

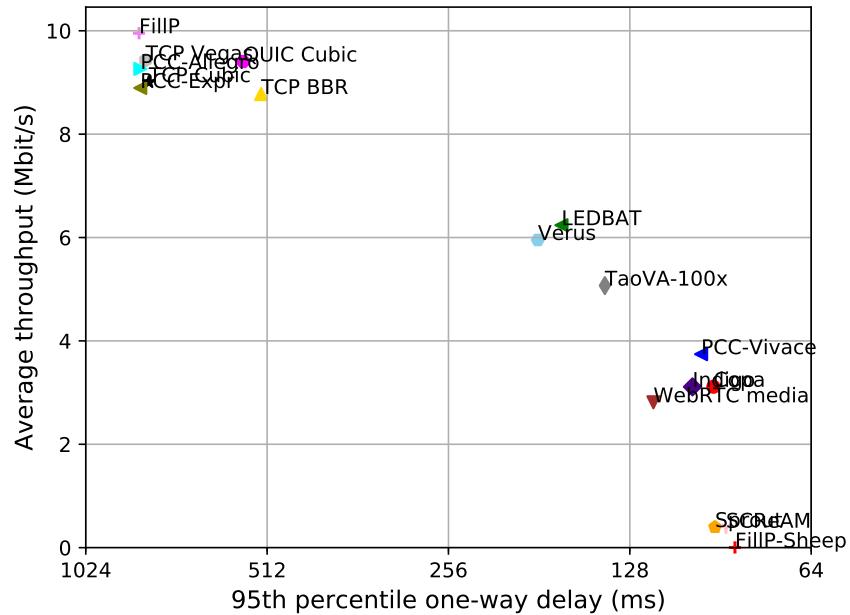
Pantheon Report

Generated at 2018-06-29 20:48:24 (UTC).
Data path: AWS Korea Ethernet (*local*) → China ppp0 ppp0 (*remote*).
Repeated the test of 17 congestion control schemes 3 times.
Each test lasted for 30 seconds running 3 flows with 10-second interval between two flows.

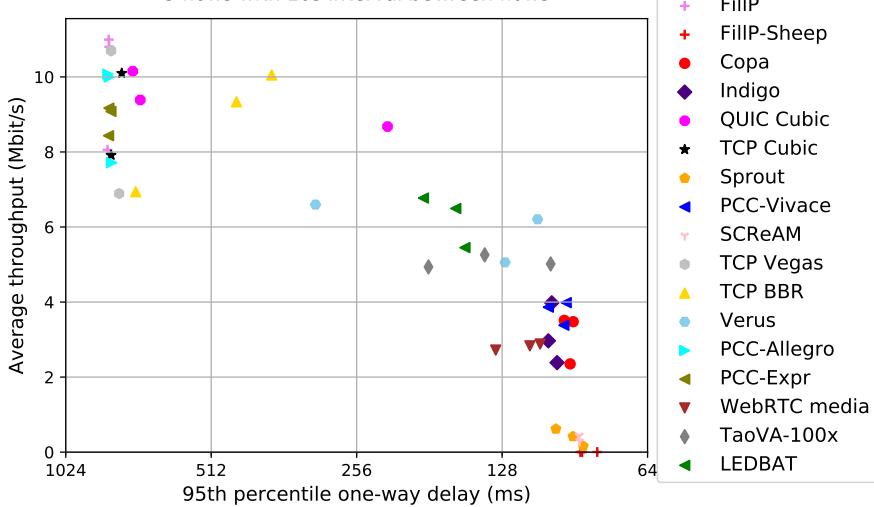
Increased UDP receive buffer to 16 MB (default) and 32 MB (max).
NTP offsets were measured against `ntp.nict.jp` and have been applied to correct the timestamps in logs.

```
Git summary:  
branch: master @ 715dc5f09d172e419699f6f17f1cb4c45064f212  
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834  
third_party/fillp-sheep @ 30060ab034deb3424347f5cc3db86198eac35d2a  
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4  
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  
  M src/ScreamClient  
  M src/ScreamServer  
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26  
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494  
  M src/verus.hpp  
  M tools/plot.py  
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4  
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```

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



test from AWS Korea to China ppp0, 3 runs of 30s each per scheme
3 flows with 10s interval between flows



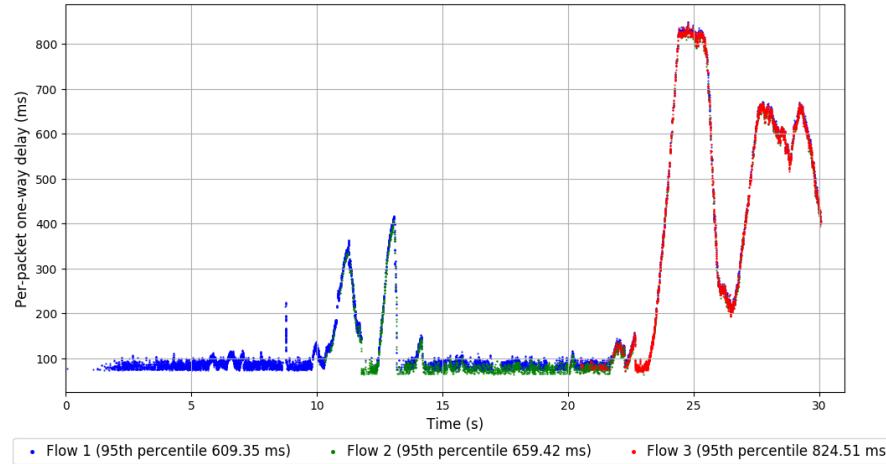
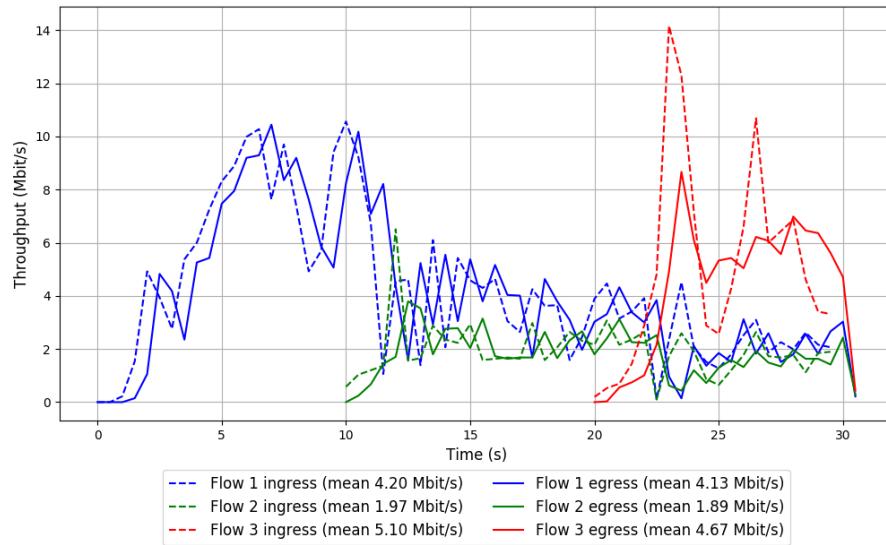
scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	3	6.54	1.78	3.19	492.23	439.87	493.28	0.72	1.52	3.68
Copa		1.62	1.48	1.54	92.32	92.56	92.05	0.03	0.01	0.18
TCP Cubic		8.42	0.67	0.48	804.88	820.21	697.54	4.14	3.96	5.46
FillP		5.56	5.87	1.78	851.99	834.73	838.19	66.93	40.92	46.76
FillP-Sheep		0.00	0.00	0.00	83.33	85.36	83.02	0.00	0.00	0.67
Indigo		1.43	1.63	1.93	96.10	103.70	106.54	0.02	0.10	0.17
LEDBAT		4.94	1.77	0.37	162.02	193.80	196.19	0.21	0.25	0.00
PCC-Allegro		6.18	3.08	3.19	830.07	830.01	848.96	7.81	11.65	39.38
PCC-Expr		5.55	4.41	1.31	830.00	830.50	836.48	13.57	18.64	30.62
QUIC Cubic		8.23	1.37	0.92	554.77	577.89	574.68	0.68	1.48	3.89
SCReAM		0.18	0.21	0.22	92.10	88.46	94.53	0.00	0.06	0.21
Sprout		0.20	0.18	0.24	90.22	92.76	93.99	0.00	0.00	0.00
TaoVA-100x		2.65	2.51	2.26	123.50	127.79	248.33	0.07	0.11	0.46
TCP Vegas		7.20	1.64	3.64	592.96	687.81	707.59	3.77	3.95	14.19
Verus		5.22	1.00	0.31	222.18	102.78	97.99	0.13	0.05	0.00
PCC-Vivace		2.15	1.54	1.72	96.07	98.24	98.82	0.06	0.09	0.19
WebRTC media		1.72	0.79	0.33	111.03	117.78	148.59	0.10	0.08	0.38

Run 1: Statistics of TCP BBR

```
Start at: 2018-06-29 19:46:38
End at: 2018-06-29 19:47:08
Local clock offset: 7.967 ms
Remote clock offset: -10.36 ms

# Below is generated by plot.py at 2018-06-29 20:47:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.94 Mbit/s
95th percentile per-packet one-way delay: 733.862 ms
Loss rate: 3.64%
-- Flow 1:
Average throughput: 4.13 Mbit/s
95th percentile per-packet one-way delay: 609.349 ms
Loss rate: 1.61%
-- Flow 2:
Average throughput: 1.89 Mbit/s
95th percentile per-packet one-way delay: 659.419 ms
Loss rate: 3.52%
-- Flow 3:
Average throughput: 4.67 Mbit/s
95th percentile per-packet one-way delay: 824.513 ms
Loss rate: 8.75%
```

Run 1: Report of TCP BBR — Data Link

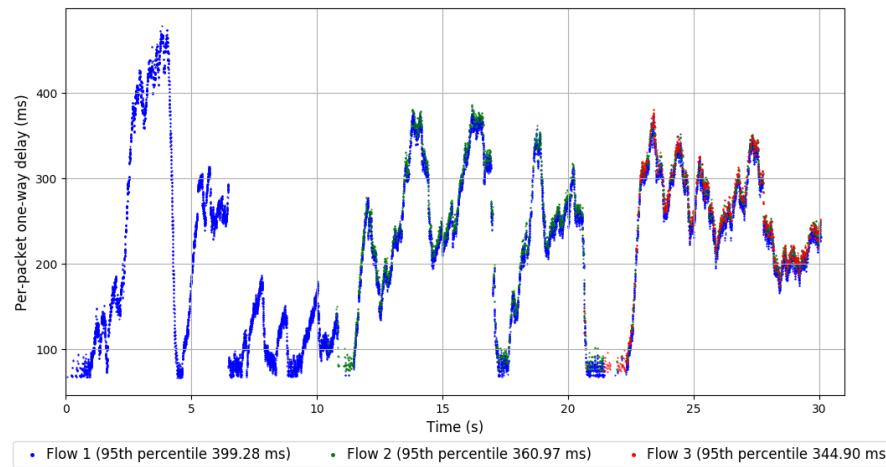
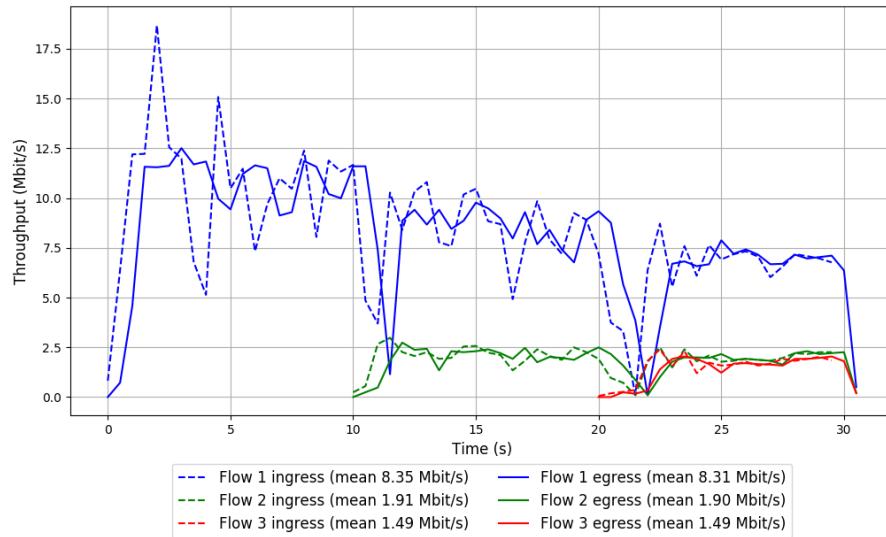


Run 2: Statistics of TCP BBR

```
Start at: 2018-06-29 20:13:01
End at: 2018-06-29 20:13:32
Local clock offset: -9.488 ms
Remote clock offset: -9.249 ms

# Below is generated by plot.py at 2018-06-29 20:47:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.05 Mbit/s
95th percentile per-packet one-way delay: 383.812 ms
Loss rate: 0.66%
-- Flow 1:
Average throughput: 8.31 Mbit/s
95th percentile per-packet one-way delay: 399.276 ms
Loss rate: 0.52%
-- Flow 2:
Average throughput: 1.90 Mbit/s
95th percentile per-packet one-way delay: 360.974 ms
Loss rate: 0.97%
-- Flow 3:
Average throughput: 1.49 Mbit/s
95th percentile per-packet one-way delay: 344.905 ms
Loss rate: 2.19%
```

Run 2: Report of TCP BBR — Data Link

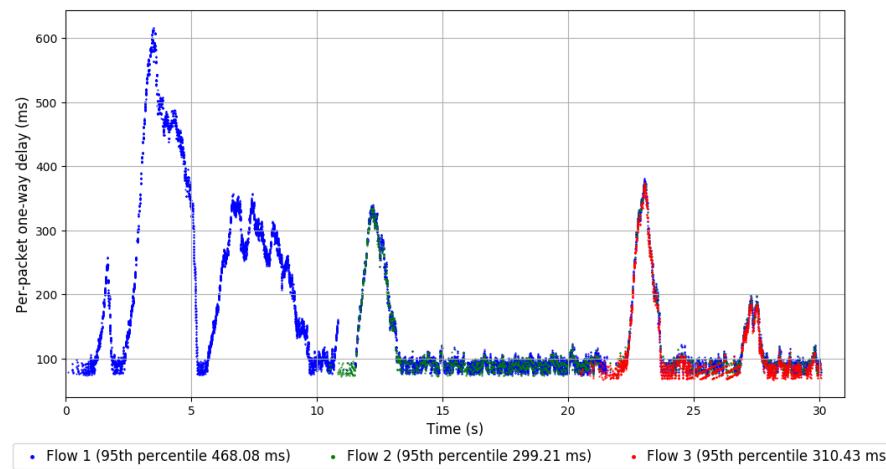
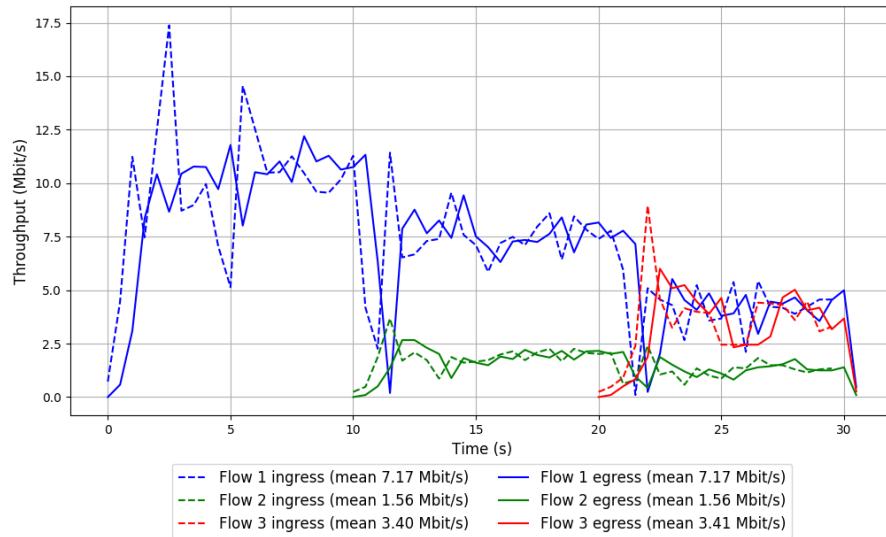


Run 3: Statistics of TCP BBR

```
Start at: 2018-06-29 20:39:51
End at: 2018-06-29 20:40:21
Local clock offset: 1.172 ms
Remote clock offset: -9.094 ms

# Below is generated by plot.py at 2018-06-29 20:47:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 9.34 Mbit/s
95th percentile per-packet one-way delay: 453.880 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 7.17 Mbit/s
95th percentile per-packet one-way delay: 468.078 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 1.56 Mbit/s
95th percentile per-packet one-way delay: 299.213 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 3.41 Mbit/s
95th percentile per-packet one-way delay: 310.426 ms
Loss rate: 0.11%
```

Run 3: Report of TCP BBR — Data Link

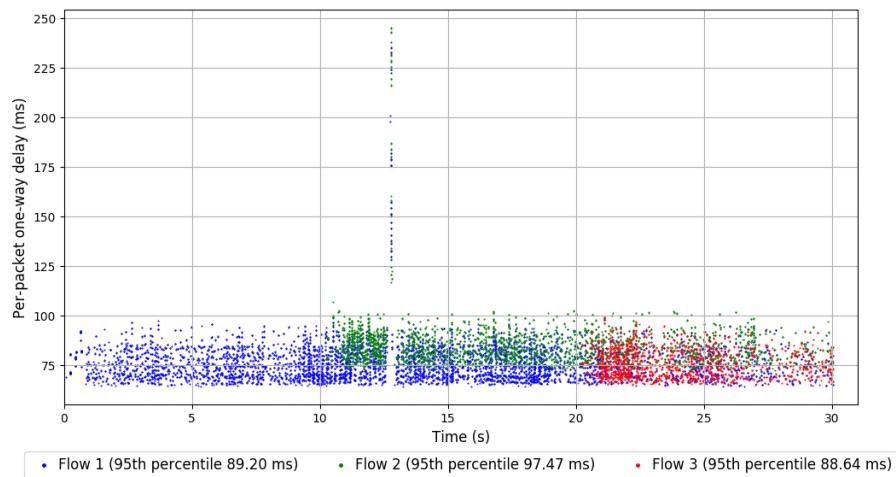
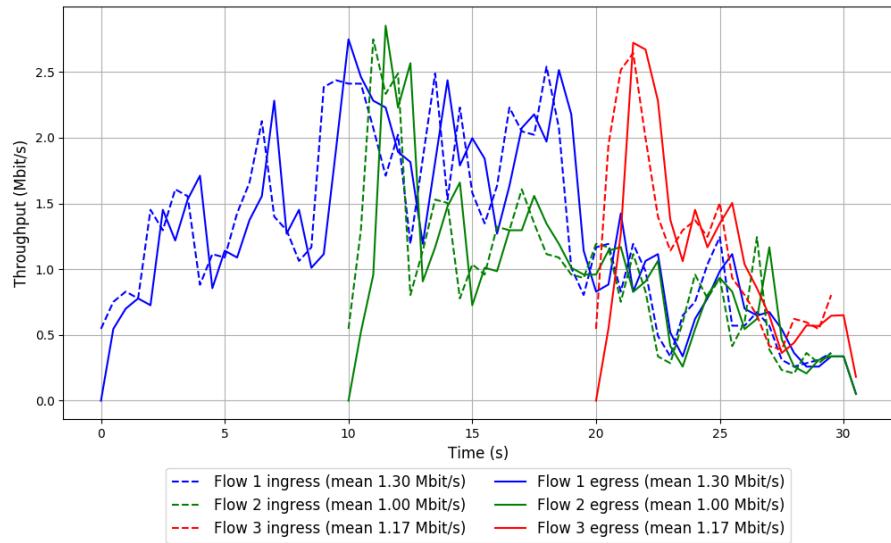


Run 1: Statistics of Copa

```
Start at: 2018-06-29 19:48:11
End at: 2018-06-29 19:48:41
Local clock offset: 5.471 ms
Remote clock offset: -9.547 ms

# Below is generated by plot.py at 2018-06-29 20:47:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.35 Mbit/s
95th percentile per-packet one-way delay: 92.555 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.30 Mbit/s
95th percentile per-packet one-way delay: 89.197 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 97.470 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 1.17 Mbit/s
95th percentile per-packet one-way delay: 88.635 ms
Loss rate: 0.00%
```

Run 1: Report of Copa — Data Link

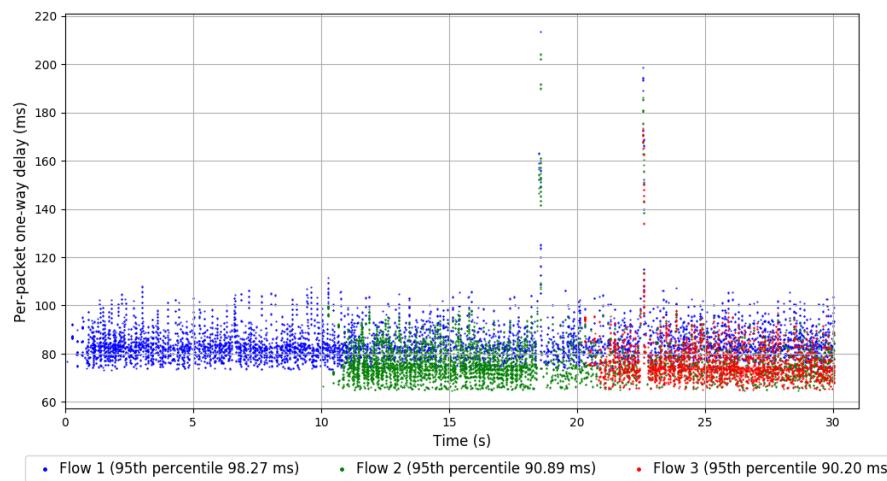
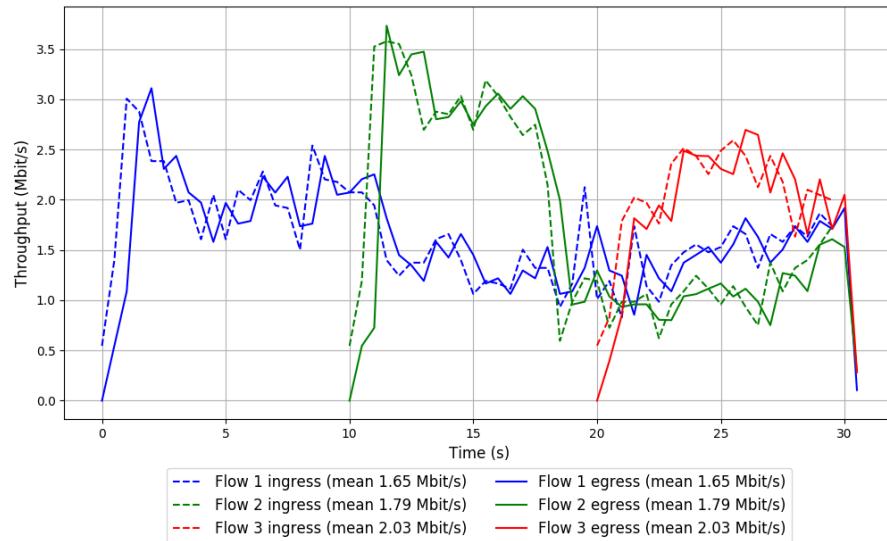


Run 2: Statistics of Copa

```
Start at: 2018-06-29 20:14:42
End at: 2018-06-29 20:15:12
Local clock offset: -10.008 ms
Remote clock offset: -9.155 ms

# Below is generated by plot.py at 2018-06-29 20:47:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.51 Mbit/s
95th percentile per-packet one-way delay: 95.190 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 1.65 Mbit/s
95th percentile per-packet one-way delay: 98.272 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 1.79 Mbit/s
95th percentile per-packet one-way delay: 90.887 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 2.03 Mbit/s
95th percentile per-packet one-way delay: 90.205 ms
Loss rate: 0.26%
```

Run 2: Report of Copa — Data Link

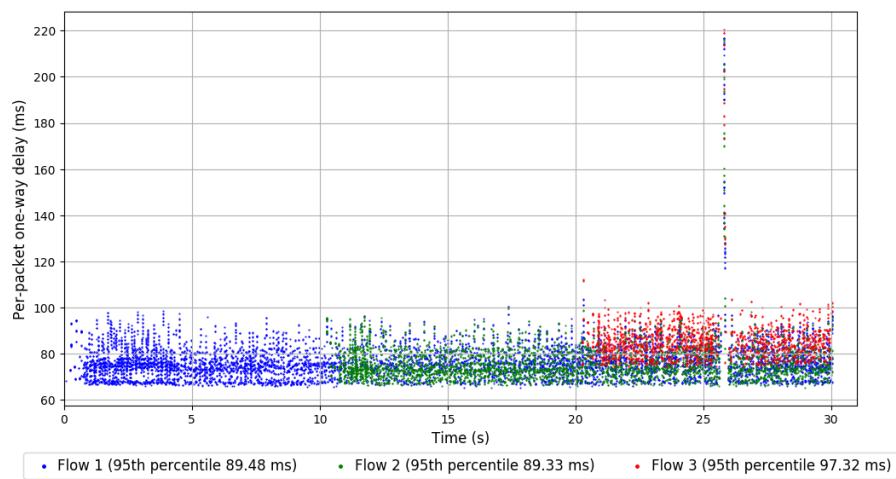
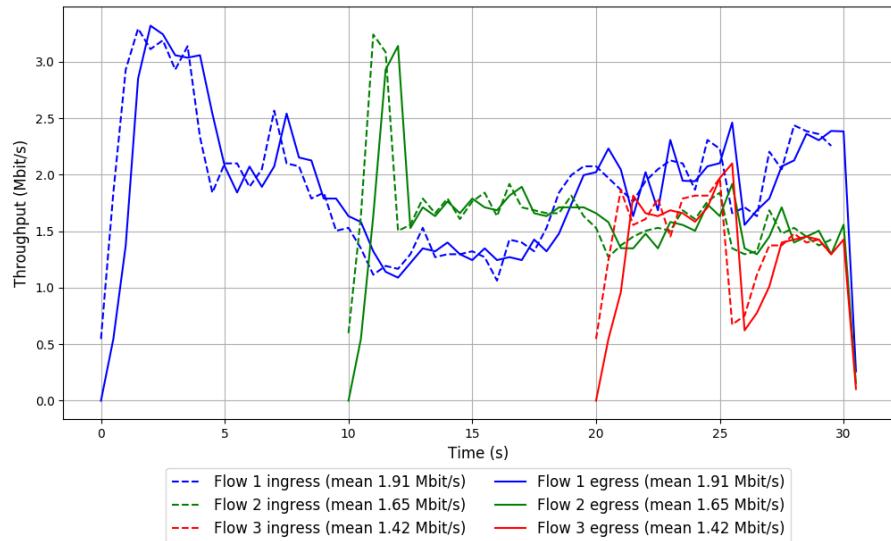


Run 3: Statistics of Copa

```
Start at: 2018-06-29 20:41:31
End at: 2018-06-29 20:42:01
Local clock offset: 1.06 ms
Remote clock offset: -9.138 ms

# Below is generated by plot.py at 2018-06-29 20:47:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.48 Mbit/s
95th percentile per-packet one-way delay: 91.225 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 1.91 Mbit/s
95th percentile per-packet one-way delay: 89.483 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.65 Mbit/s
95th percentile per-packet one-way delay: 89.333 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 1.42 Mbit/s
95th percentile per-packet one-way delay: 97.323 ms
Loss rate: 0.27%
```

Run 3: Report of Copa — Data Link

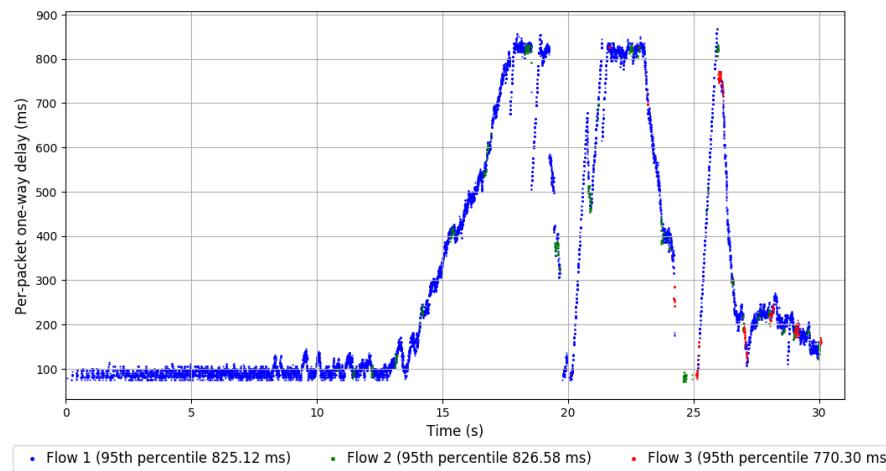
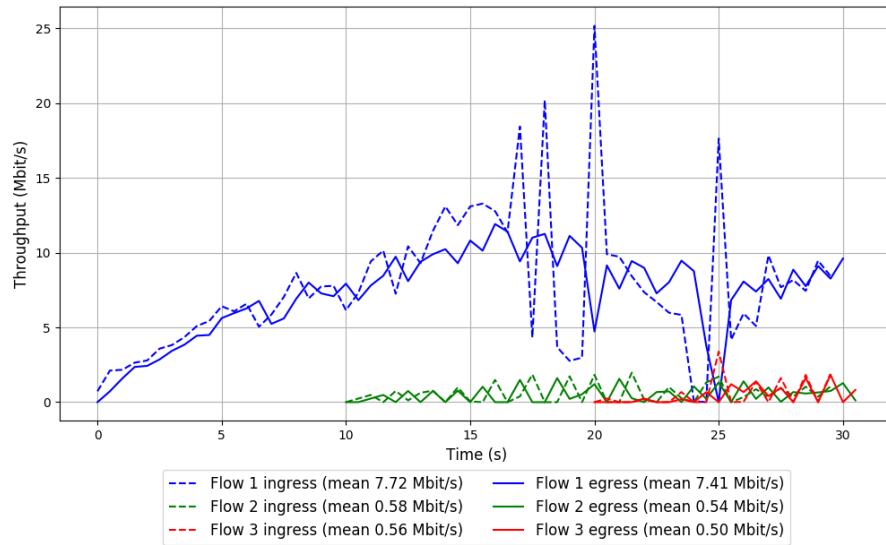


Run 1: Statistics of TCP Cubic

```
Start at: 2018-06-29 19:43:05
End at: 2018-06-29 19:43:35
Local clock offset: 9.27 ms
Remote clock offset: -10.454 ms

# Below is generated by plot.py at 2018-06-29 20:47:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.92 Mbit/s
95th percentile per-packet one-way delay: 825.101 ms
Loss rate: 4.53%
-- Flow 1:
Average throughput: 7.41 Mbit/s
95th percentile per-packet one-way delay: 825.119 ms
Loss rate: 4.28%
-- Flow 2:
Average throughput: 0.54 Mbit/s
95th percentile per-packet one-way delay: 826.579 ms
Loss rate: 6.47%
-- Flow 3:
Average throughput: 0.50 Mbit/s
95th percentile per-packet one-way delay: 770.301 ms
Loss rate: 10.93%
```

Run 1: Report of TCP Cubic — Data Link

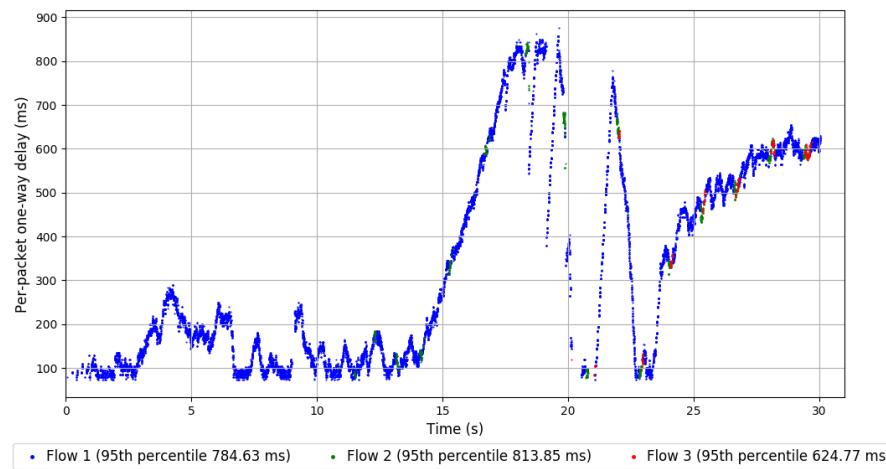
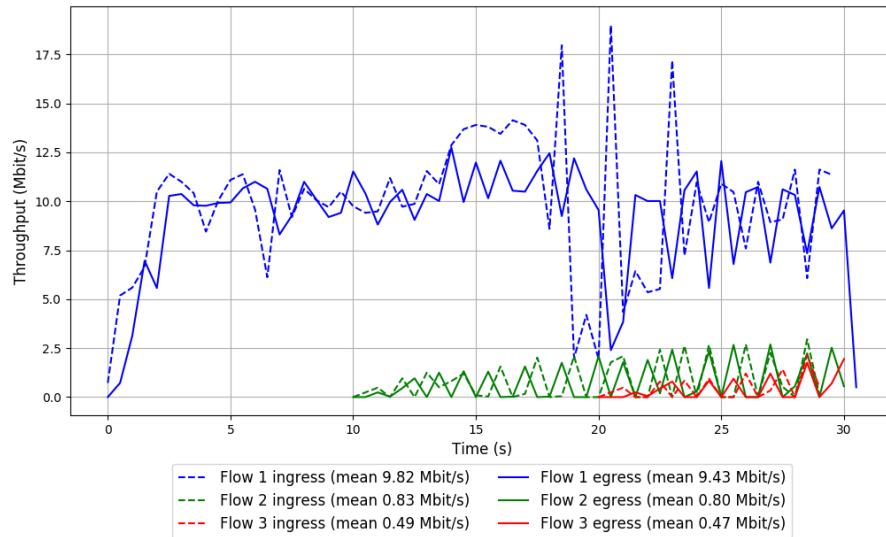


Run 2: Statistics of TCP Cubic

```
Start at: 2018-06-29 20:09:26
End at: 2018-06-29 20:09:56
Local clock offset: -8.684 ms
Remote clock offset: -9.382 ms

# Below is generated by plot.py at 2018-06-29 20:47:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.10 Mbit/s
95th percentile per-packet one-way delay: 784.360 ms
Loss rate: 3.82%
-- Flow 1:
Average throughput: 9.43 Mbit/s
95th percentile per-packet one-way delay: 784.634 ms
Loss rate: 4.01%
-- Flow 2:
Average throughput: 0.80 Mbit/s
95th percentile per-packet one-way delay: 813.848 ms
Loss rate: 1.45%
-- Flow 3:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 624.771 ms
Loss rate: 0.00%
```

Run 2: Report of TCP Cubic — Data Link



Run 3: Statistics of TCP Cubic

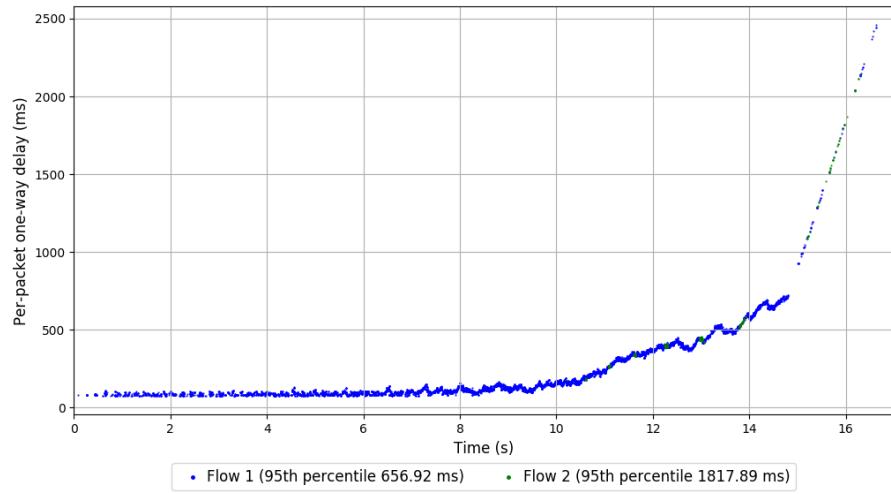
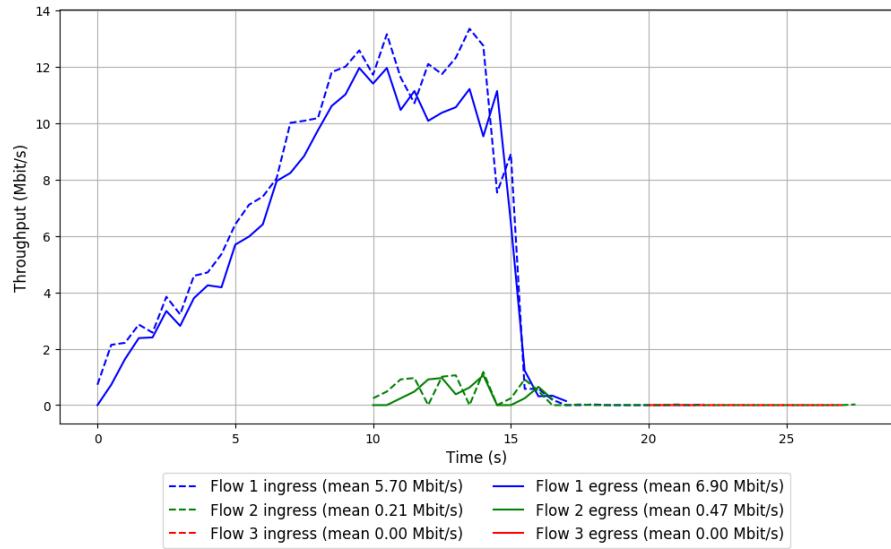
Start at: 2018-06-29 20:36:20

End at: 2018-06-29 20:36:50

Local clock offset: 0.632 ms

Remote clock offset: -8.95 ms

Run 3: Report of TCP Cubic — Data Link

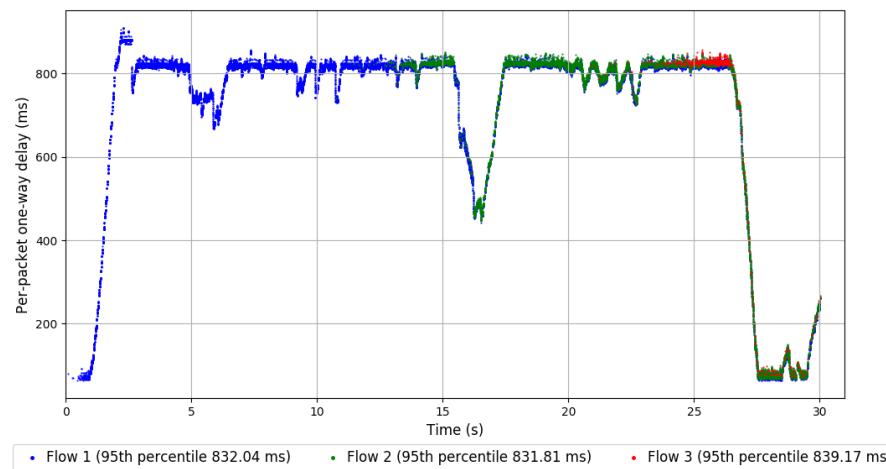
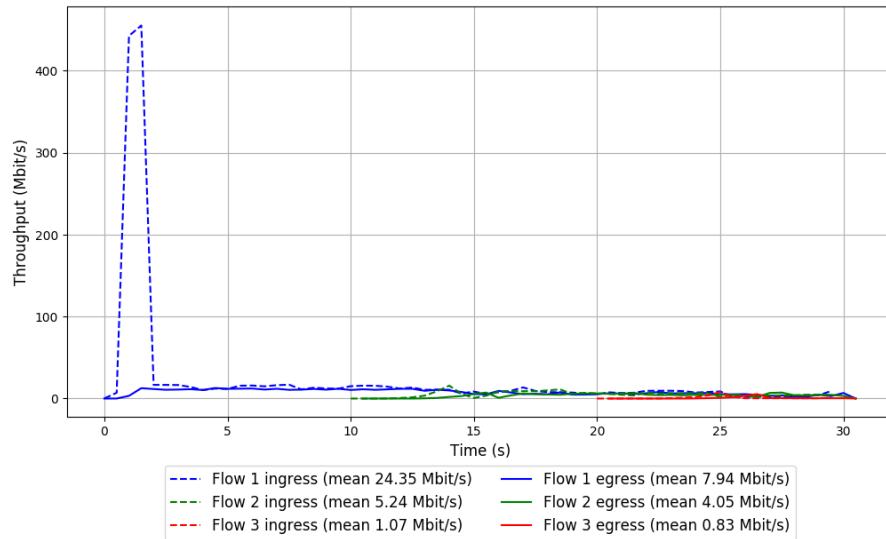


```
Run 1: Statistics of FillP

Start at: 2018-06-29 19:49:39
End at: 2018-06-29 19:50:09
Local clock offset: 3.381 ms
Remote clock offset: -10.23 ms

# Below is generated by plot.py at 2018-06-29 20:47:49
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.80 Mbit/s
95th percentile per-packet one-way delay: 832.283 ms
Loss rate: 61.69%
-- Flow 1:
Average throughput: 7.94 Mbit/s
95th percentile per-packet one-way delay: 832.042 ms
Loss rate: 67.39%
-- Flow 2:
Average throughput: 4.05 Mbit/s
95th percentile per-packet one-way delay: 831.809 ms
Loss rate: 25.20%
-- Flow 3:
Average throughput: 0.83 Mbit/s
95th percentile per-packet one-way delay: 839.169 ms
Loss rate: 28.58%
```

Run 1: Report of FillP — Data Link

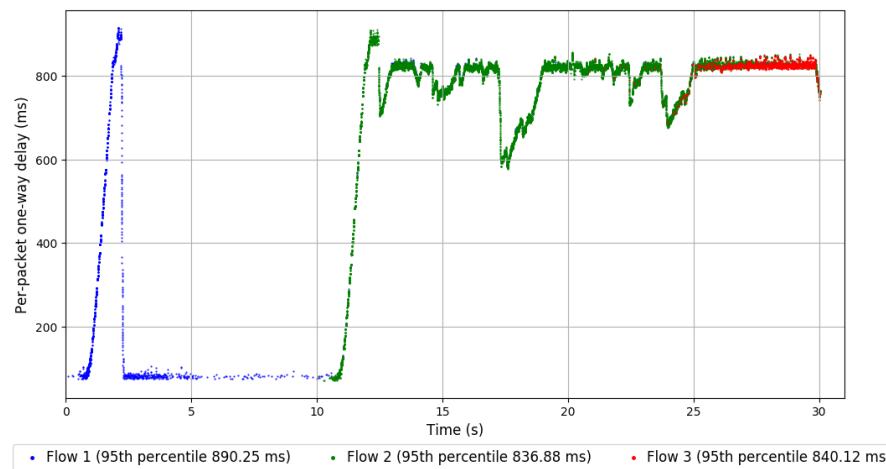
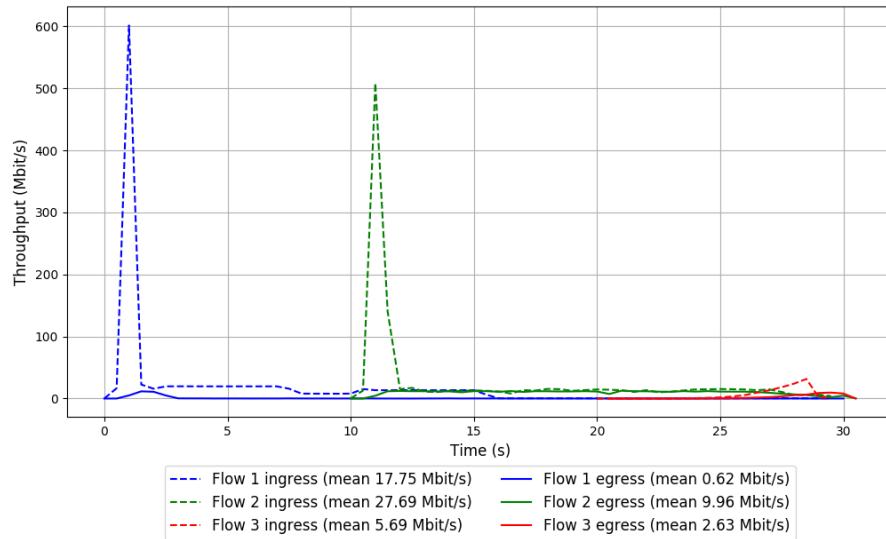


Run 2: Statistics of FillP

```
Start at: 2018-06-29 20:16:14
End at: 2018-06-29 20:16:44
Local clock offset: -9.483 ms
Remote clock offset: -9.102 ms

# Below is generated by plot.py at 2018-06-29 20:47:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.06 Mbit/s
95th percentile per-packet one-way delay: 839.282 ms
Loss rate: 78.84%
-- Flow 1:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 890.248 ms
Loss rate: 96.51%
-- Flow 2:
Average throughput: 9.96 Mbit/s
95th percentile per-packet one-way delay: 836.882 ms
Loss rate: 64.06%
-- Flow 3:
Average throughput: 2.63 Mbit/s
95th percentile per-packet one-way delay: 840.119 ms
Loss rate: 57.17%
```

Run 2: Report of FillP — Data Link

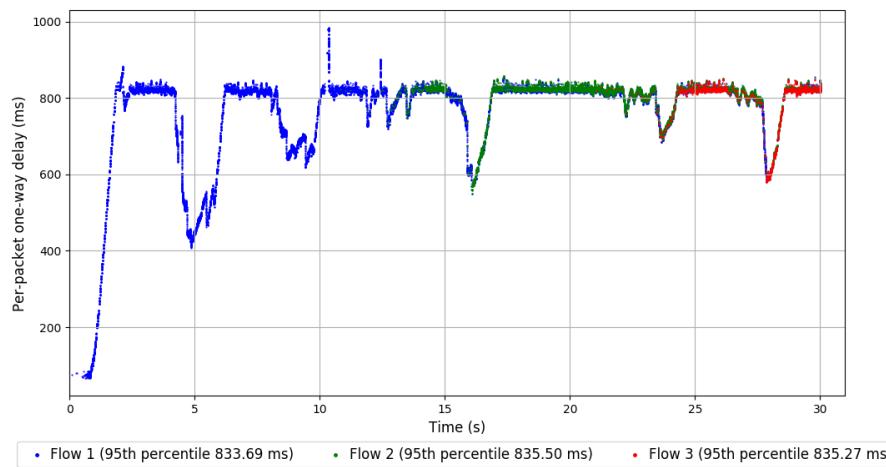
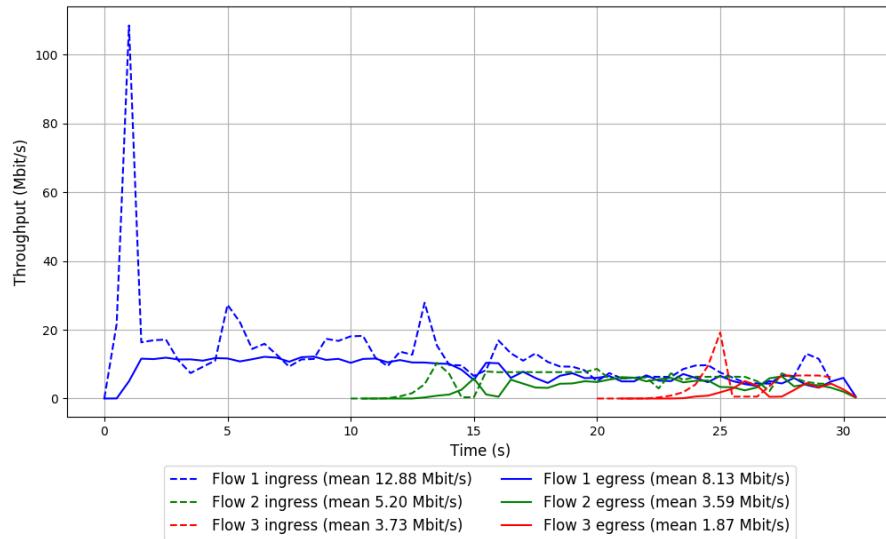


Run 3: Statistics of FillP

```
Start at: 2018-06-29 20:43:00
End at: 2018-06-29 20:43:30
Local clock offset: 1.155 ms
Remote clock offset: -9.212 ms

# Below is generated by plot.py at 2018-06-29 20:47:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.99 Mbit/s
95th percentile per-packet one-way delay: 834.288 ms
Loss rate: 37.47%
-- Flow 1:
Average throughput: 8.13 Mbit/s
95th percentile per-packet one-way delay: 833.687 ms
Loss rate: 36.90%
-- Flow 2:
Average throughput: 3.59 Mbit/s
95th percentile per-packet one-way delay: 835.496 ms
Loss rate: 33.49%
-- Flow 3:
Average throughput: 1.87 Mbit/s
95th percentile per-packet one-way delay: 835.269 ms
Loss rate: 54.53%
```

Run 3: Report of FillP — Data Link

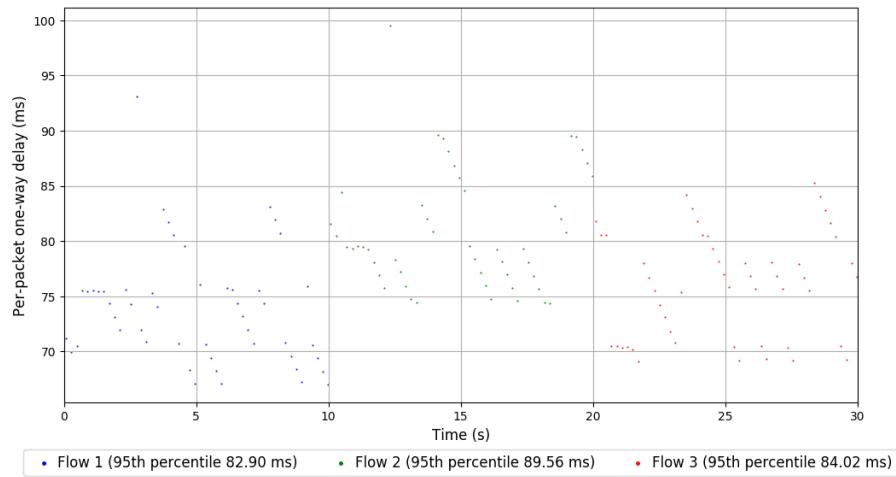
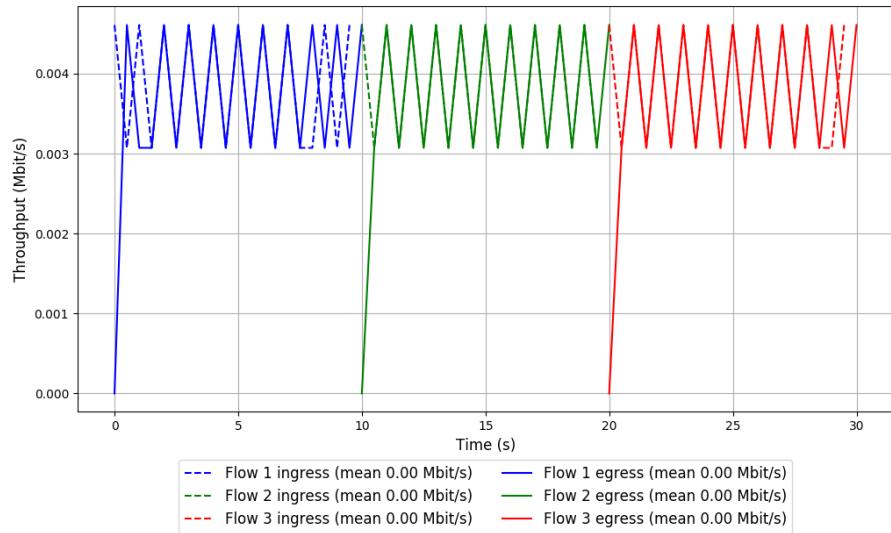


Run 1: Statistics of FillP-Sheep

```
Start at: 2018-06-29 19:40:04
End at: 2018-06-29 19:40:34
Local clock offset: 8.78 ms
Remote clock offset: -10.606 ms

# Below is generated by plot.py at 2018-06-29 20:47:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 88.138 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 82.904 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 89.563 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 84.015 ms
Loss rate: 0.00%
```

Run 1: Report of FillP-Sheep — Data Link

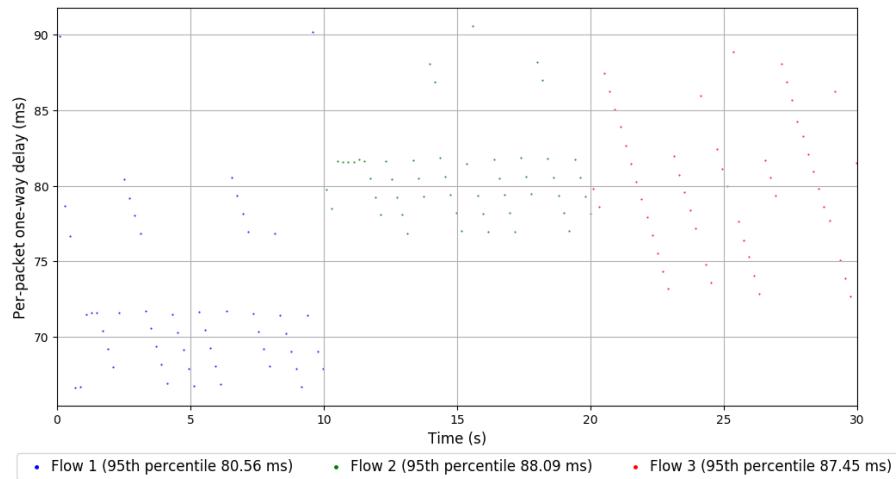
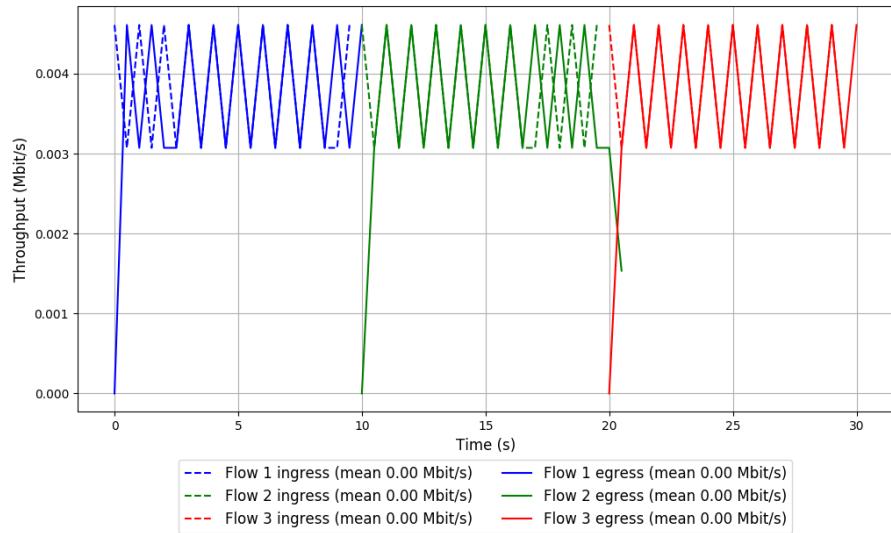


Run 2: Statistics of FillP-Sheep

```
Start at: 2018-06-29 20:06:26
End at: 2018-06-29 20:06:56
Local clock offset: -7.778 ms
Remote clock offset: -9.466 ms

# Below is generated by plot.py at 2018-06-29 20:47:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 87.447 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 80.563 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 88.086 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 87.447 ms
Loss rate: 0.00%
```

Run 2: Report of FillP-Sheep — Data Link

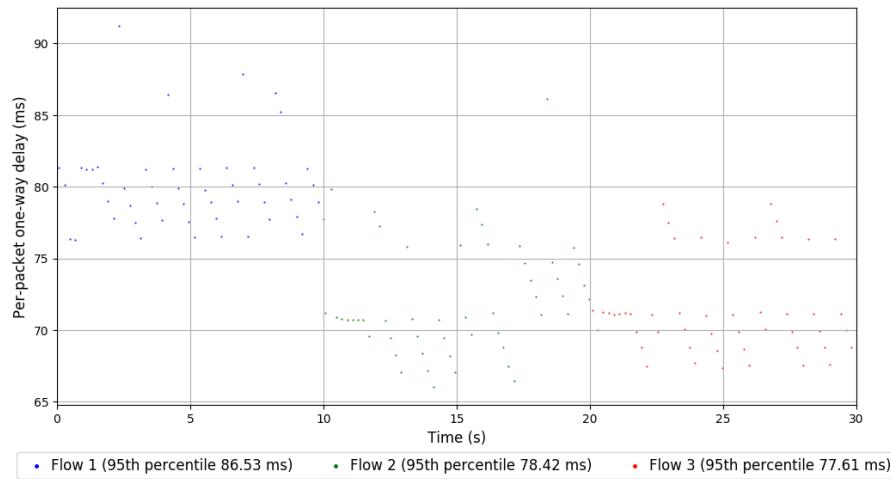
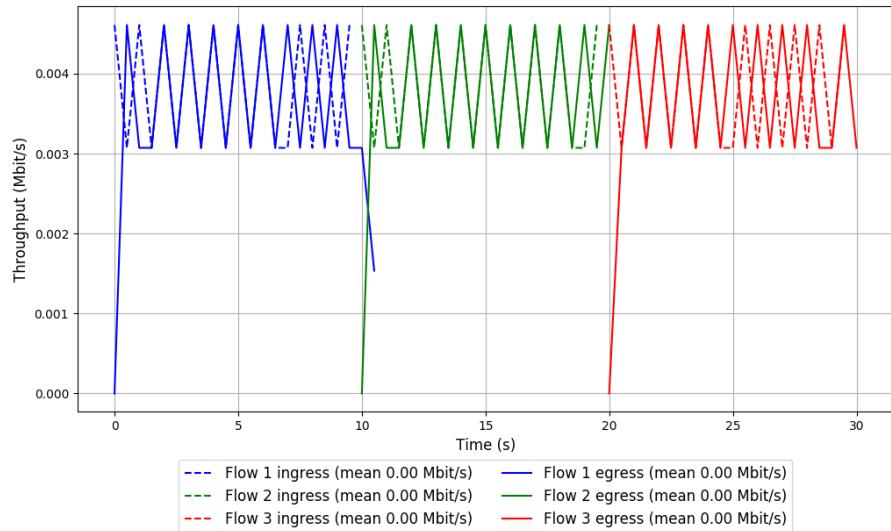


Run 3: Statistics of FillP-Sheep

```
Start at: 2018-06-29 20:33:04
End at: 2018-06-29 20:33:34
Local clock offset: 0.246 ms
Remote clock offset: -8.707 ms

# Below is generated by plot.py at 2018-06-29 20:47:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 81.346 ms
Loss rate: 0.67%
-- Flow 1:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 86.530 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 78.424 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 77.607 ms
Loss rate: 2.00%
```

Run 3: Report of FillP-Sheep — Data Link

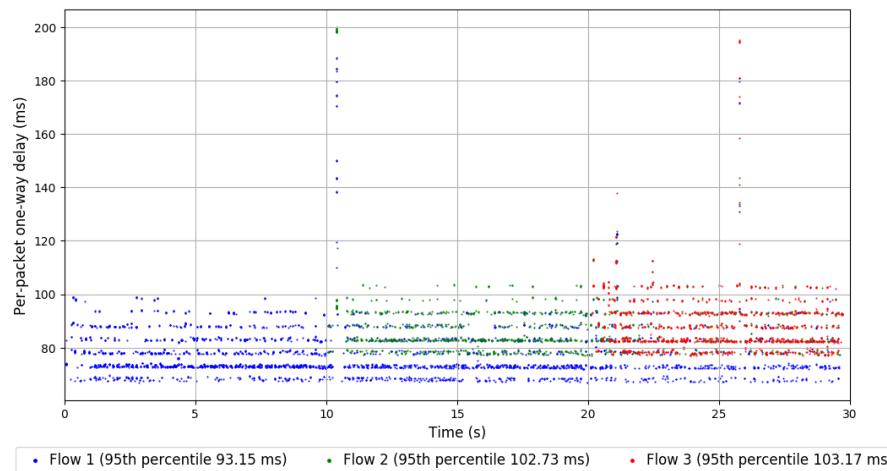
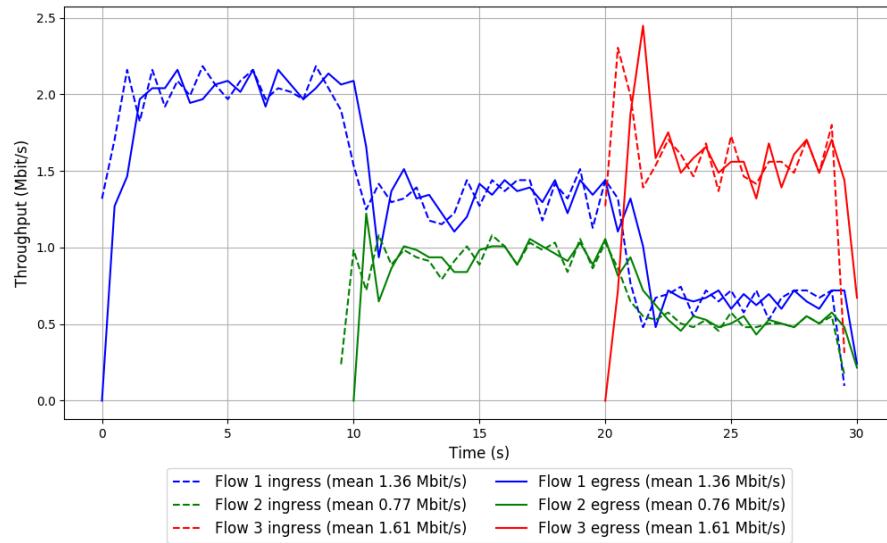


Run 1: Statistics of Indigo

```
Start at: 2018-06-29 19:51:21
End at: 2018-06-29 19:51:51
Local clock offset: 1.112 ms
Remote clock offset: -10.167 ms

# Below is generated by plot.py at 2018-06-29 20:47:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.39 Mbit/s
95th percentile per-packet one-way delay: 98.507 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 1.36 Mbit/s
95th percentile per-packet one-way delay: 93.146 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.76 Mbit/s
95th percentile per-packet one-way delay: 102.732 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 1.61 Mbit/s
95th percentile per-packet one-way delay: 103.174 ms
Loss rate: 0.39%
```

Run 1: Report of Indigo — Data Link

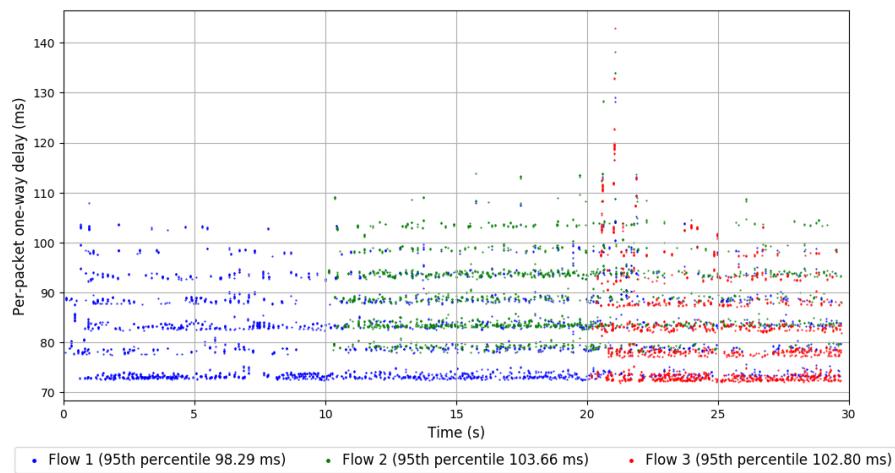
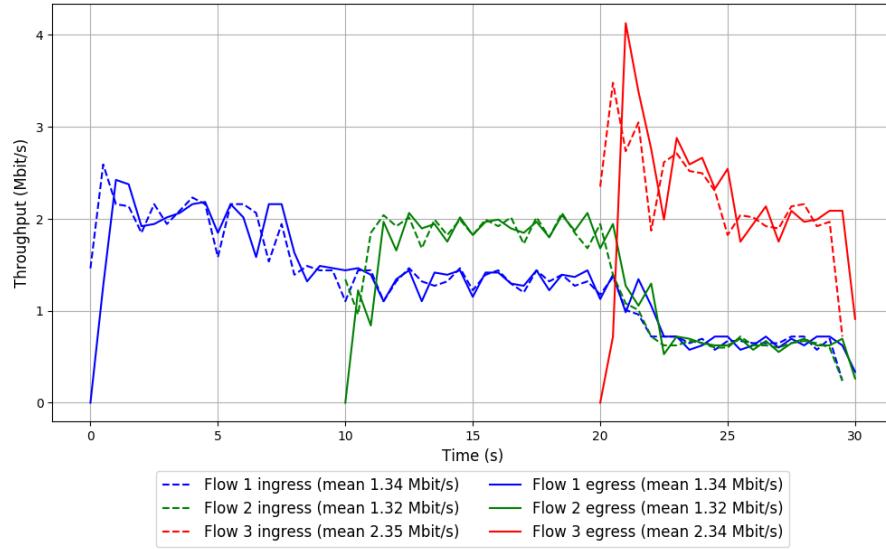


Run 2: Statistics of Indigo

```
Start at: 2018-06-29 20:17:54
End at: 2018-06-29 20:18:24
Local clock offset: -7.765 ms
Remote clock offset: -9.026 ms

# Below is generated by plot.py at 2018-06-29 20:47:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.97 Mbit/s
95th percentile per-packet one-way delay: 102.689 ms
Loss rate: 0.03%
-- Flow 1:
Average throughput: 1.34 Mbit/s
95th percentile per-packet one-way delay: 98.289 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 1.32 Mbit/s
95th percentile per-packet one-way delay: 103.658 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 2.34 Mbit/s
95th percentile per-packet one-way delay: 102.799 ms
Loss rate: 0.05%
```

Run 2: Report of Indigo — Data Link

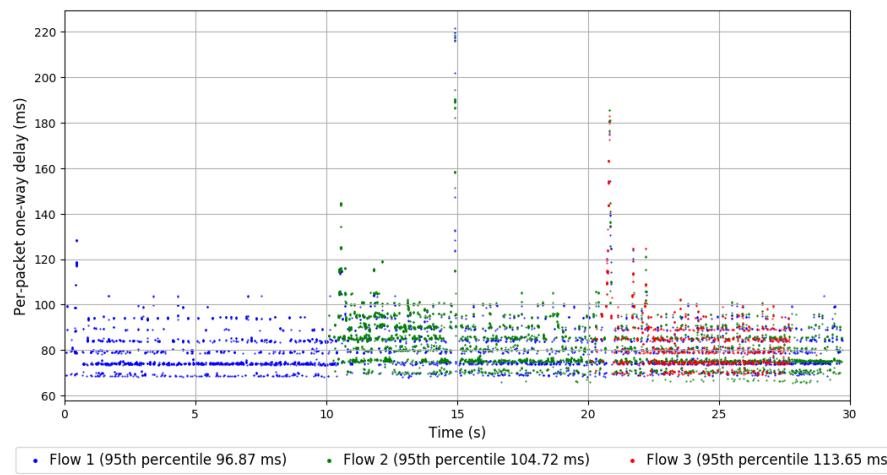
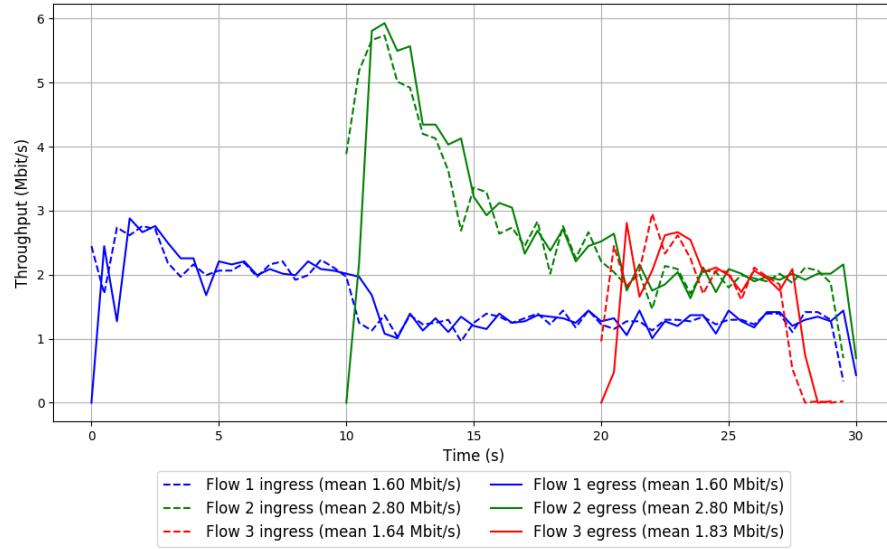


Run 3: Statistics of Indigo

```
Start at: 2018-06-29 20:44:50
End at: 2018-06-29 20:45:20
Local clock offset: 1.531 ms
Remote clock offset: -9.259 ms

# Below is generated by plot.py at 2018-06-29 20:47:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.98 Mbit/s
95th percentile per-packet one-way delay: 101.036 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 1.60 Mbit/s
95th percentile per-packet one-way delay: 96.866 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 2.80 Mbit/s
95th percentile per-packet one-way delay: 104.717 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 1.83 Mbit/s
95th percentile per-packet one-way delay: 113.649 ms
Loss rate: 0.08%
```

Run 3: Report of Indigo — Data Link

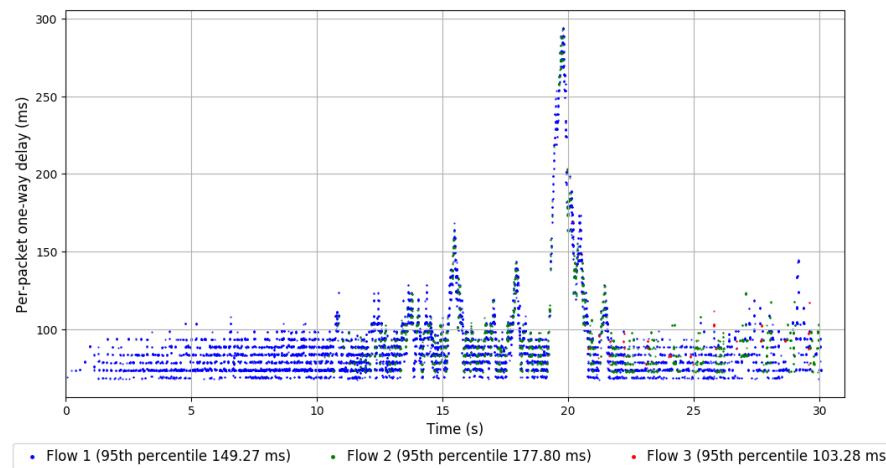
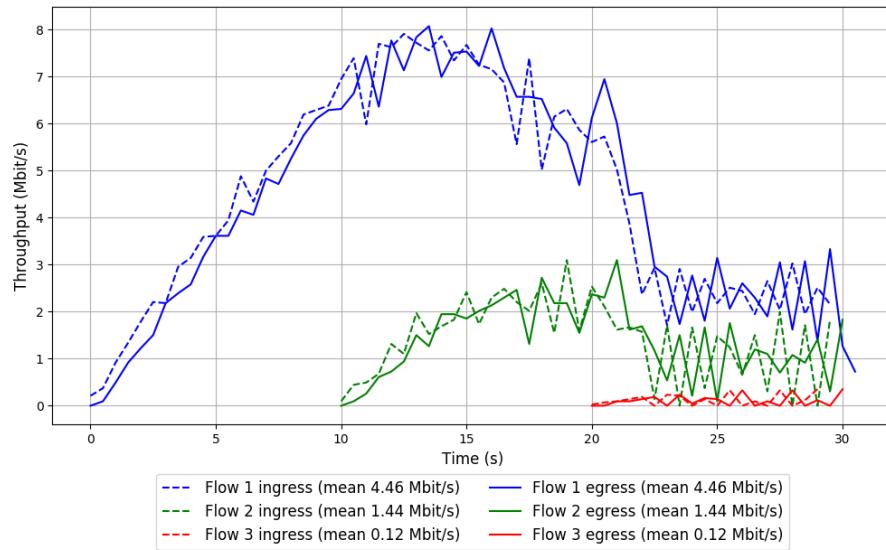


```
Run 1: Statistics of LEDBAT
```

```
Start at: 2018-06-29 19:32:47
End at: 2018-06-29 19:33:17
Local clock offset: 7.911 ms
Remote clock offset: -11.238 ms

# Below is generated by plot.py at 2018-06-29 20:47:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.45 Mbit/s
95th percentile per-packet one-way delay: 152.826 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 4.46 Mbit/s
95th percentile per-packet one-way delay: 149.273 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 1.44 Mbit/s
95th percentile per-packet one-way delay: 177.798 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.12 Mbit/s
95th percentile per-packet one-way delay: 103.280 ms
Loss rate: 0.00%
```

Run 1: Report of LEDBAT — Data Link

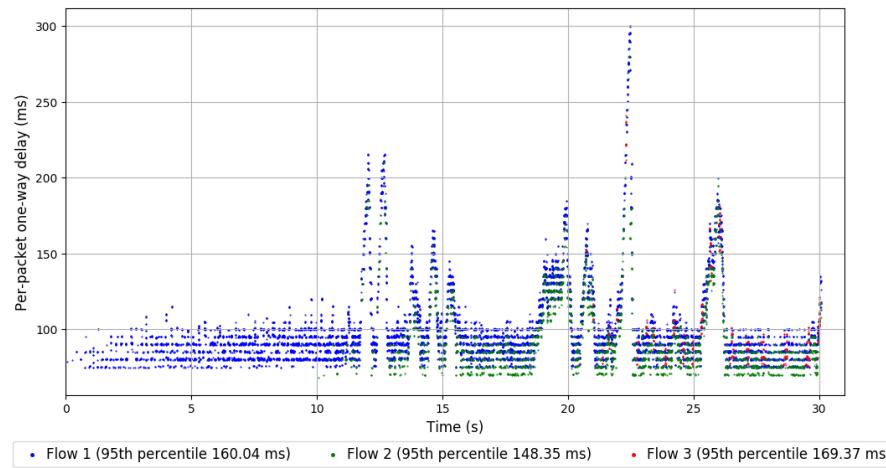
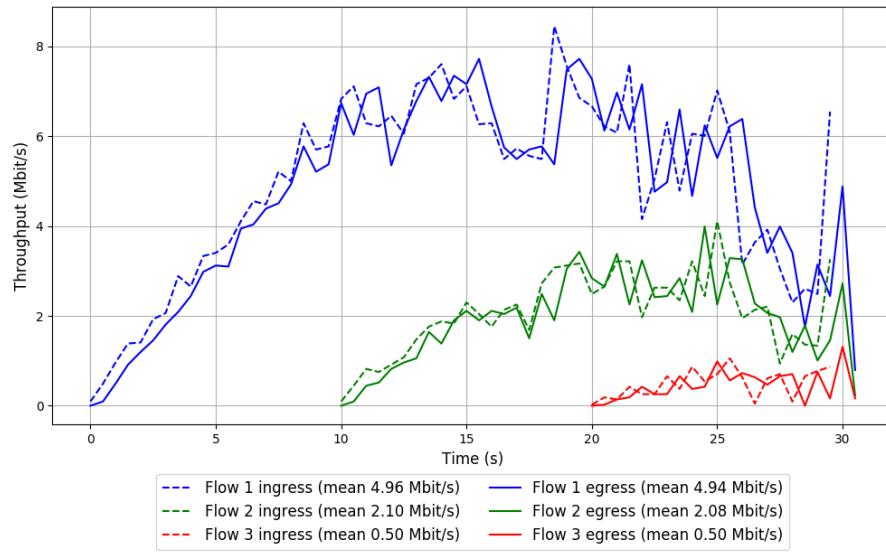


Run 2: Statistics of LEDBAT

```
Start at: 2018-06-29 19:58:54
End at: 2018-06-29 19:59:24
Local clock offset: -4.6 ms
Remote clock offset: -9.904 ms

# Below is generated by plot.py at 2018-06-29 20:47:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.49 Mbit/s
95th percentile per-packet one-way delay: 159.646 ms
Loss rate: 0.45%
-- Flow 1:
Average throughput: 4.94 Mbit/s
95th percentile per-packet one-way delay: 160.037 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 2.08 Mbit/s
95th percentile per-packet one-way delay: 148.351 ms
Loss rate: 0.67%
-- Flow 3:
Average throughput: 0.50 Mbit/s
95th percentile per-packet one-way delay: 169.370 ms
Loss rate: 0.00%
```

Run 2: Report of LEDBAT — Data Link

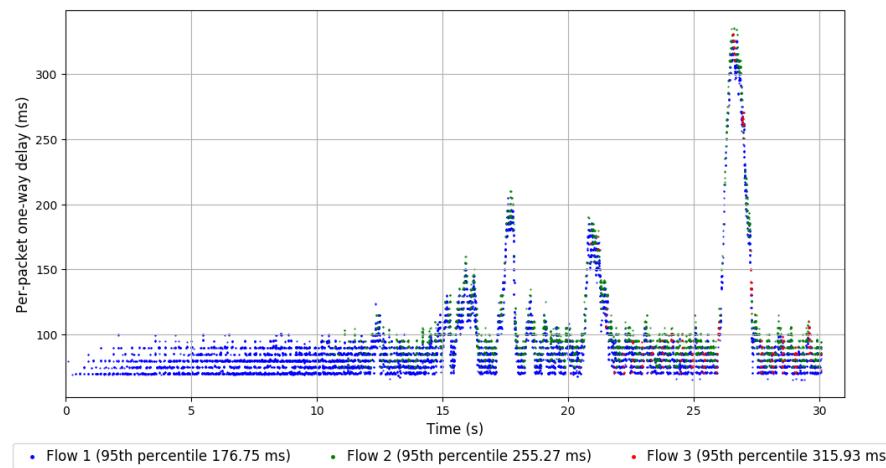
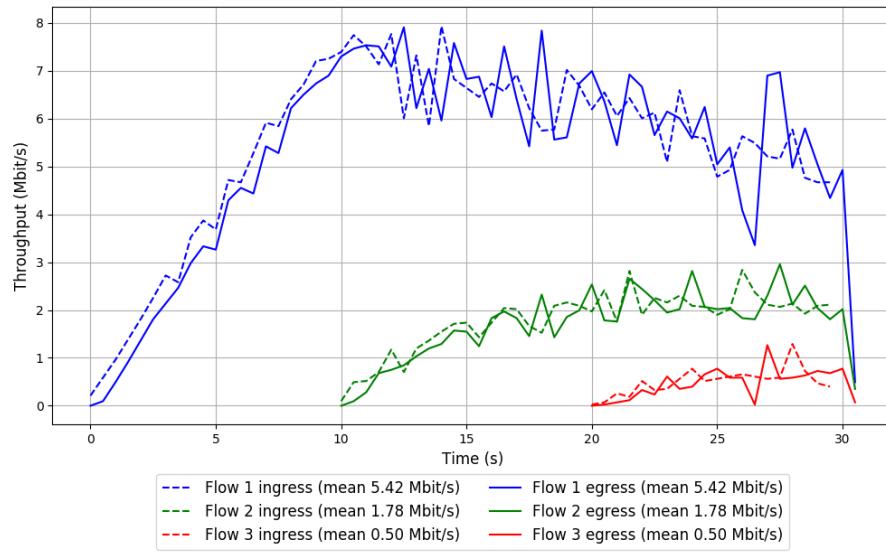


Run 3: Statistics of LEDBAT

```
Start at: 2018-06-29 20:25:41
End at: 2018-06-29 20:26:11
Local clock offset: -2.052 ms
Remote clock offset: -8.807 ms

# Below is generated by plot.py at 2018-06-29 20:47:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.77 Mbit/s
95th percentile per-packet one-way delay: 186.259 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 5.42 Mbit/s
95th percentile per-packet one-way delay: 176.752 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 1.78 Mbit/s
95th percentile per-packet one-way delay: 255.266 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 0.50 Mbit/s
95th percentile per-packet one-way delay: 315.927 ms
Loss rate: 0.00%
```

Run 3: Report of LEDBAT — Data Link

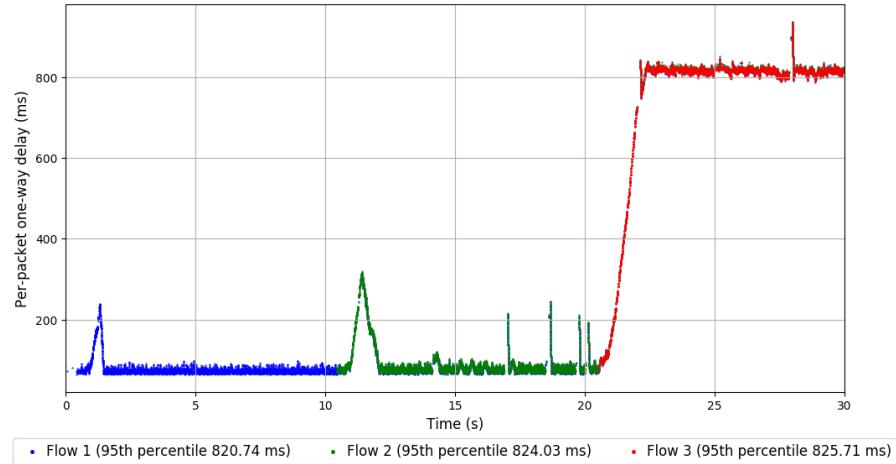
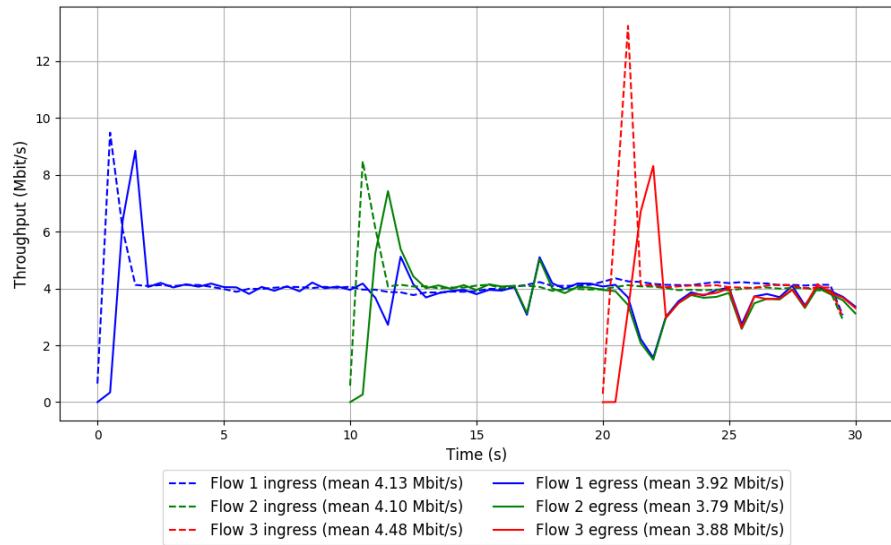


```
Run 1: Statistics of PCC-Allegro
```

```
Start at: 2018-06-29 19:52:47
End at: 2018-06-29 19:53:17
Local clock offset: -0.318 ms
Remote clock offset: -10.115 ms

# Below is generated by plot.py at 2018-06-29 20:47:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 7.72 Mbit/s
95th percentile per-packet one-way delay: 822.994 ms
Loss rate: 7.44%
-- Flow 1:
Average throughput: 3.92 Mbit/s
95th percentile per-packet one-way delay: 820.737 ms
Loss rate: 5.20%
-- Flow 2:
Average throughput: 3.79 Mbit/s
95th percentile per-packet one-way delay: 824.030 ms
Loss rate: 7.38%
-- Flow 3:
Average throughput: 3.88 Mbit/s
95th percentile per-packet one-way delay: 825.707 ms
Loss rate: 13.82%
```

Run 1: Report of PCC-Allegro — Data Link

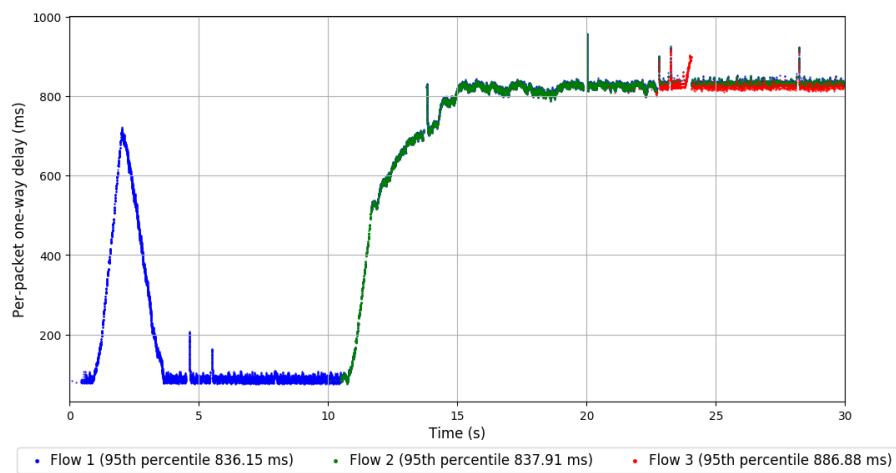
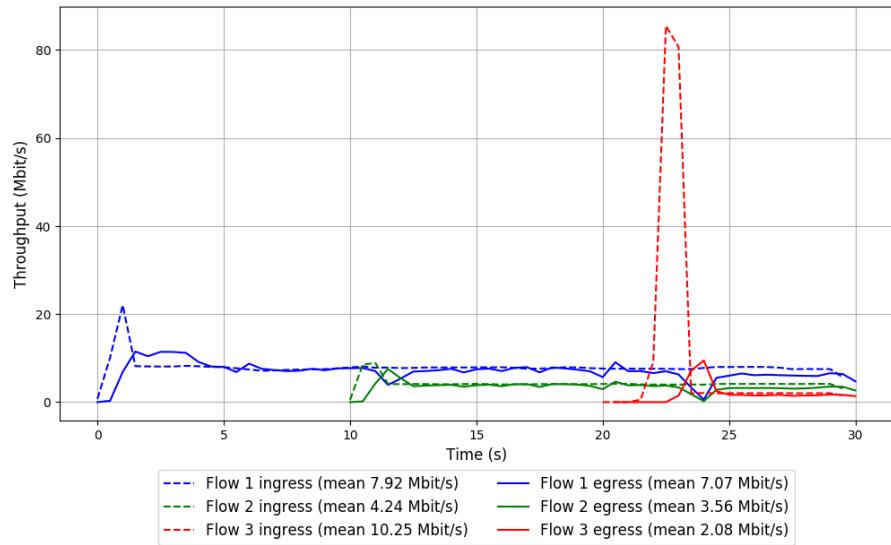


Run 2: Statistics of PCC-Allegro

```
Start at: 2018-06-29 20:19:20
End at: 2018-06-29 20:19:50
Local clock offset: -6.208 ms
Remote clock offset: -8.96 ms

# Below is generated by plot.py at 2018-06-29 20:47:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.07 Mbit/s
95th percentile per-packet one-way delay: 837.557 ms
Loss rate: 28.71%
-- Flow 1:
Average throughput: 7.07 Mbit/s
95th percentile per-packet one-way delay: 836.148 ms
Loss rate: 10.75%
-- Flow 2:
Average throughput: 3.56 Mbit/s
95th percentile per-packet one-way delay: 837.911 ms
Loss rate: 16.25%
-- Flow 3:
Average throughput: 2.08 Mbit/s
95th percentile per-packet one-way delay: 886.880 ms
Loss rate: 81.23%
```

Run 2: Report of PCC-Allegro — Data Link

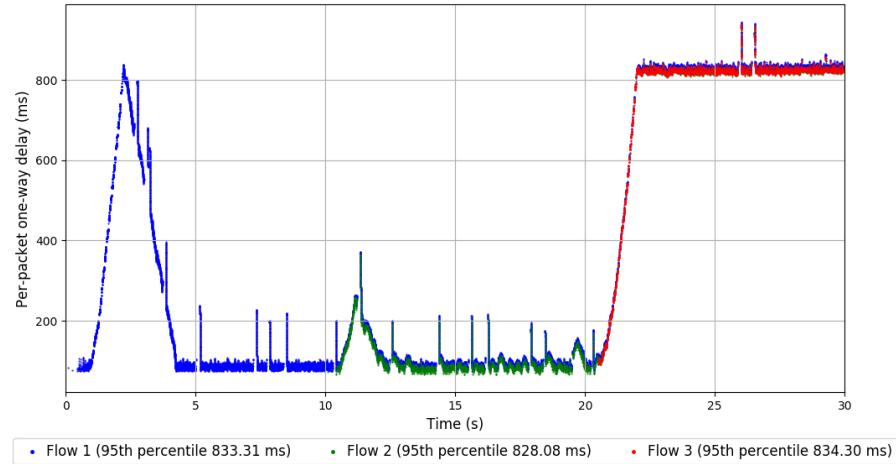
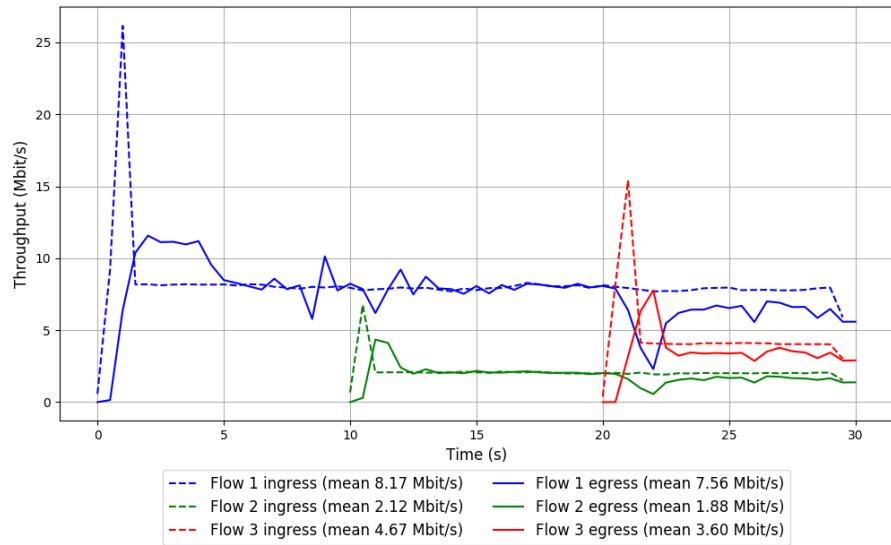


Run 3: Statistics of PCC-Allegro

```
Start at: 2018-06-29 20:46:19
End at: 2018-06-29 20:46:49
Local clock offset: 1.518 ms
Remote clock offset: -9.291 ms

# Below is generated by plot.py at 2018-06-29 20:47:51
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.00 Mbit/s
95th percentile per-packet one-way delay: 832.746 ms
Loss rate: 10.12%
-- Flow 1:
Average throughput: 7.56 Mbit/s
95th percentile per-packet one-way delay: 833.311 ms
Loss rate: 7.47%
-- Flow 2:
Average throughput: 1.88 Mbit/s
95th percentile per-packet one-way delay: 828.079 ms
Loss rate: 11.31%
-- Flow 3:
Average throughput: 3.60 Mbit/s
95th percentile per-packet one-way delay: 834.299 ms
Loss rate: 23.08%
```

Run 3: Report of PCC-Allegro — Data Link

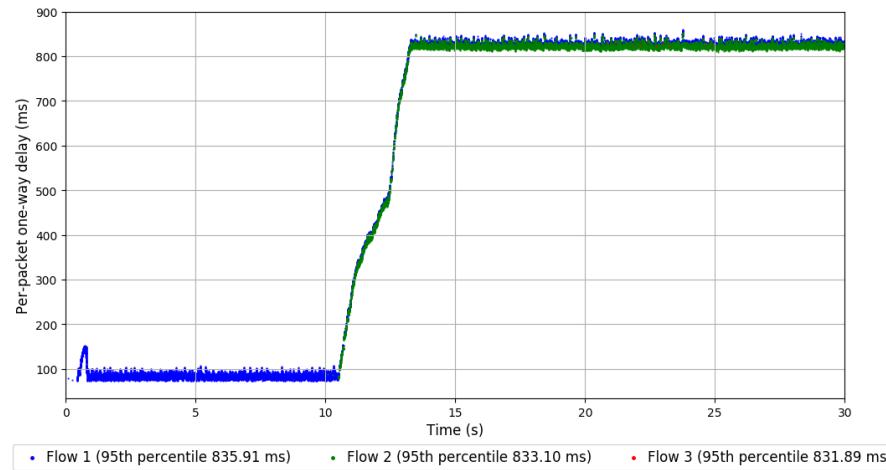
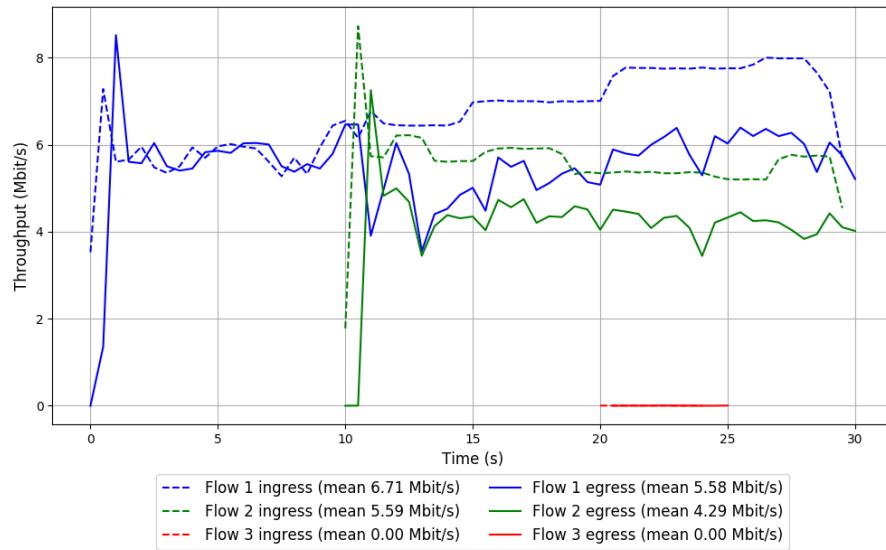


```
Run 1: Statistics of PCC-Expr
```

```
Start at: 2018-06-29 19:44:43
End at: 2018-06-29 19:45:13
Local clock offset: 9.469 ms
Remote clock offset: -10.418 ms

# Below is generated by plot.py at 2018-06-29 20:48:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.43 Mbit/s
95th percentile per-packet one-way delay: 835.114 ms
Loss rate: 19.20%
-- Flow 1:
Average throughput: 5.58 Mbit/s
95th percentile per-packet one-way delay: 835.910 ms
Loss rate: 16.84%
-- Flow 2:
Average throughput: 4.29 Mbit/s
95th percentile per-packet one-way delay: 833.100 ms
Loss rate: 23.45%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 831.888 ms
Loss rate: 36.50%
```

Run 1: Report of PCC-Expr — Data Link

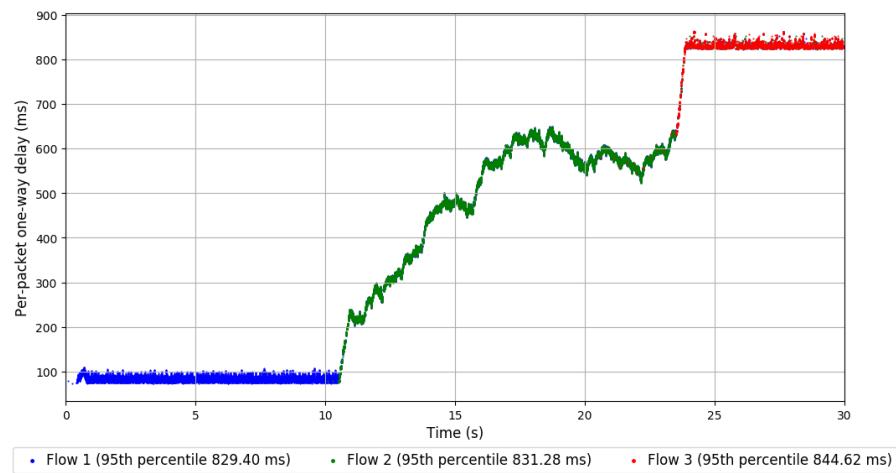
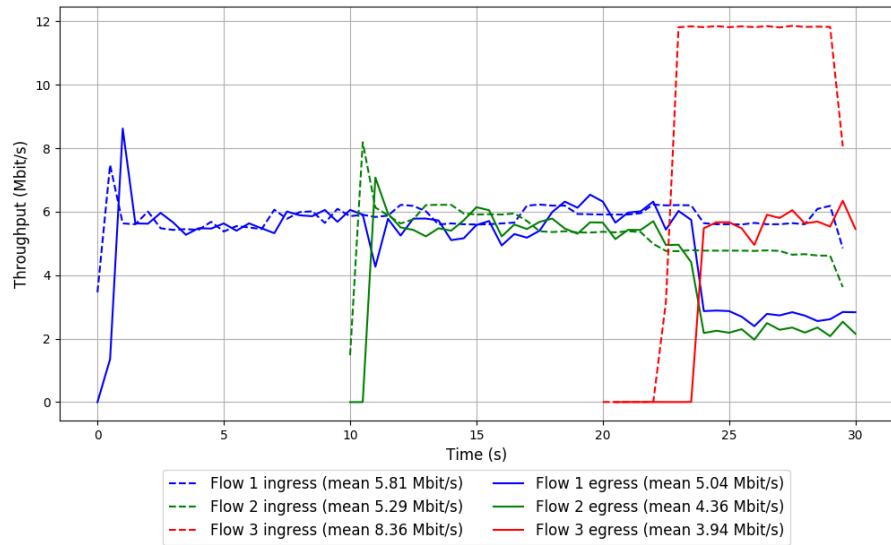


Run 2: Statistics of PCC-Expr

```
Start at: 2018-06-29 20:11:09
End at: 2018-06-29 20:11:39
Local clock offset: -9.046 ms
Remote clock offset: -9.292 ms

# Below is generated by plot.py at 2018-06-29 20:48:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 9.17 Mbit/s
95th percentile per-packet one-way delay: 833.980 ms
Loss rate: 24.16%
-- Flow 1:
Average throughput: 5.04 Mbit/s
95th percentile per-packet one-way delay: 829.397 ms
Loss rate: 13.29%
-- Flow 2:
Average throughput: 4.36 Mbit/s
95th percentile per-packet one-way delay: 831.280 ms
Loss rate: 17.64%
-- Flow 3:
Average throughput: 3.94 Mbit/s
95th percentile per-packet one-way delay: 844.619 ms
Loss rate: 55.35%
```

Run 2: Report of PCC-Expr — Data Link

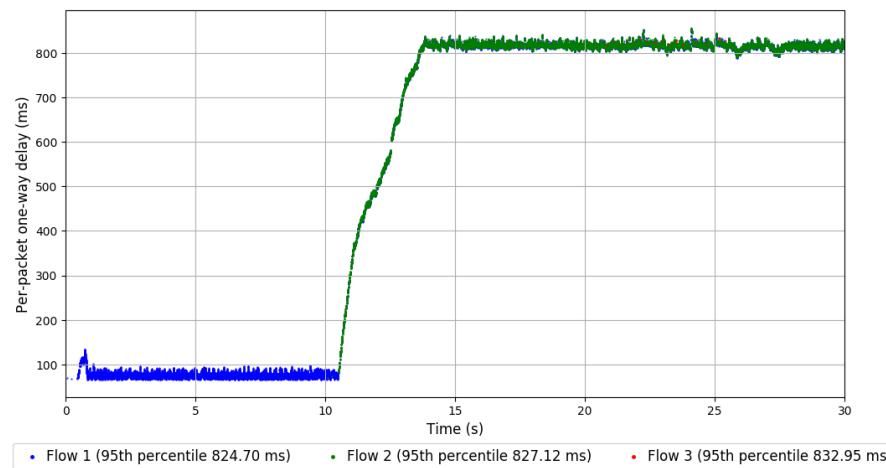
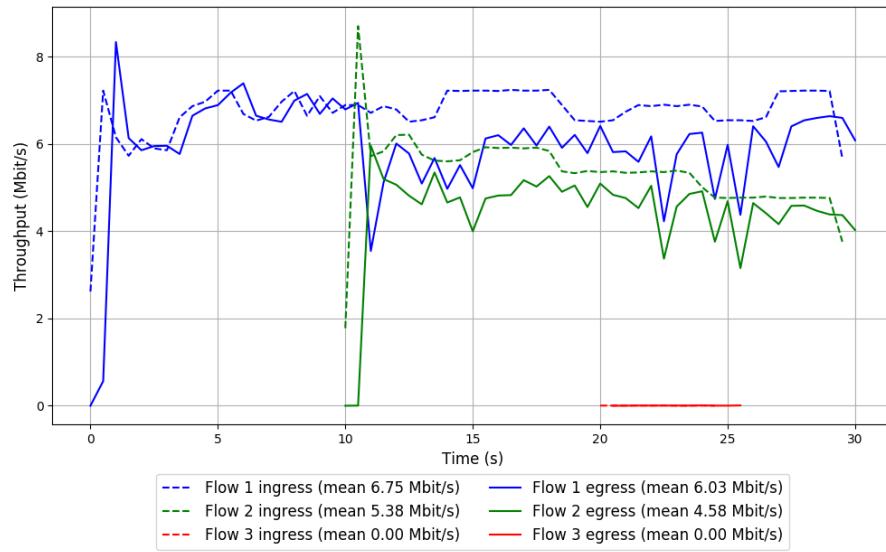


Run 3: Statistics of PCC-Expr

```
Start at: 2018-06-29 20:38:00
End at: 2018-06-29 20:38:30
Local clock offset: 0.858 ms
Remote clock offset: -9.002 ms

# Below is generated by plot.py at 2018-06-29 20:48:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 9.08 Mbit/s
95th percentile per-packet one-way delay: 825.697 ms
Loss rate: 12.05%
-- Flow 1:
Average throughput: 6.03 Mbit/s
95th percentile per-packet one-way delay: 824.700 ms
Loss rate: 10.59%
-- Flow 2:
Average throughput: 4.58 Mbit/s
95th percentile per-packet one-way delay: 827.122 ms
Loss rate: 14.82%
-- Flow 3:
Average throughput: 0.00 Mbit/s
95th percentile per-packet one-way delay: 832.947 ms
Loss rate: 0.00%
```

Run 3: Report of PCC-Expr — Data Link

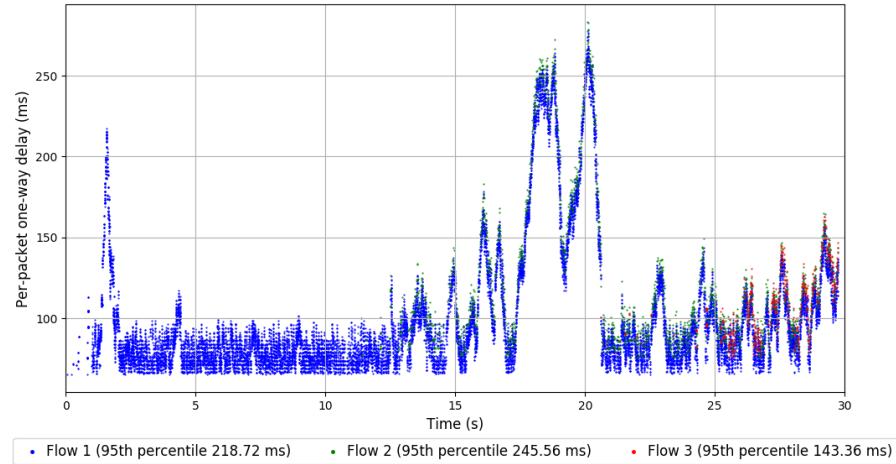
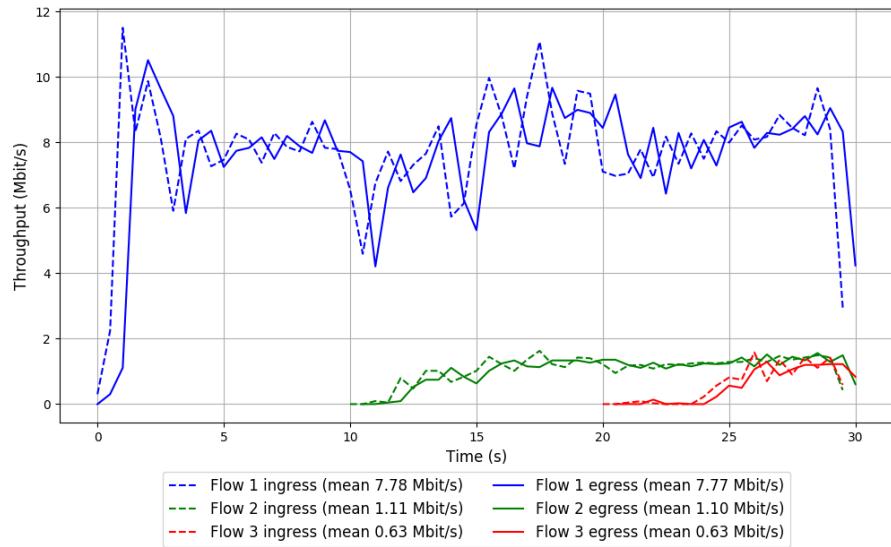


```
Run 1: Statistics of QUIC Cubic

Start at: 2018-06-29 19:41:23
End at: 2018-06-29 19:41:53
Local clock offset: 9.012 ms
Remote clock offset: -10.602 ms

# Below is generated by plot.py at 2018-06-29 20:48:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 8.68 Mbit/s
95th percentile per-packet one-way delay: 220.998 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 7.77 Mbit/s
95th percentile per-packet one-way delay: 218.723 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 1.10 Mbit/s
95th percentile per-packet one-way delay: 245.564 ms
Loss rate: 0.32%
-- Flow 3:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 143.357 ms
Loss rate: 1.56%
```

Run 1: Report of QUIC Cubic — Data Link

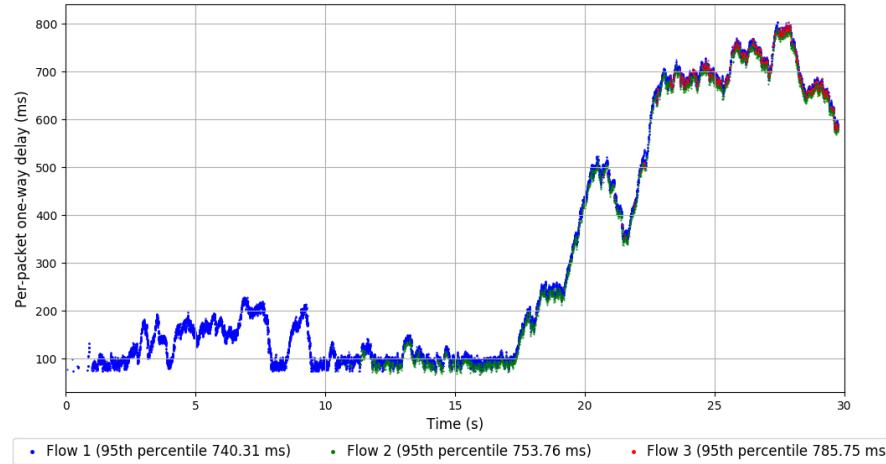
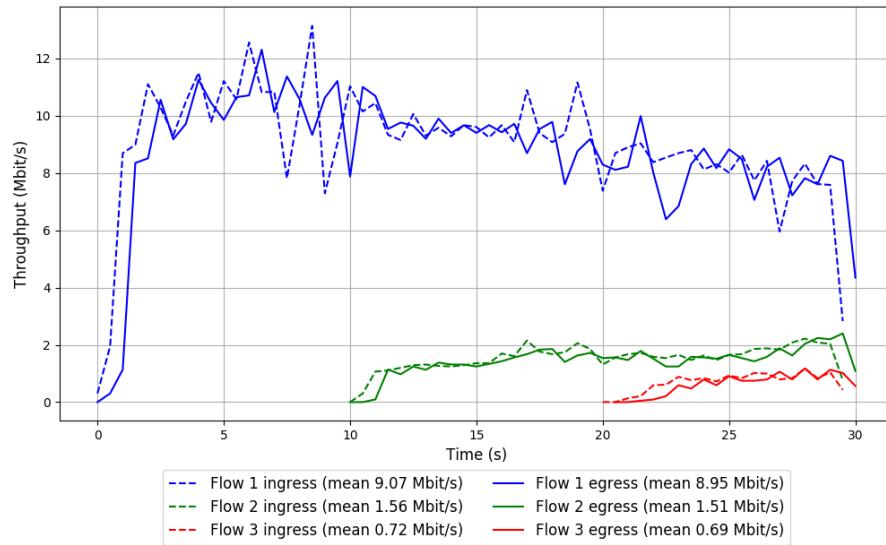


Run 2: Statistics of QUIC Cubic

```
Start at: 2018-06-29 20:07:44
End at: 2018-06-29 20:08:14
Local clock offset: -8.301 ms
Remote clock offset: -9.401 ms

# Below is generated by plot.py at 2018-06-29 20:48:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.15 Mbit/s
95th percentile per-packet one-way delay: 744.066 ms
Loss rate: 1.80%
-- Flow 1:
Average throughput: 8.95 Mbit/s
95th percentile per-packet one-way delay: 740.308 ms
Loss rate: 1.45%
-- Flow 2:
Average throughput: 1.51 Mbit/s
95th percentile per-packet one-way delay: 753.761 ms
Loss rate: 3.41%
-- Flow 3:
Average throughput: 0.69 Mbit/s
95th percentile per-packet one-way delay: 785.755 ms
Loss rate: 8.28%
```

Run 2: Report of QUIC Cubic — Data Link

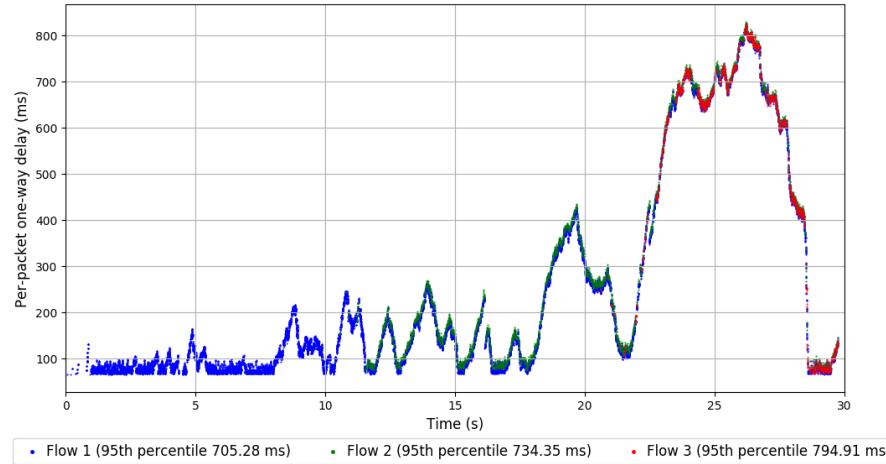
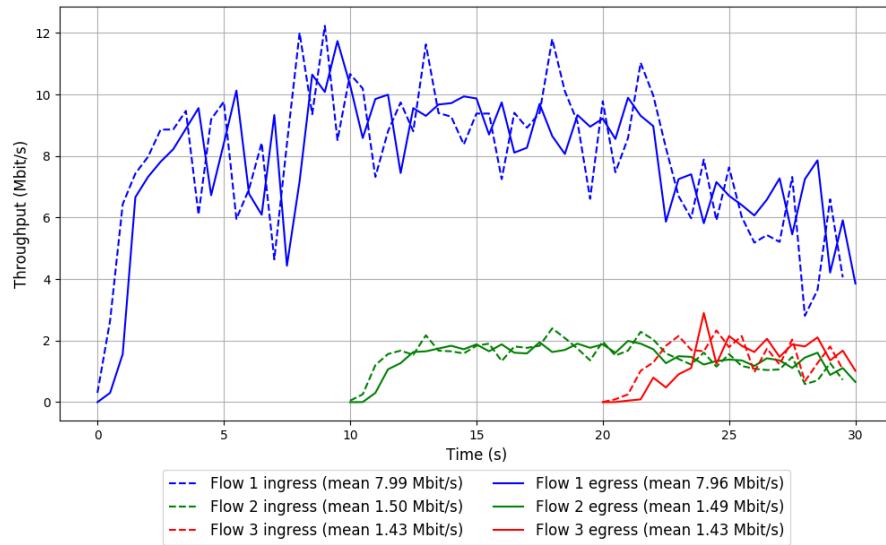


Run 3: Statistics of QUIC Cubic

```
Start at: 2018-06-29 20:34:39
End at: 2018-06-29 20:35:09
Local clock offset: 0.444 ms
Remote clock offset: -8.879 ms

# Below is generated by plot.py at 2018-06-29 20:48:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 9.39 Mbit/s
95th percentile per-packet one-way delay: 717.927 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 7.96 Mbit/s
95th percentile per-packet one-way delay: 705.276 ms
Loss rate: 0.40%
-- Flow 2:
Average throughput: 1.49 Mbit/s
95th percentile per-packet one-way delay: 734.346 ms
Loss rate: 0.70%
-- Flow 3:
Average throughput: 1.43 Mbit/s
95th percentile per-packet one-way delay: 794.915 ms
Loss rate: 1.84%
```

Run 3: Report of QUIC Cubic — Data Link

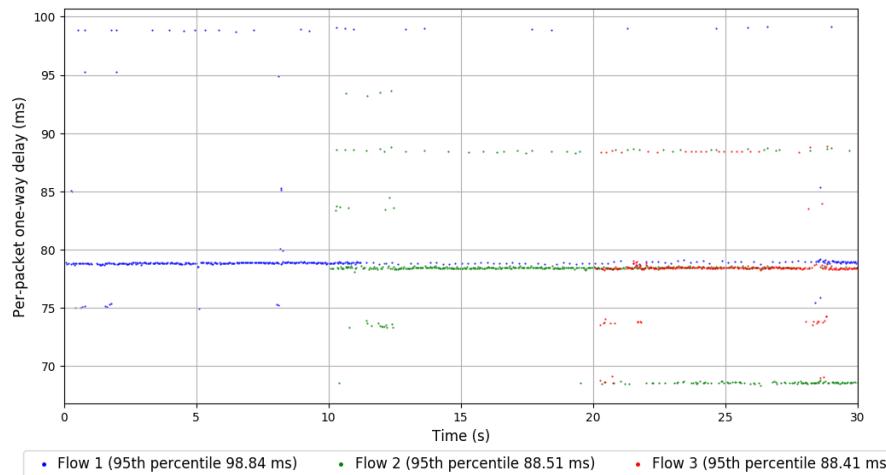
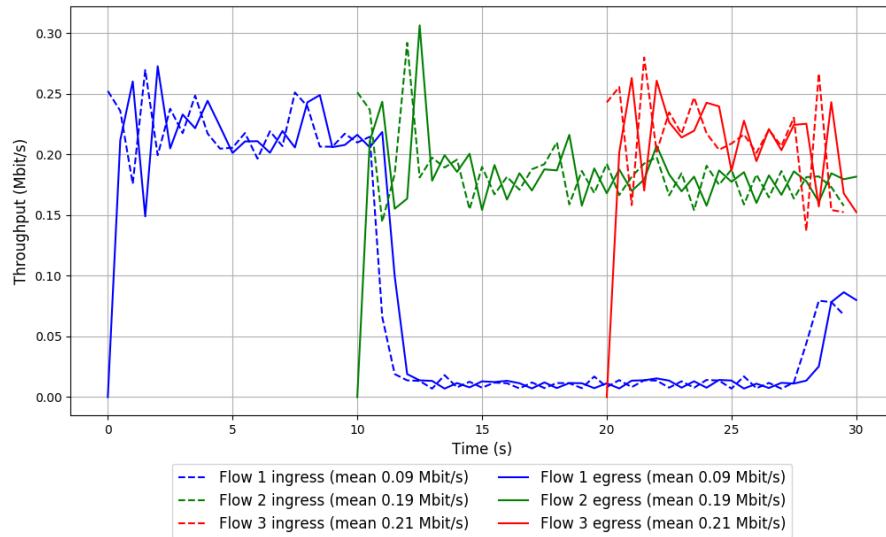


```
Run 1: Statistics of SCReAM
```

```
Start at: 2018-06-29 19:37:25
End at: 2018-06-29 19:37:55
Local clock offset: 8.523 ms
Remote clock offset: -10.818 ms

# Below is generated by plot.py at 2018-06-29 20:48:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 88.481 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 98.840 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.19 Mbit/s
95th percentile per-packet one-way delay: 88.508 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 88.413 ms
Loss rate: 0.28%
```

Run 1: Report of SCReAM — Data Link

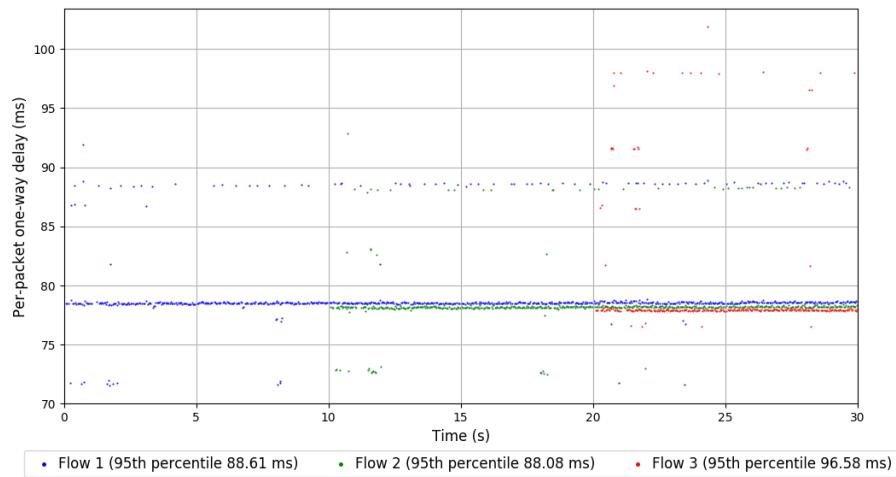
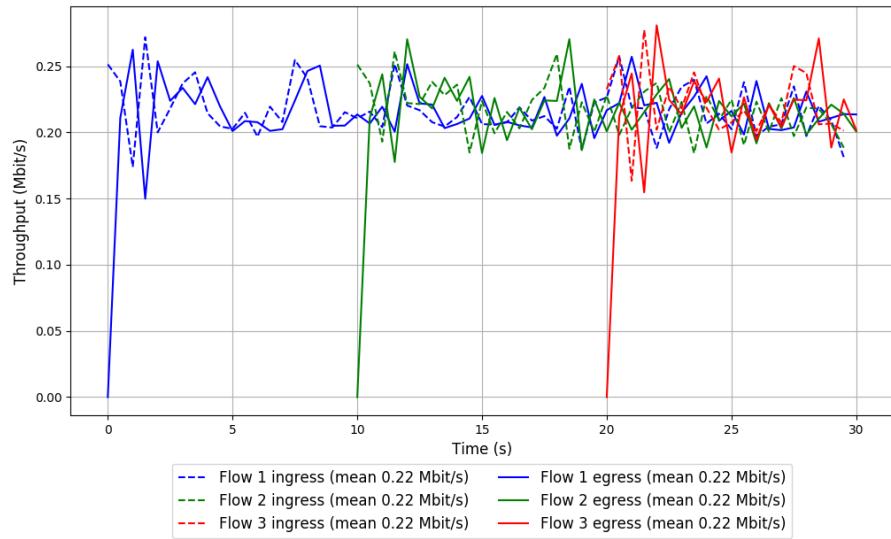


Run 2: Statistics of SCReAM

```
Start at: 2018-06-29 20:03:38
End at: 2018-06-29 20:04:08
Local clock offset: -6.862 ms
Remote clock offset: -9.569 ms

# Below is generated by plot.py at 2018-06-29 20:48:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 88.578 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 88.608 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 88.081 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 96.580 ms
Loss rate: 0.35%
```

Run 2: Report of SCReAM — Data Link

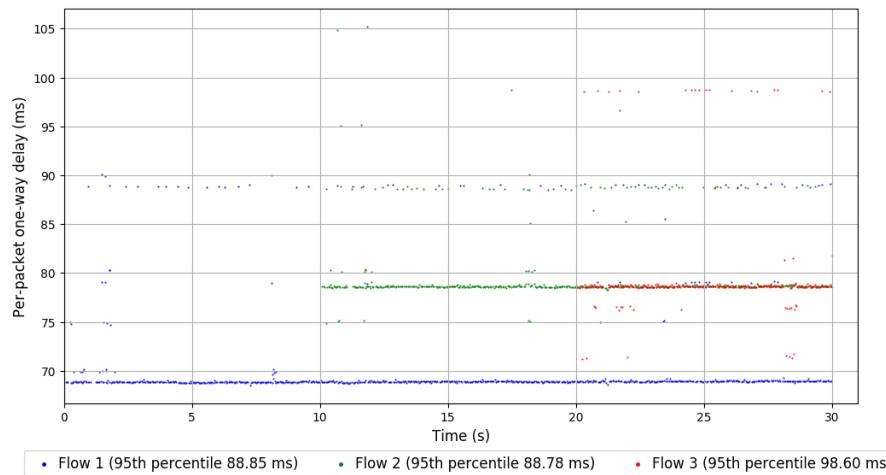
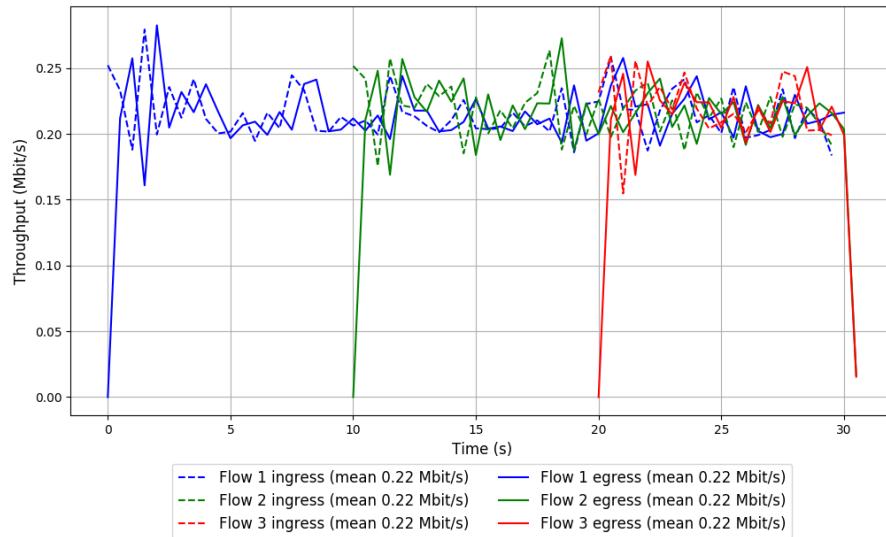


Run 3: Statistics of SCReAM

```
Start at: 2018-06-29 20:30:21
End at: 2018-06-29 20:30:51
Local clock offset: -0.529 ms
Remote clock offset: -8.647 ms

# Below is generated by plot.py at 2018-06-29 20:48:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 88.825 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 88.852 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 88.779 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 98.600 ms
Loss rate: 0.00%
```

Run 3: Report of SCReAM — Data Link

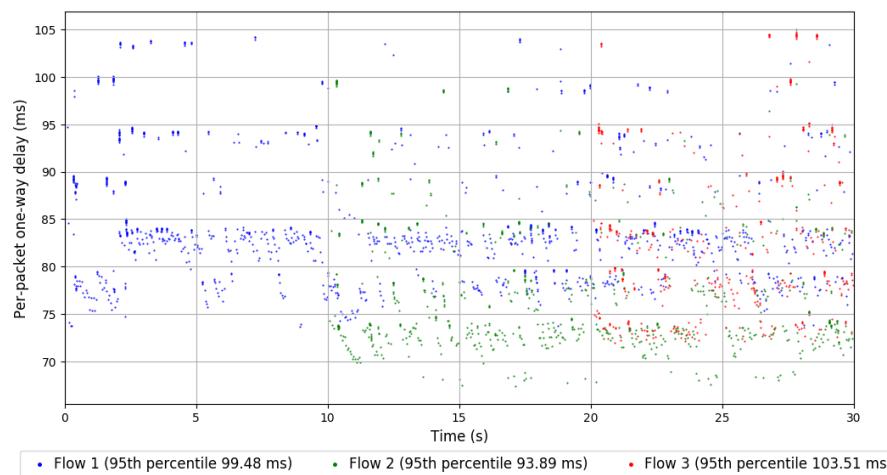
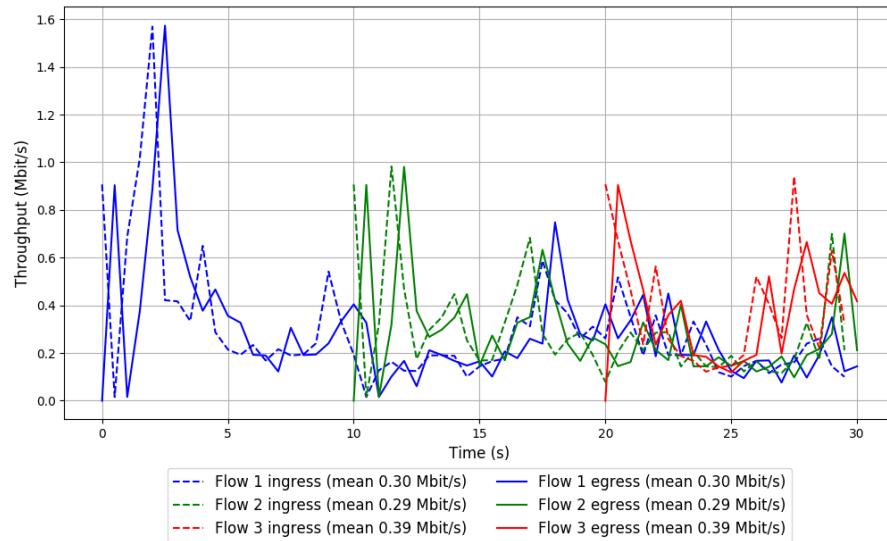


Run 1: Statistics of Sprout

```
Start at: 2018-06-29 19:38:45
End at: 2018-06-29 19:39:15
Local clock offset: 8.87 ms
Remote clock offset: -10.737 ms

# Below is generated by plot.py at 2018-06-29 20:48:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.62 Mbit/s
95th percentile per-packet one-way delay: 99.058 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 99.481 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 93.888 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 103.507 ms
Loss rate: 0.00%
```

Run 1: Report of Sprout — Data Link

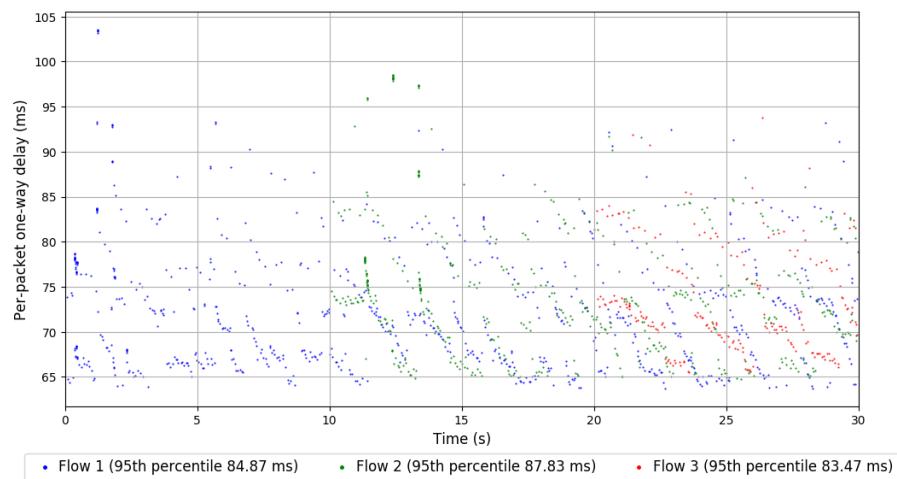
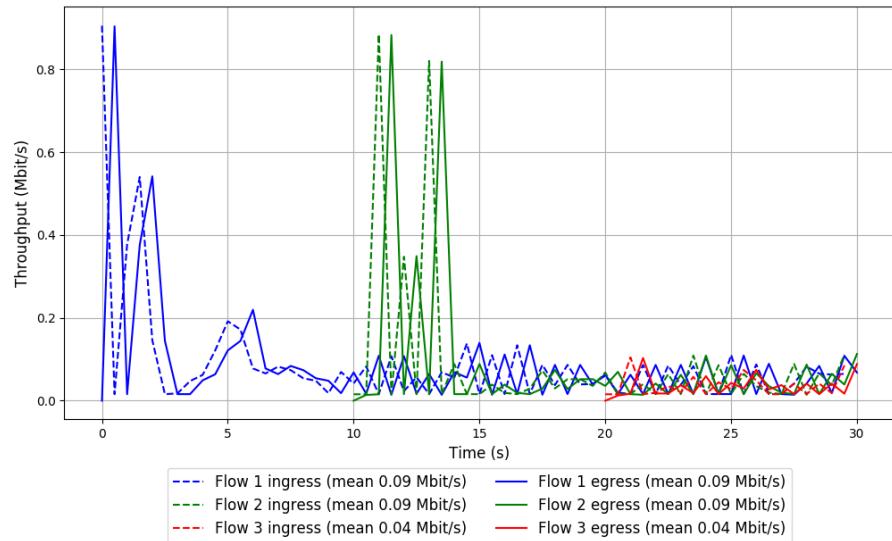


Run 2: Statistics of Sprout

```
Start at: 2018-06-29 20:05:07
End at: 2018-06-29 20:05:37
Local clock offset: -7.374 ms
Remote clock offset: -9.576 ms

# Below is generated by plot.py at 2018-06-29 20:48:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 86.960 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 84.873 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.09 Mbit/s
95th percentile per-packet one-way delay: 87.834 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.04 Mbit/s
95th percentile per-packet one-way delay: 83.468 ms
Loss rate: 0.00%
```

Run 2: Report of Sprout — Data Link

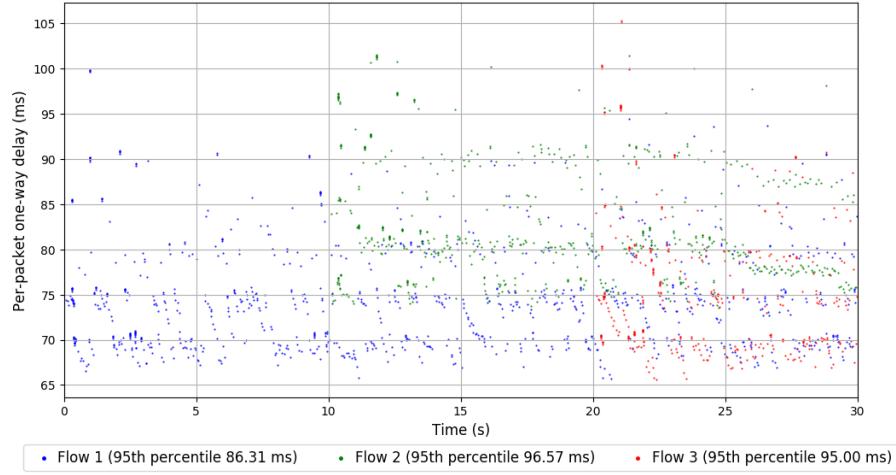
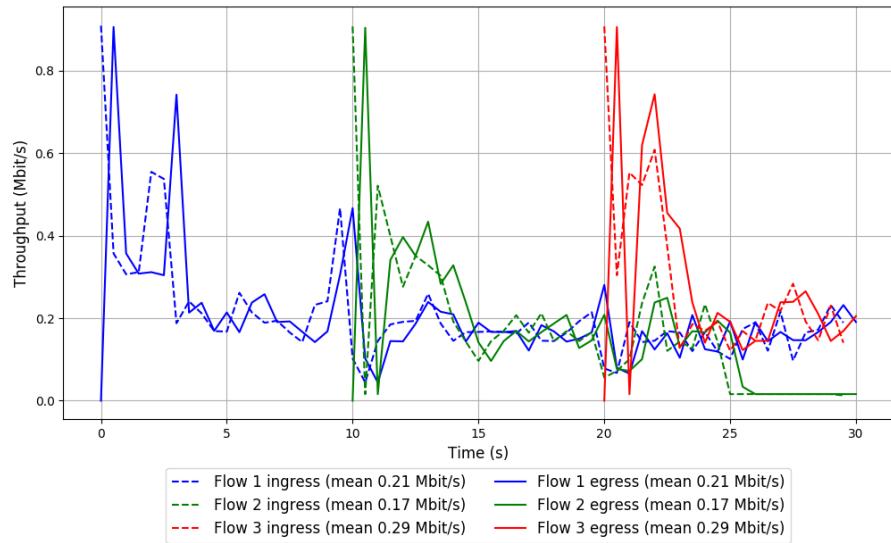


Run 3: Statistics of Sprout

```
Start at: 2018-06-29 20:31:44
End at: 2018-06-29 20:32:14
Local clock offset: -0.115 ms
Remote clock offset: -8.606 ms

# Below is generated by plot.py at 2018-06-29 20:48:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 91.281 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 86.307 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.17 Mbit/s
95th percentile per-packet one-way delay: 96.567 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.29 Mbit/s
95th percentile per-packet one-way delay: 94.996 ms
Loss rate: 0.00%
```

Run 3: Report of Sprout — Data Link

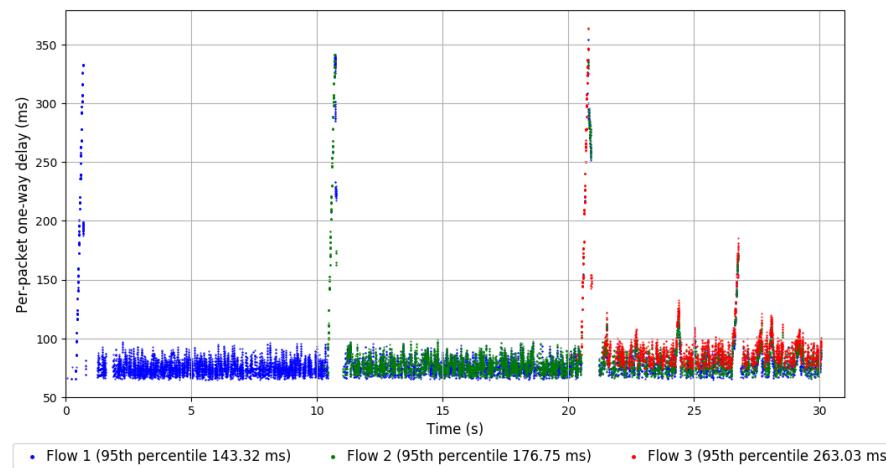
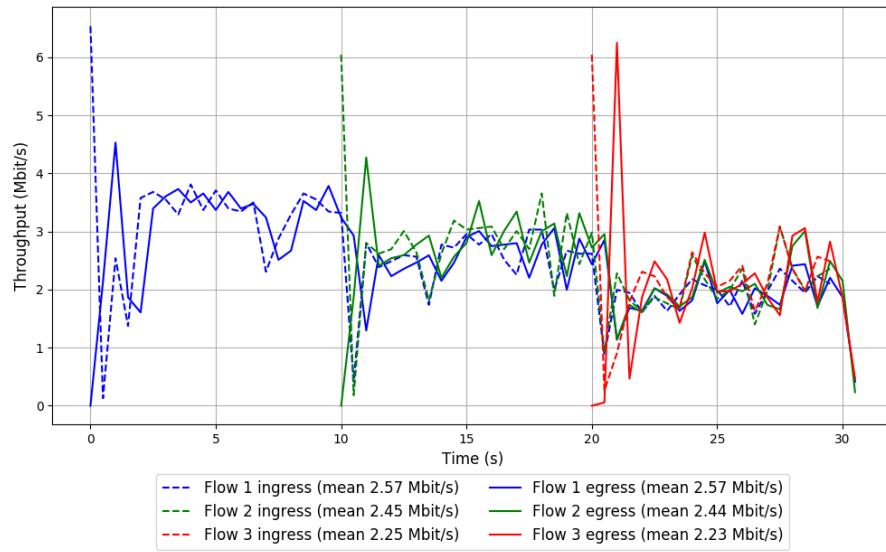


Run 1: Statistics of TaoVA-100x

```
Start at: 2018-06-29 19:27:54
End at: 2018-06-29 19:28:24
Local clock offset: 6.637 ms
Remote clock offset: -11.827 ms

# Below is generated by plot.py at 2018-06-29 20:48:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 4.94 Mbit/s
95th percentile per-packet one-way delay: 181.816 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 2.57 Mbit/s
95th percentile per-packet one-way delay: 143.319 ms
Loss rate: 0.15%
-- Flow 2:
Average throughput: 2.44 Mbit/s
95th percentile per-packet one-way delay: 176.754 ms
Loss rate: 0.24%
-- Flow 3:
Average throughput: 2.23 Mbit/s
95th percentile per-packet one-way delay: 263.029 ms
Loss rate: 0.92%
```

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

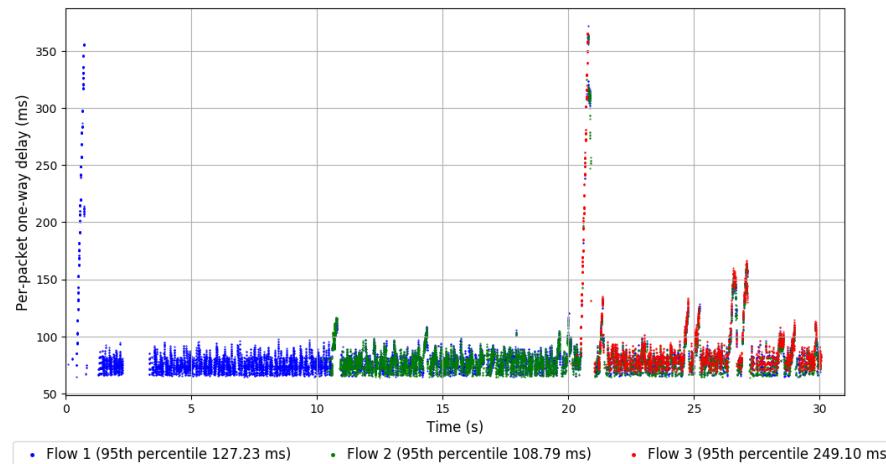
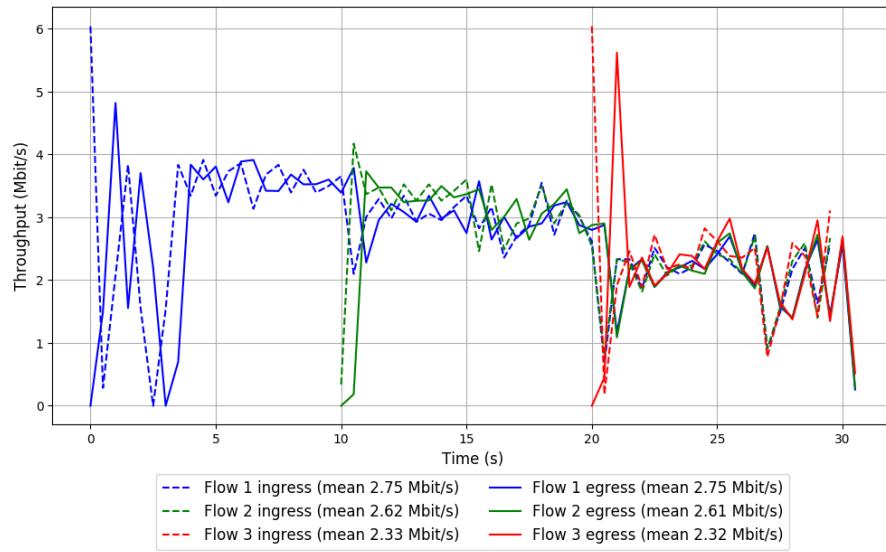


Run 2: Statistics of TaoVA-100x

```
Start at: 2018-06-29 19:54:14
End at: 2018-06-29 19:54:44
Local clock offset: -1.605 ms
Remote clock offset: -10.083 ms

# Below is generated by plot.py at 2018-06-29 20:48:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.26 Mbit/s
95th percentile per-packet one-way delay: 139.068 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 2.75 Mbit/s
95th percentile per-packet one-way delay: 127.234 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 2.61 Mbit/s
95th percentile per-packet one-way delay: 108.794 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 2.32 Mbit/s
95th percentile per-packet one-way delay: 249.103 ms
Loss rate: 0.34%
```

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

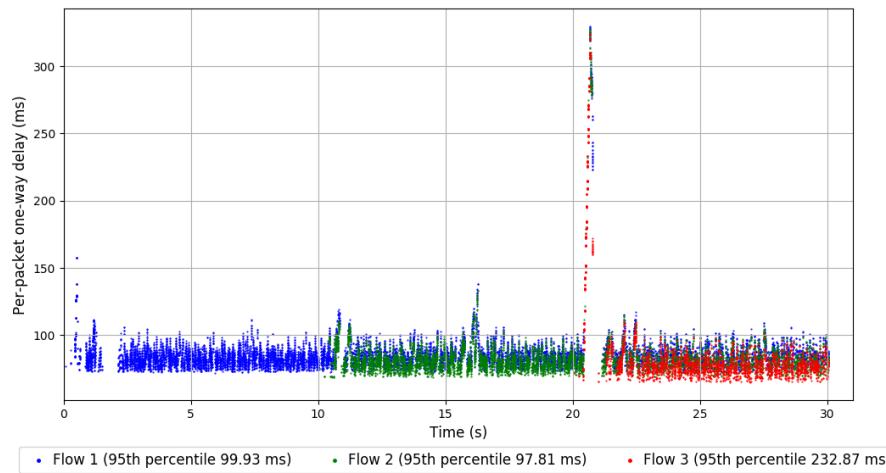
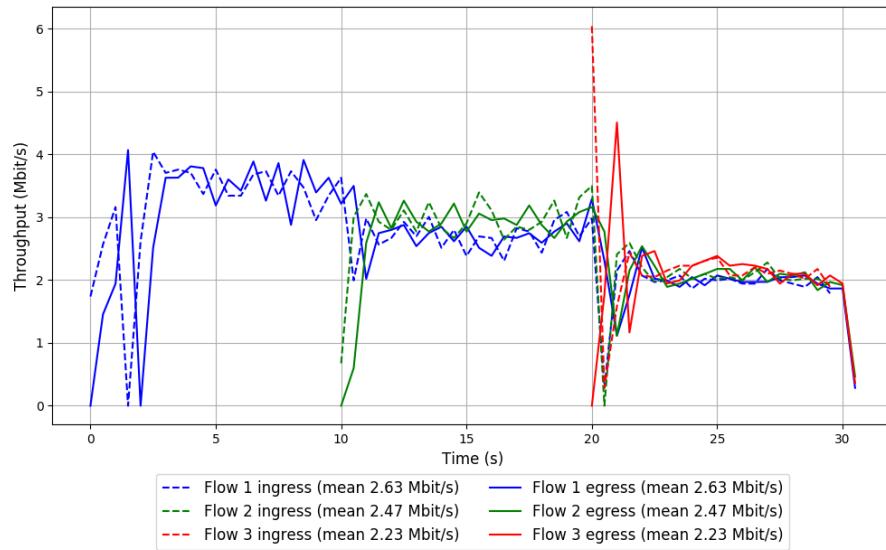


Run 3: Statistics of TaoVA-100x

```
Start at: 2018-06-29 20:20:52
End at: 2018-06-29 20:21:22
Local clock offset: -4.907 ms
Remote clock offset: -8.967 ms

# Below is generated by plot.py at 2018-06-29 20:48:12
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.02 Mbit/s
95th percentile per-packet one-way delay: 101.568 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 2.63 Mbit/s
95th percentile per-packet one-way delay: 99.934 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 2.47 Mbit/s
95th percentile per-packet one-way delay: 97.809 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 2.23 Mbit/s
95th percentile per-packet one-way delay: 232.872 ms
Loss rate: 0.12%
```

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

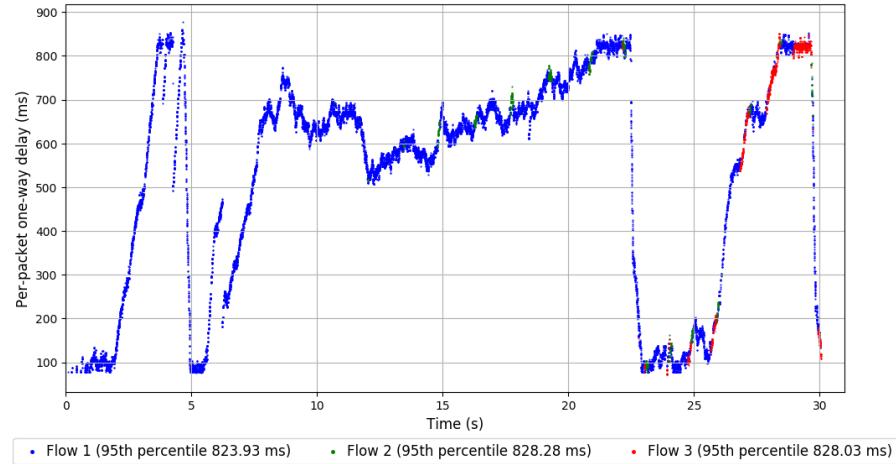
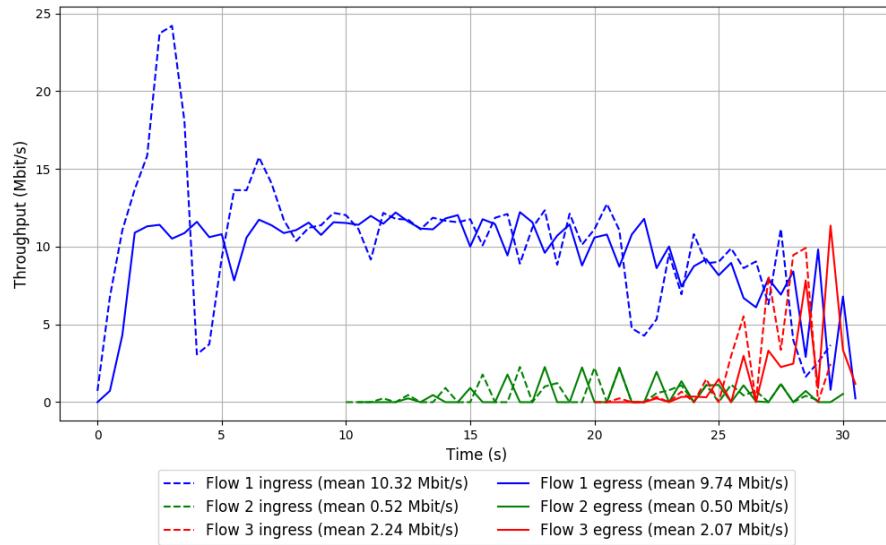


Run 1: Statistics of TCP Vegas

```
Start at: 2018-06-29 19:29:33
End at: 2018-06-29 19:30:03
Local clock offset: 7.084 ms
Remote clock offset: -11.591 ms

# Below is generated by plot.py at 2018-06-29 20:48:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.70 Mbit/s
95th percentile per-packet one-way delay: 824.748 ms
Loss rate: 6.14%
-- Flow 1:
Average throughput: 9.74 Mbit/s
95th percentile per-packet one-way delay: 823.926 ms
Loss rate: 5.65%
-- Flow 2:
Average throughput: 0.50 Mbit/s
95th percentile per-packet one-way delay: 828.282 ms
Loss rate: 3.64%
-- Flow 3:
Average throughput: 2.07 Mbit/s
95th percentile per-packet one-way delay: 828.032 ms
Loss rate: 13.94%
```

Run 1: Report of TCP Vegas — Data Link

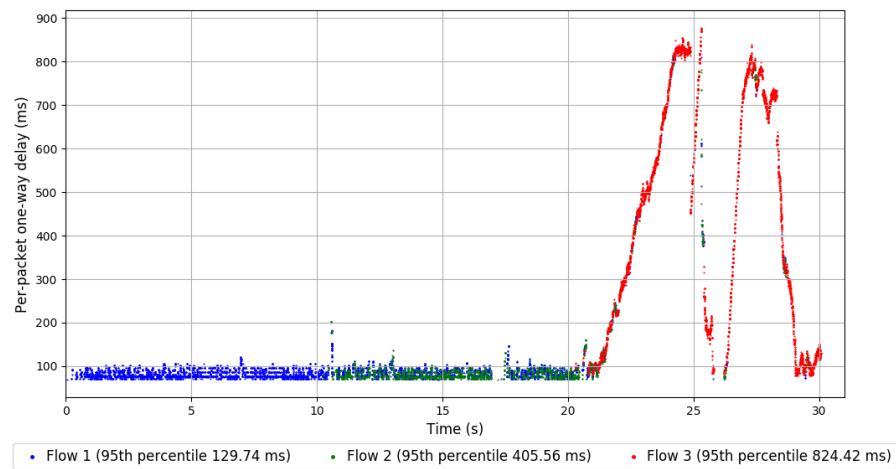
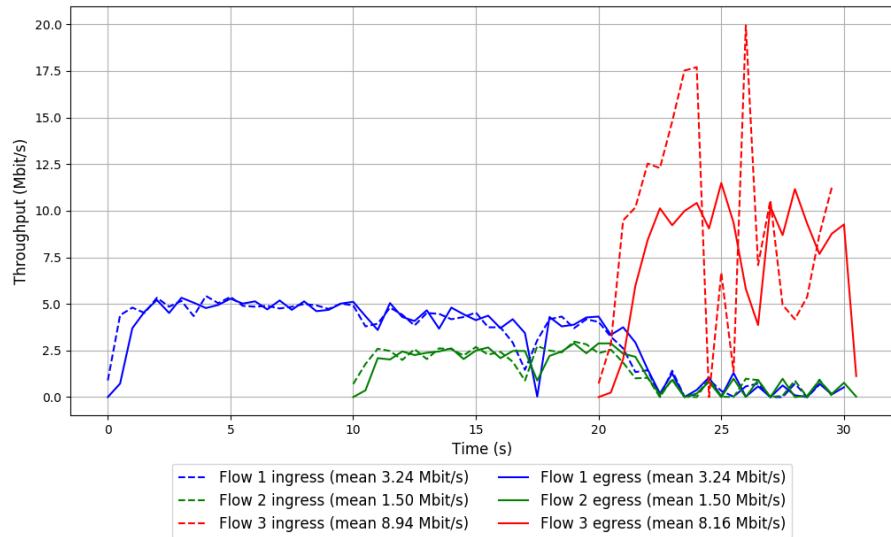


Run 2: Statistics of TCP Vegas

```
Start at: 2018-06-29 19:55:55
End at: 2018-06-29 19:56:25
Local clock offset: -2.847 ms
Remote clock offset: -10.037 ms

# Below is generated by plot.py at 2018-06-29 20:48:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.89 Mbit/s
95th percentile per-packet one-way delay: 793.874 ms
Loss rate: 3.75%
-- Flow 1:
Average throughput: 3.24 Mbit/s
95th percentile per-packet one-way delay: 129.741 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 1.50 Mbit/s
95th percentile per-packet one-way delay: 405.563 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 8.16 Mbit/s
95th percentile per-packet one-way delay: 824.422 ms
Loss rate: 8.93%
```

Run 2: Report of TCP Vegas — Data Link

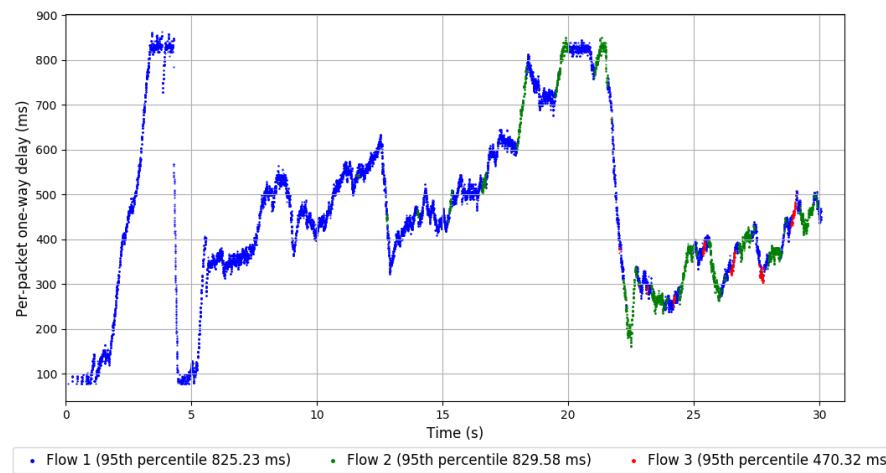
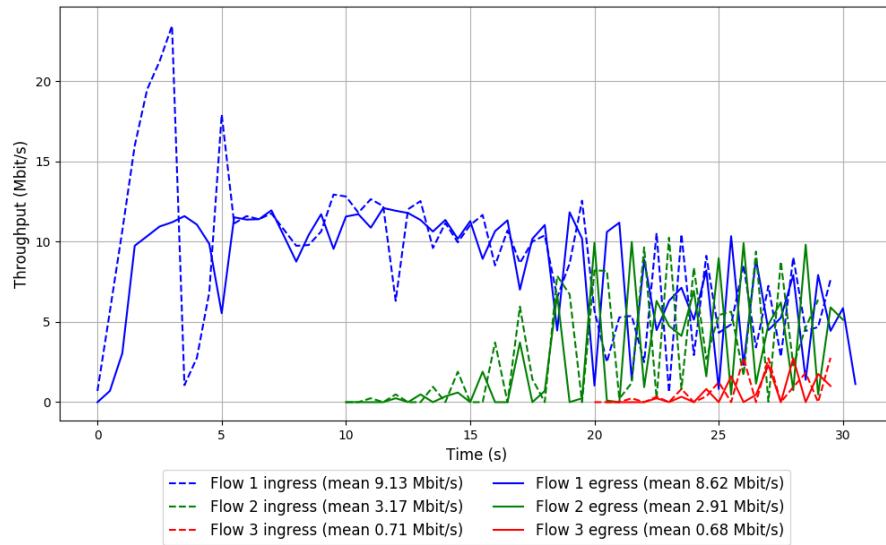


Run 3: Statistics of TCP Vegas

```
Start at: 2018-06-29 20:22:28
End at: 2018-06-29 20:22:58
Local clock offset: -3.582 ms
Remote clock offset: -8.946 ms

# Below is generated by plot.py at 2018-06-29 20:48:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 10.70 Mbit/s
95th percentile per-packet one-way delay: 825.587 ms
Loss rate: 6.34%
-- Flow 1:
Average throughput: 8.62 Mbit/s
95th percentile per-packet one-way delay: 825.227 ms
Loss rate: 5.60%
-- Flow 2:
Average throughput: 2.91 Mbit/s
95th percentile per-packet one-way delay: 829.581 ms
Loss rate: 8.12%
-- Flow 3:
Average throughput: 0.68 Mbit/s
95th percentile per-packet one-way delay: 470.318 ms
Loss rate: 19.69%
```

Run 3: Report of TCP Vegas — Data Link

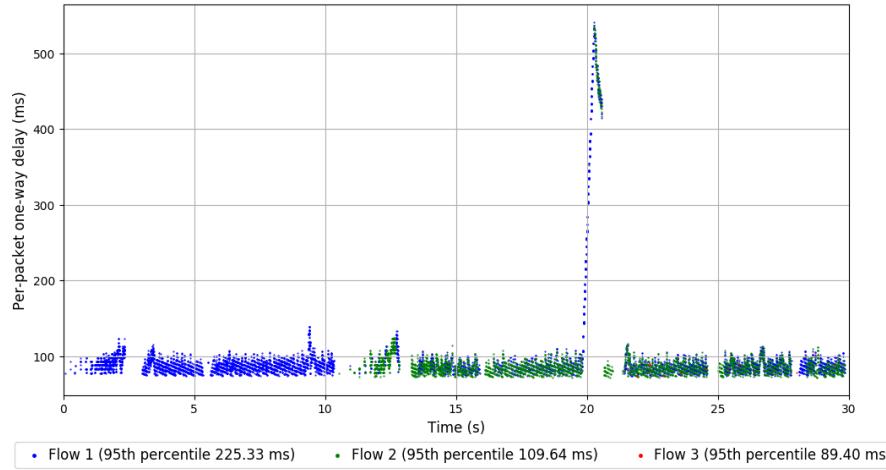
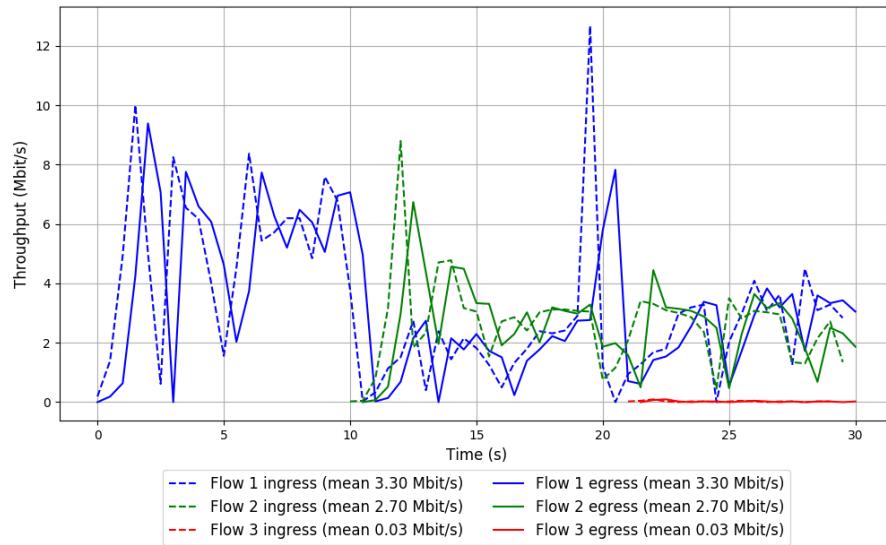


Run 1: Statistics of Verus

```
Start at: 2018-06-29 19:35:53
End at: 2018-06-29 19:36:23
Local clock offset: 8.311 ms
Remote clock offset: -10.892 ms

# Below is generated by plot.py at 2018-06-29 20:48:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 5.06 Mbit/s
95th percentile per-packet one-way delay: 126.197 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 3.30 Mbit/s
95th percentile per-packet one-way delay: 225.334 ms
Loss rate: 0.16%
-- Flow 2:
Average throughput: 2.70 Mbit/s
95th percentile per-packet one-way delay: 109.645 ms
Loss rate: 0.14%
-- Flow 3:
Average throughput: 0.03 Mbit/s
95th percentile per-packet one-way delay: 89.396 ms
Loss rate: 0.00%
```

Run 1: Report of Verus — Data Link

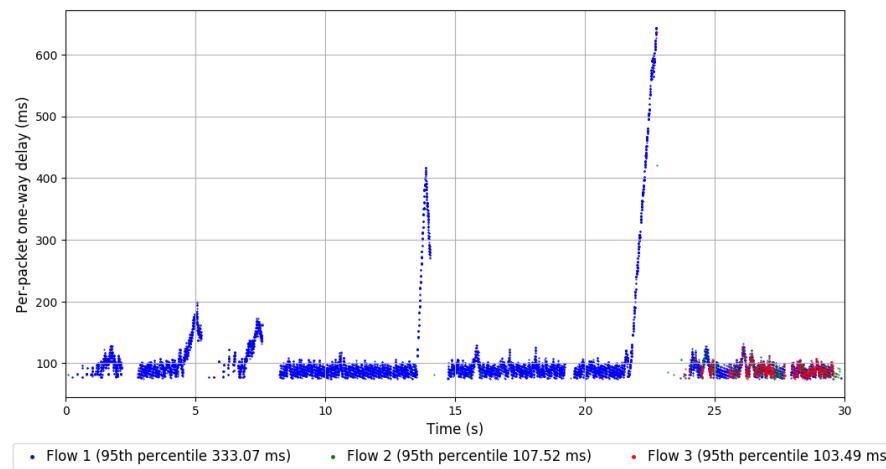
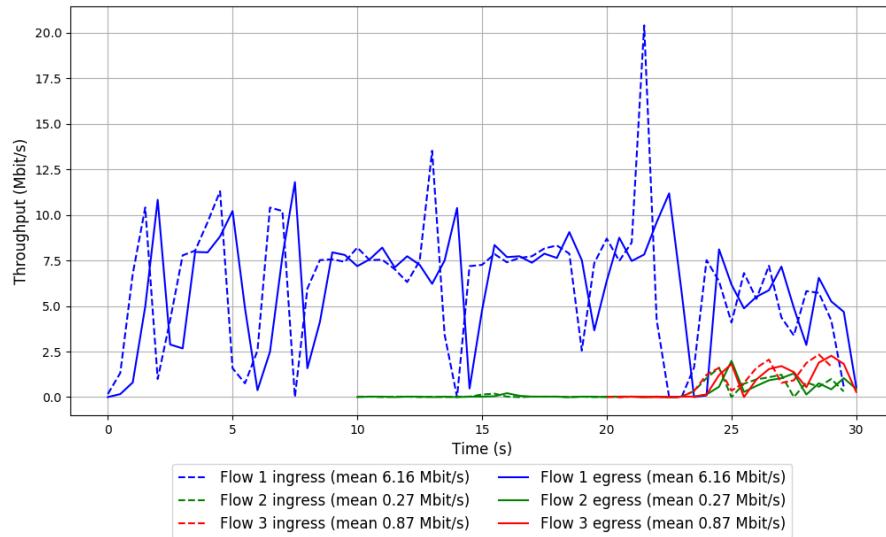


Run 2: Statistics of Verus

```
Start at: 2018-06-29 20:02:02
End at: 2018-06-29 20:02:32
Local clock offset: -6.184 ms
Remote clock offset: -9.694 ms

# Below is generated by plot.py at 2018-06-29 20:48:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.60 Mbit/s
95th percentile per-packet one-way delay: 311.449 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 6.16 Mbit/s
95th percentile per-packet one-way delay: 333.070 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 0.27 Mbit/s
95th percentile per-packet one-way delay: 107.524 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.87 Mbit/s
95th percentile per-packet one-way delay: 103.487 ms
Loss rate: 0.00%
```

Run 2: Report of Verus — Data Link

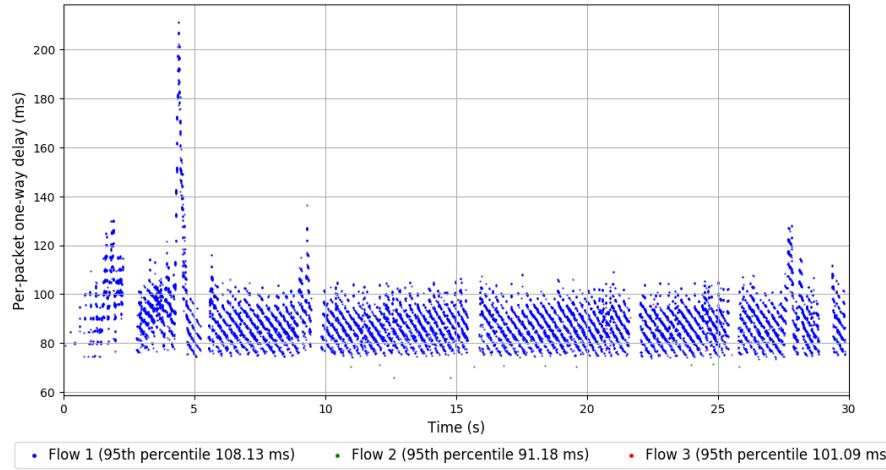
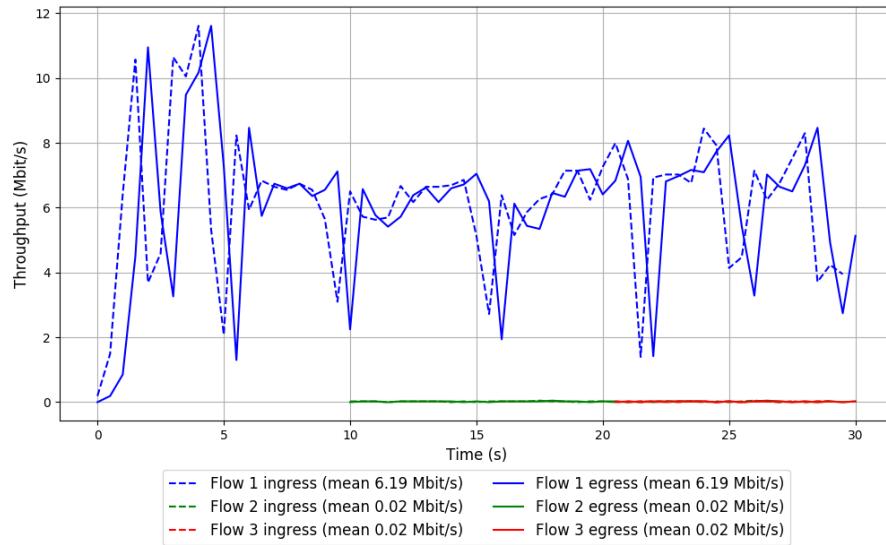


Run 3: Statistics of Verus

```
Start at: 2018-06-29 20:28:46
End at: 2018-06-29 20:29:16
Local clock offset: -1.114 ms
Remote clock offset: -8.69 ms

# Below is generated by plot.py at 2018-06-29 20:48:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 6.21 Mbit/s
95th percentile per-packet one-way delay: 108.111 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 6.19 Mbit/s
95th percentile per-packet one-way delay: 108.131 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 0.02 Mbit/s
95th percentile per-packet one-way delay: 91.179 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.02 Mbit/s
95th percentile per-packet one-way delay: 101.094 ms
Loss rate: 0.00%
```

Run 3: Report of Verus — Data Link

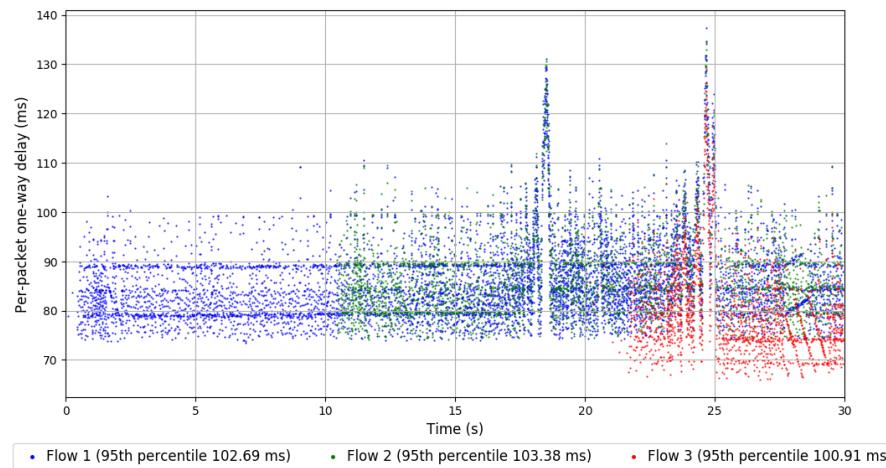
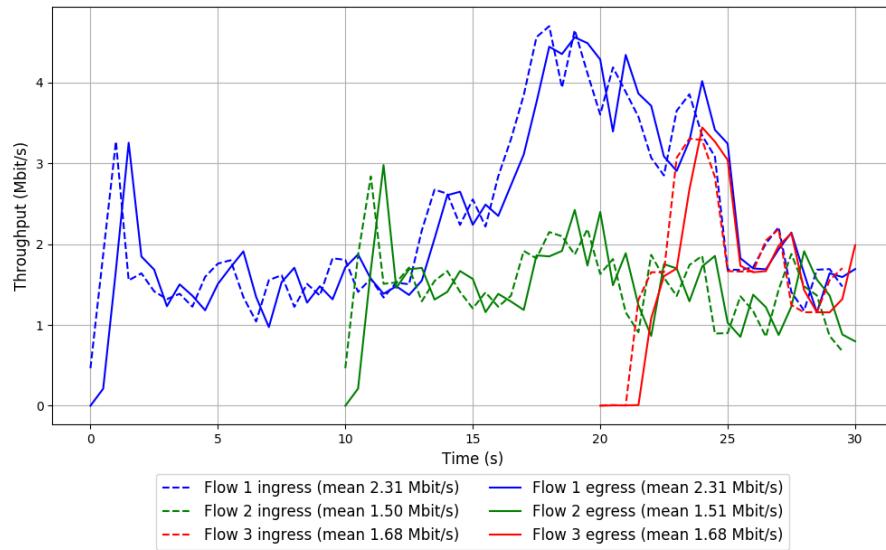


```
Run 1: Statistics of PCC-Vivace
```

```
Start at: 2018-06-29 19:34:23
End at: 2018-06-29 19:34:53
Local clock offset: 8.061 ms
Remote clock offset: -10.998 ms

# Below is generated by plot.py at 2018-06-29 20:48:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.86 Mbit/s
95th percentile per-packet one-way delay: 102.715 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 2.31 Mbit/s
95th percentile per-packet one-way delay: 102.690 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 1.51 Mbit/s
95th percentile per-packet one-way delay: 103.378 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 1.68 Mbit/s
95th percentile per-packet one-way delay: 100.907 ms
Loss rate: 0.35%
```

Run 1: Report of PCC-Vivace — Data Link

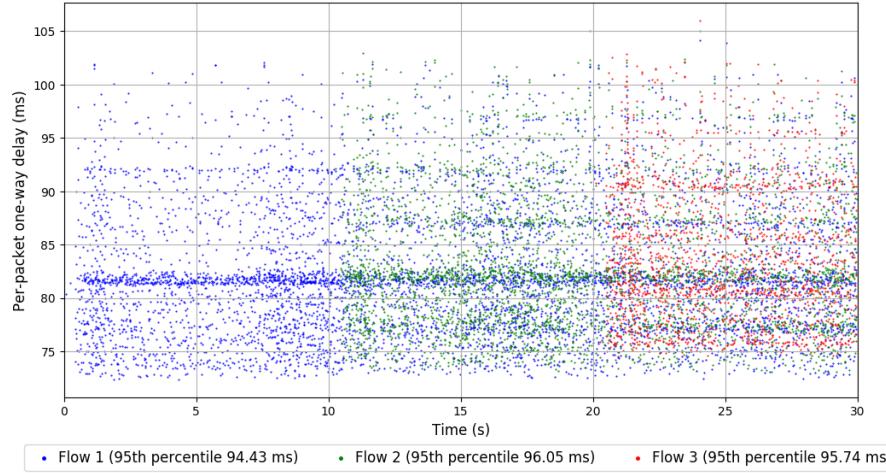
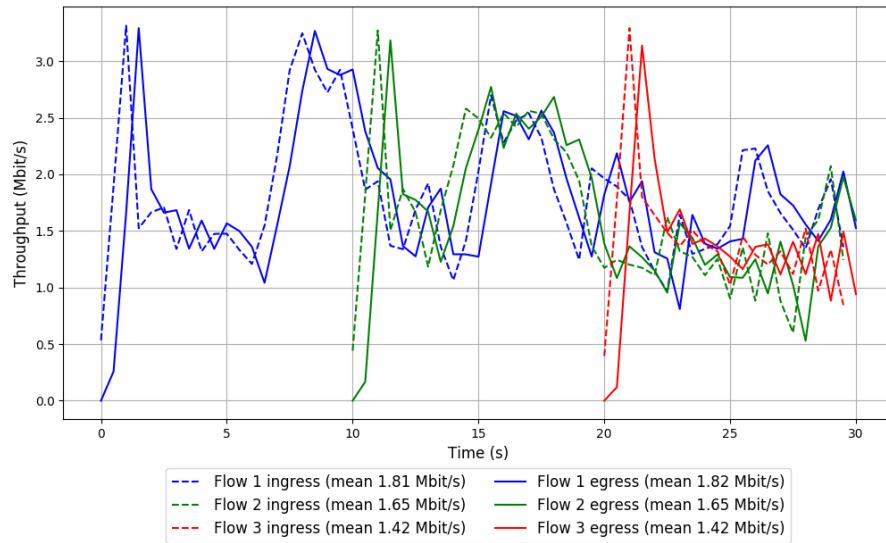


Run 2: Statistics of PCC-Vivace

```
Start at: 2018-06-29 20:00:32
End at: 2018-06-29 20:01:02
Local clock offset: -5.521 ms
Remote clock offset: -9.768 ms

# Below is generated by plot.py at 2018-06-29 20:48:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.38 Mbit/s
95th percentile per-packet one-way delay: 95.376 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 1.82 Mbit/s
95th percentile per-packet one-way delay: 94.428 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 1.65 Mbit/s
95th percentile per-packet one-way delay: 96.050 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 1.42 Mbit/s
95th percentile per-packet one-way delay: 95.740 ms
Loss rate: 0.09%
```

Run 2: Report of PCC-Vivace — Data Link

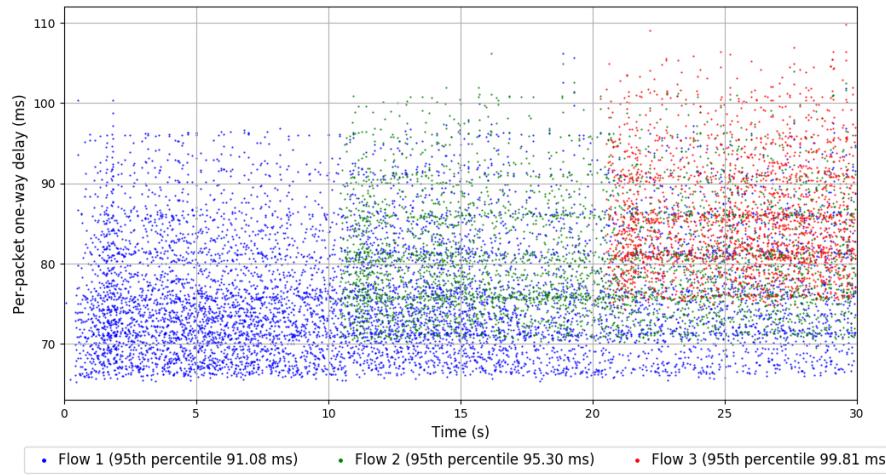
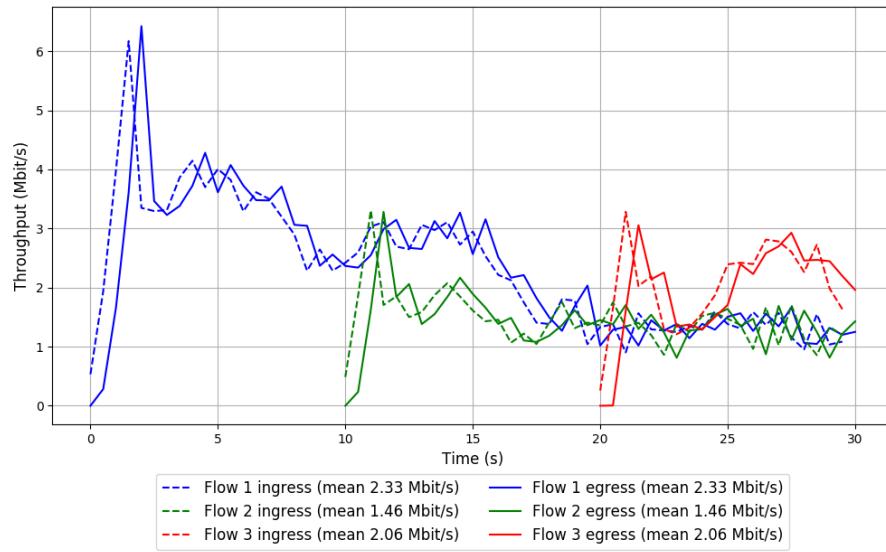


Run 3: Statistics of PCC-Vivace

```
Start at: 2018-06-29 20:27:13
End at: 2018-06-29 20:27:43
Local clock offset: -1.626 ms
Remote clock offset: -8.715 ms

# Below is generated by plot.py at 2018-06-29 20:48:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.98 Mbit/s
95th percentile per-packet one-way delay: 94.334 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 2.33 Mbit/s
95th percentile per-packet one-way delay: 91.078 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 1.46 Mbit/s
95th percentile per-packet one-way delay: 95.303 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 2.06 Mbit/s
95th percentile per-packet one-way delay: 99.808 ms
Loss rate: 0.12%
```

Run 3: Report of PCC-Vivace — Data Link

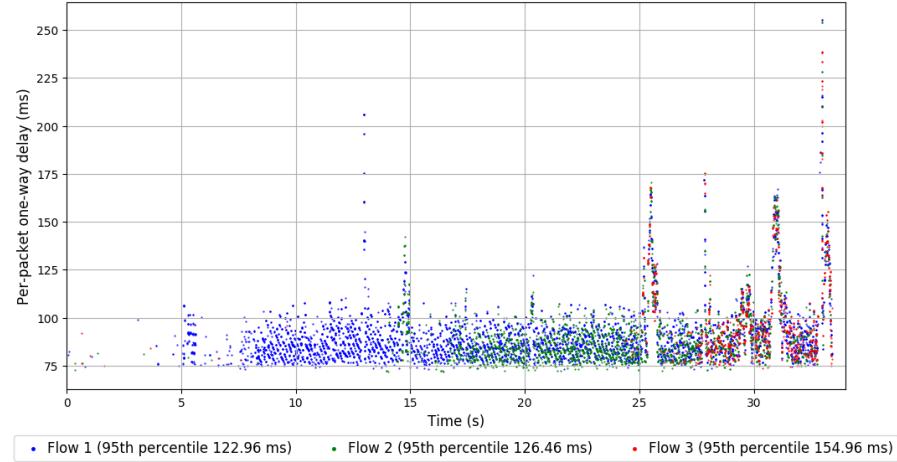
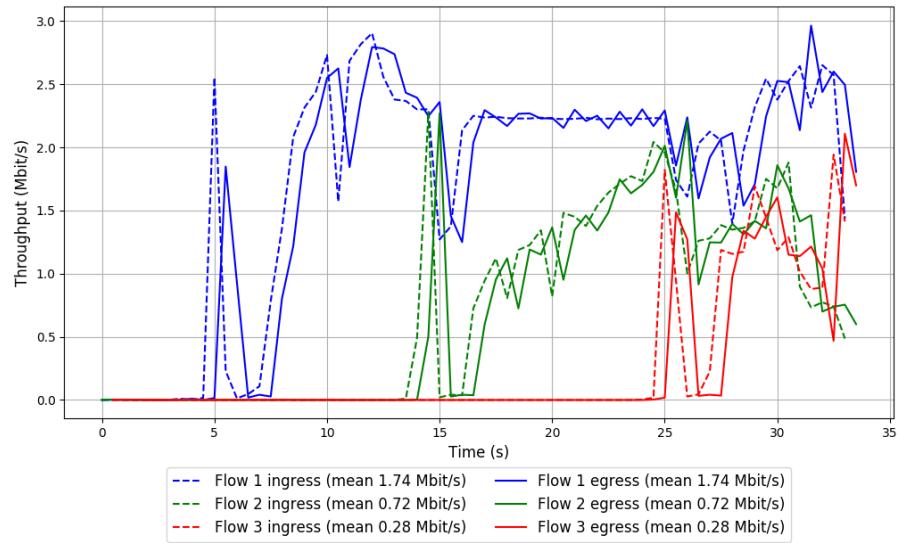


Run 1: Statistics of WebRTC media

```
Start at: 2018-06-29 19:31:21
End at: 2018-06-29 19:31:51
Local clock offset: 7.499 ms
Remote clock offset: -11.419 ms

# Below is generated by plot.py at 2018-06-29 20:48:22
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.72 Mbit/s
95th percentile per-packet one-way delay: 131.982 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 1.74 Mbit/s
95th percentile per-packet one-way delay: 122.960 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 0.72 Mbit/s
95th percentile per-packet one-way delay: 126.463 ms
Loss rate: 0.06%
-- Flow 3:
Average throughput: 0.28 Mbit/s
95th percentile per-packet one-way delay: 154.956 ms
Loss rate: 0.00%
```

Run 1: Report of WebRTC media — Data Link

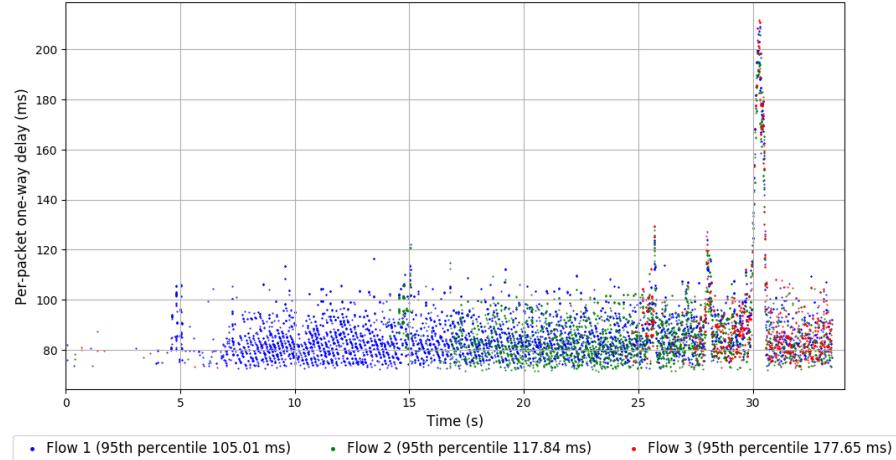
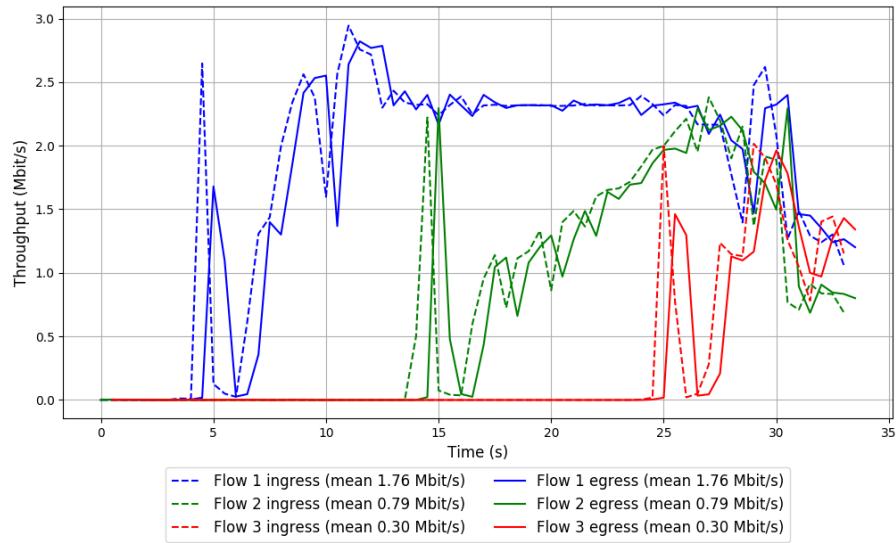


Run 2: Statistics of WebRTC media

```
Start at: 2018-06-29 19:57:28
End at: 2018-06-29 19:57:58
Local clock offset: -3.818 ms
Remote clock offset: -10.01 ms

# Below is generated by plot.py at 2018-06-29 20:48:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.83 Mbit/s
95th percentile per-packet one-way delay: 112.135 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 1.76 Mbit/s
95th percentile per-packet one-way delay: 105.014 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 0.79 Mbit/s
95th percentile per-packet one-way delay: 117.842 ms
Loss rate: 0.07%
-- Flow 3:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 177.650 ms
Loss rate: 0.26%
```

Run 2: Report of WebRTC media — Data Link



```
Run 3: Statistics of WebRTC media

Start at: 2018-06-29 20:24:13
End at: 2018-06-29 20:24:43
Local clock offset: -2.82 ms
Remote clock offset: -8.809 ms

# Below is generated by plot.py at 2018-06-29 20:48:23
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.88 Mbit/s
95th percentile per-packet one-way delay: 106.794 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 1.66 Mbit/s
95th percentile per-packet one-way delay: 105.126 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.85 Mbit/s
95th percentile per-packet one-way delay: 109.041 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 0.40 Mbit/s
95th percentile per-packet one-way delay: 113.157 ms
Loss rate: 0.87%
```

Run 3: Report of WebRTC media — Data Link

