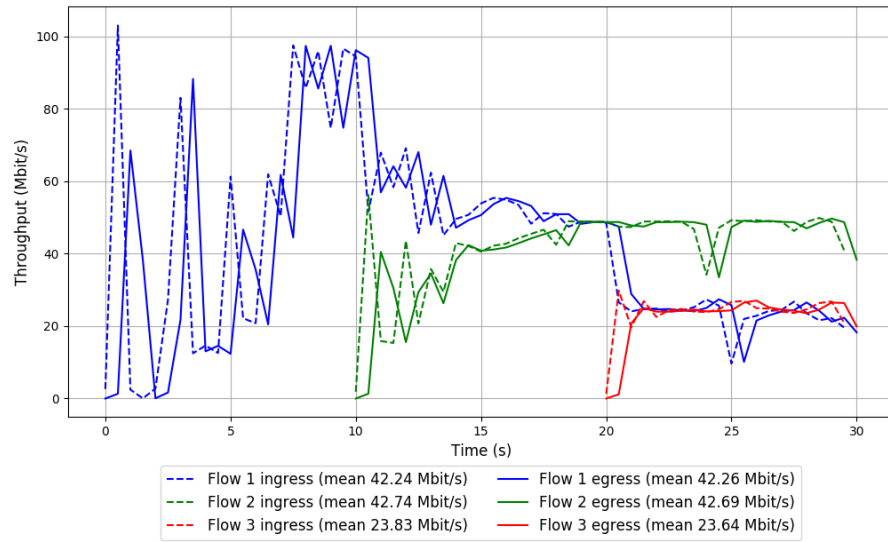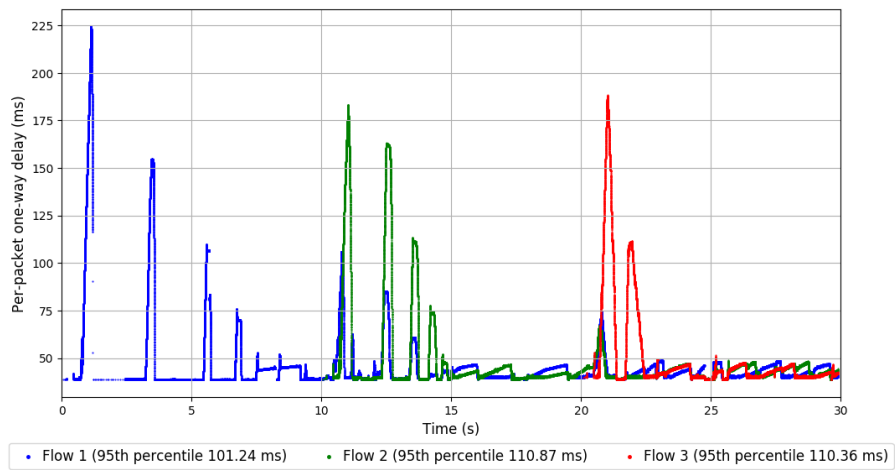
# Run 4: Report of PCC-Expr — Data Link



Flow 1 ingress (mean 85.11 Mbit/s) --- Flow 1 egress (mean 54.91 Mbit/s)
Flow 2 ingress (mean 44.67 Mbit/s) --- Flow 2 egress (mean 44.35 Mbit/s)
Flow 3 ingress (mean 23.00 Mbit/s) --- Flow 3 egress (mean 22.97 Mbit/s)



Flow 1 (95th percentile 850.35 ms)   Flow 2 (95th percentile 93.59 ms)   Flow 3 (95th percentile 161.93 ms)

```
Run 5: Statistics of PCC-Expr

Start at: 2019-02-12 06:02:00
End at: 2019-02-12 06:02:30
Local clock offset: -0.603 ms
Remote clock offset: -5.739 ms


# Below is generated by plot.py at 2019-02-12 06:29:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.91 Mbit/s
95th percentile per-packet one-way delay: 1324.486 ms
Loss rate: 24.11%
-- Flow 1:
Average throughput: 57.15 Mbit/s
95th percentile per-packet one-way delay: 934.355 ms
Loss rate: 31.08%
-- Flow 2:
Average throughput: 38.60 Mbit/s
95th percentile per-packet one-way delay: 1609.964 ms
Loss rate: 11.50%
-- Flow 3:
Average throughput: 27.72 Mbit/s
95th percentile per-packet one-way delay: 66.298 ms
Loss rate: 1.18%
```

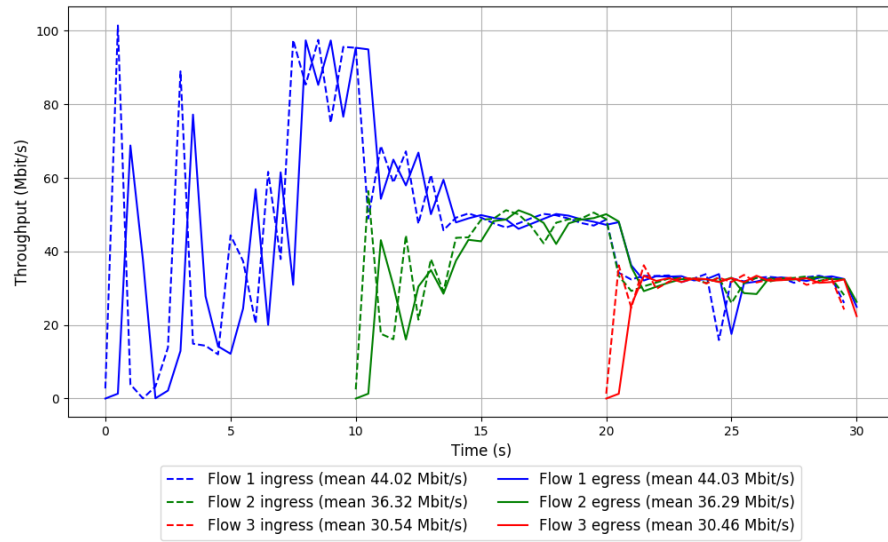# Run 5: Report of PCC-Expr — Data Link



Flow 1 ingress (mean 82.74 Mbit/s)    Flow 1 egress (mean 57.15 Mbit/s)
Flow 2 ingress (mean 43.47 Mbit/s)    Flow 2 egress (mean 38.60 Mbit/s)
Flow 3 ingress (mean 27.88 Mbit/s)    Flow 3 egress (mean 27.72 Mbit/s)



Flow 1 (95th percentile 934.36 ms)    Flow 2 (95th percentile 1609.96 ms)    Flow 3 (95th percentile 66.30 ms)
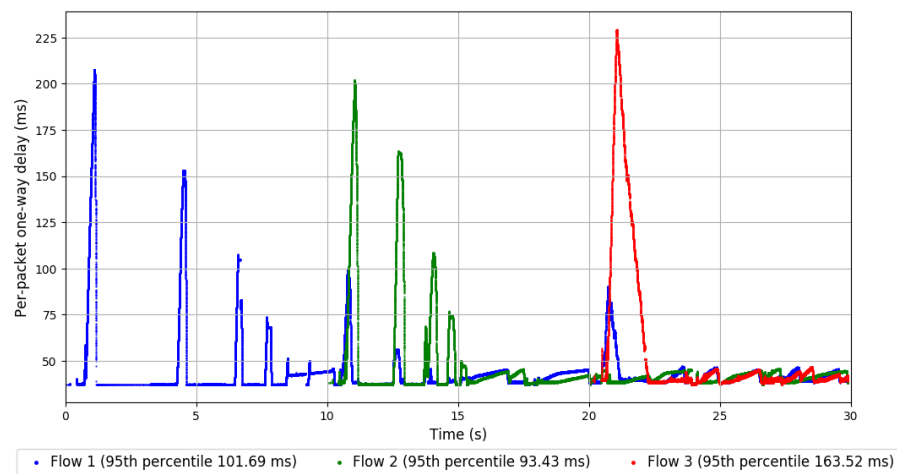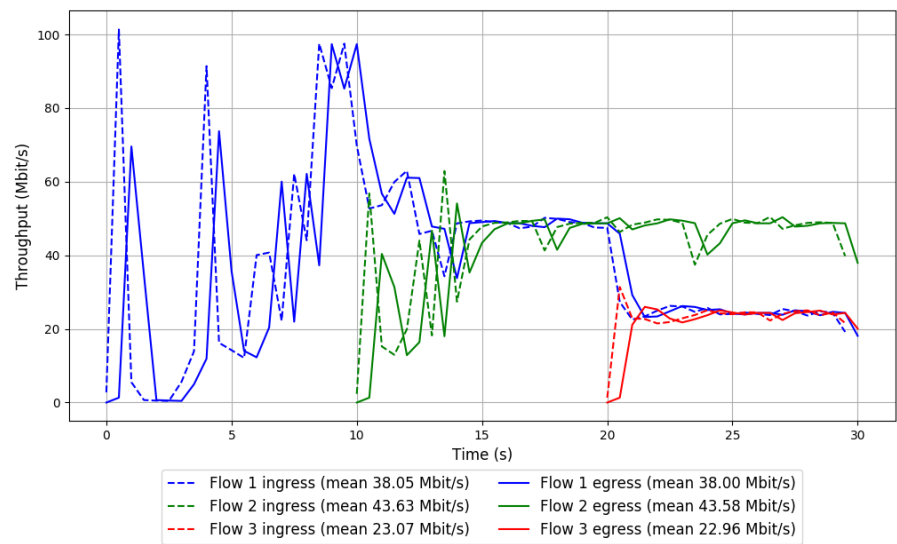
```
Run 1: Statistics of QUIC Cubic

Start at: 2019-02-12 04:28:47
End at: 2019-02-12 04:29:17
Local clock offset: 3.921 ms
Remote clock offset: -9.943 ms


# Below is generated by plot.py at 2019-02-12 06:29:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.41 Mbit/s
95th percentile per-packet one-way delay: 103.252 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 42.26 Mbit/s
95th percentile per-packet one-way delay: 101.412 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 42.69 Mbit/s
95th percentile per-packet one-way delay: 100.800 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 23.64 Mbit/s
95th percentile per-packet one-way delay: 111.284 ms
Loss rate: 1.48%
```
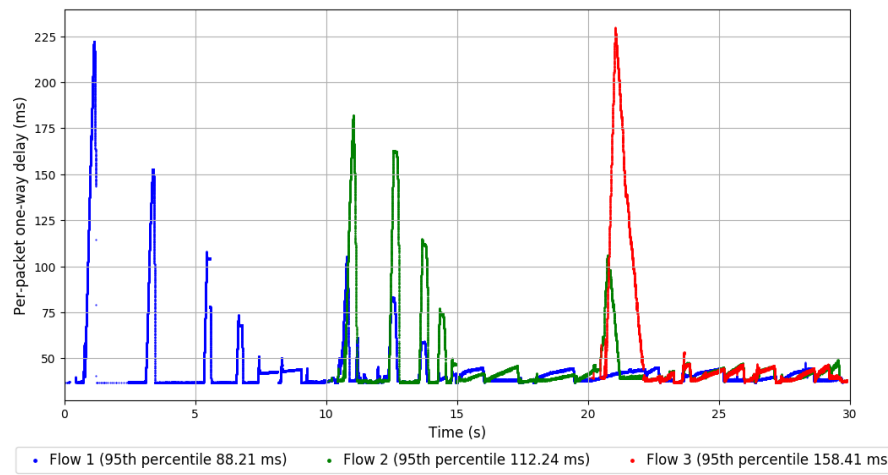
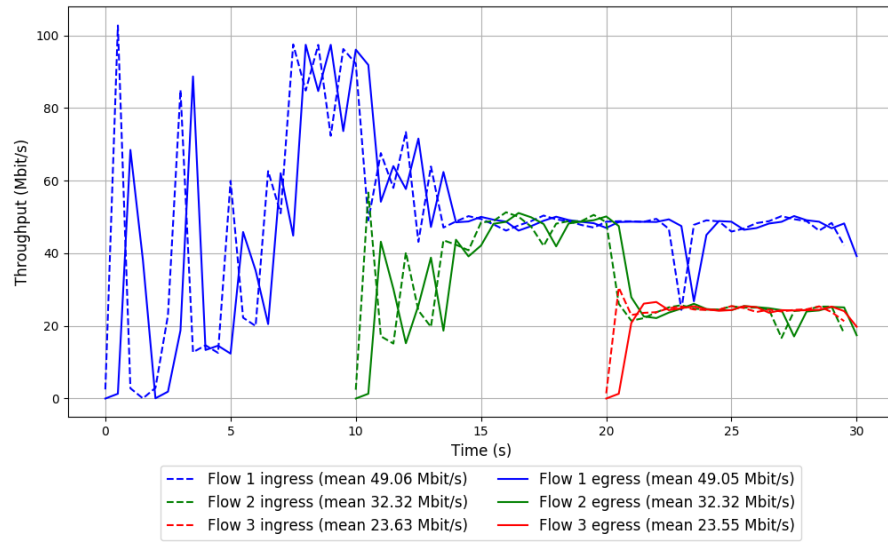Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2019-02-12 04:54:32
End at: 2019-02-12 04:55:02
Local clock offset: 3.703 ms
Remote clock offset: -8.328 ms


# Below is generated by plot.py at 2019-02-12 06:29:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.17 Mbit/s
95th percentile per-packet one-way delay: 106.436 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 44.03 Mbit/s
95th percentile per-packet one-way delay: 101.241 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 36.29 Mbit/s
95th percentile per-packet one-way delay: 110.869 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 30.46 Mbit/s
95th percentile per-packet one-way delay: 110.355 ms
Loss rate: 0.92%
```

# Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2019-02-12 05:20:15
End at: 2019-02-12 05:20:45
Local clock offset: 3.442 ms
Remote clock offset: -5.151 ms


# Below is generated by plot.py at 2019-02-12 06:29:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 74.53 Mbit/s
95th percentile per-packet one-way delay: 104.737 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 38.00 Mbit/s
95th percentile per-packet one-way delay: 101.691 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 43.58 Mbit/s
95th percentile per-packet one-way delay: 93.426 ms
Loss rate: 0.43%
-- Flow 3:
Average throughput: 22.96 Mbit/s
95th percentile per-packet one-way delay: 163.521 ms
Loss rate: 1.14%
```
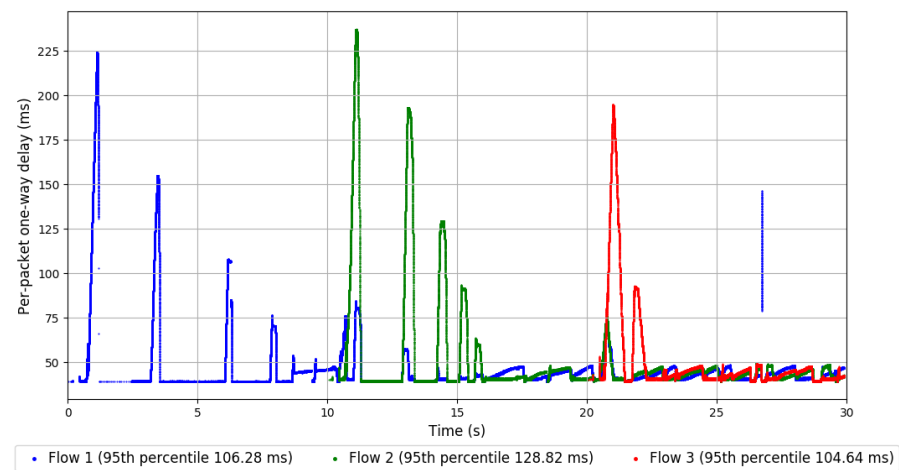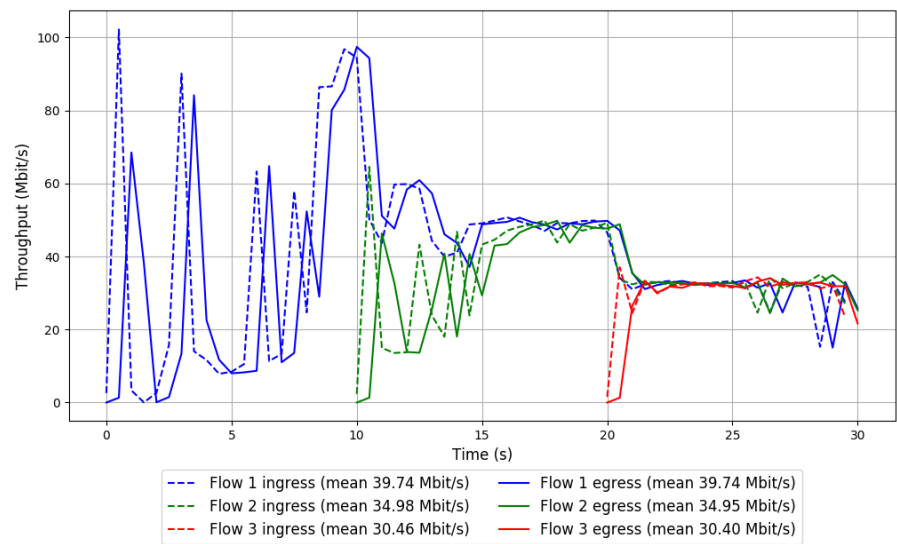
Run 3: Report of QUIC Cubic — Data Link



- - - Flow 1 ingress (mean 38.05 Mbit/s) —— Flow 1 egress (mean 38.00 Mbit/s)
- - - Flow 2 ingress (mean 43.63 Mbit/s) —— Flow 2 egress (mean 43.58 Mbit/s)
- - - Flow 3 ingress (mean 23.07 Mbit/s) —— Flow 3 egress (mean 22.96 Mbit/s)



• Flow 1 (95th percentile 101.69 ms)   • Flow 2 (95th percentile 93.43 ms)   • Flow 3 (95th percentile 163.52 ms)

```
Run 4: Statistics of QUIC Cubic

Start at: 2019-02-12 05:46:00
End at: 2019-02-12 05:46:30
Local clock offset: 0.666 ms
Remote clock offset: -3.871 ms


# Below is generated by plot.py at 2019-02-12 06:29:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.29 Mbit/s
95th percentile per-packet one-way delay: 104.450 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 49.05 Mbit/s
95th percentile per-packet one-way delay: 88.210 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 32.32 Mbit/s
95th percentile per-packet one-way delay: 112.238 ms
Loss rate: 0.32%
-- Flow 3:
Average throughput: 23.55 Mbit/s
95th percentile per-packet one-way delay: 158.415 ms
Loss rate: 1.02%
```
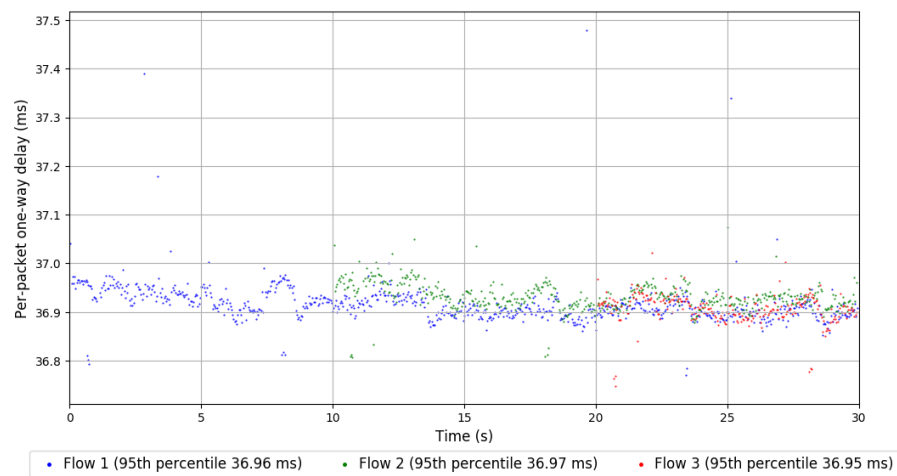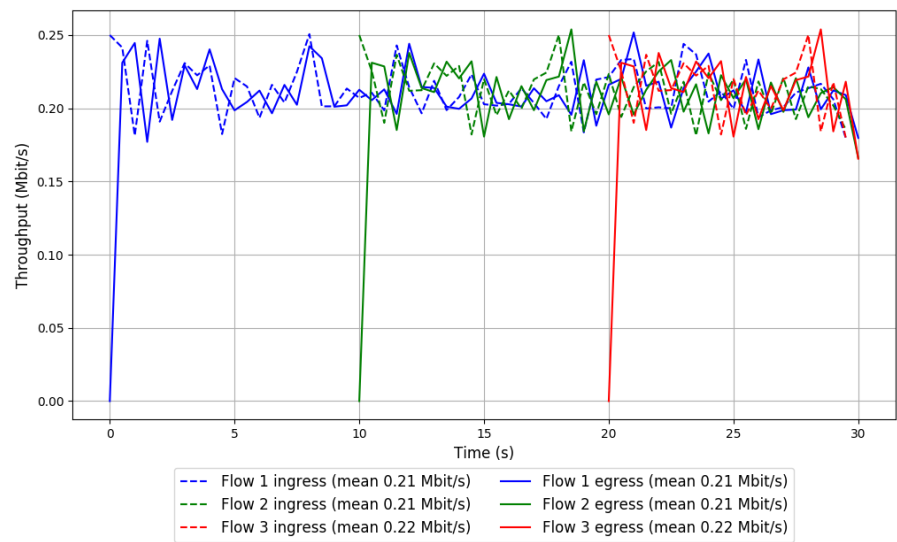
# Run 4: Report of QUIC Cubic — Data Link



Flow 1 ingress (mean 49.06 Mbit/s) — — —     Flow 1 egress (mean 49.05 Mbit/s) ———
Flow 2 ingress (mean 32.32 Mbit/s) — — —     Flow 2 egress (mean 32.32 Mbit/s) ———
Flow 3 ingress (mean 23.63 Mbit/s) — — —     Flow 3 egress (mean 23.55 Mbit/s) ———



• Flow 1 (95th percentile 88.21 ms)     • Flow 2 (95th percentile 112.24 ms)     • Flow 3 (95th percentile 158.41 ms)

```
Run 5: Statistics of QUIC Cubic

Start at: 2019-02-12 06:11:48
End at: 2019-02-12 06:12:18
Local clock offset: -2.3 ms
Remote clock offset: -5.332 ms


# Below is generated by plot.py at 2019-02-12 06:29:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 72.98 Mbit/s
95th percentile per-packet one-way delay: 109.905 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 39.74 Mbit/s
95th percentile per-packet one-way delay: 106.278 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 34.95 Mbit/s
95th percentile per-packet one-way delay: 128.822 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 30.40 Mbit/s
95th percentile per-packet one-way delay: 104.640 ms
Loss rate: 0.88%
```

Run 5: Report of QUIC Cubic — Data Link



Flow 1 ingress (mean 39.74 Mbit/s) — Flow 1 egress (mean 39.74 Mbit/s)
Flow 2 ingress (mean 34.98 Mbit/s) — Flow 2 egress (mean 34.95 Mbit/s)
Flow 3 ingress (mean 30.46 Mbit/s) — Flow 3 egress (mean 30.40 Mbit/s)



Flow 1 (95th percentile 106.28 ms) • Flow 2 (95th percentile 128.82 ms) • Flow 3 (95th percentile 104.64 ms)
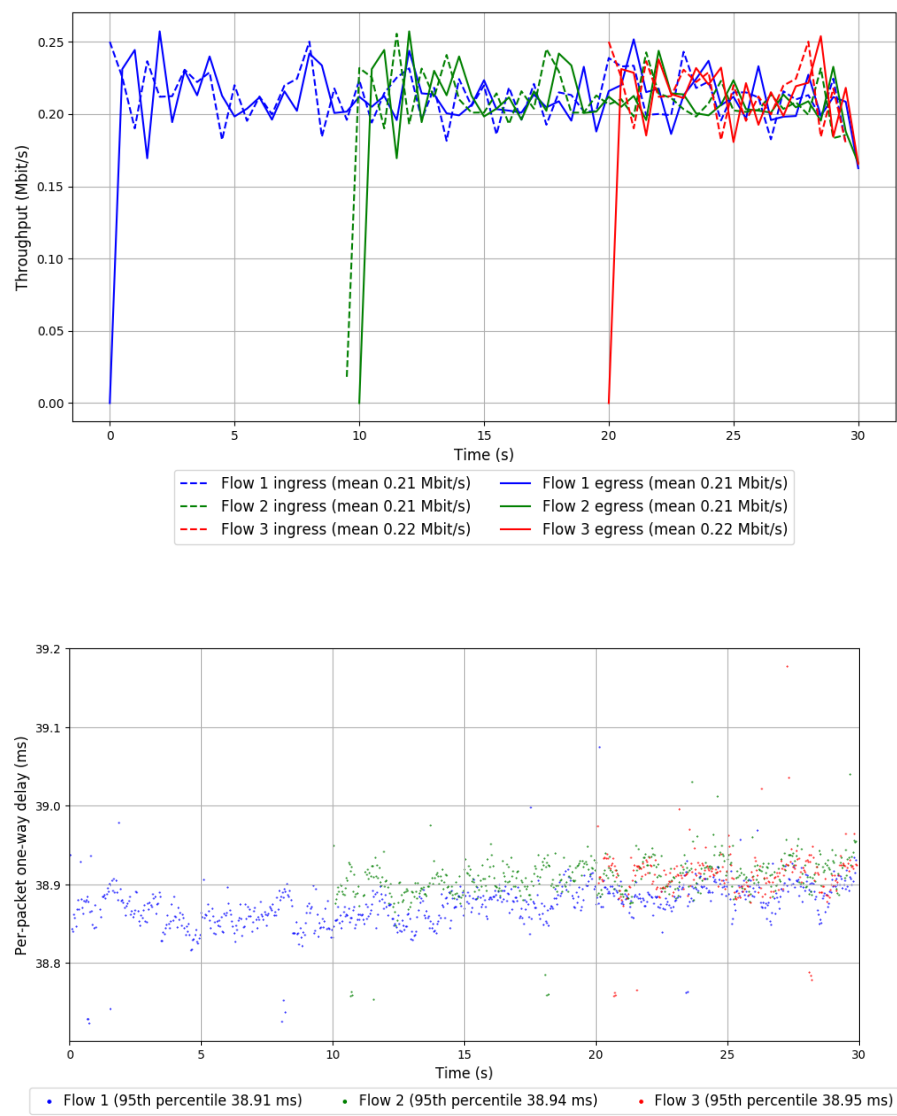
```
Run 1: Statistics of SCReAM

Start at: 2019-02-12 04:14:06
End at: 2019-02-12 04:14:36
Local clock offset: 2.533 ms
Remote clock offset: -9.082 ms


# Below is generated by plot.py at 2019-02-12 06:29:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 36.967 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 36.963 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 36.974 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 36.948 ms
Loss rate: 0.71%
```
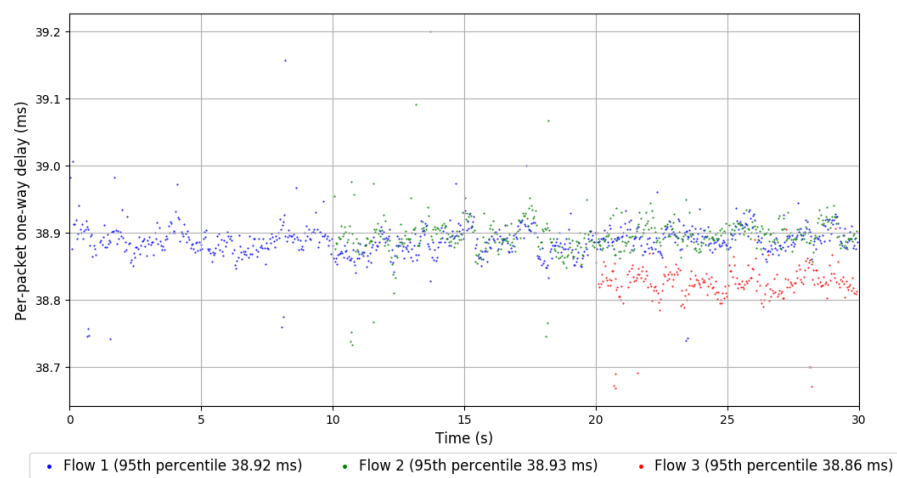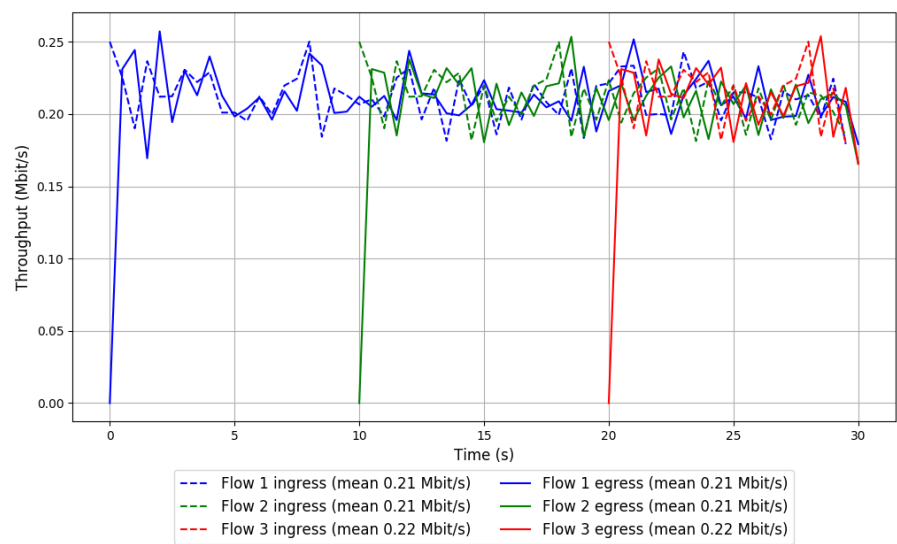
# Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2019-02-12 04:40:02
End at: 2019-02-12 04:40:32
Local clock offset: 3.836 ms
Remote clock offset: -9.05 ms

# Below is generated by plot.py at 2019-02-12 06:29:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 38.704 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 38.671 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 38.700 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 38.726 ms
Loss rate: 0.71%
```
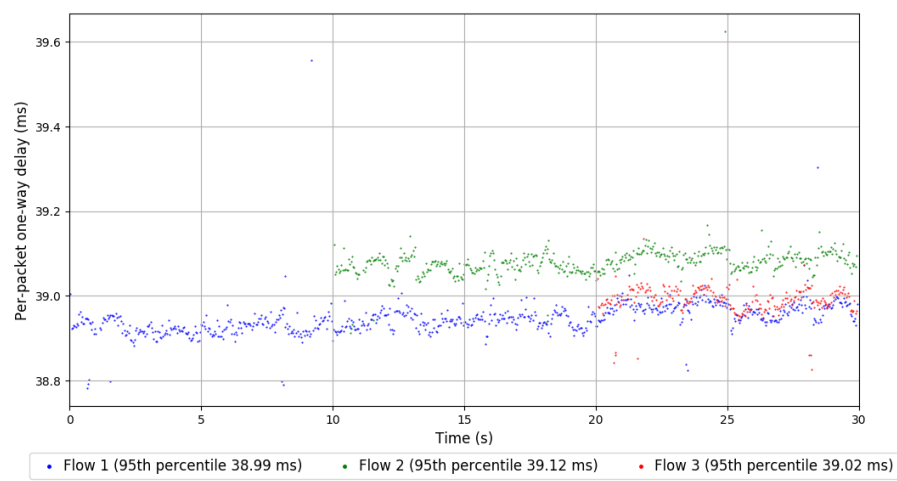
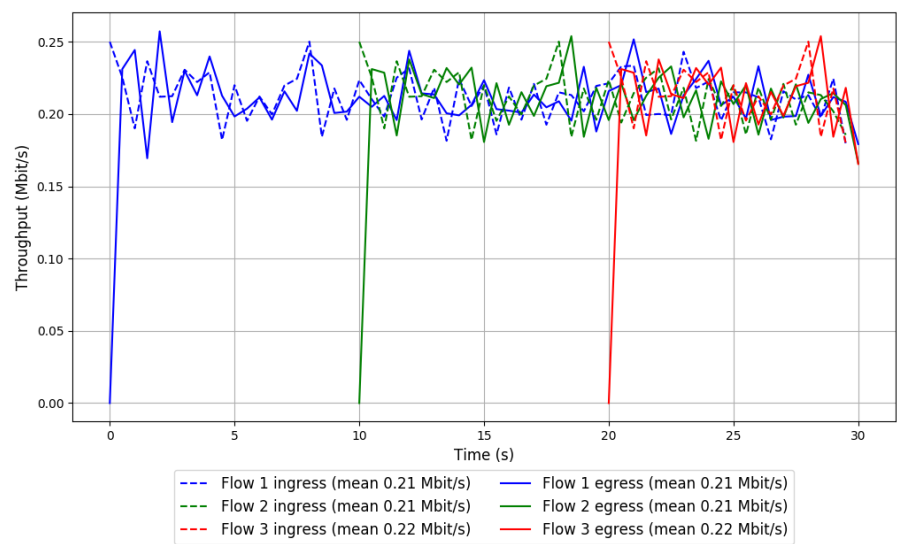# Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2019-02-12 05:05:41
End at: 2019-02-12 05:06:11
Local clock offset: 3.76 ms
Remote clock offset: -7.386 ms


# Below is generated by plot.py at 2019-02-12 06:29:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 38.937 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 38.909 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 38.944 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 38.946 ms
Loss rate: 0.71%
```

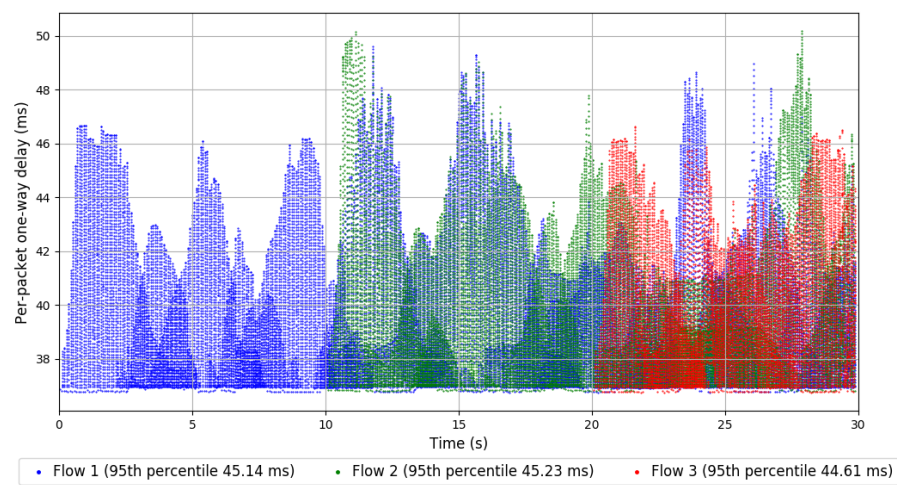# Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2019-02-12 05:31:30
End at: 2019-02-12 05:32:00
Local clock offset: 3.486 ms
Remote clock offset: -6.353 ms

# Below is generated by plot.py at 2019-02-12 06:29:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 38.925 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 38.921 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 38.931 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 38.857 ms
Loss rate: 0.71%
```
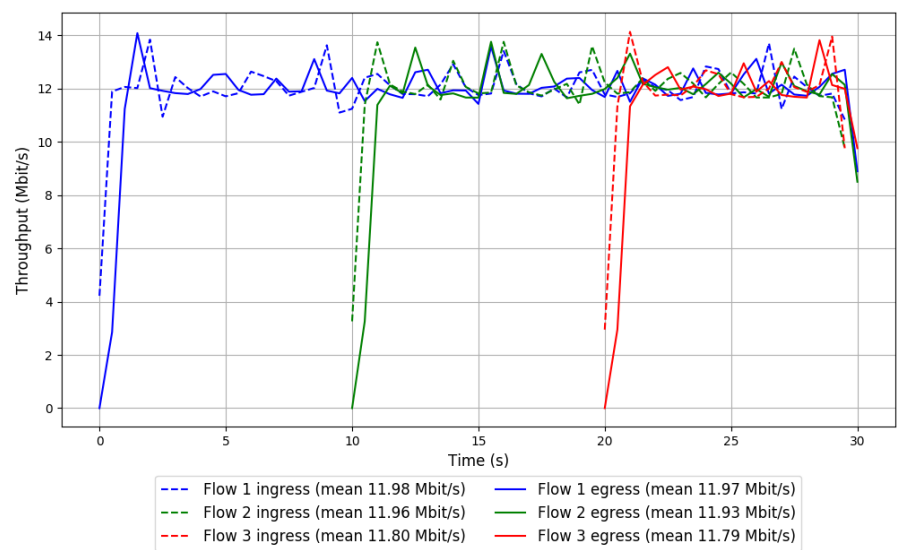
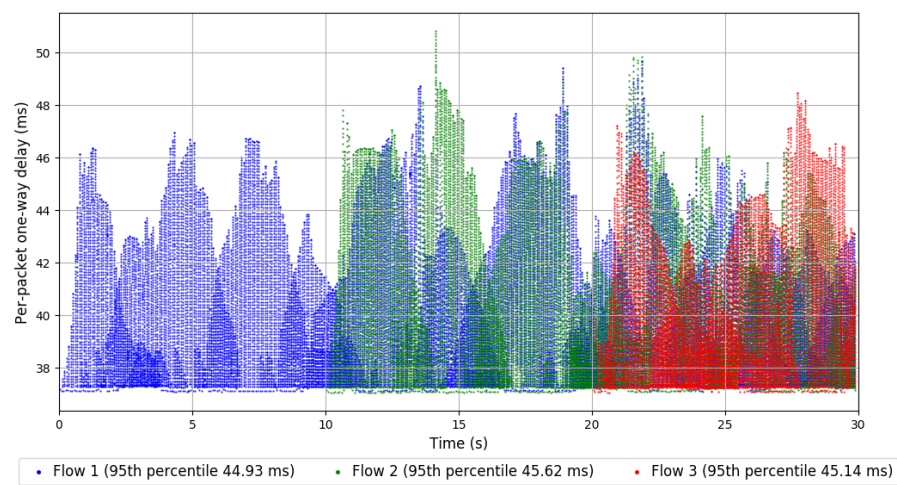## Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2019-02-12 05:57:15
End at: 2019-02-12 05:57:45
Local clock offset: -0.354 ms
Remote clock offset: -5.509 ms


# Below is generated by plot.py at 2019-02-12 06:29:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 39.103 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 38.992 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 39.115 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 39.025 ms
Loss rate: 0.71%
```
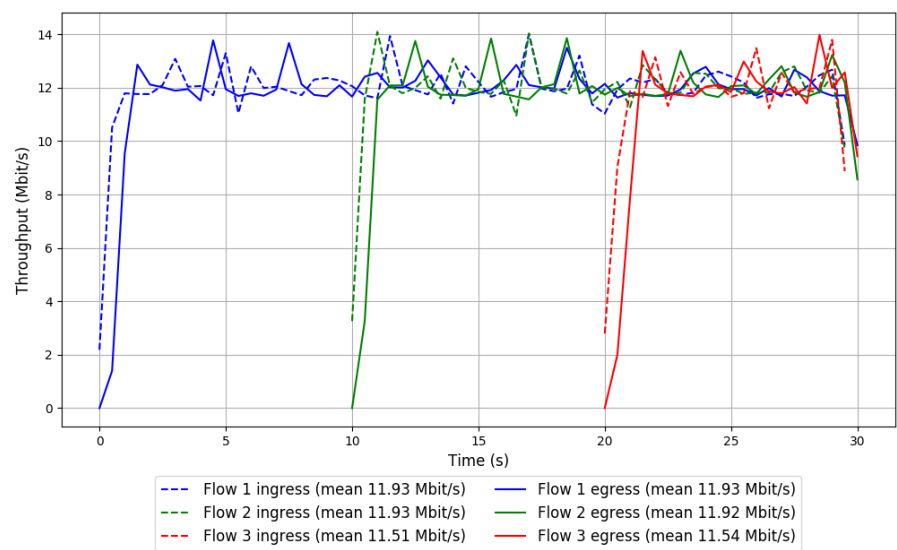
# Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2019-02-12 04:21:28
End at: 2019-02-12 04:21:58
Local clock offset: 3.427 ms
Remote clock offset: -8.637 ms


# Below is generated by plot.py at 2019-02-12 06:29:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.77 Mbit/s
95th percentile per-packet one-way delay: 45.049 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 11.97 Mbit/s
95th percentile per-packet one-way delay: 45.140 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 11.93 Mbit/s
95th percentile per-packet one-way delay: 45.234 ms
Loss rate: 0.41%
-- Flow 3:
Average throughput: 11.79 Mbit/s
95th percentile per-packet one-way delay: 44.613 ms
Loss rate: 0.84%
```
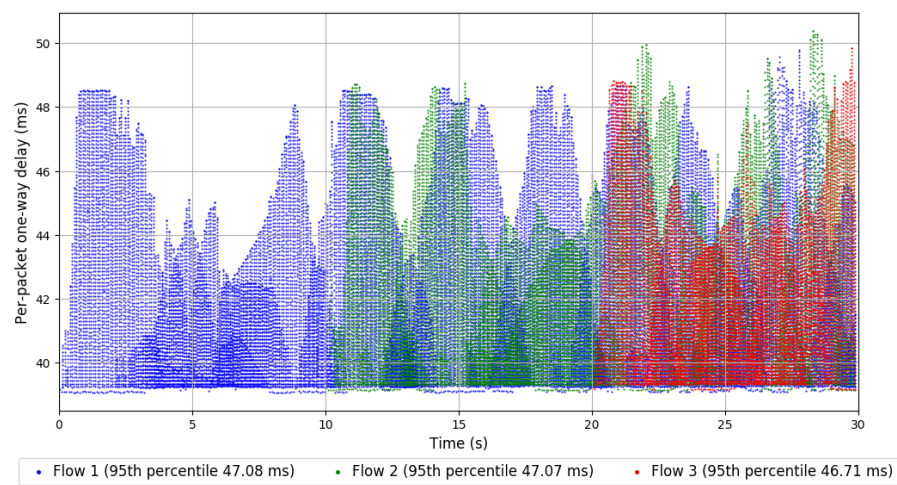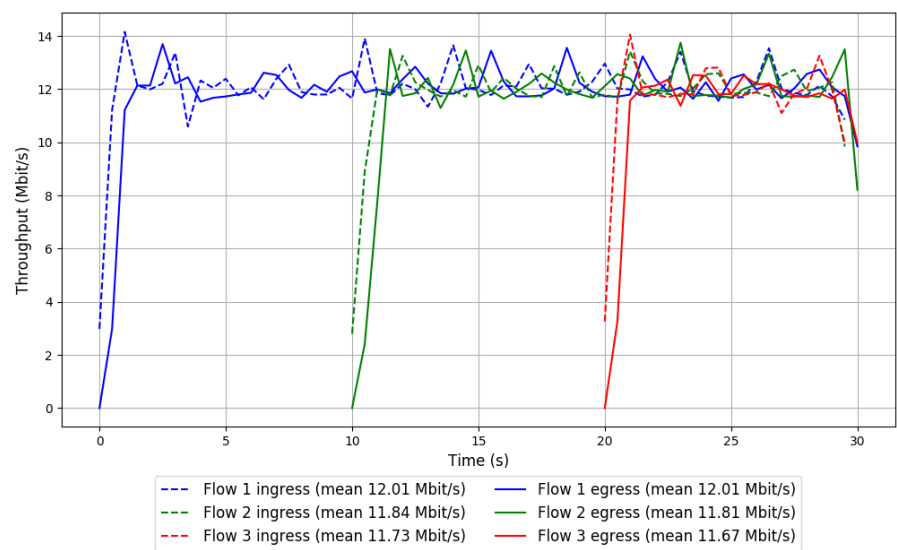
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2019-02-12 04:47:17
End at: 2019-02-12 04:47:47
Local clock offset: 3.701 ms
Remote clock offset: -7.12 ms


# Below is generated by plot.py at 2019-02-12 06:29:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.64 Mbit/s
95th percentile per-packet one-way delay: 45.216 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 11.93 Mbit/s
95th percentile per-packet one-way delay: 44.929 ms
Loss rate: 0.28%
-- Flow 2:
Average throughput: 11.92 Mbit/s
95th percentile per-packet one-way delay: 45.618 ms
Loss rate: 0.41%
-- Flow 3:
Average throughput: 11.54 Mbit/s
95th percentile per-packet one-way delay: 45.143 ms
Loss rate: 0.29%
```

## Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2019-02-12 05:12:58
End at: 2019-02-12 05:13:28
Local clock offset: 3.51 ms
Remote clock offset: -7.479 ms


# Below is generated by plot.py at 2019-02-12 06:29:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.70 Mbit/s
95th percentile per-packet one-way delay: 47.038 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 12.01 Mbit/s
95th percentile per-packet one-way delay: 47.079 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 11.81 Mbit/s
95th percentile per-packet one-way delay: 47.066 ms
Loss rate: 0.42%
-- Flow 3:
Average throughput: 11.67 Mbit/s
95th percentile per-packet one-way delay: 46.714 ms
Loss rate: 0.86%
```
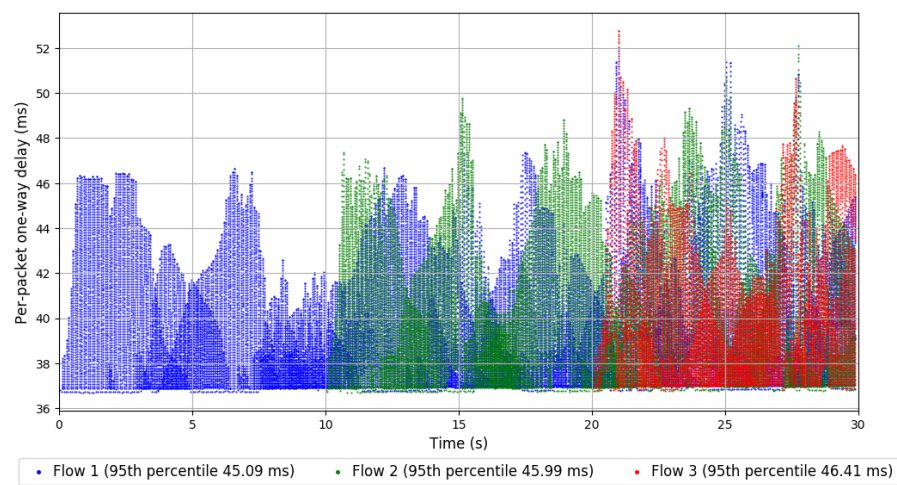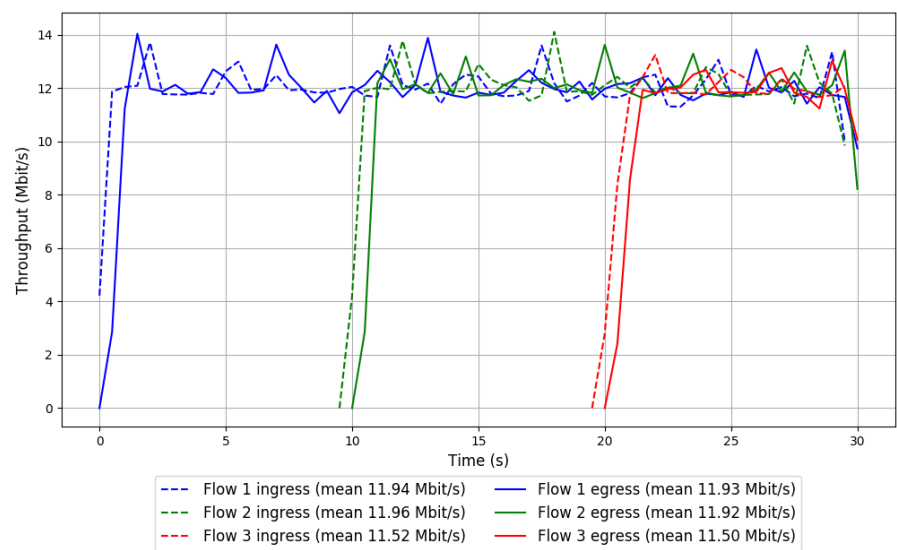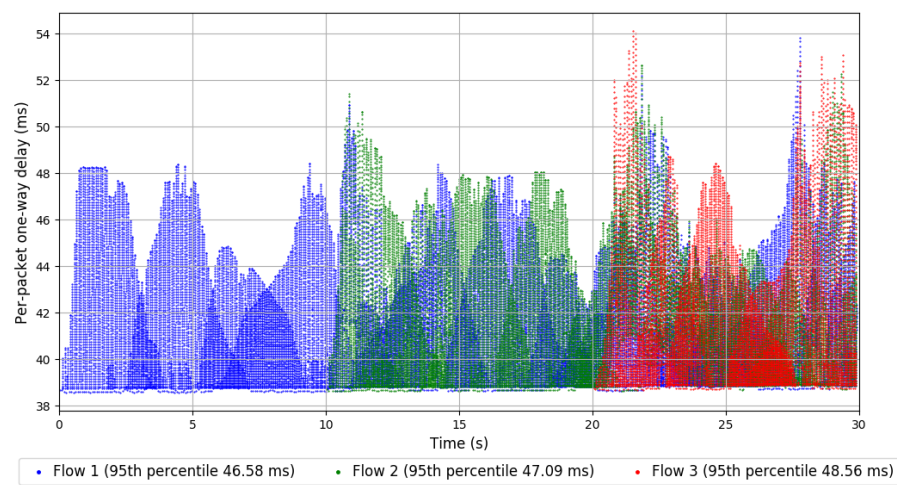
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2019-02-12 05:38:45
End at: 2019-02-12 05:39:15
Local clock offset: 2.045 ms
Remote clock offset: -3.908 ms


# Below is generated by plot.py at 2019-02-12 06:29:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.65 Mbit/s
95th percentile per-packet one-way delay: 45.657 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 11.93 Mbit/s
95th percentile per-packet one-way delay: 45.095 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 11.92 Mbit/s
95th percentile per-packet one-way delay: 45.995 ms
Loss rate: 0.41%
-- Flow 3:
Average throughput: 11.50 Mbit/s
95th percentile per-packet one-way delay: 46.408 ms
Loss rate: 0.89%
```
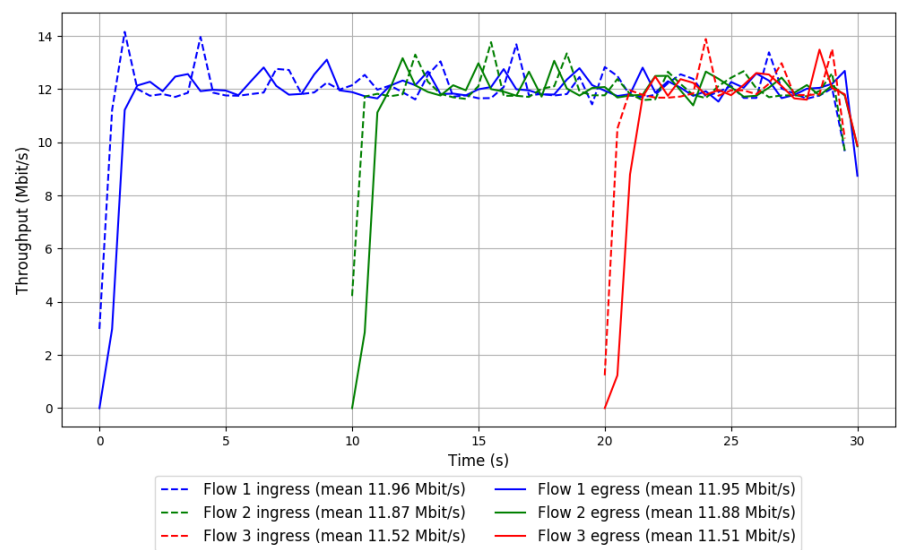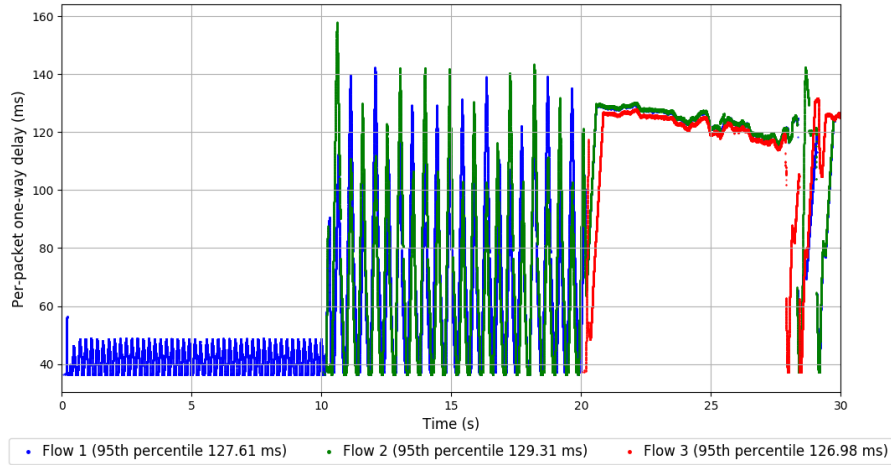
# Run 4: Report of Sprout — Data Link



Flow 1 ingress (mean 11.94 Mbit/s)      Flow 1 egress (mean 11.93 Mbit/s)
Flow 2 ingress (mean 11.96 Mbit/s)      Flow 2 egress (mean 11.92 Mbit/s)
Flow 3 ingress (mean 11.52 Mbit/s)      Flow 3 egress (mean 11.50 Mbit/s)



Flow 1 (95th percentile 45.09 ms)    Flow 2 (95th percentile 45.99 ms)    Flow 3 (95th percentile 46.41 ms)

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```
Run 5: Statistics of Sprout

Start at: 2019-02-12 06:04:33
End at: 2019-02-12 06:05:03
Local clock offset: -0.784 ms
Remote clock offset: -5.09 ms


# Below is generated by plot.py at 2019-02-12 06:29:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.63 Mbit/s
95th percentile per-packet one-way delay: 47.044 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 11.95 Mbit/s
95th percentile per-packet one-way delay: 46.575 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 11.88 Mbit/s
95th percentile per-packet one-way delay: 47.088 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 11.51 Mbit/s
95th percentile per-packet one-way delay: 48.564 ms
Loss rate: 0.86%
```
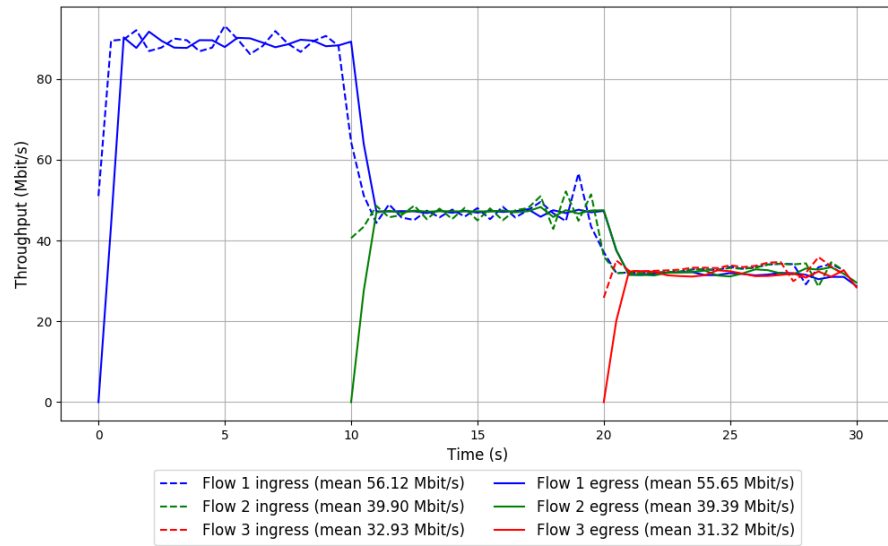
Run 5: Report of Sprout — Data Link

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

Start at: 2019-02-12 04:08:53
End at: 2019-02-12 04:09:23
Local clock offset: 1.418 ms
Remote clock offset: -8.835 ms


# Below is generated by plot.py at 2019-02-12 06:30:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.24 Mbit/s
95th percentile per-packet one-way delay: 128.272 ms
Loss rate: 1.74%
-- Flow 1:
Average throughput: 55.65 Mbit/s
95th percentile per-packet one-way delay: 127.605 ms
Loss rate: 1.06%
-- Flow 2:
Average throughput: 39.39 Mbit/s
95th percentile per-packet one-way delay: 129.308 ms
Loss rate: 1.60%
-- Flow 3:
Average throughput: 31.32 Mbit/s
95th percentile per-packet one-way delay: 126.979 ms
Loss rate: 5.54%
```

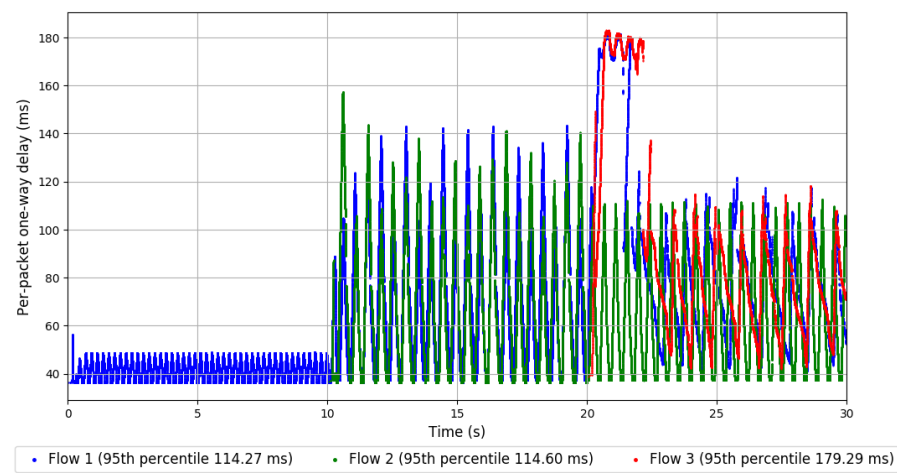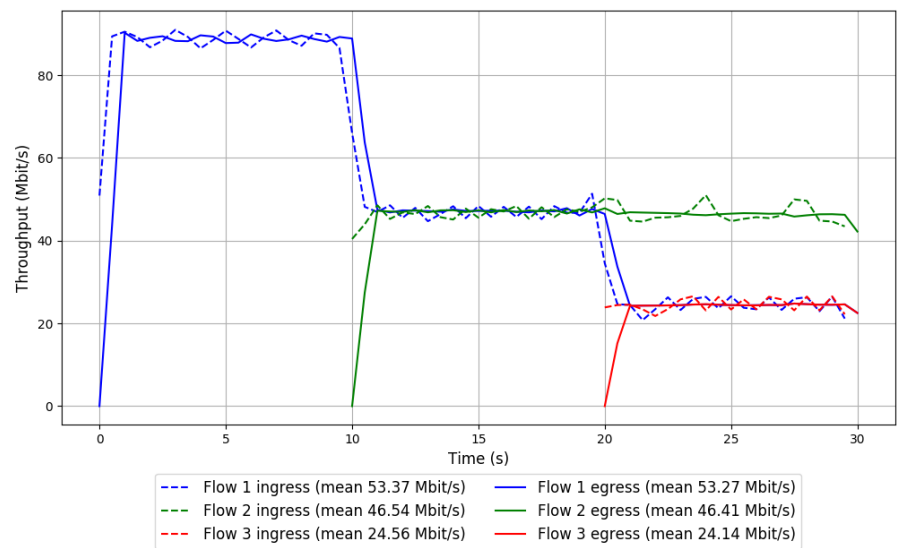# Run 1: Report of TaoVA-100x — Data Link

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

Start at: 2019-02-12 04:35:02
End at: 2019-02-12 04:35:32
Local clock offset: 4.137 ms
Remote clock offset: -7.188 ms


# Below is generated by plot.py at 2019-02-12 06:30:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.15 Mbit/s
95th percentile per-packet one-way delay: 120.480 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 53.27 Mbit/s
95th percentile per-packet one-way delay: 114.267 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 46.41 Mbit/s
95th percentile per-packet one-way delay: 114.599 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 24.14 Mbit/s
95th percentile per-packet one-way delay: 179.288 ms
Loss rate: 2.36%
```

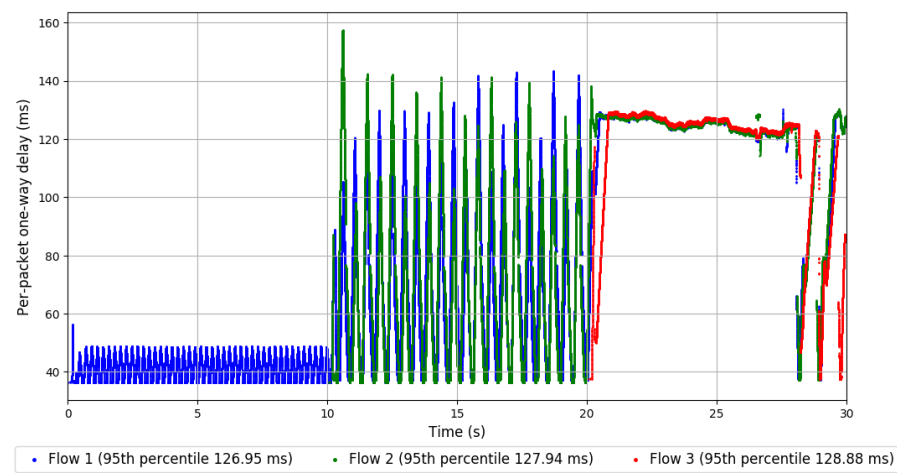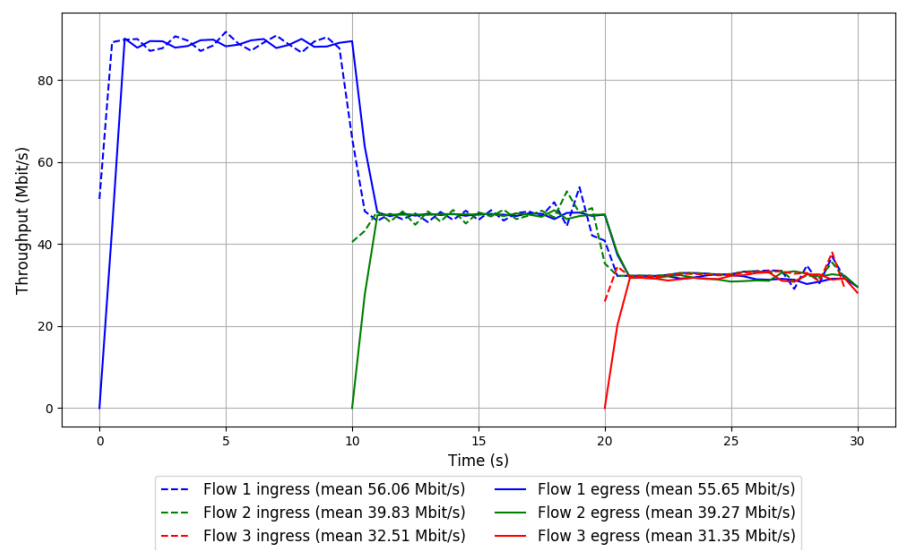# Run 2: Report of TaoVA-100x — Data Link

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

Start at: 2019-02-12 05:00:39
End at: 2019-02-12 05:01:09
Local clock offset: 3.78 ms
Remote clock offset: -5.449 ms


# Below is generated by plot.py at 2019-02-12 06:31:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.17 Mbit/s
95th percentile per-packet one-way delay: 127.836 ms
Loss rate: 1.55%
-- Flow 1:
Average throughput: 55.65 Mbit/s
95th percentile per-packet one-way delay: 126.953 ms
Loss rate: 0.96%
-- Flow 2:
Average throughput: 39.27 Mbit/s
95th percentile per-packet one-way delay: 127.943 ms
Loss rate: 1.71%
-- Flow 3:
Average throughput: 31.35 Mbit/s
95th percentile per-packet one-way delay: 128.878 ms
Loss rate: 4.19%
```

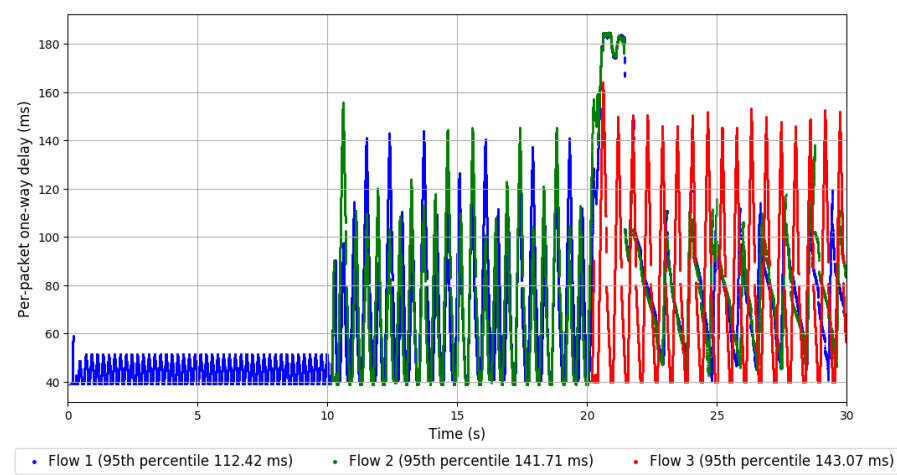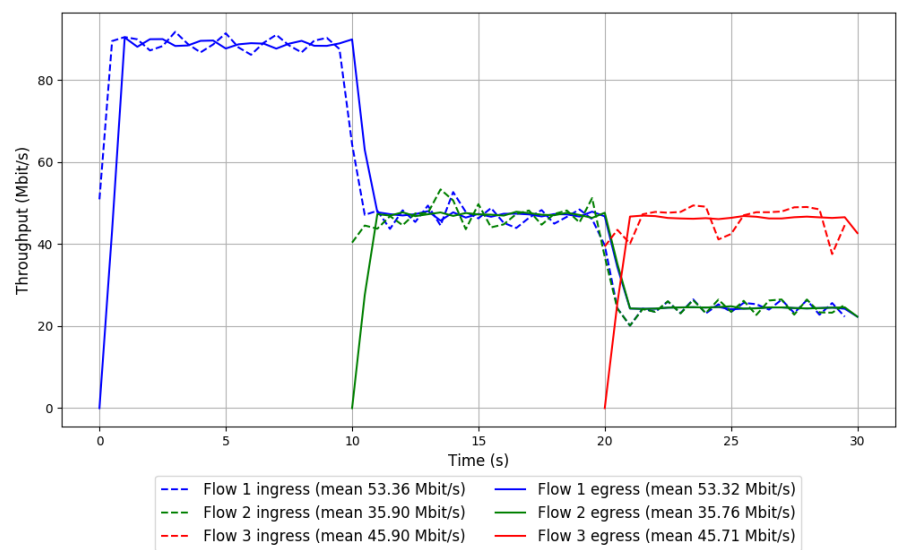## Run 3: Report of TaoVA-100x — Data Link

```
Run 4: Statistics of TaoVA-100x

Start at: 2019-02-12 05:26:28
End at: 2019-02-12 05:26:58
Local clock offset: 3.461 ms
Remote clock offset: -6.687 ms


# Below is generated by plot.py at 2019-02-12 06:31:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.26 Mbit/s
95th percentile per-packet one-way delay: 132.828 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 53.32 Mbit/s
95th percentile per-packet one-way delay: 112.420 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 35.76 Mbit/s
95th percentile per-packet one-way delay: 141.708 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 45.71 Mbit/s
95th percentile per-packet one-way delay: 143.068 ms
Loss rate: 1.07%
```

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



Flow 1 ingress (mean 53.36 Mbit/s) --- Flow 1 egress (mean 53.32 Mbit/s)
Flow 2 ingress (mean 35.90 Mbit/s) --- Flow 2 egress (mean 35.76 Mbit/s)
Flow 3 ingress (mean 45.90 Mbit/s) --- Flow 3 egress (mean 45.71 Mbit/s)



Flow 1 (95th percentile 112.42 ms)    Flow 2 (95th percentile 141.71 ms)    Flow 3 (95th percentile 143.07 ms)
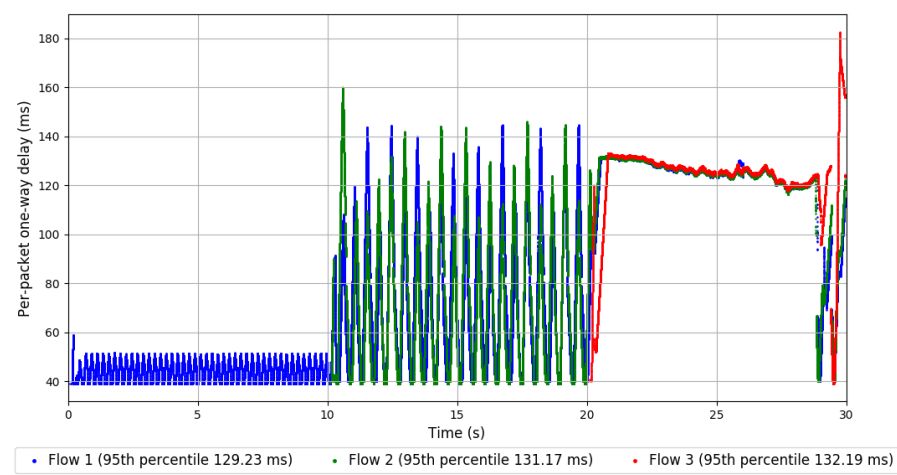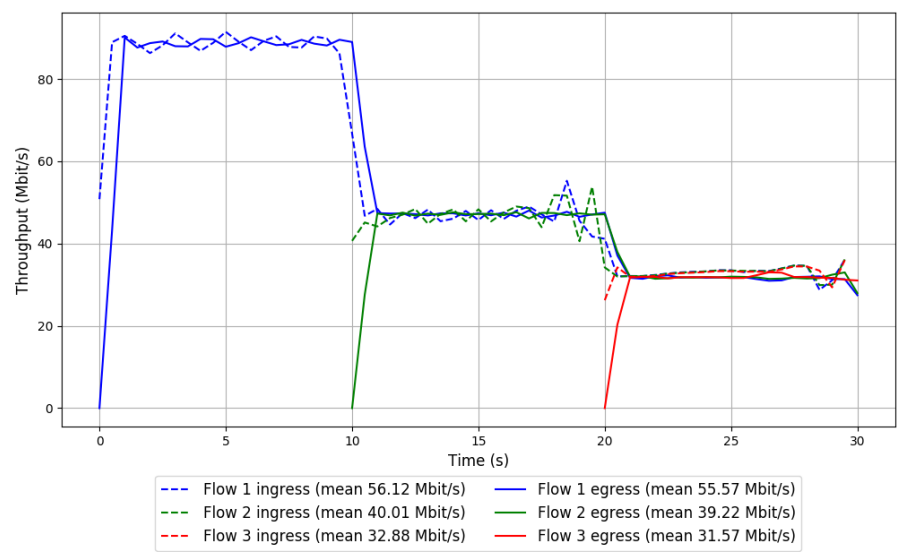
172

```
Run 5: Statistics of TaoVA-100x

Start at: 2019-02-12 05:52:10
End at: 2019-02-12 05:52:40
Local clock offset: 0.029 ms
Remote clock offset: -5.651 ms


# Below is generated by plot.py at 2019-02-12 06:31:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.14 Mbit/s
95th percentile per-packet one-way delay: 131.015 ms
Loss rate: 1.89%
-- Flow 1:
Average throughput: 55.57 Mbit/s
95th percentile per-packet one-way delay: 129.233 ms
Loss rate: 1.19%
-- Flow 2:
Average throughput: 39.22 Mbit/s
95th percentile per-packet one-way delay: 131.174 ms
Loss rate: 2.28%
-- Flow 3:
Average throughput: 31.57 Mbit/s
95th percentile per-packet one-way delay: 132.192 ms
Loss rate: 4.52%
```

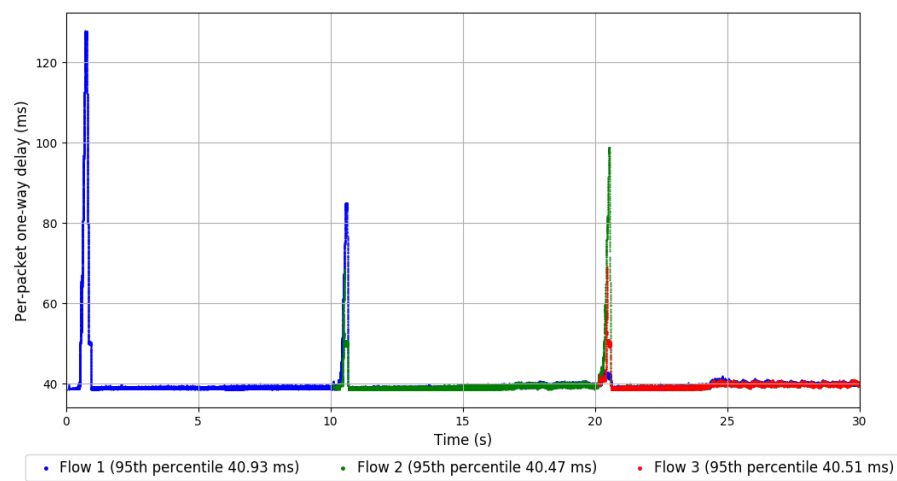Run 5: Report of TaoVA-100x — Data Link



Flow 1 ingress (mean 56.12 Mbit/s) --- Flow 1 egress (mean 55.57 Mbit/s)
Flow 2 ingress (mean 40.01 Mbit/s) --- Flow 2 egress (mean 39.22 Mbit/s)
Flow 3 ingress (mean 32.88 Mbit/s) --- Flow 3 egress (mean 31.57 Mbit/s)



Flow 1 (95th percentile 129.23 ms)   Flow 2 (95th percentile 131.17 ms)   Flow 3 (95th percentile 132.19 ms)
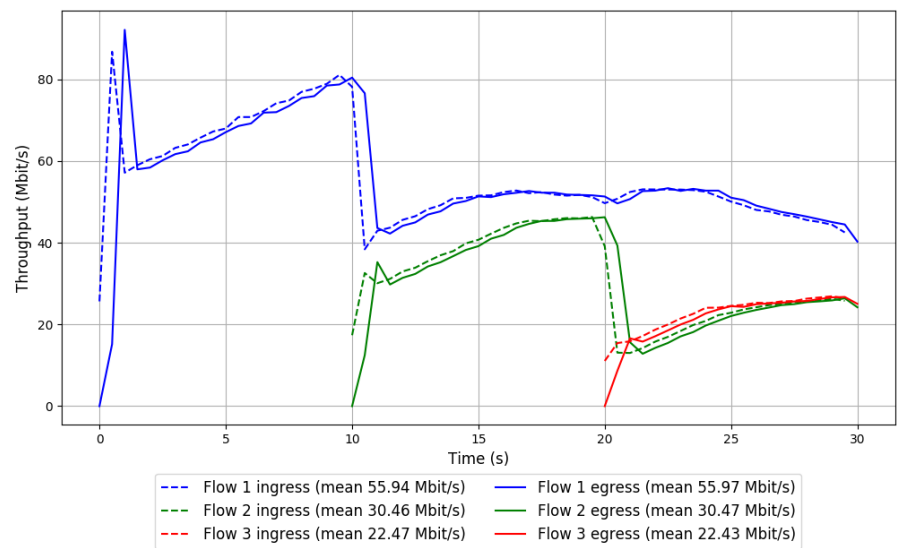
```
Run 1: Statistics of TCP Vegas

Start at: 2019-02-12 04:27:34
End at: 2019-02-12 04:28:04
Local clock offset: 3.849 ms
Remote clock offset: -10.125 ms


# Below is generated by plot.py at 2019-02-12 06:31:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 83.66 Mbit/s
95th percentile per-packet one-way delay: 40.698 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 55.97 Mbit/s
95th percentile per-packet one-way delay: 40.930 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 30.47 Mbit/s
95th percentile per-packet one-way delay: 40.467 ms
Loss rate: 0.30%
-- Flow 3:
Average throughput: 22.43 Mbit/s
95th percentile per-packet one-way delay: 40.512 ms
Loss rate: 0.81%
```

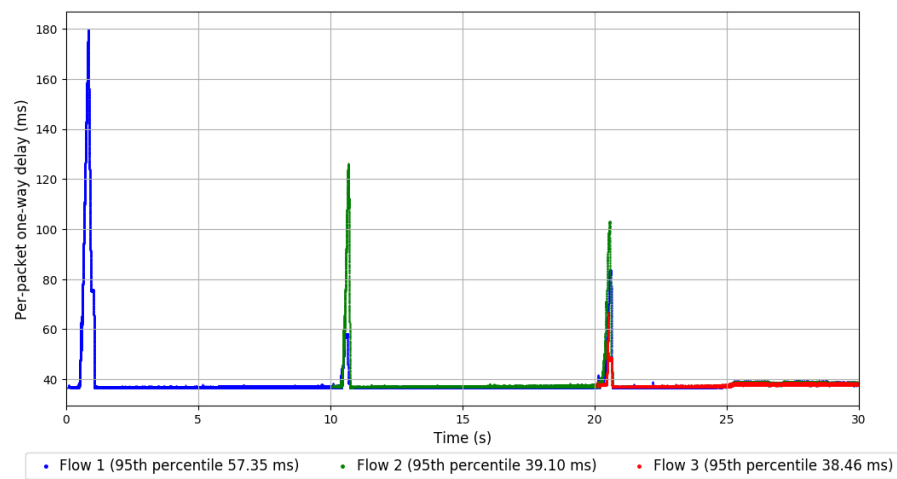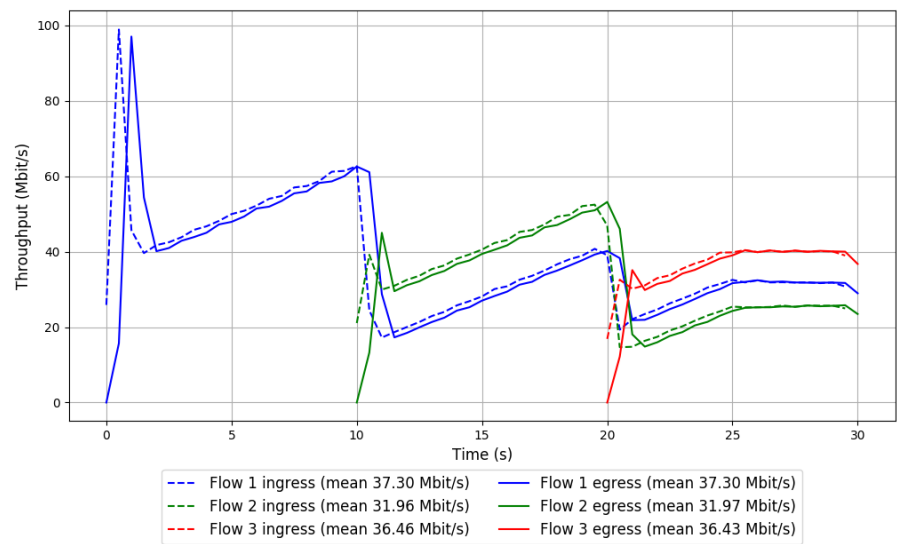Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2019-02-12 04:53:20
End at: 2019-02-12 04:53:50
Local clock offset: 3.709 ms
Remote clock offset: -6.278 ms


# Below is generated by plot.py at 2019-02-12 06:31:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 70.64 Mbit/s
95th percentile per-packet one-way delay: 43.190 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 37.30 Mbit/s
95th percentile per-packet one-way delay: 57.349 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 31.97 Mbit/s
95th percentile per-packet one-way delay: 39.102 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 36.43 Mbit/s
95th percentile per-packet one-way delay: 38.463 ms
Loss rate: 0.74%
```
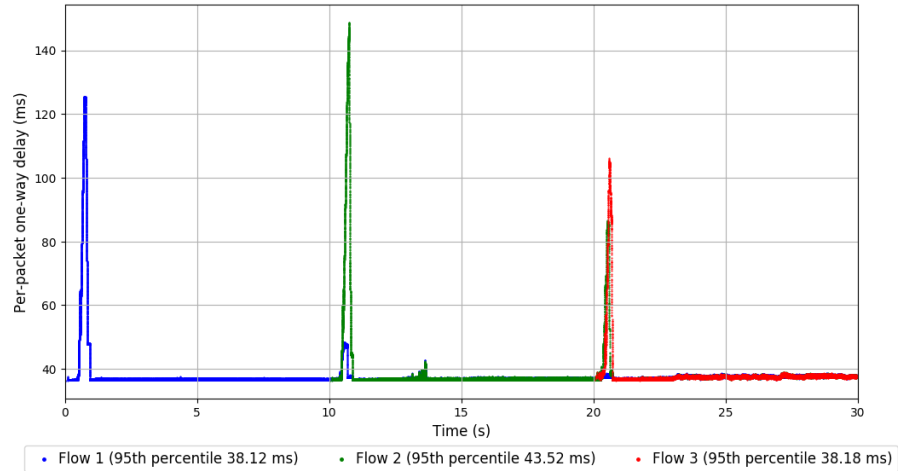
## Run 2: Report of TCP Vegas — Data Link



- - - - Flow 1 ingress (mean 37.30 Mbit/s)   ——— Flow 1 egress (mean 37.30 Mbit/s)
- - - - Flow 2 ingress (mean 31.96 Mbit/s)   ——— Flow 2 egress (mean 31.97 Mbit/s)
- - - - Flow 3 ingress (mean 36.46 Mbit/s)   ——— Flow 3 egress (mean 36.43 Mbit/s)



• Flow 1 (95th percentile 57.35 ms)    • Flow 2 (95th percentile 39.10 ms)    • Flow 3 (95th percentile 38.46 ms)
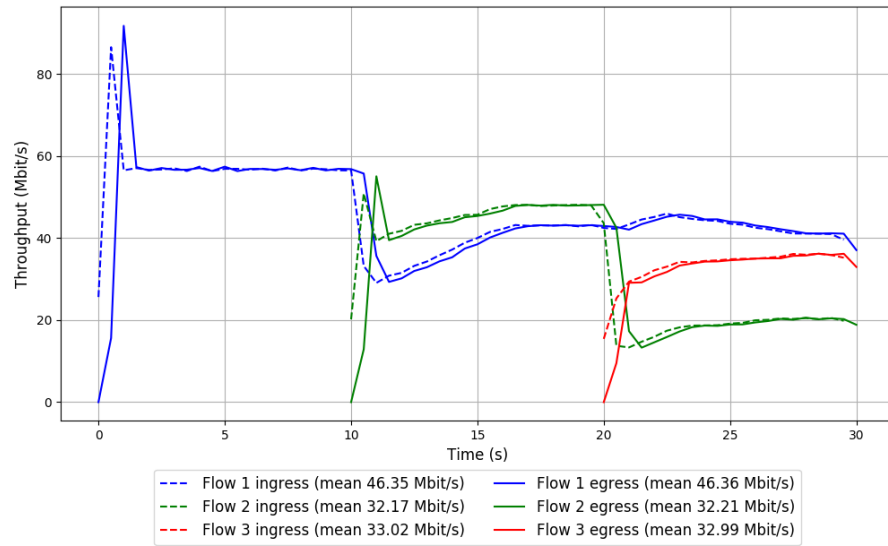
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```
Run 3: Statistics of TCP Vegas

Start at: 2019-02-12 05:19:02
End at: 2019-02-12 05:19:32
Local clock offset: 3.439 ms
Remote clock offset: -4.418 ms


# Below is generated by plot.py at 2019-02-12 06:31:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.71 Mbit/s
95th percentile per-packet one-way delay: 38.224 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 46.36 Mbit/s
95th percentile per-packet one-way delay: 38.115 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 32.21 Mbit/s
95th percentile per-packet one-way delay: 43.519 ms
Loss rate: 0.23%
-- Flow 3:
Average throughput: 32.99 Mbit/s
95th percentile per-packet one-way delay: 38.181 ms
Loss rate: 0.74%
```

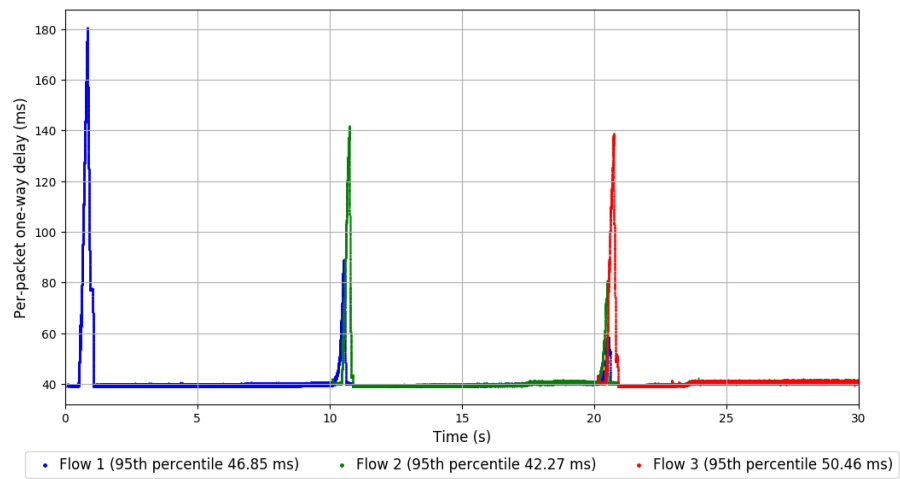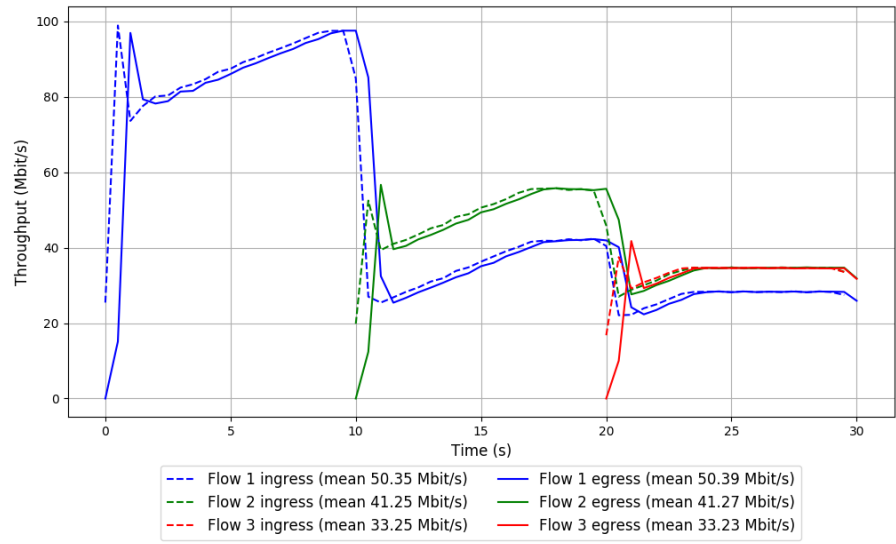Run 3: Report of TCP Vegas — Data Link

```
Run 4: Statistics of TCP Vegas

Start at: 2019-02-12 05:44:47
End at: 2019-02-12 05:45:17
Local clock offset: 0.847 ms
Remote clock offset: -5.997 ms


# Below is generated by plot.py at 2019-02-12 06:31:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.85 Mbit/s
95th percentile per-packet one-way delay: 44.445 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 50.39 Mbit/s
95th percentile per-packet one-way delay: 46.846 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 41.27 Mbit/s
95th percentile per-packet one-way delay: 42.268 ms
Loss rate: 0.29%
-- Flow 3:
Average throughput: 33.23 Mbit/s
95th percentile per-packet one-way delay: 50.456 ms
Loss rate: 0.72%
```
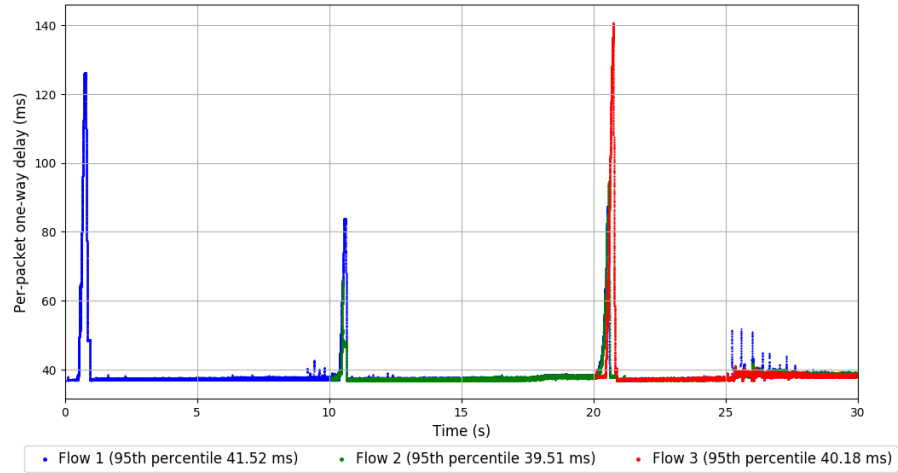
# Run 4: Report of TCP Vegas — Data Link



Flow 1 ingress (mean 50.35 Mbit/s)    Flow 1 egress (mean 50.39 Mbit/s)
Flow 2 ingress (mean 41.25 Mbit/s)    Flow 2 egress (mean 41.27 Mbit/s)
Flow 3 ingress (mean 33.25 Mbit/s)    Flow 3 egress (mean 33.23 Mbit/s)



Flow 1 (95th percentile 46.85 ms)    Flow 2 (95th percentile 42.27 ms)    Flow 3 (95th percentile 50.46 ms)
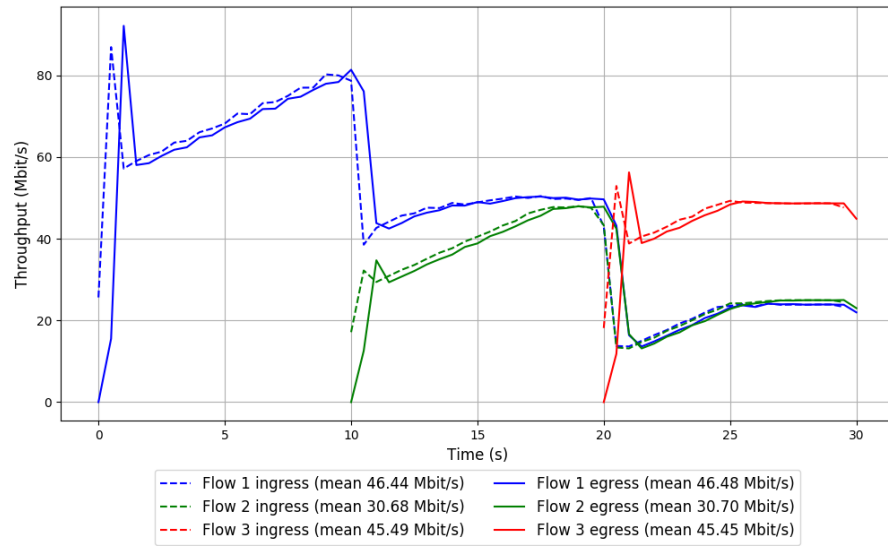
```
Run 5: Statistics of TCP Vegas

Start at: 2019-02-12 06:10:35
End at: 2019-02-12 06:11:05
Local clock offset: -2.053 ms
Remote clock offset: -3.145 ms


# Below is generated by plot.py at 2019-02-12 06:31:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.96 Mbit/s
95th percentile per-packet one-way delay: 40.118 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 46.48 Mbit/s
95th percentile per-packet one-way delay: 41.520 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 30.70 Mbit/s
95th percentile per-packet one-way delay: 39.514 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 45.45 Mbit/s
95th percentile per-packet one-way delay: 40.182 ms
Loss rate: 0.72%
```

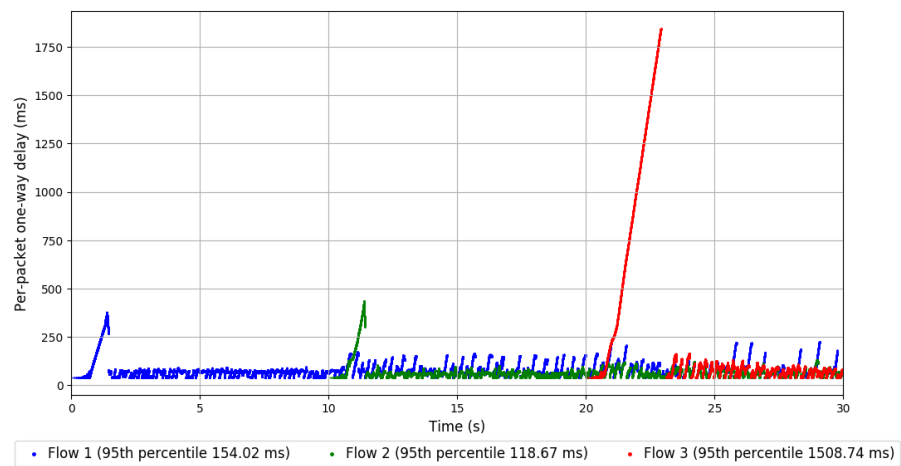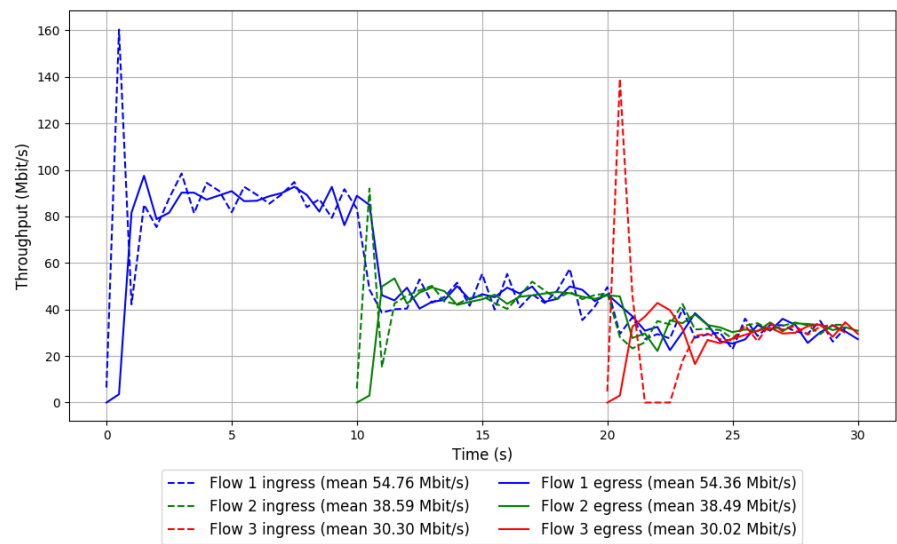Run 5: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2019-02-12 04:07:31
End at: 2019-02-12 04:08:01
Local clock offset: 1.092 ms
Remote clock offset: -11.365 ms

# Below is generated by plot.py at 2019-02-12 06:31:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.89 Mbit/s
95th percentile per-packet one-way delay: 213.660 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 54.36 Mbit/s
95th percentile per-packet one-way delay: 154.016 ms
Loss rate: 0.92%
-- Flow 2:
Average throughput: 38.49 Mbit/s
95th percentile per-packet one-way delay: 118.667 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 30.02 Mbit/s
95th percentile per-packet one-way delay: 1508.742 ms
Loss rate: 1.55%
```

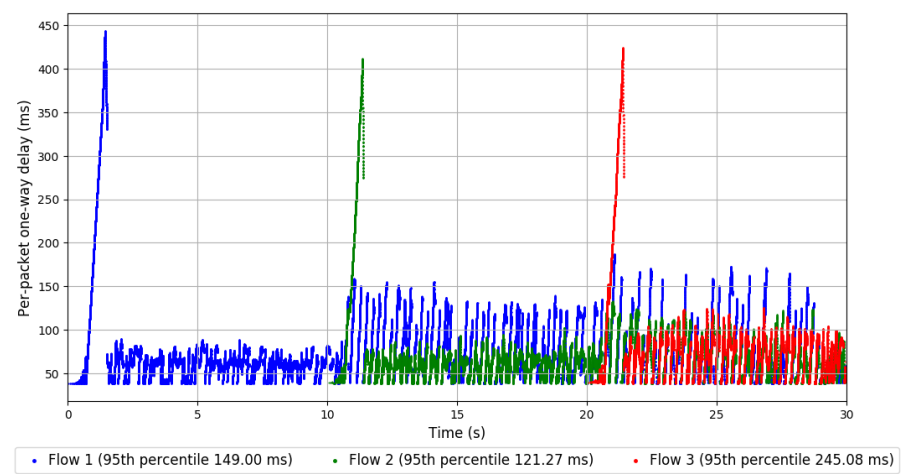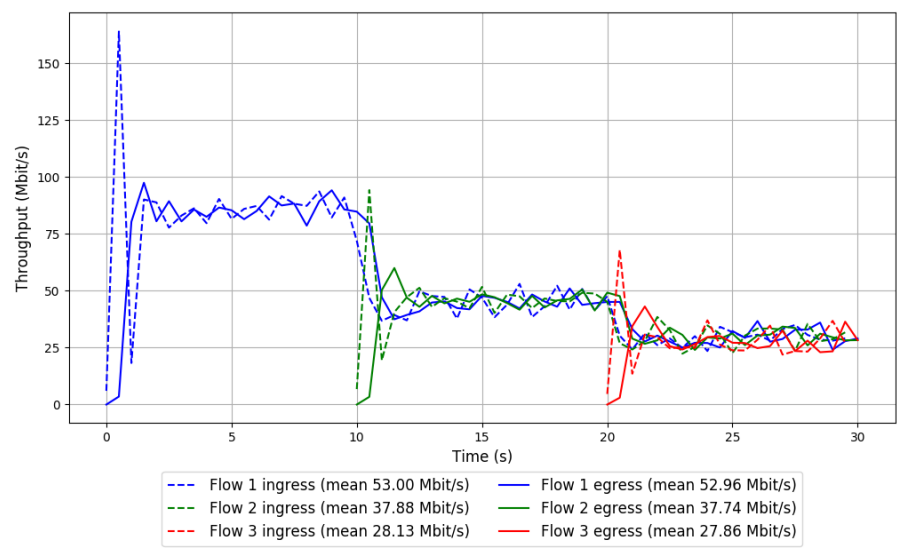Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2019-02-12 04:33:47
End at: 2019-02-12 04:34:17
Local clock offset: 4.193 ms
Remote clock offset: -9.469 ms


# Below is generated by plot.py at 2019-02-12 06:31:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.26 Mbit/s
95th percentile per-packet one-way delay: 149.593 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 52.96 Mbit/s
95th percentile per-packet one-way delay: 148.997 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 37.74 Mbit/s
95th percentile per-packet one-way delay: 121.271 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 27.86 Mbit/s
95th percentile per-packet one-way delay: 245.080 ms
Loss rate: 1.22%
```

# Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2019-02-12 04:59:25
End at: 2019-02-12 04:59:55
Local clock offset: 3.783 ms
Remote clock offset: -5.95 ms


# Below is generated by plot.py at 2019-02-12 06:31:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.16 Mbit/s
95th percentile per-packet one-way delay: 178.161 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 57.76 Mbit/s
95th percentile per-packet one-way delay: 125.810 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 30.97 Mbit/s
95th percentile per-packet one-way delay: 212.899 ms
Loss rate: 1.13%
-- Flow 3:
Average throughput: 23.59 Mbit/s
95th percentile per-packet one-way delay: 228.700 ms
Loss rate: 1.36%
```
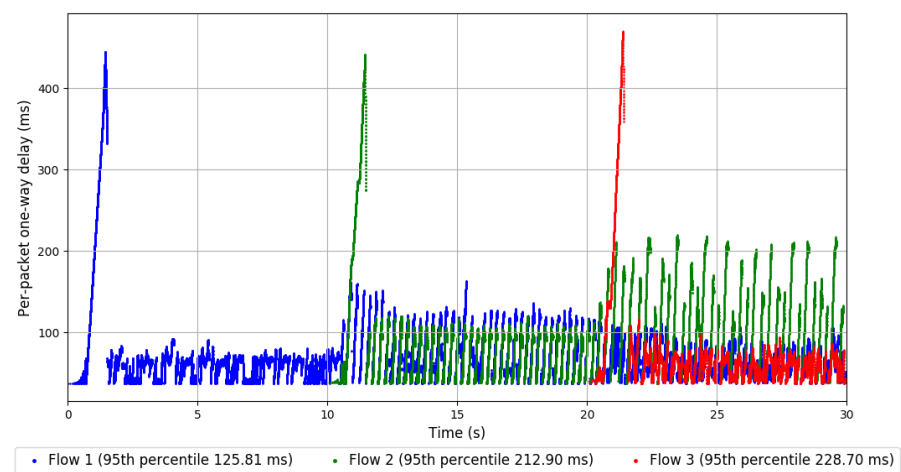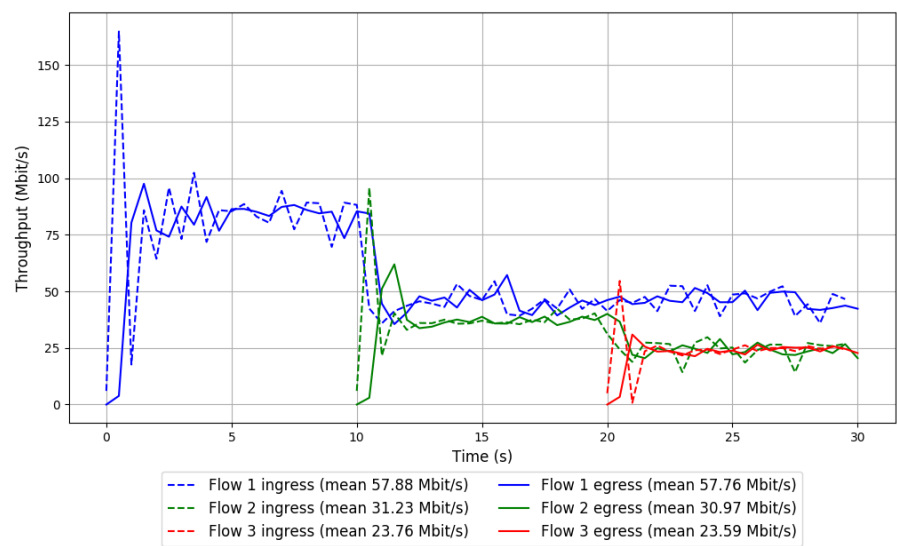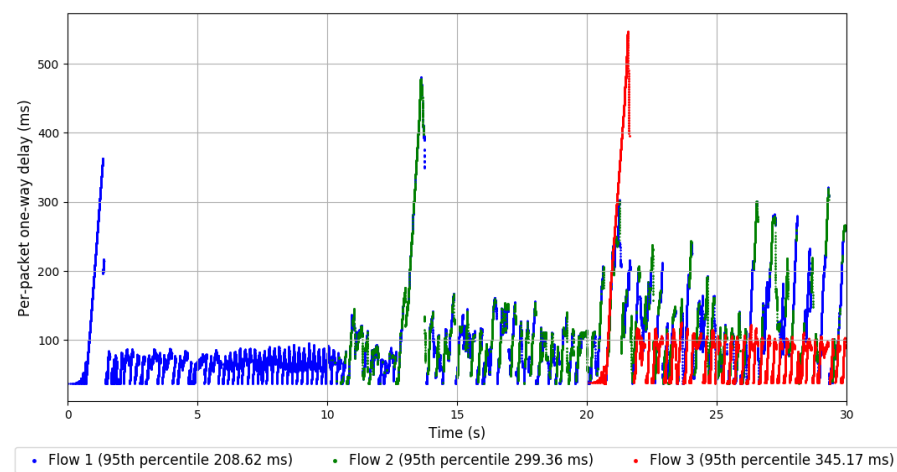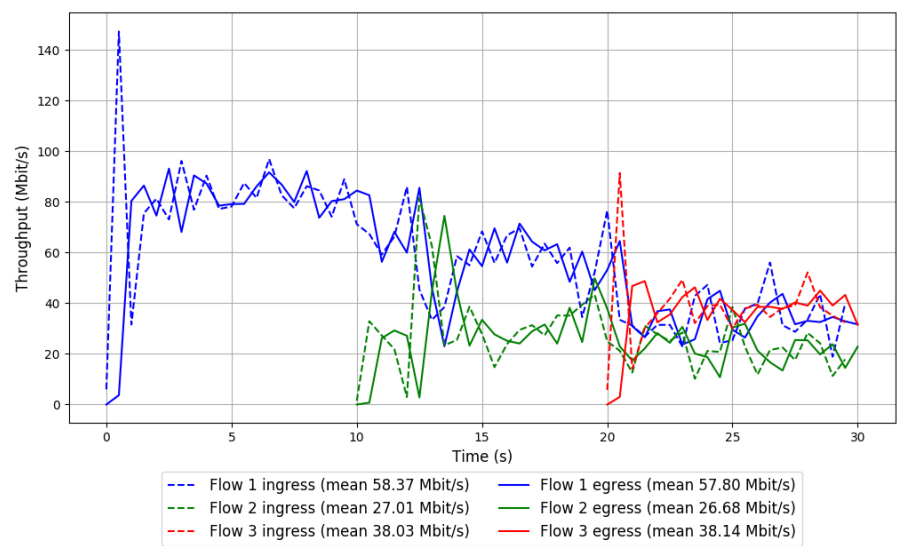
Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2019-02-12 05:25:13
End at: 2019-02-12 05:25:43
Local clock offset: 3.438 ms
Remote clock offset: -4.942 ms


# Below is generated by plot.py at 2019-02-12 06:31:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.12 Mbit/s
95th percentile per-packet one-way delay: 243.341 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 57.80 Mbit/s
95th percentile per-packet one-way delay: 208.617 ms
Loss rate: 0.72%
-- Flow 2:
Average throughput: 26.68 Mbit/s
95th percentile per-packet one-way delay: 299.360 ms
Loss rate: 0.58%
-- Flow 3:
Average throughput: 38.14 Mbit/s
95th percentile per-packet one-way delay: 345.168 ms
Loss rate: 0.39%
```

Run 4: Report of Verus — Data Link



Flow 1 ingress (mean 58.37 Mbit/s) --- Flow 1 egress (mean 57.80 Mbit/s)
Flow 2 ingress (mean 27.01 Mbit/s) --- Flow 2 egress (mean 26.68 Mbit/s)
Flow 3 ingress (mean 38.03 Mbit/s) --- Flow 3 egress (mean 38.14 Mbit/s)



Flow 1 (95th percentile 208.62 ms)   Flow 2 (95th percentile 299.36 ms)   Flow 3 (95th percentile 345.17 ms)
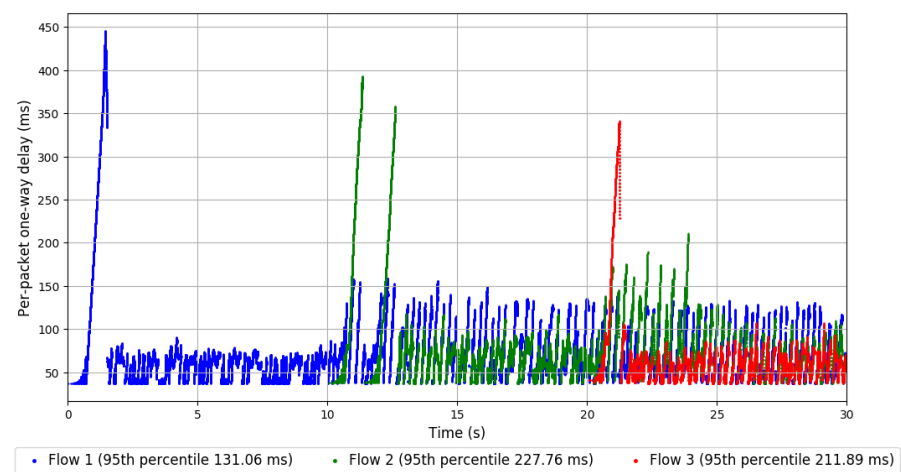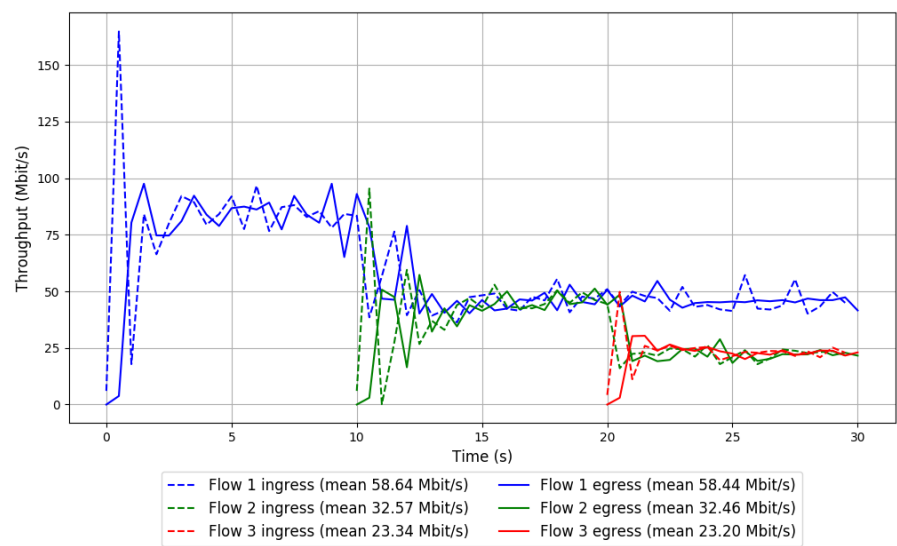
```
Run 5: Statistics of Verus

Start at: 2019-02-12 05:50:54
End at: 2019-02-12 05:51:24
Local clock offset: 0.128 ms
Remote clock offset: -3.849 ms


# Below is generated by plot.py at 2019-02-12 06:32:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.70 Mbit/s
95th percentile per-packet one-way delay: 153.842 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 58.44 Mbit/s
95th percentile per-packet one-way delay: 131.061 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 32.46 Mbit/s
95th percentile per-packet one-way delay: 227.756 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 23.20 Mbit/s
95th percentile per-packet one-way delay: 211.886 ms
Loss rate: 0.96%
```

Run 5: Report of Verus — Data Link



Flow 1 ingress (mean 58.64 Mbit/s) --- Flow 1 egress (mean 58.44 Mbit/s)
Flow 2 ingress (mean 32.57 Mbit/s) --- Flow 2 egress (mean 32.46 Mbit/s)
Flow 3 ingress (mean 23.34 Mbit/s) --- Flow 3 egress (mean 23.20 Mbit/s)



• Flow 1 (95th percentile 131.06 ms)    • Flow 2 (95th percentile 227.76 ms)    • Flow 3 (95th percentile 211.89 ms)
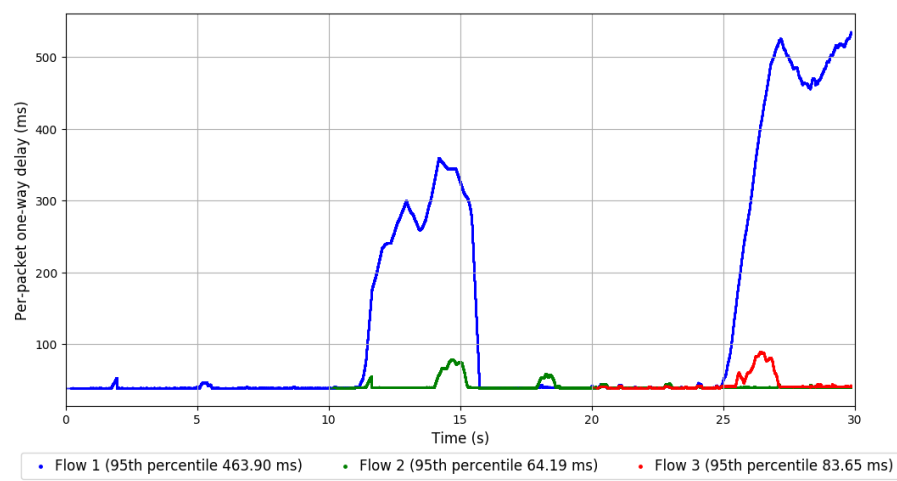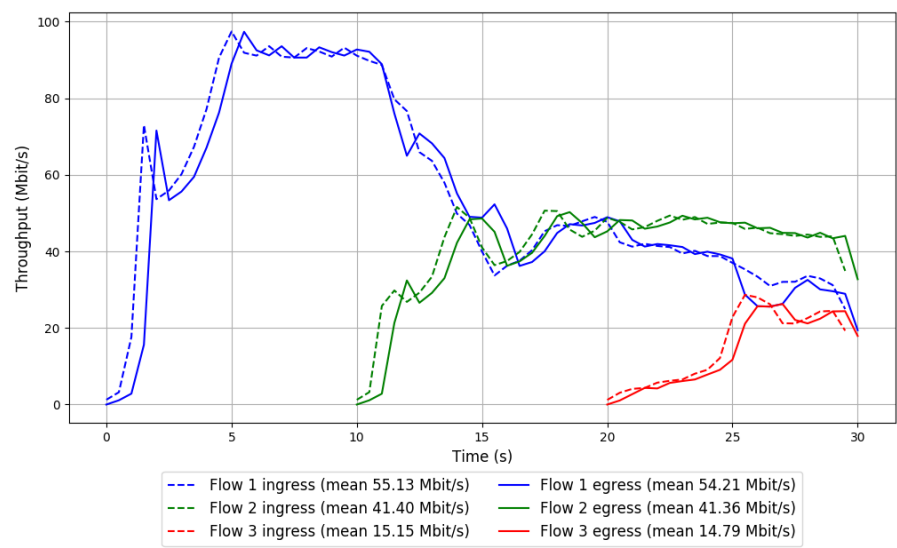
194

```
Run 1: Statistics of PCC-Vivace

Start at: 2019-02-12 04:23:52
End at: 2019-02-12 04:24:22
Local clock offset: 3.611 ms
Remote clock offset: -10.786 ms


# Below is generated by plot.py at 2019-02-12 06:32:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.56 Mbit/s
95th percentile per-packet one-way delay: 344.784 ms
Loss rate: 1.49%
-- Flow 1:
Average throughput: 54.21 Mbit/s
95th percentile per-packet one-way delay: 463.904 ms
Loss rate: 1.88%
-- Flow 2:
Average throughput: 41.36 Mbit/s
95th percentile per-packet one-way delay: 64.185 ms
Loss rate: 0.43%
-- Flow 3:
Average throughput: 14.79 Mbit/s
95th percentile per-packet one-way delay: 83.648 ms
Loss rate: 2.99%
```

# Run 1: Report of PCC-Vivace — Data Link



Flow 1 ingress (mean 55.13 Mbit/s) --- Flow 1 egress (mean 54.21 Mbit/s)
Flow 2 ingress (mean 41.40 Mbit/s) --- Flow 2 egress (mean 41.36 Mbit/s)
Flow 3 ingress (mean 15.15 Mbit/s) --- Flow 3 egress (mean 14.79 Mbit/s)



Flow 1 (95th percentile 463.90 ms) • Flow 2 (95th percentile 64.19 ms) • Flow 3 (95th percentile 83.65 ms)
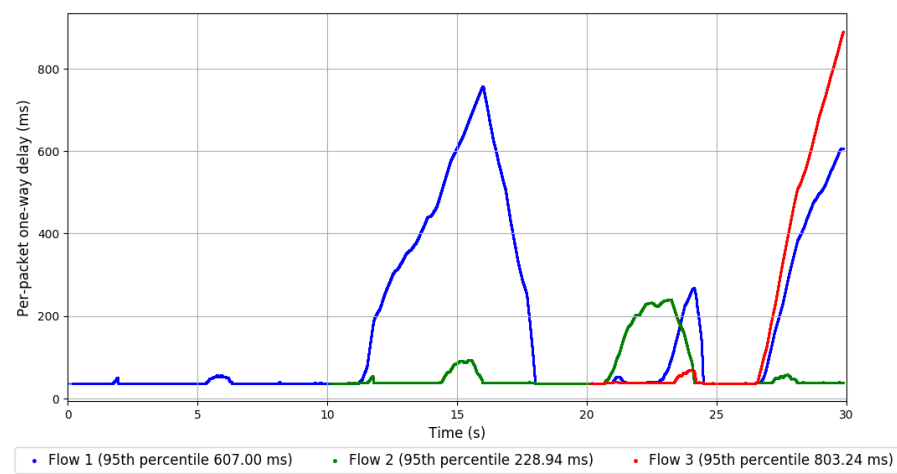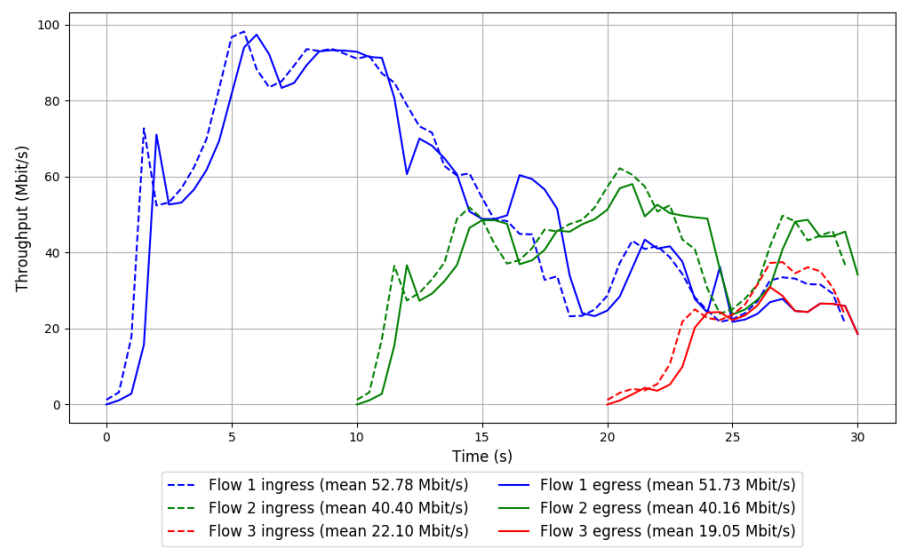
```
Run 2: Statistics of PCC-Vivace

Start at: 2019-02-12 04:49:40
End at: 2019-02-12 04:50:10
Local clock offset: 3.69 ms
Remote clock offset: -6.612 ms


# Below is generated by plot.py at 2019-02-12 06:32:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.69 Mbit/s
95th percentile per-packet one-way delay: 588.765 ms
Loss rate: 2.84%
-- Flow 1:
Average throughput: 51.73 Mbit/s
95th percentile per-packet one-way delay: 607.000 ms
Loss rate: 2.21%
-- Flow 2:
Average throughput: 40.16 Mbit/s
95th percentile per-packet one-way delay: 228.944 ms
Loss rate: 0.93%
-- Flow 3:
Average throughput: 19.05 Mbit/s
95th percentile per-packet one-way delay: 803.243 ms
Loss rate: 14.39%
```

## Run 2: Report of PCC-Vivace — Data Link



Flow 1 ingress (mean 52.78 Mbit/s) --- Flow 1 egress (mean 51.73 Mbit/s)
Flow 2 ingress (mean 40.40 Mbit/s) --- Flow 2 egress (mean 40.16 Mbit/s)
Flow 3 ingress (mean 22.10 Mbit/s) --- Flow 3 egress (mean 19.05 Mbit/s)



Flow 1 (95th percentile 607.00 ms) • Flow 2 (95th percentile 228.94 ms) • Flow 3 (95th percentile 803.24 ms)
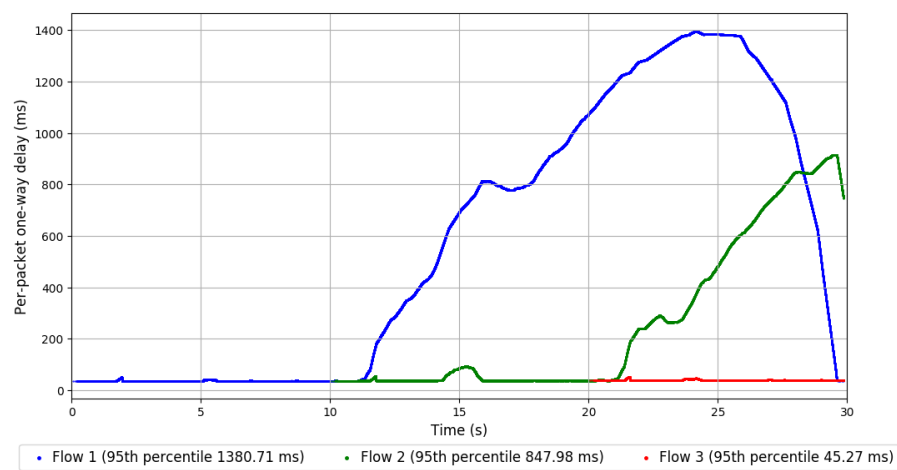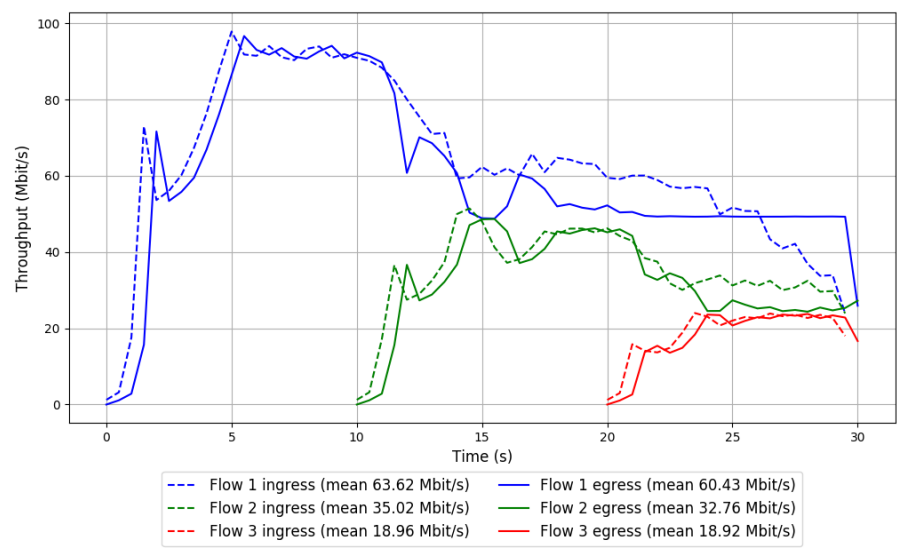
```
Run 3: Statistics of PCC-Vivace

Start at: 2019-02-12 05:15:21
End at: 2019-02-12 05:15:51
Local clock offset: 3.476 ms
Remote clock offset: -4.936 ms


# Below is generated by plot.py at 2019-02-12 06:32:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.42 Mbit/s
95th percentile per-packet one-way delay: 1356.727 ms
Loss rate: 5.32%
-- Flow 1:
Average throughput: 60.43 Mbit/s
95th percentile per-packet one-way delay: 1380.707 ms
Loss rate: 5.22%
-- Flow 2:
Average throughput: 32.76 Mbit/s
95th percentile per-packet one-way delay: 847.982 ms
Loss rate: 6.76%
-- Flow 3:
Average throughput: 18.92 Mbit/s
95th percentile per-packet one-way delay: 45.265 ms
Loss rate: 0.92%
```

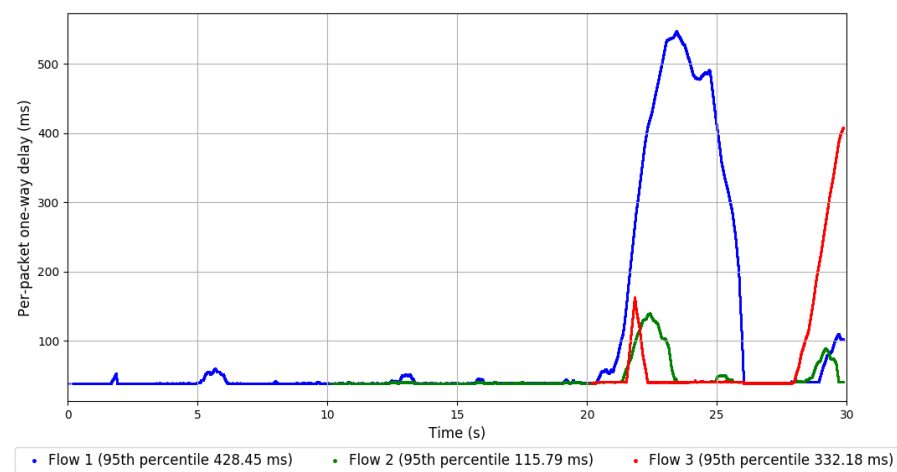# Run 3: Report of PCC-Vivace — Data Link



Flow 1 ingress (mean 63.62 Mbit/s) ---- Flow 1 egress (mean 60.43 Mbit/s)
Flow 2 ingress (mean 35.02 Mbit/s) ---- Flow 2 egress (mean 32.76 Mbit/s)
Flow 3 ingress (mean 18.96 Mbit/s) ---- Flow 3 egress (mean 18.92 Mbit/s)



Flow 1 (95th percentile 1380.71 ms) • Flow 2 (95th percentile 847.98 ms) • Flow 3 (95th percentile 45.27 ms)
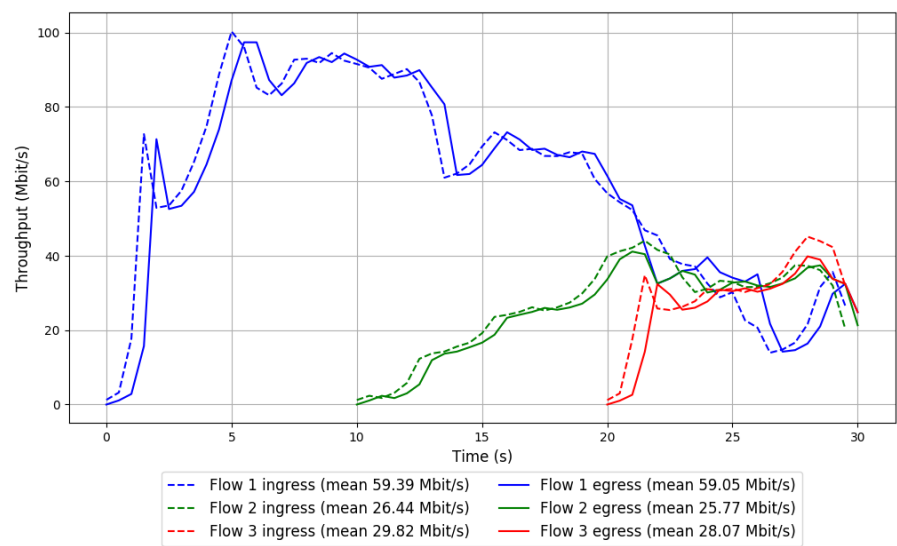
```
Run 4: Statistics of PCC-Vivace

Start at: 2019-02-12 05:41:08
End at: 2019-02-12 05:41:38
Local clock offset: 1.503 ms
Remote clock offset: -5.736 ms


# Below is generated by plot.py at 2019-02-12 06:32:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.40 Mbit/s
95th percentile per-packet one-way delay: 335.026 ms
Loss rate: 1.85%
-- Flow 1:
Average throughput: 59.05 Mbit/s
95th percentile per-packet one-way delay: 428.451 ms
Loss rate: 0.79%
-- Flow 2:
Average throughput: 25.77 Mbit/s
95th percentile per-packet one-way delay: 115.787 ms
Loss rate: 2.88%
-- Flow 3:
Average throughput: 28.07 Mbit/s
95th percentile per-packet one-way delay: 332.176 ms
Loss rate: 6.46%
```
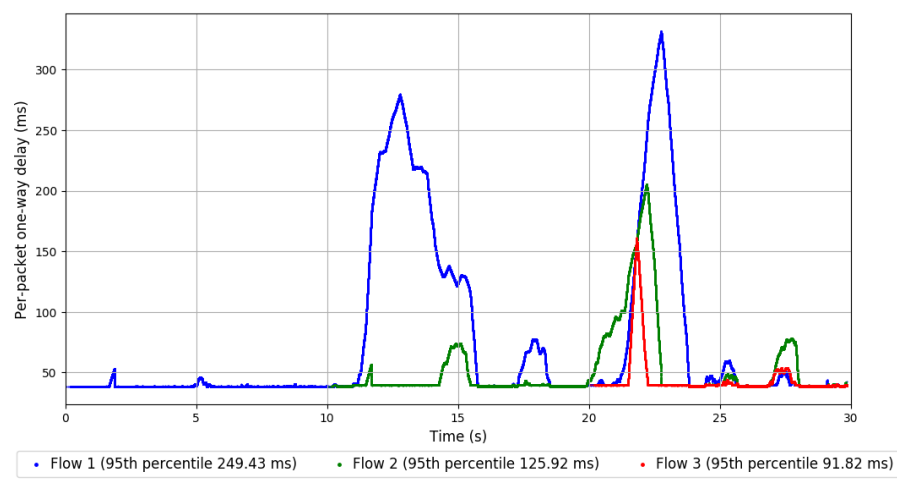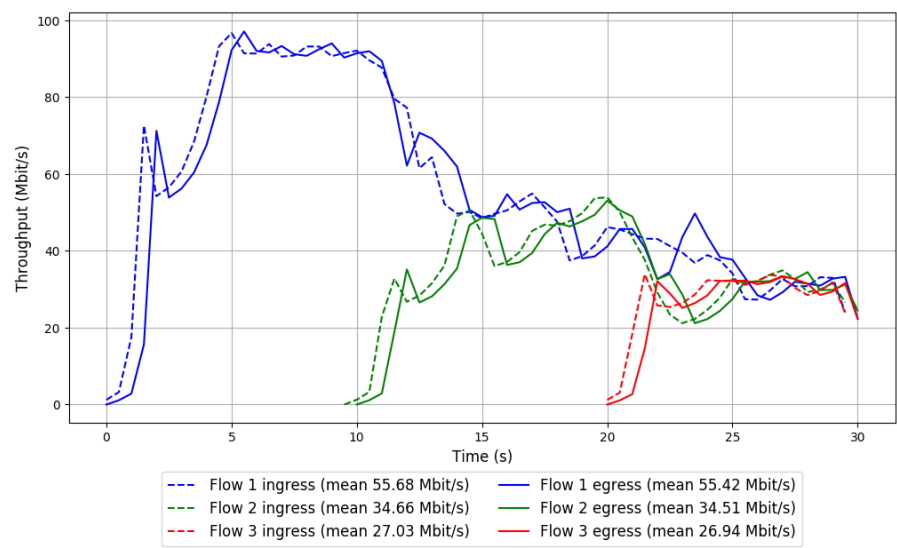
## Run 4: Report of PCC-Vivace — Data Link



Flow 1 ingress (mean 59.39 Mbit/s) Flow 1 egress (mean 59.05 Mbit/s)
Flow 2 ingress (mean 26.44 Mbit/s) Flow 2 egress (mean 25.77 Mbit/s)
Flow 3 ingress (mean 29.82 Mbit/s) Flow 3 egress (mean 28.07 Mbit/s)



Flow 1 (95th percentile 428.45 ms) Flow 2 (95th percentile 115.79 ms) Flow 3 (95th percentile 332.18 ms)

```
Run 5: Statistics of PCC-Vivace

Start at: 2019-02-12 06:06:56
End at: 2019-02-12 06:07:26
Local clock offset: -1.418 ms
Remote clock offset: -5.036 ms


# Below is generated by plot.py at 2019-02-12 06:32:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.22 Mbit/s
95th percentile per-packet one-way delay: 225.385 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 55.42 Mbit/s
95th percentile per-packet one-way delay: 249.429 ms
Loss rate: 0.68%
-- Flow 2:
Average throughput: 34.51 Mbit/s
95th percentile per-packet one-way delay: 125.915 ms
Loss rate: 0.76%
-- Flow 3:
Average throughput: 26.94 Mbit/s
95th percentile per-packet one-way delay: 91.818 ms
Loss rate: 1.02%
```

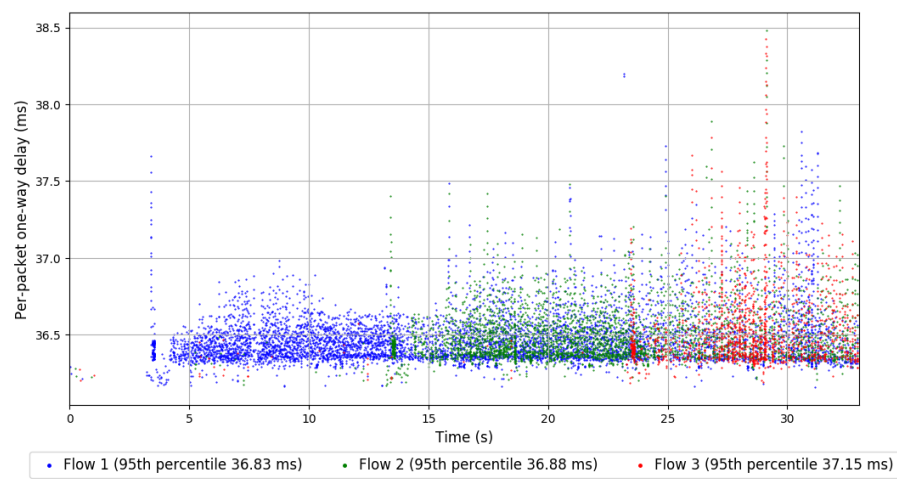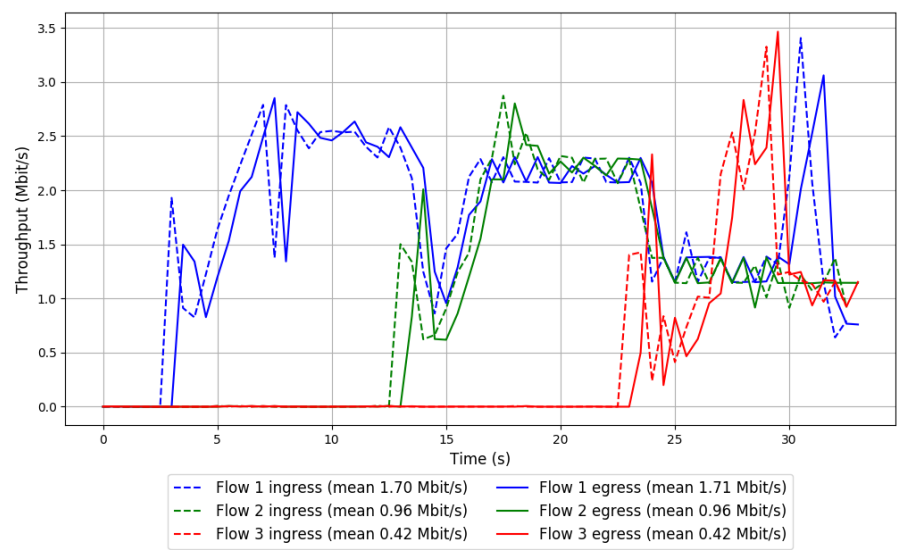Run 5: Report of PCC-Vivace — Data Link



Flow 1 ingress (mean 55.68 Mbit/s)  — — —  Flow 1 egress (mean 55.42 Mbit/s)
Flow 2 ingress (mean 34.66 Mbit/s)  — — —  Flow 2 egress (mean 34.51 Mbit/s)
Flow 3 ingress (mean 27.03 Mbit/s)  — — —  Flow 3 egress (mean 26.94 Mbit/s)



Flow 1 (95th percentile 249.43 ms)   Flow 2 (95th percentile 125.92 ms)   Flow 3 (95th percentile 91.82 ms)

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```
Run 1: Statistics of WebRTC media

Start at: 2019-02-12 04:17:44
End at: 2019-02-12 04:18:14
Local clock offset: 3.048 ms
Remote clock offset: -8.253 ms


# Below is generated by plot.py at 2019-02-12 06:32:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.08 Mbit/s
95th percentile per-packet one-way delay: 36.891 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 1.71 Mbit/s
95th percentile per-packet one-way delay: 36.827 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 0.96 Mbit/s
95th percentile per-packet one-way delay: 36.876 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 37.148 ms
Loss rate: 0.00%
```

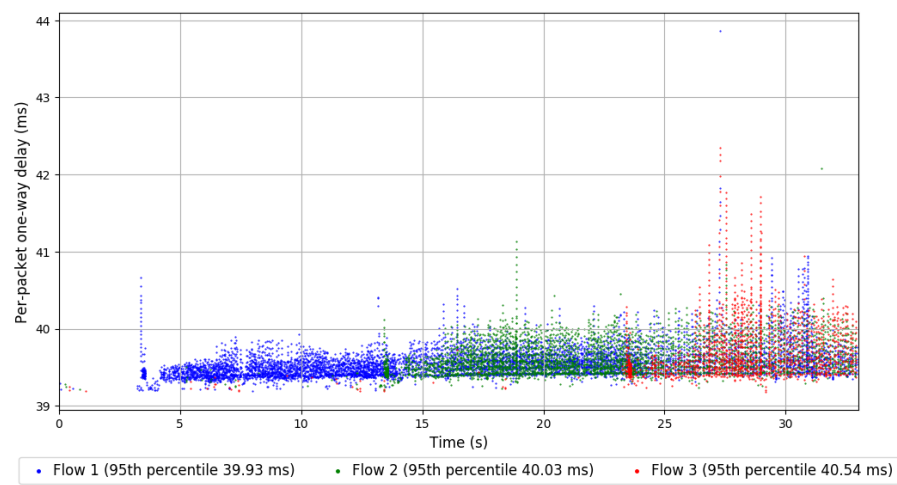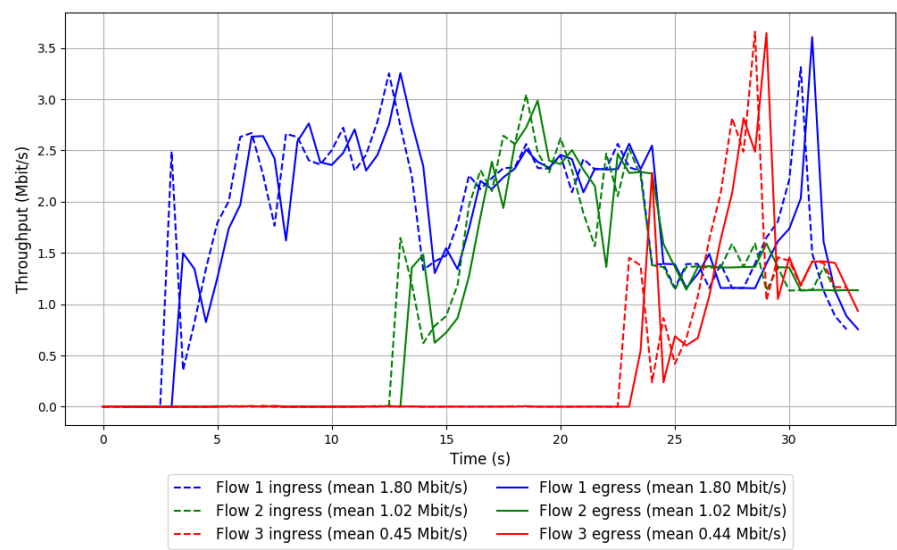Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2019-02-12 04:43:38
End at: 2019-02-12 04:44:08
Local clock offset: 3.737 ms
Remote clock offset: -9.496 ms


# Below is generated by plot.py at 2019-02-12 06:32:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.26 Mbit/s
95th percentile per-packet one-way delay: 40.086 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 1.80 Mbit/s
95th percentile per-packet one-way delay: 39.927 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 1.02 Mbit/s
95th percentile per-packet one-way delay: 40.035 ms
Loss rate: 0.34%
-- Flow 3:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 40.538 ms
Loss rate: 0.80%
```

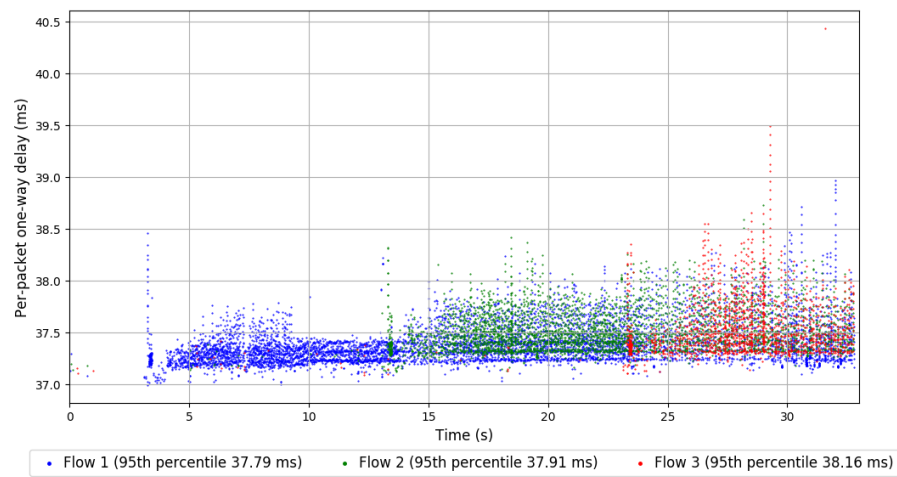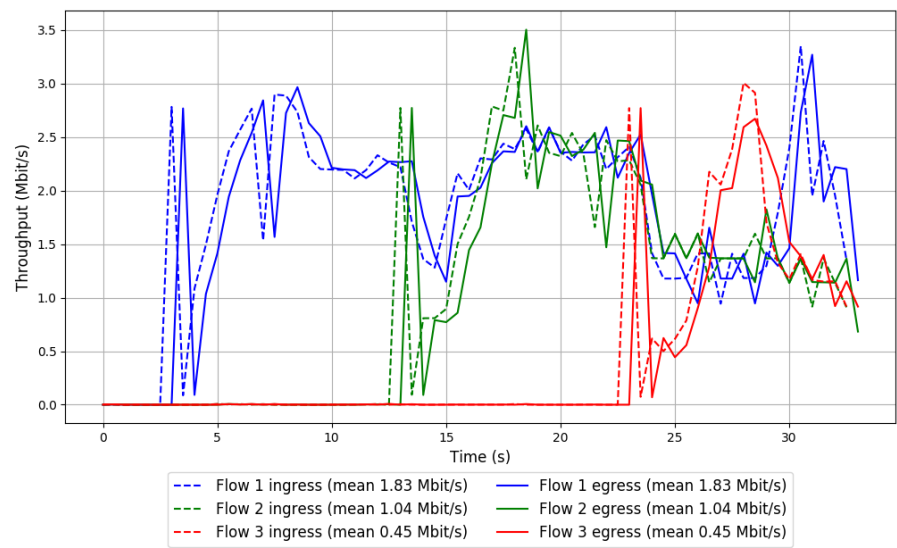Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2019-02-12 05:09:17
End at: 2019-02-12 05:09:47
Local clock offset: 3.595 ms
Remote clock offset: -5.612 ms


# Below is generated by plot.py at 2019-02-12 06:32:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.31 Mbit/s
95th percentile per-packet one-way delay: 37.902 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 1.83 Mbit/s
95th percentile per-packet one-way delay: 37.790 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 1.04 Mbit/s
95th percentile per-packet one-way delay: 37.914 ms
Loss rate: 0.33%
-- Flow 3:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 38.160 ms
Loss rate: 0.78%
```

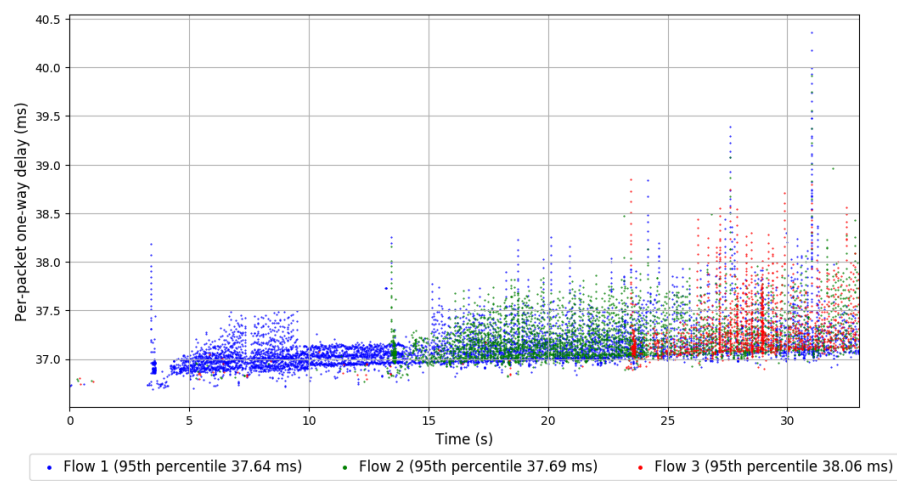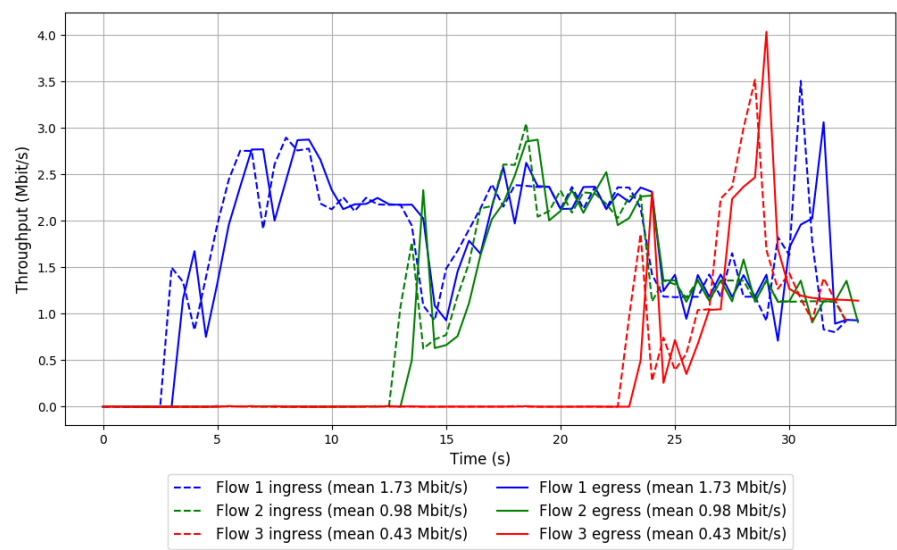Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2019-02-12 05:35:05
End at: 2019-02-12 05:35:35
Local clock offset: 3.123 ms
Remote clock offset: -4.093 ms


# Below is generated by plot.py at 2019-02-12 06:32:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.12 Mbit/s
95th percentile per-packet one-way delay: 37.740 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.73 Mbit/s
95th percentile per-packet one-way delay: 37.637 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 37.694 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 38.056 ms
Loss rate: 0.01%
```

Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2019-02-12 06:00:51
End at: 2019-02-12 06:01:21
Local clock offset: -0.56 ms
Remote clock offset: -5.362 ms


# Below is generated by plot.py at 2019-02-12 06:32:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.16 Mbit/s
95th percentile per-packet one-way delay: 39.522 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 1.77 Mbit/s
95th percentile per-packet one-way delay: 39.464 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 0.97 Mbit/s
95th percentile per-packet one-way delay: 39.543 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 39.647 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link