Pantheon Report

Generated at 2018-12-02 06:49:15 (UTC).

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

Repeated the test of 19 congestion control schemes 5 times.

Each test lasted for 30 seconds running 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 4.15.0-1027-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 @ 7b6dad87cde3ab65f7c4052140eb54098aa58e9d
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
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
```
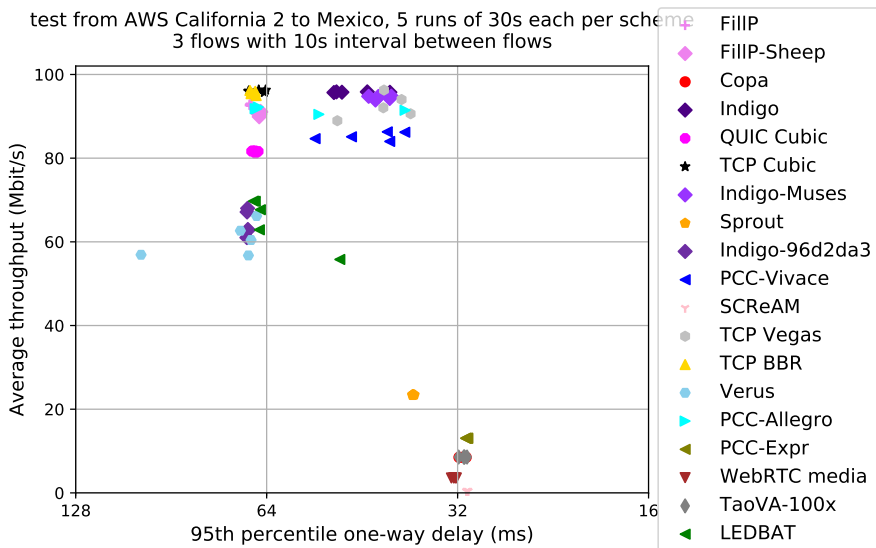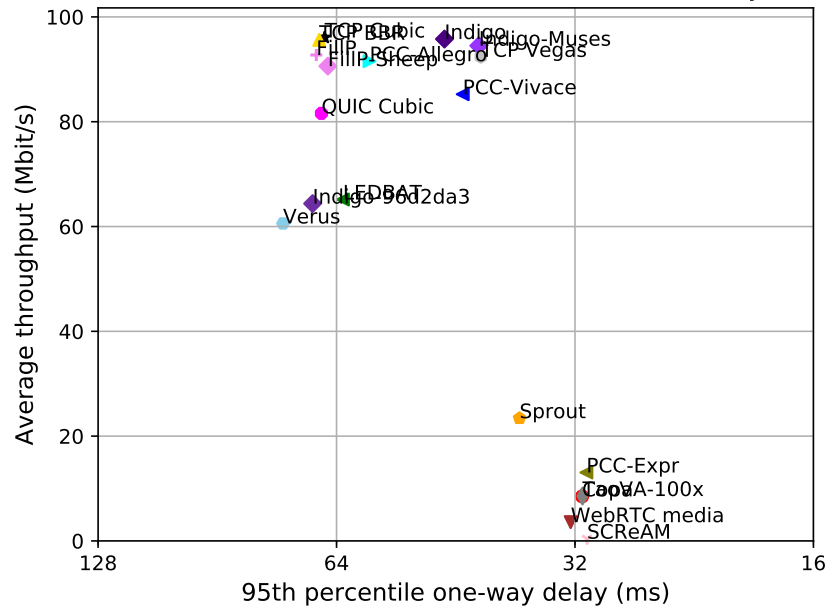
```
 M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

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

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

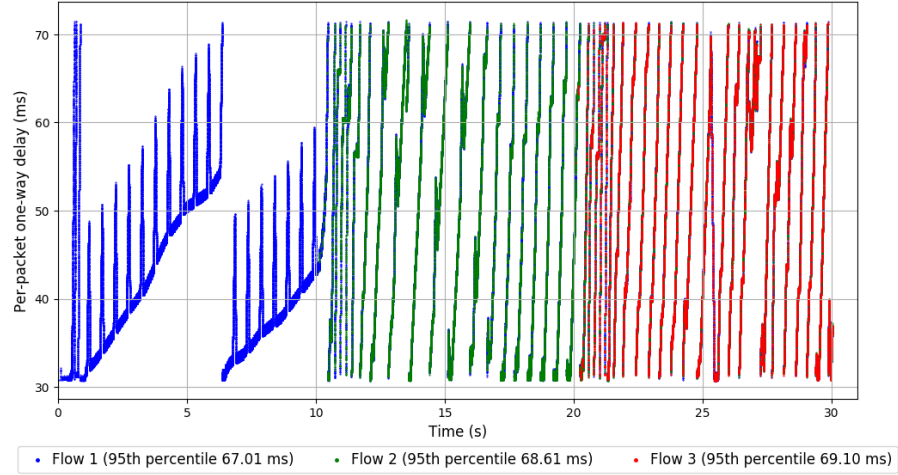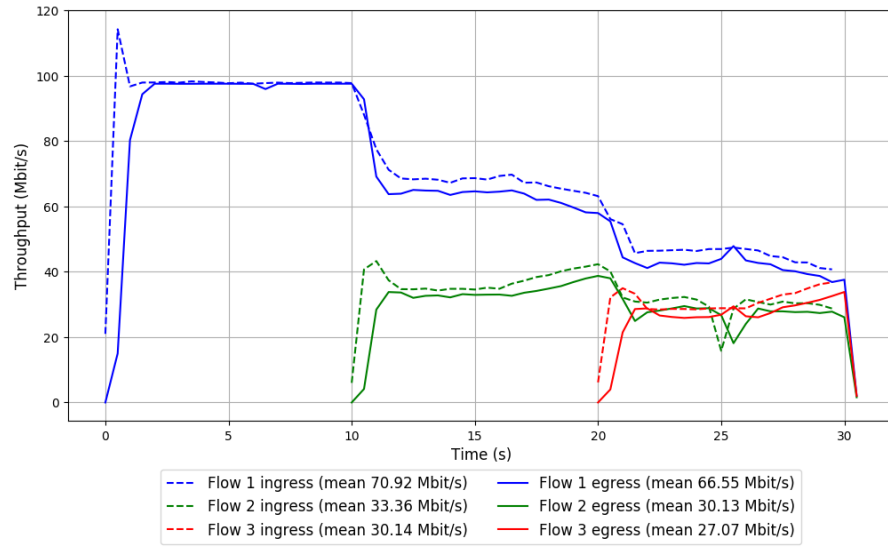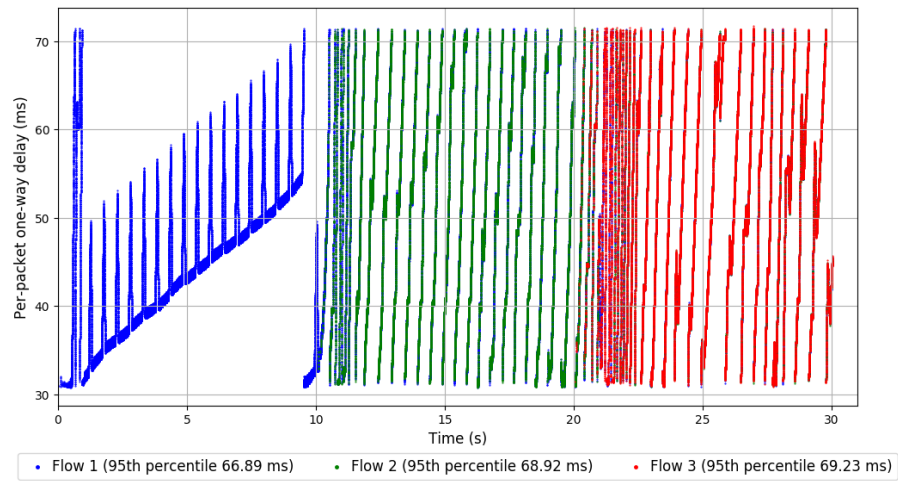| scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	60.71	35.41	34.10	66.11	68.25	68.71	6.41	10.69	11.84
Copa	5	0.00	10.07	5.41	30.87	31.86	30.94	98.11	72.18	78.94
TCP Cubic	5	73.06	23.37	22.42	65.81	66.66	64.27	0.87	0.58	0.76
FillP	5	57.39	40.58	25.45	66.34	69.09	68.86	29.75	47.95	54.73
FillP-Sheep	5	56.22	41.09	21.30	64.19	67.18	66.01	9.40	16.92	16.70
Indigo	5	65.37	30.15	31.84	43.36	48.74	53.68	0.08	0.09	0.00
Indigo-96d2da3	5	46.16	18.84	22.91	68.64	68.47	68.71	59.96	60.23	60.48
LEDBAT	5	37.42	32.98	18.78	60.62	63.79	64.70	0.20	0.20	0.01
Indigo-Muses	5	58.84	31.67	44.31	42.50	42.95	40.76	0.42	0.02	0.05
PCC-Allegro	5	79.43	12.38	11.77	57.90	59.17	56.70	3.38	4.12	4.01
PCC-Expr	5	7.79	5.82	4.23	30.95	30.96	30.99	46.11	30.65	28.93
QUIC Cubic	5	60.27	24.15	16.08	66.58	67.15	67.61	2.79	0.85	0.99
SCReAM	5	0.21	0.21	0.22	30.88	30.88	30.87	0.00	0.00	0.00
Sprout	5	11.80	11.75	11.53	37.31	37.89	37.73	0.01	0.01	0.01
TaoVA-100x	5	0.00	10.11	5.50	30.86	31.59	31.03	95.92	85.26	38.77
TCP Vegas	5	68.40	26.86	18.30	41.23	41.31	37.10	0.61	0.12	0.02
Verus	5	40.55	24.75	15.66	67.85	77.13	57.77	47.10	55.38	55.21
PCC-Vivace	5	63.19	26.40	13.63	44.27	44.37	44.36	0.10	0.20	0.13
WebRTC media	5	1.93	1.24	0.43	32.03	32.69	33.29	0.00	0.00	0.00

```
Run 1: Statistics of TCP BBR

Start at: 2018-12-02 04:48:22
End at: 2018-12-02 04:48:52
Local clock offset: -0.024 ms
Remote clock offset: -4.114 ms


# Below is generated by plot.py at 2018-12-02 06:39:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.60 Mbit/s
95th percentile per-packet one-way delay: 67.641 ms
Loss rate: 7.31%
-- Flow 1:
Average throughput: 66.55 Mbit/s
95th percentile per-packet one-way delay: 67.013 ms
Loss rate: 6.14%
-- Flow 2:
Average throughput: 30.13 Mbit/s
95th percentile per-packet one-way delay: 68.608 ms
Loss rate: 9.69%
-- Flow 3:
Average throughput: 27.07 Mbit/s
95th percentile per-packet one-way delay: 69.100 ms
Loss rate: 10.34%
```

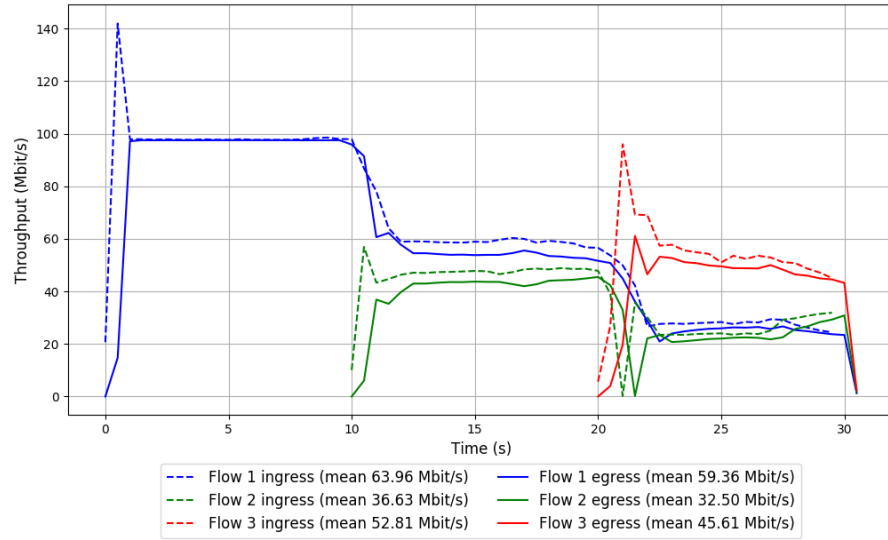Run 1: Report of TCP BBR — Data Link

```
Run 2: Statistics of TCP BBR

Start at: 2018-12-02 05:11:03
End at: 2018-12-02 05:11:33
Local clock offset: -0.065 ms
Remote clock offset: -3.497 ms


# Below is generated by plot.py at 2018-12-02 06:39:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.18 Mbit/s
95th percentile per-packet one-way delay: 68.005 ms
Loss rate: 9.16%
-- Flow 1:
Average throughput: 59.36 Mbit/s
95th percentile per-packet one-way delay: 66.892 ms
Loss rate: 7.16%
-- Flow 2:
Average throughput: 32.50 Mbit/s
95th percentile per-packet one-way delay: 68.925 ms
Loss rate: 11.27%
-- Flow 3:
Average throughput: 45.61 Mbit/s
95th percentile per-packet one-way delay: 69.231 ms
Loss rate: 13.53%
```
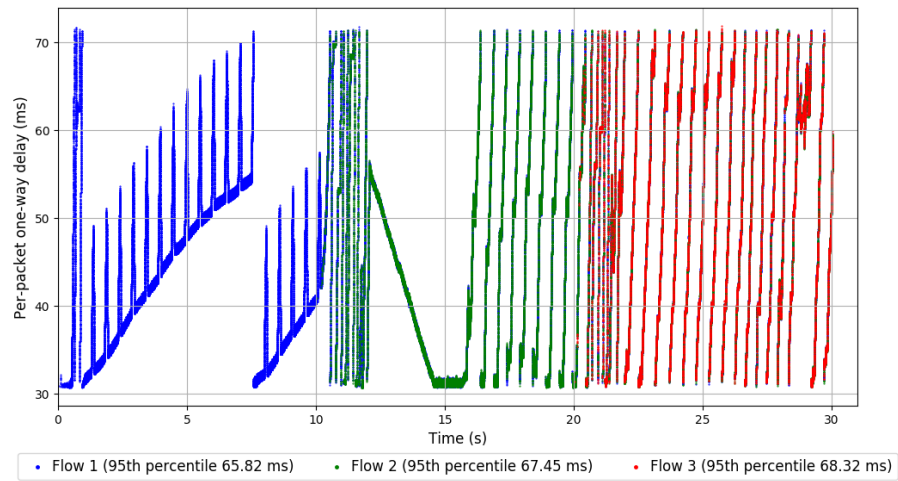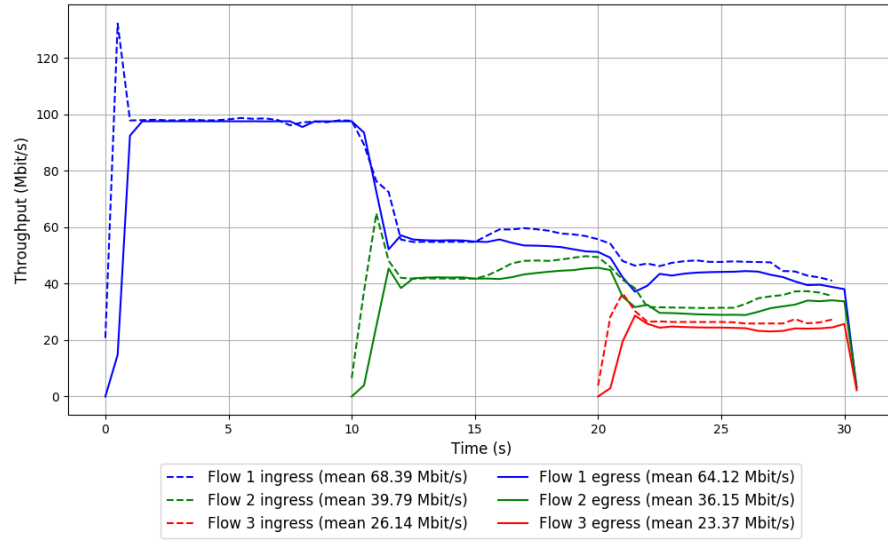
Run 2: Report of TCP BBR — Data Link

Flow 1 ingress (mean 63.96 Mbit/s) --- Flow 1 egress (mean 59.36 Mbit/s)
Flow 2 ingress (mean 36.63 Mbit/s) --- Flow 2 egress (mean 32.50 Mbit/s)
Flow 3 ingress (mean 52.81 Mbit/s) --- Flow 3 egress (mean 45.61 Mbit/s)

Flow 1 (95th percentile 66.89 ms) • Flow 2 (95th percentile 68.92 ms) • Flow 3 (95th percentile 69.23 ms)

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```
Run 3: Statistics of TCP BBR

Start at: 2018-12-02 05:34:00
End at: 2018-12-02 05:34:30
Local clock offset: -0.121 ms
Remote clock offset: -2.982 ms


# Below is generated by plot.py at 2018-12-02 06:39:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.98 Mbit/s
95th percentile per-packet one-way delay: 66.701 ms
Loss rate: 7.26%
-- Flow 1:
Average throughput: 64.12 Mbit/s
95th percentile per-packet one-way delay: 65.820 ms
Loss rate: 6.16%
-- Flow 2:
Average throughput: 36.15 Mbit/s
95th percentile per-packet one-way delay: 67.455 ms
Loss rate: 9.07%
-- Flow 3:
Average throughput: 23.37 Mbit/s
95th percentile per-packet one-way delay: 68.318 ms
Loss rate: 10.35%
```
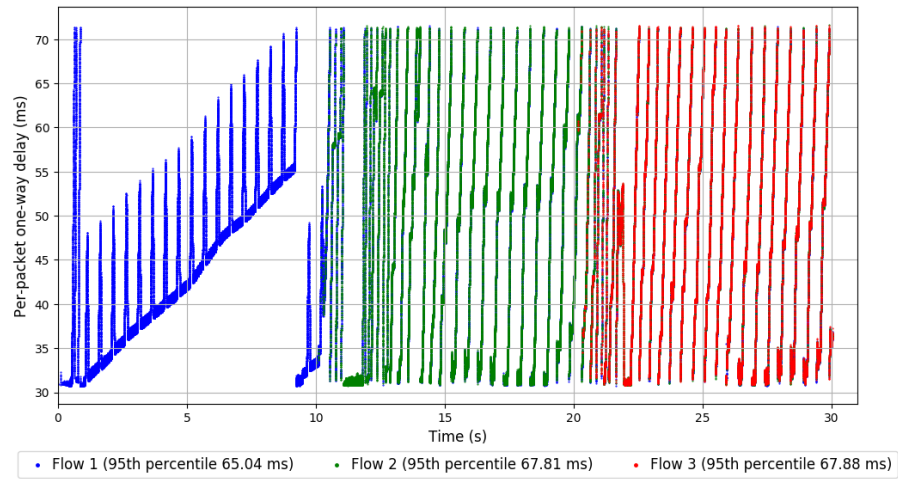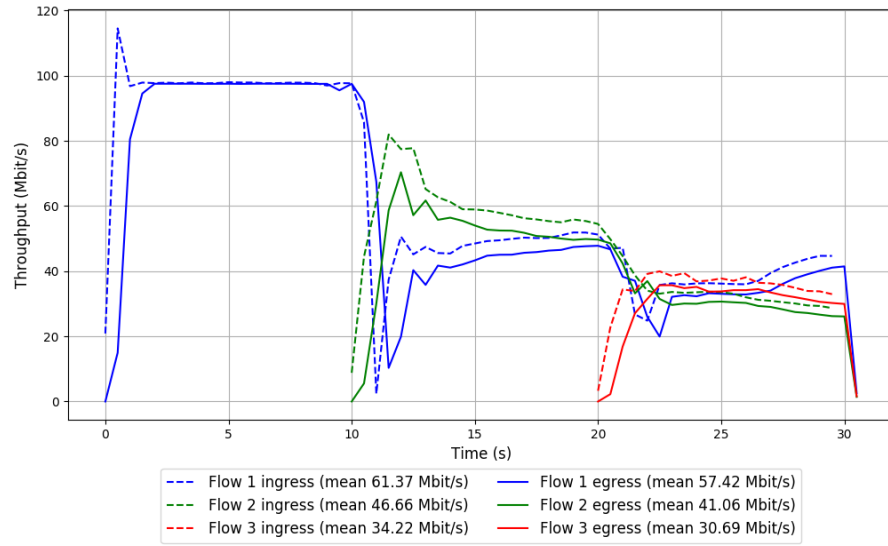
Run 3: Report of TCP BBR — Data Link

```
Run 4: Statistics of TCP BBR

Start at: 2018-12-02 05:56:49
End at: 2018-12-02 05:57:19
Local clock offset: 0.058 ms
Remote clock offset: -2.85 ms


# Below is generated by plot.py at 2018-12-02 06:39:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.96 Mbit/s
95th percentile per-packet one-way delay: 66.482 ms
Loss rate: 8.52%
-- Flow 1:
Average throughput: 57.42 Mbit/s
95th percentile per-packet one-way delay: 65.037 ms
Loss rate: 6.42%
-- Flow 2:
Average throughput: 41.06 Mbit/s
95th percentile per-packet one-way delay: 67.808 ms
Loss rate: 11.97%
-- Flow 3:
Average throughput: 30.69 Mbit/s
95th percentile per-packet one-way delay: 67.879 ms
Loss rate: 10.44%
```

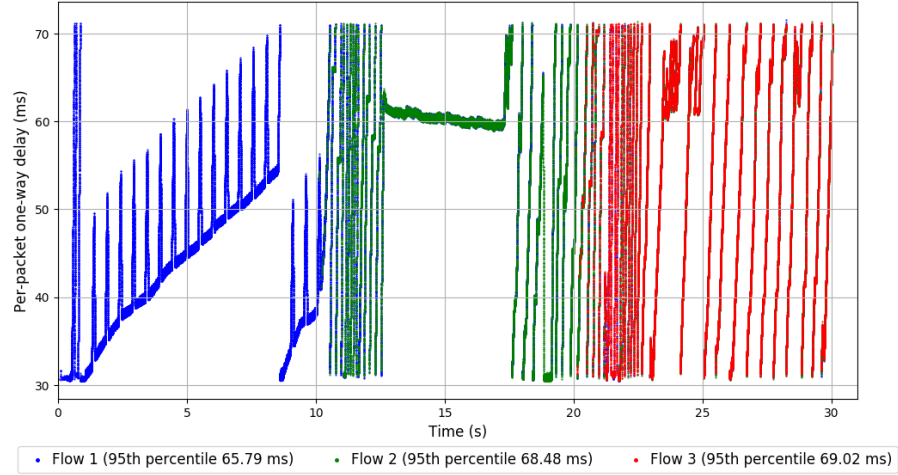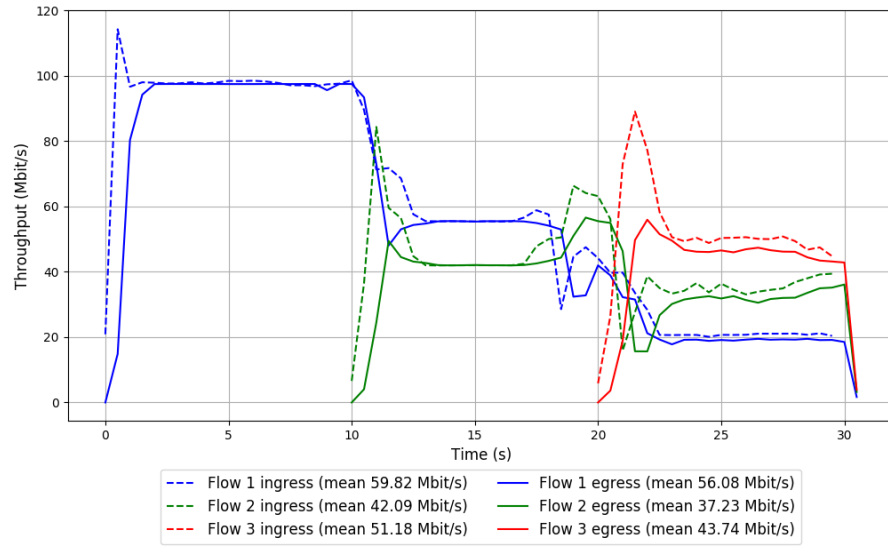Run 4: Report of TCP BBR — Data Link

```
Run 5: Statistics of TCP BBR

Start at: 2018-12-02 06:19:42
End at: 2018-12-02 06:20:12
Local clock offset: 0.228 ms
Remote clock offset: -3.013 ms


# Below is generated by plot.py at 2018-12-02 06:39:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.41 Mbit/s
95th percentile per-packet one-way delay: 67.727 ms
Loss rate: 8.92%
-- Flow 1:
Average throughput: 56.08 Mbit/s
95th percentile per-packet one-way delay: 65.794 ms
Loss rate: 6.16%
-- Flow 2:
Average throughput: 37.23 Mbit/s
95th percentile per-packet one-way delay: 68.477 ms
Loss rate: 11.43%
-- Flow 3:
Average throughput: 43.74 Mbit/s
95th percentile per-packet one-way delay: 69.017 ms
Loss rate: 14.52%
```

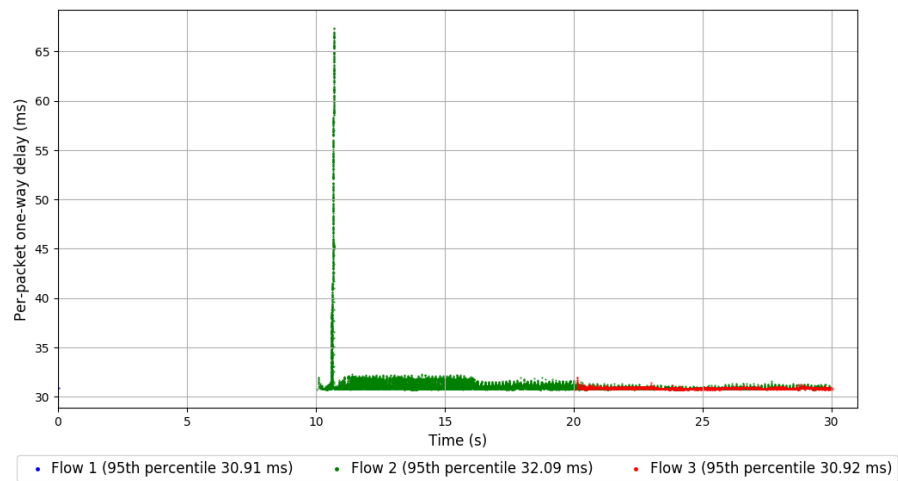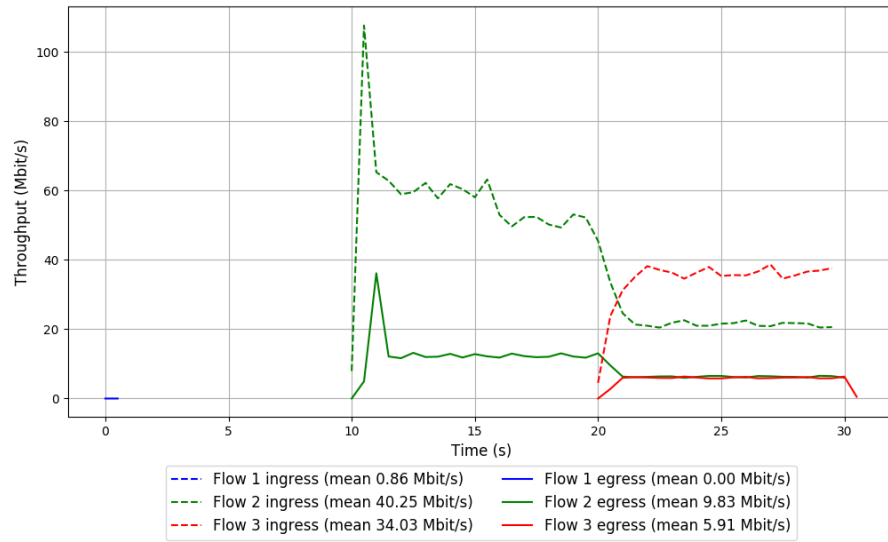Run 5: Report of TCP BBR — Data Link

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```
Run 1: Statistics of Copa

Start at: 2018-12-02 04:43:32
End at: 2018-12-02 04:44:02
Local clock offset: -0.034 ms
Remote clock offset: -4.141 ms

# Below is generated by plot.py at 2018-12-02 06:39:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.50 Mbit/s
95th percentile per-packet one-way delay: 31.845 ms
Loss rate: 77.68%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 30.907 ms
Loss rate: 98.33%
-- Flow 2:
Average throughput: 9.83 Mbit/s
95th percentile per-packet one-way delay: 32.088 ms
Loss rate: 75.58%
-- Flow 3:
Average throughput: 5.91 Mbit/s
95th percentile per-packet one-way delay: 30.919 ms
Loss rate: 82.64%
```
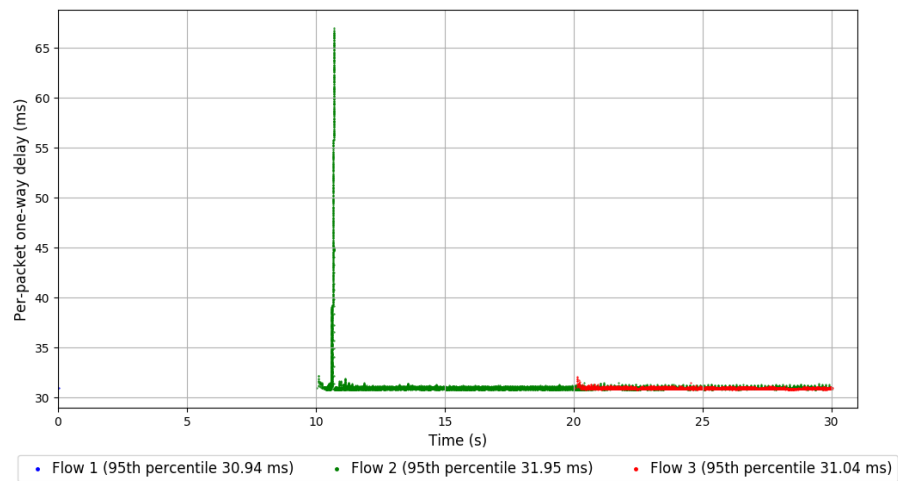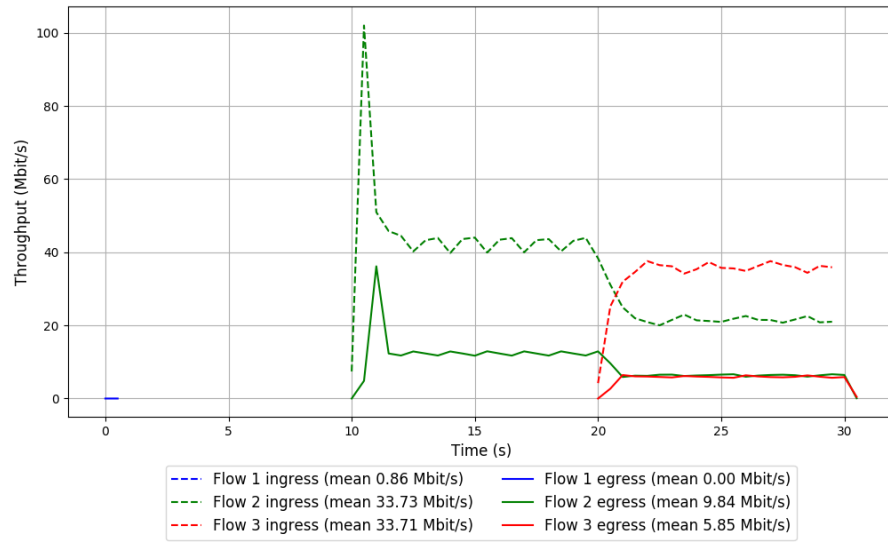
Run 1: Report of Copa — Data Link

Flow 1 ingress (mean 0.86 Mbit/s) --- Flow 1 egress (mean 0.00 Mbit/s) ---
Flow 2 ingress (mean 40.25 Mbit/s) --- Flow 2 egress (mean 9.83 Mbit/s) ---
Flow 3 ingress (mean 34.03 Mbit/s) --- Flow 3 egress (mean 5.91 Mbit/s) ---

Flow 1 (95th percentile 30.91 ms) • Flow 2 (95th percentile 32.09 ms) • Flow 3 (95th percentile 30.92 ms)

```
Run 2: Statistics of Copa

Start at: 2018-12-02 05:06:16
End at: 2018-12-02 05:06:46
Local clock offset: -0.081 ms
Remote clock offset: -3.575 ms


# Below is generated by plot.py at 2018-12-02 06:39:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.50 Mbit/s
95th percentile per-packet one-way delay: 31.244 ms
Loss rate: 74.75%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 30.936 ms
Loss rate: 98.33%
-- Flow 2:
Average throughput: 9.84 Mbit/s
95th percentile per-packet one-way delay: 31.950 ms
Loss rate: 70.81%
-- Flow 3:
Average throughput: 5.85 Mbit/s
95th percentile per-packet one-way delay: 31.035 ms
Loss rate: 82.63%
```
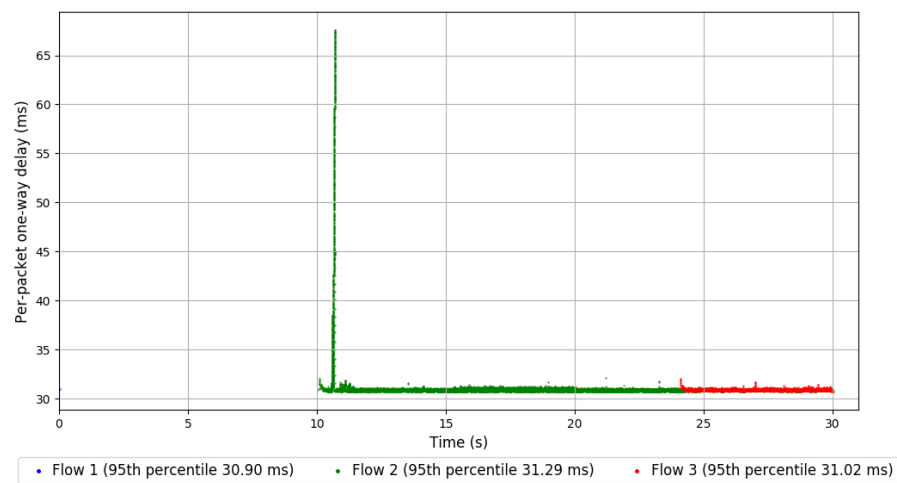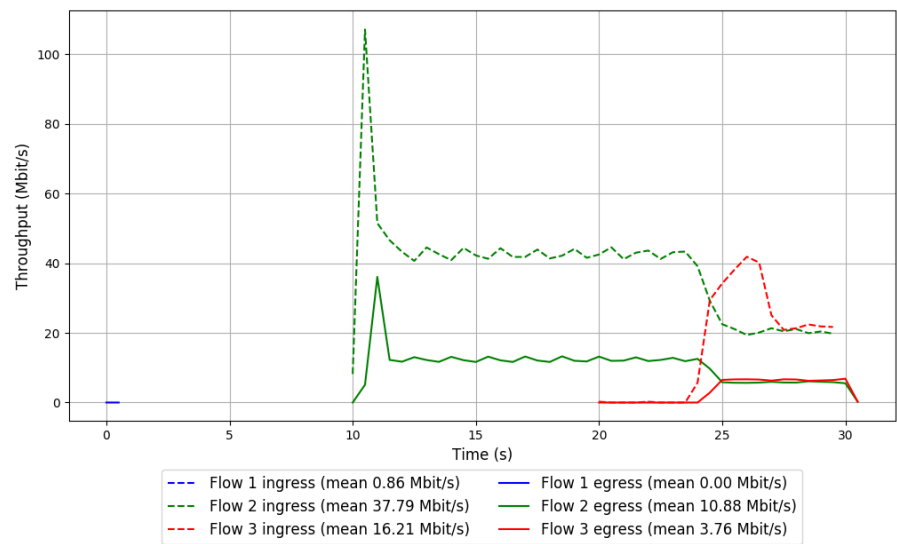
Run 2: Report of Copa — Data Link

Flow 1 ingress (mean 0.86 Mbit/s) --- Flow 1 egress (mean 0.00 Mbit/s)
Flow 2 ingress (mean 33.73 Mbit/s) --- Flow 2 egress (mean 9.84 Mbit/s)
Flow 3 ingress (mean 33.71 Mbit/s) --- Flow 3 egress (mean 5.85 Mbit/s)

Flow 1 (95th percentile 30.94 ms)   Flow 2 (95th percentile 31.95 ms)   Flow 3 (95th percentile 31.04 ms)

```
Run 3: Statistics of Copa

Start at: 2018-12-02 05:29:04
End at: 2018-12-02 05:29:34
Local clock offset: -0.12 ms
Remote clock offset: -3.035 ms


# Below is generated by plot.py at 2018-12-02 06:39:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.50 Mbit/s
95th percentile per-packet one-way delay: 31.145 ms
Loss rate: 72.19%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 30.899 ms
Loss rate: 98.33%
-- Flow 2:
Average throughput: 10.88 Mbit/s
95th percentile per-packet one-way delay: 31.289 ms
Loss rate: 71.20%
-- Flow 3:
Average throughput: 3.76 Mbit/s
95th percentile per-packet one-way delay: 31.018 ms
Loss rate: 76.80%
```
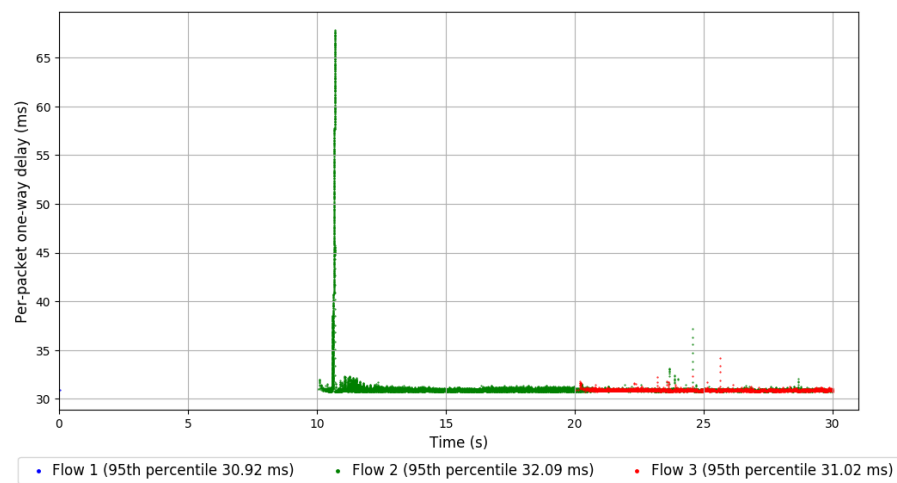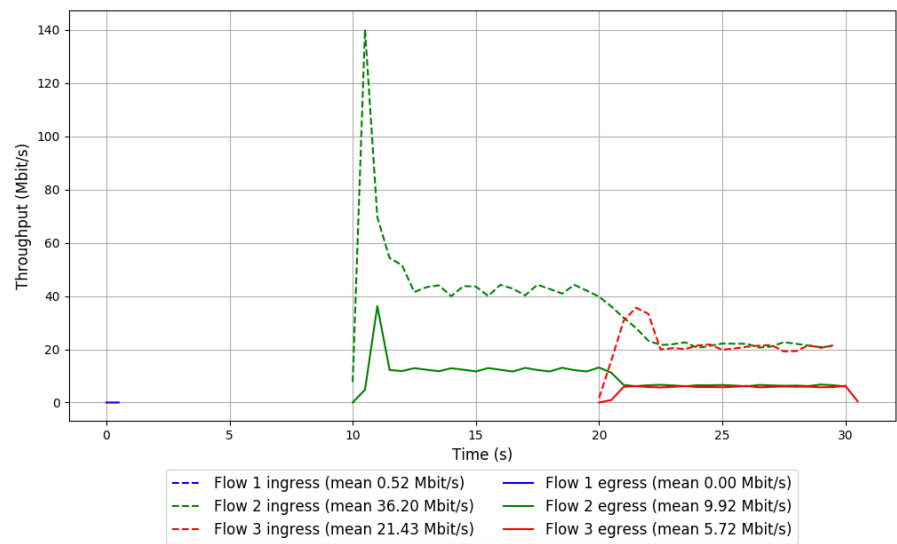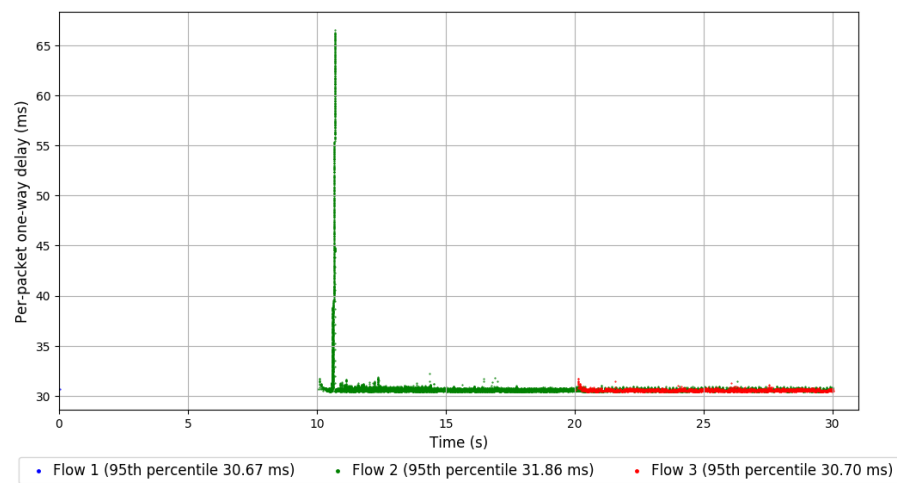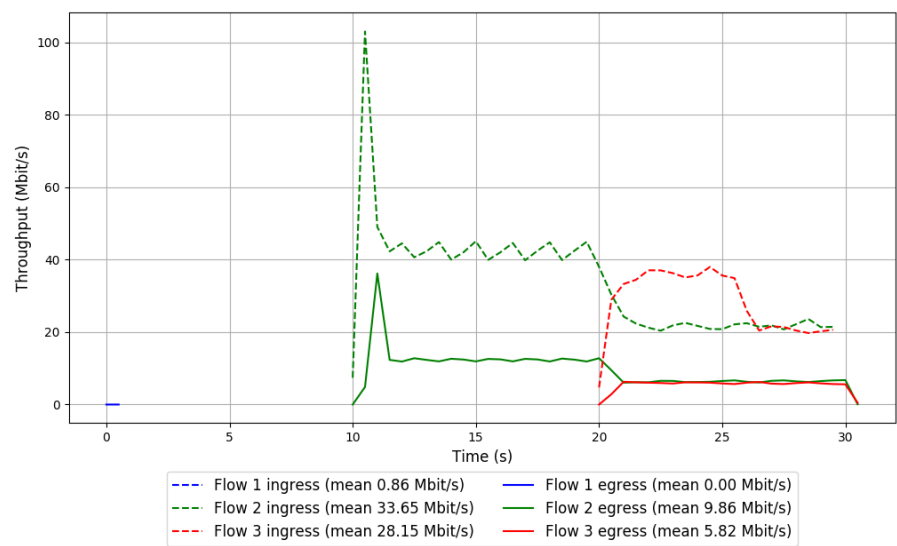
Run 3: Report of Copa — Data Link

Flow 1 ingress (mean 0.86 Mbit/s) --- Flow 1 egress (mean 0.00 Mbit/s)
Flow 2 ingress (mean 37.79 Mbit/s) --- Flow 2 egress (mean 10.88 Mbit/s)
Flow 3 ingress (mean 16.21 Mbit/s) --- Flow 3 egress (mean 3.76 Mbit/s)

Flow 1 (95th percentile 30.90 ms)   Flow 2 (95th percentile 31.29 ms)   Flow 3 (95th percentile 31.02 ms)

```
Run 4: Statistics of Copa

Start at: 2018-12-02 05:52:00
End at: 2018-12-02 05:52:30
Local clock offset: 0.02 ms
Remote clock offset: -2.853 ms


# Below is generated by plot.py at 2018-12-02 06:39:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.50 Mbit/s
95th percentile per-packet one-way delay: 31.475 ms
Loss rate: 72.76%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 30.923 ms
Loss rate: 97.24%
-- Flow 2:
Average throughput: 9.92 Mbit/s
95th percentile per-packet one-way delay: 32.094 ms
Loss rate: 72.60%
-- Flow 3:
Average throughput: 5.72 Mbit/s
95th percentile per-packet one-way delay: 31.024 ms
Loss rate: 73.31%
```
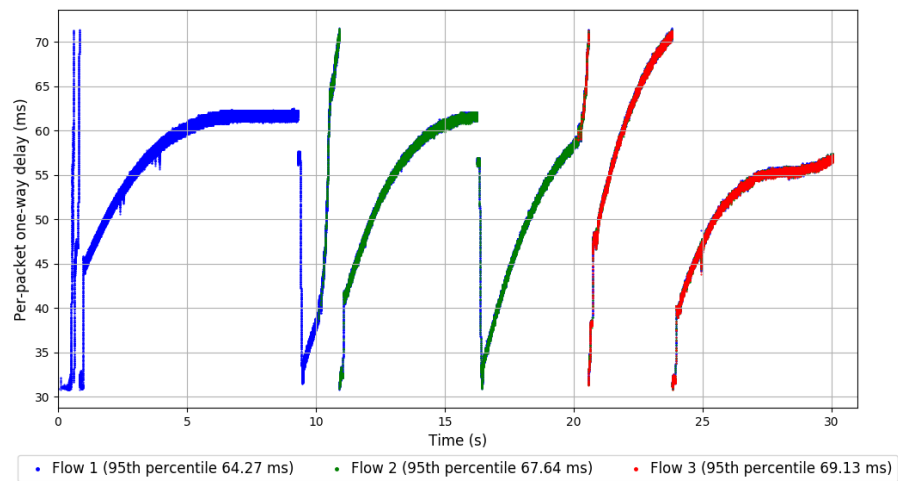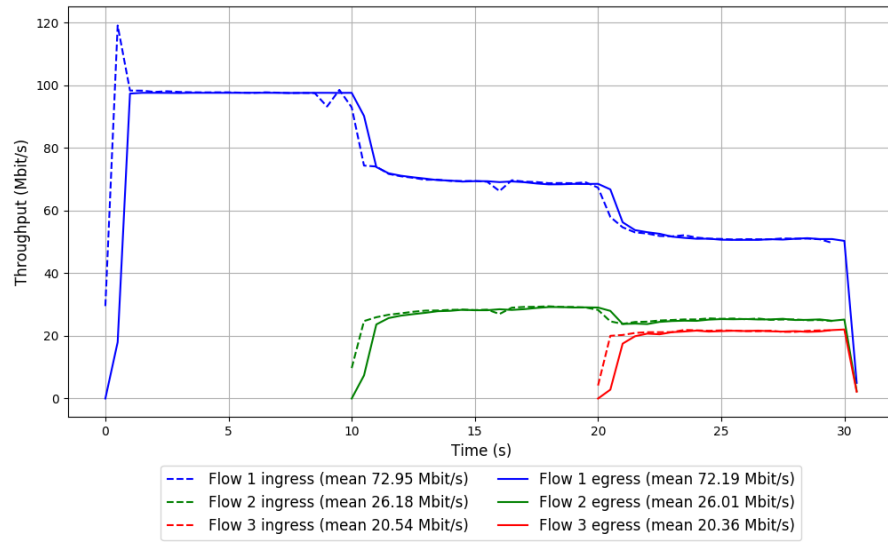
Run 4: Report of Copa — Data Link

Flow 1 ingress (mean 0.52 Mbit/s) --- Flow 1 egress (mean 0.00 Mbit/s)
Flow 2 ingress (mean 36.20 Mbit/s) --- Flow 2 egress (mean 9.92 Mbit/s)
Flow 3 ingress (mean 21.43 Mbit/s) --- Flow 3 egress (mean 5.72 Mbit/s)

Flow 1 (95th percentile 30.92 ms) • Flow 2 (95th percentile 32.09 ms) • Flow 3 (95th percentile 31.02 ms)

```
Run 5: Statistics of Copa

Start at: 2018-12-02 06:14:44
End at: 2018-12-02 06:15:14
Local clock offset: 0.221 ms
Remote clock offset: -3.056 ms

# Below is generated by plot.py at 2018-12-02 06:39:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.50 Mbit/s
95th percentile per-packet one-way delay: 31.017 ms
Loss rate: 73.24%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 30.667 ms
Loss rate: 98.33%
-- Flow 2:
Average throughput: 9.86 Mbit/s
95th percentile per-packet one-way delay: 31.860 ms
Loss rate: 70.70%
-- Flow 3:
Average throughput: 5.82 Mbit/s
95th percentile per-packet one-way delay: 30.698 ms
Loss rate: 79.31%
```
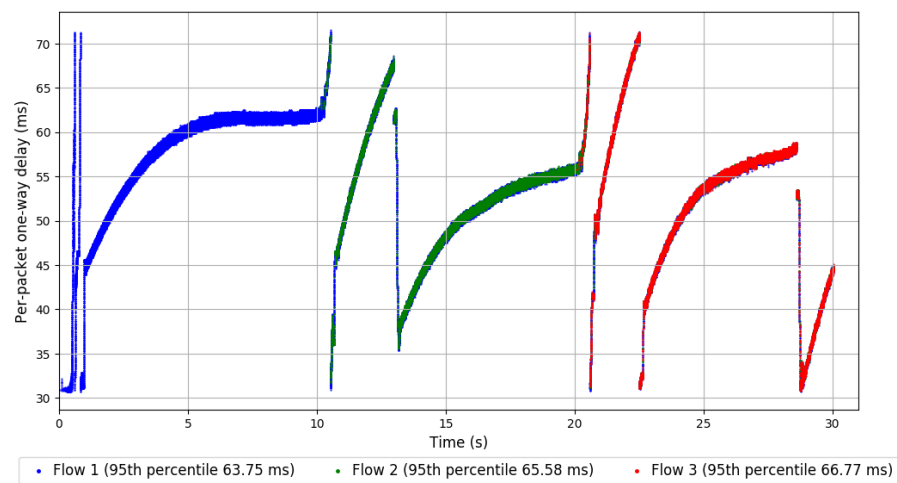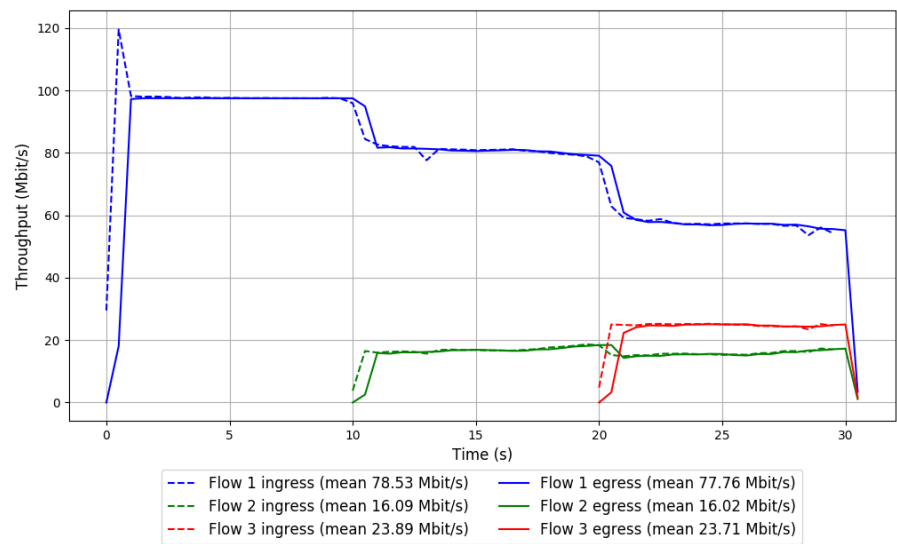
Run 5: Report of Copa — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2018-12-02 05:02:42
End at: 2018-12-02 05:03:12
Local clock offset: -0.102 ms
Remote clock offset: -3.734 ms

# Below is generated by plot.py at 2018-12-02 06:40:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.30 Mbit/s
95th percentile per-packet one-way delay: 65.877 ms
Loss rate: 0.87%
-- Flow 1:
Average throughput: 72.19 Mbit/s
95th percentile per-packet one-way delay: 64.269 ms
Loss rate: 0.95%
-- Flow 2:
Average throughput: 26.01 Mbit/s
95th percentile per-packet one-way delay: 67.637 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 20.36 Mbit/s
95th percentile per-packet one-way delay: 69.131 ms
Loss rate: 0.86%
```

Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2018-12-02 05:25:29
End at: 2018-12-02 05:25:59
Local clock offset: -0.115 ms
Remote clock offset: -3.106 ms


# Below is generated by plot.py at 2018-12-02 06:40:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.29 Mbit/s
95th percentile per-packet one-way delay: 64.245 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 77.76 Mbit/s
95th percentile per-packet one-way delay: 63.747 ms
Loss rate: 0.94%
-- Flow 2:
Average throughput: 16.02 Mbit/s
95th percentile per-packet one-way delay: 65.575 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 23.71 Mbit/s
95th percentile per-packet one-way delay: 66.774 ms
Loss rate: 0.88%
```

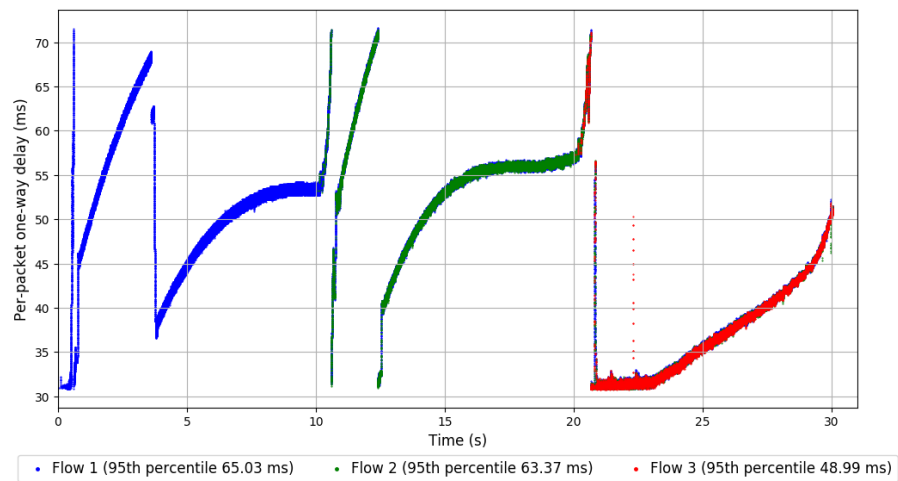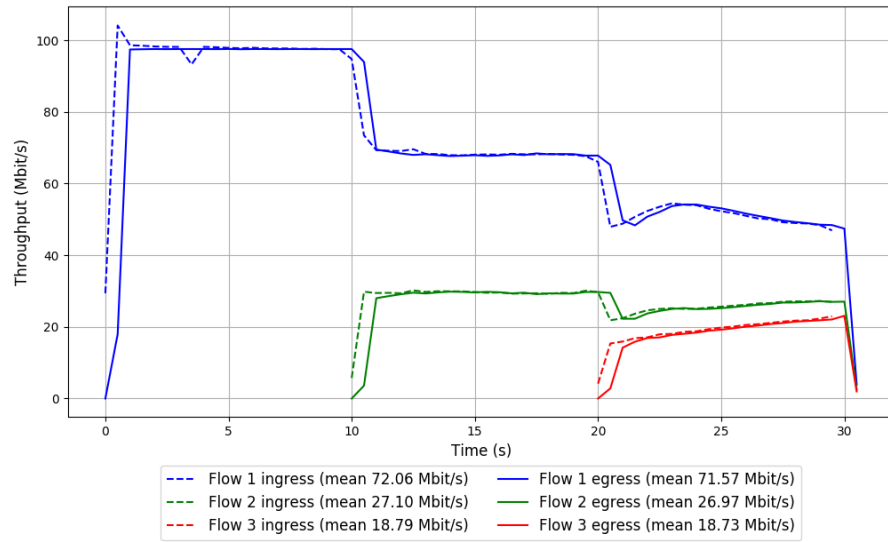Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2018-12-02 05:48:23
End at: 2018-12-02 05:48:53
Local clock offset: -0.04 ms
Remote clock offset: -2.856 ms


# Below is generated by plot.py at 2018-12-02 06:40:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.74 Mbit/s
95th percentile per-packet one-way delay: 64.540 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 71.57 Mbit/s
95th percentile per-packet one-way delay: 65.033 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 26.97 Mbit/s
95th percentile per-packet one-way delay: 63.367 ms
Loss rate: 0.48%
-- Flow 3:
Average throughput: 18.73 Mbit/s
95th percentile per-packet one-way delay: 48.991 ms
Loss rate: 0.39%
```
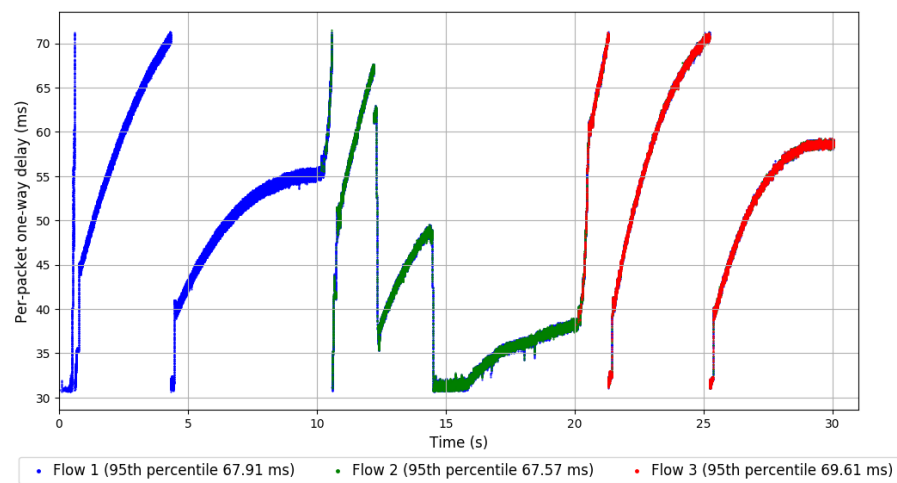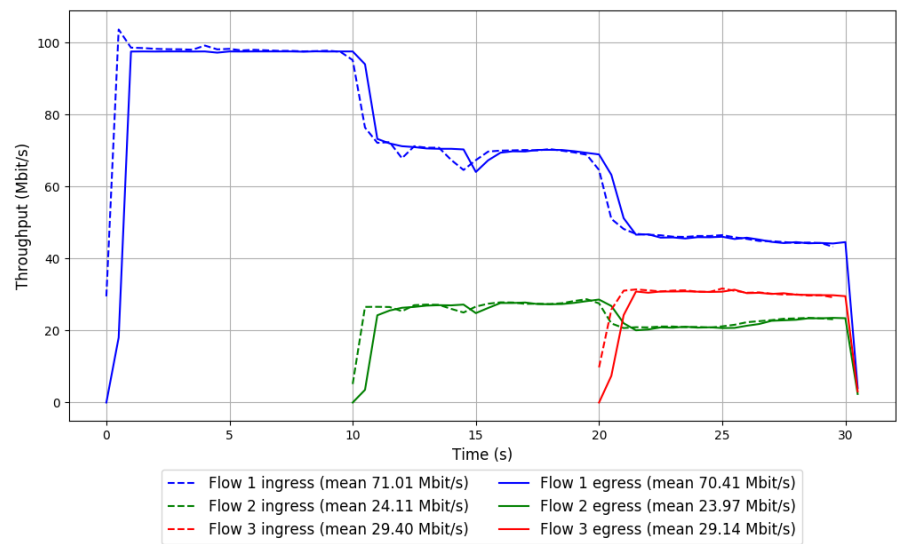
Run 3: Report of TCP Cubic — Data Link

- - - Flow 1 ingress (mean 72.06 Mbit/s)   —— Flow 1 egress (mean 71.57 Mbit/s)
- - - Flow 2 ingress (mean 27.10 Mbit/s)   —— Flow 2 egress (mean 26.97 Mbit/s)
- - - Flow 3 ingress (mean 18.79 Mbit/s)   —— Flow 3 egress (mean 18.73 Mbit/s)

- Flow 1 (95th percentile 65.03 ms)   • Flow 2 (95th percentile 63.37 ms)   • Flow 3 (95th percentile 48.99 ms)

30

```
Run 4: Statistics of TCP Cubic

Start at: 2018-12-02 06:11:11
End at: 2018-12-02 06:11:41
Local clock offset: 0.208 ms
Remote clock offset: -2.86 ms


# Below is generated by plot.py at 2018-12-02 06:40:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.08 Mbit/s
95th percentile per-packet one-way delay: 68.269 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 70.41 Mbit/s
95th percentile per-packet one-way delay: 67.908 ms
Loss rate: 0.75%
-- Flow 2:
Average throughput: 23.97 Mbit/s
95th percentile per-packet one-way delay: 67.568 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 29.14 Mbit/s
95th percentile per-packet one-way delay: 69.607 ms
Loss rate: 0.69%
```
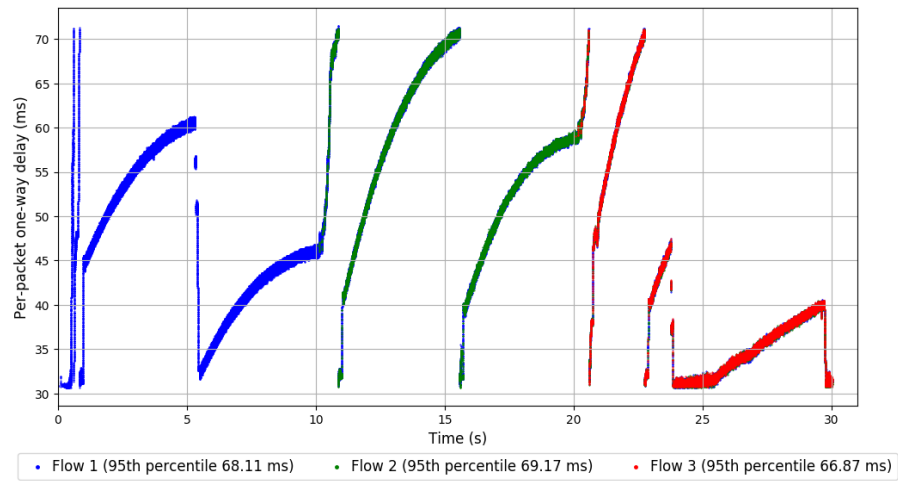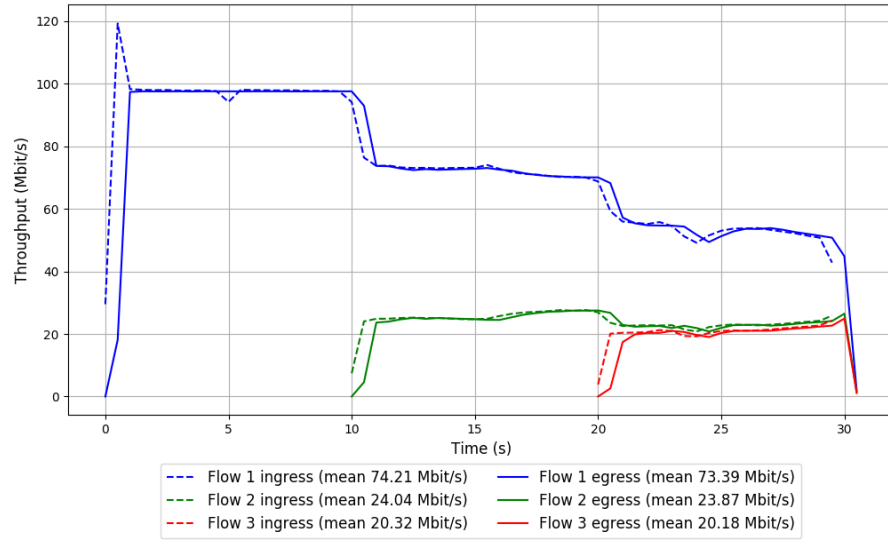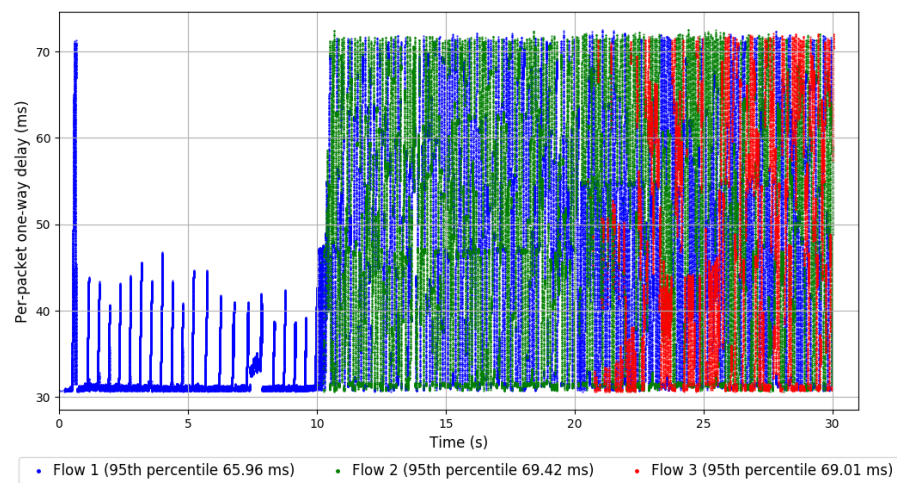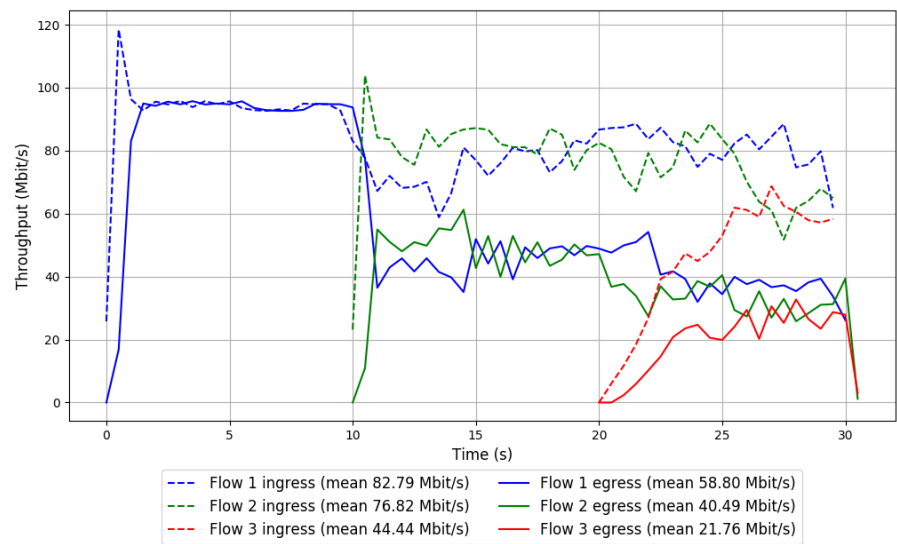
Run 4: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 71.01 Mbit/s) --- Flow 1 egress (mean 70.41 Mbit/s)
Flow 2 ingress (mean 24.11 Mbit/s) --- Flow 2 egress (mean 23.97 Mbit/s)
Flow 3 ingress (mean 29.40 Mbit/s) --- Flow 3 egress (mean 29.14 Mbit/s)

Flow 1 (95th percentile 67.91 ms)   Flow 2 (95th percentile 67.57 ms)   Flow 3 (95th percentile 69.61 ms)

```
Run 5: Statistics of TCP Cubic

Start at: 2018-12-02 06:34:16
End at: 2018-12-02 06:34:46
Local clock offset: 0.139 ms
Remote clock offset: -2.75 ms


# Below is generated by plot.py at 2018-12-02 06:40:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.97 Mbit/s
95th percentile per-packet one-way delay: 68.343 ms
Loss rate: 1.04%
-- Flow 1:
Average throughput: 73.39 Mbit/s
95th percentile per-packet one-way delay: 68.111 ms
Loss rate: 1.10%
-- Flow 2:
Average throughput: 23.87 Mbit/s
95th percentile per-packet one-way delay: 69.166 ms
Loss rate: 0.79%
-- Flow 3:
Average throughput: 20.18 Mbit/s
95th percentile per-packet one-way delay: 66.868 ms
Loss rate: 0.98%
```

Run 5: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 74.21 Mbit/s) --- Flow 1 egress (mean 73.39 Mbit/s)
Flow 2 ingress (mean 24.04 Mbit/s) --- Flow 2 egress (mean 23.87 Mbit/s)
Flow 3 ingress (mean 20.32 Mbit/s) --- Flow 3 egress (mean 20.18 Mbit/s)

Flow 1 (95th percentile 68.11 ms)   Flow 2 (95th percentile 69.17 ms)   Flow 3 (95th percentile 66.87 ms)
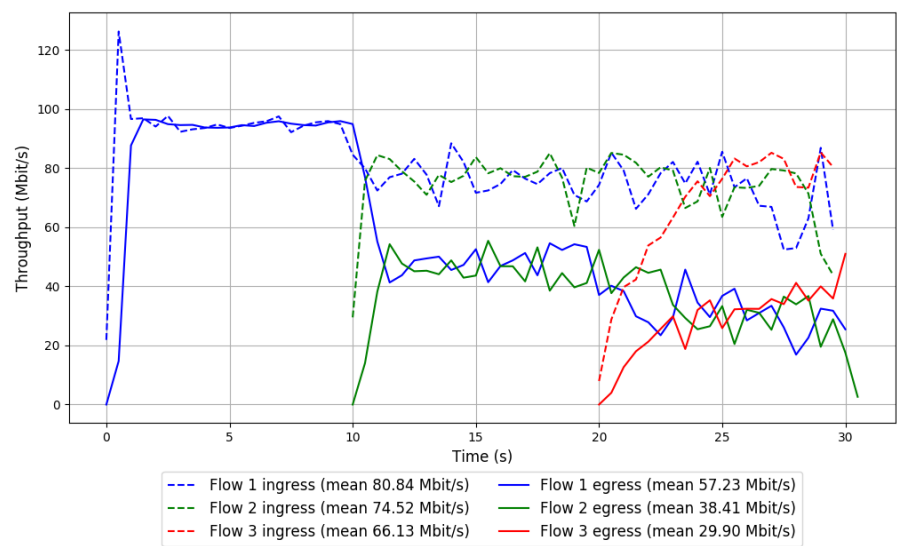
```
Run 1: Statistics of FillP

Start at: 2018-12-02 04:45:55
End at: 2018-12-02 04:46:25
Local clock offset: -0.032 ms
Remote clock offset: -4.143 ms


# Below is generated by plot.py at 2018-12-02 06:41:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.56 Mbit/s
95th percentile per-packet one-way delay: 67.848 ms
Loss rate: 37.69%
-- Flow 1:
Average throughput: 58.80 Mbit/s
95th percentile per-packet one-way delay: 65.964 ms
Loss rate: 29.06%
-- Flow 2:
Average throughput: 40.49 Mbit/s
95th percentile per-packet one-way delay: 69.420 ms
Loss rate: 47.23%
-- Flow 3:
Average throughput: 21.76 Mbit/s
95th percentile per-packet one-way delay: 69.014 ms
Loss rate: 53.11%
```
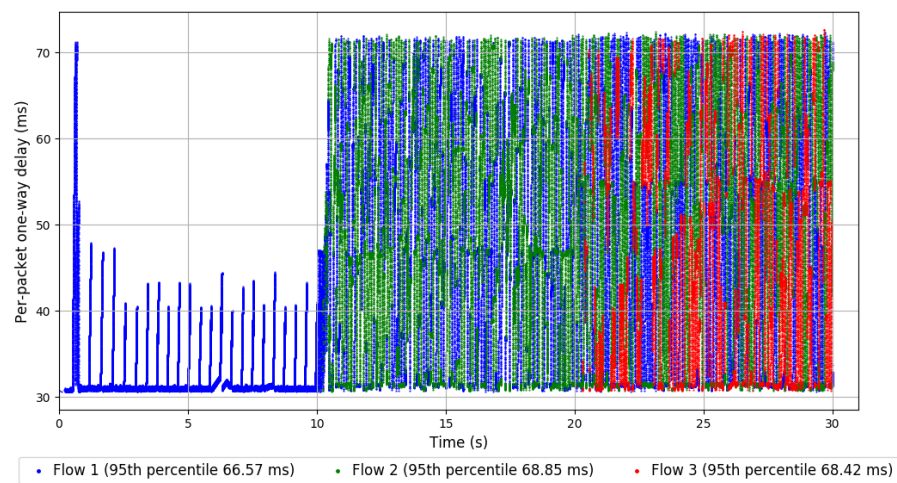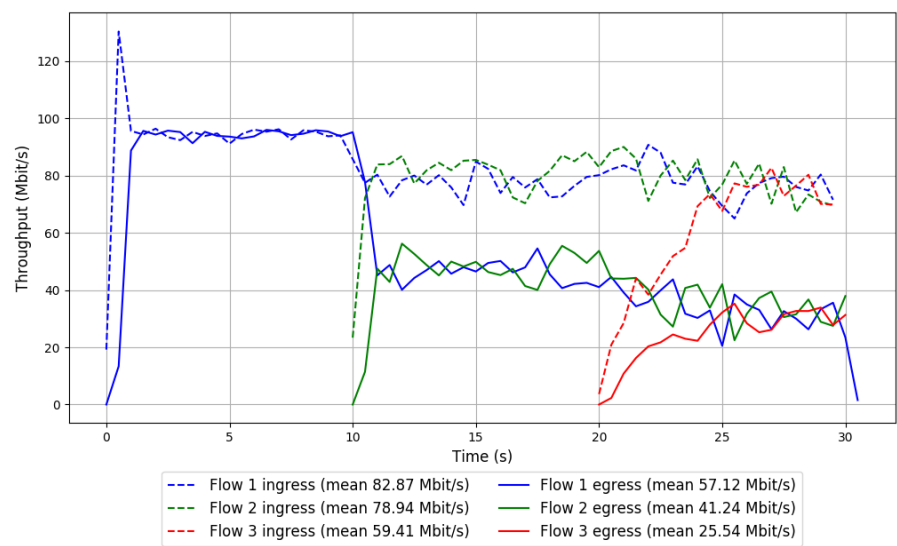
Run 1: Report of FillP — Data Link

```
Run 2: Statistics of FillP

Start at: 2018-12-02 05:08:39
End at: 2018-12-02 05:09:09
Local clock offset: -0.077 ms
Remote clock offset: -3.486 ms


# Below is generated by plot.py at 2018-12-02 06:41:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.68 Mbit/s
95th percentile per-packet one-way delay: 68.106 ms
Loss rate: 39.15%
-- Flow 1:
Average throughput: 57.23 Mbit/s
95th percentile per-packet one-way delay: 66.758 ms
Loss rate: 29.21%
-- Flow 2:
Average throughput: 38.41 Mbit/s
95th percentile per-packet one-way delay: 68.977 ms
Loss rate: 48.43%
-- Flow 3:
Average throughput: 29.90 Mbit/s
95th percentile per-packet one-way delay: 69.467 ms
Loss rate: 54.80%
```
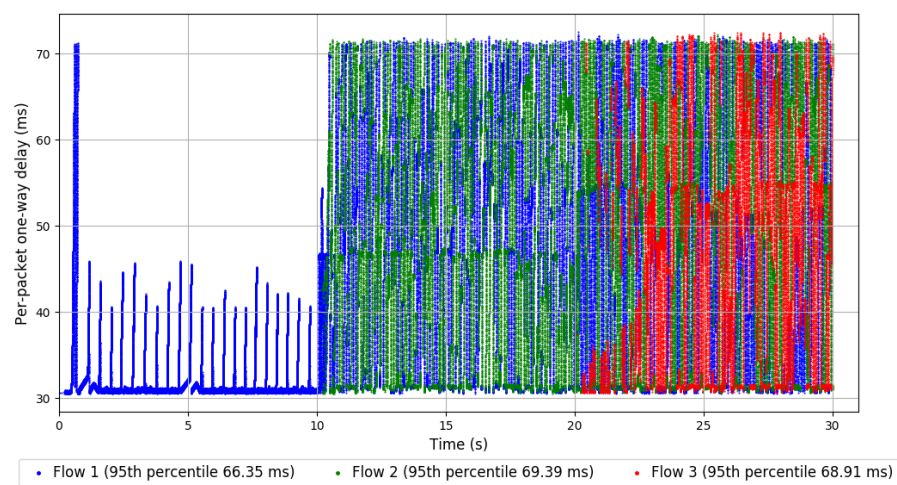
Run 2: Report of FillP — Data Link

- - - Flow 1 ingress (mean 80.84 Mbit/s) —— Flow 1 egress (mean 57.23 Mbit/s)
- - - Flow 2 ingress (mean 74.52 Mbit/s) —— Flow 2 egress (mean 38.41 Mbit/s)
- - - Flow 3 ingress (mean 66.13 Mbit/s) —— Flow 3 egress (mean 29.90 Mbit/s)

• Flow 1 (95th percentile 66.76 ms)   • Flow 2 (95th percentile 68.98 ms)   • Flow 3 (95th percentile 69.47 ms)
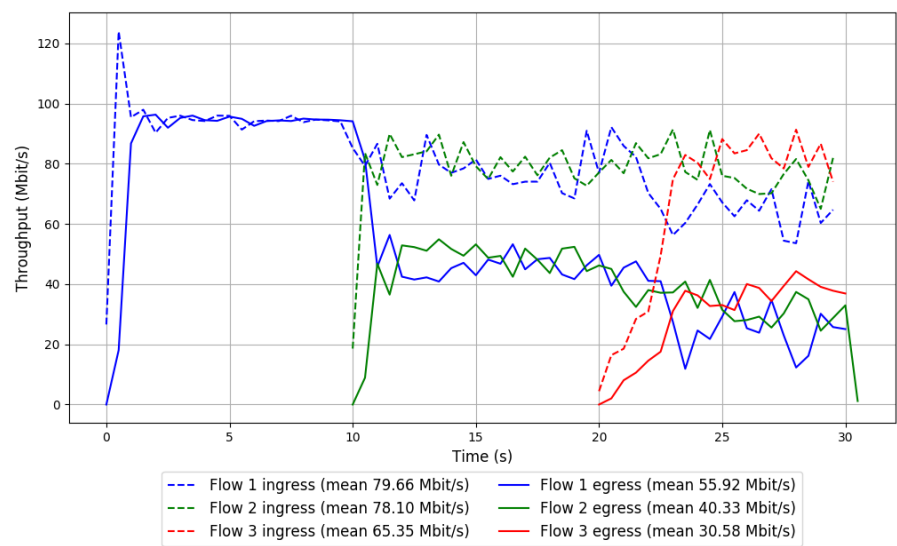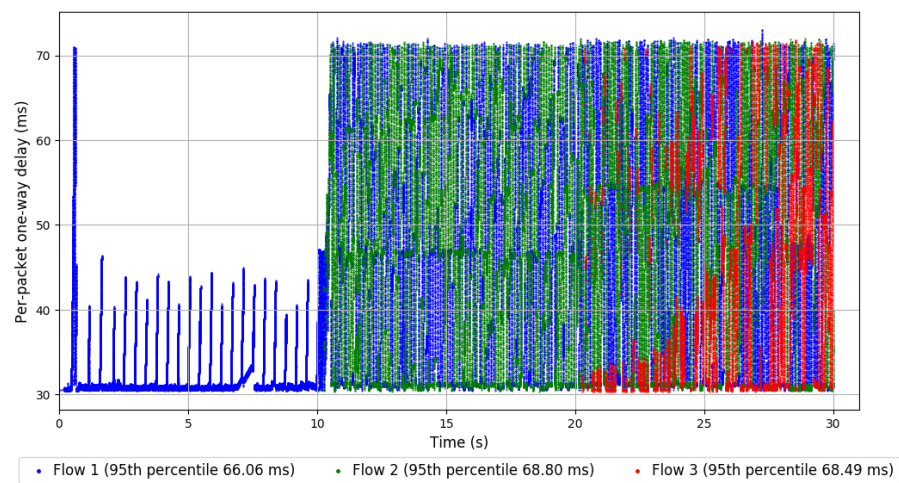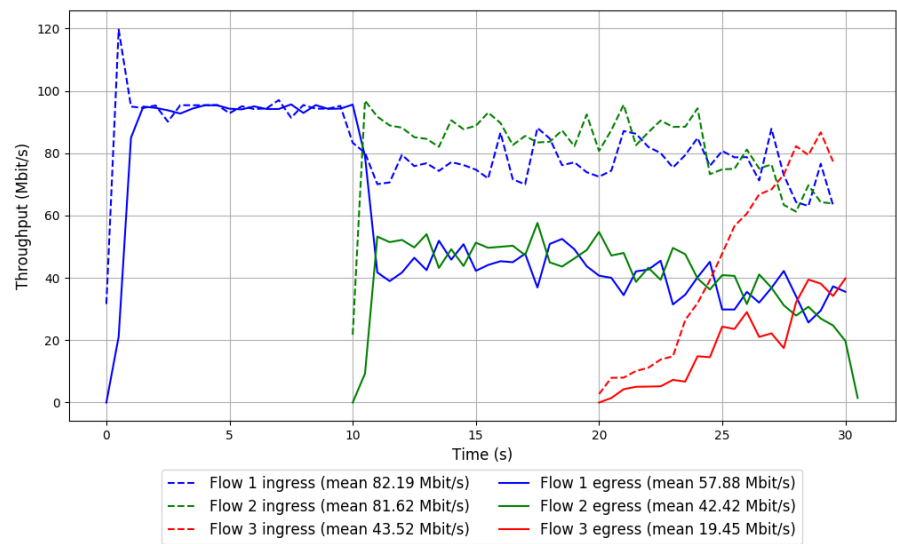
```
Run 3: Statistics of FillP

Start at: 2018-12-02 05:31:34
End at: 2018-12-02 05:32:04
Local clock offset: -0.14 ms
Remote clock offset: -2.952 ms


# Below is generated by plot.py at 2018-12-02 06:41:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.03 Mbit/s
95th percentile per-packet one-way delay: 67.817 ms
Loss rate: 40.02%
-- Flow 1:
Average throughput: 57.12 Mbit/s
95th percentile per-packet one-way delay: 66.568 ms
Loss rate: 31.06%
-- Flow 2:
Average throughput: 41.24 Mbit/s
95th percentile per-packet one-way delay: 68.852 ms
Loss rate: 47.75%
-- Flow 3:
Average throughput: 25.54 Mbit/s
95th percentile per-packet one-way delay: 68.415 ms
Loss rate: 57.12%
```

Run 3: Report of FillP — Data Link

Flow 1 ingress (mean 82.87 Mbit/s) —— Flow 1 egress (mean 57.12 Mbit/s)
Flow 2 ingress (mean 78.94 Mbit/s) —— Flow 2 egress (mean 41.24 Mbit/s)
Flow 3 ingress (mean 59.41 Mbit/s) —— Flow 3 egress (mean 25.54 Mbit/s)

• Flow 1 (95th percentile 66.57 ms)   • Flow 2 (95th percentile 68.85 ms)   • Flow 3 (95th percentile 68.42 ms)

```
Run 4: Statistics of FillP

Start at: 2018-12-02 05:54:24
End at: 2018-12-02 05:54:54
Local clock offset: 0.04 ms
Remote clock offset: -2.905 ms

# Below is generated by plot.py at 2018-12-02 06:41:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.84 Mbit/s
95th percentile per-packet one-way delay: 68.018 ms
Loss rate: 39.43%
-- Flow 1:
Average throughput: 55.92 Mbit/s
95th percentile per-packet one-way delay: 66.347 ms
Loss rate: 29.84%
-- Flow 2:
Average throughput: 40.33 Mbit/s
95th percentile per-packet one-way delay: 69.385 ms
Loss rate: 48.35%
-- Flow 3:
Average throughput: 30.58 Mbit/s
95th percentile per-packet one-way delay: 68.907 ms
Loss rate: 53.23%
```
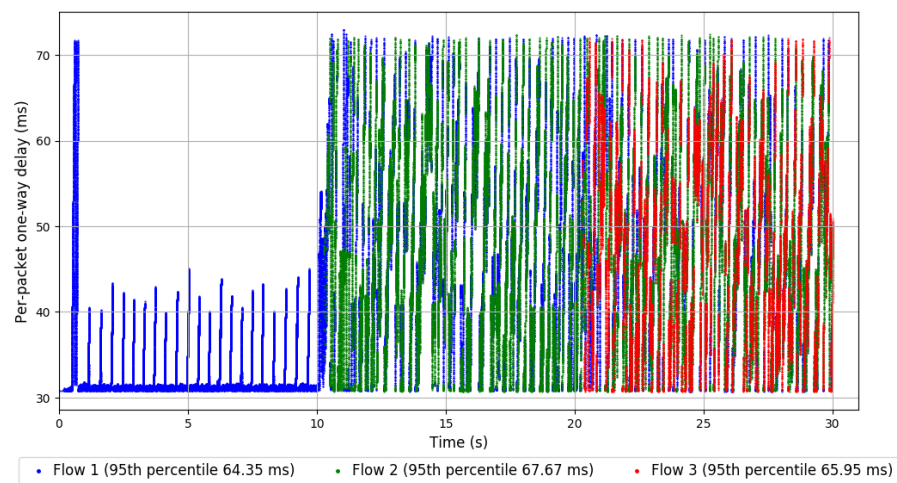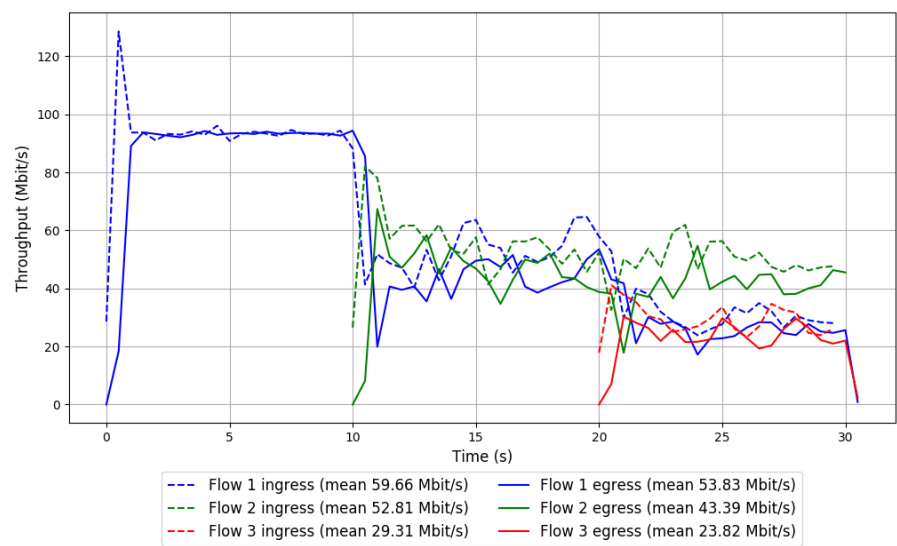
Run 4: Report of FillP — Data Link

```
Run 5: Statistics of FillP

Start at: 2018-12-02 06:17:13
End at: 2018-12-02 06:17:43
Local clock offset: 0.234 ms
Remote clock offset: -2.996 ms


# Below is generated by plot.py at 2018-12-02 06:41:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.55 Mbit/s
95th percentile per-packet one-way delay: 67.600 ms
Loss rate: 38.69%
-- Flow 1:
Average throughput: 57.88 Mbit/s
95th percentile per-packet one-way delay: 66.064 ms
Loss rate: 29.58%
-- Flow 2:
Average throughput: 42.42 Mbit/s
95th percentile per-packet one-way delay: 68.797 ms
Loss rate: 48.01%
-- Flow 3:
Average throughput: 19.45 Mbit/s
95th percentile per-packet one-way delay: 68.488 ms
Loss rate: 55.40%
```

Run 5: Report of FillP — Data Link

```
Run 1: Statistics of FillP-Sheep

Start at: 2018-12-02 04:51:57
End at: 2018-12-02 04:52:27
Local clock offset: -0.074 ms
Remote clock offset: -3.918 ms


# Below is generated by plot.py at 2018-12-02 06:41:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.58 Mbit/s
95th percentile per-packet one-way delay: 65.977 ms
Loss rate: 13.27%
-- Flow 1:
Average throughput: 53.83 Mbit/s
95th percentile per-packet one-way delay: 64.346 ms
Loss rate: 9.74%
-- Flow 2:
Average throughput: 43.39 Mbit/s
95th percentile per-packet one-way delay: 67.667 ms
Loss rate: 17.77%
-- Flow 3:
Average throughput: 23.82 Mbit/s
95th percentile per-packet one-way delay: 65.949 ms
Loss rate: 18.68%
```
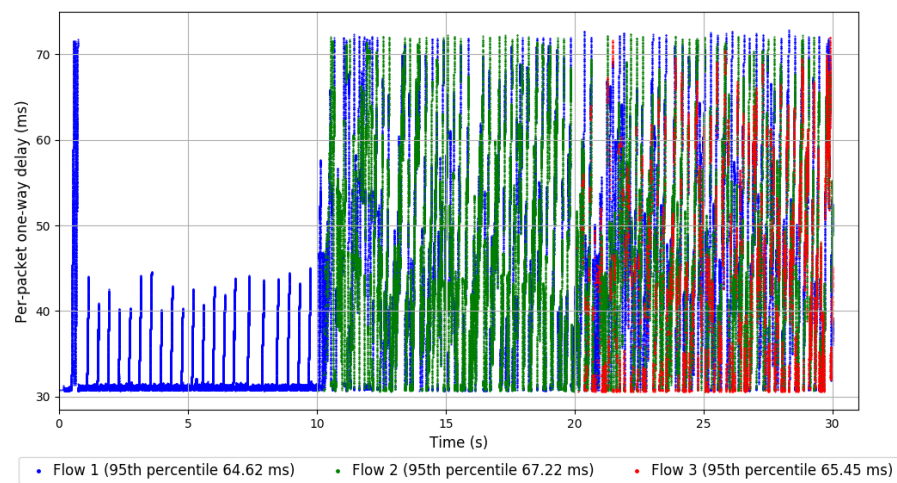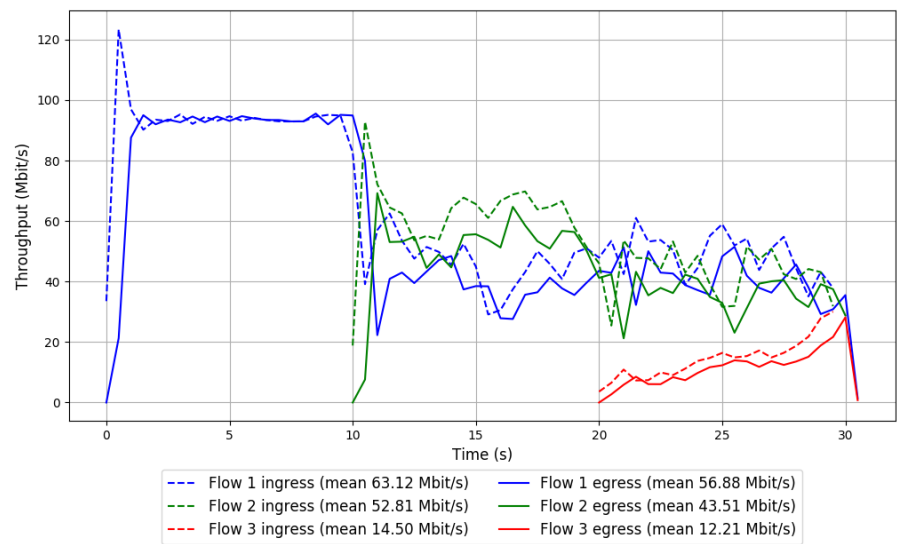
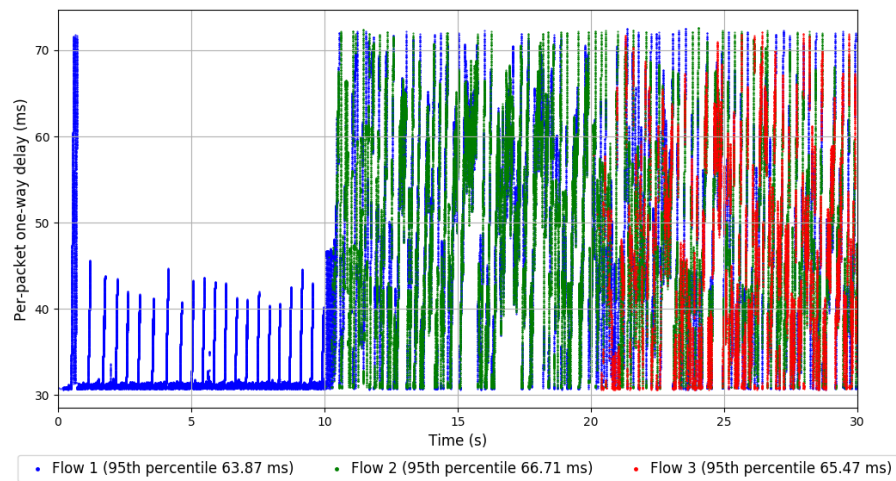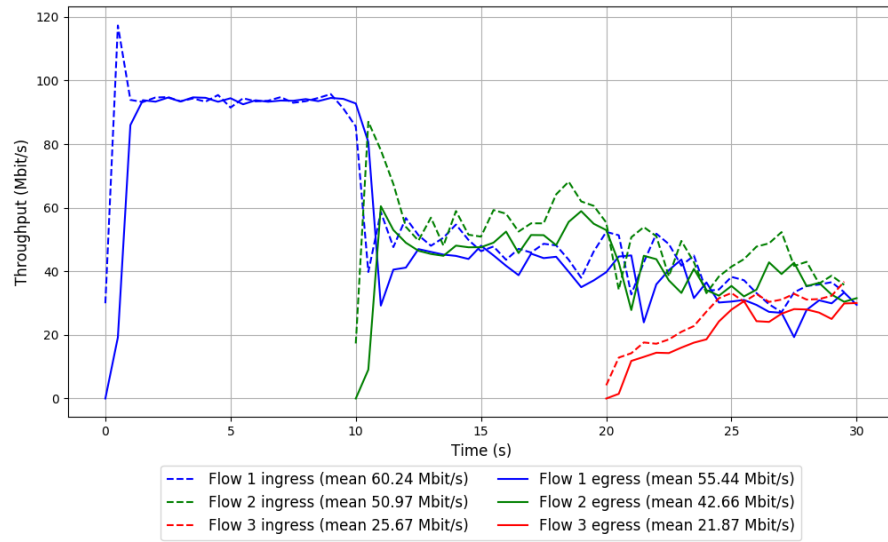Run 1: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 59.66 Mbit/s) --- Flow 1 egress (mean 53.83 Mbit/s)
Flow 2 ingress (mean 52.81 Mbit/s) --- Flow 2 egress (mean 43.39 Mbit/s)
Flow 3 ingress (mean 29.31 Mbit/s) --- Flow 3 egress (mean 23.82 Mbit/s)

Flow 1 (95th percentile 64.35 ms)   Flow 2 (95th percentile 67.67 ms)   Flow 3 (95th percentile 65.95 ms)

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```
Run 2: Statistics of FillP-Sheep

Start at: 2018-12-02 05:14:41
End at: 2018-12-02 05:15:11
Local clock offset: -0.043 ms
Remote clock offset: -3.404 ms

# Below is generated by plot.py at 2018-12-02 06:42:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.89 Mbit/s
95th percentile per-packet one-way delay: 65.749 ms
Loss rate: 12.75%
-- Flow 1:
Average throughput: 56.88 Mbit/s
95th percentile per-packet one-way delay: 64.617 ms
Loss rate: 9.86%
-- Flow 2:
Average throughput: 43.51 Mbit/s
95th percentile per-packet one-way delay: 67.224 ms
Loss rate: 17.52%
-- Flow 3:
Average throughput: 12.21 Mbit/s
95th percentile per-packet one-way delay: 65.454 ms
Loss rate: 15.84%
```

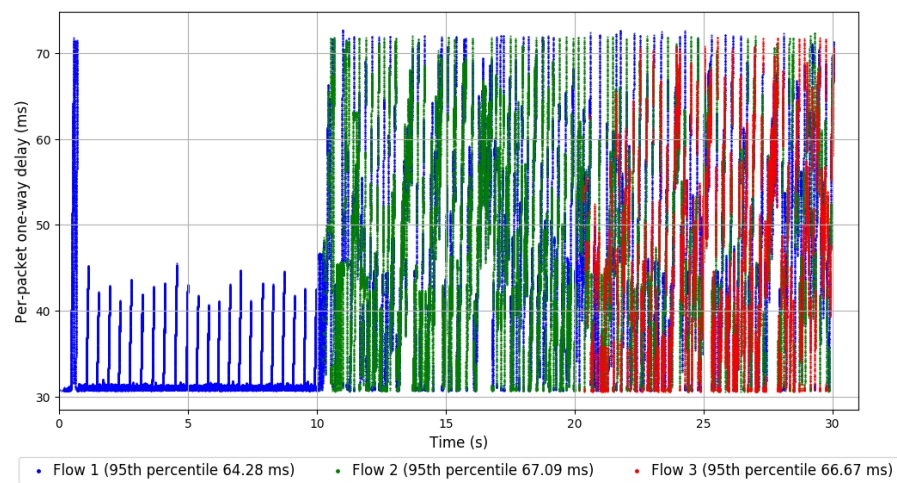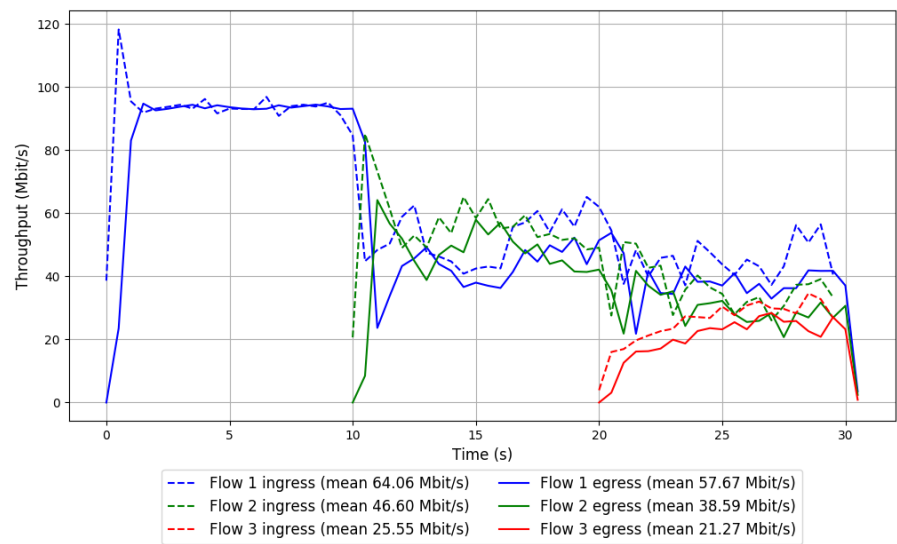Run 2: Report of FillP-Sheep — Data Link

```
Run 3: Statistics of FillP-Sheep

Start at: 2018-12-02 05:37:35
End at: 2018-12-02 05:38:05
Local clock offset: -0.1 ms
Remote clock offset: -2.905 ms


# Below is generated by plot.py at 2018-12-02 06:42:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.02 Mbit/s
95th percentile per-packet one-way delay: 65.384 ms
Loss rate: 11.31%
-- Flow 1:
Average throughput: 55.44 Mbit/s
95th percentile per-packet one-way delay: 63.873 ms
Loss rate: 8.02%
-- Flow 2:
Average throughput: 42.66 Mbit/s
95th percentile per-packet one-way delay: 66.707 ms
Loss rate: 16.24%
-- Flow 3:
Average throughput: 21.87 Mbit/s
95th percentile per-packet one-way delay: 65.468 ms
Loss rate: 15.00%
```

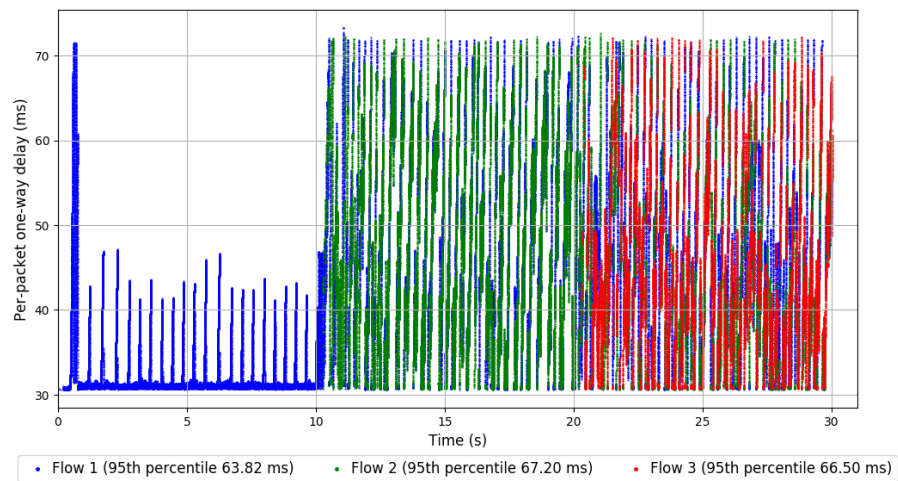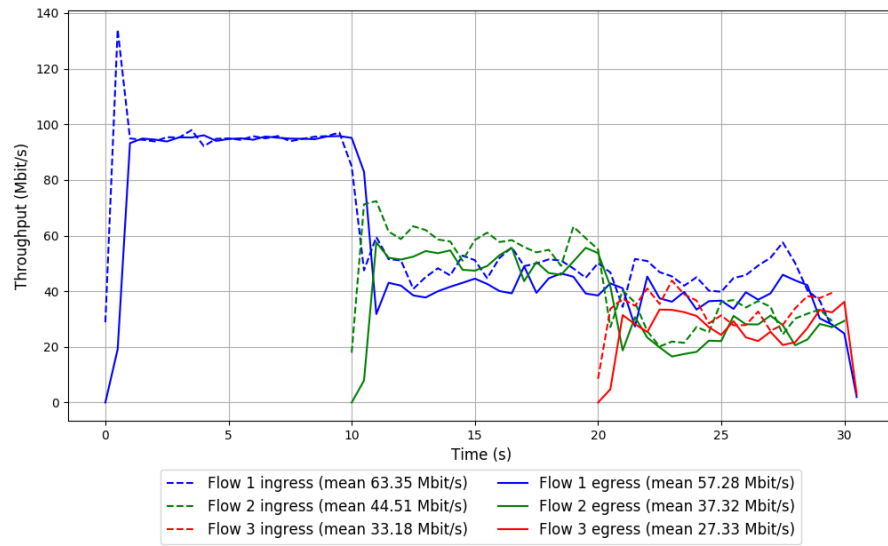Run 3: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 60.24 Mbit/s)   Flow 1 egress (mean 55.44 Mbit/s)
Flow 2 ingress (mean 50.97 Mbit/s)   Flow 2 egress (mean 42.66 Mbit/s)
Flow 3 ingress (mean 25.67 Mbit/s)   Flow 3 egress (mean 21.87 Mbit/s)

Flow 1 (95th percentile 63.87 ms)   Flow 2 (95th percentile 66.71 ms)   Flow 3 (95th percentile 65.47 ms)

```
Run 4: Statistics of FillP-Sheep

Start at: 2018-12-02 06:00:24
End at: 2018-12-02 06:00:54
Local clock offset: 0.064 ms
Remote clock offset: -2.875 ms


# Below is generated by plot.py at 2018-12-02 06:42:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.41 Mbit/s
95th percentile per-packet one-way delay: 65.621 ms
Loss rate: 12.55%
-- Flow 1:
Average throughput: 57.67 Mbit/s
95th percentile per-packet one-way delay: 64.284 ms
Loss rate: 9.86%
-- Flow 2:
Average throughput: 38.59 Mbit/s
95th percentile per-packet one-way delay: 67.093 ms
Loss rate: 17.03%
-- Flow 3:
Average throughput: 21.27 Mbit/s
95th percentile per-packet one-way delay: 66.668 ms
Loss rate: 16.54%
```
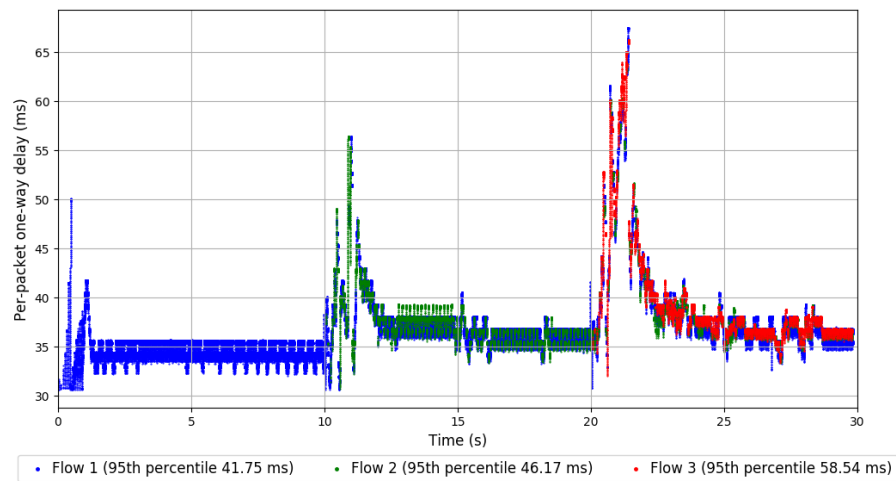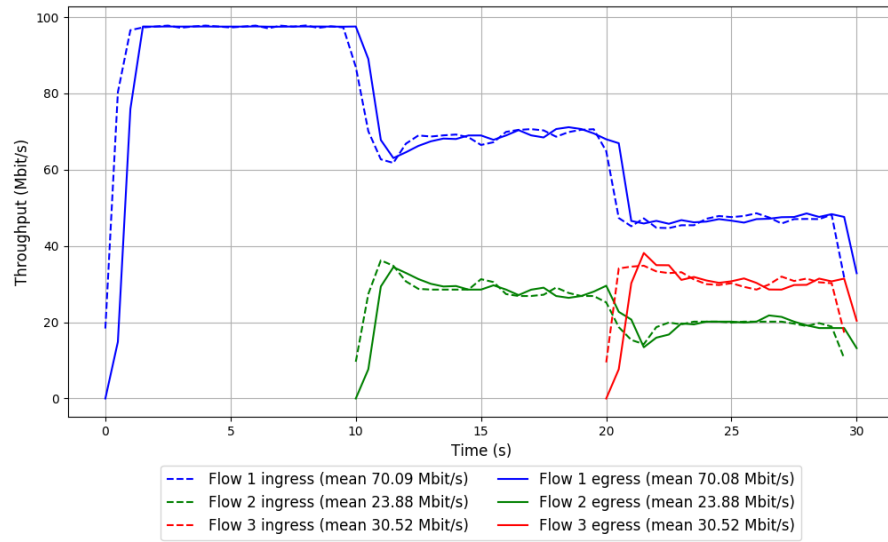
Run 4: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 64.06 Mbit/s) --- Flow 1 egress (mean 57.67 Mbit/s)
Flow 2 ingress (mean 46.60 Mbit/s) --- Flow 2 egress (mean 38.59 Mbit/s)
Flow 3 ingress (mean 25.55 Mbit/s) --- Flow 3 egress (mean 21.27 Mbit/s)

Flow 1 (95th percentile 64.28 ms)   Flow 2 (95th percentile 67.09 ms)   Flow 3 (95th percentile 66.67 ms)

```
Run 5: Statistics of FillP-Sheep

Start at: 2018-12-02 06:23:20
End at: 2018-12-02 06:23:50
Local clock offset: 0.192 ms
Remote clock offset: -2.774 ms


# Below is generated by plot.py at 2018-12-02 06:42:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.17 Mbit/s
95th percentile per-packet one-way delay: 65.448 ms
Loss rate: 12.22%
-- Flow 1:
Average throughput: 57.28 Mbit/s
95th percentile per-packet one-way delay: 63.822 ms
Loss rate: 9.53%
-- Flow 2:
Average throughput: 37.32 Mbit/s
95th percentile per-packet one-way delay: 67.201 ms
Loss rate: 16.06%
-- Flow 3:
Average throughput: 27.33 Mbit/s
95th percentile per-packet one-way delay: 66.499 ms
Loss rate: 17.42%
```

Run 5: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 63.35 Mbit/s) --- Flow 1 egress (mean 57.28 Mbit/s)
Flow 2 ingress (mean 44.51 Mbit/s) --- Flow 2 egress (mean 37.32 Mbit/s)
Flow 3 ingress (mean 33.18 Mbit/s) --- Flow 3 egress (mean 27.33 Mbit/s)

Flow 1 (95th percentile 63.82 ms)   Flow 2 (95th percentile 67.20 ms)   Flow 3 (95th percentile 66.50 ms)
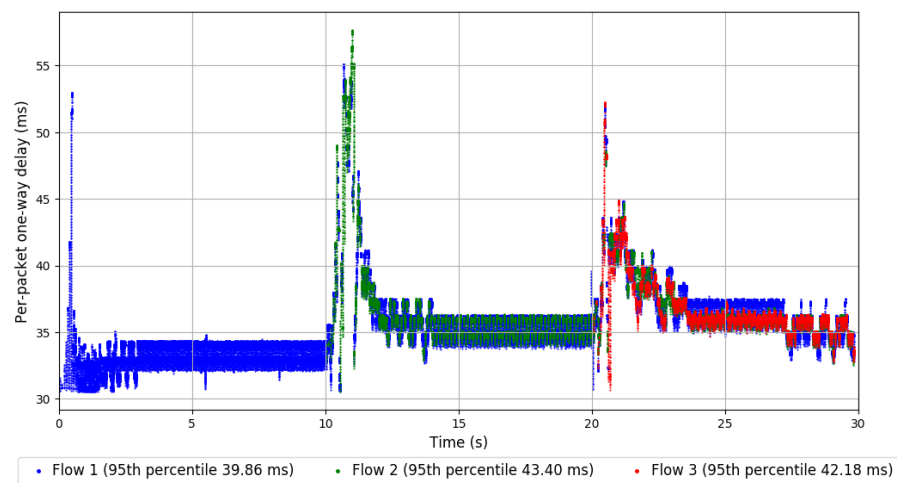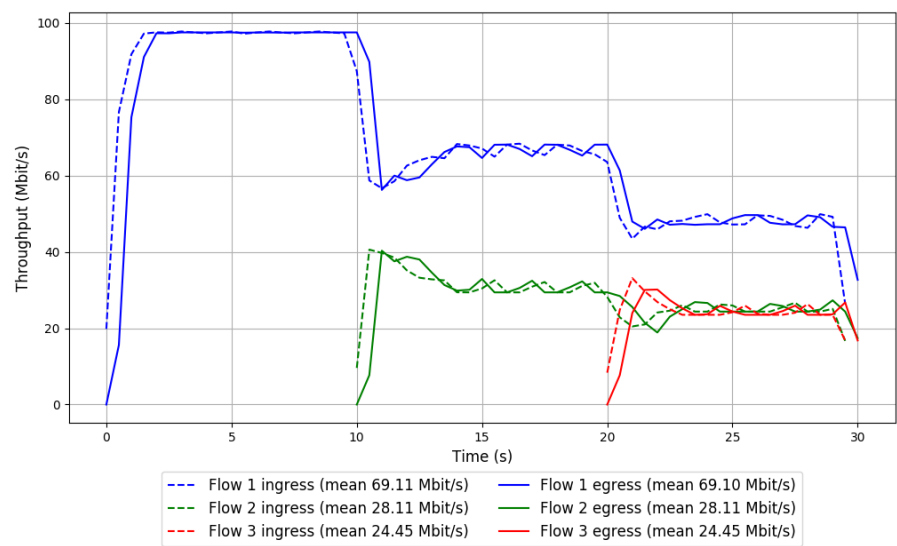
54

```
Run 1: Statistics of Indigo

Start at: 2018-12-02 04:56:41
End at: 2018-12-02 04:57:11
Local clock offset: -0.101 ms
Remote clock offset: -4.069 ms


# Below is generated by plot.py at 2018-12-02 06:42:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.85 Mbit/s
95th percentile per-packet one-way delay: 44.415 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 70.08 Mbit/s
95th percentile per-packet one-way delay: 41.753 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 23.88 Mbit/s
95th percentile per-packet one-way delay: 46.168 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 30.52 Mbit/s
95th percentile per-packet one-way delay: 58.543 ms
Loss rate: 0.00%
```

Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2018-12-02 05:19:27
End at: 2018-12-02 05:19:57
Local clock offset: -0.049 ms
Remote clock offset: -3.295 ms


# Below is generated by plot.py at 2018-12-02 06:42:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.84 Mbit/s
95th percentile per-packet one-way delay: 49.671 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 62.78 Mbit/s
95th percentile per-packet one-way delay: 46.829 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 32.85 Mbit/s
95th percentile per-packet one-way delay: 53.865 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 34.40 Mbit/s
95th percentile per-packet one-way delay: 57.055 ms
Loss rate: 0.00%
```
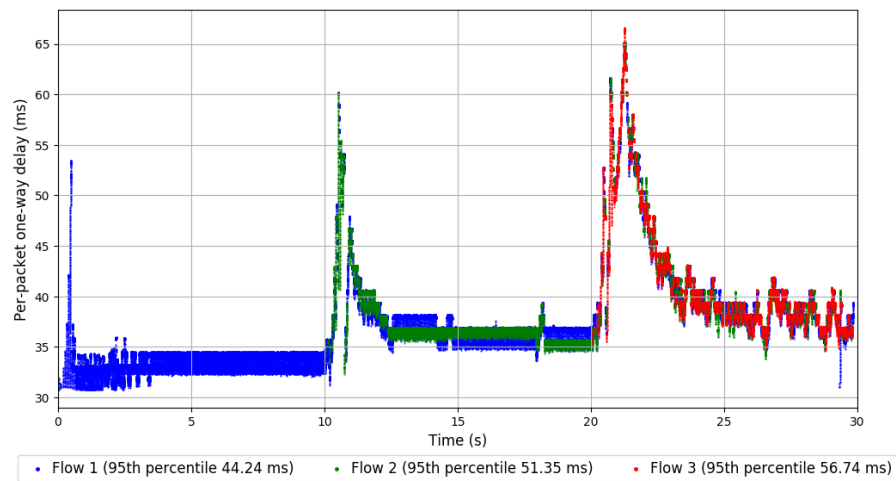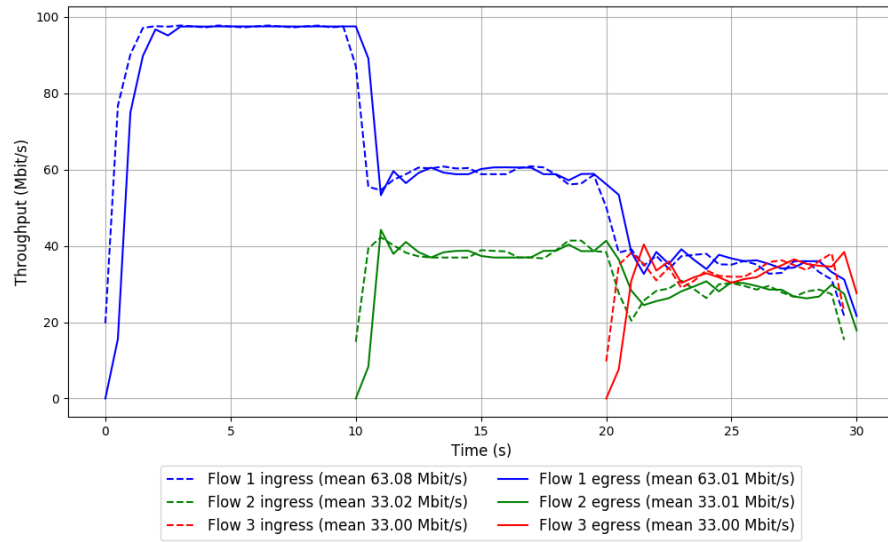
Run 2: Report of Indigo — Data Link

Flow 1 ingress (mean 62.98 Mbit/s)   Flow 1 egress (mean 62.78 Mbit/s)
Flow 2 ingress (mean 33.01 Mbit/s)   Flow 2 egress (mean 32.85 Mbit/s)
Flow 3 ingress (mean 34.41 Mbit/s)   Flow 3 egress (mean 34.40 Mbit/s)

Flow 1 (95th percentile 46.83 ms)   Flow 2 (95th percentile 53.87 ms)   Flow 3 (95th percentile 57.05 ms)

```
Run 3: Statistics of Indigo

Start at: 2018-12-02 05:42:21
End at: 2018-12-02 05:42:51
Local clock offset: -0.059 ms
Remote clock offset: -3.098 ms


# Below is generated by plot.py at 2018-12-02 06:42:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.75 Mbit/s
95th percentile per-packet one-way delay: 40.916 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 69.10 Mbit/s
95th percentile per-packet one-way delay: 39.858 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 28.11 Mbit/s
95th percentile per-packet one-way delay: 43.396 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 24.45 Mbit/s
95th percentile per-packet one-way delay: 42.181 ms
Loss rate: 0.00%
```
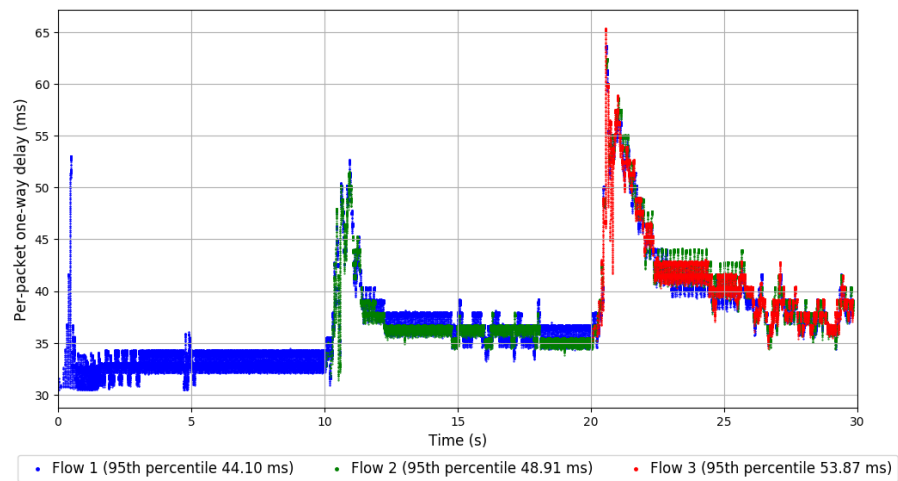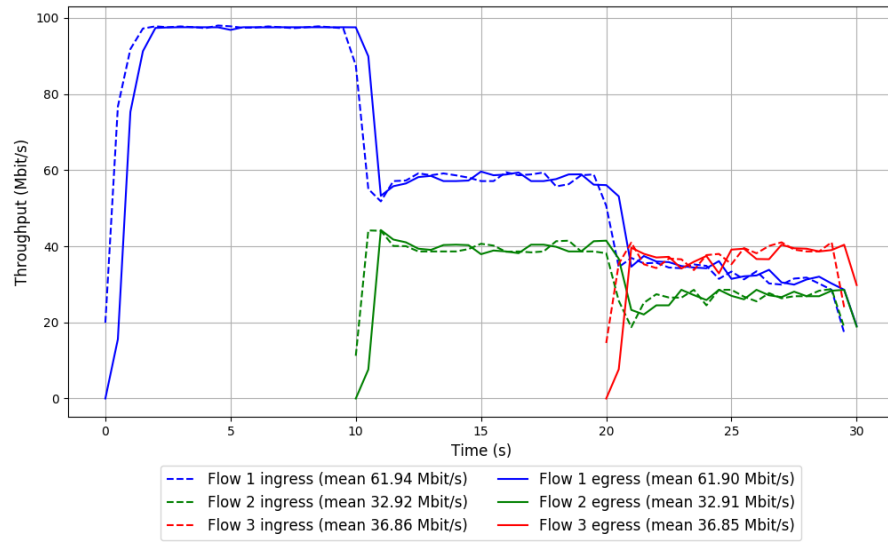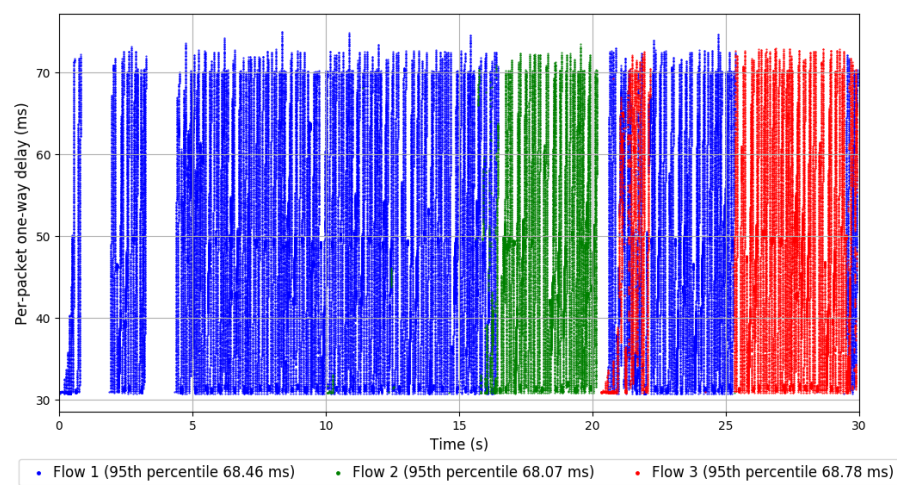
Run 3: Report of Indigo — Data Link

Flow 1 ingress (mean 69.11 Mbit/s) — — — Flow 1 egress (mean 69.10 Mbit/s)
Flow 2 ingress (mean 28.11 Mbit/s) — — — Flow 2 egress (mean 28.11 Mbit/s)
Flow 3 ingress (mean 24.45 Mbit/s) — — — Flow 3 egress (mean 24.45 Mbit/s)

Flow 1 (95th percentile 39.86 ms)   Flow 2 (95th percentile 43.40 ms)   Flow 3 (95th percentile 42.18 ms)

```
Run 4: Statistics of Indigo

Start at: 2018-12-02 06:05:08
End at: 2018-12-02 06:05:38
Local clock offset: 0.133 ms
Remote clock offset: -2.884 ms


# Below is generated by plot.py at 2018-12-02 06:43:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.68 Mbit/s
95th percentile per-packet one-way delay: 50.136 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 63.01 Mbit/s
95th percentile per-packet one-way delay: 44.243 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 33.01 Mbit/s
95th percentile per-packet one-way delay: 51.348 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 33.00 Mbit/s
95th percentile per-packet one-way delay: 56.745 ms
Loss rate: 0.00%
```
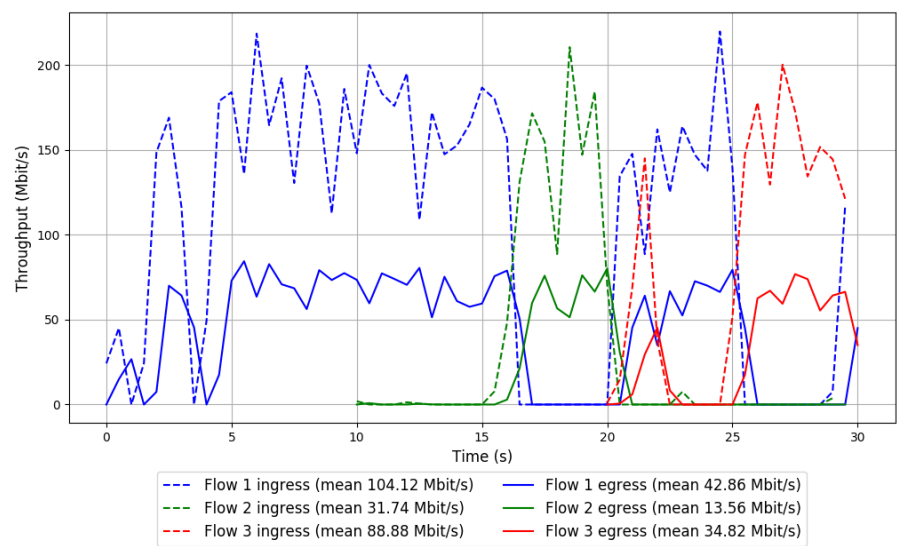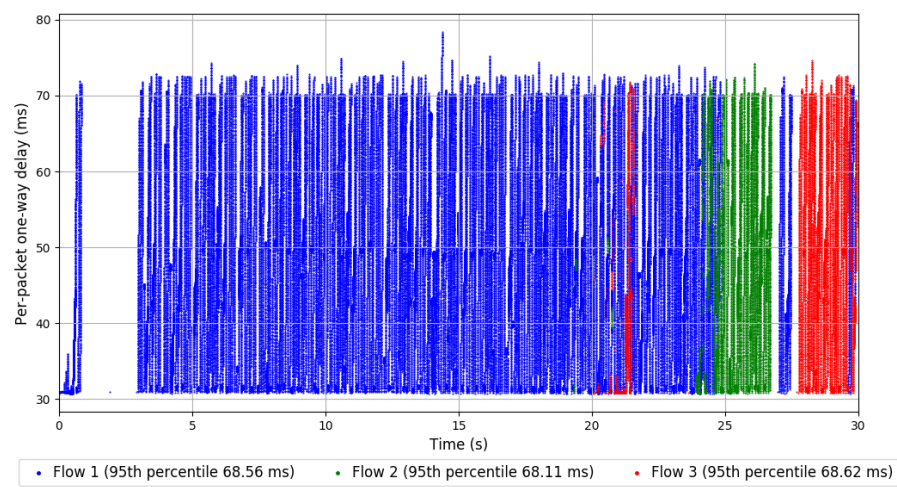
Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2018-12-02 06:28:11
End at: 2018-12-02 06:28:41
Local clock offset: 0.164 ms
Remote clock offset: -2.977 ms


# Below is generated by plot.py at 2018-12-02 06:43:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.76 Mbit/s
95th percentile per-packet one-way delay: 48.698 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 61.90 Mbit/s
95th percentile per-packet one-way delay: 44.096 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 32.91 Mbit/s
95th percentile per-packet one-way delay: 48.911 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 36.85 Mbit/s
95th percentile per-packet one-way delay: 53.874 ms
Loss rate: 0.00%
```

Run 5: Report of Indigo — Data Link

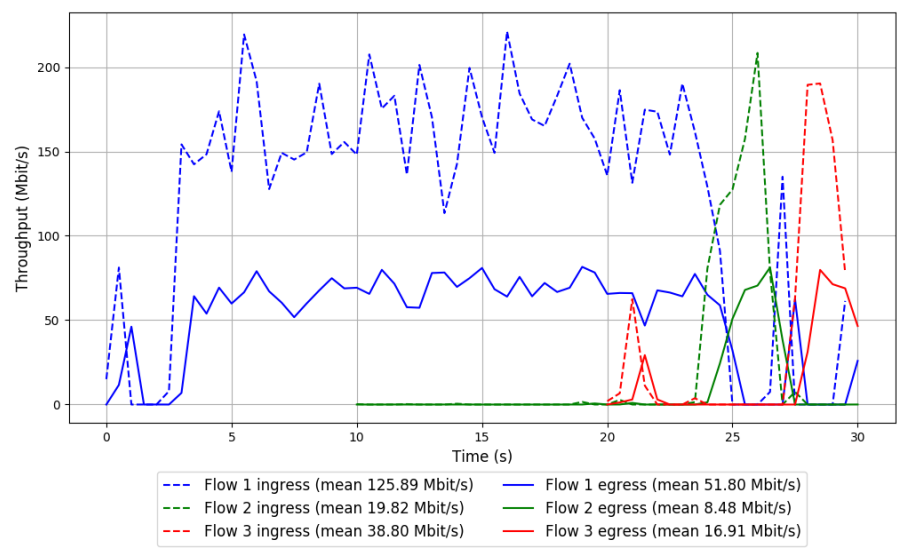Flow 1 ingress (mean 61.94 Mbit/s) ---- Flow 1 egress (mean 61.90 Mbit/s)
Flow 2 ingress (mean 32.92 Mbit/s) ---- Flow 2 egress (mean 32.91 Mbit/s)
Flow 3 ingress (mean 36.86 Mbit/s) ---- Flow 3 egress (mean 36.85 Mbit/s)

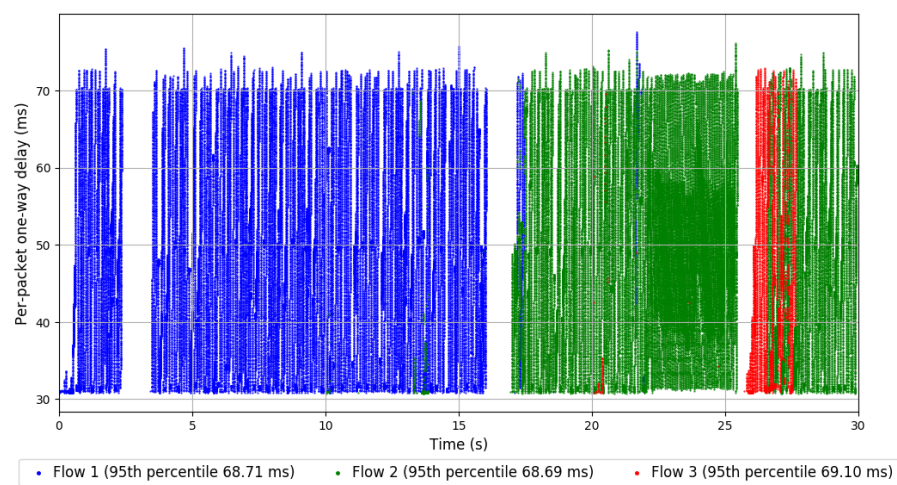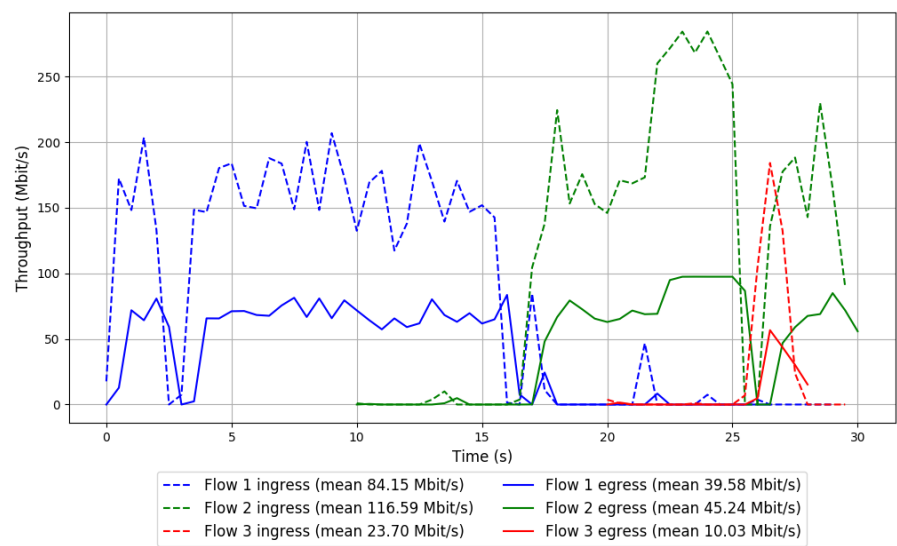Flow 1 (95th percentile 44.10 ms) • Flow 2 (95th percentile 48.91 ms) • Flow 3 (95th percentile 53.87 ms)

```
Run 1: Statistics of Indigo-96d2da3

Start at: 2018-12-02 05:03:55
End at: 2018-12-02 05:04:25
Local clock offset: -0.088 ms
Remote clock offset: -3.664 ms


# Below is generated by plot.py at 2018-12-02 06:43:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 62.79 Mbit/s
95th percentile per-packet one-way delay: 68.463 ms
Loss rate: 58.96%
-- Flow 1:
Average throughput: 42.86 Mbit/s
95th percentile per-packet one-way delay: 68.464 ms
Loss rate: 58.79%
-- Flow 2:
Average throughput: 13.56 Mbit/s
95th percentile per-packet one-way delay: 68.069 ms
Loss rate: 57.44%
-- Flow 3:
Average throughput: 34.82 Mbit/s
95th percentile per-packet one-way delay: 68.776 ms
Loss rate: 60.67%
```
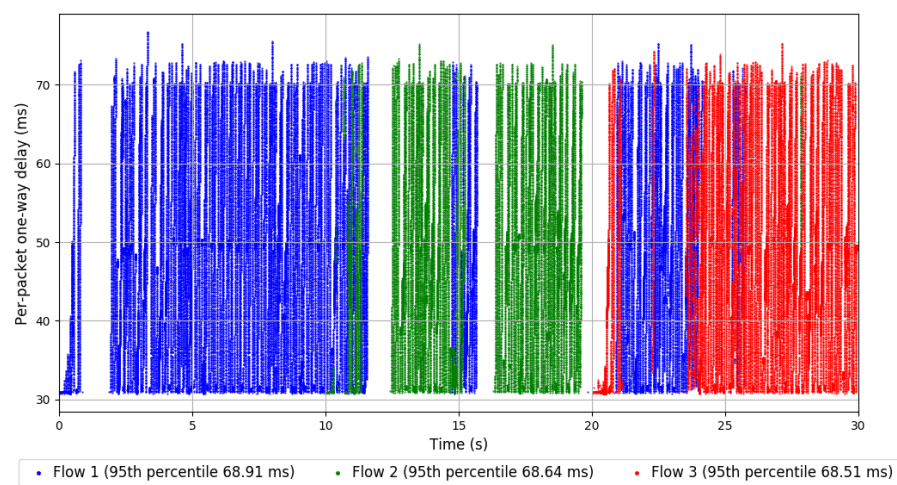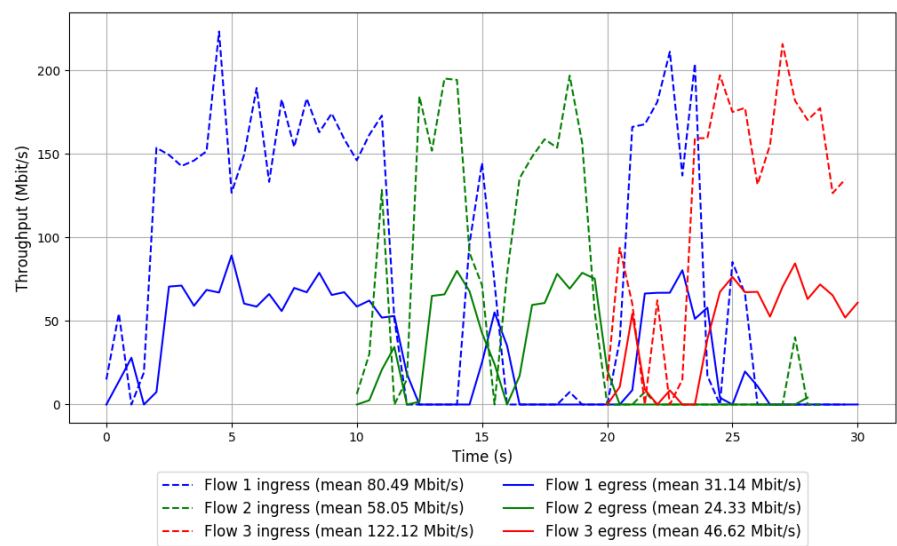
Run 1: Report of Indigo-96d2da3 — Data Link

```
Run 2: Statistics of Indigo-96d2da3

Start at: 2018-12-02 05:26:43
End at: 2018-12-02 05:27:13
Local clock offset: -0.118 ms
Remote clock offset: -3.063 ms

# Below is generated by plot.py at 2018-12-02 06:43:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 62.95 Mbit/s
95th percentile per-packet one-way delay: 68.521 ms
Loss rate: 58.44%
-- Flow 1:
Average throughput: 51.80 Mbit/s
95th percentile per-packet one-way delay: 68.559 ms
Loss rate: 58.80%
-- Flow 2:
Average throughput: 8.48 Mbit/s
95th percentile per-packet one-way delay: 68.107 ms
Loss rate: 57.19%
-- Flow 3:
Average throughput: 16.91 Mbit/s
95th percentile per-packet one-way delay: 68.623 ms
Loss rate: 56.25%
```

Run 2: Report of Indigo-96d2da3 — Data Link

Flow 1 ingress (mean 125.89 Mbit/s)   Flow 1 egress (mean 51.80 Mbit/s)
Flow 2 ingress (mean 19.82 Mbit/s)   Flow 2 egress (mean 8.48 Mbit/s)
Flow 3 ingress (mean 38.80 Mbit/s)   Flow 3 egress (mean 16.91 Mbit/s)

Flow 1 (95th percentile 68.56 ms)   Flow 2 (95th percentile 68.11 ms)   Flow 3 (95th percentile 68.62 ms)
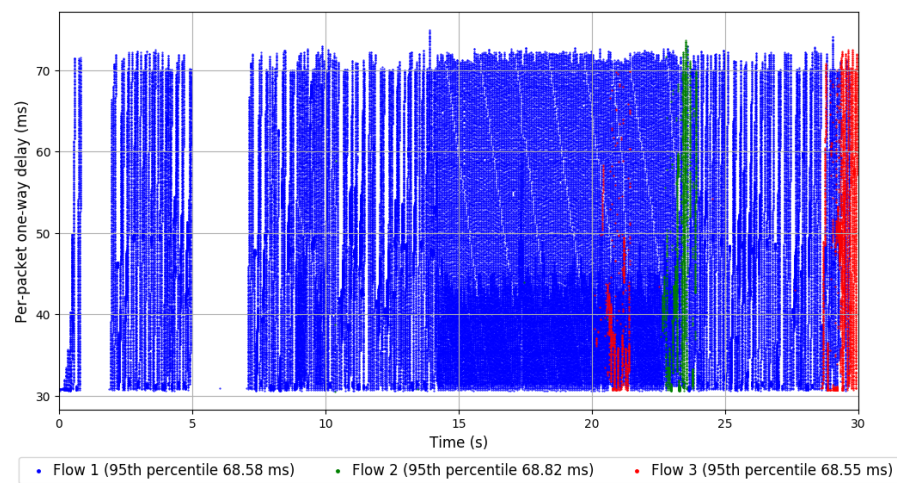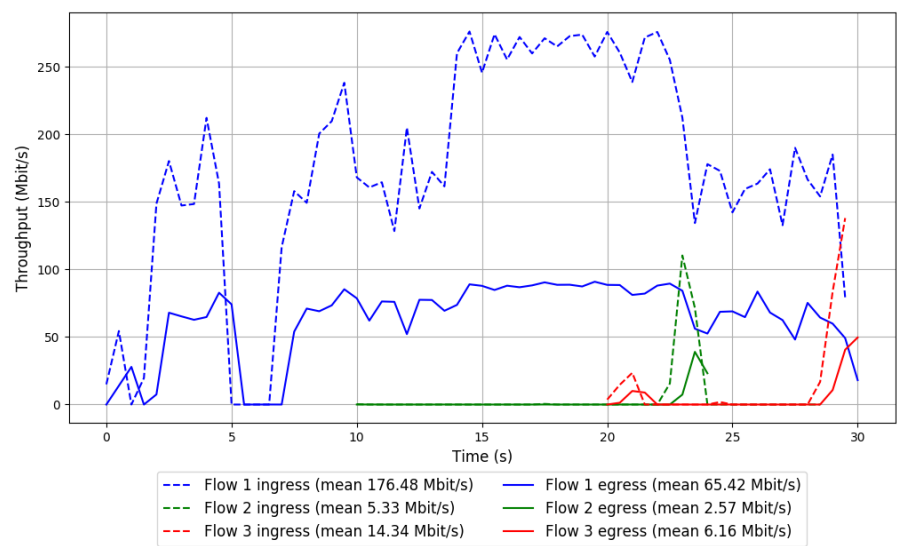
```
Run 3: Statistics of Indigo-96d2da3

Start at: 2018-12-02 05:49:35
End at: 2018-12-02 05:50:05
Local clock offset: -0.007 ms
Remote clock offset: -2.882 ms


# Below is generated by plot.py at 2018-12-02 06:44:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 67.14 Mbit/s
95th percentile per-packet one-way delay: 68.714 ms
Loss rate: 59.82%
-- Flow 1:
Average throughput: 39.58 Mbit/s
95th percentile per-packet one-way delay: 68.707 ms
Loss rate: 57.93%
-- Flow 2:
Average throughput: 45.24 Mbit/s
95th percentile per-packet one-way delay: 68.688 ms
Loss rate: 61.14%
-- Flow 3:
Average throughput: 10.03 Mbit/s
95th percentile per-packet one-way delay: 69.096 ms
Loss rate: 66.73%
```

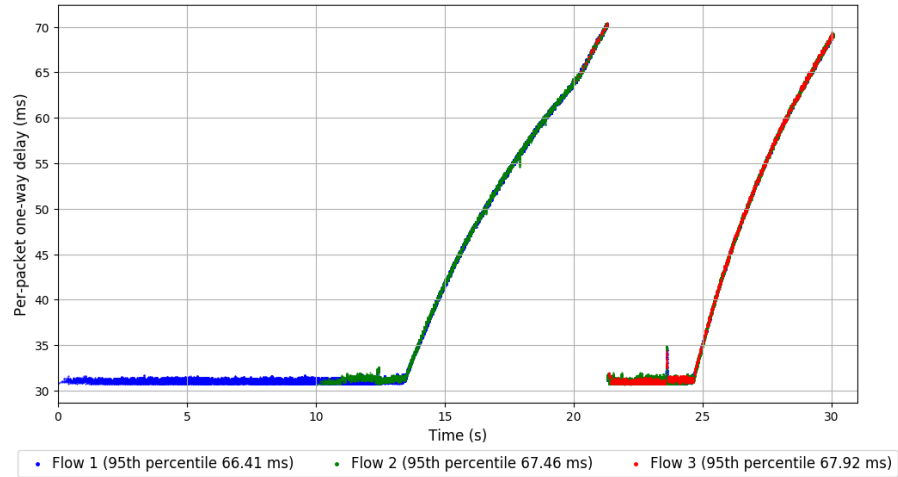Run 3: Report of Indigo-96d2da3 — Data Link

```
Run 4: Statistics of Indigo-96d2da3

Start at: 2018-12-02 06:12:24
End at: 2018-12-02 06:12:54
Local clock offset: 0.215 ms
Remote clock offset: -2.754 ms


# Below is generated by plot.py at 2018-12-02 06:44:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 61.01 Mbit/s
95th percentile per-packet one-way delay: 68.763 ms
Loss rate: 61.20%
-- Flow 1:
Average throughput: 31.14 Mbit/s
95th percentile per-packet one-way delay: 68.911 ms
Loss rate: 61.27%
-- Flow 2:
Average throughput: 24.33 Mbit/s
95th percentile per-packet one-way delay: 68.639 ms
Loss rate: 60.46%
-- Flow 3:
Average throughput: 46.62 Mbit/s
95th percentile per-packet one-way delay: 68.509 ms
Loss rate: 61.75%
```

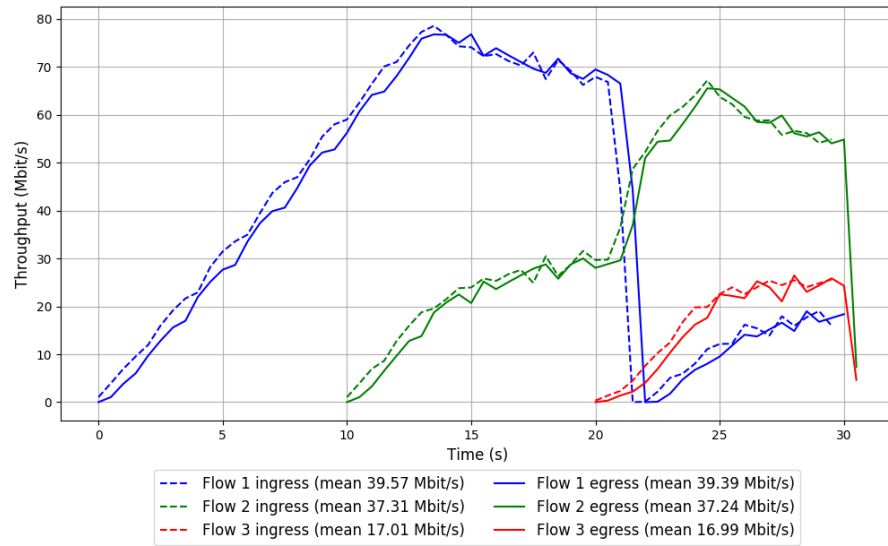Run 4: Report of Indigo-96d2da3 — Data Link
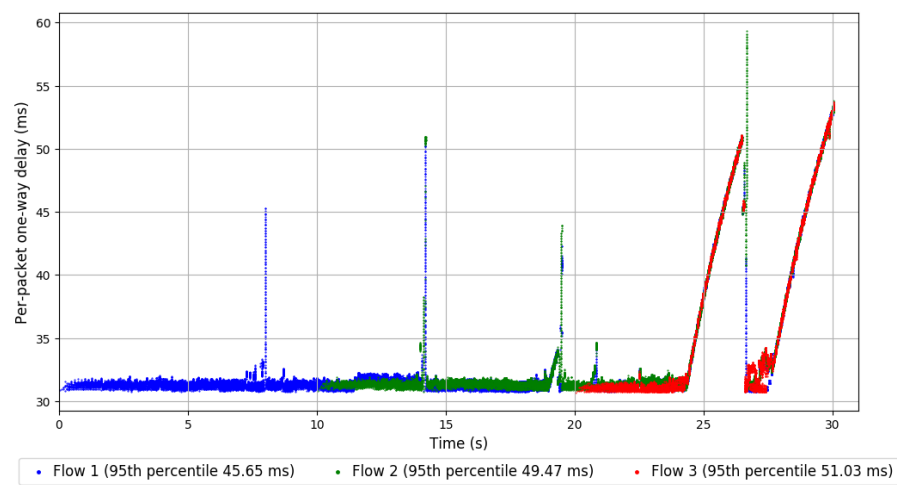
```
Run 5: Statistics of Indigo-96d2da3

Start at: 2018-12-02 06:35:29
End at: 2018-12-02 06:35:59
Local clock offset: 0.131 ms
Remote clock offset: -2.751 ms


# Below is generated by plot.py at 2018-12-02 06:44:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 68.00 Mbit/s
95th percentile per-packet one-way delay: 68.585 ms
Loss rate: 62.87%
-- Flow 1:
Average throughput: 65.42 Mbit/s
95th percentile per-packet one-way delay: 68.579 ms
Loss rate: 62.99%
-- Flow 2:
Average throughput: 2.57 Mbit/s
95th percentile per-packet one-way delay: 68.822 ms
Loss rate: 64.92%
-- Flow 3:
Average throughput: 6.16 Mbit/s
95th percentile per-packet one-way delay: 68.549 ms
Loss rate: 57.02%
```

Run 5: Report of Indigo-96d2da3 — Data Link
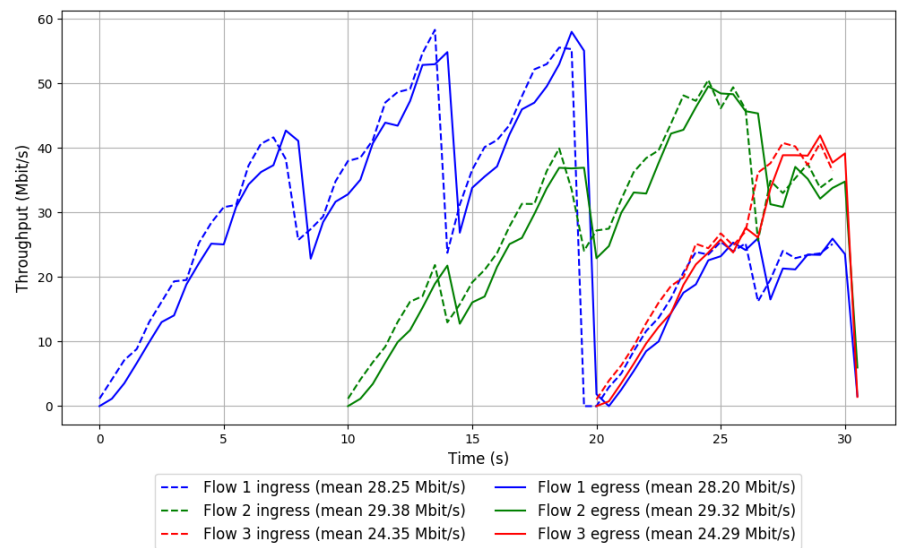

- - - - Flow 1 ingress (mean 176.48 Mbit/s) —— Flow 1 egress (mean 65.42 Mbit/s)
- - - - Flow 2 ingress (mean 5.33 Mbit/s) —— Flow 2 egress (mean 2.57 Mbit/s)
- - - - Flow 3 ingress (mean 14.34 Mbit/s) —— Flow 3 egress (mean 6.16 Mbit/s)

- Flow 1 (95th percentile 68.58 ms)   - Flow 2 (95th percentile 68.82 ms)   - Flow 3 (95th percentile 68.55 ms)
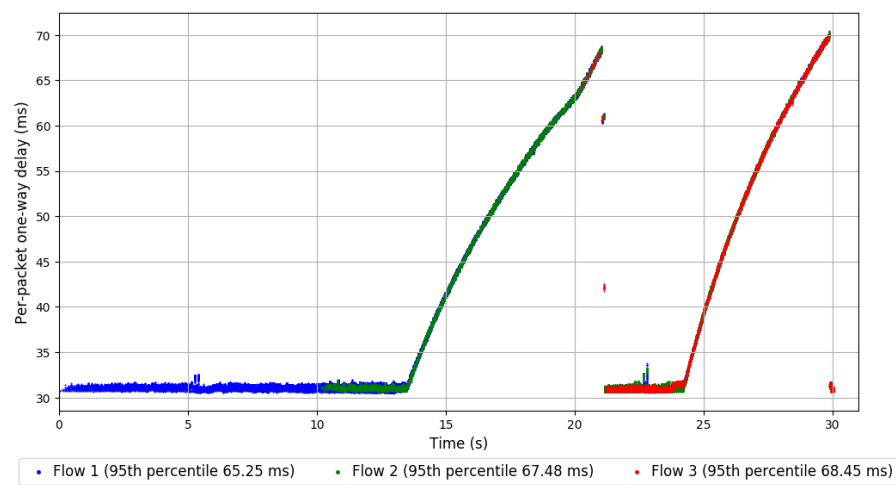
```
Run 1: Statistics of LEDBAT

Start at: 2018-12-02 04:47:09
End at: 2018-12-02 04:47:39
Local clock offset: -0.023 ms
Remote clock offset: -4.088 ms

# Below is generated by plot.py at 2018-12-02 06:44:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 69.74 Mbit/s
95th percentile per-packet one-way delay: 67.146 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 39.39 Mbit/s
95th percentile per-packet one-way delay: 66.410 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 37.24 Mbit/s
95th percentile per-packet one-way delay: 67.456 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 16.99 Mbit/s
95th percentile per-packet one-way delay: 67.925 ms
Loss rate: 0.05%
```
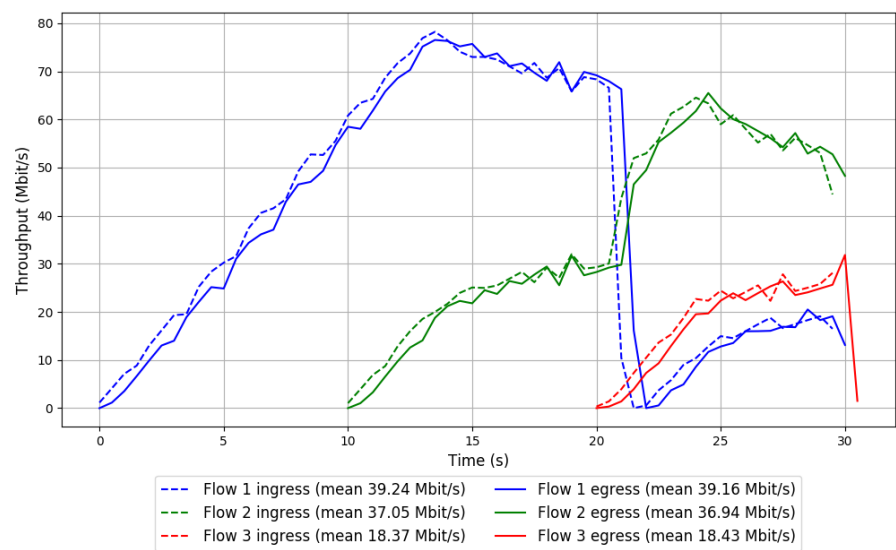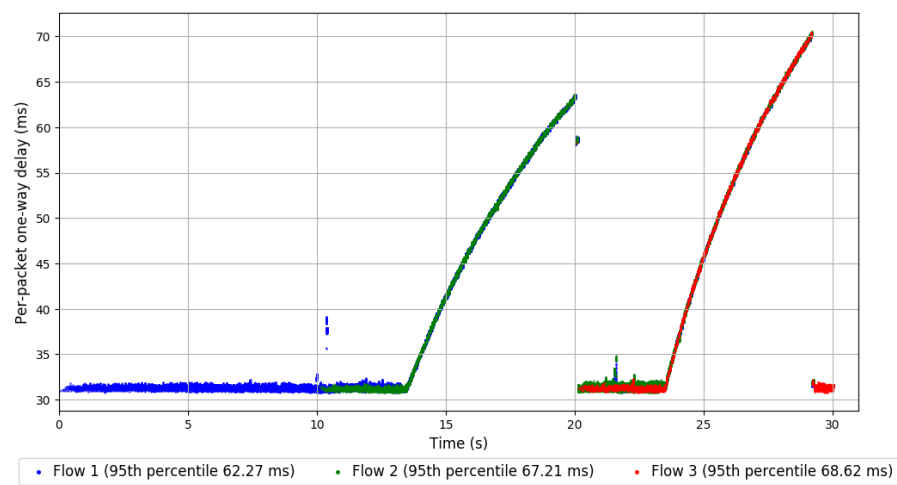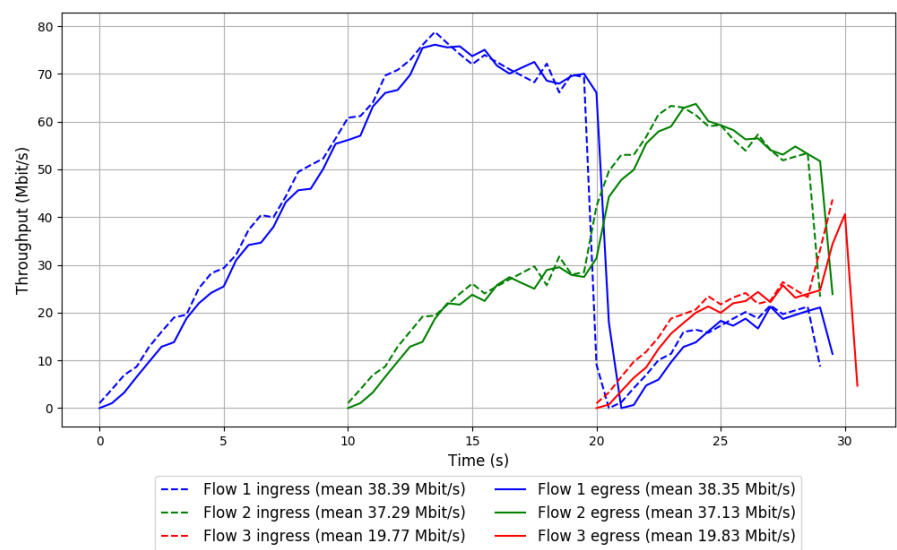
Run 1: Report of LEDBAT — Data Link

Flow 1 ingress (mean 39.57 Mbit/s) --- Flow 1 egress (mean 39.39 Mbit/s)
Flow 2 ingress (mean 37.31 Mbit/s) --- Flow 2 egress (mean 37.24 Mbit/s)
Flow 3 ingress (mean 17.01 Mbit/s) --- Flow 3 egress (mean 16.99 Mbit/s)

Flow 1 (95th percentile 66.41 ms)   Flow 2 (95th percentile 67.46 ms)   Flow 3 (95th percentile 67.92 ms)

```
Run 2: Statistics of LEDBAT

Start at: 2018-12-02 05:09:52
End at: 2018-12-02 05:10:22
Local clock offset: -0.074 ms
Remote clock offset: -3.518 ms

# Below is generated by plot.py at 2018-12-02 06:44:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 55.79 Mbit/s
95th percentile per-packet one-way delay: 49.077 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 28.20 Mbit/s
95th percentile per-packet one-way delay: 45.645 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 29.32 Mbit/s
95th percentile per-packet one-way delay: 49.466 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 24.29 Mbit/s
95th percentile per-packet one-way delay: 51.029 ms
Loss rate: 0.01%
```
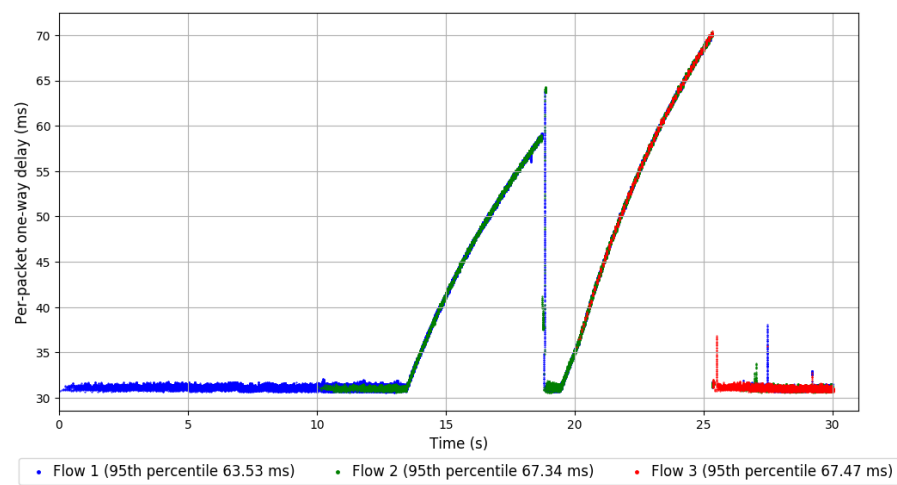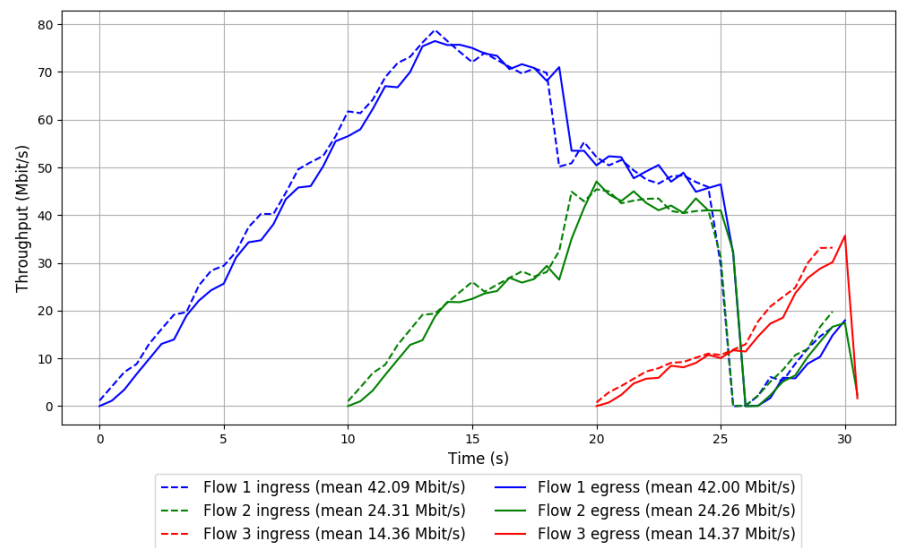
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2018-12-02 05:32:48
End at: 2018-12-02 05:33:18
Local clock offset: -0.127 ms
Remote clock offset: -3.171 ms


# Below is generated by plot.py at 2018-12-02 06:44:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 69.69 Mbit/s
95th percentile per-packet one-way delay: 66.717 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 39.16 Mbit/s
95th percentile per-packet one-way delay: 65.249 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 36.94 Mbit/s
95th percentile per-packet one-way delay: 67.484 ms
Loss rate: 0.29%
-- Flow 3:
Average throughput: 18.43 Mbit/s
95th percentile per-packet one-way delay: 68.452 ms
Loss rate: 0.00%
```

Run 3: Report of LEDBAT — Data Link

```
Run 4: Statistics of LEDBAT

Start at: 2018-12-02 05:55:37
End at: 2018-12-02 05:56:07
Local clock offset: 0.05 ms
Remote clock offset: -2.814 ms


# Below is generated by plot.py at 2018-12-02 06:44:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 67.68 Mbit/s
95th percentile per-packet one-way delay: 65.493 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 38.35 Mbit/s
95th percentile per-packet one-way delay: 62.268 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 37.13 Mbit/s
95th percentile per-packet one-way delay: 67.213 ms
Loss rate: 0.41%
-- Flow 3:
Average throughput: 19.83 Mbit/s
95th percentile per-packet one-way delay: 68.625 ms
Loss rate: 0.00%
```
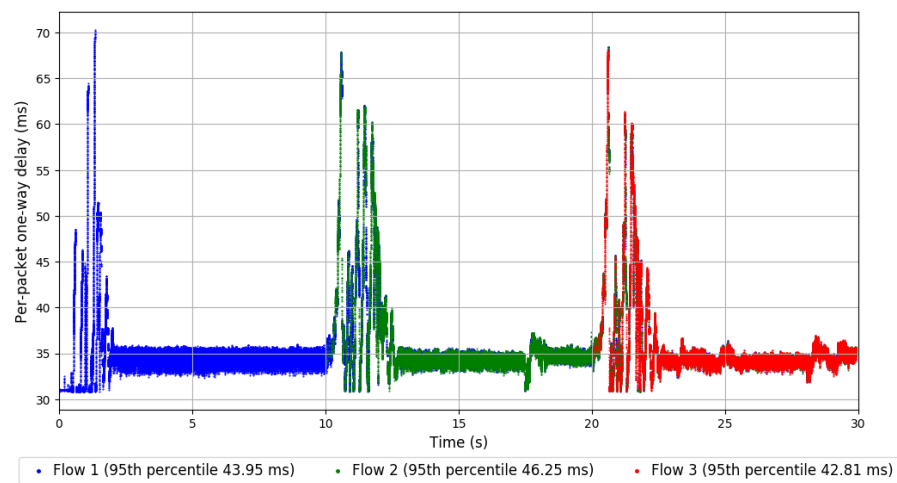
Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2018-12-02 06:18:28
End at: 2018-12-02 06:18:58
Local clock offset: 0.229 ms
Remote clock offset: -2.909 ms


# Below is generated by plot.py at 2018-12-02 06:44:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 62.88 Mbit/s
95th percentile per-packet one-way delay: 65.725 ms
Loss rate: 0.20%
-- Flow 1:
Average throughput: 42.00 Mbit/s
95th percentile per-packet one-way delay: 63.534 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 24.26 Mbit/s
95th percentile per-packet one-way delay: 67.339 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 14.37 Mbit/s
95th percentile per-packet one-way delay: 67.472 ms
Loss rate: 0.01%
```
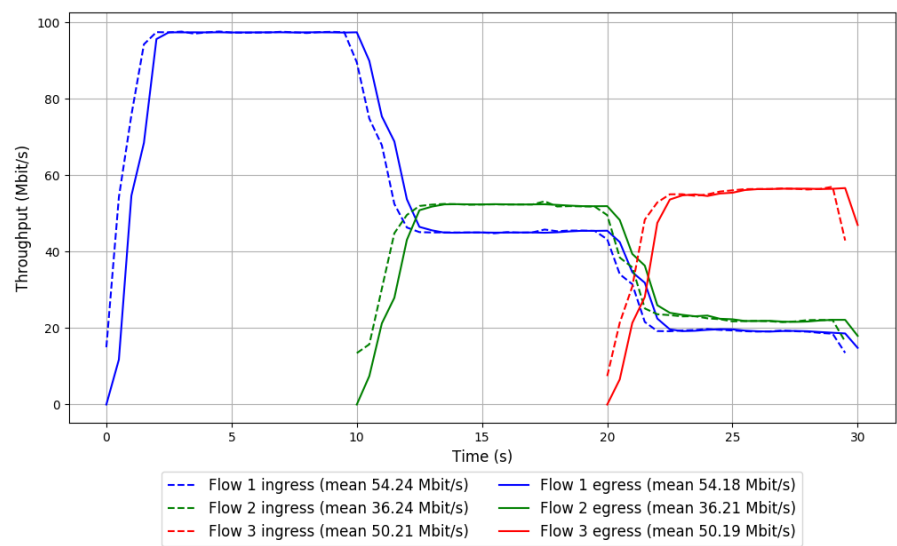
Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of Indigo-Muses

Start at: 2018-12-02 05:01:29
End at: 2018-12-02 05:01:59
Local clock offset: -0.103 ms
Remote clock offset: -3.63 ms


# Below is generated by plot.py at 2018-12-02 06:44:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.78 Mbit/s
95th percentile per-packet one-way delay: 44.196 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 54.18 Mbit/s
95th percentile per-packet one-way delay: 43.953 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 36.21 Mbit/s
95th percentile per-packet one-way delay: 46.252 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 50.19 Mbit/s
95th percentile per-packet one-way delay: 42.813 ms
Loss rate: 0.03%
```
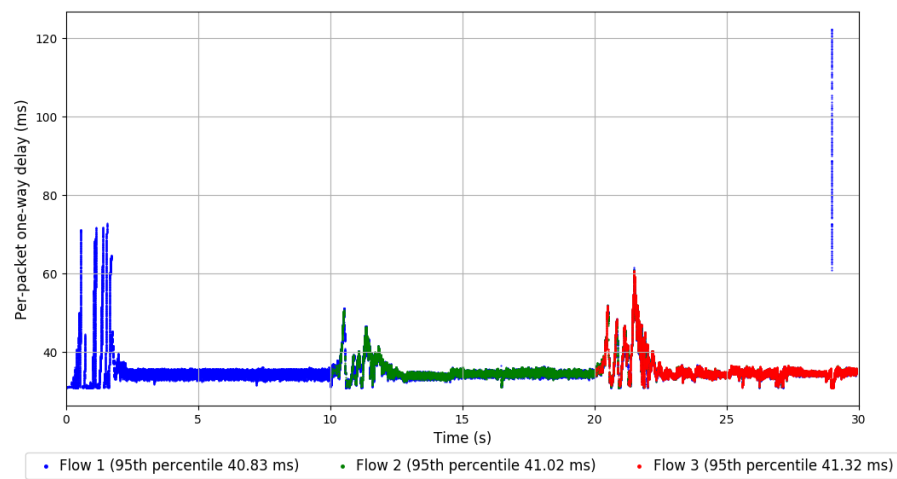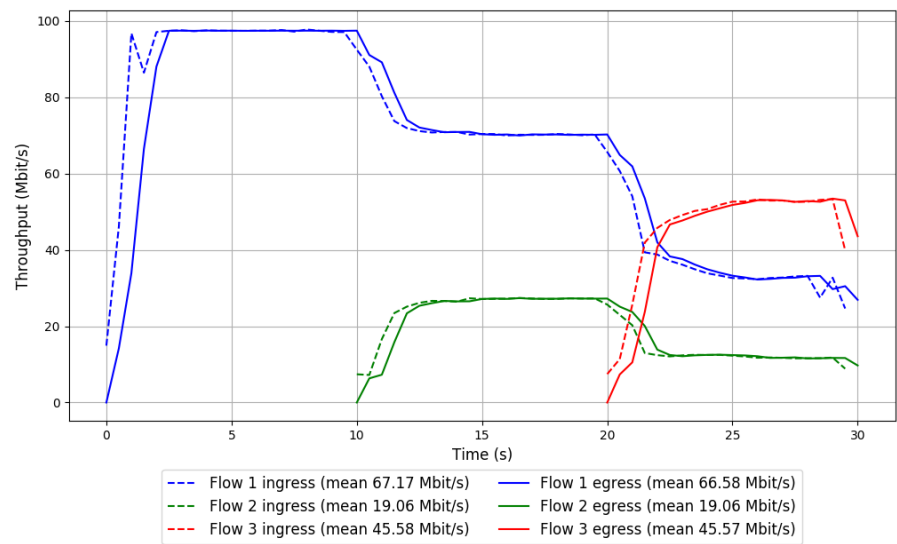
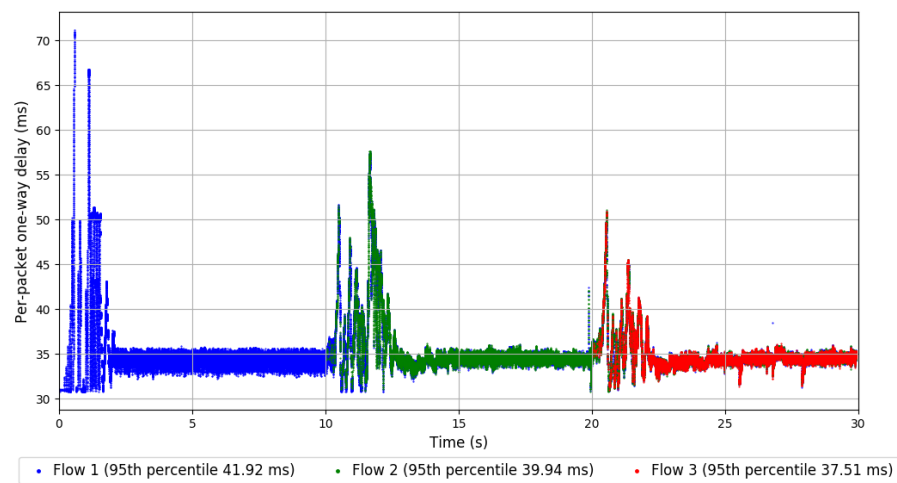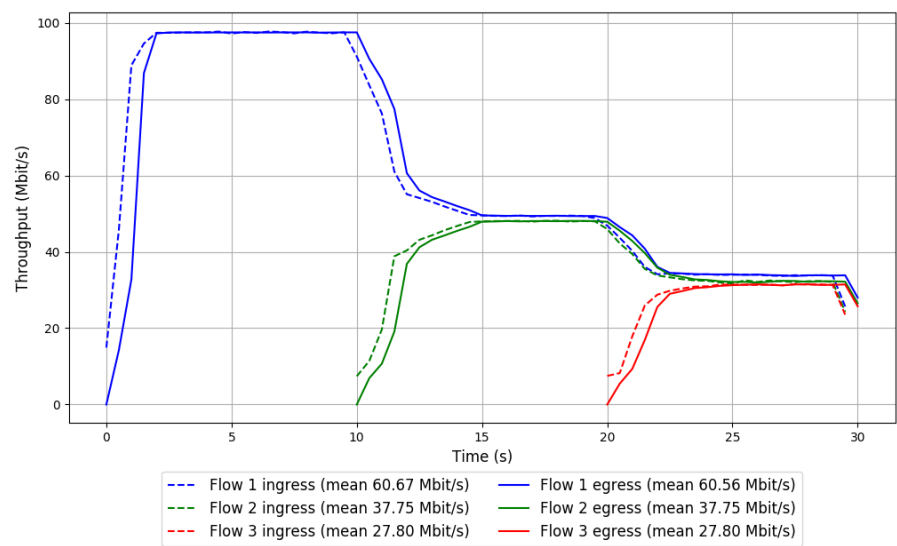Run 1: Report of Indigo-Muses — Data Link

```
Run 2: Statistics of Indigo-Muses

Start at: 2018-12-02 05:24:15
End at: 2018-12-02 05:24:45
Local clock offset: -0.115 ms
Remote clock offset: -3.088 ms


# Below is generated by plot.py at 2018-12-02 06:44:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.26 Mbit/s
95th percentile per-packet one-way delay: 40.940 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 66.58 Mbit/s
95th percentile per-packet one-way delay: 40.830 ms
Loss rate: 0.86%
-- Flow 2:
Average throughput: 19.06 Mbit/s
95th percentile per-packet one-way delay: 41.022 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 45.57 Mbit/s
95th percentile per-packet one-way delay: 41.316 ms
Loss rate: 0.00%
```

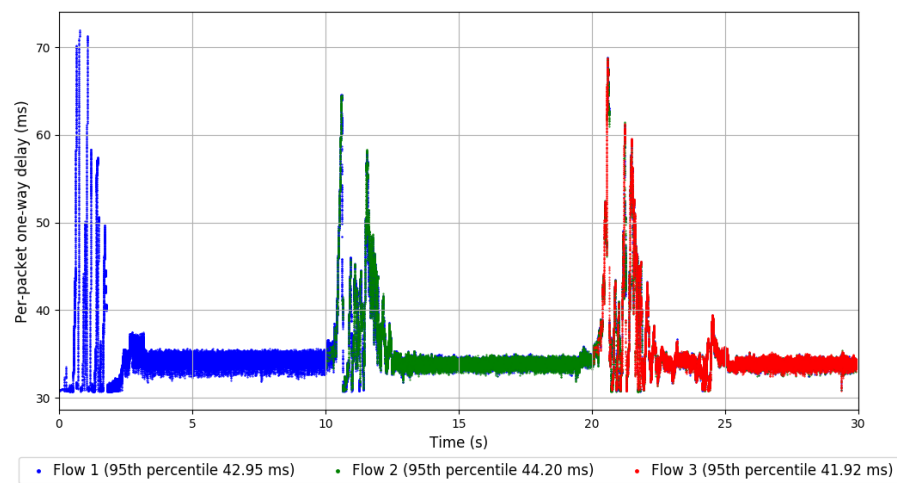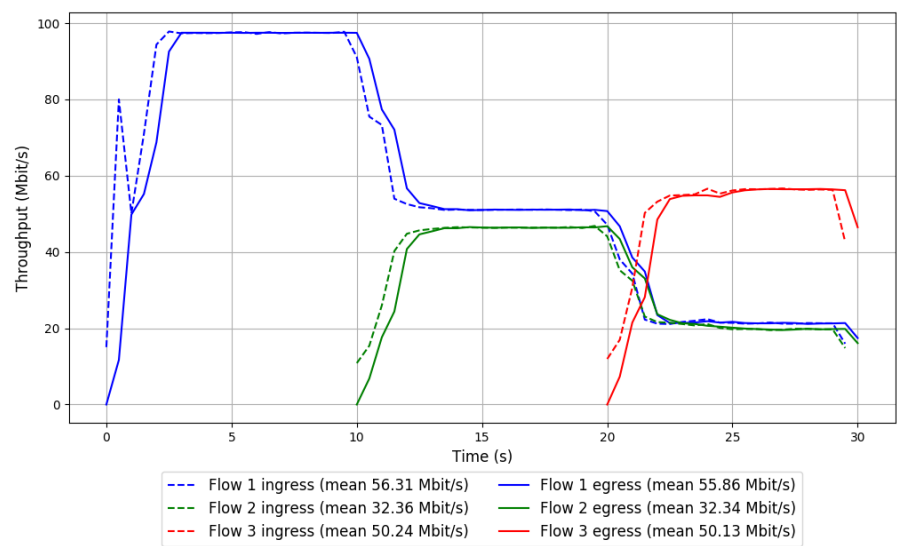Run 2: Report of Indigo-Muses — Data Link

```
Run 3: Statistics of Indigo-Muses

Start at: 2018-12-02 05:47:10
End at: 2018-12-02 05:47:40
Local clock offset: -0.04 ms
Remote clock offset: -2.833 ms

# Below is generated by plot.py at 2018-12-02 06:45:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.82 Mbit/s
95th percentile per-packet one-way delay: 40.710 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 60.56 Mbit/s
95th percentile per-packet one-way delay: 41.918 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 37.75 Mbit/s
95th percentile per-packet one-way delay: 39.936 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 27.80 Mbit/s
95th percentile per-packet one-way delay: 37.507 ms
Loss rate: 0.00%
```

Run 3: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 60.67 Mbit/s) — — — Flow 1 egress (mean 60.56 Mbit/s) ———
Flow 2 ingress (mean 37.75 Mbit/s) — — — Flow 2 egress (mean 37.75 Mbit/s) ———
Flow 3 ingress (mean 27.80 Mbit/s) — — — Flow 3 egress (mean 27.80 Mbit/s) ———

Flow 1 (95th percentile 41.92 ms)   Flow 2 (95th percentile 39.94 ms)   Flow 3 (95th percentile 37.51 ms)
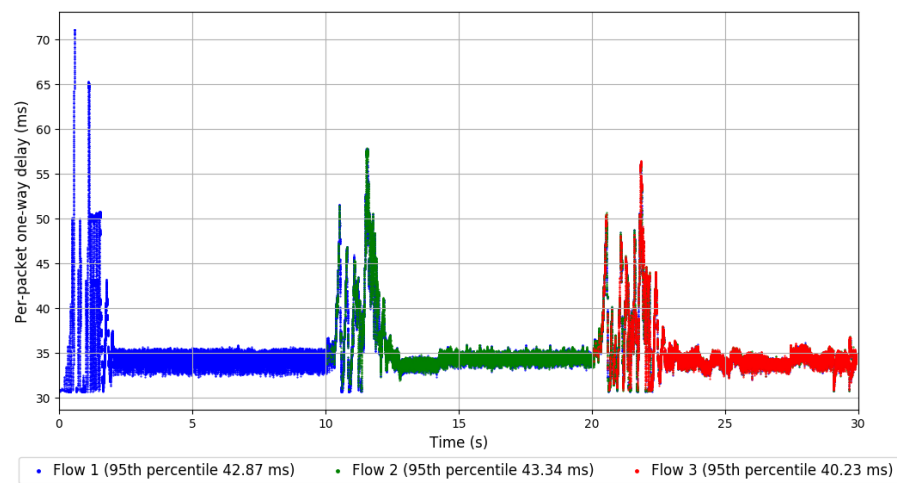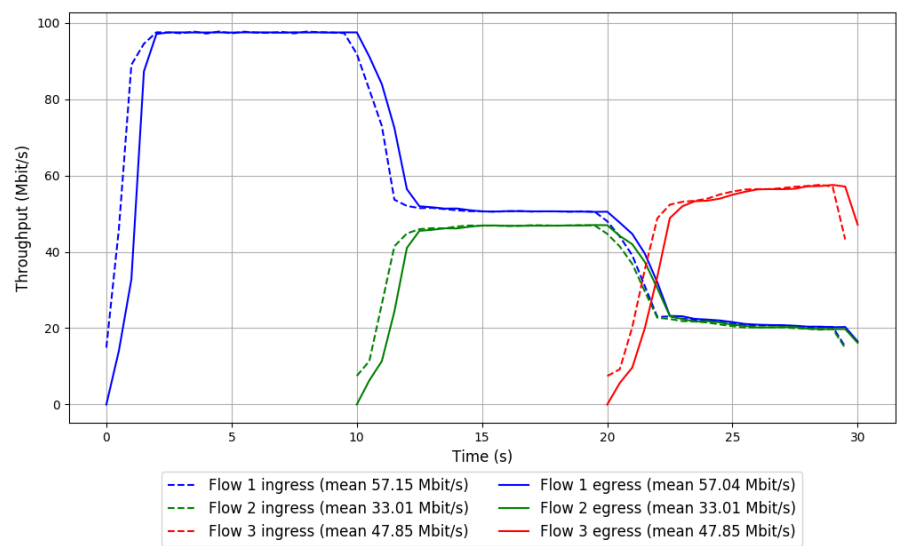
```
Run 4: Statistics of Indigo-Muses

Start at: 2018-12-02 06:09:58
End at: 2018-12-02 06:10:28
Local clock offset: 0.177 ms
Remote clock offset: -2.795 ms


# Below is generated by plot.py at 2018-12-02 06:45:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.89 Mbit/s
95th percentile per-packet one-way delay: 43.115 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 55.86 Mbit/s
95th percentile per-packet one-way delay: 42.949 ms
Loss rate: 0.79%
-- Flow 2:
Average throughput: 32.34 Mbit/s
95th percentile per-packet one-way delay: 44.205 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 50.13 Mbit/s
95th percentile per-packet one-way delay: 41.920 ms
Loss rate: 0.21%
```

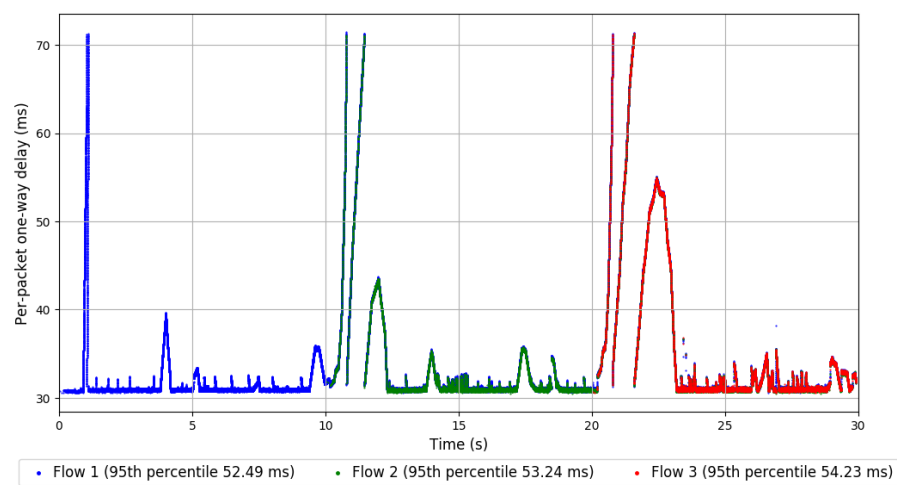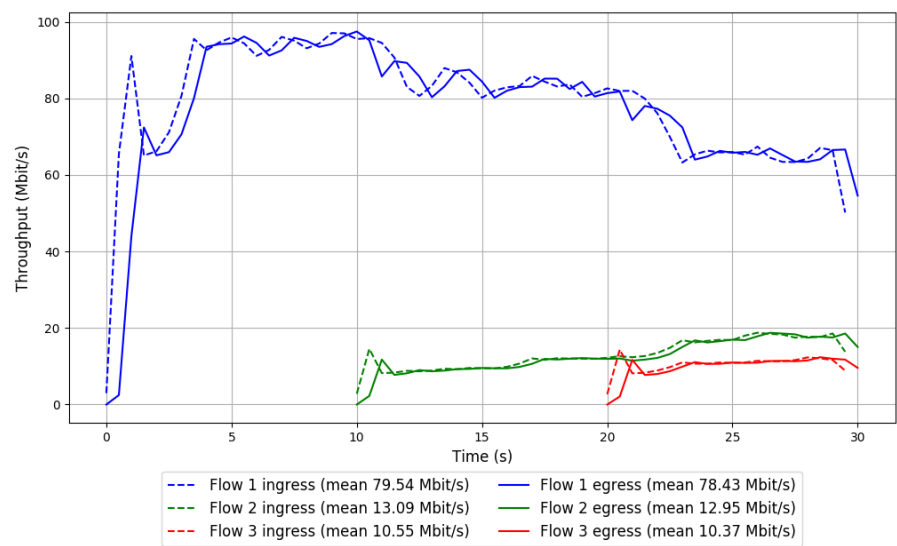Run 4: Report of Indigo-Muses — Data Link

```
Run 5: Statistics of Indigo-Muses

Start at: 2018-12-02 06:33:03
End at: 2018-12-02 06:33:33
Local clock offset: 0.143 ms
Remote clock offset: -2.768 ms

# Below is generated by plot.py at 2018-12-02 06:45:24
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.75 Mbit/s
95th percentile per-packet one-way delay: 42.662 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 57.04 Mbit/s
95th percentile per-packet one-way delay: 42.869 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 33.01 Mbit/s
95th percentile per-packet one-way delay: 43.339 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 47.85 Mbit/s
95th percentile per-packet one-way delay: 40.229 ms
Loss rate: 0.01%
```

Run 5: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 57.15 Mbit/s) ---- Flow 1 egress (mean 57.04 Mbit/s)
Flow 2 ingress (mean 33.01 Mbit/s) ---- Flow 2 egress (mean 33.01 Mbit/s)
Flow 3 ingress (mean 47.85 Mbit/s) ---- Flow 3 egress (mean 47.85 Mbit/s)

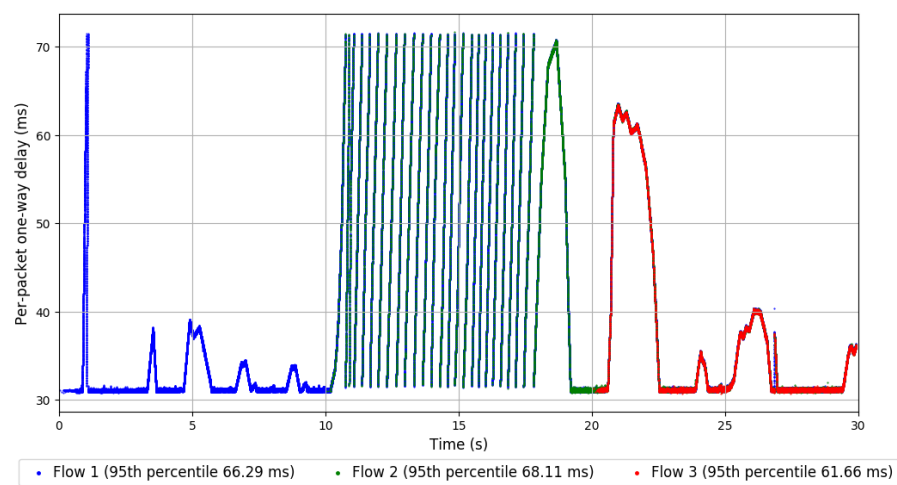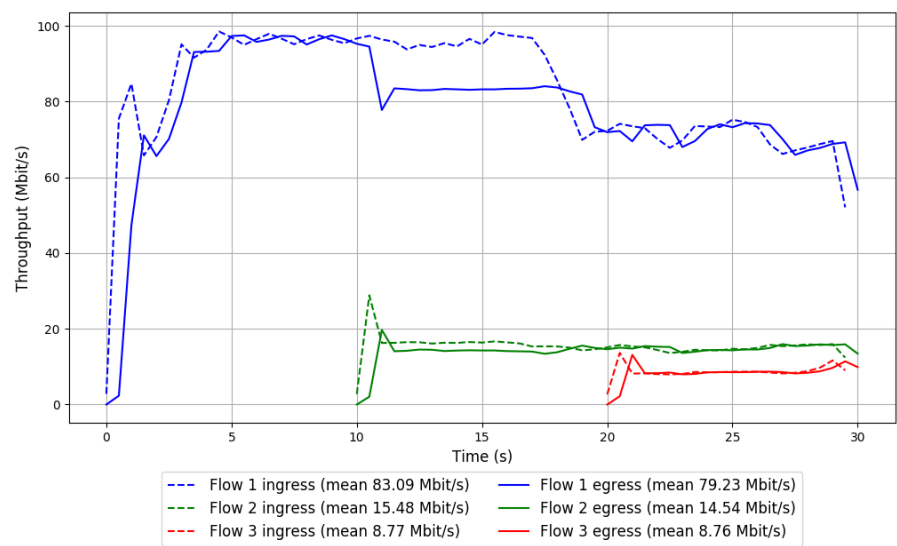Flow 1 (95th percentile 42.87 ms)　　Flow 2 (95th percentile 43.34 ms)　　Flow 3 (95th percentile 40.23 ms)

```
Run 1: Statistics of PCC-Allegro

Start at: 2018-12-02 04:49:36
End at: 2018-12-02 04:50:06
Local clock offset: -0.039 ms
Remote clock offset: -4.159 ms


# Below is generated by plot.py at 2018-12-02 06:45:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.47 Mbit/s
95th percentile per-packet one-way delay: 52.944 ms
Loss rate: 1.37%
-- Flow 1:
Average throughput: 78.43 Mbit/s
95th percentile per-packet one-way delay: 52.493 ms
Loss rate: 1.39%
-- Flow 2:
Average throughput: 12.95 Mbit/s
95th percentile per-packet one-way delay: 53.237 ms
Loss rate: 1.08%
-- Flow 3:
Average throughput: 10.37 Mbit/s
95th percentile per-packet one-way delay: 54.235 ms
Loss rate: 1.66%
```

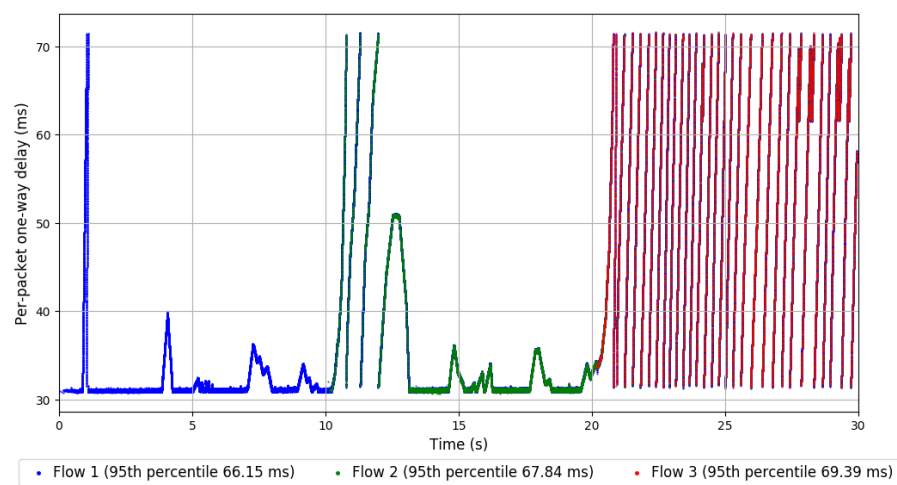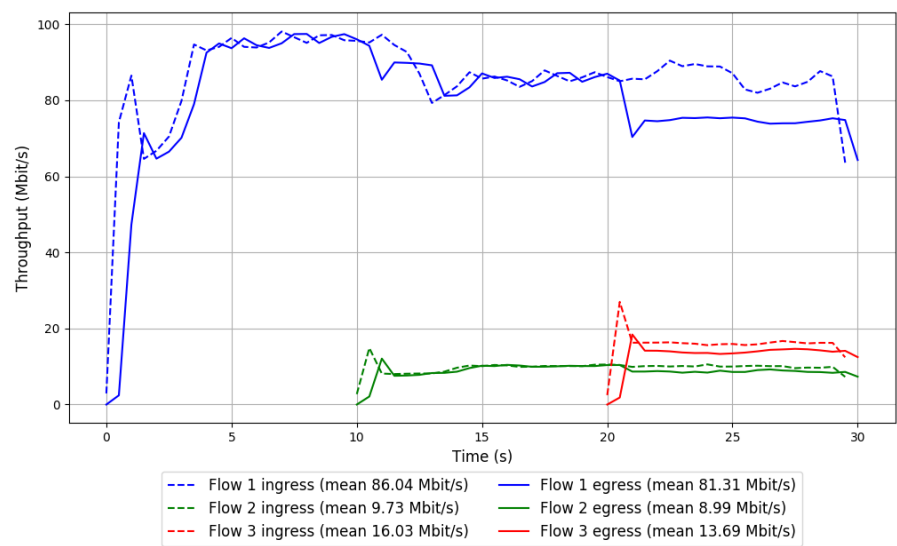Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2018-12-02 05:12:17
End at: 2018-12-02 05:12:47
Local clock offset: -0.063 ms
Remote clock offset: -3.314 ms


# Below is generated by plot.py at 2018-12-02 06:45:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.79 Mbit/s
95th percentile per-packet one-way delay: 66.368 ms
Loss rate: 4.64%
-- Flow 1:
Average throughput: 79.23 Mbit/s
95th percentile per-packet one-way delay: 66.286 ms
Loss rate: 4.63%
-- Flow 2:
Average throughput: 14.54 Mbit/s
95th percentile per-packet one-way delay: 68.112 ms
Loss rate: 6.08%
-- Flow 3:
Average throughput: 8.76 Mbit/s
95th percentile per-packet one-way delay: 61.658 ms
Loss rate: 0.00%
```
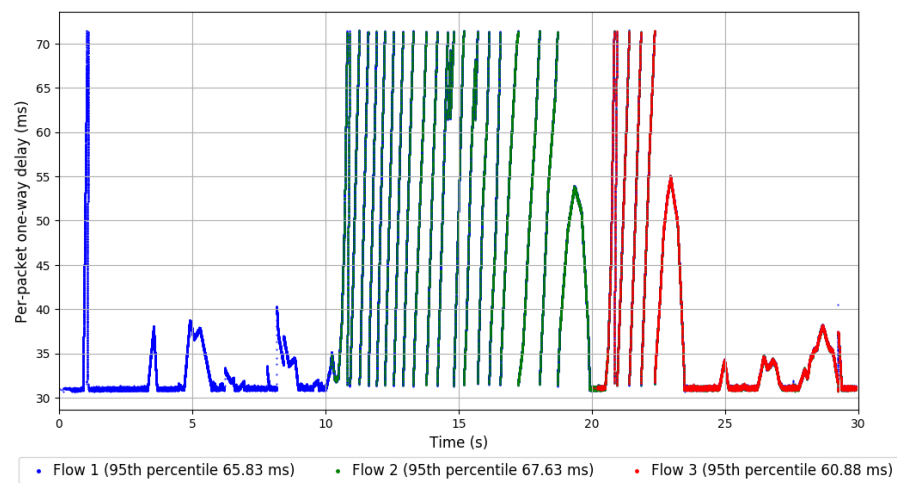
Run 2: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 83.09 Mbit/s) --- Flow 1 egress (mean 79.23 Mbit/s)
Flow 2 ingress (mean 15.48 Mbit/s) --- Flow 2 egress (mean 14.54 Mbit/s)
Flow 3 ingress (mean 8.77 Mbit/s) --- Flow 3 egress (mean 8.76 Mbit/s)

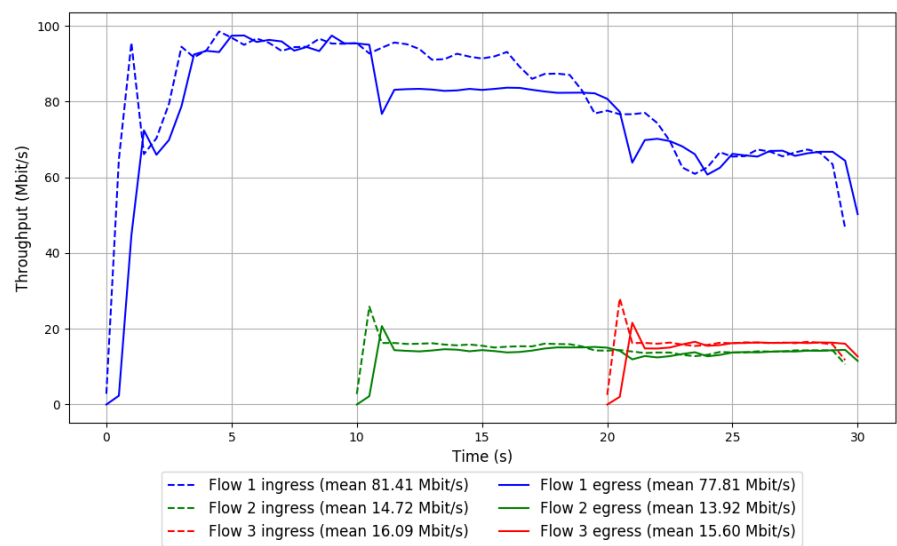Flow 1 (95th percentile 66.29 ms)   Flow 2 (95th percentile 68.11 ms)   Flow 3 (95th percentile 61.66 ms)

```
Run 3: Statistics of PCC-Allegro

Start at: 2018-12-02 05:35:14
End at: 2018-12-02 05:35:44
Local clock offset: -0.115 ms
Remote clock offset: -2.915 ms


# Below is generated by plot.py at 2018-12-02 06:45:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.82 Mbit/s
95th percentile per-packet one-way delay: 66.726 ms
Loss rate: 6.04%
-- Flow 1:
Average throughput: 81.31 Mbit/s
95th percentile per-packet one-way delay: 66.150 ms
Loss rate: 5.41%
-- Flow 2:
Average throughput: 8.99 Mbit/s
95th percentile per-packet one-way delay: 67.836 ms
Loss rate: 7.48%
-- Flow 3:
Average throughput: 13.69 Mbit/s
95th percentile per-packet one-way delay: 69.387 ms
Loss rate: 14.39%
```
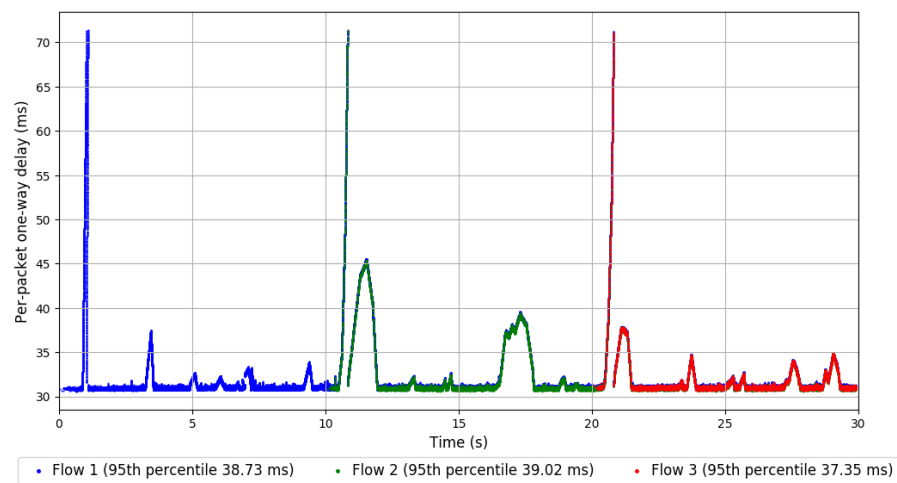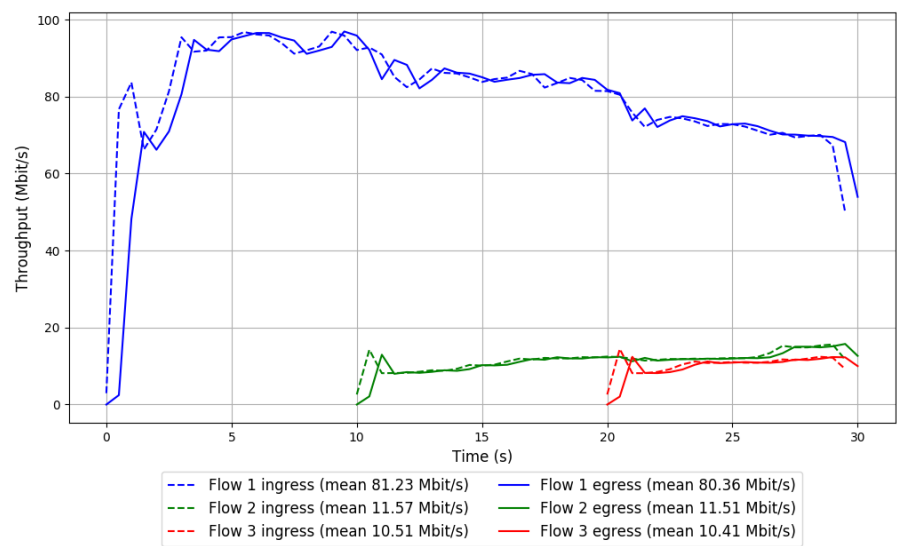
Run 3: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 86.04 Mbit/s) —— Flow 1 egress (mean 81.31 Mbit/s)
Flow 2 ingress (mean 9.73 Mbit/s) —— Flow 2 egress (mean 8.99 Mbit/s)
Flow 3 ingress (mean 16.03 Mbit/s) —— Flow 3 egress (mean 13.69 Mbit/s)

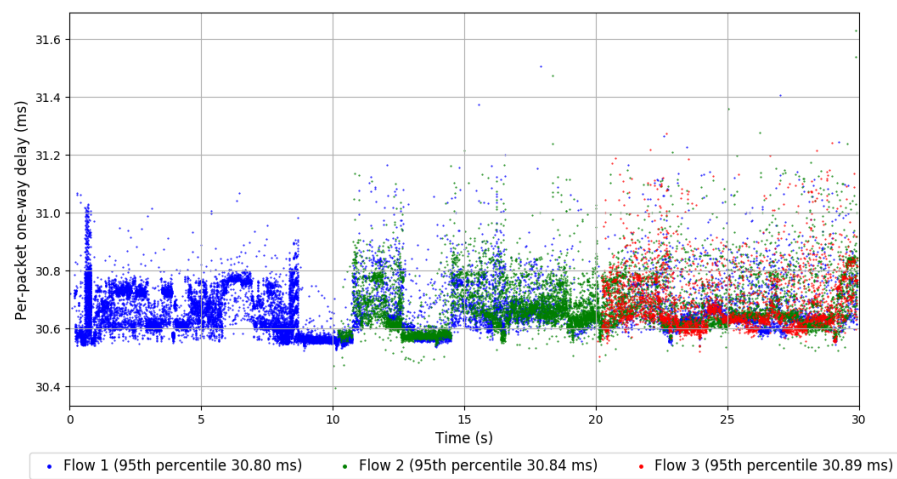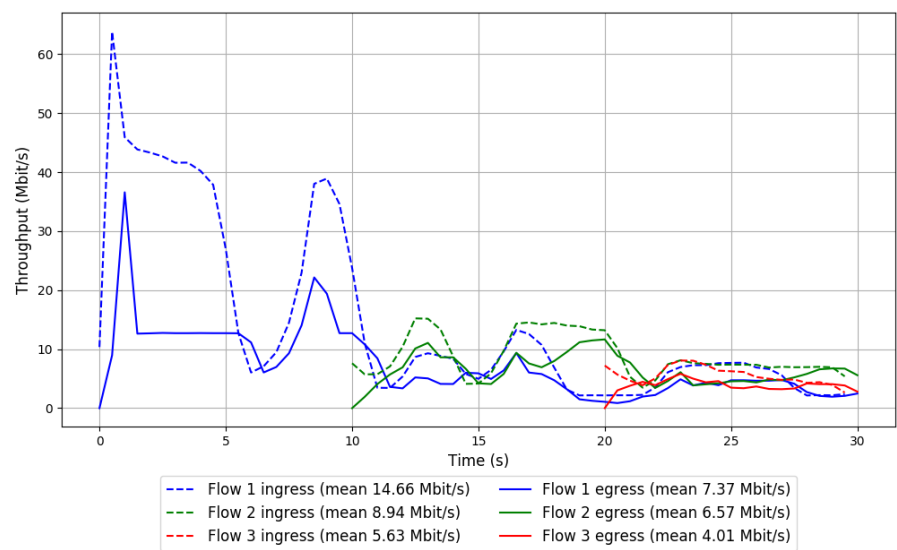Flow 1 (95th percentile 66.15 ms)   Flow 2 (95th percentile 67.84 ms)   Flow 3 (95th percentile 69.39 ms)

```
Run 4: Statistics of PCC-Allegro

Start at: 2018-12-02 05:58:03
End at: 2018-12-02 05:58:33
Local clock offset: 0.056 ms
Remote clock offset: -2.826 ms


# Below is generated by plot.py at 2018-12-02 06:46:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.21 Mbit/s
95th percentile per-packet one-way delay: 65.961 ms
Loss rate: 4.45%
-- Flow 1:
Average throughput: 77.81 Mbit/s
95th percentile per-packet one-way delay: 65.830 ms
Loss rate: 4.42%
-- Flow 2:
Average throughput: 13.92 Mbit/s
95th percentile per-packet one-way delay: 67.627 ms
Loss rate: 5.48%
-- Flow 3:
Average throughput: 15.60 Mbit/s
95th percentile per-packet one-way delay: 60.879 ms
Loss rate: 3.03%
```

Run 4: Report of PCC-Allegro — Data Link

- - - Flow 1 ingress (mean 81.41 Mbit/s) —— Flow 1 egress (mean 77.81 Mbit/s)
- - - Flow 2 ingress (mean 14.72 Mbit/s) —— Flow 2 egress (mean 13.92 Mbit/s)
- - - Flow 3 ingress (mean 16.09 Mbit/s) —— Flow 3 egress (mean 15.60 Mbit/s)

- Flow 1 (95th percentile 65.83 ms) • Flow 2 (95th percentile 67.63 ms) • Flow 3 (95th percentile 60.88 ms)

```
Run 5: Statistics of PCC-Allegro

Start at: 2018-12-02 06:20:57
End at: 2018-12-02 06:21:27
Local clock offset: 0.236 ms
Remote clock offset: -2.834 ms


# Below is generated by plot.py at 2018-12-02 06:46:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.45 Mbit/s
95th percentile per-packet one-way delay: 38.719 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 80.36 Mbit/s
95th percentile per-packet one-way delay: 38.725 ms
Loss rate: 1.07%
-- Flow 2:
Average throughput: 11.51 Mbit/s
95th percentile per-packet one-way delay: 39.021 ms
Loss rate: 0.48%
-- Flow 3:
Average throughput: 10.41 Mbit/s
95th percentile per-packet one-way delay: 37.352 ms
Loss rate: 0.98%
```
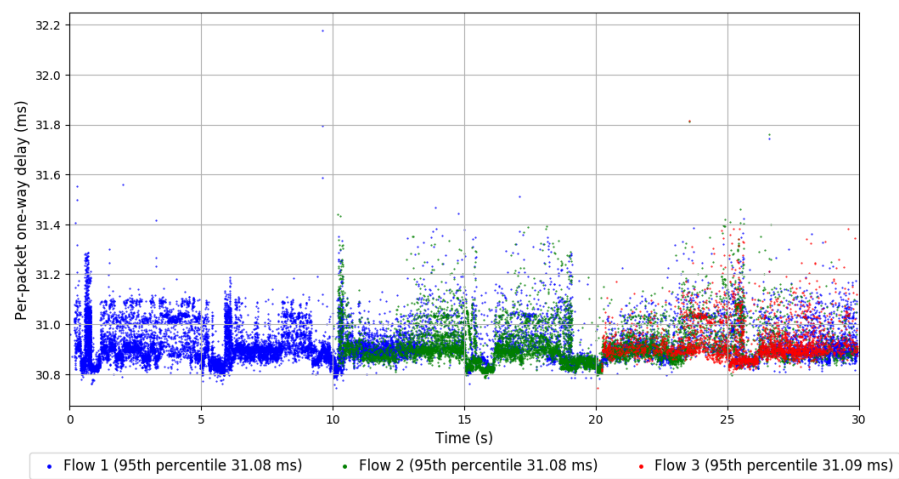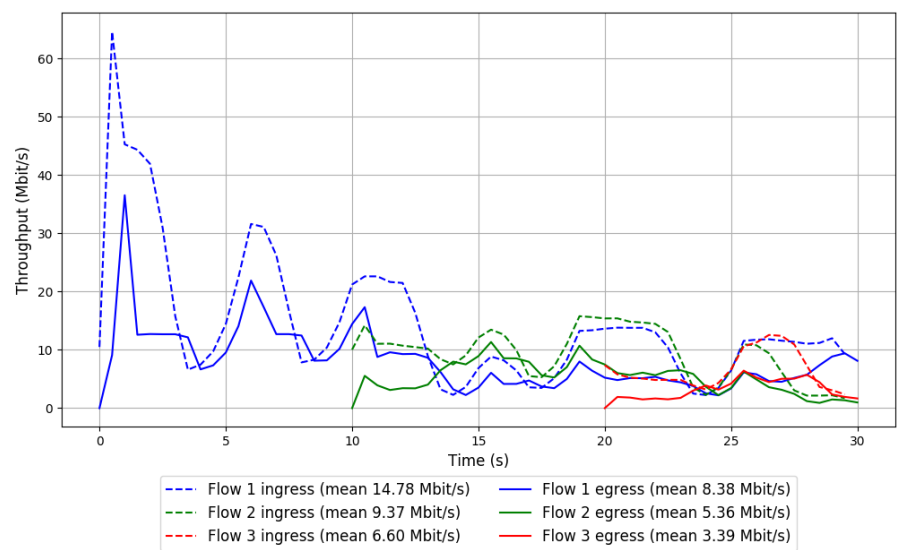
Run 5: Report of PCC-Allegro — Data Link

- - - Flow 1 ingress (mean 81.23 Mbit/s) —— Flow 1 egress (mean 80.36 Mbit/s)
- - - Flow 2 ingress (mean 11.57 Mbit/s) —— Flow 2 egress (mean 11.51 Mbit/s)
- - - Flow 3 ingress (mean 10.51 Mbit/s) —— Flow 3 egress (mean 10.41 Mbit/s)

• Flow 1 (95th percentile 38.73 ms)   • Flow 2 (95th percentile 39.02 ms)   • Flow 3 (95th percentile 37.35 ms)
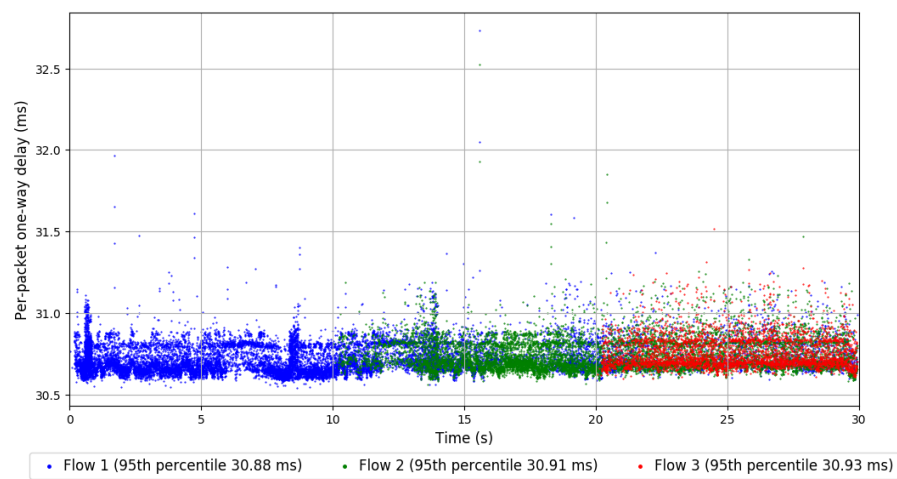
```
Run 1: Statistics of PCC-Expr

Start at: 2018-12-02 04:50:48
End at: 2018-12-02 04:51:18
Local clock offset: -0.072 ms
Remote clock offset: -4.225 ms


# Below is generated by plot.py at 2018-12-02 06:46:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.06 Mbit/s
95th percentile per-packet one-way delay: 30.832 ms
Loss rate: 41.88%
-- Flow 1:
Average throughput: 7.37 Mbit/s
95th percentile per-packet one-way delay: 30.805 ms
Loss rate: 49.74%
-- Flow 2:
Average throughput: 6.57 Mbit/s
95th percentile per-packet one-way delay: 30.841 ms
Loss rate: 26.57%
-- Flow 3:
Average throughput: 4.01 Mbit/s
95th percentile per-packet one-way delay: 30.892 ms
Loss rate: 28.85%
```
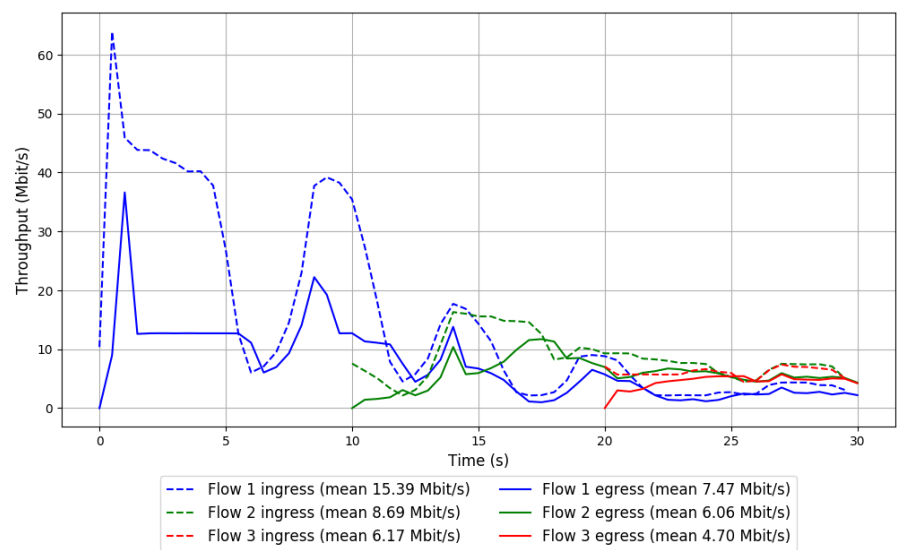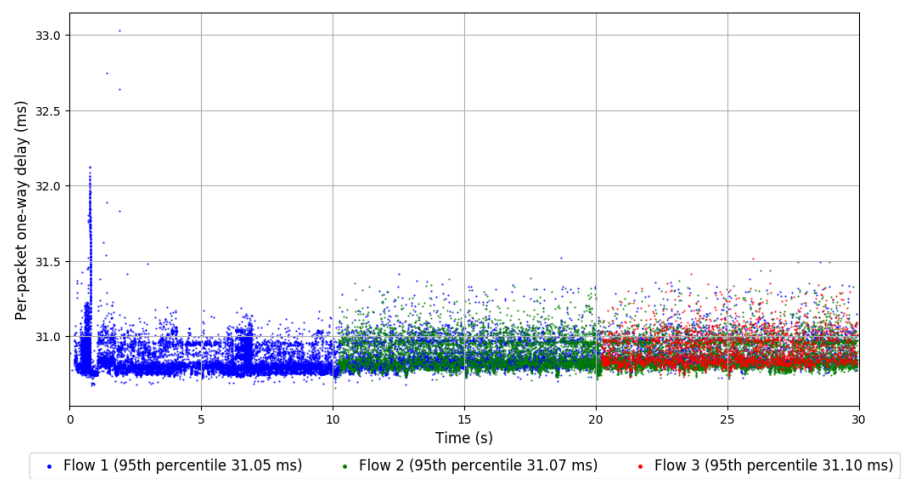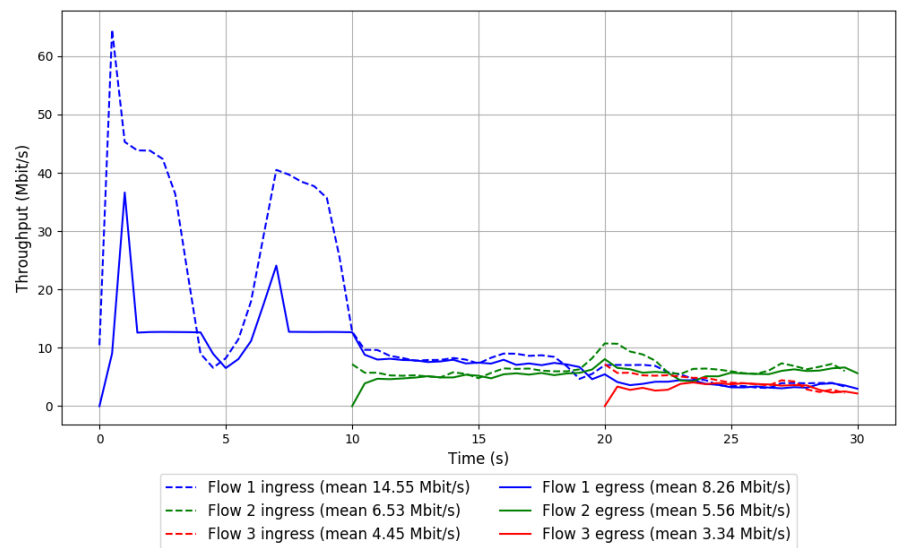
Run 1: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 14.66 Mbit/s)   Flow 1 egress (mean 7.37 Mbit/s)
Flow 2 ingress (mean 8.94 Mbit/s)   Flow 2 egress (mean 6.57 Mbit/s)
Flow 3 ingress (mean 5.63 Mbit/s)   Flow 3 egress (mean 4.01 Mbit/s)

Flow 1 (95th percentile 30.80 ms)   Flow 2 (95th percentile 30.84 ms)   Flow 3 (95th percentile 30.89 ms)

```
Run 2: Statistics of PCC-Expr

Start at: 2018-12-02 05:13:31
End at: 2018-12-02 05:14:01
Local clock offset: -0.055 ms
Remote clock offset: -3.366 ms


# Below is generated by plot.py at 2018-12-02 06:46:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.06 Mbit/s
95th percentile per-packet one-way delay: 31.078 ms
Loss rate: 43.66%
-- Flow 1:
Average throughput: 8.38 Mbit/s
95th percentile per-packet one-way delay: 31.076 ms
Loss rate: 43.32%
-- Flow 2:
Average throughput: 5.36 Mbit/s
95th percentile per-packet one-way delay: 31.079 ms
Loss rate: 42.73%
-- Flow 3:
Average throughput: 3.39 Mbit/s
95th percentile per-packet one-way delay: 31.090 ms
Loss rate: 48.66%
```
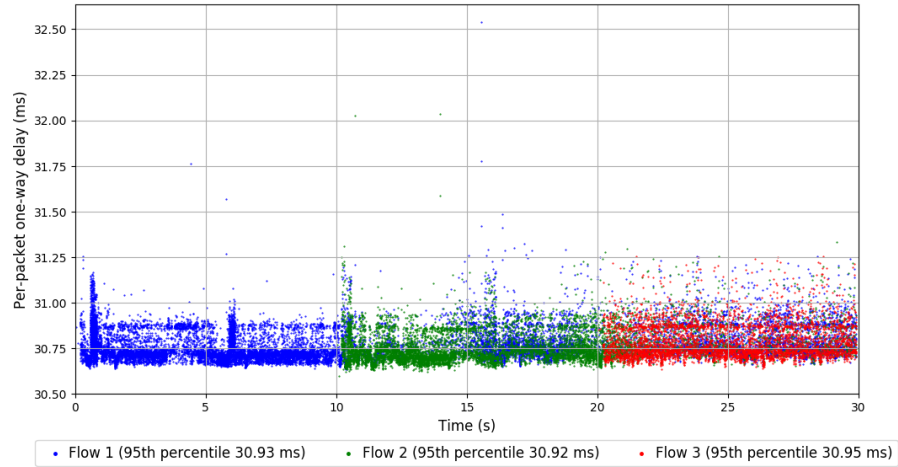
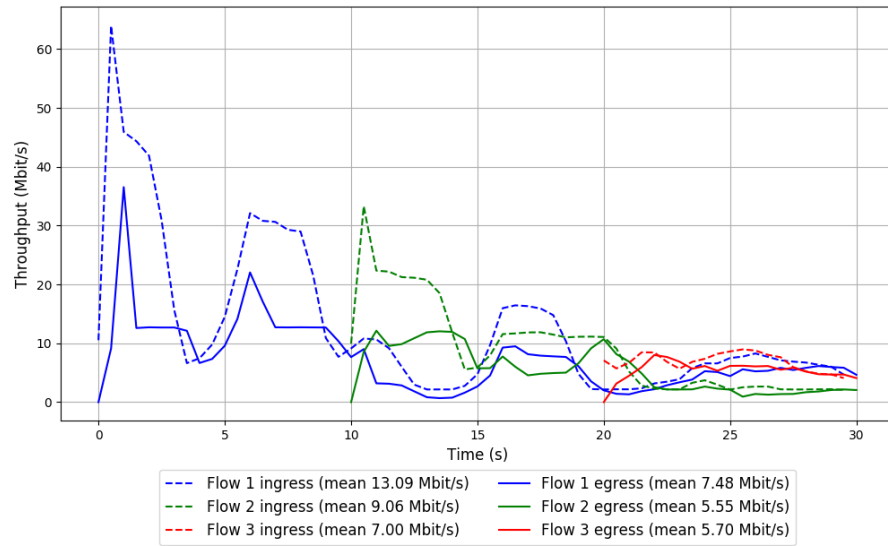Run 2: Report of PCC-Expr — Data Link

```
Run 3: Statistics of PCC-Expr

Start at: 2018-12-02 05:36:26
End at: 2018-12-02 05:36:56
Local clock offset: -0.099 ms
Remote clock offset: -3.099 ms


# Below is generated by plot.py at 2018-12-02 06:46:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.06 Mbit/s
95th percentile per-packet one-way delay: 30.892 ms
Loss rate: 43.74%
-- Flow 1:
Average throughput: 7.47 Mbit/s
95th percentile per-packet one-way delay: 30.877 ms
Loss rate: 51.45%
-- Flow 2:
Average throughput: 6.06 Mbit/s
95th percentile per-packet one-way delay: 30.907 ms
Loss rate: 30.27%
-- Flow 3:
Average throughput: 4.70 Mbit/s
95th percentile per-packet one-way delay: 30.933 ms
Loss rate: 23.78%
```

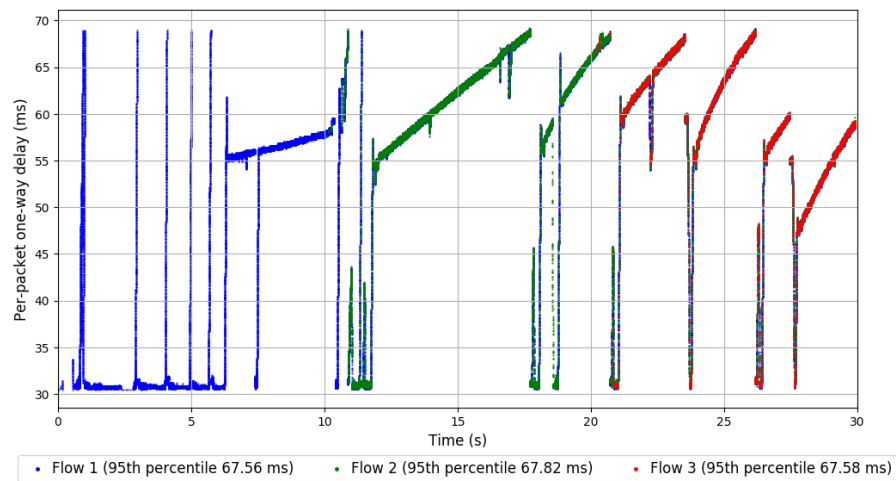Run 3: Report of PCC-Expr — Data Link

```
Run 4: Statistics of PCC-Expr

Start at: 2018-12-02 05:59:14
End at: 2018-12-02 05:59:44
Local clock offset: 0.074 ms
Remote clock offset: -2.872 ms


# Below is generated by plot.py at 2018-12-02 06:46:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.06 Mbit/s
95th percentile per-packet one-way delay: 31.063 ms
Loss rate: 35.86%
-- Flow 1:
Average throughput: 8.26 Mbit/s
95th percentile per-packet one-way delay: 31.049 ms
Loss rate: 43.22%
-- Flow 2:
Average throughput: 5.56 Mbit/s
95th percentile per-packet one-way delay: 31.067 ms
Loss rate: 14.96%
-- Flow 3:
Average throughput: 3.34 Mbit/s
95th percentile per-packet one-way delay: 31.104 ms
Loss rate: 24.86%
```
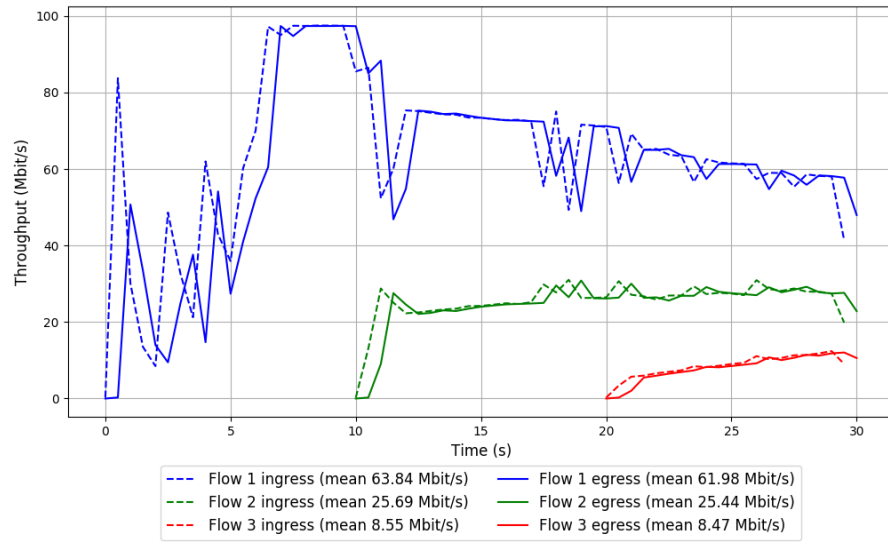
Run 4: Report of PCC-Expr — Data Link

- Flow 1 ingress (mean 14.55 Mbit/s)
- Flow 2 ingress (mean 6.53 Mbit/s)
- Flow 3 ingress (mean 4.45 Mbit/s)
- Flow 1 egress (mean 8.26 Mbit/s)
- Flow 2 egress (mean 5.56 Mbit/s)
- Flow 3 egress (mean 3.34 Mbit/s)

- Flow 1 (95th percentile 31.05 ms)
- Flow 2 (95th percentile 31.07 ms)
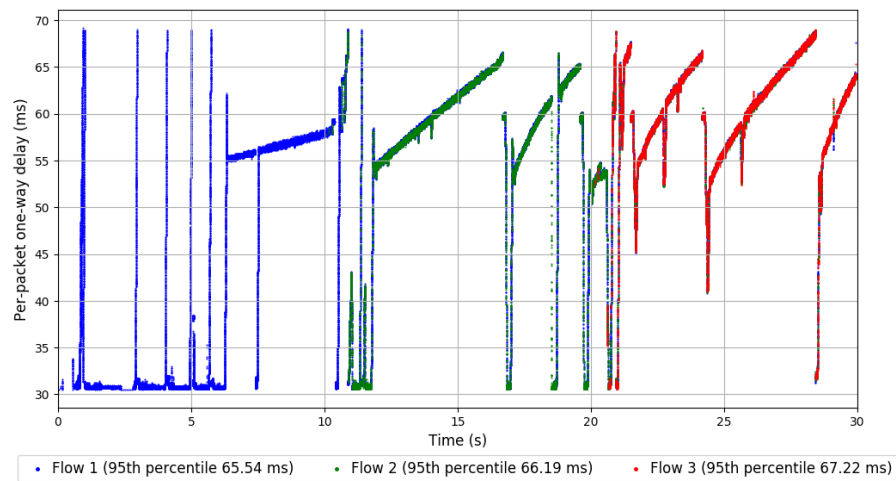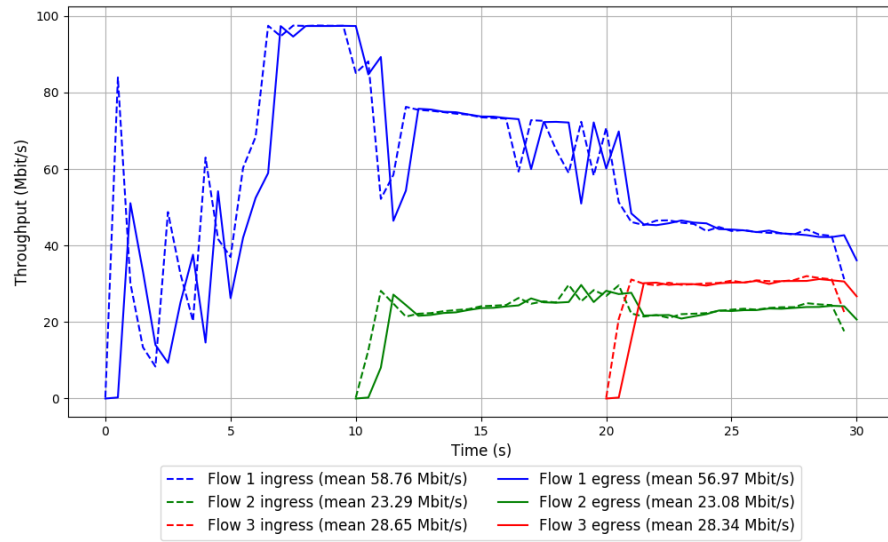- Flow 3 (95th percentile 31.10 ms)

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```
Run 5: Statistics of PCC-Expr

Start at: 2018-12-02 06:22:10
End at: 2018-12-02 06:22:40
Local clock offset: 0.213 ms
Remote clock offset: -2.823 ms


# Below is generated by plot.py at 2018-12-02 06:46:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.06 Mbit/s
95th percentile per-packet one-way delay: 30.931 ms
Loss rate: 39.06%
-- Flow 1:
Average throughput: 7.48 Mbit/s
95th percentile per-packet one-way delay: 30.929 ms
Loss rate: 42.84%
-- Flow 2:
Average throughput: 5.55 Mbit/s
95th percentile per-packet one-way delay: 30.923 ms
Loss rate: 38.72%
-- Flow 3:
Average throughput: 5.70 Mbit/s
95th percentile per-packet one-way delay: 30.955 ms
Loss rate: 18.52%
```

Run 5: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 13.09 Mbit/s)   Flow 1 egress (mean 7.48 Mbit/s)
Flow 2 ingress (mean 9.06 Mbit/s)   Flow 2 egress (mean 5.55 Mbit/s)
Flow 3 ingress (mean 7.00 Mbit/s)   Flow 3 egress (mean 5.70 Mbit/s)

Flow 1 (95th percentile 30.93 ms)   Flow 2 (95th percentile 30.92 ms)   Flow 3 (95th percentile 30.95 ms)
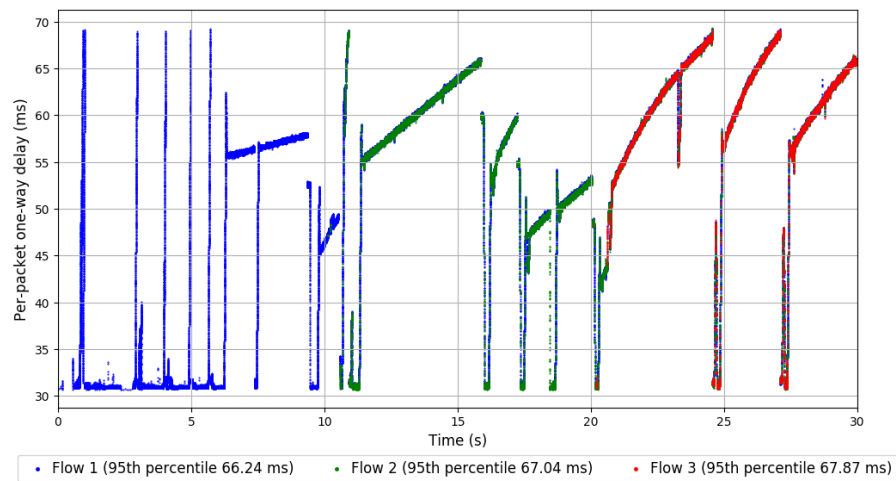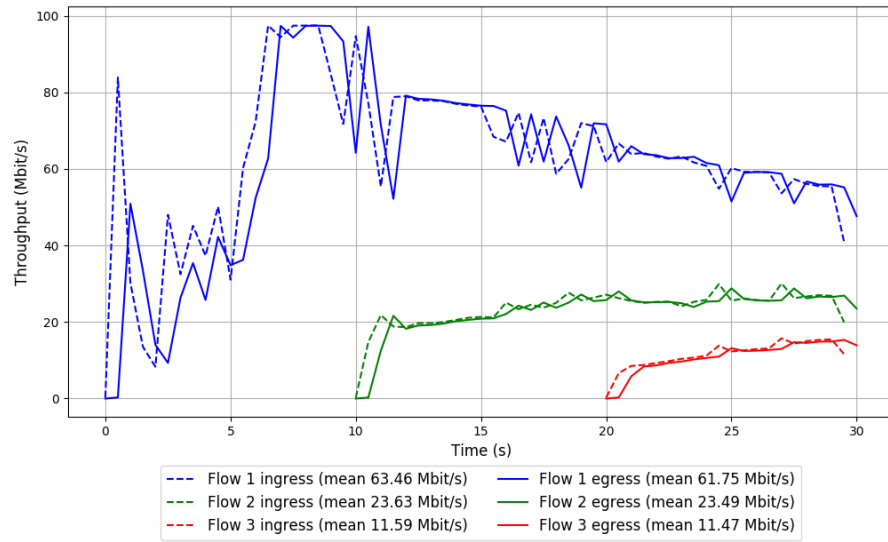
```
Run 1: Statistics of QUIC Cubic

Start at: 2018-12-02 05:00:17
End at: 2018-12-02 05:00:47
Local clock offset: -0.114 ms
Remote clock offset: -3.938 ms

# Below is generated by plot.py at 2018-12-02 06:46:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.64 Mbit/s
95th percentile per-packet one-way delay: 67.618 ms
Loss rate: 2.39%
-- Flow 1:
Average throughput: 61.98 Mbit/s
95th percentile per-packet one-way delay: 67.561 ms
Loss rate: 2.82%
-- Flow 2:
Average throughput: 25.44 Mbit/s
95th percentile per-packet one-way delay: 67.824 ms
Loss rate: 0.97%
-- Flow 3:
Average throughput: 8.47 Mbit/s
95th percentile per-packet one-way delay: 67.578 ms
Loss rate: 1.03%
```
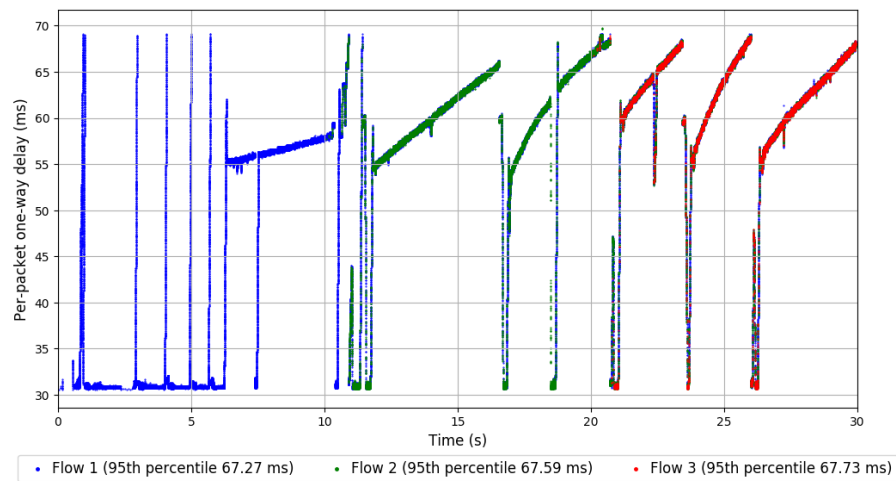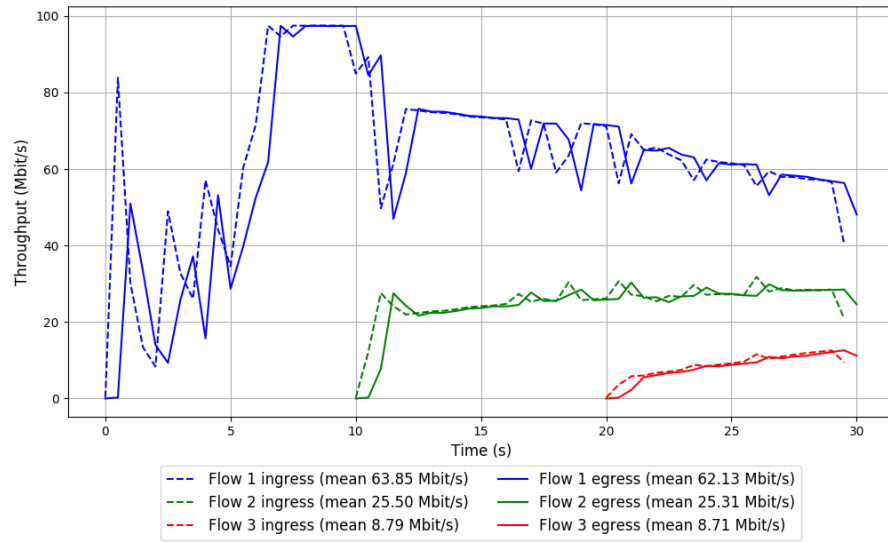
Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2018-12-02 05:23:03
End at: 2018-12-02 05:23:33
Local clock offset: -0.081 ms
Remote clock offset: -3.324 ms


# Below is generated by plot.py at 2018-12-02 06:46:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.63 Mbit/s
95th percentile per-packet one-way delay: 65.979 ms
Loss rate: 2.32%
-- Flow 1:
Average throughput: 56.97 Mbit/s
95th percentile per-packet one-way delay: 65.538 ms
Loss rate: 2.92%
-- Flow 2:
Average throughput: 23.08 Mbit/s
95th percentile per-packet one-way delay: 66.188 ms
Loss rate: 0.88%
-- Flow 3:
Average throughput: 28.34 Mbit/s
95th percentile per-packet one-way delay: 67.219 ms
Loss rate: 0.95%
```

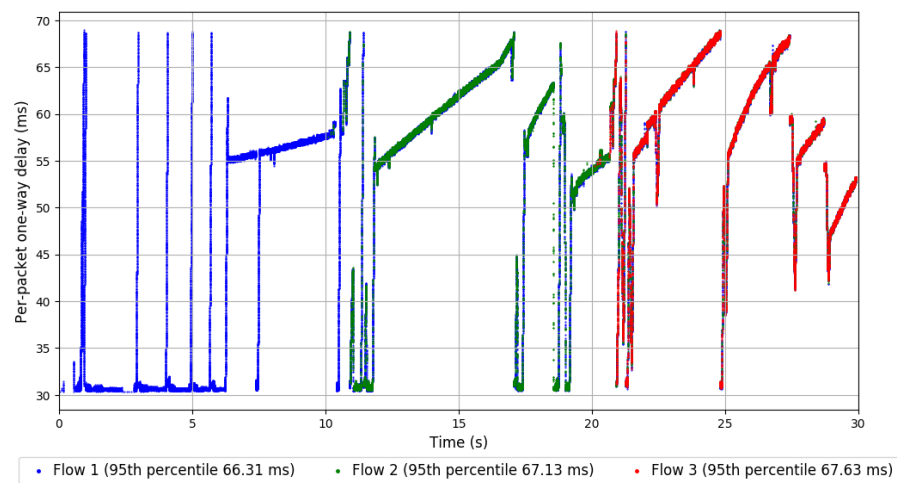Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2018-12-02 05:45:57
End at: 2018-12-02 05:46:27
Local clock offset: -0.045 ms
Remote clock offset: -2.856 ms


# Below is generated by plot.py at 2018-12-02 06:46:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.14 Mbit/s
95th percentile per-packet one-way delay: 66.649 ms
Loss rate: 2.10%
-- Flow 1:
Average throughput: 61.75 Mbit/s
95th percentile per-packet one-way delay: 66.244 ms
Loss rate: 2.57%
-- Flow 2:
Average throughput: 23.49 Mbit/s
95th percentile per-packet one-way delay: 67.037 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 11.47 Mbit/s
95th percentile per-packet one-way delay: 67.868 ms
Loss rate: 0.84%
```
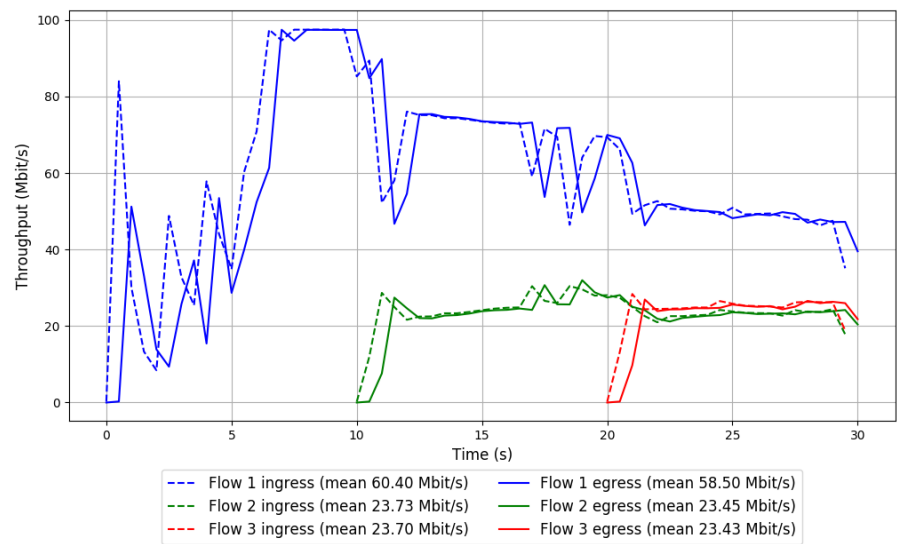
Run 3: Report of QUIC Cubic — Data Link

```
Run 4: Statistics of QUIC Cubic

Start at: 2018-12-02 06:08:45
End at: 2018-12-02 06:09:15
Local clock offset: 0.18 ms
Remote clock offset: -2.874 ms


# Below is generated by plot.py at 2018-12-02 06:46:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.79 Mbit/s
95th percentile per-packet one-way delay: 67.360 ms
Loss rate: 2.13%
-- Flow 1:
Average throughput: 62.13 Mbit/s
95th percentile per-packet one-way delay: 67.265 ms
Loss rate: 2.57%
-- Flow 2:
Average throughput: 25.31 Mbit/s
95th percentile per-packet one-way delay: 67.588 ms
Loss rate: 0.69%
-- Flow 3:
Average throughput: 8.71 Mbit/s
95th percentile per-packet one-way delay: 67.732 ms
Loss rate: 0.97%
```
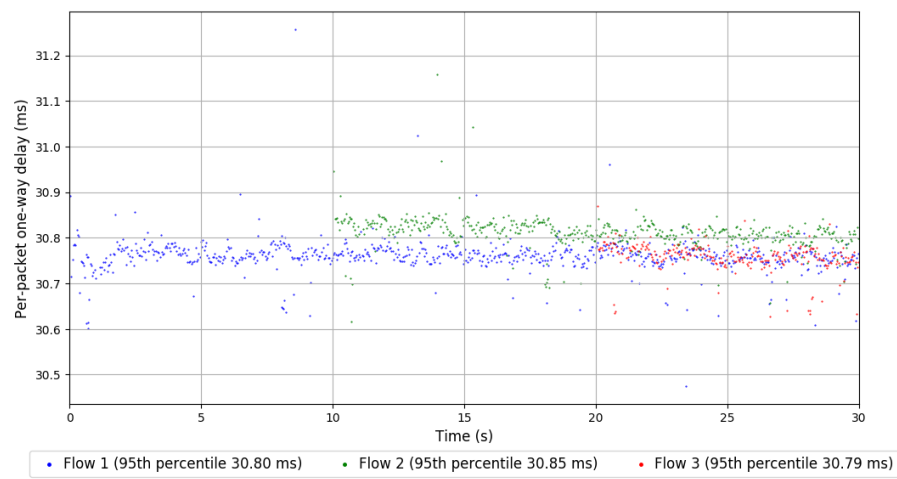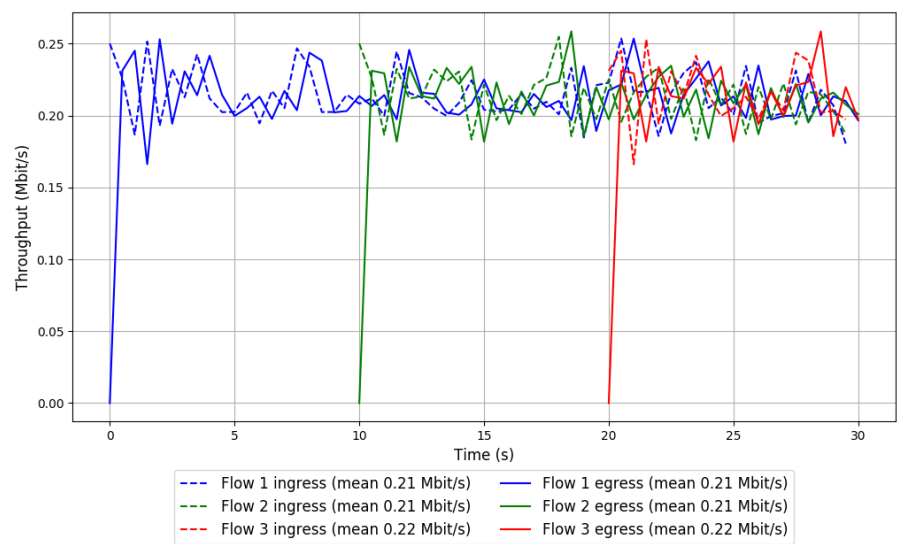
Run 4: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 63.85 Mbit/s) --- Flow 1 egress (mean 62.13 Mbit/s)
Flow 2 ingress (mean 25.50 Mbit/s) --- Flow 2 egress (mean 25.31 Mbit/s)
Flow 3 ingress (mean 8.79 Mbit/s) --- Flow 3 egress (mean 8.71 Mbit/s)

Flow 1 (95th percentile 67.27 ms)   Flow 2 (95th percentile 67.59 ms)   Flow 3 (95th percentile 67.73 ms)
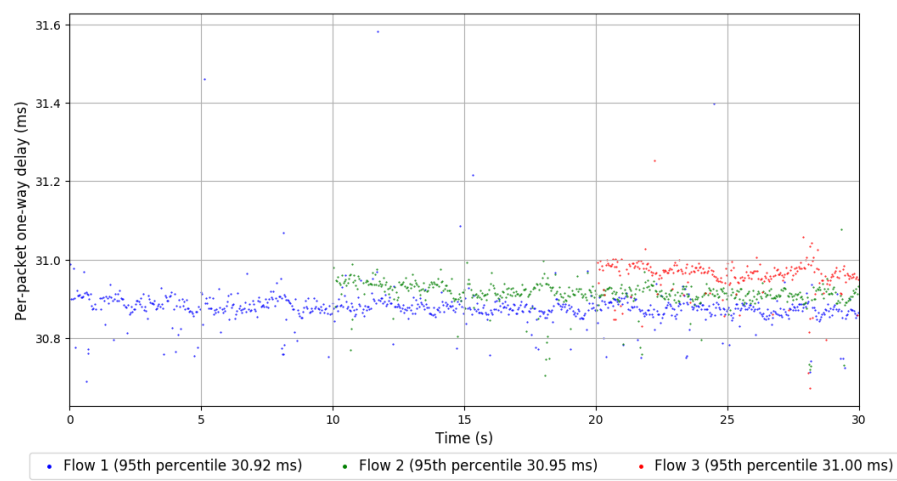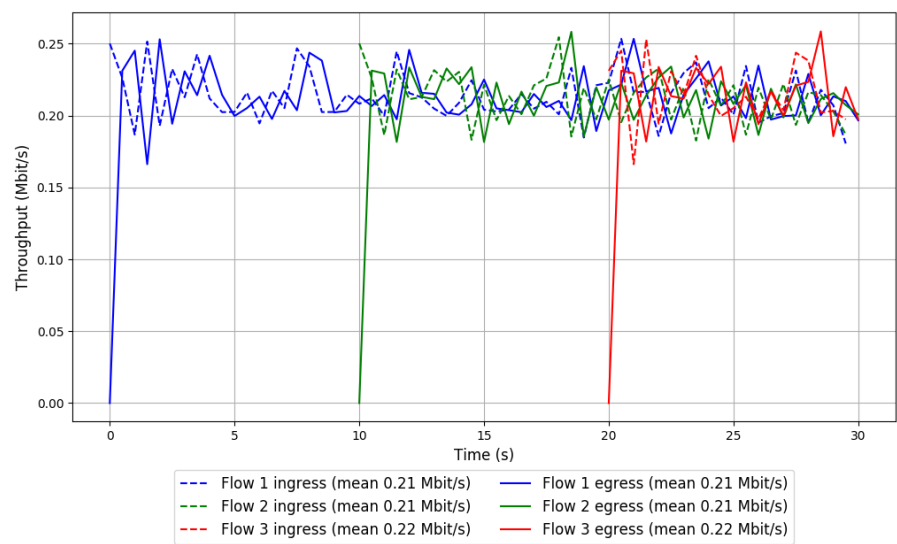
```
Run 5: Statistics of QUIC Cubic

Start at: 2018-12-02 06:31:51
End at: 2018-12-02 06:32:21
Local clock offset: 0.139 ms
Remote clock offset: -2.925 ms


# Below is generated by plot.py at 2018-12-02 06:46:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.77 Mbit/s
95th percentile per-packet one-way delay: 66.749 ms
Loss rate: 2.54%
-- Flow 1:
Average throughput: 58.50 Mbit/s
95th percentile per-packet one-way delay: 66.313 ms
Loss rate: 3.07%
-- Flow 2:
Average throughput: 23.45 Mbit/s
95th percentile per-packet one-way delay: 67.127 ms
Loss rate: 1.22%
-- Flow 3:
Average throughput: 23.43 Mbit/s
95th percentile per-packet one-way delay: 67.631 ms
Loss rate: 1.15%
```

Run 5: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2018-12-02 05:05:08
End at: 2018-12-02 05:05:38
Local clock offset: -0.084 ms
Remote clock offset: -3.758 ms


# Below is generated by plot.py at 2018-12-02 06:46:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 30.837 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 30.797 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 30.846 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 30.792 ms
Loss rate: 0.00%
```
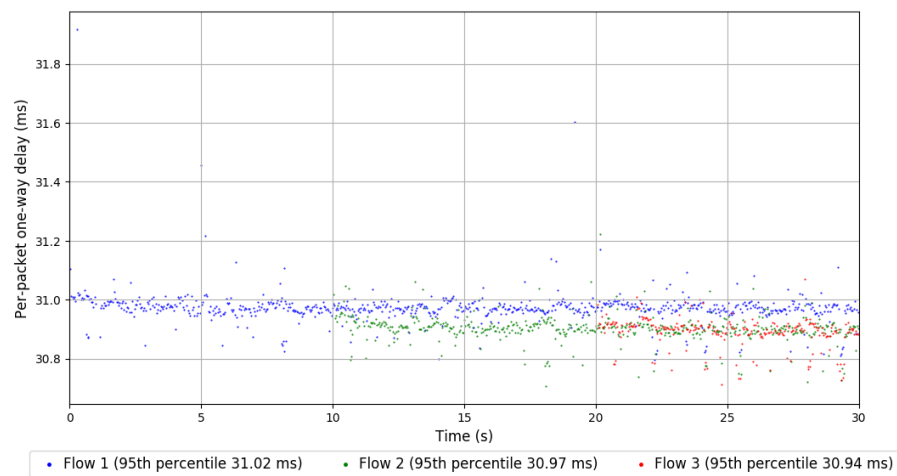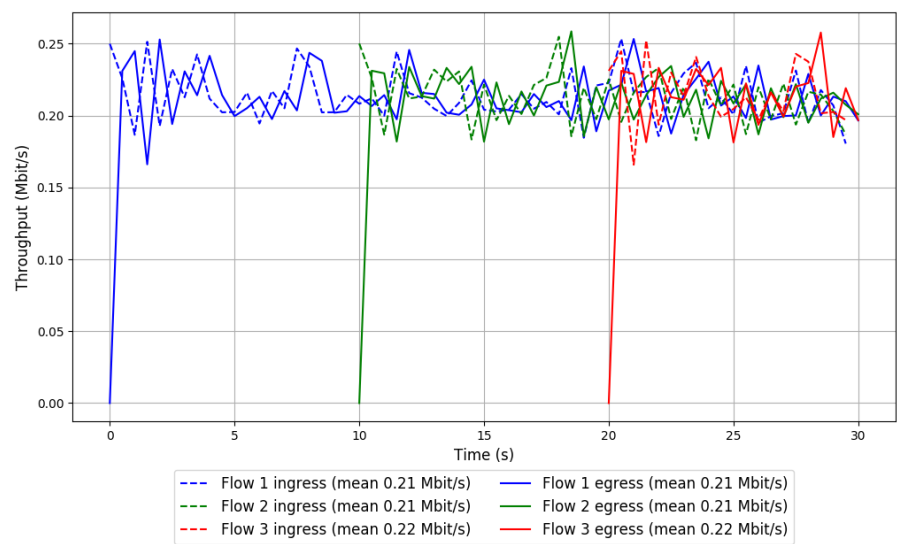
Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2018-12-02 05:27:56
End at: 2018-12-02 05:28:26
Local clock offset: -0.107 ms
Remote clock offset: -2.995 ms


# Below is generated by plot.py at 2018-12-02 06:46:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 30.980 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 30.916 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 30.954 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 30.999 ms
Loss rate: 0.00%
```
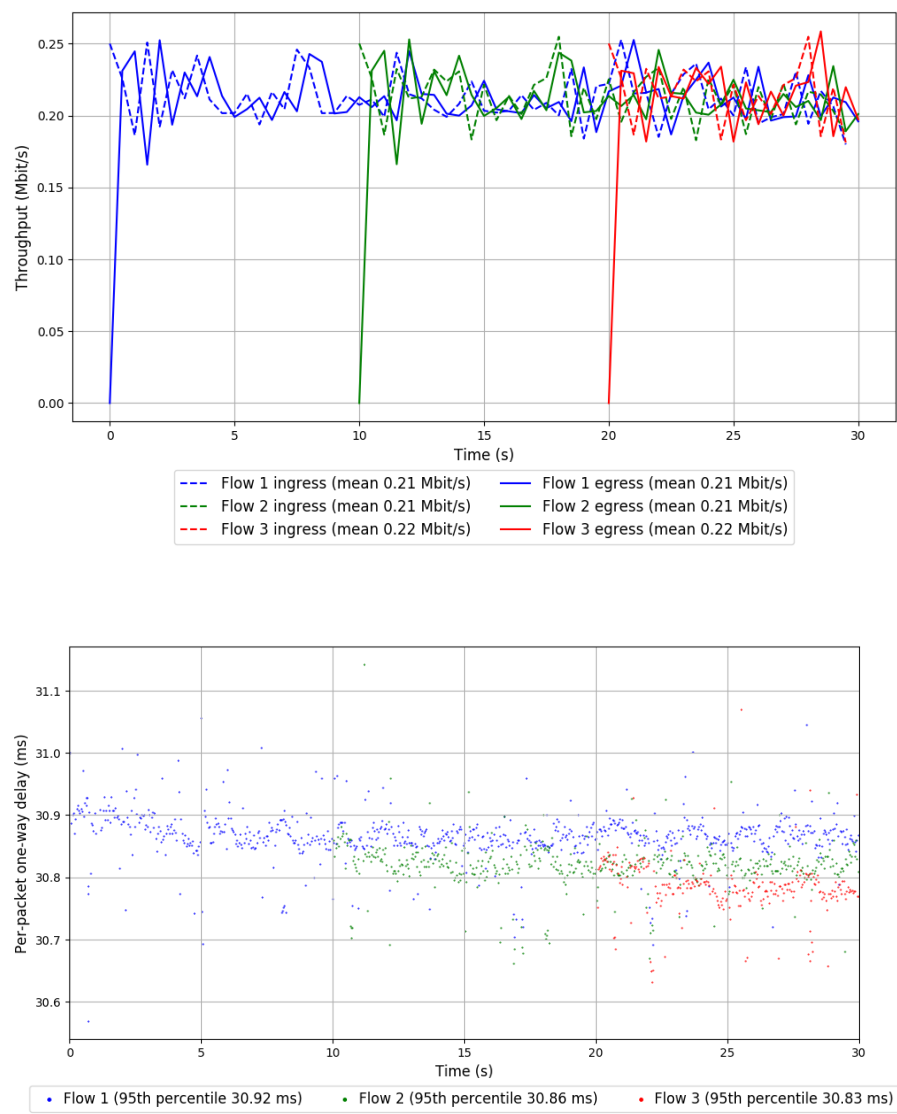
Run 2: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.21 Mbit/s)   Flow 1 egress (mean 0.21 Mbit/s)
Flow 2 ingress (mean 0.21 Mbit/s)   Flow 2 egress (mean 0.21 Mbit/s)
Flow 3 ingress (mean 0.22 Mbit/s)   Flow 3 egress (mean 0.22 Mbit/s)

Flow 1 (95th percentile 30.92 ms)   Flow 2 (95th percentile 30.95 ms)   Flow 3 (95th percentile 31.00 ms)

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```
Run 3: Statistics of SCReAM

Start at: 2018-12-02 05:50:52
End at: 2018-12-02 05:51:22
Local clock offset: 0.017 ms
Remote clock offset: -2.838 ms


# Below is generated by plot.py at 2018-12-02 06:46:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 31.005 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 31.015 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 30.969 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 30.944 ms
Loss rate: 0.00%
```
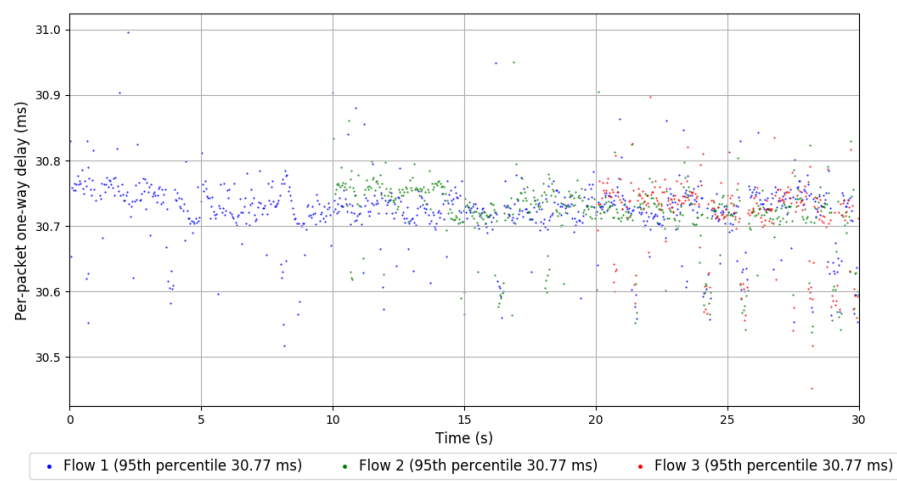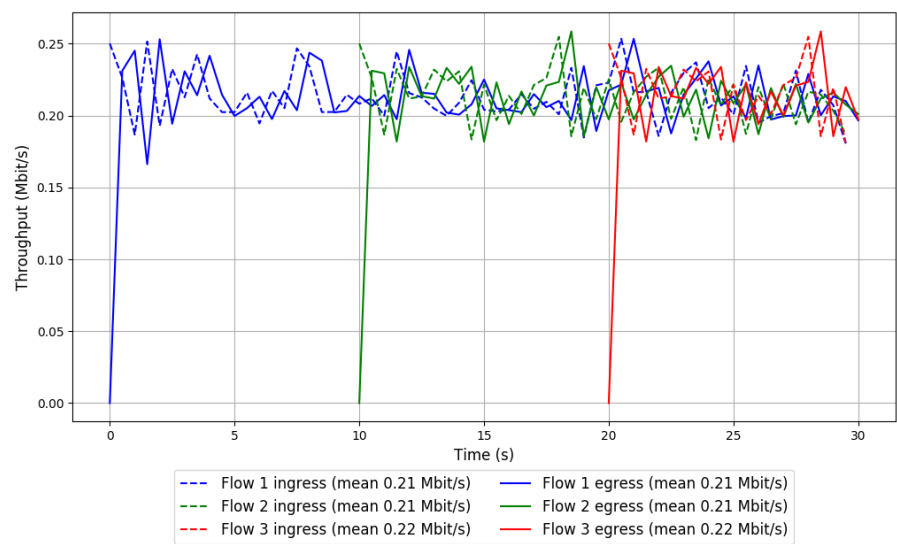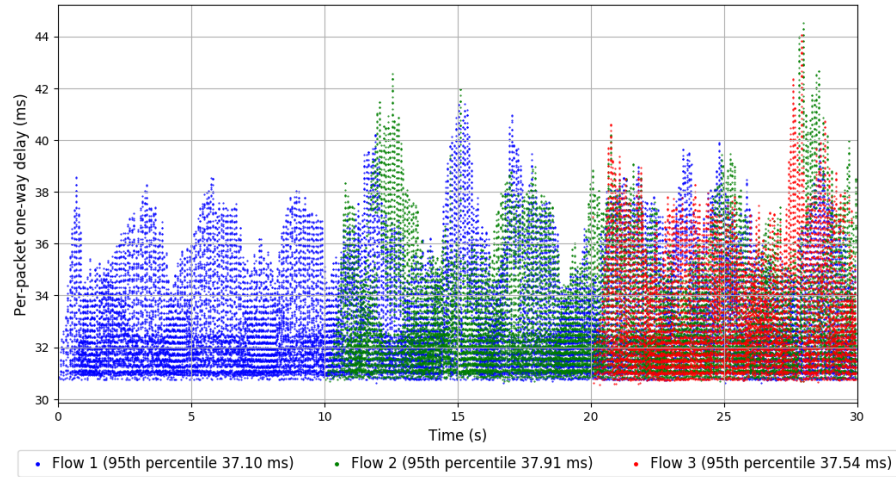
Run 3: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.21 Mbit/s) — Flow 1 egress (mean 0.21 Mbit/s)
Flow 2 ingress (mean 0.21 Mbit/s) — Flow 2 egress (mean 0.21 Mbit/s)
Flow 3 ingress (mean 0.22 Mbit/s) — Flow 3 egress (mean 0.22 Mbit/s)

Flow 1 (95th percentile 31.02 ms) • Flow 2 (95th percentile 30.97 ms) • Flow 3 (95th percentile 30.94 ms)

```
Run 4: Statistics of SCReAM

Start at: 2018-12-02 06:13:36
End at: 2018-12-02 06:14:06
Local clock offset: 0.236 ms
Remote clock offset: -2.845 ms


# Below is generated by plot.py at 2018-12-02 06:46:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 30.905 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 30.920 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 30.864 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 30.831 ms
Loss rate: 0.00%
```
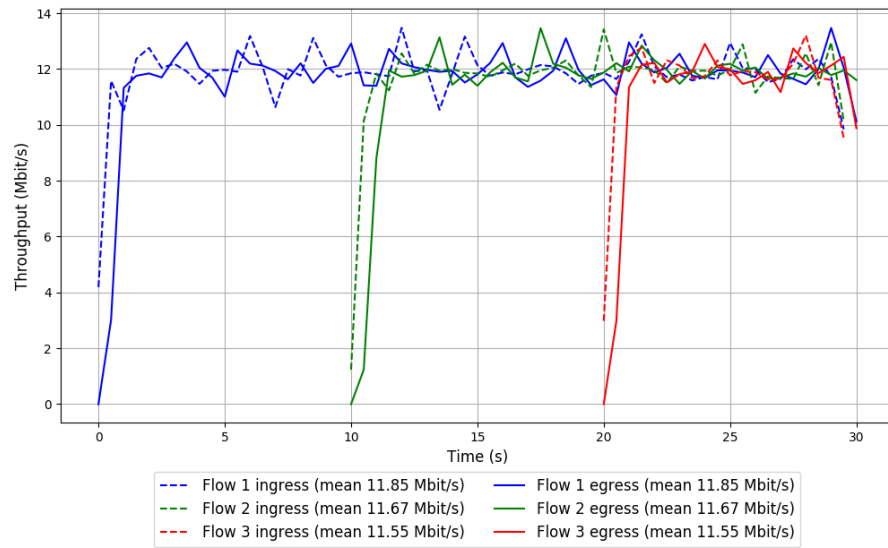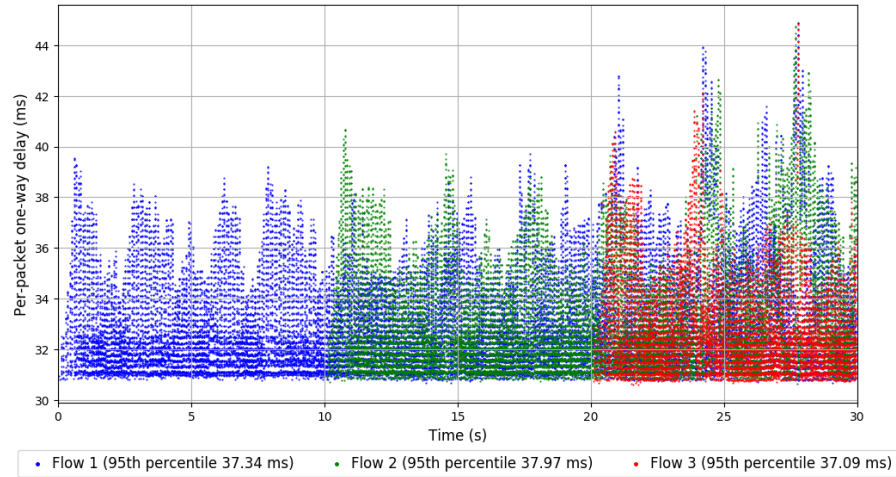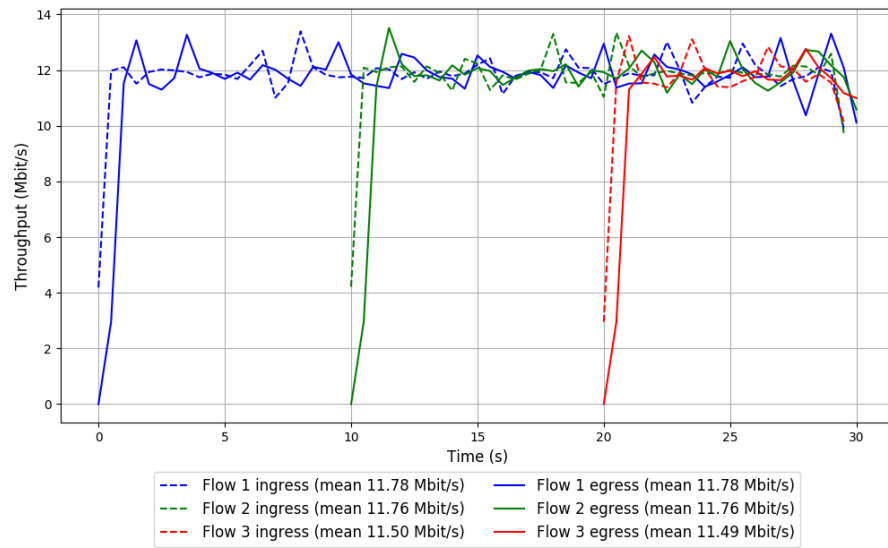
Run 4: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.21 Mbit/s)   Flow 1 egress (mean 0.21 Mbit/s)
Flow 2 ingress (mean 0.21 Mbit/s)   Flow 2 egress (mean 0.21 Mbit/s)
Flow 3 ingress (mean 0.22 Mbit/s)   Flow 3 egress (mean 0.22 Mbit/s)

Flow 1 (95th percentile 30.92 ms)   Flow 2 (95th percentile 30.86 ms)   Flow 3 (95th percentile 30.83 ms)

```
Run 5: Statistics of SCReAM

Start at: 2018-12-02 06:36:42
End at: 2018-12-02 06:37:12
Local clock offset: 0.128 ms
Remote clock offset: -2.877 ms


# Below is generated by plot.py at 2018-12-02 06:46:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 30.773 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 30.773 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 30.773 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 30.771 ms
Loss rate: 0.00%
```
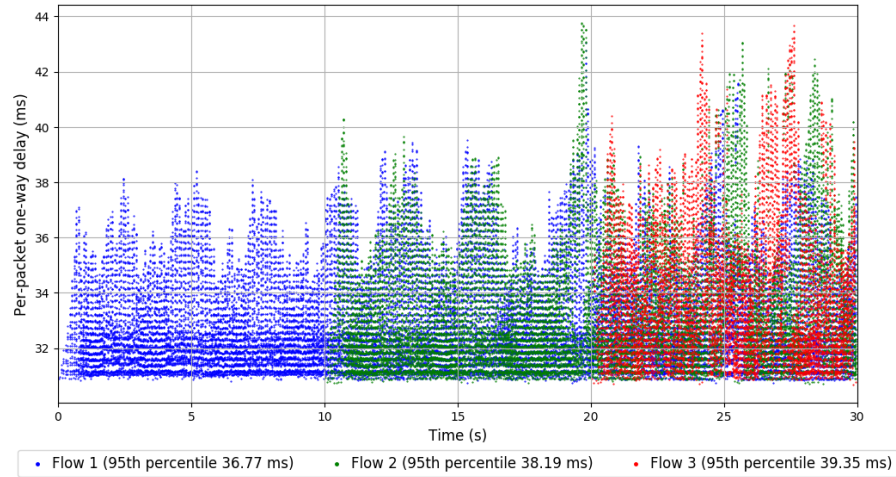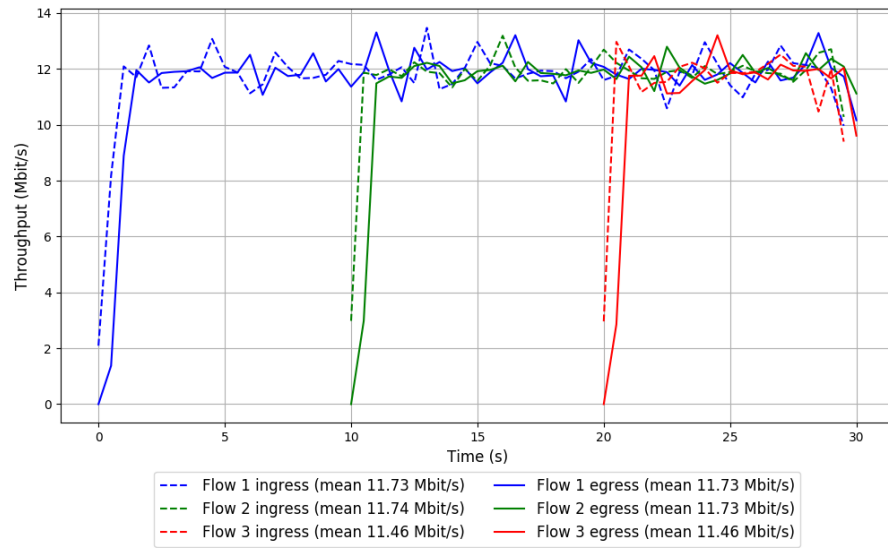
Run 5: Report of SCReAM — Data Link

```
Run 1: Statistics of Sprout

Start at: 2018-12-02 04:59:07
End at: 2018-12-02 04:59:38
Local clock offset: -0.111 ms
Remote clock offset: -3.849 ms


# Below is generated by plot.py at 2018-12-02 06:46:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.43 Mbit/s
95th percentile per-packet one-way delay: 37.443 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 11.85 Mbit/s
95th percentile per-packet one-way delay: 37.100 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 11.67 Mbit/s
95th percentile per-packet one-way delay: 37.909 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 11.55 Mbit/s
95th percentile per-packet one-way delay: 37.542 ms
Loss rate: 0.00%
```
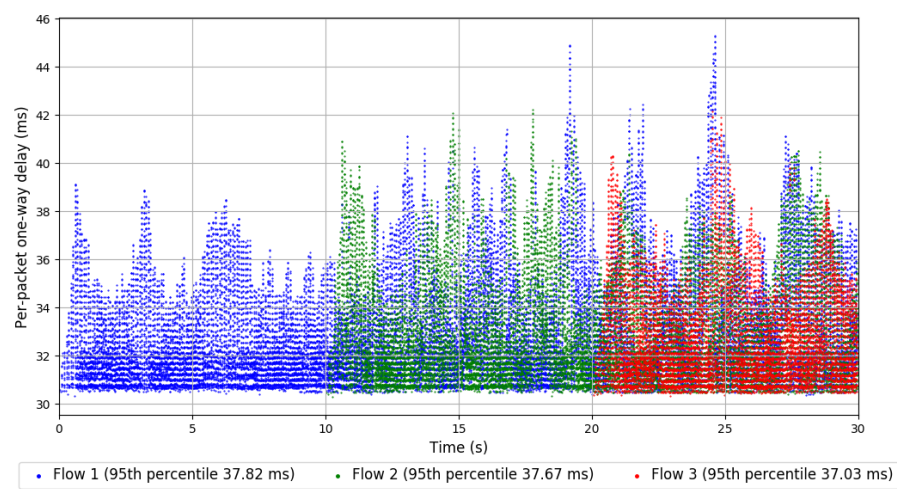
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2018-12-02 05:21:54
End at: 2018-12-02 05:22:24
Local clock offset: -0.071 ms
Remote clock offset: -3.152 ms


# Below is generated by plot.py at 2018-12-02 06:46:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.40 Mbit/s
95th percentile per-packet one-way delay: 37.562 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 11.78 Mbit/s
95th percentile per-packet one-way delay: 37.345 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 11.76 Mbit/s
95th percentile per-packet one-way delay: 37.972 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 11.49 Mbit/s
95th percentile per-packet one-way delay: 37.089 ms
Loss rate: 0.00%
```
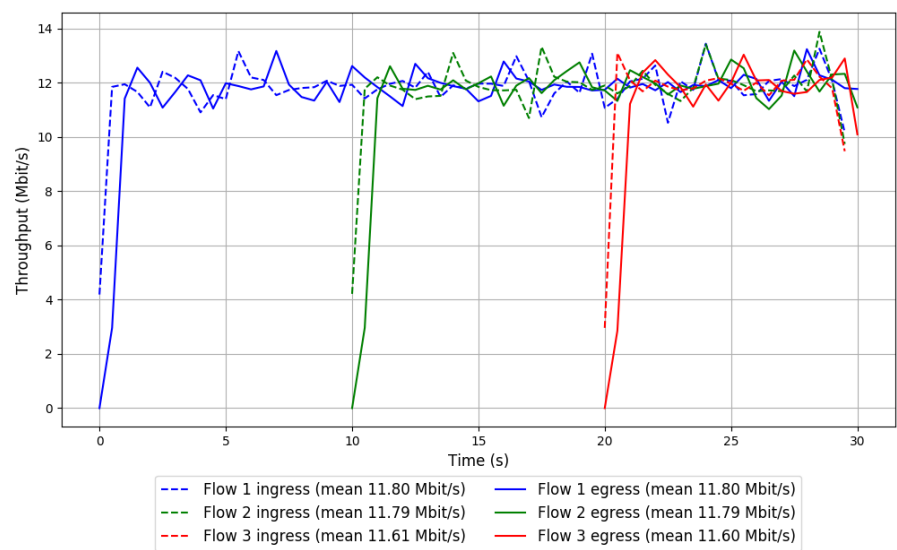
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2018-12-02 05:44:48
End at: 2018-12-02 05:45:18
Local clock offset: -0.049 ms
Remote clock offset: -2.845 ms


# Below is generated by plot.py at 2018-12-02 06:46:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.32 Mbit/s
95th percentile per-packet one-way delay: 37.697 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 11.73 Mbit/s
95th percentile per-packet one-way delay: 36.769 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 11.73 Mbit/s
95th percentile per-packet one-way delay: 38.193 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 11.46 Mbit/s
95th percentile per-packet one-way delay: 39.350 ms
Loss rate: 0.00%
```
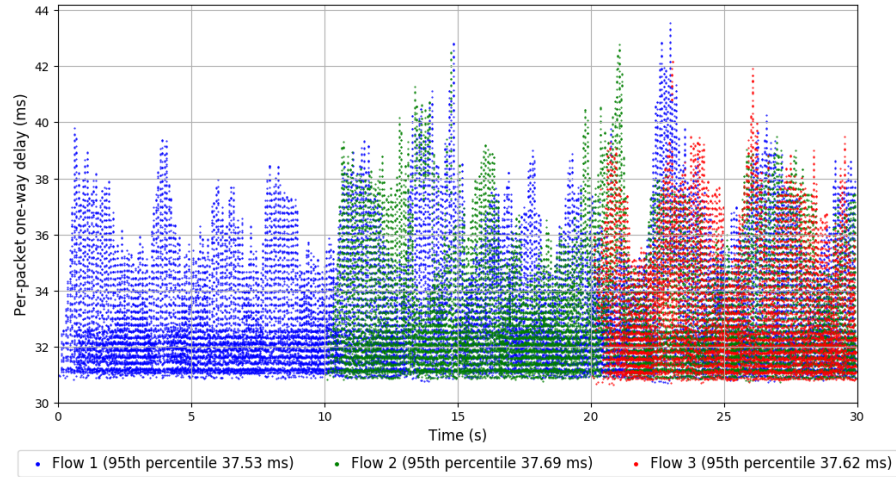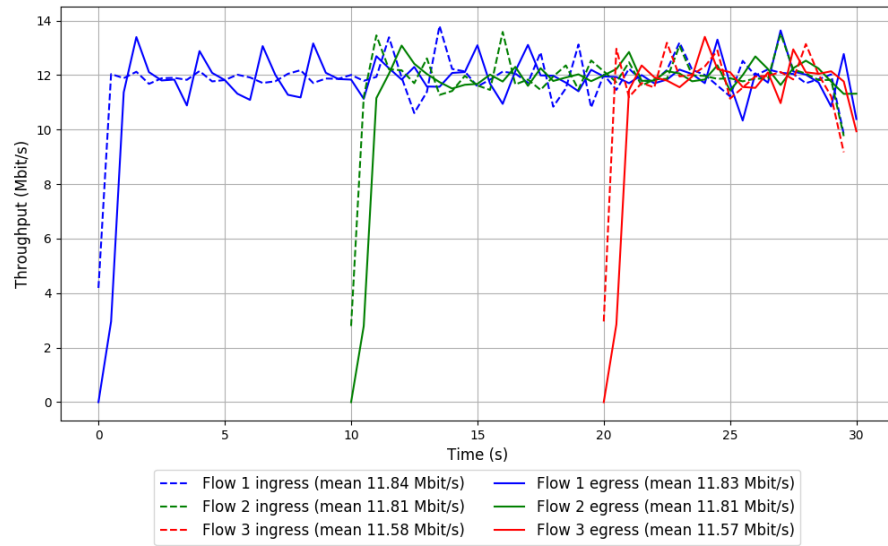
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2018-12-02 06:07:36
End at: 2018-12-02 06:08:06
Local clock offset: 0.162 ms
Remote clock offset: -3.096 ms


# Below is generated by plot.py at 2018-12-02 06:46:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.47 Mbit/s
95th percentile per-packet one-way delay: 37.670 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 11.80 Mbit/s
95th percentile per-packet one-way delay: 37.823 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 11.79 Mbit/s
95th percentile per-packet one-way delay: 37.672 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 11.60 Mbit/s
95th percentile per-packet one-way delay: 37.032 ms
Loss rate: 0.00%
```
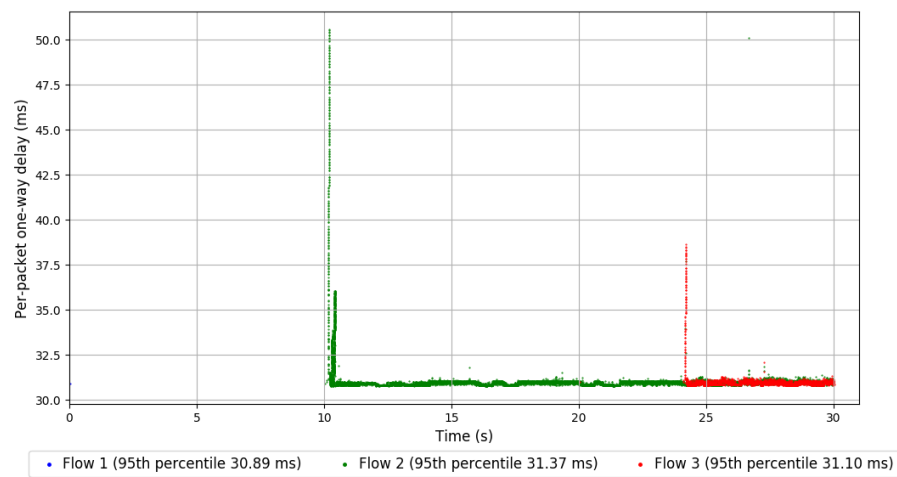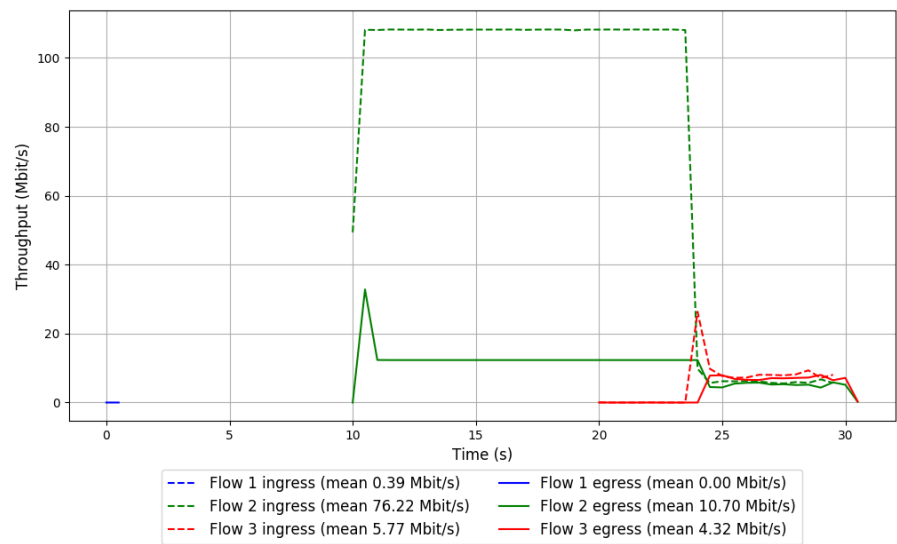
Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2018-12-02 06:30:41
End at: 2018-12-02 06:31:11
Local clock offset: 0.155 ms
Remote clock offset: -2.623 ms


# Below is generated by plot.py at 2018-12-02 06:46:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.51 Mbit/s
95th percentile per-packet one-way delay: 37.634 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 11.83 Mbit/s
95th percentile per-packet one-way delay: 37.528 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 11.81 Mbit/s
95th percentile per-packet one-way delay: 37.690 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 11.57 Mbit/s
95th percentile per-packet one-way delay: 37.619 ms
Loss rate: 0.06%
```
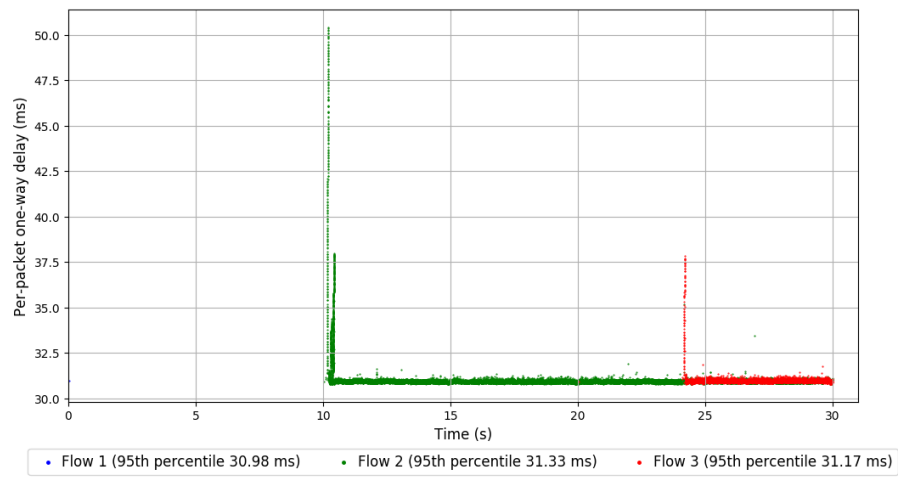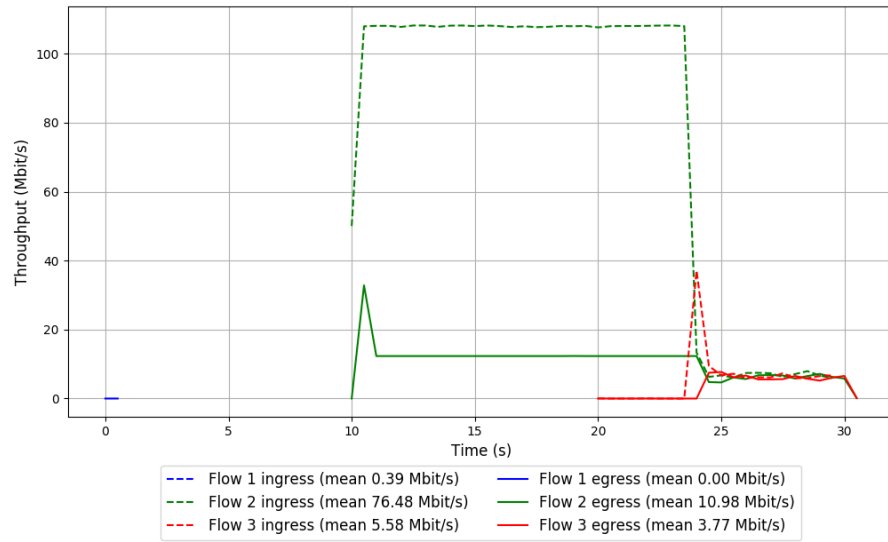
Run 5: Report of Sprout — Data Link

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

Start at: 2018-12-02 04:54:23
End at: 2018-12-02 04:54:53
Local clock offset: -0.092 ms
Remote clock offset: -3.933 ms

# Below is generated by plot.py at 2018-12-02 06:46:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.57 Mbit/s
95th percentile per-packet one-way delay: 31.204 ms
Loss rate: 83.74%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 30.894 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 10.70 Mbit/s
95th percentile per-packet one-way delay: 31.371 ms
Loss rate: 85.96%
-- Flow 3:
Average throughput: 4.32 Mbit/s
95th percentile per-packet one-way delay: 31.102 ms
Loss rate: 25.08%
```
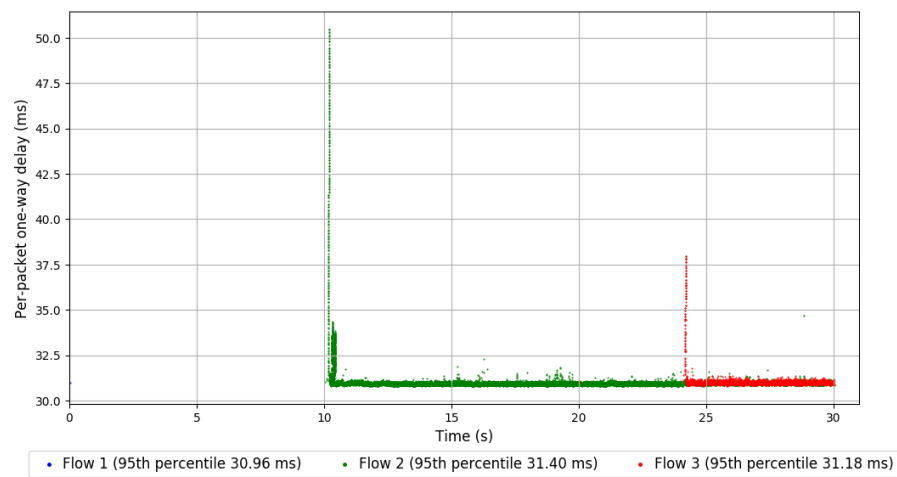
Run 1: Report of TaoVA-100x — Data Link

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

Start at: 2018-12-02 05:17:09
End at: 2018-12-02 05:17:39
Local clock offset: -0.036 ms
Remote clock offset: -3.269 ms

# Below is generated by plot.py at 2018-12-02 06:47:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.57 Mbit/s
95th percentile per-packet one-way delay: 31.238 ms
Loss rate: 83.78%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 30.978 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 10.98 Mbit/s
95th percentile per-packet one-way delay: 31.334 ms
Loss rate: 85.64%
-- Flow 3:
Average throughput: 3.77 Mbit/s
95th percentile per-packet one-way delay: 31.166 ms
Loss rate: 32.53%
```

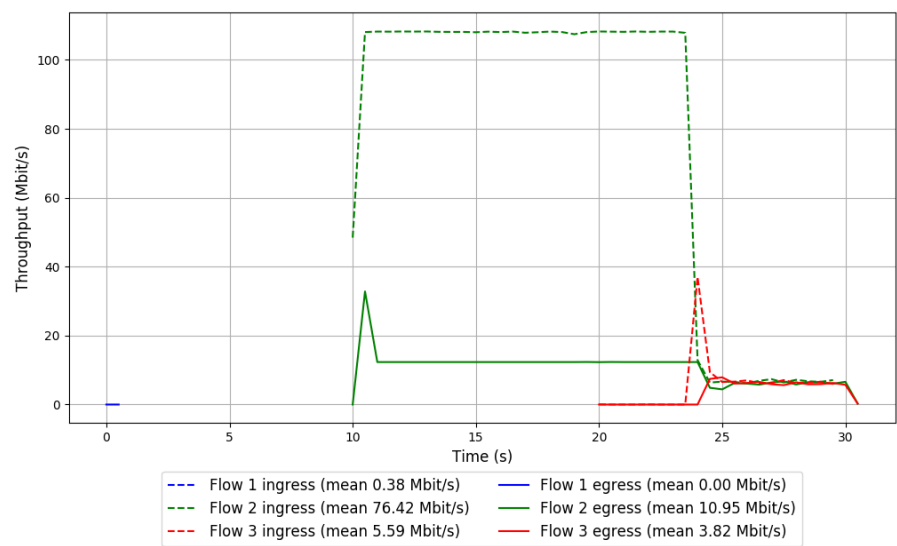## Run 2: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 0.39 Mbit/s)   Flow 1 egress (mean 0.00 Mbit/s)
Flow 2 ingress (mean 76.48 Mbit/s)   Flow 2 egress (mean 10.98 Mbit/s)
Flow 3 ingress (mean 5.58 Mbit/s)   Flow 3 egress (mean 3.77 Mbit/s)

Flow 1 (95th percentile 30.98 ms)   Flow 2 (95th percentile 31.33 ms)   Flow 3 (95th percentile 31.17 ms)
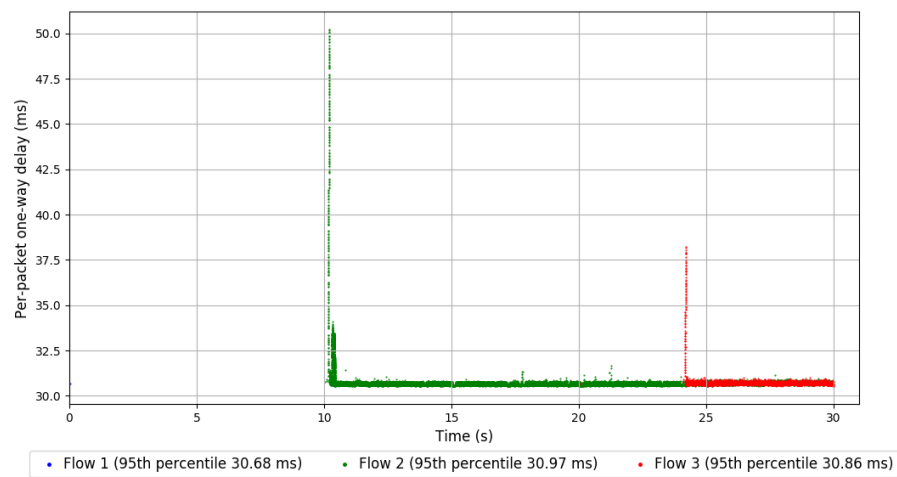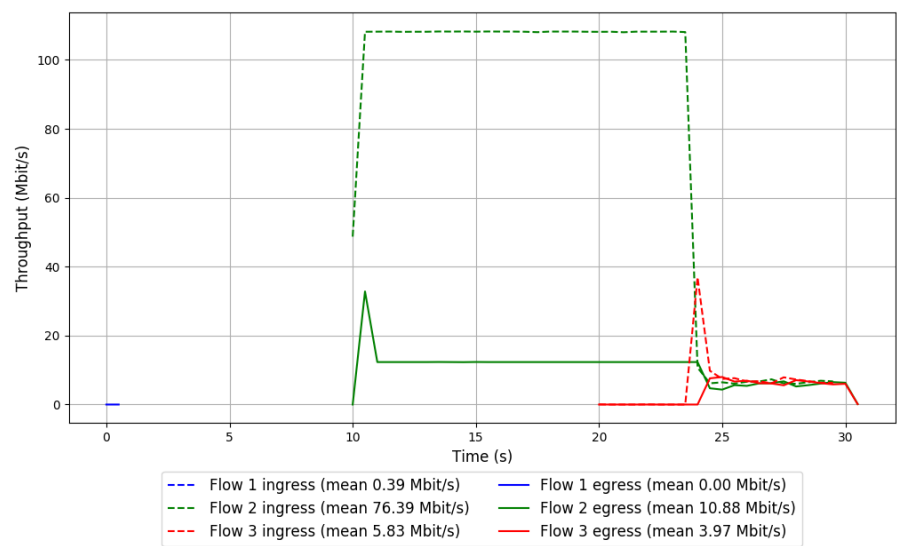
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```
Run 3: Statistics of TaoVA-100x

Start at: 2018-12-02 05:40:03
End at: 2018-12-02 05:40:33
Local clock offset: -0.072 ms
Remote clock offset: -2.856 ms


# Below is generated by plot.py at 2018-12-02 06:47:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.57 Mbit/s
95th percentile per-packet one-way delay: 31.296 ms
Loss rate: 83.77%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 30.964 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 10.95 Mbit/s
95th percentile per-packet one-way delay: 31.399 ms
Loss rate: 85.67%
-- Flow 3:
Average throughput: 3.82 Mbit/s
95th percentile per-packet one-way delay: 31.180 ms
Loss rate: 31.62%
```
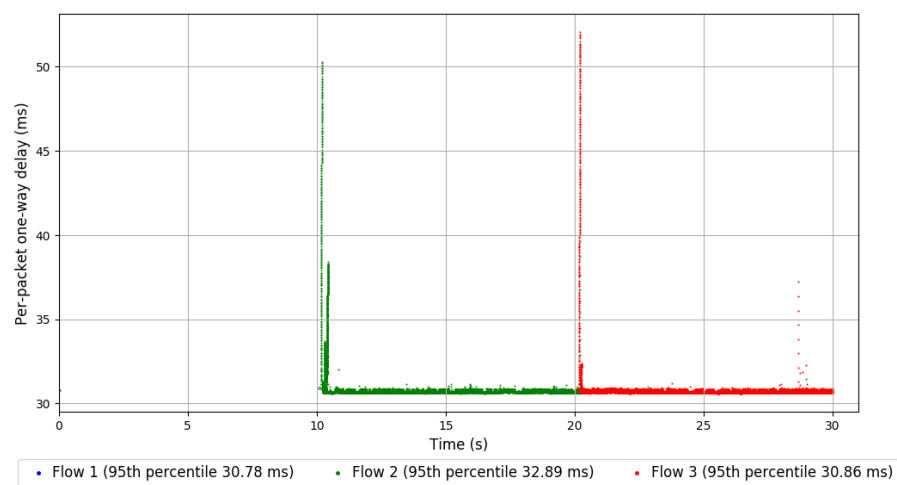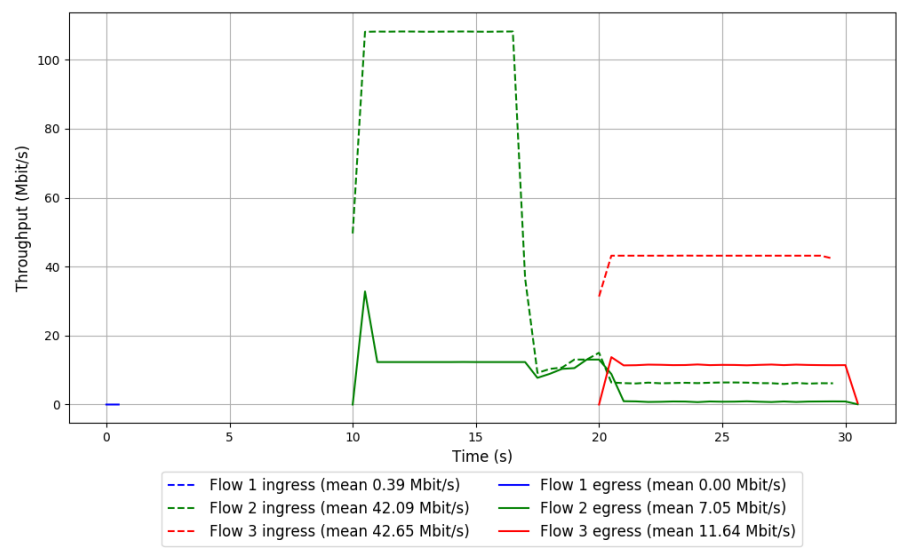
Run 3: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 0.38 Mbit/s) --- Flow 1 egress (mean 0.00 Mbit/s)
Flow 2 ingress (mean 76.42 Mbit/s) --- Flow 2 egress (mean 10.95 Mbit/s)
Flow 3 ingress (mean 5.59 Mbit/s) --- Flow 3 egress (mean 3.82 Mbit/s)

Flow 1 (95th percentile 30.96 ms) Flow 2 (95th percentile 31.40 ms) Flow 3 (95th percentile 31.18 ms)

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

Start at: 2018-12-02 06:02:50
End at: 2018-12-02 06:03:20
Local clock offset: 0.114 ms
Remote clock offset: -3.053 ms


# Below is generated by plot.py at 2018-12-02 06:47:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.57 Mbit/s
95th percentile per-packet one-way delay: 30.921 ms
Loss rate: 83.78%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 30.680 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 10.88 Mbit/s
95th percentile per-packet one-way delay: 30.966 ms
Loss rate: 85.76%
-- Flow 3:
Average throughput: 3.97 Mbit/s
95th percentile per-packet one-way delay: 30.860 ms
Loss rate: 31.92%
```
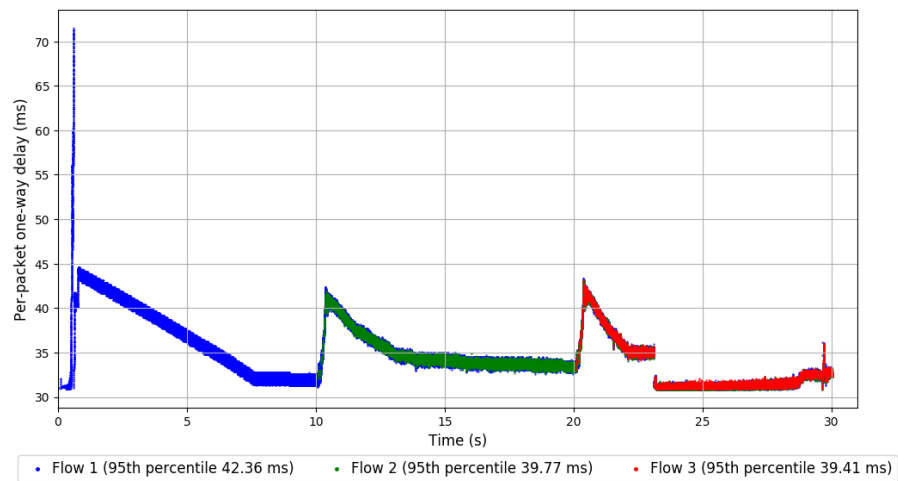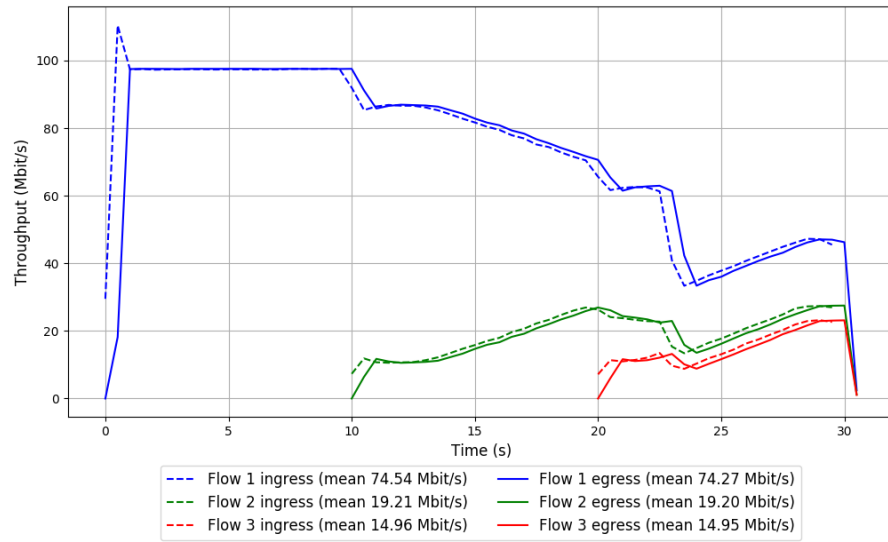
Run 4: Report of TaoVA-100x — Data Link

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

Start at: 2018-12-02 06:25:53
End at: 2018-12-02 06:26:23
Local clock offset: 0.189 ms
Remote clock offset: -2.821 ms


# Below is generated by plot.py at 2018-12-02 06:47:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.57 Mbit/s
95th percentile per-packet one-way delay: 31.886 ms
Loss rate: 79.71%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 30.782 ms
Loss rate: 95.92%
-- Flow 2:
Average throughput: 7.05 Mbit/s
95th percentile per-packet one-way delay: 32.894 ms
Loss rate: 83.25%
-- Flow 3:
Average throughput: 11.64 Mbit/s
95th percentile per-packet one-way delay: 30.865 ms
Loss rate: 72.71%
```

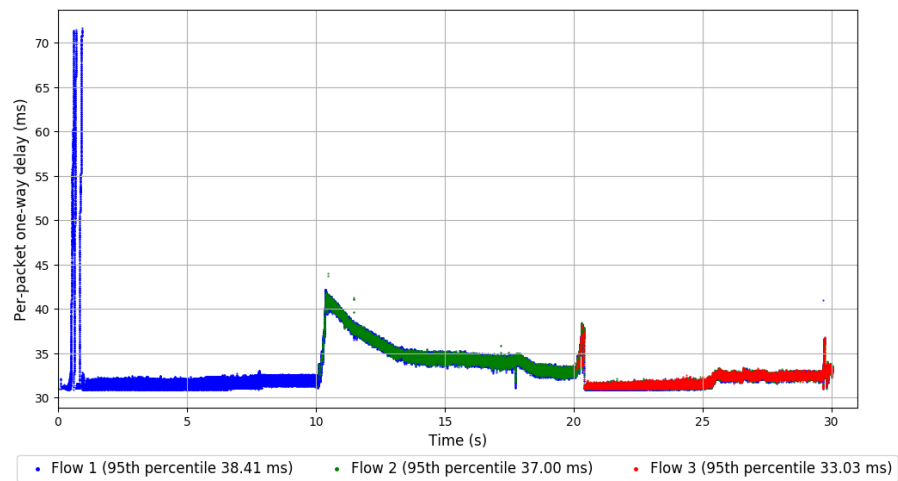Run 5: Report of TaoVA-100x — Data Link

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```
Run 1: Statistics of TCP Vegas

Start at: 2018-12-02 04:57:55
End at: 2018-12-02 04:58:25
Local clock offset: -0.103 ms
Remote clock offset: -3.732 ms


# Below is generated by plot.py at 2018-12-02 06:48:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.04 Mbit/s
95th percentile per-packet one-way delay: 41.905 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 74.27 Mbit/s
95th percentile per-packet one-way delay: 42.358 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 19.20 Mbit/s
95th percentile per-packet one-way delay: 39.774 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 14.95 Mbit/s
95th percentile per-packet one-way delay: 39.407 ms
Loss rate: 0.03%
```

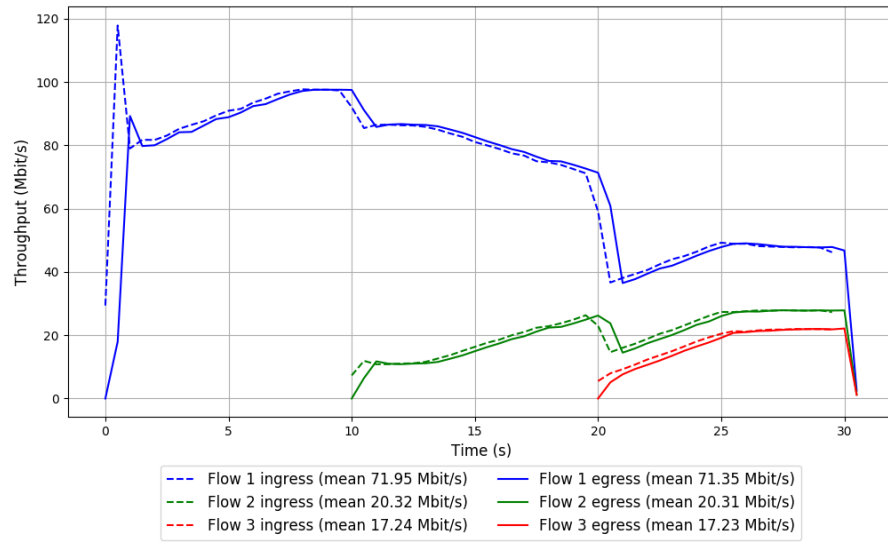Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2018-12-02 05:20:41
End at: 2018-12-02 05:21:11
Local clock offset: -0.07 ms
Remote clock offset: -3.044 ms


# Below is generated by plot.py at 2018-12-02 06:48:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.61 Mbit/s
95th percentile per-packet one-way delay: 37.955 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 71.35 Mbit/s
95th percentile per-packet one-way delay: 38.414 ms
Loss rate: 0.83%
-- Flow 2:
Average throughput: 20.31 Mbit/s
95th percentile per-packet one-way delay: 37.003 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 17.23 Mbit/s
95th percentile per-packet one-way delay: 33.030 ms
Loss rate: 0.05%
```

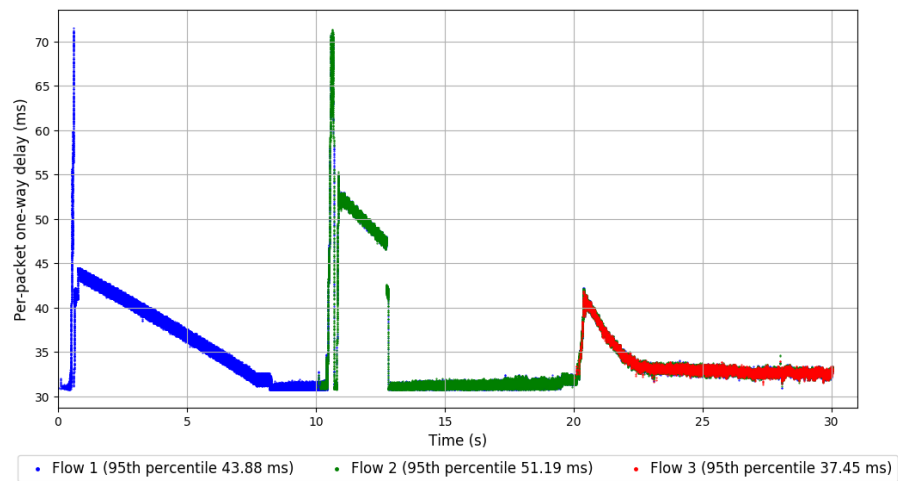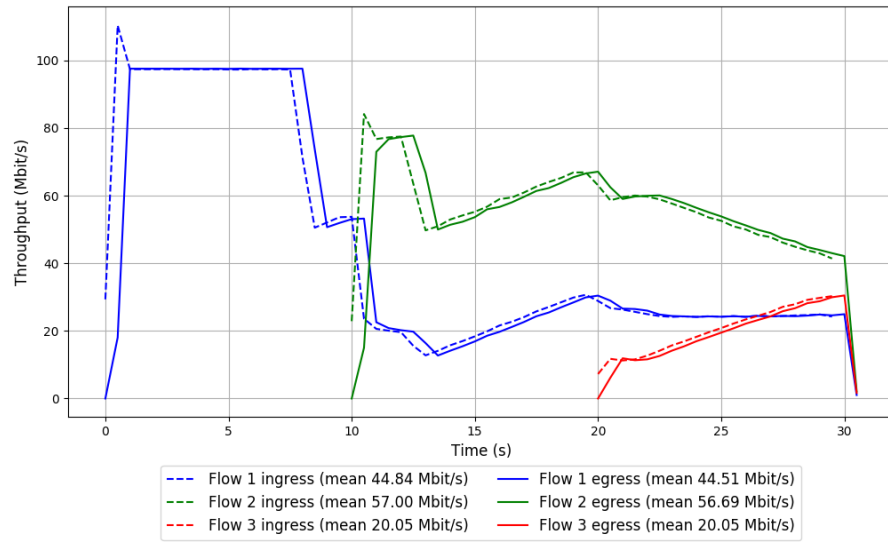Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2018-12-02 05:43:35
End at: 2018-12-02 05:44:05
Local clock offset: -0.04 ms
Remote clock offset: -2.895 ms


# Below is generated by plot.py at 2018-12-02 06:48:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.95 Mbit/s
95th percentile per-packet one-way delay: 49.516 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 44.51 Mbit/s
95th percentile per-packet one-way delay: 43.875 ms
Loss rate: 0.72%
-- Flow 2:
Average throughput: 56.69 Mbit/s
95th percentile per-packet one-way delay: 51.185 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 20.05 Mbit/s
95th percentile per-packet one-way delay: 37.446 ms
Loss rate: 0.00%
```
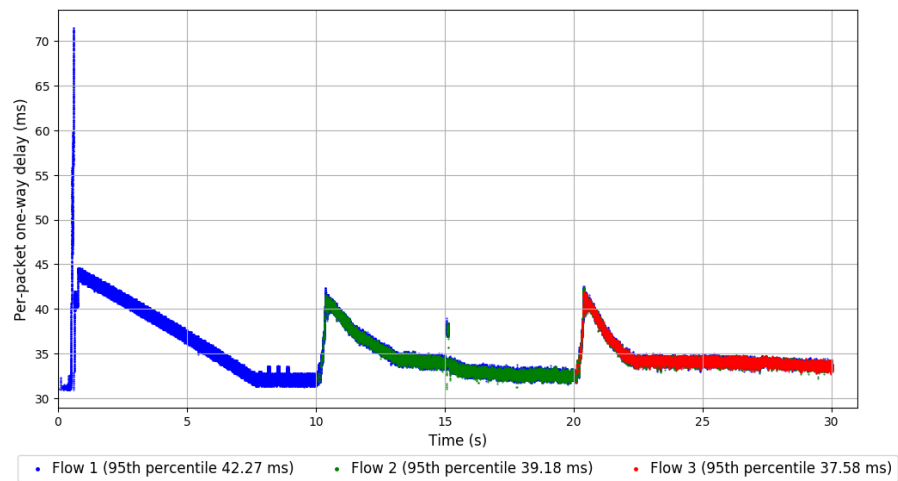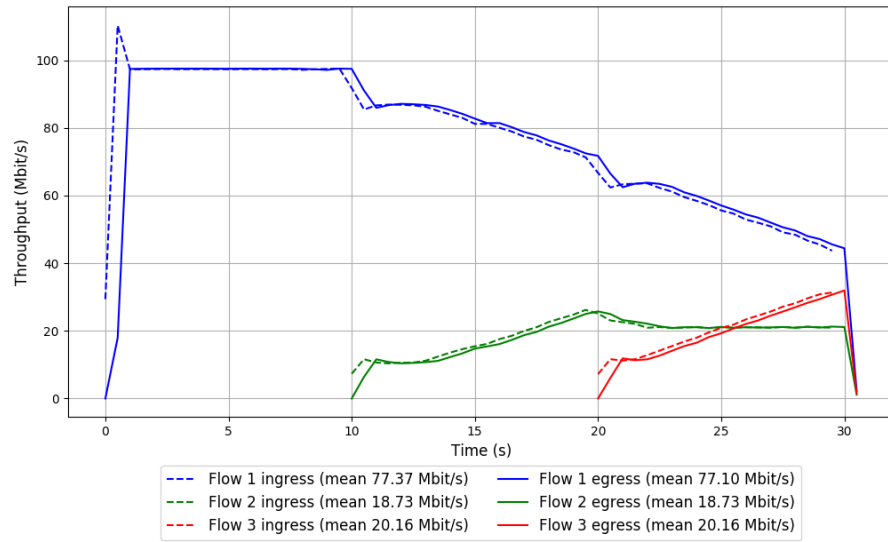
Run 3: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 44.84 Mbit/s) --- Flow 1 egress (mean 44.51 Mbit/s)
Flow 2 ingress (mean 57.00 Mbit/s) --- Flow 2 egress (mean 56.69 Mbit/s)
Flow 3 ingress (mean 20.05 Mbit/s) --- Flow 3 egress (mean 20.05 Mbit/s)

Flow 1 (95th percentile 43.88 ms) · Flow 2 (95th percentile 51.19 ms) · Flow 3 (95th percentile 37.45 ms)

```
Run 4: Statistics of TCP Vegas

Start at: 2018-12-02 06:06:23
End at: 2018-12-02 06:06:53
Local clock offset: 0.161 ms
Remote clock offset: -2.687 ms


# Below is generated by plot.py at 2018-12-02 06:48:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.27 Mbit/s
95th percentile per-packet one-way delay: 41.804 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 77.10 Mbit/s
95th percentile per-packet one-way delay: 42.268 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 18.73 Mbit/s
95th percentile per-packet one-way delay: 39.183 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 20.16 Mbit/s
95th percentile per-packet one-way delay: 37.580 ms
Loss rate: 0.00%
```
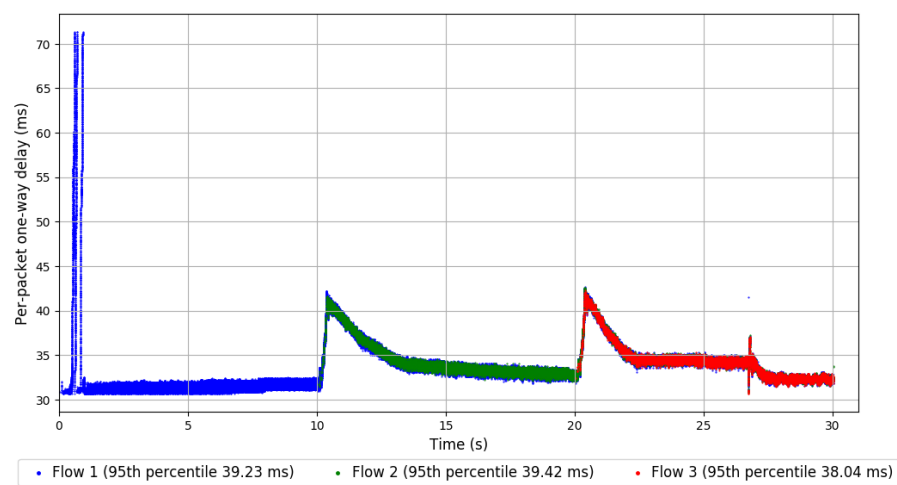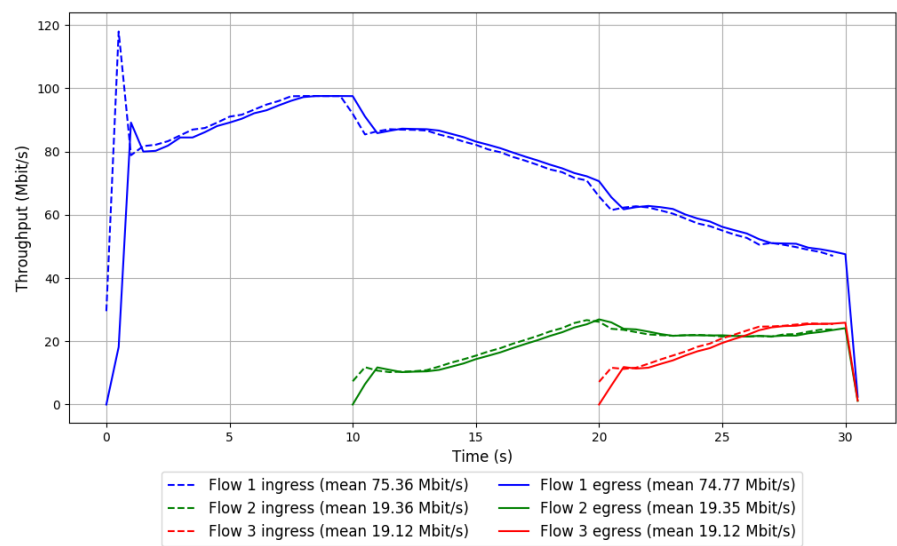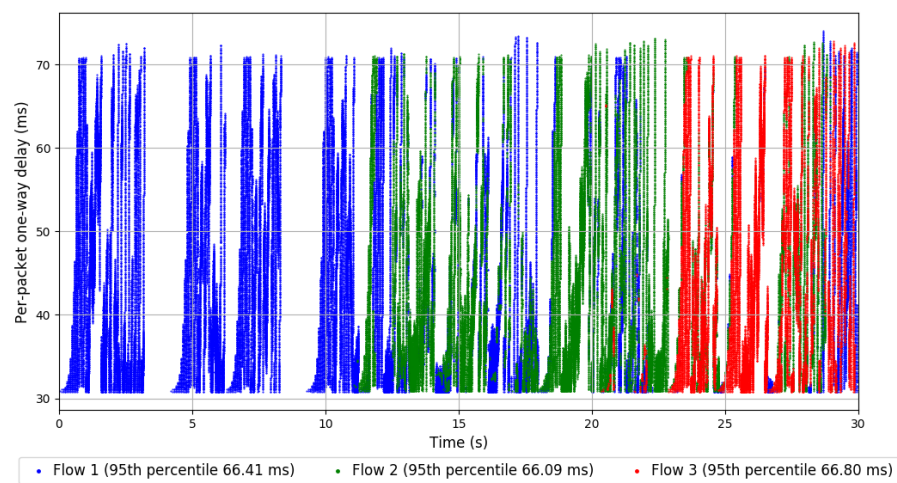
Run 4: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 77.37 Mbit/s)   Flow 1 egress (mean 77.10 Mbit/s)
Flow 2 ingress (mean 18.73 Mbit/s)   Flow 2 egress (mean 18.73 Mbit/s)
Flow 3 ingress (mean 20.16 Mbit/s)   Flow 3 egress (mean 20.16 Mbit/s)

Flow 1 (95th percentile 42.27 ms)   Flow 2 (95th percentile 39.18 ms)   Flow 3 (95th percentile 37.58 ms)

```
Run 5: Statistics of TCP Vegas

Start at: 2018-12-02 06:29:27
End at: 2018-12-02 06:29:57
Local clock offset: 0.16 ms
Remote clock offset: -2.736 ms


# Below is generated by plot.py at 2018-12-02 06:48:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.02 Mbit/s
95th percentile per-packet one-way delay: 39.218 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 74.77 Mbit/s
95th percentile per-packet one-way delay: 39.226 ms
Loss rate: 0.78%
-- Flow 2:
Average throughput: 19.35 Mbit/s
95th percentile per-packet one-way delay: 39.417 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 19.12 Mbit/s
95th percentile per-packet one-way delay: 38.038 ms
Loss rate: 0.00%
```

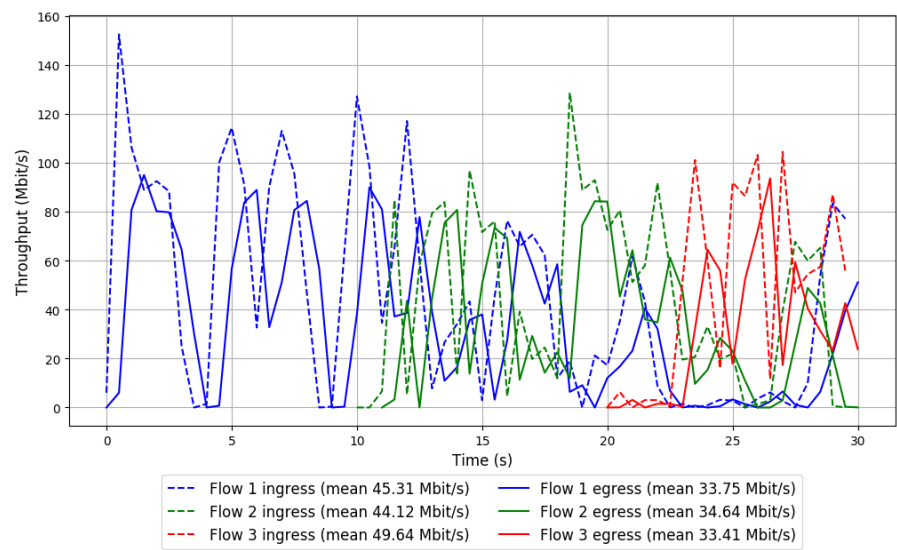Run 5: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2018-12-02 04:53:10
End at: 2018-12-02 04:53:40
Local clock offset: -0.073 ms
Remote clock offset: -3.925 ms


# Below is generated by plot.py at 2018-12-02 06:48:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 66.17 Mbit/s
95th percentile per-packet one-way delay: 66.378 ms
Loss rate: 26.70%
-- Flow 1:
Average throughput: 33.75 Mbit/s
95th percentile per-packet one-way delay: 66.408 ms
Loss rate: 25.50%
-- Flow 2:
Average throughput: 34.64 Mbit/s
95th percentile per-packet one-way delay: 66.093 ms
Loss rate: 25.36%
-- Flow 3:
Average throughput: 33.41 Mbit/s
95th percentile per-packet one-way delay: 66.799 ms
Loss rate: 32.66%
```

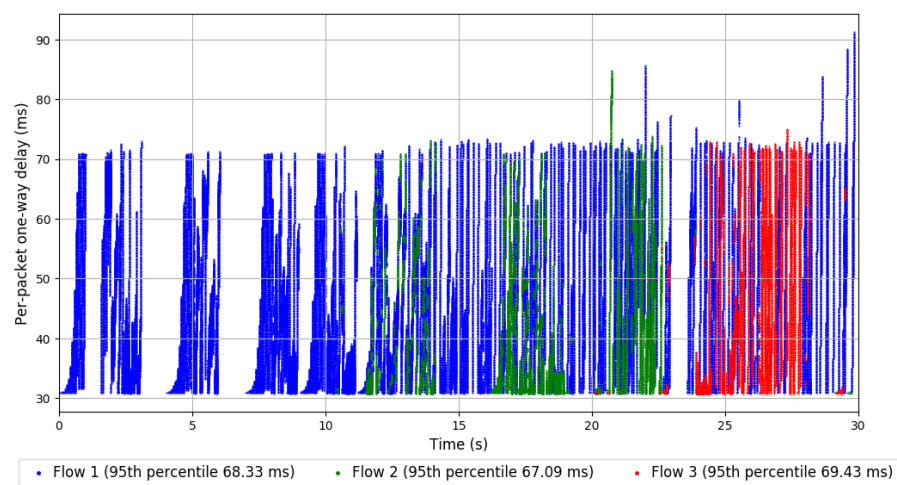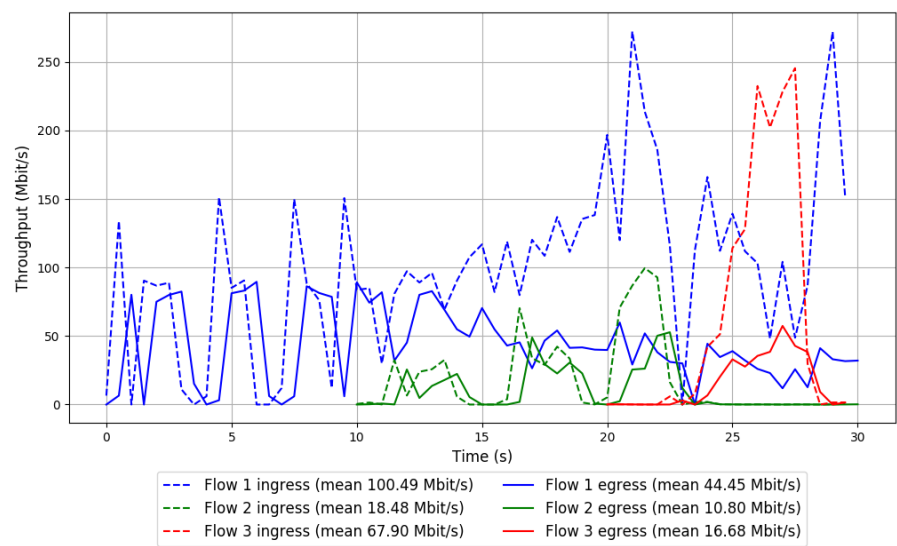Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2018-12-02 05:15:55
End at: 2018-12-02 05:16:25
Local clock offset: -0.043 ms
Remote clock offset: -3.366 ms


# Below is generated by plot.py at 2018-12-02 06:48:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 56.75 Mbit/s
95th percentile per-packet one-way delay: 68.379 ms
Loss rate: 57.67%
-- Flow 1:
Average throughput: 44.45 Mbit/s
95th percentile per-packet one-way delay: 68.329 ms
Loss rate: 55.70%
-- Flow 2:
Average throughput: 10.80 Mbit/s
95th percentile per-packet one-way delay: 67.094 ms
Loss rate: 41.76%
-- Flow 3:
Average throughput: 16.68 Mbit/s
95th percentile per-packet one-way delay: 69.431 ms
Loss rate: 75.67%
```

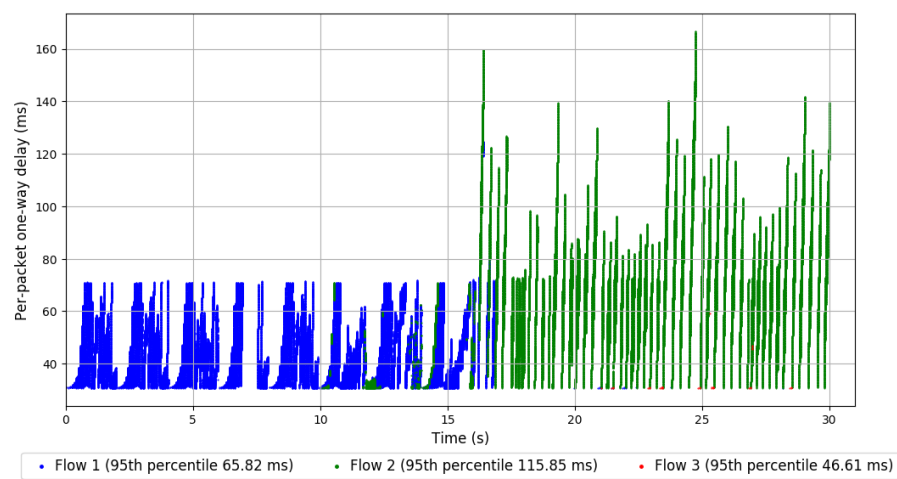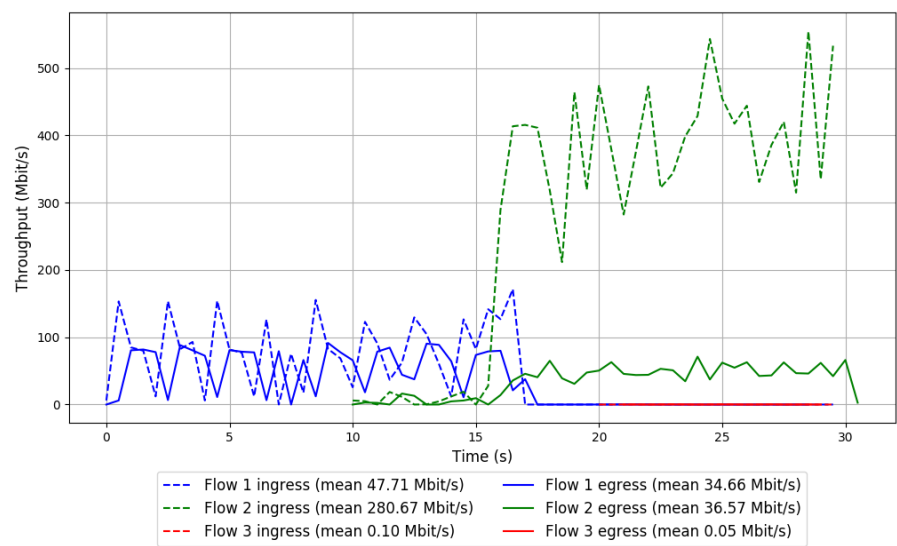## Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2018-12-02 05:38:48
End at: 2018-12-02 05:39:18
Local clock offset: -0.093 ms
Remote clock offset: -2.964 ms


# Below is generated by plot.py at 2018-12-02 06:48:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 56.91 Mbit/s
95th percentile per-packet one-way delay: 100.974 ms
Loss rate: 75.59%
-- Flow 1:
Average throughput: 34.66 Mbit/s
95th percentile per-packet one-way delay: 65.819 ms
Loss rate: 30.77%
-- Flow 2:
Average throughput: 36.57 Mbit/s
95th percentile per-packet one-way delay: 115.850 ms
Loss rate: 86.91%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 46.612 ms
Loss rate: 59.04%
```
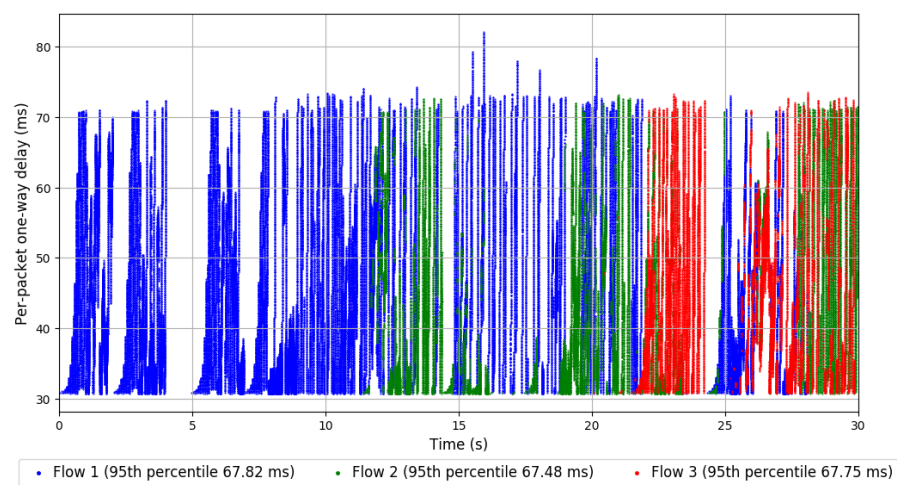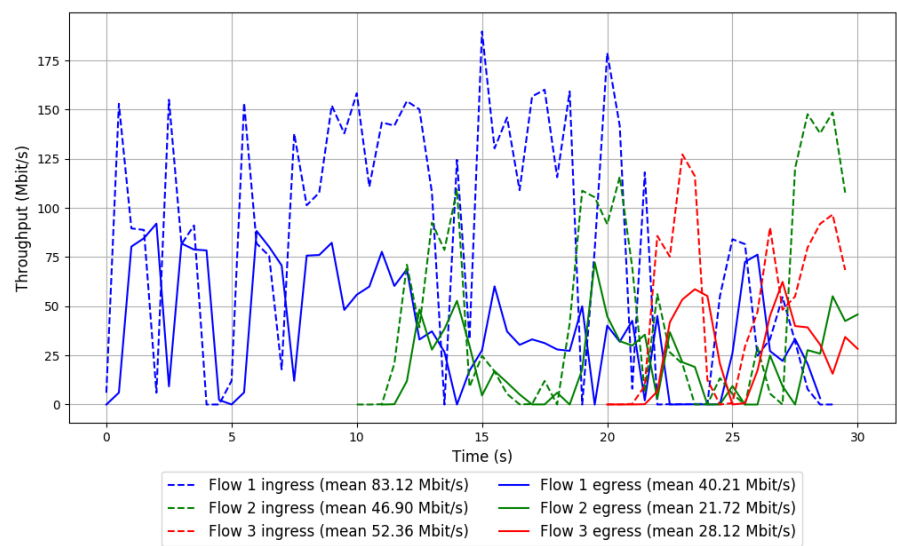
Run 3: Report of Verus — Data Link

Flow 1 ingress (mean 47.71 Mbit/s) — Flow 1 egress (mean 34.66 Mbit/s)
Flow 2 ingress (mean 280.67 Mbit/s) — Flow 2 egress (mean 36.57 Mbit/s)
Flow 3 ingress (mean 0.10 Mbit/s) — Flow 3 egress (mean 0.05 Mbit/s)

Flow 1 (95th percentile 65.82 ms)   Flow 2 (95th percentile 115.85 ms)   Flow 3 (95th percentile 46.61 ms)

```
Run 4: Statistics of Verus

Start at: 2018-12-02 06:01:36
End at: 2018-12-02 06:02:06
Local clock offset: 0.088 ms
Remote clock offset: -2.851 ms

# Below is generated by plot.py at 2018-12-02 06:49:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 60.44 Mbit/s
95th percentile per-packet one-way delay: 67.730 ms
Loss rate: 53.10%
-- Flow 1:
Average throughput: 40.21 Mbit/s
95th percentile per-packet one-way delay: 67.820 ms
Loss rate: 53.32%
-- Flow 2:
Average throughput: 21.72 Mbit/s
95th percentile per-packet one-way delay: 67.484 ms
Loss rate: 56.08%
-- Flow 3:
Average throughput: 28.12 Mbit/s
95th percentile per-packet one-way delay: 67.752 ms
Loss rate: 46.77%
```

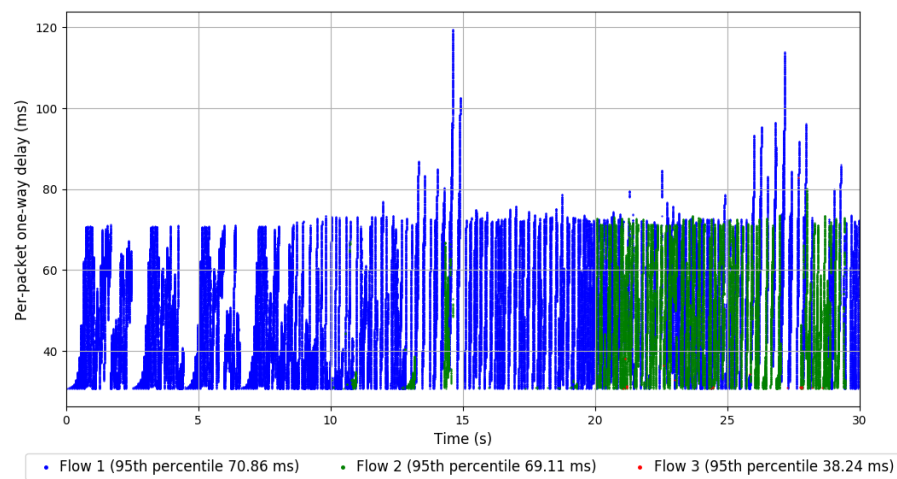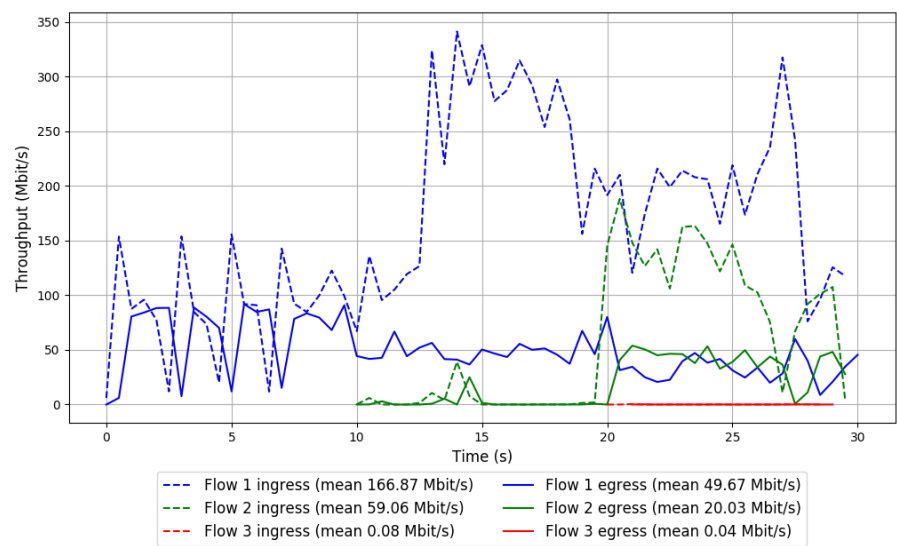Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2018-12-02 06:24:34
End at: 2018-12-02 06:25:04
Local clock offset: 0.189 ms
Remote clock offset: -2.69 ms


# Below is generated by plot.py at 2018-12-02 06:49:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 62.66 Mbit/s
95th percentile per-packet one-way delay: 70.409 ms
Loss rate: 69.55%
-- Flow 1:
Average throughput: 49.67 Mbit/s
95th percentile per-packet one-way delay: 70.862 ms
Loss rate: 70.20%
-- Flow 2:
Average throughput: 20.03 Mbit/s
95th percentile per-packet one-way delay: 69.110 ms
Loss rate: 66.78%
-- Flow 3:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 38.244 ms
Loss rate: 61.90%
```

Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2018-12-02 04:44:41
End at: 2018-12-02 04:45:11
Local clock offset: -0.052 ms
Remote clock offset: -4.29 ms


# Below is generated by plot.py at 2018-12-02 06:49:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.29 Mbit/s
95th percentile per-packet one-way delay: 41.312 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 65.95 Mbit/s
95th percentile per-packet one-way delay: 39.516 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 21.03 Mbit/s
95th percentile per-packet one-way delay: 44.800 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 19.24 Mbit/s
95th percentile per-packet one-way delay: 45.718 ms
Loss rate: 0.00%
```
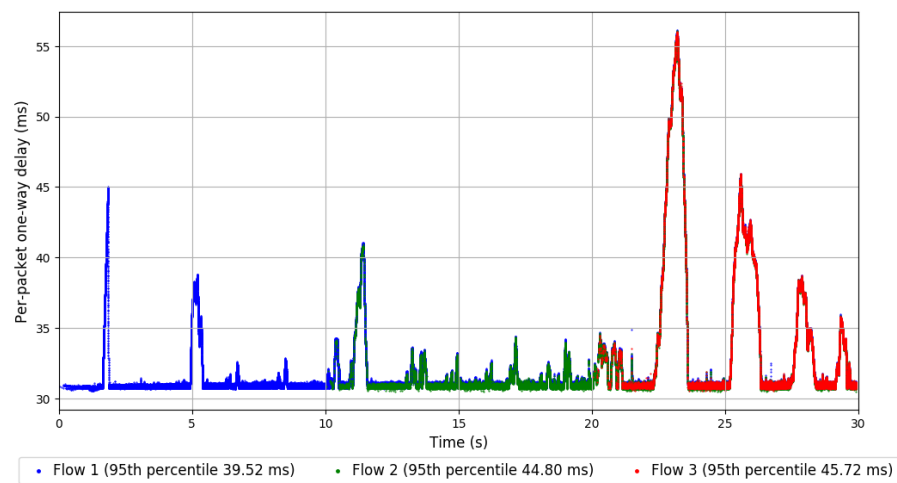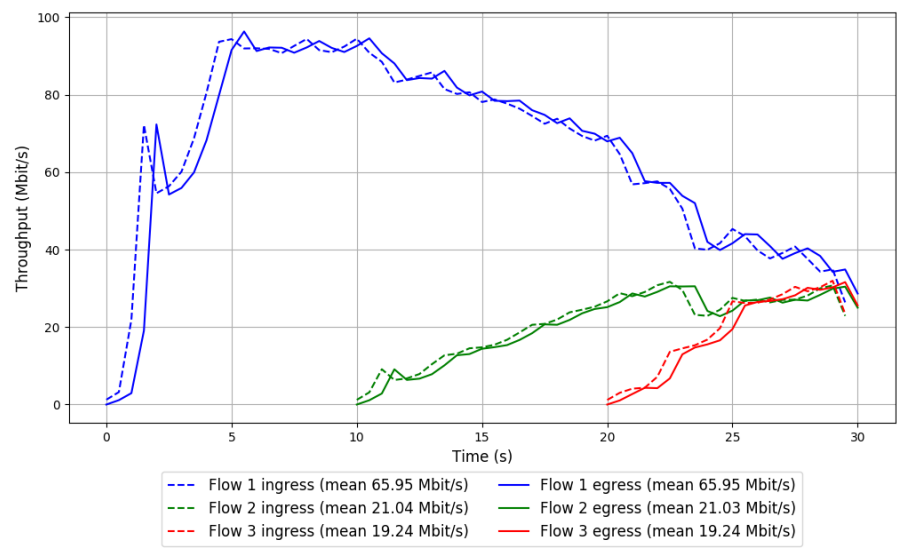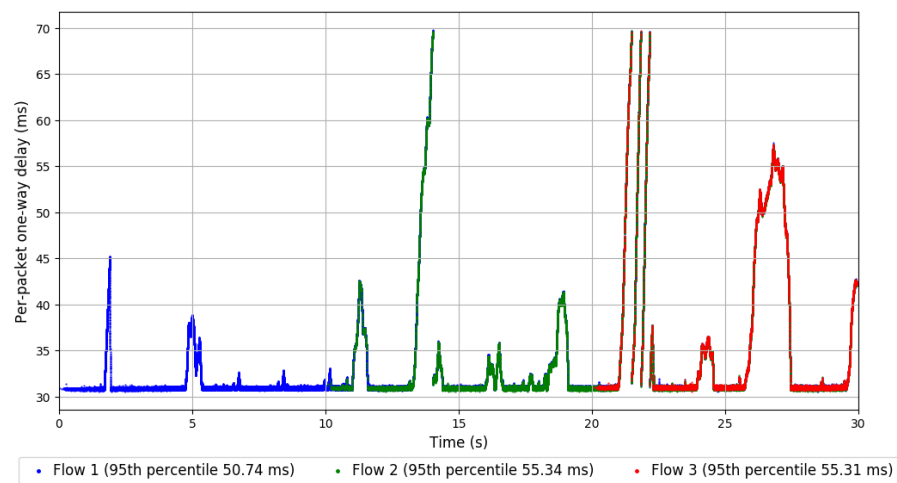
Run 1: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 65.95 Mbit/s) ---- Flow 1 egress (mean 65.95 Mbit/s)
Flow 2 ingress (mean 21.04 Mbit/s) ---- Flow 2 egress (mean 21.03 Mbit/s)
Flow 3 ingress (mean 19.24 Mbit/s) ---- Flow 3 egress (mean 19.24 Mbit/s)

Flow 1 (95th percentile 39.52 ms)   Flow 2 (95th percentile 44.80 ms)   Flow 3 (95th percentile 45.72 ms)

```
Run 2: Statistics of PCC-Vivace

Start at: 2018-12-02 05:07:25
End at: 2018-12-02 05:07:55
Local clock offset: -0.07 ms
Remote clock offset: -3.61 ms


# Below is generated by plot.py at 2018-12-02 06:49:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.66 Mbit/s
95th percentile per-packet one-way delay: 53.685 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 59.74 Mbit/s
95th percentile per-packet one-way delay: 50.743 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 31.67 Mbit/s
95th percentile per-packet one-way delay: 55.340 ms
Loss rate: 0.99%
-- Flow 3:
Average throughput: 11.65 Mbit/s
95th percentile per-packet one-way delay: 55.309 ms
Loss rate: 0.66%
```
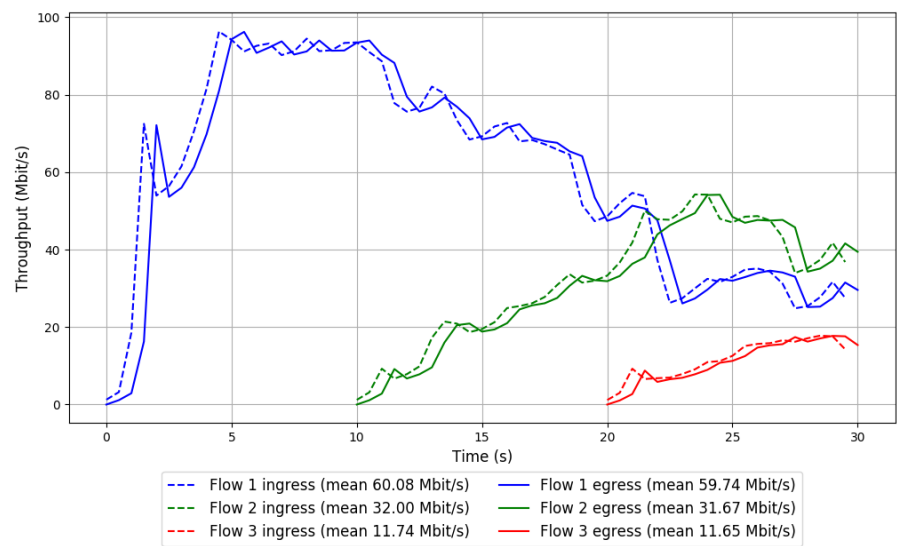
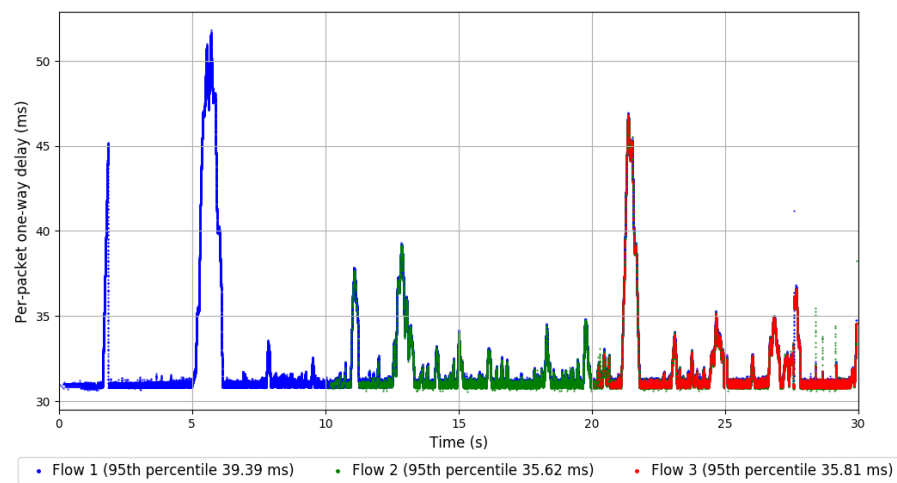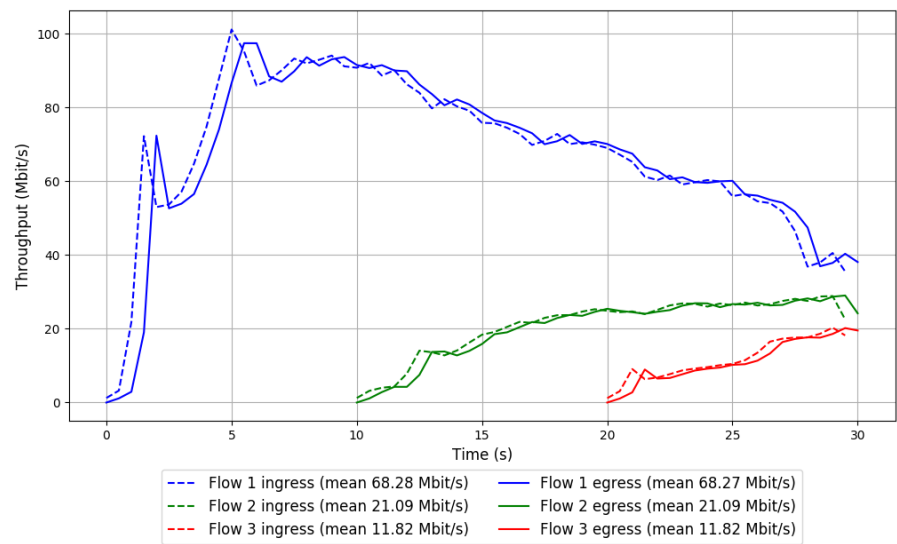Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2018-12-02 05:30:15
End at: 2018-12-02 05:30:45
Local clock offset: -0.125 ms
Remote clock offset: -2.985 ms


# Below is generated by plot.py at 2018-12-02 06:49:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.20 Mbit/s
95th percentile per-packet one-way delay: 38.762 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 68.27 Mbit/s
95th percentile per-packet one-way delay: 39.389 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 21.09 Mbit/s
95th percentile per-packet one-way delay: 35.616 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 11.82 Mbit/s
95th percentile per-packet one-way delay: 35.806 ms
Loss rate: 0.00%
```

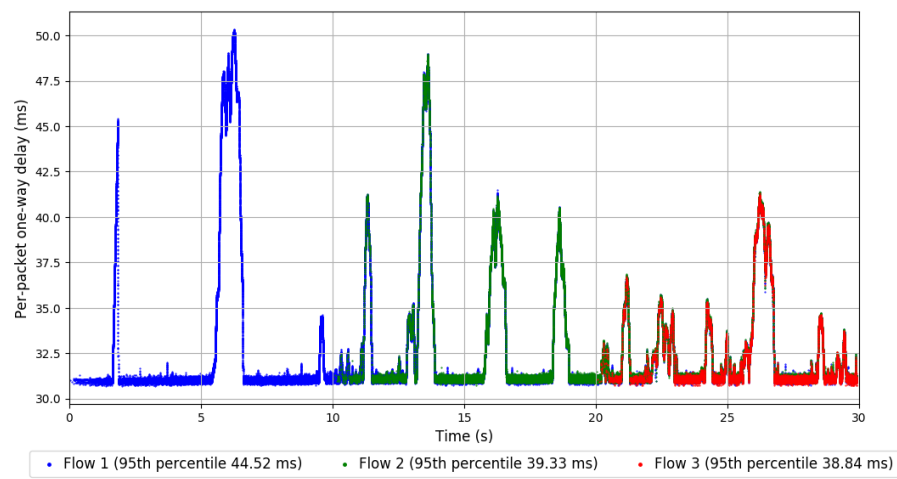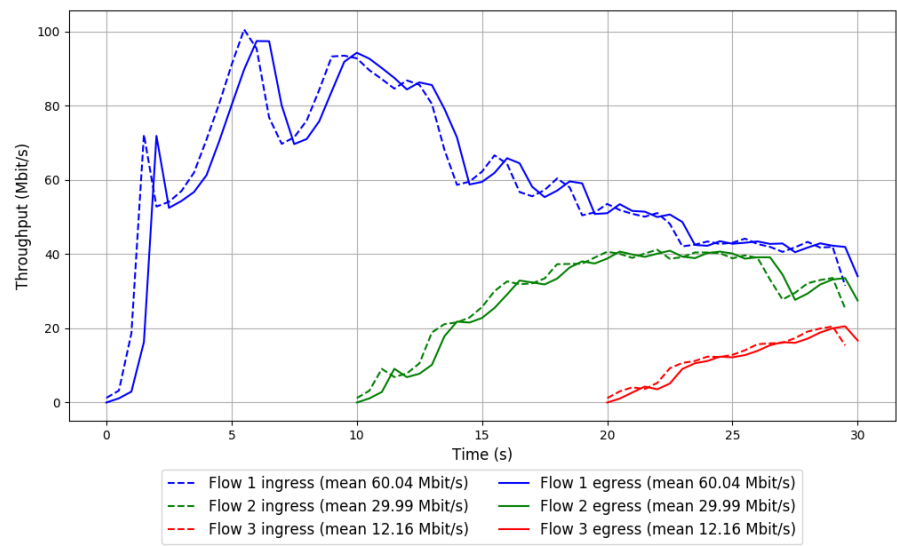# Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2018-12-02 05:53:09
End at: 2018-12-02 05:53:39
Local clock offset: 0.025 ms
Remote clock offset: -2.784 ms


# Below is generated by plot.py at 2018-12-02 06:49:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.00 Mbit/s
95th percentile per-packet one-way delay: 40.948 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 60.04 Mbit/s
95th percentile per-packet one-way delay: 44.515 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 29.99 Mbit/s
95th percentile per-packet one-way delay: 39.326 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 12.16 Mbit/s
95th percentile per-packet one-way delay: 38.835 ms
Loss rate: 0.00%
```

Run 4: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 60.04 Mbit/s) --- Flow 1 egress (mean 60.04 Mbit/s)
Flow 2 ingress (mean 29.99 Mbit/s) --- Flow 2 egress (mean 29.99 Mbit/s)
Flow 3 ingress (mean 12.16 Mbit/s) --- Flow 3 egress (mean 12.16 Mbit/s)

Flow 1 (95th percentile 44.52 ms)   •   Flow 2 (95th percentile 39.33 ms)   •   Flow 3 (95th percentile 38.84 ms)
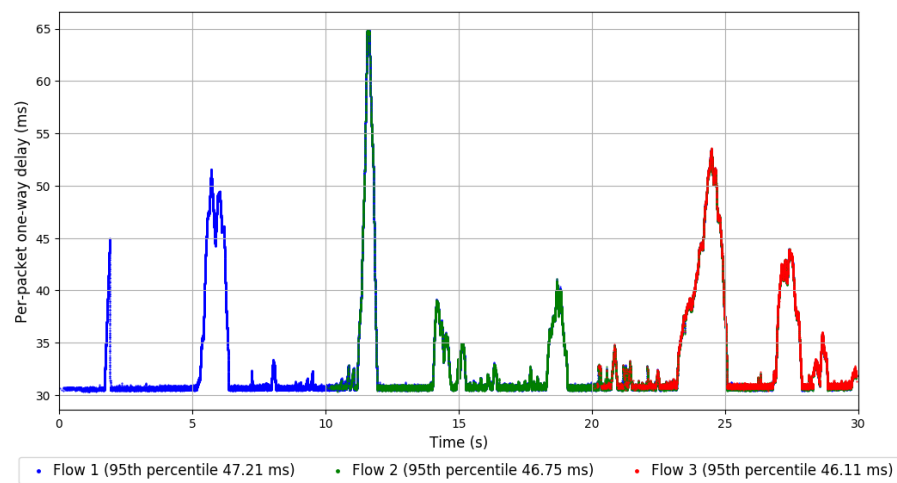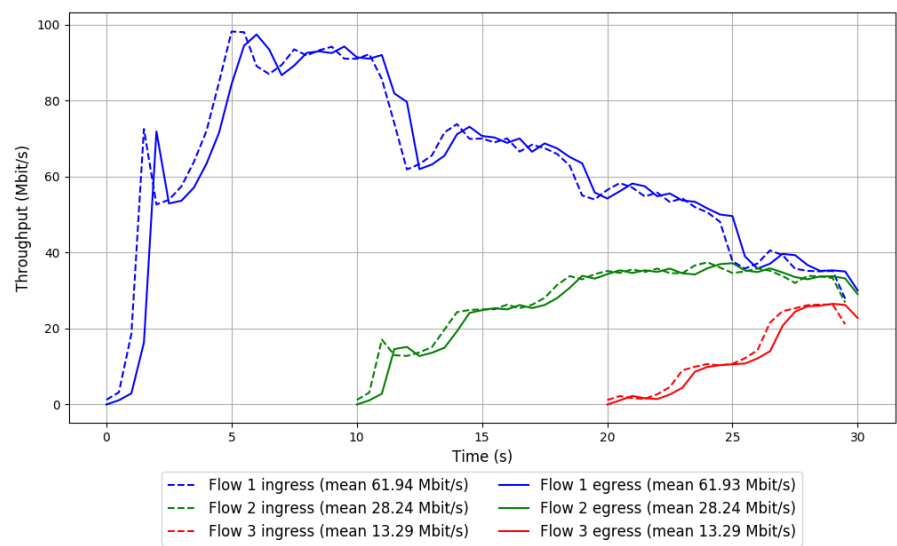
```
Run 5: Statistics of PCC-Vivace

Start at: 2018-12-02 06:15:54
End at: 2018-12-02 06:16:24
Local clock offset: 0.216 ms
Remote clock offset: -3.003 ms


# Below is generated by plot.py at 2018-12-02 06:49:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.10 Mbit/s
95th percentile per-packet one-way delay: 47.043 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 61.93 Mbit/s
95th percentile per-packet one-way delay: 47.207 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 28.24 Mbit/s
95th percentile per-packet one-way delay: 46.754 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 13.29 Mbit/s
95th percentile per-packet one-way delay: 46.111 ms
Loss rate: 0.00%
```
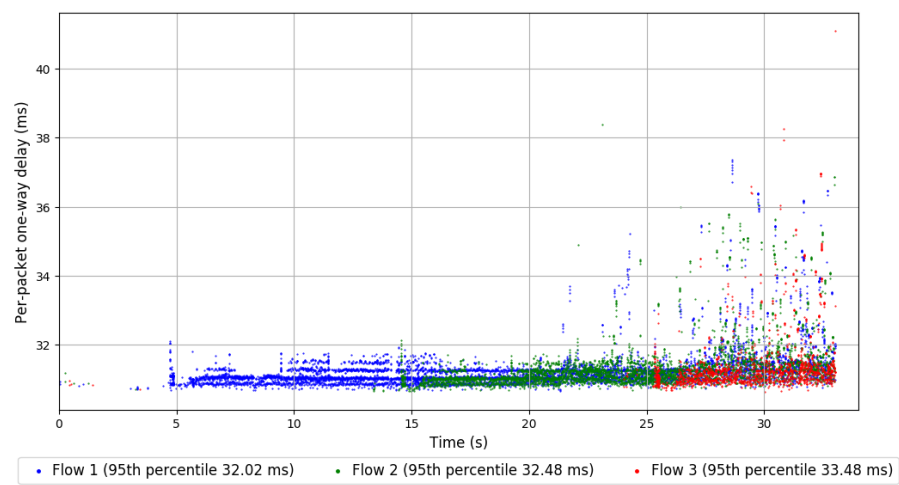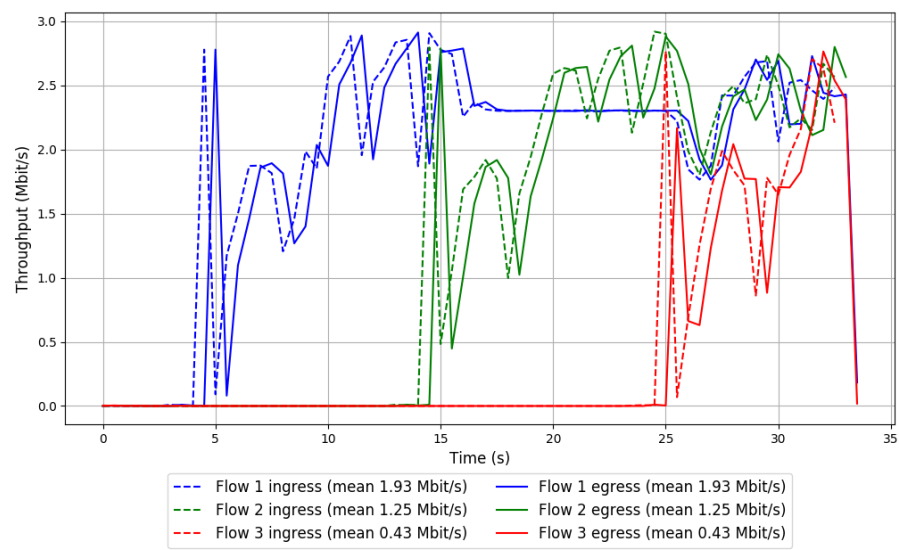
Run 5: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 61.94 Mbit/s) --- Flow 1 egress (mean 61.93 Mbit/s)
Flow 2 ingress (mean 28.24 Mbit/s) --- Flow 2 egress (mean 28.24 Mbit/s)
Flow 3 ingress (mean 13.29 Mbit/s) --- Flow 3 egress (mean 13.29 Mbit/s)

Flow 1 (95th percentile 47.21 ms) • Flow 2 (95th percentile 46.75 ms) • Flow 3 (95th percentile 46.11 ms)

```
Run 1: Statistics of WebRTC media

Start at: 2018-12-02 04:55:32
End at: 2018-12-02 04:56:02
Local clock offset: -0.084 ms
Remote clock offset: -3.889 ms


# Below is generated by plot.py at 2018-12-02 06:49:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.60 Mbit/s
95th percentile per-packet one-way delay: 32.431 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 32.025 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.25 Mbit/s
95th percentile per-packet one-way delay: 32.482 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 33.481 ms
Loss rate: 0.00%
```

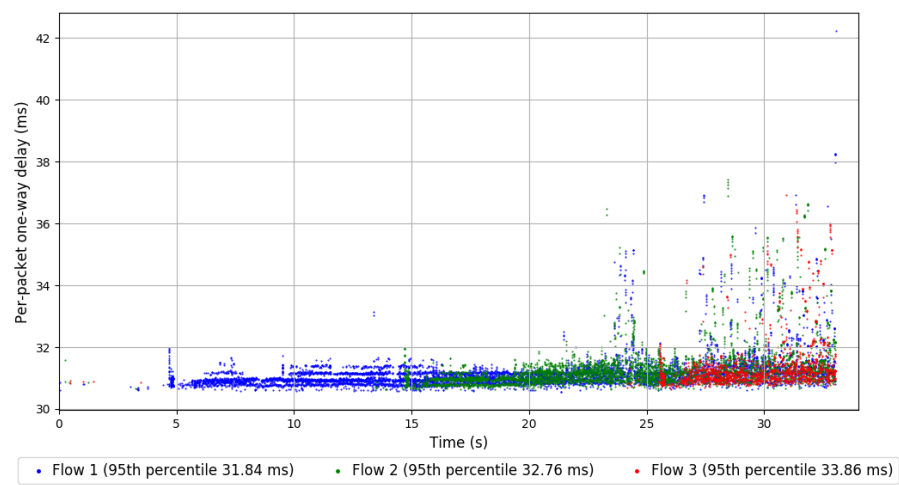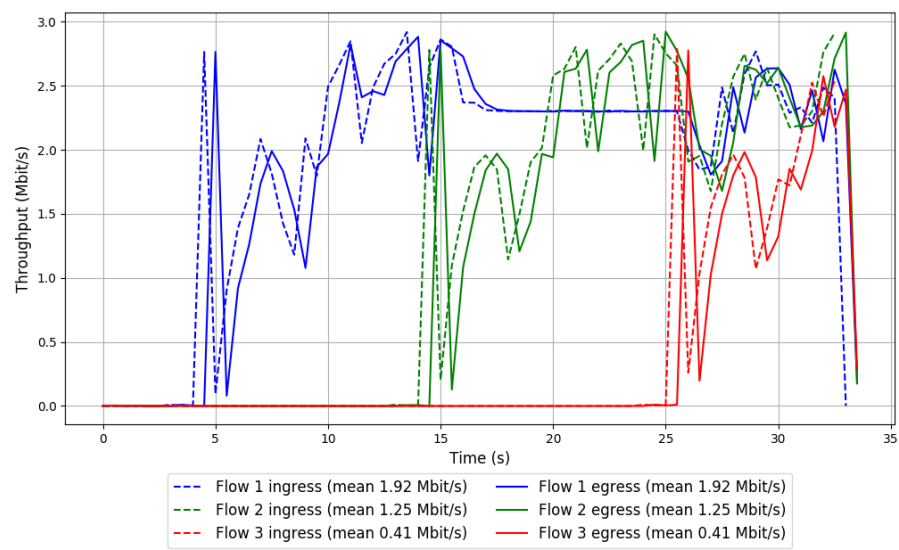Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-12-02 05:18:18
End at: 2018-12-02 05:18:48
Local clock offset: -0.031 ms
Remote clock offset: -3.316 ms


# Below is generated by plot.py at 2018-12-02 06:49:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.56 Mbit/s
95th percentile per-packet one-way delay: 32.263 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.92 Mbit/s
95th percentile per-packet one-way delay: 31.841 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.25 Mbit/s
95th percentile per-packet one-way delay: 32.758 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 33.863 ms
Loss rate: 0.00%
```

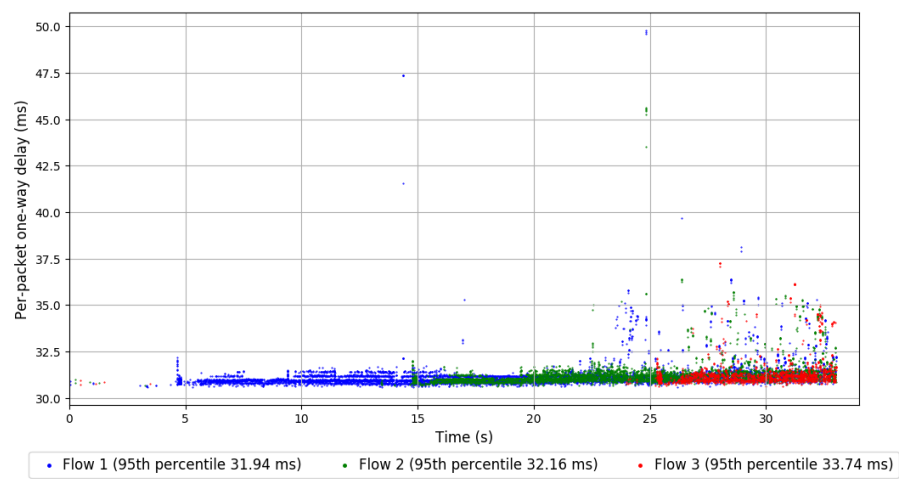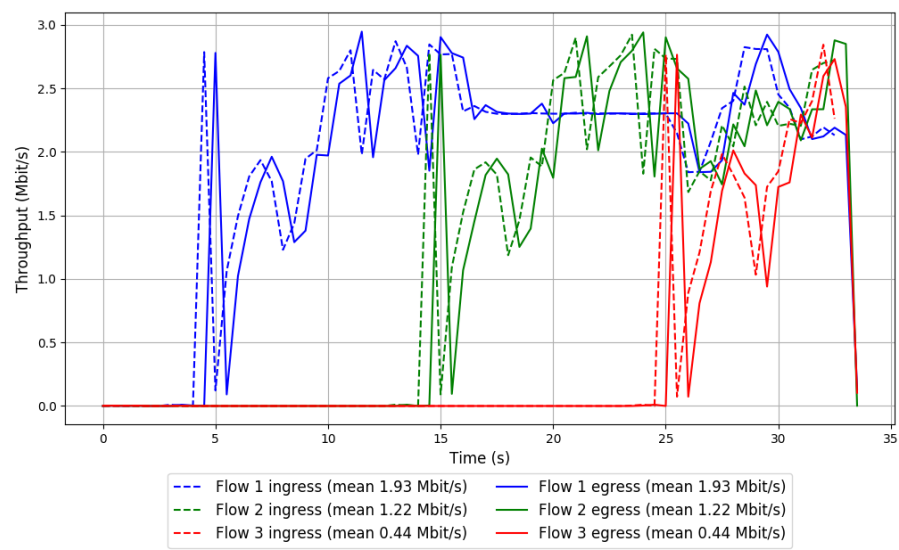Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2018-12-02 05:41:12
End at: 2018-12-02 05:41:42
Local clock offset: -0.058 ms
Remote clock offset: -2.921 ms


# Below is generated by plot.py at 2018-12-02 06:49:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.58 Mbit/s
95th percentile per-packet one-way delay: 32.146 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 31.939 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.22 Mbit/s
95th percentile per-packet one-way delay: 32.155 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 33.741 ms
Loss rate: 0.00%
```

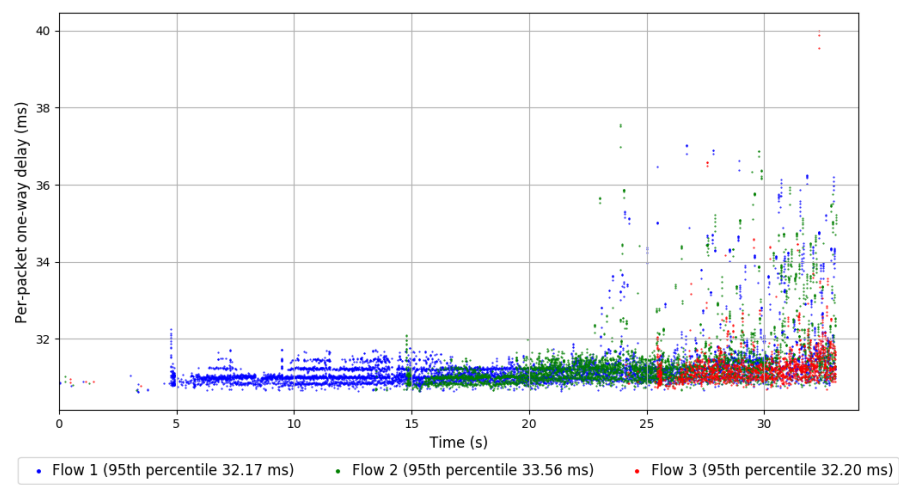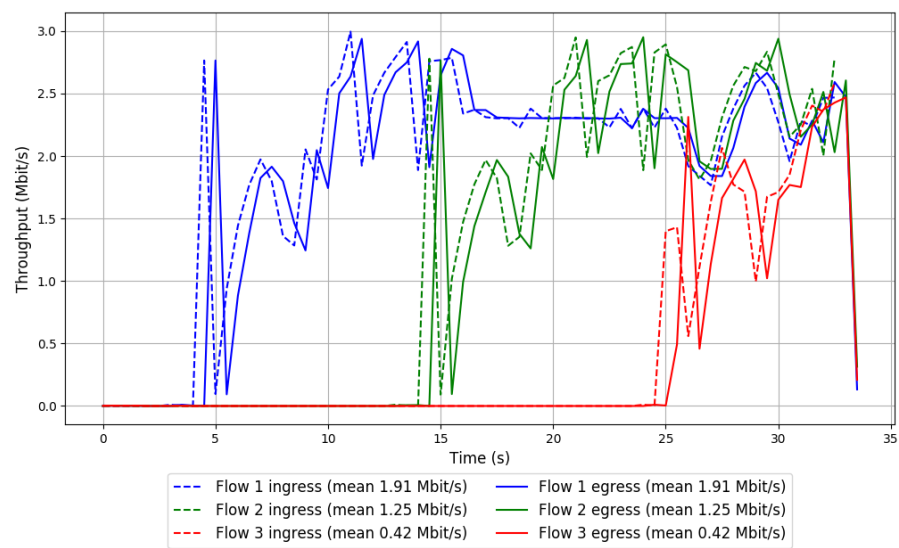Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2018-12-02 06:04:00
End at: 2018-12-02 06:04:30
Local clock offset: 0.112 ms
Remote clock offset: -2.791 ms


# Below is generated by plot.py at 2018-12-02 06:49:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.57 Mbit/s
95th percentile per-packet one-way delay: 32.726 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.91 Mbit/s
95th percentile per-packet one-way delay: 32.166 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.25 Mbit/s
95th percentile per-packet one-way delay: 33.560 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 32.198 ms
Loss rate: 0.00%
```

Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2018-12-02 06:27:02
End at: 2018-12-02 06:27:32
Local clock offset: 0.187 ms
Remote clock offset: -2.788 ms


# Below is generated by plot.py at 2018-12-02 06:49:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.59 Mbit/s
95th percentile per-packet one-way delay: 32.450 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 32.167 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.24 Mbit/s
95th percentile per-packet one-way delay: 32.501 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 33.180 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link