Pantheon Report

Generated at 2018-09-25 12:14:38 (UTC).

Data path: AWS Brazil 2 on `ens5` (*local*) →Colombia on `p4p1` (*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 `gps.ntp.br` and have been applied to correct the timestamps in logs.
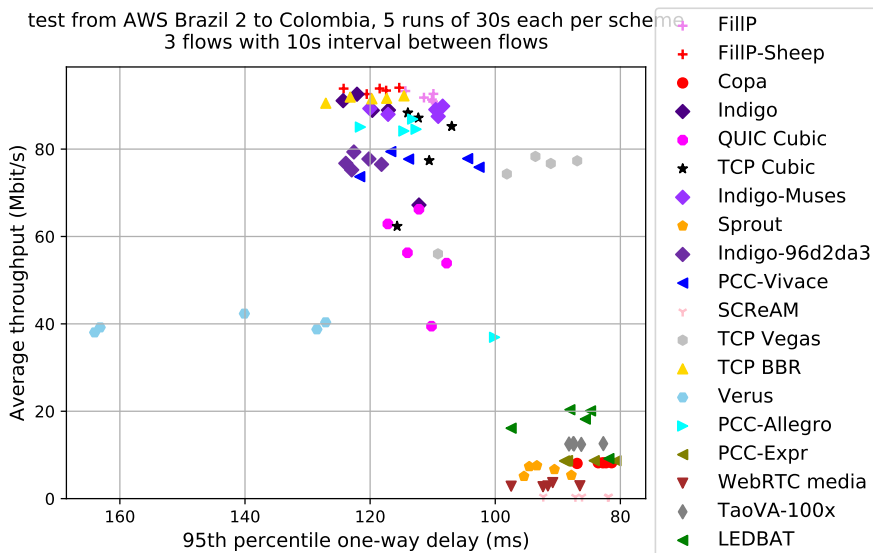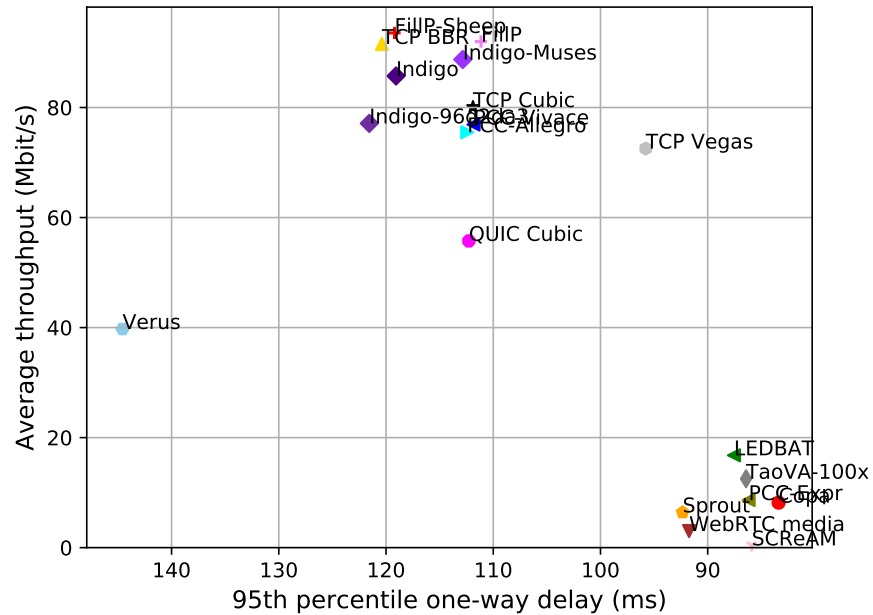
```
System info:
Linux 4.15.0-1021-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
net.ipv4.tcp_mem = 184101 245469 368202

Git summary:
branch: muses @ 90192f6b64ce1a1191dcca0e9ff9ee24950674d7
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ cbfce6db5ff5740dafe1771f813cd646339e1952
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
 M receiver/src/buffer.h
 M receiver/src/core.cpp
 M sender/src/buffer.h
 M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
 M src/ScreamClient
 M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
 M src/examples/cellsim.cc
 M src/examples/sproutbt2.cc
 M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
```

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

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

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

scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	54.94	40.17	29.90	118.76	118.08	117.05	12.91	19.98	28.05
Copa	5	0.00	9.98	4.63	82.86	83.44	83.11	98.44	74.75	82.52
TCP Cubic	5	60.03	18.22	23.79	111.35	113.67	106.38	1.28	1.60	1.42
FillP	5	60.35	36.71	21.76	110.58	110.98	111.64	16.77	19.80	17.85
FillP-Sheep	5	55.40	40.96	33.02	117.28	116.95	114.89	16.31	28.39	27.74
Indigo	5	52.27	39.09	23.45	114.73	118.87	118.49	6.62	11.40	27.51
Indigo-96d2da3	5	47.27	34.37	22.35	118.91	123.42	119.56	55.71	60.07	61.13
LEDBAT	5	10.83	7.11	3.74	85.45	88.49	86.31	0.10	0.23	0.16
Indigo-Muses	5	69.13	20.73	17.91	112.56	110.42	116.42	3.34	0.96	2.51
PCC-Allegro	5	65.94	6.06	16.79	110.74	108.40	116.32	2.19	3.05	5.44
PCC-Expr	5	0.01	9.53	7.01	87.08	86.18	86.20	85.71	50.10	44.74
QUIC Cubic	5	35.47	22.07	17.19	109.38	107.87	115.74	1.72	1.08	2.88
SCReAM	5	0.19	0.22	0.22	82.65	83.23	85.67	0.36	0.09	0.25
Sprout	5	3.16	3.55	2.71	92.00	92.26	92.06	0.04	0.00	0.00
TaoVA-100x	5	6.72	5.39	6.78	93.08	85.04	82.51	51.26	68.01	84.78
TCP Vegas	5	39.86	31.58	35.00	94.79	99.06	92.72	0.94	0.76	0.97
Verus	5	20.01	21.39	17.36	148.12	135.81	115.17	50.33	46.49	23.94
PCC-Vivace	5	64.13	14.43	9.61	111.87	111.61	110.65	0.28	0.66	0.89
WebRTC media	5	1.74	1.12	0.17	86.22	89.60	88.62	0.39	0.21	0.05

```
Run 1: Statistics of TCP BBR

Start at: 2018-09-25 08:52:24
End at: 2018-09-25 08:52:54
Local clock offset: -6.885 ms
Remote clock offset: 1.421 ms


# Below is generated by plot.py at 2018-09-25 12:06:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.91 Mbit/s
95th percentile per-packet one-way delay: 123.177 ms
Loss rate: 16.78%
-- Flow 1:
Average throughput: 54.92 Mbit/s
95th percentile per-packet one-way delay: 115.963 ms
Loss rate: 12.36%
-- Flow 2:
Average throughput: 39.23 Mbit/s
95th percentile per-packet one-way delay: 123.281 ms
Loss rate: 18.52%
-- Flow 3:
Average throughput: 32.61 Mbit/s
95th percentile per-packet one-way delay: 116.644 ms
Loss rate: 30.91%
```
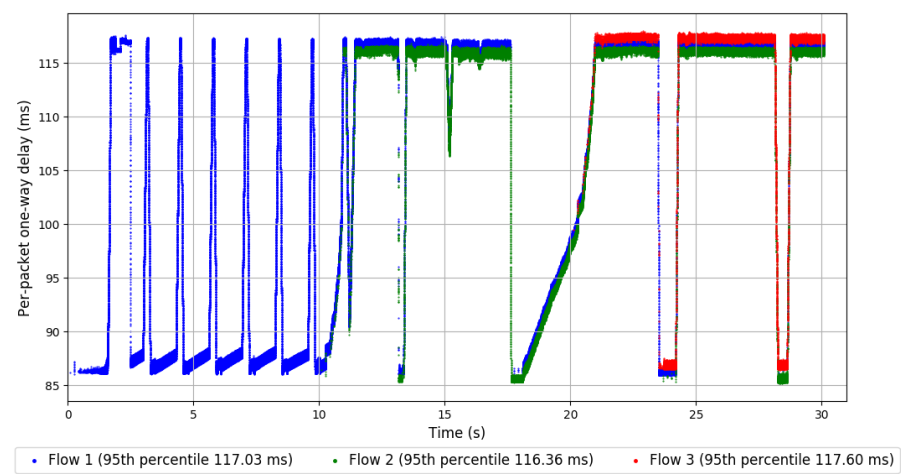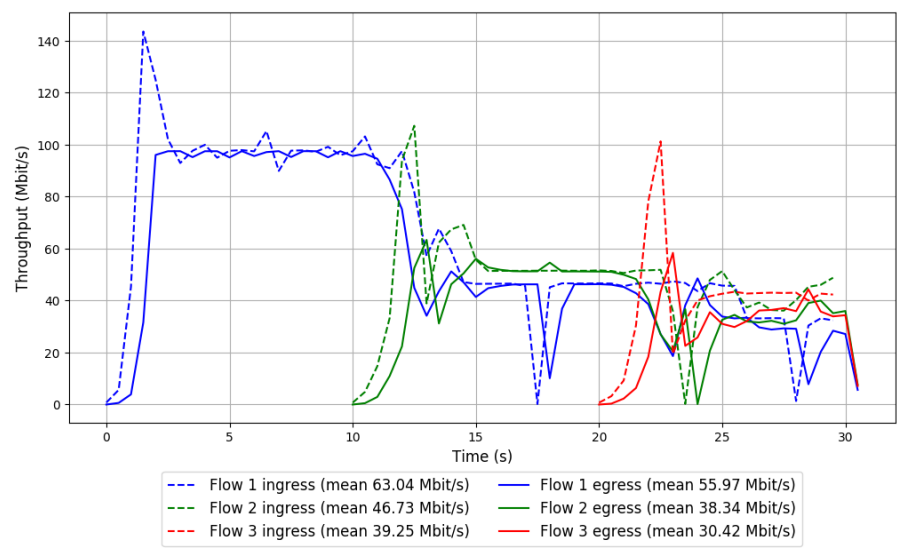
Run 1: Report of TCP BBR — Data Link

```
Run 2: Statistics of TCP BBR

Start at: 2018-09-25 09:39:28
End at: 2018-09-25 09:39:58
Local clock offset: -3.638 ms
Remote clock offset: 1.839 ms


# Below is generated by plot.py at 2018-09-25 12:06:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.64 Mbit/s
95th percentile per-packet one-way delay: 117.357 ms
Loss rate: 14.44%
-- Flow 1:
Average throughput: 55.97 Mbit/s
95th percentile per-packet one-way delay: 117.026 ms
Loss rate: 11.12%
-- Flow 2:
Average throughput: 38.34 Mbit/s
95th percentile per-packet one-way delay: 116.358 ms
Loss rate: 17.85%
-- Flow 3:
Average throughput: 30.42 Mbit/s
95th percentile per-packet one-way delay: 117.597 ms
Loss rate: 22.38%
```
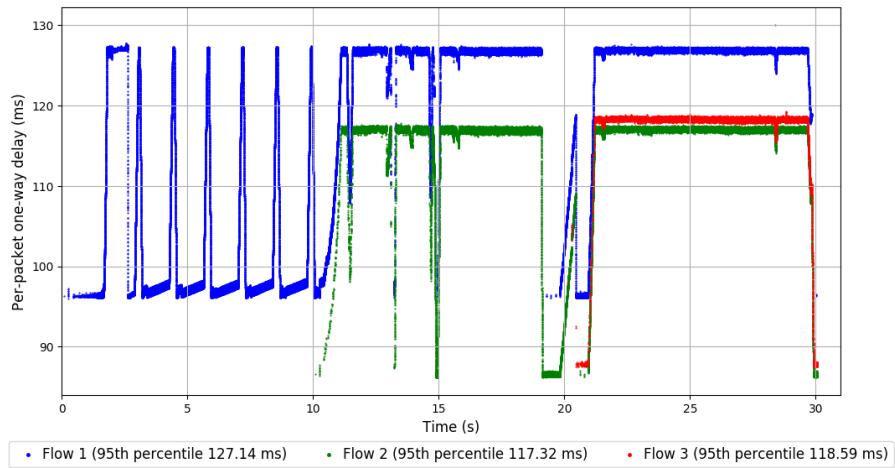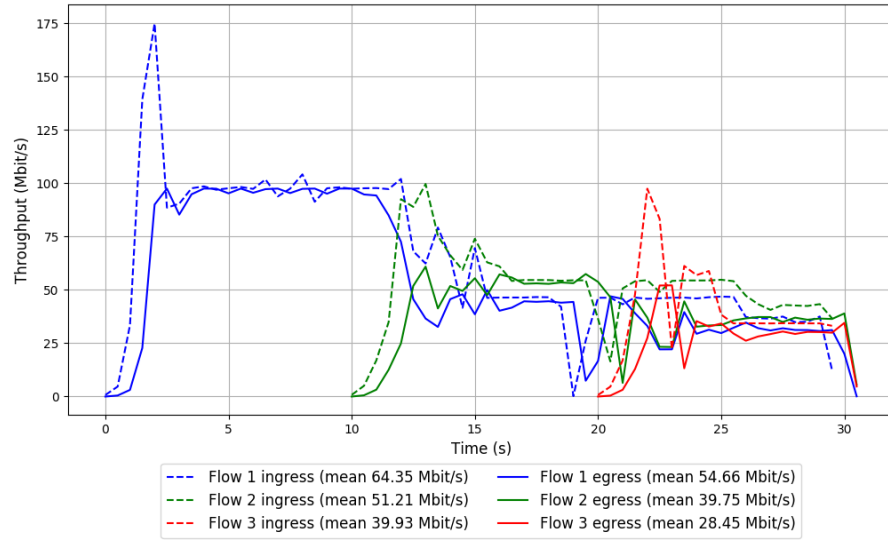
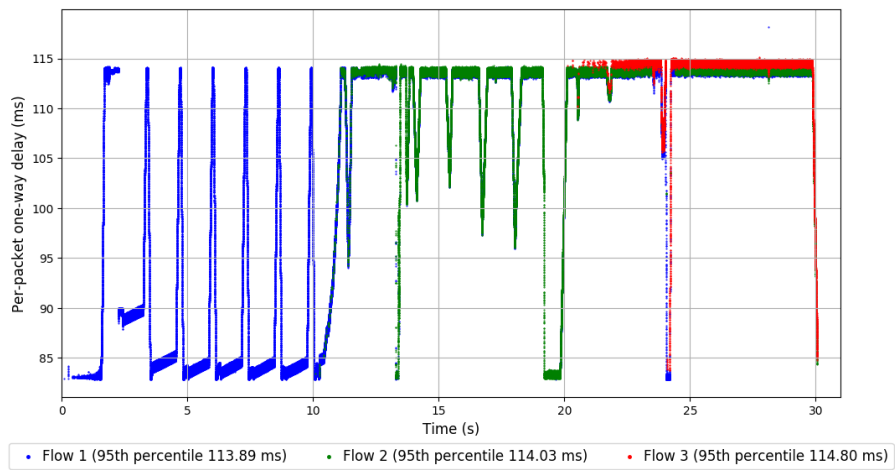Run 2: Report of TCP BBR — Data Link

```
Run 3: Statistics of TCP BBR

Start at: 2018-09-25 10:25:23
End at: 2018-09-25 10:25:53
Local clock offset: -7.078 ms
Remote clock offset: 1.749 ms


# Below is generated by plot.py at 2018-09-25 12:06:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.51 Mbit/s
95th percentile per-packet one-way delay: 127.085 ms
Loss rate: 18.94%
-- Flow 1:
Average throughput: 54.66 Mbit/s
95th percentile per-packet one-way delay: 127.139 ms
Loss rate: 15.06%
-- Flow 2:
Average throughput: 39.75 Mbit/s
95th percentile per-packet one-way delay: 117.323 ms
Loss rate: 22.38%
-- Flow 3:
Average throughput: 28.45 Mbit/s
95th percentile per-packet one-way delay: 118.586 ms
Loss rate: 28.86%
```

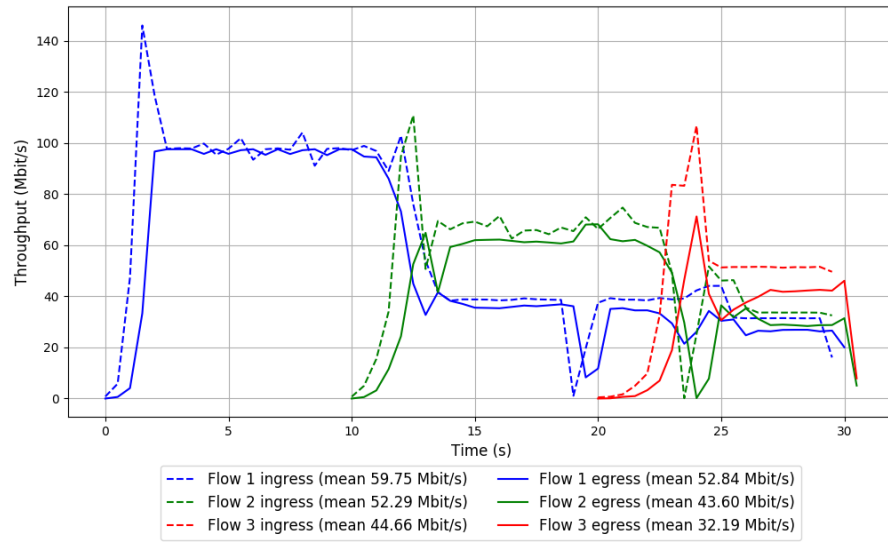Run 3: Report of TCP BBR — Data Link

```
Run 4: Statistics of TCP BBR

Start at: 2018-09-25 11:10:37
End at: 2018-09-25 11:11:07
Local clock offset: -3.01 ms
Remote clock offset: -3.227 ms


# Below is generated by plot.py at 2018-09-25 12:06:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.19 Mbit/s
95th percentile per-packet one-way delay: 114.588 ms
Loss rate: 15.38%
-- Flow 1:
Average throughput: 52.84 Mbit/s
95th percentile per-packet one-way delay: 113.895 ms
Loss rate: 11.47%
-- Flow 2:
Average throughput: 43.60 Mbit/s
95th percentile per-packet one-way delay: 114.035 ms
Loss rate: 16.62%
-- Flow 3:
Average throughput: 32.19 Mbit/s
95th percentile per-packet one-way delay: 114.796 ms
Loss rate: 28.14%
```
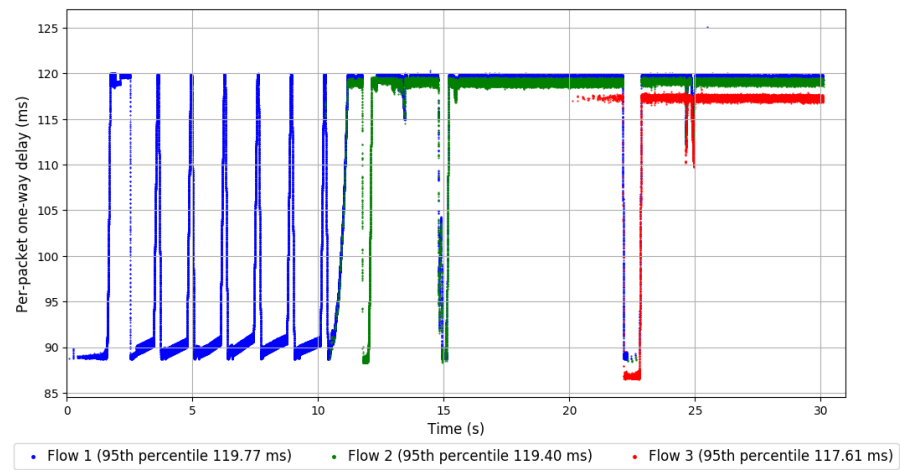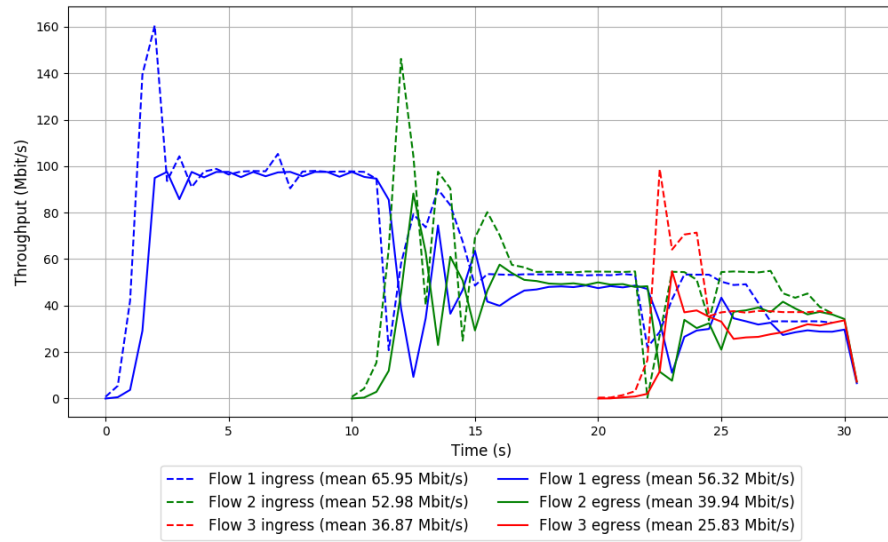
Run 4: Report of TCP BBR — Data Link

```
Run 5: Statistics of TCP BBR

Start at: 2018-09-25 11:58:24
End at: 2018-09-25 11:58:54
Local clock offset: -3.966 ms
Remote clock offset: 1.955 ms


# Below is generated by plot.py at 2018-09-25 12:06:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.52 Mbit/s
95th percentile per-packet one-way delay: 119.714 ms
Loss rate: 19.30%
-- Flow 1:
Average throughput: 56.32 Mbit/s
95th percentile per-packet one-way delay: 119.767 ms
Loss rate: 14.52%
-- Flow 2:
Average throughput: 39.94 Mbit/s
95th percentile per-packet one-way delay: 119.398 ms
Loss rate: 24.53%
-- Flow 3:
Average throughput: 25.83 Mbit/s
95th percentile per-packet one-way delay: 117.613 ms
Loss rate: 29.95%
```
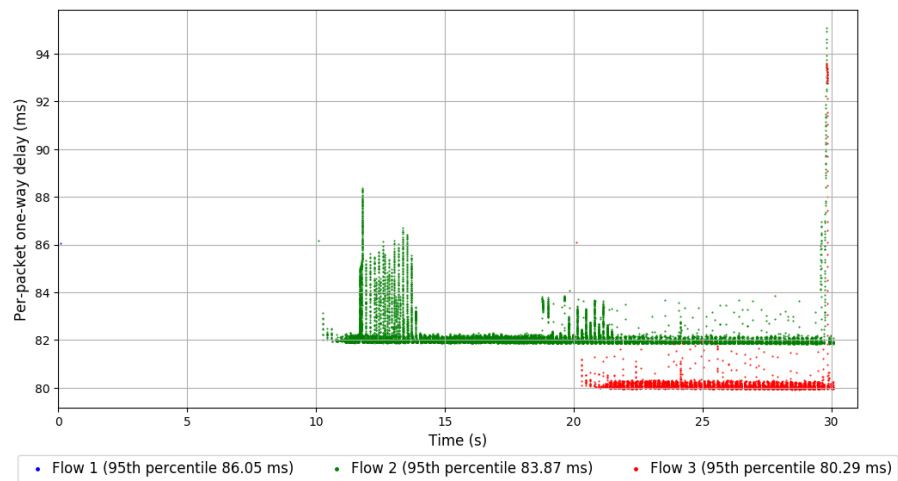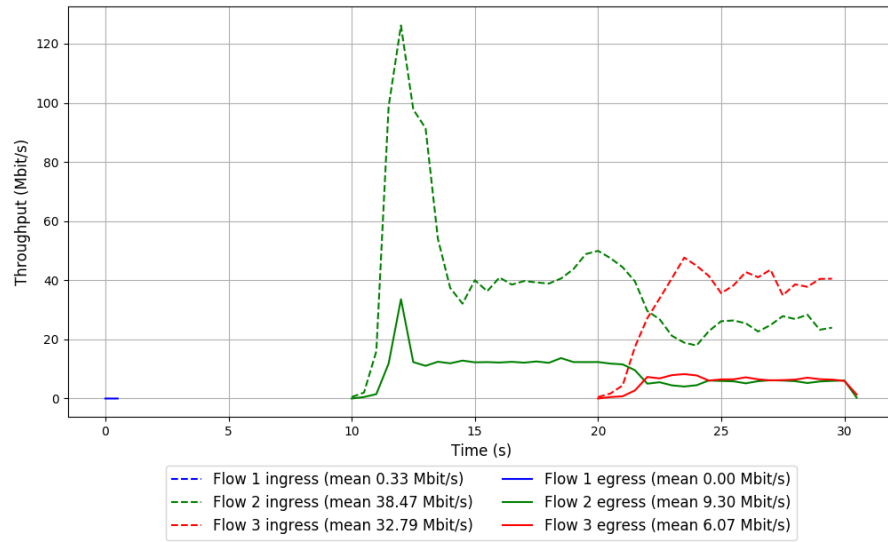
Run 5: Report of TCP BBR — Data Link

Flow 1 ingress (mean 65.95 Mbit/s)   Flow 1 egress (mean 56.32 Mbit/s)
Flow 2 ingress (mean 52.98 Mbit/s)   Flow 2 egress (mean 39.94 Mbit/s)
Flow 3 ingress (mean 36.87 Mbit/s)   Flow 3 egress (mean 25.83 Mbit/s)

Flow 1 (95th percentile 119.77 ms)   Flow 2 (95th percentile 119.40 ms)   Flow 3 (95th percentile 117.61 ms)

```
Run 1: Statistics of Copa

Start at: 2018-09-25 08:46:37
End at: 2018-09-25 08:47:07
Local clock offset: -6.819 ms
Remote clock offset: -3.853 ms


# Below is generated by plot.py at 2018-09-25 12:06:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.21 Mbit/s
95th percentile per-packet one-way delay: 83.532 ms
Loss rate: 77.52%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 86.053 ms
Loss rate: 98.33%
-- Flow 2:
Average throughput: 9.30 Mbit/s
95th percentile per-packet one-way delay: 83.872 ms
Loss rate: 75.83%
-- Flow 3:
Average throughput: 6.07 Mbit/s
95th percentile per-packet one-way delay: 80.289 ms
Loss rate: 81.49%
```
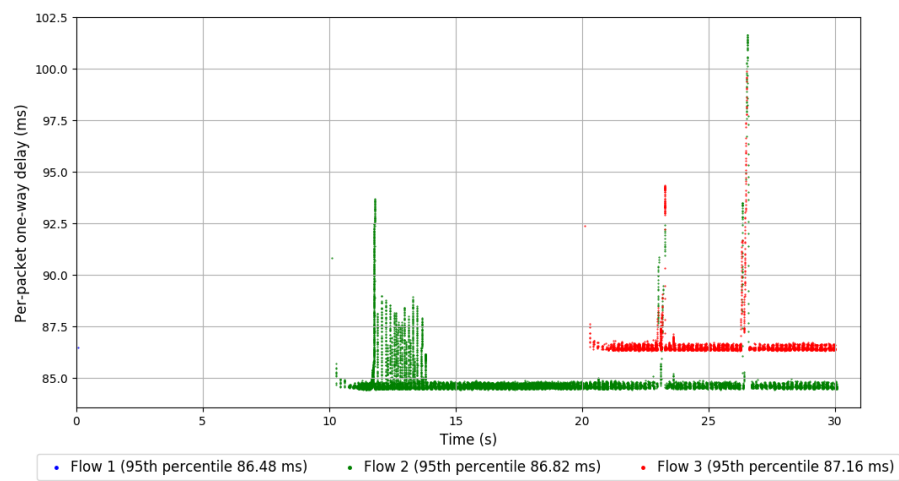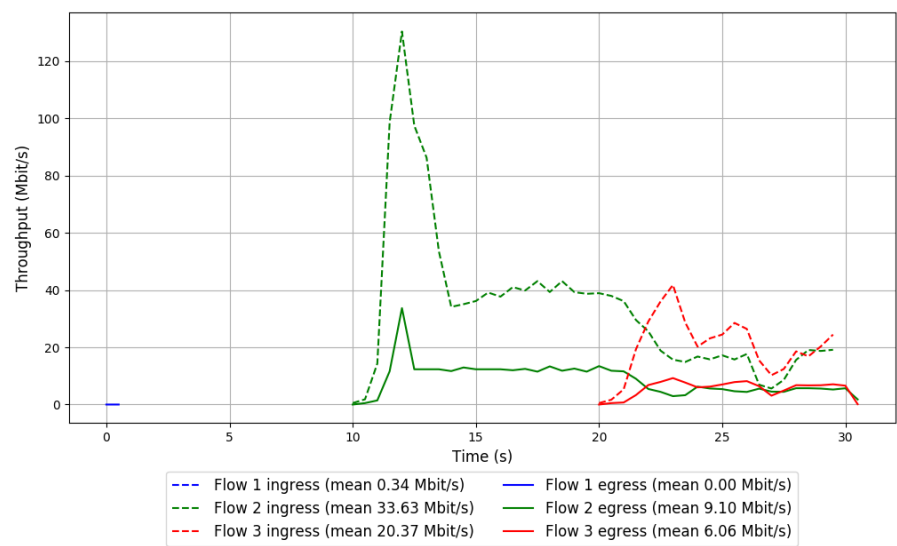
Run 1: Report of Copa — Data Link

```
Run 2: Statistics of Copa

Start at: 2018-09-25 09:32:44
End at: 2018-09-25 09:33:14
Local clock offset: -3.845 ms
Remote clock offset: 0.931 ms


# Below is generated by plot.py at 2018-09-25 12:06:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.06 Mbit/s
95th percentile per-packet one-way delay: 86.922 ms
Loss rate: 72.34%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 86.479 ms
Loss rate: 98.33%
-- Flow 2:
Average throughput: 9.10 Mbit/s
95th percentile per-packet one-way delay: 86.822 ms
Loss rate: 72.96%
-- Flow 3:
Average throughput: 6.06 Mbit/s
95th percentile per-packet one-way delay: 87.156 ms
Loss rate: 70.28%
```
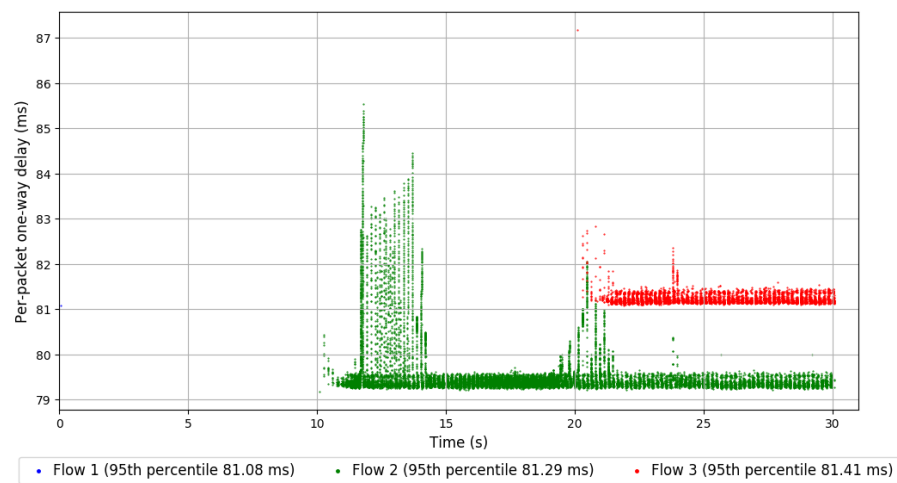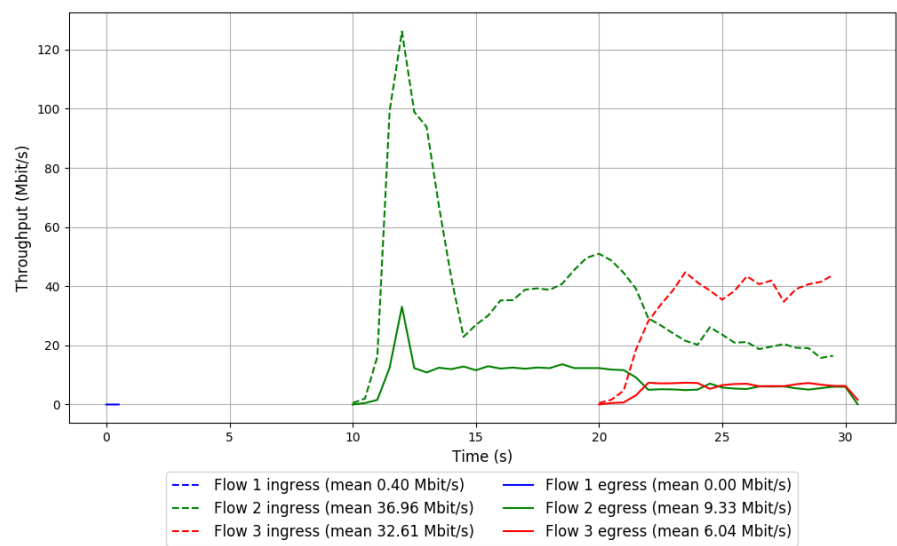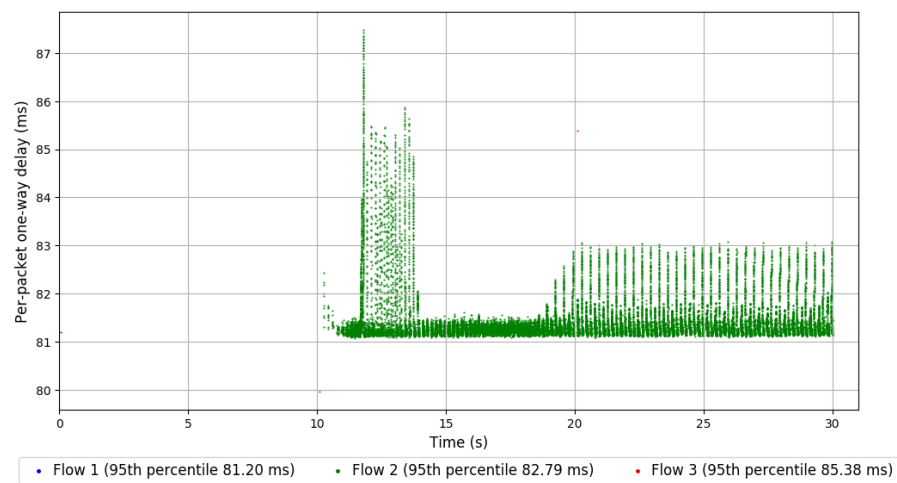
Run 2: Report of Copa — Data Link

Flow 1 ingress (mean 0.34 Mbit/s)   Flow 1 egress (mean 0.00 Mbit/s)
Flow 2 ingress (mean 33.63 Mbit/s)   Flow 2 egress (mean 9.10 Mbit/s)
Flow 3 ingress (mean 20.37 Mbit/s)   Flow 3 egress (mean 6.06 Mbit/s)

Flow 1 (95th percentile 86.48 ms)   Flow 2 (95th percentile 86.82 ms)   Flow 3 (95th percentile 87.16 ms)

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```
Run 3: Statistics of Copa

Start at: 2018-09-25 10:19:28
End at: 2018-09-25 10:19:58
Local clock offset: -7.106 ms
Remote clock offset: -4.477 ms


# Below is generated by plot.py at 2018-09-25 12:06:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.22 Mbit/s
95th percentile per-packet one-way delay: 81.397 ms
Loss rate: 76.83%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 81.085 ms
Loss rate: 98.60%
-- Flow 2:
Average throughput: 9.33 Mbit/s
95th percentile per-packet one-way delay: 81.291 ms
Loss rate: 74.77%
-- Flow 3:
Average throughput: 6.04 Mbit/s
95th percentile per-packet one-way delay: 81.406 ms
Loss rate: 81.50%
```
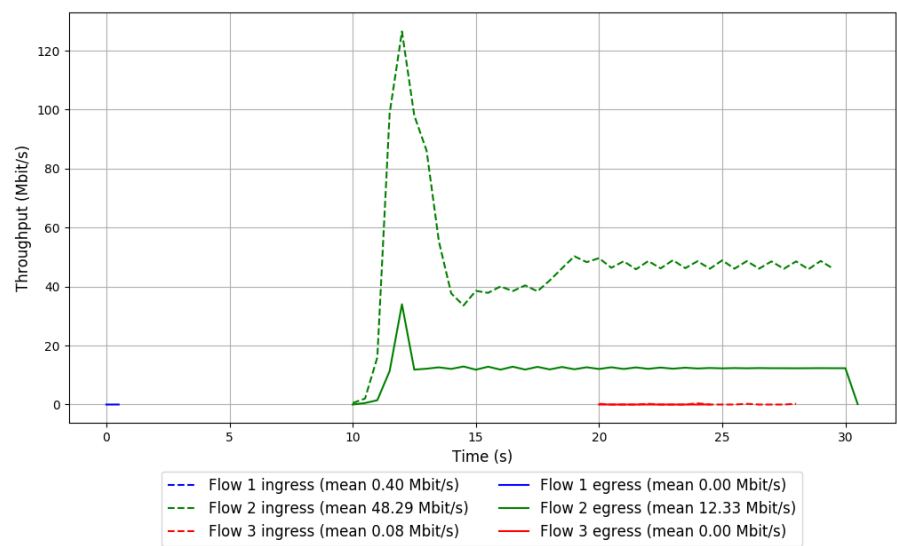
Run 3: Report of Copa — Data Link

- - - Flow 1 ingress (mean 0.40 Mbit/s)   —— Flow 1 egress (mean 0.00 Mbit/s)
- - - Flow 2 ingress (mean 36.96 Mbit/s)   —— Flow 2 egress (mean 9.33 Mbit/s)
- - - Flow 3 ingress (mean 32.61 Mbit/s)   —— Flow 3 egress (mean 6.04 Mbit/s)

- Flow 1 (95th percentile 81.08 ms)   • Flow 2 (95th percentile 81.29 ms)   • Flow 3 (95th percentile 81.41 ms)
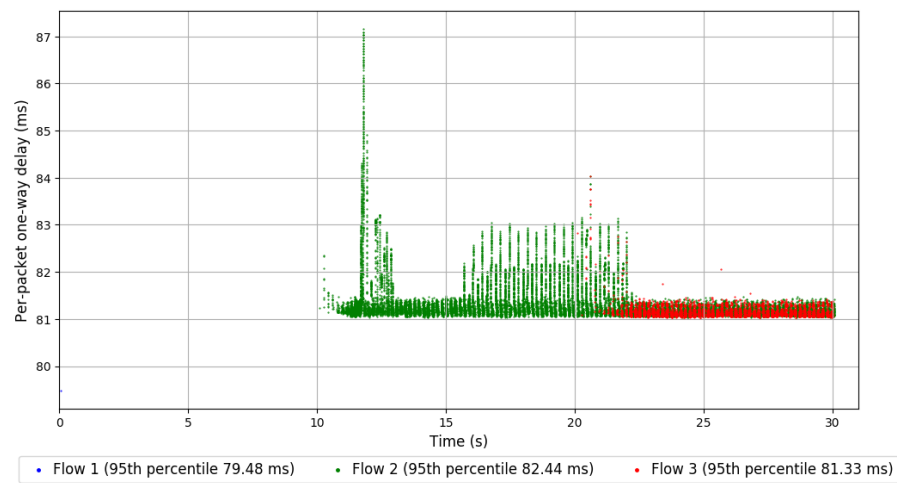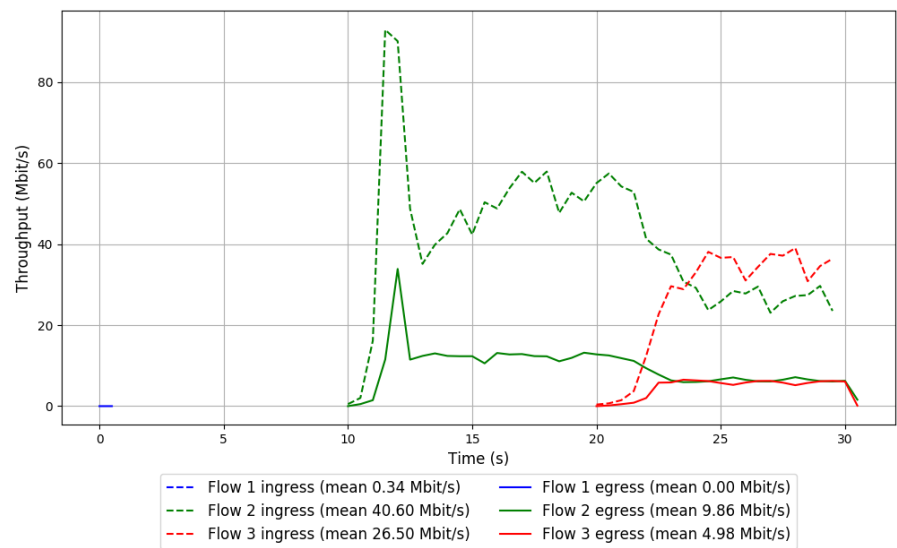
20

```
Run 4: Statistics of Copa

Start at: 2018-09-25 11:04:37
End at: 2018-09-25 11:05:07
Local clock offset: -2.504 ms
Remote clock offset: -4.479 ms


# Below is generated by plot.py at 2018-09-25 12:06:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.20 Mbit/s
95th percentile per-packet one-way delay: 82.795 ms
Loss rate: 74.49%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 81.205 ms
Loss rate: 98.60%
-- Flow 2:
Average throughput: 12.33 Mbit/s
95th percentile per-packet one-way delay: 82.794 ms
Loss rate: 74.48%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 85.383 ms
Loss rate: 98.10%
```
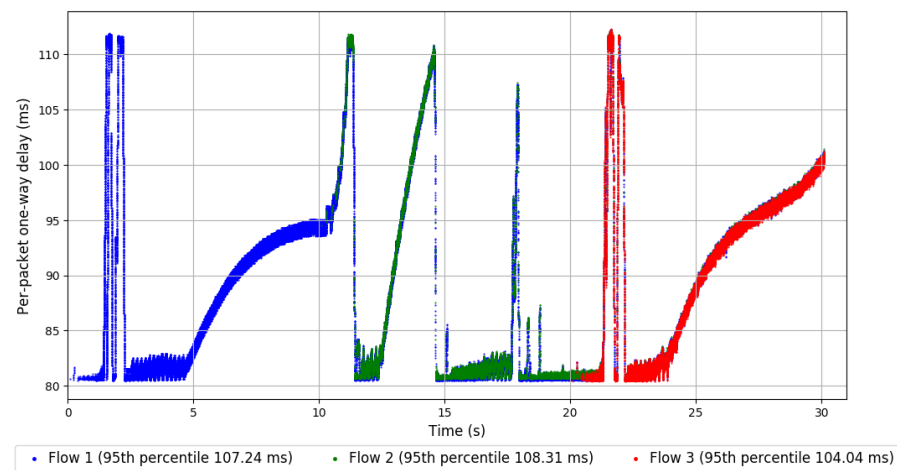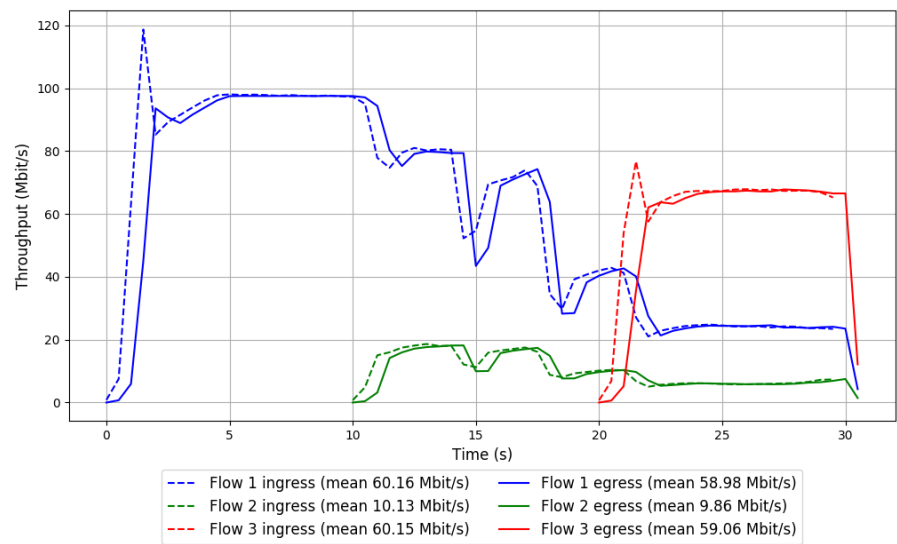
Run 4: Report of Copa — Data Link

```
Run 5: Statistics of Copa

Start at: 2018-09-25 11:52:27
End at: 2018-09-25 11:52:57
Local clock offset: -3.037 ms
Remote clock offset: -4.408 ms


# Below is generated by plot.py at 2018-09-25 12:06:45
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.21 Mbit/s
95th percentile per-packet one-way delay: 82.289 ms
Loss rate: 77.06%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 79.478 ms
Loss rate: 98.33%
-- Flow 2:
Average throughput: 9.86 Mbit/s
95th percentile per-packet one-way delay: 82.439 ms
Loss rate: 75.72%
-- Flow 3:
Average throughput: 4.98 Mbit/s
95th percentile per-packet one-way delay: 81.334 ms
Loss rate: 81.21%
```

Run 5: Report of Copa — Data Link

```
Run 1: Statistics of TCP Cubic

Start at: 2018-09-25 08:26:53
End at: 2018-09-25 08:27:23
Local clock offset: -4.39 ms
Remote clock offset: -3.412 ms


# Below is generated by plot.py at 2018-09-25 12:06:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.21 Mbit/s
95th percentile per-packet one-way delay: 106.956 ms
Loss rate: 1.88%
-- Flow 1:
Average throughput: 58.98 Mbit/s
95th percentile per-packet one-way delay: 107.240 ms
Loss rate: 1.89%
-- Flow 2:
Average throughput: 9.86 Mbit/s
95th percentile per-packet one-way delay: 108.314 ms
Loss rate: 2.56%
-- Flow 3:
Average throughput: 59.06 Mbit/s
95th percentile per-packet one-way delay: 104.042 ms
Loss rate: 1.61%
```
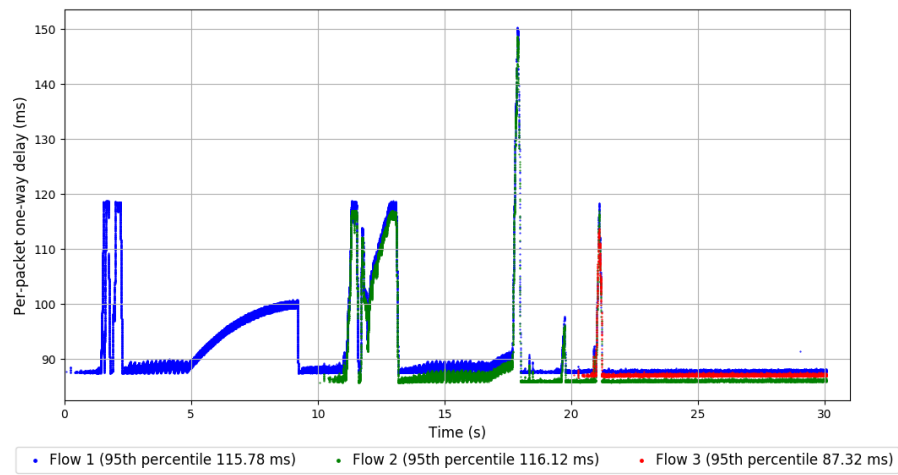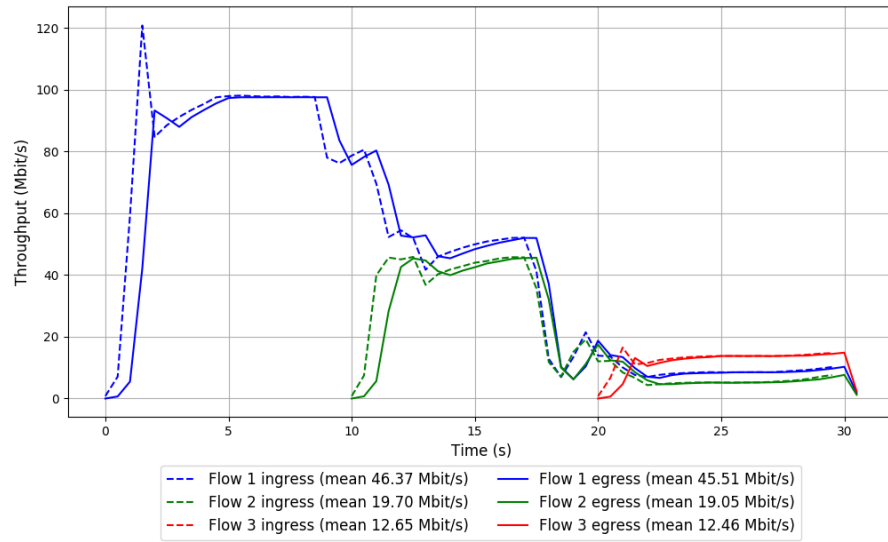
Run 1: Report of TCP Cubic — Data Link

```
Run 2: Statistics of TCP Cubic

Start at: 2018-09-25 09:12:49
End at: 2018-09-25 09:13:19
Local clock offset: -6.789 ms
Remote clock offset: 2.139 ms

# Below is generated by plot.py at 2018-09-25 12:06:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 62.35 Mbit/s
95th percentile per-packet one-way delay: 115.684 ms
Loss rate: 2.14%
-- Flow 1:
Average throughput: 45.51 Mbit/s
95th percentile per-packet one-way delay: 115.782 ms
Loss rate: 1.85%
-- Flow 2:
Average throughput: 19.05 Mbit/s
95th percentile per-packet one-way delay: 116.118 ms
Loss rate: 3.34%
-- Flow 3:
Average throughput: 12.46 Mbit/s
95th percentile per-packet one-way delay: 87.322 ms
Loss rate: 1.53%
```

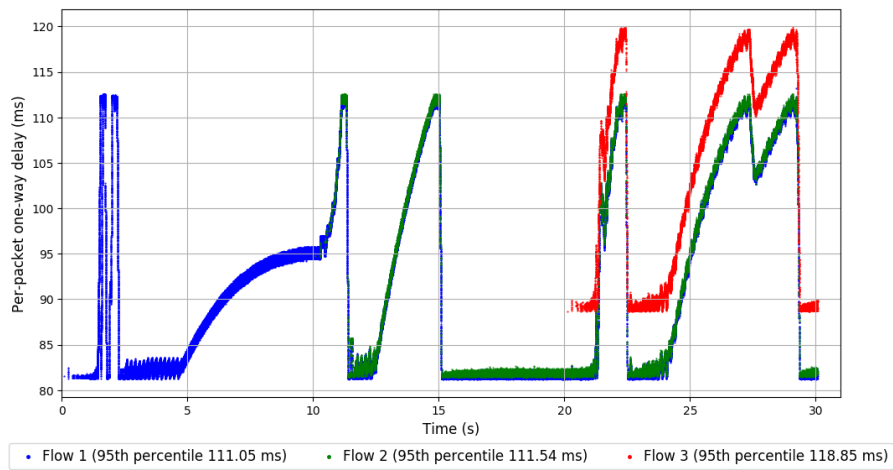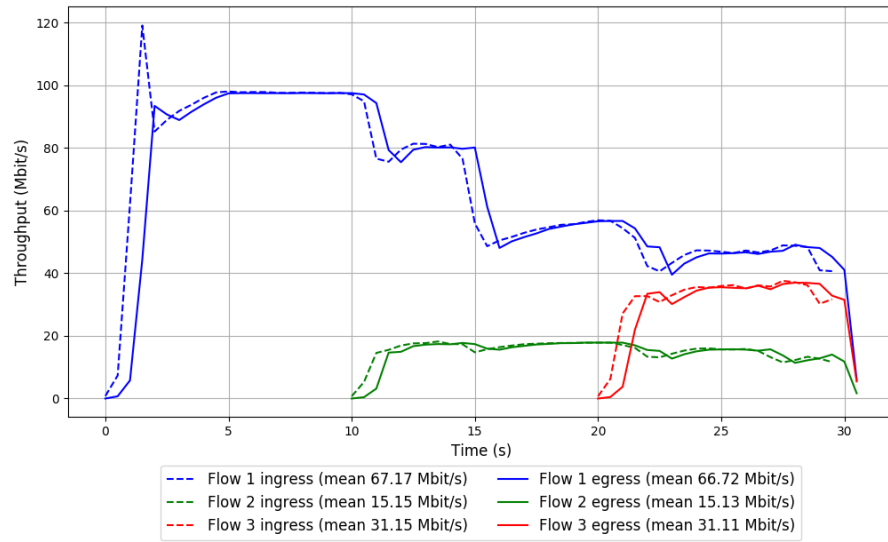Run 2: Report of TCP Cubic — Data Link

```
Run 3: Statistics of TCP Cubic

Start at: 2018-09-25 09:59:29
End at: 2018-09-25 09:59:59
Local clock offset: -7.751 ms
Remote clock offset: -3.393 ms


# Below is generated by plot.py at 2018-09-25 12:07:00
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.13 Mbit/s
95th percentile per-packet one-way delay: 112.294 ms
Loss rate: 0.55%
-- Flow 1:
Average throughput: 66.72 Mbit/s
95th percentile per-packet one-way delay: 111.045 ms
Loss rate: 0.67%
-- Flow 2:
Average throughput: 15.13 Mbit/s
95th percentile per-packet one-way delay: 111.539 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 31.11 Mbit/s
95th percentile per-packet one-way delay: 118.852 ms
Loss rate: 0.17%
```

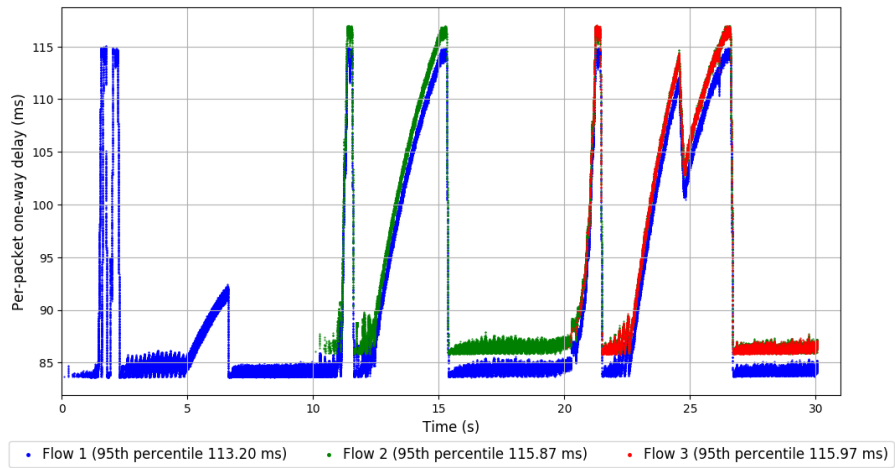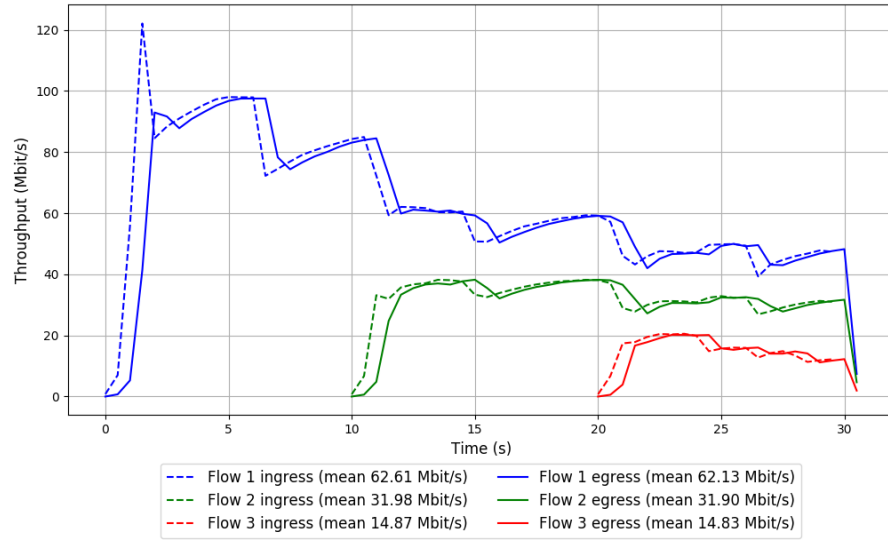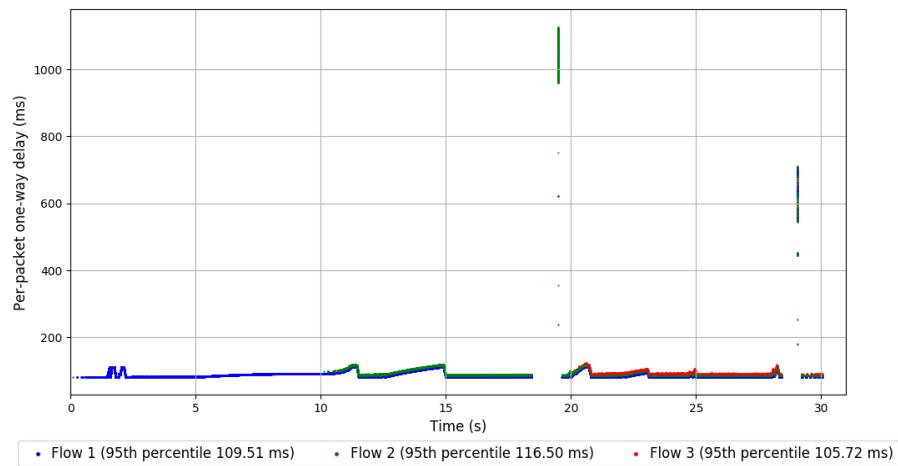# Run 3: Report of TCP Cubic — Data Link

- Flow 1 ingress (mean 67.17 Mbit/s)
- Flow 1 egress (mean 66.72 Mbit/s)
- Flow 2 ingress (mean 15.15 Mbit/s)
- Flow 2 egress (mean 15.13 Mbit/s)
- Flow 3 ingress (mean 31.15 Mbit/s)
- Flow 3 egress (mean 31.11 Mbit/s)

- Flow 1 (95th percentile 111.05 ms)
- Flow 2 (95th percentile 111.54 ms)
- Flow 3 (95th percentile 118.85 ms)

```
Run 4: Statistics of TCP Cubic

Start at: 2018-09-25 10:44:27
End at: 2018-09-25 10:44:57
Local clock offset: -5.325 ms
Remote clock offset: -0.544 ms


# Below is generated by plot.py at 2018-09-25 12:07:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.30 Mbit/s
95th percentile per-packet one-way delay: 113.970 ms
Loss rate: 0.62%
-- Flow 1:
Average throughput: 62.13 Mbit/s
95th percentile per-packet one-way delay: 113.197 ms
Loss rate: 0.76%
-- Flow 2:
Average throughput: 31.90 Mbit/s
95th percentile per-packet one-way delay: 115.869 ms
Loss rate: 0.26%
-- Flow 3:
Average throughput: 14.83 Mbit/s
95th percentile per-packet one-way delay: 115.971 ms
Loss rate: 0.29%
```

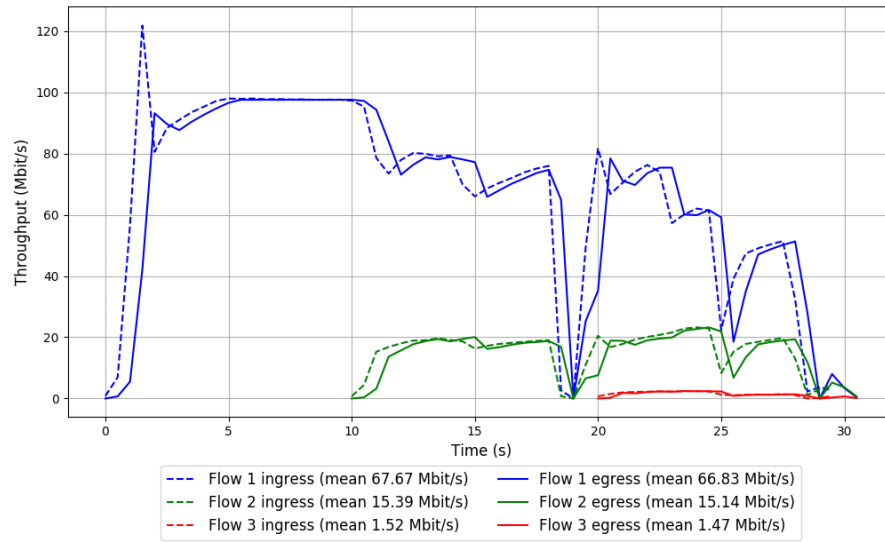# Run 4: Report of TCP Cubic — Data Link

```
Run 5: Statistics of TCP Cubic

Start at: 2018-09-25 11:30:42
End at: 2018-09-25 11:31:12
Local clock offset: -1.995 ms
Remote clock offset: -3.179 ms


# Below is generated by plot.py at 2018-09-25 12:07:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 77.38 Mbit/s
95th percentile per-packet one-way delay: 110.556 ms
Loss rate: 1.32%
-- Flow 1:
Average throughput: 66.83 Mbit/s
95th percentile per-packet one-way delay: 109.506 ms
Loss rate: 1.24%
-- Flow 2:
Average throughput: 15.14 Mbit/s
95th percentile per-packet one-way delay: 116.500 ms
Loss rate: 1.70%
-- Flow 3:
Average throughput: 1.47 Mbit/s
95th percentile per-packet one-way delay: 105.718 ms
Loss rate: 3.49%
```
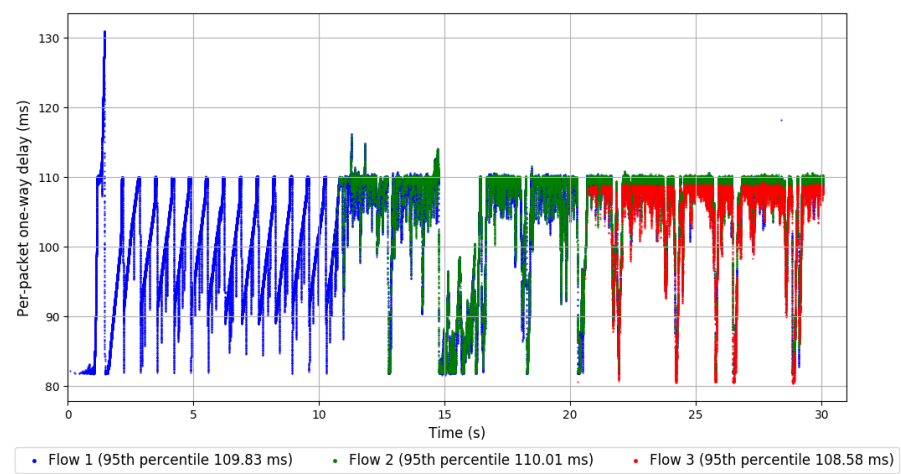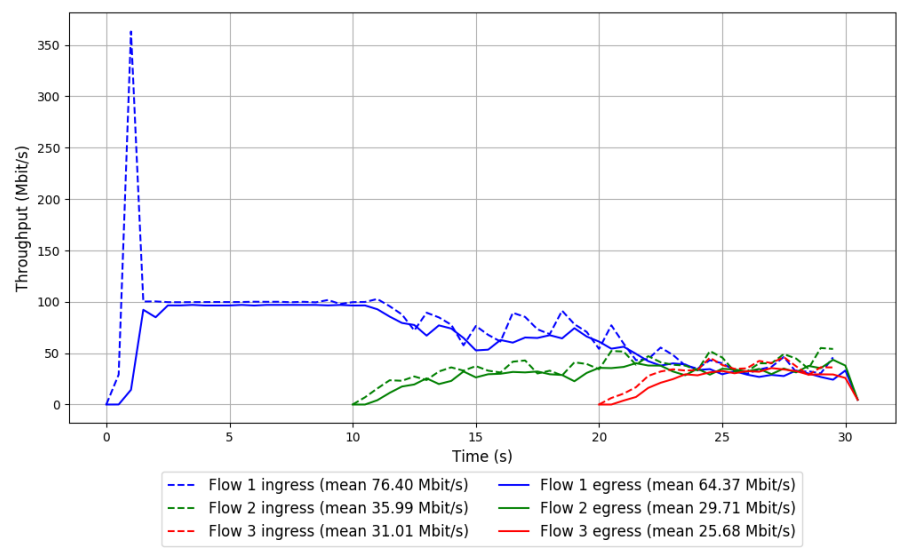
Run 5: Report of TCP Cubic — Data Link

- - - Flow 1 ingress (mean 67.67 Mbit/s) —— Flow 1 egress (mean 66.83 Mbit/s)
- - - Flow 2 ingress (mean 15.39 Mbit/s) —— Flow 2 egress (mean 15.14 Mbit/s)
- - - Flow 3 ingress (mean 1.52 Mbit/s) —— Flow 3 egress (mean 1.47 Mbit/s)

• Flow 1 (95th percentile 109.51 ms)   • Flow 2 (95th percentile 116.50 ms)   • Flow 3 (95th percentile 105.72 ms)
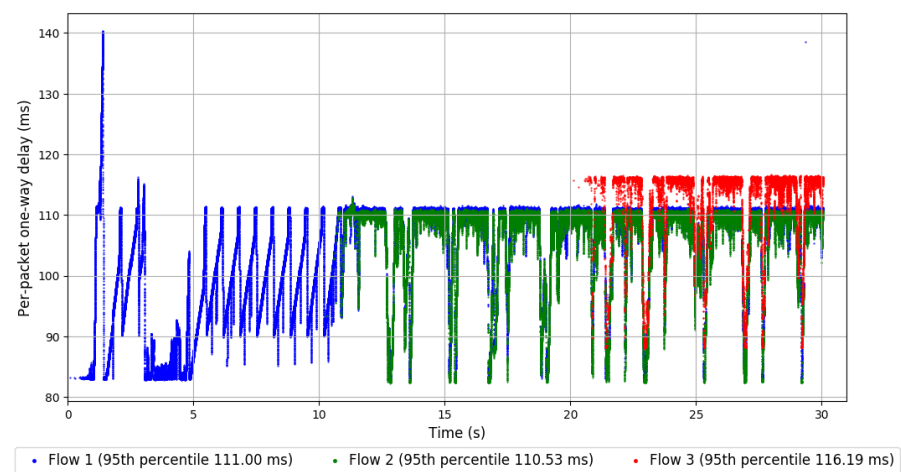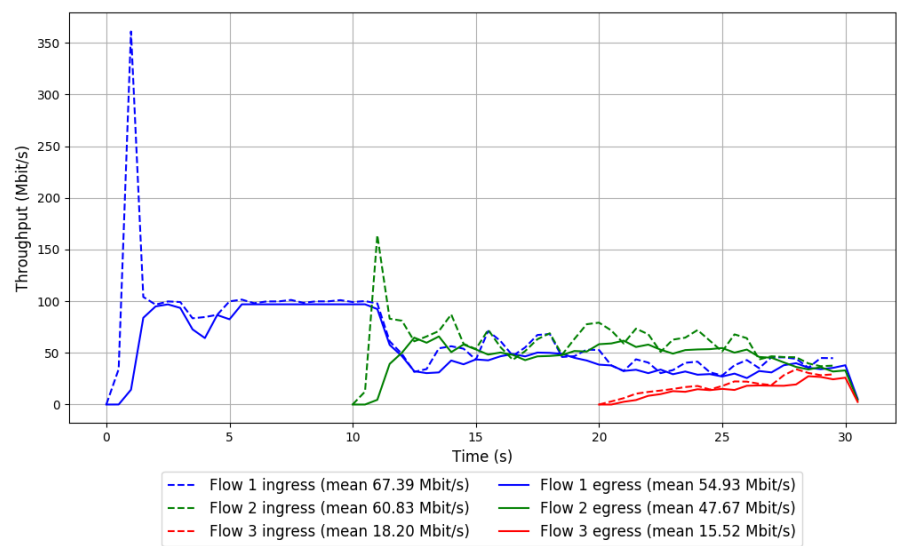
```
Run 1: Statistics of FillP

Start at: 2018-09-25 08:21:56
End at: 2018-09-25 08:22:26
Local clock offset: -4.133 ms
Remote clock offset: -3.36 ms

# Below is generated by plot.py at 2018-09-25 12:08:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.64 Mbit/s
95th percentile per-packet one-way delay: 109.885 ms
Loss rate: 16.19%
-- Flow 1:
Average throughput: 64.37 Mbit/s
95th percentile per-packet one-way delay: 109.835 ms
Loss rate: 15.68%
-- Flow 2:
Average throughput: 29.71 Mbit/s
95th percentile per-packet one-way delay: 110.012 ms
Loss rate: 17.42%
-- Flow 3:
Average throughput: 25.68 Mbit/s
95th percentile per-packet one-way delay: 108.585 ms
Loss rate: 17.16%
```
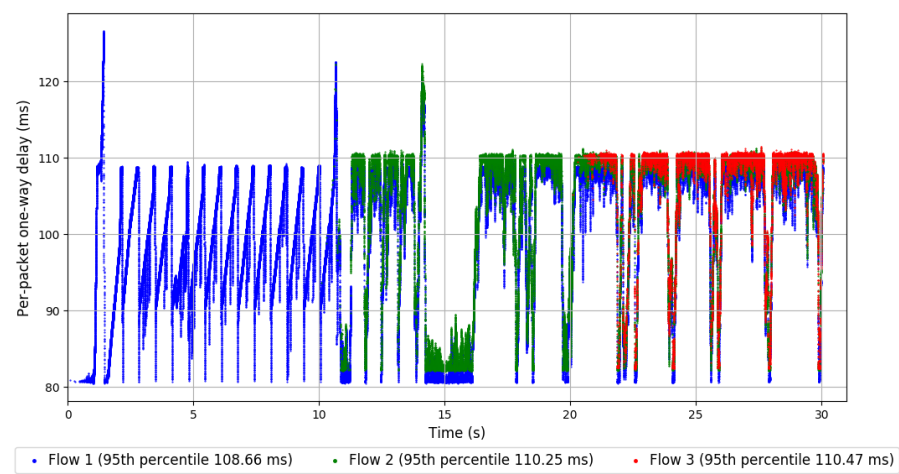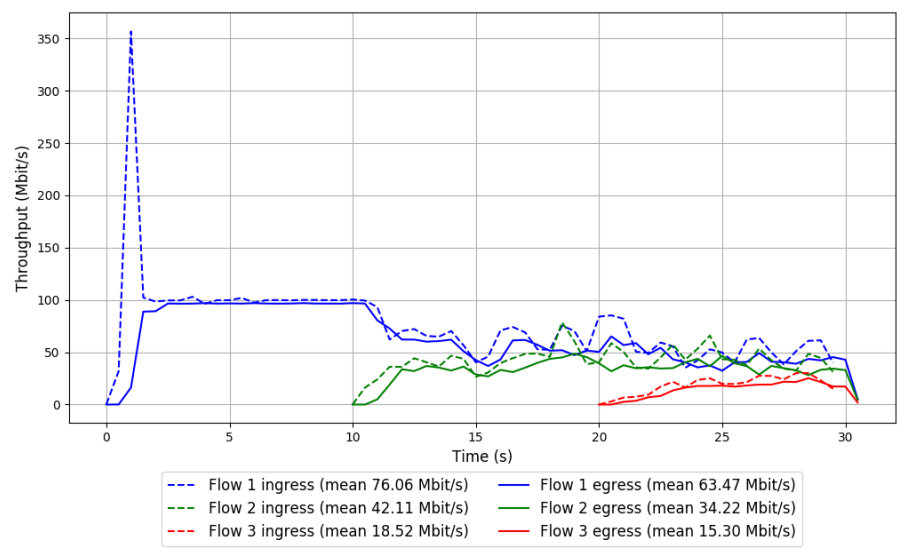
Run 1: Report of FillP — Data Link

Flow 1 ingress (mean 76.40 Mbit/s) --- Flow 1 egress (mean 64.37 Mbit/s) —
Flow 2 ingress (mean 35.99 Mbit/s) --- Flow 2 egress (mean 29.71 Mbit/s) —
Flow 3 ingress (mean 31.01 Mbit/s) --- Flow 3 egress (mean 25.68 Mbit/s) —

Flow 1 (95th percentile 109.83 ms) · Flow 2 (95th percentile 110.01 ms) · Flow 3 (95th percentile 108.58 ms)

```
Run 2: Statistics of FillP

Start at: 2018-09-25 09:08:08
End at: 2018-09-25 09:08:38
Local clock offset: -8.276 ms
Remote clock offset: -2.755 ms


# Below is generated by plot.py at 2018-09-25 12:08:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.79 Mbit/s
95th percentile per-packet one-way delay: 111.396 ms
Loss rate: 19.36%
-- Flow 1:
Average throughput: 54.93 Mbit/s
95th percentile per-packet one-way delay: 111.001 ms
Loss rate: 18.41%
-- Flow 2:
Average throughput: 47.67 Mbit/s
95th percentile per-packet one-way delay: 110.527 ms
Loss rate: 21.64%
-- Flow 3:
Average throughput: 15.52 Mbit/s
95th percentile per-packet one-way delay: 116.195 ms
Loss rate: 14.81%
```

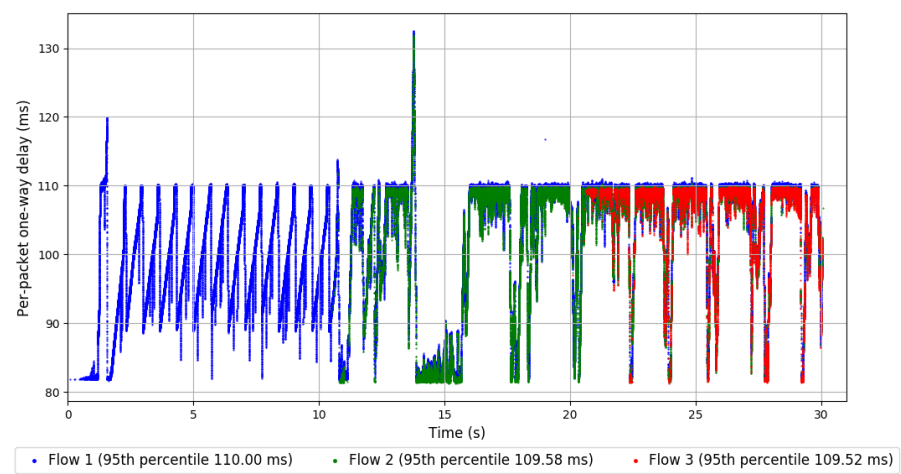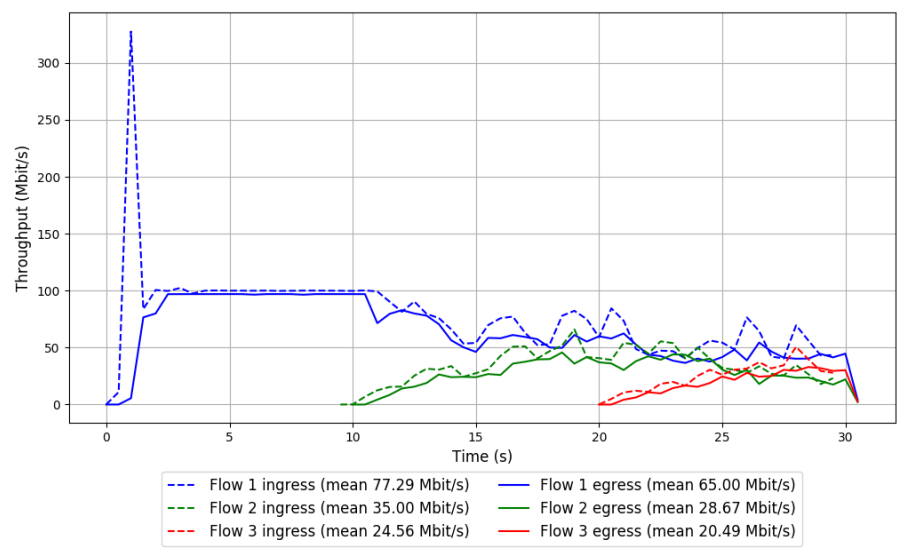Run 2: Report of FillP — Data Link

```
Run 3: Statistics of FillP

Start at: 2018-09-25 09:54:56
End at: 2018-09-25 09:55:26
Local clock offset: -7.484 ms
Remote clock offset: -4.393 ms


# Below is generated by plot.py at 2018-09-25 12:08:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.34 Mbit/s
95th percentile per-packet one-way delay: 110.121 ms
Loss rate: 17.09%
-- Flow 1:
Average throughput: 63.47 Mbit/s
95th percentile per-packet one-way delay: 108.658 ms
Loss rate: 16.49%
-- Flow 2:
Average throughput: 34.22 Mbit/s
95th percentile per-packet one-way delay: 110.245 ms
Loss rate: 18.67%
-- Flow 3:
Average throughput: 15.30 Mbit/s
95th percentile per-packet one-way delay: 110.470 ms
Loss rate: 17.33%
```

Run 3: Report of FillP — Data Link

```
Run 4: Statistics of FillP

Start at: 2018-09-25 10:39:57
End at: 2018-09-25 10:40:27
Local clock offset: -6.986 ms
Remote clock offset: -4.469 ms


# Below is generated by plot.py at 2018-09-25 12:08:10
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.87 Mbit/s
95th percentile per-packet one-way delay: 109.936 ms
Loss rate: 16.38%
-- Flow 1:
Average throughput: 65.00 Mbit/s
95th percentile per-packet one-way delay: 110.003 ms
Loss rate: 15.85%
-- Flow 2:
Average throughput: 28.67 Mbit/s
95th percentile per-packet one-way delay: 109.576 ms
Loss rate: 18.06%
-- Flow 3:
Average throughput: 20.49 Mbit/s
95th percentile per-packet one-way delay: 109.517 ms
Loss rate: 16.56%
```
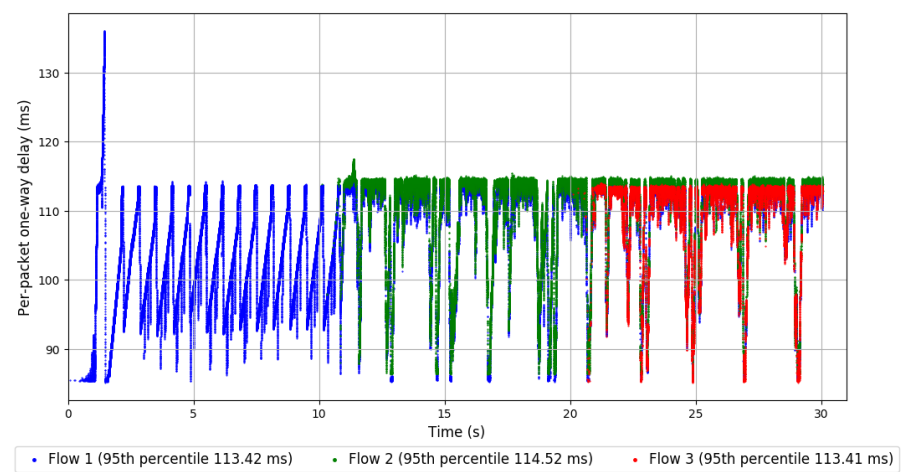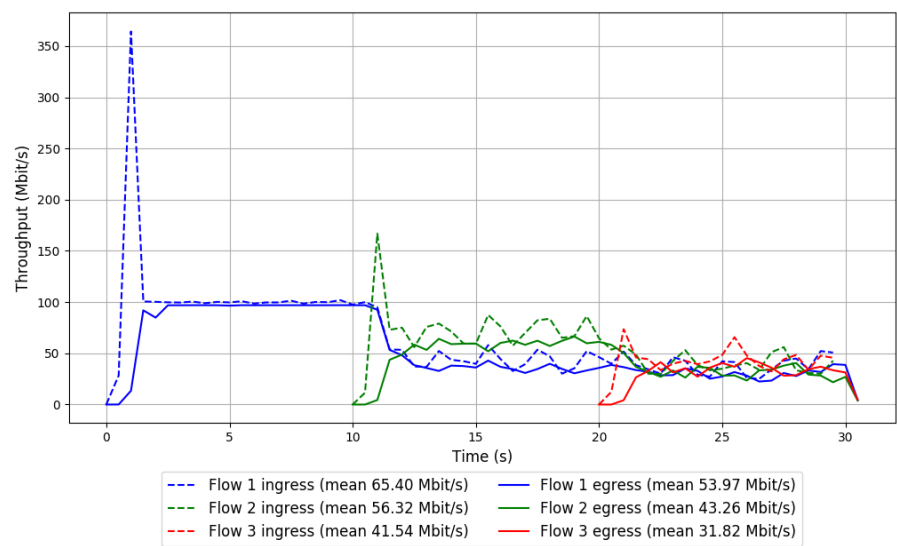
Run 4: Report of FillP — Data Link

```
Run 5: Statistics of FillP

Start at: 2018-09-25 11:26:15
End at: 2018-09-25 11:26:46
Local clock offset: -2.189 ms
Remote clock offset: 0.721 ms


# Below is generated by plot.py at 2018-09-25 12:08:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.29 Mbit/s
95th percentile per-packet one-way delay: 114.364 ms
Loss rate: 19.97%
-- Flow 1:
Average throughput: 53.97 Mbit/s
95th percentile per-packet one-way delay: 113.421 ms
Loss rate: 17.41%
-- Flow 2:
Average throughput: 43.26 Mbit/s
95th percentile per-packet one-way delay: 114.517 ms
Loss rate: 23.19%
-- Flow 3:
Average throughput: 31.82 Mbit/s
95th percentile per-packet one-way delay: 113.414 ms
Loss rate: 23.40%
```
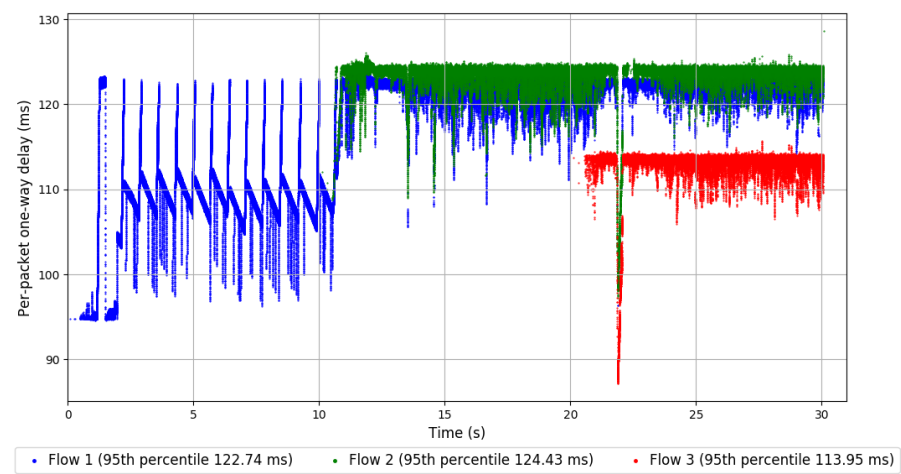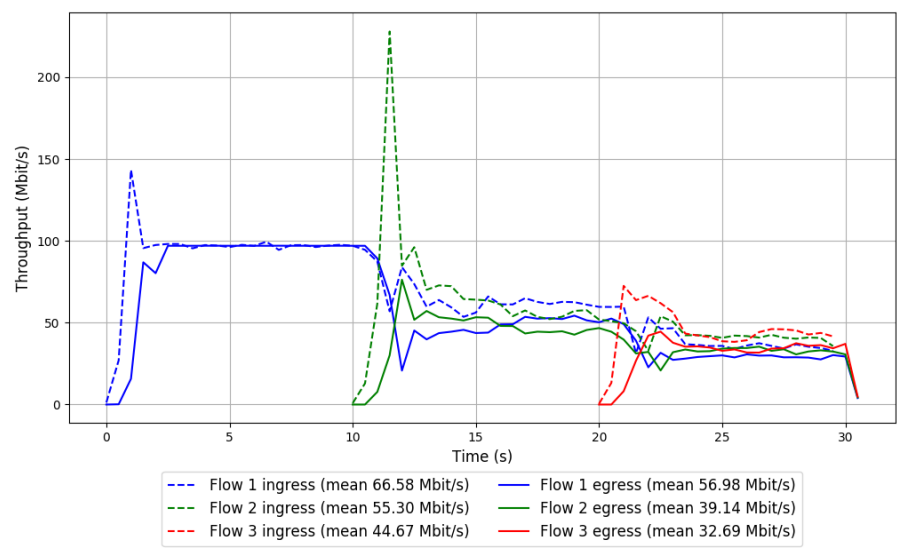
Run 5: Report of FillP — Data Link

```
Run 1: Statistics of FillP-Sheep

Start at: 2018-09-25 08:16:36
End at: 2018-09-25 08:17:06
Local clock offset: -3.612 ms
Remote clock offset: 0.747 ms


# Below is generated by plot.py at 2018-09-25 12:08:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.85 Mbit/s
95th percentile per-packet one-way delay: 124.235 ms
Loss rate: 20.55%
-- Flow 1:
Average throughput: 56.98 Mbit/s
95th percentile per-packet one-way delay: 122.741 ms
Loss rate: 14.37%
-- Flow 2:
Average throughput: 39.14 Mbit/s
95th percentile per-packet one-way delay: 124.428 ms
Loss rate: 29.20%
-- Flow 3:
Average throughput: 32.69 Mbit/s
95th percentile per-packet one-way delay: 113.946 ms
Loss rate: 26.82%
```
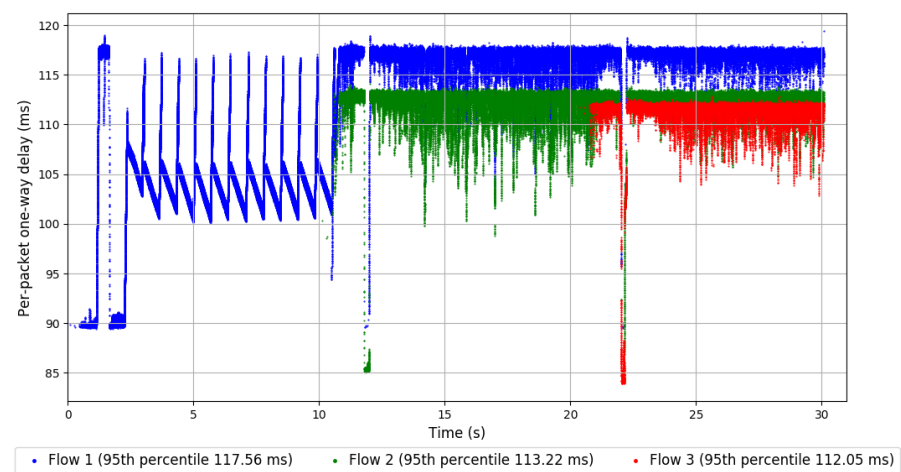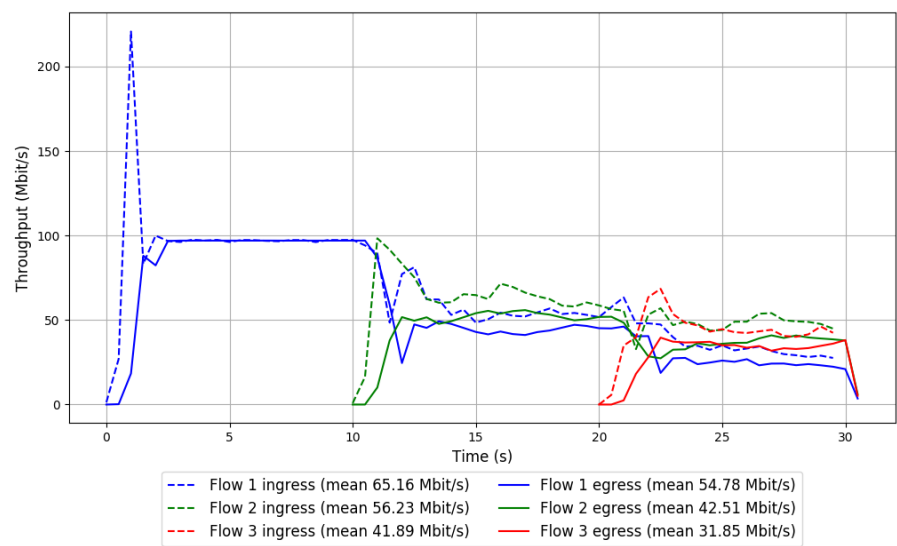
Run 1: Report of FillP-Sheep — Data Link

- - - Flow 1 ingress (mean 66.58 Mbit/s)   —— Flow 1 egress (mean 56.98 Mbit/s)
- - - Flow 2 ingress (mean 55.30 Mbit/s)   —— Flow 2 egress (mean 39.14 Mbit/s)
- - - Flow 3 ingress (mean 44.67 Mbit/s)   —— Flow 3 egress (mean 32.69 Mbit/s)

- Flow 1 (95th percentile 122.74 ms)   • Flow 2 (95th percentile 124.43 ms)   • Flow 3 (95th percentile 113.95 ms)

```
Run 2: Statistics of FillP-Sheep

Start at: 2018-09-25 09:02:34
End at: 2018-09-25 09:03:04
Local clock offset: -7.827 ms
Remote clock offset: 0.093 ms


# Below is generated by plot.py at 2018-09-25 12:09:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.40 Mbit/s
95th percentile per-packet one-way delay: 117.439 ms
Loss rate: 19.74%
-- Flow 1:
Average throughput: 54.78 Mbit/s
95th percentile per-packet one-way delay: 117.560 ms
Loss rate: 15.86%
-- Flow 2:
Average throughput: 42.51 Mbit/s
95th percentile per-packet one-way delay: 113.217 ms
Loss rate: 24.37%
-- Flow 3:
Average throughput: 31.85 Mbit/s
95th percentile per-packet one-way delay: 112.049 ms
Loss rate: 25.51%
```
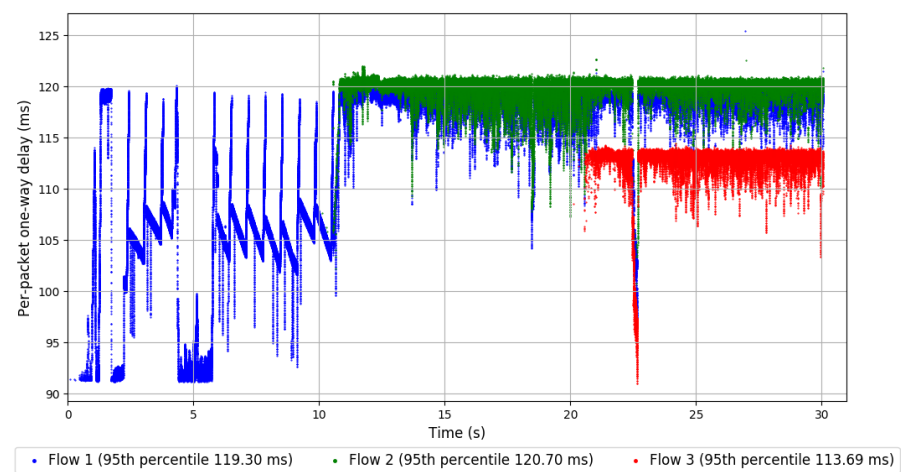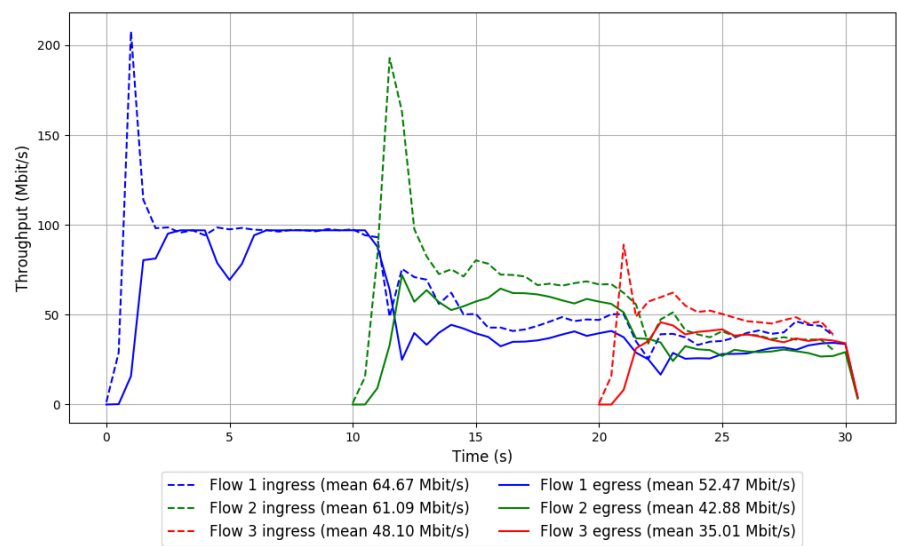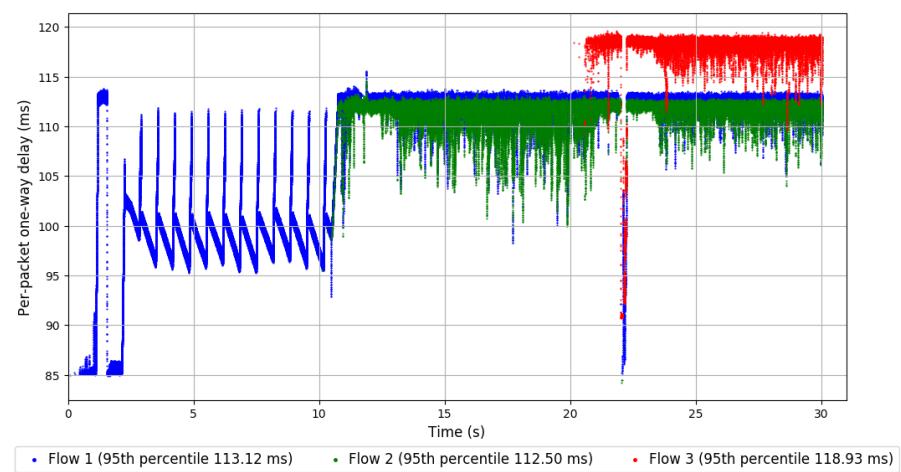
Run 2: Report of FillP-Sheep — Data Link

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```
Run 3: Statistics of FillP-Sheep

Start at: 2018-09-25 09:49:06
End at: 2018-09-25 09:49:36
Local clock offset: -6.74 ms
Remote clock offset: 0.74 ms


# Below is generated by plot.py at 2018-09-25 12:09:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.60 Mbit/s
95th percentile per-packet one-way delay: 120.541 ms
Loss rate: 23.58%
-- Flow 1:
Average throughput: 52.47 Mbit/s
95th percentile per-packet one-way delay: 119.301 ms
Loss rate: 18.80%
-- Flow 2:
Average throughput: 42.88 Mbit/s
95th percentile per-packet one-way delay: 120.705 ms
Loss rate: 29.78%
-- Flow 3:
Average throughput: 35.01 Mbit/s
95th percentile per-packet one-way delay: 113.685 ms
Loss rate: 27.18%
```

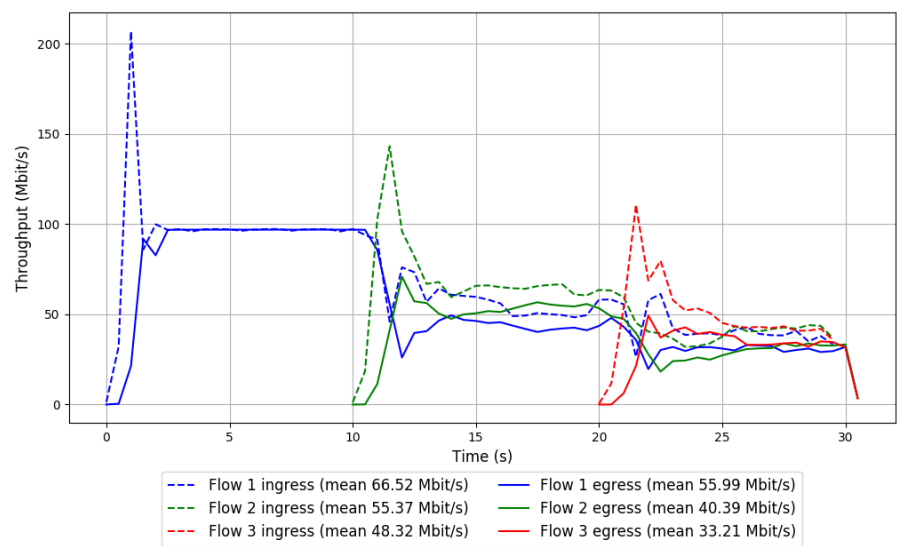Run 3: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 64.67 Mbit/s)   Flow 1 egress (mean 52.47 Mbit/s)
Flow 2 ingress (mean 61.09 Mbit/s)   Flow 2 egress (mean 42.88 Mbit/s)
Flow 3 ingress (mean 48.10 Mbit/s)   Flow 3 egress (mean 35.01 Mbit/s)

Flow 1 (95th percentile 119.30 ms)   Flow 2 (95th percentile 120.70 ms)   Flow 3 (95th percentile 113.69 ms)

```
Run 4: Statistics of FillP-Sheep

Start at: 2018-09-25 10:34:29
End at: 2018-09-25 10:34:59
Local clock offset: -7.158 ms
Remote clock offset: -0.475 ms


# Below is generated by plot.py at 2018-09-25 12:09:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.87 Mbit/s
95th percentile per-packet one-way delay: 118.473 ms
Loss rate: 21.31%
-- Flow 1:
Average throughput: 55.99 Mbit/s
95th percentile per-packet one-way delay: 113.121 ms
Loss rate: 15.76%
-- Flow 2:
Average throughput: 40.39 Mbit/s
95th percentile per-packet one-way delay: 112.497 ms
Loss rate: 26.98%
-- Flow 3:
Average throughput: 33.21 Mbit/s
95th percentile per-packet one-way delay: 118.933 ms
Loss rate: 31.32%
```
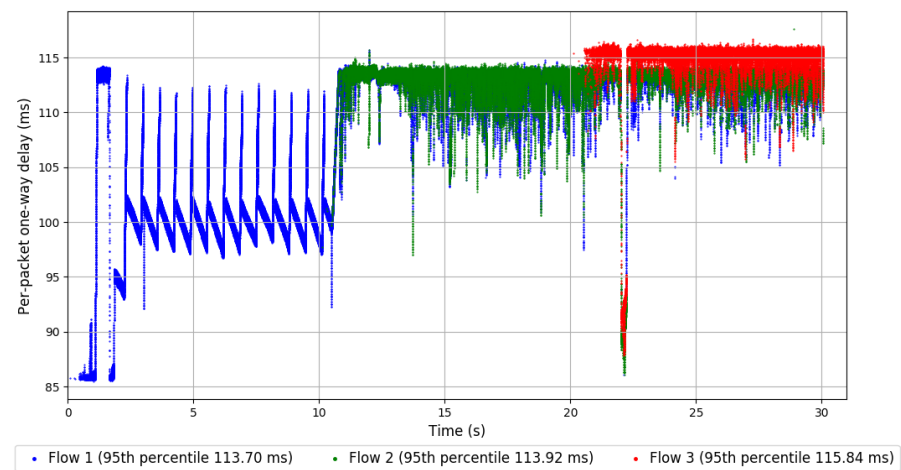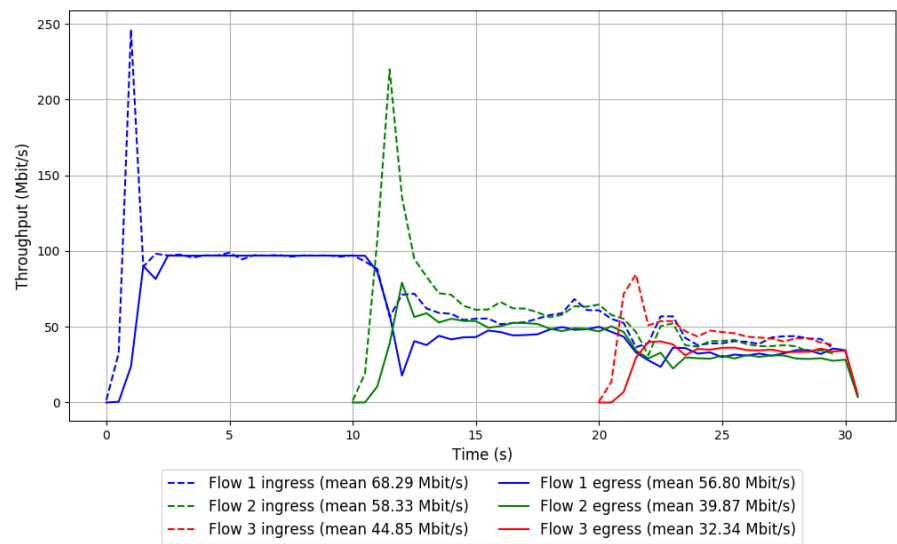
Run 4: Report of FillP-Sheep — Data Link

```
Run 5: Statistics of FillP-Sheep

Start at: 2018-09-25 11:20:22
End at: 2018-09-25 11:20:52
Local clock offset: -2.995 ms
Remote clock offset: 0.774 ms


# Below is generated by plot.py at 2018-09-25 12:09:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.05 Mbit/s
95th percentile per-packet one-way delay: 115.347 ms
Loss rate: 22.83%
-- Flow 1:
Average throughput: 56.80 Mbit/s
95th percentile per-packet one-way delay: 113.697 ms
Loss rate: 16.75%
-- Flow 2:
Average throughput: 39.87 Mbit/s
95th percentile per-packet one-way delay: 113.924 ms
Loss rate: 31.60%
-- Flow 3:
Average throughput: 32.34 Mbit/s
95th percentile per-packet one-way delay: 115.839 ms
Loss rate: 27.89%
```
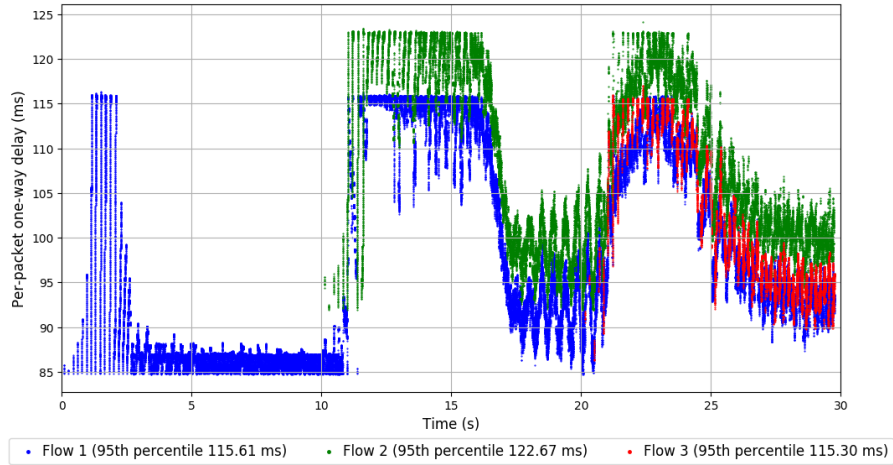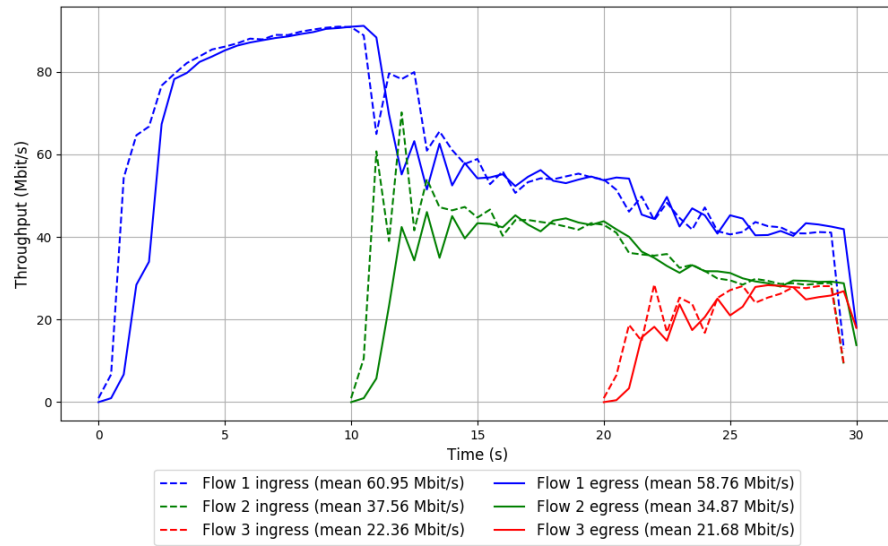
Run 5: Report of FillP-Sheep — Data Link

Flow 1 ingress (mean 68.29 Mbit/s) --- Flow 1 egress (mean 56.80 Mbit/s)
Flow 2 ingress (mean 58.33 Mbit/s) --- Flow 2 egress (mean 39.87 Mbit/s)
Flow 3 ingress (mean 44.85 Mbit/s) --- Flow 3 egress (mean 32.34 Mbit/s)

Flow 1 (95th percentile 113.70 ms) Flow 2 (95th percentile 113.92 ms) Flow 3 (95th percentile 115.84 ms)

```
Run 1: Statistics of Indigo

Start at: 2018-09-25 08:12:34
End at: 2018-09-25 08:13:04
Local clock offset: -2.23 ms
Remote clock offset: 1.965 ms


# Below is generated by plot.py at 2018-09-25 12:09:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.87 Mbit/s
95th percentile per-packet one-way delay: 119.652 ms
Loss rate: 4.48%
-- Flow 1:
Average throughput: 58.76 Mbit/s
95th percentile per-packet one-way delay: 115.605 ms
Loss rate: 3.57%
-- Flow 2:
Average throughput: 34.87 Mbit/s
95th percentile per-packet one-way delay: 122.673 ms
Loss rate: 7.17%
-- Flow 3:
Average throughput: 21.68 Mbit/s
95th percentile per-packet one-way delay: 115.303 ms
Loss rate: 2.95%
```
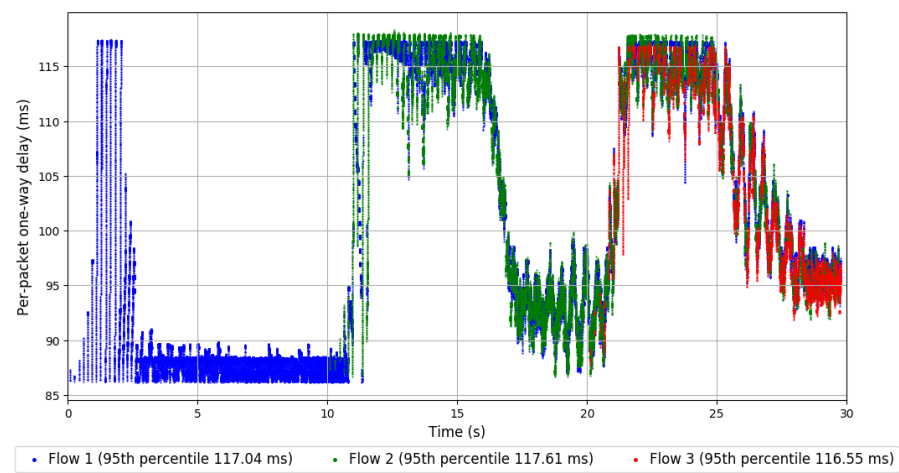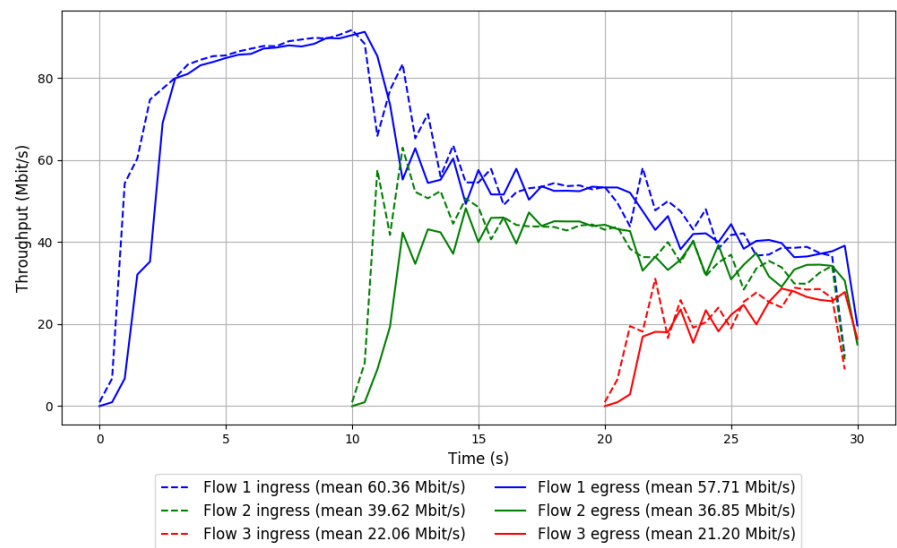
Run 1: Report of Indigo — Data Link

```
Run 2: Statistics of Indigo

Start at: 2018-09-25 08:58:31
End at: 2018-09-25 08:59:01
Local clock offset: -8.28 ms
Remote clock offset: 1.287 ms

# Below is generated by plot.py at 2018-09-25 12:09:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.92 Mbit/s
95th percentile per-packet one-way delay: 117.072 ms
Loss rate: 5.04%
-- Flow 1:
Average throughput: 57.71 Mbit/s
95th percentile per-packet one-way delay: 117.039 ms
Loss rate: 4.37%
-- Flow 2:
Average throughput: 36.85 Mbit/s
95th percentile per-packet one-way delay: 117.612 ms
Loss rate: 6.94%
-- Flow 3:
Average throughput: 21.20 Mbit/s
95th percentile per-packet one-way delay: 116.545 ms
Loss rate: 3.81%
```
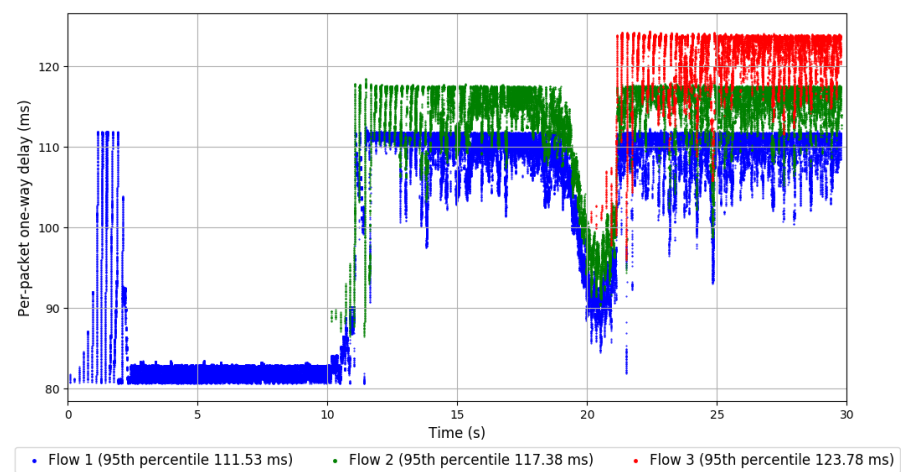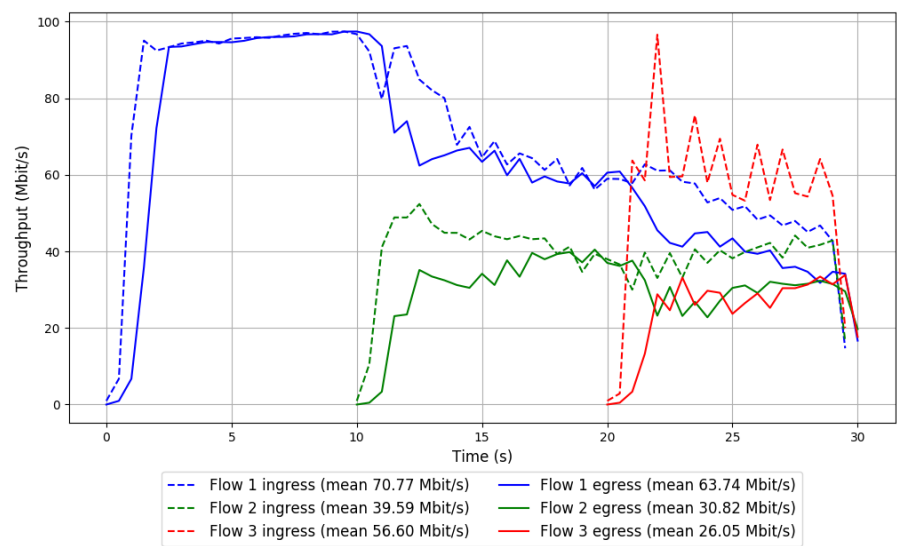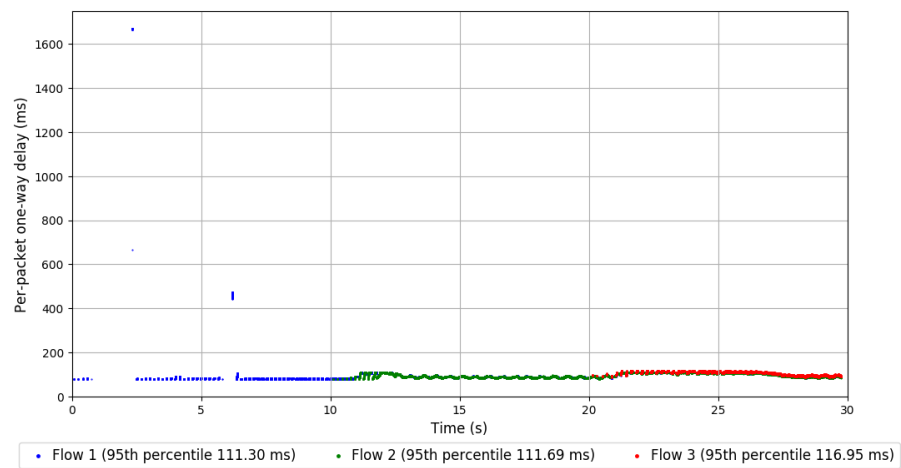
Run 2: Report of Indigo — Data Link

```
Run 3: Statistics of Indigo

Start at: 2018-09-25 09:45:14
End at: 2018-09-25 09:45:44
Local clock offset: -5.326 ms
Remote clock offset: -3.221 ms

# Below is generated by plot.py at 2018-09-25 12:09:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.56 Mbit/s
95th percentile per-packet one-way delay: 122.097 ms
Loss rate: 19.63%
-- Flow 1:
Average throughput: 63.74 Mbit/s
95th percentile per-packet one-way delay: 111.525 ms
Loss rate: 9.83%
-- Flow 2:
Average throughput: 30.82 Mbit/s
95th percentile per-packet one-way delay: 117.375 ms
Loss rate: 22.08%
-- Flow 3:
Average throughput: 26.05 Mbit/s
95th percentile per-packet one-way delay: 123.783 ms
Loss rate: 53.94%
```

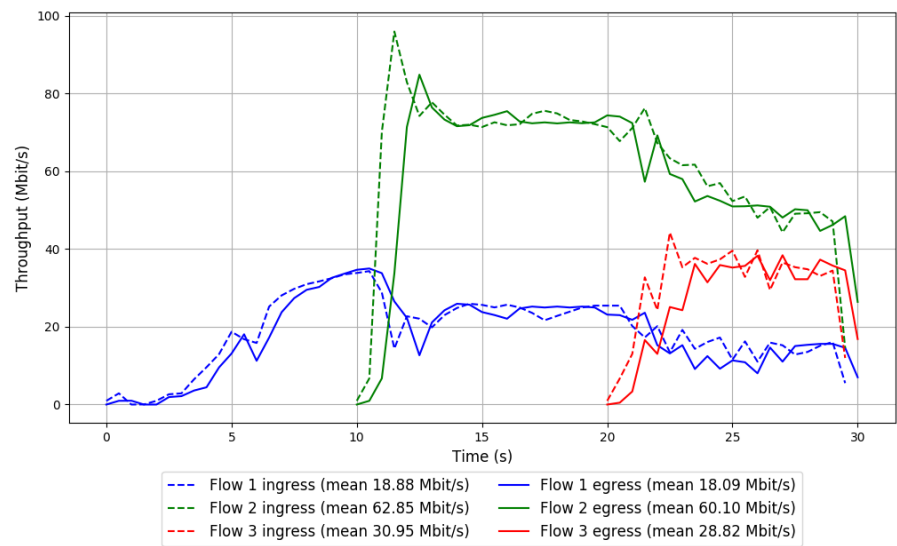Run 3: Report of Indigo — Data Link

```
Run 4: Statistics of Indigo

Start at: 2018-09-25 10:31:34
End at: 2018-09-25 10:32:04
Local clock offset: -7.908 ms
Remote clock offset: -4.484 ms


# Below is generated by plot.py at 2018-09-25 12:09:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 67.20 Mbit/s
95th percentile per-packet one-way delay: 112.192 ms
Loss rate: 4.65%
-- Flow 1:
Average throughput: 18.09 Mbit/s
95th percentile per-packet one-way delay: 111.299 ms
Loss rate: 4.12%
-- Flow 2:
Average throughput: 60.10 Mbit/s
95th percentile per-packet one-way delay: 111.689 ms
Loss rate: 4.33%
-- Flow 3:
Average throughput: 28.82 Mbit/s
95th percentile per-packet one-way delay: 116.949 ms
Loss rate: 6.97%
```
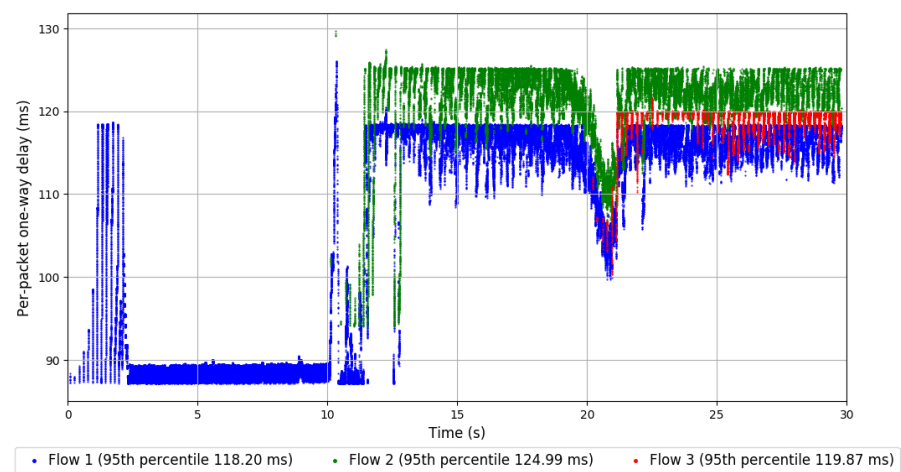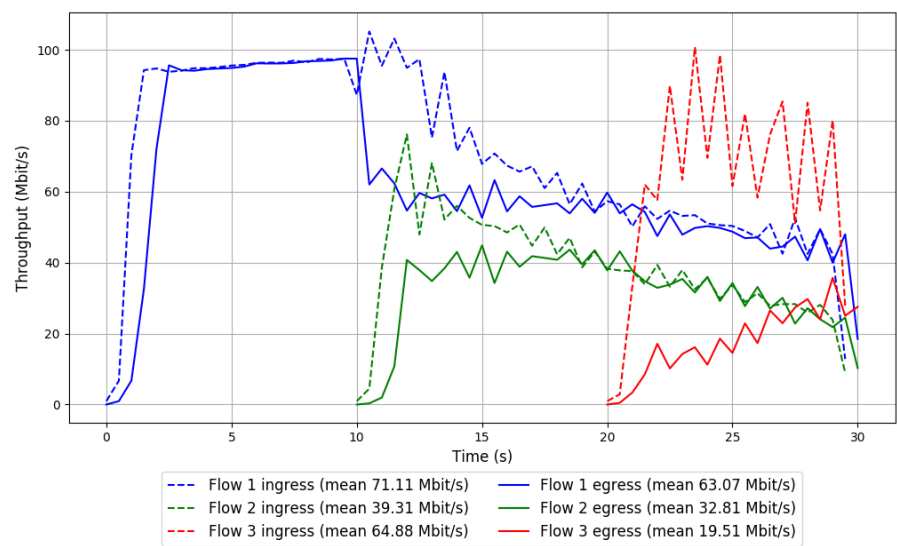
Run 4: Report of Indigo — Data Link

```
Run 5: Statistics of Indigo

Start at: 2018-09-25 11:17:00
End at: 2018-09-25 11:17:30
Local clock offset: -3.037 ms
Remote clock offset: 1.911 ms


# Below is generated by plot.py at 2018-09-25 12:10:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.08 Mbit/s
95th percentile per-packet one-way delay: 124.313 ms
Loss rate: 22.77%
-- Flow 1:
Average throughput: 63.07 Mbit/s
95th percentile per-packet one-way delay: 118.200 ms
Loss rate: 11.22%
-- Flow 2:
Average throughput: 32.81 Mbit/s
95th percentile per-packet one-way delay: 124.987 ms
Loss rate: 16.47%
-- Flow 3:
Average throughput: 19.51 Mbit/s
95th percentile per-packet one-way delay: 119.870 ms
Loss rate: 69.90%
```
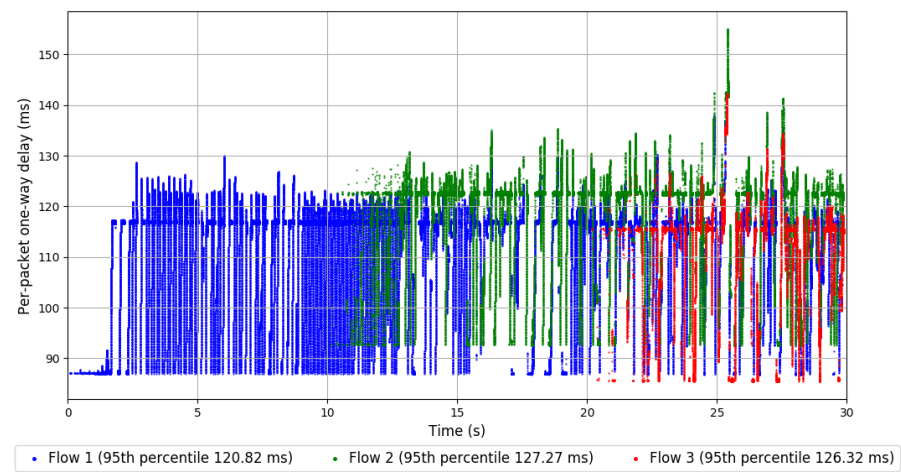
Run 5: Report of Indigo — Data Link

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

Start at: 2018-09-25 08:39:43
End at: 2018-09-25 08:40:13
Local clock offset: -4.735 ms
Remote clock offset: 1.448 ms


# Below is generated by plot.py at 2018-09-25 12:10:31
# Datalink statistics
-- Total of 3 flows:
Average throughput: 76.75 Mbit/s
95th percentile per-packet one-way delay: 123.888 ms
Loss rate: 57.27%
-- Flow 1:
Average throughput: 46.56 Mbit/s
95th percentile per-packet one-way delay: 120.820 ms
Loss rate: 55.11%
-- Flow 2:
Average throughput: 33.95 Mbit/s
95th percentile per-packet one-way delay: 127.271 ms
Loss rate: 59.92%
-- Flow 3:
Average throughput: 23.83 Mbit/s
95th percentile per-packet one-way delay: 126.318 ms
Loss rate: 61.01%
```
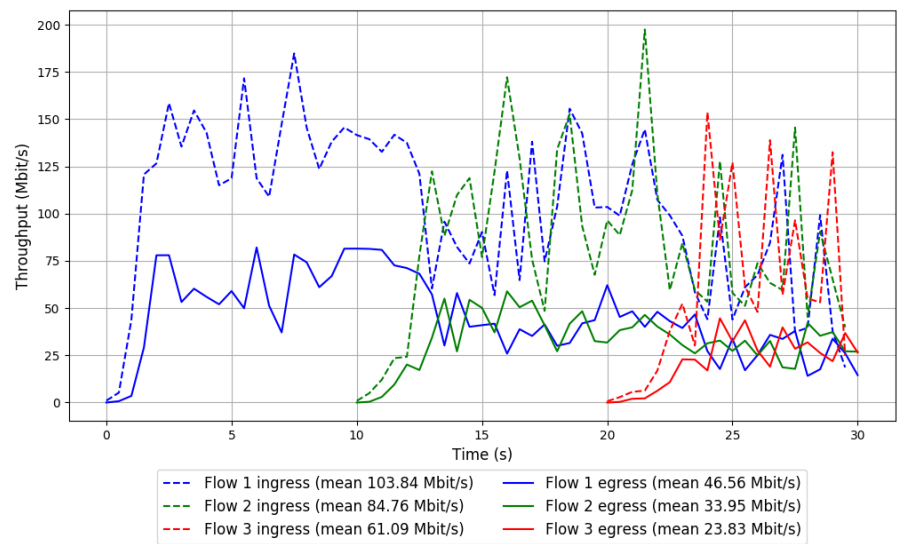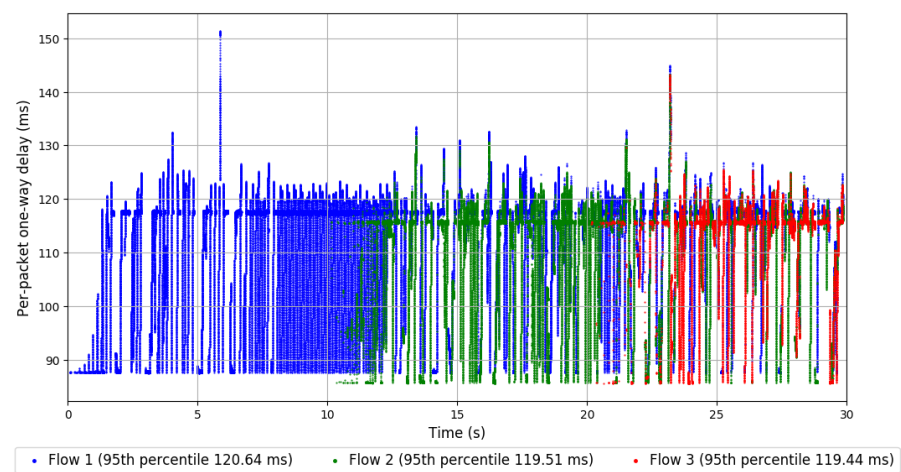
Run 1: Report of Indigo-96d2da3 — Data Link

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

Start at: 2018-09-25 09:25:20
End at: 2018-09-25 09:25:50
Local clock offset: -4.346 ms
Remote clock offset: 2.097 ms


# Below is generated by plot.py at 2018-09-25 12:10:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 77.74 Mbit/s
95th percentile per-packet one-way delay: 120.195 ms
Loss rate: 57.39%
-- Flow 1:
Average throughput: 46.38 Mbit/s
95th percentile per-packet one-way delay: 120.638 ms
Loss rate: 55.68%
-- Flow 2:
Average throughput: 35.89 Mbit/s
95th percentile per-packet one-way delay: 119.512 ms
Loss rate: 59.58%
-- Flow 3:
Average throughput: 23.40 Mbit/s
95th percentile per-packet one-way delay: 119.437 ms
Loss rate: 59.98%
```
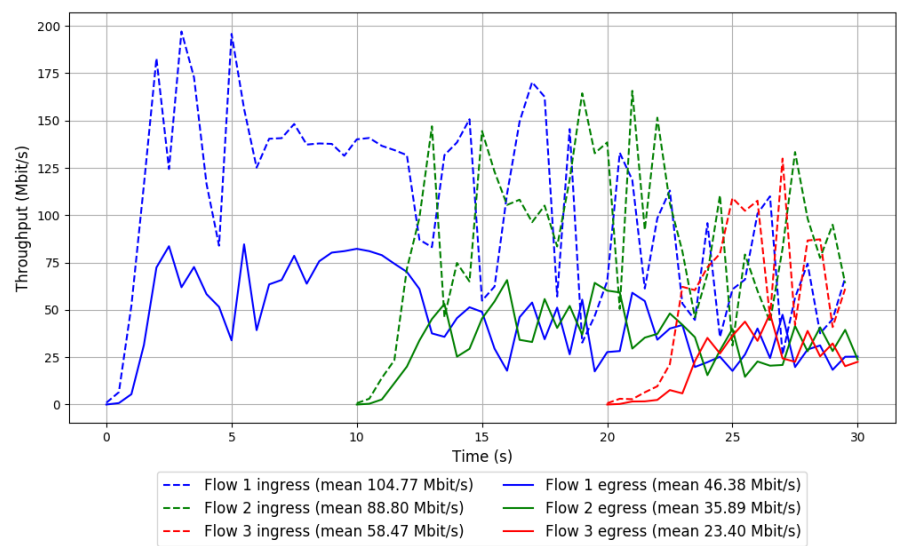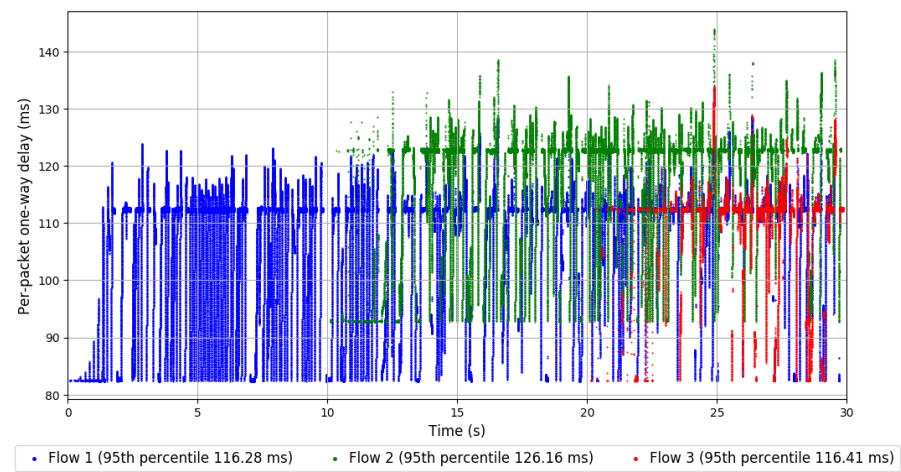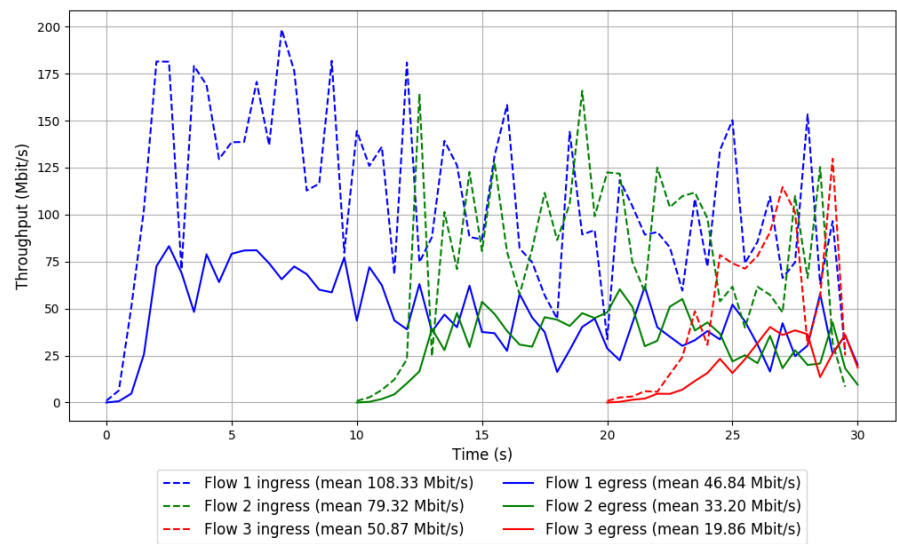
Run 2: Report of Indigo-96d2da3 — Data Link

Flow 1 ingress (mean 104.77 Mbit/s)   Flow 1 egress (mean 46.38 Mbit/s)
Flow 2 ingress (mean 88.80 Mbit/s)   Flow 2 egress (mean 35.89 Mbit/s)
Flow 3 ingress (mean 58.47 Mbit/s)   Flow 3 egress (mean 23.40 Mbit/s)

Flow 1 (95th percentile 120.64 ms)   Flow 2 (95th percentile 119.51 ms)   Flow 3 (95th percentile 119.44 ms)

```
Run 3: Statistics of Indigo-96d2da3

Start at: 2018-09-25 10:12:16
End at: 2018-09-25 10:12:46
Local clock offset: -7.313 ms
Remote clock offset: -3.424 ms


# Below is generated by plot.py at 2018-09-25 12:10:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 75.24 Mbit/s
95th percentile per-packet one-way delay: 122.944 ms
Loss rate: 57.51%
-- Flow 1:
Average throughput: 46.84 Mbit/s
95th percentile per-packet one-way delay: 116.283 ms
Loss rate: 56.72%
-- Flow 2:
Average throughput: 33.20 Mbit/s
95th percentile per-packet one-way delay: 126.162 ms
Loss rate: 58.08%
-- Flow 3:
Average throughput: 19.86 Mbit/s
95th percentile per-packet one-way delay: 116.405 ms
Loss rate: 60.89%
```
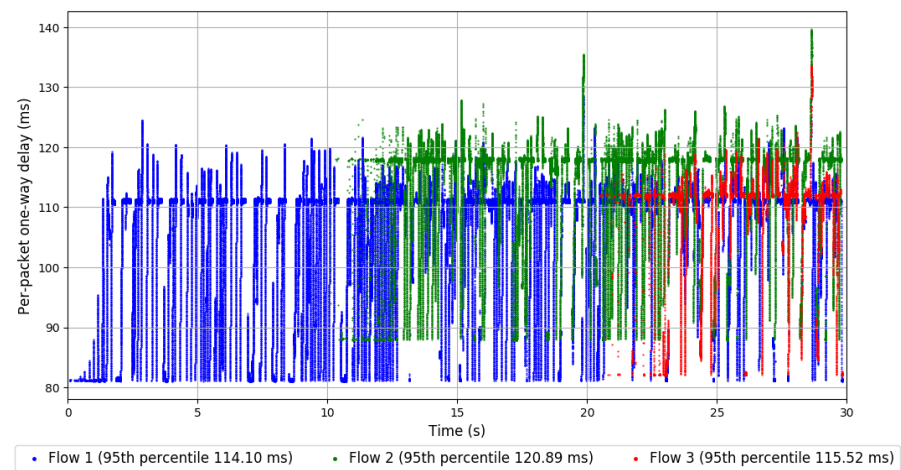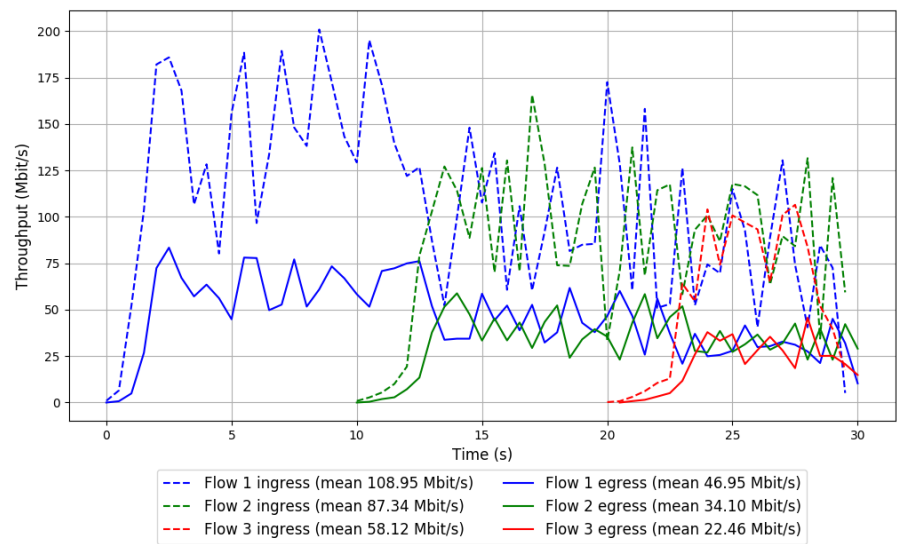
Run 3: Report of Indigo-96d2da3 — Data Link

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

Start at: 2018-09-25 10:57:32
End at: 2018-09-25 10:58:02
Local clock offset: -3.833 ms
Remote clock offset: -4.352 ms


# Below is generated by plot.py at 2018-09-25 12:10:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 76.51 Mbit/s
95th percentile per-packet one-way delay: 118.178 ms
Loss rate: 58.62%
-- Flow 1:
Average throughput: 46.95 Mbit/s
95th percentile per-packet one-way delay: 114.104 ms
Loss rate: 56.91%
-- Flow 2:
Average throughput: 34.10 Mbit/s
95th percentile per-packet one-way delay: 120.892 ms
Loss rate: 60.96%
-- Flow 3:
Average throughput: 22.46 Mbit/s
95th percentile per-packet one-way delay: 115.520 ms
Loss rate: 61.48%
```
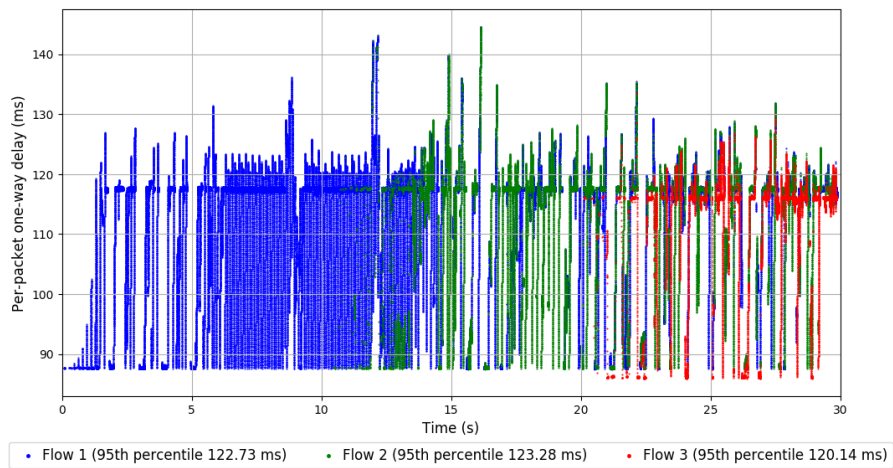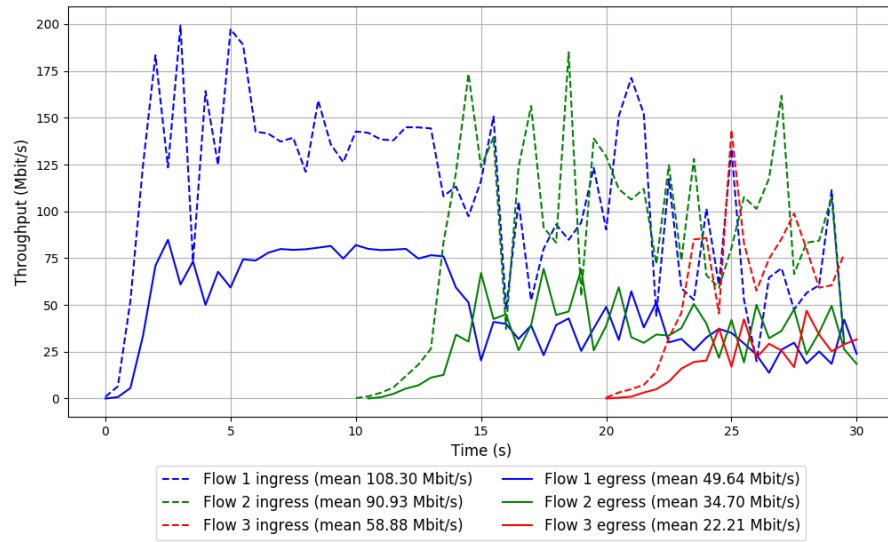
Run 4: Report of Indigo-96d2da3 — Data Link

- - - Flow 1 ingress (mean 108.95 Mbit/s)   —— Flow 1 egress (mean 46.95 Mbit/s)
- - - Flow 2 ingress (mean 87.34 Mbit/s)   —— Flow 2 egress (mean 34.10 Mbit/s)
- - - Flow 3 ingress (mean 58.12 Mbit/s)   —— Flow 3 egress (mean 22.46 Mbit/s)

- Flow 1 (95th percentile 114.10 ms)   • Flow 2 (95th percentile 120.89 ms)   • Flow 3 (95th percentile 115.52 ms)

```
Run 5: Statistics of Indigo-96d2da3

Start at: 2018-09-25 11:44:58
End at: 2018-09-25 11:45:28
Local clock offset: -2.503 ms
Remote clock offset: 1.973 ms


# Below is generated by plot.py at 2018-09-25 12:10:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 79.34 Mbit/s
95th percentile per-packet one-way delay: 122.599 ms
Loss rate: 57.38%
-- Flow 1:
Average throughput: 49.64 Mbit/s
95th percentile per-packet one-way delay: 122.730 ms
Loss rate: 54.12%
-- Flow 2:
Average throughput: 34.70 Mbit/s
95th percentile per-packet one-way delay: 123.283 ms
Loss rate: 61.79%
-- Flow 3:
Average throughput: 22.21 Mbit/s
95th percentile per-packet one-way delay: 120.139 ms
Loss rate: 62.28%
```
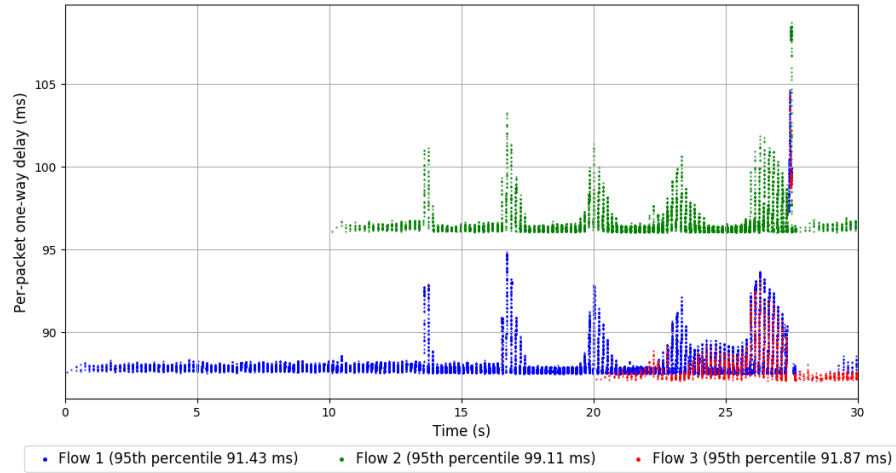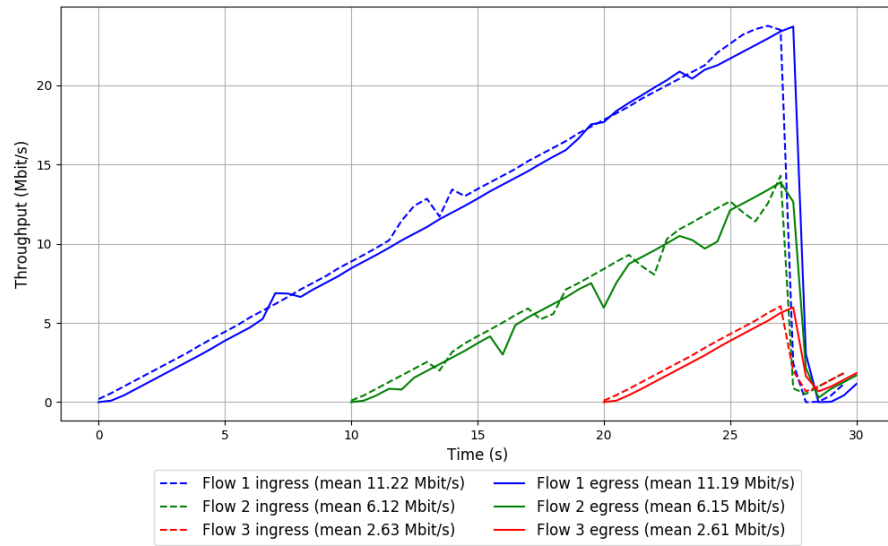
Run 5: Report of Indigo-96d2da3 — Data Link

Flow 1 ingress (mean 108.30 Mbit/s) — Flow 1 egress (mean 49.64 Mbit/s)
Flow 2 ingress (mean 90.93 Mbit/s) — Flow 2 egress (mean 34.70 Mbit/s)
Flow 3 ingress (mean 58.88 Mbit/s) — Flow 3 egress (mean 22.21 Mbit/s)

Flow 1 (95th percentile 122.73 ms) — Flow 2 (95th percentile 123.28 ms) — Flow 3 (95th percentile 120.14 ms)

```
Run 1: Statistics of LEDBAT

Start at: 2018-09-25 08:43:40
End at: 2018-09-25 08:44:10
Local clock offset: -6.057 ms
Remote clock offset: 1.373 ms

# Below is generated by plot.py at 2018-09-25 12:10:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 16.12 Mbit/s
95th percentile per-packet one-way delay: 97.468 ms
Loss rate: 0.32%
-- Flow 1:
Average throughput: 11.19 Mbit/s
95th percentile per-packet one-way delay: 91.432 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 6.15 Mbit/s
95th percentile per-packet one-way delay: 99.106 ms
Loss rate: 0.41%
-- Flow 3:
Average throughput: 2.61 Mbit/s
95th percentile per-packet one-way delay: 91.866 ms
Loss rate: 0.77%
```
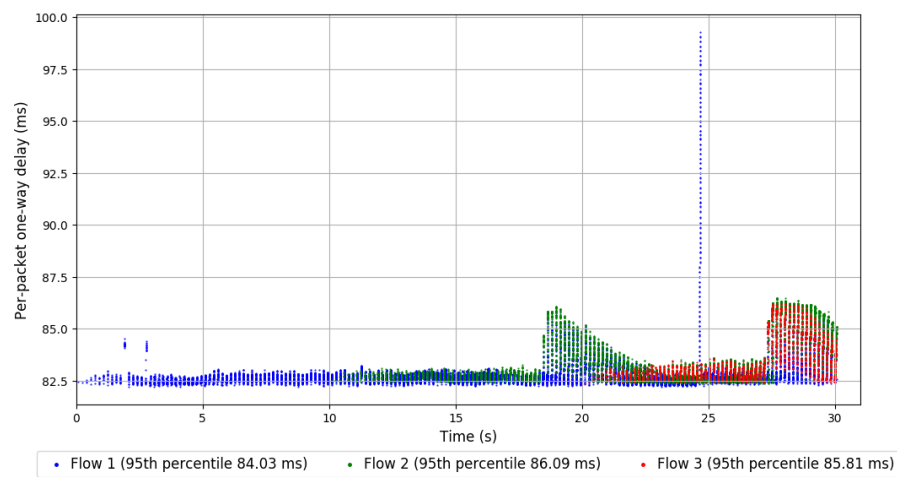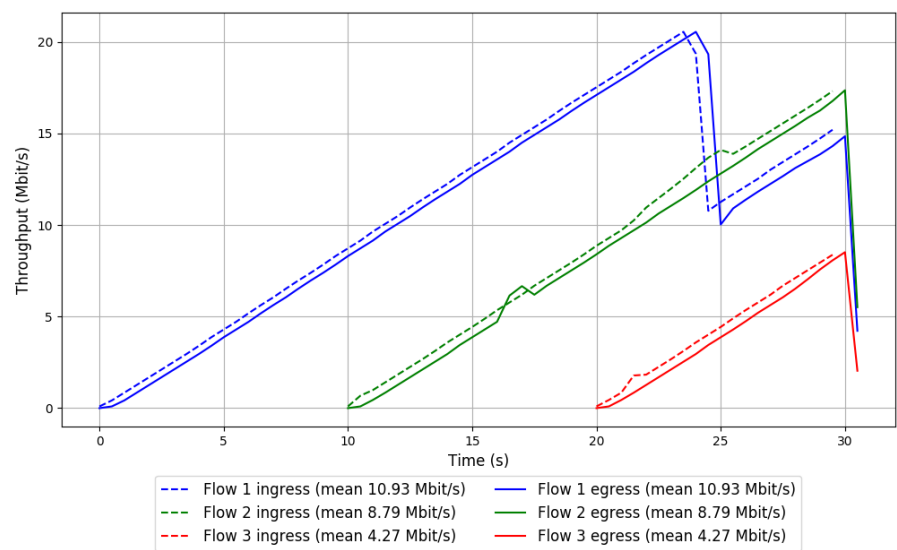
Run 1: Report of LEDBAT — Data Link

```
Run 2: Statistics of LEDBAT

Start at: 2018-09-25 09:29:36
End at: 2018-09-25 09:30:06
Local clock offset: -4.018 ms
Remote clock offset: -3.156 ms


# Below is generated by plot.py at 2018-09-25 12:10:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.20 Mbit/s
95th percentile per-packet one-way delay: 85.608 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 10.93 Mbit/s
95th percentile per-packet one-way delay: 84.030 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 8.79 Mbit/s
95th percentile per-packet one-way delay: 86.095 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 4.27 Mbit/s
95th percentile per-packet one-way delay: 85.812 ms
Loss rate: 0.00%
```
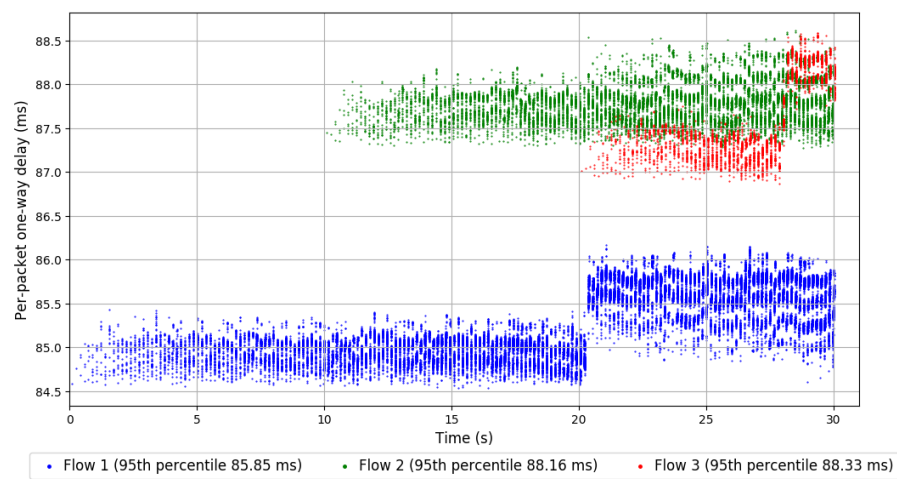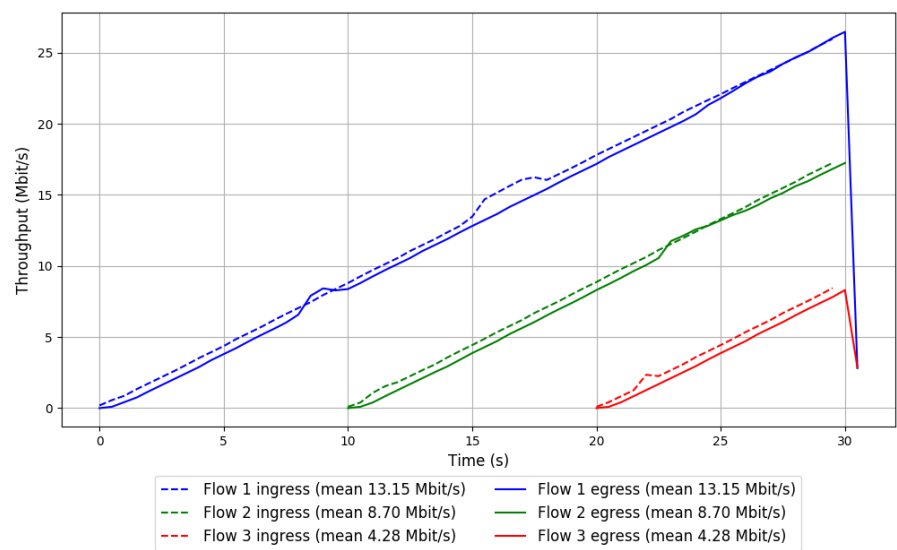
Run 2: Report of LEDBAT — Data Link

```
Run 3: Statistics of LEDBAT

Start at: 2018-09-25 10:16:21
End at: 2018-09-25 10:16:51
Local clock offset: -7.163 ms
Remote clock offset: 0.735 ms


# Below is generated by plot.py at 2018-09-25 12:10:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 20.34 Mbit/s
95th percentile per-packet one-way delay: 88.075 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 13.15 Mbit/s
95th percentile per-packet one-way delay: 85.848 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 8.70 Mbit/s
95th percentile per-packet one-way delay: 88.161 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 4.28 Mbit/s
95th percentile per-packet one-way delay: 88.332 ms
Loss rate: 0.00%
```
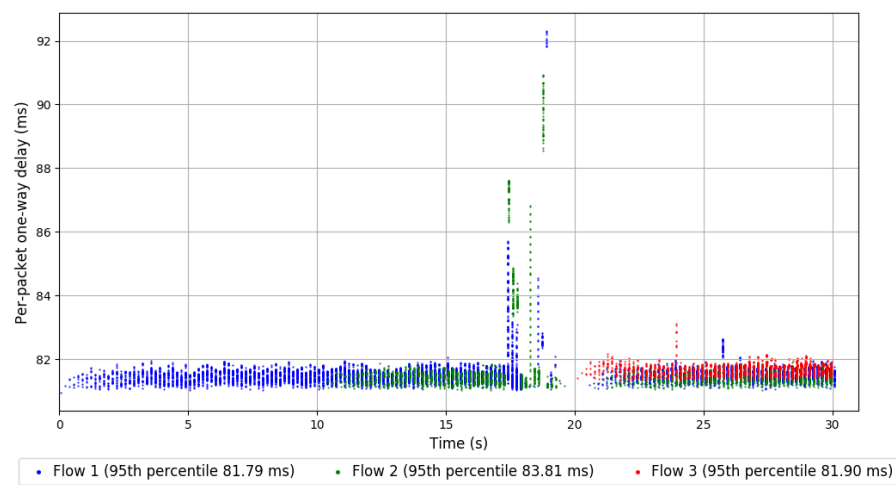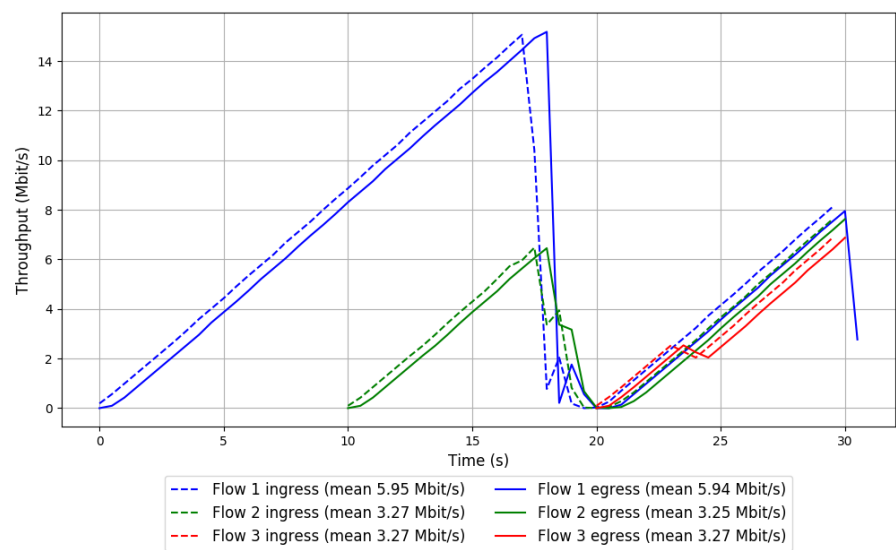
Run 3: Report of LEDBAT — Data Link

```
Run 4: Statistics of LEDBAT

Start at: 2018-09-25 11:01:52
End at: 2018-09-25 11:02:22
Local clock offset: -2.702 ms
Remote clock offset: -4.408 ms

# Below is generated by plot.py at 2018-09-25 12:10:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 9.16 Mbit/s
95th percentile per-packet one-way delay: 81.843 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 5.94 Mbit/s
95th percentile per-packet one-way delay: 81.791 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 3.25 Mbit/s
95th percentile per-packet one-way delay: 83.805 ms
Loss rate: 0.72%
-- Flow 3:
Average throughput: 3.27 Mbit/s
95th percentile per-packet one-way delay: 81.898 ms
Loss rate: 0.04%
```
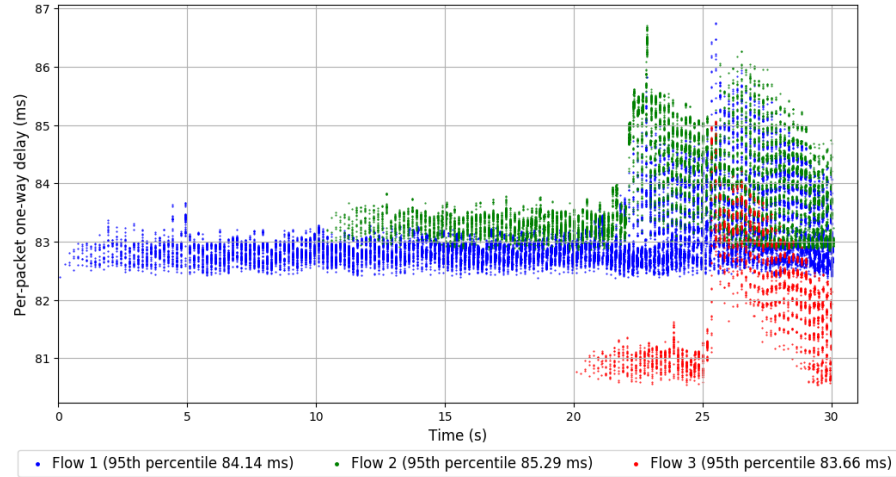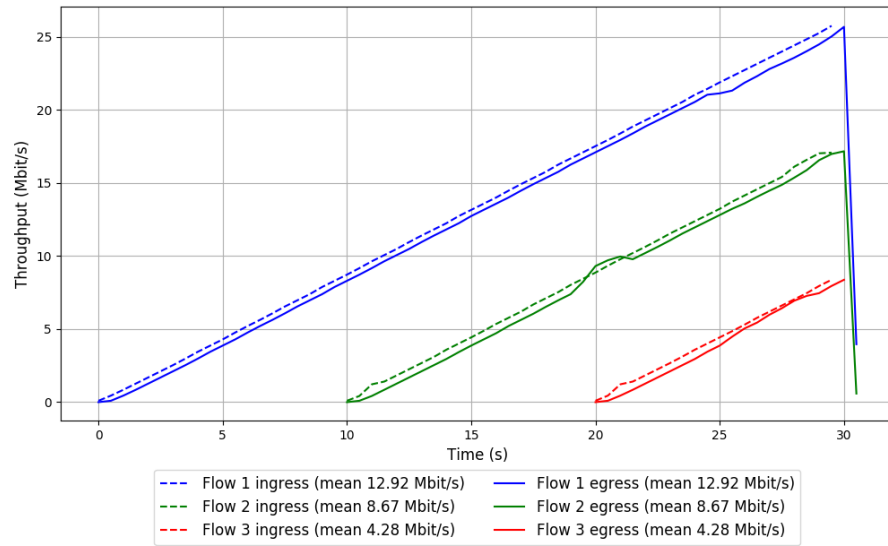
Run 4: Report of LEDBAT — Data Link

```
Run 5: Statistics of LEDBAT

Start at: 2018-09-25 11:49:20
End at: 2018-09-25 11:49:50
Local clock offset: -3.608 ms
Remote clock offset: -4.305 ms


# Below is generated by plot.py at 2018-09-25 12:10:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 20.08 Mbit/s
95th percentile per-packet one-way delay: 84.775 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 12.92 Mbit/s
95th percentile per-packet one-way delay: 84.140 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 8.67 Mbit/s
95th percentile per-packet one-way delay: 85.293 ms
Loss rate: 0.03%
-- Flow 3:
Average throughput: 4.28 Mbit/s
95th percentile per-packet one-way delay: 83.657 ms
Loss rate: 0.00%
```
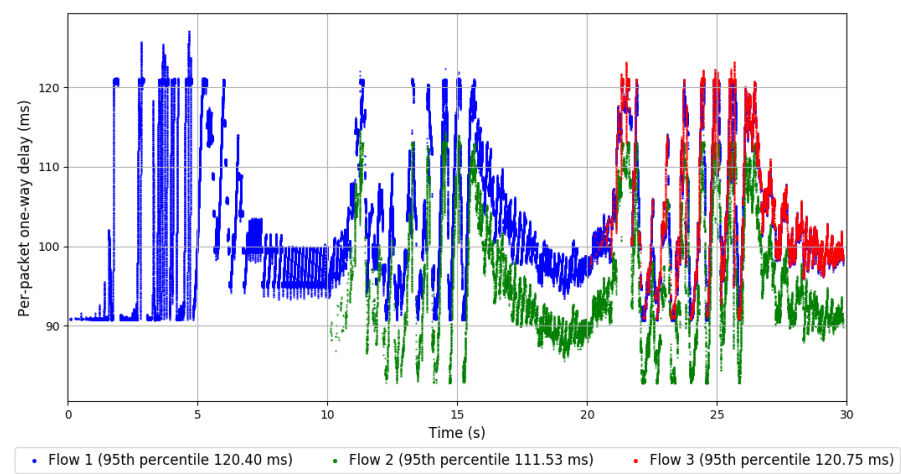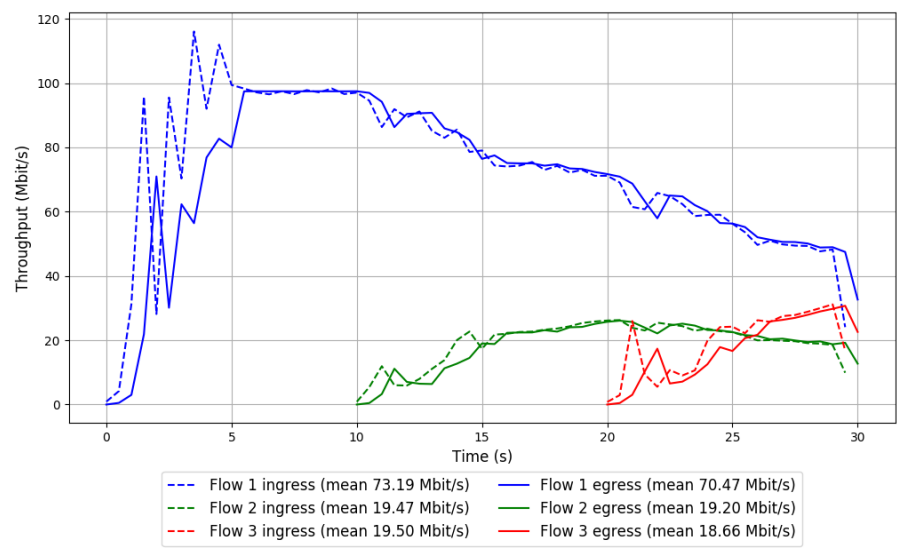
Run 5: Report of LEDBAT — Data Link

```
Run 1: Statistics of Indigo-Muses

Start at: 2018-09-25 08:49:30
End at: 2018-09-25 08:50:00
Local clock offset: -7.231 ms
Remote clock offset: -3.885 ms


# Below is generated by plot.py at 2018-09-25 12:11:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.29 Mbit/s
95th percentile per-packet one-way delay: 120.048 ms
Loss rate: 3.45%
-- Flow 1:
Average throughput: 70.47 Mbit/s
95th percentile per-packet one-way delay: 120.401 ms
Loss rate: 3.73%
-- Flow 2:
Average throughput: 19.20 Mbit/s
95th percentile per-packet one-way delay: 111.532 ms
Loss rate: 1.37%
-- Flow 3:
Average throughput: 18.66 Mbit/s
95th percentile per-packet one-way delay: 120.751 ms
Loss rate: 4.41%
```

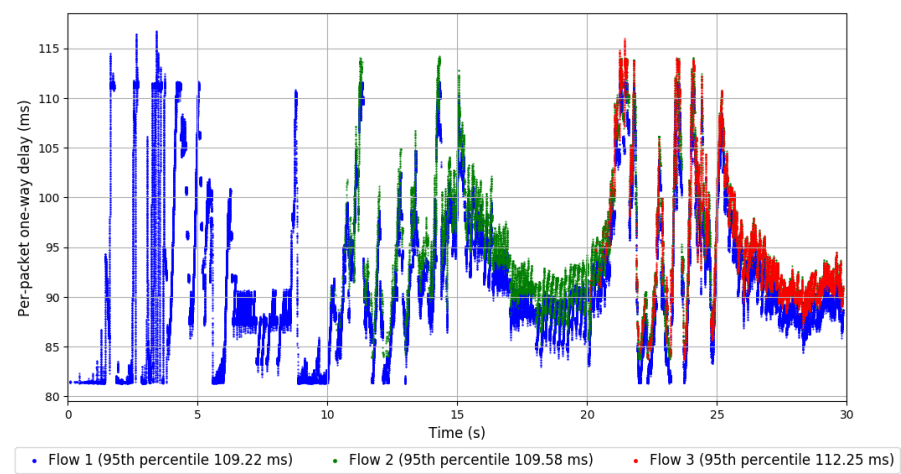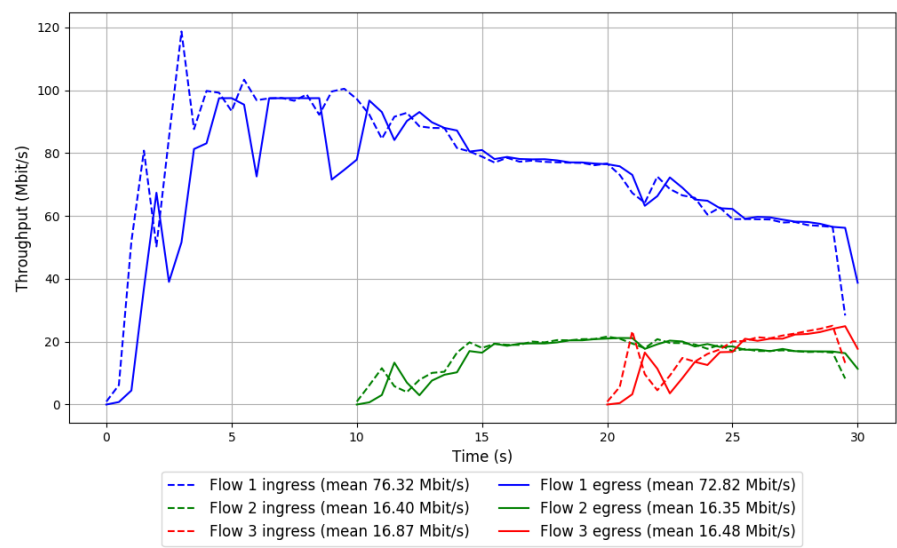Run 1: Report of Indigo-Muses — Data Link

- - - Flow 1 ingress (mean 73.19 Mbit/s) ——— Flow 1 egress (mean 70.47 Mbit/s)
- - - Flow 2 ingress (mean 19.47 Mbit/s) ——— Flow 2 egress (mean 19.20 Mbit/s)
- - - Flow 3 ingress (mean 19.50 Mbit/s) ——— Flow 3 egress (mean 18.66 Mbit/s)

• Flow 1 (95th percentile 120.40 ms)   • Flow 2 (95th percentile 111.53 ms)   • Flow 3 (95th percentile 120.75 ms)

```
Run 2: Statistics of Indigo-Muses

Start at: 2018-09-25 09:36:02
End at: 2018-09-25 09:36:32
Local clock offset: -4.473 ms
Remote clock offset: -3.109 ms


# Below is generated by plot.py at 2018-09-25 12:11:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.05 Mbit/s
95th percentile per-packet one-way delay: 109.505 ms
Loss rate: 3.94%
-- Flow 1:
Average throughput: 72.82 Mbit/s
95th percentile per-packet one-way delay: 109.217 ms
Loss rate: 4.57%
-- Flow 2:
Average throughput: 16.35 Mbit/s
95th percentile per-packet one-way delay: 109.582 ms
Loss rate: 0.31%
-- Flow 3:
Average throughput: 16.48 Mbit/s
95th percentile per-packet one-way delay: 112.255 ms
Loss rate: 2.32%
```

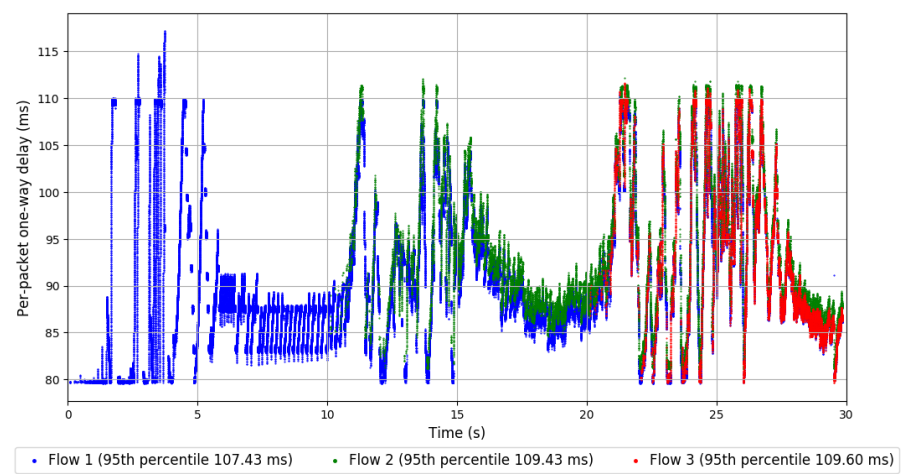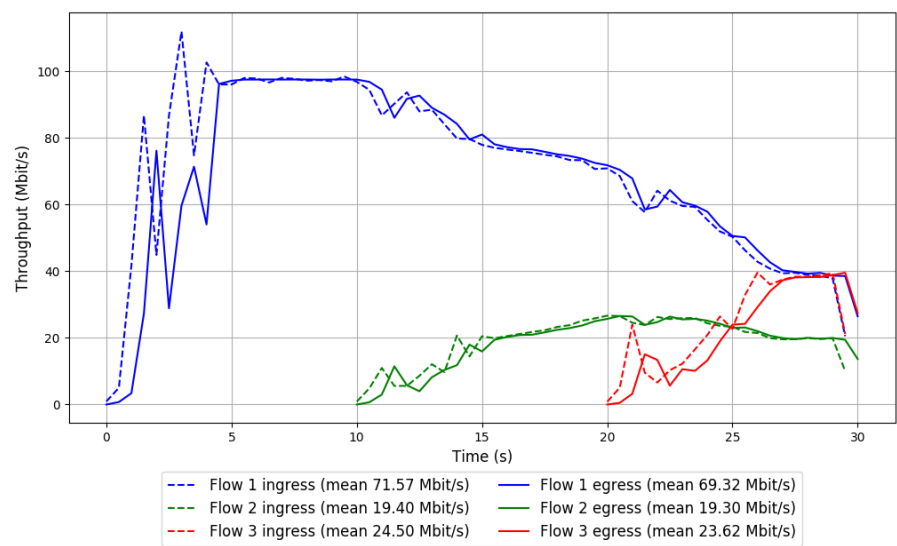Run 2: Report of Indigo-Muses — Data Link

```
Run 3: Statistics of Indigo-Muses

Start at: 2018-09-25 10:22:27
End at: 2018-09-25 10:22:57
Local clock offset: -7.078 ms
Remote clock offset: -4.525 ms


# Below is generated by plot.py at 2018-09-25 12:11:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.83 Mbit/s
95th percentile per-packet one-way delay: 108.408 ms
Loss rate: 2.80%
-- Flow 1:
Average throughput: 69.32 Mbit/s
95th percentile per-packet one-way delay: 107.430 ms
Loss rate: 3.12%
-- Flow 2:
Average throughput: 19.30 Mbit/s
95th percentile per-packet one-way delay: 109.433 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 23.62 Mbit/s
95th percentile per-packet one-way delay: 109.597 ms
Loss rate: 3.60%
```
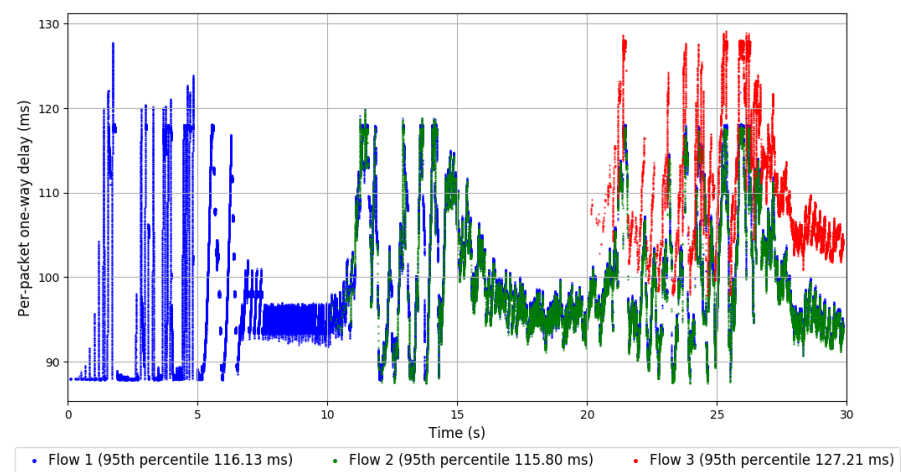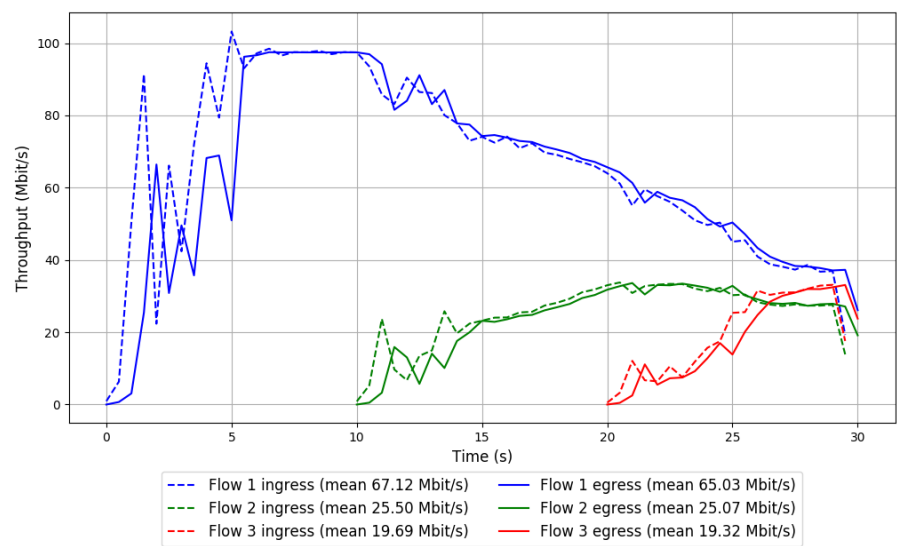
Run 3: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 71.57 Mbit/s) — Flow 1 egress (mean 69.32 Mbit/s)
Flow 2 ingress (mean 19.40 Mbit/s) — Flow 2 egress (mean 19.30 Mbit/s)
Flow 3 ingress (mean 24.50 Mbit/s) — Flow 3 egress (mean 23.62 Mbit/s)

Flow 1 (95th percentile 107.43 ms) • Flow 2 (95th percentile 109.43 ms) • Flow 3 (95th percentile 109.60 ms)

```
Run 4: Statistics of Indigo-Muses

Start at: 2018-09-25 11:07:34
End at: 2018-09-25 11:08:04
Local clock offset: -2.31 ms
Remote clock offset: 1.741 ms


# Below is generated by plot.py at 2018-09-25 12:11:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.96 Mbit/s
95th percentile per-packet one-way delay: 117.134 ms
Loss rate: 2.75%
-- Flow 1:
Average throughput: 65.03 Mbit/s
95th percentile per-packet one-way delay: 116.131 ms
Loss rate: 3.09%
-- Flow 2:
Average throughput: 25.07 Mbit/s
95th percentile per-packet one-way delay: 115.802 ms
Loss rate: 1.69%
-- Flow 3:
Average throughput: 19.32 Mbit/s
95th percentile per-packet one-way delay: 127.209 ms
Loss rate: 2.04%
```

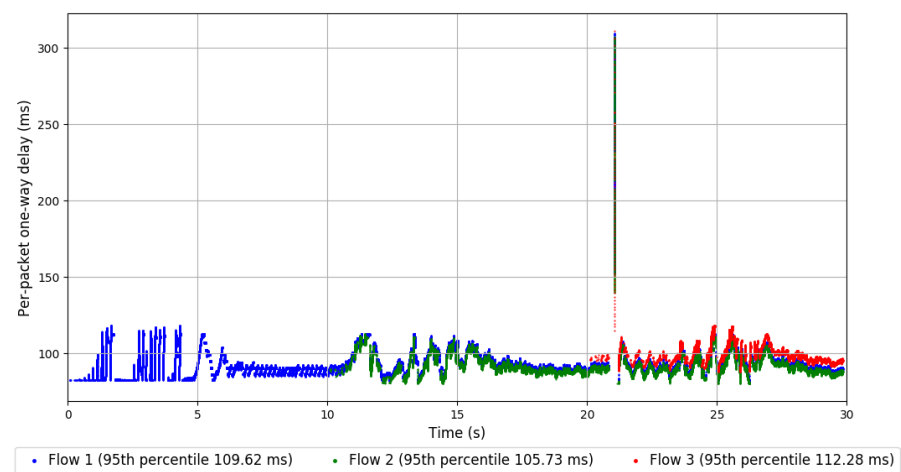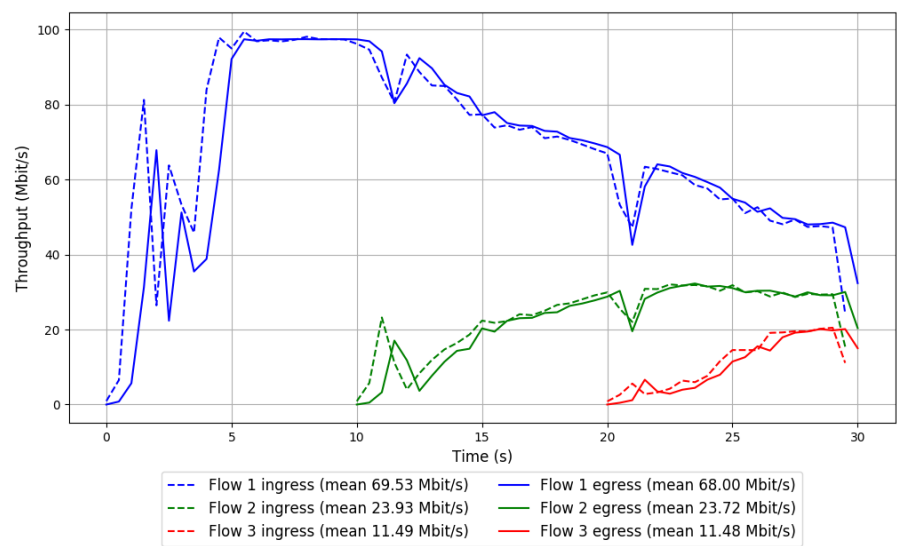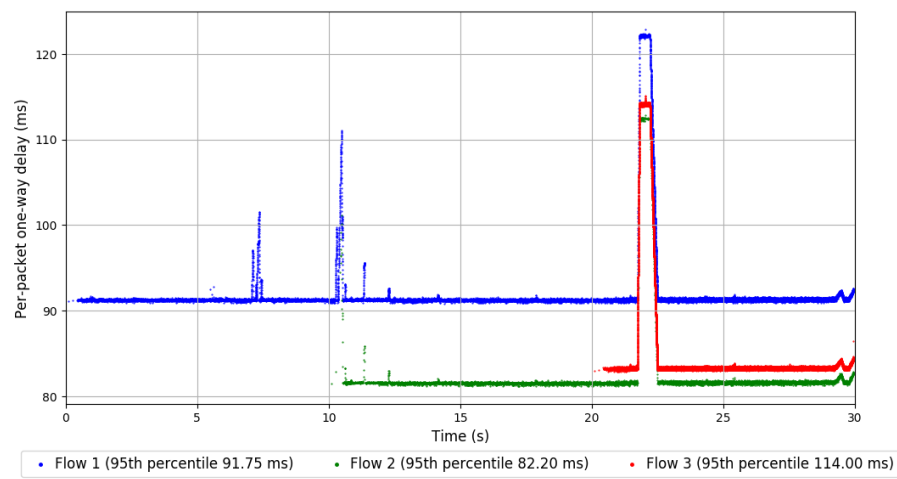# Run 4: Report of Indigo-Muses — Data Link

Flow 1 ingress (mean 67.12 Mbit/s) — — — — Flow 1 egress (mean 65.03 Mbit/s)
Flow 2 ingress (mean 25.50 Mbit/s) — — — — Flow 2 egress (mean 25.07 Mbit/s)
Flow 3 ingress (mean 19.69 Mbit/s) — — — — Flow 3 egress (mean 19.32 Mbit/s)

Flow 1 (95th percentile 116.13 ms) • Flow 2 (95th percentile 115.80 ms) • Flow 3 (95th percentile 127.21 ms)

```
Run 5: Statistics of Indigo-Muses

Start at: 2018-09-25 11:55:30
End at: 2018-09-25 11:56:00
Local clock offset: -3.068 ms
Remote clock offset: -3.167 ms


# Below is generated by plot.py at 2018-09-25 12:11:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.49 Mbit/s
95th percentile per-packet one-way delay: 109.118 ms
Loss rate: 1.87%
-- Flow 1:
Average throughput: 68.00 Mbit/s
95th percentile per-packet one-way delay: 109.623 ms
Loss rate: 2.19%
-- Flow 2:
Average throughput: 23.72 Mbit/s
95th percentile per-packet one-way delay: 105.726 ms
Loss rate: 0.87%
-- Flow 3:
Average throughput: 11.48 Mbit/s
95th percentile per-packet one-way delay: 112.279 ms
Loss rate: 0.18%
```

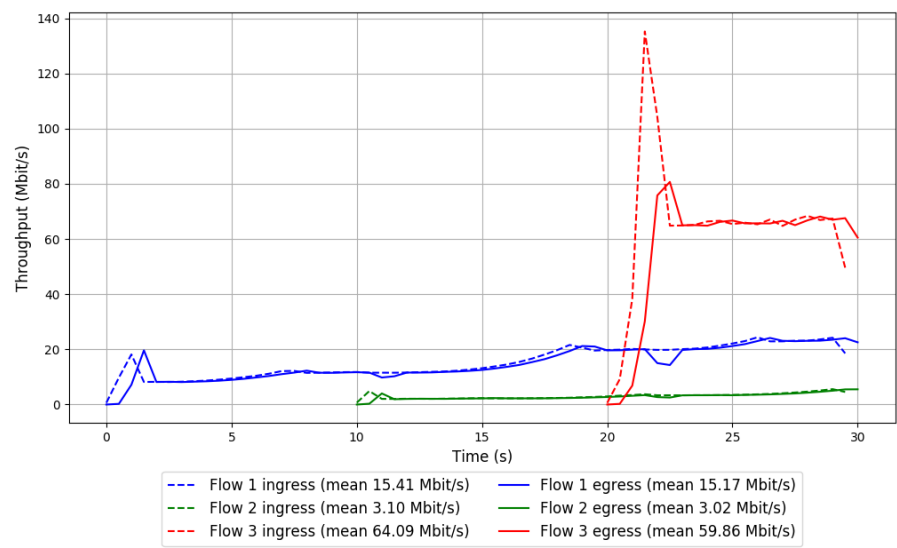Run 5: Report of Indigo-Muses — Data Link

```
Run 1: Statistics of PCC-Allegro

Start at: 2018-09-25 08:20:00
End at: 2018-09-25 08:20:30
Local clock offset: -3.206 ms
Remote clock offset: -2.209 ms


# Below is generated by plot.py at 2018-09-25 12:11:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 36.93 Mbit/s
95th percentile per-packet one-way delay: 100.111 ms
Loss rate: 4.37%
-- Flow 1:
Average throughput: 15.17 Mbit/s
95th percentile per-packet one-way delay: 91.750 ms
Loss rate: 1.61%
-- Flow 2:
Average throughput: 3.02 Mbit/s
95th percentile per-packet one-way delay: 82.200 ms
Loss rate: 2.39%
-- Flow 3:
Average throughput: 59.86 Mbit/s
95th percentile per-packet one-way delay: 113.998 ms
Loss rate: 6.58%
```
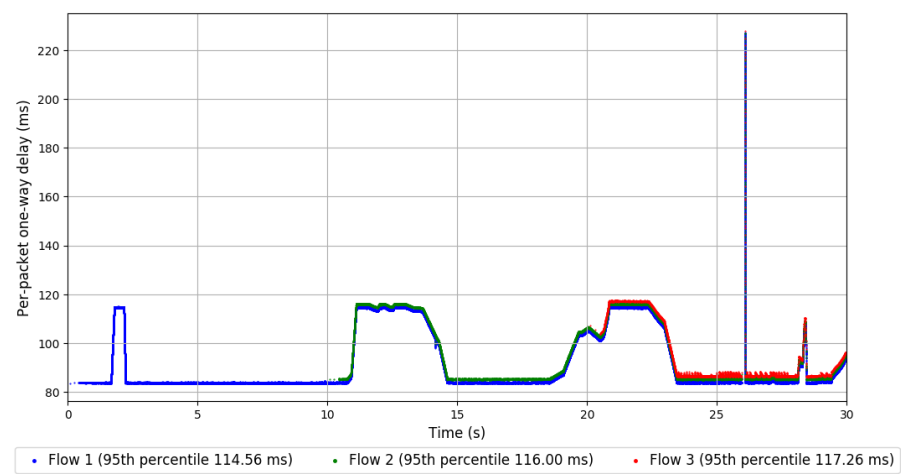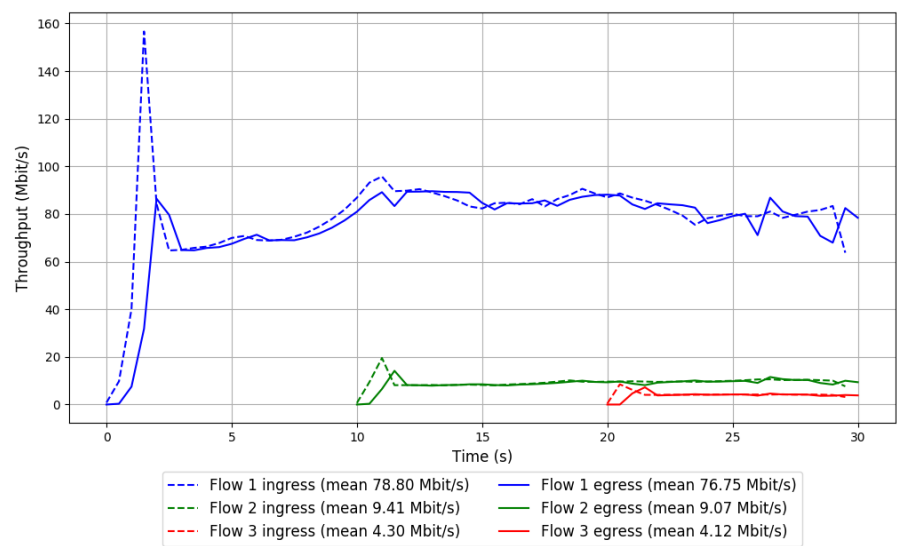
Run 1: Report of PCC-Allegro — Data Link

- - - Flow 1 ingress (mean 15.41 Mbit/s) —— Flow 1 egress (mean 15.17 Mbit/s)
- - - Flow 2 ingress (mean 3.10 Mbit/s) —— Flow 2 egress (mean 3.02 Mbit/s)
- - - Flow 3 ingress (mean 64.09 Mbit/s) —— Flow 3 egress (mean 59.86 Mbit/s)

• Flow 1 (95th percentile 91.75 ms) • Flow 2 (95th percentile 82.20 ms) • Flow 3 (95th percentile 114.00 ms)

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```
Run 2: Statistics of PCC-Allegro

Start at: 2018-09-25 09:05:39
End at: 2018-09-25 09:06:09
Local clock offset: -8.025 ms
Remote clock offset: 0.116 ms


# Below is generated by plot.py at 2018-09-25 12:11:48
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.14 Mbit/s
95th percentile per-packet one-way delay: 114.604 ms
Loss rate: 2.66%
-- Flow 1:
Average throughput: 76.75 Mbit/s
95th percentile per-packet one-way delay: 114.563 ms
Loss rate: 2.56%
-- Flow 2:
Average throughput: 9.07 Mbit/s
95th percentile per-packet one-way delay: 115.997 ms
Loss rate: 3.50%
-- Flow 3:
Average throughput: 4.12 Mbit/s
95th percentile per-packet one-way delay: 117.259 ms
Loss rate: 4.27%
```
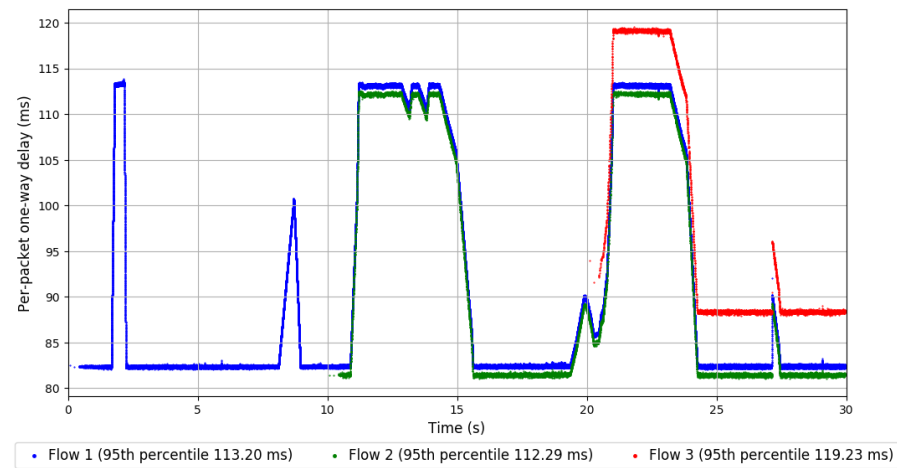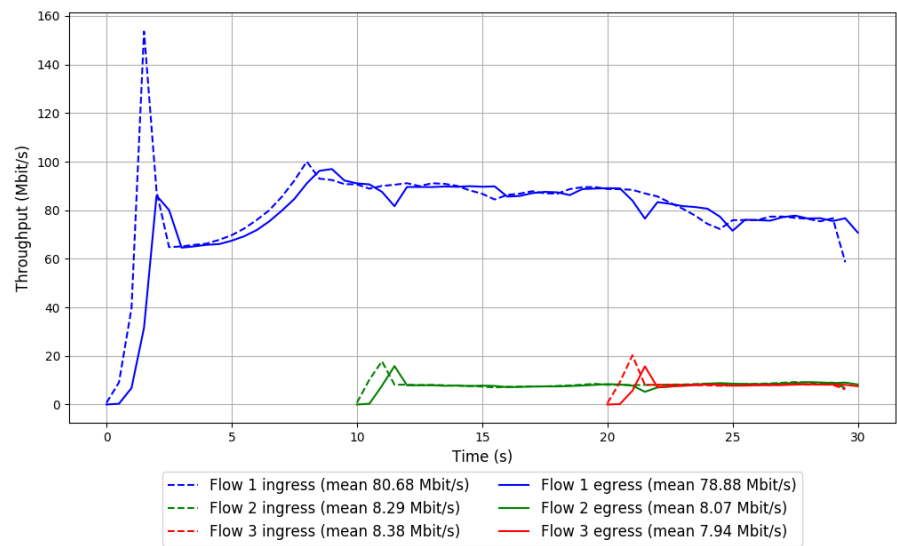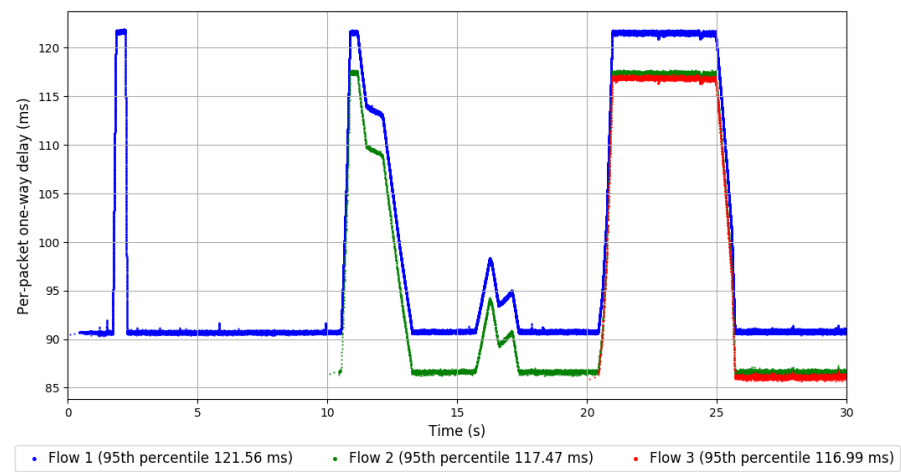
Run 2: Report of PCC-Allegro — Data Link

- - - - Flow 1 ingress (mean 78.80 Mbit/s) —— Flow 1 egress (mean 76.75 Mbit/s)
- - - - Flow 2 ingress (mean 9.41 Mbit/s) —— Flow 2 egress (mean 9.07 Mbit/s)
- - - - Flow 3 ingress (mean 4.30 Mbit/s) —— Flow 3 egress (mean 4.12 Mbit/s)

• Flow 1 (95th percentile 114.56 ms)   • Flow 2 (95th percentile 116.00 ms)   • Flow 3 (95th percentile 117.26 ms)

```
Run 3: Statistics of PCC-Allegro

Start at: 2018-09-25 09:52:16
End at: 2018-09-25 09:52:46
Local clock offset: -6.387 ms
Remote clock offset: -3.26 ms


# Below is generated by plot.py at 2018-09-25 12:12:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.86 Mbit/s
95th percentile per-packet one-way delay: 113.206 ms
Loss rate: 2.36%
-- Flow 1:
Average throughput: 78.88 Mbit/s
95th percentile per-packet one-way delay: 113.196 ms
Loss rate: 2.24%
-- Flow 2:
Average throughput: 8.07 Mbit/s
95th percentile per-packet one-way delay: 112.287 ms
Loss rate: 2.73%
-- Flow 3:
Average throughput: 7.94 Mbit/s
95th percentile per-packet one-way delay: 119.235 ms
Loss rate: 5.36%
```
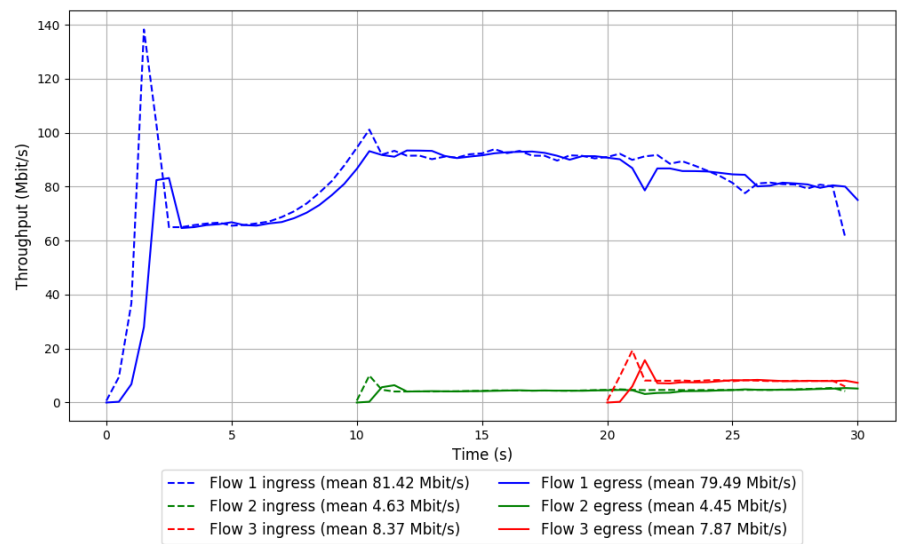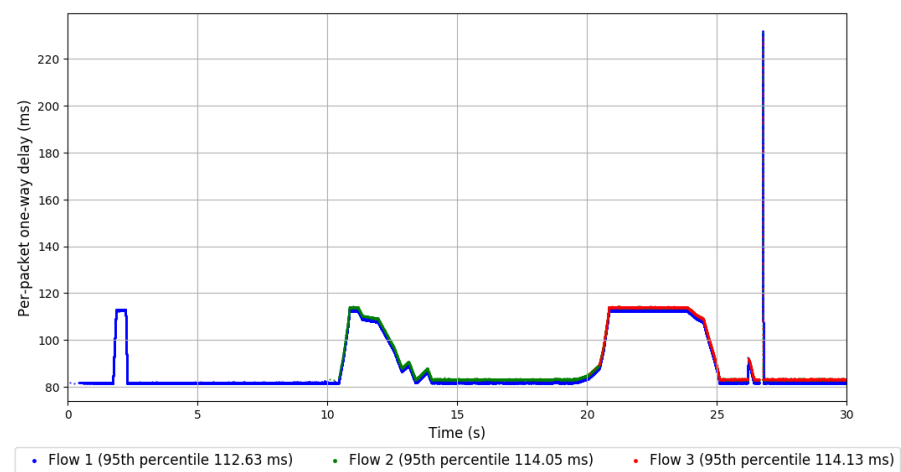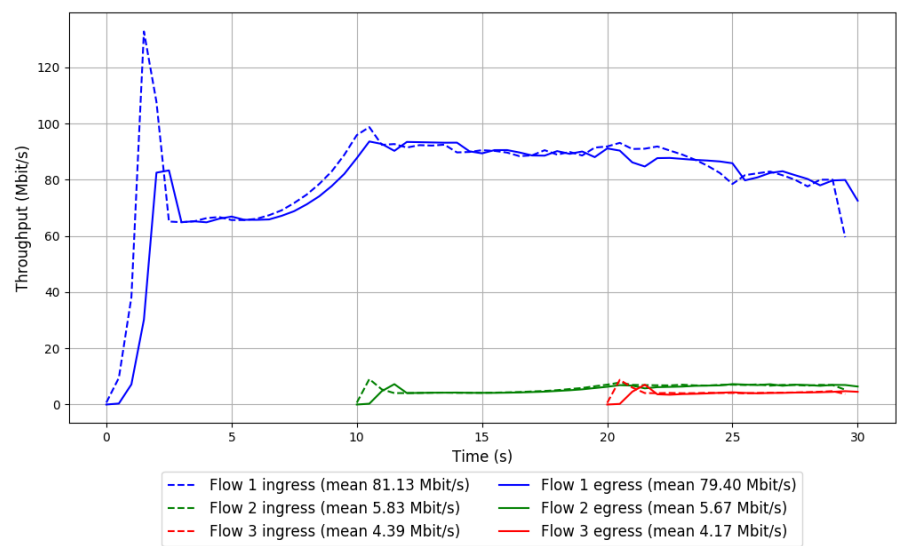
Run 3: Report of PCC-Allegro — Data Link

```
Run 4: Statistics of PCC-Allegro

Start at: 2018-09-25 10:37:32
End at: 2018-09-25 10:38:02
Local clock offset: -7.203 ms
Remote clock offset: 0.86 ms


# Below is generated by plot.py at 2018-09-25 12:12:15
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.05 Mbit/s
95th percentile per-packet one-way delay: 121.556 ms
Loss rate: 2.55%
-- Flow 1:
Average throughput: 79.49 Mbit/s
95th percentile per-packet one-way delay: 121.563 ms
Loss rate: 2.39%
-- Flow 2:
Average throughput: 4.45 Mbit/s
95th percentile per-packet one-way delay: 117.465 ms
Loss rate: 3.94%
-- Flow 3:
Average throughput: 7.87 Mbit/s
95th percentile per-packet one-way delay: 116.987 ms
Loss rate: 5.92%
```
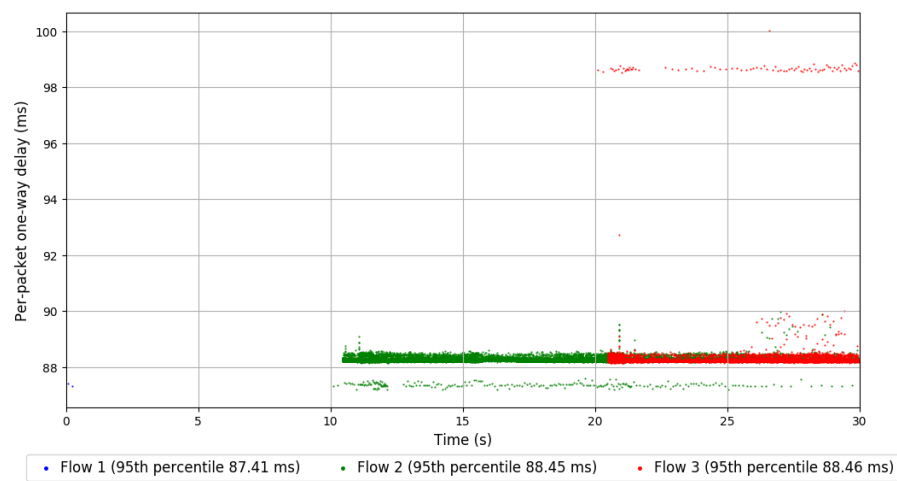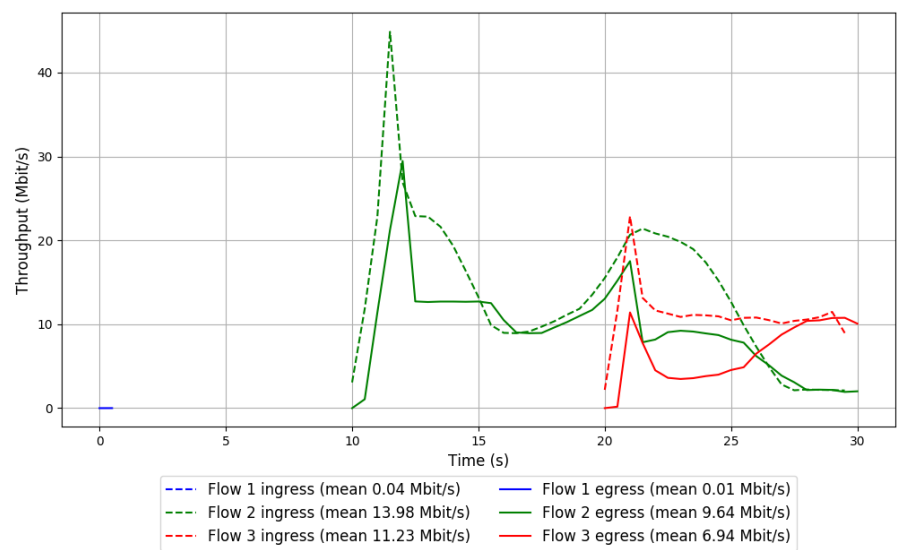
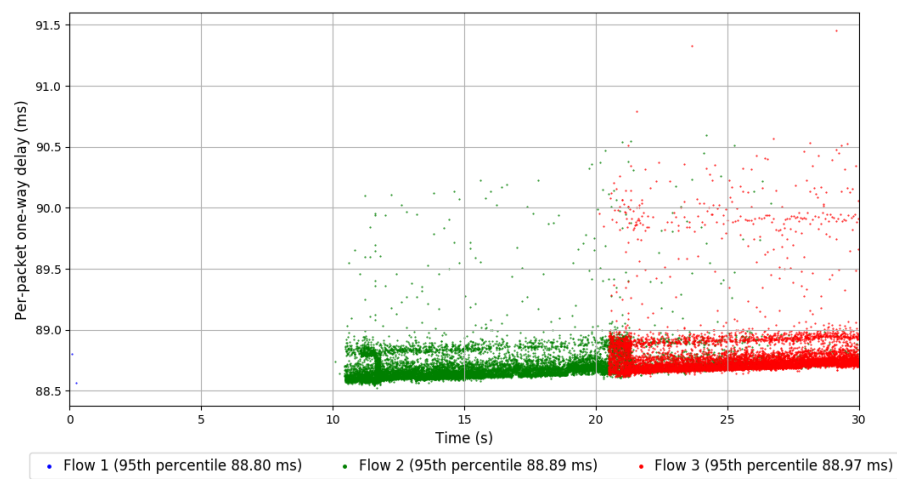Run 4: Report of PCC-Allegro — Data Link

```
Run 5: Statistics of PCC-Allegro

Start at: 2018-09-25 11:23:34
End at: 2018-09-25 11:24:04
Local clock offset: -2.985 ms
Remote clock offset: -3.305 ms


# Below is generated by plot.py at 2018-09-25 12:12:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.54 Mbit/s
95th percentile per-packet one-way delay: 112.655 ms
Loss rate: 2.21%
-- Flow 1:
Average throughput: 79.40 Mbit/s
95th percentile per-packet one-way delay: 112.626 ms
Loss rate: 2.14%
-- Flow 2:
Average throughput: 5.67 Mbit/s
95th percentile per-packet one-way delay: 114.052 ms
Loss rate: 2.68%
-- Flow 3:
Average throughput: 4.17 Mbit/s
95th percentile per-packet one-way delay: 114.130 ms
Loss rate: 5.06%
```

Run 5: Report of PCC-Allegro — Data Link

Flow 1 ingress (mean 81.13 Mbit/s)   Flow 1 egress (mean 79.40 Mbit/s)
Flow 2 ingress (mean 5.83 Mbit/s)   Flow 2 egress (mean 5.67 Mbit/s)
Flow 3 ingress (mean 4.39 Mbit/s)   Flow 3 egress (mean 4.17 Mbit/s)

Flow 1 (95th percentile 112.63 ms)   Flow 2 (95th percentile 114.05 ms)   Flow 3 (95th percentile 114.13 ms)
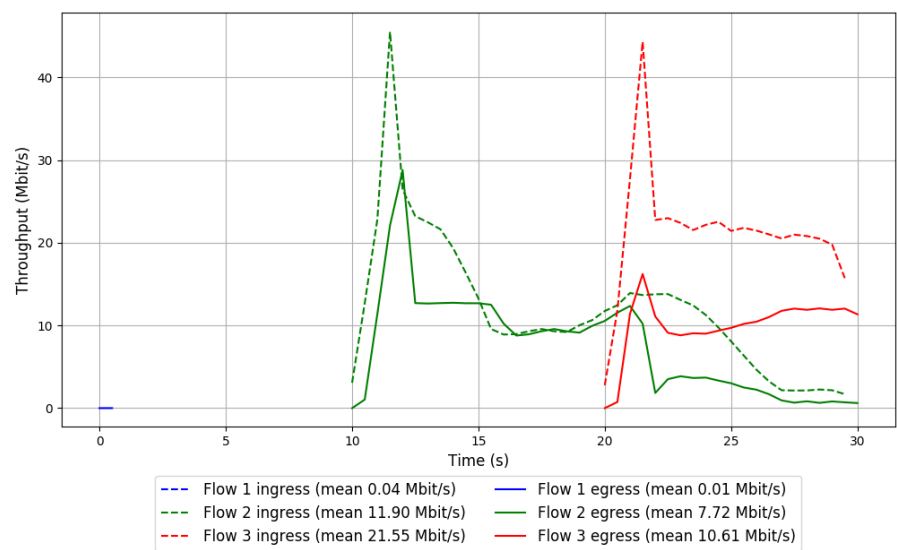
```
Run 1: Statistics of PCC-Expr

Start at: 2018-09-25 08:25:24
End at: 2018-09-25 08:25:54
Local clock offset: -4.323 ms
Remote clock offset: 2.879 ms


# Below is generated by plot.py at 2018-09-25 12:12:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.70 Mbit/s
95th percentile per-packet one-way delay: 88.450 ms
Loss rate: 33.11%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 87.410 ms
Loss rate: 85.71%
-- Flow 2:
Average throughput: 9.64 Mbit/s
95th percentile per-packet one-way delay: 88.446 ms
Loss rate: 31.03%
-- Flow 3:
Average throughput: 6.94 Mbit/s
95th percentile per-packet one-way delay: 88.461 ms
Loss rate: 38.32%
```
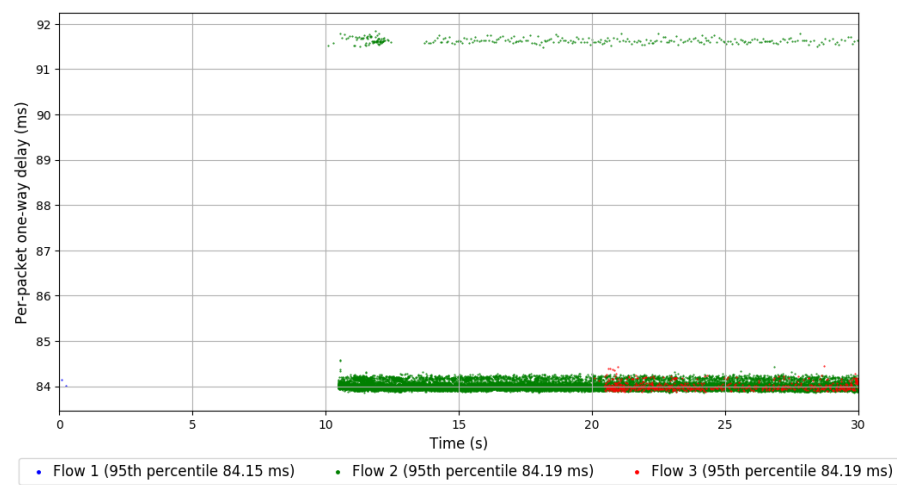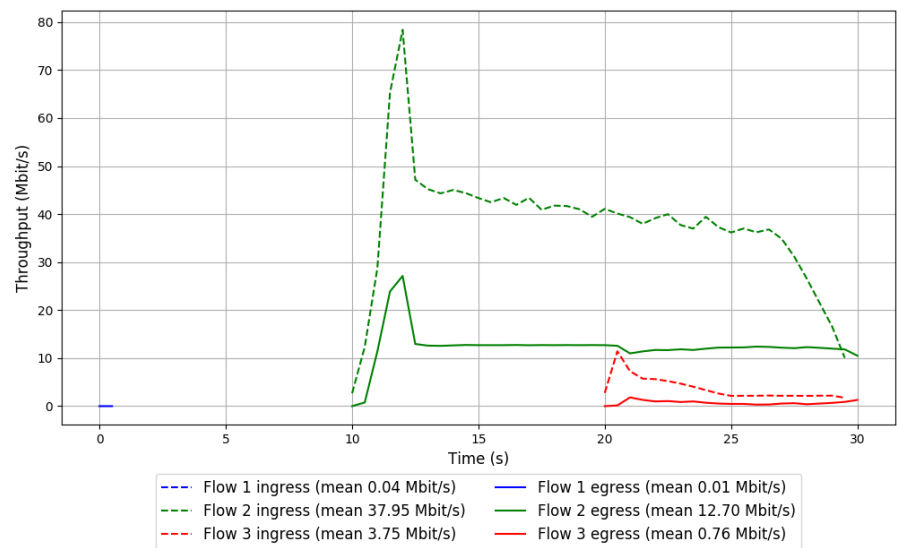
Run 1: Report of PCC-Expr — Data Link

```
Run 2: Statistics of PCC-Expr

Start at: 2018-09-25 09:11:26
End at: 2018-09-25 09:11:56
Local clock offset: -8.138 ms
Remote clock offset: 2.348 ms


# Below is generated by plot.py at 2018-09-25 12:12:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.63 Mbit/s
95th percentile per-packet one-way delay: 88.931 ms
Loss rate: 42.60%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 88.800 ms
Loss rate: 85.71%
-- Flow 2:
Average throughput: 7.72 Mbit/s
95th percentile per-packet one-way delay: 88.888 ms
Loss rate: 35.24%
-- Flow 3:
Average throughput: 10.61 Mbit/s
95th percentile per-packet one-way delay: 88.966 ms
Loss rate: 50.78%
```

Run 2: Report of PCC-Expr — Data Link

```
Run 3: Statistics of PCC-Expr

Start at: 2018-09-25 09:58:04
End at: 2018-09-25 09:58:34
Local clock offset: -7.707 ms
Remote clock offset: -0.596 ms


# Below is generated by plot.py at 2018-09-25 12:12:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.69 Mbit/s
95th percentile per-packet one-way delay: 84.190 ms
Loss rate: 67.17%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 84.147 ms
Loss rate: 85.71%
-- Flow 2:
Average throughput: 12.70 Mbit/s
95th percentile per-packet one-way delay: 84.190 ms
Loss rate: 66.55%
-- Flow 3:
Average throughput: 0.76 Mbit/s
95th percentile per-packet one-way delay: 84.187 ms
Loss rate: 79.79%
```
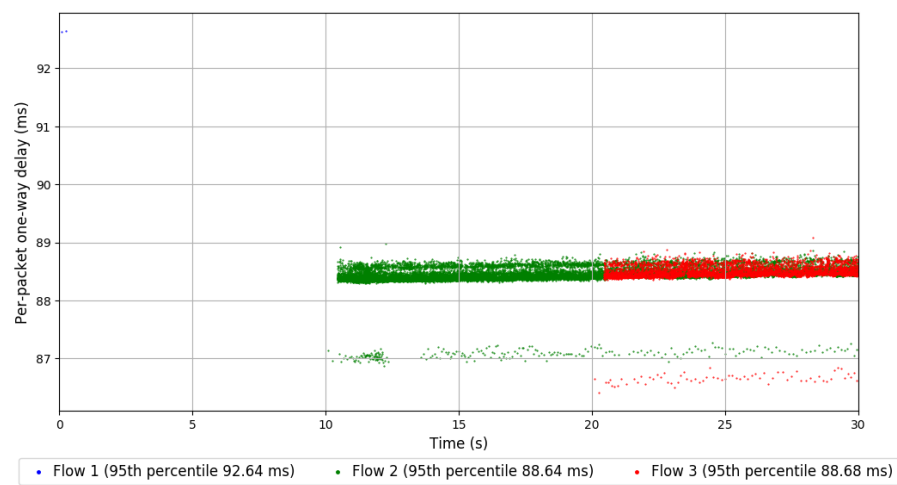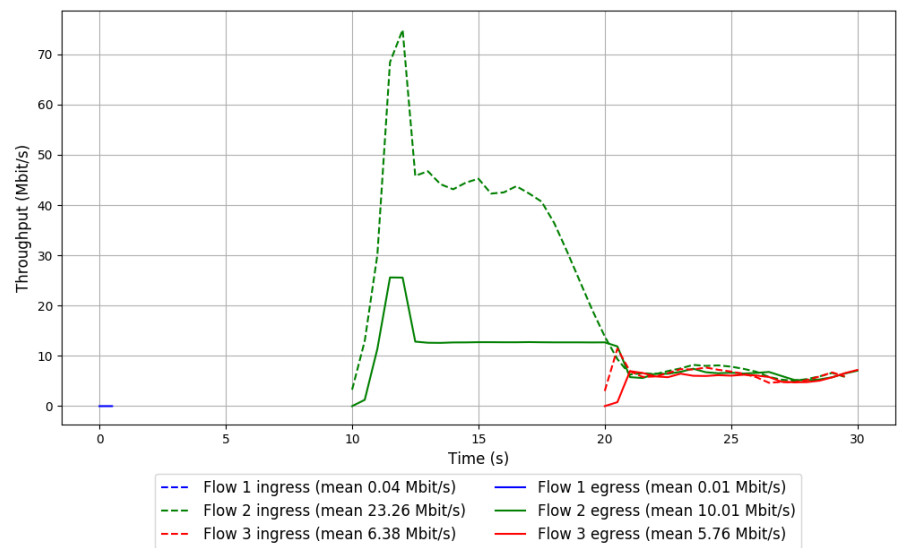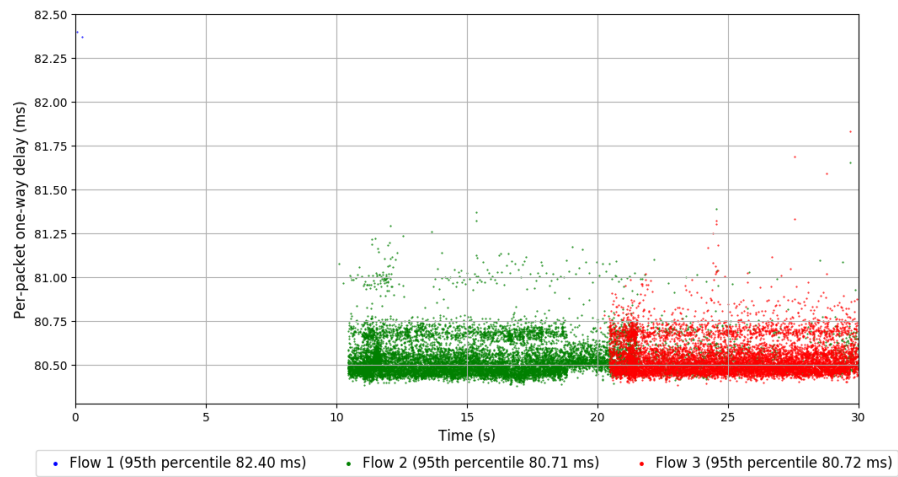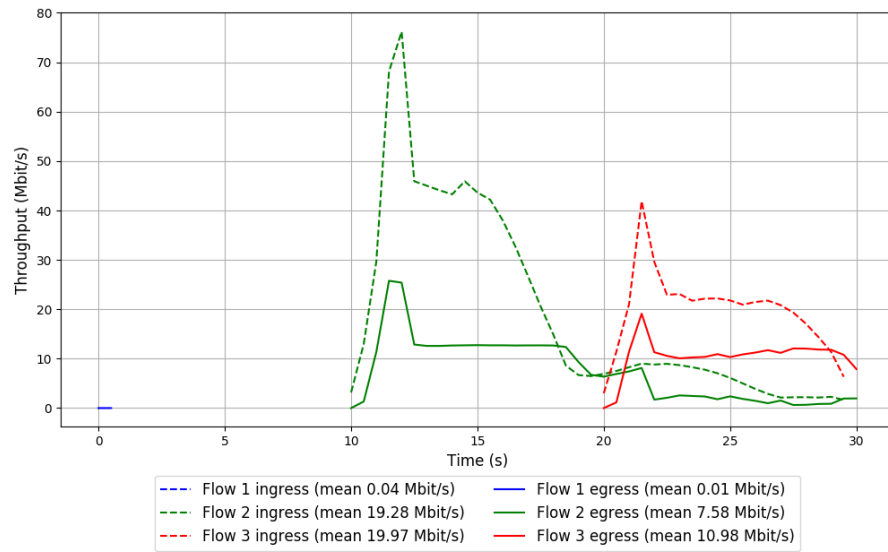
Run 3: Report of PCC-Expr — Data Link

- - - - Flow 1 ingress (mean 0.04 Mbit/s) ——— Flow 1 egress (mean 0.01 Mbit/s)
- - - - Flow 2 ingress (mean 37.95 Mbit/s) ——— Flow 2 egress (mean 12.70 Mbit/s)
- - - - Flow 3 ingress (mean 3.75 Mbit/s) ——— Flow 3 egress (mean 0.76 Mbit/s)

• Flow 1 (95th percentile 84.15 ms)   • Flow 2 (95th percentile 84.19 ms)   • Flow 3 (95th percentile 84.19 ms)

```
Run 4: Statistics of PCC-Expr

Start at: 2018-09-25 10:43:02
End at: 2018-09-25 10:43:32
Local clock offset: -6.567 ms
Remote clock offset: 1.702 ms


# Below is generated by plot.py at 2018-09-25 12:12:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.56 Mbit/s
95th percentile per-packet one-way delay: 88.653 ms
Loss rate: 51.32%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 92.643 ms
Loss rate: 85.71%
-- Flow 2:
Average throughput: 10.01 Mbit/s
95th percentile per-packet one-way delay: 88.642 ms
Loss rate: 56.98%
-- Flow 3:
Average throughput: 5.76 Mbit/s
95th percentile per-packet one-way delay: 88.677 ms
Loss rate: 9.80%
```
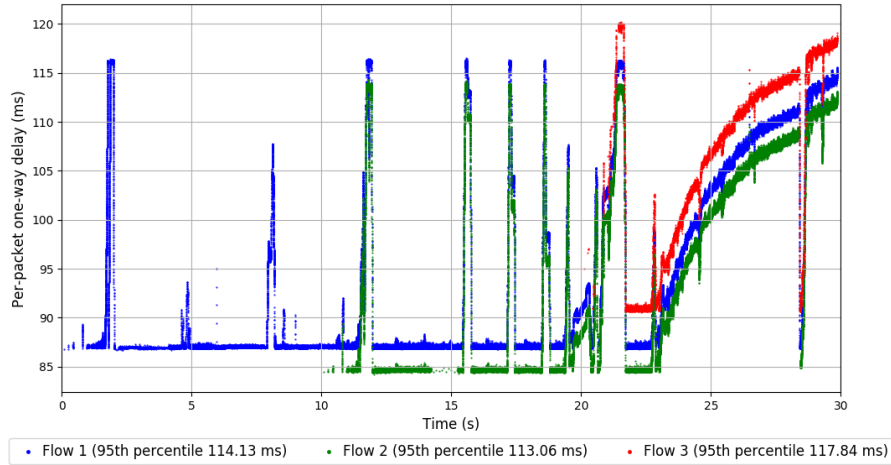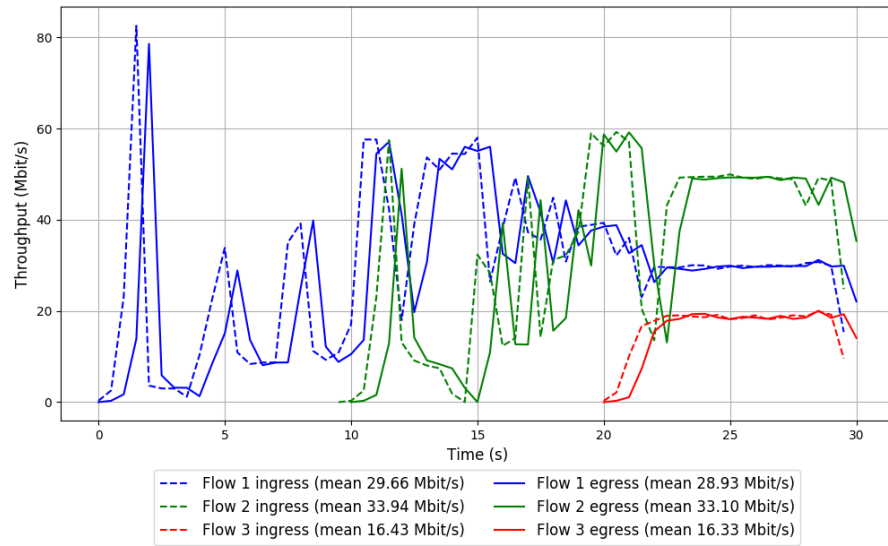
Run 4: Report of PCC-Expr — Data Link

- - - Flow 1 ingress (mean 0.04 Mbit/s)   ⎯⎯⎯ Flow 1 egress (mean 0.01 Mbit/s)
- - - Flow 2 ingress (mean 23.26 Mbit/s)   ⎯⎯⎯ Flow 2 egress (mean 10.01 Mbit/s)
- - - Flow 3 ingress (mean 6.38 Mbit/s)   ⎯⎯⎯ Flow 3 egress (mean 5.76 Mbit/s)

- Flow 1 (95th percentile 92.64 ms)   • Flow 2 (95th percentile 88.64 ms)   • Flow 3 (95th percentile 88.68 ms)

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```
Run 5: Statistics of PCC-Expr

Start at: 2018-09-25 11:29:22
End at: 2018-09-25 11:29:52
Local clock offset: -2.026 ms
Remote clock offset: -3.26 ms


# Below is generated by plot.py at 2018-09-25 12:12:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.67 Mbit/s
95th percentile per-packet one-way delay: 80.716 ms
Loss rate: 55.35%
-- Flow 1:
Average throughput: 0.01 Mbit/s
95th percentile per-packet one-way delay: 82.398 ms
Loss rate: 85.71%
-- Flow 2:
Average throughput: 7.58 Mbit/s
95th percentile per-packet one-way delay: 80.712 ms
Loss rate: 60.68%
-- Flow 3:
Average throughput: 10.98 Mbit/s
95th percentile per-packet one-way delay: 80.722 ms
Loss rate: 44.99%
```
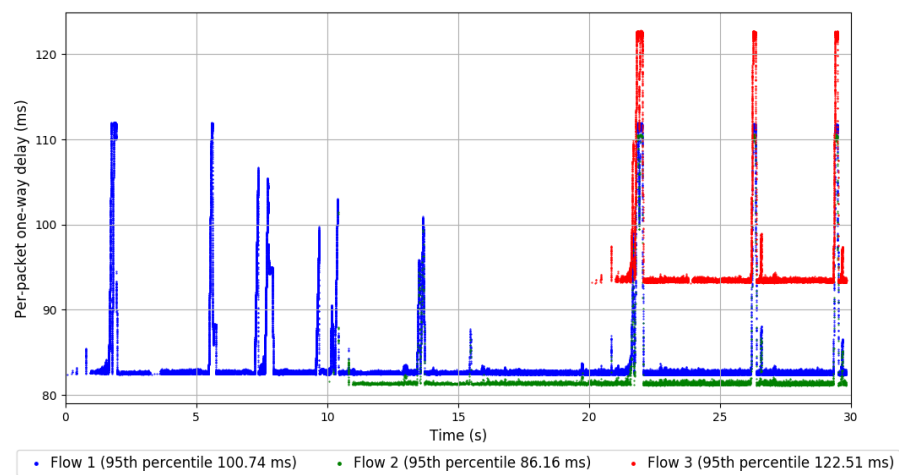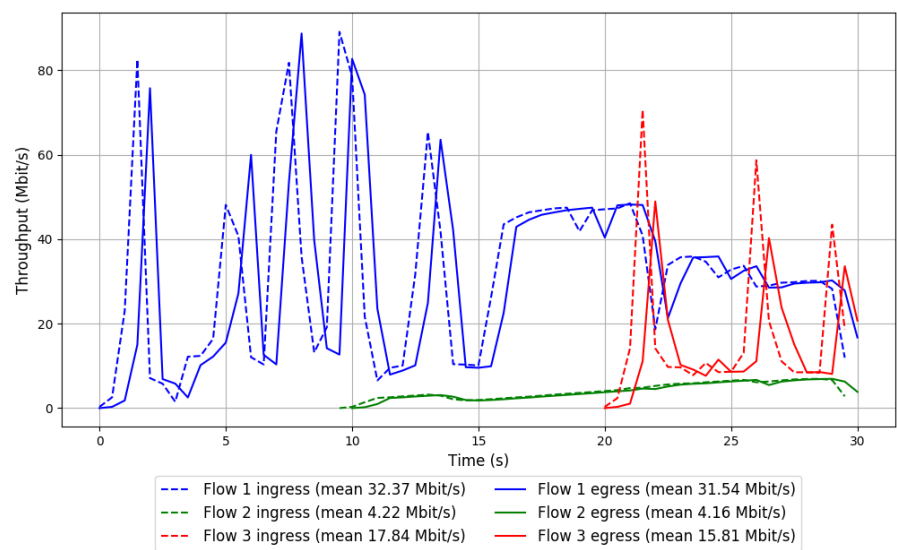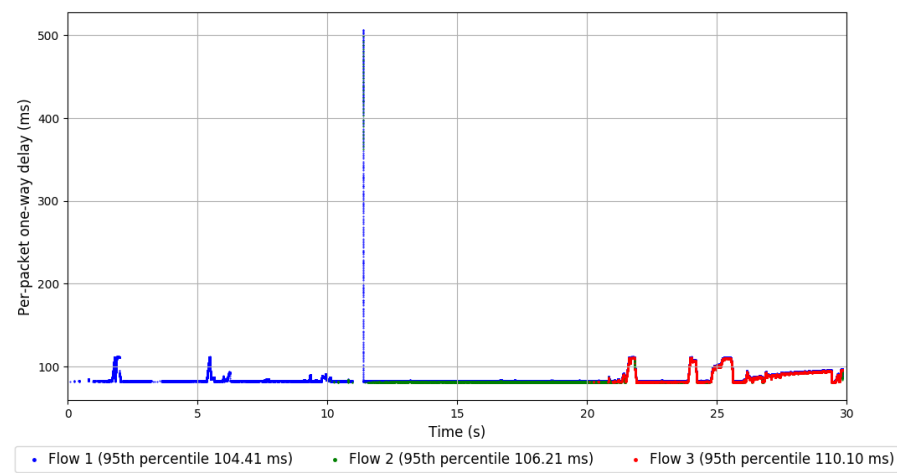
Run 5: Report of PCC-Expr — Data Link

```
Run 1: Statistics of QUIC Cubic

Start at: 2018-09-25 08:56:02
End at: 2018-09-25 08:56:32
Local clock offset: -7.345 ms
Remote clock offset: 1.197 ms


# Below is generated by plot.py at 2018-09-25 12:12:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 56.27 Mbit/s
95th percentile per-packet one-way delay: 114.036 ms
Loss rate: 2.18%
-- Flow 1:
Average throughput: 28.93 Mbit/s
95th percentile per-packet one-way delay: 114.133 ms
Loss rate: 2.38%
-- Flow 2:
Average throughput: 33.10 Mbit/s
95th percentile per-packet one-way delay: 113.063 ms
Loss rate: 2.33%
-- Flow 3:
Average throughput: 16.33 Mbit/s
95th percentile per-packet one-way delay: 117.843 ms
Loss rate: 0.47%
```

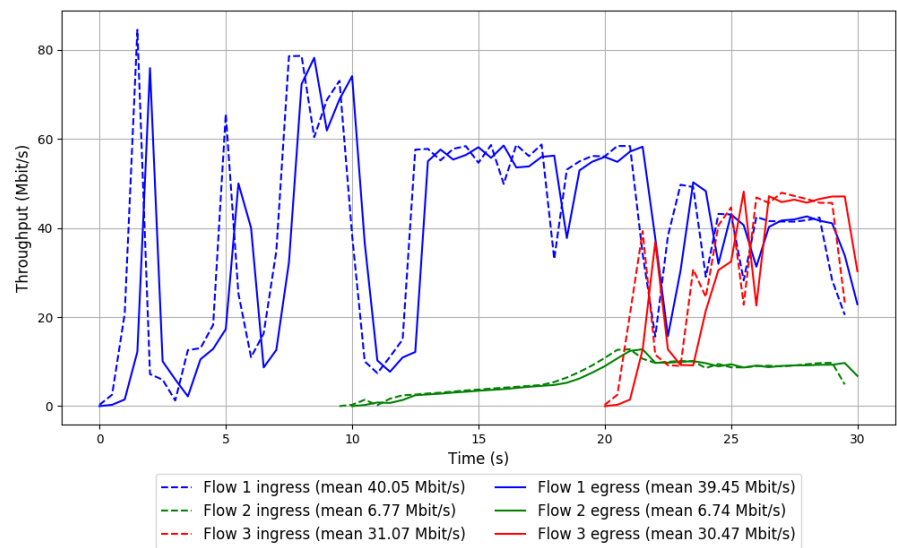Run 1: Report of QUIC Cubic — Data Link

```
Run 2: Statistics of QUIC Cubic

Start at: 2018-09-25 09:42:57
End at: 2018-09-25 09:43:27
Local clock offset: -5.471 ms
Remote clock offset: -3.227 ms


# Below is generated by plot.py at 2018-09-25 12:12:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 39.47 Mbit/s
95th percentile per-packet one-way delay: 110.189 ms
Loss rate: 3.76%
-- Flow 1:
Average throughput: 31.54 Mbit/s
95th percentile per-packet one-way delay: 100.736 ms
Loss rate: 2.56%
-- Flow 2:
Average throughput: 4.16 Mbit/s
95th percentile per-packet one-way delay: 86.164 ms
Loss rate: 1.45%
-- Flow 3:
Average throughput: 15.81 Mbit/s
95th percentile per-packet one-way delay: 122.509 ms
Loss rate: 11.48%
```

Run 2: Report of QUIC Cubic — Data Link

```
Run 3: Statistics of QUIC Cubic

Start at: 2018-09-25 10:29:01
End at: 2018-09-25 10:29:31
Local clock offset: -7.093 ms
Remote clock offset: -4.396 ms


# Below is generated by plot.py at 2018-09-25 12:12:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 53.90 Mbit/s
95th percentile per-packet one-way delay: 107.775 ms
Loss rate: 1.46%
-- Flow 1:
Average throughput: 39.45 Mbit/s
95th percentile per-packet one-way delay: 104.413 ms
Loss rate: 1.49%
-- Flow 2:
Average throughput: 6.74 Mbit/s
95th percentile per-packet one-way delay: 106.209 ms
Loss rate: 0.44%
-- Flow 3:
Average throughput: 30.47 Mbit/s
95th percentile per-packet one-way delay: 110.098 ms
Loss rate: 1.79%
```
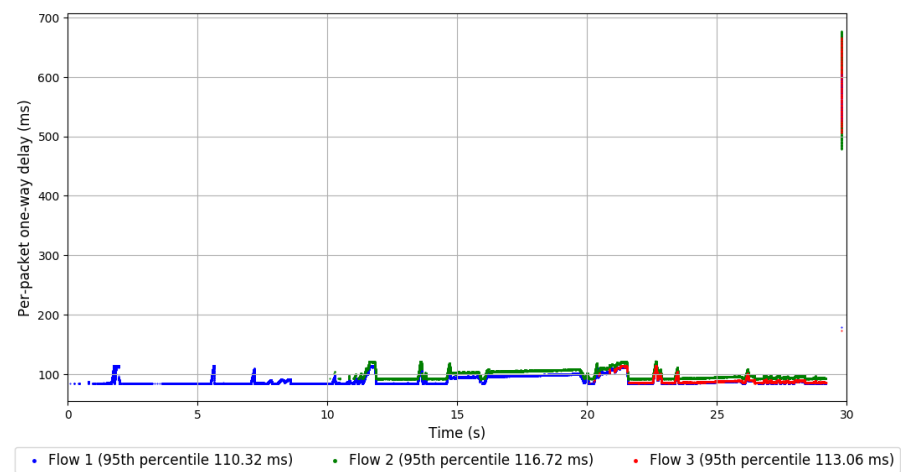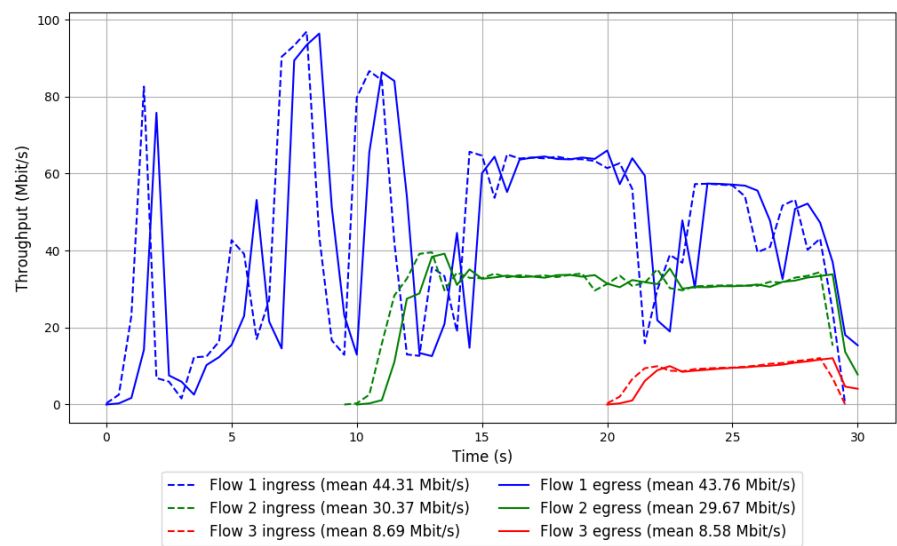
Run 3: Report of QUIC Cubic — Data Link

Flow 1 ingress (mean 40.05 Mbit/s) — Flow 1 egress (mean 39.45 Mbit/s)
Flow 2 ingress (mean 6.77 Mbit/s) — Flow 2 egress (mean 6.74 Mbit/s)
Flow 3 ingress (mean 31.07 Mbit/s) — Flow 3 egress (mean 30.47 Mbit/s)

Flow 1 (95th percentile 104.41 ms) — Flow 2 (95th percentile 106.21 ms) — Flow 3 (95th percentile 110.10 ms)

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```
Run 4: Statistics of QUIC Cubic

Start at: 2018-09-25 11:14:21
End at: 2018-09-25 11:14:51
Local clock offset: -2.277 ms
Remote clock offset: 0.758 ms


# Below is generated by plot.py at 2018-09-25 12:12:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 66.24 Mbit/s
95th percentile per-packet one-way delay: 112.195 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 43.76 Mbit/s
95th percentile per-packet one-way delay: 110.317 ms
Loss rate: 0.91%
-- Flow 2:
Average throughput: 29.67 Mbit/s
95th percentile per-packet one-way delay: 116.717 ms
Loss rate: 0.37%
-- Flow 3:
Average throughput: 8.58 Mbit/s
95th percentile per-packet one-way delay: 113.059 ms
Loss rate: 0.27%
```
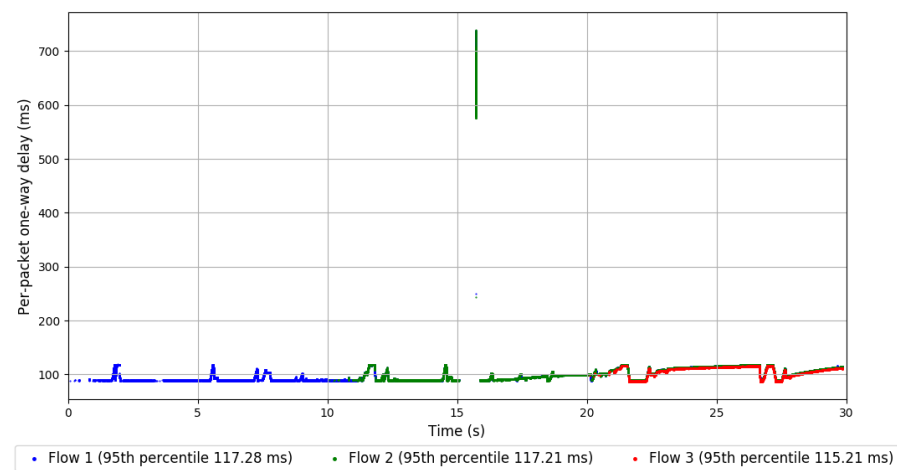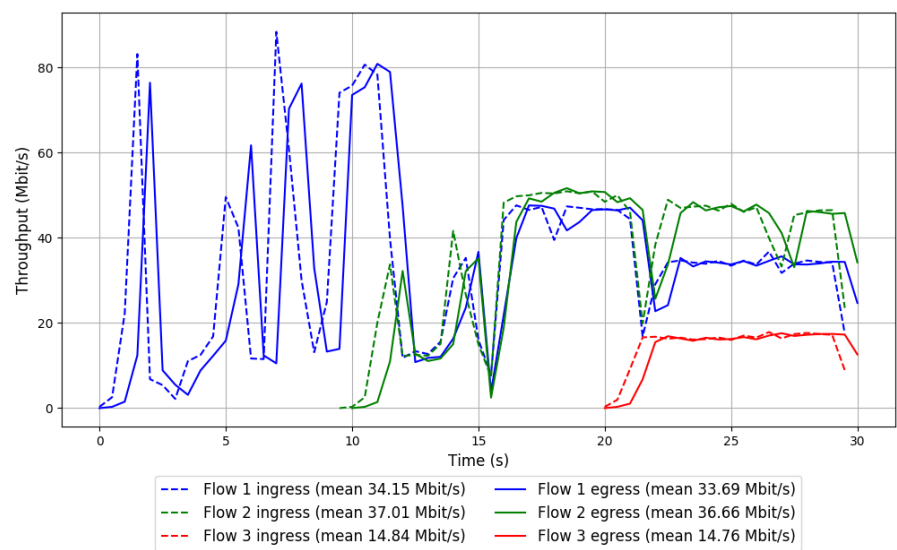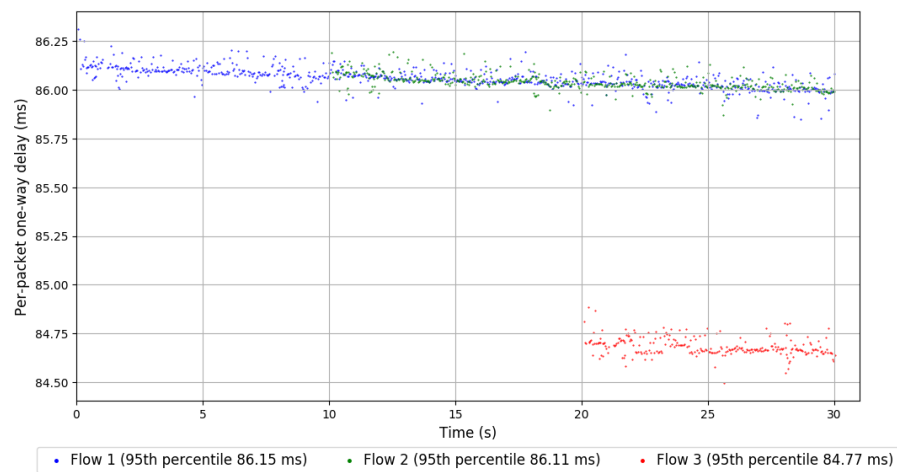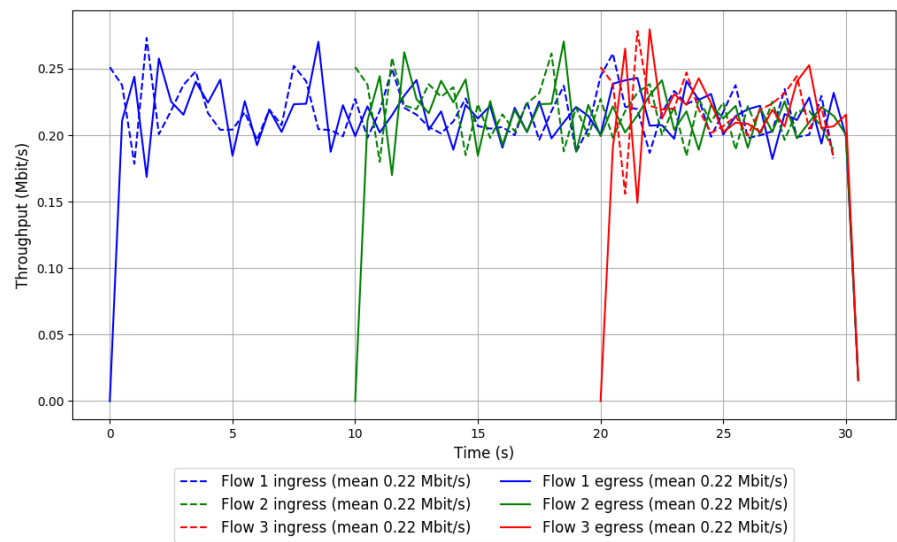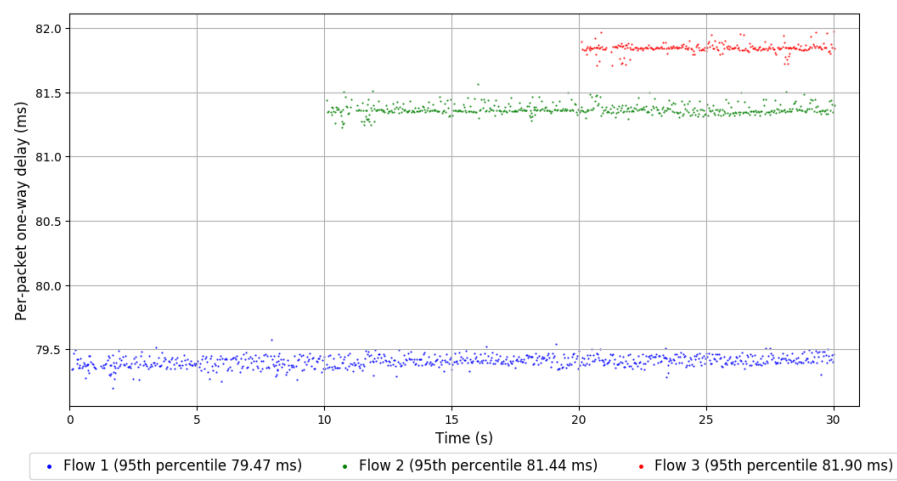
Run 4: Report of QUIC Cubic — Data Link

- - - Flow 1 ingress (mean 44.31 Mbit/s) ——— Flow 1 egress (mean 43.76 Mbit/s)
- - - Flow 2 ingress (mean 30.37 Mbit/s) ——— Flow 2 egress (mean 29.67 Mbit/s)
- - - Flow 3 ingress (mean 8.69 Mbit/s) ——— Flow 3 egress (mean 8.58 Mbit/s)

• Flow 1 (95th percentile 110.32 ms)   • Flow 2 (95th percentile 116.72 ms)   • Flow 3 (95th percentile 113.06 ms)

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```
Run 5: Statistics of QUIC Cubic

Start at: 2018-09-25 12:01:58
End at: 2018-09-25 12:02:28
Local clock offset: -3.925 ms
Remote clock offset: 1.907 ms


# Below is generated by plot.py at 2018-09-25 12:12:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 62.87 Mbit/s
95th percentile per-packet one-way delay: 117.167 ms
Loss rate: 1.03%
-- Flow 1:
Average throughput: 33.69 Mbit/s
95th percentile per-packet one-way delay: 117.278 ms
Loss rate: 1.27%
-- Flow 2:
Average throughput: 36.66 Mbit/s
95th percentile per-packet one-way delay: 117.210 ms
Loss rate: 0.83%
-- Flow 3:
Average throughput: 14.76 Mbit/s
95th percentile per-packet one-way delay: 115.208 ms
Loss rate: 0.38%
```

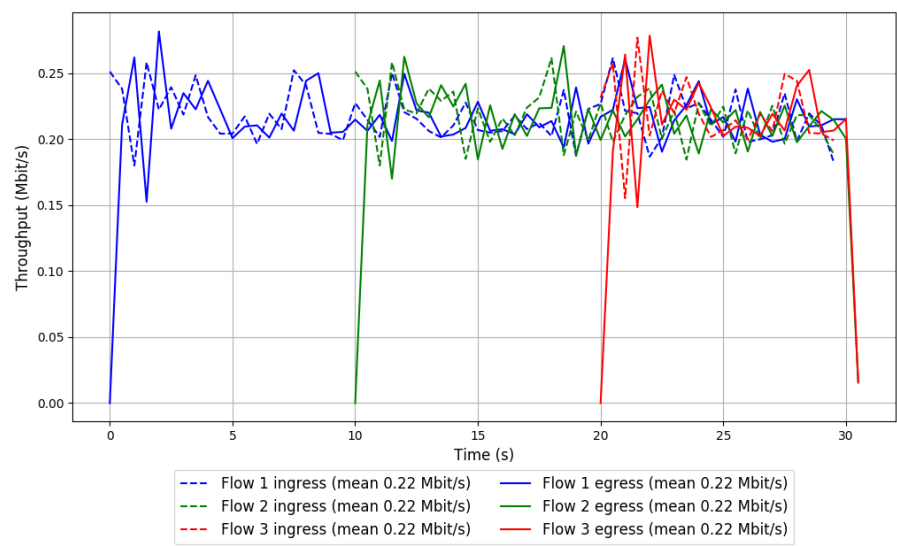Run 5: Report of QUIC Cubic — Data Link

```
Run 1: Statistics of SCReAM

Start at: 2018-09-25 08:42:27
End at: 2018-09-25 08:42:57
Local clock offset: -4.966 ms
Remote clock offset: 1.304 ms

# Below is generated by plot.py at 2018-09-25 12:12:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 86.130 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.147 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 86.109 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 84.769 ms
Loss rate: 0.00%
```
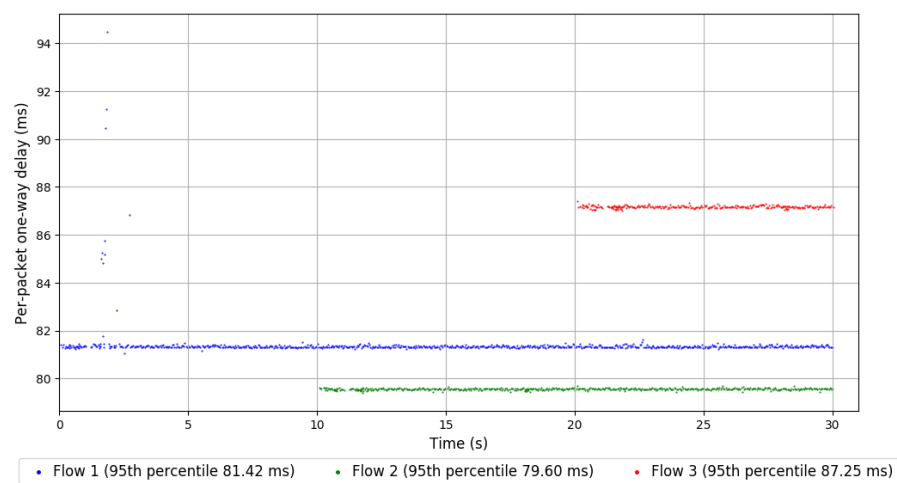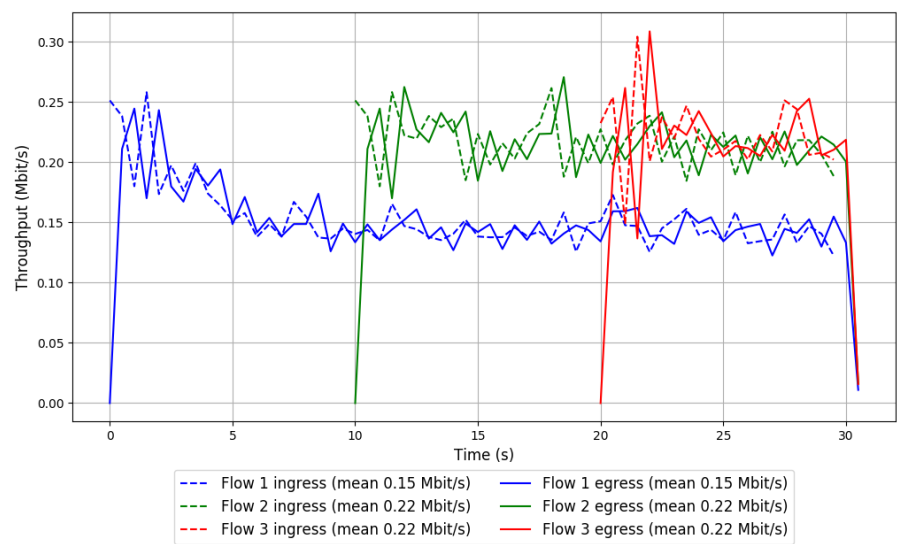
Run 1: Report of SCReAM — Data Link

```
Run 2: Statistics of SCReAM

Start at: 2018-09-25 09:28:24
End at: 2018-09-25 09:28:54
Local clock offset: -4.1 ms
Remote clock offset: -4.226 ms

# Below is generated by plot.py at 2018-09-25 12:12:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 81.853 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 79.471 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 81.444 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 81.896 ms
Loss rate: 0.00%
```
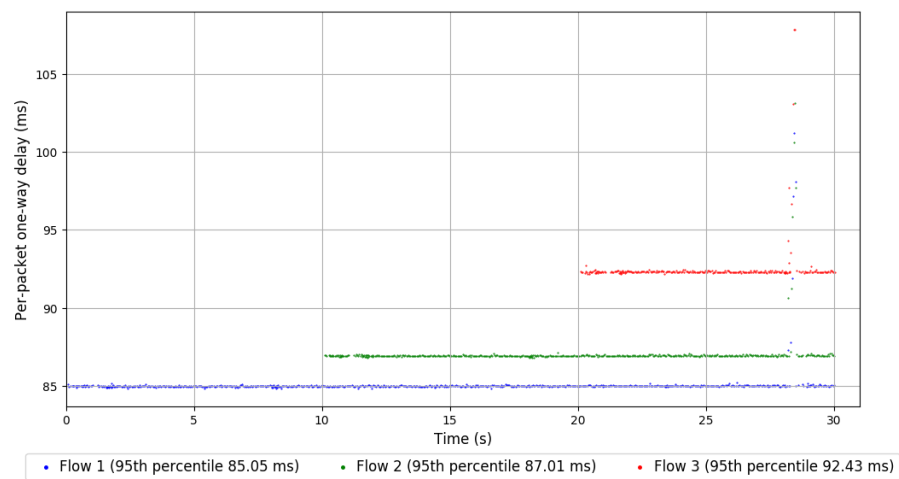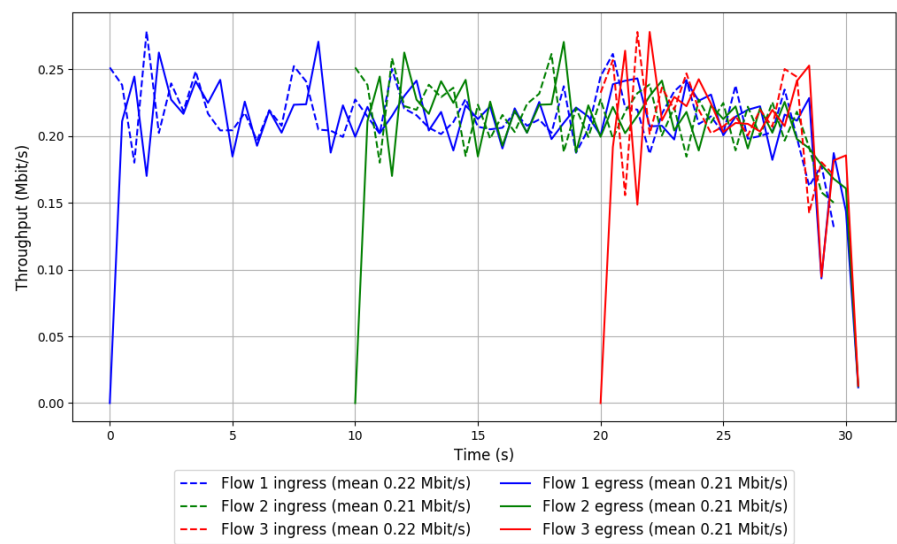
Run 2: Report of SCReAM — Data Link

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```
Run 3: Statistics of SCReAM

Start at: 2018-09-25 10:15:09
End at: 2018-09-25 10:15:39
Local clock offset: -7.202 ms
Remote clock offset: -4.478 ms


# Below is generated by plot.py at 2018-09-25 12:12:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 87.187 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 81.423 ms
Loss rate: 0.39%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 79.604 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 87.253 ms
Loss rate: 0.00%
```
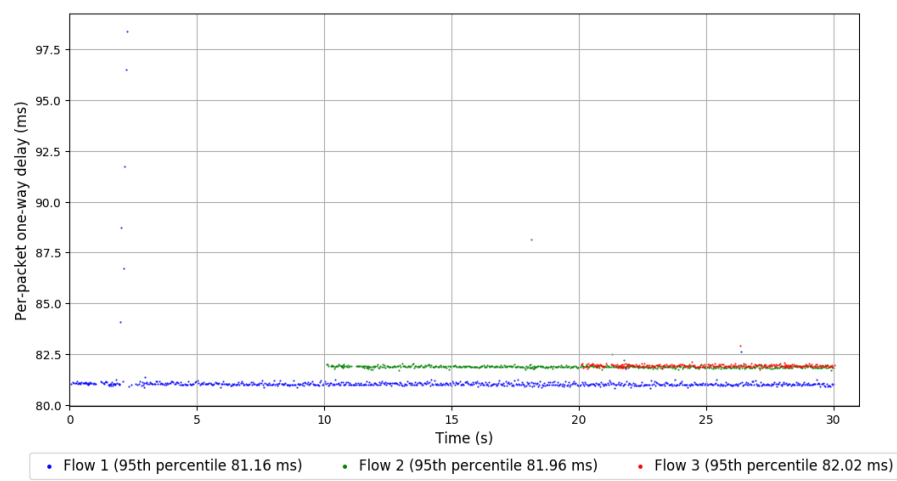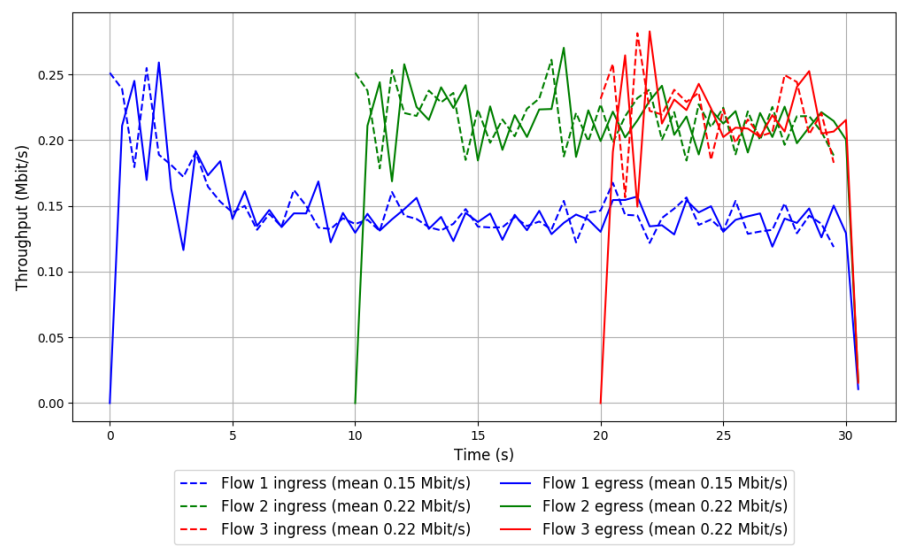
Run 3: Report of SCReAM — Data Link

```
Run 4: Statistics of SCReAM

Start at: 2018-09-25 11:00:39
End at: 2018-09-25 11:01:09
Local clock offset: -2.776 ms
Remote clock offset: 0.748 ms


# Below is generated by plot.py at 2018-09-25 12:12:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 92.329 ms
Loss rate: 0.61%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 85.050 ms
Loss rate: 0.50%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 87.011 ms
Loss rate: 0.45%
-- Flow 3:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 92.426 ms
Loss rate: 1.24%
```
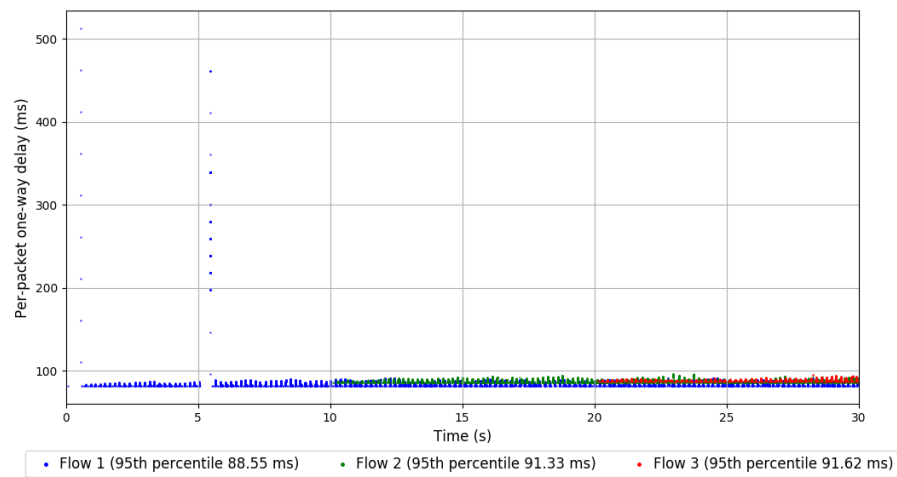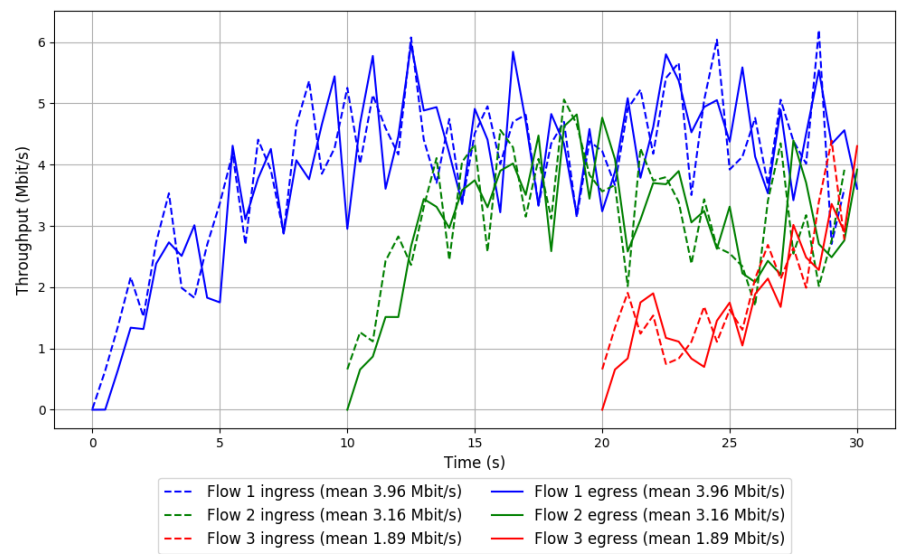
Run 4: Report of SCReAM — Data Link

```
Run 5: Statistics of SCReAM

Start at: 2018-09-25 11:48:08
End at: 2018-09-25 11:48:38
Local clock offset: -3.527 ms
Remote clock offset: -4.347 ms


# Below is generated by plot.py at 2018-09-25 12:12:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.37 Mbit/s
95th percentile per-packet one-way delay: 81.977 ms
Loss rate: 0.38%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 81.156 ms
Loss rate: 0.93%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 81.960 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 82.022 ms
Loss rate: 0.00%
```

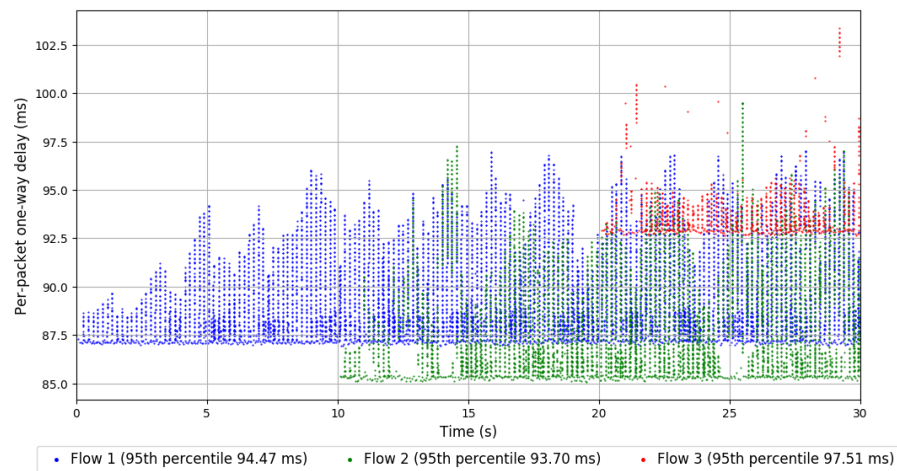# Run 5: Report of SCReAM — Data Link

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```
Run 1: Statistics of Sprout

Start at: 2018-09-25 08:45:21
End at: 2018-09-25 08:45:51
Local clock offset: -6.45 ms
Remote clock offset: -3.883 ms


# Below is generated by plot.py at 2018-09-25 12:12:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.68 Mbit/s
95th percentile per-packet one-way delay: 90.537 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 3.96 Mbit/s
95th percentile per-packet one-way delay: 88.550 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 3.16 Mbit/s
95th percentile per-packet one-way delay: 91.335 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 91.620 ms
Loss rate: 0.00%
```
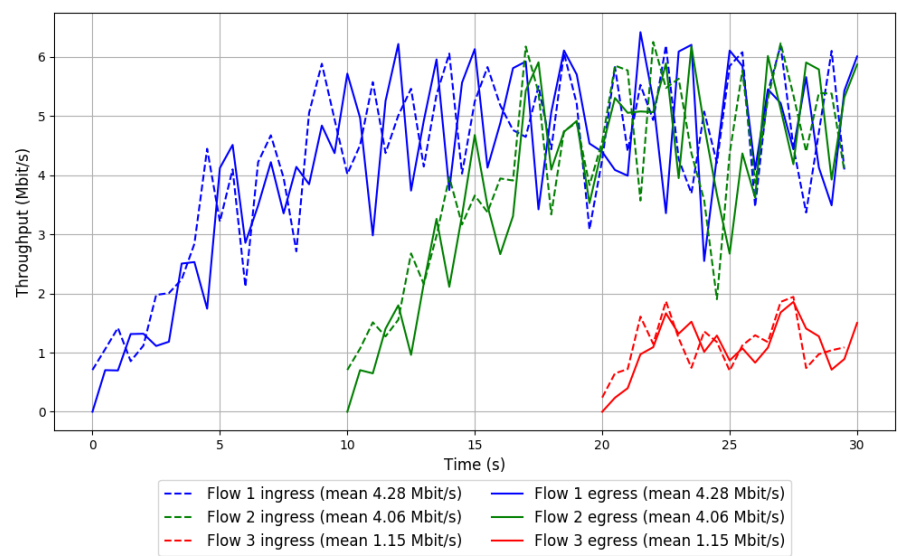
Run 1: Report of Sprout — Data Link

```
Run 2: Statistics of Sprout

Start at: 2018-09-25 09:31:21
End at: 2018-09-25 09:31:51
Local clock offset: -4.736 ms
Remote clock offset: 0.937 ms


# Below is generated by plot.py at 2018-09-25 12:12:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.36 Mbit/s
95th percentile per-packet one-way delay: 94.566 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 4.28 Mbit/s
95th percentile per-packet one-way delay: 94.473 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 4.06 Mbit/s
95th percentile per-packet one-way delay: 93.698 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 1.15 Mbit/s
95th percentile per-packet one-way delay: 97.514 ms
Loss rate: 0.00%
```
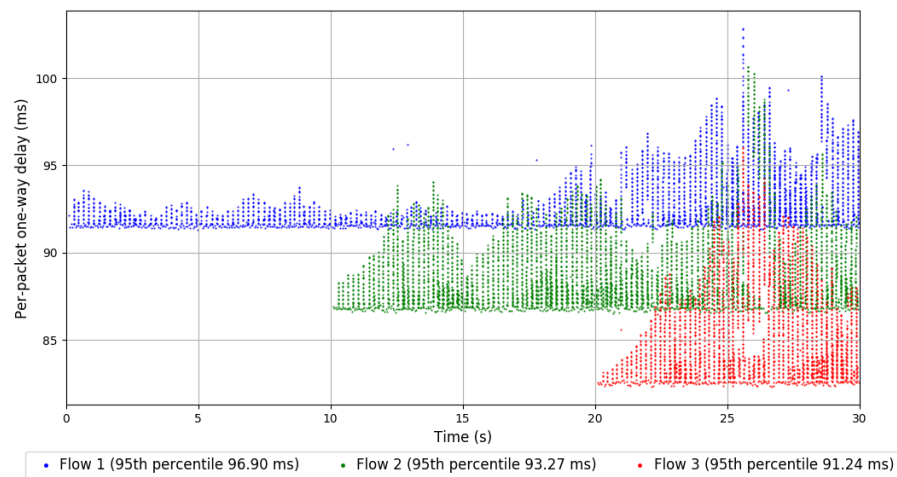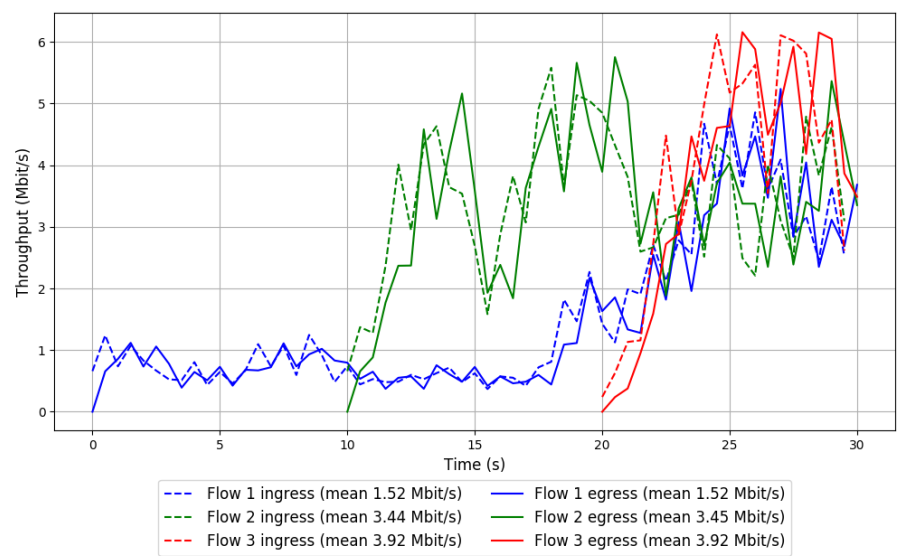
Run 2: Report of Sprout — Data Link

```
Run 3: Statistics of Sprout

Start at: 2018-09-25 10:18:12
End at: 2018-09-25 10:18:42
Local clock offset: -7.192 ms
Remote clock offset: -3.189 ms


# Below is generated by plot.py at 2018-09-25 12:12:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.11 Mbit/s
95th percentile per-packet one-way delay: 95.409 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.52 Mbit/s
95th percentile per-packet one-way delay: 96.896 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 3.45 Mbit/s
95th percentile per-packet one-way delay: 93.268 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 3.92 Mbit/s
95th percentile per-packet one-way delay: 91.241 ms
Loss rate: 0.00%
```
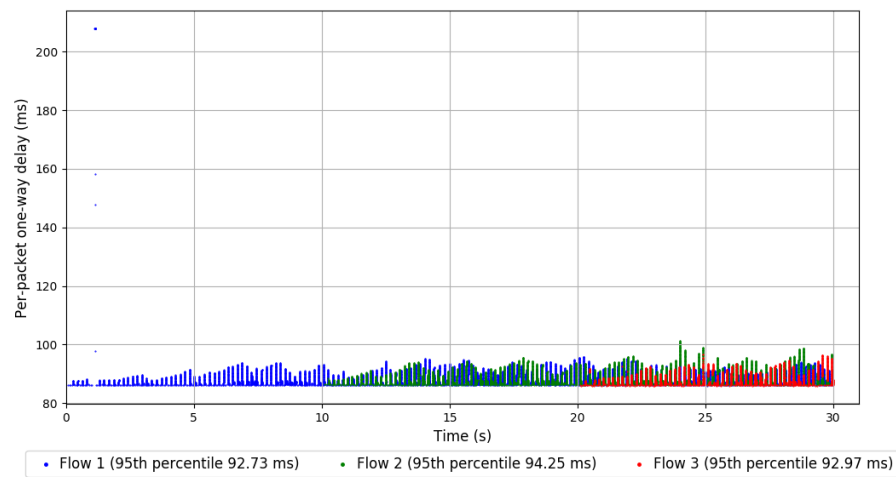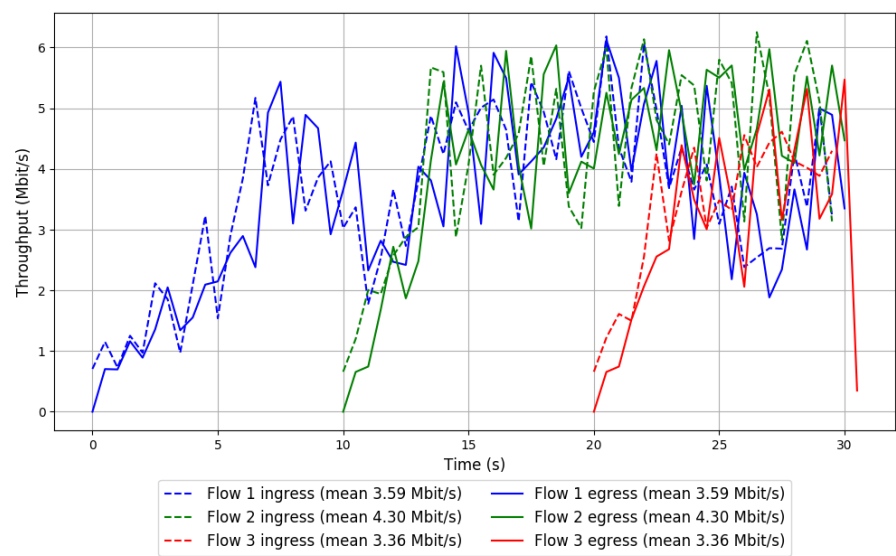
Run 3: Report of Sprout — Data Link

```
Run 4: Statistics of Sprout

Start at: 2018-09-25 11:03:18
End at: 2018-09-25 11:03:48
Local clock offset: -2.581 ms
Remote clock offset: 0.742 ms


# Below is generated by plot.py at 2018-09-25 12:12:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.55 Mbit/s
95th percentile per-packet one-way delay: 93.348 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 3.59 Mbit/s
95th percentile per-packet one-way delay: 92.734 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 4.30 Mbit/s
95th percentile per-packet one-way delay: 94.248 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 3.36 Mbit/s
95th percentile per-packet one-way delay: 92.966 ms
Loss rate: 0.00%
```
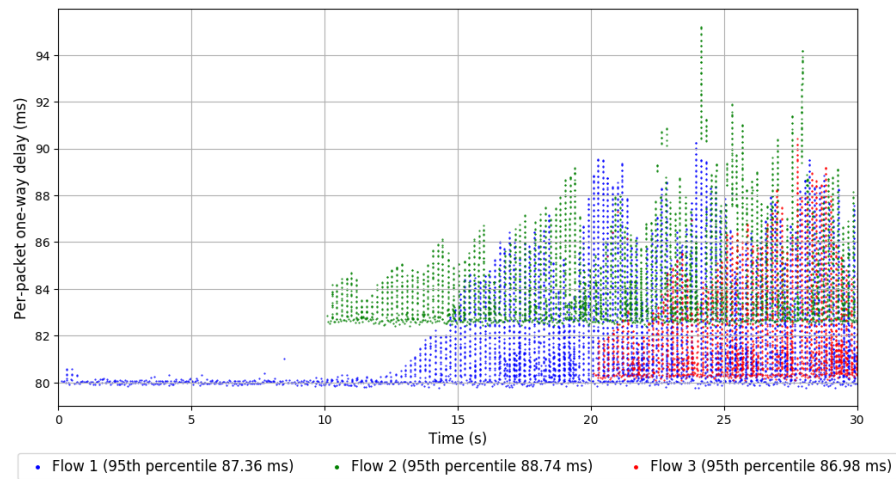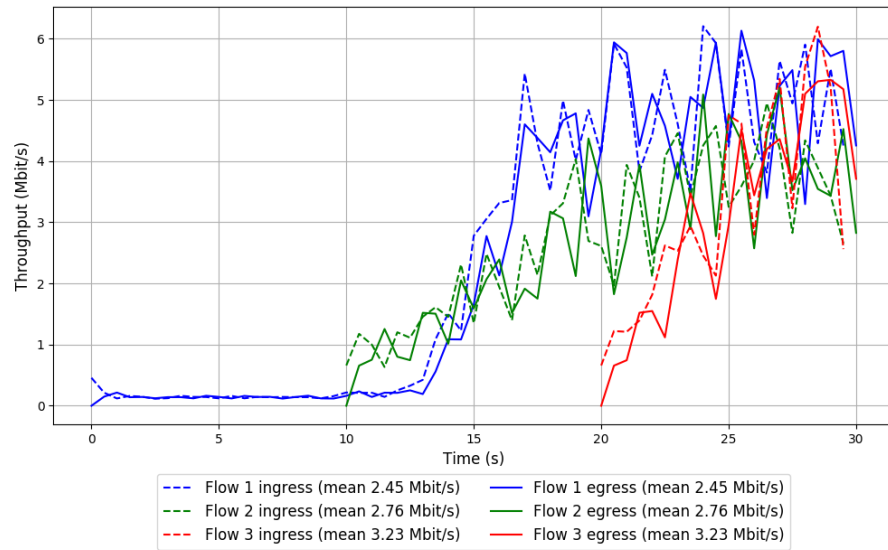
Run 4: Report of Sprout — Data Link

```
Run 5: Statistics of Sprout

Start at: 2018-09-25 11:51:11
End at: 2018-09-25 11:51:41
Local clock offset: -3.686 ms
Remote clock offset: -4.427 ms


# Below is generated by plot.py at 2018-09-25 12:12:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.36 Mbit/s
95th percentile per-packet one-way delay: 87.830 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 2.45 Mbit/s
95th percentile per-packet one-way delay: 87.358 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 2.76 Mbit/s
95th percentile per-packet one-way delay: 88.744 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 3.23 Mbit/s
95th percentile per-packet one-way delay: 86.979 ms
Loss rate: 0.00%
```
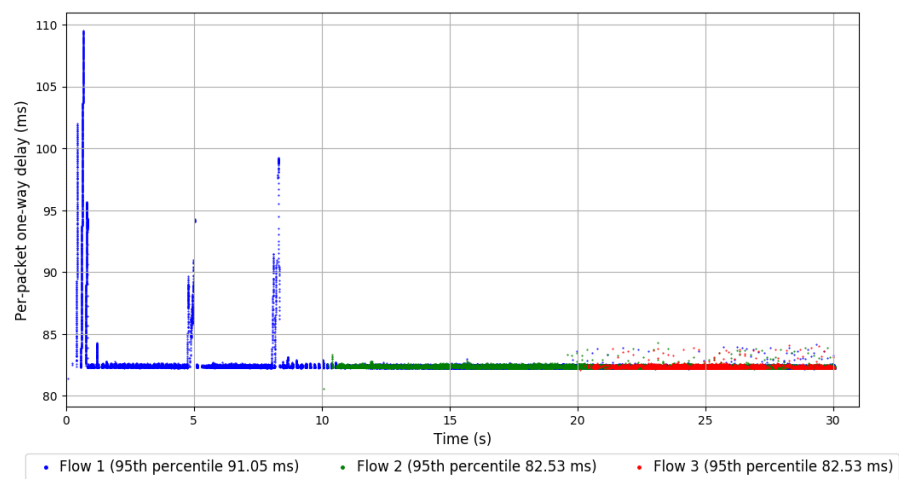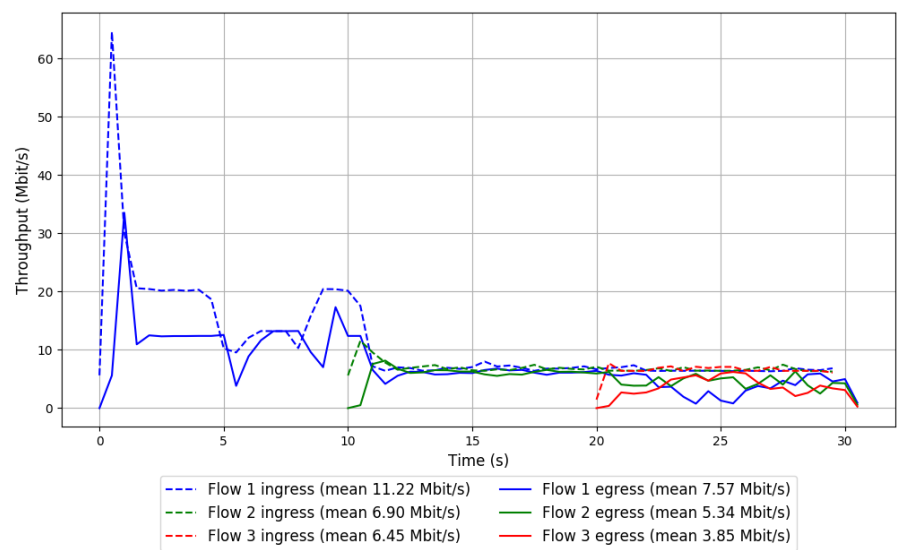
Run 5: Report of Sprout — Data Link

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

Start at: 2018-09-25 08:48:02
End at: 2018-09-25 08:48:32
Local clock offset: -6.227 ms
Remote clock offset: -2.656 ms


# Below is generated by plot.py at 2018-09-25 12:12:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.41 Mbit/s
95th percentile per-packet one-way delay: 86.245 ms
Loss rate: 30.91%
-- Flow 1:
Average throughput: 7.57 Mbit/s
95th percentile per-packet one-way delay: 91.049 ms
Loss rate: 32.51%
-- Flow 2:
Average throughput: 5.34 Mbit/s
95th percentile per-packet one-way delay: 82.528 ms
Loss rate: 22.66%
-- Flow 3:
Average throughput: 3.85 Mbit/s
95th percentile per-packet one-way delay: 82.525 ms
Loss rate: 40.23%
```

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

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

Start at: 2018-09-25 09:34:16
End at: 2018-09-25 09:34:46
Local clock offset: -4.534 ms
Remote clock offset: 0.975 ms

# Below is generated by plot.py at 2018-09-25 12:13:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.60 Mbit/s
95th percentile per-packet one-way delay: 87.525 ms
Loss rate: 91.93%
-- Flow 1:
Average throughput: 5.49 Mbit/s
95th percentile per-packet one-way delay: 98.574 ms
Loss rate: 55.18%
-- Flow 2:
Average throughput: 7.44 Mbit/s
95th percentile per-packet one-way delay: 85.580 ms
Loss rate: 94.83%
-- Flow 3:
Average throughput: 6.56 Mbit/s
95th percentile per-packet one-way delay: 85.589 ms
Loss rate: 95.50%
```
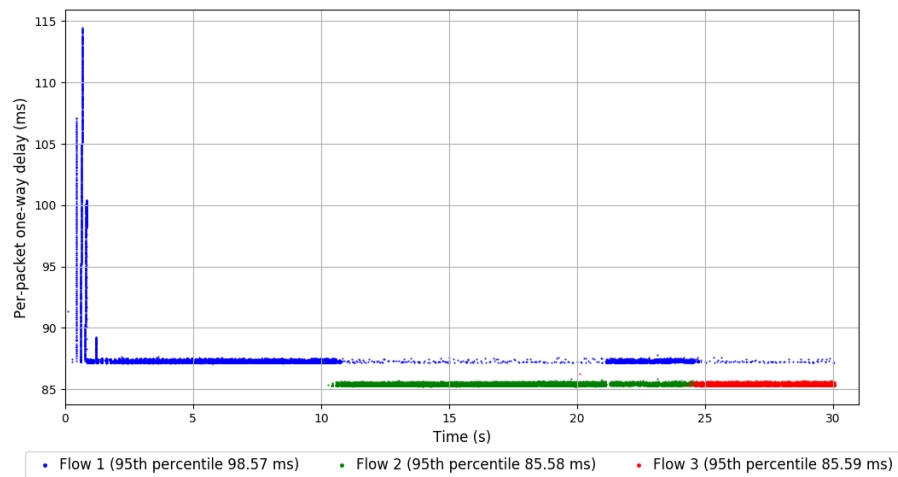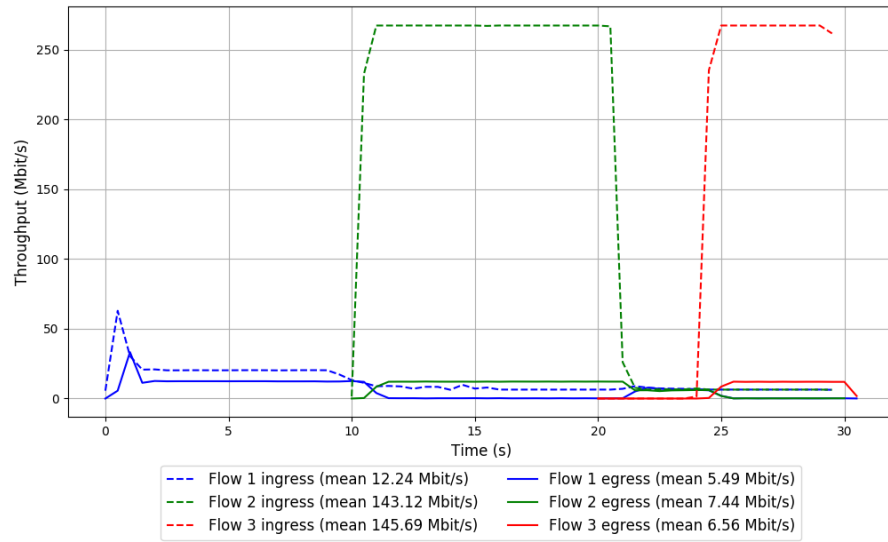
Run 2: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 12.24 Mbit/s) --- Flow 1 egress (mean 5.49 Mbit/s)
Flow 2 ingress (mean 143.12 Mbit/s) --- Flow 2 egress (mean 7.44 Mbit/s)
Flow 3 ingress (mean 145.69 Mbit/s) --- Flow 3 egress (mean 6.56 Mbit/s)

Flow 1 (95th percentile 98.57 ms) Flow 2 (95th percentile 85.58 ms) Flow 3 (95th percentile 85.59 ms)

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

Start at: 2018-09-25 10:20:55
End at: 2018-09-25 10:21:25
Local clock offset: -7.866 ms
Remote clock offset: -0.34 ms


# Below is generated by plot.py at 2018-09-25 12:13:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.51 Mbit/s
95th percentile per-packet one-way delay: 87.417 ms
Loss rate: 89.35%
-- Flow 1:
Average throughput: 6.31 Mbit/s
95th percentile per-packet one-way delay: 94.926 ms
Loss rate: 46.96%
-- Flow 2:
Average throughput: 3.66 Mbit/s
95th percentile per-packet one-way delay: 85.727 ms
Loss rate: 88.74%
-- Flow 3:
Average throughput: 11.32 Mbit/s
95th percentile per-packet one-way delay: 84.448 ms
Loss rate: 95.52%
```
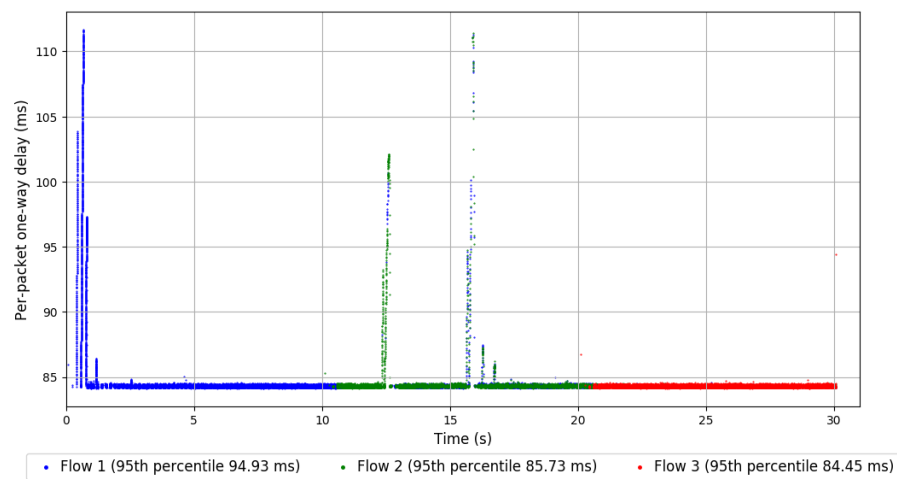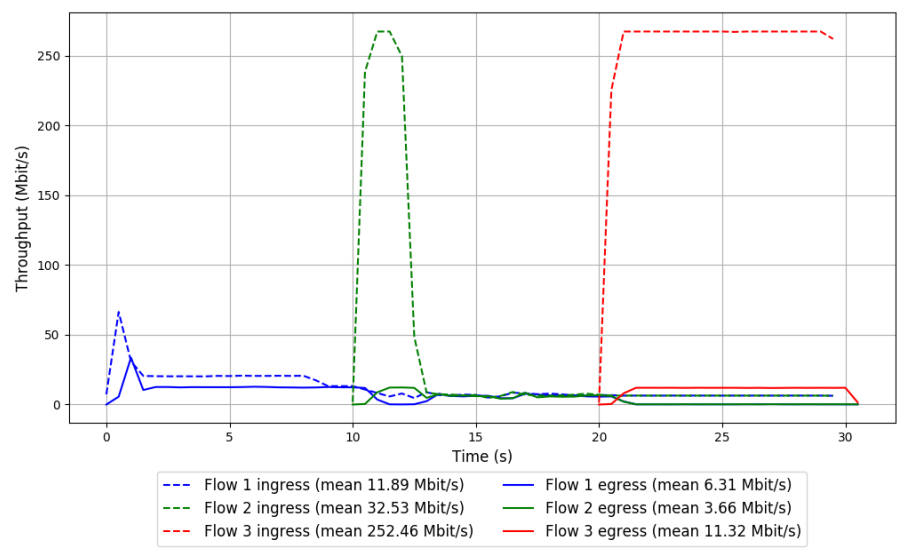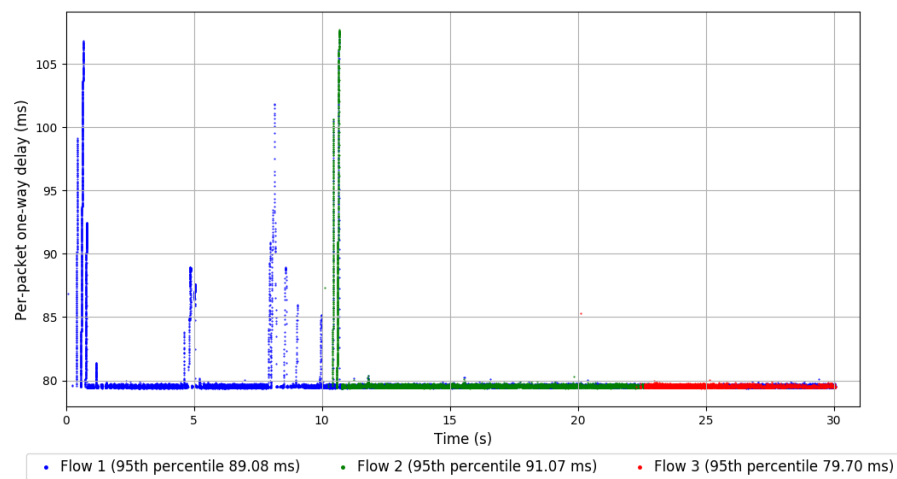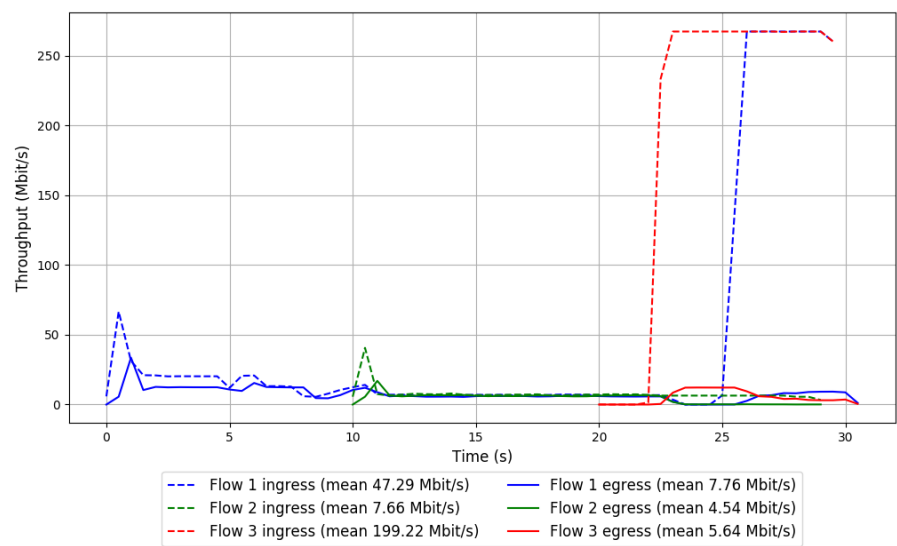
Run 3: Report of TaoVA-100x — Data Link

- - - Flow 1 ingress (mean 11.89 Mbit/s) —— Flow 1 egress (mean 6.31 Mbit/s)
- - - Flow 2 ingress (mean 32.53 Mbit/s) —— Flow 2 egress (mean 3.66 Mbit/s)
- - - Flow 3 ingress (mean 252.46 Mbit/s) —— Flow 3 egress (mean 11.32 Mbit/s)

• Flow 1 (95th percentile 94.93 ms)   • Flow 2 (95th percentile 85.73 ms)   • Flow 3 (95th percentile 84.45 ms)

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

Start at: 2018-09-25 11:06:02
End at: 2018-09-25 11:06:32
Local clock offset: -2.468 ms
Remote clock offset: -4.366 ms


# Below is generated by plot.py at 2018-09-25 12:13:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.50 Mbit/s
95th percentile per-packet one-way delay: 88.212 ms
Loss rate: 89.45%
-- Flow 1:
Average throughput: 7.76 Mbit/s
95th percentile per-packet one-way delay: 89.083 ms
Loss rate: 83.59%
-- Flow 2:
Average throughput: 4.54 Mbit/s
95th percentile per-packet one-way delay: 91.074 ms
Loss rate: 41.74%
-- Flow 3:
Average throughput: 5.64 Mbit/s
95th percentile per-packet one-way delay: 79.699 ms
Loss rate: 97.17%
```

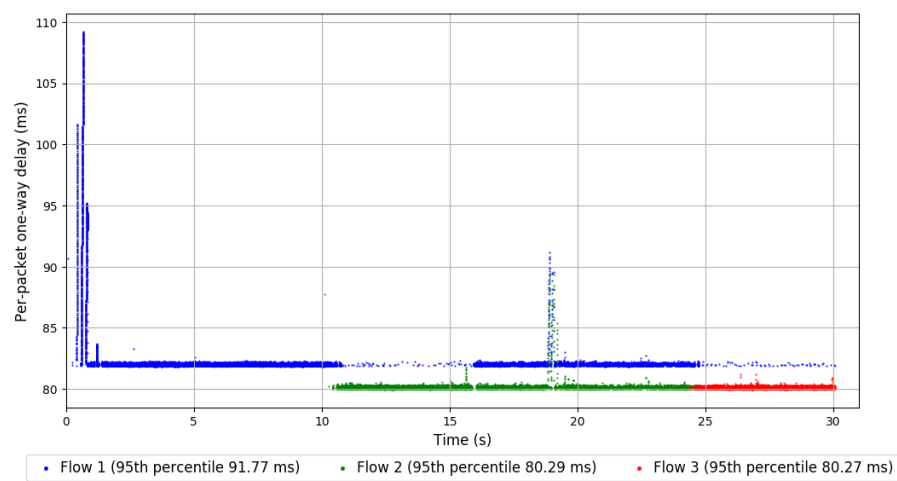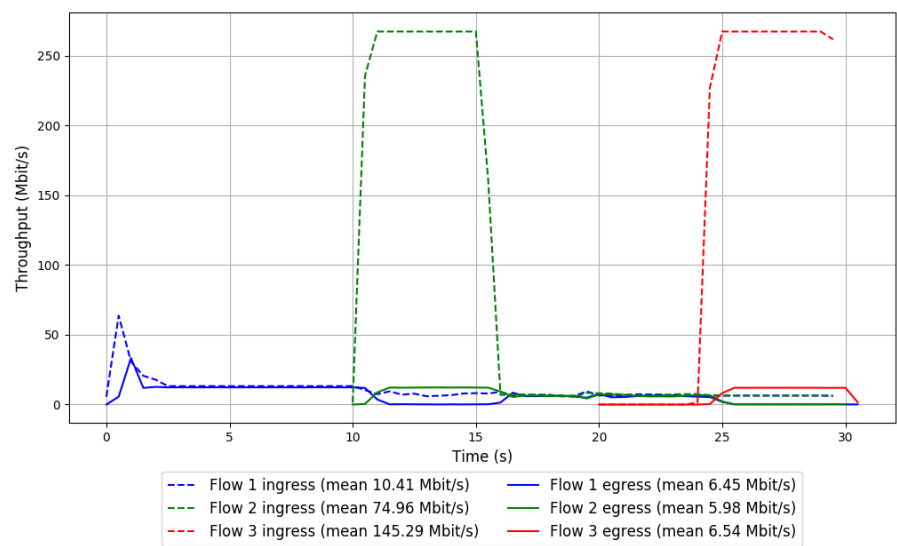Run 4: Report of TaoVA-100x — Data Link

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

Start at: 2018-09-25 11:53:51
End at: 2018-09-25 11:54:21
Local clock offset: -3.799 ms
Remote clock offset: -4.322 ms


# Below is generated by plot.py at 2018-09-25 12:13:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.59 Mbit/s
95th percentile per-packet one-way delay: 82.722 ms
Loss rate: 88.42%
-- Flow 1:
Average throughput: 6.45 Mbit/s
95th percentile per-packet one-way delay: 91.765 ms
Loss rate: 38.07%
-- Flow 2:
Average throughput: 5.98 Mbit/s
95th percentile per-packet one-way delay: 80.292 ms
Loss rate: 92.07%
-- Flow 3:
Average throughput: 6.54 Mbit/s
95th percentile per-packet one-way delay: 80.269 ms
Loss rate: 95.50%
```
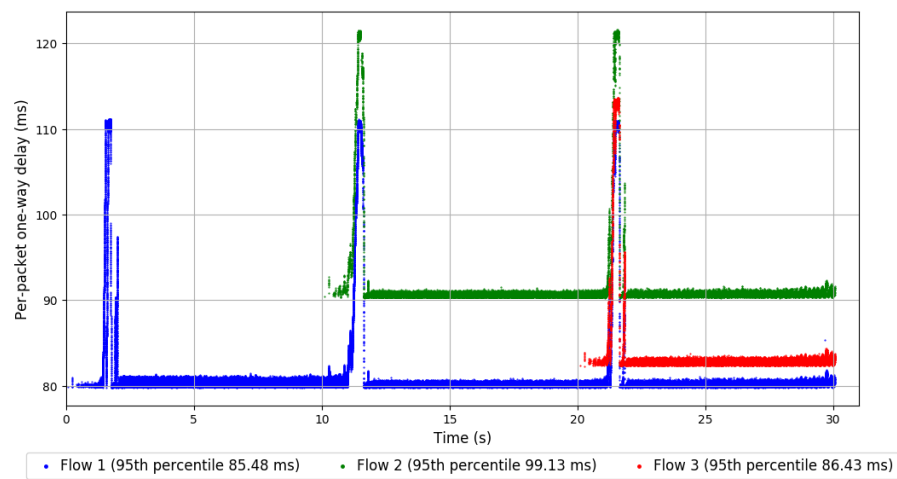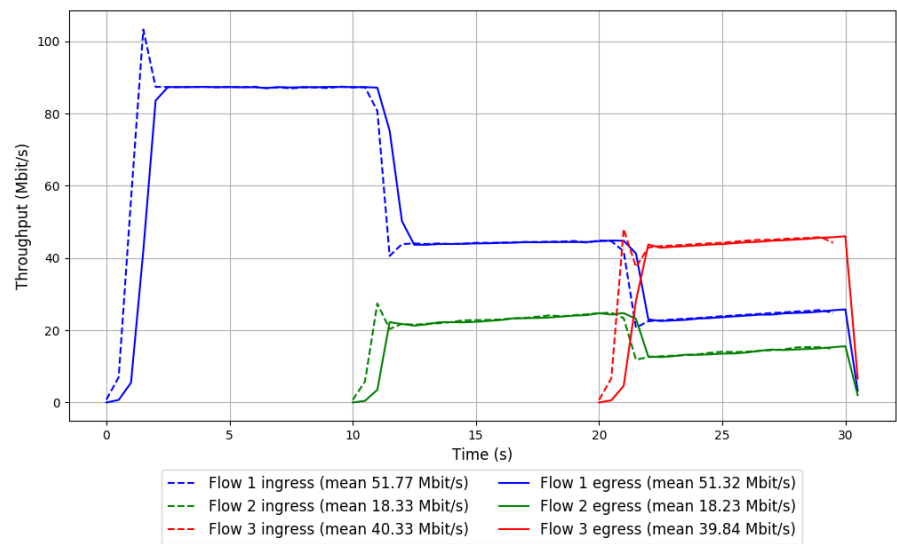
Run 5: Report of TaoVA-100x — Data Link

Flow 1 ingress (mean 10.41 Mbit/s) --- Flow 1 egress (mean 6.45 Mbit/s)
Flow 2 ingress (mean 74.96 Mbit/s) --- Flow 2 egress (mean 5.98 Mbit/s)
Flow 3 ingress (mean 145.29 Mbit/s) --- Flow 3 egress (mean 6.54 Mbit/s)

Flow 1 (95th percentile 91.77 ms) Flow 2 (95th percentile 80.29 ms) Flow 3 (95th percentile 80.27 ms)

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```
Run 1: Statistics of TCP Vegas

Start at: 2018-09-25 08:33:17
End at: 2018-09-25 08:33:47
Local clock offset: -3.822 ms
Remote clock offset: -3.477 ms


# Below is generated by plot.py at 2018-09-25 12:13:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 76.71 Mbit/s
95th percentile per-packet one-way delay: 91.120 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 51.32 Mbit/s
95th percentile per-packet one-way delay: 85.477 ms
Loss rate: 0.87%
-- Flow 2:
Average throughput: 18.23 Mbit/s
95th percentile per-packet one-way delay: 99.131 ms
Loss rate: 0.57%
-- Flow 3:
Average throughput: 39.84 Mbit/s
95th percentile per-packet one-way delay: 86.429 ms
Loss rate: 1.21%
```

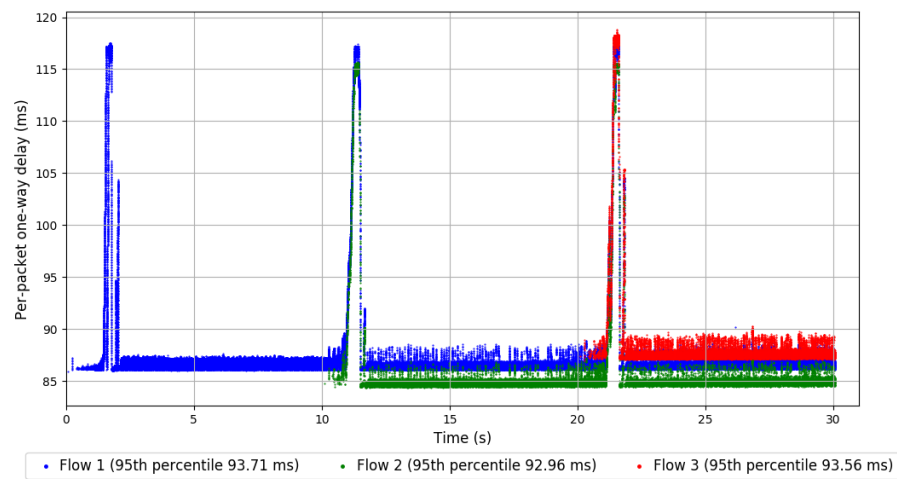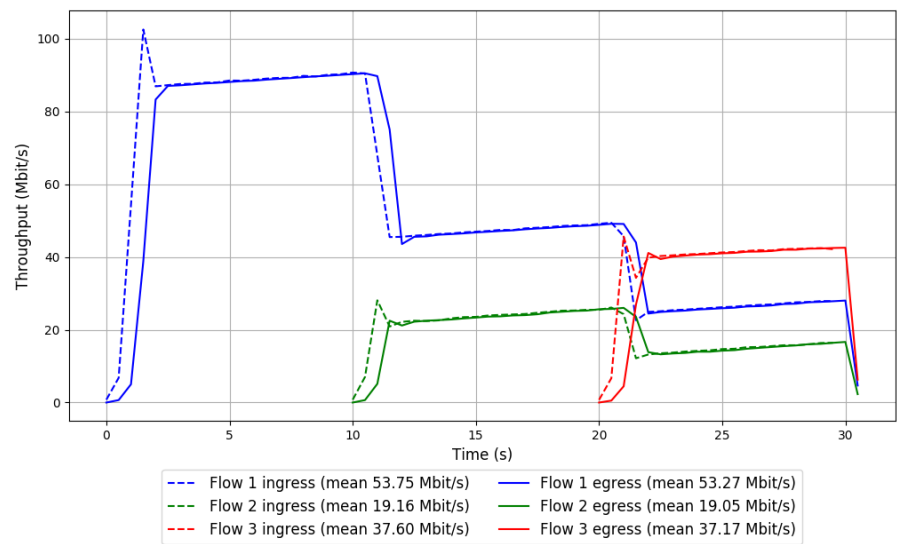Run 1: Report of TCP Vegas — Data Link

```
Run 2: Statistics of TCP Vegas

Start at: 2018-09-25 09:18:35
End at: 2018-09-25 09:19:05
Local clock offset: -6.0 ms
Remote clock offset: -0.057 ms


# Below is generated by plot.py at 2018-09-25 12:13:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.32 Mbit/s
95th percentile per-packet one-way delay: 93.579 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 53.27 Mbit/s
95th percentile per-packet one-way delay: 93.710 ms
Loss rate: 0.88%
-- Flow 2:
Average throughput: 19.05 Mbit/s
95th percentile per-packet one-way delay: 92.956 ms
Loss rate: 0.56%
-- Flow 3:
Average throughput: 37.17 Mbit/s
95th percentile per-packet one-way delay: 93.555 ms
Loss rate: 1.16%
```
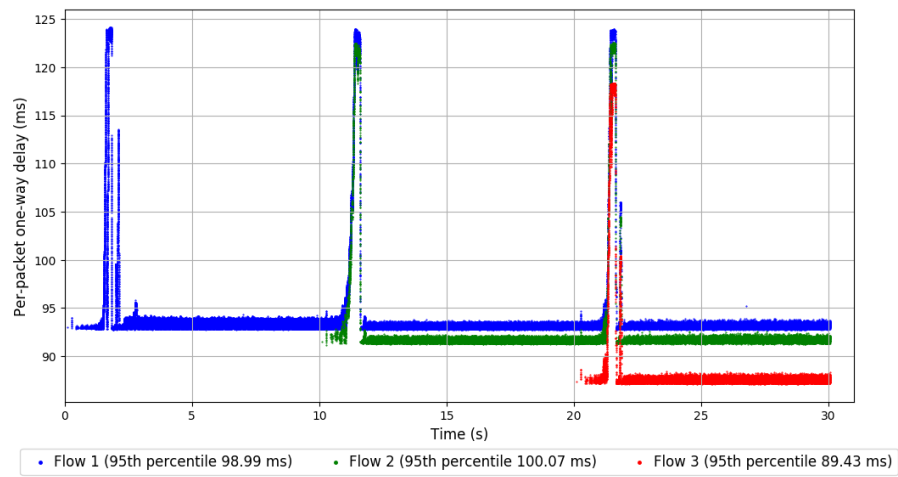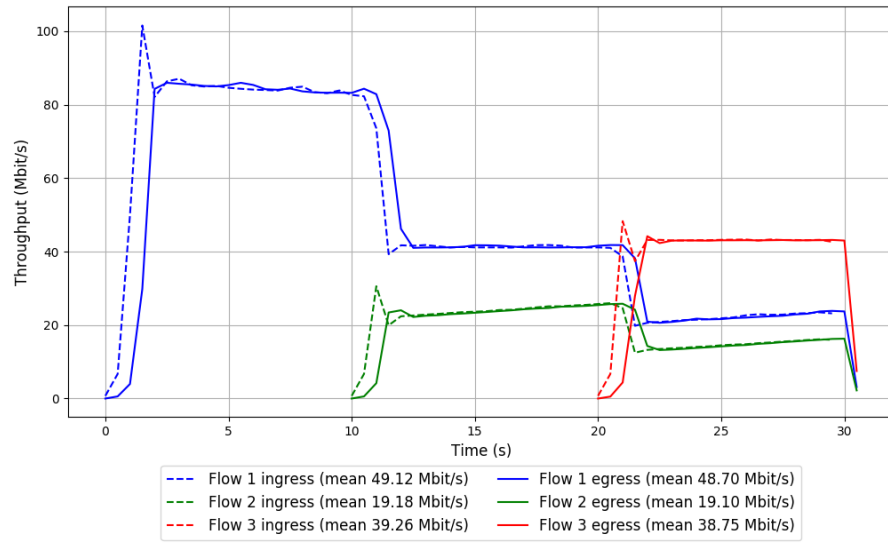
Run 2: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 53.75 Mbit/s) --- Flow 1 egress (mean 53.27 Mbit/s)
Flow 2 ingress (mean 19.16 Mbit/s) --- Flow 2 egress (mean 19.05 Mbit/s)
Flow 3 ingress (mean 37.60 Mbit/s) --- Flow 3 egress (mean 37.17 Mbit/s)

Flow 1 (95th percentile 93.71 ms) • Flow 2 (95th percentile 92.96 ms) • Flow 3 (95th percentile 93.56 ms)

```
Run 3: Statistics of TCP Vegas

Start at: 2018-09-25 10:06:17
End at: 2018-09-25 10:06:47
Local clock offset: -8.129 ms
Remote clock offset: 0.665 ms


# Below is generated by plot.py at 2018-09-25 12:13:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 74.31 Mbit/s
95th percentile per-packet one-way delay: 98.145 ms
Loss rate: 0.88%
-- Flow 1:
Average throughput: 48.70 Mbit/s
95th percentile per-packet one-way delay: 98.990 ms
Loss rate: 0.88%
-- Flow 2:
Average throughput: 19.10 Mbit/s
95th percentile per-packet one-way delay: 100.071 ms
Loss rate: 0.45%
-- Flow 3:
Average throughput: 38.75 Mbit/s
95th percentile per-packet one-way delay: 89.432 ms
Loss rate: 1.30%
```
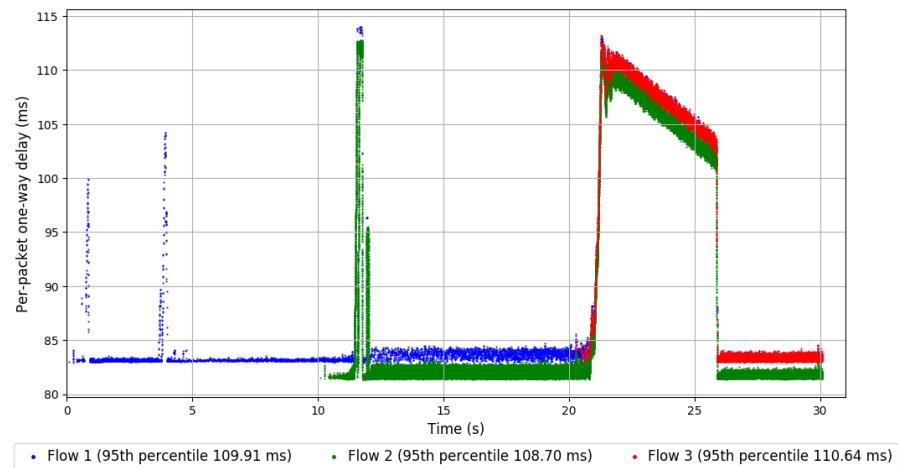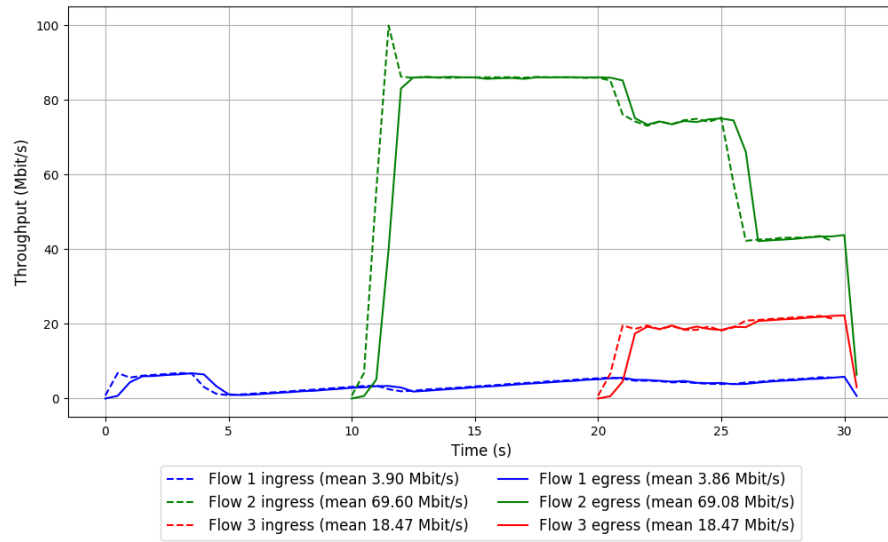
Run 3: Report of TCP Vegas — Data Link

```
Run 4: Statistics of TCP Vegas

Start at: 2018-09-25 10:51:07
End at: 2018-09-25 10:51:37
Local clock offset: -4.587 ms
Remote clock offset: -3.41 ms


# Below is generated by plot.py at 2018-09-25 12:13:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 56.03 Mbit/s
95th percentile per-packet one-way delay: 109.156 ms
Loss rate: 0.69%
-- Flow 1:
Average throughput: 3.86 Mbit/s
95th percentile per-packet one-way delay: 109.907 ms
Loss rate: 1.06%
-- Flow 2:
Average throughput: 69.08 Mbit/s
95th percentile per-packet one-way delay: 108.697 ms
Loss rate: 0.75%
-- Flow 3:
Average throughput: 18.47 Mbit/s
95th percentile per-packet one-way delay: 110.635 ms
Loss rate: 0.01%
```
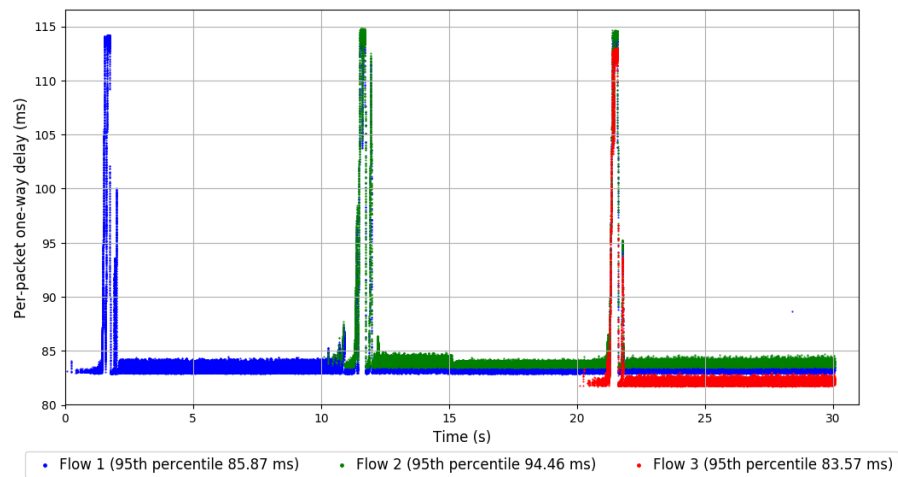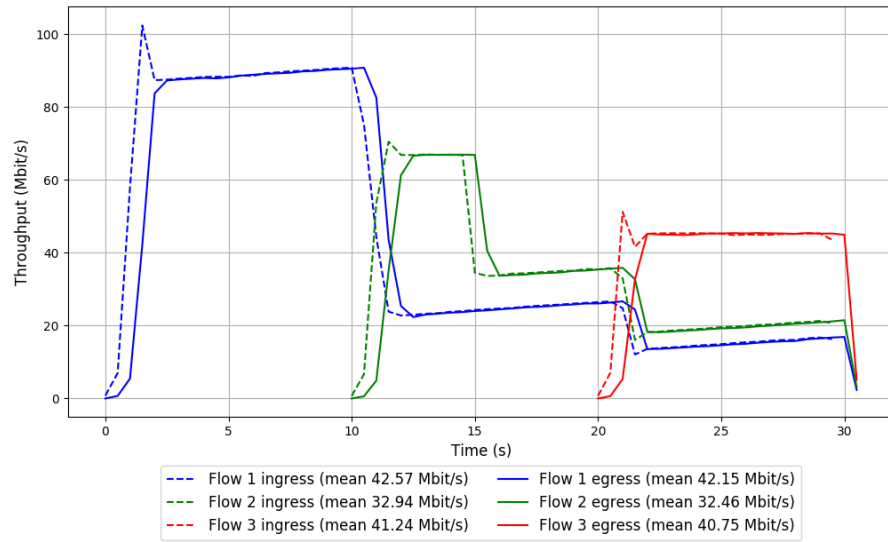
Run 4: Report of TCP Vegas — Data Link

Flow 1 ingress (mean 3.90 Mbit/s) — Flow 1 egress (mean 3.86 Mbit/s)
Flow 2 ingress (mean 69.60 Mbit/s) — Flow 2 egress (mean 69.08 Mbit/s)
Flow 3 ingress (mean 18.47 Mbit/s) — Flow 3 egress (mean 18.47 Mbit/s)

Flow 1 (95th percentile 109.91 ms) • Flow 2 (95th percentile 108.70 ms) • Flow 3 (95th percentile 110.64 ms)

```
Run 5: Statistics of TCP Vegas

Start at: 2018-09-25 11:37:33
End at: 2018-09-25 11:38:03
Local clock offset: -2.565 ms
Remote clock offset: -3.293 ms


# Below is generated by plot.py at 2018-09-25 12:13:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 77.32 Mbit/s
95th percentile per-packet one-way delay: 86.903 ms
Loss rate: 1.16%
-- Flow 1:
Average throughput: 42.15 Mbit/s
95th percentile per-packet one-way delay: 85.867 ms
Loss rate: 1.00%
-- Flow 2:
Average throughput: 32.46 Mbit/s
95th percentile per-packet one-way delay: 94.463 ms
Loss rate: 1.47%
-- Flow 3:
Average throughput: 40.75 Mbit/s
95th percentile per-packet one-way delay: 83.568 ms
Loss rate: 1.17%
```
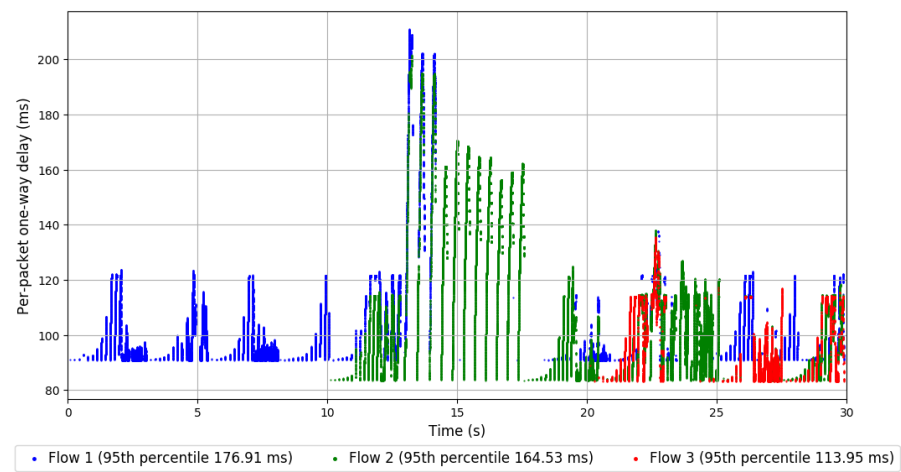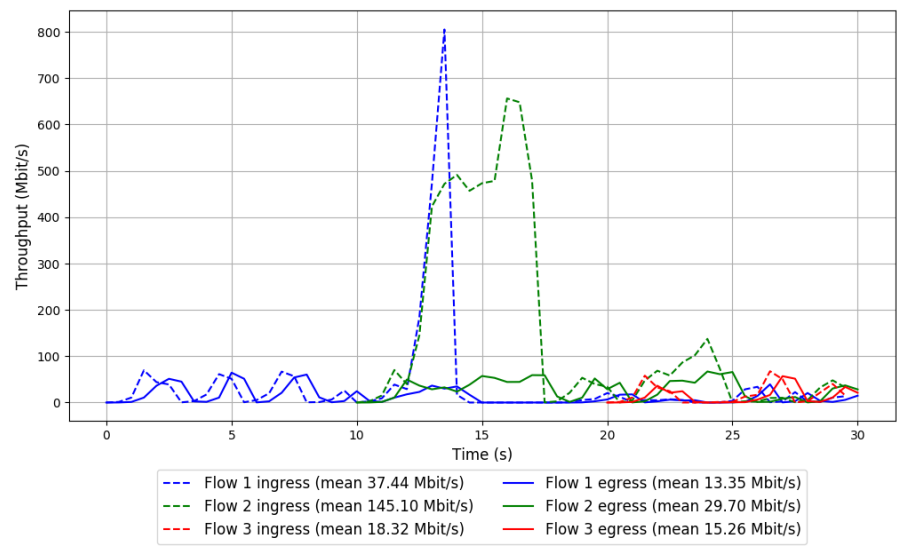
Run 5: Report of TCP Vegas — Data Link

```
Run 1: Statistics of Verus

Start at: 2018-09-25 08:29:48
End at: 2018-09-25 08:30:18
Local clock offset: -3.723 ms
Remote clock offset: 0.439 ms


# Below is generated by plot.py at 2018-09-25 12:13:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 38.04 Mbit/s
95th percentile per-packet one-way delay: 164.031 ms
Loss rate: 72.73%
-- Flow 1:
Average throughput: 13.35 Mbit/s
95th percentile per-packet one-way delay: 176.915 ms
Loss rate: 64.34%
-- Flow 2:
Average throughput: 29.70 Mbit/s
95th percentile per-packet one-way delay: 164.534 ms
Loss rate: 79.50%
-- Flow 3:
Average throughput: 15.26 Mbit/s
95th percentile per-packet one-way delay: 113.951 ms
Loss rate: 16.72%
```

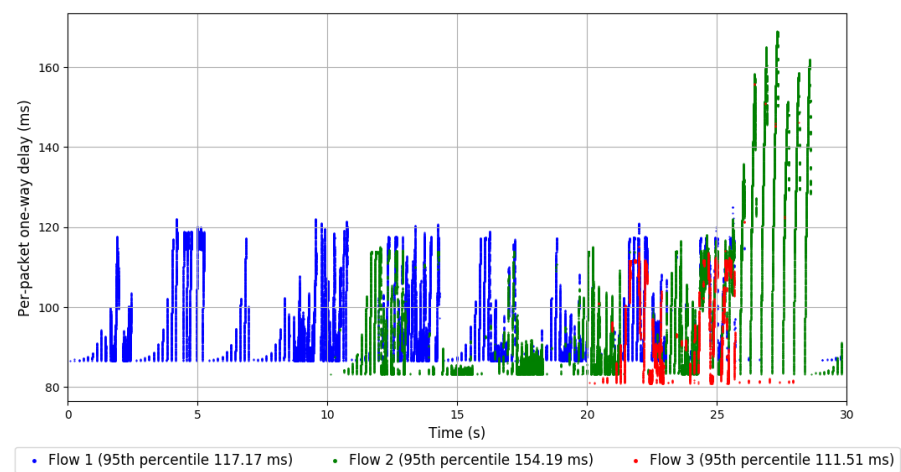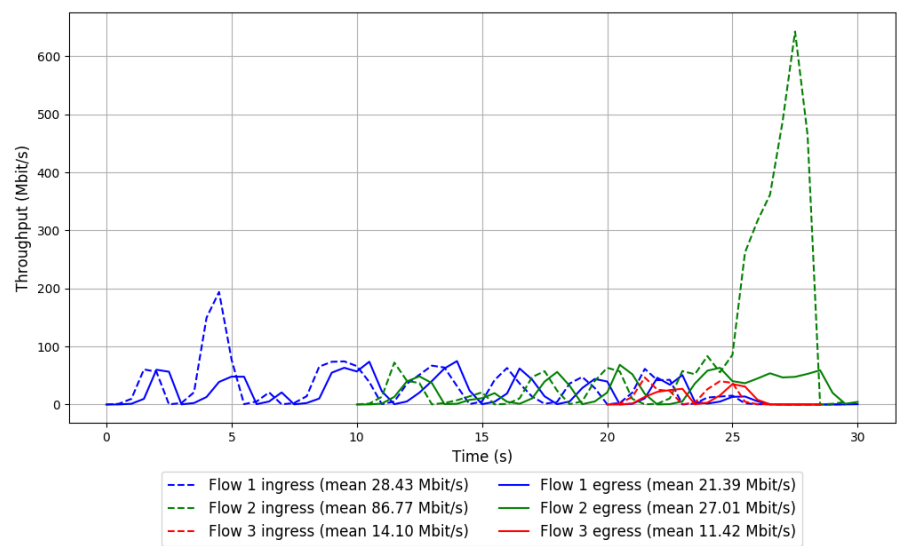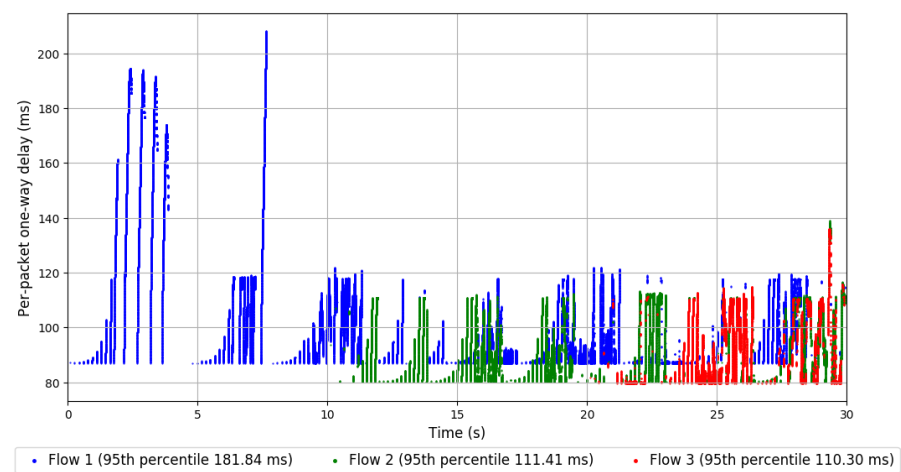Run 1: Report of Verus — Data Link

```
Run 2: Statistics of Verus

Start at: 2018-09-25 09:15:12
End at: 2018-09-25 09:15:42
Local clock offset: -6.772 ms
Remote clock offset: -4.001 ms


# Below is generated by plot.py at 2018-09-25 12:13:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 42.35 Mbit/s
95th percentile per-packet one-way delay: 140.098 ms
Loss rate: 52.76%
-- Flow 1:
Average throughput: 21.39 Mbit/s
95th percentile per-packet one-way delay: 117.165 ms
Loss rate: 24.76%
-- Flow 2:
Average throughput: 27.01 Mbit/s
95th percentile per-packet one-way delay: 154.188 ms
Loss rate: 68.86%
-- Flow 3:
Average throughput: 11.42 Mbit/s
95th percentile per-packet one-way delay: 111.510 ms
Loss rate: 18.36%
```
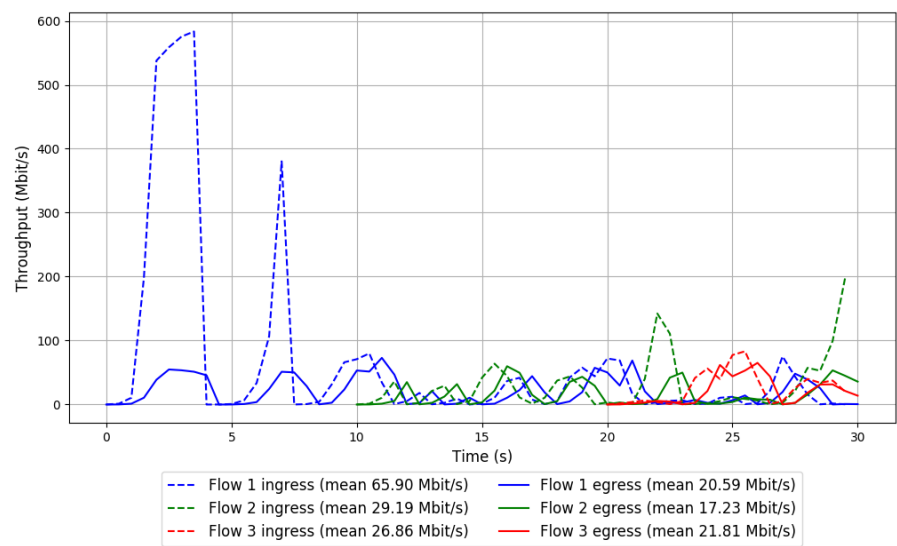
Run 2: Report of Verus — Data Link

- Flow 1 ingress (mean 28.43 Mbit/s)
- Flow 1 egress (mean 21.39 Mbit/s)
- Flow 2 ingress (mean 86.77 Mbit/s)
- Flow 2 egress (mean 27.01 Mbit/s)
- Flow 3 ingress (mean 14.10 Mbit/s)
- Flow 3 egress (mean 11.42 Mbit/s)

- Flow 1 (95th percentile 117.17 ms)
- Flow 2 (95th percentile 154.19 ms)
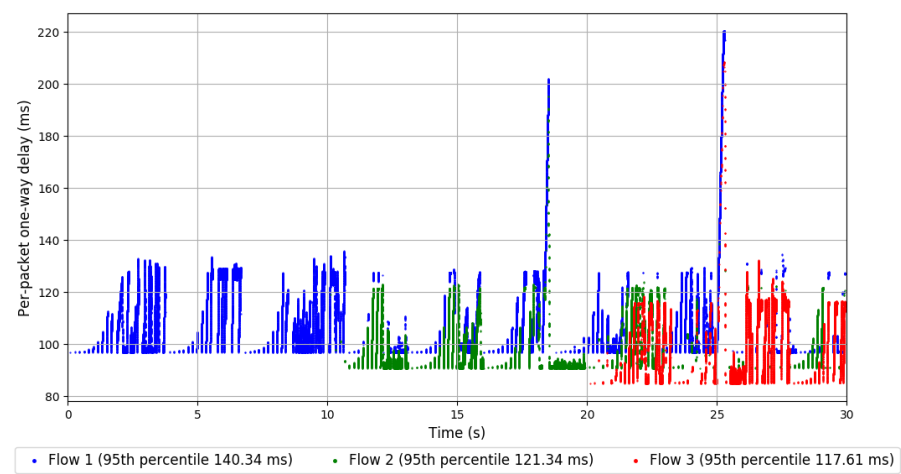- Flow 3 (95th percentile 111.51 ms)

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```
Run 3: Statistics of Verus

Start at: 2018-09-25 10:02:38
End at: 2018-09-25 10:03:08
Local clock offset: -7.192 ms
Remote clock offset: -4.465 ms


# Below is generated by plot.py at 2018-09-25 12:13:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 39.19 Mbit/s
95th percentile per-packet one-way delay: 163.149 ms
Loss rate: 58.31%
-- Flow 1:
Average throughput: 20.59 Mbit/s
95th percentile per-packet one-way delay: 181.837 ms
Loss rate: 68.72%
-- Flow 2:
Average throughput: 17.23 Mbit/s
95th percentile per-packet one-way delay: 111.414 ms
Loss rate: 40.93%
-- Flow 3:
Average throughput: 21.81 Mbit/s
95th percentile per-packet one-way delay: 110.297 ms
Loss rate: 18.58%
```
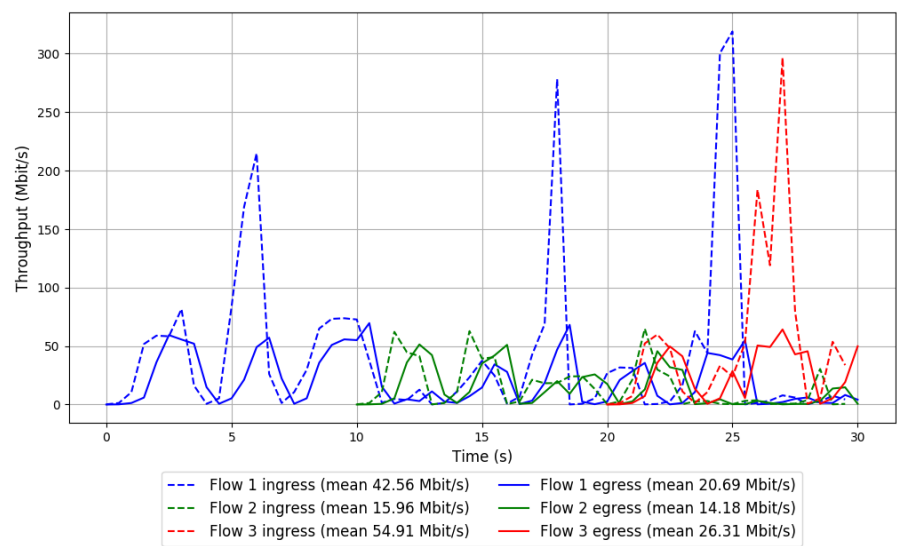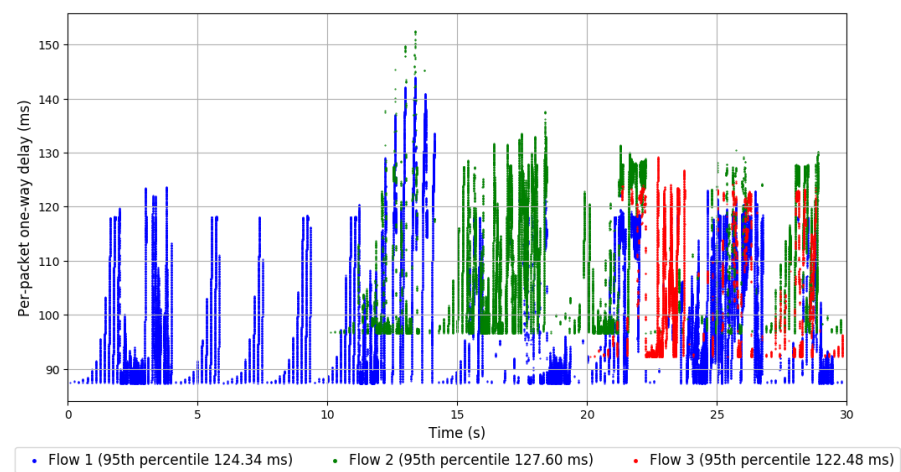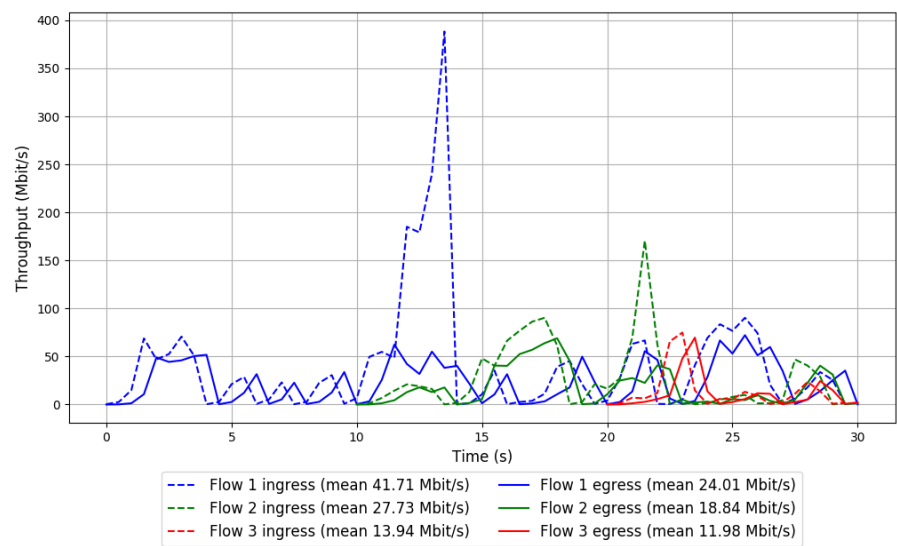
Run 3: Report of Verus — Data Link

```
Run 4: Statistics of Verus

Start at: 2018-09-25 10:47:35
End at: 2018-09-25 10:48:05
Local clock offset: -4.461 ms
Remote clock offset: 0.698 ms


# Below is generated by plot.py at 2018-09-25 12:14:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 38.75 Mbit/s
95th percentile per-packet one-way delay: 128.509 ms
Loss rate: 45.53%
-- Flow 1:
Average throughput: 20.69 Mbit/s
95th percentile per-packet one-way delay: 140.342 ms
Loss rate: 51.36%
-- Flow 2:
Average throughput: 14.18 Mbit/s
95th percentile per-packet one-way delay: 121.339 ms
Loss rate: 11.15%
-- Flow 3:
Average throughput: 26.31 Mbit/s
95th percentile per-packet one-way delay: 117.611 ms
Loss rate: 51.94%
```

Run 4: Report of Verus — Data Link

Flow 1 ingress (mean 42.56 Mbit/s) ---- Flow 1 egress (mean 20.69 Mbit/s) ——
Flow 2 ingress (mean 15.96 Mbit/s) ---- Flow 2 egress (mean 14.18 Mbit/s) ——
Flow 3 ingress (mean 54.91 Mbit/s) ---- Flow 3 egress (mean 26.31 Mbit/s) ——

• Flow 1 (95th percentile 140.34 ms)   • Flow 2 (95th percentile 121.34 ms)   • Flow 3 (95th percentile 117.61 ms)

```
Run 5: Statistics of Verus

Start at: 2018-09-25 11:33:47
End at: 2018-09-25 11:34:17
Local clock offset: -1.903 ms
Remote clock offset: 0.776 ms


# Below is generated by plot.py at 2018-09-25 12:14:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 40.35 Mbit/s
95th percentile per-packet one-way delay: 127.104 ms
Loss rate: 37.48%
-- Flow 1:
Average throughput: 24.01 Mbit/s
95th percentile per-packet one-way delay: 124.340 ms
Loss rate: 42.45%
-- Flow 2:
Average throughput: 18.84 Mbit/s
95th percentile per-packet one-way delay: 127.600 ms
Loss rate: 32.03%
-- Flow 3:
Average throughput: 11.98 Mbit/s
95th percentile per-packet one-way delay: 122.485 ms
Loss rate: 14.08%
```
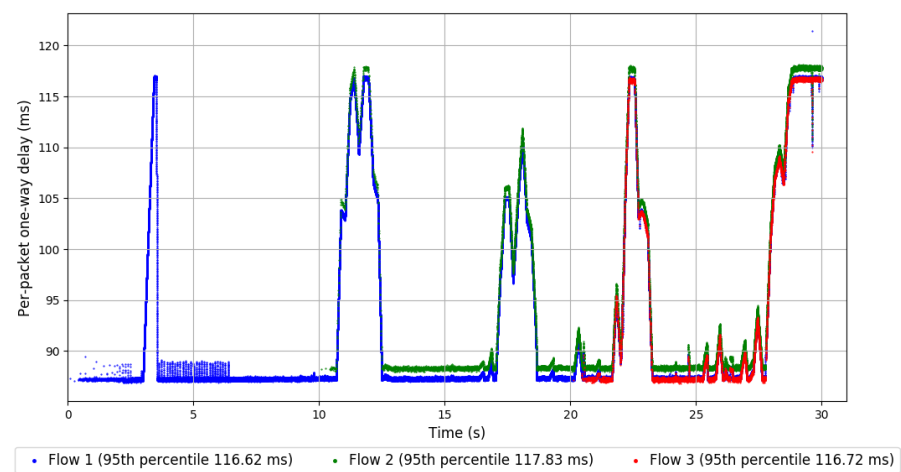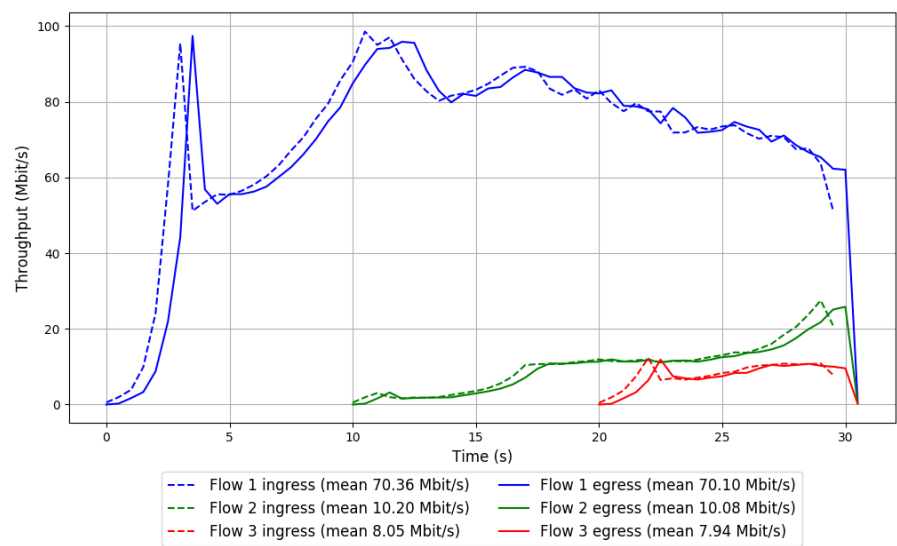
Run 5: Report of Verus — Data Link

```
Run 1: Statistics of PCC-Vivace

Start at: 2018-09-25 08:36:12
End at: 2018-09-25 08:36:42
Local clock offset: -4.639 ms
Remote clock offset: 1.493 ms


# Below is generated by plot.py at 2018-09-25 12:14:30
# Datalink statistics
-- Total of 3 flows:
Average throughput: 79.43 Mbit/s
95th percentile per-packet one-way delay: 116.698 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 70.10 Mbit/s
95th percentile per-packet one-way delay: 116.621 ms
Loss rate: 0.27%
-- Flow 2:
Average throughput: 10.08 Mbit/s
95th percentile per-packet one-way delay: 117.832 ms
Loss rate: 1.02%
-- Flow 3:
Average throughput: 7.94 Mbit/s
95th percentile per-packet one-way delay: 116.715 ms
Loss rate: 1.09%
```
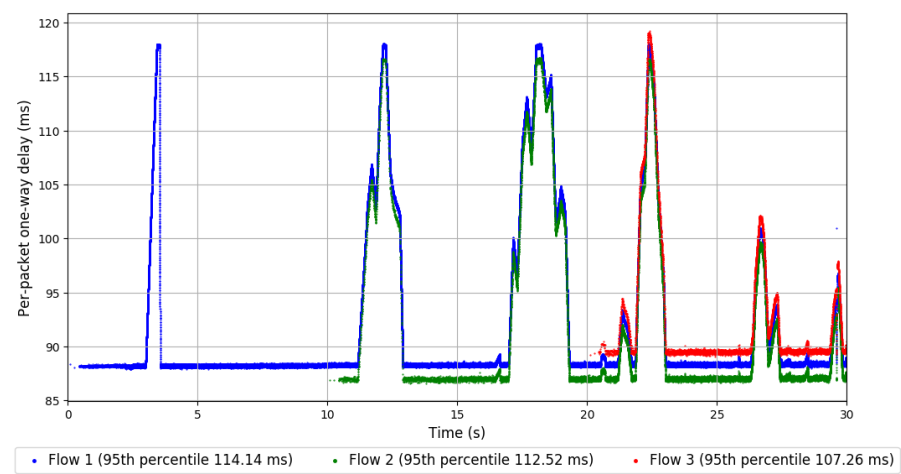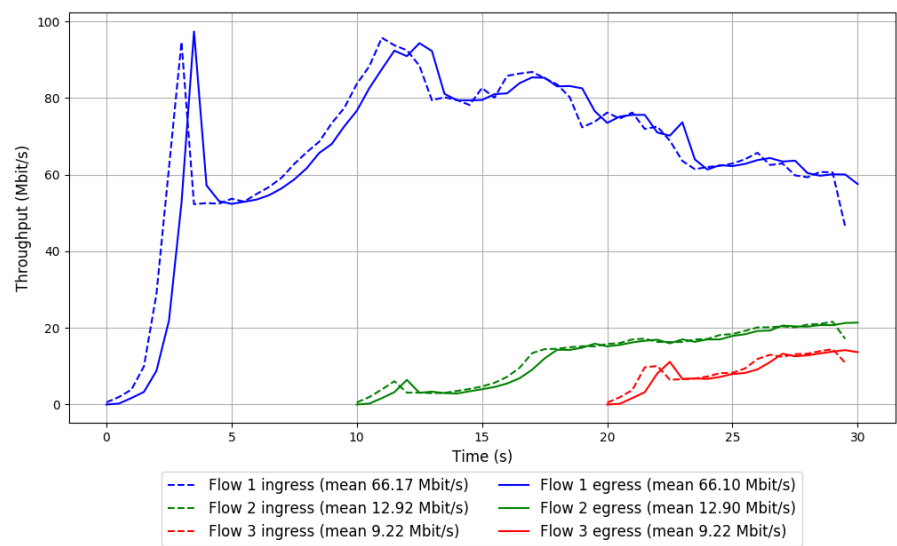
Run 1: Report of PCC-Vivace — Data Link

```
Run 2: Statistics of PCC-Vivace

Start at: 2018-09-25 09:21:31
End at: 2018-09-25 09:22:01
Local clock offset: -5.554 ms
Remote clock offset: 2.154 ms


# Below is generated by plot.py at 2018-09-25 12:14:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 77.72 Mbit/s
95th percentile per-packet one-way delay: 113.855 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 66.10 Mbit/s
95th percentile per-packet one-way delay: 114.144 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 12.90 Mbit/s
95th percentile per-packet one-way delay: 112.518 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 9.22 Mbit/s
95th percentile per-packet one-way delay: 107.263 ms
Loss rate: 0.08%
```

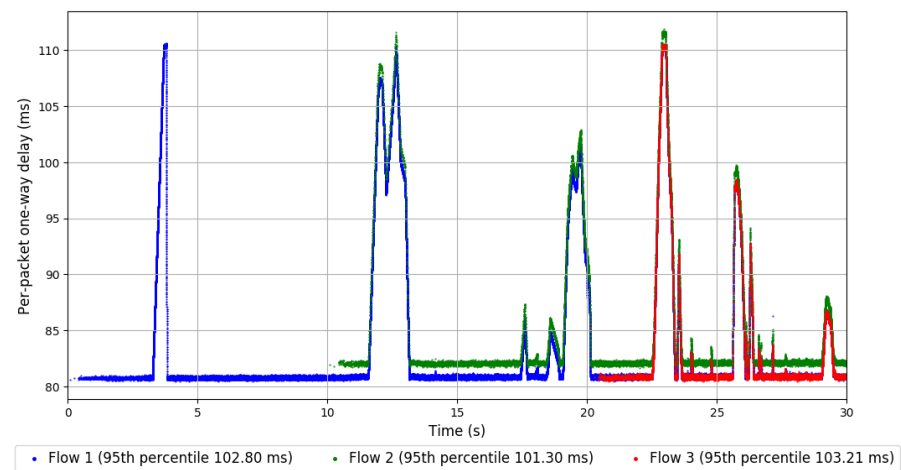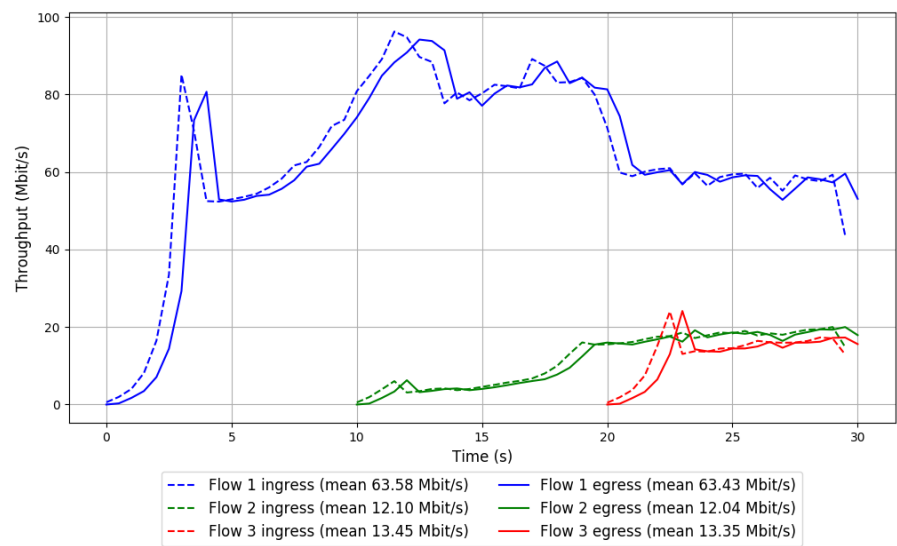Run 2: Report of PCC-Vivace — Data Link

```
Run 3: Statistics of PCC-Vivace

Start at: 2018-09-25 10:08:45
End at: 2018-09-25 10:09:15
Local clock offset: -8.302 ms
Remote clock offset: -4.454 ms


# Below is generated by plot.py at 2018-09-25 12:14:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 75.85 Mbit/s
95th percentile per-packet one-way delay: 102.591 ms
Loss rate: 0.29%
-- Flow 1:
Average throughput: 63.43 Mbit/s
95th percentile per-packet one-way delay: 102.802 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 12.04 Mbit/s
95th percentile per-packet one-way delay: 101.304 ms
Loss rate: 0.48%
-- Flow 3:
Average throughput: 13.35 Mbit/s
95th percentile per-packet one-way delay: 103.208 ms
Loss rate: 0.84%
```

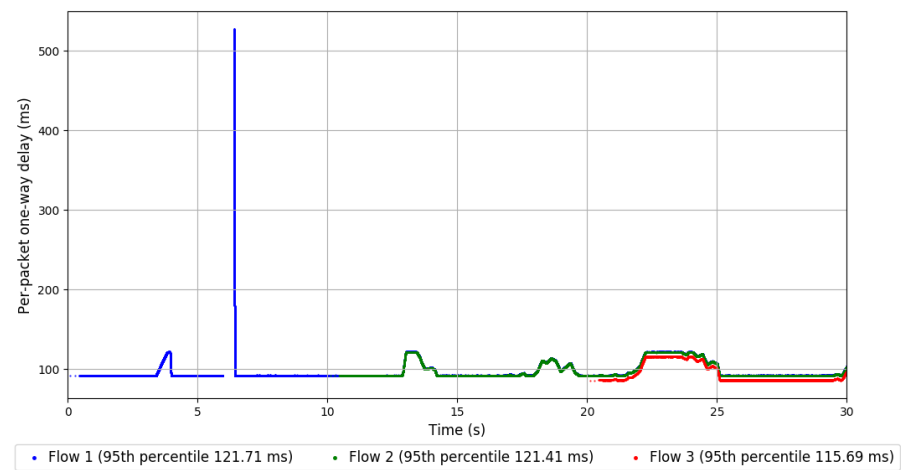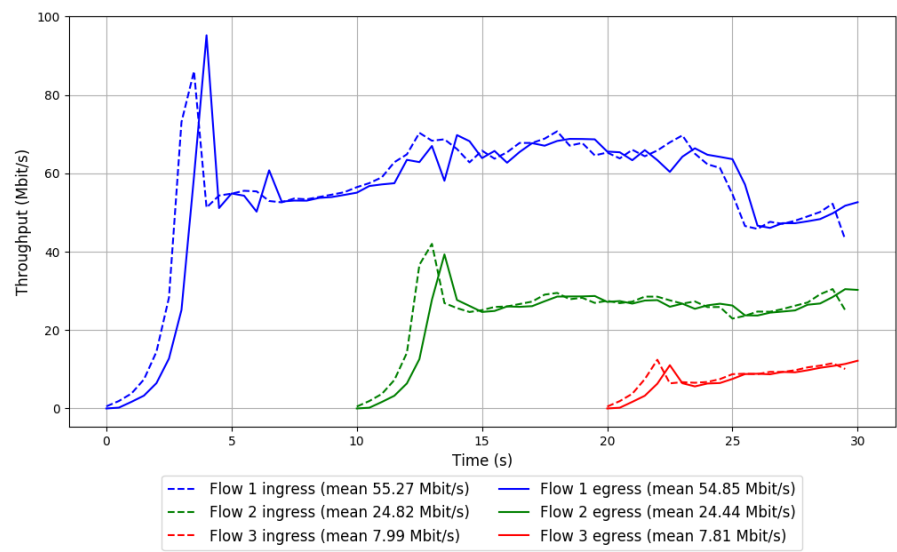# Run 3: Report of PCC-Vivace — Data Link

```
Run 4: Statistics of PCC-Vivace

Start at: 2018-09-25 10:53:35
End at: 2018-09-25 10:54:05
Local clock offset: -4.248 ms
Remote clock offset: -0.293 ms


# Below is generated by plot.py at 2018-09-25 12:14:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 73.69 Mbit/s
95th percentile per-packet one-way delay: 121.663 ms
Loss rate: 0.96%
-- Flow 1:
Average throughput: 54.85 Mbit/s
95th percentile per-packet one-way delay: 121.714 ms
Loss rate: 0.74%
-- Flow 2:
Average throughput: 24.44 Mbit/s
95th percentile per-packet one-way delay: 121.412 ms
Loss rate: 1.51%
-- Flow 3:
Average throughput: 7.81 Mbit/s
95th percentile per-packet one-way delay: 115.689 ms
Loss rate: 2.20%
```

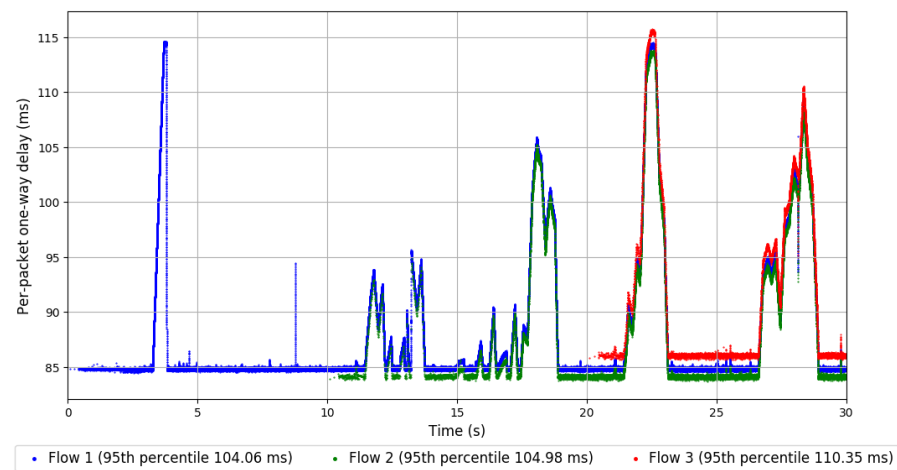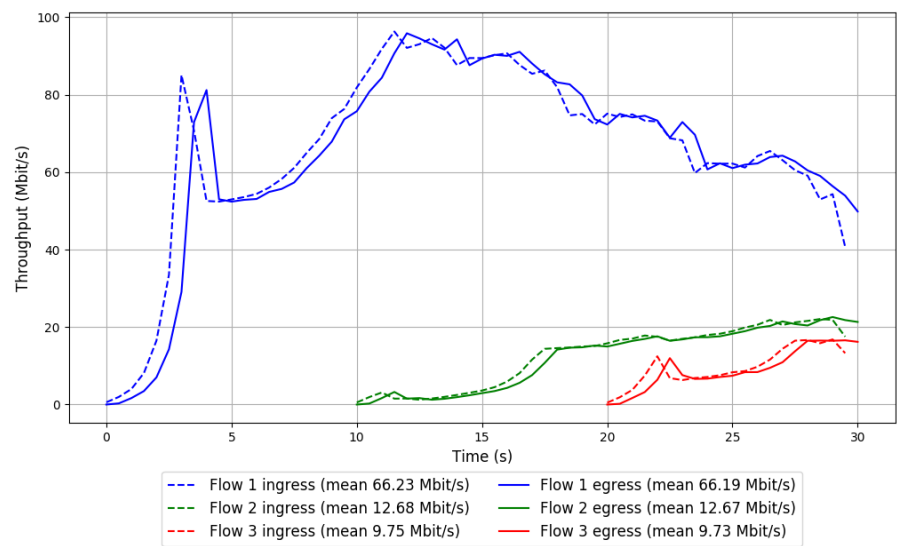# Run 4: Report of PCC-Vivace — Data Link

```
Run 5: Statistics of PCC-Vivace

Start at: 2018-09-25 11:40:32
End at: 2018-09-25 11:41:02
Local clock offset: -2.681 ms
Remote clock offset: -0.281 ms


# Below is generated by plot.py at 2018-09-25 12:14:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 77.83 Mbit/s
95th percentile per-packet one-way delay: 104.413 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 66.19 Mbit/s
95th percentile per-packet one-way delay: 104.056 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 12.67 Mbit/s
95th percentile per-packet one-way delay: 104.983 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 9.73 Mbit/s
95th percentile per-packet one-way delay: 110.352 ms
Loss rate: 0.26%
```

Run 5: Report of PCC-Vivace — Data Link

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```
Run 1: Statistics of WebRTC media

Start at: 2018-09-25 08:32:02
End at: 2018-09-25 08:32:32
Local clock offset: -3.865 ms
Remote clock offset: 1.48 ms


# Below is generated by plot.py at 2018-09-25 12:14:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.85 Mbit/s
95th percentile per-packet one-way delay: 97.453 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 1.85 Mbit/s
95th percentile per-packet one-way delay: 85.177 ms
Loss rate: 0.17%
-- Flow 2:
Average throughput: 0.96 Mbit/s
95th percentile per-packet one-way delay: 97.918 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 87.351 ms
Loss rate: 0.00%
```
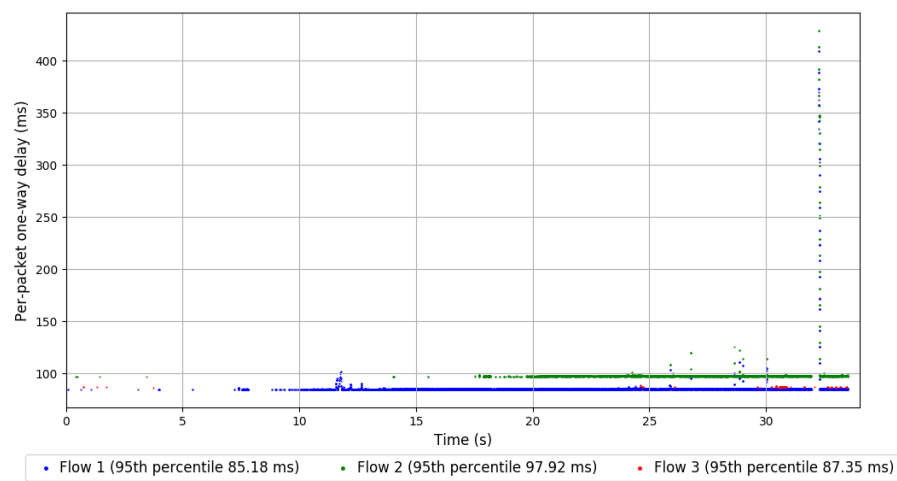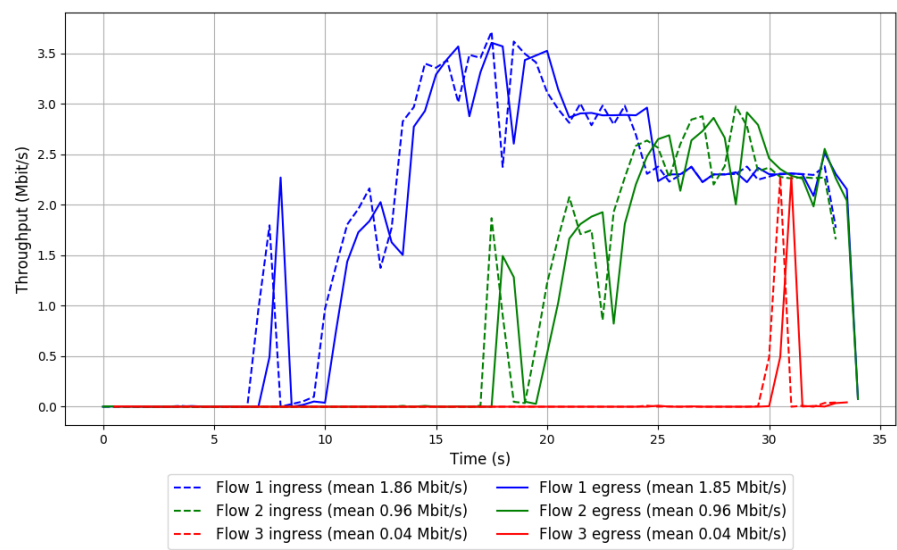
Run 1: Report of WebRTC media — Data Link

```
Run 2: Statistics of WebRTC media

Start at: 2018-09-25 09:17:19
End at: 2018-09-25 09:17:49
Local clock offset: -5.601 ms
Remote clock offset: -2.88 ms


# Below is generated by plot.py at 2018-09-25 12:14:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.90 Mbit/s
95th percentile per-packet one-way delay: 91.588 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.71 Mbit/s
95th percentile per-packet one-way delay: 81.601 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.02 Mbit/s
95th percentile per-packet one-way delay: 83.830 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 92.285 ms
Loss rate: 0.00%
```
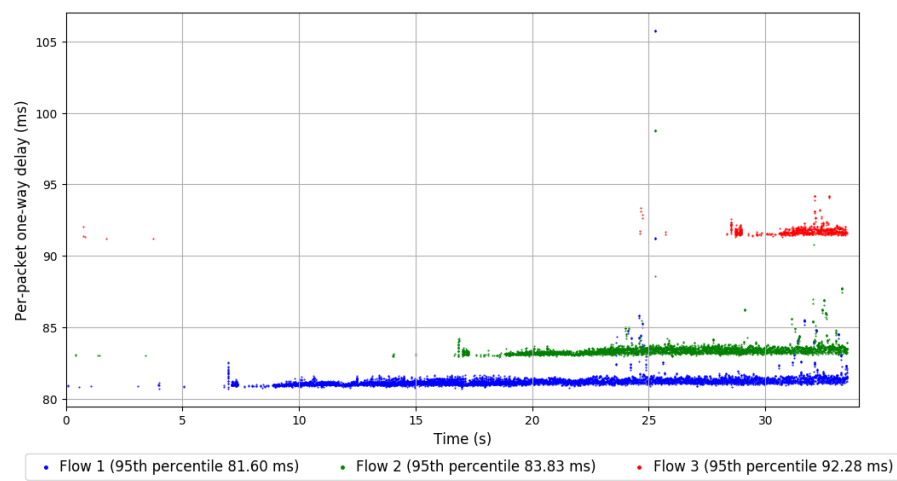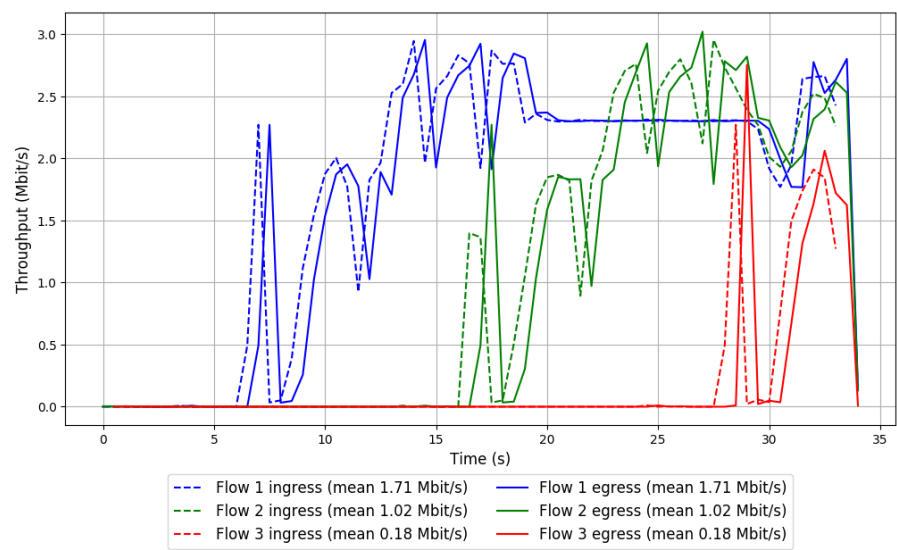
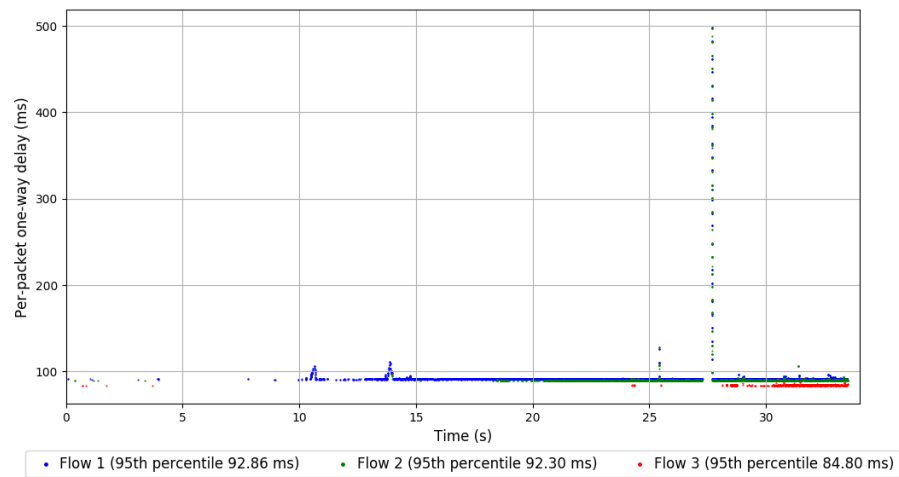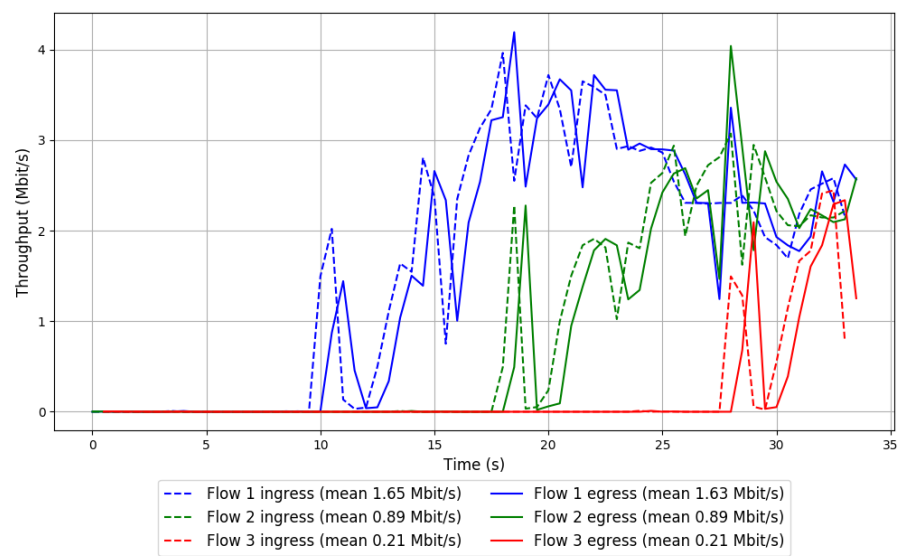Run 2: Report of WebRTC media — Data Link

```
Run 3: Statistics of WebRTC media

Start at: 2018-09-25 10:05:00
End at: 2018-09-25 10:05:30
Local clock offset: -7.291 ms
Remote clock offset: -0.356 ms


# Below is generated by plot.py at 2018-09-25 12:14:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.72 Mbit/s
95th percentile per-packet one-way delay: 92.363 ms
Loss rate: 0.65%
-- Flow 1:
Average throughput: 1.63 Mbit/s
95th percentile per-packet one-way delay: 92.855 ms
Loss rate: 1.06%
-- Flow 2:
Average throughput: 0.89 Mbit/s
95th percentile per-packet one-way delay: 92.300 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 84.804 ms
Loss rate: 0.14%
```

Run 3: Report of WebRTC media — Data Link

```
Run 4: Statistics of WebRTC media

Start at: 2018-09-25 10:49:51
End at: 2018-09-25 10:50:21
Local clock offset: -4.099 ms
Remote clock offset: 0.753 ms


# Below is generated by plot.py at 2018-09-25 12:14:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.67 Mbit/s
95th percentile per-packet one-way delay: 90.816 ms
Loss rate: 0.83%
-- Flow 1:
Average throughput: 1.81 Mbit/s
95th percentile per-packet one-way delay: 86.291 ms
Loss rate: 0.71%
-- Flow 2:
Average throughput: 1.70 Mbit/s
95th percentile per-packet one-way delay: 88.592 ms
Loss rate: 1.04%
-- Flow 3:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 91.340 ms
Loss rate: 0.00%
```
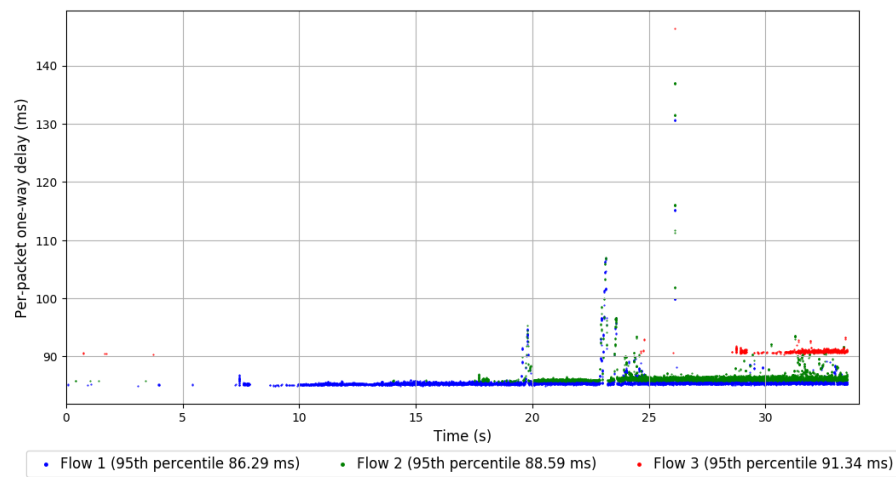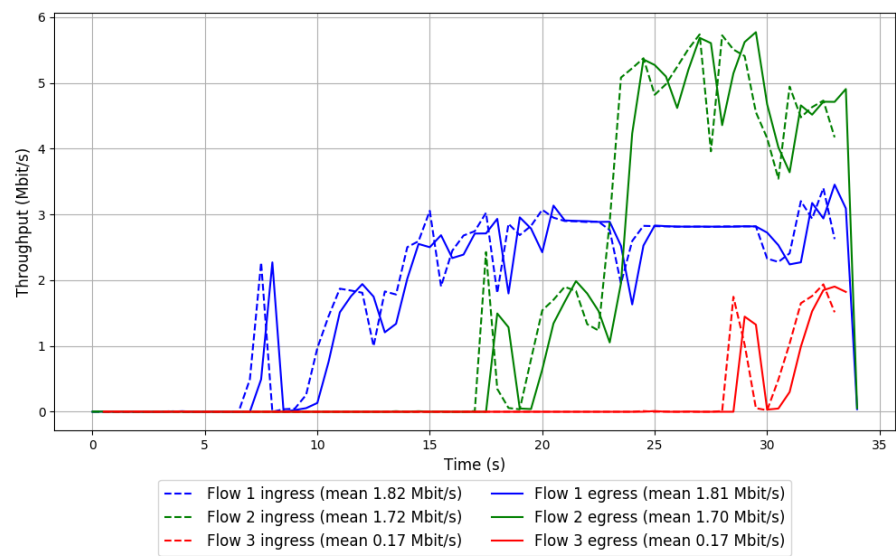
Run 4: Report of WebRTC media — Data Link

```
Run 5: Statistics of WebRTC media

Start at: 2018-09-25 11:36:18
End at: 2018-09-25 11:36:48
Local clock offset: -2.639 ms
Remote clock offset: -0.374 ms


# Below is generated by plot.py at 2018-09-25 12:14:38
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.93 Mbit/s
95th percentile per-packet one-way delay: 86.474 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 1.70 Mbit/s
95th percentile per-packet one-way delay: 85.155 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.02 Mbit/s
95th percentile per-packet one-way delay: 85.339 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.23 Mbit/s
95th percentile per-packet one-way delay: 87.297 ms
Loss rate: 0.11%
```

Run 5: Report of WebRTC media — Data Link