Pantheon Report

Generated at 2018-04-19 04:36:22 (UTC).

Data path: GCE Iowa Ethernet (*local*) →GCE Tokyo Ethernet (*remote*).

Repeated the test of 16 congestion control schemes 10 times.

Each test lasted for 30 seconds running 3 flows with 10-second interval between two flows.
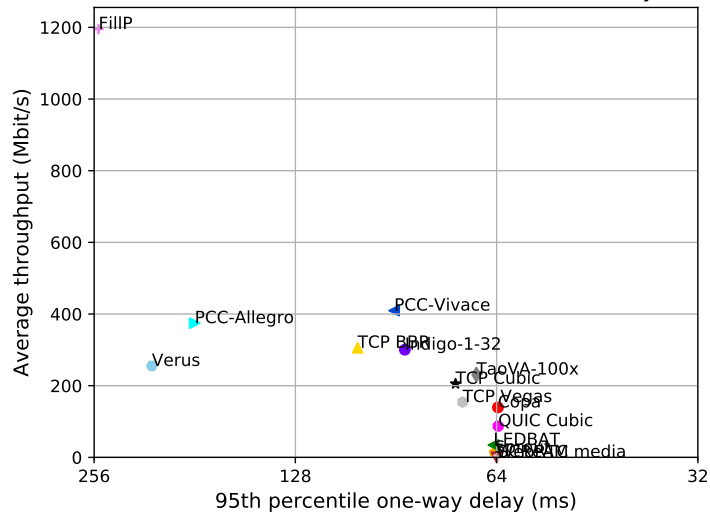
Increased UDP receive buffer to 16 MB (default) and 32 MB (max).

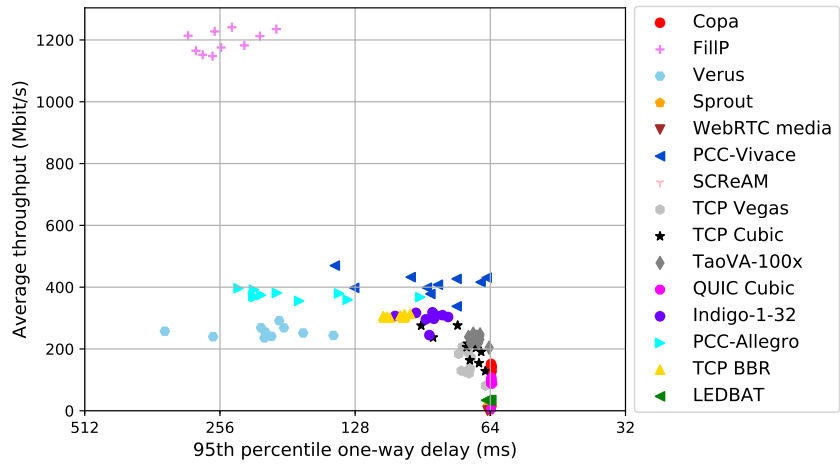Tested BBR with qdisc of Fair Queuing (`fq`), and other schemes with the default Linux qdisc (`pfifo_fast`).

```
Git summary:
branch: master @ b3d6e7098641364fd3a292656a51aa81e316d0b4
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
 M datagrump/sender.cc
third_party/fillp @ 11f8c46a2bf1dc797253db7e8ca04076272b2a44
third_party/genericCC @ d223989828276fa83a807da6e0341dc0c7b89aec
third_party/indigo @ a9b2060d39e4da2e8987e893e3eca2a6c7cd0ab9
third_party/indigo-1-layer-128-unit @ 3ae9e4ef4230db7484501f82ce8b377695f2f66d
third_party/indigo-1-layer-32-unit @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-1-layer-32-unit-no-calib @ 1f3a7f75b41135ed5b540c0fd3505939528e2a5f
third_party/indigo-no-calib @ 7224f2202e8a044d8306fa0b983ad84360c53d89
third_party/koho_cc @ f0f2e693303aee82ea808e6928eac4f1083a6681
 M datagrump/sender.cc
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ fb1053193c2861da659ba9013db26744ccfcf993
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
 M receiver/src/buffer.h
 M receiver/src/core.cpp
 M sender/src/buffer.h
 M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream @ c3370fd7bd17265a79aeb34e4016ad23f5965885
third_party/sourdough @ f1a14bffe749737437f61b1eaeeb30b267cde681
third_party/sprout @ 6f2efe6e088d91066a9f023df375eee2665089ce
 M src/examples/cellsim.cc
 M src/examples/sproutbt2.cc
 M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
 M src/verus.hpp
 M tools/plot.py
third_party/vivace @ 7a4ba531e75b4a6f66f5c4580192120401784ce3
third_party/webrtc @ f271183af822eee5d0031620f4bebf38aedc5581
```

test from GCE Iowa Ethernet to GCE Tokyo Ethernet, 10 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)

test from GCE Iowa Ethernet to GCE Tokyo Ethernet, 10 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	10	159.57	153.13	133.68	100.42	103.52	107.44	0.12	0.16	0.37
TCP Cubic	10	107.42	111.20	71.87	73.07	73.46	72.72	0.01	0.00	0.09
LEDBAT	10	22.20	14.75	7.33	64.80	64.59	64.56	0.00	0.02	0.00
PCC-Allegro	10	353.41	19.65	24.43	181.01	175.76	163.37	0.55	0.73	1.06
QUIC Cubic	10	47.34	40.33	40.13	63.61	63.30	63.55	0.00	0.00	0.00
SCReAM	10	0.22	0.22	0.22	63.57	63.51	63.52	0.00	0.00	0.00
WebRTC media	10	0.06	0.06	0.05	64.37	63.96	63.78	0.00	0.00	0.00
Sprout	10	6.58	6.44	6.18	64.51	64.43	64.42	0.03	0.01	0.00
TaoVA-100x	10	129.37	121.30	75.30	67.21	69.06	70.38	0.01	0.01	0.00
TCP Vegas	10	83.45	61.64	90.21	70.68	70.45	69.38	0.00	0.01	0.04
Verus	10	158.05	102.88	89.66	195.61	191.27	217.15	0.75	1.08	1.22
Copa	10	69.91	72.17	64.68	63.70	63.70	63.53	0.00	0.01	0.01
FillP	10	622.51	608.93	506.24	258.66	230.58	213.88	4.96	5.24	7.91
Indigo-1-32	10	165.89	149.66	110.05	84.15	88.28	93.70	0.02	0.04	0.06
PCC-Vivace	10	216.42	219.99	142.59	97.03	90.52	102.52	0.33	0.06	0.03
PCC-Expr	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

```
Run 1: Statistics of TCP BBR

Start at: 2018-04-18 22:28:51
End at: 2018-04-18 22:29:21

# Below is generated by plot.py at 2018-04-19 03:01:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 304.36 Mbit/s
95th percentile per-packet one-way delay: 108.638 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 161.92 Mbit/s
95th percentile per-packet one-way delay: 105.403 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 151.40 Mbit/s
95th percentile per-packet one-way delay: 108.802 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 126.03 Mbit/s
95th percentile per-packet one-way delay: 112.264 ms
Loss rate: 0.32%
```
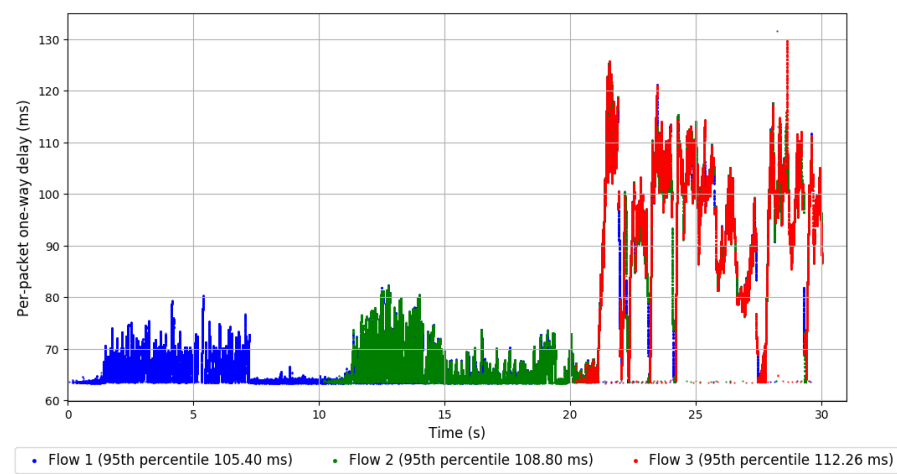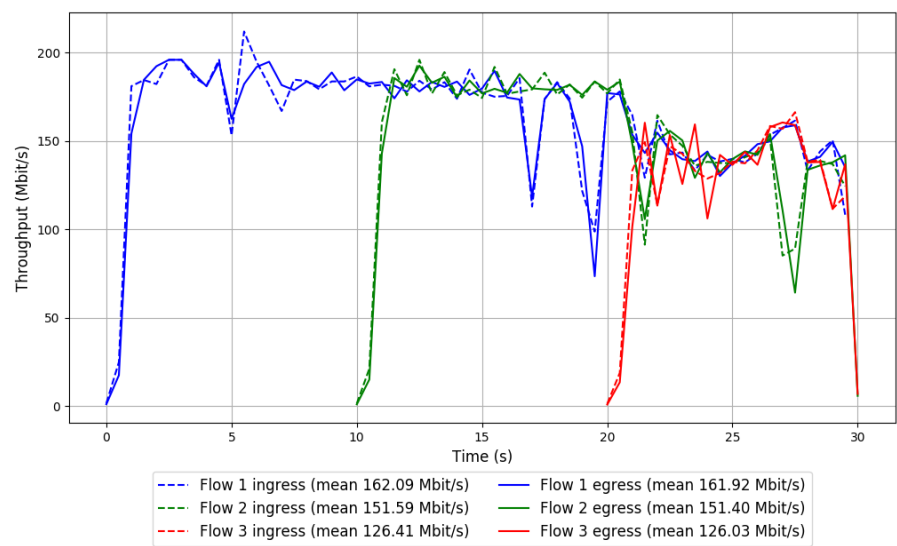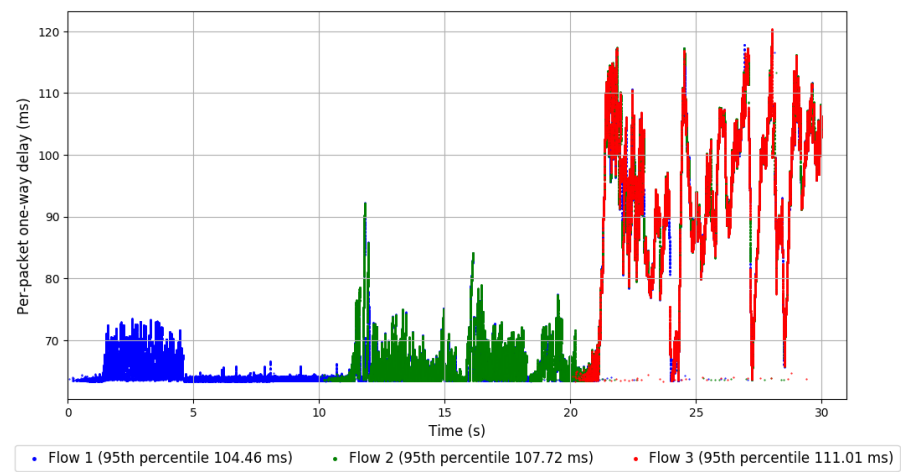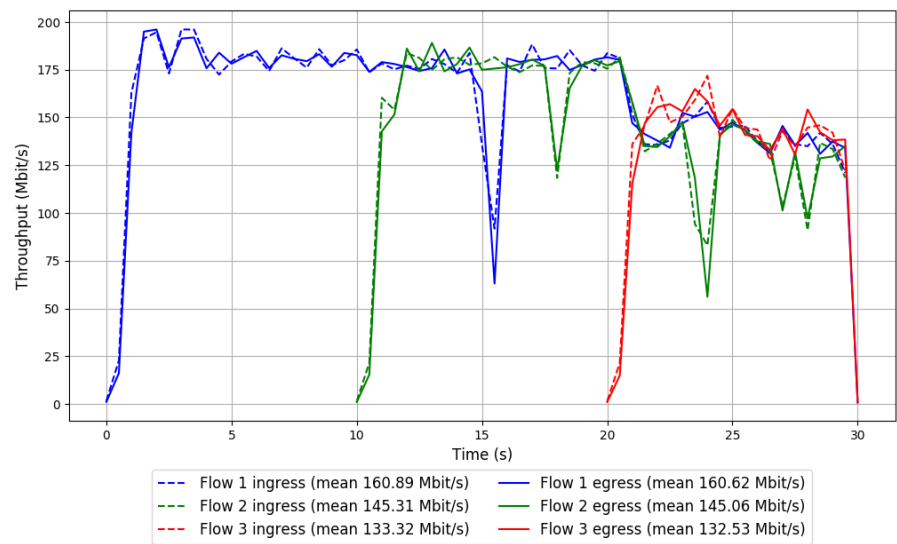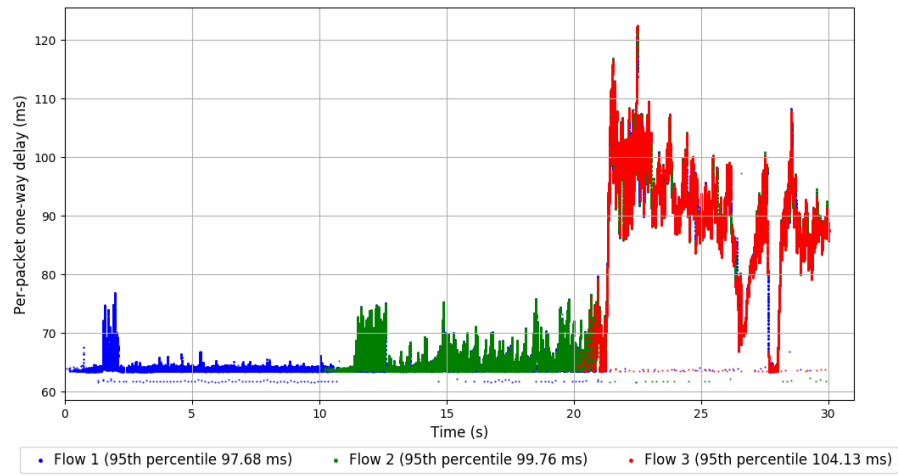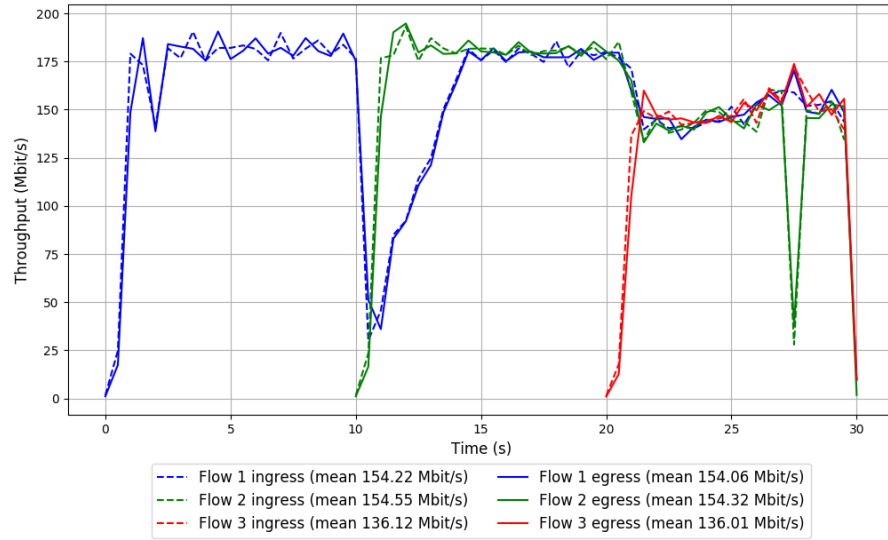
Run 1: Report of TCP BBR — Data Link

```
Run 2: Statistics of TCP BBR

Start at: 2018-04-18 22:44:33
End at: 2018-04-18 22:45:03

# Below is generated by plot.py at 2018-04-19 03:01:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 301.08 Mbit/s
95th percentile per-packet one-way delay: 107.142 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 160.62 Mbit/s
95th percentile per-packet one-way delay: 104.456 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 145.06 Mbit/s
95th percentile per-packet one-way delay: 107.717 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 132.53 Mbit/s
95th percentile per-packet one-way delay: 111.011 ms
Loss rate: 0.50%
```
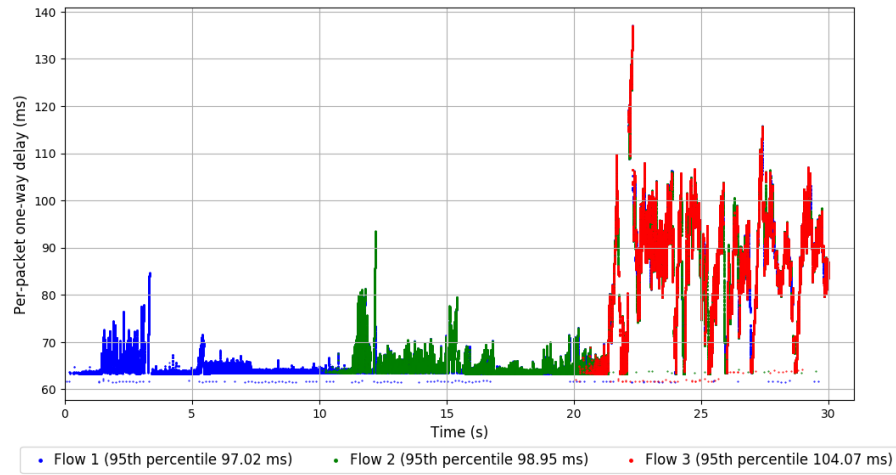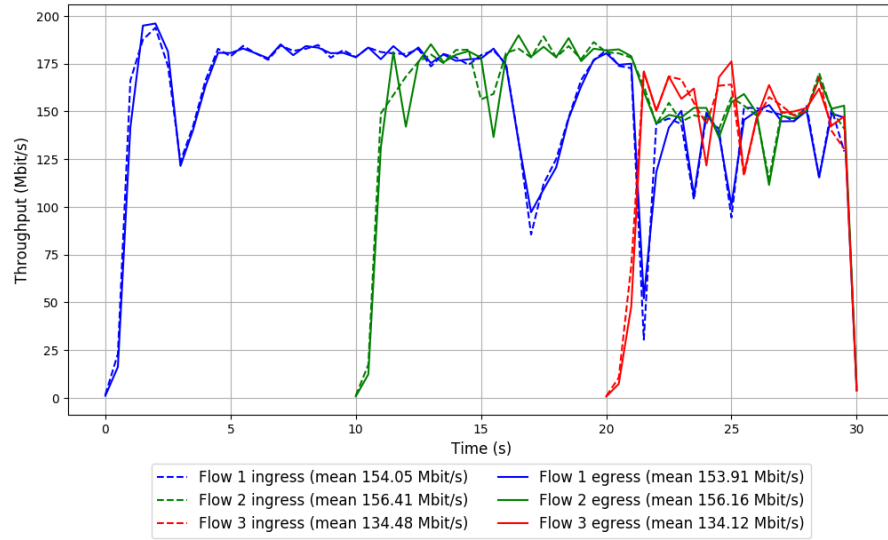
Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2018-04-18 23:00:17
End at: 2018-04-18 23:00:47


# Below is generated by plot.py at 2018-04-19 03:01:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 301.96 Mbit/s
95th percentile per-packet one-way delay: 100.064 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 154.06 Mbit/s
95th percentile per-packet one-way delay: 97.679 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 154.32 Mbit/s
95th percentile per-packet one-way delay: 99.756 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 136.01 Mbit/s
95th percentile per-packet one-way delay: 104.128 ms
Loss rate: 0.07%
```
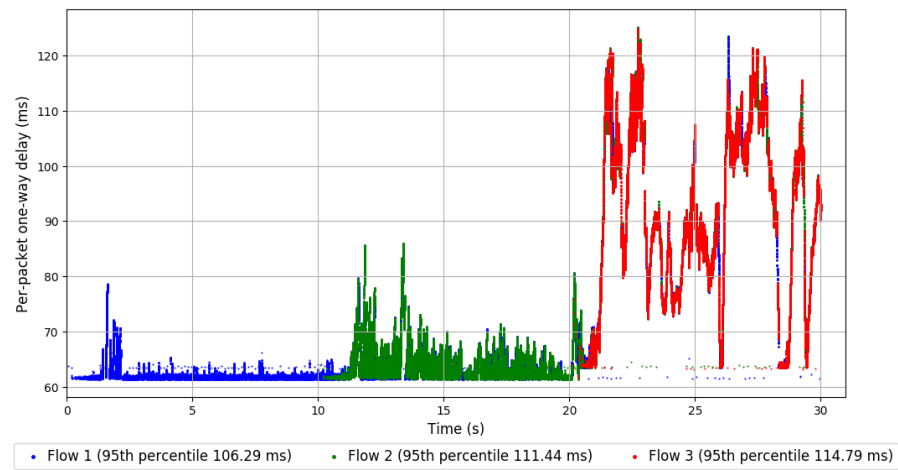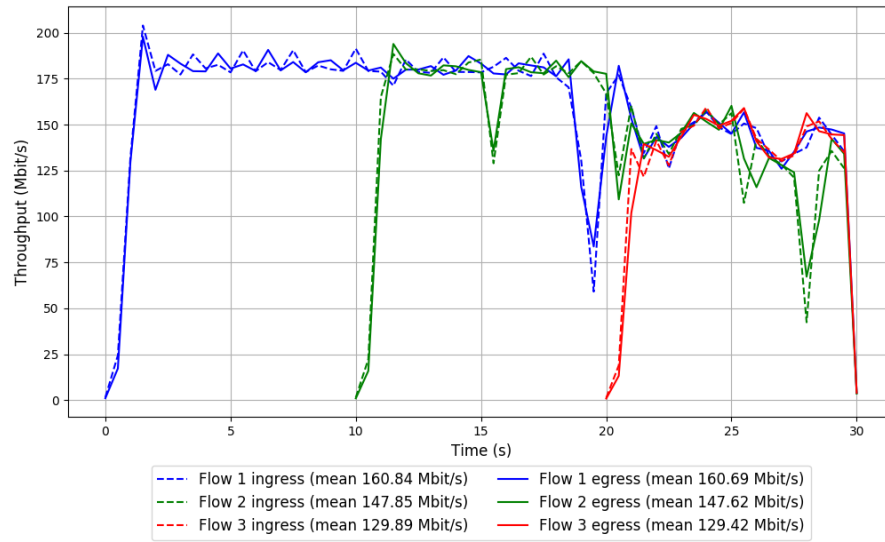
Run 3: Report of TCP BBR — Data Link

```
Run 4: Statistics of TCP BBR

Start at: 2018-04-18 23:15:55
End at: 2018-04-18 23:16:25


# Below is generated by plot.py at 2018-04-19 03:01:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 302.16 Mbit/s
95th percentile per-packet one-way delay: 99.492 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 153.91 Mbit/s
95th percentile per-packet one-way delay: 97.024 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 156.16 Mbit/s
95th percentile per-packet one-way delay: 98.947 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 134.12 Mbit/s
95th percentile per-packet one-way delay: 104.069 ms
Loss rate: 0.26%
```
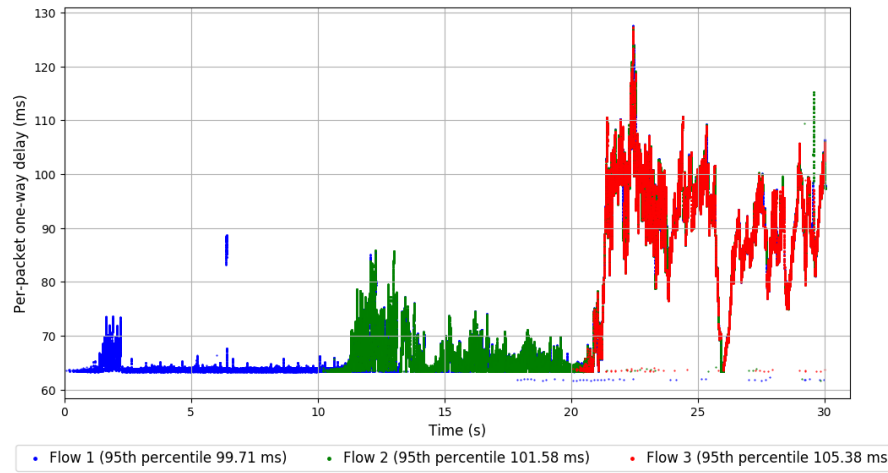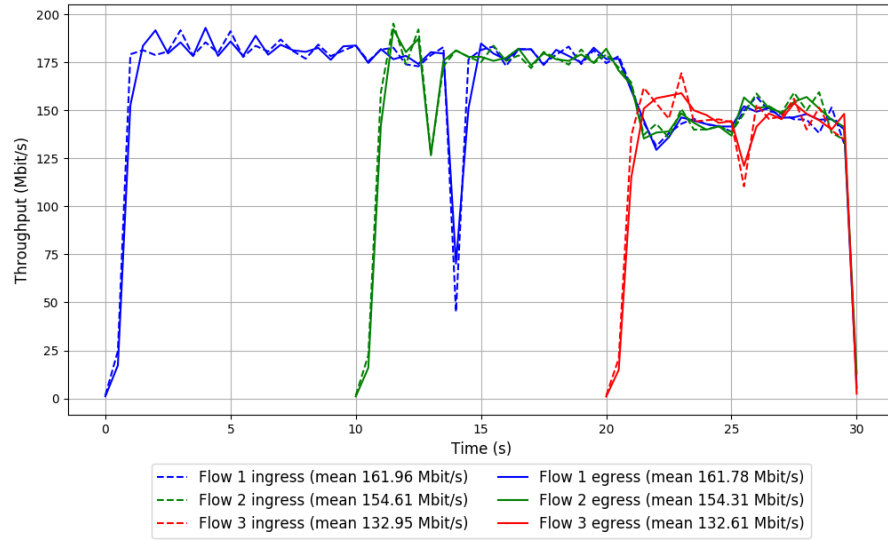
Run 4: Report of TCP BBR — Data Link

```
Run 5: Statistics of TCP BBR

Start at: 2018-04-18 23:31:30
End at: 2018-04-18 23:32:00

# Below is generated by plot.py at 2018-04-19 03:01:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 301.85 Mbit/s
95th percentile per-packet one-way delay: 110.321 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 160.69 Mbit/s
95th percentile per-packet one-way delay: 106.291 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 147.62 Mbit/s
95th percentile per-packet one-way delay: 111.443 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 129.42 Mbit/s
95th percentile per-packet one-way delay: 114.786 ms
Loss rate: 0.36%
```
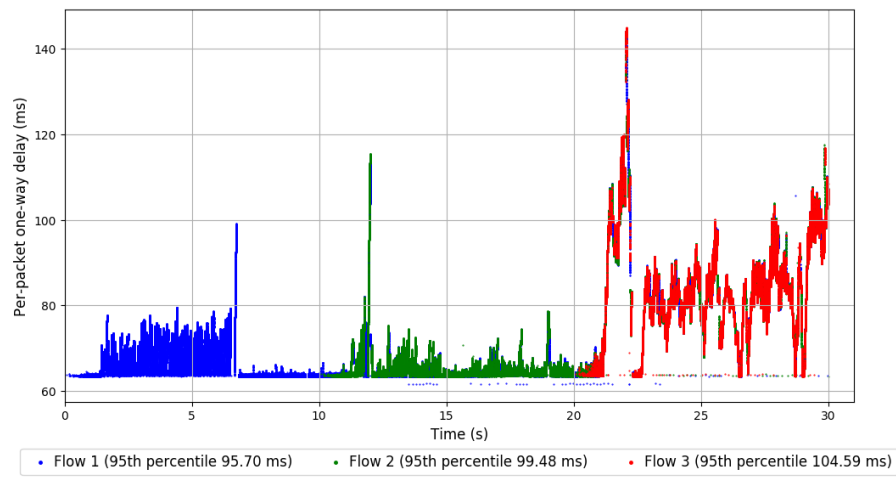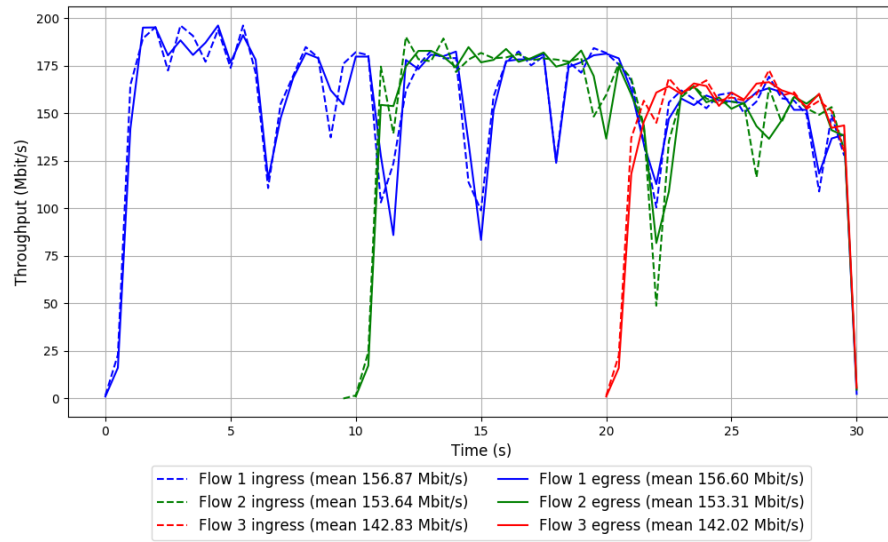
Run 5: Report of TCP BBR — Data Link

Flow 1 ingress (mean 160.84 Mbit/s) --- Flow 1 egress (mean 160.69 Mbit/s)
Flow 2 ingress (mean 147.85 Mbit/s) --- Flow 2 egress (mean 147.62 Mbit/s)
Flow 3 ingress (mean 129.89 Mbit/s) --- Flow 3 egress (mean 129.42 Mbit/s)

Flow 1 (95th percentile 106.29 ms)   Flow 2 (95th percentile 111.44 ms)   Flow 3 (95th percentile 114.79 ms)

13

```
Run 6: Statistics of TCP BBR

Start at: 2018-04-18 23:47:11
End at: 2018-04-18 23:47:41


# Below is generated by plot.py at 2018-04-19 03:01:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 308.53 Mbit/s
95th percentile per-packet one-way delay: 101.506 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 161.78 Mbit/s
95th percentile per-packet one-way delay: 99.706 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 154.31 Mbit/s
95th percentile per-packet one-way delay: 101.581 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 132.61 Mbit/s
95th percentile per-packet one-way delay: 105.380 ms
Loss rate: 0.42%
```
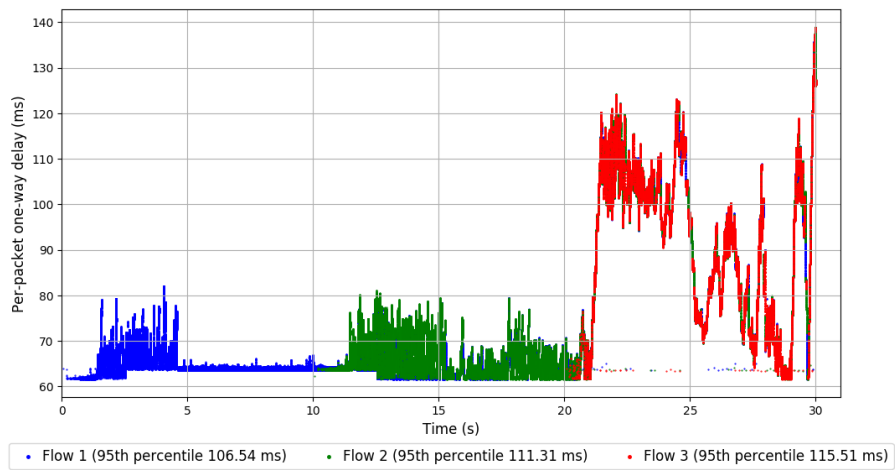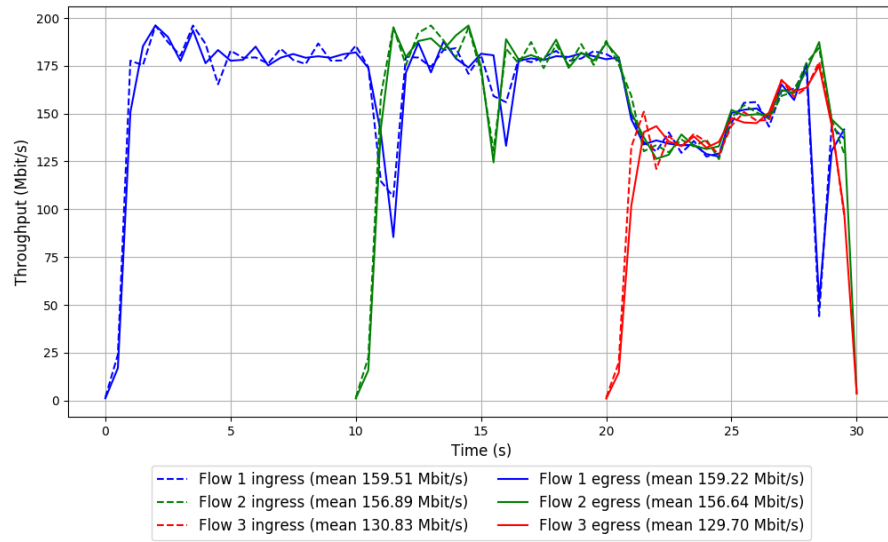
Run 6: Report of TCP BBR — Data Link

```
Run 7: Statistics of TCP BBR

Start at: 2018-04-19 00:02:55
End at: 2018-04-19 00:03:25


# Below is generated by plot.py at 2018-04-19 03:01:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 305.88 Mbit/s
95th percentile per-packet one-way delay: 99.255 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 156.60 Mbit/s
95th percentile per-packet one-way delay: 95.700 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 153.31 Mbit/s
95th percentile per-packet one-way delay: 99.483 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 142.02 Mbit/s
95th percentile per-packet one-way delay: 104.589 ms
Loss rate: 0.37%
```
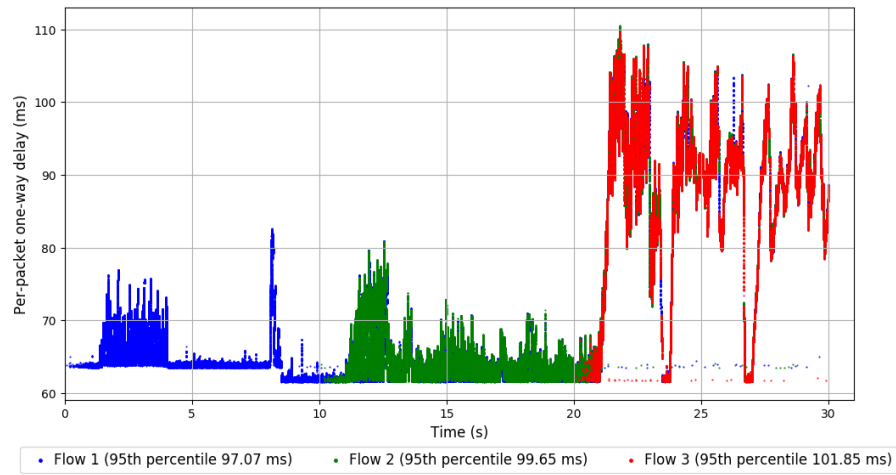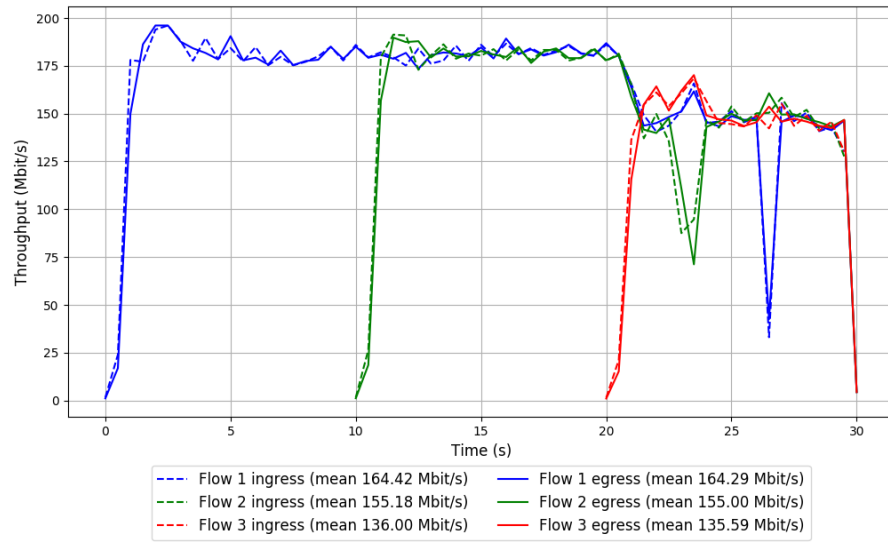
Run 7: Report of TCP BBR — Data Link

```
Run 8: Statistics of TCP BBR

Start at: 2018-04-19 00:18:38
End at: 2018-04-19 00:19:08


# Below is generated by plot.py at 2018-04-19 03:01:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 306.42 Mbit/s
95th percentile per-packet one-way delay: 110.826 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 159.22 Mbit/s
95th percentile per-packet one-way delay: 106.539 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 156.64 Mbit/s
95th percentile per-packet one-way delay: 111.312 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 129.70 Mbit/s
95th percentile per-packet one-way delay: 115.513 ms
Loss rate: 0.72%
```
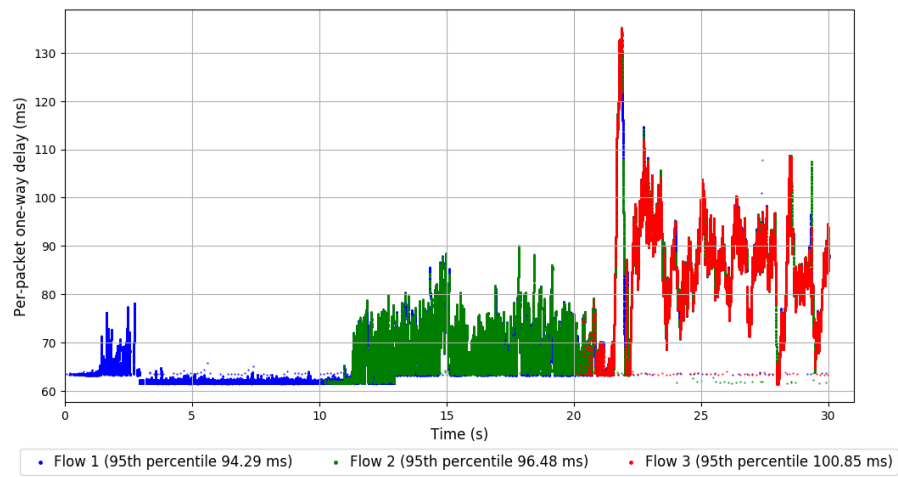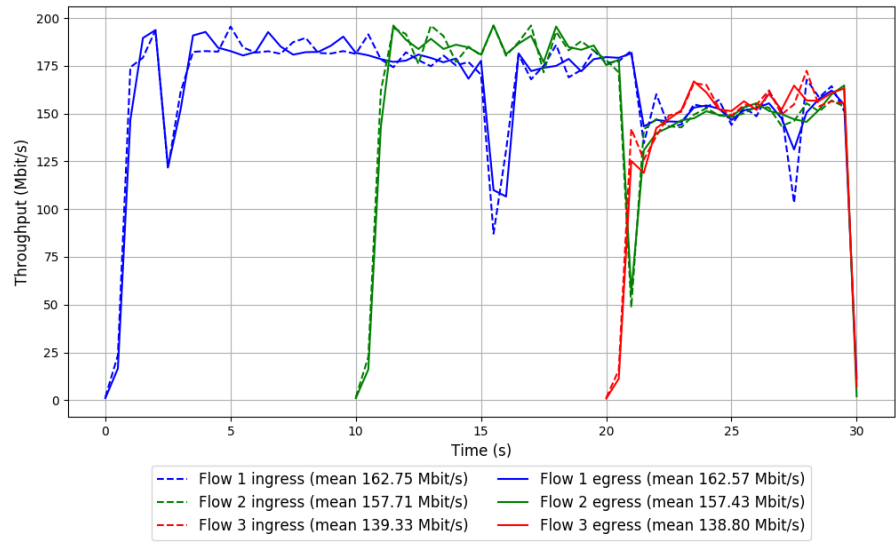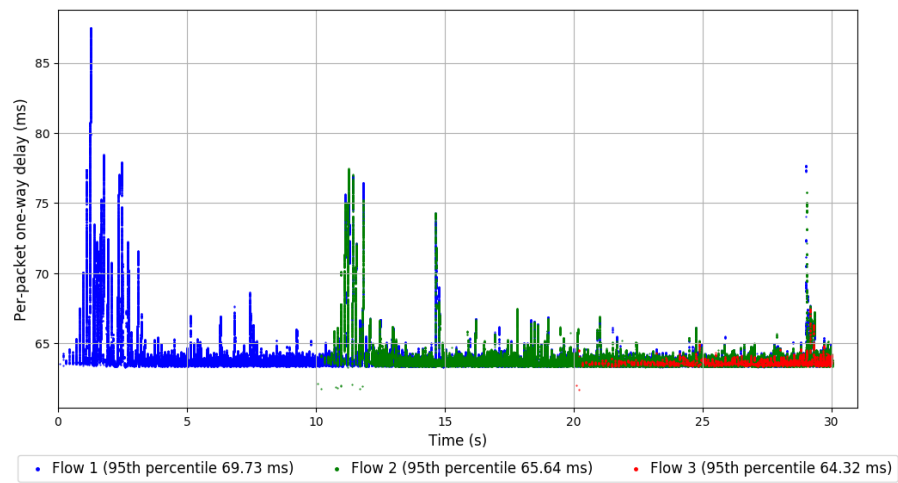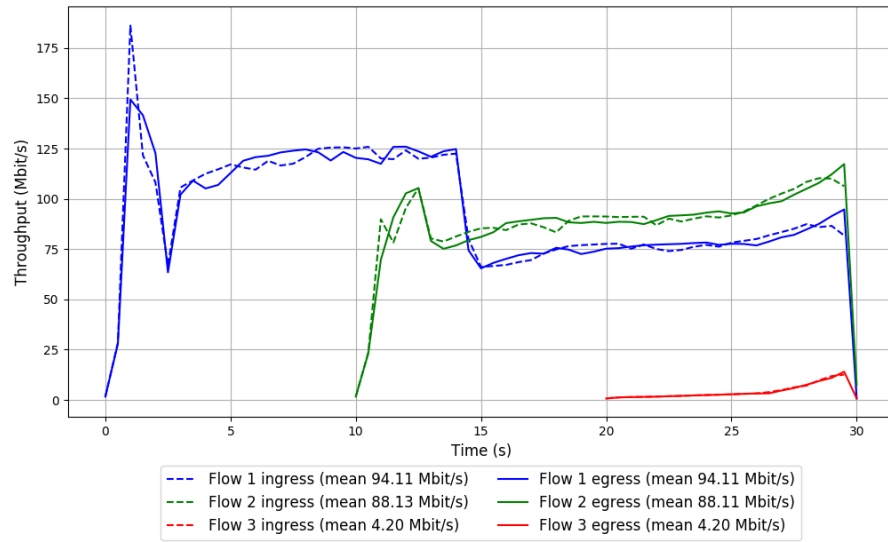
Run 8: Report of TCP BBR — Data Link

Flow 1 ingress (mean 159.51 Mbit/s) Flow 1 egress (mean 159.22 Mbit/s)
Flow 2 ingress (mean 156.89 Mbit/s) Flow 2 egress (mean 156.64 Mbit/s)
Flow 3 ingress (mean 130.83 Mbit/s) Flow 3 egress (mean 129.70 Mbit/s)

Flow 1 (95th percentile 106.54 ms)   Flow 2 (95th percentile 111.31 ms)   Flow 3 (95th percentile 115.51 ms)

```
Run 9: Statistics of TCP BBR

Start at: 2018-04-19 00:34:02
End at: 2018-04-19 00:34:32


# Below is generated by plot.py at 2018-04-19 03:07:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 312.53 Mbit/s
95th percentile per-packet one-way delay: 99.325 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 164.29 Mbit/s
95th percentile per-packet one-way delay: 97.069 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 155.00 Mbit/s
95th percentile per-packet one-way delay: 99.652 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 135.59 Mbit/s
95th percentile per-packet one-way delay: 101.854 ms
Loss rate: 0.28%
```

Run 9: Report of TCP BBR — Data Link

Flow 1 ingress (mean 164.42 Mbit/s) ---- Flow 1 egress (mean 164.29 Mbit/s)
Flow 2 ingress (mean 155.18 Mbit/s) ---- Flow 2 egress (mean 155.00 Mbit/s)
Flow 3 ingress (mean 136.00 Mbit/s) ---- Flow 3 egress (mean 135.59 Mbit/s)

Flow 1 (95th percentile 97.07 ms)   Flow 2 (95th percentile 99.65 ms)   Flow 3 (95th percentile 101.85 ms)

```
Run 10: Statistics of TCP BBR

Start at: 2018-04-19 00:49:28
End at: 2018-04-19 00:49:58

# Below is generated by plot.py at 2018-04-19 03:07:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 313.42 Mbit/s
95th percentile per-packet one-way delay: 96.528 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 162.57 Mbit/s
95th percentile per-packet one-way delay: 94.288 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 157.43 Mbit/s
95th percentile per-packet one-way delay: 96.477 ms
Loss rate: 0.17%
-- Flow 3:
Average throughput: 138.80 Mbit/s
95th percentile per-packet one-way delay: 100.849 ms
Loss rate: 0.38%
```
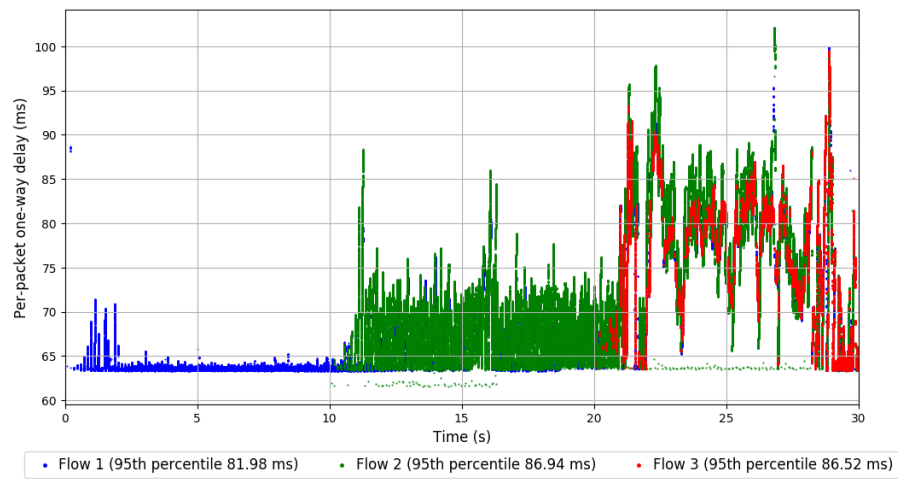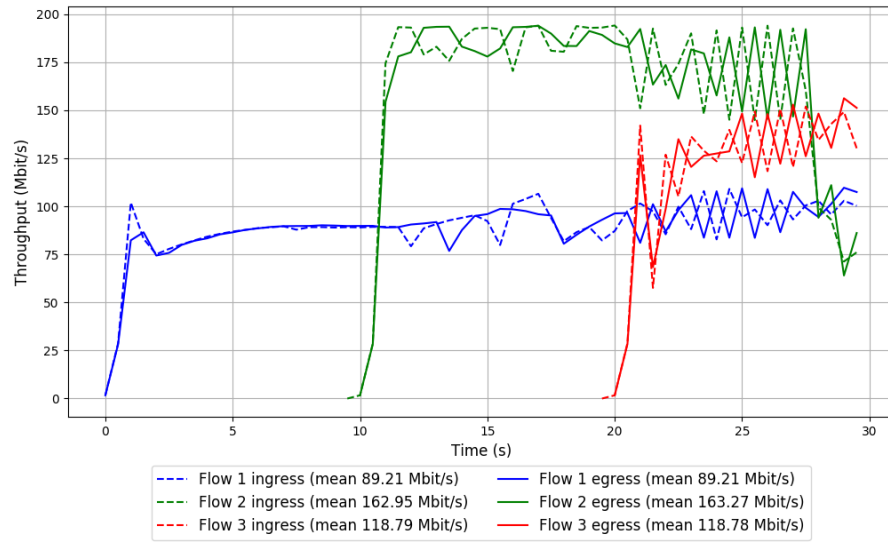
Run 10: Report of TCP BBR — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2018-04-18 22:16:00
End at: 2018-04-18 22:16:30

# Below is generated by plot.py at 2018-04-19 03:07:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 154.15 Mbit/s
95th percentile per-packet one-way delay: 67.818 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 94.11 Mbit/s
95th percentile per-packet one-way delay: 69.728 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 88.11 Mbit/s
95th percentile per-packet one-way delay: 65.635 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 4.20 Mbit/s
95th percentile per-packet one-way delay: 64.319 ms
Loss rate: 0.12%
```
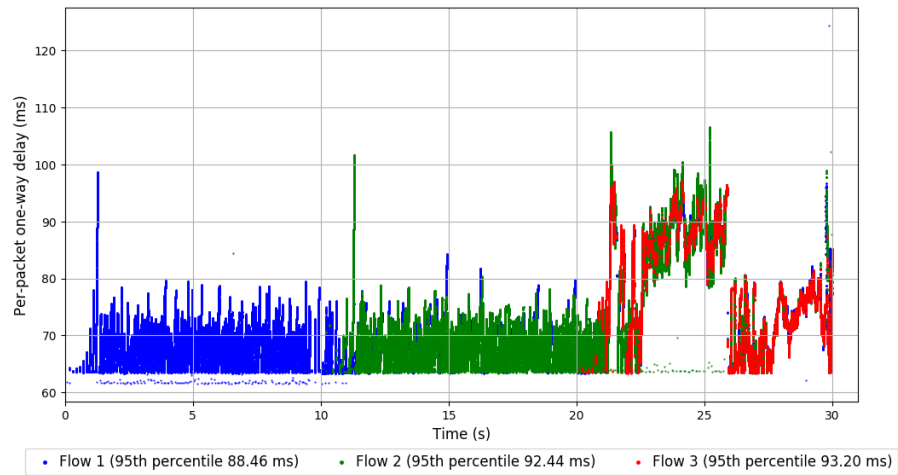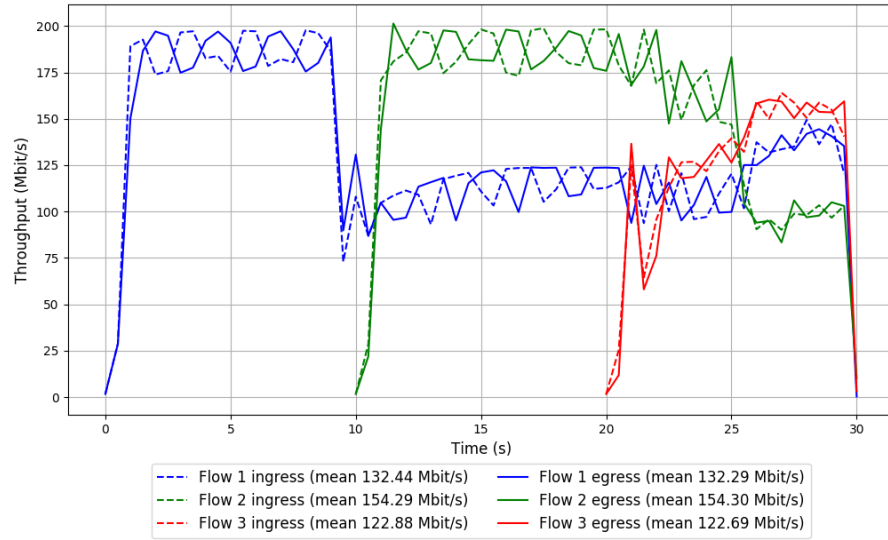
Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2018-04-18 22:31:22
End at: 2018-04-18 22:31:52

# Below is generated by plot.py at 2018-04-19 03:07:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 237.17 Mbit/s
95th percentile per-packet one-way delay: 85.837 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 89.21 Mbit/s
95th percentile per-packet one-way delay: 81.983 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 163.27 Mbit/s
95th percentile per-packet one-way delay: 86.940 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 118.78 Mbit/s
95th percentile per-packet one-way delay: 86.522 ms
Loss rate: 0.01%
```
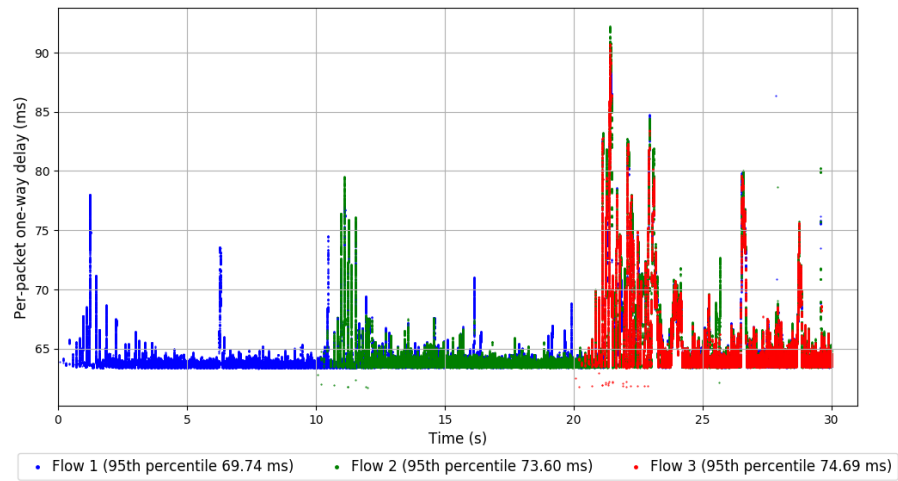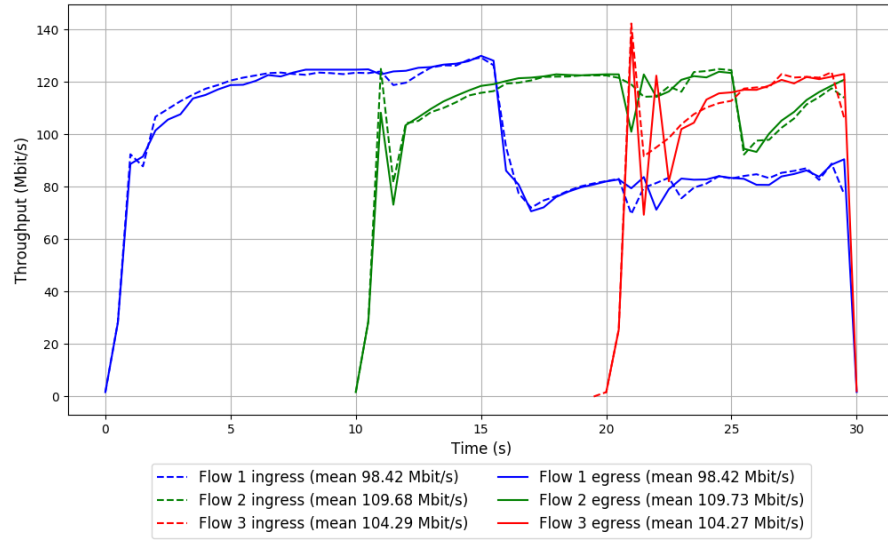
Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2018-04-18 22:47:09
End at: 2018-04-18 22:47:39

# Below is generated by plot.py at 2018-04-19 03:07:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 275.69 Mbit/s
95th percentile per-packet one-way delay: 91.211 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 132.29 Mbit/s
95th percentile per-packet one-way delay: 88.461 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 154.30 Mbit/s
95th percentile per-packet one-way delay: 92.435 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 122.69 Mbit/s
95th percentile per-packet one-way delay: 93.196 ms
Loss rate: 0.17%
```
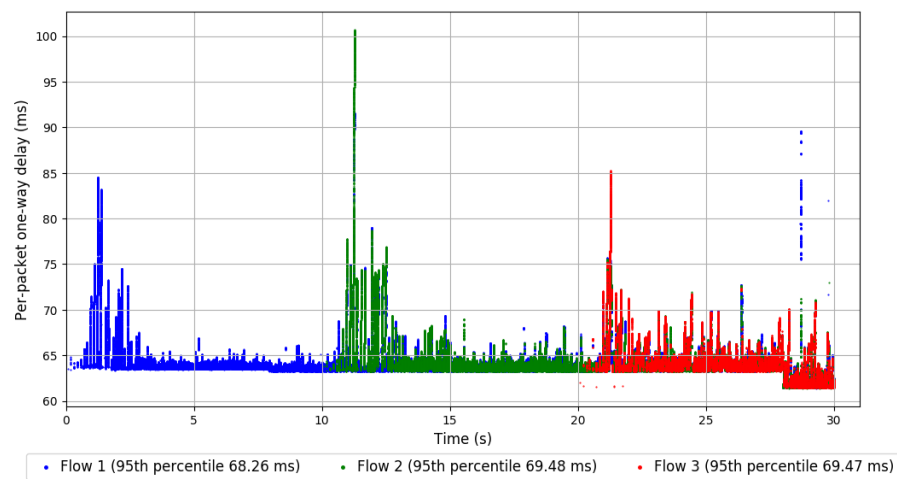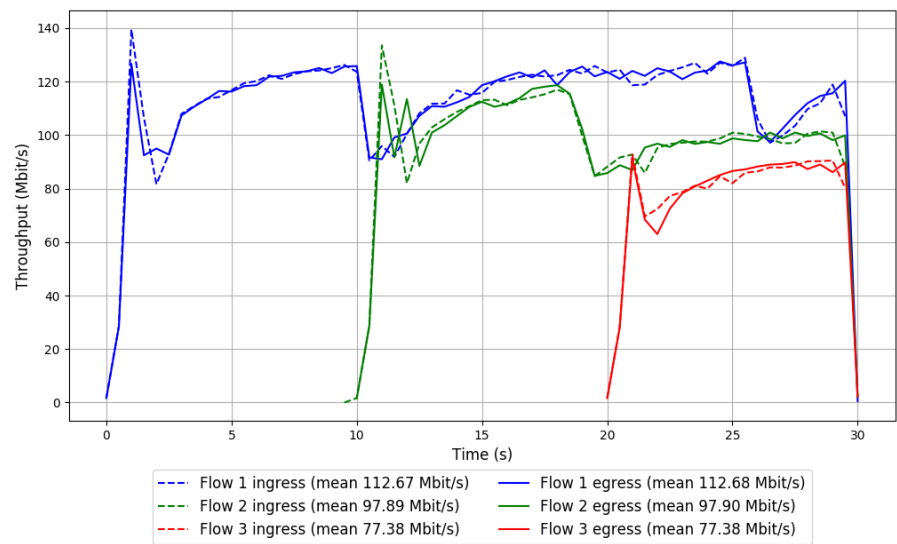
Run 3: Report of TCP Cubic — Data Link

```
Run 4: Statistics of TCP Cubic

Start at: 2018-04-18 23:02:49
End at: 2018-04-18 23:03:19


# Below is generated by plot.py at 2018-04-19 03:07:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 206.10 Mbit/s
95th percentile per-packet one-way delay: 72.216 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 98.42 Mbit/s
95th percentile per-packet one-way delay: 69.744 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 109.73 Mbit/s
95th percentile per-packet one-way delay: 73.602 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 104.27 Mbit/s
95th percentile per-packet one-way delay: 74.691 ms
Loss rate: 0.01%
```
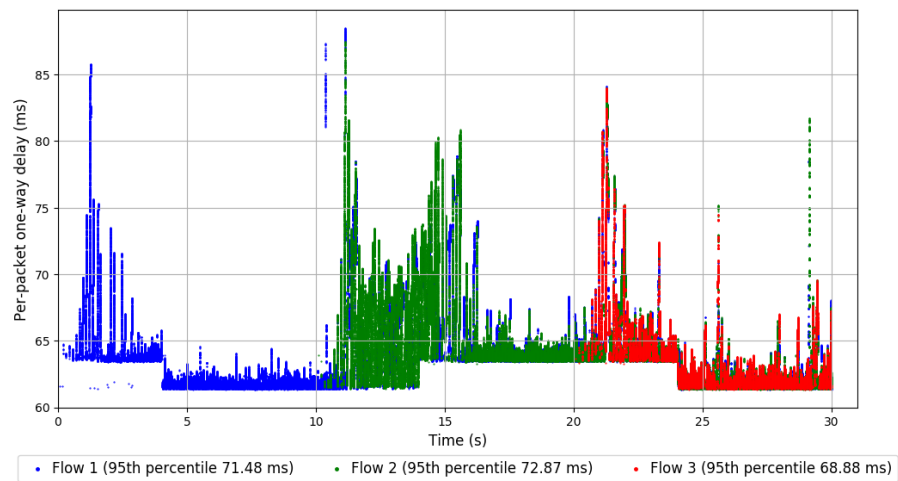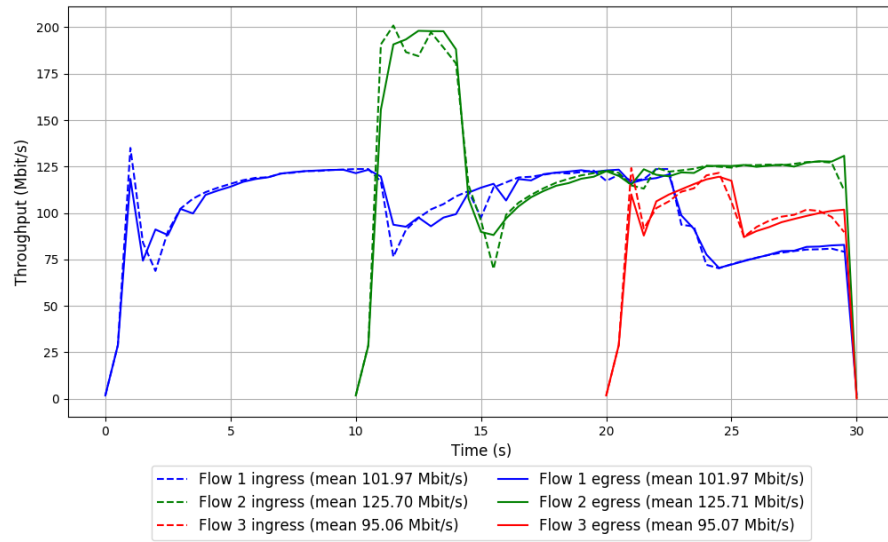
Run 4: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 98.42 Mbit/s) --- Flow 1 egress (mean 98.42 Mbit/s)
Flow 2 ingress (mean 109.68 Mbit/s) --- Flow 2 egress (mean 109.73 Mbit/s)
Flow 3 ingress (mean 104.29 Mbit/s) --- Flow 3 egress (mean 104.27 Mbit/s)

Flow 1 (95th percentile 69.74 ms) • Flow 2 (95th percentile 73.60 ms) • Flow 3 (95th percentile 74.69 ms)

```
Run 5: Statistics of TCP Cubic

Start at: 2018-04-18 23:18:23
End at: 2018-04-18 23:18:53


# Below is generated by plot.py at 2018-04-19 03:07:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 203.54 Mbit/s
95th percentile per-packet one-way delay: 68.873 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 112.68 Mbit/s
95th percentile per-packet one-way delay: 68.257 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 97.90 Mbit/s
95th percentile per-packet one-way delay: 69.478 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 77.38 Mbit/s
95th percentile per-packet one-way delay: 69.465 ms
Loss rate: 0.00%
```
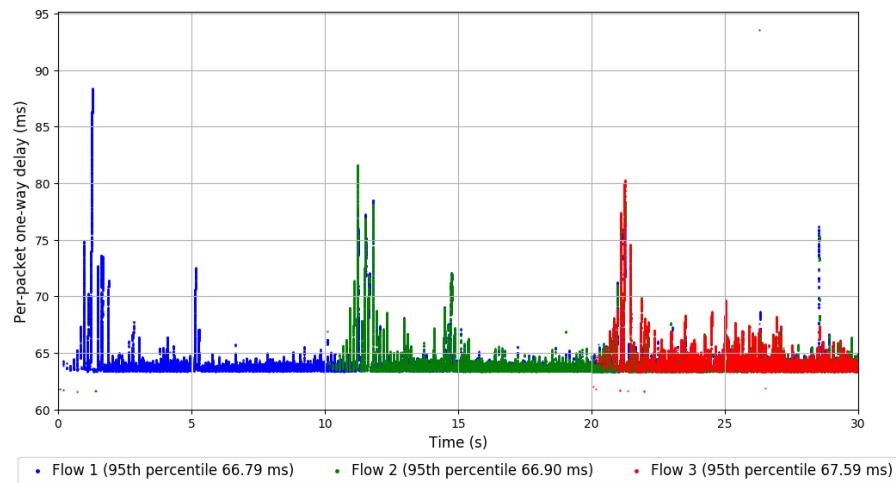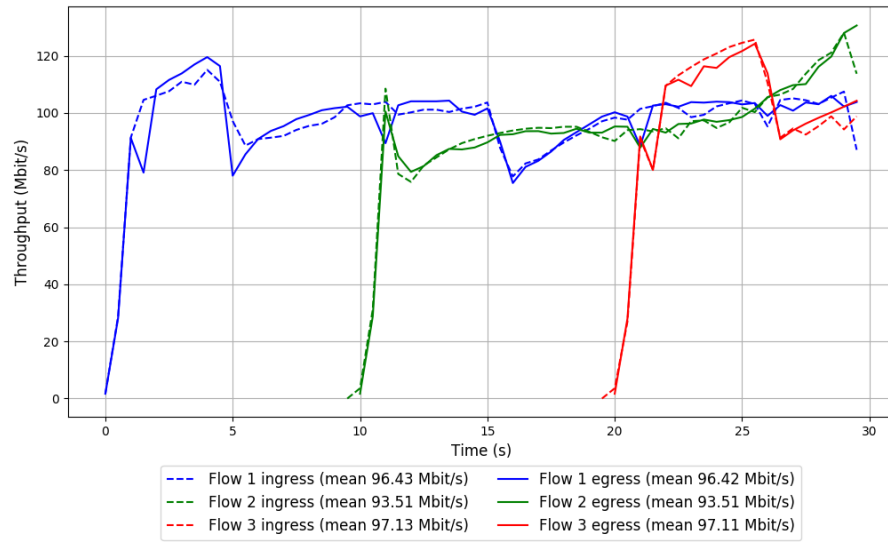
Run 5: Report of TCP Cubic — Data Link

```
Run 6: Statistics of TCP Cubic

Start at: 2018-04-18 23:34:07
End at: 2018-04-18 23:34:37


# Below is generated by plot.py at 2018-04-19 03:07:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 217.15 Mbit/s
95th percentile per-packet one-way delay: 71.871 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 101.97 Mbit/s
95th percentile per-packet one-way delay: 71.483 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 125.71 Mbit/s
95th percentile per-packet one-way delay: 72.871 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 95.07 Mbit/s
95th percentile per-packet one-way delay: 68.881 ms
Loss rate: 0.00%
```
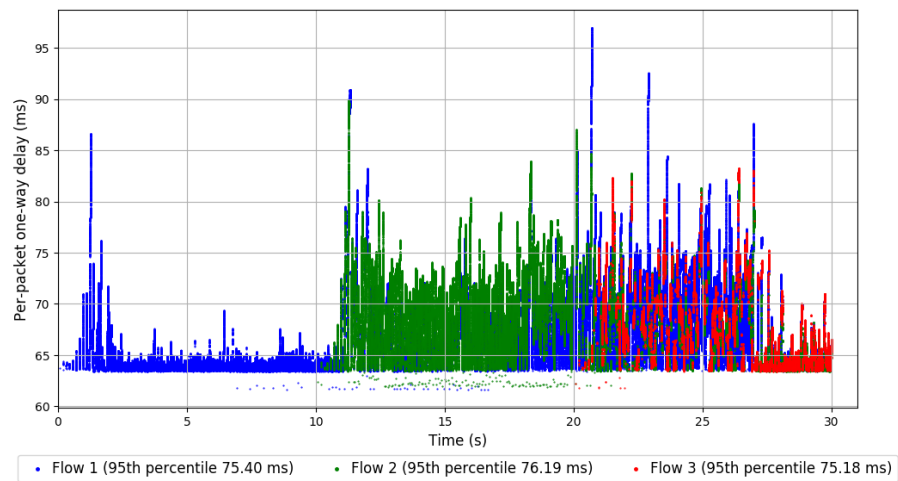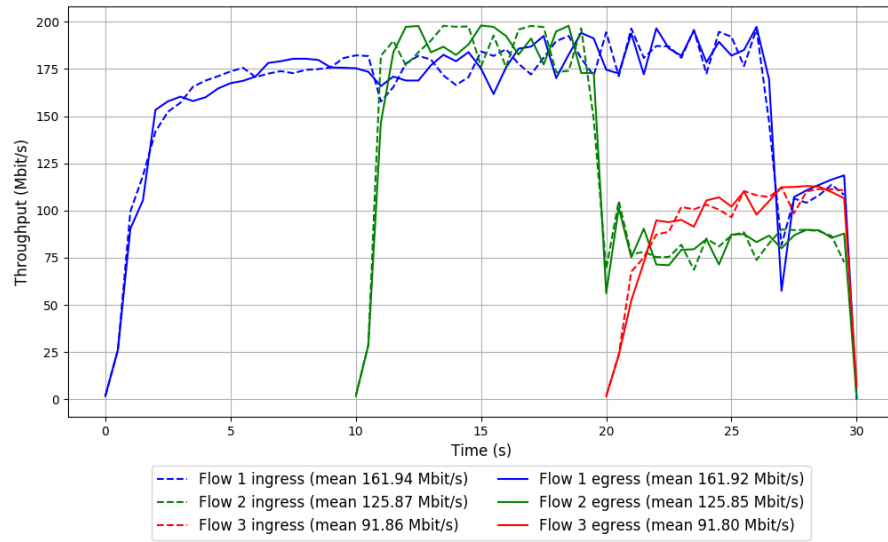
Run 6: Report of TCP Cubic — Data Link

```
Run 7: Statistics of TCP Cubic

Start at: 2018-04-18 23:49:41
End at: 2018-04-18 23:50:11


# Below is generated by plot.py at 2018-04-19 03:08:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 190.95 Mbit/s
95th percentile per-packet one-way delay: 67.074 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 96.42 Mbit/s
95th percentile per-packet one-way delay: 66.792 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 93.51 Mbit/s
95th percentile per-packet one-way delay: 66.897 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 97.11 Mbit/s
95th percentile per-packet one-way delay: 67.588 ms
Loss rate: 0.00%
```
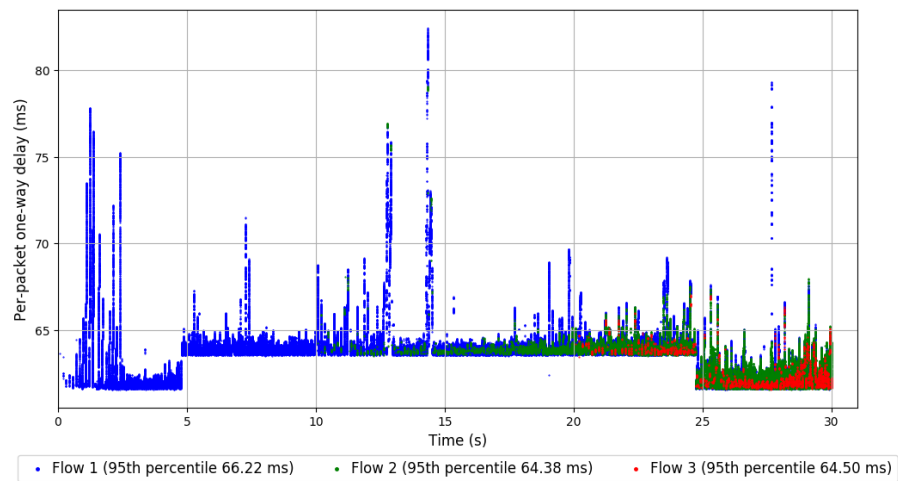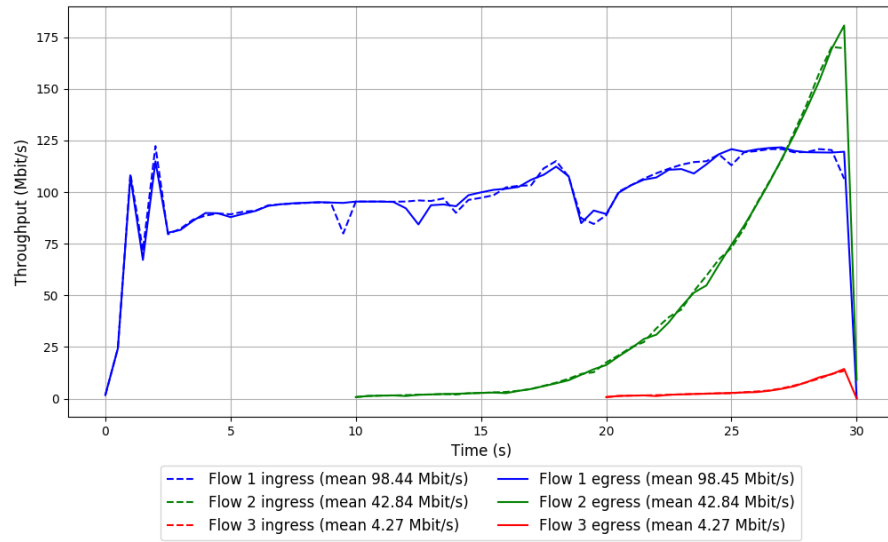
Run 7: Report of TCP Cubic — Data Link

```
Run 8: Statistics of TCP Cubic

Start at: 2018-04-19 00:05:24
End at: 2018-04-19 00:05:54


# Below is generated by plot.py at 2018-04-19 03:10:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 276.17 Mbit/s
95th percentile per-packet one-way delay: 75.685 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 161.92 Mbit/s
95th percentile per-packet one-way delay: 75.404 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 125.85 Mbit/s
95th percentile per-packet one-way delay: 76.186 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 91.80 Mbit/s
95th percentile per-packet one-way delay: 75.183 ms
Loss rate: 0.05%
```
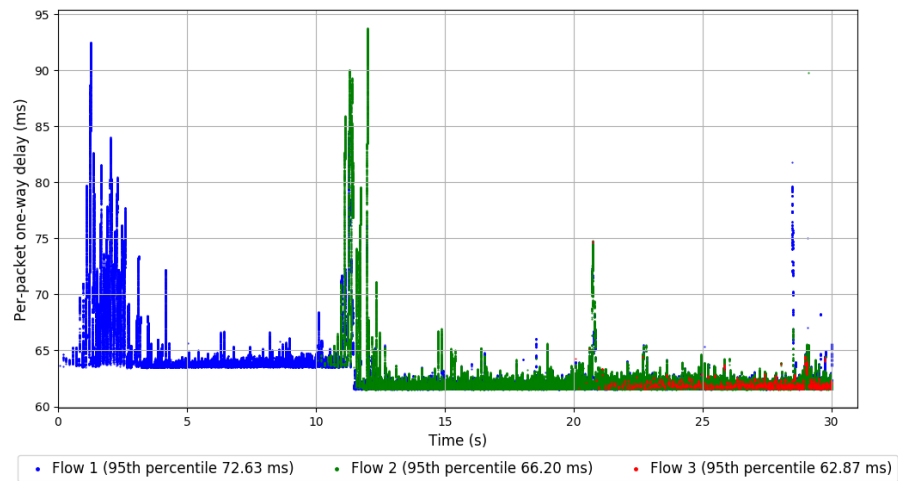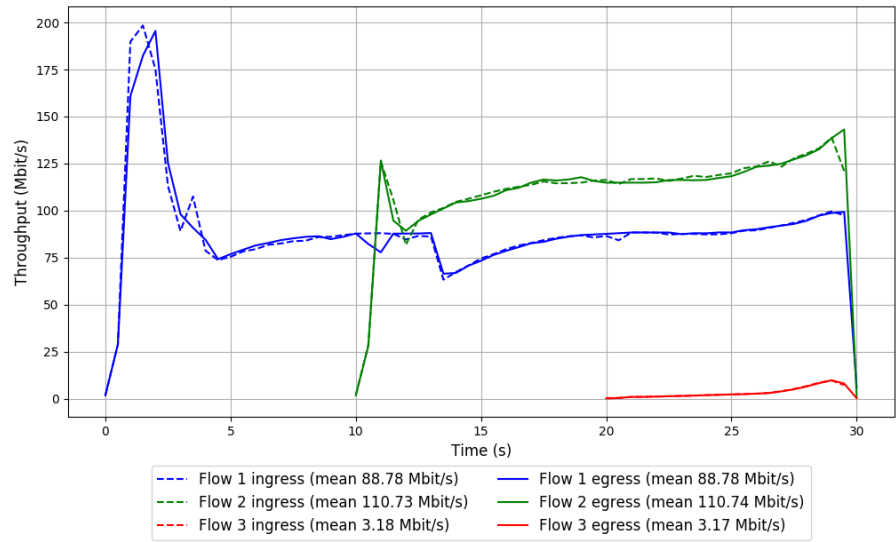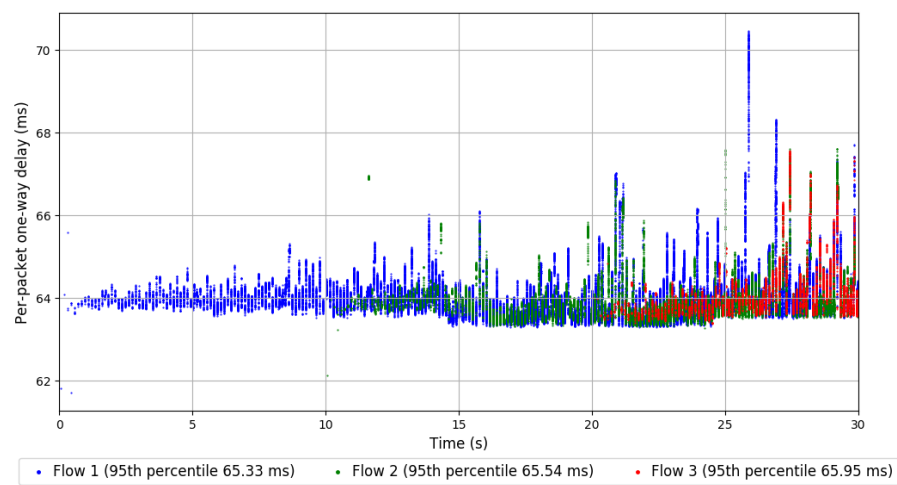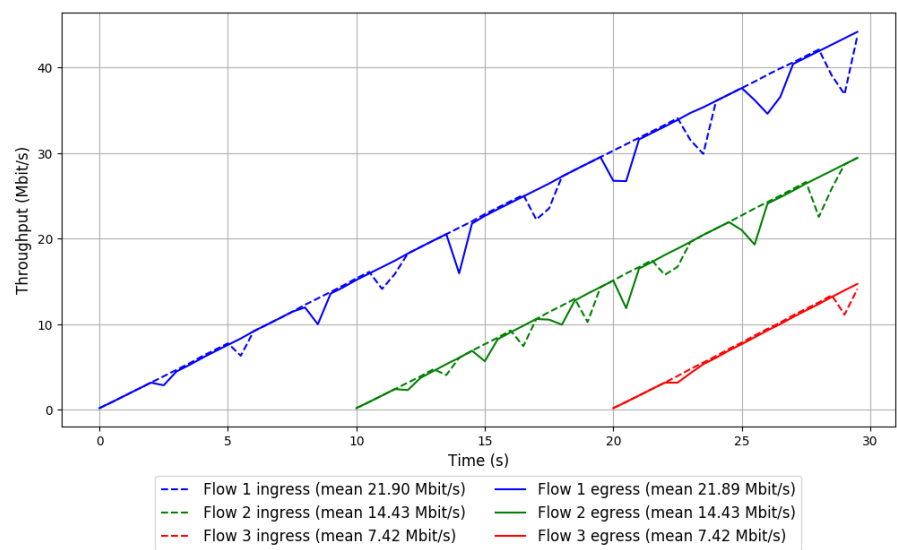
Run 8: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 161.94 Mbit/s) --- Flow 1 egress (mean 161.92 Mbit/s)
Flow 2 ingress (mean 125.87 Mbit/s) --- Flow 2 egress (mean 125.85 Mbit/s)
Flow 3 ingress (mean 91.86 Mbit/s) --- Flow 3 egress (mean 91.80 Mbit/s)

Flow 1 (95th percentile 75.40 ms)   Flow 2 (95th percentile 76.19 ms)   Flow 3 (95th percentile 75.18 ms)

```
Run 9: Statistics of TCP Cubic

Start at: 2018-04-19 00:21:06
End at: 2018-04-19 00:21:36

# Below is generated by plot.py at 2018-04-19 03:10:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 128.38 Mbit/s
95th percentile per-packet one-way delay: 65.650 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 98.45 Mbit/s
95th percentile per-packet one-way delay: 66.217 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 42.84 Mbit/s
95th percentile per-packet one-way delay: 64.384 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 4.27 Mbit/s
95th percentile per-packet one-way delay: 64.498 ms
Loss rate: 0.11%
```
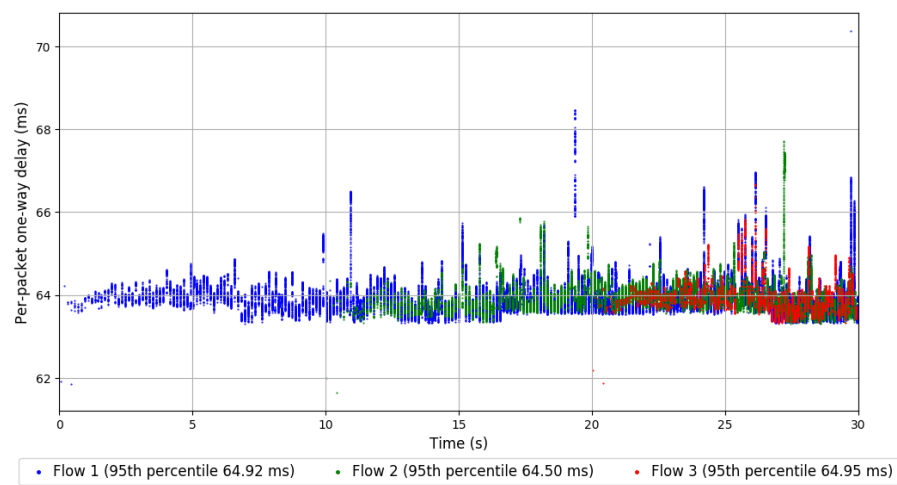
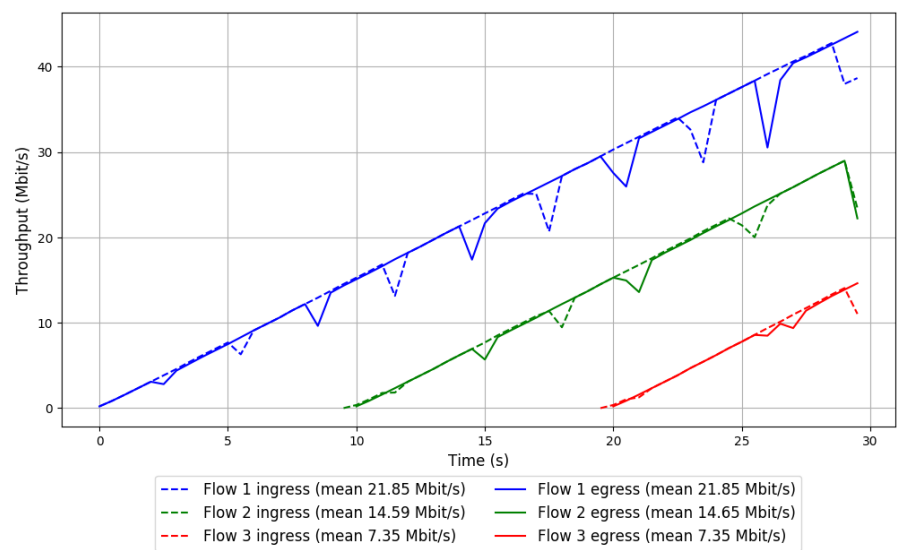Run 9: Report of TCP Cubic — Data Link

```
Run 10: Statistics of TCP Cubic

Start at: 2018-04-19 00:36:29
End at: 2018-04-19 00:36:59


# Below is generated by plot.py at 2018-04-19 03:10:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 163.56 Mbit/s
95th percentile per-packet one-way delay: 71.078 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 88.78 Mbit/s
95th percentile per-packet one-way delay: 72.631 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 110.74 Mbit/s
95th percentile per-packet one-way delay: 66.203 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 3.17 Mbit/s
95th percentile per-packet one-way delay: 62.868 ms
Loss rate: 0.42%
```

Run 10: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 88.78 Mbit/s) --- Flow 1 egress (mean 88.78 Mbit/s)
Flow 2 ingress (mean 110.73 Mbit/s) --- Flow 2 egress (mean 110.74 Mbit/s)
Flow 3 ingress (mean 3.18 Mbit/s) --- Flow 3 egress (mean 3.17 Mbit/s)

Flow 1 (95th percentile 72.63 ms) Flow 2 (95th percentile 66.20 ms) Flow 3 (95th percentile 62.87 ms)

43

```
Run 1: Statistics of LEDBAT

Start at: 2018-04-18 22:26:06
End at: 2018-04-18 22:26:36

# Below is generated by plot.py at 2018-04-19 03:10:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 33.95 Mbit/s
95th percentile per-packet one-way delay: 65.415 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 21.89 Mbit/s
95th percentile per-packet one-way delay: 65.325 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 14.43 Mbit/s
95th percentile per-packet one-way delay: 65.543 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 7.42 Mbit/s
95th percentile per-packet one-way delay: 65.953 ms
Loss rate: 0.00%
```
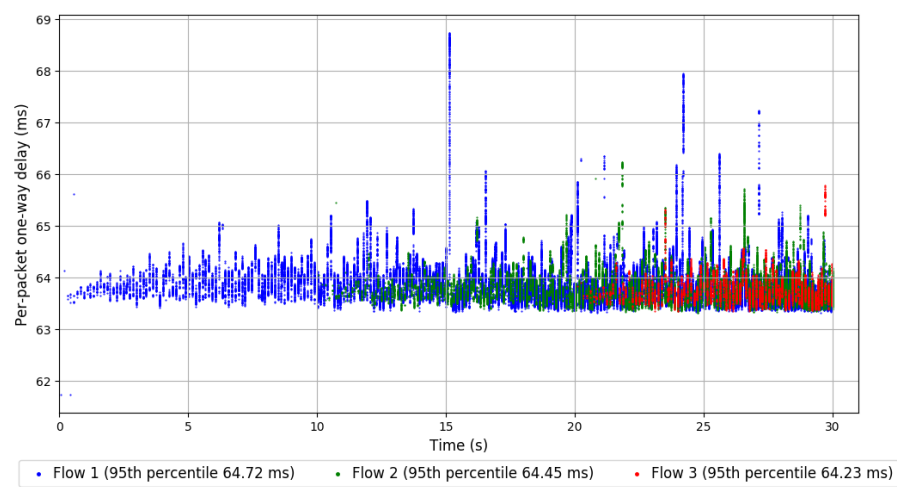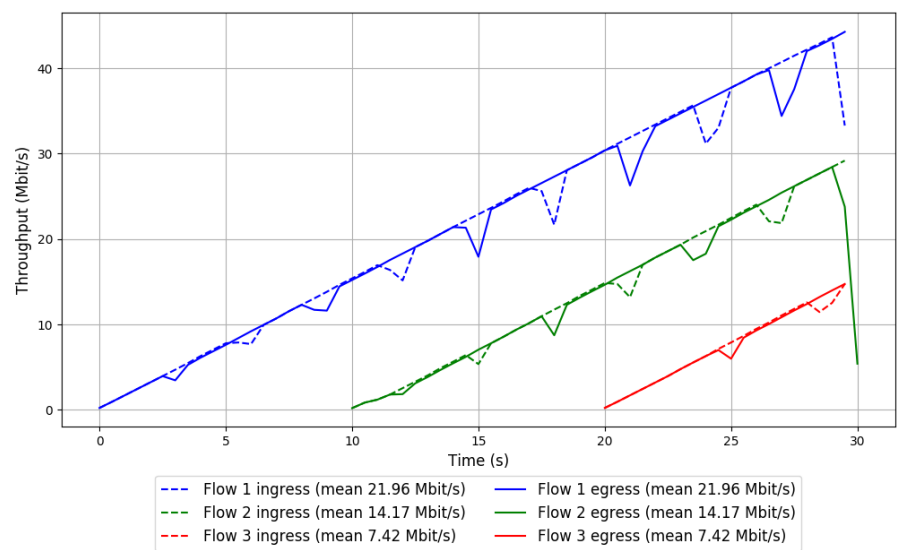
Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2018-04-18 22:41:44
End at: 2018-04-18 22:42:14


# Below is generated by plot.py at 2018-04-19 03:10:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 33.99 Mbit/s
95th percentile per-packet one-way delay: 64.798 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 21.85 Mbit/s
95th percentile per-packet one-way delay: 64.915 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 14.65 Mbit/s
95th percentile per-packet one-way delay: 64.498 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 7.35 Mbit/s
95th percentile per-packet one-way delay: 64.950 ms
Loss rate: 0.00%
```
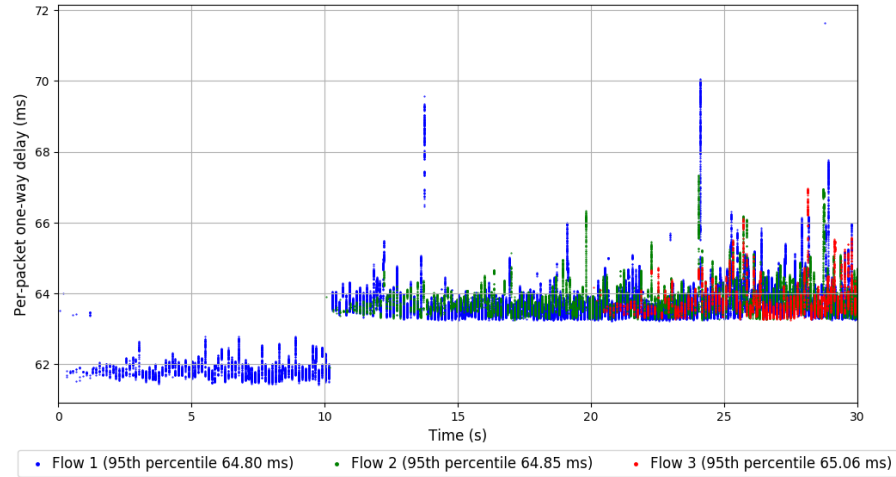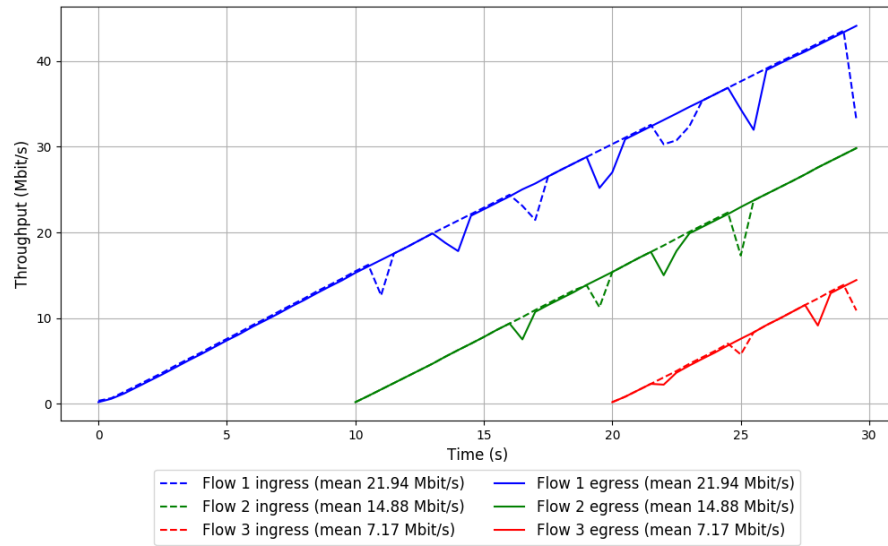
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2018-04-18 22:57:32
End at: 2018-04-18 22:58:02

# Below is generated by plot.py at 2018-04-19 03:10:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 33.78 Mbit/s
95th percentile per-packet one-way delay: 64.629 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 21.96 Mbit/s
95th percentile per-packet one-way delay: 64.725 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 14.17 Mbit/s
95th percentile per-packet one-way delay: 64.452 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 7.42 Mbit/s
95th percentile per-packet one-way delay: 64.235 ms
Loss rate: 0.00%
```
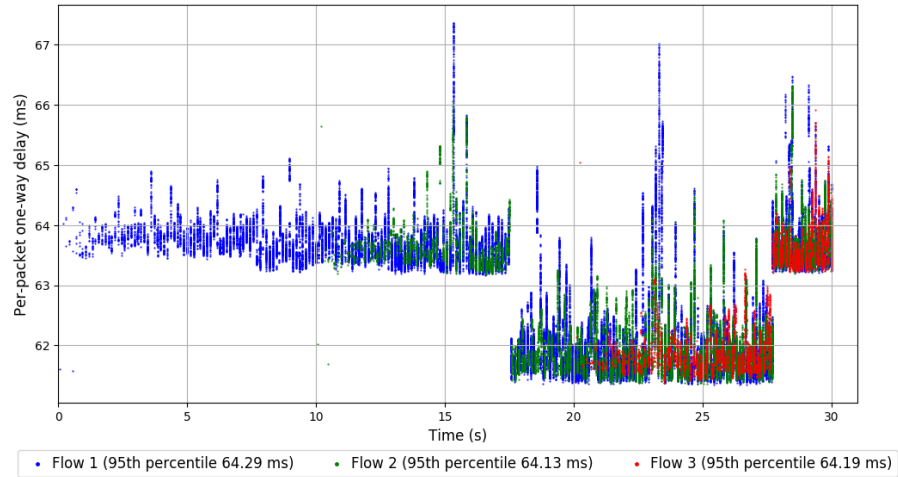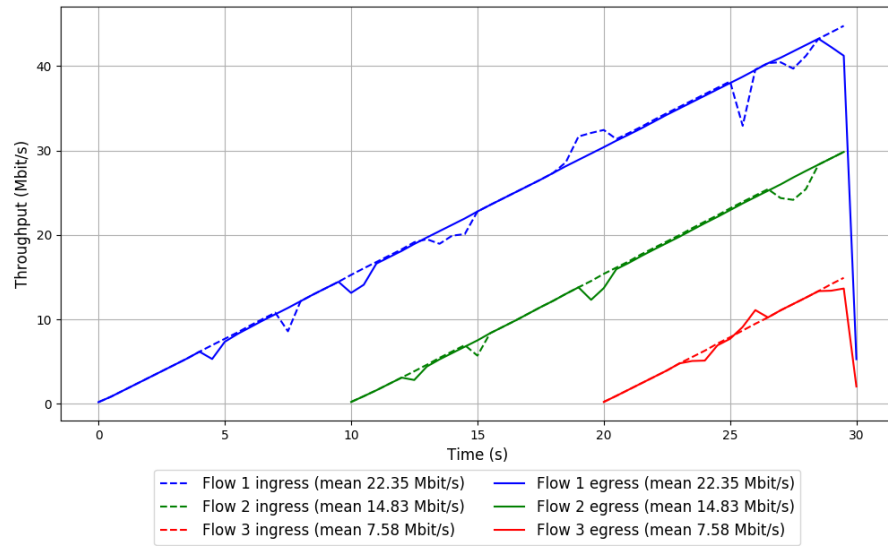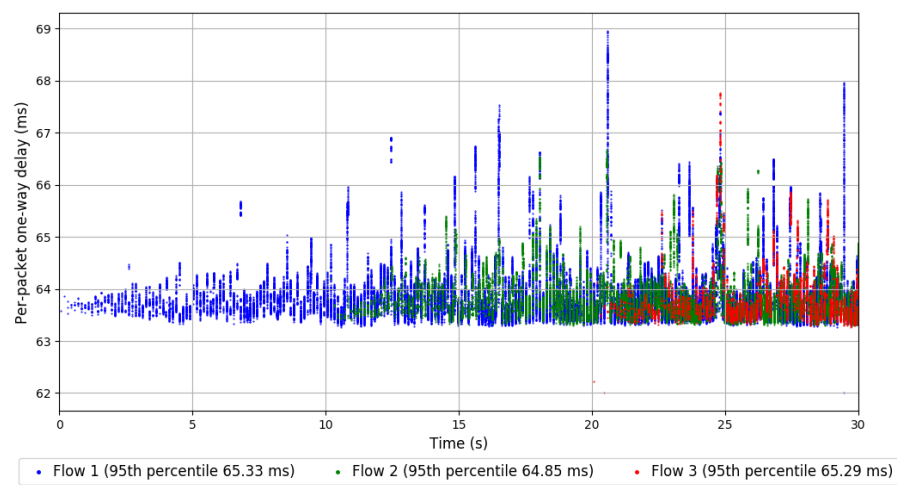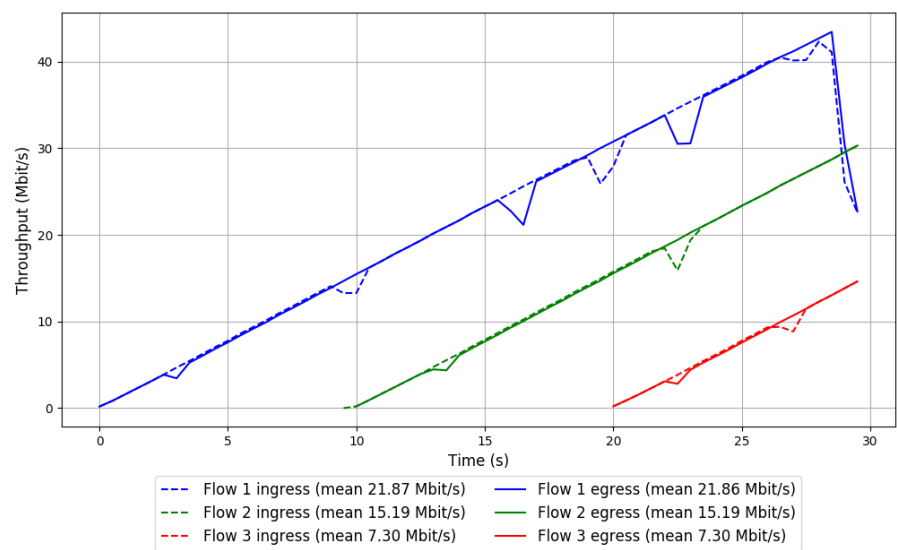
Run 3: Report of LEDBAT — Data Link

```
Run 4: Statistics of LEDBAT

Start at: 2018-04-18 23:13:10
End at: 2018-04-18 23:13:40

# Below is generated by plot.py at 2018-04-19 03:10:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 34.15 Mbit/s
95th percentile per-packet one-way delay: 64.830 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 21.94 Mbit/s
95th percentile per-packet one-way delay: 64.802 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 14.88 Mbit/s
95th percentile per-packet one-way delay: 64.850 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 7.17 Mbit/s
95th percentile per-packet one-way delay: 65.058 ms
Loss rate: 0.00%
```
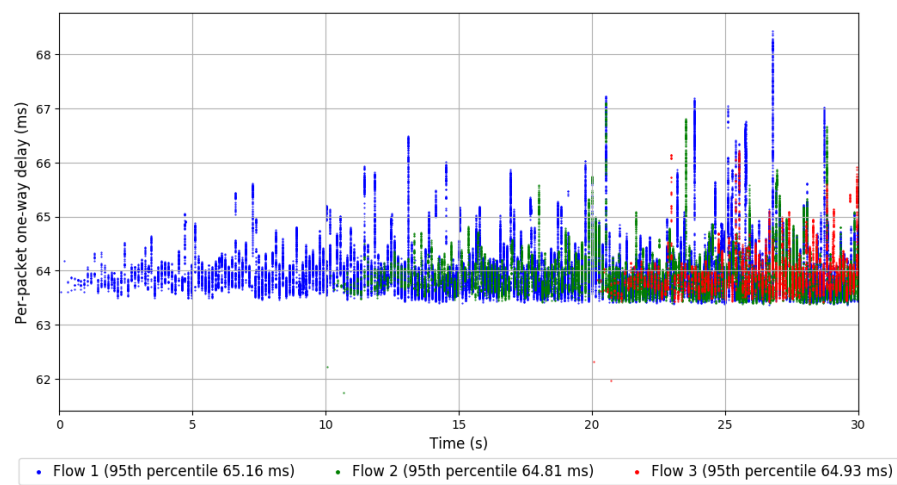
Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2018-04-18 23:28:43
End at: 2018-04-18 23:29:13

# Below is generated by plot.py at 2018-04-19 03:10:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 34.72 Mbit/s
95th percentile per-packet one-way delay: 64.250 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 22.35 Mbit/s
95th percentile per-packet one-way delay: 64.287 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 14.83 Mbit/s
95th percentile per-packet one-way delay: 64.130 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 7.58 Mbit/s
95th percentile per-packet one-way delay: 64.194 ms
Loss rate: 0.00%
```
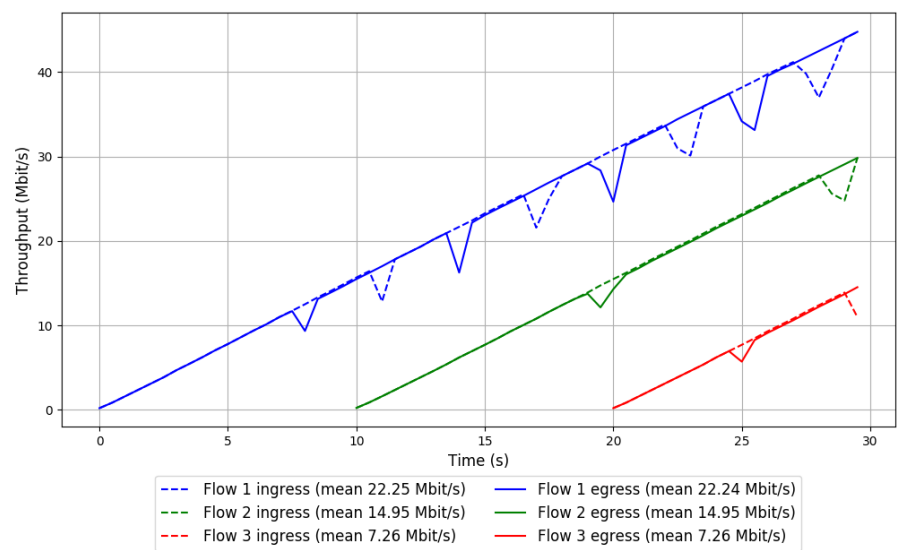
Run 5: Report of LEDBAT — Data Link

Flow 1 ingress (mean 22.35 Mbit/s)   Flow 1 egress (mean 22.35 Mbit/s)
Flow 2 ingress (mean 14.83 Mbit/s)   Flow 2 egress (mean 14.83 Mbit/s)
Flow 3 ingress (mean 7.58 Mbit/s)   Flow 3 egress (mean 7.58 Mbit/s)

Flow 1 (95th percentile 64.29 ms)   Flow 2 (95th percentile 64.13 ms)   Flow 3 (95th percentile 64.19 ms)

```
Run 6: Statistics of LEDBAT

Start at: 2018-04-18 23:44:23
End at: 2018-04-18 23:44:53


# Below is generated by plot.py at 2018-04-19 03:10:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 34.35 Mbit/s
95th percentile per-packet one-way delay: 65.144 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 21.86 Mbit/s
95th percentile per-packet one-way delay: 65.333 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 15.19 Mbit/s
95th percentile per-packet one-way delay: 64.854 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 7.30 Mbit/s
95th percentile per-packet one-way delay: 65.293 ms
Loss rate: 0.00%
```
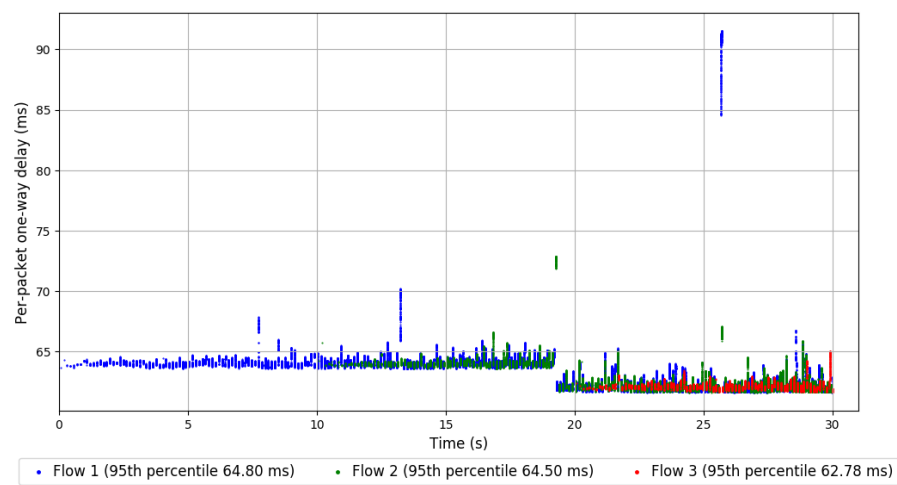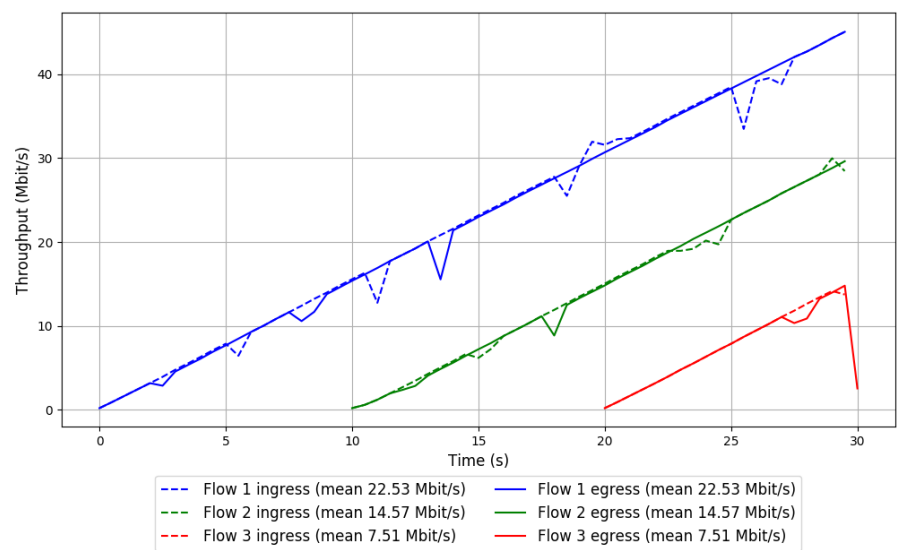
Run 6: Report of LEDBAT — Data Link

```
Run 7: Statistics of LEDBAT

Start at: 2018-04-19 00:00:08
End at: 2018-04-19 00:00:38


# Below is generated by plot.py at 2018-04-19 03:10:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 34.59 Mbit/s
95th percentile per-packet one-way delay: 65.052 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 22.24 Mbit/s
95th percentile per-packet one-way delay: 65.162 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 14.95 Mbit/s
95th percentile per-packet one-way delay: 64.807 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 7.26 Mbit/s
95th percentile per-packet one-way delay: 64.928 ms
Loss rate: 0.00%
```
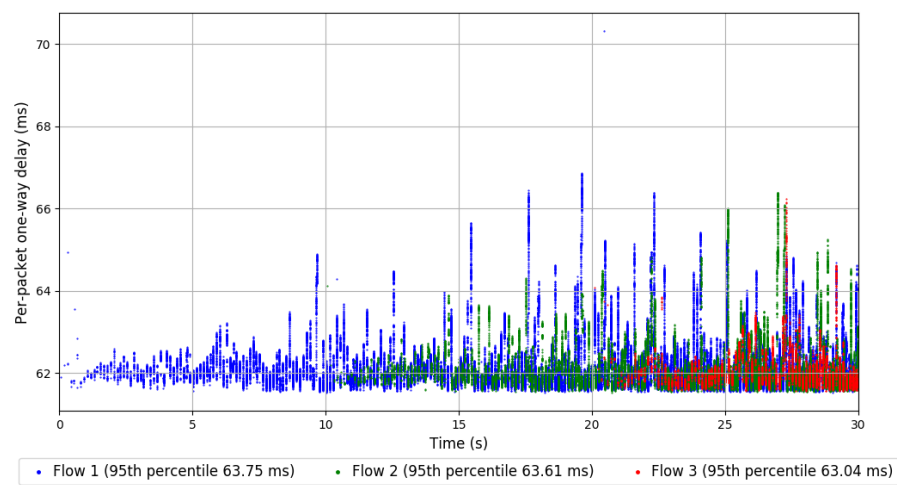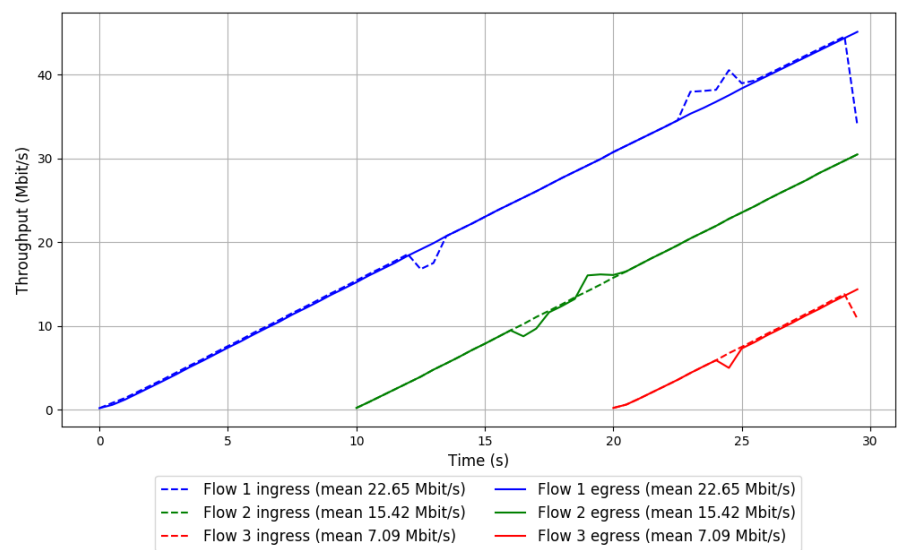
Run 7: Report of LEDBAT — Data Link

```
Run 8: Statistics of LEDBAT

Start at: 2018-04-19 00:15:51
End at: 2018-04-19 00:16:21


# Below is generated by plot.py at 2018-04-19 03:10:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 34.66 Mbit/s
95th percentile per-packet one-way delay: 64.700 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 22.53 Mbit/s
95th percentile per-packet one-way delay: 64.795 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 14.57 Mbit/s
95th percentile per-packet one-way delay: 64.505 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 7.51 Mbit/s
95th percentile per-packet one-way delay: 62.778 ms
Loss rate: 0.00%
```
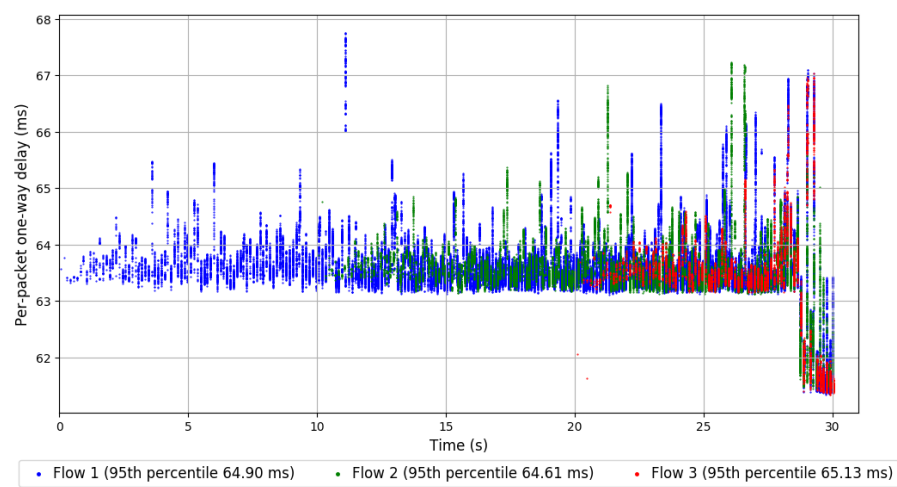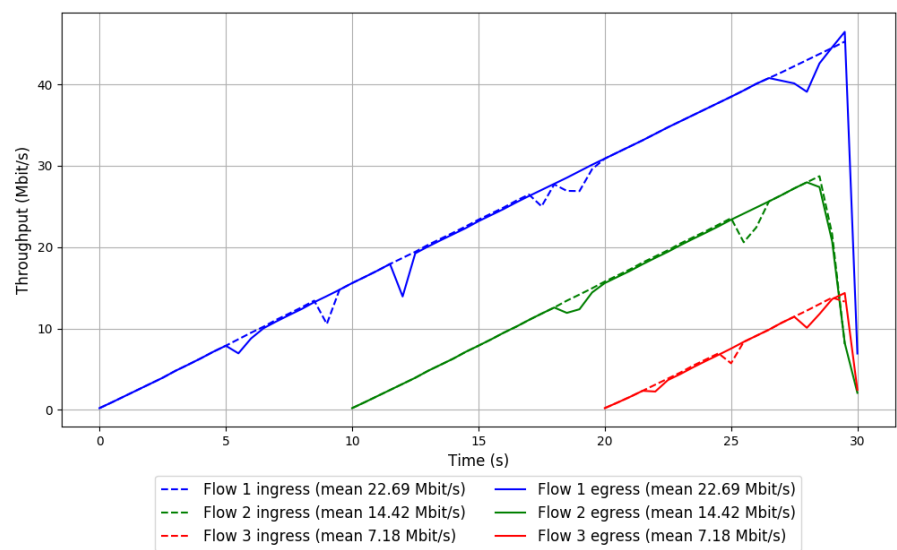
Run 8: Report of LEDBAT — Data Link

```
Run 9: Statistics of LEDBAT

Start at: 2018-04-19 00:31:18
End at: 2018-04-19 00:31:48

# Below is generated by plot.py at 2018-04-19 03:10:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 35.21 Mbit/s
95th percentile per-packet one-way delay: 63.676 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 22.65 Mbit/s
95th percentile per-packet one-way delay: 63.750 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 15.42 Mbit/s
95th percentile per-packet one-way delay: 63.606 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 7.09 Mbit/s
95th percentile per-packet one-way delay: 63.040 ms
Loss rate: 0.00%
```
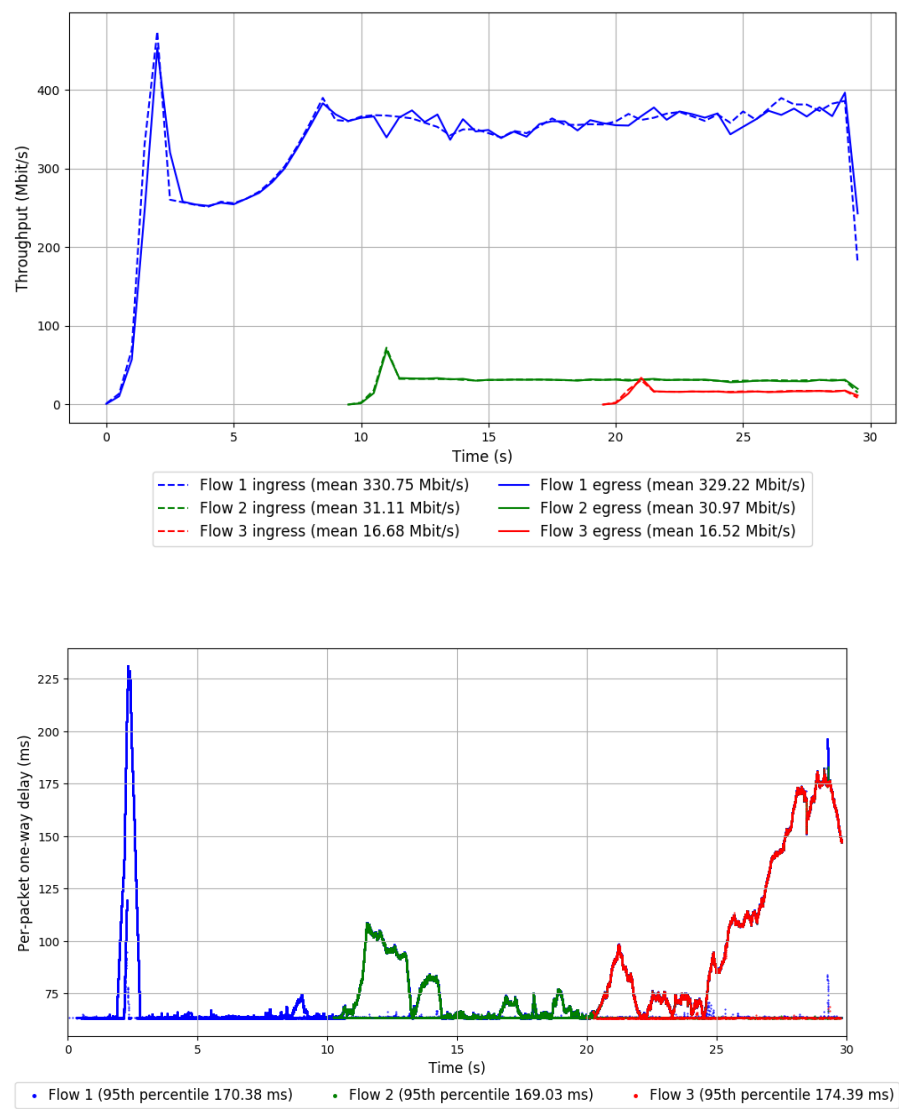
Run 9: Report of LEDBAT — Data Link

```
Run 10: Statistics of LEDBAT

Start at: 2018-04-19 00:46:42
End at: 2018-04-19 00:47:12


# Below is generated by plot.py at 2018-04-19 03:10:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 34.67 Mbit/s
95th percentile per-packet one-way delay: 64.830 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 22.69 Mbit/s
95th percentile per-packet one-way delay: 64.897 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 14.42 Mbit/s
95th percentile per-packet one-way delay: 64.610 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 7.18 Mbit/s
95th percentile per-packet one-way delay: 65.129 ms
Loss rate: 0.00%
```
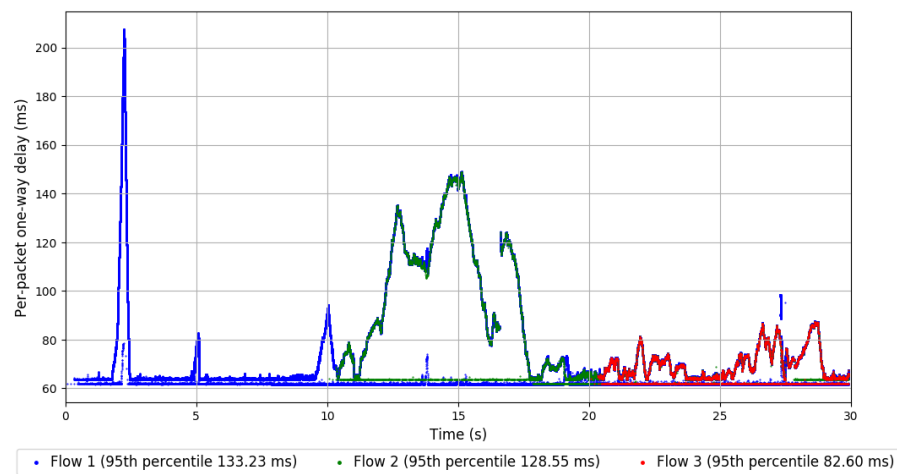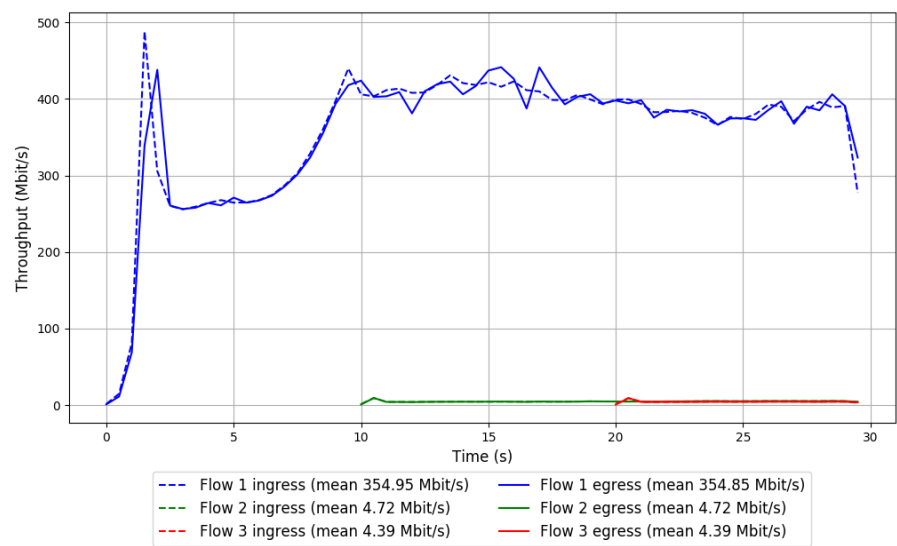
Run 10: Report of LEDBAT — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2018-04-18 22:18:28
End at: 2018-04-18 22:18:58

# Below is generated by plot.py at 2018-04-19 03:14:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 355.36 Mbit/s
95th percentile per-packet one-way delay: 170.535 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 329.22 Mbit/s
95th percentile per-packet one-way delay: 170.381 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 30.97 Mbit/s
95th percentile per-packet one-way delay: 169.028 ms
Loss rate: 0.43%
-- Flow 3:
Average throughput: 16.52 Mbit/s
95th percentile per-packet one-way delay: 174.390 ms
Loss rate: 0.93%
```
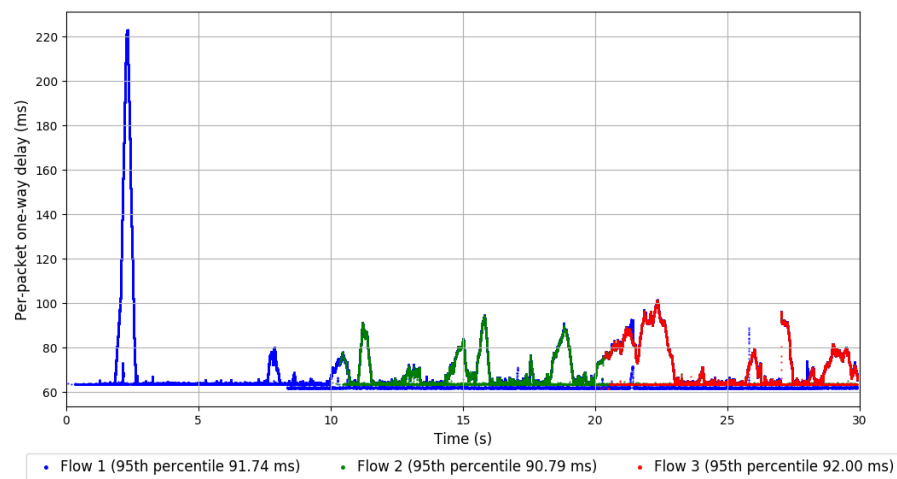
Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2018-04-18 22:34:00
End at: 2018-04-18 22:34:30

# Below is generated by plot.py at 2018-04-19 03:15:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 359.43 Mbit/s
95th percentile per-packet one-way delay: 132.971 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 354.85 Mbit/s
95th percentile per-packet one-way delay: 133.233 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 4.72 Mbit/s
95th percentile per-packet one-way delay: 128.554 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 4.39 Mbit/s
95th percentile per-packet one-way delay: 82.599 ms
Loss rate: 0.06%
```
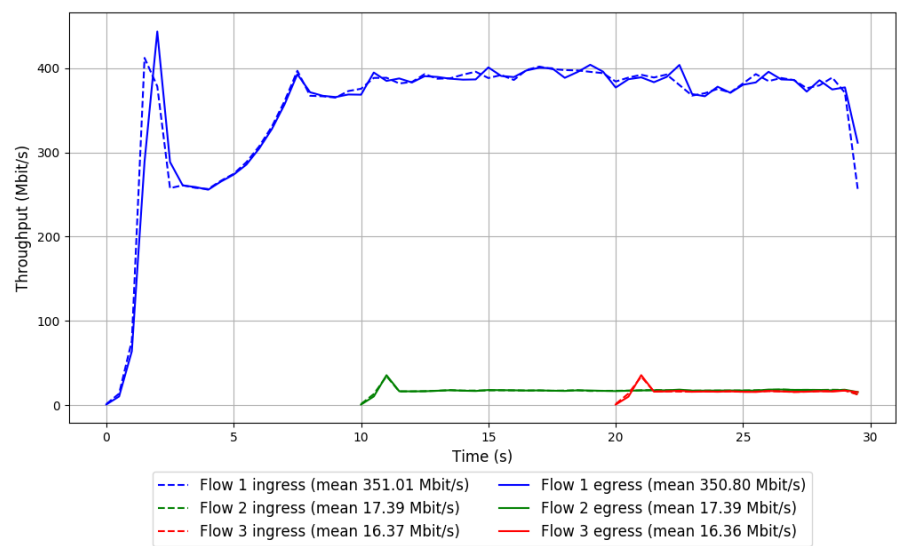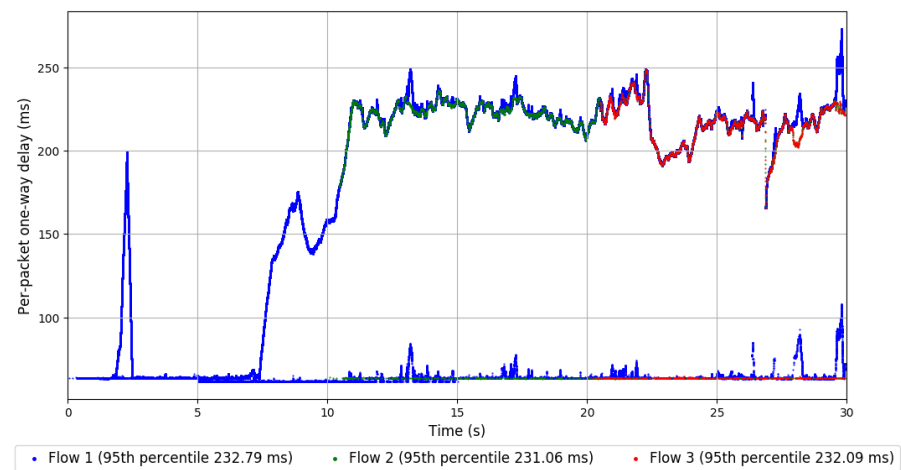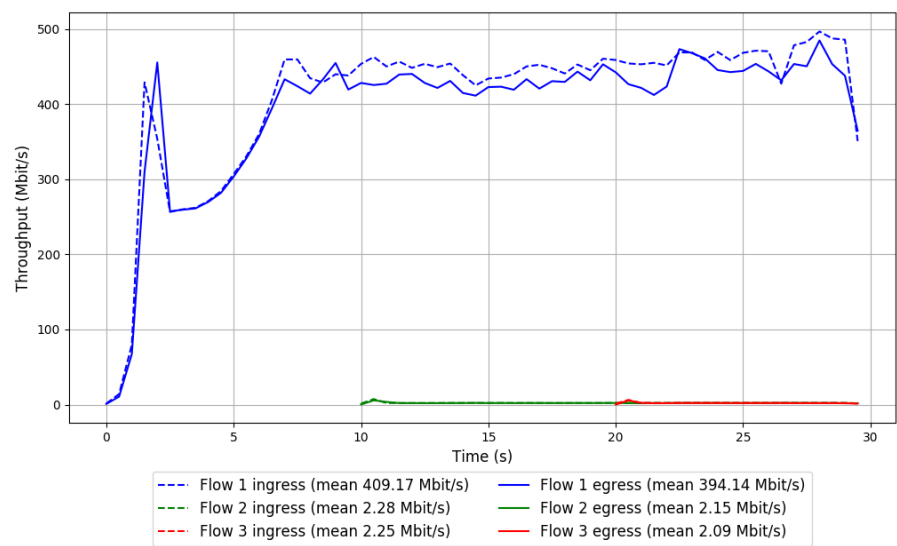
Run 2: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 354.95 Mbit/s) — — — Flow 1 egress (mean 354.85 Mbit/s)
Flow 2 ingress (mean 4.72 Mbit/s) — — — Flow 2 egress (mean 4.72 Mbit/s)
Flow 3 ingress (mean 4.39 Mbit/s) — — — Flow 3 egress (mean 4.39 Mbit/s)

Flow 1 (95th percentile 133.23 ms) • Flow 2 (95th percentile 128.55 ms) • Flow 3 (95th percentile 82.60 ms)

```
Run 3: Statistics of PCC-Allegro

Start at: 2018-04-18 22:49:50
End at: 2018-04-18 22:50:20

# Below is generated by plot.py at 2018-04-19 03:15:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 367.75 Mbit/s
95th percentile per-packet one-way delay: 91.709 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 350.80 Mbit/s
95th percentile per-packet one-way delay: 91.738 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 17.39 Mbit/s
95th percentile per-packet one-way delay: 90.786 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 16.36 Mbit/s
95th percentile per-packet one-way delay: 91.996 ms
Loss rate: 0.00%
```
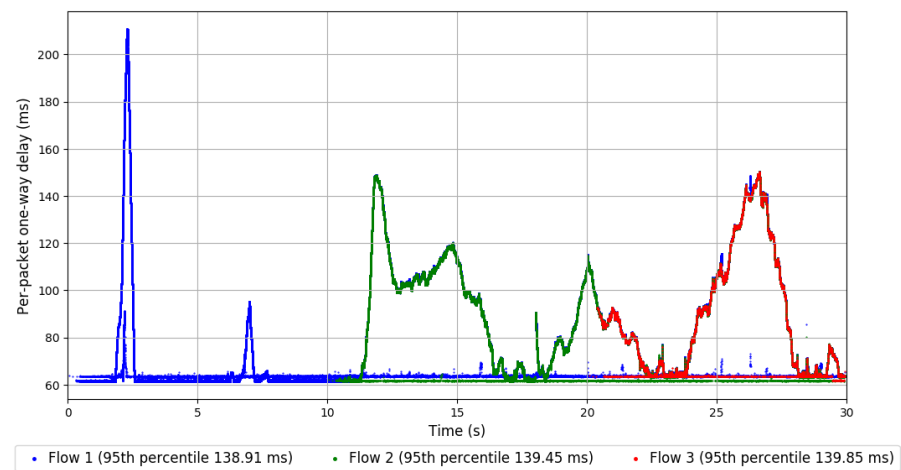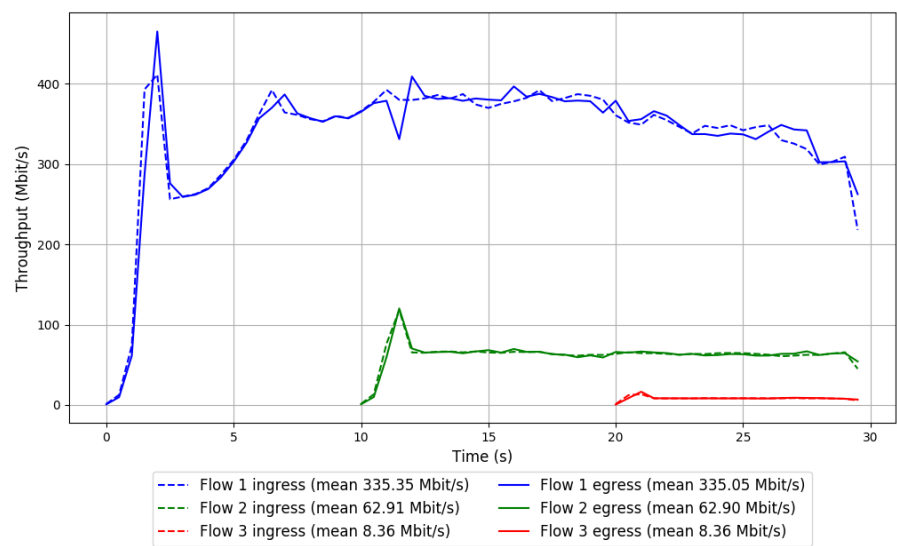
Run 3: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 351.01 Mbit/s) ----- Flow 1 egress (mean 350.80 Mbit/s)
Flow 2 ingress (mean 17.39 Mbit/s) ----- Flow 2 egress (mean 17.39 Mbit/s)
Flow 3 ingress (mean 16.37 Mbit/s) ----- Flow 3 egress (mean 16.36 Mbit/s)

Flow 1 (95th percentile 91.74 ms) • Flow 2 (95th percentile 90.79 ms) • Flow 3 (95th percentile 92.00 ms)

```
Run 4: Statistics of PCC-Allegro

Start at: 2018-04-18 23:05:26
End at: 2018-04-18 23:05:56


# Below is generated by plot.py at 2018-04-19 03:16:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 396.26 Mbit/s
95th percentile per-packet one-way delay: 232.776 ms
Loss rate: 3.69%
-- Flow 1:
Average throughput: 394.14 Mbit/s
95th percentile per-packet one-way delay: 232.795 ms
Loss rate: 3.68%
-- Flow 2:
Average throughput: 2.15 Mbit/s
95th percentile per-packet one-way delay: 231.056 ms
Loss rate: 5.86%
-- Flow 3:
Average throughput: 2.09 Mbit/s
95th percentile per-packet one-way delay: 232.093 ms
Loss rate: 7.26%
```
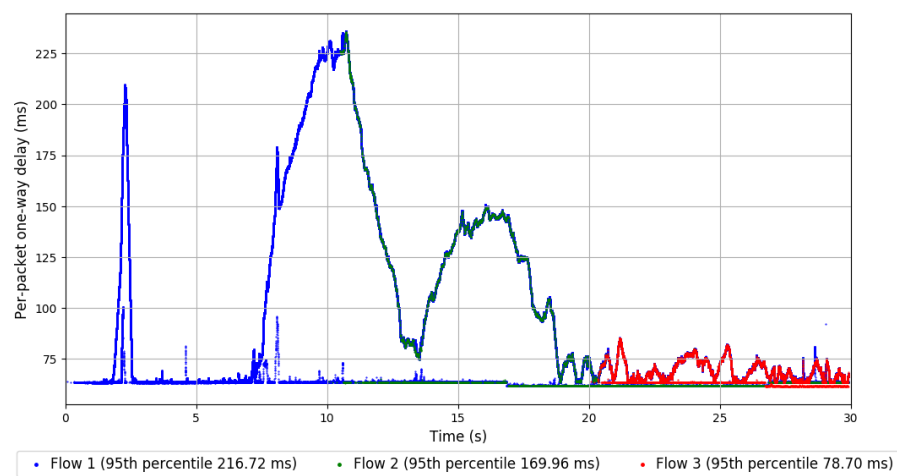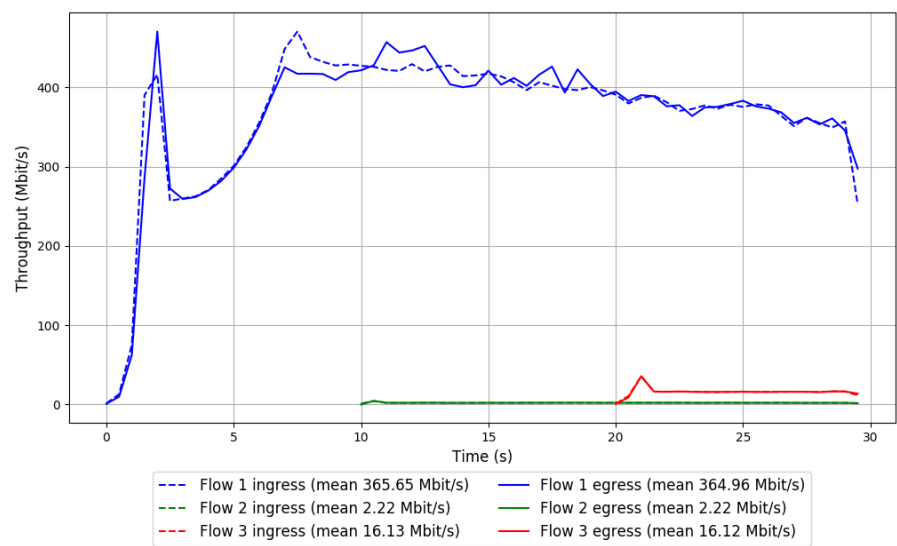
Run 4: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 409.17 Mbit/s) --- Flow 1 egress (mean 394.14 Mbit/s)
Flow 2 ingress (mean 2.28 Mbit/s) --- Flow 2 egress (mean 2.15 Mbit/s)
Flow 3 ingress (mean 2.25 Mbit/s) --- Flow 3 egress (mean 2.09 Mbit/s)

Flow 1 (95th percentile 232.79 ms)   Flow 2 (95th percentile 231.06 ms)   Flow 3 (95th percentile 232.09 ms)
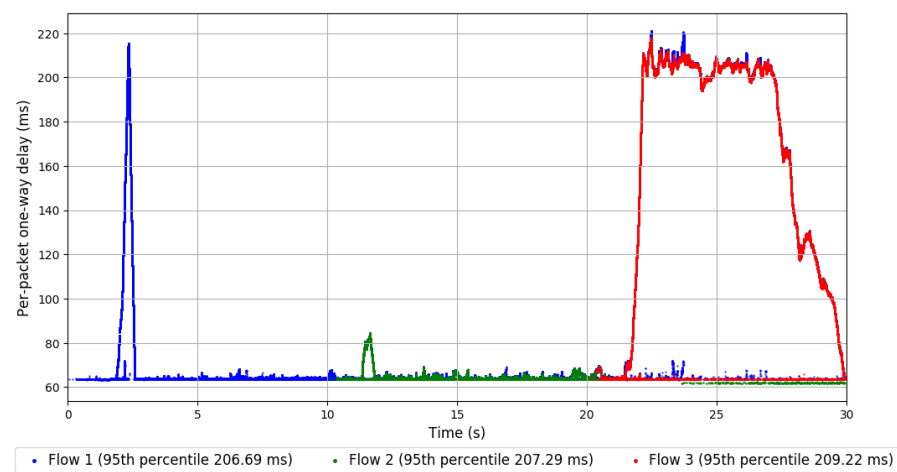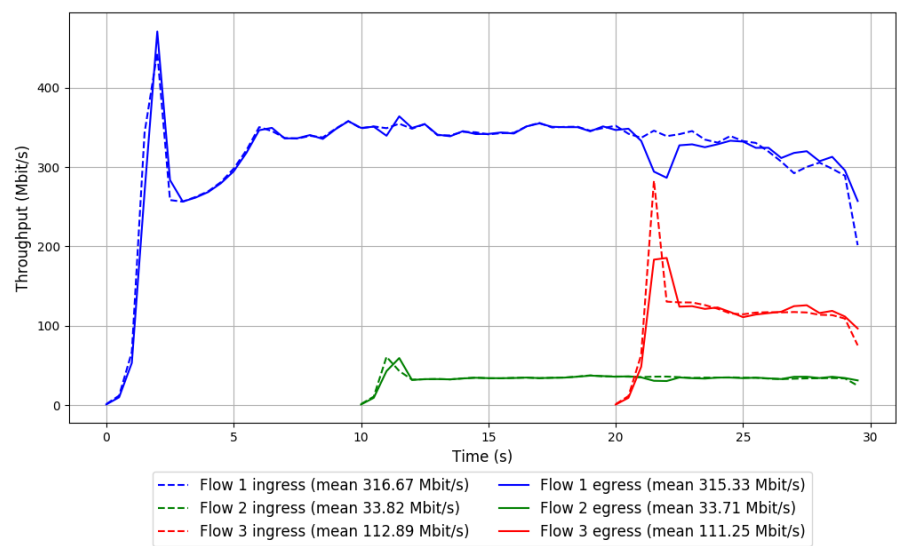
71

```
Run 5: Statistics of PCC-Allegro

Start at: 2018-04-18 23:20:59
End at: 2018-04-18 23:21:29


# Below is generated by plot.py at 2018-04-19 03:16:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 379.60 Mbit/s
95th percentile per-packet one-way delay: 139.018 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 335.05 Mbit/s
95th percentile per-packet one-way delay: 138.910 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 62.90 Mbit/s
95th percentile per-packet one-way delay: 139.453 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 8.36 Mbit/s
95th percentile per-packet one-way delay: 139.855 ms
Loss rate: 0.03%
```

Run 5: Report of PCC-Allegro — Data Link

```
Run 6: Statistics of PCC-Allegro

Start at: 2018-04-18 23:36:44
End at: 2018-04-18 23:37:14


# Below is generated by plot.py at 2018-04-19 03:16:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 371.74 Mbit/s
95th percentile per-packet one-way delay: 215.894 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 364.96 Mbit/s
95th percentile per-packet one-way delay: 216.721 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 2.22 Mbit/s
95th percentile per-packet one-way delay: 169.962 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 16.12 Mbit/s
95th percentile per-packet one-way delay: 78.699 ms
Loss rate: 0.04%
```
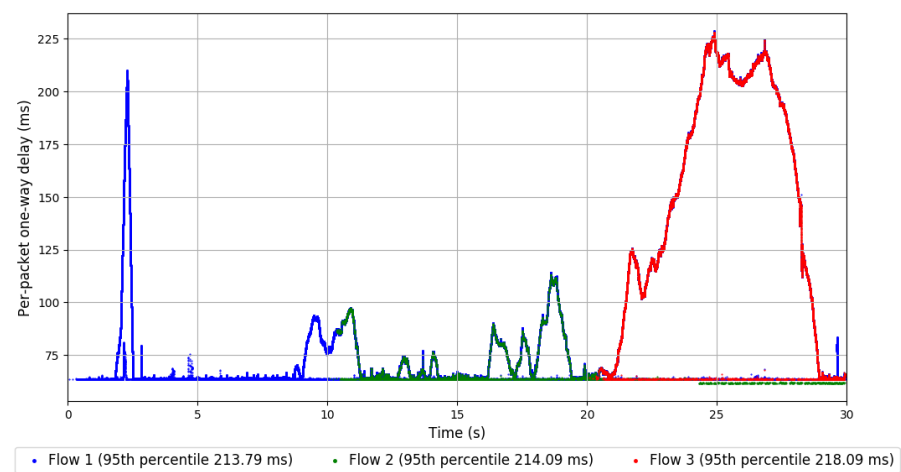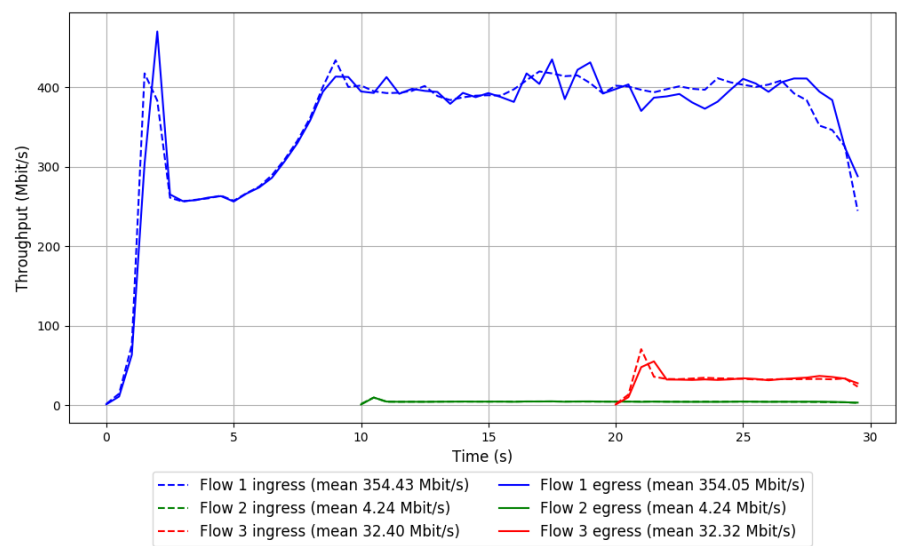
Run 6: Report of PCC-Allegro — Data Link

```
Run 7: Statistics of PCC-Allegro

Start at: 2018-04-18 23:52:17
End at: 2018-04-18 23:52:47


# Below is generated by plot.py at 2018-04-19 03:16:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 374.40 Mbit/s
95th percentile per-packet one-way delay: 207.212 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 315.33 Mbit/s
95th percentile per-packet one-way delay: 206.694 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 33.71 Mbit/s
95th percentile per-packet one-way delay: 207.295 ms
Loss rate: 0.33%
-- Flow 3:
Average throughput: 111.25 Mbit/s
95th percentile per-packet one-way delay: 209.223 ms
Loss rate: 1.46%
```
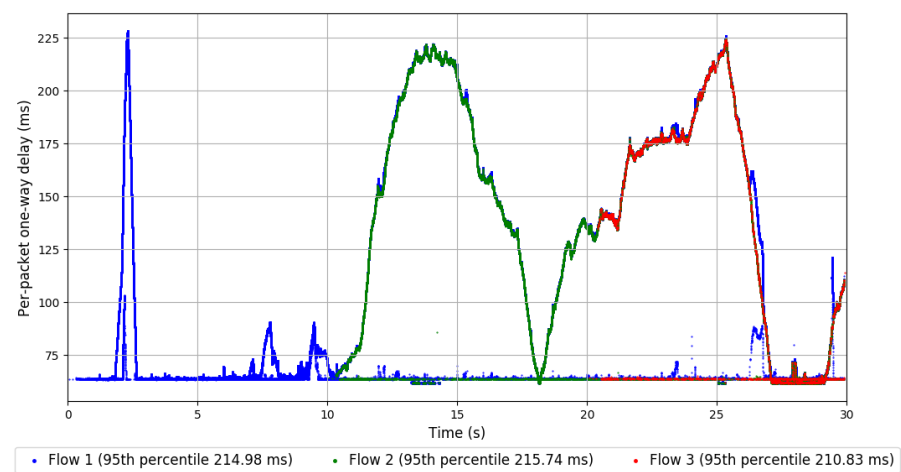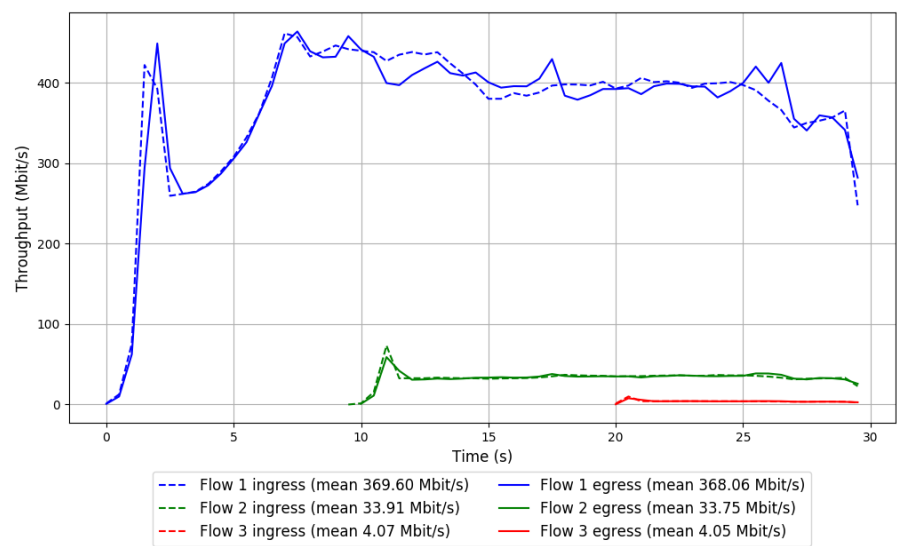
Run 7: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 316.67 Mbit/s) --- Flow 1 egress (mean 315.33 Mbit/s)
Flow 2 ingress (mean 33.82 Mbit/s) --- Flow 2 egress (mean 33.71 Mbit/s)
Flow 3 ingress (mean 112.89 Mbit/s) --- Flow 3 egress (mean 111.25 Mbit/s)

Flow 1 (95th percentile 206.69 ms) • Flow 2 (95th percentile 207.29 ms) • Flow 3 (95th percentile 209.22 ms)
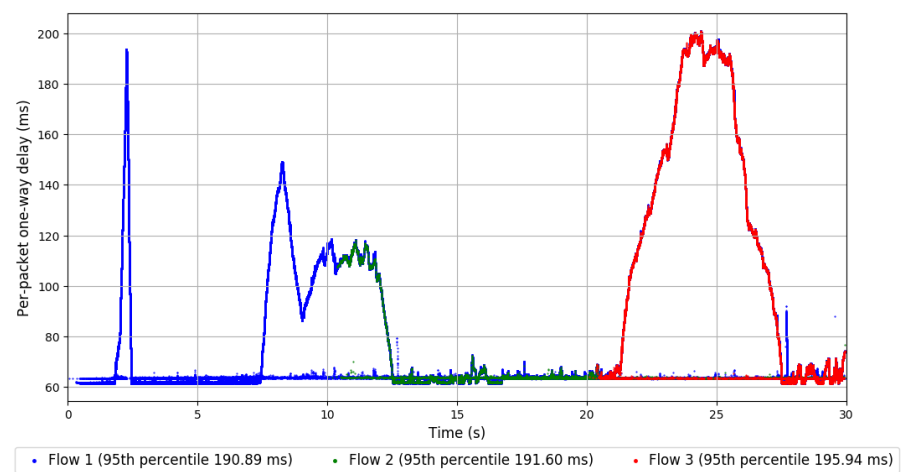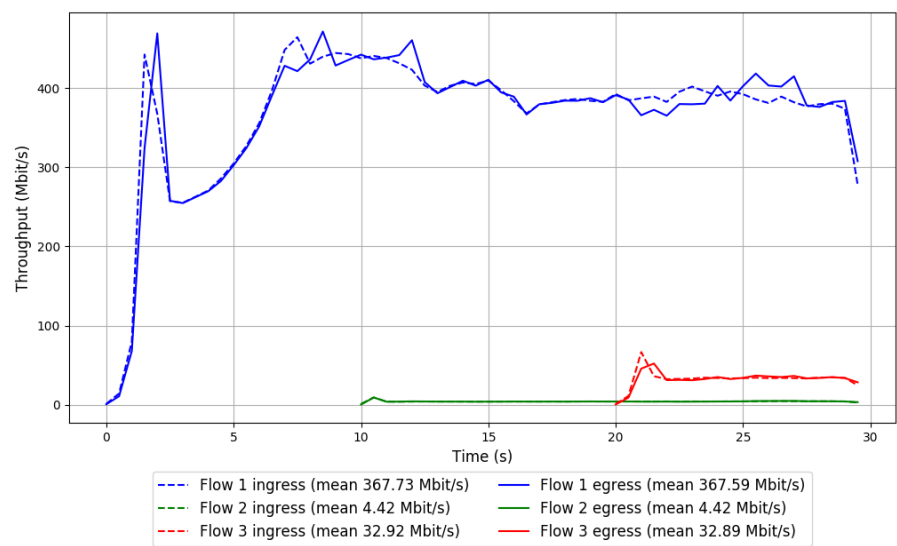
```
Run 8: Statistics of PCC-Allegro

Start at: 2018-04-19 00:08:04
End at: 2018-04-19 00:08:34


# Below is generated by plot.py at 2018-04-19 03:18:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 367.51 Mbit/s
95th percentile per-packet one-way delay: 214.080 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 354.05 Mbit/s
95th percentile per-packet one-way delay: 213.793 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 4.24 Mbit/s
95th percentile per-packet one-way delay: 214.086 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 32.32 Mbit/s
95th percentile per-packet one-way delay: 218.093 ms
Loss rate: 0.22%
```
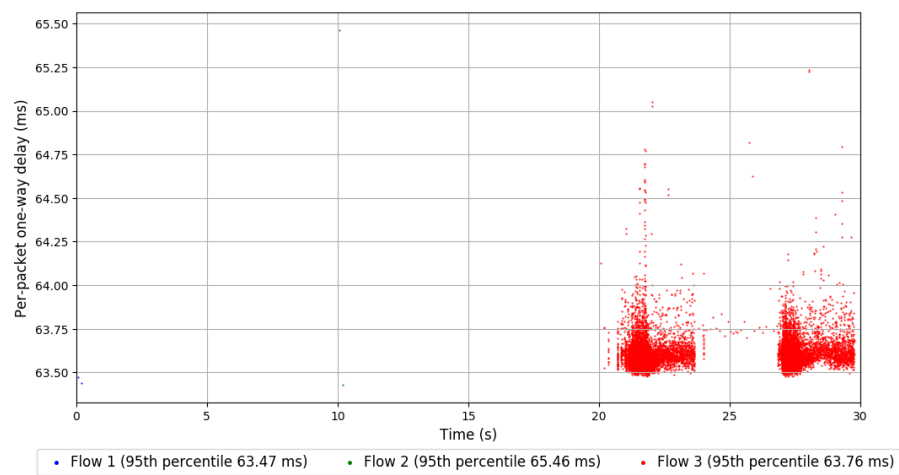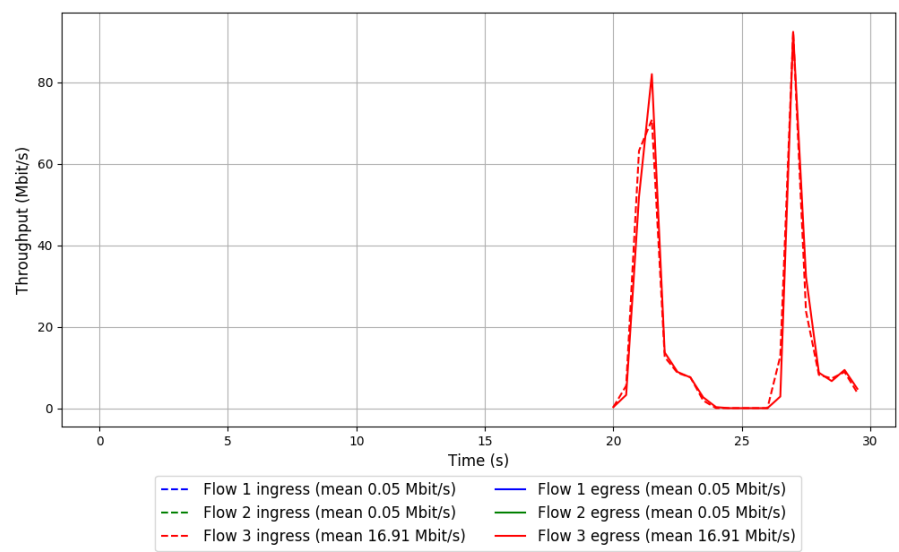
Run 8: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 354.43 Mbit/s) — Flow 1 egress (mean 354.05 Mbit/s)
Flow 2 ingress (mean 4.24 Mbit/s) — Flow 2 egress (mean 4.24 Mbit/s)
Flow 3 ingress (mean 32.40 Mbit/s) — Flow 3 egress (mean 32.32 Mbit/s)

Flow 1 (95th percentile 213.79 ms)   Flow 2 (95th percentile 214.09 ms)   Flow 3 (95th percentile 218.09 ms)

```
Run 9: Statistics of PCC-Allegro

Start at: 2018-04-19 00:23:38
End at: 2018-04-19 00:24:08

# Below is generated by plot.py at 2018-04-19 03:22:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 391.81 Mbit/s
95th percentile per-packet one-way delay: 215.033 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 368.06 Mbit/s
95th percentile per-packet one-way delay: 214.984 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 33.75 Mbit/s
95th percentile per-packet one-way delay: 215.738 ms
Loss rate: 0.45%
-- Flow 3:
Average throughput: 4.05 Mbit/s
95th percentile per-packet one-way delay: 210.829 ms
Loss rate: 0.51%
```

Run 9: Report of PCC-Allegro — Data Link

- - - Flow 1 ingress (mean 369.60 Mbit/s) ——— Flow 1 egress (mean 368.06 Mbit/s)
- - - Flow 2 ingress (mean 33.91 Mbit/s) ——— Flow 2 egress (mean 33.75 Mbit/s)
- - - Flow 3 ingress (mean 4.07 Mbit/s) ——— Flow 3 egress (mean 4.05 Mbit/s)

• Flow 1 (95th percentile 214.98 ms)   • Flow 2 (95th percentile 215.74 ms)   • Flow 3 (95th percentile 210.83 ms)

```
Run 10: Statistics of PCC-Allegro

Start at: 2018-04-19 00:39:04
End at: 2018-04-19 00:39:34


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 381.32 Mbit/s
95th percentile per-packet one-way delay: 191.227 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 367.59 Mbit/s
95th percentile per-packet one-way delay: 190.890 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 4.42 Mbit/s
95th percentile per-packet one-way delay: 191.601 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 32.89 Mbit/s
95th percentile per-packet one-way delay: 195.938 ms
Loss rate: 0.11%
```
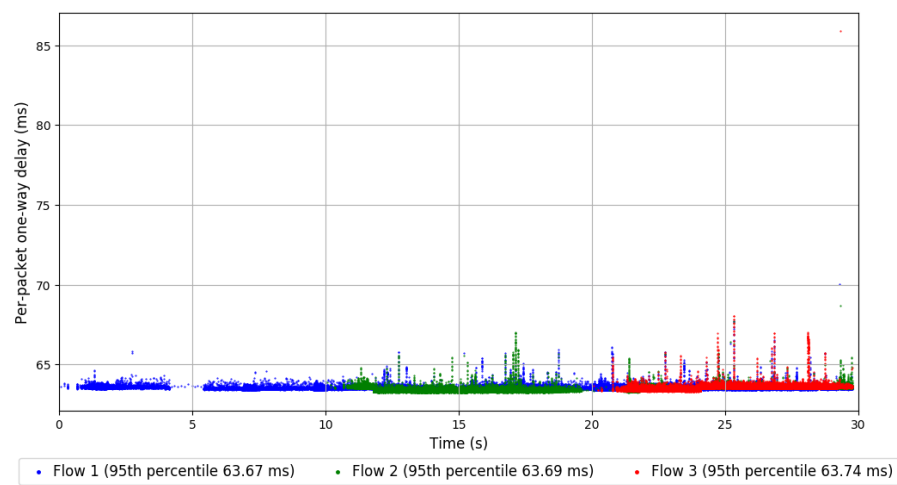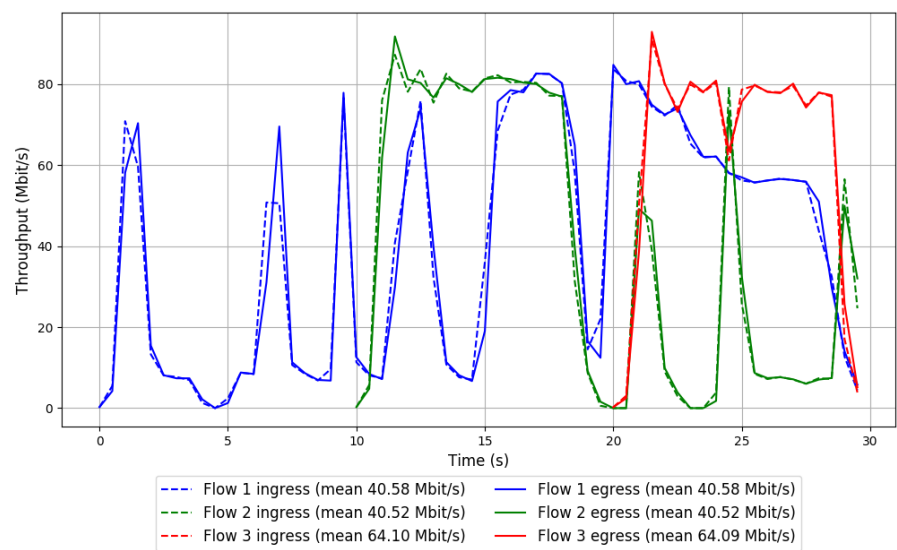
Run 10: Report of PCC-Allegro — Data Link

```
Run 1: Statistics of QUIC Cubic

Start at: 2018-04-18 22:25:25
End at: 2018-04-18 22:25:55


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.51 Mbit/s
95th percentile per-packet one-way delay: 63.760 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 63.474 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 65.462 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 16.91 Mbit/s
95th percentile per-packet one-way delay: 63.760 ms
Loss rate: 0.00%
```
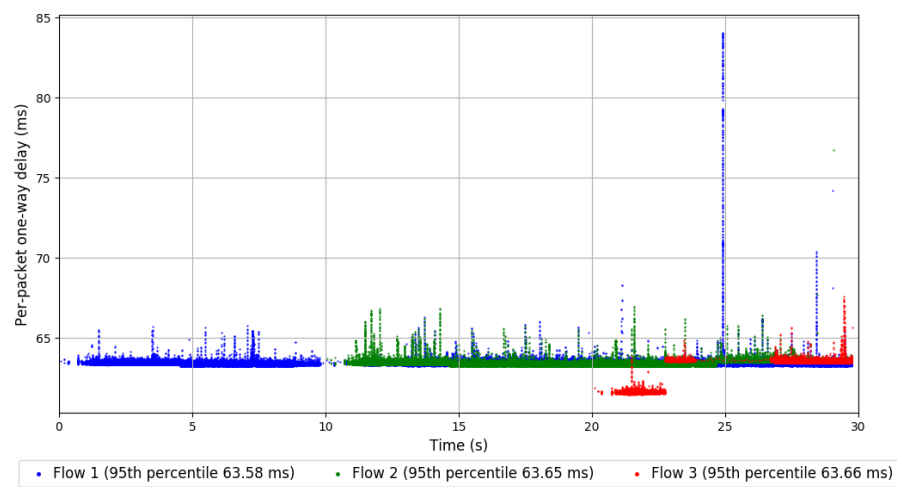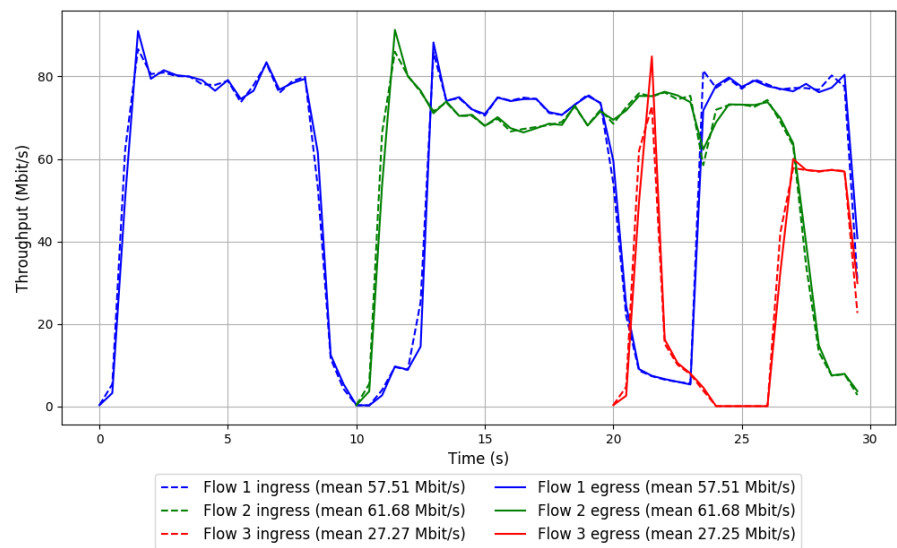
Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2018-04-18 22:40:57
End at: 2018-04-18 22:41:27


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 102.77 Mbit/s
95th percentile per-packet one-way delay: 63.680 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 54.30 Mbit/s
95th percentile per-packet one-way delay: 63.579 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 47.47 Mbit/s
95th percentile per-packet one-way delay: 63.726 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 52.10 Mbit/s
95th percentile per-packet one-way delay: 63.702 ms
Loss rate: 0.01%
```
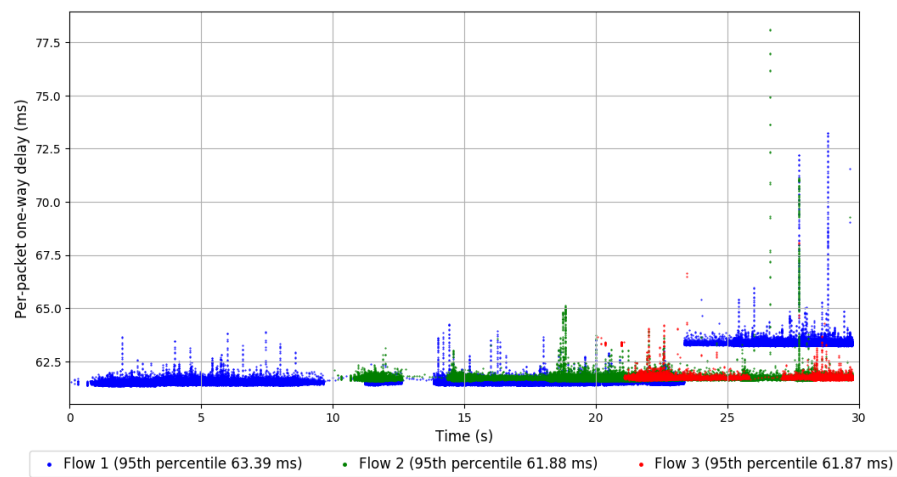
Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2018-04-18 22:56:46
End at: 2018-04-18 22:57:16


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.36 Mbit/s
95th percentile per-packet one-way delay: 63.702 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 40.58 Mbit/s
95th percentile per-packet one-way delay: 63.672 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 40.52 Mbit/s
95th percentile per-packet one-way delay: 63.689 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 64.09 Mbit/s
95th percentile per-packet one-way delay: 63.741 ms
Loss rate: 0.00%
```
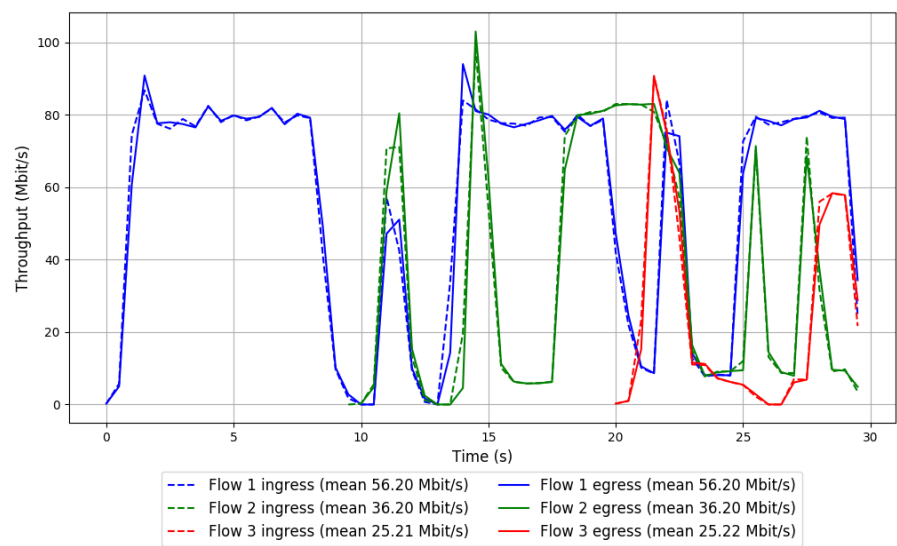
Run 3: Report of QUIC Cubic — Data Link

```
Run 4: Statistics of QUIC Cubic

Start at: 2018-04-18 23:12:24
End at: 2018-04-18 23:12:54

# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 107.27 Mbit/s
95th percentile per-packet one-way delay: 63.624 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 57.51 Mbit/s
95th percentile per-packet one-way delay: 63.578 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 61.68 Mbit/s
95th percentile per-packet one-way delay: 63.648 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 27.25 Mbit/s
95th percentile per-packet one-way delay: 63.661 ms
Loss rate: 0.03%
```
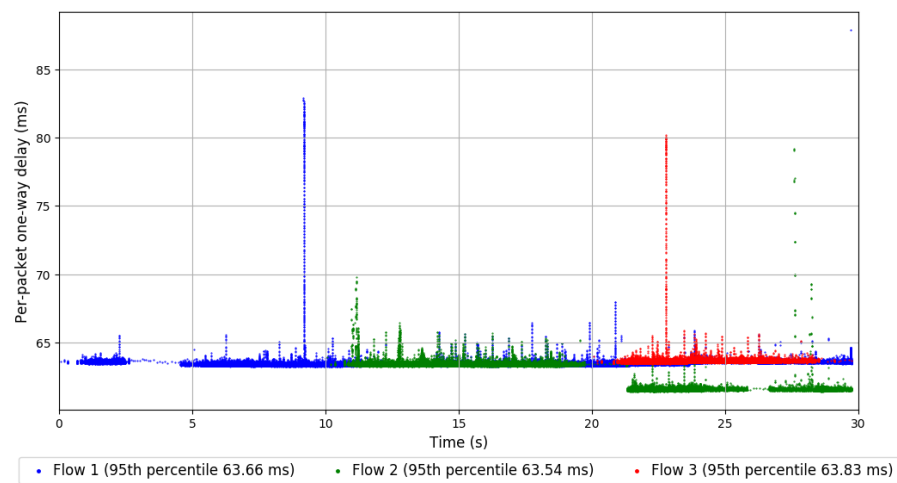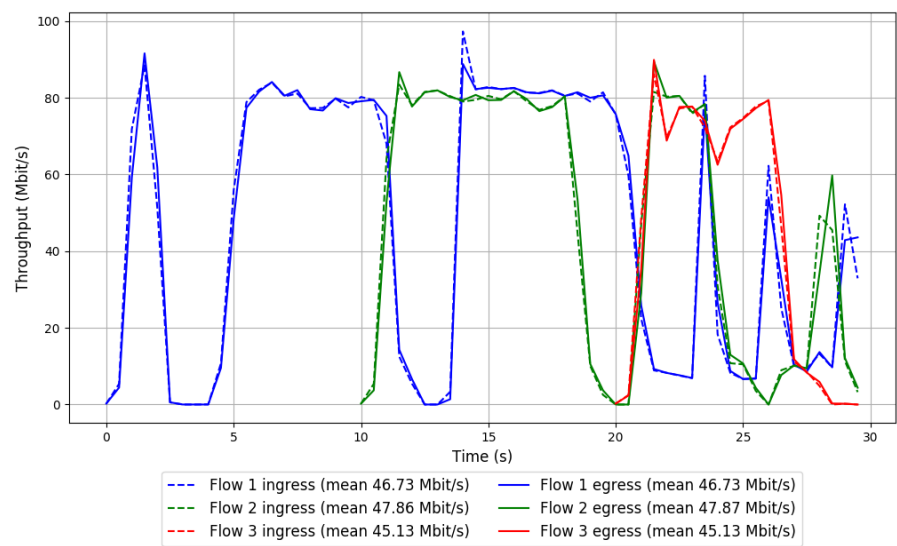
Run 4: Report of QUIC Cubic — Data Link

```
Run 5: Statistics of QUIC Cubic

Start at: 2018-04-18 23:27:57
End at: 2018-04-18 23:28:27


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.42 Mbit/s
95th percentile per-packet one-way delay: 63.362 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 56.20 Mbit/s
95th percentile per-packet one-way delay: 63.390 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 36.20 Mbit/s
95th percentile per-packet one-way delay: 61.877 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 25.22 Mbit/s
95th percentile per-packet one-way delay: 61.871 ms
Loss rate: 0.00%
```
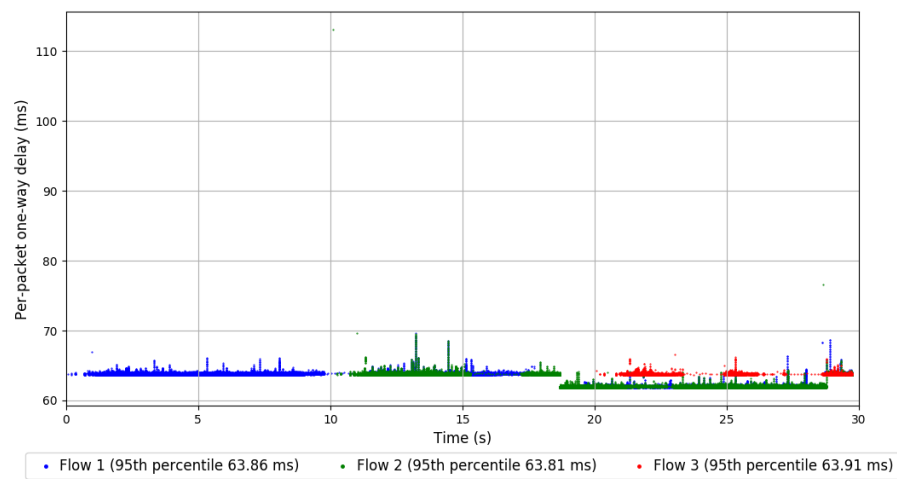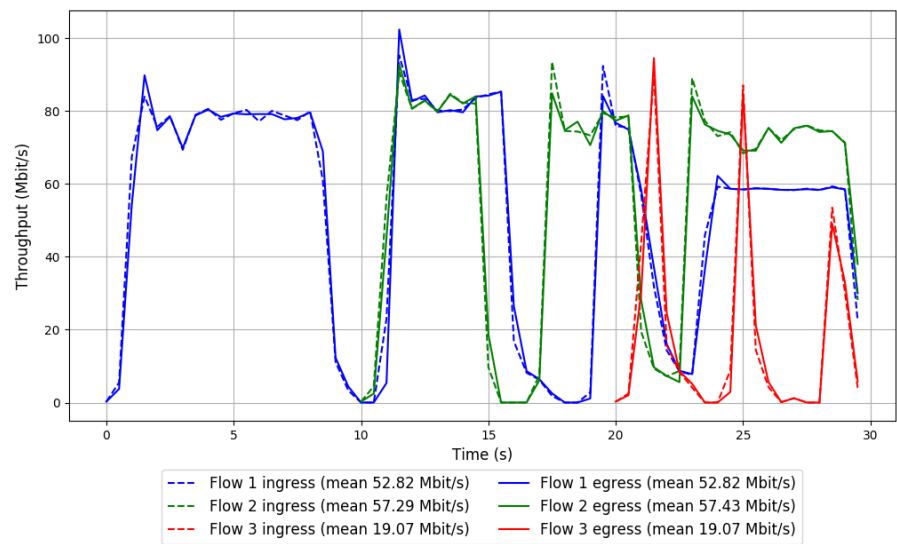
Run 5: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 56.20 Mbit/s) --- Flow 1 egress (mean 56.20 Mbit/s)
Flow 2 ingress (mean 36.20 Mbit/s) --- Flow 2 egress (mean 36.20 Mbit/s)
Flow 3 ingress (mean 25.21 Mbit/s) --- Flow 3 egress (mean 25.22 Mbit/s)

Flow 1 (95th percentile 63.39 ms)   Flow 2 (95th percentile 61.88 ms)   Flow 3 (95th percentile 61.87 ms)

```
Run 6: Statistics of QUIC Cubic

Start at: 2018-04-18 23:43:37
End at: 2018-04-18 23:44:07


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.16 Mbit/s
95th percentile per-packet one-way delay: 63.708 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 46.73 Mbit/s
95th percentile per-packet one-way delay: 63.660 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 47.87 Mbit/s
95th percentile per-packet one-way delay: 63.540 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 45.13 Mbit/s
95th percentile per-packet one-way delay: 63.826 ms
Loss rate: 0.00%
```
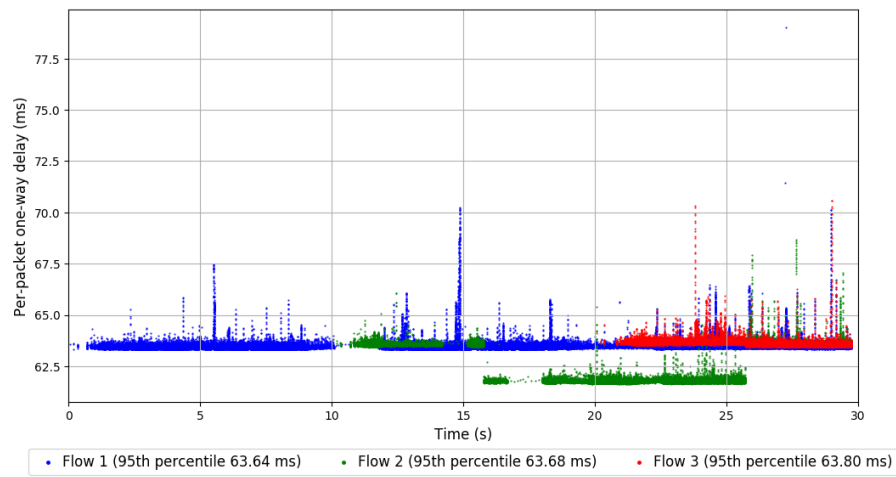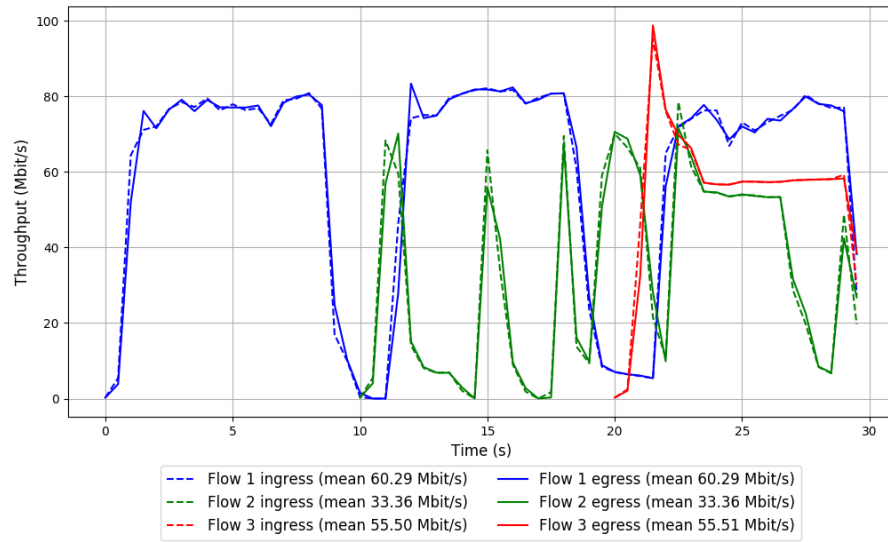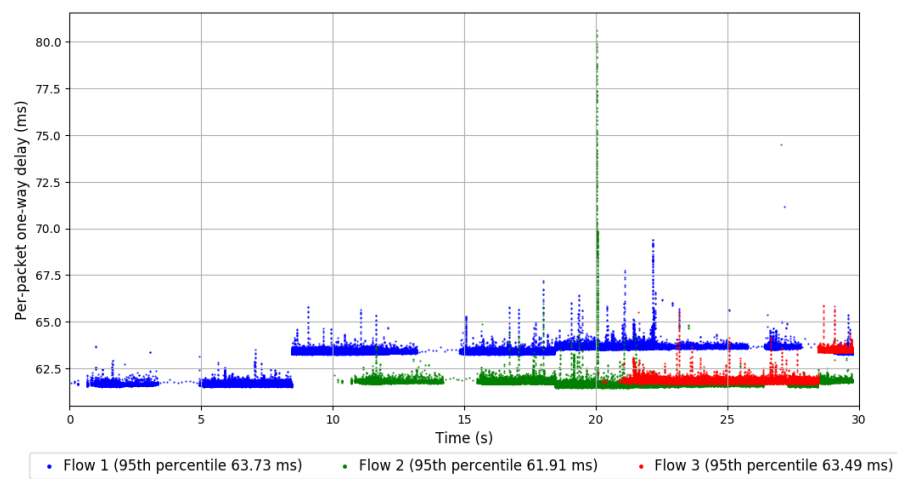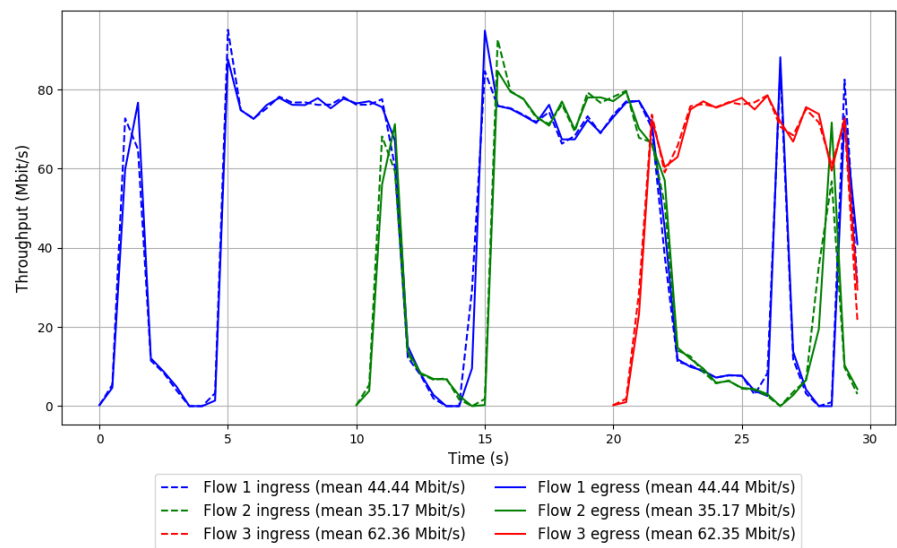
Run 6: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 46.73 Mbit/s)   Flow 1 egress (mean 46.73 Mbit/s)
Flow 2 ingress (mean 47.86 Mbit/s)   Flow 2 egress (mean 47.87 Mbit/s)
Flow 3 ingress (mean 45.13 Mbit/s)   Flow 3 egress (mean 45.13 Mbit/s)

Flow 1 (95th percentile 63.66 ms)   Flow 2 (95th percentile 63.54 ms)   Flow 3 (95th percentile 63.83 ms)

```
Run 7: Statistics of QUIC Cubic

Start at: 2018-04-18 23:59:22
End at: 2018-04-18 23:59:52


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.02 Mbit/s
95th percentile per-packet one-way delay: 63.846 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 52.82 Mbit/s
95th percentile per-packet one-way delay: 63.858 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 57.43 Mbit/s
95th percentile per-packet one-way delay: 63.811 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 19.07 Mbit/s
95th percentile per-packet one-way delay: 63.913 ms
Loss rate: 0.00%
```
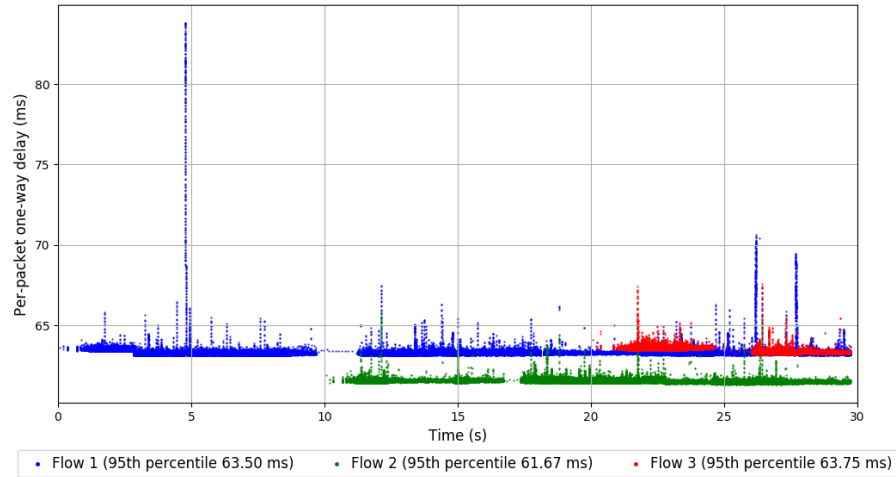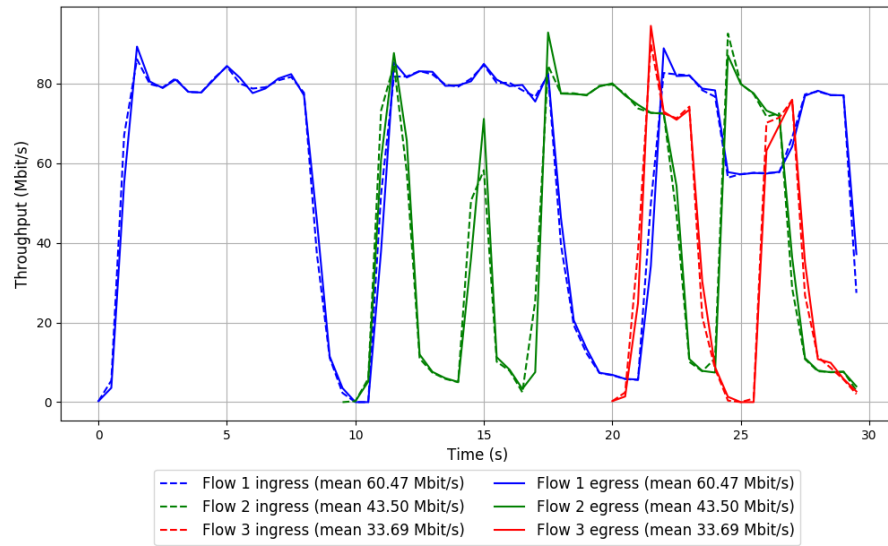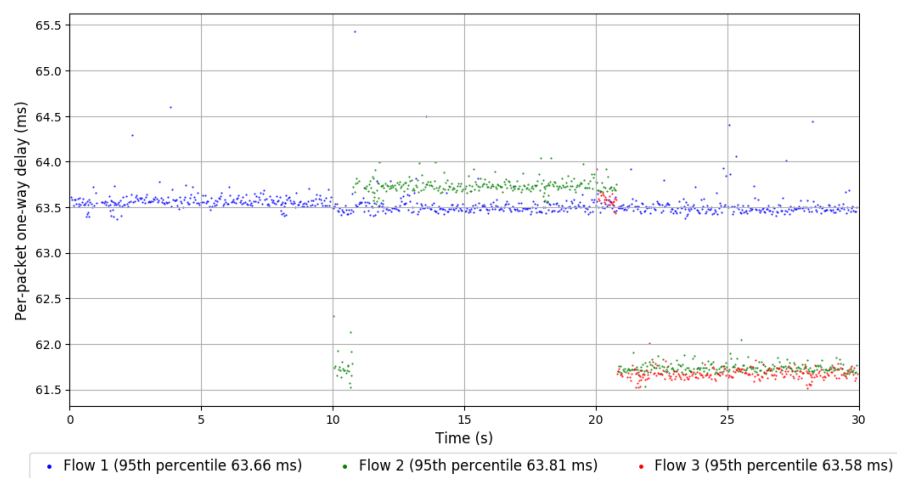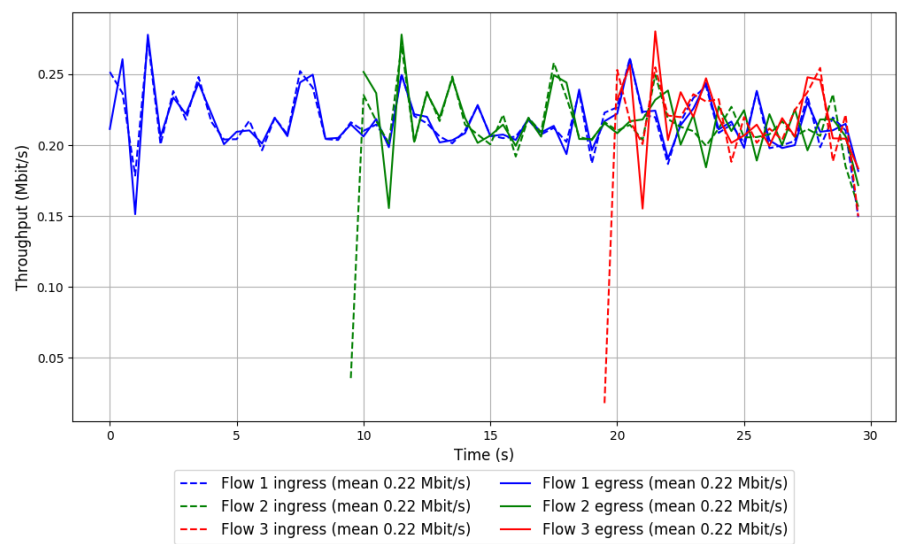
Run 7: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 52.82 Mbit/s)   Flow 1 egress (mean 52.82 Mbit/s)
Flow 2 ingress (mean 57.29 Mbit/s)   Flow 2 egress (mean 57.43 Mbit/s)
Flow 3 ingress (mean 19.07 Mbit/s)   Flow 3 egress (mean 19.07 Mbit/s)

Flow 1 (95th percentile 63.86 ms)   Flow 2 (95th percentile 63.81 ms)   Flow 3 (95th percentile 63.91 ms)

```
Run 8: Statistics of QUIC Cubic

Start at: 2018-04-19 00:15:05
End at: 2018-04-19 00:15:35


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 100.50 Mbit/s
95th percentile per-packet one-way delay: 63.712 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 60.29 Mbit/s
95th percentile per-packet one-way delay: 63.638 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 33.36 Mbit/s
95th percentile per-packet one-way delay: 63.676 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 55.51 Mbit/s
95th percentile per-packet one-way delay: 63.796 ms
Loss rate: 0.00%
```
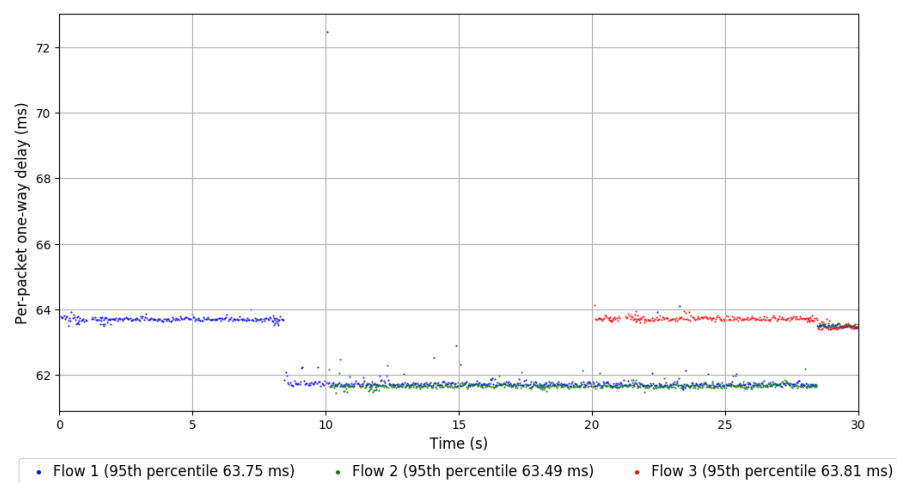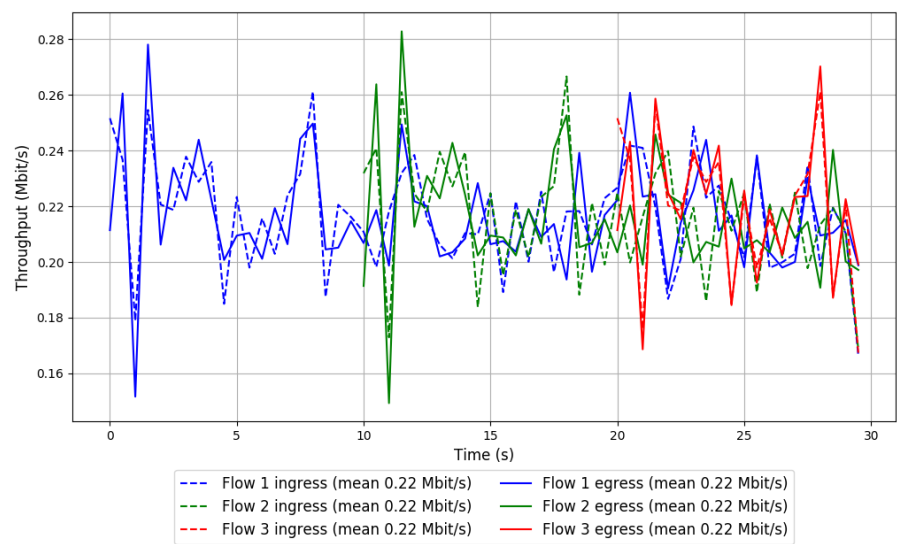
Run 8: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 60.29 Mbit/s) --- Flow 1 egress (mean 60.29 Mbit/s)
Flow 2 ingress (mean 33.36 Mbit/s) --- Flow 2 egress (mean 33.36 Mbit/s)
Flow 3 ingress (mean 55.50 Mbit/s) --- Flow 3 egress (mean 55.51 Mbit/s)

Flow 1 (95th percentile 63.64 ms)   Flow 2 (95th percentile 63.68 ms)   Flow 3 (95th percentile 63.80 ms)

99

```
Run 9: Statistics of QUIC Cubic

Start at: 2018-04-19 00:30:32
End at: 2018-04-19 00:31:02


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.04 Mbit/s
95th percentile per-packet one-way delay: 63.677 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 44.44 Mbit/s
95th percentile per-packet one-way delay: 63.725 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 35.17 Mbit/s
95th percentile per-packet one-way delay: 61.912 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 62.35 Mbit/s
95th percentile per-packet one-way delay: 63.490 ms
Loss rate: 0.00%
```
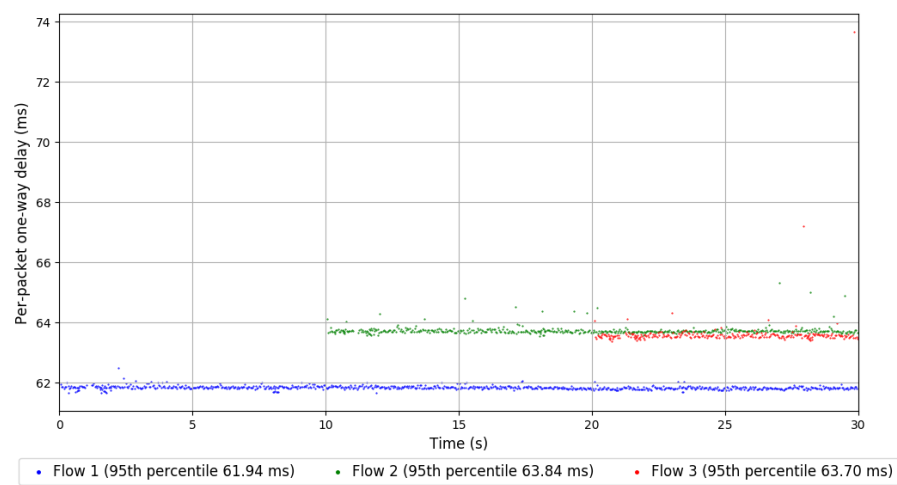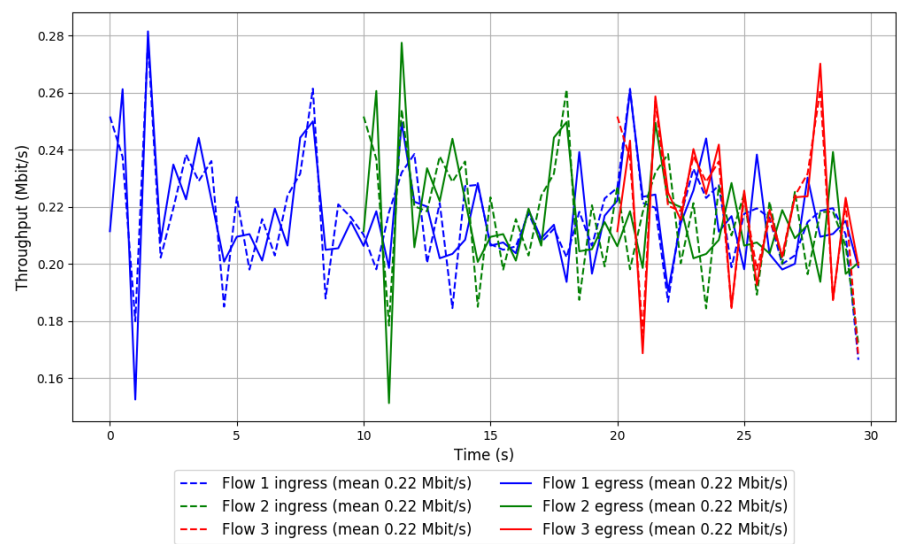
Run 9: Report of QUIC Cubic — Data Link

```
Run 10: Statistics of QUIC Cubic

Start at: 2018-04-19 00:45:55
End at: 2018-04-19 00:46:25


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 100.29 Mbit/s
95th percentile per-packet one-way delay: 63.574 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 60.47 Mbit/s
95th percentile per-packet one-way delay: 63.496 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 43.50 Mbit/s
95th percentile per-packet one-way delay: 61.670 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 33.69 Mbit/s
95th percentile per-packet one-way delay: 63.747 ms
Loss rate: 0.00%
```

Run 10: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2018-04-18 22:20:57
End at: 2018-04-18 22:21:27


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 63.768 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.655 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.812 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.575 ms
Loss rate: 0.00%
```
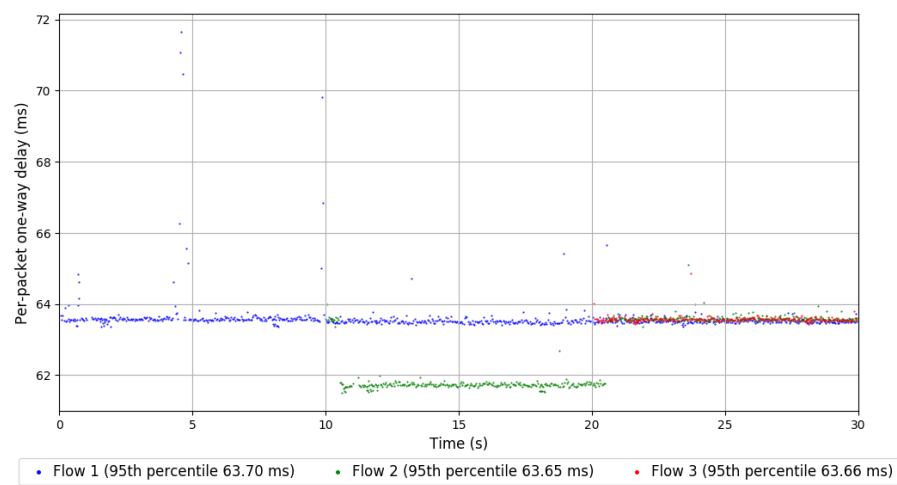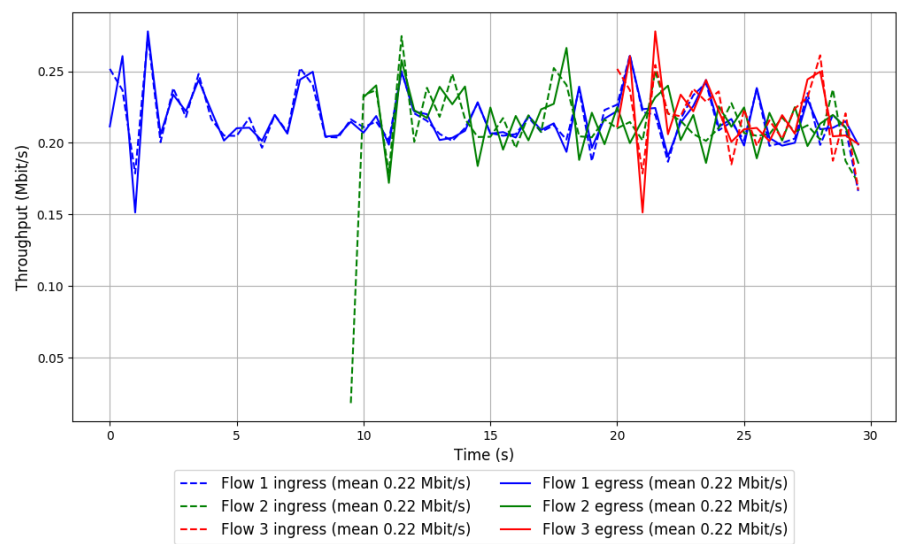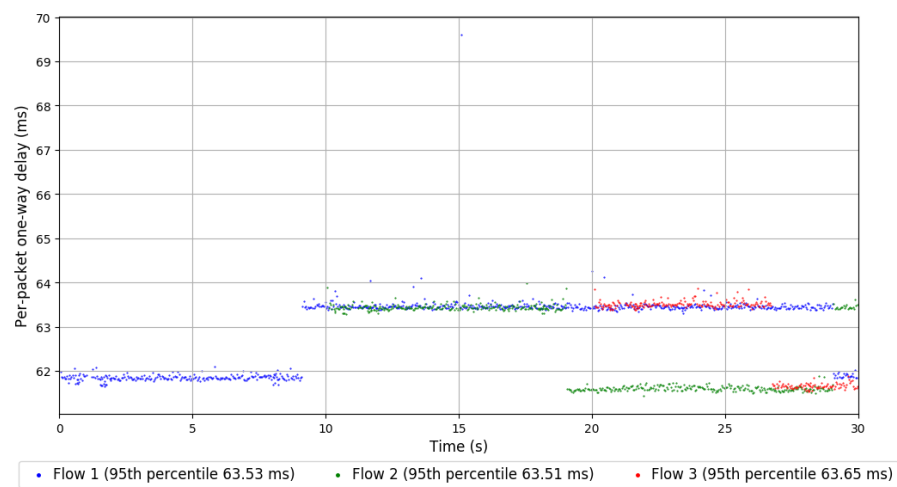
Run 1: Report of SCReAM — Data Link

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

Flow 1 (95th percentile 63.66 ms)   Flow 2 (95th percentile 63.81 ms)   Flow 3 (95th percentile 63.58 ms)
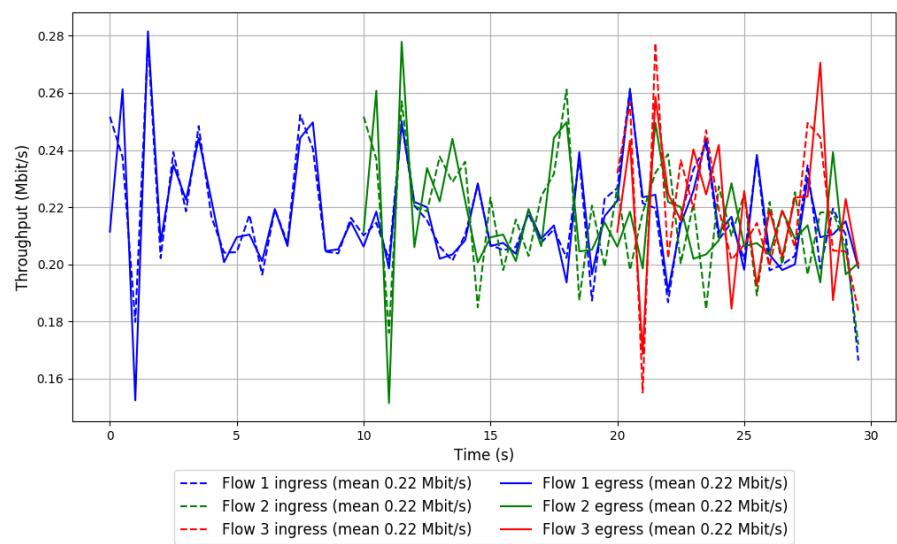
```
Run 2: Statistics of SCReAM

Start at: 2018-04-18 22:36:32
End at: 2018-04-18 22:37:02

# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 63.761 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.752 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.486 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.813 ms
Loss rate: 0.00%
```
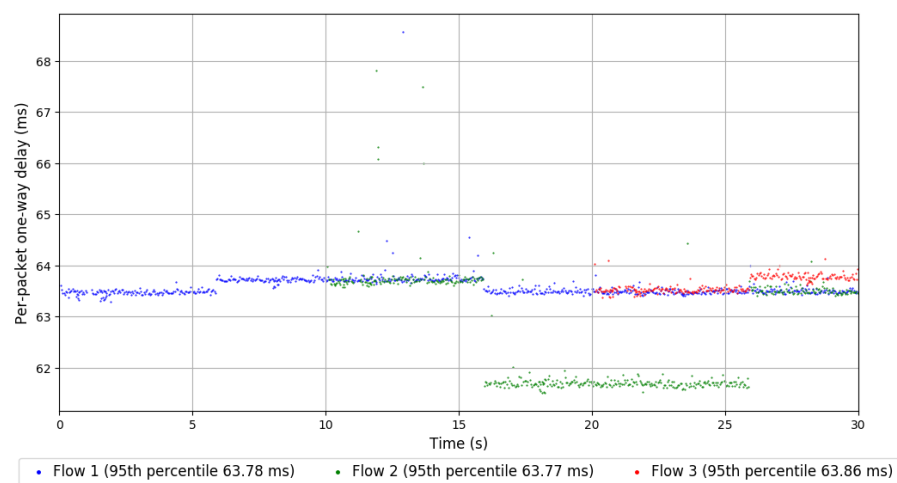
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2018-04-18 22:52:22
End at: 2018-04-18 22:52:52

# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 63.774 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 61.935 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.843 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.705 ms
Loss rate: 0.00%
```
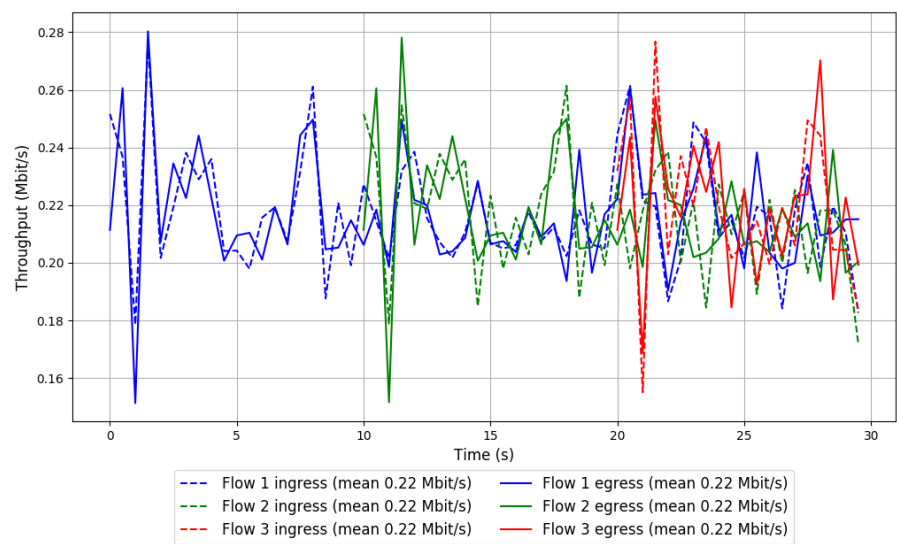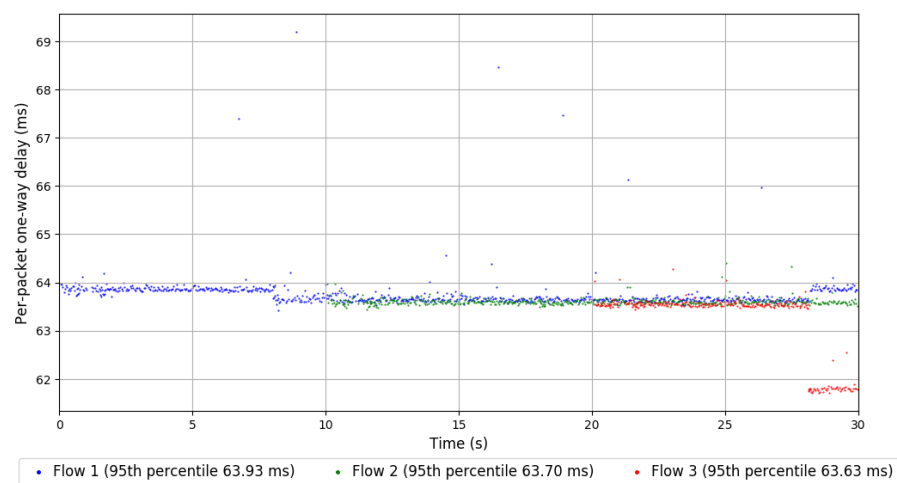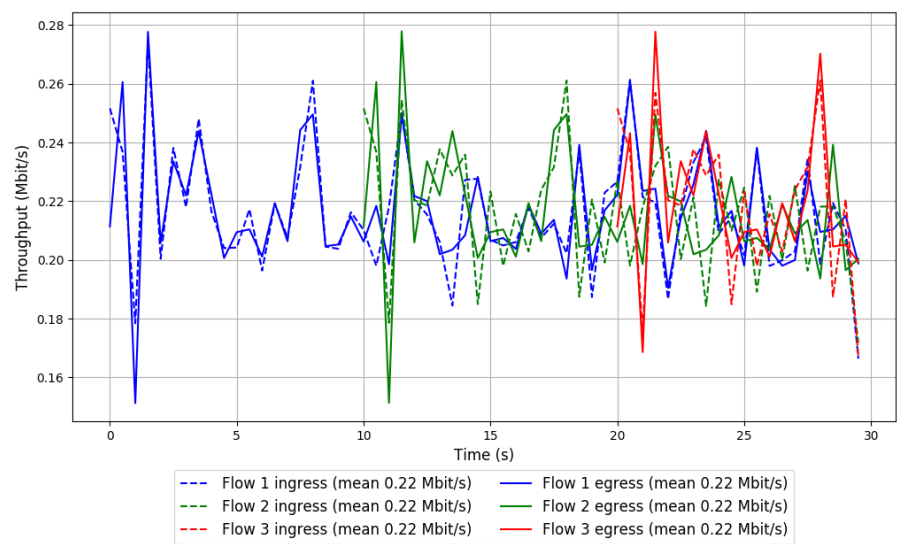
Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2018-04-18 23:07:58
End at: 2018-04-18 23:08:28

# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 63.673 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.701 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.654 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.656 ms
Loss rate: 0.00%
```

Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2018-04-18 23:23:32
End at: 2018-04-18 23:24:02

# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 63.555 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.534 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.509 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.646 ms
Loss rate: 0.00%
```
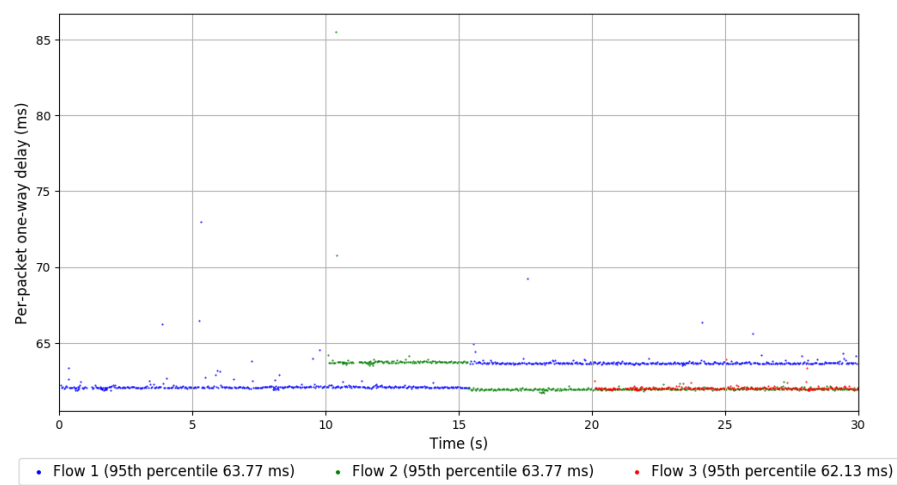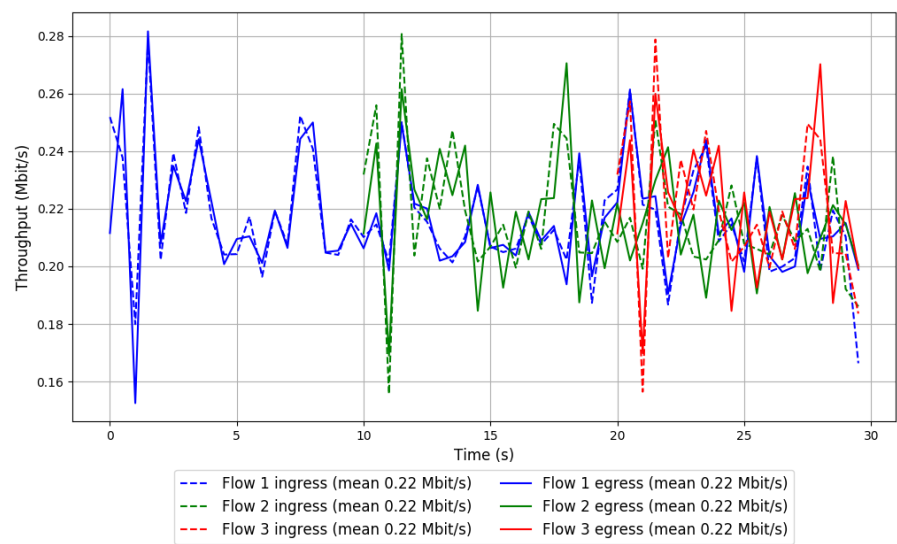
Run 5: Report of SCReAM — Data Link

```
Run 6: Statistics of SCReAM

Start at: 2018-04-18 23:39:15
End at: 2018-04-18 23:39:45


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 63.804 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.780 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.774 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.862 ms
Loss rate: 0.00%
```
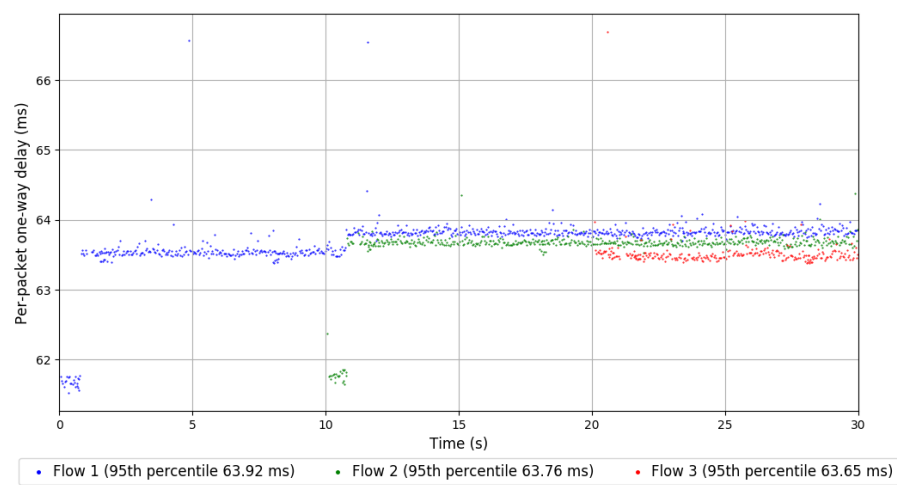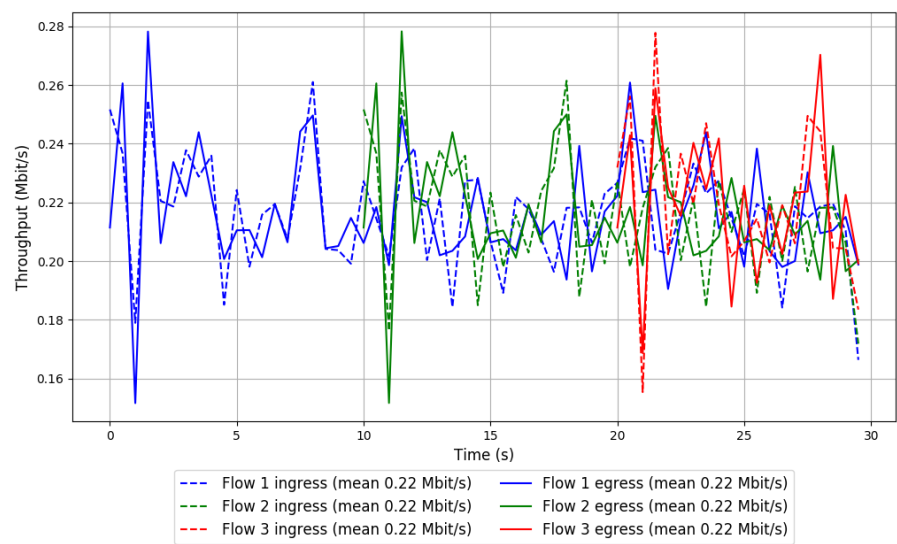
Run 6: Report of SCReAM — Data Link

```
Run 7: Statistics of SCReAM

Start at: 2018-04-18 23:54:50
End at: 2018-04-18 23:55:20

# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 63.899 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.930 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.696 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.633 ms
Loss rate: 0.00%
```
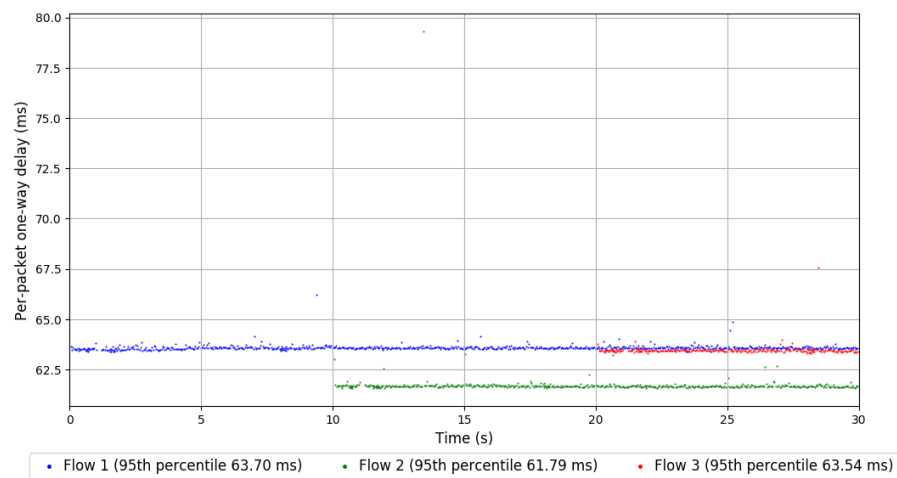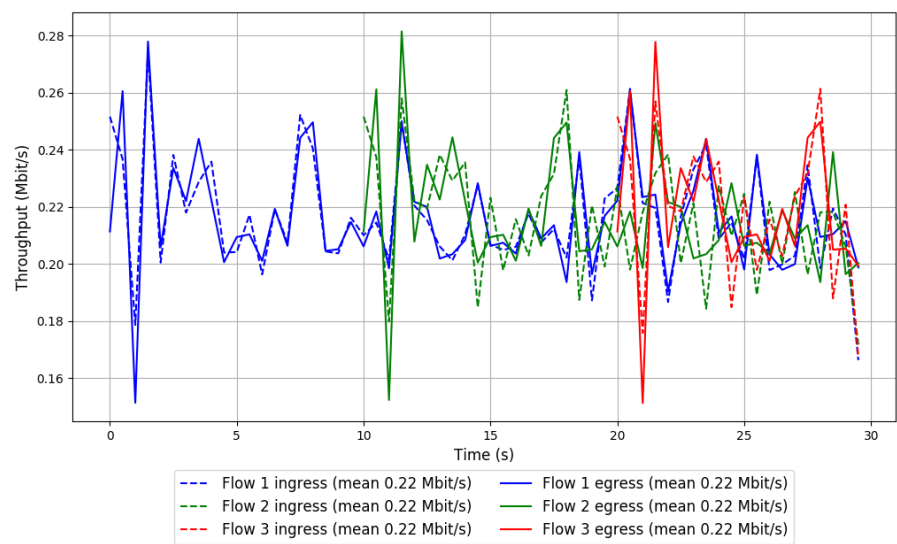
Run 7: Report of SCReAM — Data Link

```
Run 8: Statistics of SCReAM

Start at: 2018-04-19 00:10:35
End at: 2018-04-19 00:11:05


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 63.763 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.766 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.772 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 62.131 ms
Loss rate: 0.00%
```
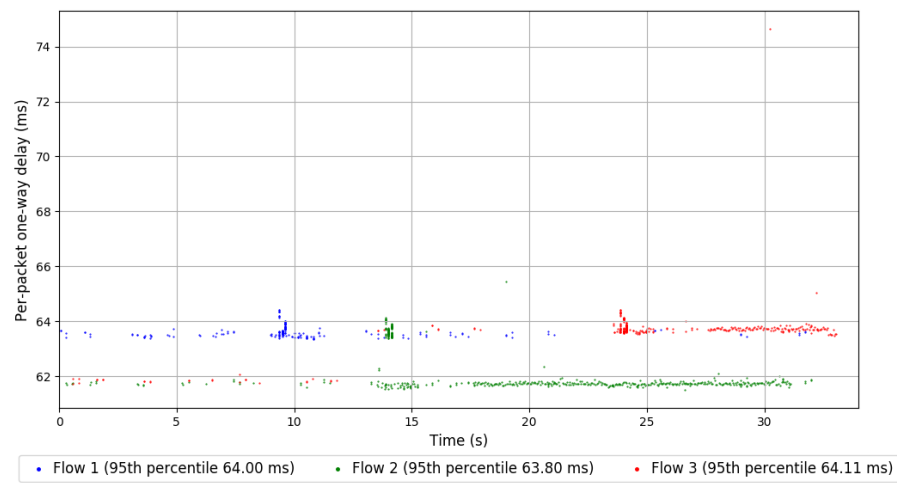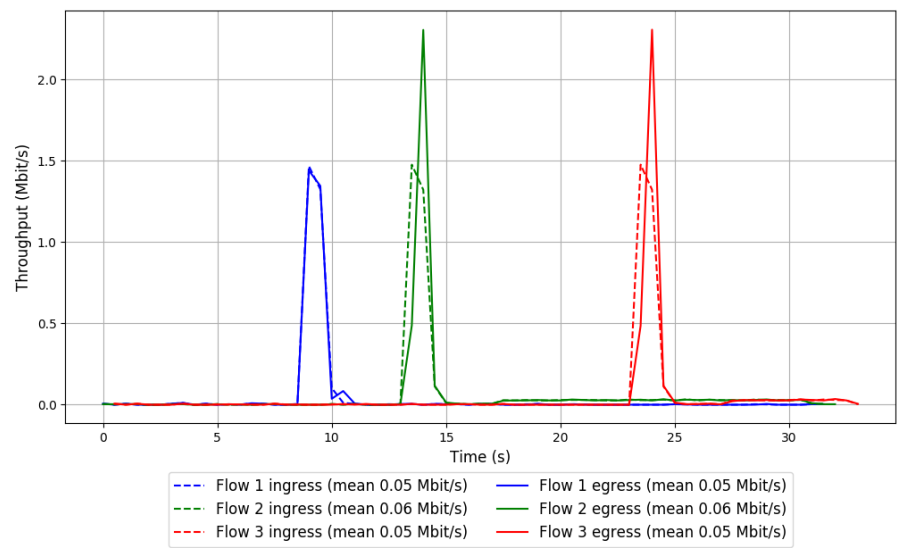
Run 8: Report of SCReAM — Data Link

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```
Run 9: Statistics of SCReAM

Start at: 2018-04-19 00:26:10
End at: 2018-04-19 00:26:40

# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 63.885 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.919 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.757 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.651 ms
Loss rate: 0.00%
```
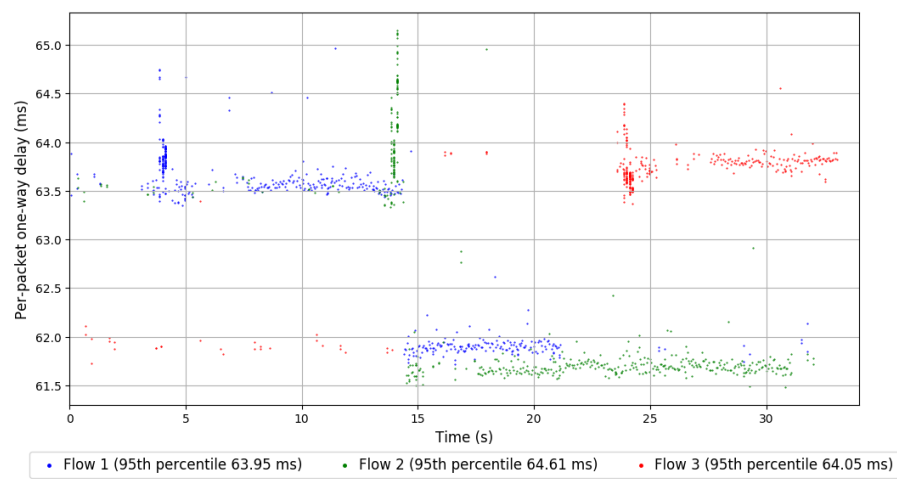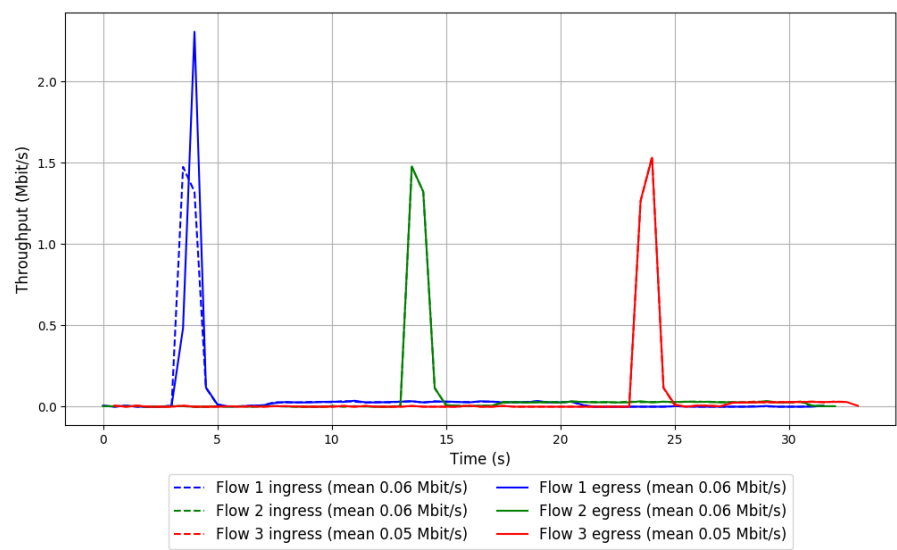
Run 9: Report of SCReAM — Data Link

```
Run 10: Statistics of SCReAM

Start at: 2018-04-19 00:41:36
End at: 2018-04-19 00:42:06


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 63.651 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.701 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 61.788 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 63.544 ms
Loss rate: 0.00%
```

Run 10: Report of SCReAM — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2018-04-18 22:16:49
End at: 2018-04-18 22:17:19


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 63.976 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 63.996 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 63.801 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 64.109 ms
Loss rate: 0.00%
```
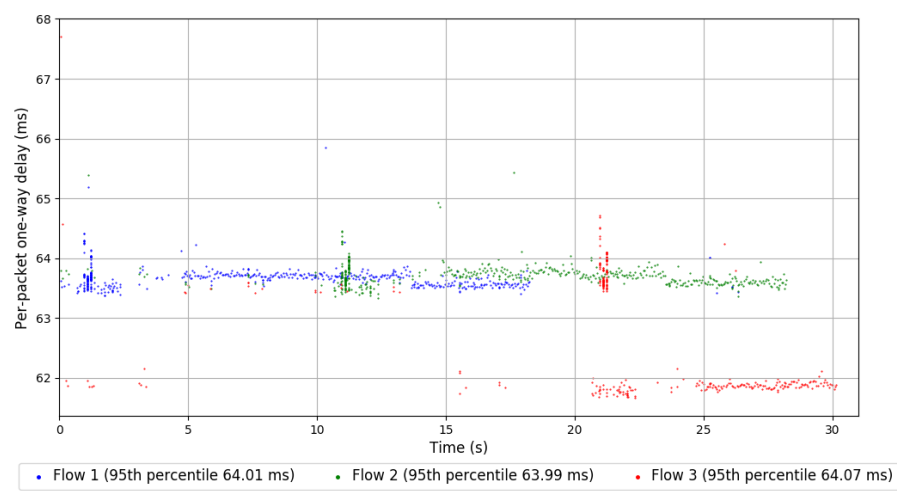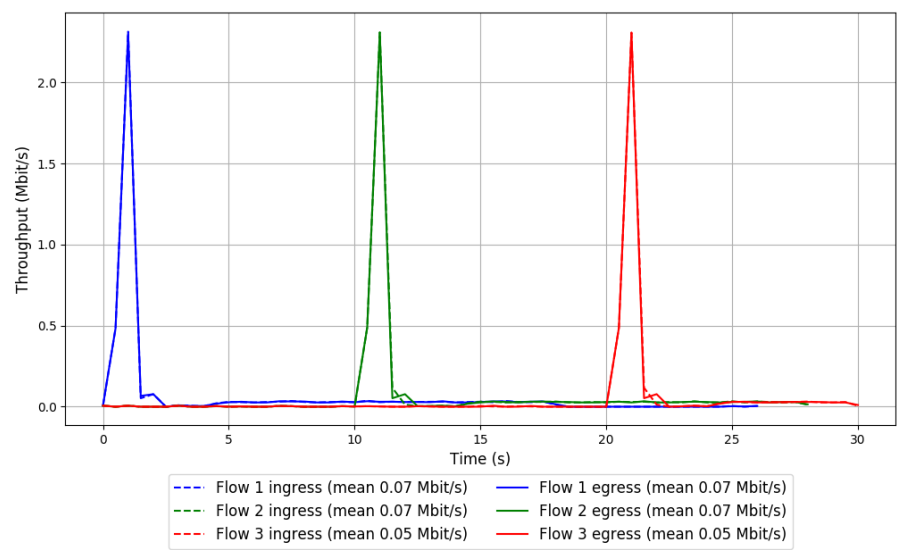
Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-04-18 22:32:17
End at: 2018-04-18 22:32:47


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 64.184 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 63.949 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 64.608 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 64.047 ms
Loss rate: 0.00%
```
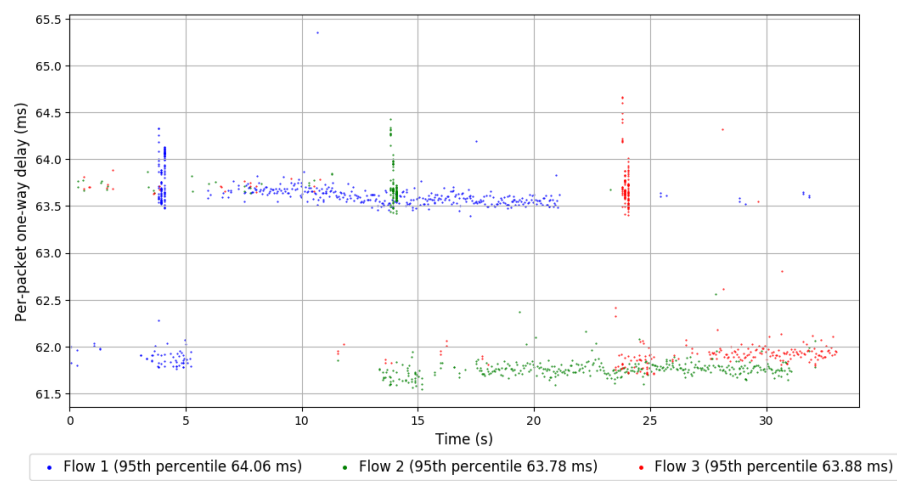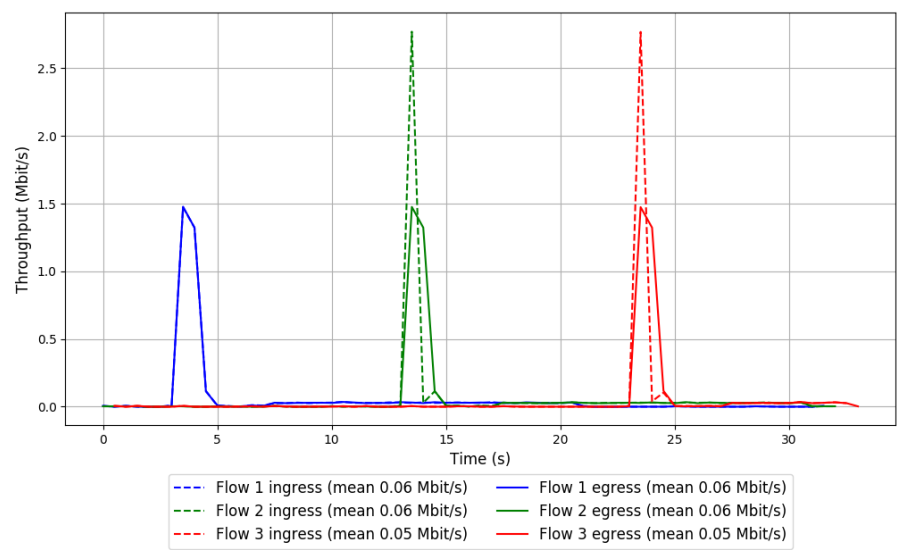
Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2018-04-18 22:48:07
End at: 2018-04-18 22:48:37


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 64.009 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 64.010 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.07 Mbit/s
95th percentile per-packet one-way delay: 63.994 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 64.069 ms
Loss rate: 0.00%
```
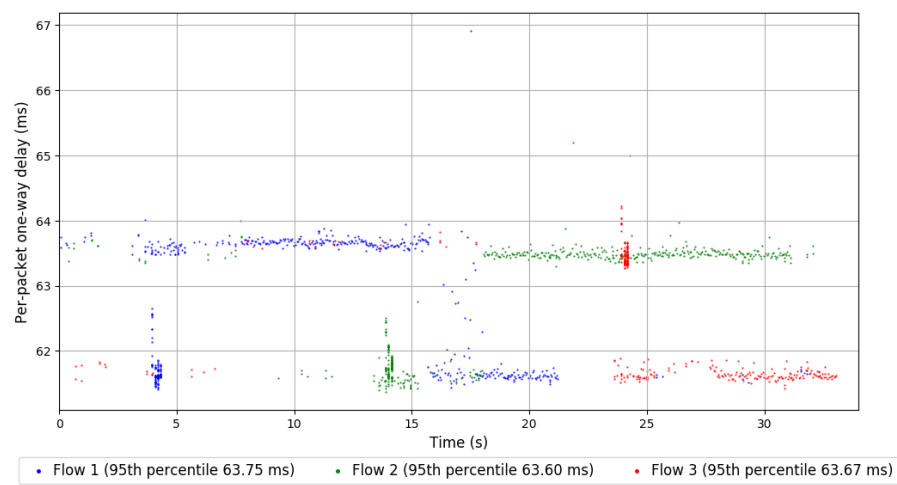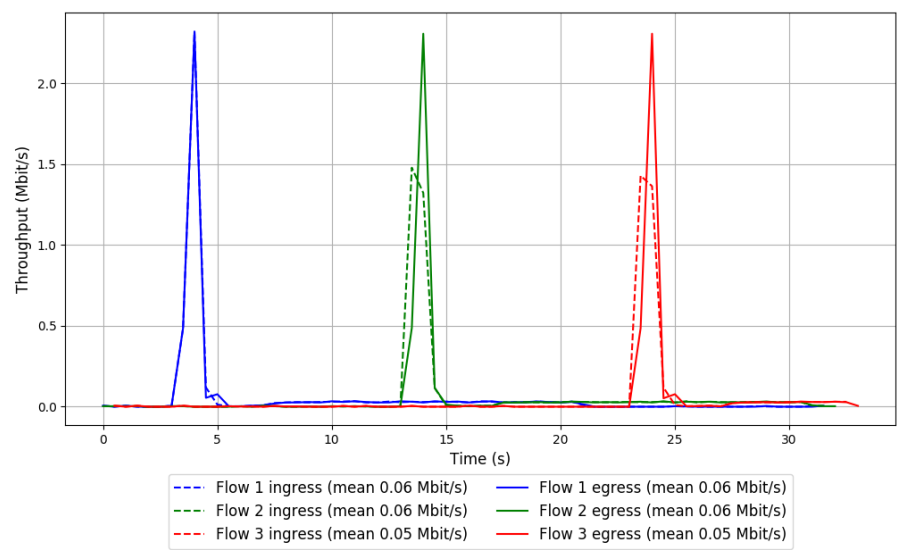
Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2018-04-18 23:03:42
End at: 2018-04-18 23:04:12


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 63.944 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 64.058 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 63.778 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 63.882 ms
Loss rate: 0.00%
```
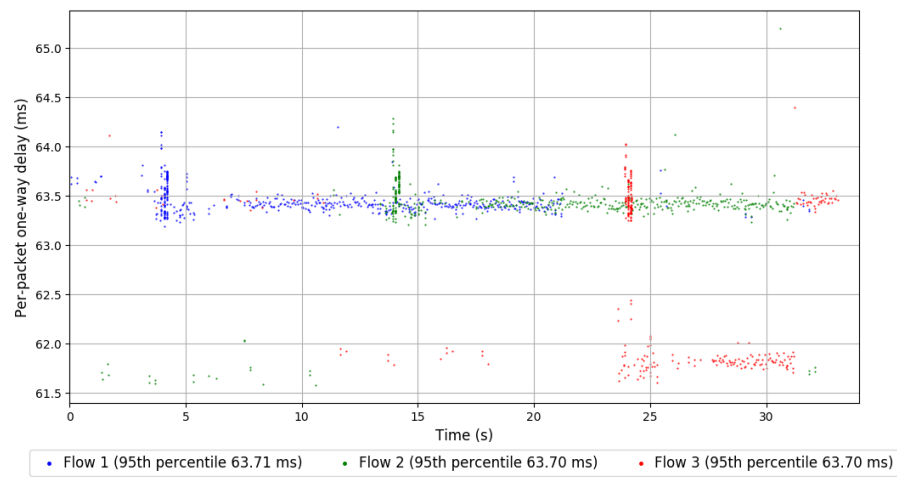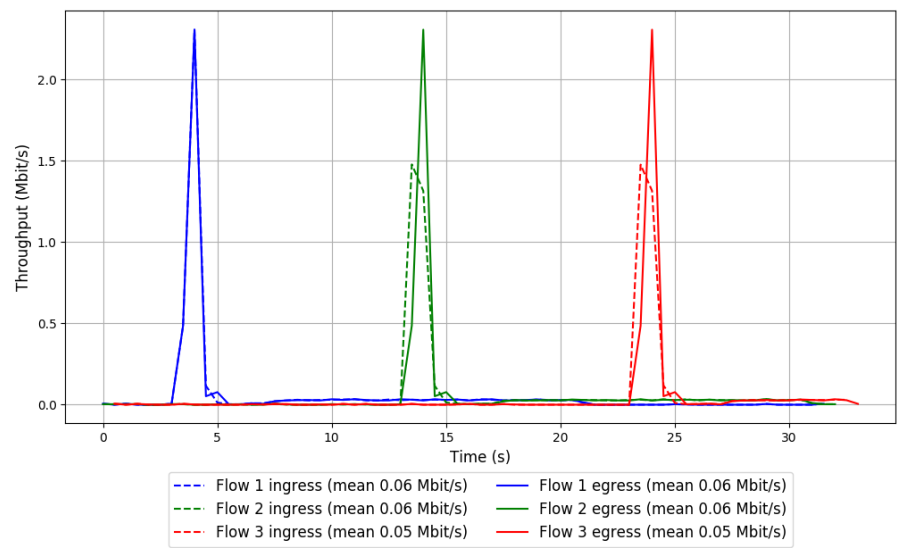
Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2018-04-18 23:19:16
End at: 2018-04-18 23:19:46


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 63.708 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 63.750 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 63.596 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 63.666 ms
Loss rate: 0.00%
```
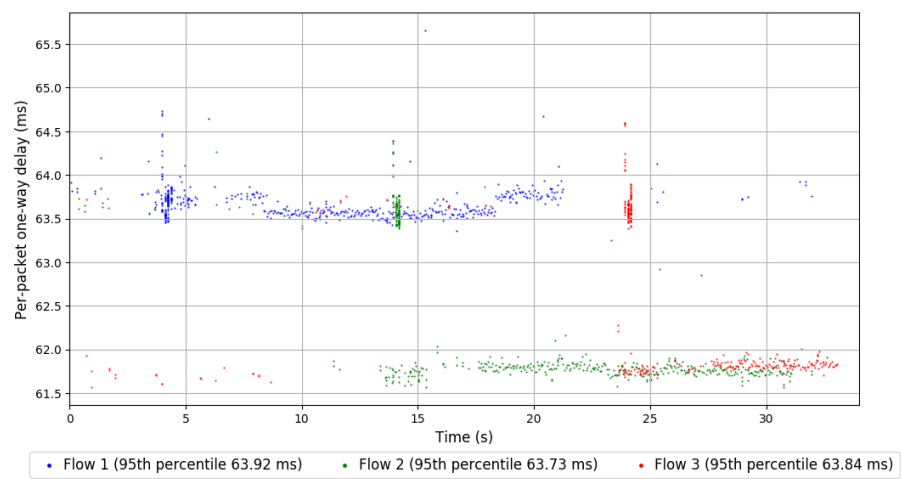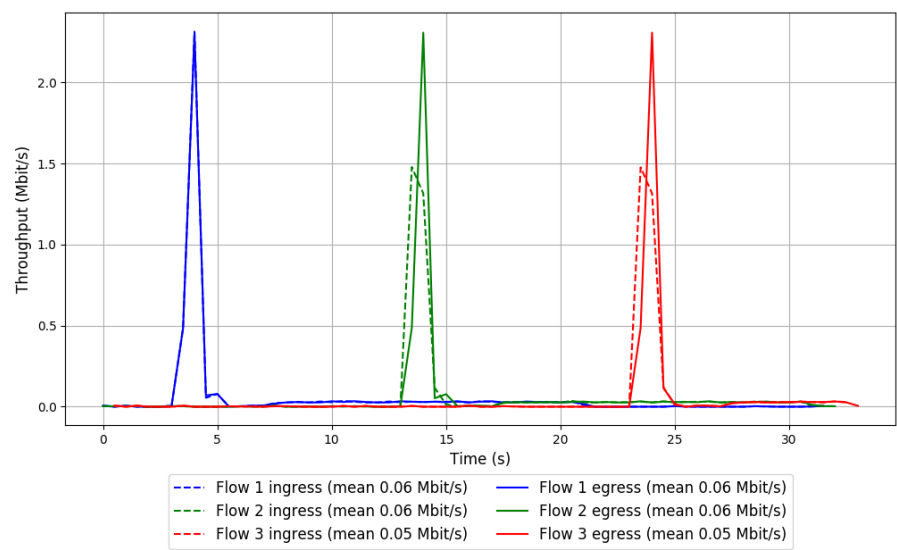
Run 5: Report of WebRTC media — Data Link

```
Run 6: Statistics of WebRTC media

Start at: 2018-04-18 23:35:00
End at: 2018-04-18 23:35:30


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 63.700 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 63.712 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 63.696 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 63.698 ms
Loss rate: 0.00%
```
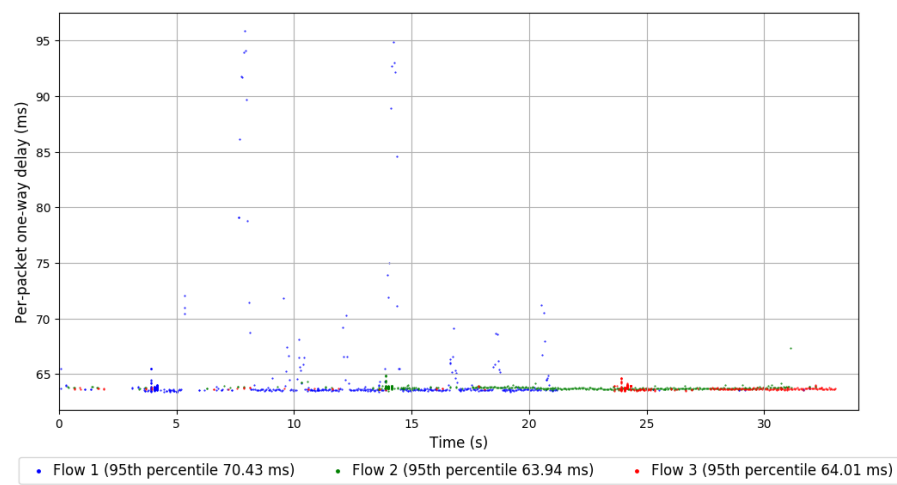
Run 6: Report of WebRTC media — Data Link

```
Run 7: Statistics of WebRTC media

Start at: 2018-04-18 23:50:33
End at: 2018-04-18 23:51:03


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 63.850 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 63.924 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 63.725 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 63.842 ms
Loss rate: 0.00%
```
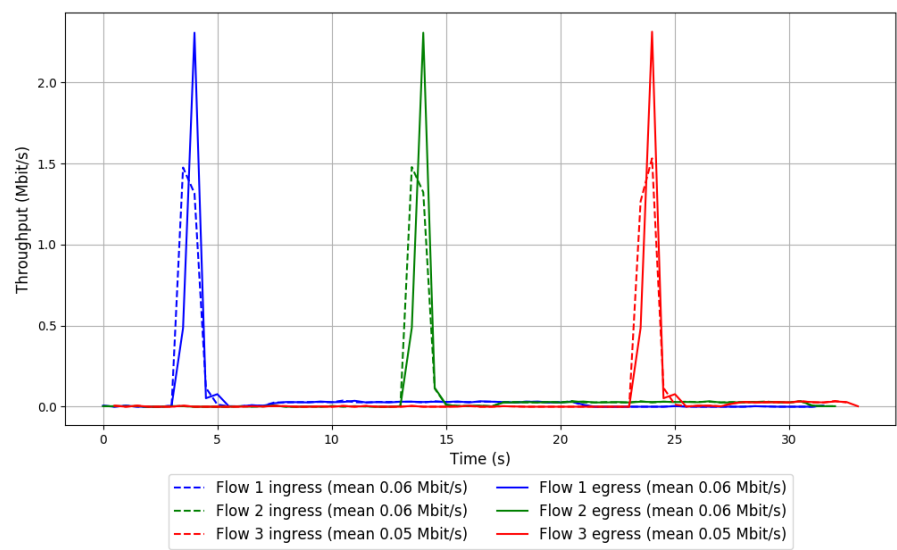
Run 7: Report of WebRTC media — Data Link

```
Run 8: Statistics of WebRTC media

Start at: 2018-04-19 00:06:21
End at: 2018-04-19 00:06:51


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 64.911 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 70.433 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 63.936 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 64.009 ms
Loss rate: 0.00%
```
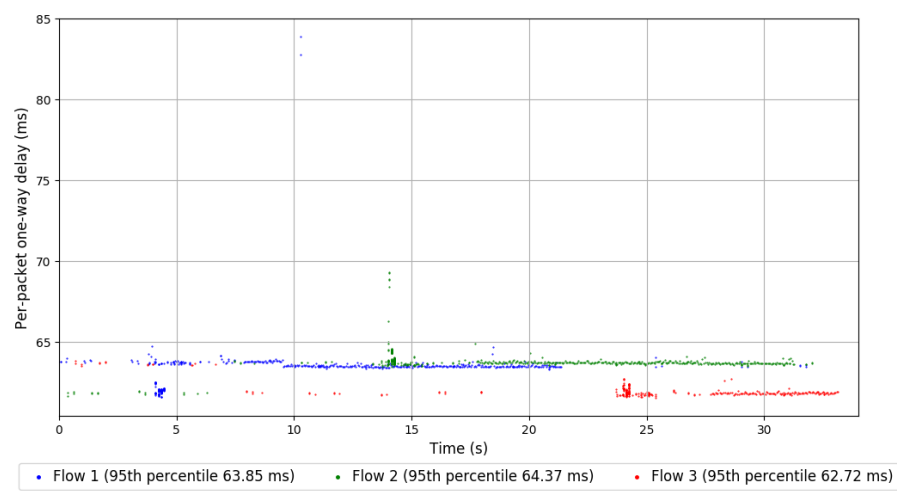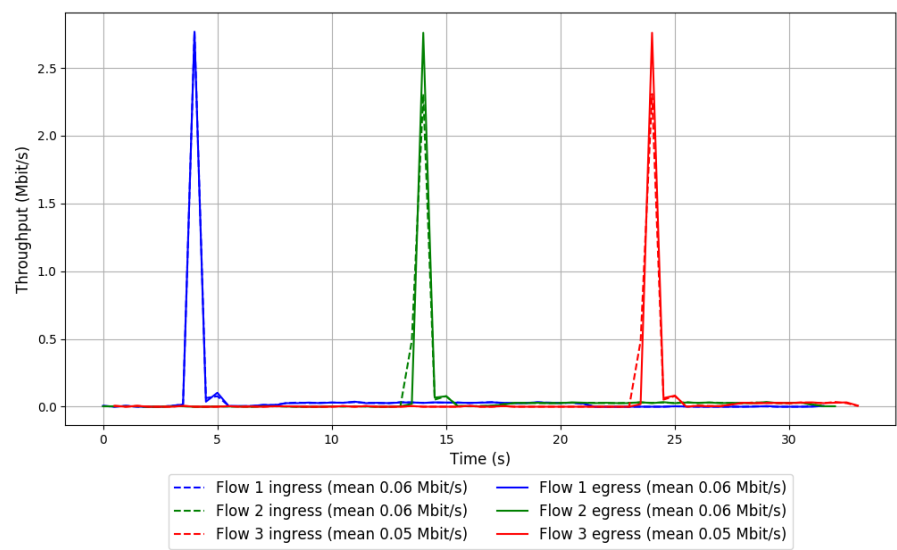
Run 8: Report of WebRTC media — Data Link

```
Run 9: Statistics of WebRTC media

Start at: 2018-04-19 00:21:54
End at: 2018-04-19 00:22:25


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 63.969 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 63.846 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 64.369 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 62.716 ms
Loss rate: 0.00%
```
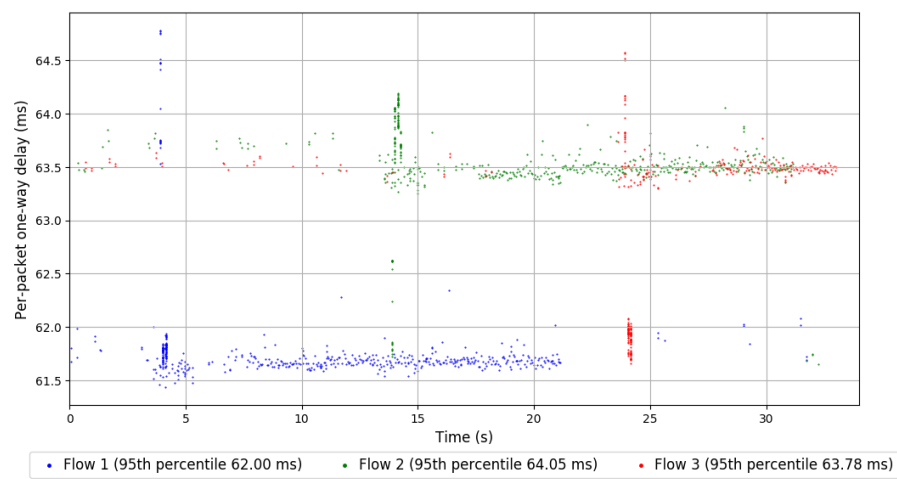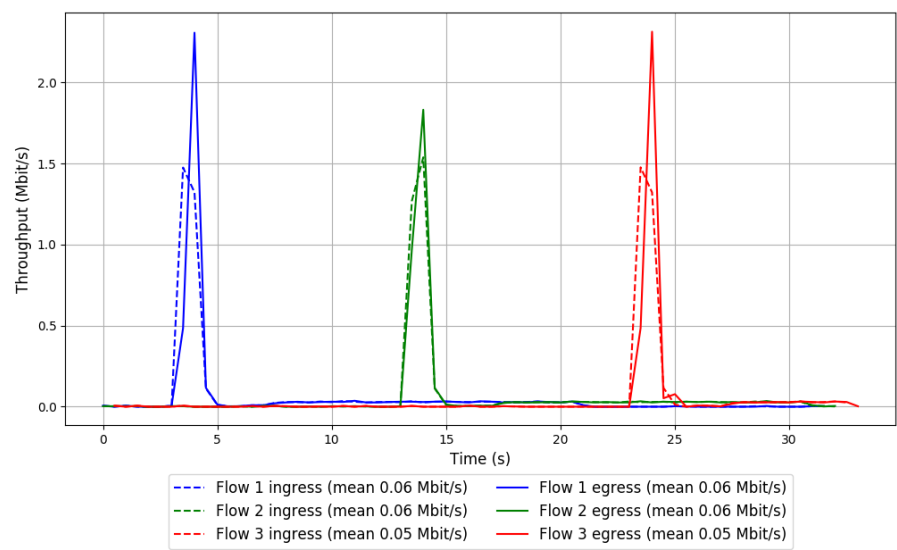
Run 9: Report of WebRTC media — Data Link

```
Run 10: Statistics of WebRTC media

Start at: 2018-04-19 00:37:20
End at: 2018-04-19 00:37:50


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 63.896 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 62.001 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.06 Mbit/s
95th percentile per-packet one-way delay: 64.047 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 63.785 ms
Loss rate: 0.00%
```
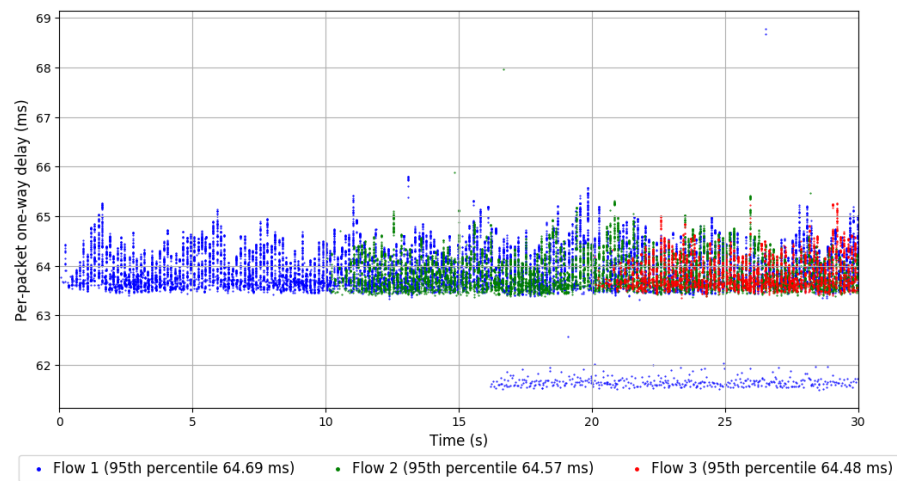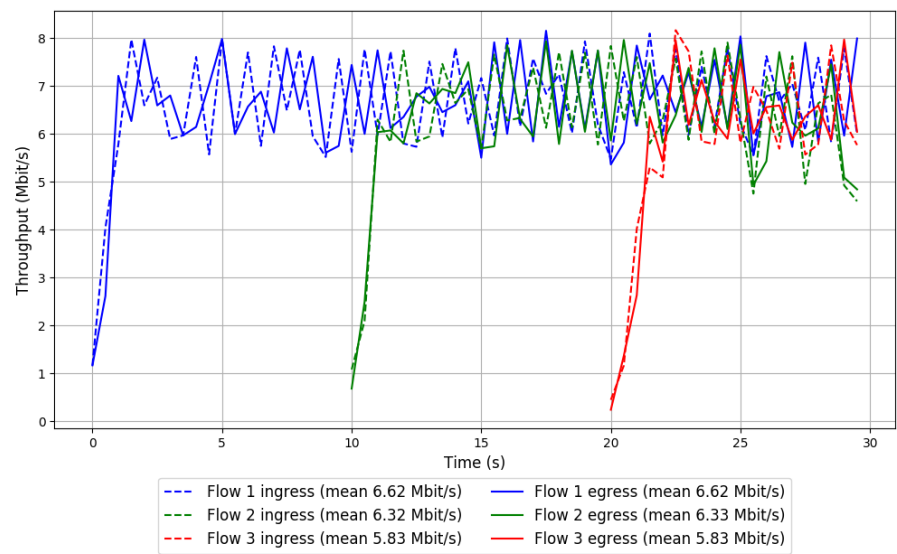
Run 10: Report of WebRTC media — Data Link

Flow 1 ingress (mean 0.06 Mbit/s) Flow 1 egress (mean 0.06 Mbit/s)
Flow 2 ingress (mean 0.06 Mbit/s) Flow 2 egress (mean 0.06 Mbit/s)
Flow 3 ingress (mean 0.05 Mbit/s) Flow 3 egress (mean 0.05 Mbit/s)

Flow 1 (95th percentile 62.00 ms)   Flow 2 (95th percentile 64.05 ms)   Flow 3 (95th percentile 63.78 ms)

```
Run 1: Statistics of Sprout

Start at: 2018-04-18 22:19:22
End at: 2018-04-18 22:19:52


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.75 Mbit/s
95th percentile per-packet one-way delay: 64.622 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 6.62 Mbit/s
95th percentile per-packet one-way delay: 64.687 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 6.33 Mbit/s
95th percentile per-packet one-way delay: 64.573 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 5.83 Mbit/s
95th percentile per-packet one-way delay: 64.476 ms
Loss rate: 0.00%
```
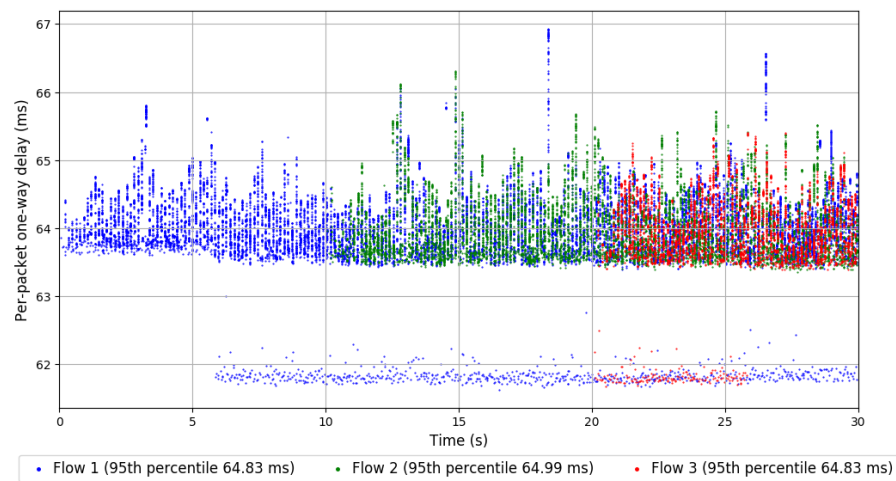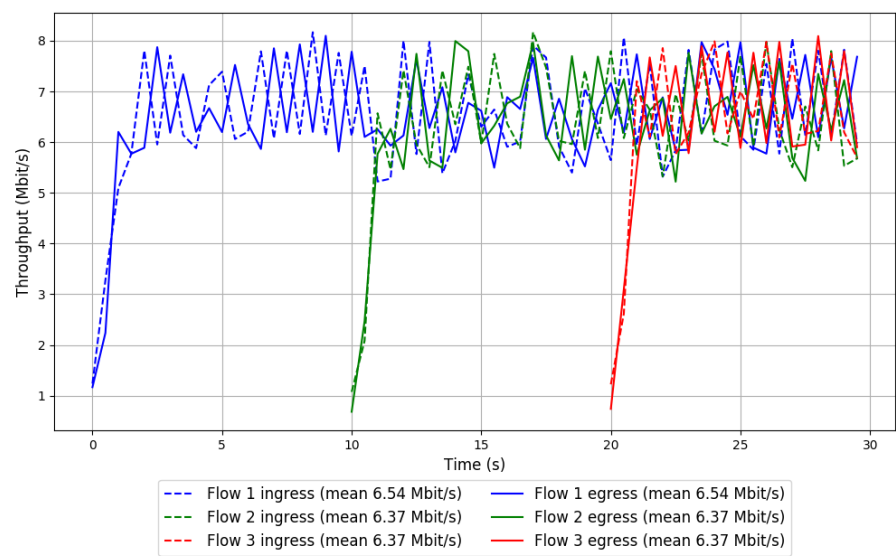
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2018-04-18 22:34:55
End at: 2018-04-18 22:35:25


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.87 Mbit/s
95th percentile per-packet one-way delay: 64.889 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 6.54 Mbit/s
95th percentile per-packet one-way delay: 64.828 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 6.37 Mbit/s
95th percentile per-packet one-way delay: 64.989 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 6.37 Mbit/s
95th percentile per-packet one-way delay: 64.825 ms
Loss rate: 0.00%
```
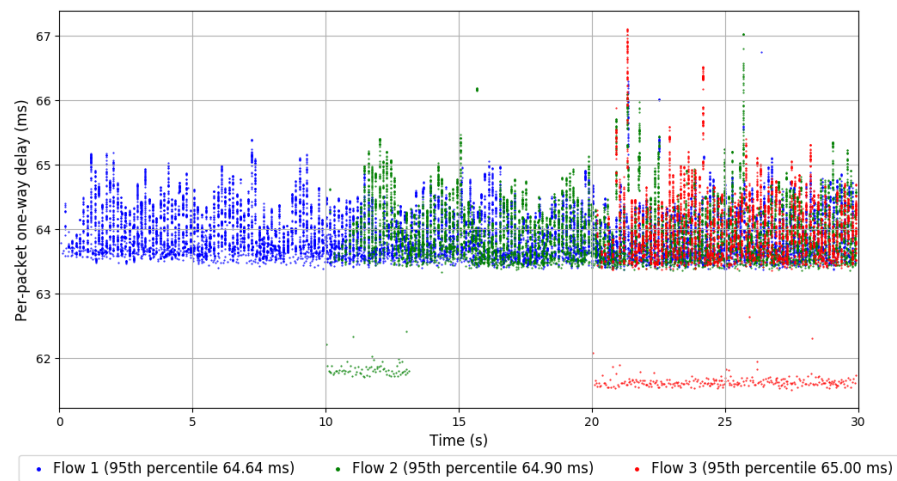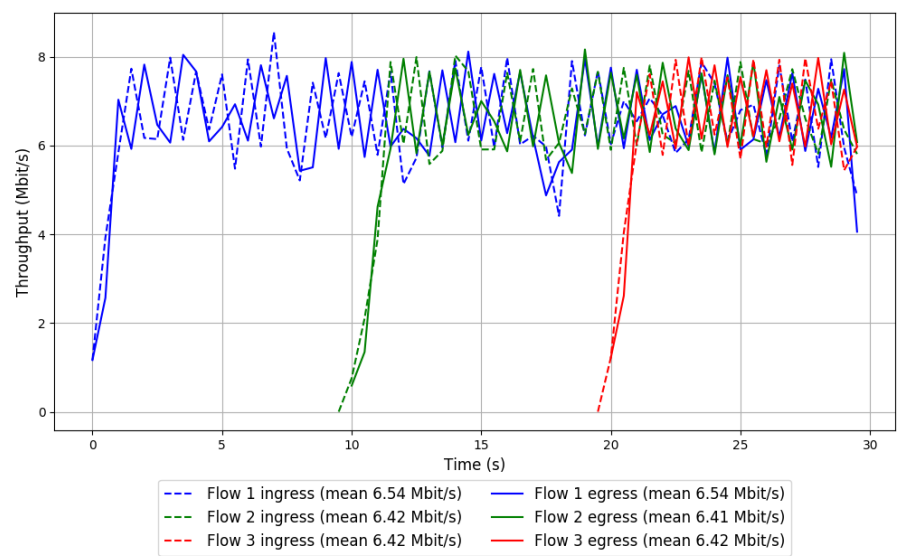
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2018-04-18 22:50:45
End at: 2018-04-18 22:51:15


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.93 Mbit/s
95th percentile per-packet one-way delay: 64.778 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 6.54 Mbit/s
95th percentile per-packet one-way delay: 64.643 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 6.41 Mbit/s
95th percentile per-packet one-way delay: 64.903 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 6.42 Mbit/s
95th percentile per-packet one-way delay: 64.995 ms
Loss rate: 0.00%
```
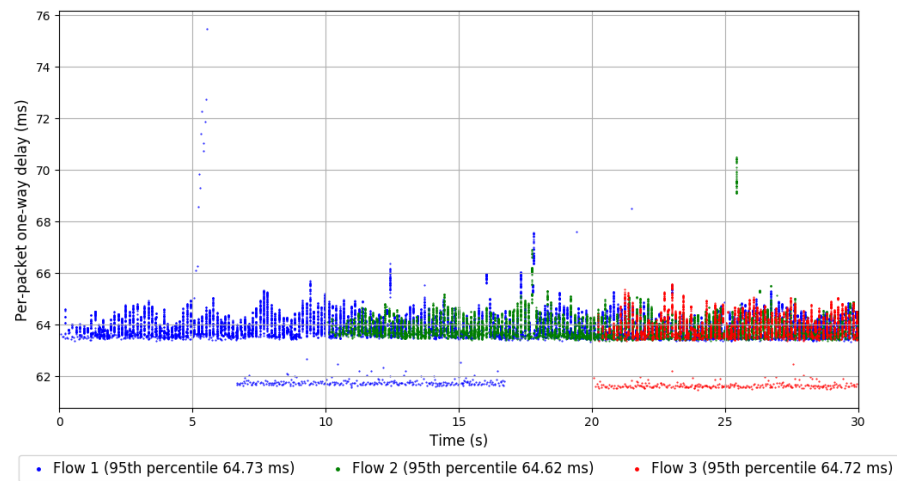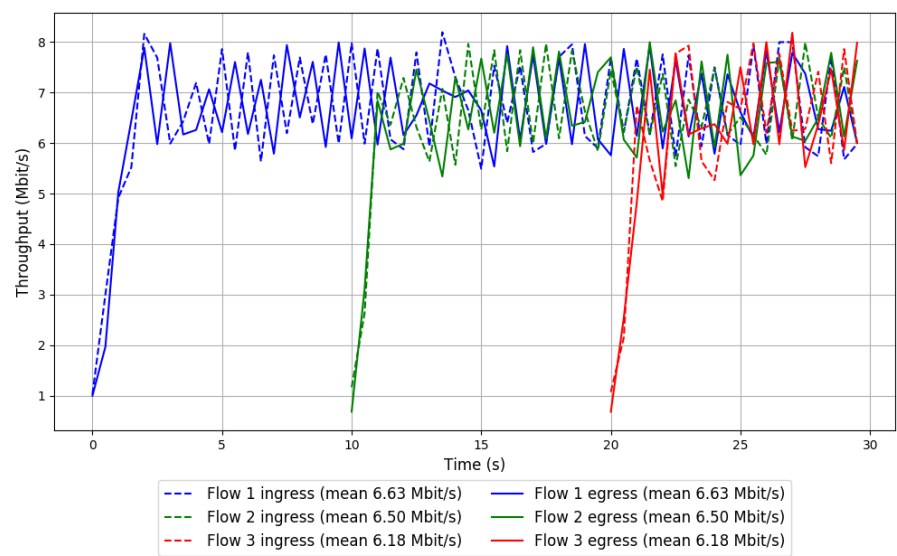
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2018-04-18 23:06:22
End at: 2018-04-18 23:06:52


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.99 Mbit/s
95th percentile per-packet one-way delay: 64.705 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 6.63 Mbit/s
95th percentile per-packet one-way delay: 64.729 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 6.50 Mbit/s
95th percentile per-packet one-way delay: 64.623 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 6.18 Mbit/s
95th percentile per-packet one-way delay: 64.717 ms
Loss rate: 0.00%
```
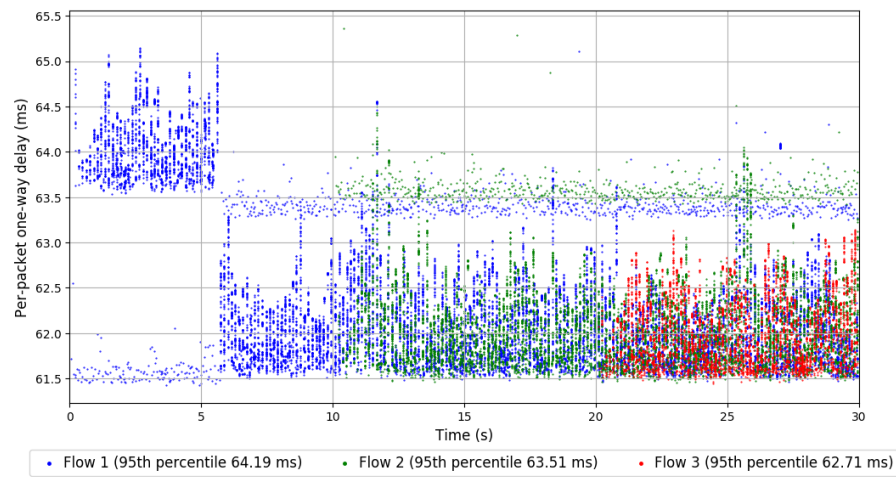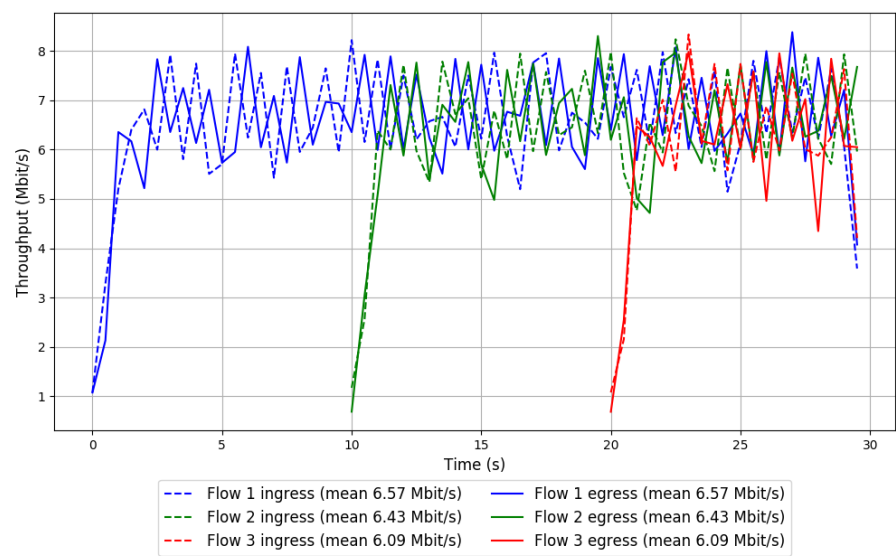
Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2018-04-18 23:21:55
End at: 2018-04-18 23:22:25


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.84 Mbit/s
95th percentile per-packet one-way delay: 63.922 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 6.57 Mbit/s
95th percentile per-packet one-way delay: 64.193 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 6.43 Mbit/s
95th percentile per-packet one-way delay: 63.514 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 6.09 Mbit/s
95th percentile per-packet one-way delay: 62.714 ms
Loss rate: 0.00%
```
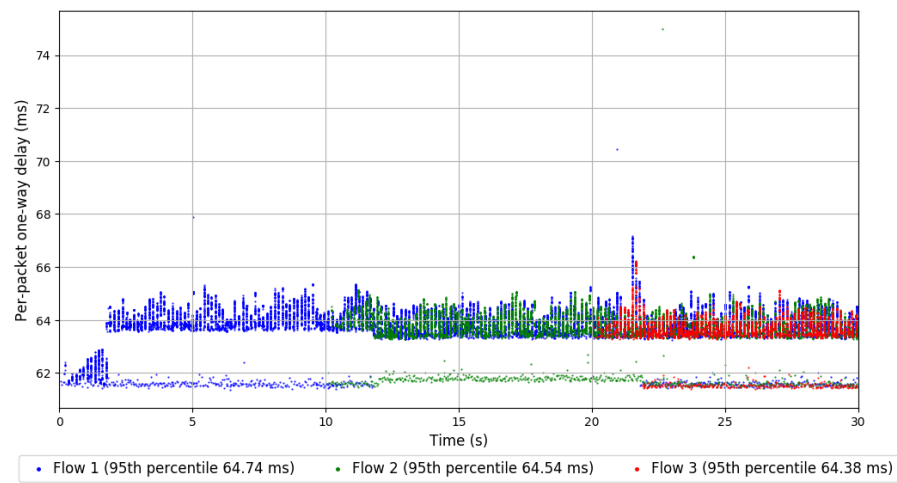
Run 5: Report of Sprout — Data Link

```
Run 6: Statistics of Sprout

Start at: 2018-04-18 23:37:39
End at: 2018-04-18 23:38:09


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.97 Mbit/s
95th percentile per-packet one-way delay: 64.637 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 6.55 Mbit/s
95th percentile per-packet one-way delay: 64.736 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 6.53 Mbit/s
95th percentile per-packet one-way delay: 64.540 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 6.34 Mbit/s
95th percentile per-packet one-way delay: 64.379 ms
Loss rate: 0.00%
```
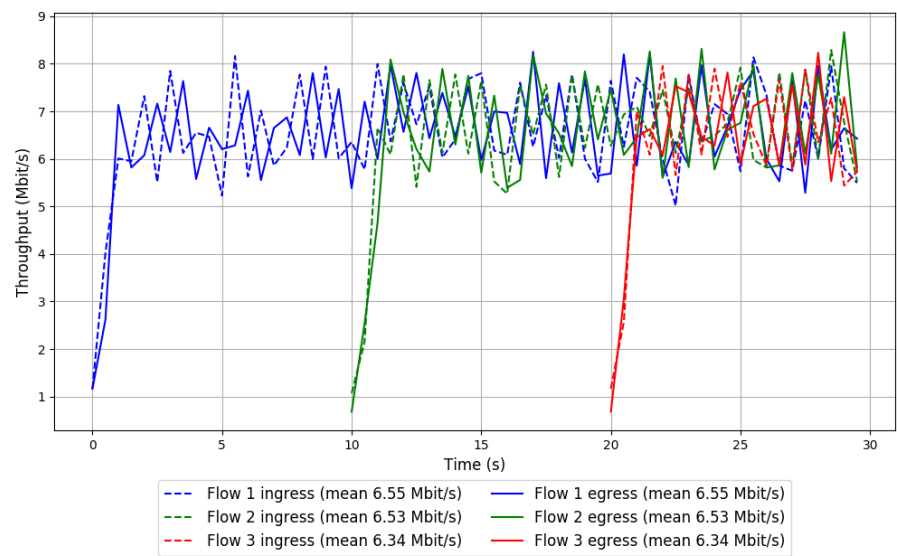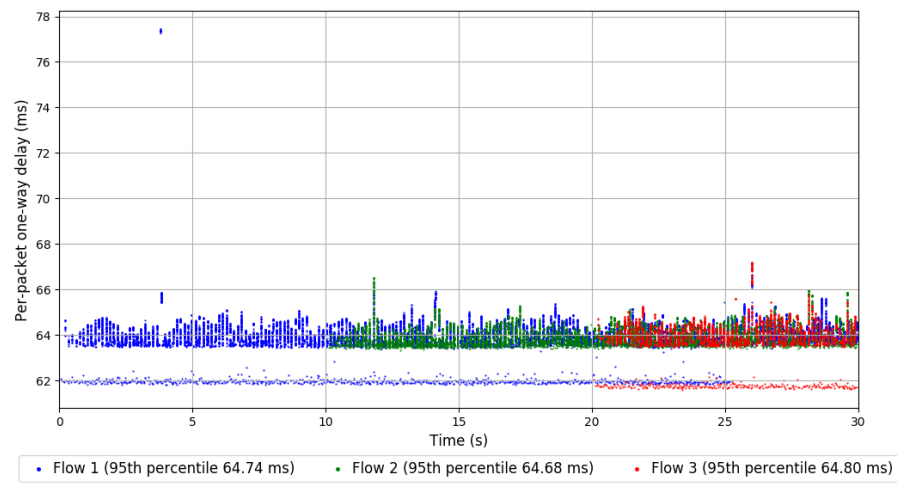
Run 6: Report of Sprout — Data Link

```
Run 7: Statistics of Sprout

Start at: 2018-04-18 23:53:13
End at: 2018-04-18 23:53:43


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.90 Mbit/s
95th percentile per-packet one-way delay: 64.736 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 6.60 Mbit/s
95th percentile per-packet one-way delay: 64.737 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 6.36 Mbit/s
95th percentile per-packet one-way delay: 64.677 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 6.32 Mbit/s
95th percentile per-packet one-way delay: 64.804 ms
Loss rate: 0.00%
```
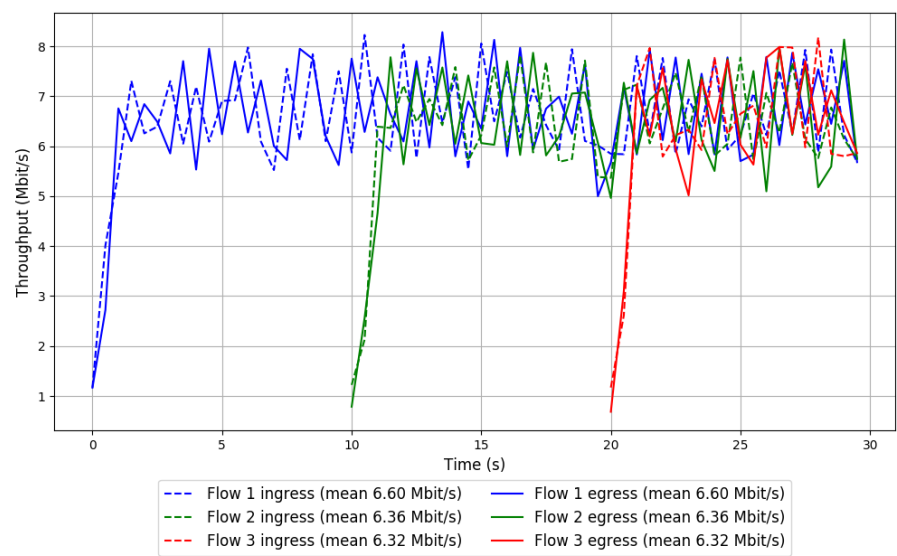
Run 7: Report of Sprout — Data Link

```
Run 8: Statistics of Sprout

Start at: 2018-04-19 00:08:59
End at: 2018-04-19 00:09:29


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.81 Mbit/s
95th percentile per-packet one-way delay: 64.781 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 6.49 Mbit/s
95th percentile per-packet one-way delay: 64.799 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 6.40 Mbit/s
95th percentile per-packet one-way delay: 64.713 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 6.29 Mbit/s
95th percentile per-packet one-way delay: 64.847 ms
Loss rate: 0.00%
```
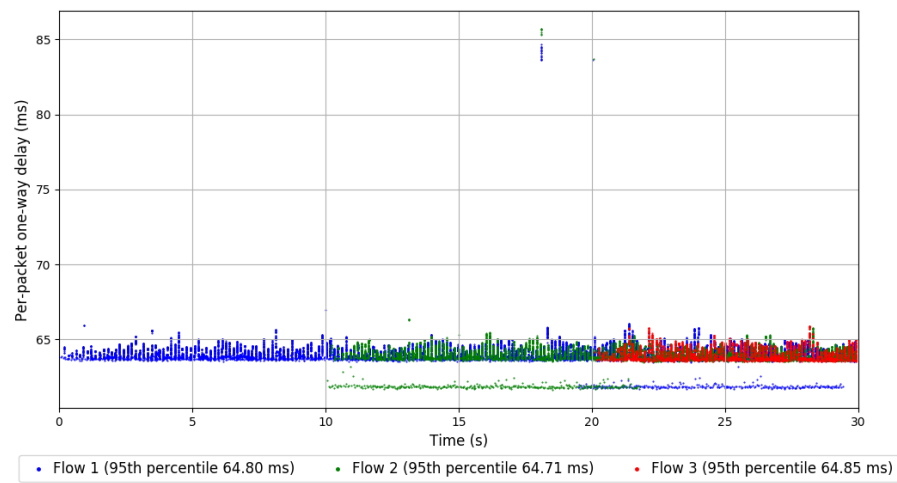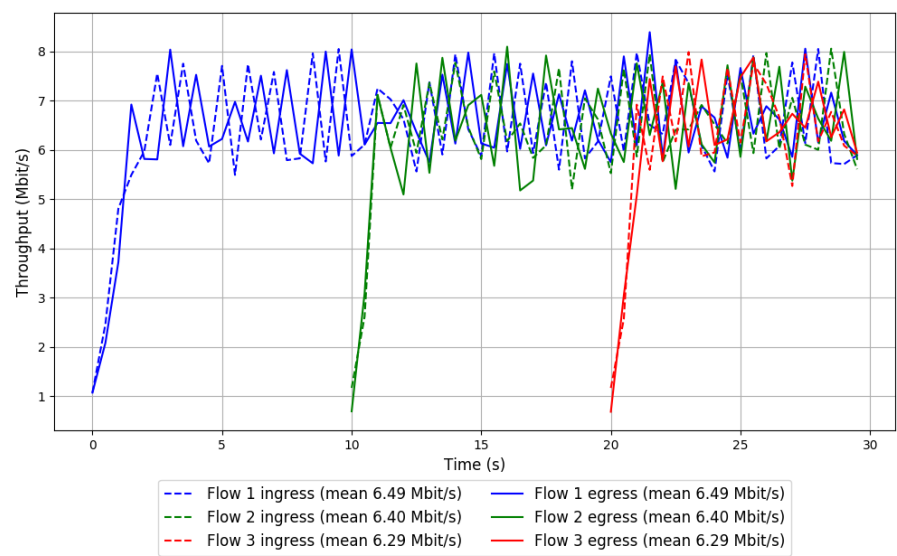
Run 8: Report of Sprout — Data Link

```
Run 9: Statistics of Sprout

Start at: 2018-04-19 00:24:34
End at: 2018-04-19 00:25:04


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.92 Mbit/s
95th percentile per-packet one-way delay: 64.425 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 6.55 Mbit/s
95th percentile per-packet one-way delay: 64.221 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 6.59 Mbit/s
95th percentile per-packet one-way delay: 64.367 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 6.04 Mbit/s
95th percentile per-packet one-way delay: 64.907 ms
Loss rate: 0.00%
```
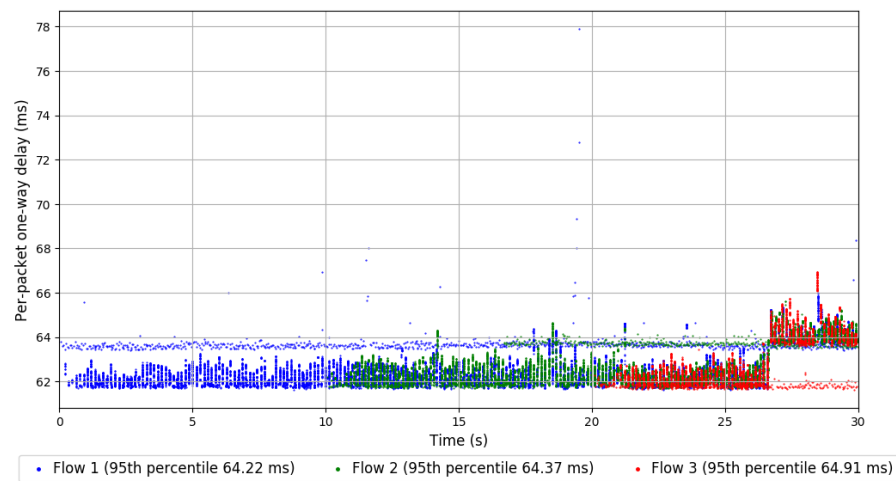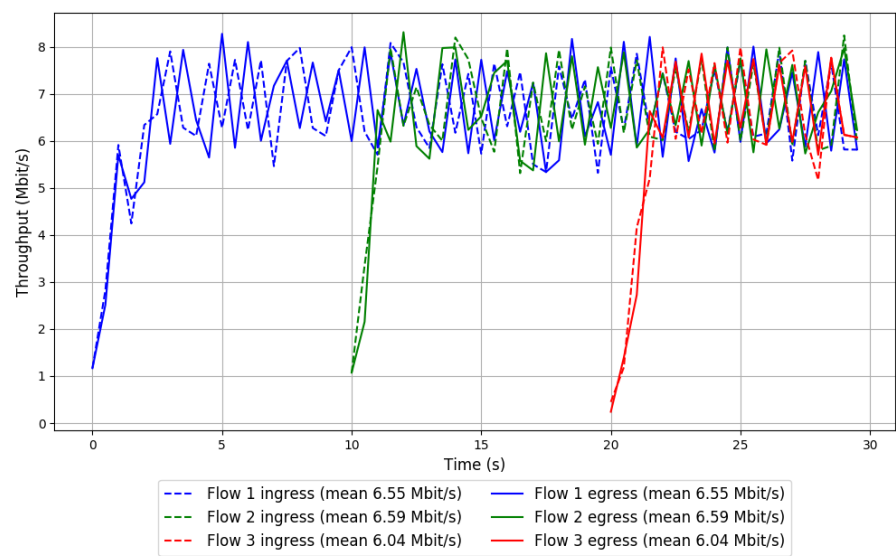
Run 9: Report of Sprout — Data Link

```
Run 10: Statistics of Sprout

Start at: 2018-04-19 00:39:59
End at: 2018-04-19 00:40:29


# Below is generated by plot.py at 2018-04-19 03:22:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.94 Mbit/s
95th percentile per-packet one-way delay: 63.437 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 6.66 Mbit/s
95th percentile per-packet one-way delay: 63.482 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 6.52 Mbit/s
95th percentile per-packet one-way delay: 63.380 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 5.94 Mbit/s
95th percentile per-packet one-way delay: 63.550 ms
Loss rate: 0.00%
```
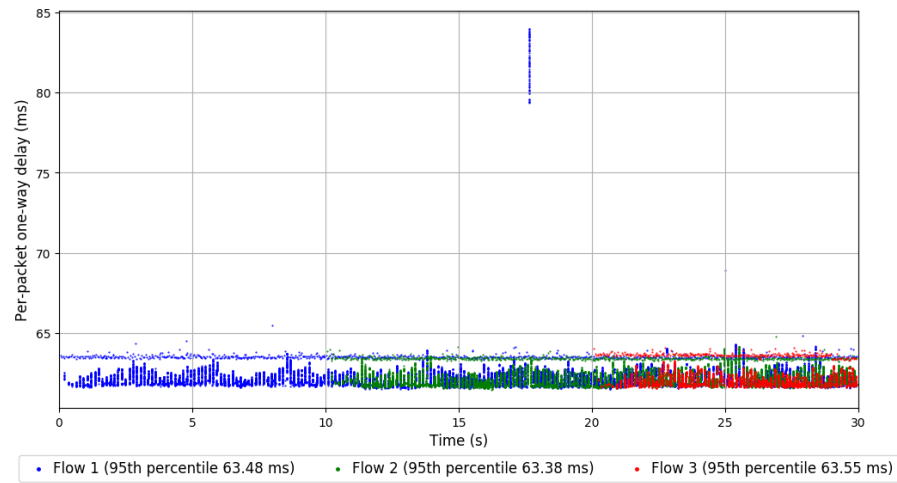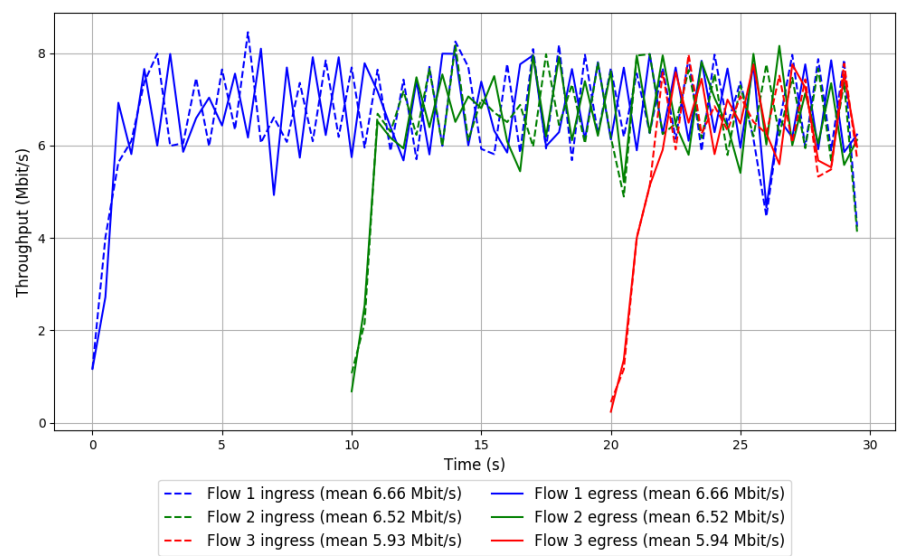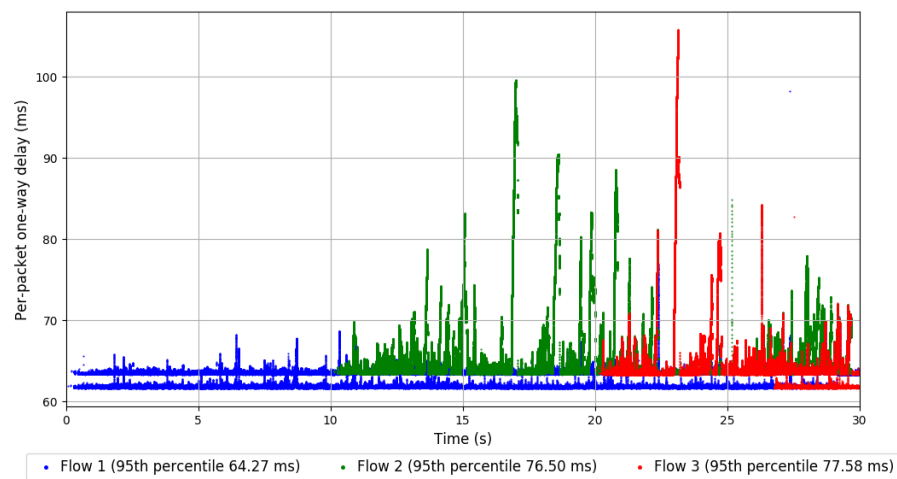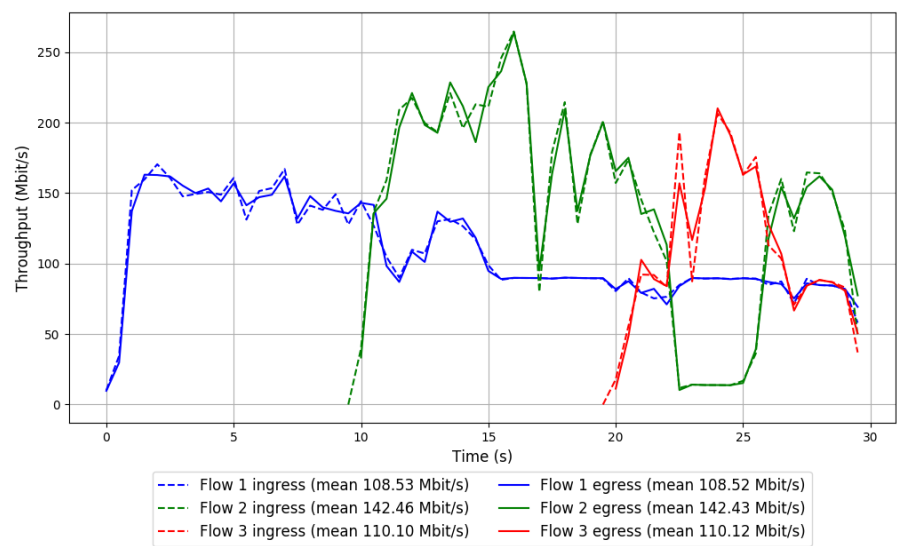
Run 10: Report of Sprout — Data Link

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

Start at: 2018-04-18 22:24:22
End at: 2018-04-18 22:24:52


# Below is generated by plot.py at 2018-04-19 03:28:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 238.80 Mbit/s
95th percentile per-packet one-way delay: 71.573 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 108.52 Mbit/s
95th percentile per-packet one-way delay: 64.268 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 142.43 Mbit/s
95th percentile per-packet one-way delay: 76.497 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 110.12 Mbit/s
95th percentile per-packet one-way delay: 77.585 ms
Loss rate: 0.01%
```

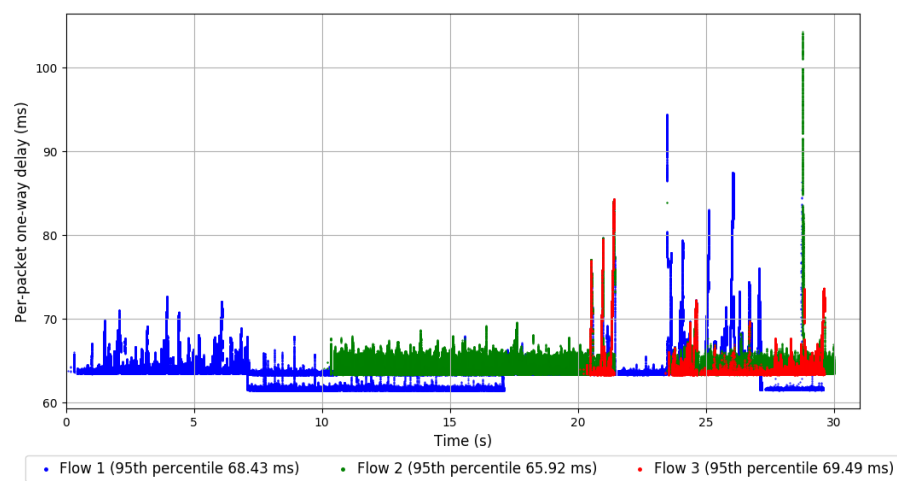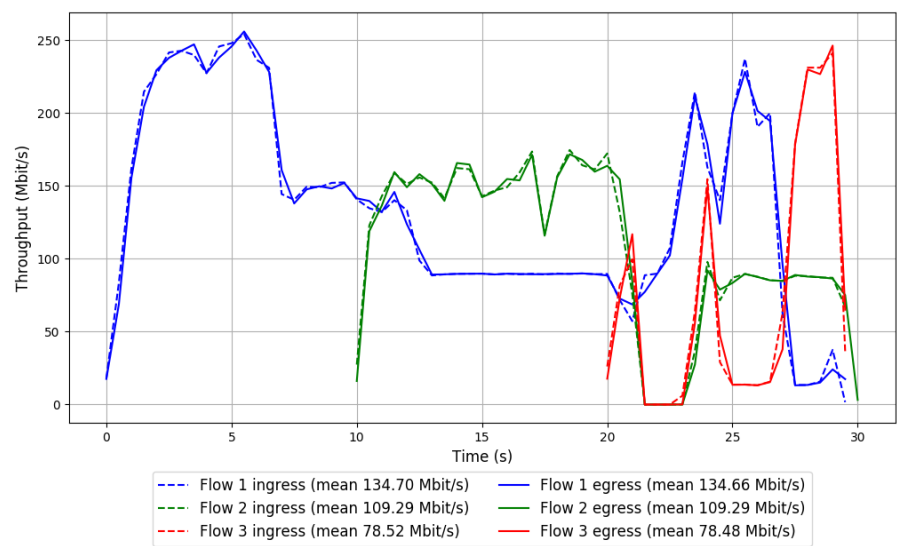# Run 1: Report of TaoVA-100x — Data Link

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

Start at: 2018-04-18 22:39:54
End at: 2018-04-18 22:40:24


# Below is generated by plot.py at 2018-04-19 03:28:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 230.44 Mbit/s
95th percentile per-packet one-way delay: 67.532 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 134.66 Mbit/s
95th percentile per-packet one-way delay: 68.433 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 109.29 Mbit/s
95th percentile per-packet one-way delay: 65.922 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 78.48 Mbit/s
95th percentile per-packet one-way delay: 69.489 ms
Loss rate: 0.00%
```

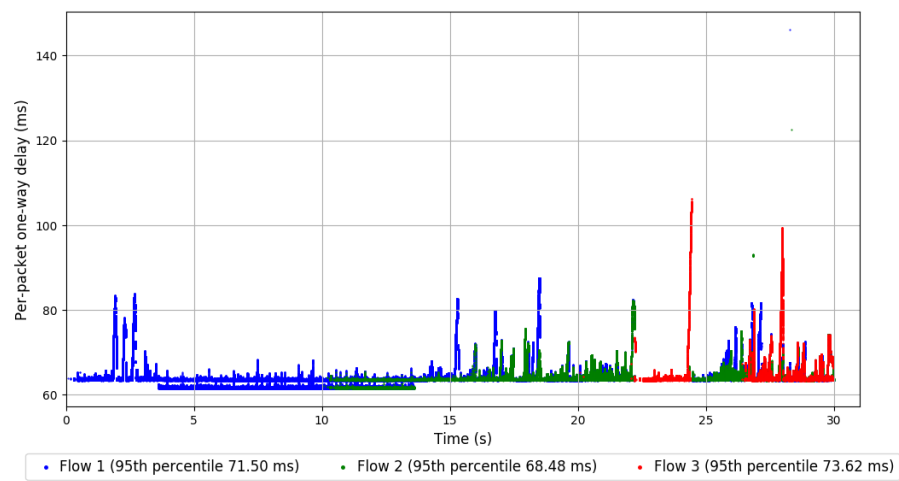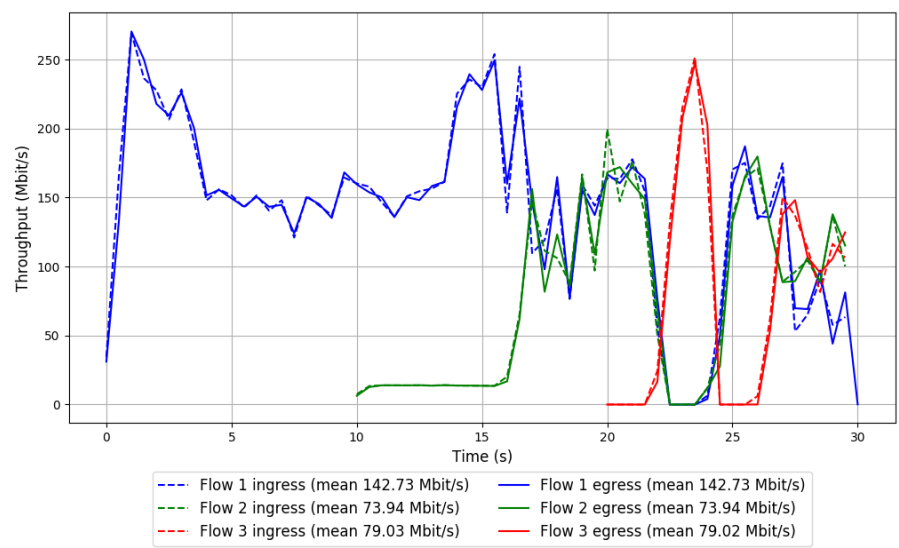Run 2: Report of TaoVA-100x — Data Link

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

Start at: 2018-04-18 22:55:45
End at: 2018-04-18 22:56:15


# Below is generated by plot.py at 2018-04-19 03:28:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 218.04 Mbit/s
95th percentile per-packet one-way delay: 70.802 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 142.73 Mbit/s
95th percentile per-packet one-way delay: 71.503 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 73.94 Mbit/s
95th percentile per-packet one-way delay: 68.483 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 79.02 Mbit/s
95th percentile per-packet one-way delay: 73.621 ms
Loss rate: 0.00%
```

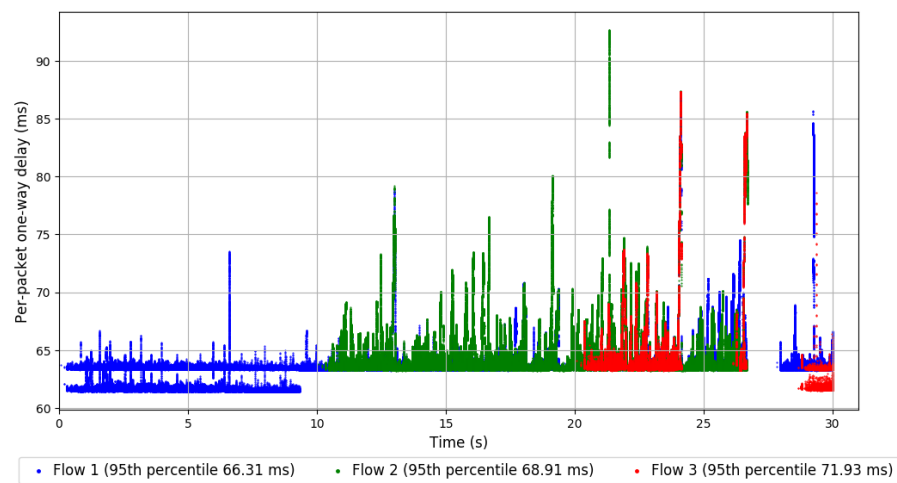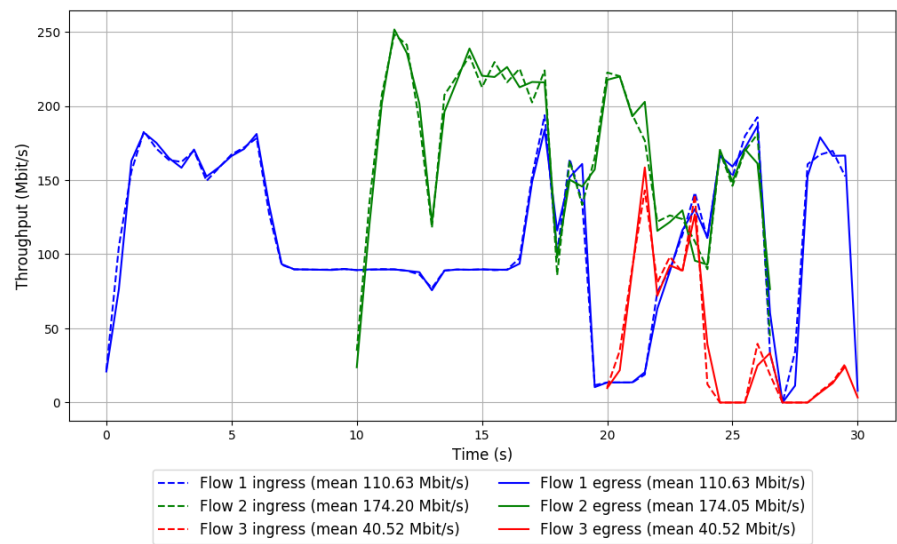Run 3: Report of TaoVA-100x — Data Link

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

Start at: 2018-04-18 23:11:21
End at: 2018-04-18 23:11:51


# Below is generated by plot.py at 2018-04-19 03:28:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 220.62 Mbit/s
95th percentile per-packet one-way delay: 67.906 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 110.63 Mbit/s
95th percentile per-packet one-way delay: 66.308 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 174.05 Mbit/s
95th percentile per-packet one-way delay: 68.905 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 40.52 Mbit/s
95th percentile per-packet one-way delay: 71.932 ms
Loss rate: 0.00%
```

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

Flow 1 ingress (mean 110.63 Mbit/s) --- Flow 1 egress (mean 110.63 Mbit/s)
Flow 2 ingress (mean 174.20 Mbit/s) --- Flow 2 egress (mean 174.05 Mbit/s)
Flow 3 ingress (mean 40.52 Mbit/s) --- Flow 3 egress (mean 40.52 Mbit/s)

Flow 1 (95th percentile 66.31 ms) Flow 2 (95th percentile 68.91 ms) Flow 3 (95th percentile 71.93 ms)

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

Start at: 2018-04-18 23:26:55
End at: 2018-04-18 23:27:25


# Below is generated by plot.py at 2018-04-19 03:28:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 220.94 Mbit/s
95th percentile per-packet one-way delay: 70.607 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 109.62 Mbit/s
95th percentile per-packet one-way delay: 64.022 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 149.06 Mbit/s
95th percentile per-packet one-way delay: 73.911 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 36.83 Mbit/s
95th percentile per-packet one-way delay: 69.085 ms
Loss rate: 0.00%
```
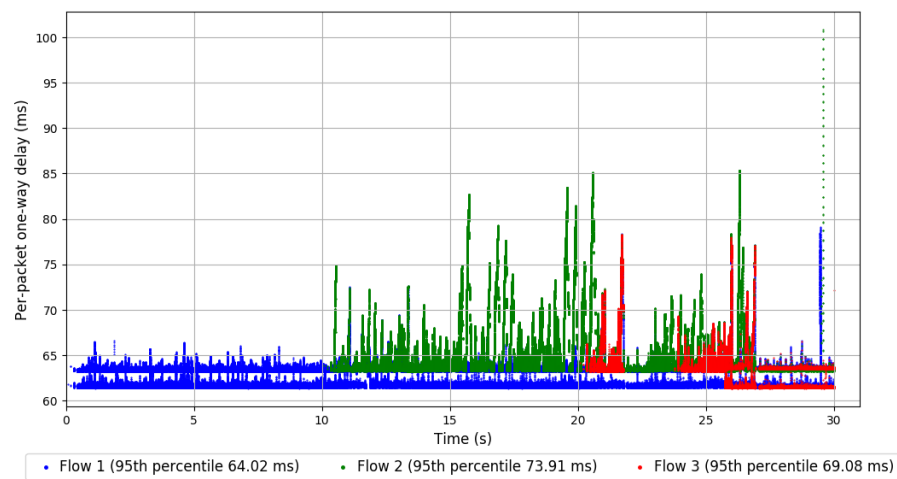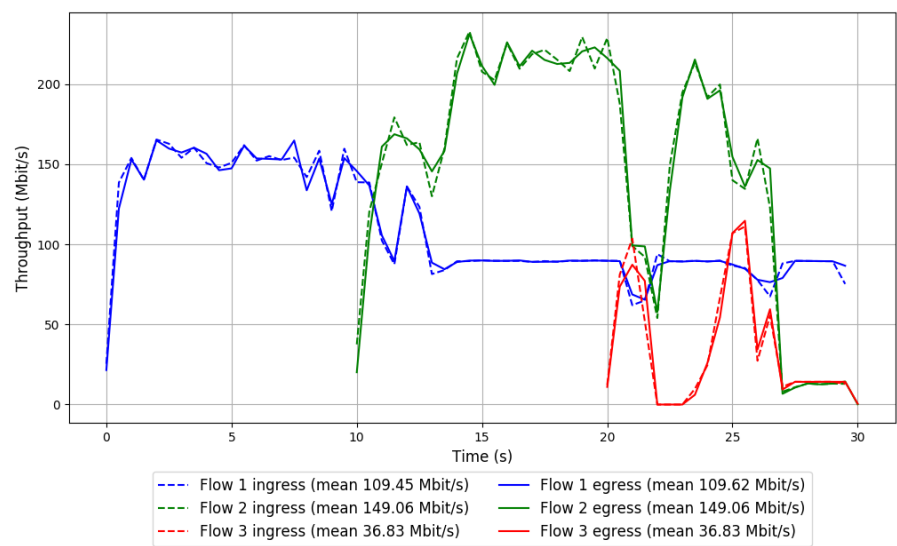
Run 5: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 109.45 Mbit/s) --- Flow 1 egress (mean 109.62 Mbit/s)
Flow 2 ingress (mean 149.06 Mbit/s) --- Flow 2 egress (mean 149.06 Mbit/s)
Flow 3 ingress (mean 36.83 Mbit/s) --- Flow 3 egress (mean 36.83 Mbit/s)

Flow 1 (95th percentile 64.02 ms)   Flow 2 (95th percentile 73.91 ms)   Flow 3 (95th percentile 69.08 ms)

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```
Run 6: Statistics of TaoVA-100x

Start at: 2018-04-18 23:42:36
End at: 2018-04-18 23:43:06


# Below is generated by plot.py at 2018-04-19 03:28:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 204.23 Mbit/s
95th percentile per-packet one-way delay: 64.376 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 140.17 Mbit/s
95th percentile per-packet one-way delay: 64.581 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 89.63 Mbit/s
95th percentile per-packet one-way delay: 63.837 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 13.23 Mbit/s
95th percentile per-packet one-way delay: 64.357 ms
Loss rate: 0.00%
```
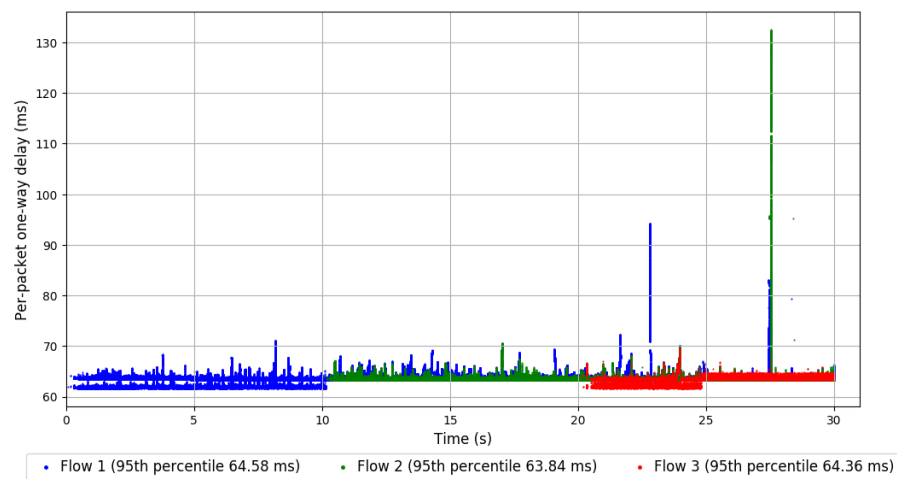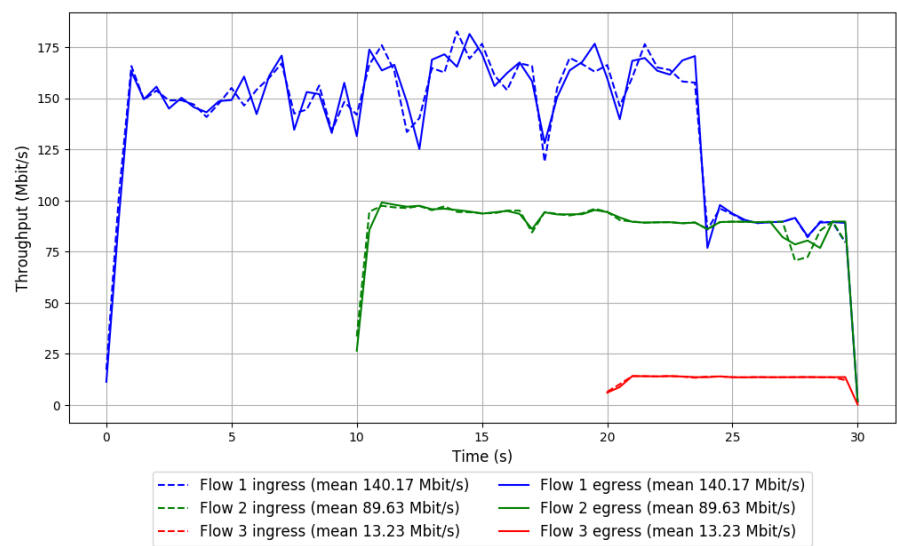
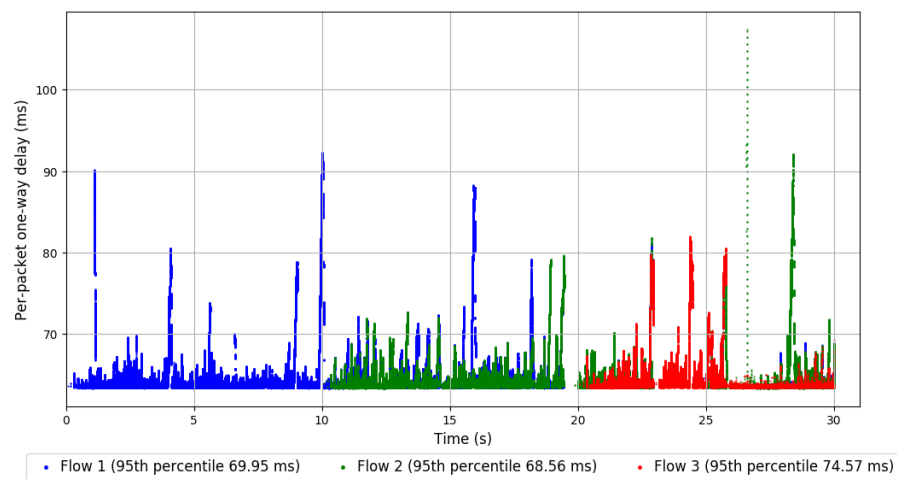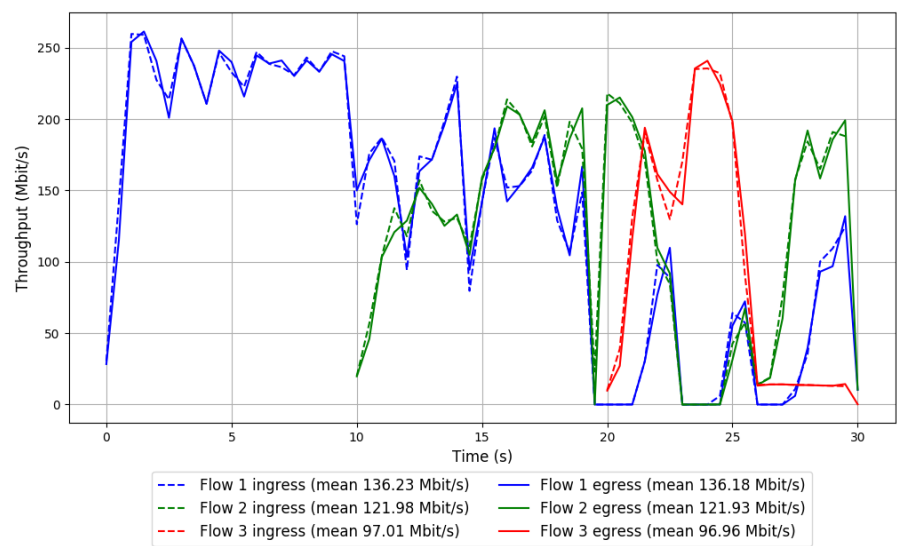Run 6: Report of TaoVA-100x — Data Link

```
Run 7: Statistics of TaoVA-100x

Start at: 2018-04-18 23:58:16
End at: 2018-04-18 23:58:46


# Below is generated by plot.py at 2018-04-19 03:32:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 249.51 Mbit/s
95th percentile per-packet one-way delay: 69.827 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 136.18 Mbit/s
95th percentile per-packet one-way delay: 69.948 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 121.93 Mbit/s
95th percentile per-packet one-way delay: 68.559 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 96.96 Mbit/s
95th percentile per-packet one-way delay: 74.571 ms
Loss rate: 0.00%
```

Run 7: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 136.23 Mbit/s) --- Flow 1 egress (mean 136.18 Mbit/s)
Flow 2 ingress (mean 121.98 Mbit/s) --- Flow 2 egress (mean 121.93 Mbit/s)
Flow 3 ingress (mean 97.01 Mbit/s) --- Flow 3 egress (mean 96.96 Mbit/s)

Flow 1 (95th percentile 69.95 ms)   Flow 2 (95th percentile 68.56 ms)   Flow 3 (95th percentile 74.57 ms)

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```
Run 8: Statistics of TaoVA-100x

Start at: 2018-04-19 00:14:00
End at: 2018-04-19 00:14:30


# Below is generated by plot.py at 2018-04-19 03:32:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 247.13 Mbit/s
95th percentile per-packet one-way delay: 67.452 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 126.62 Mbit/s
95th percentile per-packet one-way delay: 66.816 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 136.61 Mbit/s
95th percentile per-packet one-way delay: 70.332 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 89.20 Mbit/s
95th percentile per-packet one-way delay: 64.996 ms
Loss rate: 0.03%
```
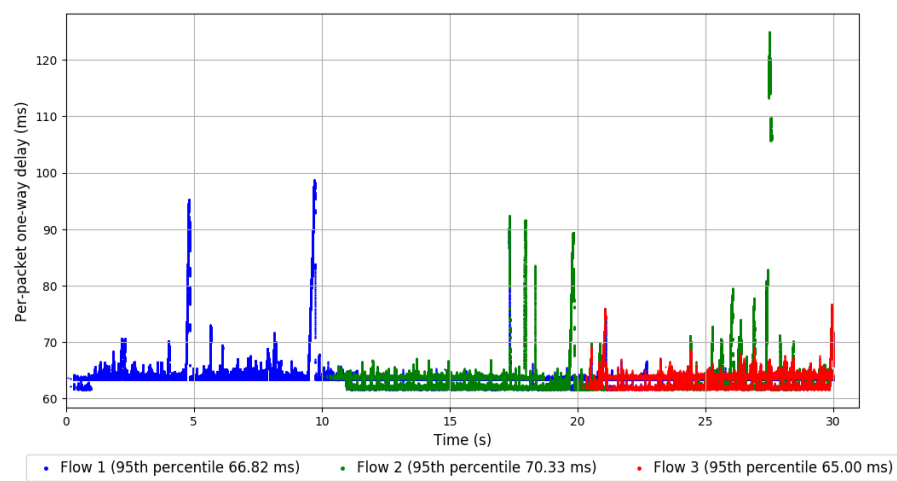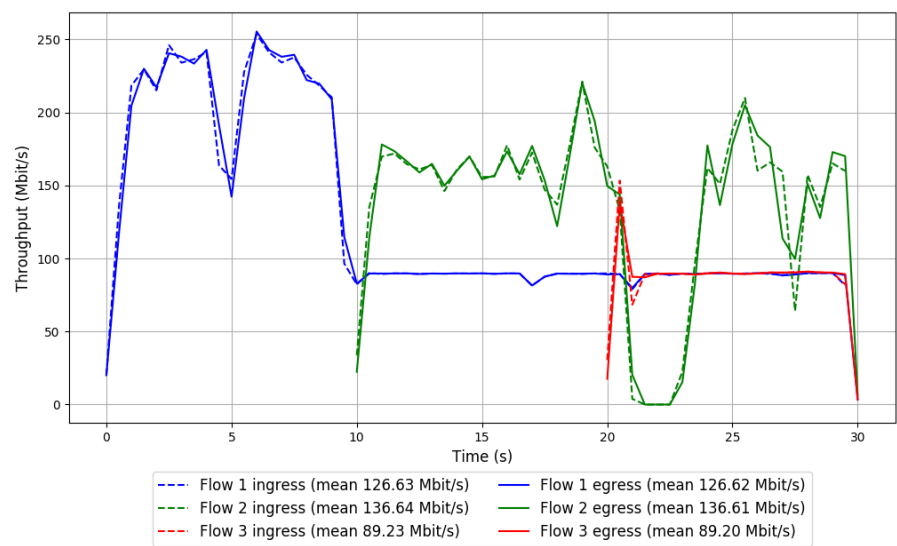
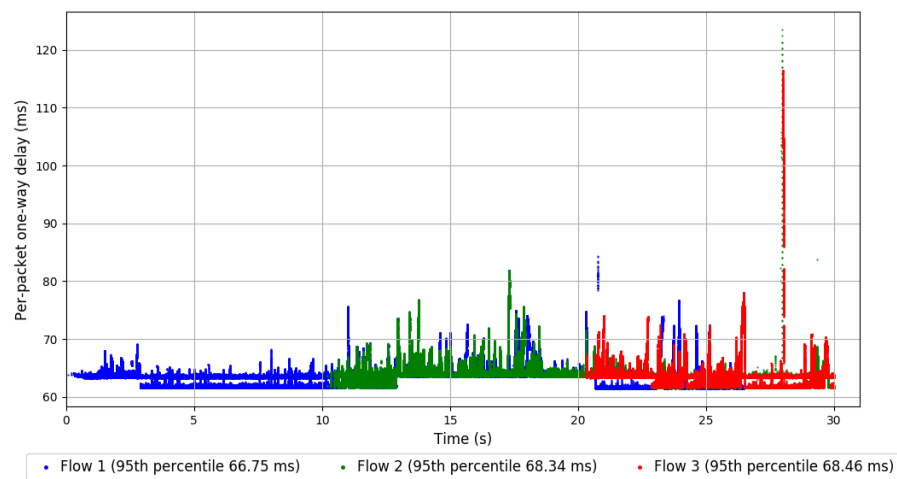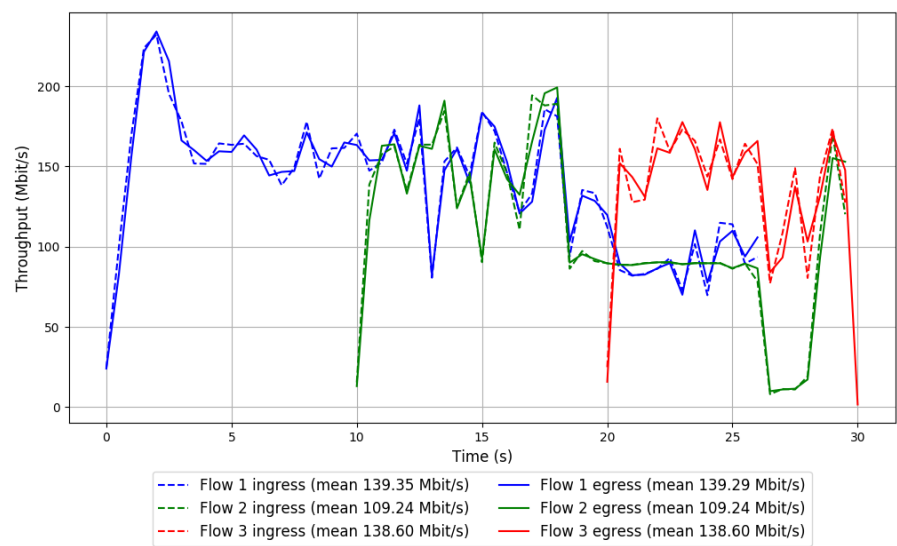# Run 8: Report of TaoVA-100x — Data Link

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```
Run 9: Statistics of TaoVA-100x

Start at: 2018-04-19 00:29:28
End at: 2018-04-19 00:29:58


# Below is generated by plot.py at 2018-04-19 03:36:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 241.47 Mbit/s
95th percentile per-packet one-way delay: 67.557 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 139.29 Mbit/s
95th percentile per-packet one-way delay: 66.753 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 109.24 Mbit/s
95th percentile per-packet one-way delay: 68.339 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 138.60 Mbit/s
95th percentile per-packet one-way delay: 68.456 ms
Loss rate: 0.00%
```

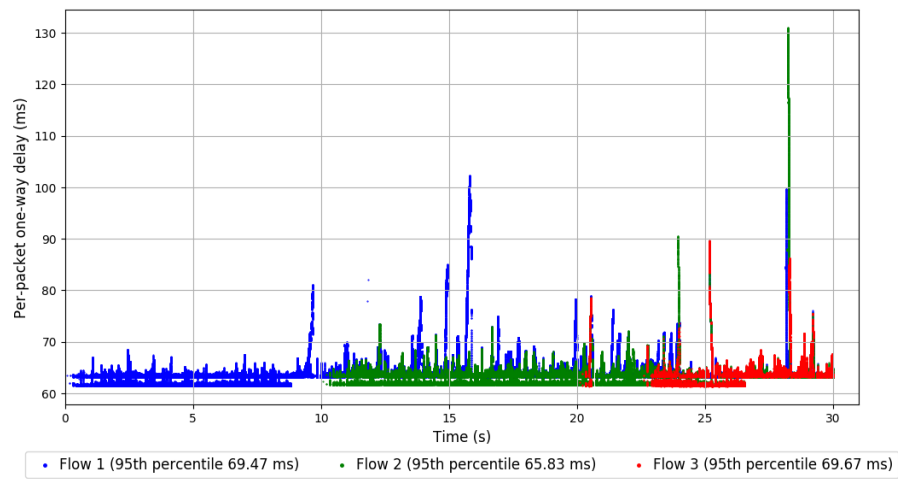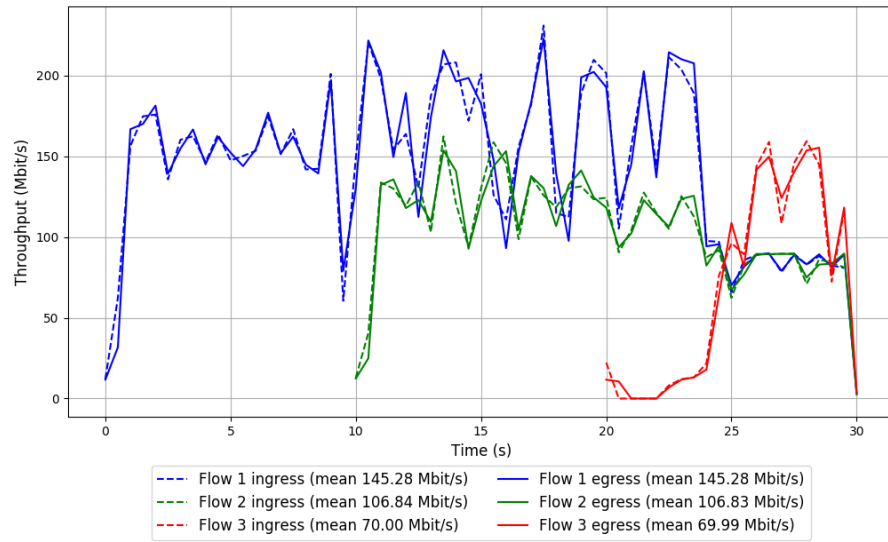# Run 9: Report of TaoVA-100x — Data Link

```
Run 10: Statistics of TaoVA-100x

Start at: 2018-04-19 00:44:52
End at: 2018-04-19 00:45:22

# Below is generated by plot.py at 2018-04-19 03:36:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 239.57 Mbit/s
95th percentile per-packet one-way delay: 68.545 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 145.28 Mbit/s
95th percentile per-packet one-way delay: 69.468 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 106.83 Mbit/s
95th percentile per-packet one-way delay: 65.827 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 69.99 Mbit/s
95th percentile per-packet one-way delay: 69.667 ms
Loss rate: 0.00%
```

Run 10: Report of TaoVA-100x — Data Link

```
Run 1: Statistics of TCP Vegas

Start at: 2018-04-18 22:22:49
End at: 2018-04-18 22:23:19


# Below is generated by plot.py at 2018-04-19 03:36:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 207.02 Mbit/s
95th percentile per-packet one-way delay: 73.893 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 105.39 Mbit/s
95th percentile per-packet one-way delay: 73.773 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 68.80 Mbit/s
95th percentile per-packet one-way delay: 73.963 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 168.65 Mbit/s
95th percentile per-packet one-way delay: 74.047 ms
Loss rate: 0.00%
```
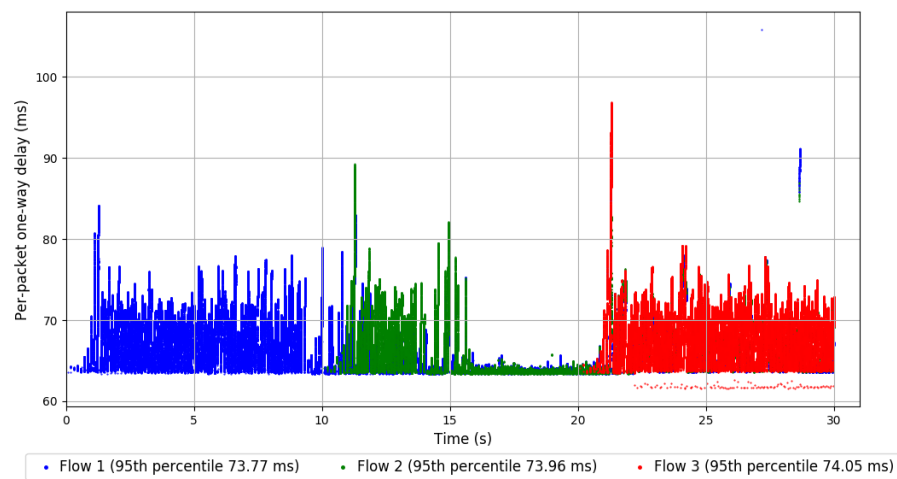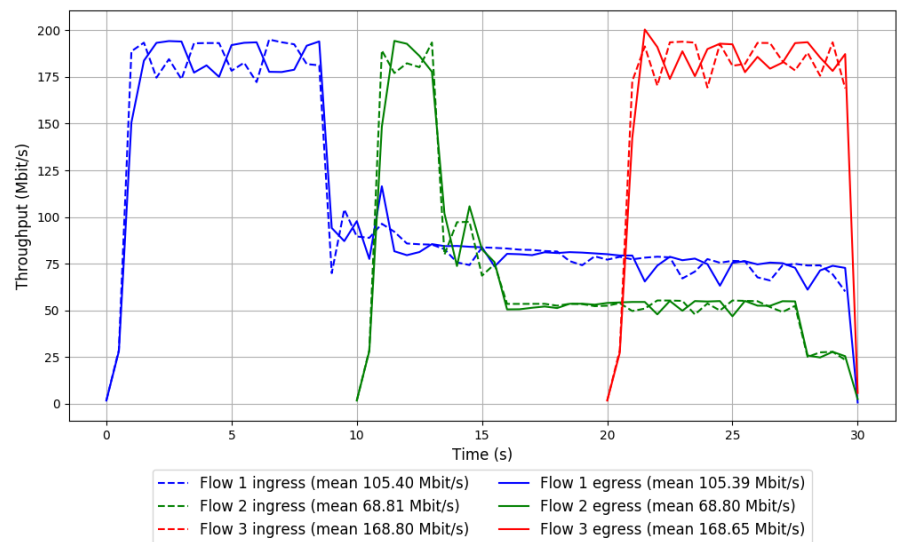
Run 1: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 105.40 Mbit/s) — Flow 1 egress (mean 105.39 Mbit/s)
Flow 2 ingress (mean 68.81 Mbit/s) — Flow 2 egress (mean 68.80 Mbit/s)
Flow 3 ingress (mean 168.80 Mbit/s) — Flow 3 egress (mean 168.65 Mbit/s)

Flow 1 (95th percentile 73.77 ms) • Flow 2 (95th percentile 73.96 ms) • Flow 3 (95th percentile 74.05 ms)

```
Run 2: Statistics of TCP Vegas

Start at: 2018-04-18 22:38:26
End at: 2018-04-18 22:38:56


# Below is generated by plot.py at 2018-04-19 03:36:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 125.35 Mbit/s
95th percentile per-packet one-way delay: 72.682 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 17.71 Mbit/s
95th percentile per-packet one-way delay: 69.032 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 77.53 Mbit/s
95th percentile per-packet one-way delay: 70.193 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 169.23 Mbit/s
95th percentile per-packet one-way delay: 73.922 ms
Loss rate: 0.00%
```
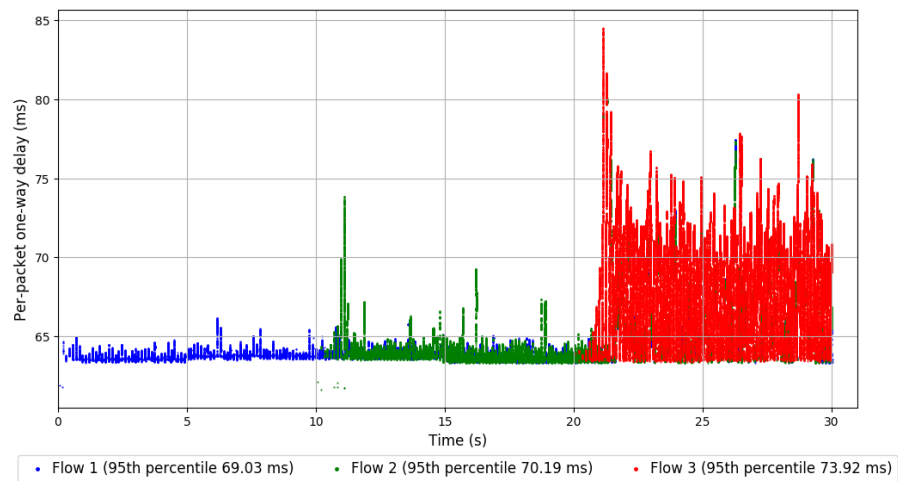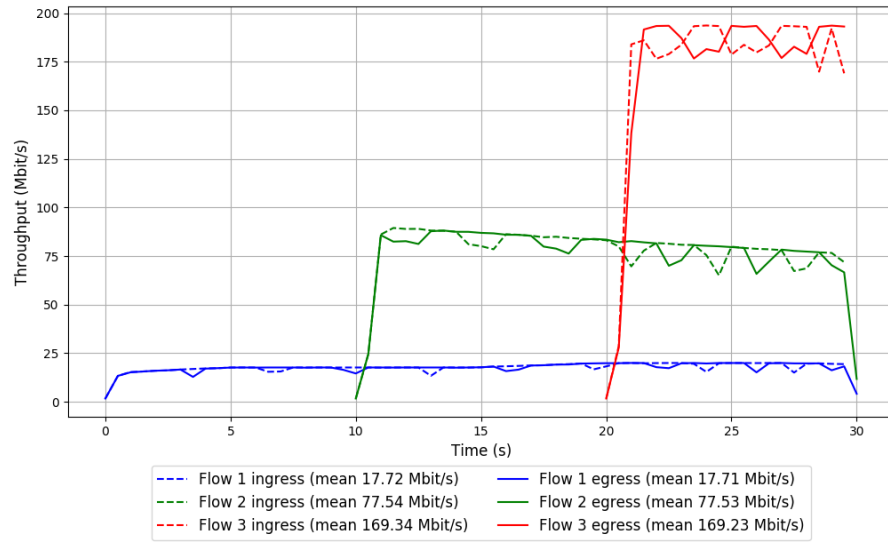
Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2018-04-18 22:54:19
End at: 2018-04-18 22:54:49

# Below is generated by plot.py at 2018-04-19 03:36:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 80.92 Mbit/s
95th percentile per-packet one-way delay: 65.598 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 28.05 Mbit/s
95th percentile per-packet one-way delay: 64.671 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 77.58 Mbit/s
95th percentile per-packet one-way delay: 66.199 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 3.95 Mbit/s
95th percentile per-packet one-way delay: 63.999 ms
Loss rate: 0.15%
```
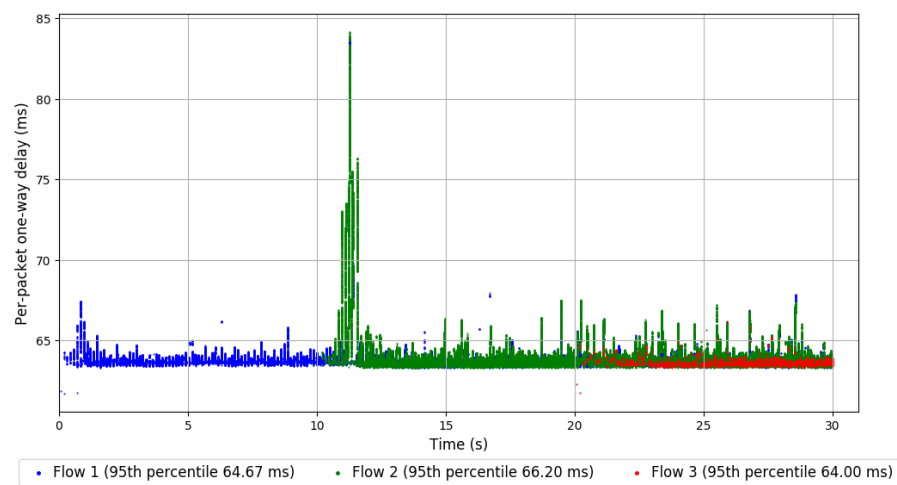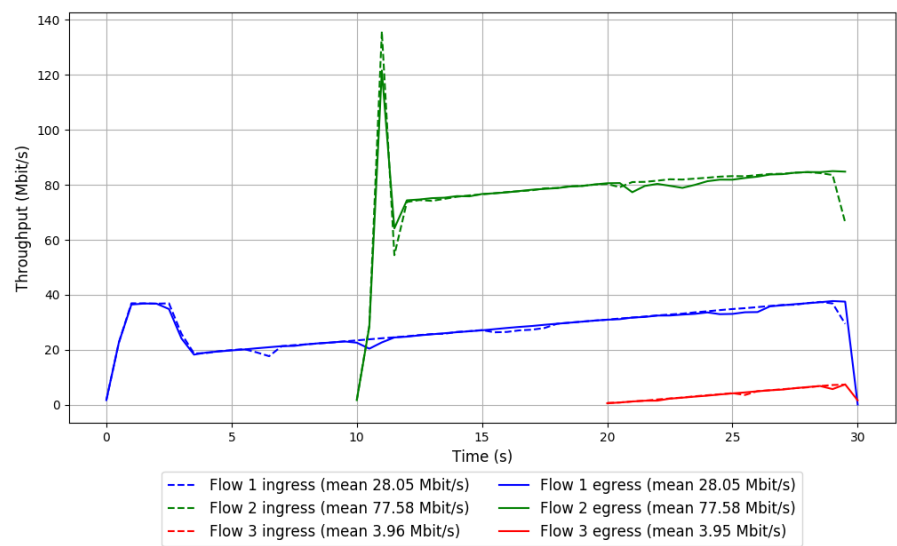
Run 3: Report of TCP Vegas — Data Link

```
Run 4: Statistics of TCP Vegas

Start at: 2018-04-18 23:09:51
End at: 2018-04-18 23:10:21


# Below is generated by plot.py at 2018-04-19 03:36:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 172.09 Mbit/s
95th percentile per-packet one-way delay: 70.647 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 110.42 Mbit/s
95th percentile per-packet one-way delay: 69.785 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 37.30 Mbit/s
95th percentile per-packet one-way delay: 71.440 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 111.32 Mbit/s
95th percentile per-packet one-way delay: 71.261 ms
Loss rate: 0.00%
```
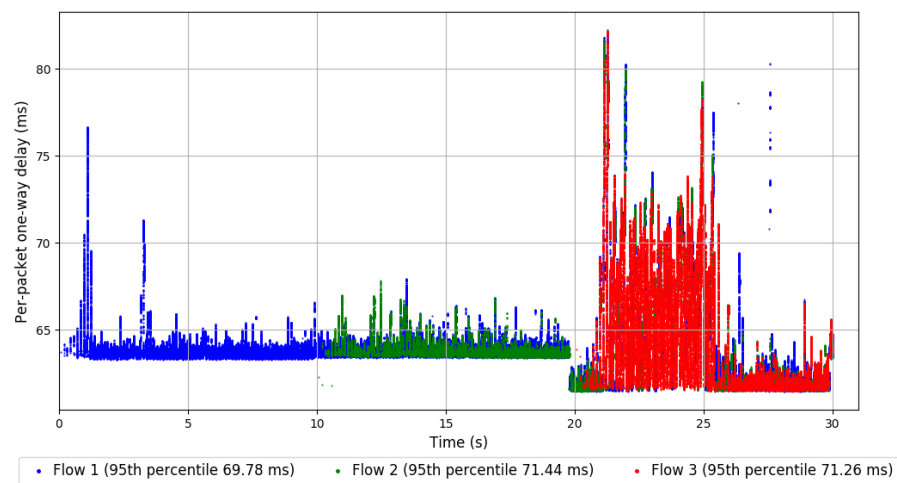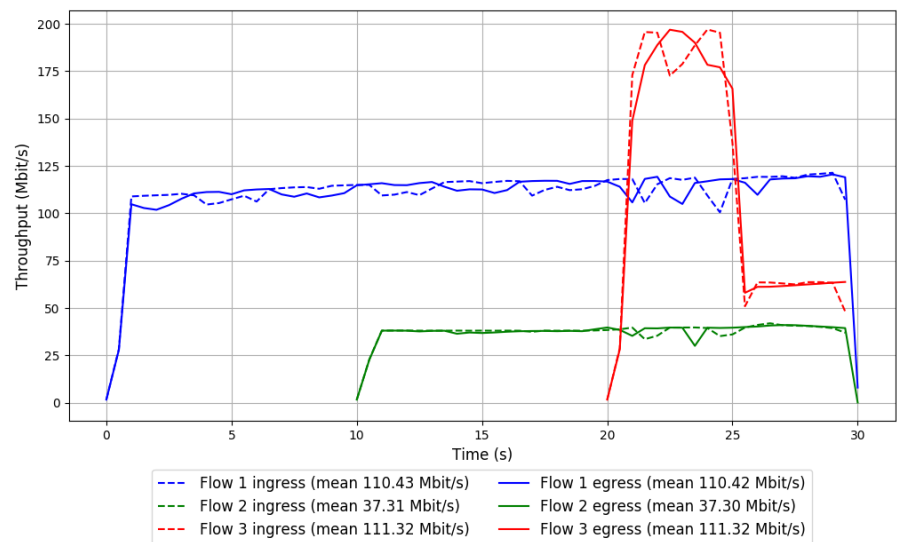
Run 4: Report of TCP Vegas — Data Link

```
Run 5: Statistics of TCP Vegas

Start at: 2018-04-18 23:25:23
End at: 2018-04-18 23:25:53


# Below is generated by plot.py at 2018-04-19 03:36:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 183.75 Mbit/s
95th percentile per-packet one-way delay: 75.295 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 95.46 Mbit/s
95th percentile per-packet one-way delay: 75.261 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 110.29 Mbit/s
95th percentile per-packet one-way delay: 75.978 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 44.78 Mbit/s
95th percentile per-packet one-way delay: 69.037 ms
Loss rate: 0.00%
```
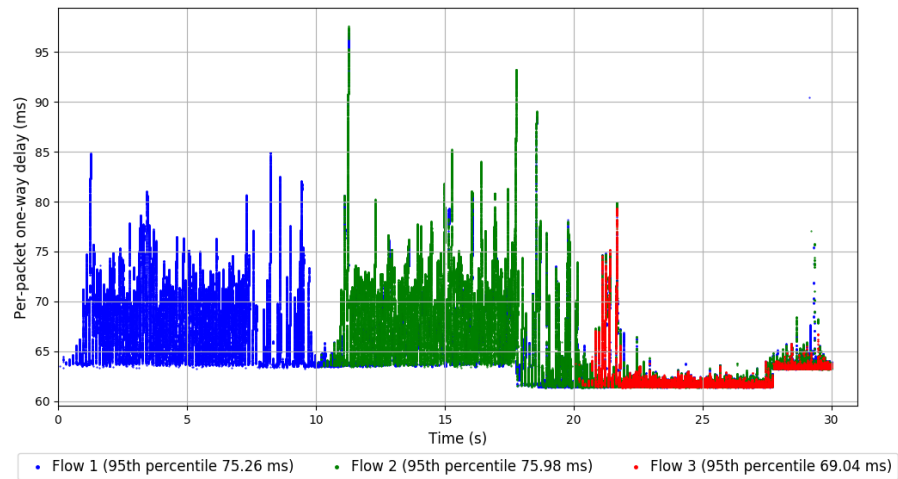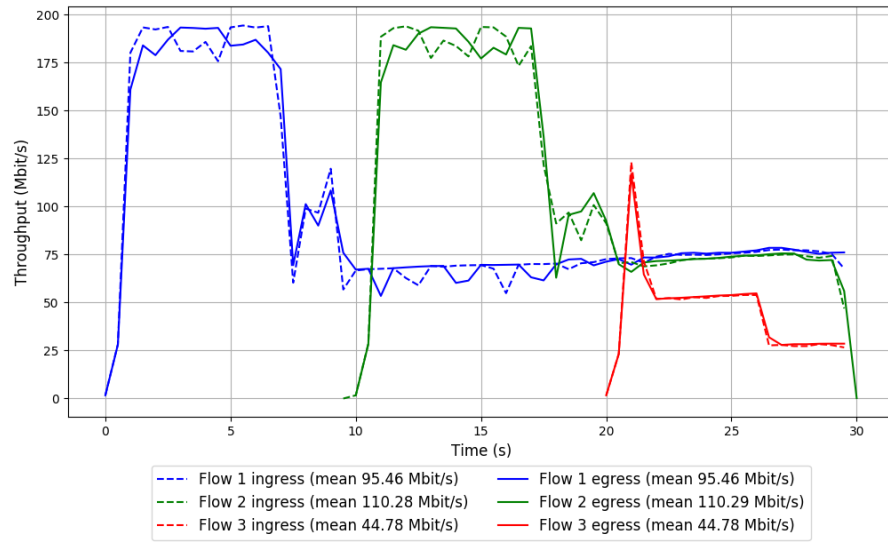
Run 5: Report of TCP Vegas — Data Link

```
Run 6: Statistics of TCP Vegas

Start at: 2018-04-18 23:41:07
End at: 2018-04-18 23:41:37


# Below is generated by plot.py at 2018-04-19 03:36:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 129.83 Mbit/s
95th percentile per-packet one-way delay: 74.280 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 113.20 Mbit/s
95th percentile per-packet one-way delay: 74.685 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 7.42 Mbit/s
95th percentile per-packet one-way delay: 64.566 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 35.46 Mbit/s
95th percentile per-packet one-way delay: 64.714 ms
Loss rate: 0.00%
```
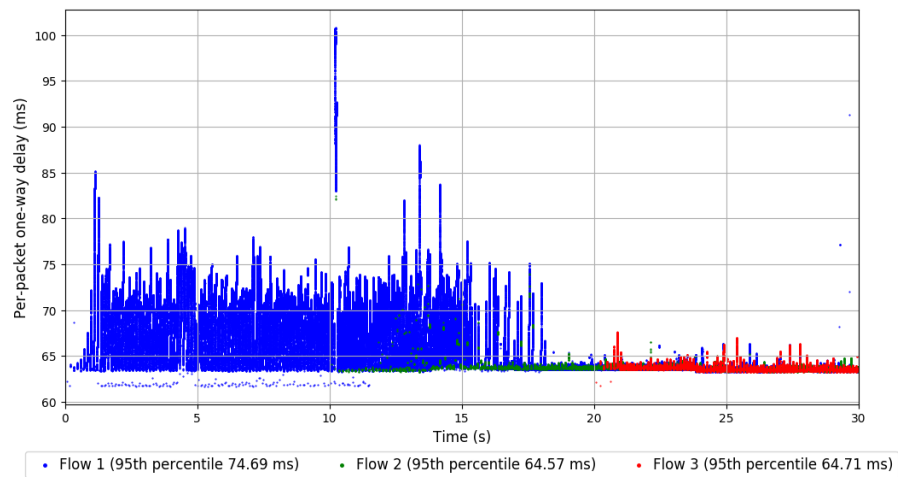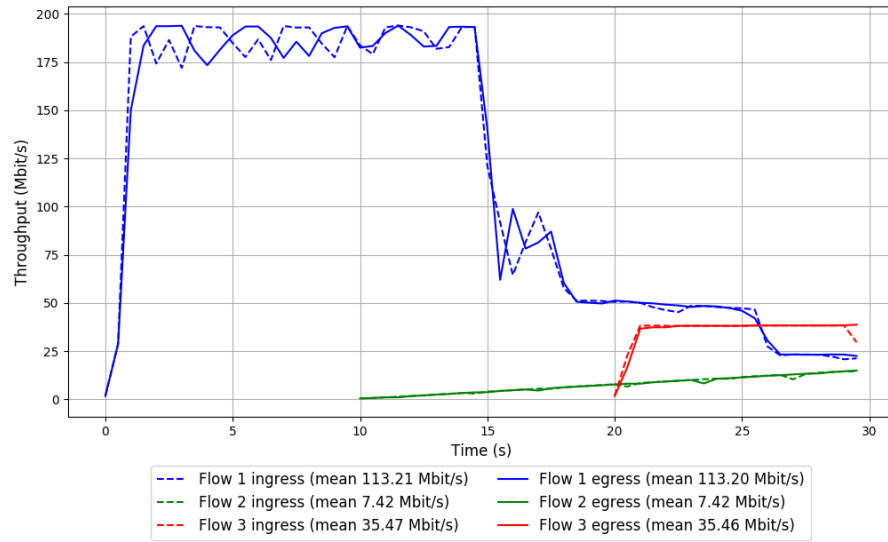
Run 6: Report of TCP Vegas — Data Link

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```
Run 7: Statistics of TCP Vegas

Start at: 2018-04-18 23:56:44
End at: 2018-04-18 23:57:14


# Below is generated by plot.py at 2018-04-19 03:36:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 199.22 Mbit/s
95th percentile per-packet one-way delay: 73.232 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 119.34 Mbit/s
95th percentile per-packet one-way delay: 71.166 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 76.93 Mbit/s
95th percentile per-packet one-way delay: 74.686 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 86.64 Mbit/s
95th percentile per-packet one-way delay: 73.306 ms
Loss rate: 0.00%
```
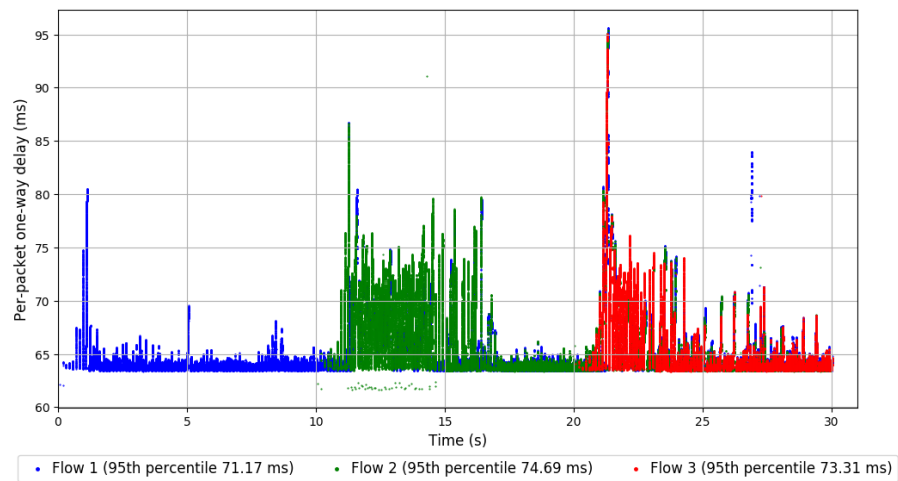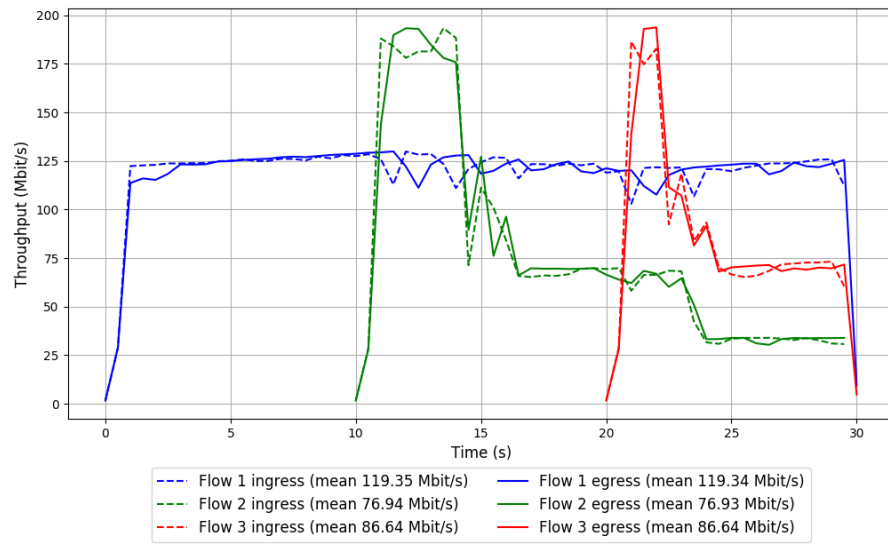
Run 7: Report of TCP Vegas — Data Link

Run 8: Statistics of TCP Vegas

Start at: 2018-04-19 00:12:28
End at: 2018-04-19 00:12:58

Below is generated by plot.py at 2018-04-19 03:36:15
Datalink statistics
-- Total of 3 flows:
Average throughput: 188.28 Mbit/s
95th percentile per-packet one-way delay: 71.639 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 97.00 Mbit/s
95th percentile per-packet one-way delay: 69.133 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 135.25 Mbit/s
95th percentile per-packet one-way delay: 72.408 ms
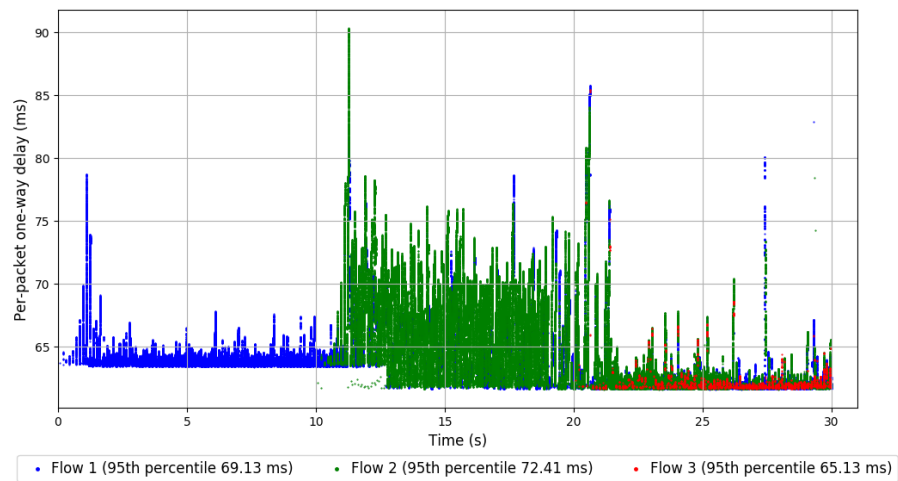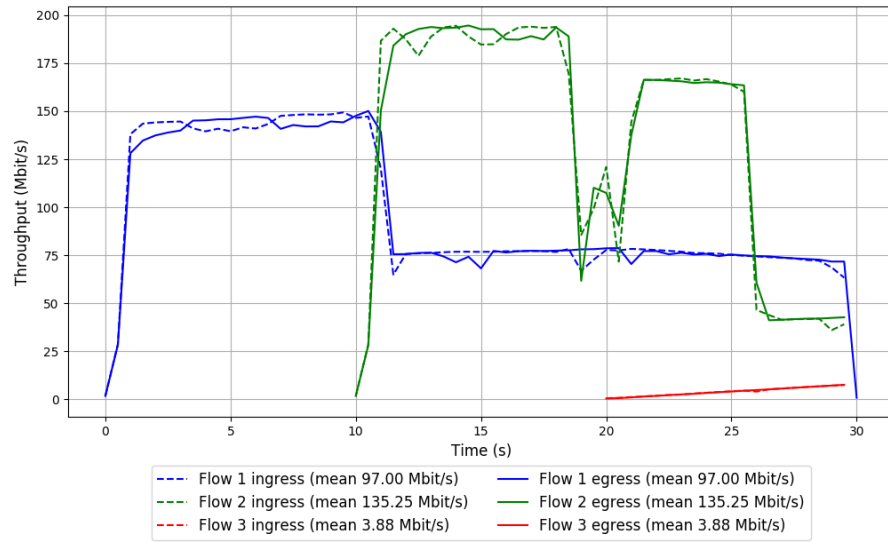Loss rate: 0.00%
-- Flow 3:
Average throughput: 3.88 Mbit/s
95th percentile per-packet one-way delay: 65.133 ms
Loss rate: 0.22%

Run 8: Report of TCP Vegas — Data Link

```
Run 9: Statistics of TCP Vegas

Start at: 2018-04-19 00:28:00
End at: 2018-04-19 00:28:30


# Below is generated by plot.py at 2018-04-19 03:36:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 120.69 Mbit/s
95th percentile per-packet one-way delay: 71.333 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 80.45 Mbit/s
95th percentile per-packet one-way delay: 72.344 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 7.58 Mbit/s
95th percentile per-packet one-way delay: 64.779 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 106.54 Mbit/s
95th percentile per-packet one-way delay: 65.723 ms
Loss rate: 0.00%
```
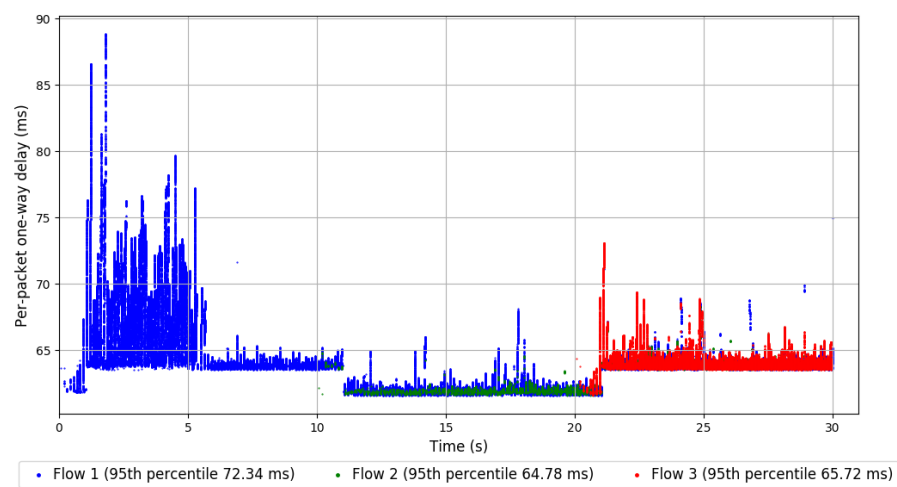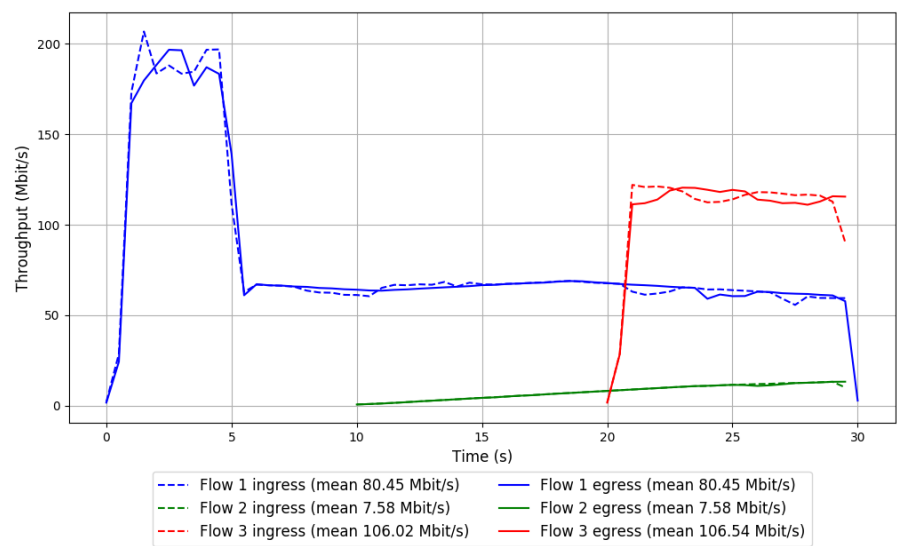
Run 9: Report of TCP Vegas — Data Link

```
Run 10: Statistics of TCP Vegas

Start at: 2018-04-19 00:43:23
End at: 2018-04-19 00:43:53

# Below is generated by plot.py at 2018-04-19 03:36:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 136.21 Mbit/s
95th percentile per-packet one-way delay: 71.015 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 67.48 Mbit/s
95th percentile per-packet one-way delay: 66.962 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 17.75 Mbit/s
95th percentile per-packet one-way delay: 70.330 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 171.69 Mbit/s
95th percentile per-packet one-way delay: 72.668 ms
Loss rate: 0.05%
```
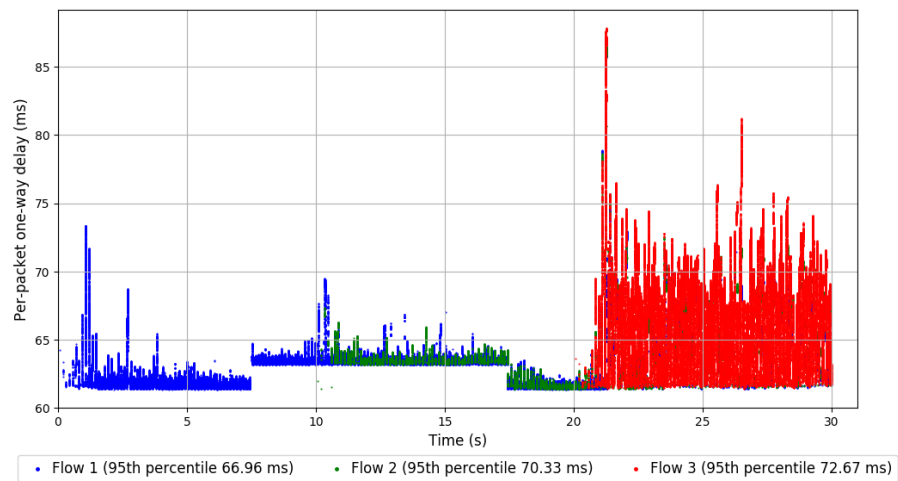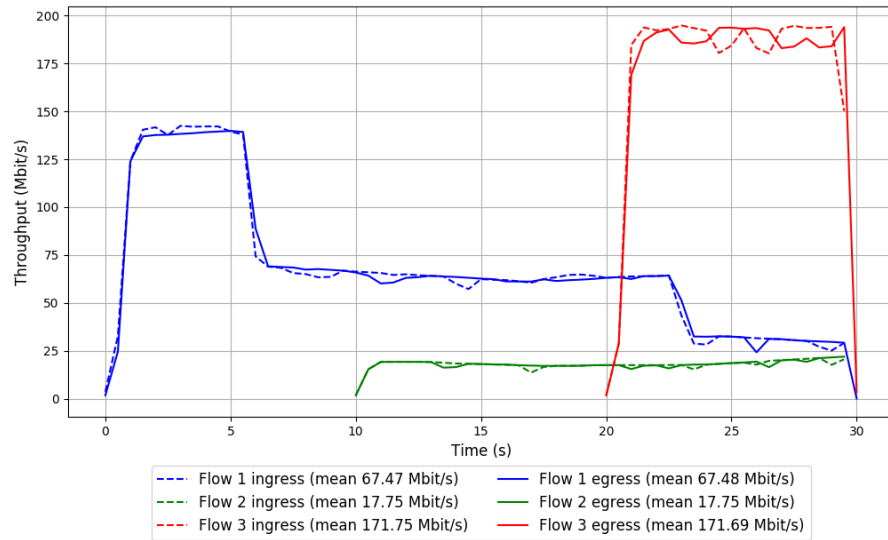
Run 10: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2018-04-18 22:26:49
End at: 2018-04-18 22:27:19


# Below is generated by plot.py at 2018-04-19 03:38:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 254.04 Mbit/s
95th percentile per-packet one-way delay: 202.659 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 182.79 Mbit/s
95th percentile per-packet one-way delay: 207.560 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 69.62 Mbit/s
95th percentile per-packet one-way delay: 189.287 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 76.88 Mbit/s
95th percentile per-packet one-way delay: 201.050 ms
Loss rate: 0.75%
```
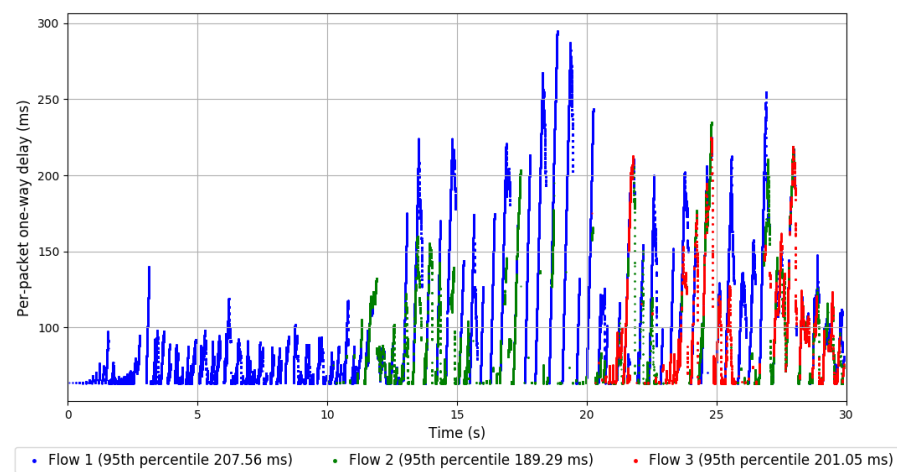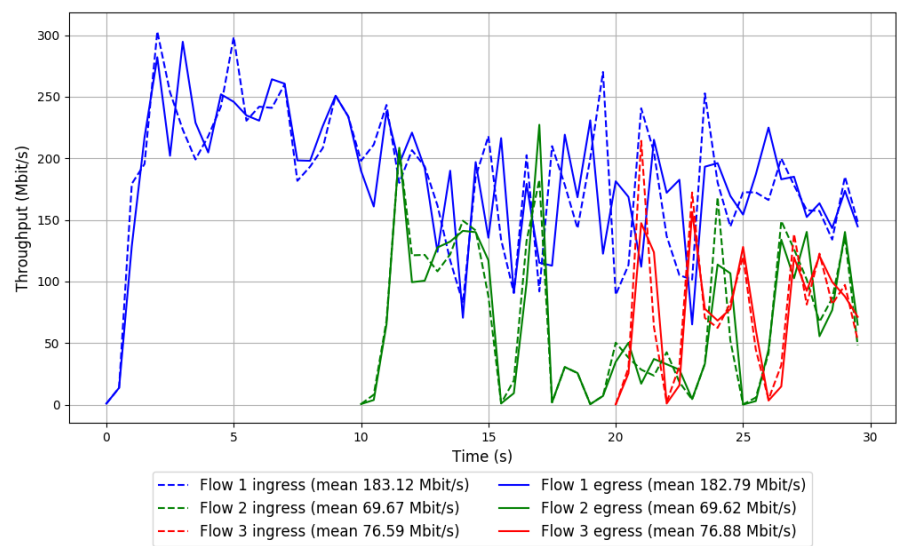
Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2018-04-18 22:42:27
End at: 2018-04-18 22:42:57

# Below is generated by plot.py at 2018-04-19 03:38:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 291.45 Mbit/s
95th percentile per-packet one-way delay: 188.867 ms
Loss rate: 1.08%
-- Flow 1:
Average throughput: 171.07 Mbit/s
95th percentile per-packet one-way delay: 212.979 ms
Loss rate: 1.13%
-- Flow 2:
Average throughput: 125.60 Mbit/s
95th percentile per-packet one-way delay: 180.034 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 112.47 Mbit/s
95th percentile per-packet one-way delay: 181.148 ms
Loss rate: 1.61%
```
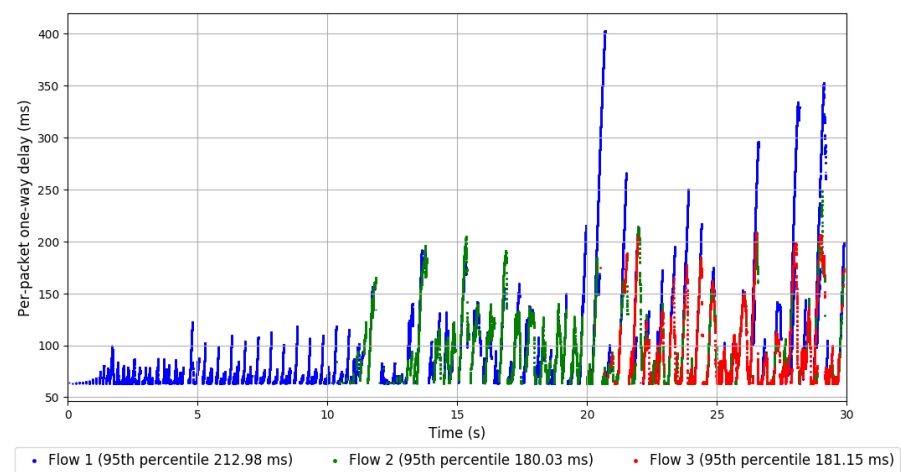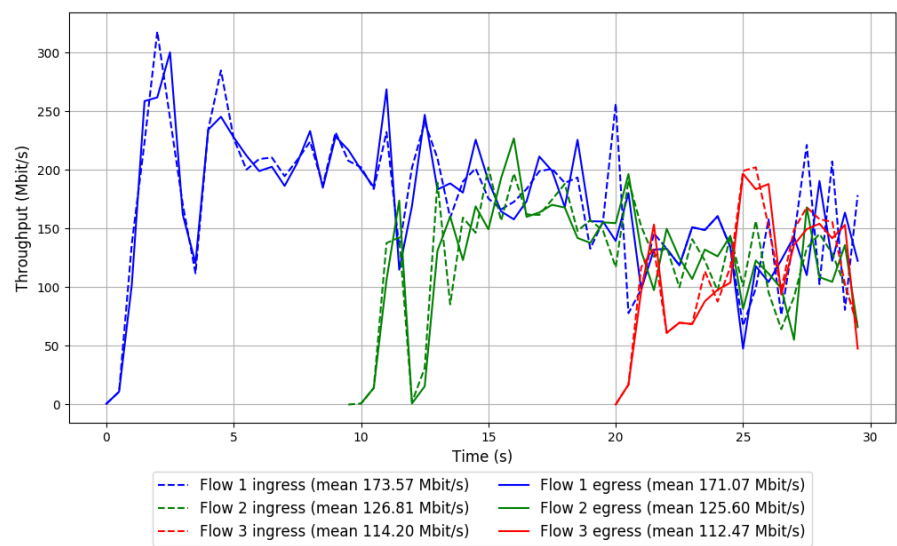
Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2018-04-18 22:58:15
End at: 2018-04-18 22:58:45


# Below is generated by plot.py at 2018-04-19 03:39:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 240.66 Mbit/s
95th percentile per-packet one-way delay: 196.554 ms
Loss rate: 0.76%
-- Flow 1:
Average throughput: 108.94 Mbit/s
95th percentile per-packet one-way delay: 162.748 ms
Loss rate: 0.73%
-- Flow 2:
Average throughput: 142.70 Mbit/s
95th percentile per-packet one-way delay: 173.683 ms
Loss rate: 0.30%
-- Flow 3:
Average throughput: 113.66 Mbit/s
95th percentile per-packet one-way delay: 247.800 ms
Loss rate: 1.97%
```

Run 3: Report of Verus — Data Link

Flow 1 ingress (mean 109.79 Mbit/s) Flow 1 egress (mean 108.94 Mbit/s)
Flow 2 ingress (mean 143.25 Mbit/s) Flow 2 egress (mean 142.70 Mbit/s)
Flow 3 ingress (mean 115.63 Mbit/s) Flow 3 egress (mean 113.66 Mbit/s)

Flow 1 (95th percentile 162.75 ms) Flow 2 (95th percentile 173.68 ms) Flow 3 (95th percentile 247.80 ms)

```
Run 4: Statistics of Verus

Start at: 2018-04-18 23:13:54
End at: 2018-04-18 23:14:24


# Below is generated by plot.py at 2018-04-19 03:39:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 243.78 Mbit/s
95th percentile per-packet one-way delay: 143.008 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 129.44 Mbit/s
95th percentile per-packet one-way delay: 131.253 ms
Loss rate: 1.03%
-- Flow 2:
Average throughput: 131.27 Mbit/s
95th percentile per-packet one-way delay: 181.704 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 82.75 Mbit/s
95th percentile per-packet one-way delay: 133.497 ms
Loss rate: 2.63%
```
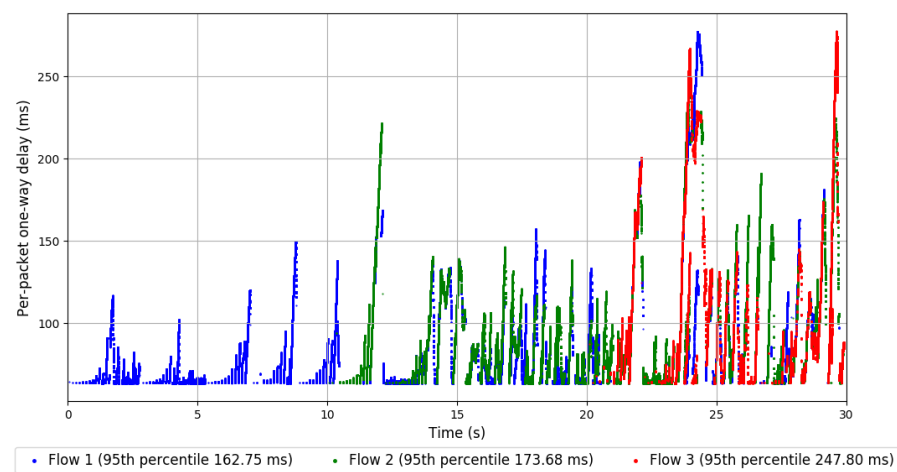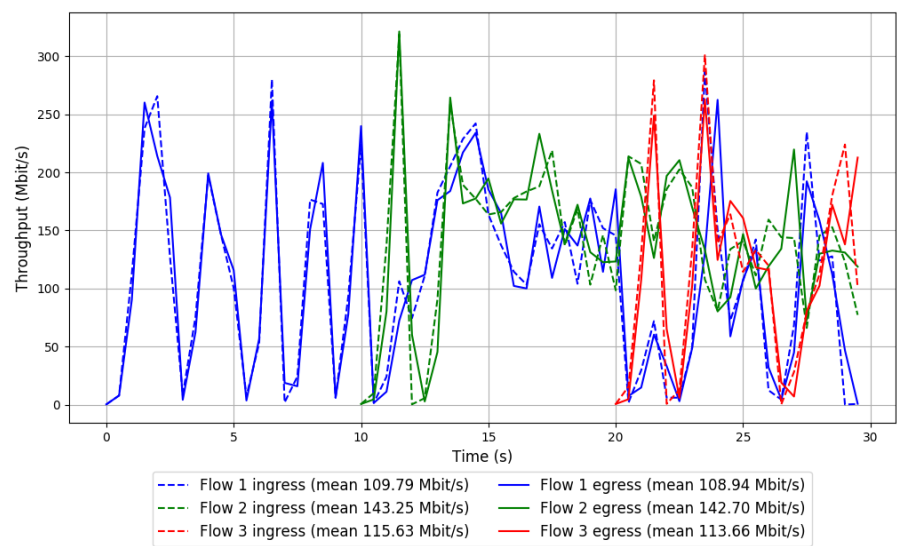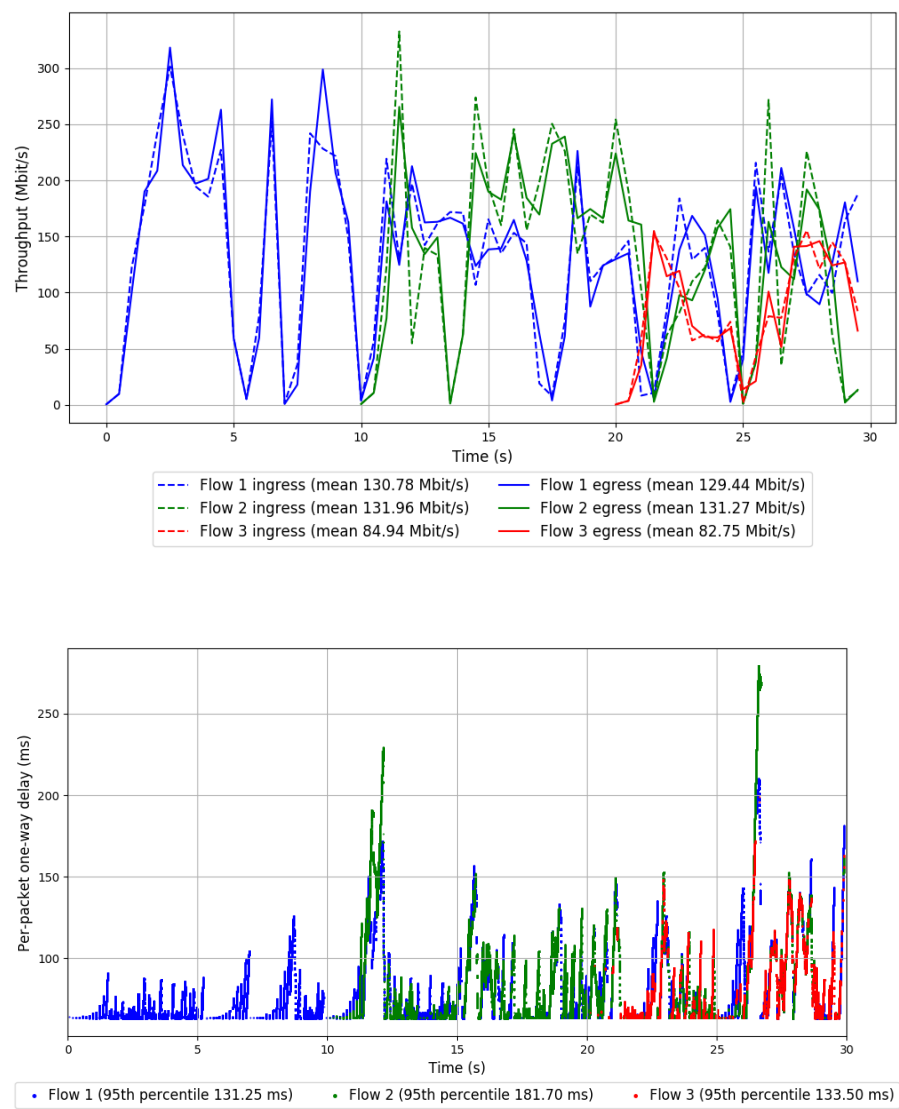
Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2018-04-18 23:29:27
End at: 2018-04-18 23:29:57

# Below is generated by plot.py at 2018-04-19 03:40:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 268.54 Mbit/s
95th percentile per-packet one-way delay: 207.413 ms
Loss rate: 0.94%
-- Flow 1:
Average throughput: 166.27 Mbit/s
95th percentile per-packet one-way delay: 214.887 ms
Loss rate: 1.33%
-- Flow 2:
Average throughput: 102.06 Mbit/s
95th percentile per-packet one-way delay: 134.930 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 105.17 Mbit/s
95th percentile per-packet one-way delay: 262.798 ms
Loss rate: 0.70%
```
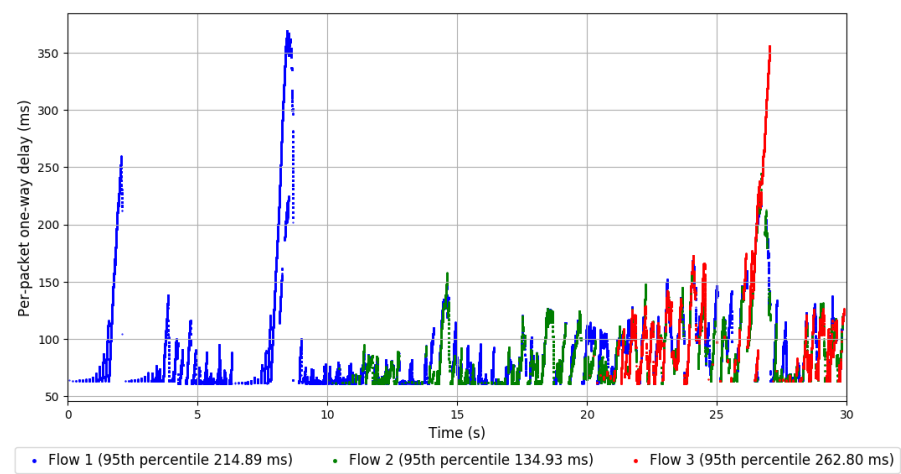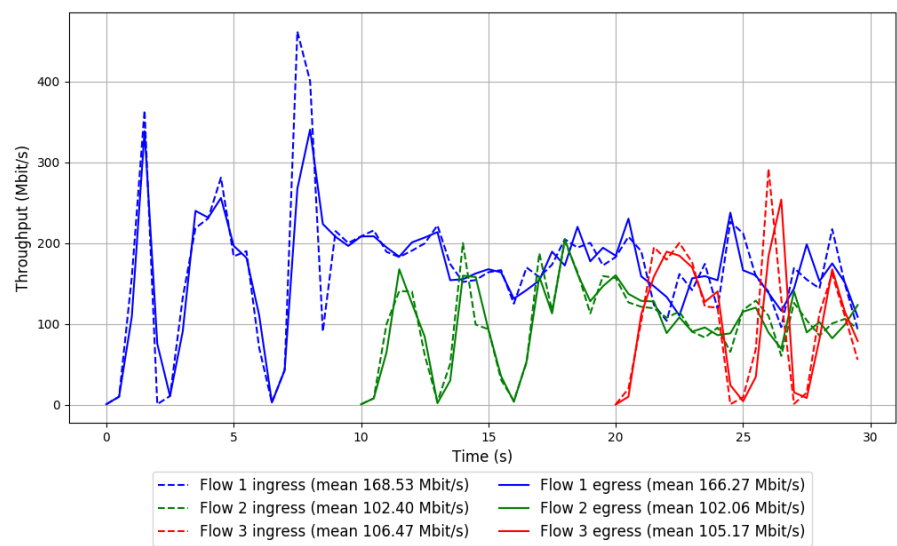
Run 5: Report of Verus — Data Link

```
Run 6: Statistics of Verus

Start at: 2018-04-18 23:45:07
End at: 2018-04-18 23:45:37


# Below is generated by plot.py at 2018-04-19 03:41:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 268.52 Mbit/s
95th percentile per-packet one-way delay: 184.409 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 159.27 Mbit/s
95th percentile per-packet one-way delay: 169.760 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 106.97 Mbit/s
95th percentile per-packet one-way delay: 198.703 ms
Loss rate: 0.14%
-- Flow 3:
Average throughput: 119.31 Mbit/s
95th percentile per-packet one-way delay: 188.125 ms
Loss rate: 0.05%
```
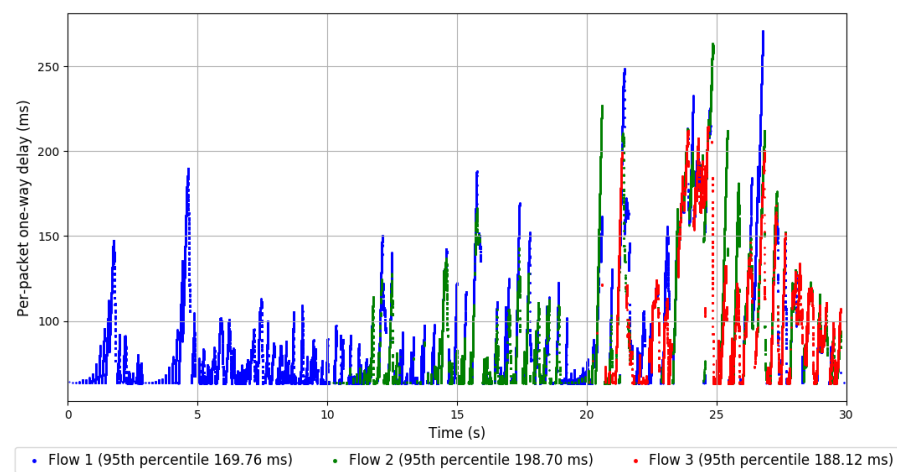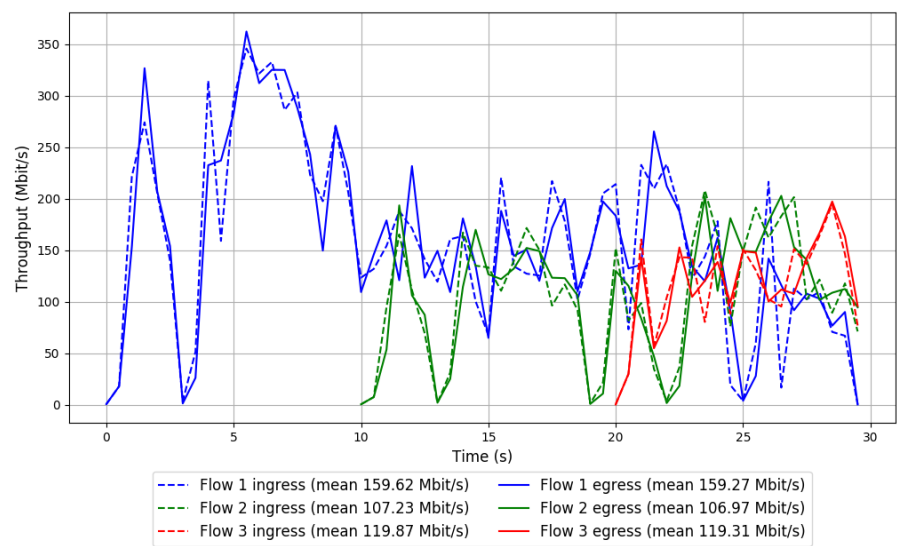
Run 6: Report of Verus — Data Link

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```
Run 7: Statistics of Verus

Start at: 2018-04-19 00:00:52
End at: 2018-04-19 00:01:22


# Below is generated by plot.py at 2018-04-19 03:41:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 251.73 Mbit/s
95th percentile per-packet one-way delay: 167.032 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 160.49 Mbit/s
95th percentile per-packet one-way delay: 167.498 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 108.32 Mbit/s
95th percentile per-packet one-way delay: 163.881 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 66.76 Mbit/s
95th percentile per-packet one-way delay: 188.229 ms
Loss rate: 1.01%
```

Run 7: Report of Verus — Data Link

- --- Flow 1 ingress (mean 160.77 Mbit/s) — Flow 1 egress (mean 160.49 Mbit/s)
- --- Flow 2 ingress (mean 109.16 Mbit/s) — Flow 2 egress (mean 108.32 Mbit/s)
- --- Flow 3 ingress (mean 60.56 Mbit/s) — Flow 3 egress (mean 66.76 Mbit/s)

- Flow 1 (95th percentile 167.50 ms)   • Flow 2 (95th percentile 163.88 ms)   • Flow 3 (95th percentile 188.23 ms)

```
Run 8: Statistics of Verus

Start at: 2018-04-19 00:16:35
End at: 2018-04-19 00:17:05


# Below is generated by plot.py at 2018-04-19 03:41:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 257.36 Mbit/s
95th percentile per-packet one-way delay: 339.652 ms
Loss rate: 4.13%
-- Flow 1:
Average throughput: 144.77 Mbit/s
95th percentile per-packet one-way delay: 228.636 ms
Loss rate: 1.52%
-- Flow 2:
Average throughput: 123.31 Mbit/s
95th percentile per-packet one-way delay: 352.960 ms
Loss rate: 9.27%
-- Flow 3:
Average throughput: 95.25 Mbit/s
95th percentile per-packet one-way delay: 191.505 ms
Loss rate: 1.52%
```
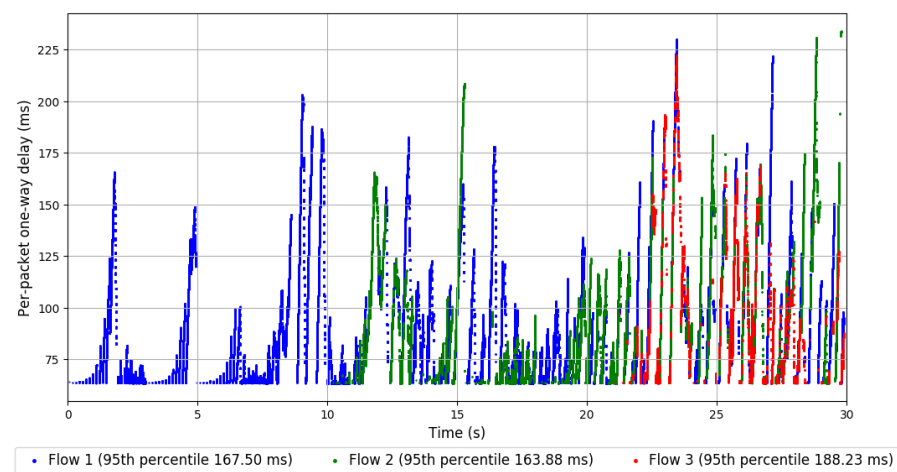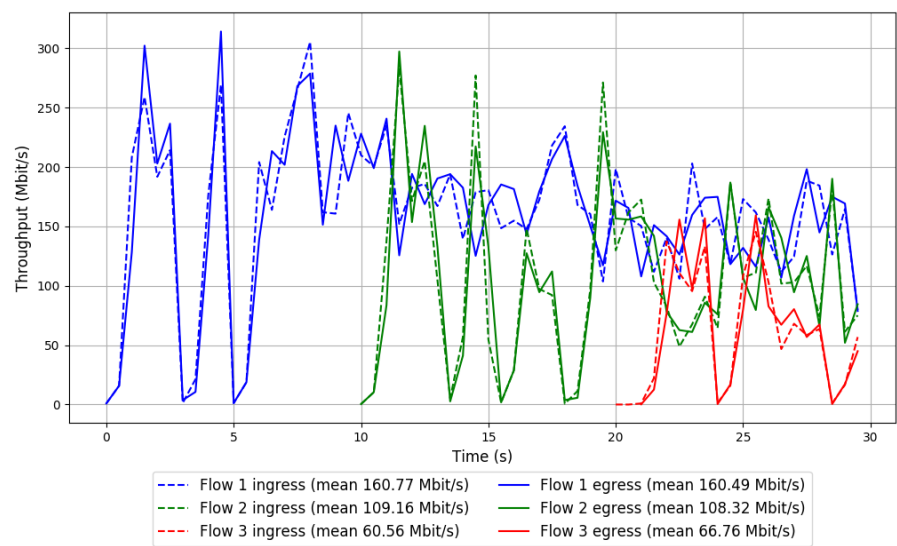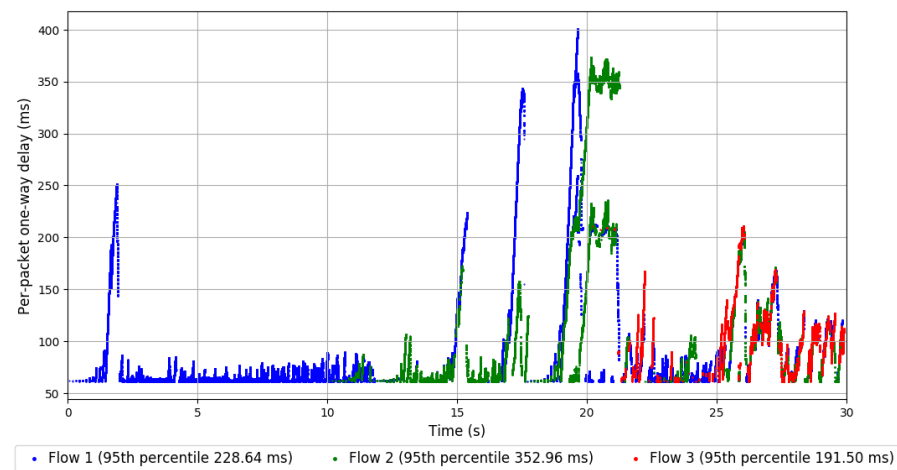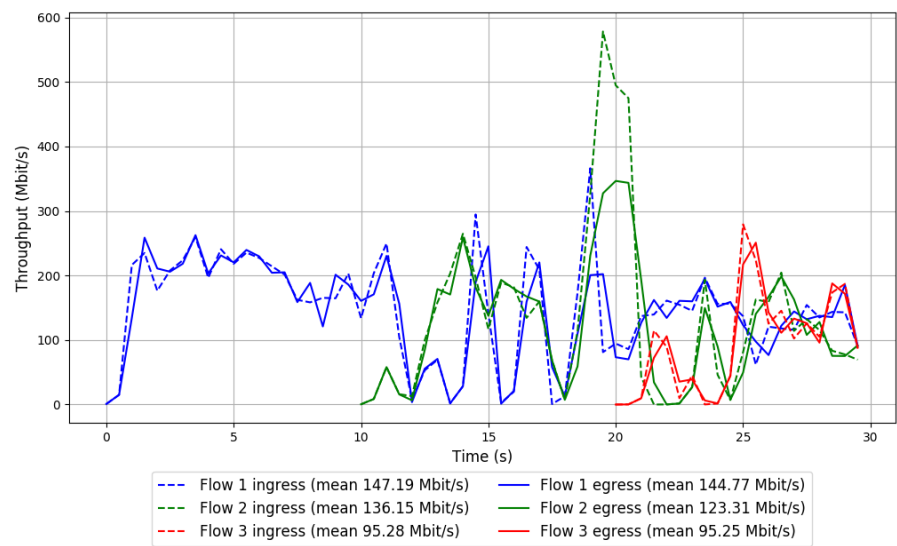
Run 8: Report of Verus — Data Link

```
Run 9: Statistics of Verus

Start at: 2018-04-19 00:32:02
End at: 2018-04-19 00:32:32


# Below is generated by plot.py at 2018-04-19 03:42:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 235.87 Mbit/s
95th percentile per-packet one-way delay: 203.834 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 160.44 Mbit/s
95th percentile per-packet one-way delay: 184.796 ms
Loss rate: 0.55%
-- Flow 2:
Average throughput: 70.82 Mbit/s
95th percentile per-packet one-way delay: 141.866 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 89.77 Mbit/s
95th percentile per-packet one-way delay: 384.317 ms
Loss rate: 1.92%
```
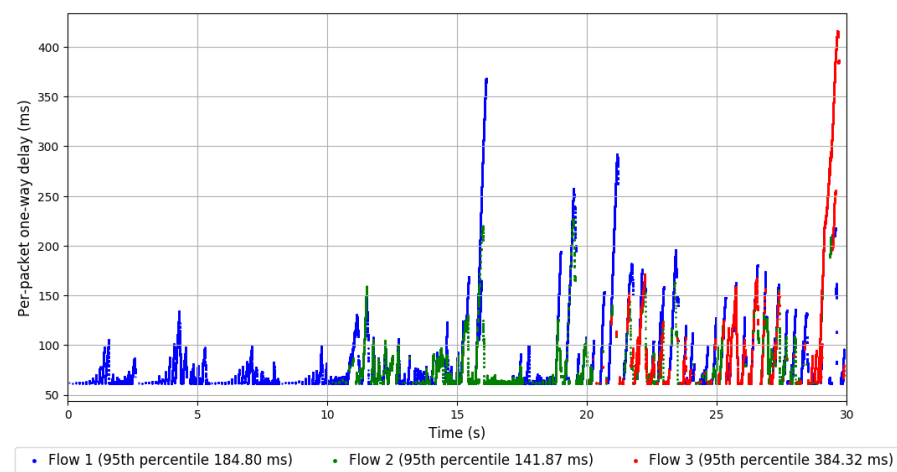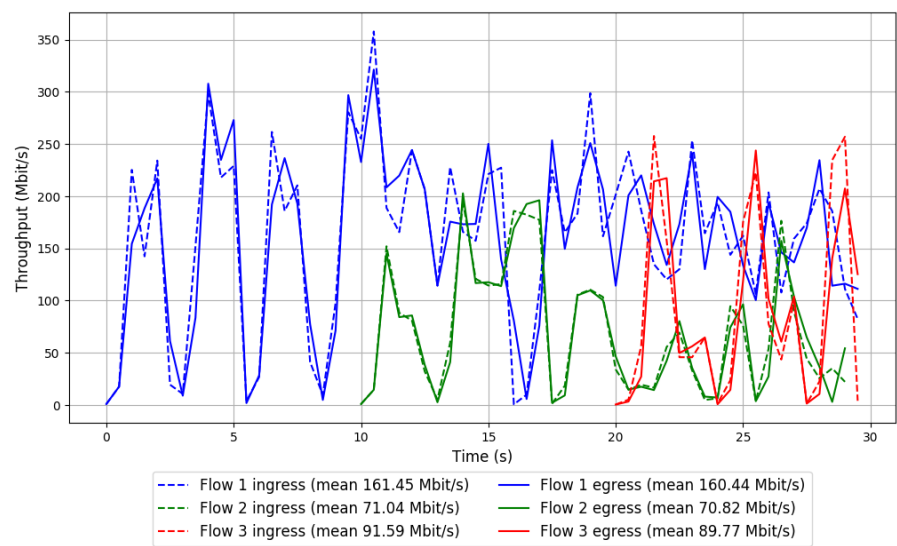
Run 9: Report of Verus — Data Link

```
Run 10: Statistics of Verus

Start at: 2018-04-19 00:47:25
End at: 2018-04-19 00:47:55


# Below is generated by plot.py at 2018-04-19 03:43:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 239.69 Mbit/s
95th percentile per-packet one-way delay: 265.148 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 197.02 Mbit/s
95th percentile per-packet one-way delay: 276.002 ms
Loss rate: 0.61%
-- Flow 2:
Average throughput: 48.14 Mbit/s
95th percentile per-packet one-way delay: 195.671 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 34.61 Mbit/s
95th percentile per-packet one-way delay: 193.050 ms
Loss rate: 0.04%
```
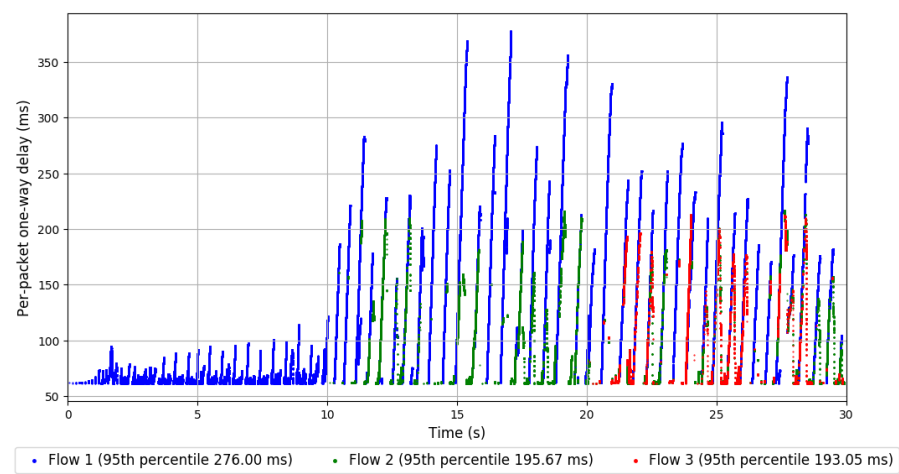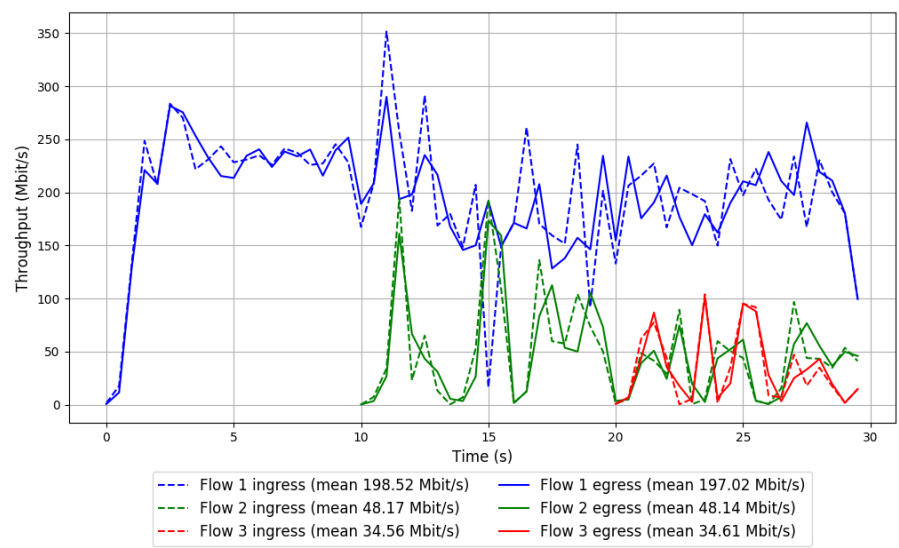
Run 10: Report of Verus — Data Link

```
Run 1: Statistics of Copa

Start at: 2018-04-18 22:20:04
End at: 2018-04-18 22:20:34


# Below is generated by plot.py at 2018-04-19 03:43:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 130.61 Mbit/s
95th percentile per-packet one-way delay: 63.742 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 45.98 Mbit/s
95th percentile per-packet one-way delay: 63.736 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 83.62 Mbit/s
95th percentile per-packet one-way delay: 63.774 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 86.50 Mbit/s
95th percentile per-packet one-way delay: 63.589 ms
Loss rate: 0.02%
```

Run 1: Report of Copa — Data Link

Flow 1 ingress (mean 45.99 Mbit/s) --- Flow 1 egress (mean 45.98 Mbit/s)
Flow 2 ingress (mean 83.64 Mbit/s) --- Flow 2 egress (mean 83.62 Mbit/s)
Flow 3 ingress (mean 86.52 Mbit/s) --- Flow 3 egress (mean 86.50 Mbit/s)

Flow 1 (95th percentile 63.74 ms)   Flow 2 (95th percentile 63.77 ms)   Flow 3 (95th percentile 63.59 ms)

225

```
Run 2: Statistics of Copa

Start at: 2018-04-18 22:35:36
End at: 2018-04-18 22:36:06

# Below is generated by plot.py at 2018-04-19 03:45:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 151.68 Mbit/s
95th percentile per-packet one-way delay: 63.751 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 77.10 Mbit/s
95th percentile per-packet one-way delay: 63.783 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 76.81 Mbit/s
95th percentile per-packet one-way delay: 63.649 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 70.64 Mbit/s
95th percentile per-packet one-way delay: 63.650 ms
Loss rate: 0.02%
```
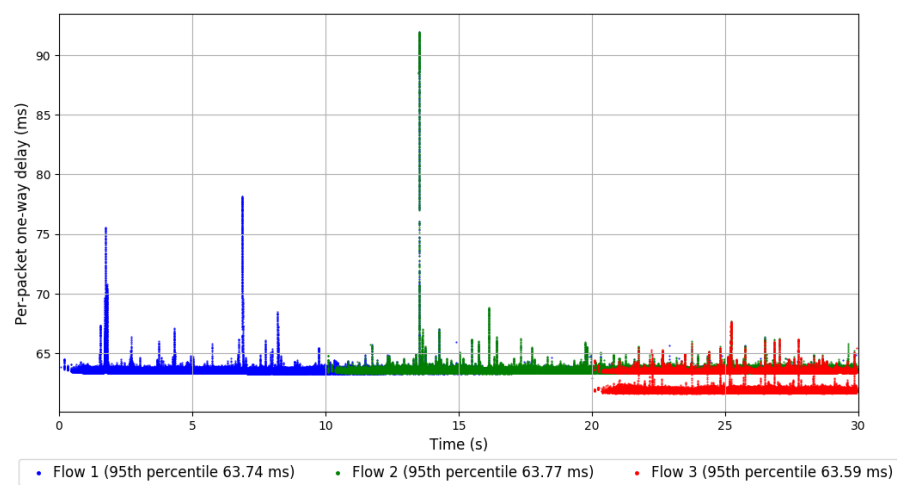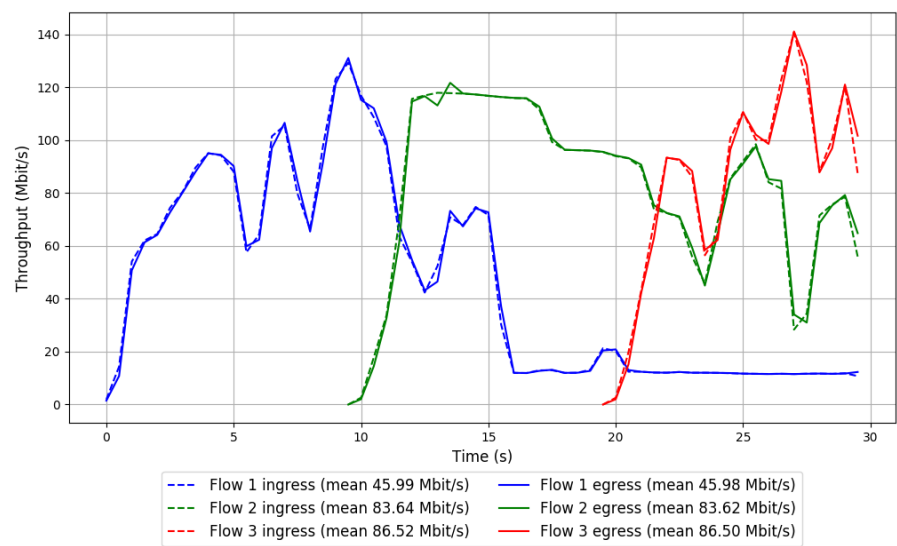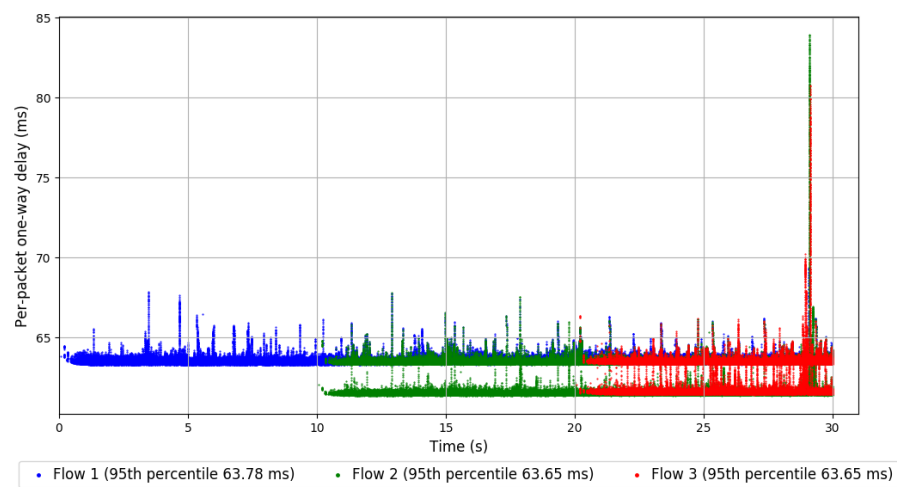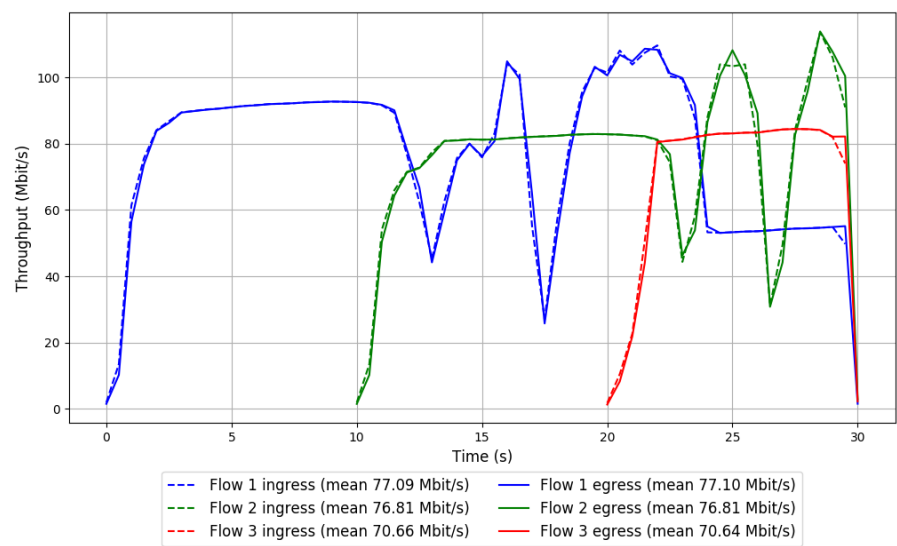
Run 2: Report of Copa — Data Link

```
Run 3: Statistics of Copa

Start at: 2018-04-18 22:51:26
End at: 2018-04-18 22:51:56


# Below is generated by plot.py at 2018-04-19 03:46:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 145.78 Mbit/s
95th percentile per-packet one-way delay: 63.655 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 73.69 Mbit/s
95th percentile per-packet one-way delay: 63.621 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 81.12 Mbit/s
95th percentile per-packet one-way delay: 63.677 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 54.58 Mbit/s
95th percentile per-packet one-way delay: 63.674 ms
Loss rate: 0.01%
```

Run 3: Report of Copa — Data Link

Flow 1 ingress (mean 73.69 Mbit/s) --- Flow 1 egress (mean 73.69 Mbit/s)
Flow 2 ingress (mean 81.12 Mbit/s) --- Flow 2 egress (mean 81.12 Mbit/s)
Flow 3 ingress (mean 54.58 Mbit/s) --- Flow 3 egress (mean 54.58 Mbit/s)

Flow 1 (95th percentile 63.62 ms) · Flow 2 (95th percentile 63.68 ms) · Flow 3 (95th percentile 63.67 ms)

```
Run 4: Statistics of Copa

Start at: 2018-04-18 23:07:03
End at: 2018-04-18 23:07:33


# Below is generated by plot.py at 2018-04-19 03:46:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 141.36 Mbit/s
95th percentile per-packet one-way delay: 63.640 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 77.99 Mbit/s
95th percentile per-packet one-way delay: 63.634 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 59.42 Mbit/s
95th percentile per-packet one-way delay: 63.647 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 71.69 Mbit/s
95th percentile per-packet one-way delay: 63.649 ms
Loss rate: 0.01%
```
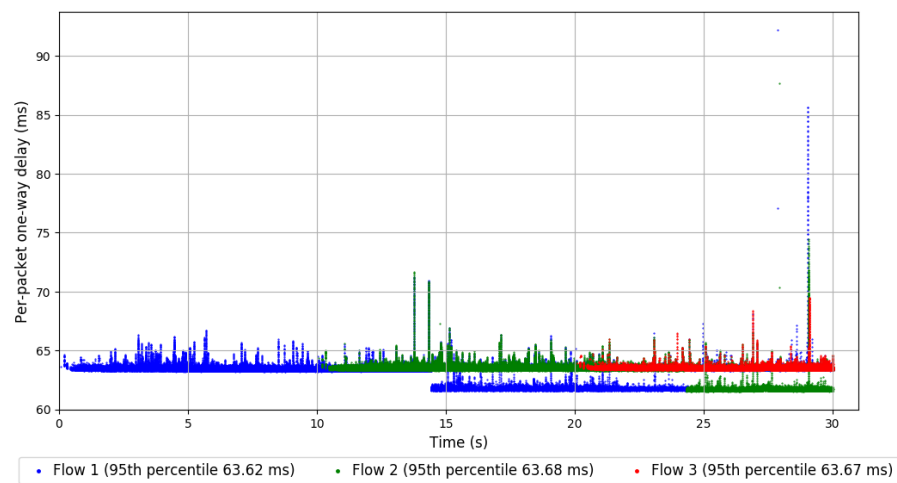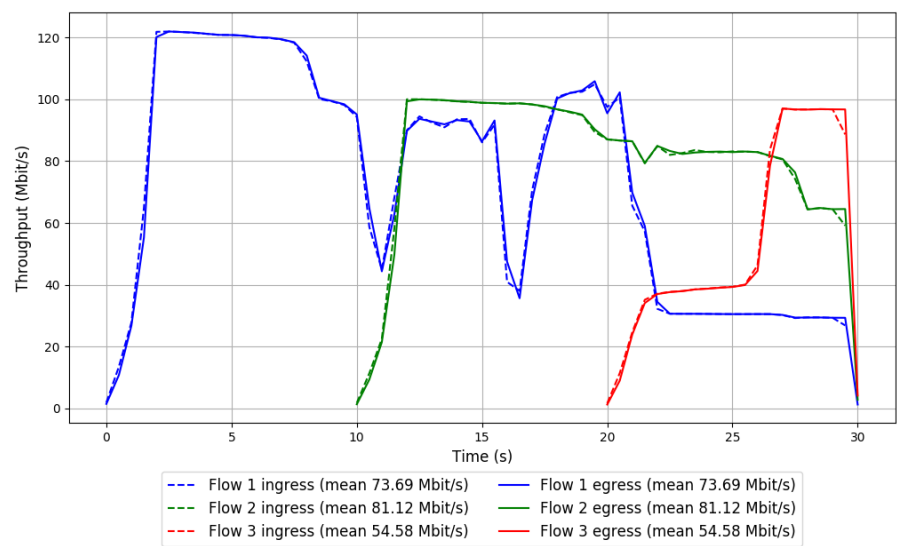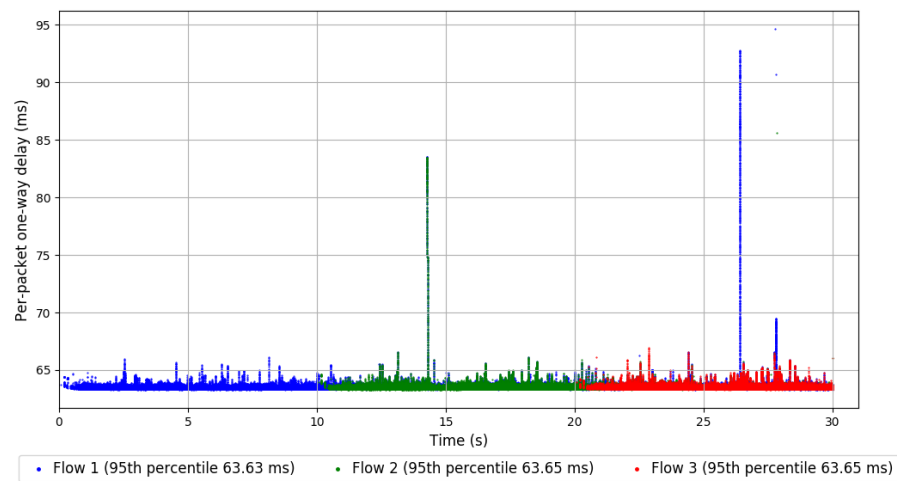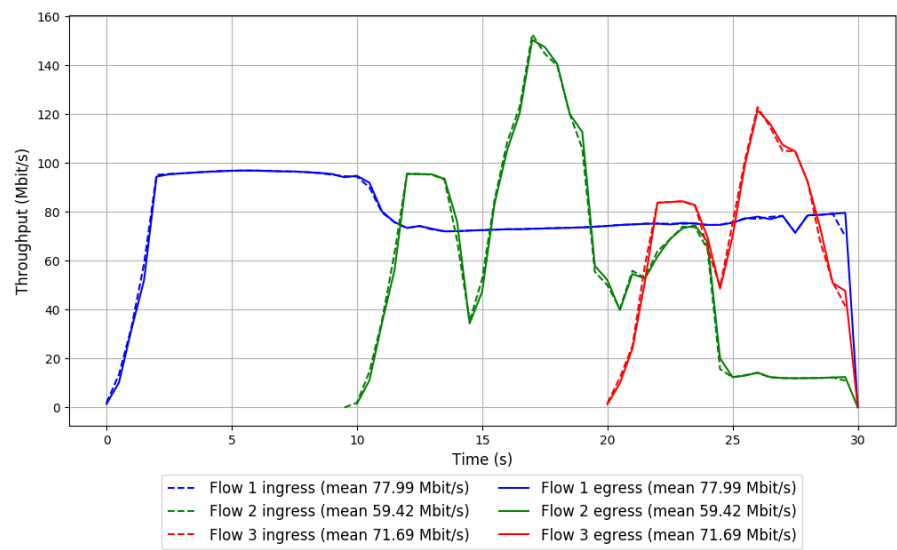
Run 4: Report of Copa — Data Link

```
Run 5: Statistics of Copa

Start at: 2018-04-18 23:22:36
End at: 2018-04-18 23:23:06


# Below is generated by plot.py at 2018-04-19 03:46:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 140.83 Mbit/s
95th percentile per-packet one-way delay: 63.656 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 73.13 Mbit/s
95th percentile per-packet one-way delay: 63.649 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 73.29 Mbit/s
95th percentile per-packet one-way delay: 63.641 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 56.88 Mbit/s
95th percentile per-packet one-way delay: 63.698 ms
Loss rate: 0.00%
```

Run 5: Report of Copa — Data Link

Flow 1 ingress (mean 73.13 Mbit/s) --- Flow 1 egress (mean 73.13 Mbit/s)
Flow 2 ingress (mean 73.30 Mbit/s) --- Flow 2 egress (mean 73.29 Mbit/s)
Flow 3 ingress (mean 56.88 Mbit/s) --- Flow 3 egress (mean 56.88 Mbit/s)

Flow 1 (95th percentile 63.65 ms)   Flow 2 (95th percentile 63.64 ms)   Flow 3 (95th percentile 63.70 ms)

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```
Run 6: Statistics of Copa

Start at: 2018-04-18 23:38:20
End at: 2018-04-18 23:38:50


# Below is generated by plot.py at 2018-04-19 03:46:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 127.38 Mbit/s
95th percentile per-packet one-way delay: 63.601 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 62.43 Mbit/s
95th percentile per-packet one-way delay: 63.651 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 73.63 Mbit/s
95th percentile per-packet one-way delay: 63.475 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 48.02 Mbit/s
95th percentile per-packet one-way delay: 62.024 ms
Loss rate: 0.00%
```
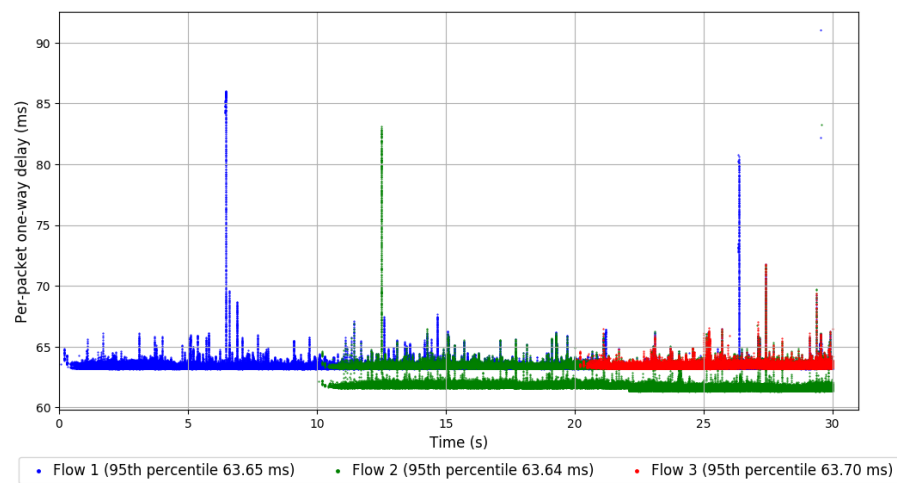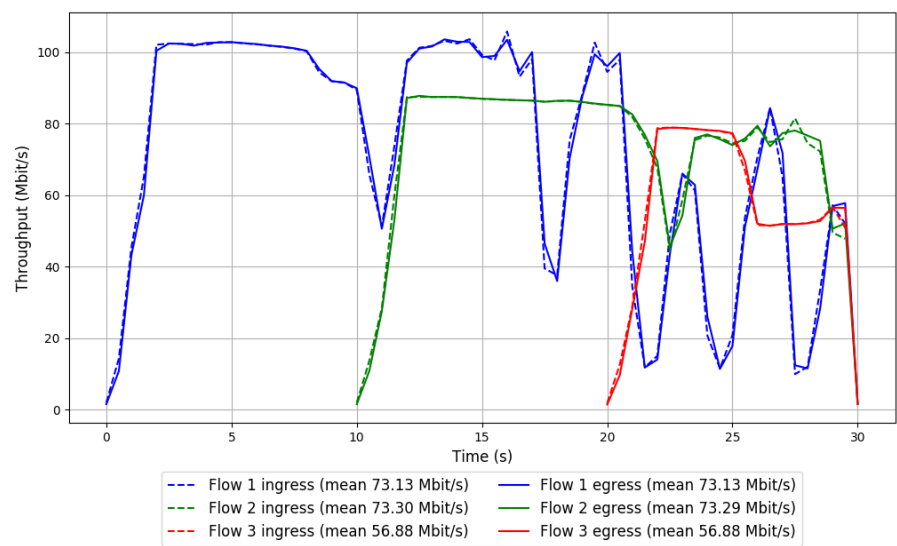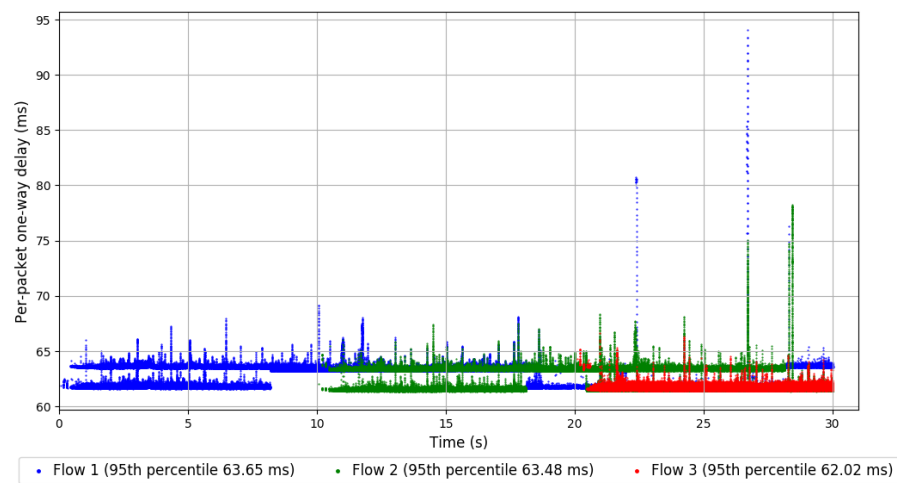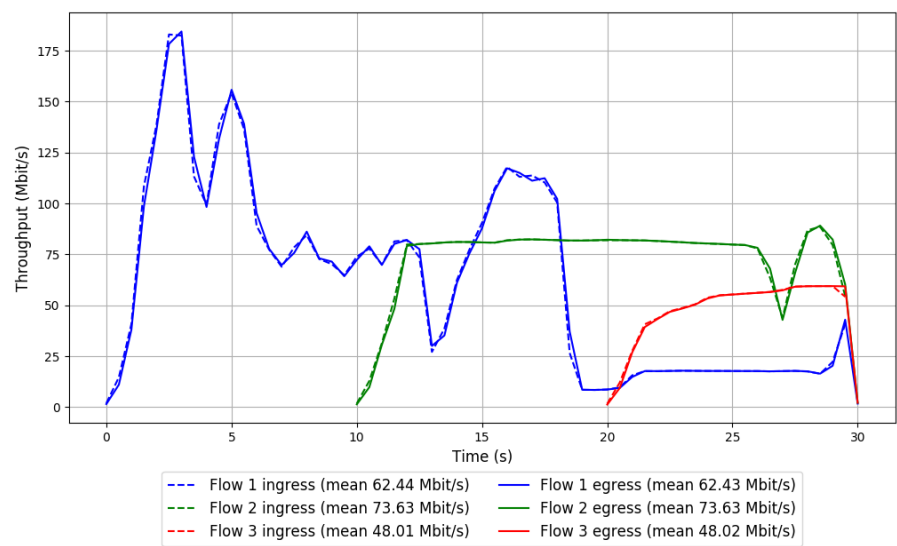
Run 6: Report of Copa — Data Link

Flow 1 ingress (mean 62.44 Mbit/s) --- Flow 1 egress (mean 62.43 Mbit/s)
Flow 2 ingress (mean 73.63 Mbit/s) --- Flow 2 egress (mean 73.63 Mbit/s)
Flow 3 ingress (mean 48.01 Mbit/s) --- Flow 3 egress (mean 48.02 Mbit/s)

Flow 1 (95th percentile 63.65 ms)   Flow 2 (95th percentile 63.48 ms)   Flow 3 (95th percentile 62.02 ms)

235

```
Run 7: Statistics of Copa

Start at: 2018-04-18 23:53:55
End at: 2018-04-18 23:54:25


# Below is generated by plot.py at 2018-04-19 03:48:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 143.54 Mbit/s
95th percentile per-packet one-way delay: 63.743 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 75.61 Mbit/s
95th percentile per-packet one-way delay: 63.639 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 70.91 Mbit/s
95th percentile per-packet one-way delay: 63.810 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 62.47 Mbit/s
95th percentile per-packet one-way delay: 63.699 ms
Loss rate: 0.00%
```
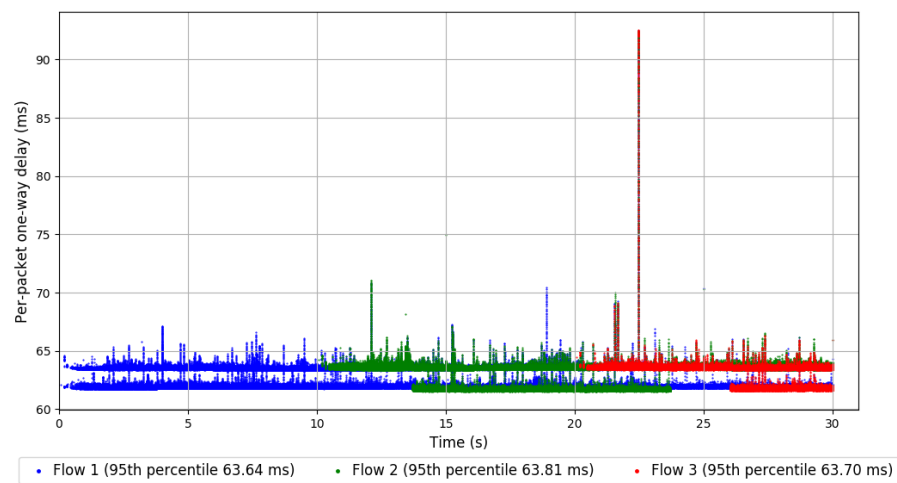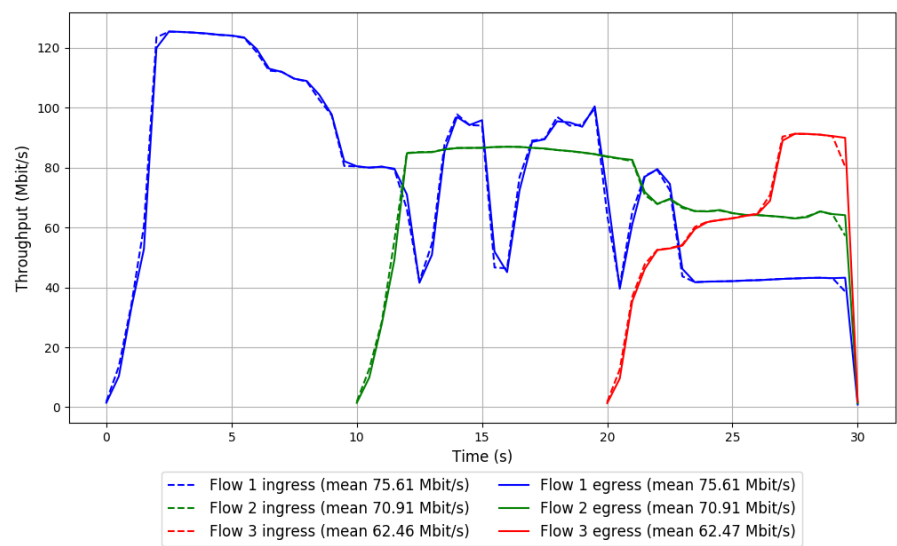
Run 7: Report of Copa — Data Link

```
Run 8: Statistics of Copa

Start at: 2018-04-19 00:09:41
End at: 2018-04-19 00:10:11


# Below is generated by plot.py at 2018-04-19 03:48:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 137.03 Mbit/s
95th percentile per-packet one-way delay: 63.806 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 70.18 Mbit/s
95th percentile per-packet one-way delay: 63.825 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 63.85 Mbit/s
95th percentile per-packet one-way delay: 63.800 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 73.41 Mbit/s
95th percentile per-packet one-way delay: 63.676 ms
Loss rate: 0.01%
```
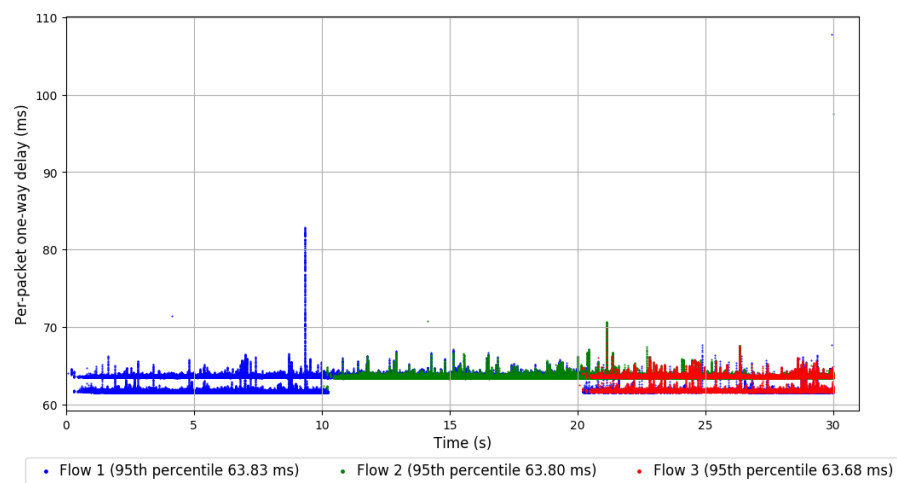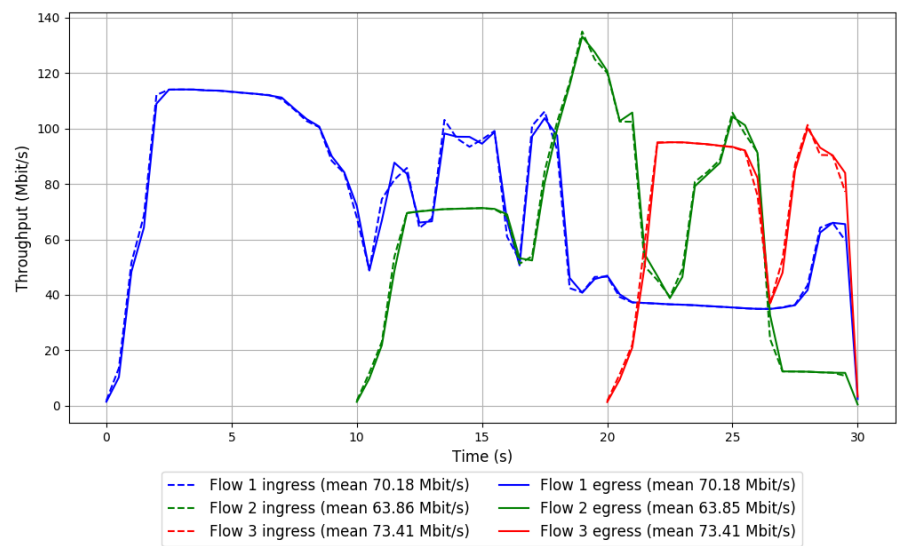
Run 8: Report of Copa — Data Link

```
Run 9: Statistics of Copa

Start at: 2018-04-19 00:25:15
End at: 2018-04-19 00:25:45


# Below is generated by plot.py at 2018-04-19 03:48:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 131.06 Mbit/s
95th percentile per-packet one-way delay: 63.794 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 59.99 Mbit/s
95th percentile per-packet one-way delay: 63.832 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 72.51 Mbit/s
95th percentile per-packet one-way delay: 63.717 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 68.77 Mbit/s
95th percentile per-packet one-way delay: 63.749 ms
Loss rate: 0.00%
```
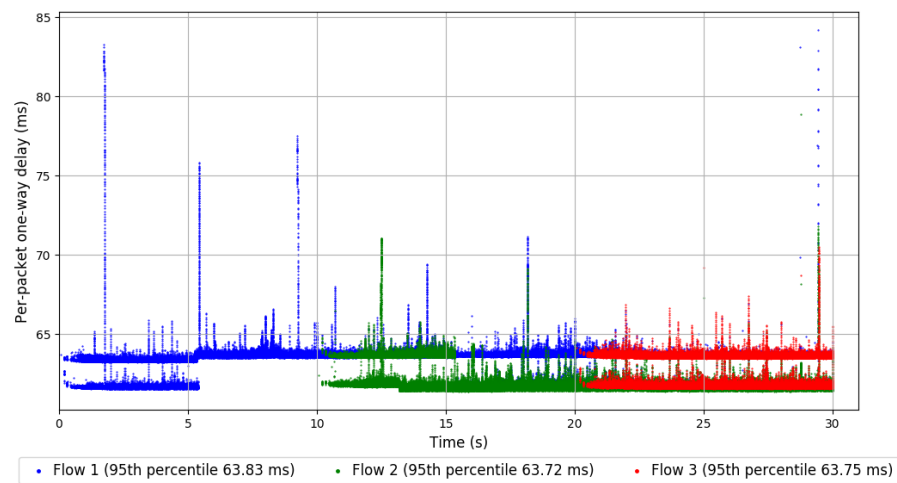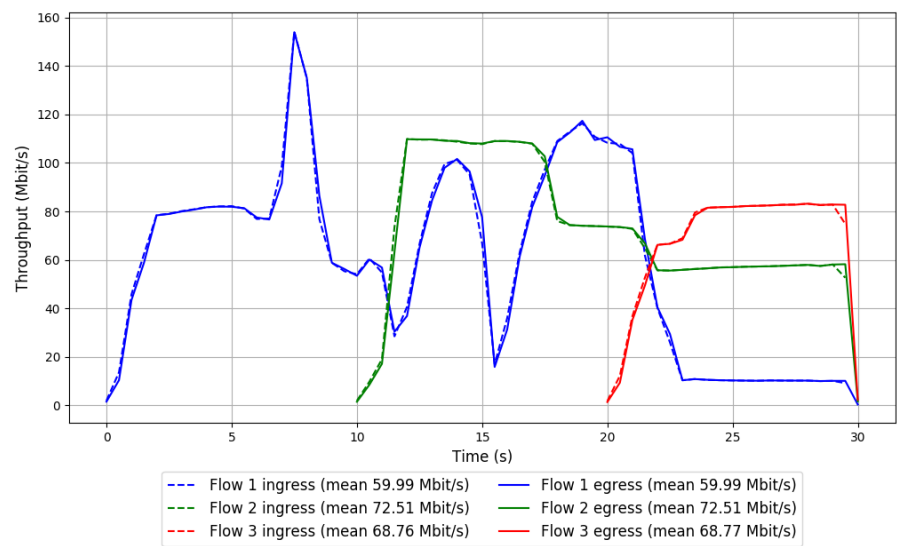
Run 9: Report of Copa — Data Link

```
Run 10: Statistics of Copa

Start at: 2018-04-19 00:40:41
End at: 2018-04-19 00:41:11


# Below is generated by plot.py at 2018-04-19 03:50:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 145.12 Mbit/s
95th percentile per-packet one-way delay: 63.735 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 82.95 Mbit/s
95th percentile per-packet one-way delay: 63.665 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 66.55 Mbit/s
95th percentile per-packet one-way delay: 63.768 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 53.87 Mbit/s
95th percentile per-packet one-way delay: 63.914 ms
Loss rate: 0.00%
```
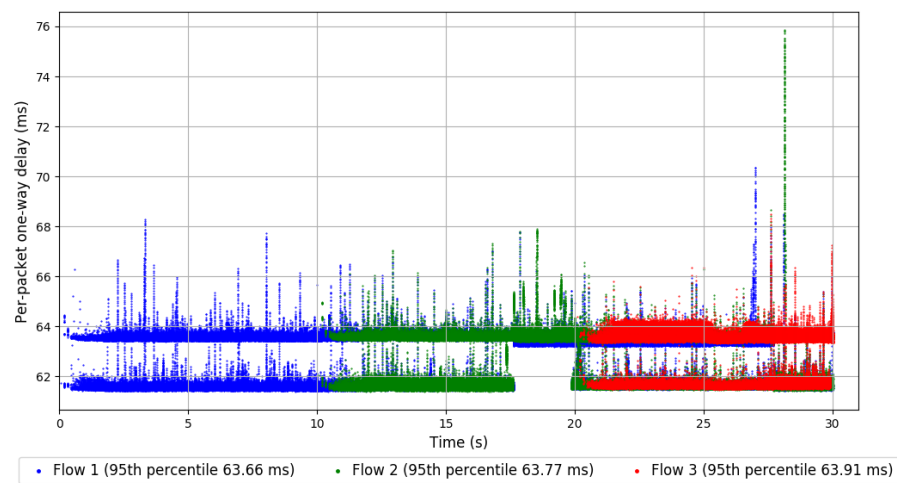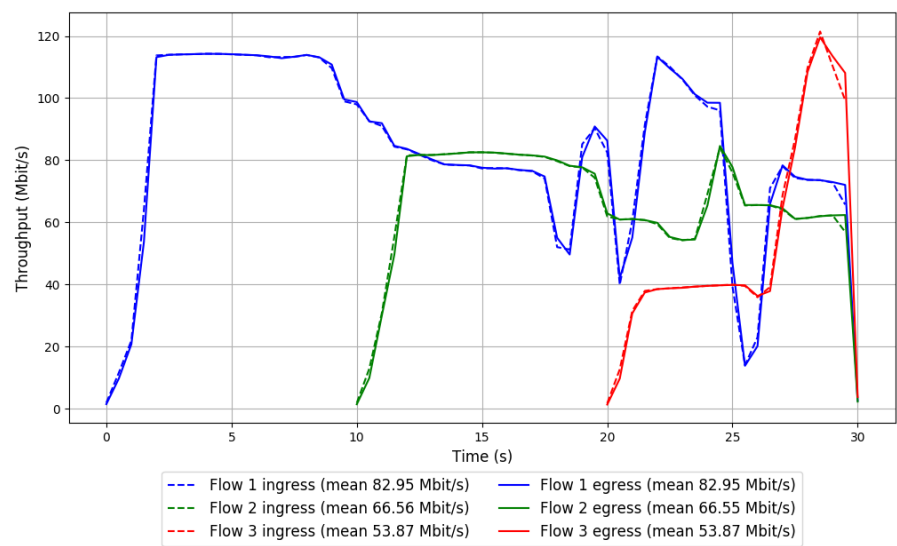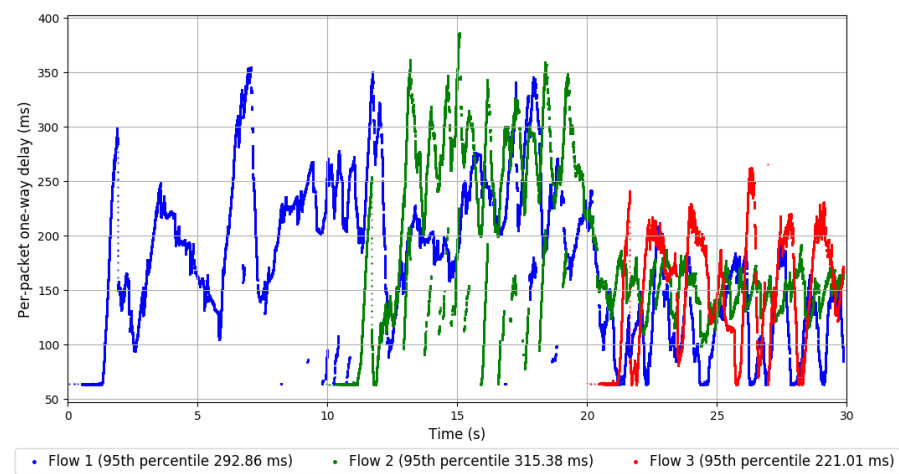
Run 10: Report of Copa — Data Link

```
Run 1: Statistics of FillP

Start at: 2018-04-18 22:29:50
End at: 2018-04-18 22:30:20


# Below is generated by plot.py at 2018-04-19 04:11:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1213.67 Mbit/s
95th percentile per-packet one-way delay: 301.428 ms
Loss rate: 6.11%
-- Flow 1:
Average throughput: 629.34 Mbit/s
95th percentile per-packet one-way delay: 292.860 ms
Loss rate: 2.88%
-- Flow 2:
Average throughput: 650.74 Mbit/s
95th percentile per-packet one-way delay: 315.382 ms
Loss rate: 7.87%
-- Flow 3:
Average throughput: 450.33 Mbit/s
95th percentile per-packet one-way delay: 221.006 ms
Loss rate: 13.42%
```
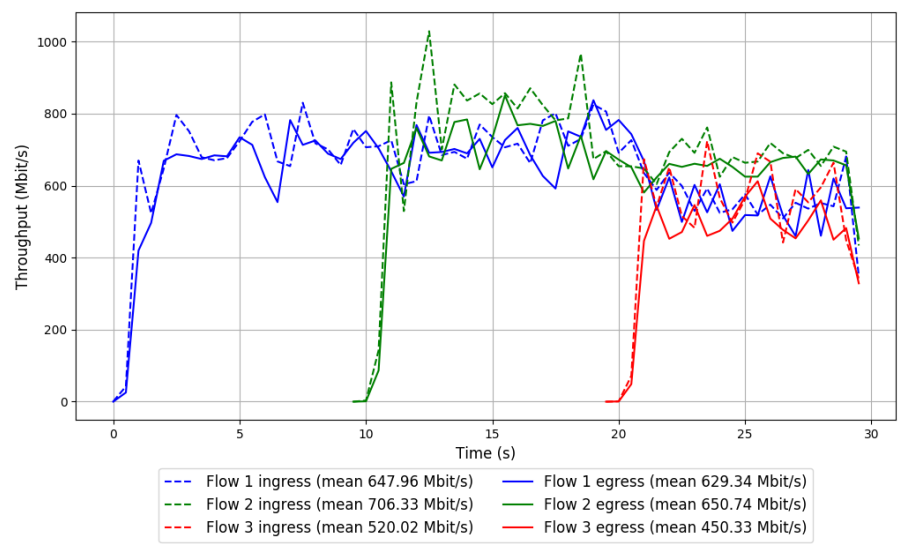
Run 1: Report of FillP — Data Link

```
Run 2: Statistics of FillP

Start at: 2018-04-18 22:45:32
End at: 2018-04-18 22:46:02

# Below is generated by plot.py at 2018-04-19 04:11:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1241.05 Mbit/s
95th percentile per-packet one-way delay: 240.752 ms
Loss rate: 7.31%
-- Flow 1:
Average throughput: 661.33 Mbit/s
95th percentile per-packet one-way delay: 283.742 ms
Loss rate: 7.16%
-- Flow 2:
Average throughput: 598.51 Mbit/s
95th percentile per-packet one-way delay: 199.846 ms
Loss rate: 7.25%
-- Flow 3:
Average throughput: 552.46 Mbit/s
95th percentile per-packet one-way delay: 202.585 ms
Loss rate: 7.96%
```

Run 2: Report of FillP — Data Link

- - - - Flow 1 ingress (mean 712.33 Mbit/s) ——— Flow 1 egress (mean 661.33 Mbit/s)
- - - - Flow 2 ingress (mean 645.23 Mbit/s) ——— Flow 2 egress (mean 598.51 Mbit/s)
- - - - Flow 3 ingress (mean 600.11 Mbit/s) ——— Flow 3 egress (mean 552.46 Mbit/s)

- Flow 1 (95th percentile 283.74 ms)   • Flow 2 (95th percentile 199.85 ms)   • Flow 3 (95th percentile 202.59 ms)

```
Run 3: Statistics of FillP

Start at: 2018-04-18 23:01:18
End at: 2018-04-18 23:01:48

# Below is generated by plot.py at 2018-04-19 04:11:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1165.21 Mbit/s
95th percentile per-packet one-way delay: 289.524 ms
Loss rate: 3.58%
-- Flow 1:
Average throughput: 658.97 Mbit/s
95th percentile per-packet one-way delay: 256.494 ms
Loss rate: 3.48%
-- Flow 2:
Average throughput: 637.35 Mbit/s
95th percentile per-packet one-way delay: 313.966 ms
Loss rate: 3.28%
-- Flow 3:
Average throughput: 248.30 Mbit/s
95th percentile per-packet one-way delay: 199.600 ms
Loss rate: 5.85%
```
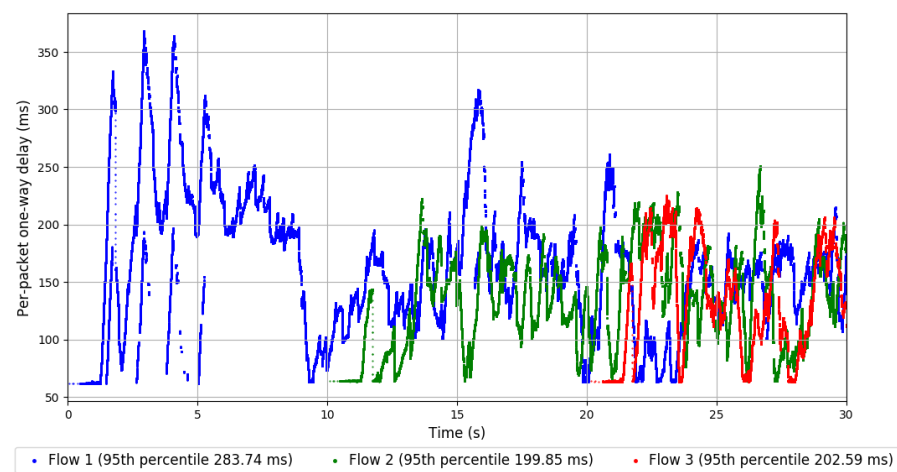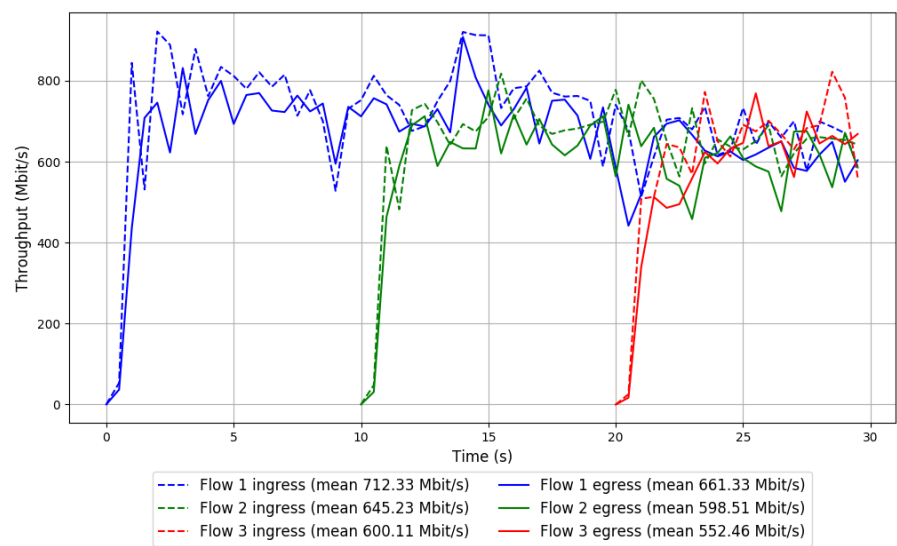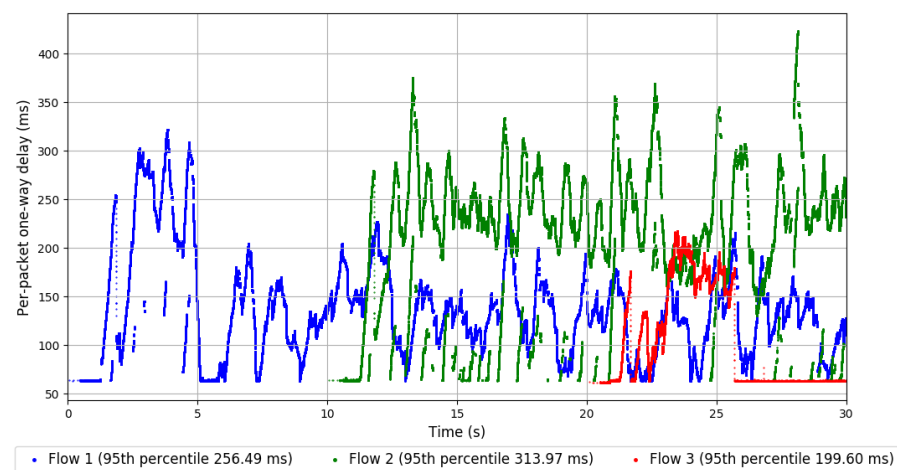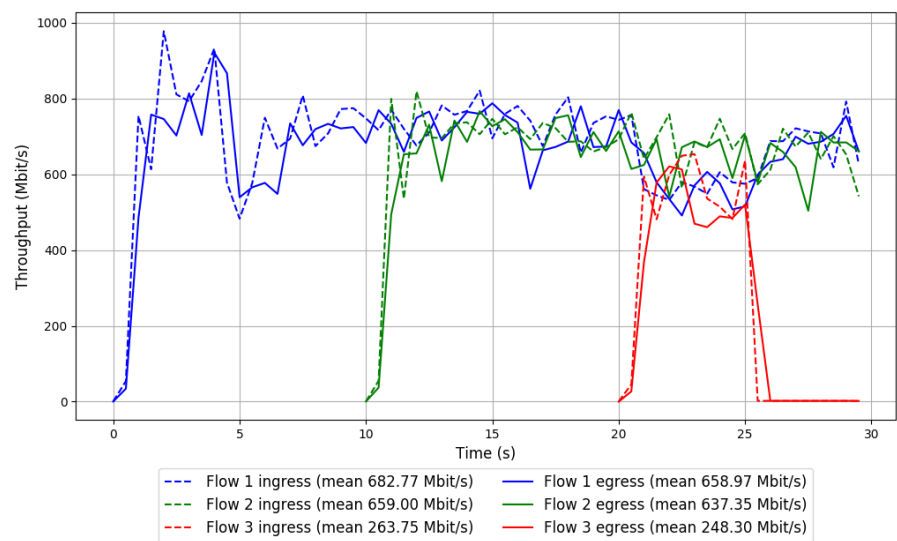
Run 3: Report of FillP — Data Link

```
Run 4: Statistics of FillP

Start at: 2018-04-18 23:16:54
End at: 2018-04-18 23:17:24


# Below is generated by plot.py at 2018-04-19 04:11:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1175.60 Mbit/s
95th percentile per-packet one-way delay: 254.535 ms
Loss rate: 3.79%
-- Flow 1:
Average throughput: 575.85 Mbit/s
95th percentile per-packet one-way delay: 272.825 ms
Loss rate: 4.53%
-- Flow 2:
Average throughput: 624.81 Mbit/s
95th percentile per-packet one-way delay: 230.738 ms
Loss rate: 2.18%
-- Flow 3:
Average throughput: 557.05 Mbit/s
95th percentile per-packet one-way delay: 196.803 ms
Loss rate: 4.98%
```
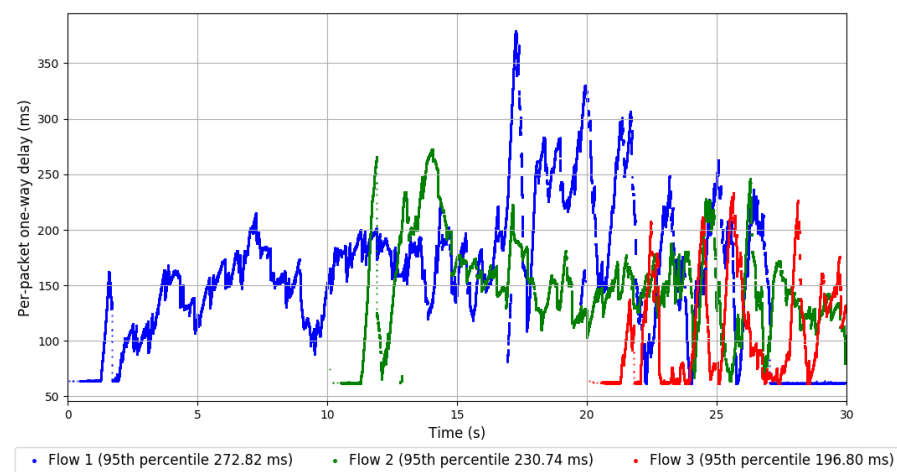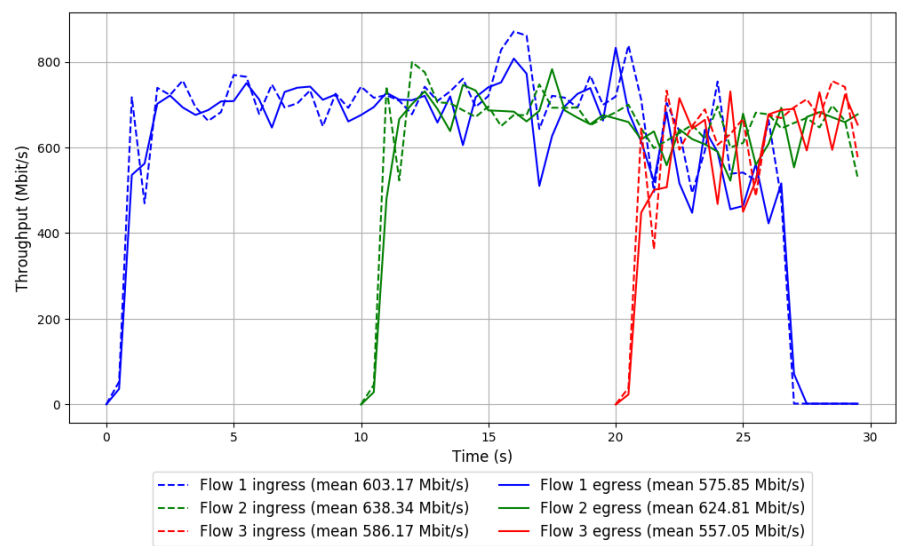
Run 4: Report of FillP — Data Link

```
Run 5: Statistics of FillP

Start at: 2018-04-18 23:32:29
End at: 2018-04-18 23:32:59


# Below is generated by plot.py at 2018-04-19 04:13:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1235.01 Mbit/s
95th percentile per-packet one-way delay: 191.718 ms
Loss rate: 3.86%
-- Flow 1:
Average throughput: 658.15 Mbit/s
95th percentile per-packet one-way delay: 184.171 ms
Loss rate: 2.63%
-- Flow 2:
Average throughput: 572.16 Mbit/s
95th percentile per-packet one-way delay: 209.083 ms
Loss rate: 6.28%
-- Flow 3:
Average throughput: 592.04 Mbit/s
95th percentile per-packet one-way delay: 173.858 ms
Loss rate: 3.15%
```

Run 5: Report of FillP — Data Link

Flow 1 ingress (mean 675.95 Mbit/s) --- Flow 1 egress (mean 658.15 Mbit/s) ---
Flow 2 ingress (mean 610.59 Mbit/s) --- Flow 2 egress (mean 572.16 Mbit/s) ---
Flow 3 ingress (mean 611.31 Mbit/s) --- Flow 3 egress (mean 592.04 Mbit/s) ---

Flow 1 (95th percentile 184.17 ms)   Flow 2 (95th percentile 209.08 ms)   Flow 3 (95th percentile 173.86 ms)

253

```
Run 6: Statistics of FillP

Start at: 2018-04-18 23:48:09
End at: 2018-04-18 23:48:39

# Below is generated by plot.py at 2018-04-19 04:14:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1227.57 Mbit/s
95th percentile per-packet one-way delay: 263.022 ms
Loss rate: 7.81%
-- Flow 1:
Average throughput: 676.37 Mbit/s
95th percentile per-packet one-way delay: 274.180 ms
Loss rate: 6.82%
-- Flow 2:
Average throughput: 565.66 Mbit/s
95th percentile per-packet one-way delay: 239.728 ms
Loss rate: 8.14%
-- Flow 3:
Average throughput: 526.49 Mbit/s
95th percentile per-packet one-way delay: 268.067 ms
Loss rate: 10.75%
```
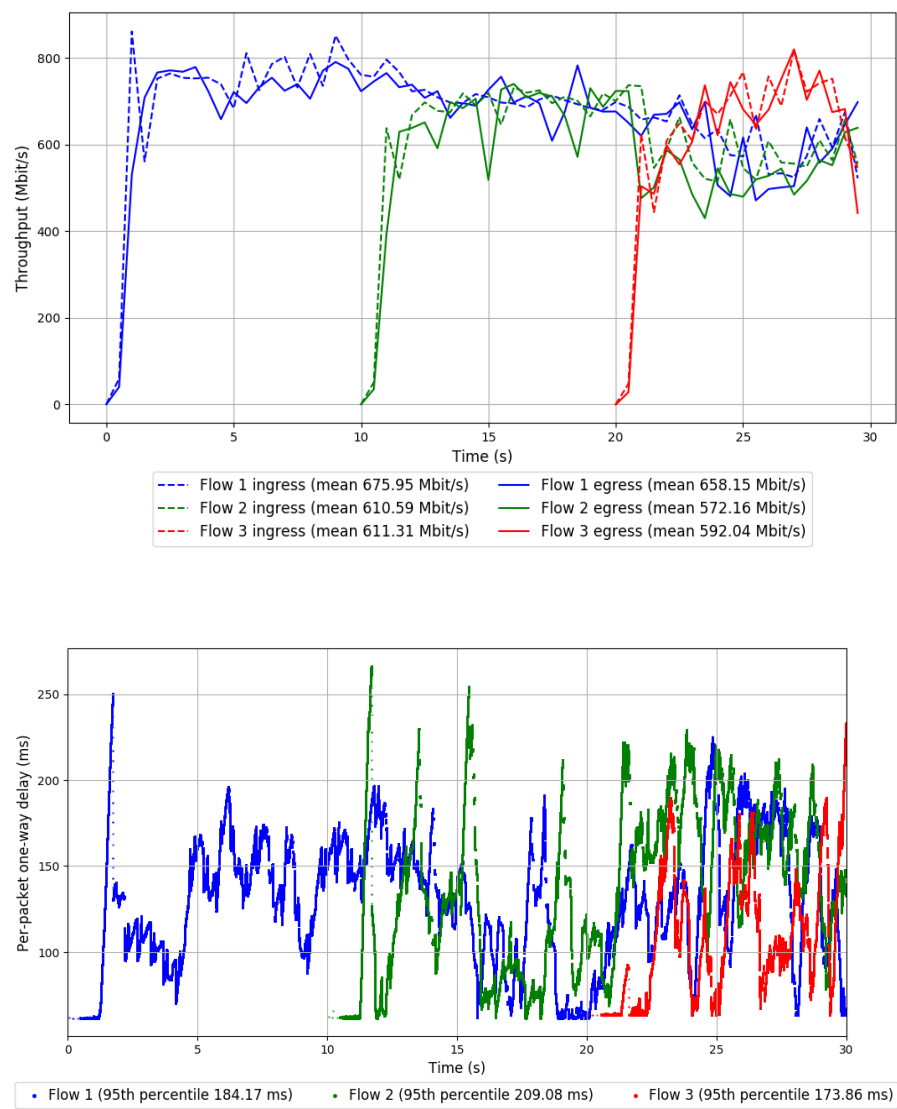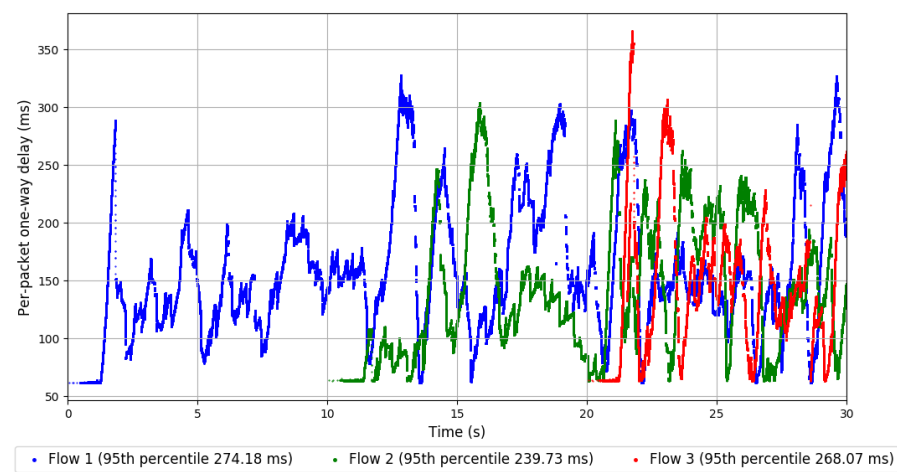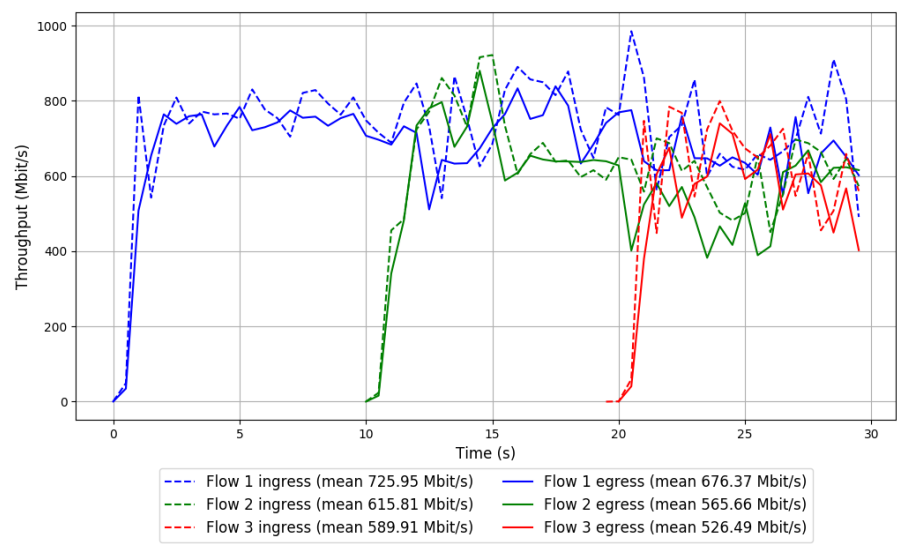
Run 6: Report of FillP — Data Link

```
Run 7: Statistics of FillP

Start at: 2018-04-19 00:03:53
End at: 2018-04-19 00:04:23

# Below is generated by plot.py at 2018-04-19 04:14:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1212.20 Mbit/s
95th percentile per-packet one-way delay: 208.635 ms
Loss rate: 6.97%
-- Flow 1:
Average throughput: 642.82 Mbit/s
95th percentile per-packet one-way delay: 188.880 ms
Loss rate: 4.18%
-- Flow 2:
Average throughput: 586.00 Mbit/s
95th percentile per-packet one-way delay: 225.008 ms
Loss rate: 10.77%
-- Flow 3:
Average throughput: 543.54 Mbit/s
95th percentile per-packet one-way delay: 244.884 ms
Loss rate: 8.04%
```
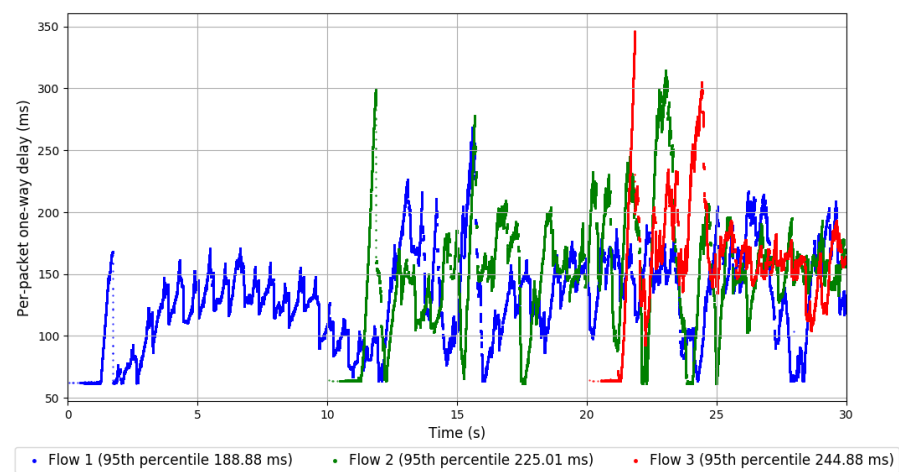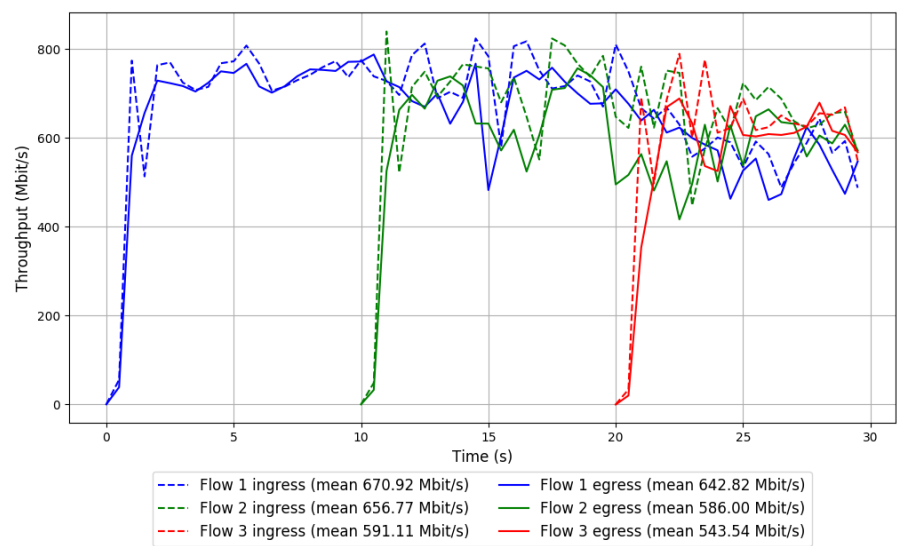
Run 7: Report of FillP — Data Link

Flow 1 ingress (mean 670.92 Mbit/s)   Flow 1 egress (mean 642.82 Mbit/s)
Flow 2 ingress (mean 656.77 Mbit/s)   Flow 2 egress (mean 586.00 Mbit/s)
Flow 3 ingress (mean 591.11 Mbit/s)   Flow 3 egress (mean 543.54 Mbit/s)

Flow 1 (95th percentile 188.88 ms)   Flow 2 (95th percentile 225.01 ms)   Flow 3 (95th percentile 244.88 ms)

257

```
Run 8: Statistics of FillP

Start at: 2018-04-19 00:19:36
End at: 2018-04-19 00:20:06

# Below is generated by plot.py at 2018-04-19 04:14:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1152.05 Mbit/s
95th percentile per-packet one-way delay: 279.715 ms
Loss rate: 7.12%
-- Flow 1:
Average throughput: 547.81 Mbit/s
95th percentile per-packet one-way delay: 302.635 ms
Loss rate: 9.19%
-- Flow 2:
Average throughput: 658.97 Mbit/s
95th percentile per-packet one-way delay: 160.931 ms
Loss rate: 1.19%
-- Flow 3:
Average throughput: 501.27 Mbit/s
95th percentile per-packet one-way delay: 221.643 ms
Loss rate: 14.28%
```
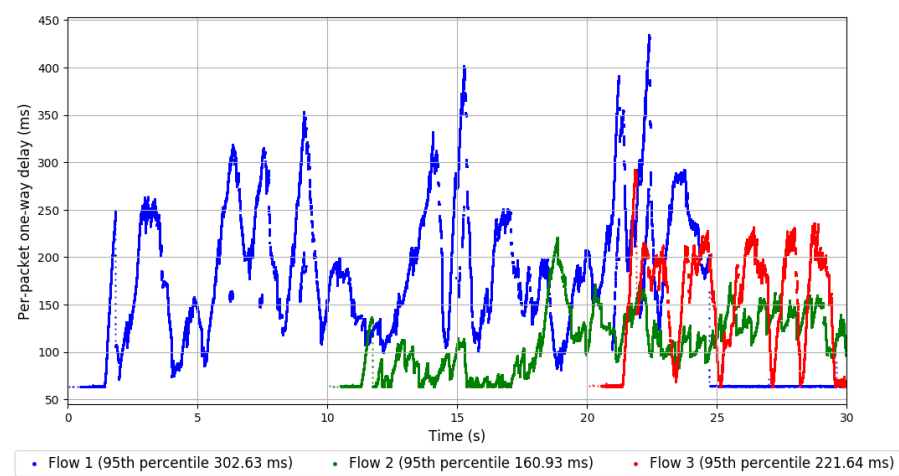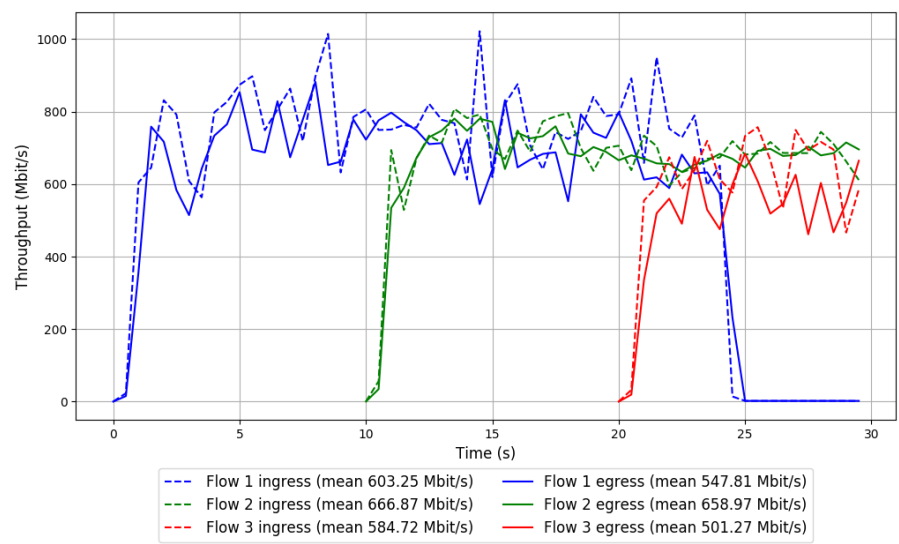
Run 8: Report of FillP — Data Link

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```
Run 9: Statistics of FillP

Start at: 2018-04-19 00:35:01
End at: 2018-04-19 00:35:31


# Below is generated by plot.py at 2018-04-19 04:34:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1147.85 Mbit/s
95th percentile per-packet one-way delay: 265.870 ms
Loss rate: 3.52%
-- Flow 1:
Average throughput: 539.91 Mbit/s
95th percentile per-packet one-way delay: 294.817 ms
Loss rate: 4.12%
-- Flow 2:
Average throughput: 637.49 Mbit/s
95th percentile per-packet one-way delay: 214.305 ms
Loss rate: 3.04%
-- Flow 3:
Average throughput: 558.32 Mbit/s
95th percentile per-packet one-way delay: 182.170 ms
Loss rate: 2.85%
```
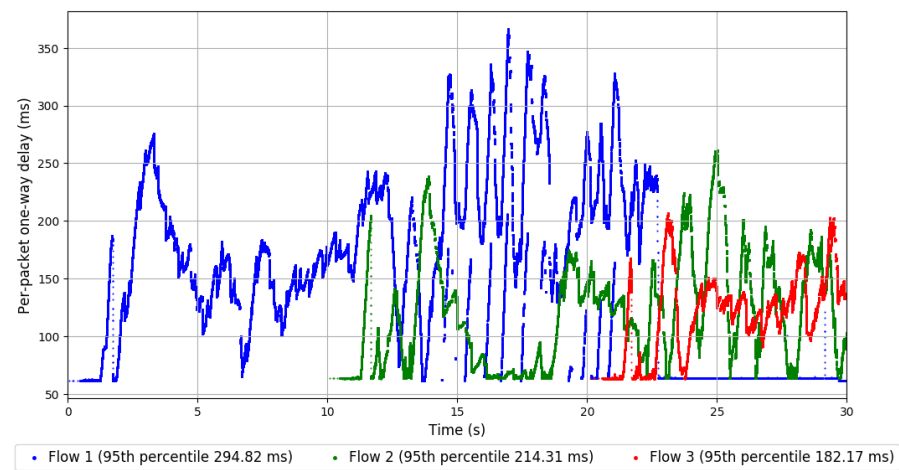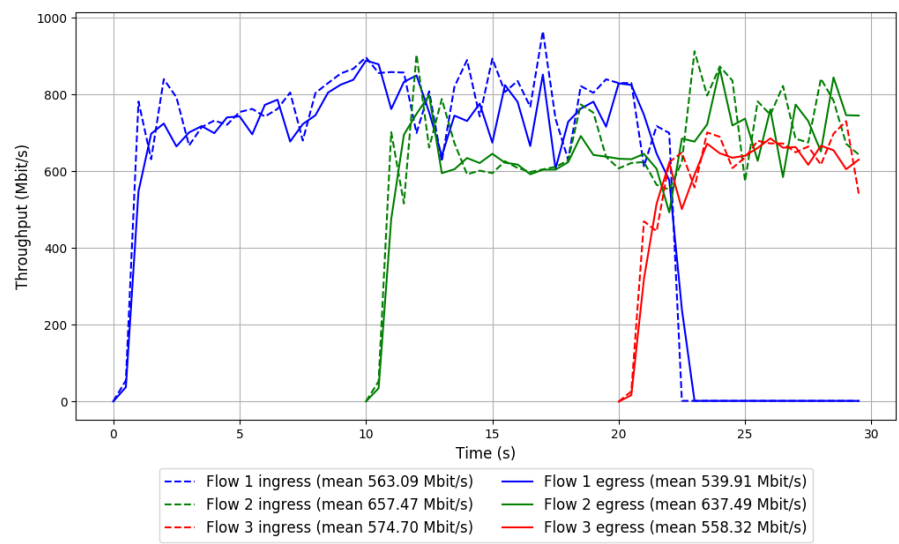
Run 9: Report of FillP — Data Link

Flow 1 ingress (mean 563.09 Mbit/s)   Flow 1 egress (mean 539.91 Mbit/s)
Flow 2 ingress (mean 657.47 Mbit/s)   Flow 2 egress (mean 637.49 Mbit/s)
Flow 3 ingress (mean 574.70 Mbit/s)   Flow 3 egress (mean 558.32 Mbit/s)

Flow 1 (95th percentile 294.82 ms)   Flow 2 (95th percentile 214.31 ms)   Flow 3 (95th percentile 182.17 ms)

```
Run 10: Statistics of FillP

Start at: 2018-04-19 00:50:27
End at: 2018-04-19 00:50:57


# Below is generated by plot.py at 2018-04-19 04:34:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1182.47 Mbit/s
95th percentile per-packet one-way delay: 225.889 ms
Loss rate: 4.44%
-- Flow 1:
Average throughput: 634.56 Mbit/s
95th percentile per-packet one-way delay: 235.977 ms
Loss rate: 4.65%
-- Flow 2:
Average throughput: 557.57 Mbit/s
95th percentile per-packet one-way delay: 196.848 ms
Loss rate: 2.39%
-- Flow 3:
Average throughput: 532.61 Mbit/s
95th percentile per-packet one-way delay: 228.203 ms
Loss rate: 7.80%
```
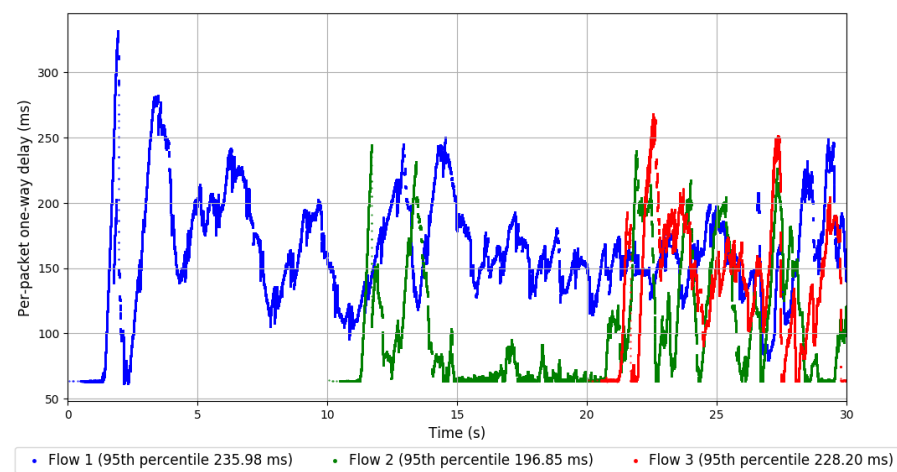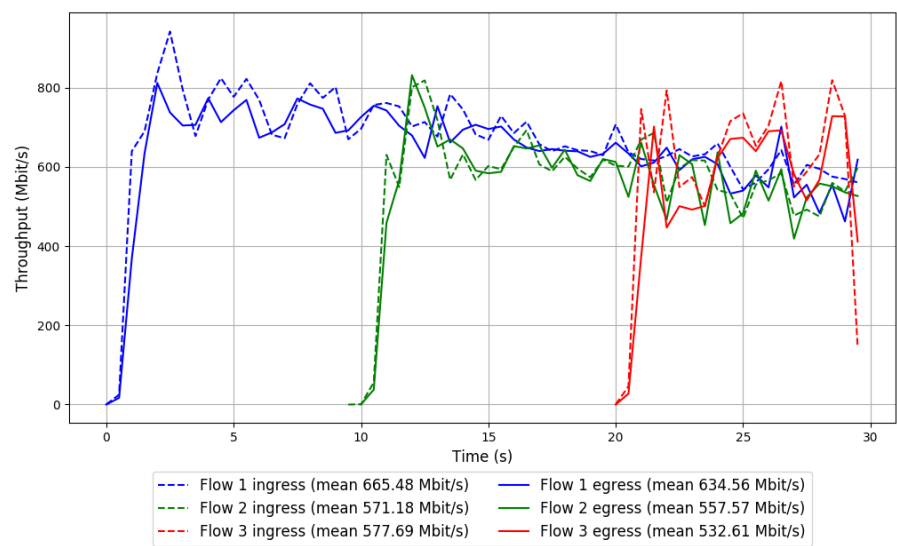
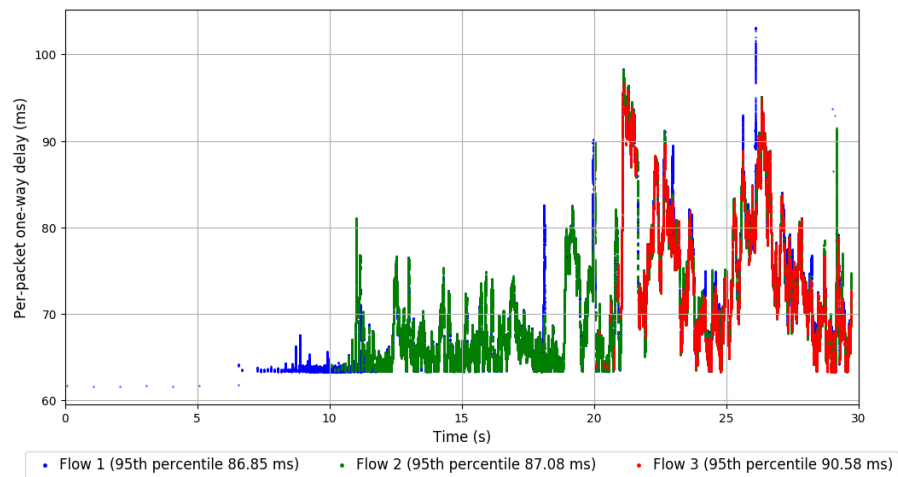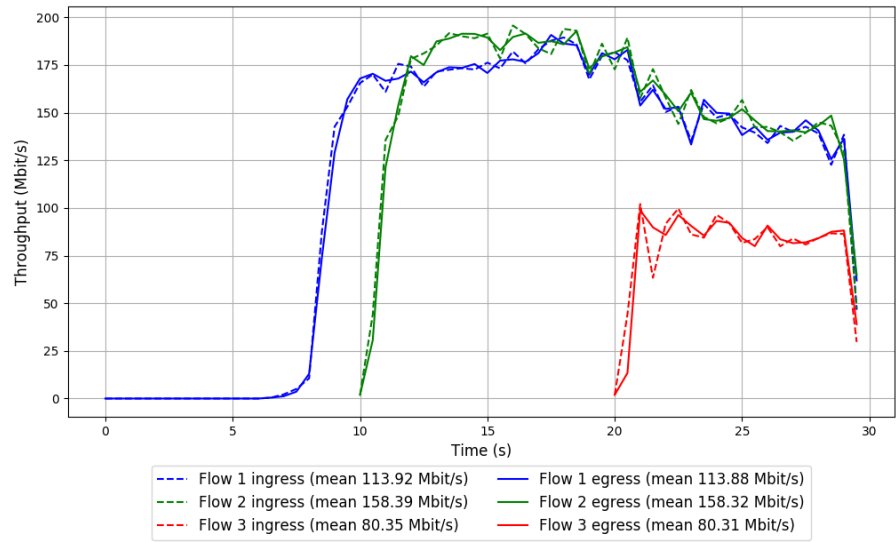Run 10: Report of FillP — Data Link

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```
Run 1: Statistics of Indigo-1-32

Start at: 2018-04-18 22:17:29
End at: 2018-04-18 22:17:59


# Below is generated by plot.py at 2018-04-19 04:34:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 244.87 Mbit/s
95th percentile per-packet one-way delay: 87.468 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 113.88 Mbit/s
95th percentile per-packet one-way delay: 86.846 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 158.32 Mbit/s
95th percentile per-packet one-way delay: 87.079 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 80.31 Mbit/s
95th percentile per-packet one-way delay: 90.583 ms
Loss rate: 0.04%
```

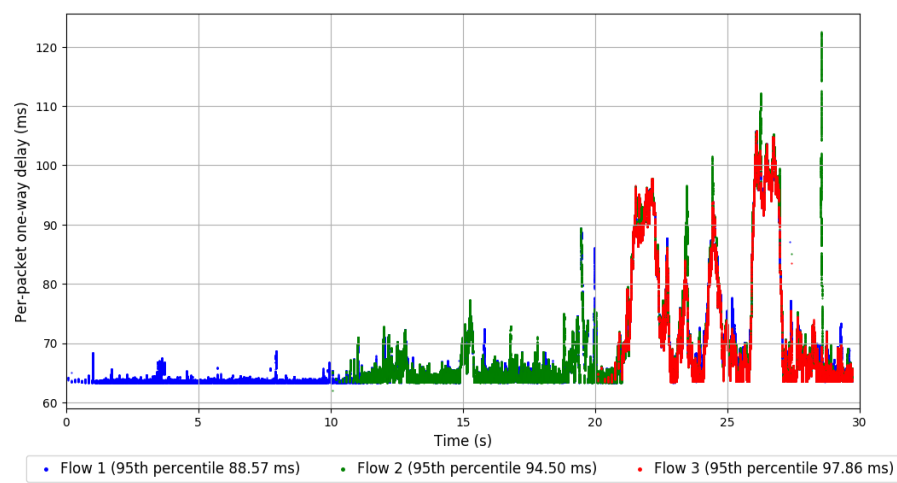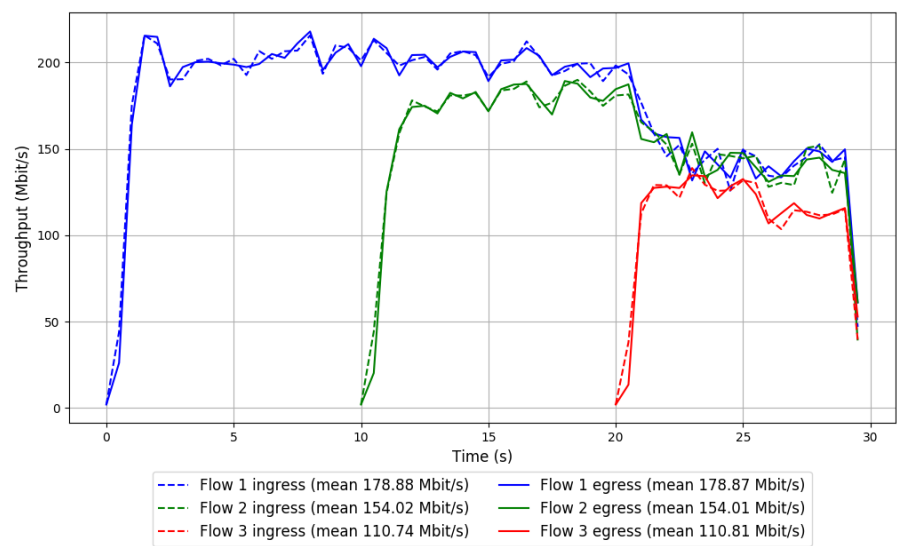Run 1: Report of Indigo-1-32 — Data Link

```
Run 2: Statistics of Indigo-1-32

Start at: 2018-04-18 22:32:57
End at: 2018-04-18 22:33:27


# Below is generated by plot.py at 2018-04-19 04:34:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 316.86 Mbit/s
95th percentile per-packet one-way delay: 93.697 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 178.87 Mbit/s
95th percentile per-packet one-way delay: 88.571 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 154.01 Mbit/s
95th percentile per-packet one-way delay: 94.504 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 110.81 Mbit/s
95th percentile per-packet one-way delay: 97.860 ms
Loss rate: 0.02%
```

Run 2: Report of Indigo-1-32 — Data Link

```
Run 3: Statistics of Indigo-1-32

Start at: 2018-04-18 22:48:48
End at: 2018-04-18 22:49:18

# Below is generated by plot.py at 2018-04-19 04:34:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 303.48 Mbit/s
95th percentile per-packet one-way delay: 79.463 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 170.19 Mbit/s
95th percentile per-packet one-way delay: 77.402 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 149.39 Mbit/s
95th percentile per-packet one-way delay: 79.487 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 107.77 Mbit/s
95th percentile per-packet one-way delay: 81.719 ms
Loss rate: 0.01%
```
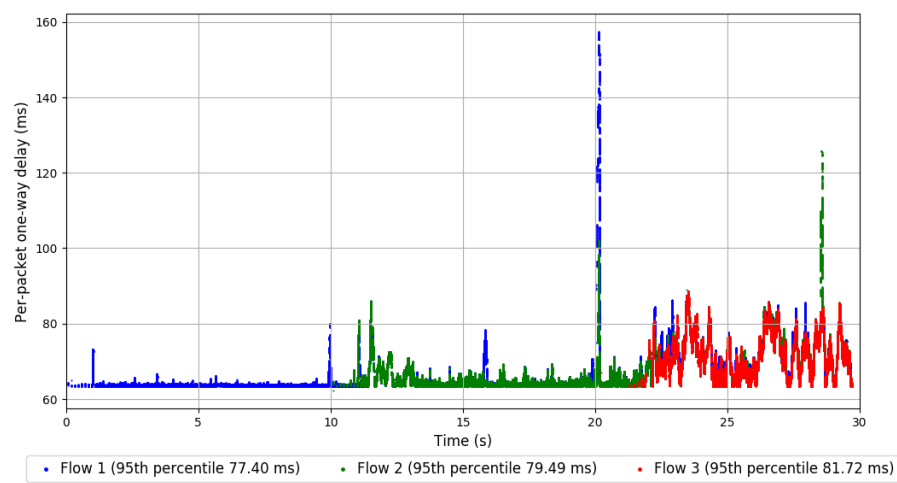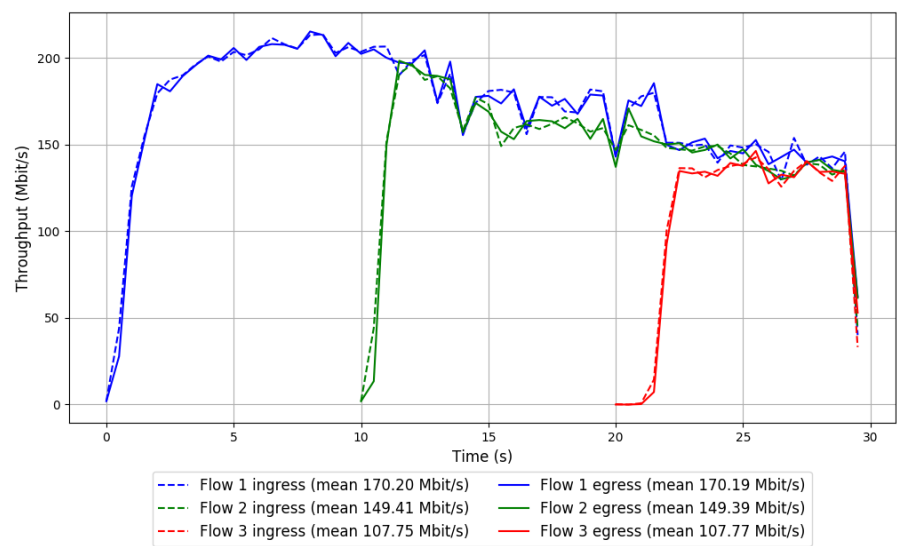
Run 3: Report of Indigo-1-32 — Data Link

```
Run 4: Statistics of Indigo-1-32

Start at: 2018-04-18 23:04:23
End at: 2018-04-18 23:04:53

# Below is generated by plot.py at 2018-04-19 04:34:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 297.67 Mbit/s
95th percentile per-packet one-way delay: 85.460 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 165.36 Mbit/s
95th percentile per-packet one-way delay: 81.121 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 149.53 Mbit/s
95th percentile per-packet one-way delay: 86.731 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 103.56 Mbit/s
95th percentile per-packet one-way delay: 94.439 ms
Loss rate: 0.16%
```
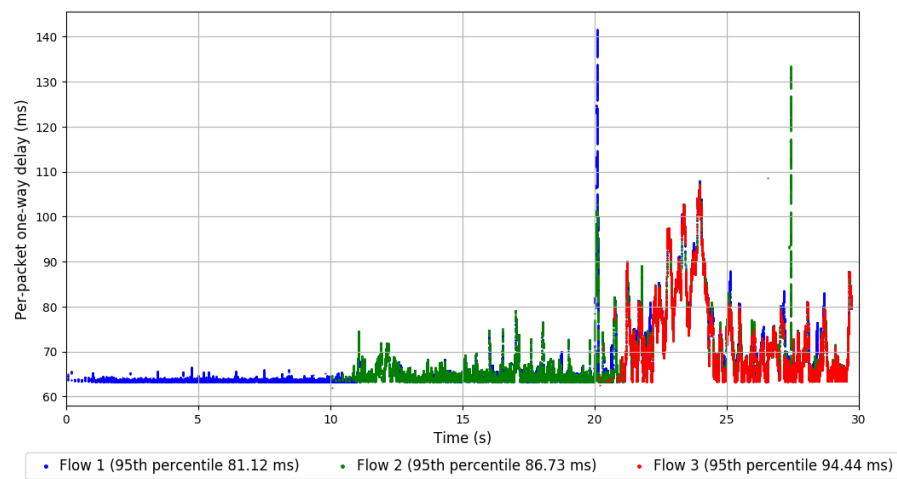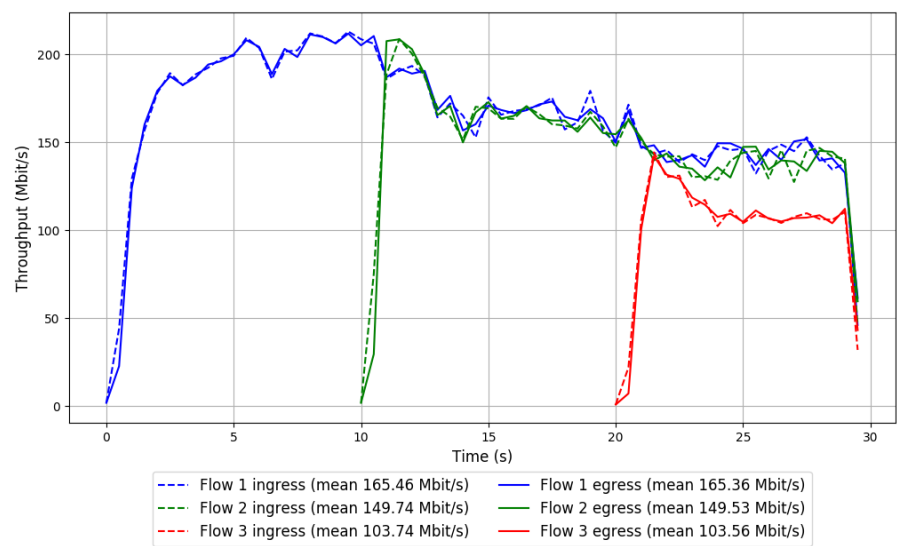
Run 4: Report of Indigo-1-32 — Data Link

```
Run 5: Statistics of Indigo-1-32

Start at: 2018-04-18 23:19:56
End at: 2018-04-18 23:20:26


# Below is generated by plot.py at 2018-04-19 04:34:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 309.41 Mbit/s
95th percentile per-packet one-way delay: 81.819 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 179.48 Mbit/s
95th percentile per-packet one-way delay: 78.282 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 145.41 Mbit/s
95th percentile per-packet one-way delay: 82.848 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 104.14 Mbit/s
95th percentile per-packet one-way delay: 86.829 ms
Loss rate: 0.00%
```
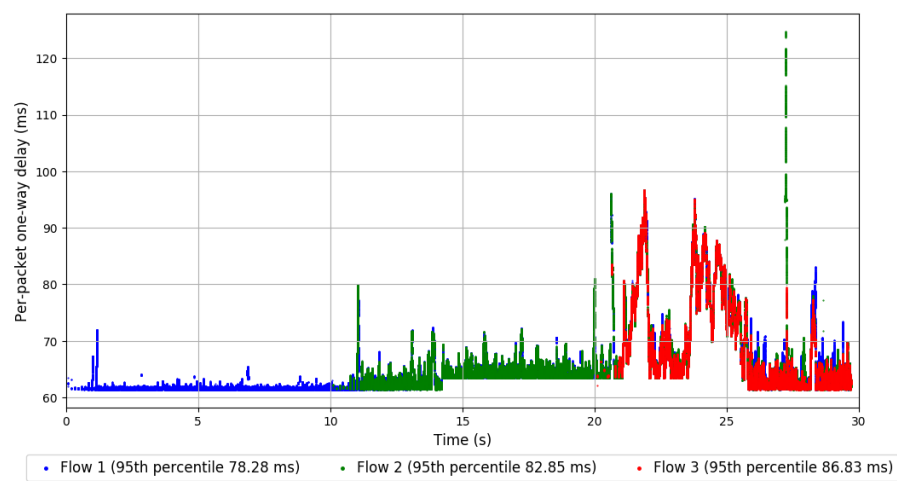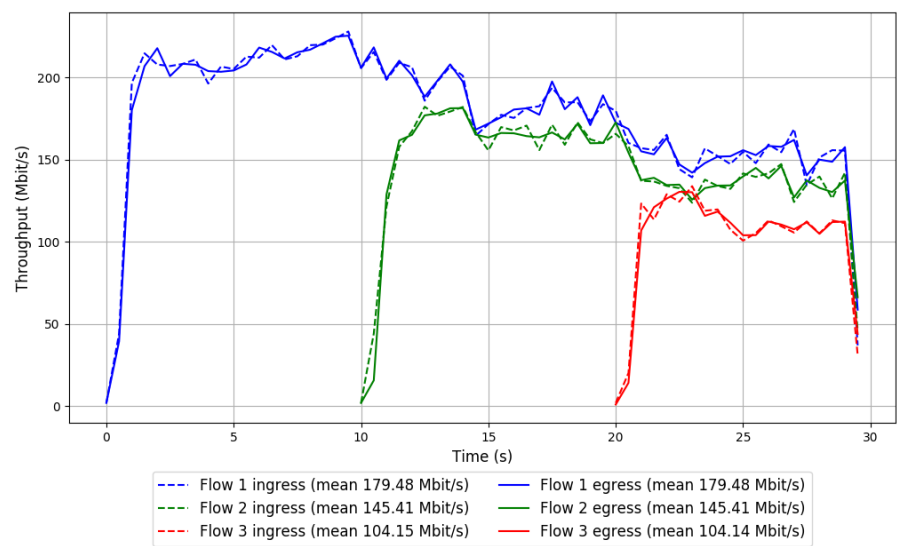
Run 5: Report of Indigo-1-32 — Data Link

```
Run 6: Statistics of Indigo-1-32

Start at: 2018-04-18 23:35:41
End at: 2018-04-18 23:36:11


# Below is generated by plot.py at 2018-04-19 04:34:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 302.47 Mbit/s
95th percentile per-packet one-way delay: 85.838 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 161.68 Mbit/s
95th percentile per-packet one-way delay: 81.901 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 147.86 Mbit/s
95th percentile per-packet one-way delay: 85.397 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 134.03 Mbit/s
95th percentile per-packet one-way delay: 92.624 ms
Loss rate: 0.17%
```
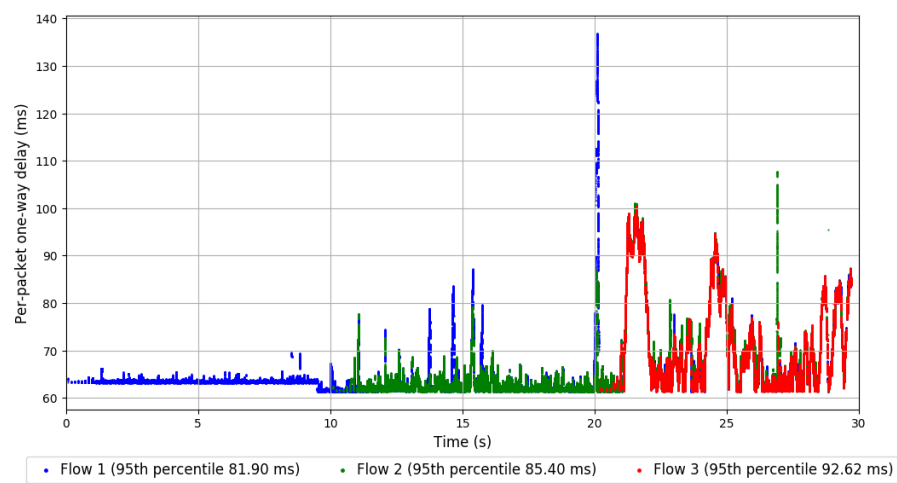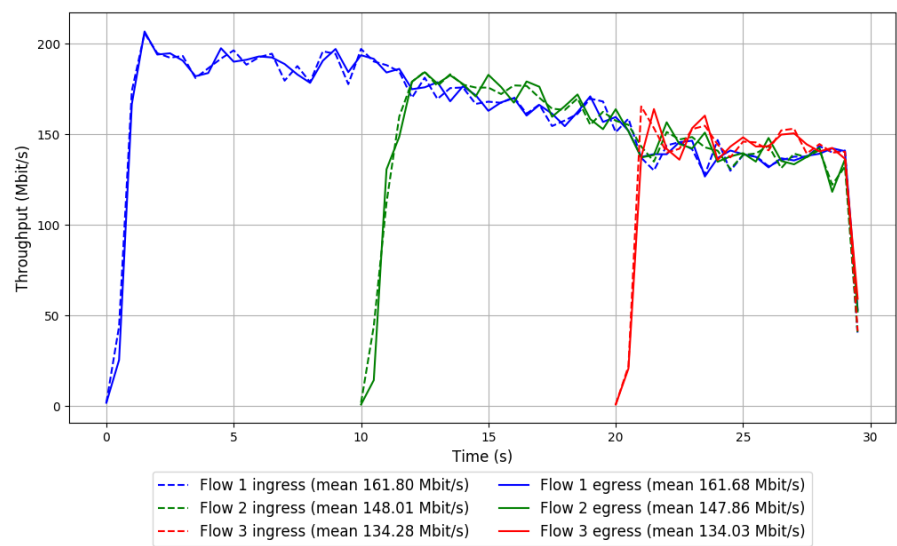
Run 6: Report of Indigo-1-32 — Data Link

```
Run 7: Statistics of Indigo-1-32

Start at: 2018-04-18 23:51:14
End at: 2018-04-18 23:51:44

# Below is generated by plot.py at 2018-04-19 04:34:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 306.82 Mbit/s
95th percentile per-packet one-way delay: 104.257 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 165.70 Mbit/s
95th percentile per-packet one-way delay: 98.065 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 150.65 Mbit/s
95th percentile per-packet one-way delay: 105.718 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 127.66 Mbit/s
95th percentile per-packet one-way delay: 113.127 ms
Loss rate: 0.05%
```

Run 7: Report of Indigo-1-32 — Data Link

Flow 1 ingress (mean 165.74 Mbit/s)   Flow 1 egress (mean 165.70 Mbit/s)
Flow 2 ingress (mean 150.71 Mbit/s)   Flow 2 egress (mean 150.65 Mbit/s)
Flow 3 ingress (mean 127.73 Mbit/s)   Flow 3 egress (mean 127.66 Mbit/s)

Flow 1 (95th percentile 98.06 ms)   Flow 2 (95th percentile 105.72 ms)   Flow 3 (95th percentile 113.13 ms)

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```
Run 8: Statistics of Indigo-1-32

Start at: 2018-04-19 00:07:02
End at: 2018-04-19 00:07:32


# Below is generated by plot.py at 2018-04-19 04:34:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 295.87 Mbit/s
95th percentile per-packet one-way delay: 89.078 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 162.61 Mbit/s
95th percentile per-packet one-way delay: 86.511 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 138.66 Mbit/s
95th percentile per-packet one-way delay: 88.934 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 128.83 Mbit/s
95th percentile per-packet one-way delay: 92.736 ms
Loss rate: 0.08%
```
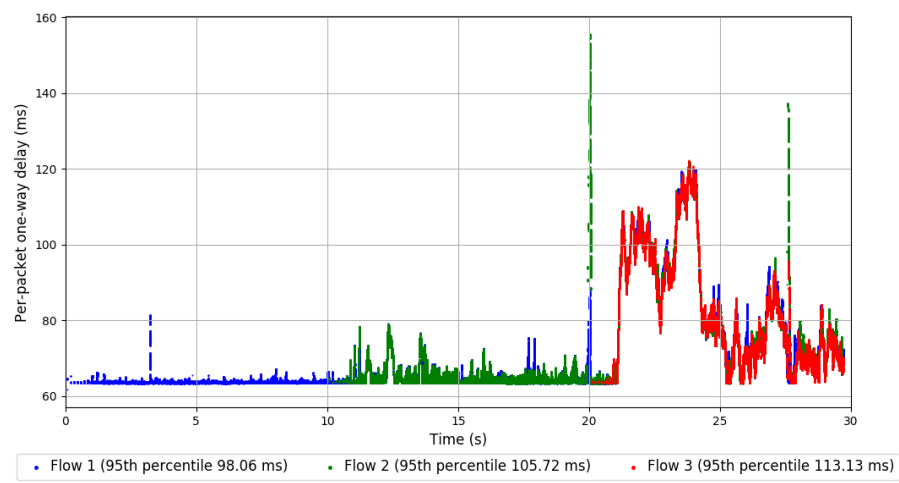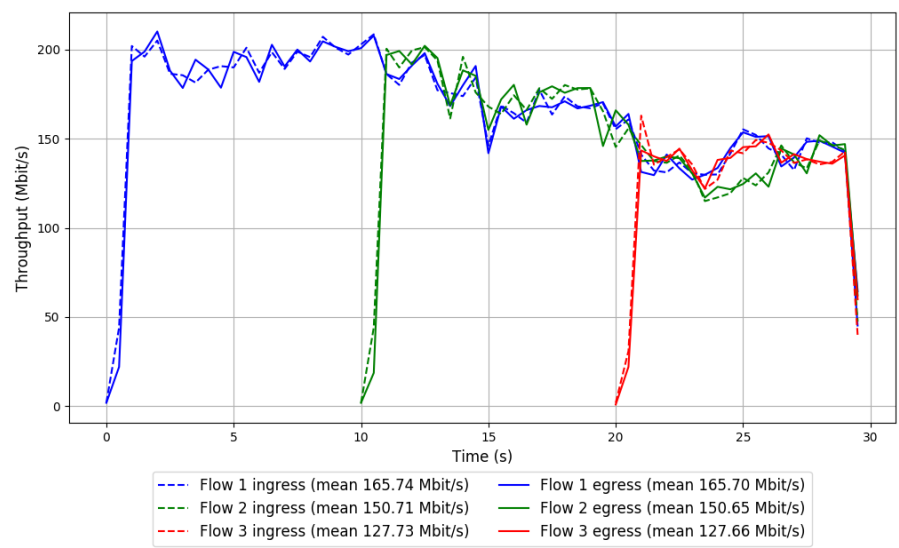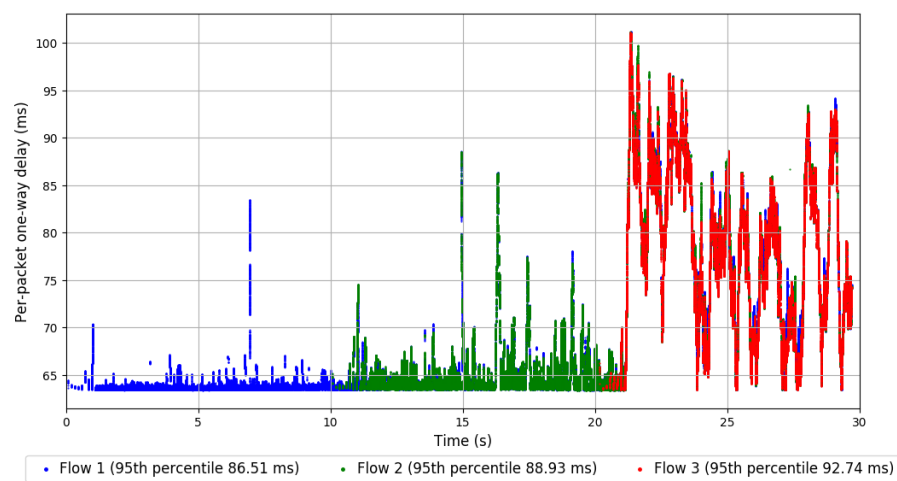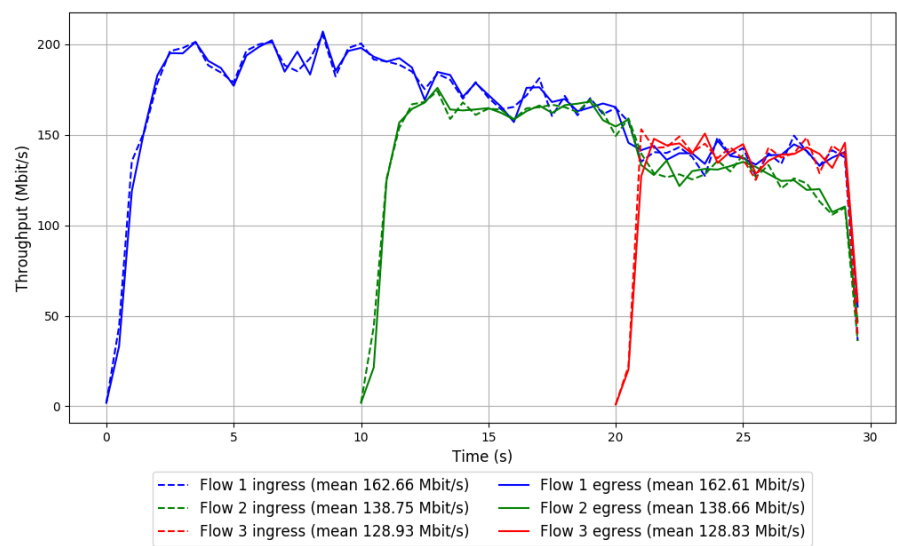
Run 8: Report of Indigo-1-32 — Data Link

Flow 1 ingress (mean 162.66 Mbit/s) --- Flow 1 egress (mean 162.61 Mbit/s)
Flow 2 ingress (mean 138.75 Mbit/s) --- Flow 2 egress (mean 138.66 Mbit/s)
Flow 3 ingress (mean 128.93 Mbit/s) --- Flow 3 egress (mean 128.83 Mbit/s)

Flow 1 (95th percentile 86.51 ms)   Flow 2 (95th percentile 88.93 ms)   Flow 3 (95th percentile 92.74 ms)

279

```
Run 9: Statistics of Indigo-1-32

Start at: 2018-04-19 00:22:35
End at: 2018-04-19 00:23:05


# Below is generated by plot.py at 2018-04-19 04:34:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 308.72 Mbit/s
95th percentile per-packet one-way delay: 84.736 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 183.05 Mbit/s
95th percentile per-packet one-way delay: 80.563 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 153.99 Mbit/s
95th percentile per-packet one-way delay: 85.143 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 73.43 Mbit/s
95th percentile per-packet one-way delay: 96.260 ms
Loss rate: 0.09%
```
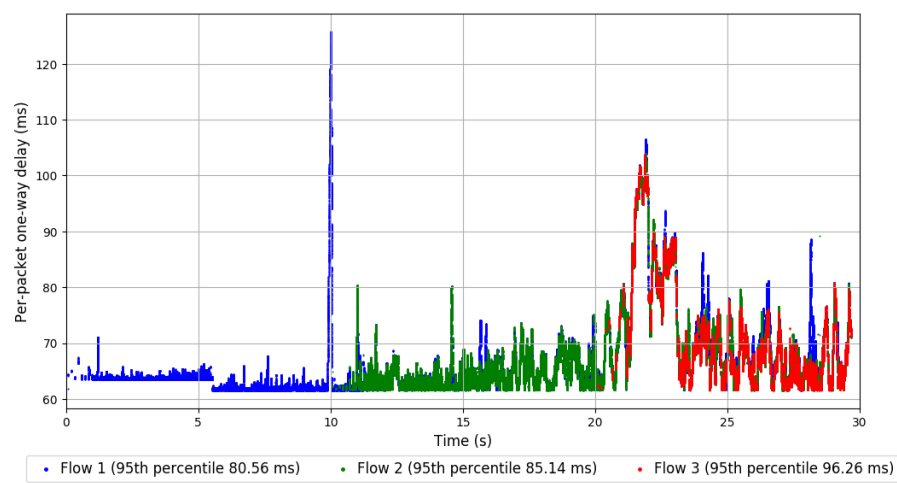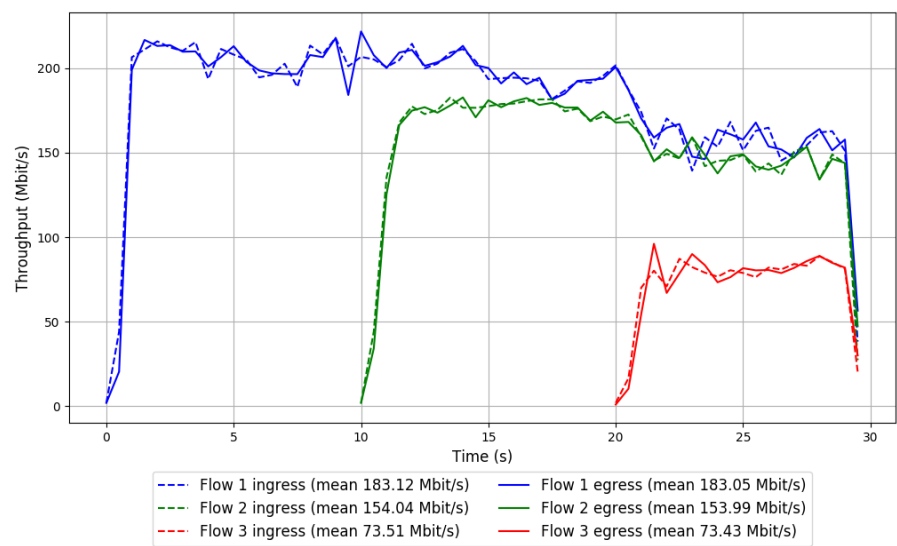
Run 9: Report of Indigo-1-32 — Data Link

```
Run 10: Statistics of Indigo-1-32

Start at: 2018-04-19 00:38:00
End at: 2018-04-19 00:38:30


# Below is generated by plot.py at 2018-04-19 04:34:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 318.64 Mbit/s
95th percentile per-packet one-way delay: 86.100 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 178.05 Mbit/s
95th percentile per-packet one-way delay: 82.197 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 148.78 Mbit/s
95th percentile per-packet one-way delay: 86.946 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 129.99 Mbit/s
95th percentile per-packet one-way delay: 90.784 ms
Loss rate: 0.02%
```
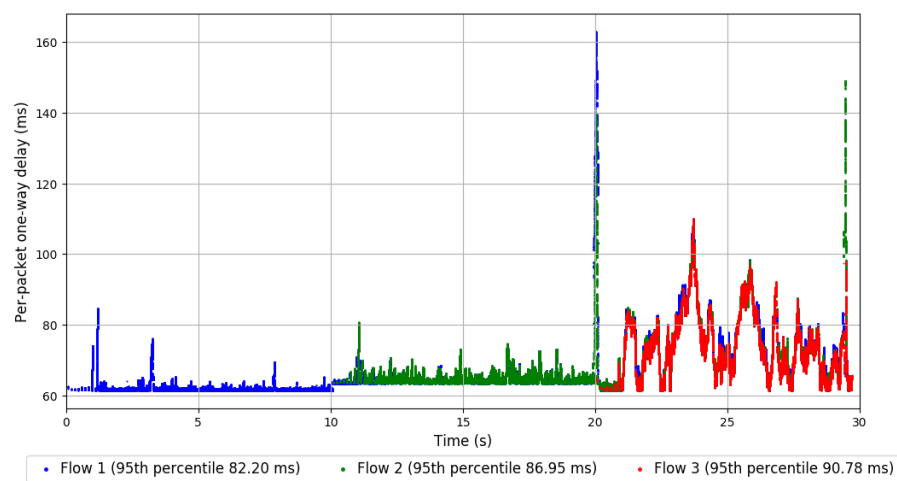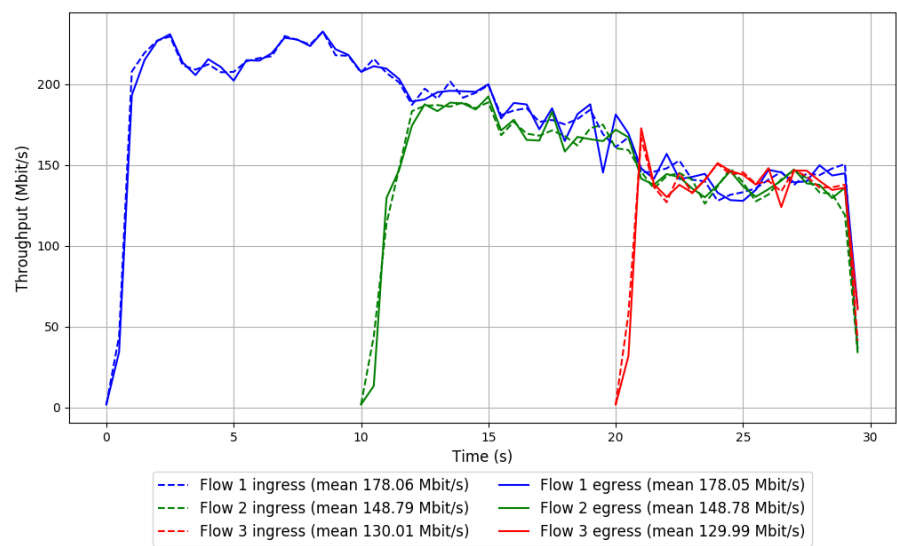
Run 10: Report of Indigo-1-32 — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2018-04-18 22:21:38
End at: 2018-04-18 22:22:08

# Below is generated by plot.py at 2018-04-19 04:34:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 398.22 Mbit/s
95th percentile per-packet one-way delay: 88.605 ms
Loss rate: 1.58%
-- Flow 1:
Average throughput: 209.19 Mbit/s
95th percentile per-packet one-way delay: 213.219 ms
Loss rate: 2.90%
-- Flow 2:
Average throughput: 203.06 Mbit/s
95th percentile per-packet one-way delay: 65.664 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 162.56 Mbit/s
95th percentile per-packet one-way delay: 100.449 ms
Loss rate: 0.04%
```
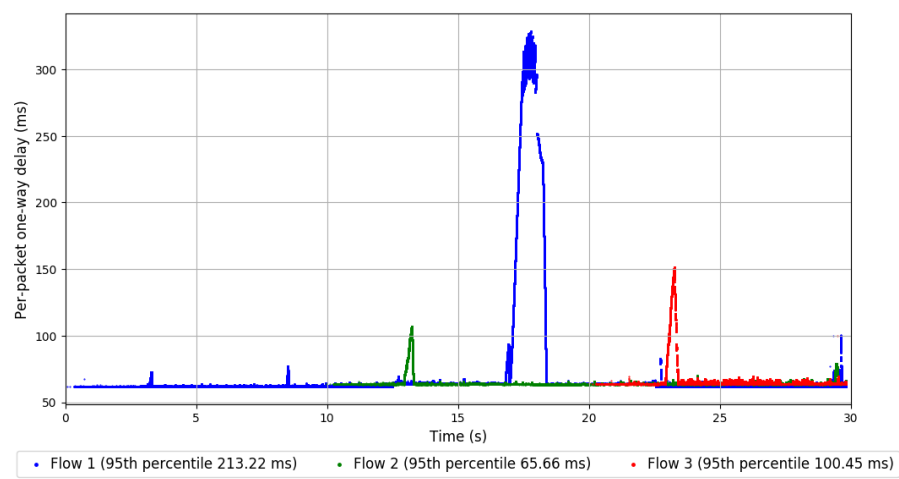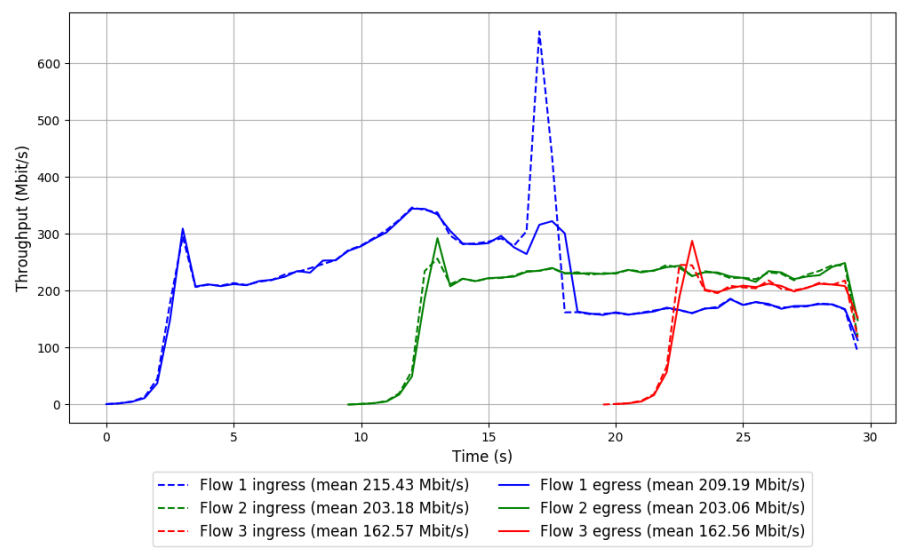
Run 1: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 215.43 Mbit/s) --- Flow 1 egress (mean 209.19 Mbit/s)
Flow 2 ingress (mean 203.18 Mbit/s) --- Flow 2 egress (mean 203.06 Mbit/s)
Flow 3 ingress (mean 162.57 Mbit/s) --- Flow 3 egress (mean 162.56 Mbit/s)

Flow 1 (95th percentile 213.22 ms) • Flow 2 (95th percentile 65.66 ms) • Flow 3 (95th percentile 100.45 ms)

```
Run 2: Statistics of PCC-Vivace

Start at: 2018-04-18 22:37:13
End at: 2018-04-18 22:37:43

# Below is generated by plot.py at 2018-04-19 04:34:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 430.70 Mbit/s
95th percentile per-packet one-way delay: 65.215 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 243.64 Mbit/s
95th percentile per-packet one-way delay: 65.462 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 268.01 Mbit/s
95th percentile per-packet one-way delay: 64.737 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 27.14 Mbit/s
95th percentile per-packet one-way delay: 64.076 ms
Loss rate: 0.00%
```
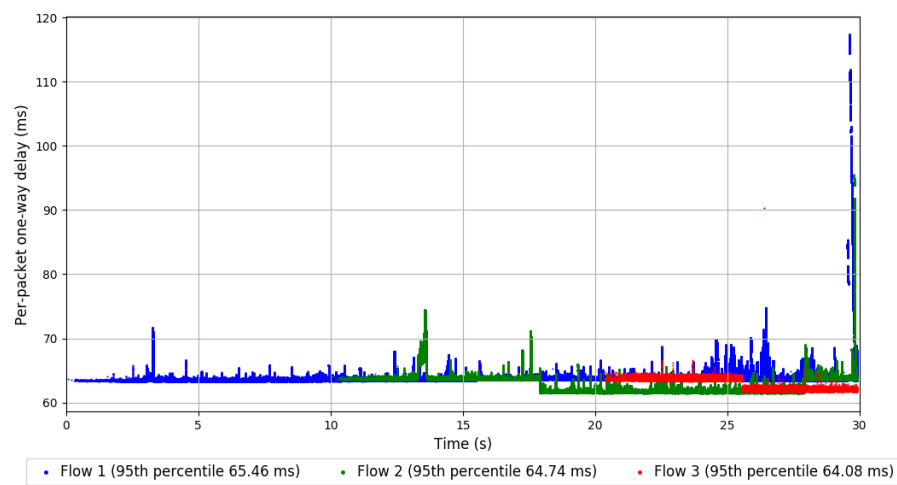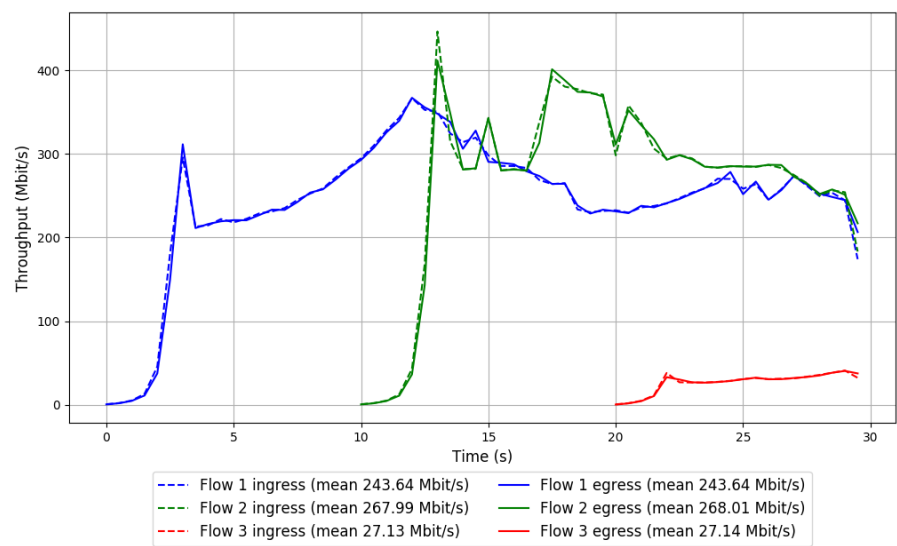
Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2018-04-18 22:53:03
End at: 2018-04-18 22:53:33

# Below is generated by plot.py at 2018-04-19 04:34:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 469.81 Mbit/s
95th percentile per-packet one-way delay: 142.043 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 271.46 Mbit/s
95th percentile per-packet one-way delay: 164.021 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 216.40 Mbit/s
95th percentile per-packet one-way delay: 70.514 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 165.96 Mbit/s
95th percentile per-packet one-way delay: 66.202 ms
Loss rate: 0.05%
```
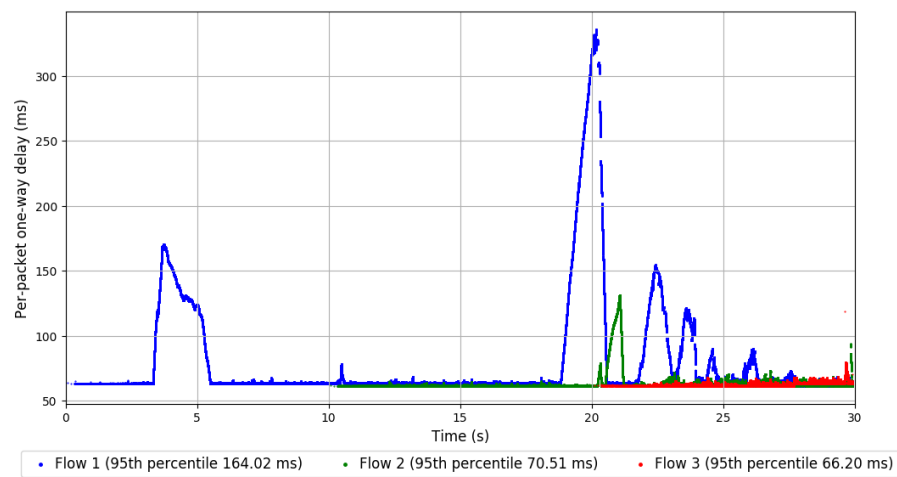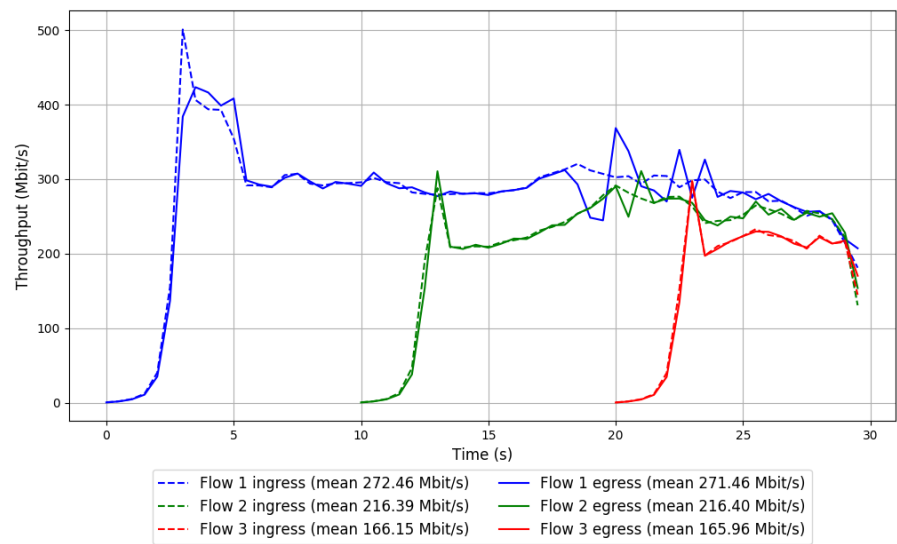
Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2018-04-18 23:08:38
End at: 2018-04-18 23:09:08

# Below is generated by plot.py at 2018-04-19 04:34:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 432.47 Mbit/s
95th percentile per-packet one-way delay: 96.281 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 238.01 Mbit/s
95th percentile per-packet one-way delay: 81.687 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 214.70 Mbit/s
95th percentile per-packet one-way delay: 90.718 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 157.48 Mbit/s
95th percentile per-packet one-way delay: 165.276 ms
Loss rate: 0.00%
```
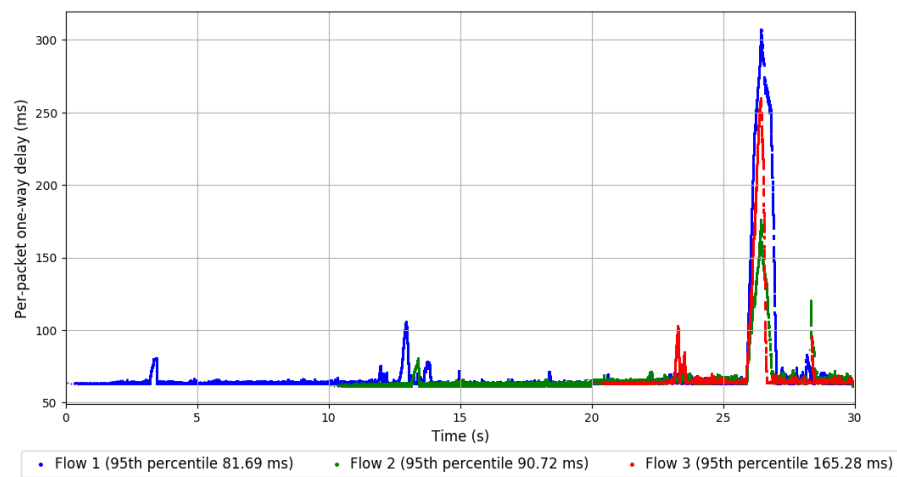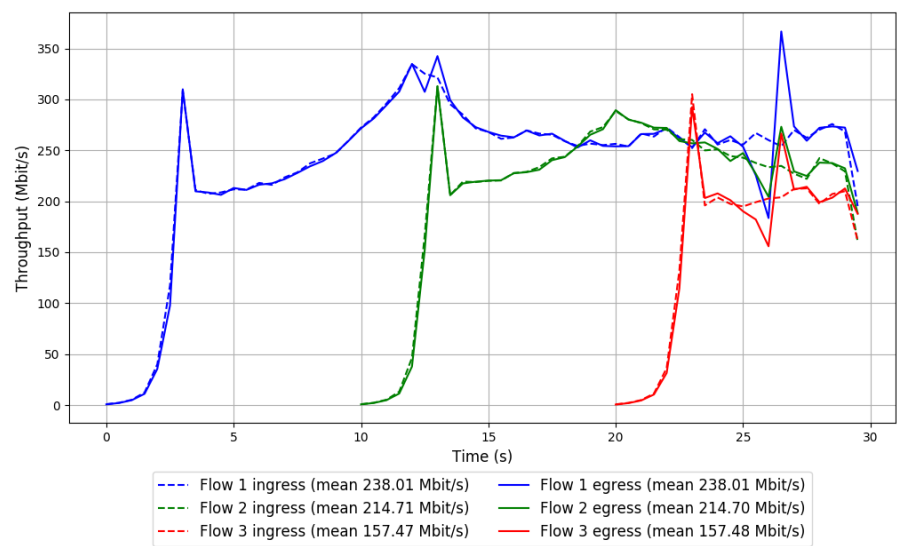
Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2018-04-18 23:24:12
End at: 2018-04-18 23:24:42


# Below is generated by plot.py at 2018-04-19 04:34:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 397.71 Mbit/s
95th percentile per-packet one-way delay: 128.615 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 206.61 Mbit/s
95th percentile per-packet one-way delay: 64.791 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 201.47 Mbit/s
95th percentile per-packet one-way delay: 150.221 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 173.50 Mbit/s
95th percentile per-packet one-way delay: 134.091 ms
Loss rate: 0.00%
```
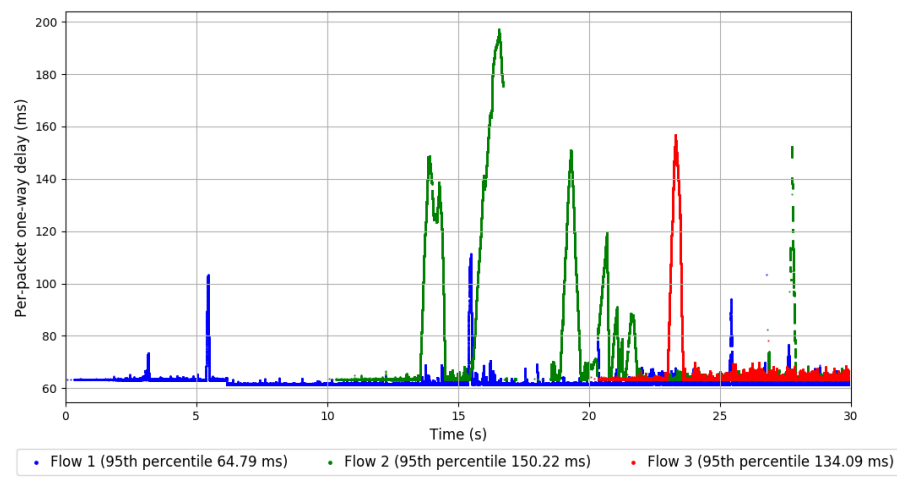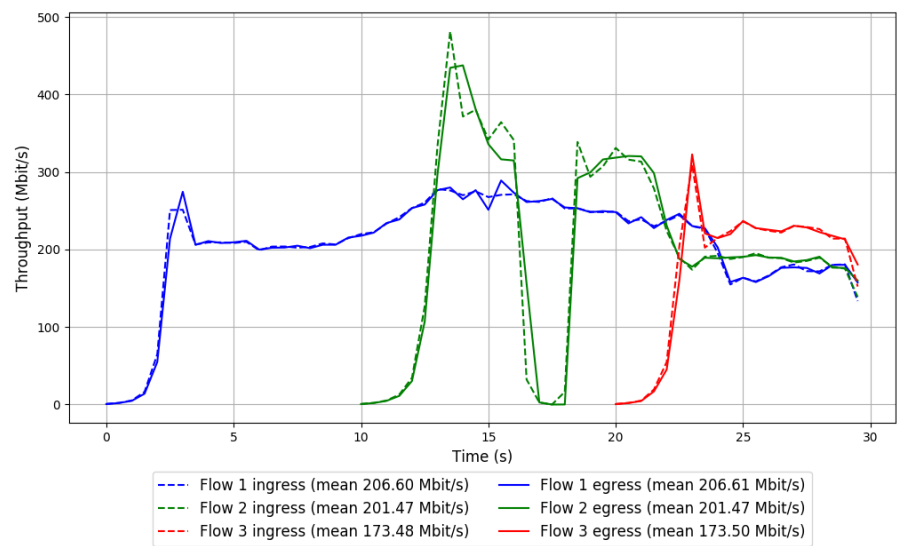
Run 5: Report of PCC-Vivace — Data Link

```
Run 6: Statistics of PCC-Vivace

Start at: 2018-04-18 23:39:56
End at: 2018-04-18 23:40:26


# Below is generated by plot.py at 2018-04-19 04:34:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 407.98 Mbit/s
95th percentile per-packet one-way delay: 83.732 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 199.83 Mbit/s
95th percentile per-packet one-way delay: 108.651 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 239.83 Mbit/s
95th percentile per-packet one-way delay: 82.733 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 148.21 Mbit/s
95th percentile per-packet one-way delay: 68.600 ms
Loss rate: 0.00%
```
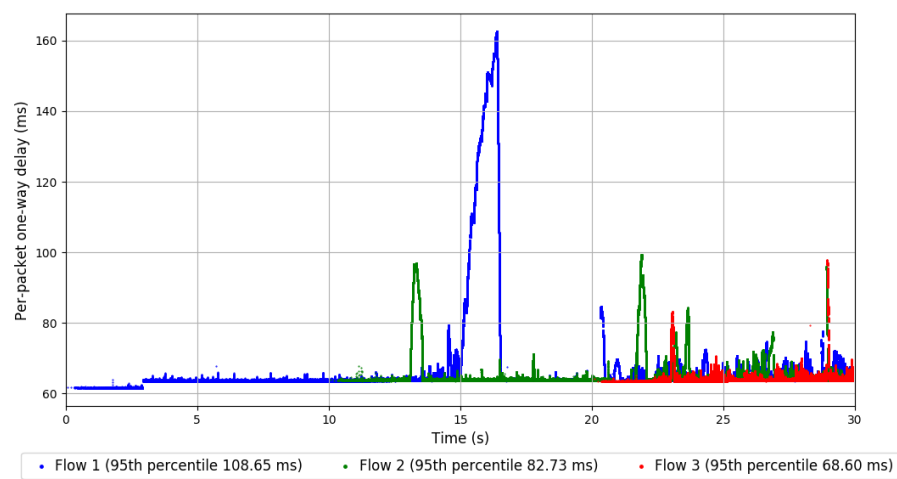
Run 6: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 199.85 Mbit/s) — Flow 1 egress (mean 199.83 Mbit/s)
Flow 2 ingress (mean 239.83 Mbit/s) — Flow 2 egress (mean 239.83 Mbit/s)
Flow 3 ingress (mean 148.20 Mbit/s) — Flow 3 egress (mean 148.21 Mbit/s)

Flow 1 (95th percentile 108.65 ms) • Flow 2 (95th percentile 82.73 ms) • Flow 3 (95th percentile 68.60 ms)

295

```
Run 7: Statistics of PCC-Vivace

Start at: 2018-04-18 23:55:31
End at: 2018-04-18 23:56:01

# Below is generated by plot.py at 2018-04-19 04:35:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 426.81 Mbit/s
95th percentile per-packet one-way delay: 76.094 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 223.23 Mbit/s
95th percentile per-packet one-way delay: 74.812 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 214.52 Mbit/s
95th percentile per-packet one-way delay: 106.893 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 185.52 Mbit/s
95th percentile per-packet one-way delay: 84.880 ms
Loss rate: 0.06%
```
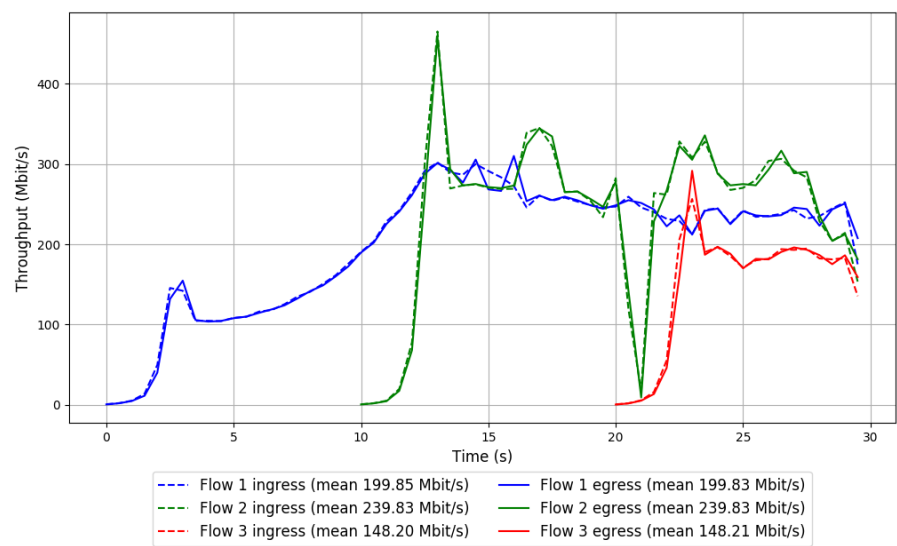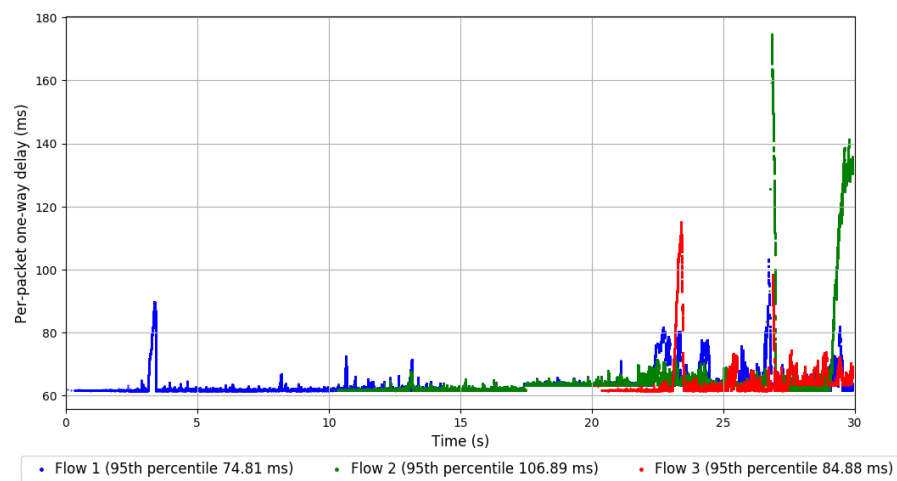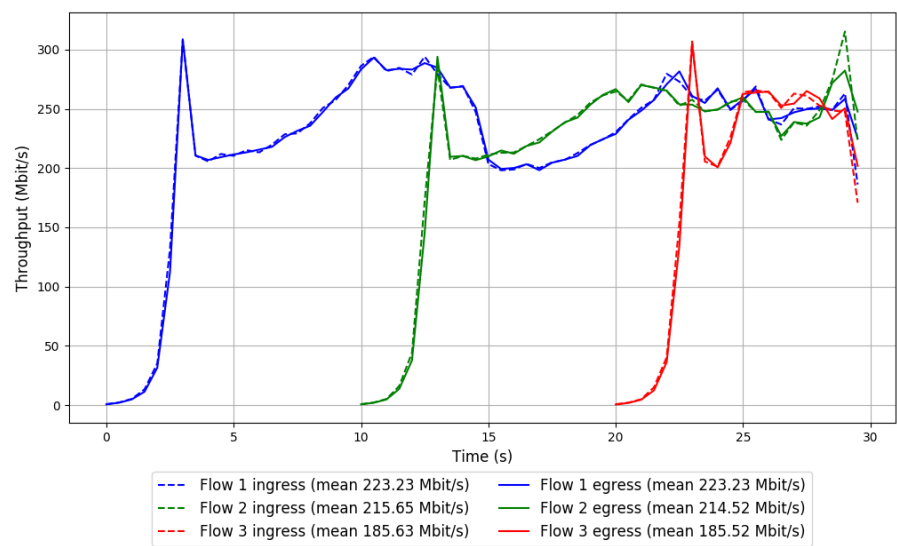
Run 7: Report of PCC-Vivace — Data Link

```
Run 8: Statistics of PCC-Vivace

Start at: 2018-04-19 00:11:16
End at: 2018-04-19 00:11:46


# Below is generated by plot.py at 2018-04-19 04:35:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 416.21 Mbit/s
95th percentile per-packet one-way delay: 67.273 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 223.51 Mbit/s
95th percentile per-packet one-way delay: 66.352 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 212.78 Mbit/s
95th percentile per-packet one-way delay: 67.358 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 155.69 Mbit/s
95th percentile per-packet one-way delay: 103.040 ms
Loss rate: 0.00%
```
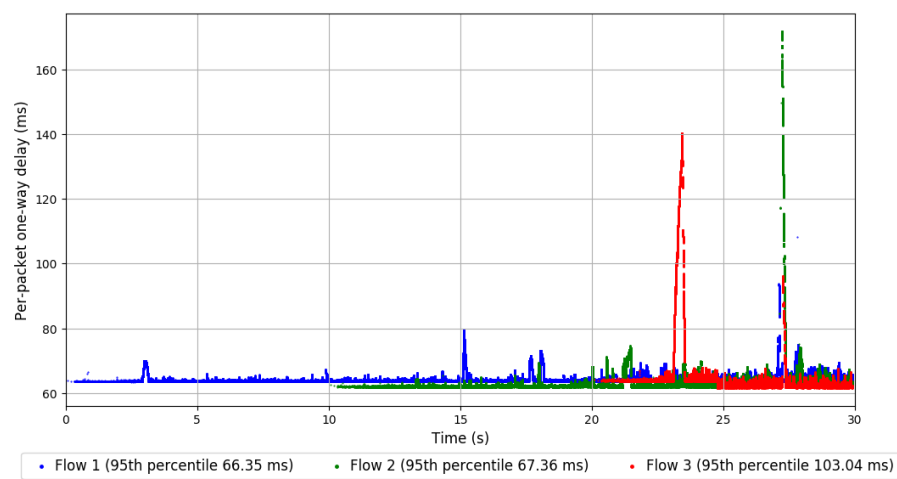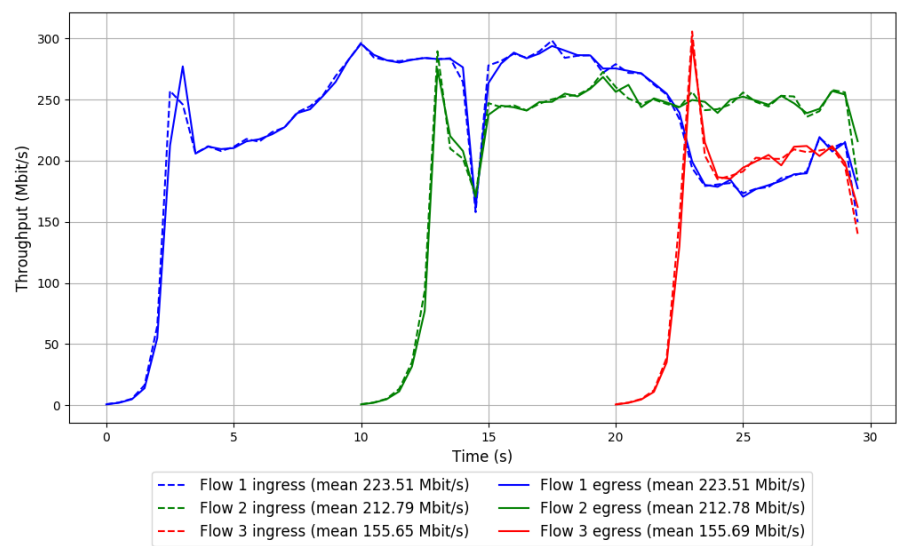
Run 8: Report of PCC-Vivace — Data Link

```
Run 9: Statistics of PCC-Vivace

Start at: 2018-04-19 00:26:51
End at: 2018-04-19 00:27:21


# Below is generated by plot.py at 2018-04-19 04:36:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 378.20 Mbit/s
95th percentile per-packet one-way delay: 87.038 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 167.67 Mbit/s
95th percentile per-packet one-way delay: 64.799 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 237.21 Mbit/s
95th percentile per-packet one-way delay: 92.650 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 160.65 Mbit/s
95th percentile per-packet one-way delay: 176.098 ms
Loss rate: 0.11%
```
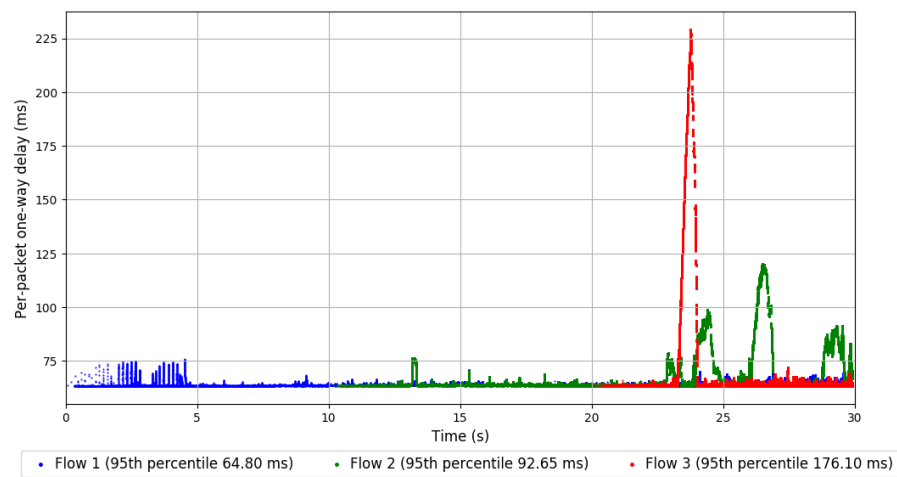
Run 9: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 167.68 Mbit/s) — — — Flow 1 egress (mean 167.67 Mbit/s)
Flow 2 ingress (mean 237.28 Mbit/s) — — — Flow 2 egress (mean 237.21 Mbit/s)
Flow 3 ingress (mean 160.76 Mbit/s) — — — Flow 3 egress (mean 160.65 Mbit/s)

Flow 1 (95th percentile 64.80 ms)   Flow 2 (95th percentile 92.65 ms)   Flow 3 (95th percentile 176.10 ms)

```
Run 10: Statistics of PCC-Vivace

Start at: 2018-04-19 00:42:17
End at: 2018-04-19 00:42:47

# Below is generated by plot.py at 2018-04-19 04:36:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 338.02 Mbit/s
95th percentile per-packet one-way delay: 76.042 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 181.08 Mbit/s
95th percentile per-packet one-way delay: 66.546 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 191.88 Mbit/s
95th percentile per-packet one-way delay: 113.667 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 89.23 Mbit/s
95th percentile per-packet one-way delay: 62.507 ms
Loss rate: 0.00%
```
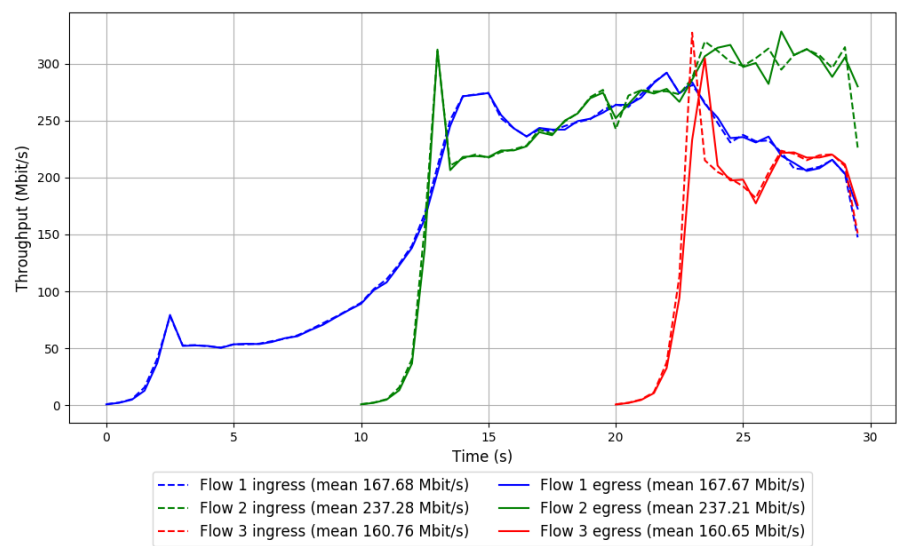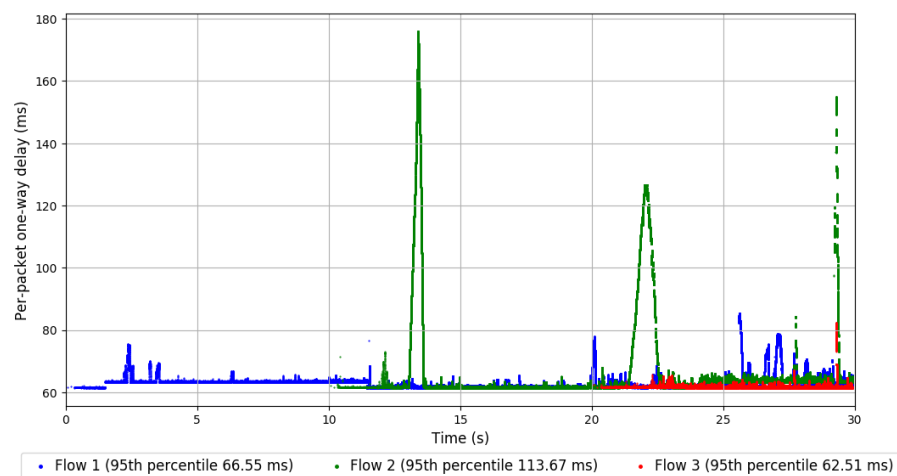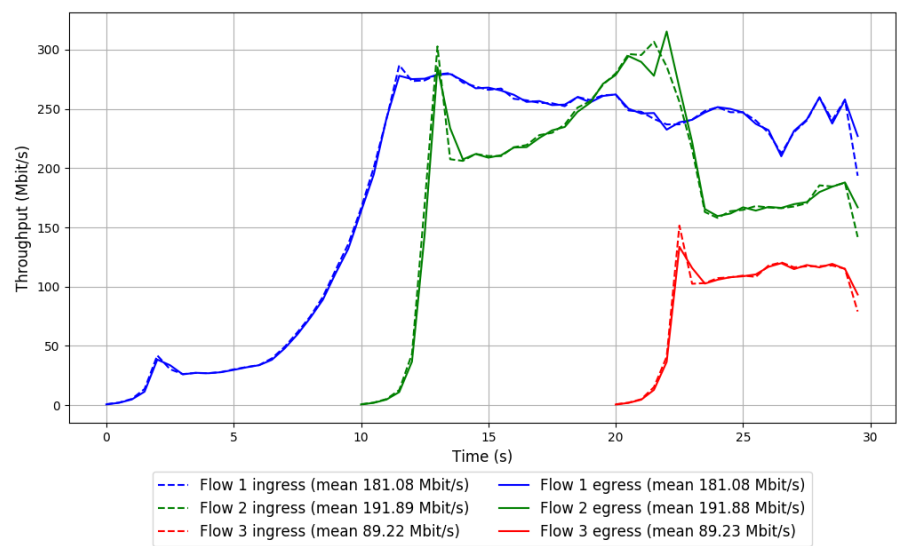
Run 10: Report of PCC-Vivace — Data Link

```
Run 1: Statistics of PCC-Expr

Start at: 2018-04-18 22:23:41
End at: 2018-04-18 22:24:11
```

Run 1: Report of PCC-Expr — Data Link

Figure is missing

Figure is missing

```
Run 2: Statistics of PCC-Expr

Start at: 2018-04-18 22:39:13
End at: 2018-04-18 22:39:43
```

Run 2: Report of PCC-Expr — Data Link

Figure is missing

Figure is missing

```
Run 3: Statistics of PCC-Expr

Start at: 2018-04-18 22:55:04
End at: 2018-04-18 22:55:34
```

Run 3: Report of PCC-Expr — Data Link

Figure is missing

Figure is missing

```
Run 4: Statistics of PCC-Expr

Start at: 2018-04-18 23:10:41
End at: 2018-04-18 23:11:11
```

Run 4: Report of PCC-Expr — Data Link

Figure is missing

Figure is missing

Run 5: Statistics of PCC-Expr

Start at: 2018-04-18 23:26:15
End at: 2018-04-18 23:26:45

Run 5: Report of PCC-Expr — Data Link

Figure is missing

Figure is missing

```
Run 6: Statistics of PCC-Expr

Start at: 2018-04-18 23:41:55
End at: 2018-04-18 23:42:25
```

Run 6: Report of PCC-Expr — Data Link

Figure is missing

Figure is missing

```
Run 7: Statistics of PCC-Expr

Start at: 2018-04-18 23:57:36
End at: 2018-04-18 23:58:06
```

Run 7: Report of PCC-Expr — Data Link

Figure is missing

Figure is missing

Run 8: Statistics of PCC-Expr

Start at: 2018-04-19 00:13:19
End at: 2018-04-19 00:13:49

Run 8: Report of PCC-Expr — Data Link

Figure is missing

Figure is missing

```
Run 9: Statistics of PCC-Expr

Start at: 2018-04-19 00:28:47
End at: 2018-04-19 00:29:18
```

Run 9: Report of PCC-Expr — Data Link

Figure is missing

Figure is missing

Run 10: Statistics of PCC-Expr

Start at: 2018-04-19 00:44:12
End at: 2018-04-19 00:44:42

Run 10: Report of PCC-Expr — Data Link

Figure is missing

Figure is missing