Pantheon Report

Generated at 2018-01-16 02:11:29 (UTC).

Data path: Stanford ppp0 (*remote*) →AWS California 1 Ethernet (*local*).

Repeated the test of 14 congestion control schemes 3 times.

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

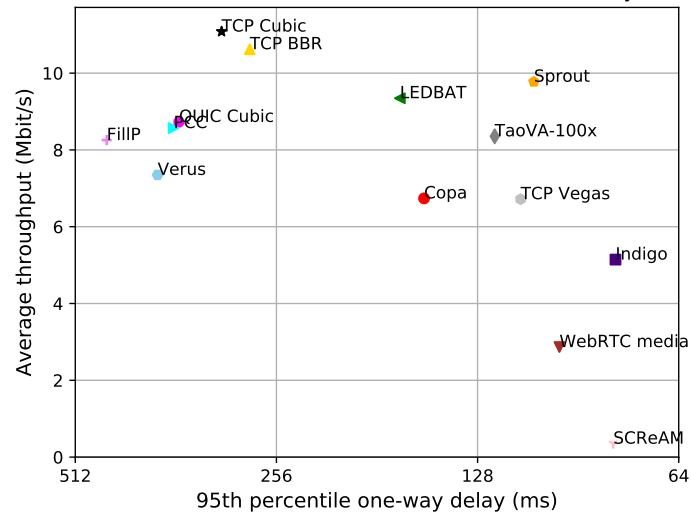Increased UDP receive buffer to 16 MB (default) and 32 MB (max).

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

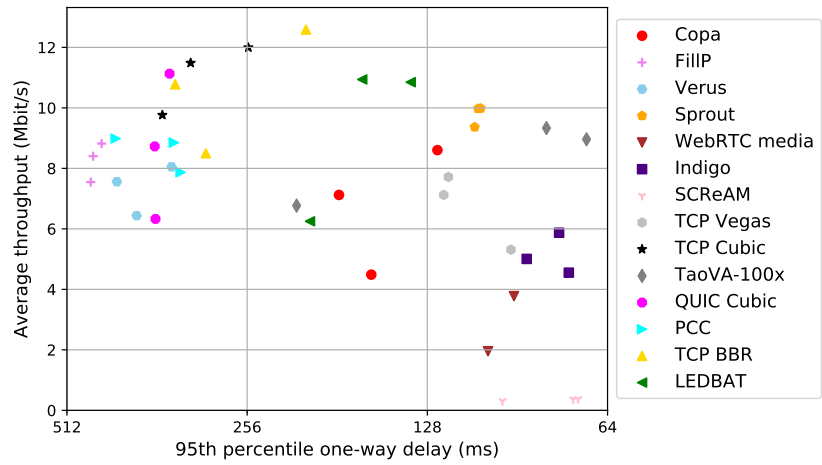NTP offsets were measured against `time.stanford.edu` and have been applied to correct the timestamps in logs.

```
Git summary:
branch: master @ af8abdfba95588b0c5f2aeca9e856a1656b0c598
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
 M datagrump/sender.cc
third_party/fillp @ ec9585325218d5048c4d4152fa42240af54c6e67
third_party/genericCC @ 80b516c448f795fd6e9675f7177b69c622f07da8
third_party/indigo @ b19f3730105f9aa95452552af924e3719b03cc55
third_party/indigo-no-calib @ 7224f2202e8a044d8306fa0b983ad84360c53d89
third_party/koho_cc @ f0f2e693303aee82ea808e6928eac4f1083a6681
 M datagrump/sender.cc
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ fb1053193c2861da659ba9013db26744ccfcf993
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
 M receiver/src/buffer.h
 M receiver/src/core.cpp
 M sender/src/buffer.h
 M sender/src/core.cpp
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream @ c3370fd7bd17265a79aeb34e4016ad23f5965885
third_party/sourdough @ f1a14bffe749737437f61b1eaeeb30b267cde681
third_party/sprout @ 6f2efe6e088d91066a9f023df375eee2665089ce
 M src/examples/cellsim.cc
 M src/examples/sproutbt2.cc
 M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
 M src/verus.hpp
 M tools/plot.py
third_party/vivace @ 423cbca3e8ea1d599e7b5cf725835e8a2b6bfac6
third_party/webrtc @ a488197ddd041ace68a42849b2540ad834825f42
```

test from Stanford ppp0 to AWS California 1 Ethernet, 3 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)

test from Stanford ppp0 to AWS California 1 Ethernet, 3 runs of 30s each per scheme
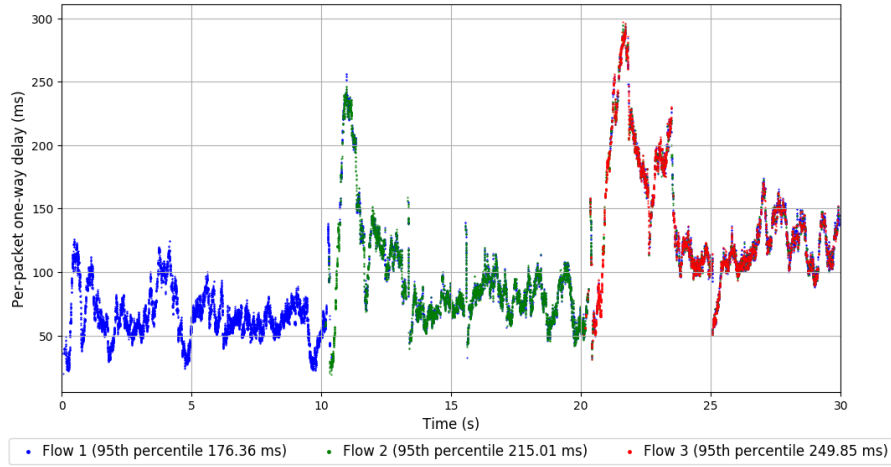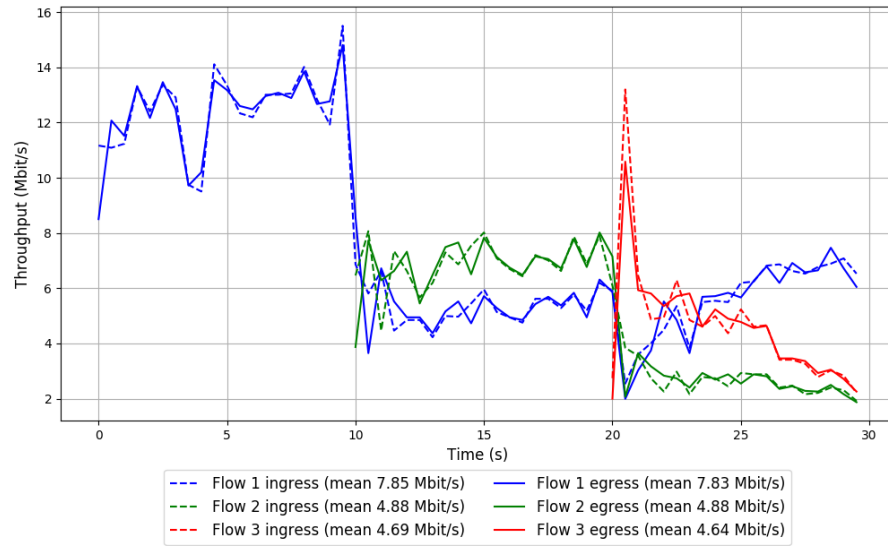3 flows with 10s interval between flows

scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	3	6.55	3.82	4.71	255.55	286.06	331.74	1.27	2.18	6.36
TCP Cubic	3	8.47	2.84	2.31	307.87	311.27	294.94	0.68	1.25	2.34
LEDBAT	3	6.09	3.42	3.04	165.90	170.23	145.65	0.29	0.75	1.74
PCC	3	5.03	4.22	2.26	357.38	366.73	385.68	9.31	13.15	23.56
QUIC Cubic	3	5.13	4.45	2.14	252.18	370.25	369.13	1.31	3.10	5.35
SCReAM	3	0.15	0.20	0.22	85.74	75.87	68.81	0.28	0.53	0.47
WebRTC media	2	1.32	0.90	0.67	101.81	92.99	98.26	1.15	1.10	0.89
Sprout	3	5.89	4.28	3.19	99.32	107.86	118.01	1.22	1.89	1.99
TaoVA-100x	3	4.64	4.12	3.83	109.52	132.19	146.48	0.57	0.93	4.88
TCP Vegas	3	3.47	3.15	3.53	111.80	113.28	71.88	0.20	0.32	0.31
Verus	3	4.59	3.55	1.31	360.65	393.35	437.89	6.09	19.77	37.25
Copa	3	3.76	3.45	3.19	870.02	105.17	174.63	0.23	0.42	2.41
FillP	3	7.00	1.06	1.90	455.87	495.98	461.32	65.53	97.01	97.18
Indigo	3	2.32	2.58	3.44	87.79	72.17	71.81	0.26	0.44	0.42

```
Run 1: Statistics of TCP BBR

Start at: 2018-01-16 00:27:09
End at: 2018-01-16 00:27:39
Local clock offset: 4.4 ms
Remote clock offset: -2.638 ms


# Below is generated by plot.py at 2018-01-16 02:10:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.59 Mbit/s
95th percentile per-packet one-way delay: 204.216 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 7.83 Mbit/s
95th percentile per-packet one-way delay: 176.361 ms
Loss rate: 0.53%
-- Flow 2:
Average throughput: 4.88 Mbit/s
95th percentile per-packet one-way delay: 215.011 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 4.64 Mbit/s
95th percentile per-packet one-way delay: 249.847 ms
Loss rate: 1.76%
```

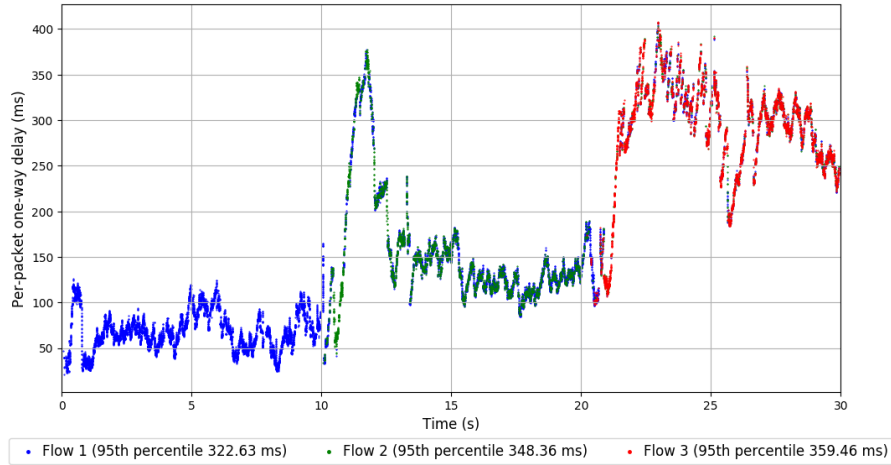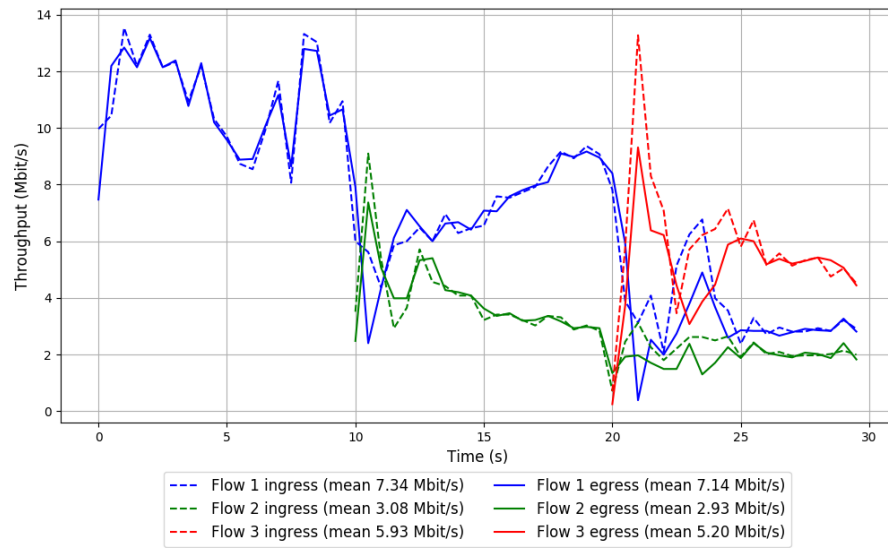Run 1: Report of TCP BBR — Data Link

```
Run 2: Statistics of TCP BBR

Start at: 2018-01-16 00:44:58
End at: 2018-01-16 00:45:28
Local clock offset: 0.795 ms
Remote clock offset: -2.657 ms


# Below is generated by plot.py at 2018-01-16 02:10:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.78 Mbit/s
95th percentile per-packet one-way delay: 337.612 ms
Loss rate: 5.20%
-- Flow 1:
Average throughput: 7.14 Mbit/s
95th percentile per-packet one-way delay: 322.631 ms
Loss rate: 2.87%
-- Flow 2:
Average throughput: 2.93 Mbit/s
95th percentile per-packet one-way delay: 348.357 ms
Loss rate: 5.06%
-- Flow 3:
Average throughput: 5.20 Mbit/s
95th percentile per-packet one-way delay: 359.459 ms
Loss rate: 14.07%
```
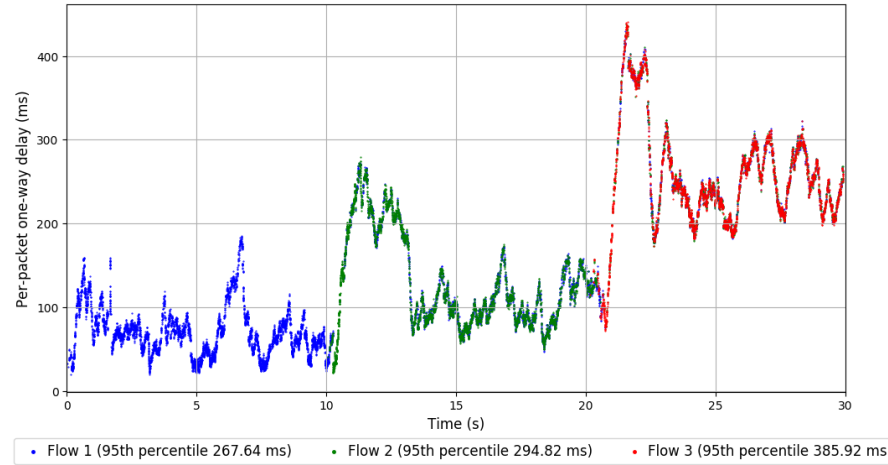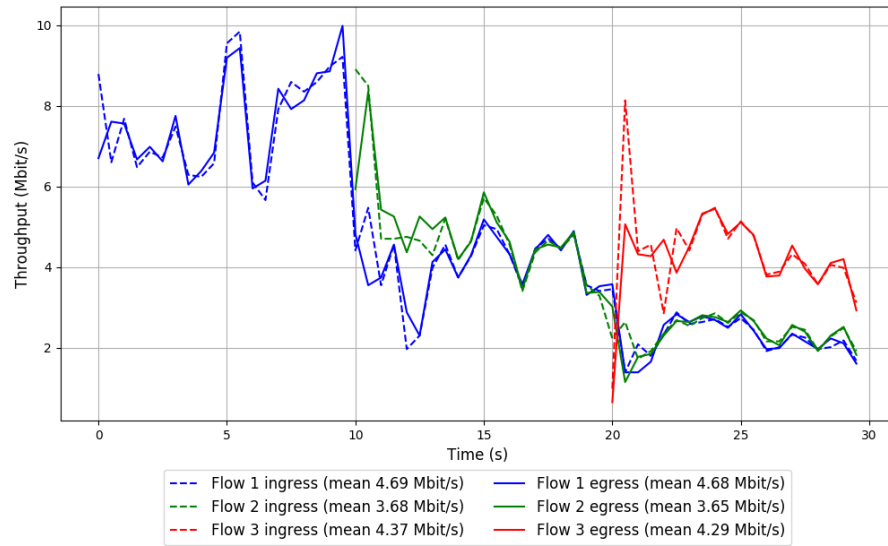
Run 2: Report of TCP BBR — Data Link

Flow 1 ingress (mean 7.34 Mbit/s)   Flow 1 egress (mean 7.14 Mbit/s)
Flow 2 ingress (mean 3.08 Mbit/s)   Flow 2 egress (mean 2.93 Mbit/s)
Flow 3 ingress (mean 5.93 Mbit/s)   Flow 3 egress (mean 5.20 Mbit/s)

Flow 1 (95th percentile 322.63 ms)   Flow 2 (95th percentile 348.36 ms)   Flow 3 (95th percentile 359.46 ms)

```
Run 3: Statistics of TCP BBR

Start at: 2018-01-16 01:02:47
End at: 2018-01-16 01:03:17
Local clock offset: 1.354 ms
Remote clock offset: -2.463 ms


# Below is generated by plot.py at 2018-01-16 02:10:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.50 Mbit/s
95th percentile per-packet one-way delay: 300.015 ms
Loss rate: 1.10%
-- Flow 1:
Average throughput: 4.68 Mbit/s
95th percentile per-packet one-way delay: 267.644 ms
Loss rate: 0.42%
-- Flow 2:
Average throughput: 3.65 Mbit/s
95th percentile per-packet one-way delay: 294.825 ms
Loss rate: 1.13%
-- Flow 3:
Average throughput: 4.29 Mbit/s
95th percentile per-packet one-way delay: 385.924 ms
Loss rate: 3.24%
```

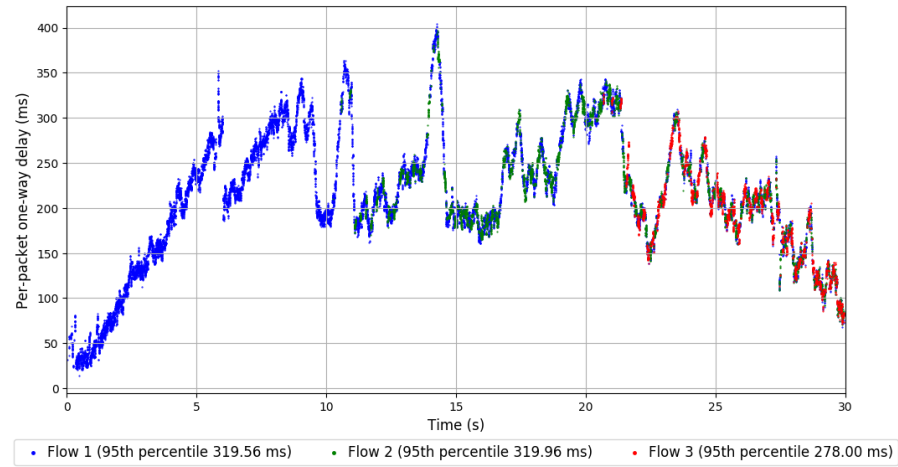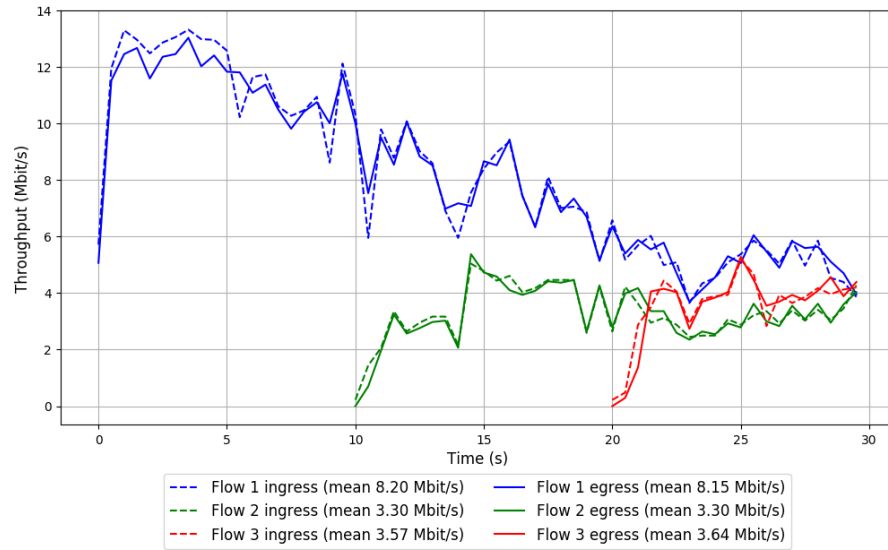Run 3: Report of TCP BBR — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2018-01-16 00:36:39
End at: 2018-01-16 00:37:09
Local clock offset: 1.808 ms
Remote clock offset: -2.605 ms


# Below is generated by plot.py at 2018-01-16 02:10:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 11.49 Mbit/s
95th percentile per-packet one-way delay: 318.208 ms
Loss rate: 0.86%
-- Flow 1:
Average throughput: 8.15 Mbit/s
95th percentile per-packet one-way delay: 319.561 ms
Loss rate: 0.75%
-- Flow 2:
Average throughput: 3.30 Mbit/s
95th percentile per-packet one-way delay: 319.965 ms
Loss rate: 1.00%
-- Flow 3:
Average throughput: 3.64 Mbit/s
95th percentile per-packet one-way delay: 277.996 ms
Loss rate: 1.32%
```
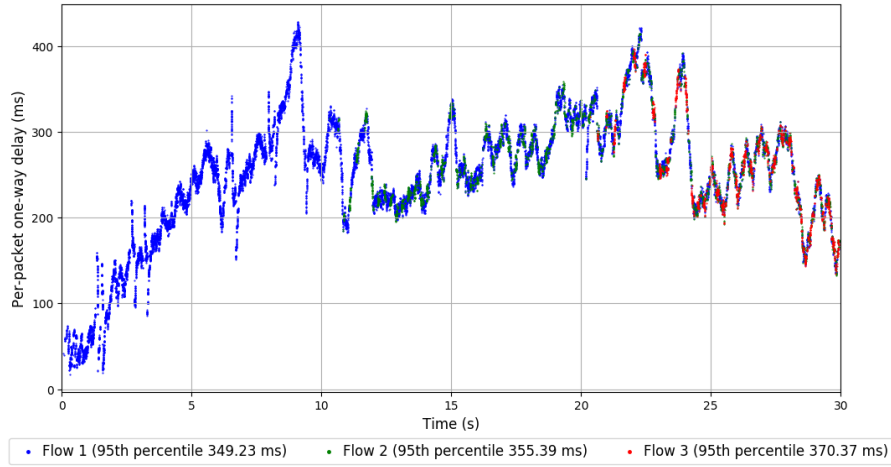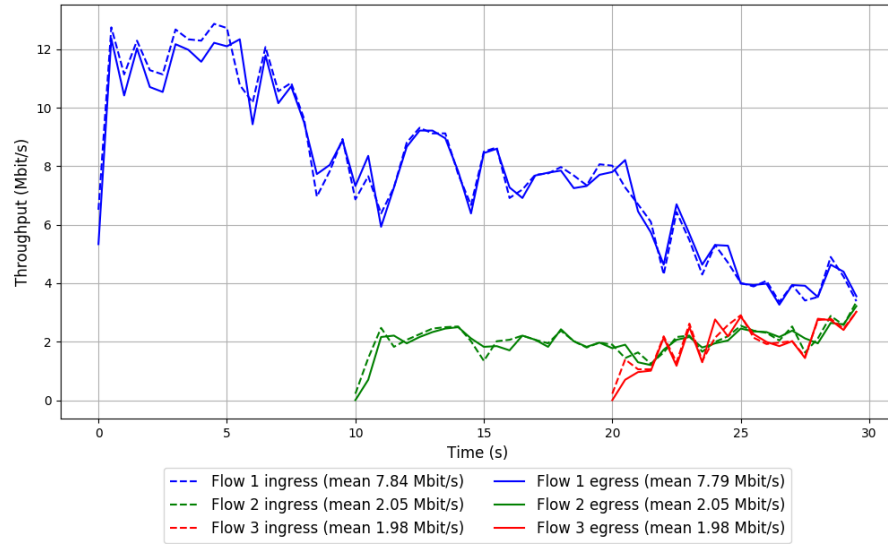
Run 1: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 8.20 Mbit/s) --- Flow 1 egress (mean 8.15 Mbit/s)
Flow 2 ingress (mean 3.30 Mbit/s) --- Flow 2 egress (mean 3.30 Mbit/s)
Flow 3 ingress (mean 3.57 Mbit/s) --- Flow 3 egress (mean 3.64 Mbit/s)

Flow 1 (95th percentile 319.56 ms)　Flow 2 (95th percentile 319.96 ms)　Flow 3 (95th percentile 278.00 ms)

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```
Run 2: Statistics of TCP Cubic

Start at: 2018-01-16 00:54:27
End at: 2018-01-16 00:54:57
Local clock offset: 0.975 ms
Remote clock offset: -2.62 ms


# Below is generated by plot.py at 2018-01-16 02:10:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 9.76 Mbit/s
95th percentile per-packet one-way delay: 354.721 ms
Loss rate: 1.20%
-- Flow 1:
Average throughput: 7.79 Mbit/s
95th percentile per-packet one-way delay: 349.234 ms
Loss rate: 0.91%
-- Flow 2:
Average throughput: 2.05 Mbit/s
95th percentile per-packet one-way delay: 355.386 ms
Loss rate: 1.96%
-- Flow 3:
Average throughput: 1.98 Mbit/s
95th percentile per-packet one-way delay: 370.374 ms
Loss rate: 3.12%
```

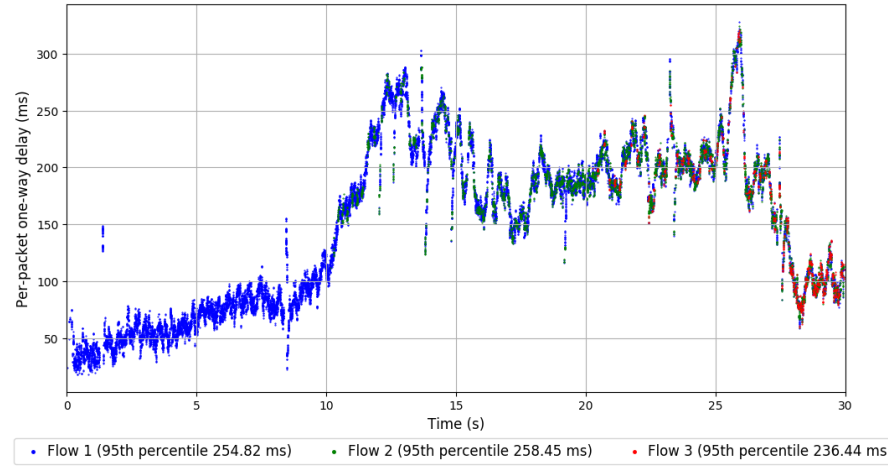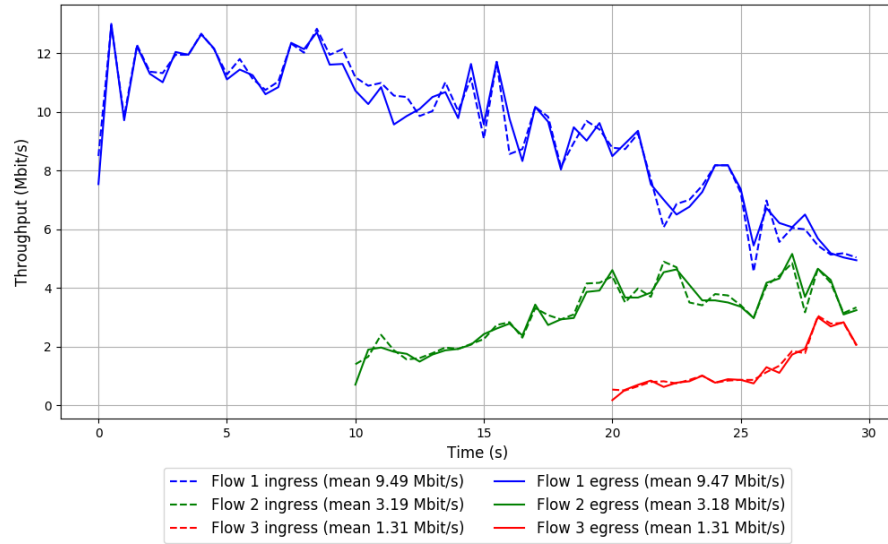Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2018-01-16 01:12:16
End at: 2018-01-16 01:12:46
Local clock offset: 2.079 ms
Remote clock offset: -2.385 ms


# Below is generated by plot.py at 2018-01-16 02:10:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.00 Mbit/s
95th percentile per-packet one-way delay: 254.822 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 9.47 Mbit/s
95th percentile per-packet one-way delay: 254.822 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 3.18 Mbit/s
95th percentile per-packet one-way delay: 258.446 ms
Loss rate: 0.79%
-- Flow 3:
Average throughput: 1.31 Mbit/s
95th percentile per-packet one-way delay: 236.441 ms
Loss rate: 2.58%
```
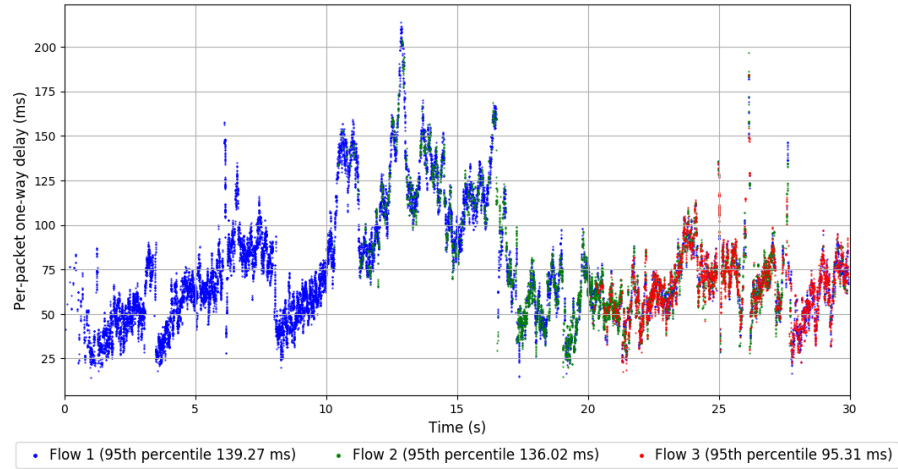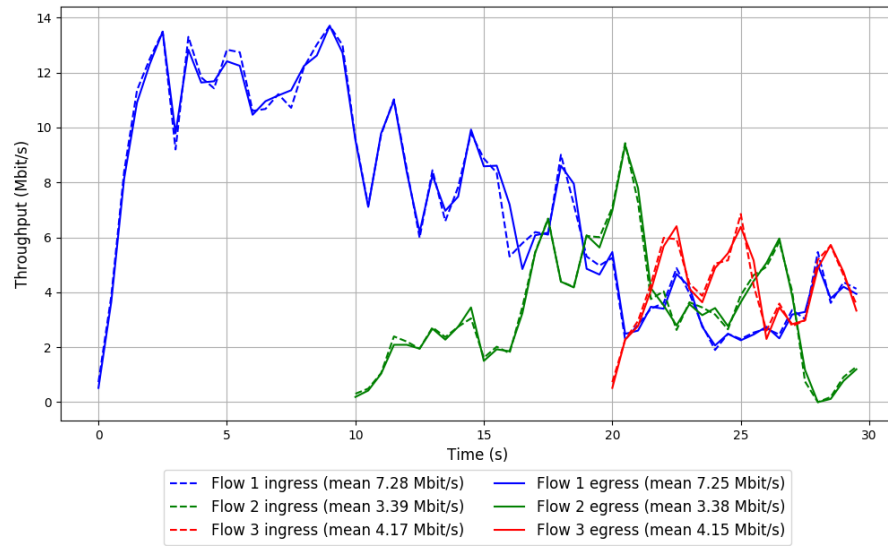
Run 3: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 9.49 Mbit/s) --- Flow 1 egress (mean 9.47 Mbit/s)
Flow 2 ingress (mean 3.19 Mbit/s) --- Flow 2 egress (mean 3.18 Mbit/s)
Flow 3 ingress (mean 1.31 Mbit/s) --- Flow 3 egress (mean 1.31 Mbit/s)

Flow 1 (95th percentile 254.82 ms) • Flow 2 (95th percentile 258.45 ms) • Flow 3 (95th percentile 236.44 ms)

```
Run 1: Statistics of LEDBAT

Start at: 2018-01-16 00:23:34
End at: 2018-01-16 00:24:04
Local clock offset: 4.886 ms
Remote clock offset: -2.635 ms


# Below is generated by plot.py at 2018-01-16 02:10:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.85 Mbit/s
95th percentile per-packet one-way delay: 136.481 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 7.25 Mbit/s
95th percentile per-packet one-way delay: 139.272 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 3.38 Mbit/s
95th percentile per-packet one-way delay: 136.020 ms
Loss rate: 0.78%
-- Flow 3:
Average throughput: 4.15 Mbit/s
95th percentile per-packet one-way delay: 95.313 ms
Loss rate: 1.36%
```
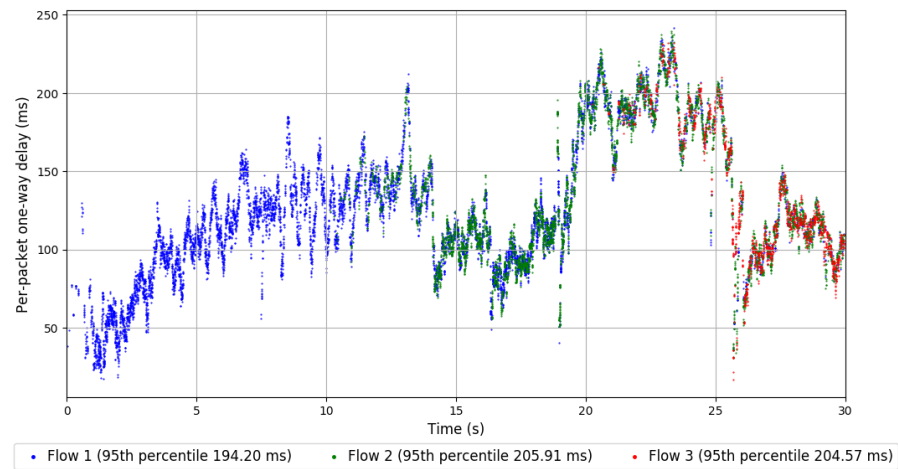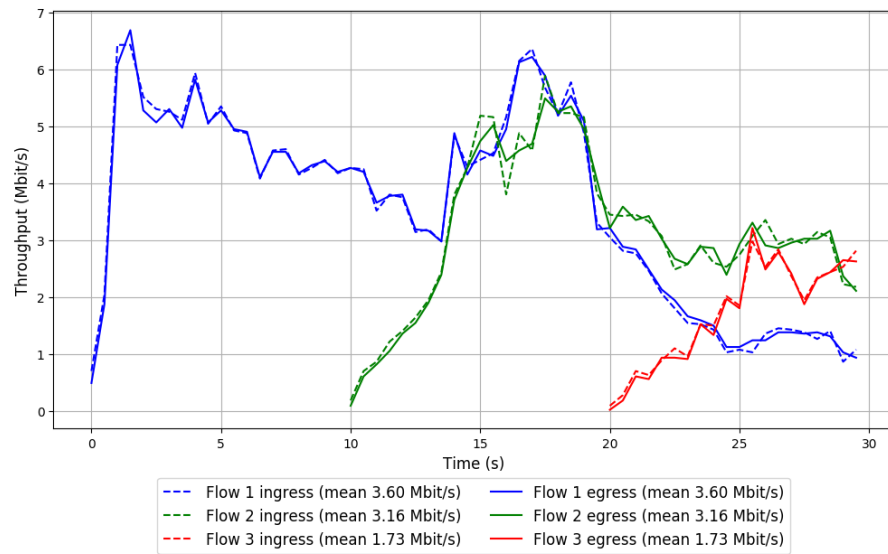
Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2018-01-16 00:41:24
End at: 2018-01-16 00:41:54
Local clock offset: 1.038 ms
Remote clock offset: -2.538 ms

# Below is generated by plot.py at 2018-01-16 02:10:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.25 Mbit/s
95th percentile per-packet one-way delay: 201.058 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 3.60 Mbit/s
95th percentile per-packet one-way delay: 194.198 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 3.16 Mbit/s
95th percentile per-packet one-way delay: 205.909 ms
Loss rate: 0.78%
-- Flow 3:
Average throughput: 1.73 Mbit/s
95th percentile per-packet one-way delay: 204.572 ms
Loss rate: 2.12%
```
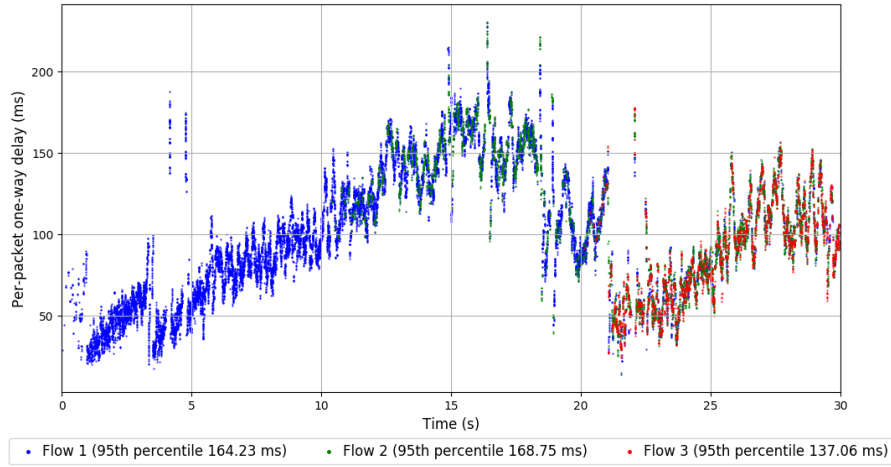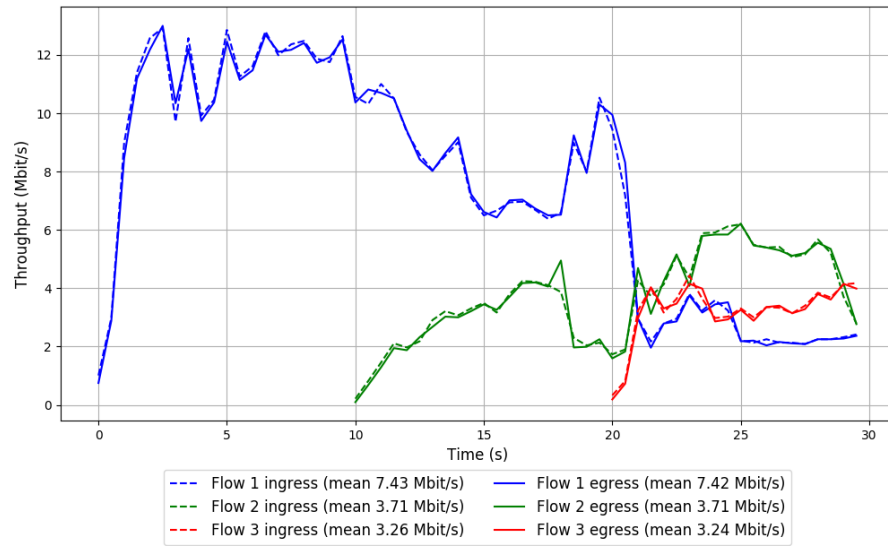
Run 2: Report of LEDBAT — Data Link

Flow 1 ingress (mean 3.60 Mbit/s)   Flow 1 egress (mean 3.60 Mbit/s)
Flow 2 ingress (mean 3.16 Mbit/s)   Flow 2 egress (mean 3.16 Mbit/s)
Flow 3 ingress (mean 1.73 Mbit/s)   Flow 3 egress (mean 1.73 Mbit/s)

Flow 1 (95th percentile 194.20 ms)   Flow 2 (95th percentile 205.91 ms)   Flow 3 (95th percentile 204.57 ms)

```
Run 3: Statistics of LEDBAT

Start at: 2018-01-16 00:59:13
End at: 2018-01-16 00:59:43
Local clock offset: 1.182 ms
Remote clock offset: -2.599 ms


# Below is generated by plot.py at 2018-01-16 02:10:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.94 Mbit/s
95th percentile per-packet one-way delay: 164.458 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 7.42 Mbit/s
95th percentile per-packet one-way delay: 164.234 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 3.71 Mbit/s
95th percentile per-packet one-way delay: 168.747 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 3.24 Mbit/s
95th percentile per-packet one-way delay: 137.055 ms
Loss rate: 1.74%
```
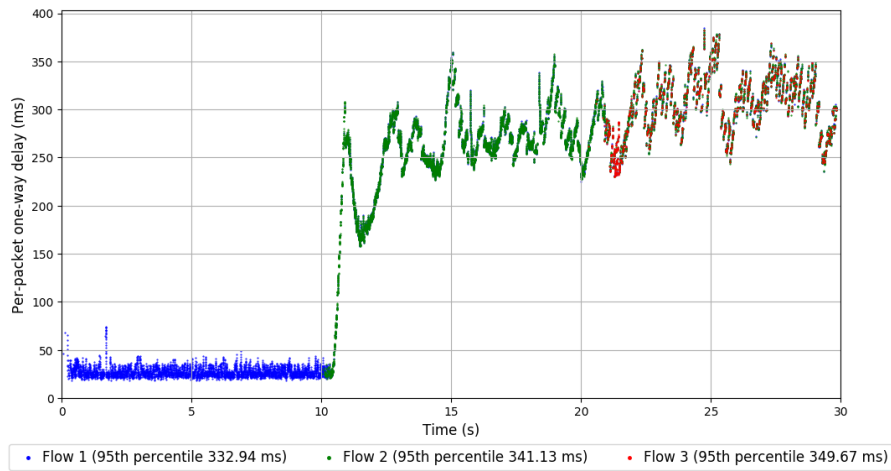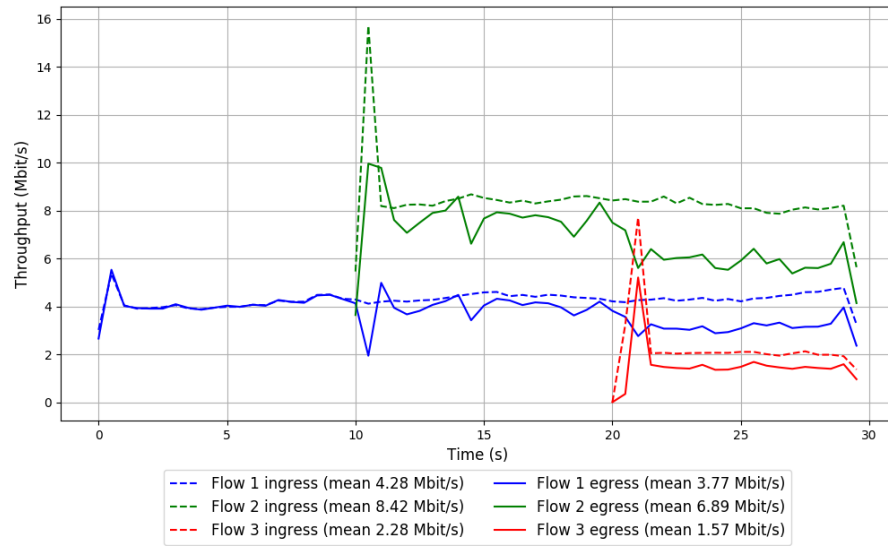
Run 3: Report of LEDBAT — Data Link

Flow 1 ingress (mean 7.43 Mbit/s)　　Flow 1 egress (mean 7.42 Mbit/s)
Flow 2 ingress (mean 3.71 Mbit/s)　　Flow 2 egress (mean 3.71 Mbit/s)
Flow 3 ingress (mean 3.26 Mbit/s)　　Flow 3 egress (mean 3.24 Mbit/s)

Flow 1 (95th percentile 164.23 ms)　　Flow 2 (95th percentile 168.75 ms)　　Flow 3 (95th percentile 137.06 ms)

```
Run 1: Statistics of PCC

Start at: 2018-01-16 00:31:55
End at: 2018-01-16 00:32:25
Local clock offset: 2.987 ms
Remote clock offset: -2.606 ms


# Below is generated by plot.py at 2018-01-16 02:10:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.85 Mbit/s
95th percentile per-packet one-way delay: 339.374 ms
Loss rate: 16.93%
-- Flow 1:
Average throughput: 3.77 Mbit/s
95th percentile per-packet one-way delay: 332.937 ms
Loss rate: 12.27%
-- Flow 2:
Average throughput: 6.89 Mbit/s
95th percentile per-packet one-way delay: 341.135 ms
Loss rate: 18.35%
-- Flow 3:
Average throughput: 1.57 Mbit/s
95th percentile per-packet one-way delay: 349.670 ms
Loss rate: 33.01%
```
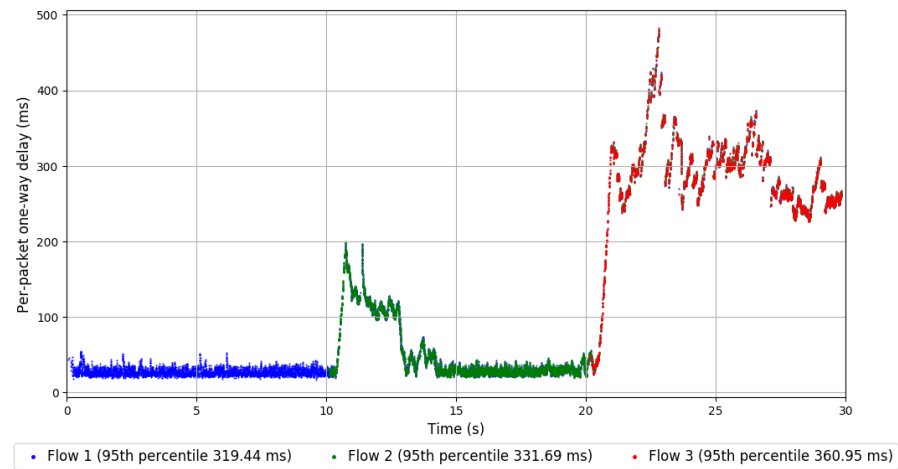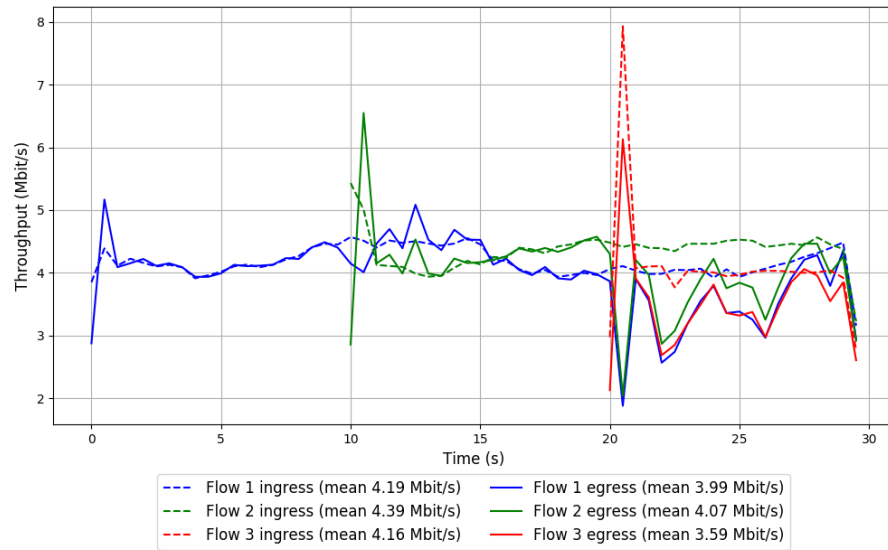
Run 1: Report of PCC — Data Link

Flow 1 ingress (mean 4.28 Mbit/s)   Flow 1 egress (mean 3.77 Mbit/s)
Flow 2 ingress (mean 8.42 Mbit/s)   Flow 2 egress (mean 6.89 Mbit/s)
Flow 3 ingress (mean 2.28 Mbit/s)   Flow 3 egress (mean 1.57 Mbit/s)

Flow 1 (95th percentile 332.94 ms)   Flow 2 (95th percentile 341.13 ms)   Flow 3 (95th percentile 349.67 ms)

```
Run 2: Statistics of PCC

Start at: 2018-01-16 00:49:44
End at: 2018-01-16 00:50:14
Local clock offset: 0.762 ms
Remote clock offset: -2.659 ms


# Below is generated by plot.py at 2018-01-16 02:10:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.87 Mbit/s
95th percentile per-packet one-way delay: 330.700 ms
Loss rate: 7.38%
-- Flow 1:
Average throughput: 3.99 Mbit/s
95th percentile per-packet one-way delay: 319.438 ms
Loss rate: 4.98%
-- Flow 2:
Average throughput: 4.07 Mbit/s
95th percentile per-packet one-way delay: 331.693 ms
Loss rate: 7.61%
-- Flow 3:
Average throughput: 3.59 Mbit/s
95th percentile per-packet one-way delay: 360.952 ms
Loss rate: 14.21%
```
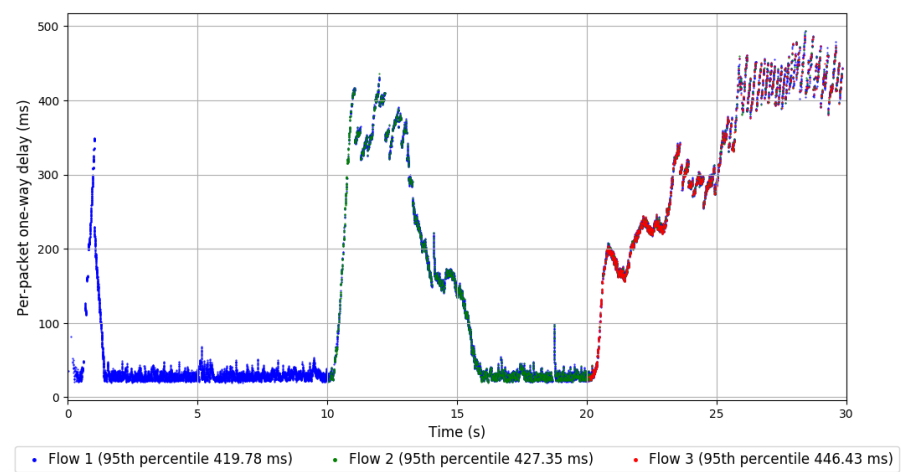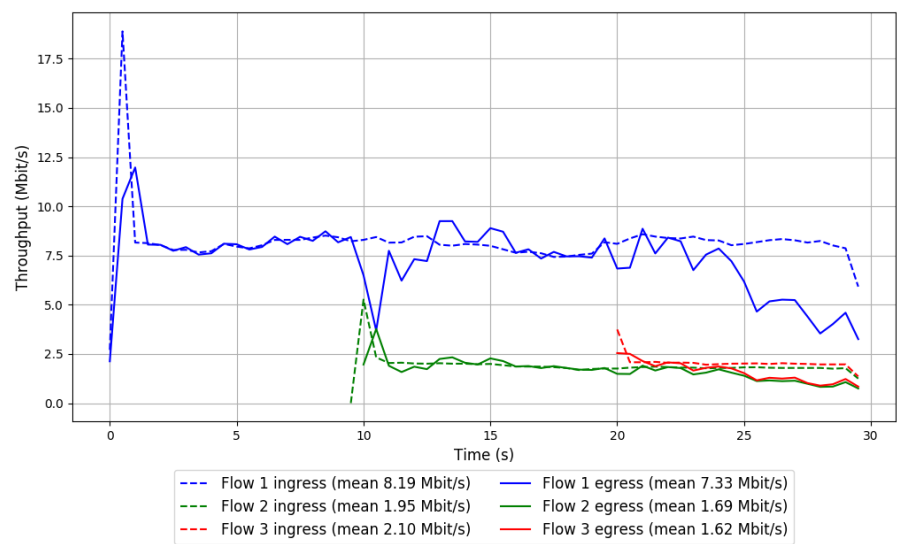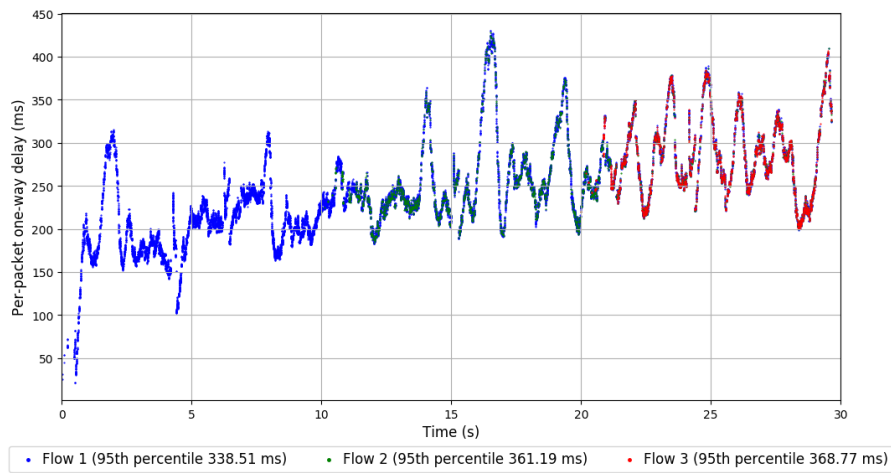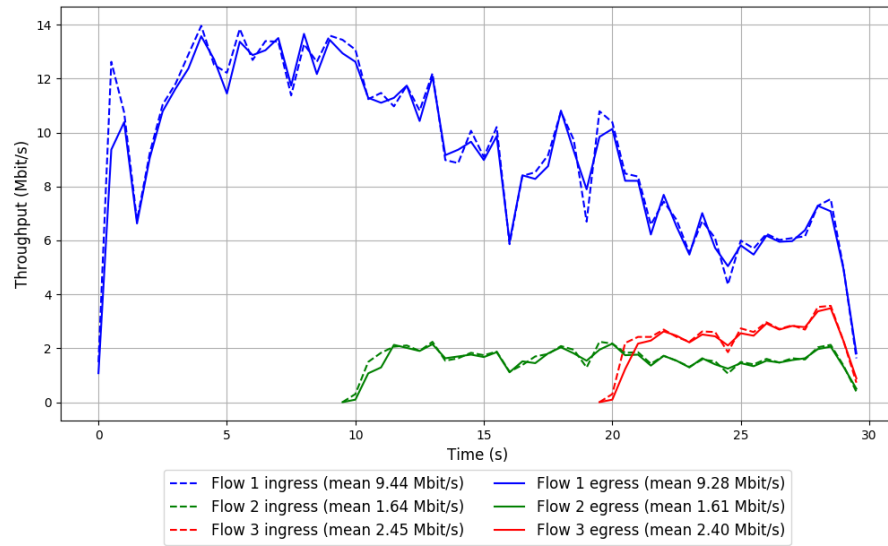
Run 2: Report of PCC — Data Link

Flow 1 ingress (mean 4.19 Mbit/s)   Flow 1 egress (mean 3.99 Mbit/s)
Flow 2 ingress (mean 4.39 Mbit/s)   Flow 2 egress (mean 4.07 Mbit/s)
Flow 3 ingress (mean 4.16 Mbit/s)   Flow 3 egress (mean 3.59 Mbit/s)

Flow 1 (95th percentile 319.44 ms)   Flow 2 (95th percentile 331.69 ms)   Flow 3 (95th percentile 360.95 ms)

```
Run 3: Statistics of PCC

Start at: 2018-01-16 01:07:33
End at: 2018-01-16 01:08:03
Local clock offset: 1.651 ms
Remote clock offset: -2.437 ms

# Below is generated by plot.py at 2018-01-16 02:10:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.99 Mbit/s
95th percentile per-packet one-way delay: 424.532 ms
Loss rate: 11.92%
-- Flow 1:
Average throughput: 7.33 Mbit/s
95th percentile per-packet one-way delay: 419.779 ms
Loss rate: 10.69%
-- Flow 2:
Average throughput: 1.69 Mbit/s
95th percentile per-packet one-way delay: 427.354 ms
Loss rate: 13.49%
-- Flow 3:
Average throughput: 1.62 Mbit/s
95th percentile per-packet one-way delay: 446.429 ms
Loss rate: 23.46%
```

Run 3: Report of PCC — Data Link

Flow 1 ingress (mean 8.19 Mbit/s) --- Flow 1 egress (mean 7.33 Mbit/s)
Flow 2 ingress (mean 1.95 Mbit/s) --- Flow 2 egress (mean 1.69 Mbit/s)
Flow 3 ingress (mean 2.10 Mbit/s) --- Flow 3 egress (mean 1.62 Mbit/s)

Flow 1 (95th percentile 419.78 ms)   Flow 2 (95th percentile 427.35 ms)   Flow 3 (95th percentile 446.43 ms)
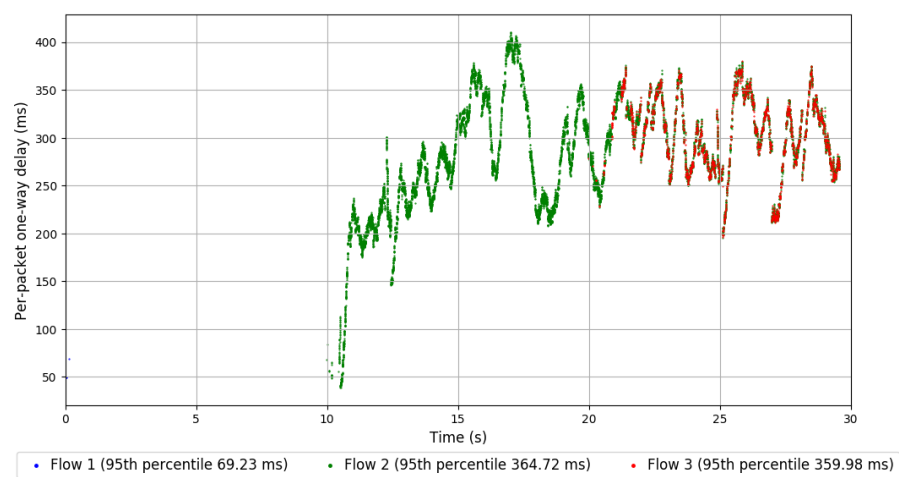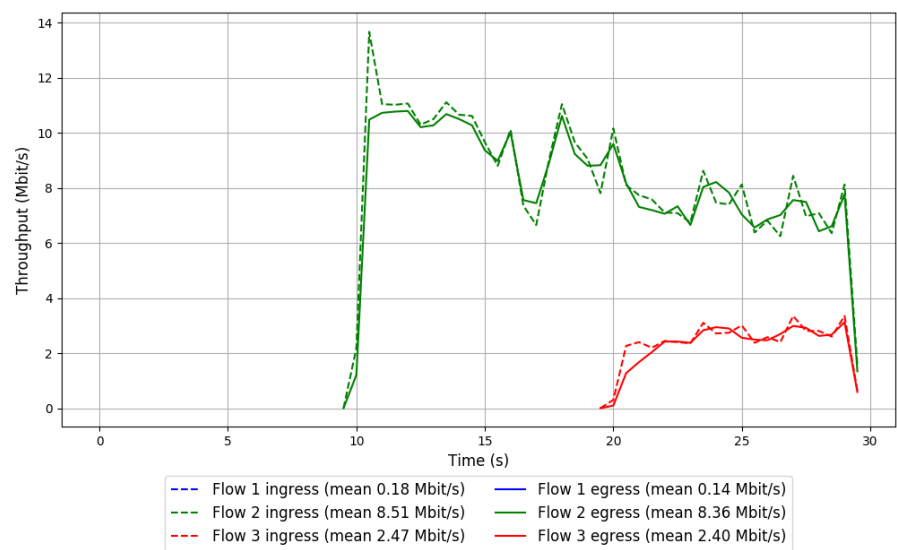
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```
Run 1: Statistics of QUIC Cubic

Start at: 2018-01-16 00:24:46
End at: 2018-01-16 00:25:16
Local clock offset: 4.606 ms
Remote clock offset: -2.537 ms

# Below is generated by plot.py at 2018-01-16 02:10:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 11.13 Mbit/s
95th percentile per-packet one-way delay: 345.071 ms
Loss rate: 2.11%
-- Flow 1:
Average throughput: 9.28 Mbit/s
95th percentile per-packet one-way delay: 338.511 ms
Loss rate: 1.80%
-- Flow 2:
Average throughput: 1.61 Mbit/s
95th percentile per-packet one-way delay: 361.194 ms
Loss rate: 3.16%
-- Flow 3:
Average throughput: 2.40 Mbit/s
95th percentile per-packet one-way delay: 368.775 ms
Loss rate: 4.20%
```
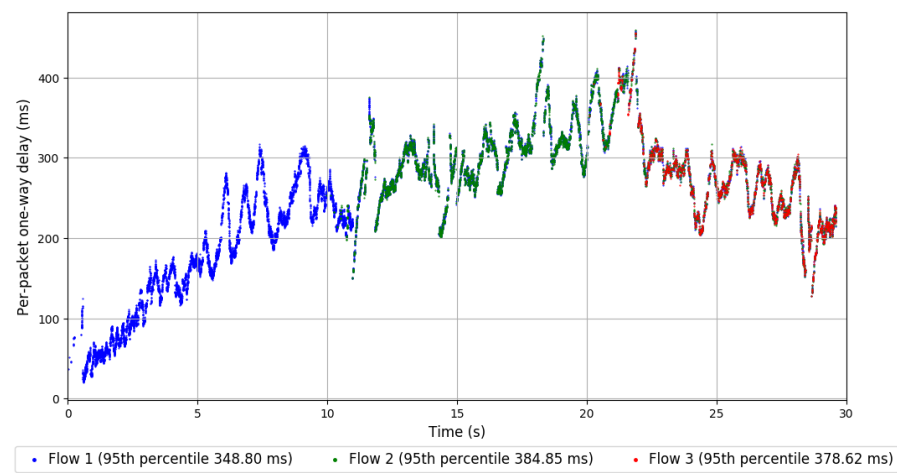
Run 1: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 9.44 Mbit/s)   Flow 1 egress (mean 9.28 Mbit/s)
Flow 2 ingress (mean 1.64 Mbit/s)   Flow 2 egress (mean 1.61 Mbit/s)
Flow 3 ingress (mean 2.45 Mbit/s)   Flow 3 egress (mean 2.40 Mbit/s)

Flow 1 (95th percentile 338.51 ms)   Flow 2 (95th percentile 361.19 ms)   Flow 3 (95th percentile 368.77 ms)
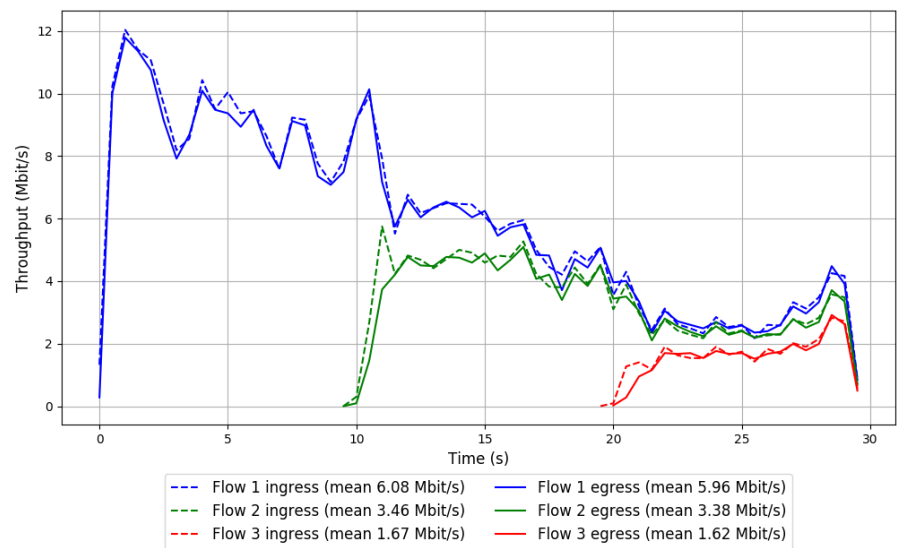
```
Run 2: Statistics of QUIC Cubic

Start at: 2018-01-16 00:42:35
End at: 2018-01-16 00:43:05
Local clock offset: 0.934 ms
Remote clock offset: -2.565 ms


# Below is generated by plot.py at 2018-01-16 02:10:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.33 Mbit/s
95th percentile per-packet one-way delay: 364.216 ms
Loss rate: 2.72%
-- Flow 1:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 69.228 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 8.36 Mbit/s
95th percentile per-packet one-way delay: 364.717 ms
Loss rate: 2.30%
-- Flow 3:
Average throughput: 2.40 Mbit/s
95th percentile per-packet one-way delay: 359.979 ms
Loss rate: 5.61%
```
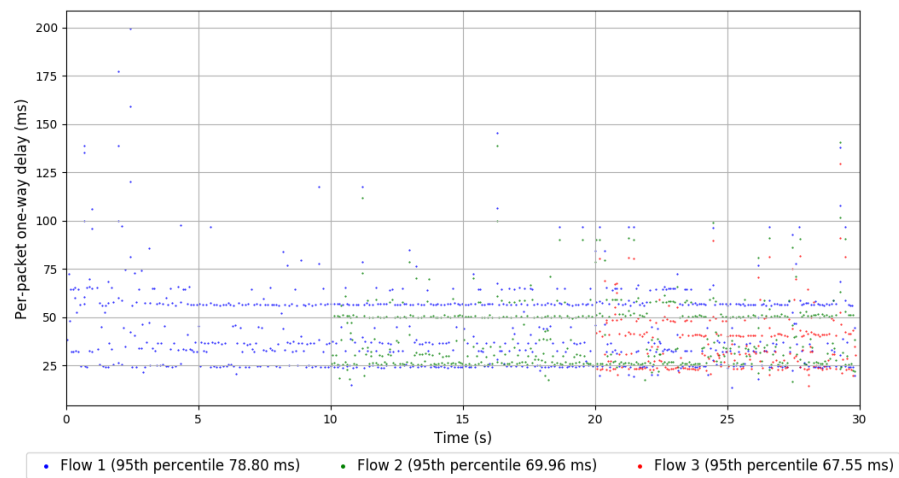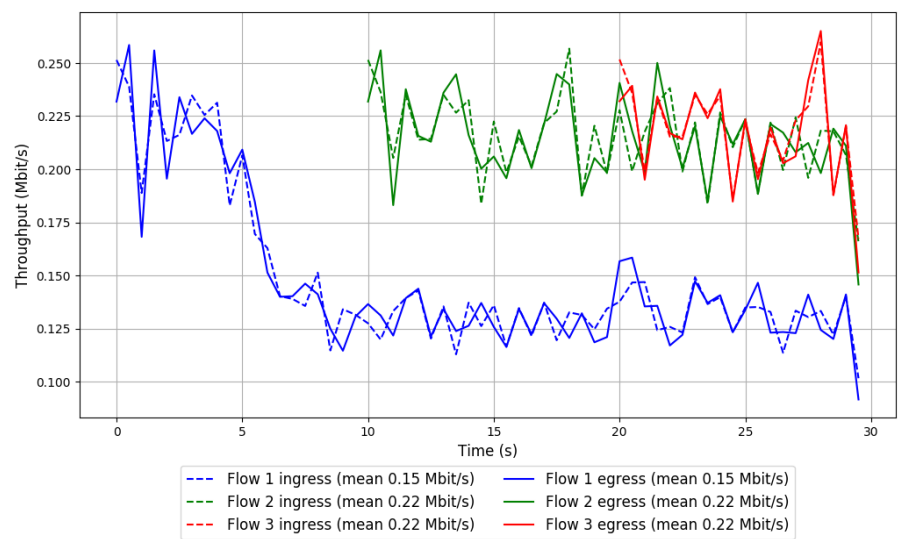
Run 2: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 0.18 Mbit/s) — — — Flow 1 egress (mean 0.14 Mbit/s)
Flow 2 ingress (mean 8.51 Mbit/s) — — — Flow 2 egress (mean 8.36 Mbit/s)
Flow 3 ingress (mean 2.47 Mbit/s) — — — Flow 3 egress (mean 2.40 Mbit/s)

Flow 1 (95th percentile 69.23 ms)   Flow 2 (95th percentile 364.72 ms)   Flow 3 (95th percentile 359.98 ms)

```
Run 3: Statistics of QUIC Cubic

Start at: 2018-01-16 01:00:24
End at: 2018-01-16 01:00:55
Local clock offset: 1.134 ms
Remote clock offset: -2.568 ms


# Below is generated by plot.py at 2018-01-16 02:10:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.73 Mbit/s
95th percentile per-packet one-way delay: 365.283 ms
Loss rate: 2.83%
-- Flow 1:
Average throughput: 5.96 Mbit/s
95th percentile per-packet one-way delay: 348.799 ms
Loss rate: 2.13%
-- Flow 2:
Average throughput: 3.38 Mbit/s
95th percentile per-packet one-way delay: 384.847 ms
Loss rate: 3.84%
-- Flow 3:
Average throughput: 1.62 Mbit/s
95th percentile per-packet one-way delay: 378.622 ms
Loss rate: 6.25%
```

Run 3: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 6.08 Mbit/s)   Flow 1 egress (mean 5.96 Mbit/s)
Flow 2 ingress (mean 3.46 Mbit/s)   Flow 2 egress (mean 3.38 Mbit/s)
Flow 3 ingress (mean 1.67 Mbit/s)   Flow 3 egress (mean 1.62 Mbit/s)

Flow 1 (95th percentile 348.80 ms)   Flow 2 (95th percentile 384.85 ms)   Flow 3 (95th percentile 378.62 ms)

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```
Run 1: Statistics of SCReAM

Start at: 2018-01-16 00:34:17
End at: 2018-01-16 00:34:47
Local clock offset: 2.377 ms
Remote clock offset: -2.557 ms

# Below is generated by plot.py at 2018-01-16 02:10:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 73.032 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 78.801 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 69.961 ms
Loss rate: 0.40%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 67.551 ms
Loss rate: 0.74%
```
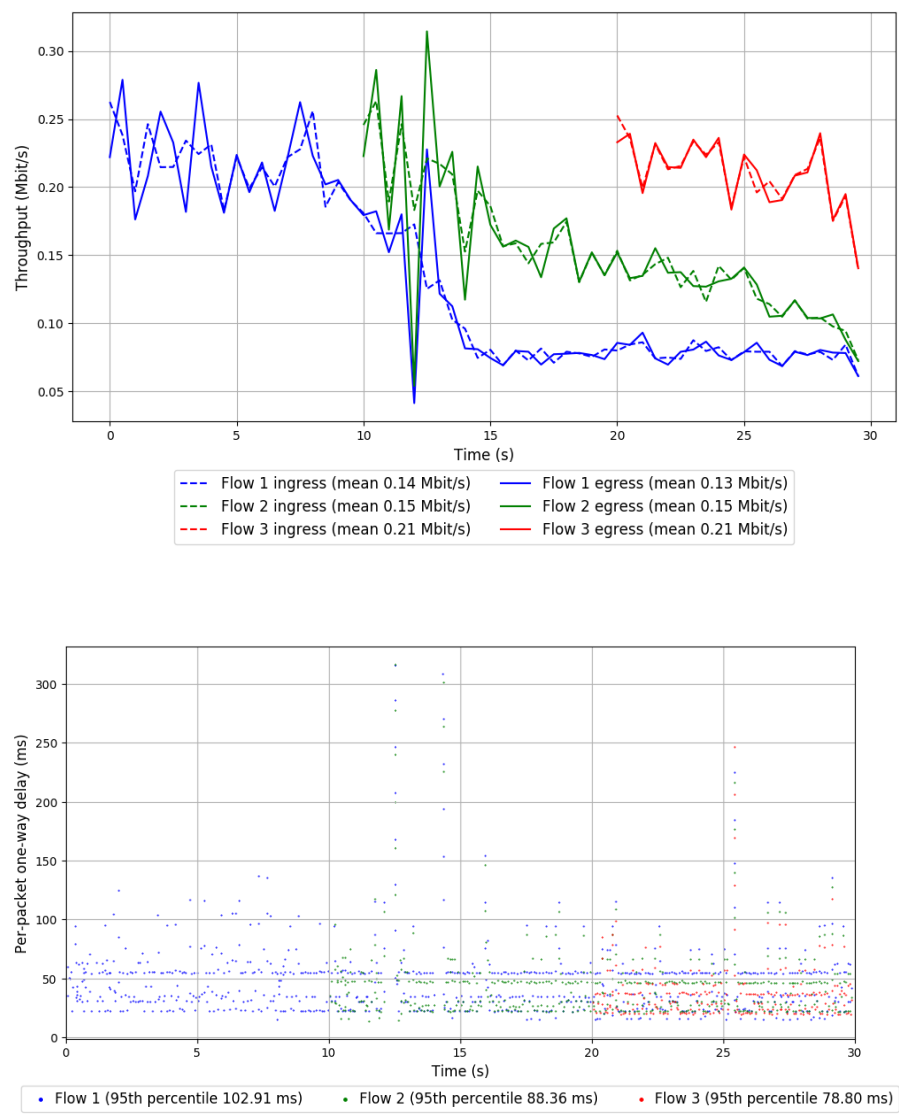
Run 1: Report of SCReAM — Data Link

Flow 1 ingress (mean 0.15 Mbit/s) --- Flow 1 egress (mean 0.15 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 78.80 ms)   Flow 2 (95th percentile 69.96 ms)   Flow 3 (95th percentile 67.55 ms)

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```
Run 2: Statistics of SCReAM

Start at: 2018-01-16 00:52:06
End at: 2018-01-16 00:52:36
Local clock offset: 0.837 ms
Remote clock offset: -2.534 ms


# Below is generated by plot.py at 2018-01-16 02:10:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 71.678 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 75.498 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 69.295 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 60.070 ms
Loss rate: 0.36%
```
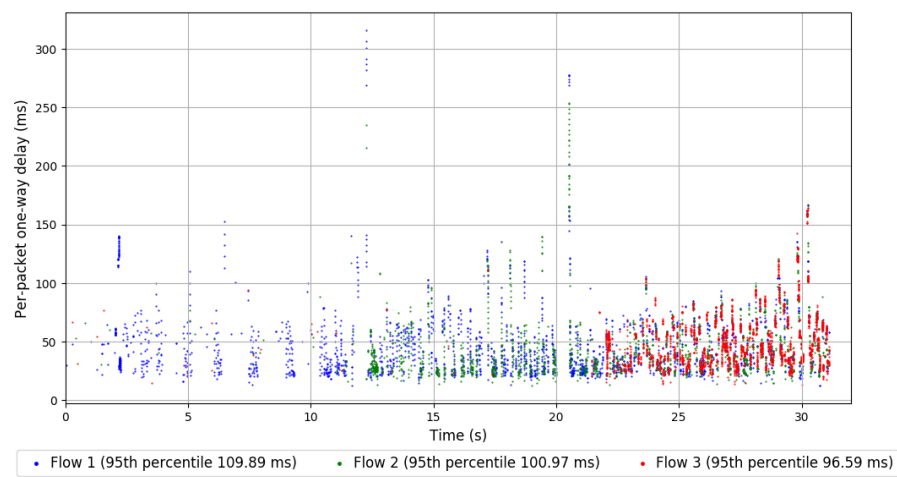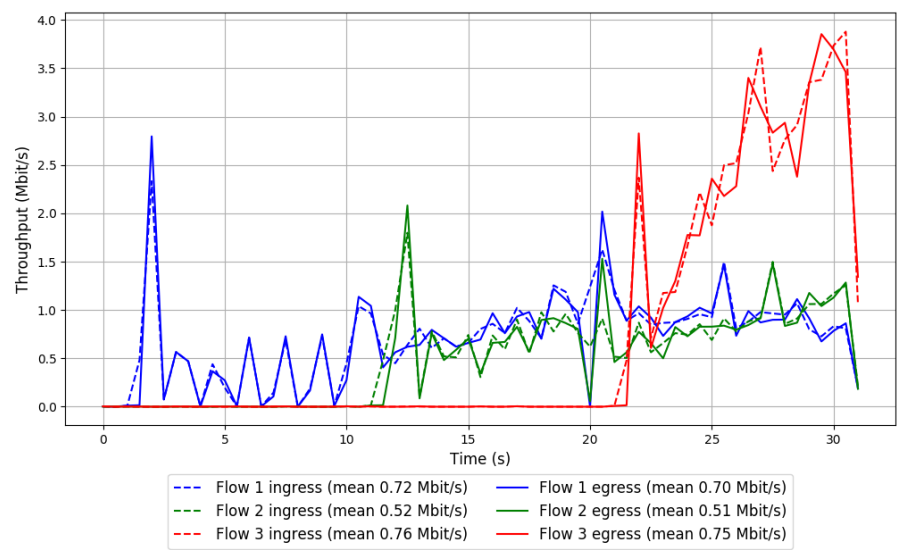
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2018-01-16 01:09:55
End at: 2018-01-16 01:10:25
Local clock offset: 1.758 ms
Remote clock offset: -2.391 ms

# Below is generated by plot.py at 2018-01-16 02:10:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 95.869 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 102.913 ms
Loss rate: 0.53%
-- Flow 2:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 88.357 ms
Loss rate: 0.99%
-- Flow 3:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 78.803 ms
Loss rate: 0.30%
```
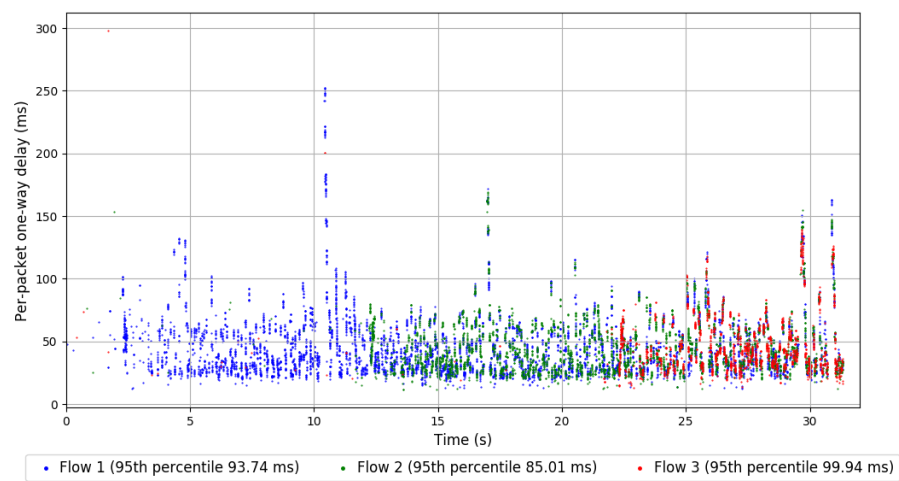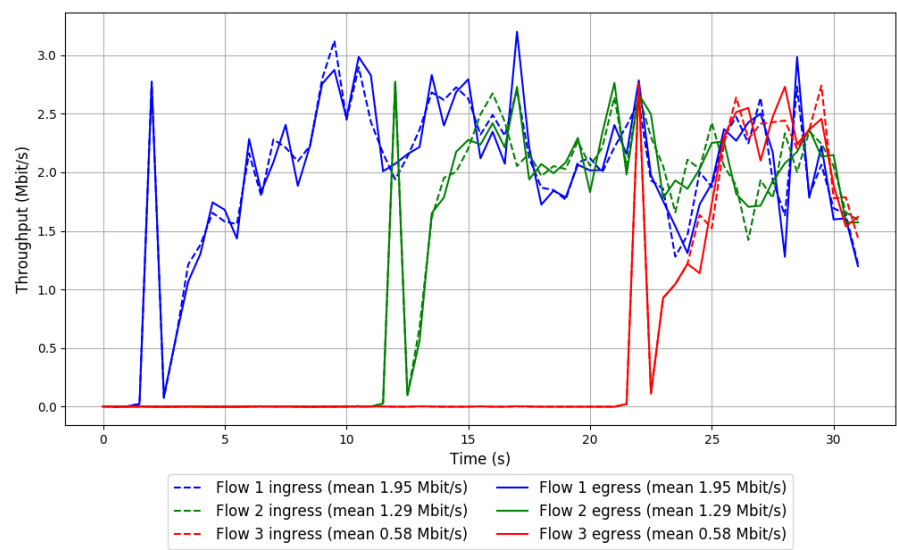
Run 3: Report of SCReAM — Data Link

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```
Run 1: Statistics of WebRTC media

Start at: 2018-01-16 00:33:06
End at: 2018-01-16 00:33:36
Local clock offset: 2.613 ms
Remote clock offset: -2.59 ms

# Below is generated by plot.py at 2018-01-16 02:10:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.95 Mbit/s
95th percentile per-packet one-way delay: 101.362 ms
Loss rate: 1.61%
-- Flow 1:
Average throughput: 0.70 Mbit/s
95th percentile per-packet one-way delay: 109.891 ms
Loss rate: 2.00%
-- Flow 2:
Average throughput: 0.51 Mbit/s
95th percentile per-packet one-way delay: 100.975 ms
Loss rate: 1.88%
-- Flow 3:
Average throughput: 0.75 Mbit/s
95th percentile per-packet one-way delay: 96.591 ms
Loss rate: 1.04%
```
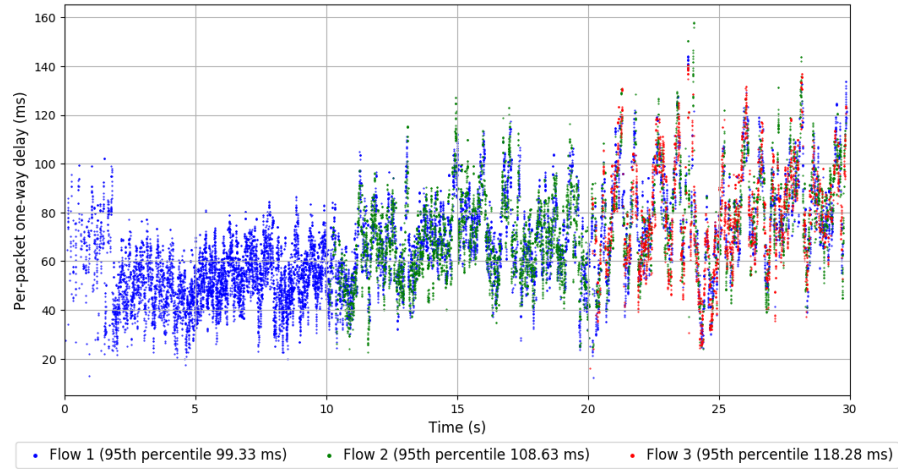
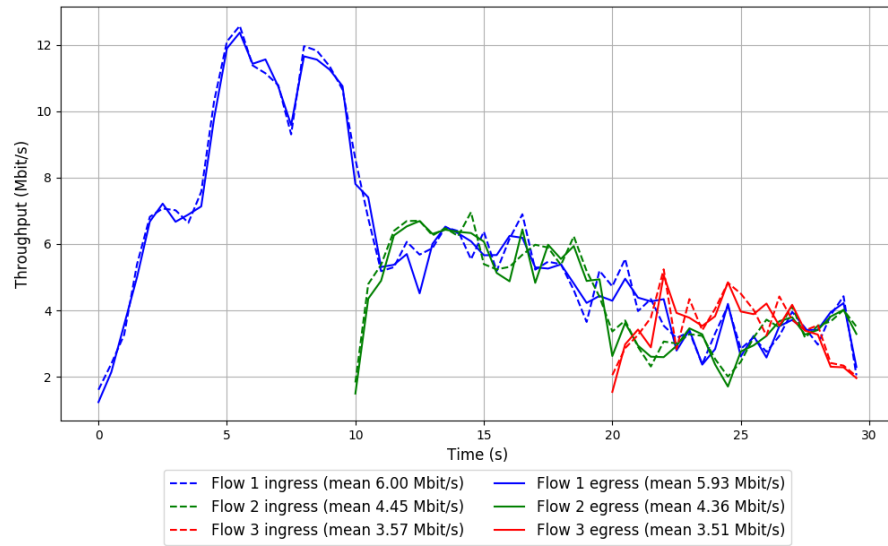Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-01-16 00:50:55
End at: 2018-01-16 00:51:25
Local clock offset: 0.871 ms
Remote clock offset: -2.66 ms
```

Run 2: Report of WebRTC media — Data Link

Flow 1 ingress (mean 0.95 Mbit/s)   Flow 1 egress (mean 1.33 Mbit/s)
Flow 2 ingress (mean 0.88 Mbit/s)   Flow 2 egress (mean 1.22 Mbit/s)
Flow 3 ingress (mean 0.38 Mbit/s)   Flow 3 egress (mean 0.53 Mbit/s)

Flow 1 (95th percentile 83.42 ms)   Flow 2 (95th percentile 85.38 ms)   Flow 3 (95th percentile 84.98 ms)

```
Run 3: Statistics of WebRTC media

Start at: 2018-01-16 01:08:44
End at: 2018-01-16 01:09:14
Local clock offset: 1.676 ms
Remote clock offset: -2.417 ms


# Below is generated by plot.py at 2018-01-16 02:10:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.78 Mbit/s
95th percentile per-packet one-way delay: 91.728 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 1.95 Mbit/s
95th percentile per-packet one-way delay: 93.736 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 1.29 Mbit/s
95th percentile per-packet one-way delay: 85.007 ms
Loss rate: 0.33%
-- Flow 3:
Average throughput: 0.58 Mbit/s
95th percentile per-packet one-way delay: 99.936 ms
Loss rate: 0.73%
```

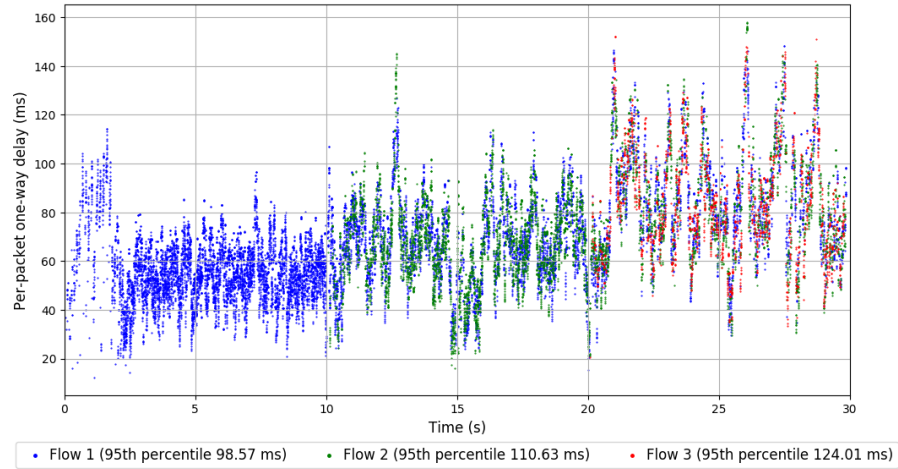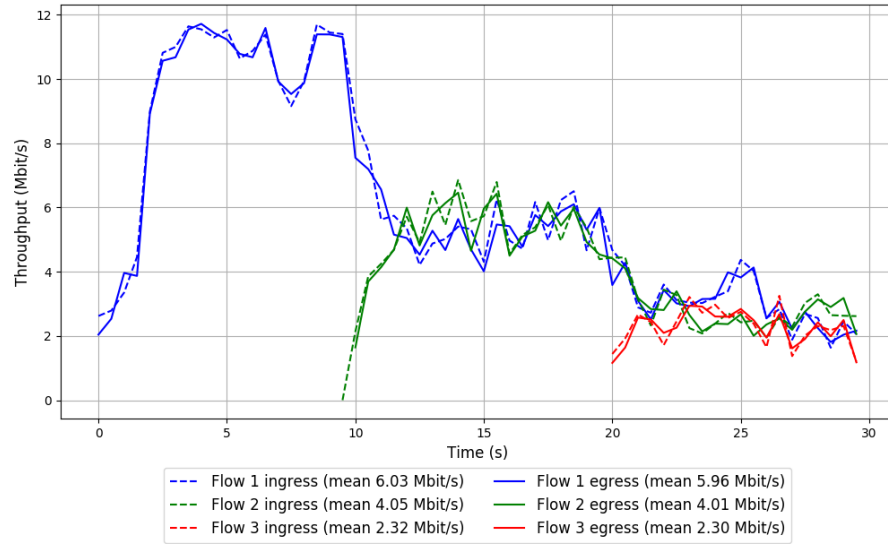Run 3: Report of WebRTC media — Data Link

```
Run 1: Statistics of Sprout

Start at: 2018-01-16 00:40:13
End at: 2018-01-16 00:40:43
Local clock offset: 1.235 ms
Remote clock offset: -2.656 ms


# Below is generated by plot.py at 2018-01-16 02:10:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 9.98 Mbit/s
95th percentile per-packet one-way delay: 105.309 ms
Loss rate: 1.62%
-- Flow 1:
Average throughput: 5.93 Mbit/s
95th percentile per-packet one-way delay: 99.335 ms
Loss rate: 1.19%
-- Flow 2:
Average throughput: 4.36 Mbit/s
95th percentile per-packet one-way delay: 108.634 ms
Loss rate: 2.29%
-- Flow 3:
Average throughput: 3.51 Mbit/s
95th percentile per-packet one-way delay: 118.284 ms
Loss rate: 2.13%
```
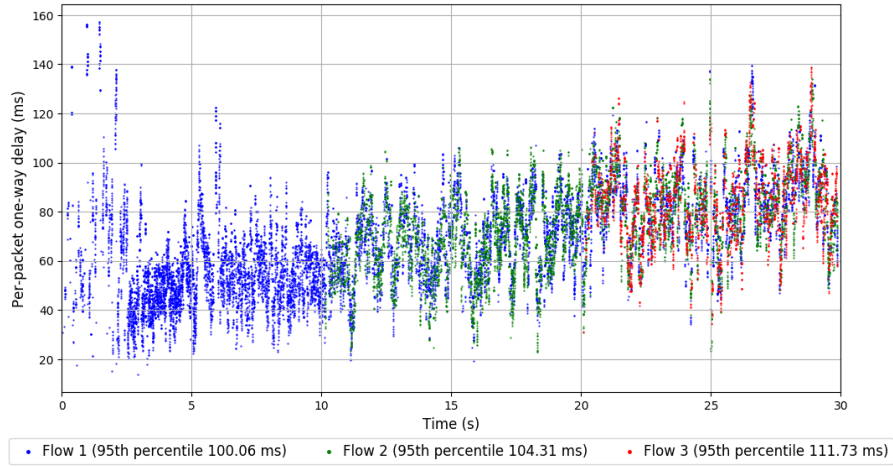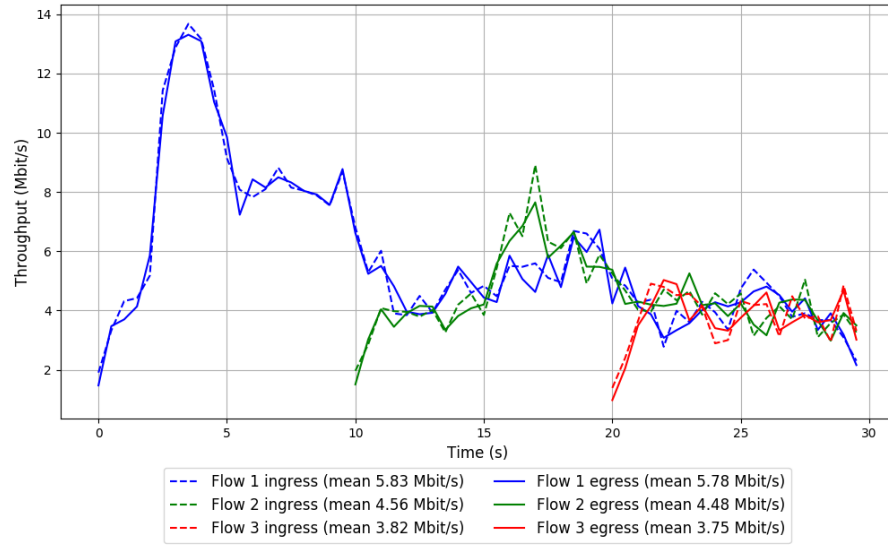
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2018-01-16 00:58:02
End at: 2018-01-16 00:58:32
Local clock offset: 1.136 ms
Remote clock offset: -2.566 ms


# Below is generated by plot.py at 2018-01-16 02:10:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 9.37 Mbit/s
95th percentile per-packet one-way delay: 106.692 ms
Loss rate: 1.42%
-- Flow 1:
Average throughput: 5.96 Mbit/s
95th percentile per-packet one-way delay: 98.573 ms
Loss rate: 1.37%
-- Flow 2:
Average throughput: 4.01 Mbit/s
95th percentile per-packet one-way delay: 110.634 ms
Loss rate: 1.51%
-- Flow 3:
Average throughput: 2.30 Mbit/s
95th percentile per-packet one-way delay: 124.006 ms
Loss rate: 1.45%
```
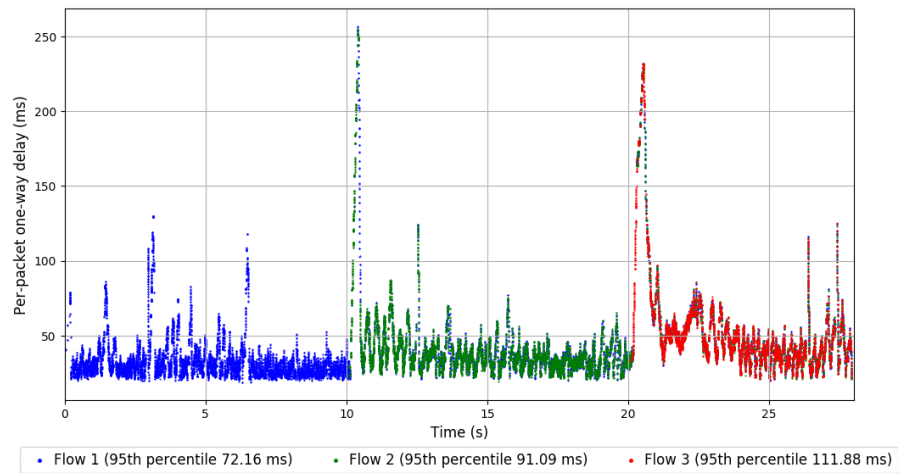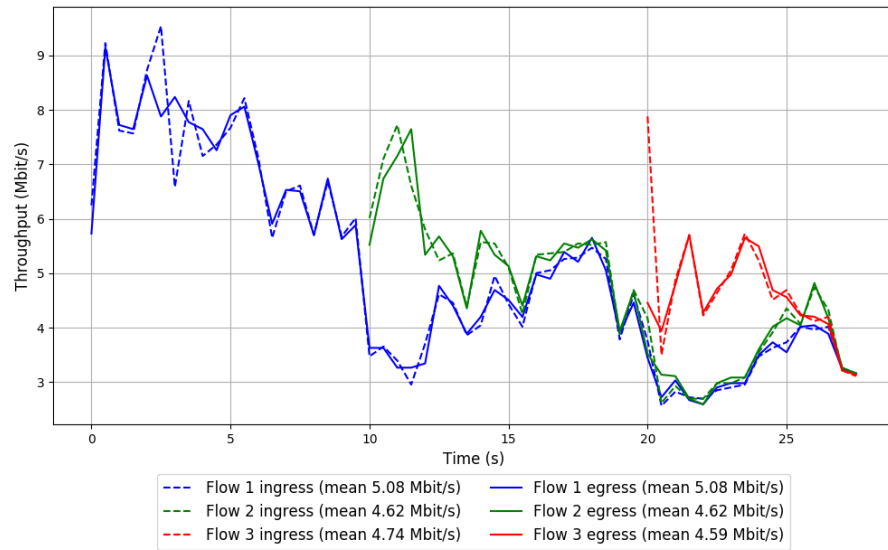
Run 2: Report of Sprout — Data Link

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```
Run 3: Statistics of Sprout

Start at: 2018-01-16 01:15:50
End at: 2018-01-16 01:16:20
Local clock offset: 2.395 ms
Remote clock offset: -2.461 ms


# Below is generated by plot.py at 2018-01-16 02:11:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 9.98 Mbit/s
95th percentile per-packet one-way delay: 104.257 ms
Loss rate: 1.50%
-- Flow 1:
Average throughput: 5.78 Mbit/s
95th percentile per-packet one-way delay: 100.063 ms
Loss rate: 1.11%
-- Flow 2:
Average throughput: 4.48 Mbit/s
95th percentile per-packet one-way delay: 104.310 ms
Loss rate: 1.87%
-- Flow 3:
Average throughput: 3.75 Mbit/s
95th percentile per-packet one-way delay: 111.730 ms
Loss rate: 2.40%
```

Run 3: Report of Sprout — Data Link

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

Start at: 2018-01-16 00:25:57
End at: 2018-01-16 00:26:27
Local clock offset: 4.487 ms
Remote clock offset: -2.547 ms


# Below is generated by plot.py at 2018-01-16 02:11:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 9.33 Mbit/s
95th percentile per-packet one-way delay: 80.962 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 5.08 Mbit/s
95th percentile per-packet one-way delay: 72.158 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 4.62 Mbit/s
95th percentile per-packet one-way delay: 91.088 ms
Loss rate: 0.27%
-- Flow 3:
Average throughput: 4.59 Mbit/s
95th percentile per-packet one-way delay: 111.882 ms
Loss rate: 3.77%
```
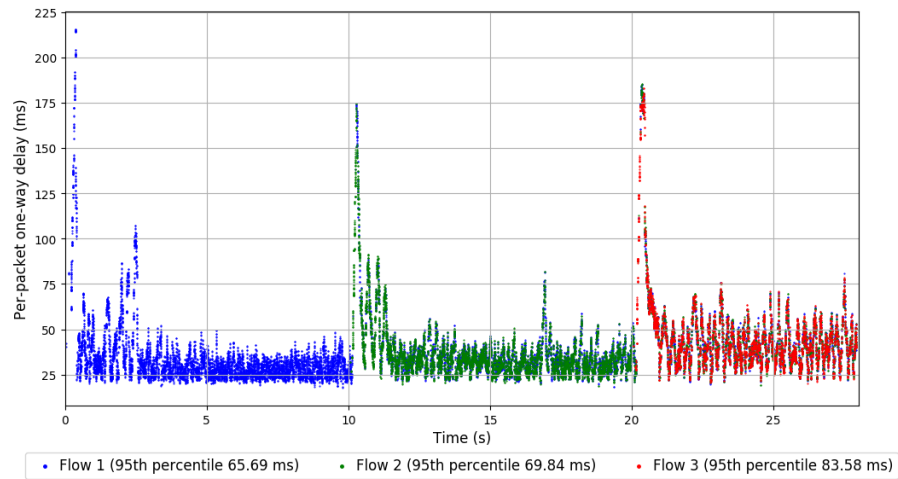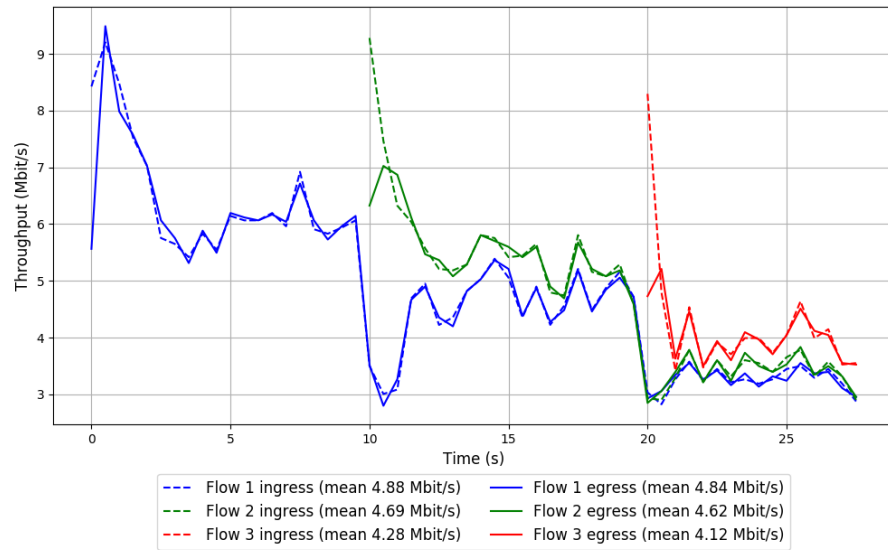
Run 1: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 5.08 Mbit/s)   Flow 1 egress (mean 5.08 Mbit/s)
Flow 2 ingress (mean 4.62 Mbit/s)   Flow 2 egress (mean 4.62 Mbit/s)
Flow 3 ingress (mean 4.74 Mbit/s)   Flow 3 egress (mean 4.59 Mbit/s)

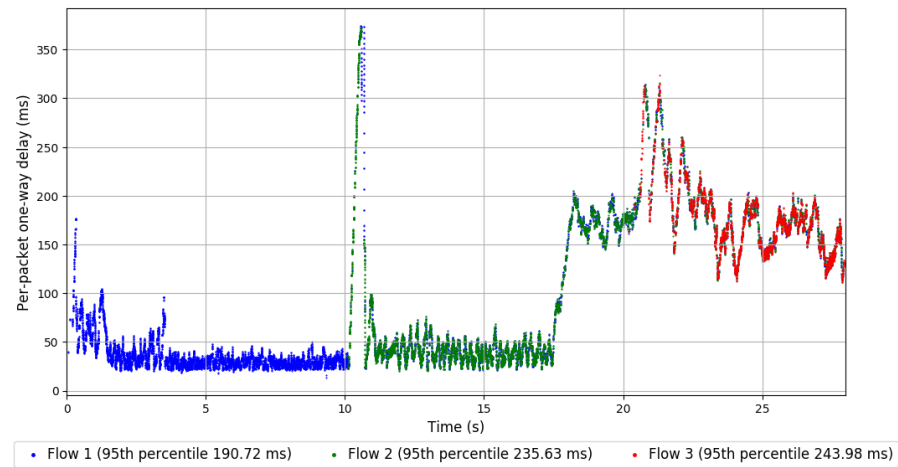Flow 1 (95th percentile 72.16 ms)   Flow 2 (95th percentile 91.09 ms)   Flow 3 (95th percentile 111.88 ms)

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

Start at: 2018-01-16 00:43:47
End at: 2018-01-16 00:44:17
Local clock offset: 0.93 ms
Remote clock offset: -2.551 ms

# Below is generated by plot.py at 2018-01-16 02:11:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.96 Mbit/s
95th percentile per-packet one-way delay: 69.391 ms
Loss rate: 1.69%
-- Flow 1:
Average throughput: 4.84 Mbit/s
95th percentile per-packet one-way delay: 65.694 ms
Loss rate: 0.98%
-- Flow 2:
Average throughput: 4.62 Mbit/s
95th percentile per-packet one-way delay: 69.839 ms
Loss rate: 1.67%
-- Flow 3:
Average throughput: 4.12 Mbit/s
95th percentile per-packet one-way delay: 83.580 ms
Loss rate: 4.61%
```
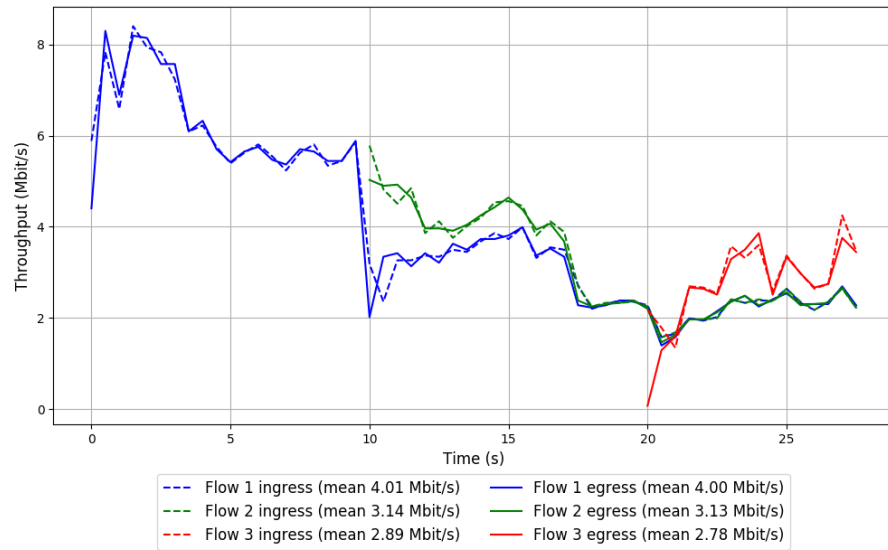
Run 2: Report of TaoVA-100x — Data Link

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

Start at: 2018-01-16 01:01:36
End at: 2018-01-16 01:02:06
Local clock offset: 1.269 ms
Remote clock offset: -2.553 ms


# Below is generated by plot.py at 2018-01-16 02:11:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.77 Mbit/s
95th percentile per-packet one-way delay: 211.669 ms
Loss rate: 1.32%
-- Flow 1:
Average throughput: 4.00 Mbit/s
95th percentile per-packet one-way delay: 190.719 ms
Loss rate: 0.55%
-- Flow 2:
Average throughput: 3.13 Mbit/s
95th percentile per-packet one-way delay: 235.632 ms
Loss rate: 0.84%
-- Flow 3:
Average throughput: 2.78 Mbit/s
95th percentile per-packet one-way delay: 243.976 ms
Loss rate: 6.25%
```
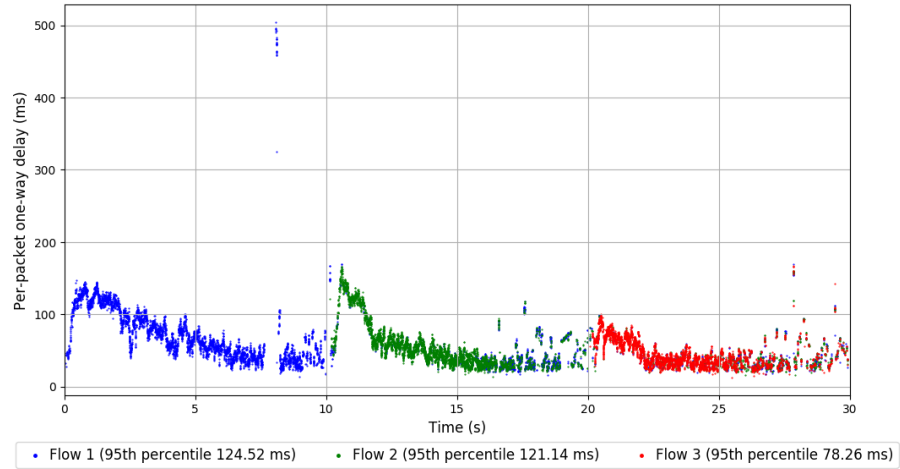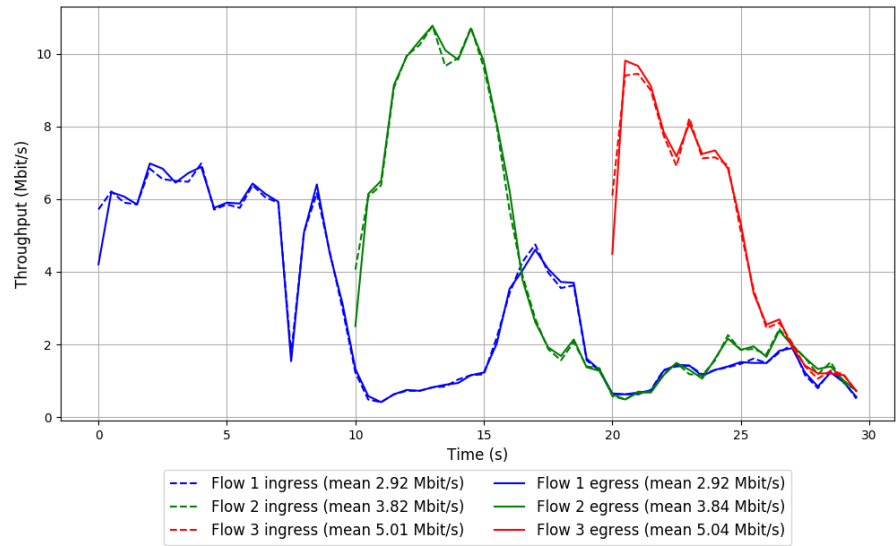
Run 3: Report of TaoVA-100x — Data Link

- - - Flow 1 ingress (mean 4.01 Mbit/s) —— Flow 1 egress (mean 4.00 Mbit/s)
- - - Flow 2 ingress (mean 3.14 Mbit/s) —— Flow 2 egress (mean 3.13 Mbit/s)
- - - Flow 3 ingress (mean 2.89 Mbit/s) —— Flow 3 egress (mean 2.78 Mbit/s)

· Flow 1 (95th percentile 190.72 ms)   · Flow 2 (95th percentile 235.63 ms)   · Flow 3 (95th percentile 243.98 ms)
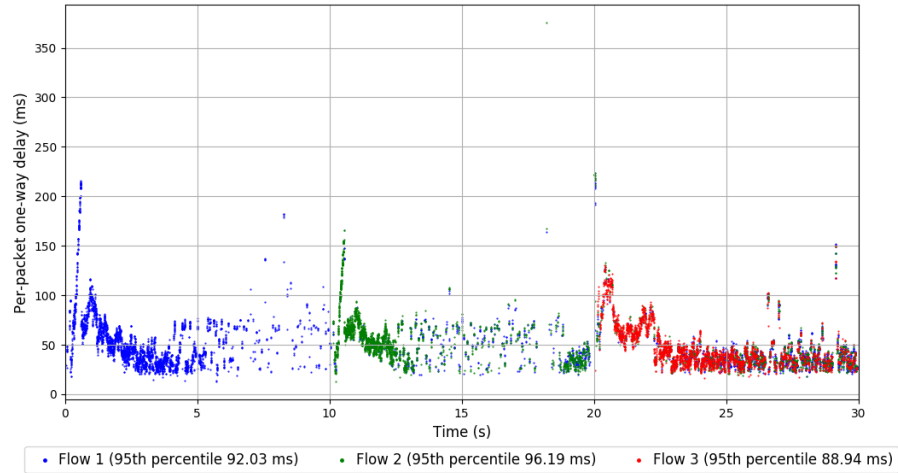
```
Run 1: Statistics of TCP Vegas

Start at: 2018-01-16 00:28:20
End at: 2018-01-16 00:28:50
Local clock offset: 4.085 ms
Remote clock offset: -2.639 ms


# Below is generated by plot.py at 2018-01-16 02:11:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.12 Mbit/s
95th percentile per-packet one-way delay: 120.181 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 2.92 Mbit/s
95th percentile per-packet one-way delay: 124.519 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 3.84 Mbit/s
95th percentile per-packet one-way delay: 121.140 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 5.04 Mbit/s
95th percentile per-packet one-way delay: 78.256 ms
Loss rate: 0.14%
```

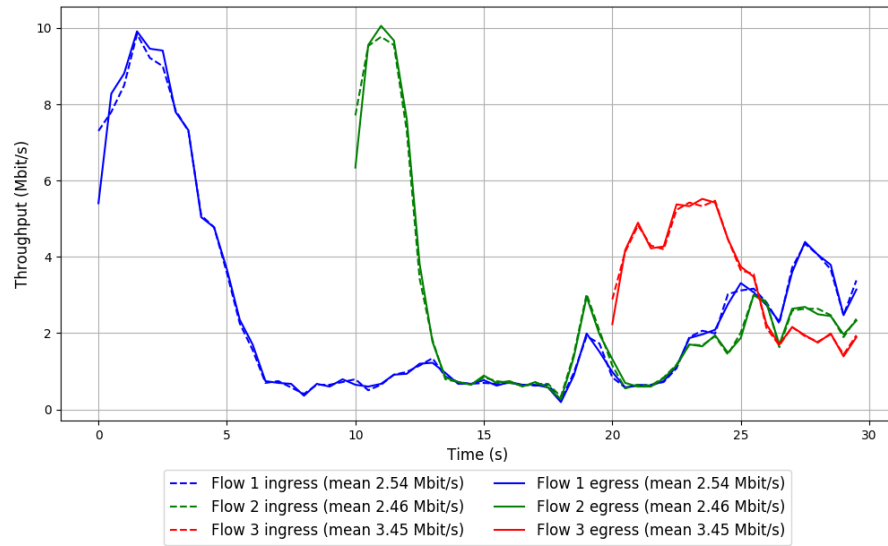Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2018-01-16 00:46:09
End at: 2018-01-16 00:46:40
Local clock offset: 0.747 ms
Remote clock offset: -2.636 ms


# Below is generated by plot.py at 2018-01-16 02:11:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.31 Mbit/s
95th percentile per-packet one-way delay: 92.800 ms
Loss rate: 0.42%
-- Flow 1:
Average throughput: 2.54 Mbit/s
95th percentile per-packet one-way delay: 92.032 ms
Loss rate: 0.38%
-- Flow 2:
Average throughput: 2.46 Mbit/s
95th percentile per-packet one-way delay: 96.188 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 3.45 Mbit/s
95th percentile per-packet one-way delay: 88.935 ms
Loss rate: 0.39%
```

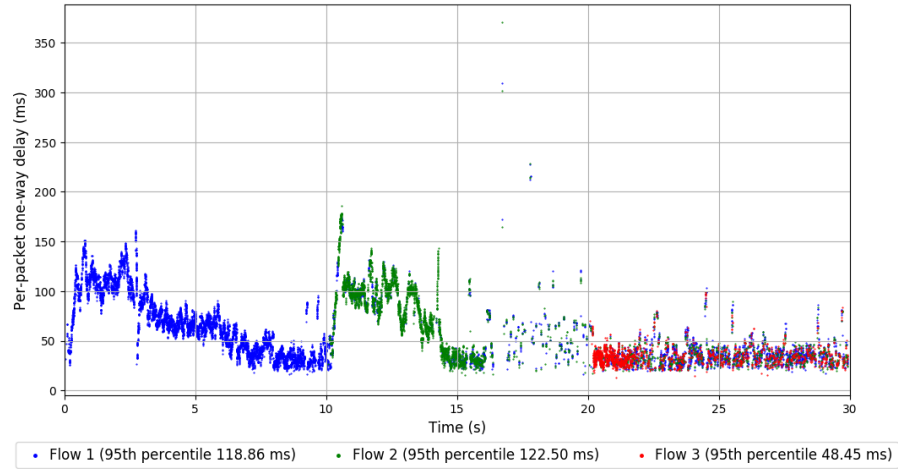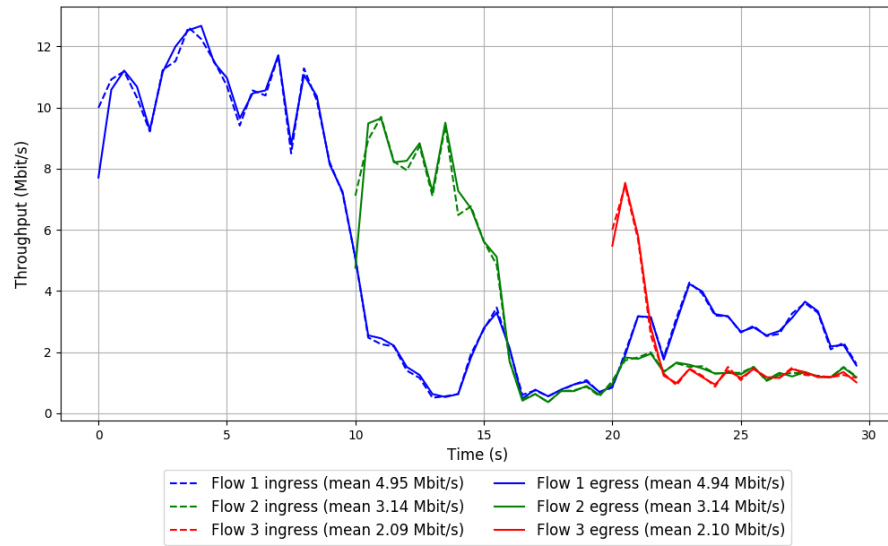Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2018-01-16 01:03:58
End at: 2018-01-16 01:04:28
Local clock offset: 1.429 ms
Remote clock offset: -2.412 ms


# Below is generated by plot.py at 2018-01-16 02:11:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.72 Mbit/s
95th percentile per-packet one-way delay: 118.068 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 4.94 Mbit/s
95th percentile per-packet one-way delay: 118.863 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 3.14 Mbit/s
95th percentile per-packet one-way delay: 122.505 ms
Loss rate: 0.35%
-- Flow 3:
Average throughput: 2.10 Mbit/s
95th percentile per-packet one-way delay: 48.447 ms
Loss rate: 0.41%
```

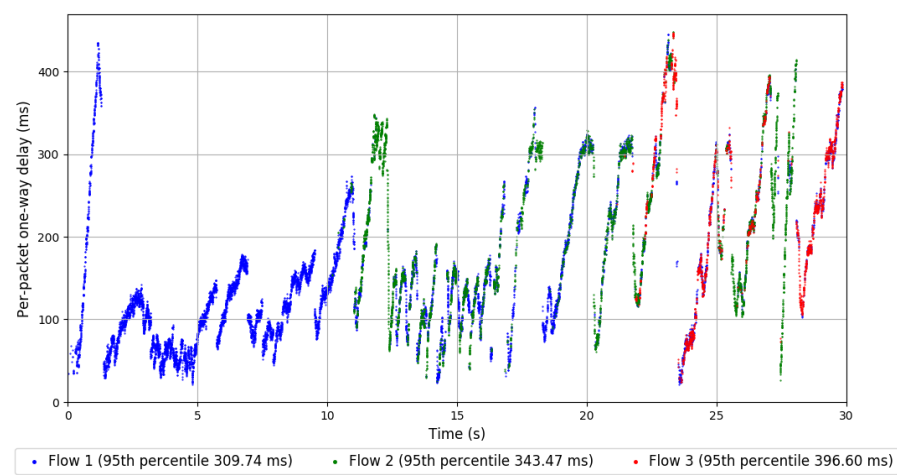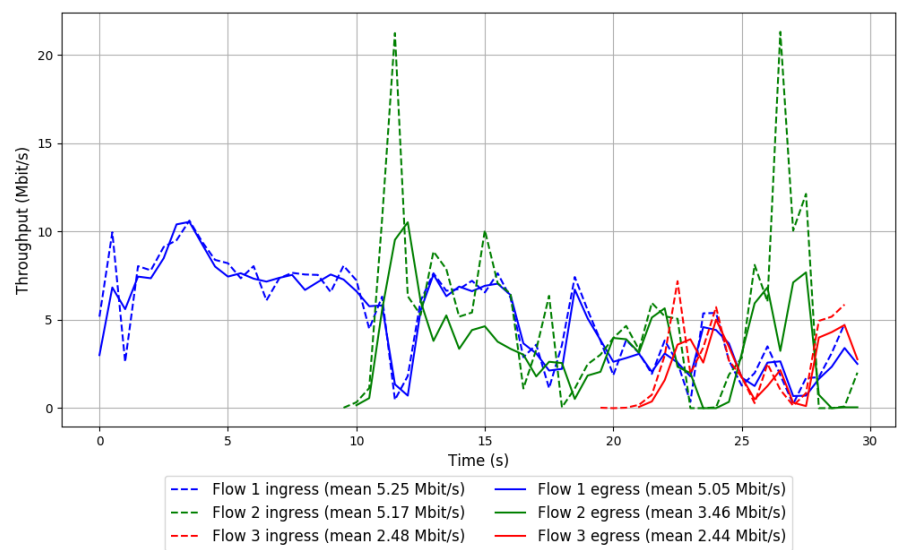Run 3: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2018-01-16 00:39:02
End at: 2018-01-16 00:39:32
Local clock offset: 1.314 ms
Remote clock offset: -2.648 ms


# Below is generated by plot.py at 2018-01-16 02:11:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.05 Mbit/s
95th percentile per-packet one-way delay: 342.373 ms
Loss rate: 14.78%
-- Flow 1:
Average throughput: 5.05 Mbit/s
95th percentile per-packet one-way delay: 309.740 ms
Loss rate: 2.80%
-- Flow 2:
Average throughput: 3.46 Mbit/s
95th percentile per-packet one-way delay: 343.472 ms
Loss rate: 33.70%
-- Flow 3:
Average throughput: 2.44 Mbit/s
95th percentile per-packet one-way delay: 396.597 ms
Loss rate: 10.70%
```

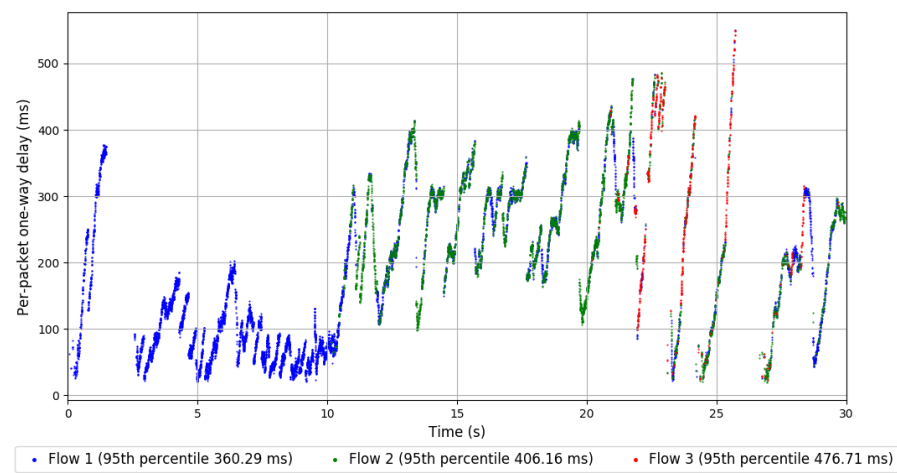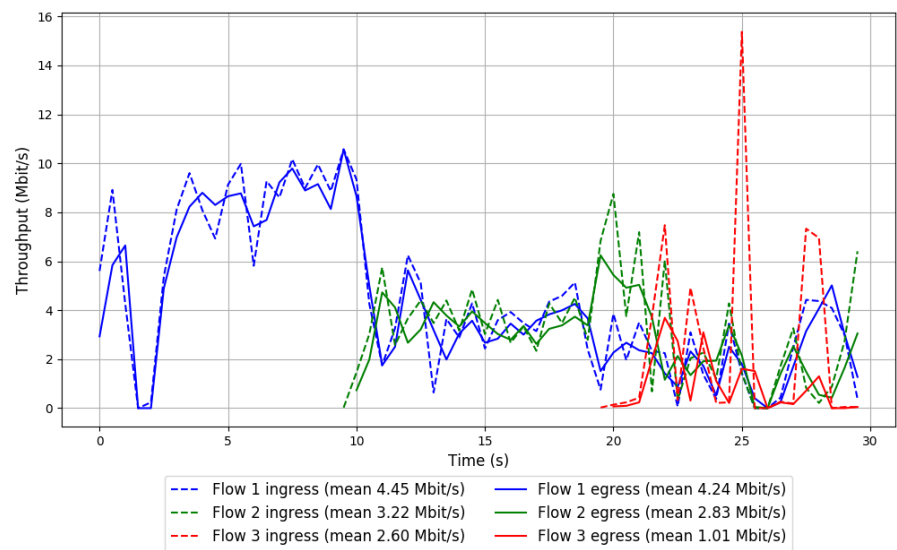Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2018-01-16 00:56:50
End at: 2018-01-16 00:57:20
Local clock offset: 1.133 ms
Remote clock offset: -2.637 ms


# Below is generated by plot.py at 2018-01-16 02:11:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.44 Mbit/s
95th percentile per-packet one-way delay: 391.658 ms
Loss rate: 13.66%
-- Flow 1:
Average throughput: 4.24 Mbit/s
95th percentile per-packet one-way delay: 360.294 ms
Loss rate: 5.06%
-- Flow 2:
Average throughput: 2.83 Mbit/s
95th percentile per-packet one-way delay: 406.163 ms
Loss rate: 12.53%
-- Flow 3:
Average throughput: 1.01 Mbit/s
95th percentile per-packet one-way delay: 476.711 ms
Loss rate: 62.04%
```

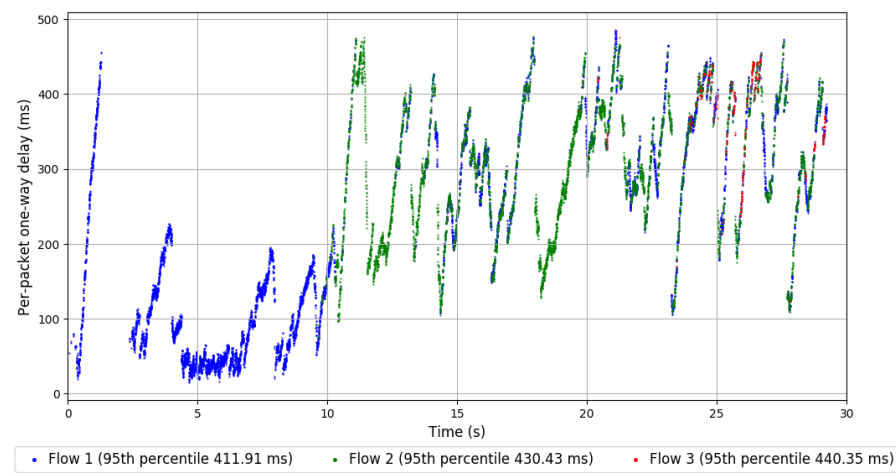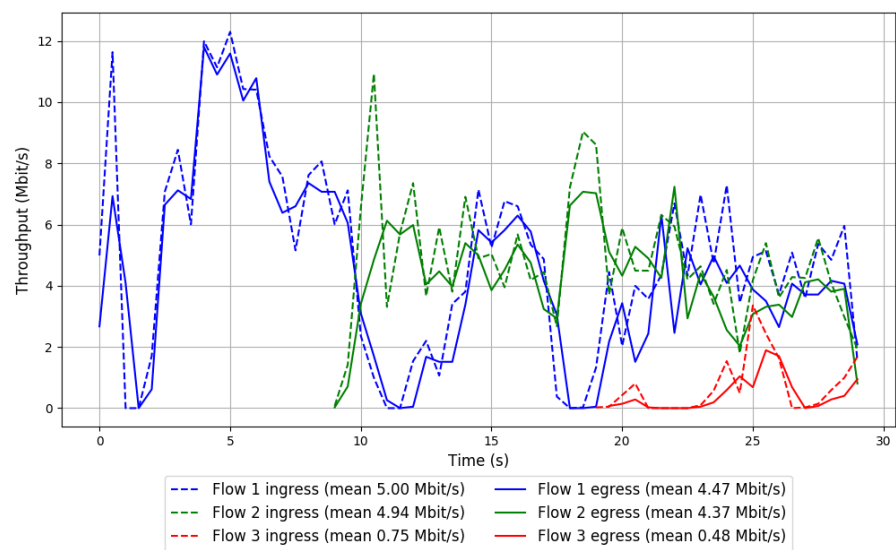Run 2: Report of Verus — Data Link

```
Run 3: Statistics of Verus

Start at: 2018-01-16 01:14:39
End at: 2018-01-16 01:15:09
Local clock offset: 2.29 ms
Remote clock offset: -2.425 ms


# Below is generated by plot.py at 2018-01-16 02:11:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.56 Mbit/s
95th percentile per-packet one-way delay: 422.612 ms
Loss rate: 12.31%
-- Flow 1:
Average throughput: 4.47 Mbit/s
95th percentile per-packet one-way delay: 411.913 ms
Loss rate: 10.42%
-- Flow 2:
Average throughput: 4.37 Mbit/s
95th percentile per-packet one-way delay: 430.428 ms
Loss rate: 13.09%
-- Flow 3:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 440.351 ms
Loss rate: 39.01%
```
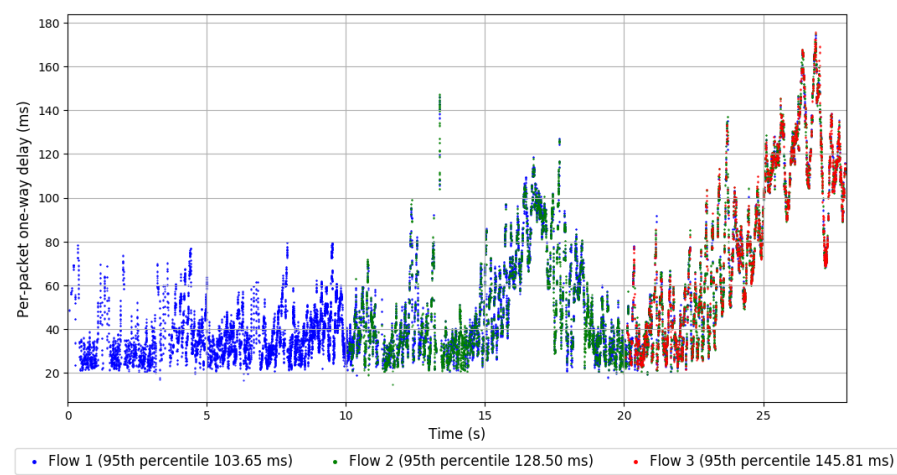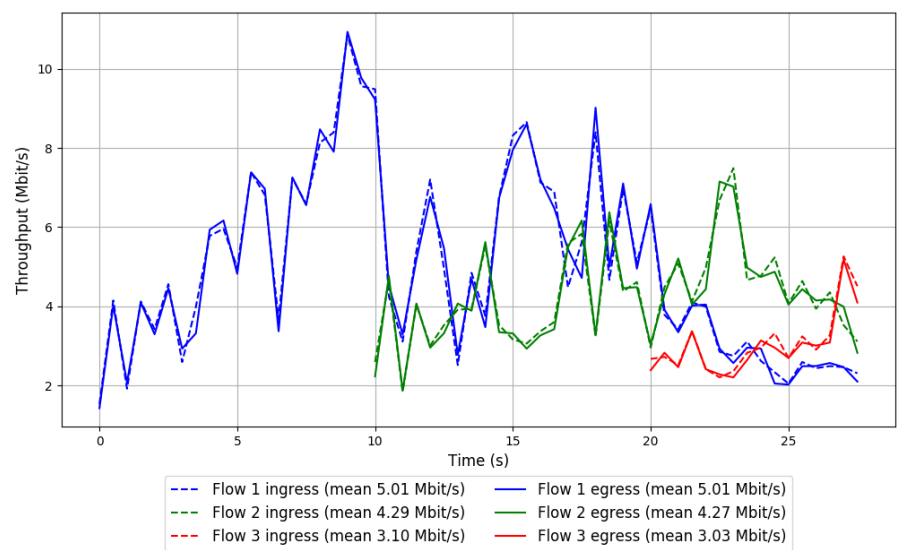
Run 3: Report of Verus — Data Link

```
Run 1: Statistics of Copa

Start at: 2018-01-16 00:37:50
End at: 2018-01-16 00:38:20
Local clock offset: 1.569 ms
Remote clock offset: -2.659 ms


# Below is generated by plot.py at 2018-01-16 02:11:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.60 Mbit/s
95th percentile per-packet one-way delay: 123.135 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 5.01 Mbit/s
95th percentile per-packet one-way delay: 103.646 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 4.27 Mbit/s
95th percentile per-packet one-way delay: 128.505 ms
Loss rate: 0.62%
-- Flow 3:
Average throughput: 3.03 Mbit/s
95th percentile per-packet one-way delay: 145.805 ms
Loss rate: 2.85%
```

Run 1: Report of Copa — Data Link

Flow 1 ingress (mean 5.01 Mbit/s) --- Flow 1 egress (mean 5.01 Mbit/s)
Flow 2 ingress (mean 4.29 Mbit/s) --- Flow 2 egress (mean 4.27 Mbit/s)
Flow 3 ingress (mean 3.10 Mbit/s) --- Flow 3 egress (mean 3.03 Mbit/s)

Flow 1 (95th percentile 103.65 ms)   Flow 2 (95th percentile 128.50 ms)   Flow 3 (95th percentile 145.81 ms)
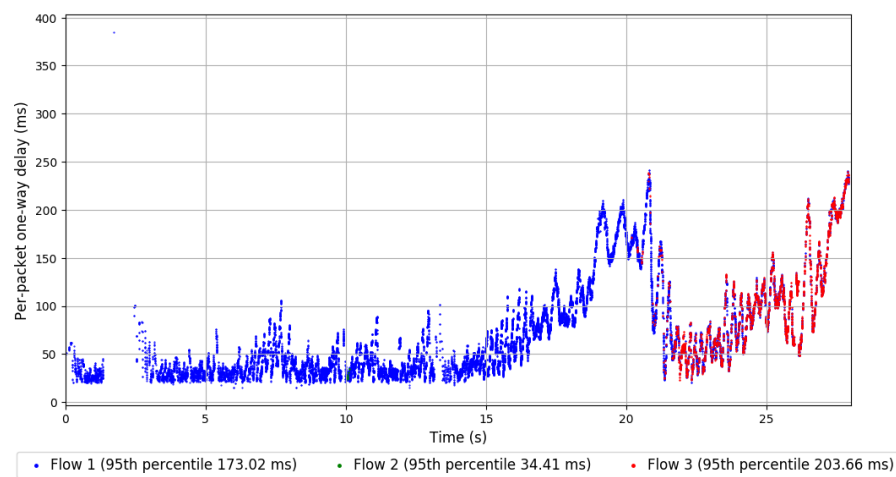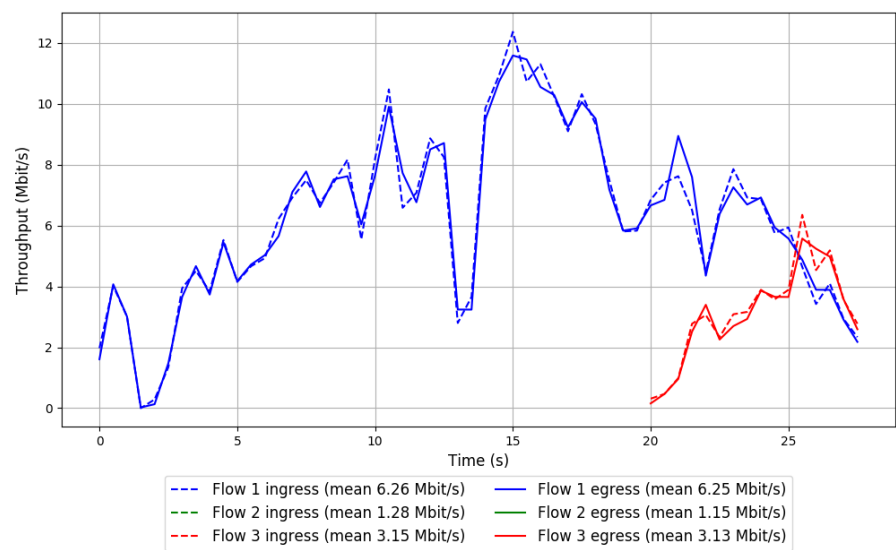
71

```
Run 2: Statistics of Copa

Start at: 2018-01-16 00:55:39
End at: 2018-01-16 00:56:09
Local clock offset: 0.988 ms
Remote clock offset: -2.639 ms


# Below is generated by plot.py at 2018-01-16 02:11:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.12 Mbit/s
95th percentile per-packet one-way delay: 179.814 ms
Loss rate: 0.73%
-- Flow 1:
Average throughput: 6.25 Mbit/s
95th percentile per-packet one-way delay: 173.016 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 1.15 Mbit/s
95th percentile per-packet one-way delay: 34.410 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 3.13 Mbit/s
95th percentile per-packet one-way delay: 203.657 ms
Loss rate: 2.86%
```

Run 2: Report of Copa — Data Link

Flow 1 ingress (mean 6.26 Mbit/s)   Flow 1 egress (mean 6.25 Mbit/s)
Flow 2 ingress (mean 1.28 Mbit/s)   Flow 2 egress (mean 1.15 Mbit/s)
Flow 3 ingress (mean 3.15 Mbit/s)   Flow 3 egress (mean 3.13 Mbit/s)

Flow 1 (95th percentile 173.02 ms)   Flow 2 (95th percentile 34.41 ms)   Flow 3 (95th percentile 203.66 ms)
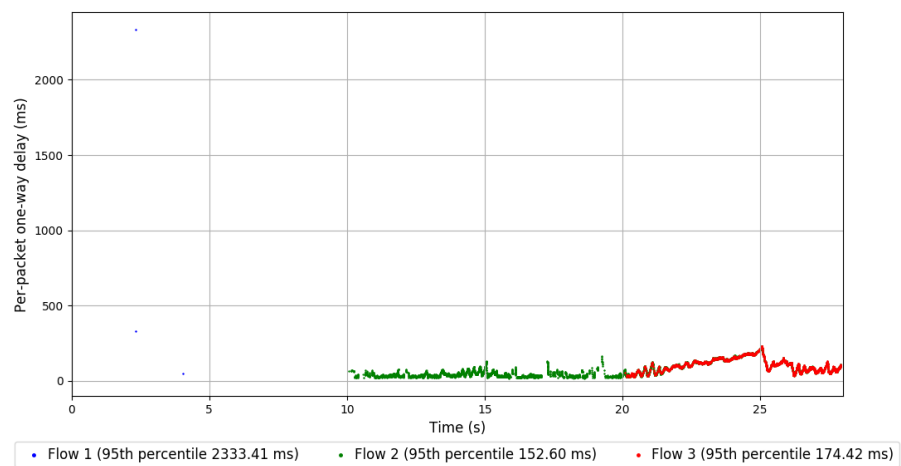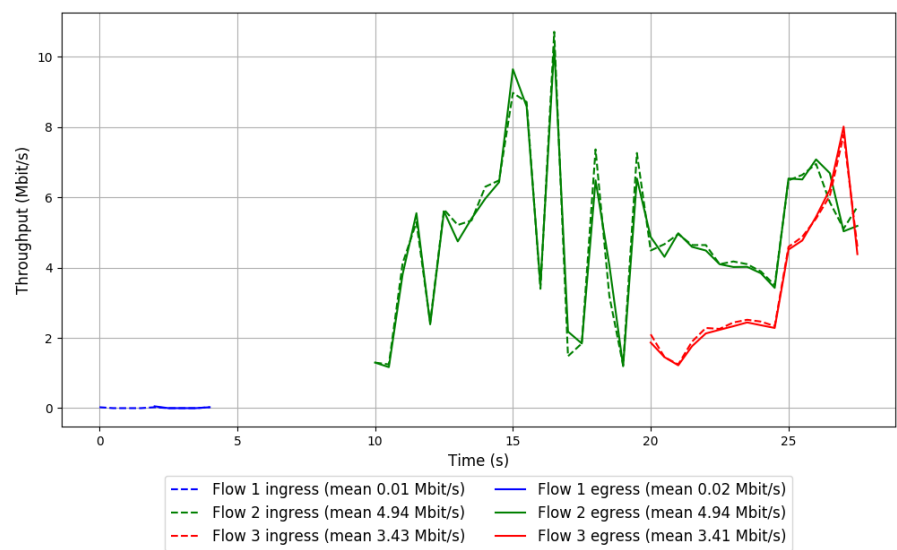
73

```
Run 3: Statistics of Copa

Start at: 2018-01-16 01:13:28
End at: 2018-01-16 01:13:58
Local clock offset: 2.188 ms
Remote clock offset: -2.322 ms

# Below is generated by plot.py at 2018-01-16 02:11:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.49 Mbit/s
95th percentile per-packet one-way delay: 158.813 ms
Loss rate: 0.84%
-- Flow 1:
Average throughput: 0.02 Mbit/s
95th percentile per-packet one-way delay: 2333.410 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 4.94 Mbit/s
95th percentile per-packet one-way delay: 152.596 ms
Loss rate: 0.63%
-- Flow 3:
Average throughput: 3.41 Mbit/s
95th percentile per-packet one-way delay: 174.417 ms
Loss rate: 1.53%
```
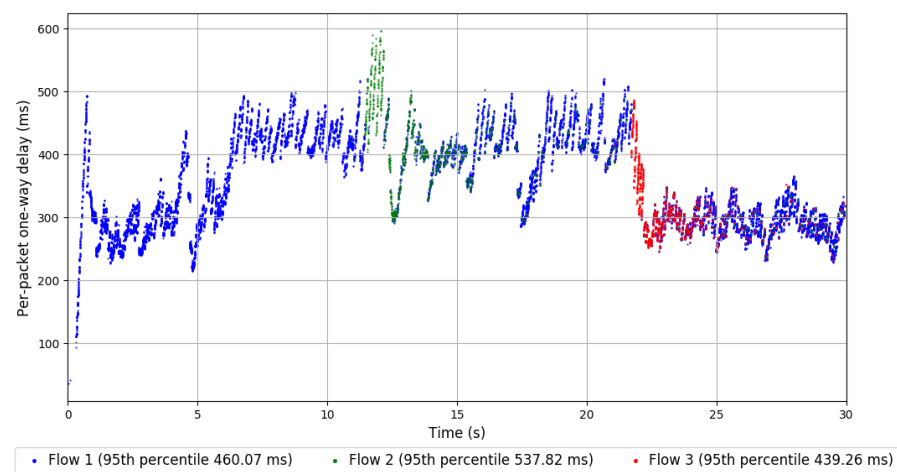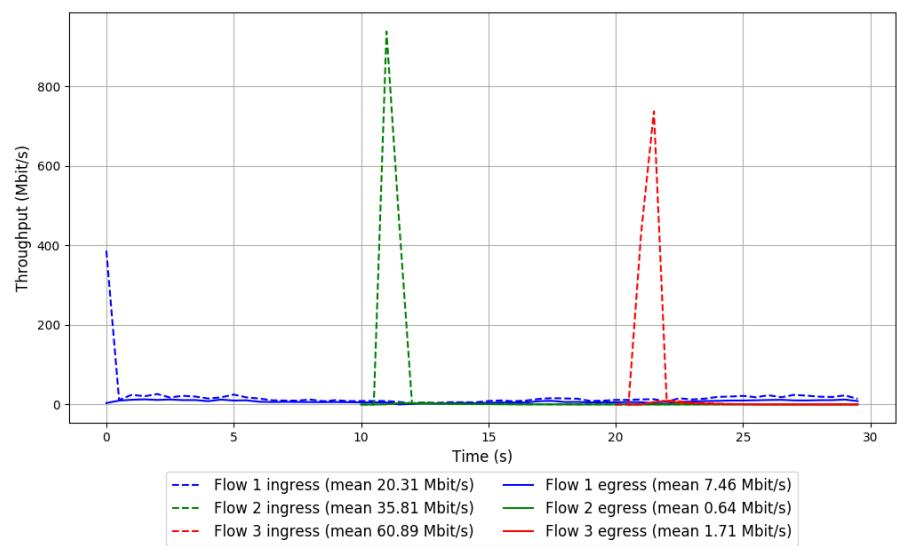
Run 3: Report of Copa — Data Link

```
Run 1: Statistics of FillP

Start at: 2018-01-16 00:29:31
End at: 2018-01-16 00:30:01
Local clock offset: 3.721 ms
Remote clock offset: -2.597 ms

# Below is generated by plot.py at 2018-01-16 02:11:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.40 Mbit/s
95th percentile per-packet one-way delay: 462.968 ms
Loss rate: 86.94%
-- Flow 1:
Average throughput: 7.46 Mbit/s
95th percentile per-packet one-way delay: 460.072 ms
Loss rate: 63.35%
-- Flow 2:
Average throughput: 0.64 Mbit/s
95th percentile per-packet one-way delay: 537.817 ms
Loss rate: 98.25%
-- Flow 3:
Average throughput: 1.71 Mbit/s
95th percentile per-packet one-way delay: 439.260 ms
Loss rate: 97.39%
```

Run 1: Report of FillP — Data Link

Flow 1 ingress (mean 20.31 Mbit/s)   Flow 1 egress (mean 7.46 Mbit/s)
Flow 2 ingress (mean 35.81 Mbit/s)   Flow 2 egress (mean 0.64 Mbit/s)
Flow 3 ingress (mean 60.89 Mbit/s)   Flow 3 egress (mean 1.71 Mbit/s)

Flow 1 (95th percentile 460.07 ms)   Flow 2 (95th percentile 537.82 ms)   Flow 3 (95th percentile 439.26 ms)

```
Run 2: Statistics of FillP

Start at: 2018-01-16 00:47:21
End at: 2018-01-16 00:47:51
Local clock offset: 0.837 ms
Remote clock offset: -2.65 ms

# Below is generated by plot.py at 2018-01-16 02:11:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.82 Mbit/s
95th percentile per-packet one-way delay: 448.090 ms
Loss rate: 86.54%
-- Flow 1:
Average throughput: 7.38 Mbit/s
95th percentile per-packet one-way delay: 446.326 ms
Loss rate: 69.78%
-- Flow 2:
Average throughput: 1.26 Mbit/s
95th percentile per-packet one-way delay: 444.061 ms
Loss rate: 95.89%
-- Flow 3:
Average throughput: 1.94 Mbit/s
95th percentile per-packet one-way delay: 458.742 ms
Loss rate: 97.07%
```
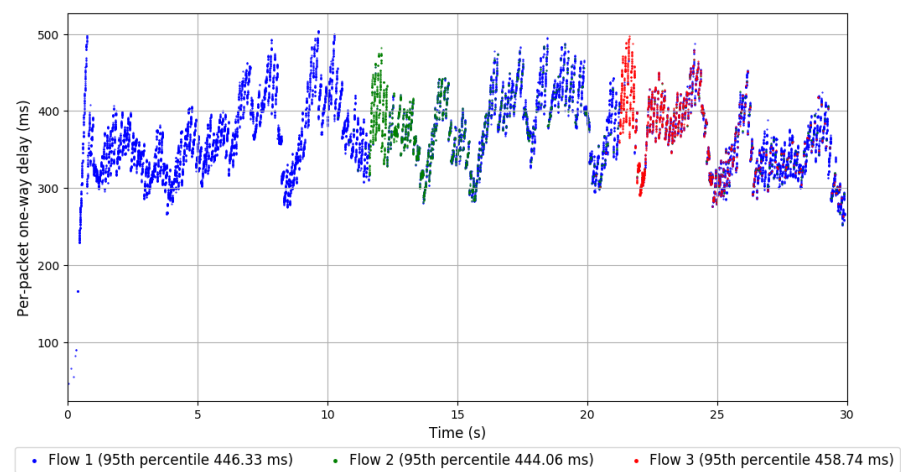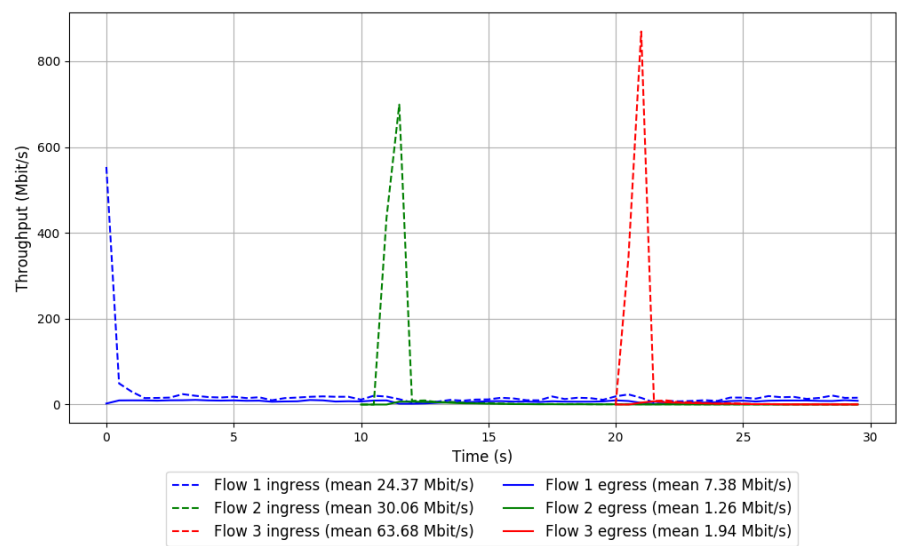
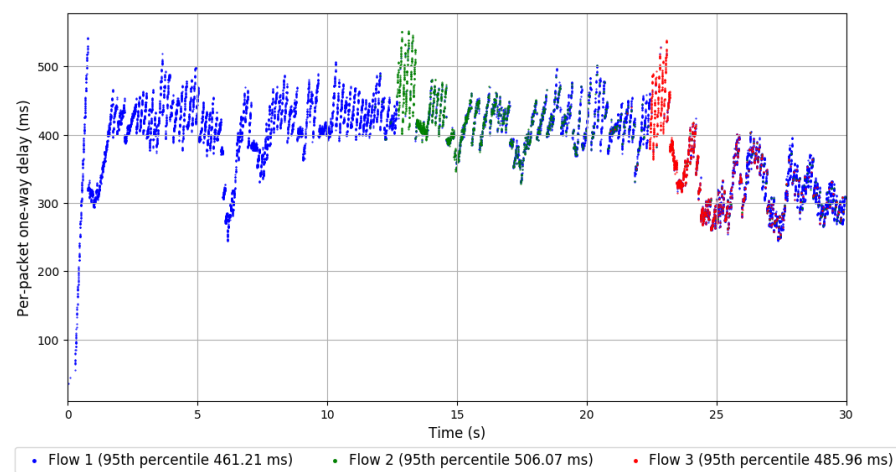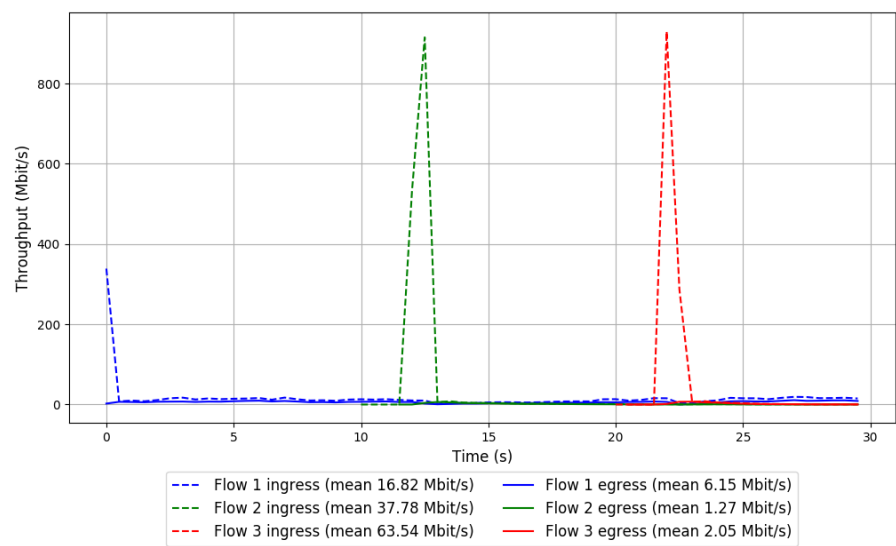## Run 2: Report of FillP — Data Link

```
Run 3: Statistics of FillP

Start at: 2018-01-16 01:05:09
End at: 2018-01-16 01:05:39
Local clock offset: 1.488 ms
Remote clock offset: -2.458 ms


# Below is generated by plot.py at 2018-01-16 02:11:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.55 Mbit/s
95th percentile per-packet one-way delay: 467.185 ms
Loss rate: 88.01%
-- Flow 1:
Average throughput: 6.15 Mbit/s
95th percentile per-packet one-way delay: 461.212 ms
Loss rate: 63.47%
-- Flow 2:
Average throughput: 1.27 Mbit/s
95th percentile per-packet one-way delay: 506.073 ms
Loss rate: 96.90%
-- Flow 3:
Average throughput: 2.05 Mbit/s
95th percentile per-packet one-way delay: 485.961 ms
Loss rate: 97.07%
```

Run 3: Report of FillP — Data Link

Flow 1 ingress (mean 16.82 Mbit/s)   Flow 1 egress (mean 6.15 Mbit/s)
Flow 2 ingress (mean 37.78 Mbit/s)   Flow 2 egress (mean 1.27 Mbit/s)
Flow 3 ingress (mean 63.54 Mbit/s)   Flow 3 egress (mean 2.05 Mbit/s)

Flow 1 (95th percentile 461.21 ms)   Flow 2 (95th percentile 506.07 ms)   Flow 3 (95th percentile 485.96 ms)
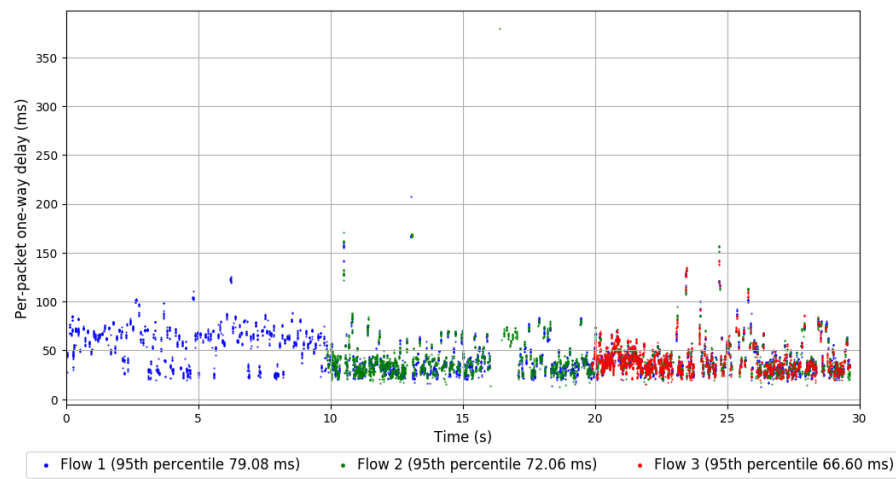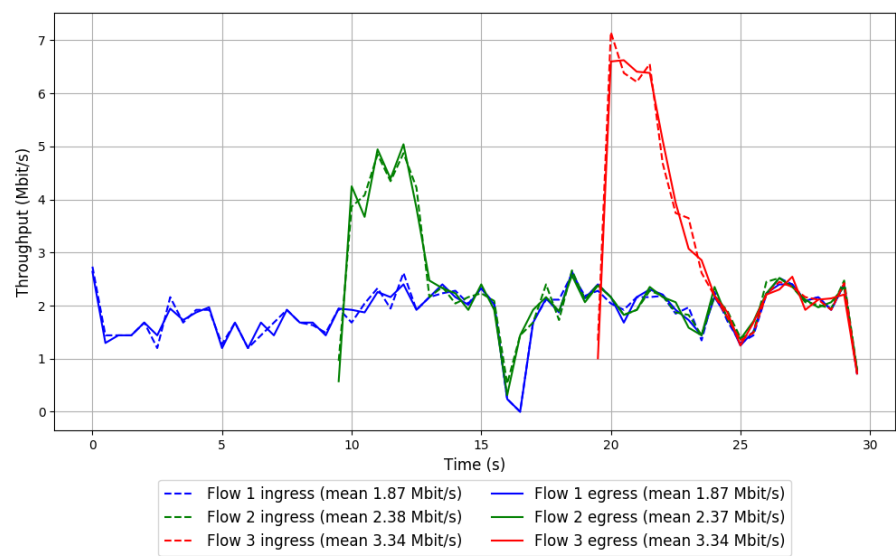
```
Run 1: Statistics of Indigo

Start at: 2018-01-16 00:30:44
End at: 2018-01-16 00:31:14
Local clock offset: 3.381 ms
Remote clock offset: -2.669 ms

# Below is generated by plot.py at 2018-01-16 02:11:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.55 Mbit/s
95th percentile per-packet one-way delay: 74.286 ms
Loss rate: 0.47%
-- Flow 1:
Average throughput: 1.87 Mbit/s
95th percentile per-packet one-way delay: 79.076 ms
Loss rate: 0.43%
-- Flow 2:
Average throughput: 2.37 Mbit/s
95th percentile per-packet one-way delay: 72.062 ms
Loss rate: 0.48%
-- Flow 3:
Average throughput: 3.34 Mbit/s
95th percentile per-packet one-way delay: 66.598 ms
Loss rate: 0.51%
```
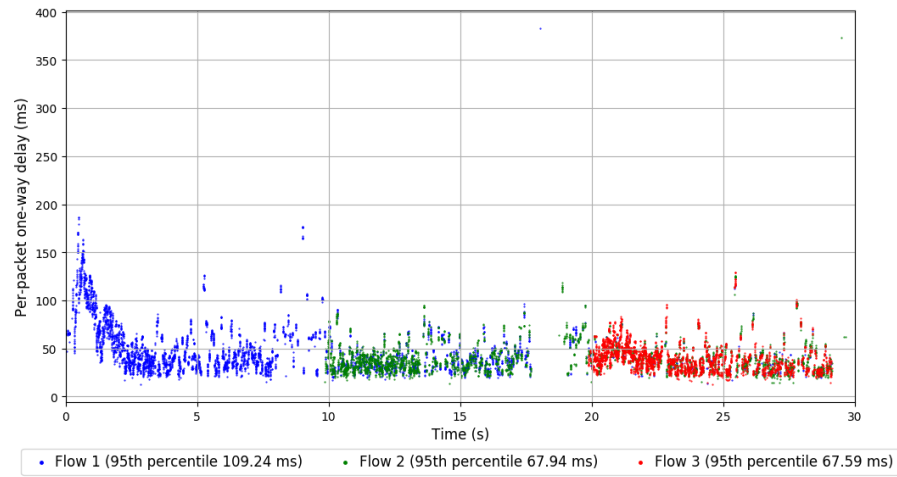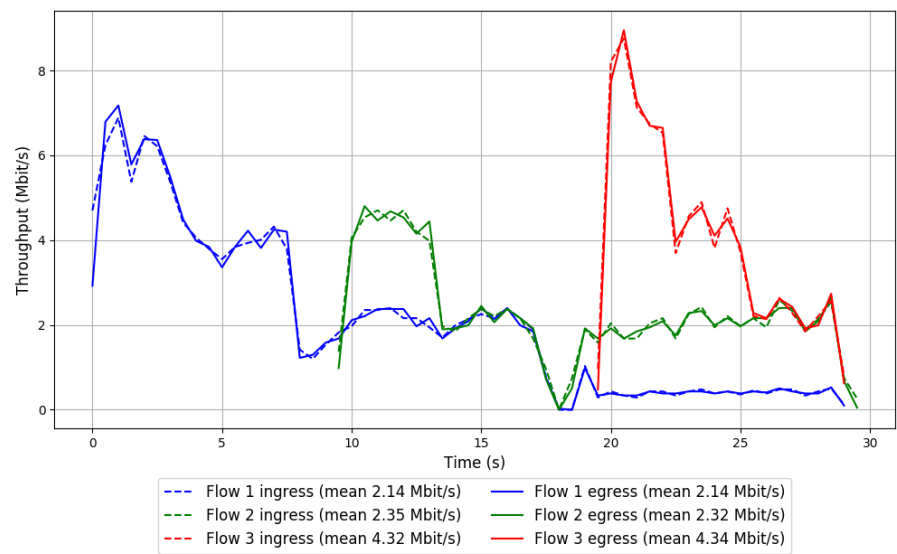
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2018-01-16 00:48:33
End at: 2018-01-16 00:49:03
Local clock offset: 0.727 ms
Remote clock offset: -2.647 ms


# Below is generated by plot.py at 2018-01-16 02:11:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.01 Mbit/s
95th percentile per-packet one-way delay: 87.348 ms
Loss rate: 0.40%
-- Flow 1:
Average throughput: 2.14 Mbit/s
95th percentile per-packet one-way delay: 109.243 ms
Loss rate: 0.21%
-- Flow 2:
Average throughput: 2.32 Mbit/s
95th percentile per-packet one-way delay: 67.938 ms
Loss rate: 0.73%
-- Flow 3:
Average throughput: 4.34 Mbit/s
95th percentile per-packet one-way delay: 67.594 ms
Loss rate: 0.30%
```

Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2018-01-16 01:06:21
End at: 2018-01-16 01:06:51
Local clock offset: 1.551 ms
Remote clock offset: -2.469 ms


# Below is generated by plot.py at 2018-01-16 02:11:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.87 Mbit/s
95th percentile per-packet one-way delay: 77.113 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 2.96 Mbit/s
95th percentile per-packet one-way delay: 75.059 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 3.06 Mbit/s
95th percentile per-packet one-way delay: 76.516 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 2.65 Mbit/s
95th percentile per-packet one-way delay: 81.244 ms
Loss rate: 0.46%
```

Run 3: Report of Indigo — Data Link