Pantheon Report

Generated at 2017-12-21 03:27:08 (UTC).

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

Repeated the test of 14 congestion control schemes 10 times.

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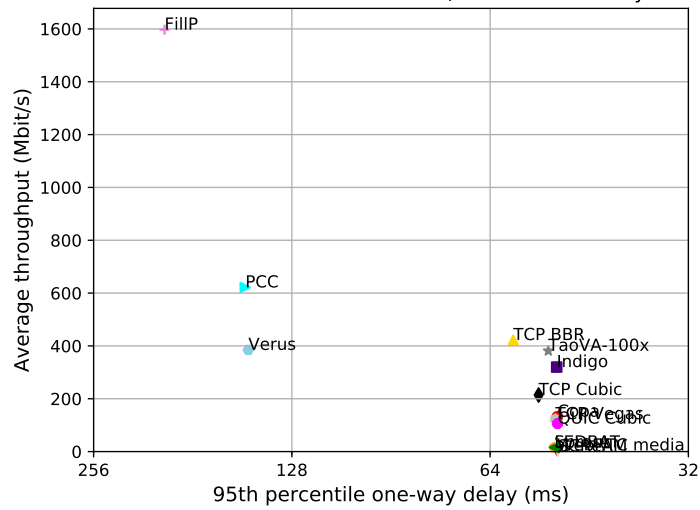
Increased UDP receive buffer to 16 MB (default) and 32 MB (max).

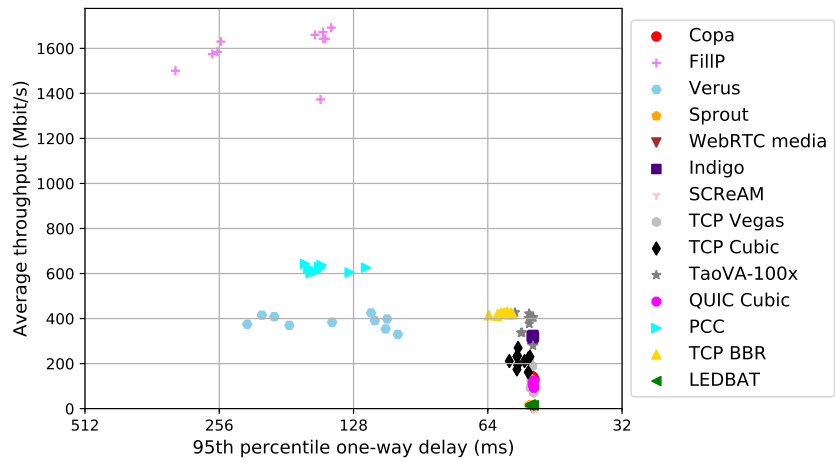Tested BBR with qdisc of Fair Queuing (`fq`), and other schemes with the default Linux qdisc (`pfifo_fast`).

```
Git summary:
branch: master @ 904a5750834816b1e46a2c86405d707788d27c16
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
 M datagrump/sender.cc
third_party/fillp @ dcaef6b00654e660f73f7ed679d2eab61ce08639
third_party/genericCC @ 80b516c448f795fd6e9675f7177b69c622f07da8
third_party/indigo @ b19f3730105f9aa95452552af924e3719b03cc55
third_party/indigo-no-calib @ 7224f2202e8a044d8306fa0b983ad84360c53d89
third_party/koho_cc @ f0f2e693303aee82ea808e6928eac4f1083a6681
 M datagrump/sender.cc
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ fb1053193c2861da659ba9013db26744ccfcf993
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
 M receiver/src/buffer.h
 M receiver/src/core.cpp
 M sender/src/buffer.h
 M sender/src/core.cpp
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream @ c3370fd7bd17265a79aeb34e4016ad23f5965885
third_party/sourdough @ f1a14bffe749737437f61b1eaeeb30b267cde681
third_party/sprout @ 6f2efe6e088d91066a9f023df375eee2665089ce
 M src/examples/cellsim.cc
 M src/examples/sproutbt2.cc
 M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
 M src/verus.hpp
 M tools/plot.py
third_party/webrtc @ a488197ddd041ace68a42849b2540ad834825f42
```

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

test from GCE London Ethernet to GCE Iowa Ethernet, 10 runs of 30s each per scheme
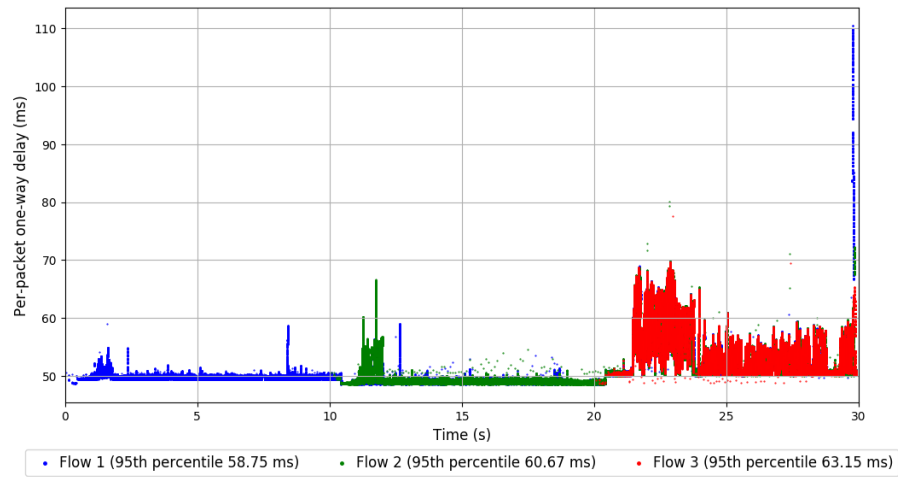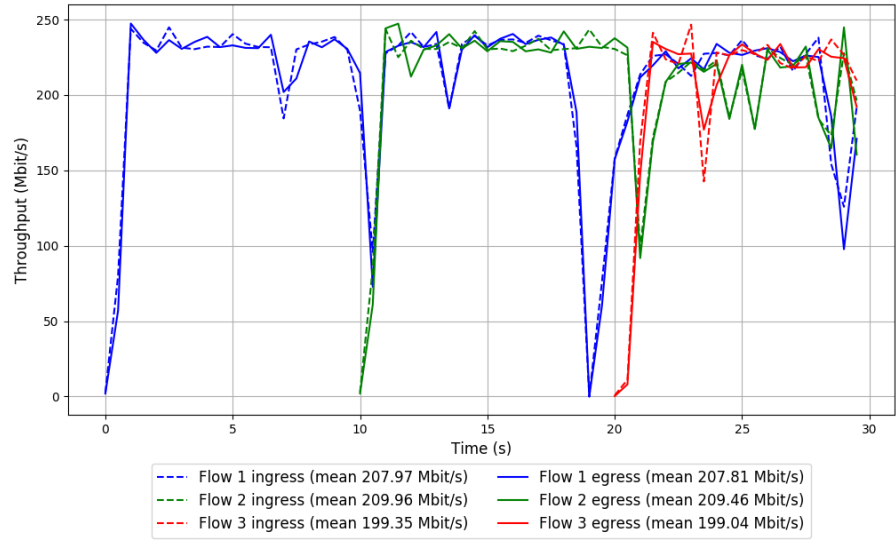3 flows with 10s interval between flows

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	214.06	213.23	201.72	57.80	58.80	61.11	0.37	0.56	1.19
TCP Cubic	10	126.18	90.36	85.14	53.61	53.84	53.36	0.40	0.76	1.73
LEDBAT	7	8.14	8.18	6.03	51.08	51.21	50.95	1.41	1.69	3.12
PCC	10	573.71	55.82	32.68	150.71	148.10	128.23	1.46	1.50	2.12
QUIC Cubic	10	59.33	48.70	43.48	50.49	50.52	50.34	0.45	0.71	1.20
SCReAM	10	0.22	0.22	0.22	50.51	50.33	50.19	0.26	0.44	1.03
WebRTC media	10	2.24	1.42	0.58	50.49	50.63	50.40	0.42	0.60	1.63
Sprout	10	7.84	7.77	7.39	51.15	51.16	51.09	0.99	0.97	1.63
TaoVA-100x	10	200.92	202.19	186.75	51.47	52.35	54.14	0.33	0.51	1.46
TCP Vegas	10	54.50	63.06	79.26	50.81	50.98	51.45	0.42	0.47	1.09
Verus	10	225.69	191.50	100.00	126.85	156.39	170.56	1.04	2.33	6.58
Copa	10	72.05	68.60	57.06	50.52	50.53	50.62	0.35	0.58	1.56
FillP	10	878.68	759.29	653.12	177.52	176.78	202.43	5.15	9.14	15.86
Indigo	10	172.02	158.34	132.80	50.60	50.80	50.42	0.30	0.48	1.13

```
Run 1: Statistics of TCP BBR

Start at: 2017-12-20 21:11:20
End at: 2017-12-20 21:11:50

# Below is generated by plot.py at 2017-12-21 01:50:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 412.54 Mbit/s
95th percentile per-packet one-way delay: 60.904 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 207.81 Mbit/s
95th percentile per-packet one-way delay: 58.746 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 209.46 Mbit/s
95th percentile per-packet one-way delay: 60.672 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 199.04 Mbit/s
95th percentile per-packet one-way delay: 63.152 ms
Loss rate: 1.20%
```
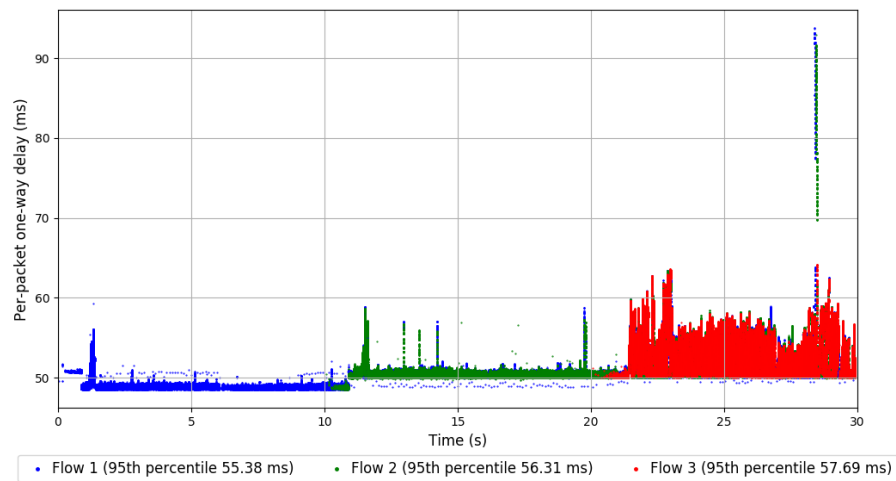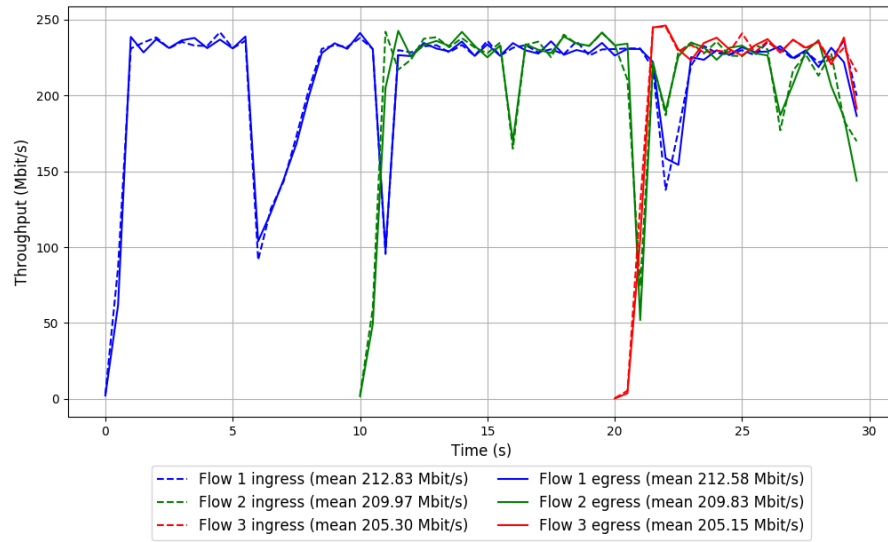
Run 1: Report of TCP BBR — Data Link

- - - - Flow 1 ingress (mean 207.97 Mbit/s) —— Flow 1 egress (mean 207.81 Mbit/s)
- - - - Flow 2 ingress (mean 209.96 Mbit/s) —— Flow 2 egress (mean 209.46 Mbit/s)
- - - - Flow 3 ingress (mean 199.35 Mbit/s) —— Flow 3 egress (mean 199.04 Mbit/s)

• Flow 1 (95th percentile 58.75 ms)   • Flow 2 (95th percentile 60.67 ms)   • Flow 3 (95th percentile 63.15 ms)

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```
Run 2: Statistics of TCP BBR

Start at: 2017-12-20 21:25:39
End at: 2017-12-20 21:26:09

# Below is generated by plot.py at 2017-12-21 01:50:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 419.62 Mbit/s
95th percentile per-packet one-way delay: 56.310 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 212.58 Mbit/s
95th percentile per-packet one-way delay: 55.381 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 209.83 Mbit/s
95th percentile per-packet one-way delay: 56.308 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 205.15 Mbit/s
95th percentile per-packet one-way delay: 57.694 ms
Loss rate: 1.09%
```
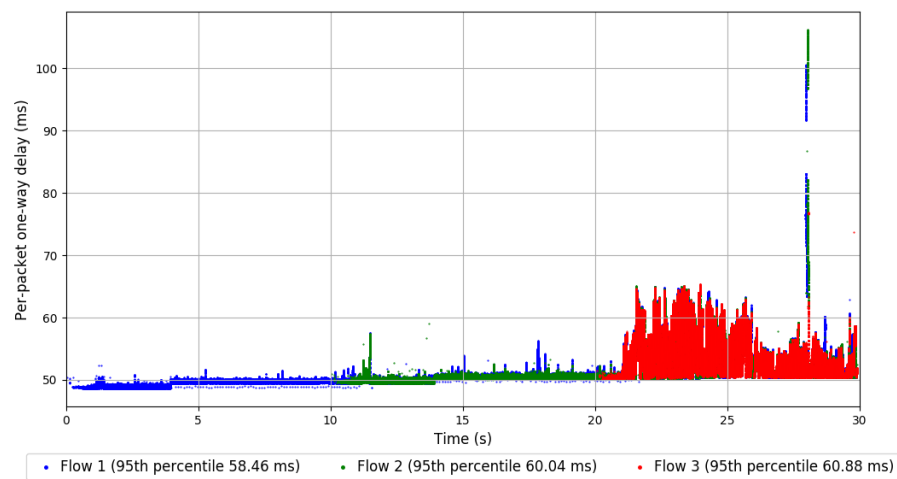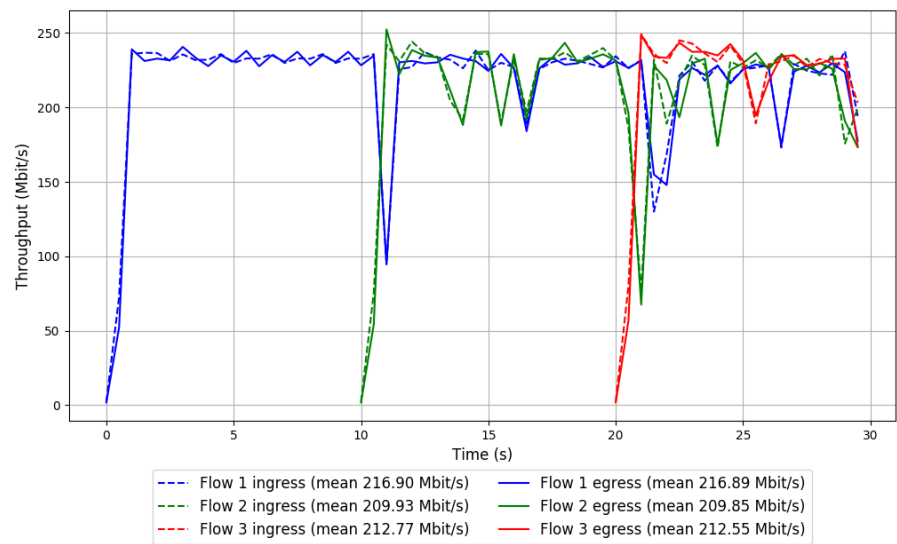
Run 2: Report of TCP BBR — Data Link

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Run 3: Statistics of TCP BBR

Start at: 2017-12-20 21:39:46
End at: 2017-12-20 21:40:16

# Below is generated by plot.py at 2017-12-21 01:51:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 426.43 Mbit/s
95th percentile per-packet one-way delay: 59.694 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 216.89 Mbit/s
95th percentile per-packet one-way delay: 58.459 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 209.85 Mbit/s
95th percentile per-packet one-way delay: 60.037 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 212.55 Mbit/s
95th percentile per-packet one-way delay: 60.879 ms
Loss rate: 1.13%
```
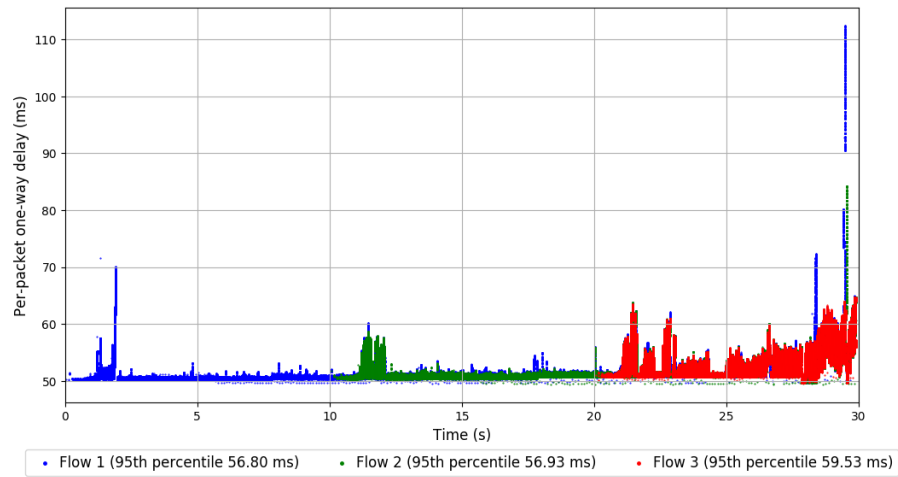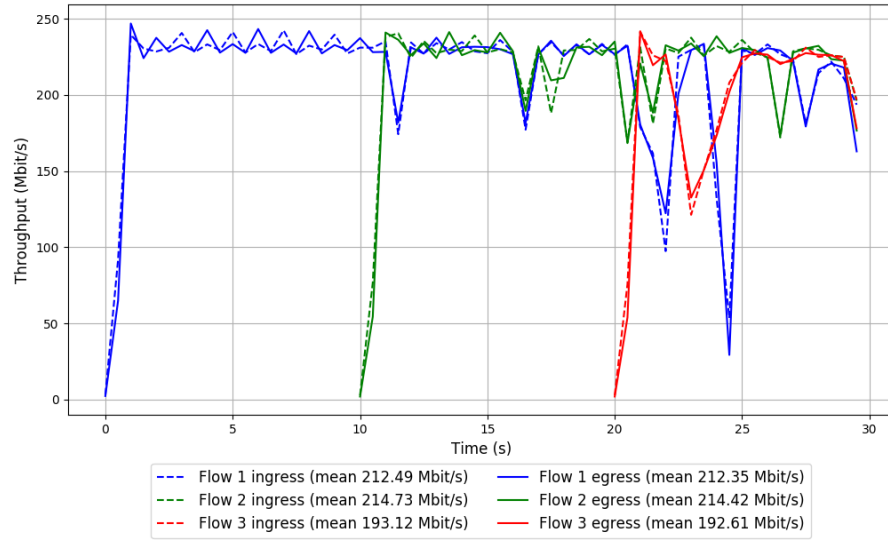
Run 3: Report of TCP BBR — Data Link

Flow 1 ingress (mean 216.90 Mbit/s) -- -- Flow 1 egress (mean 216.89 Mbit/s)
Flow 2 ingress (mean 209.93 Mbit/s) -- -- Flow 2 egress (mean 209.85 Mbit/s)
Flow 3 ingress (mean 212.77 Mbit/s) -- -- Flow 3 egress (mean 212.55 Mbit/s)

Flow 1 (95th percentile 58.46 ms) Flow 2 (95th percentile 60.04 ms) Flow 3 (95th percentile 60.88 ms)

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Run 4: Statistics of TCP BBR

Start at: 2017-12-20 21:54:12
End at: 2017-12-20 21:54:42

# Below is generated by plot.py at 2017-12-21 01:51:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 418.26 Mbit/s
95th percentile per-packet one-way delay: 57.432 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 212.35 Mbit/s
95th percentile per-packet one-way delay: 56.800 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 214.42 Mbit/s
95th percentile per-packet one-way delay: 56.930 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 192.61 Mbit/s
95th percentile per-packet one-way delay: 59.532 ms
Loss rate: 1.21%
```
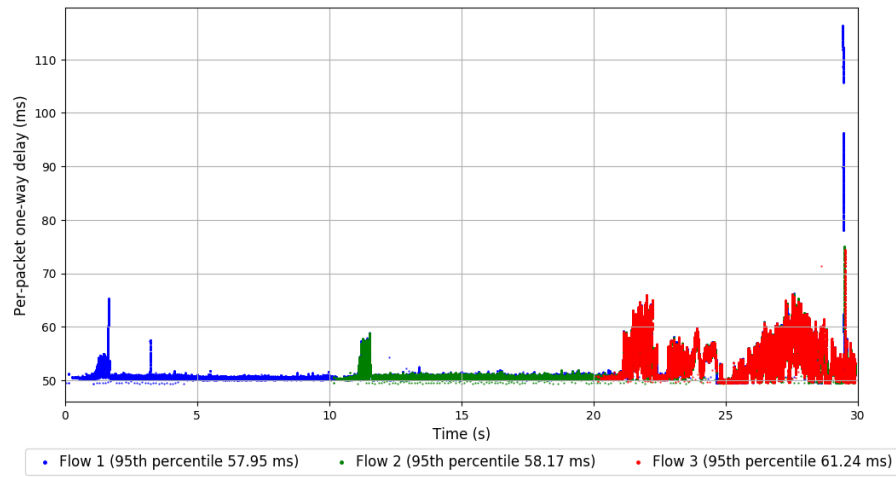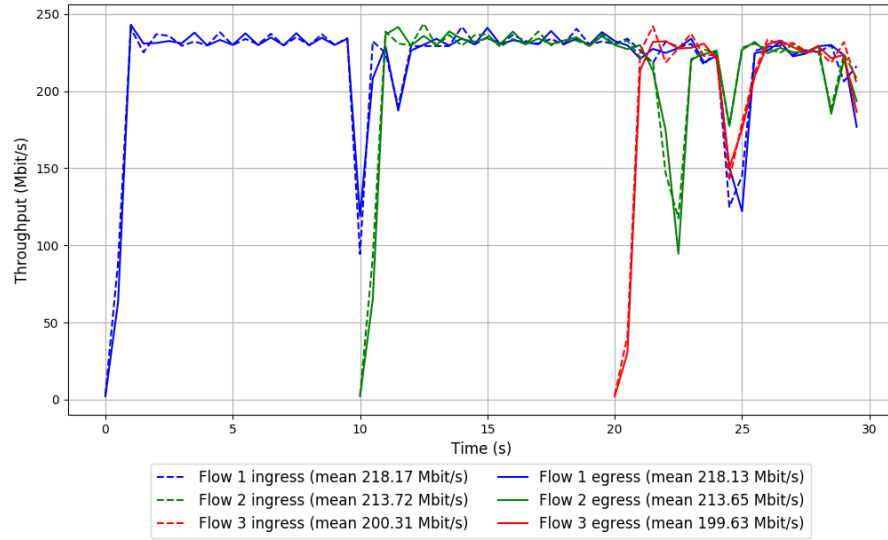
Run 4: Report of TCP BBR — Data Link

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Run 5: Statistics of TCP BBR

Start at: 2017-12-20 22:08:26
End at: 2017-12-20 22:08:56

# Below is generated by plot.py at 2017-12-21 01:51:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 425.94 Mbit/s
95th percentile per-packet one-way delay: 58.806 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 218.13 Mbit/s
95th percentile per-packet one-way delay: 57.949 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 213.65 Mbit/s
95th percentile per-packet one-way delay: 58.170 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 199.63 Mbit/s
95th percentile per-packet one-way delay: 61.244 ms
Loss rate: 1.22%
```
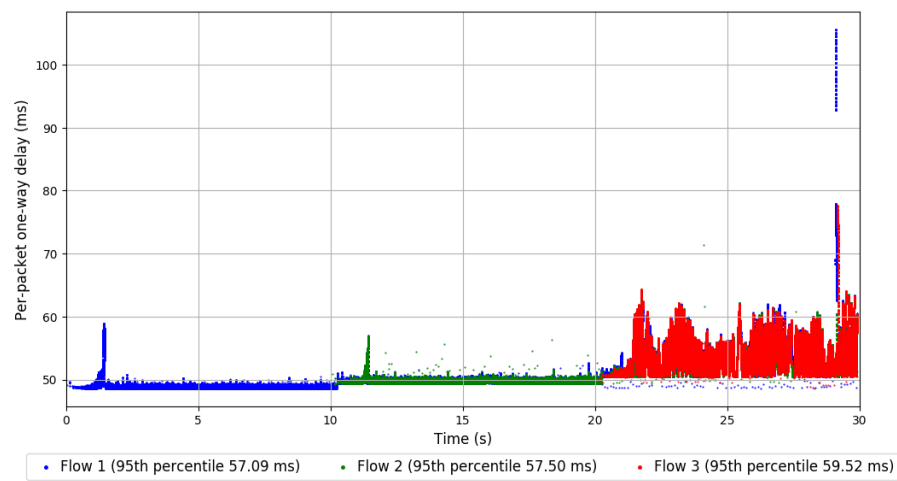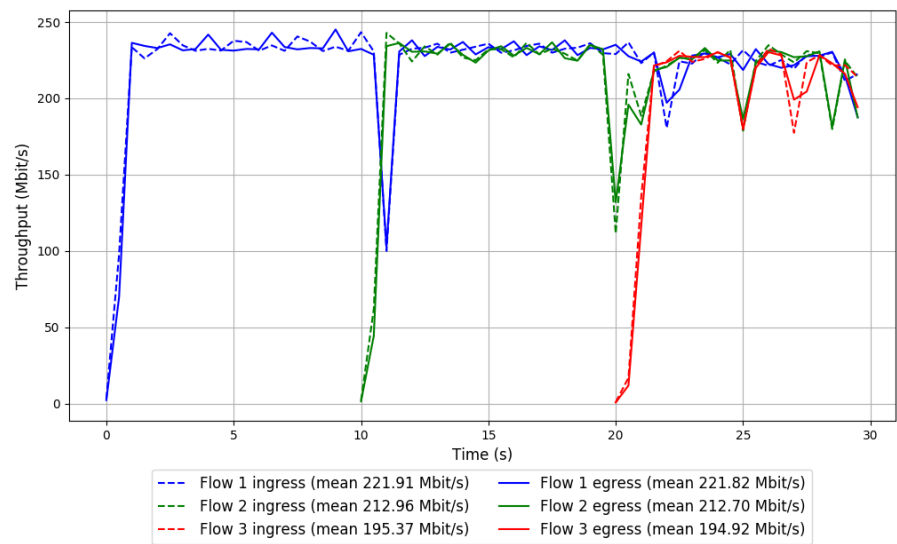
Run 5: Report of TCP BBR — Data Link

Flow 1 ingress (mean 218.17 Mbit/s) --- Flow 1 egress (mean 218.13 Mbit/s)
Flow 2 ingress (mean 213.72 Mbit/s) --- Flow 2 egress (mean 213.65 Mbit/s)
Flow 3 ingress (mean 200.31 Mbit/s) --- Flow 3 egress (mean 199.63 Mbit/s)

Flow 1 (95th percentile 57.95 ms) • Flow 2 (95th percentile 58.17 ms) • Flow 3 (95th percentile 61.24 ms)
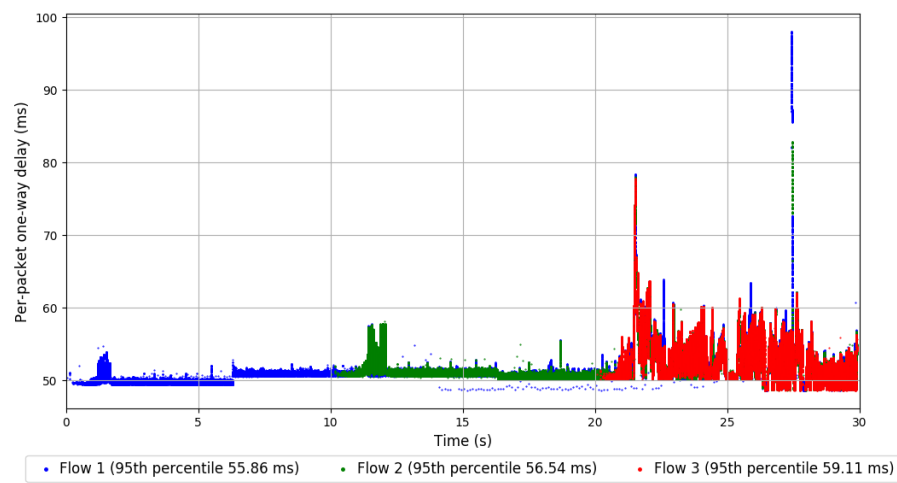
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```
Run 6: Statistics of TCP BBR

Start at: 2017-12-20 22:22:40
End at: 2017-12-20 22:23:10

# Below is generated by plot.py at 2017-12-21 01:51:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 427.30 Mbit/s
95th percentile per-packet one-way delay: 57.900 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 221.82 Mbit/s
95th percentile per-packet one-way delay: 57.094 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 212.70 Mbit/s
95th percentile per-packet one-way delay: 57.497 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 194.92 Mbit/s
95th percentile per-packet one-way delay: 59.516 ms
Loss rate: 1.25%
```
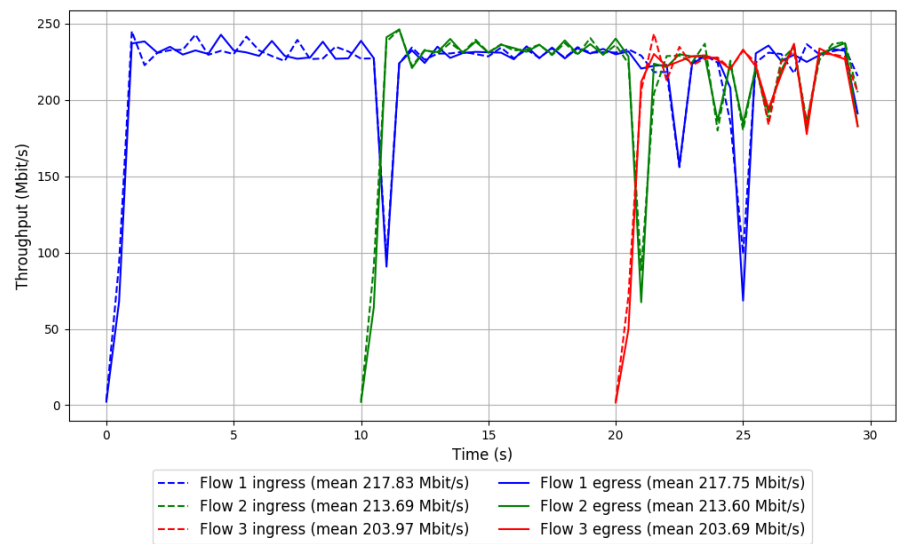
Run 6: Report of TCP BBR — Data Link

Flow 1 ingress (mean 221.91 Mbit/s) --- Flow 1 egress (mean 221.82 Mbit/s)
Flow 2 ingress (mean 212.96 Mbit/s) --- Flow 2 egress (mean 212.70 Mbit/s)
Flow 3 ingress (mean 195.37 Mbit/s) --- Flow 3 egress (mean 194.92 Mbit/s)

Flow 1 (95th percentile 57.09 ms) Flow 2 (95th percentile 57.50 ms) Flow 3 (95th percentile 59.52 ms)

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```
Run 7: Statistics of TCP BBR

Start at: 2017-12-20 22:36:44
End at: 2017-12-20 22:37:14


# Below is generated by plot.py at 2017-12-21 01:51:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 426.73 Mbit/s
95th percentile per-packet one-way delay: 56.795 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 217.75 Mbit/s
95th percentile per-packet one-way delay: 55.860 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 213.60 Mbit/s
95th percentile per-packet one-way delay: 56.539 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 203.69 Mbit/s
95th percentile per-packet one-way delay: 59.106 ms
Loss rate: 1.16%
```
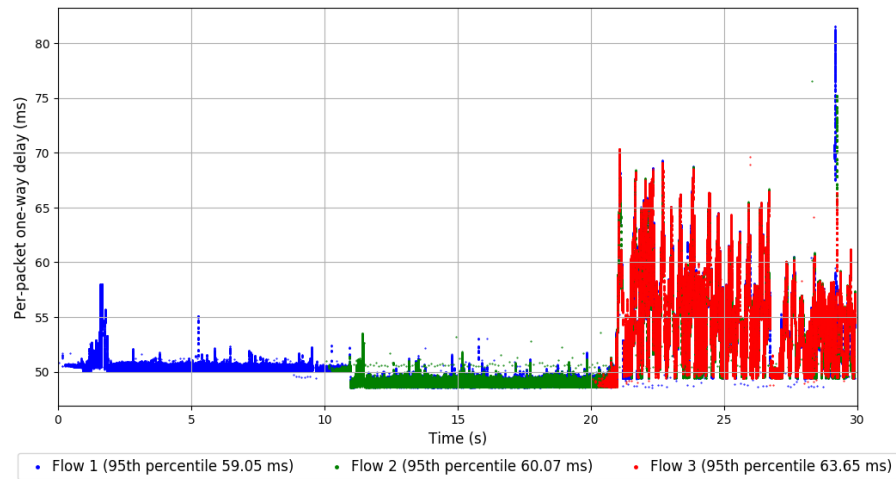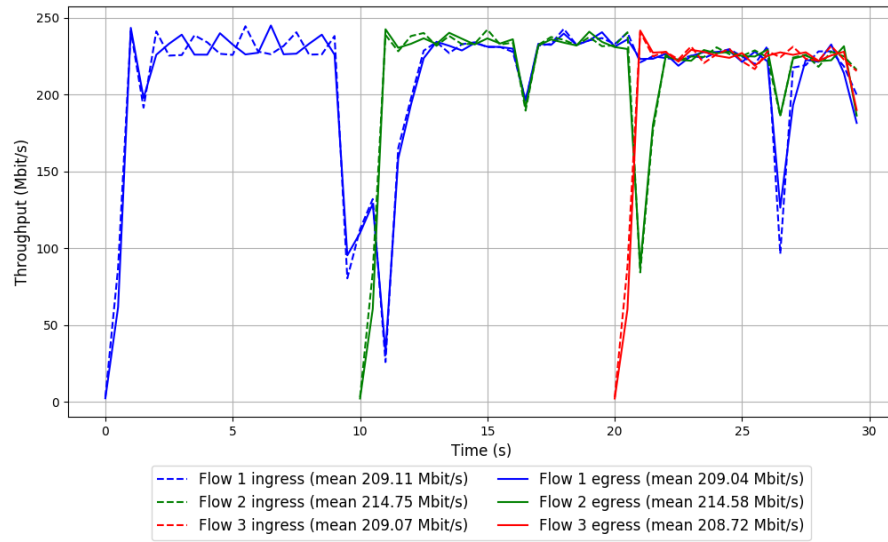
Run 7: Report of TCP BBR — Data Link

Flow 1 ingress (mean 217.83 Mbit/s) --- Flow 1 egress (mean 217.75 Mbit/s)
Flow 2 ingress (mean 213.69 Mbit/s) --- Flow 2 egress (mean 213.60 Mbit/s)
Flow 3 ingress (mean 203.97 Mbit/s) --- Flow 3 egress (mean 203.69 Mbit/s)

Flow 1 (95th percentile 55.86 ms)   Flow 2 (95th percentile 56.54 ms)   Flow 3 (95th percentile 59.11 ms)

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```
Run 8: Statistics of TCP BBR

Start at: 2017-12-20 22:50:59
End at: 2017-12-20 22:51:29

# Below is generated by plot.py at 2017-12-21 01:51:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 420.37 Mbit/s
95th percentile per-packet one-way delay: 60.742 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 209.04 Mbit/s
95th percentile per-packet one-way delay: 59.053 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 214.58 Mbit/s
95th percentile per-packet one-way delay: 60.067 ms
Loss rate: 0.58%
-- Flow 3:
Average throughput: 208.72 Mbit/s
95th percentile per-packet one-way delay: 63.650 ms
Loss rate: 1.17%
```
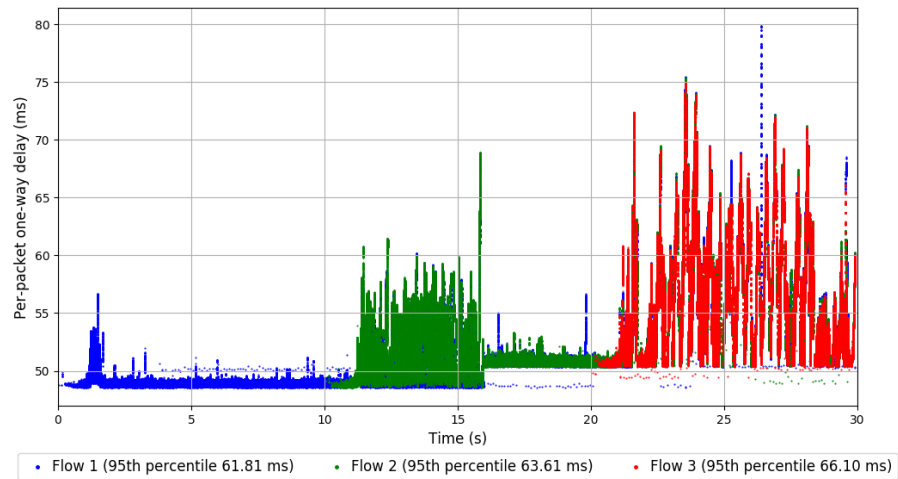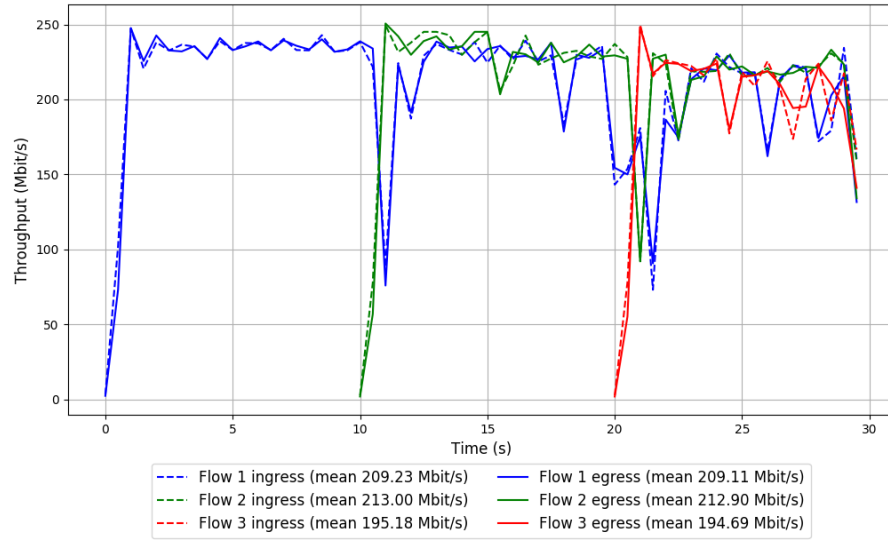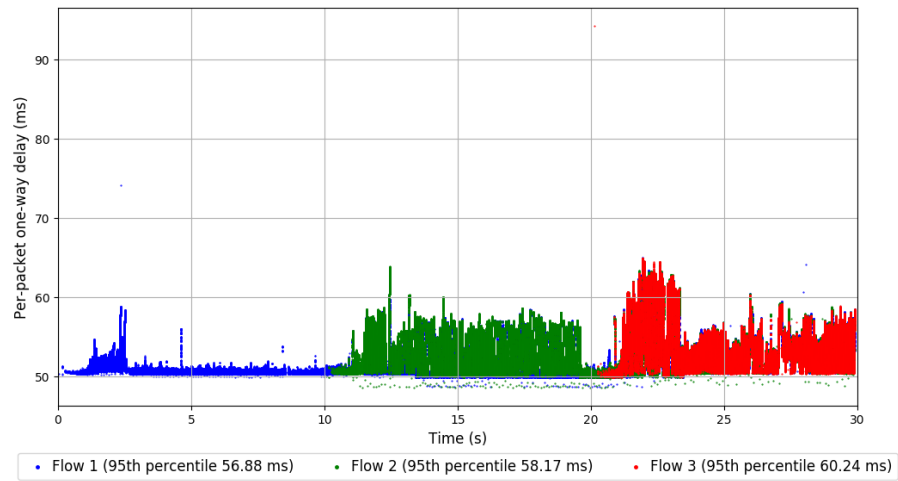
Run 8: Report of TCP BBR — Data Link

Flow 1 ingress (mean 209.11 Mbit/s) --- Flow 1 egress (mean 209.04 Mbit/s) ——
Flow 2 ingress (mean 214.75 Mbit/s) --- Flow 2 egress (mean 214.58 Mbit/s) ——
Flow 3 ingress (mean 209.07 Mbit/s) --- Flow 3 egress (mean 208.72 Mbit/s) ——

Flow 1 (95th percentile 59.05 ms) • Flow 2 (95th percentile 60.07 ms) • Flow 3 (95th percentile 63.65 ms)

```
Run 9: Statistics of TCP BBR

Start at: 2017-12-20 23:05:04
End at: 2017-12-20 23:05:34


# Below is generated by plot.py at 2017-12-21 01:58:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 414.76 Mbit/s
95th percentile per-packet one-way delay: 63.638 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 209.11 Mbit/s
95th percentile per-packet one-way delay: 61.806 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 212.90 Mbit/s
95th percentile per-packet one-way delay: 63.611 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 194.69 Mbit/s
95th percentile per-packet one-way delay: 66.100 ms
Loss rate: 1.27%
```
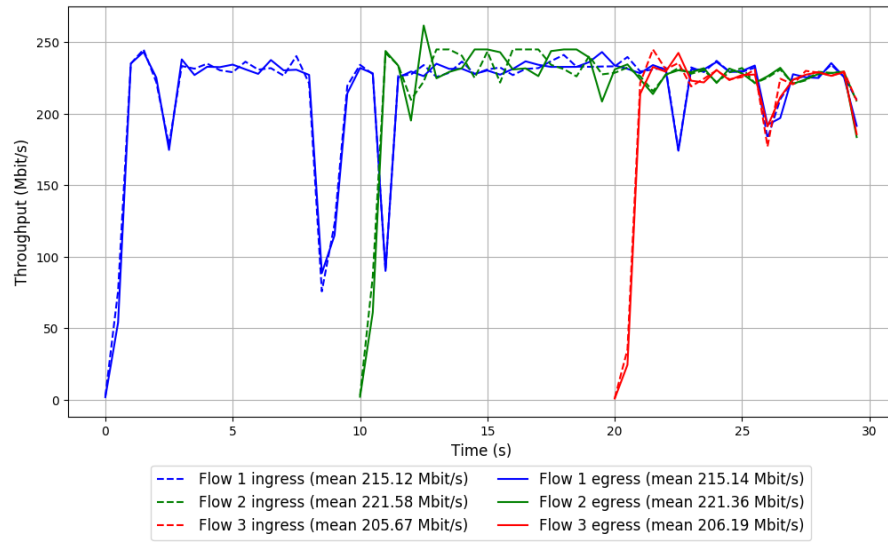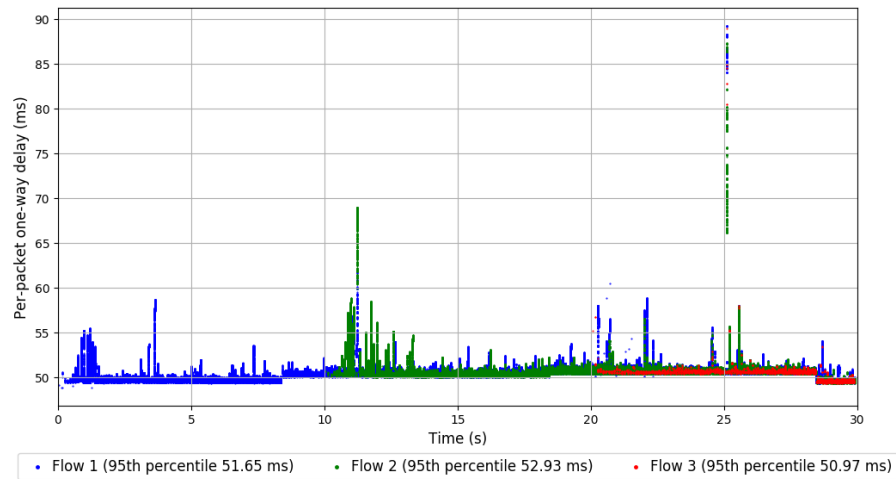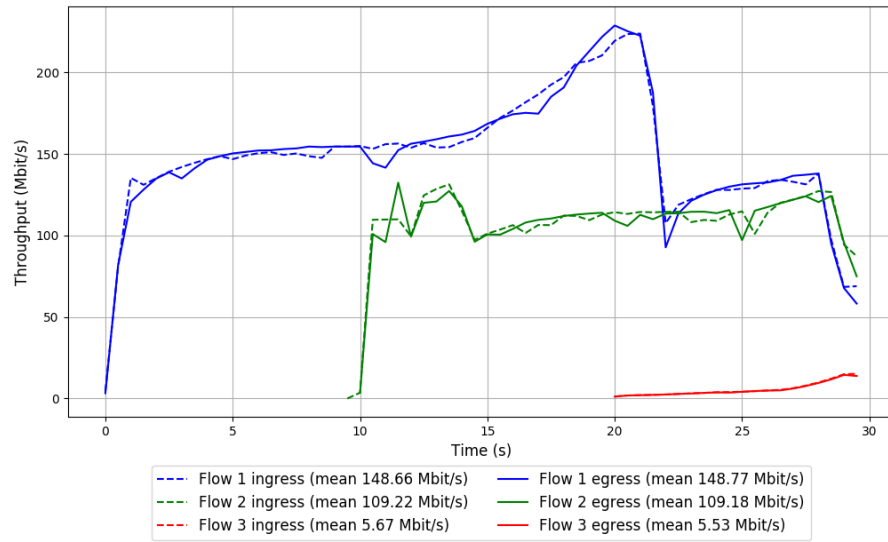
Run 9: Report of TCP BBR — Data Link

Flow 1 ingress (mean 209.23 Mbit/s)   Flow 1 egress (mean 209.11 Mbit/s)
Flow 2 ingress (mean 213.00 Mbit/s)   Flow 2 egress (mean 212.90 Mbit/s)
Flow 3 ingress (mean 195.18 Mbit/s)   Flow 3 egress (mean 194.69 Mbit/s)

Flow 1 (95th percentile 61.81 ms)   Flow 2 (95th percentile 63.61 ms)   Flow 3 (95th percentile 66.10 ms)

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```
Run 10: Statistics of TCP BBR

Start at: 2017-12-20 23:19:27
End at: 2017-12-20 23:19:57

# Below is generated by plot.py at 2017-12-21 01:58:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 429.72 Mbit/s
95th percentile per-packet one-way delay: 58.011 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 215.14 Mbit/s
95th percentile per-packet one-way delay: 56.878 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 221.36 Mbit/s
95th percentile per-packet one-way delay: 58.167 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 206.19 Mbit/s
95th percentile per-packet one-way delay: 60.245 ms
Loss rate: 1.19%
```
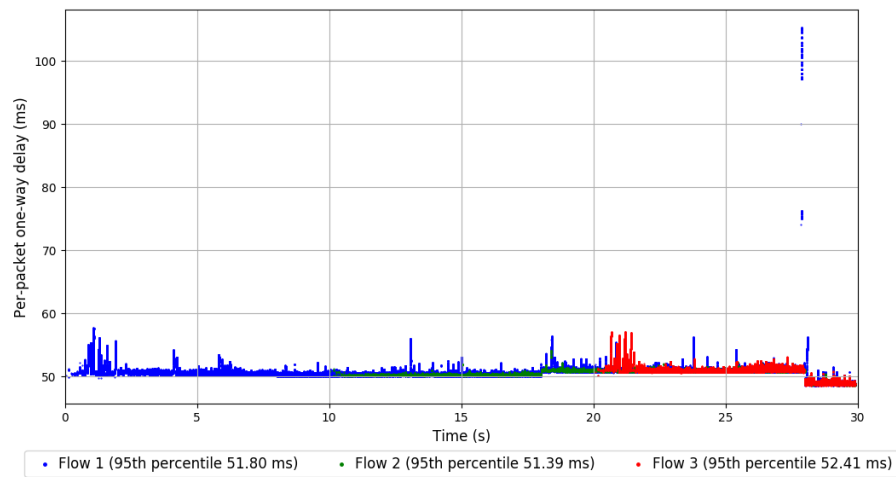
Run 10: Report of TCP BBR — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2017-12-20 21:12:22
End at: 2017-12-20 21:12:52

# Below is generated by plot.py at 2017-12-21 01:58:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 223.18 Mbit/s
95th percentile per-packet one-way delay: 51.914 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 148.77 Mbit/s
95th percentile per-packet one-way delay: 51.653 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 109.18 Mbit/s
95th percentile per-packet one-way delay: 52.933 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 5.53 Mbit/s
95th percentile per-packet one-way delay: 50.972 ms
Loss rate: 3.39%
```
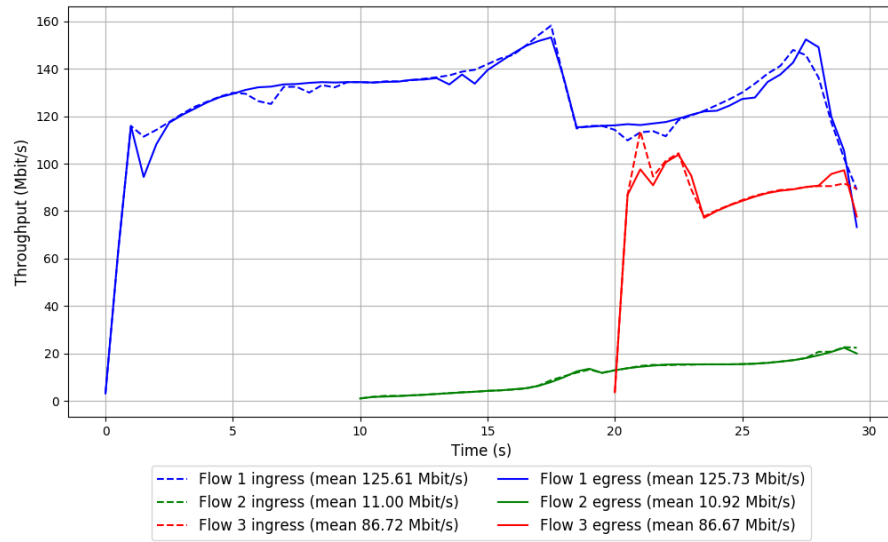
Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2017-12-20 21:26:42
End at: 2017-12-20 21:27:12

# Below is generated by plot.py at 2017-12-21 01:58:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 161.54 Mbit/s
95th percentile per-packet one-way delay: 51.930 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 125.73 Mbit/s
95th percentile per-packet one-way delay: 51.795 ms
Loss rate: 0.24%
-- Flow 2:
Average throughput: 10.92 Mbit/s
95th percentile per-packet one-way delay: 51.388 ms
Loss rate: 1.20%
-- Flow 3:
Average throughput: 86.67 Mbit/s
95th percentile per-packet one-way delay: 52.411 ms
Loss rate: 1.06%
```
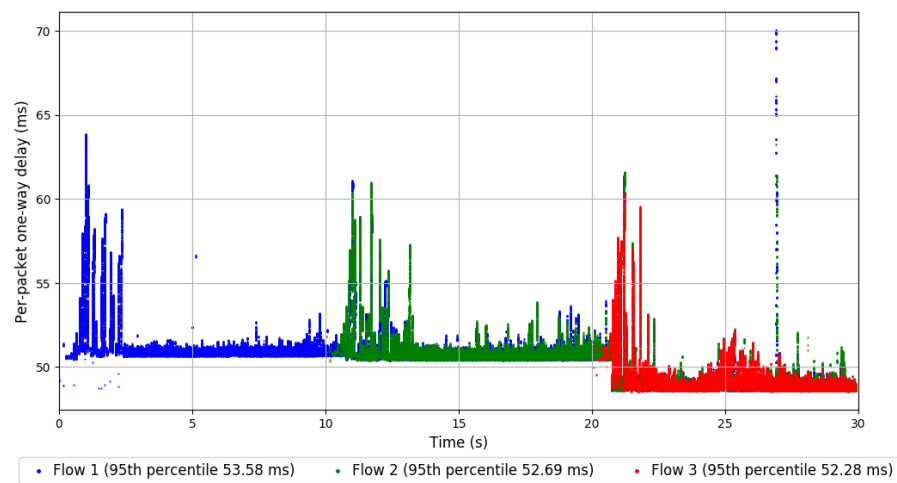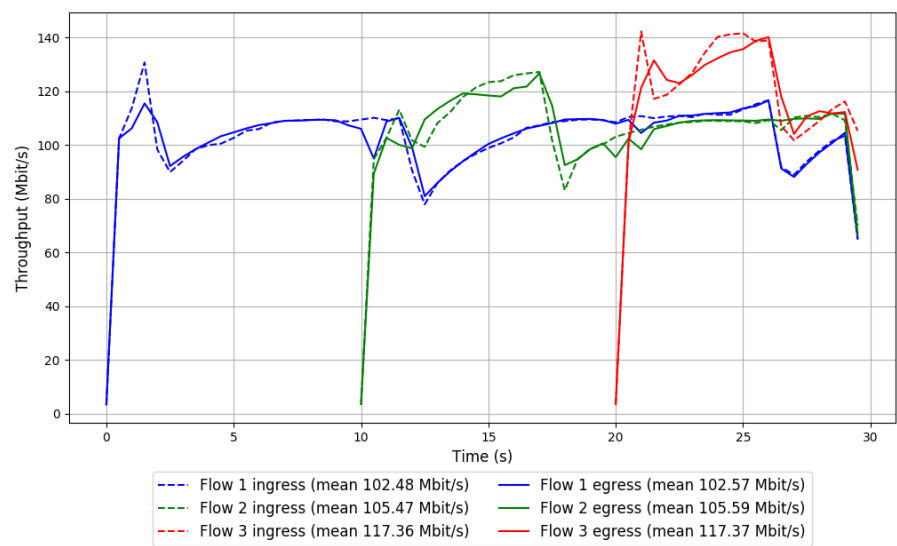
Run 2: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 125.61 Mbit/s) — — — Flow 1 egress (mean 125.73 Mbit/s)
Flow 2 ingress (mean 11.00 Mbit/s) — — — Flow 2 egress (mean 10.92 Mbit/s)
Flow 3 ingress (mean 86.72 Mbit/s) — — — Flow 3 egress (mean 86.67 Mbit/s)

Flow 1 (95th percentile 51.80 ms) • Flow 2 (95th percentile 51.39 ms) • Flow 3 (95th percentile 52.41 ms)

```
Run 3: Statistics of TCP Cubic

Start at: 2017-12-20 21:40:50
End at: 2017-12-20 21:41:20


# Below is generated by plot.py at 2017-12-21 01:58:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 211.32 Mbit/s
95th percentile per-packet one-way delay: 52.948 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 102.57 Mbit/s
95th percentile per-packet one-way delay: 53.580 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 105.59 Mbit/s
95th percentile per-packet one-way delay: 52.687 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 117.37 Mbit/s
95th percentile per-packet one-way delay: 52.285 ms
Loss rate: 0.98%
```
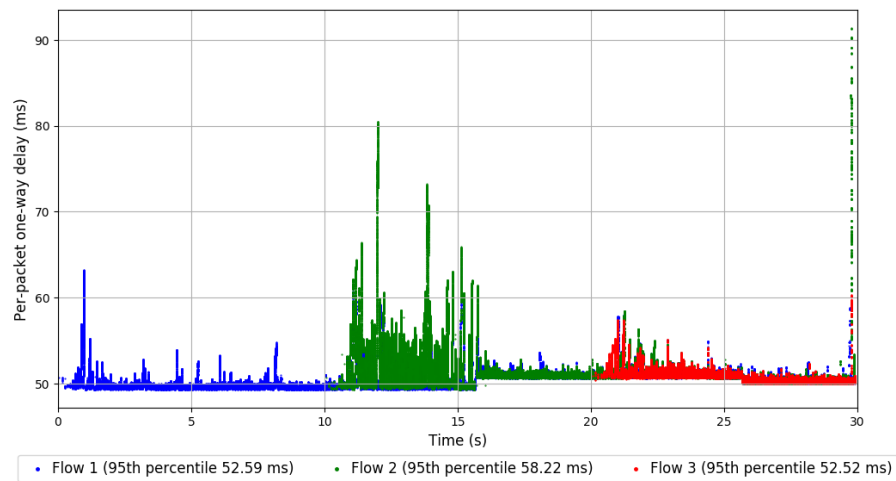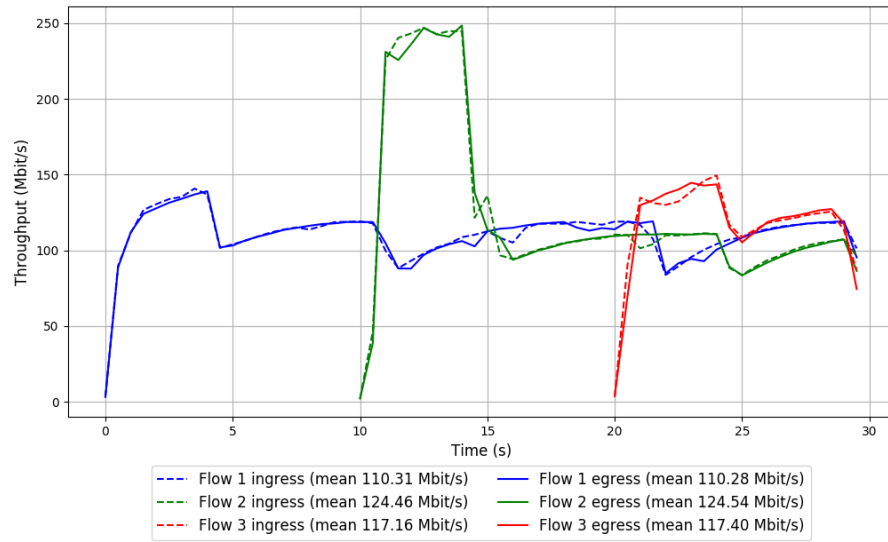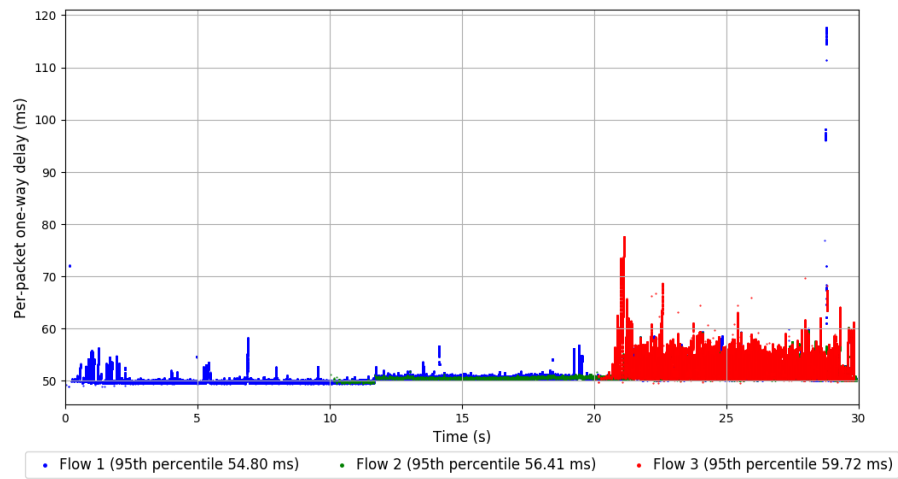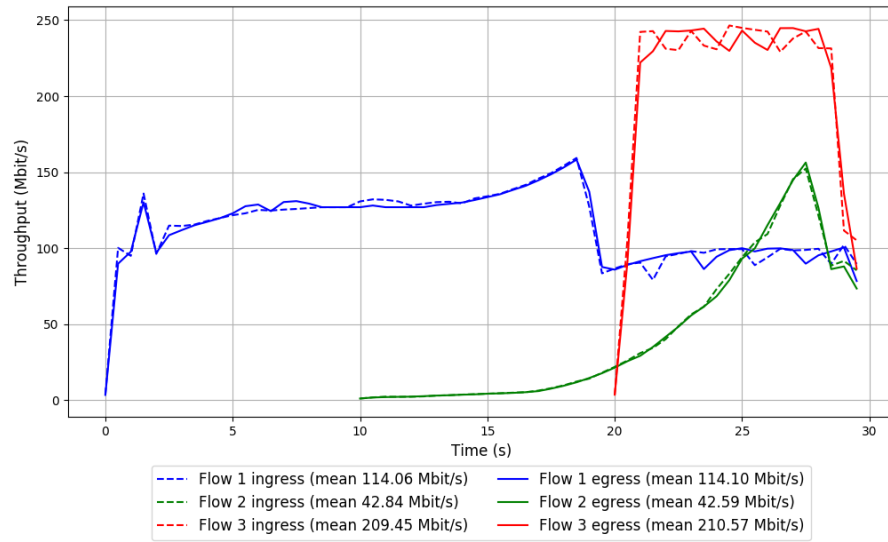
Run 3: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 102.48 Mbit/s) ---- Flow 1 egress (mean 102.57 Mbit/s)
Flow 2 ingress (mean 105.47 Mbit/s) ---- Flow 2 egress (mean 105.59 Mbit/s)
Flow 3 ingress (mean 117.36 Mbit/s) ---- Flow 3 egress (mean 117.37 Mbit/s)

Flow 1 (95th percentile 53.58 ms)　　Flow 2 (95th percentile 52.69 ms)　　Flow 3 (95th percentile 52.28 ms)

29

```
Run 4: Statistics of TCP Cubic

Start at: 2017-12-20 21:55:15
End at: 2017-12-20 21:55:45

# Below is generated by plot.py at 2017-12-21 01:58:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 231.64 Mbit/s
95th percentile per-packet one-way delay: 55.078 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 110.28 Mbit/s
95th percentile per-packet one-way delay: 52.592 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 124.54 Mbit/s
95th percentile per-packet one-way delay: 58.217 ms
Loss rate: 0.44%
-- Flow 3:
Average throughput: 117.40 Mbit/s
95th percentile per-packet one-way delay: 52.523 ms
Loss rate: 0.80%
```
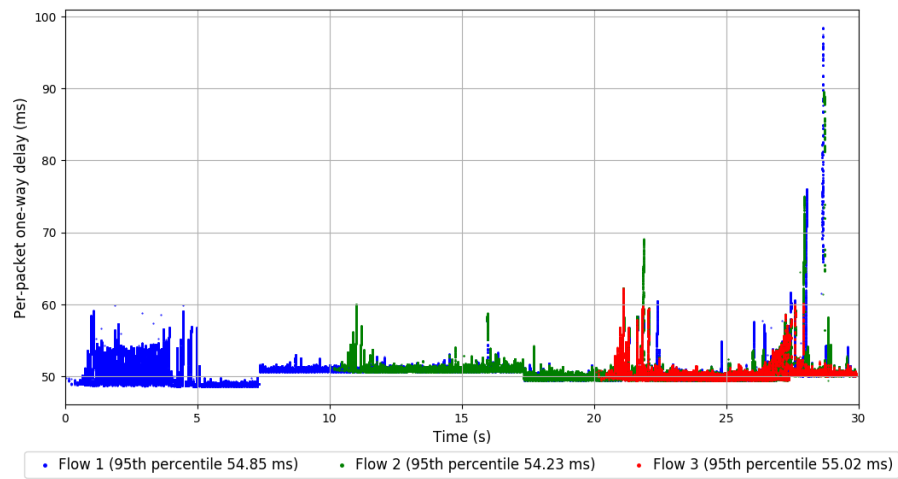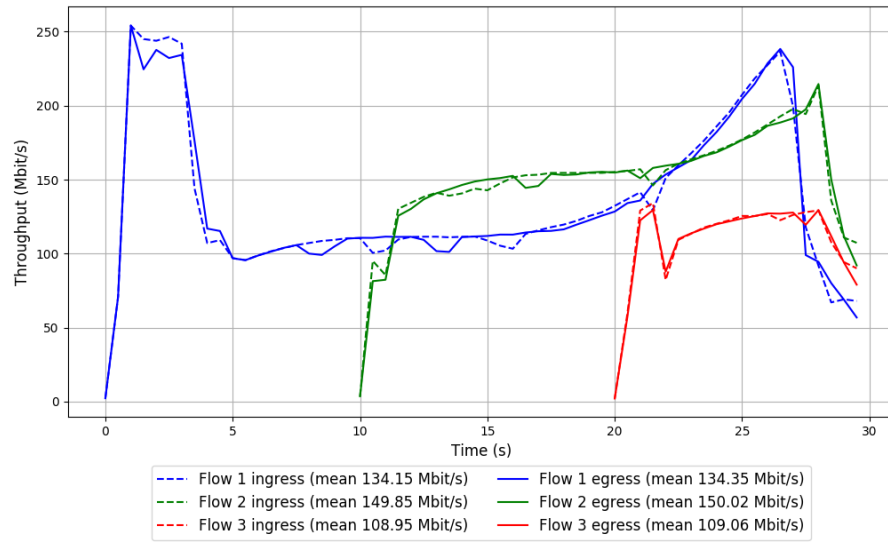
Run 4: Report of TCP Cubic — Data Link

```
Run 5: Statistics of TCP Cubic

Start at: 2017-12-20 22:09:29
End at: 2017-12-20 22:09:59


# Below is generated by plot.py at 2017-12-21 01:58:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 211.27 Mbit/s
95th percentile per-packet one-way delay: 57.273 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 114.10 Mbit/s
95th percentile per-packet one-way delay: 54.802 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 42.59 Mbit/s
95th percentile per-packet one-way delay: 56.408 ms
Loss rate: 1.12%
-- Flow 3:
Average throughput: 210.57 Mbit/s
95th percentile per-packet one-way delay: 59.716 ms
Loss rate: 0.45%
```
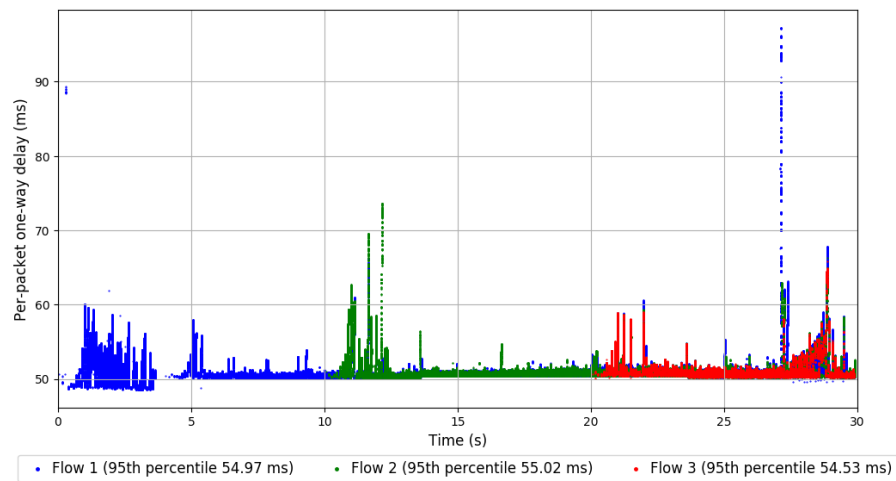
Run 5: Report of TCP Cubic — Data Link

- - - - Flow 1 ingress (mean 114.06 Mbit/s) —— Flow 1 egress (mean 114.10 Mbit/s)
- - - - Flow 2 ingress (mean 42.84 Mbit/s) —— Flow 2 egress (mean 42.59 Mbit/s)
- - - - Flow 3 ingress (mean 209.45 Mbit/s) —— Flow 3 egress (mean 210.57 Mbit/s)

- Flow 1 (95th percentile 54.80 ms) • Flow 2 (95th percentile 56.41 ms) • Flow 3 (95th percentile 59.72 ms)

```
Run 6: Statistics of TCP Cubic

Start at: 2017-12-20 22:23:43
End at: 2017-12-20 22:24:13


# Below is generated by plot.py at 2017-12-21 01:58:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 269.88 Mbit/s
95th percentile per-packet one-way delay: 54.745 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 134.35 Mbit/s
95th percentile per-packet one-way delay: 54.847 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 150.02 Mbit/s
95th percentile per-packet one-way delay: 54.235 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 109.06 Mbit/s
95th percentile per-packet one-way delay: 55.017 ms
Loss rate: 0.91%
```
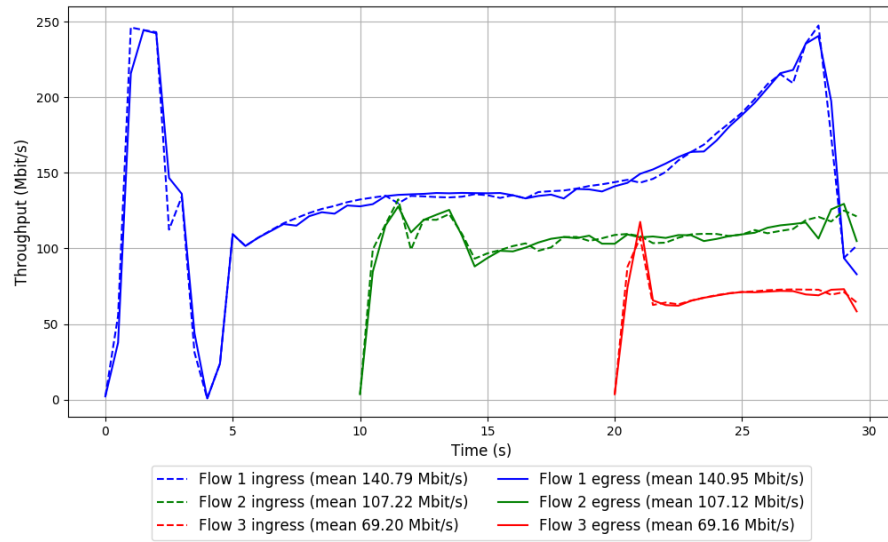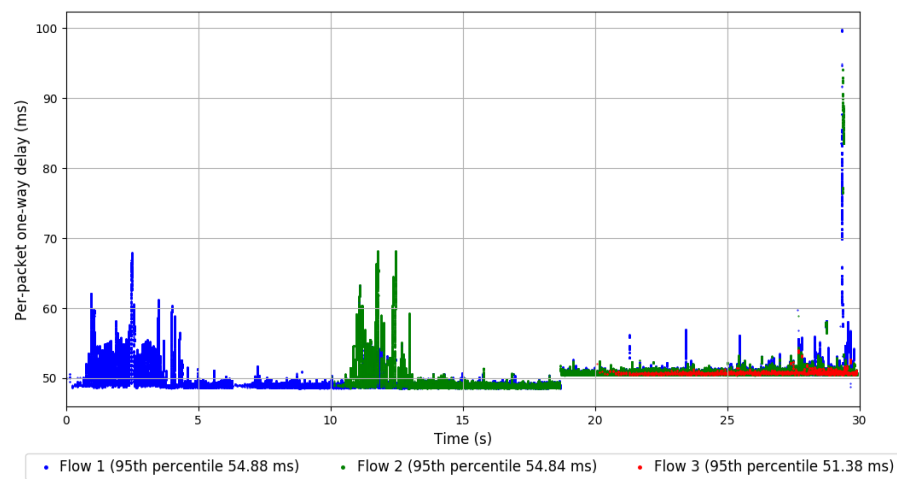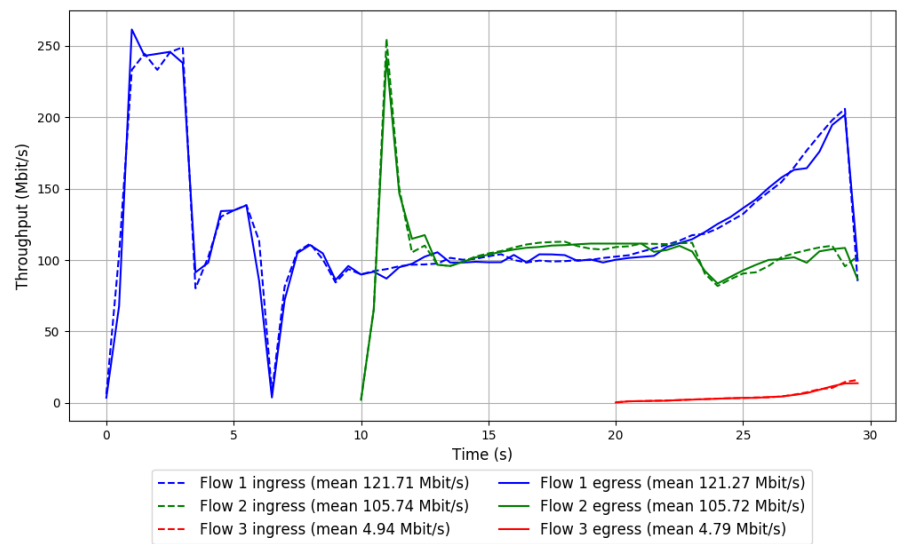
Run 6: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 134.15 Mbit/s) --- Flow 1 egress (mean 134.35 Mbit/s)
Flow 2 ingress (mean 149.85 Mbit/s) --- Flow 2 egress (mean 150.02 Mbit/s)
Flow 3 ingress (mean 108.95 Mbit/s) --- Flow 3 egress (mean 109.06 Mbit/s)

Flow 1 (95th percentile 54.85 ms) Flow 2 (95th percentile 54.23 ms) Flow 3 (95th percentile 55.02 ms)

```
Run 7: Statistics of TCP Cubic

Start at: 2017-12-20 22:37:47
End at: 2017-12-20 22:38:17


# Below is generated by plot.py at 2017-12-21 01:58:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 234.87 Mbit/s
95th percentile per-packet one-way delay: 54.917 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 140.95 Mbit/s
95th percentile per-packet one-way delay: 54.972 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 107.12 Mbit/s
95th percentile per-packet one-way delay: 55.017 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 69.16 Mbit/s
95th percentile per-packet one-way delay: 54.531 ms
Loss rate: 1.07%
```
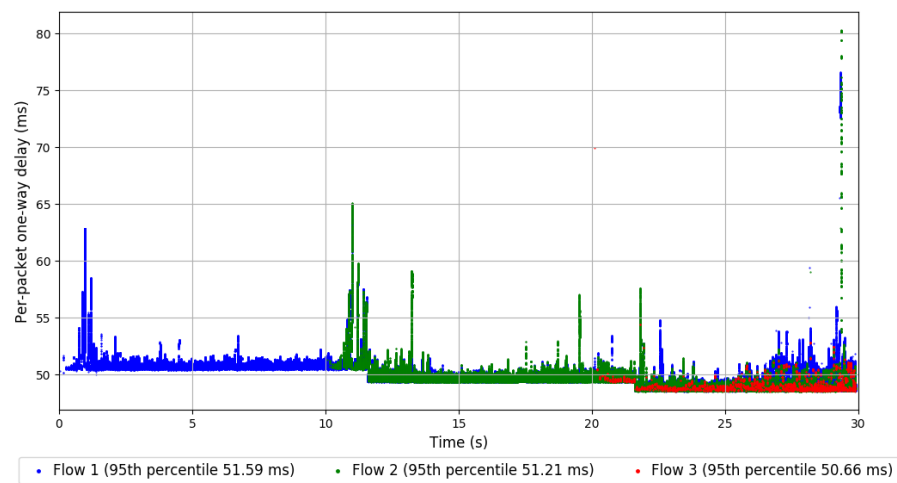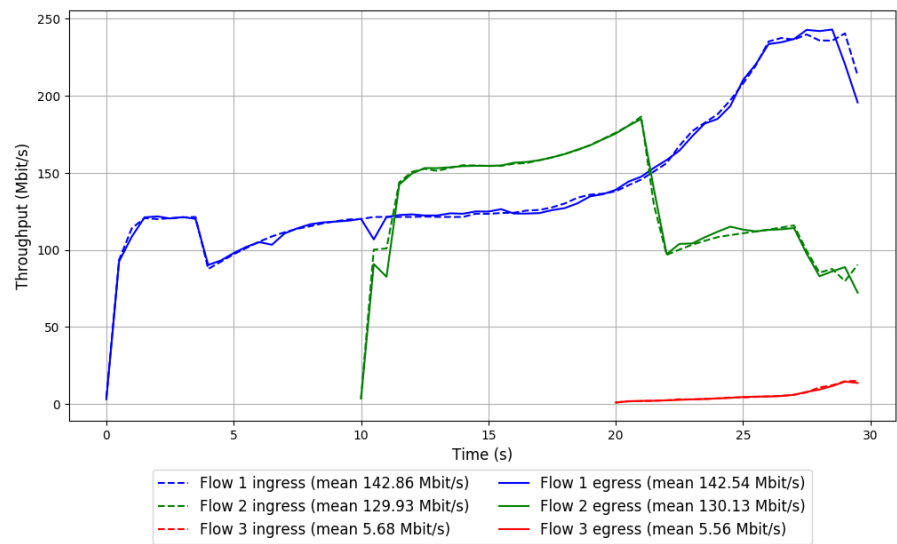
Run 7: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 140.79 Mbit/s)   Flow 1 egress (mean 140.95 Mbit/s)
Flow 2 ingress (mean 107.22 Mbit/s)   Flow 2 egress (mean 107.12 Mbit/s)
Flow 3 ingress (mean 69.20 Mbit/s)   Flow 3 egress (mean 69.16 Mbit/s)

Flow 1 (95th percentile 54.97 ms)   Flow 2 (95th percentile 55.02 ms)   Flow 3 (95th percentile 54.53 ms)

```
Run 8: Statistics of TCP Cubic

Start at: 2017-12-20 22:52:02
End at: 2017-12-20 22:52:32

# Below is generated by plot.py at 2017-12-21 01:58:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 193.11 Mbit/s
95th percentile per-packet one-way delay: 54.857 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 121.27 Mbit/s
95th percentile per-packet one-way delay: 54.885 ms
Loss rate: 0.69%
-- Flow 2:
Average throughput: 105.72 Mbit/s
95th percentile per-packet one-way delay: 54.835 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 4.79 Mbit/s
95th percentile per-packet one-way delay: 51.381 ms
Loss rate: 4.09%
```
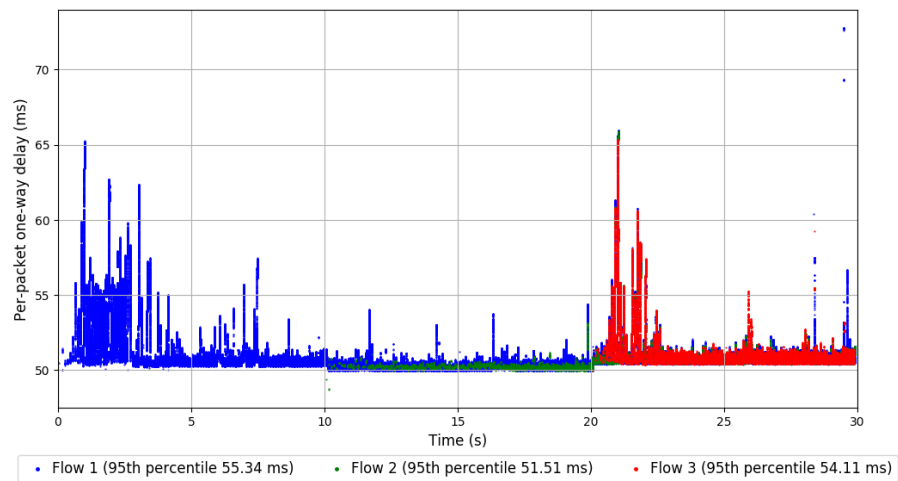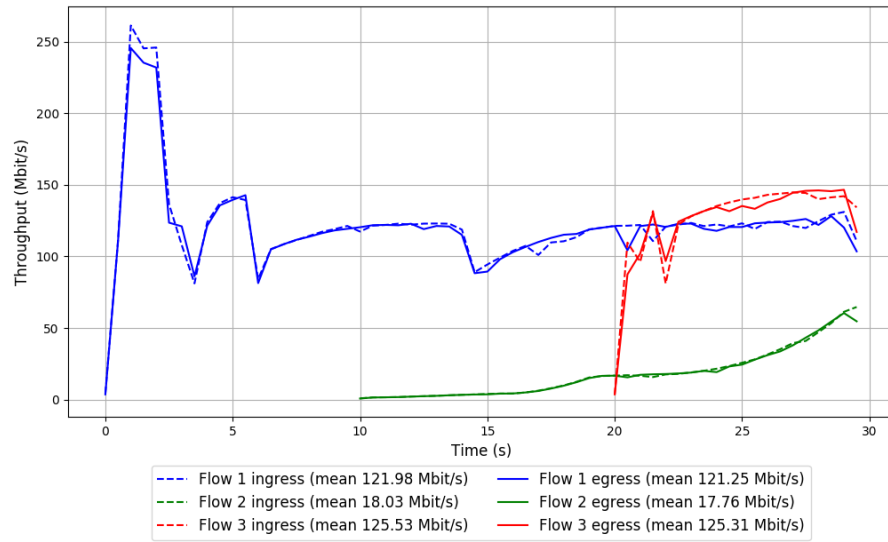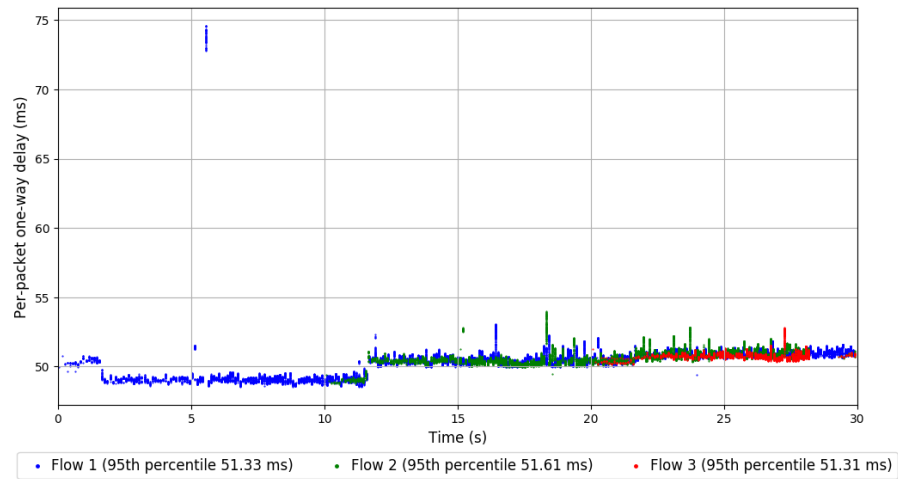
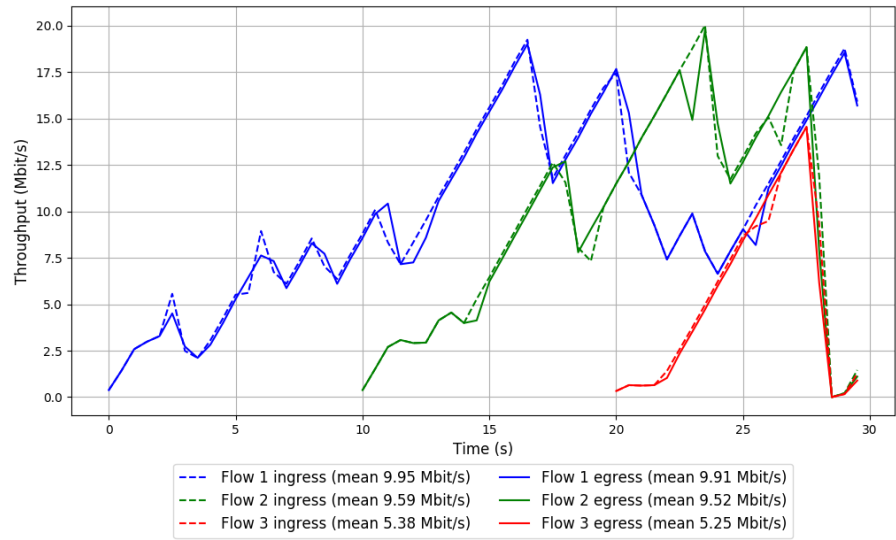Run 8: Report of TCP Cubic — Data Link

```
Run 9: Statistics of TCP Cubic

Start at: 2017-12-20 23:06:09
End at: 2017-12-20 23:06:39


# Below is generated by plot.py at 2017-12-21 01:58:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 230.83 Mbit/s
95th percentile per-packet one-way delay: 51.503 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 142.54 Mbit/s
95th percentile per-packet one-way delay: 51.592 ms
Loss rate: 0.55%
-- Flow 2:
Average throughput: 130.13 Mbit/s
95th percentile per-packet one-way delay: 51.214 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 5.56 Mbit/s
95th percentile per-packet one-way delay: 50.663 ms
Loss rate: 3.36%
```

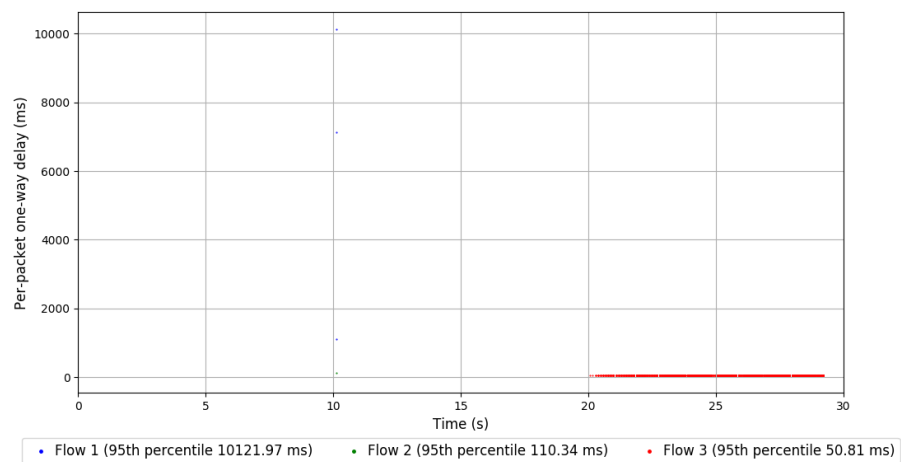Run 9: Report of TCP Cubic — Data Link

```
Run 10: Statistics of TCP Cubic

Start at: 2017-12-20 23:20:30
End at: 2017-12-20 23:21:00


# Below is generated by plot.py at 2017-12-21 01:58:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 174.28 Mbit/s
95th percentile per-packet one-way delay: 55.061 ms
Loss rate: 1.06%
-- Flow 1:
Average throughput: 121.25 Mbit/s
95th percentile per-packet one-way delay: 55.340 ms
Loss rate: 0.93%
-- Flow 2:
Average throughput: 17.76 Mbit/s
95th percentile per-packet one-way delay: 51.505 ms
Loss rate: 2.00%
-- Flow 3:
Average throughput: 125.31 Mbit/s
95th percentile per-packet one-way delay: 54.107 ms
Loss rate: 1.18%
```
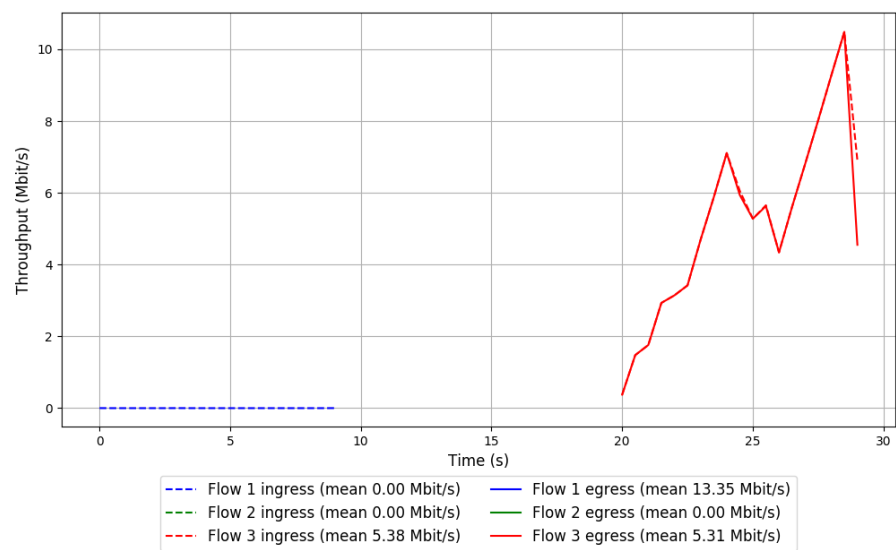
Run 10: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 121.98 Mbit/s) --- Flow 1 egress (mean 121.25 Mbit/s)
Flow 2 ingress (mean 18.03 Mbit/s) --- Flow 2 egress (mean 17.76 Mbit/s)
Flow 3 ingress (mean 125.53 Mbit/s) --- Flow 3 egress (mean 125.31 Mbit/s)

Flow 1 (95th percentile 55.34 ms)   Flow 2 (95th percentile 51.51 ms)   Flow 3 (95th percentile 54.11 ms)

43

```
Run 1: Statistics of LEDBAT

Start at: 2017-12-20 21:01:29
End at: 2017-12-20 21:01:59

# Below is generated by plot.py at 2017-12-21 01:58:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 17.95 Mbit/s
95th percentile per-packet one-way delay: 51.396 ms
Loss rate: 1.16%
-- Flow 1:
Average throughput: 9.91 Mbit/s
95th percentile per-packet one-way delay: 51.327 ms
Loss rate: 0.75%
-- Flow 2:
Average throughput: 9.52 Mbit/s
95th percentile per-packet one-way delay: 51.606 ms
Loss rate: 1.19%
-- Flow 3:
Average throughput: 5.25 Mbit/s
95th percentile per-packet one-way delay: 51.313 ms
Loss rate: 3.32%
```
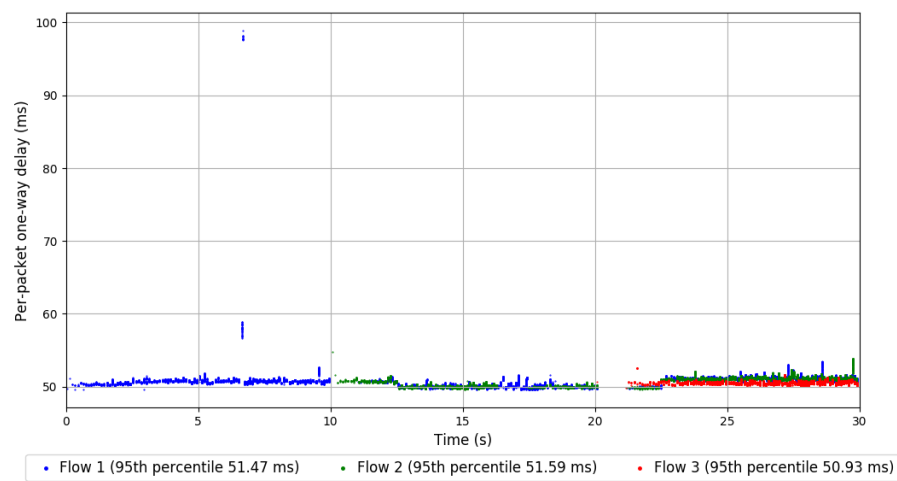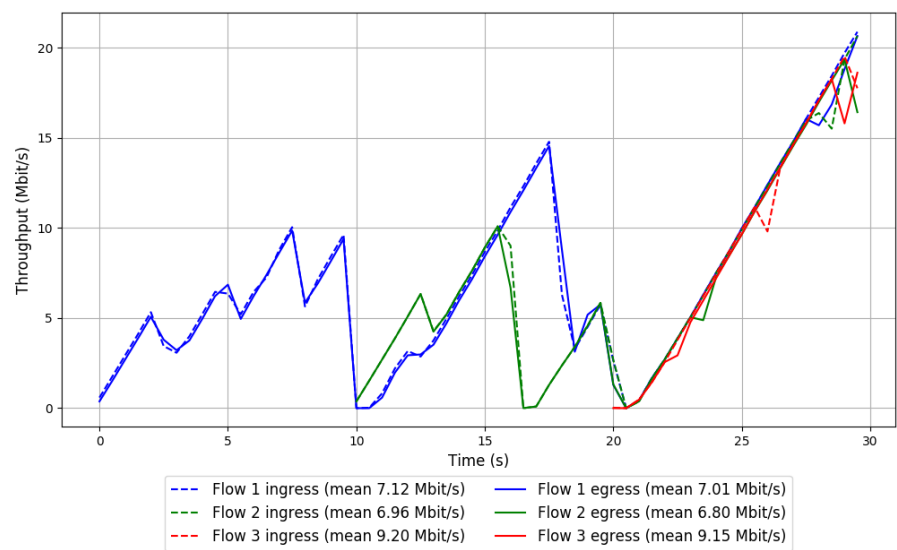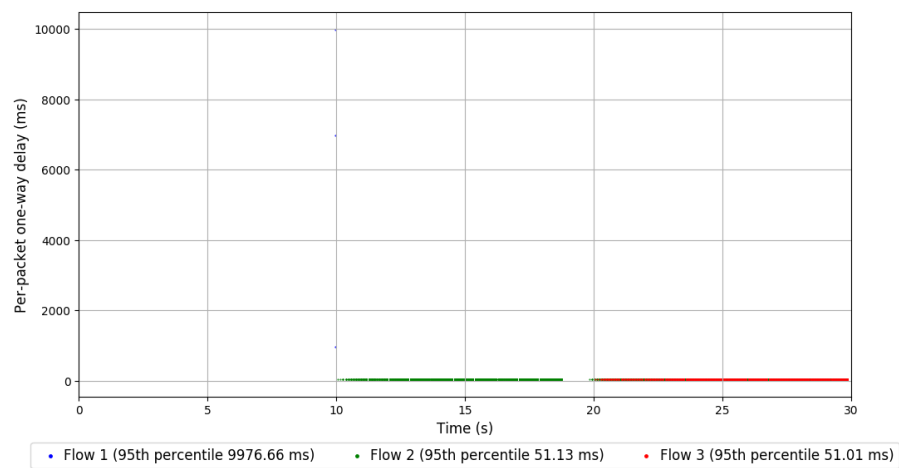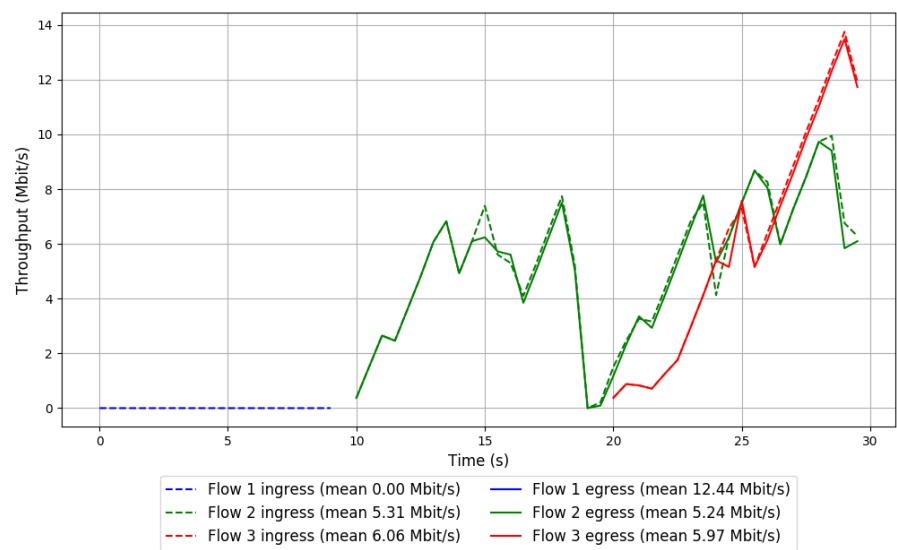
Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2017-12-20 21:15:48
End at: 2017-12-20 21:16:18
```

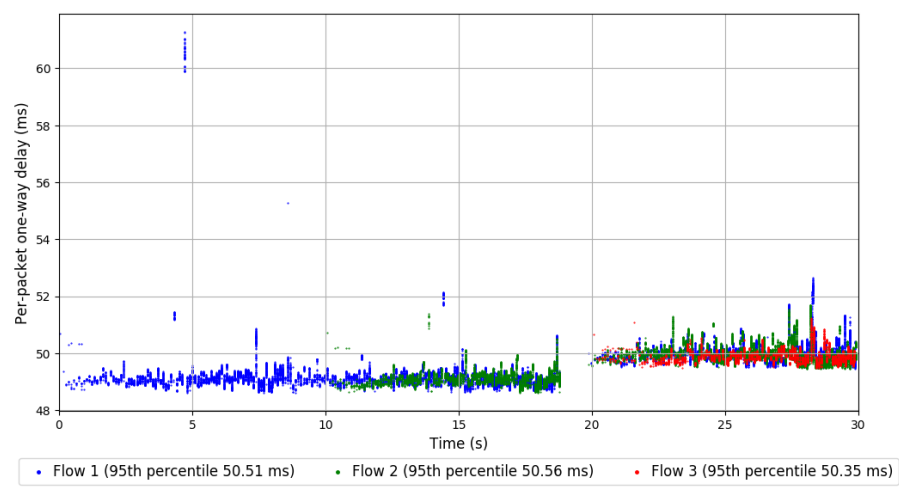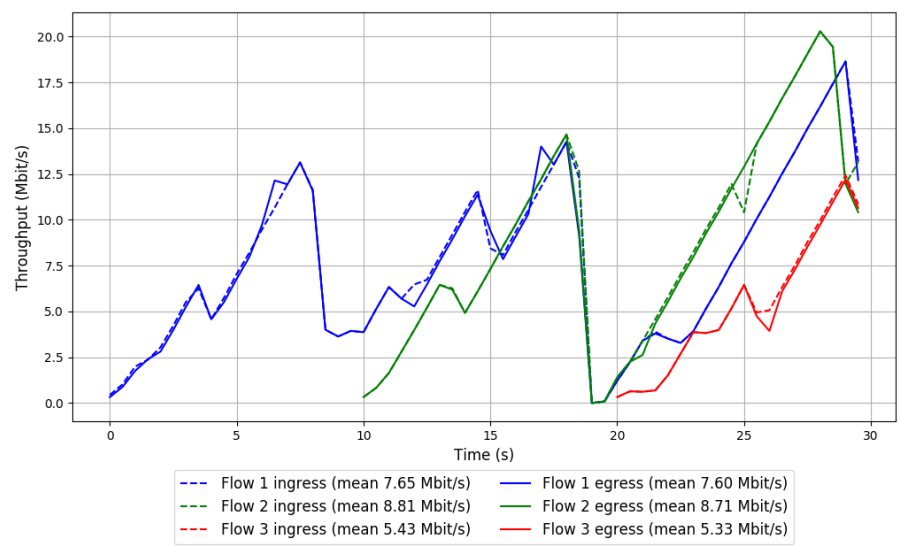# Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2017-12-20 21:30:08
End at: 2017-12-20 21:30:38

# Below is generated by plot.py at 2017-12-21 01:58:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 14.53 Mbit/s
95th percentile per-packet one-way delay: 51.447 ms
Loss rate: 2.10%
-- Flow 1:
Average throughput: 7.01 Mbit/s
95th percentile per-packet one-way delay: 51.471 ms
Loss rate: 1.82%
-- Flow 2:
Average throughput: 6.80 Mbit/s
95th percentile per-packet one-way delay: 51.591 ms
Loss rate: 2.86%
-- Flow 3:
Average throughput: 9.15 Mbit/s
95th percentile per-packet one-way delay: 50.934 ms
Loss rate: 1.58%
```

Run 3: Report of LEDBAT — Data Link

Run 4: Statistics of LEDBAT

Start at: 2017-12-20 21:44:16
End at: 2017-12-20 21:44:46

Run 4: Report of LEDBAT — Data Link

Flow 1 ingress (mean 0.00 Mbit/s) — Flow 1 egress (mean 12.44 Mbit/s)
Flow 2 ingress (mean 5.31 Mbit/s) — Flow 2 egress (mean 5.24 Mbit/s)
Flow 3 ingress (mean 6.06 Mbit/s) — Flow 3 egress (mean 5.97 Mbit/s)

Flow 1 (95th percentile 9976.66 ms) • Flow 2 (95th percentile 51.13 ms) • Flow 3 (95th percentile 51.01 ms)

```
Run 5: Statistics of LEDBAT

Start at: 2017-12-20 21:58:41
End at: 2017-12-20 21:59:11

# Below is generated by plot.py at 2017-12-21 01:58:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 15.12 Mbit/s
95th percentile per-packet one-way delay: 50.526 ms
Loss rate: 1.46%
-- Flow 1:
Average throughput: 7.60 Mbit/s
95th percentile per-packet one-way delay: 50.512 ms
Loss rate: 0.94%
-- Flow 2:
Average throughput: 8.71 Mbit/s
95th percentile per-packet one-way delay: 50.565 ms
Loss rate: 1.72%
-- Flow 3:
Average throughput: 5.33 Mbit/s
95th percentile per-packet one-way delay: 50.347 ms
Loss rate: 2.81%
```
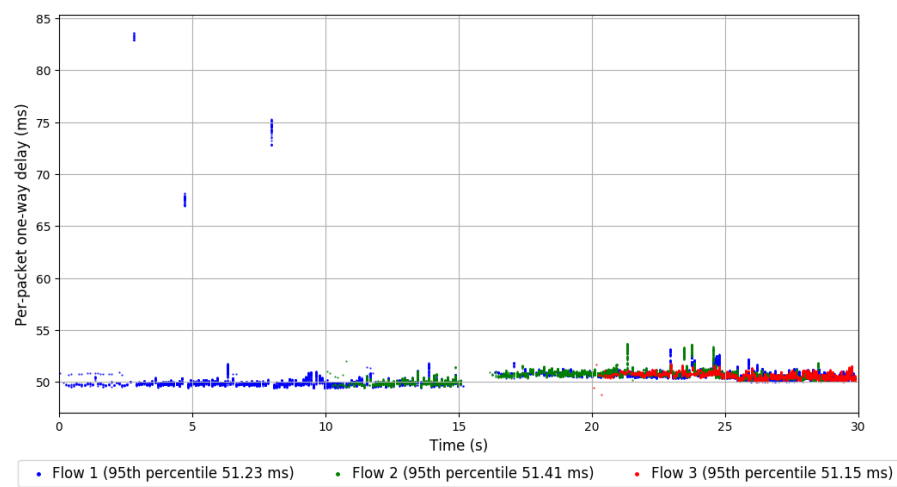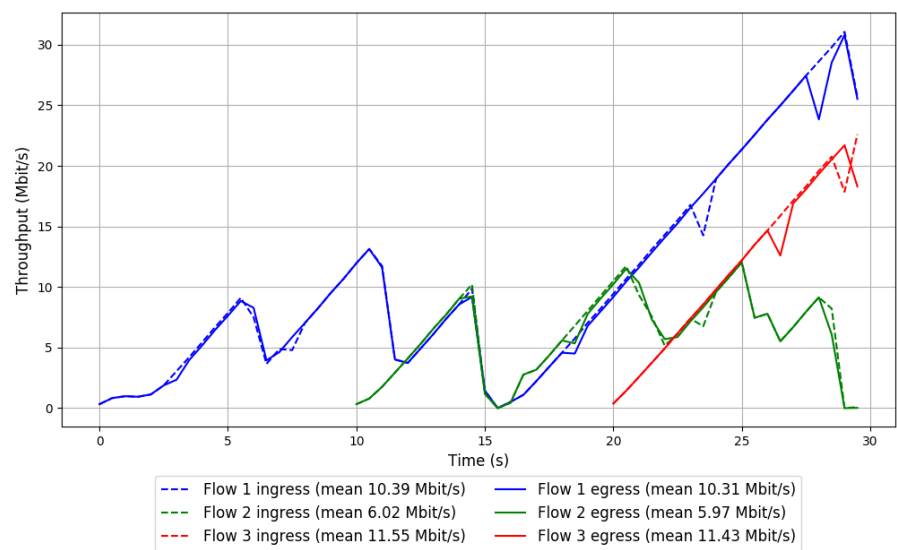
Run 5: Report of LEDBAT — Data Link

```
Run 6: Statistics of LEDBAT

Start at: 2017-12-20 22:12:55
End at: 2017-12-20 22:13:25


# Below is generated by plot.py at 2017-12-21 01:58:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.00 Mbit/s
95th percentile per-packet one-way delay: 51.234 ms
Loss rate: 1.40%
-- Flow 1:
Average throughput: 10.31 Mbit/s
95th percentile per-packet one-way delay: 51.225 ms
Loss rate: 1.18%
-- Flow 2:
Average throughput: 5.97 Mbit/s
95th percentile per-packet one-way delay: 51.411 ms
Loss rate: 1.35%
-- Flow 3:
Average throughput: 11.43 Mbit/s
95th percentile per-packet one-way delay: 51.147 ms
Loss rate: 2.05%
```
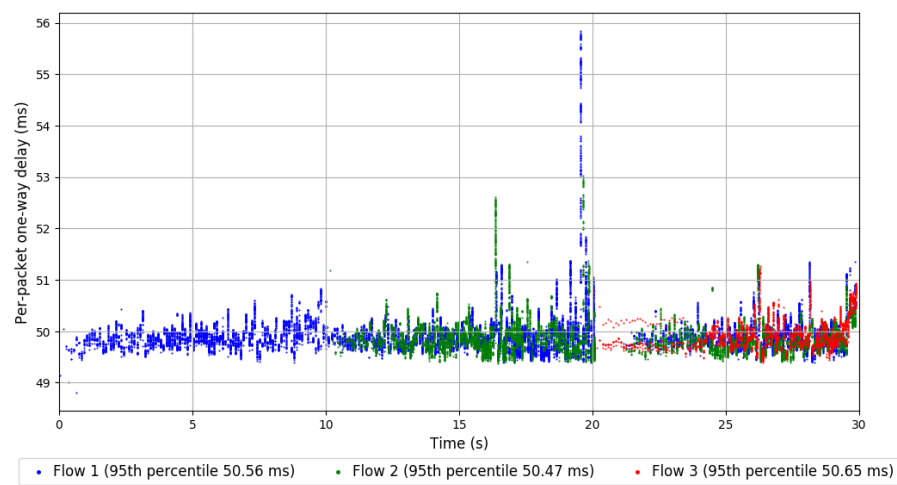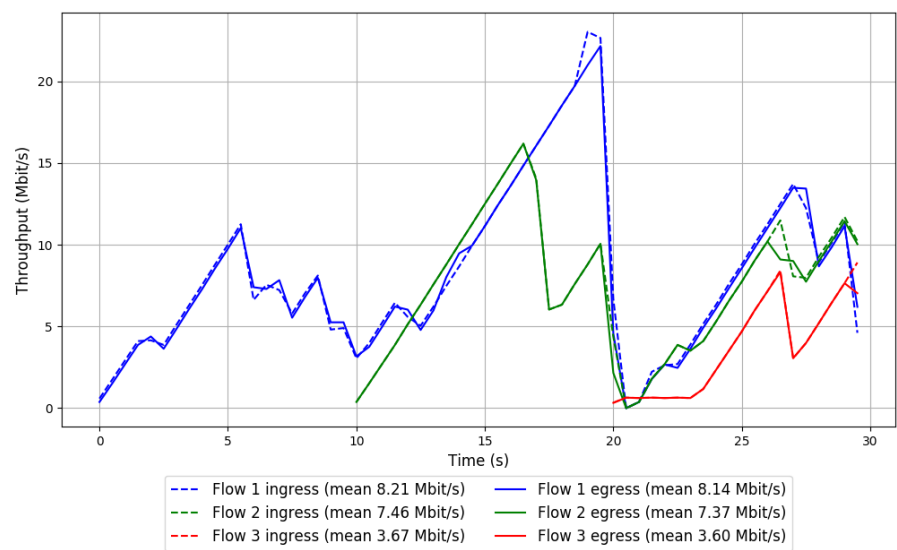
Run 6: Report of LEDBAT — Data Link

```
Run 7: Statistics of LEDBAT

Start at: 2017-12-20 22:27:11
End at: 2017-12-20 22:27:41


# Below is generated by plot.py at 2017-12-21 01:58:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 14.20 Mbit/s
95th percentile per-packet one-way delay: 50.552 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 8.14 Mbit/s
95th percentile per-packet one-way delay: 50.557 ms
Loss rate: 1.19%
-- Flow 2:
Average throughput: 7.37 Mbit/s
95th percentile per-packet one-way delay: 50.466 ms
Loss rate: 1.66%
-- Flow 3:
Average throughput: 3.60 Mbit/s
95th percentile per-packet one-way delay: 50.653 ms
Loss rate: 2.71%
```
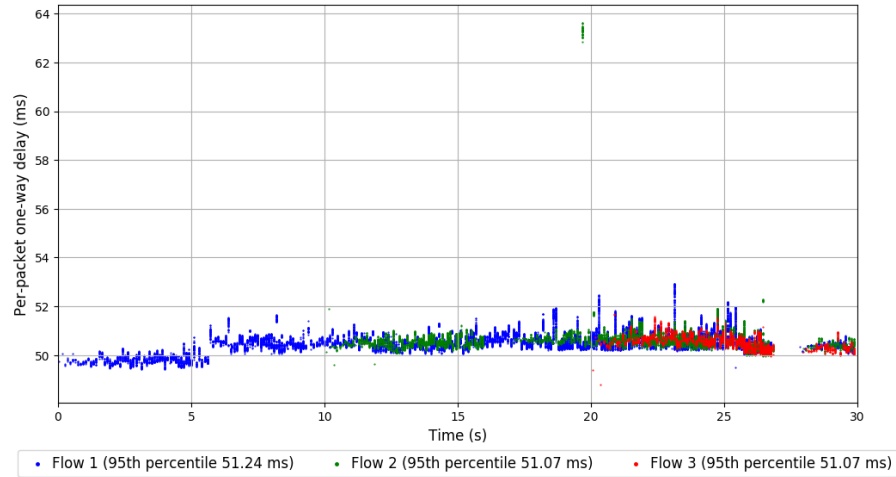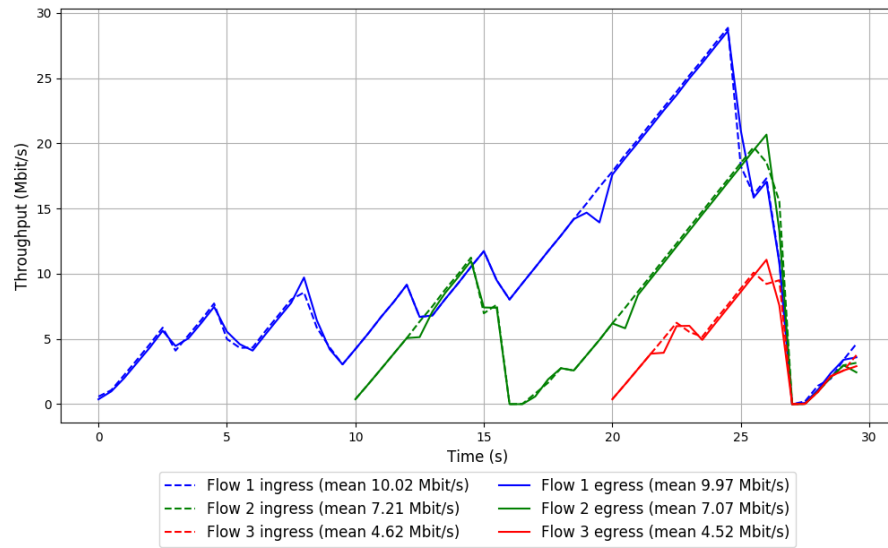
Run 7: Report of LEDBAT — Data Link

```
Run 8: Statistics of LEDBAT

Start at: 2017-12-20 22:41:15
End at: 2017-12-20 22:41:45

# Below is generated by plot.py at 2017-12-21 01:58:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 16.15 Mbit/s
95th percentile per-packet one-way delay: 51.174 ms
Loss rate: 1.54%
-- Flow 1:
Average throughput: 9.97 Mbit/s
95th percentile per-packet one-way delay: 51.236 ms
Loss rate: 0.83%
-- Flow 2:
Average throughput: 7.07 Mbit/s
95th percentile per-packet one-way delay: 51.071 ms
Loss rate: 2.44%
-- Flow 3:
Average throughput: 4.52 Mbit/s
95th percentile per-packet one-way delay: 51.070 ms
Loss rate: 3.30%
```
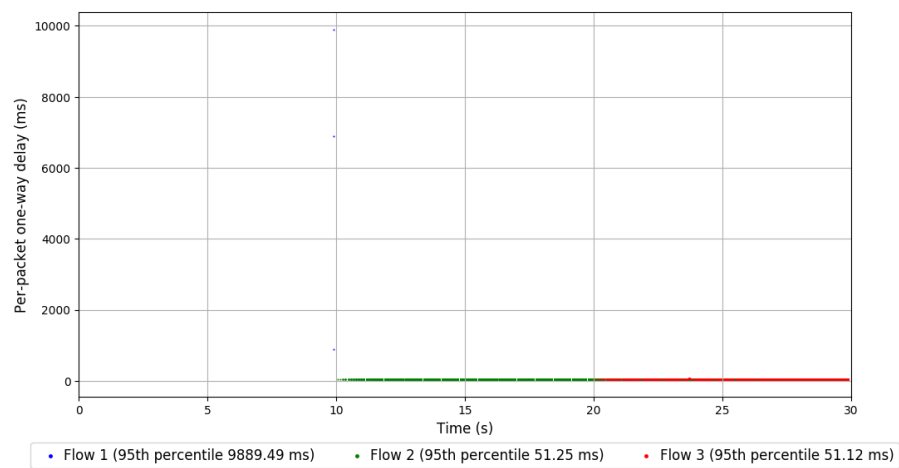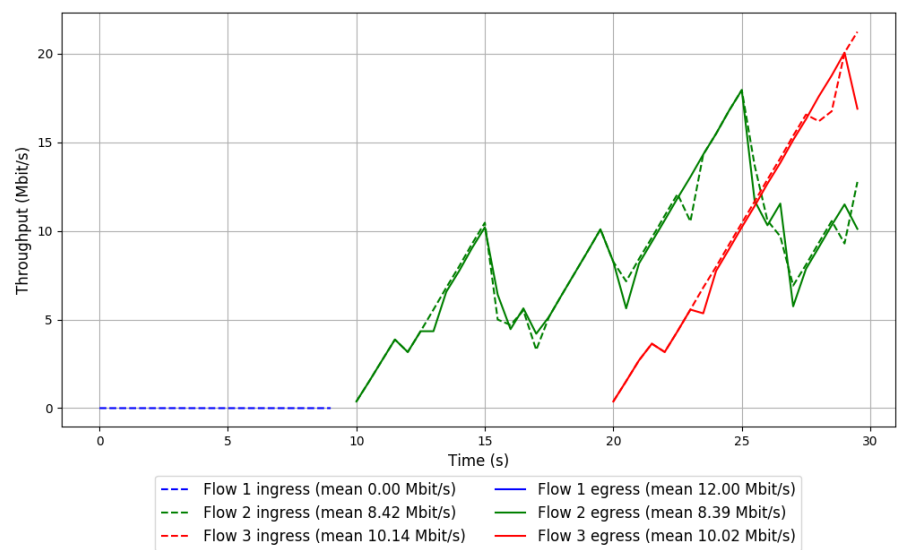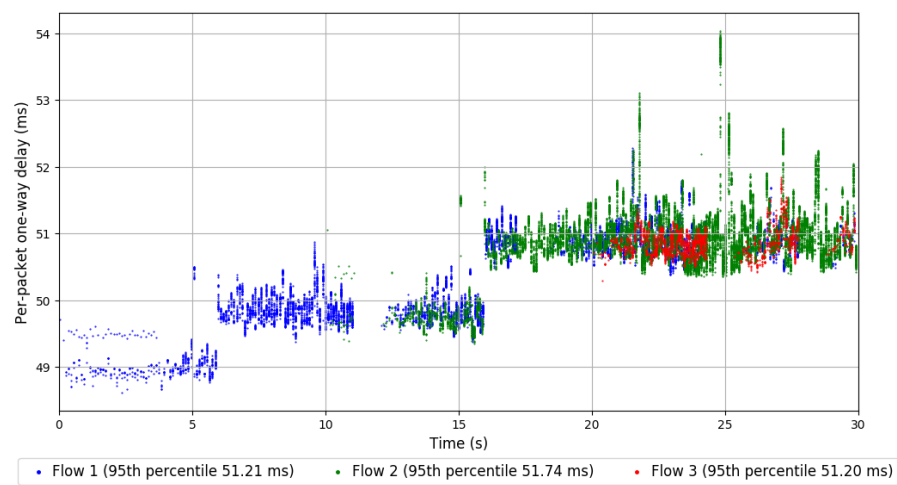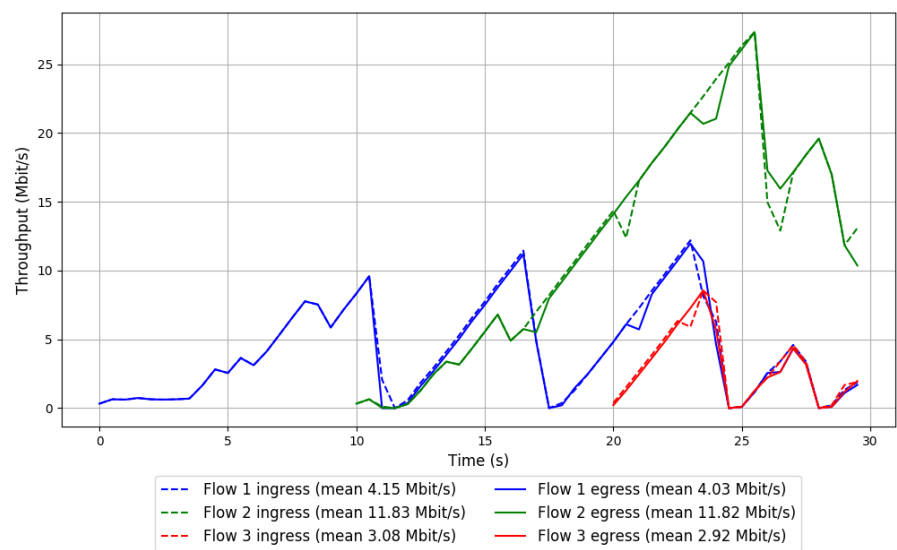
Run 8: Report of LEDBAT — Data Link

Flow 1 ingress (mean 10.02 Mbit/s) — Flow 1 egress (mean 9.97 Mbit/s)
Flow 2 ingress (mean 7.21 Mbit/s) — Flow 2 egress (mean 7.07 Mbit/s)
Flow 3 ingress (mean 4.62 Mbit/s) — Flow 3 egress (mean 4.52 Mbit/s)

Flow 1 (95th percentile 51.24 ms)   Flow 2 (95th percentile 51.07 ms)   Flow 3 (95th percentile 51.07 ms)

```
Run 9: Statistics of LEDBAT

Start at: 2017-12-20 22:55:25
End at: 2017-12-20 22:55:55
```

Run 9: Report of LEDBAT — Data Link

```
Run 10: Statistics of LEDBAT

Start at: 2017-12-20 23:09:34
End at: 2017-12-20 23:10:04

# Below is generated by plot.py at 2017-12-21 01:58:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.83 Mbit/s
95th percentile per-packet one-way delay: 51.563 ms
Loss rate: 1.85%
-- Flow 1:
Average throughput: 4.03 Mbit/s
95th percentile per-packet one-way delay: 51.212 ms
Loss rate: 3.19%
-- Flow 2:
Average throughput: 11.82 Mbit/s
95th percentile per-packet one-way delay: 51.745 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 2.92 Mbit/s
95th percentile per-packet one-way delay: 51.200 ms
Loss rate: 6.10%
```
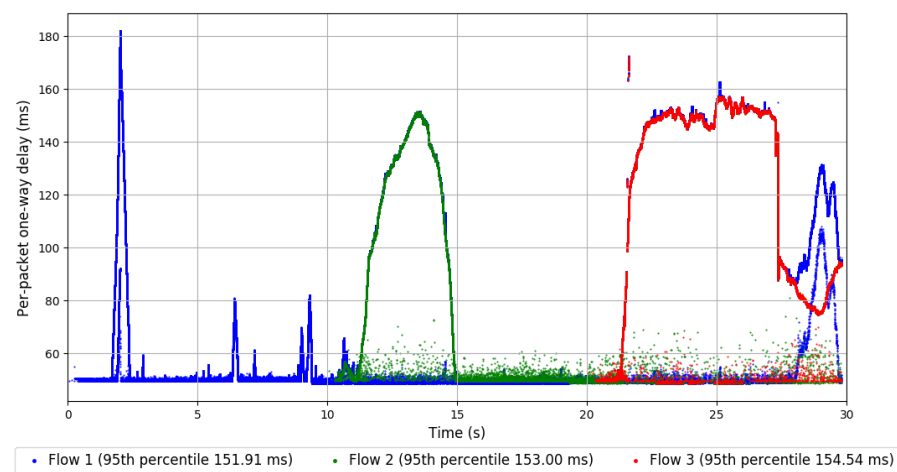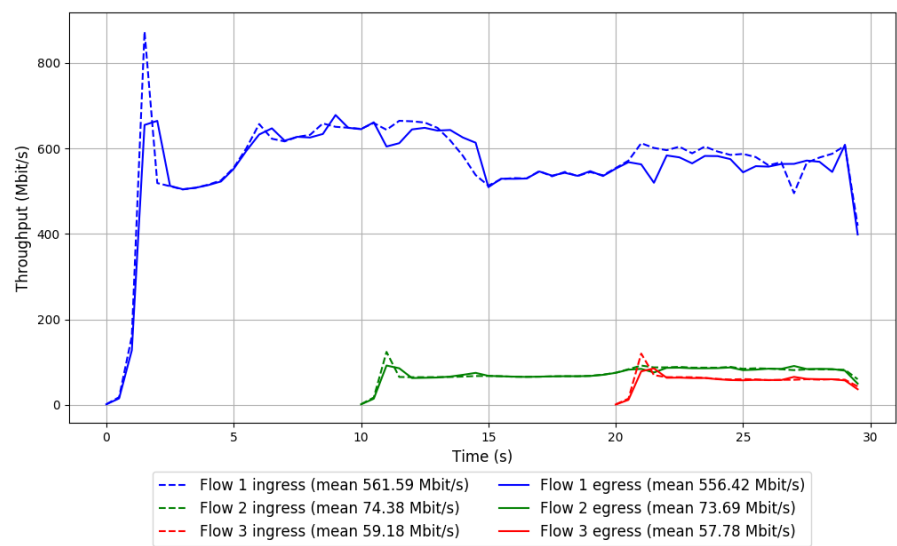
Run 10: Report of LEDBAT — Data Link

```
Run 1: Statistics of PCC

Start at: 2017-12-20 21:05:19
End at: 2017-12-20 21:05:49

# Below is generated by plot.py at 2017-12-21 02:07:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 624.11 Mbit/s
95th percentile per-packet one-way delay: 152.111 ms
Loss rate: 1.33%
-- Flow 1:
Average throughput: 556.42 Mbit/s
95th percentile per-packet one-way delay: 151.912 ms
Loss rate: 1.25%
-- Flow 2:
Average throughput: 73.69 Mbit/s
95th percentile per-packet one-way delay: 152.997 ms
Loss rate: 1.43%
-- Flow 3:
Average throughput: 57.78 Mbit/s
95th percentile per-packet one-way delay: 154.544 ms
Loss rate: 3.40%
```
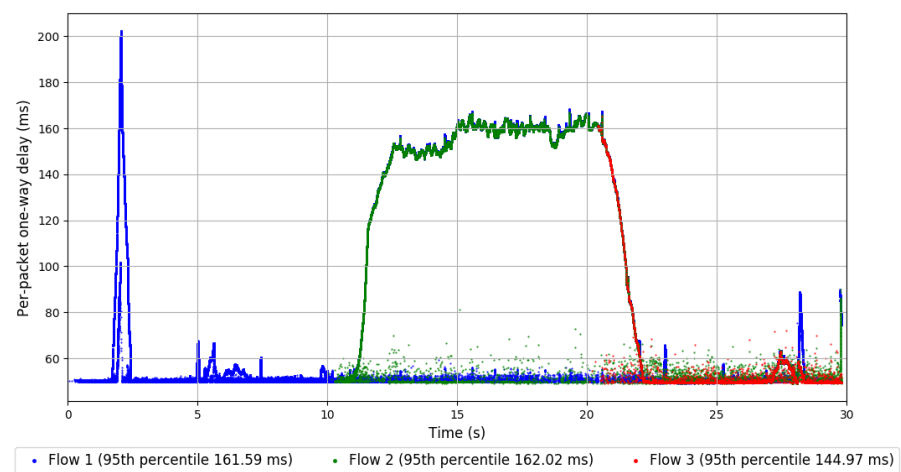
Run 1: Report of PCC — Data Link

Flow 1 ingress (mean 561.59 Mbit/s)   Flow 1 egress (mean 556.42 Mbit/s)
Flow 2 ingress (mean 74.38 Mbit/s)   Flow 2 egress (mean 73.69 Mbit/s)
Flow 3 ingress (mean 59.18 Mbit/s)   Flow 3 egress (mean 57.78 Mbit/s)

Flow 1 (95th percentile 151.91 ms)   Flow 2 (95th percentile 153.00 ms)   Flow 3 (95th percentile 154.54 ms)

```
Run 2: Statistics of PCC

Start at: 2017-12-20 21:19:38
End at: 2017-12-20 21:20:08

# Below is generated by plot.py at 2017-12-21 02:07:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 624.16 Mbit/s
95th percentile per-packet one-way delay: 161.604 ms
Loss rate: 1.97%
-- Flow 1:
Average throughput: 587.35 Mbit/s
95th percentile per-packet one-way delay: 161.585 ms
Loss rate: 1.98%
-- Flow 2:
Average throughput: 53.01 Mbit/s
95th percentile per-packet one-way delay: 162.022 ms
Loss rate: 1.87%
-- Flow 3:
Average throughput: 4.99 Mbit/s
95th percentile per-packet one-way delay: 144.970 ms
Loss rate: 1.15%
```
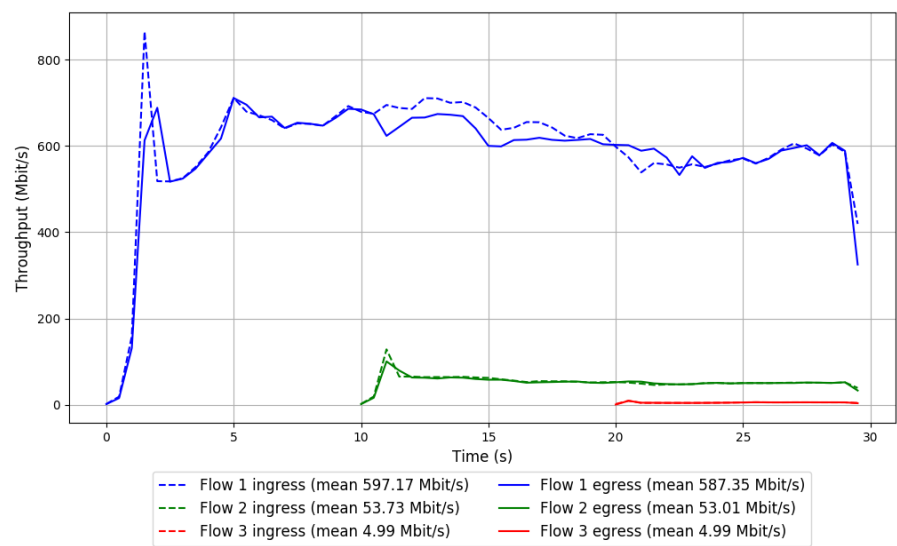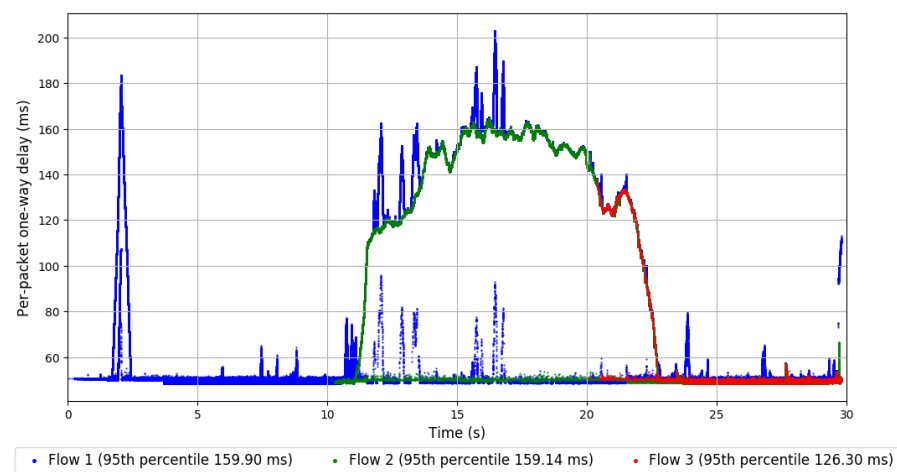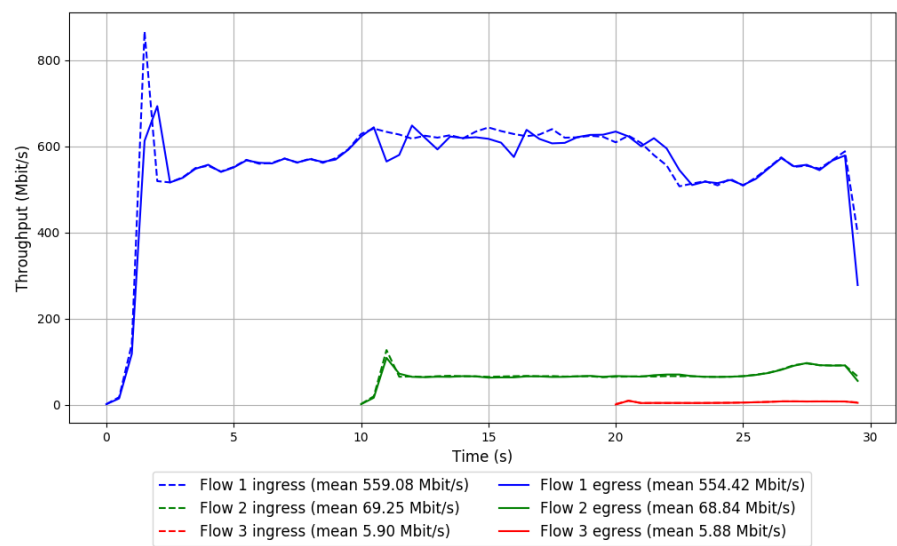
Run 2: Report of PCC — Data Link

Flow 1 ingress (mean 597.17 Mbit/s)   Flow 1 egress (mean 587.35 Mbit/s)
Flow 2 ingress (mean 53.73 Mbit/s)   Flow 2 egress (mean 53.01 Mbit/s)
Flow 3 ingress (mean 4.99 Mbit/s)   Flow 3 egress (mean 4.99 Mbit/s)

Flow 1 (95th percentile 161.59 ms)   Flow 2 (95th percentile 162.02 ms)   Flow 3 (95th percentile 144.97 ms)
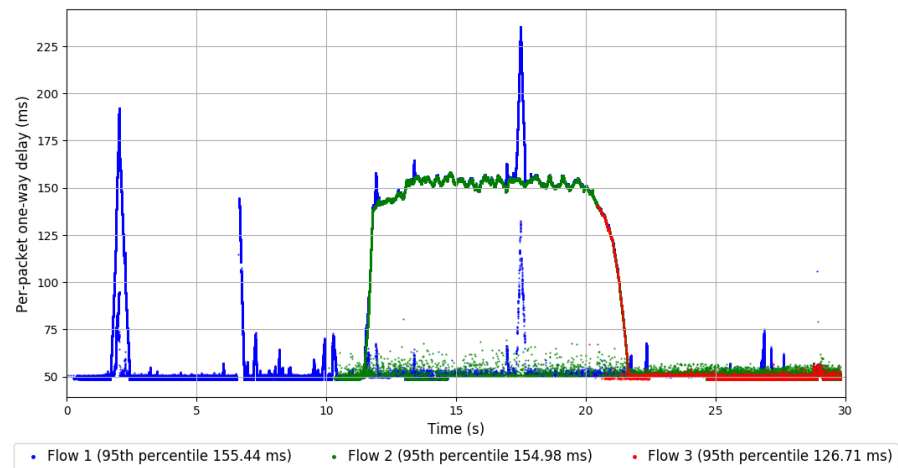
```
Run 3: Statistics of PCC

Start at: 2017-12-20 21:33:56
End at: 2017-12-20 21:34:26


# Below is generated by plot.py at 2017-12-21 02:08:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 602.02 Mbit/s
95th percentile per-packet one-way delay: 159.790 ms
Loss rate: 1.17%
-- Flow 1:
Average throughput: 554.42 Mbit/s
95th percentile per-packet one-way delay: 159.897 ms
Loss rate: 1.18%
-- Flow 2:
Average throughput: 68.84 Mbit/s
95th percentile per-packet one-way delay: 159.136 ms
Loss rate: 1.11%
-- Flow 3:
Average throughput: 5.88 Mbit/s
95th percentile per-packet one-way delay: 126.304 ms
Loss rate: 1.40%
```
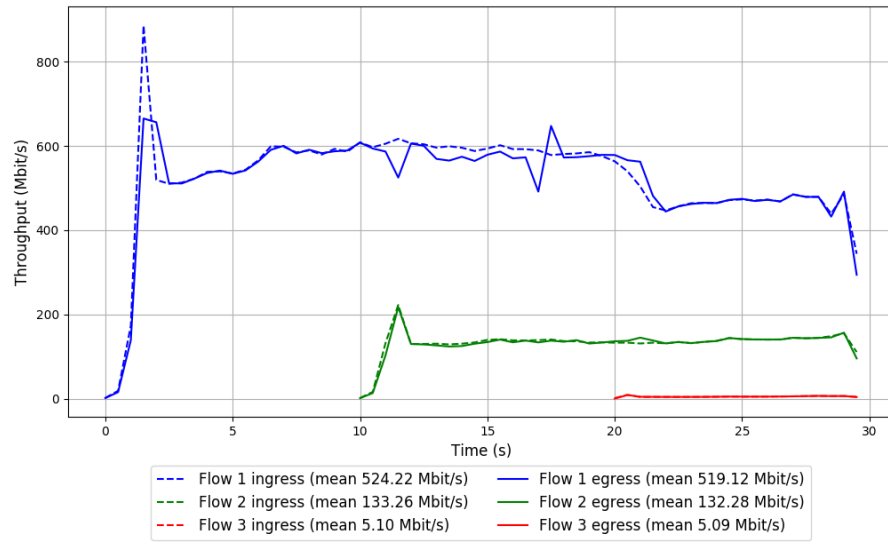
Run 3: Report of PCC — Data Link

Flow 1 ingress (mean 559.08 Mbit/s) — — — Flow 1 egress (mean 554.42 Mbit/s)
Flow 2 ingress (mean 69.25 Mbit/s) — — — Flow 2 egress (mean 68.84 Mbit/s)
Flow 3 ingress (mean 5.90 Mbit/s) — — — Flow 3 egress (mean 5.88 Mbit/s)

Flow 1 (95th percentile 159.90 ms)   Flow 2 (95th percentile 159.14 ms)   Flow 3 (95th percentile 126.30 ms)

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```
Run 4: Statistics of PCC

Start at: 2017-12-20 21:48:05
End at: 2017-12-20 21:48:36


# Below is generated by plot.py at 2017-12-21 02:08:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 608.45 Mbit/s
95th percentile per-packet one-way delay: 155.344 ms
Loss rate: 1.31%
-- Flow 1:
Average throughput: 519.12 Mbit/s
95th percentile per-packet one-way delay: 155.436 ms
Loss rate: 1.31%
-- Flow 2:
Average throughput: 132.28 Mbit/s
95th percentile per-packet one-way delay: 154.980 ms
Loss rate: 1.27%
-- Flow 3:
Average throughput: 5.09 Mbit/s
95th percentile per-packet one-way delay: 126.707 ms
Loss rate: 1.26%
```
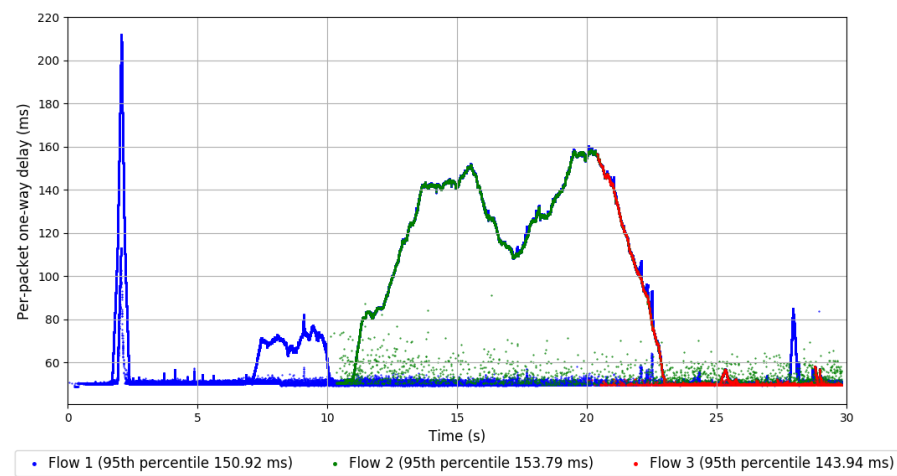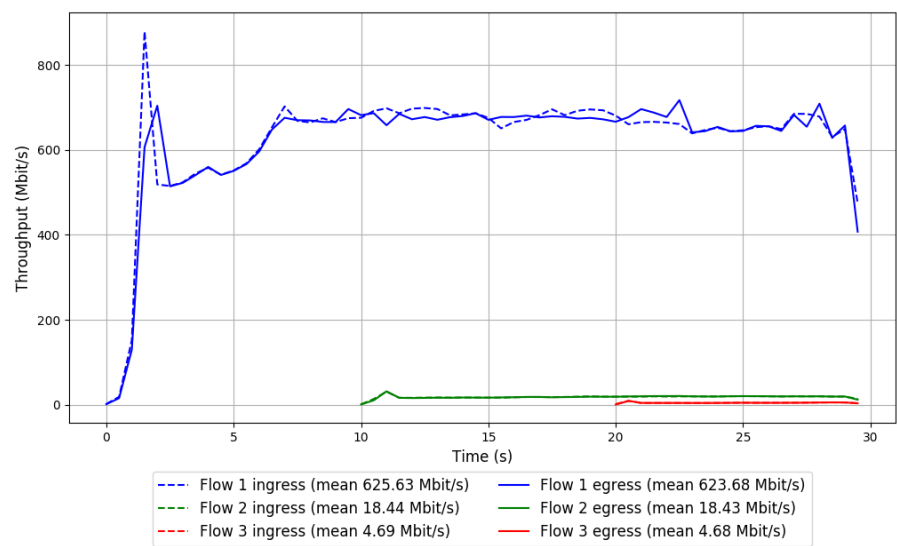
Run 4: Report of PCC — Data Link

Flow 1 ingress (mean 524.22 Mbit/s) --- Flow 1 egress (mean 519.12 Mbit/s)
Flow 2 ingress (mean 133.26 Mbit/s) --- Flow 2 egress (mean 132.28 Mbit/s)
Flow 3 ingress (mean 5.10 Mbit/s) --- Flow 3 egress (mean 5.09 Mbit/s)

Flow 1 (95th percentile 155.44 ms)   Flow 2 (95th percentile 154.98 ms)   Flow 3 (95th percentile 126.71 ms)

```
Run 5: Statistics of PCC

Start at: 2017-12-20 22:02:30
End at: 2017-12-20 22:03:00


# Below is generated by plot.py at 2017-12-21 02:08:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 637.41 Mbit/s
95th percentile per-packet one-way delay: 150.950 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 623.68 Mbit/s
95th percentile per-packet one-way delay: 150.924 ms
Loss rate: 0.64%
-- Flow 2:
Average throughput: 18.43 Mbit/s
95th percentile per-packet one-way delay: 153.789 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 4.68 Mbit/s
95th percentile per-packet one-way delay: 143.939 ms
Loss rate: 1.12%
```
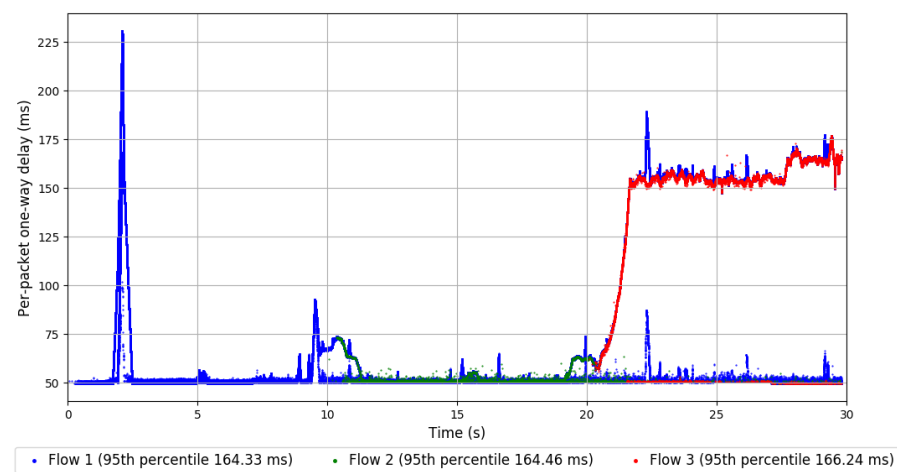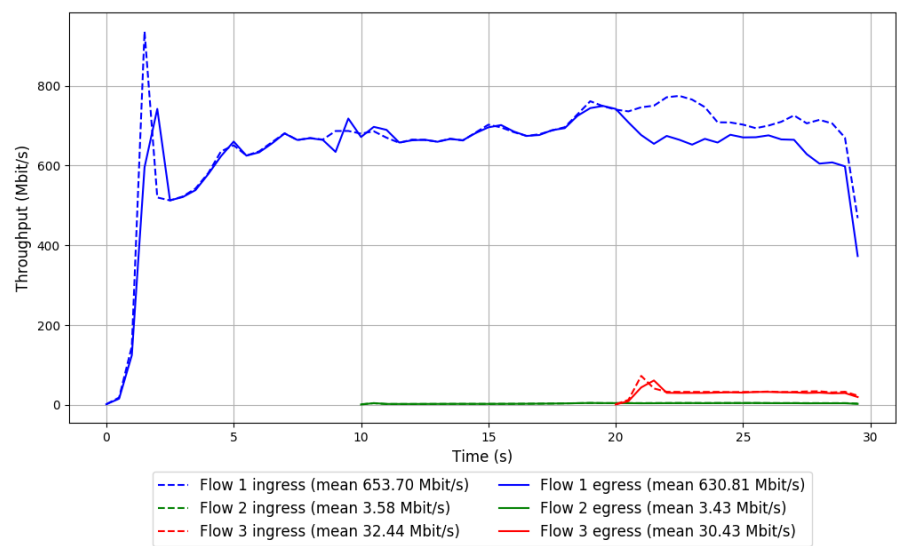
Run 5: Report of PCC — Data Link

- Flow 1 ingress (mean 625.63 Mbit/s) —— Flow 1 egress (mean 623.68 Mbit/s)
- Flow 2 ingress (mean 18.44 Mbit/s) —— Flow 2 egress (mean 18.43 Mbit/s)
- Flow 3 ingress (mean 4.69 Mbit/s) —— Flow 3 egress (mean 4.68 Mbit/s)

- Flow 1 (95th percentile 150.92 ms)   • Flow 2 (95th percentile 153.79 ms)   • Flow 3 (95th percentile 143.94 ms)

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```
Run 6: Statistics of PCC

Start at: 2017-12-20 22:16:43
End at: 2017-12-20 22:17:13


# Below is generated by plot.py at 2017-12-21 02:09:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 642.94 Mbit/s
95th percentile per-packet one-way delay: 164.397 ms
Loss rate: 3.89%
-- Flow 1:
Average throughput: 630.81 Mbit/s
95th percentile per-packet one-way delay: 164.333 ms
Loss rate: 3.83%
-- Flow 2:
Average throughput: 3.43 Mbit/s
95th percentile per-packet one-way delay: 164.462 ms
Loss rate: 4.81%
-- Flow 3:
Average throughput: 30.43 Mbit/s
95th percentile per-packet one-way delay: 166.243 ms
Loss rate: 7.24%
```
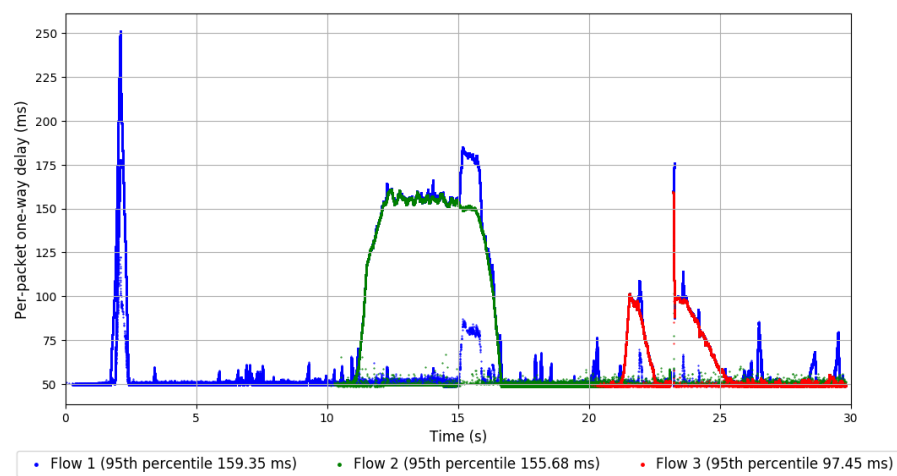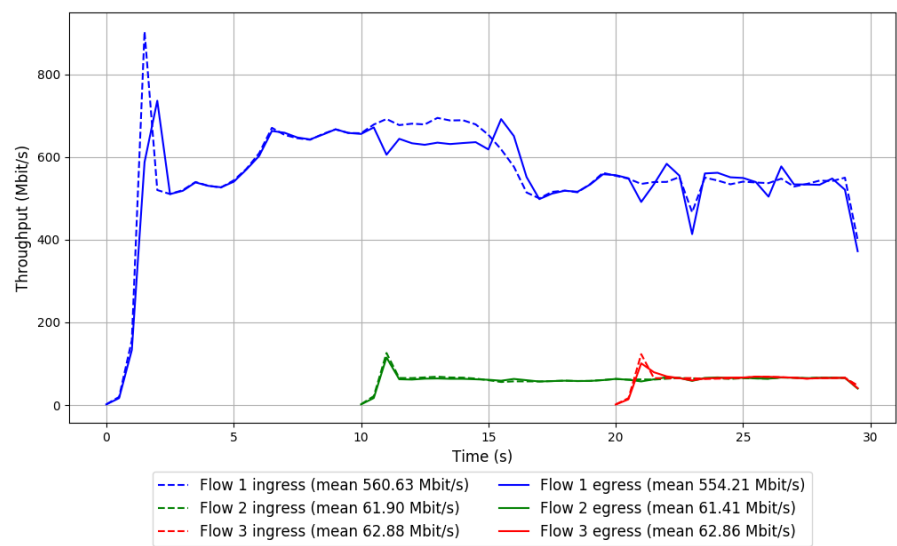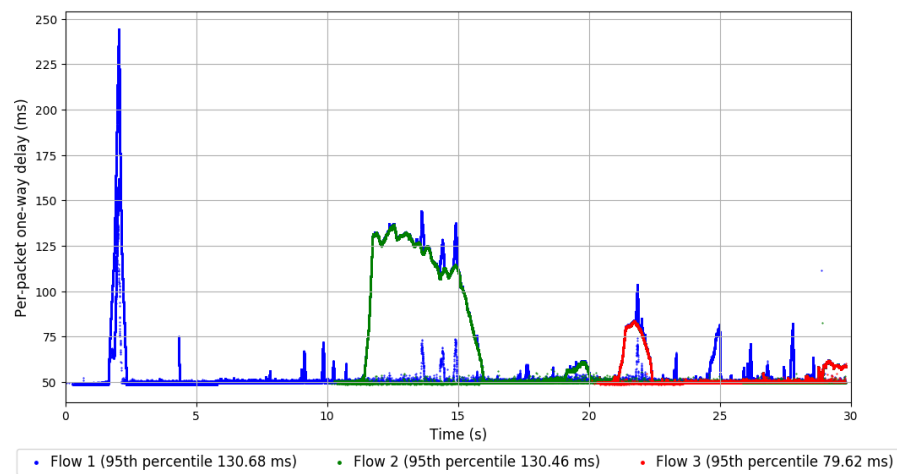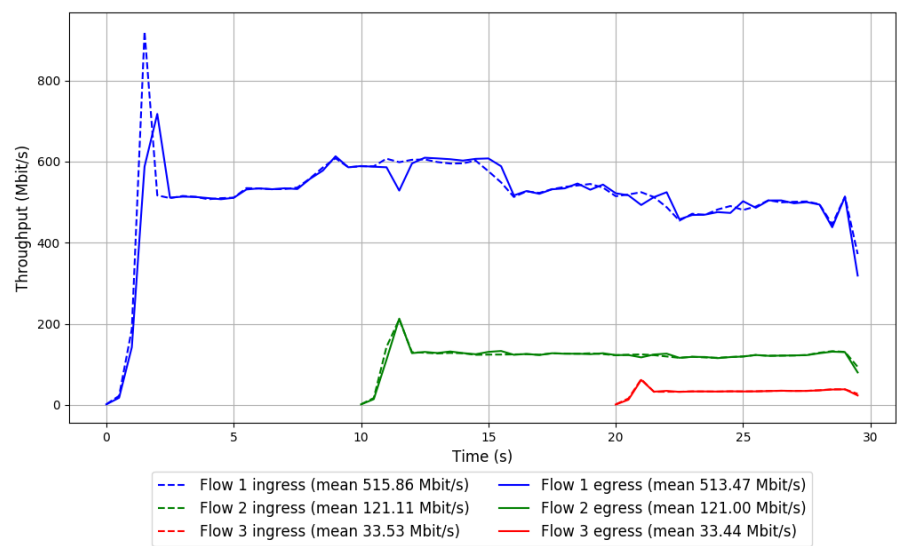
Run 6: Report of PCC — Data Link

Flow 1 ingress (mean 653.70 Mbit/s) Flow 1 egress (mean 630.81 Mbit/s)
Flow 2 ingress (mean 3.58 Mbit/s) Flow 2 egress (mean 3.43 Mbit/s)
Flow 3 ingress (mean 32.44 Mbit/s) Flow 3 egress (mean 30.43 Mbit/s)

Flow 1 (95th percentile 164.33 ms) Flow 2 (95th percentile 164.46 ms) Flow 3 (95th percentile 166.24 ms)

```
Run 7: Statistics of PCC

Start at: 2017-12-20 22:30:46
End at: 2017-12-20 22:31:16


# Below is generated by plot.py at 2017-12-21 02:09:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 615.47 Mbit/s
95th percentile per-packet one-way delay: 158.403 ms
Loss rate: 1.46%
-- Flow 1:
Average throughput: 554.21 Mbit/s
95th percentile per-packet one-way delay: 159.352 ms
Loss rate: 1.49%
-- Flow 2:
Average throughput: 61.41 Mbit/s
95th percentile per-packet one-way delay: 155.675 ms
Loss rate: 1.30%
-- Flow 3:
Average throughput: 62.86 Mbit/s
95th percentile per-packet one-way delay: 97.446 ms
Loss rate: 1.06%
```
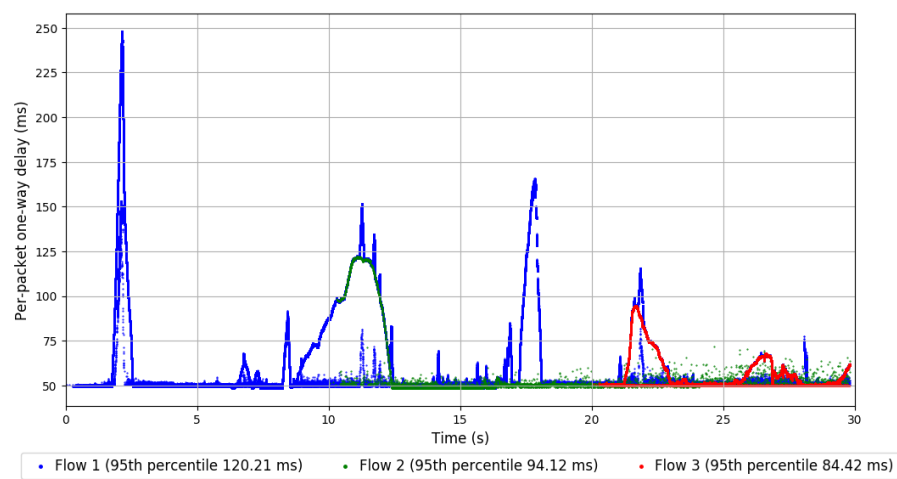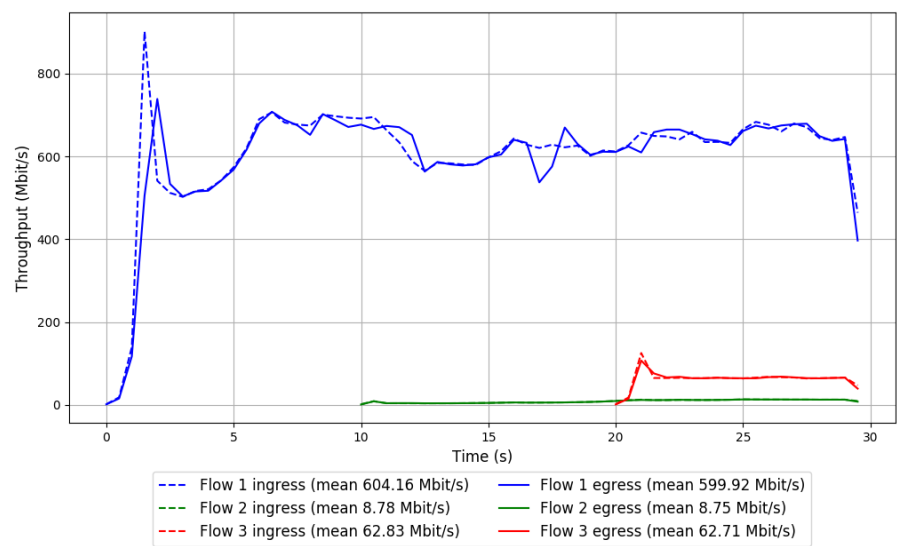
Run 7: Report of PCC — Data Link

- - - - Flow 1 ingress (mean 560.63 Mbit/s) —— Flow 1 egress (mean 554.21 Mbit/s)
- - - - Flow 2 ingress (mean 61.90 Mbit/s) —— Flow 2 egress (mean 61.41 Mbit/s)
- - - - Flow 3 ingress (mean 62.88 Mbit/s) —— Flow 3 egress (mean 62.86 Mbit/s)

- Flow 1 (95th percentile 159.35 ms) • Flow 2 (95th percentile 155.68 ms) • Flow 3 (95th percentile 97.45 ms)
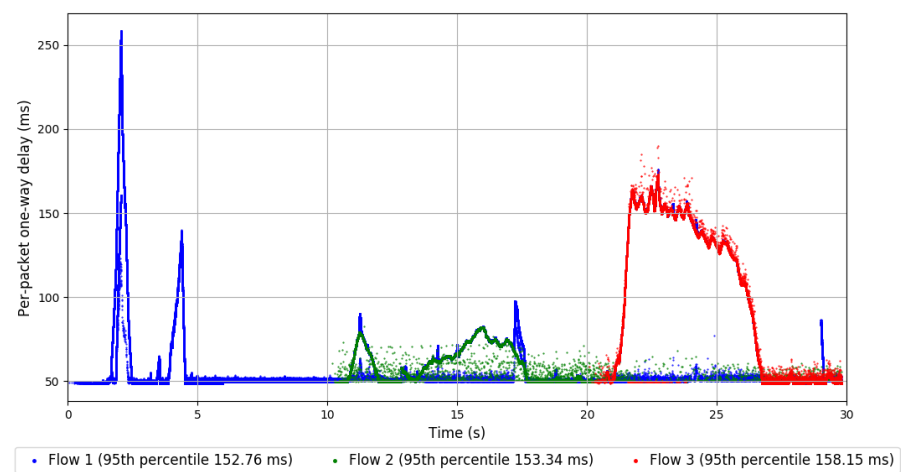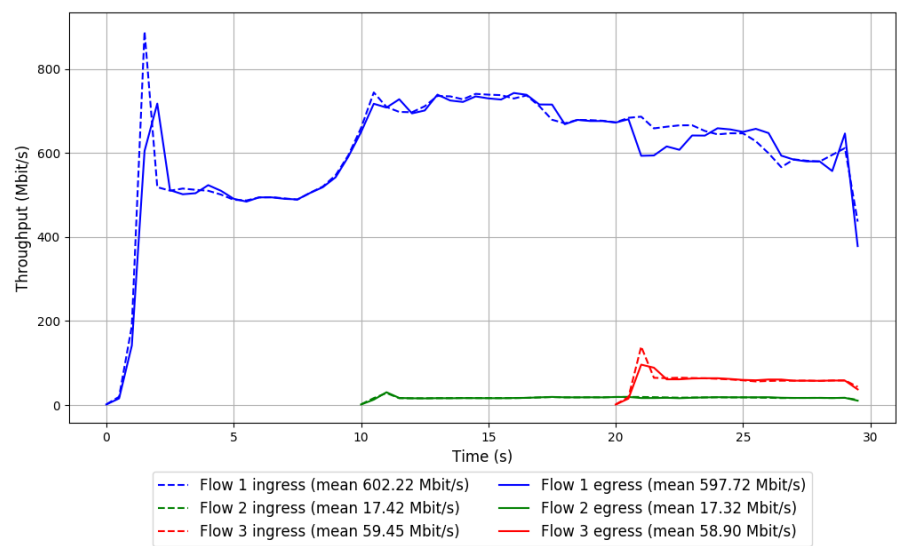
77

```
Run 8: Statistics of PCC

Start at: 2017-12-20 22:45:04
End at: 2017-12-20 22:45:34


# Below is generated by plot.py at 2017-12-21 02:09:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 604.65 Mbit/s
95th percentile per-packet one-way delay: 130.581 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 513.47 Mbit/s
95th percentile per-packet one-way delay: 130.680 ms
Loss rate: 0.80%
-- Flow 2:
Average throughput: 121.00 Mbit/s
95th percentile per-packet one-way delay: 130.460 ms
Loss rate: 0.60%
-- Flow 3:
Average throughput: 33.44 Mbit/s
95th percentile per-packet one-way delay: 79.619 ms
Loss rate: 1.28%
```

Run 8: Report of PCC — Data Link

- Flow 1 ingress (mean 515.86 Mbit/s)
- Flow 1 egress (mean 513.47 Mbit/s)
- Flow 2 ingress (mean 121.11 Mbit/s)
- Flow 2 egress (mean 121.00 Mbit/s)
- Flow 3 ingress (mean 33.53 Mbit/s)
- Flow 3 egress (mean 33.44 Mbit/s)

- Flow 1 (95th percentile 130.68 ms)
- Flow 2 (95th percentile 130.46 ms)
- Flow 3 (95th percentile 79.62 ms)
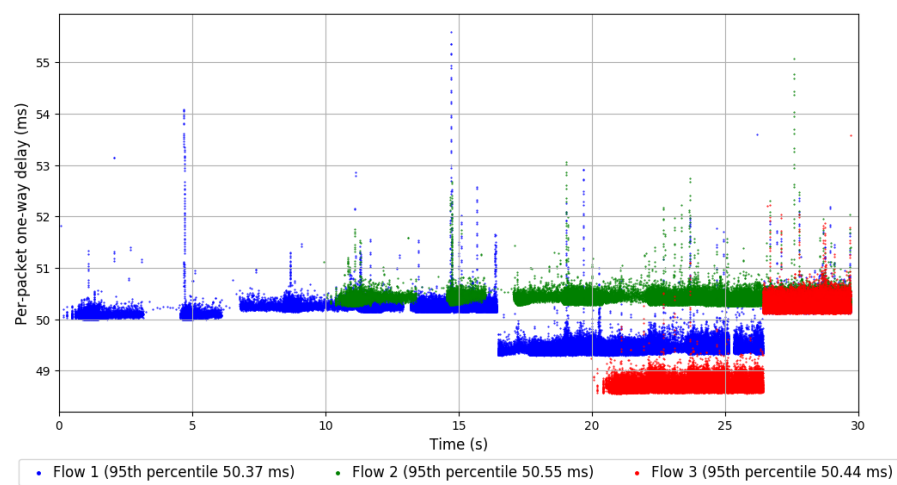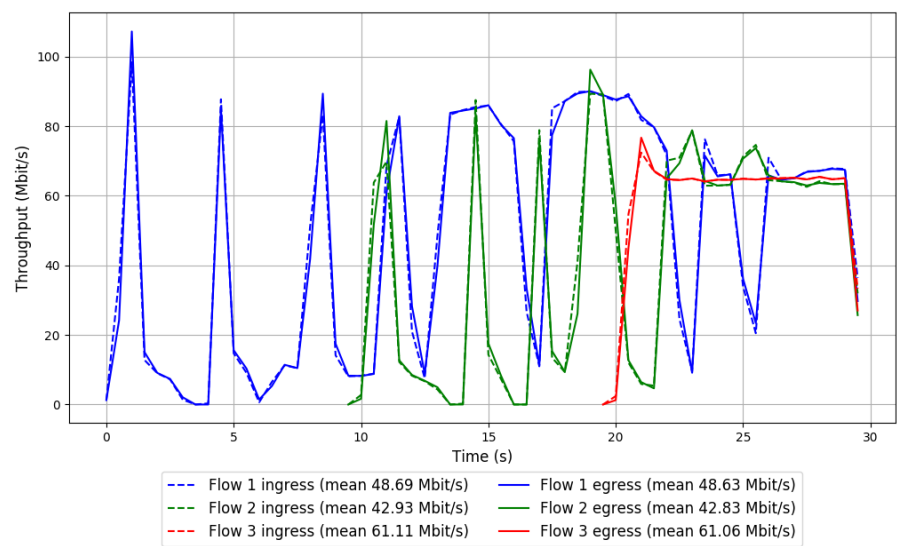
```
Run 9: Statistics of PCC

Start at: 2017-12-20 22:59:14
End at: 2017-12-20 22:59:44


# Below is generated by plot.py at 2017-12-21 02:18:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 626.19 Mbit/s
95th percentile per-packet one-way delay: 119.976 ms
Loss rate: 1.05%
-- Flow 1:
Average throughput: 599.92 Mbit/s
95th percentile per-packet one-way delay: 120.206 ms
Loss rate: 1.04%
-- Flow 2:
Average throughput: 8.75 Mbit/s
95th percentile per-packet one-way delay: 94.117 ms
Loss rate: 0.84%
-- Flow 3:
Average throughput: 62.71 Mbit/s
95th percentile per-packet one-way delay: 84.423 ms
Loss rate: 1.21%
```

Run 9: Report of PCC — Data Link

```
Run 10: Statistics of PCC

Start at: 2017-12-20 23:13:24
End at: 2017-12-20 23:13:54


# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 628.46 Mbit/s
95th percentile per-packet one-way delay: 153.050 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 597.72 Mbit/s
95th percentile per-packet one-way delay: 152.765 ms
Loss rate: 1.08%
-- Flow 2:
Average throughput: 17.32 Mbit/s
95th percentile per-packet one-way delay: 153.342 ms
Loss rate: 1.10%
-- Flow 3:
Average throughput: 58.90 Mbit/s
95th percentile per-packet one-way delay: 158.154 ms
Loss rate: 2.05%
```
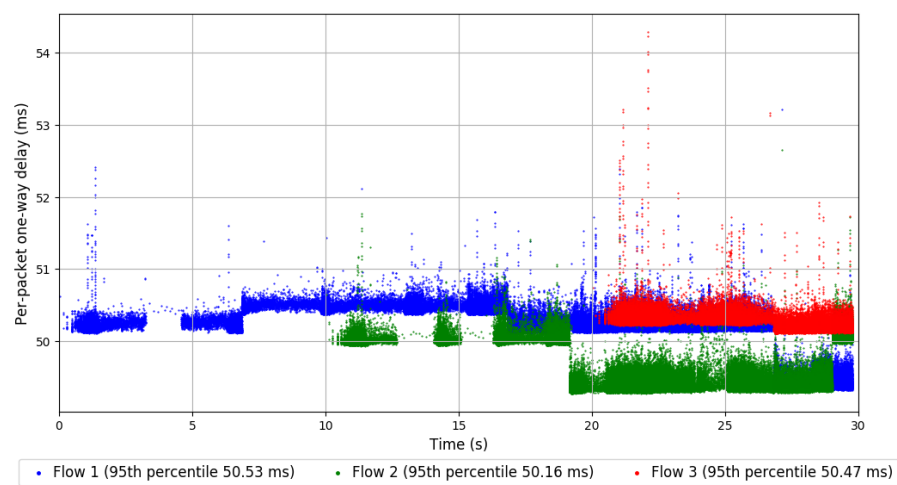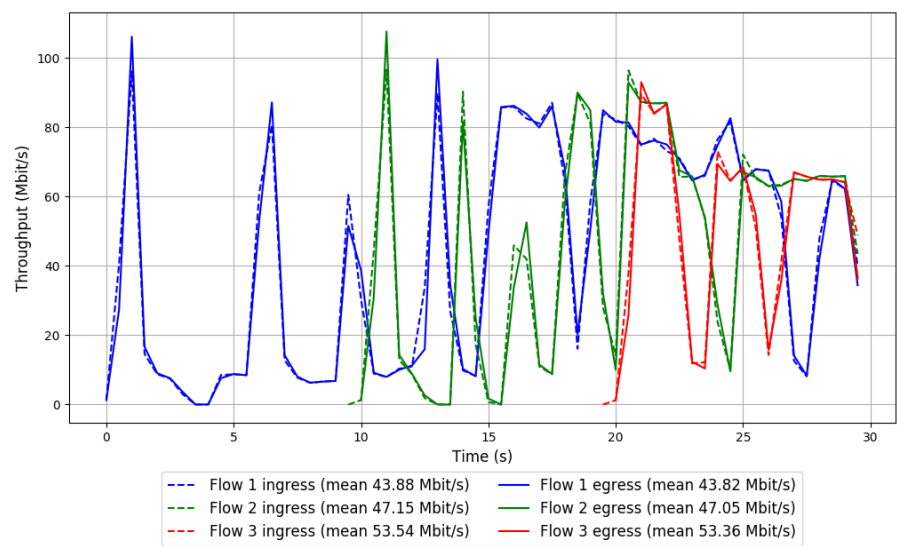
Run 10: Report of PCC — Data Link

Flow 1 ingress (mean 602.22 Mbit/s)   Flow 1 egress (mean 597.72 Mbit/s)
Flow 2 ingress (mean 17.42 Mbit/s)   Flow 2 egress (mean 17.32 Mbit/s)
Flow 3 ingress (mean 59.45 Mbit/s)   Flow 3 egress (mean 58.90 Mbit/s)

Flow 1 (95th percentile 152.76 ms)   Flow 2 (95th percentile 153.34 ms)   Flow 3 (95th percentile 158.15 ms)

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```
Run 1: Statistics of QUIC Cubic

Start at: 2017-12-20 21:13:14
End at: 2017-12-20 21:13:44

# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.20 Mbit/s
95th percentile per-packet one-way delay: 50.481 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 48.63 Mbit/s
95th percentile per-packet one-way delay: 50.371 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 42.83 Mbit/s
95th percentile per-packet one-way delay: 50.550 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 61.06 Mbit/s
95th percentile per-packet one-way delay: 50.437 ms
Loss rate: 1.07%
```
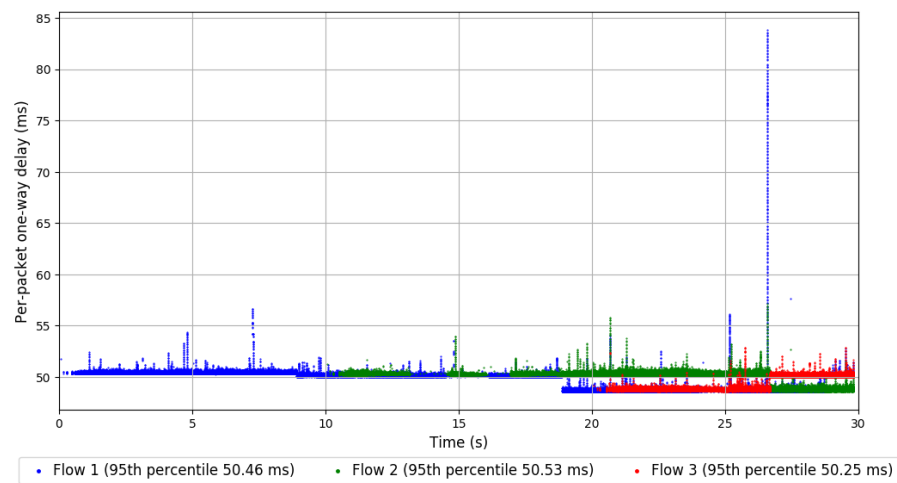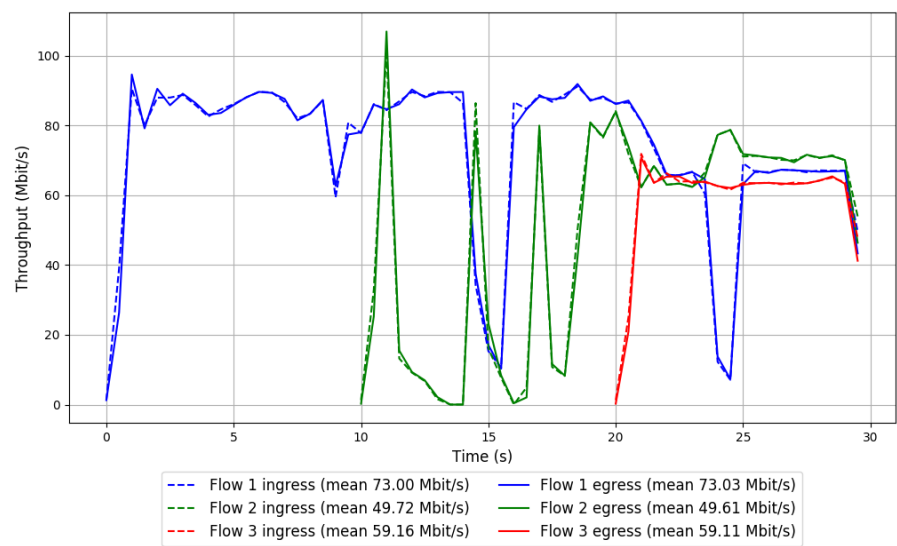
Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2017-12-20 21:27:31
End at: 2017-12-20 21:28:01

# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.59 Mbit/s
95th percentile per-packet one-way delay: 50.492 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 43.82 Mbit/s
95th percentile per-packet one-way delay: 50.534 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 47.05 Mbit/s
95th percentile per-packet one-way delay: 50.160 ms
Loss rate: 0.71%
-- Flow 3:
Average throughput: 53.36 Mbit/s
95th percentile per-packet one-way delay: 50.469 ms
Loss rate: 1.80%
```
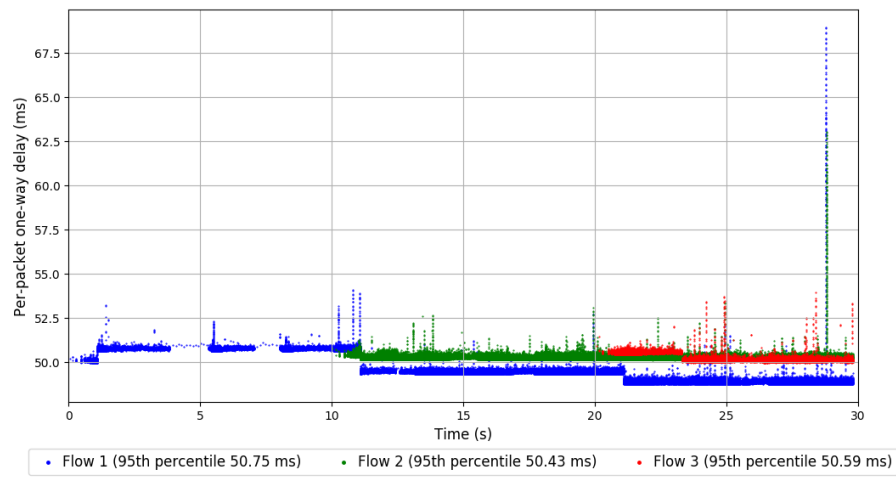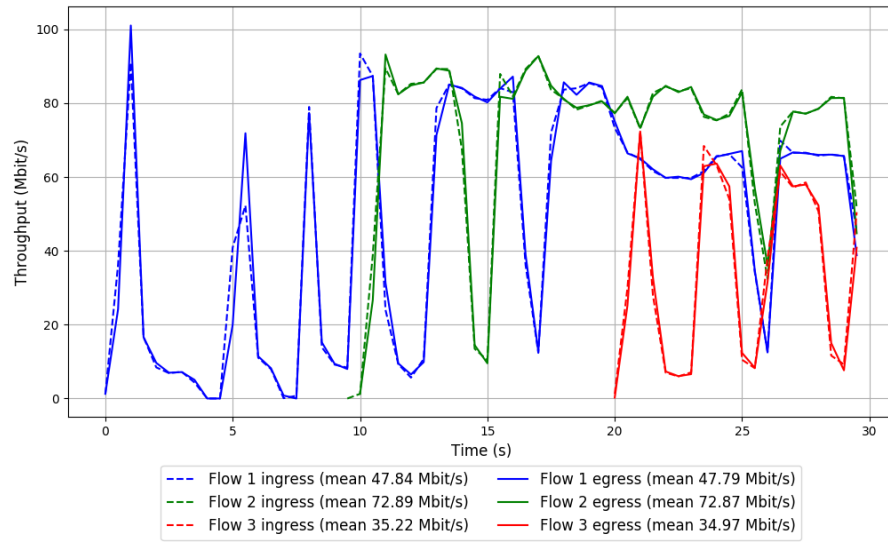
Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2017-12-20 21:41:41
End at: 2017-12-20 21:42:11


# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 125.32 Mbit/s
95th percentile per-packet one-way delay: 50.466 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 73.03 Mbit/s
95th percentile per-packet one-way delay: 50.456 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 49.61 Mbit/s
95th percentile per-packet one-way delay: 50.527 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 59.11 Mbit/s
95th percentile per-packet one-way delay: 50.250 ms
Loss rate: 1.12%
```
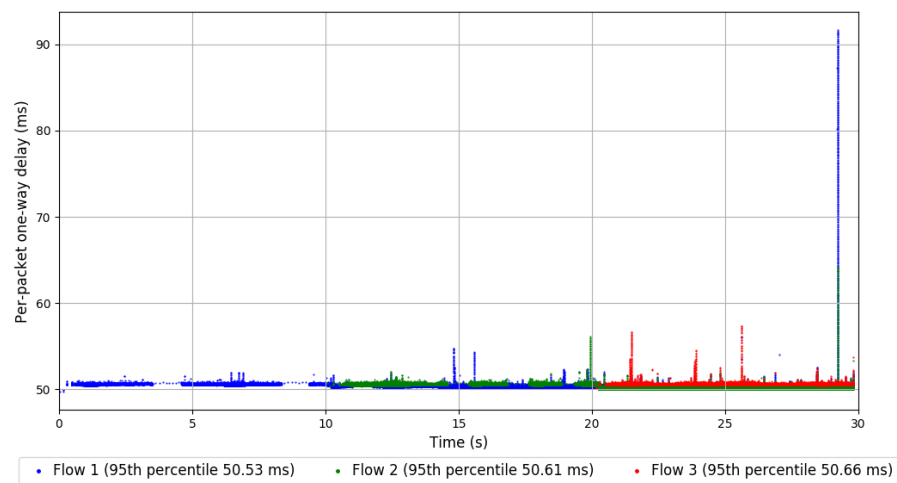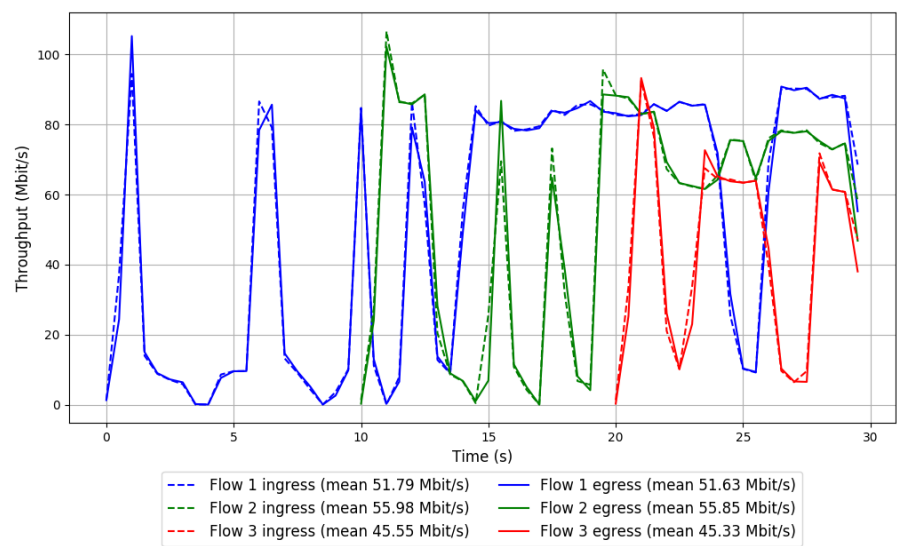
Run 3: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 73.00 Mbit/s) — Flow 1 egress (mean 73.03 Mbit/s)
Flow 2 ingress (mean 49.72 Mbit/s) — Flow 2 egress (mean 49.61 Mbit/s)
Flow 3 ingress (mean 59.16 Mbit/s) — Flow 3 egress (mean 59.11 Mbit/s)

Flow 1 (95th percentile 50.46 ms) • Flow 2 (95th percentile 50.53 ms) • Flow 3 (95th percentile 50.25 ms)

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```
Run 4: Statistics of QUIC Cubic

Start at: 2017-12-20 21:56:07
End at: 2017-12-20 21:56:37


# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 107.63 Mbit/s
95th percentile per-packet one-way delay: 50.691 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 47.79 Mbit/s
95th percentile per-packet one-way delay: 50.754 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 72.87 Mbit/s
95th percentile per-packet one-way delay: 50.428 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 34.97 Mbit/s
95th percentile per-packet one-way delay: 50.589 ms
Loss rate: 1.73%
```
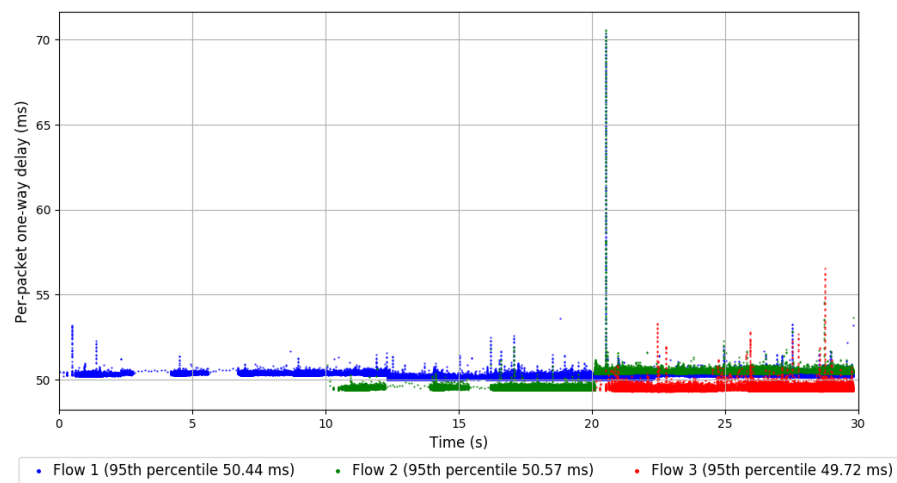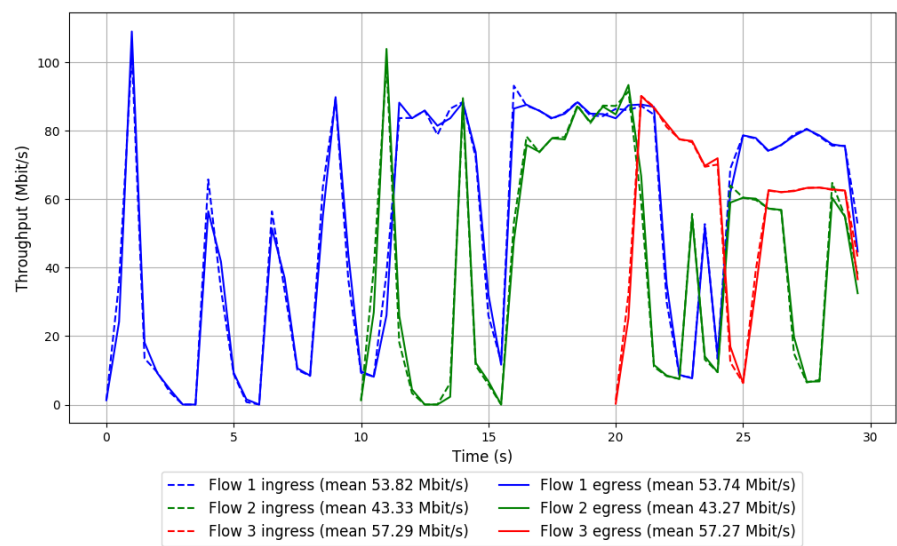
Run 4: Report of QUIC Cubic — Data Link

```
Run 5: Statistics of QUIC Cubic

Start at: 2017-12-20 22:10:20
End at: 2017-12-20 22:10:50

# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 103.51 Mbit/s
95th percentile per-packet one-way delay: 50.597 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 51.63 Mbit/s
95th percentile per-packet one-way delay: 50.535 ms
Loss rate: 0.72%
-- Flow 2:
Average throughput: 55.85 Mbit/s
95th percentile per-packet one-way delay: 50.606 ms
Loss rate: 0.85%
-- Flow 3:
Average throughput: 45.33 Mbit/s
95th percentile per-packet one-way delay: 50.658 ms
Loss rate: 1.71%
```
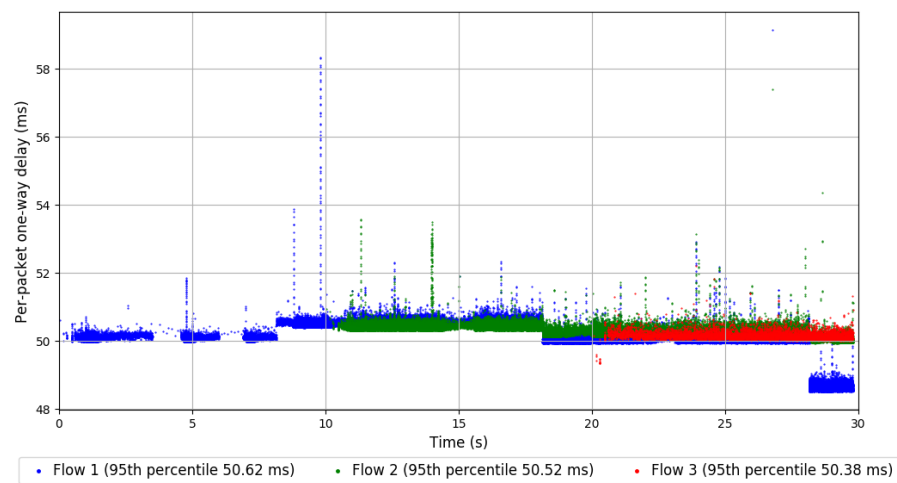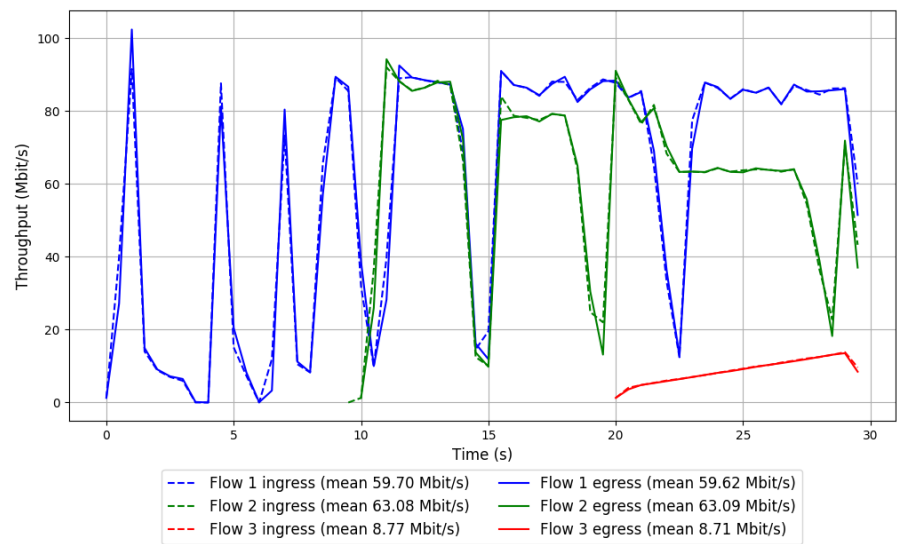
Run 5: Report of QUIC Cubic — Data Link

- - - Flow 1 ingress (mean 51.79 Mbit/s) —— Flow 1 egress (mean 51.63 Mbit/s)
- - - Flow 2 ingress (mean 55.98 Mbit/s) —— Flow 2 egress (mean 55.85 Mbit/s)
- - - Flow 3 ingress (mean 45.55 Mbit/s) —— Flow 3 egress (mean 45.33 Mbit/s)

• Flow 1 (95th percentile 50.53 ms)   • Flow 2 (95th percentile 50.61 ms)   • Flow 3 (95th percentile 50.66 ms)

```
Run 6: Statistics of QUIC Cubic

Start at: 2017-12-20 22:24:38
End at: 2017-12-20 22:25:08

# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 101.17 Mbit/s
95th percentile per-packet one-way delay: 50.492 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 53.74 Mbit/s
95th percentile per-packet one-way delay: 50.440 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 43.27 Mbit/s
95th percentile per-packet one-way delay: 50.571 ms
Loss rate: 0.64%
-- Flow 3:
Average throughput: 57.27 Mbit/s
95th percentile per-packet one-way delay: 49.724 ms
Loss rate: 1.11%
```
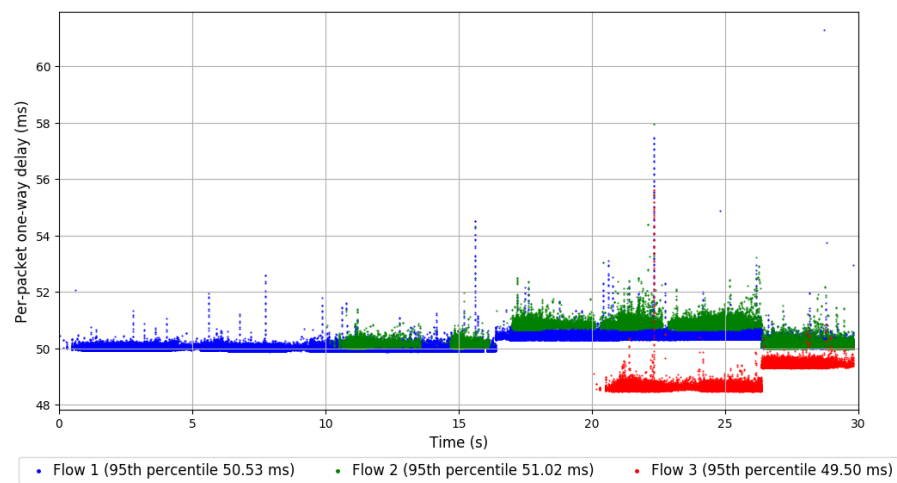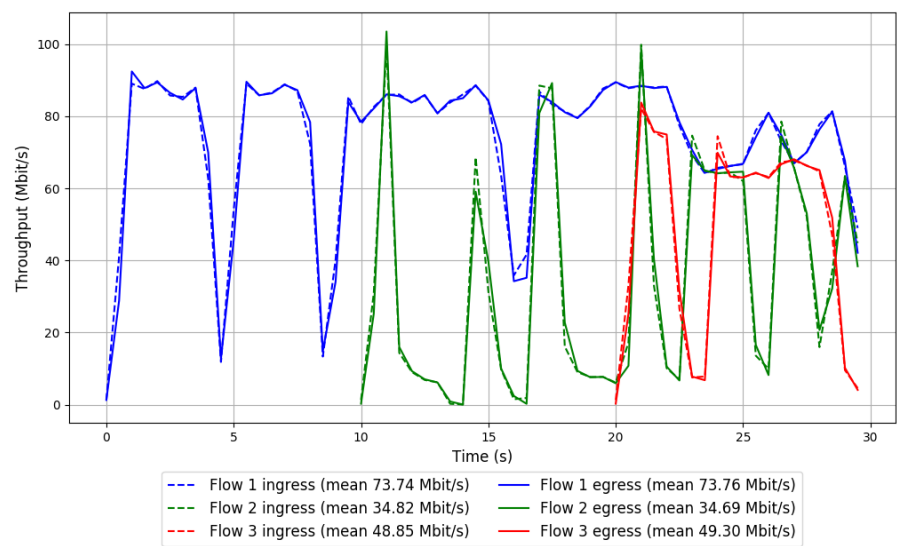
Run 6: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 53.82 Mbit/s) ---- Flow 1 egress (mean 53.74 Mbit/s) ——
Flow 2 ingress (mean 43.33 Mbit/s) ---- Flow 2 egress (mean 43.27 Mbit/s) ——
Flow 3 ingress (mean 57.29 Mbit/s) ---- Flow 3 egress (mean 57.27 Mbit/s) ——

Flow 1 (95th percentile 50.44 ms) · Flow 2 (95th percentile 50.57 ms) · Flow 3 (95th percentile 49.72 ms)

```
Run 7: Statistics of QUIC Cubic

Start at: 2017-12-20 22:38:40
End at: 2017-12-20 22:39:10

# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 104.36 Mbit/s
95th percentile per-packet one-way delay: 50.584 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 59.62 Mbit/s
95th percentile per-packet one-way delay: 50.621 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 63.09 Mbit/s
95th percentile per-packet one-way delay: 50.517 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 8.71 Mbit/s
95th percentile per-packet one-way delay: 50.378 ms
Loss rate: 1.65%
```
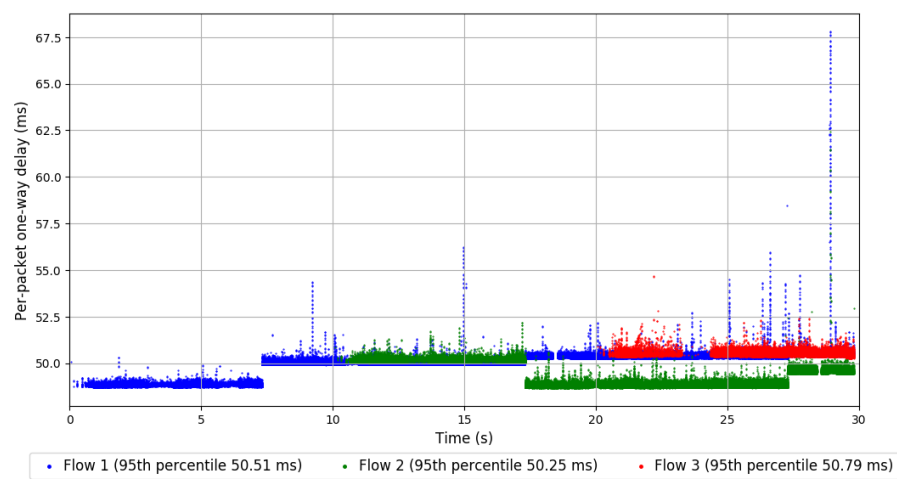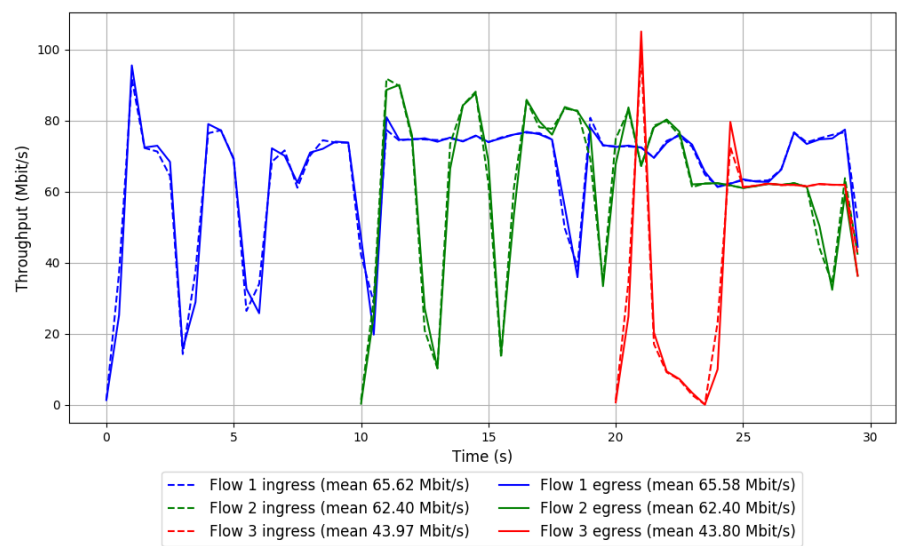
Run 7: Report of QUIC Cubic — Data Link

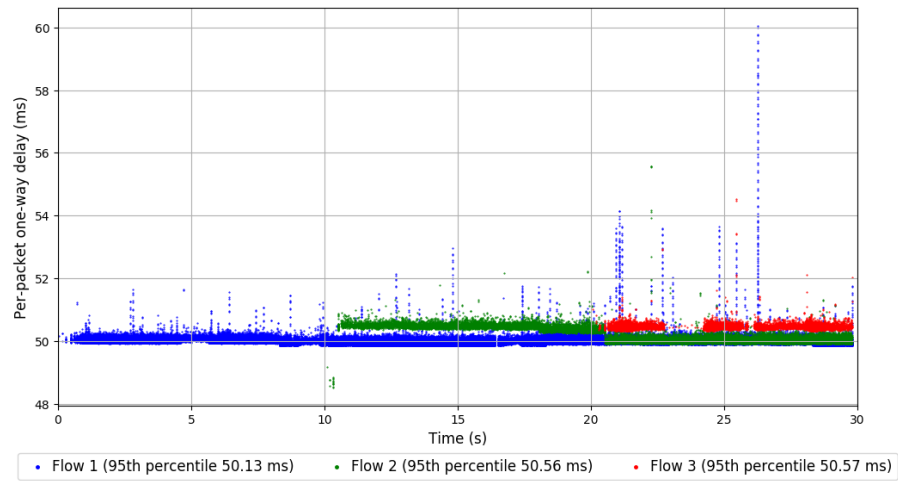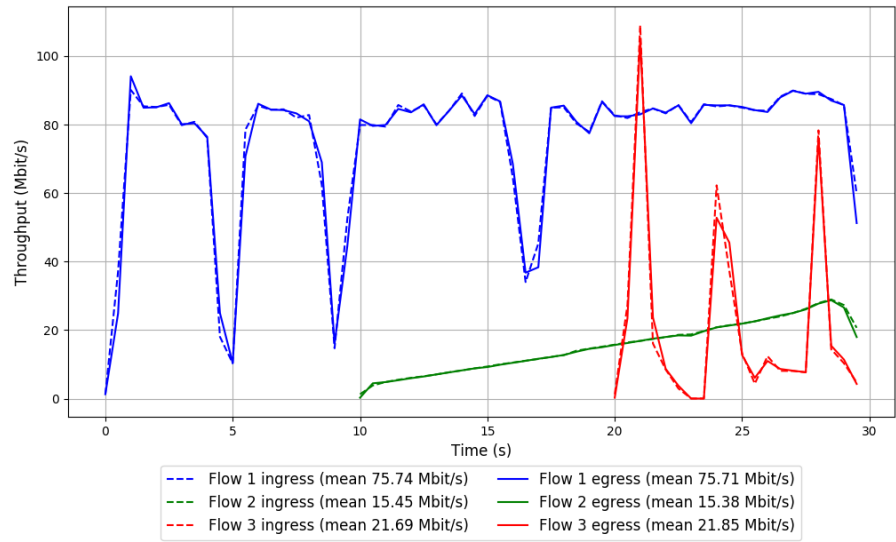```
Run 8: Statistics of QUIC Cubic

Start at: 2017-12-20 22:52:52
End at: 2017-12-20 22:53:22

Below is generated by plot.py at 2017-12-21 02:18:18
Datalink statistics
-- Total of 3 flows:
Average throughput: 112.92 Mbit/s
95th percentile per-packet one-way delay: 50.816 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 73.76 Mbit/s
95th percentile per-packet one-way delay: 50.529 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 34.69 Mbit/s
95th percentile per-packet one-way delay: 51.024 ms
Loss rate: 0.91%
-- Flow 3:
Average throughput: 49.30 Mbit/s
95th percentile per-packet one-way delay: 49.502 ms
Loss rate: 0.12%
```
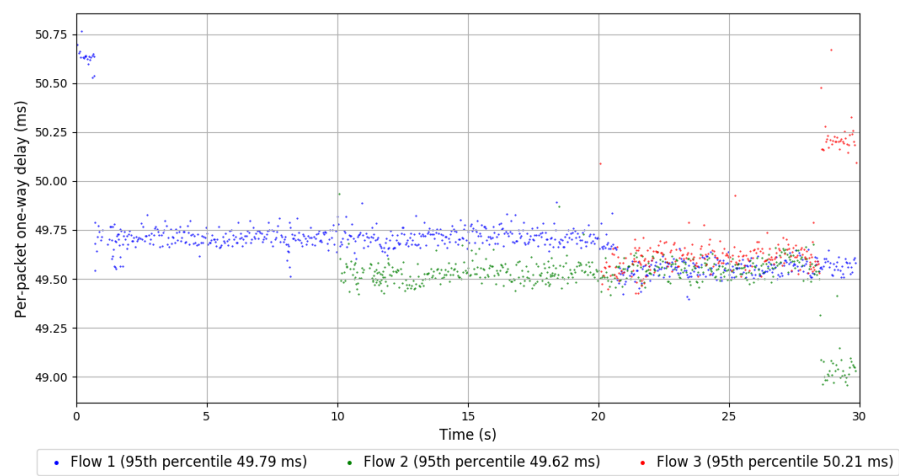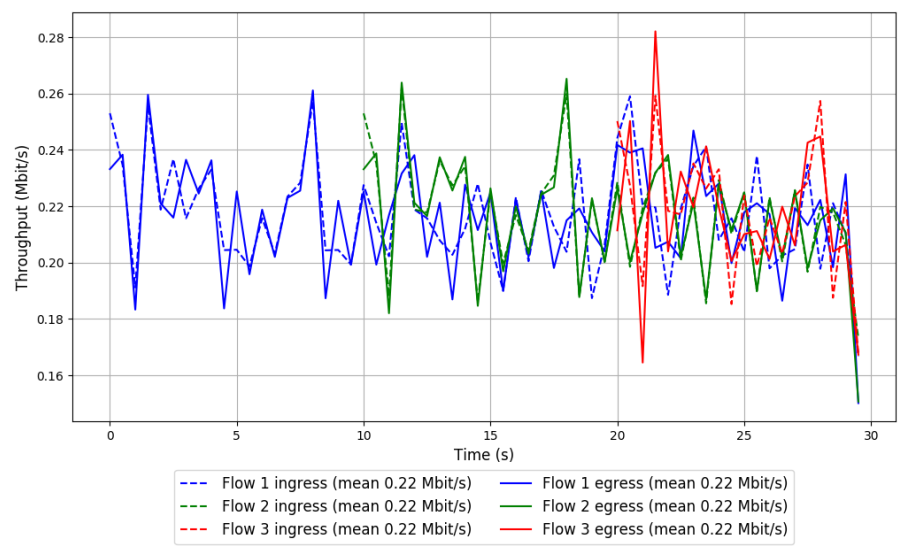
Run 8: Report of QUIC Cubic — Data Link



Flow 1 ingress (mean 73.74 Mbit/s)    Flow 1 egress (mean 73.76 Mbit/s)
Flow 2 ingress (mean 34.82 Mbit/s)    Flow 2 egress (mean 34.69 Mbit/s)
Flow 3 ingress (mean 48.85 Mbit/s)    Flow 3 egress (mean 49.30 Mbit/s)



Flow 1 (95th percentile 50.53 ms)    Flow 2 (95th percentile 51.02 ms)    Flow 3 (95th percentile 49.50 ms)

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```
Run 9: Statistics of QUIC Cubic

Start at: 2017-12-20 23:07:01
End at: 2017-12-20 23:07:31

Below is generated by plot.py at 2017-12-21 02:18:18
Datalink statistics
-- Total of 3 flows:
Average throughput: 121.27 Mbit/s
95th percentile per-packet one-way delay: 50.554 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 65.58 Mbit/s
95th percentile per-packet one-way delay: 50.507 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 62.40 Mbit/s
95th percentile per-packet one-way delay: 50.247 ms
Loss rate: 0.49%
-- Flow 3:
Average throughput: 43.80 Mbit/s
95th percentile per-packet one-way delay: 50.786 ms
Loss rate: 1.42%
```
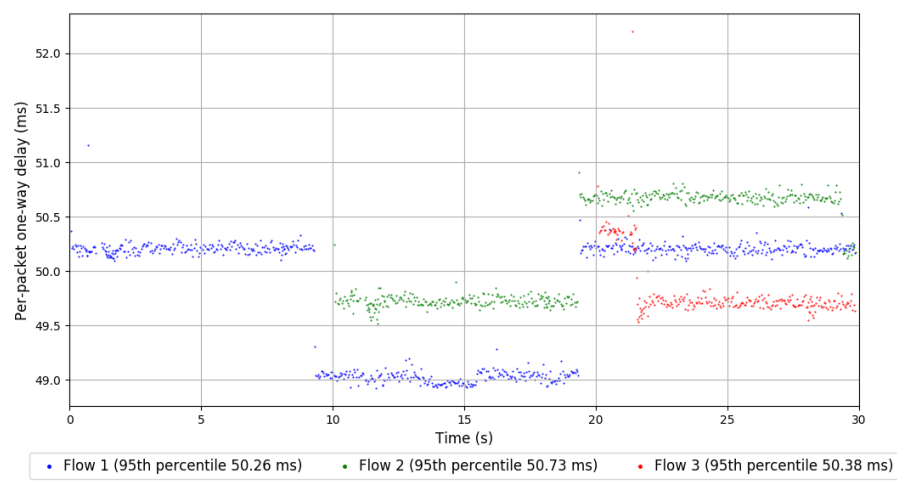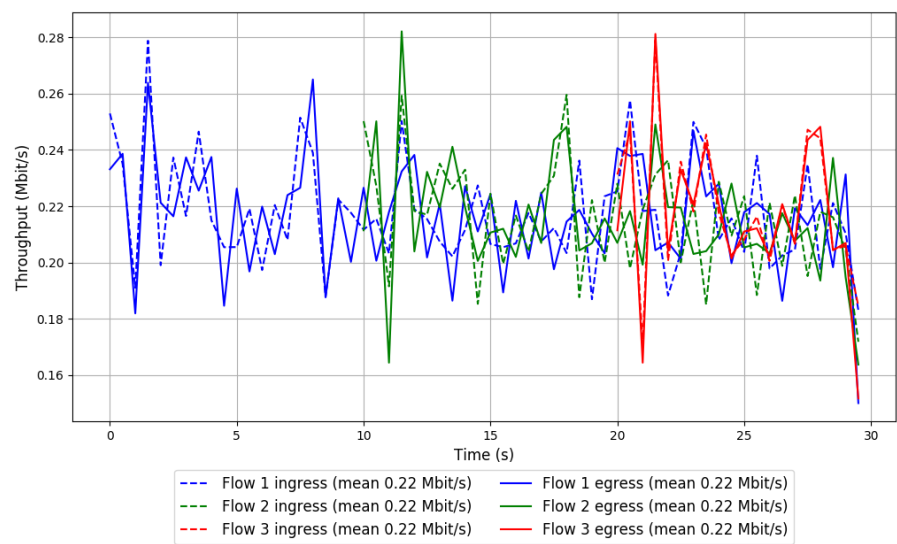
Run 9: Report of QUIC Cubic — Data Link



Flow 1 ingress (mean 65.62 Mbit/s) --- Flow 1 egress (mean 65.58 Mbit/s)
Flow 2 ingress (mean 62.40 Mbit/s) --- Flow 2 egress (mean 62.40 Mbit/s)
Flow 3 ingress (mean 43.97 Mbit/s) --- Flow 3 egress (mean 43.80 Mbit/s)



Flow 1 (95th percentile 50.51 ms) · Flow 2 (95th percentile 50.25 ms) · Flow 3 (95th percentile 50.79 ms)

```
Run 10: Statistics of QUIC Cubic

Start at: 2017-12-20 23:21:20
End at: 2017-12-20 23:21:50

Below is generated by plot.py at 2017-12-21 02:18:18
Datalink statistics
-- Total of 3 flows:
Average throughput: 93.04 Mbit/s
95th percentile per-packet one-way delay: 50.452 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 75.71 Mbit/s
95th percentile per-packet one-way delay: 50.126 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 15.38 Mbit/s
95th percentile per-packet one-way delay: 50.556 ms
Loss rate: 0.97%
-- Flow 3:
Average throughput: 21.85 Mbit/s
95th percentile per-packet one-way delay: 50.570 ms
Loss rate: 0.30%
```
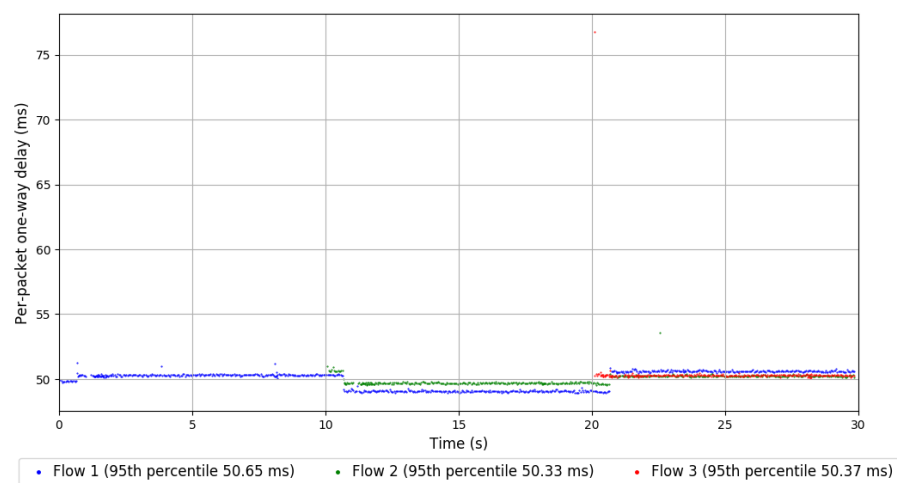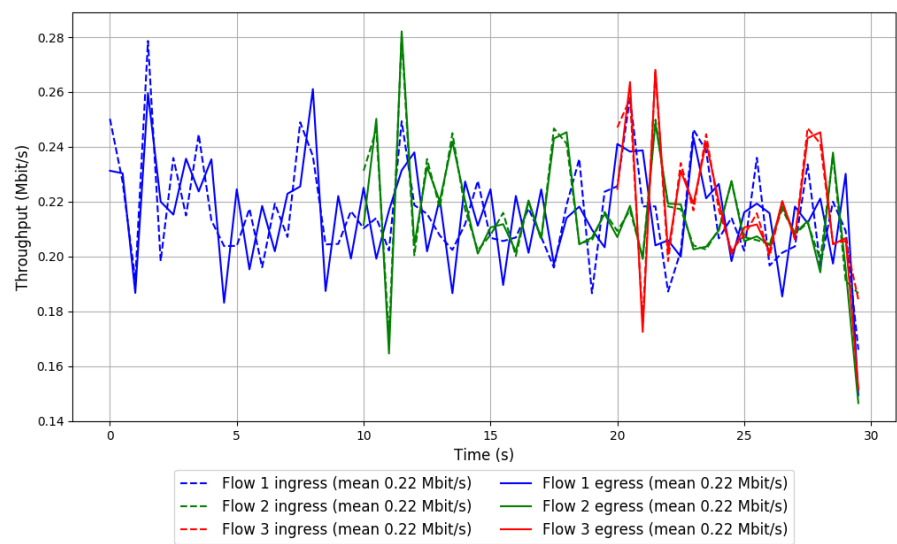
Run 10: Report of QUIC Cubic — Data Link



Flow 1 ingress (mean 75.74 Mbit/s)    Flow 1 egress (mean 75.71 Mbit/s)
Flow 2 ingress (mean 15.45 Mbit/s)    Flow 2 egress (mean 15.38 Mbit/s)
Flow 3 ingress (mean 21.69 Mbit/s)    Flow 3 egress (mean 21.85 Mbit/s)



Flow 1 (95th percentile 50.13 ms)    Flow 2 (95th percentile 50.56 ms)    Flow 3 (95th percentile 50.57 ms)
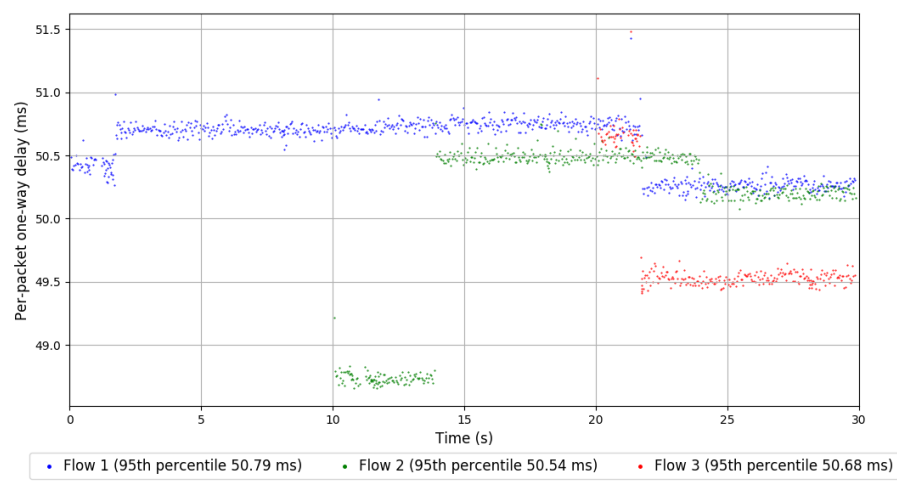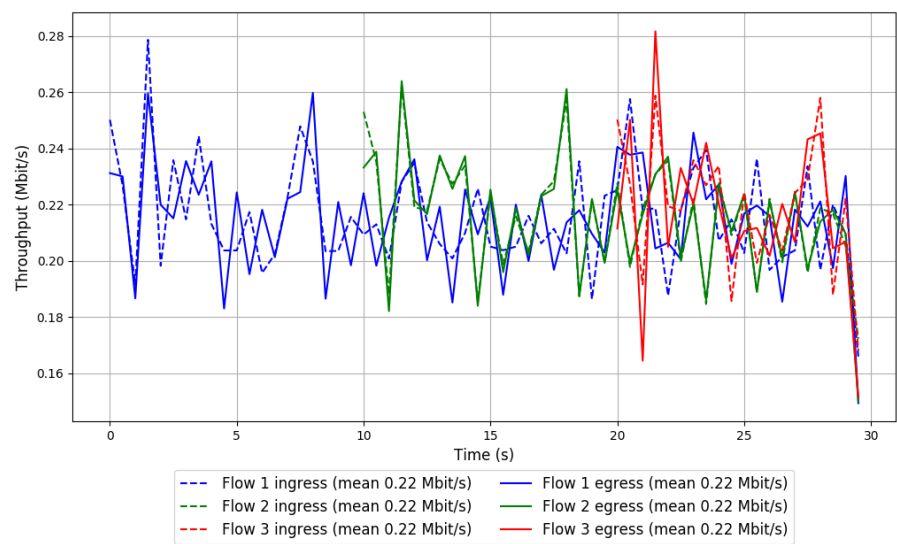
```
Run 1: Statistics of SCReAM

Start at: 2017-12-20 21:04:40
End at: 2017-12-20 21:05:10

Below is generated by plot.py at 2017-12-21 02:18:18
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 49.788 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 49.788 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 49.623 ms
Loss rate: 0.42%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.213 ms
Loss rate: 0.74%
```

# 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 49.79 ms)    Flow 2 (95th percentile 49.62 ms)    Flow 3 (95th percentile 50.21 ms)

```
Run 2: Statistics of SCReAM

Start at: 2017-12-20 21:18:59
End at: 2017-12-20 21:19:29

Below is generated by plot.py at 2017-12-21 02:18:18
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 50.697 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.263 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.725 ms
Loss rate: 0.42%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.377 ms
Loss rate: 1.11%
```
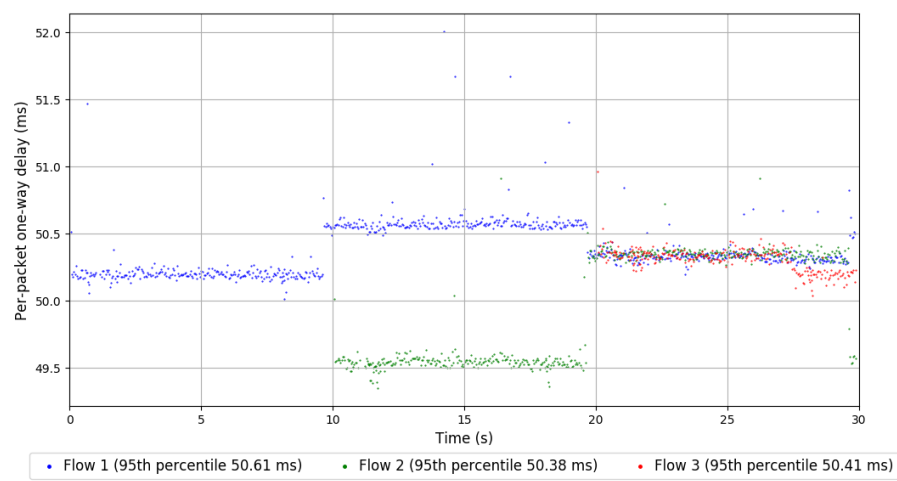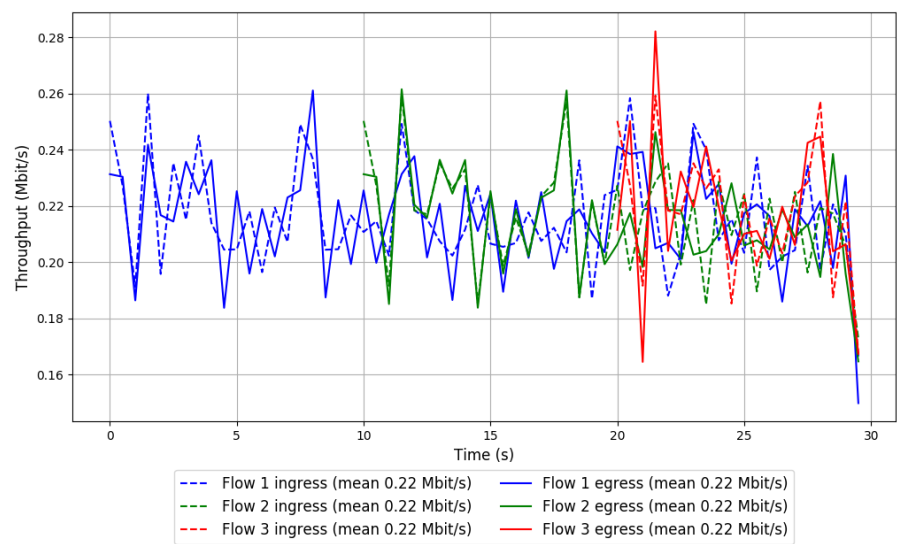
# Run 2: Report of SCReAM — Data Link



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 50.26 ms)     Flow 2 (95th percentile 50.73 ms)     Flow 3 (95th percentile 50.38 ms)

```
Run 3: Statistics of SCReAM

Start at: 2017-12-20 21:33:17
End at: 2017-12-20 21:33:47

Below is generated by plot.py at 2017-12-21 02:18:18
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 50.627 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.652 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.332 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.369 ms
Loss rate: 1.10%
```
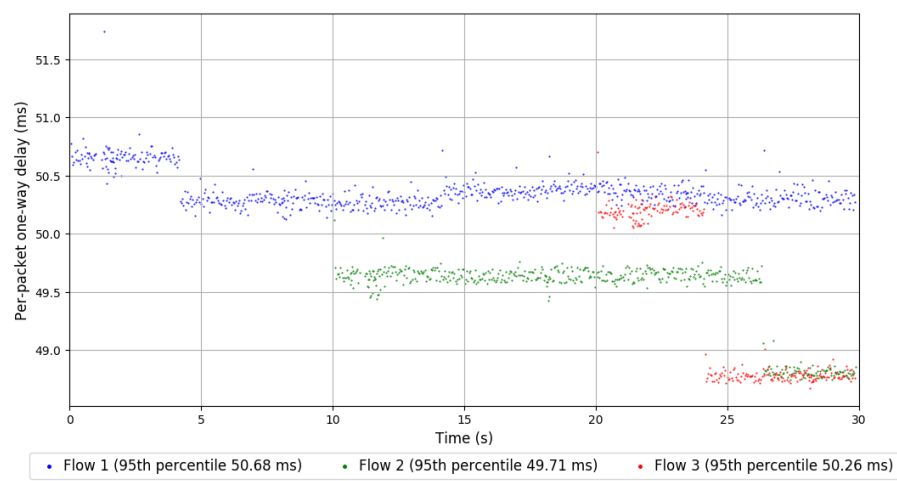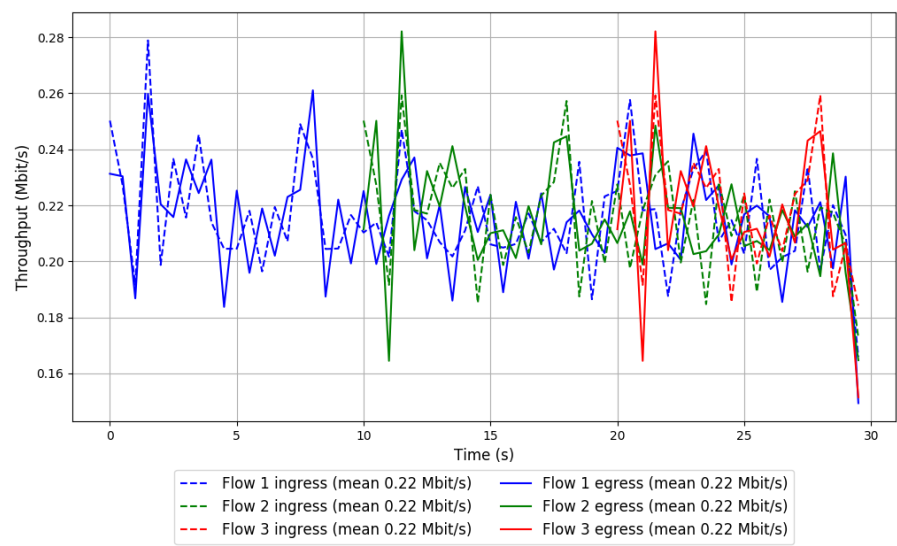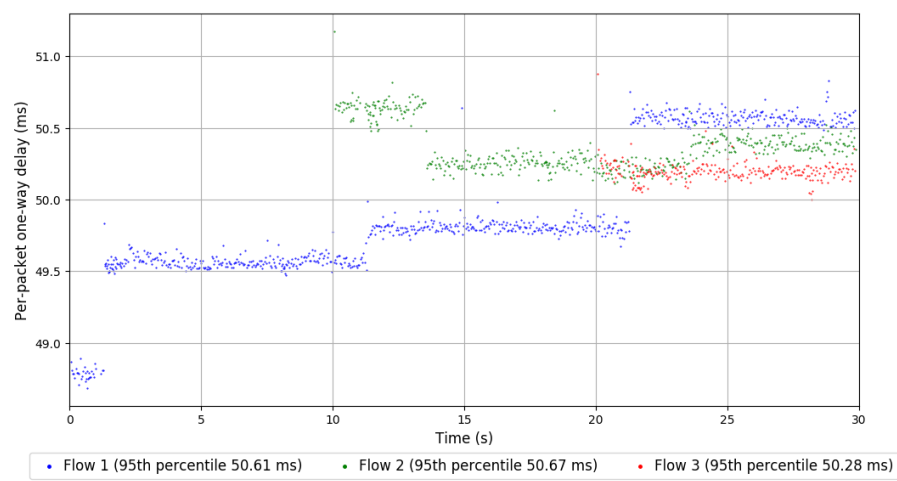
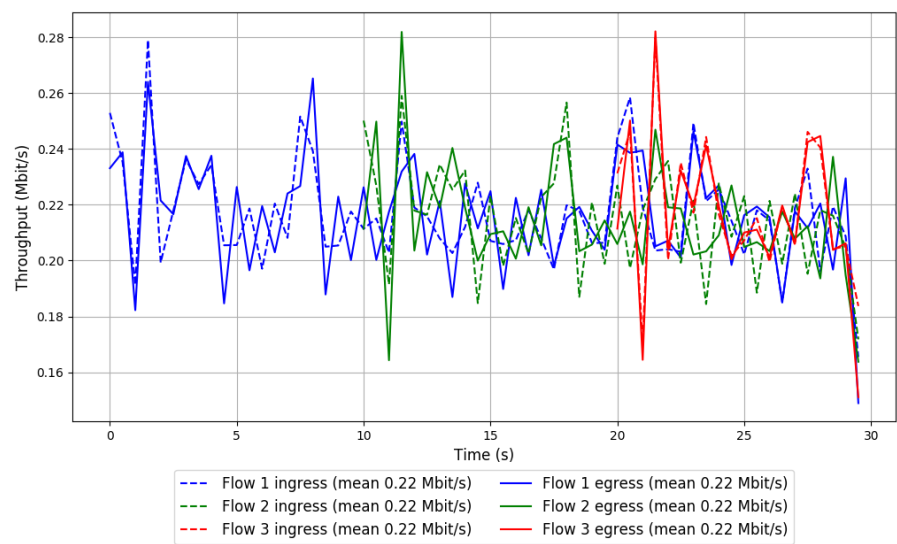## Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2017-12-20 21:47:26
End at: 2017-12-20 21:47:56


# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 50.773 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.792 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.544 ms
Loss rate: 0.42%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.677 ms
Loss rate: 1.11%
```

Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2017-12-20 22:01:51
End at: 2017-12-20 22:02:21

# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 50.587 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.612 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.385 ms
Loss rate: 0.43%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.415 ms
Loss rate: 0.74%
```
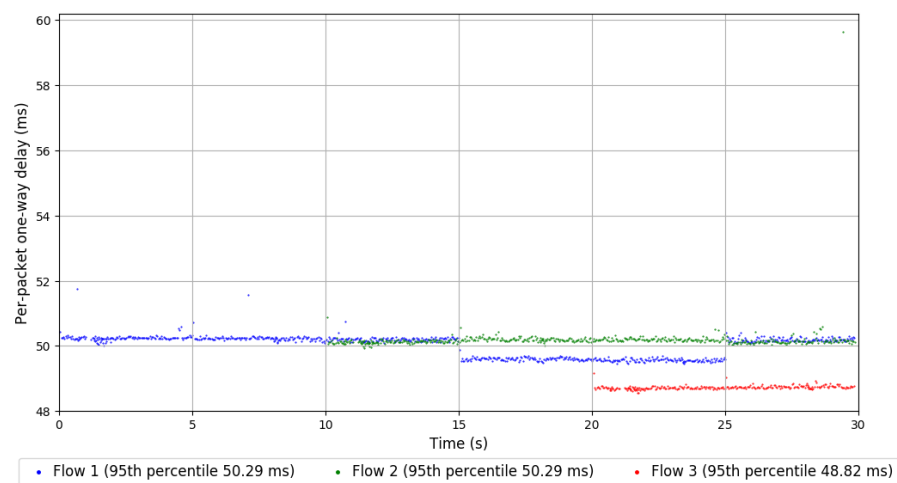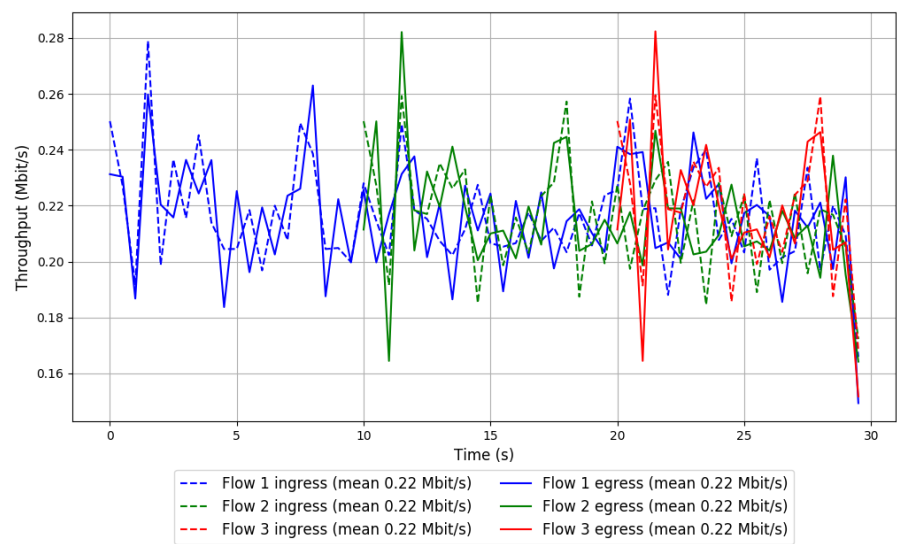
Run 5: Report of SCReAM — Data Link

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 50.61 ms) Flow 2 (95th percentile 50.38 ms) Flow 3 (95th percentile 50.41 ms)

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```
Run 6: Statistics of SCReAM

Start at: 2017-12-20 22:16:04
End at: 2017-12-20 22:16:34

# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 50.642 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.683 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 49.710 ms
Loss rate: 0.42%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.257 ms
Loss rate: 1.11%
```
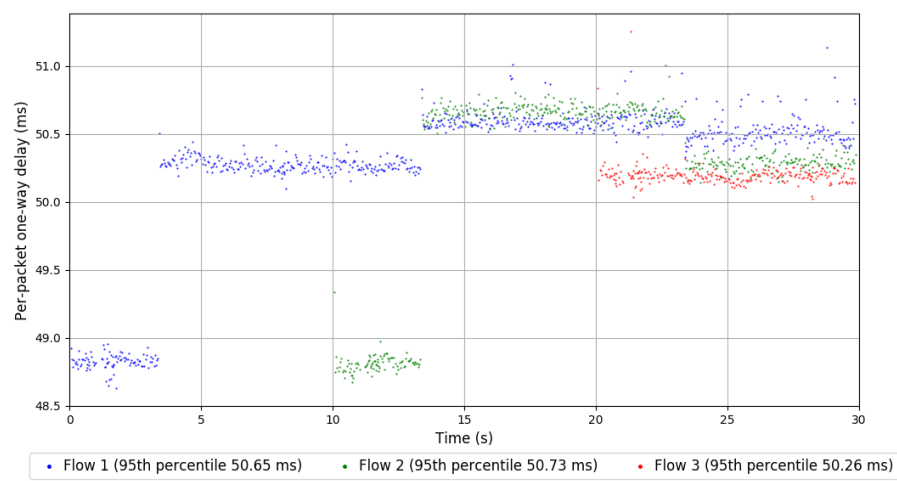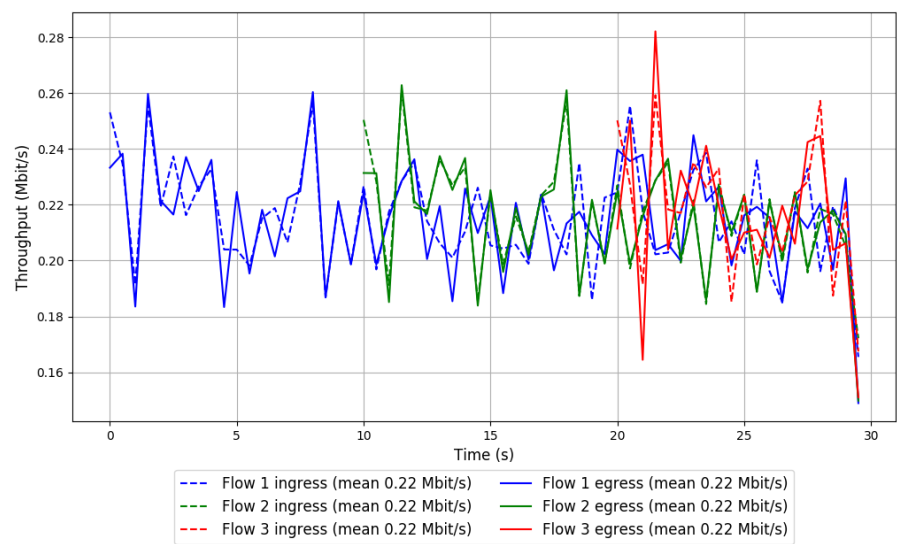
Run 6: Report of SCReAM — Data Link

```
Run 7: Statistics of SCReAM

Start at: 2017-12-20 22:30:07
End at: 2017-12-20 22:30:37

# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 50.635 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.614 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.673 ms
Loss rate: 0.42%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.278 ms
Loss rate: 1.11%
```
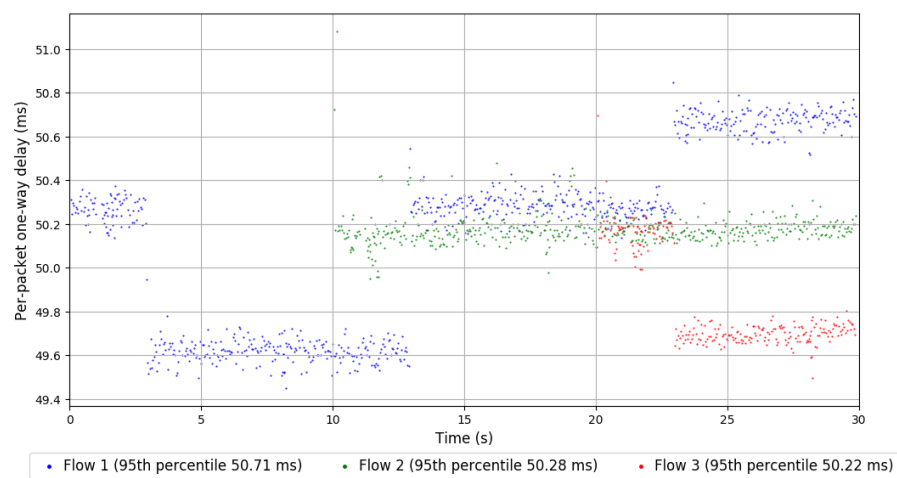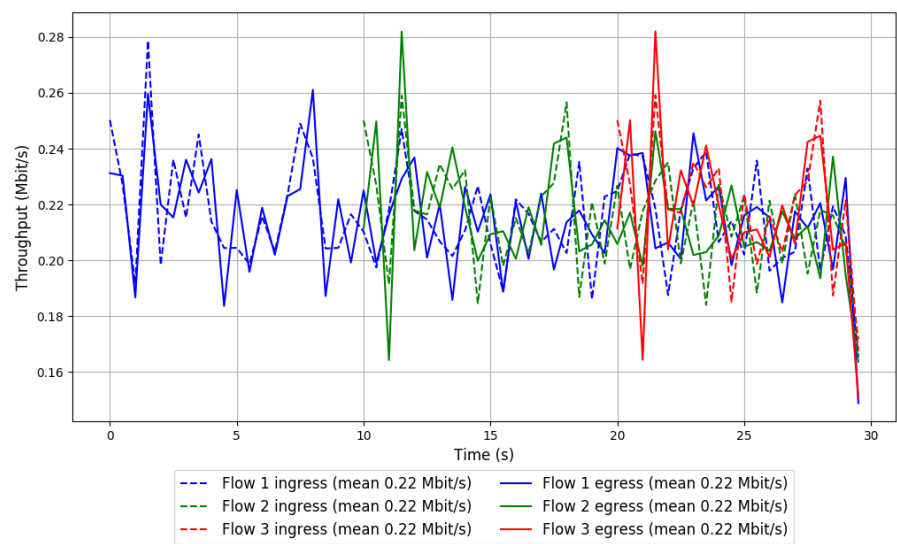
Run 7: Report of SCReAM — Data Link

```
Run 8: Statistics of SCReAM

Start at: 2017-12-20 22:44:25
End at: 2017-12-20 22:44:55


# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 50.285 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.293 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.294 ms
Loss rate: 0.42%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 48.817 ms
Loss rate: 1.11%
```
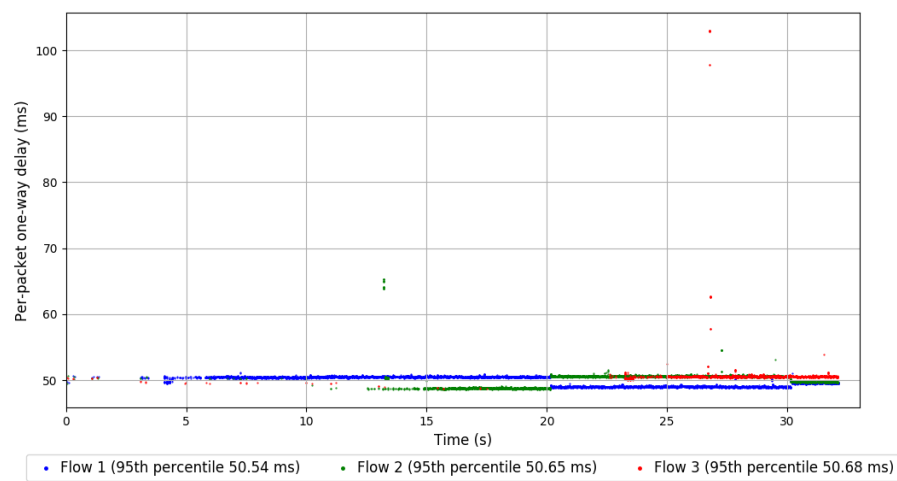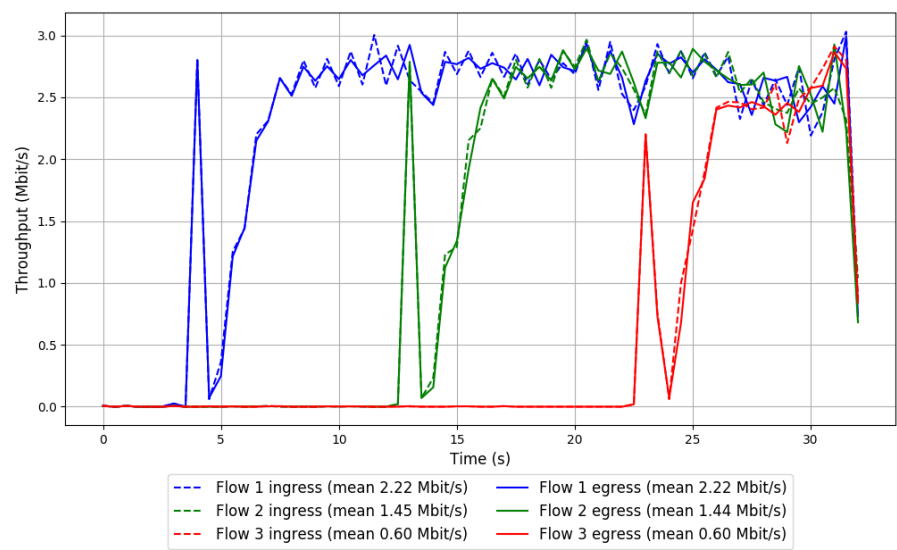
Run 8: Report of SCReAM — Data Link

```
Run 9: Statistics of SCReAM

Start at: 2017-12-20 22:58:35
End at: 2017-12-20 22:59:05

# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 50.710 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.654 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.730 ms
Loss rate: 0.42%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.261 ms
Loss rate: 1.11%
```
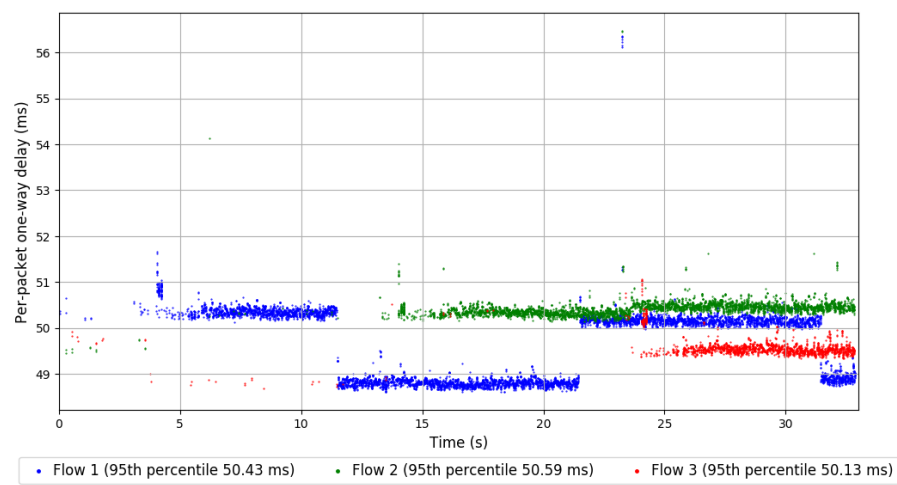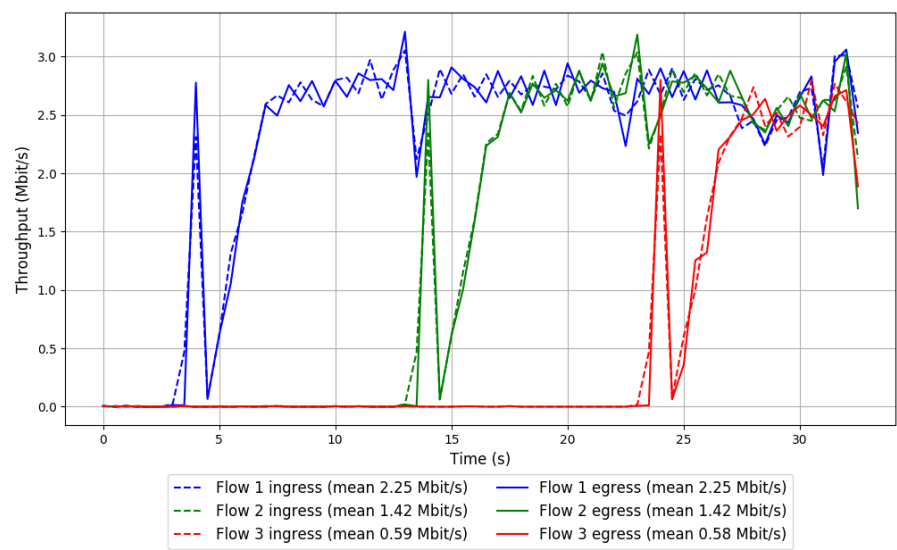
Run 9: Report of SCReAM — Data Link

```
Run 10: Statistics of SCReAM

Start at: 2017-12-20 23:12:45
End at: 2017-12-20 23:13:15


# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 50.688 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.713 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.284 ms
Loss rate: 0.42%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 50.215 ms
Loss rate: 1.11%
```

Run 10: Report of SCReAM — Data Link

```
Run 1: Statistics of WebRTC media

Start at: 2017-12-20 21:10:40
End at: 2017-12-20 21:11:10

# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.26 Mbit/s
95th percentile per-packet one-way delay: 50.620 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 2.22 Mbit/s
95th percentile per-packet one-way delay: 50.543 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 1.44 Mbit/s
95th percentile per-packet one-way delay: 50.654 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 0.60 Mbit/s
95th percentile per-packet one-way delay: 50.676 ms
Loss rate: 1.33%
```
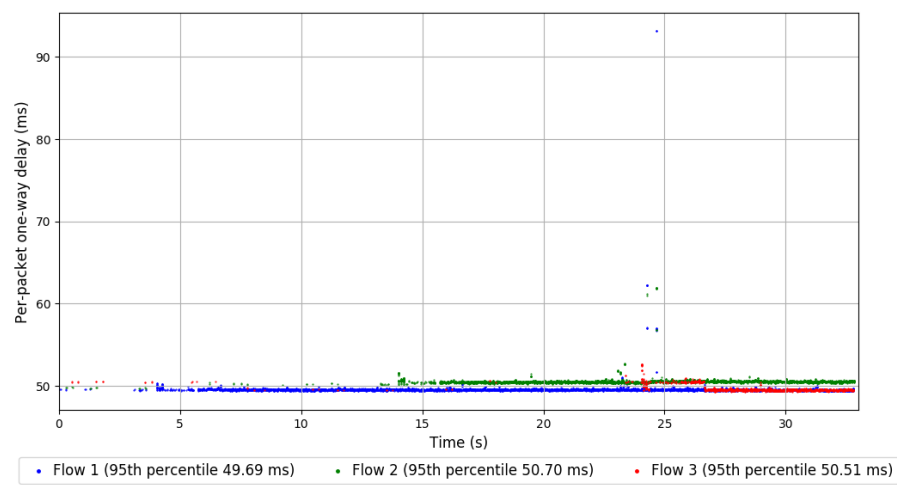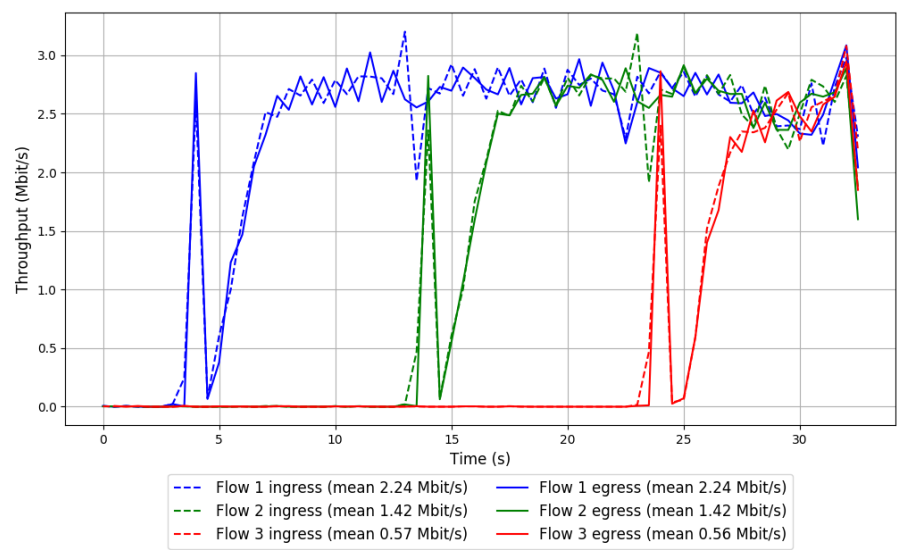
Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2017-12-20 21:25:00
End at: 2017-12-20 21:25:30

# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.23 Mbit/s
95th percentile per-packet one-way delay: 50.536 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 2.25 Mbit/s
95th percentile per-packet one-way delay: 50.430 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 1.42 Mbit/s
95th percentile per-packet one-way delay: 50.591 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 50.130 ms
Loss rate: 2.00%
```
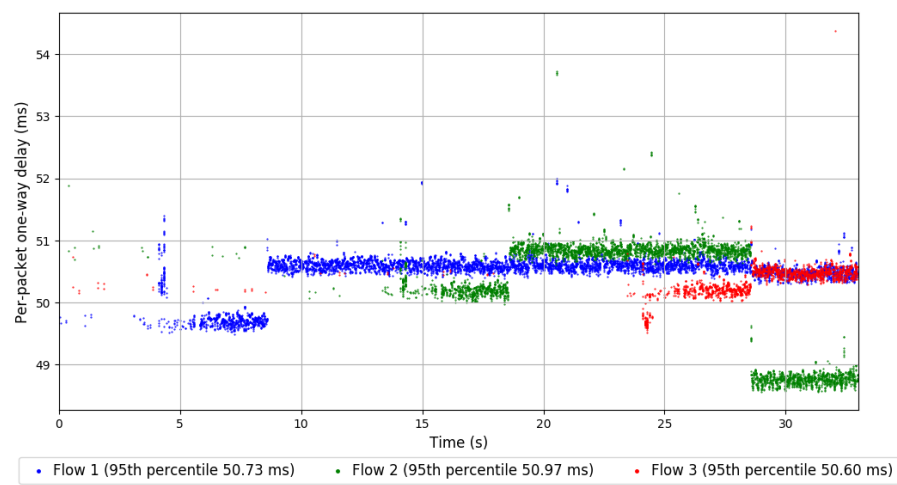
Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2017-12-20 21:39:07
End at: 2017-12-20 21:39:37

# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.20 Mbit/s
95th percentile per-packet one-way delay: 50.619 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 2.24 Mbit/s
95th percentile per-packet one-way delay: 49.694 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 1.42 Mbit/s
95th percentile per-packet one-way delay: 50.705 ms
Loss rate: 0.48%
-- Flow 3:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 50.512 ms
Loss rate: 1.95%
```
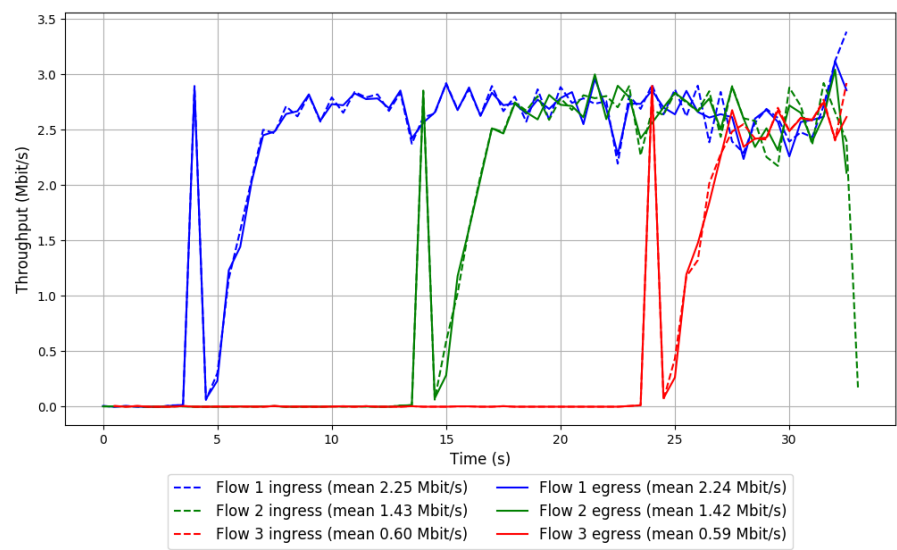
Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2017-12-20 21:53:33
End at: 2017-12-20 21:54:03

# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.23 Mbit/s
95th percentile per-packet one-way delay: 50.908 ms
Loss rate: 0.70%
-- Flow 1:
Average throughput: 2.24 Mbit/s
95th percentile per-packet one-way delay: 50.727 ms
Loss rate: 0.53%
-- Flow 2:
Average throughput: 1.42 Mbit/s
95th percentile per-packet one-way delay: 50.966 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 50.597 ms
Loss rate: 1.38%
```
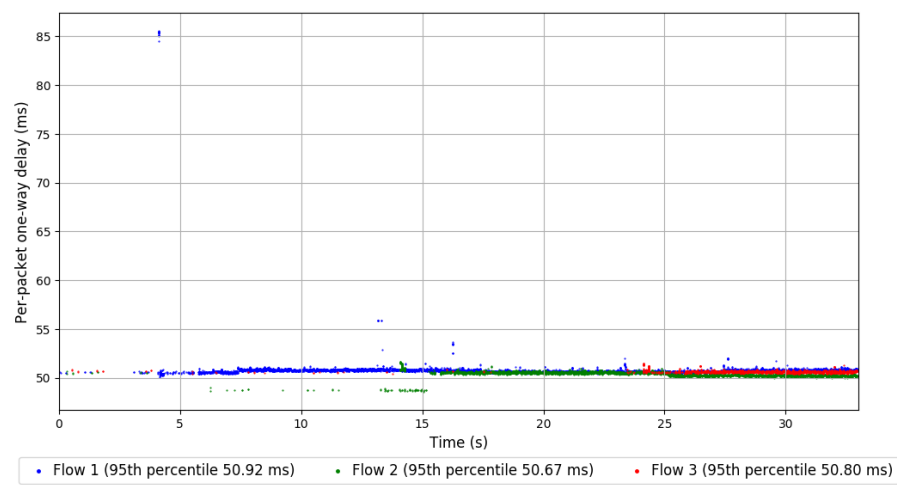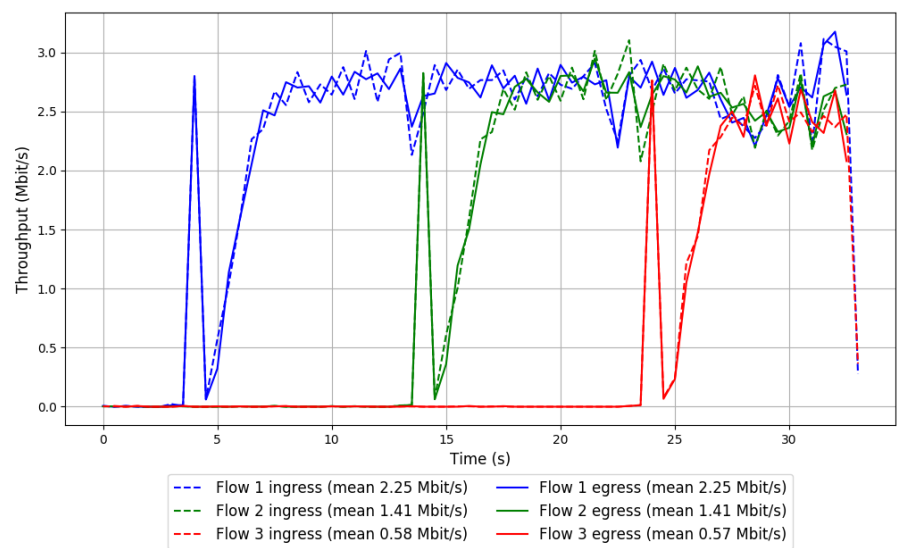
Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2017-12-20 22:07:46
End at: 2017-12-20 22:08:16


# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.21 Mbit/s
95th percentile per-packet one-way delay: 50.887 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 2.25 Mbit/s
95th percentile per-packet one-way delay: 50.917 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 1.41 Mbit/s
95th percentile per-packet one-way delay: 50.668 ms
Loss rate: 0.65%
-- Flow 3:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 50.800 ms
Loss rate: 2.17%
```
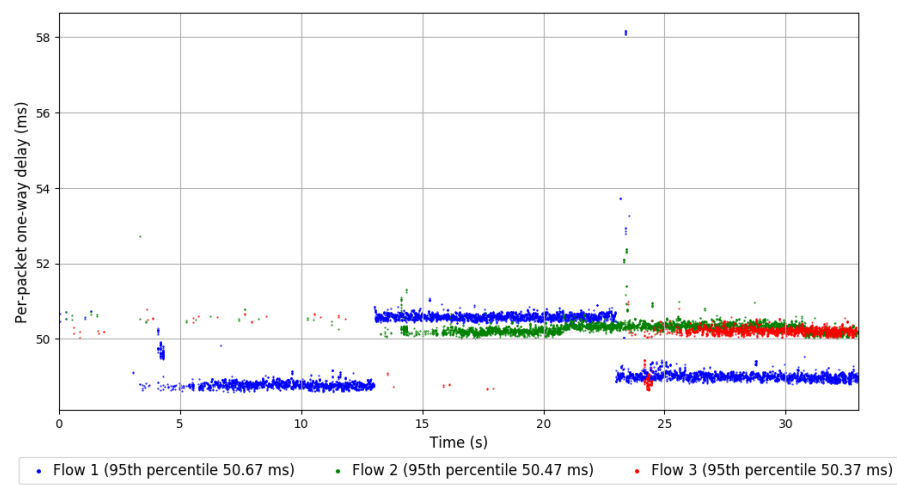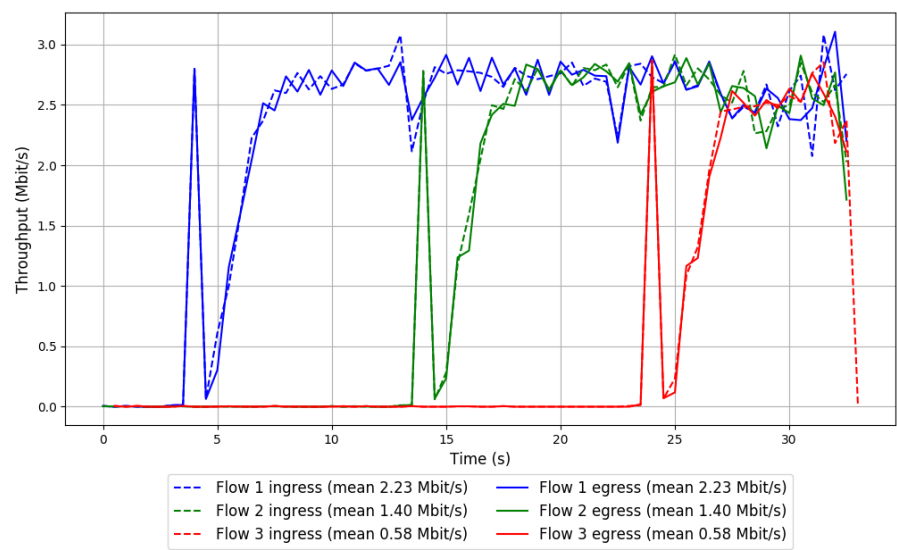
Run 5: Report of WebRTC media — Data Link

```
Run 6: Statistics of WebRTC media

Start at: 2017-12-20 22:22:00
End at: 2017-12-20 22:22:30

# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.19 Mbit/s
95th percentile per-packet one-way delay: 50.640 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 2.23 Mbit/s
95th percentile per-packet one-way delay: 50.669 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 1.40 Mbit/s
95th percentile per-packet one-way delay: 50.471 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 50.373 ms
Loss rate: 1.43%
```
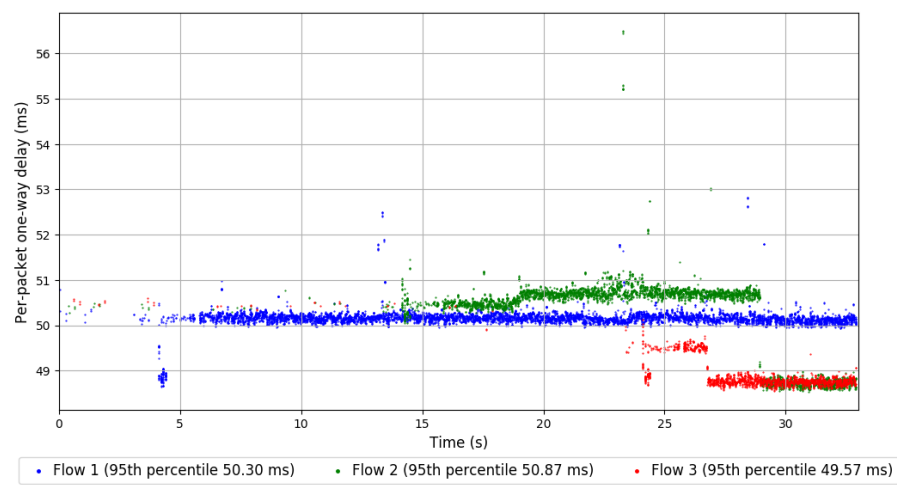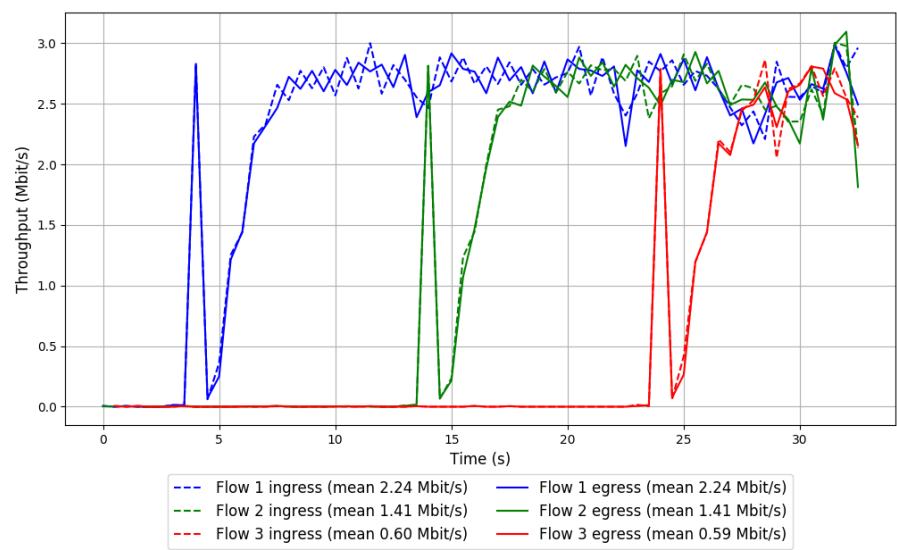
Run 6: Report of WebRTC media — Data Link

```
Run 7: Statistics of WebRTC media

Start at: 2017-12-20 22:36:04
End at: 2017-12-20 22:36:34


# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.21 Mbit/s
95th percentile per-packet one-way delay: 50.774 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 2.24 Mbit/s
95th percentile per-packet one-way delay: 50.295 ms
Loss rate: 0.49%
-- Flow 2:
Average throughput: 1.41 Mbit/s
95th percentile per-packet one-way delay: 50.870 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 49.569 ms
Loss rate: 1.17%
```
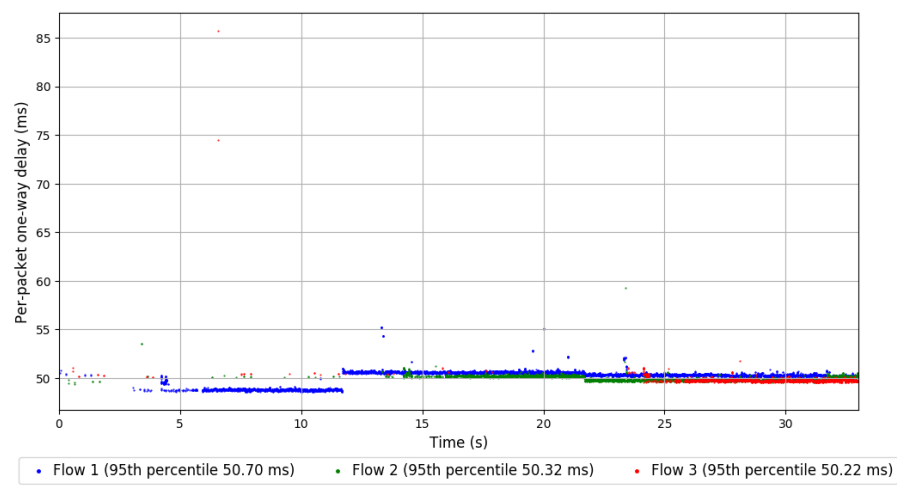
Run 7: Report of WebRTC media — Data Link

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```
Run 8: Statistics of WebRTC media

Start at: 2017-12-20 22:50:19
End at: 2017-12-20 22:50:49

# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.19 Mbit/s
95th percentile per-packet one-way delay: 50.660 ms
Loss rate: 0.60%
-- Flow 1:
Average throughput: 2.23 Mbit/s
95th percentile per-packet one-way delay: 50.696 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 1.40 Mbit/s
95th percentile per-packet one-way delay: 50.323 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 50.215 ms
Loss rate: 1.48%
```
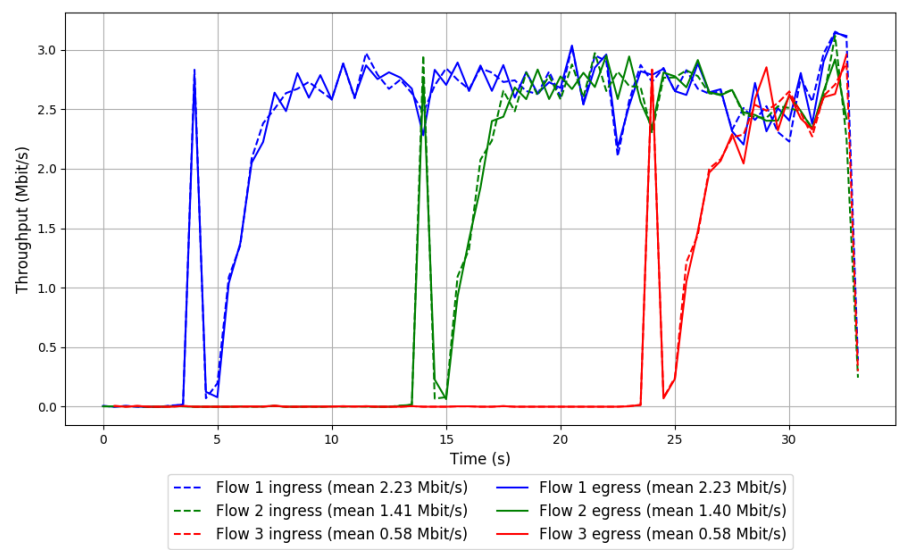
Run 8: Report of WebRTC media — Data Link

```
Run 9: Statistics of WebRTC media

Start at: 2017-12-20 23:04:25
End at: 2017-12-20 23:04:55


# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.22 Mbit/s
95th percentile per-packet one-way delay: 50.575 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 2.23 Mbit/s
95th percentile per-packet one-way delay: 50.569 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 1.42 Mbit/s
95th percentile per-packet one-way delay: 50.590 ms
Loss rate: 0.83%
-- Flow 3:
Average throughput: 0.59 Mbit/s
95th percentile per-packet one-way delay: 50.563 ms
Loss rate: 1.43%
```
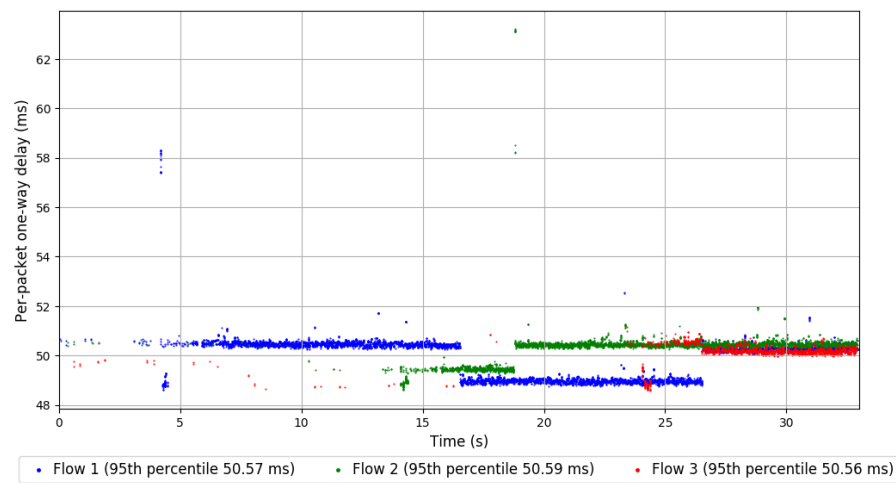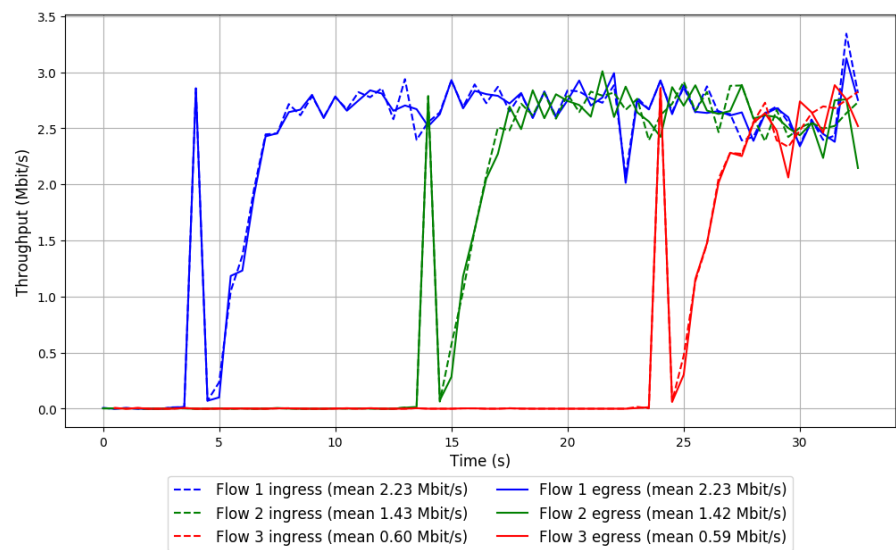
Run 9: Report of WebRTC media — Data Link

```
Run 10: Statistics of WebRTC media

Start at: 2017-12-20 23:18:47
End at: 2017-12-20 23:19:17

# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.23 Mbit/s
95th percentile per-packet one-way delay: 50.438 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 2.26 Mbit/s
95th percentile per-packet one-way delay: 50.322 ms
Loss rate: 0.51%
-- Flow 2:
Average throughput: 1.42 Mbit/s
95th percentile per-packet one-way delay: 50.490 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 0.57 Mbit/s
95th percentile per-packet one-way delay: 50.535 ms
Loss rate: 1.99%
```
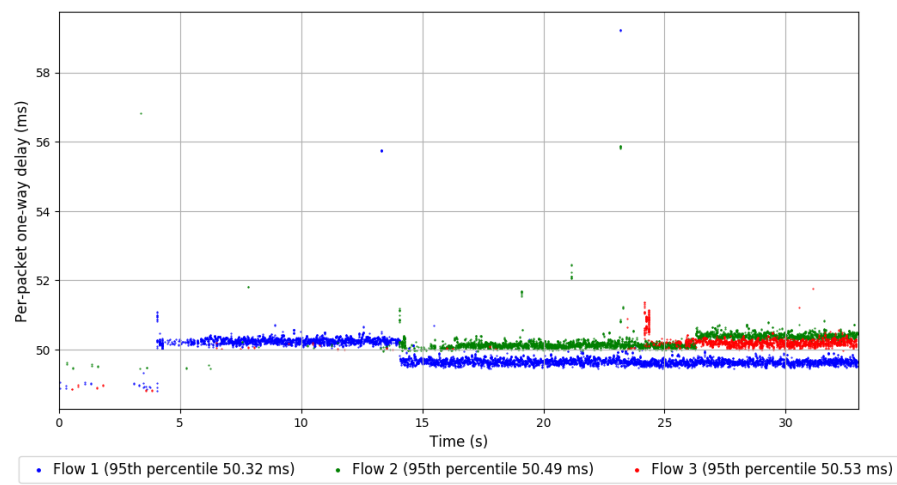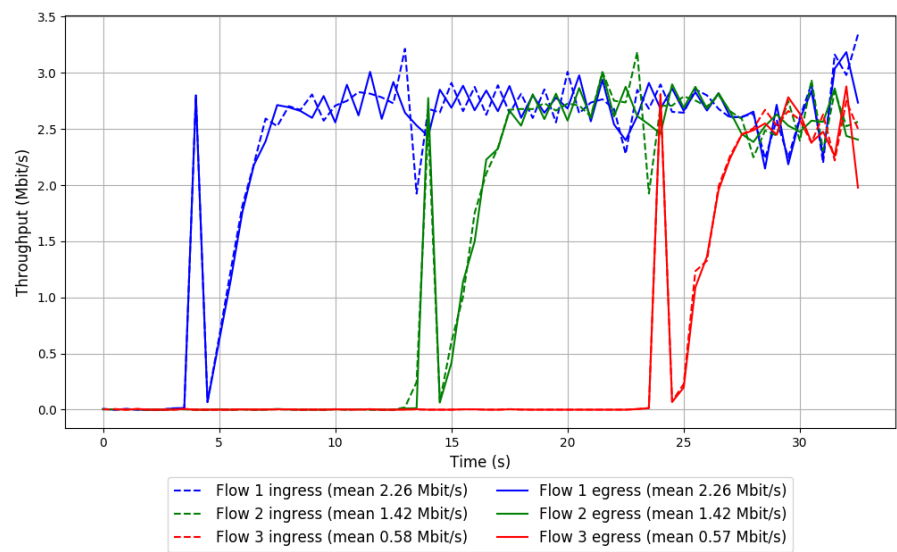
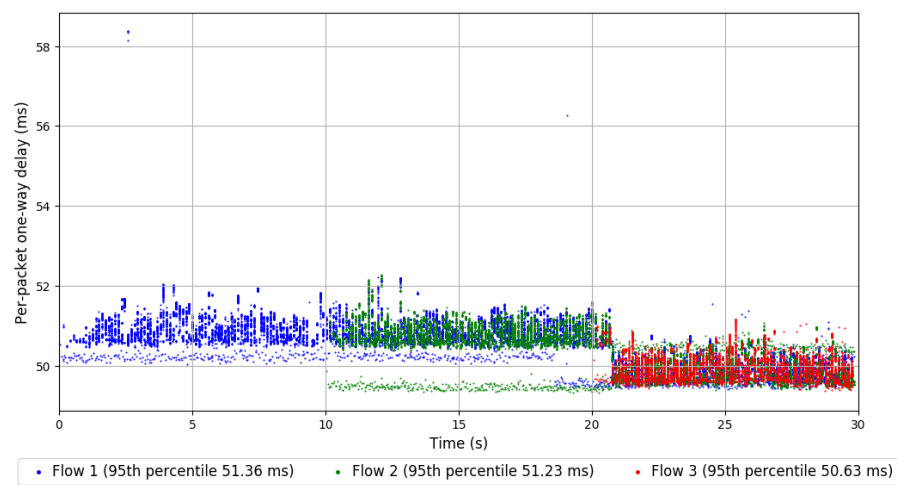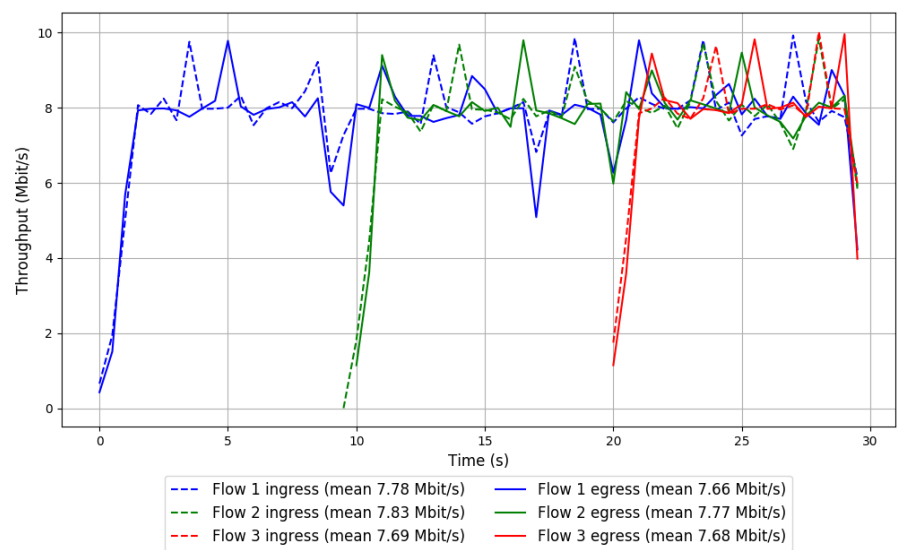Run 10: Report of WebRTC media — Data Link

```
Run 1: Statistics of Sprout

Start at: 2017-12-20 21:03:59
End at: 2017-12-20 21:04:29


# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 15.33 Mbit/s
95th percentile per-packet one-way delay: 51.277 ms
Loss rate: 1.44%
-- Flow 1:
Average throughput: 7.66 Mbit/s
95th percentile per-packet one-way delay: 51.363 ms
Loss rate: 1.72%
-- Flow 2:
Average throughput: 7.77 Mbit/s
95th percentile per-packet one-way delay: 51.231 ms
Loss rate: 1.07%
-- Flow 3:
Average throughput: 7.68 Mbit/s
95th percentile per-packet one-way delay: 50.629 ms
Loss rate: 1.34%
```

Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2017-12-20 21:18:19
End at: 2017-12-20 21:18:49


# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 15.62 Mbit/s
95th percentile per-packet one-way delay: 50.982 ms
Loss rate: 0.79%
-- Flow 1:
Average throughput: 7.89 Mbit/s
95th percentile per-packet one-way delay: 50.907 ms
Loss rate: 0.78%
-- Flow 2:
Average throughput: 7.86 Mbit/s
95th percentile per-packet one-way delay: 51.013 ms
Loss rate: 1.00%
-- Flow 3:
Average throughput: 7.68 Mbit/s
95th percentile per-packet one-way delay: 51.027 ms
Loss rate: 0.38%
```
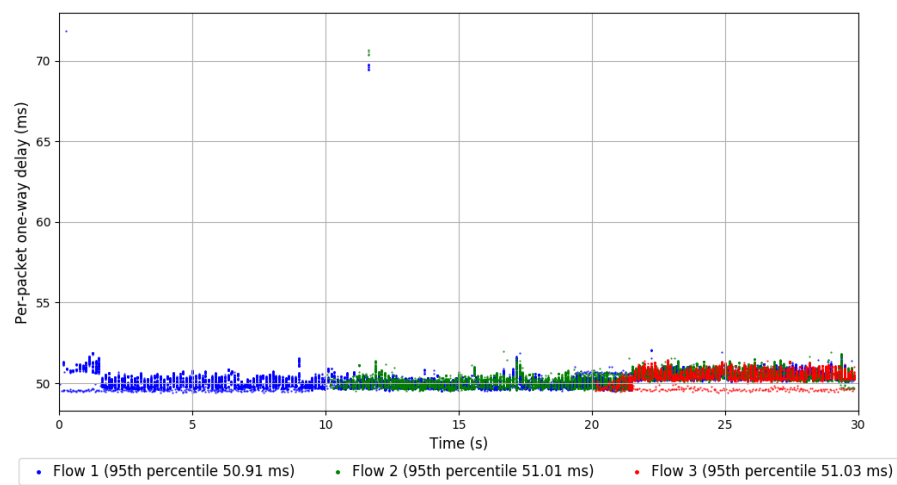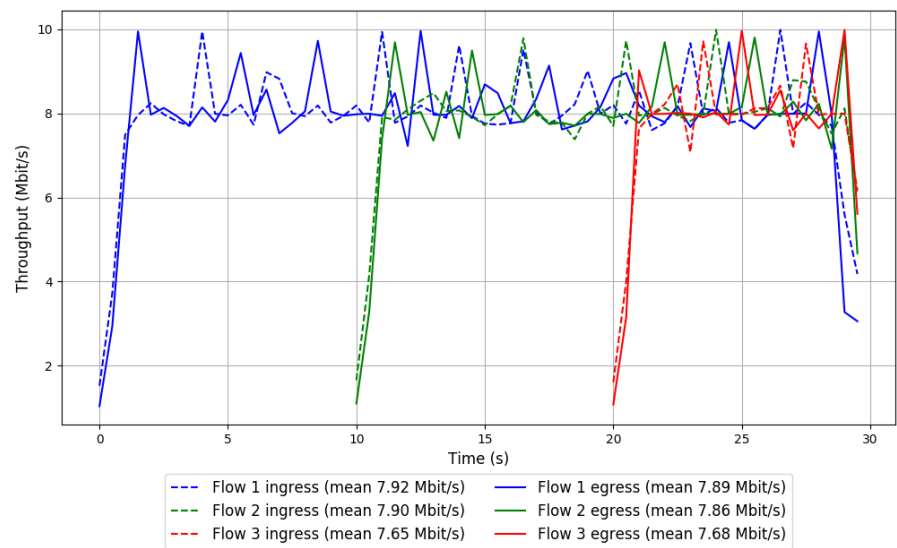
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2017-12-20 21:32:37
End at: 2017-12-20 21:33:07

# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 15.31 Mbit/s
95th percentile per-packet one-way delay: 50.996 ms
Loss rate: 1.44%
-- Flow 1:
Average throughput: 7.85 Mbit/s
95th percentile per-packet one-way delay: 51.003 ms
Loss rate: 0.81%
-- Flow 2:
Average throughput: 7.75 Mbit/s
95th percentile per-packet one-way delay: 51.082 ms
Loss rate: 1.25%
-- Flow 3:
Average throughput: 7.12 Mbit/s
95th percentile per-packet one-way delay: 50.801 ms
Loss rate: 3.91%
```
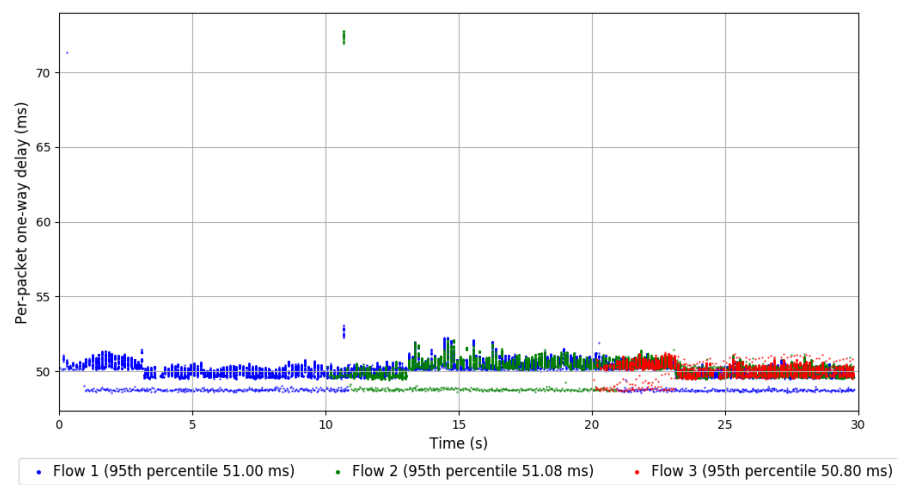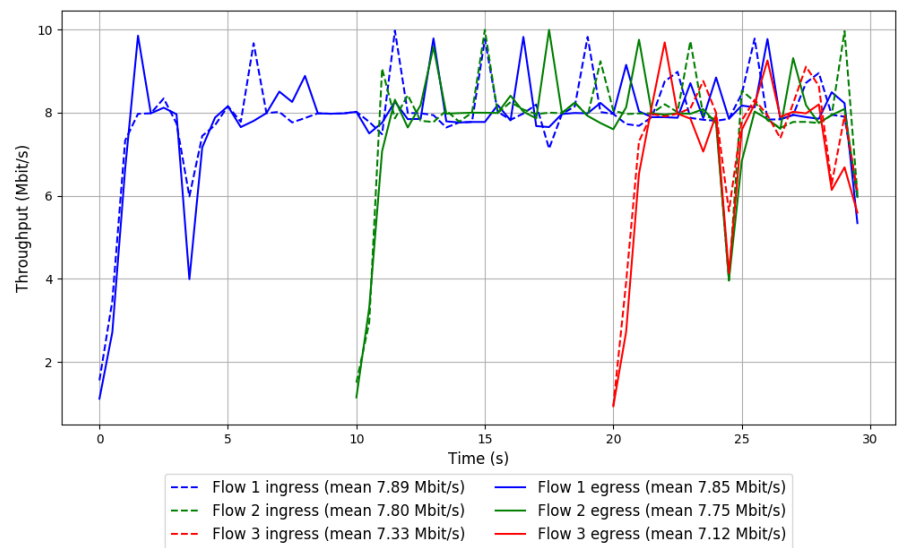
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2017-12-20 21:46:46
End at: 2017-12-20 21:47:16


# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 15.21 Mbit/s
95th percentile per-packet one-way delay: 50.981 ms
Loss rate: 1.69%
-- Flow 1:
Average throughput: 7.77 Mbit/s
95th percentile per-packet one-way delay: 50.956 ms
Loss rate: 1.65%
-- Flow 2:
Average throughput: 7.59 Mbit/s
95th percentile per-packet one-way delay: 51.055 ms
Loss rate: 1.22%
-- Flow 3:
Average throughput: 7.34 Mbit/s
95th percentile per-packet one-way delay: 50.849 ms
Loss rate: 2.78%
```
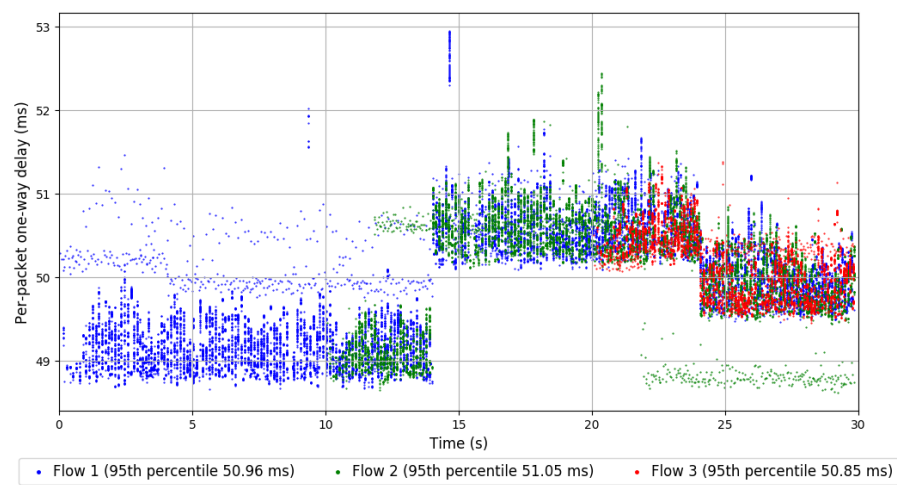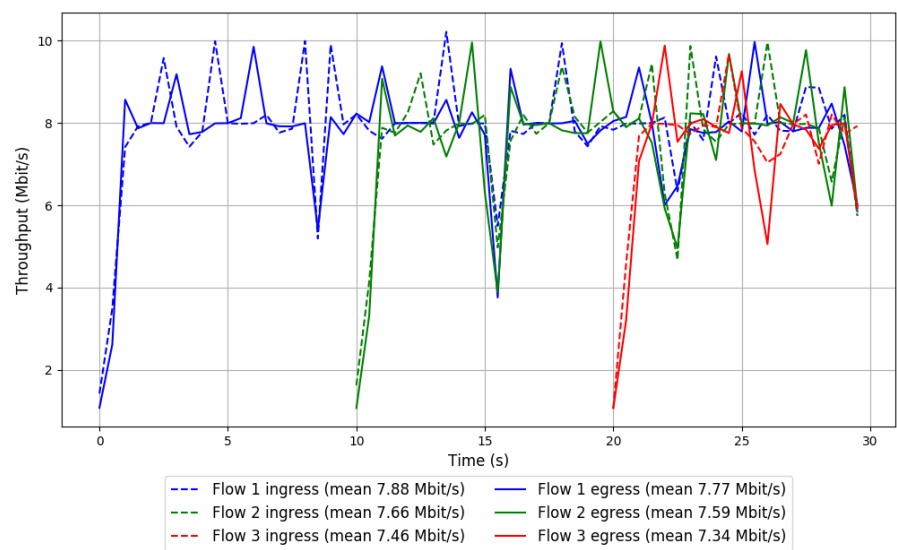
Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2017-12-20 22:01:11
End at: 2017-12-20 22:01:41


# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 15.08 Mbit/s
95th percentile per-packet one-way delay: 50.501 ms
Loss rate: 1.93%
-- Flow 1:
Average throughput: 7.59 Mbit/s
95th percentile per-packet one-way delay: 50.504 ms
Loss rate: 2.17%
-- Flow 2:
Average throughput: 7.72 Mbit/s
95th percentile per-packet one-way delay: 50.453 ms
Loss rate: 1.77%
-- Flow 3:
Average throughput: 7.24 Mbit/s
95th percentile per-packet one-way delay: 50.596 ms
Loss rate: 1.52%
```

Run 5: Report of Sprout — Data Link

Flow 1 ingress (mean 7.74 Mbit/s)   Flow 1 egress (mean 7.59 Mbit/s)
Flow 2 ingress (mean 7.82 Mbit/s)   Flow 2 egress (mean 7.72 Mbit/s)
Flow 3 ingress (mean 7.26 Mbit/s)   Flow 3 egress (mean 7.24 Mbit/s)

Flow 1 (95th percentile 50.50 ms)   Flow 2 (95th percentile 50.45 ms)   Flow 3 (95th percentile 50.60 ms)

```
Run 6: Statistics of Sprout

Start at: 2017-12-20 22:15:24
End at: 2017-12-20 22:15:54


# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 15.68 Mbit/s
95th percentile per-packet one-way delay: 51.365 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 8.02 Mbit/s
95th percentile per-packet one-way delay: 51.339 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 7.83 Mbit/s
95th percentile per-packet one-way delay: 51.385 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 7.58 Mbit/s
95th percentile per-packet one-way delay: 51.387 ms
Loss rate: 1.30%
```
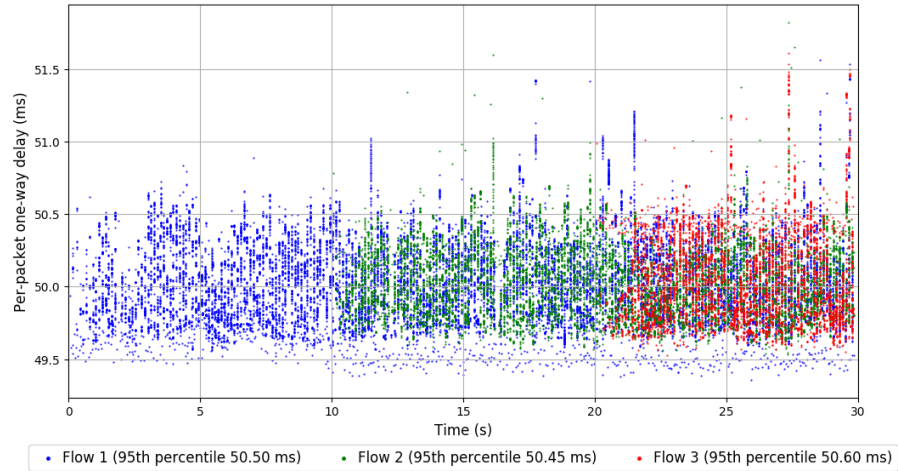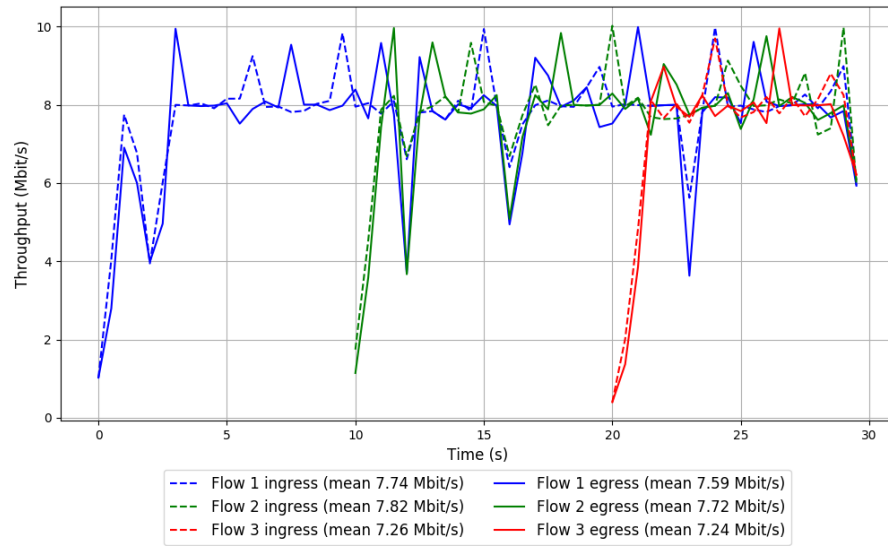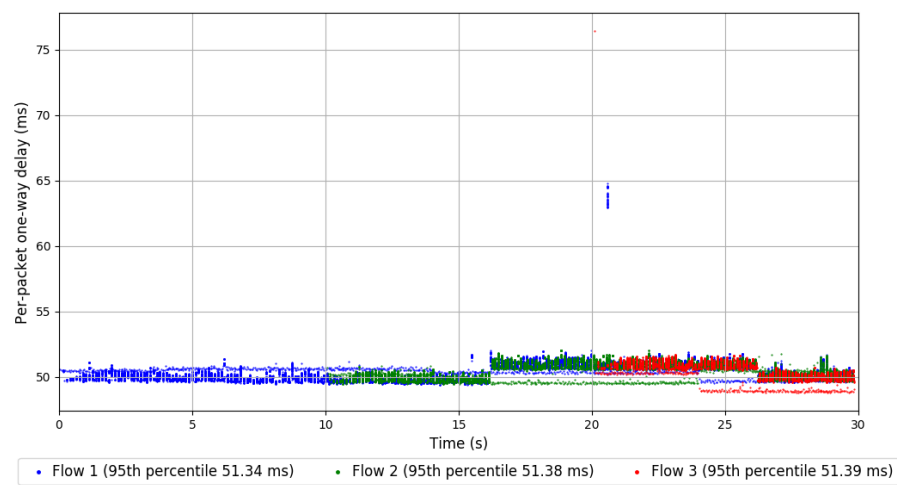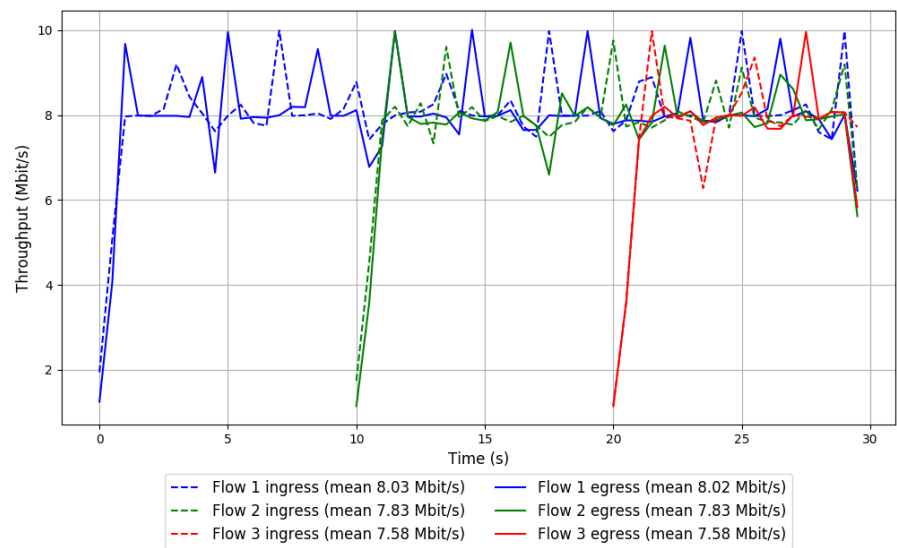
Run 6: Report of Sprout — Data Link

```
Run 7: Statistics of Sprout

Start at: 2017-12-20 22:29:27
End at: 2017-12-20 22:29:57


# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 15.66 Mbit/s
95th percentile per-packet one-way delay: 50.953 ms
Loss rate: 0.58%
-- Flow 1:
Average throughput: 7.95 Mbit/s
95th percentile per-packet one-way delay: 51.027 ms
Loss rate: 0.55%
-- Flow 2:
Average throughput: 7.89 Mbit/s
95th percentile per-packet one-way delay: 50.883 ms
Loss rate: 0.27%
-- Flow 3:
Average throughput: 7.56 Mbit/s
95th percentile per-packet one-way delay: 50.395 ms
Loss rate: 1.34%
```
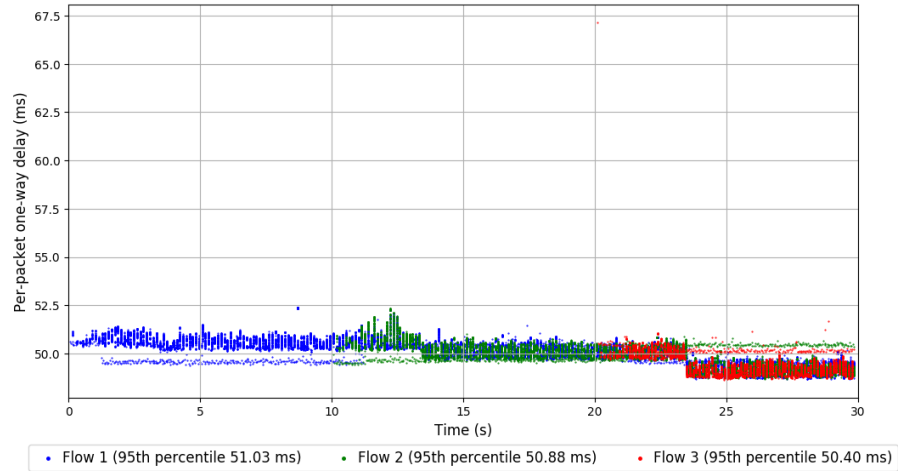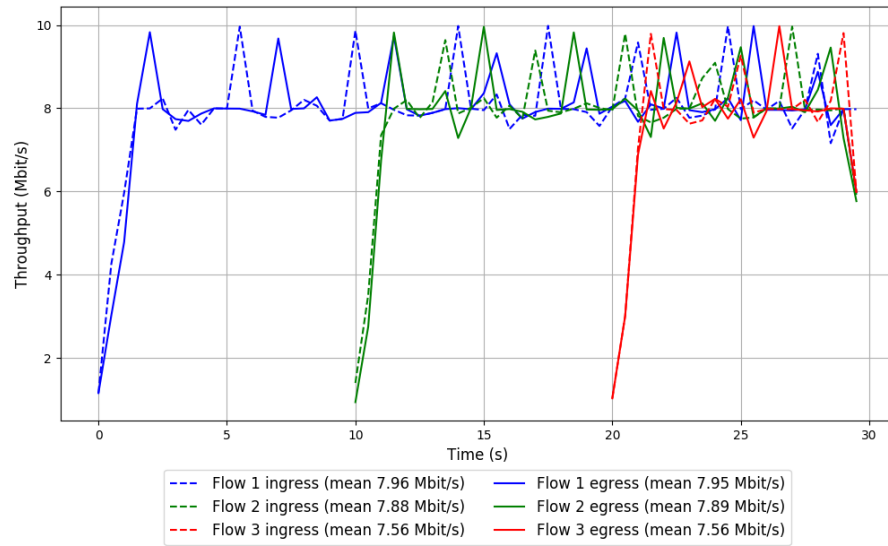
Run 7: Report of Sprout — Data Link

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```
Run 8: Statistics of Sprout

Start at: 2017-12-20 22:43:45
End at: 2017-12-20 22:44:15


# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 15.47 Mbit/s
95th percentile per-packet one-way delay: 51.468 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 7.96 Mbit/s
95th percentile per-packet one-way delay: 51.458 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 7.74 Mbit/s
95th percentile per-packet one-way delay: 51.394 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 7.24 Mbit/s
95th percentile per-packet one-way delay: 51.734 ms
Loss rate: 1.55%
```

Run 8: Report of Sprout — Data Link

- Flow 1 ingress (mean 7.96 Mbit/s)
- Flow 1 egress (mean 7.96 Mbit/s)
- Flow 2 ingress (mean 7.77 Mbit/s)
- Flow 2 egress (mean 7.74 Mbit/s)
- Flow 3 ingress (mean 7.30 Mbit/s)
- Flow 3 egress (mean 7.24 Mbit/s)

- Flow 1 (95th percentile 51.46 ms)
- Flow 2 (95th percentile 51.39 ms)
- Flow 3 (95th percentile 51.73 ms)

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```
Run 9: Statistics of Sprout

Start at: 2017-12-20 22:57:54
End at: 2017-12-20 22:58:24


# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 15.15 Mbit/s
95th percentile per-packet one-way delay: 51.678 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 7.85 Mbit/s
95th percentile per-packet one-way delay: 51.659 ms
Loss rate: 0.54%
-- Flow 2:
Average throughput: 7.62 Mbit/s
95th percentile per-packet one-way delay: 51.662 ms
Loss rate: 1.08%
-- Flow 3:
Average throughput: 6.86 Mbit/s
95th percentile per-packet one-way delay: 51.782 ms
Loss rate: 0.66%
```
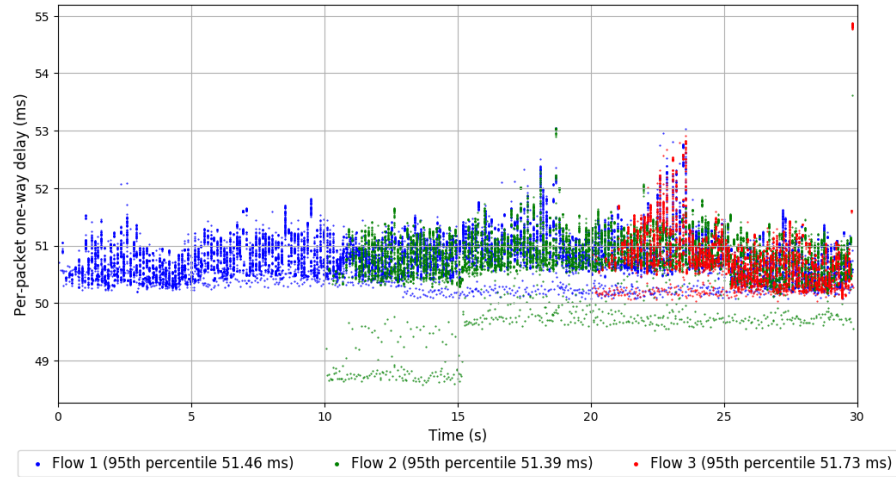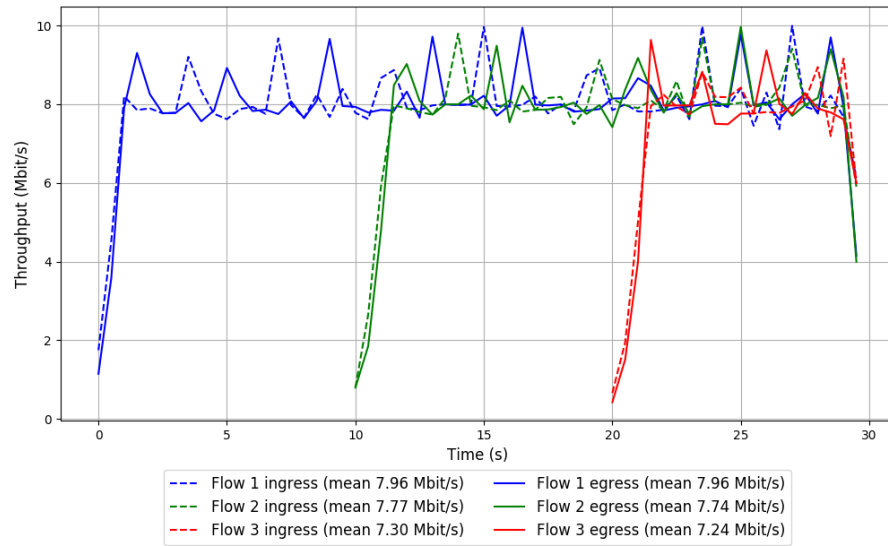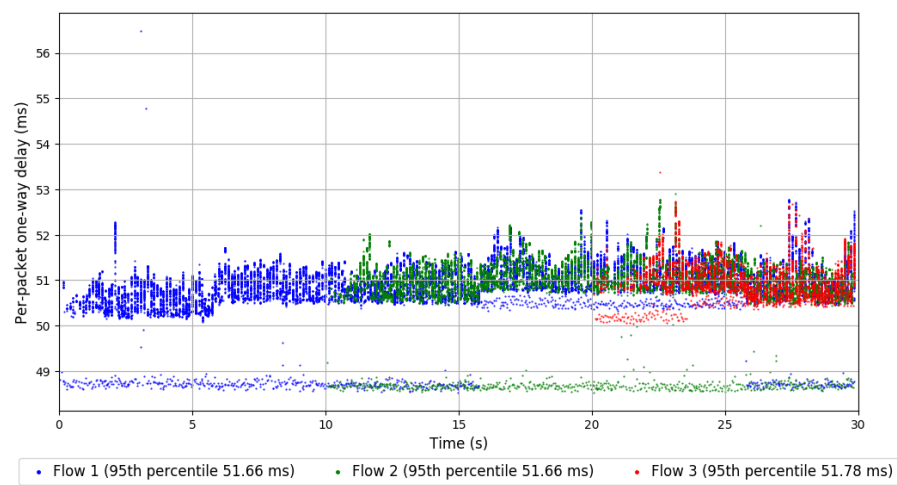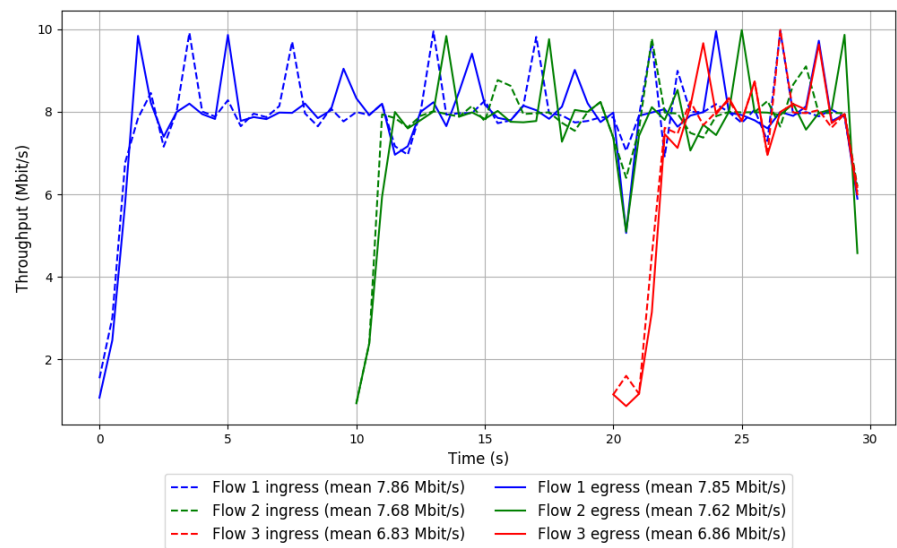
Run 9: Report of Sprout — Data Link

```
Run 10: Statistics of Sprout

Start at: 2017-12-20 23:12:05
End at: 2017-12-20 23:12:35


# Below is generated by plot.py at 2017-12-21 02:18:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 15.59 Mbit/s
95th percentile per-packet one-way delay: 51.409 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 7.86 Mbit/s
95th percentile per-packet one-way delay: 51.333 ms
Loss rate: 0.74%
-- Flow 2:
Average throughput: 7.91 Mbit/s
95th percentile per-packet one-way delay: 51.435 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 7.63 Mbit/s
95th percentile per-packet one-way delay: 51.718 ms
Loss rate: 1.50%
```

Run 10: Report of Sprout — Data Link

Flow 1 ingress (mean 7.89 Mbit/s)   Flow 1 egress (mean 7.86 Mbit/s)
Flow 2 ingress (mean 7.92 Mbit/s)   Flow 2 egress (mean 7.91 Mbit/s)
Flow 3 ingress (mean 7.65 Mbit/s)   Flow 3 egress (mean 7.63 Mbit/s)

Flow 1 (95th percentile 51.33 ms)   Flow 2 (95th percentile 51.44 ms)   Flow 3 (95th percentile 51.72 ms)

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

Start at: 2017-12-20 21:06:22
End at: 2017-12-20 21:06:52

# Below is generated by plot.py at 2017-12-21 02:24:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 404.73 Mbit/s
95th percentile per-packet one-way delay: 50.577 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 197.64 Mbit/s
95th percentile per-packet one-way delay: 50.626 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 227.81 Mbit/s
95th percentile per-packet one-way delay: 50.552 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 219.32 Mbit/s
95th percentile per-packet one-way delay: 50.144 ms
Loss rate: 1.50%
```
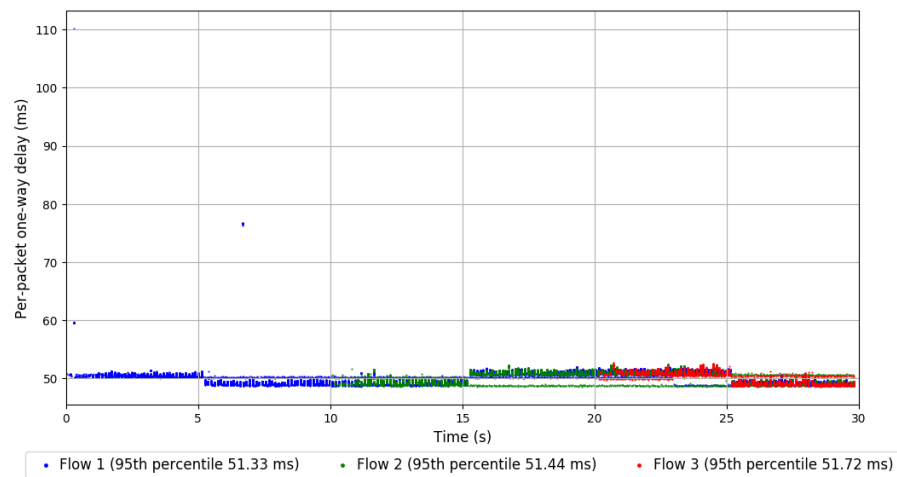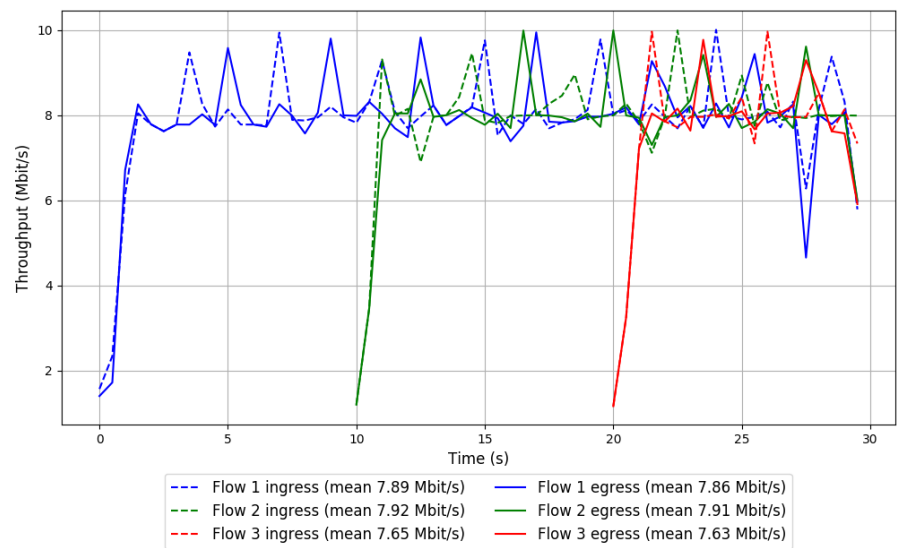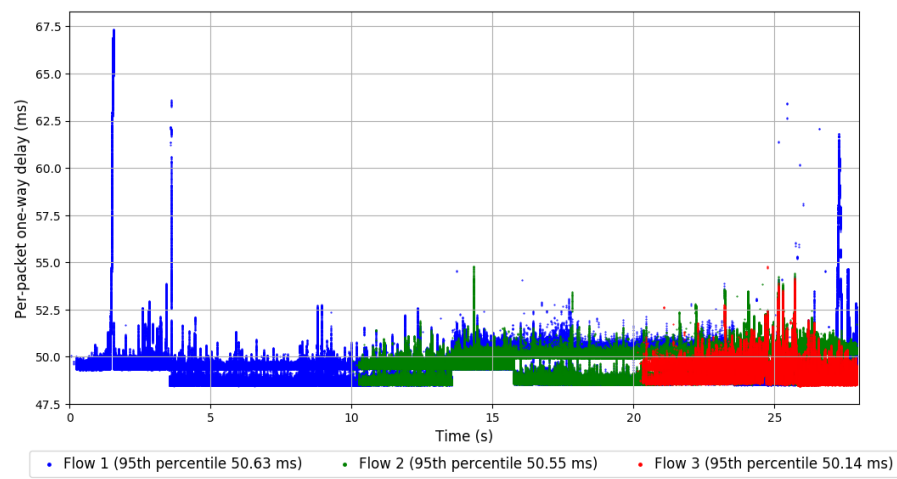
Run 1: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 197.77 Mbit/s) --- Flow 1 egress (mean 197.64 Mbit/s)
Flow 2 ingress (mean 227.79 Mbit/s) --- Flow 2 egress (mean 227.81 Mbit/s)
Flow 3 ingress (mean 219.81 Mbit/s) --- Flow 3 egress (mean 219.32 Mbit/s)

Flow 1 (95th percentile 50.63 ms)   Flow 2 (95th percentile 50.55 ms)   Flow 3 (95th percentile 50.14 ms)
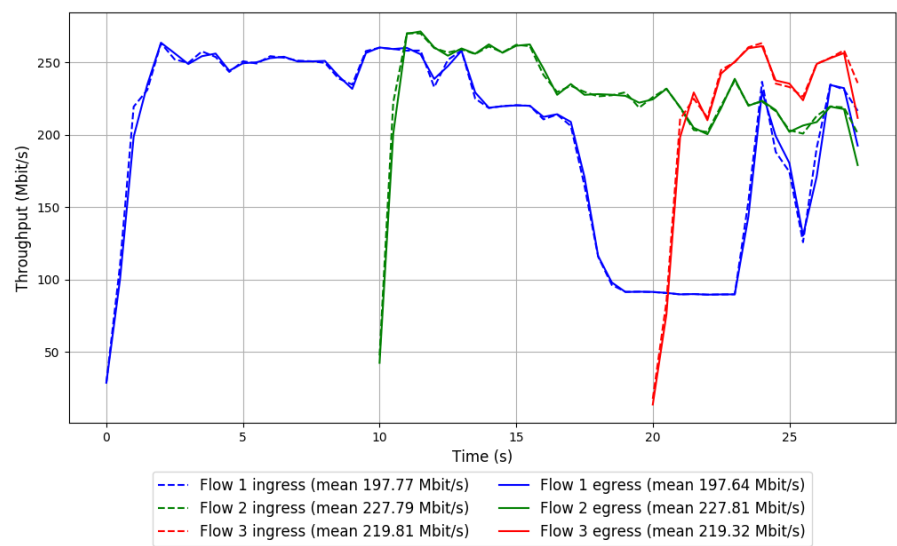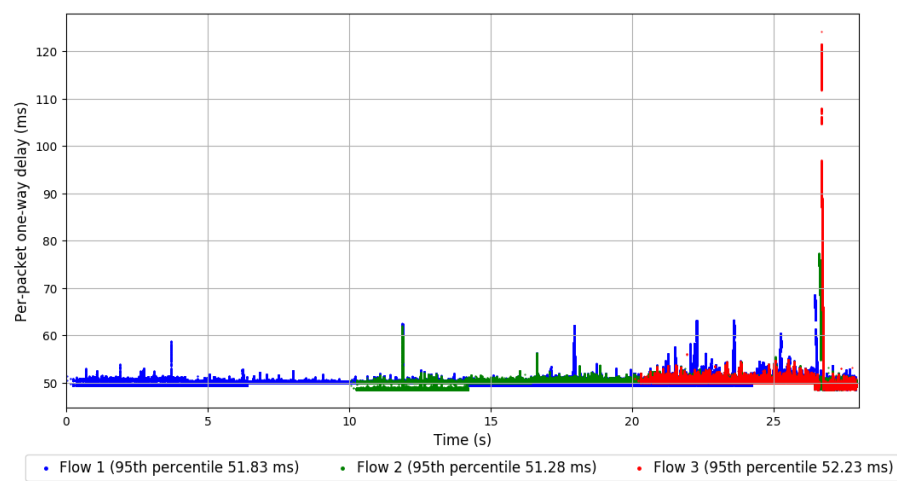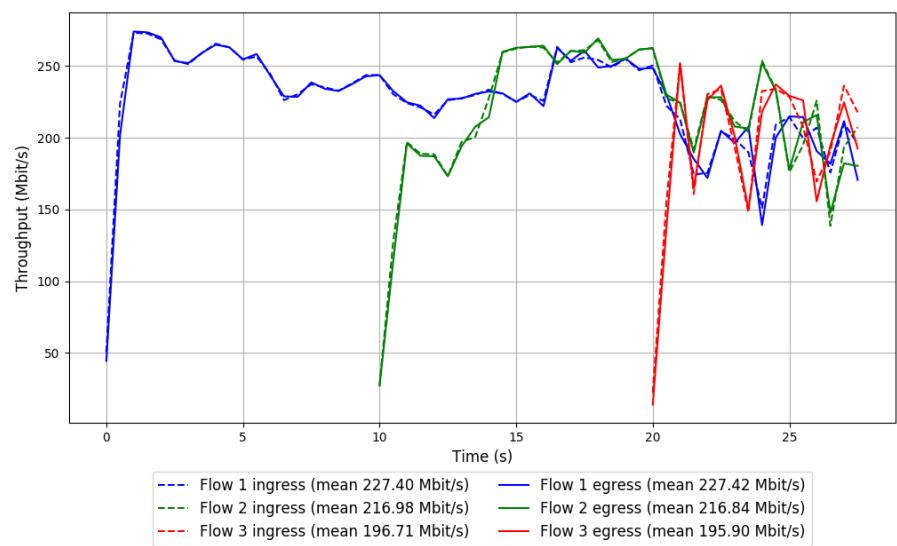
```
Run 2: Statistics of TaoVA-100x

Start at: 2017-12-20 21:20:42
End at: 2017-12-20 21:21:12

# Below is generated by plot.py at 2017-12-21 02:24:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 421.27 Mbit/s
95th percentile per-packet one-way delay: 51.685 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 227.42 Mbit/s
95th percentile per-packet one-way delay: 51.832 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 216.84 Mbit/s
95th percentile per-packet one-way delay: 51.281 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 195.90 Mbit/s
95th percentile per-packet one-way delay: 52.230 ms
Loss rate: 1.68%
```

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

Flow 1 ingress (mean 227.40 Mbit/s) ---- Flow 1 egress (mean 227.42 Mbit/s)
Flow 2 ingress (mean 216.98 Mbit/s) ---- Flow 2 egress (mean 216.84 Mbit/s)
Flow 3 ingress (mean 196.71 Mbit/s) ---- Flow 3 egress (mean 195.90 Mbit/s)

Flow 1 (95th percentile 51.83 ms)   Flow 2 (95th percentile 51.28 ms)   Flow 3 (95th percentile 52.23 ms)
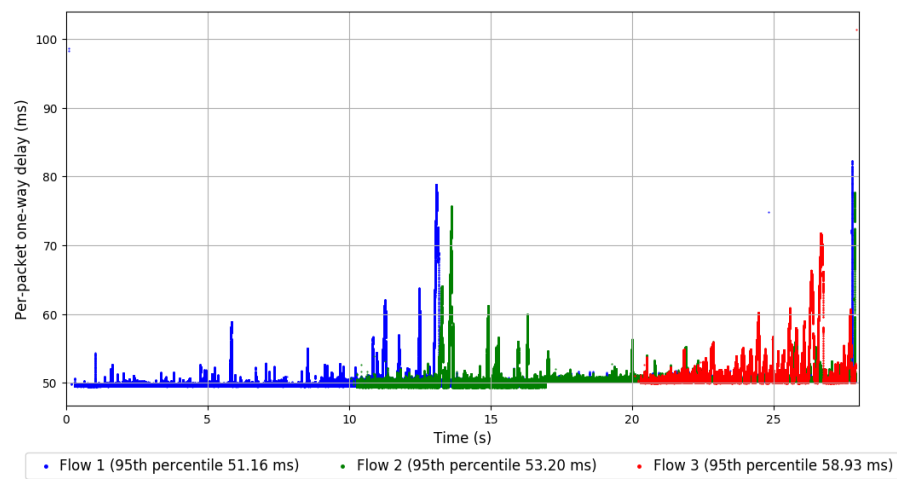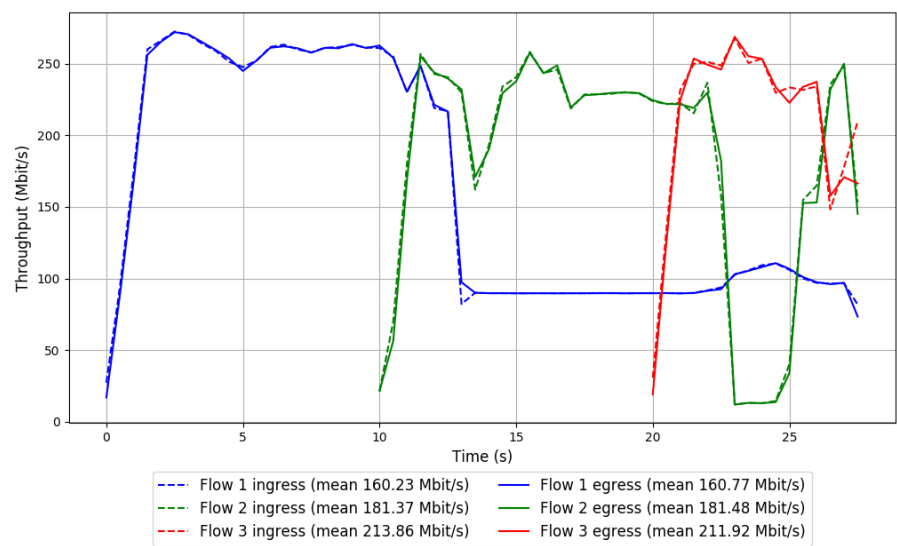
```
Run 3: Statistics of TaoVA-100x

Start at: 2017-12-20 21:34:59
End at: 2017-12-20 21:35:29

# Below is generated by plot.py at 2017-12-21 02:24:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 336.62 Mbit/s
95th percentile per-packet one-way delay: 53.937 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 160.77 Mbit/s
95th percentile per-packet one-way delay: 51.161 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 181.48 Mbit/s
95th percentile per-packet one-way delay: 53.202 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 211.92 Mbit/s
95th percentile per-packet one-way delay: 58.927 ms
Loss rate: 1.91%
```

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

Flow 1 ingress (mean 160.23 Mbit/s)   Flow 1 egress (mean 160.77 Mbit/s)
Flow 2 ingress (mean 181.37 Mbit/s)   Flow 2 egress (mean 181.48 Mbit/s)
Flow 3 ingress (mean 213.86 Mbit/s)   Flow 3 egress (mean 211.92 Mbit/s)

Flow 1 (95th percentile 51.16 ms)   Flow 2 (95th percentile 53.20 ms)   Flow 3 (95th percentile 58.93 ms)
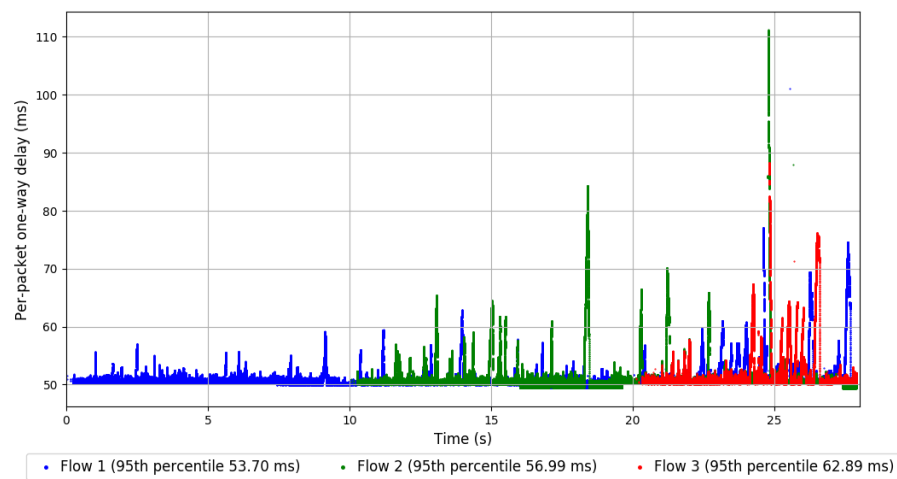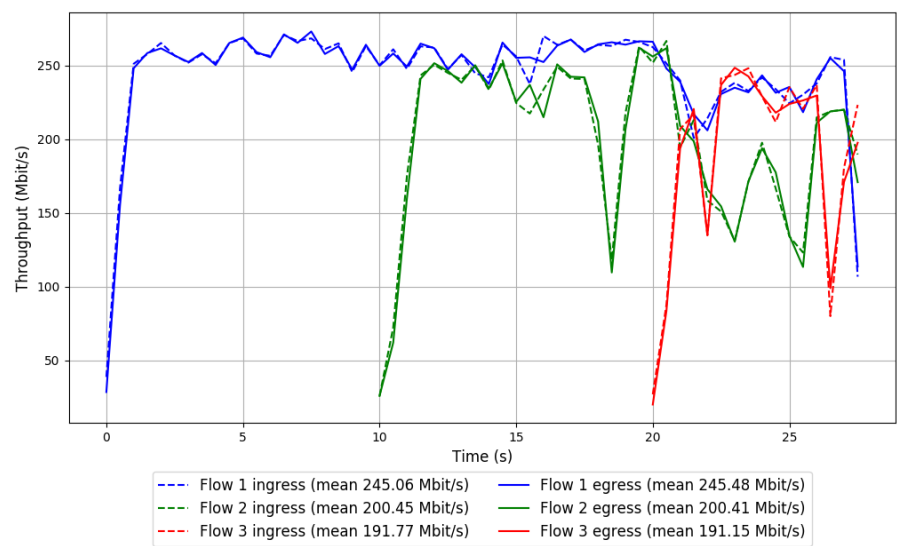
```
Run 4: Statistics of TaoVA-100x

Start at: 2017-12-20 21:49:09
End at: 2017-12-20 21:49:39

# Below is generated by plot.py at 2017-12-21 02:25:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 427.28 Mbit/s
95th percentile per-packet one-way delay: 55.608 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 245.48 Mbit/s
95th percentile per-packet one-way delay: 53.699 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 200.41 Mbit/s
95th percentile per-packet one-way delay: 56.988 ms
Loss rate: 0.58%
-- Flow 3:
Average throughput: 191.15 Mbit/s
95th percentile per-packet one-way delay: 62.891 ms
Loss rate: 1.60%
```

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

Flow 1 ingress (mean 245.06 Mbit/s) --- Flow 1 egress (mean 245.48 Mbit/s)
Flow 2 ingress (mean 200.45 Mbit/s) --- Flow 2 egress (mean 200.41 Mbit/s)
Flow 3 ingress (mean 191.77 Mbit/s) --- Flow 3 egress (mean 191.15 Mbit/s)

Flow 1 (95th percentile 53.70 ms)   Flow 2 (95th percentile 56.99 ms)   Flow 3 (95th percentile 62.89 ms)

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

Start at: 2017-12-20 22:03:35
End at: 2017-12-20 22:04:05

# Below is generated by plot.py at 2017-12-21 02:25:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 338.10 Mbit/s
95th percentile per-packet one-way delay: 53.623 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 164.71 Mbit/s
95th percentile per-packet one-way delay: 50.641 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 197.48 Mbit/s
95th percentile per-packet one-way delay: 54.373 ms
Loss rate: 0.80%
-- Flow 3:
Average throughput: 218.00 Mbit/s
95th percentile per-packet one-way delay: 63.540 ms
Loss rate: 0.35%
```
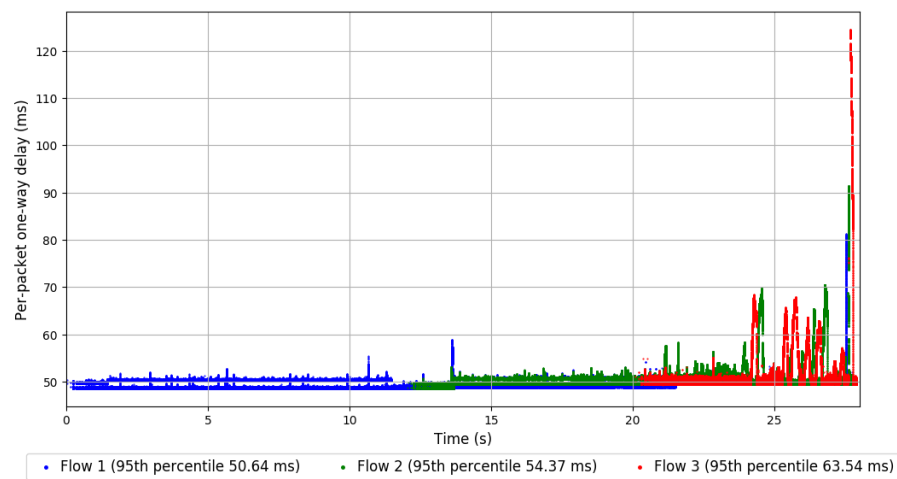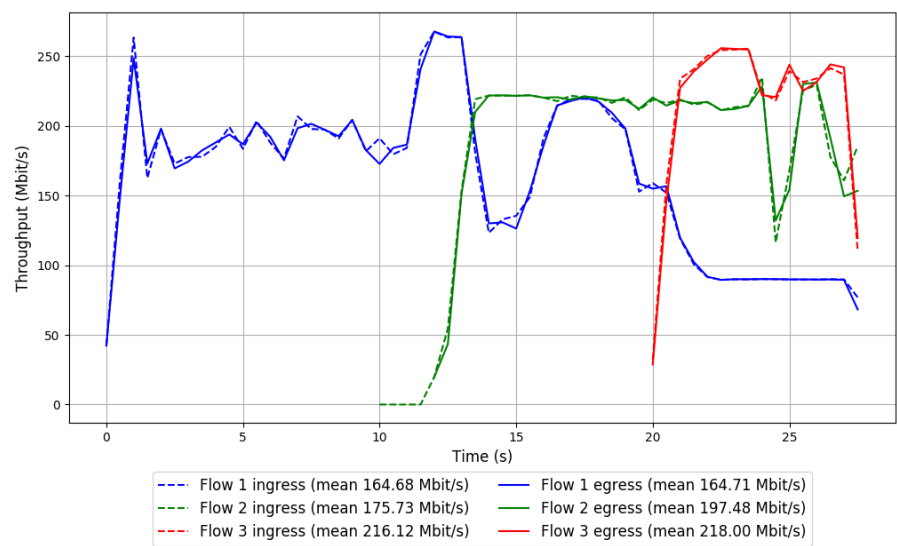
Run 5: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 164.68 Mbit/s) --- Flow 1 egress (mean 164.71 Mbit/s)
Flow 2 ingress (mean 175.73 Mbit/s) --- Flow 2 egress (mean 197.48 Mbit/s)
Flow 3 ingress (mean 216.12 Mbit/s) --- Flow 3 egress (mean 218.00 Mbit/s)

Flow 1 (95th percentile 50.64 ms) · Flow 2 (95th percentile 54.37 ms) · Flow 3 (95th percentile 63.54 ms)

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

Start at: 2017-12-20 22:17:48
End at: 2017-12-20 22:18:18

# Below is generated by plot.py at 2017-12-21 02:25:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 421.73 Mbit/s
95th percentile per-packet one-way delay: 51.683 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 238.31 Mbit/s
95th percentile per-packet one-way delay: 52.170 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 213.86 Mbit/s
95th percentile per-packet one-way delay: 50.895 ms
Loss rate: 0.30%
-- Flow 3:
Average throughput: 165.59 Mbit/s
95th percentile per-packet one-way delay: 50.947 ms
Loss rate: 1.72%
```
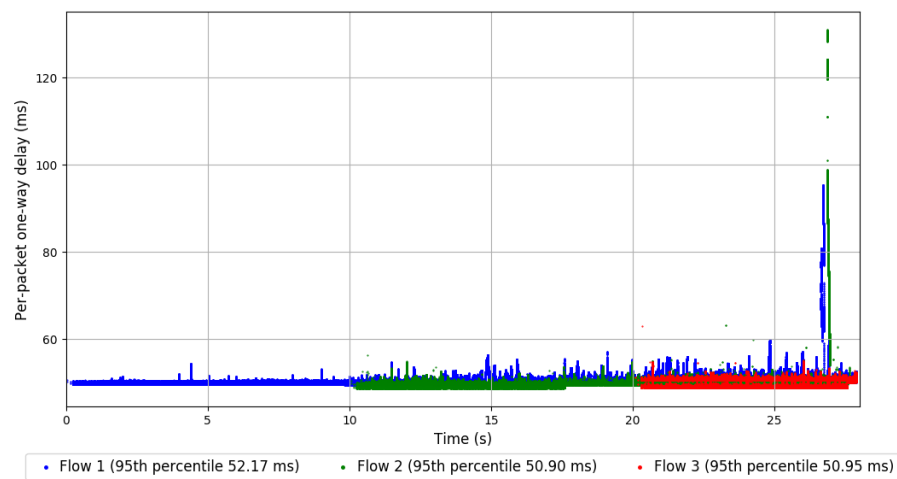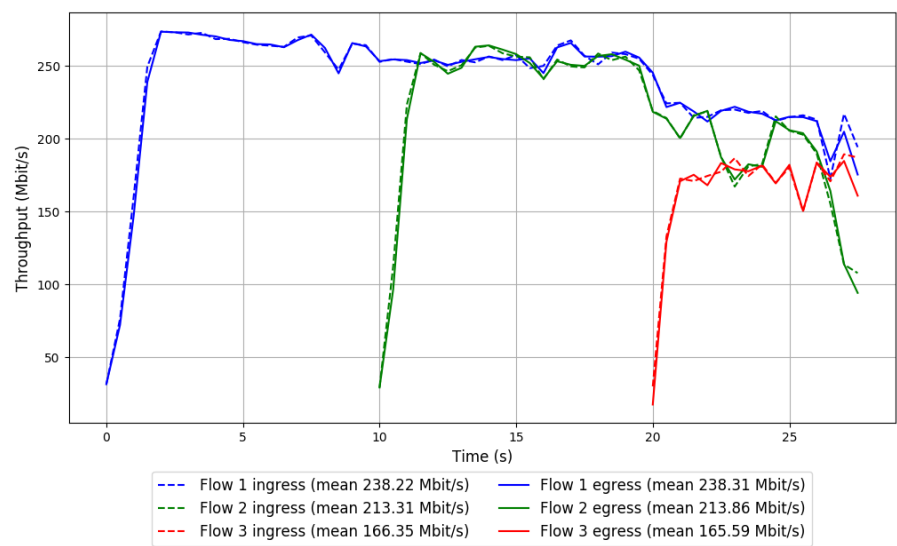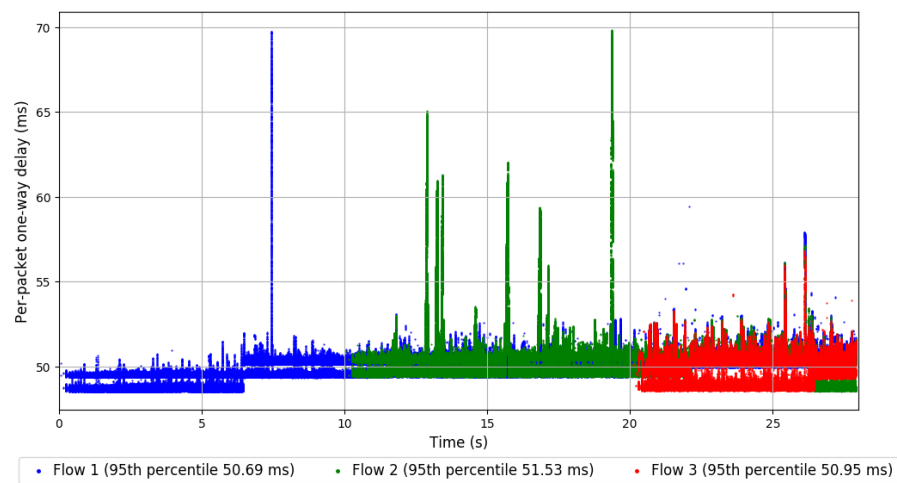
Run 6: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 238.22 Mbit/s) --- Flow 1 egress (mean 238.31 Mbit/s)
Flow 2 ingress (mean 213.31 Mbit/s) --- Flow 2 egress (mean 213.86 Mbit/s)
Flow 3 ingress (mean 166.35 Mbit/s) --- Flow 3 egress (mean 165.59 Mbit/s)

Flow 1 (95th percentile 52.17 ms)   Flow 2 (95th percentile 50.90 ms)   Flow 3 (95th percentile 50.95 ms)
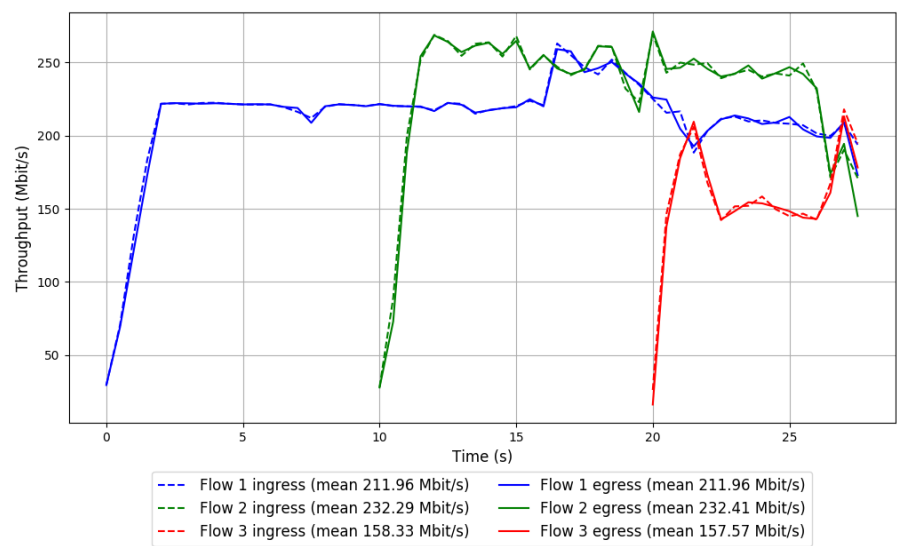
```
Run 7: Statistics of TaoVA-100x

Start at: 2017-12-20 22:31:50
End at: 2017-12-20 22:32:20

# Below is generated by plot.py at 2017-12-21 02:31:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 404.95 Mbit/s
95th percentile per-packet one-way delay: 50.980 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 211.96 Mbit/s
95th percentile per-packet one-way delay: 50.687 ms
Loss rate: 0.36%
-- Flow 2:
Average throughput: 232.41 Mbit/s
95th percentile per-packet one-way delay: 51.527 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 157.57 Mbit/s
95th percentile per-packet one-way delay: 50.948 ms
Loss rate: 1.69%
```

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

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

Start at: 2017-12-20 22:46:07
End at: 2017-12-20 22:46:37

# Below is generated by plot.py at 2017-12-21 02:31:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 376.78 Mbit/s
95th percentile per-packet one-way delay: 51.645 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 222.36 Mbit/s
95th percentile per-packet one-way delay: 50.933 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 201.35 Mbit/s
95th percentile per-packet one-way delay: 52.978 ms
Loss rate: 0.75%
-- Flow 3:
Average throughput: 90.97 Mbit/s
95th percentile per-packet one-way delay: 50.745 ms
Loss rate: 1.27%
```
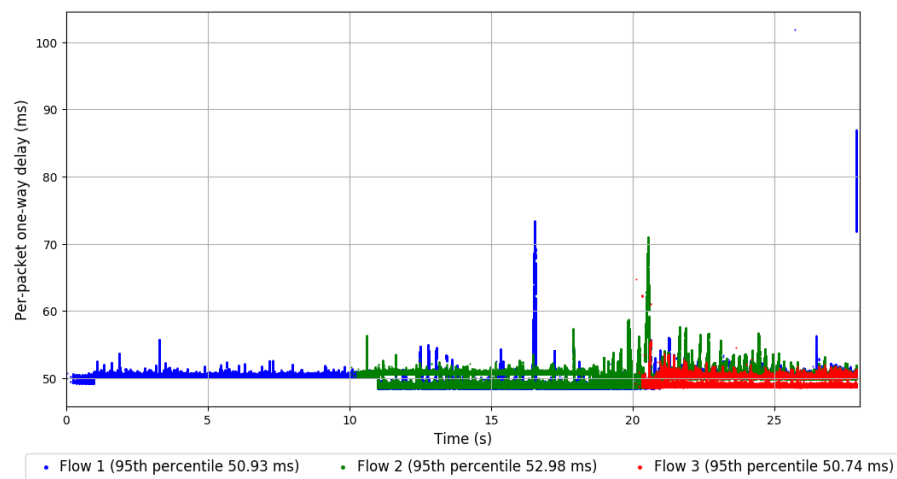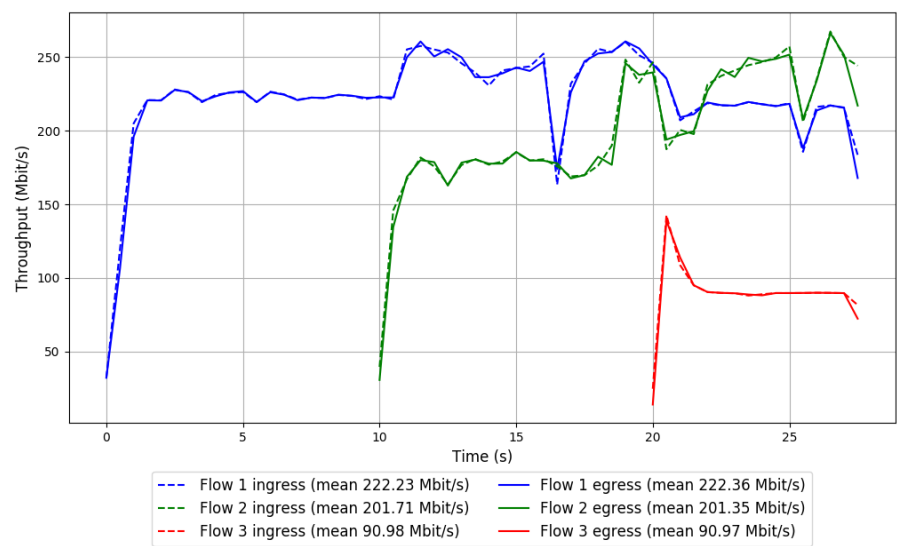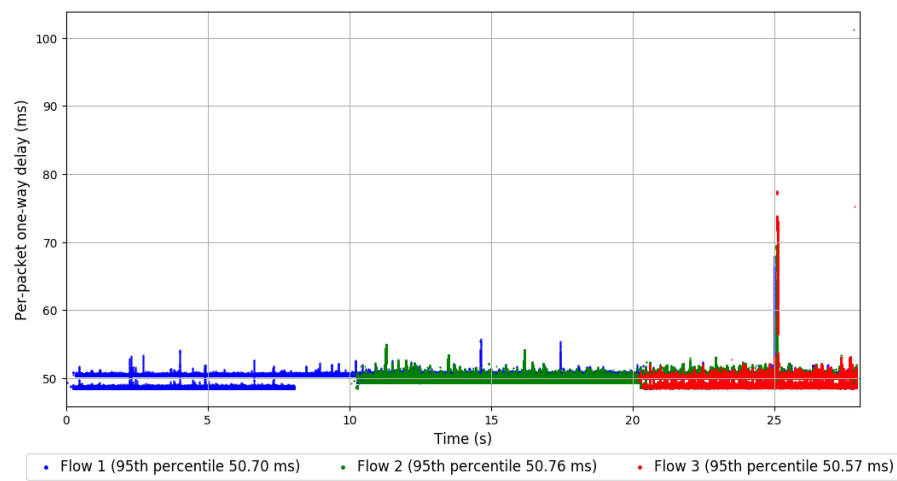
Run 8: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 222.23 Mbit/s)   Flow 1 egress (mean 222.36 Mbit/s)
Flow 2 ingress (mean 201.71 Mbit/s)   Flow 2 egress (mean 201.35 Mbit/s)
Flow 3 ingress (mean 90.98 Mbit/s)   Flow 3 egress (mean 90.97 Mbit/s)

Flow 1 (95th percentile 50.93 ms)   Flow 2 (95th percentile 52.98 ms)   Flow 3 (95th percentile 50.74 ms)
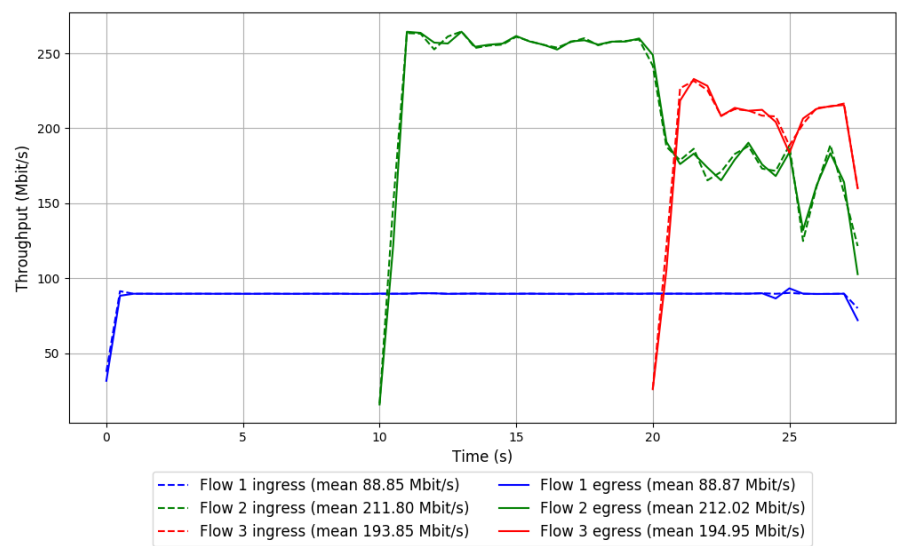
```
Run 9: Statistics of TaoVA-100x

Start at: 2017-12-20 23:00:18
End at: 2017-12-20 23:00:48

# Below is generated by plot.py at 2017-12-21 02:31:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 279.53 Mbit/s
95th percentile per-packet one-way delay: 50.704 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 88.87 Mbit/s
95th percentile per-packet one-way delay: 50.701 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 212.02 Mbit/s
95th percentile per-packet one-way delay: 50.757 ms
Loss rate: 0.45%
-- Flow 3:
Average throughput: 194.95 Mbit/s
95th percentile per-packet one-way delay: 50.574 ms
Loss rate: 0.72%
```

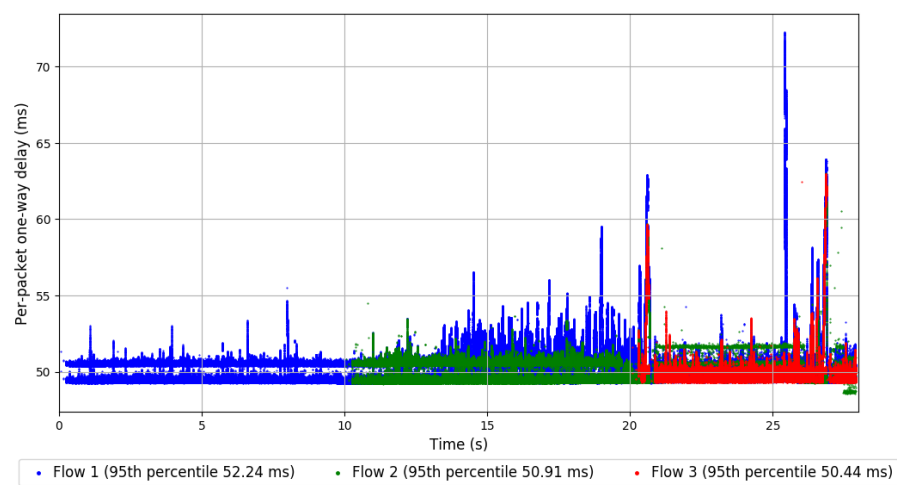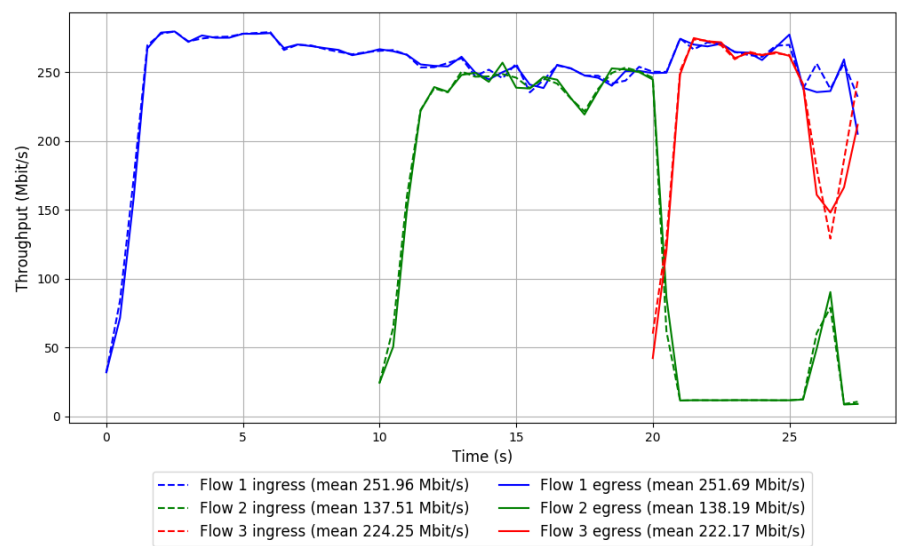Run 9: Report of TaoVA-100x — Data Link

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

Start at: 2017-12-20 23:14:29
End at: 2017-12-20 23:14:59


# Below is generated by plot.py at 2017-12-21 02:35:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 402.52 Mbit/s
95th percentile per-packet one-way delay: 51.792 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 251.69 Mbit/s
95th percentile per-packet one-way delay: 52.244 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 138.19 Mbit/s
95th percentile per-packet one-way delay: 50.909 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 222.17 Mbit/s
95th percentile per-packet one-way delay: 50.441 ms
Loss rate: 2.19%
```

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

Flow 1 ingress (mean 251.96 Mbit/s)   Flow 1 egress (mean 251.69 Mbit/s)
Flow 2 ingress (mean 137.51 Mbit/s)   Flow 2 egress (mean 138.19 Mbit/s)
Flow 3 ingress (mean 224.25 Mbit/s)   Flow 3 egress (mean 222.17 Mbit/s)

Flow 1 (95th percentile 52.24 ms)   Flow 2 (95th percentile 50.91 ms)   Flow 3 (95th percentile 50.44 ms)

```
Run 1: Statistics of TCP Vegas

Start at: 2017-12-20 21:13:59
End at: 2017-12-20 21:14:29


# Below is generated by plot.py at 2017-12-21 02:35:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 126.95 Mbit/s
95th percentile per-packet one-way delay: 50.750 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 82.11 Mbit/s
95th percentile per-packet one-way delay: 50.922 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 34.04 Mbit/s
95th percentile per-packet one-way delay: 50.628 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 67.82 Mbit/s
95th percentile per-packet one-way delay: 50.529 ms
Loss rate: 1.15%
```
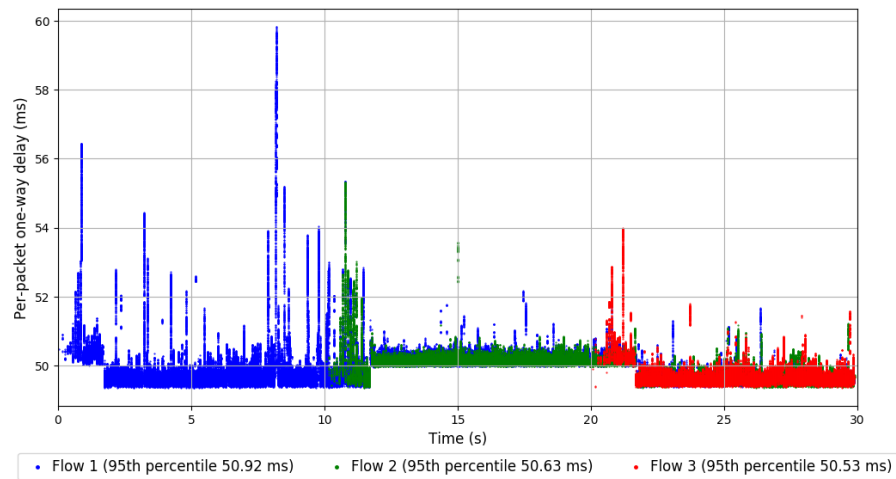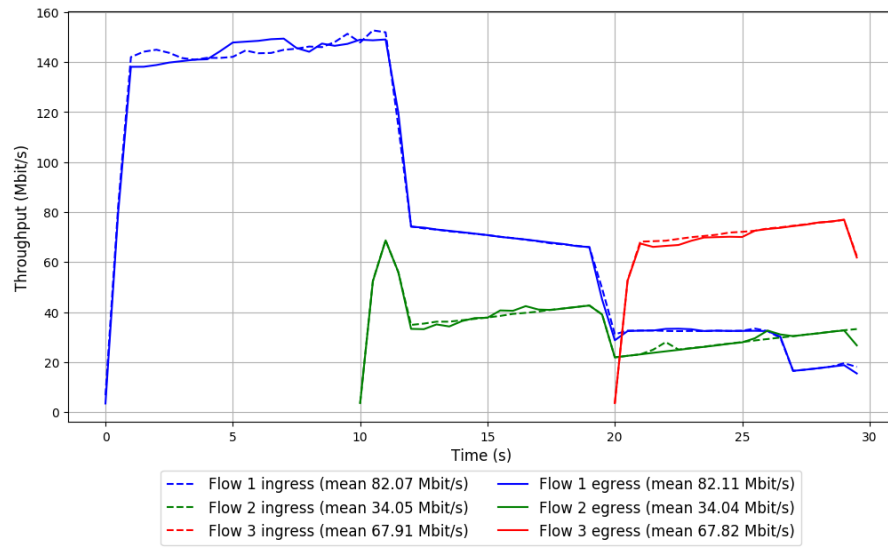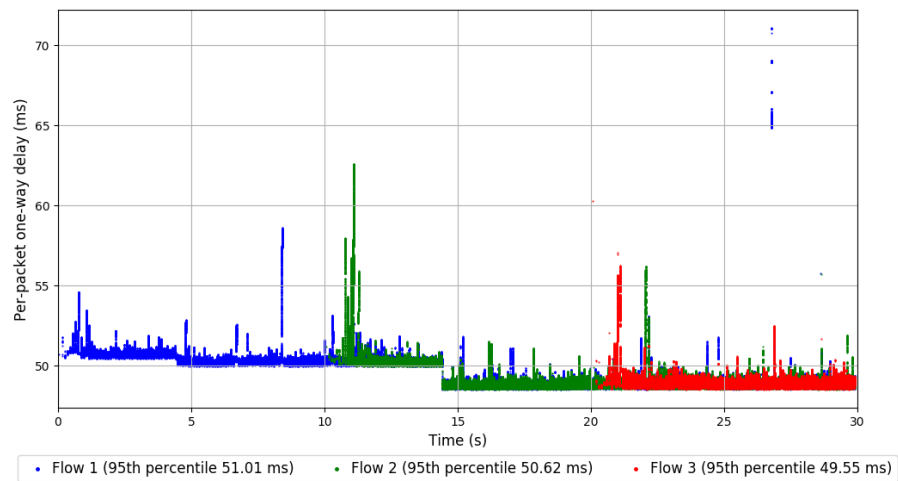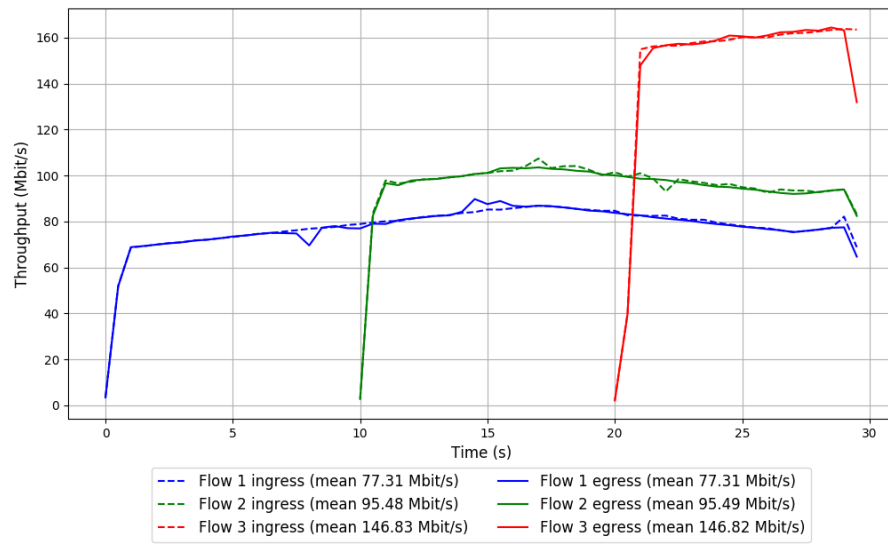
Run 1: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 82.07 Mbit/s)   Flow 1 egress (mean 82.11 Mbit/s)
Flow 2 ingress (mean 34.05 Mbit/s)   Flow 2 egress (mean 34.04 Mbit/s)
Flow 3 ingress (mean 67.91 Mbit/s)   Flow 3 egress (mean 67.82 Mbit/s)

Flow 1 (95th percentile 50.92 ms)   Flow 2 (95th percentile 50.63 ms)   Flow 3 (95th percentile 50.53 ms)

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```
Run 2: Statistics of TCP Vegas

Start at: 2017-12-20 21:28:16
End at: 2017-12-20 21:28:46

# Below is generated by plot.py at 2017-12-21 02:35:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 189.11 Mbit/s
95th percentile per-packet one-way delay: 50.838 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 77.31 Mbit/s
95th percentile per-packet one-way delay: 51.006 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 95.49 Mbit/s
95th percentile per-packet one-way delay: 50.622 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 146.82 Mbit/s
95th percentile per-packet one-way delay: 49.545 ms
Loss rate: 1.13%
```
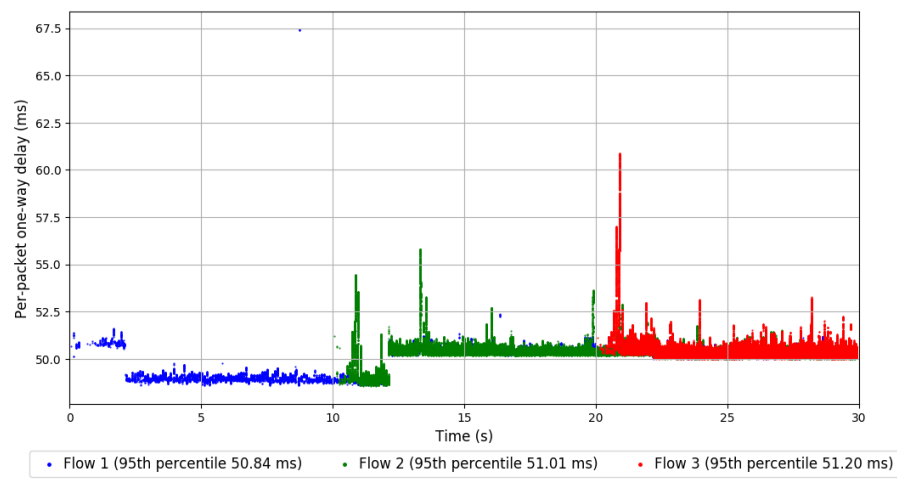
Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2017-12-20 21:42:28
End at: 2017-12-20 21:42:58

# Below is generated by plot.py at 2017-12-21 02:35:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 101.10 Mbit/s
95th percentile per-packet one-way delay: 51.074 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 11.61 Mbit/s
95th percentile per-packet one-way delay: 50.836 ms
Loss rate: 0.71%
-- Flow 2:
Average throughput: 65.92 Mbit/s
95th percentile per-packet one-way delay: 51.005 ms
Loss rate: 0.31%
-- Flow 3:
Average throughput: 138.63 Mbit/s
95th percentile per-packet one-way delay: 51.202 ms
Loss rate: 1.06%
```
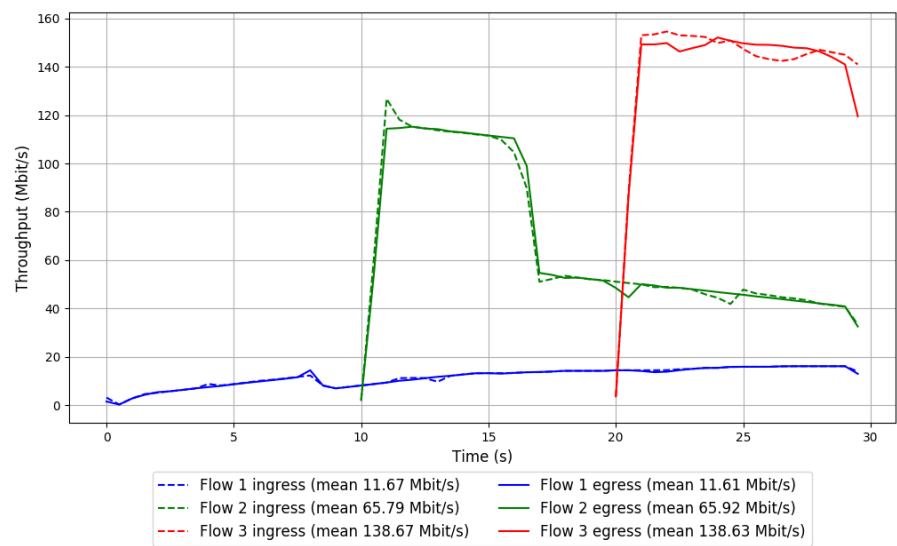
Run 3: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 11.67 Mbit/s) --- Flow 1 egress (mean 11.61 Mbit/s)
Flow 2 ingress (mean 65.79 Mbit/s) --- Flow 2 egress (mean 65.92 Mbit/s)
Flow 3 ingress (mean 138.67 Mbit/s) --- Flow 3 egress (mean 138.63 Mbit/s)

Flow 1 (95th percentile 50.84 ms) Flow 2 (95th percentile 51.01 ms) Flow 3 (95th percentile 51.20 ms)

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```
Run 4: Statistics of TCP Vegas

Start at: 2017-12-20 21:56:52
End at: 2017-12-20 21:57:22

# Below is generated by plot.py at 2017-12-21 02:35:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.05 Mbit/s
95th percentile per-packet one-way delay: 51.126 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 64.38 Mbit/s
95th percentile per-packet one-way delay: 51.033 ms
Loss rate: 0.24%
-- Flow 2:
Average throughput: 25.44 Mbit/s
95th percentile per-packet one-way delay: 51.201 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 47.88 Mbit/s
95th percentile per-packet one-way delay: 51.351 ms
Loss rate: 1.13%
```
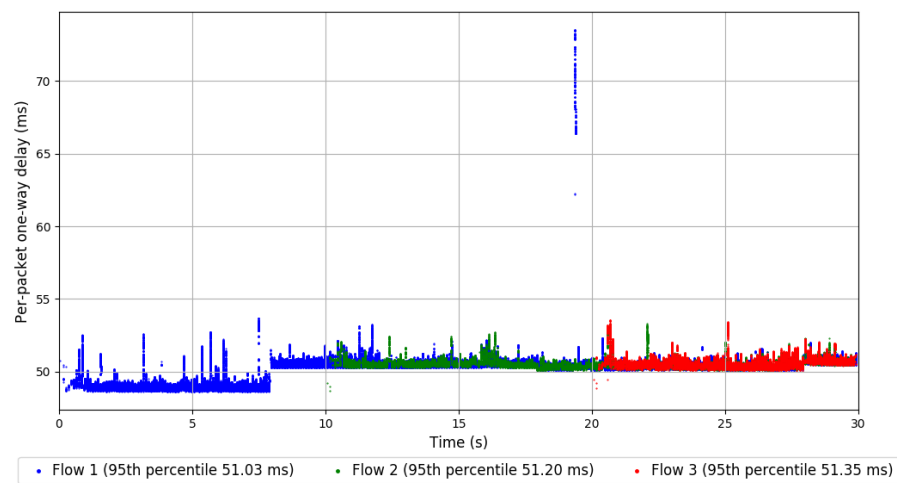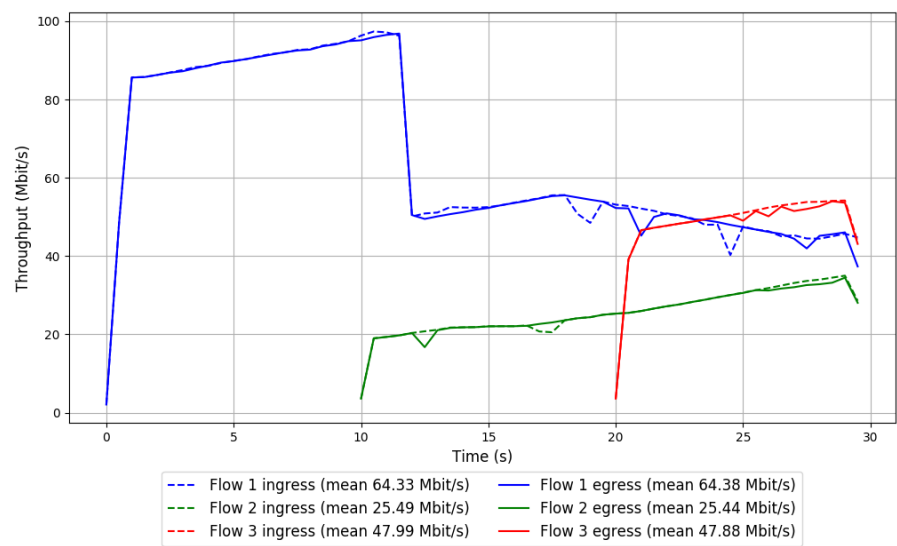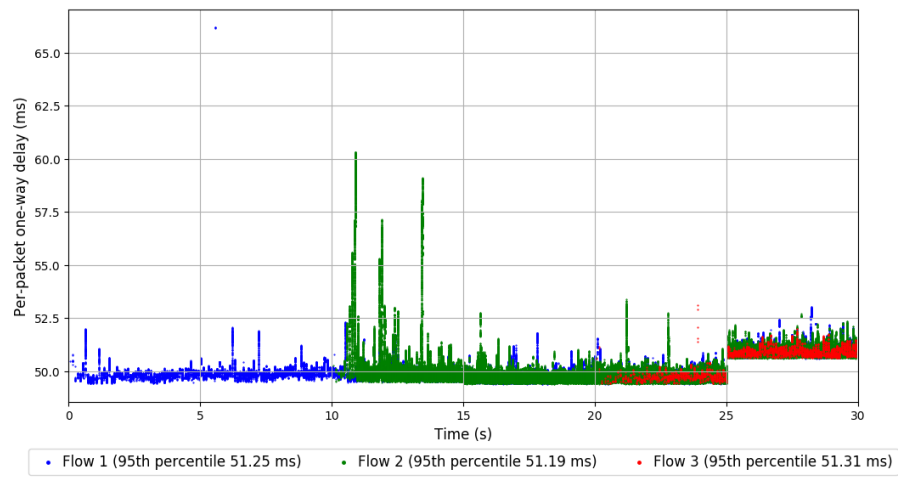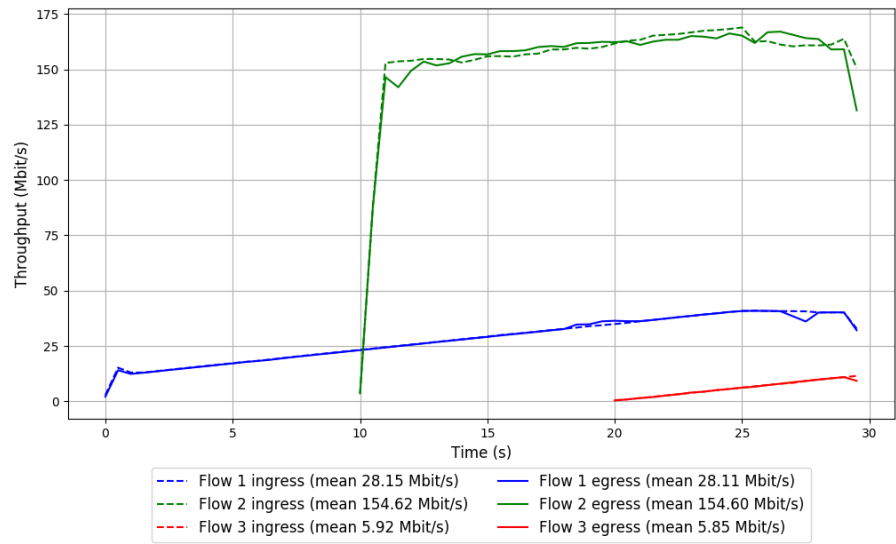
Run 4: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 64.33 Mbit/s) —— Flow 1 egress (mean 64.38 Mbit/s)
Flow 2 ingress (mean 25.49 Mbit/s) —— Flow 2 egress (mean 25.44 Mbit/s)
Flow 3 ingress (mean 47.99 Mbit/s) —— Flow 3 egress (mean 47.88 Mbit/s)

Flow 1 (95th percentile 51.03 ms)   Flow 2 (95th percentile 51.20 ms)   Flow 3 (95th percentile 51.35 ms)

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```
Run 5: Statistics of TCP Vegas

Start at: 2017-12-20 22:11:05
End at: 2017-12-20 22:11:35


# Below is generated by plot.py at 2017-12-21 02:35:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 132.78 Mbit/s
95th percentile per-packet one-way delay: 51.211 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 28.11 Mbit/s
95th percentile per-packet one-way delay: 51.250 ms
Loss rate: 0.48%
-- Flow 2:
Average throughput: 154.60 Mbit/s
95th percentile per-packet one-way delay: 51.190 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 5.85 Mbit/s
95th percentile per-packet one-way delay: 51.315 ms
Loss rate: 2.15%
```
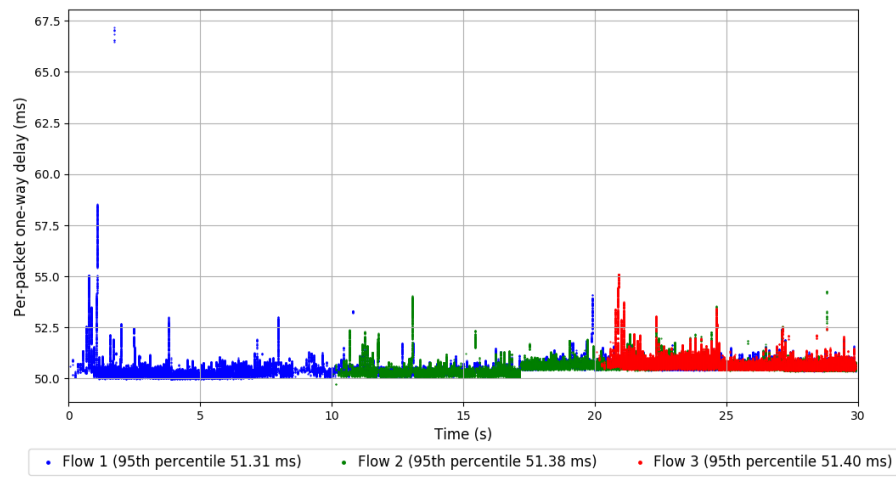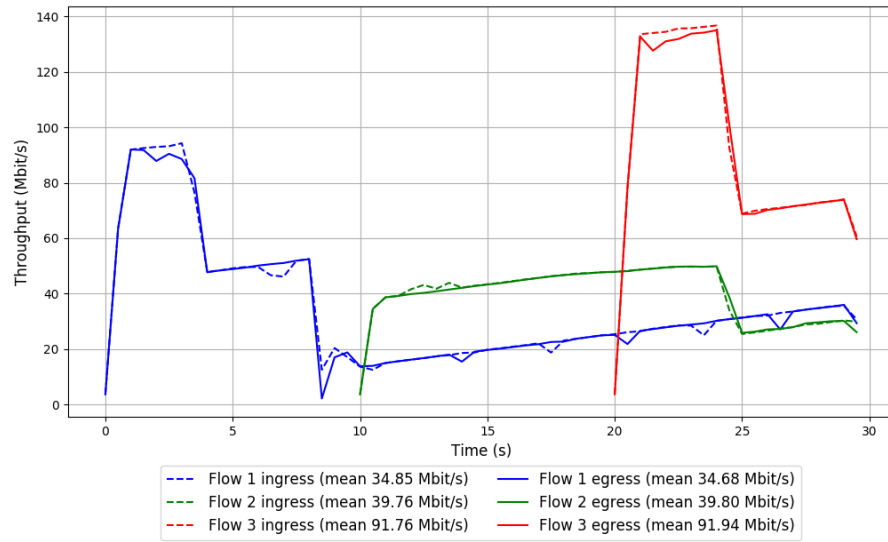
Run 5: Report of TCP Vegas — Data Link

```
Run 6: Statistics of TCP Vegas

Start at: 2017-12-20 22:25:23
End at: 2017-12-20 22:25:53


# Below is generated by plot.py at 2017-12-21 02:35:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.44 Mbit/s
95th percentile per-packet one-way delay: 51.366 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 34.68 Mbit/s
95th percentile per-packet one-way delay: 51.309 ms
Loss rate: 0.84%
-- Flow 2:
Average throughput: 39.80 Mbit/s
95th percentile per-packet one-way delay: 51.377 ms
Loss rate: 0.39%
-- Flow 3:
Average throughput: 91.94 Mbit/s
95th percentile per-packet one-way delay: 51.401 ms
Loss rate: 0.82%
```
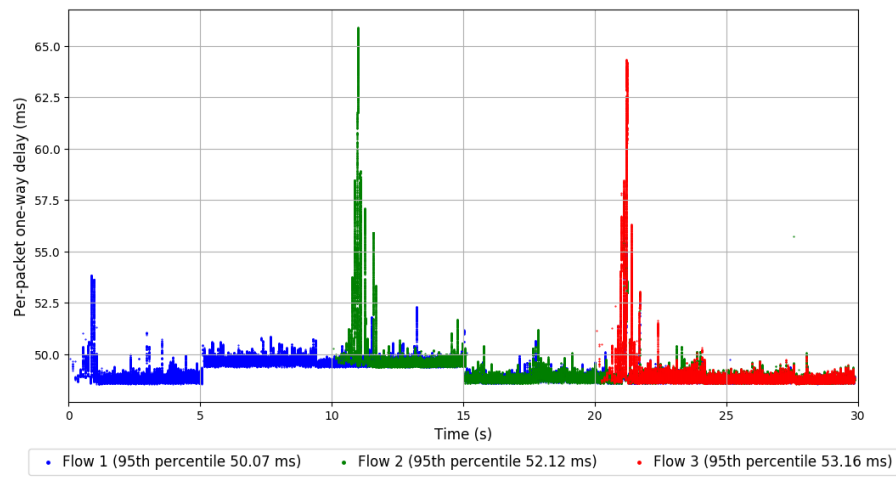
Run 6: Report of TCP Vegas — Data Link

```
Run 7: Statistics of TCP Vegas

Start at: 2017-12-20 22:39:25
End at: 2017-12-20 22:39:55

# Below is generated by plot.py at 2017-12-21 02:35:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 112.88 Mbit/s
95th percentile per-packet one-way delay: 50.686 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 44.16 Mbit/s
95th percentile per-packet one-way delay: 50.070 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 72.89 Mbit/s
95th percentile per-packet one-way delay: 52.122 ms
Loss rate: 0.34%
-- Flow 3:
Average throughput: 61.64 Mbit/s
95th percentile per-packet one-way delay: 53.165 ms
Loss rate: 0.51%
```
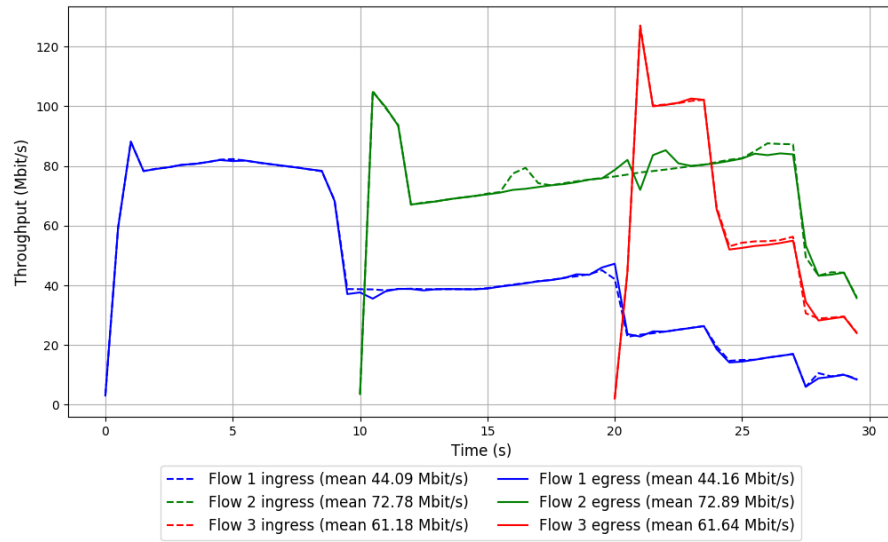
Run 7: Report of TCP Vegas — Data Link

```
Run 8: Statistics of TCP Vegas

Start at: 2017-12-20 22:53:38
End at: 2017-12-20 22:54:08

# Below is generated by plot.py at 2017-12-21 02:35:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 70.68 Mbit/s
95th percentile per-packet one-way delay: 50.517 ms
Loss rate: 0.71%
-- Flow 1:
Average throughput: 23.42 Mbit/s
95th percentile per-packet one-way delay: 50.533 ms
Loss rate: 0.50%
-- Flow 2:
Average throughput: 38.10 Mbit/s
95th percentile per-packet one-way delay: 50.607 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 66.79 Mbit/s
95th percentile per-packet one-way delay: 50.309 ms
Loss rate: 1.14%
```
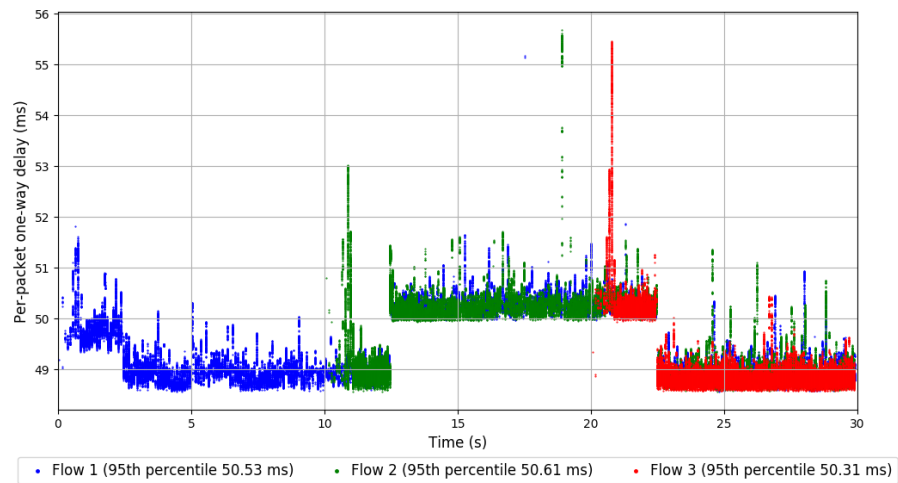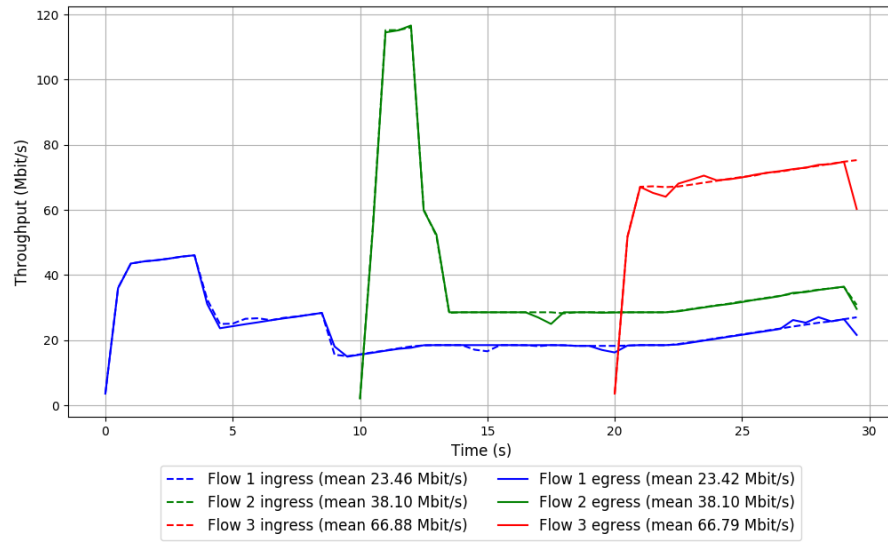
Run 8: Report of TCP Vegas — Data Link

```
Run 9: Statistics of TCP Vegas

Start at: 2017-12-20 23:07:47
End at: 2017-12-20 23:08:17


# Below is generated by plot.py at 2017-12-21 02:35:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.16 Mbit/s
95th percentile per-packet one-way delay: 50.221 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 32.34 Mbit/s
95th percentile per-packet one-way delay: 49.688 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 45.78 Mbit/s
95th percentile per-packet one-way delay: 49.727 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 86.42 Mbit/s
95th percentile per-packet one-way delay: 53.033 ms
Loss rate: 0.75%
```
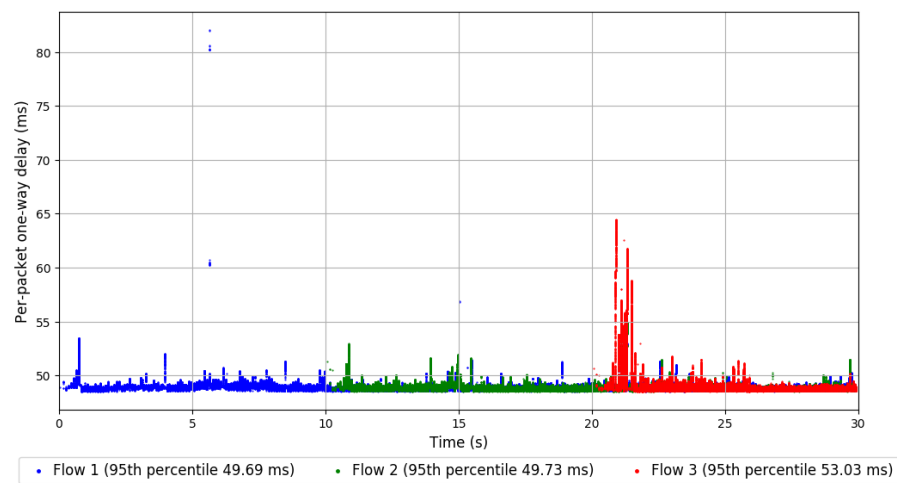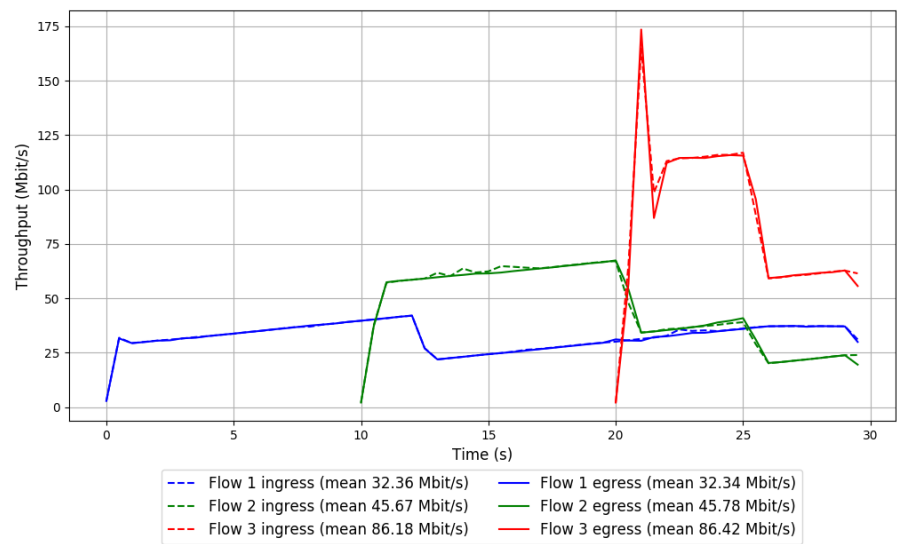
Run 9: Report of TCP Vegas — Data Link

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```
Run 10: Statistics of TCP Vegas

Start at: 2017-12-20 23:22:05
End at: 2017-12-20 23:22:35


# Below is generated by plot.py at 2017-12-21 02:35:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 214.42 Mbit/s
95th percentile per-packet one-way delay: 51.622 ms
Loss rate: 0.39%
-- Flow 1:
Average throughput: 146.85 Mbit/s
95th percentile per-packet one-way delay: 51.479 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 58.58 Mbit/s
95th percentile per-packet one-way delay: 51.346 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 78.85 Mbit/s
95th percentile per-packet one-way delay: 52.649 ms
Loss rate: 1.10%
```
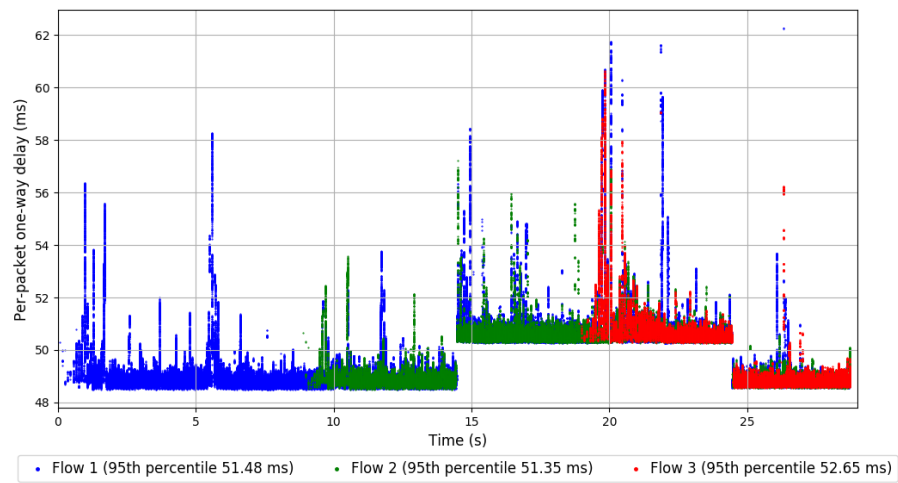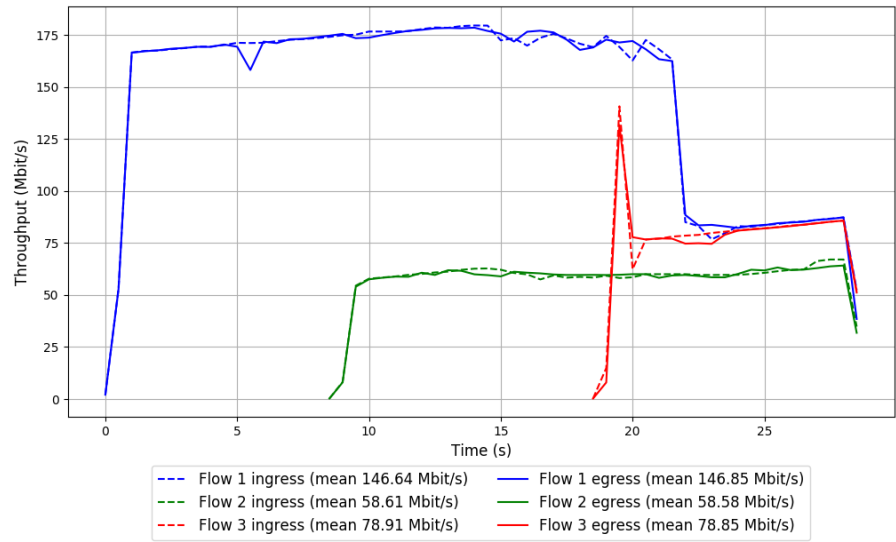
Run 10: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 146.64 Mbit/s)   Flow 1 egress (mean 146.85 Mbit/s)
Flow 2 ingress (mean 58.61 Mbit/s)   Flow 2 egress (mean 58.58 Mbit/s)
Flow 3 ingress (mean 78.91 Mbit/s)   Flow 3 egress (mean 78.85 Mbit/s)

Flow 1 (95th percentile 51.48 ms)   Flow 2 (95th percentile 51.35 ms)   Flow 3 (95th percentile 52.65 ms)

```
Run 1: Statistics of Verus

Start at: 2017-12-20 21:07:39
End at: 2017-12-20 21:08:09

# Below is generated by plot.py at 2017-12-21 02:36:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 383.90 Mbit/s
95th percentile per-packet one-way delay: 142.956 ms
Loss rate: 0.89%
-- Flow 1:
Average throughput: 232.57 Mbit/s
95th percentile per-packet one-way delay: 153.049 ms
Loss rate: 0.80%
-- Flow 2:
Average throughput: 147.50 Mbit/s
95th percentile per-packet one-way delay: 102.907 ms
Loss rate: 0.66%
-- Flow 3:
Average throughput: 162.07 Mbit/s
95th percentile per-packet one-way delay: 144.774 ms
Loss rate: 1.69%
```
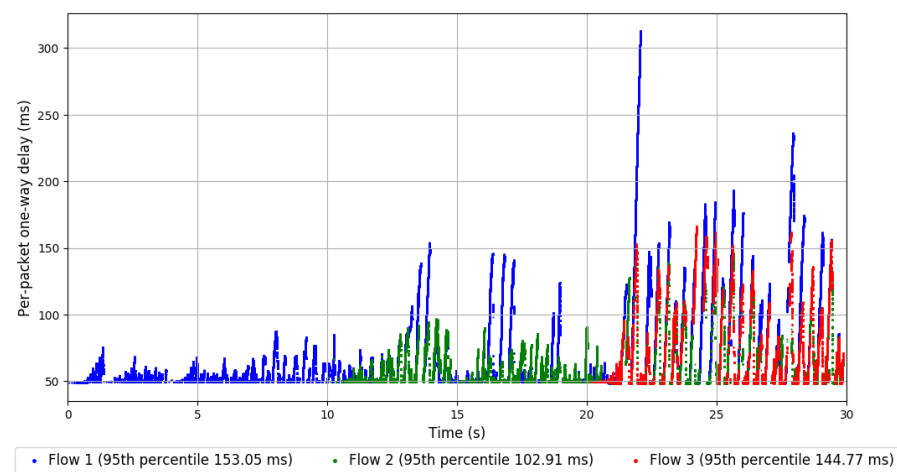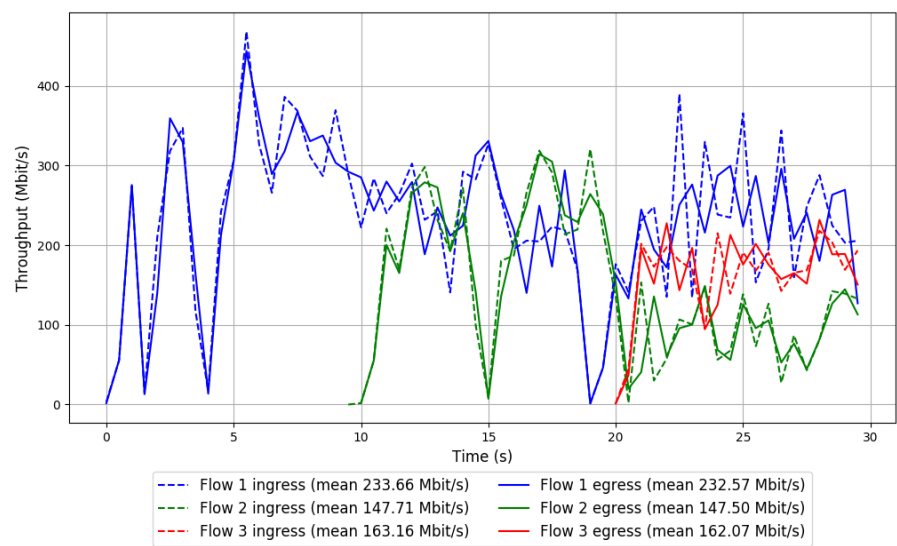
Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2017-12-20 21:21:59
End at: 2017-12-20 21:22:29

# Below is generated by plot.py at 2017-12-21 02:36:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 398.25 Mbit/s
95th percentile per-packet one-way delay: 107.676 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 244.05 Mbit/s
95th percentile per-packet one-way delay: 118.931 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 170.80 Mbit/s
95th percentile per-packet one-way delay: 97.417 ms
Loss rate: 0.85%
-- Flow 3:
Average throughput: 125.99 Mbit/s
95th percentile per-packet one-way delay: 98.370 ms
Loss rate: 0.87%
```
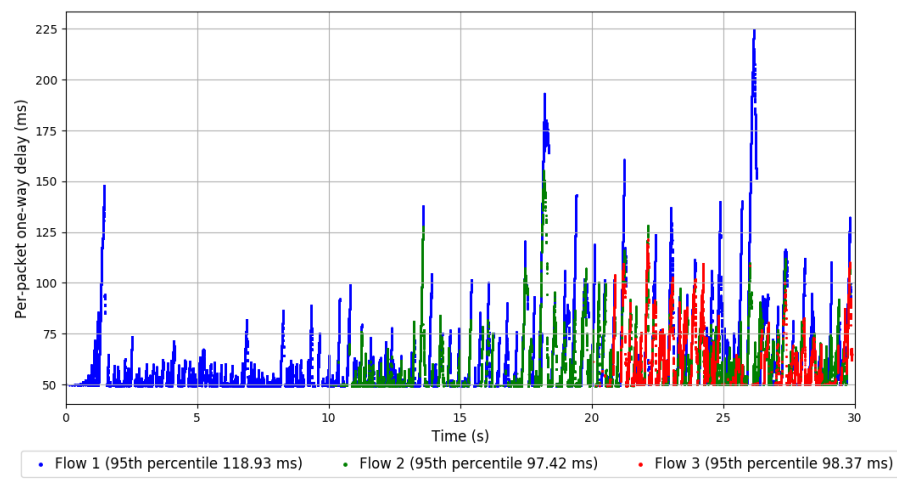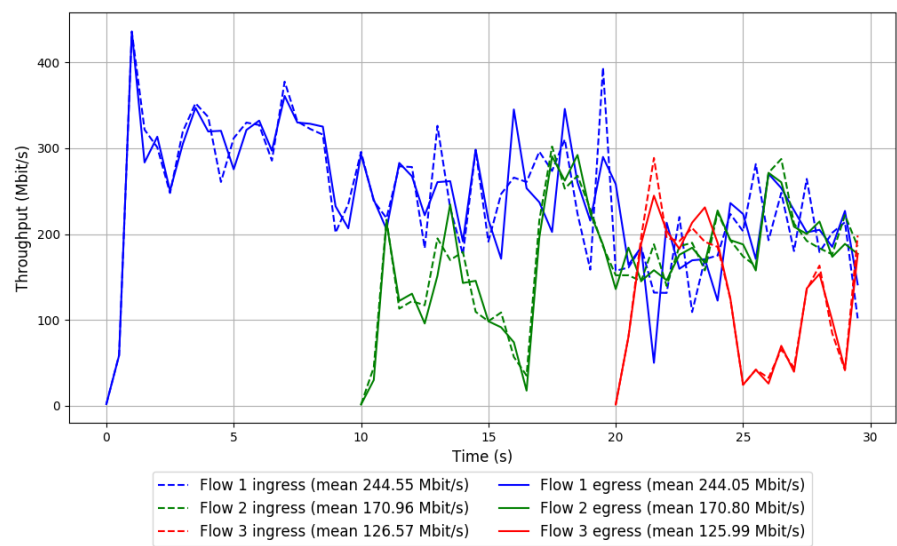
Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2017-12-20 21:36:09
End at: 2017-12-20 21:36:39

# Below is generated by plot.py at 2017-12-21 02:36:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 370.00 Mbit/s
95th percentile per-packet one-way delay: 178.274 ms
Loss rate: 1.92%
-- Flow 1:
Average throughput: 192.02 Mbit/s
95th percentile per-packet one-way delay: 115.454 ms
Loss rate: 0.58%
-- Flow 2:
Average throughput: 209.85 Mbit/s
95th percentile per-packet one-way delay: 185.699 ms
Loss rate: 2.34%
-- Flow 3:
Average throughput: 117.71 Mbit/s
95th percentile per-packet one-way delay: 240.134 ms
Loss rate: 6.73%
```
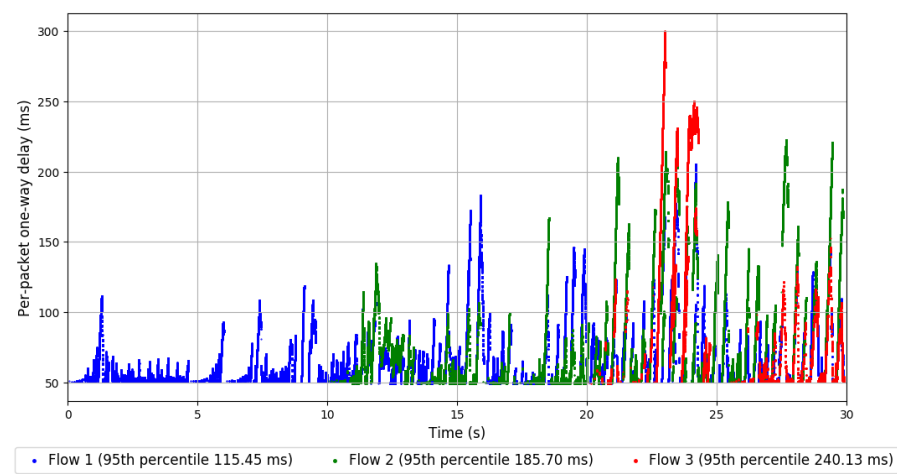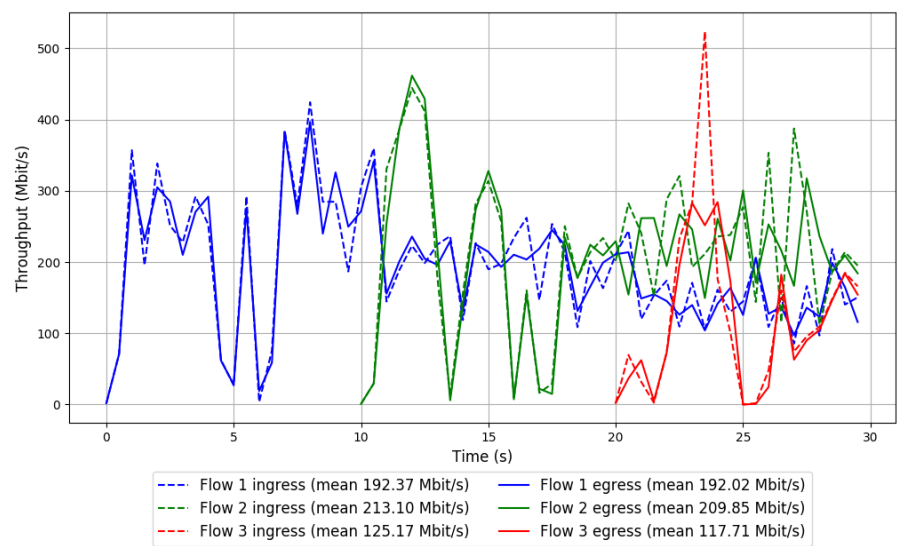
Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2017-12-20 21:50:28
End at: 2017-12-20 21:50:58


# Below is generated by plot.py at 2017-12-21 02:37:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 425.13 Mbit/s
95th percentile per-packet one-way delay: 116.920 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 250.53 Mbit/s
95th percentile per-packet one-way delay: 94.814 ms
Loss rate: 0.82%
-- Flow 2:
Average throughput: 208.60 Mbit/s
95th percentile per-packet one-way delay: 135.459 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 113.09 Mbit/s
95th percentile per-packet one-way delay: 146.075 ms
Loss rate: 3.62%
```
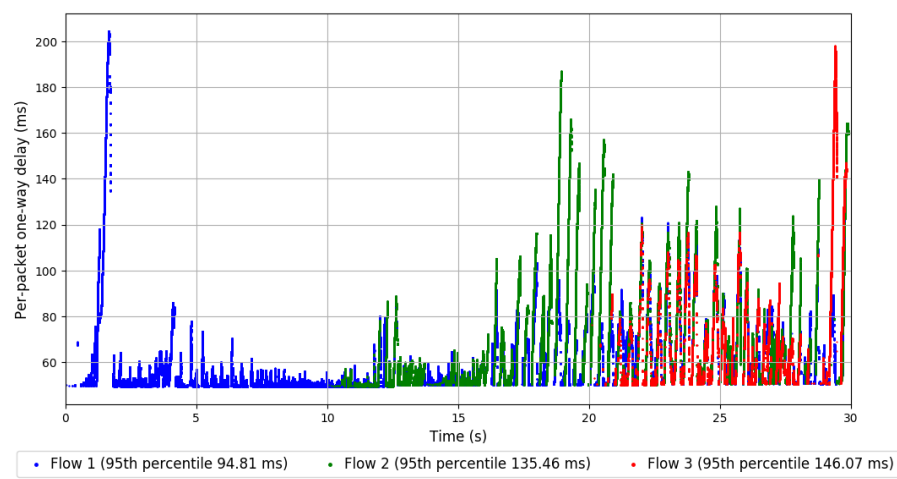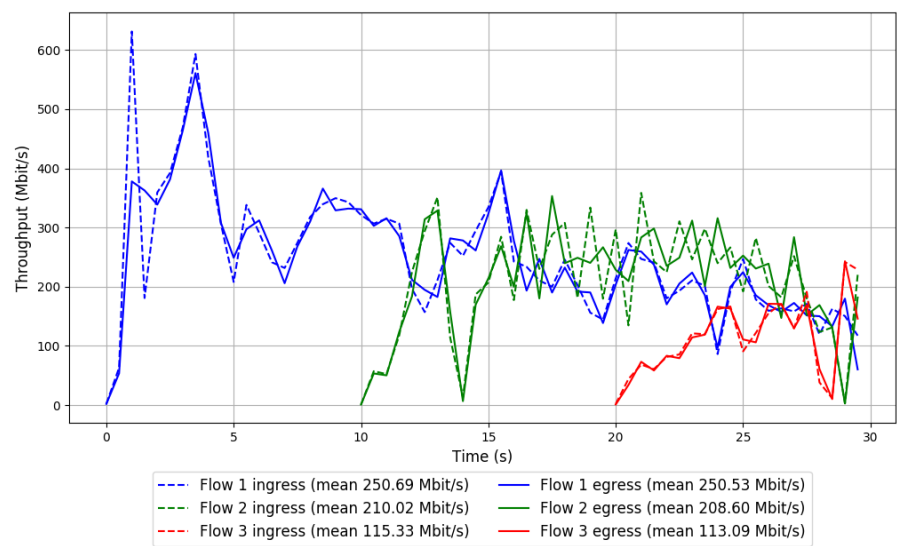
Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2017-12-20 22:04:44
End at: 2017-12-20 22:05:14


# Below is generated by plot.py at 2017-12-21 02:37:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 408.50 Mbit/s
95th percentile per-packet one-way delay: 192.689 ms
Loss rate: 3.19%
-- Flow 1:
Average throughput: 228.09 Mbit/s
95th percentile per-packet one-way delay: 147.640 ms
Loss rate: 1.85%
-- Flow 2:
Average throughput: 255.31 Mbit/s
95th percentile per-packet one-way delay: 227.998 ms
Loss rate: 4.77%
-- Flow 3:
Average throughput: 36.74 Mbit/s
95th percentile per-packet one-way delay: 175.960 ms
Loss rate: 5.84%
```
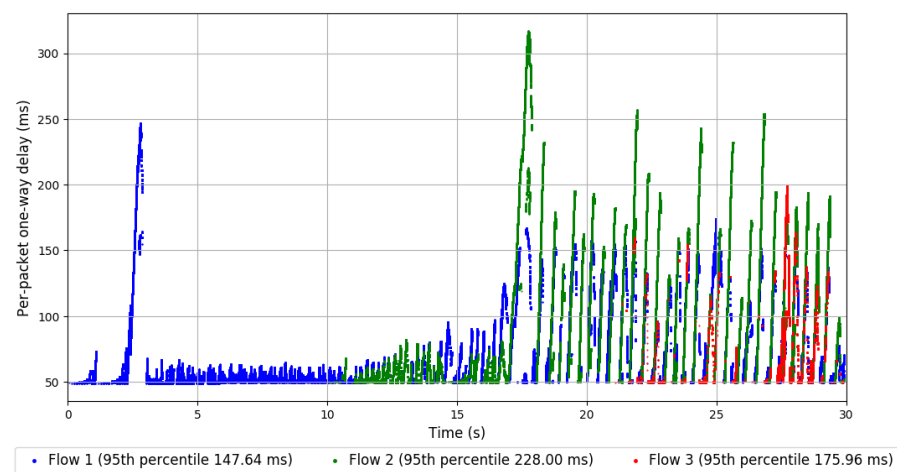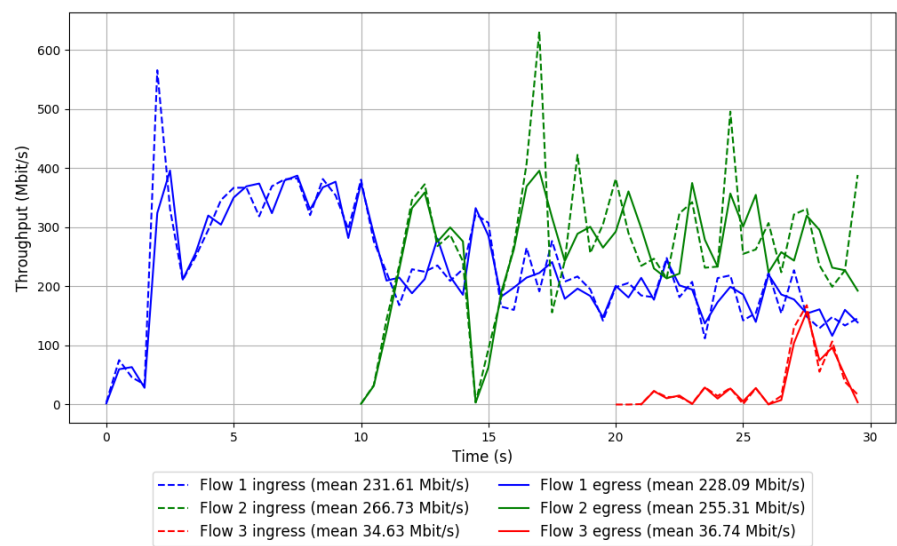
Run 5: Report of Verus — Data Link

```
Run 6: Statistics of Verus

Start at: 2017-12-20 22:19:06
End at: 2017-12-20 22:19:36

# Below is generated by plot.py at 2017-12-21 02:37:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 329.85 Mbit/s
95th percentile per-packet one-way delay: 101.875 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 218.55 Mbit/s
95th percentile per-packet one-way delay: 113.354 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 137.47 Mbit/s
95th percentile per-packet one-way delay: 81.306 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 61.65 Mbit/s
95th percentile per-packet one-way delay: 83.247 ms
Loss rate: 0.95%
```
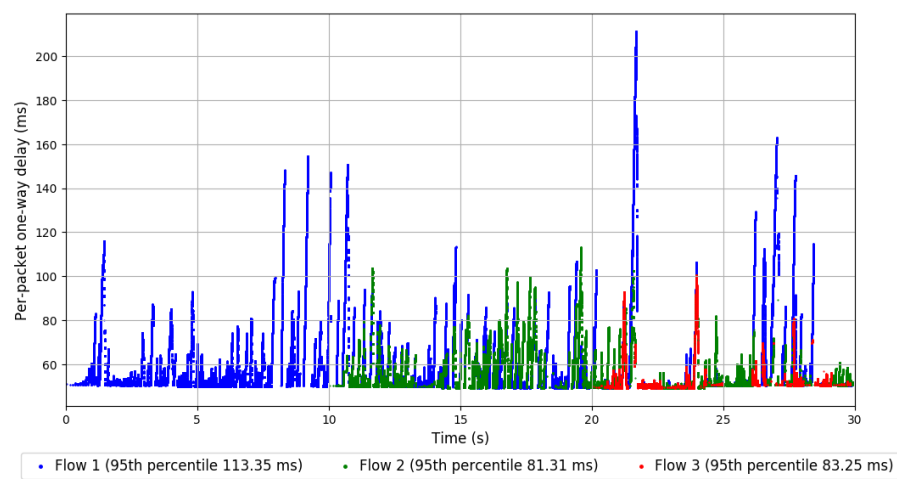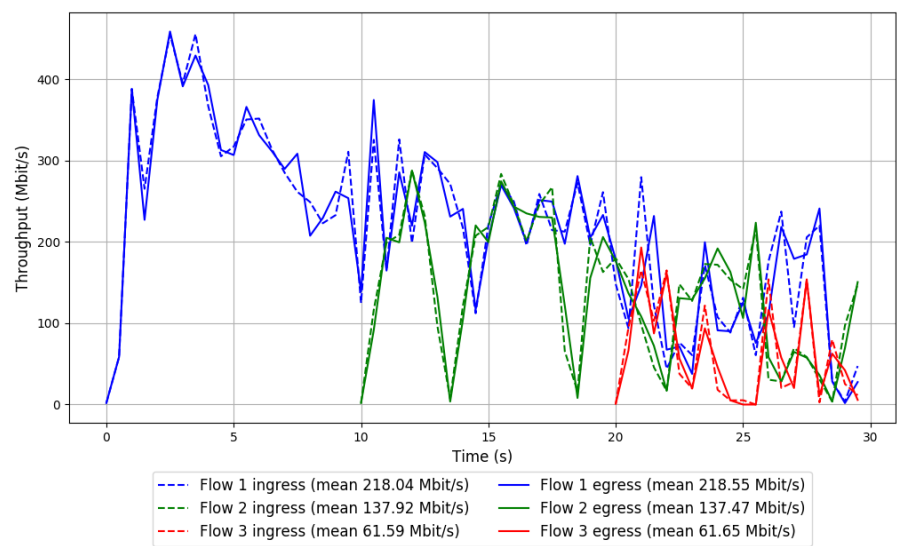
Run 6: Report of Verus — Data Link

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```
Run 7: Statistics of Verus

Start at: 2017-12-20 22:33:05
End at: 2017-12-20 22:33:35


# Below is generated by plot.py at 2017-12-21 02:39:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 374.68 Mbit/s
95th percentile per-packet one-way delay: 221.537 ms
Loss rate: 4.52%
-- Flow 1:
Average throughput: 205.37 Mbit/s
95th percentile per-packet one-way delay: 183.155 ms
Loss rate: 2.40%
-- Flow 2:
Average throughput: 215.20 Mbit/s
95th percentile per-packet one-way delay: 254.994 ms
Loss rate: 7.21%
-- Flow 3:
Average throughput: 89.19 Mbit/s
95th percentile per-packet one-way delay: 137.329 ms
Loss rate: 5.57%
```

Run 7: Report of Verus — Data Link

Flow 1 ingress (mean 209.71 Mbit/s)   Flow 1 egress (mean 205.37 Mbit/s)
Flow 2 ingress (mean 231.40 Mbit/s)   Flow 2 egress (mean 215.20 Mbit/s)
Flow 3 ingress (mean 83.86 Mbit/s)   Flow 3 egress (mean 89.19 Mbit/s)

Flow 1 (95th percentile 183.16 ms)   Flow 2 (95th percentile 254.99 ms)   Flow 3 (95th percentile 137.33 ms)

```
Run 8: Statistics of Verus

Start at: 2017-12-20 22:47:21
End at: 2017-12-20 22:47:51


# Below is generated by plot.py at 2017-12-21 02:41:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 353.83 Mbit/s
95th percentile per-packet one-way delay: 108.444 ms
Loss rate: 1.40%
-- Flow 1:
Average throughput: 221.65 Mbit/s
95th percentile per-packet one-way delay: 92.263 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 147.38 Mbit/s
95th percentile per-packet one-way delay: 151.225 ms
Loss rate: 1.28%
-- Flow 3:
Average throughput: 104.74 Mbit/s
95th percentile per-packet one-way delay: 274.446 ms
Loss rate: 7.80%
```
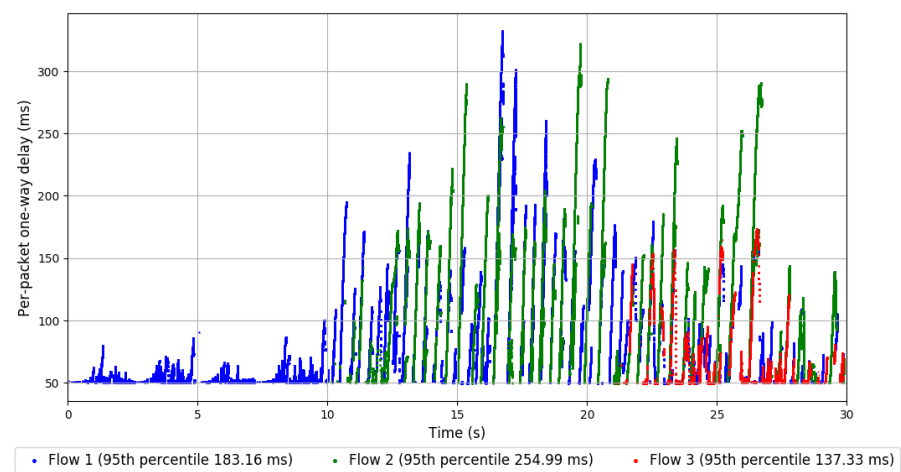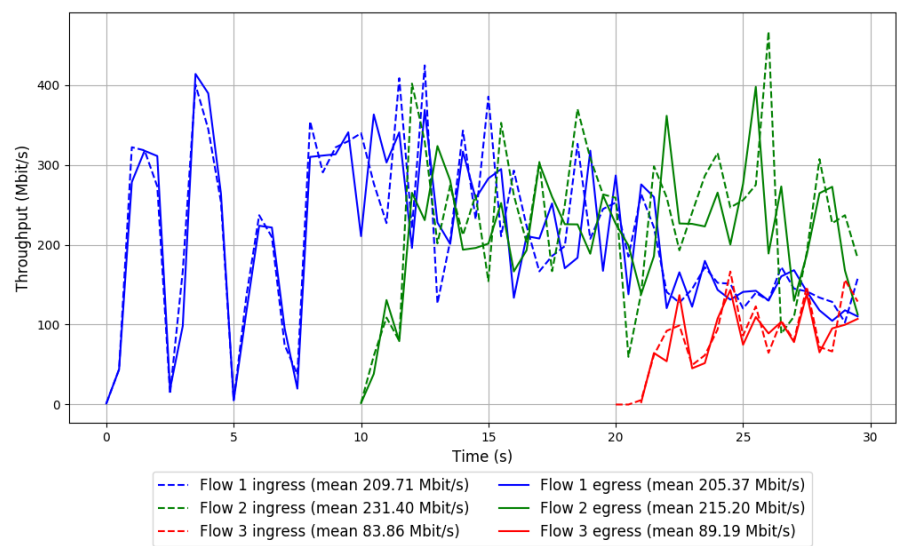
Run 8: Report of Verus — Data Link

Flow 1 ingress (mean 221.76 Mbit/s)   Flow 1 egress (mean 221.65 Mbit/s)
Flow 2 ingress (mean 148.52 Mbit/s)   Flow 2 egress (mean 147.38 Mbit/s)
Flow 3 ingress (mean 111.53 Mbit/s)   Flow 3 egress (mean 104.74 Mbit/s)

Flow 1 (95th percentile 92.26 ms)   Flow 2 (95th percentile 151.22 ms)   Flow 3 (95th percentile 274.45 ms)

```
Run 9: Statistics of Verus

Start at: 2017-12-20 23:01:23
End at: 2017-12-20 23:01:53


# Below is generated by plot.py at 2017-12-21 02:43:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 391.18 Mbit/s
95th percentile per-packet one-way delay: 114.661 ms
Loss rate: 1.81%
-- Flow 1:
Average throughput: 226.75 Mbit/s
95th percentile per-packet one-way delay: 111.027 ms
Loss rate: 1.55%
-- Flow 2:
Average throughput: 195.66 Mbit/s
95th percentile per-packet one-way delay: 135.435 ms
Loss rate: 2.48%
-- Flow 3:
Average throughput: 104.85 Mbit/s
95th percentile per-packet one-way delay: 88.733 ms
Loss rate: 0.94%
```
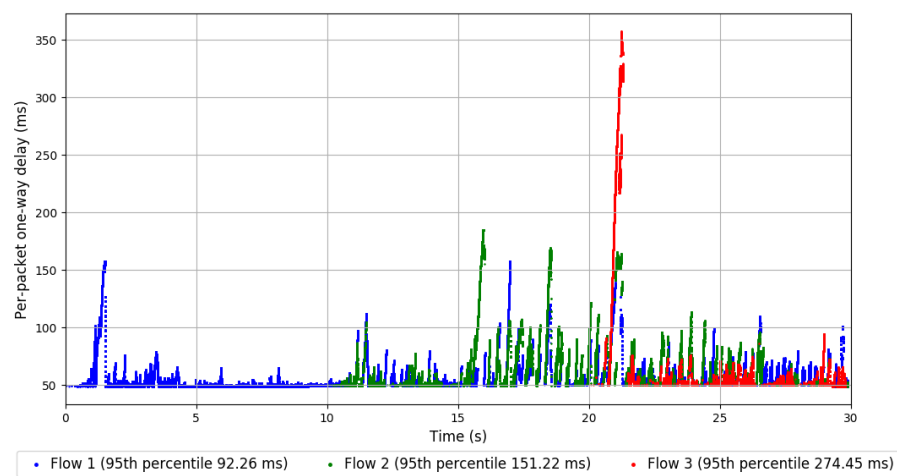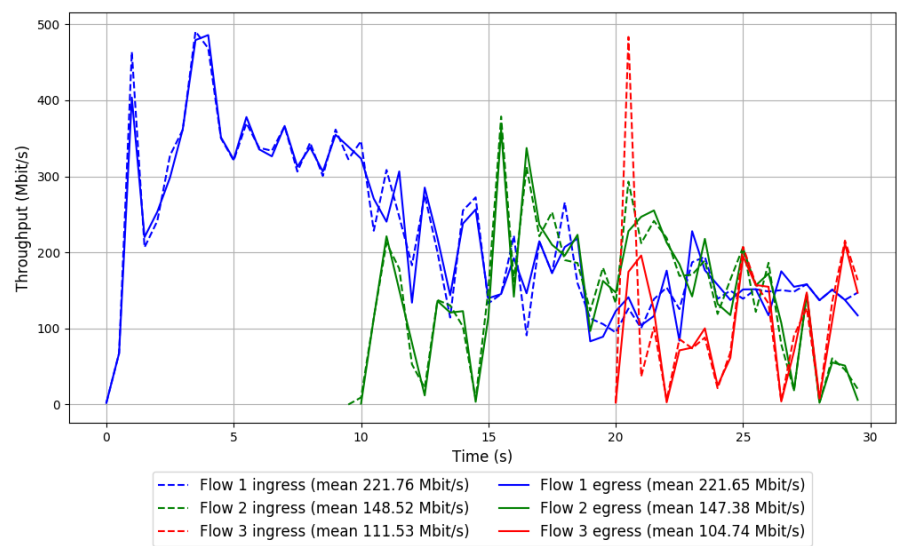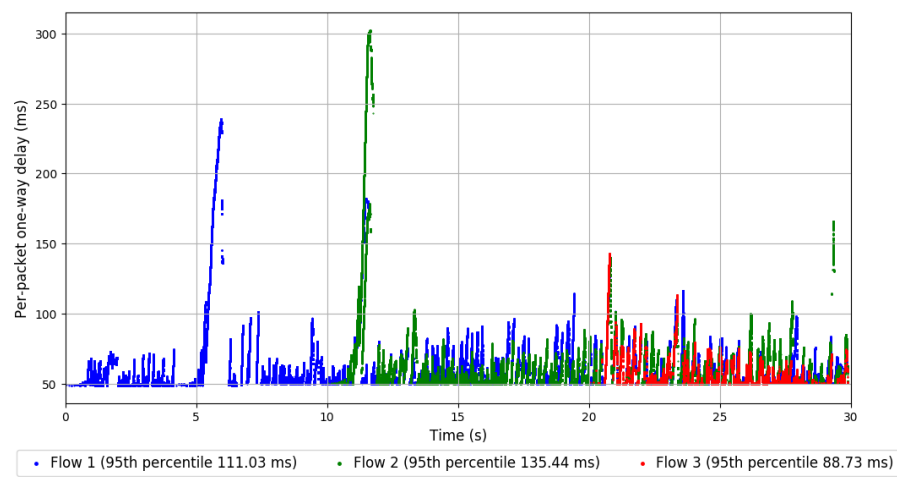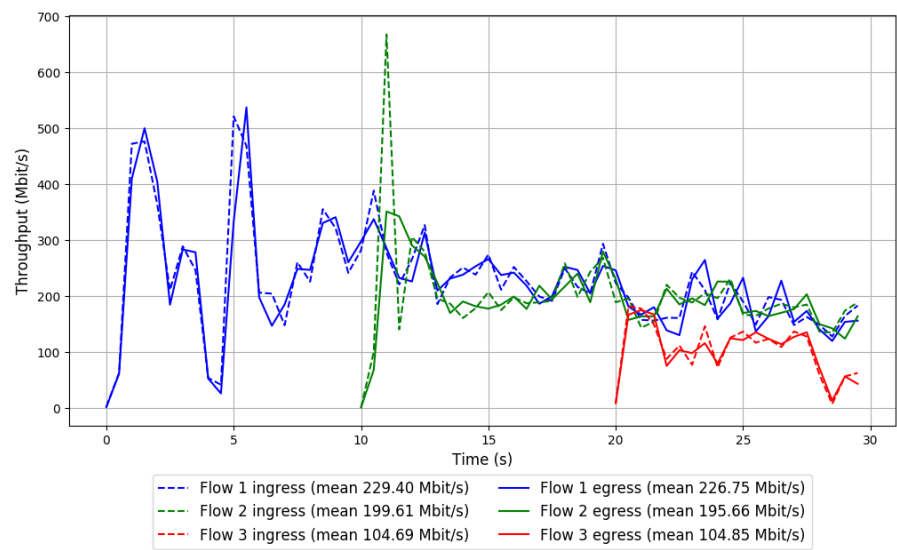
Run 9: Report of Verus — Data Link

```
Run 10: Statistics of Verus

Start at: 2017-12-20 23:15:46
End at: 2017-12-20 23:16:16


# Below is generated by plot.py at 2017-12-21 02:43:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 415.23 Mbit/s
95th percentile per-packet one-way delay: 205.475 ms
Loss rate: 4.87%
-- Flow 1:
Average throughput: 237.36 Mbit/s
95th percentile per-packet one-way delay: 138.784 ms
Loss rate: 1.79%
-- Flow 2:
Average throughput: 227.22 Mbit/s
95th percentile per-packet one-way delay: 191.489 ms
Loss rate: 2.69%
-- Flow 3:
Average throughput: 83.95 Mbit/s
95th percentile per-packet one-way delay: 316.568 ms
Loss rate: 31.75%
```
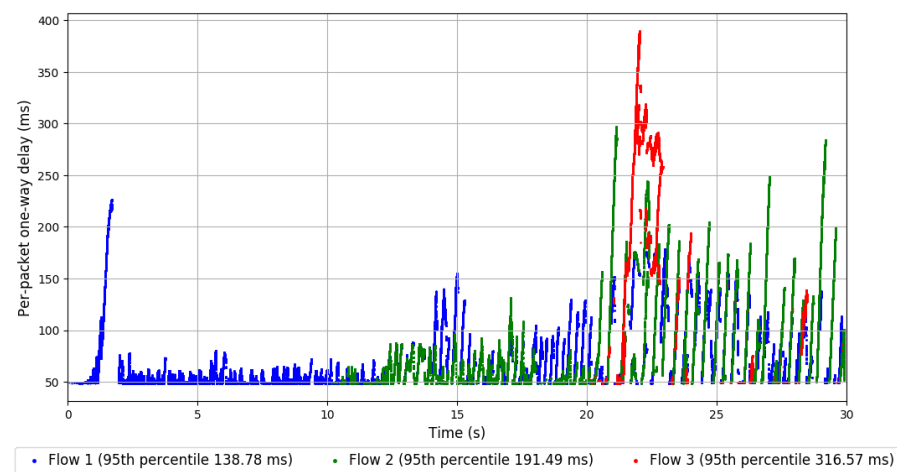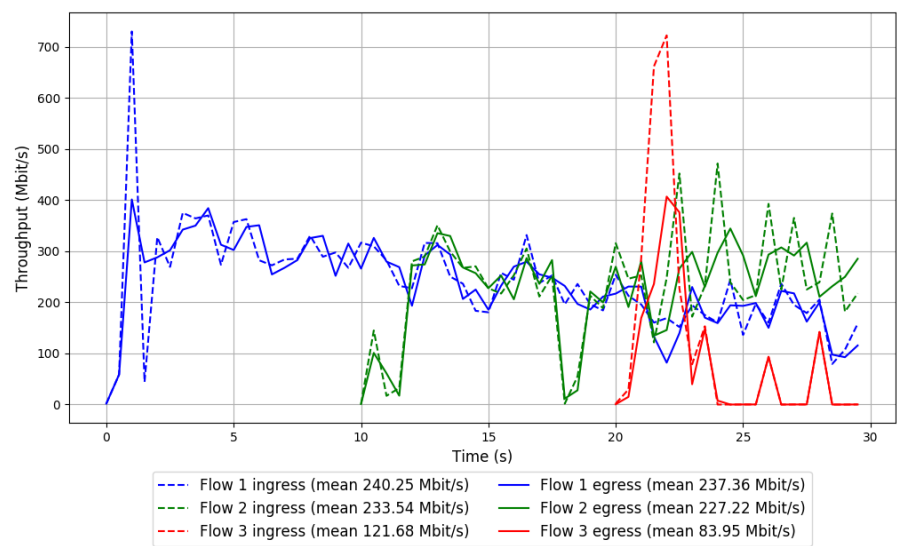
Run 10: Report of Verus — Data Link

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```
Run 1: Statistics of Copa

Start at: 2017-12-20 21:08:46
End at: 2017-12-20 21:09:16


# Below is generated by plot.py at 2017-12-21 02:43:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 127.80 Mbit/s
95th percentile per-packet one-way delay: 50.612 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 79.32 Mbit/s
95th percentile per-packet one-way delay: 50.644 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 65.40 Mbit/s
95th percentile per-packet one-way delay: 50.454 ms
Loss rate: 0.53%
-- Flow 3:
Average throughput: 23.42 Mbit/s
95th percentile per-packet one-way delay: 50.884 ms
Loss rate: 1.72%
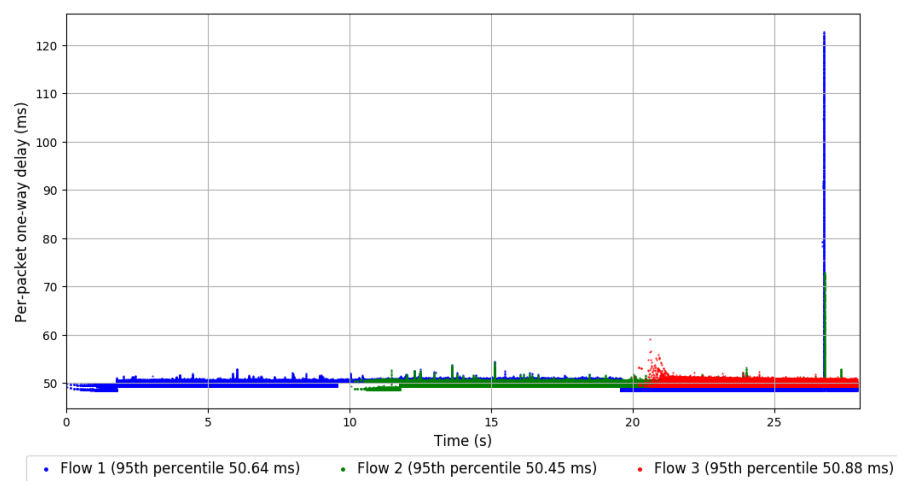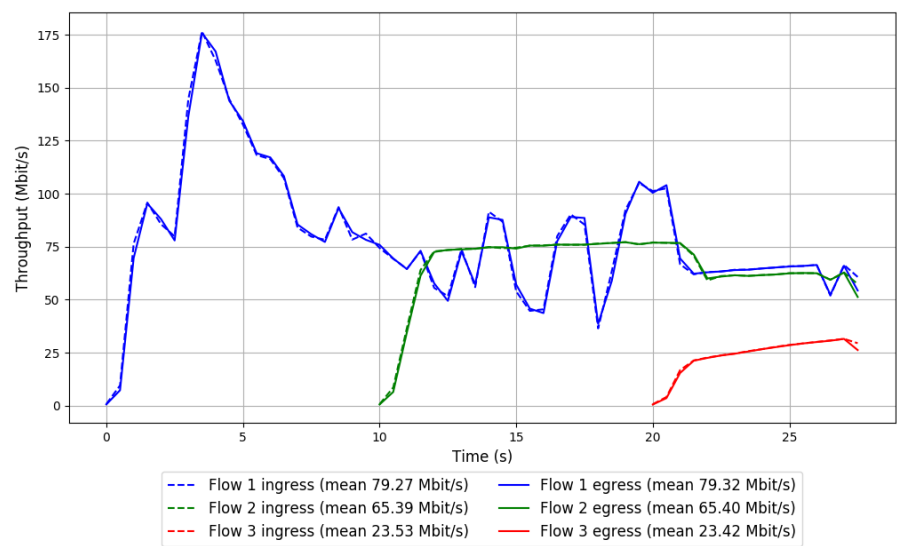```

Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: 2017-12-20 21:23:06
End at: 2017-12-20 21:23:36


# Below is generated by plot.py at 2017-12-21 02:43:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 138.34 Mbit/s
95th percentile per-packet one-way delay: 50.557 ms
Loss rate: 0.59%
-- Flow 1:
Average throughput: 73.85 Mbit/s
95th percentile per-packet one-way delay: 50.583 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 76.39 Mbit/s
95th percentile per-packet one-way delay: 50.516 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 55.30 Mbit/s
95th percentile per-packet one-way delay: 50.532 ms
Loss rate: 1.50%
```

Run 2: Report of Copa — Data Link

Flow 1 ingress (mean 73.81 Mbit/s) — — Flow 1 egress (mean 73.85 Mbit/s)
Flow 2 ingress (mean 76.49 Mbit/s) — — Flow 2 egress (mean 76.39 Mbit/s)
Flow 3 ingress (mean 55.44 Mbit/s) — — Flow 3 egress (mean 55.30 Mbit/s)

Flow 1 (95th percentile 50.58 ms) • Flow 2 (95th percentile 50.52 ms) • Flow 3 (95th percentile 50.53 ms)

```
Run 3: Statistics of Copa

Start at: 2017-12-20 21:37:15
End at: 2017-12-20 21:37:45

# Below is generated by plot.py at 2017-12-21 02:43:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 132.45 Mbit/s
95th percentile per-packet one-way delay: 50.797 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 77.77 Mbit/s
95th percentile per-packet one-way delay: 50.743 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 61.59 Mbit/s
95th percentile per-packet one-way delay: 50.789 ms
Loss rate: 0.41%
-- Flow 3:
Average throughput: 53.94 Mbit/s
95th percentile per-packet one-way delay: 50.937 ms
Loss rate: 2.59%
```
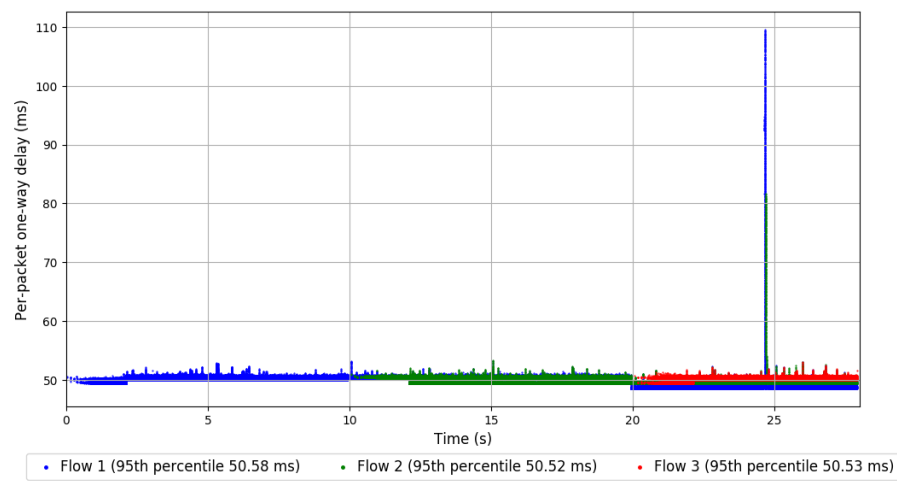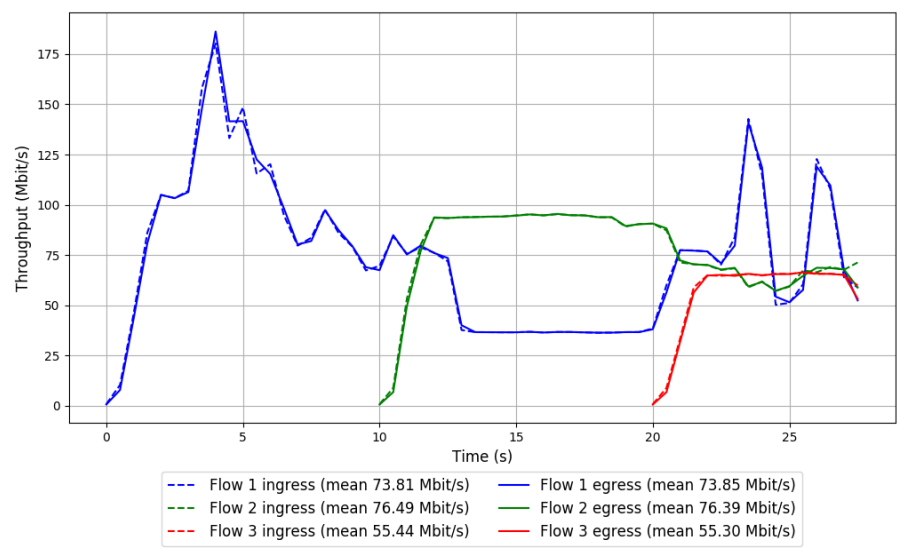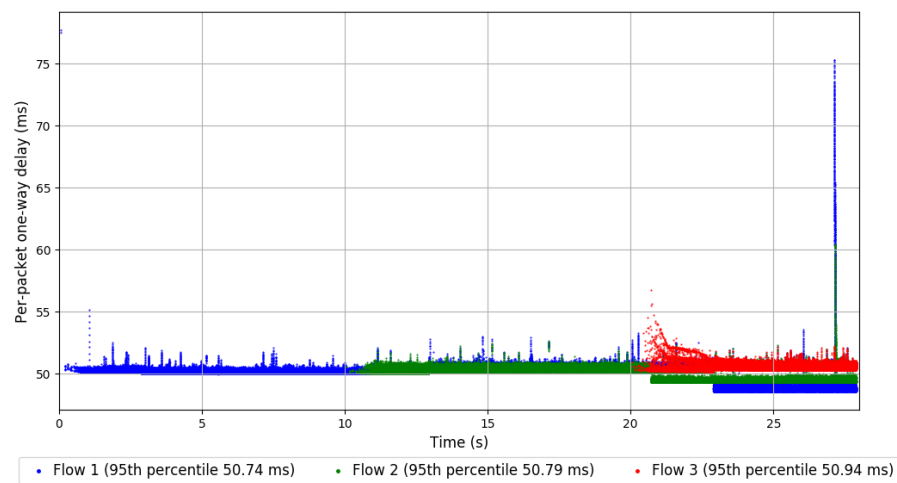
Run 3: Report of Copa — Data Link

```
Run 4: Statistics of Copa

Start at: 2017-12-20 21:51:38
End at: 2017-12-20 21:52:08


# Below is generated by plot.py at 2017-12-21 02:43:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 134.58 Mbit/s
95th percentile per-packet one-way delay: 50.542 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 70.18 Mbit/s
95th percentile per-packet one-way delay: 50.497 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 78.05 Mbit/s
95th percentile per-packet one-way delay: 50.552 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 51.21 Mbit/s
95th percentile per-packet one-way delay: 50.635 ms
Loss rate: 1.66%
```
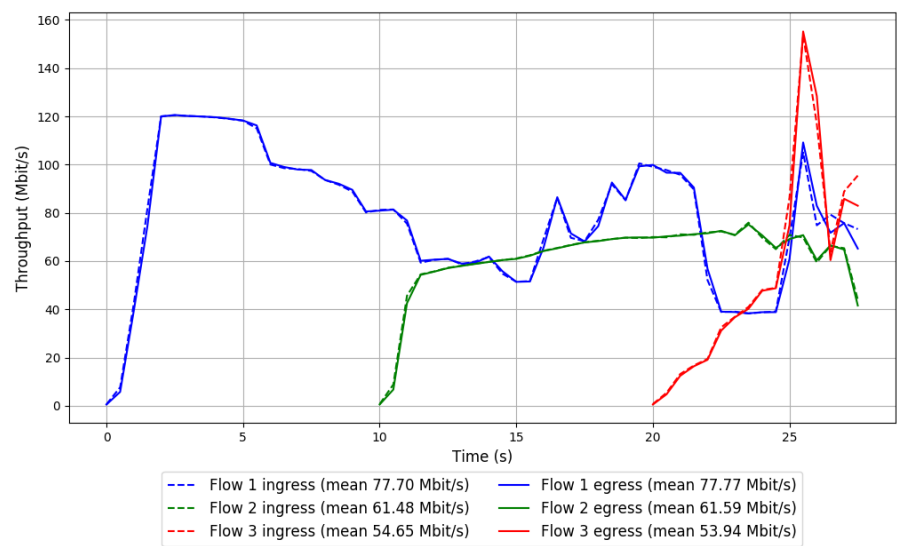
Run 4: Report of Copa — Data Link

Flow 1 ingress (mean 69.97 Mbit/s) --- Flow 1 egress (mean 70.18 Mbit/s)
Flow 2 ingress (mean 78.02 Mbit/s) --- Flow 2 egress (mean 78.05 Mbit/s)
Flow 3 ingress (mean 51.42 Mbit/s) --- Flow 3 egress (mean 51.21 Mbit/s)

Flow 1 (95th percentile 50.50 ms)   Flow 2 (95th percentile 50.55 ms)   Flow 3 (95th percentile 50.63 ms)

```
Run 5: Statistics of Copa

Start at: 2017-12-20 22:05:54
End at: 2017-12-20 22:06:24


# Below is generated by plot.py at 2017-12-21 02:43:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 126.11 Mbit/s
95th percentile per-packet one-way delay: 50.559 ms
Loss rate: 0.74%
-- Flow 1:
Average throughput: 57.98 Mbit/s
95th percentile per-packet one-way delay: 50.160 ms
Loss rate: 0.82%
-- Flow 2:
Average throughput: 71.08 Mbit/s
95th percentile per-packet one-way delay: 50.434 ms
Loss rate: 0.45%
-- Flow 3:
Average throughput: 80.17 Mbit/s
95th percentile per-packet one-way delay: 50.764 ms
Loss rate: 1.13%
```
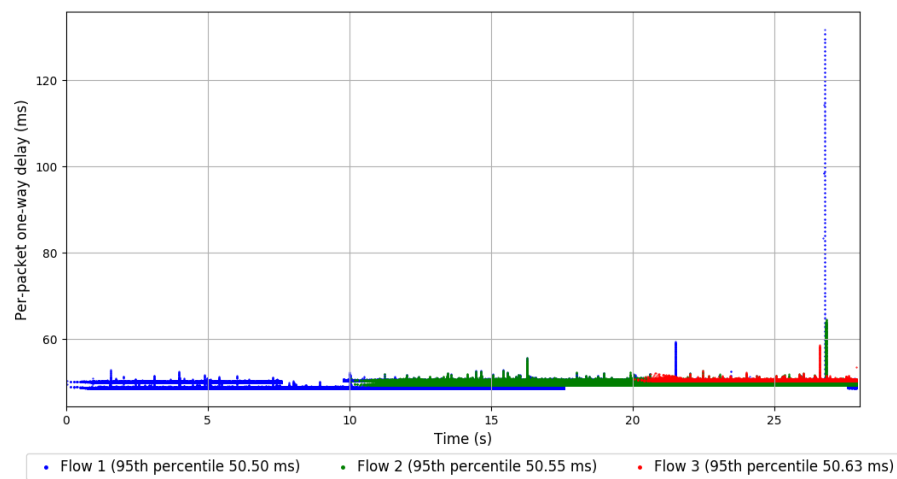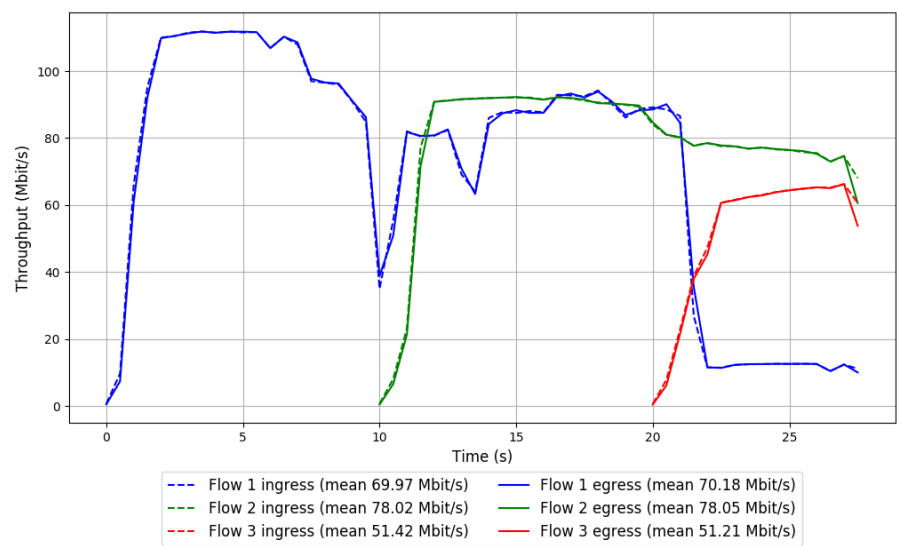
Run 5: Report of Copa — Data Link

Flow 1 ingress (mean 58.22 Mbit/s) ---- Flow 1 egress (mean 57.98 Mbit/s)
Flow 2 ingress (mean 71.00 Mbit/s) ---- Flow 2 egress (mean 71.08 Mbit/s)
Flow 3 ingress (mean 80.05 Mbit/s) ---- Flow 3 egress (mean 80.17 Mbit/s)

Flow 1 (95th percentile 50.16 ms) ・ Flow 2 (95th percentile 50.43 ms) ・ Flow 3 (95th percentile 50.76 ms)

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```
Run 6: Statistics of Copa

Start at: 2017-12-20 22:20:09
End at: 2017-12-20 22:20:39

# Below is generated by plot.py at 2017-12-21 02:44:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 125.93 Mbit/s
95th percentile per-packet one-way delay: 50.680 ms
Loss rate: 0.54%
-- Flow 1:
Average throughput: 76.29 Mbit/s
95th percentile per-packet one-way delay: 50.604 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 65.68 Mbit/s
95th percentile per-packet one-way delay: 50.778 ms
Loss rate: 0.75%
-- Flow 3:
Average throughput: 26.93 Mbit/s
95th percentile per-packet one-way delay: 50.942 ms
Loss rate: 1.75%
```
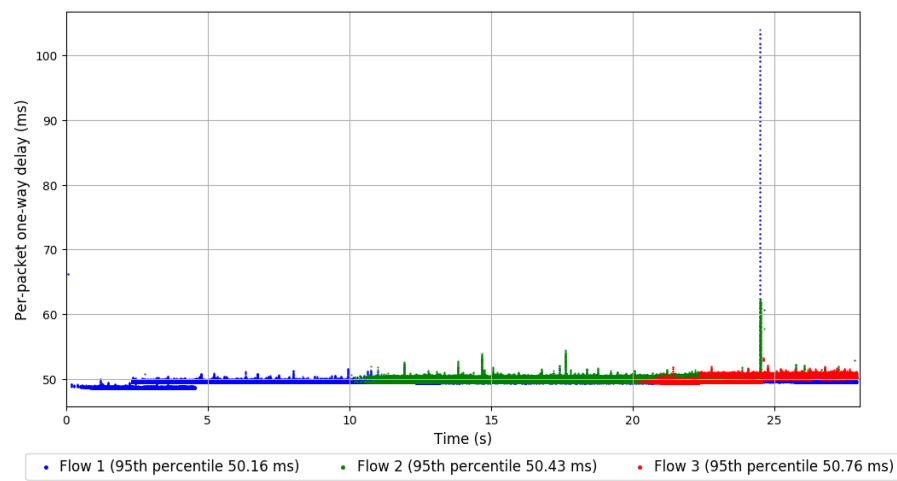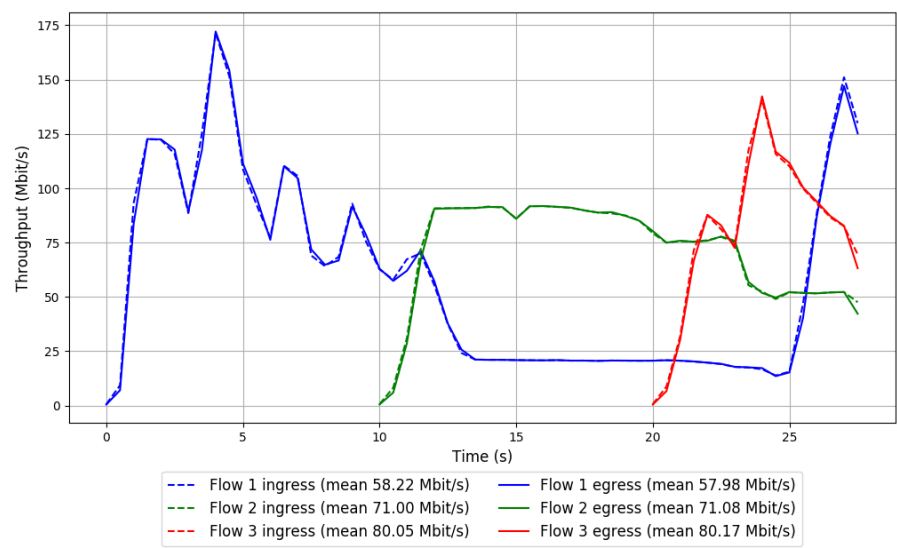
Run 6: Report of Copa — Data Link

Flow 1 ingress (mean 76.24 Mbit/s) — Flow 1 egress (mean 76.29 Mbit/s)
Flow 2 ingress (mean 65.81 Mbit/s) — Flow 2 egress (mean 65.68 Mbit/s)
Flow 3 ingress (mean 27.07 Mbit/s) — Flow 3 egress (mean 26.93 Mbit/s)

Flow 1 (95th percentile 50.60 ms) • Flow 2 (95th percentile 50.78 ms) • Flow 3 (95th percentile 50.94 ms)

```
Run 7: Statistics of Copa

Start at: 2017-12-20 22:34:12
End at: 2017-12-20 22:34:42


# Below is generated by plot.py at 2017-12-21 02:45:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 144.06 Mbit/s
95th percentile per-packet one-way delay: 50.817 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 78.61 Mbit/s
95th percentile per-packet one-way delay: 50.878 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 71.54 Mbit/s
95th percentile per-packet one-way delay: 50.418 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 69.79 Mbit/s
95th percentile per-packet one-way delay: 50.451 ms
Loss rate: 1.36%
```
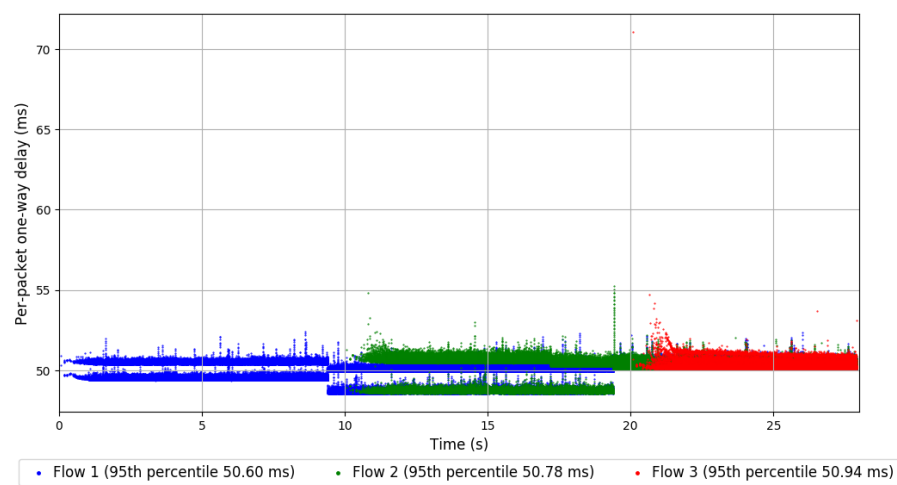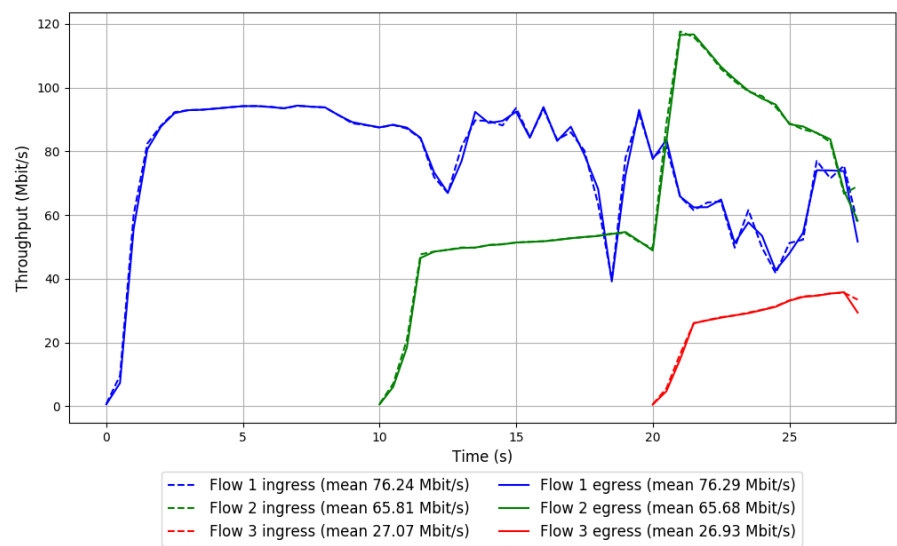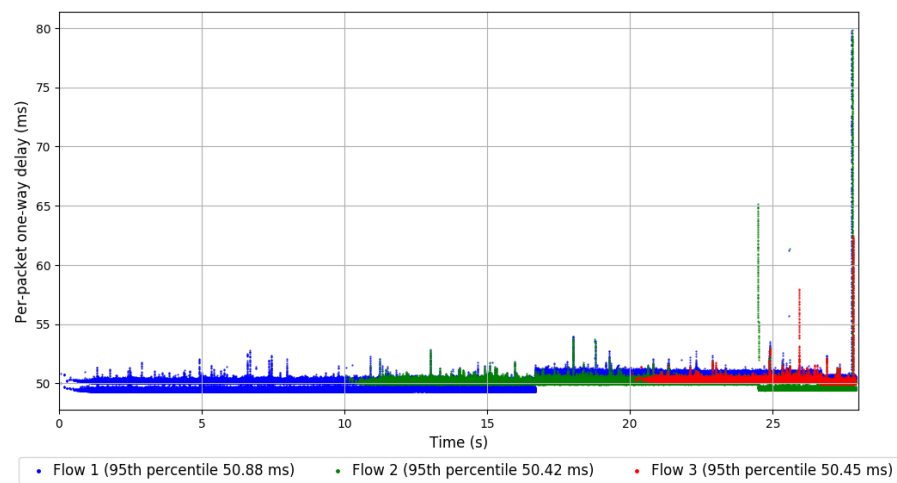
Run 7: Report of Copa — Data Link

Flow 1 ingress (mean 78.51 Mbit/s) — — — — Flow 1 egress (mean 78.61 Mbit/s)
Flow 2 ingress (mean 71.50 Mbit/s) — — — — Flow 2 egress (mean 71.54 Mbit/s)
Flow 3 ingress (mean 69.78 Mbit/s) — — — — Flow 3 egress (mean 69.79 Mbit/s)

Flow 1 (95th percentile 50.88 ms) • Flow 2 (95th percentile 50.42 ms) • Flow 3 (95th percentile 50.45 ms)

237

```
Run 8: Statistics of Copa

Start at: 2017-12-20 22:48:26
End at: 2017-12-20 22:48:56

# Below is generated by plot.py at 2017-12-21 02:45:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 127.85 Mbit/s
95th percentile per-packet one-way delay: 50.506 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 63.80 Mbit/s
95th percentile per-packet one-way delay: 50.417 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 65.20 Mbit/s
95th percentile per-packet one-way delay: 50.602 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 79.60 Mbit/s
95th percentile per-packet one-way delay: 50.348 ms
Loss rate: 1.00%
```
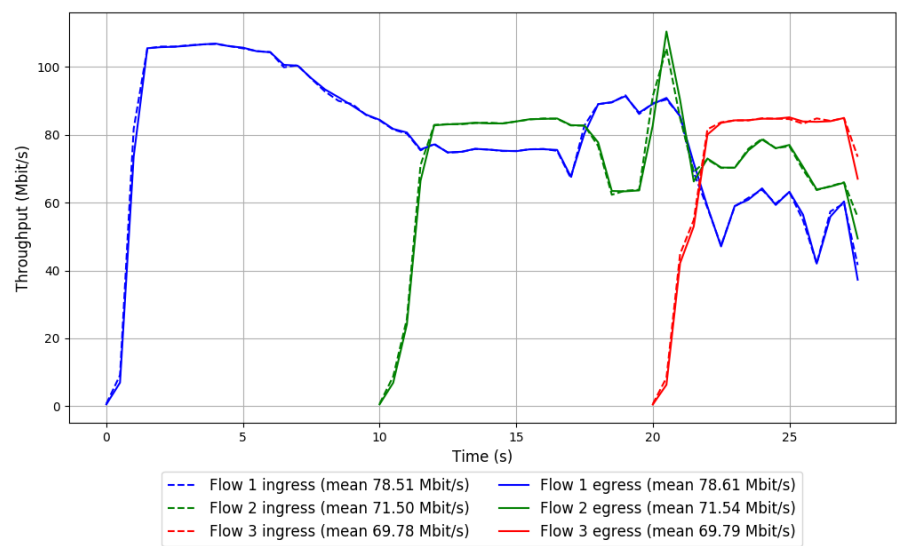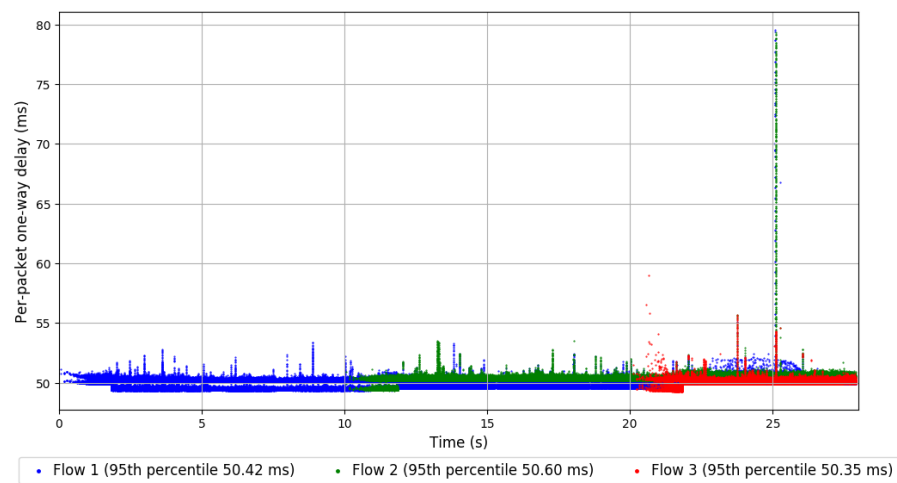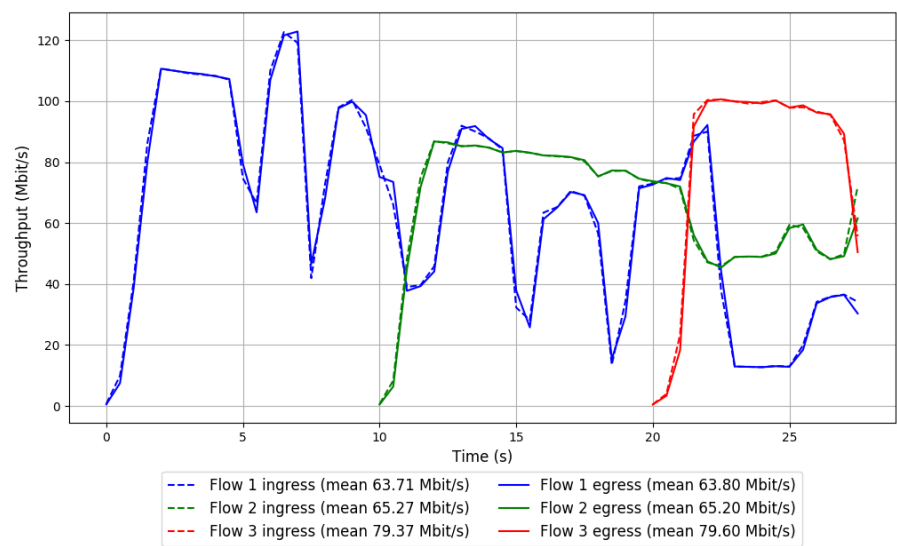
Run 8: Report of Copa — Data Link

Flow 1 ingress (mean 63.71 Mbit/s)   Flow 1 egress (mean 63.80 Mbit/s)
Flow 2 ingress (mean 65.27 Mbit/s)   Flow 2 egress (mean 65.20 Mbit/s)
Flow 3 ingress (mean 79.37 Mbit/s)   Flow 3 egress (mean 79.60 Mbit/s)

Flow 1 (95th percentile 50.42 ms)   Flow 2 (95th percentile 50.60 ms)   Flow 3 (95th percentile 50.35 ms)

239

```
Run 9: Statistics of Copa

Start at: 2017-12-20 23:02:32
End at: 2017-12-20 23:03:02


# Below is generated by plot.py at 2017-12-21 02:45:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 134.99 Mbit/s
95th percentile per-packet one-way delay: 50.520 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 78.34 Mbit/s
95th percentile per-packet one-way delay: 50.549 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 56.67 Mbit/s
95th percentile per-packet one-way delay: 50.346 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 72.44 Mbit/s
95th percentile per-packet one-way delay: 50.420 ms
Loss rate: 1.34%
```
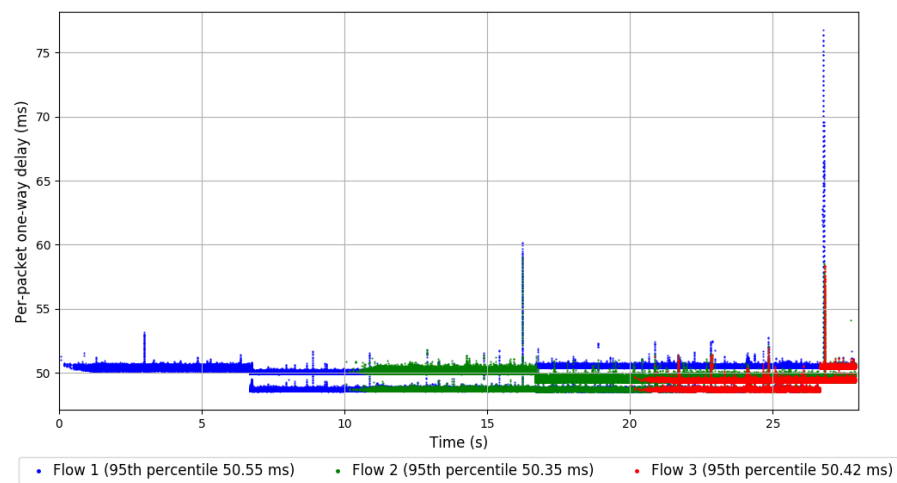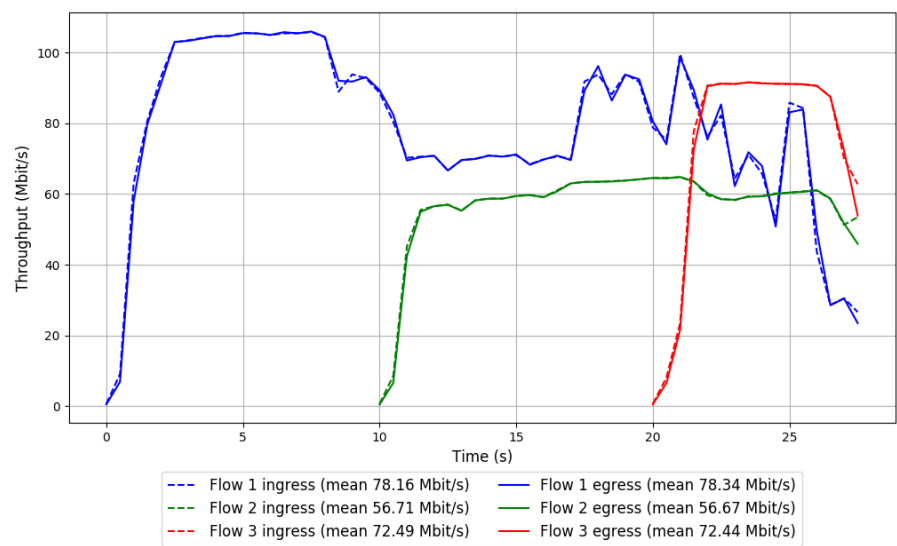
Run 9: Report of Copa — Data Link

Flow 1 ingress (mean 78.16 Mbit/s) — Flow 1 egress (mean 78.34 Mbit/s)
Flow 2 ingress (mean 56.71 Mbit/s) — Flow 2 egress (mean 56.67 Mbit/s)
Flow 3 ingress (mean 72.49 Mbit/s) — Flow 3 egress (mean 72.44 Mbit/s)

Flow 1 (95th percentile 50.55 ms) · Flow 2 (95th percentile 50.35 ms) · Flow 3 (95th percentile 50.42 ms)

```
Run 10: Statistics of Copa

Start at: 2017-12-20 23:16:55
End at: 2017-12-20 23:17:25


# Below is generated by plot.py at 2017-12-21 02:45:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 128.16 Mbit/s
95th percentile per-packet one-way delay: 50.312 ms
Loss rate: 0.80%
-- Flow 1:
Average throughput: 64.31 Mbit/s
95th percentile per-packet one-way delay: 50.108 ms
Loss rate: 0.73%
-- Flow 2:
Average throughput: 74.36 Mbit/s
95th percentile per-packet one-way delay: 50.402 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 57.78 Mbit/s
95th percentile per-packet one-way delay: 50.250 ms
Loss rate: 1.53%
```
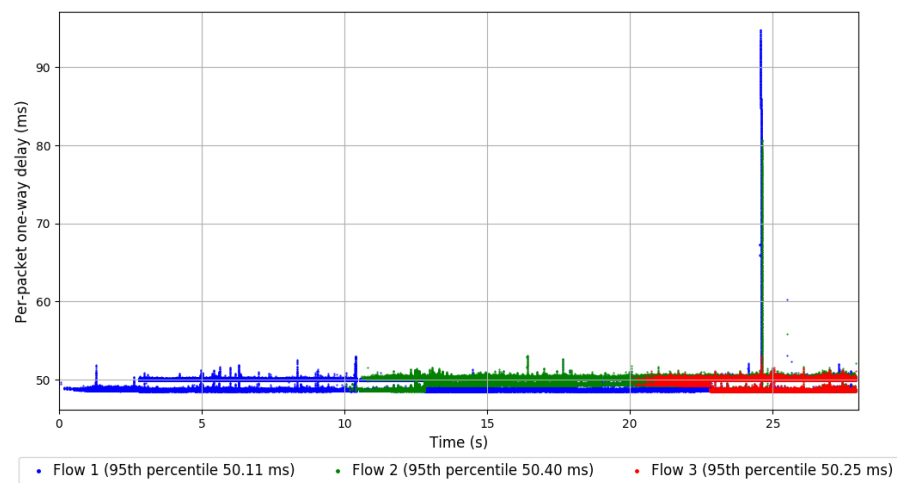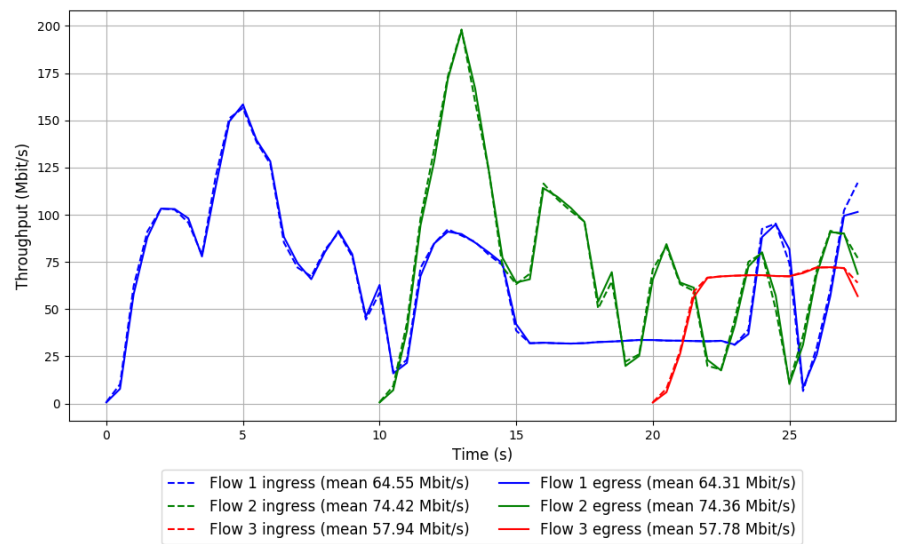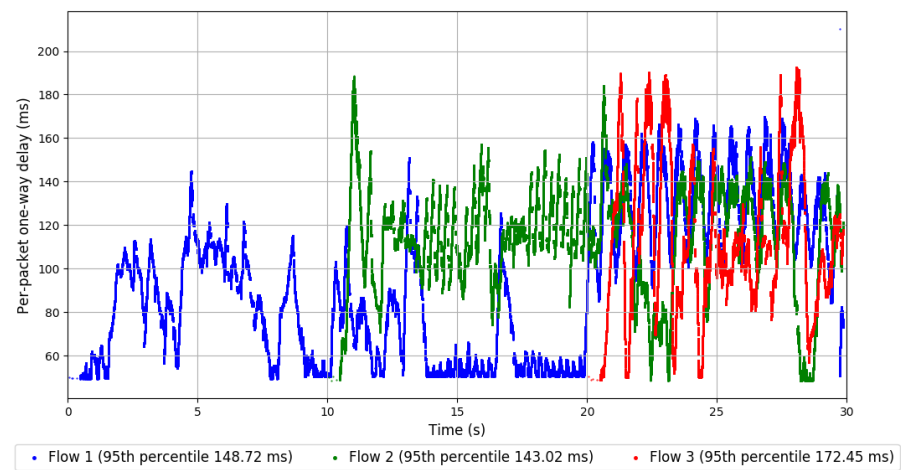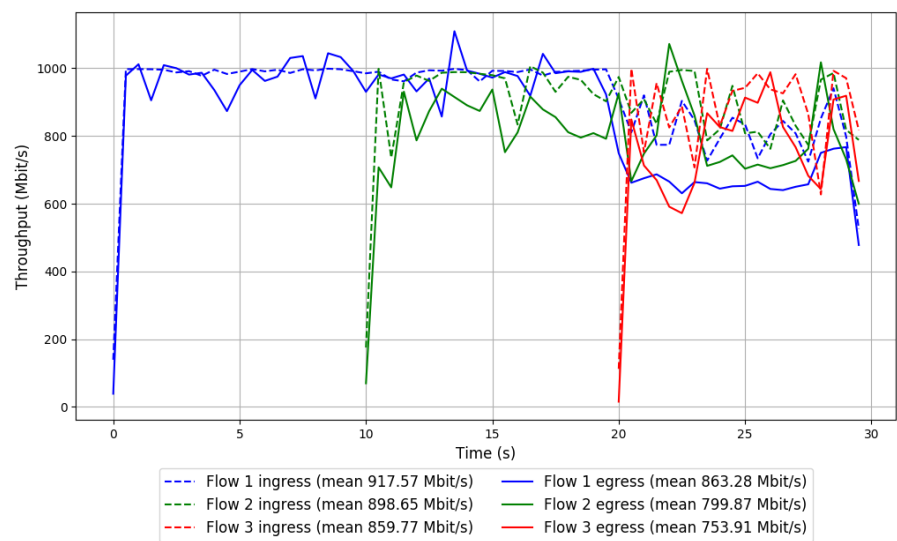
Run 10: Report of Copa — Data Link

```
Run 1: Statistics of FillP

Start at: 2017-12-20 21:02:10
End at: 2017-12-20 21:02:40

# Below is generated by plot.py at 2017-12-21 03:14:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1642.69 Mbit/s
95th percentile per-packet one-way delay: 149.656 ms
Loss rate: 9.07%
-- Flow 1:
Average throughput: 863.28 Mbit/s
95th percentile per-packet one-way delay: 148.715 ms
Loss rate: 6.23%
-- Flow 2:
Average throughput: 799.87 Mbit/s
95th percentile per-packet one-way delay: 143.018 ms
Loss rate: 11.44%
-- Flow 3:
Average throughput: 753.91 Mbit/s
95th percentile per-packet one-way delay: 172.453 ms
Loss rate: 13.21%
```
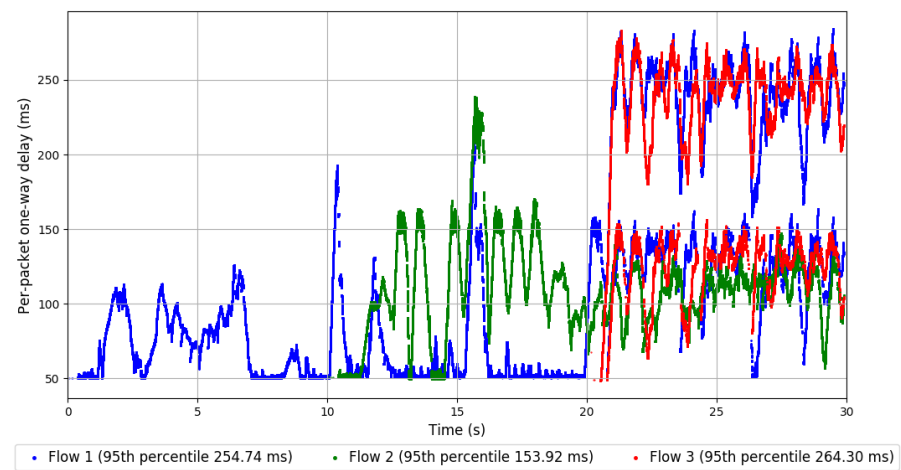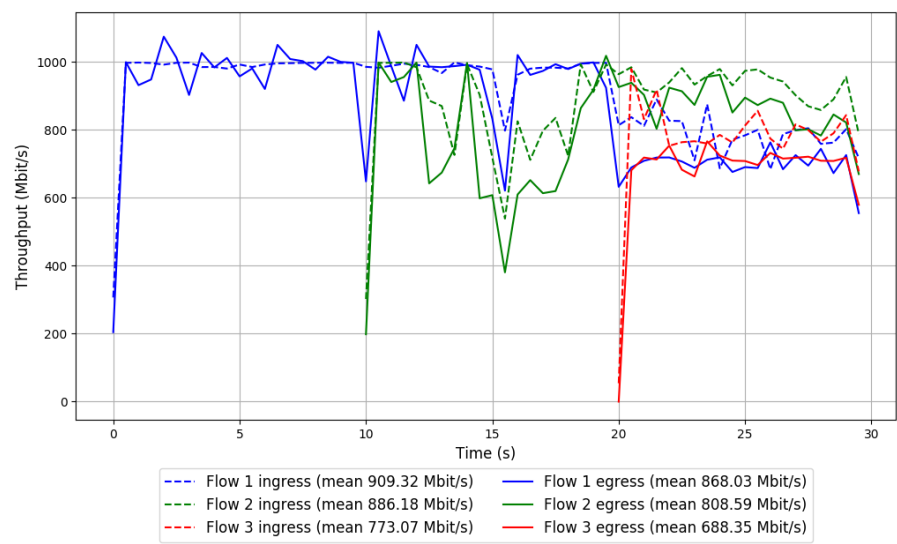
Run 1: Report of FillP — Data Link

```
Run 2: Statistics of FillP

Start at: 2017-12-20 21:16:28
End at: 2017-12-20 21:16:58

# Below is generated by plot.py at 2017-12-21 03:14:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1629.96 Mbit/s
95th percentile per-packet one-way delay: 253.920 ms
Loss rate: 7.38%
-- Flow 1:
Average throughput: 868.03 Mbit/s
95th percentile per-packet one-way delay: 254.738 ms
Loss rate: 4.87%
-- Flow 2:
Average throughput: 808.59 Mbit/s
95th percentile per-packet one-way delay: 153.918 ms
Loss rate: 9.23%
-- Flow 3:
Average throughput: 688.35 Mbit/s
95th percentile per-packet one-way delay: 264.298 ms
Loss rate: 12.04%
```

Run 2: Report of FillP — Data Link

Flow 1 ingress (mean 909.32 Mbit/s) --- Flow 1 egress (mean 868.03 Mbit/s)
Flow 2 ingress (mean 886.18 Mbit/s) --- Flow 2 egress (mean 808.59 Mbit/s)
Flow 3 ingress (mean 773.07 Mbit/s) --- Flow 3 egress (mean 688.35 Mbit/s)

Flow 1 (95th percentile 254.74 ms)   Flow 2 (95th percentile 153.92 ms)   Flow 3 (95th percentile 264.30 ms)

```
Run 3: Statistics of FillP

Start at: 2017-12-20 21:30:48
End at: 2017-12-20 21:31:18


# Below is generated by plot.py at 2017-12-21 03:14:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1574.67 Mbit/s
95th percentile per-packet one-way delay: 265.275 ms
Loss rate: 9.29%
-- Flow 1:
Average throughput: 877.59 Mbit/s
95th percentile per-packet one-way delay: 140.748 ms
Loss rate: 5.53%
-- Flow 2:
Average throughput: 780.22 Mbit/s
95th percentile per-packet one-way delay: 261.403 ms
Loss rate: 10.70%
-- Flow 3:
Average throughput: 543.49 Mbit/s
95th percentile per-packet one-way delay: 305.310 ms
Loss rate: 21.04%
```
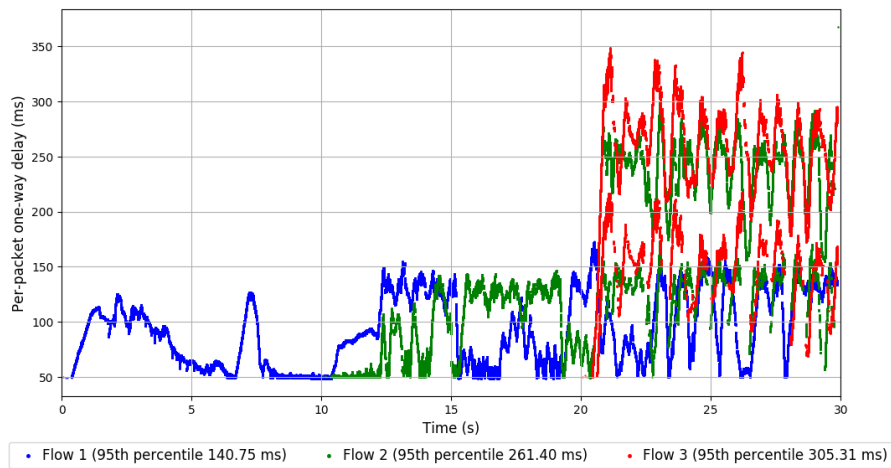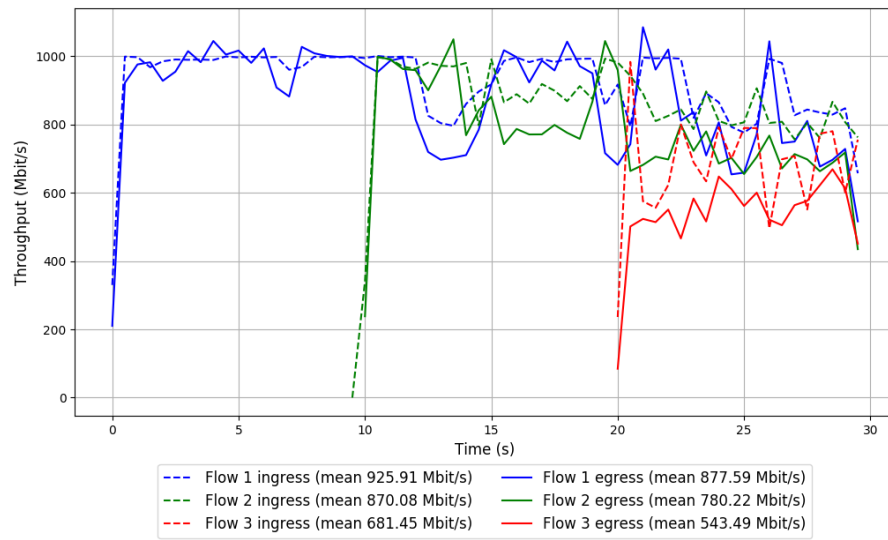
Run 3: Report of FillP — Data Link

- - - - Flow 1 ingress (mean 925.91 Mbit/s) —— Flow 1 egress (mean 877.59 Mbit/s)
- - - - Flow 2 ingress (mean 870.08 Mbit/s) —— Flow 2 egress (mean 780.22 Mbit/s)
- - - - Flow 3 ingress (mean 681.45 Mbit/s) —— Flow 3 egress (mean 543.49 Mbit/s)

- Flow 1 (95th percentile 140.75 ms)   • Flow 2 (95th percentile 261.40 ms)   • Flow 3 (95th percentile 305.31 ms)

249

```
Run 4: Statistics of FillP

Start at: 2017-12-20 21:44:56
End at: 2017-12-20 21:45:26


# Below is generated by plot.py at 2017-12-21 03:14:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1642.50 Mbit/s
95th percentile per-packet one-way delay: 147.995 ms
Loss rate: 6.76%
-- Flow 1:
Average throughput: 911.39 Mbit/s
95th percentile per-packet one-way delay: 126.566 ms
Loss rate: 2.79%
-- Flow 2:
Average throughput: 765.37 Mbit/s
95th percentile per-packet one-way delay: 153.709 ms
Loss rate: 9.05%
-- Flow 3:
Average throughput: 680.69 Mbit/s
95th percentile per-packet one-way delay: 175.047 ms
Loss rate: 15.96%
```
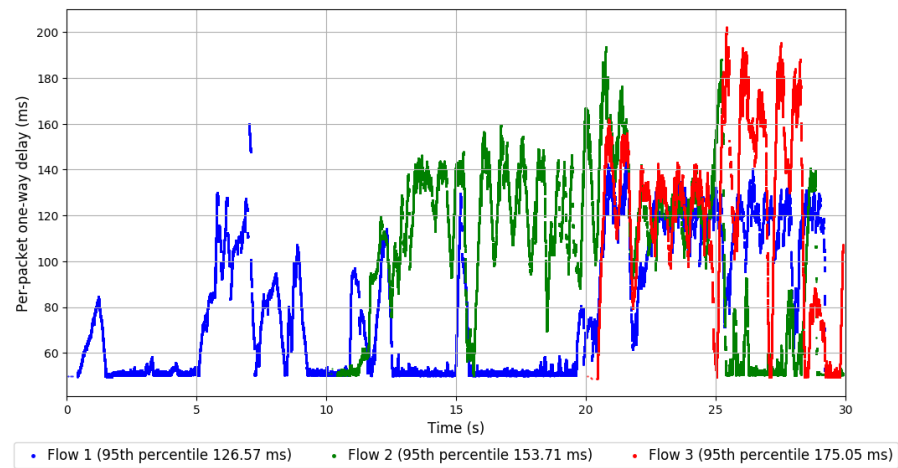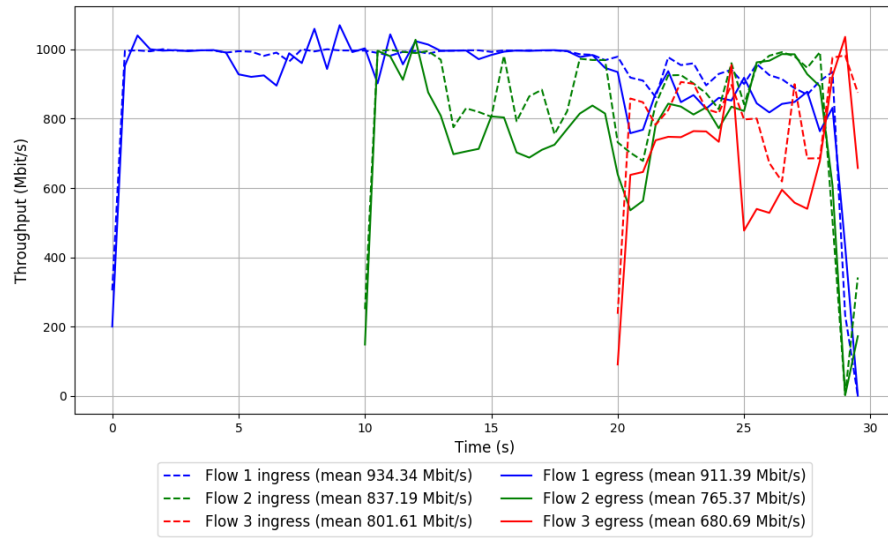
Run 4: Report of FillP — Data Link

```
Run 5: Statistics of FillP

Start at: 2017-12-20 21:59:21
End at: 2017-12-20 21:59:51

# Below is generated by plot.py at 2017-12-21 03:17:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1691.80 Mbit/s
95th percentile per-packet one-way delay: 143.655 ms
Loss rate: 7.48%
-- Flow 1:
Average throughput: 873.63 Mbit/s
95th percentile per-packet one-way delay: 143.855 ms
Loss rate: 6.13%
-- Flow 2:
Average throughput: 888.18 Mbit/s
95th percentile per-packet one-way delay: 133.591 ms
Loss rate: 5.64%
-- Flow 3:
Average throughput: 691.53 Mbit/s
95th percentile per-packet one-way delay: 149.209 ms
Loss rate: 16.30%
```
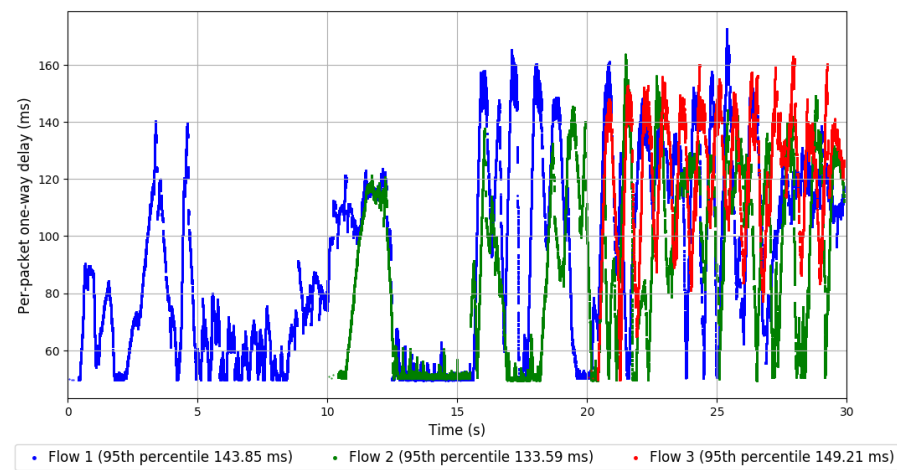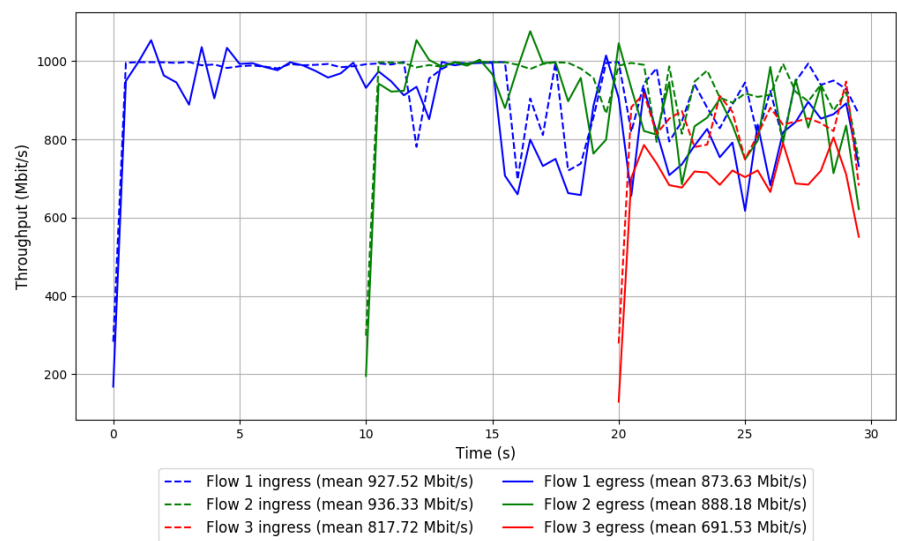
Run 5: Report of FillP — Data Link

```
Run 6: Statistics of FillP

Start at: 2017-12-20 22:13:36
End at: 2017-12-20 22:14:06

# Below is generated by plot.py at 2017-12-21 03:17:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1659.85 Mbit/s
95th percentile per-packet one-way delay: 156.209 ms
Loss rate: 7.50%
-- Flow 1:
Average throughput: 899.89 Mbit/s
95th percentile per-packet one-way delay: 136.340 ms
Loss rate: 4.57%
-- Flow 2:
Average throughput: 868.77 Mbit/s
95th percentile per-packet one-way delay: 131.270 ms
Loss rate: 7.54%
-- Flow 3:
Average throughput: 567.89 Mbit/s
95th percentile per-packet one-way delay: 182.095 ms
Loss rate: 19.19%
```
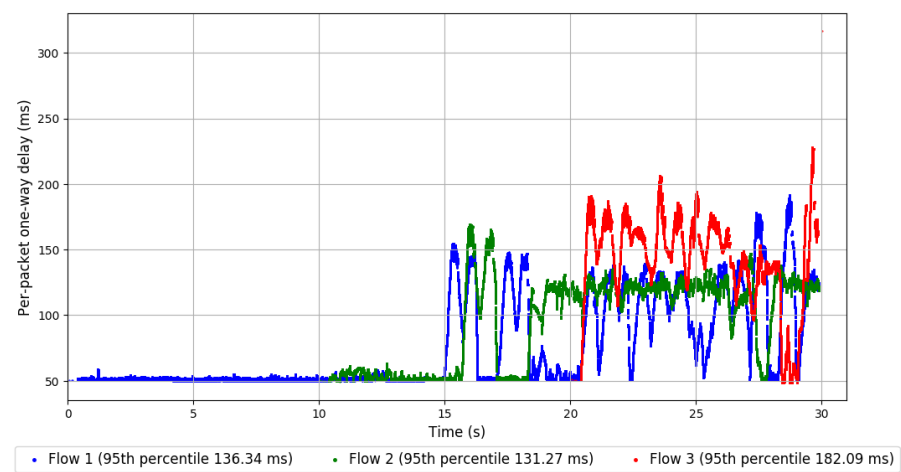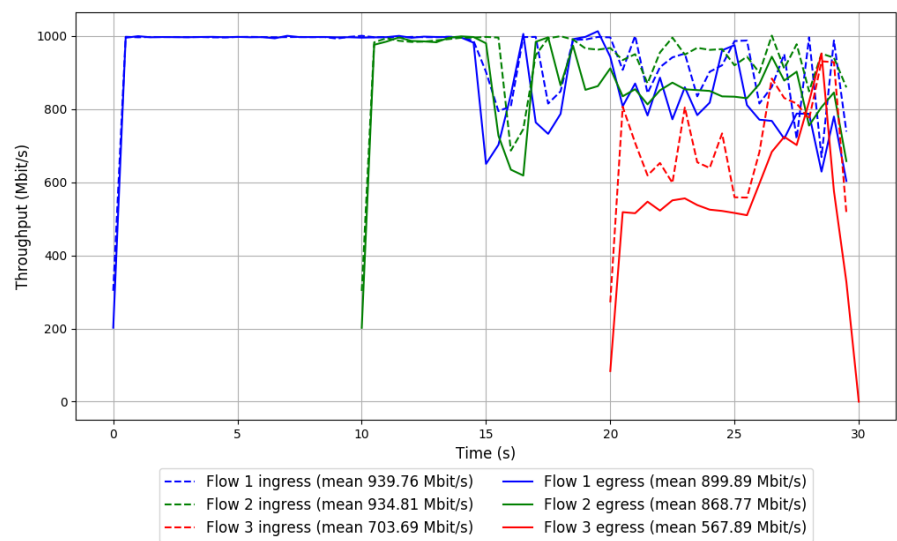
Run 6: Report of FillP — Data Link

Flow 1 ingress (mean 939.76 Mbit/s) --- Flow 1 egress (mean 899.89 Mbit/s)
Flow 2 ingress (mean 934.81 Mbit/s) --- Flow 2 egress (mean 868.77 Mbit/s)
Flow 3 ingress (mean 703.69 Mbit/s) --- Flow 3 egress (mean 567.89 Mbit/s)

Flow 1 (95th percentile 136.34 ms)   Flow 2 (95th percentile 131.27 ms)   Flow 3 (95th percentile 182.09 ms)

```
Run 7: Statistics of FillP

Start at: 2017-12-20 22:27:51
End at: 2017-12-20 22:28:21

# Below is generated by plot.py at 2017-12-21 03:17:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1373.14 Mbit/s
95th percentile per-packet one-way delay: 151.762 ms
Loss rate: 6.34%
-- Flow 1:
Average throughput: 932.59 Mbit/s
95th percentile per-packet one-way delay: 136.391 ms
Loss rate: 2.76%
-- Flow 2:
Average throughput: 318.02 Mbit/s
95th percentile per-packet one-way delay: 149.540 ms
Loss rate: 8.48%
-- Flow 3:
Average throughput: 697.81 Mbit/s
95th percentile per-packet one-way delay: 179.035 ms
Loss rate: 16.97%
```
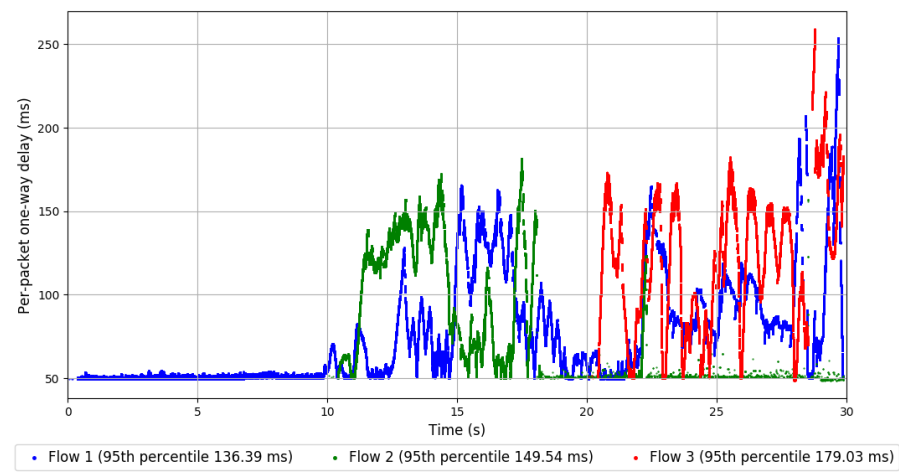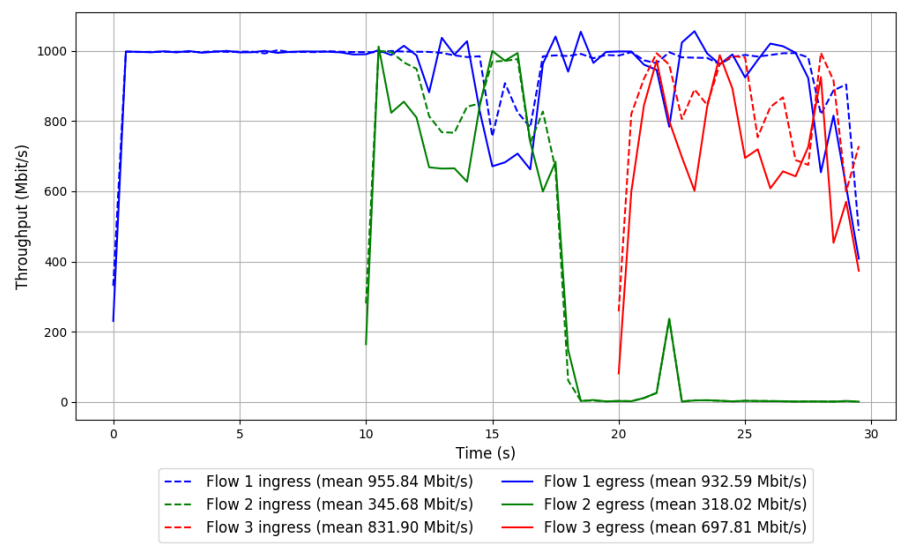
Run 7: Report of FillP — Data Link

Flow 1 ingress (mean 955.84 Mbit/s) --- Flow 1 egress (mean 932.59 Mbit/s)
Flow 2 ingress (mean 345.68 Mbit/s) --- Flow 2 egress (mean 318.02 Mbit/s)
Flow 3 ingress (mean 831.90 Mbit/s) --- Flow 3 egress (mean 697.81 Mbit/s)

Flow 1 (95th percentile 136.39 ms)   Flow 2 (95th percentile 149.54 ms)   Flow 3 (95th percentile 179.03 ms)

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```
Run 8: Statistics of FillP

Start at: 2017-12-20 22:41:55
End at: 2017-12-20 22:42:25

# Below is generated by plot.py at 2017-12-21 03:17:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1584.70 Mbit/s
95th percentile per-packet one-way delay: 258.377 ms
Loss rate: 8.56%
-- Flow 1:
Average throughput: 867.18 Mbit/s
95th percentile per-packet one-way delay: 250.006 ms
Loss rate: 4.89%
-- Flow 2:
Average throughput: 779.55 Mbit/s
95th percentile per-packet one-way delay: 155.950 ms
Loss rate: 10.09%
-- Flow 3:
Average throughput: 606.89 Mbit/s
95th percentile per-packet one-way delay: 285.068 ms
Loss rate: 18.62%
```
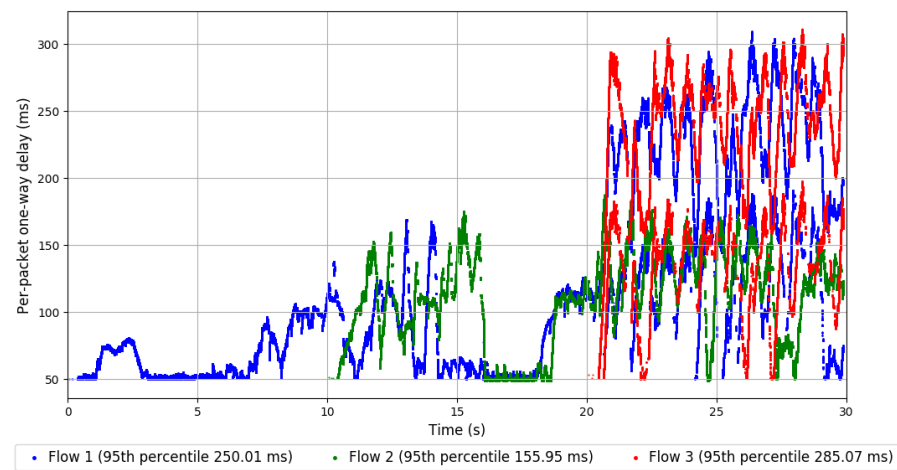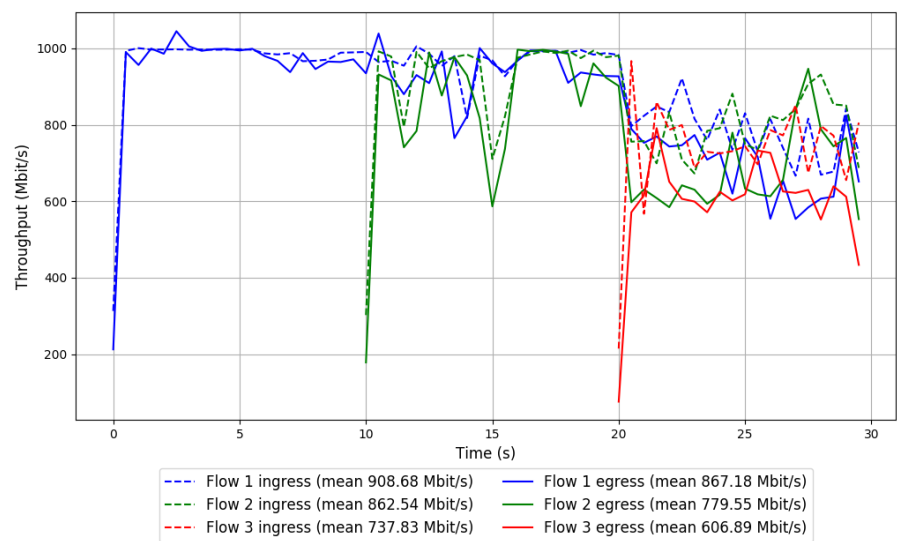
Run 8: Report of FillP — Data Link

- Flow 1 ingress (mean 908.68 Mbit/s)
- Flow 1 egress (mean 867.18 Mbit/s)
- Flow 2 ingress (mean 862.54 Mbit/s)
- Flow 2 egress (mean 779.55 Mbit/s)
- Flow 3 ingress (mean 737.83 Mbit/s)
- Flow 3 egress (mean 606.89 Mbit/s)

- Flow 1 (95th percentile 250.01 ms)
- Flow 2 (95th percentile 155.95 ms)
- Flow 3 (95th percentile 285.07 ms)

259

```
Run 9: Statistics of FillP

Start at: 2017-12-20 22:56:05
End at: 2017-12-20 22:56:35


# Below is generated by plot.py at 2017-12-21 03:27:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1672.11 Mbit/s
95th percentile per-packet one-way delay: 149.948 ms
Loss rate: 8.67%
-- Flow 1:
Average throughput: 877.44 Mbit/s
95th percentile per-packet one-way delay: 141.087 ms
Loss rate: 7.16%
-- Flow 2:
Average throughput: 867.66 Mbit/s
95th percentile per-packet one-way delay: 143.275 ms
Loss rate: 7.00%
-- Flow 3:
Average throughput: 663.34 Mbit/s
95th percentile per-packet one-way delay: 162.446 ms
Loss rate: 17.94%
```
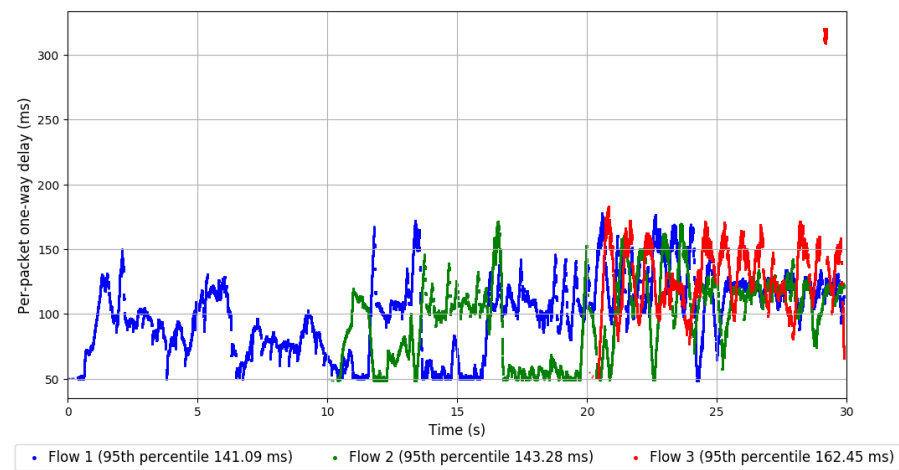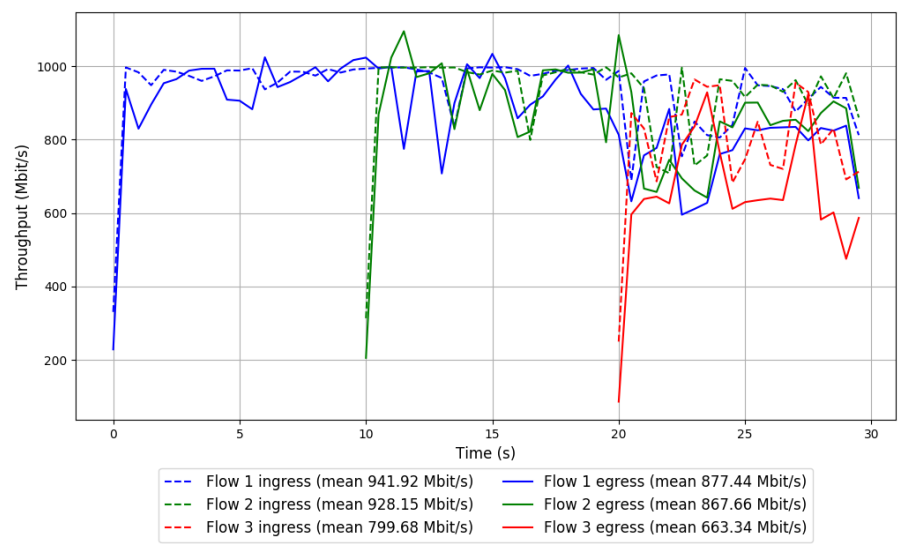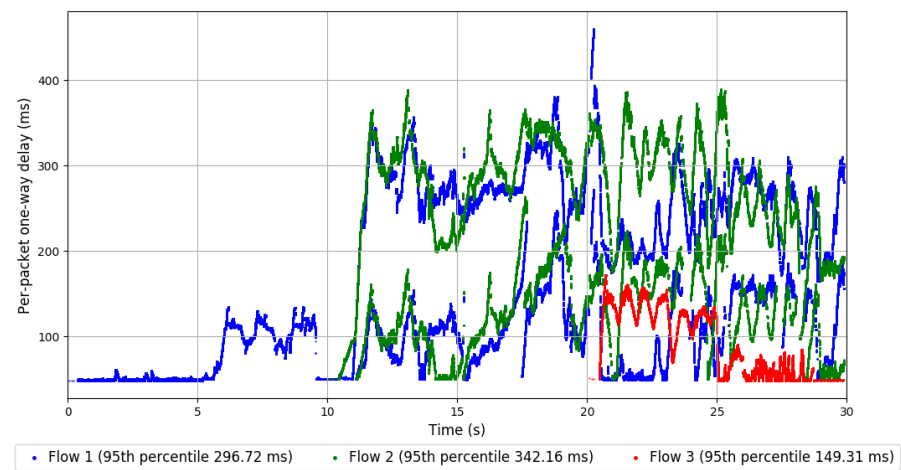
Run 9: Report of FillP — Data Link

Flow 1 ingress (mean 941.92 Mbit/s)   Flow 1 egress (mean 877.44 Mbit/s)
Flow 2 ingress (mean 928.15 Mbit/s)   Flow 2 egress (mean 867.66 Mbit/s)
Flow 3 ingress (mean 799.68 Mbit/s)   Flow 3 egress (mean 663.34 Mbit/s)

Flow 1 (95th percentile 141.09 ms)   Flow 2 (95th percentile 143.28 ms)   Flow 3 (95th percentile 162.45 ms)
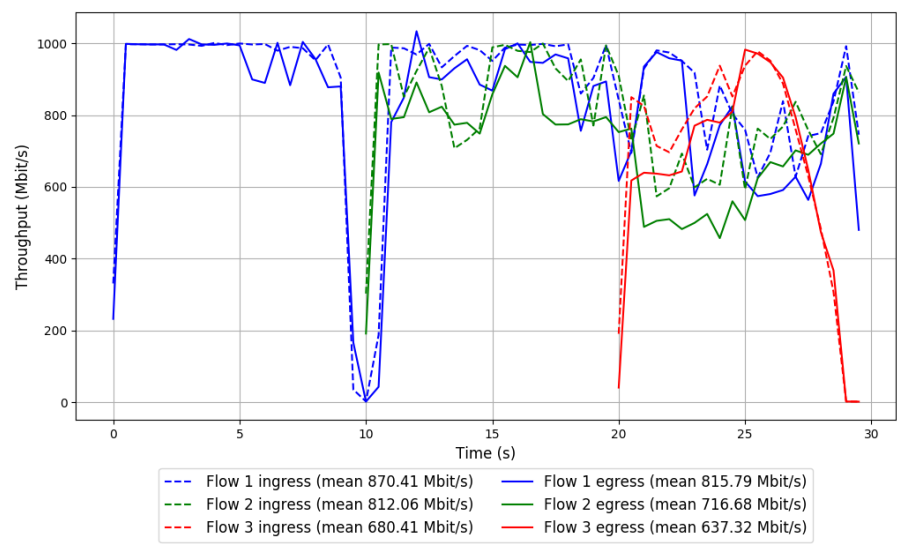
261

```
Run 10: Statistics of FillP

Start at: 2017-12-20 23:10:15
End at: 2017-12-20 23:10:45

# Below is generated by plot.py at 2017-12-21 03:27:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1500.58 Mbit/s
95th percentile per-packet one-way delay: 321.007 ms
Loss rate: 8.54%
-- Flow 1:
Average throughput: 815.79 Mbit/s
95th percentile per-packet one-way delay: 296.720 ms
Loss rate: 6.59%
-- Flow 2:
Average throughput: 716.68 Mbit/s
95th percentile per-packet one-way delay: 342.163 ms
Loss rate: 12.19%
-- Flow 3:
Average throughput: 637.32 Mbit/s
95th percentile per-packet one-way delay: 149.312 ms
Loss rate: 7.35%
```

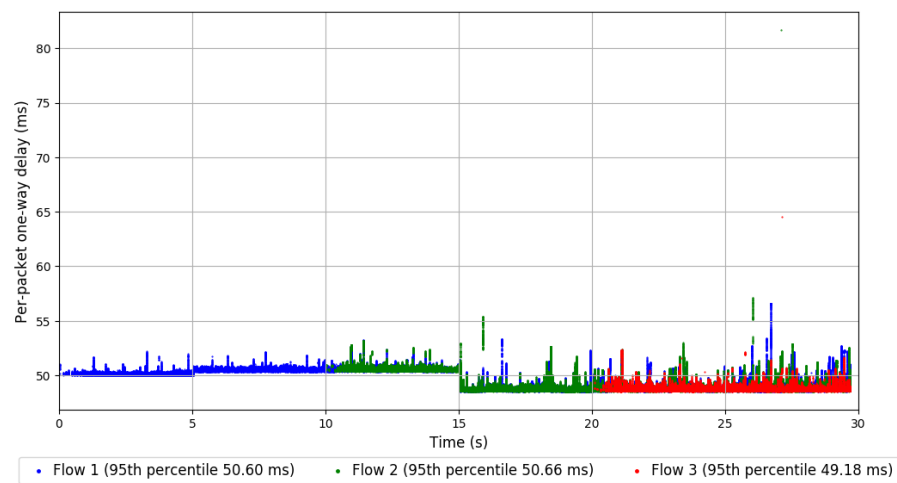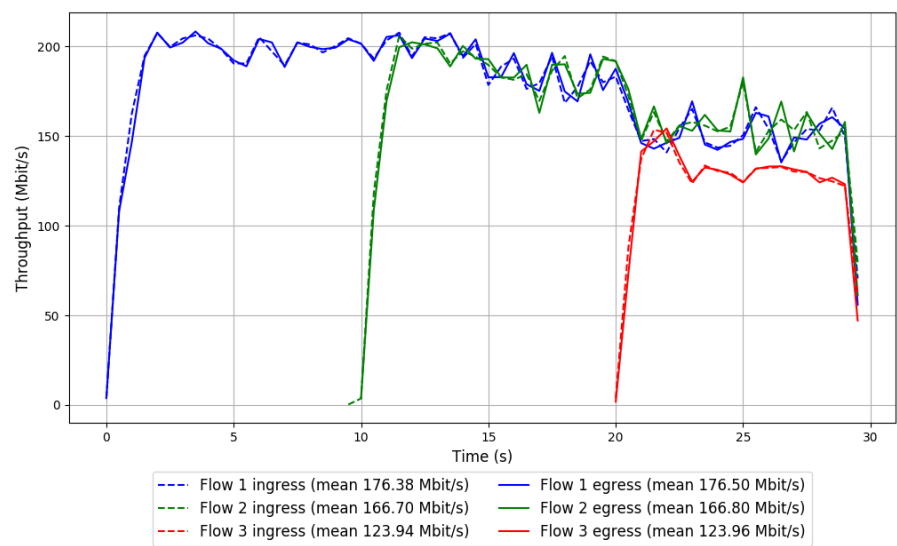# Run 10: Report of FillP — Data Link

Flow 1 ingress (mean 870.41 Mbit/s) Flow 1 egress (mean 815.79 Mbit/s)
Flow 2 ingress (mean 812.06 Mbit/s) Flow 2 egress (mean 716.68 Mbit/s)
Flow 3 ingress (mean 680.41 Mbit/s) Flow 3 egress (mean 637.32 Mbit/s)

Flow 1 (95th percentile 296.72 ms) Flow 2 (95th percentile 342.16 ms) Flow 3 (95th percentile 149.31 ms)

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```
Run 1: Statistics of Indigo

Start at: 2017-12-20 21:14:45
End at: 2017-12-20 21:15:15


# Below is generated by plot.py at 2017-12-21 03:27:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 327.25 Mbit/s
95th percentile per-packet one-way delay: 50.603 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 176.50 Mbit/s
95th percentile per-packet one-way delay: 50.605 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 166.80 Mbit/s
95th percentile per-packet one-way delay: 50.655 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 123.96 Mbit/s
95th percentile per-packet one-way delay: 49.181 ms
Loss rate: 1.01%
```
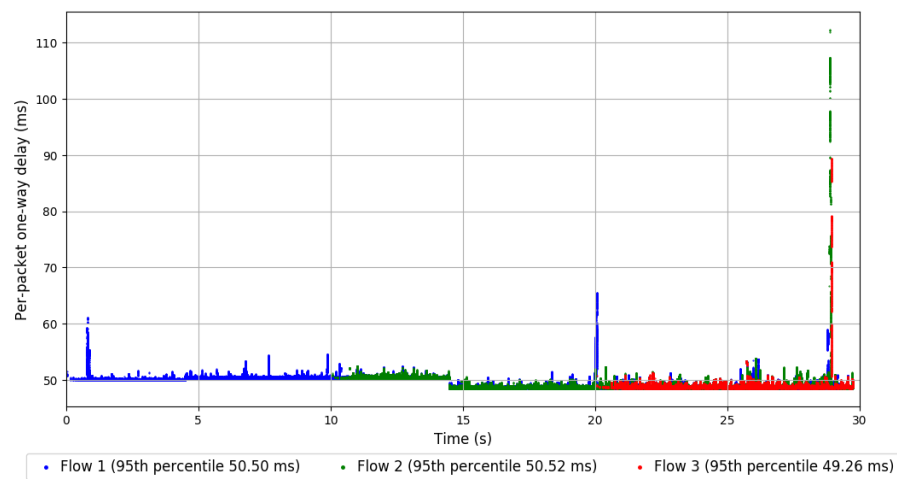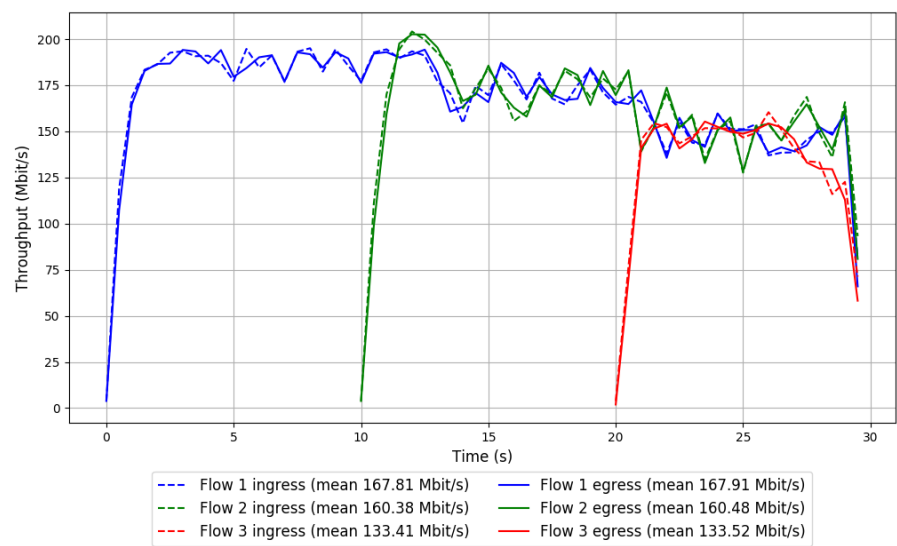
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2017-12-20 21:29:06
End at: 2017-12-20 21:29:36

# Below is generated by plot.py at 2017-12-21 03:27:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 317.67 Mbit/s
95th percentile per-packet one-way delay: 50.491 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 167.91 Mbit/s
95th percentile per-packet one-way delay: 50.497 ms
Loss rate: 0.28%
-- Flow 2:
Average throughput: 160.48 Mbit/s
95th percentile per-packet one-way delay: 50.522 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 133.52 Mbit/s
95th percentile per-packet one-way delay: 49.262 ms
Loss rate: 0.98%
```

Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2017-12-20 21:43:13
End at: 2017-12-20 21:43:43

# Below is generated by plot.py at 2017-12-21 03:27:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 321.12 Mbit/s
95th percentile per-packet one-way delay: 51.019 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 171.18 Mbit/s
95th percentile per-packet one-way delay: 50.943 ms
Loss rate: 0.28%
-- Flow 2:
Average throughput: 156.72 Mbit/s
95th percentile per-packet one-way delay: 51.118 ms
Loss rate: 0.43%
-- Flow 3:
Average throughput: 142.00 Mbit/s
95th percentile per-packet one-way delay: 51.085 ms
Loss rate: 0.93%
```
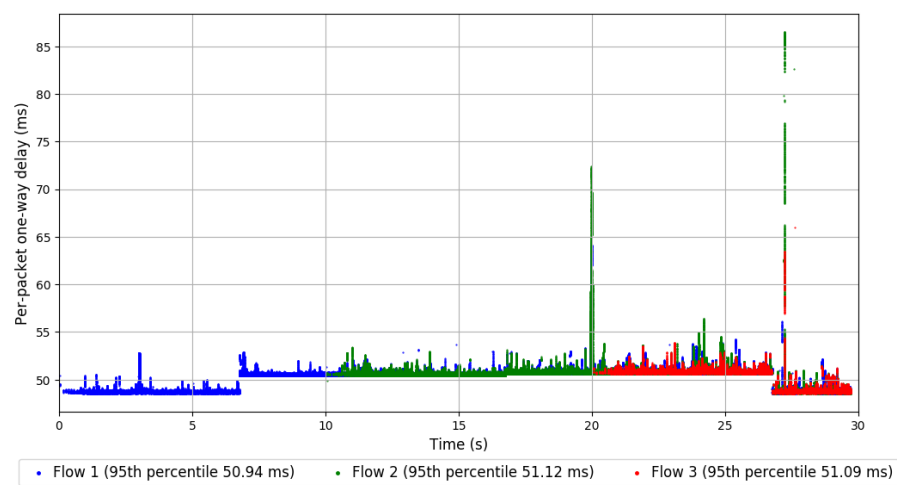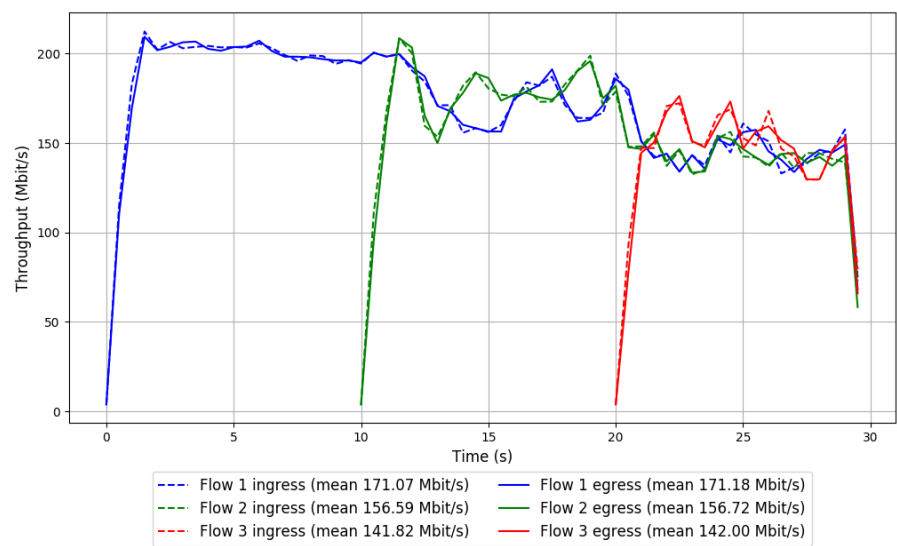
Run 3: Report of Indigo — Data Link

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```
Run 4: Statistics of Indigo

Start at: 2017-12-20 21:57:37
End at: 2017-12-20 21:58:07

# Below is generated by plot.py at 2017-12-21 03:27:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 319.20 Mbit/s
95th percentile per-packet one-way delay: 50.905 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 172.83 Mbit/s
95th percentile per-packet one-way delay: 50.843 ms
Loss rate: 0.31%
-- Flow 2:
Average throughput: 157.39 Mbit/s
95th percentile per-packet one-way delay: 51.032 ms
Loss rate: 0.50%
-- Flow 3:
Average throughput: 129.79 Mbit/s
95th percentile per-packet one-way delay: 50.968 ms
Loss rate: 1.29%
```
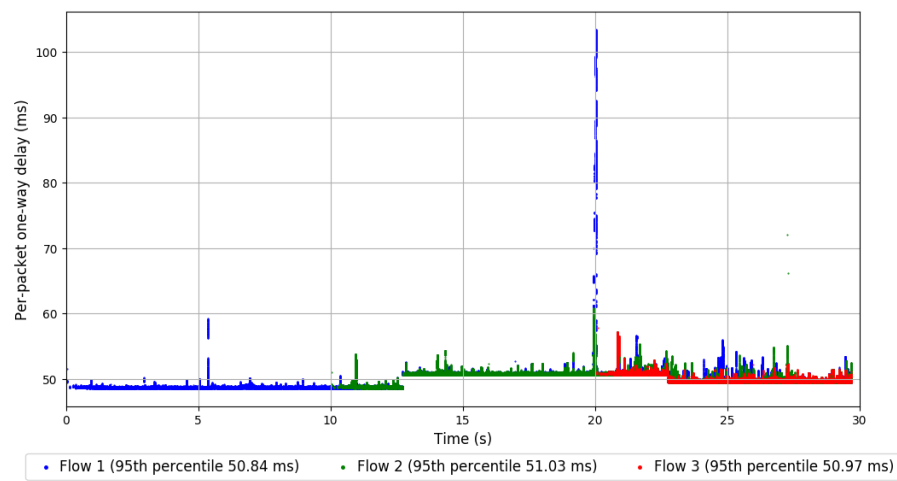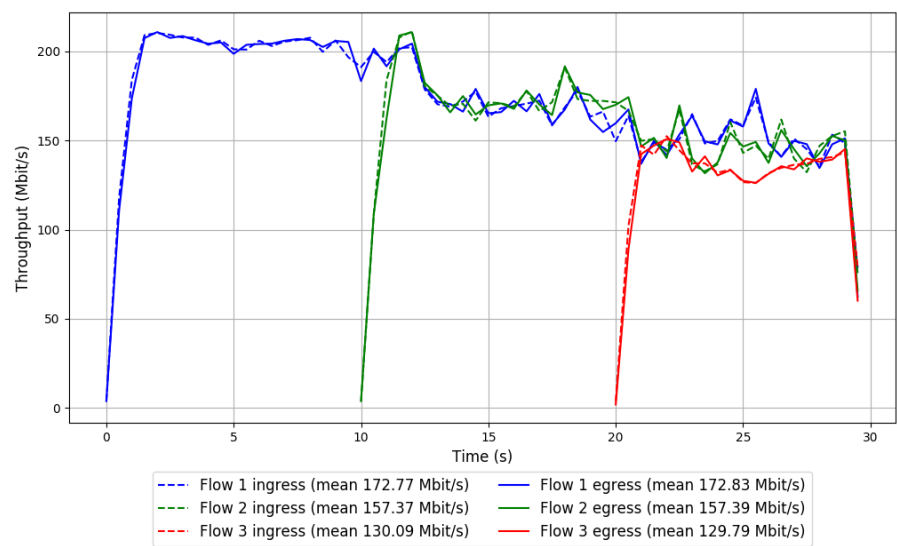
Run 4: Report of Indigo — Data Link

Flow 1 ingress (mean 172.77 Mbit/s) ---- Flow 1 egress (mean 172.83 Mbit/s) ——
Flow 2 ingress (mean 157.37 Mbit/s) ---- Flow 2 egress (mean 157.39 Mbit/s) ——
Flow 3 ingress (mean 130.09 Mbit/s) ---- Flow 3 egress (mean 129.79 Mbit/s) ——

Flow 1 (95th percentile 50.84 ms)   Flow 2 (95th percentile 51.03 ms)   Flow 3 (95th percentile 50.97 ms)

271

```
Run 5: Statistics of Indigo

Start at: 2017-12-20 22:11:52
End at: 2017-12-20 22:12:22

# Below is generated by plot.py at 2017-12-21 03:27:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 321.64 Mbit/s
95th percentile per-packet one-way delay: 50.621 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 170.86 Mbit/s
95th percentile per-packet one-way delay: 50.660 ms
Loss rate: 0.45%
-- Flow 2:
Average throughput: 158.96 Mbit/s
95th percentile per-packet one-way delay: 50.351 ms
Loss rate: 0.47%
-- Flow 3:
Average throughput: 140.89 Mbit/s
95th percentile per-packet one-way delay: 50.326 ms
Loss rate: 1.18%
```
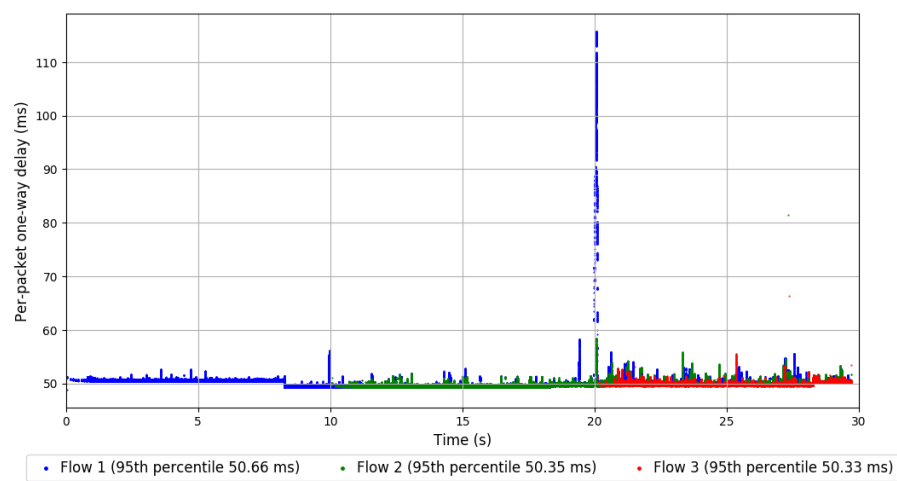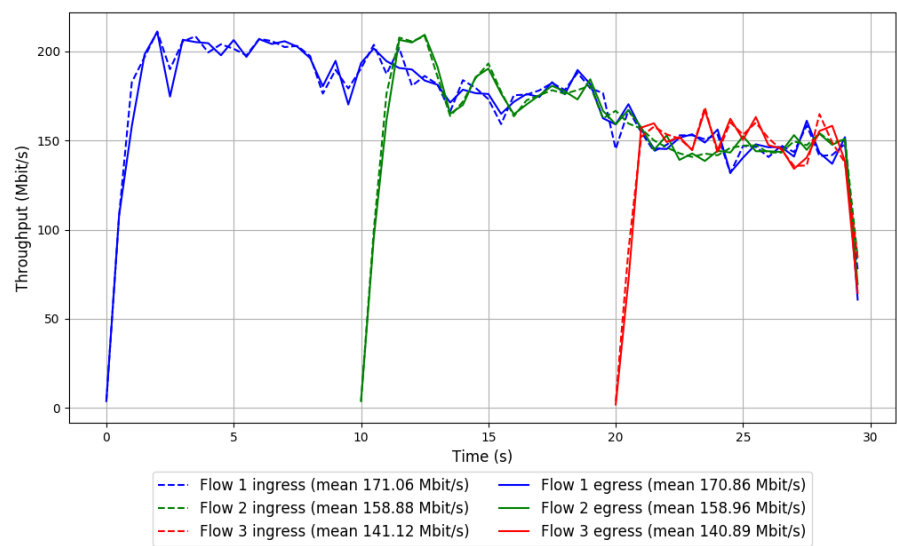
Run 5: Report of Indigo — Data Link

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```
Run 6: Statistics of Indigo

Start at: 2017-12-20 22:26:07
End at: 2017-12-20 22:26:37


# Below is generated by plot.py at 2017-12-21 03:27:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 325.78 Mbit/s
95th percentile per-packet one-way delay: 50.822 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 172.60 Mbit/s
95th percentile per-packet one-way delay: 50.642 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 160.69 Mbit/s
95th percentile per-packet one-way delay: 51.148 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 145.44 Mbit/s
95th percentile per-packet one-way delay: 50.786 ms
Loss rate: 1.26%
```
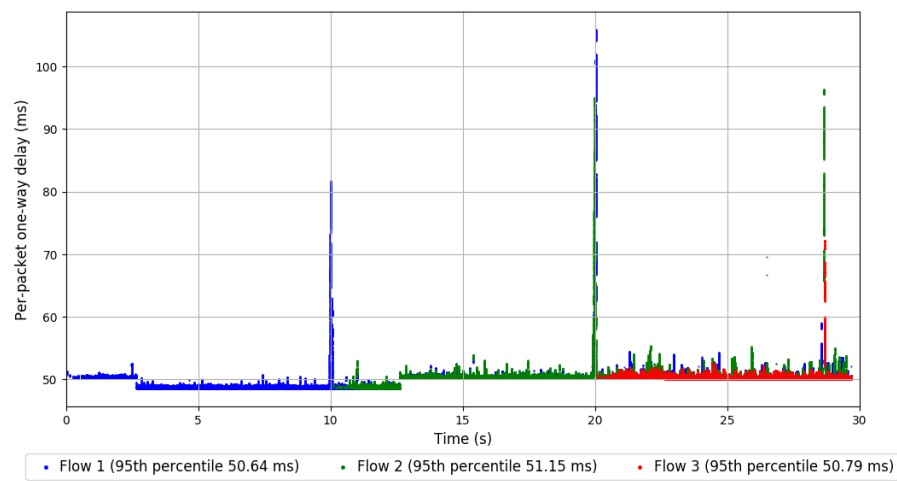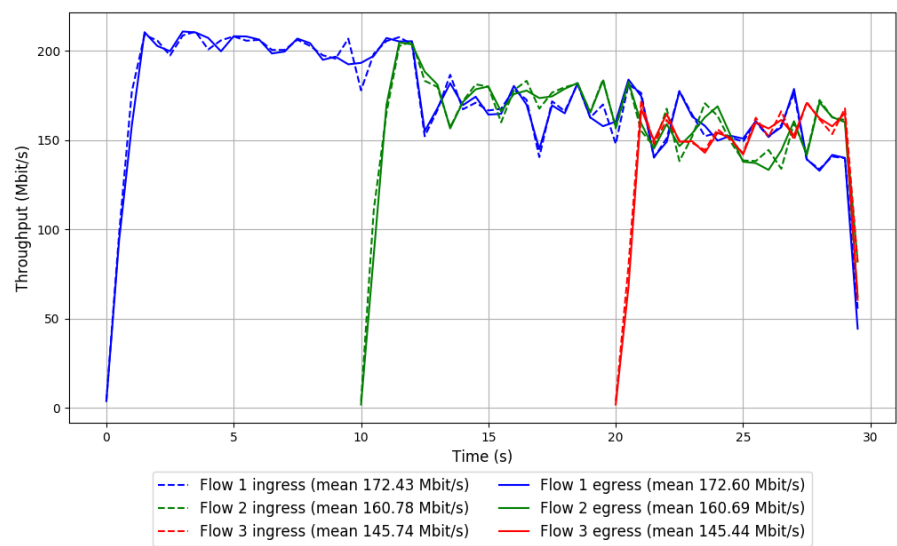
Run 6: Report of Indigo — Data Link

Flow 1 ingress (mean 172.43 Mbit/s) --- Flow 1 egress (mean 172.60 Mbit/s)
Flow 2 ingress (mean 160.78 Mbit/s) --- Flow 2 egress (mean 160.69 Mbit/s)
Flow 3 ingress (mean 145.74 Mbit/s) --- Flow 3 egress (mean 145.44 Mbit/s)

Flow 1 (95th percentile 50.64 ms) • Flow 2 (95th percentile 51.15 ms) • Flow 3 (95th percentile 50.79 ms)

275

```
Run 7: Statistics of Indigo

Start at: 2017-12-20 22:40:11
End at: 2017-12-20 22:40:41

# Below is generated by plot.py at 2017-12-21 03:27:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 322.77 Mbit/s
95th percentile per-packet one-way delay: 50.779 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 175.51 Mbit/s
95th percentile per-packet one-way delay: 50.725 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 154.51 Mbit/s
95th percentile per-packet one-way delay: 50.972 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 139.41 Mbit/s
95th percentile per-packet one-way delay: 50.619 ms
Loss rate: 1.25%
```
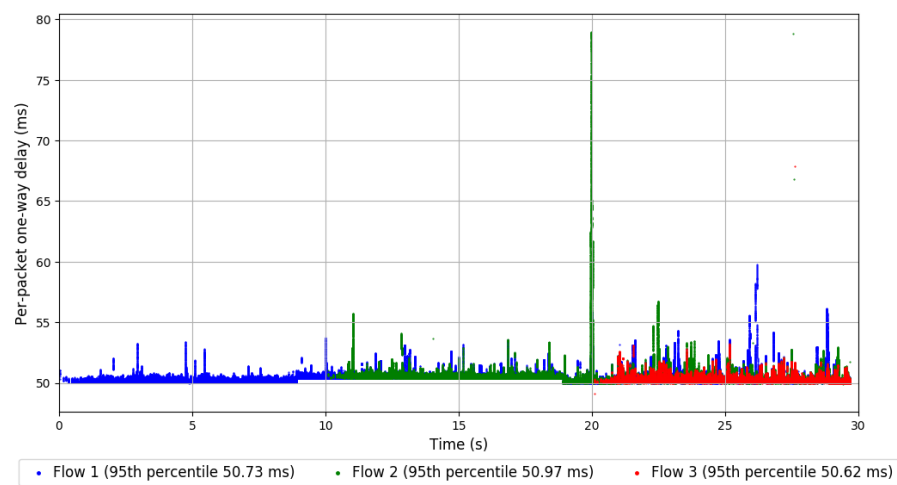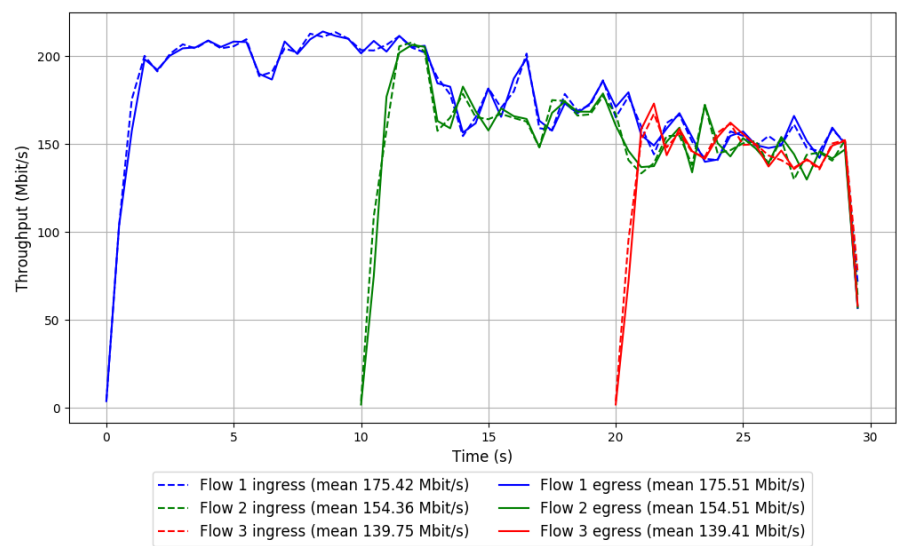
Run 7: Report of Indigo — Data Link

```
Run 8: Statistics of Indigo

Start at: 2017-12-20 22:54:21
End at: 2017-12-20 22:54:51

# Below is generated by plot.py at 2017-12-21 03:27:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 319.62 Mbit/s
95th percentile per-packet one-way delay: 50.439 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 172.18 Mbit/s
95th percentile per-packet one-way delay: 49.731 ms
Loss rate: 0.29%
-- Flow 2:
Average throughput: 155.06 Mbit/s
95th percentile per-packet one-way delay: 50.599 ms
Loss rate: 0.49%
-- Flow 3:
Average throughput: 137.92 Mbit/s
95th percentile per-packet one-way delay: 50.709 ms
Loss rate: 1.14%
```
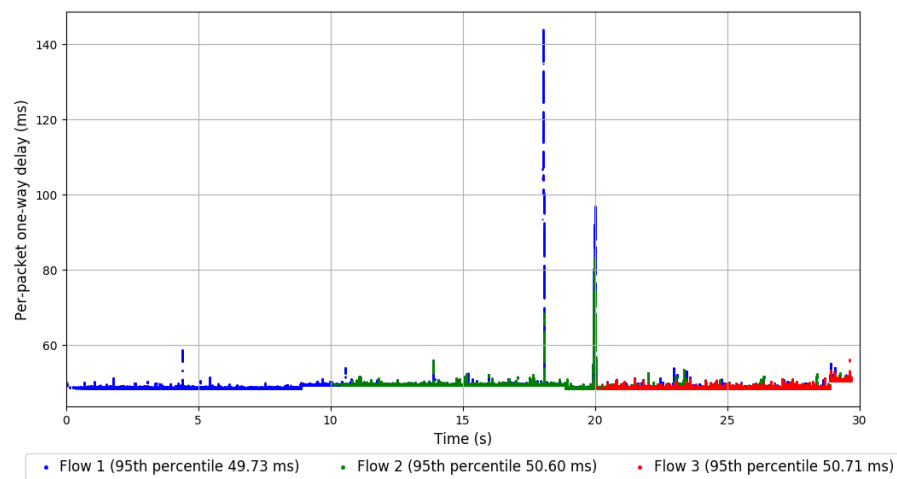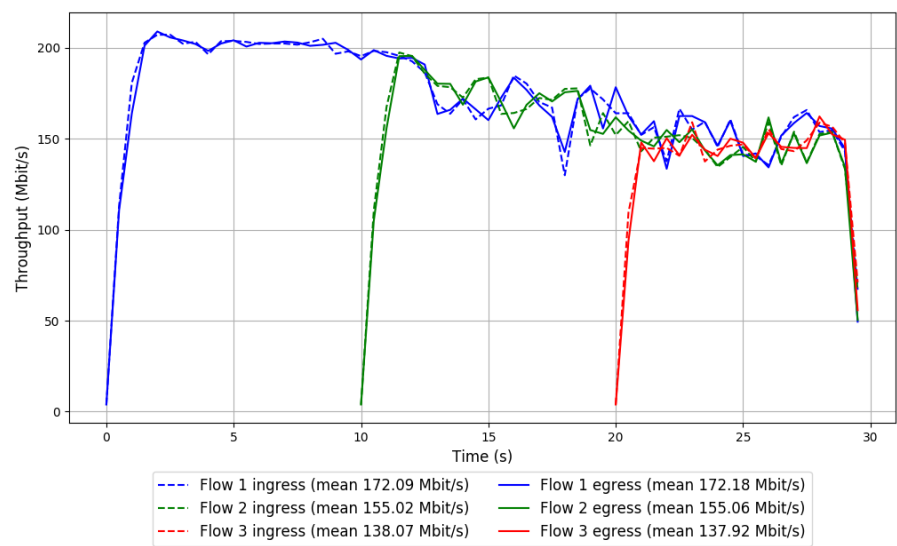
Run 8: Report of Indigo — Data Link

```
Run 9: Statistics of Indigo

Start at: 2017-12-20 23:08:32
End at: 2017-12-20 23:09:02

# Below is generated by plot.py at 2017-12-21 03:27:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 306.91 Mbit/s
95th percentile per-packet one-way delay: 50.794 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 168.91 Mbit/s
95th percentile per-packet one-way delay: 50.838 ms
Loss rate: 0.34%
-- Flow 2:
Average throughput: 146.73 Mbit/s
95th percentile per-packet one-way delay: 50.768 ms
Loss rate: 0.49%
-- Flow 3:
Average throughput: 124.76 Mbit/s
95th percentile per-packet one-way delay: 50.758 ms
Loss rate: 1.26%
```
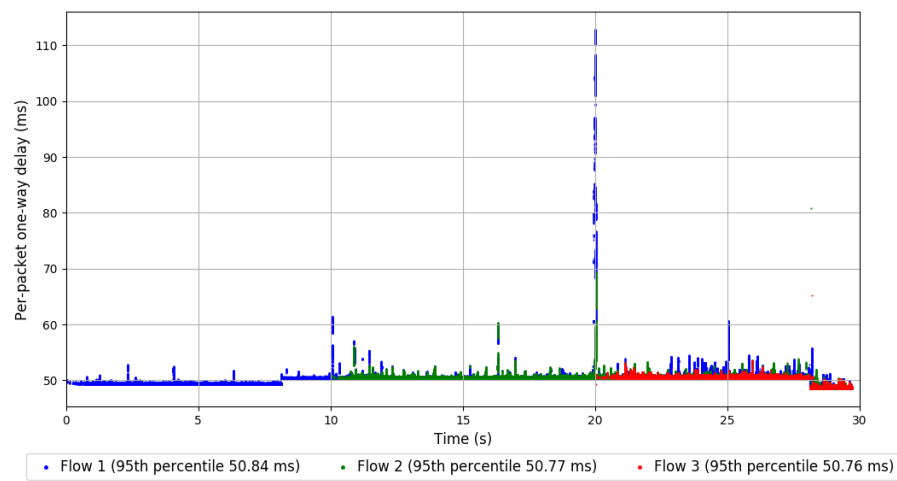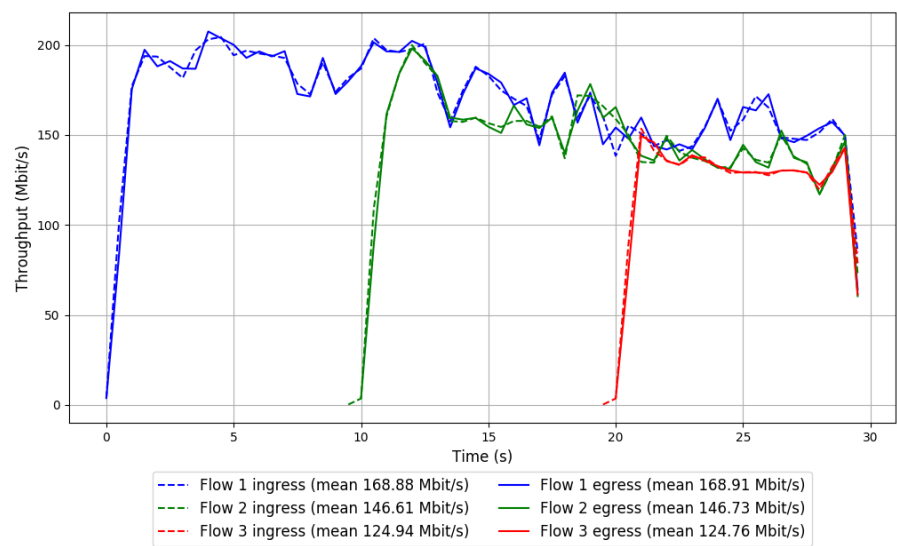
Run 9: Report of Indigo — Data Link

```
Run 10: Statistics of Indigo

Start at: 2017-12-20 23:22:55
End at: 2017-12-20 23:23:25


# Below is generated by plot.py at 2017-12-21 03:27:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 317.52 Mbit/s
95th percentile per-packet one-way delay: 50.627 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 171.69 Mbit/s
95th percentile per-packet one-way delay: 50.538 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 166.08 Mbit/s
95th percentile per-packet one-way delay: 50.866 ms
Loss rate: 0.58%
-- Flow 3:
Average throughput: 110.30 Mbit/s
95th percentile per-packet one-way delay: 50.519 ms
Loss rate: 1.01%
```

Run 10: Report of Indigo — Data Link