Pantheon Report

Generated at 2018-12-11 18:49:56 (UTC).

Data path: GCE Sydney on `ens4` (*local*) →GCE Iowa on `ens4` (*remote*).

Repeated the test of 19 congestion control schemes 5 times.

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

NTP offsets were measured against `time.google.com` and have been applied to correct the timestamps in logs.
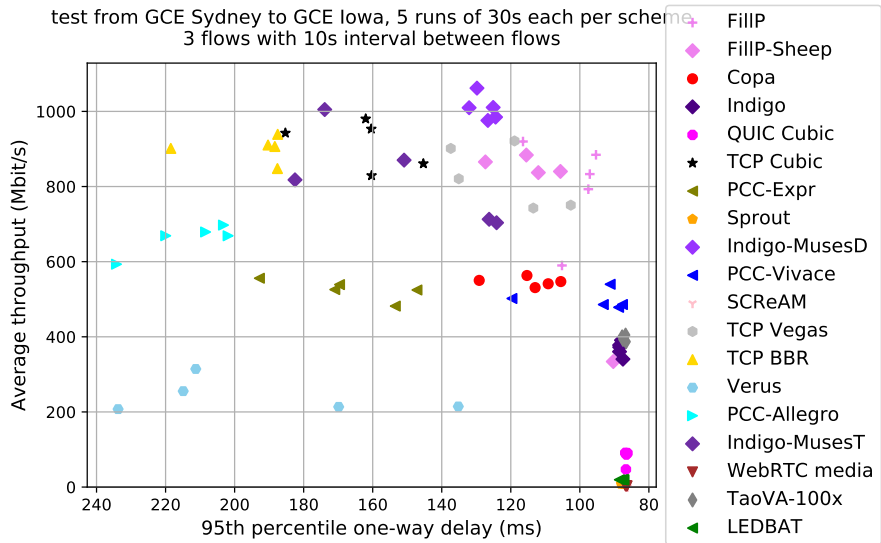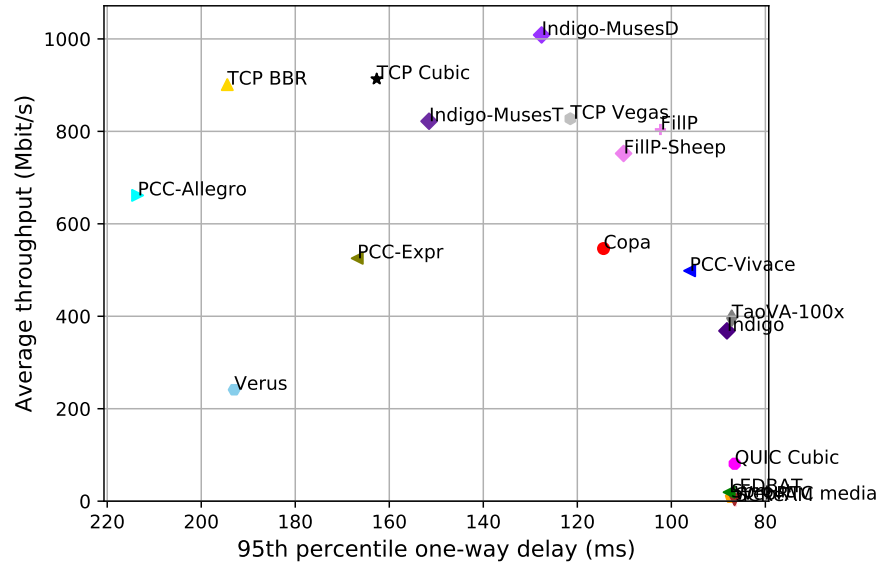
```
System info:
Linux 4.15.0-1024-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912

Git summary:
branch: muses @ c654af0b7d59d4ef4b914cfac404e1fc2e96dc68
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/muses-refactored @ 31f8f0ba8ef8b1da76c2bc0cd0a7850c33ff64fb
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
 M receiver/src/buffer.h
 M receiver/src/core.cpp
 M sender/src/buffer.h
 M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
 M src/ScreamClient
 M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
 M src/examples/cellsim.cc
 M src/examples/sproutbt2.cc
 M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
 M src/verus.hpp
```

```
 M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

test from GCE Sydney to GCE Iowa, 5 runs of 30s each per scheme
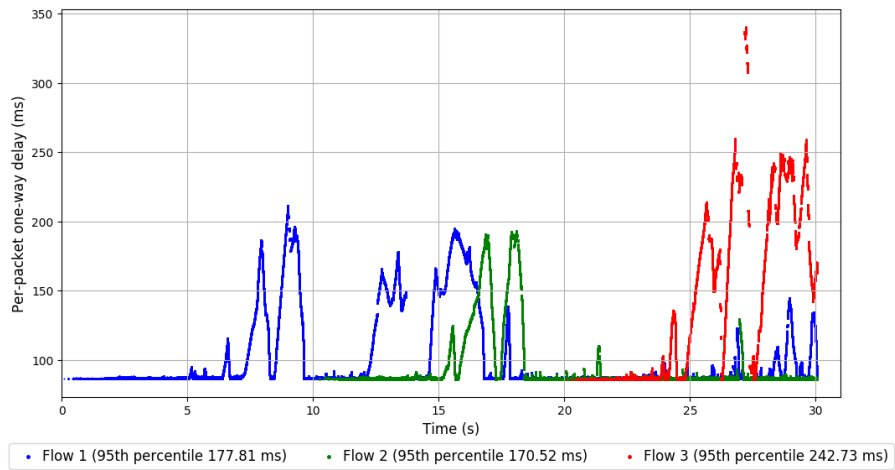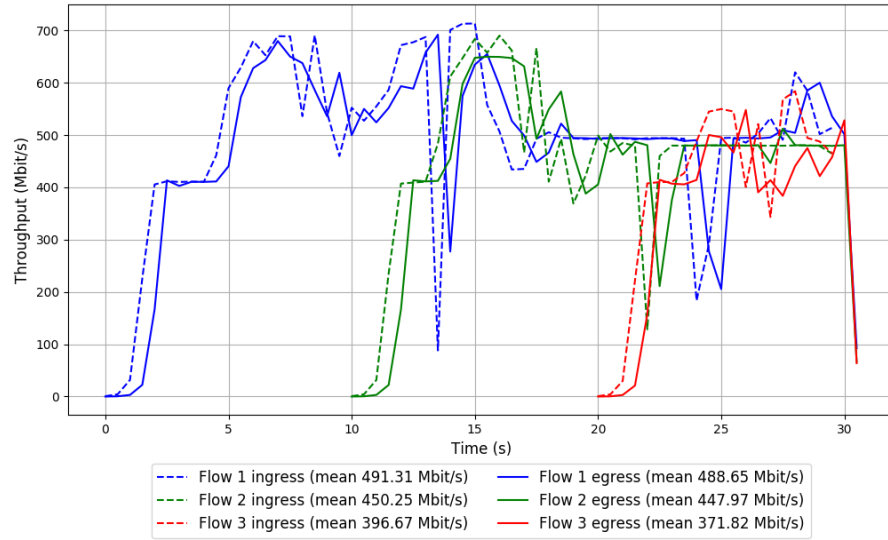3 flows with 10s interval between flows (mean of all runs by scheme)

test from GCE Sydney to GCE Iowa, 5 runs of 30s each per scheme
3 flows with 10s interval between flows

3

scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	475.14	444.29	391.31	181.35	187.94	221.45	0.61	1.03	3.25
Copa	5	297.41	264.86	218.36	113.97	116.04	100.66	0.00	0.00	0.00
TCP Cubic	5	476.55	449.45	413.33	154.44	136.77	168.75	0.03	0.04	0.53
FillP	5	485.32	356.77	246.94	113.20	90.69	89.04	0.17	0.00	0.01
FillP-Sheep	5	451.77	333.54	237.28	115.68	89.53	88.88	0.15	0.00	0.00
Indigo	5	190.79	191.40	157.70	87.93	88.21	88.68	0.00	0.00	0.00
Indigo-MusesD	5	561.54	502.77	351.11	125.72	130.85	131.96	0.03	0.07	0.17
Indigo-MusesT	5	495.03	378.51	278.42	156.04	122.24	111.06	0.79	0.33	0.13
LEDBAT	5	12.53	8.27	4.10	87.69	87.53	87.29	0.00	0.00	0.00
PCC-Allegro	5	365.86	325.76	240.76	214.96	157.74	171.45	4.91	3.18	1.21
PCC-Expr	5	303.06	235.96	198.07	166.45	139.08	130.32	1.88	0.58	0.68
QUIC Cubic	5	40.70	47.54	26.83	86.31	86.37	86.45	0.00	0.00	0.00
SCReAM	5	0.22	0.22	0.22	86.26	86.29	86.33	0.00	0.00	0.00
Sprout	5	4.33	4.07	3.30	87.16	87.10	87.19	0.00	0.00	0.00
TaoVA-100x	5	203.37	197.19	184.24	87.05	87.11	87.51	0.00	0.00	0.00
TCP Vegas	5	425.23	405.40	397.49	110.78	104.31	140.53	0.01	0.04	0.34
Verus	5	138.11	116.90	78.05	174.24	183.74	116.70	0.69	0.73	0.23
PCC-Vivace	5	316.74	224.01	99.35	94.43	98.08	95.20	0.03	0.11	0.00
WebRTC media	5	1.86	1.09	0.40	86.42	86.47	86.58	0.00	0.00	0.00

```
Run 1: Statistics of TCP BBR

Start at: 2018-12-11 13:24:53
End at: 2018-12-11 13:25:23
Local clock offset: -0.025 ms
Remote clock offset: -0.028 ms

# Below is generated by plot.py at 2018-12-11 16:41:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 910.58 Mbit/s
95th percentile per-packet one-way delay: 190.322 ms
Loss rate: 1.35%
-- Flow 1:
Average throughput: 488.65 Mbit/s
95th percentile per-packet one-way delay: 177.813 ms
Loss rate: 0.54%
-- Flow 2:
Average throughput: 447.97 Mbit/s
95th percentile per-packet one-way delay: 170.518 ms
Loss rate: 0.51%
-- Flow 3:
Average throughput: 371.82 Mbit/s
95th percentile per-packet one-way delay: 242.733 ms
Loss rate: 6.26%
```
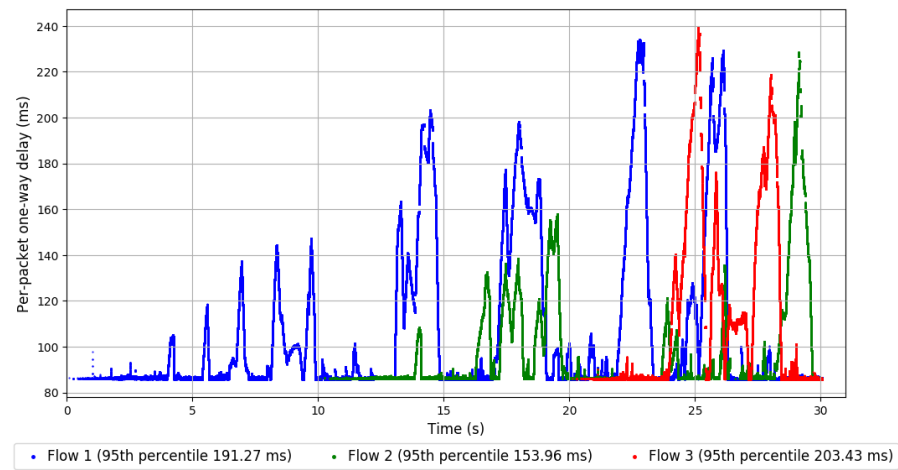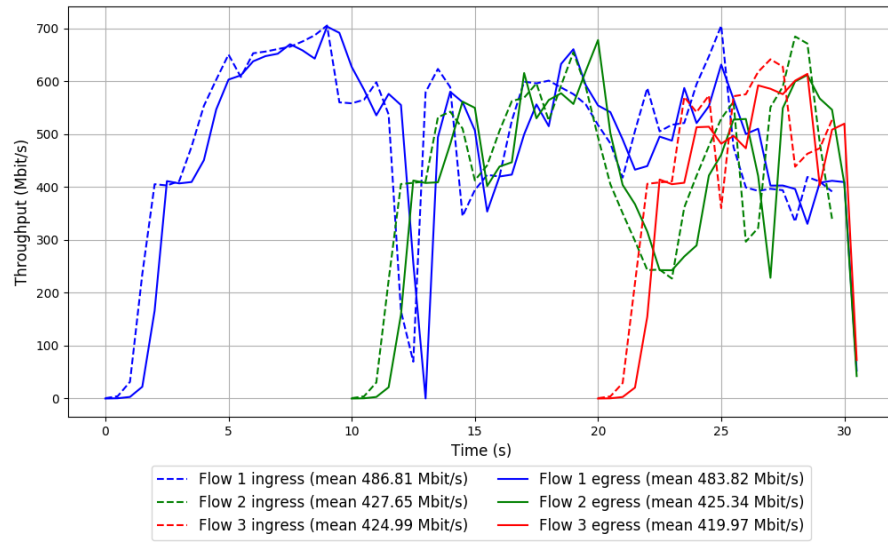
Run 1: Report of TCP BBR — Data Link

Flow 1 ingress (mean 491.31 Mbit/s)   Flow 1 egress (mean 488.65 Mbit/s)
Flow 2 ingress (mean 450.25 Mbit/s)   Flow 2 egress (mean 447.97 Mbit/s)
Flow 3 ingress (mean 396.67 Mbit/s)   Flow 3 egress (mean 371.82 Mbit/s)

Flow 1 (95th percentile 177.81 ms)   Flow 2 (95th percentile 170.52 ms)   Flow 3 (95th percentile 242.73 ms)
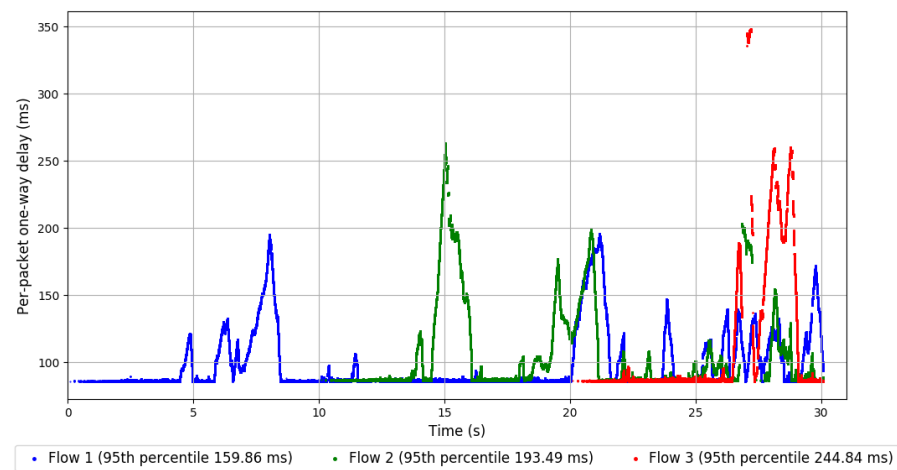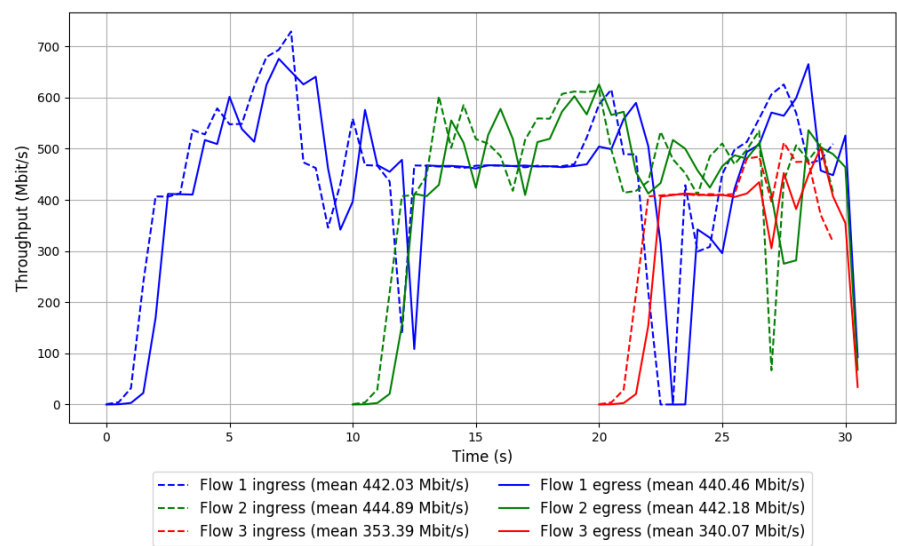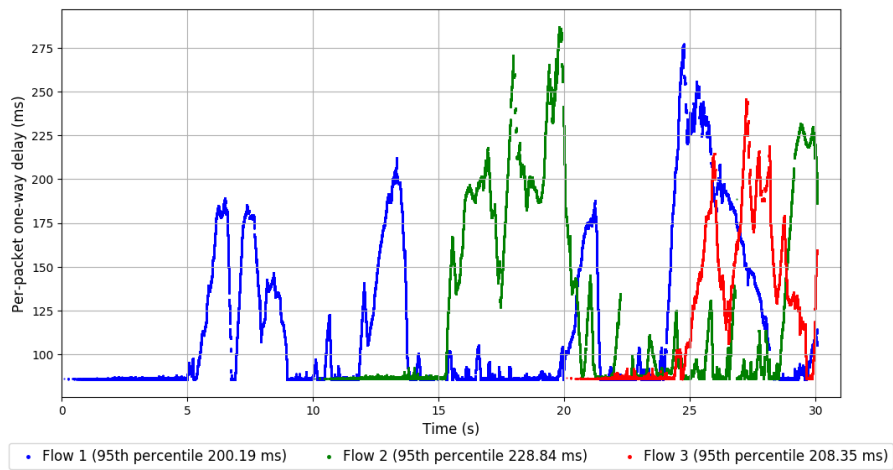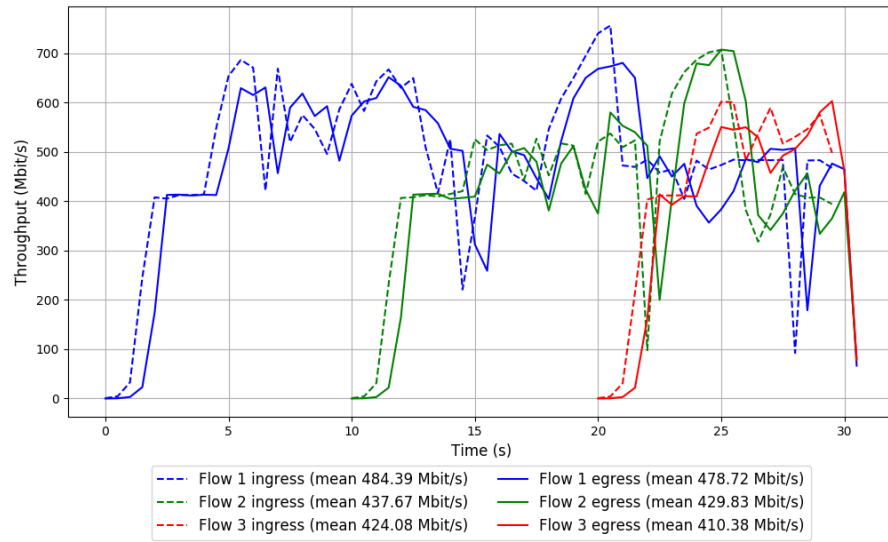
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```
Run 2: Statistics of TCP BBR

Start at: 2018-12-11 13:59:03
End at: 2018-12-11 13:59:33
Local clock offset: 0.324 ms
Remote clock offset: 0.001 ms


# Below is generated by plot.py at 2018-12-11 16:41:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 906.61 Mbit/s
95th percentile per-packet one-way delay: 188.346 ms
Loss rate: 0.68%
-- Flow 1:
Average throughput: 483.82 Mbit/s
95th percentile per-packet one-way delay: 191.269 ms
Loss rate: 0.62%
-- Flow 2:
Average throughput: 425.34 Mbit/s
95th percentile per-packet one-way delay: 153.961 ms
Loss rate: 0.54%
-- Flow 3:
Average throughput: 419.97 Mbit/s
95th percentile per-packet one-way delay: 203.431 ms
Loss rate: 1.18%
```

Run 2: Report of TCP BBR — Data Link

Flow 1 ingress (mean 486.81 Mbit/s) --- Flow 1 egress (mean 483.82 Mbit/s)
Flow 2 ingress (mean 427.65 Mbit/s) --- Flow 2 egress (mean 425.34 Mbit/s)
Flow 3 ingress (mean 424.99 Mbit/s) --- Flow 3 egress (mean 419.97 Mbit/s)

Flow 1 (95th percentile 191.27 ms)   Flow 2 (95th percentile 153.96 ms)   Flow 3 (95th percentile 203.43 ms)
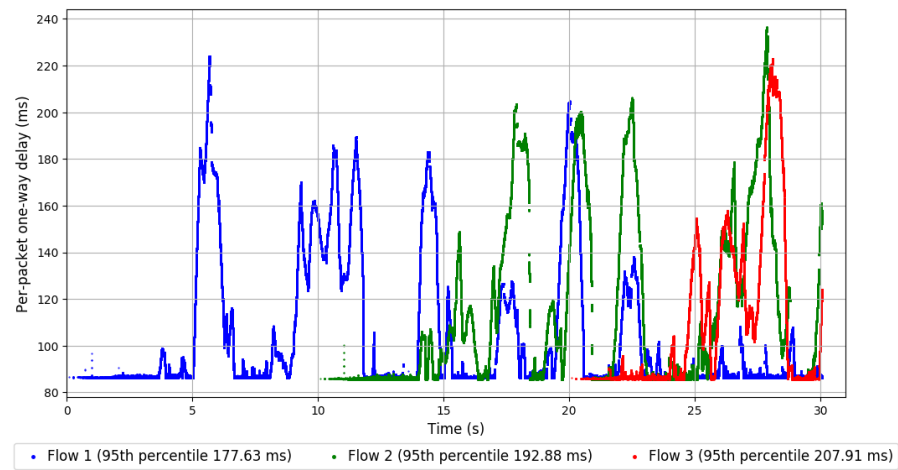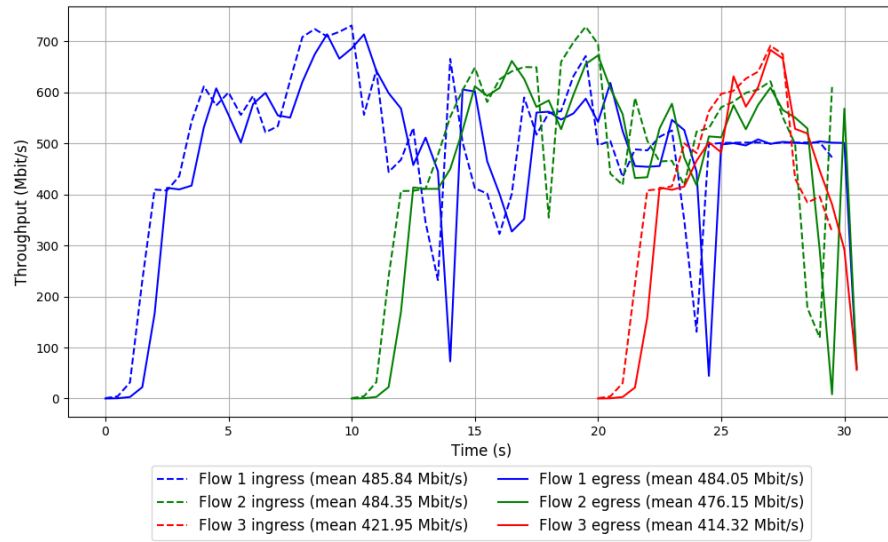
8

```
Run 3: Statistics of TCP BBR

Start at: 2018-12-11 14:33:14
End at: 2018-12-11 14:33:44
Local clock offset: 0.253 ms
Remote clock offset: -0.105 ms


# Below is generated by plot.py at 2018-12-11 16:41:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 847.87 Mbit/s
95th percentile per-packet one-way delay: 187.595 ms
Loss rate: 0.91%
-- Flow 1:
Average throughput: 440.46 Mbit/s
95th percentile per-packet one-way delay: 159.857 ms
Loss rate: 0.35%
-- Flow 2:
Average throughput: 442.18 Mbit/s
95th percentile per-packet one-way delay: 193.485 ms
Loss rate: 0.61%
-- Flow 3:
Average throughput: 340.07 Mbit/s
95th percentile per-packet one-way delay: 244.845 ms
Loss rate: 3.77%
```

Run 3: Report of TCP BBR — Data Link

Flow 1 ingress (mean 442.03 Mbit/s) --- Flow 1 egress (mean 440.46 Mbit/s)
Flow 2 ingress (mean 444.89 Mbit/s) --- Flow 2 egress (mean 442.18 Mbit/s)
Flow 3 ingress (mean 353.39 Mbit/s) --- Flow 3 egress (mean 340.07 Mbit/s)

Flow 1 (95th percentile 159.86 ms)   Flow 2 (95th percentile 193.49 ms)   Flow 3 (95th percentile 244.84 ms)

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```
Run 4: Statistics of TCP BBR

Start at: 2018-12-11 15:07:00
End at: 2018-12-11 15:07:30
Local clock offset: 0.421 ms
Remote clock offset: -0.089 ms


# Below is generated by plot.py at 2018-12-11 16:41:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 901.54 Mbit/s
95th percentile per-packet one-way delay: 218.486 ms
Loss rate: 1.68%
-- Flow 1:
Average throughput: 478.72 Mbit/s
95th percentile per-packet one-way delay: 200.188 ms
Loss rate: 1.17%
-- Flow 2:
Average throughput: 429.83 Mbit/s
95th percentile per-packet one-way delay: 228.843 ms
Loss rate: 1.79%
-- Flow 3:
Average throughput: 410.38 Mbit/s
95th percentile per-packet one-way delay: 208.355 ms
Loss rate: 3.23%
```
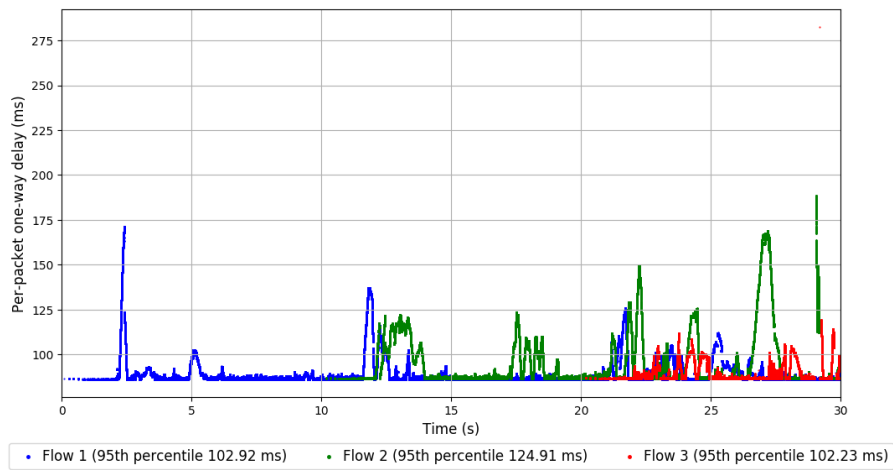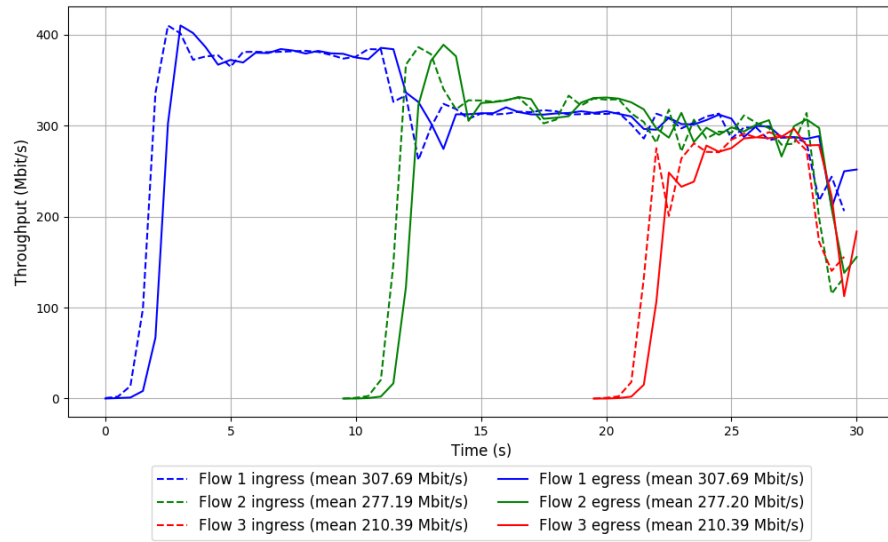
Run 4: Report of TCP BBR — Data Link

Flow 1 ingress (mean 484.39 Mbit/s) --- Flow 1 egress (mean 478.72 Mbit/s)
Flow 2 ingress (mean 437.67 Mbit/s) --- Flow 2 egress (mean 429.83 Mbit/s)
Flow 3 ingress (mean 424.08 Mbit/s) --- Flow 3 egress (mean 410.38 Mbit/s)

Flow 1 (95th percentile 200.19 ms)   Flow 2 (95th percentile 228.84 ms)   Flow 3 (95th percentile 208.35 ms)

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```
Run 5: Statistics of TCP BBR

Start at: 2018-12-11 15:41:44
End at: 2018-12-11 15:42:14
Local clock offset: 0.292 ms
Remote clock offset: -0.069 ms


# Below is generated by plot.py at 2018-12-11 16:41:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 939.02 Mbit/s
95th percentile per-packet one-way delay: 187.523 ms
Loss rate: 1.03%
-- Flow 1:
Average throughput: 484.05 Mbit/s
95th percentile per-packet one-way delay: 177.632 ms
Loss rate: 0.37%
-- Flow 2:
Average throughput: 476.15 Mbit/s
95th percentile per-packet one-way delay: 192.876 ms
Loss rate: 1.69%
-- Flow 3:
Average throughput: 414.32 Mbit/s
95th percentile per-packet one-way delay: 207.908 ms
Loss rate: 1.80%
```
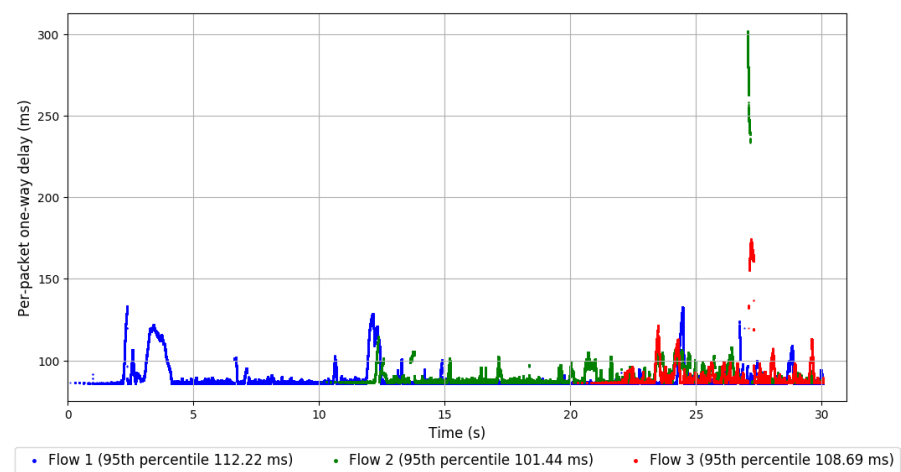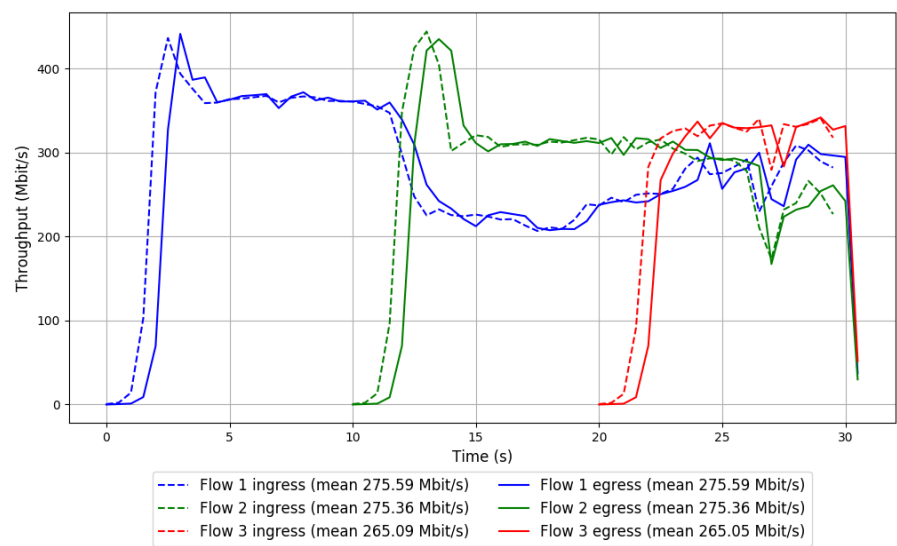
Run 5: Report of TCP BBR — Data Link

Flow 1 ingress (mean 485.84 Mbit/s) --- Flow 1 egress (mean 484.05 Mbit/s)
Flow 2 ingress (mean 484.35 Mbit/s) --- Flow 2 egress (mean 476.15 Mbit/s)
Flow 3 ingress (mean 421.95 Mbit/s) --- Flow 3 egress (mean 414.32 Mbit/s)

Flow 1 (95th percentile 177.63 ms)   Flow 2 (95th percentile 192.88 ms)   Flow 3 (95th percentile 207.91 ms)
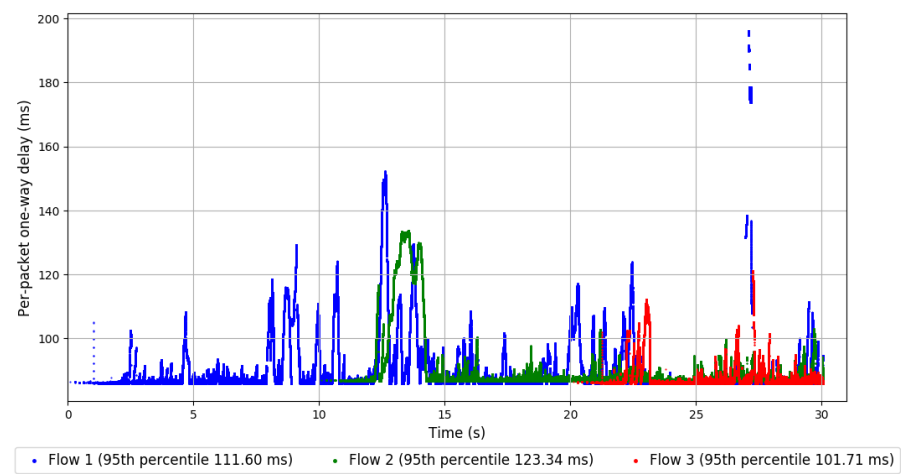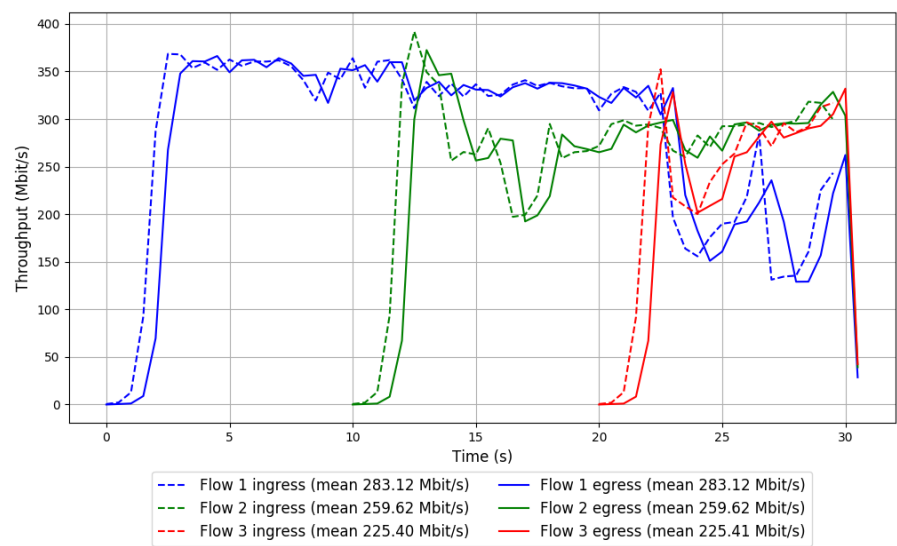
14

```
Run 1: Statistics of Copa

Start at: 2018-12-11 13:22:41
End at: 2018-12-11 13:23:11
Local clock offset: -0.224 ms
Remote clock offset: -0.041 ms


# Below is generated by plot.py at 2018-12-11 16:43:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 563.19 Mbit/s
95th percentile per-packet one-way delay: 115.322 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 307.69 Mbit/s
95th percentile per-packet one-way delay: 102.924 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 277.20 Mbit/s
95th percentile per-packet one-way delay: 124.911 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 210.39 Mbit/s
95th percentile per-packet one-way delay: 102.232 ms
Loss rate: 0.00%
```

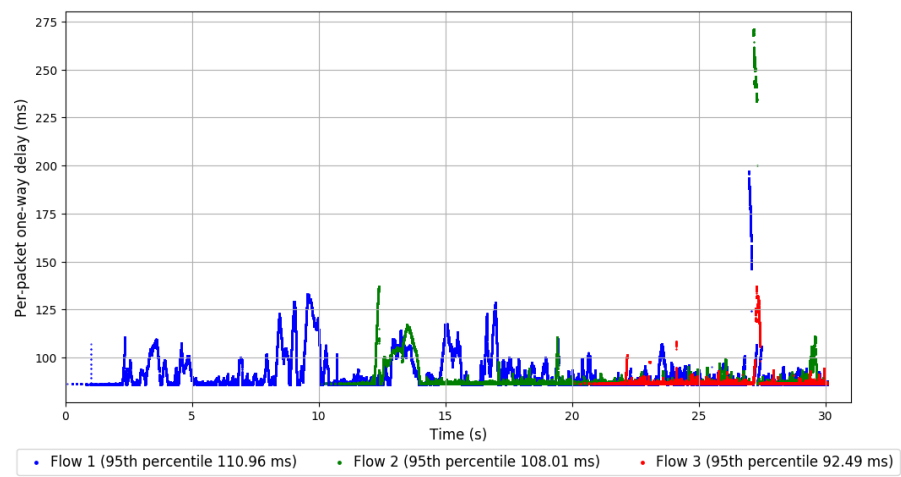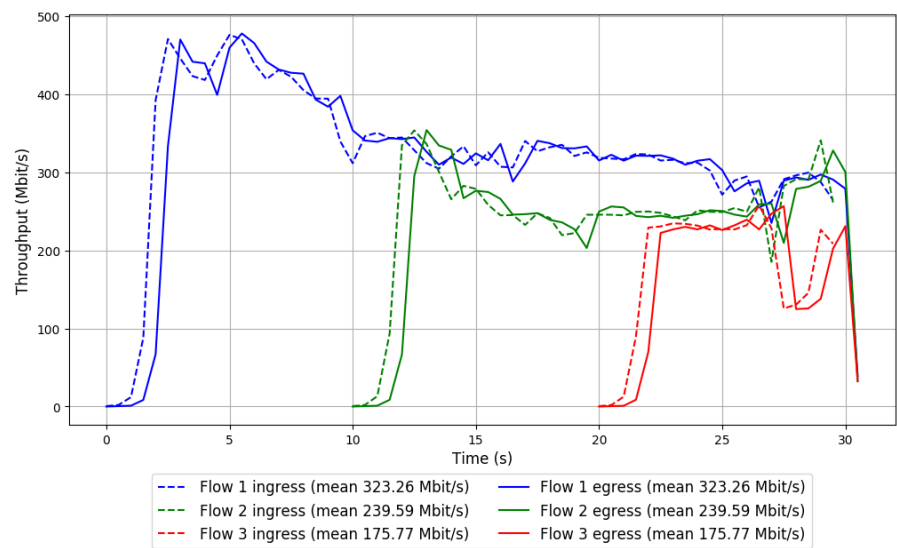Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: 2018-12-11 13:56:51
End at: 2018-12-11 13:57:21
Local clock offset: -0.072 ms
Remote clock offset: 0.011 ms


# Below is generated by plot.py at 2018-12-11 16:43:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 547.02 Mbit/s
95th percentile per-packet one-way delay: 105.513 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 275.59 Mbit/s
95th percentile per-packet one-way delay: 112.225 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 275.36 Mbit/s
95th percentile per-packet one-way delay: 101.445 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 265.05 Mbit/s
95th percentile per-packet one-way delay: 108.689 ms
Loss rate: 0.00%
```

Run 2: Report of Copa — Data Link

```
Run 3: Statistics of Copa

Start at: 2018-12-11 14:31:06
End at: 2018-12-11 14:31:36
Local clock offset: -0.206 ms
Remote clock offset: -0.117 ms


# Below is generated by plot.py at 2018-12-11 16:43:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 530.96 Mbit/s
95th percentile per-packet one-way delay: 112.955 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 283.12 Mbit/s
95th percentile per-packet one-way delay: 111.599 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 259.62 Mbit/s
95th percentile per-packet one-way delay: 123.341 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 225.41 Mbit/s
95th percentile per-packet one-way delay: 101.710 ms
Loss rate: 0.00%
```
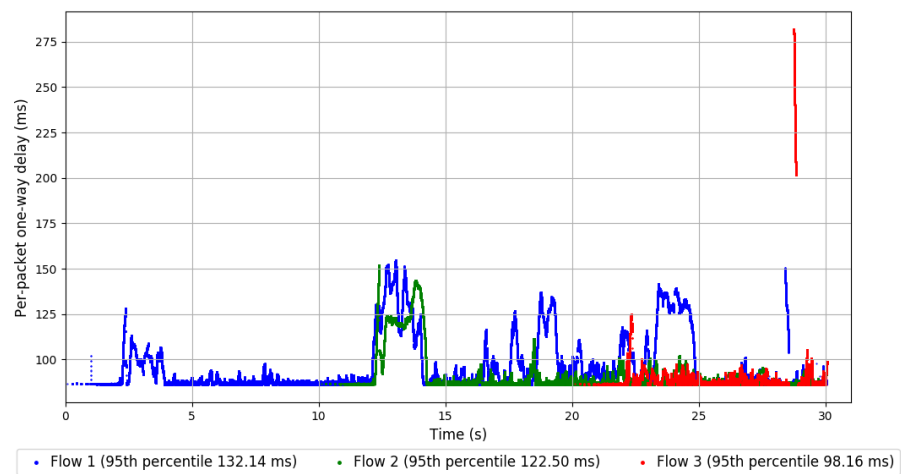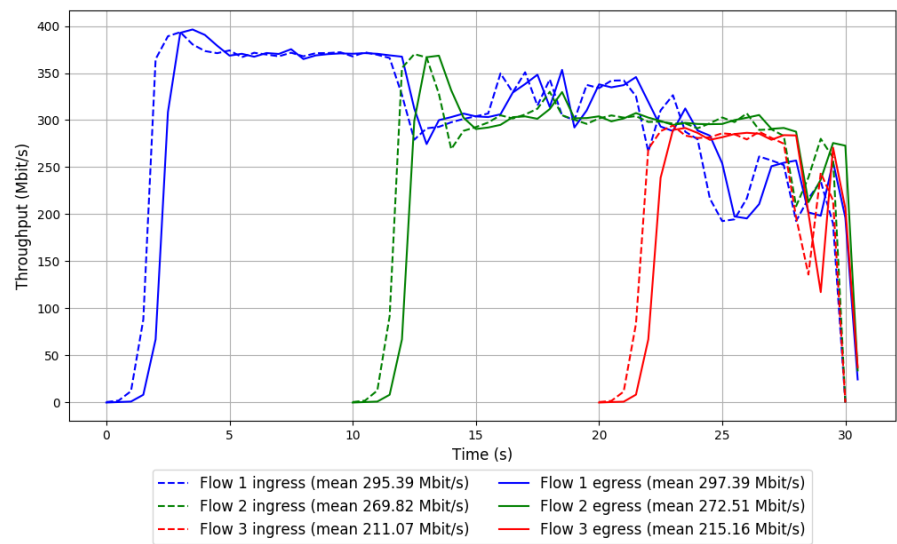
Run 3: Report of Copa — Data Link

```
Run 4: Statistics of Copa

Start at: 2018-12-11 15:04:51
End at: 2018-12-11 15:05:21
Local clock offset: -0.005 ms
Remote clock offset: -0.095 ms


# Below is generated by plot.py at 2018-12-11 16:59:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 541.20 Mbit/s
95th percentile per-packet one-way delay: 109.167 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 323.26 Mbit/s
95th percentile per-packet one-way delay: 110.964 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 239.59 Mbit/s
95th percentile per-packet one-way delay: 108.009 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 175.77 Mbit/s
95th percentile per-packet one-way delay: 92.486 ms
Loss rate: 0.00%
```
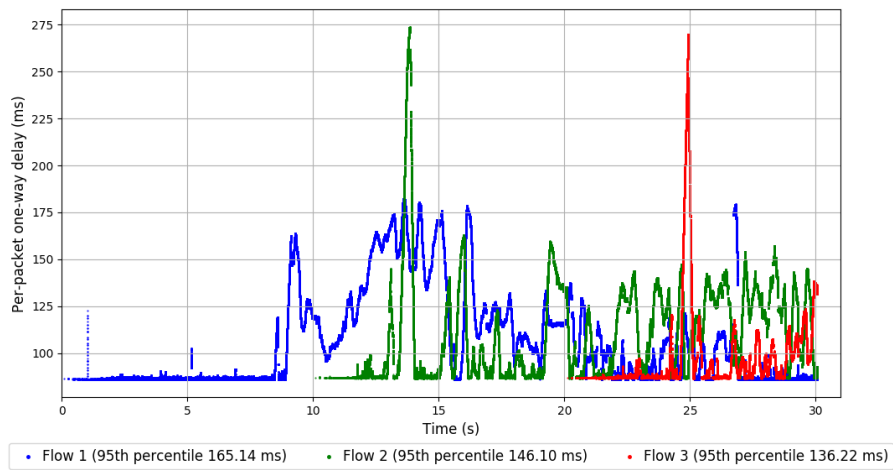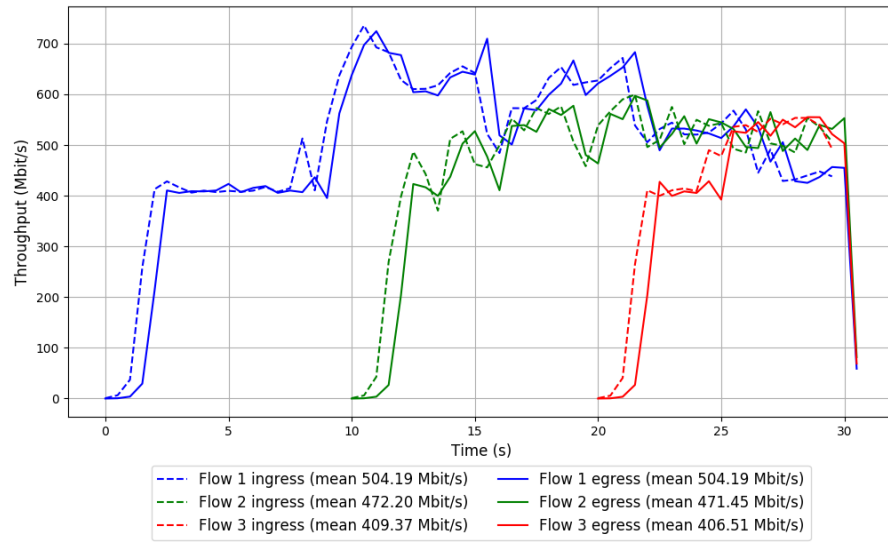
Run 4: Report of Copa — Data Link

```
Run 5: Statistics of Copa

Start at: 2018-12-11 15:39:34
End at: 2018-12-11 15:40:04
Local clock offset: 0.121 ms
Remote clock offset: -0.05 ms


# Below is generated by plot.py at 2018-12-11 17:00:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 550.17 Mbit/s
95th percentile per-packet one-way delay: 129.148 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 297.39 Mbit/s
95th percentile per-packet one-way delay: 132.140 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 272.51 Mbit/s
95th percentile per-packet one-way delay: 122.499 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 215.16 Mbit/s
95th percentile per-packet one-way delay: 98.161 ms
Loss rate: 0.00%
```
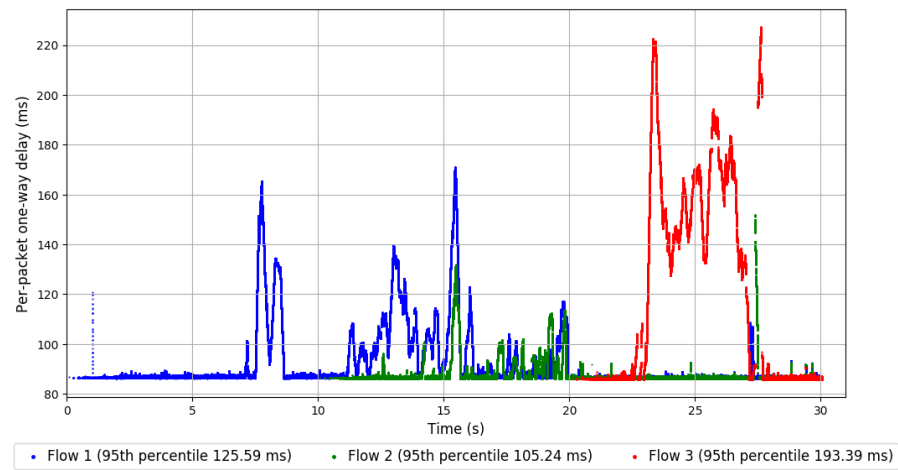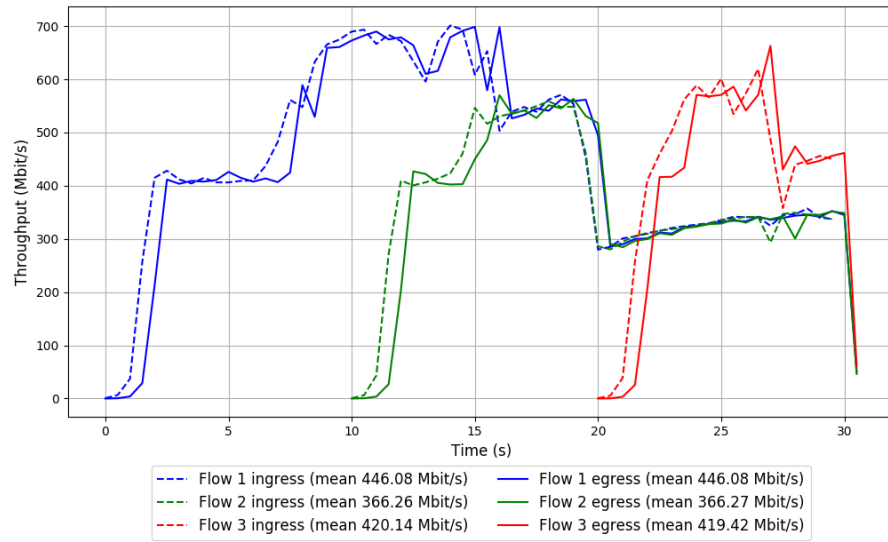
Run 5: Report of Copa — Data Link

Flow 1 ingress (mean 295.39 Mbit/s) --- Flow 1 egress (mean 297.39 Mbit/s)
Flow 2 ingress (mean 269.82 Mbit/s) --- Flow 2 egress (mean 272.51 Mbit/s)
Flow 3 ingress (mean 211.07 Mbit/s) --- Flow 3 egress (mean 215.16 Mbit/s)

Flow 1 (95th percentile 132.14 ms)   Flow 2 (95th percentile 122.50 ms)   Flow 3 (95th percentile 98.16 ms)

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```
Run 1: Statistics of TCP Cubic

Start at: 2018-12-11 13:32:44
End at: 2018-12-11 13:33:14
Local clock offset: -0.1 ms
Remote clock offset: -0.004 ms


# Below is generated by plot.py at 2018-12-11 17:00:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 953.26 Mbit/s
95th percentile per-packet one-way delay: 160.414 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 504.19 Mbit/s
95th percentile per-packet one-way delay: 165.136 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 471.45 Mbit/s
95th percentile per-packet one-way delay: 146.105 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 406.51 Mbit/s
95th percentile per-packet one-way delay: 136.223 ms
Loss rate: 0.69%
```

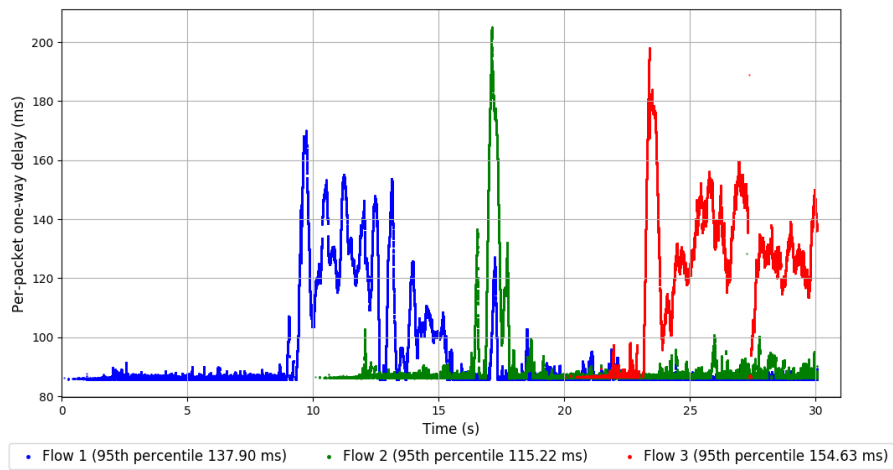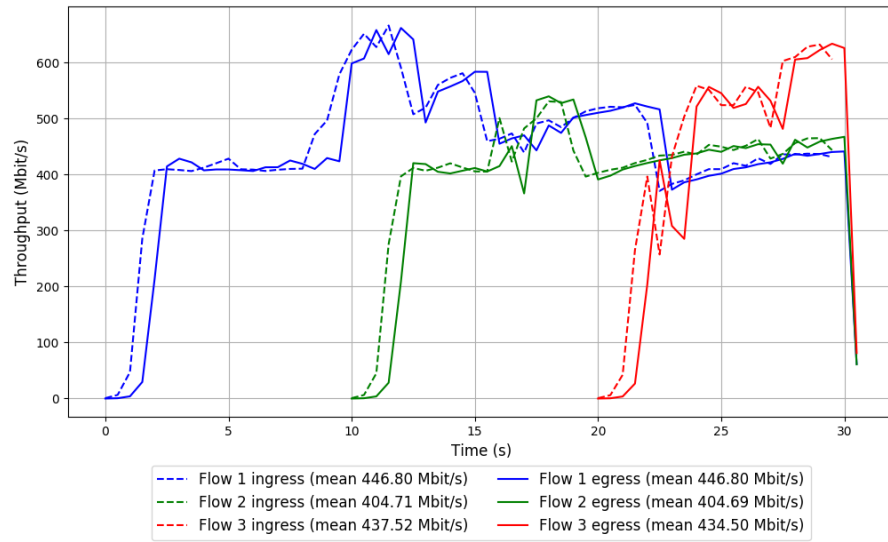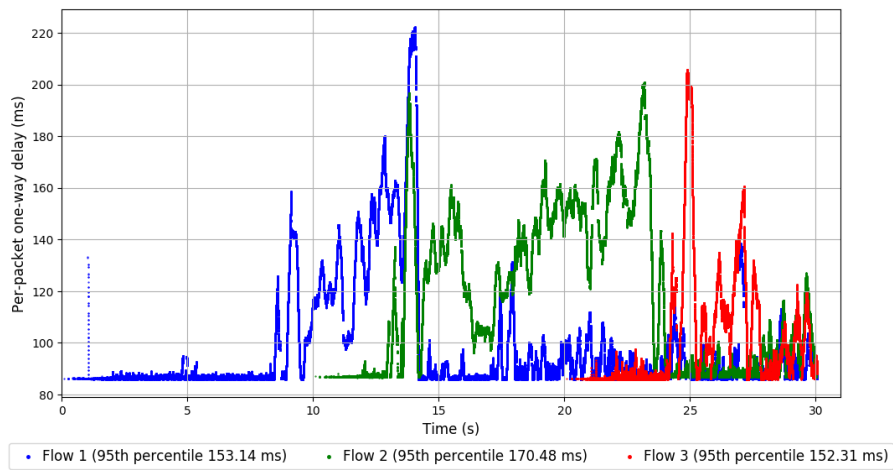Run 1: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 504.19 Mbit/s) --- Flow 1 egress (mean 504.19 Mbit/s)
Flow 2 ingress (mean 472.20 Mbit/s) --- Flow 2 egress (mean 471.45 Mbit/s)
Flow 3 ingress (mean 409.37 Mbit/s) --- Flow 3 egress (mean 406.51 Mbit/s)

Flow 1 (95th percentile 165.14 ms)   Flow 2 (95th percentile 146.10 ms)   Flow 3 (95th percentile 136.22 ms)
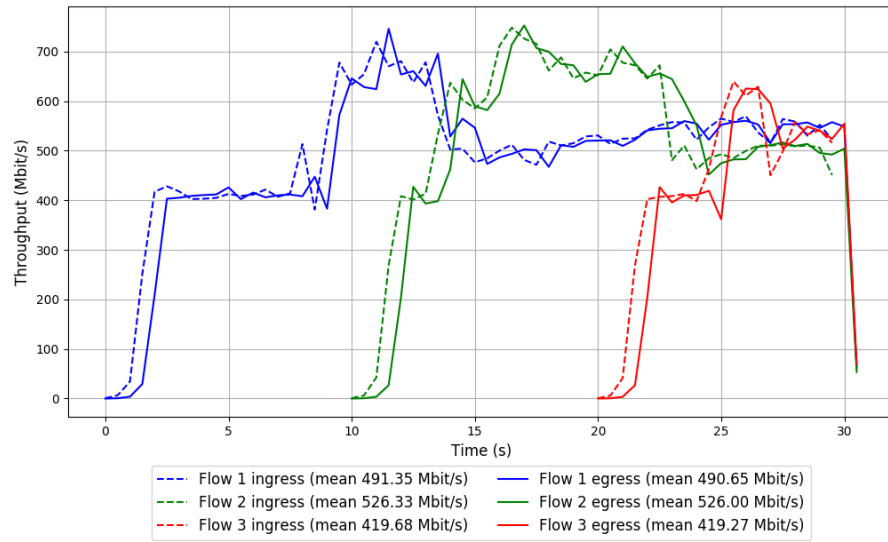
26

```
Run 2: Statistics of TCP Cubic

Start at: 2018-12-11 14:07:00
End at: 2018-12-11 14:07:30
Local clock offset: -0.109 ms
Remote clock offset: -0.04 ms


# Below is generated by plot.py at 2018-12-11 17:00:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 829.20 Mbit/s
95th percentile per-packet one-way delay: 160.325 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 446.08 Mbit/s
95th percentile per-packet one-way delay: 125.586 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 366.27 Mbit/s
95th percentile per-packet one-way delay: 105.240 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 419.42 Mbit/s
95th percentile per-packet one-way delay: 193.394 ms
Loss rate: 0.17%
```

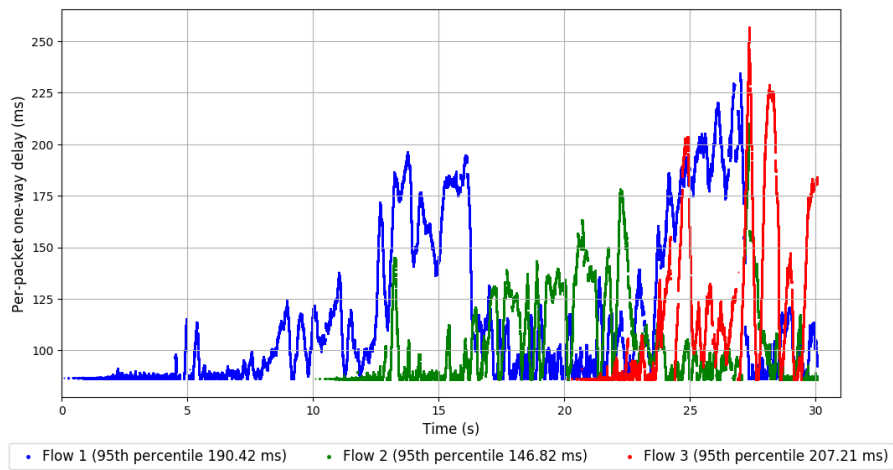Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2018-12-11 14:41:01
End at: 2018-12-11 14:41:31
Local clock offset: 0.068 ms
Remote clock offset: -0.099 ms


# Below is generated by plot.py at 2018-12-11 17:00:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 860.94 Mbit/s
95th percentile per-packet one-way delay: 145.324 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 446.80 Mbit/s
95th percentile per-packet one-way delay: 137.898 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 404.69 Mbit/s
95th percentile per-packet one-way delay: 115.220 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 434.50 Mbit/s
95th percentile per-packet one-way delay: 154.633 ms
Loss rate: 0.68%
```

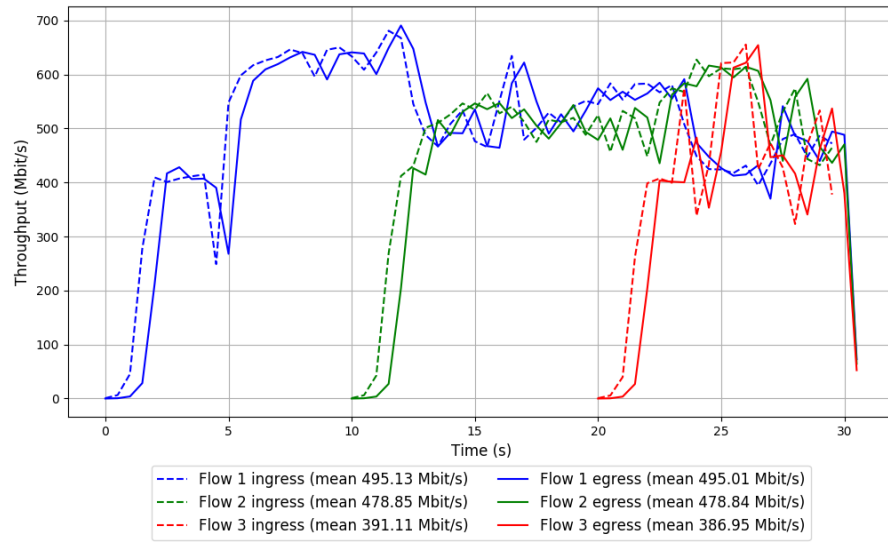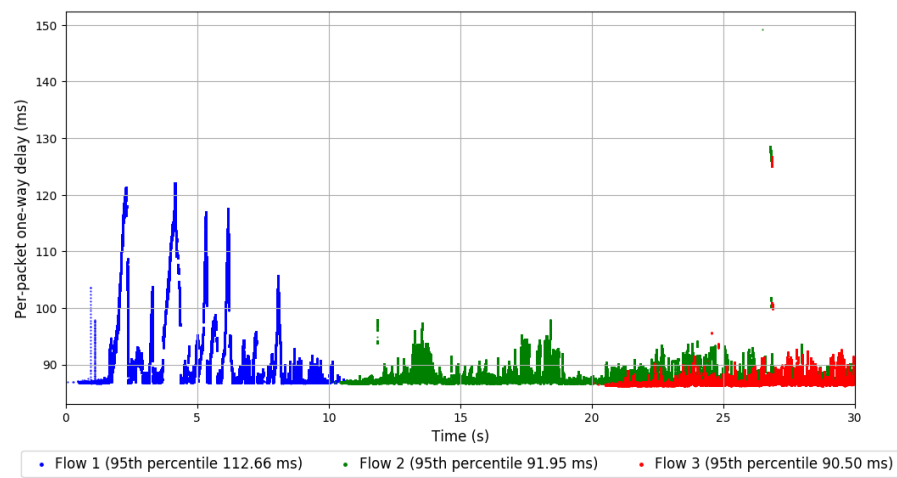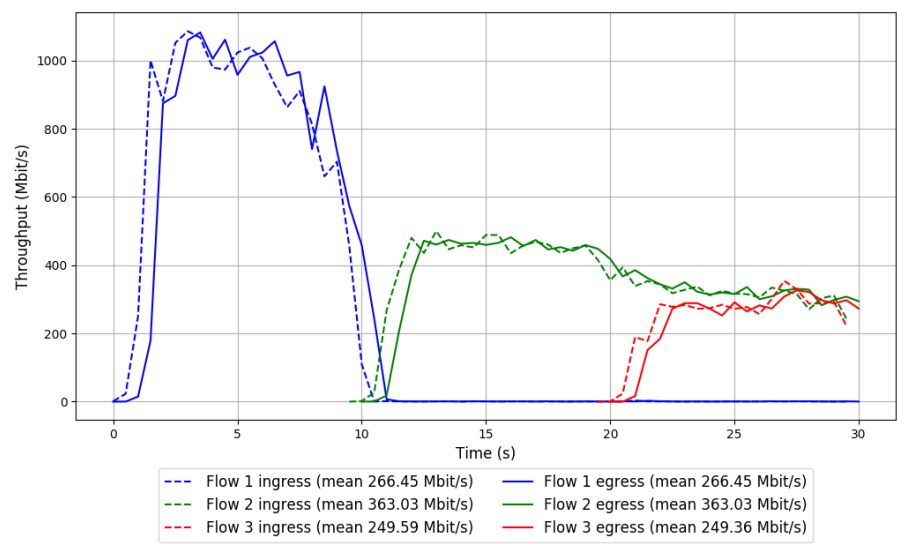Run 3: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 446.80 Mbit/s) --- Flow 1 egress (mean 446.80 Mbit/s)
Flow 2 ingress (mean 404.71 Mbit/s) --- Flow 2 egress (mean 404.69 Mbit/s)
Flow 3 ingress (mean 437.52 Mbit/s) --- Flow 3 egress (mean 434.50 Mbit/s)

Flow 1 (95th percentile 137.90 ms)   Flow 2 (95th percentile 115.22 ms)   Flow 3 (95th percentile 154.63 ms)

```
Run 4: Statistics of TCP Cubic

Start at: 2018-12-11 15:15:04
End at: 2018-12-11 15:15:34
Local clock offset: 0.083 ms
Remote clock offset: -0.087 ms


# Below is generated by plot.py at 2018-12-11 17:01:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 980.20 Mbit/s
95th percentile per-packet one-way delay: 162.037 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 490.65 Mbit/s
95th percentile per-packet one-way delay: 153.140 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 526.00 Mbit/s
95th percentile per-packet one-way delay: 170.477 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 419.27 Mbit/s
95th percentile per-packet one-way delay: 152.307 ms
Loss rate: 0.08%
```
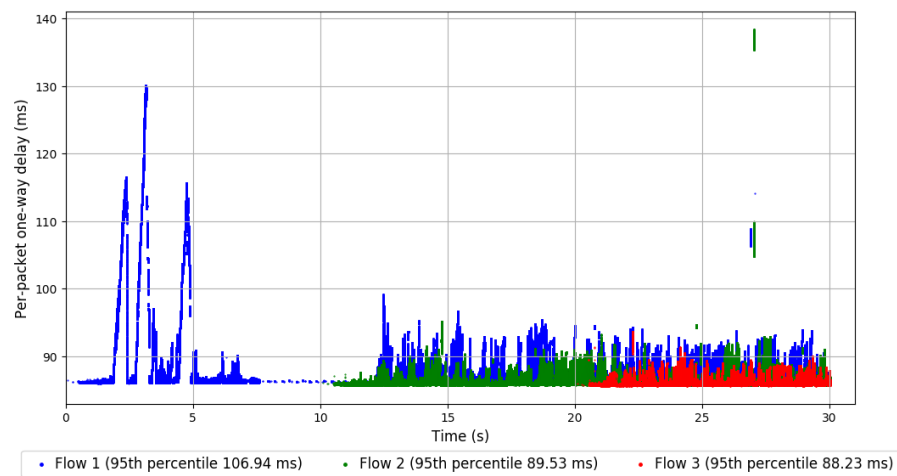
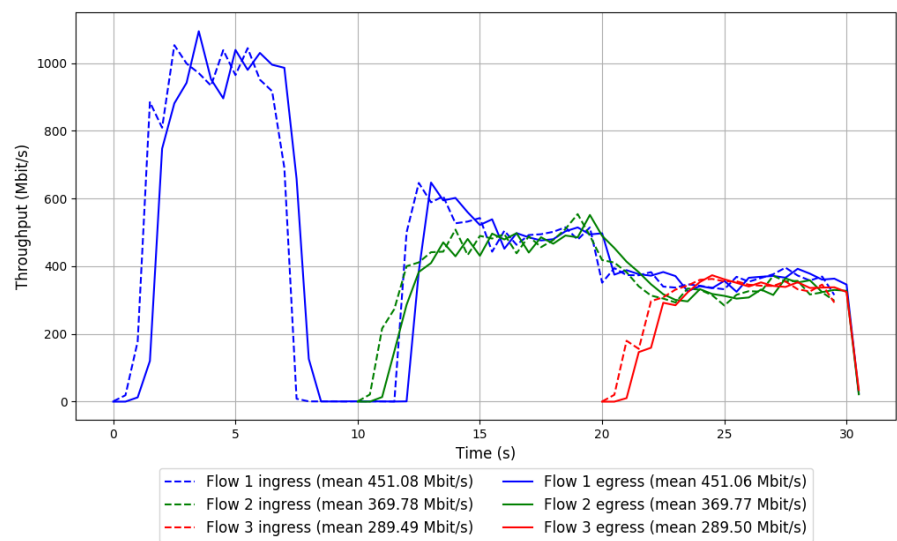Run 4: Report of TCP Cubic — Data Link

```
Run 5: Statistics of TCP Cubic

Start at: 2018-12-11 15:49:39
End at: 2018-12-11 15:50:09
Local clock offset: 0.064 ms
Remote clock offset: -0.028 ms


# Below is generated by plot.py at 2018-12-11 17:01:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 942.49 Mbit/s
95th percentile per-packet one-way delay: 185.290 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 495.01 Mbit/s
95th percentile per-packet one-way delay: 190.416 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 478.84 Mbit/s
95th percentile per-packet one-way delay: 146.816 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 386.95 Mbit/s
95th percentile per-packet one-way delay: 207.209 ms
Loss rate: 1.04%
```

Run 5: Report of TCP Cubic — Data Link

Flow 1 ingress (mean 495.13 Mbit/s)   Flow 1 egress (mean 495.01 Mbit/s)
Flow 2 ingress (mean 478.85 Mbit/s)   Flow 2 egress (mean 478.84 Mbit/s)
Flow 3 ingress (mean 391.11 Mbit/s)   Flow 3 egress (mean 386.95 Mbit/s)

Flow 1 (95th percentile 190.42 ms)   Flow 2 (95th percentile 146.82 ms)   Flow 3 (95th percentile 207.21 ms)
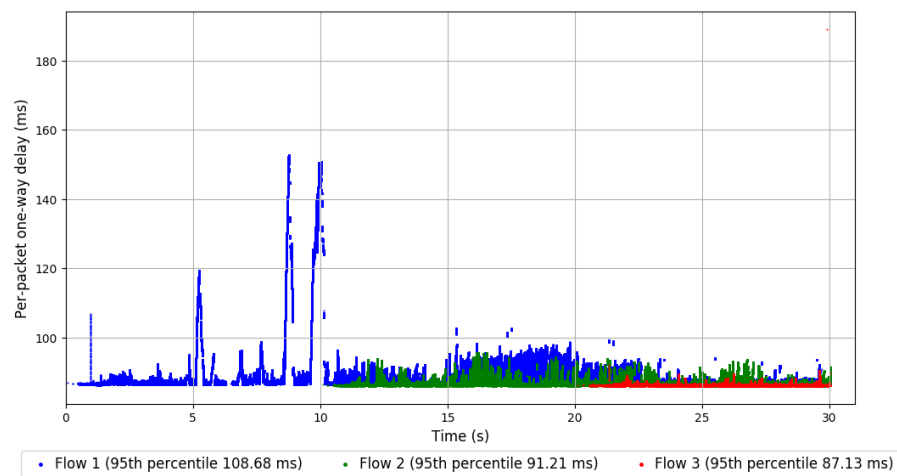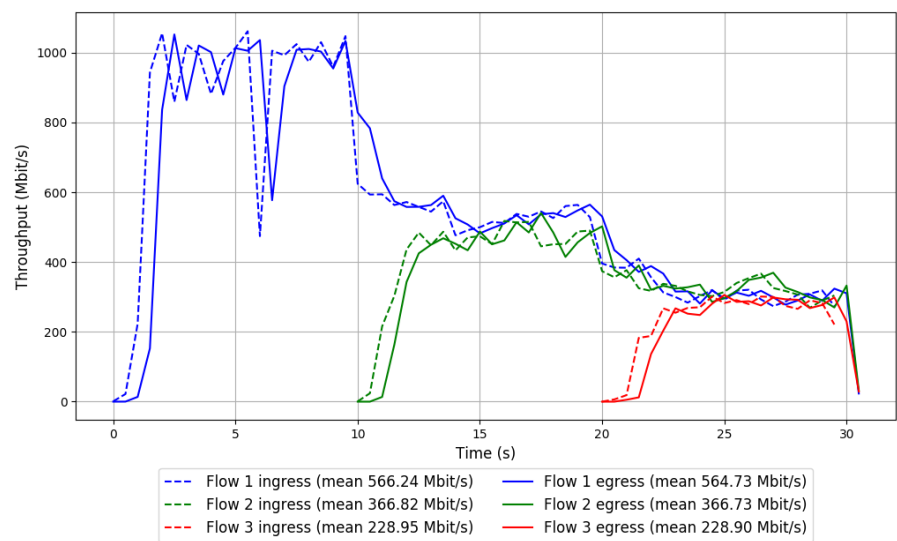
```
Run 1: Statistics of FillP

Start at: 2018-12-11 13:45:37
End at: 2018-12-11 13:46:07
Local clock offset: -0.496 ms
Remote clock offset: 0.0 ms

# Below is generated by plot.py at 2018-12-11 17:01:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 589.92 Mbit/s
95th percentile per-packet one-way delay: 105.172 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 266.45 Mbit/s
95th percentile per-packet one-way delay: 112.661 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 363.03 Mbit/s
95th percentile per-packet one-way delay: 91.952 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 249.36 Mbit/s
95th percentile per-packet one-way delay: 90.499 ms
Loss rate: 0.06%
```
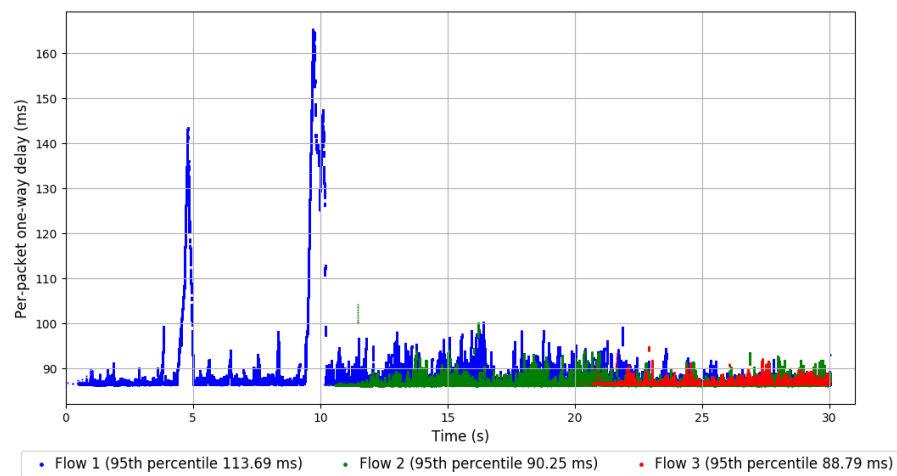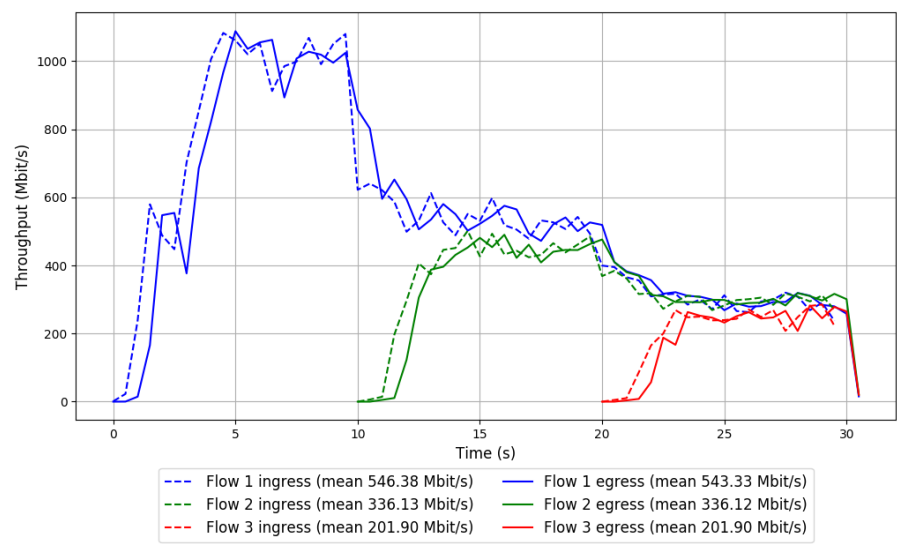
Run 1: Report of FillP — Data Link

```
Run 2: Statistics of FillP

Start at: 2018-12-11 14:19:41
End at: 2018-12-11 14:20:11
Local clock offset: 0.027 ms
Remote clock offset: -0.074 ms


# Below is generated by plot.py at 2018-12-11 17:13:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 792.93 Mbit/s
95th percentile per-packet one-way delay: 97.537 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 451.06 Mbit/s
95th percentile per-packet one-way delay: 106.945 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 369.77 Mbit/s
95th percentile per-packet one-way delay: 89.529 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 289.50 Mbit/s
95th percentile per-packet one-way delay: 88.235 ms
Loss rate: 0.00%
```
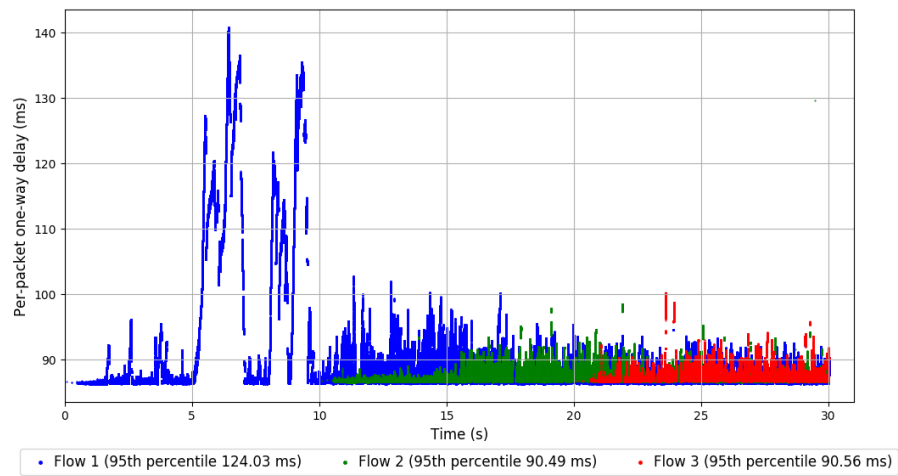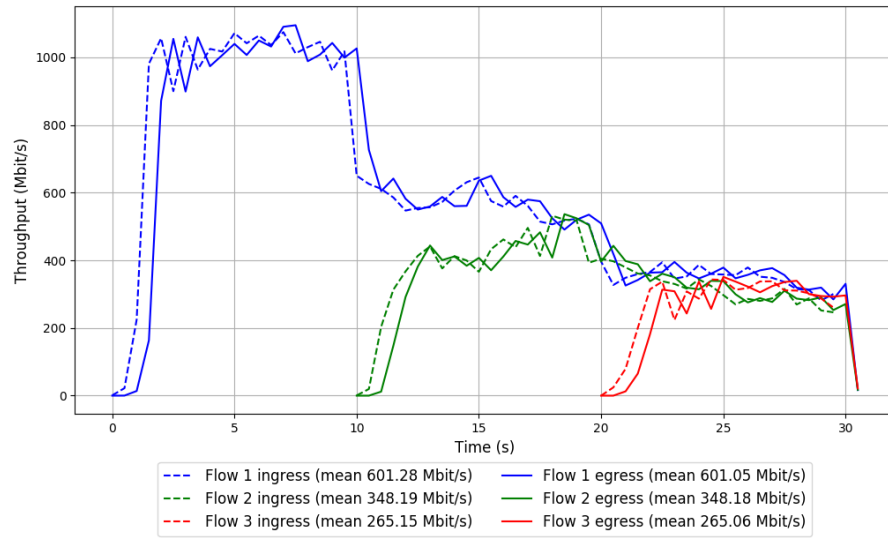
Run 2: Report of FillP — Data Link

Flow 1 ingress (mean 451.08 Mbit/s) --- Flow 1 egress (mean 451.06 Mbit/s)
Flow 2 ingress (mean 369.78 Mbit/s) --- Flow 2 egress (mean 369.77 Mbit/s)
Flow 3 ingress (mean 289.49 Mbit/s) --- Flow 3 egress (mean 289.50 Mbit/s)

Flow 1 (95th percentile 106.94 ms)   Flow 2 (95th percentile 89.53 ms)   Flow 3 (95th percentile 88.23 ms)

```
Run 3: Statistics of FillP

Start at: 2018-12-11 14:53:24
End at: 2018-12-11 14:53:54
Local clock offset: 0.225 ms
Remote clock offset: -0.095 ms


# Below is generated by plot.py at 2018-12-11 17:17:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 884.45 Mbit/s
95th percentile per-packet one-way delay: 95.317 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 564.73 Mbit/s
95th percentile per-packet one-way delay: 108.676 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 366.73 Mbit/s
95th percentile per-packet one-way delay: 91.214 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 228.90 Mbit/s
95th percentile per-packet one-way delay: 87.127 ms
Loss rate: 0.00%
```
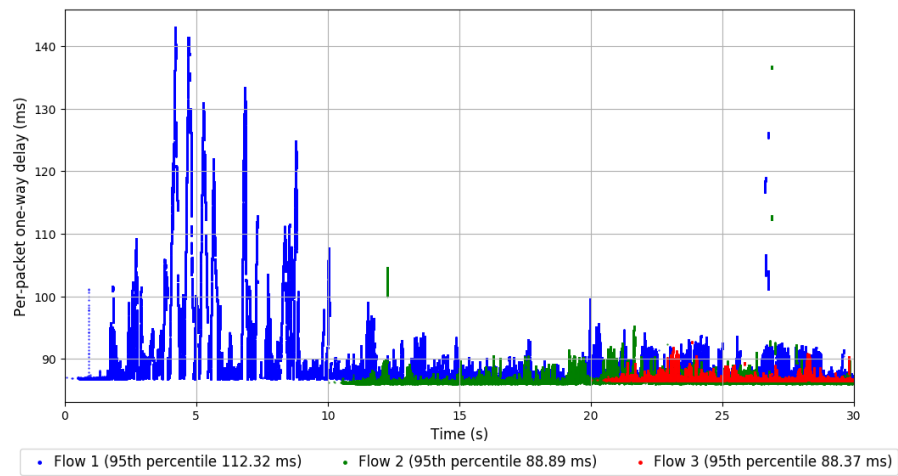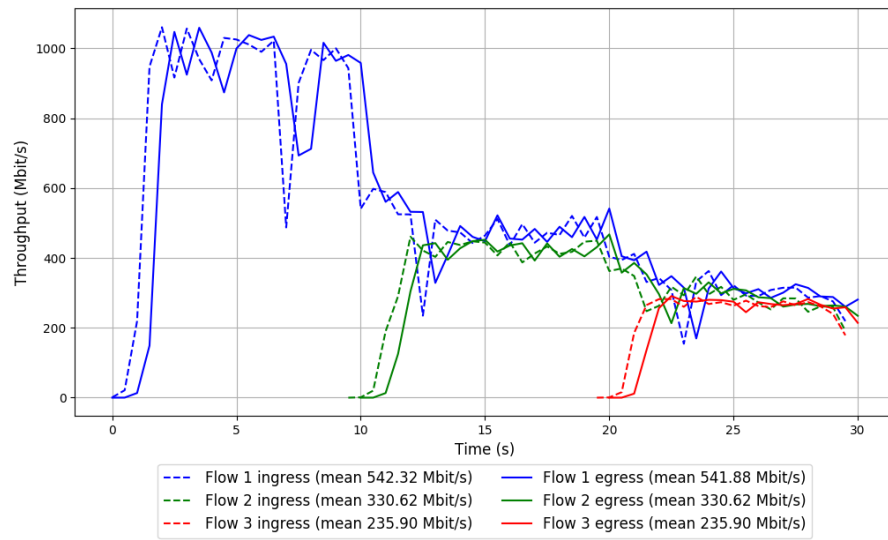
Run 3: Report of FillP — Data Link

- - - Flow 1 ingress (mean 566.24 Mbit/s) ——— Flow 1 egress (mean 564.73 Mbit/s)
- - - Flow 2 ingress (mean 366.82 Mbit/s) ——— Flow 2 egress (mean 366.73 Mbit/s)
- - - Flow 3 ingress (mean 228.95 Mbit/s) ——— Flow 3 egress (mean 228.90 Mbit/s)

• Flow 1 (95th percentile 108.68 ms)   • Flow 2 (95th percentile 91.21 ms)   • Flow 3 (95th percentile 87.13 ms)

```
Run 4: Statistics of FillP

Start at: 2018-12-11 15:27:56
End at: 2018-12-11 15:28:26
Local clock offset: -0.086 ms
Remote clock offset: -0.036 ms


# Below is generated by plot.py at 2018-12-11 17:17:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 833.12 Mbit/s
95th percentile per-packet one-way delay: 97.112 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 543.33 Mbit/s
95th percentile per-packet one-way delay: 113.689 ms
Loss rate: 0.55%
-- Flow 2:
Average throughput: 336.12 Mbit/s
95th percentile per-packet one-way delay: 90.245 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 201.90 Mbit/s
95th percentile per-packet one-way delay: 88.788 ms
Loss rate: 0.00%
```
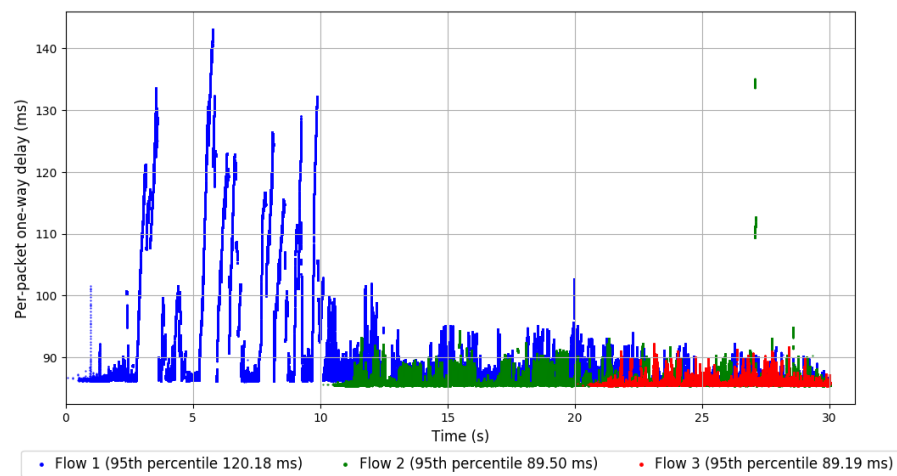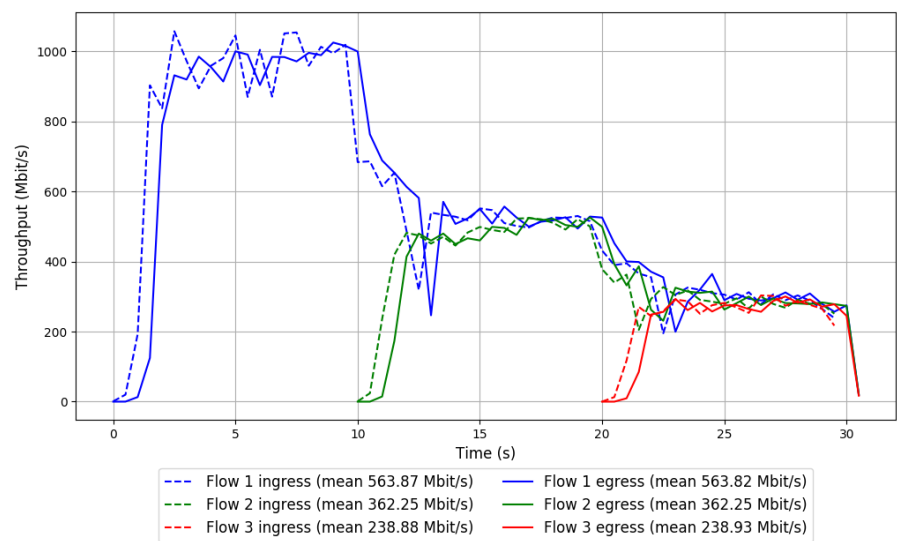
Run 4: Report of FillP — Data Link

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```
Run 5: Statistics of FillP

Start at: 2018-12-11 16:02:36
End at: 2018-12-11 16:03:06
Local clock offset: -0.1 ms
Remote clock offset: -0.077 ms


# Below is generated by plot.py at 2018-12-11 17:19:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 919.84 Mbit/s
95th percentile per-packet one-way delay: 116.463 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 601.05 Mbit/s
95th percentile per-packet one-way delay: 124.030 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 348.18 Mbit/s
95th percentile per-packet one-way delay: 90.489 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 265.06 Mbit/s
95th percentile per-packet one-way delay: 90.556 ms
Loss rate: 0.00%
```
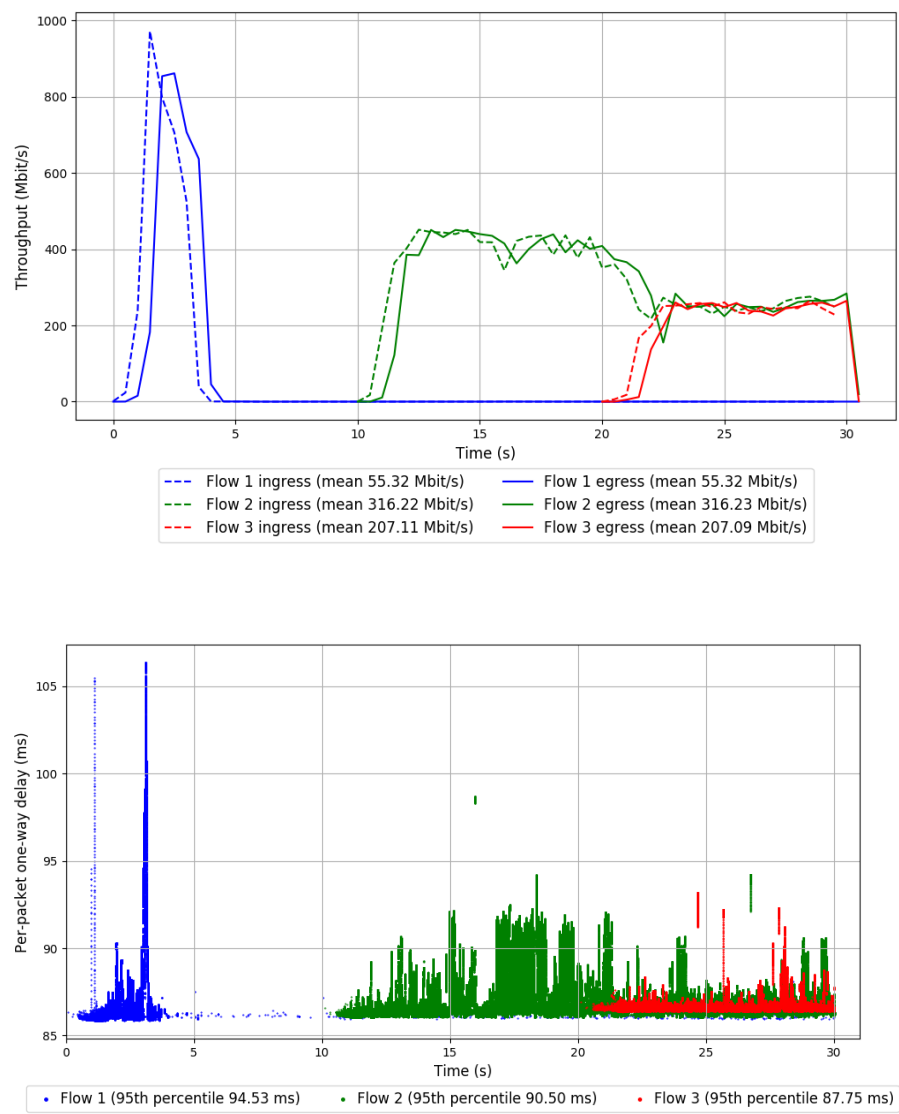
Run 5: Report of FillP — Data Link

- - - Flow 1 ingress (mean 601.28 Mbit/s) ——— Flow 1 egress (mean 601.05 Mbit/s)
- - - Flow 2 ingress (mean 348.19 Mbit/s) ——— Flow 2 egress (mean 348.18 Mbit/s)
- - - Flow 3 ingress (mean 265.15 Mbit/s) ——— Flow 3 egress (mean 265.06 Mbit/s)

• Flow 1 (95th percentile 124.03 ms)   • Flow 2 (95th percentile 90.49 ms)   • Flow 3 (95th percentile 90.56 ms)

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```
Run 1: Statistics of FillP-Sheep

Start at: 2018-12-11 13:37:53
End at: 2018-12-11 13:38:23
Local clock offset: -0.238 ms
Remote clock offset: -0.013 ms


# Below is generated by plot.py at 2018-12-11 17:19:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 840.21 Mbit/s
95th percentile per-packet one-way delay: 105.621 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 541.88 Mbit/s
95th percentile per-packet one-way delay: 112.321 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 330.62 Mbit/s
95th percentile per-packet one-way delay: 88.887 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 235.90 Mbit/s
95th percentile per-packet one-way delay: 88.372 ms
Loss rate: 0.00%
```

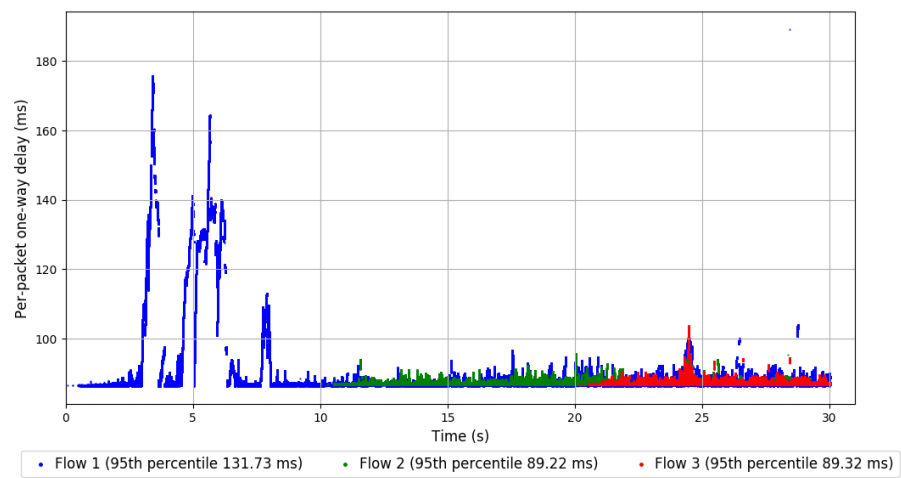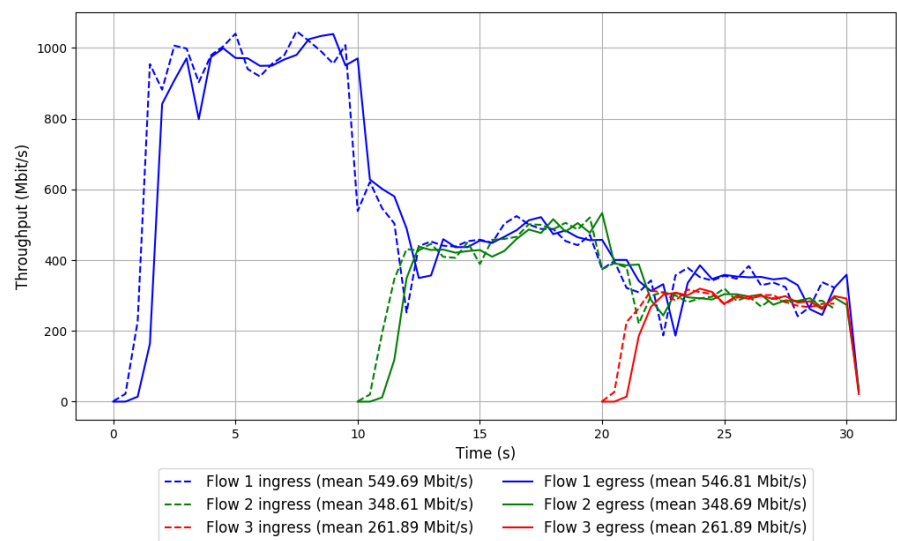Run 1: Report of FillP-Sheep — Data Link

```
Run 2: Statistics of FillP-Sheep

Start at: 2018-12-11 14:11:59
End at: 2018-12-11 14:12:29
Local clock offset: 0.279 ms
Remote clock offset: -0.056 ms


# Below is generated by plot.py at 2018-12-11 17:20:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 883.84 Mbit/s
95th percentile per-packet one-way delay: 115.495 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 563.82 Mbit/s
95th percentile per-packet one-way delay: 120.182 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 362.25 Mbit/s
95th percentile per-packet one-way delay: 89.504 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 238.93 Mbit/s
95th percentile per-packet one-way delay: 89.193 ms
Loss rate: 0.00%
```

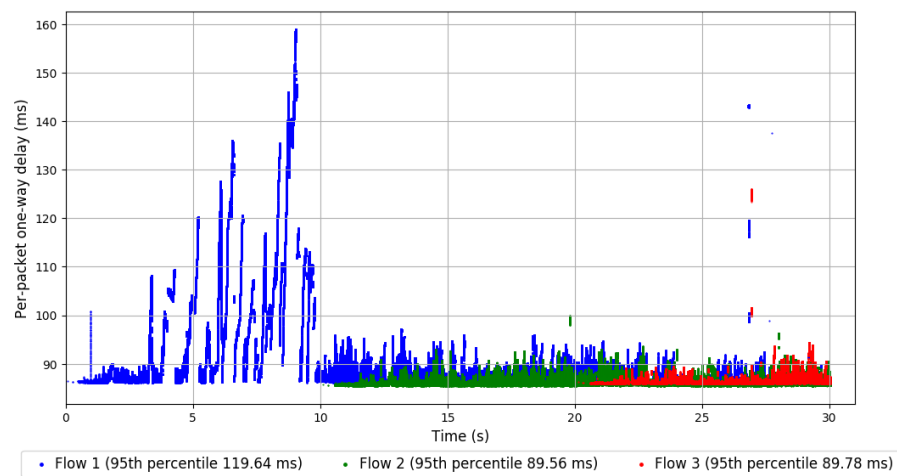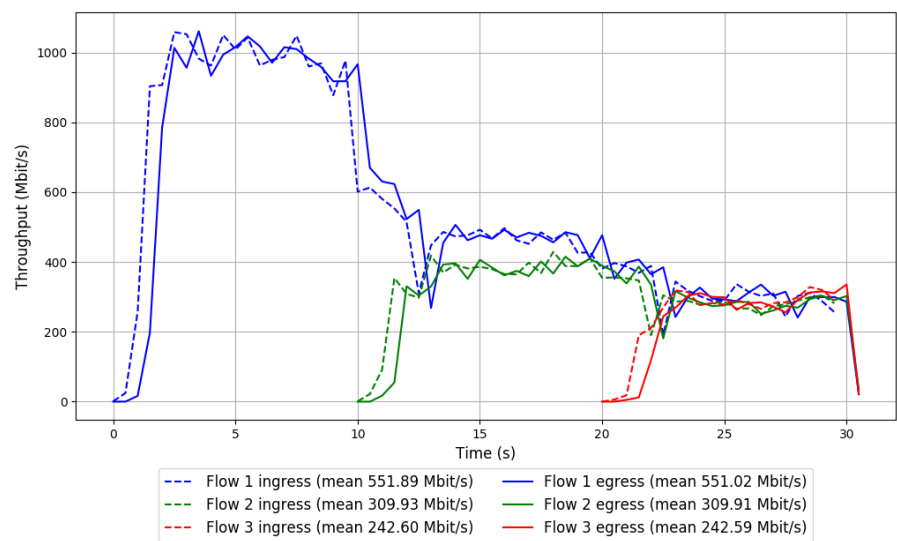Run 2: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 563.87 Mbit/s) --- Flow 1 egress (mean 563.82 Mbit/s)
Flow 2 ingress (mean 362.25 Mbit/s) --- Flow 2 egress (mean 362.25 Mbit/s)
Flow 3 ingress (mean 238.88 Mbit/s) --- Flow 3 egress (mean 238.93 Mbit/s)

• Flow 1 (95th percentile 120.18 ms)   • Flow 2 (95th percentile 89.50 ms)   • Flow 3 (95th percentile 89.19 ms)

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```
Run 3: Statistics of FillP-Sheep

Start at: 2018-12-11 14:45:59
End at: 2018-12-11 14:46:29
Local clock offset: 0.092 ms
Remote clock offset: -0.094 ms


# Below is generated by plot.py at 2018-12-11 17:20:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 334.11 Mbit/s
95th percentile per-packet one-way delay: 90.308 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 55.32 Mbit/s
95th percentile per-packet one-way delay: 94.529 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 316.23 Mbit/s
95th percentile per-packet one-way delay: 90.498 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 207.09 Mbit/s
95th percentile per-packet one-way delay: 87.752 ms
Loss rate: 0.00%
```

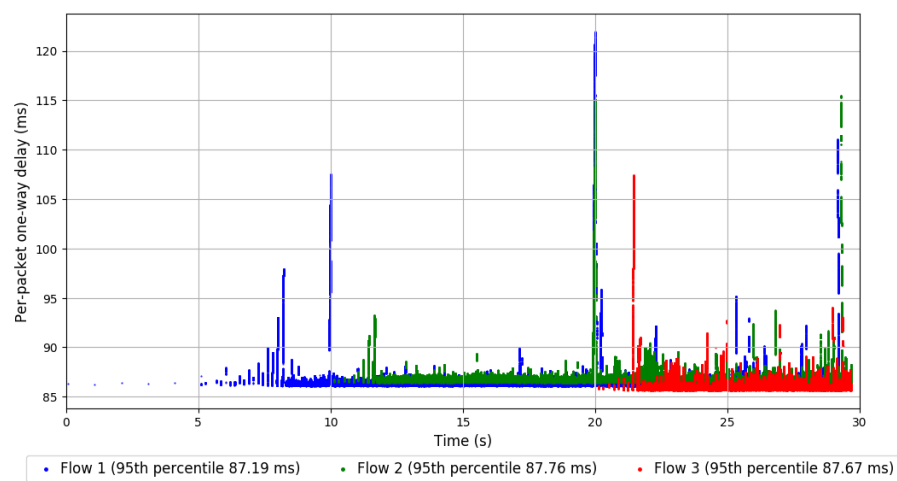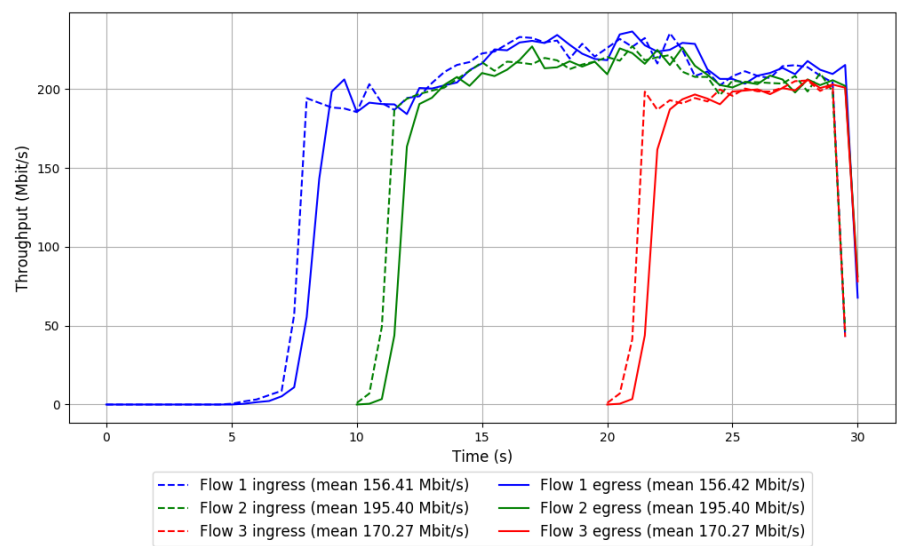Run 3: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 55.32 Mbit/s) --- Flow 1 egress (mean 55.32 Mbit/s)
Flow 2 ingress (mean 316.22 Mbit/s) --- Flow 2 egress (mean 316.23 Mbit/s)
Flow 3 ingress (mean 207.11 Mbit/s) --- Flow 3 egress (mean 207.09 Mbit/s)

Flow 1 (95th percentile 94.53 ms) • Flow 2 (95th percentile 90.50 ms) • Flow 3 (95th percentile 87.75 ms)

```
Run 4: Statistics of FillP-Sheep

Start at: 2018-12-11 15:20:09
End at: 2018-12-11 15:20:39
Local clock offset: -0.379 ms
Remote clock offset: -0.086 ms


# Below is generated by plot.py at 2018-12-11 17:20:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 865.56 Mbit/s
95th percentile per-packet one-way delay: 127.354 ms
Loss rate: 0.33%
-- Flow 1:
Average throughput: 546.81 Mbit/s
95th percentile per-packet one-way delay: 131.734 ms
Loss rate: 0.52%
-- Flow 2:
Average throughput: 348.69 Mbit/s
95th percentile per-packet one-way delay: 89.220 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 261.89 Mbit/s
95th percentile per-packet one-way delay: 89.324 ms
Loss rate: 0.00%
```
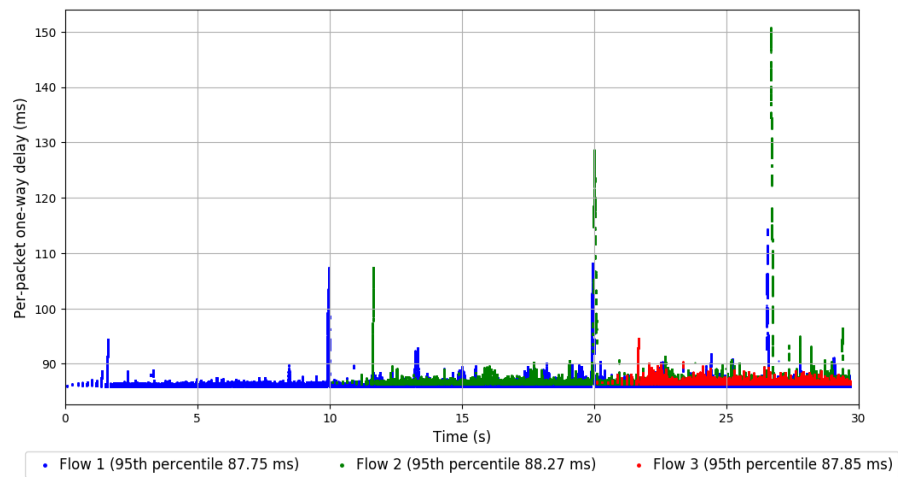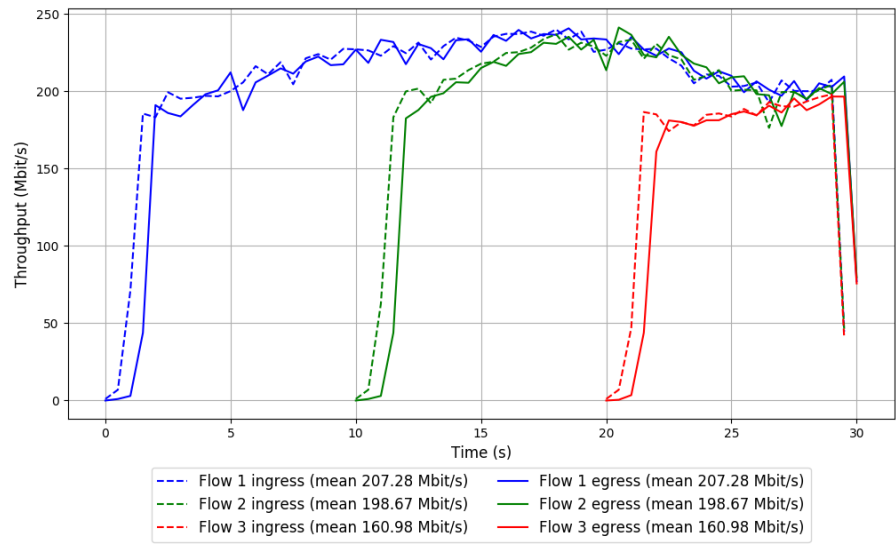
Run 4: Report of FillP-Sheep — Data Link
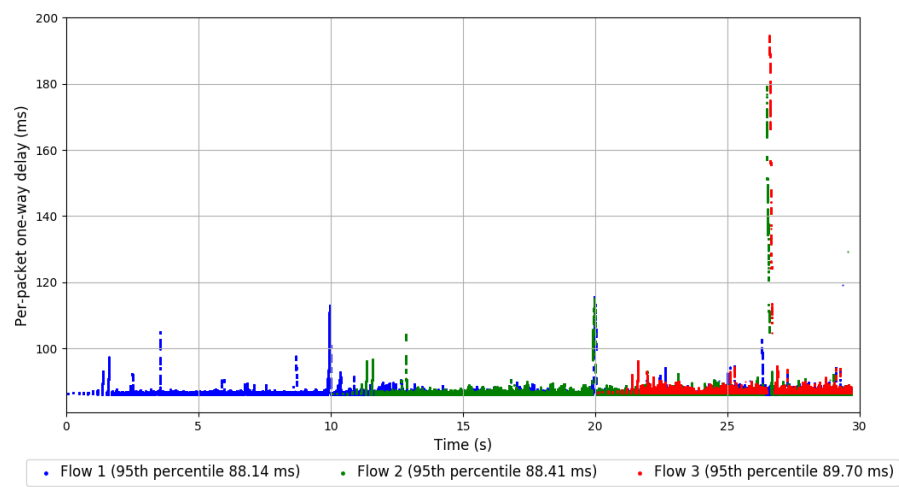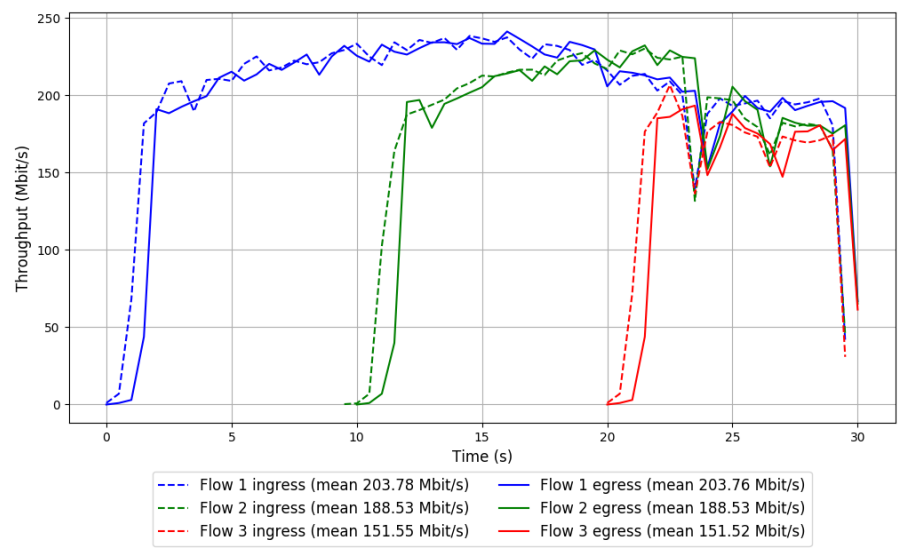
```
Run 5: Statistics of FillP-Sheep

Start at: 2018-12-11 15:54:49
End at: 2018-12-11 15:55:19
Local clock offset: 0.382 ms
Remote clock offset: -0.082 ms

# Below is generated by plot.py at 2018-12-11 17:27:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 837.08 Mbit/s
95th percentile per-packet one-way delay: 112.022 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 551.02 Mbit/s
95th percentile per-packet one-way delay: 119.641 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 309.91 Mbit/s
95th percentile per-packet one-way delay: 89.558 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 242.59 Mbit/s
95th percentile per-packet one-way delay: 89.782 ms
Loss rate: 0.00%
```

Run 5: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 551.89 Mbit/s) - - - -   Flow 1 egress (mean 551.02 Mbit/s) ———
Flow 2 ingress (mean 309.93 Mbit/s) - - - -   Flow 2 egress (mean 309.91 Mbit/s) ———
Flow 3 ingress (mean 242.60 Mbit/s) - - - -   Flow 3 egress (mean 242.59 Mbit/s) ———

• Flow 1 (95th percentile 119.64 ms)   • Flow 2 (95th percentile 89.56 ms)   • Flow 3 (95th percentile 89.78 ms)
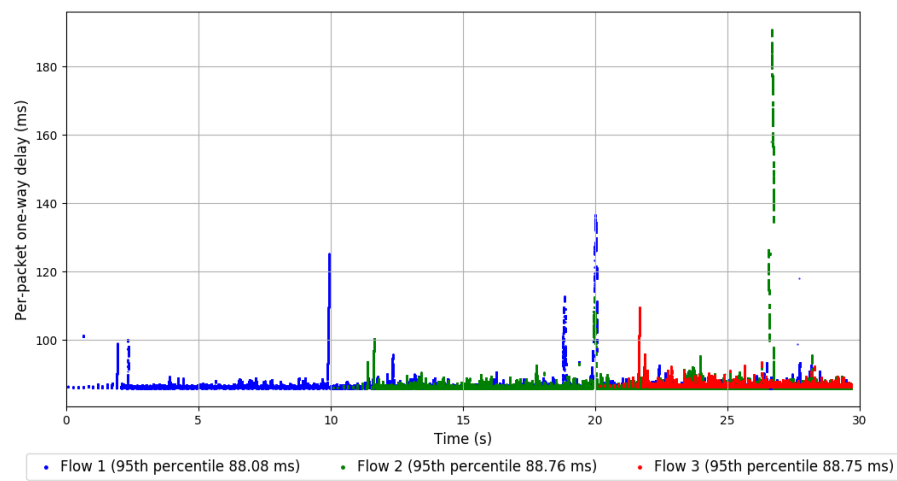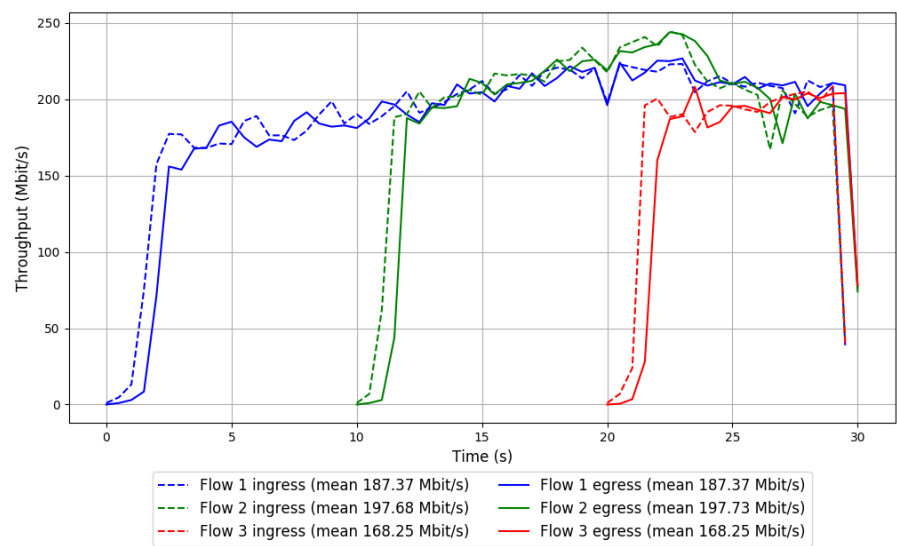
```
Run 1: Statistics of Indigo

Start at: 2018-12-11 13:18:39
End at: 2018-12-11 13:19:09
Local clock offset: 0.066 ms
Remote clock offset: -0.1 ms


# Below is generated by plot.py at 2018-12-11 17:27:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 340.51 Mbit/s
95th percentile per-packet one-way delay: 87.519 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 156.42 Mbit/s
95th percentile per-packet one-way delay: 87.188 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 195.40 Mbit/s
95th percentile per-packet one-way delay: 87.760 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 170.27 Mbit/s
95th percentile per-packet one-way delay: 87.673 ms
Loss rate: 0.00%
```
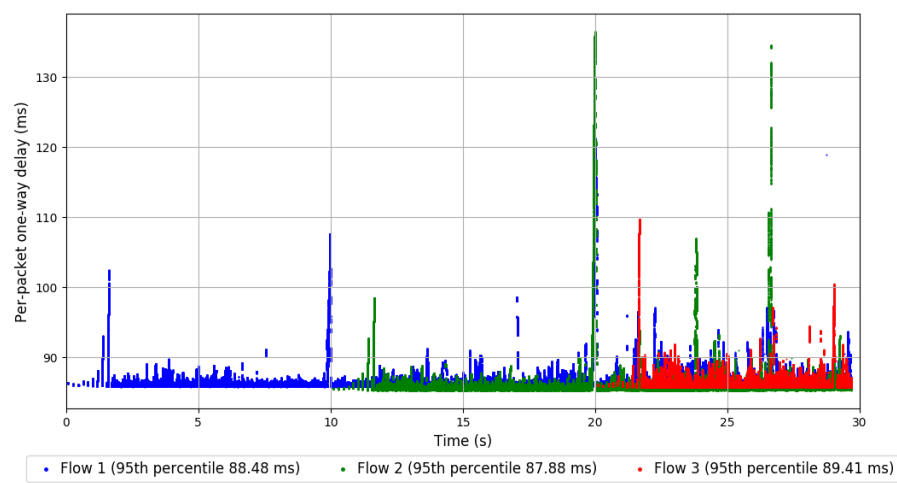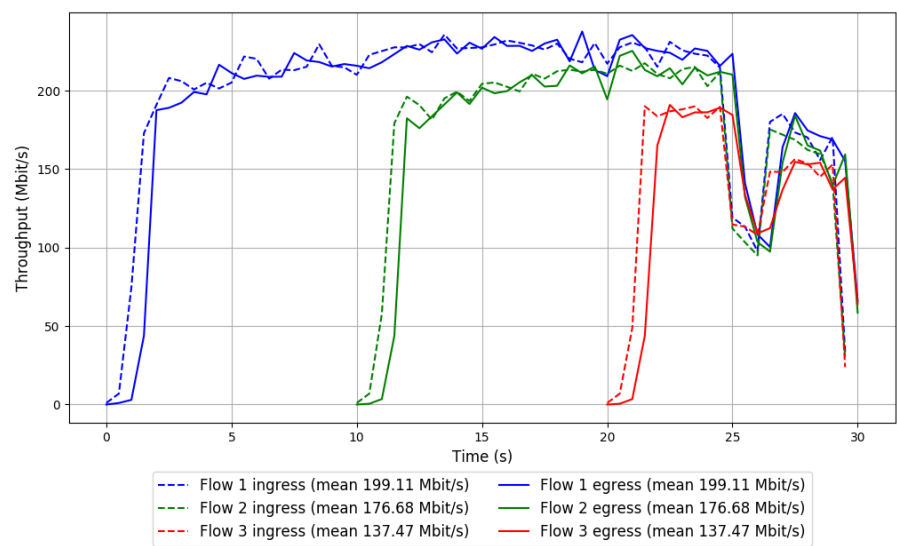
Run 1: Report of Indigo — Data Link

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```
Run 2: Statistics of Indigo

Start at: 2018-12-11 13:52:48
End at: 2018-12-11 13:53:18
Local clock offset: -0.157 ms
Remote clock offset: 0.015 ms


# Below is generated by plot.py at 2018-12-11 17:30:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 390.86 Mbit/s
95th percentile per-packet one-way delay: 87.941 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 207.28 Mbit/s
95th percentile per-packet one-way delay: 87.755 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 198.67 Mbit/s
95th percentile per-packet one-way delay: 88.266 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 160.98 Mbit/s
95th percentile per-packet one-way delay: 87.848 ms
Loss rate: 0.00%
```
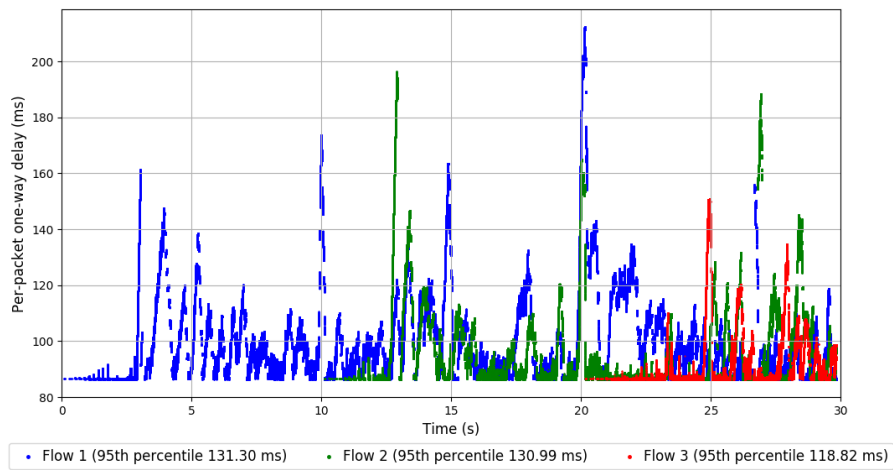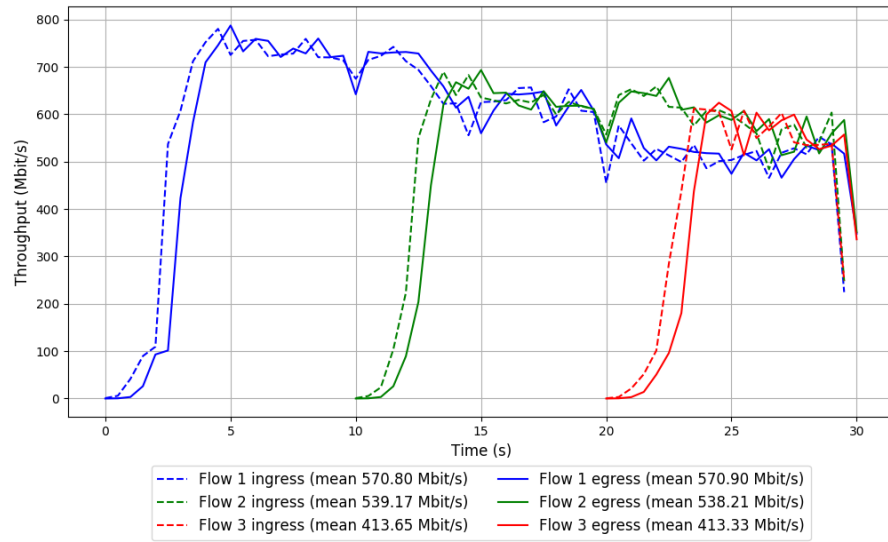
Run 2: Report of Indigo — Data Link

Flow 1 ingress (mean 207.28 Mbit/s)   Flow 1 egress (mean 207.28 Mbit/s)
Flow 2 ingress (mean 198.67 Mbit/s)   Flow 2 egress (mean 198.67 Mbit/s)
Flow 3 ingress (mean 160.98 Mbit/s)   Flow 3 egress (mean 160.98 Mbit/s)

Flow 1 (95th percentile 87.75 ms)   Flow 2 (95th percentile 88.27 ms)   Flow 3 (95th percentile 87.85 ms)

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```
Run 3: Statistics of Indigo

Start at: 2018-12-11 14:27:04
End at: 2018-12-11 14:27:34
Local clock offset: -0.399 ms
Remote clock offset: -0.103 ms


# Below is generated by plot.py at 2018-12-11 17:30:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 377.87 Mbit/s
95th percentile per-packet one-way delay: 88.475 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 203.76 Mbit/s
95th percentile per-packet one-way delay: 88.144 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 188.53 Mbit/s
95th percentile per-packet one-way delay: 88.408 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 151.52 Mbit/s
95th percentile per-packet one-way delay: 89.705 ms
Loss rate: 0.02%
```

Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2018-12-11 15:00:48
End at: 2018-12-11 15:01:18
Local clock offset: -0.004 ms
Remote clock offset: -0.051 ms


# Below is generated by plot.py at 2018-12-11 17:31:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 372.40 Mbit/s
95th percentile per-packet one-way delay: 88.448 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 187.37 Mbit/s
95th percentile per-packet one-way delay: 88.077 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 197.73 Mbit/s
95th percentile per-packet one-way delay: 88.757 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 168.25 Mbit/s
95th percentile per-packet one-way delay: 88.745 ms
Loss rate: 0.00%
```
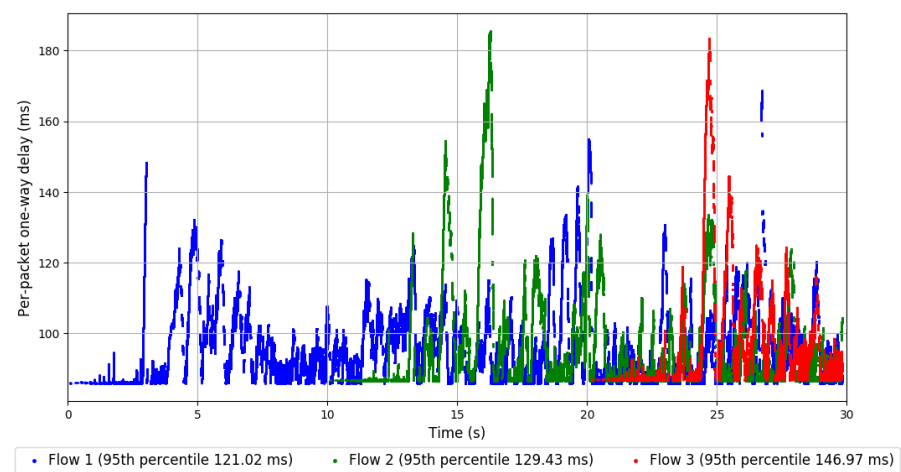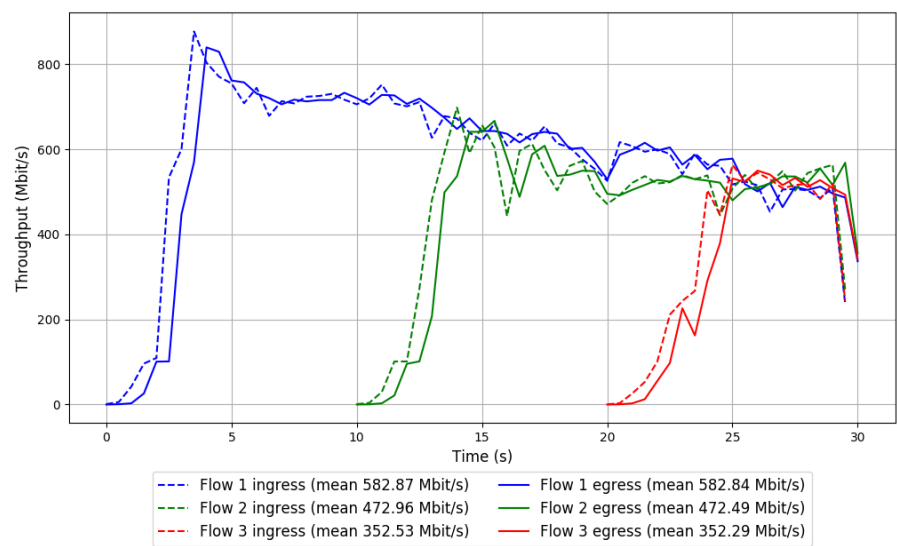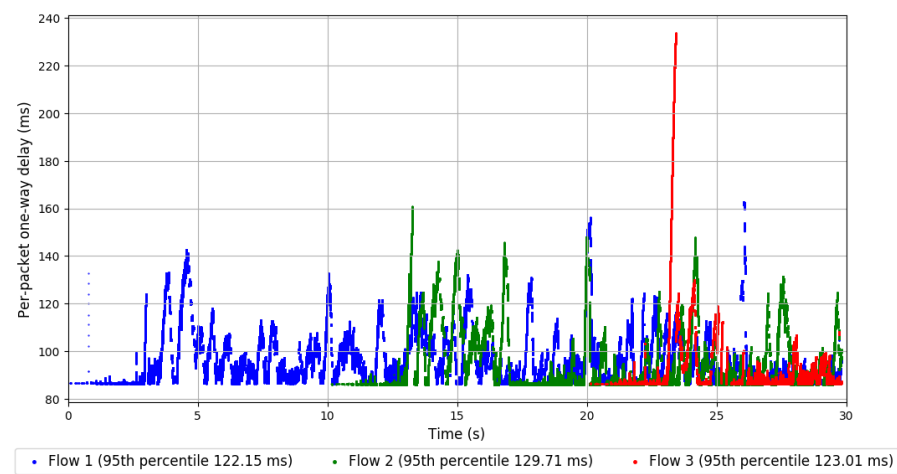
Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2018-12-11 15:35:35
End at: 2018-12-11 15:36:05
Local clock offset: 0.527 ms
Remote clock offset: -0.096 ms


# Below is generated by plot.py at 2018-12-11 17:32:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 360.43 Mbit/s
95th percentile per-packet one-way delay: 88.500 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 199.11 Mbit/s
95th percentile per-packet one-way delay: 88.477 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 176.68 Mbit/s
95th percentile per-packet one-way delay: 87.883 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 137.47 Mbit/s
95th percentile per-packet one-way delay: 89.410 ms
Loss rate: 0.00%
```
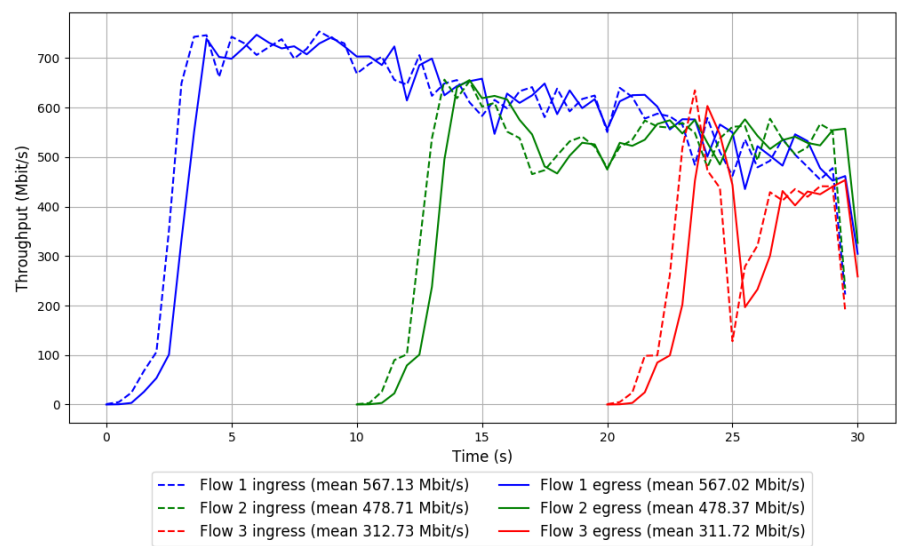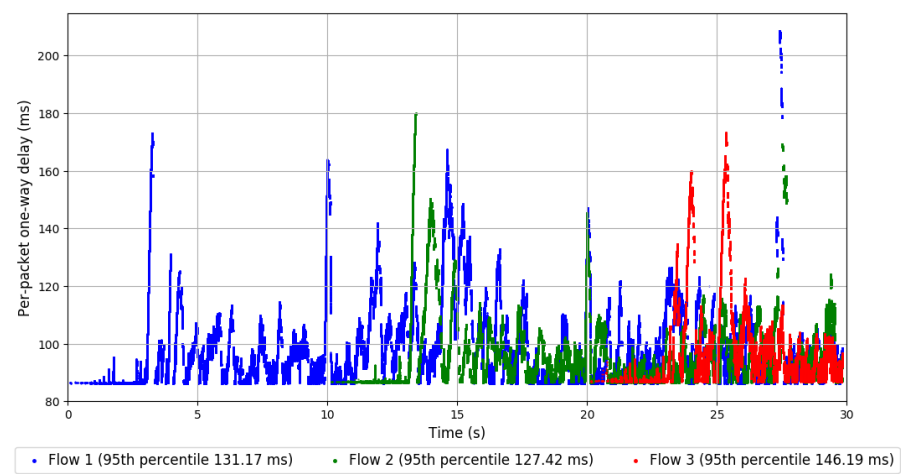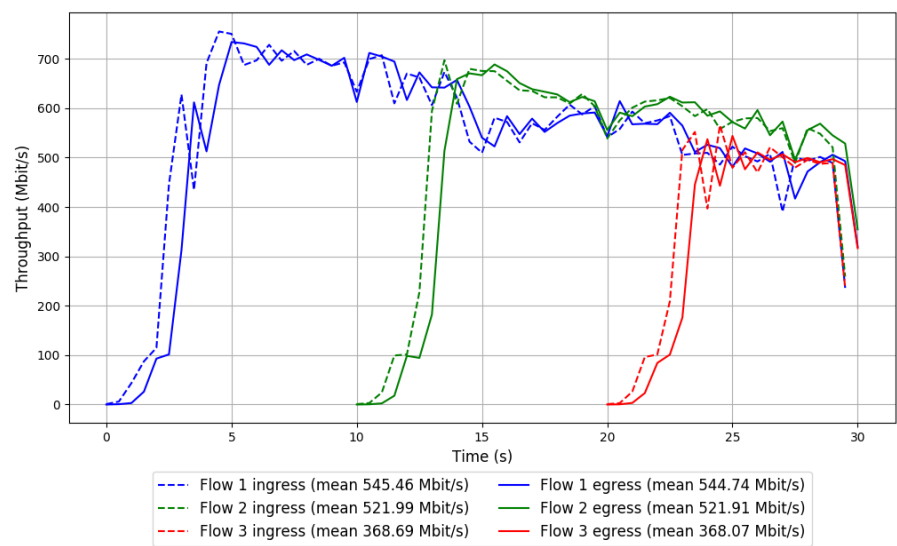
Run 5: Report of Indigo — Data Link

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```
Run 1: Statistics of Indigo-MusesD

Start at: 2018-12-11 13:20:29
End at: 2018-12-11 13:20:59
Local clock offset: -0.087 ms
Remote clock offset: -0.087 ms


# Below is generated by plot.py at 2018-12-11 17:40:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1061.96 Mbit/s
95th percentile per-packet one-way delay: 129.800 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 570.90 Mbit/s
95th percentile per-packet one-way delay: 131.300 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 538.21 Mbit/s
95th percentile per-packet one-way delay: 130.990 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 413.33 Mbit/s
95th percentile per-packet one-way delay: 118.823 ms
Loss rate: 0.02%
```
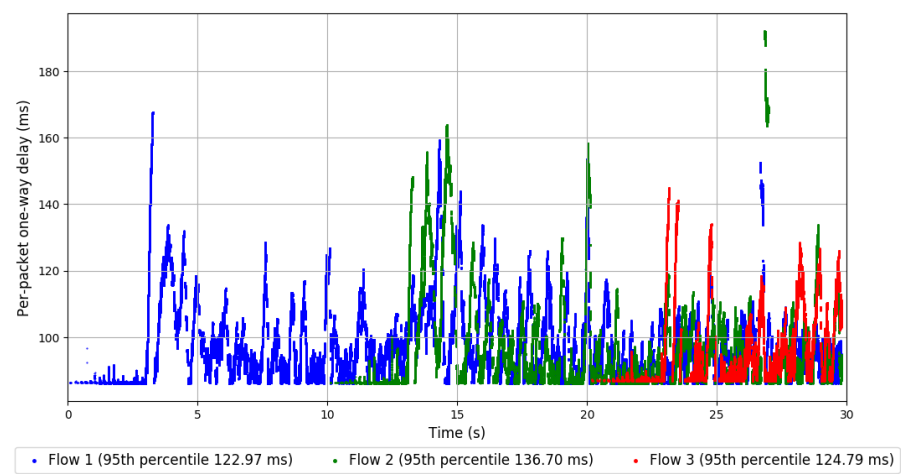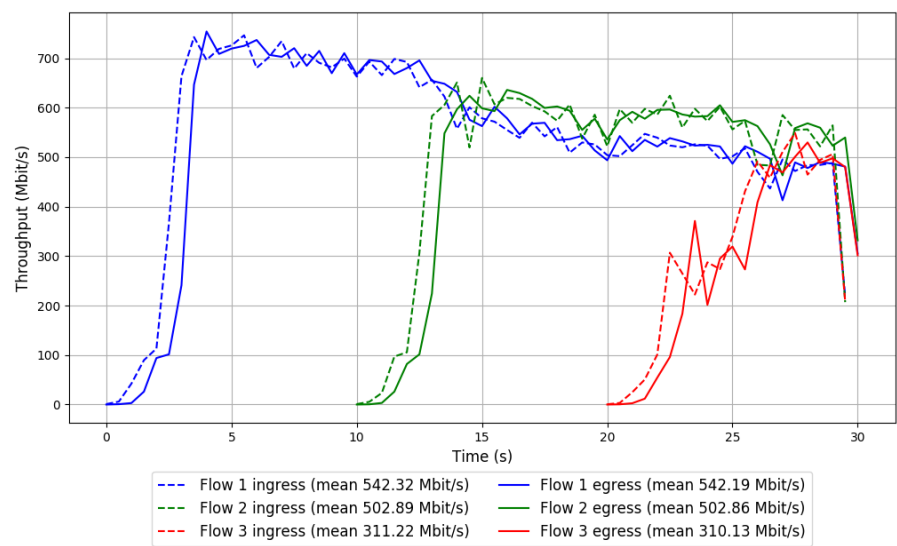
Run 1: Report of Indigo-MusesD — Data Link

```
Run 2: Statistics of Indigo-MusesD

Start at: 2018-12-11 13:54:43
End at: 2018-12-11 13:55:13
Local clock offset: -0.04 ms
Remote clock offset: -0.034 ms


# Below is generated by plot.py at 2018-12-11 17:40:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1010.57 Mbit/s
95th percentile per-packet one-way delay: 125.104 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 582.84 Mbit/s
95th percentile per-packet one-way delay: 121.020 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 472.49 Mbit/s
95th percentile per-packet one-way delay: 129.431 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 352.29 Mbit/s
95th percentile per-packet one-way delay: 146.971 ms
Loss rate: 0.04%
```

Run 2: Report of Indigo-MusesD — Data Link

Flow 1 ingress (mean 582.87 Mbit/s)   Flow 1 egress (mean 582.84 Mbit/s)
Flow 2 ingress (mean 472.96 Mbit/s)   Flow 2 egress (mean 472.49 Mbit/s)
Flow 3 ingress (mean 352.53 Mbit/s)   Flow 3 egress (mean 352.29 Mbit/s)

Flow 1 (95th percentile 121.02 ms)   Flow 2 (95th percentile 129.43 ms)   Flow 3 (95th percentile 146.97 ms)

```
Run 3: Statistics of Indigo-MusesD

Start at: 2018-12-11 14:28:58
End at: 2018-12-11 14:29:28
Local clock offset: -0.386 ms
Remote clock offset: -0.149 ms

# Below is generated by plot.py at 2018-12-11 17:46:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 984.81 Mbit/s
95th percentile per-packet one-way delay: 124.410 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 567.02 Mbit/s
95th percentile per-packet one-way delay: 122.153 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 478.37 Mbit/s
95th percentile per-packet one-way delay: 129.707 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 311.72 Mbit/s
95th percentile per-packet one-way delay: 123.012 ms
Loss rate: 0.32%
```
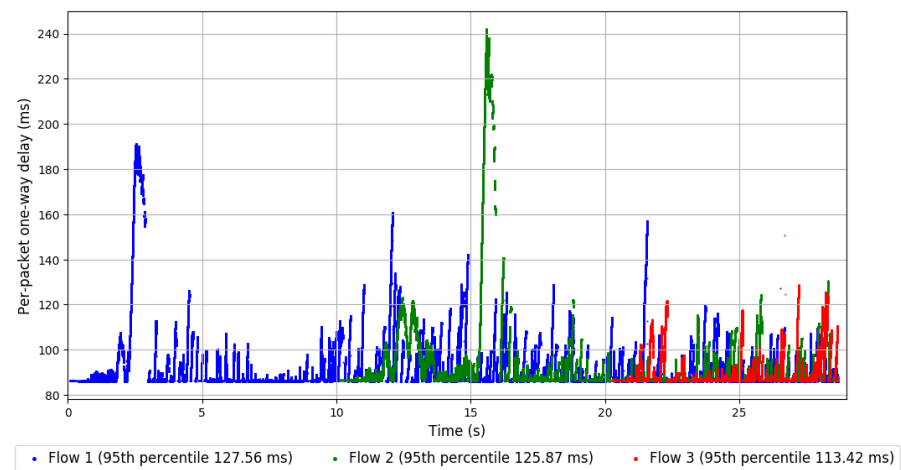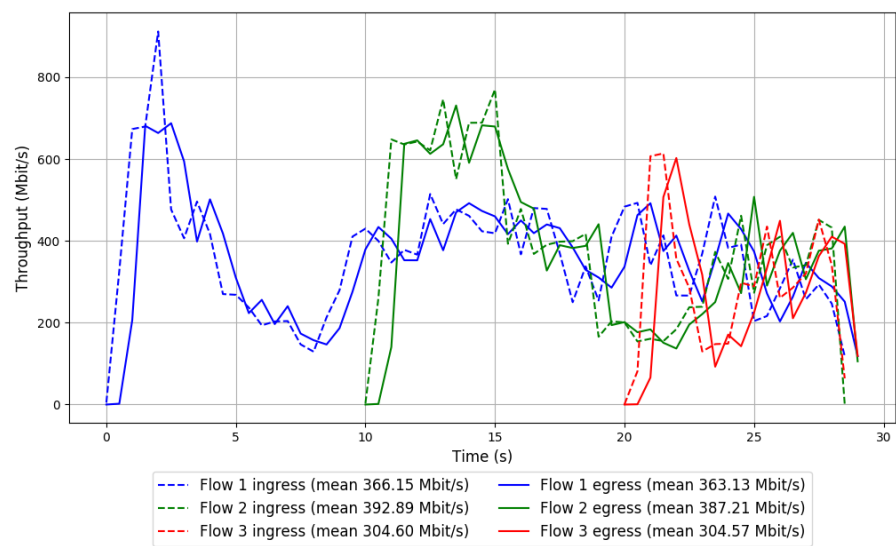
Run 3: Report of Indigo-MusesD — Data Link

```
Run 4: Statistics of Indigo-MusesD

Start at: 2018-12-11 15:02:40
End at: 2018-12-11 15:03:10
Local clock offset: -0.386 ms
Remote clock offset: -0.118 ms


# Below is generated by plot.py at 2018-12-11 17:47:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1009.79 Mbit/s
95th percentile per-packet one-way delay: 132.068 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 544.74 Mbit/s
95th percentile per-packet one-way delay: 131.172 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 521.91 Mbit/s
95th percentile per-packet one-way delay: 127.422 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 368.07 Mbit/s
95th percentile per-packet one-way delay: 146.192 ms
Loss rate: 0.15%
```
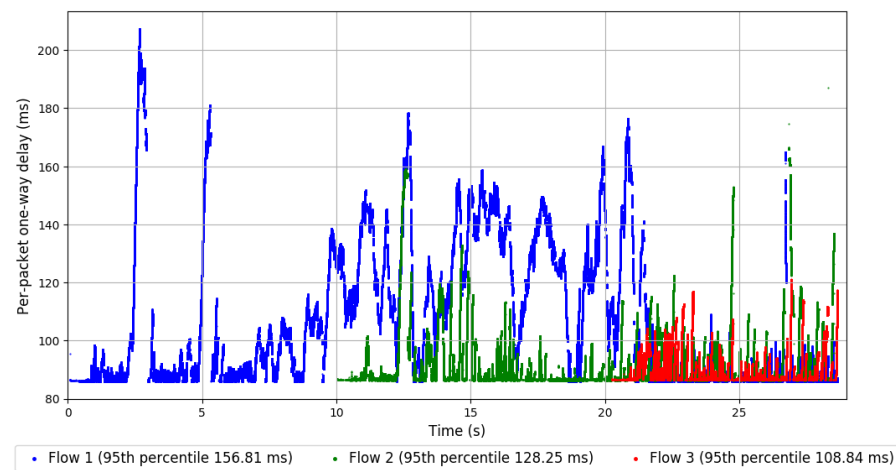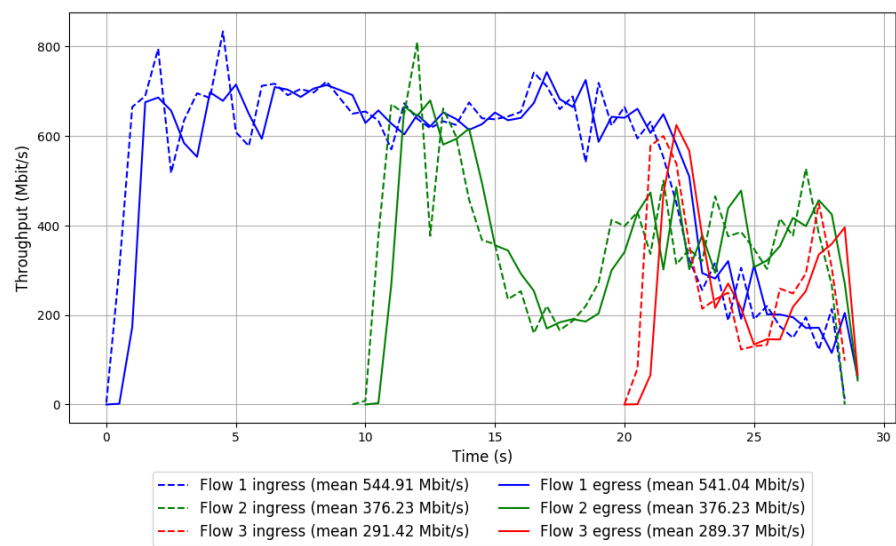
Run 4: Report of Indigo-MusesD — Data Link

- - - - Flow 1 ingress (mean 545.46 Mbit/s)   —— Flow 1 egress (mean 544.74 Mbit/s)
- - - - Flow 2 ingress (mean 521.99 Mbit/s)   —— Flow 2 egress (mean 521.91 Mbit/s)
- - - - Flow 3 ingress (mean 368.69 Mbit/s)   —— Flow 3 egress (mean 368.07 Mbit/s)

• Flow 1 (95th percentile 131.17 ms)   • Flow 2 (95th percentile 127.42 ms)   • Flow 3 (95th percentile 146.19 ms)
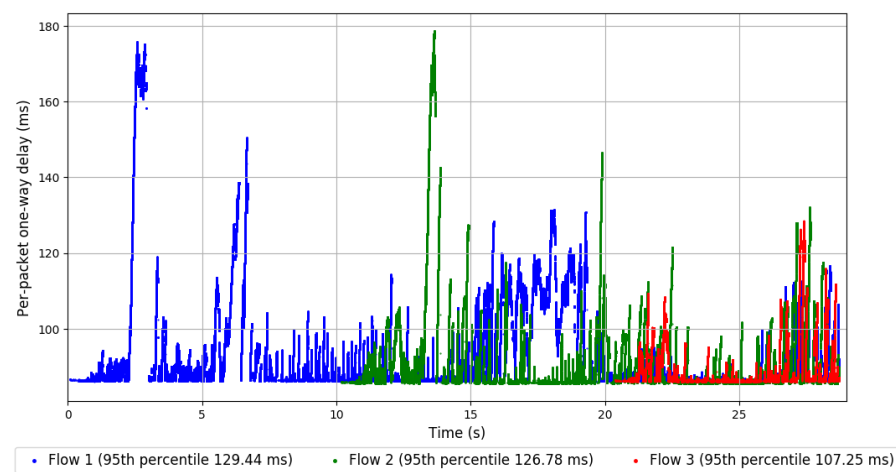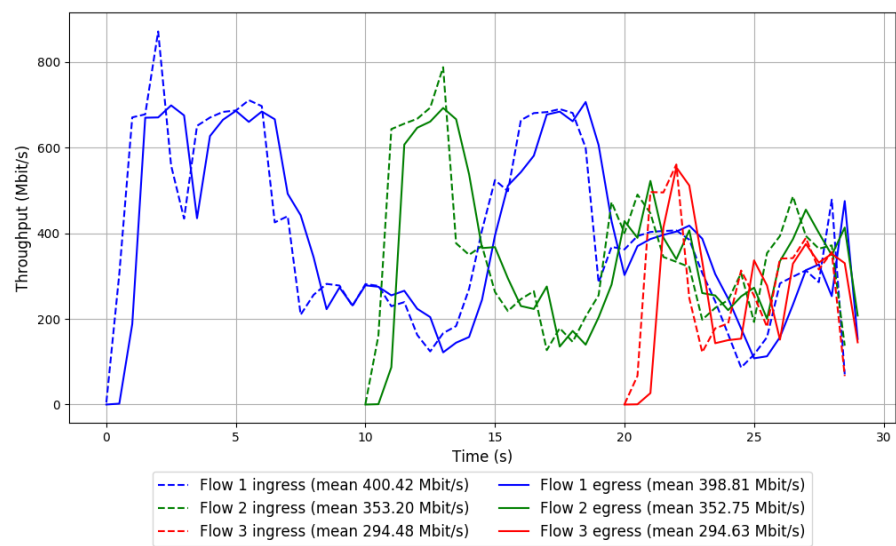
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```
Run 5: Statistics of Indigo-MusesD

Start at: 2018-12-11 15:37:27
End at: 2018-12-11 15:37:57
Local clock offset: -0.13 ms
Remote clock offset: -0.055 ms


# Below is generated by plot.py at 2018-12-11 17:49:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 975.92 Mbit/s
95th percentile per-packet one-way delay: 126.637 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 542.19 Mbit/s
95th percentile per-packet one-way delay: 122.965 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 502.86 Mbit/s
95th percentile per-packet one-way delay: 136.703 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 310.13 Mbit/s
95th percentile per-packet one-way delay: 124.794 ms
Loss rate: 0.33%
```
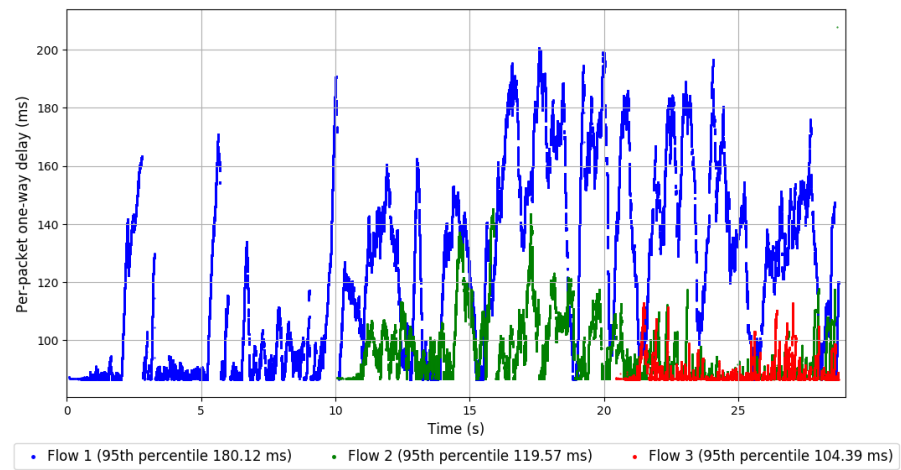
Run 5: Report of Indigo-MusesD — Data Link

```
Run 1: Statistics of Indigo-MusesT

Start at: 2018-12-11 13:30:48
End at: 2018-12-11 13:31:18
Local clock offset: -0.113 ms
Remote clock offset: 0.001 ms


# Below is generated by plot.py at 2018-12-11 17:49:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 703.64 Mbit/s
95th percentile per-packet one-way delay: 124.119 ms
Loss rate: 0.94%
-- Flow 1:
Average throughput: 363.13 Mbit/s
95th percentile per-packet one-way delay: 127.561 ms
Loss rate: 0.83%
-- Flow 2:
Average throughput: 387.21 Mbit/s
95th percentile per-packet one-way delay: 125.874 ms
Loss rate: 1.45%
-- Flow 3:
Average throughput: 304.57 Mbit/s
95th percentile per-packet one-way delay: 113.425 ms
Loss rate: 0.00%
```
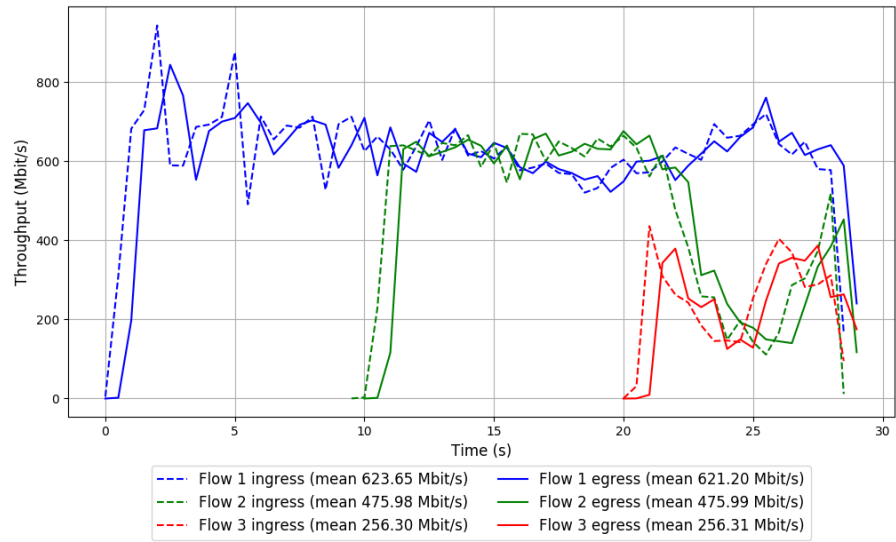
Run 1: Report of Indigo-MusesT — Data Link

Flow 1 ingress (mean 366.15 Mbit/s) --- Flow 1 egress (mean 363.13 Mbit/s)
Flow 2 ingress (mean 392.89 Mbit/s) --- Flow 2 egress (mean 387.21 Mbit/s)
Flow 3 ingress (mean 304.60 Mbit/s) --- Flow 3 egress (mean 304.57 Mbit/s)

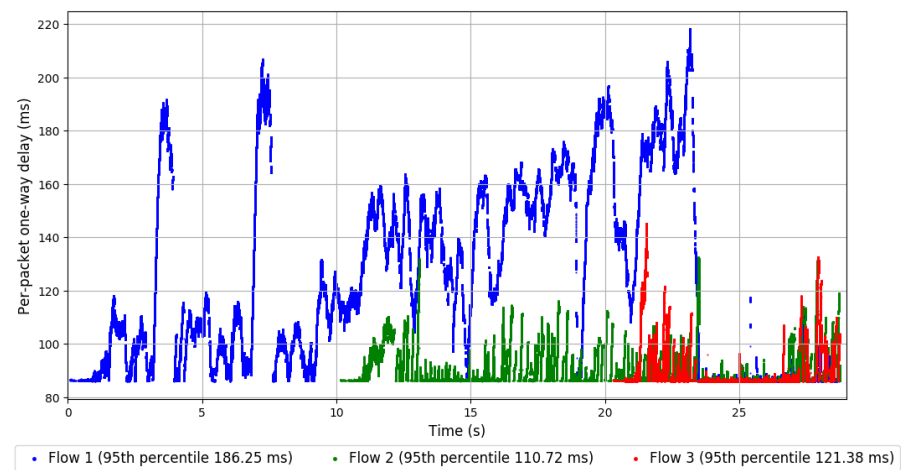Flow 1 (95th percentile 127.56 ms)   Flow 2 (95th percentile 125.87 ms)   Flow 3 (95th percentile 113.42 ms)

```
Run 2: Statistics of Indigo-MusesT

Start at: 2018-12-11 14:05:01
End at: 2018-12-11 14:05:31
Local clock offset: -0.14 ms
Remote clock offset: 0.007 ms

# Below is generated by plot.py at 2018-12-11 17:49:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 870.29 Mbit/s
95th percentile per-packet one-way delay: 150.905 ms
Loss rate: 0.51%
-- Flow 1:
Average throughput: 541.04 Mbit/s
95th percentile per-packet one-way delay: 156.807 ms
Loss rate: 0.71%
-- Flow 2:
Average throughput: 376.23 Mbit/s
95th percentile per-packet one-way delay: 128.246 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 289.37 Mbit/s
95th percentile per-packet one-way delay: 108.838 ms
Loss rate: 0.65%
```

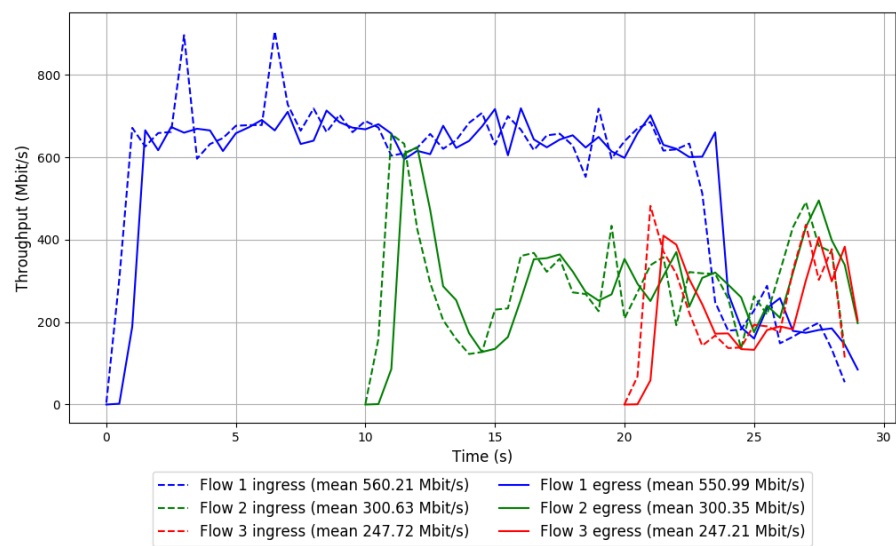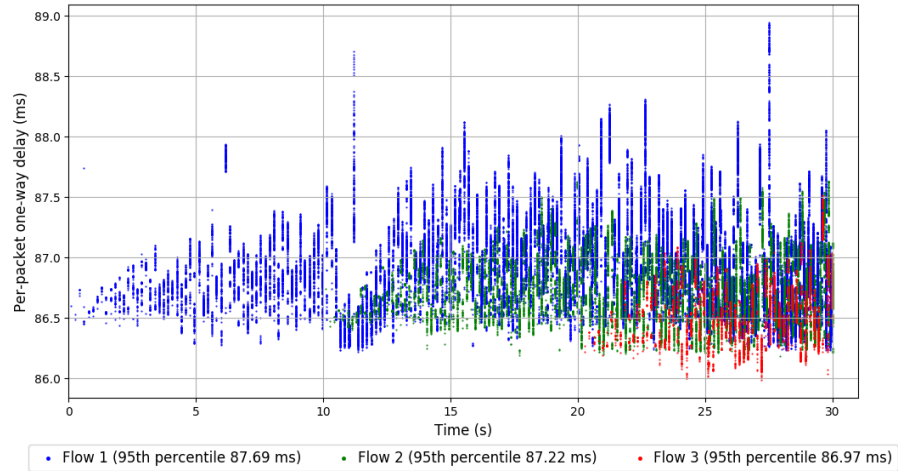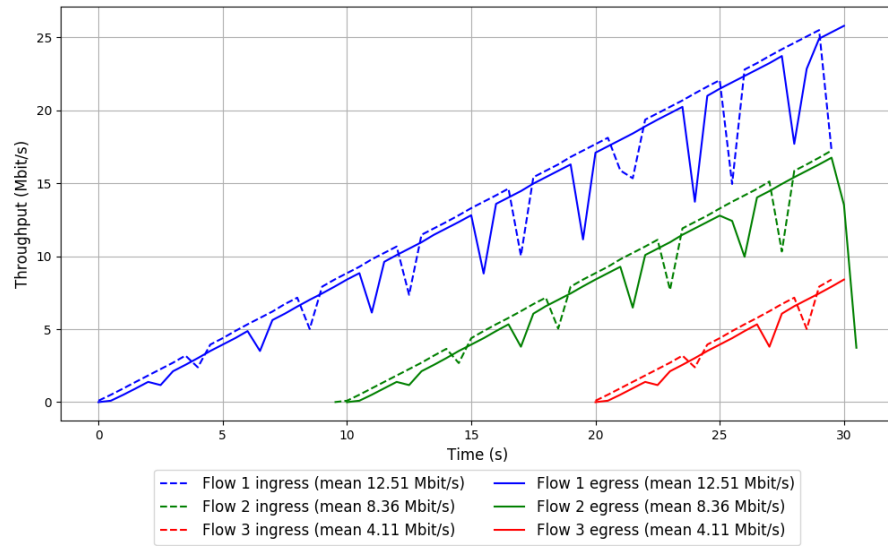Run 2: Report of Indigo-MusesT — Data Link

- - - Flow 1 ingress (mean 544.91 Mbit/s) —— Flow 1 egress (mean 541.04 Mbit/s)
- - - Flow 2 ingress (mean 376.23 Mbit/s) —— Flow 2 egress (mean 376.23 Mbit/s)
- - - Flow 3 ingress (mean 291.42 Mbit/s) —— Flow 3 egress (mean 289.37 Mbit/s)

- Flow 1 (95th percentile 156.81 ms)   - Flow 2 (95th percentile 128.25 ms)   - Flow 3 (95th percentile 108.84 ms)

```
Run 3: Statistics of Indigo-MusesT

Start at: 2018-12-11 14:39:09
End at: 2018-12-11 14:39:39
Local clock offset: 0.102 ms
Remote clock offset: -0.131 ms


# Below is generated by plot.py at 2018-12-11 17:49:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 712.84 Mbit/s
95th percentile per-packet one-way delay: 126.271 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 398.81 Mbit/s
95th percentile per-packet one-way delay: 129.441 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 352.75 Mbit/s
95th percentile per-packet one-way delay: 126.781 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 294.63 Mbit/s
95th percentile per-packet one-way delay: 107.253 ms
Loss rate: 0.00%
```

Run 3: Report of Indigo-MusesT — Data Link

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```
Run 4: Statistics of Indigo-MusesT

Start at: 2018-12-11 15:12:57
End at: 2018-12-11 15:13:27
Local clock offset: -0.222 ms
Remote clock offset: -0.101 ms


# Below is generated by plot.py at 2018-12-11 17:57:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1004.92 Mbit/s
95th percentile per-packet one-way delay: 173.903 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 621.20 Mbit/s
95th percentile per-packet one-way delay: 180.117 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 475.99 Mbit/s
95th percentile per-packet one-way delay: 119.567 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 256.31 Mbit/s
95th percentile per-packet one-way delay: 104.394 ms
Loss rate: 0.00%
```
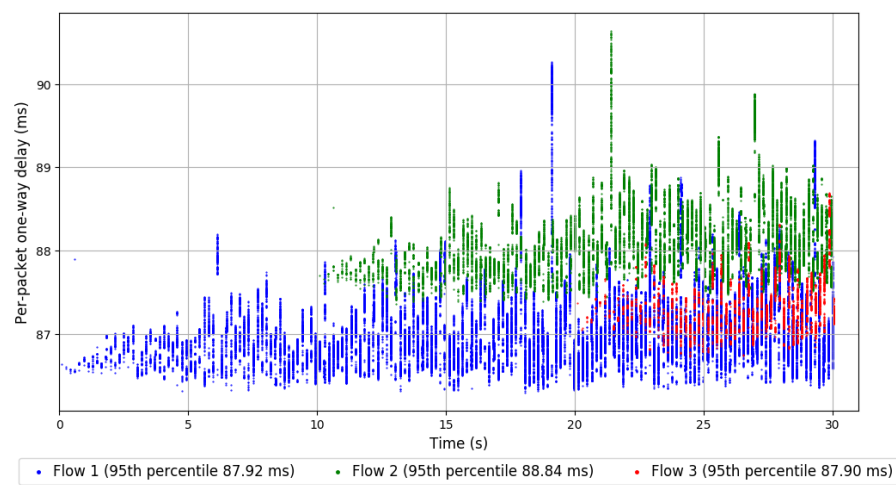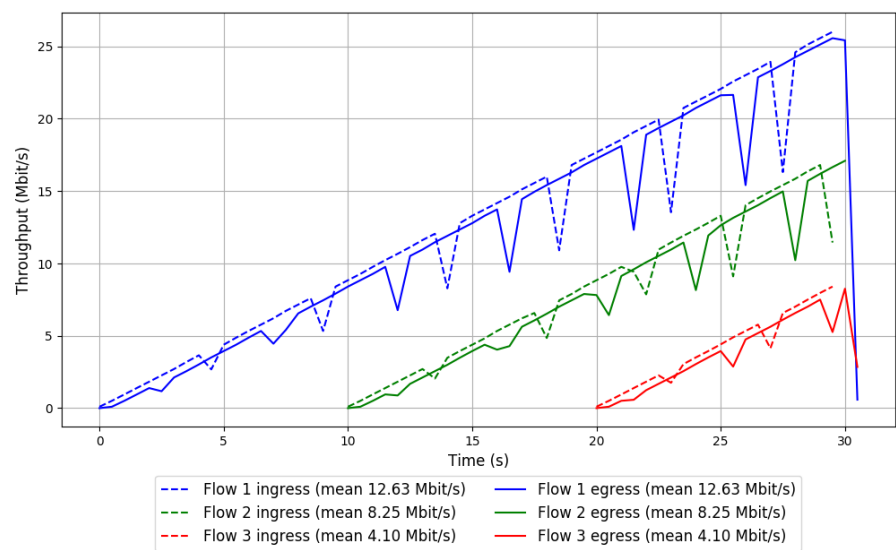
Run 4: Report of Indigo-MusesT — Data Link
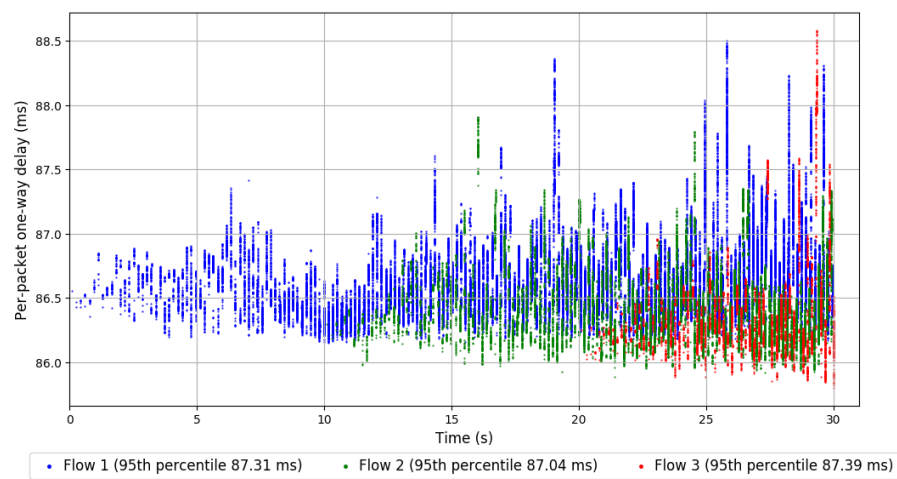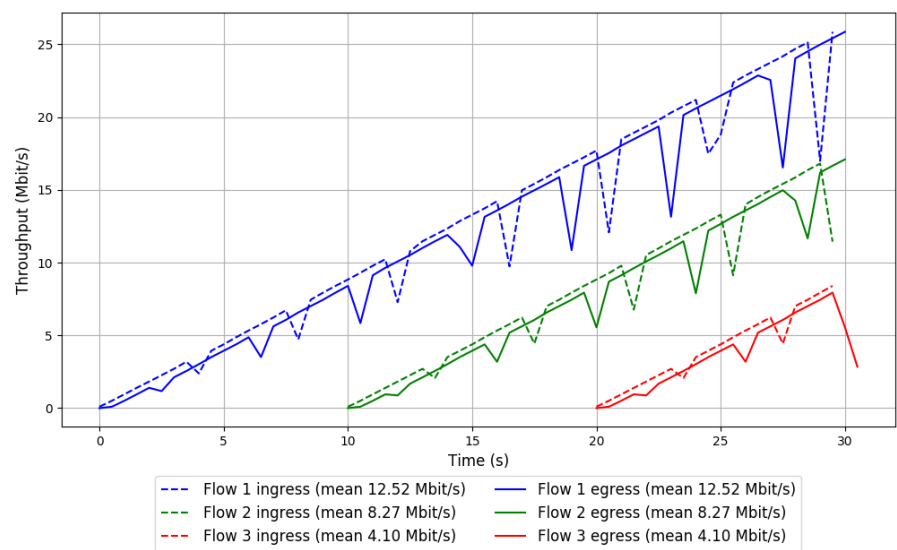

Flow 1 ingress (mean 623.65 Mbit/s) ----- Flow 1 egress (mean 621.20 Mbit/s) ——
Flow 2 ingress (mean 475.98 Mbit/s) ----- Flow 2 egress (mean 475.99 Mbit/s) ——
Flow 3 ingress (mean 256.30 Mbit/s) ----- Flow 3 egress (mean 256.31 Mbit/s) ——

• Flow 1 (95th percentile 180.12 ms)   • Flow 2 (95th percentile 119.57 ms)   • Flow 3 (95th percentile 104.39 ms)

```
Run 5: Statistics of Indigo-MusesT

Start at: 2018-12-11 15:47:41
End at: 2018-12-11 15:48:11
Local clock offset: -0.053 ms
Remote clock offset: -0.032 ms


# Below is generated by plot.py at 2018-12-11 17:57:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 817.82 Mbit/s
95th percentile per-packet one-way delay: 182.513 ms
Loss rate: 1.14%
-- Flow 1:
Average throughput: 550.99 Mbit/s
95th percentile per-packet one-way delay: 186.250 ms
Loss rate: 1.65%
-- Flow 2:
Average throughput: 300.35 Mbit/s
95th percentile per-packet one-way delay: 110.721 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 247.21 Mbit/s
95th percentile per-packet one-way delay: 121.384 ms
Loss rate: 0.00%
```

Run 5: Report of Indigo-MusesT — Data Link

```
Run 1: Statistics of LEDBAT

Start at: 2018-12-11 13:27:00
End at: 2018-12-11 13:27:30
Local clock offset: -0.002 ms
Remote clock offset: -0.026 ms


# Below is generated by plot.py at 2018-12-11 17:57:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.40 Mbit/s
95th percentile per-packet one-way delay: 87.581 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 12.51 Mbit/s
95th percentile per-packet one-way delay: 87.694 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 8.36 Mbit/s
95th percentile per-packet one-way delay: 87.215 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 4.11 Mbit/s
95th percentile per-packet one-way delay: 86.973 ms
Loss rate: 0.00%
```
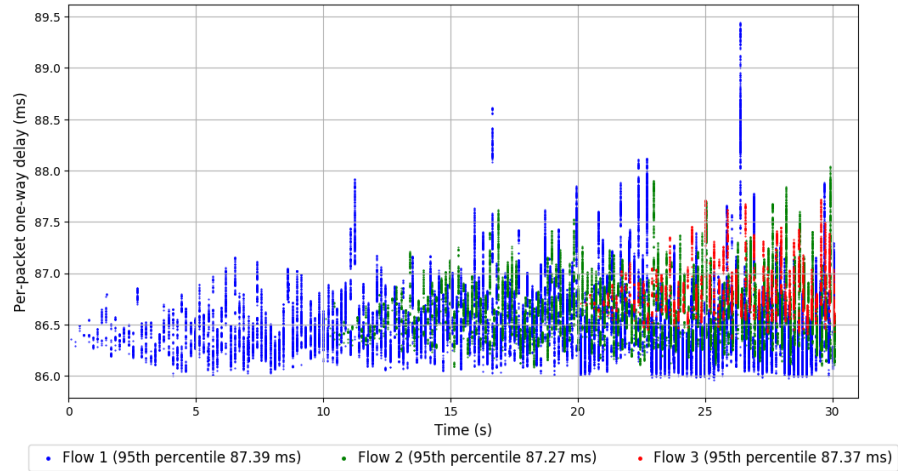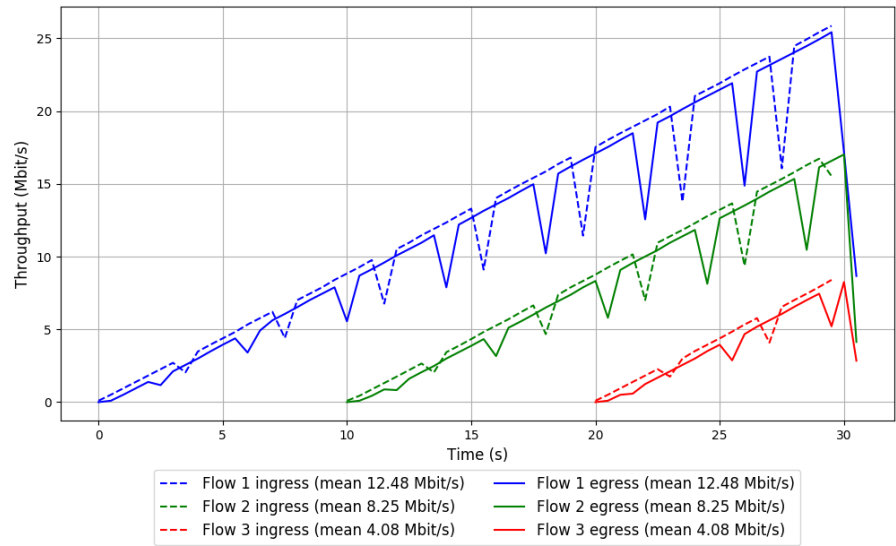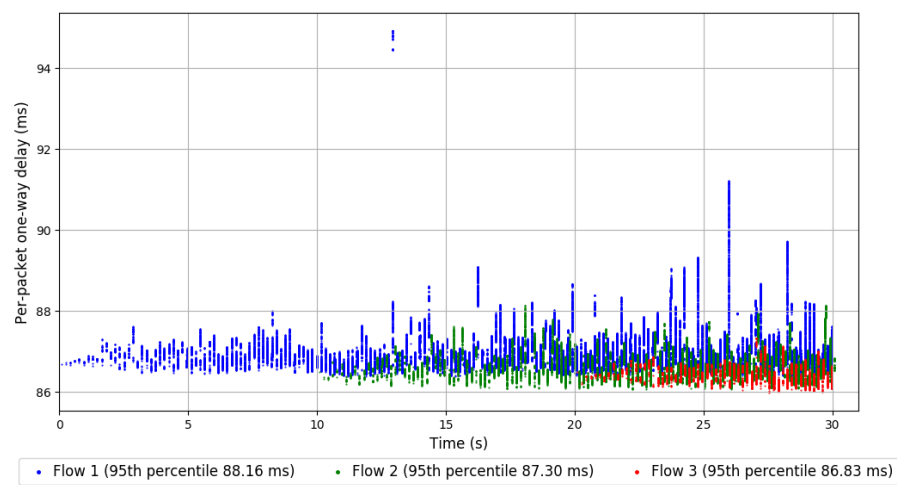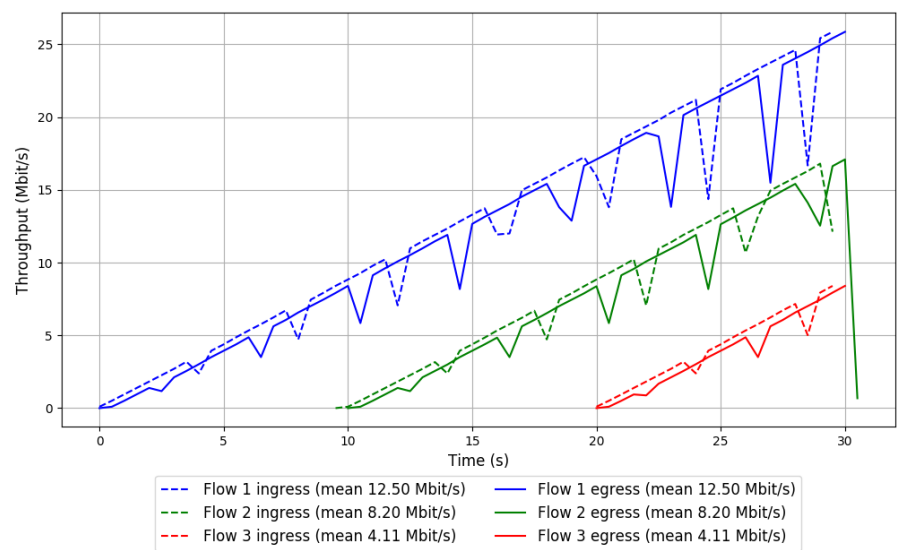
Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2018-12-11 14:01:13
End at: 2018-12-11 14:01:43
Local clock offset: -0.566 ms
Remote clock offset: 0.003 ms


# Below is generated by plot.py at 2018-12-11 17:57:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.44 Mbit/s
95th percentile per-packet one-way delay: 88.556 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 12.63 Mbit/s
95th percentile per-packet one-way delay: 87.916 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 8.25 Mbit/s
95th percentile per-packet one-way delay: 88.843 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 4.10 Mbit/s
95th percentile per-packet one-way delay: 87.902 ms
Loss rate: 0.00%
```
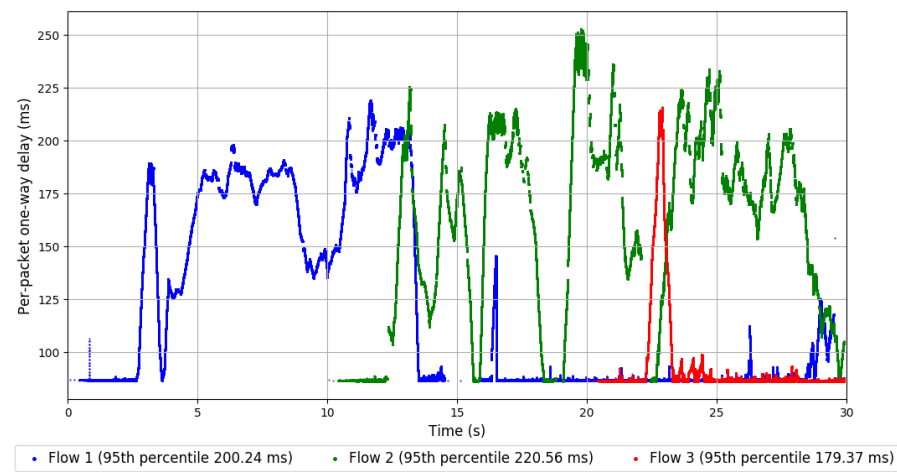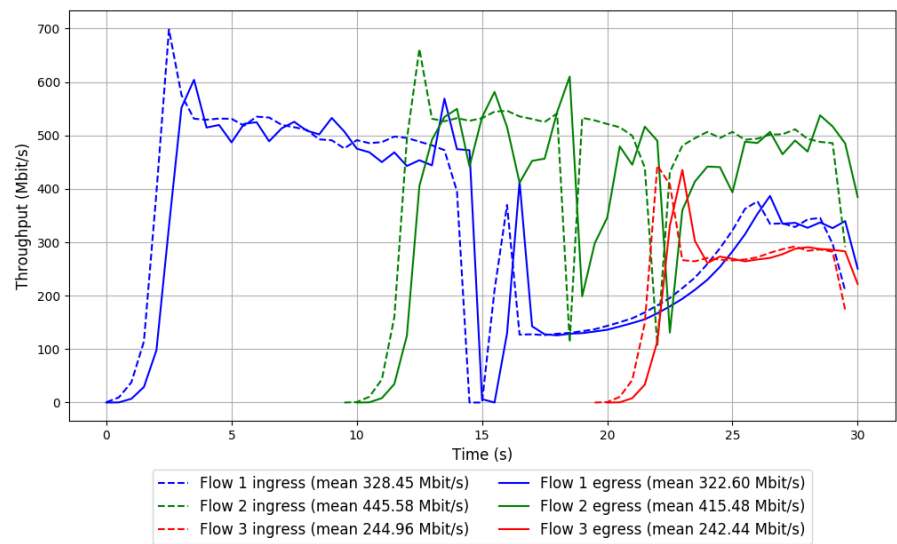
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2018-12-11 14:35:21
End at: 2018-12-11 14:35:51
Local clock offset: 0.264 ms
Remote clock offset: -0.114 ms


# Below is generated by plot.py at 2018-12-11 17:57:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.32 Mbit/s
95th percentile per-packet one-way delay: 87.228 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 12.52 Mbit/s
95th percentile per-packet one-way delay: 87.308 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 8.27 Mbit/s
95th percentile per-packet one-way delay: 87.037 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 4.10 Mbit/s
95th percentile per-packet one-way delay: 87.391 ms
Loss rate: 0.00%
```
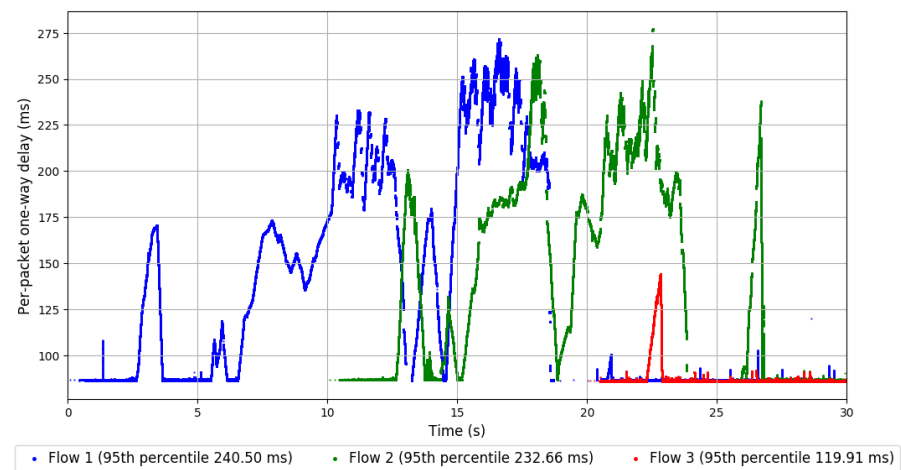
Run 3: Report of LEDBAT — Data Link

```
Run 4: Statistics of LEDBAT

Start at: 2018-12-11 15:09:10
End at: 2018-12-11 15:09:40
Local clock offset: 0.263 ms
Remote clock offset: -0.11 ms


# Below is generated by plot.py at 2018-12-11 17:57:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.30 Mbit/s
95th percentile per-packet one-way delay: 87.353 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 12.48 Mbit/s
95th percentile per-packet one-way delay: 87.395 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 8.25 Mbit/s
95th percentile per-packet one-way delay: 87.271 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 4.08 Mbit/s
95th percentile per-packet one-way delay: 87.372 ms
Loss rate: 0.00%
```

Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2018-12-11 15:43:54
End at: 2018-12-11 15:44:24
Local clock offset: -0.051 ms
Remote clock offset: -0.057 ms

# Below is generated by plot.py at 2018-12-11 17:57:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.29 Mbit/s
95th percentile per-packet one-way delay: 87.849 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 12.50 Mbit/s
95th percentile per-packet one-way delay: 88.155 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 8.20 Mbit/s
95th percentile per-packet one-way delay: 87.301 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 4.11 Mbit/s
95th percentile per-packet one-way delay: 86.829 ms
Loss rate: 0.00%
```
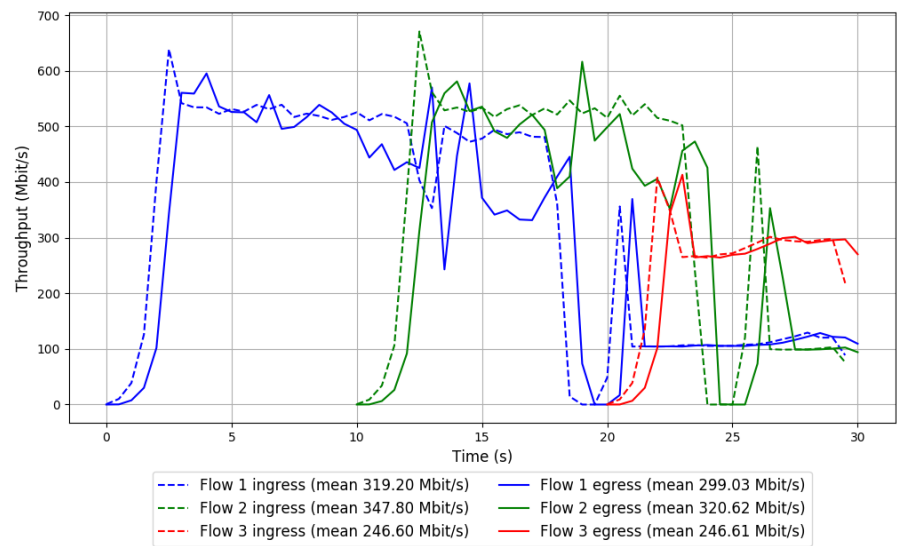
Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2018-12-11 13:43:33
End at: 2018-12-11 13:44:03
Local clock offset: -0.336 ms
Remote clock offset: 0.01 ms


# Below is generated by plot.py at 2018-12-11 18:11:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 679.01 Mbit/s
95th percentile per-packet one-way delay: 208.405 ms
Loss rate: 3.78%
-- Flow 1:
Average throughput: 322.60 Mbit/s
95th percentile per-packet one-way delay: 200.244 ms
Loss rate: 1.78%
-- Flow 2:
Average throughput: 415.48 Mbit/s
95th percentile per-packet one-way delay: 220.558 ms
Loss rate: 6.75%
-- Flow 3:
Average throughput: 242.44 Mbit/s
95th percentile per-packet one-way delay: 179.373 ms
Loss rate: 1.03%
```
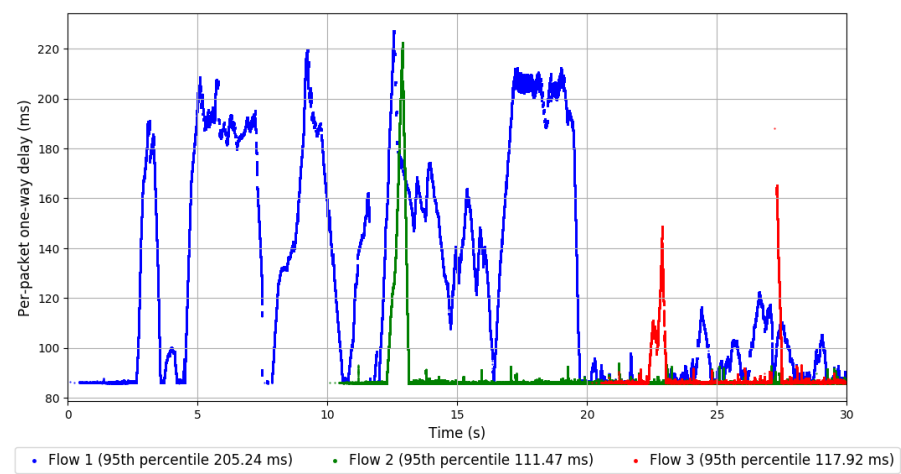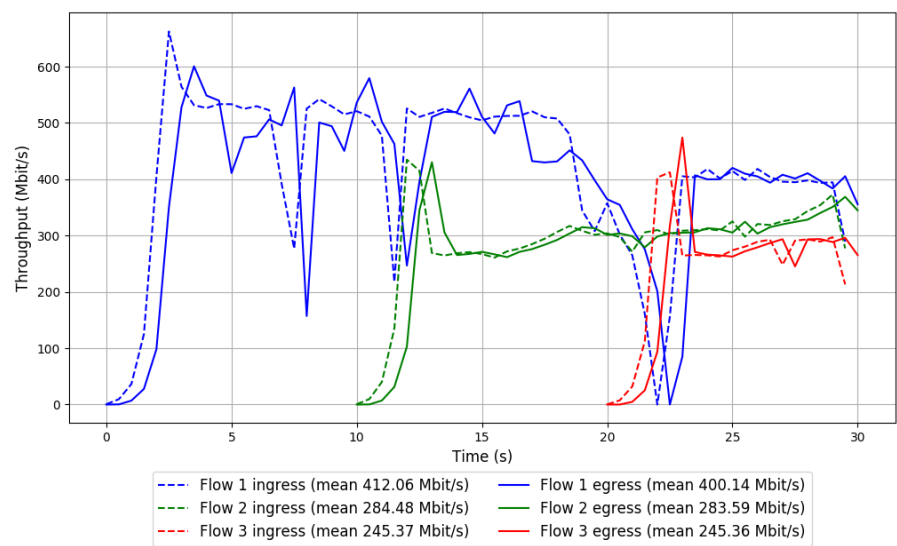
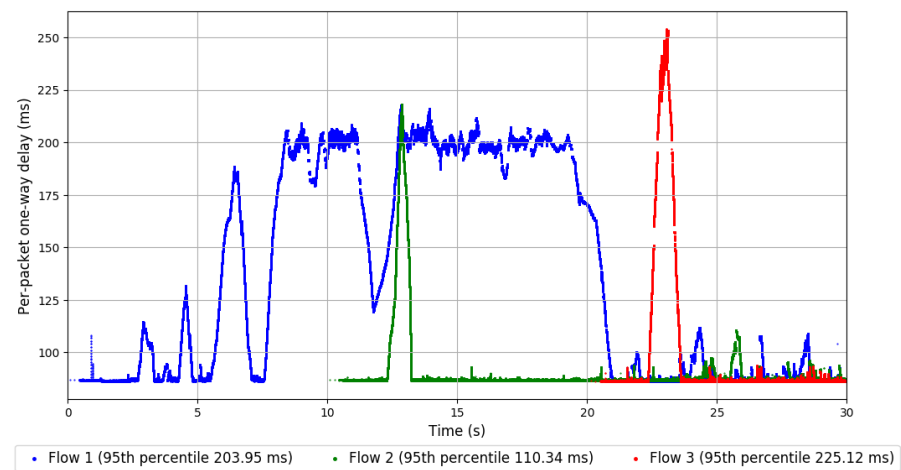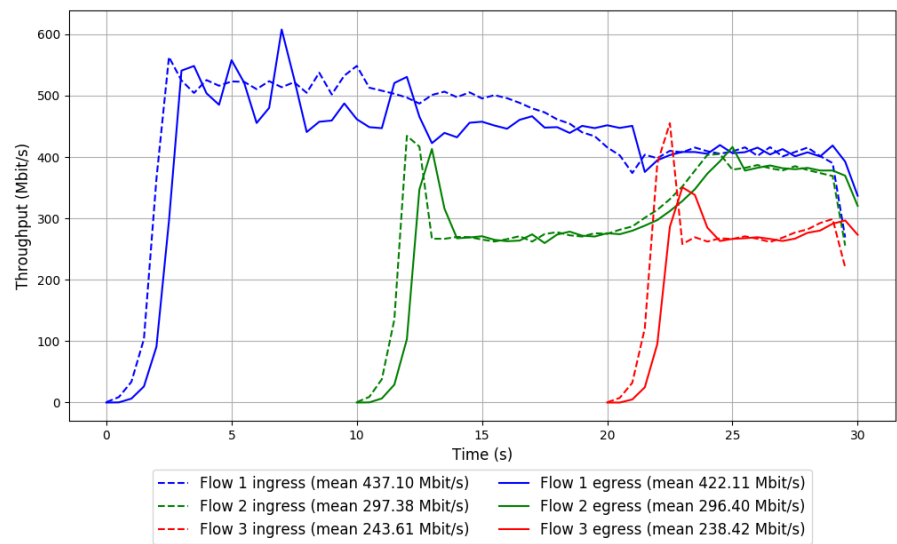Run 1: Report of PCC-Allegro — Data Link

```
Run 2: Statistics of PCC-Allegro

Start at: 2018-12-11 14:17:39
End at: 2018-12-11 14:18:09
Local clock offset: -0.128 ms
Remote clock offset: -0.107 ms


# Below is generated by plot.py at 2018-12-11 18:11:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 593.24 Mbit/s
95th percentile per-packet one-way delay: 234.212 ms
Loss rate: 6.05%
-- Flow 1:
Average throughput: 299.03 Mbit/s
95th percentile per-packet one-way delay: 240.501 ms
Loss rate: 6.32%
-- Flow 2:
Average throughput: 320.62 Mbit/s
95th percentile per-packet one-way delay: 232.664 ms
Loss rate: 7.81%
-- Flow 3:
Average throughput: 246.61 Mbit/s
95th percentile per-packet one-way delay: 119.906 ms
Loss rate: 0.00%
```

Run 2: Report of PCC-Allegro — Data Link

```
Run 3: Statistics of PCC-Allegro

Start at: 2018-12-11 14:51:21
End at: 2018-12-11 14:51:51
Local clock offset: 0.393 ms
Remote clock offset: -0.11 ms


# Below is generated by plot.py at 2018-12-11 18:11:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 668.92 Mbit/s
95th percentile per-packet one-way delay: 201.880 ms
Loss rate: 1.84%
-- Flow 1:
Average throughput: 400.14 Mbit/s
95th percentile per-packet one-way delay: 205.243 ms
Loss rate: 2.89%
-- Flow 2:
Average throughput: 283.59 Mbit/s
95th percentile per-packet one-way delay: 111.467 ms
Loss rate: 0.32%
-- Flow 3:
Average throughput: 245.36 Mbit/s
95th percentile per-packet one-way delay: 117.920 ms
Loss rate: 0.01%
```
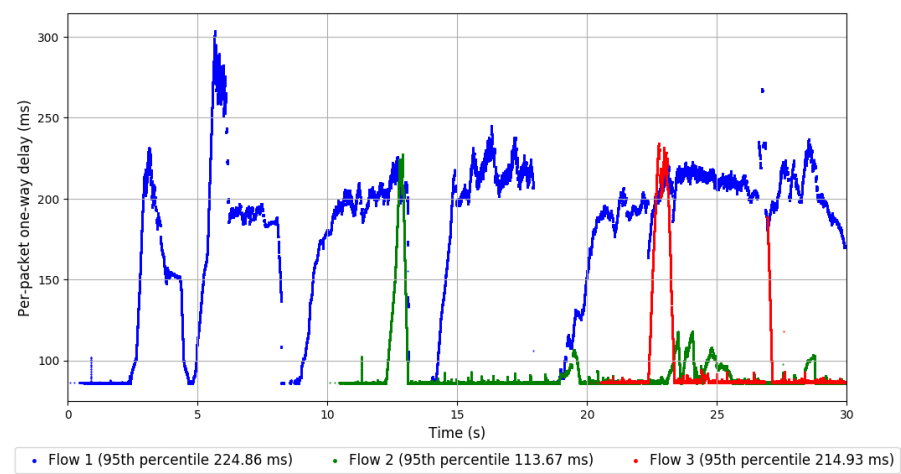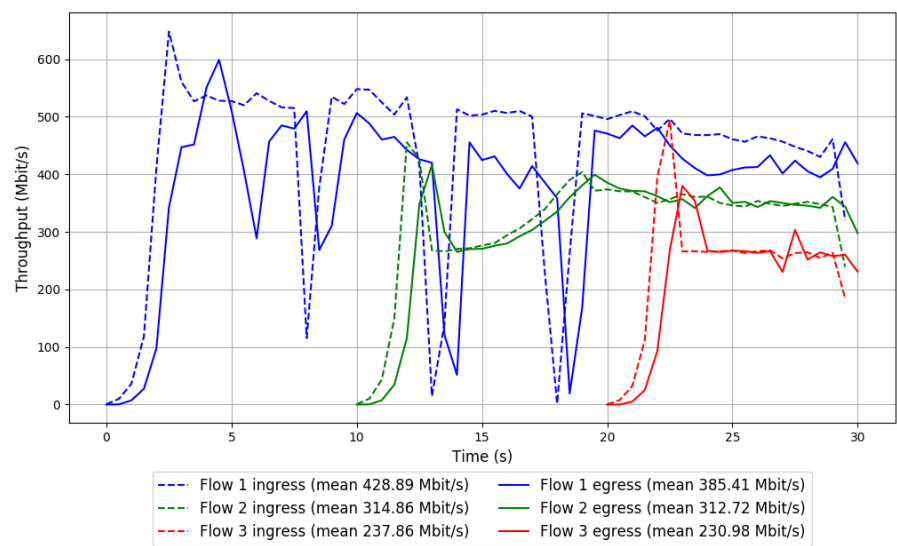
Run 3: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 412.06 Mbit/s)   Flow 1 egress (mean 400.14 Mbit/s)
Flow 2 ingress (mean 284.48 Mbit/s)   Flow 2 egress (mean 283.59 Mbit/s)
Flow 3 ingress (mean 245.37 Mbit/s)   Flow 3 egress (mean 245.36 Mbit/s)

Flow 1 (95th percentile 205.24 ms)   Flow 2 (95th percentile 111.47 ms)   Flow 3 (95th percentile 117.92 ms)

```
Run 4: Statistics of PCC-Allegro

Start at: 2018-12-11 15:25:51
End at: 2018-12-11 15:26:21
Local clock offset: 0.015 ms
Remote clock offset: -0.059 ms


# Below is generated by plot.py at 2018-12-11 18:13:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 697.36 Mbit/s
95th percentile per-packet one-way delay: 203.223 ms
Loss rate: 2.43%
-- Flow 1:
Average throughput: 422.11 Mbit/s
95th percentile per-packet one-way delay: 203.953 ms
Loss rate: 3.43%
-- Flow 2:
Average throughput: 296.40 Mbit/s
95th percentile per-packet one-way delay: 110.343 ms
Loss rate: 0.33%
-- Flow 3:
Average throughput: 238.42 Mbit/s
95th percentile per-packet one-way delay: 225.119 ms
Loss rate: 2.13%
```
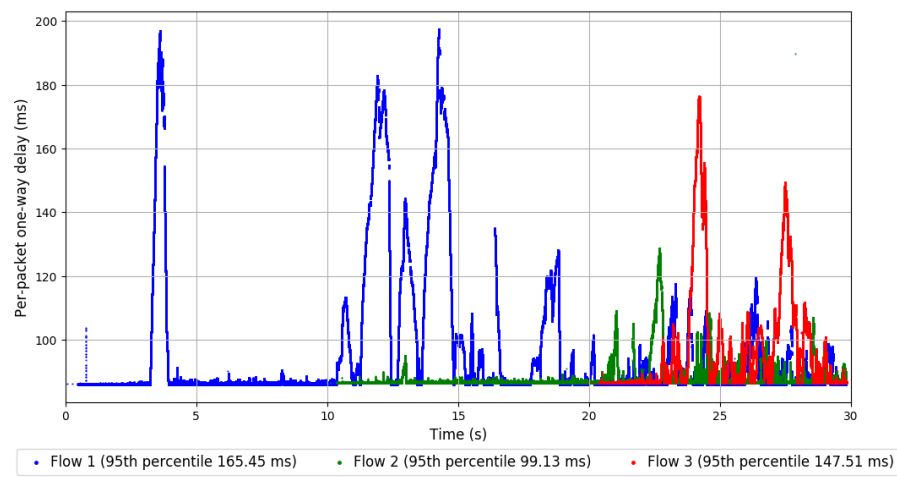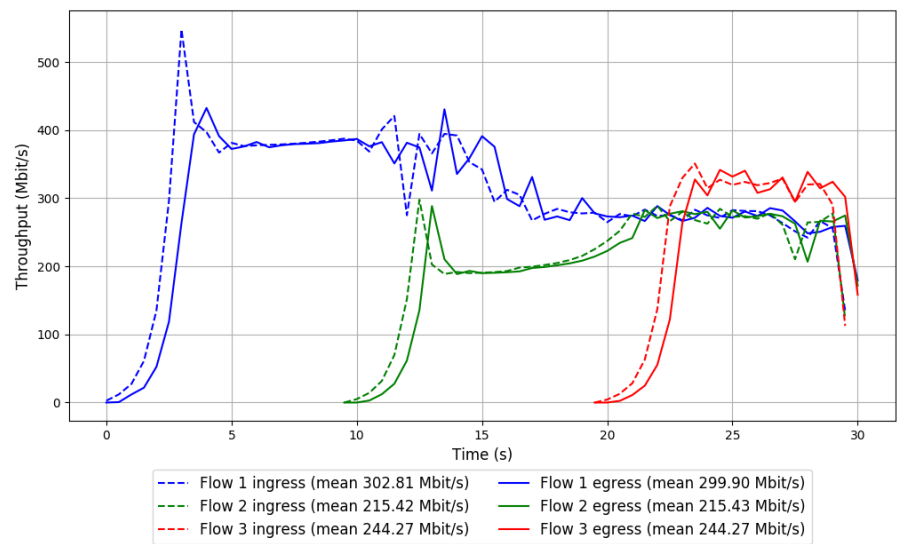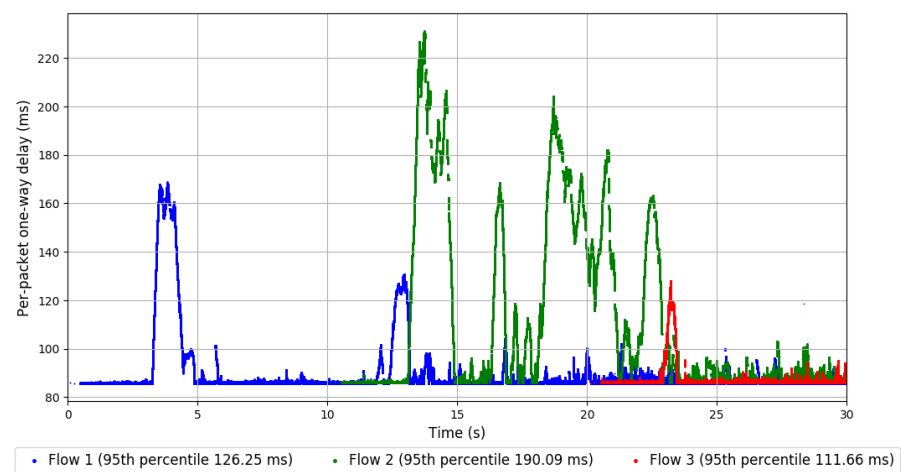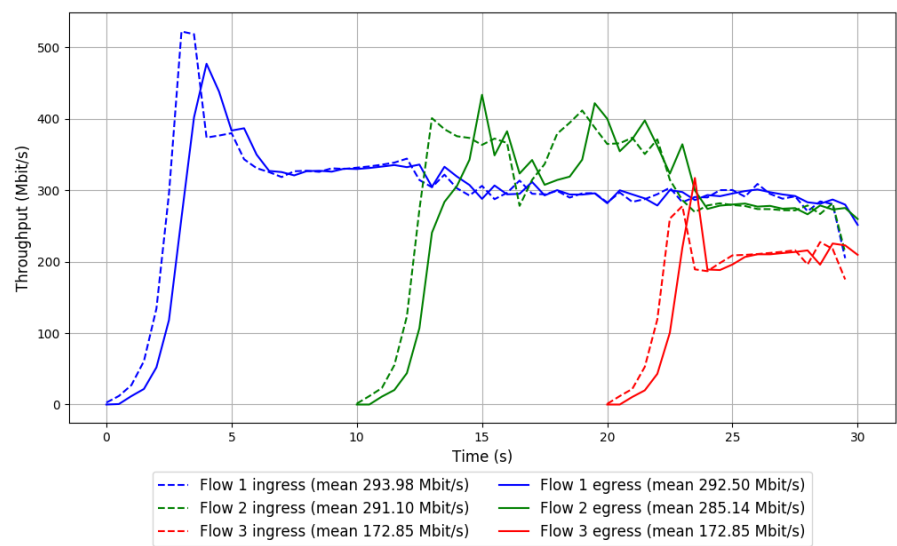
Run 4: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 437.10 Mbit/s)   Flow 1 egress (mean 422.11 Mbit/s)
Flow 2 ingress (mean 297.38 Mbit/s)   Flow 2 egress (mean 296.40 Mbit/s)
Flow 3 ingress (mean 243.61 Mbit/s)   Flow 3 egress (mean 238.42 Mbit/s)

Flow 1 (95th percentile 203.95 ms)   Flow 2 (95th percentile 110.34 ms)   Flow 3 (95th percentile 225.12 ms)

```
Run 5: Statistics of PCC-Allegro

Start at: 2018-12-11 16:00:32
End at: 2018-12-11 16:01:02
Local clock offset: 0.336 ms
Remote clock offset: -0.05 ms


# Below is generated by plot.py at 2018-12-11 18:13:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 668.98 Mbit/s
95th percentile per-packet one-way delay: 219.952 ms
Loss rate: 6.59%
-- Flow 1:
Average throughput: 385.41 Mbit/s
95th percentile per-packet one-way delay: 224.864 ms
Loss rate: 10.14%
-- Flow 2:
Average throughput: 312.72 Mbit/s
95th percentile per-packet one-way delay: 113.673 ms
Loss rate: 0.68%
-- Flow 3:
Average throughput: 230.98 Mbit/s
95th percentile per-packet one-way delay: 214.933 ms
Loss rate: 2.90%
```
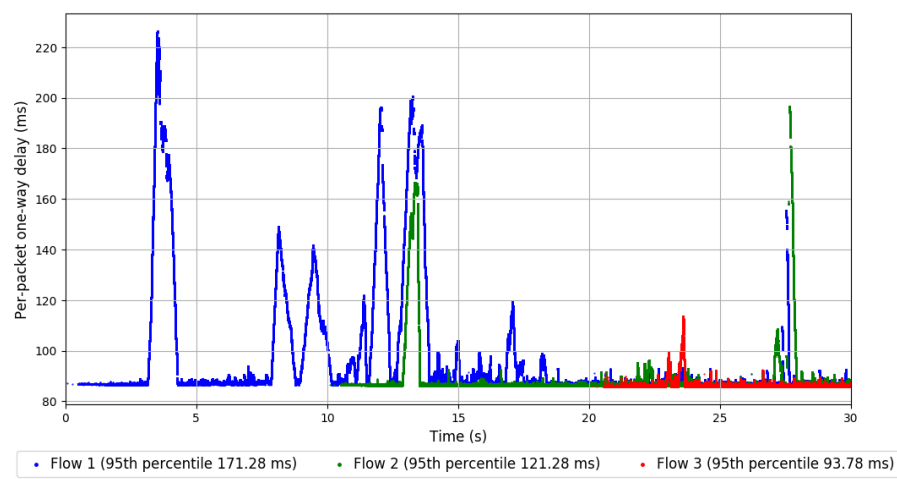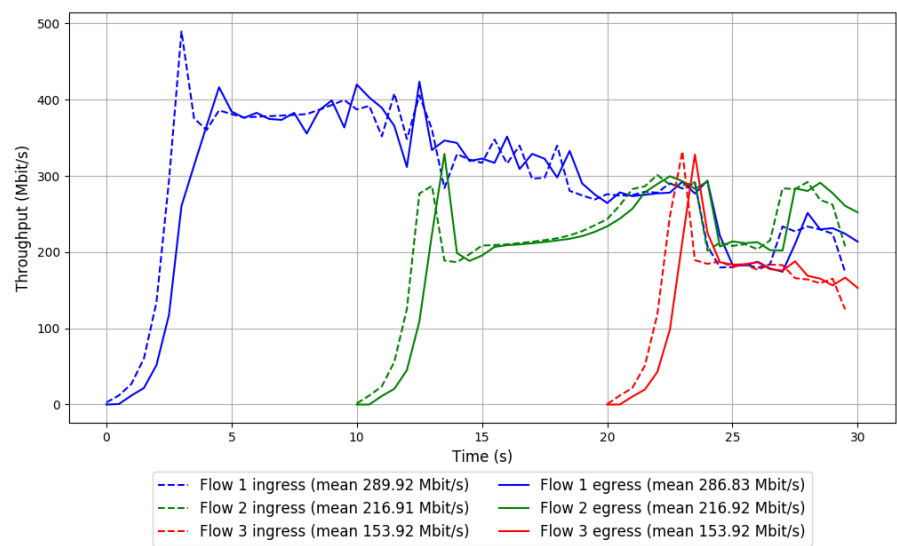
Run 5: Report of PCC-Allegro — Data Link

```
Run 1: Statistics of PCC-Expr

Start at: 2018-12-11 13:47:19
End at: 2018-12-11 13:47:49
Local clock offset: -0.146 ms
Remote clock offset: 0.016 ms


# Below is generated by plot.py at 2018-12-11 18:13:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 524.60 Mbit/s
95th percentile per-packet one-way delay: 147.191 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 299.90 Mbit/s
95th percentile per-packet one-way delay: 165.448 ms
Loss rate: 0.96%
-- Flow 2:
Average throughput: 215.43 Mbit/s
95th percentile per-packet one-way delay: 99.133 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 244.27 Mbit/s
95th percentile per-packet one-way delay: 147.512 ms
Loss rate: 0.00%
```
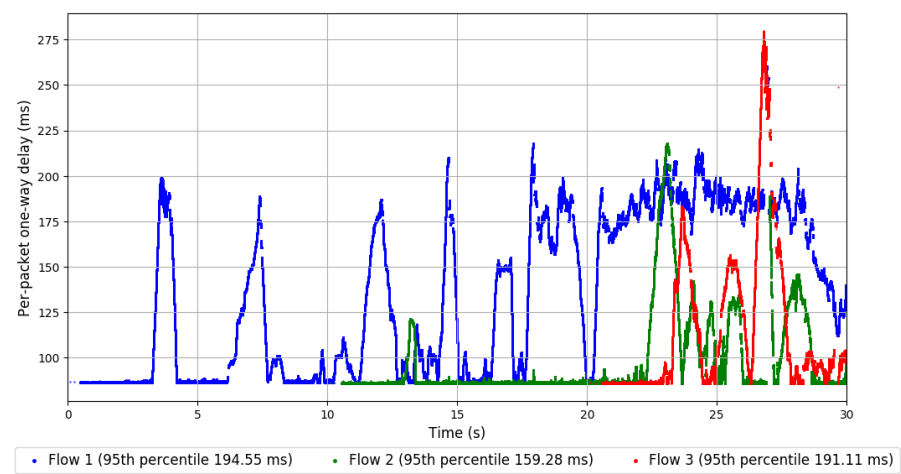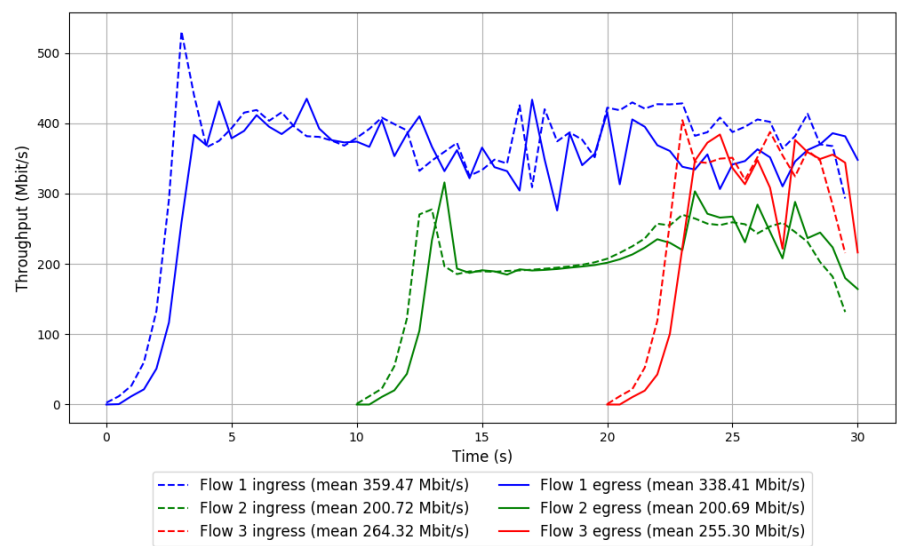
Run 1: Report of PCC-Expr — Data Link

```
Run 2: Statistics of PCC-Expr

Start at: 2018-12-11 14:21:34
End at: 2018-12-11 14:22:04
Local clock offset: 0.066 ms
Remote clock offset: -0.094 ms

# Below is generated by plot.py at 2018-12-11 18:16:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 538.97 Mbit/s
95th percentile per-packet one-way delay: 169.619 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 292.50 Mbit/s
95th percentile per-packet one-way delay: 126.249 ms
Loss rate: 0.50%
-- Flow 2:
Average throughput: 285.14 Mbit/s
95th percentile per-packet one-way delay: 190.094 ms
Loss rate: 2.04%
-- Flow 3:
Average throughput: 172.85 Mbit/s
95th percentile per-packet one-way delay: 111.657 ms
Loss rate: 0.00%
```

Run 2: Report of PCC-Expr — Data Link

```
Run 3: Statistics of PCC-Expr

Start at: 2018-12-11 14:55:19
End at: 2018-12-11 14:55:49
Local clock offset: -0.049 ms
Remote clock offset: -0.103 ms


# Below is generated by plot.py at 2018-12-11 18:16:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 481.75 Mbit/s
95th percentile per-packet one-way delay: 153.466 ms
Loss rate: 0.64%
-- Flow 1:
Average throughput: 286.83 Mbit/s
95th percentile per-packet one-way delay: 171.275 ms
Loss rate: 1.07%
-- Flow 2:
Average throughput: 216.92 Mbit/s
95th percentile per-packet one-way delay: 121.276 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 153.92 Mbit/s
95th percentile per-packet one-way delay: 93.781 ms
Loss rate: 0.00%
```
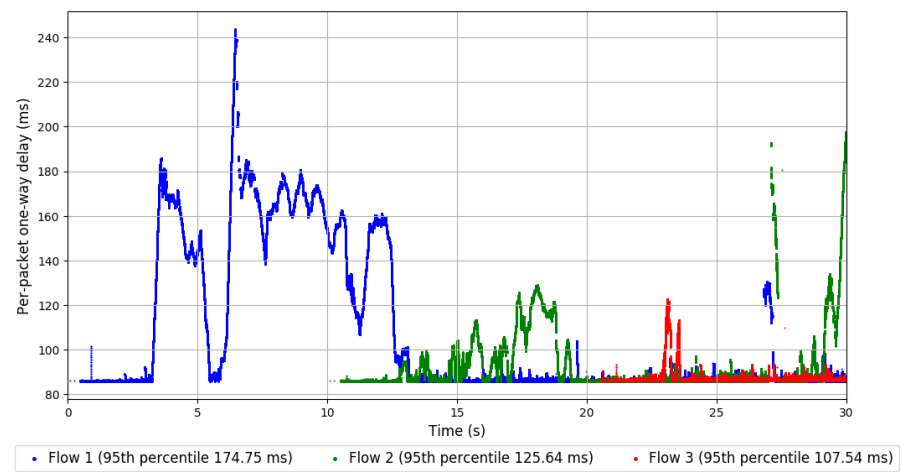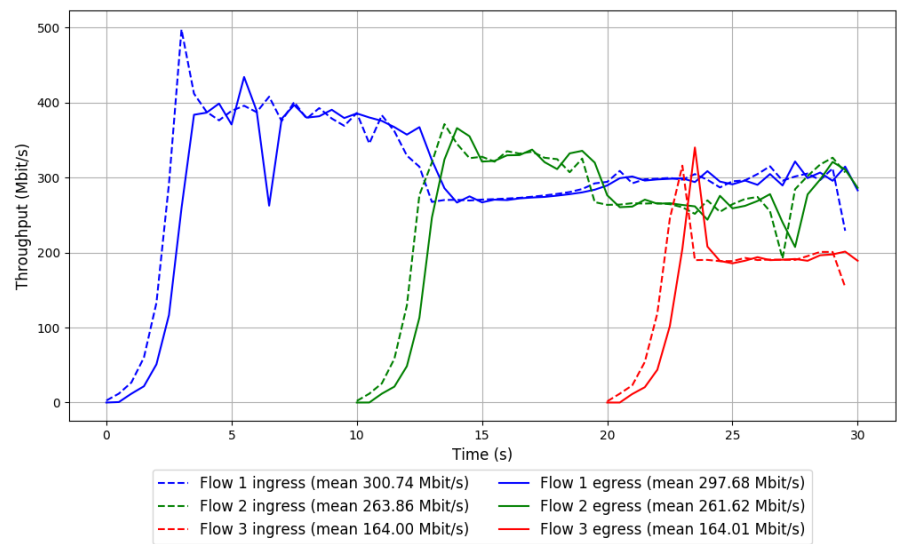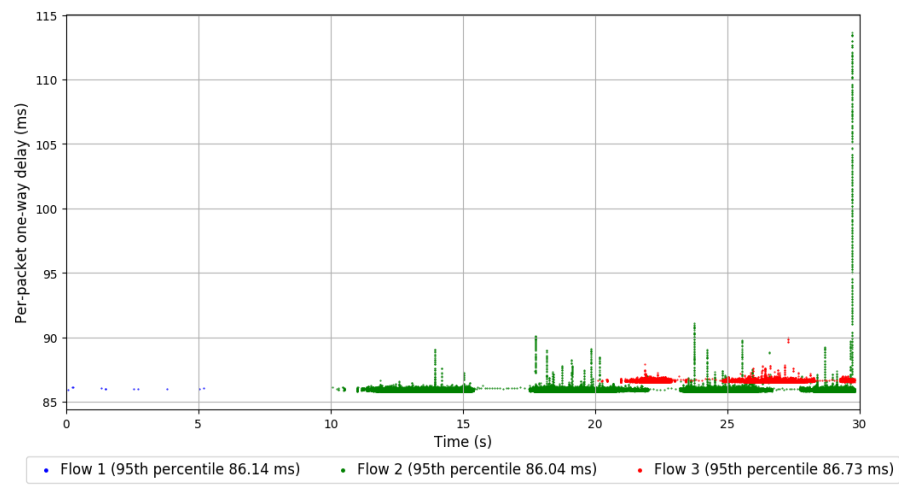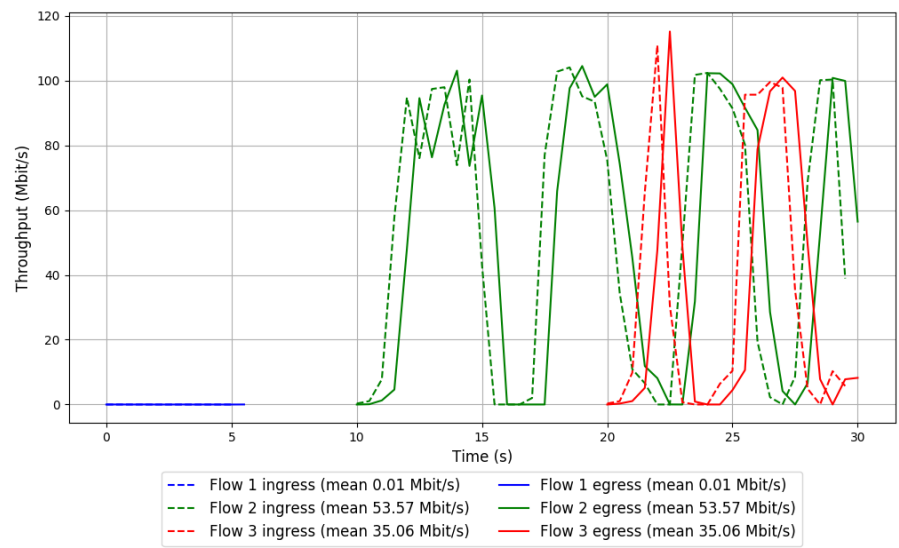
Run 3: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 289.92 Mbit/s) — Flow 1 egress (mean 286.83 Mbit/s)
Flow 2 ingress (mean 216.91 Mbit/s) — Flow 2 egress (mean 216.92 Mbit/s)
Flow 3 ingress (mean 153.92 Mbit/s) — Flow 3 egress (mean 153.92 Mbit/s)

Flow 1 (95th percentile 171.28 ms) — Flow 2 (95th percentile 121.28 ms) — Flow 3 (95th percentile 93.78 ms)

```
Run 4: Statistics of PCC-Expr

Start at: 2018-12-11 15:29:51
End at: 2018-12-11 15:30:21
Local clock offset: 0.047 ms
Remote clock offset: -0.075 ms


# Below is generated by plot.py at 2018-12-11 18:29:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 555.89 Mbit/s
95th percentile per-packet one-way delay: 192.830 ms
Loss rate: 4.14%
-- Flow 1:
Average throughput: 338.41 Mbit/s
95th percentile per-packet one-way delay: 194.552 ms
Loss rate: 5.85%
-- Flow 2:
Average throughput: 200.69 Mbit/s
95th percentile per-packet one-way delay: 159.277 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 255.30 Mbit/s
95th percentile per-packet one-way delay: 191.112 ms
Loss rate: 3.40%
```

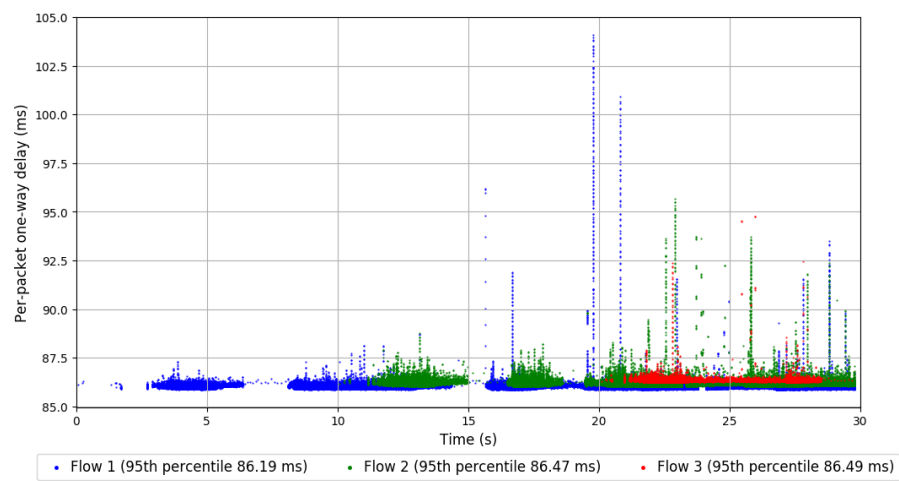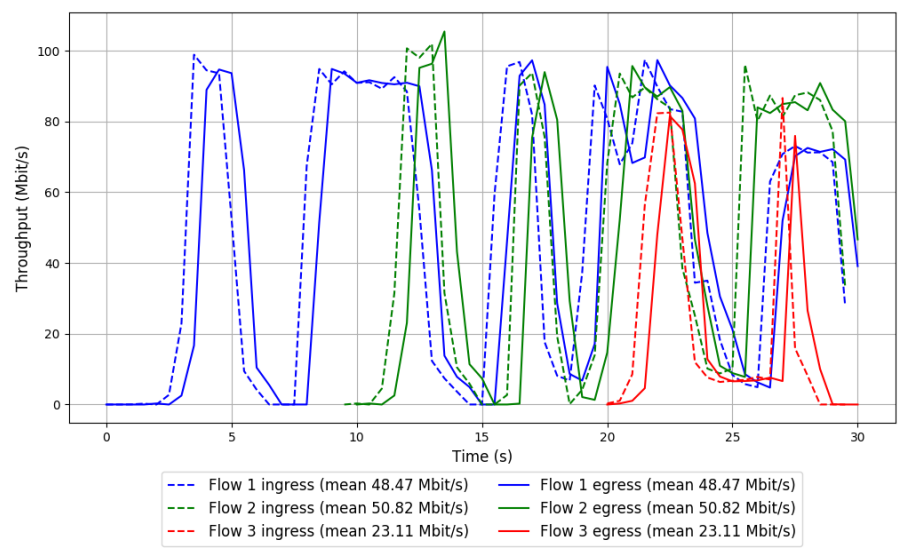# Run 4: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 359.47 Mbit/s)   Flow 1 egress (mean 338.41 Mbit/s)
Flow 2 ingress (mean 200.72 Mbit/s)   Flow 2 egress (mean 200.69 Mbit/s)
Flow 3 ingress (mean 264.32 Mbit/s)   Flow 3 egress (mean 255.30 Mbit/s)

Flow 1 (95th percentile 194.55 ms)   Flow 2 (95th percentile 159.28 ms)   Flow 3 (95th percentile 191.11 ms)

```
Run 5: Statistics of PCC-Expr

Start at: 2018-12-11 16:04:32
End at: 2018-12-11 16:05:02
Local clock offset: -0.093 ms
Remote clock offset: -0.09 ms


# Below is generated by plot.py at 2018-12-11 18:29:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 525.74 Mbit/s
95th percentile per-packet one-way delay: 170.993 ms
Loss rate: 0.85%
-- Flow 1:
Average throughput: 297.68 Mbit/s
95th percentile per-packet one-way delay: 174.749 ms
Loss rate: 1.01%
-- Flow 2:
Average throughput: 261.62 Mbit/s
95th percentile per-packet one-way delay: 125.642 ms
Loss rate: 0.84%
-- Flow 3:
Average throughput: 164.01 Mbit/s
95th percentile per-packet one-way delay: 107.540 ms
Loss rate: 0.00%
```
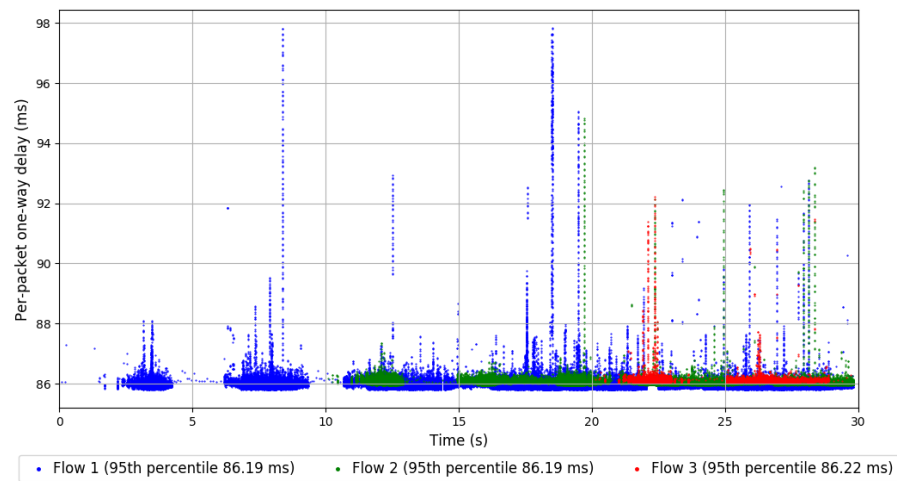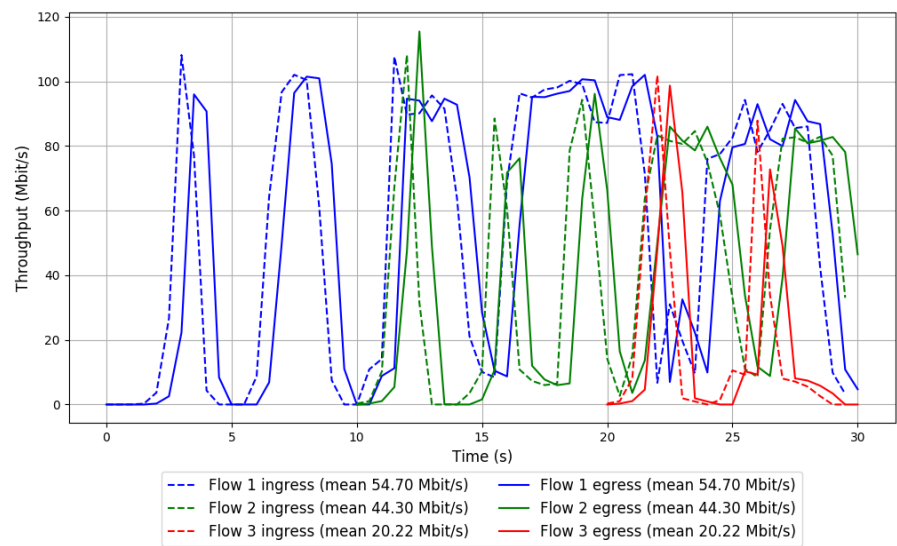
Run 5: Report of PCC-Expr — Data Link

Flow 1 ingress (mean 300.74 Mbit/s) — — — Flow 1 egress (mean 297.68 Mbit/s)
Flow 2 ingress (mean 263.86 Mbit/s) — — — Flow 2 egress (mean 261.62 Mbit/s)
Flow 3 ingress (mean 164.00 Mbit/s) — — — Flow 3 egress (mean 164.01 Mbit/s)

Flow 1 (95th percentile 174.75 ms)   Flow 2 (95th percentile 125.64 ms)   Flow 3 (95th percentile 107.54 ms)

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```
Run 1: Statistics of QUIC Cubic

Start at: 2018-12-11 13:49:25
End at: 2018-12-11 13:49:55
Local clock offset: -0.076 ms
Remote clock offset: -0.014 ms


# Below is generated by plot.py at 2018-12-11 18:29:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 46.99 Mbit/s
95th percentile per-packet one-way delay: 86.650 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 86.138 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 53.57 Mbit/s
95th percentile per-packet one-way delay: 86.036 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 35.06 Mbit/s
95th percentile per-packet one-way delay: 86.727 ms
Loss rate: 0.00%
```
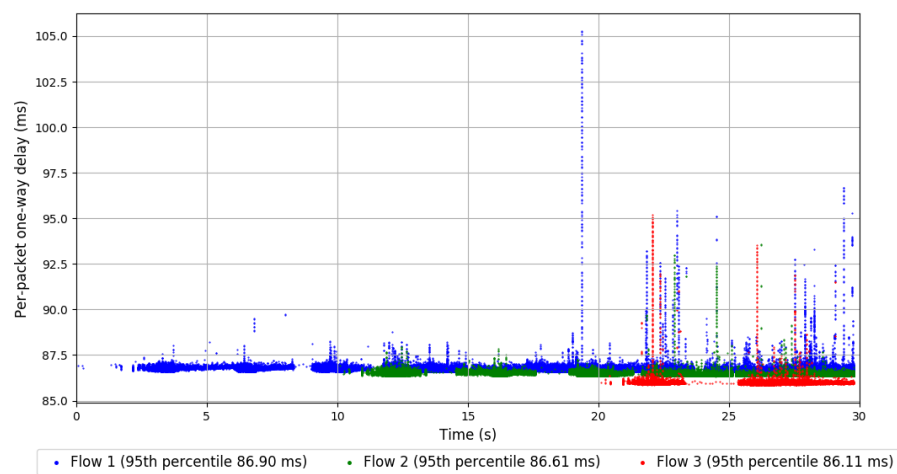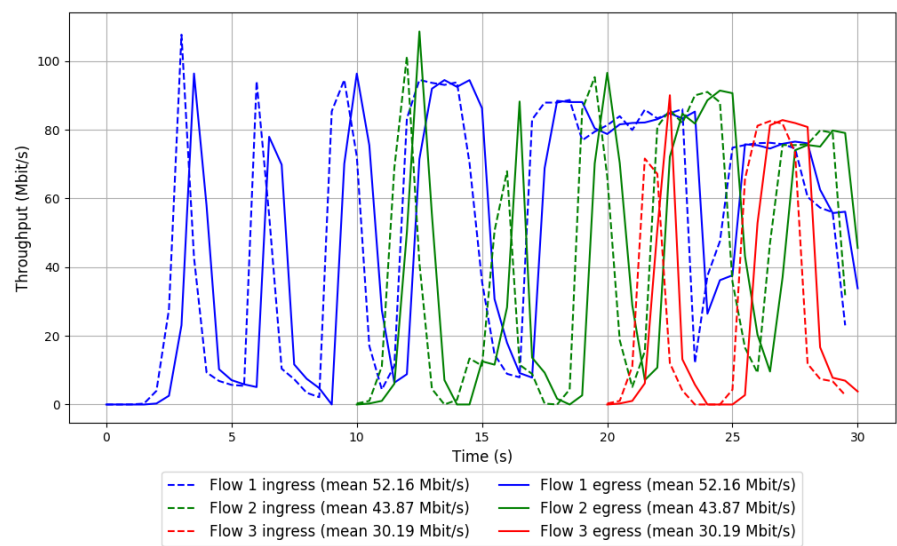
Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2018-12-11 14:23:47
End at: 2018-12-11 14:24:17
Local clock offset: -0.139 ms
Remote clock offset: -0.097 ms


# Below is generated by plot.py at 2018-12-11 18:29:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.64 Mbit/s
95th percentile per-packet one-way delay: 86.393 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 48.47 Mbit/s
95th percentile per-packet one-way delay: 86.192 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 50.82 Mbit/s
95th percentile per-packet one-way delay: 86.473 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 23.11 Mbit/s
95th percentile per-packet one-way delay: 86.493 ms
Loss rate: 0.00%
```
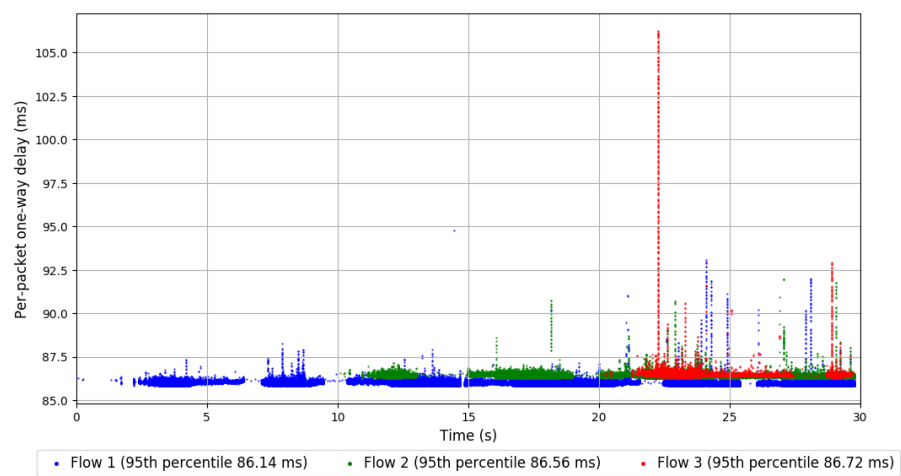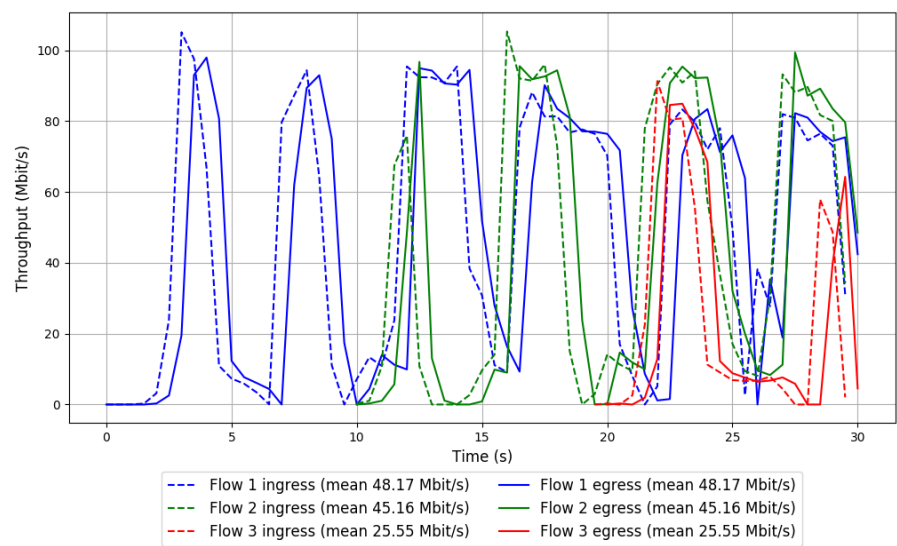
Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2018-12-11 14:57:21
End at: 2018-12-11 14:57:51
Local clock offset: 0.24 ms
Remote clock offset: -0.117 ms


# Below is generated by plot.py at 2018-12-11 18:29:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.60 Mbit/s
95th percentile per-packet one-way delay: 86.195 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 54.70 Mbit/s
95th percentile per-packet one-way delay: 86.195 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 44.30 Mbit/s
95th percentile per-packet one-way delay: 86.188 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 20.22 Mbit/s
95th percentile per-packet one-way delay: 86.220 ms
Loss rate: 0.00%
```
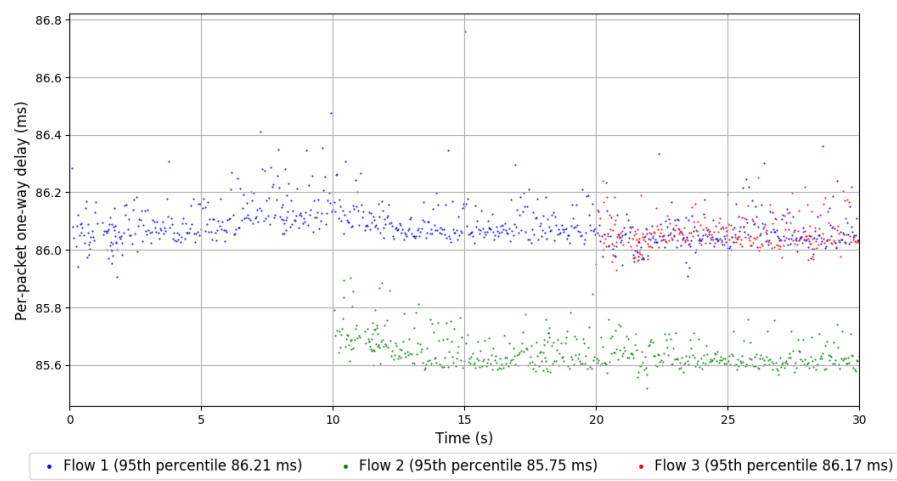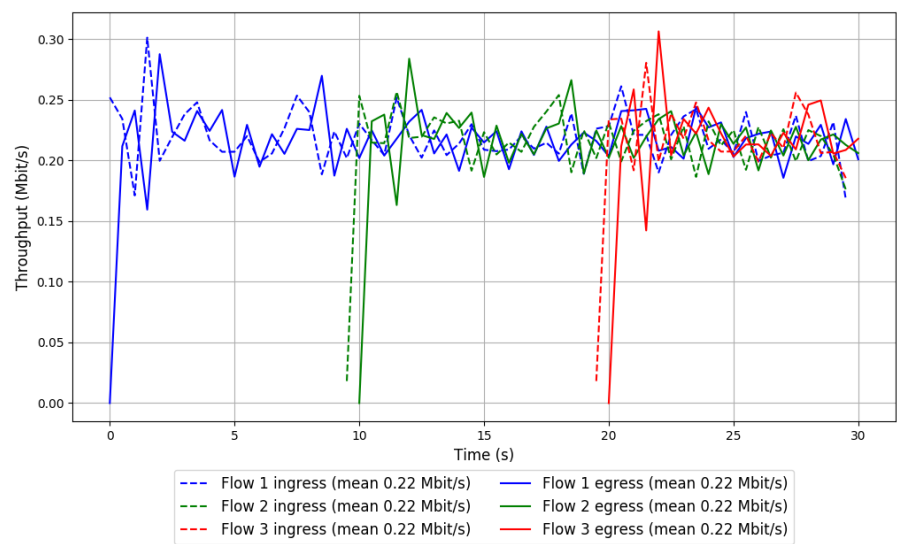
Run 3: Report of QUIC Cubic — Data Link

```
Run 4: Statistics of QUIC Cubic

Start at: 2018-12-11 15:32:13
End at: 2018-12-11 15:32:43
Local clock offset: 0.077 ms
Remote clock offset: -0.048 ms


# Below is generated by plot.py at 2018-12-11 18:29:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.11 Mbit/s
95th percentile per-packet one-way delay: 86.854 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 52.16 Mbit/s
95th percentile per-packet one-way delay: 86.903 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 43.87 Mbit/s
95th percentile per-packet one-way delay: 86.610 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 30.19 Mbit/s
95th percentile per-packet one-way delay: 86.110 ms
Loss rate: 0.00%
```
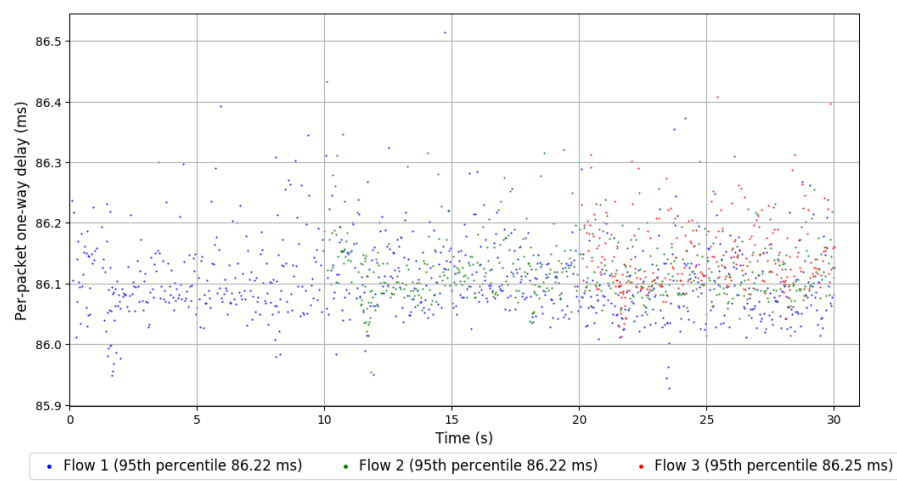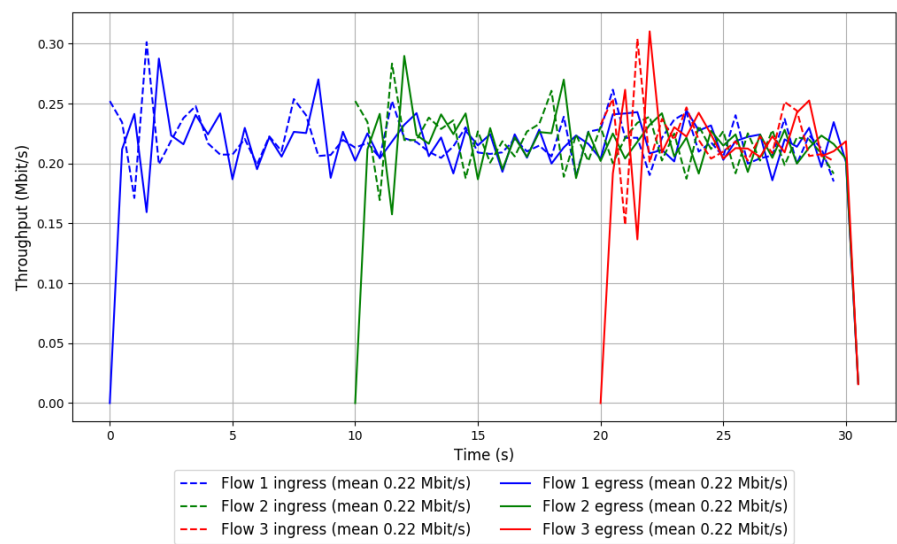
Run 4: Report of QUIC Cubic — Data Link

```
Run 5: Statistics of QUIC Cubic

Start at: 2018-12-11 16:06:39
End at: 2018-12-11 16:07:09
Local clock offset: -0.114 ms
Remote clock offset: -0.101 ms


# Below is generated by plot.py at 2018-12-11 18:29:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.44 Mbit/s
95th percentile per-packet one-way delay: 86.524 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 48.17 Mbit/s
95th percentile per-packet one-way delay: 86.138 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 45.16 Mbit/s
95th percentile per-packet one-way delay: 86.558 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 25.55 Mbit/s
95th percentile per-packet one-way delay: 86.717 ms
Loss rate: 0.00%
```

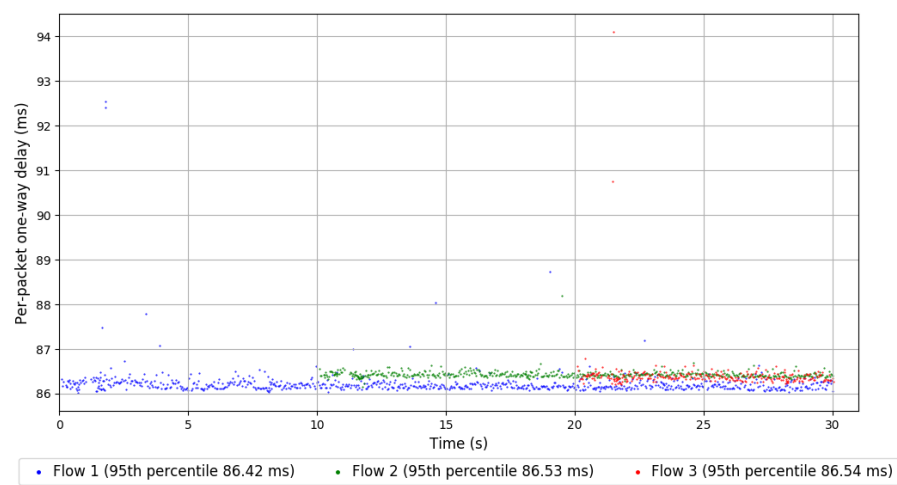# Run 5: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2018-12-11 13:28:18
End at: 2018-12-11 13:28:48
Local clock offset: 0.409 ms
Remote clock offset: -0.025 ms

# Below is generated by plot.py at 2018-12-11 18:29:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 86.173 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.209 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 85.753 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.165 ms
Loss rate: 0.00%
```
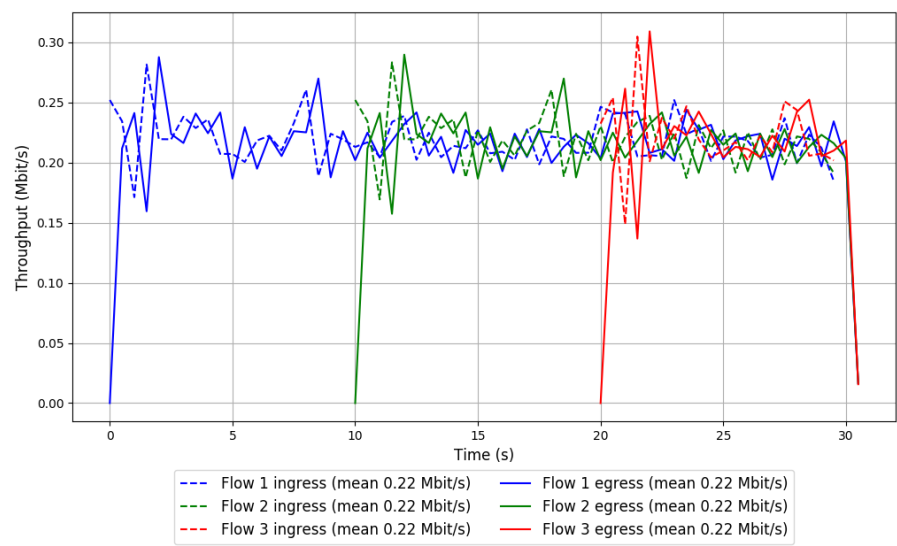
Run 1: Report of SCReAM — Data Link

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

Flow 1 (95th percentile 86.21 ms)   Flow 2 (95th percentile 85.75 ms)   Flow 3 (95th percentile 86.17 ms)

```
Run 2: Statistics of SCReAM

Start at: 2018-12-11 14:02:30
End at: 2018-12-11 14:03:00
Local clock offset: -0.122 ms
Remote clock offset: -0.004 ms

# Below is generated by plot.py at 2018-12-11 18:29:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 86.230 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.219 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.220 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.250 ms
Loss rate: 0.00%
```
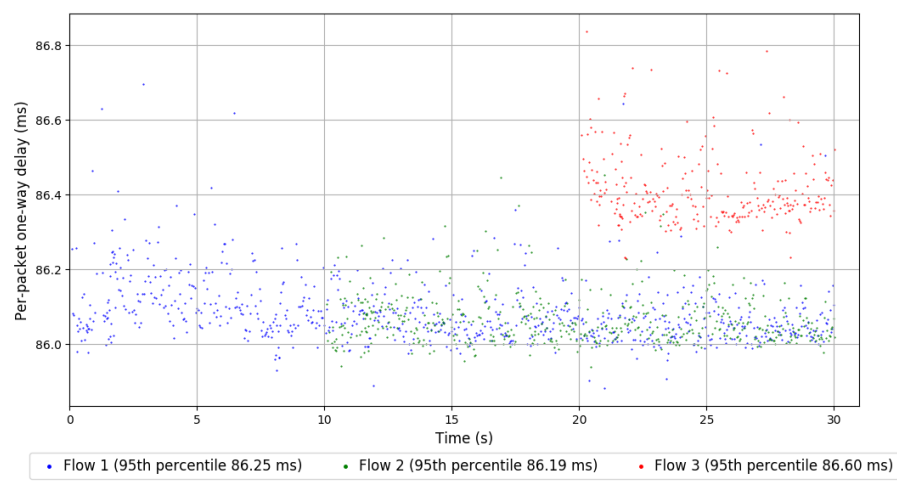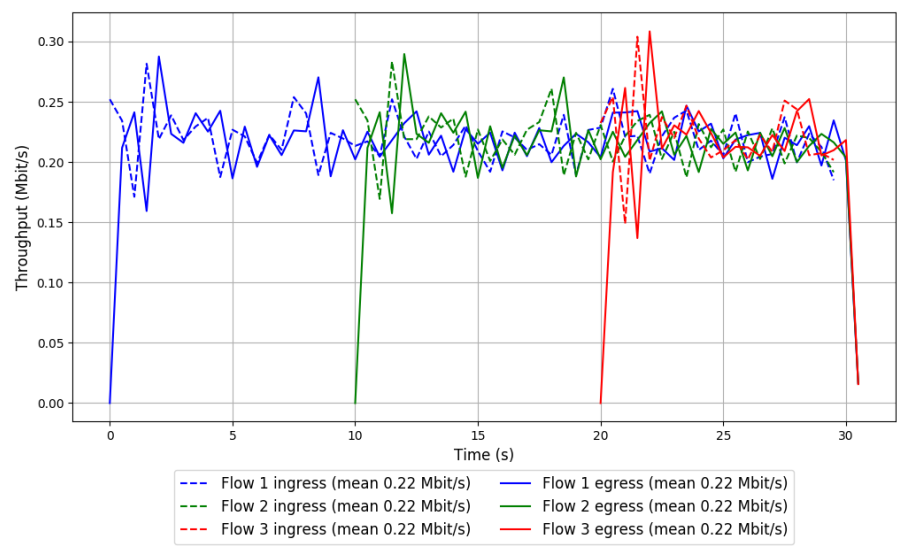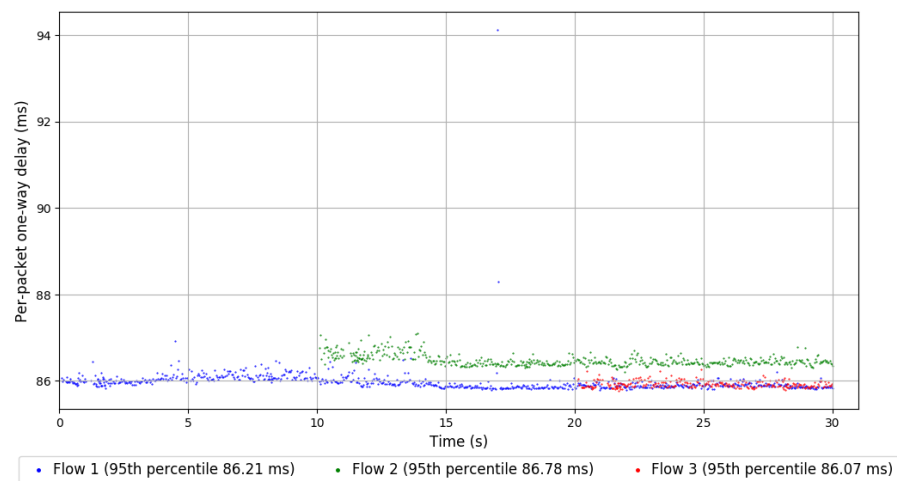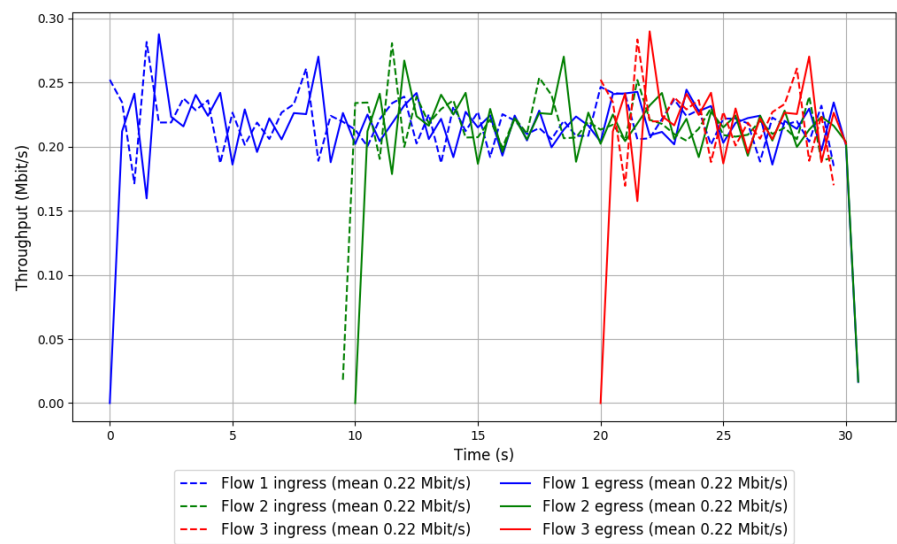
Run 2: Report of SCReAM — Data Link

```
Run 3: Statistics of SCReAM

Start at: 2018-12-11 14:36:38
End at: 2018-12-11 14:37:08
Local clock offset: -0.035 ms
Remote clock offset: -0.128 ms


# Below is generated by plot.py at 2018-12-11 18:29:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 86.516 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.415 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.532 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.544 ms
Loss rate: 0.00%
```
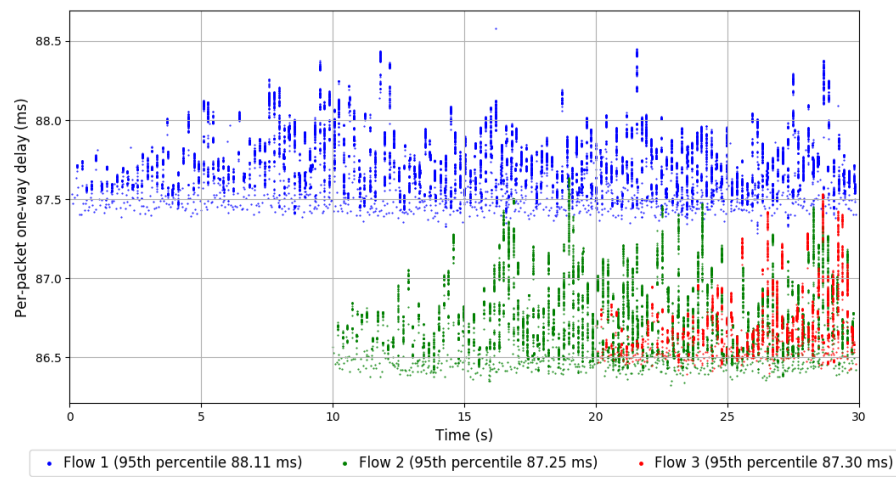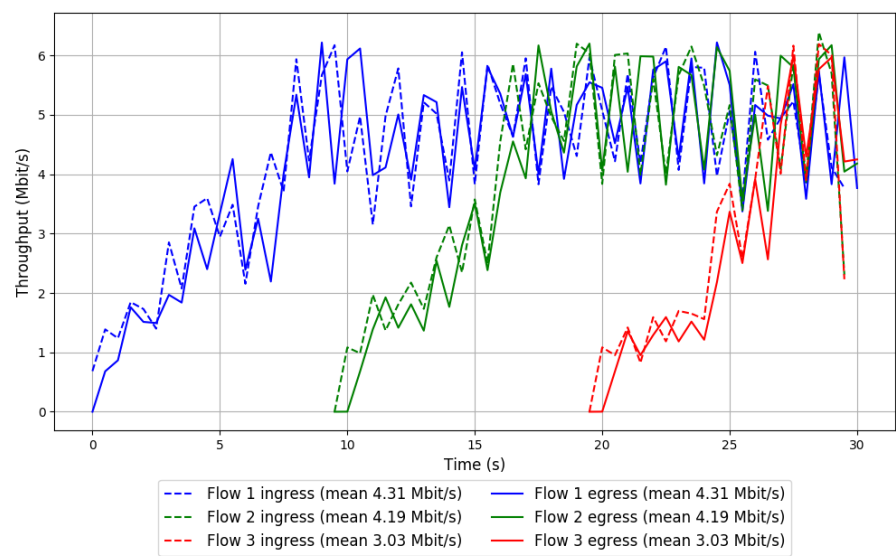
Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2018-12-11 15:10:27
End at: 2018-12-11 15:10:57
Local clock offset: 0.052 ms
Remote clock offset: -0.09 ms


# Below is generated by plot.py at 2018-12-11 18:29:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 86.442 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.247 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.192 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.600 ms
Loss rate: 0.00%
```

Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2018-12-11 15:45:11
End at: 2018-12-11 15:45:41
Local clock offset: 0.382 ms
Remote clock offset: -0.053 ms


# Below is generated by plot.py at 2018-12-11 18:29:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 86.613 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.213 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.775 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.069 ms
Loss rate: 0.00%
```
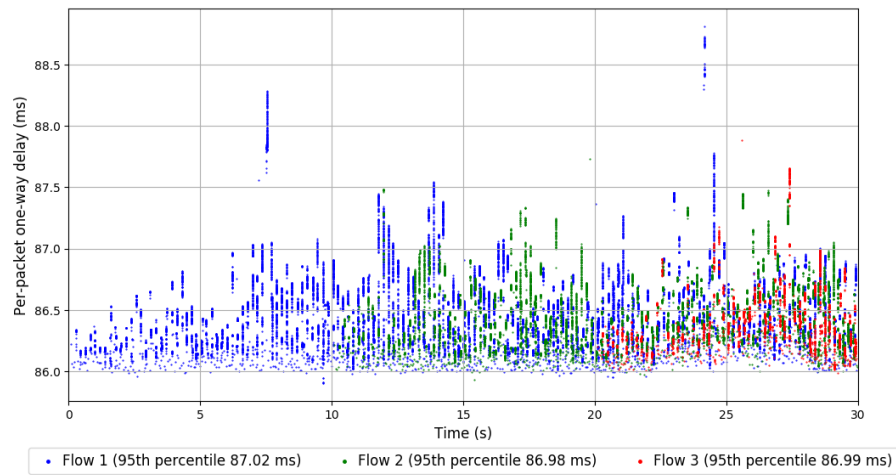
Run 5: Report of SCReAM — Data Link

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```
Run 1: Statistics of Sprout

Start at: 2018-12-11 13:29:32
End at: 2018-12-11 13:30:02
Local clock offset: -0.498 ms
Remote clock offset: -0.025 ms

# Below is generated by plot.py at 2018-12-11 18:29:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.10 Mbit/s
95th percentile per-packet one-way delay: 88.019 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 4.31 Mbit/s
95th percentile per-packet one-way delay: 88.111 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 4.19 Mbit/s
95th percentile per-packet one-way delay: 87.252 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 3.03 Mbit/s
95th percentile per-packet one-way delay: 87.295 ms
Loss rate: 0.00%
```
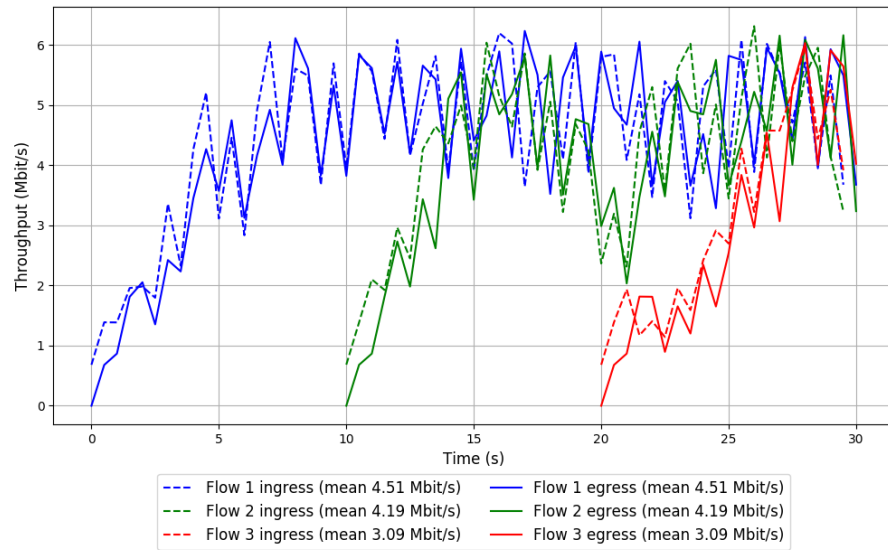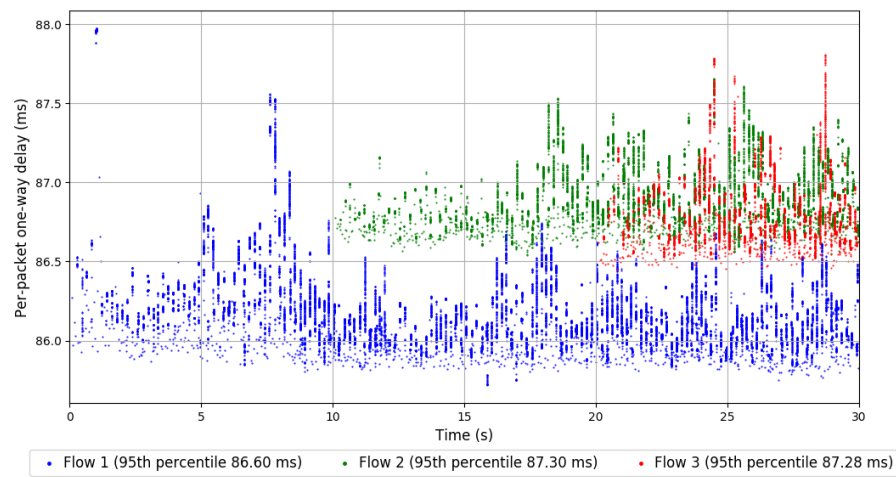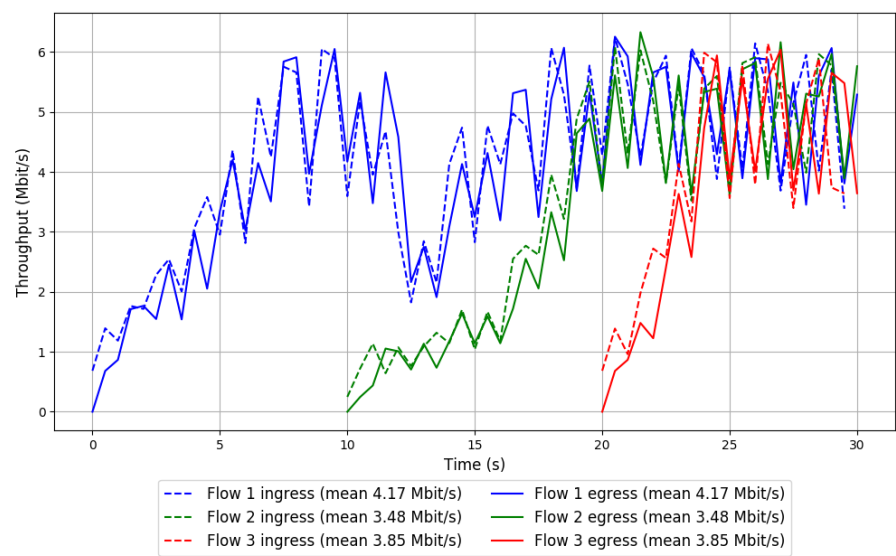
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2018-12-11 14:03:45
End at: 2018-12-11 14:04:15
Local clock offset: 0.065 ms
Remote clock offset: 0.018 ms


# Below is generated by plot.py at 2018-12-11 18:29:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.30 Mbit/s
95th percentile per-packet one-way delay: 86.999 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 4.51 Mbit/s
95th percentile per-packet one-way delay: 87.020 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 4.19 Mbit/s
95th percentile per-packet one-way delay: 86.979 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 3.09 Mbit/s
95th percentile per-packet one-way delay: 86.991 ms
Loss rate: 0.00%
```
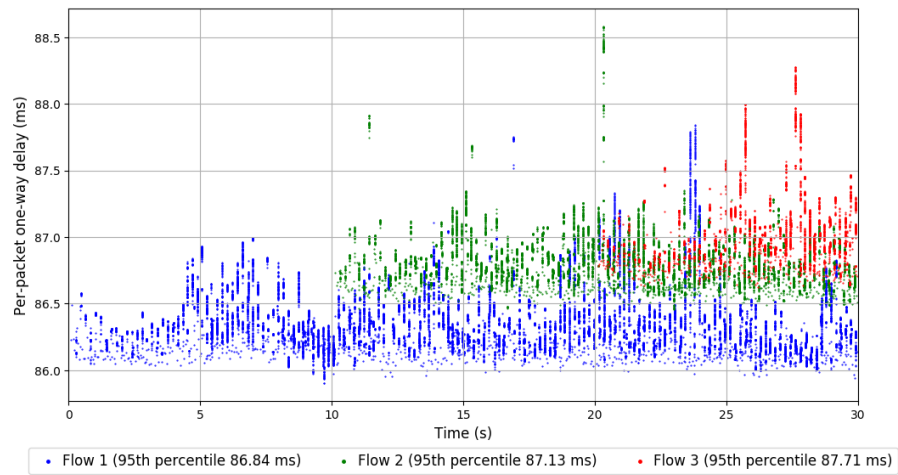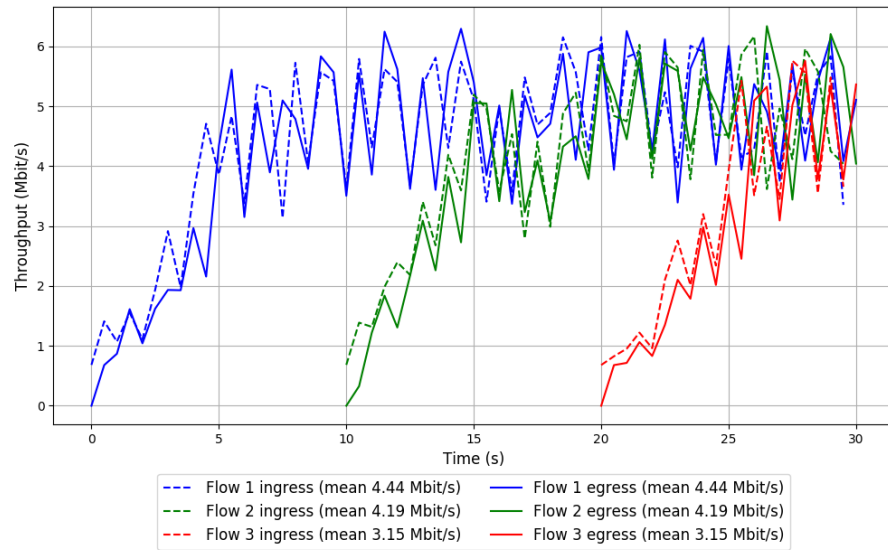
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2018-12-11 14:37:53
End at: 2018-12-11 14:38:23
Local clock offset: -0.008 ms
Remote clock offset: -0.109 ms


# Below is generated by plot.py at 2018-12-11 18:29:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.75 Mbit/s
95th percentile per-packet one-way delay: 87.197 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 4.17 Mbit/s
95th percentile per-packet one-way delay: 86.602 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 3.48 Mbit/s
95th percentile per-packet one-way delay: 87.299 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 3.85 Mbit/s
95th percentile per-packet one-way delay: 87.277 ms
Loss rate: 0.00%
```
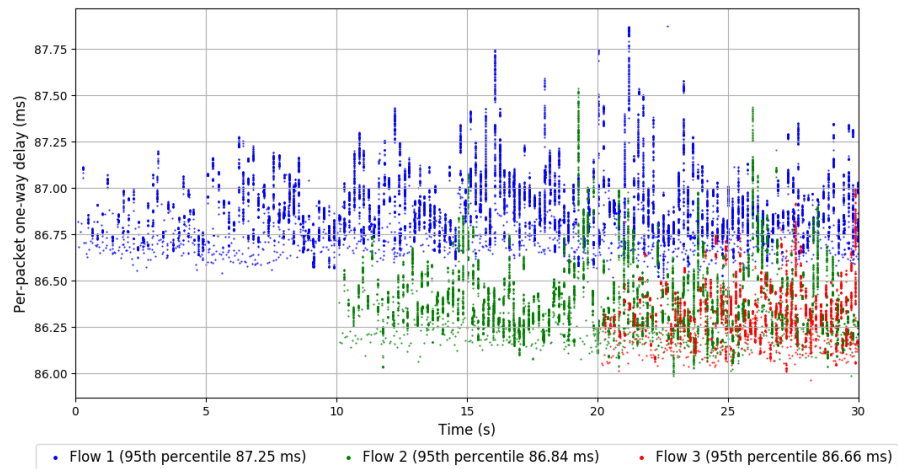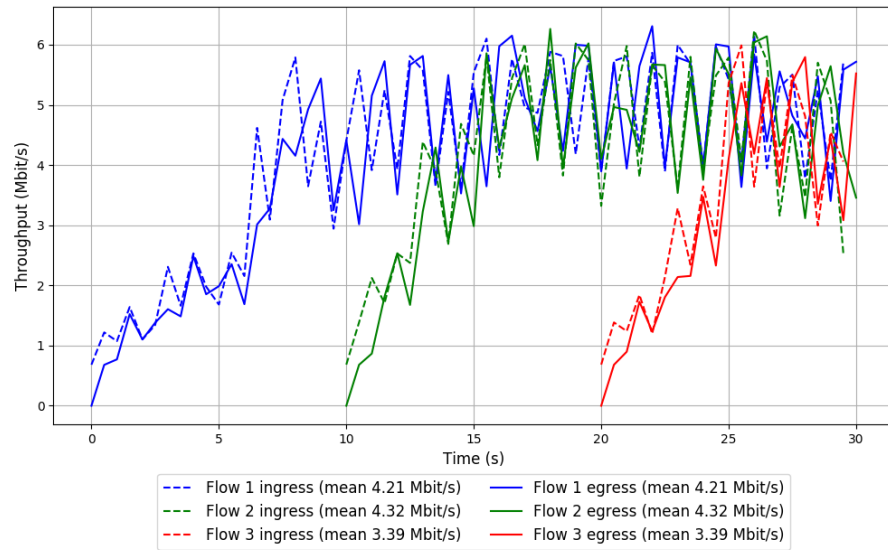
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2018-12-11 15:11:41
End at: 2018-12-11 15:12:11
Local clock offset: 0.014 ms
Remote clock offset: -0.083 ms


# Below is generated by plot.py at 2018-12-11 18:29:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.26 Mbit/s
95th percentile per-packet one-way delay: 87.162 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 4.44 Mbit/s
95th percentile per-packet one-way delay: 86.841 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 4.19 Mbit/s
95th percentile per-packet one-way delay: 87.129 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 3.15 Mbit/s
95th percentile per-packet one-way delay: 87.711 ms
Loss rate: 0.00%
```

Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2018-12-11 15:46:25
End at: 2018-12-11 15:46:55
Local clock offset: 0.094 ms
Remote clock offset: -0.044 ms


# Below is generated by plot.py at 2018-12-11 18:29:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.20 Mbit/s
95th percentile per-packet one-way delay: 87.152 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 4.21 Mbit/s
95th percentile per-packet one-way delay: 87.248 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 4.32 Mbit/s
95th percentile per-packet one-way delay: 86.836 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 3.39 Mbit/s
95th percentile per-packet one-way delay: 86.664 ms
Loss rate: 0.00%
```
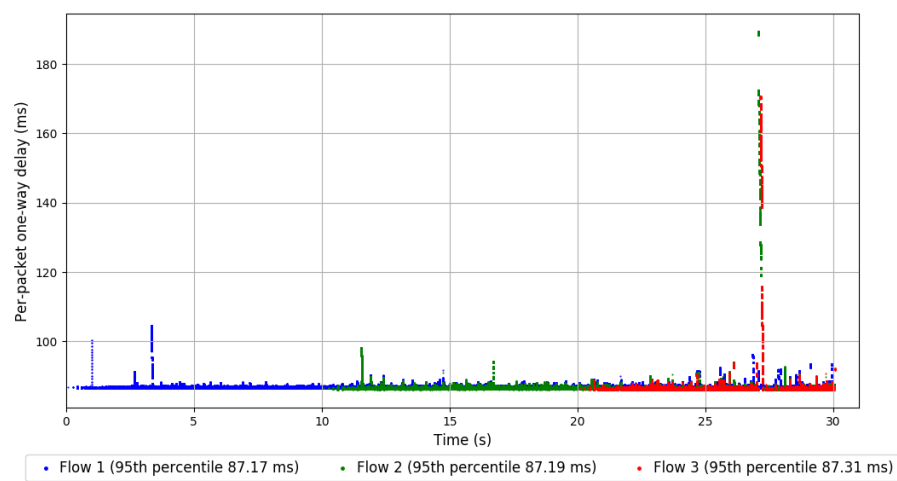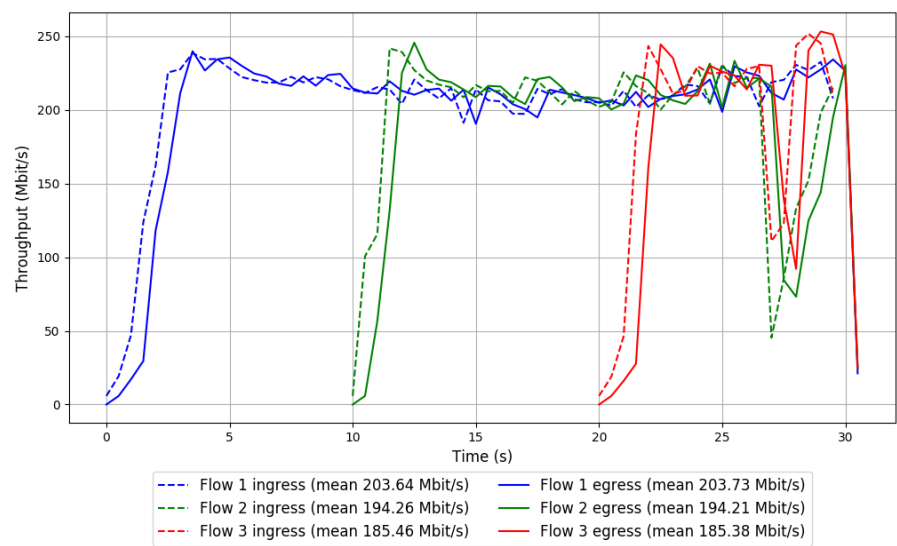
Run 5: Report of Sprout — Data Link

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

Start at: 2018-12-11 13:39:45
End at: 2018-12-11 13:40:15
Local clock offset: -0.365 ms
Remote clock offset: 0.011 ms


# Below is generated by plot.py at 2018-12-11 18:29:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 394.55 Mbit/s
95th percentile per-packet one-way delay: 87.189 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 203.73 Mbit/s
95th percentile per-packet one-way delay: 87.175 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 194.21 Mbit/s
95th percentile per-packet one-way delay: 87.187 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 185.38 Mbit/s
95th percentile per-packet one-way delay: 87.311 ms
Loss rate: 0.01%
```

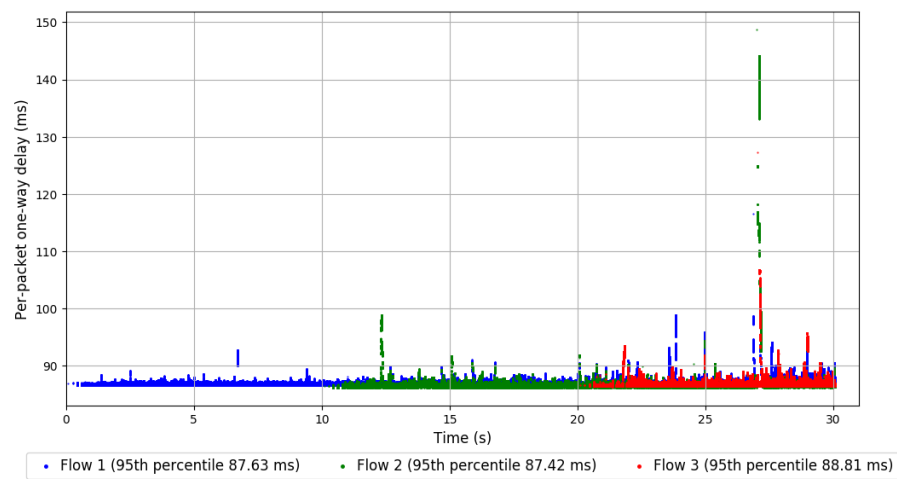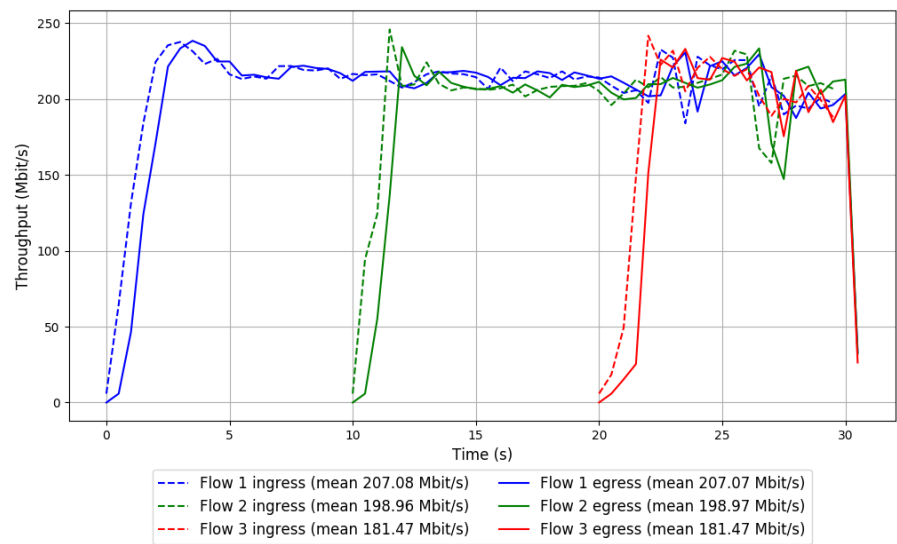# Run 1: Report of TaoVA-100x — Data Link

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

Start at: 2018-12-11 14:13:53
End at: 2018-12-11 14:14:23
Local clock offset: -0.16 ms
Remote clock offset: -0.032 ms

# Below is generated by plot.py at 2018-12-11 18:30:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 399.84 Mbit/s
95th percentile per-packet one-way delay: 87.739 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 207.07 Mbit/s
95th percentile per-packet one-way delay: 87.627 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 198.97 Mbit/s
95th percentile per-packet one-way delay: 87.415 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 181.47 Mbit/s
95th percentile per-packet one-way delay: 88.811 ms
Loss rate: 0.00%
```

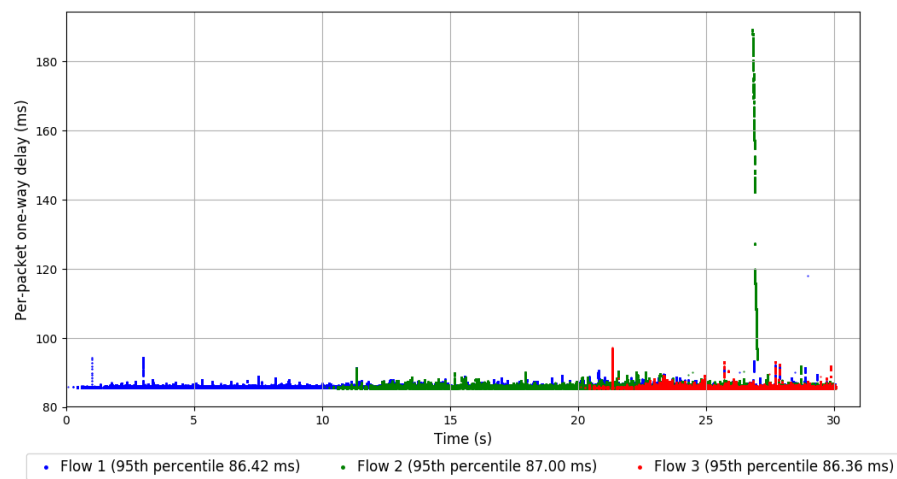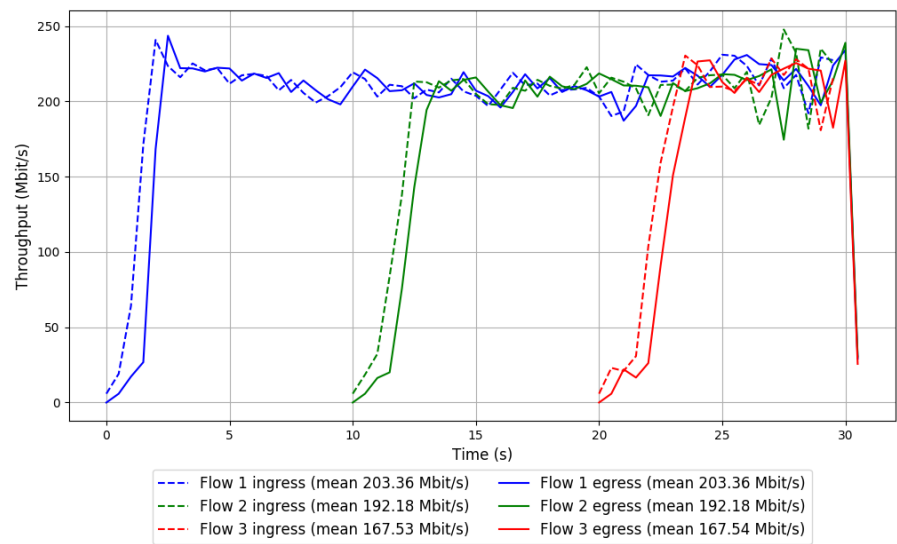Run 2: Report of TaoVA-100x — Data Link

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

Start at: 2018-12-11 14:47:31
End at: 2018-12-11 14:48:01
Local clock offset: 0.319 ms
Remote clock offset: -0.089 ms

# Below is generated by plot.py at 2018-12-11 18:30:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 387.05 Mbit/s
95th percentile per-packet one-way delay: 86.609 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 203.36 Mbit/s
95th percentile per-packet one-way delay: 86.425 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 192.18 Mbit/s
95th percentile per-packet one-way delay: 86.999 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 167.54 Mbit/s
95th percentile per-packet one-way delay: 86.362 ms
Loss rate: 0.00%
```

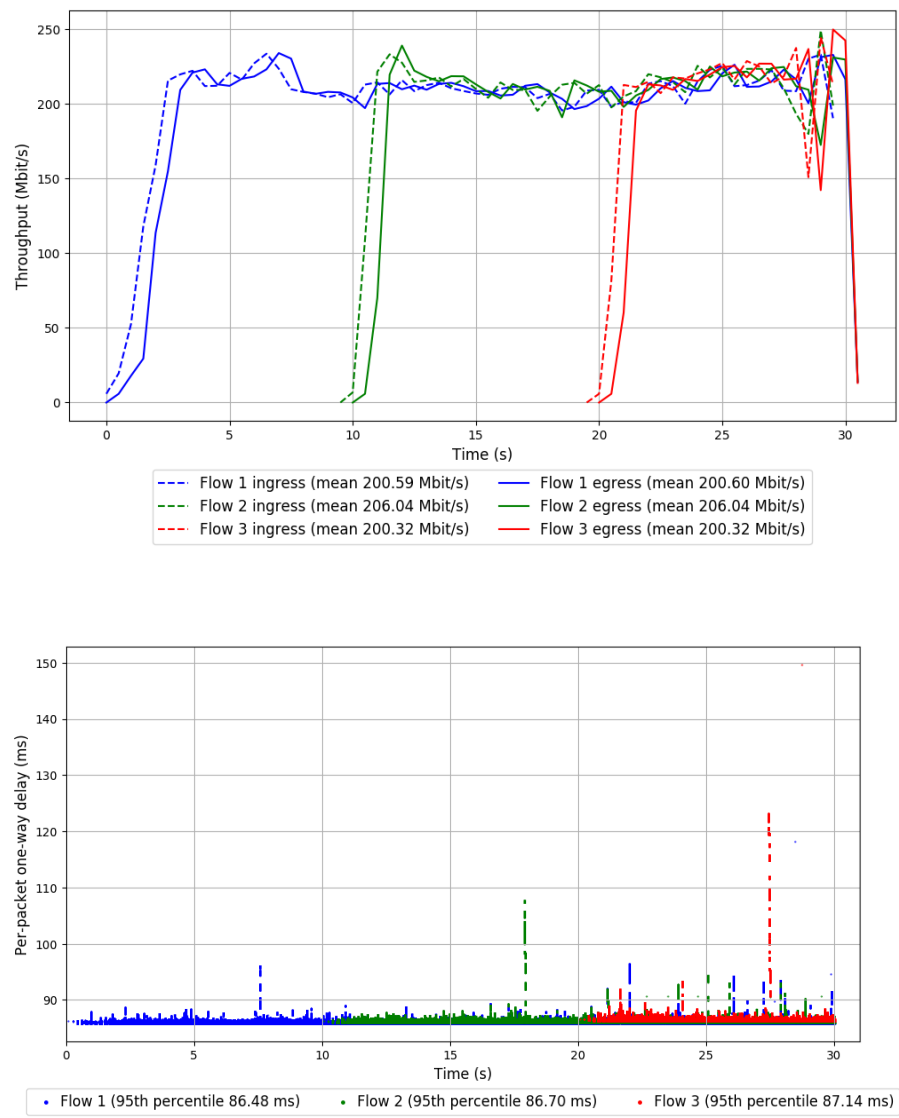Run 3: Report of TaoVA-100x — Data Link

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

Start at: 2018-12-11 15:22:04
End at: 2018-12-11 15:22:34
Local clock offset: 0.031 ms
Remote clock offset: -0.077 ms


# Below is generated by plot.py at 2018-12-11 18:30:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 404.61 Mbit/s
95th percentile per-packet one-way delay: 86.750 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 200.60 Mbit/s
95th percentile per-packet one-way delay: 86.483 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 206.04 Mbit/s
95th percentile per-packet one-way delay: 86.701 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 200.32 Mbit/s
95th percentile per-packet one-way delay: 87.144 ms
Loss rate: 0.00%
```

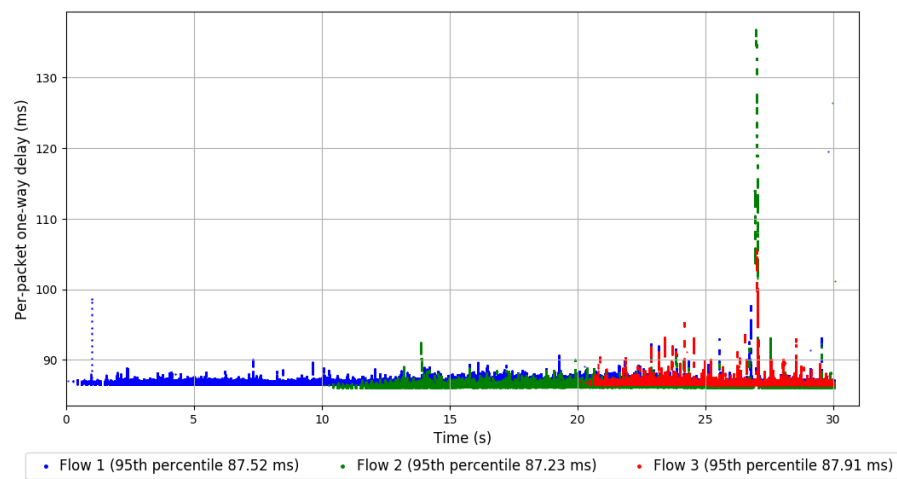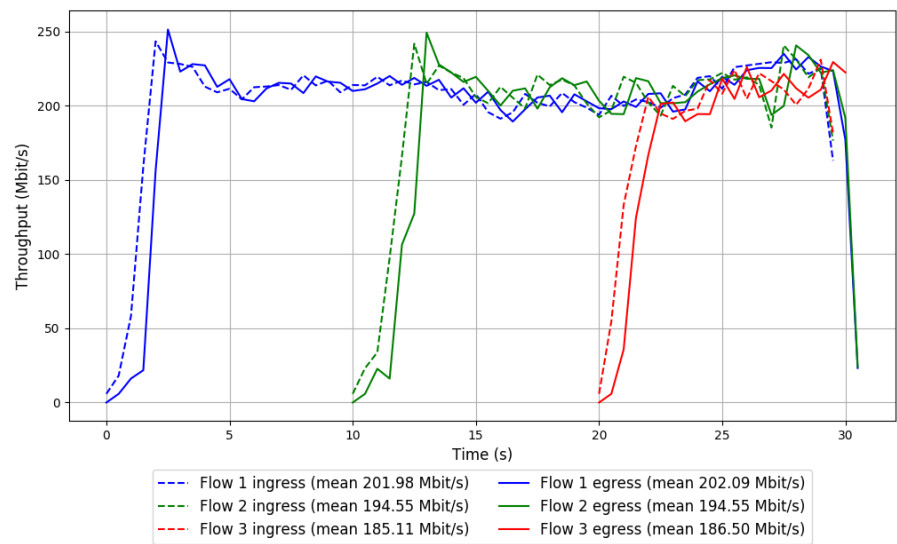Run 4: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 200.59 Mbit/s)   Flow 1 egress (mean 200.60 Mbit/s)
Flow 2 ingress (mean 206.04 Mbit/s)   Flow 2 egress (mean 206.04 Mbit/s)
Flow 3 ingress (mean 200.32 Mbit/s)   Flow 3 egress (mean 200.32 Mbit/s)

Flow 1 (95th percentile 86.48 ms)   Flow 2 (95th percentile 86.70 ms)   Flow 3 (95th percentile 87.14 ms)

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

Start at: 2018-12-11 15:56:41
End at: 2018-12-11 15:57:11
Local clock offset: -0.198 ms
Remote clock offset: -0.062 ms


# Below is generated by plot.py at 2018-12-11 18:31:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 393.01 Mbit/s
95th percentile per-packet one-way delay: 87.493 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 202.09 Mbit/s
95th percentile per-packet one-way delay: 87.521 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 194.55 Mbit/s
95th percentile per-packet one-way delay: 87.228 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 186.50 Mbit/s
95th percentile per-packet one-way delay: 87.914 ms
Loss rate: 0.00%
```

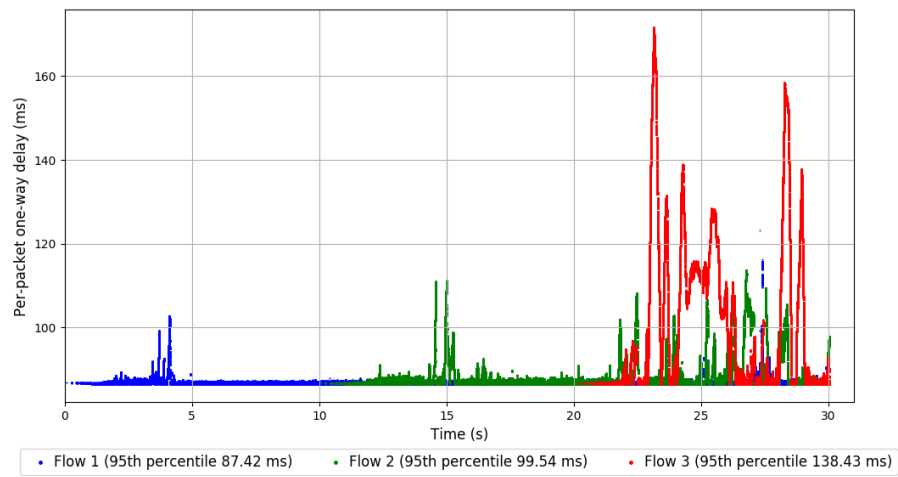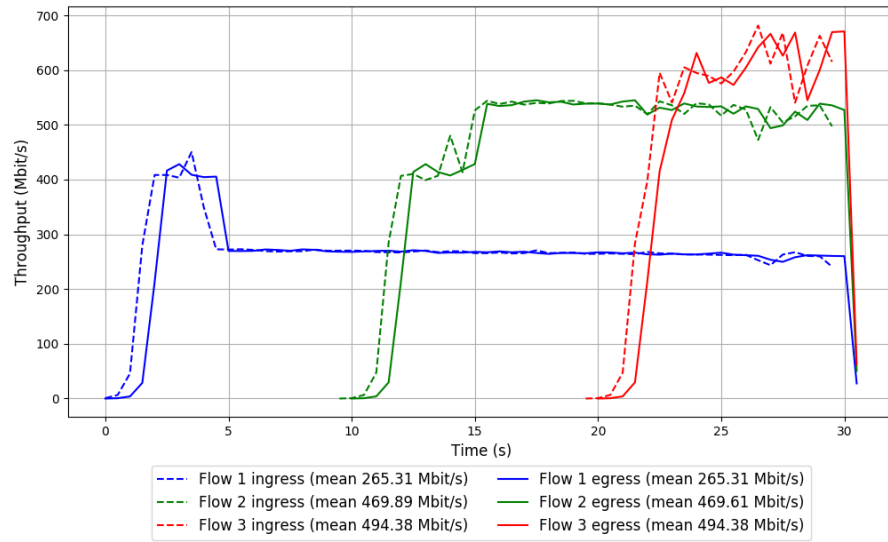# Run 5: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 201.98 Mbit/s)   Flow 1 egress (mean 202.09 Mbit/s)
Flow 2 ingress (mean 194.55 Mbit/s)   Flow 2 egress (mean 194.55 Mbit/s)
Flow 3 ingress (mean 185.11 Mbit/s)   Flow 3 egress (mean 186.50 Mbit/s)

Flow 1 (95th percentile 87.52 ms)   Flow 2 (95th percentile 87.23 ms)   Flow 3 (95th percentile 87.91 ms)

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```
Run 1: Statistics of TCP Vegas

Start at: 2018-12-11 13:16:43
End at: 2018-12-11 13:17:13
Local clock offset: -0.023 ms
Remote clock offset: -0.117 ms


# Below is generated by plot.py at 2018-12-11 18:31:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 742.68 Mbit/s
95th percentile per-packet one-way delay: 113.477 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 265.31 Mbit/s
95th percentile per-packet one-way delay: 87.421 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 469.61 Mbit/s
95th percentile per-packet one-way delay: 99.540 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 494.38 Mbit/s
95th percentile per-packet one-way delay: 138.427 ms
Loss rate: 0.00%
```
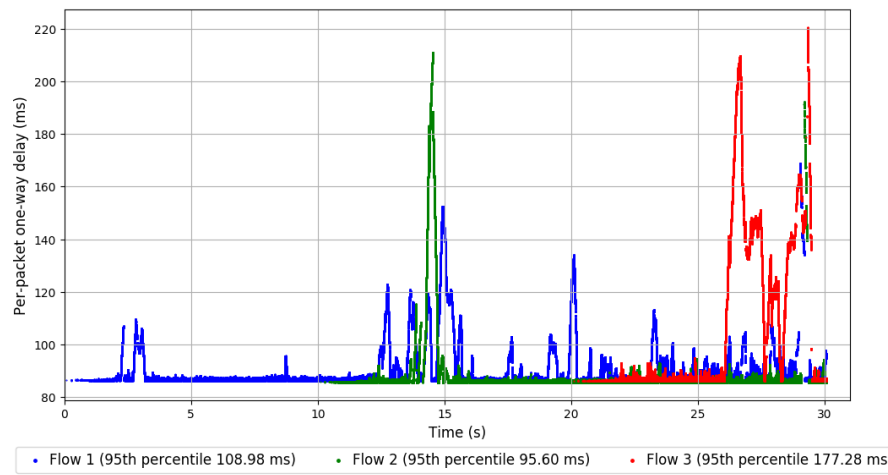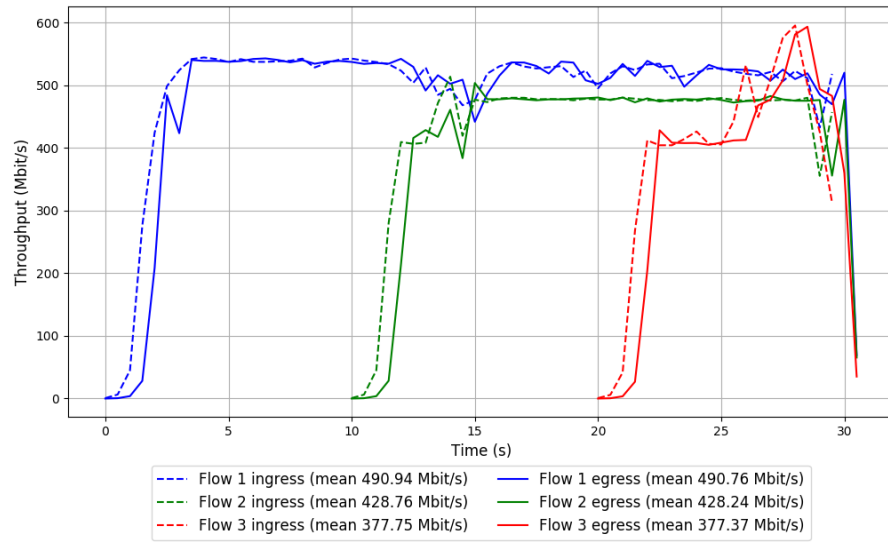
Run 1: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 265.31 Mbit/s)   Flow 1 egress (mean 265.31 Mbit/s)
Flow 2 ingress (mean 469.89 Mbit/s)   Flow 2 egress (mean 469.61 Mbit/s)
Flow 3 ingress (mean 494.38 Mbit/s)   Flow 3 egress (mean 494.38 Mbit/s)

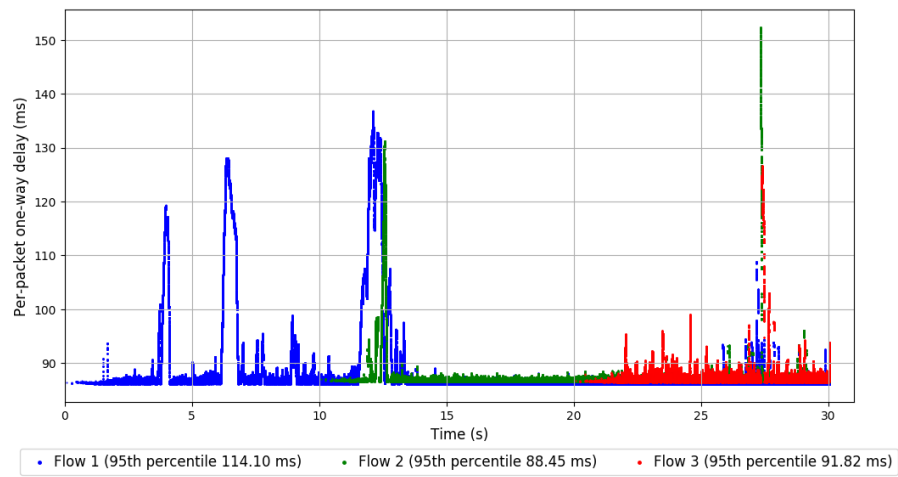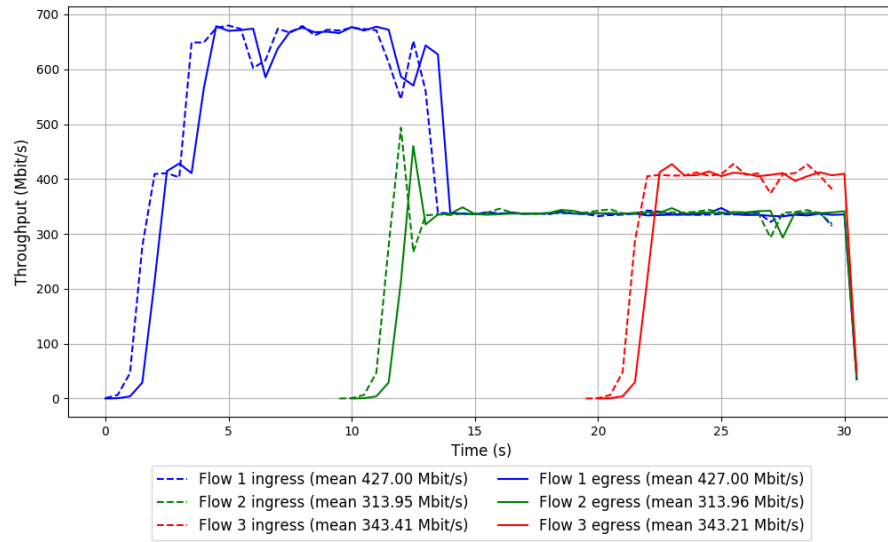Flow 1 (95th percentile 87.42 ms)   Flow 2 (95th percentile 99.54 ms)   Flow 3 (95th percentile 138.43 ms)

```
Run 2: Statistics of TCP Vegas

Start at: 2018-12-11 13:50:43
End at: 2018-12-11 13:51:13
Local clock offset: 0.163 ms
Remote clock offset: 0.026 ms


# Below is generated by plot.py at 2018-12-11 18:46:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 901.44 Mbit/s
95th percentile per-packet one-way delay: 137.382 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 490.76 Mbit/s
95th percentile per-packet one-way delay: 108.979 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 428.24 Mbit/s
95th percentile per-packet one-way delay: 95.602 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 377.37 Mbit/s
95th percentile per-packet one-way delay: 177.275 ms
Loss rate: 0.10%
```
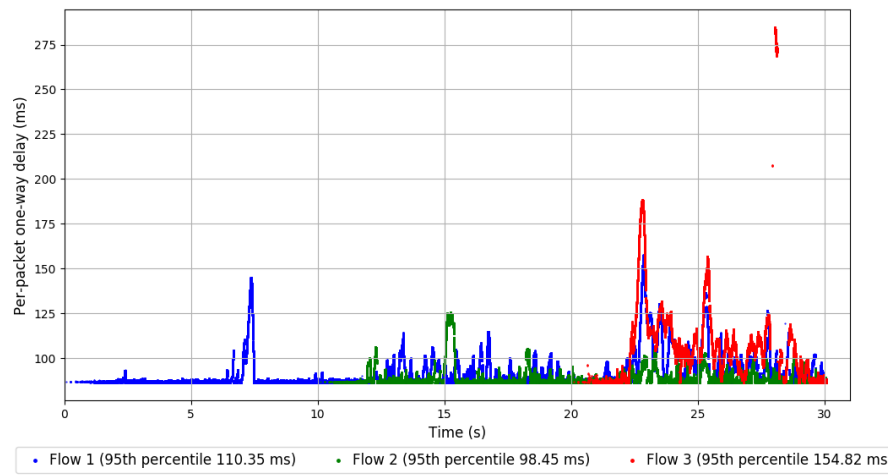
Run 2: Report of TCP Vegas — Data Link

```
Run 3: Statistics of TCP Vegas

Start at: 2018-12-11 14:25:09
End at: 2018-12-11 14:25:39
Local clock offset: -0.339 ms
Remote clock offset: -0.108 ms


# Below is generated by plot.py at 2018-12-11 18:46:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 750.40 Mbit/s
95th percentile per-packet one-way delay: 102.622 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 427.00 Mbit/s
95th percentile per-packet one-way delay: 114.101 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 313.96 Mbit/s
95th percentile per-packet one-way delay: 88.447 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 343.21 Mbit/s
95th percentile per-packet one-way delay: 91.824 ms
Loss rate: 0.05%
```
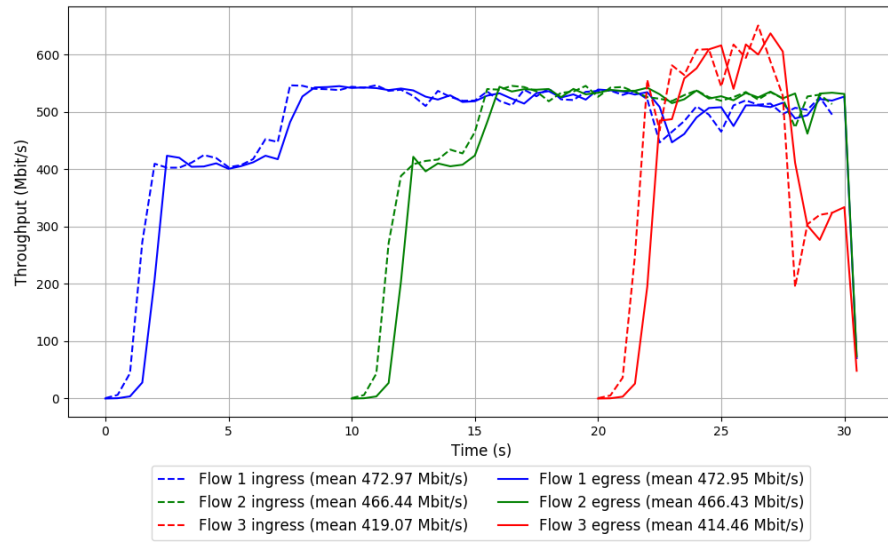
Run 3: Report of TCP Vegas — Data Link

```
Run 4: Statistics of TCP Vegas

Start at: 2018-12-11 14:58:42
End at: 2018-12-11 14:59:12
Local clock offset: 0.16 ms
Remote clock offset: -0.089 ms


# Below is generated by plot.py at 2018-12-11 18:47:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 921.35 Mbit/s
95th percentile per-packet one-way delay: 118.921 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 472.95 Mbit/s
95th percentile per-packet one-way delay: 110.348 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 466.43 Mbit/s
95th percentile per-packet one-way delay: 98.450 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 414.46 Mbit/s
95th percentile per-packet one-way delay: 154.823 ms
Loss rate: 1.10%
```

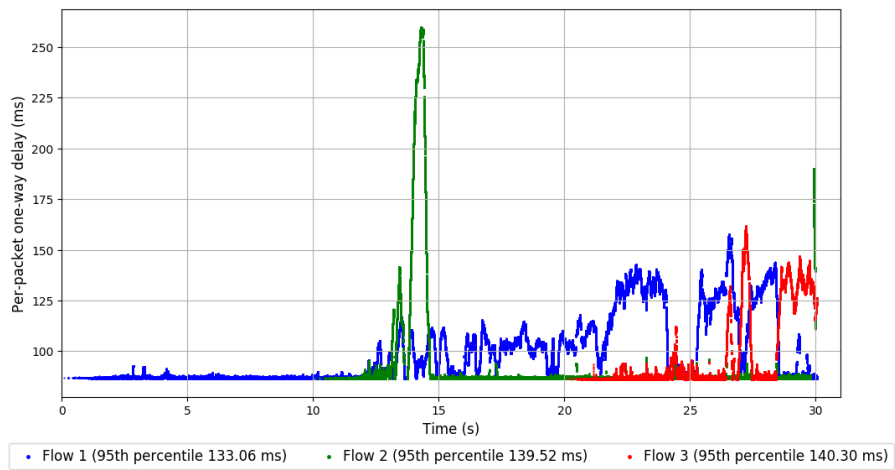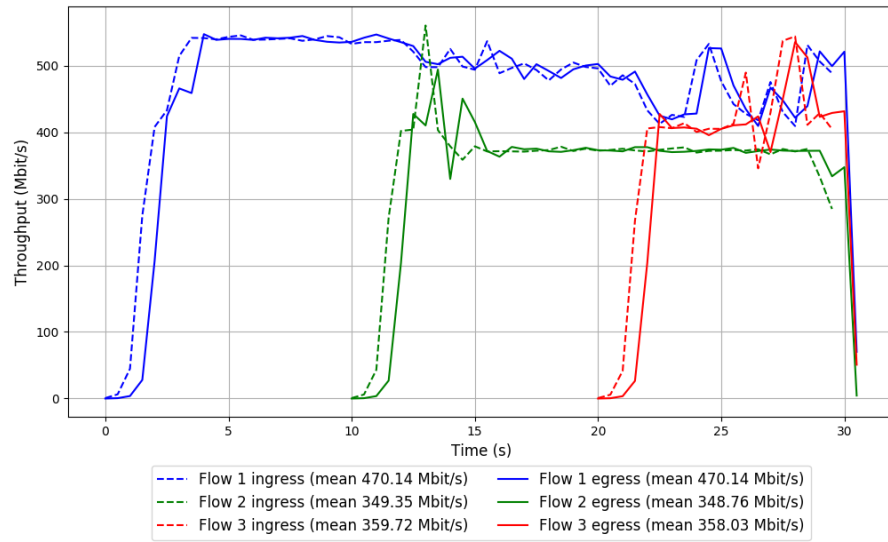Run 4: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 472.97 Mbit/s) Flow 1 egress (mean 472.95 Mbit/s)
Flow 2 ingress (mean 466.44 Mbit/s) Flow 2 egress (mean 466.43 Mbit/s)
Flow 3 ingress (mean 419.07 Mbit/s) Flow 3 egress (mean 414.46 Mbit/s)

Flow 1 (95th percentile 110.35 ms) Flow 2 (95th percentile 98.45 ms) Flow 3 (95th percentile 154.82 ms)

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```
Run 5: Statistics of TCP Vegas

Start at: 2018-12-11 15:33:34
End at: 2018-12-11 15:34:04
Local clock offset: -0.248 ms
Remote clock offset: -0.069 ms


# Below is generated by plot.py at 2018-12-11 18:47:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 820.64 Mbit/s
95th percentile per-packet one-way delay: 135.064 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 470.14 Mbit/s
95th percentile per-packet one-way delay: 133.055 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 348.76 Mbit/s
95th percentile per-packet one-way delay: 139.524 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 358.03 Mbit/s
95th percentile per-packet one-way delay: 140.302 ms
Loss rate: 0.46%
```
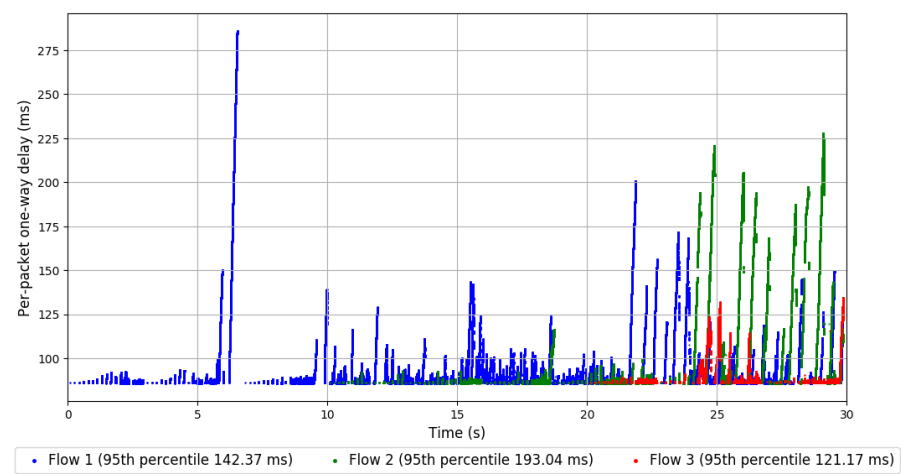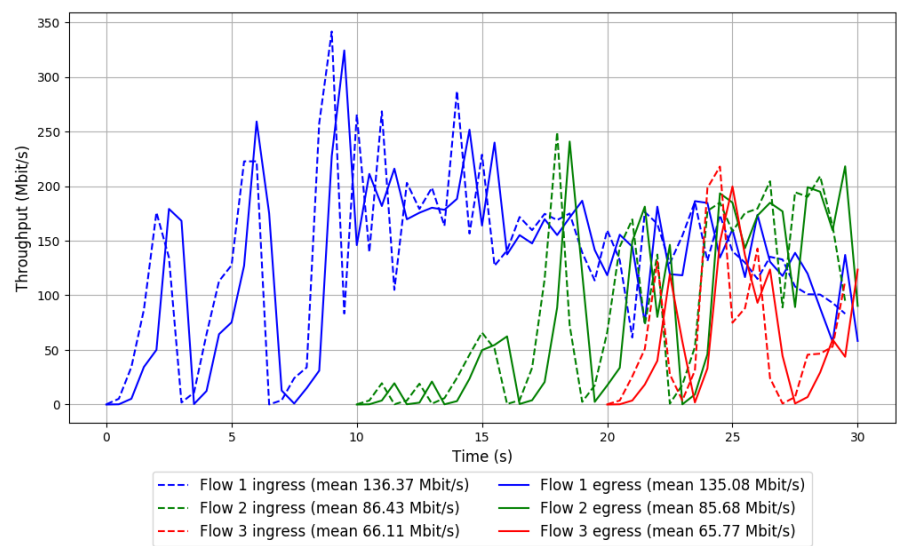
Run 5: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2018-12-11 13:36:13
End at: 2018-12-11 13:36:43
Local clock offset: -0.058 ms
Remote clock offset: 0.005 ms


# Below is generated by plot.py at 2018-12-11 18:47:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 213.52 Mbit/s
95th percentile per-packet one-way delay: 169.853 ms
Loss rate: 0.82%
-- Flow 1:
Average throughput: 135.08 Mbit/s
95th percentile per-packet one-way delay: 142.365 ms
Loss rate: 0.91%
-- Flow 2:
Average throughput: 85.68 Mbit/s
95th percentile per-packet one-way delay: 193.039 ms
Loss rate: 0.85%
-- Flow 3:
Average throughput: 65.77 Mbit/s
95th percentile per-packet one-way delay: 121.173 ms
Loss rate: 0.18%
```
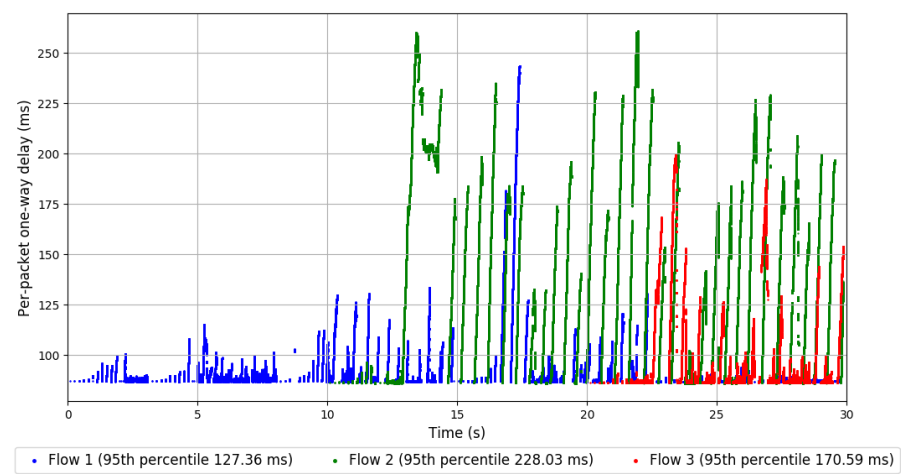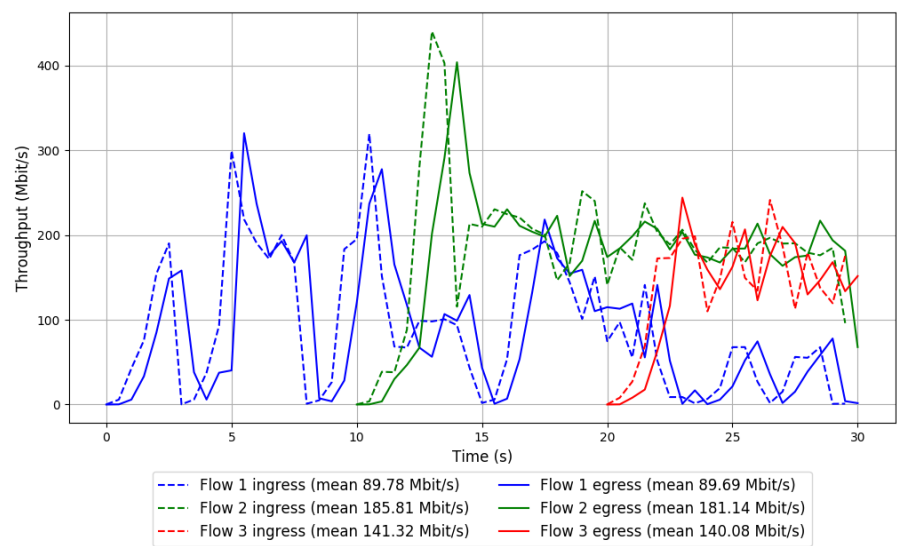
Run 1: Report of Verus — Data Link

Flow 1 ingress (mean 136.37 Mbit/s)   Flow 1 egress (mean 135.08 Mbit/s)
Flow 2 ingress (mean 86.43 Mbit/s)   Flow 2 egress (mean 85.68 Mbit/s)
Flow 3 ingress (mean 66.11 Mbit/s)   Flow 3 egress (mean 65.77 Mbit/s)

Flow 1 (95th percentile 142.37 ms)   Flow 2 (95th percentile 193.04 ms)   Flow 3 (95th percentile 121.17 ms)
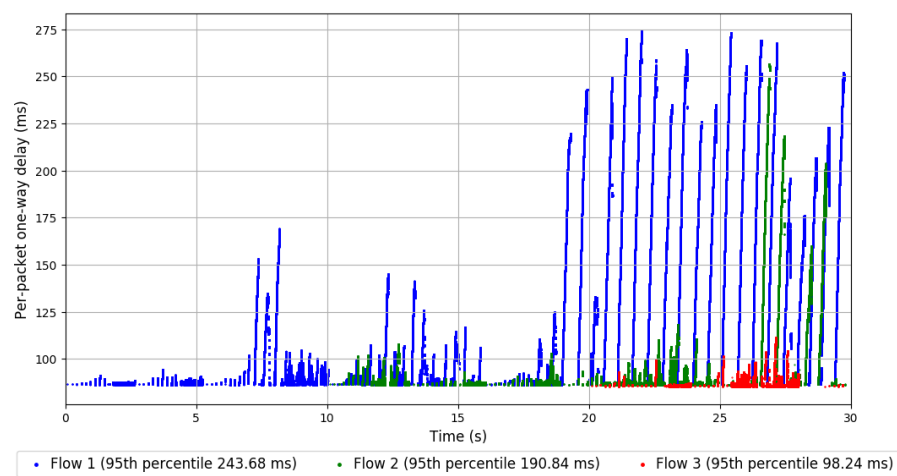
```
Run 2: Statistics of Verus

Start at: 2018-12-11 14:10:17
End at: 2018-12-11 14:10:47
Local clock offset: -0.137 ms
Remote clock offset: -0.0 ms


# Below is generated by plot.py at 2018-12-11 18:47:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 255.37 Mbit/s
95th percentile per-packet one-way delay: 214.891 ms
Loss rate: 1.39%
-- Flow 1:
Average throughput: 89.69 Mbit/s
95th percentile per-packet one-way delay: 127.359 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 181.14 Mbit/s
95th percentile per-packet one-way delay: 228.033 ms
Loss rate: 2.51%
-- Flow 3:
Average throughput: 140.08 Mbit/s
95th percentile per-packet one-way delay: 170.594 ms
Loss rate: 0.86%
```
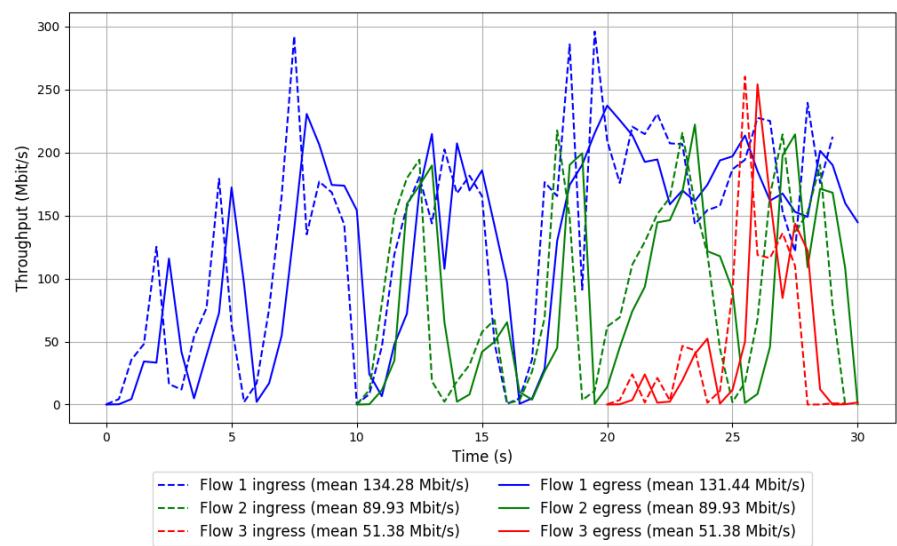
Run 2: Report of Verus — Data Link

Flow 1 ingress (mean 89.78 Mbit/s) — Flow 1 egress (mean 89.69 Mbit/s)
Flow 2 ingress (mean 185.81 Mbit/s) — Flow 2 egress (mean 181.14 Mbit/s)
Flow 3 ingress (mean 141.32 Mbit/s) — Flow 3 egress (mean 140.08 Mbit/s)

Flow 1 (95th percentile 127.36 ms)   Flow 2 (95th percentile 228.03 ms)   Flow 3 (95th percentile 170.59 ms)
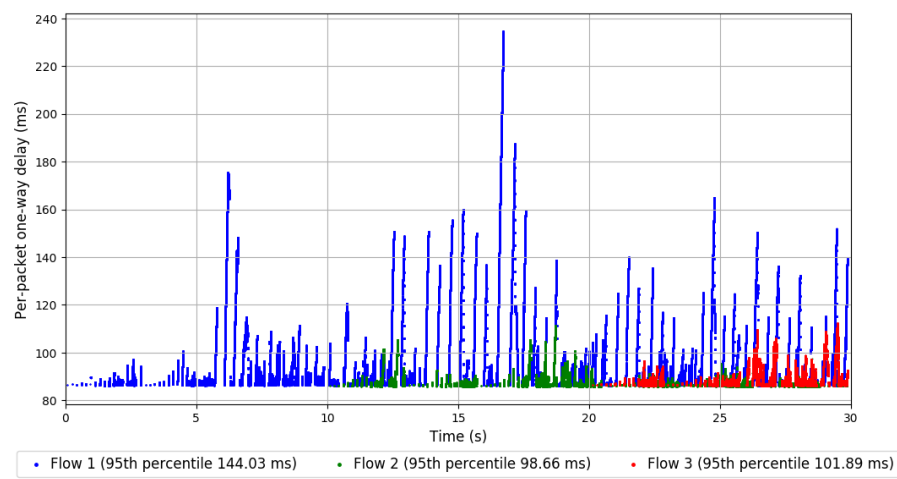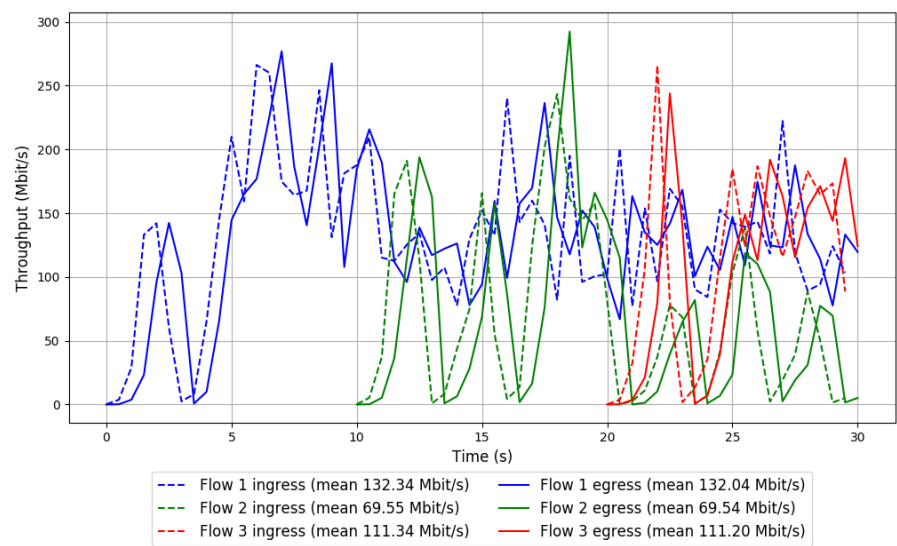
```
Run 3: Statistics of Verus

Start at: 2018-12-11 14:44:21
End at: 2018-12-11 14:44:51
Local clock offset: 0.257 ms
Remote clock offset: -0.112 ms


# Below is generated by plot.py at 2018-12-11 18:47:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 207.50 Mbit/s
95th percentile per-packet one-way delay: 233.751 ms
Loss rate: 1.00%
-- Flow 1:
Average throughput: 131.44 Mbit/s
95th percentile per-packet one-way delay: 243.678 ms
Loss rate: 1.56%
-- Flow 2:
Average throughput: 89.93 Mbit/s
95th percentile per-packet one-way delay: 190.841 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 51.38 Mbit/s
95th percentile per-packet one-way delay: 98.243 ms
Loss rate: 0.00%
```

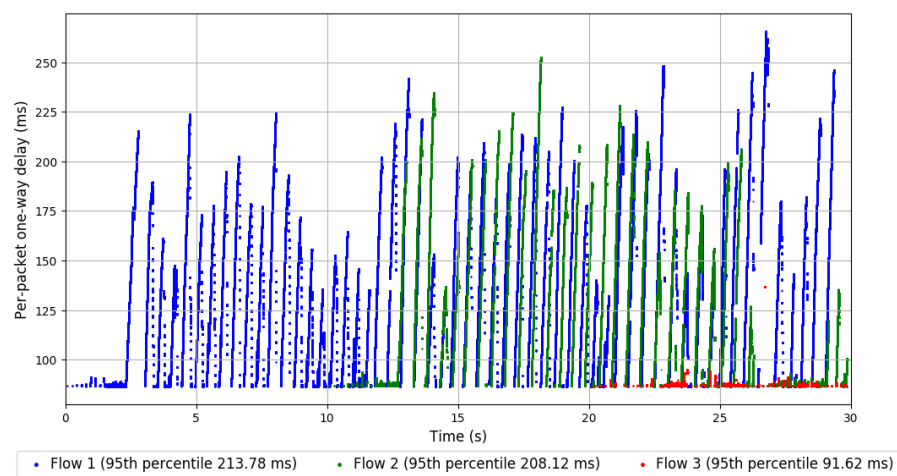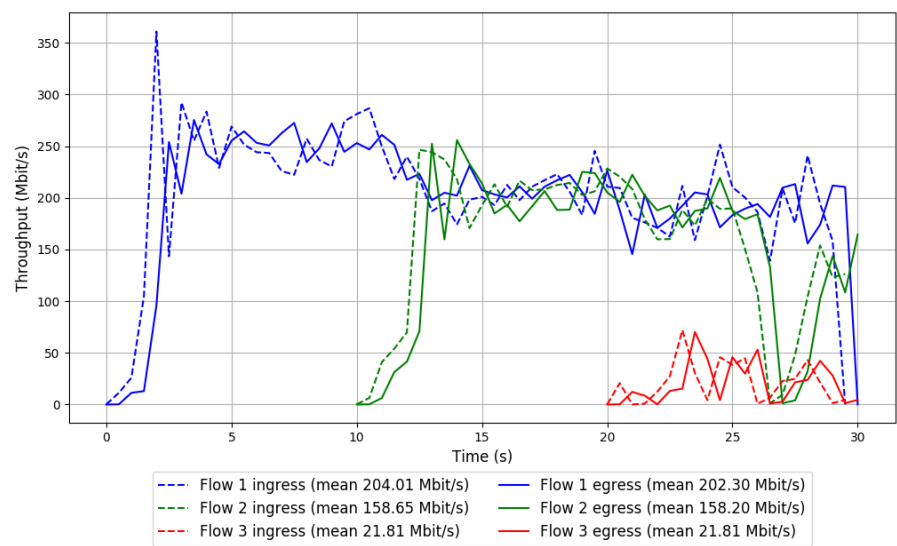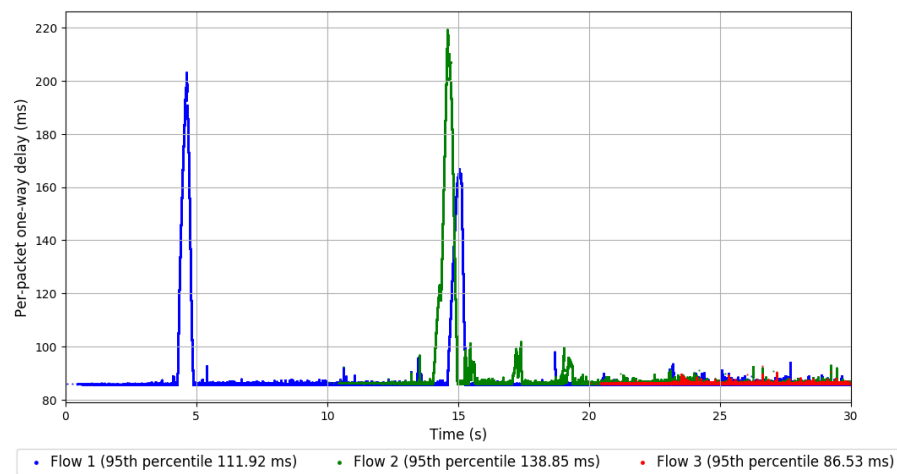Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2018-12-11 15:18:31
End at: 2018-12-11 15:19:01
Local clock offset: 0.018 ms
Remote clock offset: -0.093 ms


# Below is generated by plot.py at 2018-12-11 18:47:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 214.56 Mbit/s
95th percentile per-packet one-way delay: 135.204 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 132.04 Mbit/s
95th percentile per-packet one-way delay: 144.027 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 69.54 Mbit/s
95th percentile per-packet one-way delay: 98.655 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 111.20 Mbit/s
95th percentile per-packet one-way delay: 101.890 ms
Loss rate: 0.11%
```

Run 4: Report of Verus — Data Link

```
Run 5: Statistics of Verus

Start at: 2018-12-11 15:53:01
End at: 2018-12-11 15:53:31
Local clock offset: -0.326 ms
Remote clock offset: -0.067 ms


# Below is generated by plot.py at 2018-12-11 18:48:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 314.36 Mbit/s
95th percentile per-packet one-way delay: 211.253 ms
Loss rate: 0.63%
-- Flow 1:
Average throughput: 202.30 Mbit/s
95th percentile per-packet one-way delay: 213.781 ms
Loss rate: 0.84%
-- Flow 2:
Average throughput: 158.20 Mbit/s
95th percentile per-packet one-way delay: 208.115 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 21.81 Mbit/s
95th percentile per-packet one-way delay: 91.623 ms
Loss rate: 0.00%
```

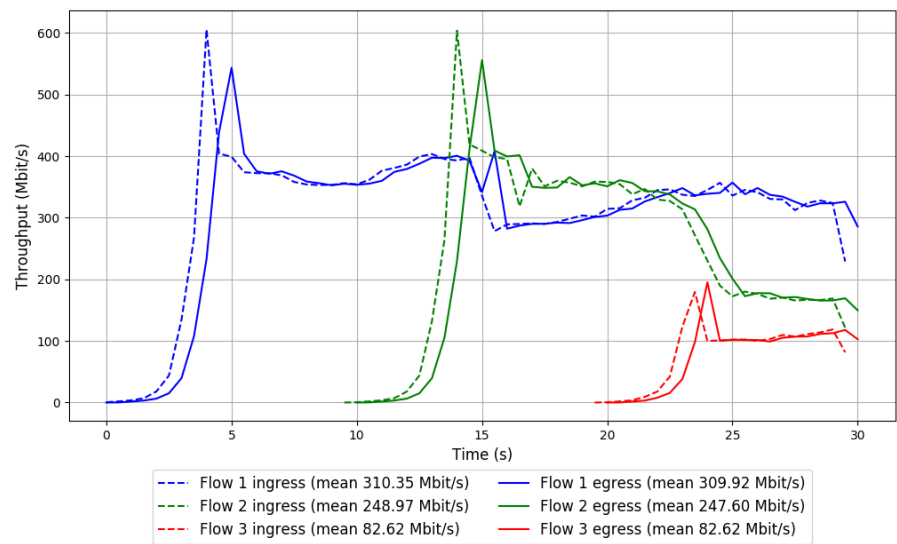Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2018-12-11 13:41:40
End at: 2018-12-11 13:42:10
Local clock offset: 0.09 ms
Remote clock offset: -0.009 ms


# Below is generated by plot.py at 2018-12-11 18:48:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 501.97 Mbit/s
95th percentile per-packet one-way delay: 119.679 ms
Loss rate: 0.27%
-- Flow 1:
Average throughput: 309.92 Mbit/s
95th percentile per-packet one-way delay: 111.919 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 247.60 Mbit/s
95th percentile per-packet one-way delay: 138.851 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 82.62 Mbit/s
95th percentile per-packet one-way delay: 86.532 ms
Loss rate: 0.00%
```

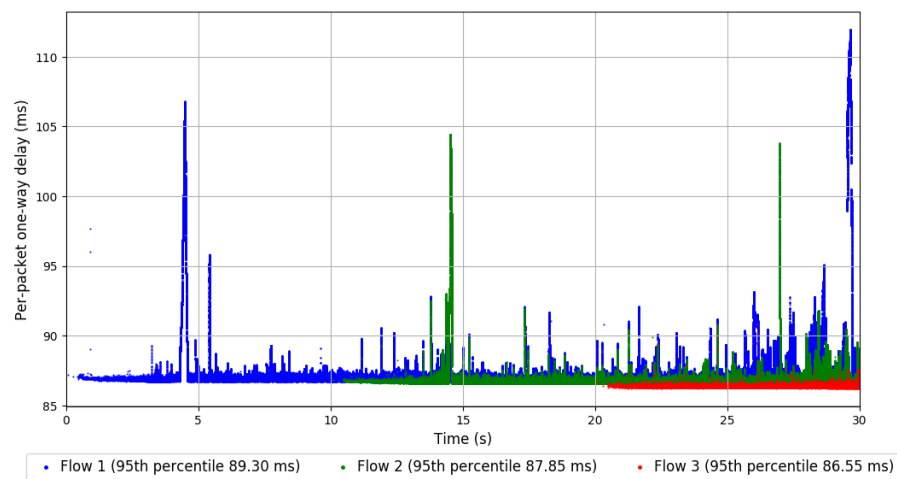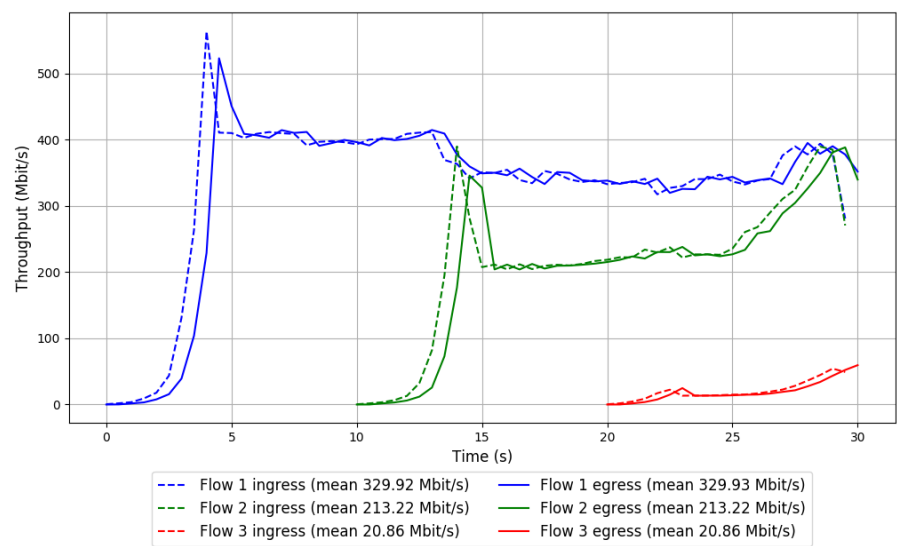## Run 1: Report of PCC-Vivace — Data Link

```
Run 2: Statistics of PCC-Vivace

Start at: 2018-12-11 14:15:48
End at: 2018-12-11 14:16:18
Local clock offset: -0.524 ms
Remote clock offset: -0.064 ms


# Below is generated by plot.py at 2018-12-11 18:48:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 478.44 Mbit/s
95th percentile per-packet one-way delay: 88.778 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 329.93 Mbit/s
95th percentile per-packet one-way delay: 89.300 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 213.22 Mbit/s
95th percentile per-packet one-way delay: 87.851 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 20.86 Mbit/s
95th percentile per-packet one-way delay: 86.554 ms
Loss rate: 0.00%
```

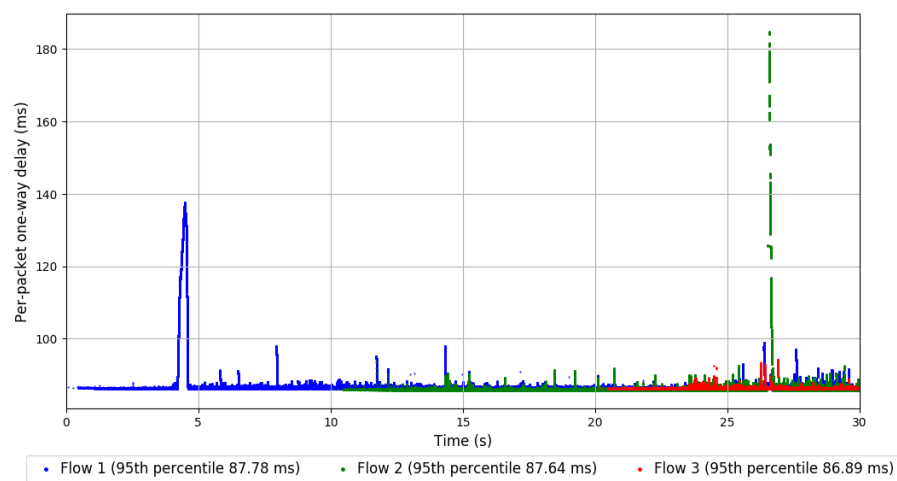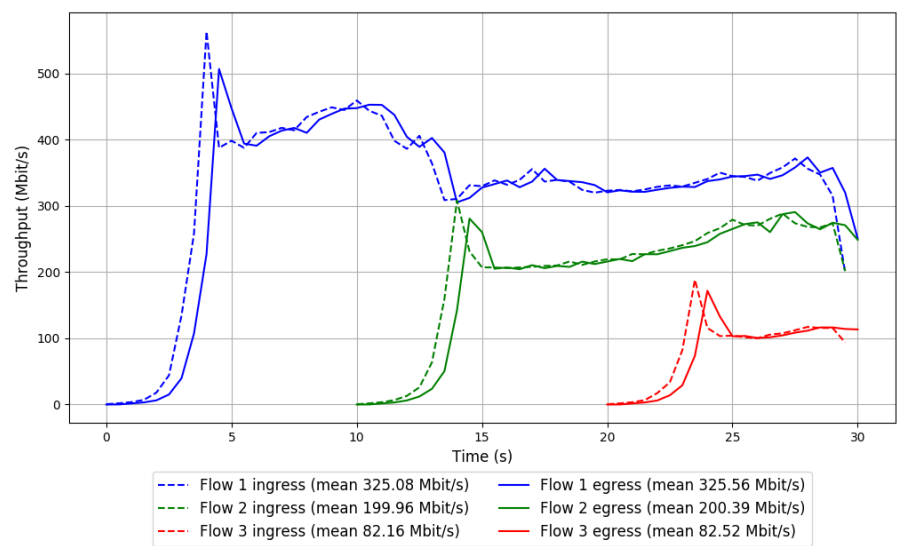Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2018-12-11 14:49:29
End at: 2018-12-11 14:49:59
Local clock offset: -0.036 ms
Remote clock offset: -0.127 ms


# Below is generated by plot.py at 2018-12-11 18:48:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 485.95 Mbit/s
95th percentile per-packet one-way delay: 87.663 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 325.56 Mbit/s
95th percentile per-packet one-way delay: 87.784 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 200.39 Mbit/s
95th percentile per-packet one-way delay: 87.644 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 82.52 Mbit/s
95th percentile per-packet one-way delay: 86.886 ms
Loss rate: 0.00%
```

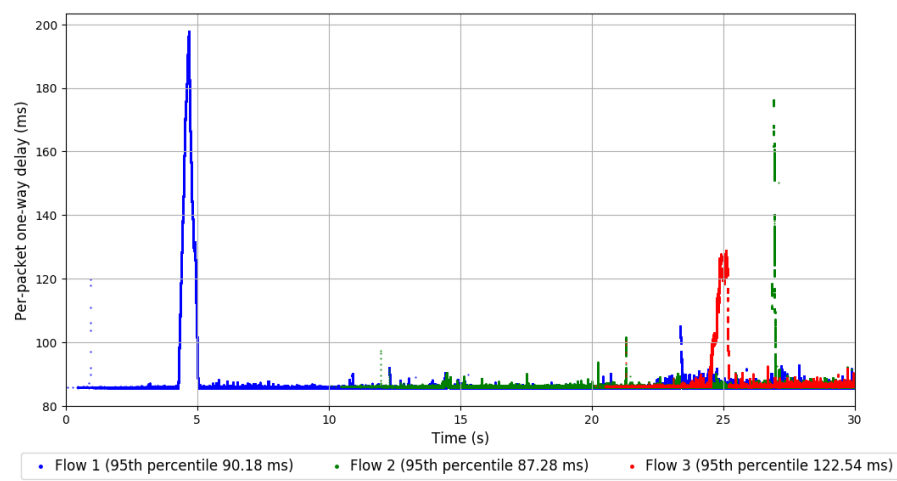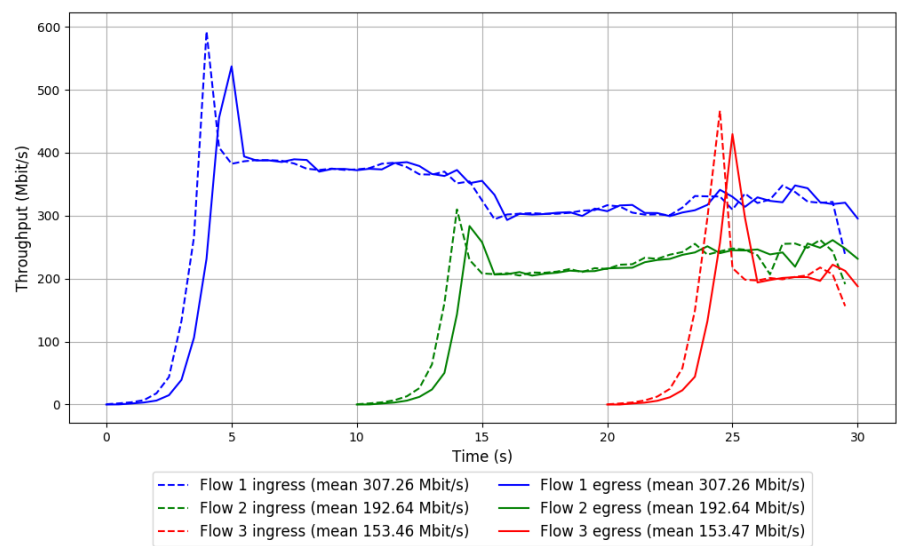Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2018-12-11 15:24:00
End at: 2018-12-11 15:24:30
Local clock offset: 0.318 ms
Remote clock offset: -0.105 ms


# Below is generated by plot.py at 2018-12-11 18:49:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 485.87 Mbit/s
95th percentile per-packet one-way delay: 93.212 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 307.26 Mbit/s
95th percentile per-packet one-way delay: 90.183 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 192.64 Mbit/s
95th percentile per-packet one-way delay: 87.277 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 153.47 Mbit/s
95th percentile per-packet one-way delay: 122.542 ms
Loss rate: 0.00%
```

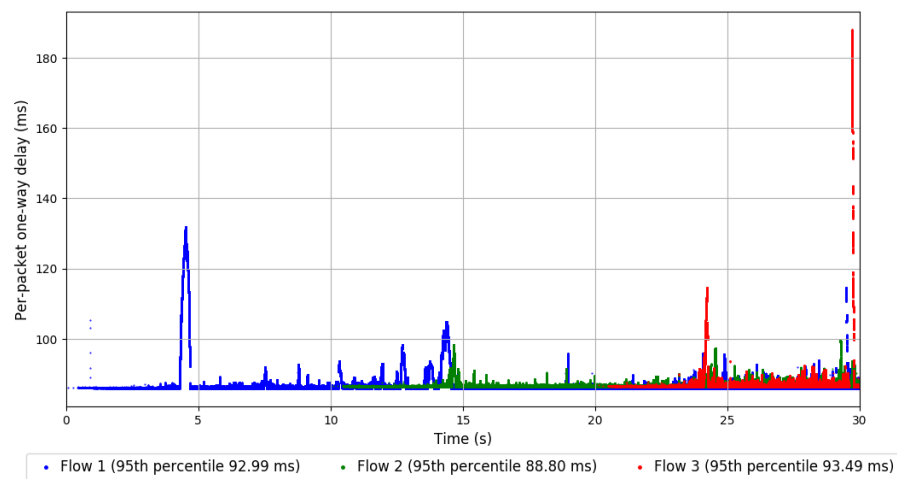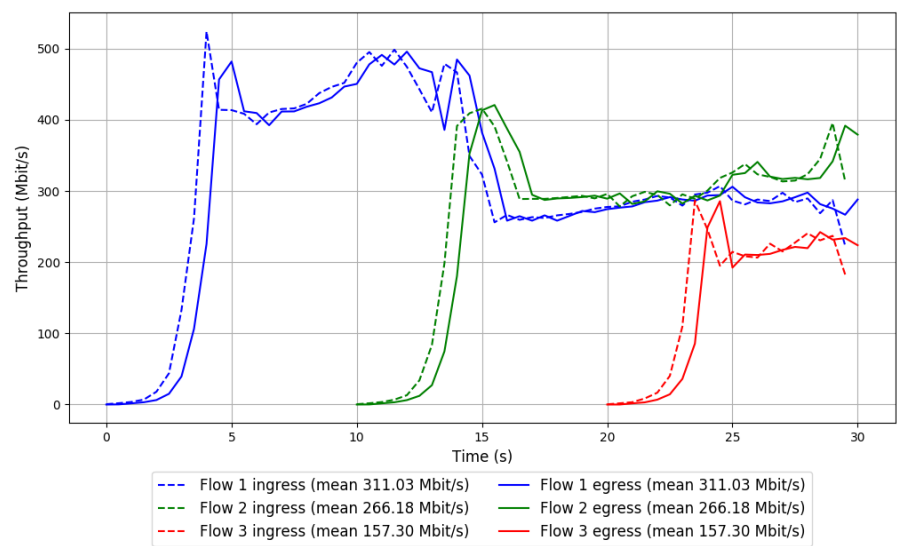## Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2018-12-11 15:58:36
End at: 2018-12-11 15:59:06
Local clock offset: 0.01 ms
Remote clock offset: -0.056 ms


# Below is generated by plot.py at 2018-12-11 18:49:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 539.81 Mbit/s
95th percentile per-packet one-way delay: 91.224 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 311.03 Mbit/s
95th percentile per-packet one-way delay: 92.986 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 266.18 Mbit/s
95th percentile per-packet one-way delay: 88.798 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 157.30 Mbit/s
95th percentile per-packet one-way delay: 93.490 ms
Loss rate: 0.00%
```

Run 5: Report of PCC-Vivace — Data Link

Flow 1 ingress (mean 311.03 Mbit/s) — Flow 1 egress (mean 311.03 Mbit/s)
Flow 2 ingress (mean 266.18 Mbit/s) — Flow 2 egress (mean 266.18 Mbit/s)
Flow 3 ingress (mean 157.30 Mbit/s) — Flow 3 egress (mean 157.30 Mbit/s)

Flow 1 (95th percentile 92.99 ms)   Flow 2 (95th percentile 88.80 ms)   Flow 3 (95th percentile 93.49 ms)

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```
Run 1: Statistics of WebRTC media

Start at: 2018-12-11 13:34:58
End at: 2018-12-11 13:35:28
Local clock offset: -0.131 ms
Remote clock offset: 0.005 ms


# Below is generated by plot.py at 2018-12-11 18:49:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.63 Mbit/s
95th percentile per-packet one-way delay: 86.775 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 2.00 Mbit/s
95th percentile per-packet one-way delay: 86.737 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.22 Mbit/s
95th percentile per-packet one-way delay: 86.824 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 86.408 ms
Loss rate: 0.00%
```
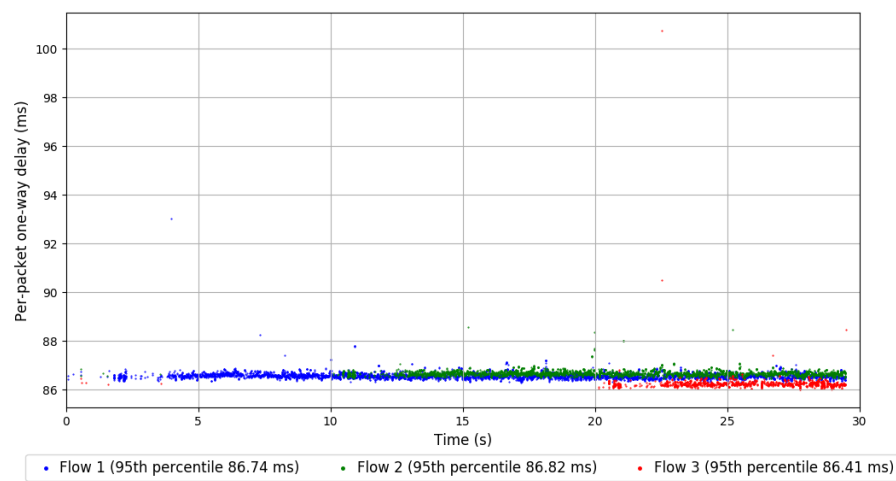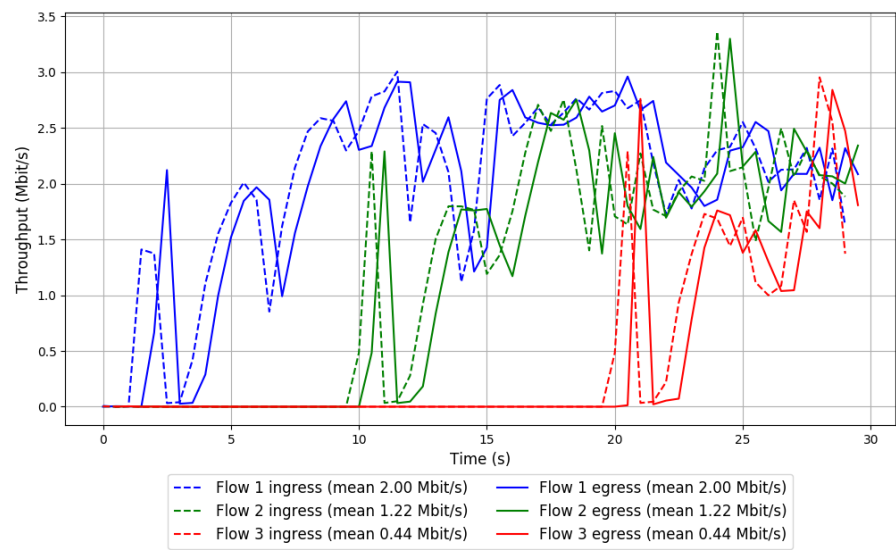
Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-12-11 14:09:01
End at: 2018-12-11 14:09:31
Local clock offset: -0.125 ms
Remote clock offset: -0.0 ms


# Below is generated by plot.py at 2018-12-11 18:49:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.33 Mbit/s
95th percentile per-packet one-way delay: 86.594 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.90 Mbit/s
95th percentile per-packet one-way delay: 86.372 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.06 Mbit/s
95th percentile per-packet one-way delay: 86.424 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 86.731 ms
Loss rate: 0.00%
```
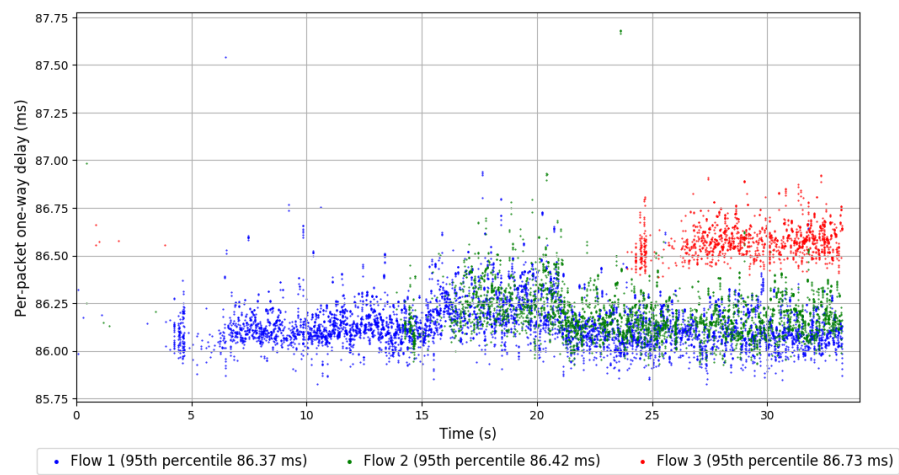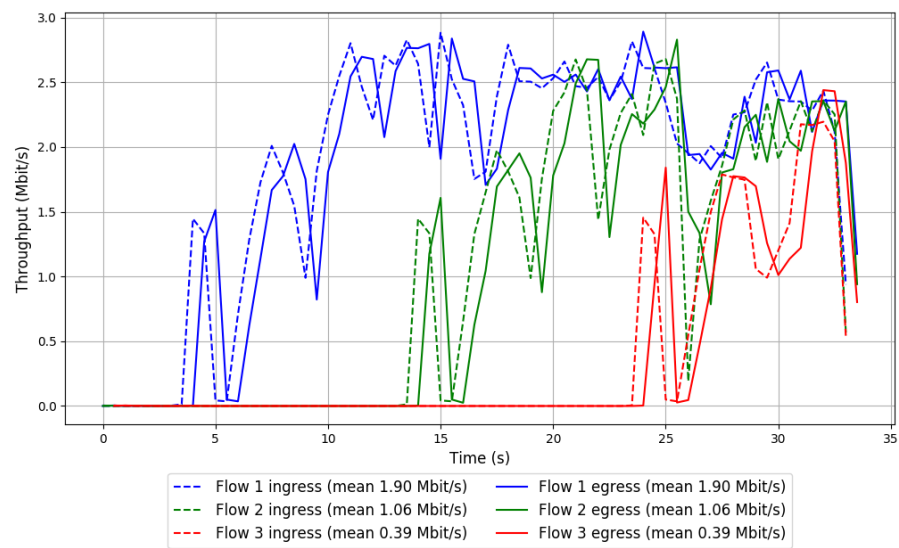
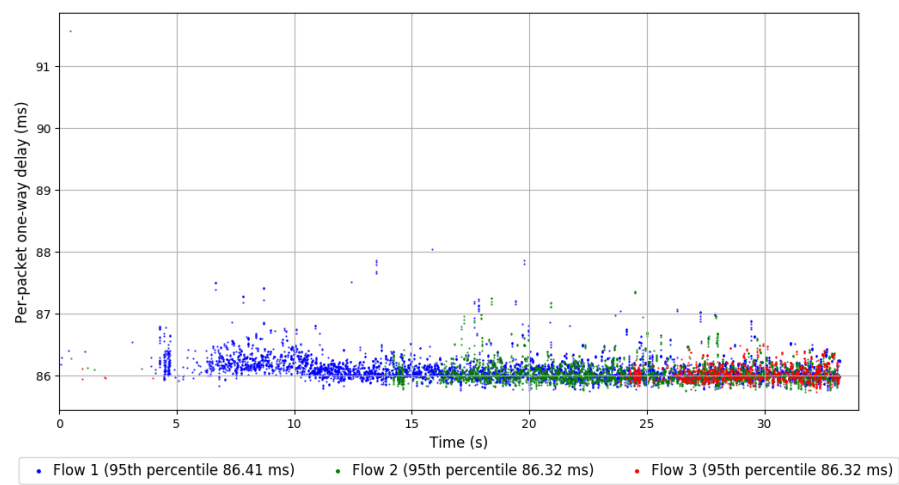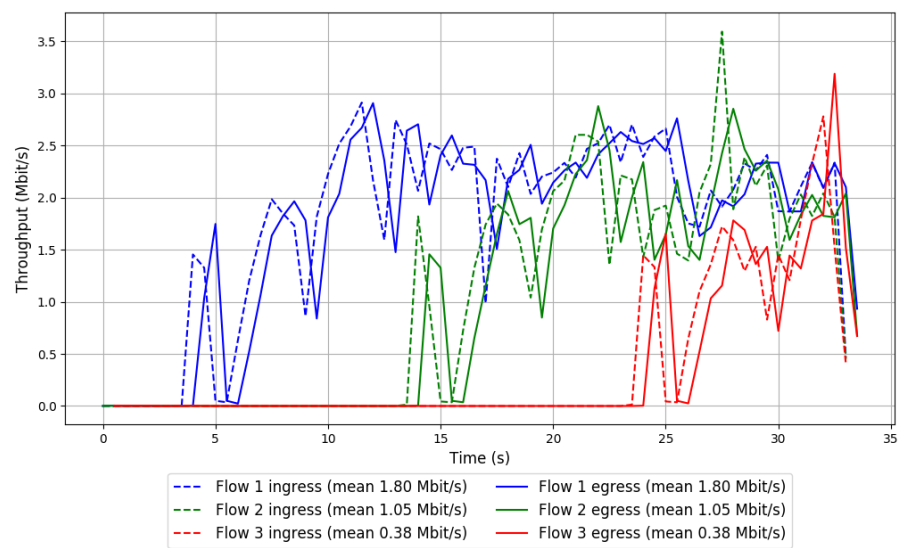Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2018-12-11 14:43:05
End at: 2018-12-11 14:43:35
Local clock offset: 0.201 ms
Remote clock offset: -0.126 ms


# Below is generated by plot.py at 2018-12-11 18:49:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.21 Mbit/s
95th percentile per-packet one-way delay: 86.366 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.80 Mbit/s
95th percentile per-packet one-way delay: 86.405 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.05 Mbit/s
95th percentile per-packet one-way delay: 86.319 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 86.318 ms
Loss rate: 0.01%
```
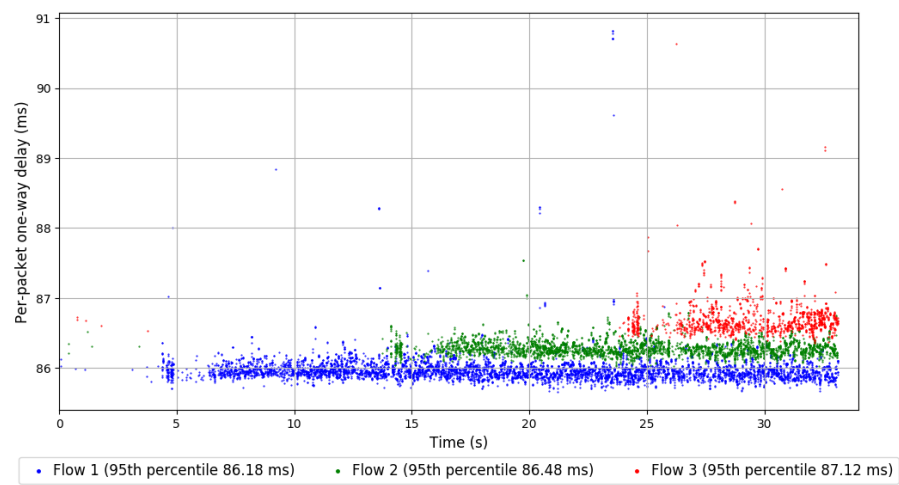
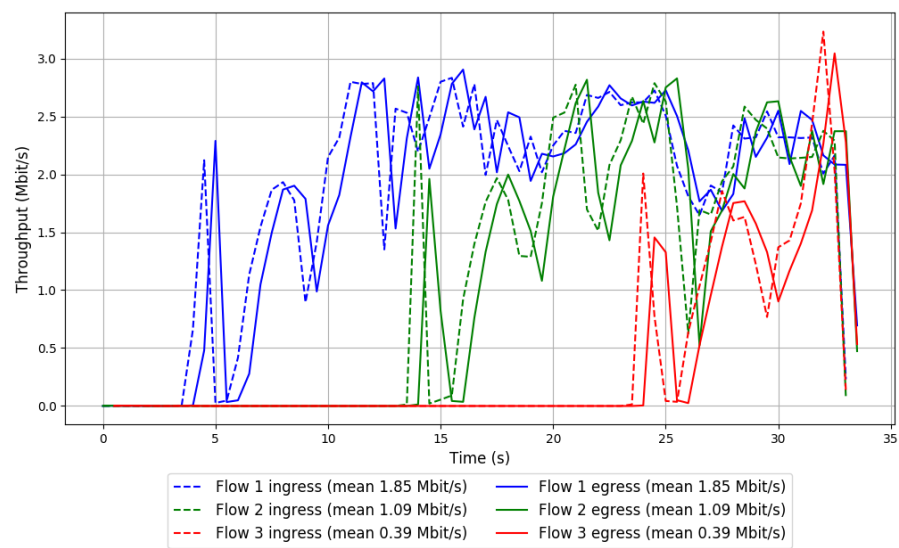Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2018-12-11 15:17:15
End at: 2018-12-11 15:17:45
Local clock offset: 0.322 ms
Remote clock offset: -0.077 ms


# Below is generated by plot.py at 2018-12-11 18:49:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.32 Mbit/s
95th percentile per-packet one-way delay: 86.690 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.85 Mbit/s
95th percentile per-packet one-way delay: 86.182 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.09 Mbit/s
95th percentile per-packet one-way delay: 86.483 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 87.118 ms
Loss rate: 0.00%
```

Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2018-12-11 15:51:46
End at: 2018-12-11 15:52:16
Local clock offset: 0.119 ms
Remote clock offset: -0.033 ms


# Below is generated by plot.py at 2018-12-11 18:49:52
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.14 Mbit/s
95th percentile per-packet one-way delay: 86.369 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.74 Mbit/s
95th percentile per-packet one-way delay: 86.397 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.04 Mbit/s
95th percentile per-packet one-way delay: 86.288 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.38 Mbit/s
95th percentile per-packet one-way delay: 86.314 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link