Pantheon Report

Generated at 2018-05-24 17:09:45 (UTC).

Data path: AWS India 1 Ethernet (*local*) →India Ethernet (*remote*).

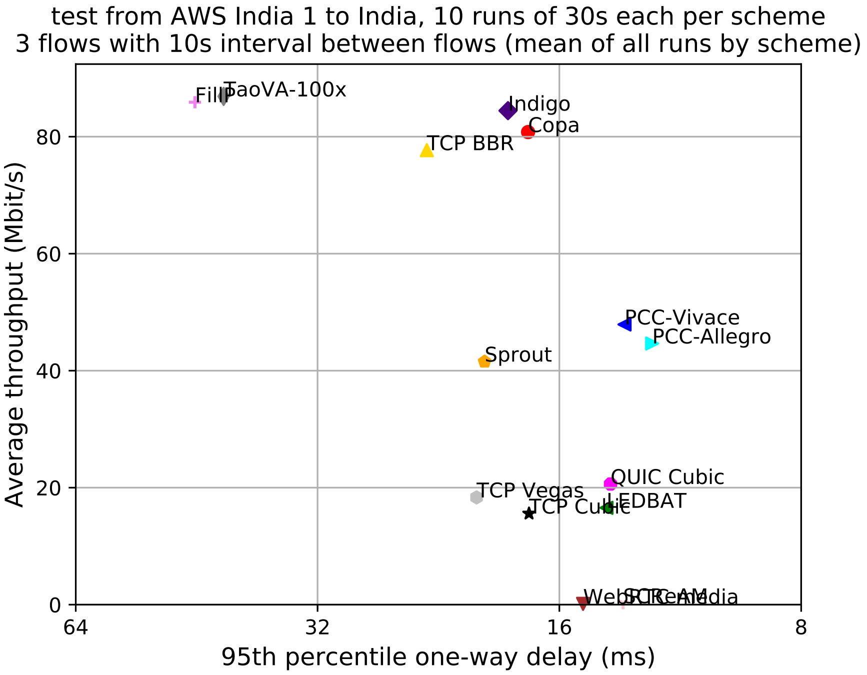
Repeated the test of 16 congestion control schemes 10 times.

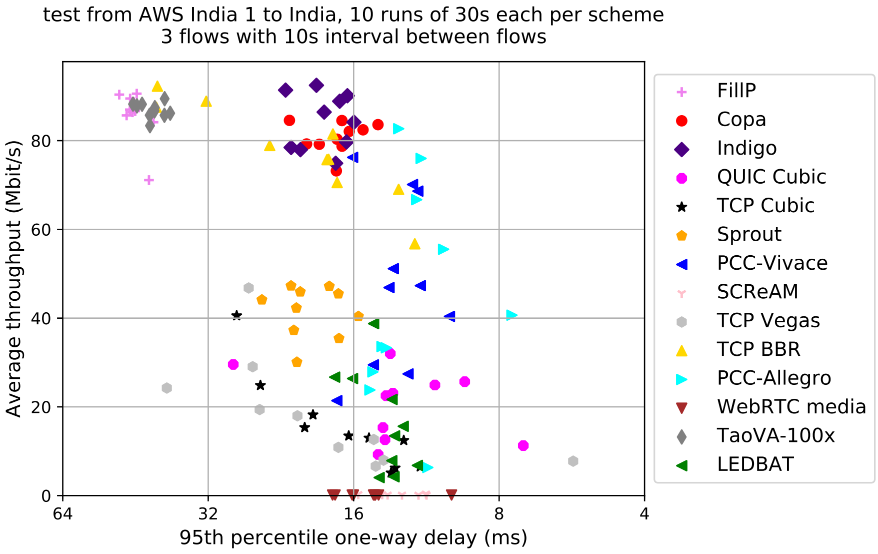
Each test lasted for 30 seconds running 3 flows with 10-second interval between two flows.

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

NTP offsets were measured against `nets.org.sg` and have been applied to correct the timestamps in logs.

```
Git summary:
branch: master @ 0088822873ea99180f63545a341ef069f40efe59
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/genericCC @ c7966e494a929986eaa5a9c169a7f381fe1bbbe5
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ 6f038ed31259d366f9840f65b82cbe8f464b1b39
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
third_party/sprout @ c838669682f0c19f6baf92afc9a596a406d48c1f
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
 M src/verus.hpp
 M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```


test from AWS India 1 to India, 10 runs of 30s each per scheme
3 flows with 10s interval between flows (mean of all runs by scheme)
Average throughput (Mbit/s)
95th percentile one-way delay (ms)
0
20
40
60
80
64
32
16
8
FillP
TaoVA-100x
Indigo
Copa
TCP BBR
PCC-Vivace
PCC-Allegro
Sprout
QUIC Cubic
TCP Vegas
TCP Cubic
LEDBAT
WebRTC media
SCReAM


test from AWS India 1 to India, 10 runs of 30s each per scheme
3 flows with 10s interval between flows
Average throughput (Mbit/s)
95th percentile one-way delay (ms)
0
20
40
60
80
64
32
16
8
4
FillP
Copa
Indigo
QUIC Cubic
TCP Cubic
Sprout
PCC-Vivace
SCReAM
TCP Vegas
TCP BBR
PCC-Allegro
WebRTC media
TaoVA-100x
LEDBAT

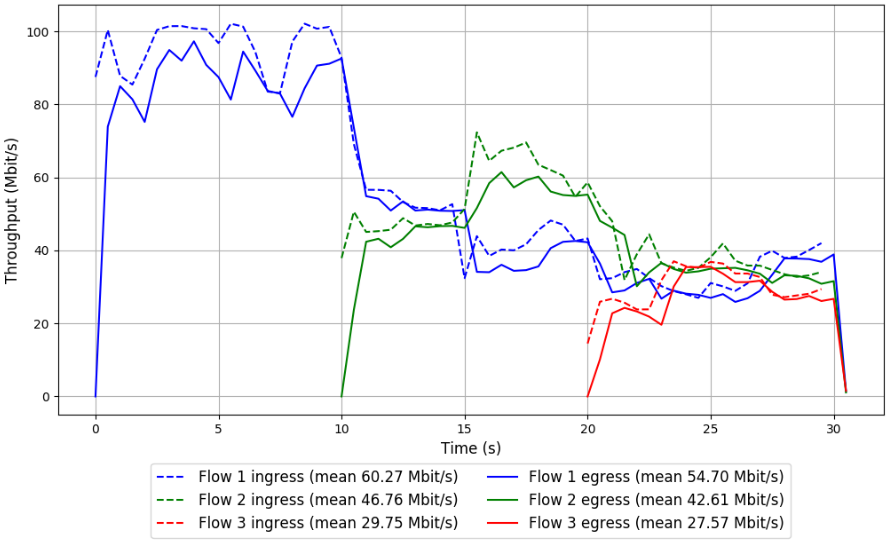
scheme	# runs	mean avg tput (Mbit/s) flow 1	flow 2	flow 3	mean 95th-%ile delay (ms) flow 1	flow 2	flow 3	mean loss rate (%) flow 1	flow 2	flow 3
TCP BBR	10	51.66	25.24	27.96	22.55	23.87	26.76	14.18	15.01	15.58
Copa	10	50.57	32.99	24.89	17.30	17.65	17.98	13.92	13.82	13.81
TCP Cubic	10	7.92	7.36	8.42	15.75	17.51	17.65	2.39	2.38	3.18
FillP	10	50.30	39.90	27.43	41.67	46.45	47.44	22.75	27.92	30.46
Indigo	10	49.10	37.75	31.59	17.66	18.67	20.47	13.96	15.39	16.16
LEDBAT	10	9.75	7.60	5.65	14.08	13.81	14.02	3.90	4.17	5.18
PCC-Allegro	10	34.23	10.28	10.92	12.27	12.26	12.90	8.39	9.08	9.32
PCC-Expr	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
QUIC Cubic	10	10.51	10.37	9.73	13.27	14.22	13.28	4.16	4.40	4.83
SCReAM	10	0.12	0.13	0.16	13.15	13.66	13.37	2.83	2.46	2.67
Sprout	10	20.98	20.78	20.42	19.47	20.07	20.08	5.90	7.11	6.85
TaoVA-100x	10	51.35	38.10	30.68	37.69	42.78	46.29	16.50	19.18	21.40
TCP Vegas	10	9.60	8.94	8.38	21.09	17.29	19.40	2.07	2.60	2.67
Verus	0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
PCC-Vivace	10	33.97	15.92	10.11	13.20	13.38	14.53	7.68	8.58	8.53
WebRTC media	10	0.05	0.04	0.05	14.12	15.15	15.19	5.93	2.53	3.65

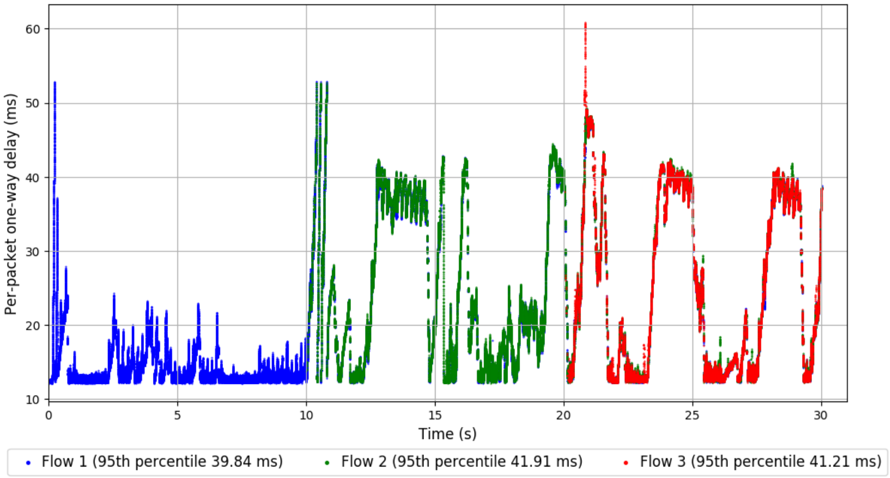
```
Run 1: Statistics of TCP BBR

Start at: 2018-05-24 13:58:11
End at: 2018-05-24 13:58:41
Local clock offset: 1.382 ms
Remote clock offset: 0.211 ms

# Below is generated by plot.py at 2018-05-24 16:57:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.28 Mbit/s
95th percentile per-packet one-way delay: 40.763 ms
Loss rate: 8.86%
-- Flow 1:
Average throughput: 54.70 Mbit/s
95th percentile per-packet one-way delay: 39.836 ms
Loss rate: 9.16%
-- Flow 2:
Average throughput: 42.61 Mbit/s
95th percentile per-packet one-way delay: 41.906 ms
Loss rate: 8.76%
-- Flow 3:
Average throughput: 27.57 Mbit/s
95th percentile per-packet one-way delay: 41.212 ms
Loss rate: 7.35%
```

Run 1: Report of TCP BBR — Data Link



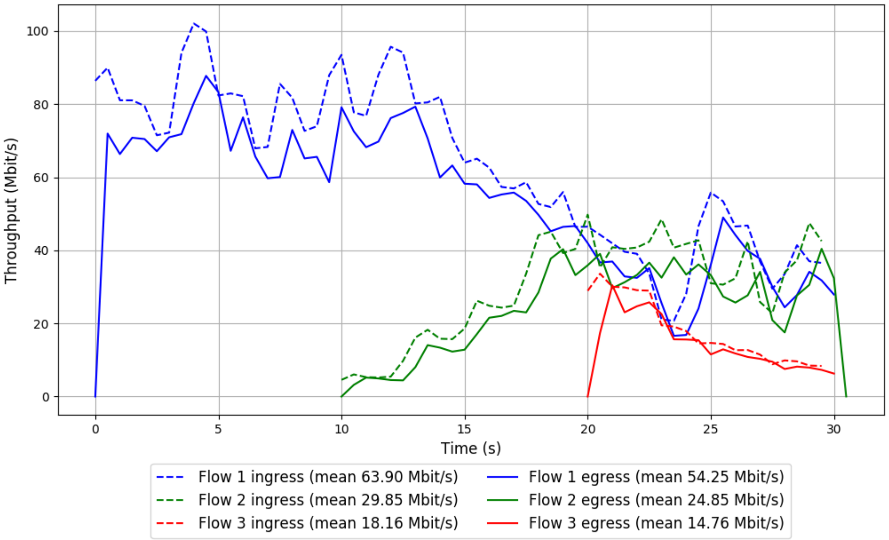


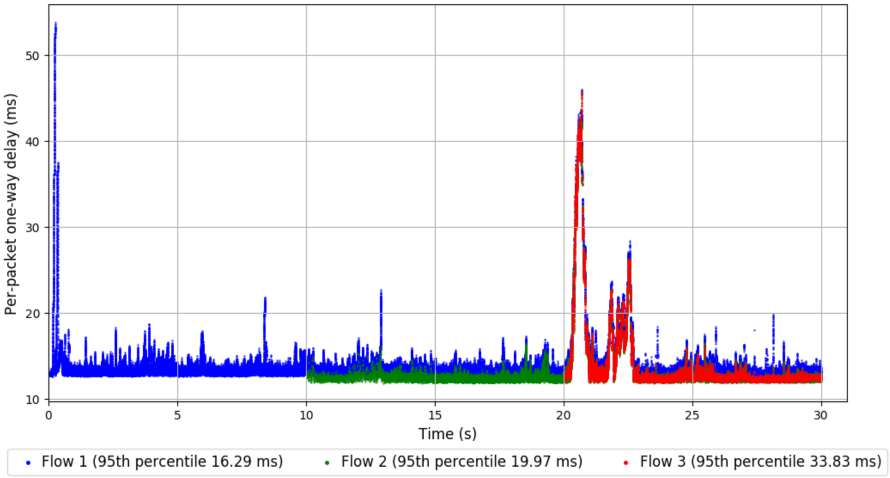
```
Run 2: Statistics of TCP BBR

Start at: 2018-05-24 14:16:13
End at: 2018-05-24 14:16:43
Local clock offset: 2.184 ms
Remote clock offset: -2.777 ms

# Below is generated by plot.py at 2018-05-24 16:57:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 75.72 Mbit/s
95th percentile per-packet one-way delay: 18.167 ms
Loss rate: 15.72%
-- Flow 1:
Average throughput: 54.25 Mbit/s
95th percentile per-packet one-way delay: 16.291 ms
Loss rate: 15.11%
-- Flow 2:
Average throughput: 24.85 Mbit/s
95th percentile per-packet one-way delay: 19.969 ms
Loss rate: 16.76%
-- Flow 3:
Average throughput: 14.76 Mbit/s
95th percentile per-packet one-way delay: 33.831 ms
Loss rate: 18.74%
```

Run 2: Report of TCP BBR — Data Link



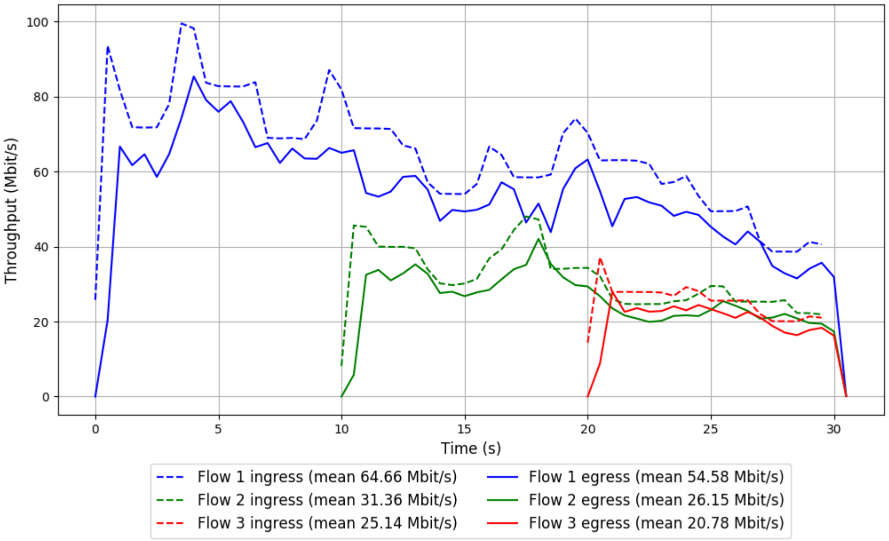


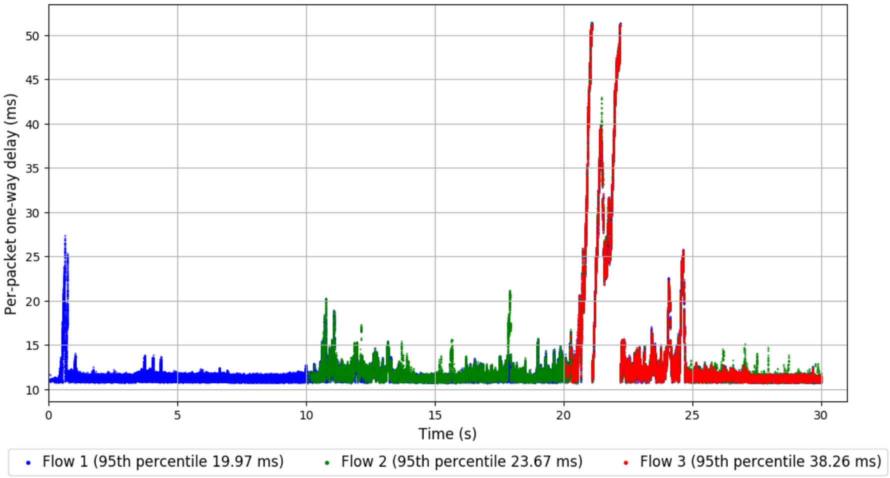
```
Run 3: Statistics of TCP BBR

Start at: 2018-05-24 14:34:42
End at: 2018-05-24 14:35:12
Local clock offset: 0.792 ms
Remote clock offset: 0.396 ms

# Below is generated by plot.py at 2018-05-24 16:57:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.91 Mbit/s
95th percentile per-packet one-way delay: 23.867 ms
Loss rate: 15.98%
-- Flow 1:
Average throughput: 54.58 Mbit/s
95th percentile per-packet one-way delay: 19.966 ms
Loss rate: 15.59%
-- Flow 2:
Average throughput: 26.15 Mbit/s
95th percentile per-packet one-way delay: 23.673 ms
Loss rate: 16.62%
-- Flow 3:
Average throughput: 20.78 Mbit/s
95th percentile per-packet one-way delay: 38.264 ms
Loss rate: 17.38%
```

Run 3: Report of TCP BBR — Data Link



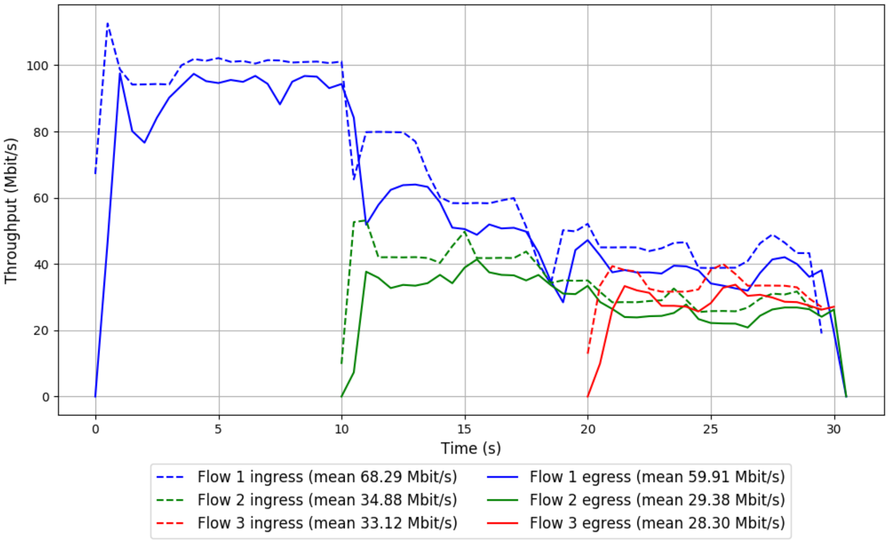


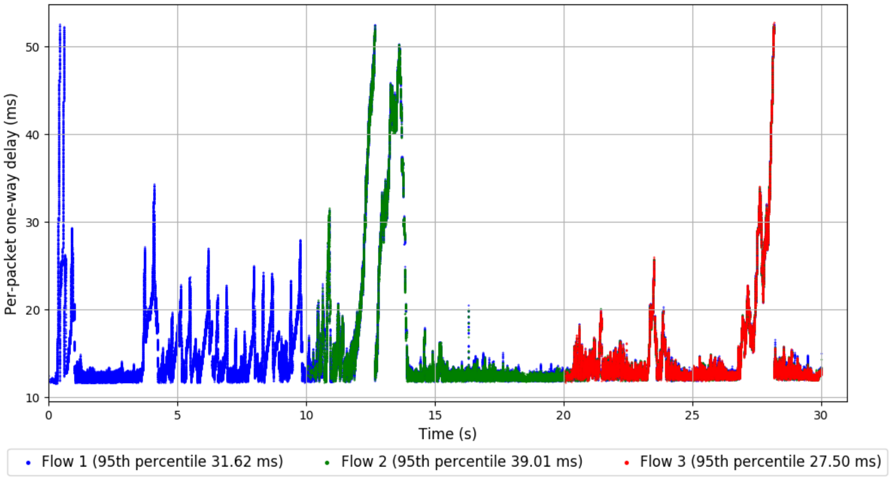
```
Run 4: Statistics of TCP BBR

Start at: 2018-05-24 14:53:18
End at: 2018-05-24 14:53:48
Local clock offset: 1.393 ms
Remote clock offset: 1.974 ms

# Below is generated by plot.py at 2018-05-24 16:57:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.88 Mbit/s
95th percentile per-packet one-way delay: 32.306 ms
Loss rate: 13.31%
-- Flow 1:
Average throughput: 59.91 Mbit/s
95th percentile per-packet one-way delay: 31.618 ms
Loss rate: 12.27%
-- Flow 2:
Average throughput: 29.38 Mbit/s
95th percentile per-packet one-way delay: 39.013 ms
Loss rate: 15.77%
-- Flow 3:
Average throughput: 28.30 Mbit/s
95th percentile per-packet one-way delay: 27.504 ms
Loss rate: 14.54%
```

Run 4: Report of TCP BBR — Data Link



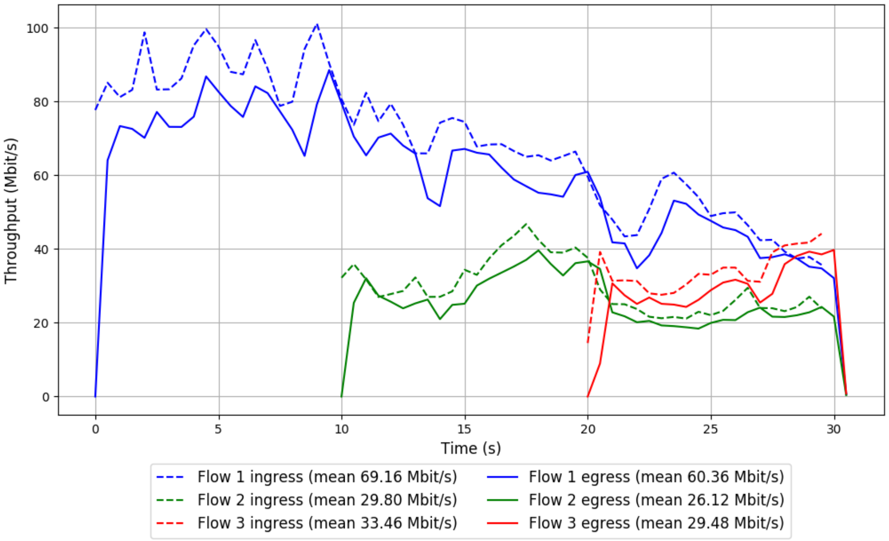


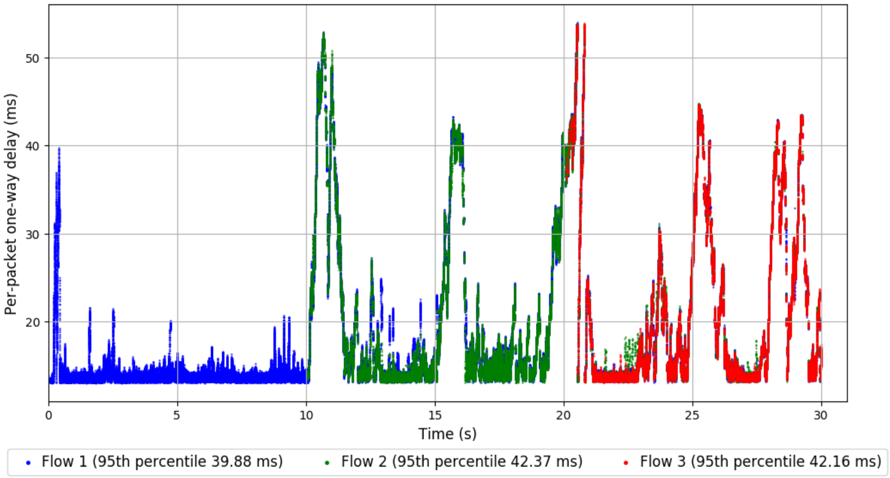
```
Run 5: Statistics of TCP BBR

Start at: 2018-05-24 15:11:25
End at: 2018-05-24 15:11:55
Local clock offset: -0.035 ms
Remote clock offset: -4.968 ms

# Below is generated by plot.py at 2018-05-24 16:57:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.54 Mbit/s
95th percentile per-packet one-way delay: 40.982 ms
Loss rate: 12.57%
-- Flow 1:
Average throughput: 60.36 Mbit/s
95th percentile per-packet one-way delay: 39.883 ms
Loss rate: 12.71%
-- Flow 2:
Average throughput: 26.12 Mbit/s
95th percentile per-packet one-way delay: 42.365 ms
Loss rate: 12.34%
-- Flow 3:
Average throughput: 29.48 Mbit/s
95th percentile per-packet one-way delay: 42.160 ms
Loss rate: 12.08%
```

Run 5: Report of TCP BBR — Data Link



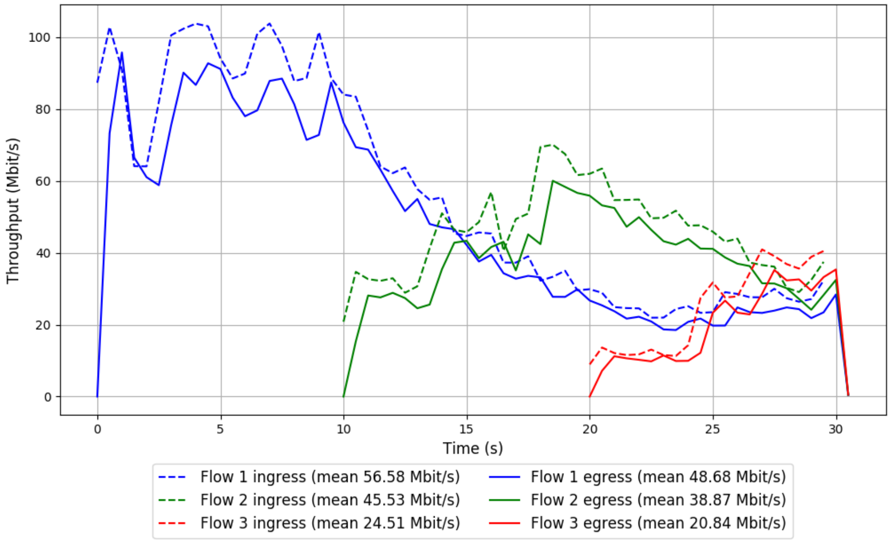


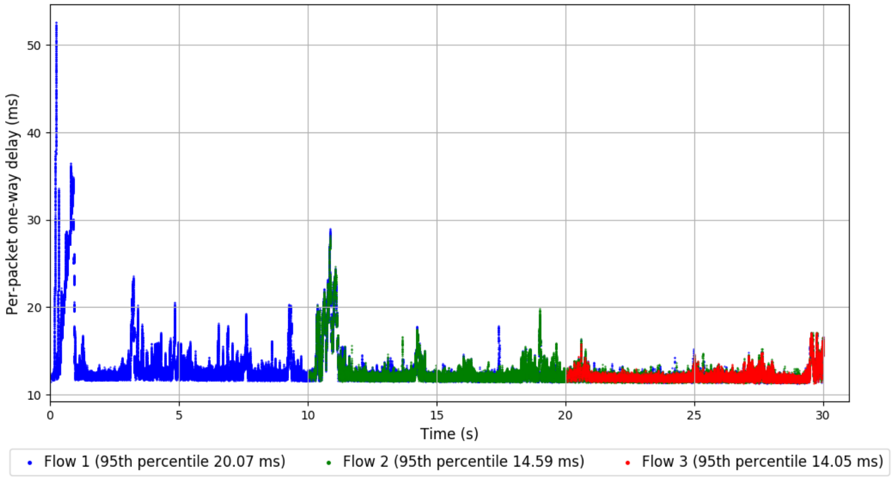
```
Run 6: Statistics of TCP BBR

Start at: 2018-05-24 15:29:55
End at: 2018-05-24 15:30:25
Local clock offset: 1.336 ms
Remote clock offset: -3.517 ms

# Below is generated by plot.py at 2018-05-24 16:57:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 81.51 Mbit/s
95th percentile per-packet one-way delay: 17.662 ms
Loss rate: 14.25%
-- Flow 1:
Average throughput: 48.68 Mbit/s
95th percentile per-packet one-way delay: 20.070 ms
Loss rate: 13.96%
-- Flow 2:
Average throughput: 38.87 Mbit/s
95th percentile per-packet one-way delay: 14.593 ms
Loss rate: 14.62%
-- Flow 3:
Average throughput: 20.84 Mbit/s
95th percentile per-packet one-way delay: 14.048 ms
Loss rate: 14.93%
```

Run 6: Report of TCP BBR — Data Link



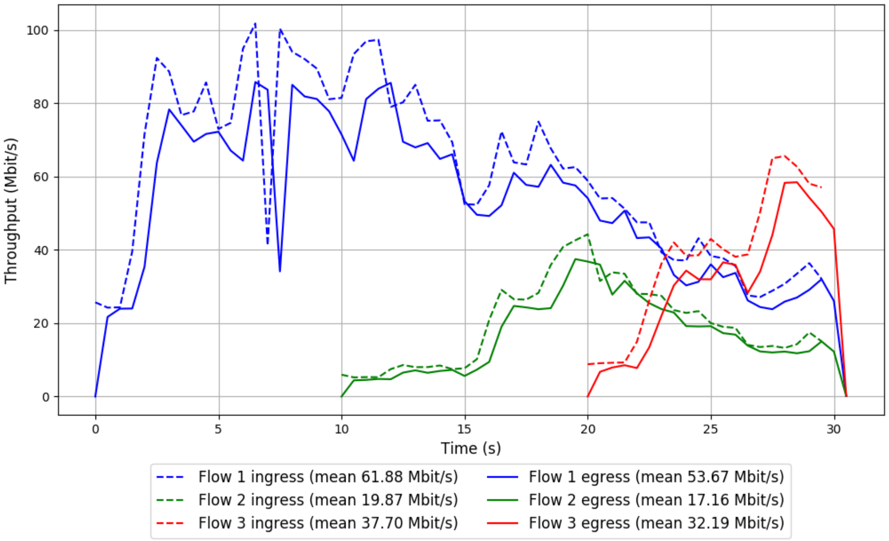


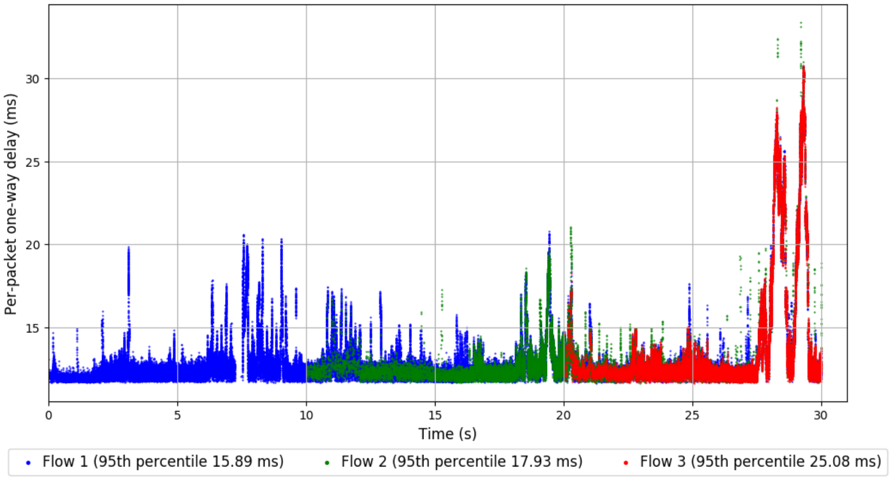
```
Run 7: Statistics of TCP BBR

Start at: 2018-05-24 15:48:04
End at: 2018-05-24 15:48:34
Local clock offset: 1.795 ms
Remote clock offset: 3.465 ms

# Below is generated by plot.py at 2018-05-24 16:57:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 75.80 Mbit/s
95th percentile per-packet one-way delay: 18.029 ms
Loss rate: 13.53%
-- Flow 1:
Average throughput: 53.67 Mbit/s
95th percentile per-packet one-way delay: 15.890 ms
Loss rate: 13.27%
-- Flow 2:
Average throughput: 17.16 Mbit/s
95th percentile per-packet one-way delay: 17.934 ms
Loss rate: 13.67%
-- Flow 3:
Average throughput: 32.19 Mbit/s
95th percentile per-packet one-way delay: 25.084 ms
Loss rate: 14.65%
```

Run 7: Report of TCP BBR — Data Link



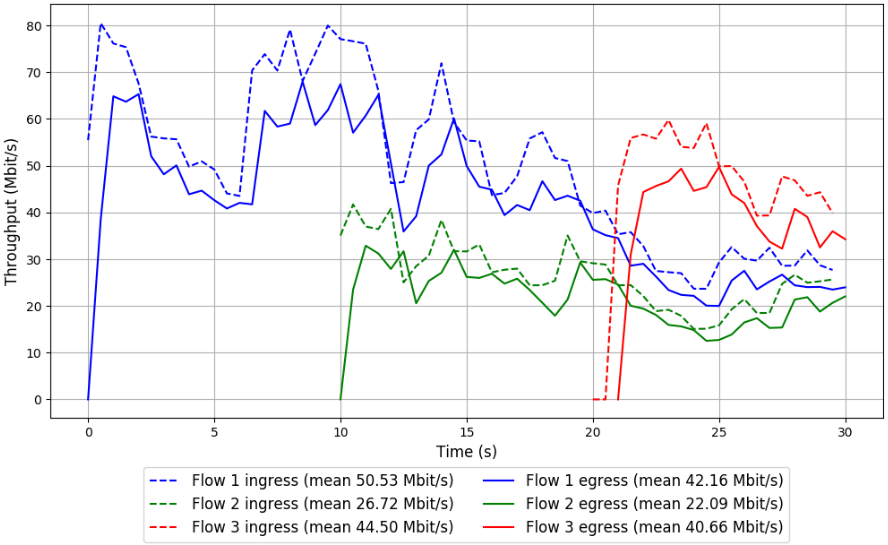


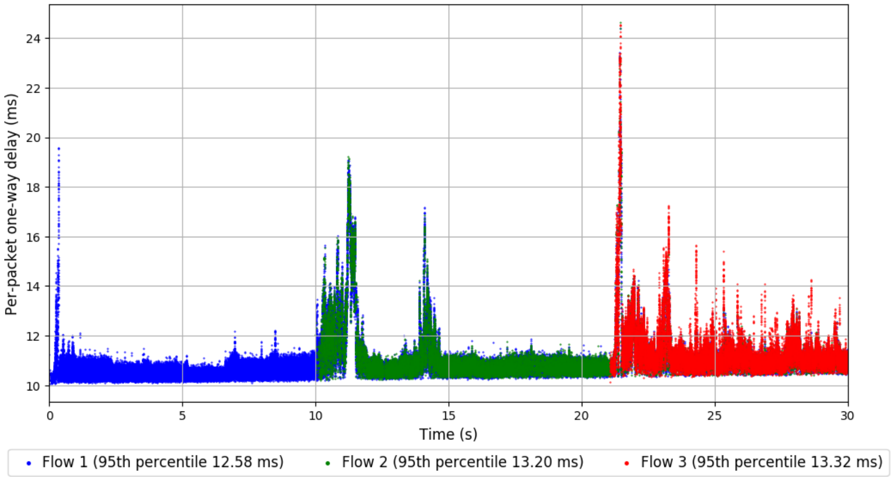
```
Run 8: Statistics of TCP BBR

Start at: 2018-05-24 16:06:16
End at: 2018-05-24 16:06:46
Local clock offset: 3.164 ms
Remote clock offset: -0.901 ms

# Below is generated by plot.py at 2018-05-24 16:57:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 69.03 Mbit/s
95th percentile per-packet one-way delay: 12.913 ms
Loss rate: 16.98%
-- Flow 1:
Average throughput: 42.16 Mbit/s
95th percentile per-packet one-way delay: 12.582 ms
Loss rate: 16.56%
-- Flow 2:
Average throughput: 22.09 Mbit/s
95th percentile per-packet one-way delay: 13.196 ms
Loss rate: 17.34%
-- Flow 3:
Average throughput: 40.66 Mbit/s
95th percentile per-packet one-way delay: 13.316 ms
Loss rate: 18.00%
```

Run 8: Report of TCP BBR — Data Link



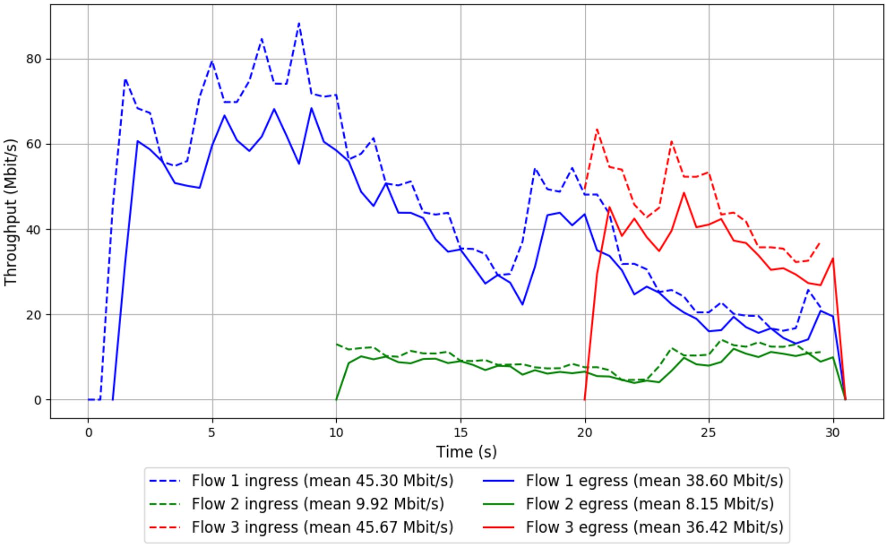


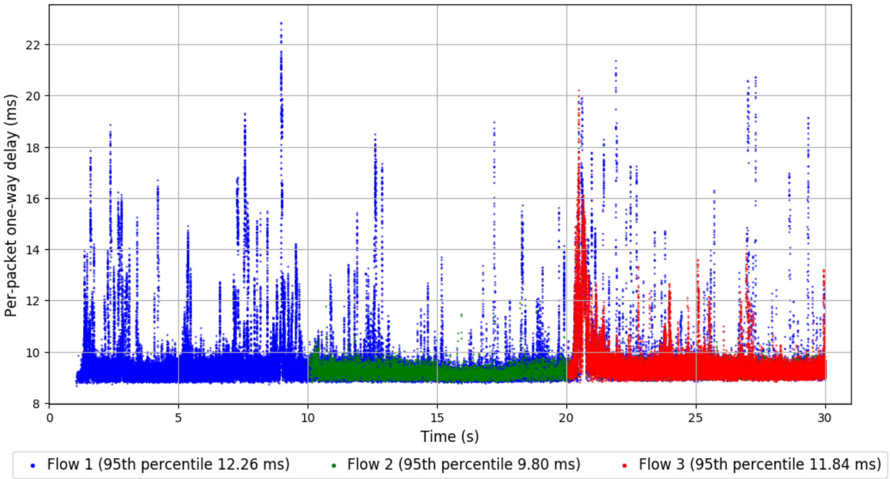
```
Run 9: Statistics of TCP BBR

Start at: 2018-05-24 16:24:34
End at: 2018-05-24 16:25:04
Local clock offset: 2.825 ms
Remote clock offset: -9.063 ms

# Below is generated by plot.py at 2018-05-24 16:57:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 56.75 Mbit/s
95th percentile per-packet one-way delay: 11.955 ms
Loss rate: 18.31%
-- Flow 1:
Average throughput: 38.60 Mbit/s
95th percentile per-packet one-way delay: 12.255 ms
Loss rate: 17.72%
-- Flow 2:
Average throughput: 8.15 Mbit/s
95th percentile per-packet one-way delay: 9.804 ms
Loss rate: 17.86%
-- Flow 3:
Average throughput: 36.42 Mbit/s
95th percentile per-packet one-way delay: 11.842 ms
Loss rate: 20.26%
```

Run 9: Report of TCP BBR — Data Link



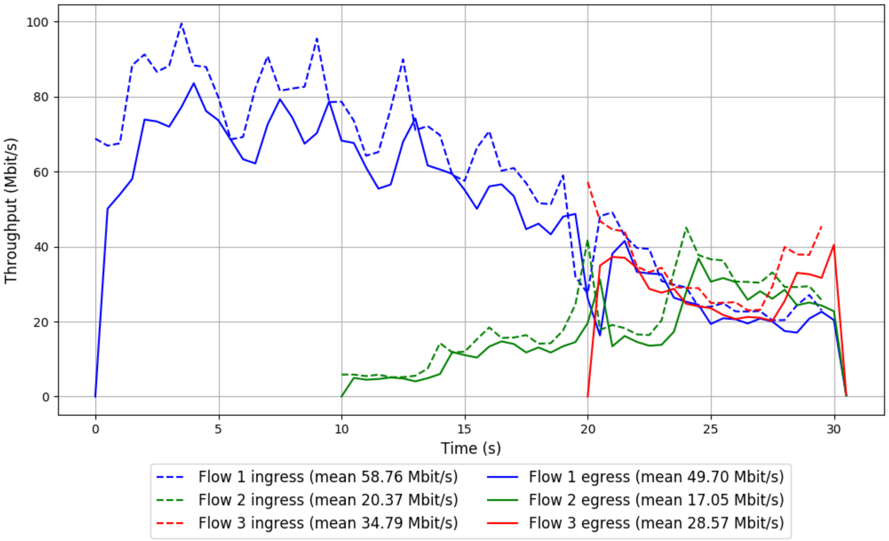


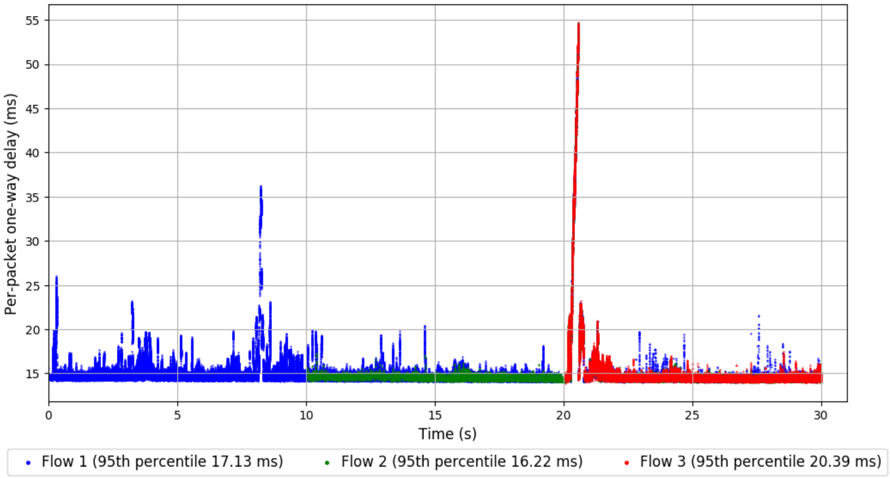
```
Run 10: Statistics of TCP BBR

Start at: 2018-05-24 16:42:50
End at: 2018-05-24 16:43:20
Local clock offset: -0.903 ms
Remote clock offset: -2.587 ms

# Below is generated by plot.py at 2018-05-24 16:57:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 70.55 Mbit/s
95th percentile per-packet one-way delay: 17.308 ms
Loss rate: 15.91%
-- Flow 1:
Average throughput: 49.70 Mbit/s
95th percentile per-packet one-way delay: 17.127 ms
Loss rate: 15.43%
-- Flow 2:
Average throughput: 17.05 Mbit/s
95th percentile per-packet one-way delay: 16.222 ms
Loss rate: 16.31%
-- Flow 3:
Average throughput: 28.57 Mbit/s
95th percentile per-packet one-way delay: 20.387 ms
Loss rate: 17.86%
```

Run 10: Report of TCP BBR — Data Link



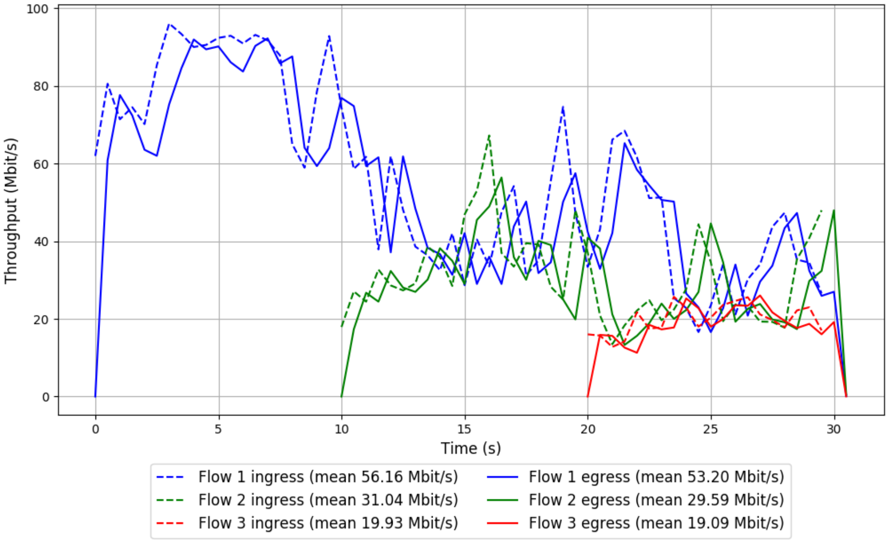


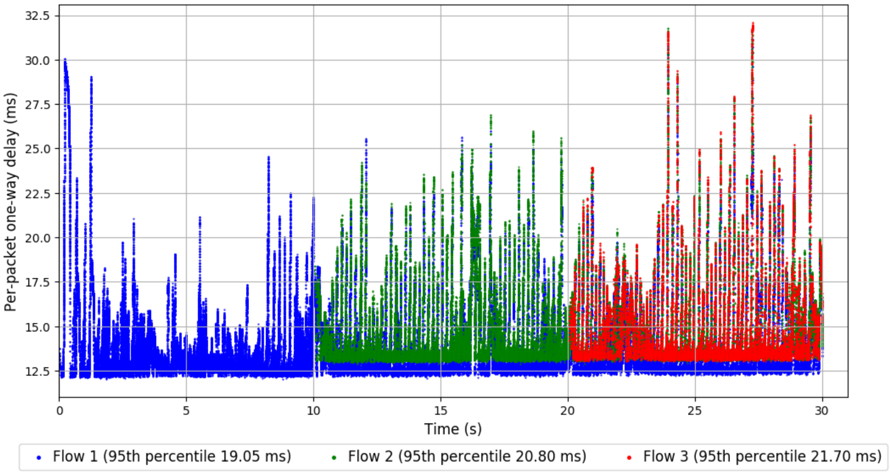
```
Run 1: Statistics of Copa

Start at: 2018-05-24 13:54:45
End at: 2018-05-24 13:55:15
Local clock offset: 1.413 ms
Remote clock offset: 2.218 ms

# Below is generated by plot.py at 2018-05-24 16:58:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 79.25 Mbit/s
95th percentile per-packet one-way delay: 20.025 ms
Loss rate: 5.04%
-- Flow 1:
Average throughput: 53.20 Mbit/s
95th percentile per-packet one-way delay: 19.052 ms
Loss rate: 5.27%
-- Flow 2:
Average throughput: 29.59 Mbit/s
95th percentile per-packet one-way delay: 20.795 ms
Loss rate: 4.69%
-- Flow 3:
Average throughput: 19.09 Mbit/s
95th percentile per-packet one-way delay: 21.703 ms
Loss rate: 4.22%
```

Run 1: Report of Copa — Data Link



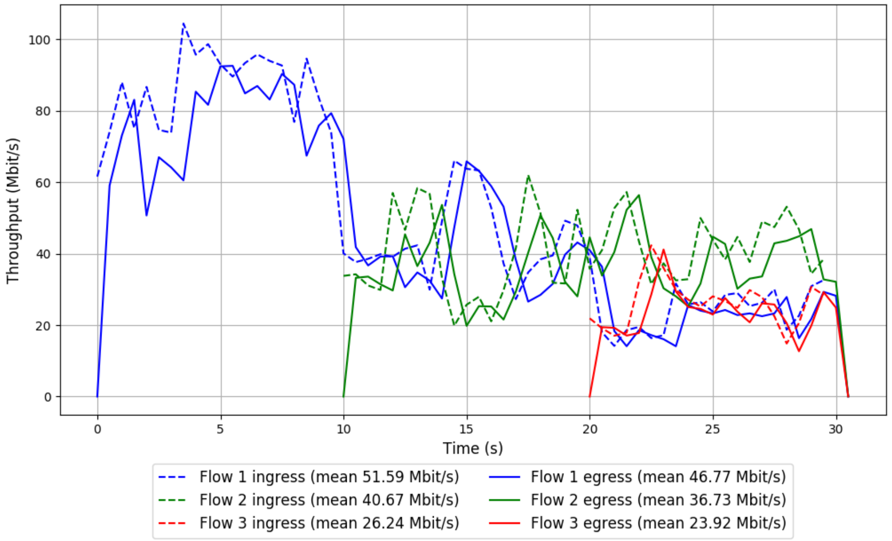


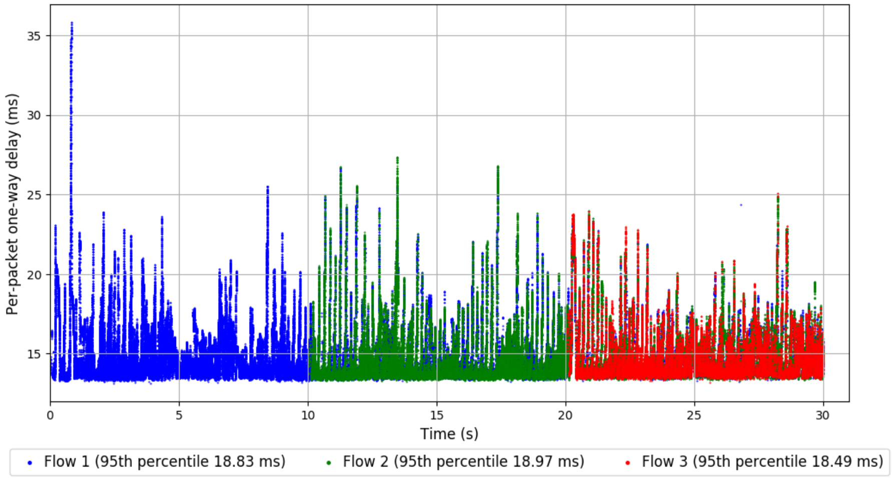
```
Run 2: Statistics of Copa

Start at: 2018-05-24 14:12:49
End at: 2018-05-24 14:13:19
Local clock offset: 1.156 ms
Remote clock offset: -2.682 ms

# Below is generated by plot.py at 2018-05-24 16:58:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 79.18 Mbit/s
95th percentile per-packet one-way delay: 18.846 ms
Loss rate: 9.40%
-- Flow 1:
Average throughput: 46.77 Mbit/s
95th percentile per-packet one-way delay: 18.830 ms
Loss rate: 9.35%
-- Flow 2:
Average throughput: 36.73 Mbit/s
95th percentile per-packet one-way delay: 18.968 ms
Loss rate: 9.68%
-- Flow 3:
Average throughput: 23.92 Mbit/s
95th percentile per-packet one-way delay: 18.487 ms
Loss rate: 8.89%
```

Run 2: Report of Copa — Data Link



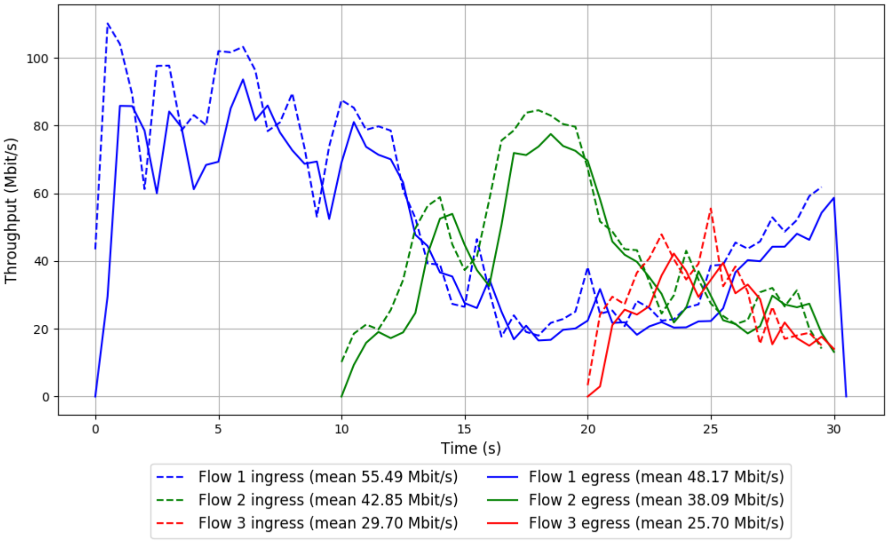


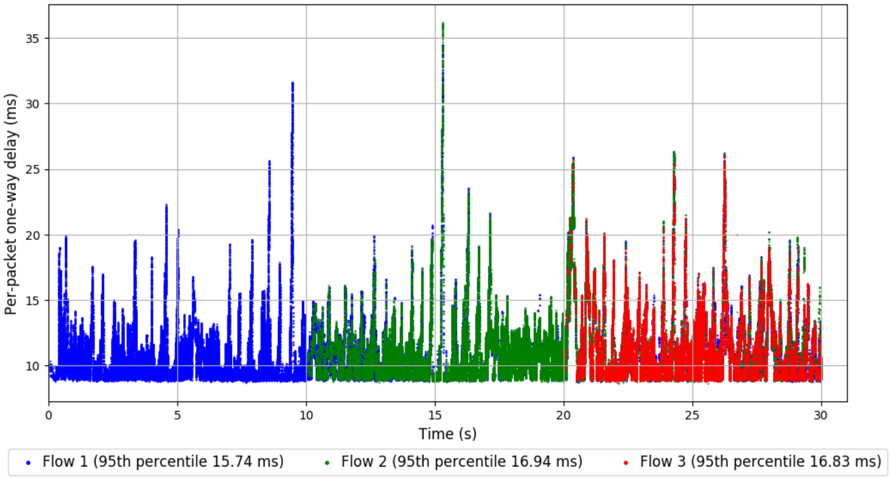
```
Run 3: Statistics of Copa

Start at: 2018-05-24 14:31:05
End at: 2018-05-24 14:31:35
Local clock offset: 2.739 ms
Remote clock offset: -0.148 ms

# Below is generated by plot.py at 2018-05-24 16:58:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 82.09 Mbit/s
95th percentile per-packet one-way delay: 16.337 ms
Loss rate: 12.58%
-- Flow 1:
Average throughput: 48.17 Mbit/s
95th percentile per-packet one-way delay: 15.745 ms
Loss rate: 13.18%
-- Flow 2:
Average throughput: 38.09 Mbit/s
95th percentile per-packet one-way delay: 16.941 ms
Loss rate: 11.12%
-- Flow 3:
Average throughput: 25.70 Mbit/s
95th percentile per-packet one-way delay: 16.834 ms
Loss rate: 13.46%
```

Run 3: Report of Copa — Data Link



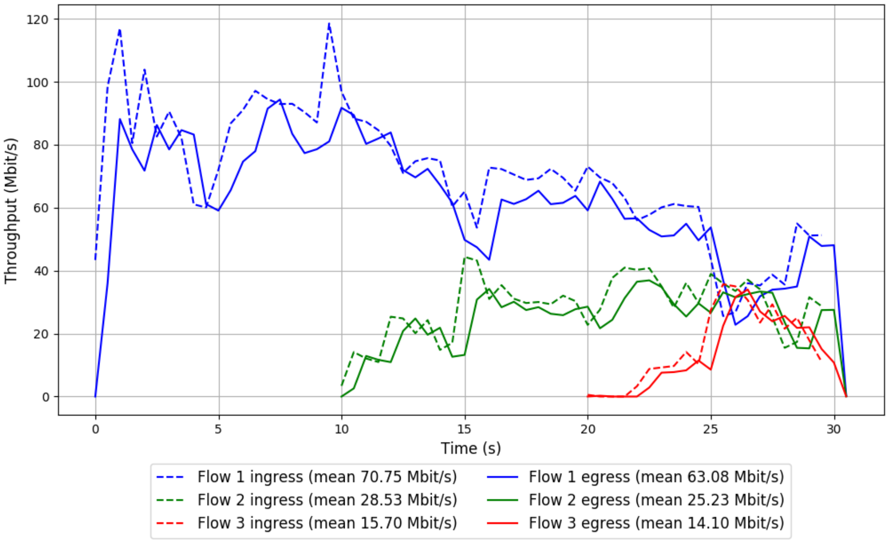


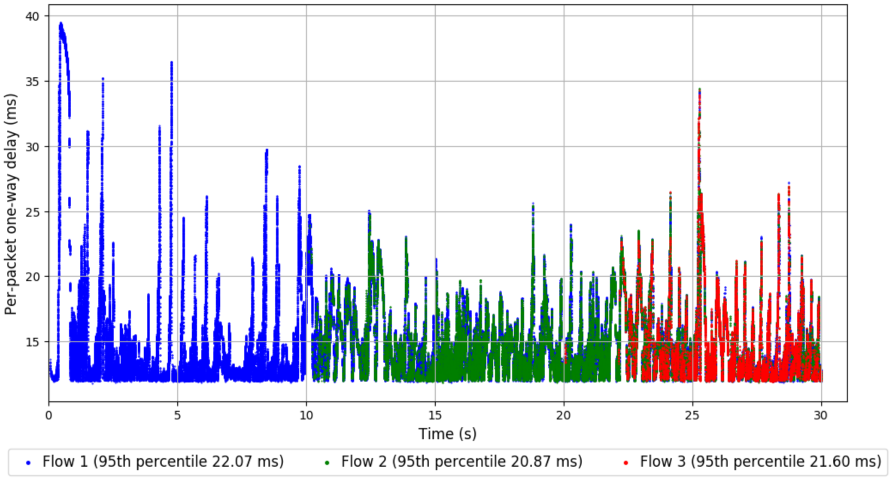
```
Run 4: Statistics of Copa

Start at: 2018-05-24 14:49:47
End at: 2018-05-24 14:50:17
Local clock offset: 1.588 ms
Remote clock offset: 3.419 ms

# Below is generated by plot.py at 2018-05-24 16:58:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.57 Mbit/s
95th percentile per-packet one-way delay: 21.729 ms
Loss rate: 10.95%
-- Flow 1:
Average throughput: 63.08 Mbit/s
95th percentile per-packet one-way delay: 22.069 ms
Loss rate: 10.84%
-- Flow 2:
Average throughput: 25.23 Mbit/s
95th percentile per-packet one-way delay: 20.867 ms
Loss rate: 11.60%
-- Flow 3:
Average throughput: 14.10 Mbit/s
95th percentile per-packet one-way delay: 21.601 ms
Loss rate: 10.18%
```

Run 4: Report of Copa — Data Link



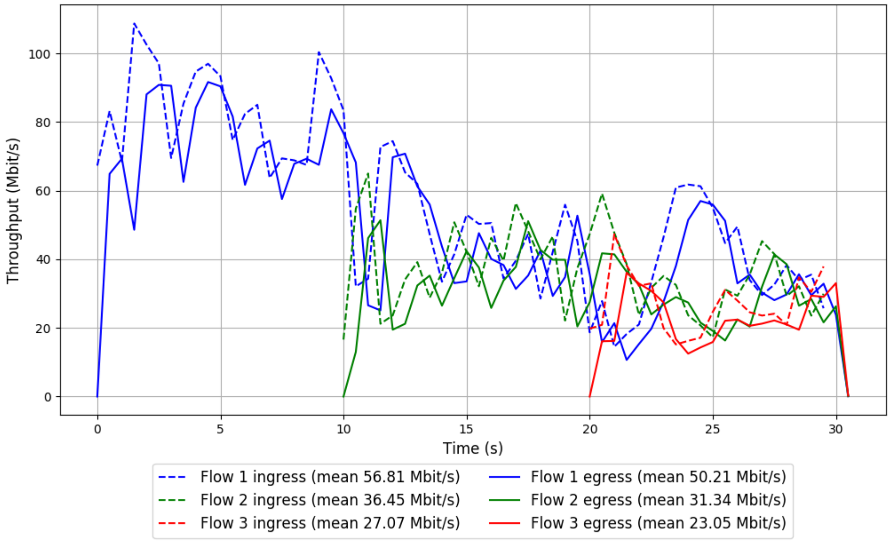


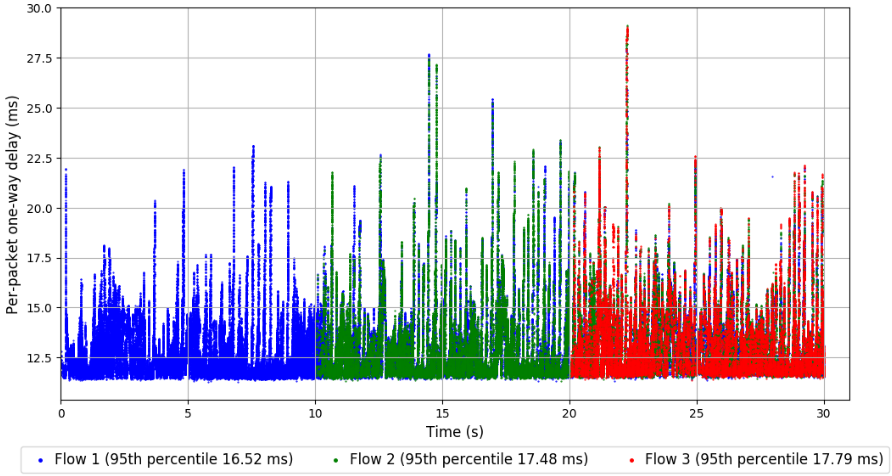
```
Run 5: Statistics of Copa

Start at: 2018-05-24 15:08:01
End at: 2018-05-24 15:08:31
Local clock offset: 0.552 ms
Remote clock offset: -5.261 ms

# Below is generated by plot.py at 2018-05-24 16:58:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.75 Mbit/s
95th percentile per-packet one-way delay: 16.910 ms
Loss rate: 12.59%
-- Flow 1:
Average throughput: 50.21 Mbit/s
95th percentile per-packet one-way delay: 16.519 ms
Loss rate: 11.63%
-- Flow 2:
Average throughput: 31.34 Mbit/s
95th percentile per-packet one-way delay: 17.483 ms
Loss rate: 14.01%
-- Flow 3:
Average throughput: 23.05 Mbit/s
95th percentile per-packet one-way delay: 17.787 ms
Loss rate: 14.86%
```

Run 5: Report of Copa — Data Link



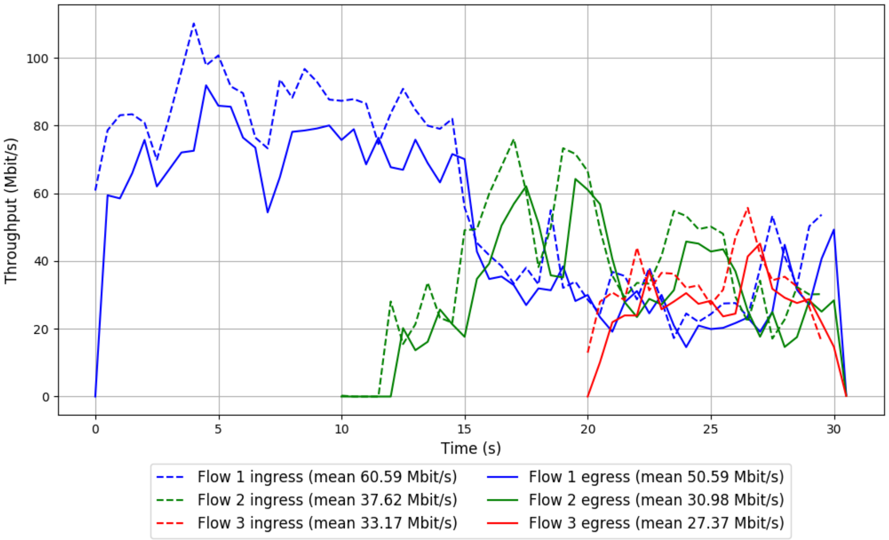


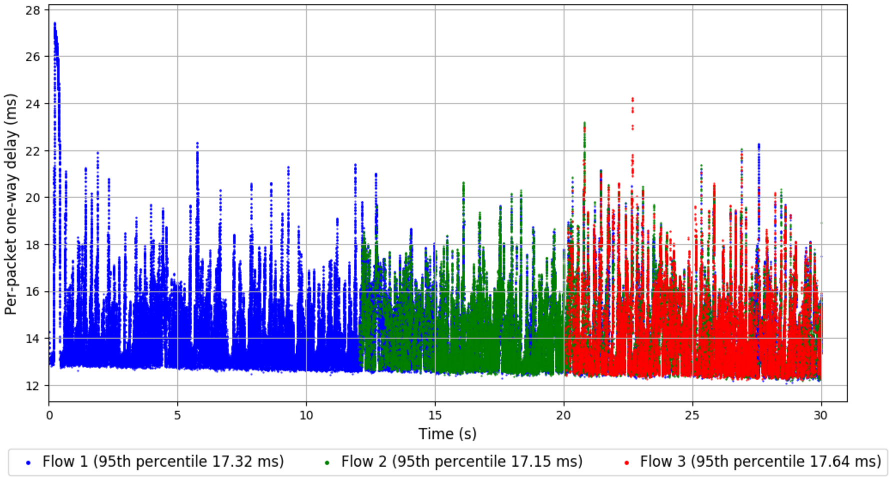
```
Run 6: Statistics of Copa

Start at: 2018-05-24 15:26:29
End at: 2018-05-24 15:26:59
Local clock offset: 0.622 ms
Remote clock offset: -6.606 ms

# Below is generated by plot.py at 2018-05-24 16:58:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 80.33 Mbit/s
95th percentile per-packet one-way delay: 17.316 ms
Loss rate: 16.90%
-- Flow 1:
Average throughput: 50.59 Mbit/s
95th percentile per-packet one-way delay: 17.318 ms
Loss rate: 16.50%
-- Flow 2:
Average throughput: 30.98 Mbit/s
95th percentile per-packet one-way delay: 17.147 ms
Loss rate: 17.63%
-- Flow 3:
Average throughput: 27.37 Mbit/s
95th percentile per-packet one-way delay: 17.640 ms
Loss rate: 17.47%
```

Run 6: Report of Copa — Data Link



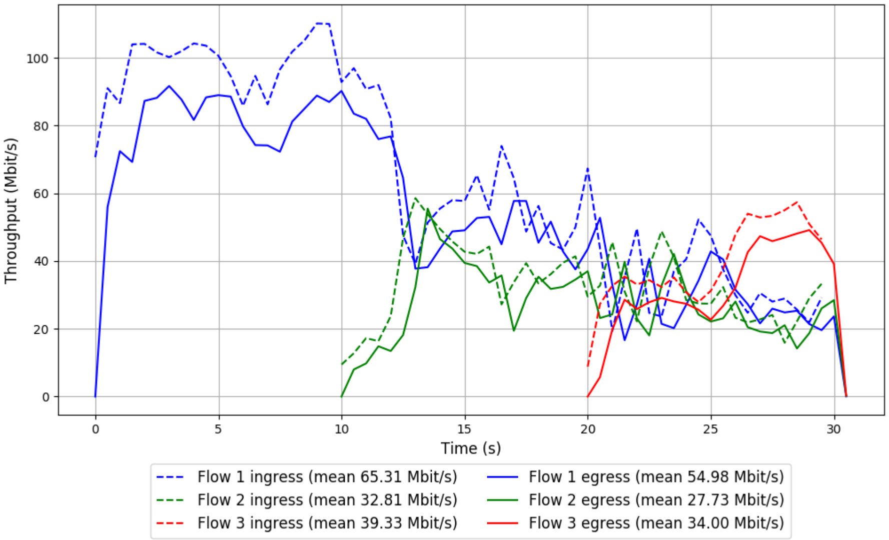


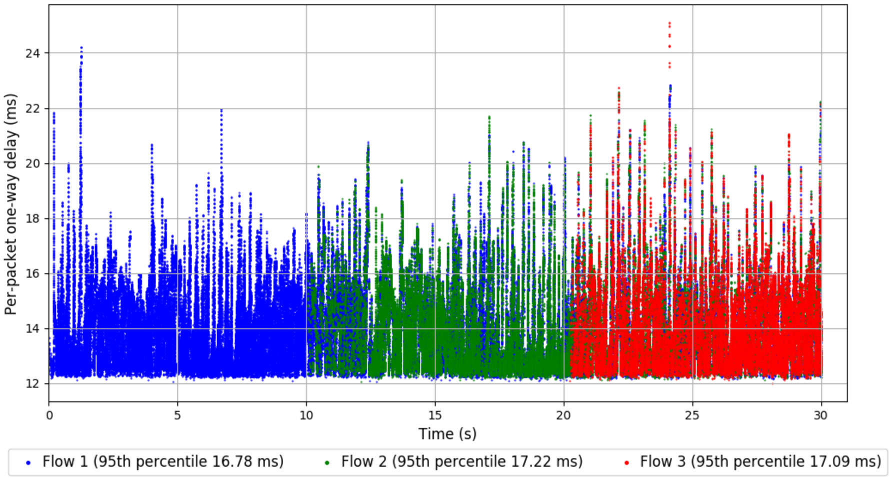
```
Run 7: Statistics of Copa

Start at: 2018-05-24 15:44:40
End at: 2018-05-24 15:45:10
Local clock offset: 1.56 ms
Remote clock offset: 3.252 ms

# Below is generated by plot.py at 2018-05-24 16:59:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.53 Mbit/s
95th percentile per-packet one-way delay: 16.921 ms
Loss rate: 15.68%
-- Flow 1:
Average throughput: 54.98 Mbit/s
95th percentile per-packet one-way delay: 16.776 ms
Loss rate: 15.82%
-- Flow 2:
Average throughput: 27.73 Mbit/s
95th percentile per-packet one-way delay: 17.222 ms
Loss rate: 15.50%
-- Flow 3:
Average throughput: 34.00 Mbit/s
95th percentile per-packet one-way delay: 17.089 ms
Loss rate: 15.29%
```

Run 7: Report of Copa — Data Link



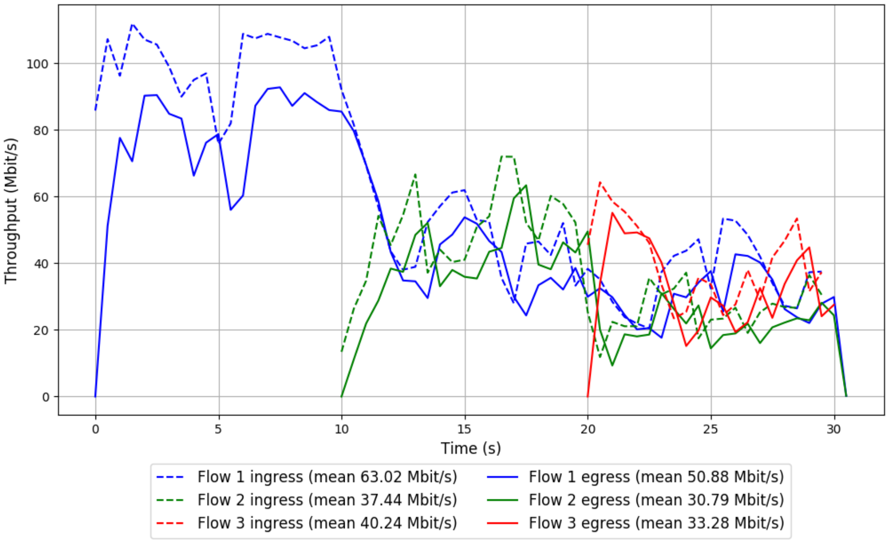


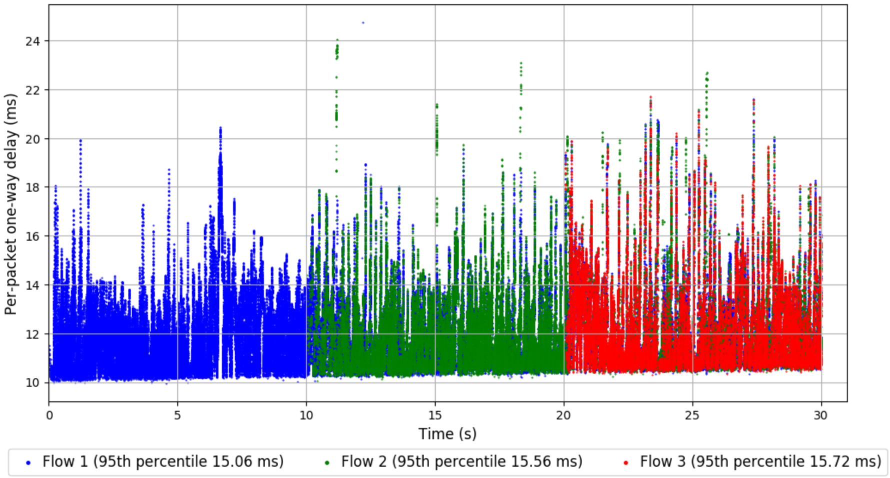
```
Run 8: Statistics of Copa

Start at: 2018-05-24 16:02:49
End at: 2018-05-24 16:03:19
Local clock offset: 2.875 ms
Remote clock offset: 1.52 ms

# Below is generated by plot.py at 2018-05-24 16:59:54
# Datalink statistics
-- Total of 3 flows:
Average throughput: 82.44 Mbit/s
95th percentile per-packet one-way delay: 15.302 ms
Loss rate: 18.64%
-- Flow 1:
Average throughput: 50.88 Mbit/s
95th percentile per-packet one-way delay: 15.064 ms
Loss rate: 19.27%
-- Flow 2:
Average throughput: 30.79 Mbit/s
95th percentile per-packet one-way delay: 15.558 ms
Loss rate: 17.74%
-- Flow 3:
Average throughput: 33.28 Mbit/s
95th percentile per-packet one-way delay: 15.720 ms
Loss rate: 17.31%
```

Run 8: Report of Copa — Data Link



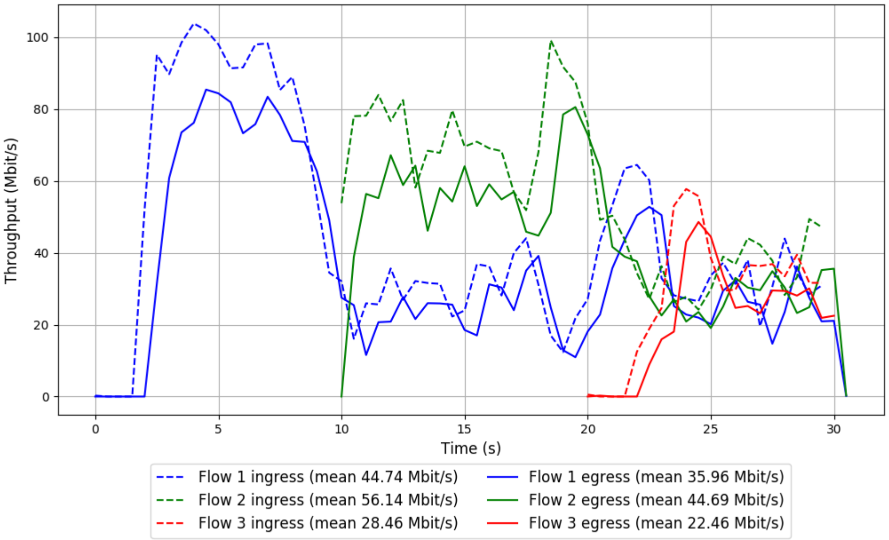


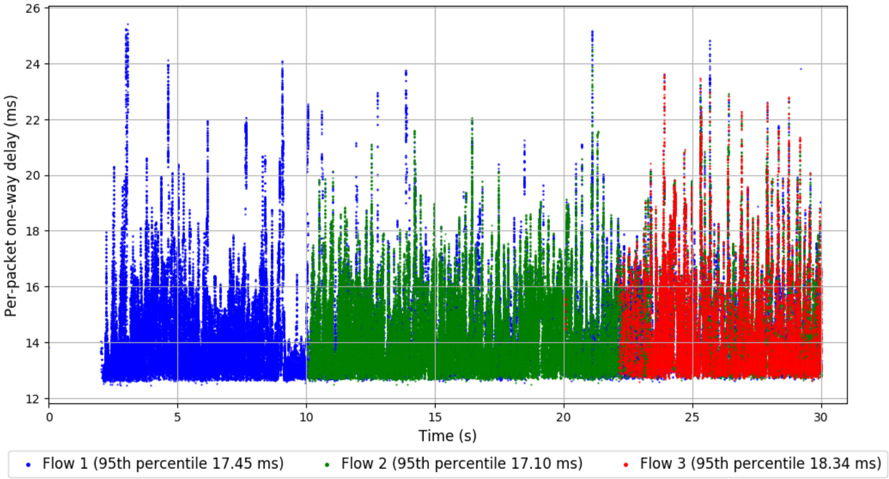
```
Run 9: Statistics of Copa

Start at: 2018-05-24 16:21:03
End at: 2018-05-24 16:21:33
Local clock offset: 0.962 ms
Remote clock offset: -6.401 ms

# Below is generated by plot.py at 2018-05-24 17:00:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 73.19 Mbit/s
95th percentile per-packet one-way delay: 17.377 ms
Loss rate: 20.09%
-- Flow 1:
Average throughput: 35.96 Mbit/s
95th percentile per-packet one-way delay: 17.455 ms
Loss rate: 19.64%
-- Flow 2:
Average throughput: 44.69 Mbit/s
95th percentile per-packet one-way delay: 17.097 ms
Loss rate: 20.39%
-- Flow 3:
Average throughput: 22.46 Mbit/s
95th percentile per-packet one-way delay: 18.338 ms
Loss rate: 21.08%
```

Run 9: Report of Copa — Data Link



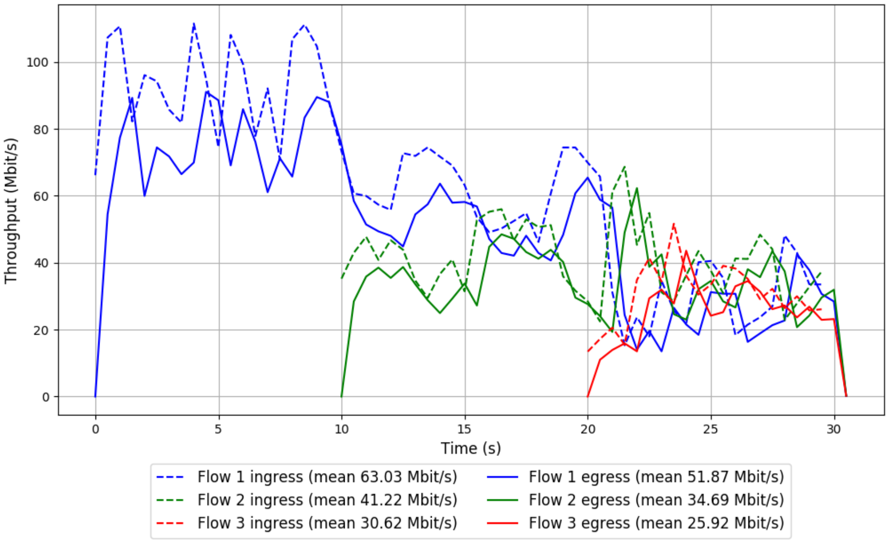


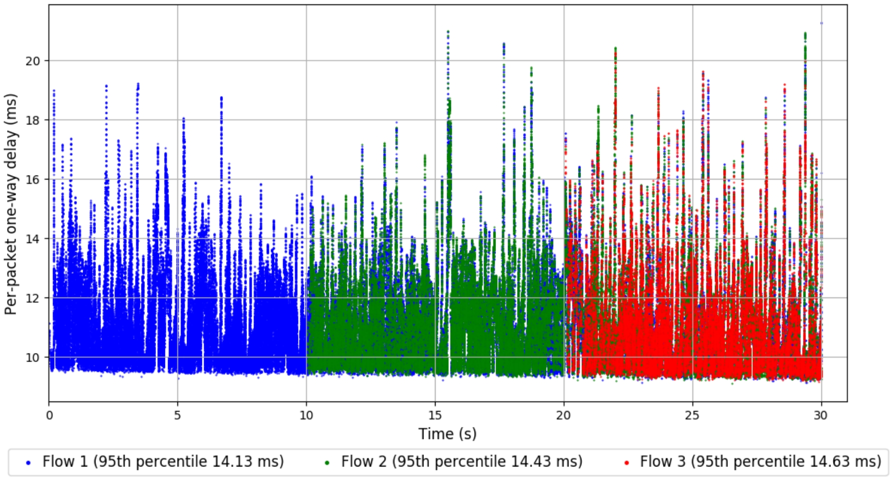
```
Run 10: Statistics of Copa

Start at: 2018-05-24 16:39:23
End at: 2018-05-24 16:39:53
Local clock offset: 3.287 ms
Remote clock offset: -5.057 ms

# Below is generated by plot.py at 2018-05-24 17:00:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 83.61 Mbit/s
95th percentile per-packet one-way delay: 14.249 ms
Loss rate: 16.93%
-- Flow 1:
Average throughput: 51.87 Mbit/s
95th percentile per-packet one-way delay: 14.126 ms
Loss rate: 17.68%
-- Flow 2:
Average throughput: 34.69 Mbit/s
95th percentile per-packet one-way delay: 14.431 ms
Loss rate: 15.83%
-- Flow 3:
Average throughput: 25.92 Mbit/s
95th percentile per-packet one-way delay: 14.626 ms
Loss rate: 15.33%
```

Run 10: Report of Copa — Data Link



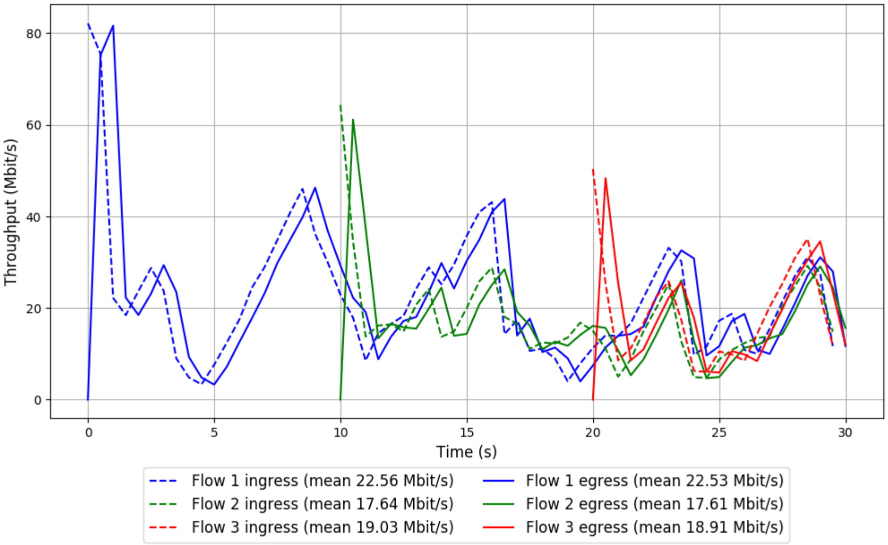


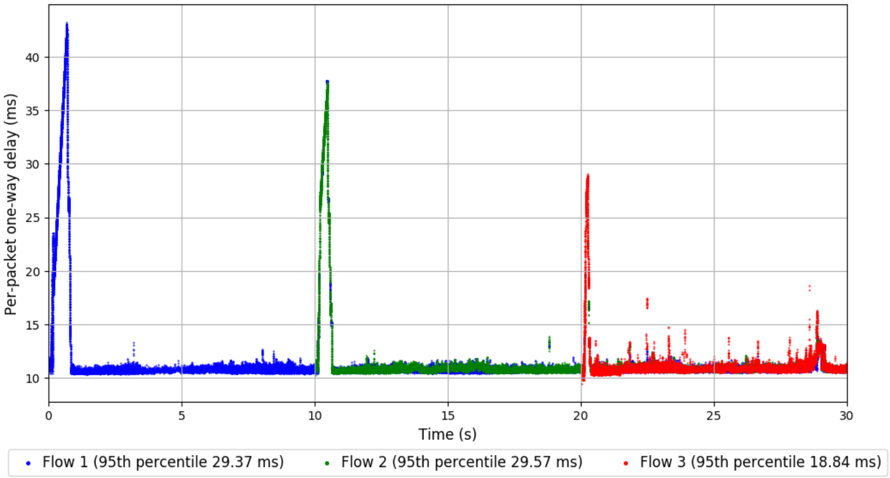
```
Run 1: Statistics of TCP Cubic

Start at: 2018-05-24 13:57:04
End at: 2018-05-24 13:57:34
Local clock offset: 3.264 ms
Remote clock offset: 0.737 ms

# Below is generated by plot.py at 2018-05-24 17:00:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 40.55 Mbit/s
95th percentile per-packet one-way delay: 27.940 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 22.53 Mbit/s
95th percentile per-packet one-way delay: 29.374 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 17.61 Mbit/s
95th percentile per-packet one-way delay: 29.567 ms
Loss rate: 0.17%
-- Flow 3:
Average throughput: 18.91 Mbit/s
95th percentile per-packet one-way delay: 18.844 ms
Loss rate: 0.59%
```

Run 1: Report of TCP Cubic — Data Link



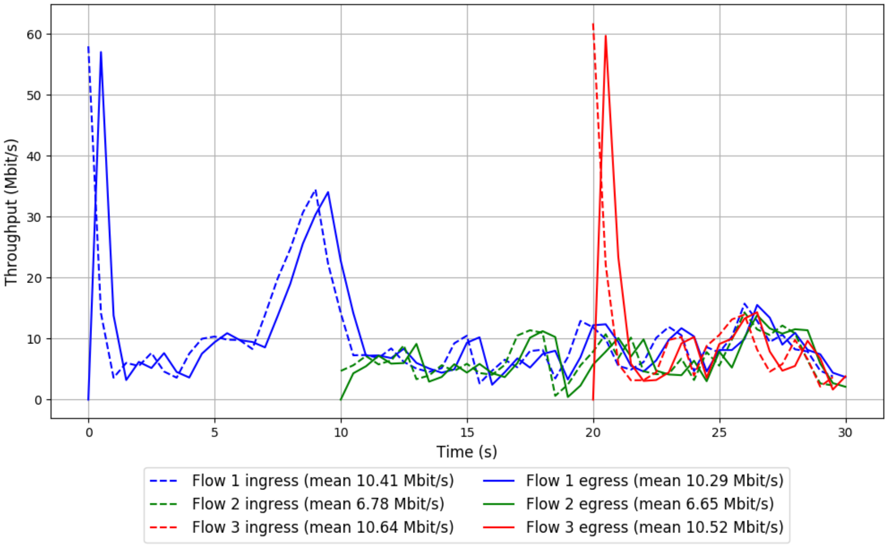


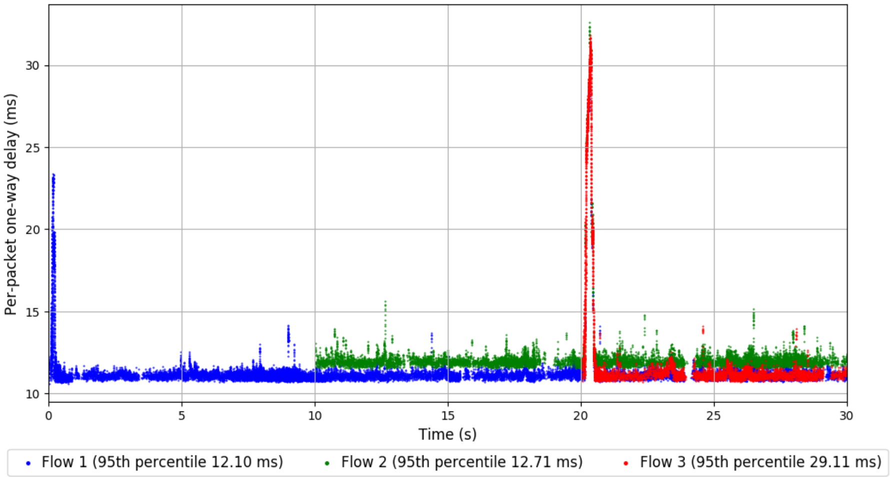
```
Run 2: Statistics of TCP Cubic

Start at: 2018-05-24 14:15:07
End at: 2018-05-24 14:15:37
Local clock offset: 2.695 ms
Remote clock offset: -3.303 ms

# Below is generated by plot.py at 2018-05-24 17:00:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 18.21 Mbit/s
95th percentile per-packet one-way delay: 19.422 ms
Loss rate: 1.33%
-- Flow 1:
Average throughput: 10.29 Mbit/s
95th percentile per-packet one-way delay: 12.099 ms
Loss rate: 1.17%
-- Flow 2:
Average throughput: 6.65 Mbit/s
95th percentile per-packet one-way delay: 12.706 ms
Loss rate: 1.83%
-- Flow 3:
Average throughput: 10.52 Mbit/s
95th percentile per-packet one-way delay: 29.115 ms
Loss rate: 1.13%
```

Run 2: Report of TCP Cubic — Data Link



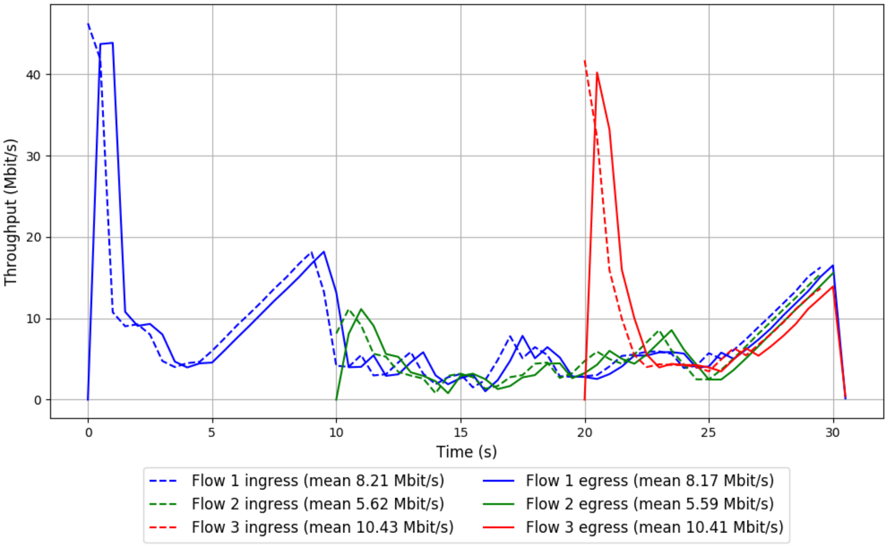


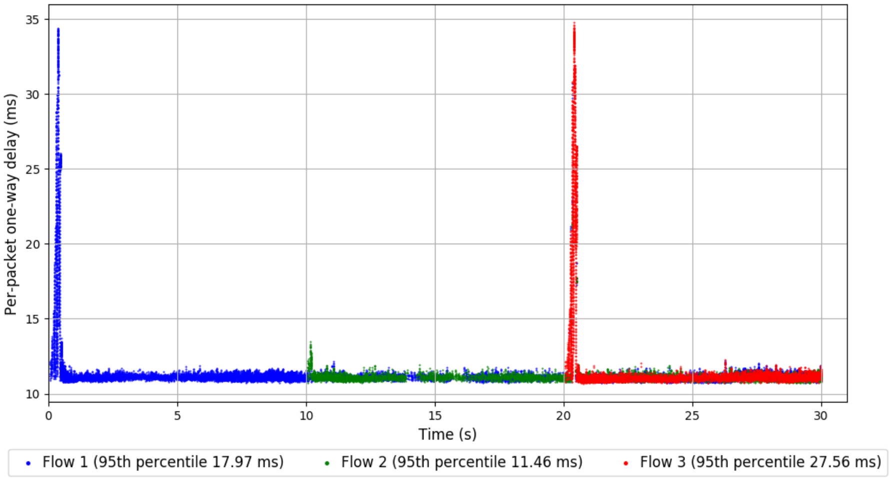
```
Run 3: Statistics of TCP Cubic

Start at: 2018-05-24 14:33:35
End at: 2018-05-24 14:34:05
Local clock offset: 1.808 ms
Remote clock offset: 1.259 ms

# Below is generated by plot.py at 2018-05-24 17:00:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 15.35 Mbit/s
95th percentile per-packet one-way delay: 20.205 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 8.17 Mbit/s
95th percentile per-packet one-way delay: 17.968 ms
Loss rate: 0.46%
-- Flow 2:
Average throughput: 5.59 Mbit/s
95th percentile per-packet one-way delay: 11.462 ms
Loss rate: 0.55%
-- Flow 3:
Average throughput: 10.41 Mbit/s
95th percentile per-packet one-way delay: 27.564 ms
Loss rate: 0.21%
```

Run 3: Report of TCP Cubic — Data Link



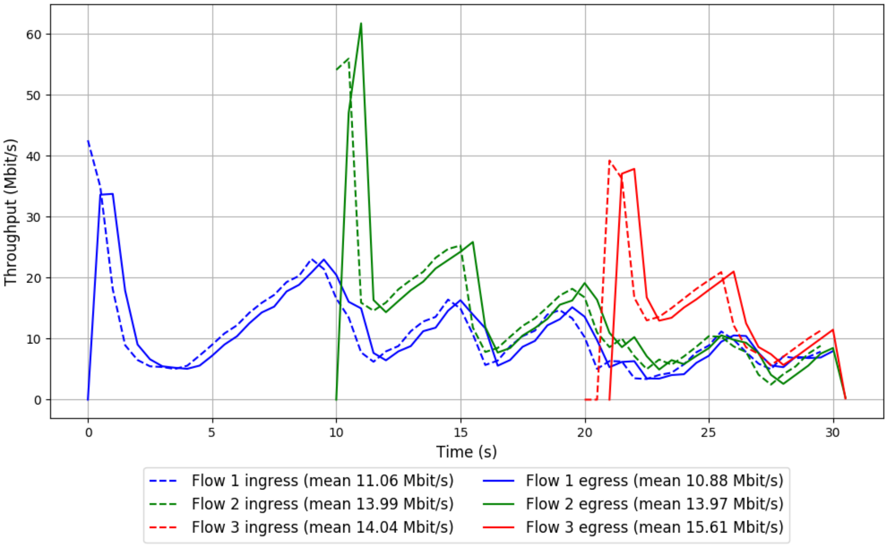


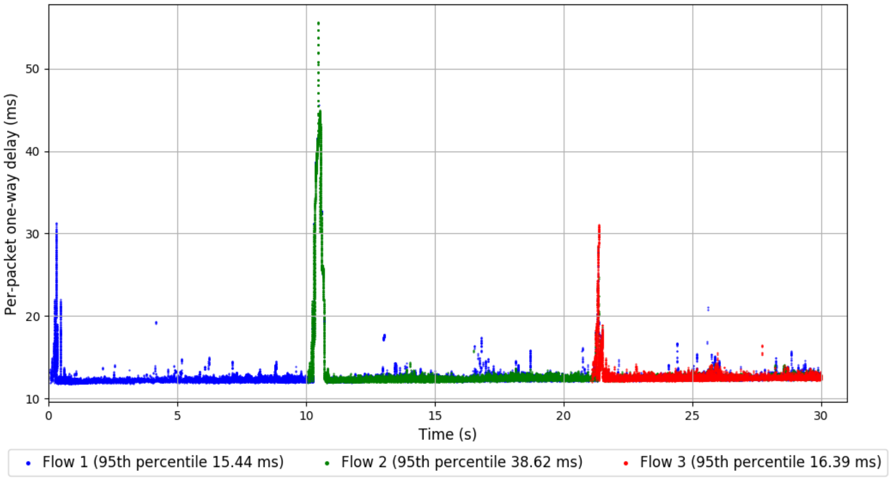
```
Run 4: Statistics of TCP Cubic

Start at: 2018-05-24 14:52:11
End at: 2018-05-24 14:52:41
Local clock offset: 1.379 ms
Remote clock offset: 3.076 ms

# Below is generated by plot.py at 2018-05-24 17:00:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 24.84 Mbit/s
95th percentile per-packet one-way delay: 24.951 ms
Loss rate: 0.81%
-- Flow 1:
Average throughput: 10.88 Mbit/s
95th percentile per-packet one-way delay: 15.435 ms
Loss rate: 1.62%
-- Flow 2:
Average throughput: 13.97 Mbit/s
95th percentile per-packet one-way delay: 38.615 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 15.61 Mbit/s
95th percentile per-packet one-way delay: 16.390 ms
Loss rate: 0.15%
```

Run 4: Report of TCP Cubic — Data Link



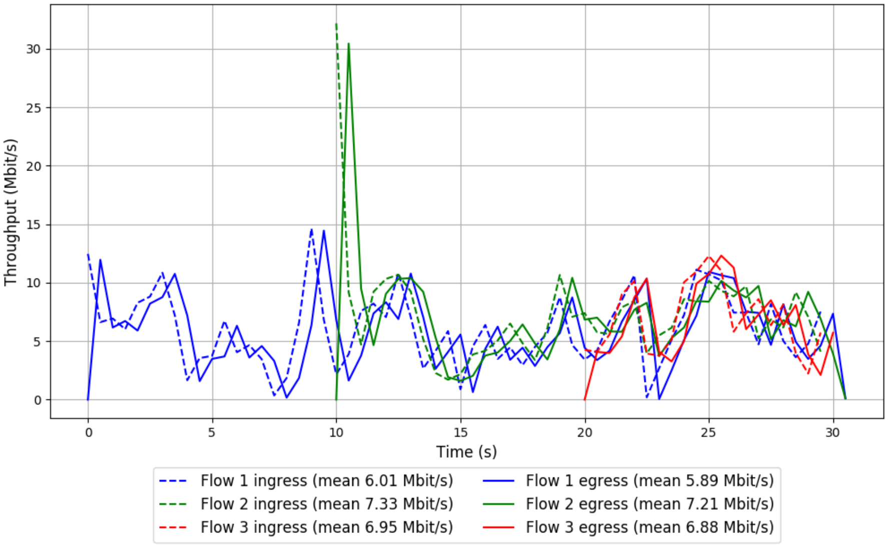


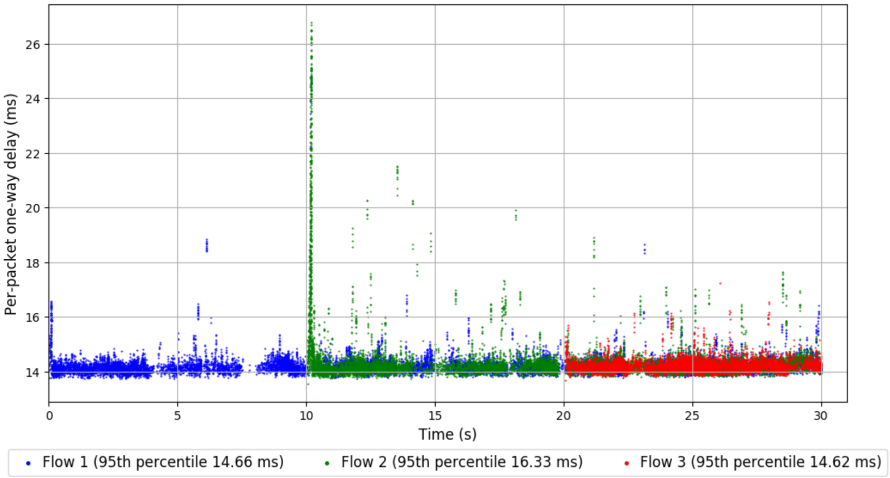
```
Run 5: Statistics of TCP Cubic

Start at: 2018-05-24 15:10:20
End at: 2018-05-24 15:10:50
Local clock offset: -0.054 ms
Remote clock offset: -4.062 ms

# Below is generated by plot.py at 2018-05-24 17:00:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.98 Mbit/s
95th percentile per-packet one-way delay: 14.873 ms
Loss rate: 1.68%
-- Flow 1:
Average throughput: 5.89 Mbit/s
95th percentile per-packet one-way delay: 14.661 ms
Loss rate: 2.00%
-- Flow 2:
Average throughput: 7.21 Mbit/s
95th percentile per-packet one-way delay: 16.327 ms
Loss rate: 1.63%
-- Flow 3:
Average throughput: 6.88 Mbit/s
95th percentile per-packet one-way delay: 14.622 ms
Loss rate: 0.94%
```

Run 5: Report of TCP Cubic — Data Link



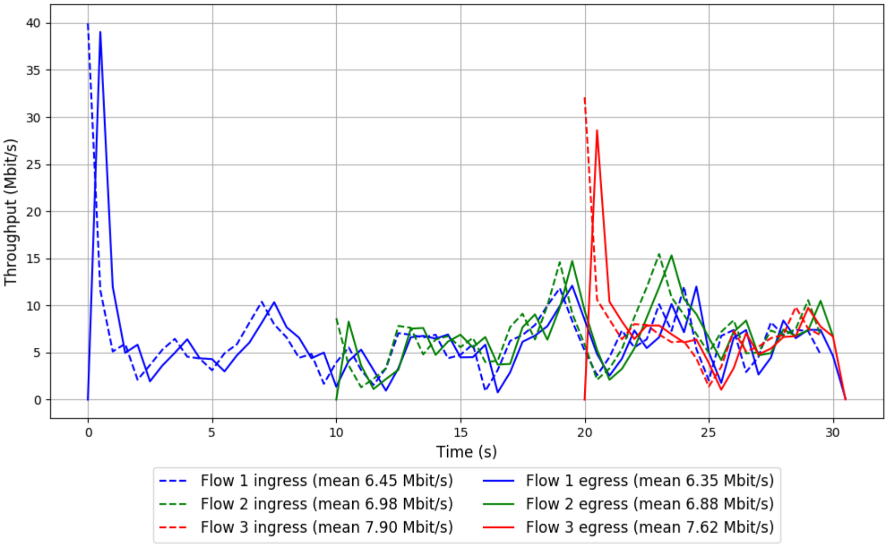


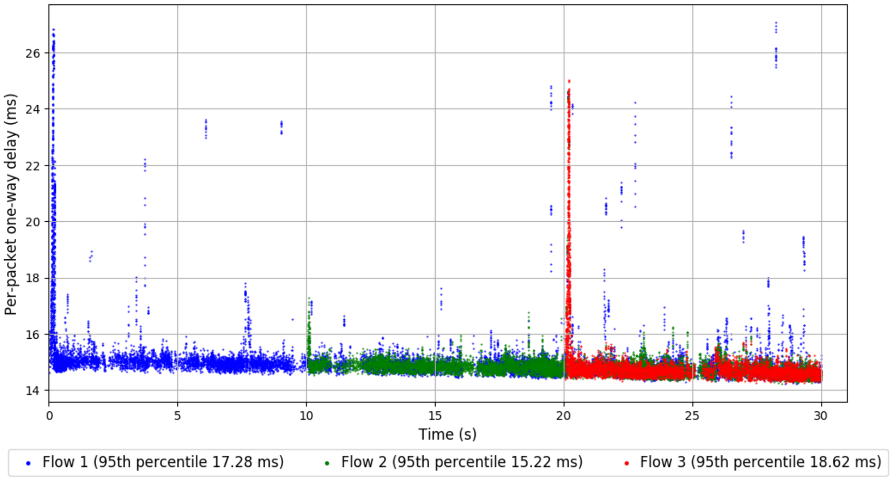
```
Run 6: Statistics of TCP Cubic

Start at: 2018-05-24 15:28:49
End at: 2018-05-24 15:29:19
Local clock offset: -0.82 ms
Remote clock offset: -3.658 ms

# Below is generated by plot.py at 2018-05-24 17:00:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.46 Mbit/s
95th percentile per-packet one-way delay: 16.380 ms
Loss rate: 1.91%
-- Flow 1:
Average throughput: 6.35 Mbit/s
95th percentile per-packet one-way delay: 17.280 ms
Loss rate: 1.56%
-- Flow 2:
Average throughput: 6.88 Mbit/s
95th percentile per-packet one-way delay: 15.221 ms
Loss rate: 1.46%
-- Flow 3:
Average throughput: 7.62 Mbit/s
95th percentile per-packet one-way delay: 18.619 ms
Loss rate: 3.56%
```

Run 6: Report of TCP Cubic — Data Link



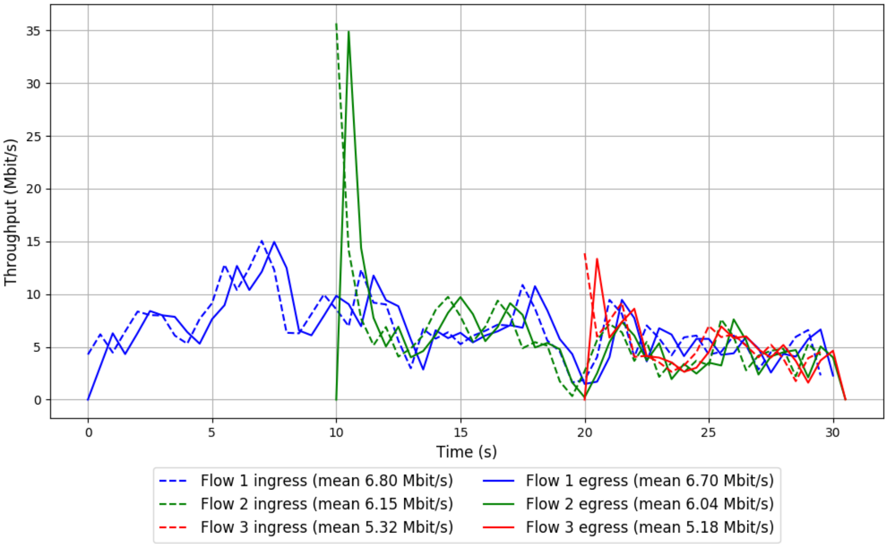


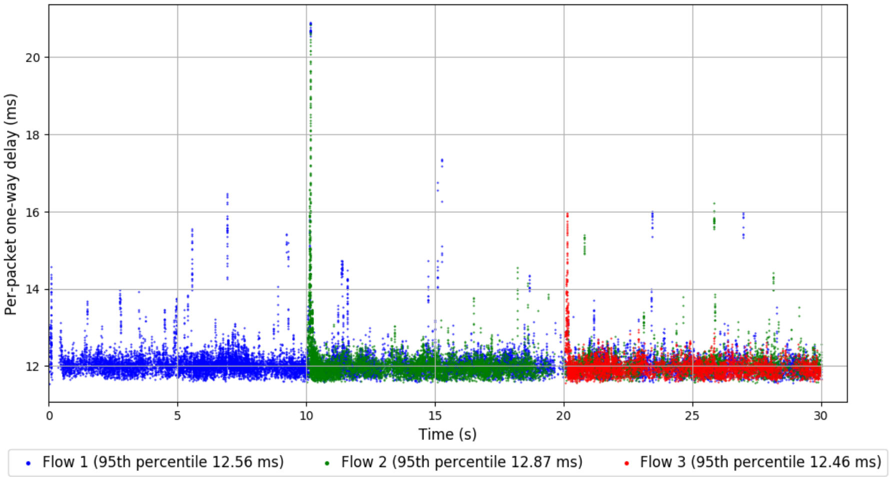
```
Run 7: Statistics of TCP Cubic

Start at: 2018-05-24 15:46:59
End at: 2018-05-24 15:47:29
Local clock offset: 1.699 ms
Remote clock offset: 3.151 ms

# Below is generated by plot.py at 2018-05-24 17:00:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.45 Mbit/s
95th percentile per-packet one-way delay: 12.603 ms
Loss rate: 1.69%
-- Flow 1:
Average throughput: 6.70 Mbit/s
95th percentile per-packet one-way delay: 12.563 ms
Loss rate: 1.37%
-- Flow 2:
Average throughput: 6.04 Mbit/s
95th percentile per-packet one-way delay: 12.873 ms
Loss rate: 1.83%
-- Flow 3:
Average throughput: 5.18 Mbit/s
95th percentile per-packet one-way delay: 12.460 ms
Loss rate: 2.62%
```

Run 7: Report of TCP Cubic — Data Link



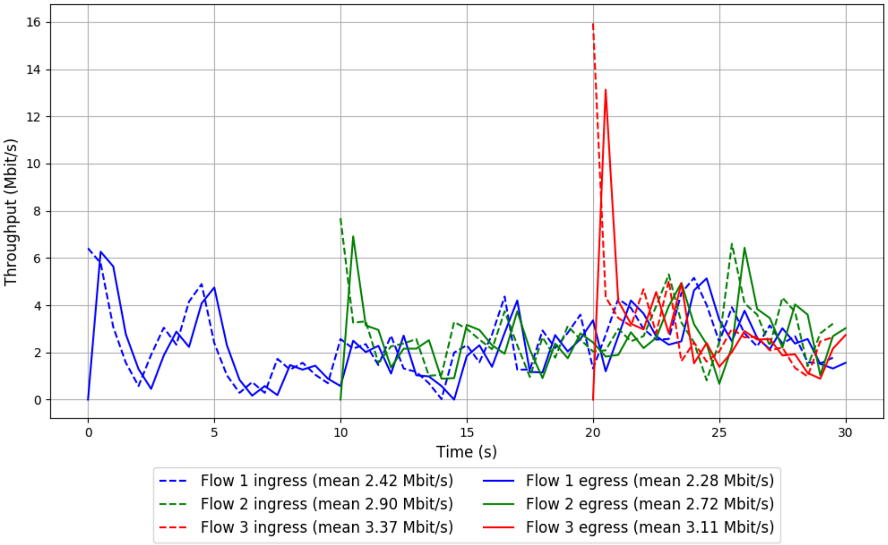


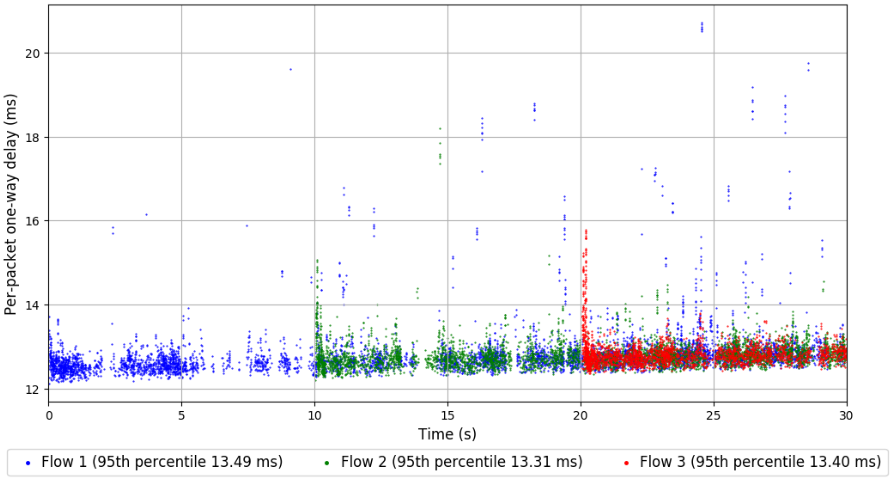
```
Run 8: Statistics of TCP Cubic

Start at: 2018-05-24 16:05:11
End at: 2018-05-24 16:05:41
Local clock offset: 1.577 ms
Remote clock offset: 0.325 ms

# Below is generated by plot.py at 2018-05-24 17:00:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.12 Mbit/s
95th percentile per-packet one-way delay: 13.387 ms
Loss rate: 6.35%
-- Flow 1:
Average throughput: 2.28 Mbit/s
95th percentile per-packet one-way delay: 13.495 ms
Loss rate: 5.80%
-- Flow 2:
Average throughput: 2.72 Mbit/s
95th percentile per-packet one-way delay: 13.306 ms
Loss rate: 6.16%
-- Flow 3:
Average throughput: 3.11 Mbit/s
95th percentile per-packet one-way delay: 13.400 ms
Loss rate: 7.87%
```

Run 8: Report of TCP Cubic — Data Link



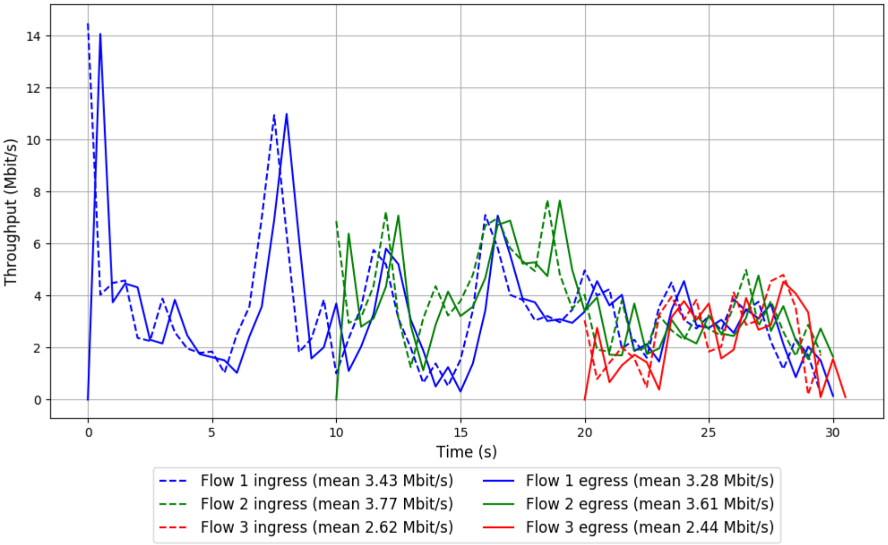


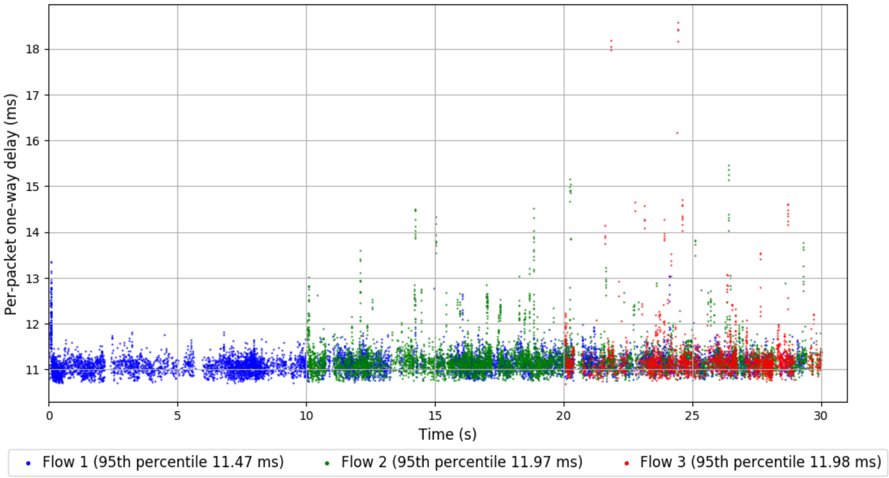
```
Run 9: Statistics of TCP Cubic

Start at: 2018-05-24 16:23:29
End at: 2018-05-24 16:23:59
Local clock offset: 0.995 ms
Remote clock offset: -8.764 ms

# Below is generated by plot.py at 2018-05-24 17:00:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.50 Mbit/s
95th percentile per-packet one-way delay: 11.652 ms
Loss rate: 4.52%
-- Flow 1:
Average throughput: 3.28 Mbit/s
95th percentile per-packet one-way delay: 11.471 ms
Loss rate: 4.25%
-- Flow 2:
Average throughput: 3.61 Mbit/s
95th percentile per-packet one-way delay: 11.973 ms
Loss rate: 4.12%
-- Flow 3:
Average throughput: 2.44 Mbit/s
95th percentile per-packet one-way delay: 11.982 ms
Loss rate: 6.71%
```

Run 9: Report of TCP Cubic — Data Link



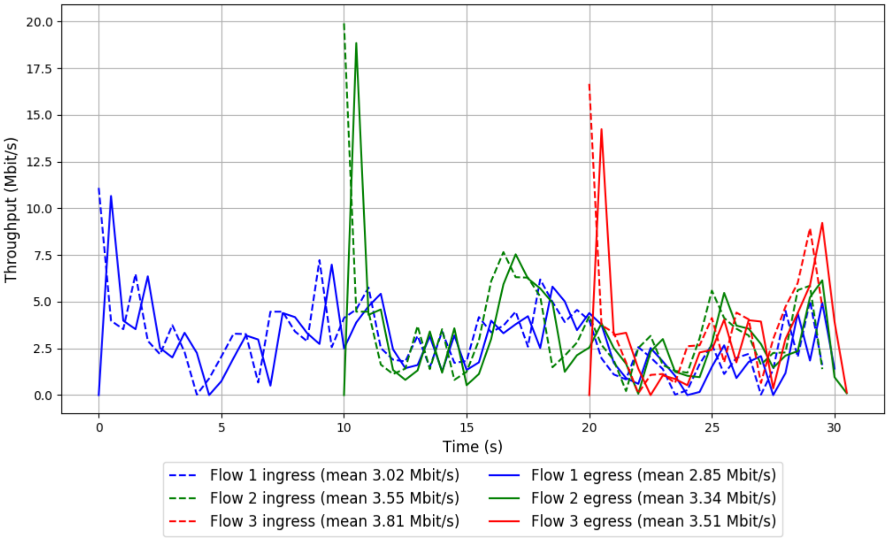


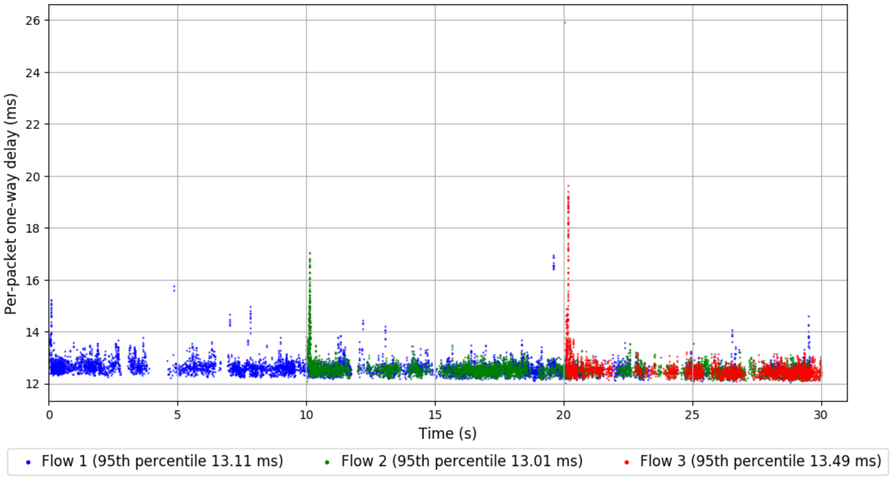
```
Run 10: Statistics of TCP Cubic

Start at: 2018-05-24 16:41:44
End at: 2018-05-24 16:42:14
Local clock offset: 1.163 ms
Remote clock offset: -2.959 ms

# Below is generated by plot.py at 2018-05-24 17:00:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.23 Mbit/s
95th percentile per-packet one-way delay: 13.130 ms
Loss rate: 6.13%
-- Flow 1:
Average throughput: 2.85 Mbit/s
95th percentile per-packet one-way delay: 13.113 ms
Loss rate: 5.53%
-- Flow 2:
Average throughput: 3.34 Mbit/s
95th percentile per-packet one-way delay: 13.014 ms
Loss rate: 5.88%
-- Flow 3:
Average throughput: 3.51 Mbit/s
95th percentile per-packet one-way delay: 13.495 ms
Loss rate: 8.01%
```

Run 10: Report of TCP Cubic — Data Link



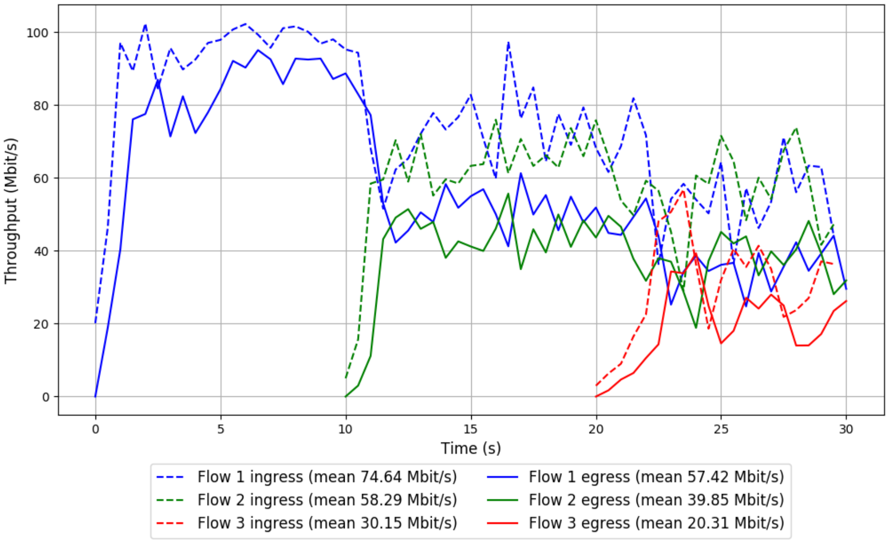


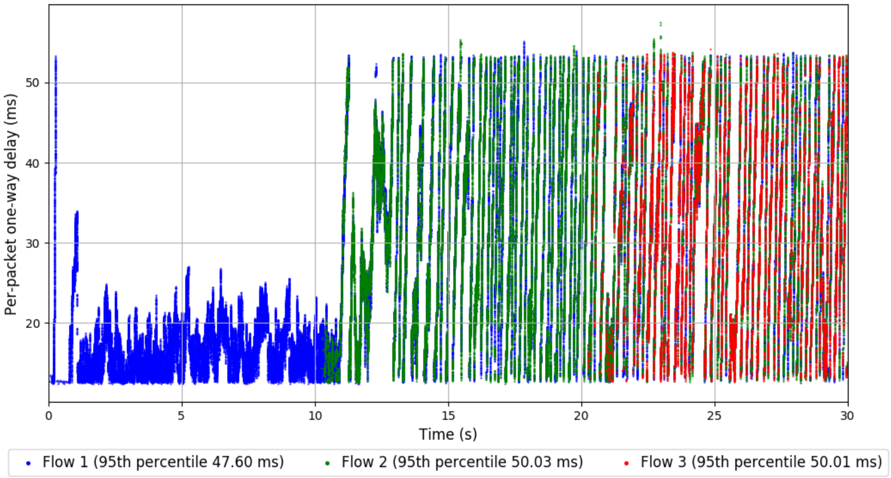
```
Run 1: Statistics of FillP

Start at: 2018-05-24 14:03:54
End at: 2018-05-24 14:04:24
Local clock offset: 0.841 ms
Remote clock offset: -1.238 ms

# Below is generated by plot.py at 2018-05-24 17:00:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.37 Mbit/s
95th percentile per-packet one-way delay: 48.890 ms
Loss rate: 26.77%
-- Flow 1:
Average throughput: 57.42 Mbit/s
95th percentile per-packet one-way delay: 47.599 ms
Loss rate: 23.06%
-- Flow 2:
Average throughput: 39.85 Mbit/s
95th percentile per-packet one-way delay: 50.026 ms
Loss rate: 32.33%
-- Flow 3:
Average throughput: 20.31 Mbit/s
95th percentile per-packet one-way delay: 50.008 ms
Loss rate: 32.85%
```

Run 1: Report of FillP — Data Link



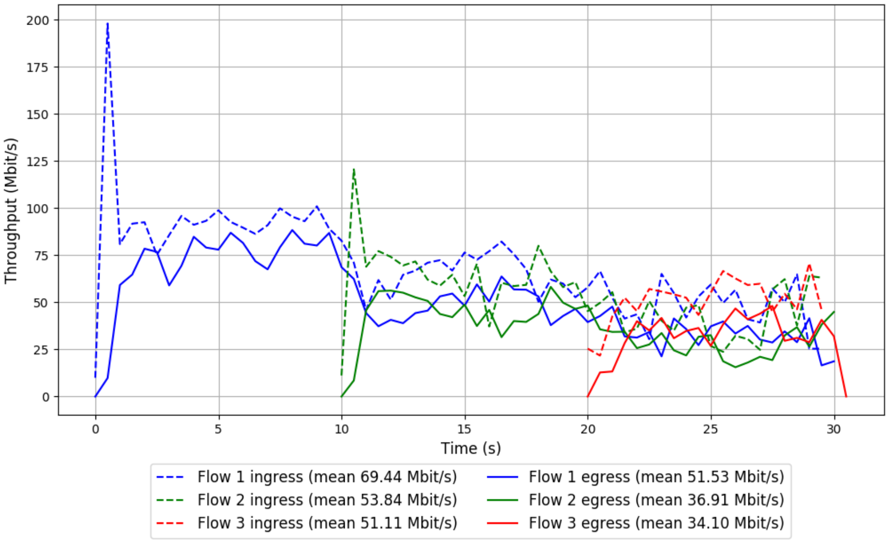


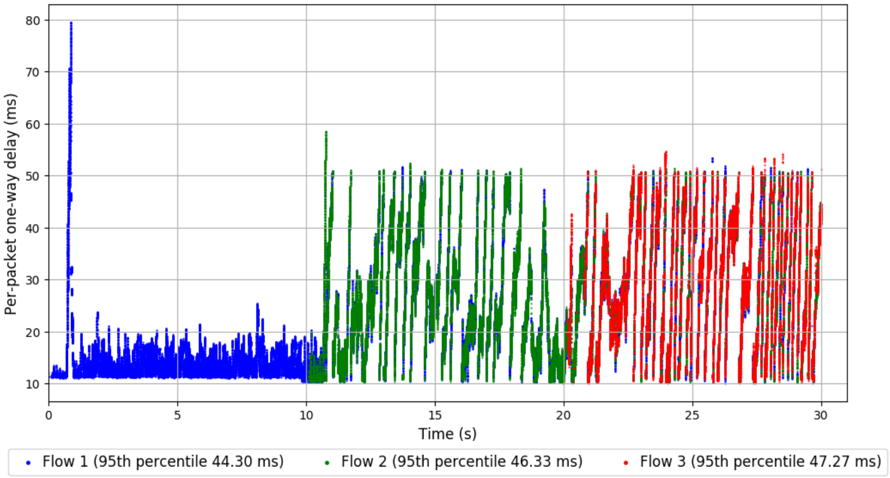
```
Run 2: Statistics of FillP

Start at: 2018-05-24 14:21:59
End at: 2018-05-24 14:22:29
Local clock offset: 2.764 ms
Remote clock offset: -1.304 ms

# Below is generated by plot.py at 2018-05-24 17:00:57
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.45 Mbit/s
95th percentile per-packet one-way delay: 45.656 ms
Loss rate: 28.39%
-- Flow 1:
Average throughput: 51.53 Mbit/s
95th percentile per-packet one-way delay: 44.304 ms
Loss rate: 25.73%
-- Flow 2:
Average throughput: 36.91 Mbit/s
95th percentile per-packet one-way delay: 46.326 ms
Loss rate: 31.34%
-- Flow 3:
Average throughput: 34.10 Mbit/s
95th percentile per-packet one-way delay: 47.266 ms
Loss rate: 33.03%
```

Run 2: Report of FillP — Data Link



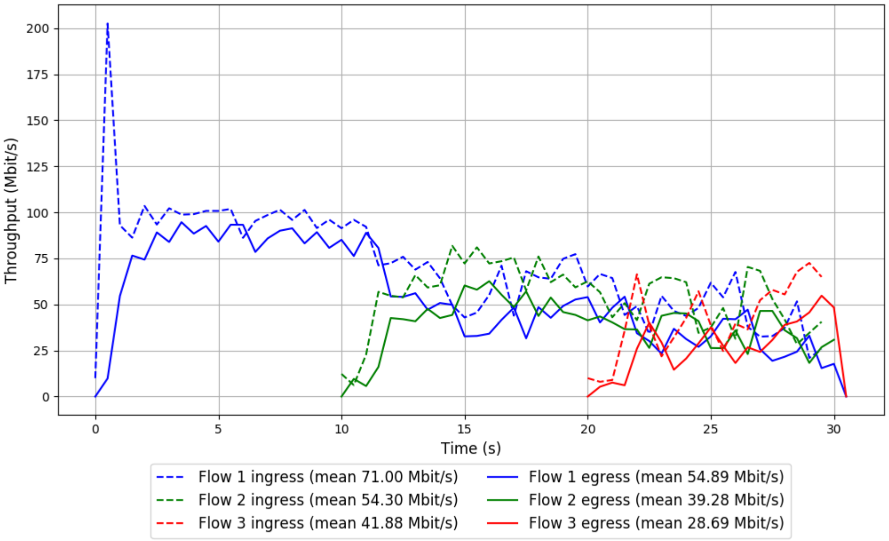


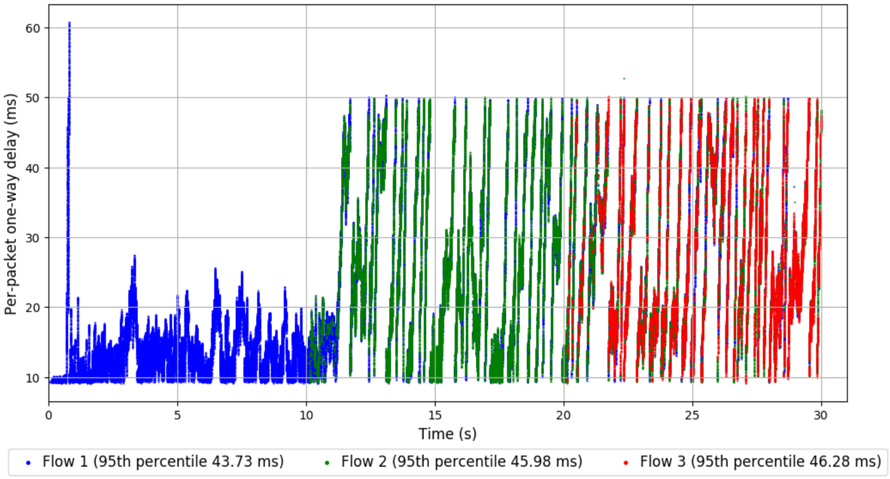
```
Run 3: Statistics of FillP

Start at: 2018-05-24 14:40:31
End at: 2018-05-24 14:41:01
Local clock offset: 2.628 ms
Remote clock offset: 1.365 ms

# Below is generated by plot.py at 2018-05-24 17:00:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.58 Mbit/s
95th percentile per-packet one-way delay: 44.986 ms
Loss rate: 25.07%
-- Flow 1:
Average throughput: 54.89 Mbit/s
95th percentile per-packet one-way delay: 43.734 ms
Loss rate: 22.60%
-- Flow 2:
Average throughput: 39.28 Mbit/s
95th percentile per-packet one-way delay: 45.978 ms
Loss rate: 27.54%
-- Flow 3:
Average throughput: 28.69 Mbit/s
95th percentile per-packet one-way delay: 46.281 ms
Loss rate: 31.25%
```

Run 3: Report of FillP — Data Link



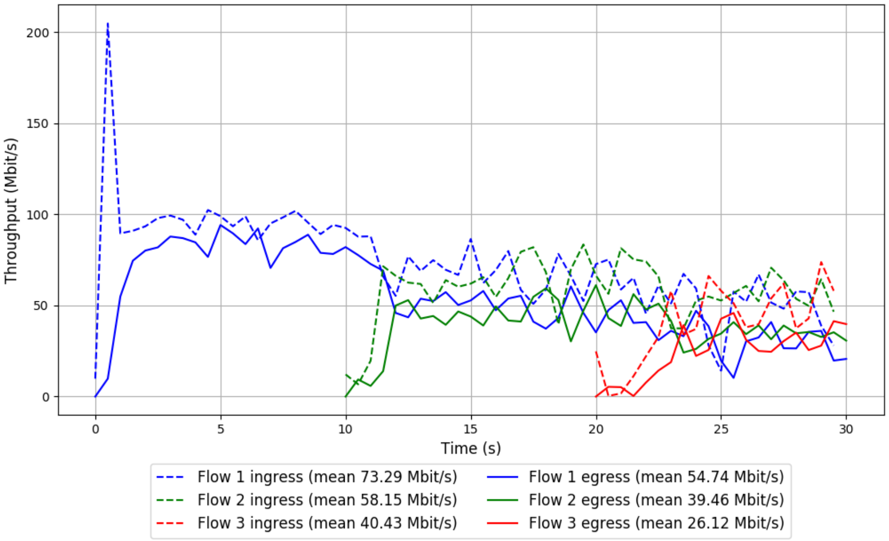


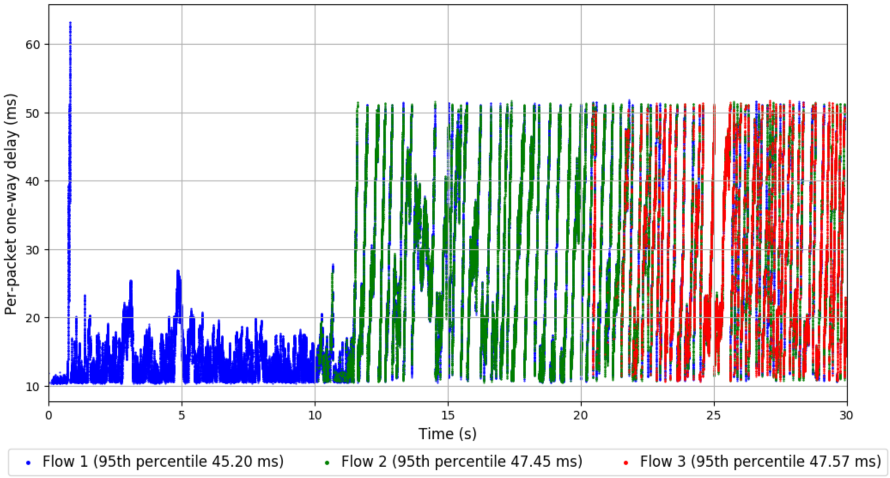
```
Run 4: Statistics of FillP

Start at: 2018-05-24 14:59:06
End at: 2018-05-24 14:59:36
Local clock offset: 1.213 ms
Remote clock offset: -2.554 ms

# Below is generated by plot.py at 2018-05-24 17:01:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.49 Mbit/s
95th percentile per-packet one-way delay: 46.423 ms
Loss rate: 28.63%
-- Flow 1:
Average throughput: 54.74 Mbit/s
95th percentile per-packet one-way delay: 45.195 ms
Loss rate: 25.30%
-- Flow 2:
Average throughput: 39.46 Mbit/s
95th percentile per-packet one-way delay: 47.446 ms
Loss rate: 32.13%
-- Flow 3:
Average throughput: 26.12 Mbit/s
95th percentile per-packet one-way delay: 47.571 ms
Loss rate: 36.73%
```

Run 4: Report of FillP — Data Link



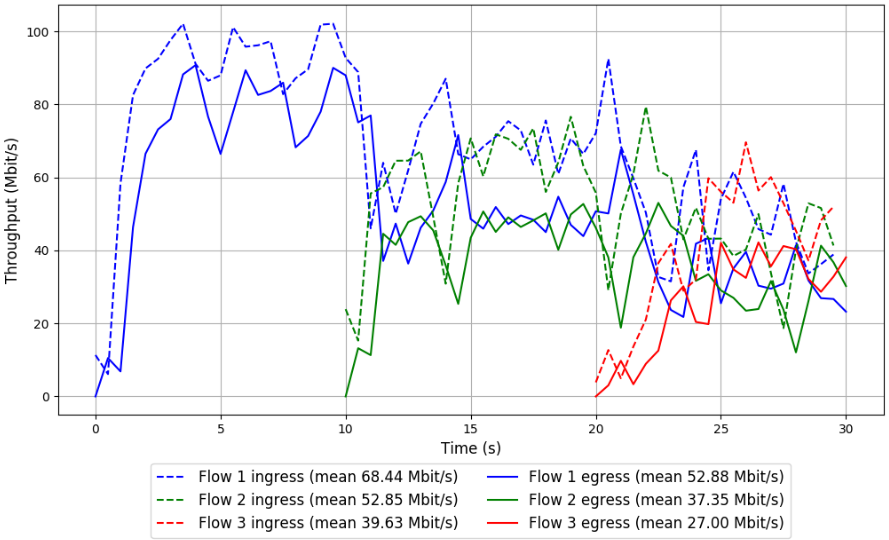


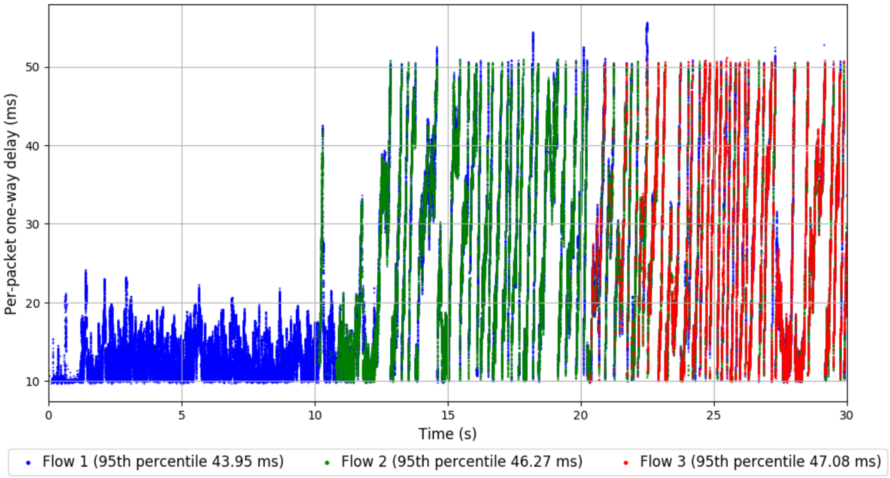
```
Run 5: Statistics of FillP

Start at: 2018-05-24 15:17:08
End at: 2018-05-24 15:17:38
Local clock offset: 3.302 ms
Remote clock offset: -5.694 ms

# Below is generated by plot.py at 2018-05-24 17:01:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.67 Mbit/s
95th percentile per-packet one-way delay: 45.317 ms
Loss rate: 25.72%
-- Flow 1:
Average throughput: 52.88 Mbit/s
95th percentile per-packet one-way delay: 43.948 ms
Loss rate: 22.69%
-- Flow 2:
Average throughput: 37.35 Mbit/s
95th percentile per-packet one-way delay: 46.268 ms
Loss rate: 29.26%
-- Flow 3:
Average throughput: 27.00 Mbit/s
95th percentile per-packet one-way delay: 47.076 ms
Loss rate: 31.99%
```

Run 5: Report of FillP — Data Link



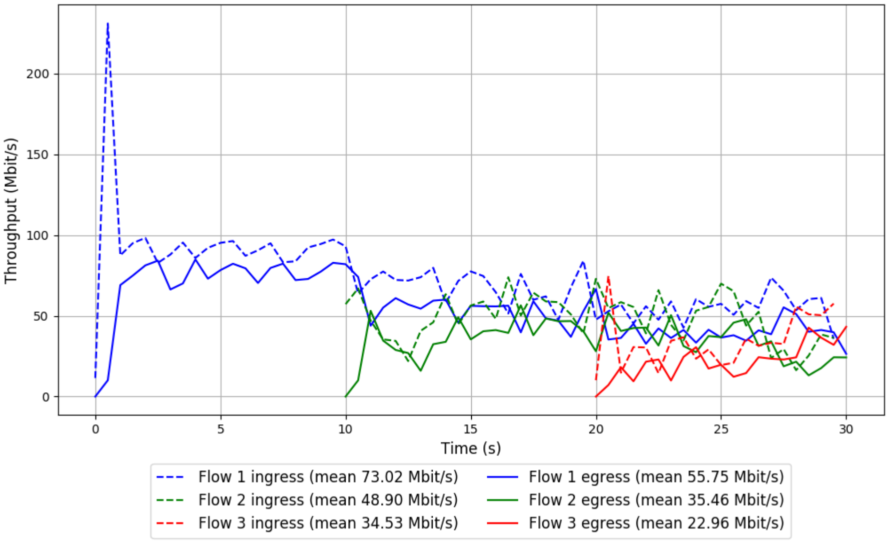


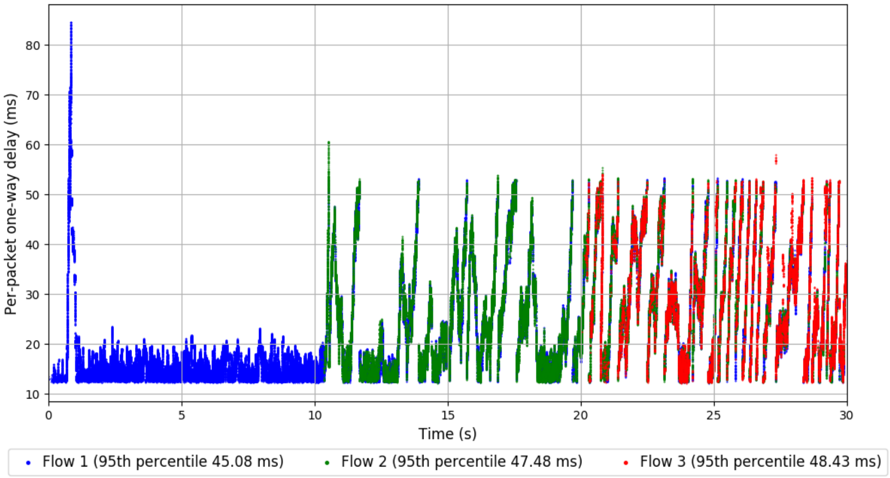
```
Run 6: Statistics of FillP

Start at: 2018-05-24 15:35:37
End at: 2018-05-24 15:36:07
Local clock offset: 0.608 ms
Remote clock offset: 0.083 ms

# Below is generated by plot.py at 2018-05-24 17:01:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.00 Mbit/s
95th percentile per-packet one-way delay: 46.475 ms
Loss rate: 25.61%
-- Flow 1:
Average throughput: 55.75 Mbit/s
95th percentile per-packet one-way delay: 45.080 ms
Loss rate: 23.59%
-- Flow 2:
Average throughput: 35.46 Mbit/s
95th percentile per-packet one-way delay: 47.475 ms
Loss rate: 27.40%
-- Flow 3:
Average throughput: 22.96 Mbit/s
95th percentile per-packet one-way delay: 48.430 ms
Loss rate: 33.41%
```

Run 6: Report of FillP — Data Link



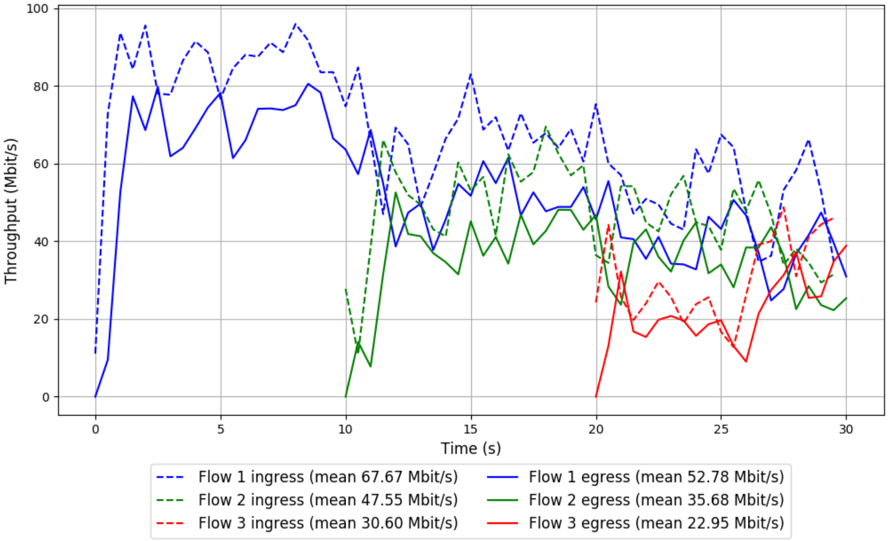


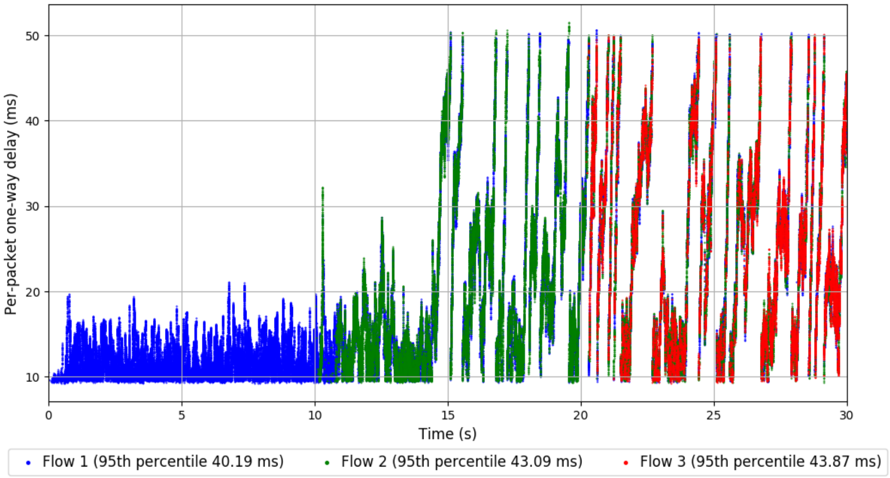
```
Run 7: Statistics of FillP

Start at: 2018-05-24 15:53:51
End at: 2018-05-24 15:54:21
Local clock offset: 4.059 ms
Remote clock offset: 3.983 ms

# Below is generated by plot.py at 2018-05-24 17:02:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.15 Mbit/s
95th percentile per-packet one-way delay: 41.536 ms
Loss rate: 23.07%
-- Flow 1:
Average throughput: 52.78 Mbit/s
95th percentile per-packet one-way delay: 40.191 ms
Loss rate: 21.93%
-- Flow 2:
Average throughput: 35.68 Mbit/s
95th percentile per-packet one-way delay: 43.086 ms
Loss rate: 24.88%
-- Flow 3:
Average throughput: 22.95 Mbit/s
95th percentile per-packet one-way delay: 43.867 ms
Loss rate: 24.96%
```

Run 7: Report of FillP — Data Link



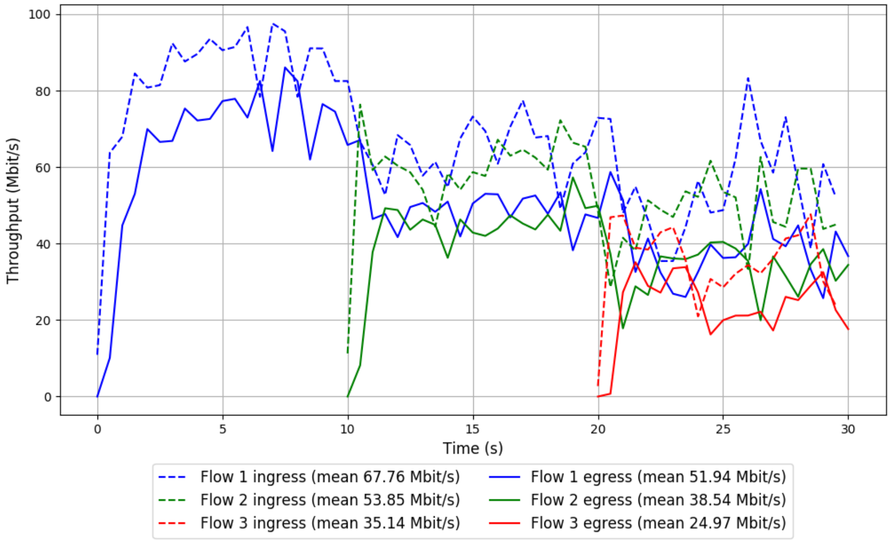


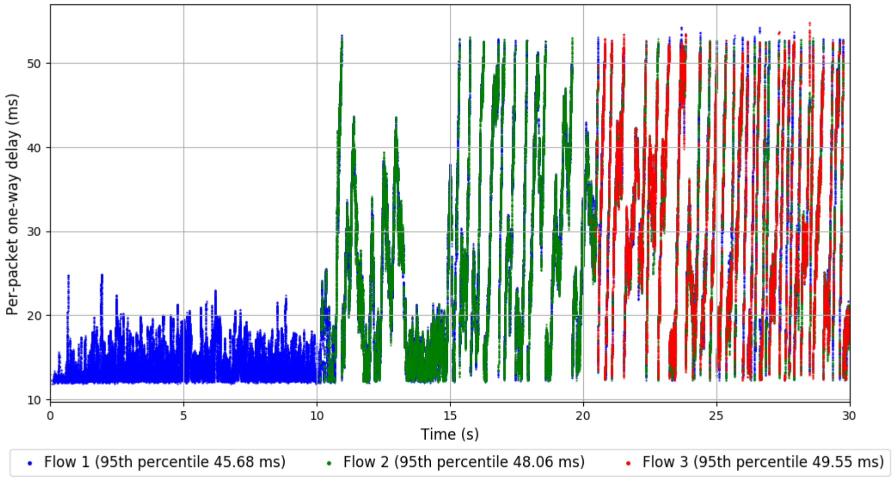
```
Run 8: Statistics of FillP

Start at: 2018-05-24 16:12:02
End at: 2018-05-24 16:12:32
Local clock offset: -0.167 ms
Remote clock offset: -5.285 ms

# Below is generated by plot.py at 2018-05-24 17:02:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.69 Mbit/s
95th percentile per-packet one-way delay: 47.209 ms
Loss rate: 25.64%
-- Flow 1:
Average throughput: 51.94 Mbit/s
95th percentile per-packet one-way delay: 45.683 ms
Loss rate: 23.34%
-- Flow 2:
Average throughput: 38.54 Mbit/s
95th percentile per-packet one-way delay: 48.064 ms
Loss rate: 28.41%
-- Flow 3:
Average throughput: 24.97 Mbit/s
95th percentile per-packet one-way delay: 49.555 ms
Loss rate: 30.48%
```

Run 8: Report of FillP — Data Link



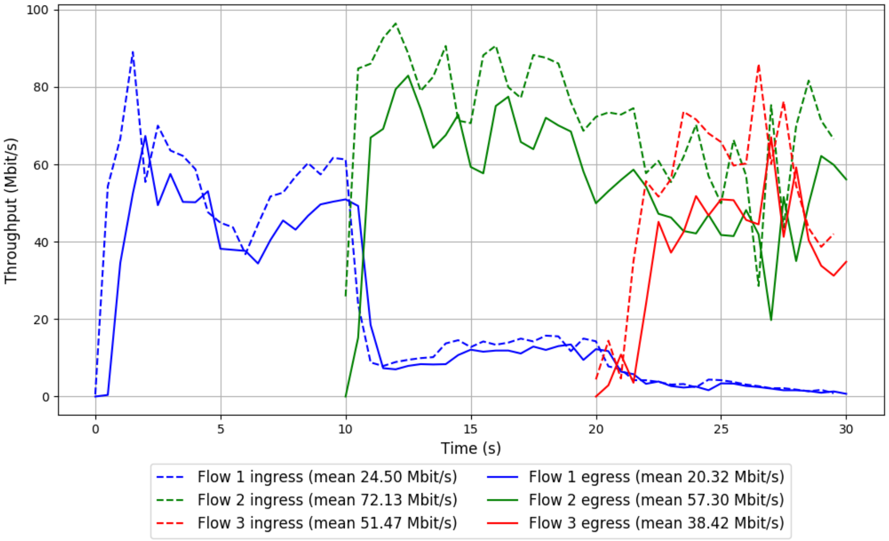


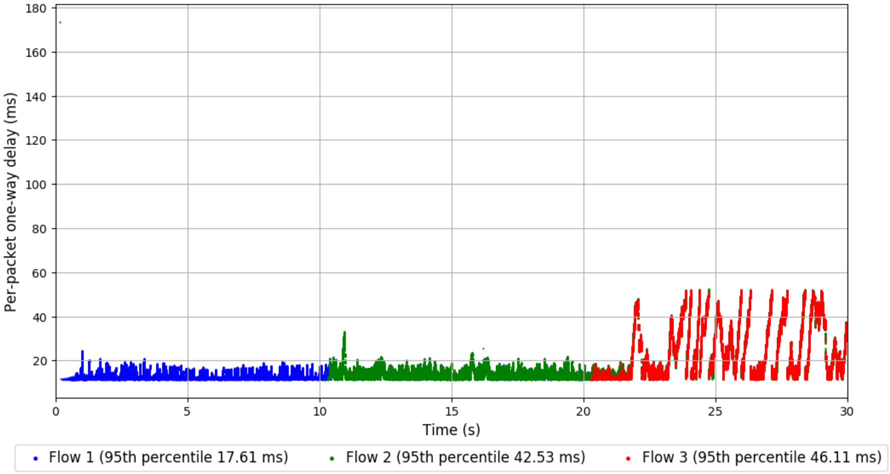
```
Run 9: Statistics of FillP

Start at: 2018-05-24 16:30:20
End at: 2018-05-24 16:30:50
Local clock offset: 1.482 ms
Remote clock offset: -8.697 ms

# Below is generated by plot.py at 2018-05-24 17:02:17
# Datalink statistics
-- Total of 3 flows:
Average throughput: 71.11 Mbit/s
95th percentile per-packet one-way delay: 42.438 ms
Loss rate: 21.01%
-- Flow 1:
Average throughput: 20.32 Mbit/s
95th percentile per-packet one-way delay: 17.613 ms
Loss rate: 17.55%
-- Flow 2:
Average throughput: 57.30 Mbit/s
95th percentile per-packet one-way delay: 42.534 ms
Loss rate: 21.27%
-- Flow 3:
Average throughput: 38.42 Mbit/s
95th percentile per-packet one-way delay: 46.110 ms
Loss rate: 25.20%
```

Run 9: Report of FillP — Data Link



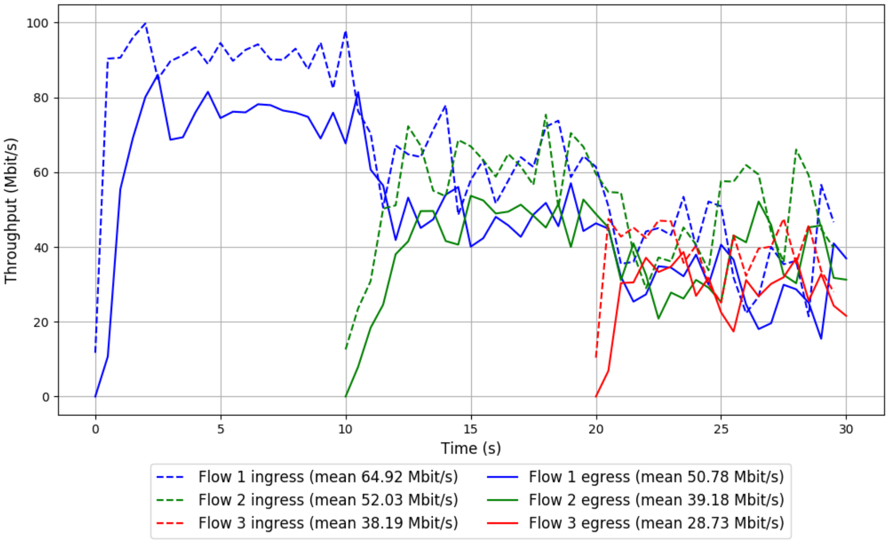


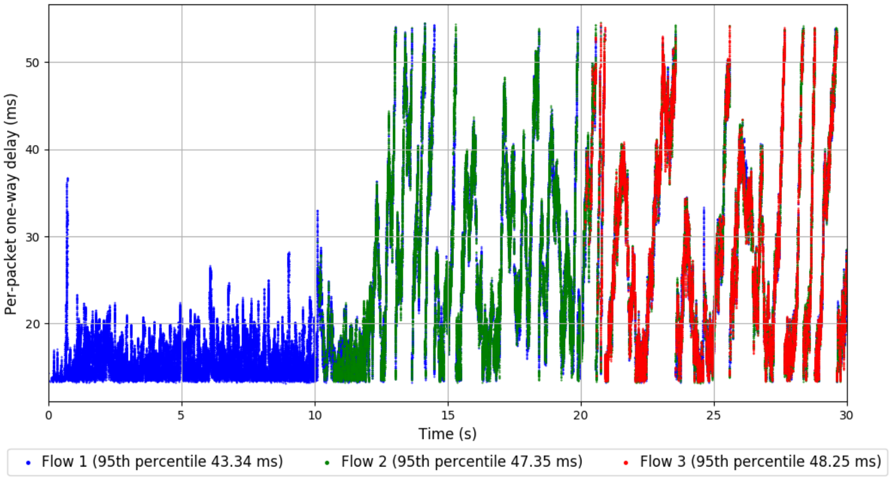
```
Run 10: Statistics of FillP

Start at: 2018-05-24 16:48:33
End at: 2018-05-24 16:49:03
Local clock offset: -0.314 ms
Remote clock offset: -0.684 ms

# Below is generated by plot.py at 2018-05-24 17:02:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.40 Mbit/s
95th percentile per-packet one-way delay: 45.888 ms
Loss rate: 22.97%
-- Flow 1:
Average throughput: 50.78 Mbit/s
95th percentile per-packet one-way delay: 43.344 ms
Loss rate: 21.74%
-- Flow 2:
Average throughput: 39.18 Mbit/s
95th percentile per-packet one-way delay: 47.346 ms
Loss rate: 24.64%
-- Flow 3:
Average throughput: 28.73 Mbit/s
95th percentile per-packet one-way delay: 48.248 ms
Loss rate: 24.71%
```

Run 10: Report of FillP — Data Link



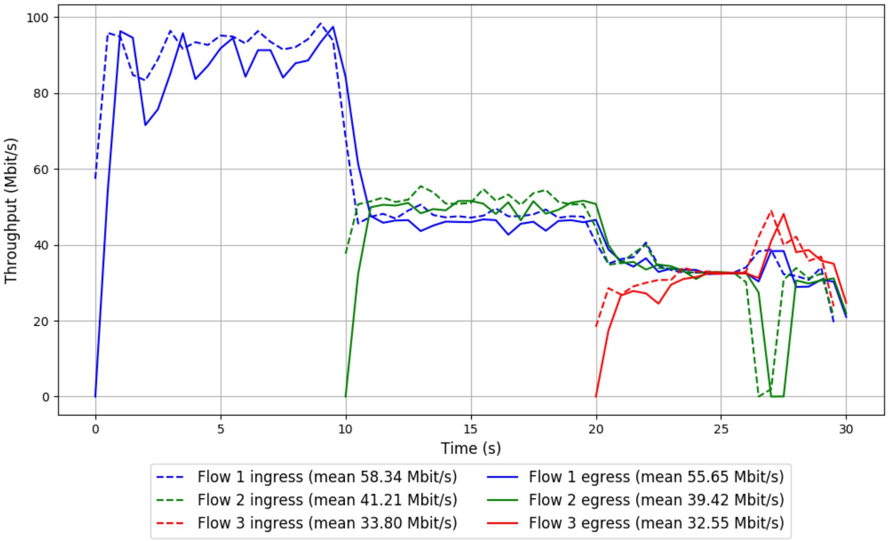


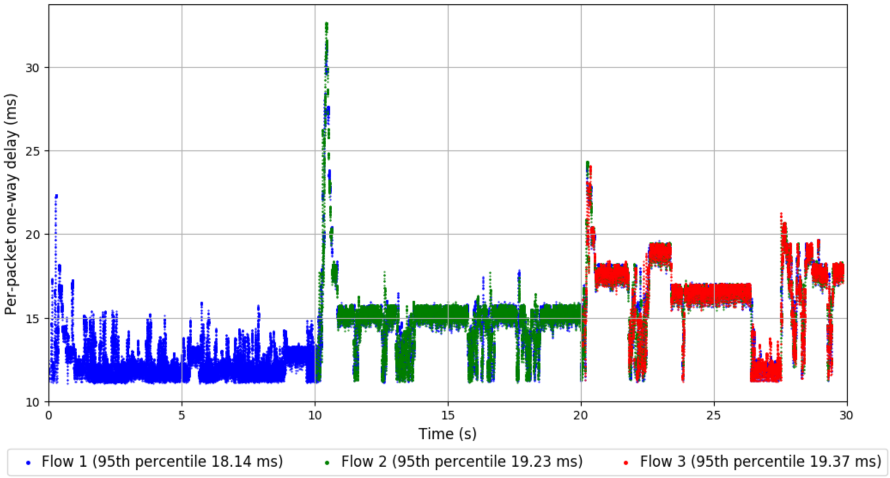
```
Run 1: Statistics of Indigo

Start at: 2018-05-24 14:07:15
End at: 2018-05-24 14:07:45
Local clock offset: 3.24 ms
Remote clock offset: -1.812 ms

# Below is generated by plot.py at 2018-05-24 17:02:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.47 Mbit/s
95th percentile per-packet one-way delay: 19.106 ms
Loss rate: 4.41%
-- Flow 1:
Average throughput: 55.65 Mbit/s
95th percentile per-packet one-way delay: 18.137 ms
Loss rate: 4.60%
-- Flow 2:
Average throughput: 39.42 Mbit/s
95th percentile per-packet one-way delay: 19.232 ms
Loss rate: 4.32%
-- Flow 3:
Average throughput: 32.55 Mbit/s
95th percentile per-packet one-way delay: 19.371 ms
Loss rate: 3.65%
```

Run 1: Report of Indigo — Data Link



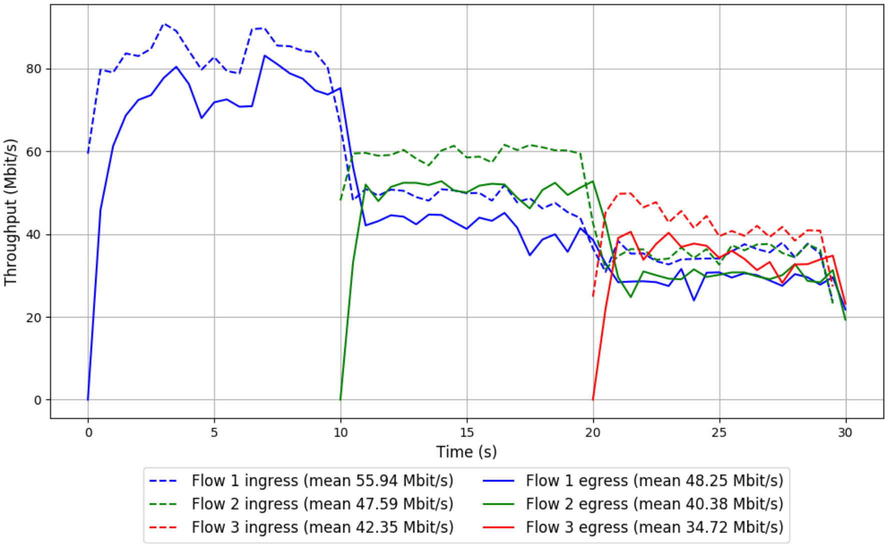


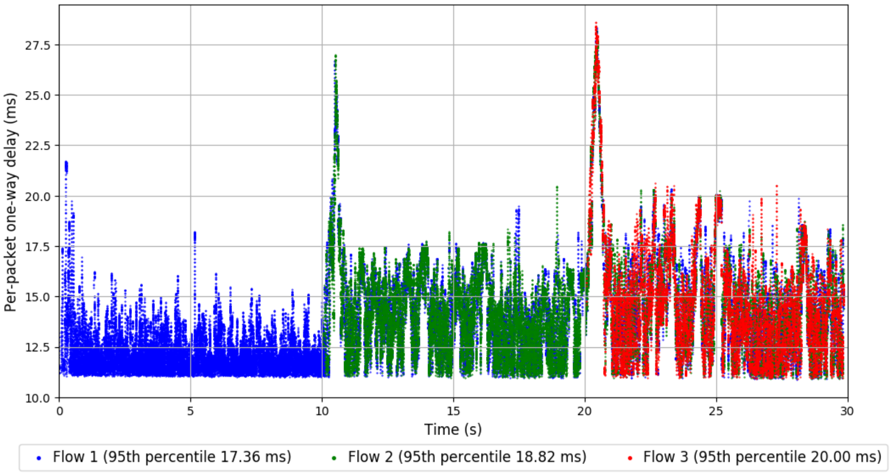
```
Run 2: Statistics of Indigo

Start at: 2018-05-24 14:25:20
End at: 2018-05-24 14:25:50
Local clock offset: 2.558 ms
Remote clock offset: 0.439 ms

# Below is generated by plot.py at 2018-05-24 17:02:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.43 Mbit/s
95th percentile per-packet one-way delay: 18.416 ms
Loss rate: 14.76%
-- Flow 1:
Average throughput: 48.25 Mbit/s
95th percentile per-packet one-way delay: 17.361 ms
Loss rate: 13.74%
-- Flow 2:
Average throughput: 40.38 Mbit/s
95th percentile per-packet one-way delay: 18.823 ms
Loss rate: 15.13%
-- Flow 3:
Average throughput: 34.72 Mbit/s
95th percentile per-packet one-way delay: 19.999 ms
Loss rate: 18.01%
```

Run 2: Report of Indigo — Data Link



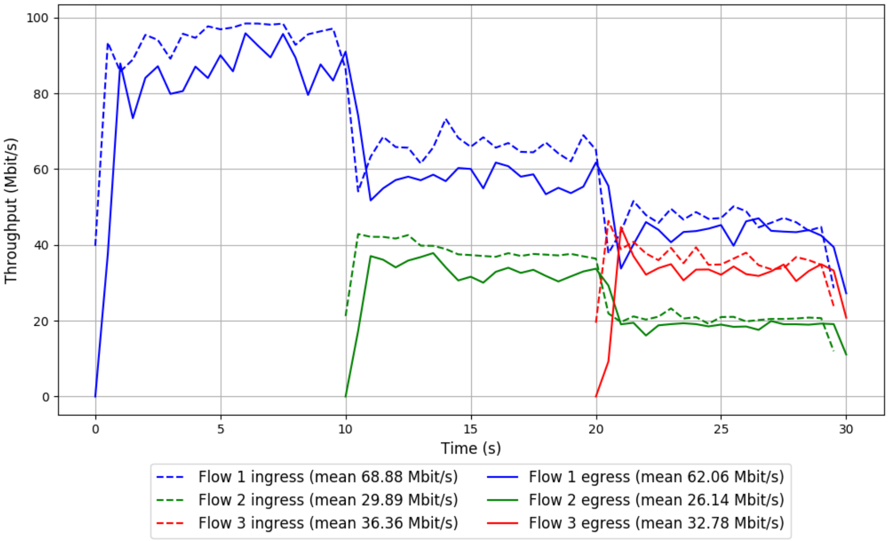


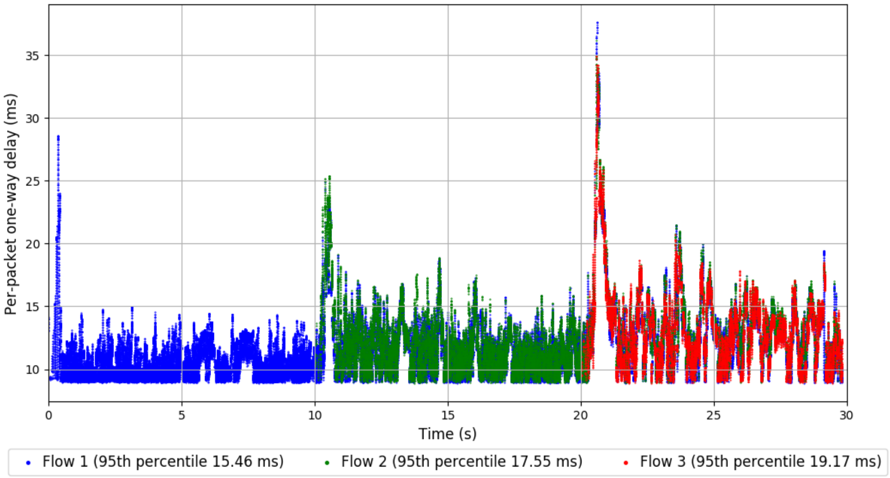
```
Run 3: Statistics of Indigo

Start at: 2018-05-24 14:43:55
End at: 2018-05-24 14:44:25
Local clock offset: 2.534 ms
Remote clock offset: 1.083 ms

# Below is generated by plot.py at 2018-05-24 17:02:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.12 Mbit/s
95th percentile per-packet one-way delay: 16.484 ms
Loss rate: 10.45%
-- Flow 1:
Average throughput: 62.06 Mbit/s
95th percentile per-packet one-way delay: 15.459 ms
Loss rate: 9.92%
-- Flow 2:
Average throughput: 26.14 Mbit/s
95th percentile per-packet one-way delay: 17.548 ms
Loss rate: 12.64%
-- Flow 3:
Average throughput: 32.78 Mbit/s
95th percentile per-packet one-way delay: 19.171 ms
Loss rate: 9.84%
```

Run 3: Report of Indigo — Data Link



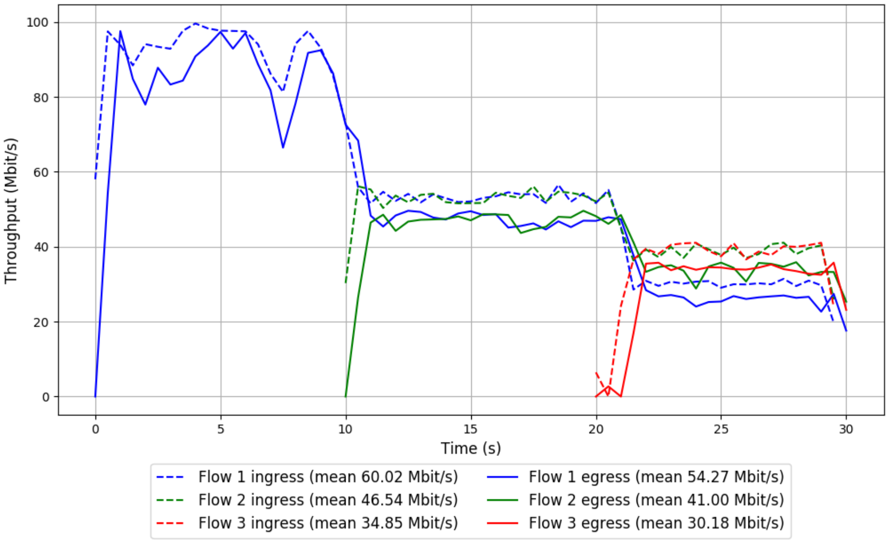


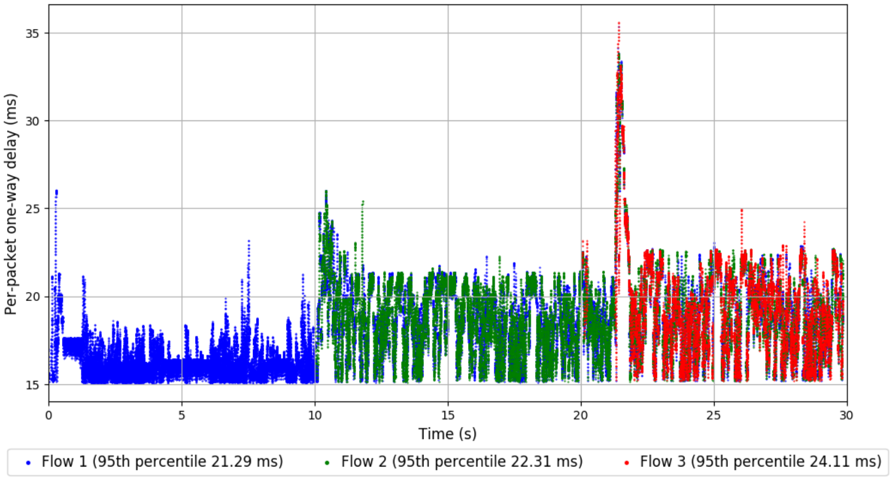
```
Run 4: Statistics of Indigo

Start at: 2018-05-24 15:02:28
End at: 2018-05-24 15:02:58
Local clock offset: -1.462 ms
Remote clock offset: -2.047 ms

# Below is generated by plot.py at 2018-05-24 17:02:41
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.39 Mbit/s
95th percentile per-packet one-way delay: 22.132 ms
Loss rate: 10.70%
-- Flow 1:
Average throughput: 54.27 Mbit/s
95th percentile per-packet one-way delay: 21.292 ms
Loss rate: 9.58%
-- Flow 2:
Average throughput: 41.00 Mbit/s
95th percentile per-packet one-way delay: 22.308 ms
Loss rate: 11.88%
-- Flow 3:
Average throughput: 30.18 Mbit/s
95th percentile per-packet one-way delay: 24.111 ms
Loss rate: 13.42%
```

Run 4: Report of Indigo — Data Link



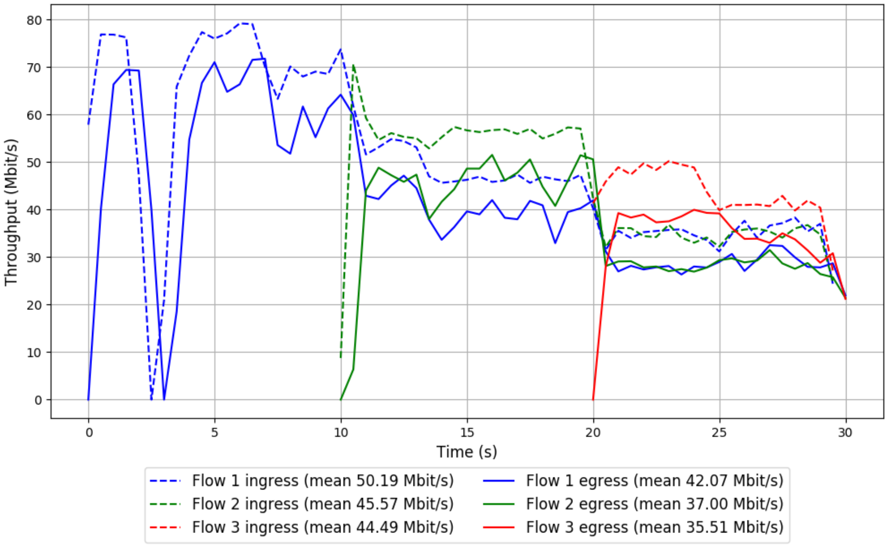


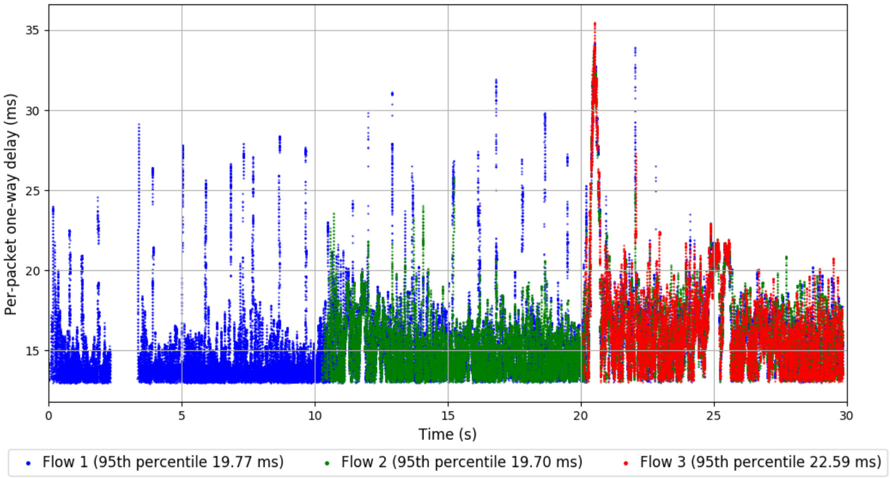
```
Run 5: Statistics of Indigo

Start at: 2018-05-24 15:20:53
End at: 2018-05-24 15:21:23
Local clock offset: 0.643 ms
Remote clock offset: -5.98 ms

# Below is generated by plot.py at 2018-05-24 17:03:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 77.97 Mbit/s
95th percentile per-packet one-way delay: 20.621 ms
Loss rate: 17.62%
-- Flow 1:
Average throughput: 42.07 Mbit/s
95th percentile per-packet one-way delay: 19.769 ms
Loss rate: 16.18%
-- Flow 2:
Average throughput: 37.00 Mbit/s
95th percentile per-packet one-way delay: 19.697 ms
Loss rate: 18.79%
-- Flow 3:
Average throughput: 35.51 Mbit/s
95th percentile per-packet one-way delay: 22.593 ms
Loss rate: 20.18%
```

Run 5: Report of Indigo — Data Link



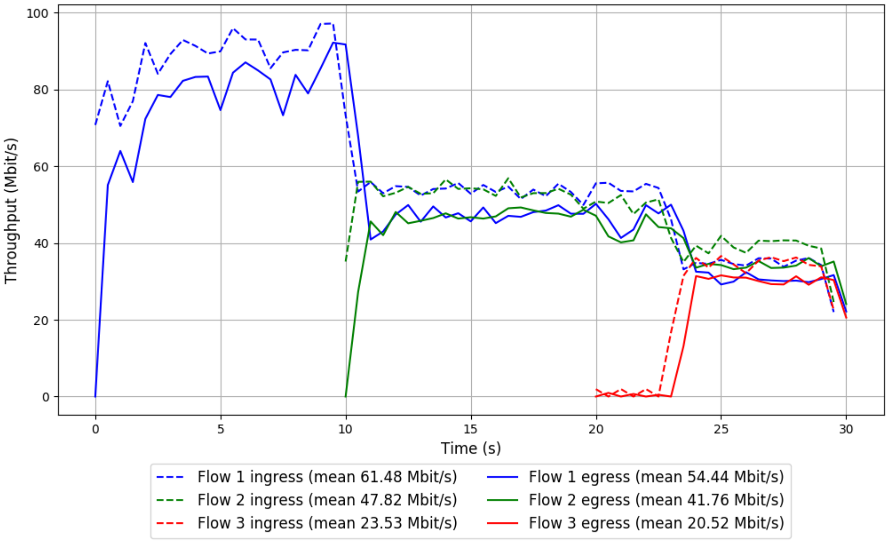


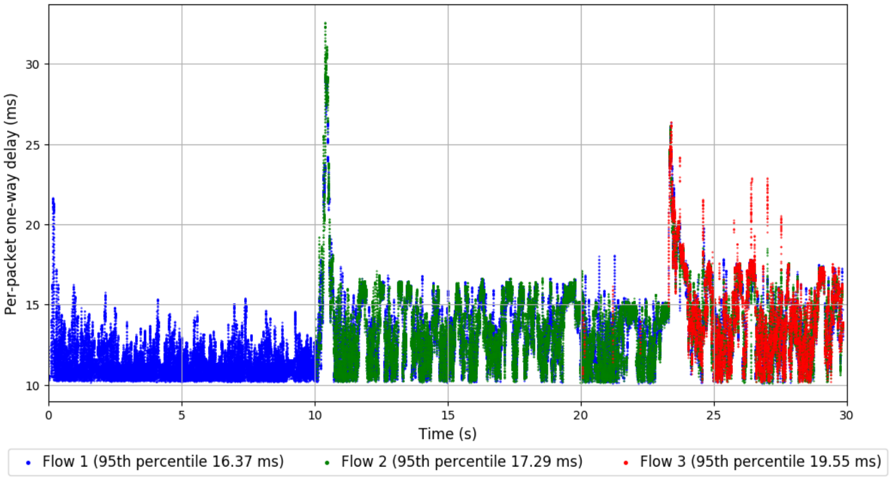
```
Run 6: Statistics of Indigo

Start at: 2018-05-24 15:38:58
End at: 2018-05-24 15:39:28
Local clock offset: 1.679 ms
Remote clock offset: 0.106 ms

# Below is generated by plot.py at 2018-05-24 17:03:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.88 Mbit/s
95th percentile per-packet one-way delay: 17.101 ms
Loss rate: 11.93%
-- Flow 1:
Average throughput: 54.44 Mbit/s
95th percentile per-packet one-way delay: 16.367 ms
Loss rate: 11.44%
-- Flow 2:
Average throughput: 41.76 Mbit/s
95th percentile per-packet one-way delay: 17.291 ms
Loss rate: 12.67%
-- Flow 3:
Average throughput: 20.52 Mbit/s
95th percentile per-packet one-way delay: 19.551 ms
Loss rate: 12.81%
```

Run 6: Report of Indigo — Data Link



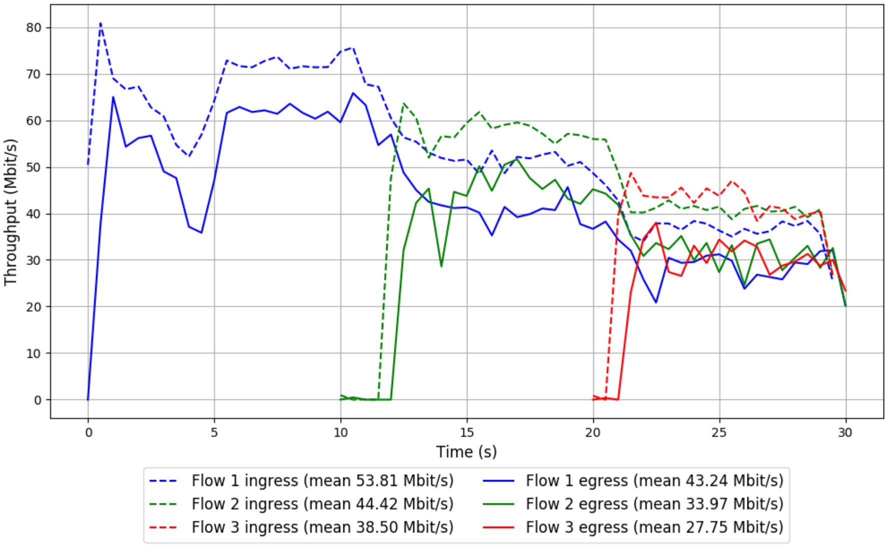


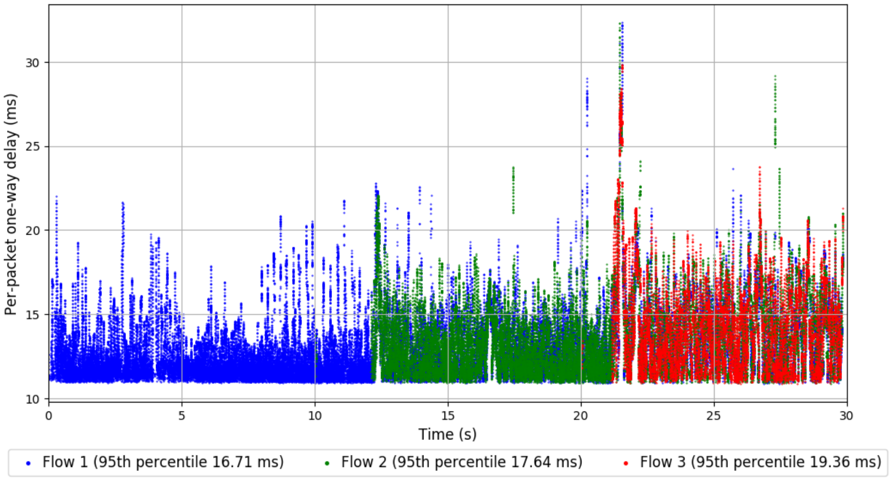
```
Run 7: Statistics of Indigo

Start at: 2018-05-24 15:57:12
End at: 2018-05-24 15:57:42
Local clock offset: 1.789 ms
Remote clock offset: 3.602 ms

# Below is generated by plot.py at 2018-05-24 17:03:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 74.90 Mbit/s
95th percentile per-packet one-way delay: 17.433 ms
Loss rate: 21.89%
-- Flow 1:
Average throughput: 43.24 Mbit/s
95th percentile per-packet one-way delay: 16.715 ms
Loss rate: 19.62%
-- Flow 2:
Average throughput: 33.97 Mbit/s
95th percentile per-packet one-way delay: 17.635 ms
Loss rate: 23.48%
-- Flow 3:
Average throughput: 27.75 Mbit/s
95th percentile per-packet one-way delay: 19.355 ms
Loss rate: 27.85%
```

Run 7: Report of Indigo — Data Link



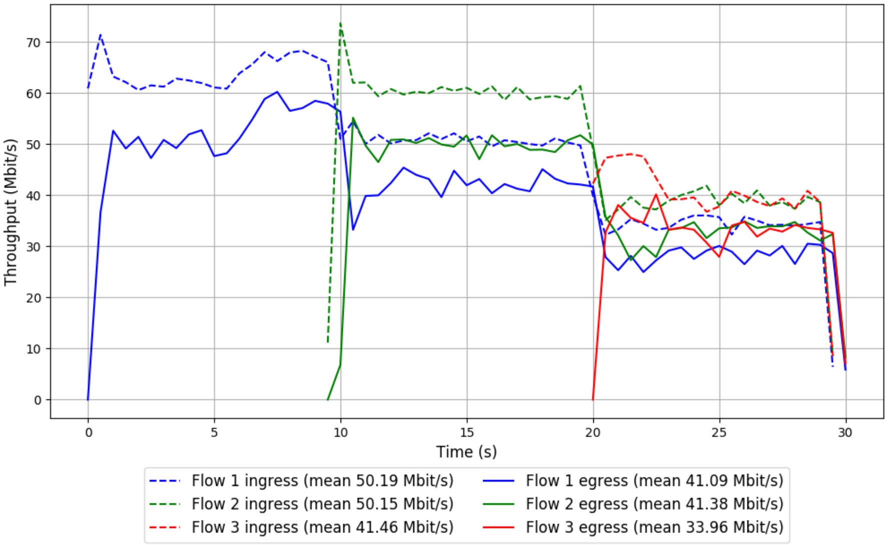


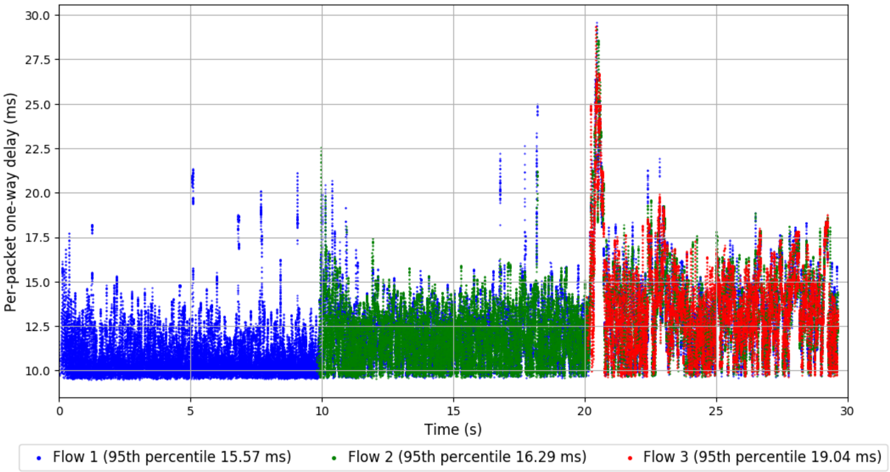
```
Run 8: Statistics of Indigo

Start at: 2018-05-24 16:15:28
End at: 2018-05-24 16:15:58
Local clock offset: 2.379 ms
Remote clock offset: -6.52 ms

# Below is generated by plot.py at 2018-05-24 17:03:18
# Datalink statistics
-- Total of 3 flows:
Average throughput: 79.71 Mbit/s
95th percentile per-packet one-way delay: 16.556 ms
Loss rate: 17.90%
-- Flow 1:
Average throughput: 41.09 Mbit/s
95th percentile per-packet one-way delay: 15.570 ms
Loss rate: 18.12%
-- Flow 2:
Average throughput: 41.38 Mbit/s
95th percentile per-packet one-way delay: 16.288 ms
Loss rate: 17.49%
-- Flow 3:
Average throughput: 33.96 Mbit/s
95th percentile per-packet one-way delay: 19.036 ms
Loss rate: 18.10%
```

Run 8: Report of Indigo — Data Link



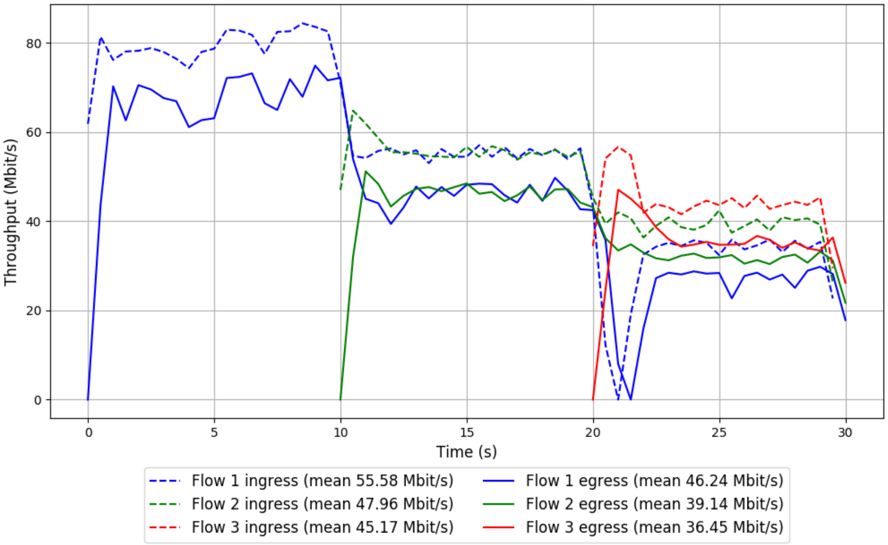


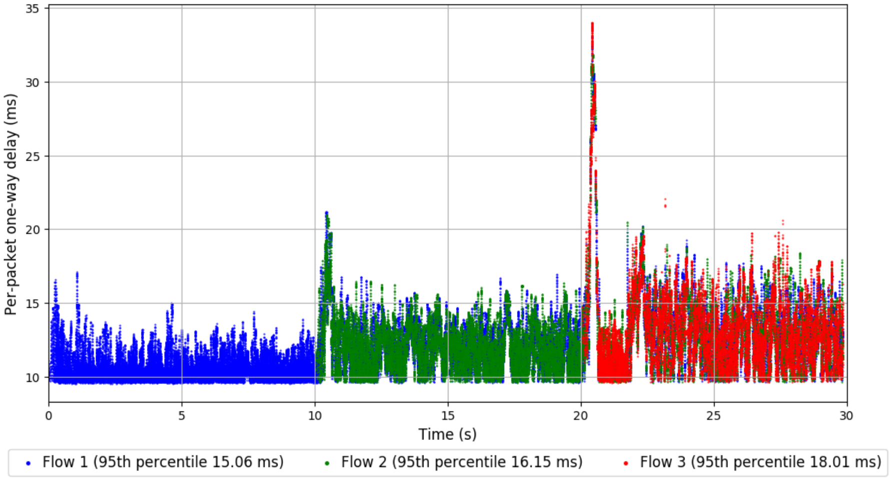
```
Run 9: Statistics of Indigo

Start at: 2018-05-24 16:33:41
End at: 2018-05-24 16:34:11
Local clock offset: 1.545 ms
Remote clock offset: -11.17 ms

# Below is generated by plot.py at 2018-05-24 17:03:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.16 Mbit/s
95th percentile per-packet one-way delay: 15.978 ms
Loss rate: 17.65%
-- Flow 1:
Average throughput: 46.24 Mbit/s
95th percentile per-packet one-way delay: 15.058 ms
Loss rate: 16.80%
-- Flow 2:
Average throughput: 39.14 Mbit/s
95th percentile per-packet one-way delay: 16.148 ms
Loss rate: 18.39%
-- Flow 3:
Average throughput: 36.45 Mbit/s
95th percentile per-packet one-way delay: 18.014 ms
Loss rate: 19.28%
```

Run 9: Report of Indigo — Data Link



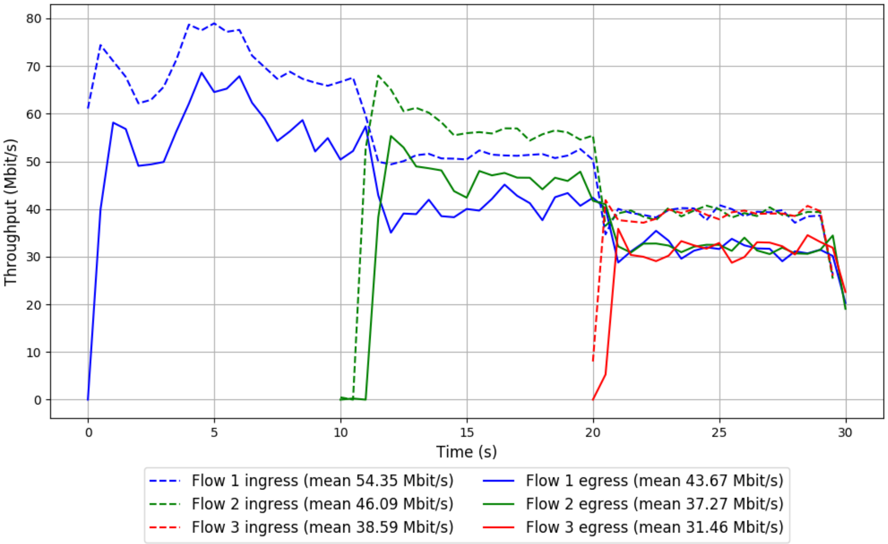


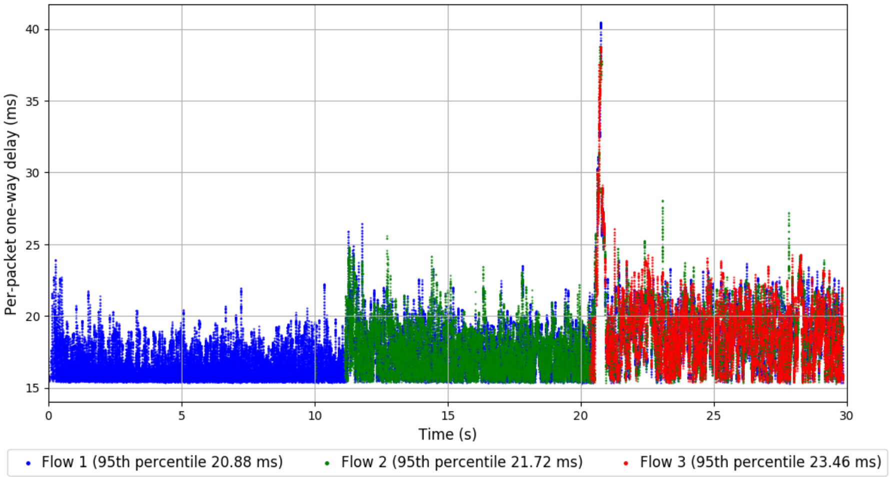
```
Run 10: Statistics of Indigo

Start at: 2018-05-24 16:51:57
End at: 2018-05-24 16:52:27
Local clock offset: -1.667 ms
Remote clock offset: 0.562 ms

# Below is generated by plot.py at 2018-05-24 17:03:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.46 Mbit/s
95th percentile per-packet one-way delay: 21.556 ms
Loss rate: 19.33%
-- Flow 1:
Average throughput: 43.67 Mbit/s
95th percentile per-packet one-way delay: 20.883 ms
Loss rate: 19.64%
-- Flow 2:
Average throughput: 37.27 Mbit/s
95th percentile per-packet one-way delay: 21.717 ms
Loss rate: 19.12%
-- Flow 3:
Average throughput: 31.46 Mbit/s
95th percentile per-packet one-way delay: 23.462 ms
Loss rate: 18.50%
```

Run 10: Report of Indigo — Data Link



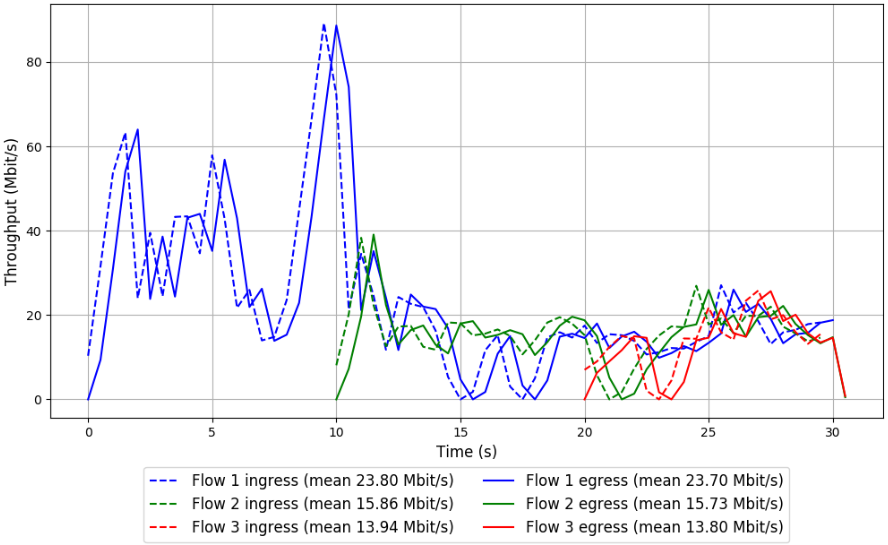


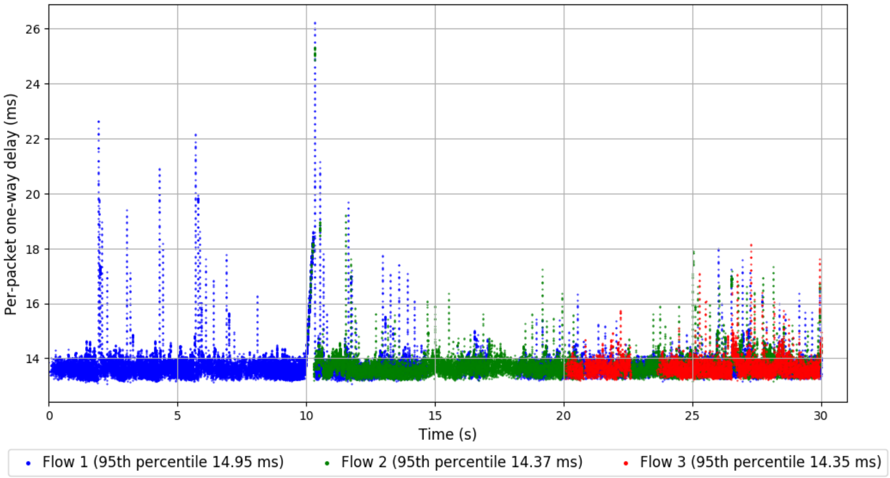
```
Run 1: Statistics of LEDBAT

Start at: 2018-05-24 14:01:34
End at: 2018-05-24 14:02:04
Local clock offset: 1.323 ms
Remote clock offset: 0.29 ms

# Below is generated by plot.py at 2018-05-24 17:03:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 38.76 Mbit/s
95th percentile per-packet one-way delay: 14.550 ms
Loss rate: 0.57%
-- Flow 1:
Average throughput: 23.70 Mbit/s
95th percentile per-packet one-way delay: 14.951 ms
Loss rate: 0.41%
-- Flow 2:
Average throughput: 15.73 Mbit/s
95th percentile per-packet one-way delay: 14.369 ms
Loss rate: 0.78%
-- Flow 3:
Average throughput: 13.80 Mbit/s
95th percentile per-packet one-way delay: 14.352 ms
Loss rate: 0.95%
```

Run 1: Report of LEDBAT — Data Link



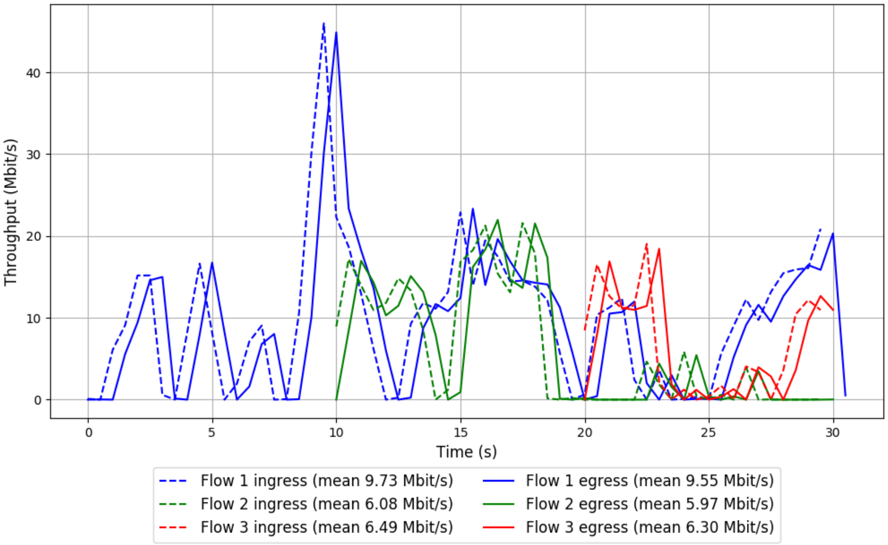


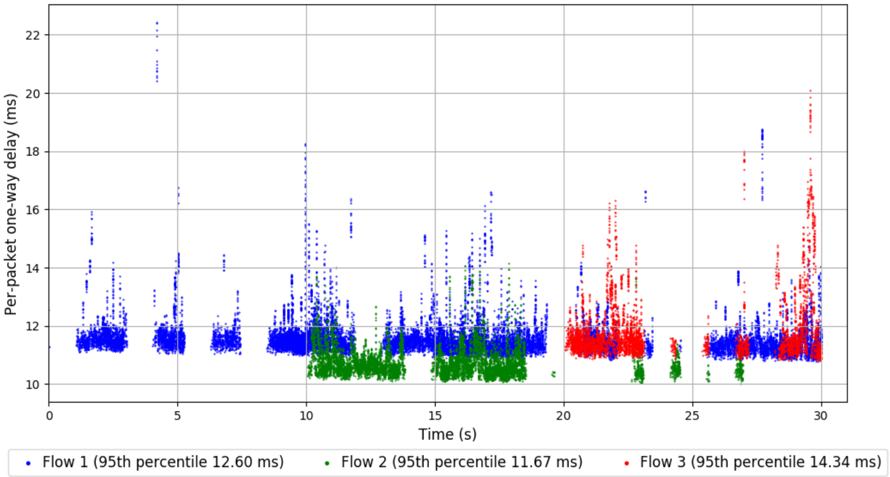
```
Run 2: Statistics of LEDBAT

Start at: 2018-05-24 14:19:37
End at: 2018-05-24 14:20:07
Local clock offset: 3.184 ms
Remote clock offset: -2.449 ms

# Below is generated by plot.py at 2018-05-24 17:03:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 15.62 Mbit/s
95th percentile per-packet one-way delay: 12.635 ms
Loss rate: 1.99%
-- Flow 1:
Average throughput: 9.55 Mbit/s
95th percentile per-packet one-way delay: 12.596 ms
Loss rate: 1.82%
-- Flow 2:
Average throughput: 5.97 Mbit/s
95th percentile per-packet one-way delay: 11.672 ms
Loss rate: 1.85%
-- Flow 3:
Average throughput: 6.30 Mbit/s
95th percentile per-packet one-way delay: 14.341 ms
Loss rate: 3.05%
```

Run 2: Report of LEDBAT — Data Link



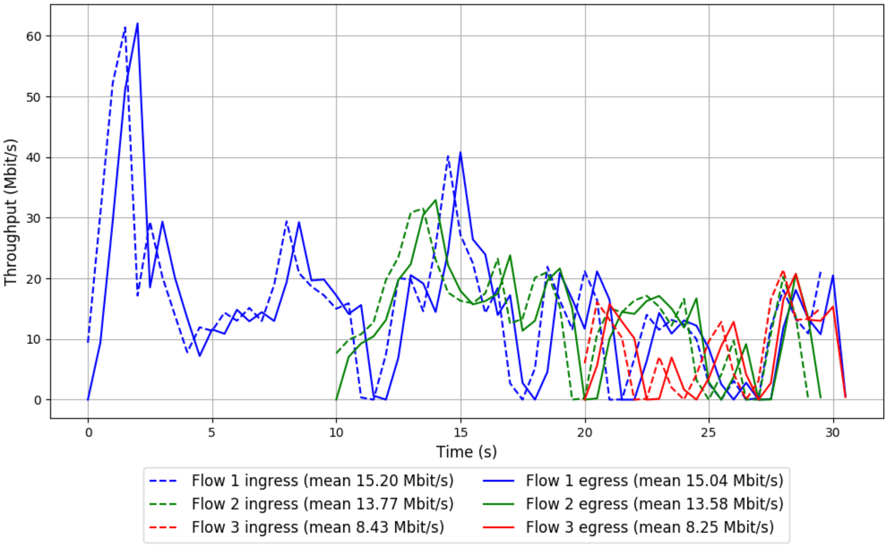


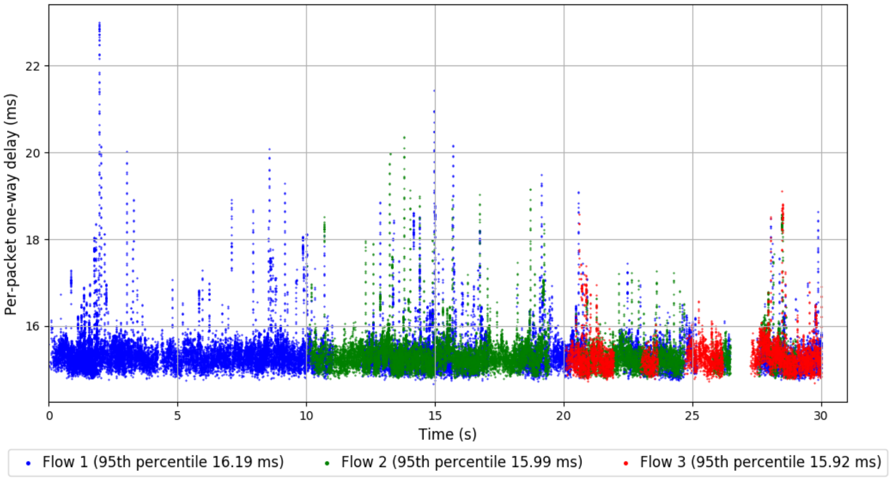
```
Run 3: Statistics of LEDBAT

Start at: 2018-05-24 14:38:09
End at: 2018-05-24 14:38:39
Local clock offset: -0.869 ms
Remote clock offset: 3.167 ms

# Below is generated by plot.py at 2018-05-24 17:03:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 26.38 Mbit/s
95th percentile per-packet one-way delay: 16.085 ms
Loss rate: 1.29%
-- Flow 1:
Average throughput: 15.04 Mbit/s
95th percentile per-packet one-way delay: 16.191 ms
Loss rate: 1.05%
-- Flow 2:
Average throughput: 13.58 Mbit/s
95th percentile per-packet one-way delay: 15.991 ms
Loss rate: 1.42%
-- Flow 3:
Average throughput: 8.25 Mbit/s
95th percentile per-packet one-way delay: 15.921 ms
Loss rate: 2.20%
```

Run 3: Report of LEDBAT — Data Link



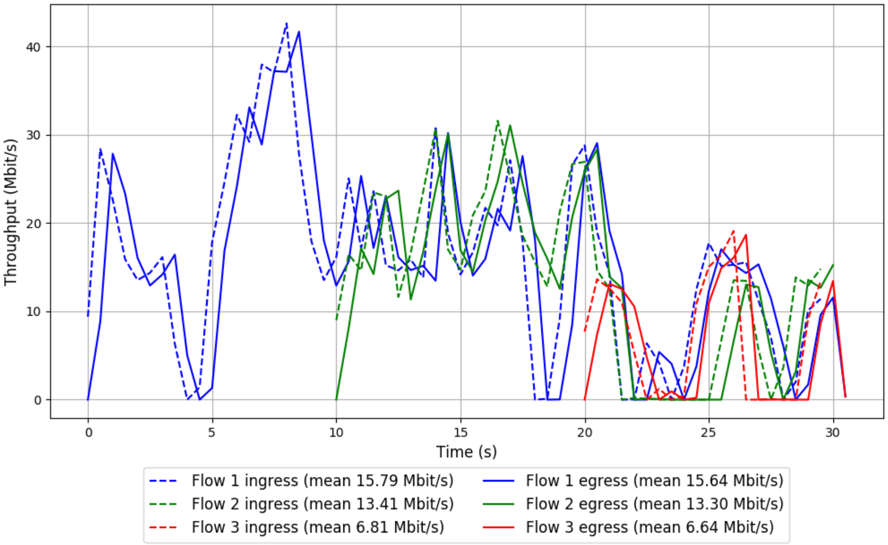


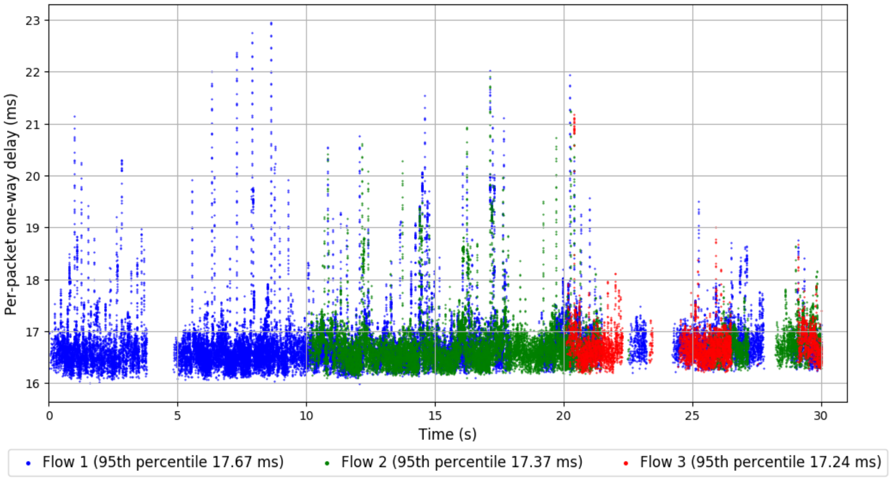
```
Run 4: Statistics of LEDBAT

Start at: 2018-05-24 14:56:44
End at: 2018-05-24 14:57:14
Local clock offset: -1.889 ms
Remote clock offset: 0.974 ms

# Below is generated by plot.py at 2018-05-24 17:03:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 26.70 Mbit/s
95th percentile per-packet one-way delay: 17.517 ms
Loss rate: 1.07%
-- Flow 1:
Average throughput: 15.64 Mbit/s
95th percentile per-packet one-way delay: 17.674 ms
Loss rate: 0.97%
-- Flow 2:
Average throughput: 13.30 Mbit/s
95th percentile per-packet one-way delay: 17.373 ms
Loss rate: 0.88%
-- Flow 3:
Average throughput: 6.64 Mbit/s
95th percentile per-packet one-way delay: 17.236 ms
Loss rate: 2.49%
```

Run 4: Report of LEDBAT — Data Link



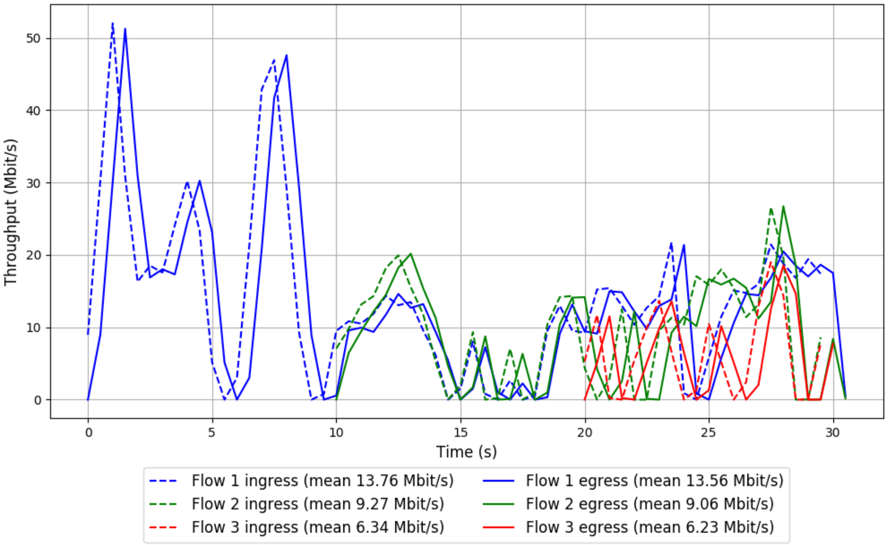


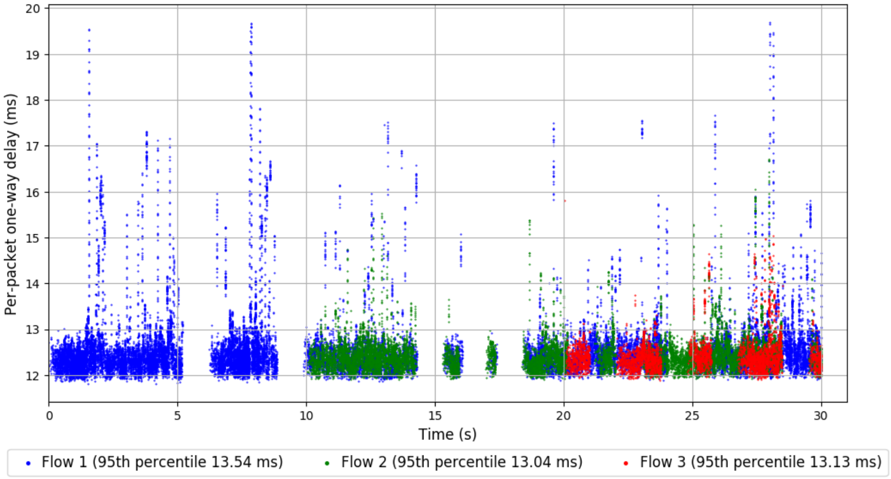
```
Run 5: Statistics of LEDBAT

Start at: 2018-05-24 15:14:46
End at: 2018-05-24 15:15:16
Local clock offset: 1.402 ms
Remote clock offset: -5.316 ms

# Below is generated by plot.py at 2018-05-24 17:03:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 21.67 Mbit/s
95th percentile per-packet one-way delay: 13.326 ms
Loss rate: 1.68%
-- Flow 1:
Average throughput: 13.56 Mbit/s
95th percentile per-packet one-way delay: 13.544 ms
Loss rate: 1.44%
-- Flow 2:
Average throughput: 9.06 Mbit/s
95th percentile per-packet one-way delay: 13.038 ms
Loss rate: 2.19%
-- Flow 3:
Average throughput: 6.23 Mbit/s
95th percentile per-packet one-way delay: 13.130 ms
Loss rate: 1.84%
```

Run 5: Report of LEDBAT — Data Link



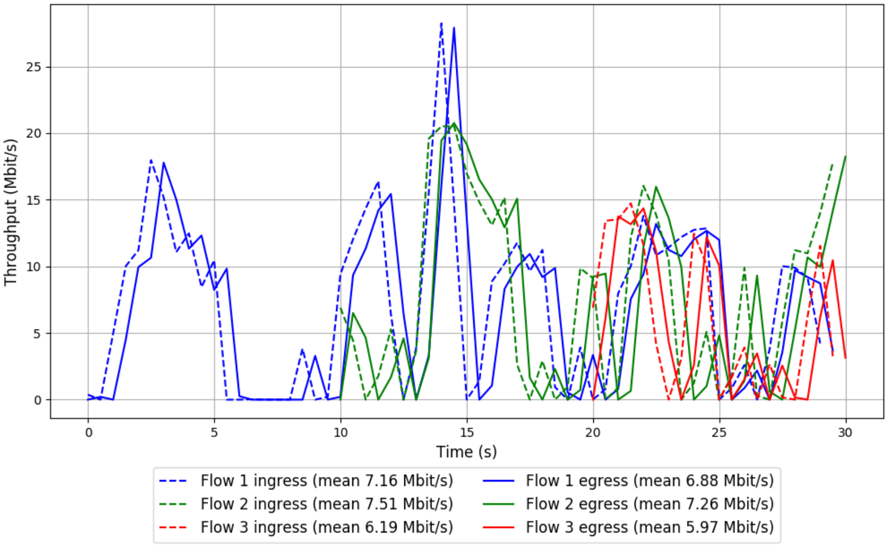


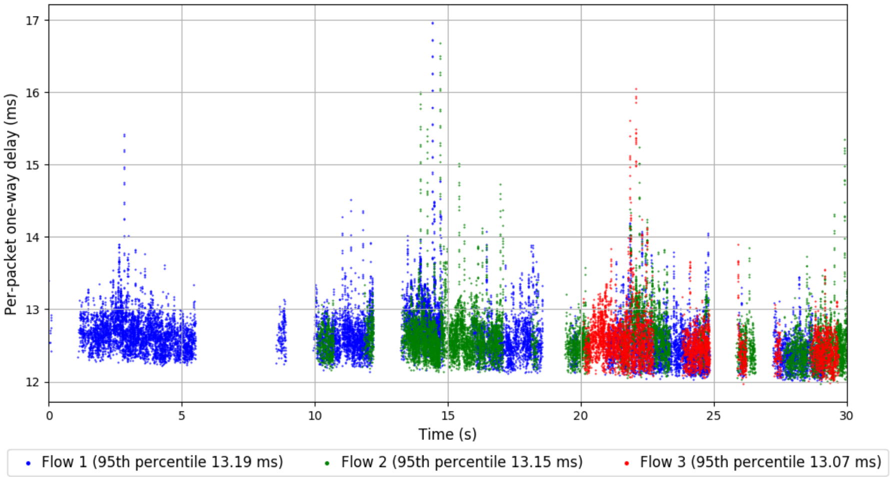
```
Run 6: Statistics of LEDBAT

Start at: 2018-05-24 15:33:17
End at: 2018-05-24 15:33:47
Local clock offset: 1.083 ms
Remote clock offset: -0.857 ms

# Below is generated by plot.py at 2018-05-24 17:03:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.46 Mbit/s
95th percentile per-packet one-way delay: 13.165 ms
Loss rate: 3.64%
-- Flow 1:
Average throughput: 6.88 Mbit/s
95th percentile per-packet one-way delay: 13.192 ms
Loss rate: 3.89%
-- Flow 2:
Average throughput: 7.26 Mbit/s
95th percentile per-packet one-way delay: 13.154 ms
Loss rate: 3.30%
-- Flow 3:
Average throughput: 5.97 Mbit/s
95th percentile per-packet one-way delay: 13.072 ms
Loss rate: 3.61%
```

Run 6: Report of LEDBAT — Data Link



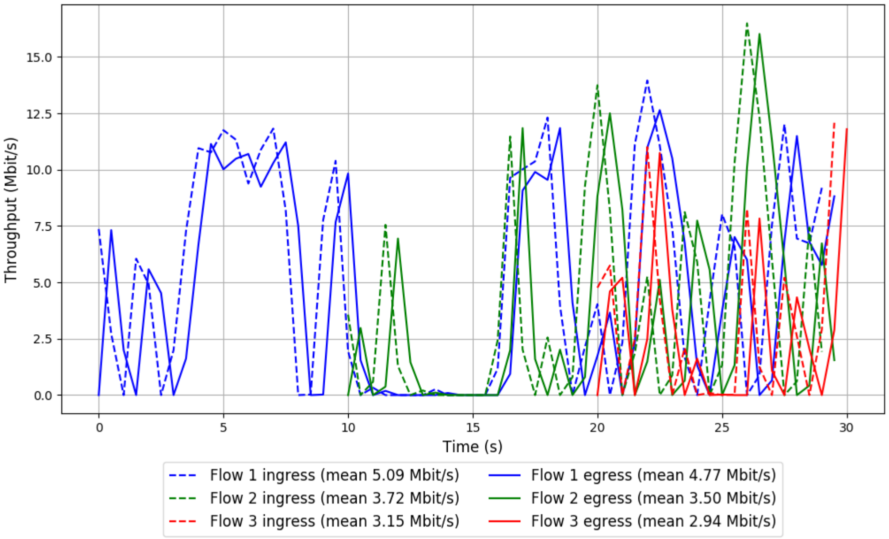


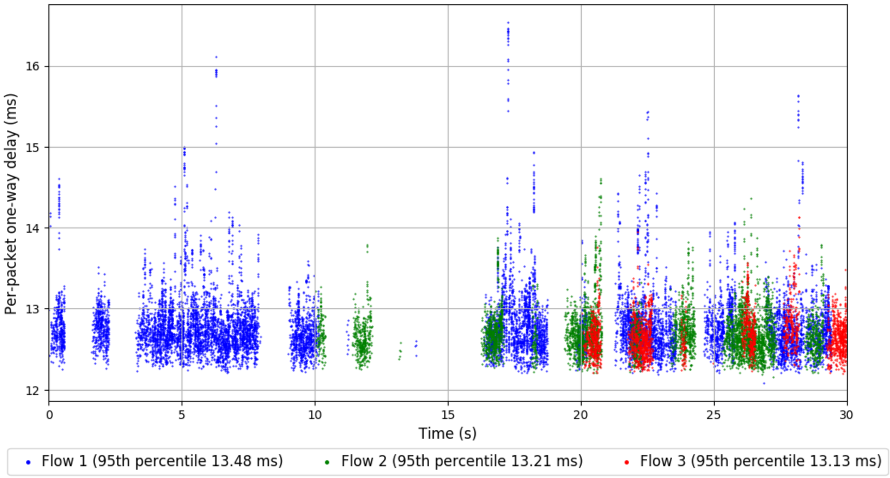
```
Run 7: Statistics of LEDBAT

Start at: 2018-05-24 15:51:29
End at: 2018-05-24 15:51:59
Local clock offset: 1.628 ms
Remote clock offset: 4.1 ms

# Below is generated by plot.py at 2018-05-24 17:03:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.87 Mbit/s
95th percentile per-packet one-way delay: 13.342 ms
Loss rate: 6.39%
-- Flow 1:
Average throughput: 4.77 Mbit/s
95th percentile per-packet one-way delay: 13.479 ms
Loss rate: 6.46%
-- Flow 2:
Average throughput: 3.50 Mbit/s
95th percentile per-packet one-way delay: 13.213 ms
Loss rate: 6.06%
-- Flow 3:
Average throughput: 2.94 Mbit/s
95th percentile per-packet one-way delay: 13.131 ms
Loss rate: 6.84%
```

Run 7: Report of LEDBAT — Data Link



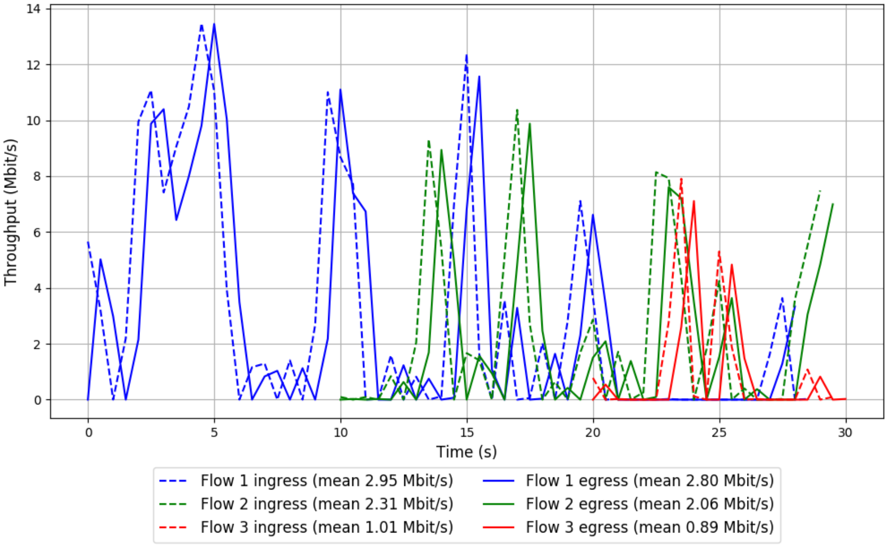


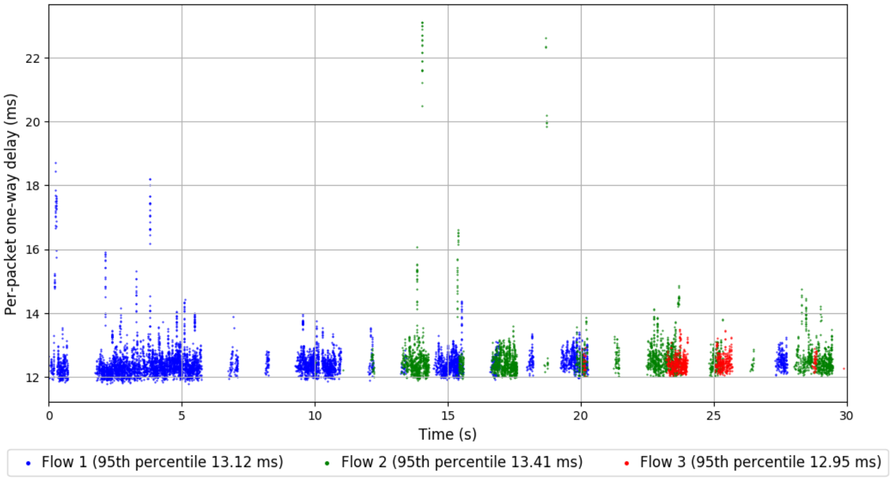
```
Run 8: Statistics of LEDBAT

Start at: 2018-05-24 16:09:40
End at: 2018-05-24 16:10:10
Local clock offset: 1.542 ms
Remote clock offset: -2.802 ms

# Below is generated by plot.py at 2018-05-24 17:03:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.24 Mbit/s
95th percentile per-packet one-way delay: 13.198 ms
Loss rate: 9.37%
-- Flow 1:
Average throughput: 2.80 Mbit/s
95th percentile per-packet one-way delay: 13.115 ms
Loss rate: 8.28%
-- Flow 2:
Average throughput: 2.06 Mbit/s
95th percentile per-packet one-way delay: 13.413 ms
Loss rate: 10.67%
-- Flow 3:
Average throughput: 0.89 Mbit/s
95th percentile per-packet one-way delay: 12.950 ms
Loss rate: 12.81%
```

Run 8: Report of LEDBAT — Data Link



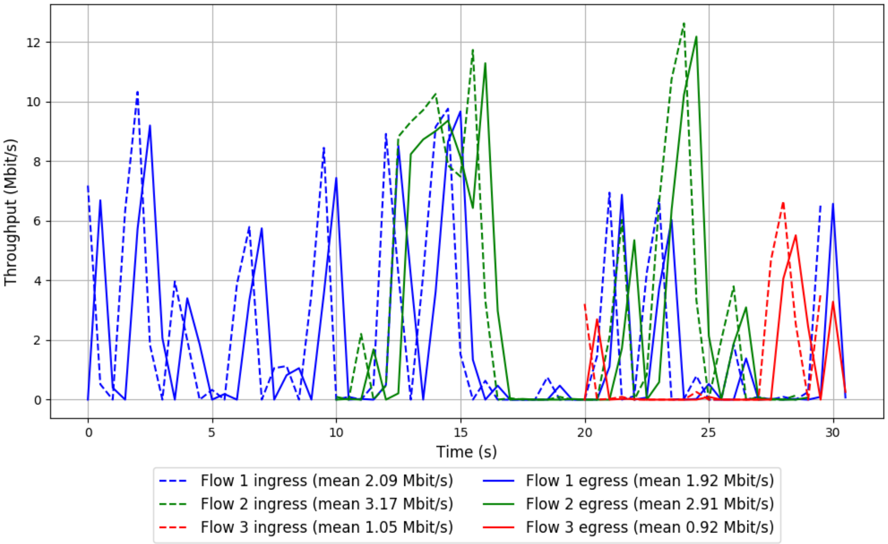


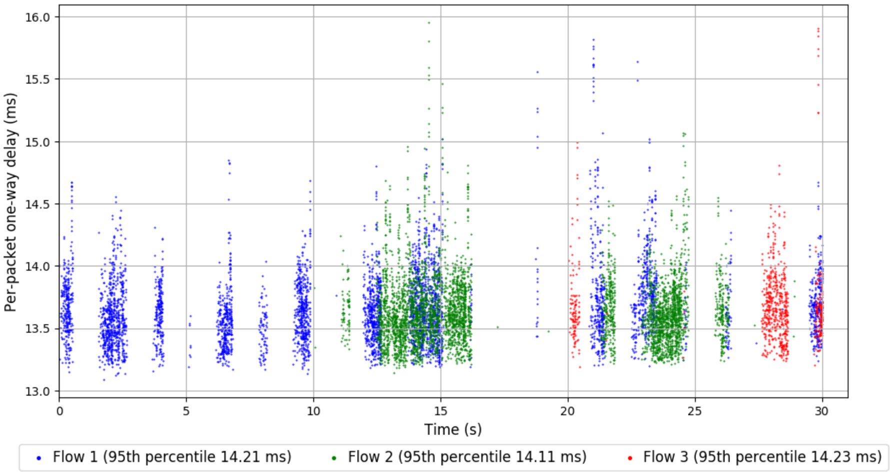
```
Run 9: Statistics of LEDBAT

Start at: 2018-05-24 16:27:55
End at: 2018-05-24 16:28:25
Local clock offset: -1.151 ms
Remote clock offset: -9.336 ms

# Below is generated by plot.py at 2018-05-24 17:03:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.06 Mbit/s
95th percentile per-packet one-way delay: 14.171 ms
Loss rate: 8.44%
-- Flow 1:
Average throughput: 1.92 Mbit/s
95th percentile per-packet one-way delay: 14.212 ms
Loss rate: 7.86%
-- Flow 2:
Average throughput: 2.91 Mbit/s
95th percentile per-packet one-way delay: 14.109 ms
Loss rate: 8.33%
-- Flow 3:
Average throughput: 0.92 Mbit/s
95th percentile per-packet one-way delay: 14.230 ms
Loss rate: 12.50%
```

Run 9: Report of LEDBAT — Data Link



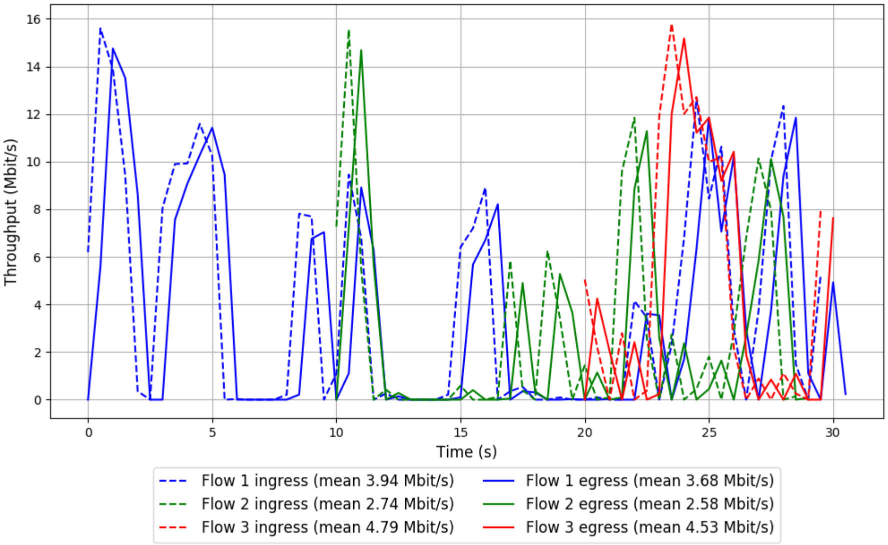


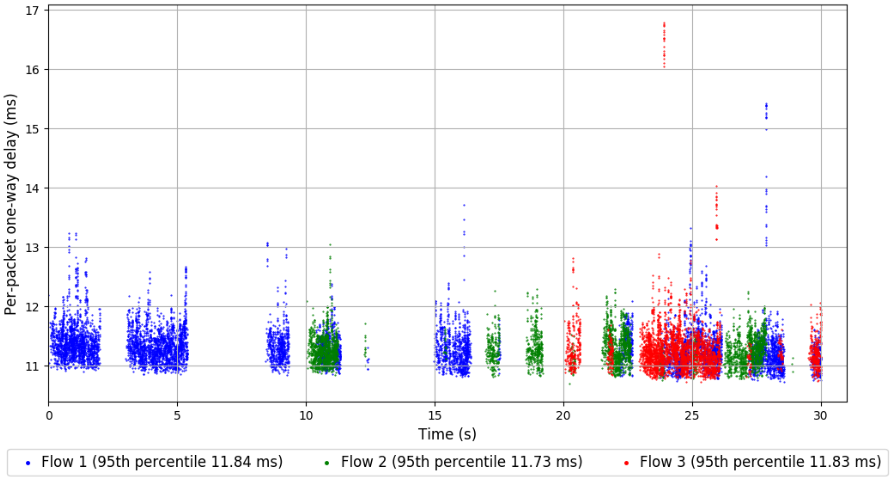
```
Run 10: Statistics of LEDBAT

Start at: 2018-05-24 16:46:12
End at: 2018-05-24 16:46:42
Local clock offset: 1.117 ms
Remote clock offset: -2.51 ms

# Below is generated by plot.py at 2018-05-24 17:03:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.80 Mbit/s
95th percentile per-packet one-way delay: 11.811 ms
Loss rate: 6.35%
-- Flow 1:
Average throughput: 3.68 Mbit/s
95th percentile per-packet one-way delay: 11.841 ms
Loss rate: 6.77%
-- Flow 2:
Average throughput: 2.58 Mbit/s
95th percentile per-packet one-way delay: 11.730 ms
Loss rate: 6.17%
-- Flow 3:
Average throughput: 4.53 Mbit/s
95th percentile per-packet one-way delay: 11.829 ms
Loss rate: 5.48%
```

Run 10: Report of LEDBAT — Data Link



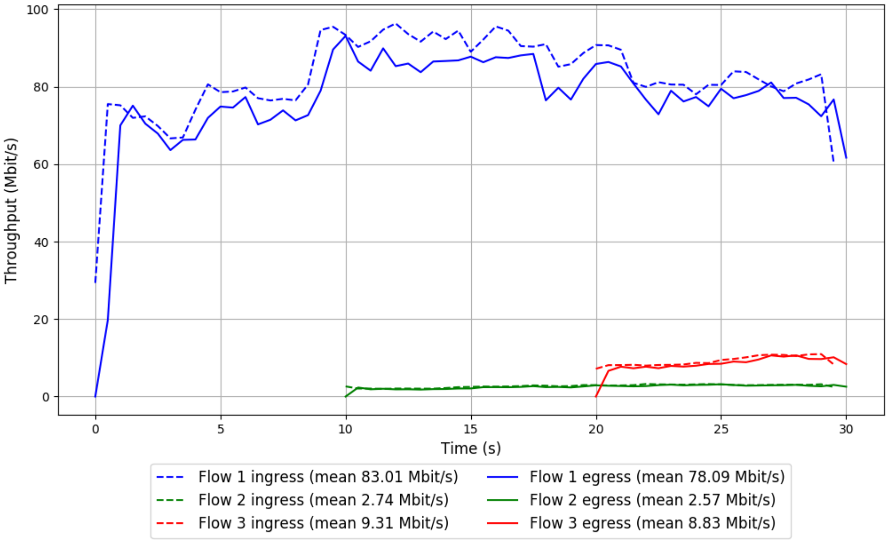


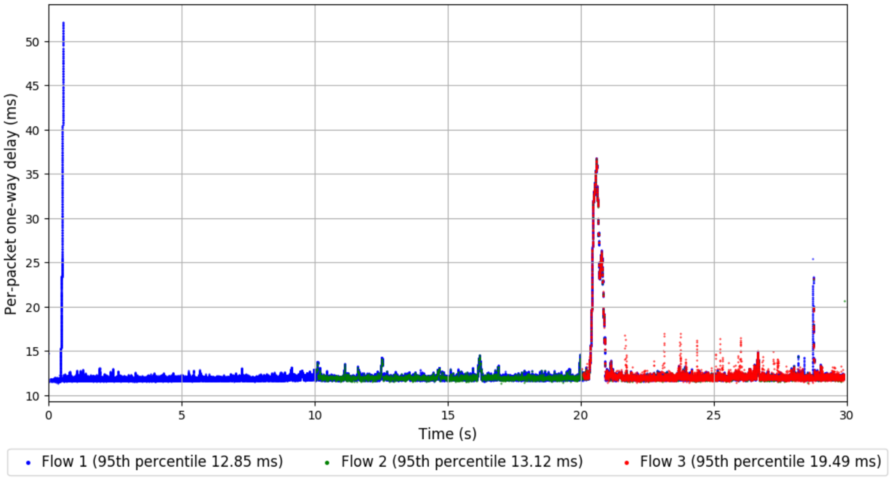
```
Run 1: Statistics of PCC-Allegro

Start at: 2018-05-24 14:05:03
End at: 2018-05-24 14:05:33
Local clock offset: 0.833 ms
Remote clock offset: -2.54 ms

# Below is generated by plot.py at 2018-05-24 17:04:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 82.69 Mbit/s
95th percentile per-packet one-way delay: 12.908 ms
Loss rate: 5.92%
-- Flow 1:
Average throughput: 78.09 Mbit/s
95th percentile per-packet one-way delay: 12.849 ms
Loss rate: 5.94%
-- Flow 2:
Average throughput: 2.57 Mbit/s
95th percentile per-packet one-way delay: 13.124 ms
Loss rate: 5.94%
-- Flow 3:
Average throughput: 8.83 Mbit/s
95th percentile per-packet one-way delay: 19.488 ms
Loss rate: 5.19%
```

Run 1: Report of PCC-Allegro — Data Link



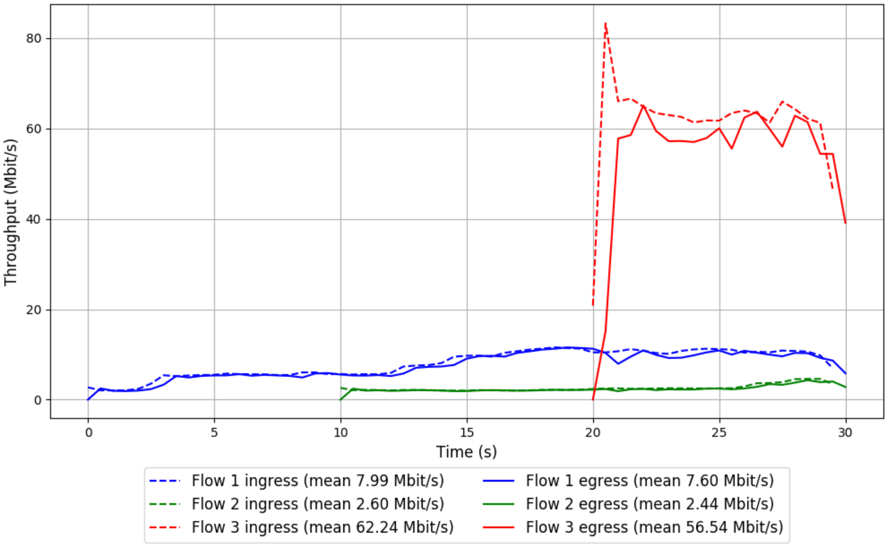


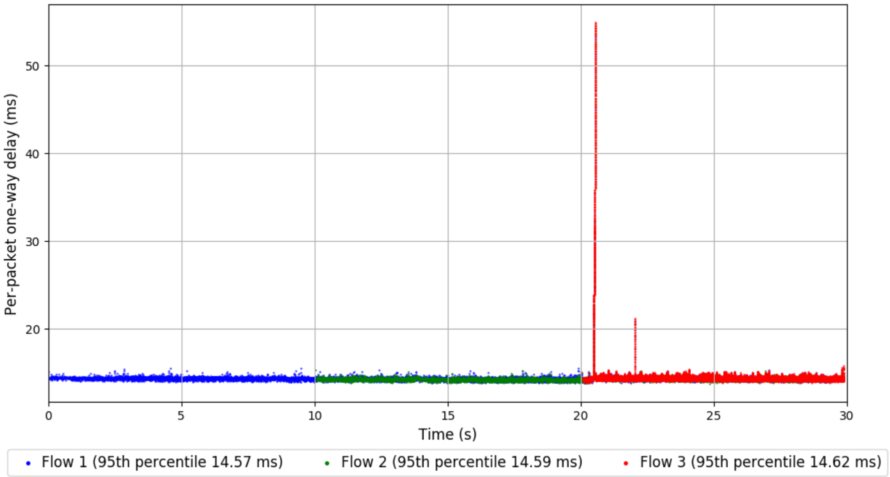
```
Run 2: Statistics of PCC-Allegro

Start at: 2018-05-24 14:23:09
End at: 2018-05-24 14:23:39
Local clock offset: -1.307 ms
Remote clock offset: -1.157 ms

# Below is generated by plot.py at 2018-05-24 17:04:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 27.88 Mbit/s
95th percentile per-packet one-way delay: 14.598 ms
Loss rate: 7.86%
-- Flow 1:
Average throughput: 7.60 Mbit/s
95th percentile per-packet one-way delay: 14.573 ms
Loss rate: 4.89%
-- Flow 2:
Average throughput: 2.44 Mbit/s
95th percentile per-packet one-way delay: 14.585 ms
Loss rate: 5.98%
-- Flow 3:
Average throughput: 56.54 Mbit/s
95th percentile per-packet one-way delay: 14.615 ms
Loss rate: 9.17%
```

Run 2: Report of PCC-Allegro — Data Link



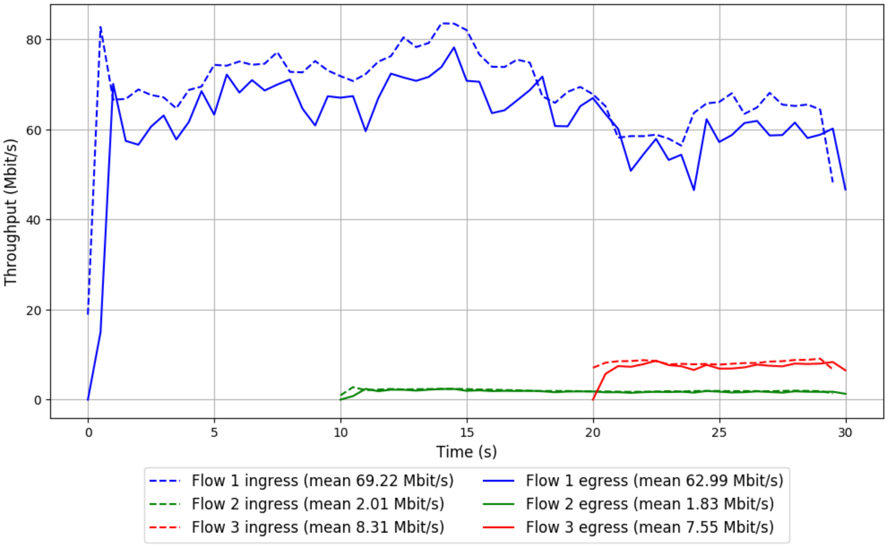


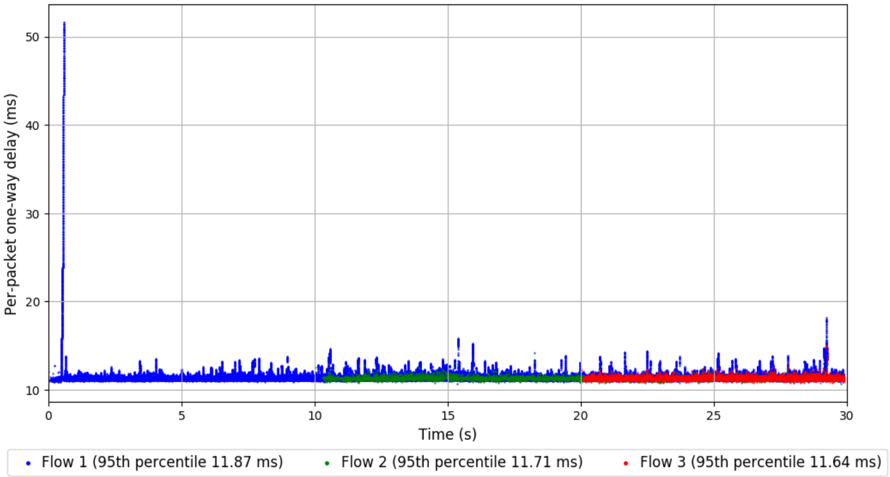
```
Run 3: Statistics of PCC-Allegro

Start at: 2018-05-24 14:41:42
End at: 2018-05-24 14:42:12
Local clock offset: 0.739 ms
Remote clock offset: 1.169 ms

# Below is generated by plot.py at 2018-05-24 17:04:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 66.70 Mbit/s
95th percentile per-packet one-way delay: 11.849 ms
Loss rate: 9.00%
-- Flow 1:
Average throughput: 62.99 Mbit/s
95th percentile per-packet one-way delay: 11.871 ms
Loss rate: 9.00%
-- Flow 2:
Average throughput: 1.83 Mbit/s
95th percentile per-packet one-way delay: 11.706 ms
Loss rate: 8.84%
-- Flow 3:
Average throughput: 7.55 Mbit/s
95th percentile per-packet one-way delay: 11.639 ms
Loss rate: 9.05%
```

Run 3: Report of PCC-Allegro — Data Link



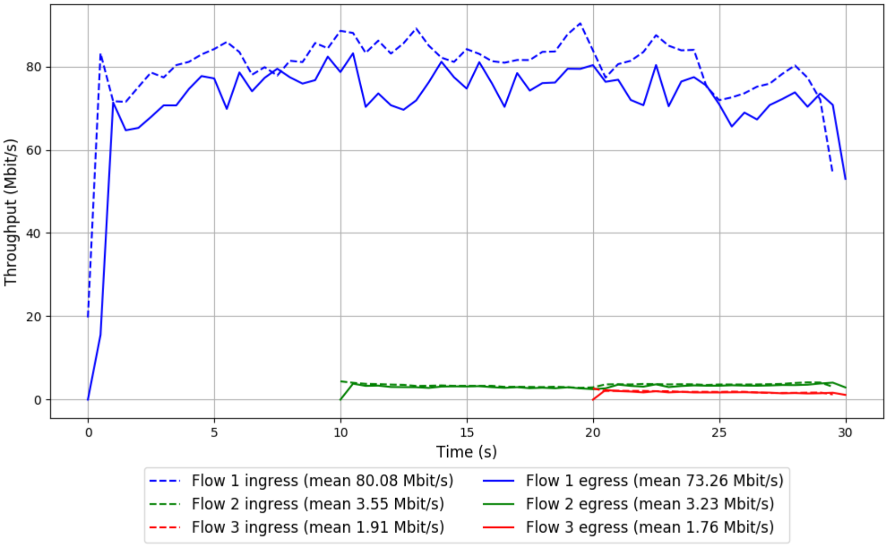


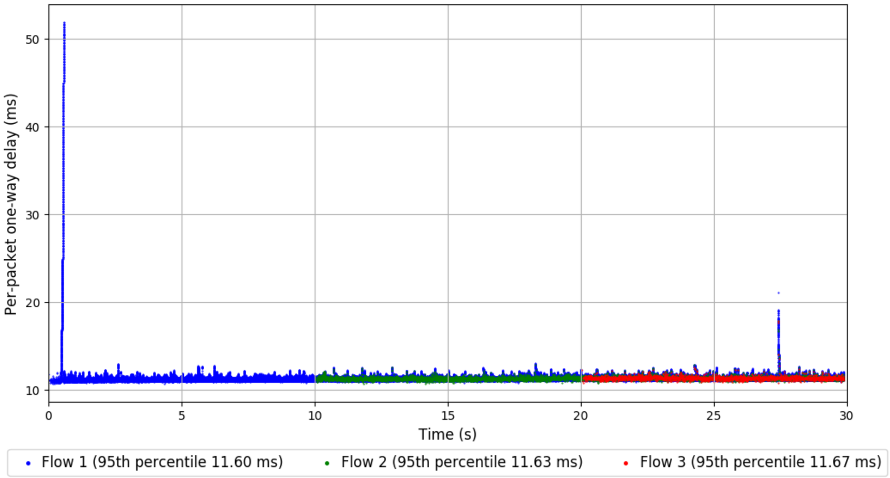
```
Run 4: Statistics of PCC-Allegro

Start at: 2018-05-24 15:00:16
End at: 2018-05-24 15:00:46
Local clock offset: 0.539 ms
Remote clock offset: -3.41 ms

# Below is generated by plot.py at 2018-05-24 17:04:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 75.99 Mbit/s
95th percentile per-packet one-way delay: 11.601 ms
Loss rate: 8.53%
-- Flow 1:
Average throughput: 73.26 Mbit/s
95th percentile per-packet one-way delay: 11.598 ms
Loss rate: 8.52%
-- Flow 2:
Average throughput: 3.23 Mbit/s
95th percentile per-packet one-way delay: 11.634 ms
Loss rate: 9.03%
-- Flow 3:
Average throughput: 1.76 Mbit/s
95th percentile per-packet one-way delay: 11.670 ms
Loss rate: 7.82%
```

Run 4: Report of PCC-Allegro — Data Link



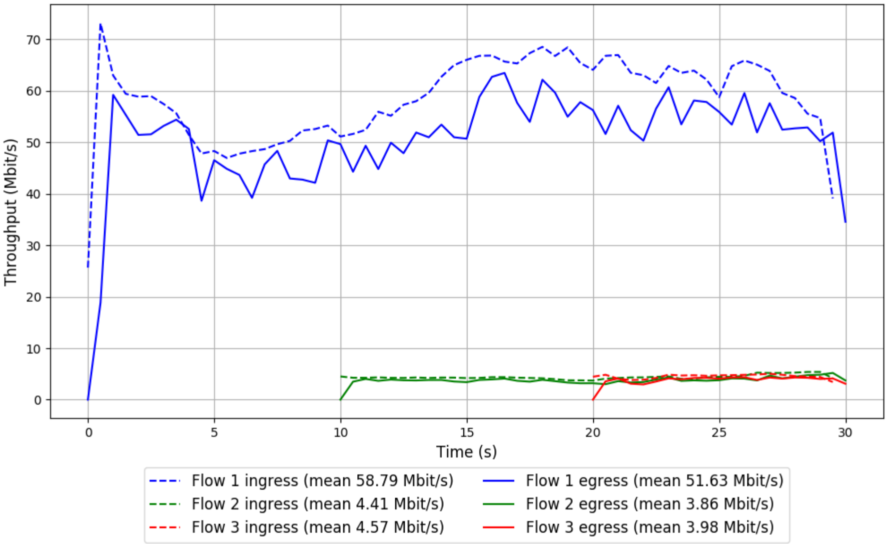


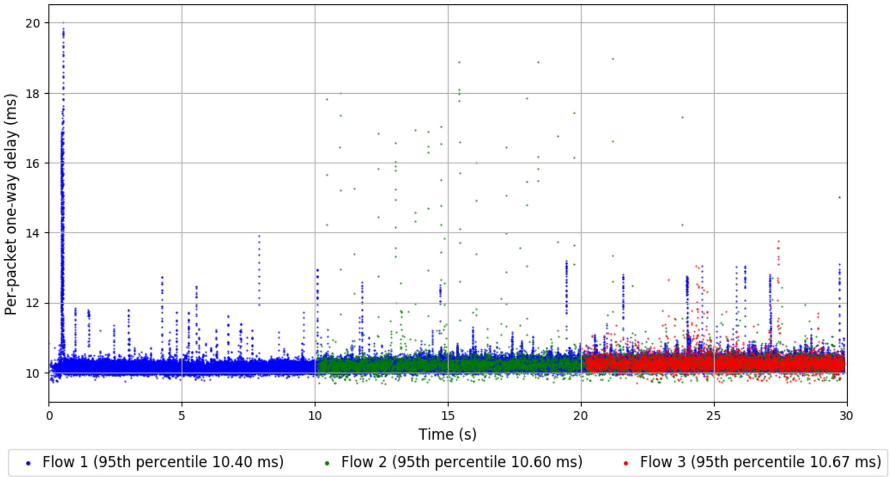
```
Run 5: Statistics of PCC-Allegro

Start at: 2018-05-24 15:18:19
End at: 2018-05-24 15:18:49
Local clock offset: 1.302 ms
Remote clock offset: -7.974 ms

# Below is generated by plot.py at 2018-05-24 17:04:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 55.52 Mbit/s
95th percentile per-packet one-way delay: 10.422 ms
Loss rate: 12.20%
-- Flow 1:
Average throughput: 51.63 Mbit/s
95th percentile per-packet one-way delay: 10.402 ms
Loss rate: 12.17%
-- Flow 2:
Average throughput: 3.86 Mbit/s
95th percentile per-packet one-way delay: 10.601 ms
Loss rate: 12.50%
-- Flow 3:
Average throughput: 3.98 Mbit/s
95th percentile per-packet one-way delay: 10.666 ms
Loss rate: 12.79%
```

Run 5: Report of PCC-Allegro — Data Link



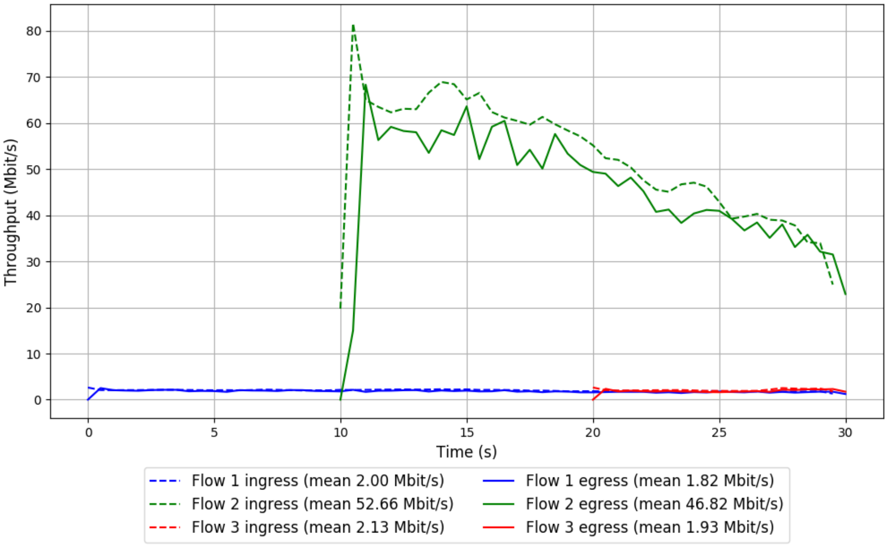


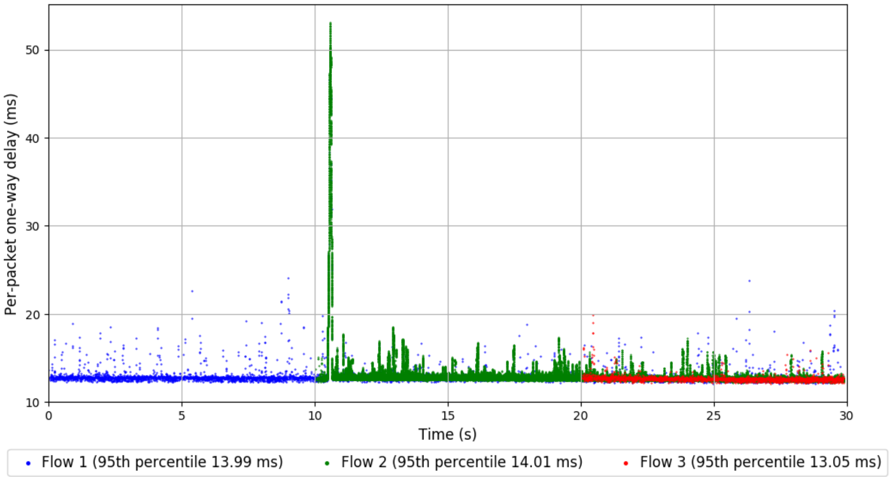
```
Run 6: Statistics of PCC-Allegro

Start at: 2018-05-24 15:36:46
End at: 2018-05-24 15:37:16
Local clock offset: 1.987 ms
Remote clock offset: 2.006 ms

# Below is generated by plot.py at 2018-05-24 17:04:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 33.59 Mbit/s
95th percentile per-packet one-way delay: 13.978 ms
Loss rate: 10.95%
-- Flow 1:
Average throughput: 1.82 Mbit/s
95th percentile per-packet one-way delay: 13.987 ms
Loss rate: 8.82%
-- Flow 2:
Average throughput: 46.82 Mbit/s
95th percentile per-packet one-way delay: 14.011 ms
Loss rate: 11.10%
-- Flow 3:
Average throughput: 1.93 Mbit/s
95th percentile per-packet one-way delay: 13.050 ms
Loss rate: 9.50%
```

Run 6: Report of PCC-Allegro — Data Link



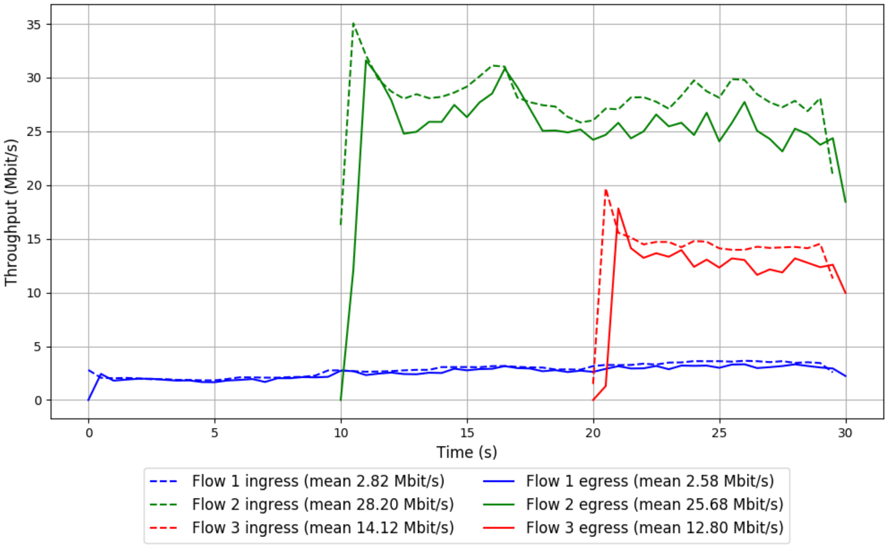


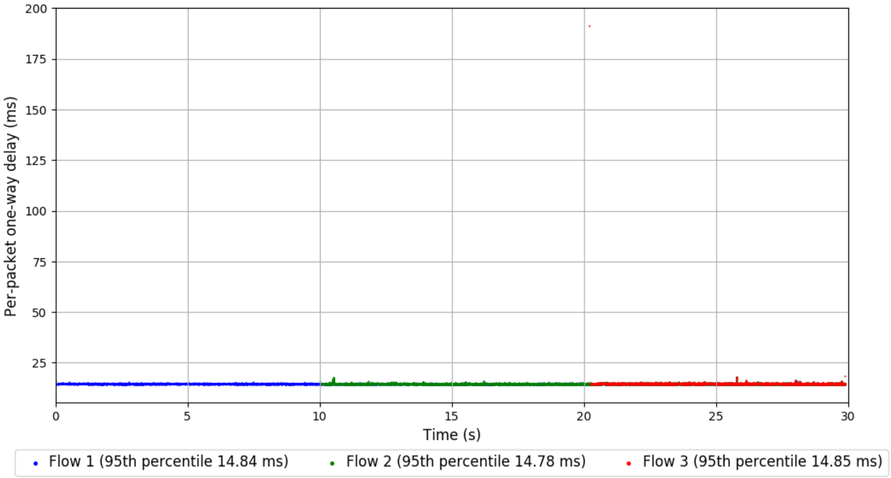
```
Run 7: Statistics of PCC-Allegro

Start at: 2018-05-24 15:55:01
End at: 2018-05-24 15:55:31
Local clock offset: -0.397 ms
Remote clock offset: 4.538 ms

# Below is generated by plot.py at 2018-05-24 17:04:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.80 Mbit/s
95th percentile per-packet one-way delay: 14.807 ms
Loss rate: 9.23%
-- Flow 1:
Average throughput: 2.58 Mbit/s
95th percentile per-packet one-way delay: 14.841 ms
Loss rate: 8.32%
-- Flow 2:
Average throughput: 25.68 Mbit/s
95th percentile per-packet one-way delay: 14.777 ms
Loss rate: 8.94%
-- Flow 3:
Average throughput: 12.80 Mbit/s
95th percentile per-packet one-way delay: 14.853 ms
Loss rate: 10.94%
```

Run 7: Report of PCC-Allegro — Data Link



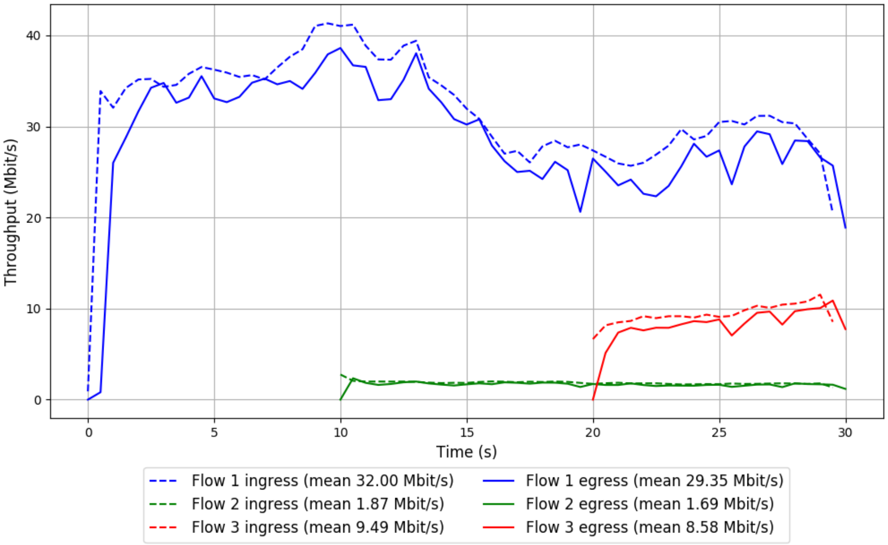


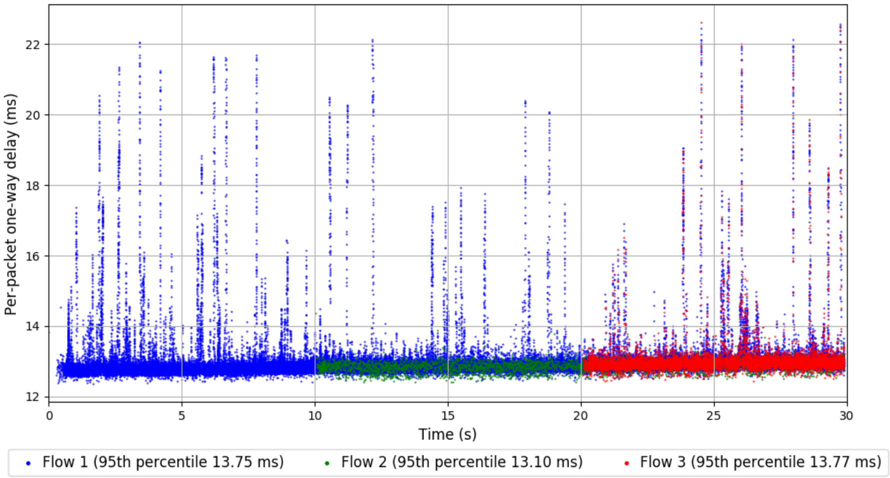
```
Run 8: Statistics of PCC-Allegro

Start at: 2018-05-24 16:13:11
End at: 2018-05-24 16:13:41
Local clock offset: 0.398 ms
Remote clock offset: -4.689 ms

# Below is generated by plot.py at 2018-05-24 17:04:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 33.30 Mbit/s
95th percentile per-packet one-way delay: 13.694 ms
Loss rate: 8.44%
-- Flow 1:
Average throughput: 29.35 Mbit/s
95th percentile per-packet one-way delay: 13.747 ms
Loss rate: 8.29%
-- Flow 2:
Average throughput: 1.69 Mbit/s
95th percentile per-packet one-way delay: 13.101 ms
Loss rate: 9.43%
-- Flow 3:
Average throughput: 8.58 Mbit/s
95th percentile per-packet one-way delay: 13.768 ms
Loss rate: 9.56%
```

Run 8: Report of PCC-Allegro — Data Link



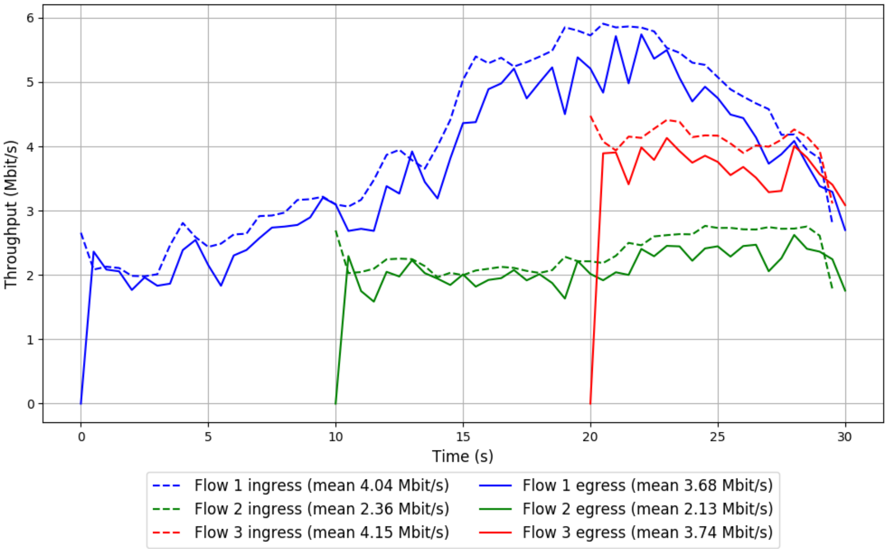


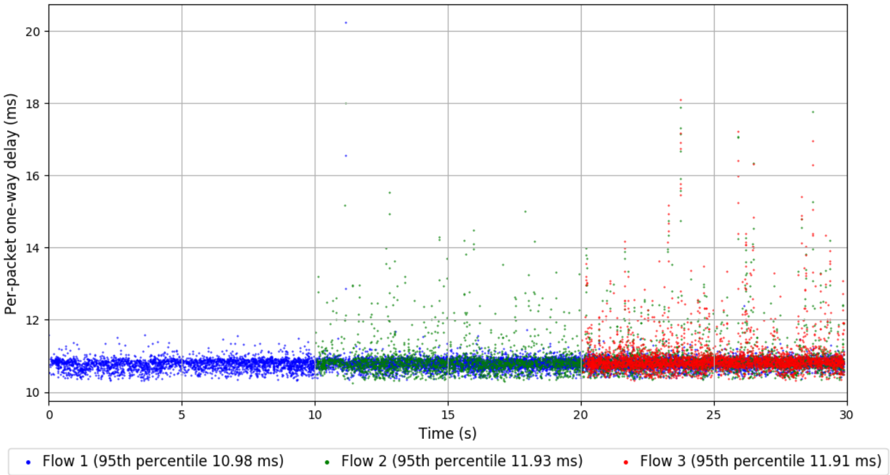
```
Run 9: Statistics of PCC-Allegro

Start at: 2018-05-24 16:31:30
End at: 2018-05-24 16:32:00
Local clock offset: 1.585 ms
Remote clock offset: -9.819 ms

# Below is generated by plot.py at 2018-05-24 17:04:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.33 Mbit/s
95th percentile per-packet one-way delay: 11.237 ms
Loss rate: 9.33%
-- Flow 1:
Average throughput: 3.68 Mbit/s
95th percentile per-packet one-way delay: 10.981 ms
Loss rate: 8.90%
-- Flow 2:
Average throughput: 2.13 Mbit/s
95th percentile per-packet one-way delay: 11.926 ms
Loss rate: 9.82%
-- Flow 3:
Average throughput: 3.74 Mbit/s
95th percentile per-packet one-way delay: 11.910 ms
Loss rate: 10.02%
```

Run 9: Report of PCC-Allegro — Data Link



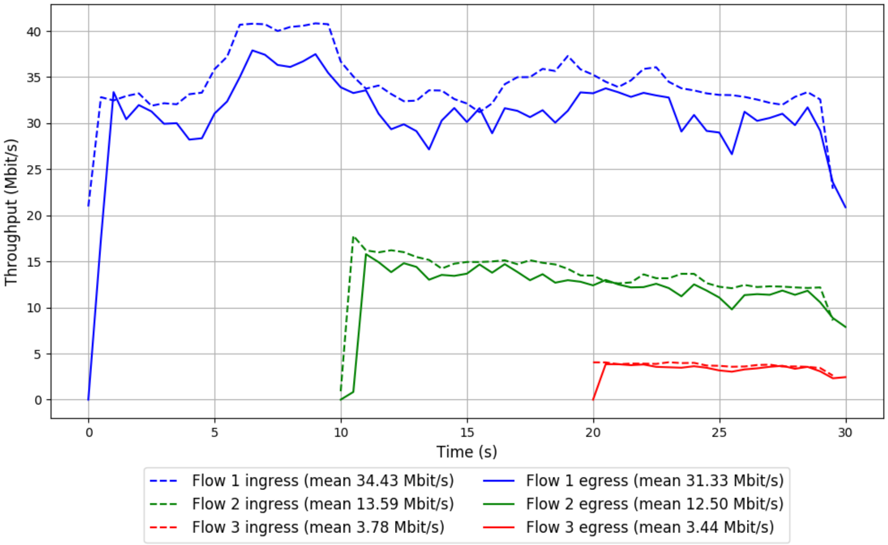


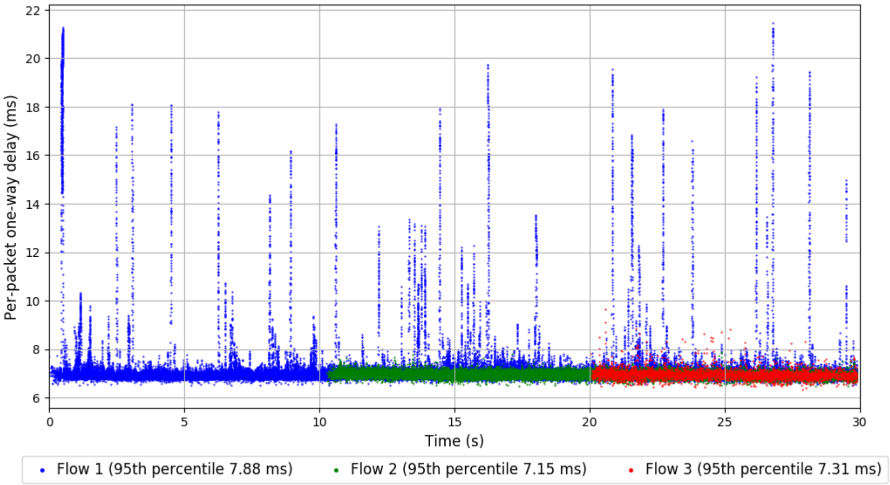
```
Run 10: Statistics of PCC-Allegro

Start at: 2018-05-24 16:49:43
End at: 2018-05-24 16:50:13
Local clock offset: 0.792 ms
Remote clock offset: -6.04 ms

# Below is generated by plot.py at 2018-05-24 17:04:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 40.66 Mbit/s
95th percentile per-packet one-way delay: 7.525 ms
Loss rate: 9.06%
-- Flow 1:
Average throughput: 31.33 Mbit/s
95th percentile per-packet one-way delay: 7.881 ms
Loss rate: 9.02%
-- Flow 2:
Average throughput: 12.50 Mbit/s
95th percentile per-packet one-way delay: 7.153 ms
Loss rate: 9.20%
-- Flow 3:
Average throughput: 3.44 Mbit/s
95th percentile per-packet one-way delay: 7.306 ms
Loss rate: 9.12%
```

Run 10: Report of PCC-Allegro — Data Link

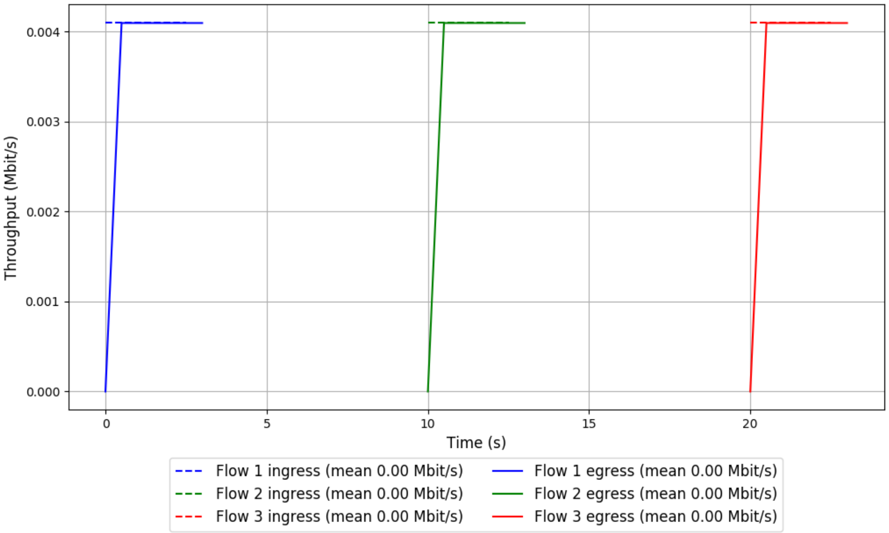


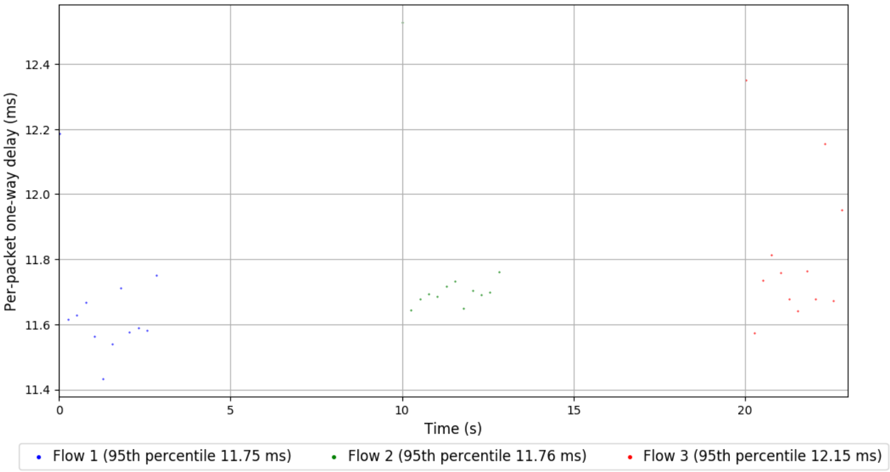


```
Run 1: Statistics of PCC-Expr

Start at: 2018-05-24 13:59:23
End at: 2018-05-24 13:59:53
Local clock offset: -0.028 ms
Remote clock offset: -2.067 ms
```

Run 1: Report of PCC-Expr — Data Link

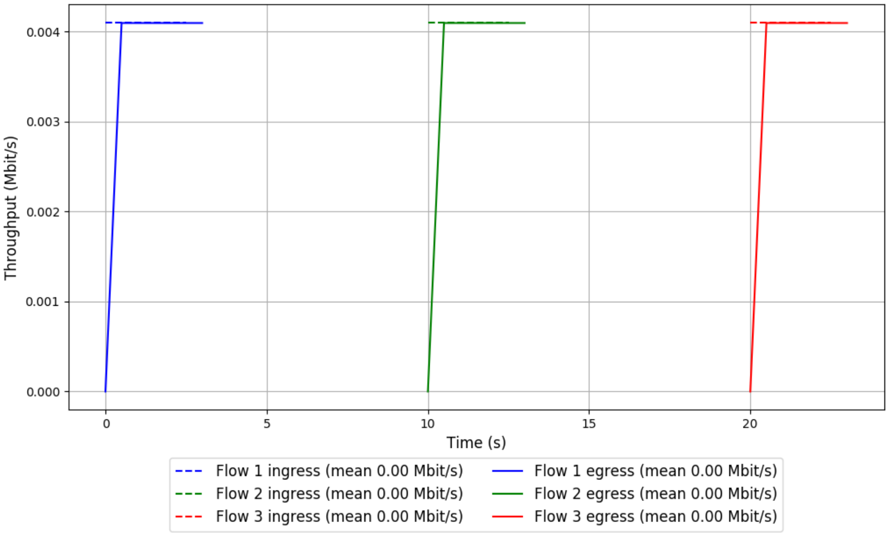


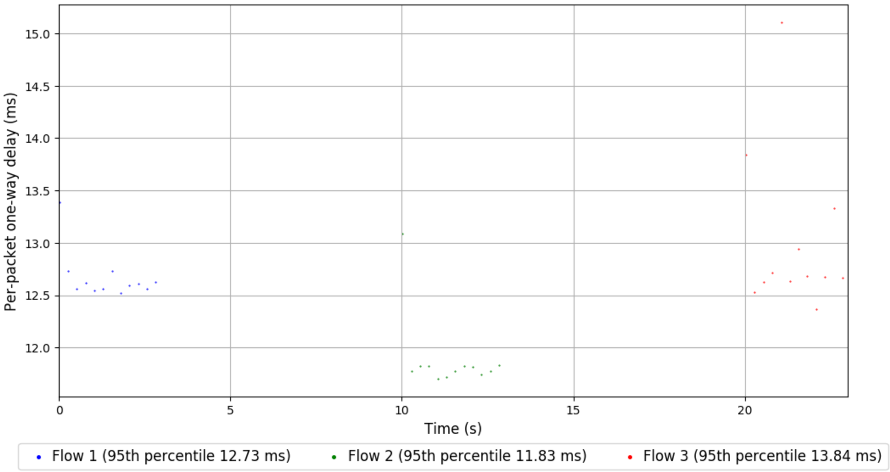


```
Run 2: Statistics of PCC-Expr

Start at: 2018-05-24 14:17:25
End at: 2018-05-24 14:17:55
Local clock offset: -0.159 ms
Remote clock offset: -5.397 ms
```

Run 2: Report of PCC-Expr — Data Link

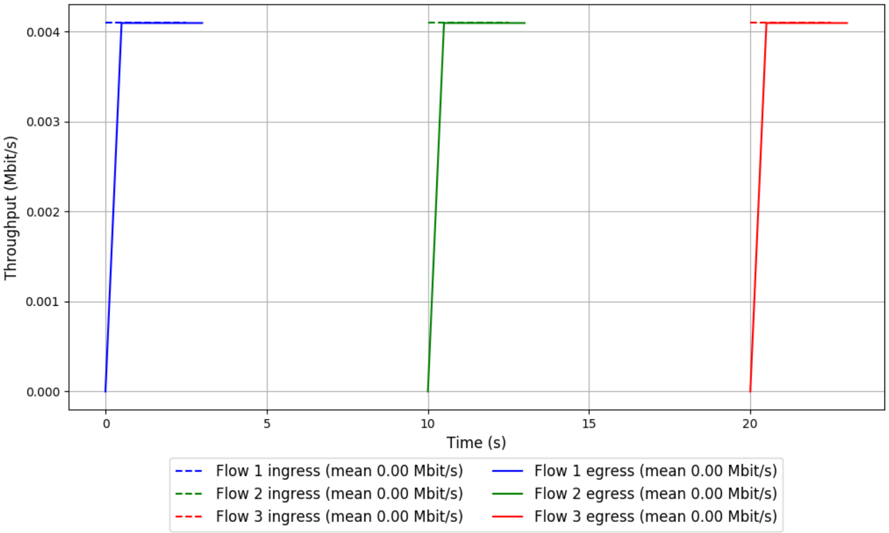


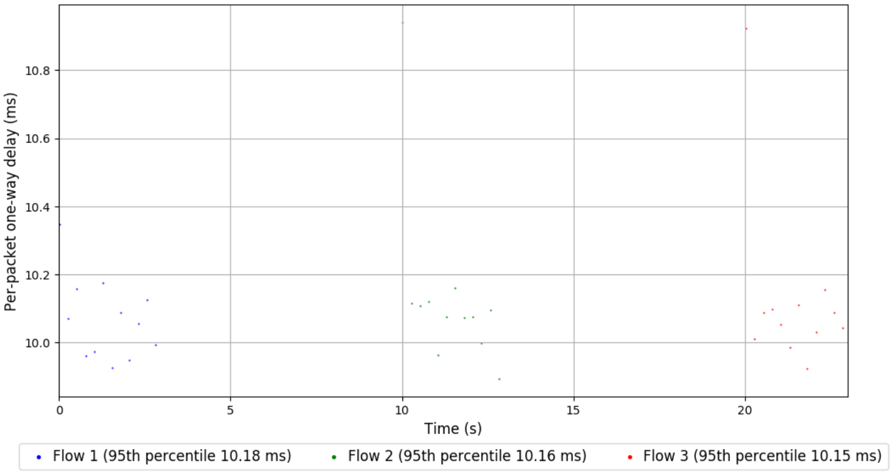


```
Run 3: Statistics of PCC-Expr

Start at: 2018-05-24 14:35:56
End at: 2018-05-24 14:36:26
Local clock offset: 2.051 ms
Remote clock offset: 1.104 ms
```

Run 3: Report of PCC-Expr — Data Link

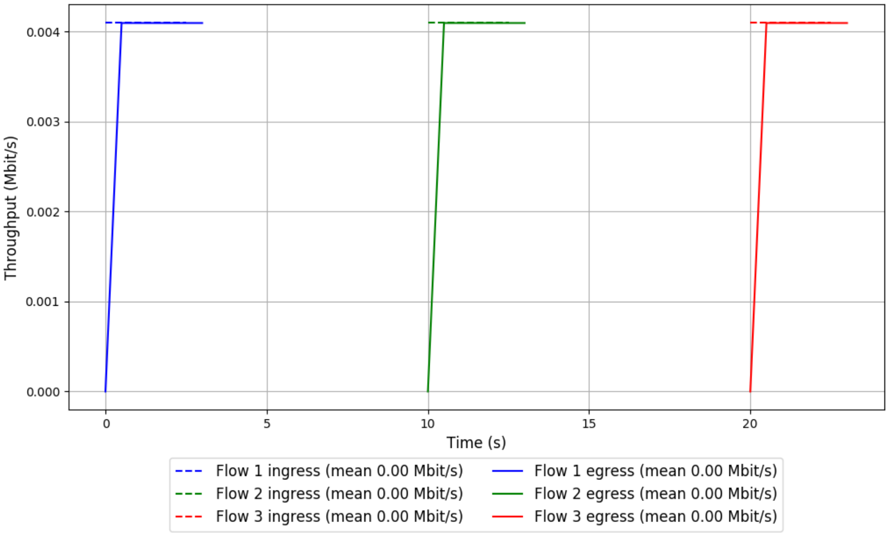


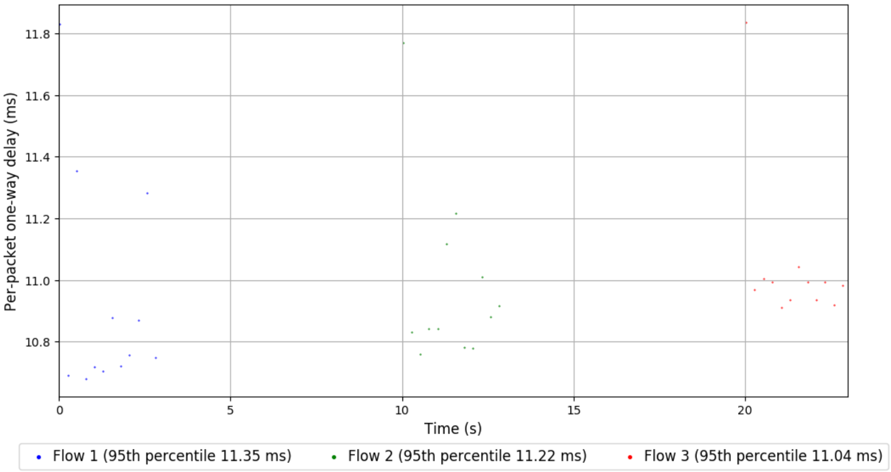


```
Run 4: Statistics of PCC-Expr

Start at: 2018-05-24 14:54:31
End at: 2018-05-24 14:55:01
Local clock offset: 2.958 ms
Remote clock offset: 1.734 ms
```

Run 4: Report of PCC-Expr — Data Link

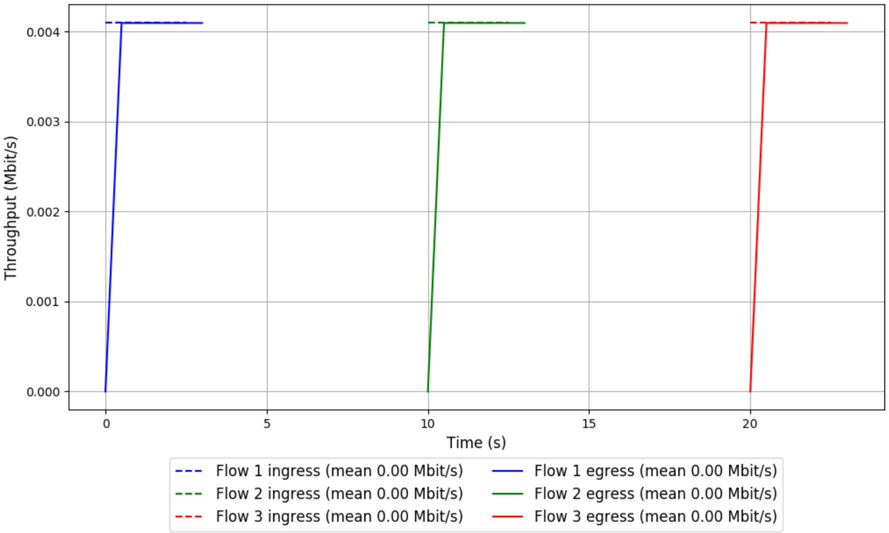


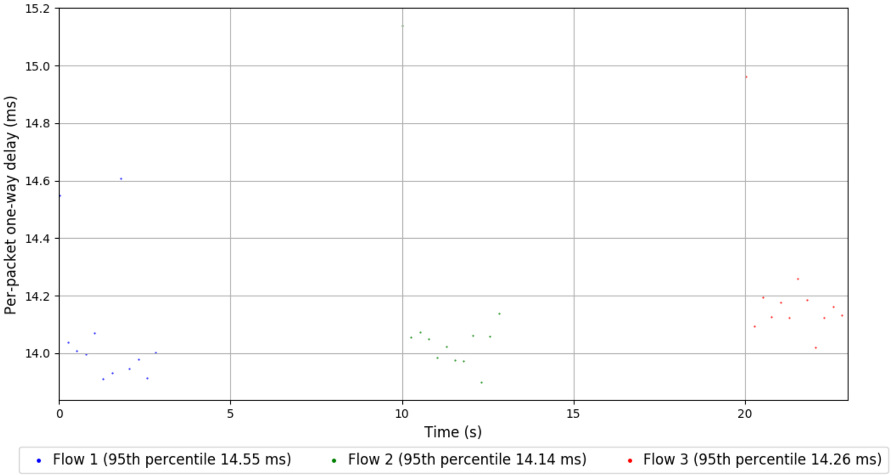


```
Run 5: Statistics of PCC-Expr

Start at: 2018-05-24 15:12:35
End at: 2018-05-24 15:13:05
Local clock offset: -0.899 ms
Remote clock offset: -5.141 ms
```

Run 5: Report of PCC-Expr — Data Link

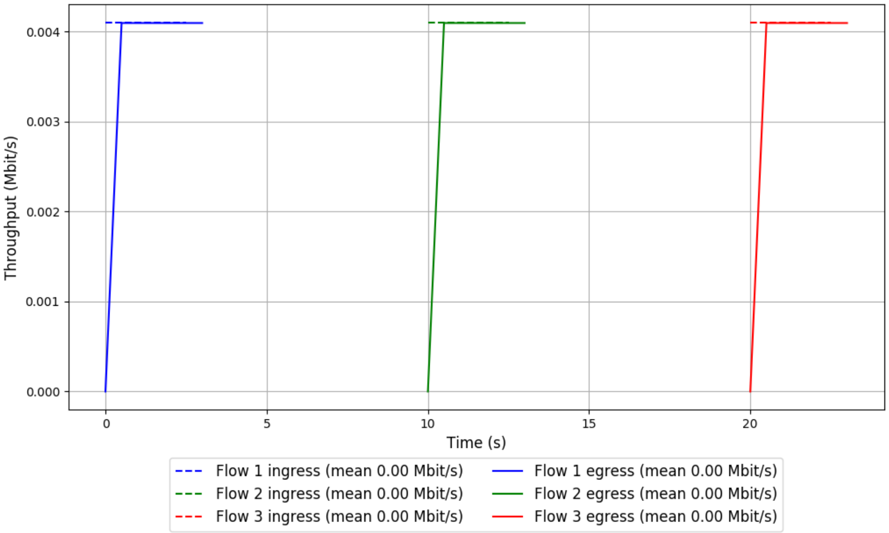


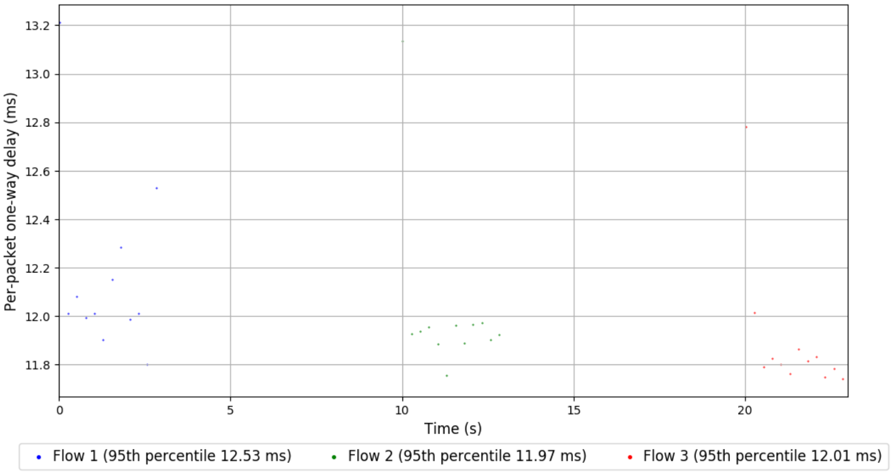


```
Run 6: Statistics of PCC-Expr

Start at: 2018-05-24 15:31:06
End at: 2018-05-24 15:31:36
Local clock offset: 1.813 ms
Remote clock offset: -1.813 ms
```

Run 6: Report of PCC-Expr — Data Link

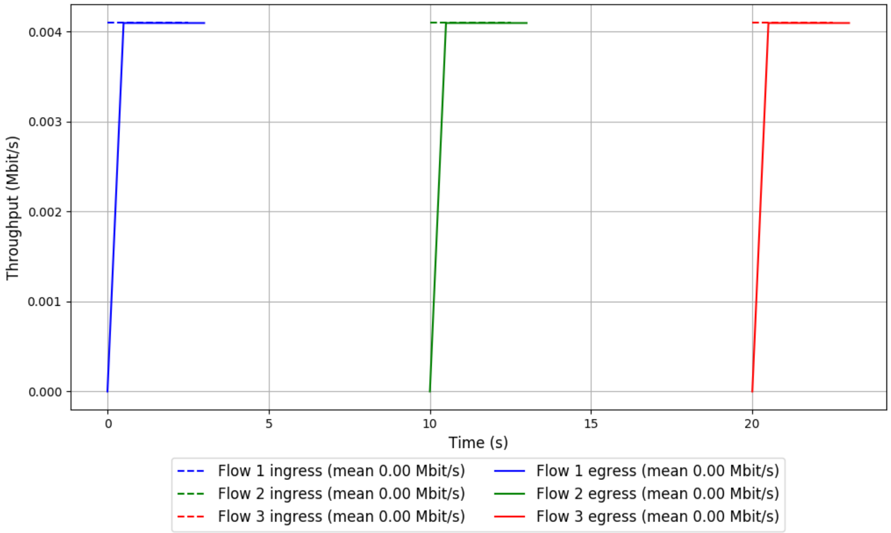


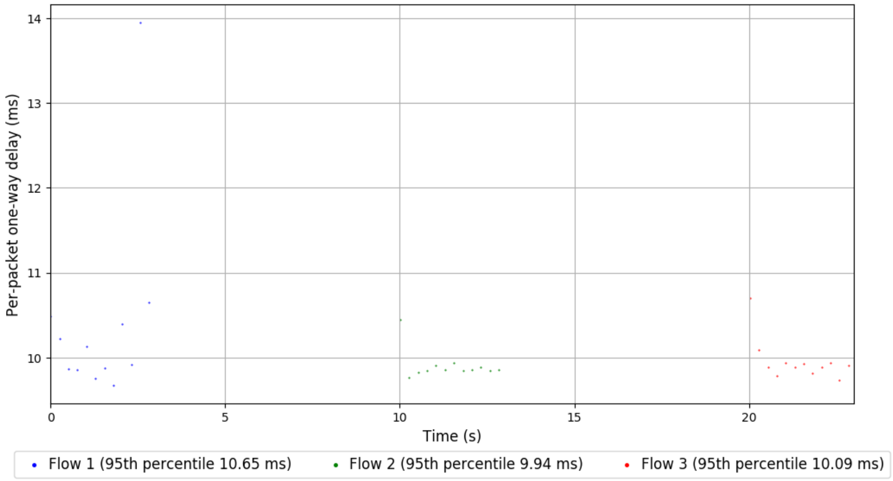


```
Run 7: Statistics of PCC-Expr

Start at: 2018-05-24 15:49:18
End at: 2018-05-24 15:49:48
Local clock offset: 1.812 ms
Remote clock offset: 1.695 ms
```

Run 7: Report of PCC-Expr — Data Link

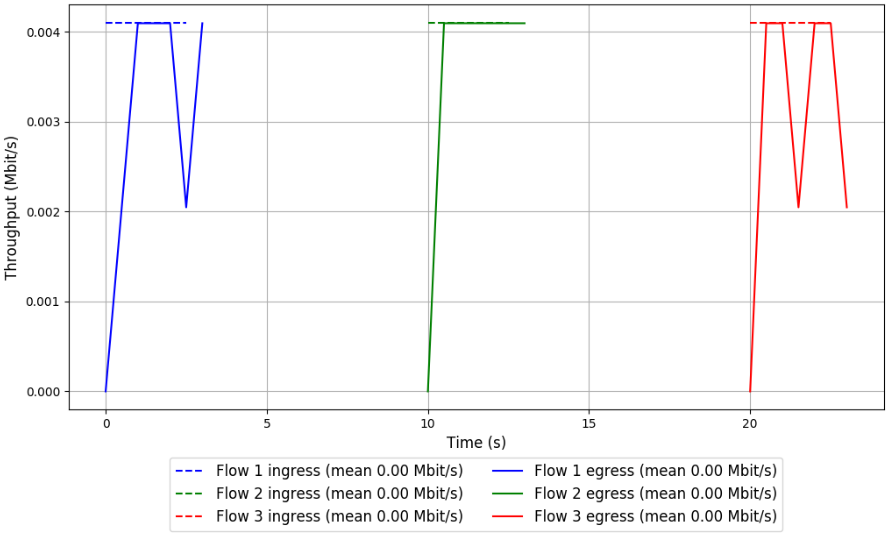


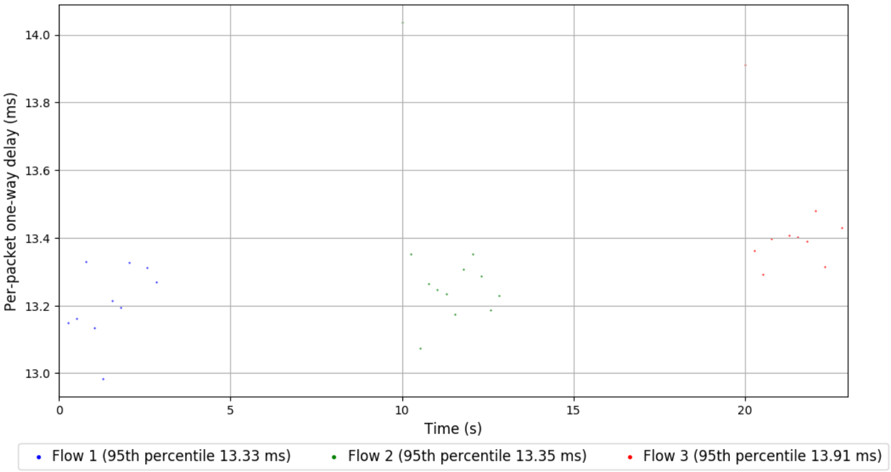


```
Run 8: Statistics of PCC-Expr

Start at: 2018-05-24 16:07:28
End at: 2018-05-24 16:07:58
Local clock offset: 1.144 ms
Remote clock offset: -0.631 ms
```

Run 8: Report of PCC-Expr — Data Link

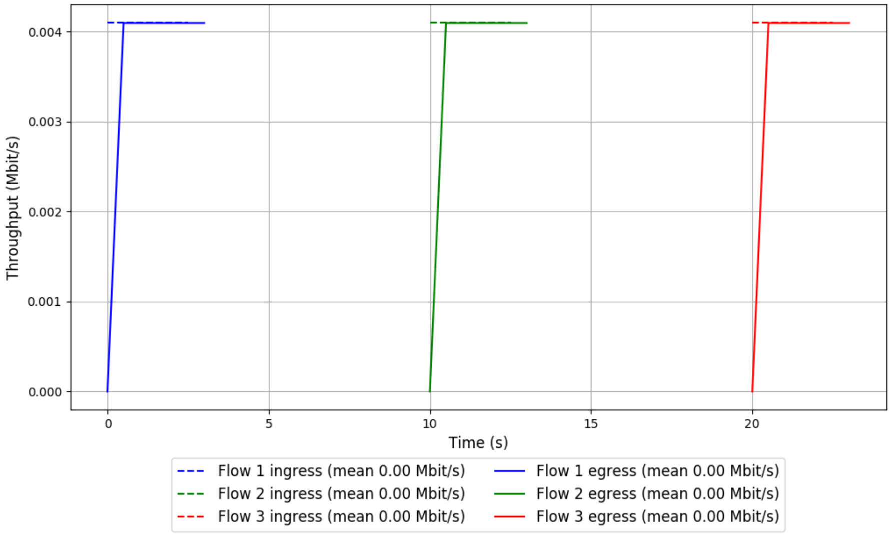


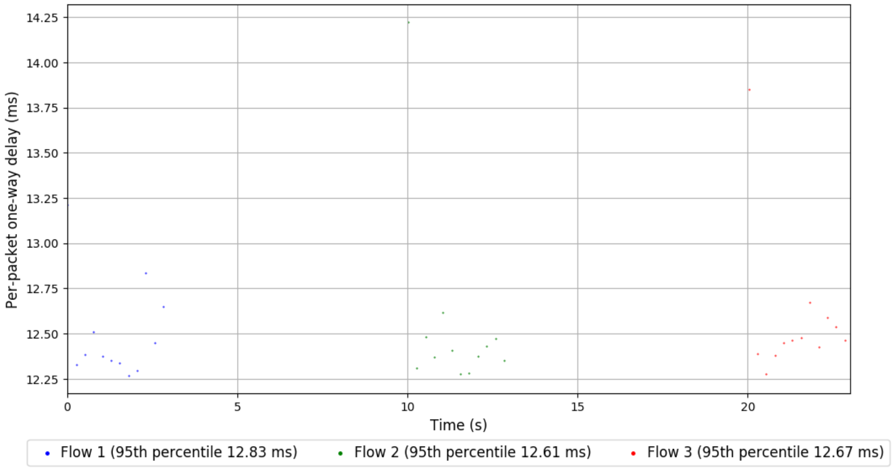


```
Run 9: Statistics of PCC-Expr

Start at: 2018-05-24 16:25:44
End at: 2018-05-24 16:26:14
Local clock offset: 0.425 ms
Remote clock offset: -8.154 ms
```

Run 9: Report of PCC-Expr — Data Link

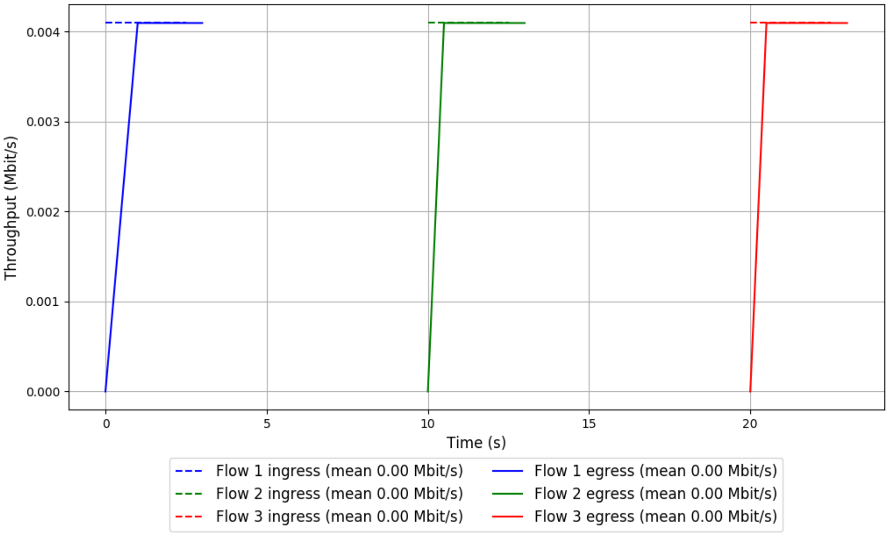


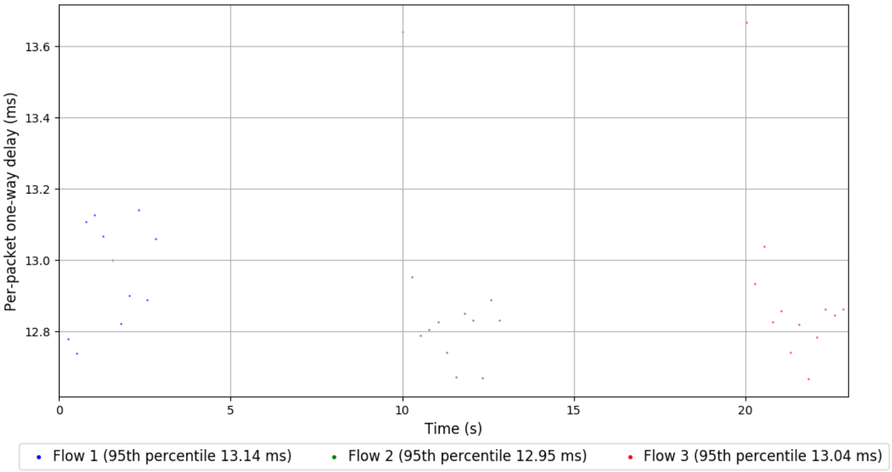


```
Run 10: Statistics of PCC-Expr

Start at: 2018-05-24 16:44:00
End at: 2018-05-24 16:44:30
Local clock offset: 0.361 ms
Remote clock offset: -2.038 ms
```

Run 10: Report of PCC-Expr — Data Link



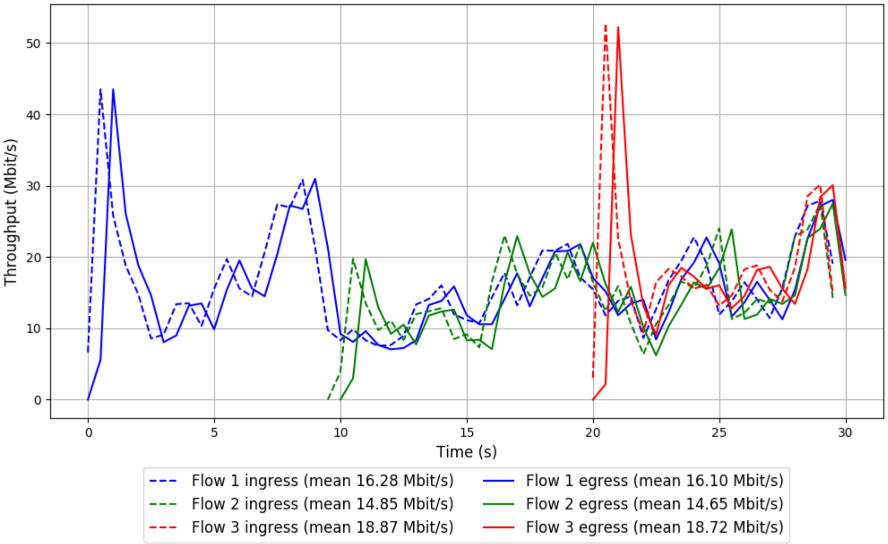


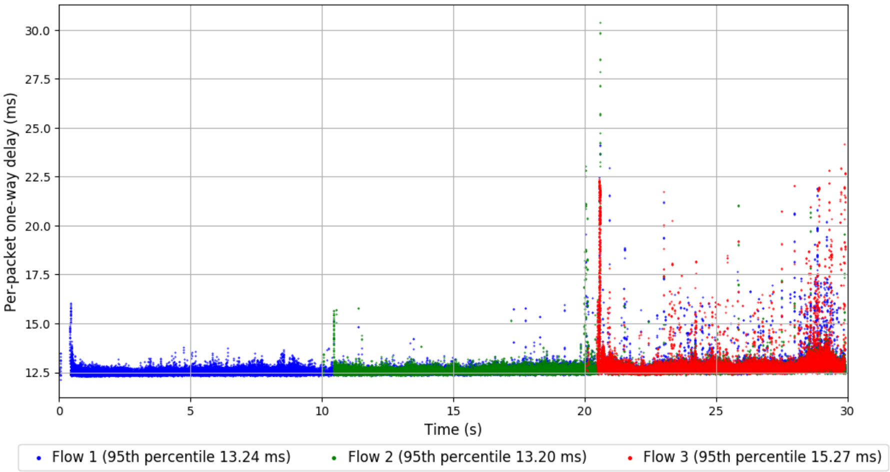
```
Run 1: Statistics of QUIC Cubic

Start at: 2018-05-24 14:00:28
End at: 2018-05-24 14:00:58
Local clock offset: 0.904 ms
Remote clock offset: -0.64 ms

# Below is generated by plot.py at 2018-05-24 17:04:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 32.01 Mbit/s
95th percentile per-packet one-way delay: 13.438 ms
Loss rate: 1.13%
-- Flow 1:
Average throughput: 16.10 Mbit/s
95th percentile per-packet one-way delay: 13.237 ms
Loss rate: 1.10%
-- Flow 2:
Average throughput: 14.65 Mbit/s
95th percentile per-packet one-way delay: 13.202 ms
Loss rate: 1.40%
-- Flow 3:
Average throughput: 18.72 Mbit/s
95th percentile per-packet one-way delay: 15.268 ms
Loss rate: 0.80%
```

Run 1: Report of QUIC Cubic — Data Link



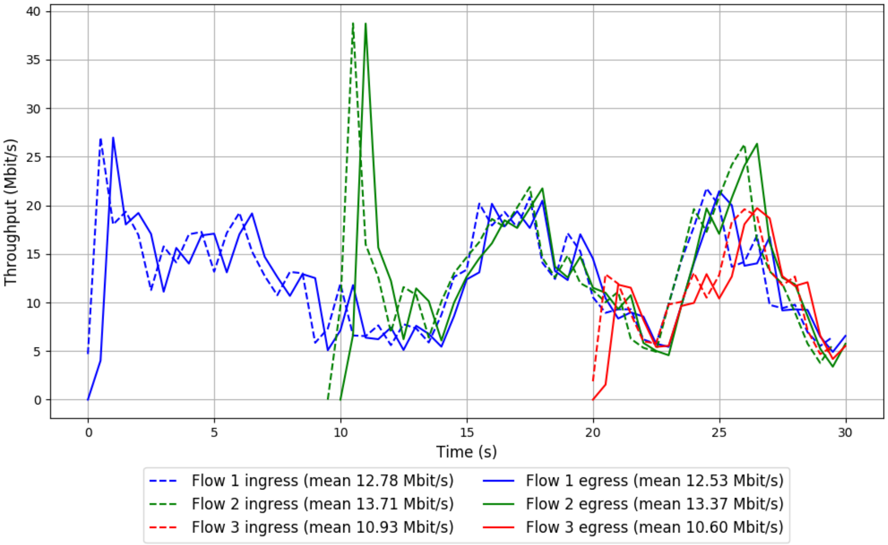


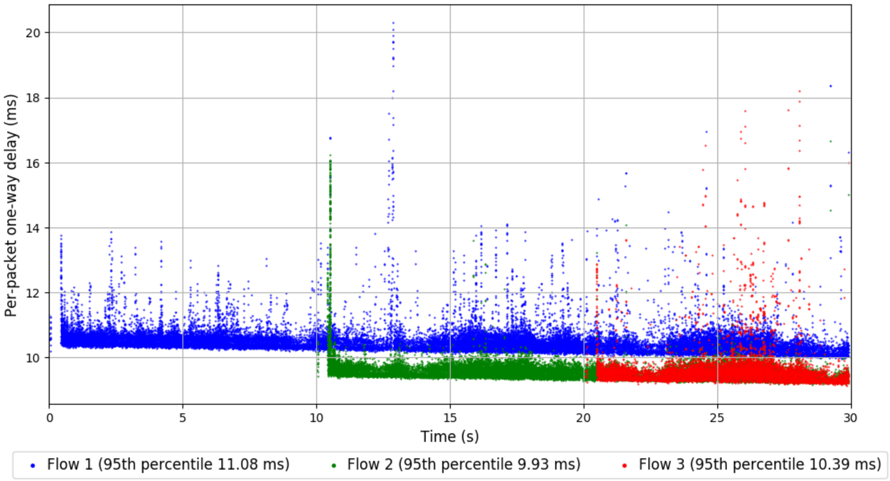
```
Run 2: Statistics of QUIC Cubic

Start at: 2018-05-24 14:18:30
End at: 2018-05-24 14:19:00
Local clock offset: 1.679 ms
Remote clock offset: -5.416 ms

# Below is generated by plot.py at 2018-05-24 17:04:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 24.92 Mbit/s
95th percentile per-packet one-way delay: 10.864 ms
Loss rate: 2.29%
-- Flow 1:
Average throughput: 12.53 Mbit/s
95th percentile per-packet one-way delay: 11.077 ms
Loss rate: 1.98%
-- Flow 2:
Average throughput: 13.37 Mbit/s
95th percentile per-packet one-way delay: 9.934 ms
Loss rate: 2.43%
-- Flow 3:
Average throughput: 10.60 Mbit/s
95th percentile per-packet one-way delay: 10.395 ms
Loss rate: 3.01%
```

Run 2: Report of QUIC Cubic — Data Link



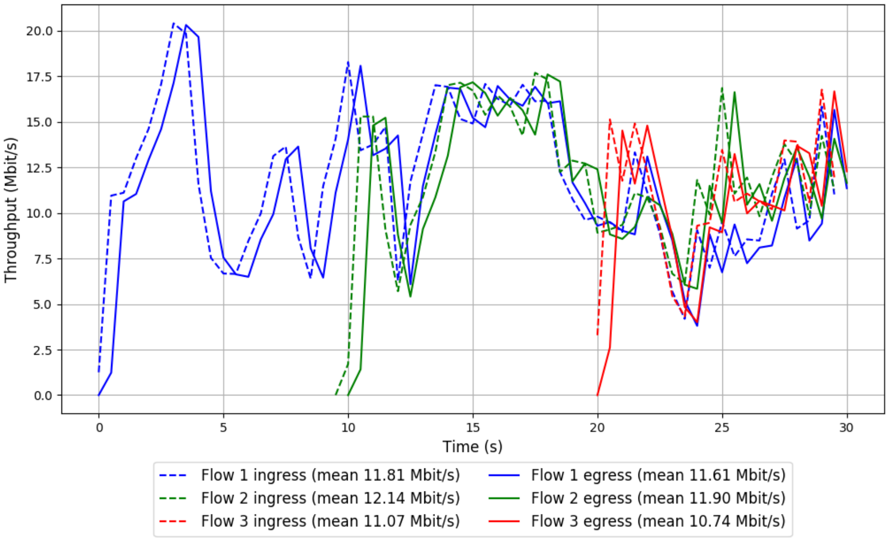


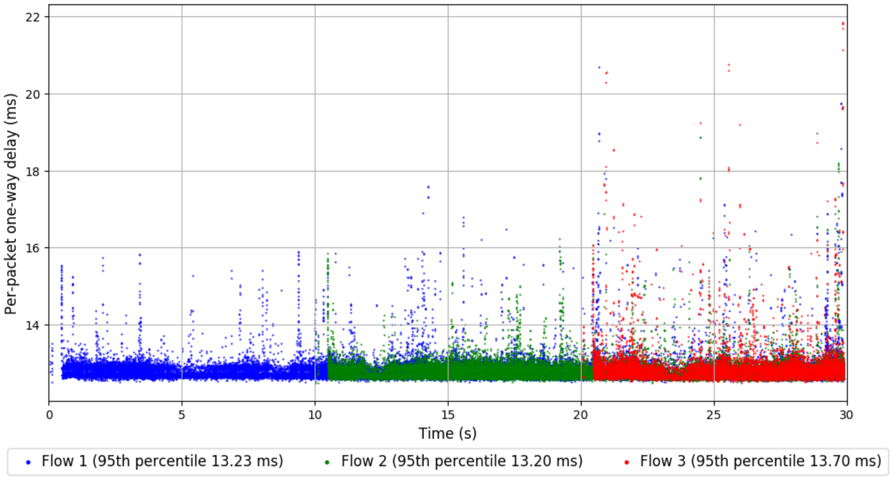
```
Run 3: Statistics of QUIC Cubic

Start at: 2018-05-24 14:37:02
End at: 2018-05-24 14:37:32
Local clock offset: 0.553 ms
Remote clock offset: 2.318 ms

# Below is generated by plot.py at 2018-05-24 17:04:42
# Datalink statistics
-- Total of 3 flows:
Average throughput: 23.08 Mbit/s
95th percentile per-packet one-way delay: 13.273 ms
Loss rate: 1.96%
-- Flow 1:
Average throughput: 11.61 Mbit/s
95th percentile per-packet one-way delay: 13.235 ms
Loss rate: 1.64%
-- Flow 2:
Average throughput: 11.90 Mbit/s
95th percentile per-packet one-way delay: 13.195 ms
Loss rate: 1.96%
-- Flow 3:
Average throughput: 10.74 Mbit/s
95th percentile per-packet one-way delay: 13.696 ms
Loss rate: 2.99%
```

Run 3: Report of QUIC Cubic — Data Link



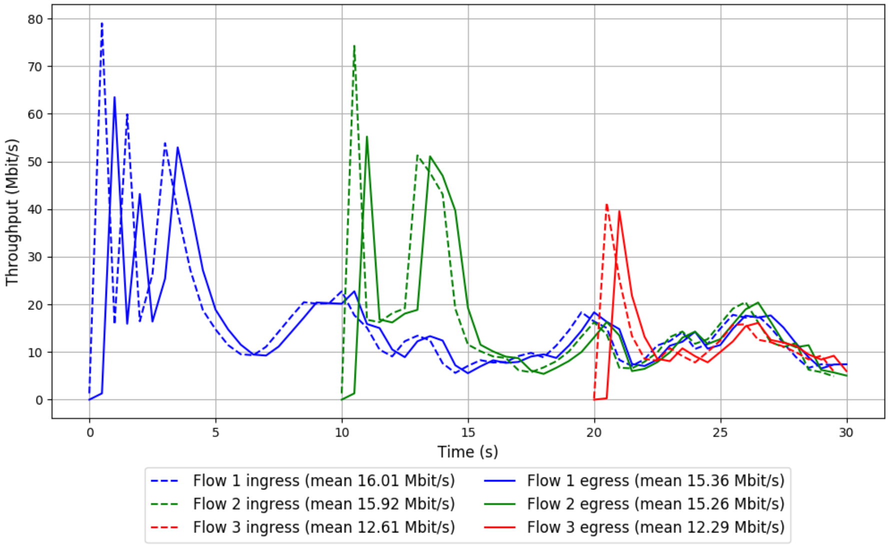


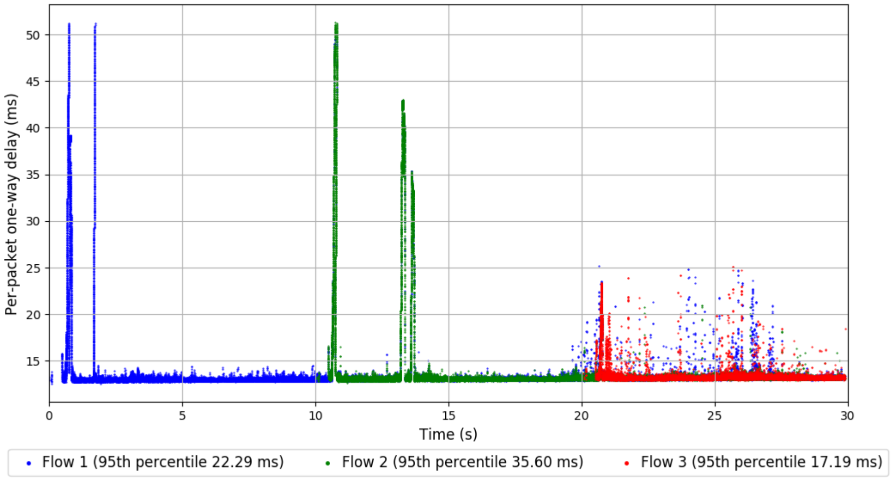
```
Run 4: Statistics of QUIC Cubic

Start at: 2018-05-24 14:55:36
End at: 2018-05-24 14:56:06
Local clock offset: 0.202 ms
Remote clock offset: 0.351 ms

# Below is generated by plot.py at 2018-05-24 17:05:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 29.56 Mbit/s
95th percentile per-packet one-way delay: 28.399 ms
Loss rate: 3.85%
-- Flow 1:
Average throughput: 15.36 Mbit/s
95th percentile per-packet one-way delay: 22.285 ms
Loss rate: 4.01%
-- Flow 2:
Average throughput: 15.26 Mbit/s
95th percentile per-packet one-way delay: 35.604 ms
Loss rate: 4.14%
-- Flow 3:
Average throughput: 12.29 Mbit/s
95th percentile per-packet one-way delay: 17.191 ms
Loss rate: 2.50%
```

Run 4: Report of QUIC Cubic — Data Link



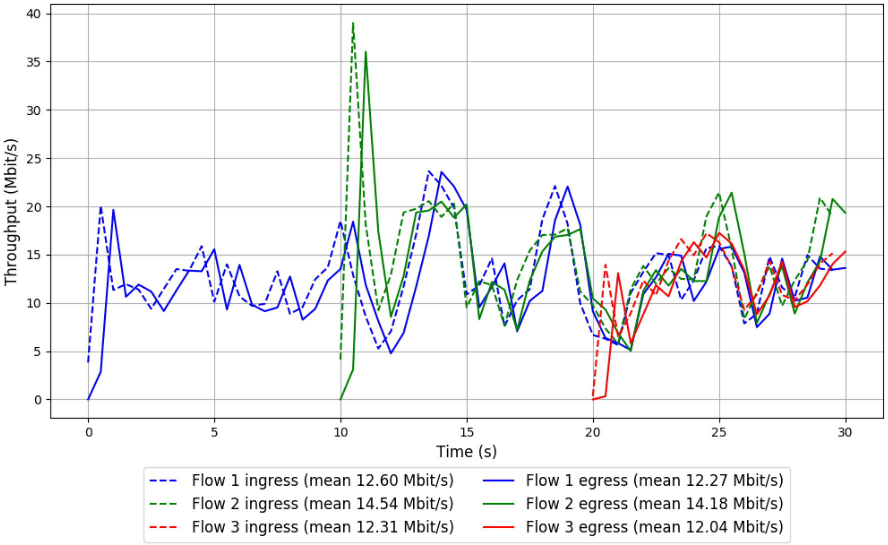


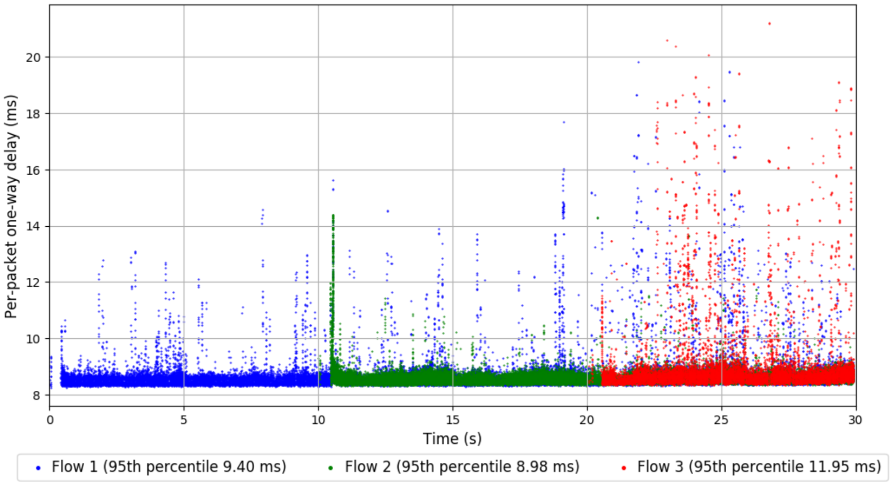
```
Run 5: Statistics of QUIC Cubic

Start at: 2018-05-24 15:13:40
End at: 2018-05-24 15:14:10
Local clock offset: 3.366 ms
Remote clock offset: -6.7 ms

# Below is generated by plot.py at 2018-05-24 17:05:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 25.67 Mbit/s
95th percentile per-packet one-way delay: 9.425 ms
Loss rate: 2.49%
-- Flow 1:
Average throughput: 12.27 Mbit/s
95th percentile per-packet one-way delay: 9.401 ms
Loss rate: 2.58%
-- Flow 2:
Average throughput: 14.18 Mbit/s
95th percentile per-packet one-way delay: 8.977 ms
Loss rate: 2.49%
-- Flow 3:
Average throughput: 12.04 Mbit/s
95th percentile per-packet one-way delay: 11.945 ms
Loss rate: 2.17%
```

Run 5: Report of QUIC Cubic — Data Link



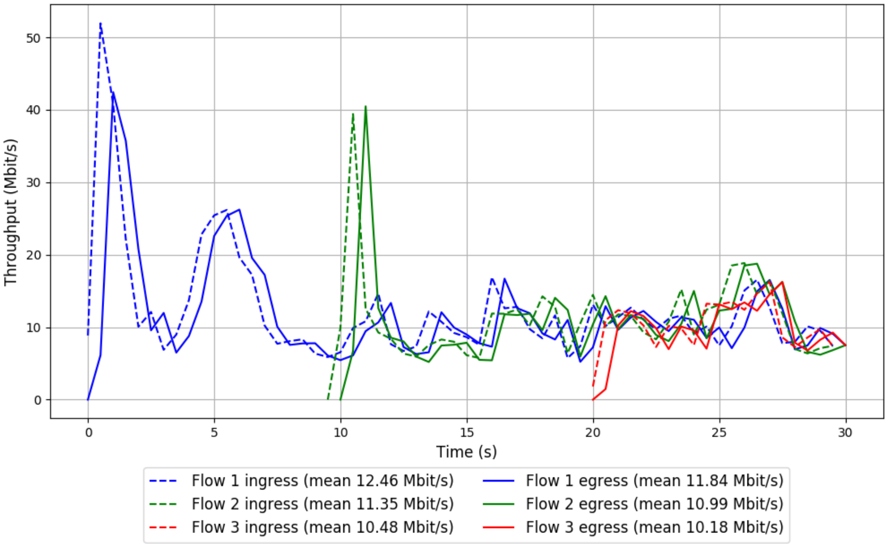


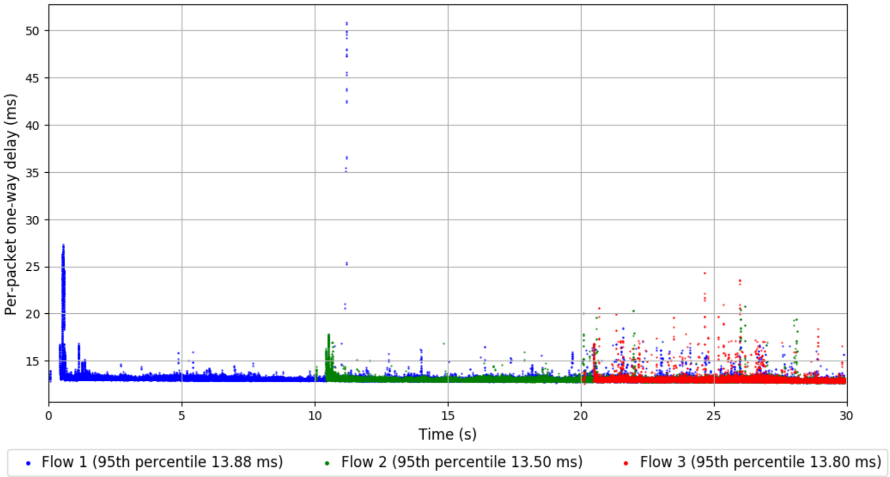
```
Run 6: Statistics of QUIC Cubic

Start at: 2018-05-24 15:32:11
End at: 2018-05-24 15:32:41
Local clock offset: 0.446 ms
Remote clock offset: -1.407 ms

# Below is generated by plot.py at 2018-05-24 17:05:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 22.51 Mbit/s
95th percentile per-packet one-way delay: 13.713 ms
Loss rate: 4.11%
-- Flow 1:
Average throughput: 11.84 Mbit/s
95th percentile per-packet one-way delay: 13.878 ms
Loss rate: 4.99%
-- Flow 2:
Average throughput: 10.99 Mbit/s
95th percentile per-packet one-way delay: 13.503 ms
Loss rate: 3.22%
-- Flow 3:
Average throughput: 10.18 Mbit/s
95th percentile per-packet one-way delay: 13.797 ms
Loss rate: 2.91%
```

Run 6: Report of QUIC Cubic — Data Link



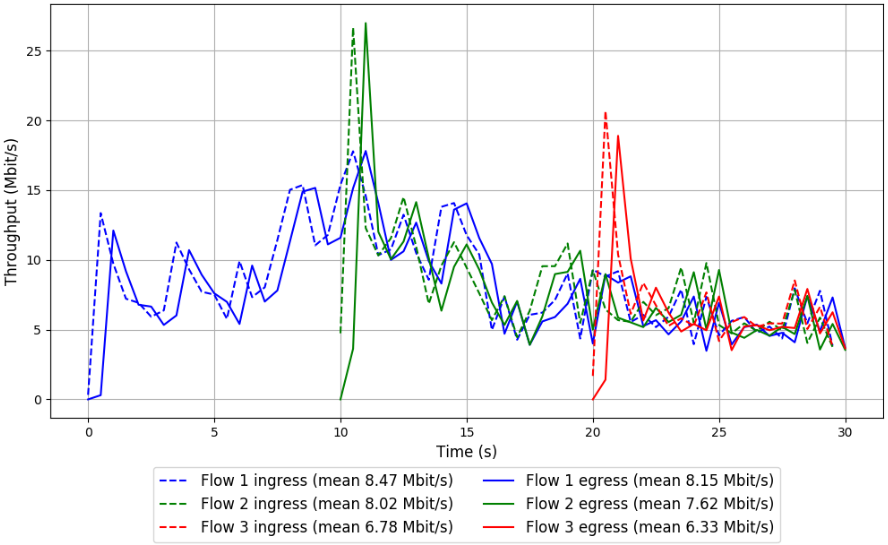


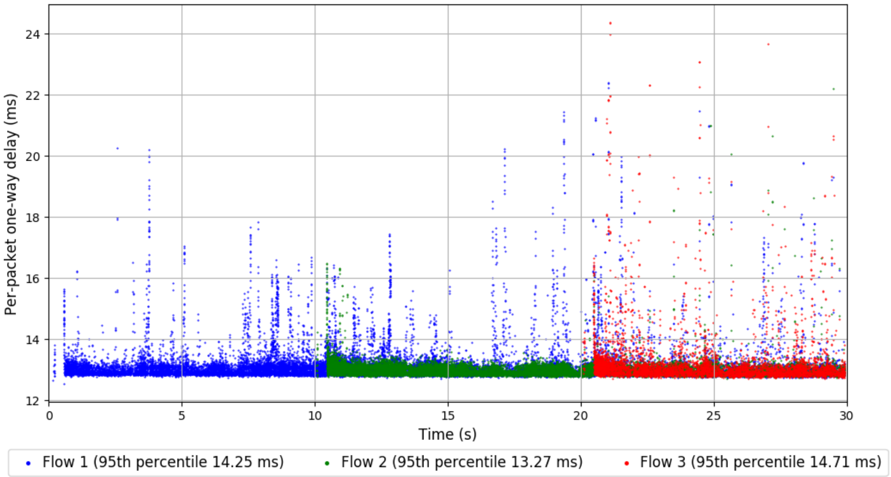
```
Run 7: Statistics of QUIC Cubic

Start at: 2018-05-24 15:50:23
End at: 2018-05-24 15:50:53
Local clock offset: 1.357 ms
Remote clock offset: 4.347 ms

# Below is generated by plot.py at 2018-05-24 17:05:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 15.34 Mbit/s
95th percentile per-packet one-way delay: 13.913 ms
Loss rate: 4.86%
-- Flow 1:
Average throughput: 8.15 Mbit/s
95th percentile per-packet one-way delay: 14.250 ms
Loss rate: 4.31%
-- Flow 2:
Average throughput: 7.62 Mbit/s
95th percentile per-packet one-way delay: 13.268 ms
Loss rate: 4.98%
-- Flow 3:
Average throughput: 6.33 Mbit/s
95th percentile per-packet one-way delay: 14.709 ms
Loss rate: 6.70%
```

Run 7: Report of QUIC Cubic — Data Link



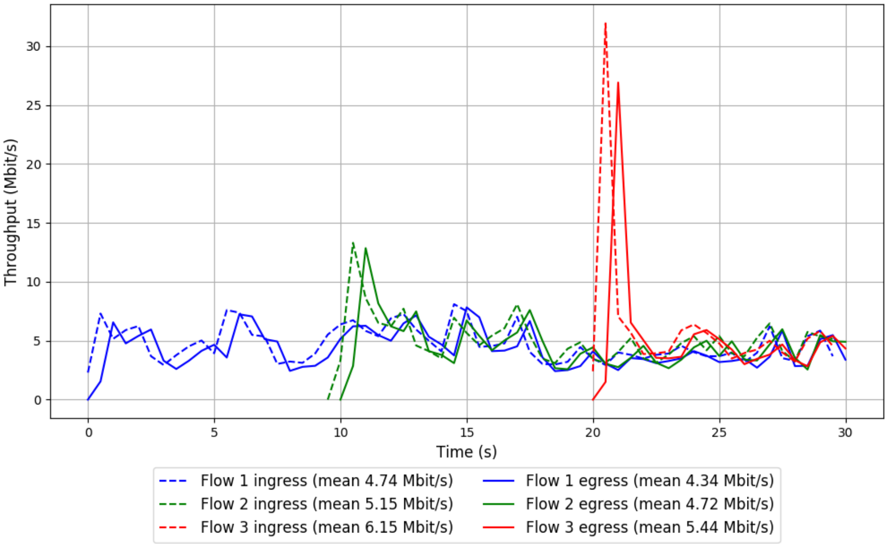


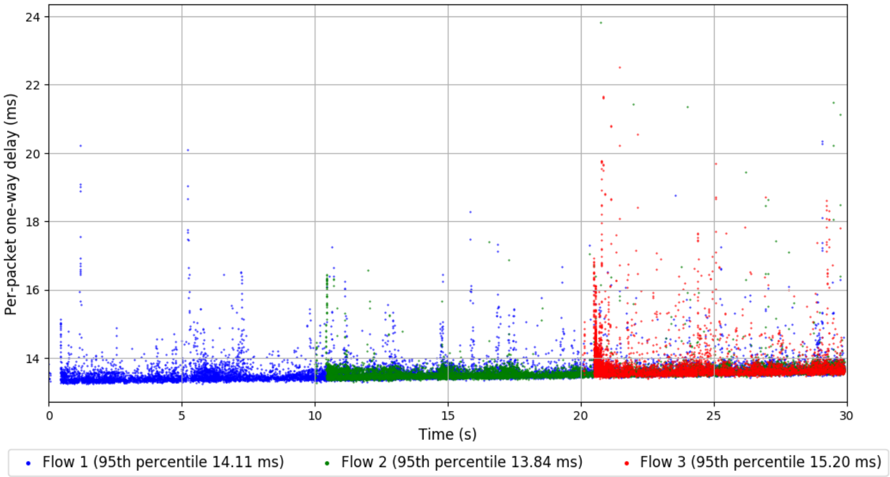
```
Run 8: Statistics of QUIC Cubic

Start at: 2018-05-24 16:08:33
End at: 2018-05-24 16:09:03
Local clock offset: 0.123 ms
Remote clock offset: -2.147 ms

# Below is generated by plot.py at 2018-05-24 17:05:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 9.27 Mbit/s
95th percentile per-packet one-way delay: 14.237 ms
Loss rate: 9.11%
-- Flow 1:
Average throughput: 4.34 Mbit/s
95th percentile per-packet one-way delay: 14.113 ms
Loss rate: 8.59%
-- Flow 2:
Average throughput: 4.72 Mbit/s
95th percentile per-packet one-way delay: 13.841 ms
Loss rate: 8.46%
-- Flow 3:
Average throughput: 5.44 Mbit/s
95th percentile per-packet one-way delay: 15.196 ms
Loss rate: 11.43%
```

Run 8: Report of QUIC Cubic — Data Link



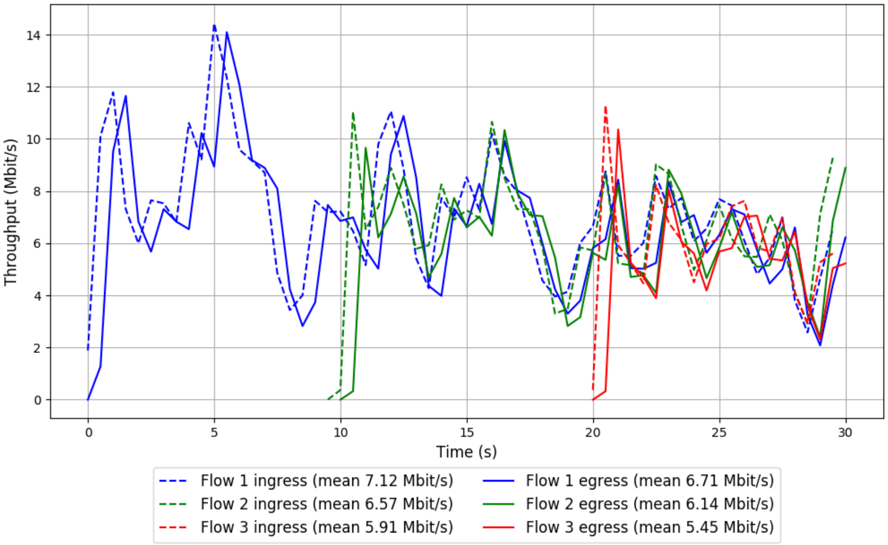


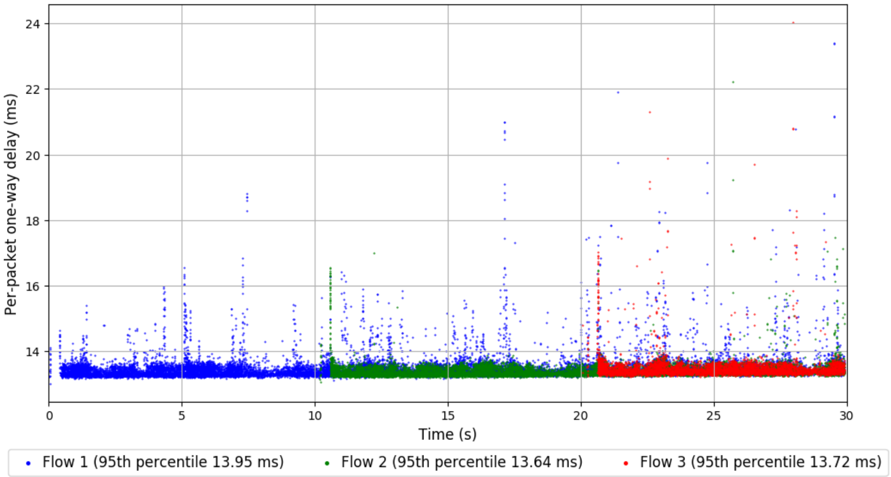
```
Run 9: Statistics of QUIC Cubic

Start at: 2018-05-24 16:26:50
End at: 2018-05-24 16:27:20
Local clock offset: 0.971 ms
Remote clock offset: -6.913 ms

# Below is generated by plot.py at 2018-05-24 17:05:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.60 Mbit/s
95th percentile per-packet one-way delay: 13.781 ms
Loss rate: 6.27%
-- Flow 1:
Average throughput: 6.71 Mbit/s
95th percentile per-packet one-way delay: 13.950 ms
Loss rate: 5.73%
-- Flow 2:
Average throughput: 6.14 Mbit/s
95th percentile per-packet one-way delay: 13.640 ms
Loss rate: 6.45%
-- Flow 3:
Average throughput: 5.45 Mbit/s
95th percentile per-packet one-way delay: 13.723 ms
Loss rate: 7.86%
```

Run 9: Report of QUIC Cubic — Data Link



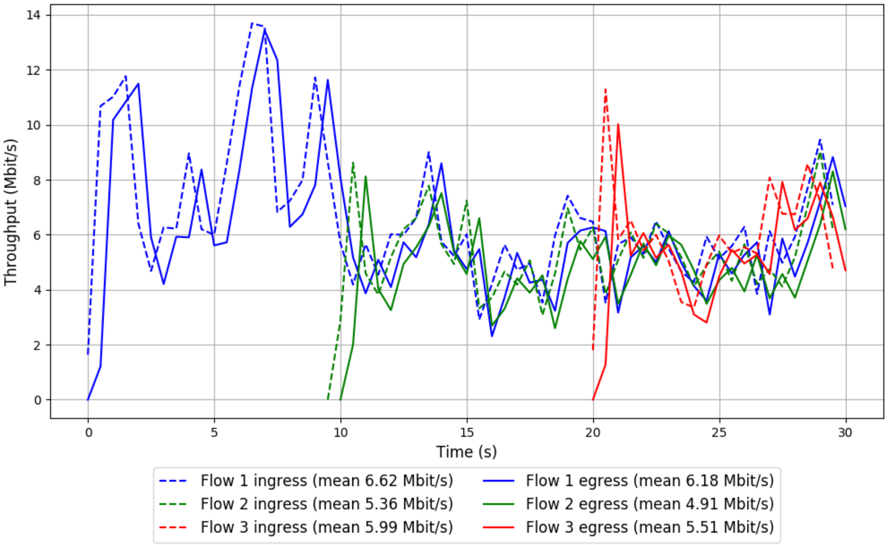


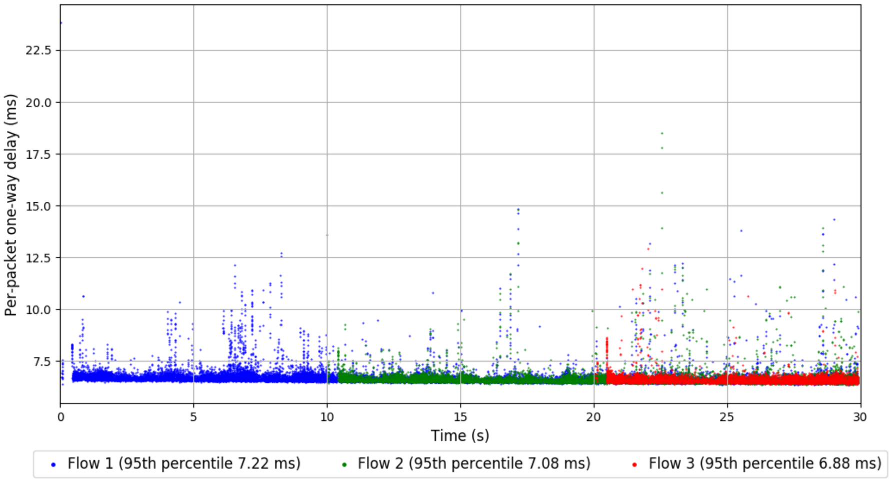
```
Run 10: Statistics of QUIC Cubic

Start at: 2018-05-24 16:45:06
End at: 2018-05-24 16:45:36
Local clock offset: 2.853 ms
Remote clock offset: -5.457 ms

# Below is generated by plot.py at 2018-05-24 17:05:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 11.27 Mbit/s
95th percentile per-packet one-way delay: 7.129 ms
Loss rate: 7.41%
-- Flow 1:
Average throughput: 6.18 Mbit/s
95th percentile per-packet one-way delay: 7.224 ms
Loss rate: 6.70%
-- Flow 2:
Average throughput: 4.91 Mbit/s
95th percentile per-packet one-way delay: 7.084 ms
Loss rate: 8.42%
-- Flow 3:
Average throughput: 5.51 Mbit/s
95th percentile per-packet one-way delay: 6.878 ms
Loss rate: 7.97%
```

Run 10: Report of QUIC Cubic — Data Link



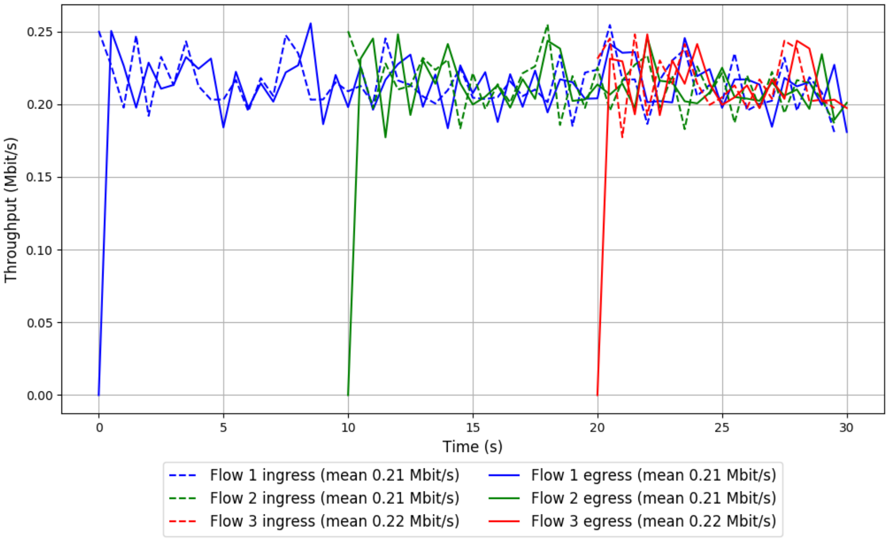


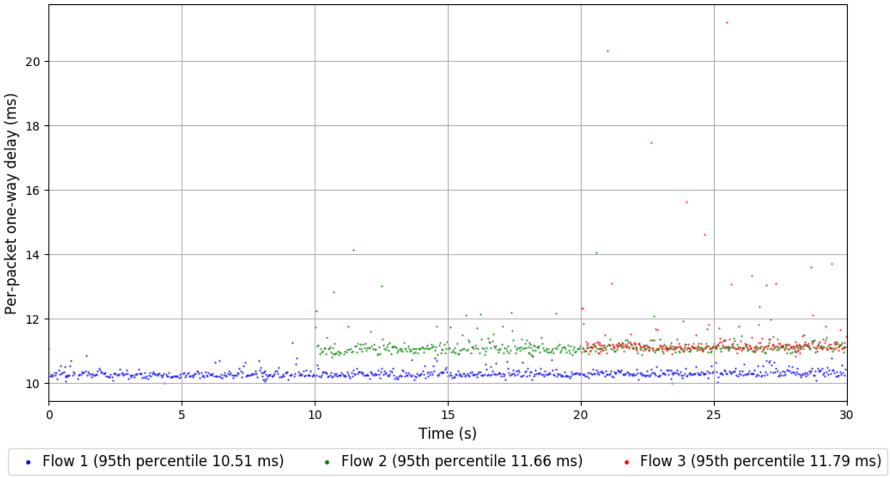
```
Run 1: Statistics of SCReAM

Start at: 2018-05-24 14:06:10
End at: 2018-05-24 14:06:40
Local clock offset: 3.027 ms
Remote clock offset: -2.07 ms

# Below is generated by plot.py at 2018-05-24 17:05:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 11.338 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 10.510 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 11.660 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 11.794 ms
Loss rate: 0.00%
```

Run 1: Report of SCReAM — Data Link



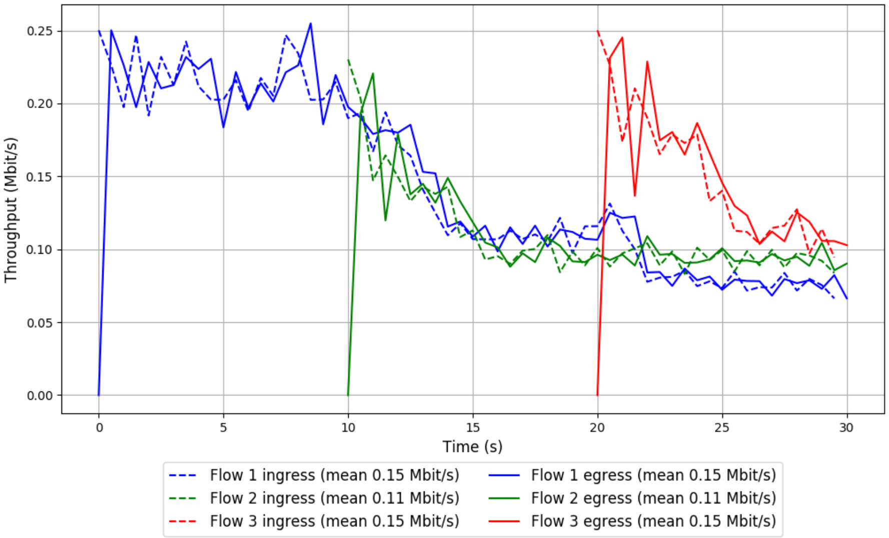


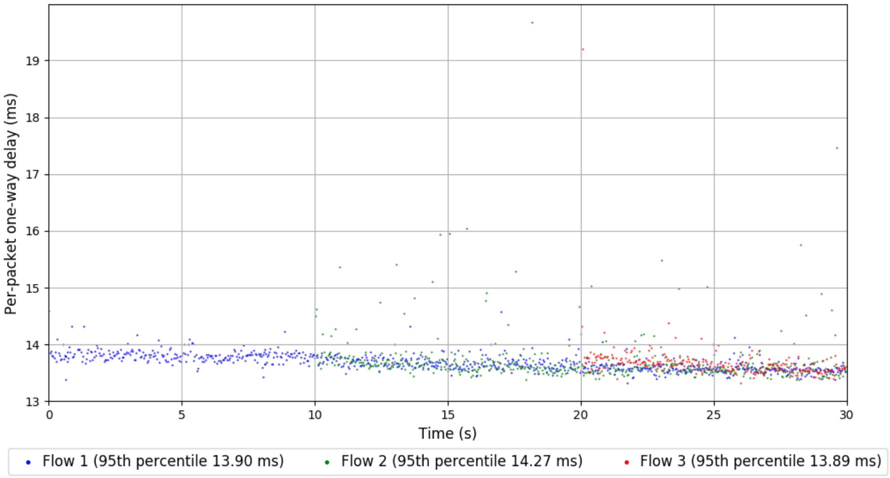
```
Run 2: Statistics of SCReAM

Start at: 2018-05-24 14:24:15
End at: 2018-05-24 14:24:45
Local clock offset: 0.647 ms
Remote clock offset: 0.669 ms

# Below is generated by plot.py at 2018-05-24 17:05:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 13.966 ms
Loss rate: 0.48%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 13.905 ms
Loss rate: 0.30%
-- Flow 2:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 14.274 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 13.893 ms
Loss rate: 0.62%
```

Run 2: Report of SCReAM — Data Link



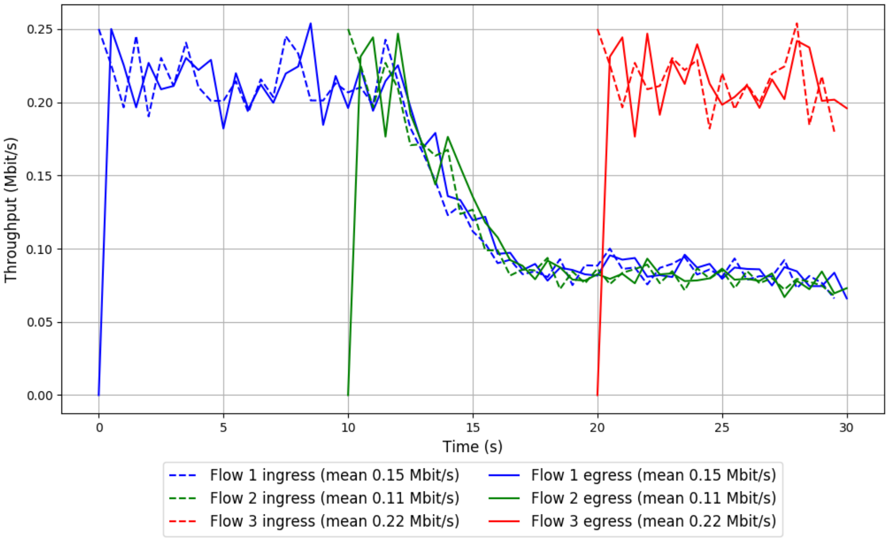


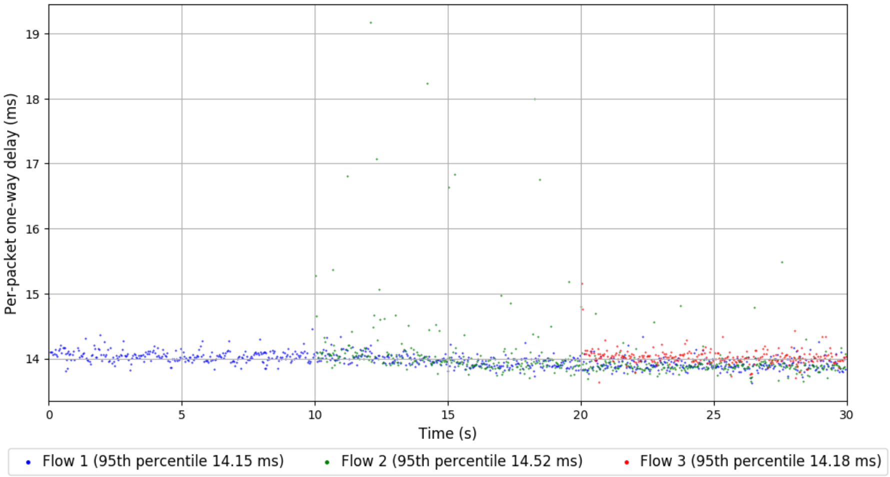
```
Run 3: Statistics of SCReAM

Start at: 2018-05-24 14:42:50
End at: 2018-05-24 14:43:20
Local clock offset: -0.856 ms
Remote clock offset: 2.541 ms

# Below is generated by plot.py at 2018-05-24 17:05:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 14.198 ms
Loss rate: 0.46%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 14.147 ms
Loss rate: 0.47%
-- Flow 2:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 14.520 ms
Loss rate: 0.89%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 14.181 ms
Loss rate: 0.00%
```

Run 3: Report of SCReAM — Data Link



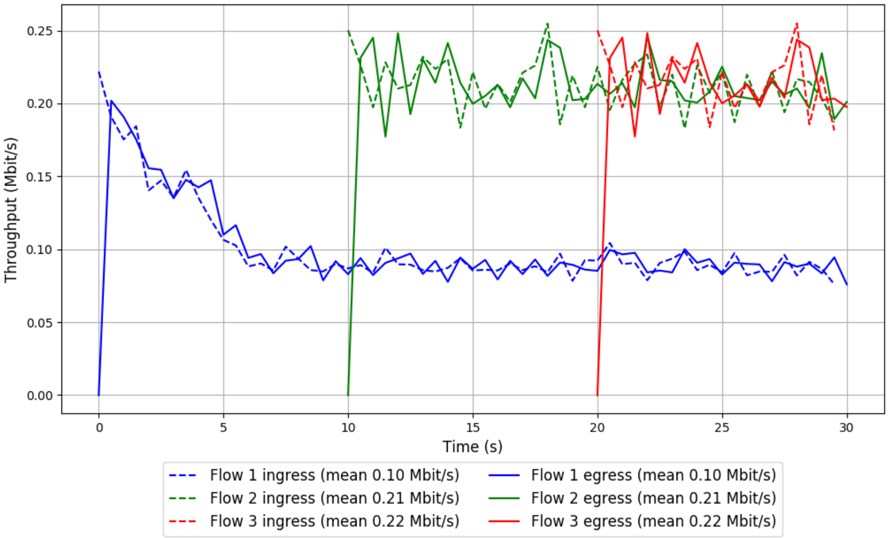


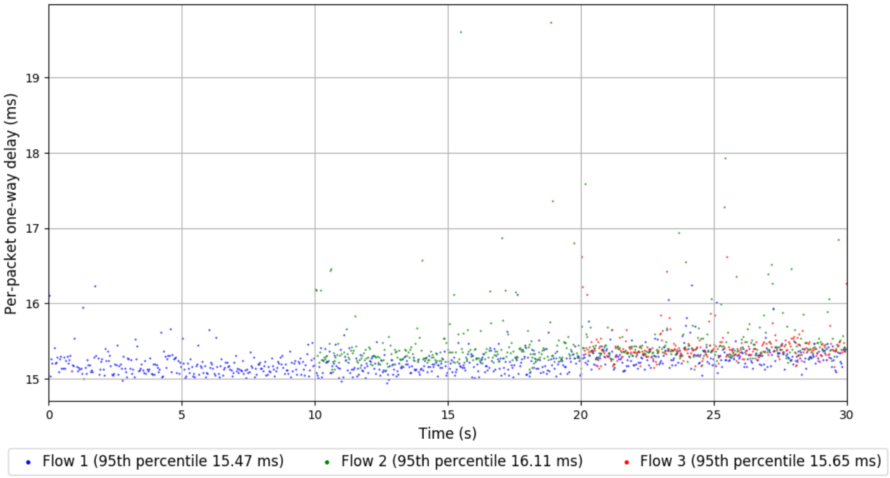
```
Run 4: Statistics of SCReAM

Start at: 2018-05-24 15:01:23
End at: 2018-05-24 15:01:53
Local clock offset: -1.633 ms
Remote clock offset: -1.822 ms

# Below is generated by plot.py at 2018-05-24 17:05:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 15.656 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 15.471 ms
Loss rate: 0.57%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 16.111 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 15.655 ms
Loss rate: 0.00%
```

Run 4: Report of SCReAM — Data Link



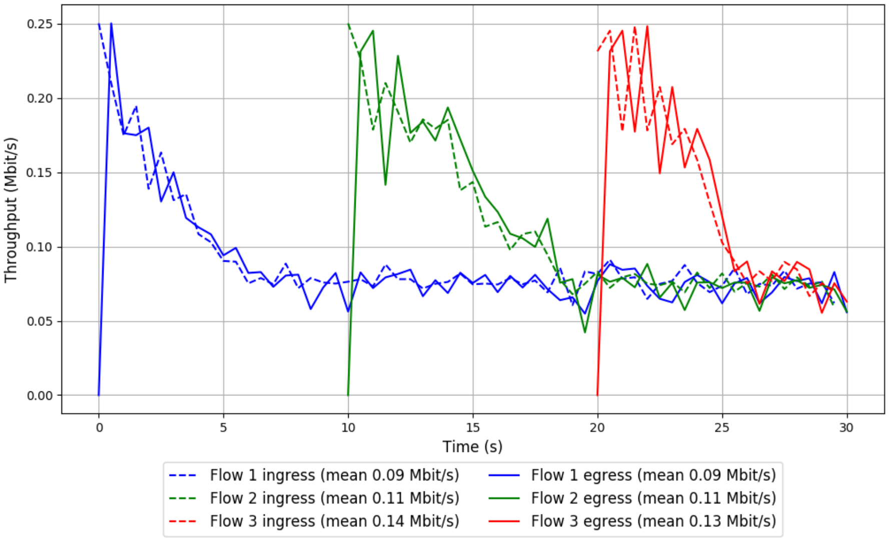


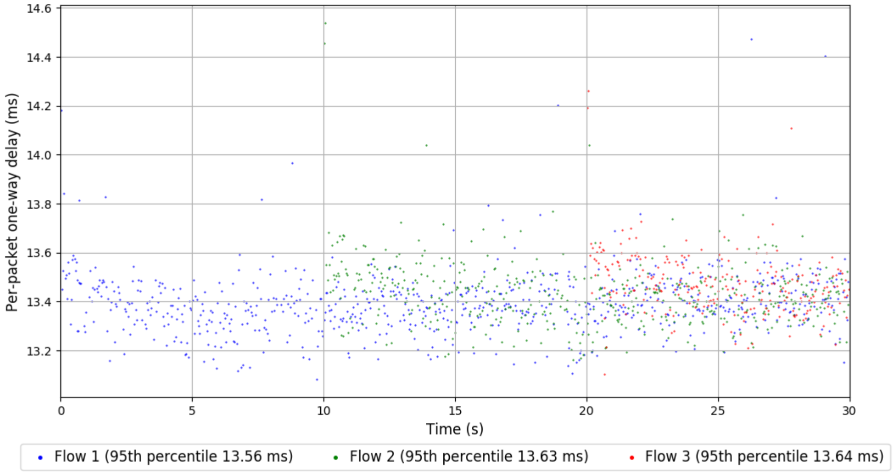
```
Run 5: Statistics of SCReAM

Start at: 2018-05-24 15:19:28
End at: 2018-05-24 15:19:58
Local clock offset: 0.675 ms
Remote clock offset: -5.403 ms

# Below is generated by plot.py at 2018-05-24 17:05:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 13.610 ms
Loss rate: 3.58%
-- Flow 1:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 13.559 ms
Loss rate: 4.35%
-- Flow 2:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 13.633 ms
Loss rate: 2.50%
-- Flow 3:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 13.640 ms
Loss rate: 3.82%
```

Run 5: Report of SCReAM — Data Link



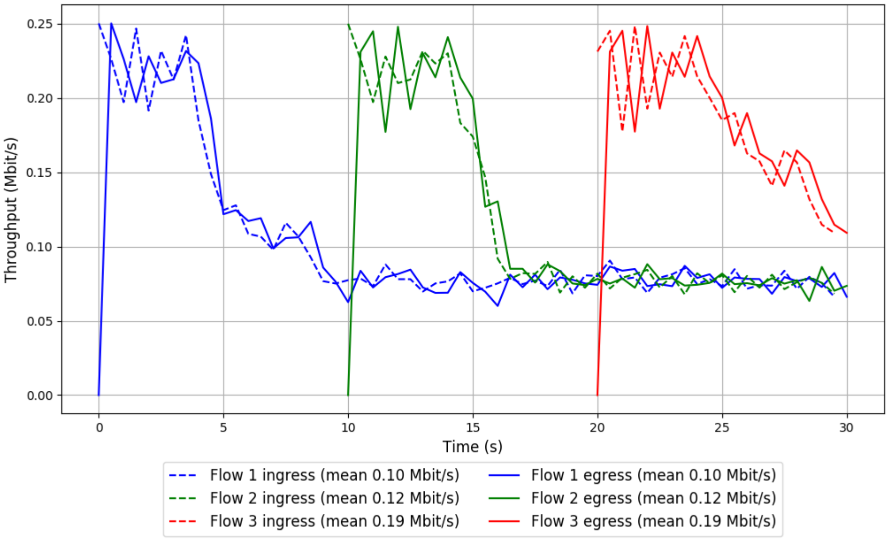


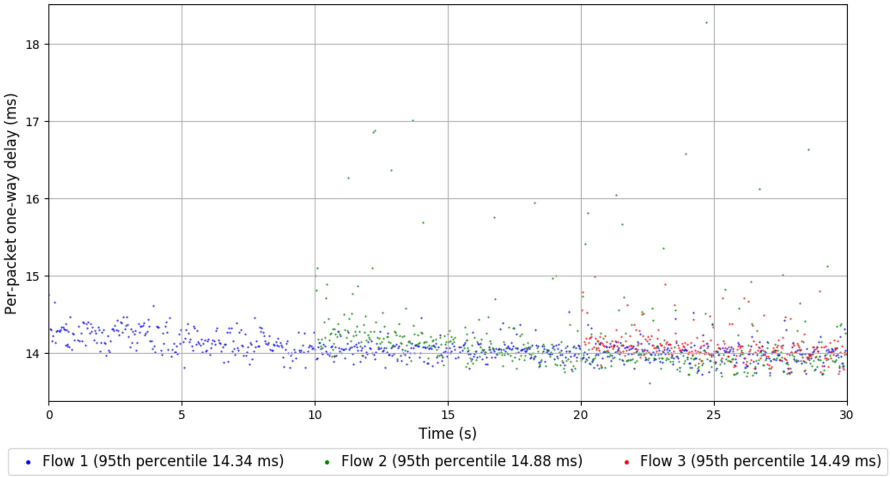
```
Run 6: Statistics of SCReAM

Start at: 2018-05-24 15:37:53
End at: 2018-05-24 15:38:23
Local clock offset: 0.038 ms
Remote clock offset: 1.92 ms

# Below is generated by plot.py at 2018-05-24 17:05:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.24 Mbit/s
95th percentile per-packet one-way delay: 14.446 ms
Loss rate: 1.12%
-- Flow 1:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 14.344 ms
Loss rate: 1.24%
-- Flow 2:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 14.882 ms
Loss rate: 1.47%
-- Flow 3:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 14.486 ms
Loss rate: 0.46%
```

Run 6: Report of SCReAM — Data Link



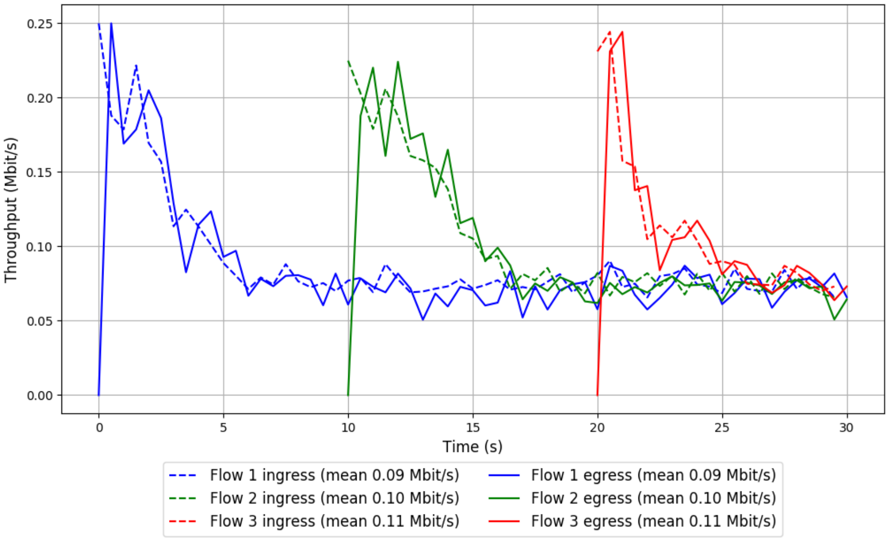


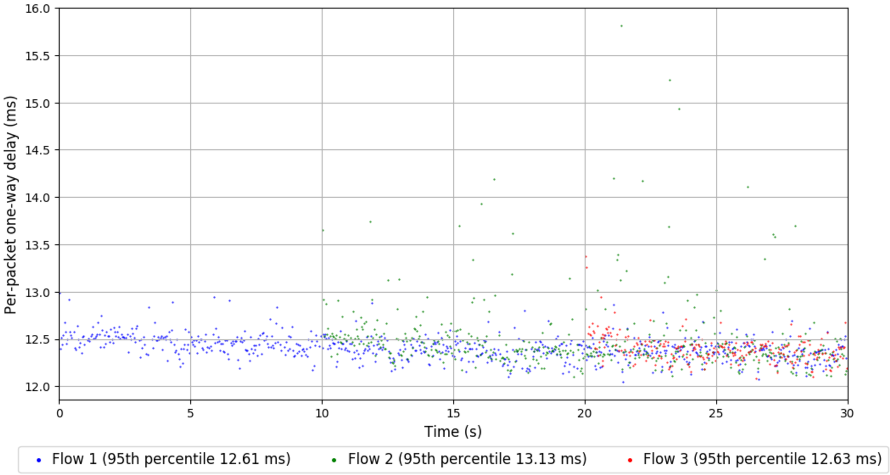
```
Run 7: Statistics of SCReAM

Start at: 2018-05-24 15:56:07
End at: 2018-05-24 15:56:37
Local clock offset: 2.663 ms
Remote clock offset: 5.678 ms

# Below is generated by plot.py at 2018-05-24 17:05:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 12.709 ms
Loss rate: 4.51%
-- Flow 1:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 12.609 ms
Loss rate: 5.20%
-- Flow 2:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 13.135 ms
Loss rate: 4.03%
-- Flow 3:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 12.631 ms
Loss rate: 3.73%
```

Run 7: Report of SCReAM — Data Link



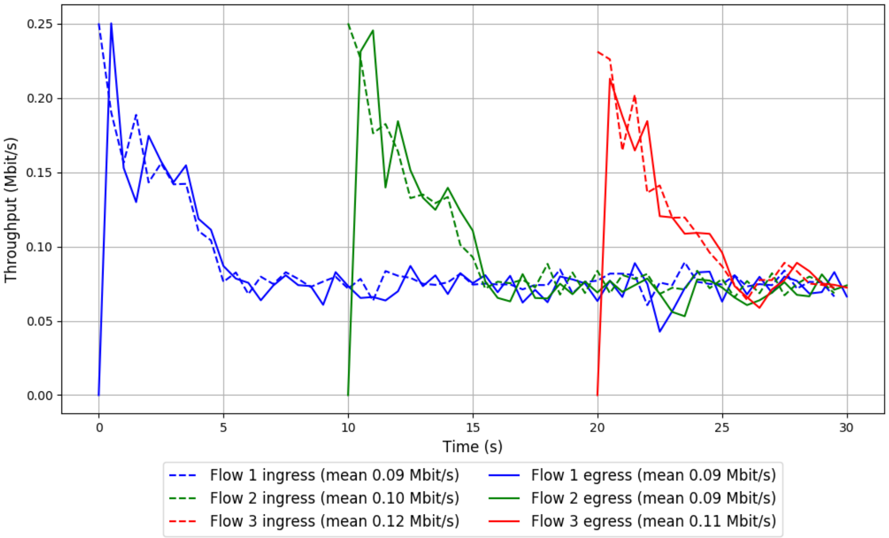


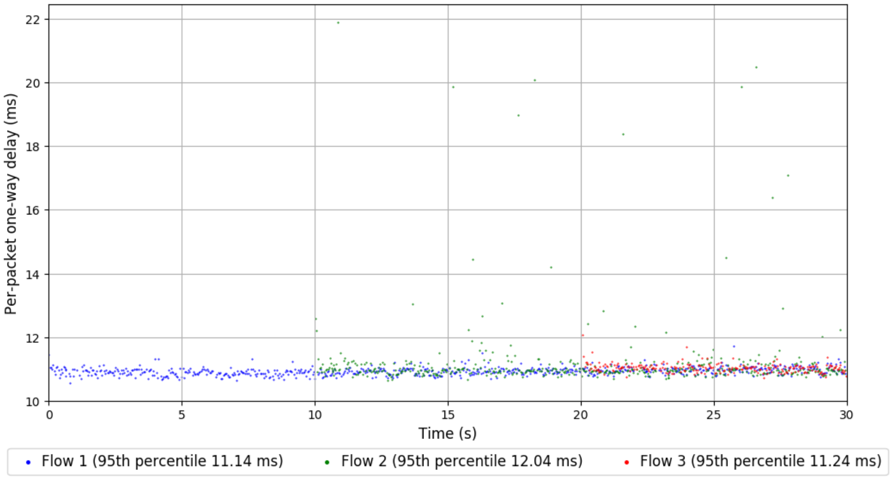
```
Run 8: Statistics of SCReAM

Start at: 2018-05-24 16:14:17
End at: 2018-05-24 16:14:47
Local clock offset: 1.332 ms
Remote clock offset: -5.913 ms

# Below is generated by plot.py at 2018-05-24 17:05:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 11.307 ms
Loss rate: 5.61%
-- Flow 1:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 11.137 ms
Loss rate: 5.03%
-- Flow 2:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 12.035 ms
Loss rate: 5.50%
-- Flow 3:
Average throughput: 0.11 Mbit/s
95th percentile per-packet one-way delay: 11.244 ms
Loss rate: 7.15%
```

Run 8: Report of SCReAM — Data Link



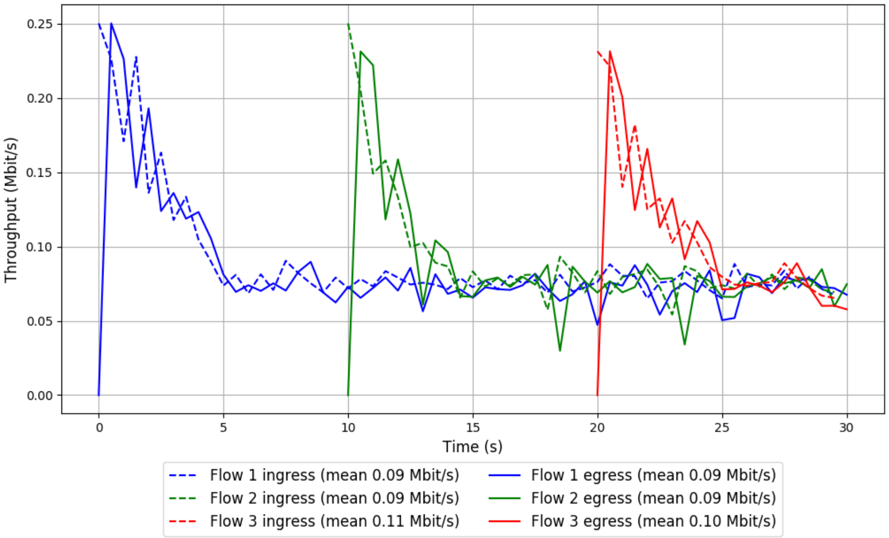


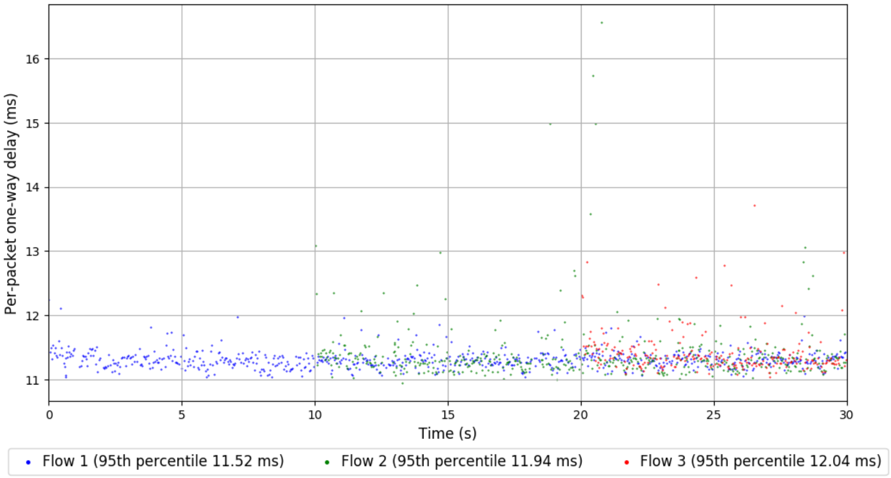
```
Run 9: Statistics of SCReAM

Start at: 2018-05-24 16:32:36
End at: 2018-05-24 16:33:06
Local clock offset: 0.116 ms
Remote clock offset: -10.836 ms

# Below is generated by plot.py at 2018-05-24 17:05:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 11.748 ms
Loss rate: 5.84%
-- Flow 1:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 11.520 ms
Loss rate: 6.09%
-- Flow 2:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 11.937 ms
Loss rate: 5.23%
-- Flow 3:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 12.042 ms
Loss rate: 6.22%
```

Run 9: Report of SCReAM — Data Link



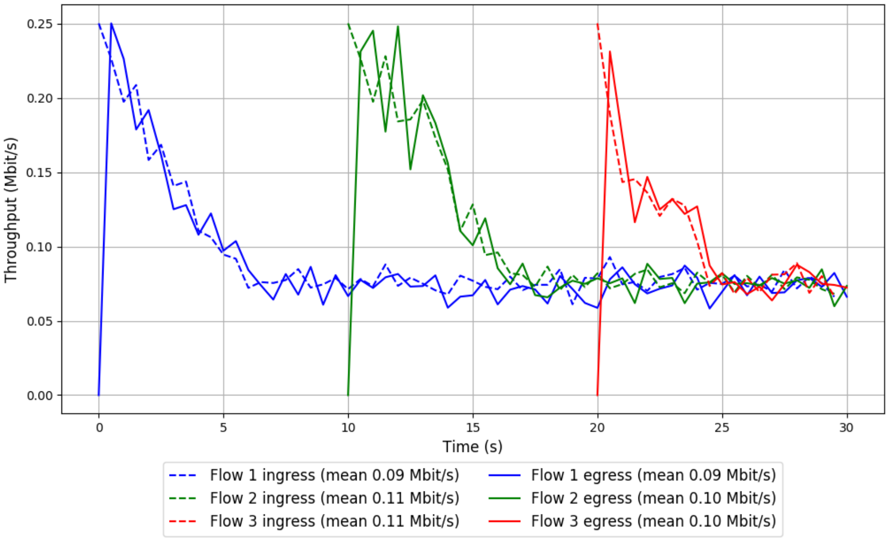


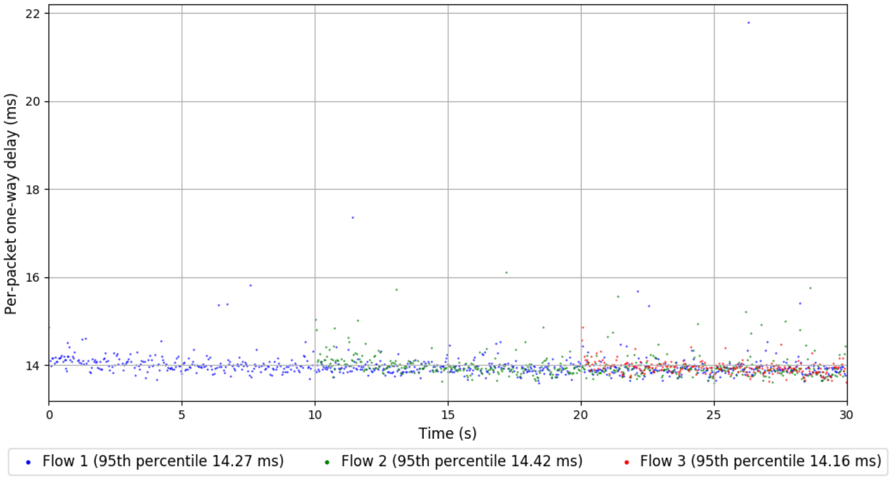
```
Run 10: Statistics of SCReAM

Start at: 2018-05-24 16:50:52
End at: 2018-05-24 16:51:22
Local clock offset: -1.721 ms
Remote clock offset: -1.184 ms

# Below is generated by plot.py at 2018-05-24 17:05:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 14.300 ms
Loss rate: 4.69%
-- Flow 1:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 14.273 ms
Loss rate: 5.04%
-- Flow 2:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 14.422 ms
Loss rate: 4.20%
-- Flow 3:
Average throughput: 0.10 Mbit/s
95th percentile per-packet one-way delay: 14.158 ms
Loss rate: 4.75%
```

Run 10: Report of SCReAM — Data Link



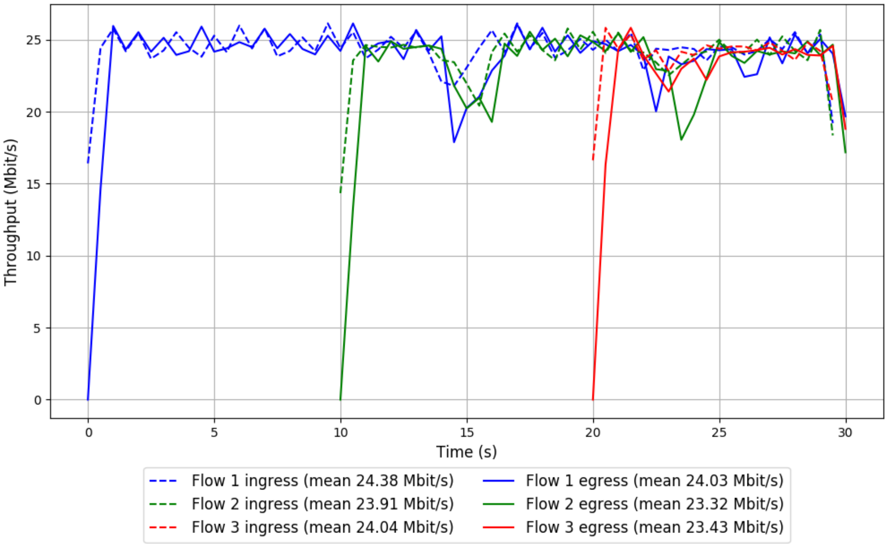


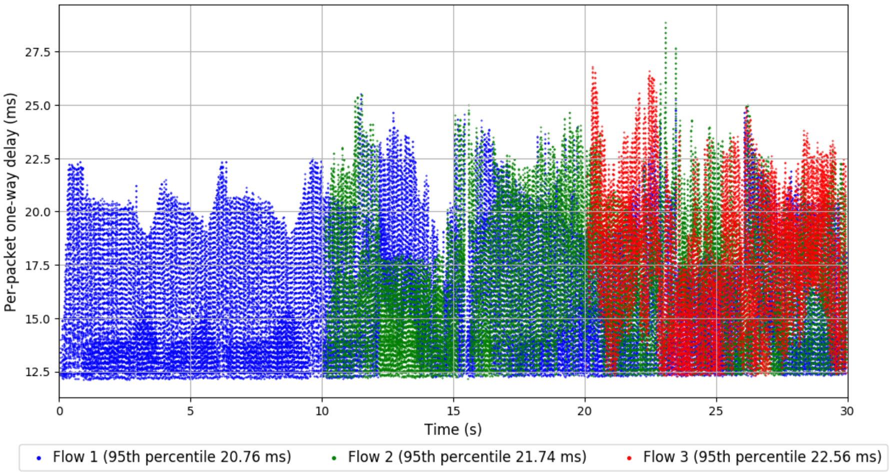
```
Run 1: Statistics of Sprout

Start at: 2018-05-24 13:51:22
End at: 2018-05-24 13:51:52
Local clock offset: 0.552 ms
Remote clock offset: 2.089 ms

# Below is generated by plot.py at 2018-05-24 17:05:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 47.28 Mbit/s
95th percentile per-packet one-way delay: 21.566 ms
Loss rate: 1.96%
-- Flow 1:
Average throughput: 24.03 Mbit/s
95th percentile per-packet one-way delay: 20.762 ms
Loss rate: 1.43%
-- Flow 2:
Average throughput: 23.32 Mbit/s
95th percentile per-packet one-way delay: 21.738 ms
Loss rate: 2.49%
-- Flow 3:
Average throughput: 23.43 Mbit/s
95th percentile per-packet one-way delay: 22.563 ms
Loss rate: 2.50%
```

Run 1: Report of Sprout — Data Link



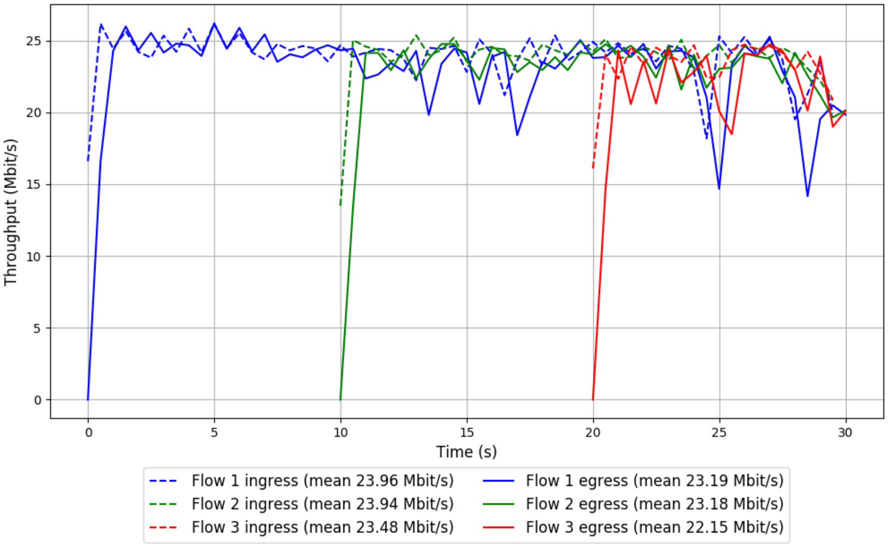


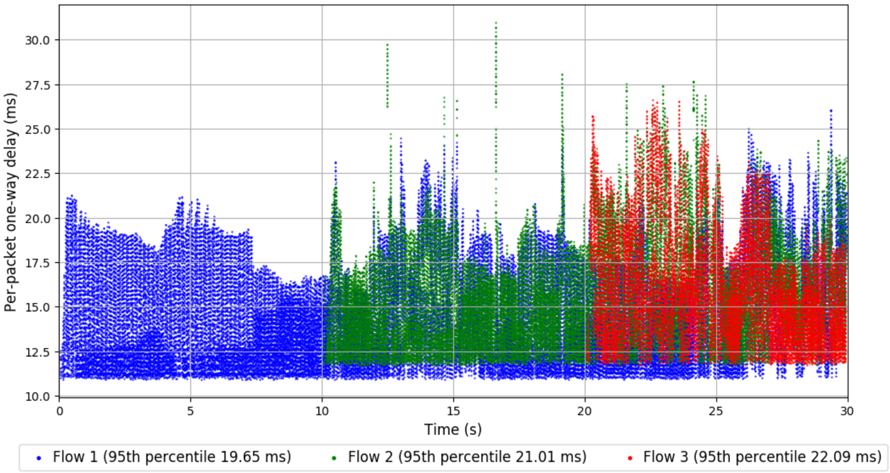
```
Run 2: Statistics of Sprout

Start at: 2018-05-24 14:09:29
End at: 2018-05-24 14:09:59
Local clock offset: 2.29 ms
Remote clock offset: -2.582 ms

# Below is generated by plot.py at 2018-05-24 17:05:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 45.93 Mbit/s
95th percentile per-packet one-way delay: 20.636 ms
Loss rate: 3.56%
-- Flow 1:
Average throughput: 23.19 Mbit/s
95th percentile per-packet one-way delay: 19.654 ms
Loss rate: 3.18%
-- Flow 2:
Average throughput: 23.18 Mbit/s
95th percentile per-packet one-way delay: 21.007 ms
Loss rate: 3.12%
-- Flow 3:
Average throughput: 22.15 Mbit/s
95th percentile per-packet one-way delay: 22.089 ms
Loss rate: 5.62%
```

Run 2: Report of Sprout — Data Link



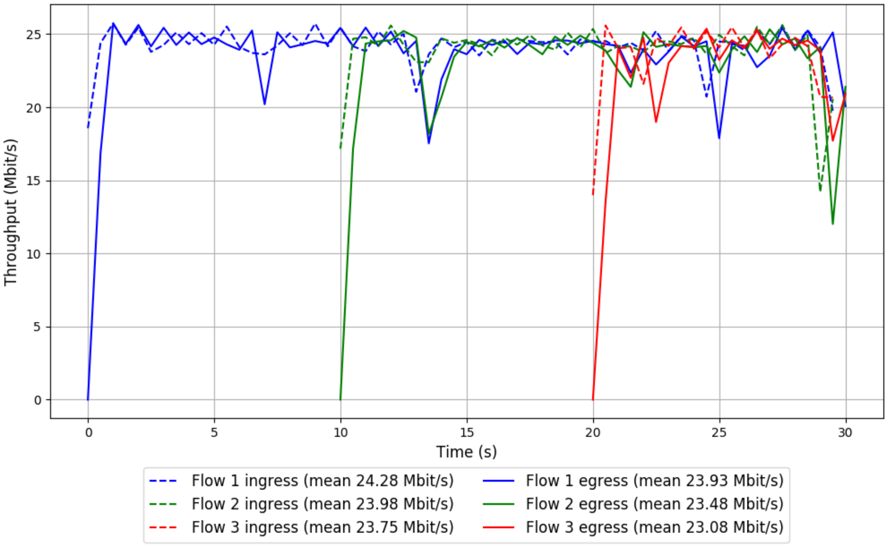


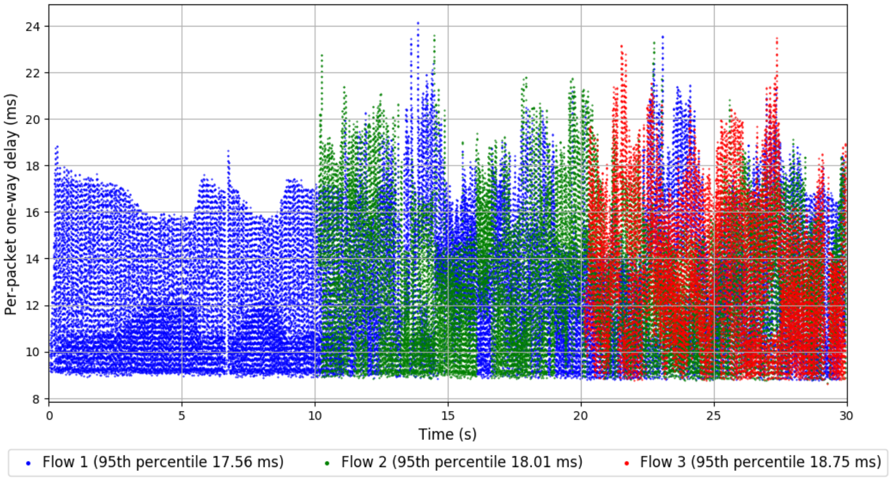
```
Run 3: Statistics of Sprout

Start at: 2018-05-24 14:27:36
End at: 2018-05-24 14:28:06
Local clock offset: 3.243 ms
Remote clock offset: -0.342 ms

# Below is generated by plot.py at 2018-05-24 17:05:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 47.18 Mbit/s
95th percentile per-packet one-way delay: 17.972 ms
Loss rate: 1.83%
-- Flow 1:
Average throughput: 23.93 Mbit/s
95th percentile per-packet one-way delay: 17.557 ms
Loss rate: 1.43%
-- Flow 2:
Average throughput: 23.48 Mbit/s
95th percentile per-packet one-way delay: 18.009 ms
Loss rate: 2.02%
-- Flow 3:
Average throughput: 23.08 Mbit/s
95th percentile per-packet one-way delay: 18.754 ms
Loss rate: 2.70%
```

Run 3: Report of Sprout — Data Link



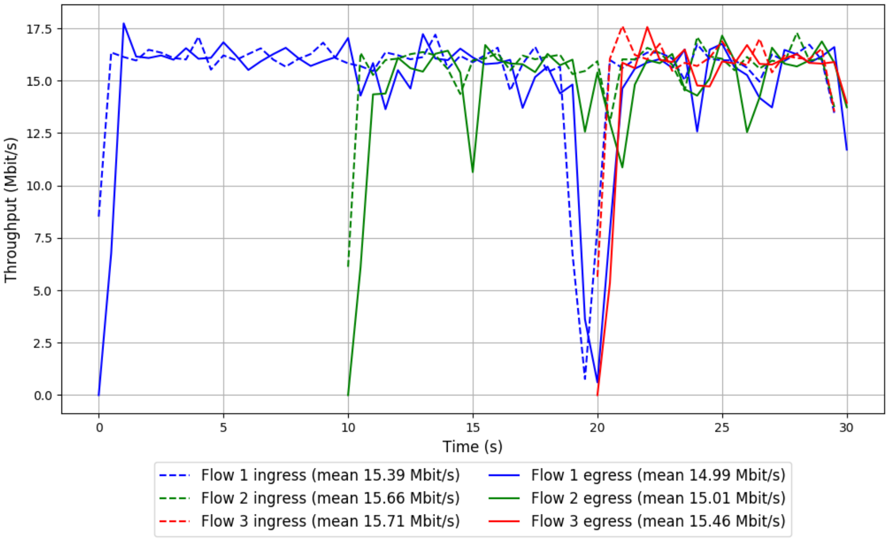


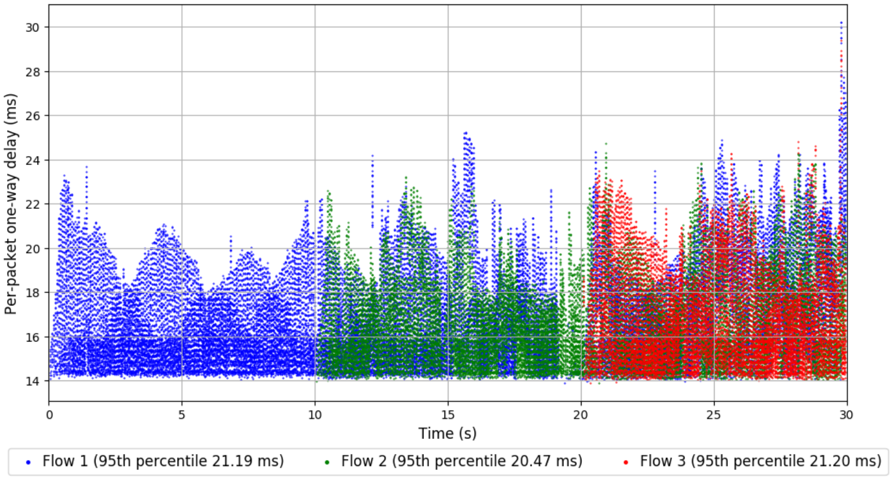
```
Run 4: Statistics of Sprout

Start at: 2018-05-24 14:46:17
End at: 2018-05-24 14:46:47
Local clock offset: -0.783 ms
Remote clock offset: 3.068 ms

# Below is generated by plot.py at 2018-05-24 17:05:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 30.08 Mbit/s
95th percentile per-packet one-way delay: 20.969 ms
Loss rate: 2.92%
-- Flow 1:
Average throughput: 14.99 Mbit/s
95th percentile per-packet one-way delay: 21.189 ms
Loss rate: 2.57%
-- Flow 2:
Average throughput: 15.01 Mbit/s
95th percentile per-packet one-way delay: 20.474 ms
Loss rate: 4.14%
-- Flow 3:
Average throughput: 15.46 Mbit/s
95th percentile per-packet one-way delay: 21.198 ms
Loss rate: 1.52%
```

Run 4: Report of Sprout — Data Link



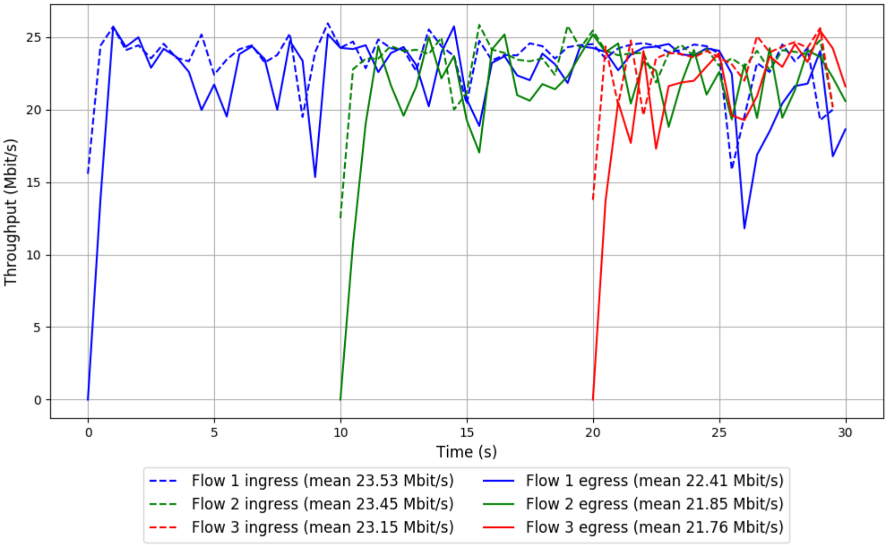


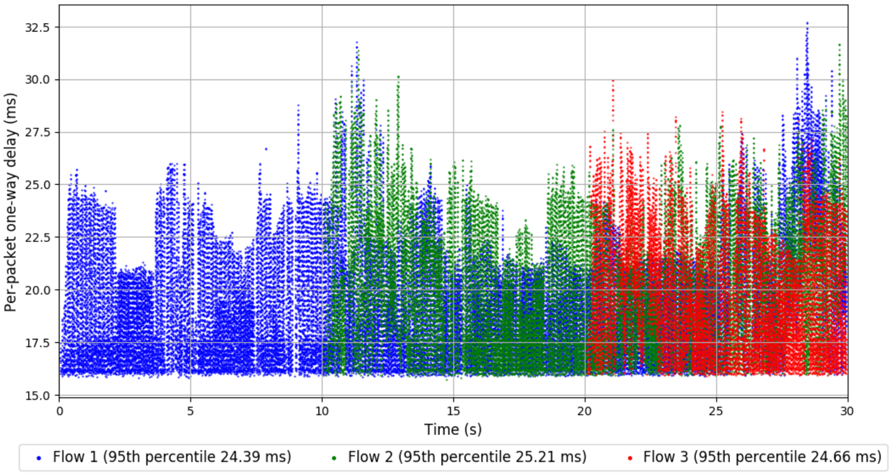
```
Run 5: Statistics of Sprout

Start at: 2018-05-24 15:04:43
End at: 2018-05-24 15:05:13
Local clock offset: -2.181 ms
Remote clock offset: -2.683 ms

# Below is generated by plot.py at 2018-05-24 17:05:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 44.13 Mbit/s
95th percentile per-packet one-way delay: 24.777 ms
Loss rate: 5.63%
-- Flow 1:
Average throughput: 22.41 Mbit/s
95th percentile per-packet one-way delay: 24.386 ms
Loss rate: 4.75%
-- Flow 2:
Average throughput: 21.85 Mbit/s
95th percentile per-packet one-way delay: 25.211 ms
Loss rate: 6.80%
-- Flow 3:
Average throughput: 21.76 Mbit/s
95th percentile per-packet one-way delay: 24.657 ms
Loss rate: 5.98%
```

Run 5: Report of Sprout — Data Link



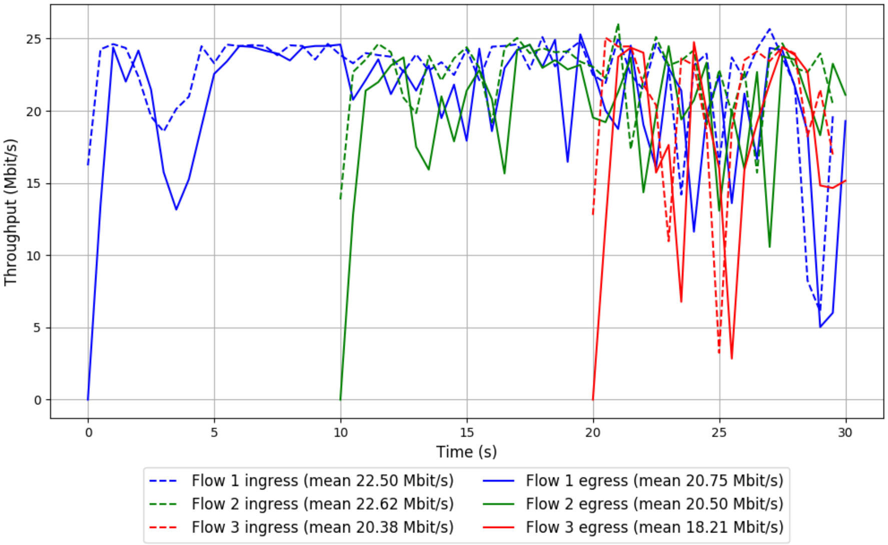


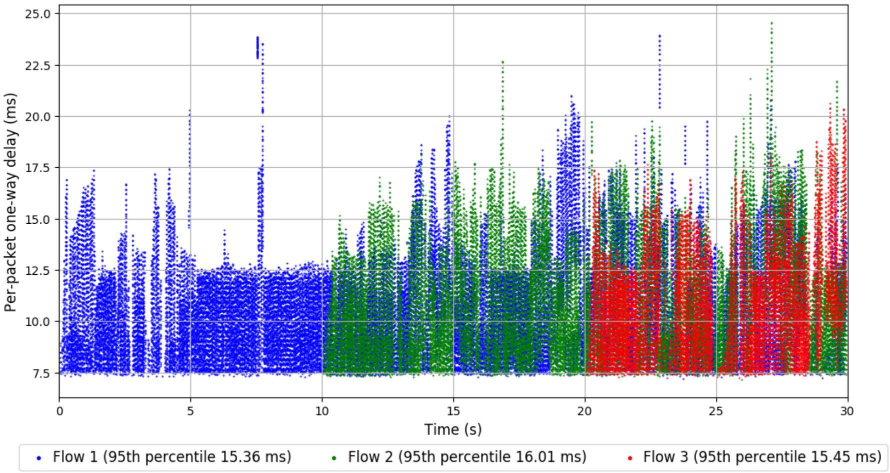
```
Run 6: Statistics of Sprout

Start at: 2018-05-24 15:23:09
End at: 2018-05-24 15:23:39
Local clock offset: 3.197 ms
Remote clock offset: -9.427 ms

# Below is generated by plot.py at 2018-05-24 17:05:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 40.40 Mbit/s
95th percentile per-packet one-way delay: 15.642 ms
Loss rate: 8.74%
-- Flow 1:
Average throughput: 20.75 Mbit/s
95th percentile per-packet one-way delay: 15.364 ms
Loss rate: 7.76%
-- Flow 2:
Average throughput: 20.50 Mbit/s
95th percentile per-packet one-way delay: 16.007 ms
Loss rate: 9.35%
-- Flow 3:
Average throughput: 18.21 Mbit/s
95th percentile per-packet one-way delay: 15.446 ms
Loss rate: 10.64%
```

Run 6: Report of Sprout — Data Link



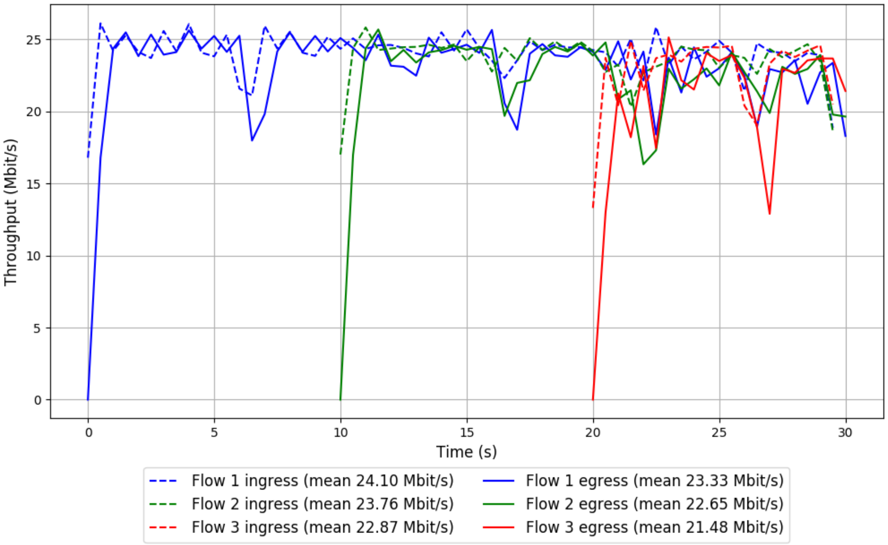


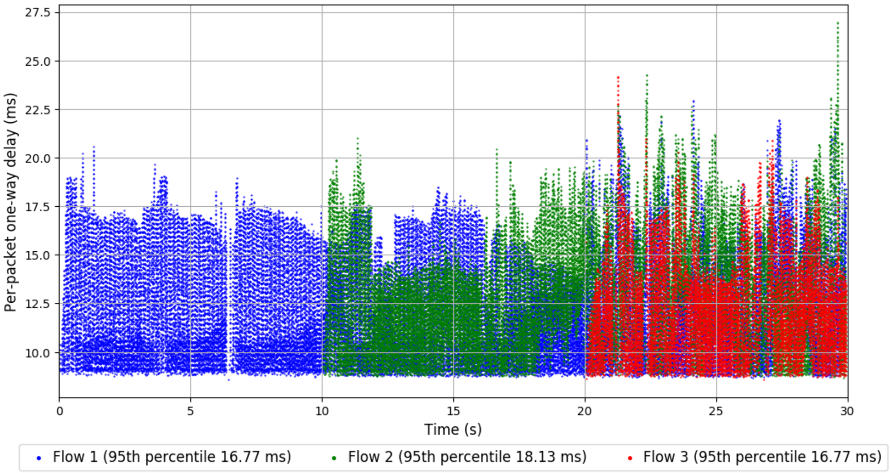
```
Run 7: Statistics of Sprout

Start at: 2018-05-24 15:41:15
End at: 2018-05-24 15:41:45
Local clock offset: 3.14 ms
Remote clock offset: 0.73 ms

# Below is generated by plot.py at 2018-05-24 17:05:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 45.49 Mbit/s
95th percentile per-packet one-way delay: 17.208 ms
Loss rate: 4.13%
-- Flow 1:
Average throughput: 23.33 Mbit/s
95th percentile per-packet one-way delay: 16.767 ms
Loss rate: 3.18%
-- Flow 2:
Average throughput: 22.65 Mbit/s
95th percentile per-packet one-way delay: 18.133 ms
Loss rate: 4.65%
-- Flow 3:
Average throughput: 21.48 Mbit/s
95th percentile per-packet one-way delay: 16.769 ms
Loss rate: 6.05%
```

Run 7: Report of Sprout — Data Link



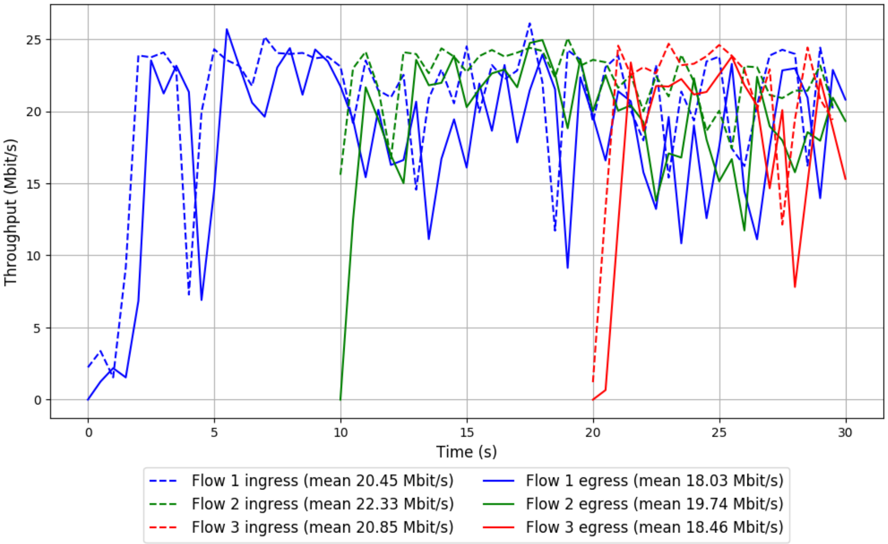


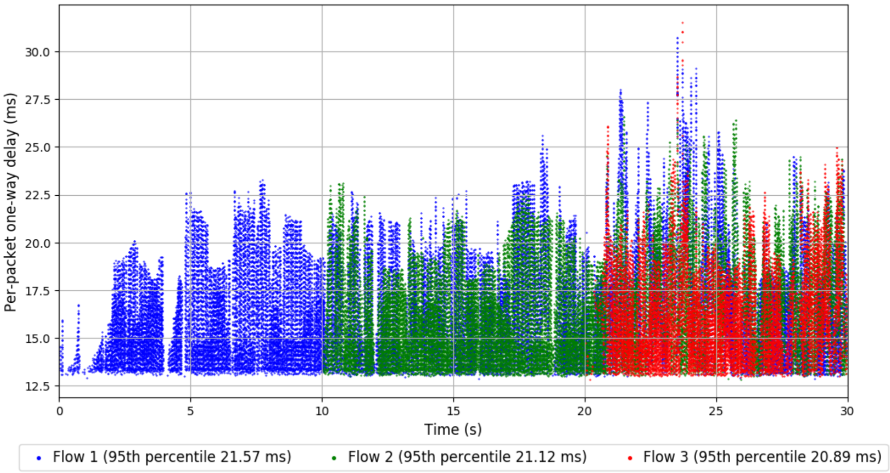
```
Run 8: Statistics of Sprout

Start at: 2018-05-24 15:59:30
End at: 2018-05-24 16:00:00
Local clock offset: 0.305 ms
Remote clock offset: 4.513 ms

# Below is generated by plot.py at 2018-05-24 17:05:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 37.27 Mbit/s
95th percentile per-packet one-way delay: 21.281 ms
Loss rate: 11.66%
-- Flow 1:
Average throughput: 18.03 Mbit/s
95th percentile per-packet one-way delay: 21.574 ms
Loss rate: 11.79%
-- Flow 2:
Average throughput: 19.74 Mbit/s
95th percentile per-packet one-way delay: 21.116 ms
Loss rate: 11.57%
-- Flow 3:
Average throughput: 18.46 Mbit/s
95th percentile per-packet one-way delay: 20.890 ms
Loss rate: 11.46%
```

Run 8: Report of Sprout — Data Link



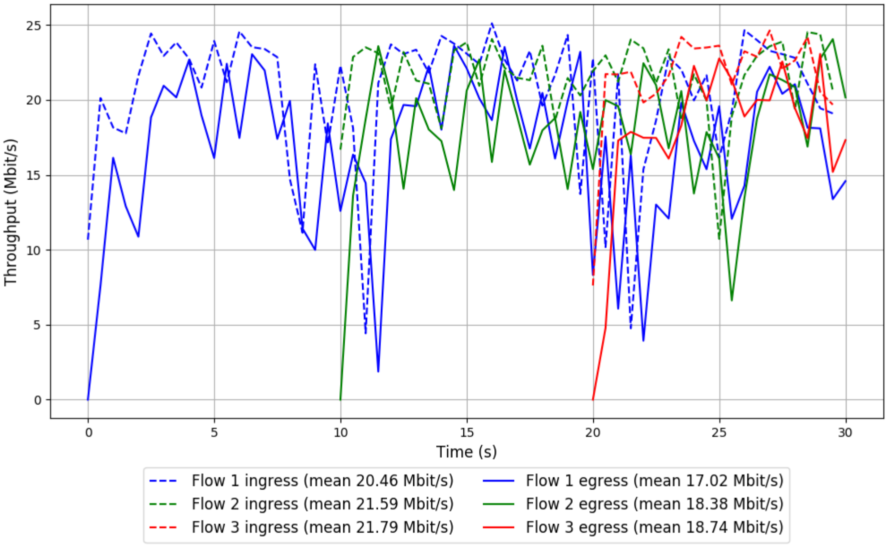


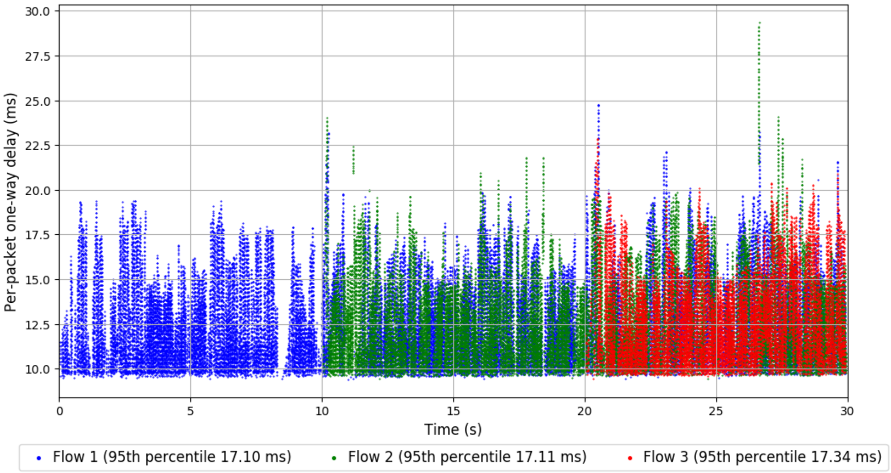
```
Run 9: Statistics of Sprout

Start at: 2018-05-24 16:17:43
End at: 2018-05-24 16:18:13
Local clock offset: -1.818 ms
Remote clock offset: -11.4 ms

# Below is generated by plot.py at 2018-05-24 17:05:53
# Datalink statistics
-- Total of 3 flows:
Average throughput: 35.42 Mbit/s
95th percentile per-packet one-way delay: 17.158 ms
Loss rate: 15.68%
-- Flow 1:
Average throughput: 17.02 Mbit/s
95th percentile per-packet one-way delay: 17.100 ms
Loss rate: 16.81%
-- Flow 2:
Average throughput: 18.38 Mbit/s
95th percentile per-packet one-way delay: 17.115 ms
Loss rate: 14.84%
-- Flow 3:
Average throughput: 18.74 Mbit/s
95th percentile per-packet one-way delay: 17.340 ms
Loss rate: 14.16%
```

Run 9: Report of Sprout — Data Link



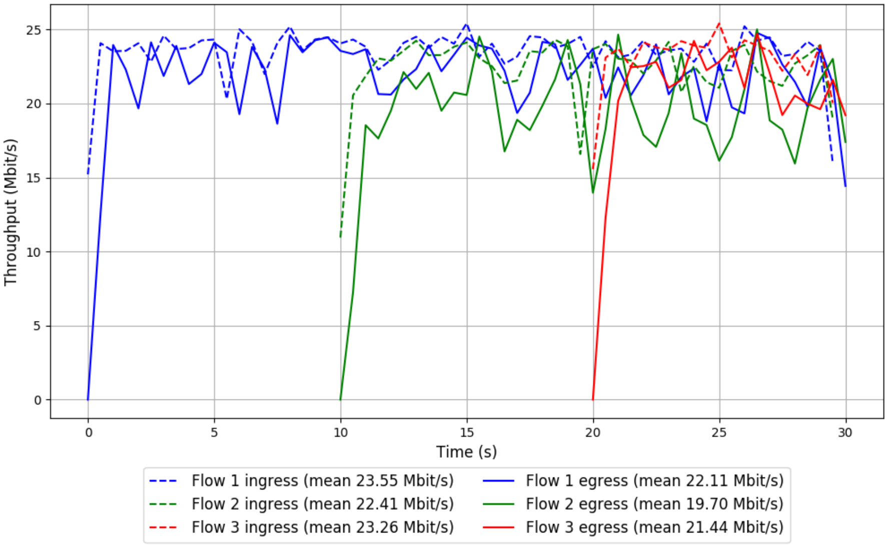


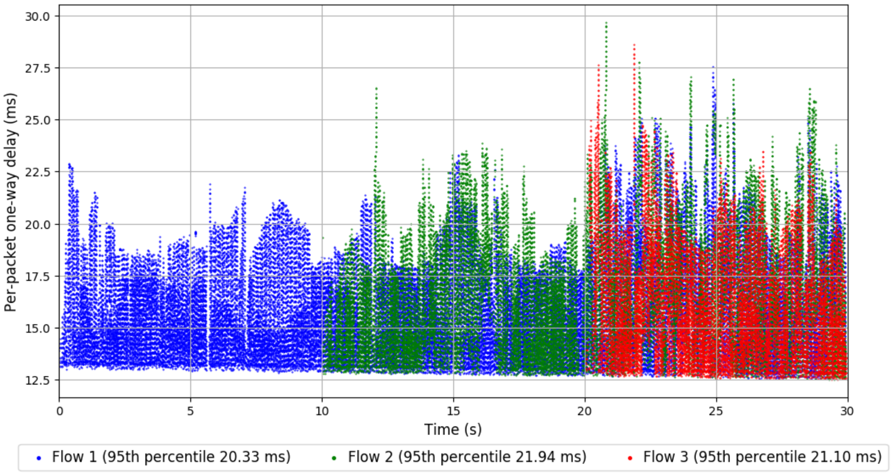
```
Run 10: Statistics of Sprout

Start at: 2018-05-24 16:35:58
End at: 2018-05-24 16:36:28
Local clock offset: 0.603 ms
Remote clock offset: -7.154 ms

# Below is generated by plot.py at 2018-05-24 17:06:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 42.30 Mbit/s
95th percentile per-packet one-way delay: 21.022 ms
Loss rate: 8.32%
-- Flow 1:
Average throughput: 22.11 Mbit/s
95th percentile per-packet one-way delay: 20.333 ms
Loss rate: 6.08%
-- Flow 2:
Average throughput: 19.70 Mbit/s
95th percentile per-packet one-way delay: 21.939 ms
Loss rate: 12.12%
-- Flow 3:
Average throughput: 21.44 Mbit/s
95th percentile per-packet one-way delay: 21.102 ms
Loss rate: 7.83%
```

Run 10: Report of Sprout — Data Link



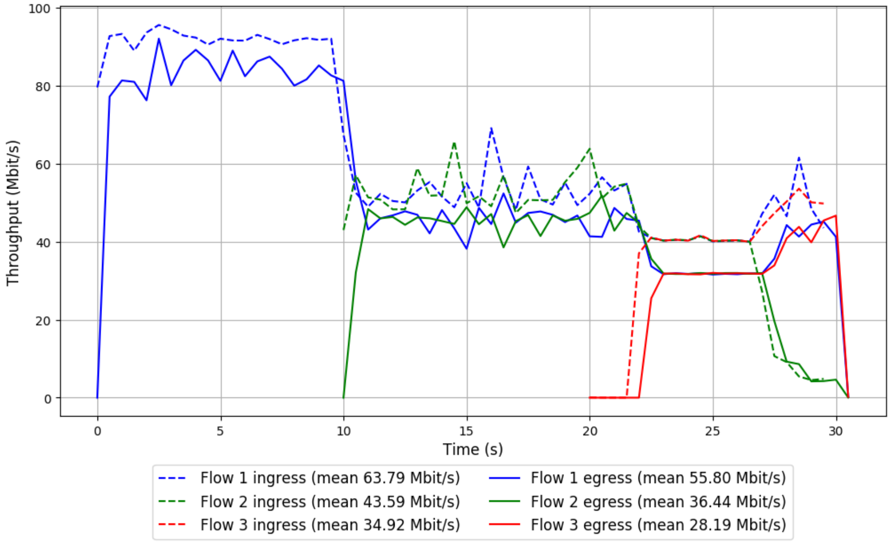


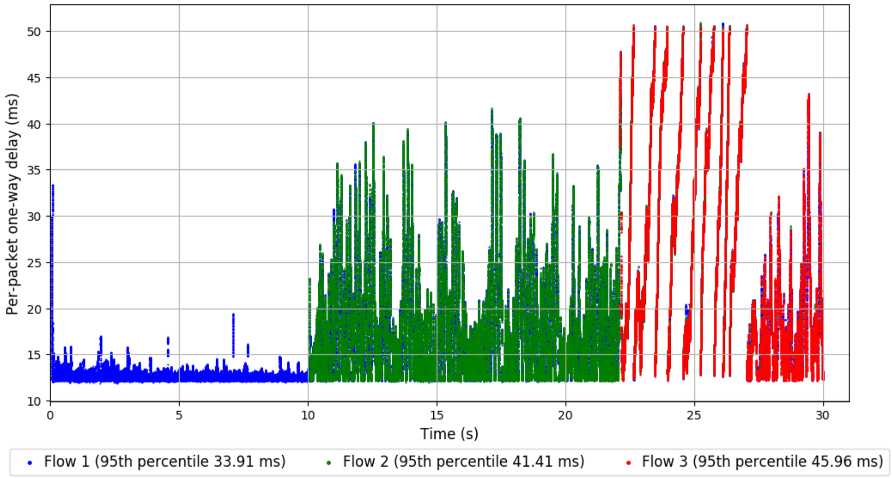
```
Run 1: Statistics of TaoVA-100x

Start at: 2018-05-24 14:02:41
End at: 2018-05-24 14:03:11
Local clock offset: 1.324 ms
Remote clock offset: -1.086 ms

# Below is generated by plot.py at 2018-05-24 17:07:35
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.45 Mbit/s
95th percentile per-packet one-way delay: 39.383 ms
Loss rate: 14.35%
-- Flow 1:
Average throughput: 55.80 Mbit/s
95th percentile per-packet one-way delay: 33.907 ms
Loss rate: 12.52%
-- Flow 2:
Average throughput: 36.44 Mbit/s
95th percentile per-packet one-way delay: 41.410 ms
Loss rate: 16.39%
-- Flow 3:
Average throughput: 28.19 Mbit/s
95th percentile per-packet one-way delay: 45.959 ms
Loss rate: 19.27%
```

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



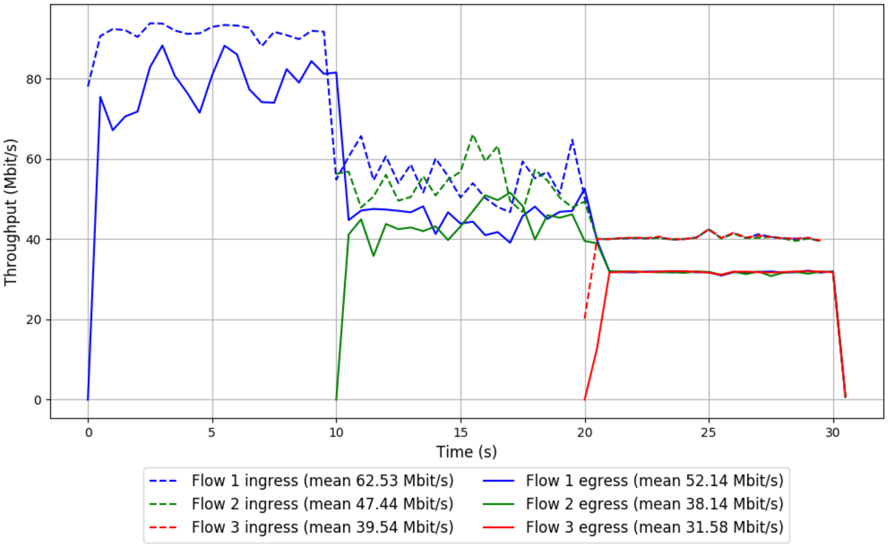


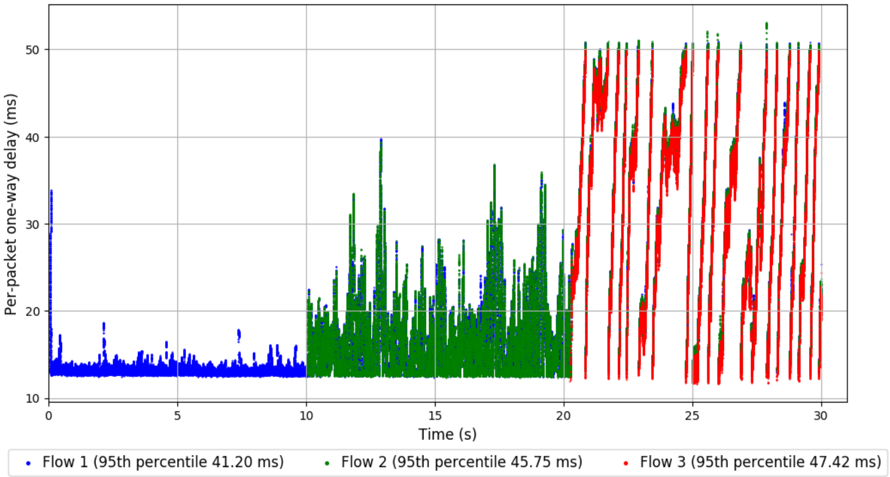
```
Run 2: Statistics of TaoVA-100x

Start at: 2018-05-24 14:20:43
End at: 2018-05-24 14:21:13
Local clock offset: 1.587 ms
Remote clock offset: -1.893 ms

# Below is generated by plot.py at 2018-05-24 17:07:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.84 Mbit/s
95th percentile per-packet one-way delay: 44.941 ms
Loss rate: 18.08%
-- Flow 1:
Average throughput: 52.14 Mbit/s
95th percentile per-packet one-way delay: 41.205 ms
Loss rate: 16.58%
-- Flow 2:
Average throughput: 38.14 Mbit/s
95th percentile per-packet one-way delay: 45.751 ms
Loss rate: 19.57%
-- Flow 3:
Average throughput: 31.58 Mbit/s
95th percentile per-packet one-way delay: 47.422 ms
Loss rate: 21.64%
```

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



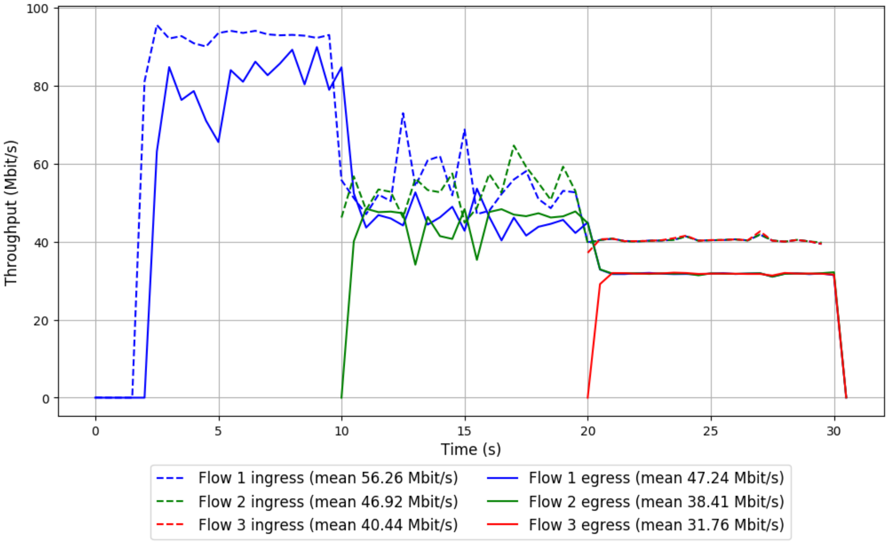


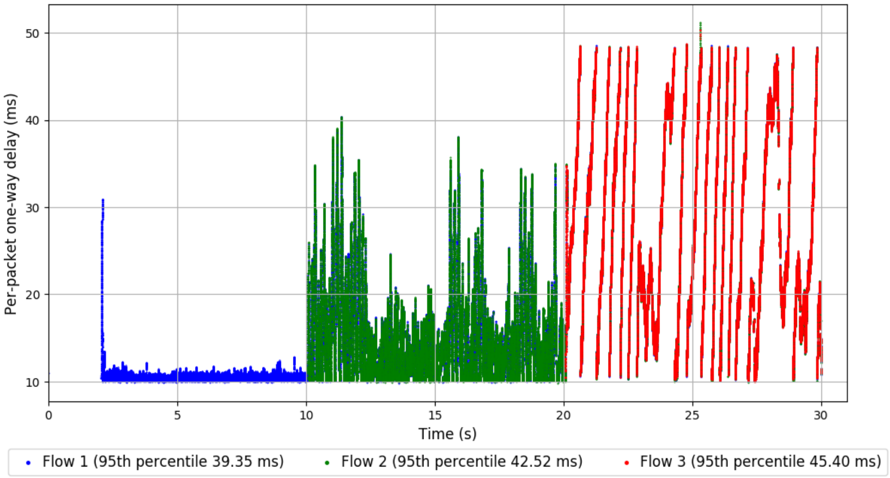
```
Run 3: Statistics of TaoVA-100x

Start at: 2018-05-24 14:39:16
End at: 2018-05-24 14:39:46
Local clock offset: 1.338 ms
Remote clock offset: 0.635 ms

# Below is generated by plot.py at 2018-05-24 17:07:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 83.37 Mbit/s
95th percentile per-packet one-way delay: 42.238 ms
Loss rate: 17.40%
-- Flow 1:
Average throughput: 47.24 Mbit/s
95th percentile per-packet one-way delay: 39.351 ms
Loss rate: 16.03%
-- Flow 2:
Average throughput: 38.41 Mbit/s
95th percentile per-packet one-way delay: 42.523 ms
Loss rate: 18.11%
-- Flow 3:
Average throughput: 31.76 Mbit/s
95th percentile per-packet one-way delay: 45.402 ms
Loss rate: 21.48%
```

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



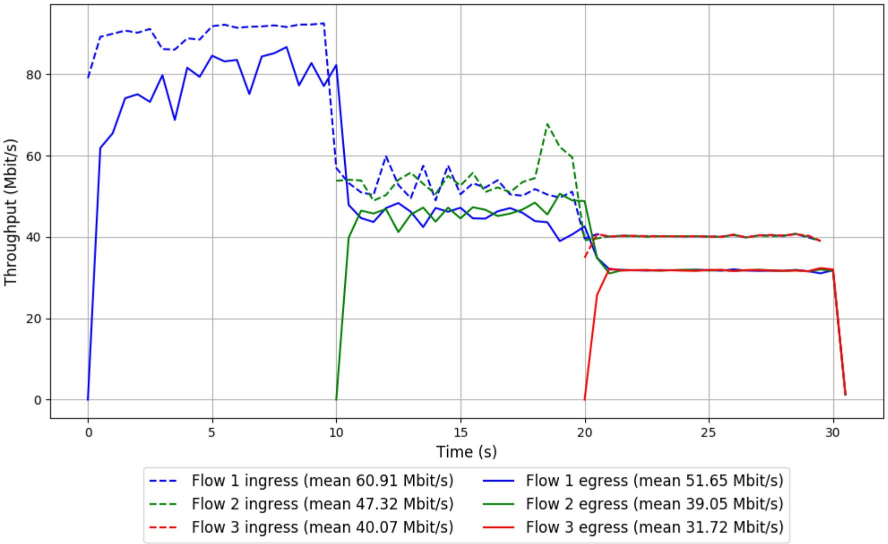


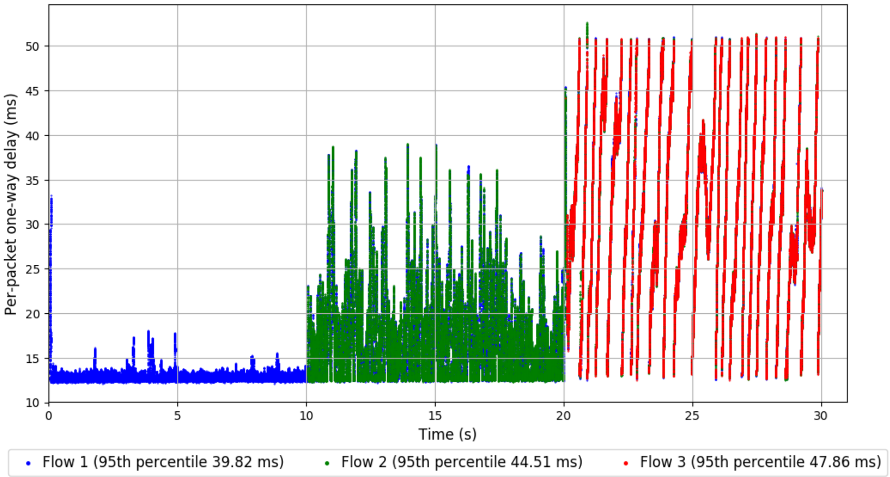
```
Run 4: Statistics of TaoVA-100x

Start at: 2018-05-24 14:57:50
End at: 2018-05-24 14:58:20
Local clock offset: 0.988 ms
Remote clock offset: -0.491 ms

# Below is generated by plot.py at 2018-05-24 17:07:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.20 Mbit/s
95th percentile per-packet one-way delay: 43.852 ms
Loss rate: 16.55%
-- Flow 1:
Average throughput: 51.65 Mbit/s
95th percentile per-packet one-way delay: 39.818 ms
Loss rate: 15.15%
-- Flow 2:
Average throughput: 39.05 Mbit/s
95th percentile per-packet one-way delay: 44.512 ms
Loss rate: 17.39%
-- Flow 3:
Average throughput: 31.72 Mbit/s
95th percentile per-packet one-way delay: 47.856 ms
Loss rate: 20.92%
```

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



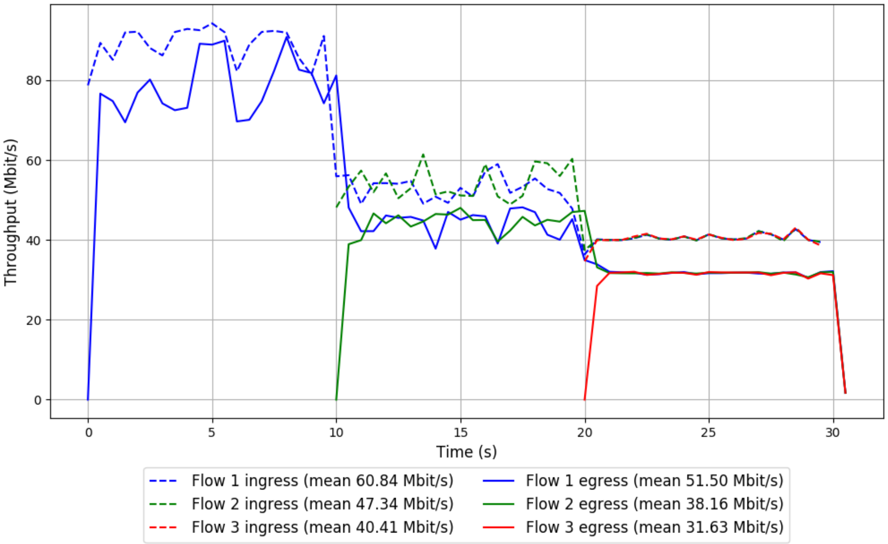


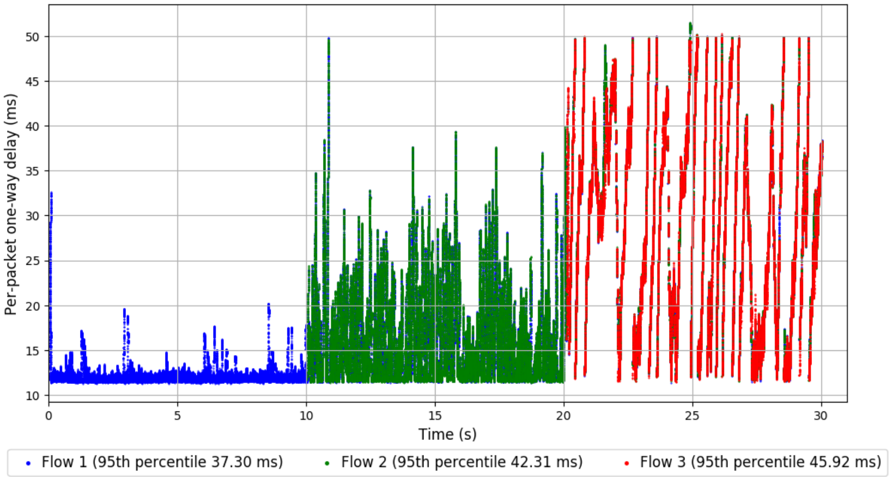
```
Run 5: Statistics of TaoVA-100x

Start at: 2018-05-24 15:15:52
End at: 2018-05-24 15:16:22
Local clock offset: 2.589 ms
Remote clock offset: -4.791 ms

# Below is generated by plot.py at 2018-05-24 17:07:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.43 Mbit/s
95th percentile per-packet one-way delay: 41.266 ms
Loss rate: 17.30%
-- Flow 1:
Average throughput: 51.50 Mbit/s
95th percentile per-packet one-way delay: 37.299 ms
Loss rate: 15.28%
-- Flow 2:
Average throughput: 38.16 Mbit/s
95th percentile per-packet one-way delay: 42.312 ms
Loss rate: 19.30%
-- Flow 3:
Average throughput: 31.63 Mbit/s
95th percentile per-packet one-way delay: 45.920 ms
Loss rate: 21.73%
```

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



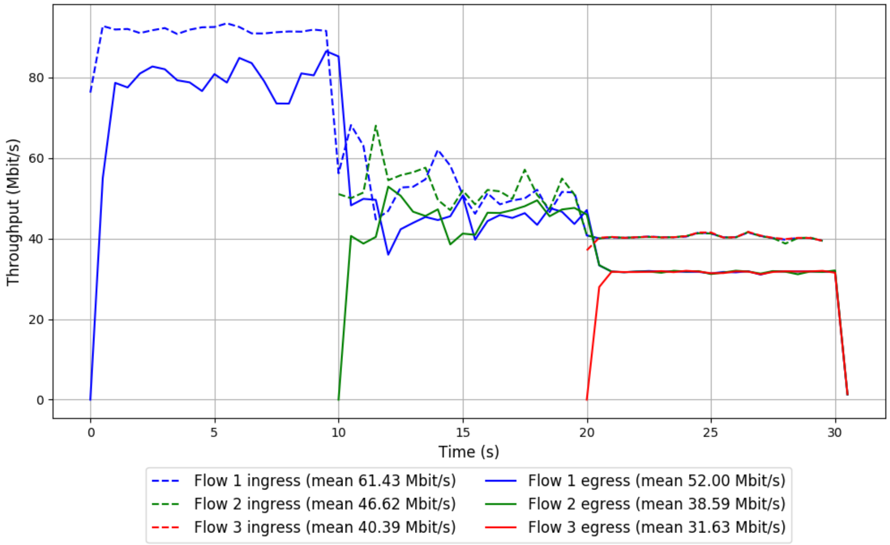


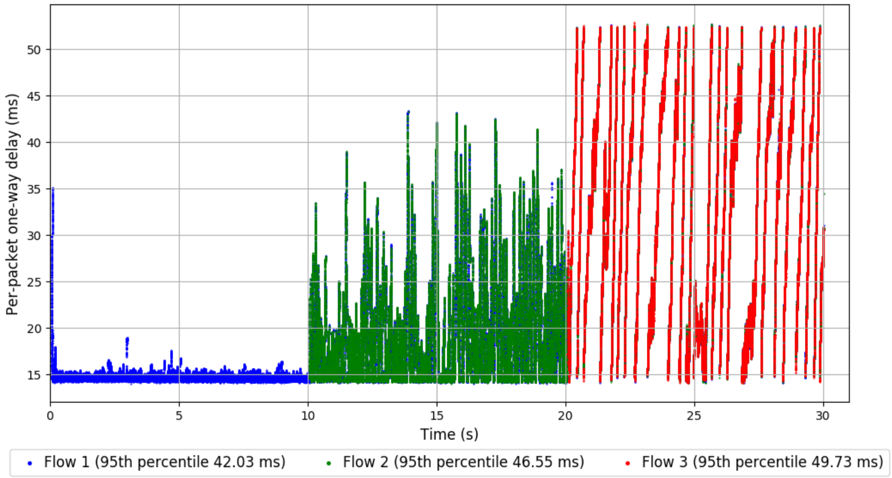
```
Run 6: Statistics of TaoVA-100x

Start at: 2018-05-24 15:34:23
End at: 2018-05-24 15:34:53
Local clock offset: -0.798 ms
Remote clock offset: -0.202 ms

# Below is generated by plot.py at 2018-05-24 17:07:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.23 Mbit/s
95th percentile per-packet one-way delay: 45.796 ms
Loss rate: 16.64%
-- Flow 1:
Average throughput: 52.00 Mbit/s
95th percentile per-packet one-way delay: 42.028 ms
Loss rate: 15.31%
-- Flow 2:
Average throughput: 38.59 Mbit/s
95th percentile per-packet one-way delay: 46.550 ms
Loss rate: 17.13%
-- Flow 3:
Average throughput: 31.63 Mbit/s
95th percentile per-packet one-way delay: 49.726 ms
Loss rate: 21.56%
```

Run 6: Report of TaoVA-100x — Data Link



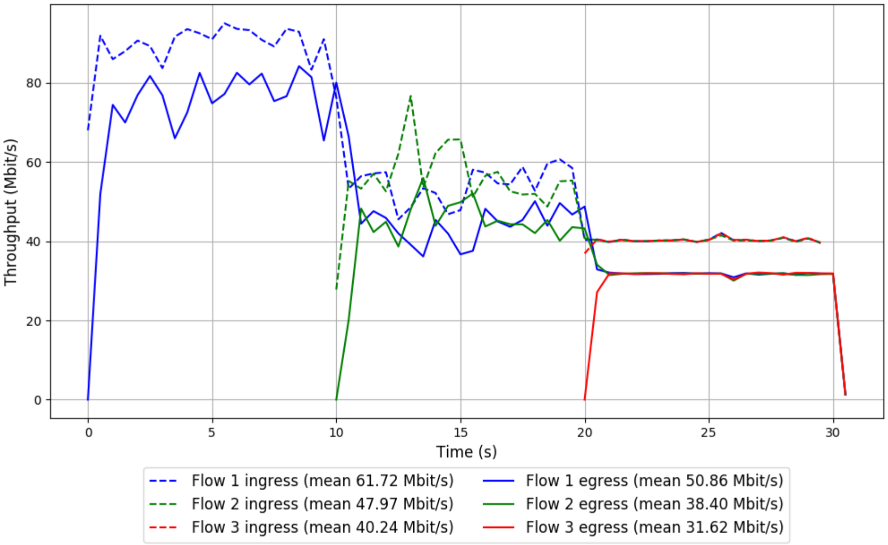


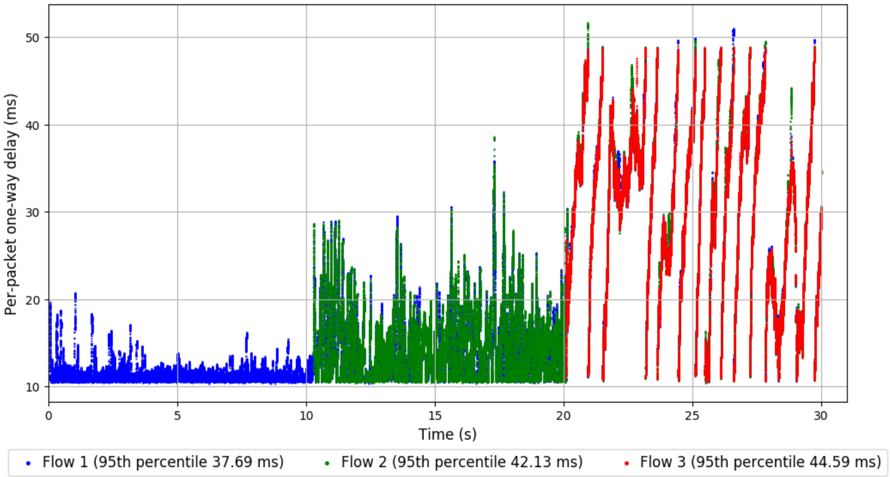
```
Run 7: Statistics of TaoVA-100x

Start at: 2018-05-24 15:52:35
End at: 2018-05-24 15:53:05
Local clock offset: 2.153 ms
Remote clock offset: 2.975 ms

# Below is generated by plot.py at 2018-05-24 17:08:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.71 Mbit/s
95th percentile per-packet one-way delay: 41.328 ms
Loss rate: 18.94%
-- Flow 1:
Average throughput: 50.86 Mbit/s
95th percentile per-packet one-way delay: 37.693 ms
Loss rate: 17.54%
-- Flow 2:
Average throughput: 38.40 Mbit/s
95th percentile per-packet one-way delay: 42.132 ms
Loss rate: 20.65%
-- Flow 3:
Average throughput: 31.62 Mbit/s
95th percentile per-packet one-way delay: 44.592 ms
Loss rate: 21.29%
```

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



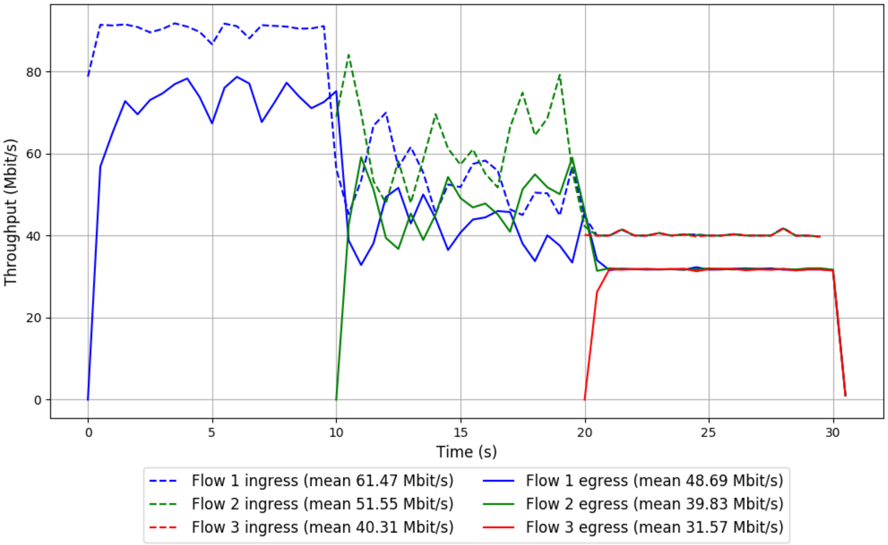


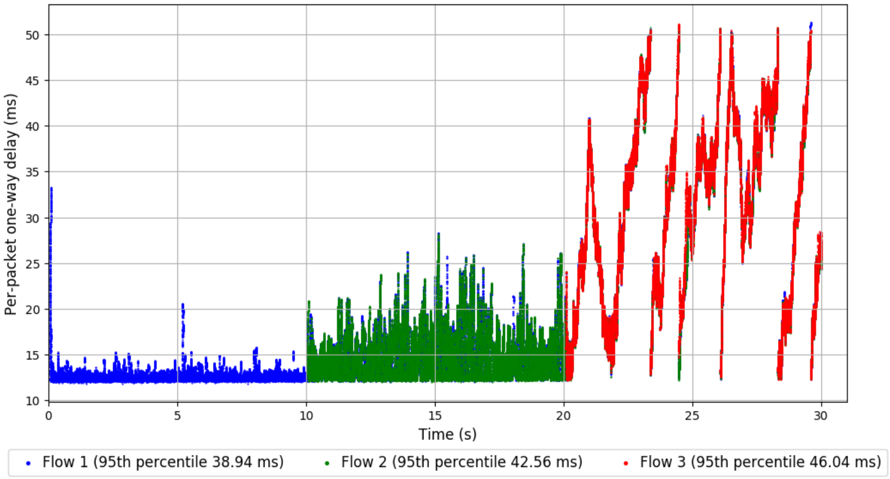
```
Run 8: Statistics of TaoVA-100x

Start at: 2018-05-24 16:10:46
End at: 2018-05-24 16:11:16
Local clock offset: 1.327 ms
Remote clock offset: -3.334 ms

# Below is generated by plot.py at 2018-05-24 17:08:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.73 Mbit/s
95th percentile per-packet one-way delay: 42.303 ms
Loss rate: 21.46%
-- Flow 1:
Average throughput: 48.69 Mbit/s
95th percentile per-packet one-way delay: 38.937 ms
Loss rate: 20.74%
-- Flow 2:
Average throughput: 39.83 Mbit/s
95th percentile per-packet one-way delay: 42.556 ms
Loss rate: 22.69%
-- Flow 3:
Average throughput: 31.57 Mbit/s
95th percentile per-packet one-way delay: 46.036 ms
Loss rate: 21.63%
```

Run 8: Report of TaoVA-100x — Data Link



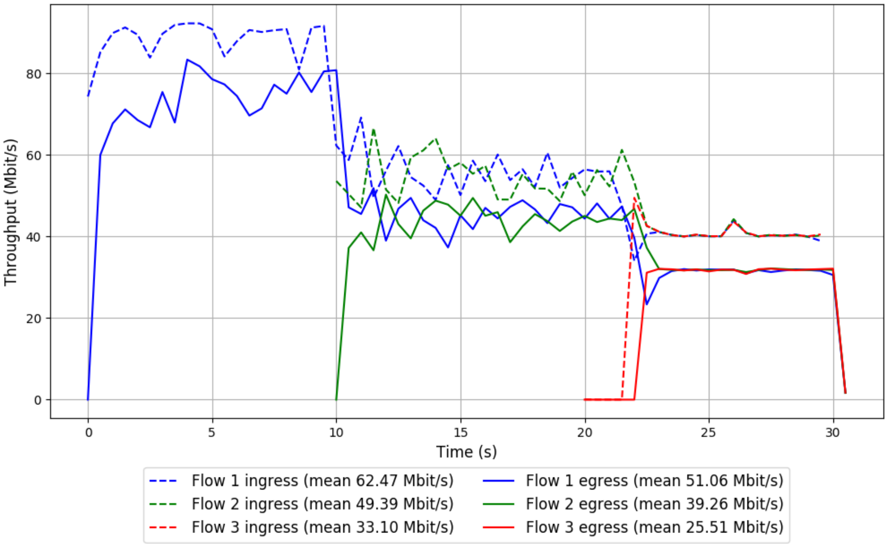


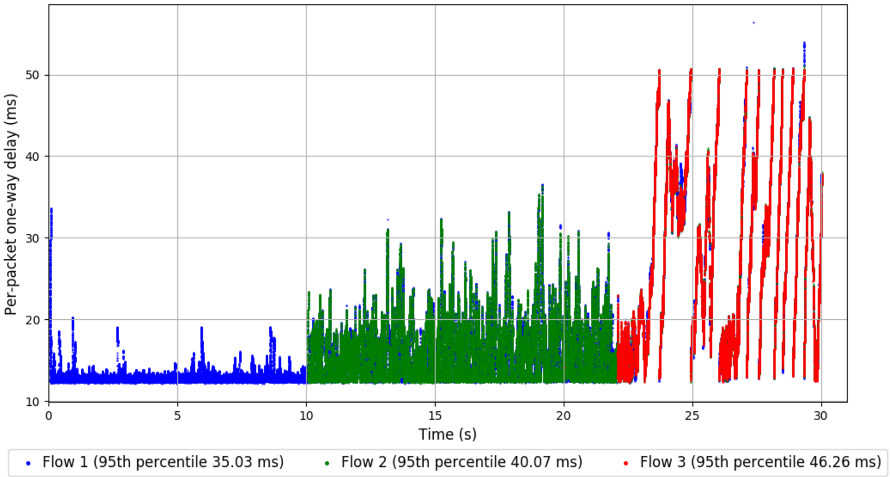
```
Run 9: Statistics of TaoVA-100x

Start at: 2018-05-24 16:29:01
End at: 2018-05-24 16:29:31
Local clock offset: -0.136 ms
Remote clock offset: -9.472 ms

# Below is generated by plot.py at 2018-05-24 17:09:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.71 Mbit/s
95th percentile per-packet one-way delay: 39.422 ms
Loss rate: 19.35%
-- Flow 1:
Average throughput: 51.06 Mbit/s
95th percentile per-packet one-way delay: 35.035 ms
Loss rate: 18.19%
-- Flow 2:
Average throughput: 39.26 Mbit/s
95th percentile per-packet one-way delay: 40.072 ms
Loss rate: 20.41%
-- Flow 3:
Average throughput: 25.51 Mbit/s
95th percentile per-packet one-way delay: 46.260 ms
Loss rate: 22.75%
```

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



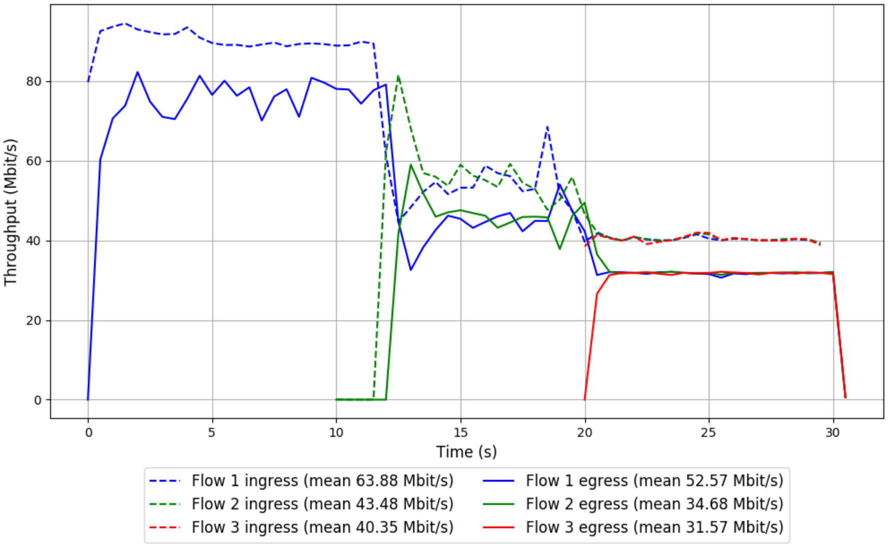


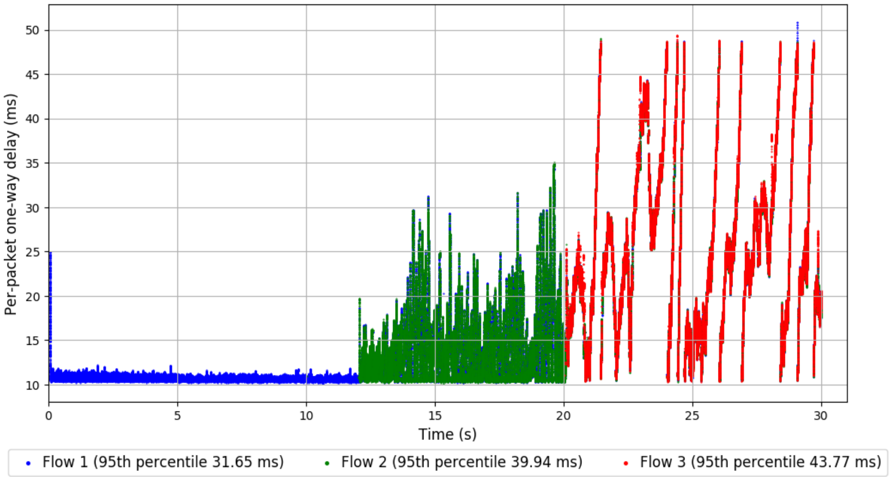
```
Run 10: Statistics of TaoVA-100x

Start at: 2018-05-24 16:47:18
End at: 2018-05-24 16:47:48
Local clock offset: -1.156 ms
Remote clock offset: -5.053 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 86.18 Mbit/s
95th percentile per-packet one-way delay: 38.349 ms
Loss rate: 18.87%
-- Flow 1:
Average throughput: 52.57 Mbit/s
95th percentile per-packet one-way delay: 31.646 ms
Loss rate: 17.68%
-- Flow 2:
Average throughput: 34.68 Mbit/s
95th percentile per-packet one-way delay: 39.943 ms
Loss rate: 20.19%
-- Flow 3:
Average throughput: 31.57 Mbit/s
95th percentile per-packet one-way delay: 43.765 ms
Loss rate: 21.69%
```

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



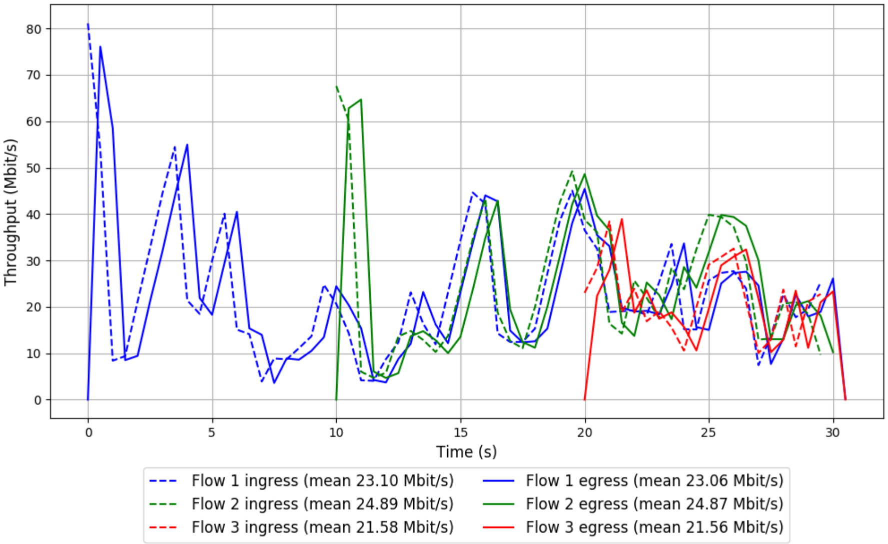


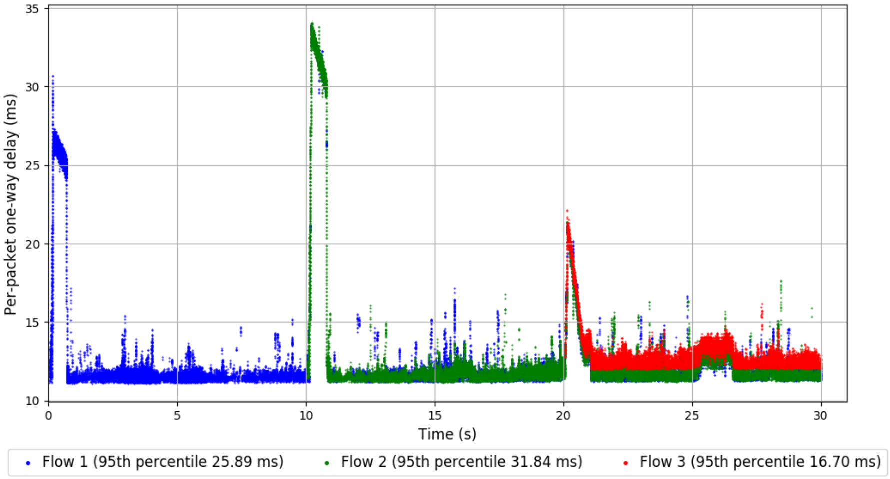
```
Run 1: Statistics of TCP Vegas

Start at: 2018-05-24 13:55:57
End at: 2018-05-24 13:56:27
Local clock offset: 0.156 ms
Remote clock offset: -0.514 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 46.79 Mbit/s
95th percentile per-packet one-way delay: 26.386 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 23.06 Mbit/s
95th percentile per-packet one-way delay: 25.888 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 24.87 Mbit/s
95th percentile per-packet one-way delay: 31.837 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 21.56 Mbit/s
95th percentile per-packet one-way delay: 16.697 ms
Loss rate: 0.09%
```

Run 1: Report of TCP Vegas — Data Link



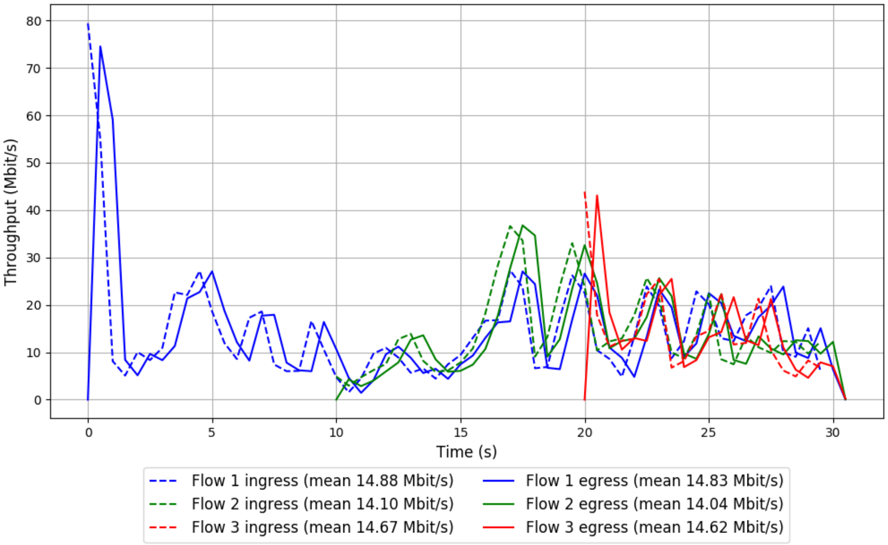


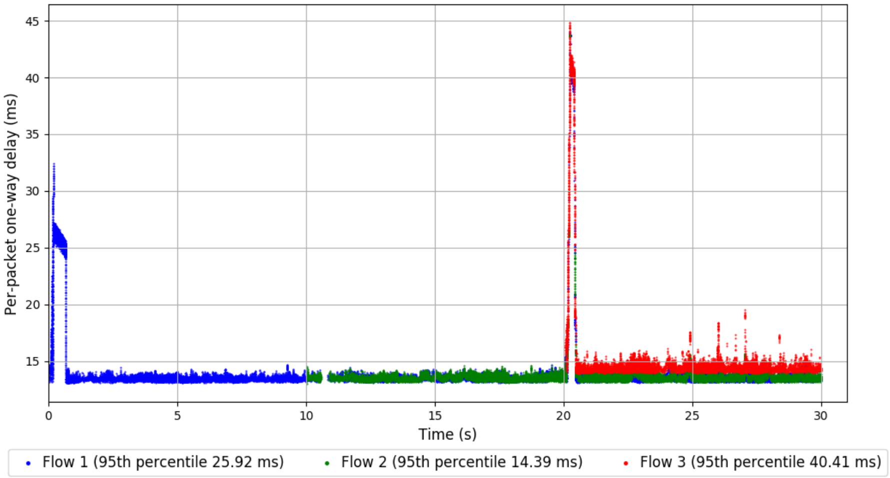
```
Run 2: Statistics of TCP Vegas

Start at: 2018-05-24 14:14:00
End at: 2018-05-24 14:14:30
Local clock offset: 0.563 ms
Remote clock offset: -2.874 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 29.04 Mbit/s
95th percentile per-packet one-way delay: 25.889 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 14.83 Mbit/s
95th percentile per-packet one-way delay: 25.917 ms
Loss rate: 0.33%
-- Flow 2:
Average throughput: 14.04 Mbit/s
95th percentile per-packet one-way delay: 14.387 ms
Loss rate: 0.46%
-- Flow 3:
Average throughput: 14.62 Mbit/s
95th percentile per-packet one-way delay: 40.407 ms
Loss rate: 0.32%
```

Run 2: Report of TCP Vegas — Data Link



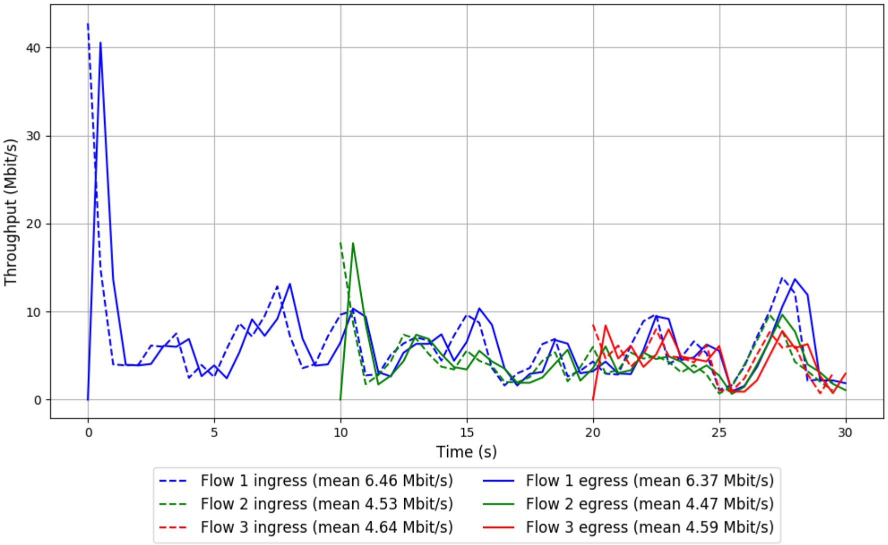


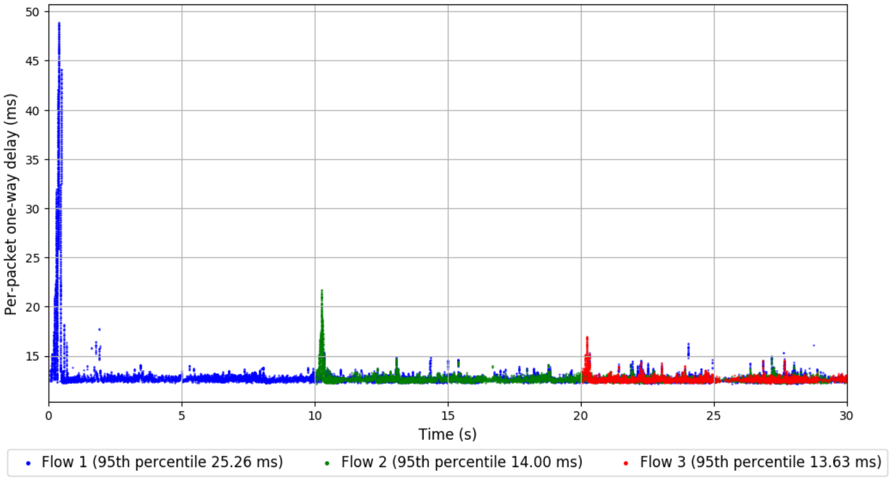
```
Run 3: Statistics of TCP Vegas

Start at: 2018-05-24 14:32:28
End at: 2018-05-24 14:32:58
Local clock offset: 1.395 ms
Remote clock offset: 2.164 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.87 Mbit/s
95th percentile per-packet one-way delay: 17.208 ms
Loss rate: 1.30%
-- Flow 1:
Average throughput: 6.37 Mbit/s
95th percentile per-packet one-way delay: 25.264 ms
Loss rate: 1.46%
-- Flow 2:
Average throughput: 4.47 Mbit/s
95th percentile per-packet one-way delay: 14.000 ms
Loss rate: 1.14%
-- Flow 3:
Average throughput: 4.59 Mbit/s
95th percentile per-packet one-way delay: 13.628 ms
Loss rate: 0.94%
```

Run 3: Report of TCP Vegas — Data Link



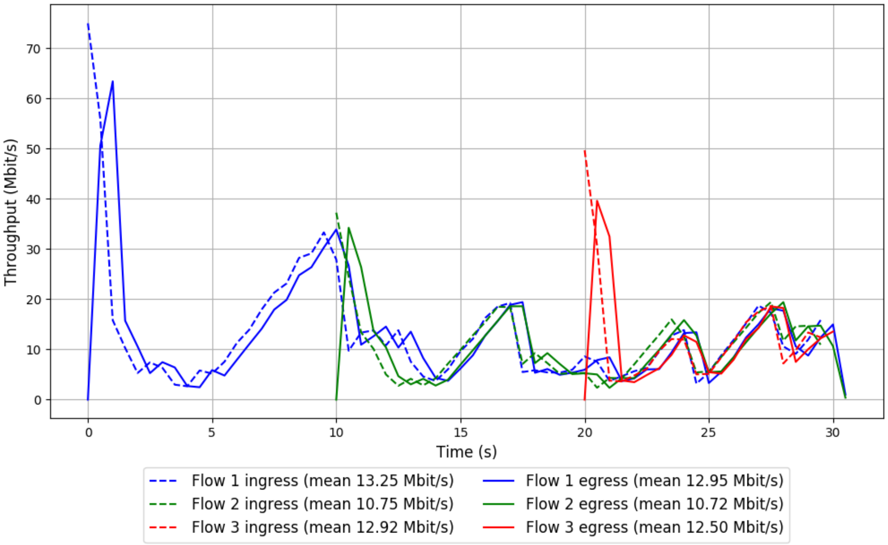


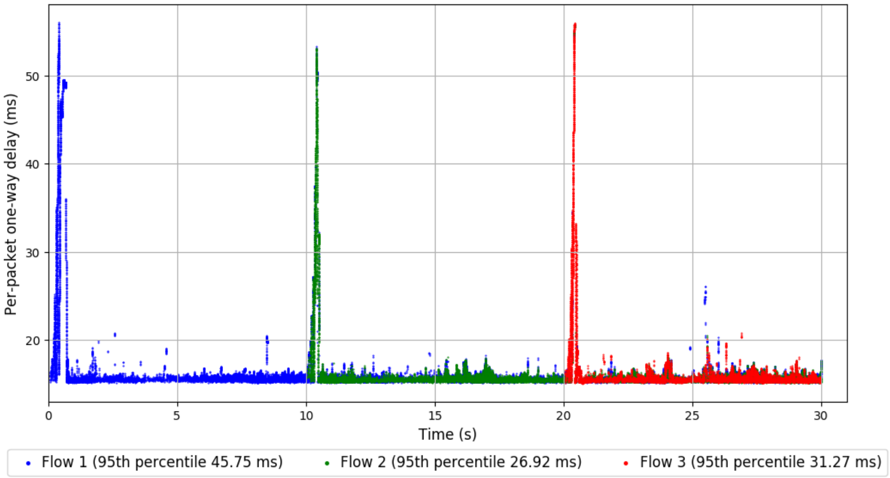
```
Run 4: Statistics of TCP Vegas

Start at: 2018-05-24 14:51:04
End at: 2018-05-24 14:51:34
Local clock offset: -0.945 ms
Remote clock offset: 4.163 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 24.24 Mbit/s
95th percentile per-packet one-way delay: 38.976 ms
Loss rate: 1.82%
-- Flow 1:
Average throughput: 12.95 Mbit/s
95th percentile per-packet one-way delay: 45.754 ms
Loss rate: 2.24%
-- Flow 2:
Average throughput: 10.72 Mbit/s
95th percentile per-packet one-way delay: 26.917 ms
Loss rate: 0.22%
-- Flow 3:
Average throughput: 12.50 Mbit/s
95th percentile per-packet one-way delay: 31.274 ms
Loss rate: 3.23%
```

Run 4: Report of TCP Vegas — Data Link



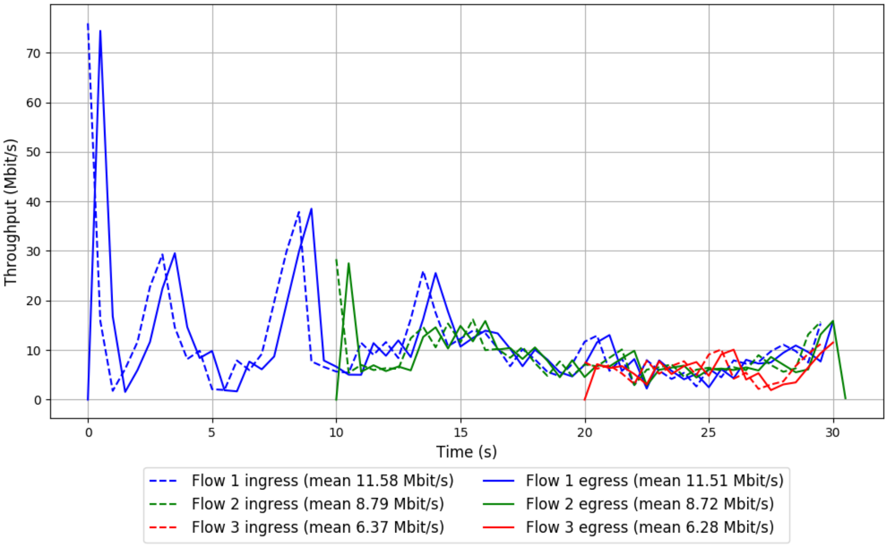


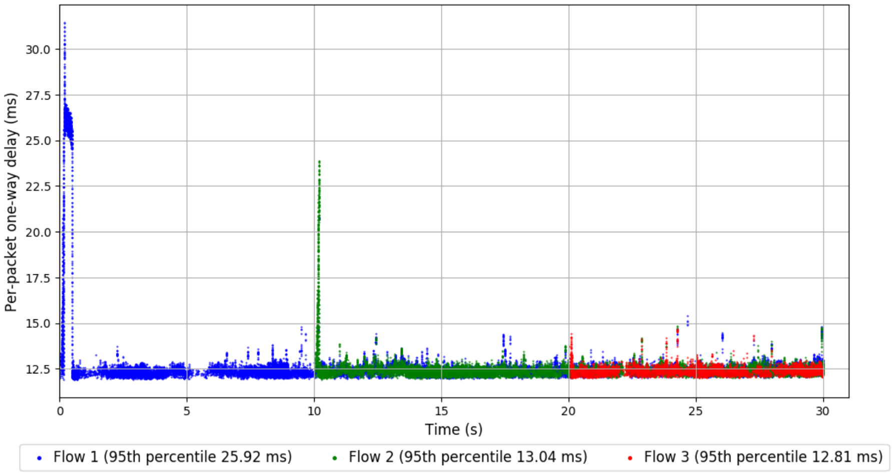
```
Run 5: Statistics of TCP Vegas

Start at: 2018-05-24 15:09:14
End at: 2018-05-24 15:09:44
Local clock offset: 1.086 ms
Remote clock offset: -4.524 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 19.39 Mbit/s
95th percentile per-packet one-way delay: 25.043 ms
Loss rate: 0.78%
-- Flow 1:
Average throughput: 11.51 Mbit/s
95th percentile per-packet one-way delay: 25.916 ms
Loss rate: 0.66%
-- Flow 2:
Average throughput: 8.72 Mbit/s
95th percentile per-packet one-way delay: 13.044 ms
Loss rate: 0.79%
-- Flow 3:
Average throughput: 6.28 Mbit/s
95th percentile per-packet one-way delay: 12.810 ms
Loss rate: 1.38%
```

Run 5: Report of TCP Vegas — Data Link



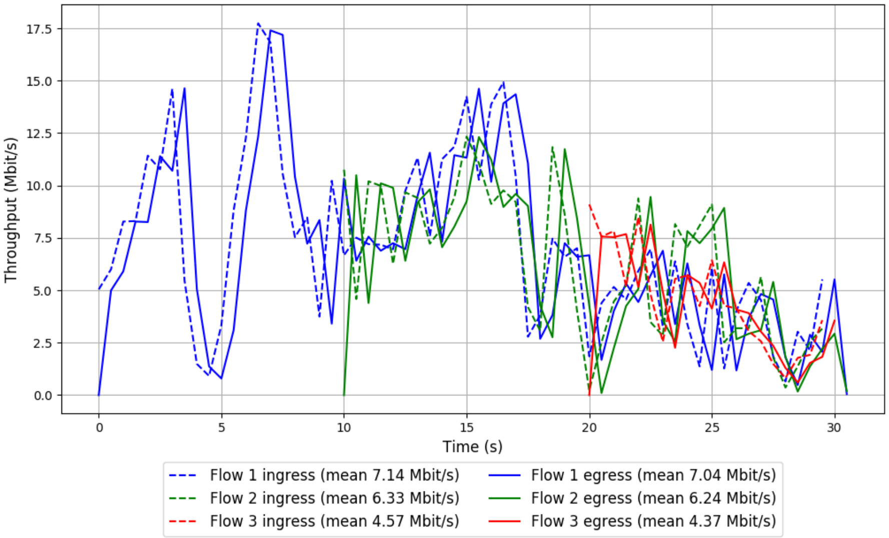


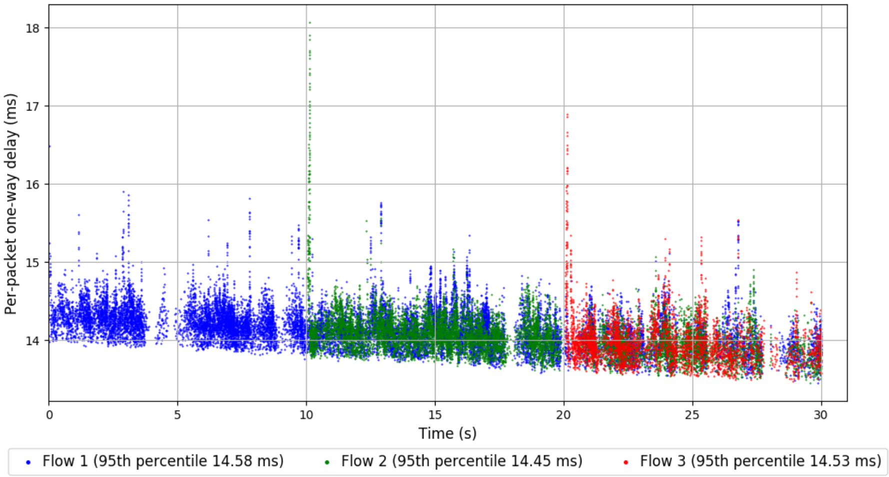
```
Run 6: Statistics of TCP Vegas

Start at: 2018-05-24 15:27:43
End at: 2018-05-24 15:28:13
Local clock offset: -0.842 ms
Remote clock offset: -5.522 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 12.65 Mbit/s
95th percentile per-packet one-way delay: 14.539 ms
Loss rate: 1.80%
-- Flow 1:
Average throughput: 7.04 Mbit/s
95th percentile per-packet one-way delay: 14.576 ms
Loss rate: 1.37%
-- Flow 2:
Average throughput: 6.24 Mbit/s
95th percentile per-packet one-way delay: 14.445 ms
Loss rate: 1.56%
-- Flow 3:
Average throughput: 4.37 Mbit/s
95th percentile per-packet one-way delay: 14.529 ms
Loss rate: 4.46%
```

Run 6: Report of TCP Vegas — Data Link



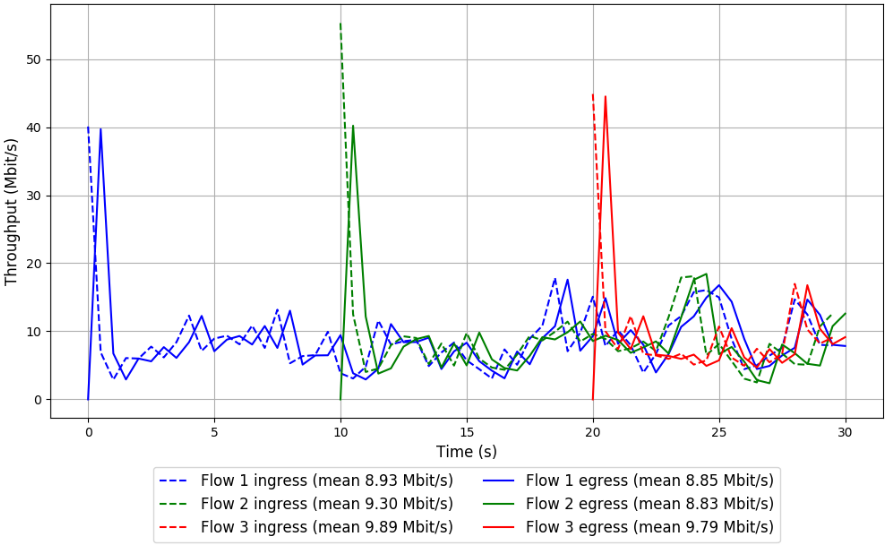


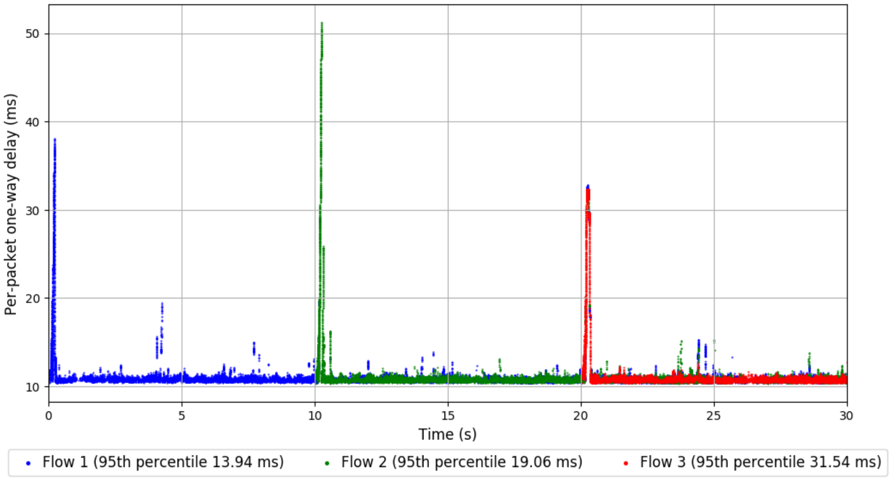
```
Run 7: Statistics of TCP Vegas

Start at: 2018-05-24 15:45:53
End at: 2018-05-24 15:46:23
Local clock offset: 1.226 ms
Remote clock offset: 1.306 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 17.98 Mbit/s
95th percentile per-packet one-way delay: 20.915 ms
Loss rate: 2.33%
-- Flow 1:
Average throughput: 8.85 Mbit/s
95th percentile per-packet one-way delay: 13.936 ms
Loss rate: 0.98%
-- Flow 2:
Average throughput: 8.83 Mbit/s
95th percentile per-packet one-way delay: 19.060 ms
Loss rate: 5.02%
-- Flow 3:
Average throughput: 9.79 Mbit/s
95th percentile per-packet one-way delay: 31.539 ms
Loss rate: 0.95%
```

Run 7: Report of TCP Vegas — Data Link



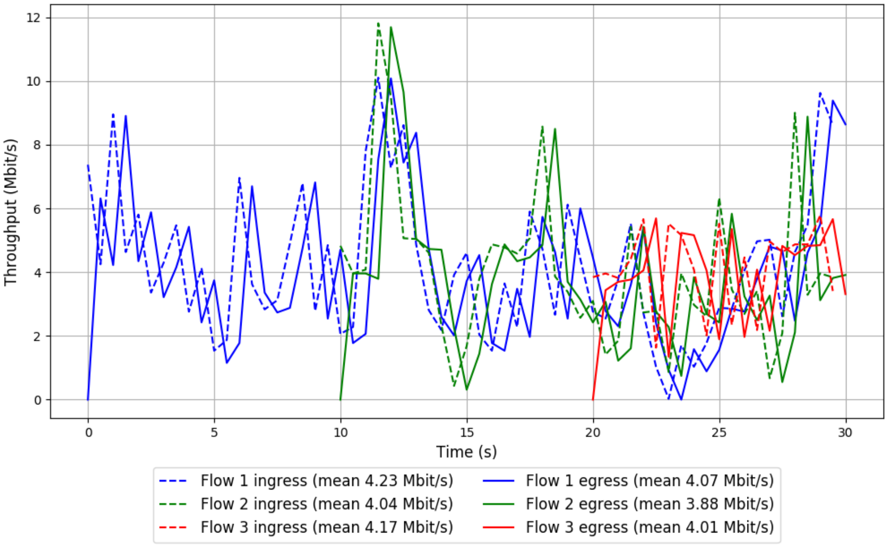


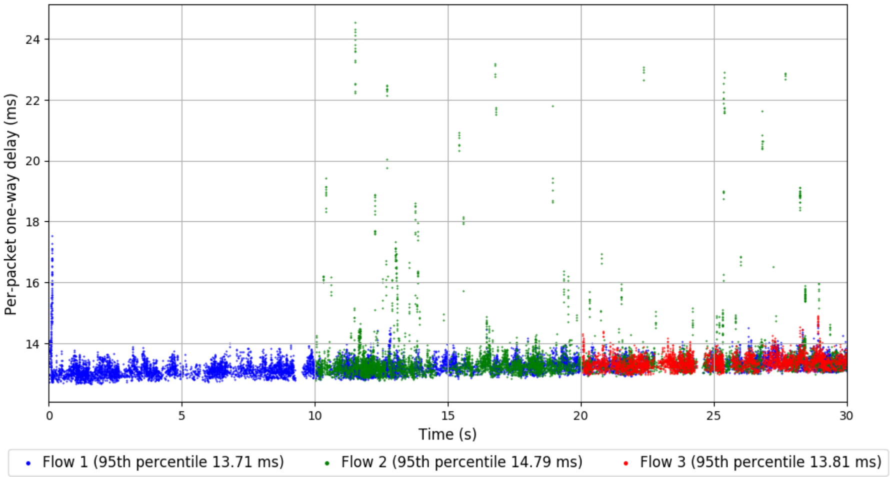
```
Run 8: Statistics of TCP Vegas

Start at: 2018-05-24 16:04:05
End at: 2018-05-24 16:04:35
Local clock offset: 0.002 ms
Remote clock offset: 0.111 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.98 Mbit/s
95th percentile per-packet one-way delay: 13.877 ms
Loss rate: 3.93%
-- Flow 1:
Average throughput: 4.07 Mbit/s
95th percentile per-packet one-way delay: 13.712 ms
Loss rate: 3.86%
-- Flow 2:
Average throughput: 3.88 Mbit/s
95th percentile per-packet one-way delay: 14.787 ms
Loss rate: 4.05%
-- Flow 3:
Average throughput: 4.01 Mbit/s
95th percentile per-packet one-way delay: 13.811 ms
Loss rate: 3.92%
```

Run 8: Report of TCP Vegas — Data Link



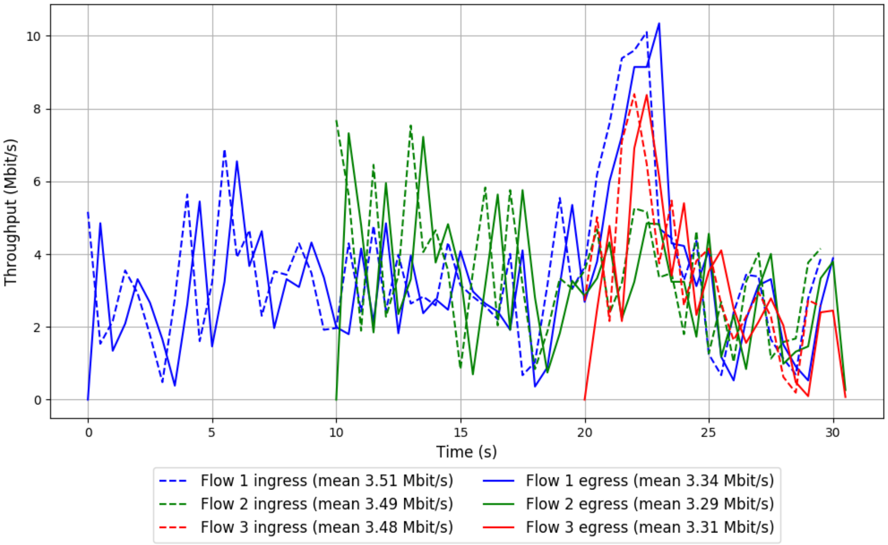


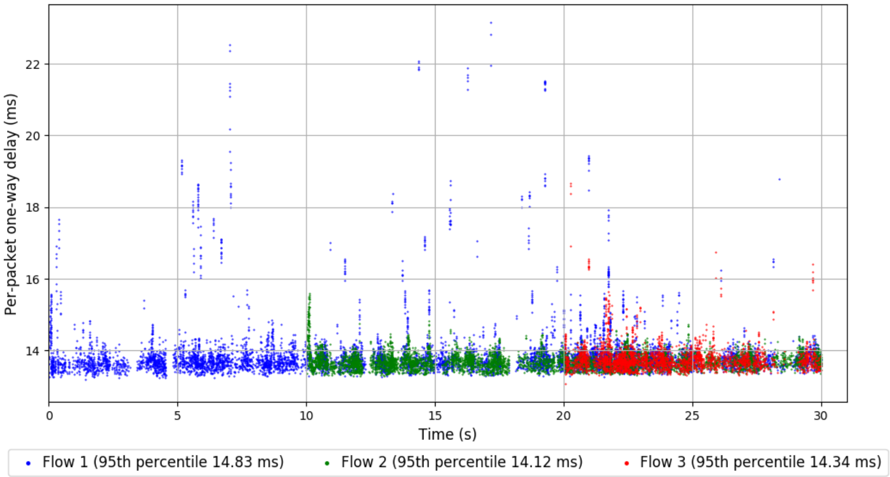
```
Run 9: Statistics of TCP Vegas

Start at: 2018-05-24 16:22:23
End at: 2018-05-24 16:22:53
Local clock offset: 0.691 ms
Remote clock offset: -6.338 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.63 Mbit/s
95th percentile per-packet one-way delay: 14.405 ms
Loss rate: 5.12%
-- Flow 1:
Average throughput: 3.34 Mbit/s
95th percentile per-packet one-way delay: 14.832 ms
Loss rate: 4.86%
-- Flow 2:
Average throughput: 3.29 Mbit/s
95th percentile per-packet one-way delay: 14.122 ms
Loss rate: 5.59%
-- Flow 3:
Average throughput: 3.31 Mbit/s
95th percentile per-packet one-way delay: 14.342 ms
Loss rate: 4.94%
```

Run 9: Report of TCP Vegas — Data Link



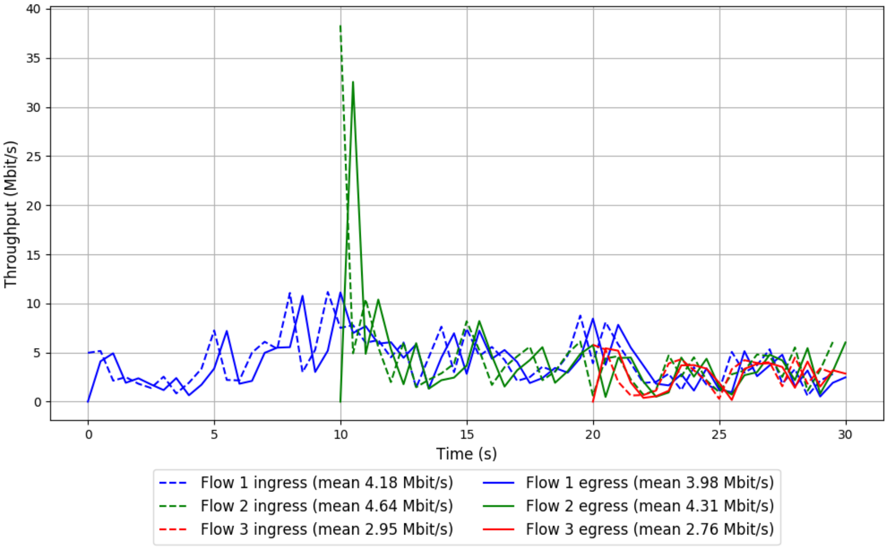


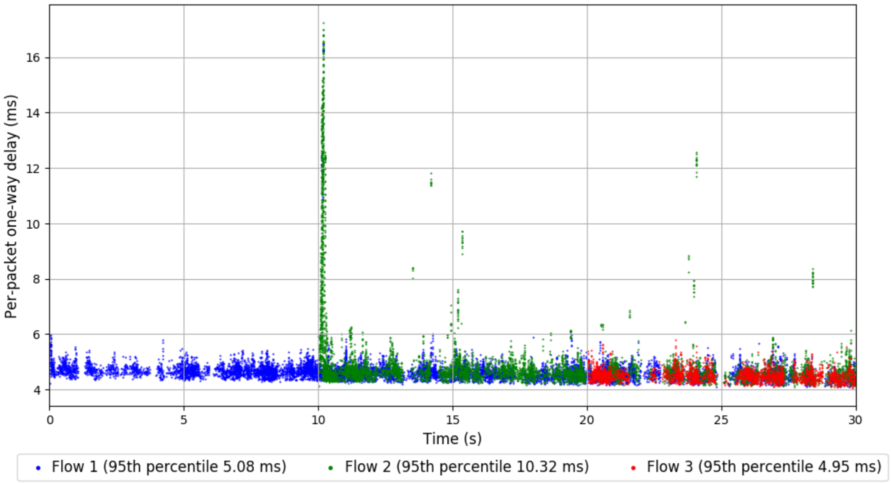
```
Run 10: Statistics of TCP Vegas

Start at: 2018-05-24 16:40:38
End at: 2018-05-24 16:41:08
Local clock offset: 1.453 ms
Remote clock offset: -11.265 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.76 Mbit/s
95th percentile per-packet one-way delay: 5.621 ms
Loss rate: 5.85%
-- Flow 1:
Average throughput: 3.98 Mbit/s
95th percentile per-packet one-way delay: 5.075 ms
Loss rate: 4.84%
-- Flow 2:
Average throughput: 4.31 Mbit/s
95th percentile per-packet one-way delay: 10.322 ms
Loss rate: 7.02%
-- Flow 3:
Average throughput: 2.76 Mbit/s
95th percentile per-packet one-way delay: 4.946 ms
Loss rate: 6.47%
```

Run 10: Report of TCP Vegas — Data Link





```
Run 1: Statistics of Verus

Start at: 2018-05-24 13:52:30
End at: 2018-05-24 13:53:00
Local clock offset: 1.069 ms
Remote clock offset: 2.863 ms
```

Run 1: Report of Verus — Data Link

Figure is missing

Figure is missing

```
Run 2: Statistics of Verus

Start at: 2018-05-24 14:10:36
End at: 2018-05-24 14:11:06
Local clock offset: 0.929 ms
Remote clock offset: -3.93 ms
```

Run 2: Report of Verus — Data Link

Figure is missing

Figure is missing

```
Run 3: Statistics of Verus

Start at: 2018-05-24 14:28:44
End at: 2018-05-24 14:29:14
Local clock offset: -1.048 ms
Remote clock offset: -0.01 ms
```

Run 3: Report of Verus — Data Link

Figure is missing

Figure is missing

```
Run 4: Statistics of Verus

Start at: 2018-05-24 14:47:26
End at: 2018-05-24 14:47:56
Local clock offset: -0.328 ms
Remote clock offset: 3.566 ms
```

Run 4: Report of Verus — Data Link

Figure is missing

Figure is missing

```
Run 5: Statistics of Verus

Start at: 2018-05-24 15:05:49
End at: 2018-05-24 15:06:19
Local clock offset: 1.6 ms
Remote clock offset: -5.307 ms
```

Run 5: Report of Verus — Data Link

Figure is missing

Figure is missing

```
Run 6: Statistics of Verus

Start at: 2018-05-24 15:24:16
End at: 2018-05-24 15:24:46
Local clock offset: -0.14 ms
Remote clock offset: -5.204 ms
```

Run 6: Report of Verus — Data Link

Figure is missing

Figure is missing

```
Run 7: Statistics of Verus

Start at: 2018-05-24 15:42:21
End at: 2018-05-24 15:42:51
Local clock offset: -0.603 ms
Remote clock offset: 2.583 ms
```

Run 7: Report of Verus — Data Link

Figure is missing

Figure is missing

```
Run 8: Statistics of Verus

Start at: 2018-05-24 16:00:37
End at: 2018-05-24 16:01:07
Local clock offset: 0.045 ms
Remote clock offset: 3.166 ms
```

Run 8: Report of Verus — Data Link

Figure is missing

Figure is missing

```
Run 9: Statistics of Verus

Start at: 2018-05-24 16:18:51
End at: 2018-05-24 16:19:21
Local clock offset: 1.559 ms
Remote clock offset: -6.58 ms
```

Run 9: Report of Verus — Data Link

Figure is missing

Figure is missing

```
Run 10: Statistics of Verus

Start at: 2018-05-24 16:37:06
End at: 2018-05-24 16:37:36
Local clock offset: -0.565 ms
Remote clock offset: -6.24 ms
```

Run 10: Report of Verus — Data Link

Figure is missing

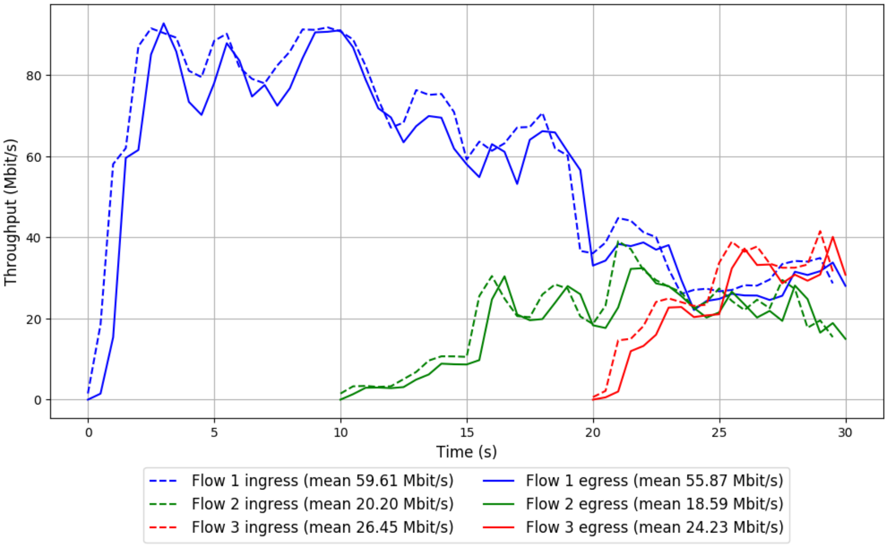
Figure is missing

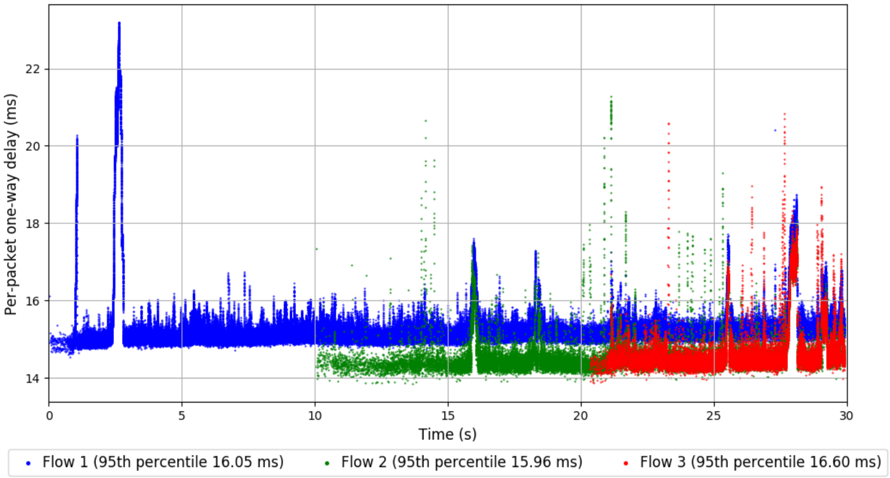
```
Run 1: Statistics of PCC-Vivace

Start at: 2018-05-24 13:53:34
End at: 2018-05-24 13:54:04
Local clock offset: -0.419 ms
Remote clock offset: 2.7 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 76.23 Mbit/s
95th percentile per-packet one-way delay: 16.080 ms
Loss rate: 6.80%
-- Flow 1:
Average throughput: 55.87 Mbit/s
95th percentile per-packet one-way delay: 16.045 ms
Loss rate: 6.29%
-- Flow 2:
Average throughput: 18.59 Mbit/s
95th percentile per-packet one-way delay: 15.963 ms
Loss rate: 8.00%
-- Flow 3:
Average throughput: 24.23 Mbit/s
95th percentile per-packet one-way delay: 16.600 ms
Loss rate: 8.41%
```

Run 1: Report of PCC-Vivace — Data Link



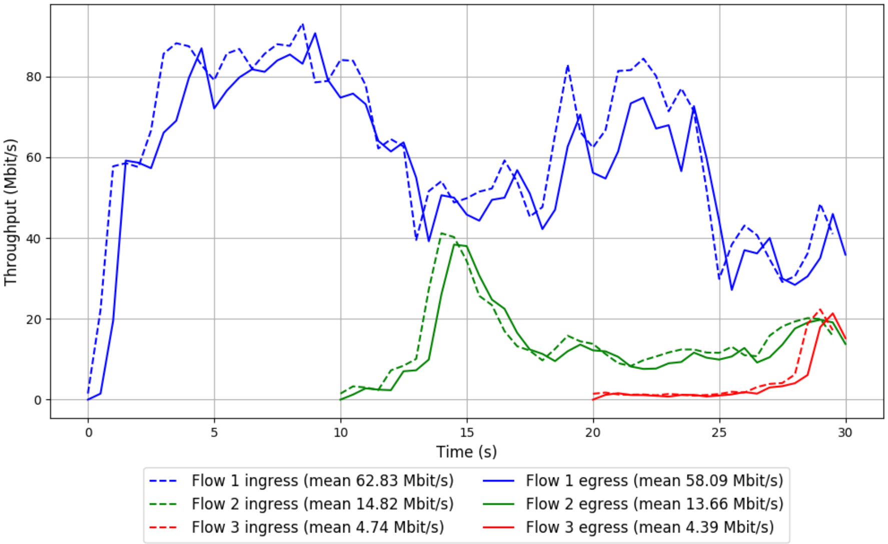


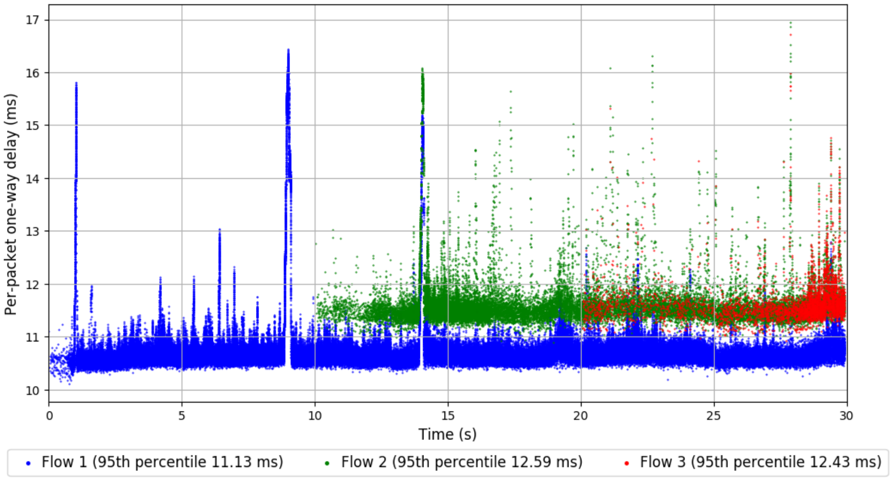
```
Run 2: Statistics of PCC-Vivace

Start at: 2018-05-24 14:11:40
End at: 2018-05-24 14:12:10
Local clock offset: 3.083 ms
Remote clock offset: -2.722 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 68.62 Mbit/s
95th percentile per-packet one-way delay: 11.785 ms
Loss rate: 7.58%
-- Flow 1:
Average throughput: 58.09 Mbit/s
95th percentile per-packet one-way delay: 11.130 ms
Loss rate: 7.55%
-- Flow 2:
Average throughput: 13.66 Mbit/s
95th percentile per-packet one-way delay: 12.594 ms
Loss rate: 7.81%
-- Flow 3:
Average throughput: 4.39 Mbit/s
95th percentile per-packet one-way delay: 12.429 ms
Loss rate: 7.47%
```

Run 2: Report of PCC-Vivace — Data Link



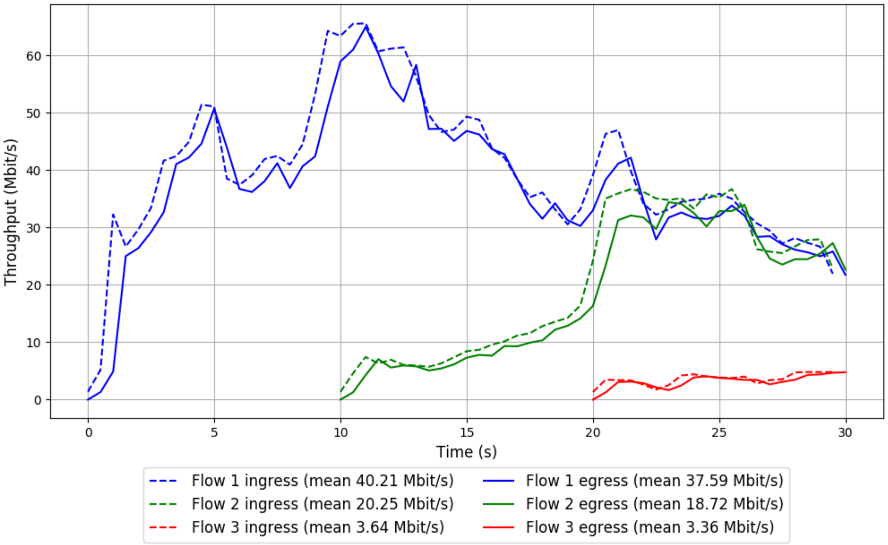


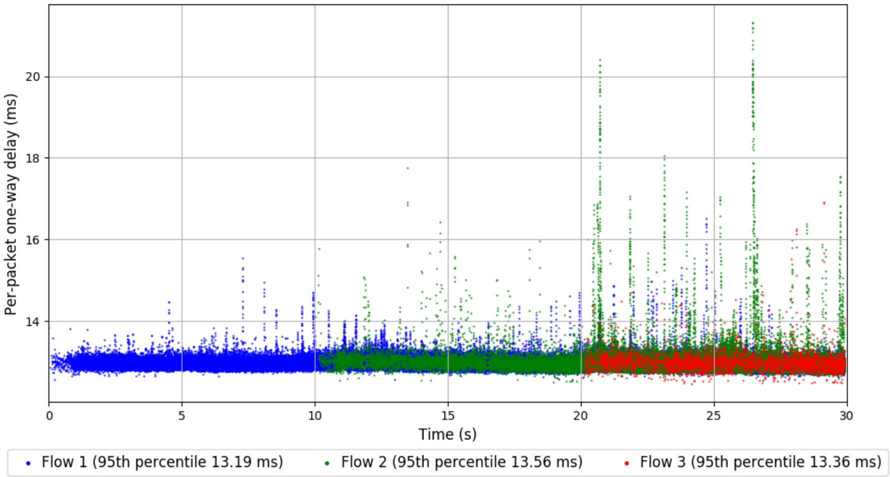
```
Run 3: Statistics of PCC-Vivace

Start at: 2018-05-24 14:29:49
End at: 2018-05-24 14:30:19
Local clock offset: -1.316 ms
Remote clock offset: -0.484 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 51.15 Mbit/s
95th percentile per-packet one-way delay: 13.246 ms
Loss rate: 6.80%
-- Flow 1:
Average throughput: 37.59 Mbit/s
95th percentile per-packet one-way delay: 13.190 ms
Loss rate: 6.52%
-- Flow 2:
Average throughput: 18.72 Mbit/s
95th percentile per-packet one-way delay: 13.561 ms
Loss rate: 7.56%
-- Flow 3:
Average throughput: 3.36 Mbit/s
95th percentile per-packet one-way delay: 13.364 ms
Loss rate: 7.55%
```

Run 3: Report of PCC-Vivace — Data Link



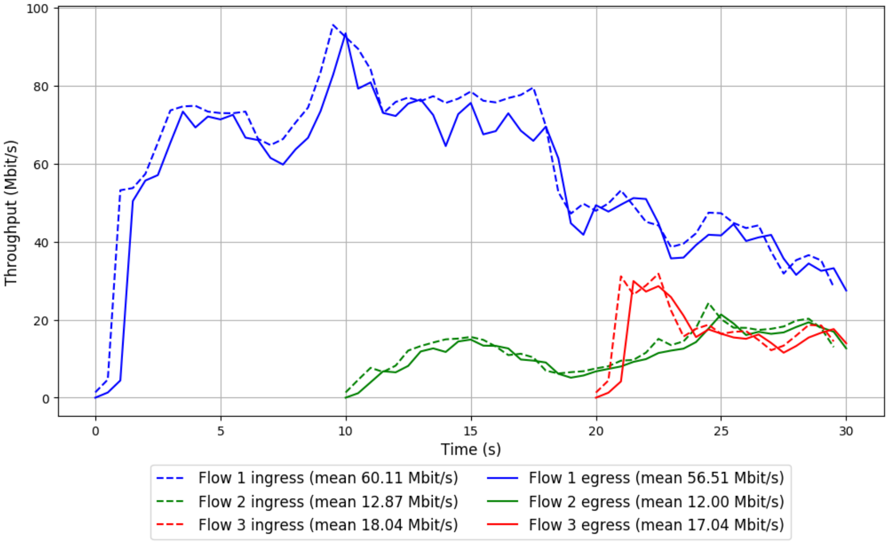


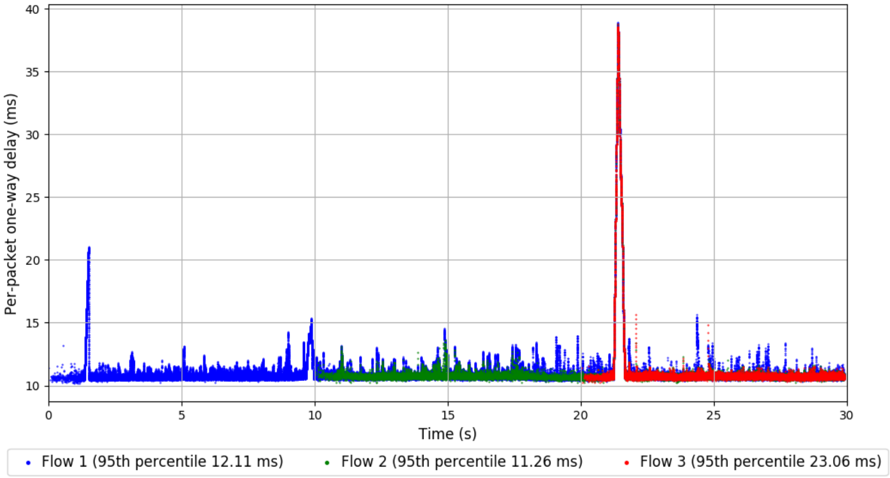
```
Run 4: Statistics of PCC-Vivace

Start at: 2018-05-24 14:48:31
End at: 2018-05-24 14:49:01
Local clock offset: 3.245 ms
Remote clock offset: 3.531 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 70.11 Mbit/s
95th percentile per-packet one-way delay: 12.088 ms
Loss rate: 6.05%
-- Flow 1:
Average throughput: 56.51 Mbit/s
95th percentile per-packet one-way delay: 12.113 ms
Loss rate: 6.00%
-- Flow 2:
Average throughput: 12.00 Mbit/s
95th percentile per-packet one-way delay: 11.261 ms
Loss rate: 6.78%
-- Flow 3:
Average throughput: 17.04 Mbit/s
95th percentile per-packet one-way delay: 23.064 ms
Loss rate: 5.53%
```

Run 4: Report of PCC-Vivace — Data Link



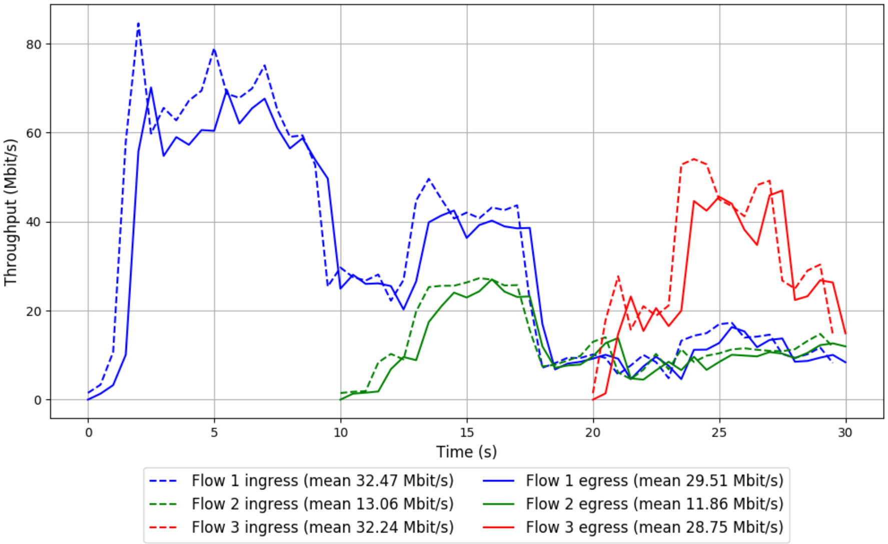


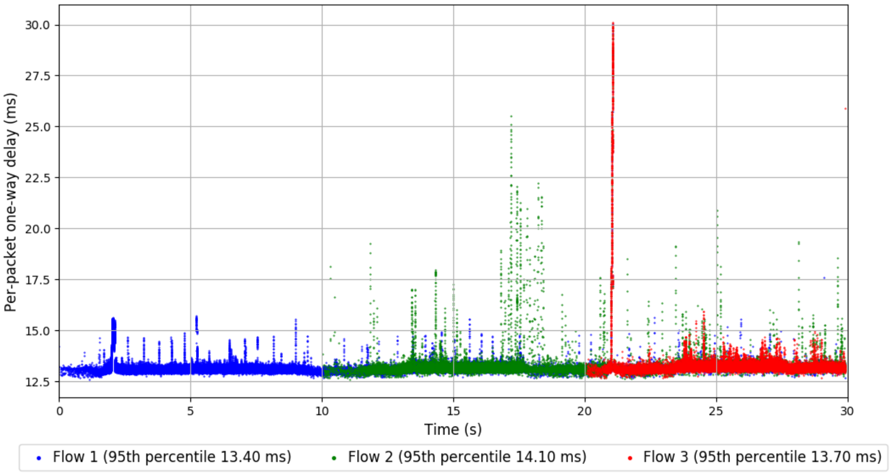
```
Run 5: Statistics of PCC-Vivace

Start at: 2018-05-24 15:06:53
End at: 2018-05-24 15:07:23
Local clock offset: 0.943 ms
Remote clock offset: -3.12 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 46.88 Mbit/s
95th percentile per-packet one-way delay: 13.520 ms
Loss rate: 9.45%
-- Flow 1:
Average throughput: 29.51 Mbit/s
95th percentile per-packet one-way delay: 13.399 ms
Loss rate: 9.10%
-- Flow 2:
Average throughput: 11.86 Mbit/s
95th percentile per-packet one-way delay: 14.100 ms
Loss rate: 9.19%
-- Flow 3:
Average throughput: 28.75 Mbit/s
95th percentile per-packet one-way delay: 13.696 ms
Loss rate: 10.72%
```

Run 5: Report of PCC-Vivace — Data Link



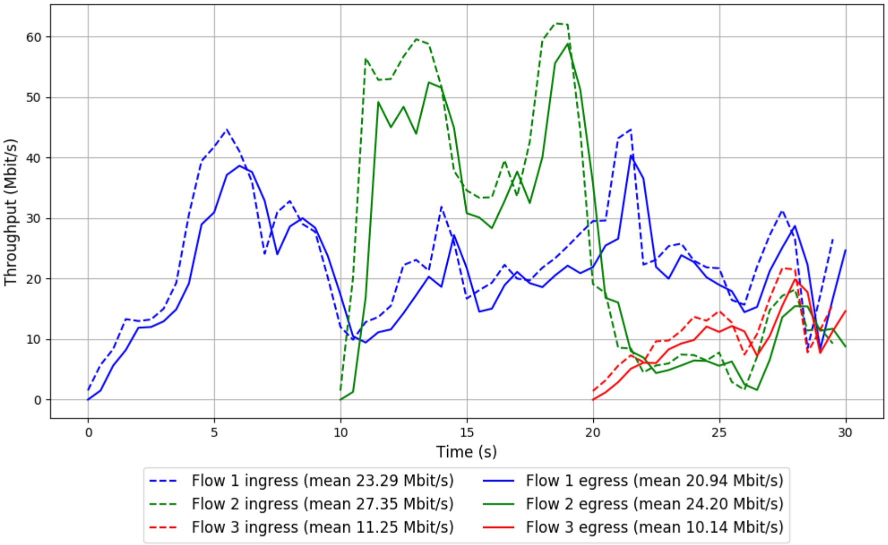


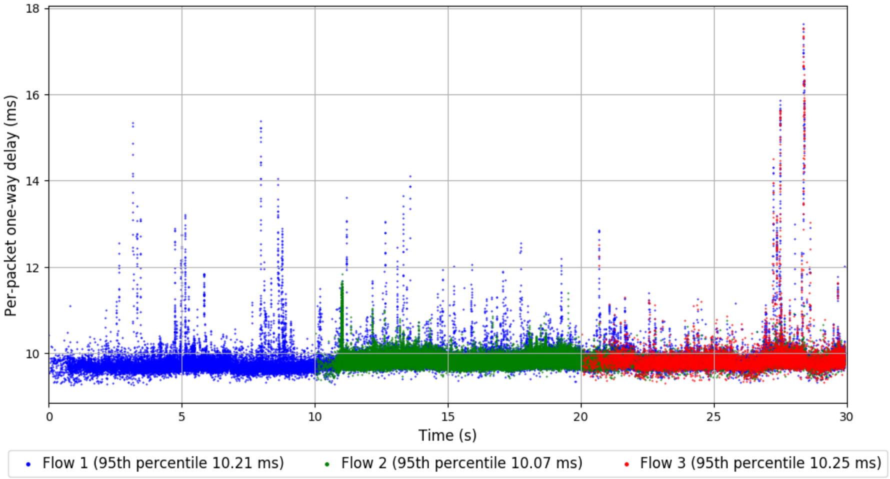
```
Run 6: Statistics of PCC-Vivace

Start at: 2018-05-24 15:25:21
End at: 2018-05-24 15:25:51
Local clock offset: 2.689 ms
Remote clock offset: -7.986 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 40.38 Mbit/s
95th percentile per-packet one-way delay: 10.138 ms
Loss rate: 10.65%
-- Flow 1:
Average throughput: 20.94 Mbit/s
95th percentile per-packet one-way delay: 10.208 ms
Loss rate: 10.11%
-- Flow 2:
Average throughput: 24.20 Mbit/s
95th percentile per-packet one-way delay: 10.072 ms
Loss rate: 11.50%
-- Flow 3:
Average throughput: 10.14 Mbit/s
95th percentile per-packet one-way delay: 10.251 ms
Loss rate: 9.85%
```

Run 6: Report of PCC-Vivace — Data Link



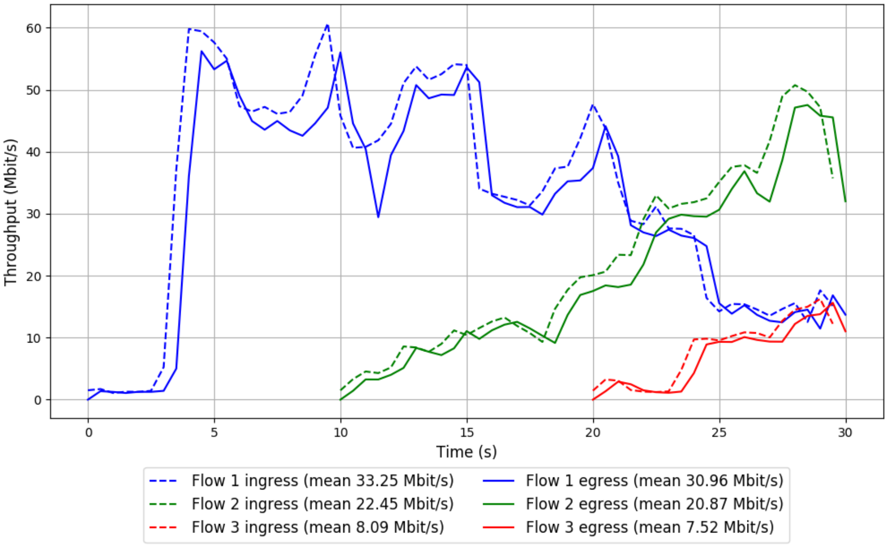


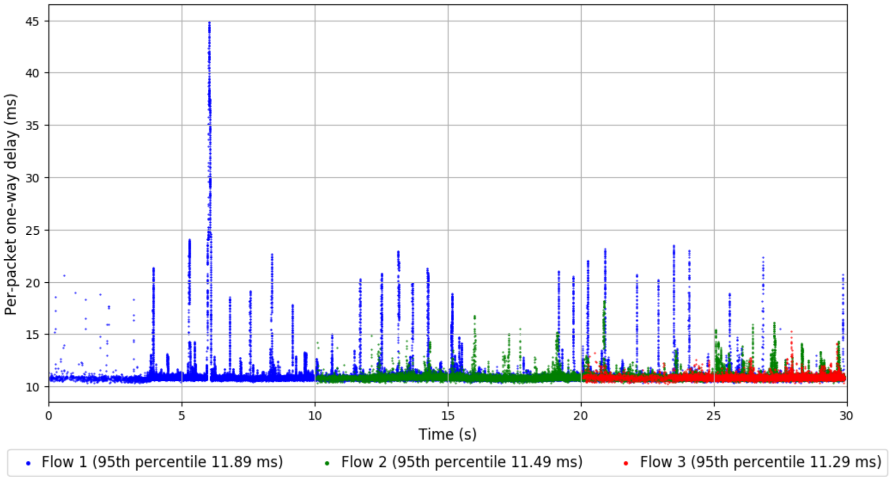
```
Run 7: Statistics of PCC-Vivace

Start at: 2018-05-24 15:43:32
End at: 2018-05-24 15:44:02
Local clock offset: 3.184 ms
Remote clock offset: 3.079 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 47.32 Mbit/s
95th percentile per-packet one-way delay: 11.646 ms
Loss rate: 6.96%
-- Flow 1:
Average throughput: 30.96 Mbit/s
95th percentile per-packet one-way delay: 11.891 ms
Loss rate: 6.90%
-- Flow 2:
Average throughput: 20.87 Mbit/s
95th percentile per-packet one-way delay: 11.492 ms
Loss rate: 7.07%
-- Flow 3:
Average throughput: 7.52 Mbit/s
95th percentile per-packet one-way delay: 11.290 ms
Loss rate: 7.11%
```

Run 7: Report of PCC-Vivace — Data Link



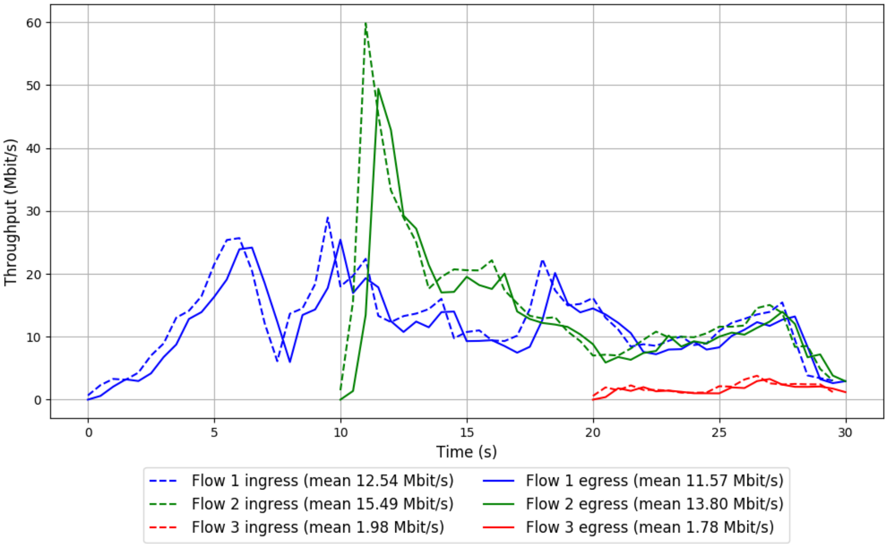


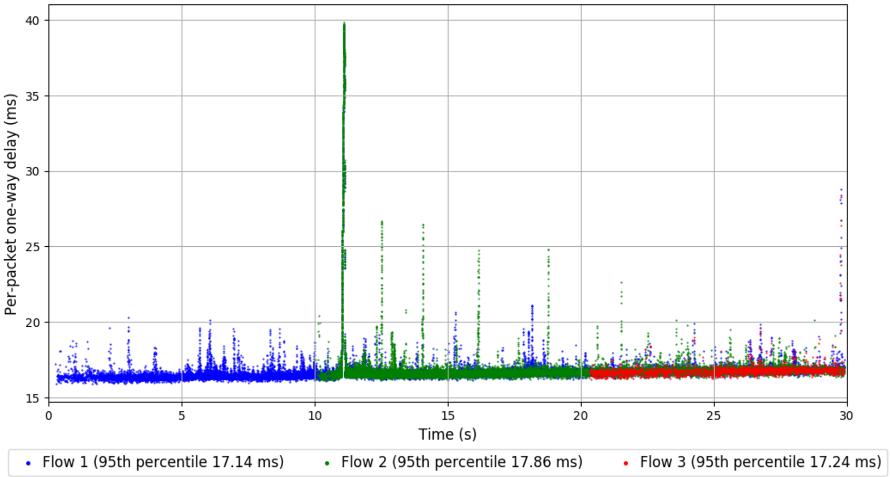
```
Run 8: Statistics of PCC-Vivace

Start at: 2018-05-24 16:01:42
End at: 2018-05-24 16:02:12
Local clock offset: -1.659 ms
Remote clock offset: 4.22 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 21.40 Mbit/s
95th percentile per-packet one-way delay: 17.337 ms
Loss rate: 9.67%
-- Flow 1:
Average throughput: 11.57 Mbit/s
95th percentile per-packet one-way delay: 17.137 ms
Loss rate: 8.52%
-- Flow 2:
Average throughput: 13.80 Mbit/s
95th percentile per-packet one-way delay: 17.856 ms
Loss rate: 10.91%
-- Flow 3:
Average throughput: 1.78 Mbit/s
95th percentile per-packet one-way delay: 17.242 ms
Loss rate: 12.32%
```

Run 8: Report of PCC-Vivace — Data Link



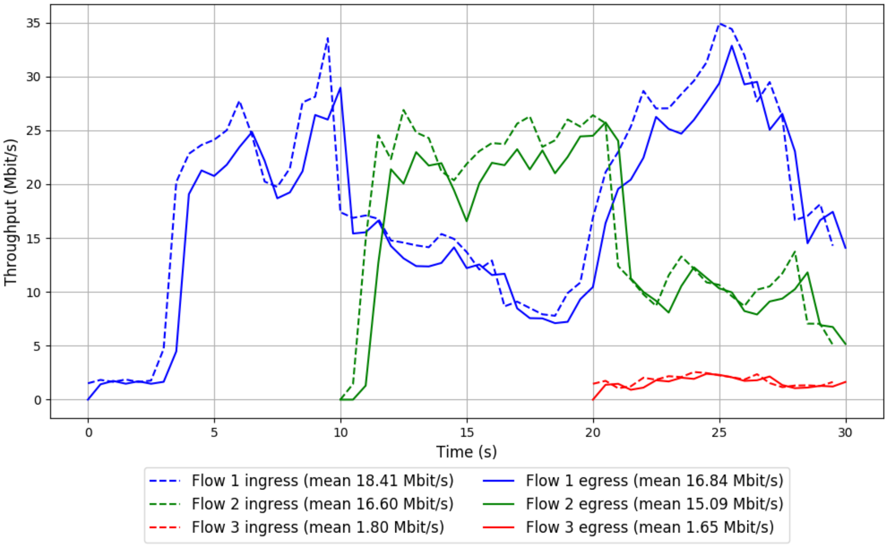


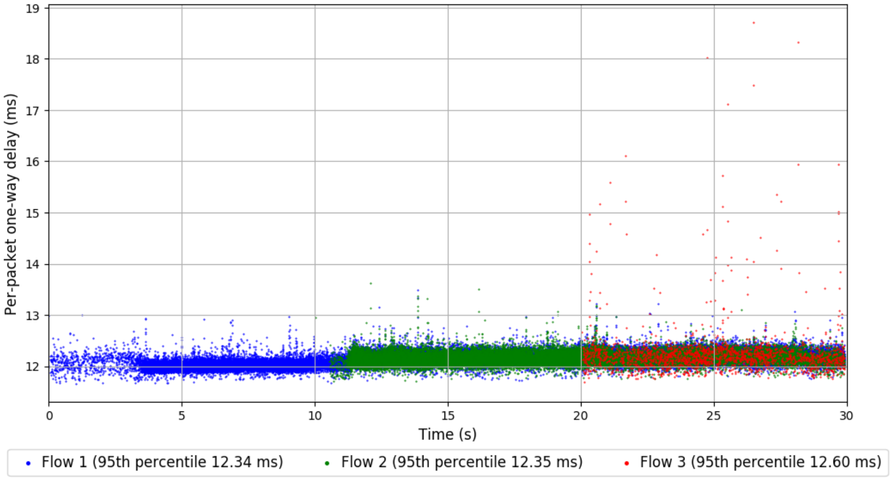
```
Run 9: Statistics of PCC-Vivace

Start at: 2018-05-24 16:19:56
End at: 2018-05-24 16:20:26
Local clock offset: 1.189 ms
Remote clock offset: -6.605 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 27.42 Mbit/s
95th percentile per-packet one-way delay: 12.348 ms
Loss rate: 8.73%
-- Flow 1:
Average throughput: 16.84 Mbit/s
95th percentile per-packet one-way delay: 12.343 ms
Loss rate: 8.52%
-- Flow 2:
Average throughput: 15.09 Mbit/s
95th percentile per-packet one-way delay: 12.346 ms
Loss rate: 9.08%
-- Flow 3:
Average throughput: 1.65 Mbit/s
95th percentile per-packet one-way delay: 12.604 ms
Loss rate: 8.55%
```

Run 9: Report of PCC-Vivace — Data Link



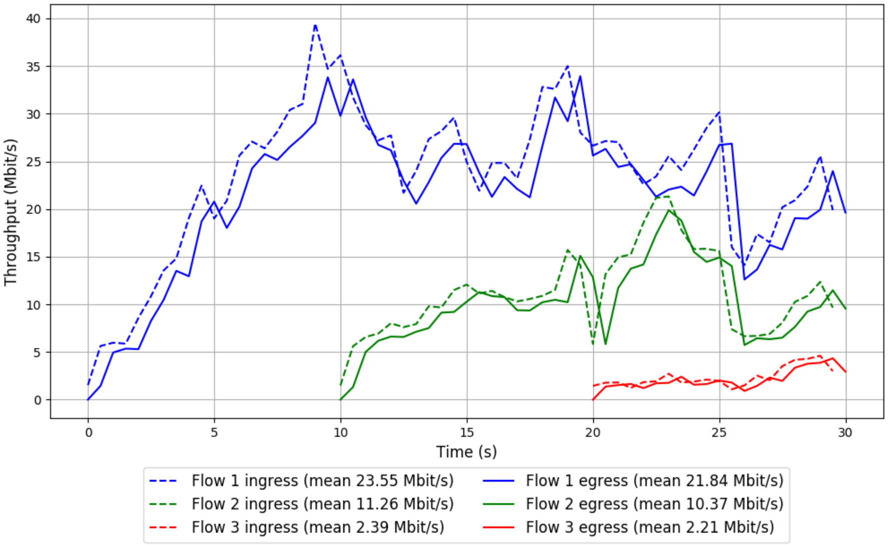


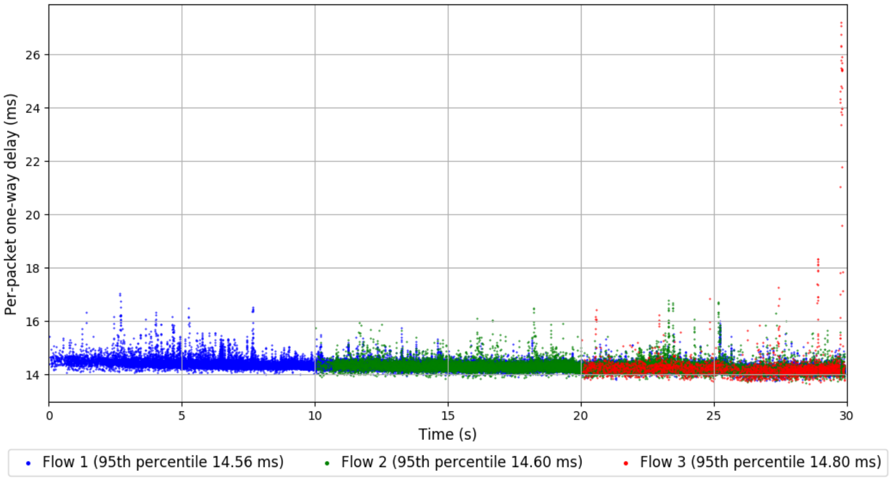
```
Run 10: Statistics of PCC-Vivace

Start at: 2018-05-24 16:38:11
End at: 2018-05-24 16:38:41
Local clock offset: -0.96 ms
Remote clock offset: -5.385 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 29.47 Mbit/s
95th percentile per-packet one-way delay: 14.567 ms
Loss rate: 7.43%
-- Flow 1:
Average throughput: 21.84 Mbit/s
95th percentile per-packet one-way delay: 14.556 ms
Loss rate: 7.28%
-- Flow 2:
Average throughput: 10.37 Mbit/s
95th percentile per-packet one-way delay: 14.599 ms
Loss rate: 7.89%
-- Flow 3:
Average throughput: 2.21 Mbit/s
95th percentile per-packet one-way delay: 14.805 ms
Loss rate: 7.80%
```

Run 10: Report of PCC-Vivace — Data Link



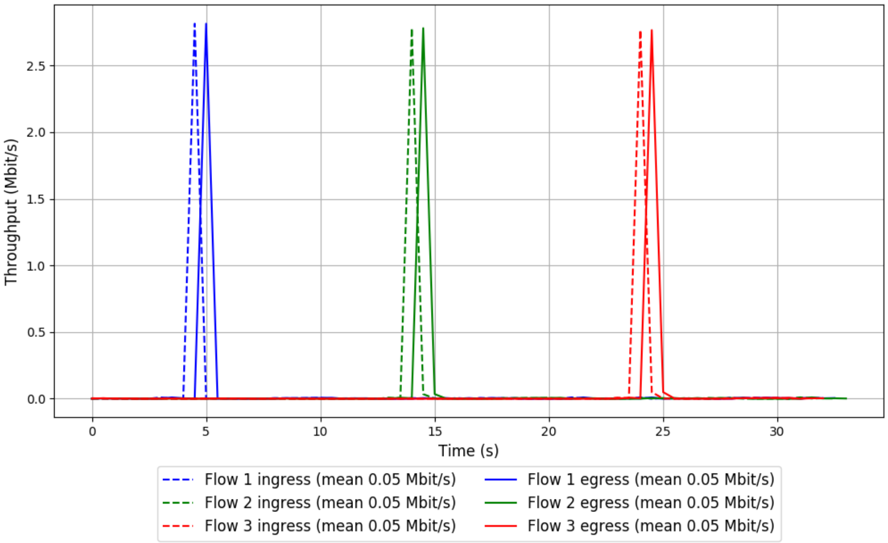


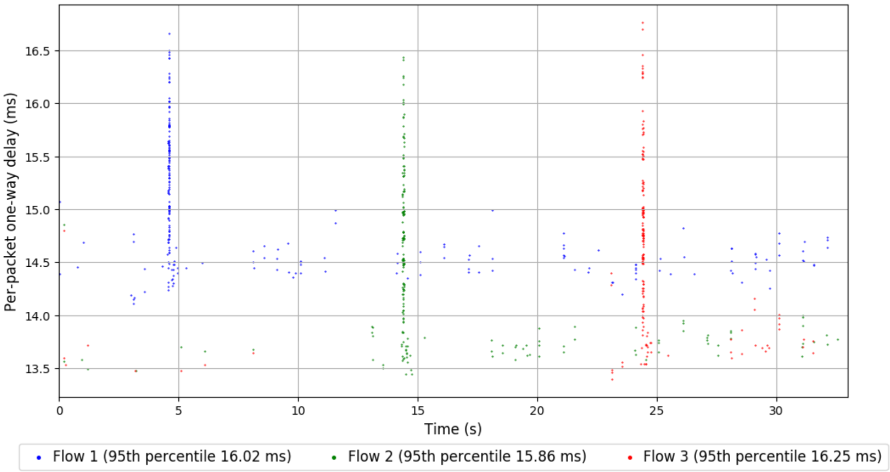
```
Run 1: Statistics of WebRTC media

Start at: 2018-05-24 14:08:25
End at: 2018-05-24 14:08:55
Local clock offset: 0.963 ms
Remote clock offset: -0.985 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 16.018 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 16.020 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 15.863 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 16.250 ms
Loss rate: 0.00%
```

Run 1: Report of WebRTC media — Data Link



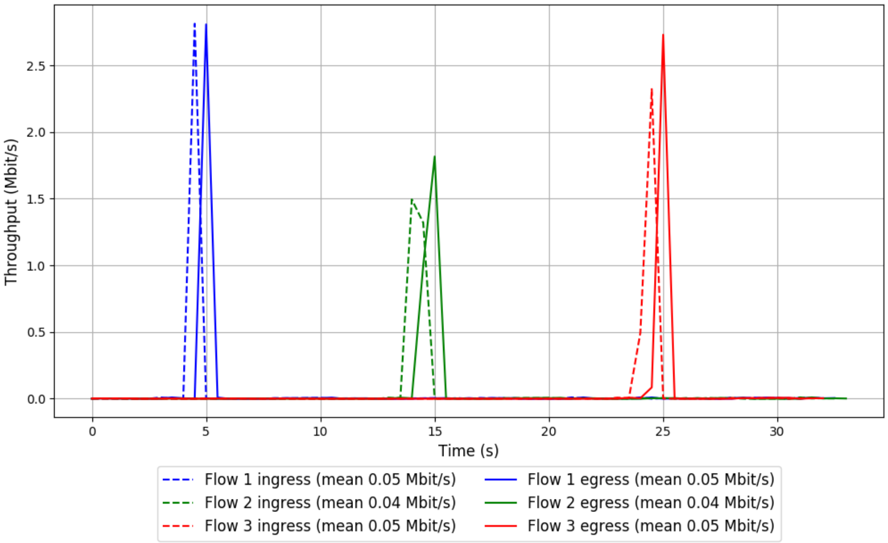


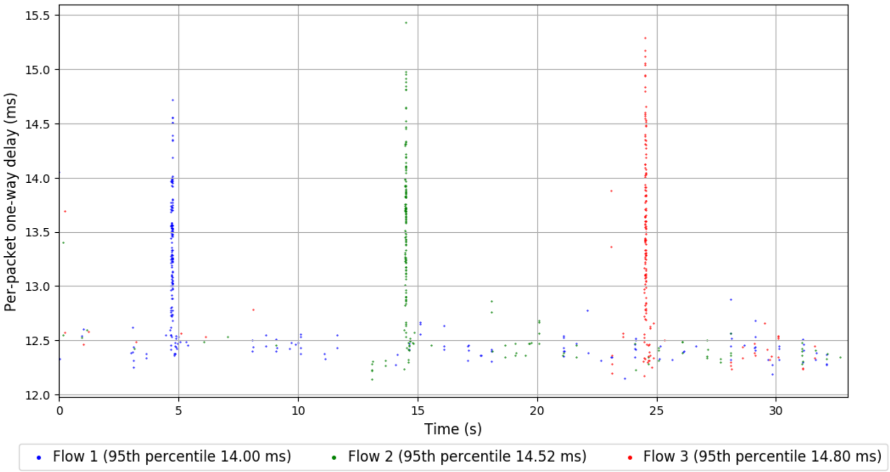
```
Run 2: Statistics of WebRTC media

Start at: 2018-05-24 14:26:31
End at: 2018-05-24 14:27:01
Local clock offset: 1.248 ms
Remote clock offset: 0.943 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 14.509 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 13.998 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 14.521 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 14.799 ms
Loss rate: 0.00%
```

Run 2: Report of WebRTC media — Data Link



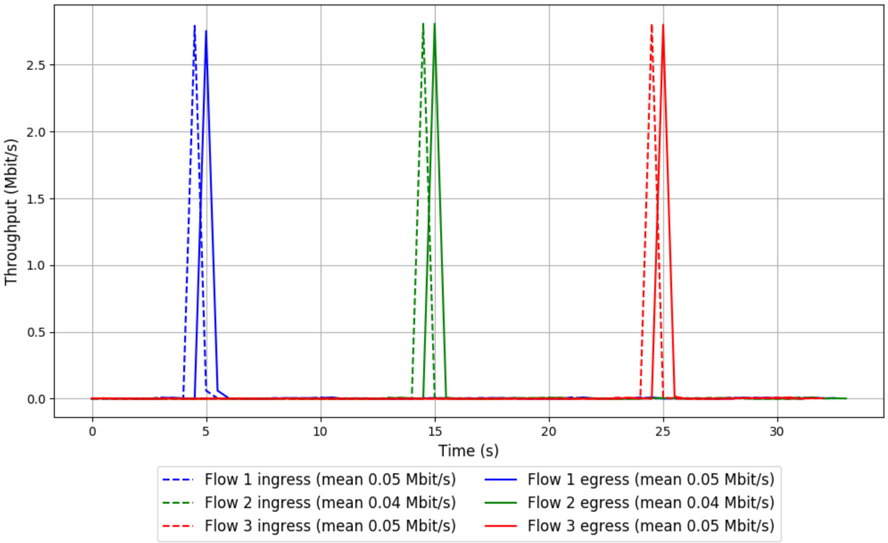


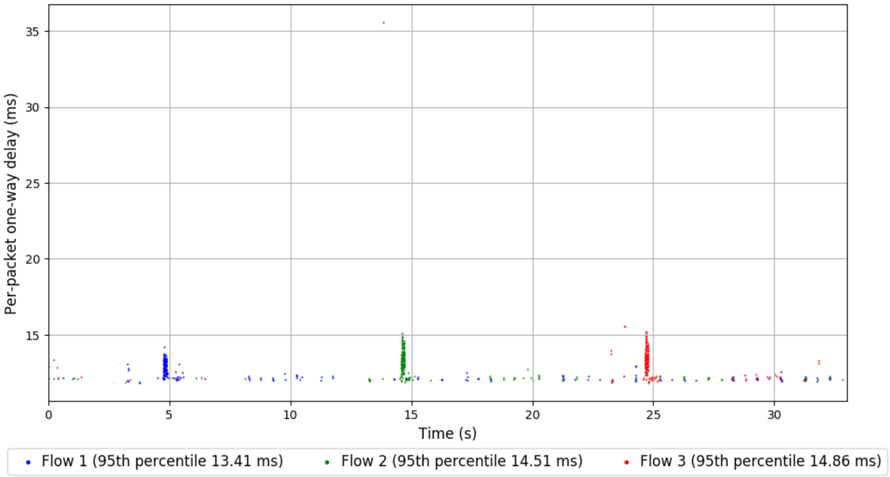
```
Run 3: Statistics of WebRTC media

Start at: 2018-05-24 14:45:12
End at: 2018-05-24 14:45:42
Local clock offset: 1.213 ms
Remote clock offset: 3.003 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 14.447 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 13.408 ms
Loss rate: 1.32%
-- Flow 2:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 14.505 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 14.861 ms
Loss rate: 0.00%
```

Run 3: Report of WebRTC media — Data Link



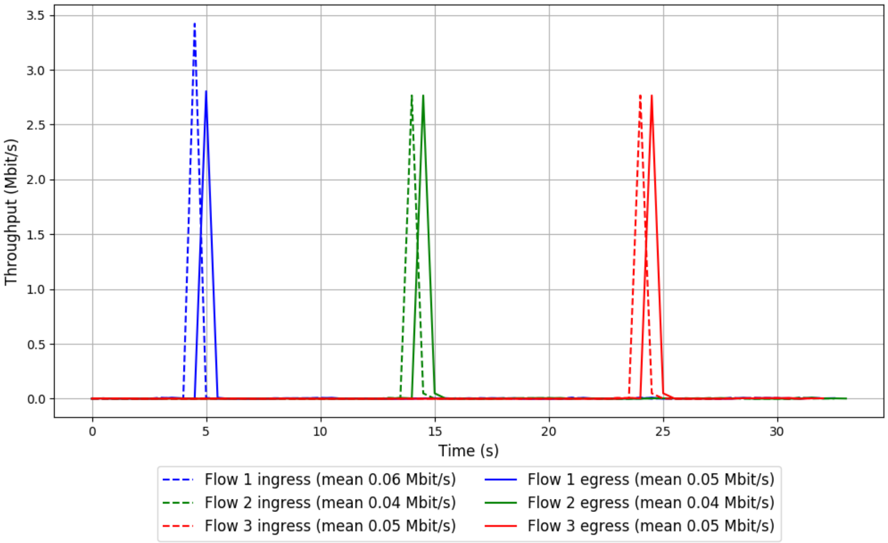


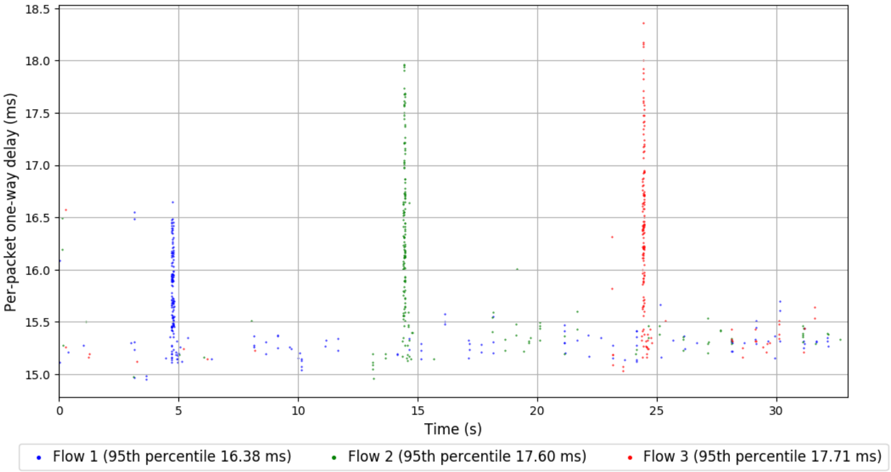
```
Run 4: Statistics of WebRTC media

Start at: 2018-05-24 15:03:38
End at: 2018-05-24 15:04:08
Local clock offset: -7.689 ms
Remote clock offset: -8.534 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 17.480 ms
Loss rate: 6.59%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 16.376 ms
Loss rate: 17.15%
-- Flow 2:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 17.601 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 17.713 ms
Loss rate: 0.00%
```

Run 4: Report of WebRTC media — Data Link



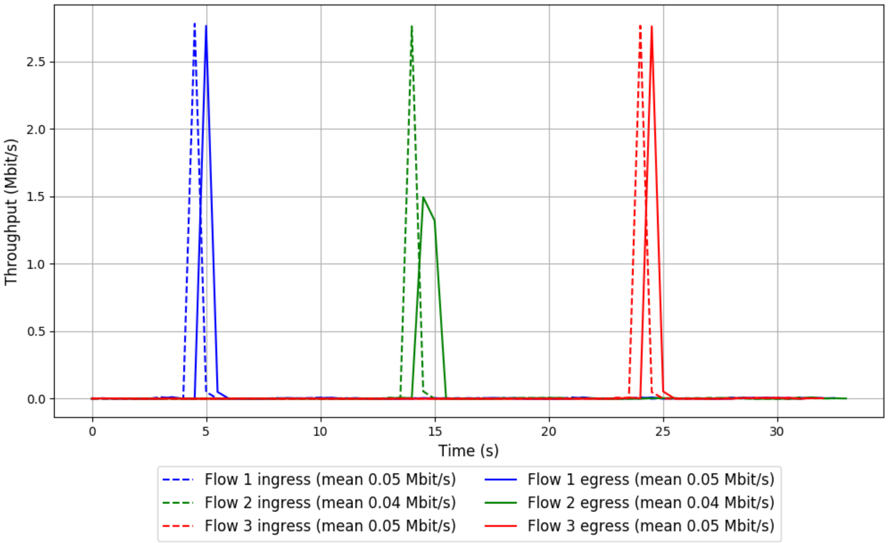


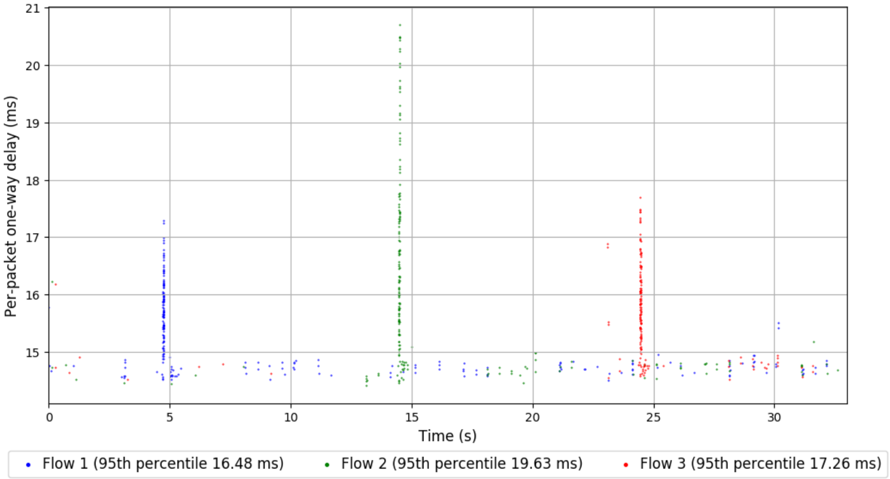
```
Run 5: Statistics of WebRTC media

Start at: 2018-05-24 15:22:04
End at: 2018-05-24 15:22:34
Local clock offset: -0.184 ms
Remote clock offset: -5.289 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 17.690 ms
Loss rate: 0.26%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 16.480 ms
Loss rate: 0.72%
-- Flow 2:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 19.627 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 17.259 ms
Loss rate: 0.00%
```

Run 5: Report of WebRTC media — Data Link



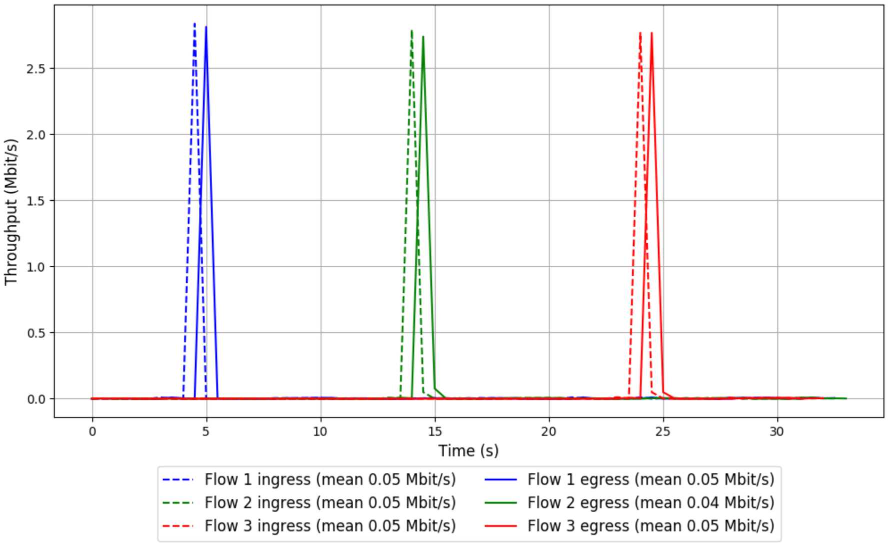


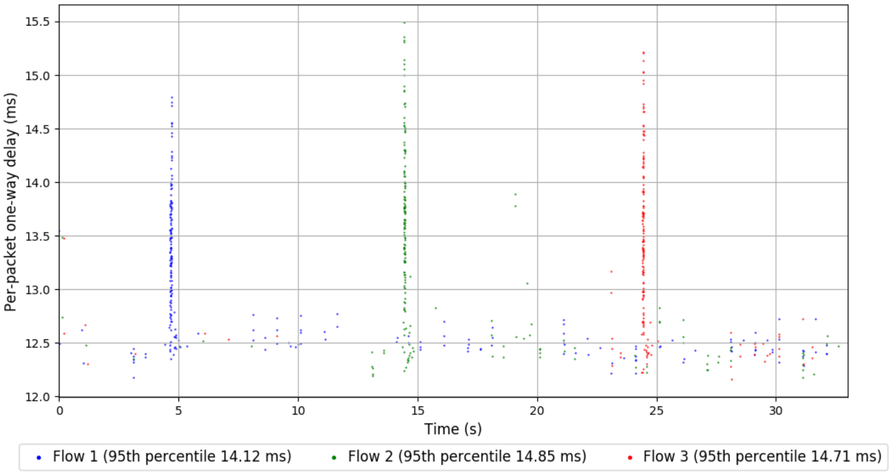
```
Run 6: Statistics of WebRTC media

Start at: 2018-05-24 15:40:10
End at: 2018-05-24 15:40:40
Local clock offset: -0.646 ms
Remote clock offset: 0.34 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 14.555 ms
Loss rate: 0.56%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 14.125 ms
Loss rate: 0.80%
-- Flow 2:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 14.847 ms
Loss rate: 0.86%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 14.707 ms
Loss rate: 0.00%
```

Run 6: Report of WebRTC media — Data Link



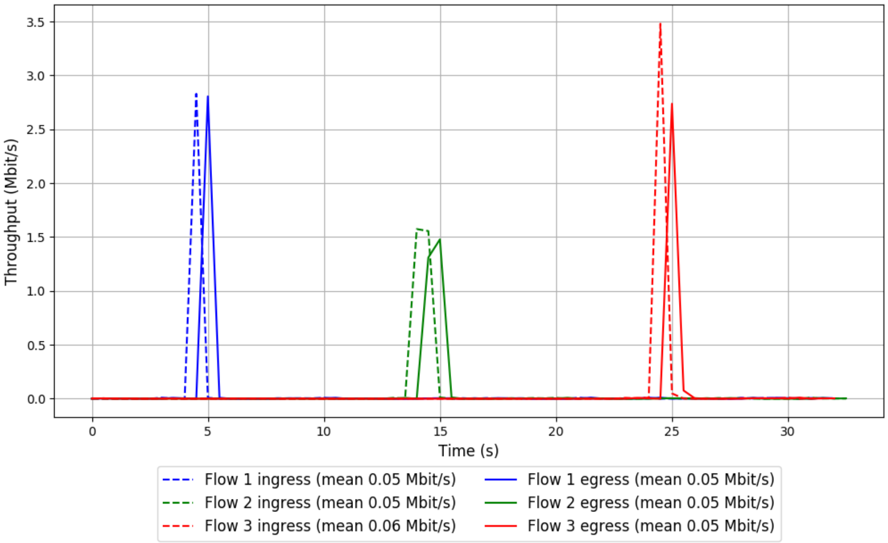


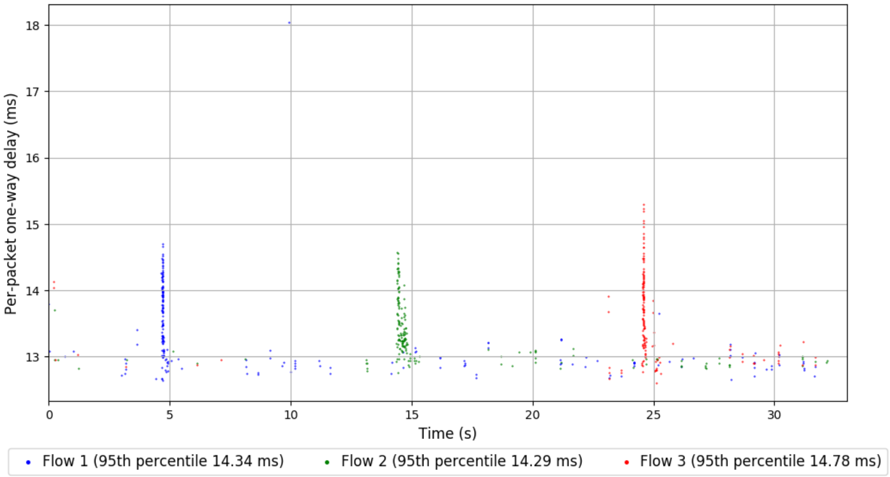
```
Run 7: Statistics of WebRTC media

Start at: 2018-05-24 15:58:24
End at: 2018-05-24 15:58:54
Local clock offset: -0.197 ms
Remote clock offset: 3.747 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 14.431 ms
Loss rate: 11.37%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 14.338 ms
Loss rate: 1.08%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 14.286 ms
Loss rate: 11.07%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 14.782 ms
Loss rate: 20.26%
```

Run 7: Report of WebRTC media — Data Link



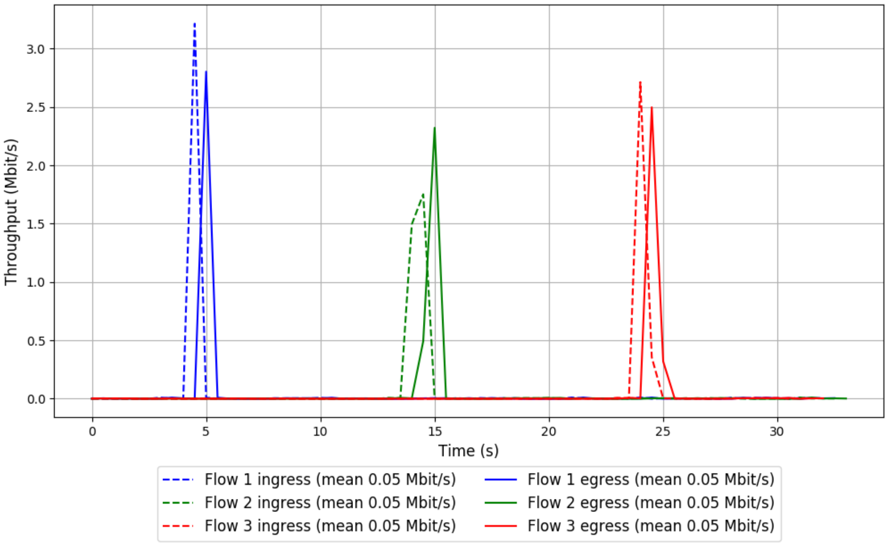


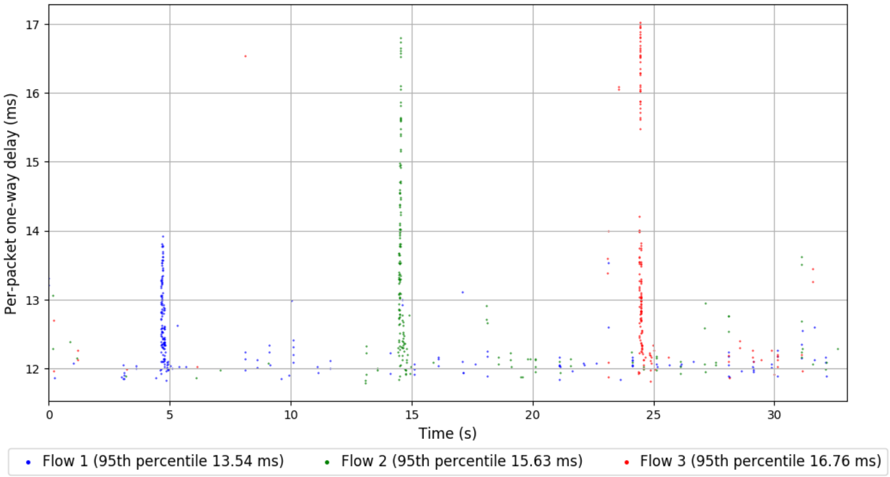
```
Run 8: Statistics of WebRTC media

Start at: 2018-05-24 16:16:38
End at: 2018-05-24 16:17:08
Local clock offset: 1.352 ms
Remote clock offset: -5.424 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 16.109 ms
Loss rate: 11.16%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 13.539 ms
Loss rate: 12.25%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 15.635 ms
Loss rate: 12.88%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 16.756 ms
Loss rate: 8.13%
```

Run 8: Report of WebRTC media — Data Link



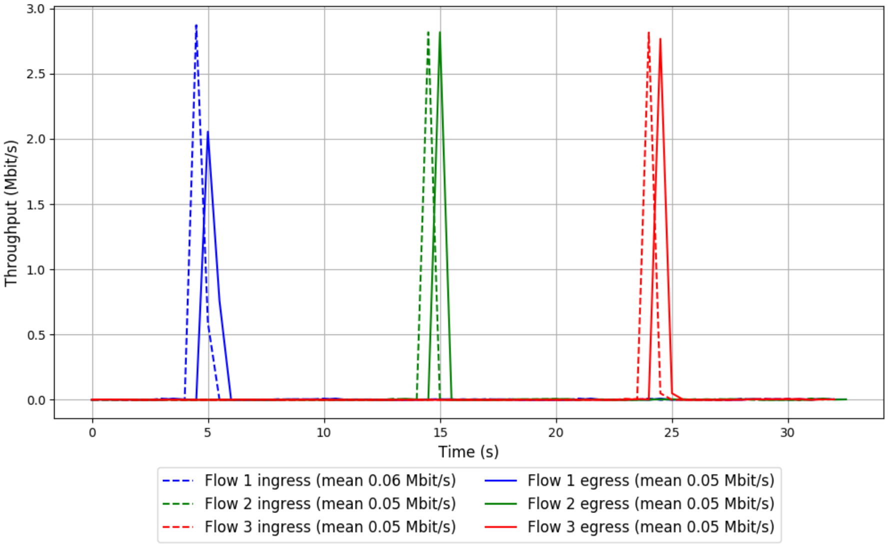


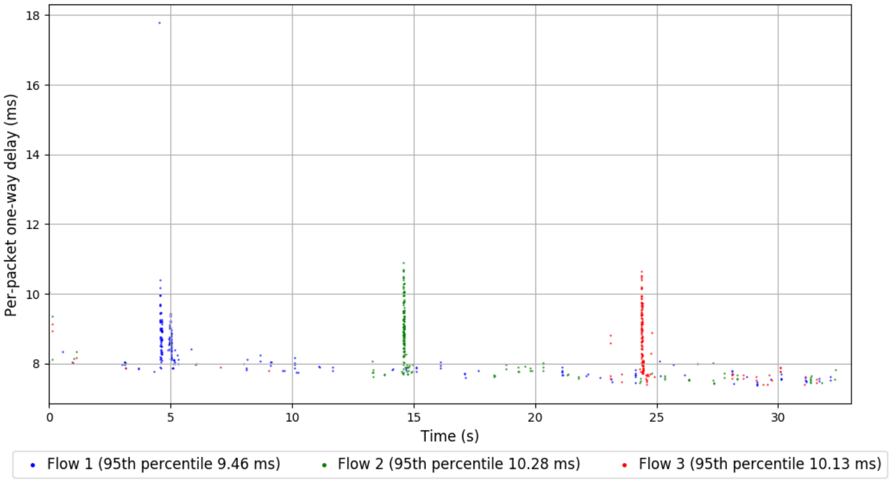
```
Run 9: Statistics of WebRTC media

Start at: 2018-05-24 16:34:53
End at: 2018-05-24 16:35:23
Local clock offset: 3.179 ms
Remote clock offset: -10.746 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 10.035 ms
Loss rate: 7.58%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 9.461 ms
Loss rate: 18.37%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 10.278 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 10.135 ms
Loss rate: 1.75%
```

Run 9: Report of WebRTC media — Data Link



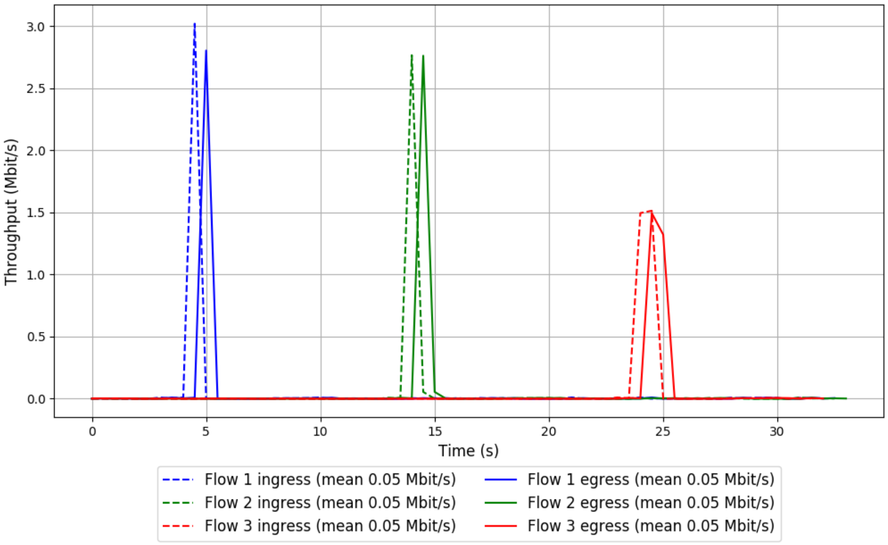


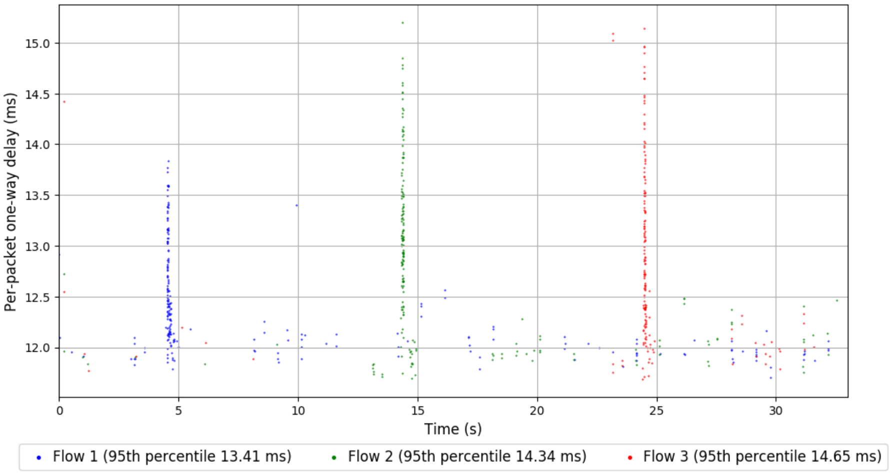
```
Run 10: Statistics of WebRTC media

Start at: 2018-05-24 16:53:20
End at: 2018-05-24 16:53:50
Local clock offset: 1.473 ms
Remote clock offset: 0.527 ms

# Below is generated by plot.py at 2018-05-24 17:09:44
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.13 Mbit/s
95th percentile per-packet one-way delay: 14.209 ms
Loss rate: 4.89%
-- Flow 1:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 13.411 ms
Loss rate: 7.59%
-- Flow 2:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 14.340 ms
Loss rate: 0.38%
-- Flow 3:
Average throughput: 0.05 Mbit/s
95th percentile per-packet one-way delay: 14.650 ms
Loss rate: 6.38%
```

Run 10: Report of WebRTC media — Data Link


Throughput (Mbit/s)
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0
5
10
15
20
25
30
Time (s)
Flow 1 ingress (mean 0.05 Mbit/s)
Flow 2 ingress (mean 0.05 Mbit/s)
Flow 3 ingress (mean 0.05 Mbit/s)
Flow 1 egress (mean 0.05 Mbit/s)
Flow 2 egress (mean 0.05 Mbit/s)
Flow 3 egress (mean 0.05 Mbit/s)


Per-packet one-way delay (ms)
15.0
14.5
14.0
13.5
13.0
12.5
12.0
0
5
10
15
20
25
30
Time (s)
Flow 1 (95th percentile 13.41 ms)
Flow 2 (95th percentile 14.34 ms)
Flow 3 (95th percentile 14.65 ms)