

Pantheon Report

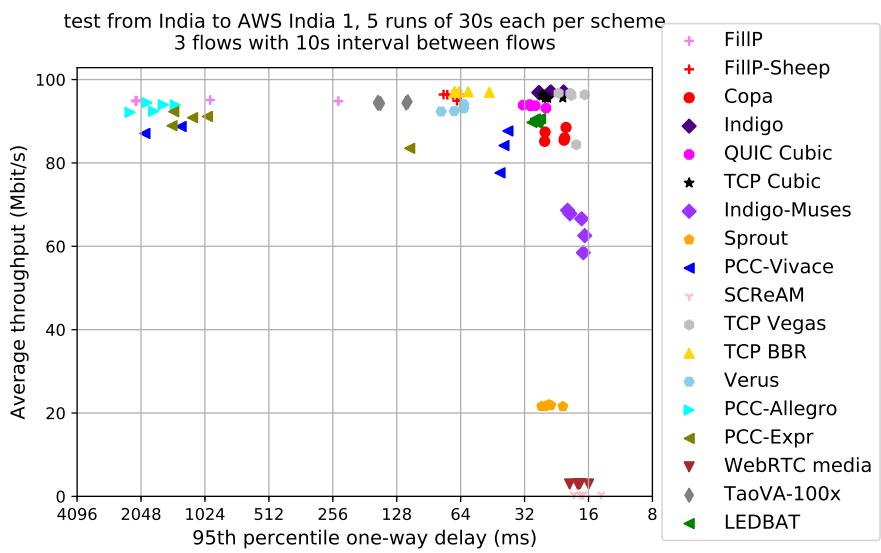
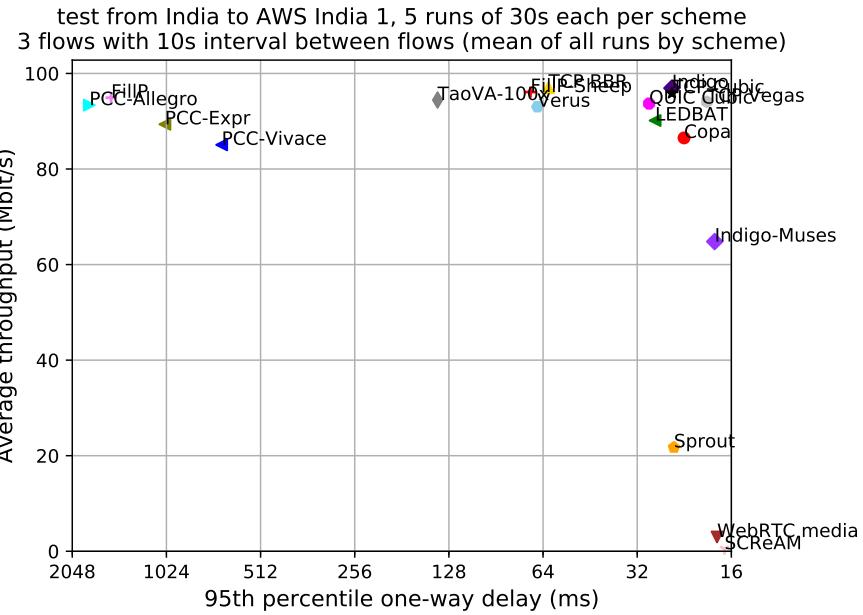
Generated at 2018-09-06 21:15:42 (UTC).
Data path: India on `em1` (*remote*) → AWS India 1 on `ens5` (*local*).
Repeated the test of 18 congestion control schemes 5 times.
Each test lasted for 30 seconds running 3 flows with 10-second interval between two flows.
NTP offsets were measured against `nets.org.sg` and have been applied to correct the timestamps in logs.

System info:

```
Linux 4.15.0-1020-aws
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
net.ipv4.tcp_mem = 536870912 536870912 536870912
```

Git summary:

```
branch: muses @ f392ce15d580343f4432c3d7e068b3290f03eb4a
third_party/fillp @ d47f4fa1b454a5e3c0537115c5a28436dbd4b834
third_party/fillp-sheep @ daed0c84f98531712514b2231f43ec6901114ffe
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ a28d20fb82a95a965a3da65fd1eb71b8994e9b84
third_party/pantheon-tunnel @ cbfce6db5ff5740dafe1771f813cd646339e1952
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
  M receiver/src/buffer.h
  M receiver/src/core.cpp
  M sender/src/buffer.h
  M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
  M src/ScreamClient
  M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
  M src/verus.hpp
  M tools/plot.py
third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851
```



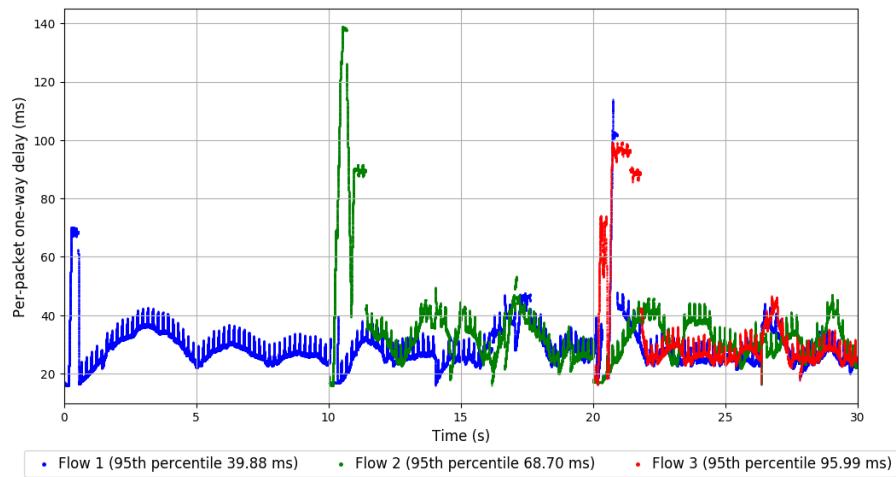
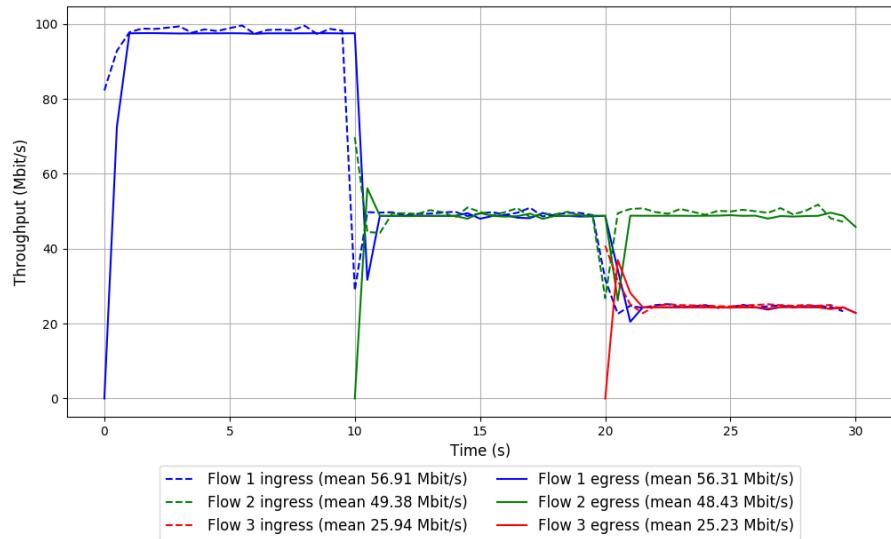
scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	57.88	46.13	25.36	44.12	73.22	171.24	1.76	2.43	2.71
Copa	5	52.83	35.89	29.45	22.89	22.25	22.63	0.04	0.12	0.25
TCP Cubic	5	60.54	38.69	28.83	24.53	25.04	25.36	0.07	0.12	0.31
FillP	5	58.06	38.59	33.77	580.37	687.05	1626.79	4.67	5.58	15.66
FillP-Sheep	5	60.53	38.91	29.21	54.84	83.31	116.04	1.56	1.62	1.18
Indigo	5	61.00	38.14	32.19	22.70	23.84	26.10	0.07	0.12	0.85
LEDBAT	5	53.95	38.60	31.63	27.53	28.37	29.48	0.07	0.16	0.31
Indigo-Muses	5	32.36	26.86	44.12	17.95	18.29	18.20	0.01	0.02	0.22
PCC-Allegro	5	62.07	32.24	30.02	1840.76	906.20	29.85	15.28	12.00	0.35
PCC-Expr	5	57.80	35.38	24.33	846.31	1026.06	136.56	18.76	8.37	1.82
QUIC Cubic	5	57.39	39.02	31.36	30.63	27.75	35.90	0.09	0.19	0.50
SCReAM	5	0.21	0.21	0.21	16.83	16.82	16.84	0.08	0.19	0.42
Sprout	5	18.09	21.36	21.07	23.31	24.11	24.98	3.67	0.11	0.31
TaoVA-100x	5	56.50	42.53	28.93	135.64	112.68	175.26	0.63	1.14	3.16
TCP Vegas	5	53.03	43.77	35.89	18.91	19.02	19.88	0.05	0.10	0.27
Verus	5	57.07	40.03	28.09	66.20	61.09	205.11	0.18	0.32	0.82
PCC-Vivace	5	55.08	34.82	20.68	828.90	83.59	69.68	2.53	0.33	0.86
WebRTC media	5	1.60	0.95	0.44	17.72	17.79	17.81	0.03	0.07	0.20

Run 1: Statistics of TCP BBR

```
Start at: 2018-09-06 19:29:15
End at: 2018-09-06 19:29:45
Local clock offset: 0.823 ms
Remote clock offset: -2.896 ms

# Below is generated by plot.py at 2018-09-06 21:04:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.93 Mbit/s
95th percentile per-packet one-way delay: 46.879 ms
Loss rate: 1.60%
-- Flow 1:
Average throughput: 56.31 Mbit/s
95th percentile per-packet one-way delay: 39.877 ms
Loss rate: 1.13%
-- Flow 2:
Average throughput: 48.43 Mbit/s
95th percentile per-packet one-way delay: 68.696 ms
Loss rate: 2.05%
-- Flow 3:
Average throughput: 25.23 Mbit/s
95th percentile per-packet one-way delay: 95.986 ms
Loss rate: 2.99%
```

Run 1: Report of TCP BBR — Data Link

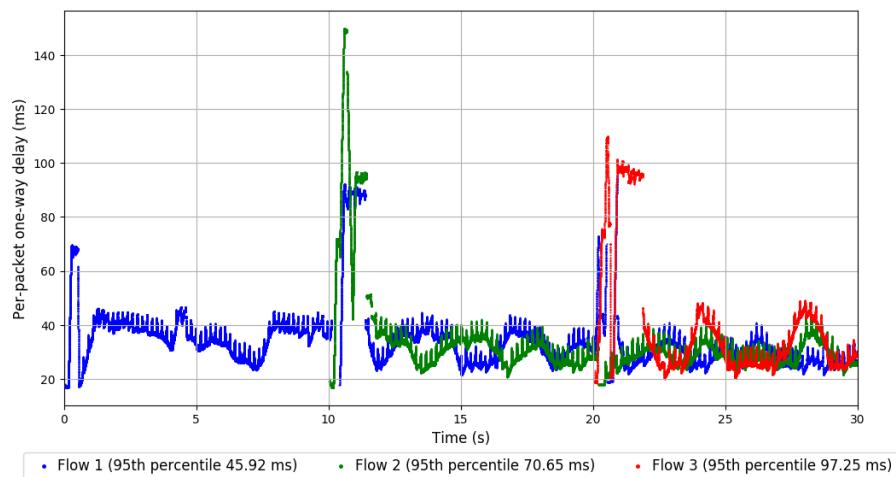
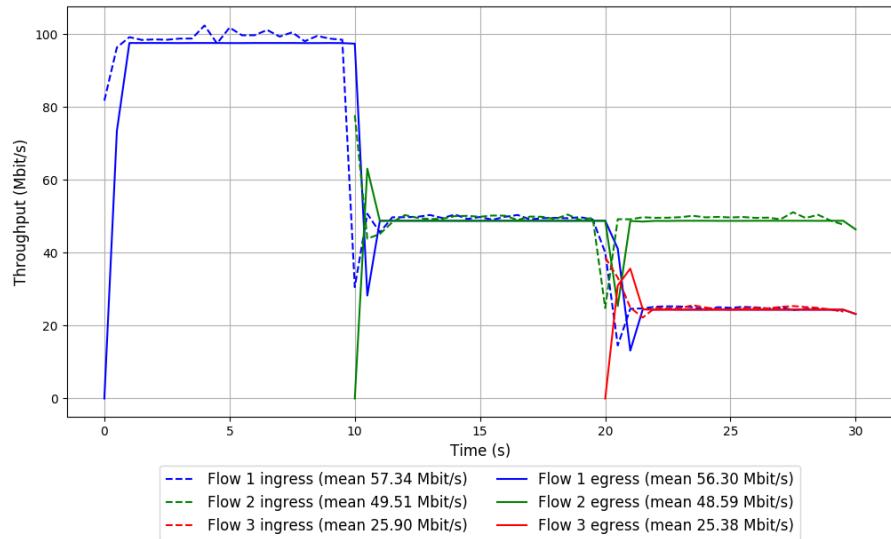


Run 2: Statistics of TCP BBR

```
Start at: 2018-09-06 19:51:07
End at: 2018-09-06 19:51:37
Local clock offset: 1.317 ms
Remote clock offset: -2.788 ms

# Below is generated by plot.py at 2018-09-06 21:04:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.07 Mbit/s
95th percentile per-packet one-way delay: 68.491 ms
Loss rate: 1.96%
-- Flow 1:
Average throughput: 56.30 Mbit/s
95th percentile per-packet one-way delay: 45.919 ms
Loss rate: 1.90%
-- Flow 2:
Average throughput: 48.59 Mbit/s
95th percentile per-packet one-way delay: 70.652 ms
Loss rate: 1.98%
-- Flow 3:
Average throughput: 25.38 Mbit/s
95th percentile per-packet one-way delay: 97.250 ms
Loss rate: 2.26%
```

Run 2: Report of TCP BBR — Data Link

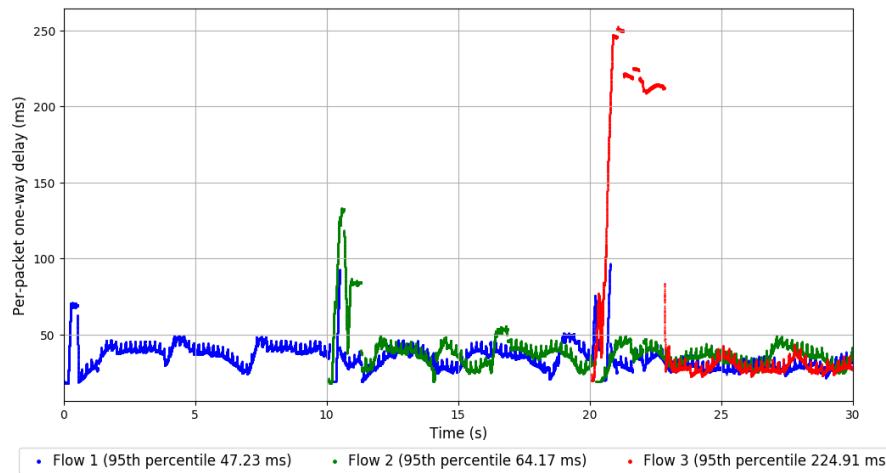
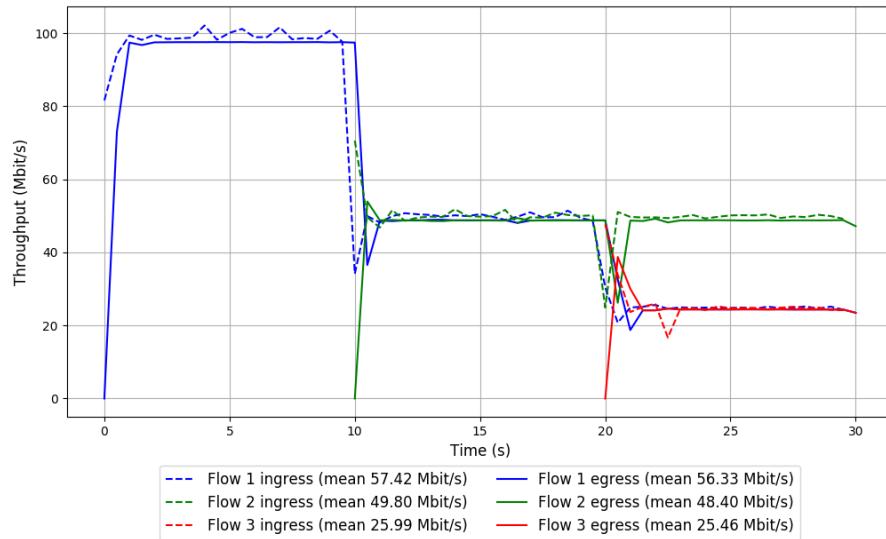


Run 3: Statistics of TCP BBR

```
Start at: 2018-09-06 20:12:45
End at: 2018-09-06 20:13:15
Local clock offset: 1.064 ms
Remote clock offset: -3.413 ms

# Below is generated by plot.py at 2018-09-06 21:04:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.00 Mbit/s
95th percentile per-packet one-way delay: 65.052 ms
Loss rate: 2.33%
-- Flow 1:
Average throughput: 56.33 Mbit/s
95th percentile per-packet one-way delay: 47.234 ms
Loss rate: 1.99%
-- Flow 2:
Average throughput: 48.40 Mbit/s
95th percentile per-packet one-way delay: 64.175 ms
Loss rate: 2.93%
-- Flow 3:
Average throughput: 25.46 Mbit/s
95th percentile per-packet one-way delay: 224.907 ms
Loss rate: 2.31%
```

Run 3: Report of TCP BBR — Data Link

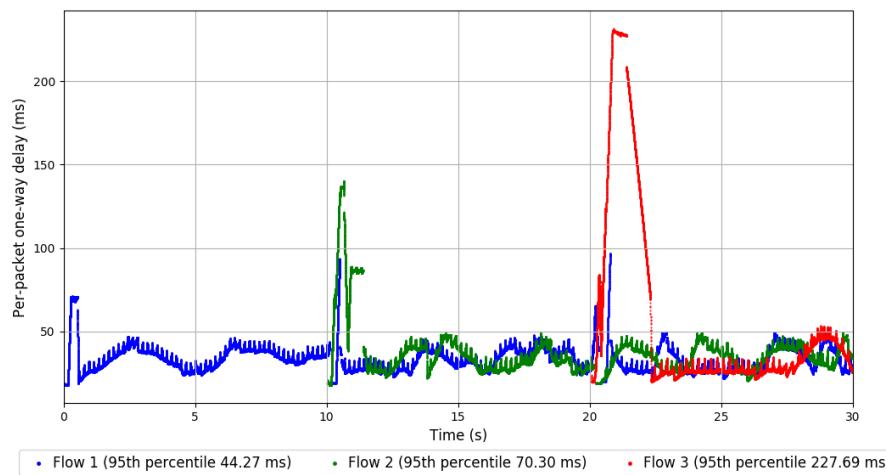
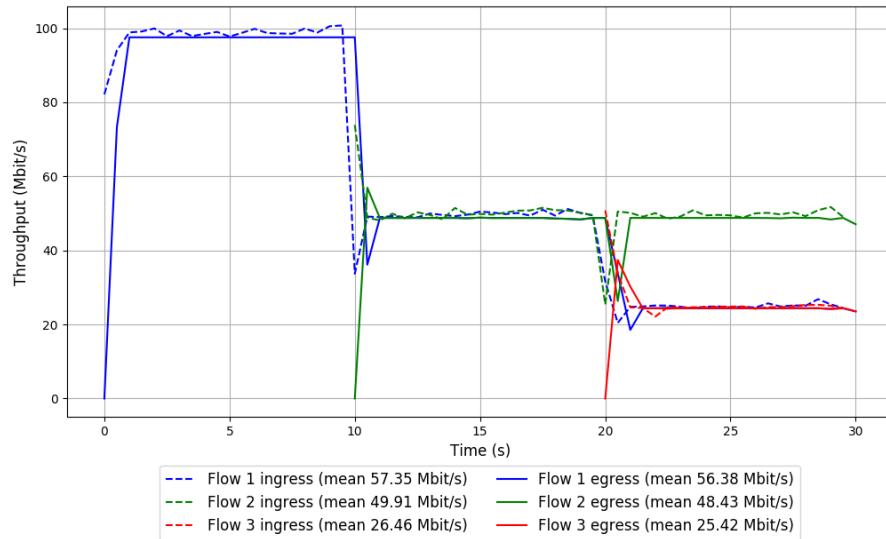


Run 4: Statistics of TCP BBR

```
Start at: 2018-09-06 20:34:50
End at: 2018-09-06 20:35:20
Local clock offset: 1.496 ms
Remote clock offset: -2.41 ms

# Below is generated by plot.py at 2018-09-06 21:04:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.07 Mbit/s
95th percentile per-packet one-way delay: 58.990 ms
Loss rate: 2.42%
-- Flow 1:
Average throughput: 56.38 Mbit/s
95th percentile per-packet one-way delay: 44.271 ms
Loss rate: 1.77%
-- Flow 2:
Average throughput: 48.43 Mbit/s
95th percentile per-packet one-way delay: 70.302 ms
Loss rate: 3.08%
-- Flow 3:
Average throughput: 25.42 Mbit/s
95th percentile per-packet one-way delay: 227.685 ms
Loss rate: 4.17%
```

Run 4: Report of TCP BBR — Data Link

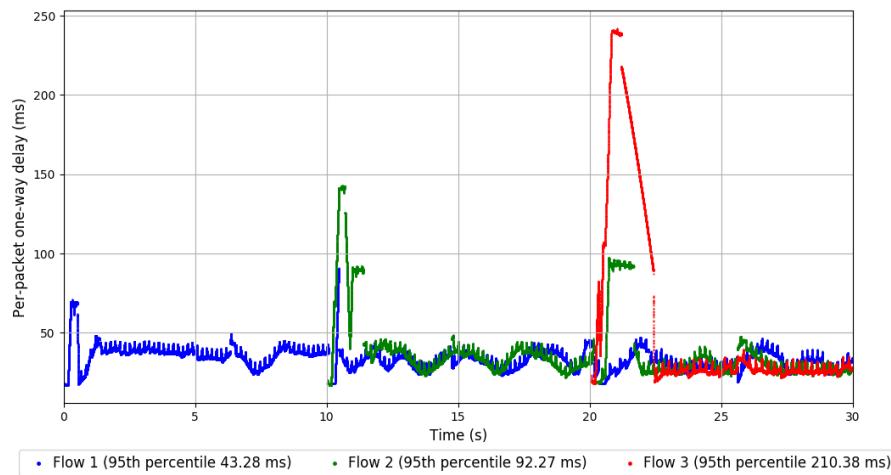
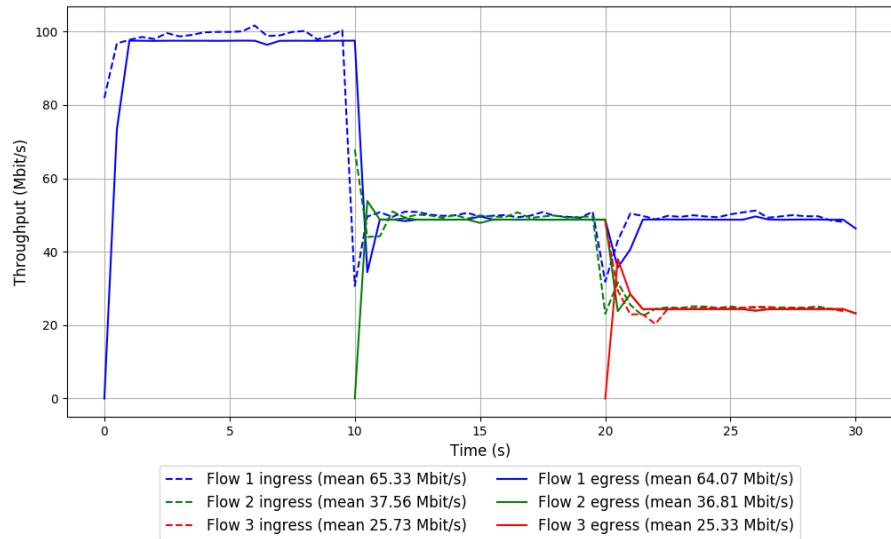


Run 5: Statistics of TCP BBR

```
Start at: 2018-09-06 20:56:54
End at: 2018-09-06 20:57:24
Local clock offset: -1.26 ms
Remote clock offset: -2.648 ms

# Below is generated by plot.py at 2018-09-06 21:04:19
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.99 Mbit/s
95th percentile per-packet one-way delay: 68.128 ms
Loss rate: 2.02%
-- Flow 1:
Average throughput: 64.07 Mbit/s
95th percentile per-packet one-way delay: 43.281 ms
Loss rate: 2.01%
-- Flow 2:
Average throughput: 36.81 Mbit/s
95th percentile per-packet one-way delay: 92.274 ms
Loss rate: 2.10%
-- Flow 3:
Average throughput: 25.33 Mbit/s
95th percentile per-packet one-way delay: 210.381 ms
Loss rate: 1.81%
```

Run 5: Report of TCP BBR — Data Link

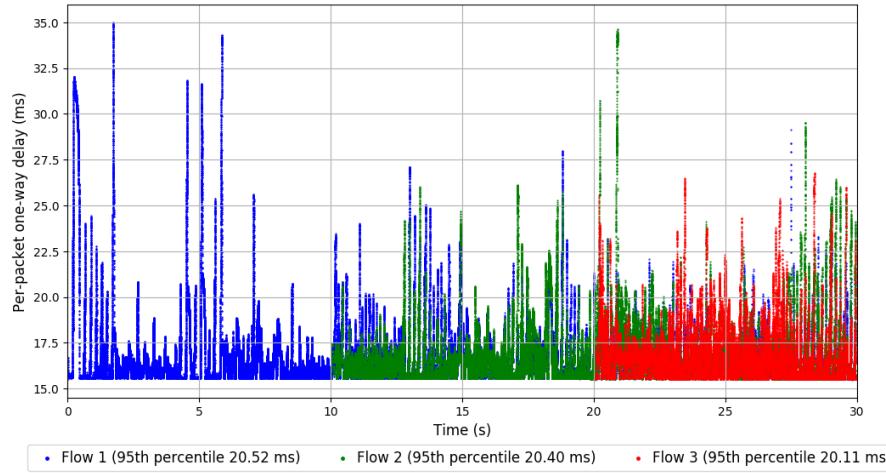
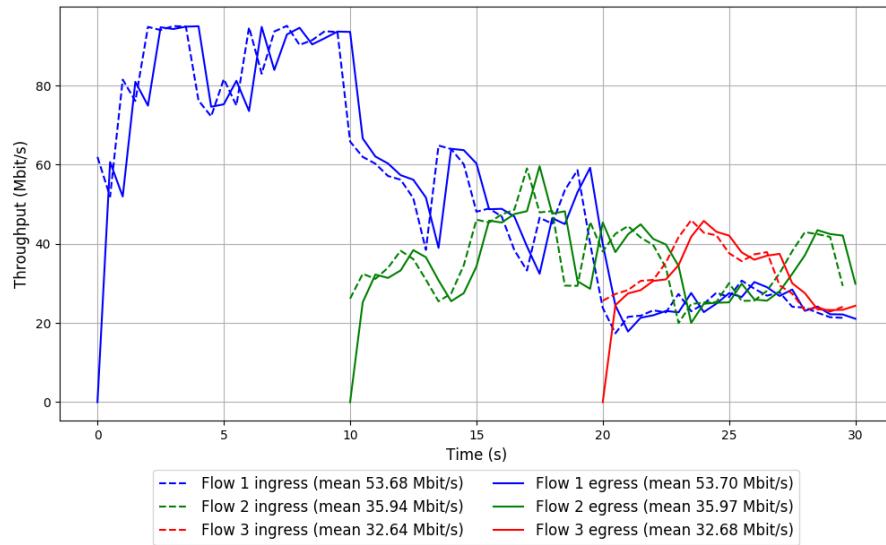


Run 1: Statistics of Copa

```
Start at: 2018-09-06 19:18:17
End at: 2018-09-06 19:18:47
Local clock offset: -1.973 ms
Remote clock offset: -4.615 ms

# Below is generated by plot.py at 2018-09-06 21:05:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.50 Mbit/s
95th percentile per-packet one-way delay: 20.416 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 53.70 Mbit/s
95th percentile per-packet one-way delay: 20.520 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 35.97 Mbit/s
95th percentile per-packet one-way delay: 20.402 ms
Loss rate: 0.05%
-- Flow 3:
Average throughput: 32.68 Mbit/s
95th percentile per-packet one-way delay: 20.109 ms
Loss rate: 0.12%
```

Run 1: Report of Copa — Data Link

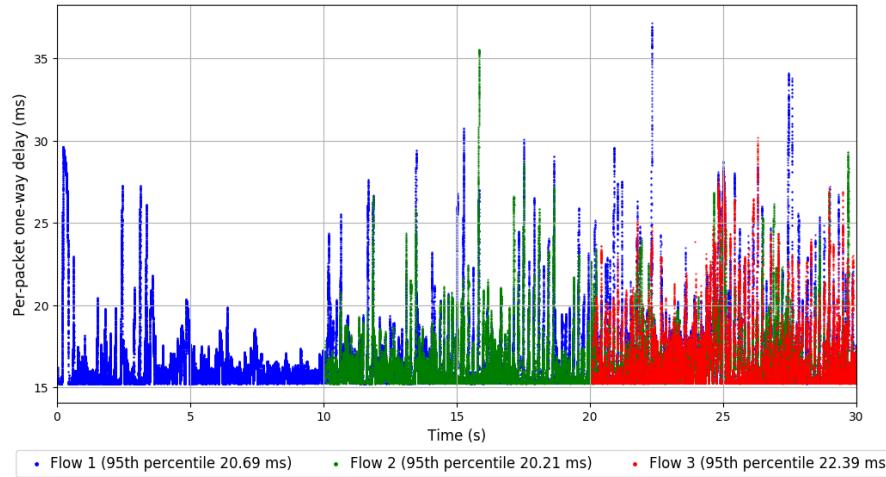
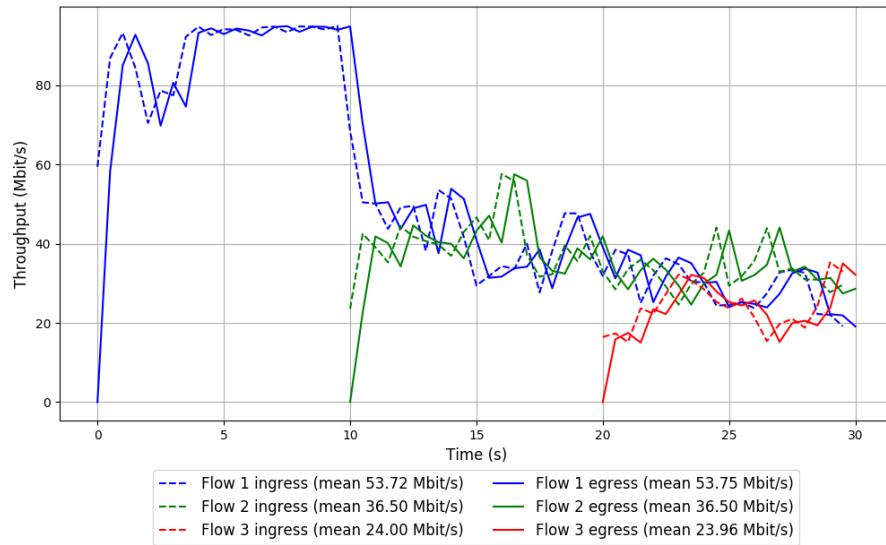


Run 2: Statistics of Copa

```
Start at: 2018-09-06 19:39:57
End at: 2018-09-06 19:40:27
Local clock offset: 0.728 ms
Remote clock offset: -2.149 ms

# Below is generated by plot.py at 2018-09-06 21:05:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.99 Mbit/s
95th percentile per-packet one-way delay: 20.722 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 53.75 Mbit/s
95th percentile per-packet one-way delay: 20.688 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 36.50 Mbit/s
95th percentile per-packet one-way delay: 20.212 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 23.96 Mbit/s
95th percentile per-packet one-way delay: 22.394 ms
Loss rate: 0.40%
```

Run 2: Report of Copa — Data Link

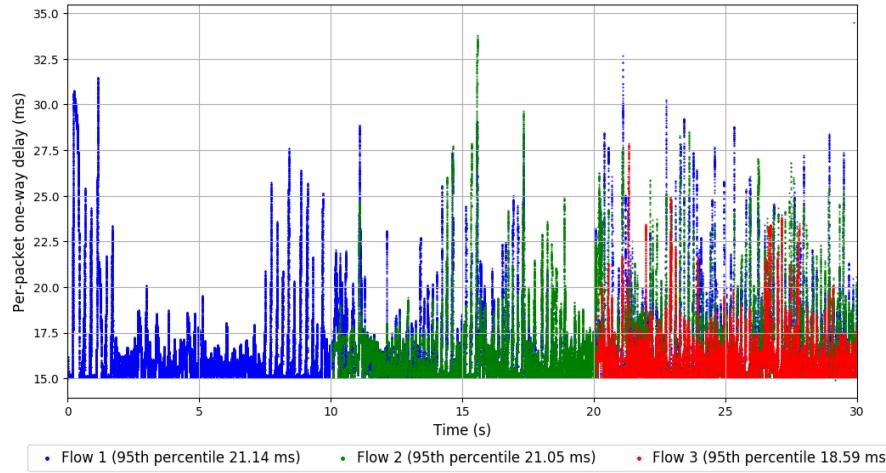
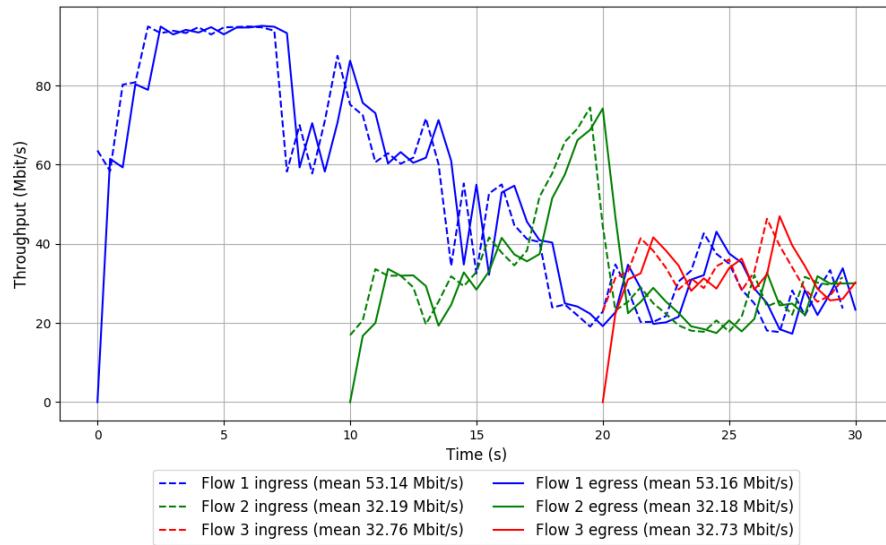


Run 3: Statistics of Copa

```
Start at: 2018-09-06 20:01:50
End at: 2018-09-06 20:02:20
Local clock offset: 0.026 ms
Remote clock offset: -1.858 ms

# Below is generated by plot.py at 2018-09-06 21:05:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.46 Mbit/s
95th percentile per-packet one-way delay: 20.853 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 53.16 Mbit/s
95th percentile per-packet one-way delay: 21.135 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 32.18 Mbit/s
95th percentile per-packet one-way delay: 21.047 ms
Loss rate: 0.17%
-- Flow 3:
Average throughput: 32.73 Mbit/s
95th percentile per-packet one-way delay: 18.594 ms
Loss rate: 0.30%
```

Run 3: Report of Copa — Data Link

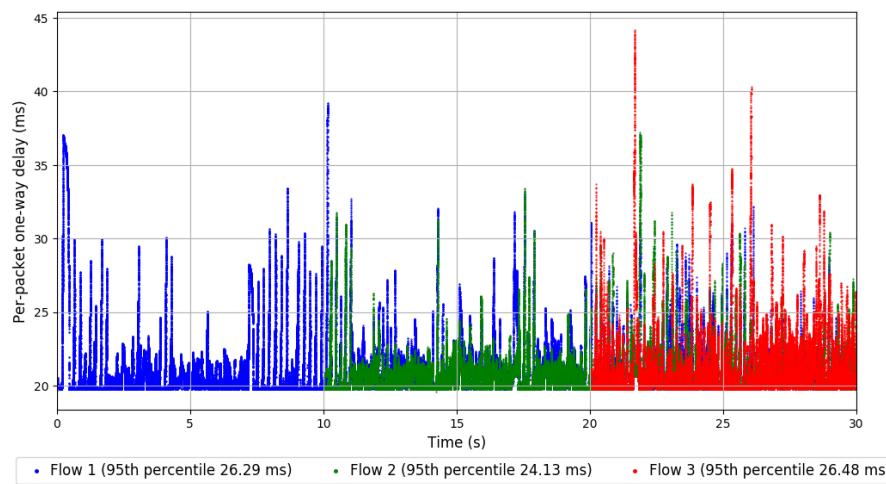
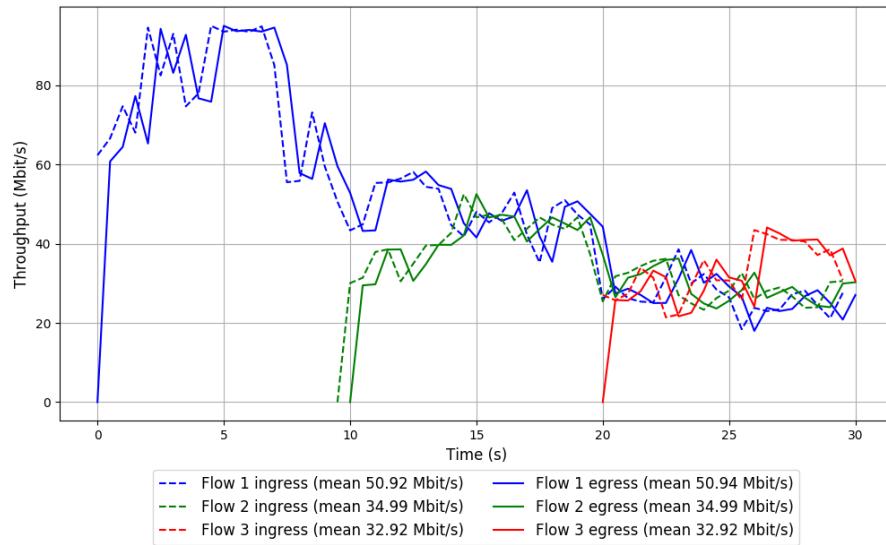


Run 4: Statistics of Copa

```
Start at: 2018-09-06 20:23:37
End at: 2018-09-06 20:24:07
Local clock offset: 2.27 ms
Remote clock offset: -3.892 ms

# Below is generated by plot.py at 2018-09-06 21:06:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 85.18 Mbit/s
95th percentile per-packet one-way delay: 25.738 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 50.94 Mbit/s
95th percentile per-packet one-way delay: 26.285 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 34.99 Mbit/s
95th percentile per-packet one-way delay: 24.126 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 32.92 Mbit/s
95th percentile per-packet one-way delay: 26.479 ms
Loss rate: 0.25%
```

Run 4: Report of Copa — Data Link

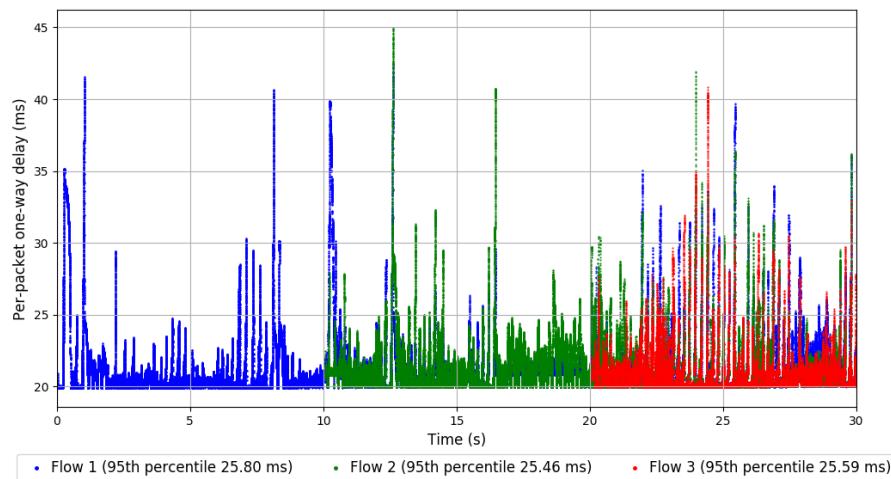
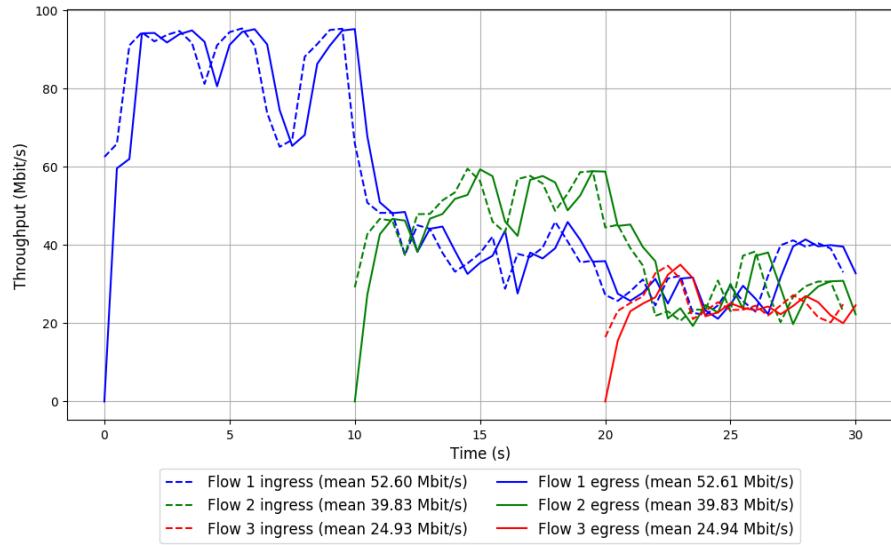


Run 5: Statistics of Copa

```
Start at: 2018-09-06 20:45:43
End at: 2018-09-06 20:46:13
Local clock offset: 2.455 ms
Remote clock offset: -3.22 ms

# Below is generated by plot.py at 2018-09-06 21:06:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.41 Mbit/s
95th percentile per-packet one-way delay: 25.611 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 52.61 Mbit/s
95th percentile per-packet one-way delay: 25.799 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 39.83 Mbit/s
95th percentile per-packet one-way delay: 25.457 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 24.94 Mbit/s
95th percentile per-packet one-way delay: 25.585 ms
Loss rate: 0.20%
```

Run 5: Report of Copa — Data Link

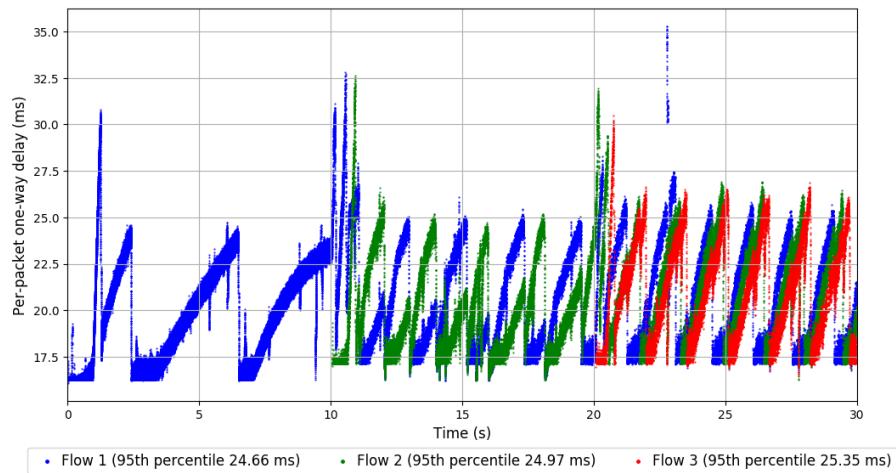
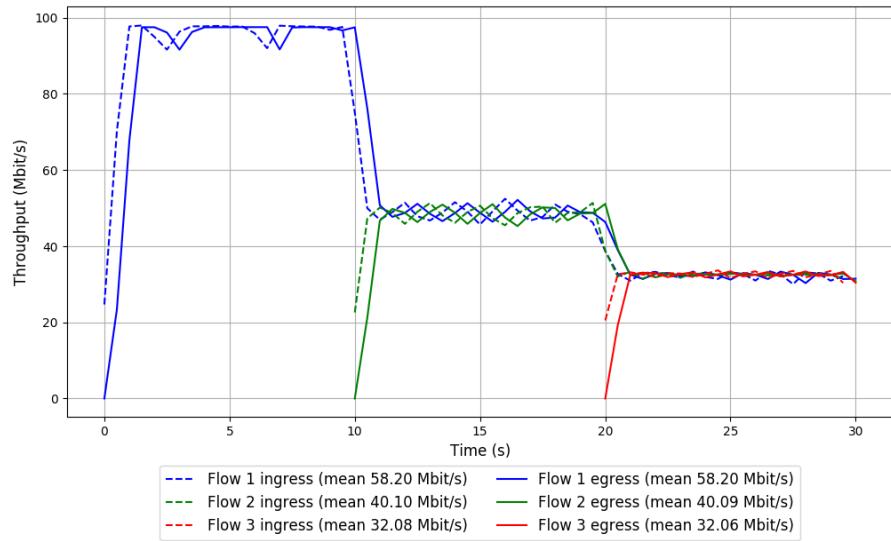


```
Run 1: Statistics of TCP Cubic

Start at: 2018-09-06 19:25:33
End at: 2018-09-06 19:26:03
Local clock offset: 0.785 ms
Remote clock offset: -3.087 ms

# Below is generated by plot.py at 2018-09-06 21:06:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.54 Mbit/s
95th percentile per-packet one-way delay: 24.905 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 58.20 Mbit/s
95th percentile per-packet one-way delay: 24.665 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 40.09 Mbit/s
95th percentile per-packet one-way delay: 24.974 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 32.06 Mbit/s
95th percentile per-packet one-way delay: 25.351 ms
Loss rate: 0.27%
```

Run 1: Report of TCP Cubic — Data Link

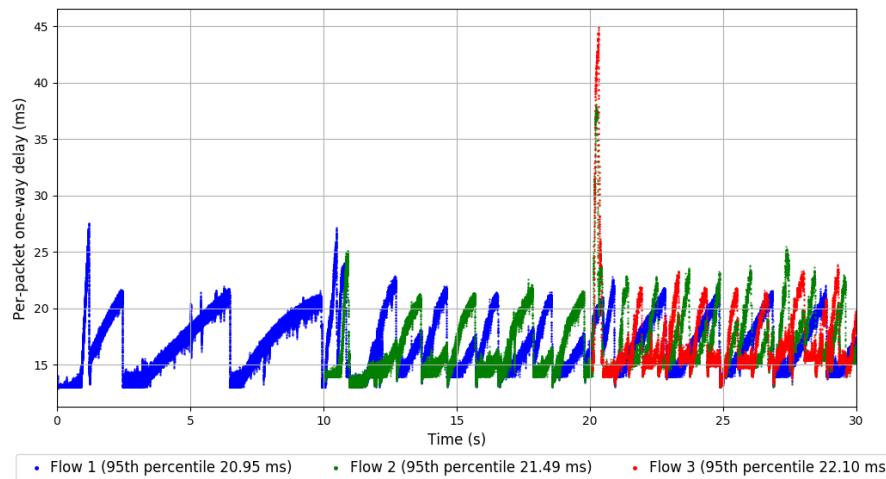
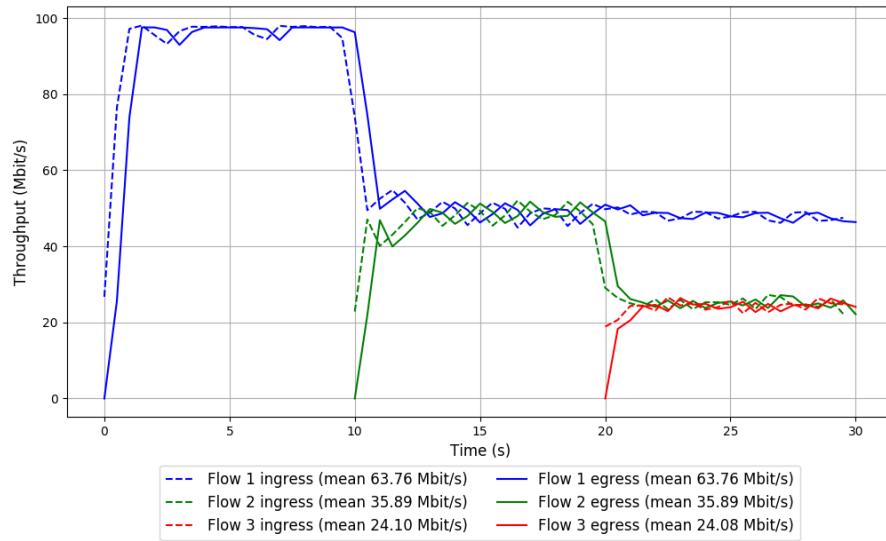


Run 2: Statistics of TCP Cubic

```
Start at: 2018-09-06 19:47:21
End at: 2018-09-06 19:47:51
Local clock offset: -2.0 ms
Remote clock offset: -2.371 ms

# Below is generated by plot.py at 2018-09-06 21:06:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.64 Mbit/s
95th percentile per-packet one-way delay: 21.132 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 63.76 Mbit/s
95th percentile per-packet one-way delay: 20.951 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 35.89 Mbit/s
95th percentile per-packet one-way delay: 21.489 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 24.08 Mbit/s
95th percentile per-packet one-way delay: 22.096 ms
Loss rate: 0.35%
```

Run 2: Report of TCP Cubic — Data Link

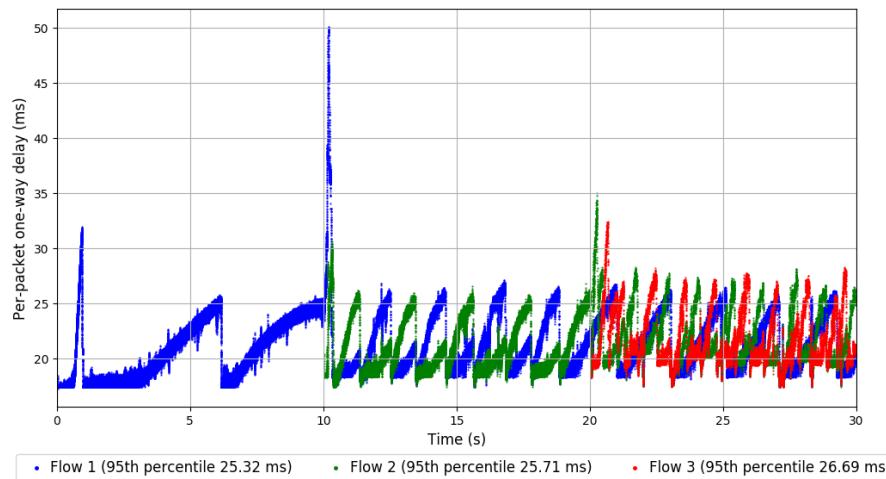
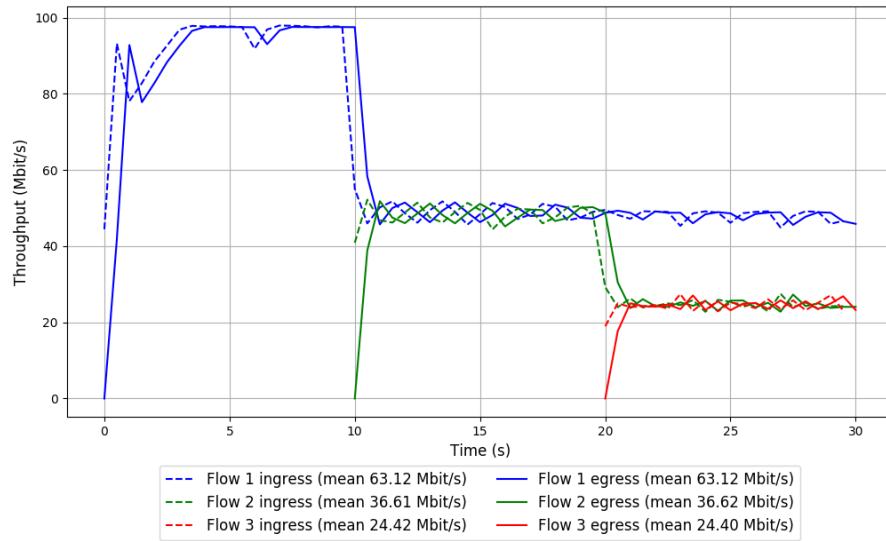


Run 3: Statistics of TCP Cubic

```
Start at: 2018-09-06 20:08:59
End at: 2018-09-06 20:09:29
Local clock offset: 0.32 ms
Remote clock offset: -3.649 ms

# Below is generated by plot.py at 2018-09-06 21:06:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.60 Mbit/s
95th percentile per-packet one-way delay: 25.559 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 63.12 Mbit/s
95th percentile per-packet one-way delay: 25.317 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 36.62 Mbit/s
95th percentile per-packet one-way delay: 25.706 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 24.40 Mbit/s
95th percentile per-packet one-way delay: 26.689 ms
Loss rate: 0.32%
```

Run 3: Report of TCP Cubic — Data Link

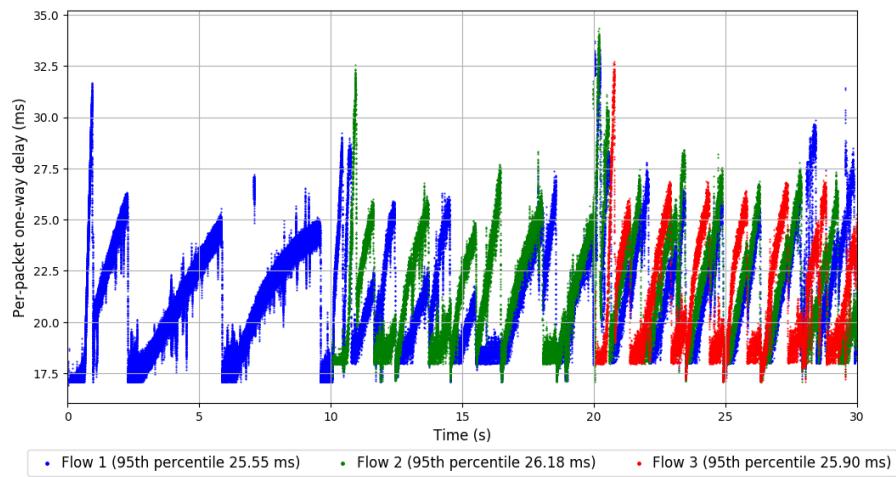
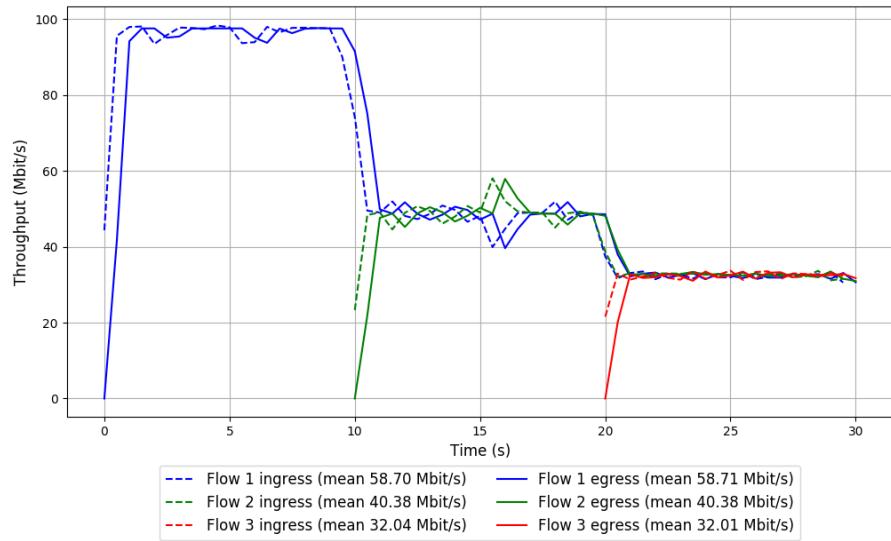


Run 4: Statistics of TCP Cubic

```
Start at: 2018-09-06 20:31:05
End at: 2018-09-06 20:31:35
Local clock offset: 0.327 ms
Remote clock offset: -3.015 ms

# Below is generated by plot.py at 2018-09-06 21:06:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.22 Mbit/s
95th percentile per-packet one-way delay: 25.808 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 58.71 Mbit/s
95th percentile per-packet one-way delay: 25.555 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 40.38 Mbit/s
95th percentile per-packet one-way delay: 26.177 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 32.01 Mbit/s
95th percentile per-packet one-way delay: 25.904 ms
Loss rate: 0.34%
```

Run 4: Report of TCP Cubic — Data Link

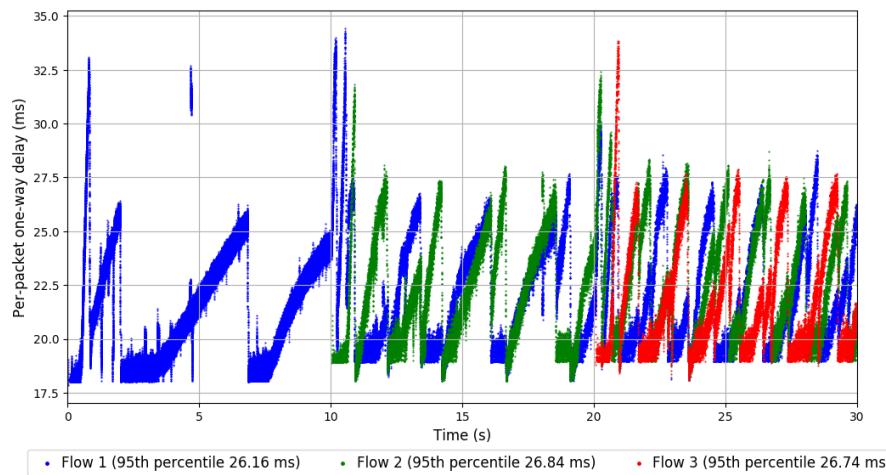
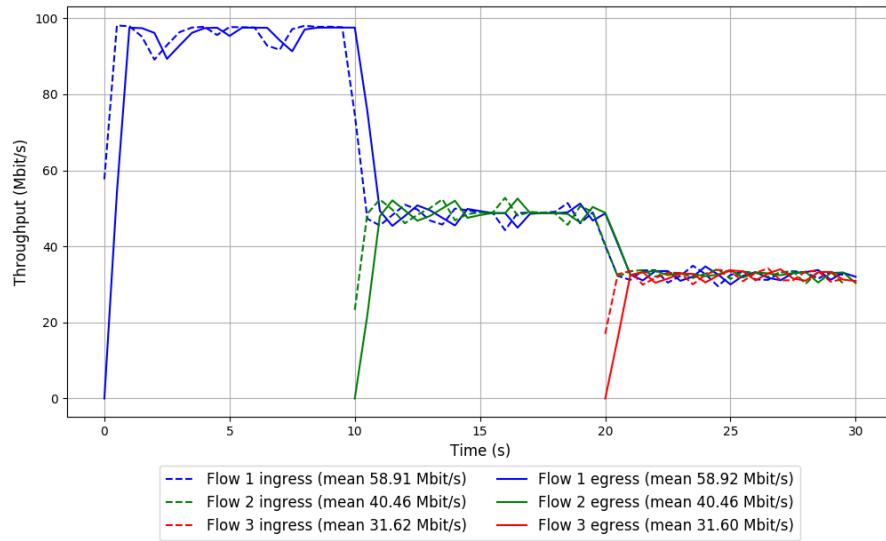


Run 5: Statistics of TCP Cubic

```
Start at: 2018-09-06 20:53:05
End at: 2018-09-06 20:53:35
Local clock offset: 1.055 ms
Remote clock offset: -1.568 ms

# Below is generated by plot.py at 2018-09-06 21:06:11
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.35 Mbit/s
95th percentile per-packet one-way delay: 26.536 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 58.92 Mbit/s
95th percentile per-packet one-way delay: 26.159 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 40.46 Mbit/s
95th percentile per-packet one-way delay: 26.836 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 31.60 Mbit/s
95th percentile per-packet one-way delay: 26.741 ms
Loss rate: 0.29%
```

Run 5: Report of TCP Cubic — Data Link

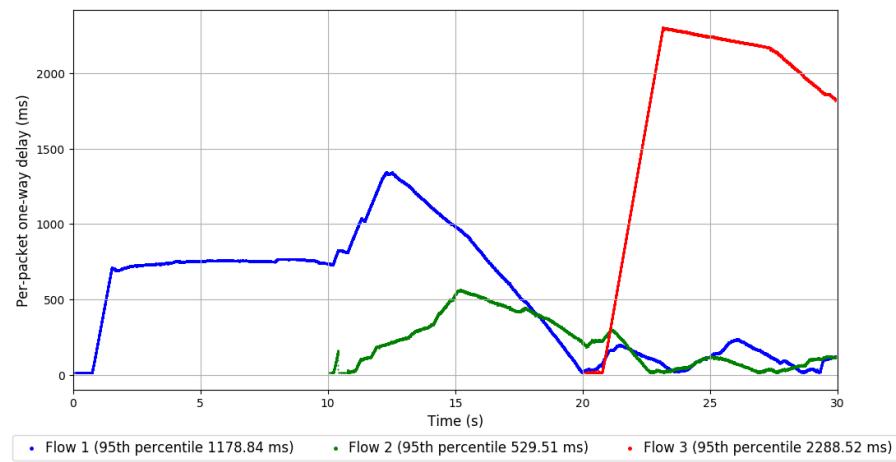
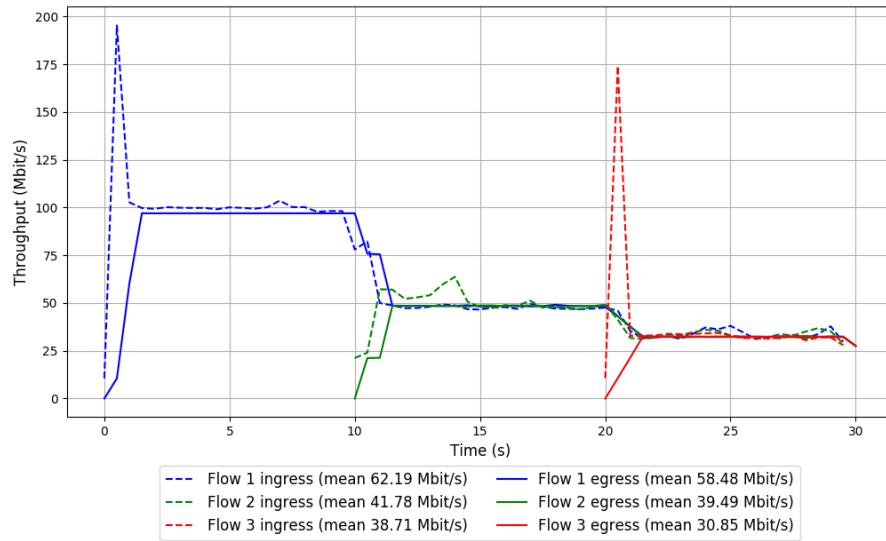


```
Run 1: Statistics of FillP

Start at: 2018-09-06 19:19:32
End at: 2018-09-06 19:20:02
Local clock offset: -2.952 ms
Remote clock offset: -4.594 ms

# Below is generated by plot.py at 2018-09-06 21:06:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.96 Mbit/s
95th percentile per-packet one-way delay: 2161.532 ms
Loss rate: 7.72%
-- Flow 1:
Average throughput: 58.48 Mbit/s
95th percentile per-packet one-way delay: 1178.841 ms
Loss rate: 6.03%
-- Flow 2:
Average throughput: 39.49 Mbit/s
95th percentile per-packet one-way delay: 529.511 ms
Loss rate: 5.61%
-- Flow 3:
Average throughput: 30.85 Mbit/s
95th percentile per-packet one-way delay: 2288.519 ms
Loss rate: 20.50%
```

Run 1: Report of FillP — Data Link

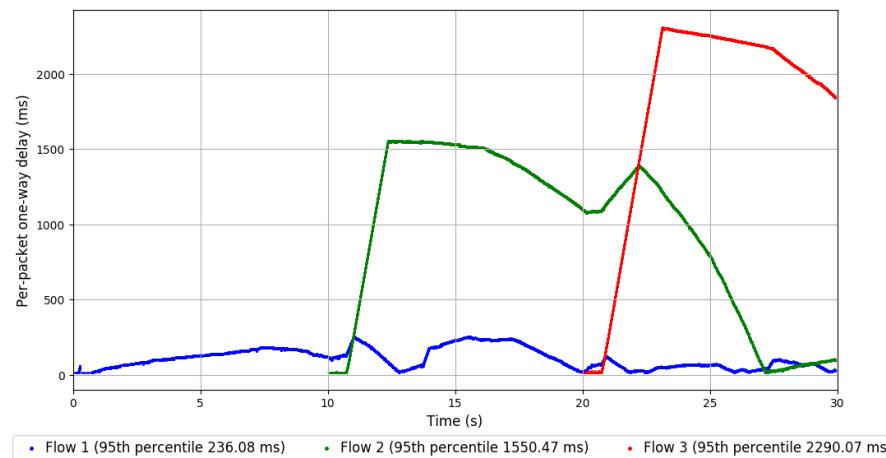
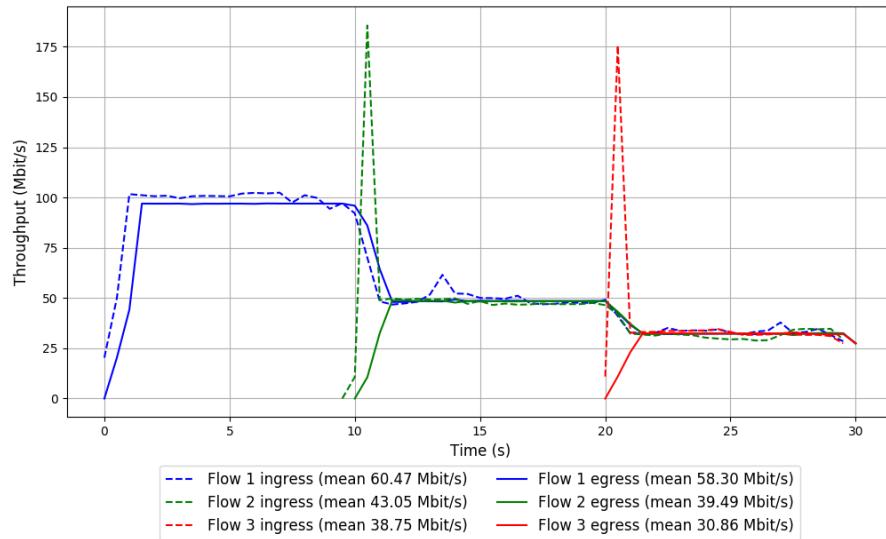


Run 2: Statistics of FillP

```
Start at: 2018-09-06 19:41:16
End at: 2018-09-06 19:41:46
Local clock offset: 1.491 ms
Remote clock offset: -1.961 ms

# Below is generated by plot.py at 2018-09-06 21:06:46
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.81 Mbit/s
95th percentile per-packet one-way delay: 2171.341 ms
Loss rate: 7.11%
-- Flow 1:
Average throughput: 58.30 Mbit/s
95th percentile per-packet one-way delay: 236.084 ms
Loss rate: 3.65%
-- Flow 2:
Average throughput: 39.49 Mbit/s
95th percentile per-packet one-way delay: 1550.470 ms
Loss rate: 8.36%
-- Flow 3:
Average throughput: 30.86 Mbit/s
95th percentile per-packet one-way delay: 2290.065 ms
Loss rate: 20.55%
```

Run 2: Report of FillP — Data Link

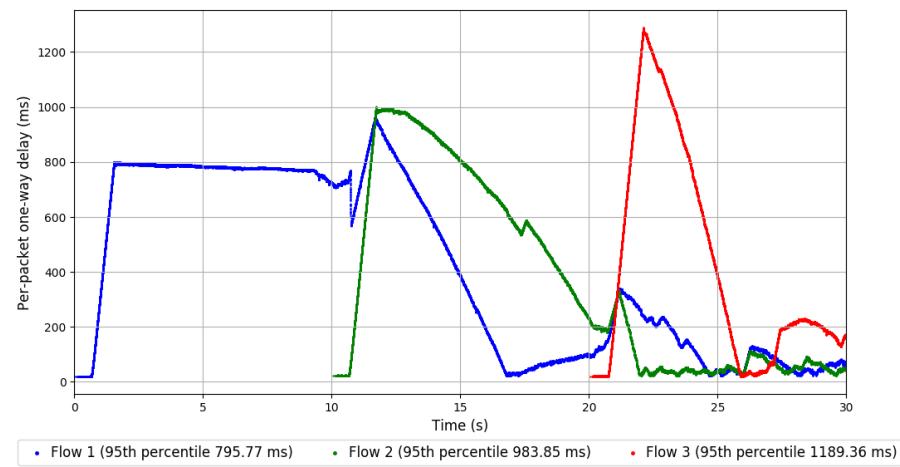
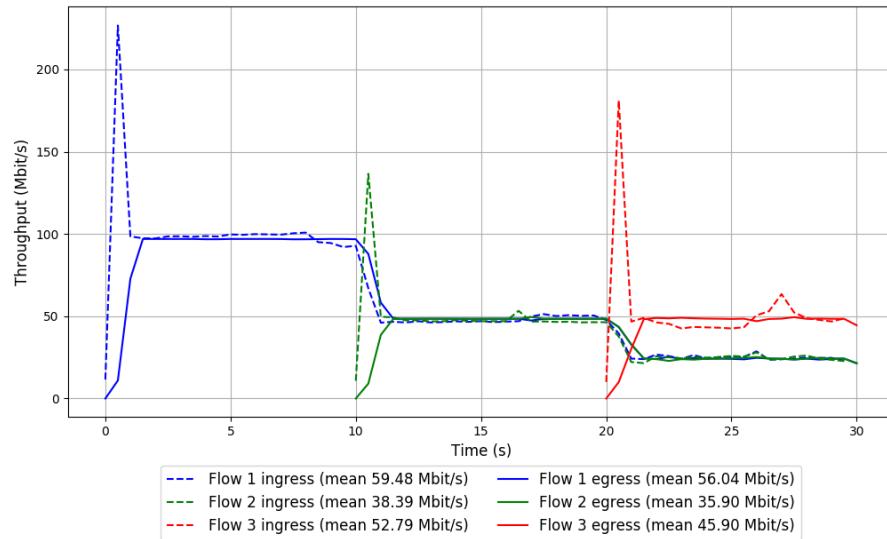


Run 3: Statistics of FillP

```
Start at: 2018-09-06 20:03:04
End at: 2018-09-06 20:03:34
Local clock offset: 1.363 ms
Remote clock offset: -4.036 ms

# Below is generated by plot.py at 2018-09-06 21:06:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 95.10 Mbit/s
95th percentile per-packet one-way delay: 967.175 ms
Loss rate: 7.30%
-- Flow 1:
Average throughput: 56.04 Mbit/s
95th percentile per-packet one-way delay: 795.771 ms
Loss rate: 5.85%
-- Flow 2:
Average throughput: 35.90 Mbit/s
95th percentile per-packet one-way delay: 983.852 ms
Loss rate: 6.60%
-- Flow 3:
Average throughput: 45.90 Mbit/s
95th percentile per-packet one-way delay: 1189.359 ms
Loss rate: 13.24%
```

Run 3: Report of FillP — Data Link

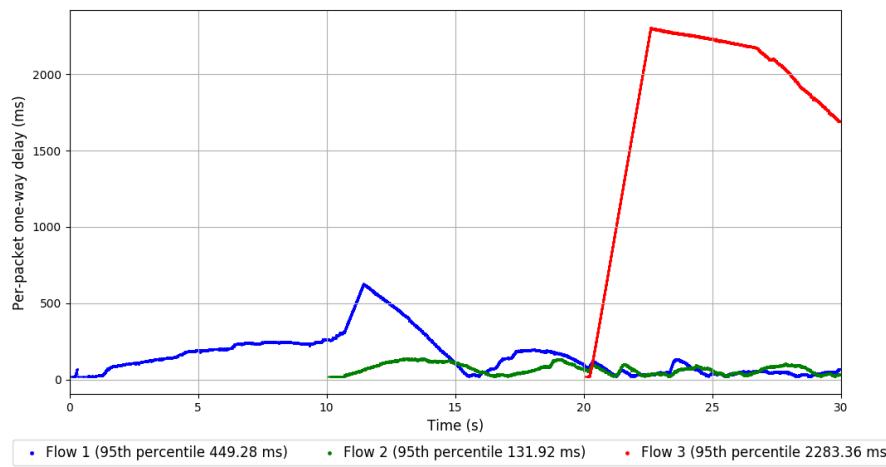
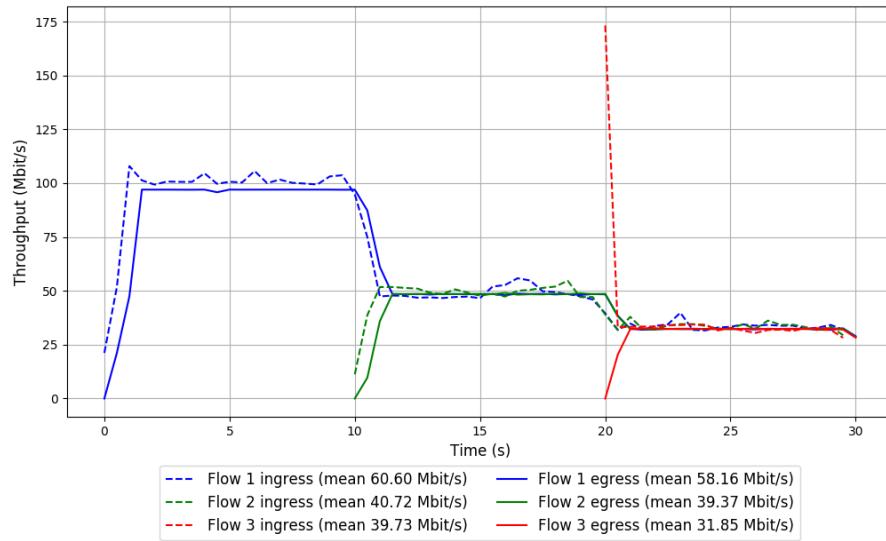


Run 4: Statistics of FillP

```
Start at: 2018-09-06 20:24:56
End at: 2018-09-06 20:25:26
Local clock offset: 1.583 ms
Remote clock offset: -3.486 ms

# Below is generated by plot.py at 2018-09-06 21:06:47
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.91 Mbit/s
95th percentile per-packet one-way delay: 2151.843 ms
Loss rate: 6.00%
-- Flow 1:
Average throughput: 58.16 Mbit/s
95th percentile per-packet one-way delay: 449.277 ms
Loss rate: 4.10%
-- Flow 2:
Average throughput: 39.37 Mbit/s
95th percentile per-packet one-way delay: 131.918 ms
Loss rate: 3.44%
-- Flow 3:
Average throughput: 31.85 Mbit/s
95th percentile per-packet one-way delay: 2283.361 ms
Loss rate: 20.02%
```

Run 4: Report of FillP — Data Link

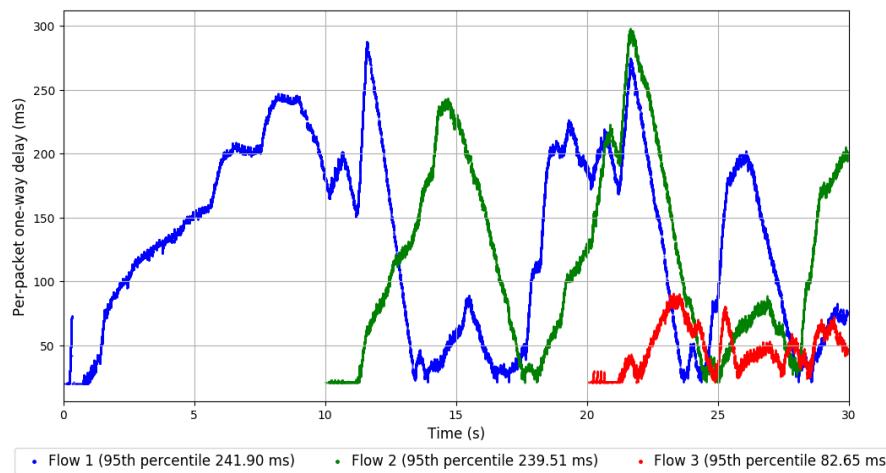
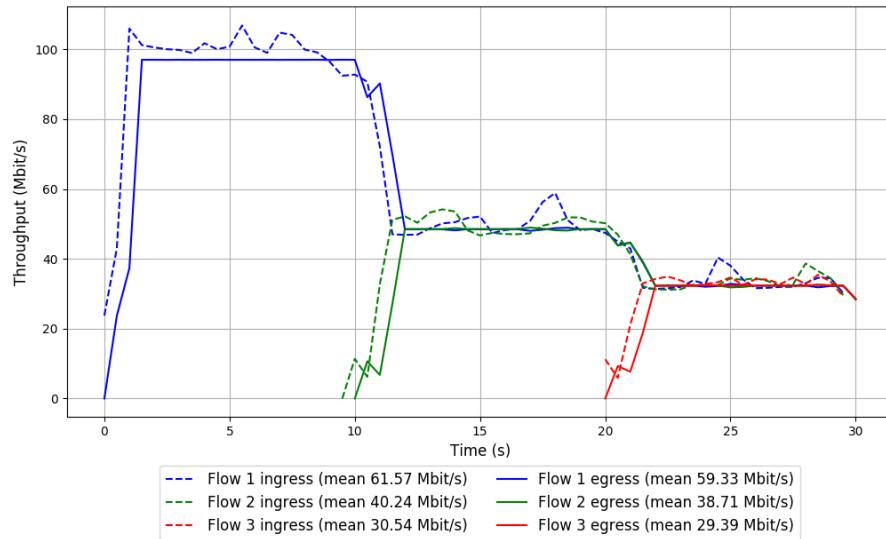


Run 5: Statistics of FillP

```
Start at: 2018-09-06 20:47:01
End at: 2018-09-06 20:47:31
Local clock offset: 2.652 ms
Remote clock offset: -3.115 ms

# Below is generated by plot.py at 2018-09-06 21:07:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.82 Mbit/s
95th percentile per-packet one-way delay: 240.875 ms
Loss rate: 3.79%
-- Flow 1:
Average throughput: 59.33 Mbit/s
95th percentile per-packet one-way delay: 241.895 ms
Loss rate: 3.71%
-- Flow 2:
Average throughput: 38.71 Mbit/s
95th percentile per-packet one-way delay: 239.509 ms
Loss rate: 3.91%
-- Flow 3:
Average throughput: 29.39 Mbit/s
95th percentile per-packet one-way delay: 82.646 ms
Loss rate: 3.99%
```

Run 5: Report of FillP — Data Link

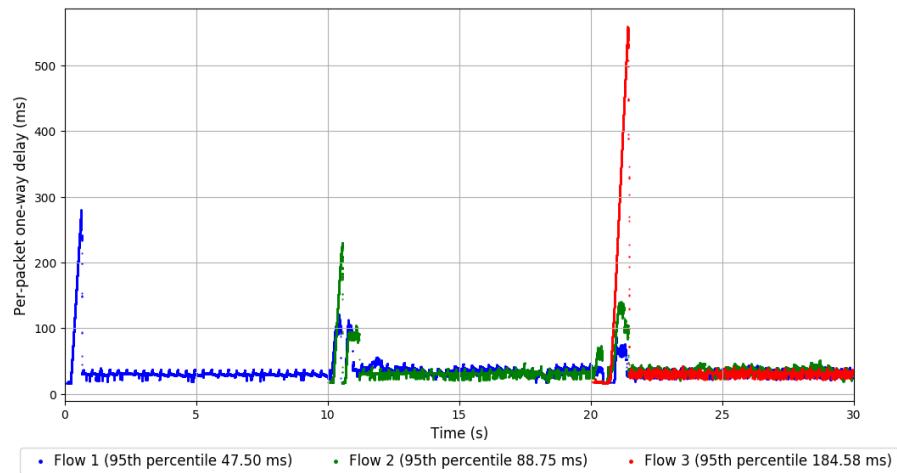
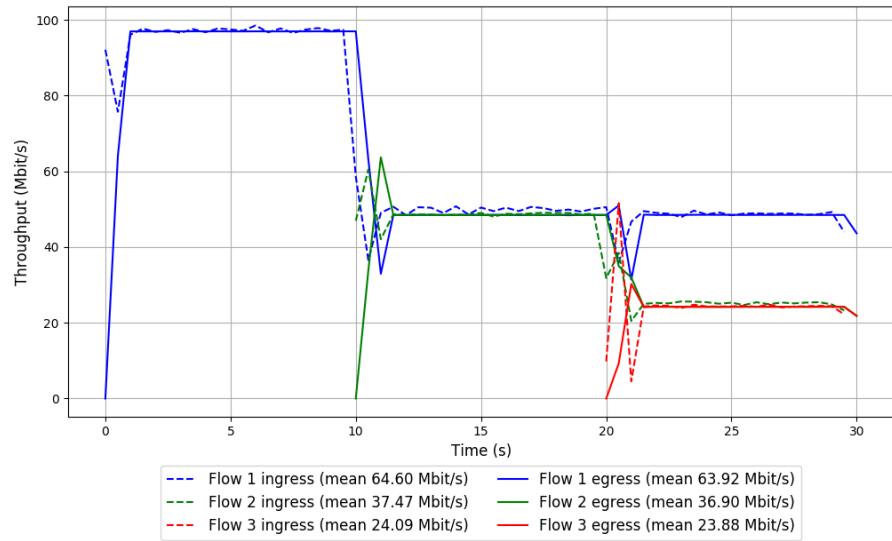


```
Run 1: Statistics of FillP-Sheep
```

```
Start at: 2018-09-06 19:21:54
End at: 2018-09-06 19:22:24
Local clock offset: 0.57 ms
Remote clock offset: -3.557 ms

# Below is generated by plot.py at 2018-09-06 21:07:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.38 Mbit/s
95th percentile per-packet one-way delay: 64.002 ms
Loss rate: 1.25%
-- Flow 1:
Average throughput: 63.92 Mbit/s
95th percentile per-packet one-way delay: 47.497 ms
Loss rate: 1.13%
-- Flow 2:
Average throughput: 36.90 Mbit/s
95th percentile per-packet one-way delay: 88.751 ms
Loss rate: 1.63%
-- Flow 3:
Average throughput: 23.88 Mbit/s
95th percentile per-packet one-way delay: 184.581 ms
Loss rate: 1.08%
```

Run 1: Report of FillP-Sheep — Data Link

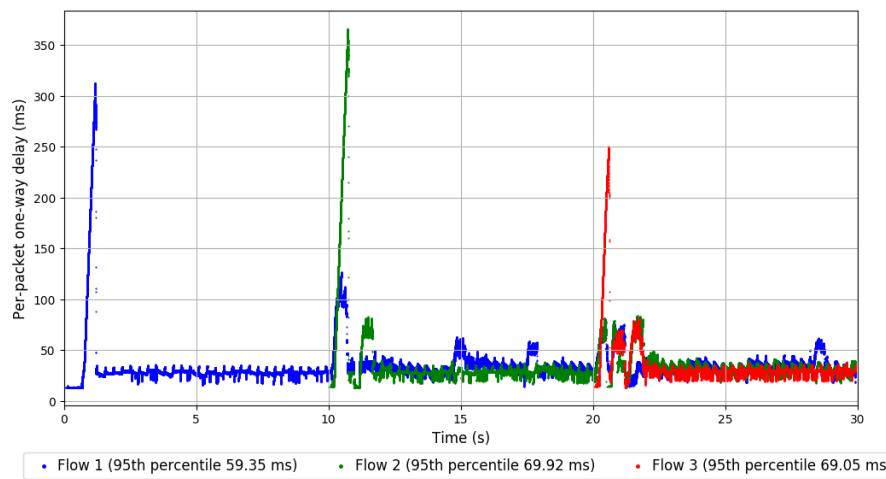
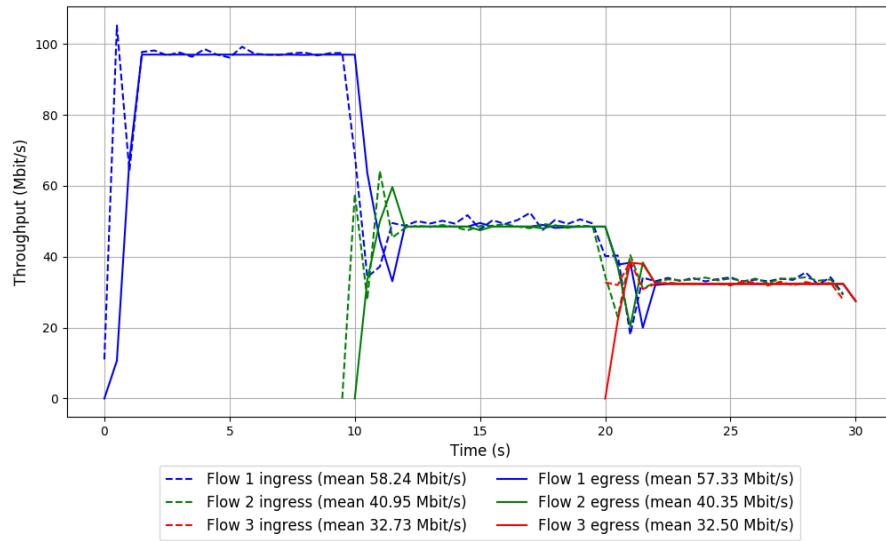


Run 2: Statistics of FillP-Sheep

```
Start at: 2018-09-06 19:43:37
End at: 2018-09-06 19:44:07
Local clock offset: -1.797 ms
Remote clock offset: -2.806 ms

# Below is generated by plot.py at 2018-09-06 21:07:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.93 Mbit/s
95th percentile per-packet one-way delay: 66.522 ms
Loss rate: 1.53%
-- Flow 1:
Average throughput: 57.33 Mbit/s
95th percentile per-packet one-way delay: 59.354 ms
Loss rate: 1.64%
-- Flow 2:
Average throughput: 40.35 Mbit/s
95th percentile per-packet one-way delay: 69.917 ms
Loss rate: 1.55%
-- Flow 3:
Average throughput: 32.50 Mbit/s
95th percentile per-packet one-way delay: 69.045 ms
Loss rate: 0.91%
```

Run 2: Report of FillP-Sheep — Data Link

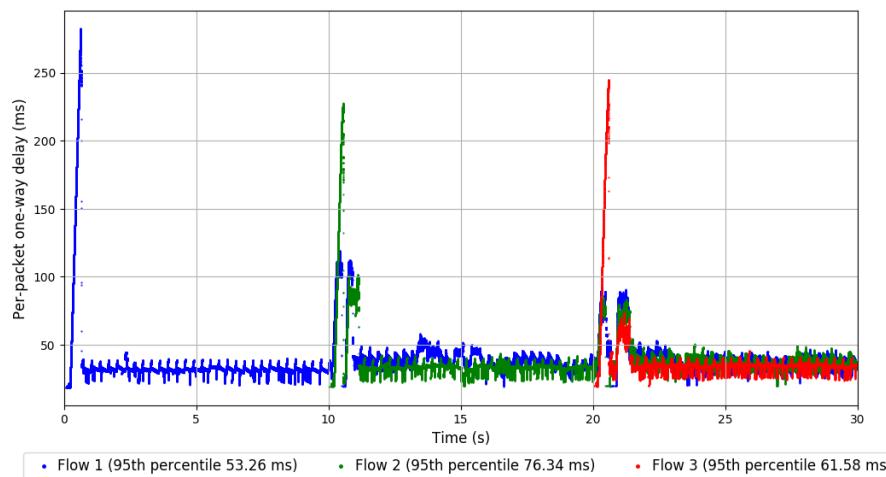
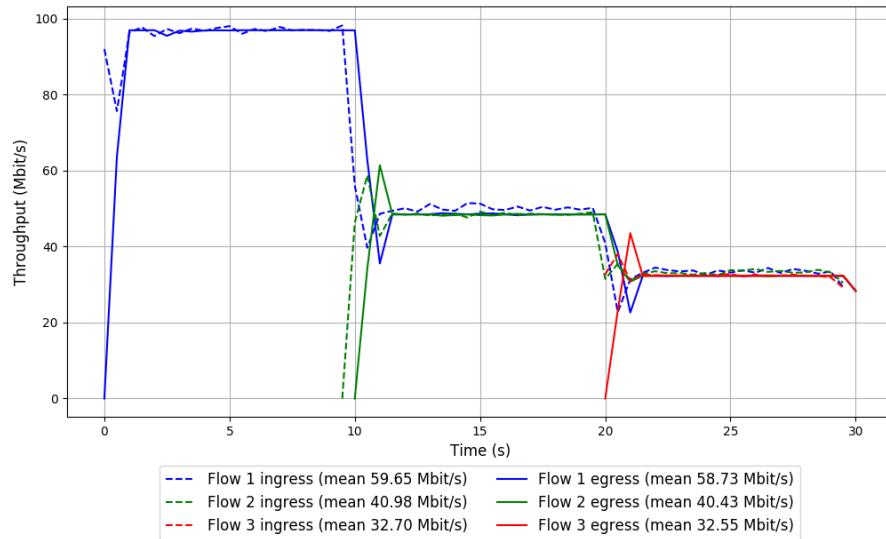


Run 3: Statistics of FillP-Sheep

```
Start at: 2018-09-06 20:05:23
End at: 2018-09-06 20:05:53
Local clock offset: 1.024 ms
Remote clock offset: -4.328 ms

# Below is generated by plot.py at 2018-09-06 21:07:32
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.43 Mbit/s
95th percentile per-packet one-way delay: 69.594 ms
Loss rate: 1.45%
-- Flow 1:
Average throughput: 58.73 Mbit/s
95th percentile per-packet one-way delay: 53.257 ms
Loss rate: 1.59%
-- Flow 2:
Average throughput: 40.43 Mbit/s
95th percentile per-packet one-way delay: 76.337 ms
Loss rate: 1.44%
-- Flow 3:
Average throughput: 32.55 Mbit/s
95th percentile per-packet one-way delay: 61.583 ms
Loss rate: 0.70%
```

Run 3: Report of FillP-Sheep — Data Link

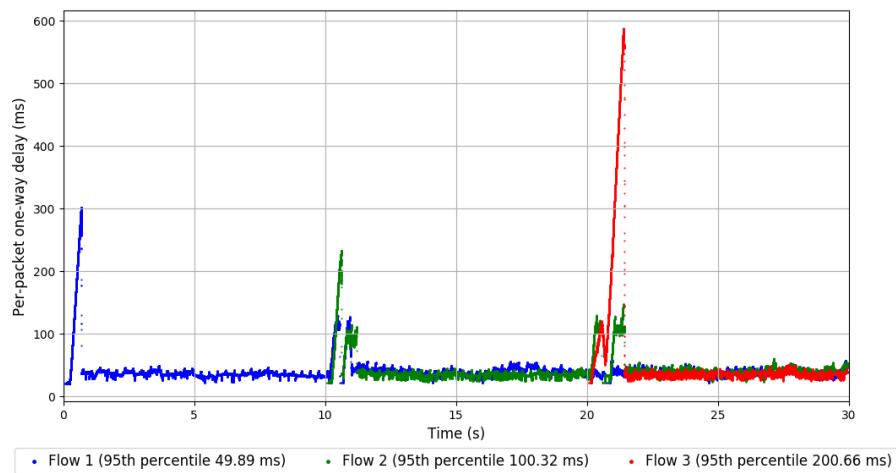
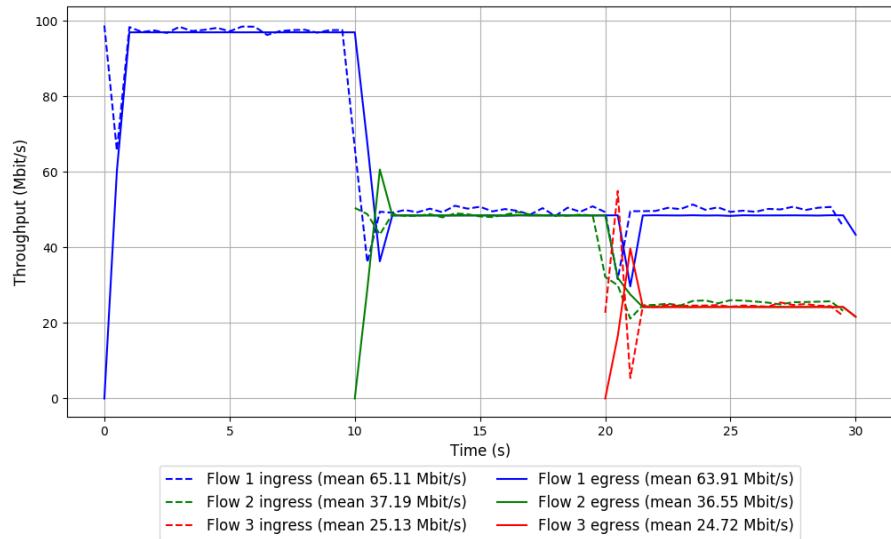


Run 4: Statistics of FillP-Sheep

```
Start at: 2018-09-06 20:27:18
End at: 2018-09-06 20:27:48
Local clock offset: 1.857 ms
Remote clock offset: -4.549 ms

# Below is generated by plot.py at 2018-09-06 21:07:55
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.42 Mbit/s
95th percentile per-packet one-way delay: 77.061 ms
Loss rate: 1.86%
-- Flow 1:
Average throughput: 63.91 Mbit/s
95th percentile per-packet one-way delay: 49.893 ms
Loss rate: 1.90%
-- Flow 2:
Average throughput: 36.55 Mbit/s
95th percentile per-packet one-way delay: 100.321 ms
Loss rate: 1.78%
-- Flow 3:
Average throughput: 24.72 Mbit/s
95th percentile per-packet one-way delay: 200.659 ms
Loss rate: 1.83%
```

Run 4: Report of FillP-Sheep — Data Link

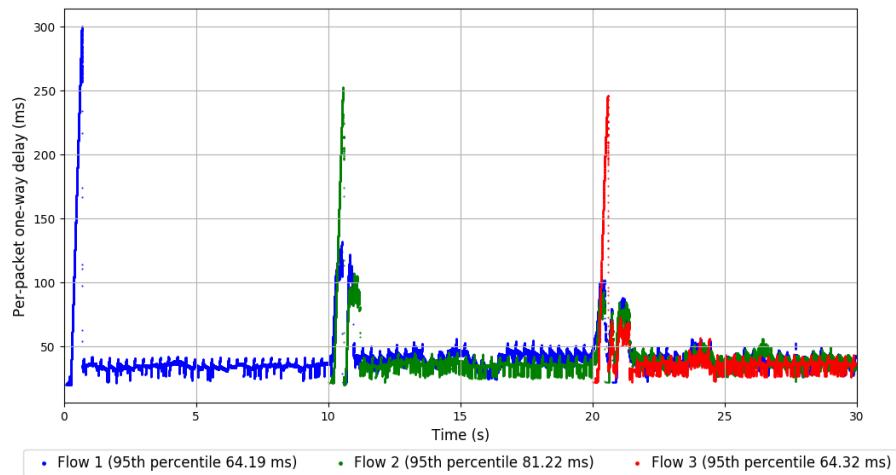
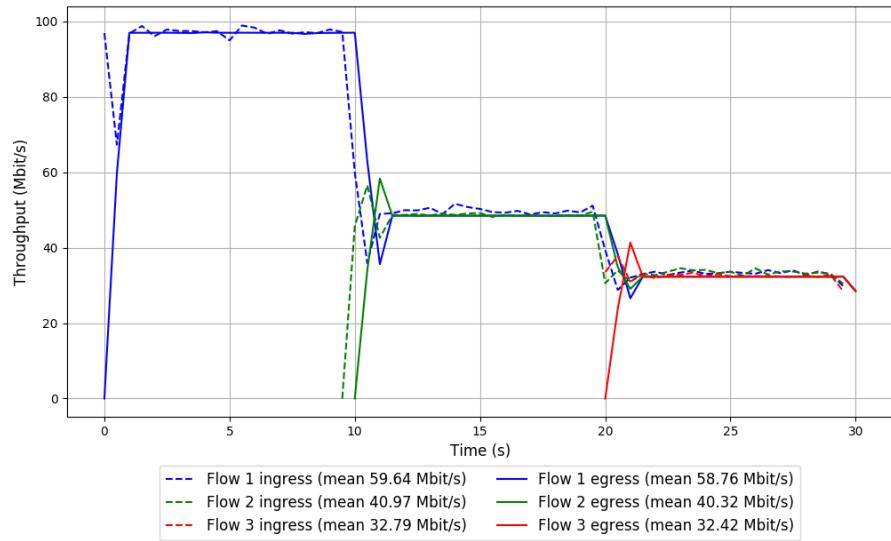


Run 5: Statistics of FillP-Sheep

```
Start at: 2018-09-06 20:49:22
End at: 2018-09-06 20:49:52
Local clock offset: 2.137 ms
Remote clock offset: -3.528 ms

# Below is generated by plot.py at 2018-09-06 21:08:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.36 Mbit/s
95th percentile per-packet one-way delay: 73.980 ms
Loss rate: 1.57%
-- Flow 1:
Average throughput: 58.76 Mbit/s
95th percentile per-packet one-way delay: 64.192 ms
Loss rate: 1.54%
-- Flow 2:
Average throughput: 40.32 Mbit/s
95th percentile per-packet one-way delay: 81.219 ms
Loss rate: 1.72%
-- Flow 3:
Average throughput: 32.42 Mbit/s
95th percentile per-packet one-way delay: 64.323 ms
Loss rate: 1.36%
```

Run 5: Report of FillP-Sheep — Data Link

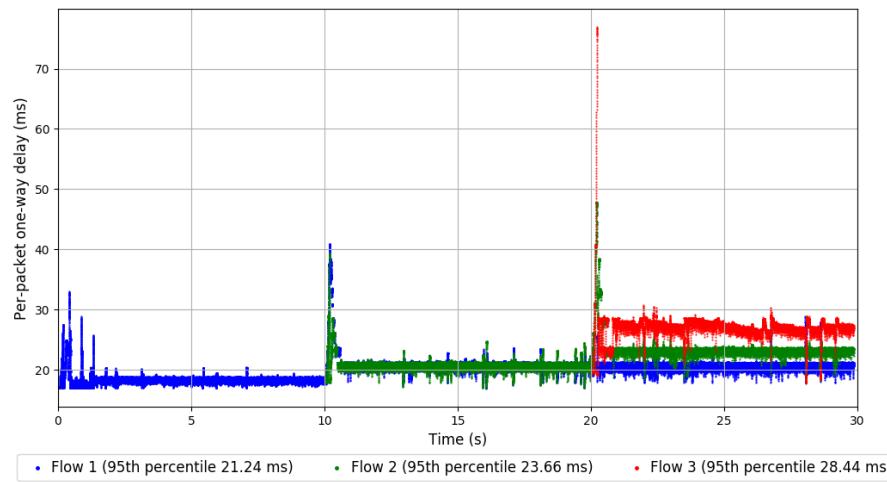
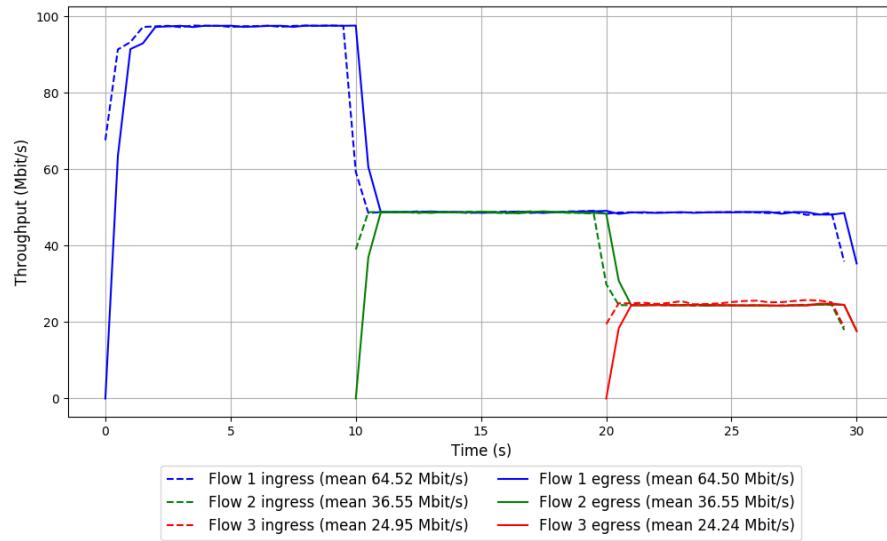


Run 1: Statistics of Indigo

```
Start at: 2018-09-06 19:24:20
End at: 2018-09-06 19:24:50
Local clock offset: 0.756 ms
Remote clock offset: -3.813 ms

# Below is generated by plot.py at 2018-09-06 21:08:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.77 Mbit/s
95th percentile per-packet one-way delay: 27.217 ms
Loss rate: 0.34%
-- Flow 1:
Average throughput: 64.50 Mbit/s
95th percentile per-packet one-way delay: 21.241 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 36.55 Mbit/s
95th percentile per-packet one-way delay: 23.662 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 24.24 Mbit/s
95th percentile per-packet one-way delay: 28.443 ms
Loss rate: 3.05%
```

Run 1: Report of Indigo — Data Link

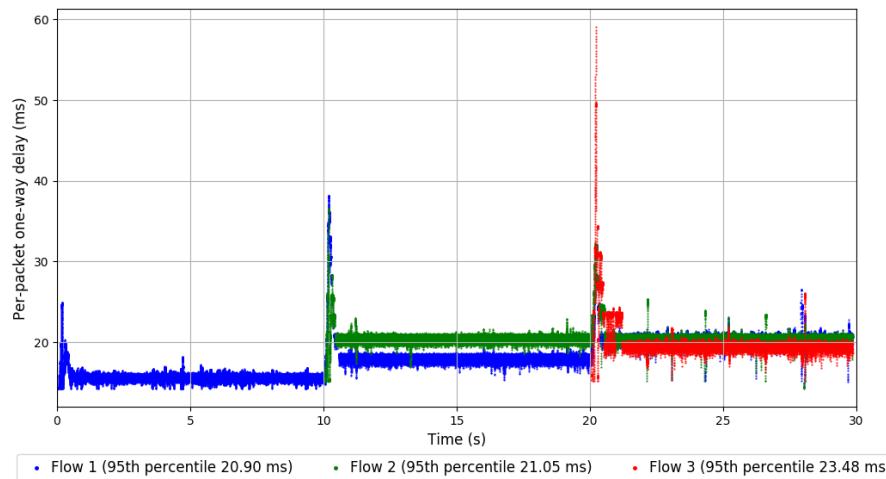
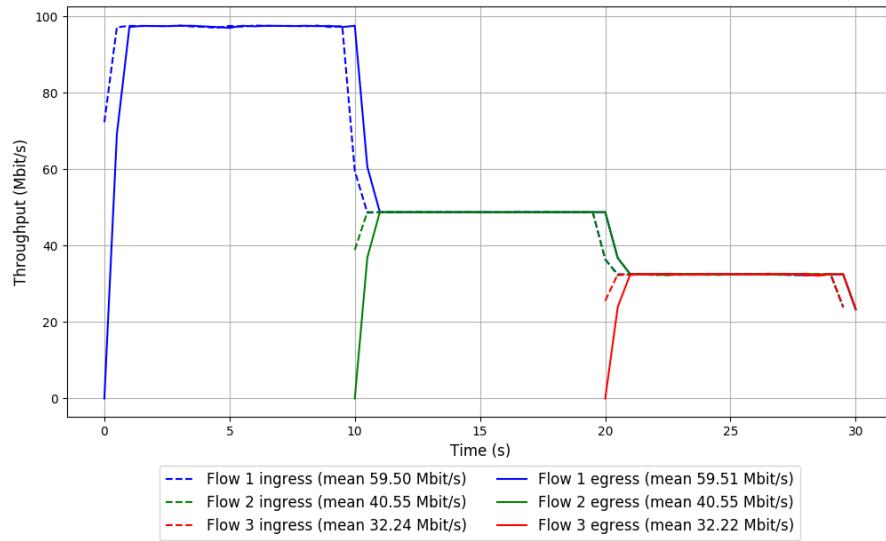


Run 2: Statistics of Indigo

```
Start at: 2018-09-06 19:46:06
End at: 2018-09-06 19:46:36
Local clock offset: -1.172 ms
Remote clock offset: -2.841 ms

# Below is generated by plot.py at 2018-09-06 21:08:09
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.05 Mbit/s
95th percentile per-packet one-way delay: 20.966 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 59.51 Mbit/s
95th percentile per-packet one-way delay: 20.896 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 40.55 Mbit/s
95th percentile per-packet one-way delay: 21.055 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 32.22 Mbit/s
95th percentile per-packet one-way delay: 23.478 ms
Loss rate: 0.31%
```

Run 2: Report of Indigo — Data Link

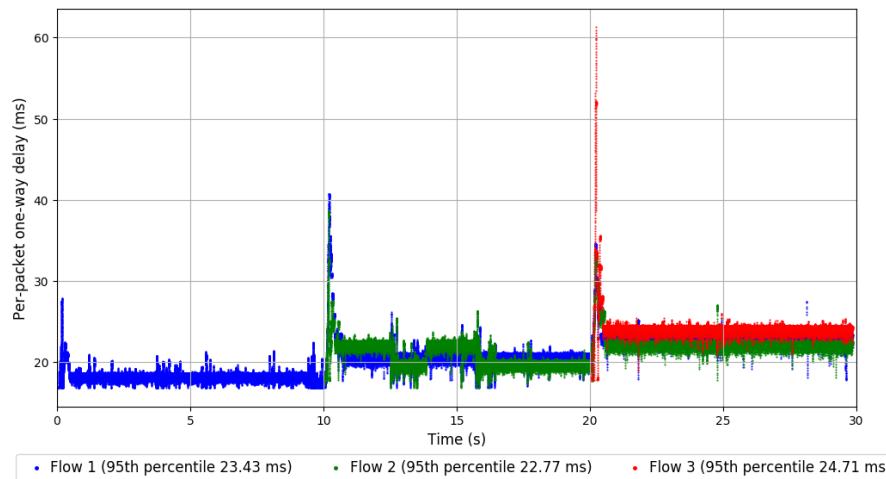
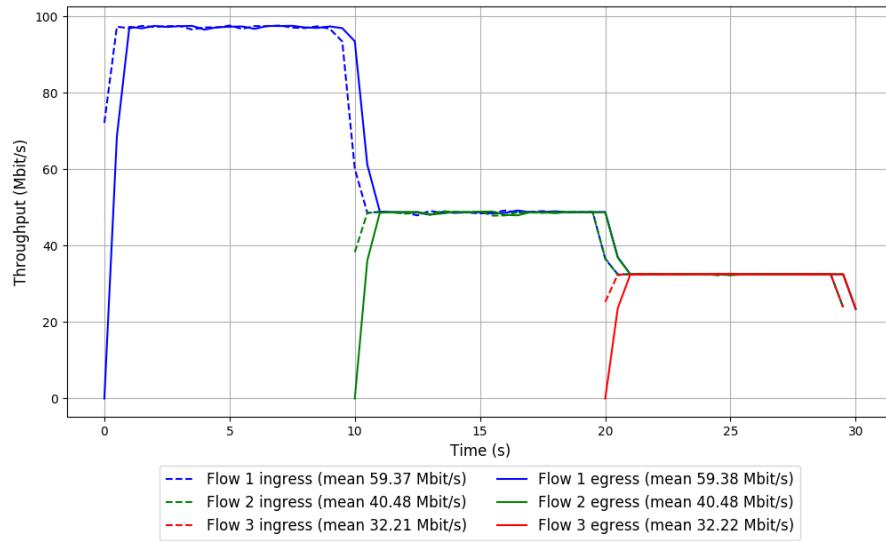


Run 3: Statistics of Indigo

```
Start at: 2018-09-06 20:07:44
End at: 2018-09-06 20:08:14
Local clock offset: 0.333 ms
Remote clock offset: -3.135 ms

# Below is generated by plot.py at 2018-09-06 21:08:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.87 Mbit/s
95th percentile per-packet one-way delay: 24.346 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 59.38 Mbit/s
95th percentile per-packet one-way delay: 23.430 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 40.48 Mbit/s
95th percentile per-packet one-way delay: 22.773 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 32.22 Mbit/s
95th percentile per-packet one-way delay: 24.709 ms
Loss rate: 0.32%
```

Run 3: Report of Indigo — Data Link

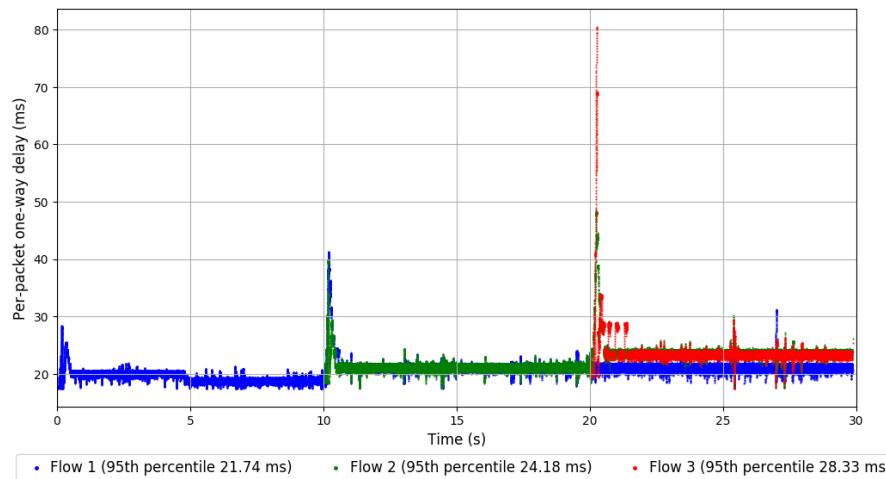
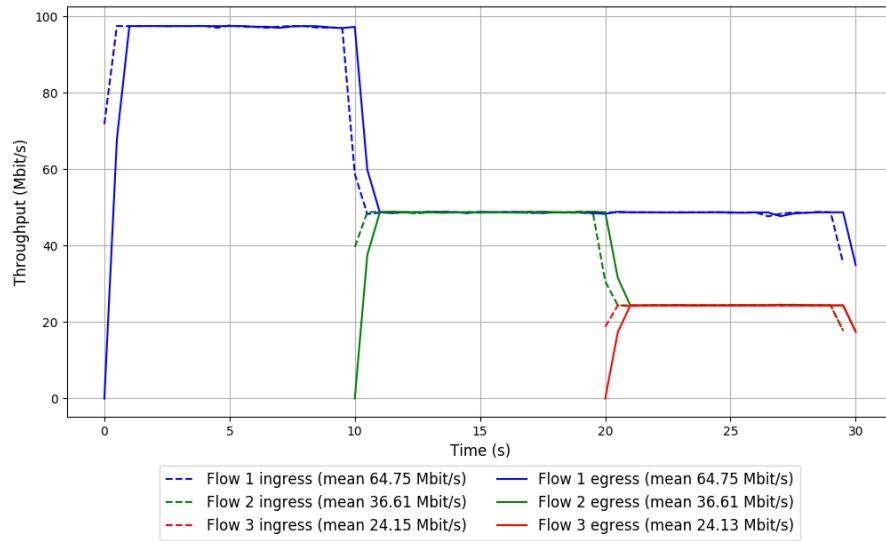


Run 4: Statistics of Indigo

```
Start at: 2018-09-06 20:29:51
End at: 2018-09-06 20:30:21
Local clock offset: -0.786 ms
Remote clock offset: -4.538 ms

# Below is generated by plot.py at 2018-09-06 21:08:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 97.03 Mbit/s
95th percentile per-packet one-way delay: 24.029 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 64.75 Mbit/s
95th percentile per-packet one-way delay: 21.737 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 36.61 Mbit/s
95th percentile per-packet one-way delay: 24.175 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 24.13 Mbit/s
95th percentile per-packet one-way delay: 28.329 ms
Loss rate: 0.31%
```

Run 4: Report of Indigo — Data Link

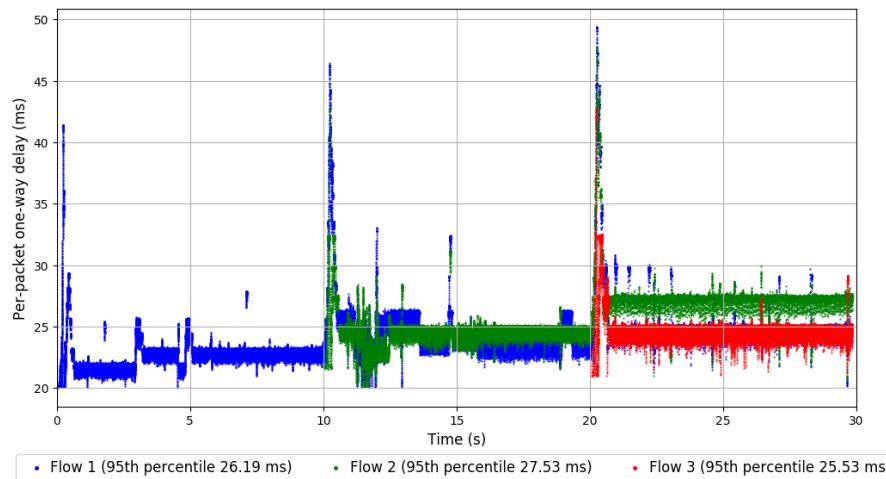
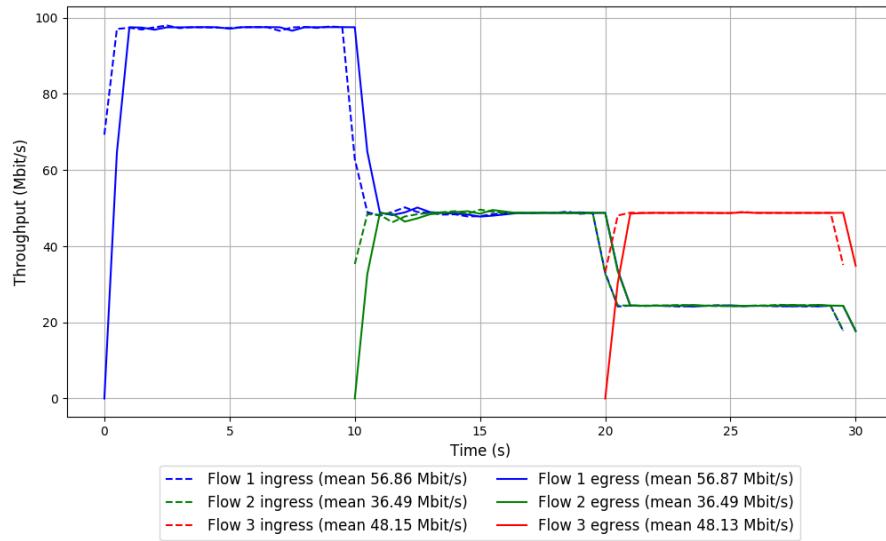


Run 5: Statistics of Indigo

```
Start at: 2018-09-06 20:51:50
End at: 2018-09-06 20:52:20
Local clock offset: 1.329 ms
Remote clock offset: -3.475 ms

# Below is generated by plot.py at 2018-09-06 21:08:34
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.91 Mbit/s
95th percentile per-packet one-way delay: 27.415 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 56.87 Mbit/s
95th percentile per-packet one-way delay: 26.189 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 36.49 Mbit/s
95th percentile per-packet one-way delay: 27.532 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 48.13 Mbit/s
95th percentile per-packet one-way delay: 25.530 ms
Loss rate: 0.28%
```

Run 5: Report of Indigo — Data Link

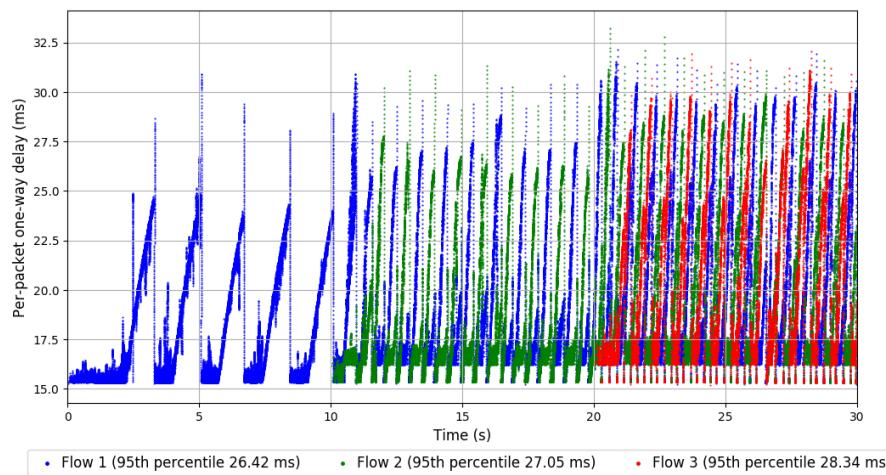
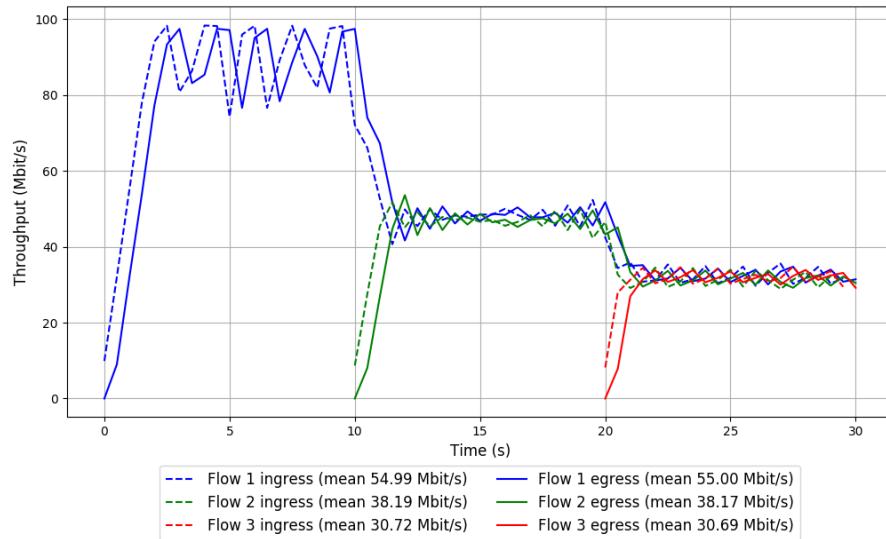


```
Run 1: Statistics of LEDBAT

Start at: 2018-09-06 19:14:38
End at: 2018-09-06 19:15:08
Local clock offset: -2.696 ms
Remote clock offset: -4.55 ms

# Below is generated by plot.py at 2018-09-06 21:08:36
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.60 Mbit/s
95th percentile per-packet one-way delay: 26.926 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 55.00 Mbit/s
95th percentile per-packet one-way delay: 26.418 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 38.17 Mbit/s
95th percentile per-packet one-way delay: 27.046 ms
Loss rate: 0.17%
-- Flow 3:
Average throughput: 30.69 Mbit/s
95th percentile per-packet one-way delay: 28.337 ms
Loss rate: 0.33%
```

Run 1: Report of LEDBAT — Data Link

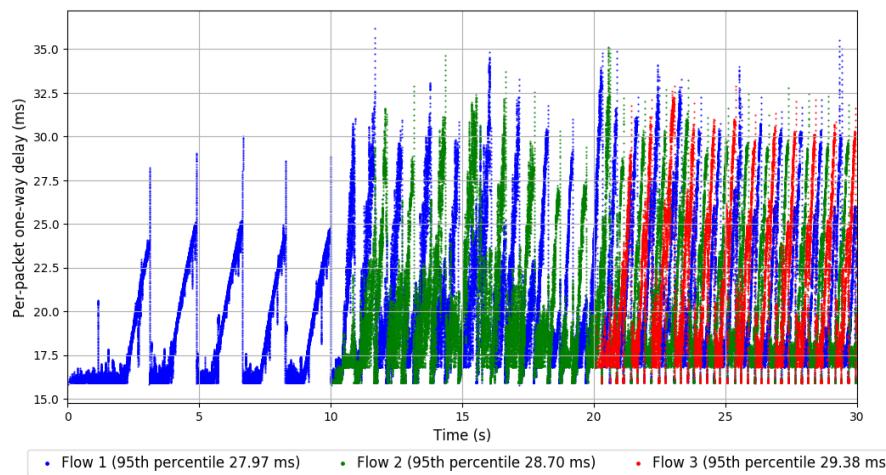
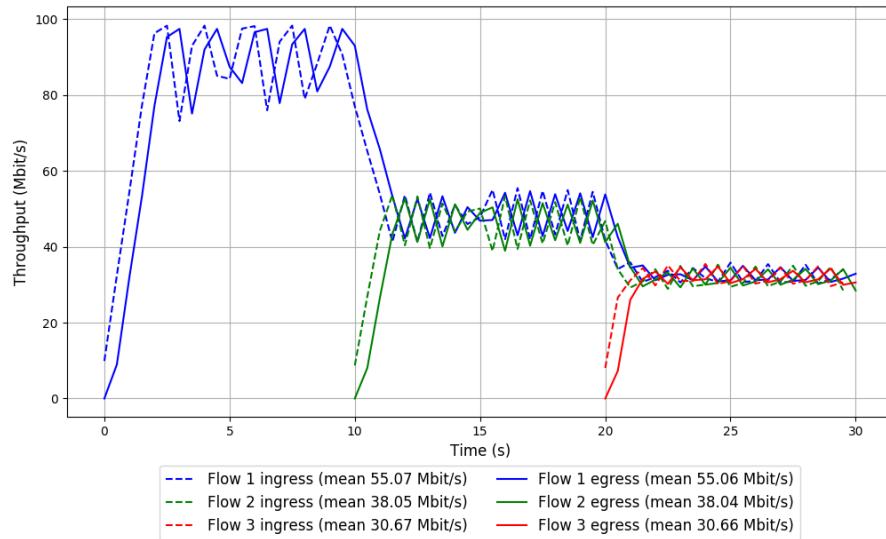


Run 2: Statistics of LEDBAT

```
Start at: 2018-09-06 19:36:16
End at: 2018-09-06 19:36:46
Local clock offset: 0.097 ms
Remote clock offset: -3.538 ms

# Below is generated by plot.py at 2018-09-06 21:09:01
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.56 Mbit/s
95th percentile per-packet one-way delay: 28.486 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 55.06 Mbit/s
95th percentile per-packet one-way delay: 27.972 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 38.04 Mbit/s
95th percentile per-packet one-way delay: 28.697 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 30.66 Mbit/s
95th percentile per-packet one-way delay: 29.379 ms
Loss rate: 0.27%
```

Run 2: Report of LEDBAT — Data Link

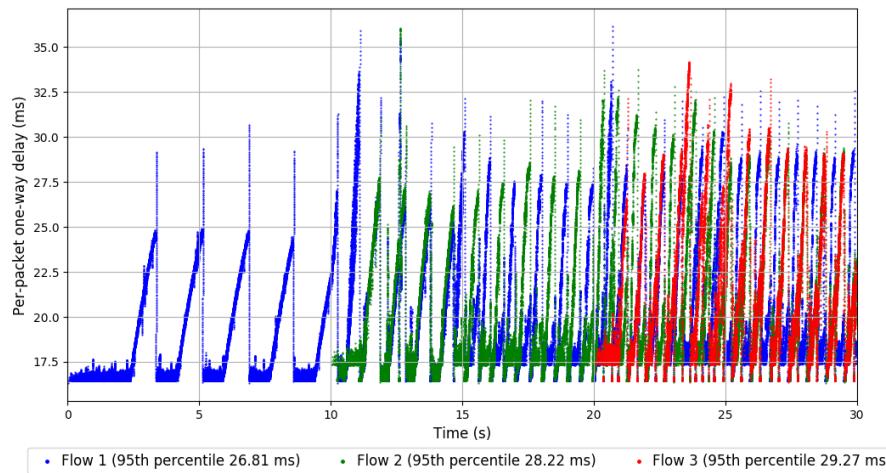
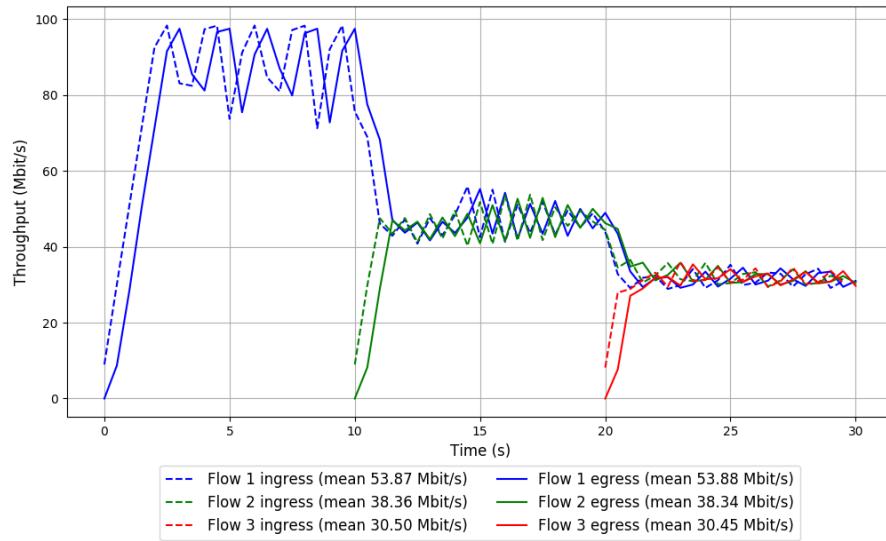


Run 3: Statistics of LEDBAT

```
Start at: 2018-09-06 19:58:12
End at: 2018-09-06 19:58:42
Local clock offset: 1.215 ms
Remote clock offset: -2.109 ms

# Below is generated by plot.py at 2018-09-06 21:09:02
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.51 Mbit/s
95th percentile per-packet one-way delay: 27.735 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 53.88 Mbit/s
95th percentile per-packet one-way delay: 26.813 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 38.34 Mbit/s
95th percentile per-packet one-way delay: 28.219 ms
Loss rate: 0.17%
-- Flow 3:
Average throughput: 30.45 Mbit/s
95th percentile per-packet one-way delay: 29.273 ms
Loss rate: 0.39%
```

Run 3: Report of LEDBAT — Data Link

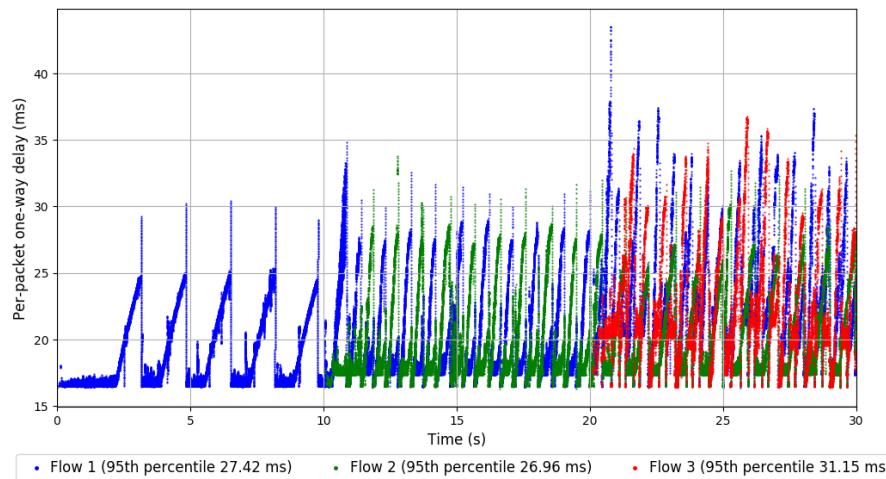
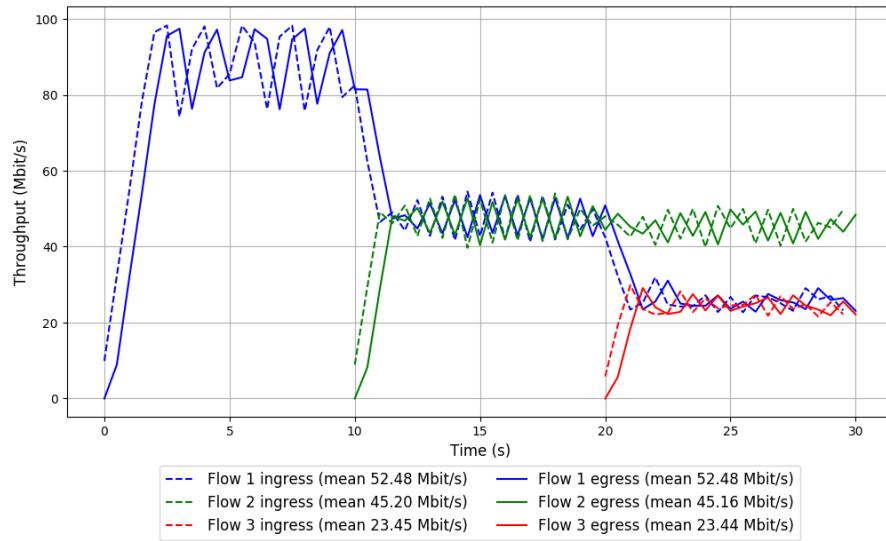


Run 4: Statistics of LEDBAT

```
Start at: 2018-09-06 20:19:50
End at: 2018-09-06 20:20:20
Local clock offset: -0.601 ms
Remote clock offset: -3.452 ms

# Below is generated by plot.py at 2018-09-06 21:09:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.33 Mbit/s
95th percentile per-packet one-way delay: 27.582 ms
Loss rate: 0.14%
-- Flow 1:
Average throughput: 52.48 Mbit/s
95th percentile per-packet one-way delay: 27.419 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 45.16 Mbit/s
95th percentile per-packet one-way delay: 26.965 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 23.44 Mbit/s
95th percentile per-packet one-way delay: 31.150 ms
Loss rate: 0.25%
```

Run 4: Report of LEDBAT — Data Link

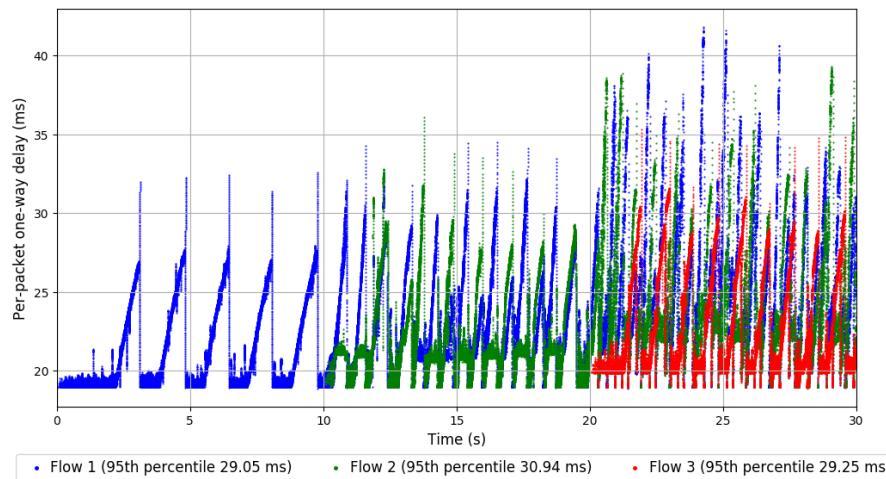
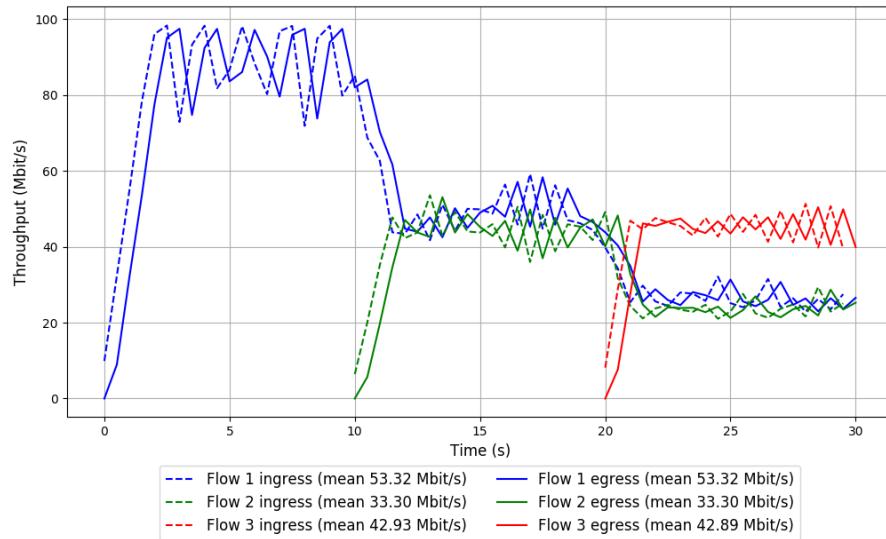


Run 5: Statistics of LEDBAT

```
Start at: 2018-09-06 20:41:54
End at: 2018-09-06 20:42:24
Local clock offset: 2.158 ms
Remote clock offset: -2.84 ms

# Below is generated by plot.py at 2018-09-06 21:09:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 89.72 Mbit/s
95th percentile per-packet one-way delay: 29.552 ms
Loss rate: 0.13%
-- Flow 1:
Average throughput: 53.32 Mbit/s
95th percentile per-packet one-way delay: 29.050 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 33.30 Mbit/s
95th percentile per-packet one-way delay: 30.941 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 42.89 Mbit/s
95th percentile per-packet one-way delay: 29.254 ms
Loss rate: 0.31%
```

Run 5: Report of LEDBAT — Data Link

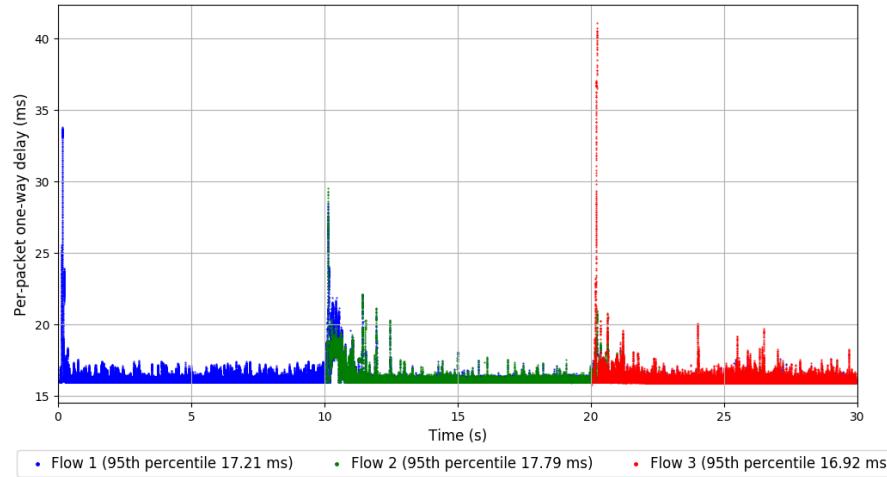
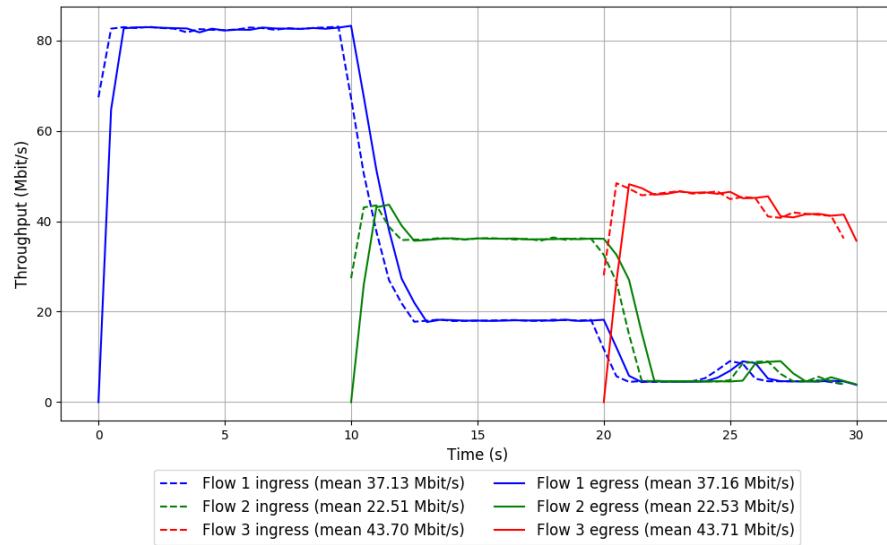


Run 1: Statistics of Indigo-Muses

```
Start at: 2018-09-06 19:17:07
End at: 2018-09-06 19:17:37
Local clock offset: -0.473 ms
Remote clock offset: -3.366 ms

# Below is generated by plot.py at 2018-09-06 21:09:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 66.60 Mbit/s
95th percentile per-packet one-way delay: 17.234 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 37.16 Mbit/s
95th percentile per-packet one-way delay: 17.208 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 22.53 Mbit/s
95th percentile per-packet one-way delay: 17.787 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 43.71 Mbit/s
95th percentile per-packet one-way delay: 16.924 ms
Loss rate: 0.21%
```

Run 1: Report of Indigo-Muses — Data Link

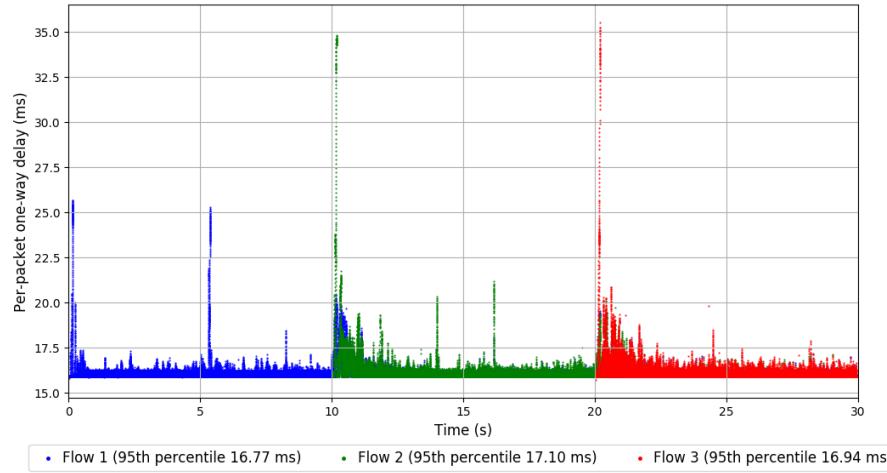
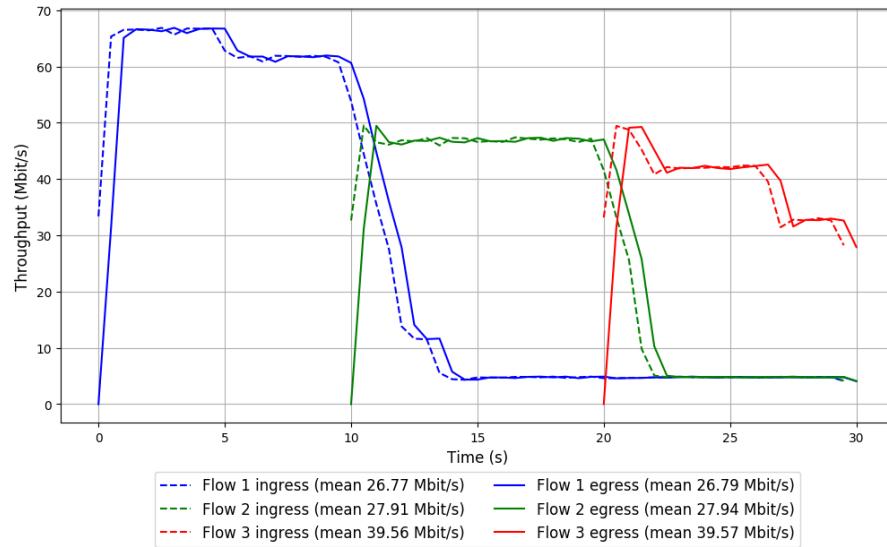


Run 2: Statistics of Indigo-Muses

```
Start at: 2018-09-06 19:38:46
End at: 2018-09-06 19:39:16
Local clock offset: -0.168 ms
Remote clock offset: -3.717 ms

# Below is generated by plot.py at 2018-09-06 21:09:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 58.47 Mbit/s
95th percentile per-packet one-way delay: 16.920 ms
Loss rate: 0.05%
-- Flow 1:
Average throughput: 26.79 Mbit/s
95th percentile per-packet one-way delay: 16.767 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 27.94 Mbit/s
95th percentile per-packet one-way delay: 17.102 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 39.57 Mbit/s
95th percentile per-packet one-way delay: 16.936 ms
Loss rate: 0.18%
```

Run 2: Report of Indigo-Muses — Data Link

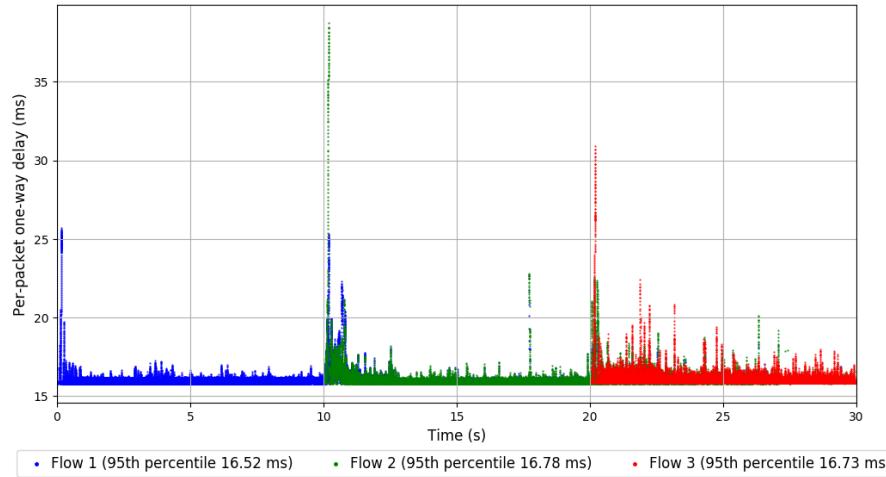
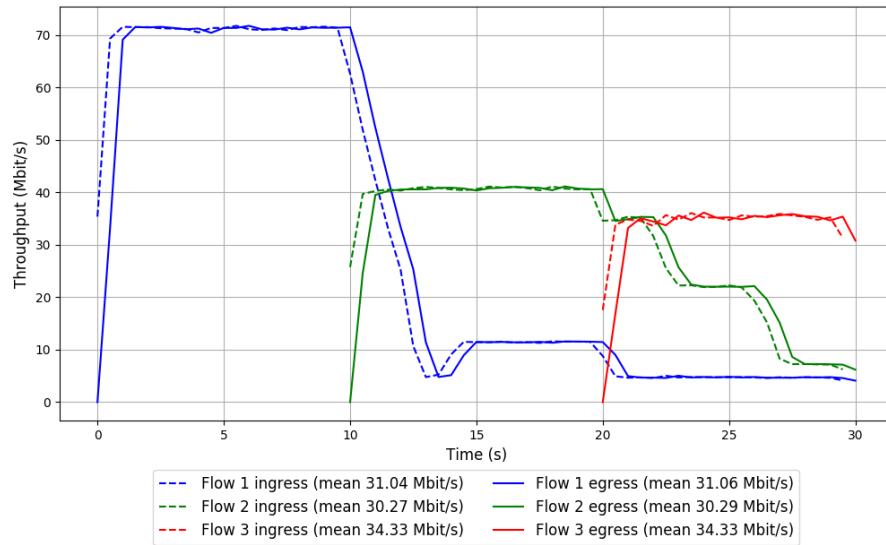


Run 3: Statistics of Indigo-Muses

```
Start at: 2018-09-06 20:00:40
End at: 2018-09-06 20:01:10
Local clock offset: 1.395 ms
Remote clock offset: -1.243 ms

# Below is generated by plot.py at 2018-09-06 21:09:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 62.56 Mbit/s
95th percentile per-packet one-way delay: 16.673 ms
Loss rate: 0.06%
-- Flow 1:
Average throughput: 31.06 Mbit/s
95th percentile per-packet one-way delay: 16.515 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 30.29 Mbit/s
95th percentile per-packet one-way delay: 16.779 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 34.33 Mbit/s
95th percentile per-packet one-way delay: 16.732 ms
Loss rate: 0.24%
```

Run 3: Report of Indigo-Muses — Data Link

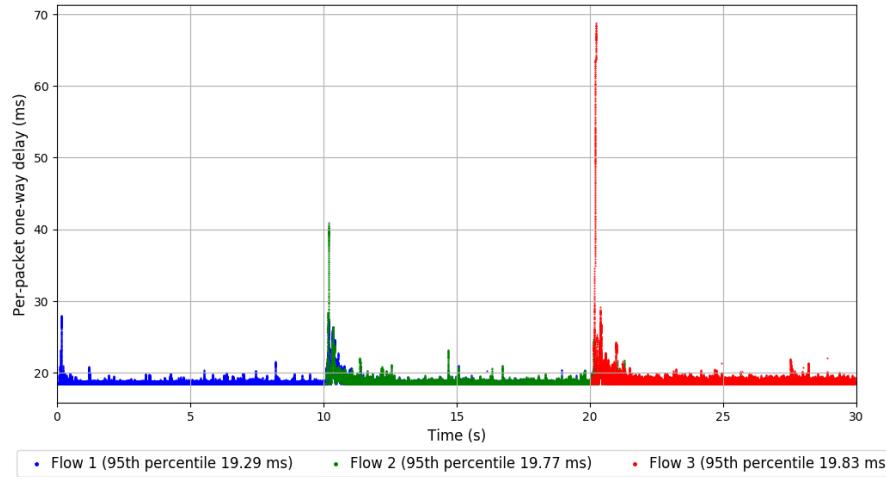
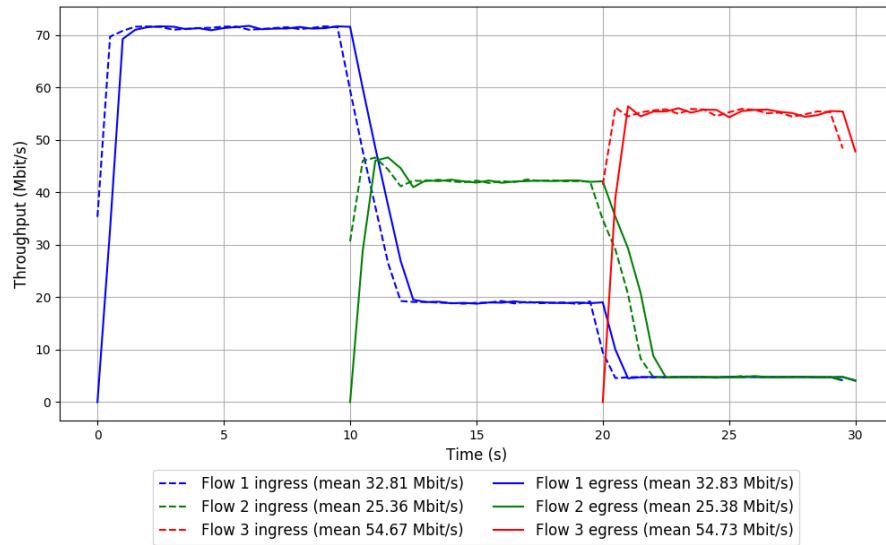


Run 4: Statistics of Indigo-Muses

```
Start at: 2018-09-06 20:22:25
End at: 2018-09-06 20:22:55
Local clock offset: 0.384 ms
Remote clock offset: -4.411 ms

# Below is generated by plot.py at 2018-09-06 21:09:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 67.80 Mbit/s
95th percentile per-packet one-way delay: 19.560 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 32.83 Mbit/s
95th percentile per-packet one-way delay: 19.287 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 25.38 Mbit/s
95th percentile per-packet one-way delay: 19.774 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 54.73 Mbit/s
95th percentile per-packet one-way delay: 19.827 ms
Loss rate: 0.23%
```

Run 4: Report of Indigo-Muses — Data Link

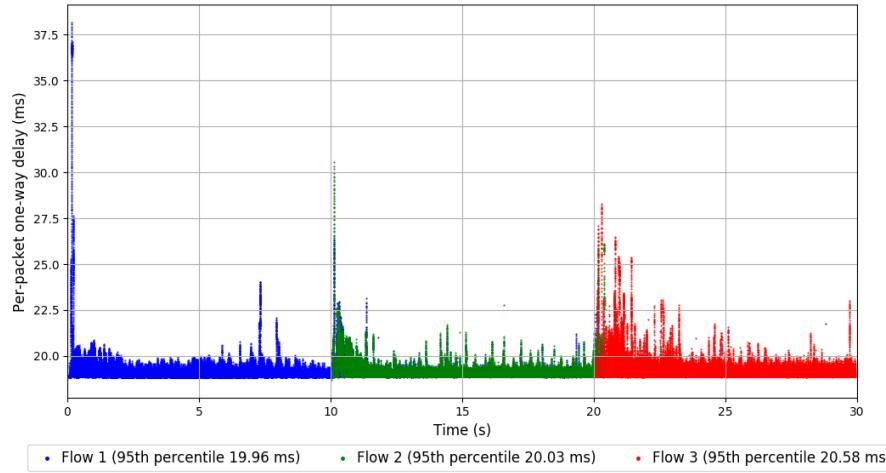
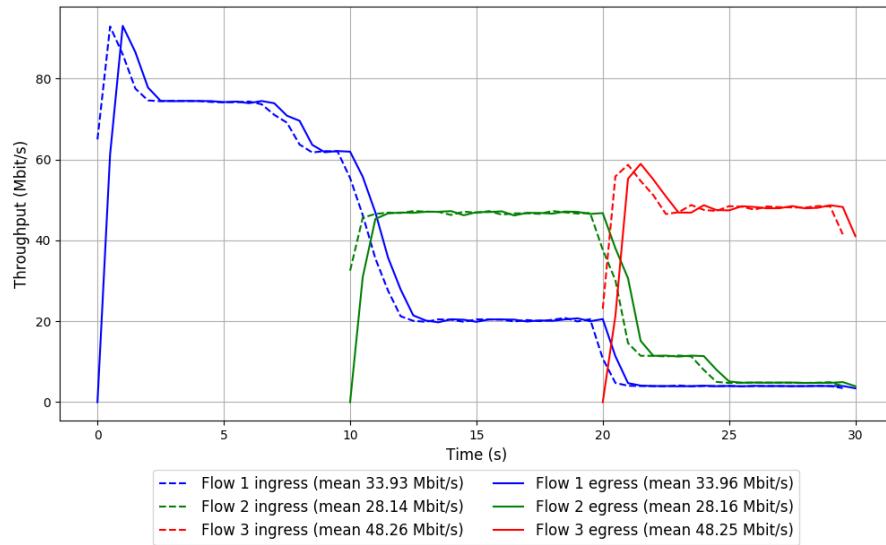


Run 5: Statistics of Indigo-Muses

```
Start at: 2018-09-06 20:44:29
End at: 2018-09-06 20:44:59
Local clock offset: 2.037 ms
Remote clock offset: -2.78 ms

# Below is generated by plot.py at 2018-09-06 21:09:50
# Datalink statistics
-- Total of 3 flows:
Average throughput: 68.64 Mbit/s
95th percentile per-packet one-way delay: 20.081 ms
Loss rate: 0.07%
-- Flow 1:
Average throughput: 33.96 Mbit/s
95th percentile per-packet one-way delay: 19.958 ms
Loss rate: 0.01%
-- Flow 2:
Average throughput: 28.16 Mbit/s
95th percentile per-packet one-way delay: 20.029 ms
Loss rate: 0.02%
-- Flow 3:
Average throughput: 48.25 Mbit/s
95th percentile per-packet one-way delay: 20.583 ms
Loss rate: 0.25%
```

Run 5: Report of Indigo-Muses — Data Link

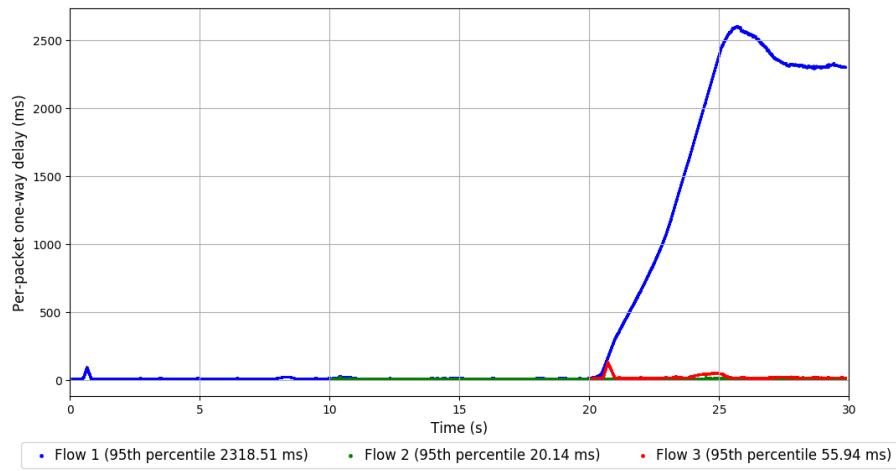
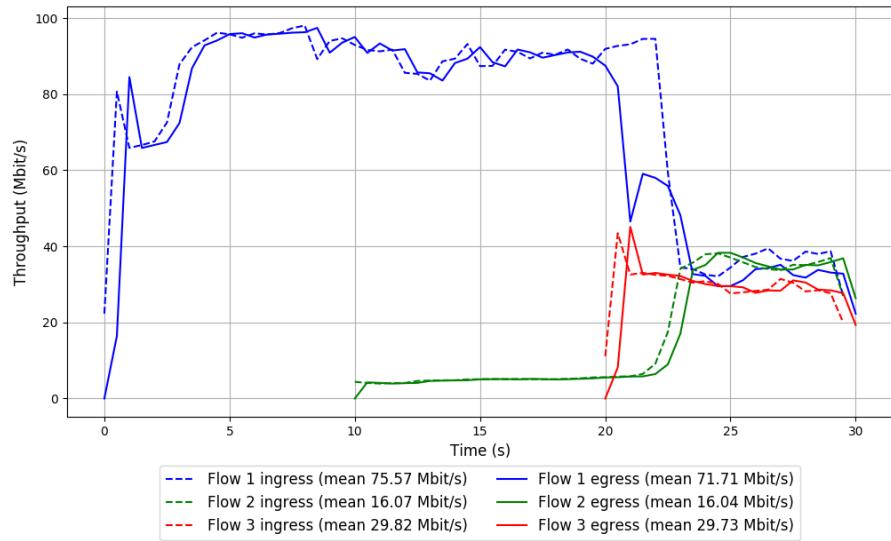


```
Run 1: Statistics of PCC-Allegro

Start at: 2018-09-06 19:30:27
End at: 2018-09-06 19:30:57
Local clock offset: 0.456 ms
Remote clock offset: -2.711 ms

# Below is generated by plot.py at 2018-09-06 21:10:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.14 Mbit/s
95th percentile per-packet one-way delay: 2306.524 ms
Loss rate: 4.15%
-- Flow 1:
Average throughput: 71.71 Mbit/s
95th percentile per-packet one-way delay: 2318.507 ms
Loss rate: 5.16%
-- Flow 2:
Average throughput: 16.04 Mbit/s
95th percentile per-packet one-way delay: 20.138 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 29.73 Mbit/s
95th percentile per-packet one-way delay: 55.935 ms
Loss rate: 0.54%
```

Run 1: Report of PCC-Allegro — Data Link

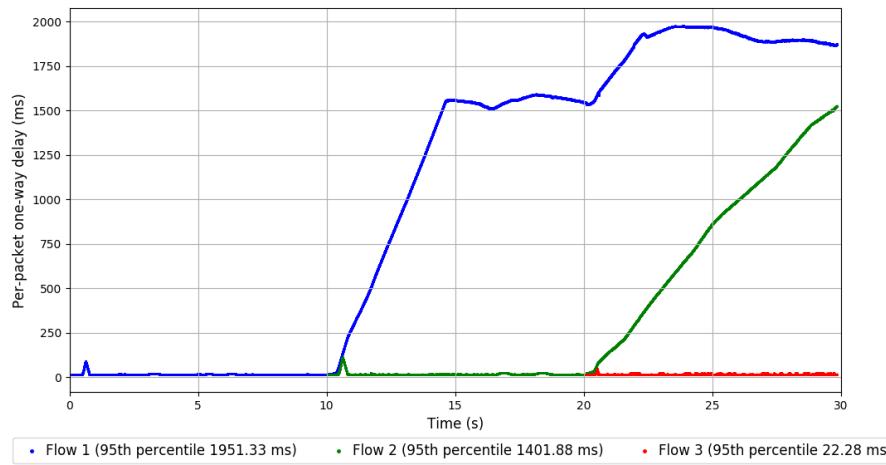
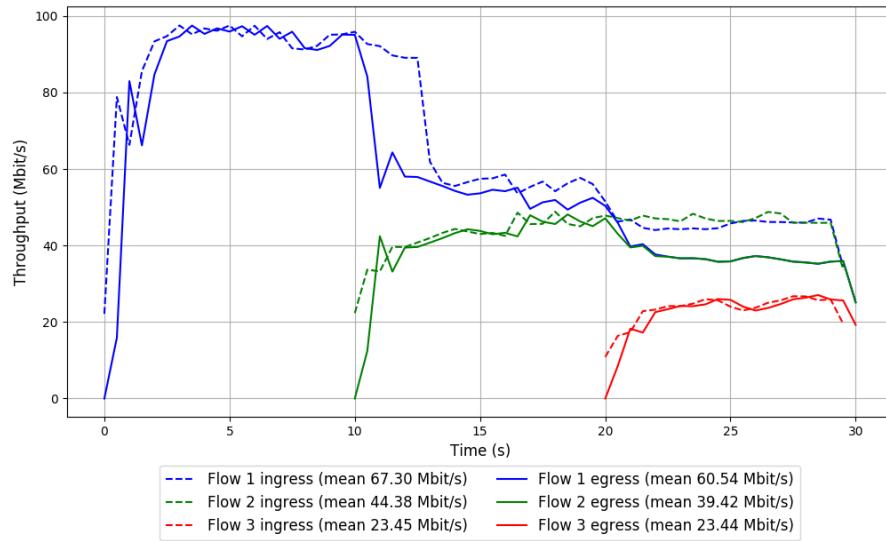


Run 2: Statistics of PCC-Allegro

```
Start at: 2018-09-06 19:52:22
End at: 2018-09-06 19:52:52
Local clock offset: -0.075 ms
Remote clock offset: -2.411 ms

# Below is generated by plot.py at 2018-09-06 21:10:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.45 Mbit/s
95th percentile per-packet one-way delay: 1919.002 ms
Loss rate: 9.70%
-- Flow 1:
Average throughput: 60.54 Mbit/s
95th percentile per-packet one-way delay: 1951.327 ms
Loss rate: 10.09%
-- Flow 2:
Average throughput: 39.42 Mbit/s
95th percentile per-packet one-way delay: 1401.876 ms
Loss rate: 11.26%
-- Flow 3:
Average throughput: 23.44 Mbit/s
95th percentile per-packet one-way delay: 22.281 ms
Loss rate: 0.27%
```

Run 2: Report of PCC-Allegro — Data Link

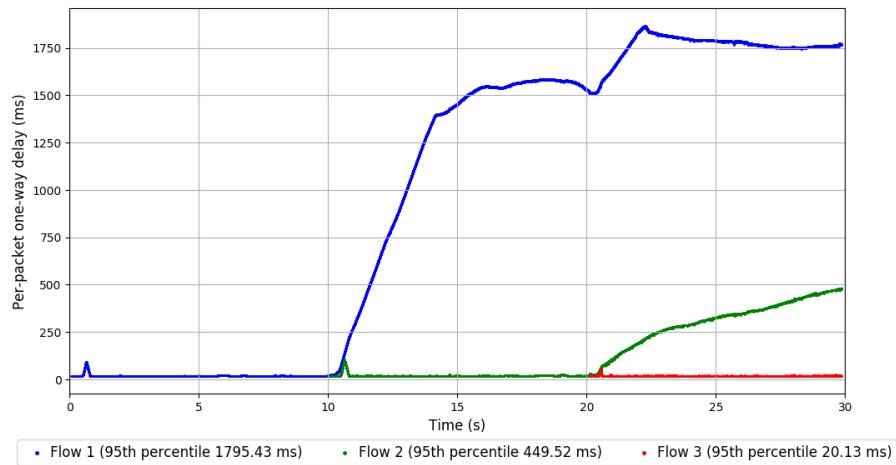
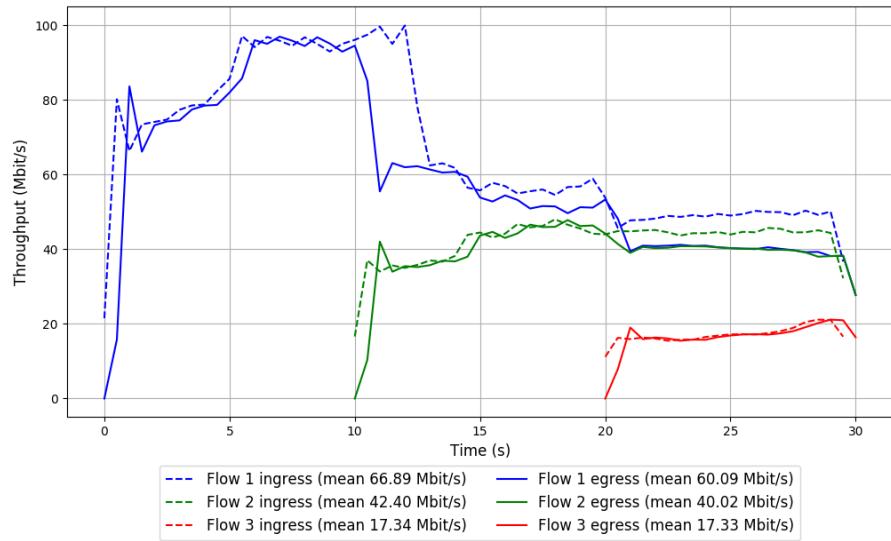


Run 3: Statistics of PCC-Allegro

```
Start at: 2018-09-06 20:14:00
End at: 2018-09-06 20:14:30
Local clock offset: 0.291 ms
Remote clock offset: -3.367 ms

# Below is generated by plot.py at 2018-09-06 21:10:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.39 Mbit/s
95th percentile per-packet one-way delay: 1785.987 ms
Loss rate: 8.40%
-- Flow 1:
Average throughput: 60.09 Mbit/s
95th percentile per-packet one-way delay: 1795.434 ms
Loss rate: 10.23%
-- Flow 2:
Average throughput: 40.02 Mbit/s
95th percentile per-packet one-way delay: 449.523 ms
Loss rate: 5.70%
-- Flow 3:
Average throughput: 17.33 Mbit/s
95th percentile per-packet one-way delay: 20.132 ms
Loss rate: 0.30%
```

Run 3: Report of PCC-Allegro — Data Link

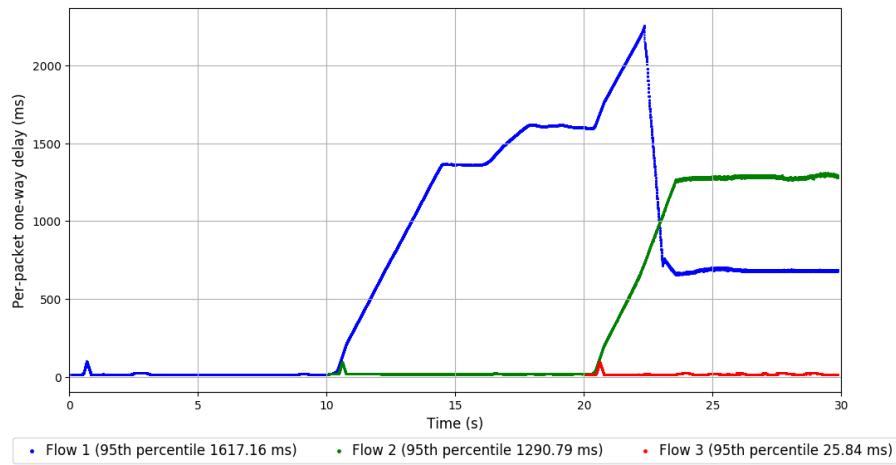
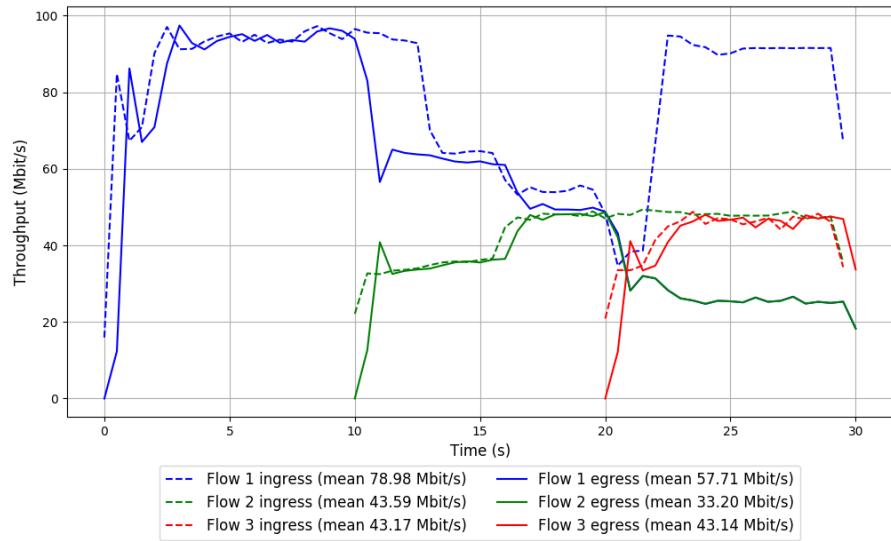


Run 4: Statistics of PCC-Allegro

```
Start at: 2018-09-06 20:36:04
End at: 2018-09-06 20:36:34
Local clock offset: -0.898 ms
Remote clock offset: -3.29 ms

# Below is generated by plot.py at 2018-09-06 21:10:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.98 Mbit/s
95th percentile per-packet one-way delay: 1608.291 ms
Loss rate: 23.16%
-- Flow 1:
Average throughput: 57.71 Mbit/s
95th percentile per-packet one-way delay: 1617.162 ms
Loss rate: 27.01%
-- Flow 2:
Average throughput: 33.20 Mbit/s
95th percentile per-packet one-way delay: 1290.792 ms
Loss rate: 23.92%
-- Flow 3:
Average throughput: 43.14 Mbit/s
95th percentile per-packet one-way delay: 25.838 ms
Loss rate: 0.30%
```

Run 4: Report of PCC-Allegro — Data Link

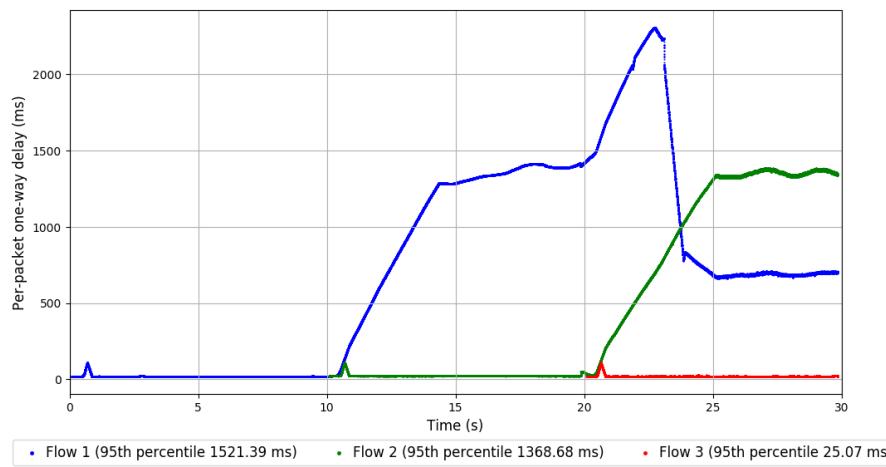
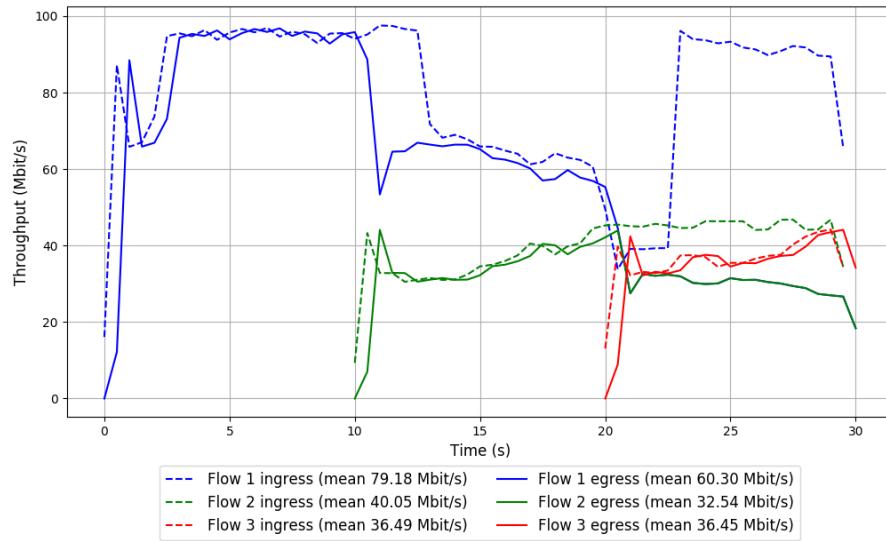


Run 5: Statistics of PCC-Allegro

```
Start at: 2018-09-06 20:58:08
End at: 2018-09-06 20:58:38
Local clock offset: 0.4 ms
Remote clock offset: -3.085 ms

# Below is generated by plot.py at 2018-09-06 21:10:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.90 Mbit/s
95th percentile per-packet one-way delay: 1412.055 ms
Loss rate: 20.36%
-- Flow 1:
Average throughput: 60.30 Mbit/s
95th percentile per-packet one-way delay: 1521.391 ms
Loss rate: 23.92%
-- Flow 2:
Average throughput: 32.54 Mbit/s
95th percentile per-packet one-way delay: 1368.677 ms
Loss rate: 18.83%
-- Flow 3:
Average throughput: 36.45 Mbit/s
95th percentile per-packet one-way delay: 25.067 ms
Loss rate: 0.33%
```

Run 5: Report of PCC-Allegro — Data Link

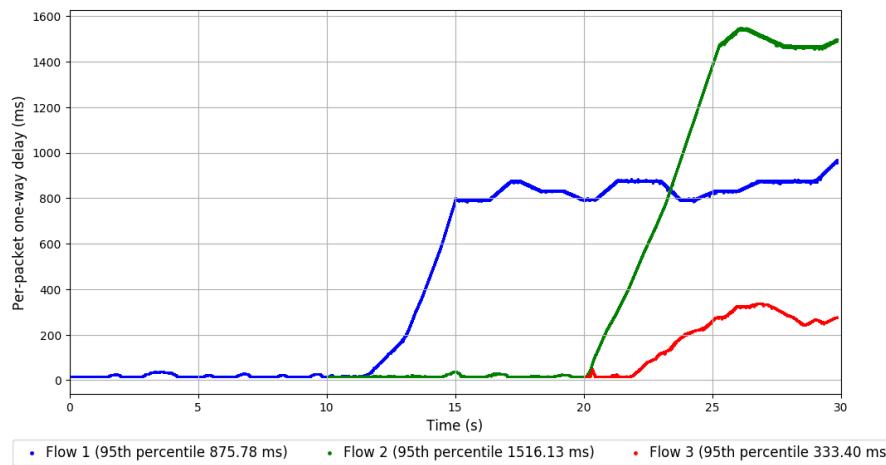
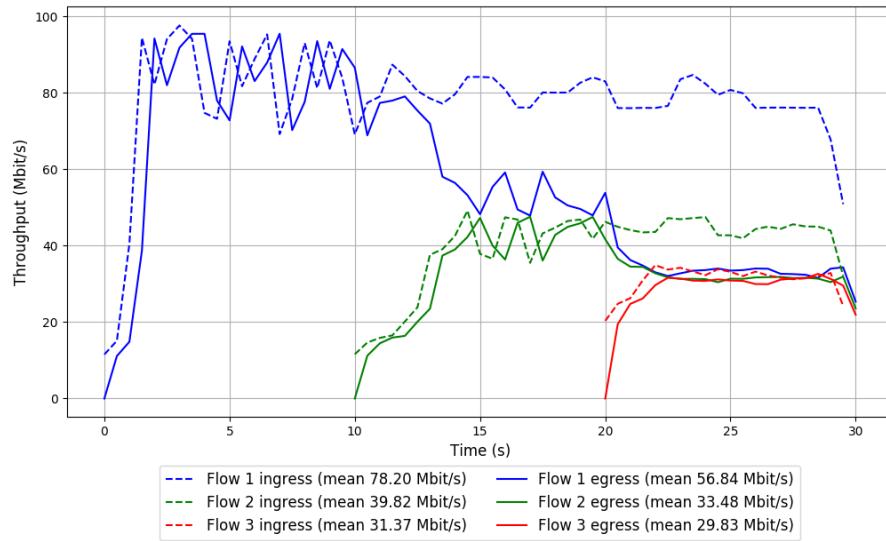


```
Run 1: Statistics of PCC-Expr
```

```
Start at: 2018-09-06 19:15:50
End at: 2018-09-06 19:16:20
Local clock offset: -3.741 ms
Remote clock offset: -6.934 ms

# Below is generated by plot.py at 2018-09-06 21:11:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.93 Mbit/s
95th percentile per-packet one-way delay: 1463.187 ms
Loss rate: 22.75%
-- Flow 1:
Average throughput: 56.84 Mbit/s
95th percentile per-packet one-way delay: 875.777 ms
Loss rate: 27.37%
-- Flow 2:
Average throughput: 33.48 Mbit/s
95th percentile per-packet one-way delay: 1516.129 ms
Loss rate: 16.00%
-- Flow 3:
Average throughput: 29.83 Mbit/s
95th percentile per-packet one-way delay: 333.405 ms
Loss rate: 5.13%
```

Run 1: Report of PCC-Expr — Data Link

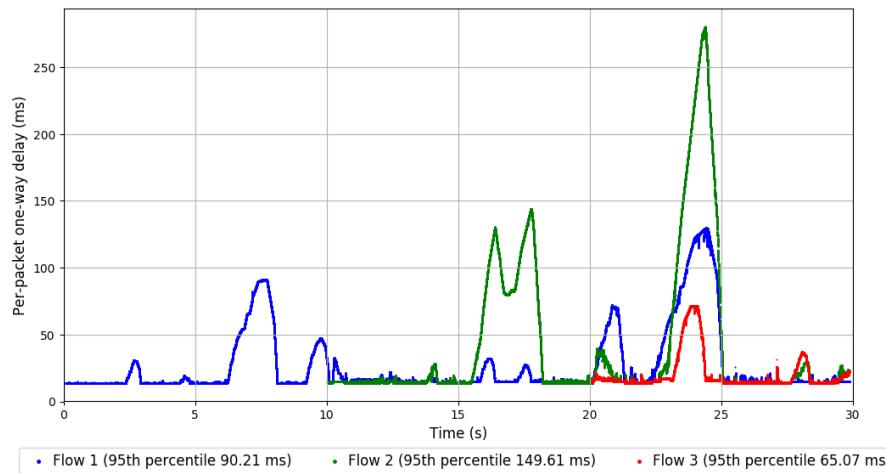
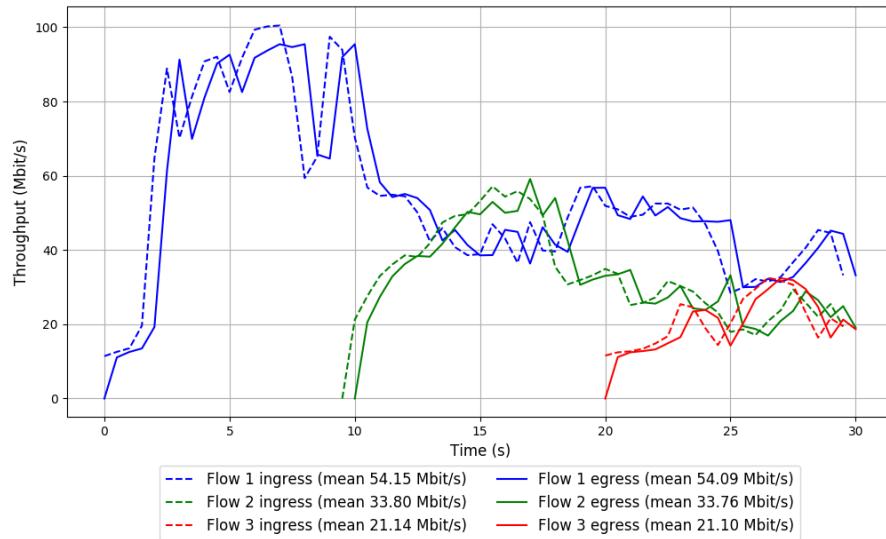


Run 2: Statistics of PCC-Expr

```
Start at: 2018-09-06 19:37:30
End at: 2018-09-06 19:38:00
Local clock offset: -1.706 ms
Remote clock offset: -3.248 ms

# Below is generated by plot.py at 2018-09-06 21:11:20
# Datalink statistics
-- Total of 3 flows:
Average throughput: 83.51 Mbit/s
95th percentile per-packet one-way delay: 111.226 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 54.09 Mbit/s
95th percentile per-packet one-way delay: 90.213 ms
Loss rate: 0.20%
-- Flow 2:
Average throughput: 33.76 Mbit/s
95th percentile per-packet one-way delay: 149.607 ms
Loss rate: 0.26%
-- Flow 3:
Average throughput: 21.10 Mbit/s
95th percentile per-packet one-way delay: 65.069 ms
Loss rate: 0.44%
```

Run 2: Report of PCC-Expr — Data Link

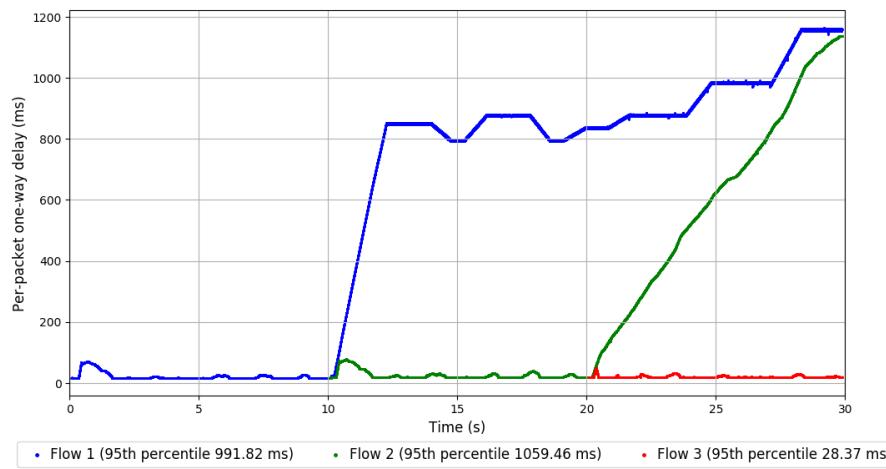
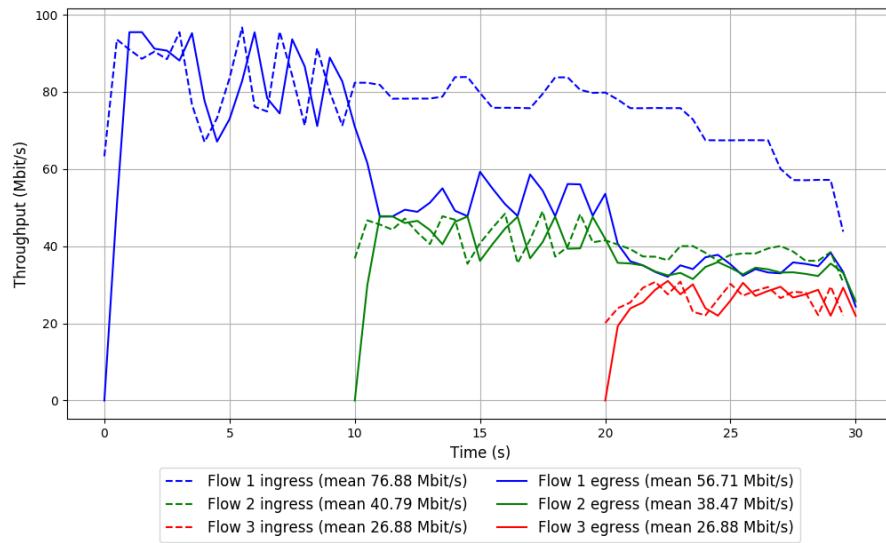


Run 3: Statistics of PCC-Expr

```
Start at: 2018-09-06 19:59:24
End at: 2018-09-06 19:59:54
Local clock offset: 0.155 ms
Remote clock offset: -2.879 ms

# Below is generated by plot.py at 2018-09-06 21:11:59
# Datalink statistics
-- Total of 3 flows:
Average throughput: 91.15 Mbit/s
95th percentile per-packet one-way delay: 997.095 ms
Loss rate: 19.33%
-- Flow 1:
Average throughput: 56.71 Mbit/s
95th percentile per-packet one-way delay: 991.823 ms
Loss rate: 26.31%
-- Flow 2:
Average throughput: 38.47 Mbit/s
95th percentile per-packet one-way delay: 1059.458 ms
Loss rate: 5.79%
-- Flow 3:
Average throughput: 26.88 Mbit/s
95th percentile per-packet one-way delay: 28.372 ms
Loss rate: 0.26%
```

Run 3: Report of PCC-Expr — Data Link

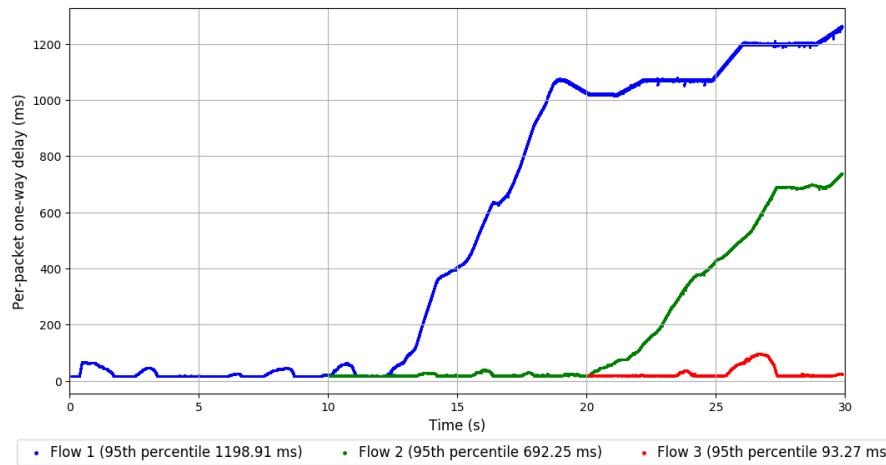
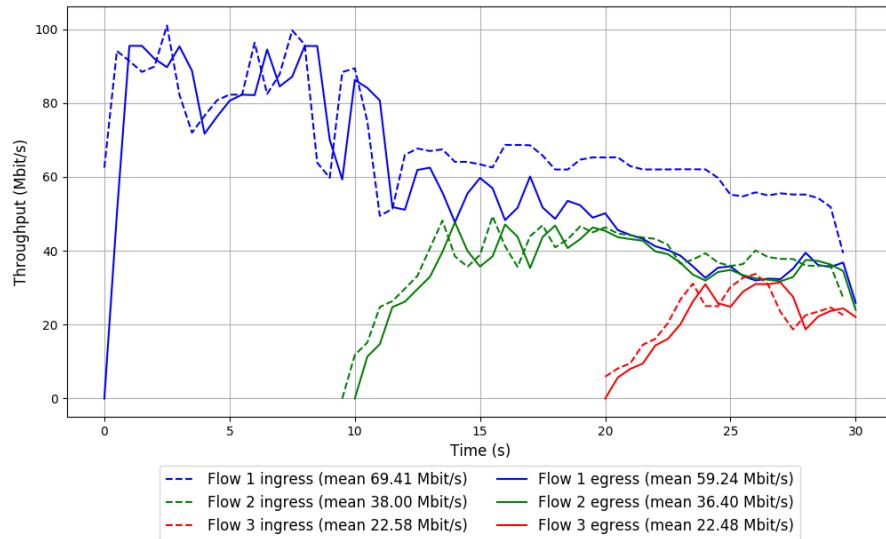


Run 4: Statistics of PCC-Expr

```
Start at: 2018-09-06 20:21:06
End at: 2018-09-06 20:21:36
Local clock offset: 1.041 ms
Remote clock offset: -3.183 ms

# Below is generated by plot.py at 2018-09-06 21:12:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 90.86 Mbit/s
95th percentile per-packet one-way delay: 1170.914 ms
Loss rate: 11.12%
-- Flow 1:
Average throughput: 59.24 Mbit/s
95th percentile per-packet one-way delay: 1198.915 ms
Loss rate: 14.72%
-- Flow 2:
Average throughput: 36.40 Mbit/s
95th percentile per-packet one-way delay: 692.250 ms
Loss rate: 4.32%
-- Flow 3:
Average throughput: 22.48 Mbit/s
95th percentile per-packet one-way delay: 93.269 ms
Loss rate: 0.66%
```

Run 4: Report of PCC-Expr — Data Link

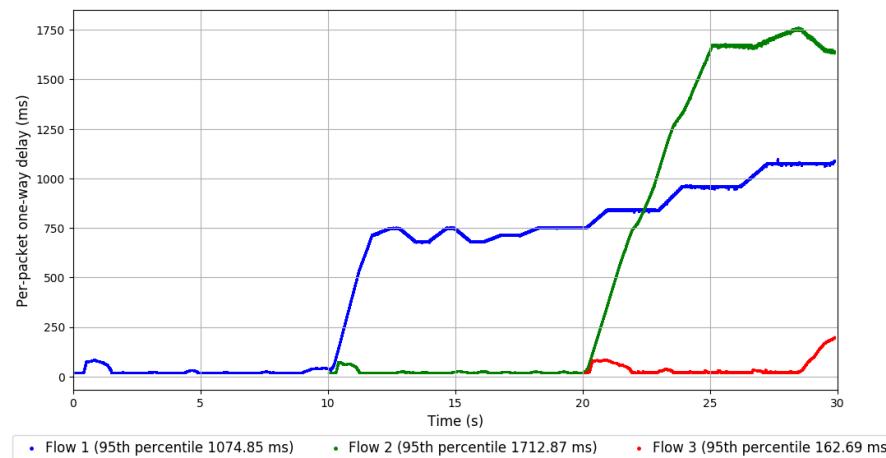
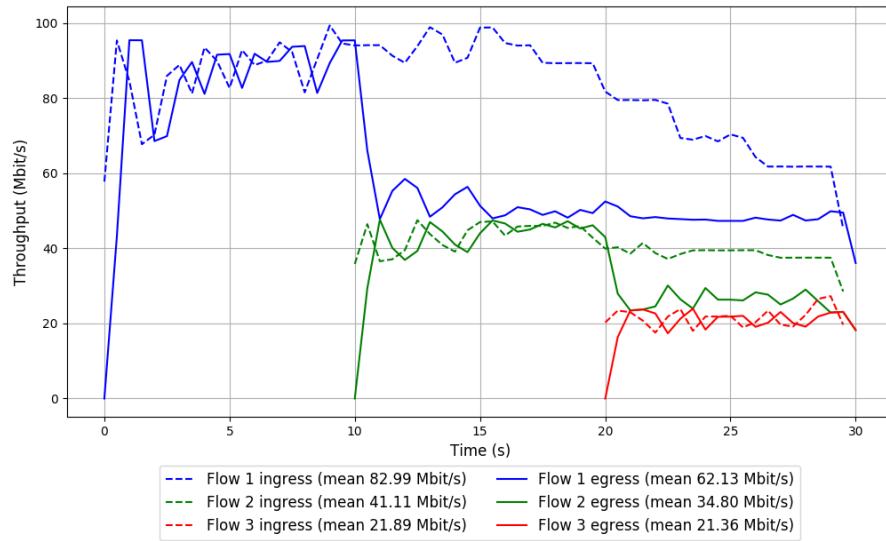


Run 5: Statistics of PCC-Expr

```
Start at: 2018-09-06 20:43:08
End at: 2018-09-06 20:43:38
Local clock offset: 2.108 ms
Remote clock offset: -3.79 ms

# Below is generated by plot.py at 2018-09-06 21:12:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.31 Mbit/s
95th percentile per-packet one-way delay: 1436.422 ms
Loss rate: 21.54%
-- Flow 1:
Average throughput: 62.13 Mbit/s
95th percentile per-packet one-way delay: 1074.845 ms
Loss rate: 25.19%
-- Flow 2:
Average throughput: 34.80 Mbit/s
95th percentile per-packet one-way delay: 1712.866 ms
Loss rate: 15.46%
-- Flow 3:
Average throughput: 21.36 Mbit/s
95th percentile per-packet one-way delay: 162.691 ms
Loss rate: 2.62%
```

Run 5: Report of PCC-Expr — Data Link

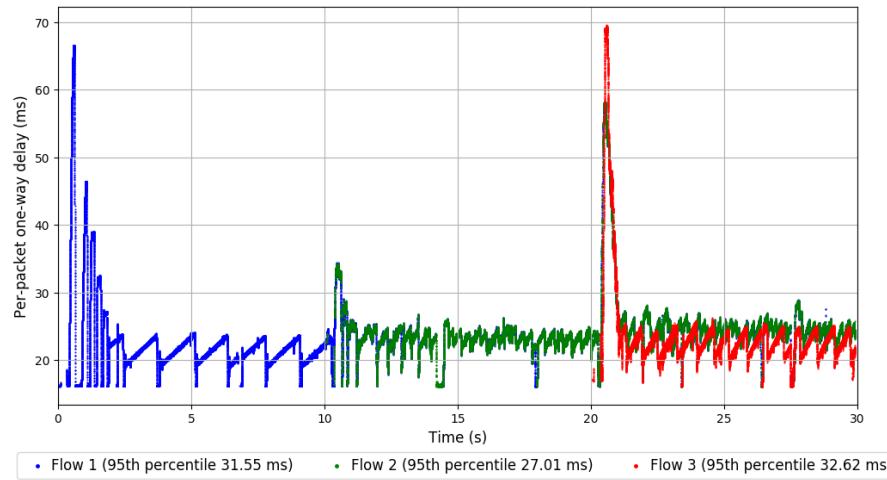
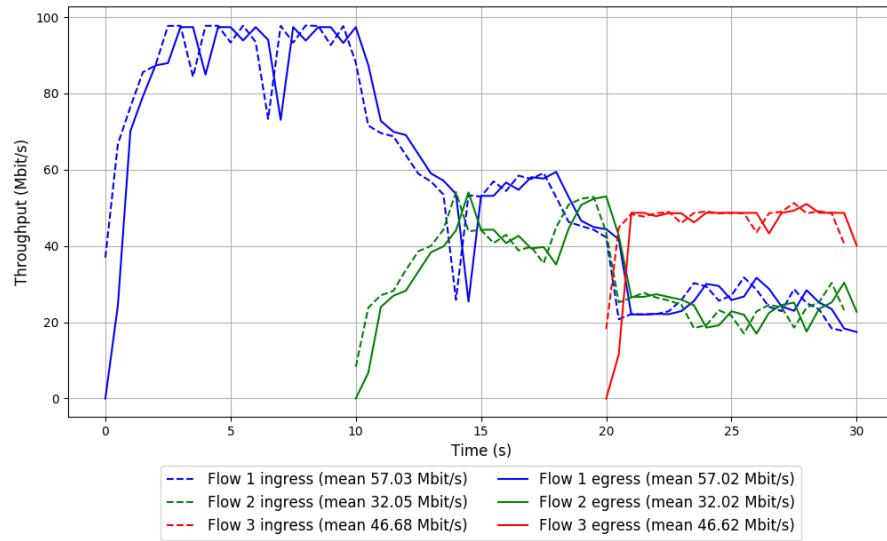


```
Run 1: Statistics of QUIC Cubic

Start at: 2018-09-06 19:23:08
End at: 2018-09-06 19:23:38
Local clock offset: -0.147 ms
Remote clock offset: -3.837 ms

# Below is generated by plot.py at 2018-09-06 21:12:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.74 Mbit/s
95th percentile per-packet one-way delay: 28.497 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 57.02 Mbit/s
95th percentile per-packet one-way delay: 31.547 ms
Loss rate: 0.07%
-- Flow 2:
Average throughput: 32.02 Mbit/s
95th percentile per-packet one-way delay: 27.008 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 46.62 Mbit/s
95th percentile per-packet one-way delay: 32.616 ms
Loss rate: 0.36%
```

Run 1: Report of QUIC Cubic — Data Link

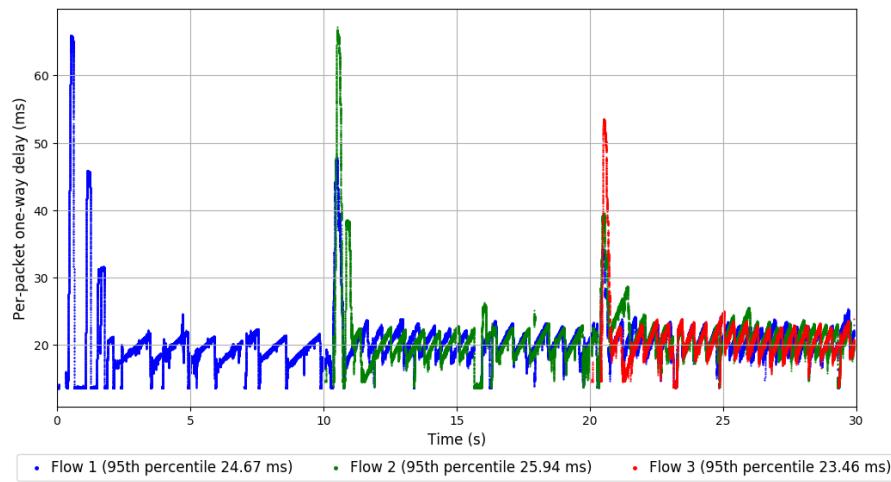
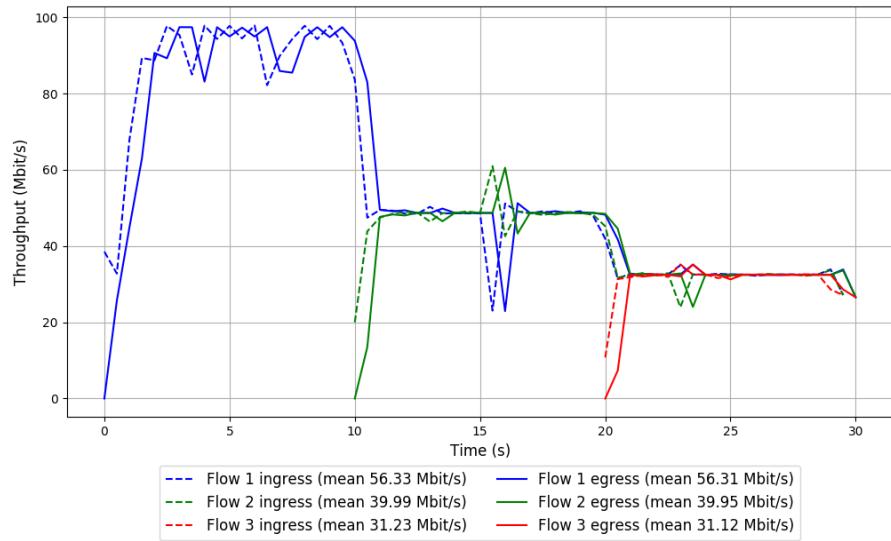


Run 2: Statistics of QUIC Cubic

```
Start at: 2018-09-06 19:44:52
End at: 2018-09-06 19:45:22
Local clock offset: -1.731 ms
Remote clock offset: -2.895 ms

# Below is generated by plot.py at 2018-09-06 21:12:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.16 Mbit/s
95th percentile per-packet one-way delay: 25.354 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 56.31 Mbit/s
95th percentile per-packet one-way delay: 24.670 ms
Loss rate: 0.10%
-- Flow 2:
Average throughput: 39.95 Mbit/s
95th percentile per-packet one-way delay: 25.938 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 31.12 Mbit/s
95th percentile per-packet one-way delay: 23.460 ms
Loss rate: 0.53%
```

Run 2: Report of QUIC Cubic — Data Link

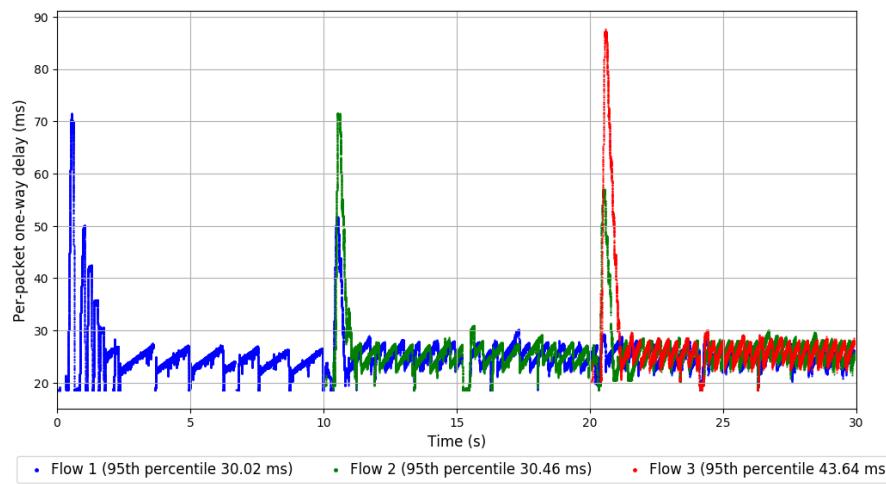
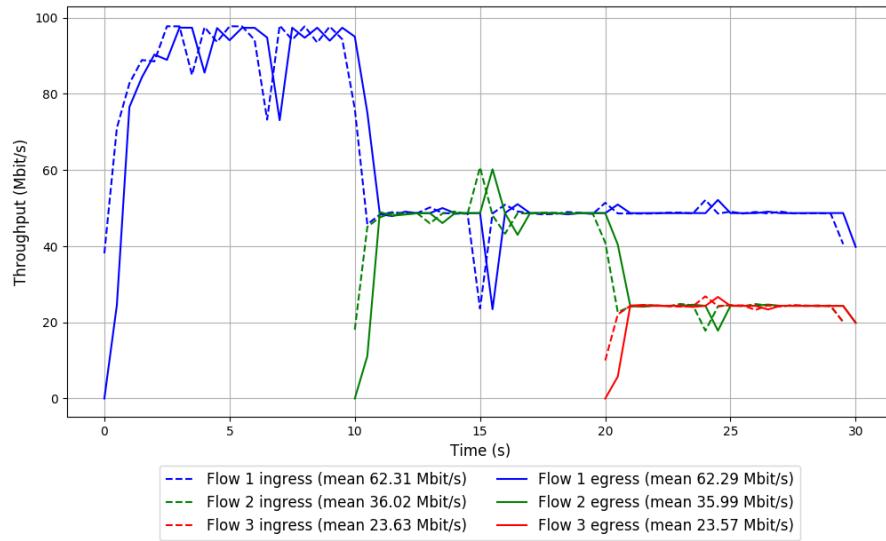


Run 3: Statistics of QUIC Cubic

```
Start at: 2018-09-06 20:06:33
End at: 2018-09-06 20:07:03
Local clock offset: 1.005 ms
Remote clock offset: -4.284 ms

# Below is generated by plot.py at 2018-09-06 21:12:26
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.00 Mbit/s
95th percentile per-packet one-way delay: 30.242 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 62.29 Mbit/s
95th percentile per-packet one-way delay: 30.021 ms
Loss rate: 0.11%
-- Flow 2:
Average throughput: 35.99 Mbit/s
95th percentile per-packet one-way delay: 30.457 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 23.57 Mbit/s
95th percentile per-packet one-way delay: 43.643 ms
Loss rate: 0.50%
```

Run 3: Report of QUIC Cubic — Data Link

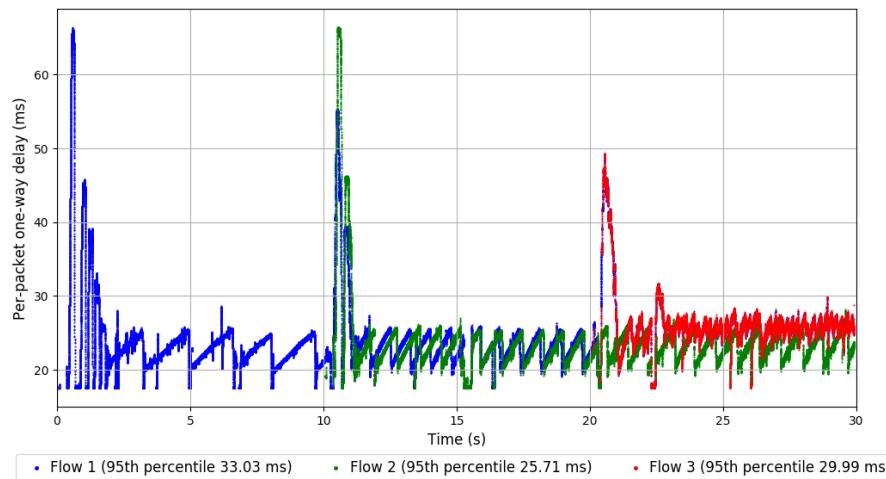
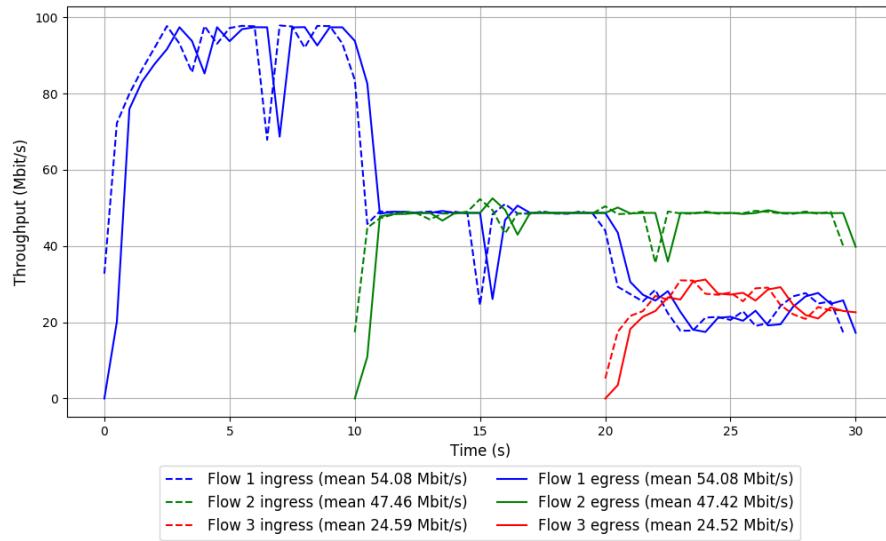


Run 4: Statistics of QUIC Cubic

```
Start at: 2018-09-06 20:28:34
End at: 2018-09-06 20:29:04
Local clock offset: 0.584 ms
Remote clock offset: -3.258 ms

# Below is generated by plot.py at 2018-09-06 21:12:27
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.69 Mbit/s
95th percentile per-packet one-way delay: 29.997 ms
Loss rate: 0.15%
-- Flow 1:
Average throughput: 54.08 Mbit/s
95th percentile per-packet one-way delay: 33.028 ms
Loss rate: 0.08%
-- Flow 2:
Average throughput: 47.42 Mbit/s
95th percentile per-packet one-way delay: 25.709 ms
Loss rate: 0.18%
-- Flow 3:
Average throughput: 24.52 Mbit/s
95th percentile per-packet one-way delay: 29.990 ms
Loss rate: 0.51%
```

Run 4: Report of QUIC Cubic — Data Link

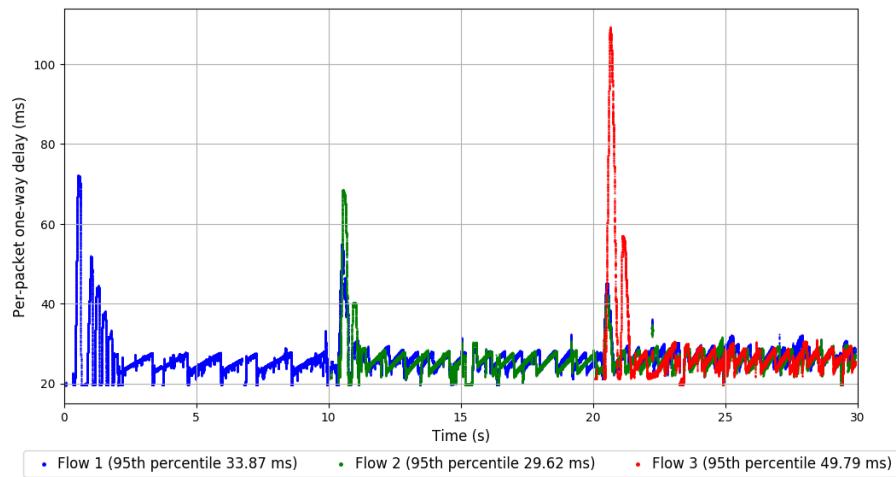
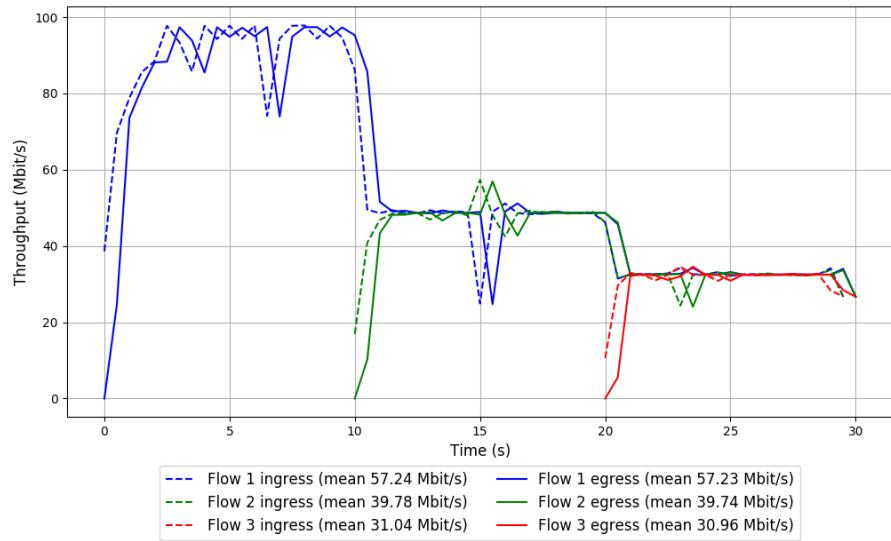


Run 5: Statistics of QUIC Cubic

```
Start at: 2018-09-06 20:50:34
End at: 2018-09-06 20:51:04
Local clock offset: 1.625 ms
Remote clock offset: -2.903 ms

# Below is generated by plot.py at 2018-09-06 21:12:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.86 Mbit/s
95th percentile per-packet one-way delay: 32.487 ms
Loss rate: 0.18%
-- Flow 1:
Average throughput: 57.23 Mbit/s
95th percentile per-packet one-way delay: 33.866 ms
Loss rate: 0.09%
-- Flow 2:
Average throughput: 39.74 Mbit/s
95th percentile per-packet one-way delay: 29.618 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 30.96 Mbit/s
95th percentile per-packet one-way delay: 49.787 ms
Loss rate: 0.60%
```

Run 5: Report of QUIC Cubic — Data Link

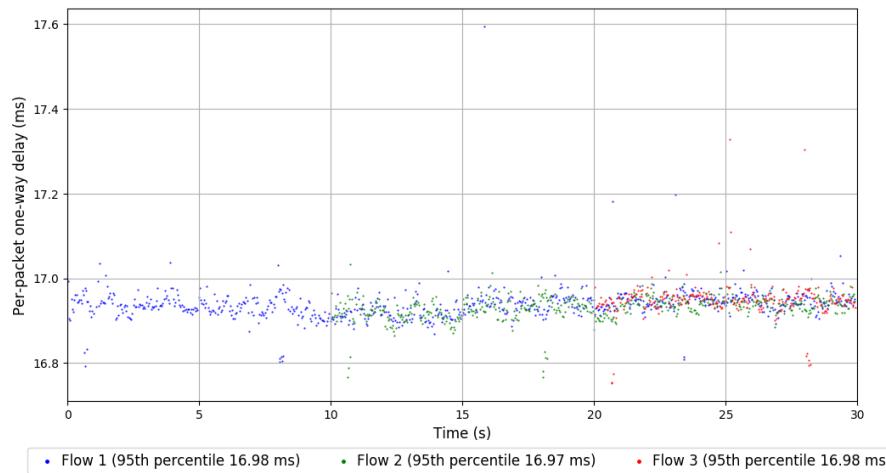
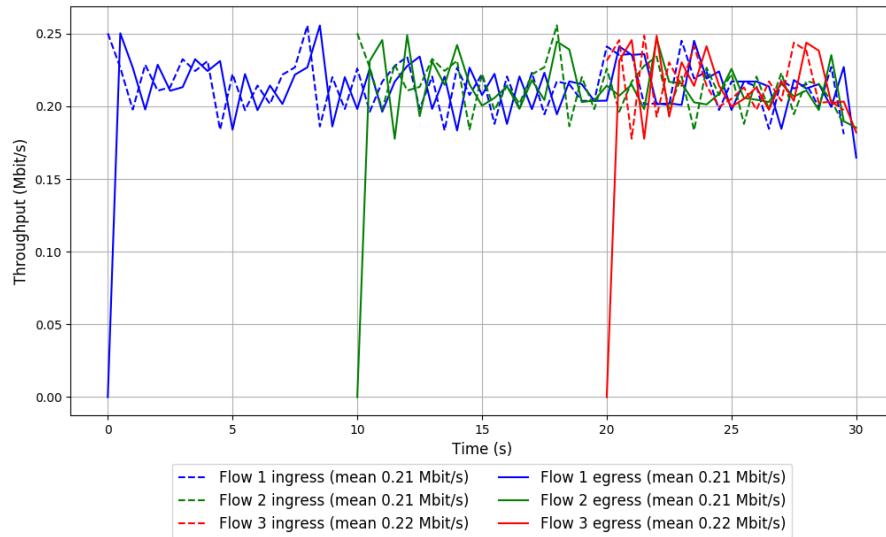


Run 1: Statistics of SCReAM

```
Start at: 2018-09-06 19:12:24
End at: 2018-09-06 19:12:54
Local clock offset: -0.305 ms
Remote clock offset: -3.814 ms

# Below is generated by plot.py at 2018-09-06 21:12:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 16.977 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 16.977 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 16.966 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 16.980 ms
Loss rate: 0.36%
```

Run 1: Report of SCReAM — Data Link

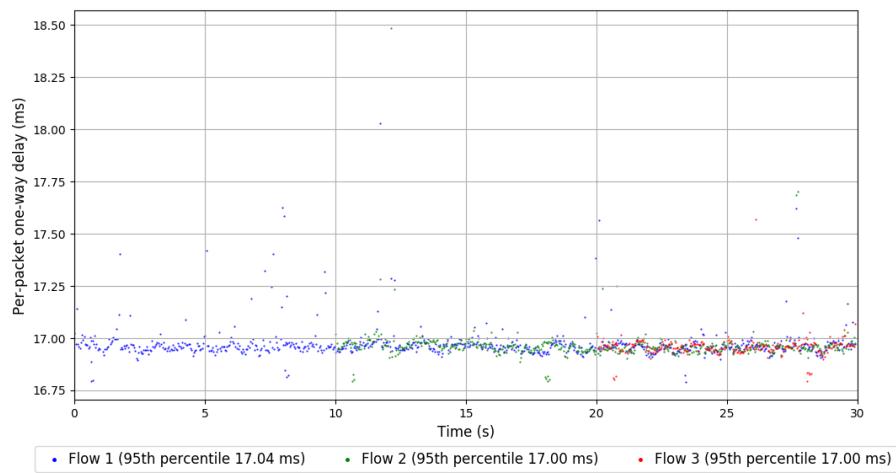
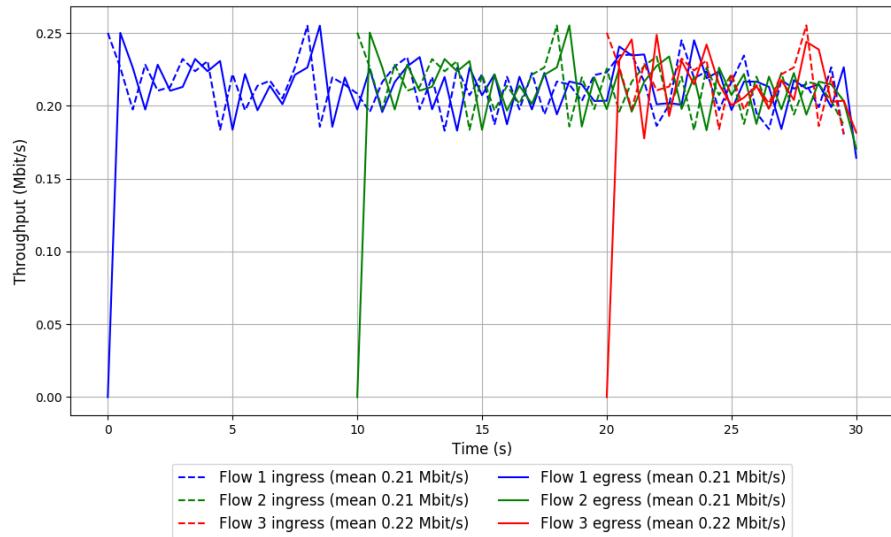


Run 2: Statistics of SCReAM

```
Start at: 2018-09-06 19:34:03
End at: 2018-09-06 19:34:33
Local clock offset: 0.974 ms
Remote clock offset: -3.706 ms

# Below is generated by plot.py at 2018-09-06 21:12:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 17.013 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 17.043 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 17.001 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 17.000 ms
Loss rate: 0.35%
```

Run 2: Report of SCReAM — Data Link

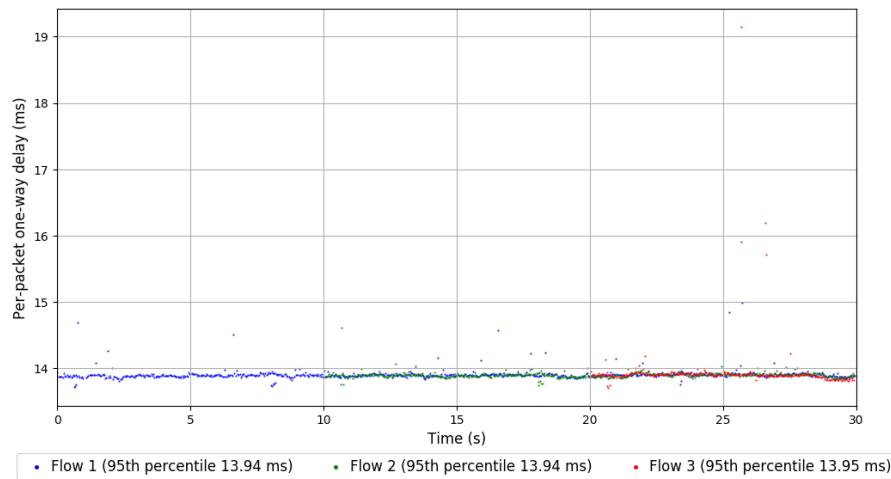
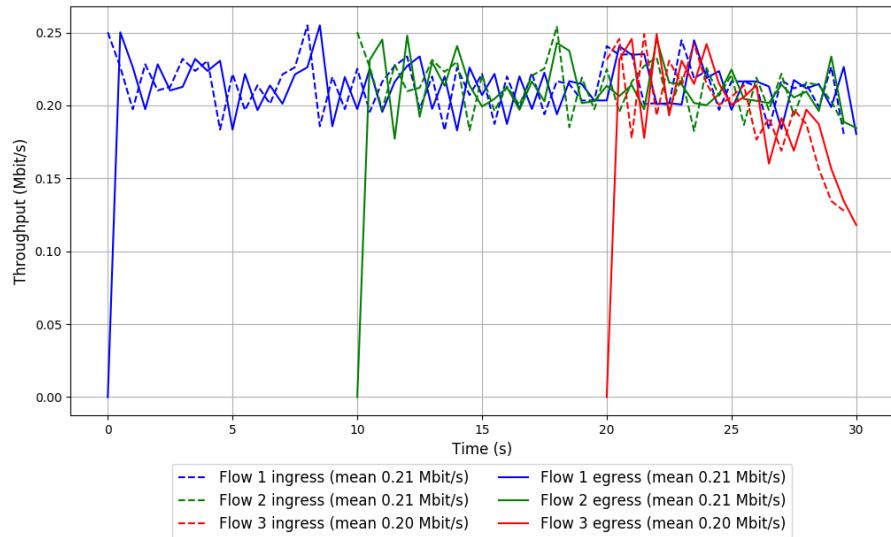


Run 3: Statistics of SCReAM

```
Start at: 2018-09-06 19:56:00
End at: 2018-09-06 19:56:30
Local clock offset: -0.948 ms
Remote clock offset: -1.787 ms

# Below is generated by plot.py at 2018-09-06 21:12:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.42 Mbit/s
95th percentile per-packet one-way delay: 13.945 ms
Loss rate: 0.17%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 13.941 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 13.942 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 0.20 Mbit/s
95th percentile per-packet one-way delay: 13.949 ms
Loss rate: 0.66%
```

Run 3: Report of SCReAM — Data Link

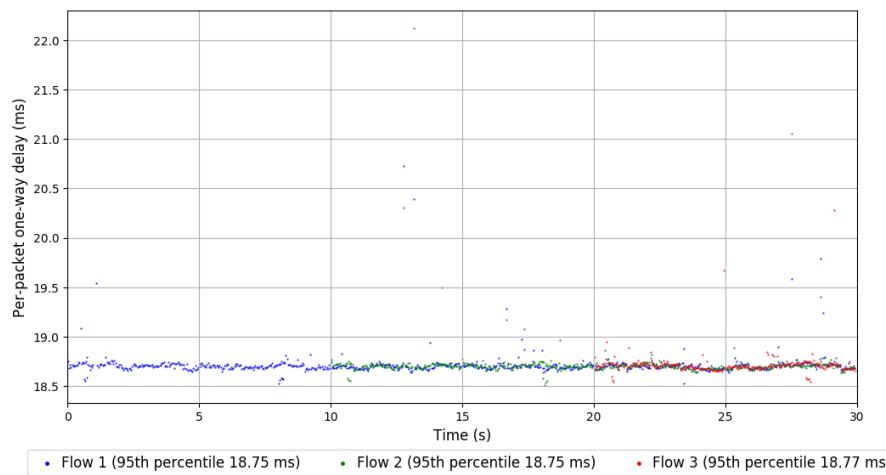
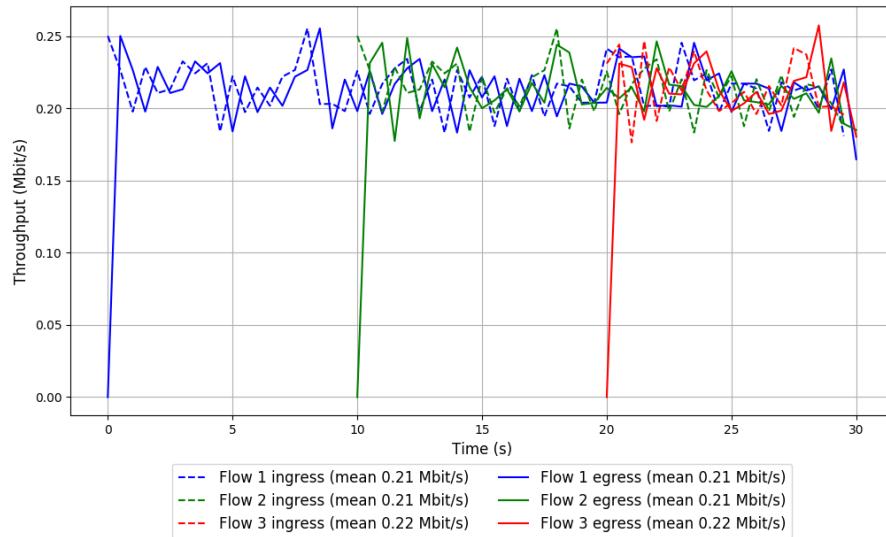


Run 4: Statistics of SCReAM

```
Start at: 2018-09-06 20:17:38
End at: 2018-09-06 20:18:08
Local clock offset: 1.406 ms
Remote clock offset: -3.674 ms

# Below is generated by plot.py at 2018-09-06 21:12:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 18.754 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 18.752 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 18.747 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 18.773 ms
Loss rate: 0.35%
```

Run 4: Report of SCReAM — Data Link

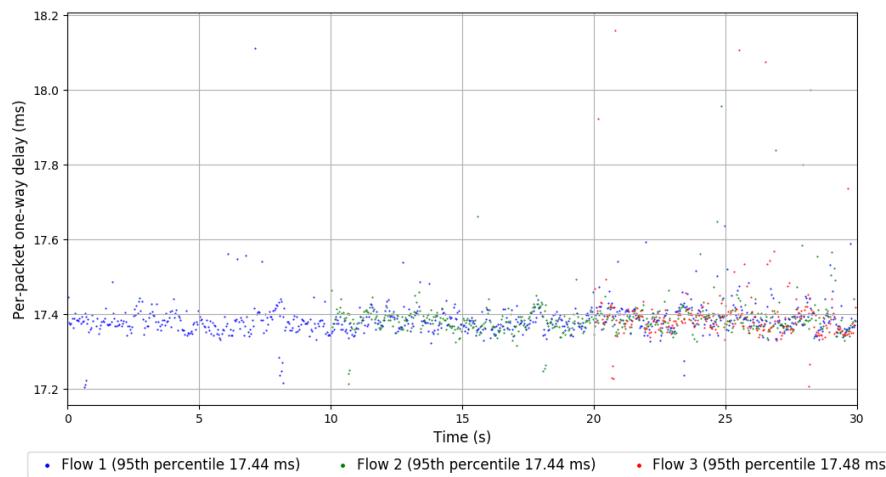
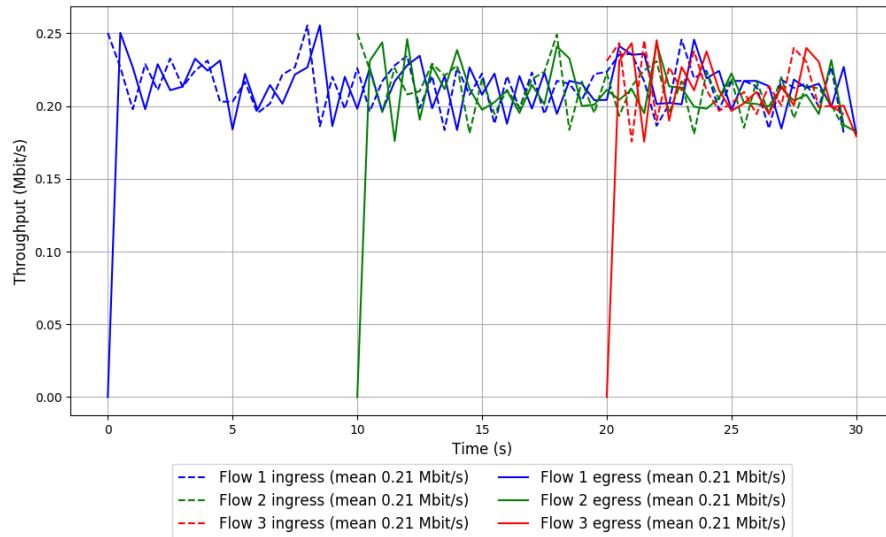


Run 5: Statistics of SCReAM

```
Start at: 2018-09-06 20:39:41
End at: 2018-09-06 20:40:11
Local clock offset: 1.015 ms
Remote clock offset: -2.419 ms

# Below is generated by plot.py at 2018-09-06 21:12:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 17.445 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 17.441 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 17.442 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 0.21 Mbit/s
95th percentile per-packet one-way delay: 17.485 ms
Loss rate: 0.36%
```

Run 5: Report of SCReAM — Data Link

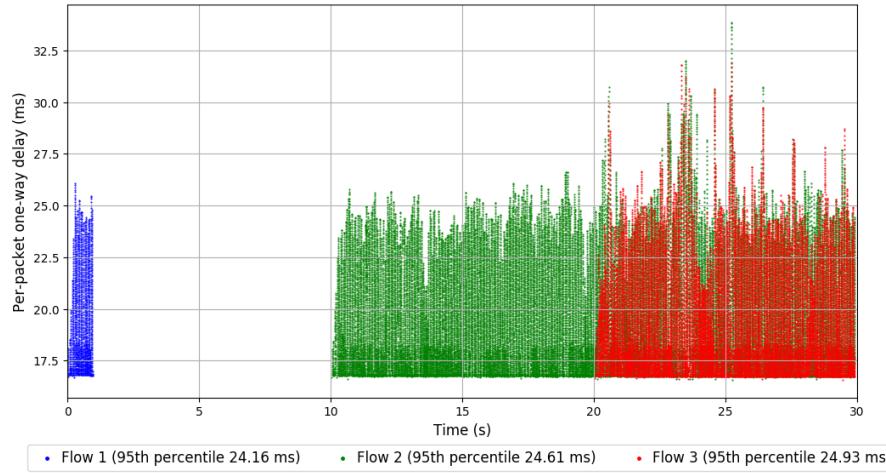
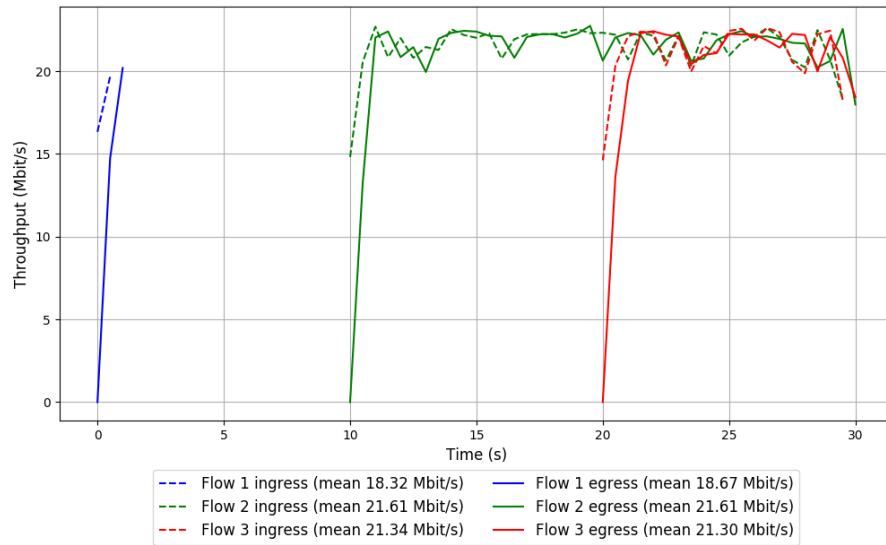


Run 1: Statistics of Sprout

```
Start at: 2018-09-06 19:20:45
End at: 2018-09-06 19:21:15
Local clock offset: 0.28 ms
Remote clock offset: -3.833 ms

# Below is generated by plot.py at 2018-09-06 21:12:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 21.99 Mbit/s
95th percentile per-packet one-way delay: 24.681 ms
Loss rate: 0.24%
-- Flow 1:
Average throughput: 18.67 Mbit/s
95th percentile per-packet one-way delay: 24.160 ms
Loss rate: 3.00%
-- Flow 2:
Average throughput: 21.61 Mbit/s
95th percentile per-packet one-way delay: 24.609 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 21.30 Mbit/s
95th percentile per-packet one-way delay: 24.932 ms
Loss rate: 0.40%
```

Run 1: Report of Sprout — Data Link

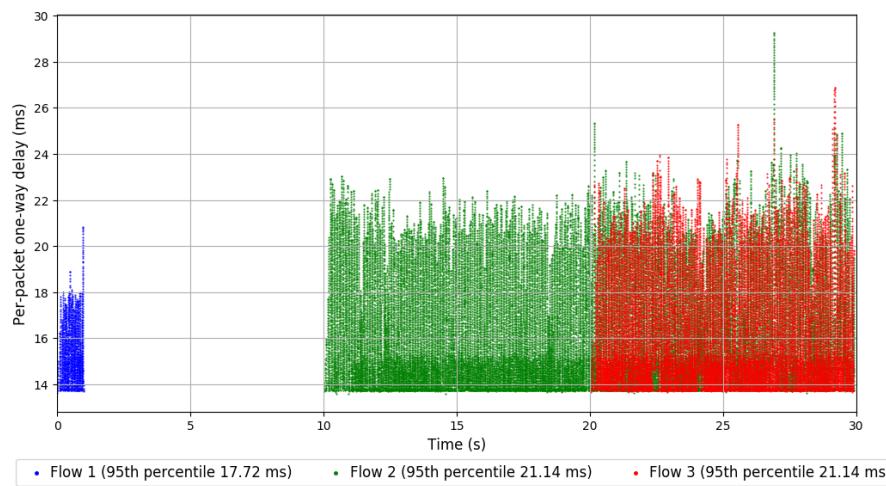
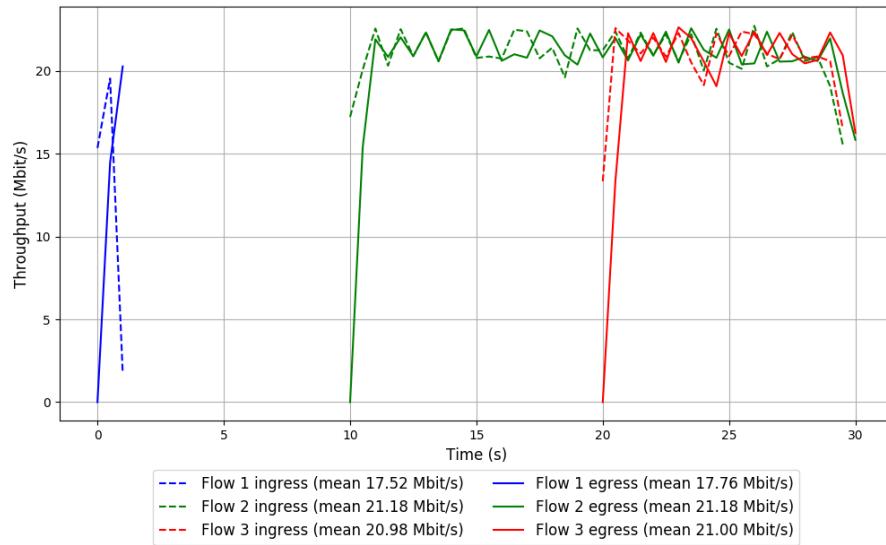


Run 2: Statistics of Sprout

```
Start at: 2018-09-06 19:42:28
End at: 2018-09-06 19:42:58
Local clock offset: -1.683 ms
Remote clock offset: -2.944 ms

# Below is generated by plot.py at 2018-09-06 21:12:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 21.59 Mbit/s
95th percentile per-packet one-way delay: 21.114 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 17.76 Mbit/s
95th percentile per-packet one-way delay: 17.722 ms
Loss rate: 5.22%
-- Flow 2:
Average throughput: 21.18 Mbit/s
95th percentile per-packet one-way delay: 21.143 ms
Loss rate: 0.08%
-- Flow 3:
Average throughput: 21.00 Mbit/s
95th percentile per-packet one-way delay: 21.144 ms
Loss rate: 0.06%
```

Run 2: Report of Sprout — Data Link

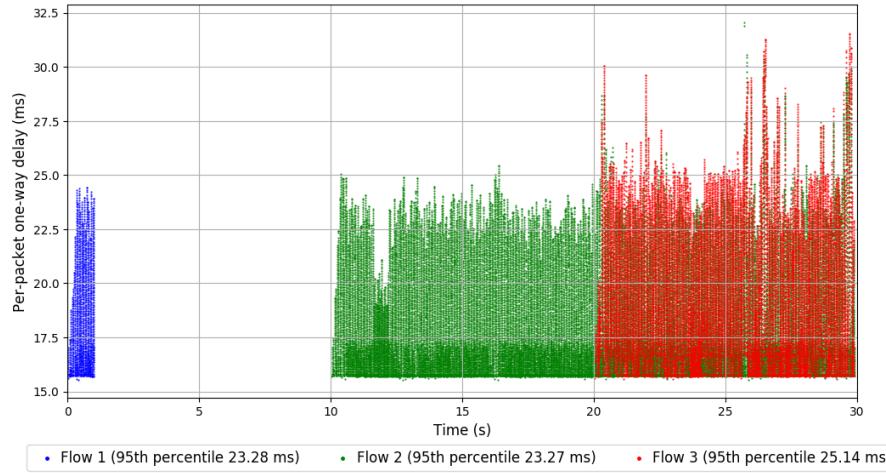
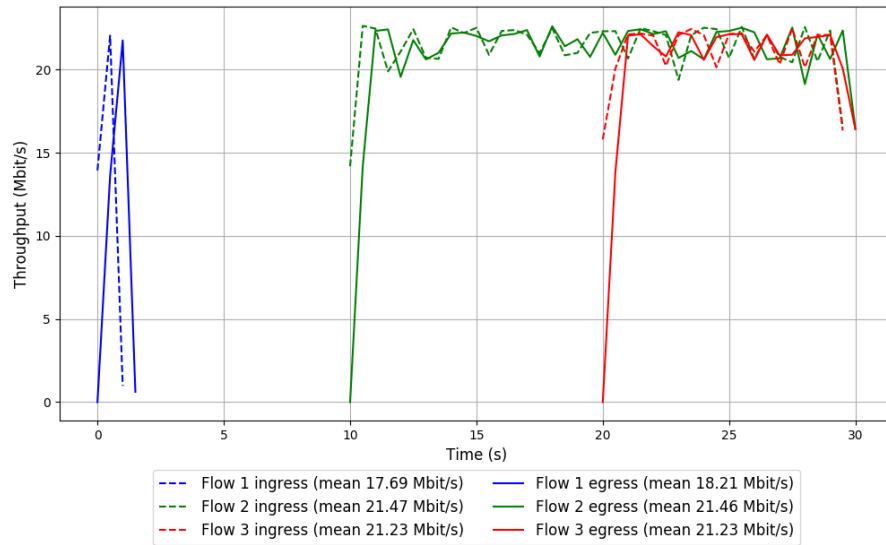


Run 3: Statistics of Sprout

```
Start at: 2018-09-06 20:04:15
End at: 2018-09-06 20:04:45
Local clock offset: -0.431 ms
Remote clock offset: -2.869 ms

# Below is generated by plot.py at 2018-09-06 21:12:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 21.86 Mbit/s
95th percentile per-packet one-way delay: 24.086 ms
Loss rate: 0.35%
-- Flow 1:
Average throughput: 18.21 Mbit/s
95th percentile per-packet one-way delay: 23.281 ms
Loss rate: 2.66%
-- Flow 2:
Average throughput: 21.46 Mbit/s
95th percentile per-packet one-way delay: 23.270 ms
Loss rate: 0.20%
-- Flow 3:
Average throughput: 21.23 Mbit/s
95th percentile per-packet one-way delay: 25.138 ms
Loss rate: 0.46%
```

Run 3: Report of Sprout — Data Link

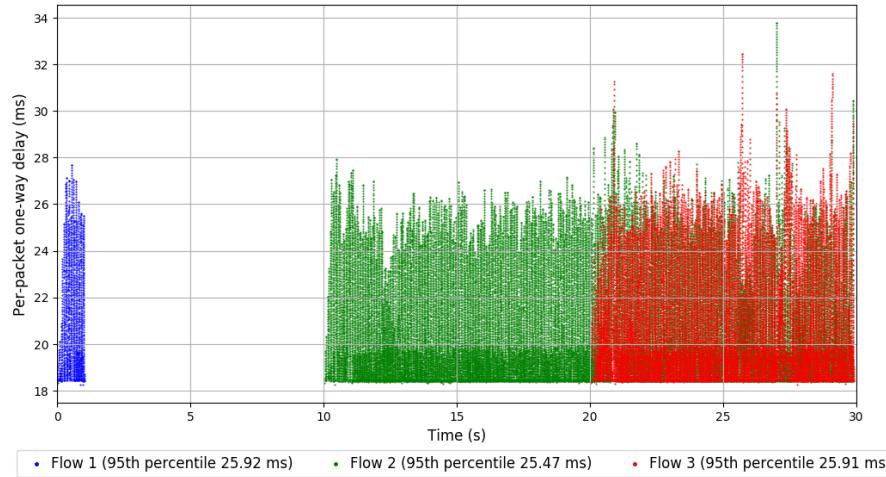
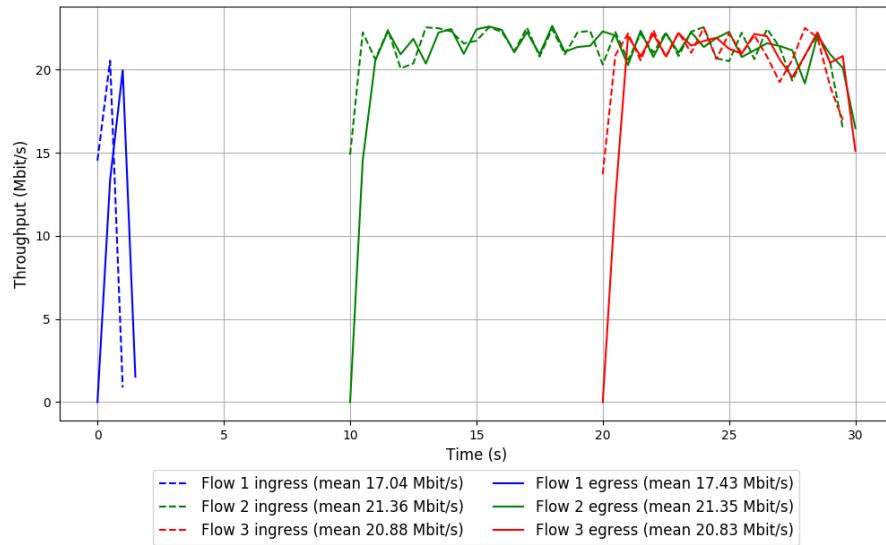


Run 4: Statistics of Sprout

```
Start at: 2018-09-06 20:26:09
End at: 2018-09-06 20:26:39
Local clock offset: 1.082 ms
Remote clock offset: -3.667 ms

# Below is generated by plot.py at 2018-09-06 21:12:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 21.64 Mbit/s
95th percentile per-packet one-way delay: 25.631 ms
Loss rate: 0.37%
-- Flow 1:
Average throughput: 17.43 Mbit/s
95th percentile per-packet one-way delay: 25.923 ms
Loss rate: 3.03%
-- Flow 2:
Average throughput: 21.35 Mbit/s
95th percentile per-packet one-way delay: 25.466 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 20.83 Mbit/s
95th percentile per-packet one-way delay: 25.909 ms
Loss rate: 0.45%
```

Run 4: Report of Sprout — Data Link

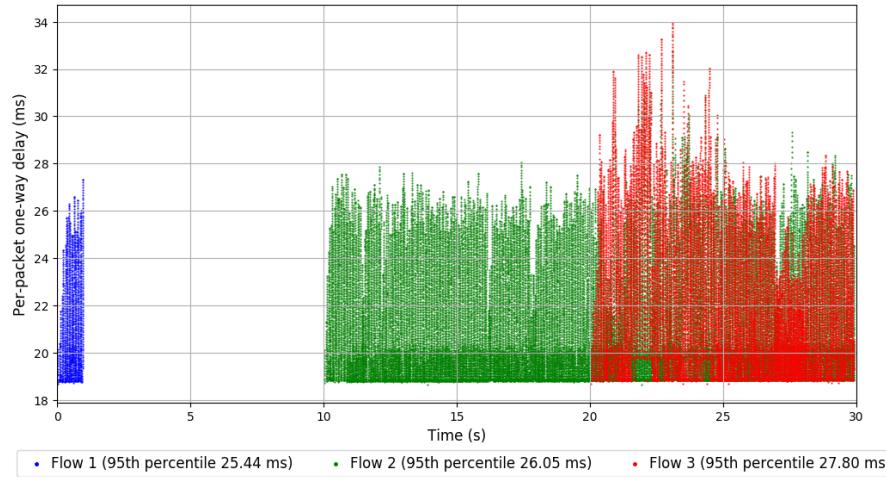
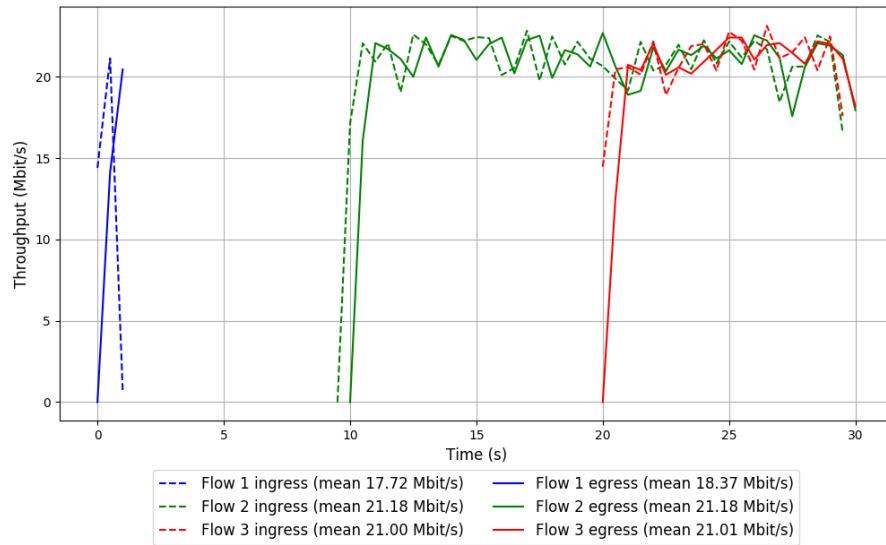


Run 5: Statistics of Sprout

```
Start at: 2018-09-06 20:48:13
End at: 2018-09-06 20:48:43
Local clock offset: 2.02 ms
Remote clock offset: -2.018 ms

# Below is generated by plot.py at 2018-09-06 21:12:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 21.61 Mbit/s
95th percentile per-packet one-way delay: 26.600 ms
Loss rate: 0.21%
-- Flow 1:
Average throughput: 18.37 Mbit/s
95th percentile per-packet one-way delay: 25.441 ms
Loss rate: 4.45%
-- Flow 2:
Average throughput: 21.18 Mbit/s
95th percentile per-packet one-way delay: 26.046 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 21.01 Mbit/s
95th percentile per-packet one-way delay: 27.801 ms
Loss rate: 0.20%
```

Run 5: Report of Sprout — Data Link

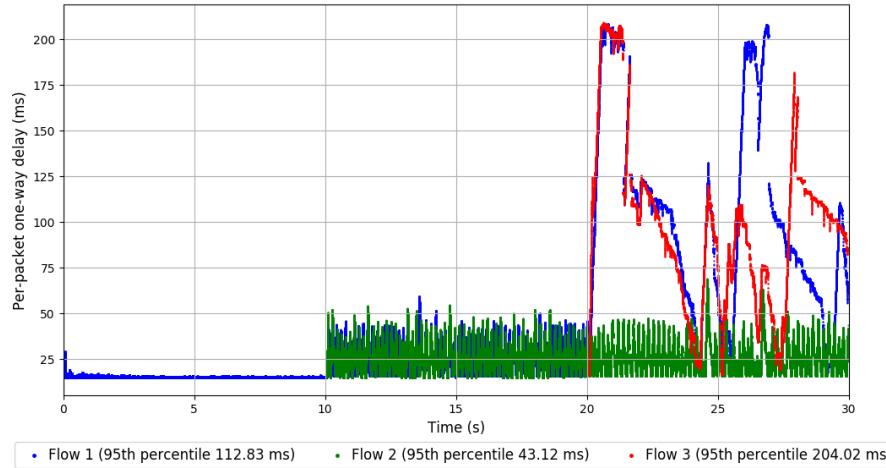
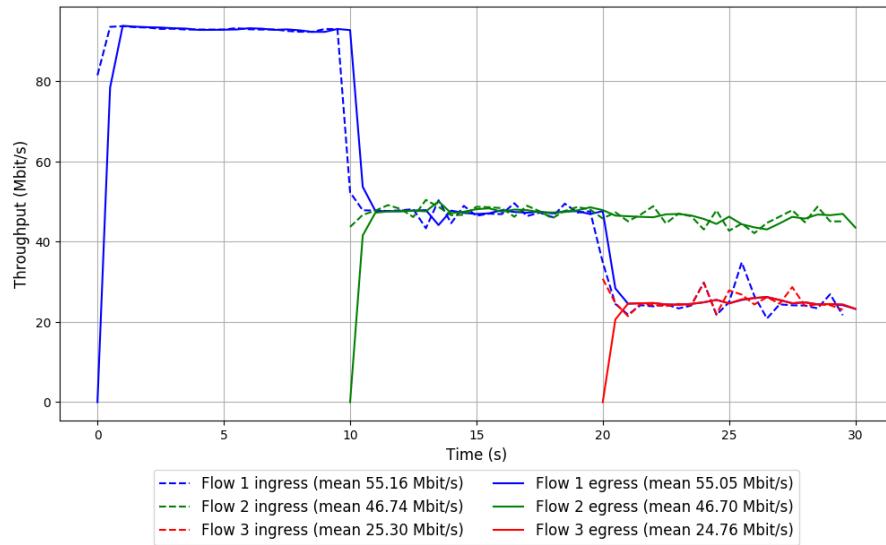


Run 1: Statistics of TaoVA-100x

```
Start at: 2018-09-06 19:26:45
End at: 2018-09-06 19:27:15
Local clock offset: -0.91 ms
Remote clock offset: -3.387 ms

# Below is generated by plot.py at 2018-09-06 21:13:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.37 Mbit/s
95th percentile per-packet one-way delay: 115.501 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 55.05 Mbit/s
95th percentile per-packet one-way delay: 112.833 ms
Loss rate: 0.26%
-- Flow 2:
Average throughput: 46.70 Mbit/s
95th percentile per-packet one-way delay: 43.117 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 24.76 Mbit/s
95th percentile per-packet one-way delay: 204.018 ms
Loss rate: 2.39%
```

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

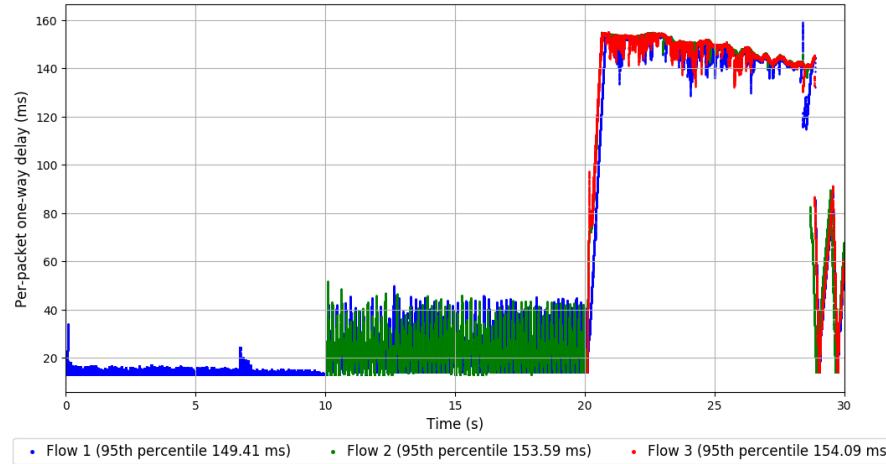
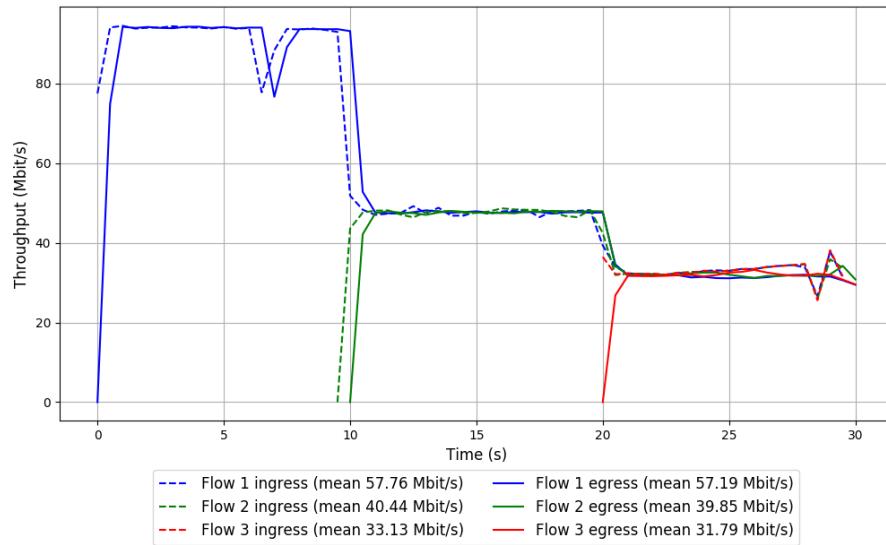


Run 2: Statistics of TaoVA-100x

```
Start at: 2018-09-06 19:48:34
End at: 2018-09-06 19:49:04
Local clock offset: -1.889 ms
Remote clock offset: -2.365 ms

# Below is generated by plot.py at 2018-09-06 21:13:58
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.29 Mbit/s
95th percentile per-packet one-way delay: 152.853 ms
Loss rate: 1.58%
-- Flow 1:
Average throughput: 57.19 Mbit/s
95th percentile per-packet one-way delay: 149.414 ms
Loss rate: 1.05%
-- Flow 2:
Average throughput: 39.85 Mbit/s
95th percentile per-packet one-way delay: 153.595 ms
Loss rate: 1.60%
-- Flow 3:
Average throughput: 31.79 Mbit/s
95th percentile per-packet one-way delay: 154.088 ms
Loss rate: 4.29%
```

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

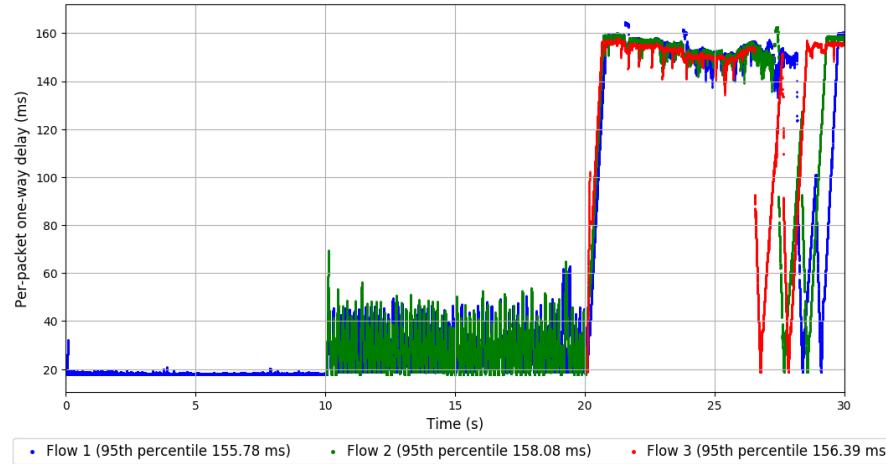
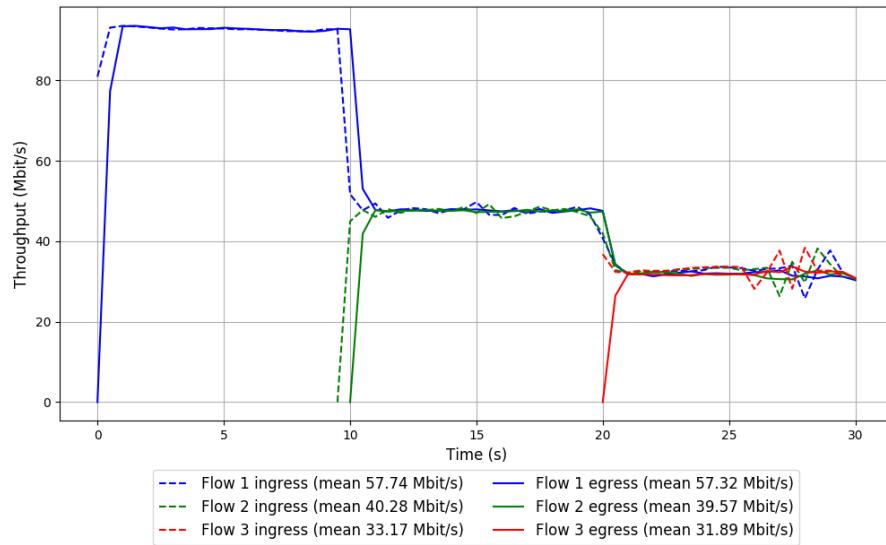


Run 3: Statistics of TaoVA-100x

```
Start at: 2018-09-06 20:10:11
End at: 2018-09-06 20:10:41
Local clock offset: 1.067 ms
Remote clock offset: -3.329 ms

# Below is generated by plot.py at 2018-09-06 21:14:08
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.27 Mbit/s
95th percentile per-packet one-way delay: 156.886 ms
Loss rate: 1.49%
-- Flow 1:
Average throughput: 57.32 Mbit/s
95th percentile per-packet one-way delay: 155.784 ms
Loss rate: 0.81%
-- Flow 2:
Average throughput: 39.57 Mbit/s
95th percentile per-packet one-way delay: 158.079 ms
Loss rate: 1.87%
-- Flow 3:
Average throughput: 31.89 Mbit/s
95th percentile per-packet one-way delay: 156.390 ms
Loss rate: 4.12%
```

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

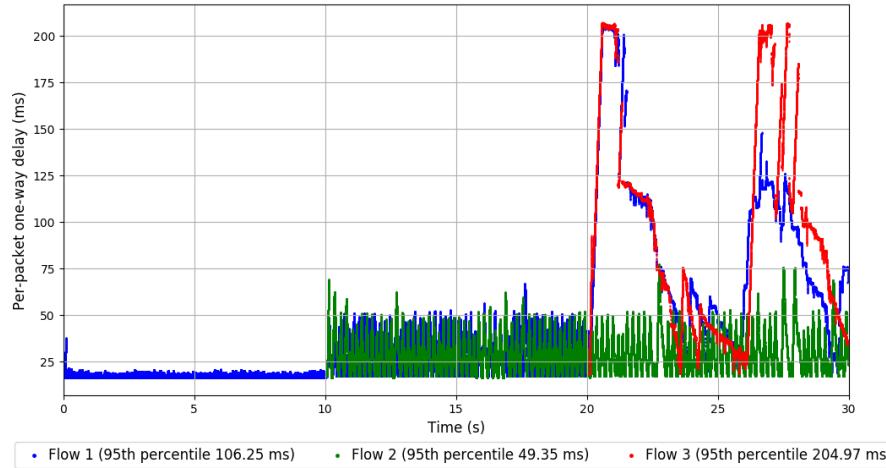
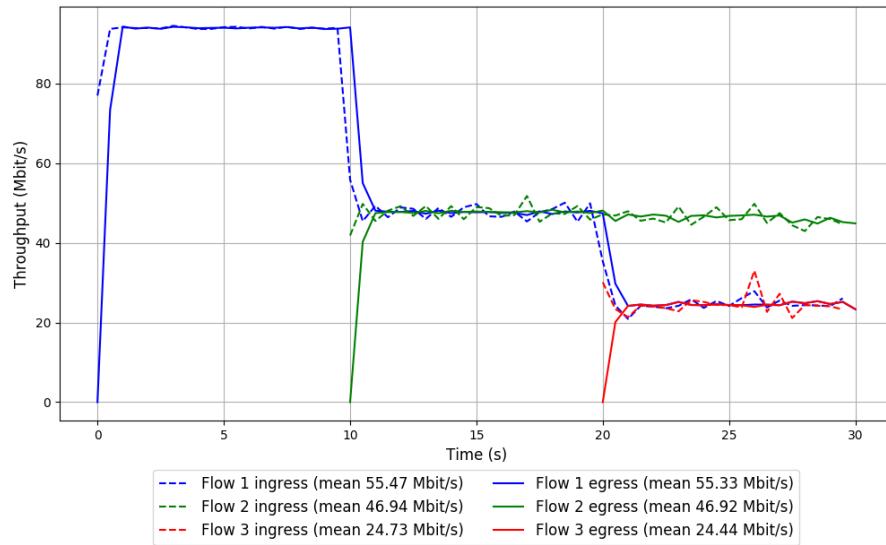


Run 4: Statistics of TaoVA-100x

```
Start at: 2018-09-06 20:32:16
End at: 2018-09-06 20:32:46
Local clock offset: -1.009 ms
Remote clock offset: -3.818 ms

# Below is generated by plot.py at 2018-09-06 21:14:13
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.69 Mbit/s
95th percentile per-packet one-way delay: 113.478 ms
Loss rate: 0.36%
-- Flow 1:
Average throughput: 55.33 Mbit/s
95th percentile per-packet one-way delay: 106.248 ms
Loss rate: 0.32%
-- Flow 2:
Average throughput: 46.92 Mbit/s
95th percentile per-packet one-way delay: 49.353 ms
Loss rate: 0.17%
-- Flow 3:
Average throughput: 24.44 Mbit/s
95th percentile per-packet one-way delay: 204.968 ms
Loss rate: 1.39%
```

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

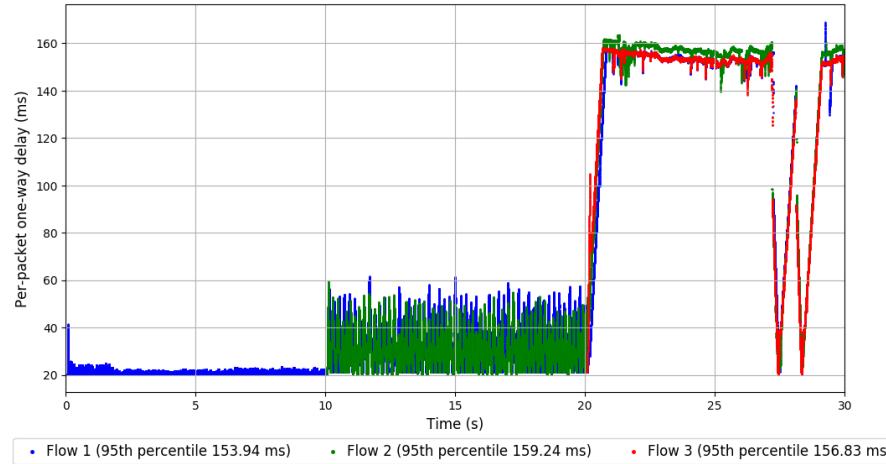
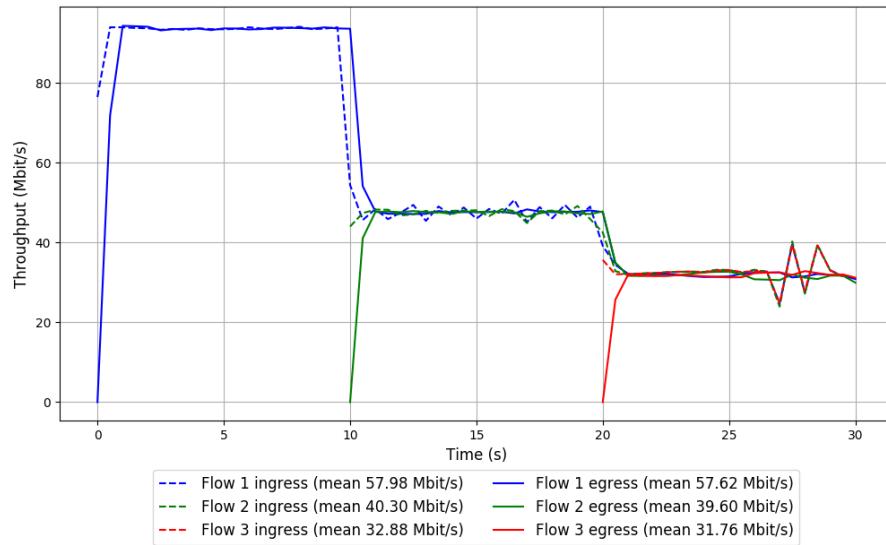


Run 5: Statistics of TaoVA-100x

```
Start at: 2018-09-06 20:54:17
End at: 2018-09-06 20:54:47
Local clock offset: 2.21 ms
Remote clock offset: -2.507 ms

# Below is generated by plot.py at 2018-09-06 21:14:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.54 Mbit/s
95th percentile per-packet one-way delay: 157.052 ms
Loss rate: 1.35%
-- Flow 1:
Average throughput: 57.62 Mbit/s
95th percentile per-packet one-way delay: 153.939 ms
Loss rate: 0.70%
-- Flow 2:
Average throughput: 39.60 Mbit/s
95th percentile per-packet one-way delay: 159.236 ms
Loss rate: 1.84%
-- Flow 3:
Average throughput: 31.76 Mbit/s
95th percentile per-packet one-way delay: 156.826 ms
Loss rate: 3.63%
```

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

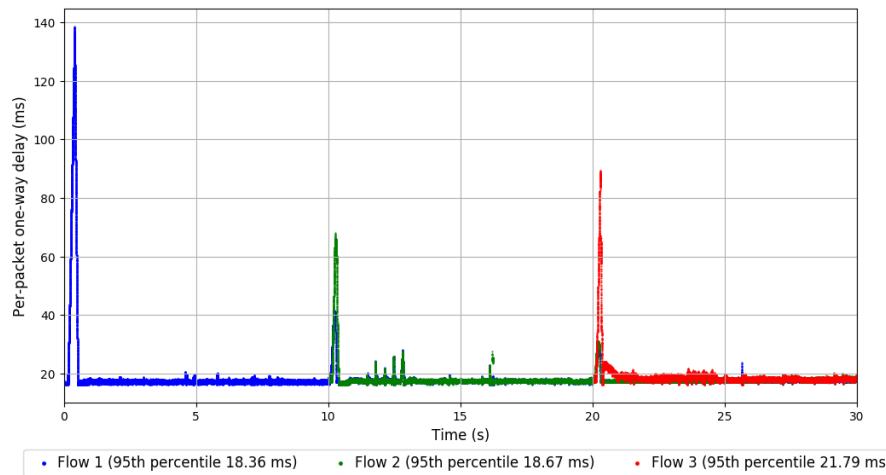
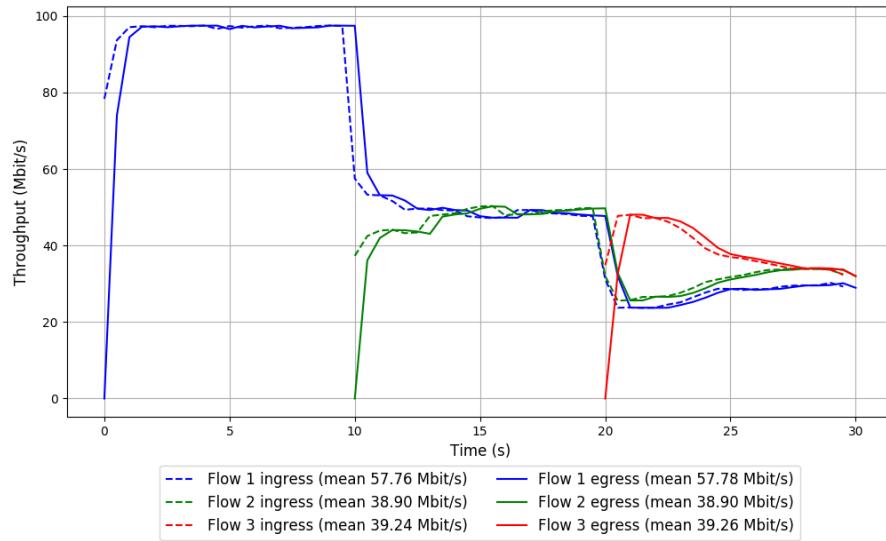


Run 1: Statistics of TCP Vegas

```
Start at: 2018-09-06 19:31:37
End at: 2018-09-06 19:32:07
Local clock offset: 0.588 ms
Remote clock offset: -3.511 ms

# Below is generated by plot.py at 2018-09-06 21:14:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.70 Mbit/s
95th percentile per-packet one-way delay: 19.470 ms
Loss rate: 0.08%
-- Flow 1:
Average throughput: 57.78 Mbit/s
95th percentile per-packet one-way delay: 18.362 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 38.90 Mbit/s
95th percentile per-packet one-way delay: 18.673 ms
Loss rate: 0.11%
-- Flow 3:
Average throughput: 39.26 Mbit/s
95th percentile per-packet one-way delay: 21.791 ms
Loss rate: 0.21%
```

Run 1: Report of TCP Vegas — Data Link

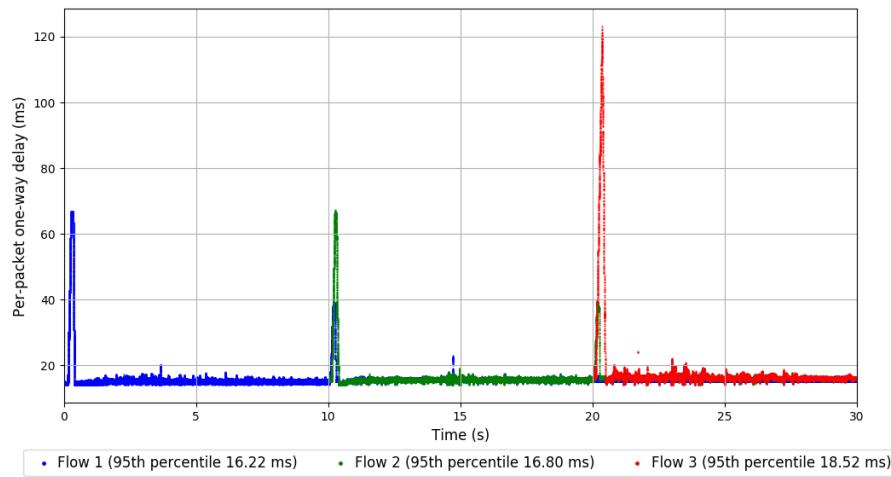
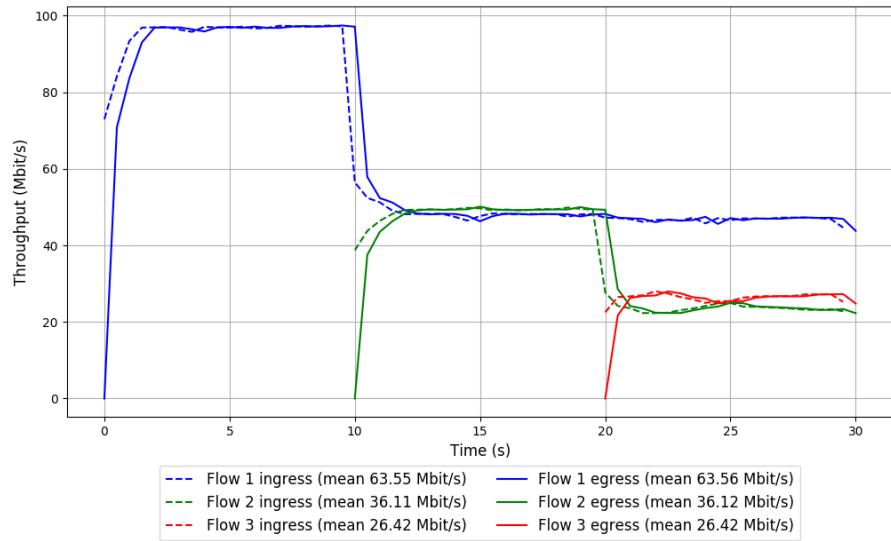


Run 2: Statistics of TCP Vegas

```
Start at: 2018-09-06 19:53:34
End at: 2018-09-06 19:54:04
Local clock offset: -0.352 ms
Remote clock offset: -1.523 ms

# Below is generated by plot.py at 2018-09-06 21:14:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.38 Mbit/s
95th percentile per-packet one-way delay: 16.680 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 63.56 Mbit/s
95th percentile per-packet one-way delay: 16.218 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 36.12 Mbit/s
95th percentile per-packet one-way delay: 16.804 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 26.42 Mbit/s
95th percentile per-packet one-way delay: 18.518 ms
Loss rate: 0.27%
```

Run 2: Report of TCP Vegas — Data Link

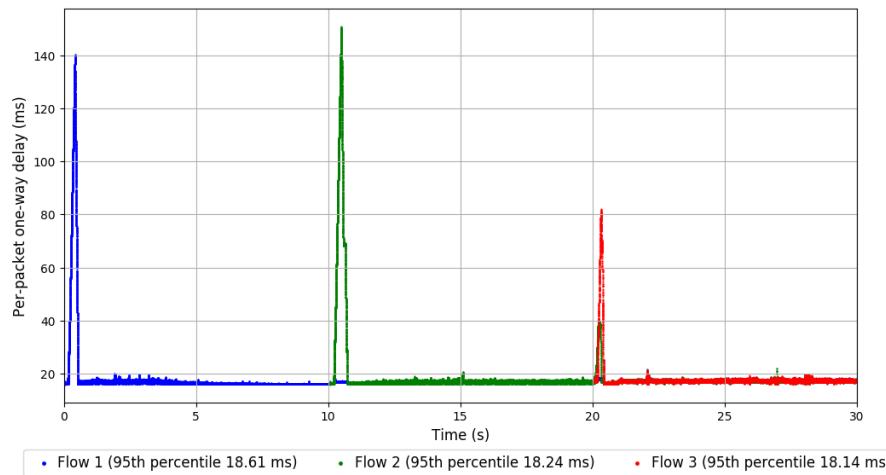
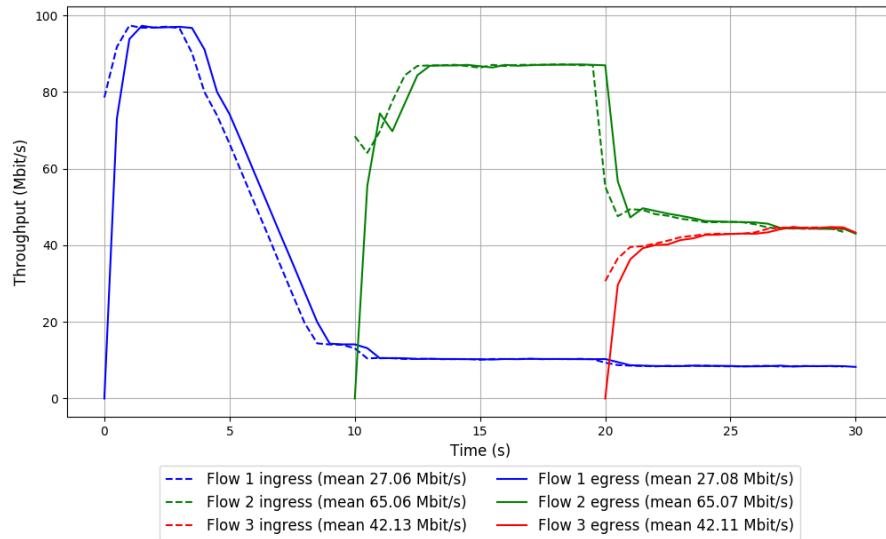


Run 3: Statistics of TCP Vegas

```
Start at: 2018-09-06 20:15:11
End at: 2018-09-06 20:15:41
Local clock offset: 0.008 ms
Remote clock offset: -2.426 ms

# Below is generated by plot.py at 2018-09-06 21:14:14
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.37 Mbit/s
95th percentile per-packet one-way delay: 18.280 ms
Loss rate: 0.10%
-- Flow 1:
Average throughput: 27.08 Mbit/s
95th percentile per-packet one-way delay: 18.611 ms
Loss rate: 0.03%
-- Flow 2:
Average throughput: 65.07 Mbit/s
95th percentile per-packet one-way delay: 18.236 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 42.11 Mbit/s
95th percentile per-packet one-way delay: 18.141 ms
Loss rate: 0.27%
```

Run 3: Report of TCP Vegas — Data Link

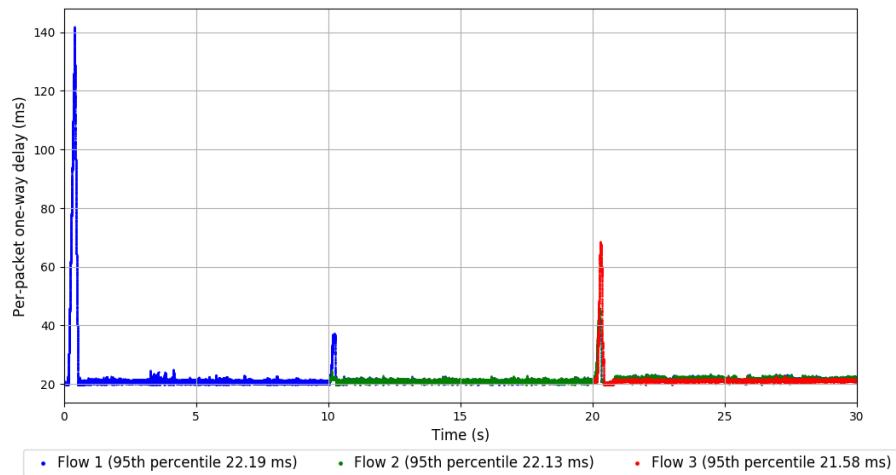
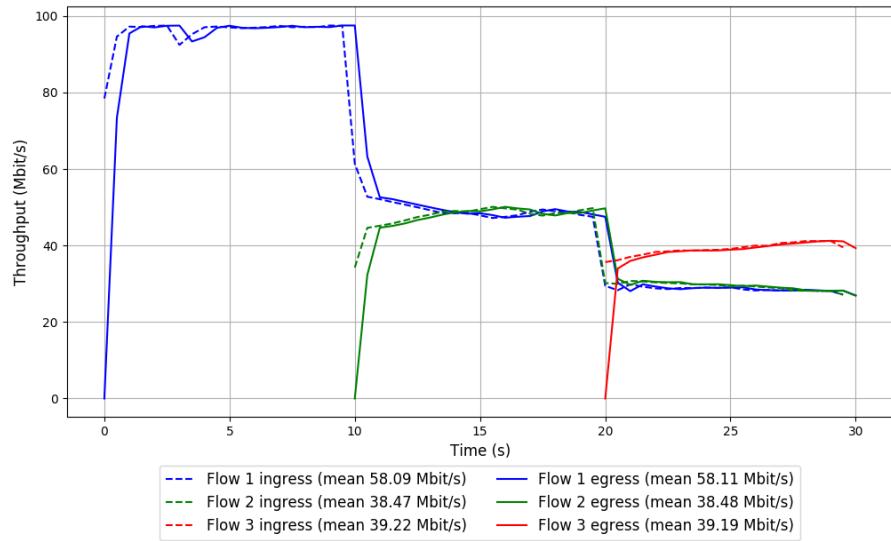


Run 4: Statistics of TCP Vegas

```
Start at: 2018-09-06 20:37:16
End at: 2018-09-06 20:37:46
Local clock offset: 2.591 ms
Remote clock offset: -3.363 ms

# Below is generated by plot.py at 2018-09-06 21:14:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.73 Mbit/s
95th percentile per-packet one-way delay: 22.132 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 58.11 Mbit/s
95th percentile per-packet one-way delay: 22.193 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 38.48 Mbit/s
95th percentile per-packet one-way delay: 22.128 ms
Loss rate: 0.09%
-- Flow 3:
Average throughput: 39.19 Mbit/s
95th percentile per-packet one-way delay: 21.582 ms
Loss rate: 0.31%
```

Run 4: Report of TCP Vegas — Data Link

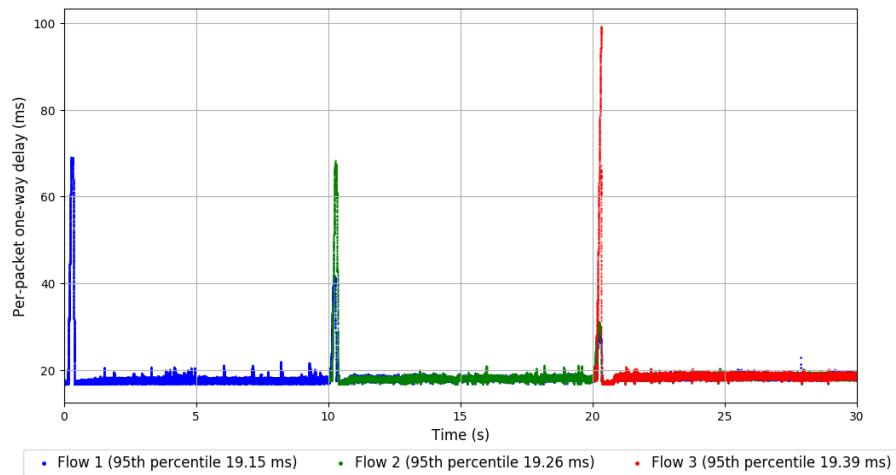
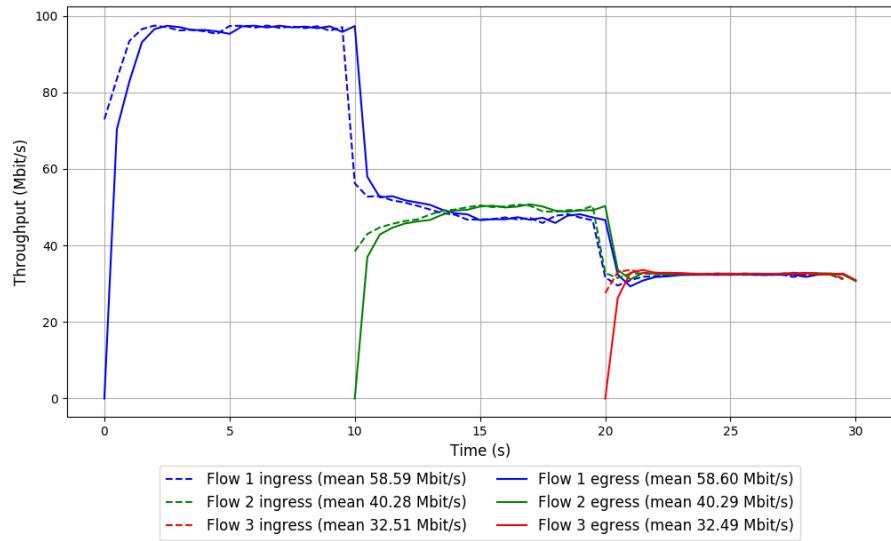


Run 5: Statistics of TCP Vegas

```
Start at: 2018-09-06 20:59:21
End at: 2018-09-06 20:59:51
Local clock offset: -0.69 ms
Remote clock offset: -1.482 ms

# Below is generated by plot.py at 2018-09-06 21:14:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 96.21 Mbit/s
95th percentile per-packet one-way delay: 19.248 ms
Loss rate: 0.09%
-- Flow 1:
Average throughput: 58.60 Mbit/s
95th percentile per-packet one-way delay: 19.154 ms
Loss rate: 0.05%
-- Flow 2:
Average throughput: 40.29 Mbit/s
95th percentile per-packet one-way delay: 19.256 ms
Loss rate: 0.10%
-- Flow 3:
Average throughput: 32.49 Mbit/s
95th percentile per-packet one-way delay: 19.389 ms
Loss rate: 0.29%
```

Run 5: Report of TCP Vegas — Data Link

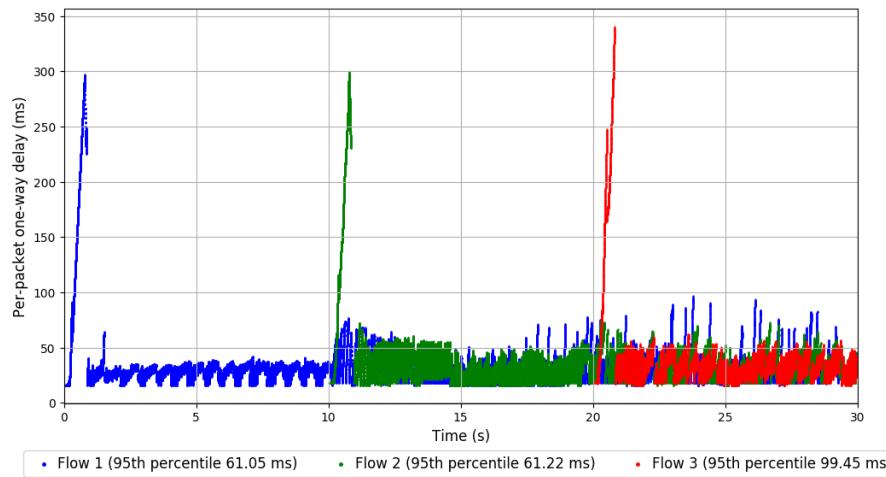
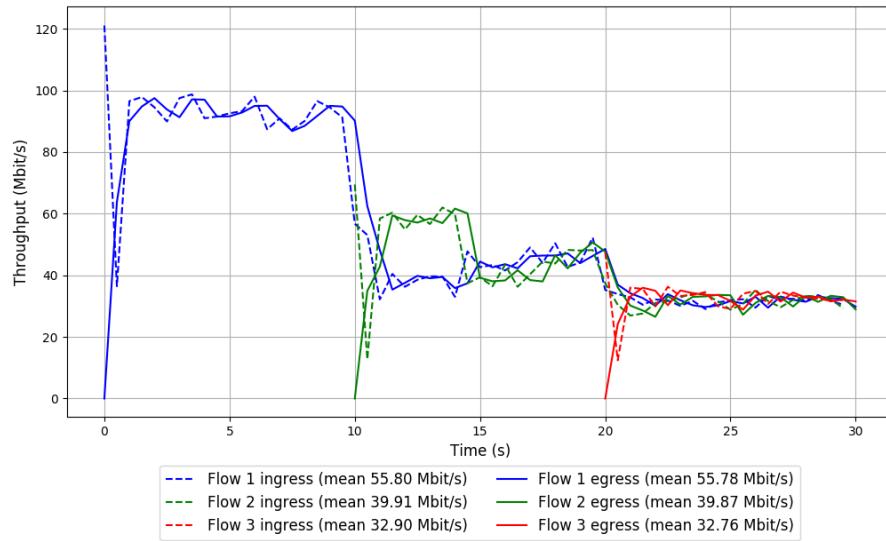


Run 1: Statistics of Verus

```
Start at: 2018-09-06 19:28:02
End at: 2018-09-06 19:28:32
Local clock offset: -0.371 ms
Remote clock offset: -3.997 ms

# Below is generated by plot.py at 2018-09-06 21:14:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.18 Mbit/s
95th percentile per-packet one-way delay: 61.740 ms
Loss rate: 0.22%
-- Flow 1:
Average throughput: 55.78 Mbit/s
95th percentile per-packet one-way delay: 61.048 ms
Loss rate: 0.14%
-- Flow 2:
Average throughput: 39.87 Mbit/s
95th percentile per-packet one-way delay: 61.219 ms
Loss rate: 0.21%
-- Flow 3:
Average throughput: 32.76 Mbit/s
95th percentile per-packet one-way delay: 99.452 ms
Loss rate: 0.65%
```

Run 1: Report of Verus — Data Link

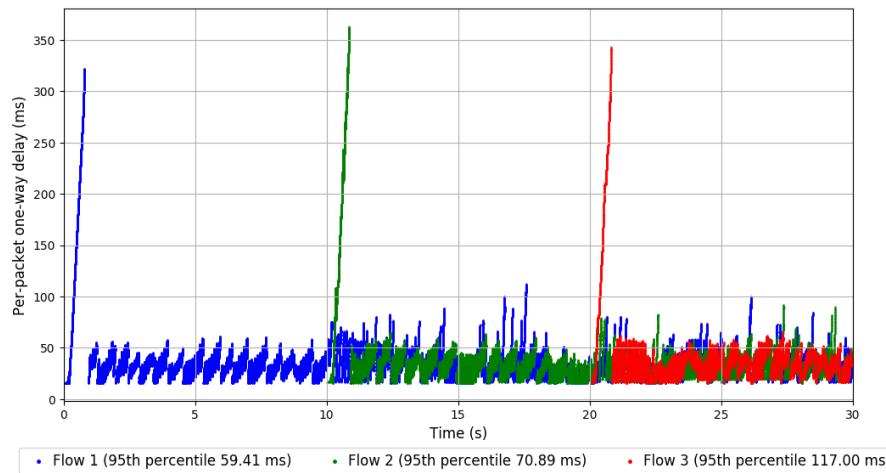
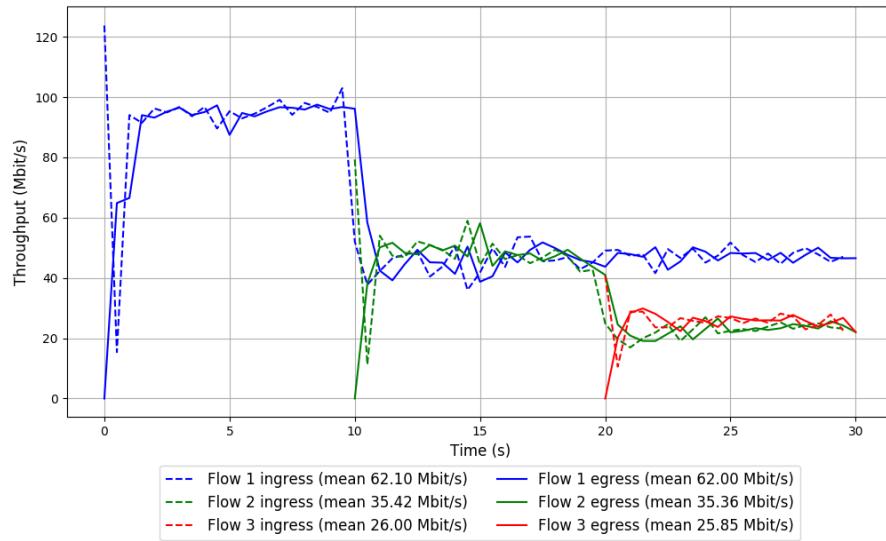


Run 2: Statistics of Verus

```
Start at: 2018-09-06 19:49:50
End at: 2018-09-06 19:50:20
Local clock offset: 0.231 ms
Remote clock offset: -2.579 ms

# Below is generated by plot.py at 2018-09-06 21:15:04
# Datalink statistics
-- Total of 3 flows:
Average throughput: 94.10 Mbit/s
95th percentile per-packet one-way delay: 61.861 ms
Loss rate: 0.30%
-- Flow 1:
Average throughput: 62.00 Mbit/s
95th percentile per-packet one-way delay: 59.406 ms
Loss rate: 0.23%
-- Flow 2:
Average throughput: 35.36 Mbit/s
95th percentile per-packet one-way delay: 70.890 ms
Loss rate: 0.29%
-- Flow 3:
Average throughput: 25.85 Mbit/s
95th percentile per-packet one-way delay: 117.004 ms
Loss rate: 0.86%
```

Run 2: Report of Verus — Data Link

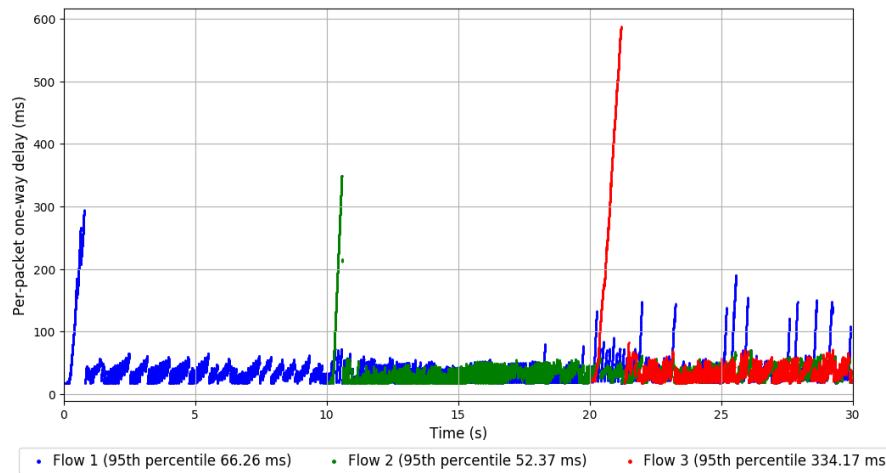
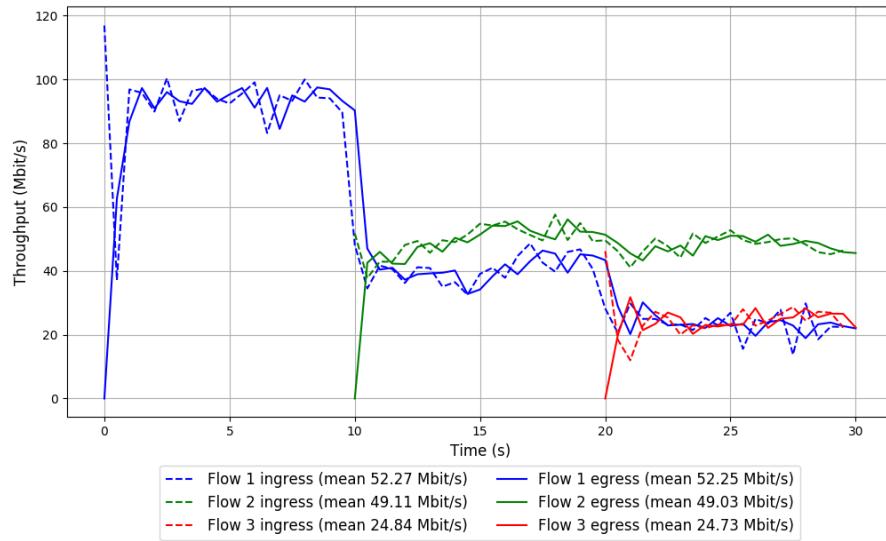


Run 3: Statistics of Verus

```
Start at: 2018-09-06 20:11:29
End at: 2018-09-06 20:11:59
Local clock offset: 2.079 ms
Remote clock offset: -2.073 ms

# Below is generated by plot.py at 2018-09-06 21:15:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 93.10 Mbit/s
95th percentile per-packet one-way delay: 62.192 ms
Loss rate: 0.23%
-- Flow 1:
Average throughput: 52.25 Mbit/s
95th percentile per-packet one-way delay: 66.257 ms
Loss rate: 0.13%
-- Flow 2:
Average throughput: 49.03 Mbit/s
95th percentile per-packet one-way delay: 52.372 ms
Loss rate: 0.28%
-- Flow 3:
Average throughput: 24.73 Mbit/s
95th percentile per-packet one-way delay: 334.173 ms
Loss rate: 0.70%
```

Run 3: Report of Verus — Data Link

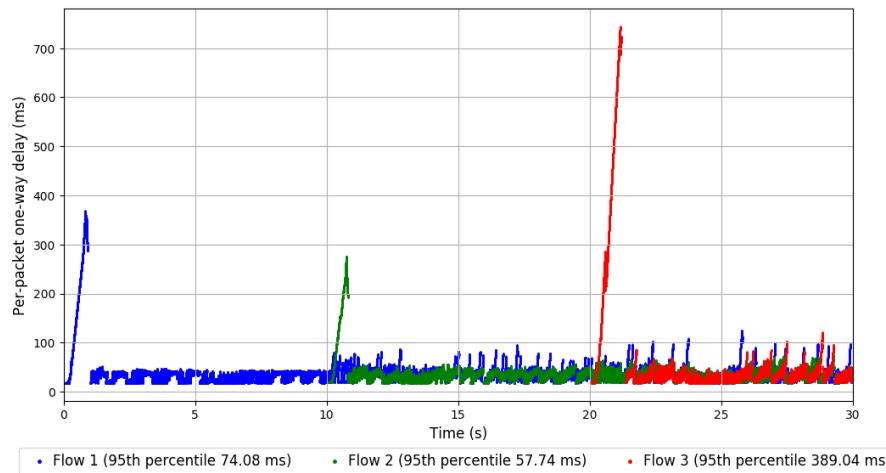
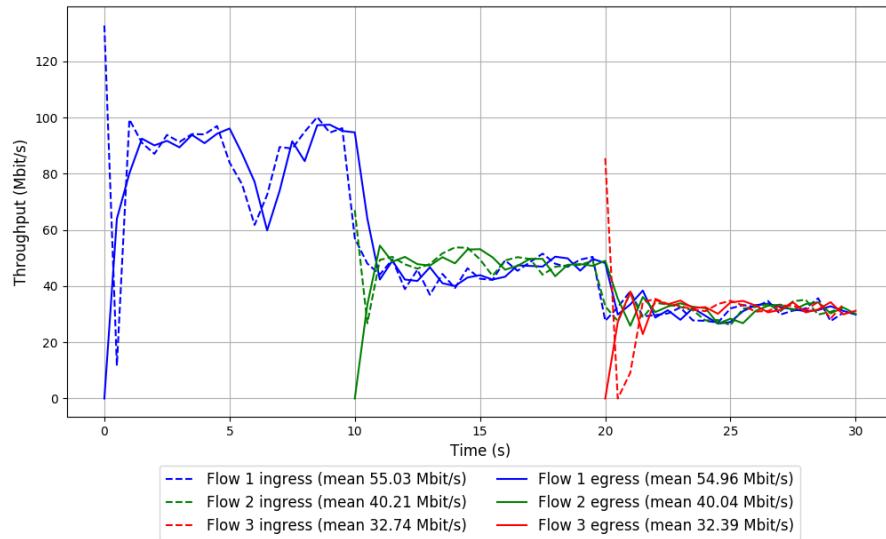


Run 4: Statistics of Verus

```
Start at: 2018-09-06 20:33:33
End at: 2018-09-06 20:34:03
Local clock offset: -0.451 ms
Remote clock offset: -4.064 ms

# Below is generated by plot.py at 2018-09-06 21:15:16
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.34 Mbit/s
95th percentile per-packet one-way delay: 79.096 ms
Loss rate: 0.41%
-- Flow 1:
Average throughput: 54.96 Mbit/s
95th percentile per-packet one-way delay: 74.076 ms
Loss rate: 0.19%
-- Flow 2:
Average throughput: 40.04 Mbit/s
95th percentile per-packet one-way delay: 57.741 ms
Loss rate: 0.52%
-- Flow 3:
Average throughput: 32.39 Mbit/s
95th percentile per-packet one-way delay: 389.036 ms
Loss rate: 1.30%
```

Run 4: Report of Verus — Data Link

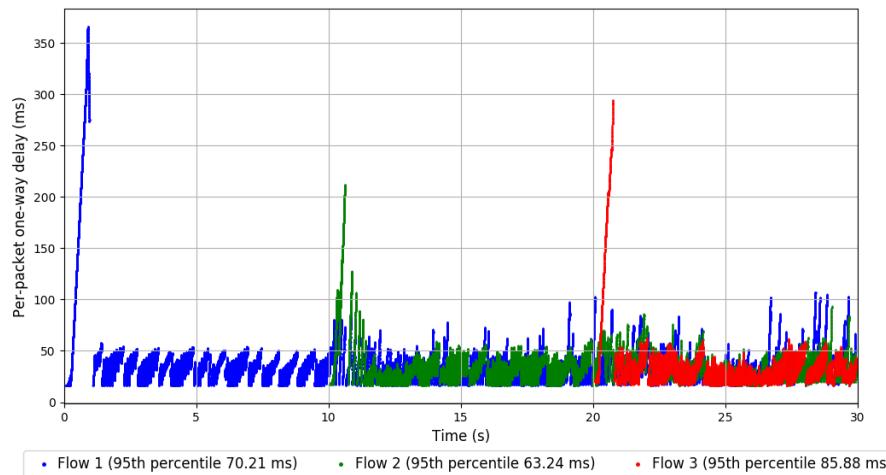
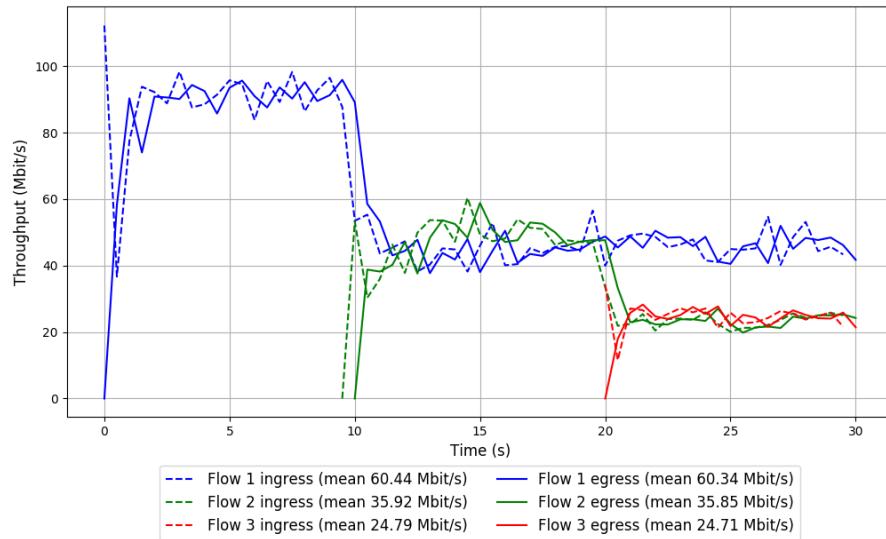


Run 5: Statistics of Verus

```
Start at: 2018-09-06 20:55:36
End at: 2018-09-06 20:56:06
Local clock offset: -1.808 ms
Remote clock offset: -2.543 ms

# Below is generated by plot.py at 2018-09-06 21:15:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 92.42 Mbit/s
95th percentile per-packet one-way delay: 68.660 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 60.34 Mbit/s
95th percentile per-packet one-way delay: 70.214 ms
Loss rate: 0.22%
-- Flow 2:
Average throughput: 35.85 Mbit/s
95th percentile per-packet one-way delay: 63.241 ms
Loss rate: 0.31%
-- Flow 3:
Average throughput: 24.71 Mbit/s
95th percentile per-packet one-way delay: 85.883 ms
Loss rate: 0.57%
```

Run 5: Report of Verus — Data Link

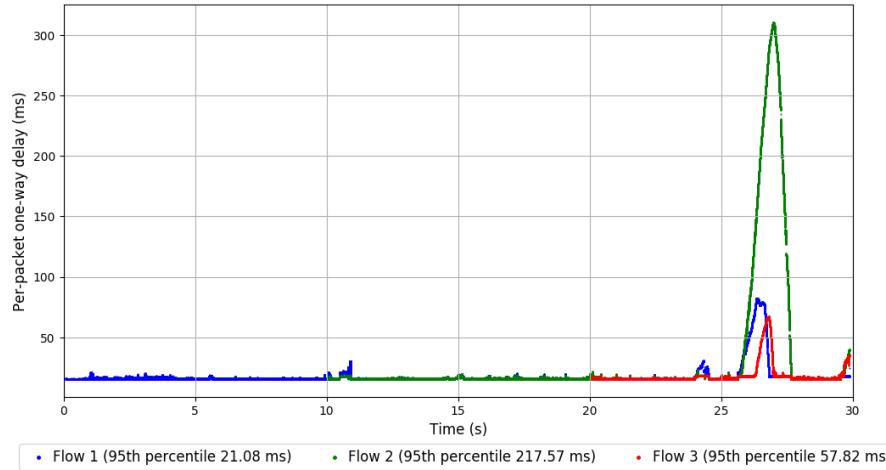
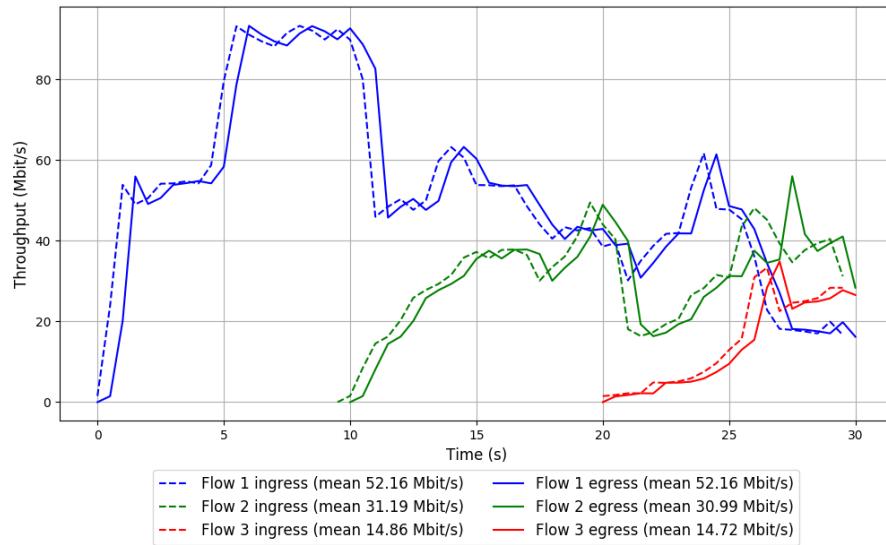


Run 1: Statistics of PCC-Vivace

```
Start at: 2018-09-06 19:32:48
End at: 2018-09-06 19:33:18
Local clock offset: -0.051 ms
Remote clock offset: -3.437 ms

# Below is generated by plot.py at 2018-09-06 21:15:21
# Datalink statistics
-- Total of 3 flows:
Average throughput: 77.62 Mbit/s
95th percentile per-packet one-way delay: 41.784 ms
Loss rate: 0.31%
-- Flow 1:
Average throughput: 52.16 Mbit/s
95th percentile per-packet one-way delay: 21.084 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 30.99 Mbit/s
95th percentile per-packet one-way delay: 217.567 ms
Loss rate: 0.74%
-- Flow 3:
Average throughput: 14.72 Mbit/s
95th percentile per-packet one-way delay: 57.820 ms
Loss rate: 1.19%
```

Run 1: Report of PCC-Vivace — Data Link

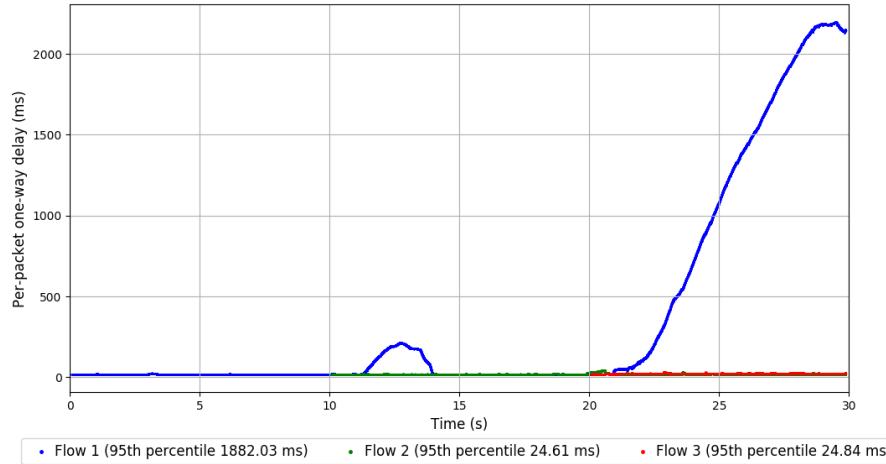
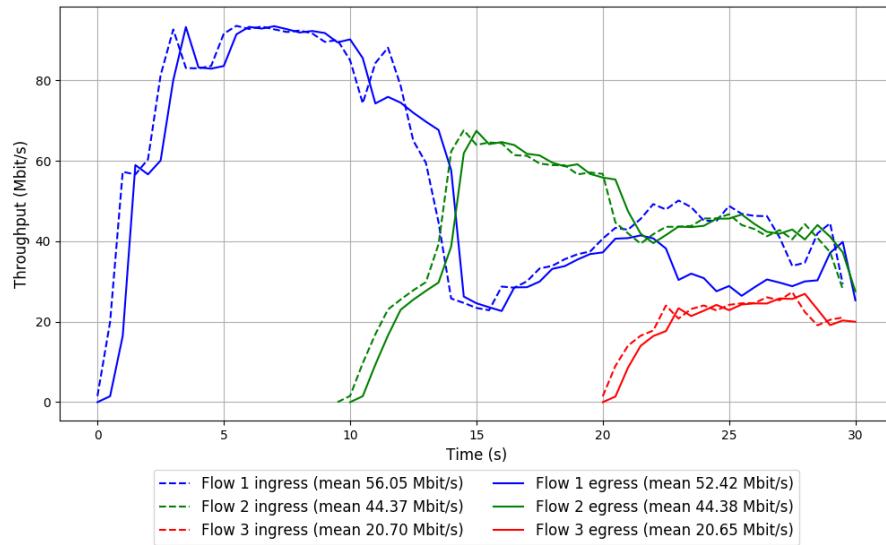


Run 2: Statistics of PCC-Vivace

```
Start at: 2018-09-06 19:54:46
End at: 2018-09-06 19:55:16
Local clock offset: 1.278 ms
Remote clock offset: -1.912 ms

# Below is generated by plot.py at 2018-09-06 21:15:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 88.74 Mbit/s
95th percentile per-packet one-way delay: 1325.892 ms
Loss rate: 4.04%
-- Flow 1:
Average throughput: 52.42 Mbit/s
95th percentile per-packet one-way delay: 1882.028 ms
Loss rate: 6.54%
-- Flow 2:
Average throughput: 44.38 Mbit/s
95th percentile per-packet one-way delay: 24.611 ms
Loss rate: 0.12%
-- Flow 3:
Average throughput: 20.65 Mbit/s
95th percentile per-packet one-way delay: 24.840 ms
Loss rate: 0.49%
```

Run 2: Report of PCC-Vivace — Data Link

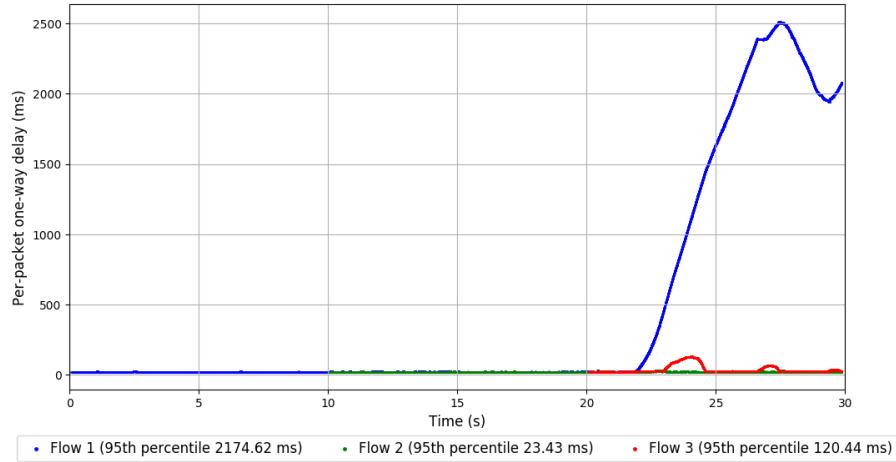
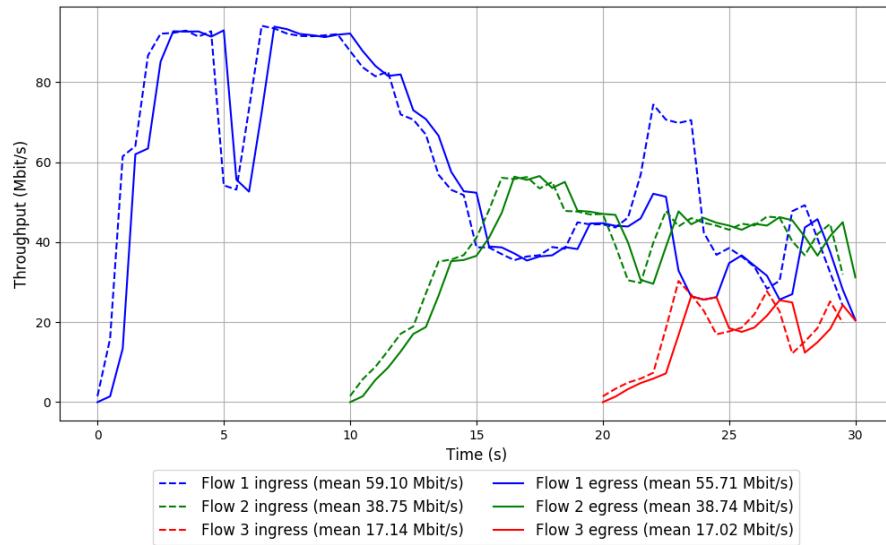


Run 3: Statistics of PCC-Vivace

```
Start at: 2018-09-06 20:16:22
End at: 2018-09-06 20:16:52
Local clock offset: 1.734 ms
Remote clock offset: -3.094 ms

# Below is generated by plot.py at 2018-09-06 21:15:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.07 Mbit/s
95th percentile per-packet one-way delay: 1963.337 ms
Loss rate: 3.89%
-- Flow 1:
Average throughput: 55.71 Mbit/s
95th percentile per-packet one-way delay: 2174.617 ms
Loss rate: 5.80%
-- Flow 2:
Average throughput: 38.74 Mbit/s
95th percentile per-packet one-way delay: 23.428 ms
Loss rate: 0.15%
-- Flow 3:
Average throughput: 17.02 Mbit/s
95th percentile per-packet one-way delay: 120.440 ms
Loss rate: 0.96%
```

Run 3: Report of PCC-Vivace — Data Link

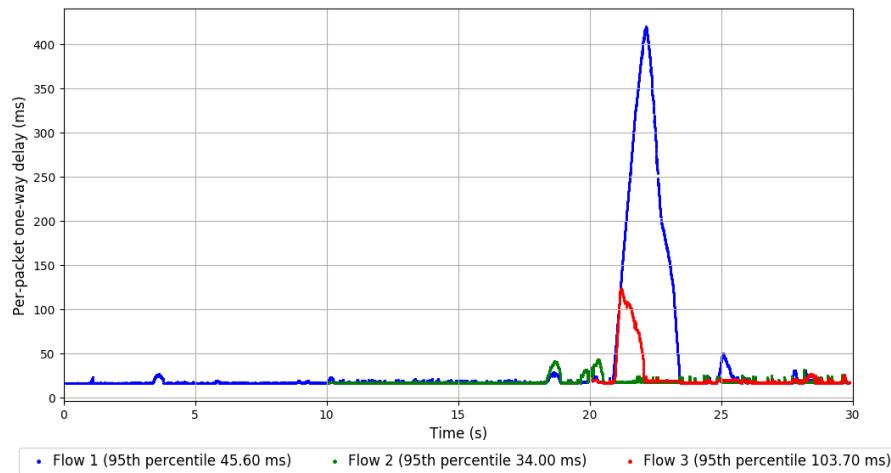
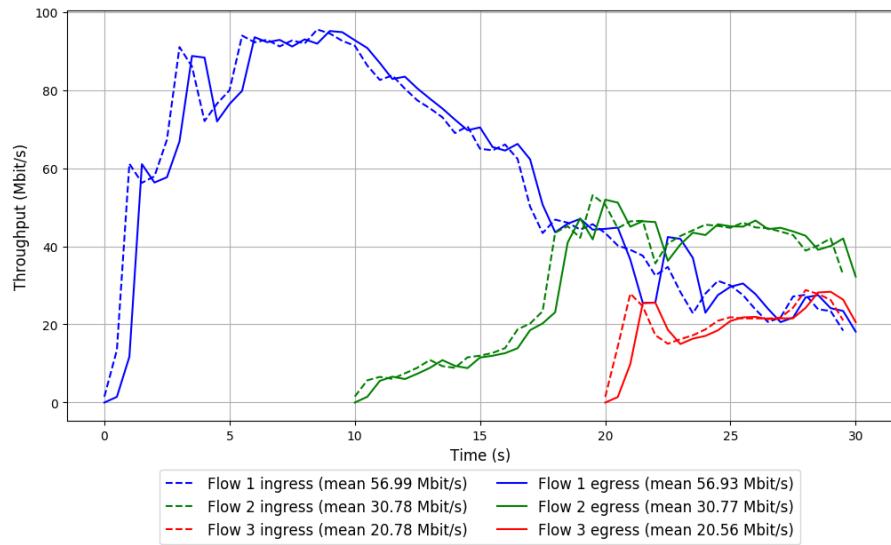


Run 4: Statistics of PCC-Vivace

```
Start at: 2018-09-06 20:38:28
End at: 2018-09-06 20:38:58
Local clock offset: 0.624 ms
Remote clock offset: -2.453 ms

# Below is generated by plot.py at 2018-09-06 21:15:37
# Datalink statistics
-- Total of 3 flows:
Average throughput: 84.17 Mbit/s
95th percentile per-packet one-way delay: 40.024 ms
Loss rate: 0.28%
-- Flow 1:
Average throughput: 56.93 Mbit/s
95th percentile per-packet one-way delay: 45.604 ms
Loss rate: 0.18%
-- Flow 2:
Average throughput: 30.77 Mbit/s
95th percentile per-packet one-way delay: 33.996 ms
Loss rate: 0.19%
-- Flow 3:
Average throughput: 20.56 Mbit/s
95th percentile per-packet one-way delay: 103.700 ms
Loss rate: 1.32%
```

Run 4: Report of PCC-Vivace — Data Link

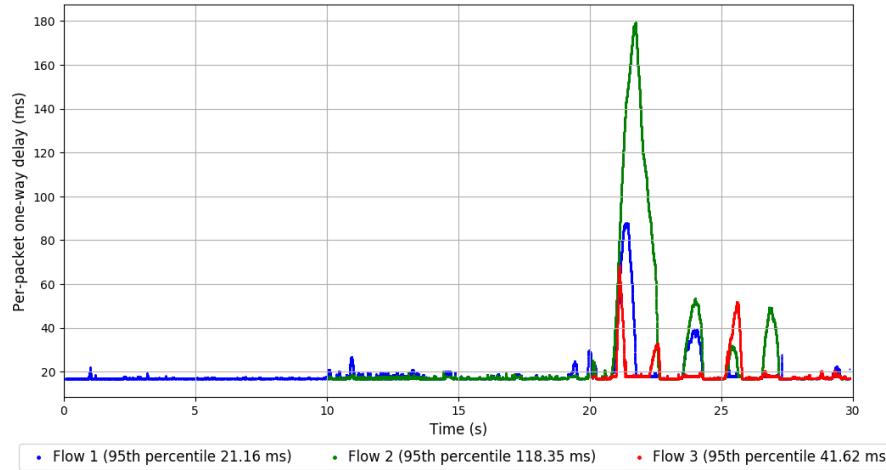
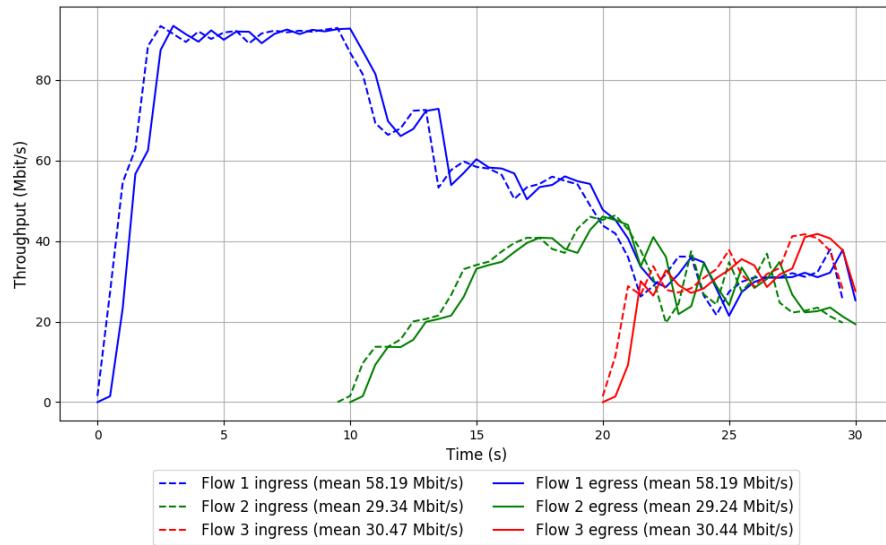


Run 5: Statistics of PCC-Vivace

```
Start at: 2018-09-06 21:00:33
End at: 2018-09-06 21:01:03
Local clock offset: -1.754 ms
Remote clock offset: -2.569 ms

# Below is generated by plot.py at 2018-09-06 21:15:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 87.67 Mbit/s
95th percentile per-packet one-way delay: 38.346 ms
Loss rate: 0.19%
-- Flow 1:
Average throughput: 58.19 Mbit/s
95th percentile per-packet one-way delay: 21.165 ms
Loss rate: 0.06%
-- Flow 2:
Average throughput: 29.24 Mbit/s
95th percentile per-packet one-way delay: 118.353 ms
Loss rate: 0.47%
-- Flow 3:
Average throughput: 30.44 Mbit/s
95th percentile per-packet one-way delay: 41.615 ms
Loss rate: 0.35%
```

Run 5: Report of PCC-Vivace — Data Link

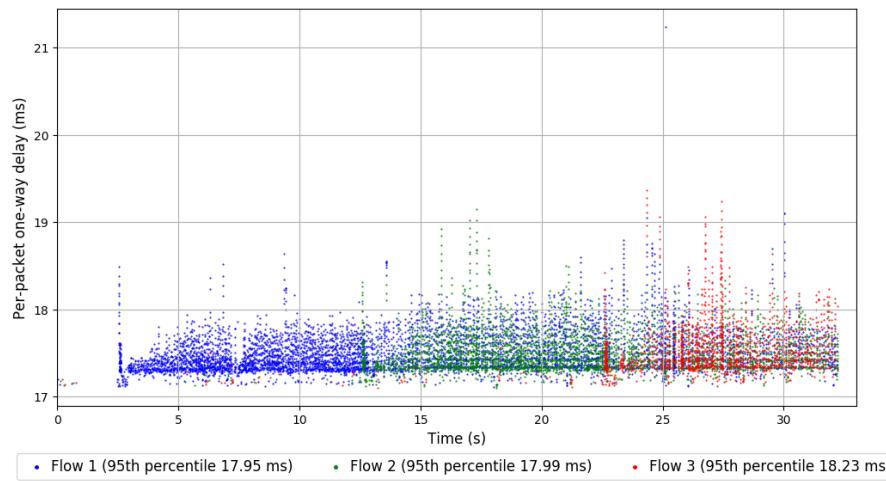
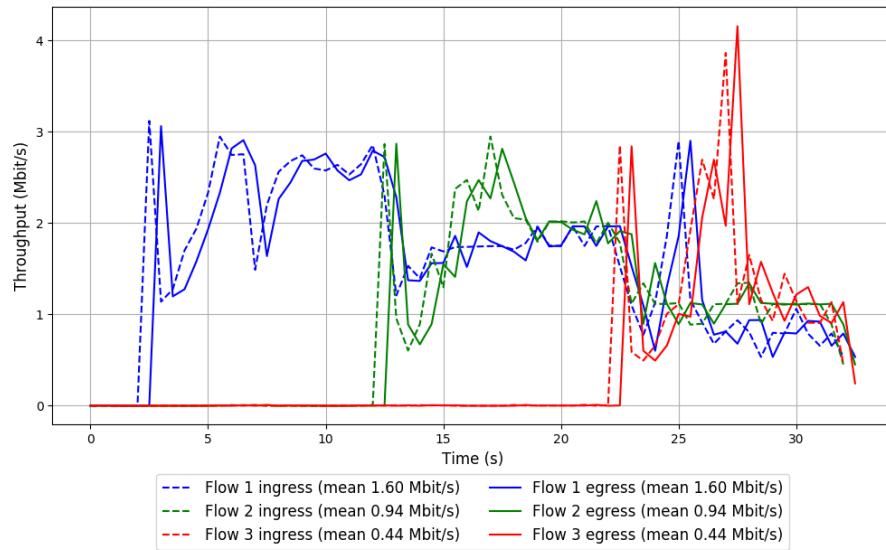


```
Run 1: Statistics of WebRTC media

Start at: 2018-09-06 19:13:31
End at: 2018-09-06 19:14:01
Local clock offset: -0.703 ms
Remote clock offset: -4.541 ms

# Below is generated by plot.py at 2018-09-06 21:15:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.98 Mbit/s
95th percentile per-packet one-way delay: 18.003 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 1.60 Mbit/s
95th percentile per-packet one-way delay: 17.953 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.94 Mbit/s
95th percentile per-packet one-way delay: 17.988 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 18.230 ms
Loss rate: 0.74%
```

Run 1: Report of WebRTC media — Data Link

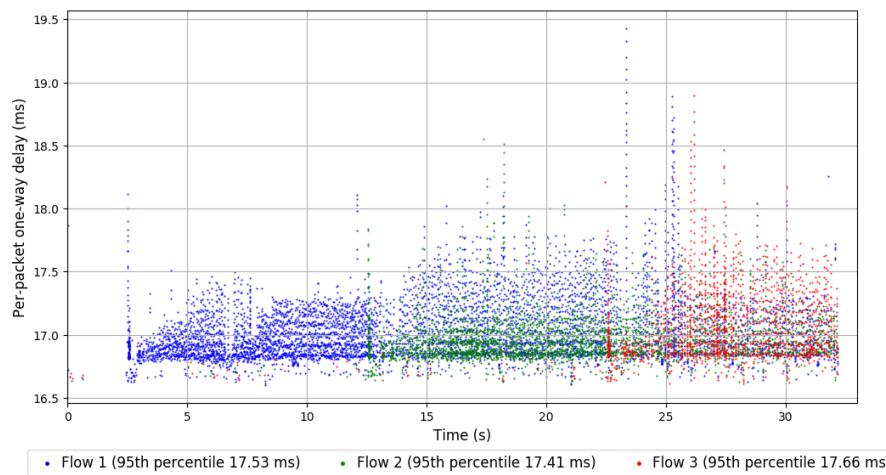
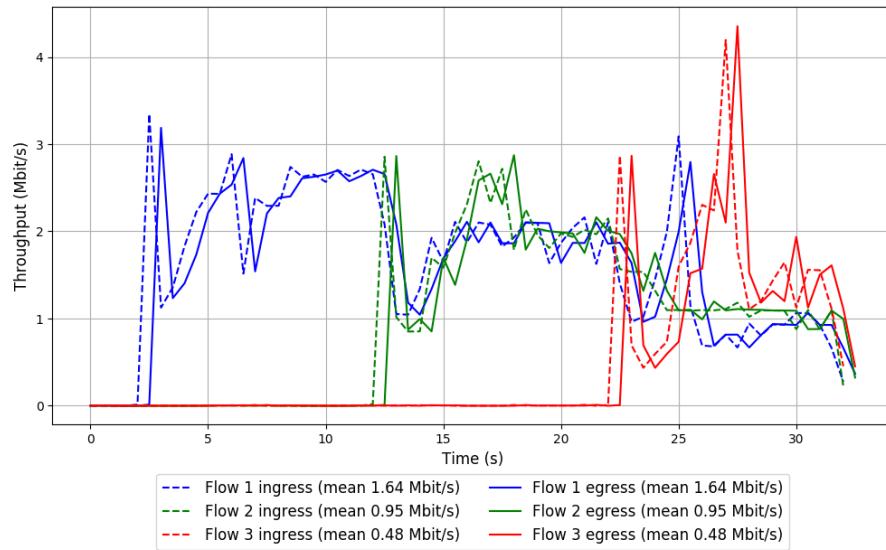


Run 2: Statistics of WebRTC media

```
Start at: 2018-09-06 19:35:09
End at: 2018-09-06 19:35:39
Local clock offset: 1.437 ms
Remote clock offset: -3.085 ms

# Below is generated by plot.py at 2018-09-06 21:15:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 3.07 Mbit/s
95th percentile per-packet one-way delay: 17.527 ms
Loss rate: 0.02%
-- Flow 1:
Average throughput: 1.64 Mbit/s
95th percentile per-packet one-way delay: 17.528 ms
Loss rate: 0.04%
-- Flow 2:
Average throughput: 0.95 Mbit/s
95th percentile per-packet one-way delay: 17.409 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.48 Mbit/s
95th percentile per-packet one-way delay: 17.656 ms
Loss rate: 0.00%
```

Run 2: Report of WebRTC media — Data Link

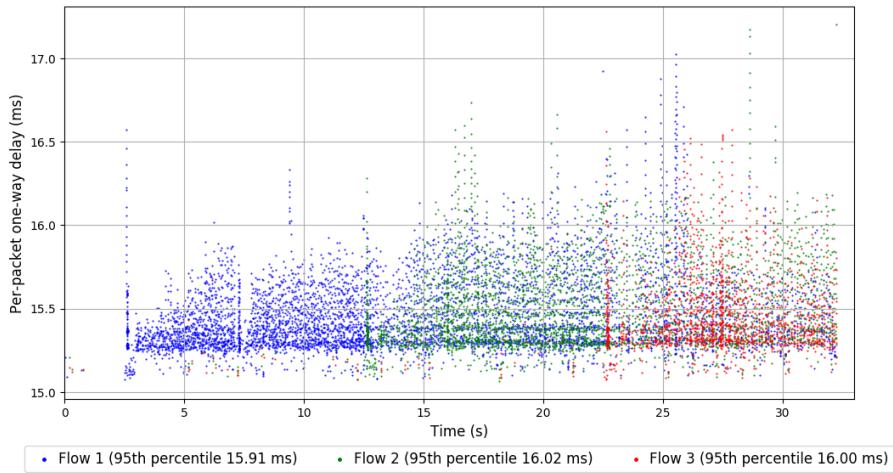
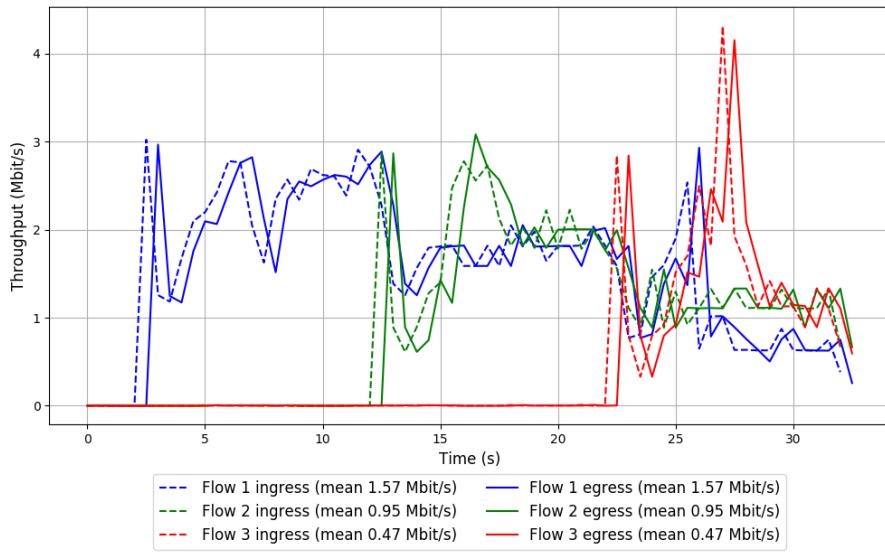


```
Run 3: Statistics of WebRTC media

Start at: 2018-09-06 19:57:06
End at: 2018-09-06 19:57:36
Local clock offset: 0.709 ms
Remote clock offset: -1.469 ms

# Below is generated by plot.py at 2018-09-06 21:15:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.98 Mbit/s
95th percentile per-packet one-way delay: 15.975 ms
Loss rate: 0.11%
-- Flow 1:
Average throughput: 1.57 Mbit/s
95th percentile per-packet one-way delay: 15.913 ms
Loss rate: 0.12%
-- Flow 2:
Average throughput: 0.95 Mbit/s
95th percentile per-packet one-way delay: 16.022 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.47 Mbit/s
95th percentile per-packet one-way delay: 16.002 ms
Loss rate: 0.26%
```

Run 3: Report of WebRTC media — Data Link

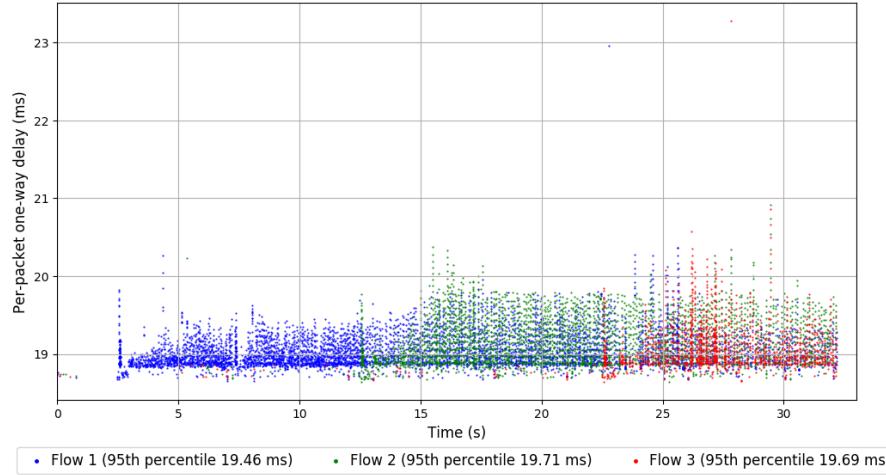
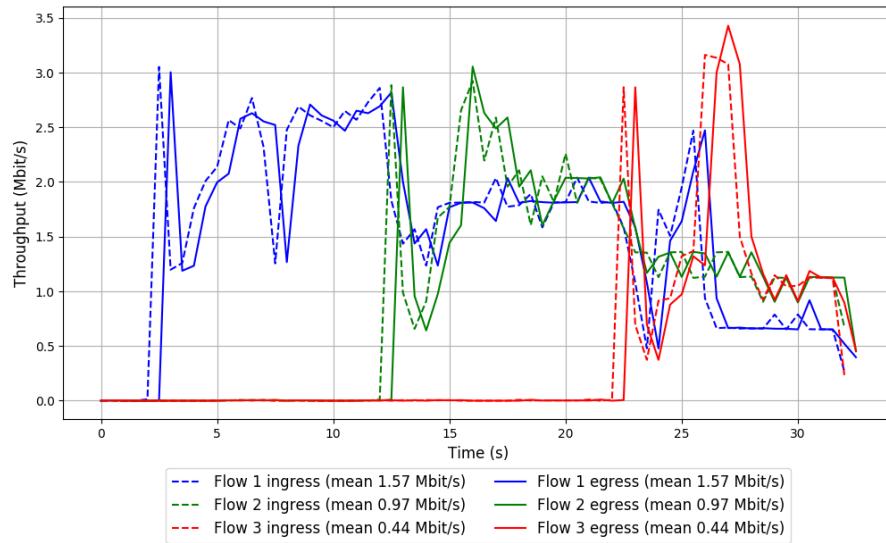


Run 4: Statistics of WebRTC media

```
Start at: 2018-09-06 20:18:44
End at: 2018-09-06 20:19:14
Local clock offset: 2.42 ms
Remote clock offset: -2.823 ms

# Below is generated by plot.py at 2018-09-06 21:15:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.98 Mbit/s
95th percentile per-packet one-way delay: 19.633 ms
Loss rate: 0.12%
-- Flow 1:
Average throughput: 1.57 Mbit/s
95th percentile per-packet one-way delay: 19.461 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.97 Mbit/s
95th percentile per-packet one-way delay: 19.714 ms
Loss rate: 0.36%
-- Flow 3:
Average throughput: 0.44 Mbit/s
95th percentile per-packet one-way delay: 19.690 ms
Loss rate: 0.00%
```

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

```
Start at: 2018-09-06 20:40:48
End at: 2018-09-06 20:41:18
Local clock offset: 0.746 ms
Remote clock offset: -2.36 ms

# Below is generated by plot.py at 2018-09-06 21:15:40
# Datalink statistics
-- Total of 3 flows:
Average throughput: 2.91 Mbit/s
95th percentile per-packet one-way delay: 17.767 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.62 Mbit/s
95th percentile per-packet one-way delay: 17.728 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.95 Mbit/s
95th percentile per-packet one-way delay: 17.833 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 0.35 Mbit/s
95th percentile per-packet one-way delay: 17.467 ms
Loss rate: 0.01%
```

Run 5: Report of WebRTC media — Data Link

