

Pantheon Report

Generated at 2017-09-19 08:45:43 (UTC).

Data path: GCE Sydney Ethernet (*local*) → GCE London Ethernet (*remote*).

Repeated the test of 10 congestion control schemes 10 times.

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

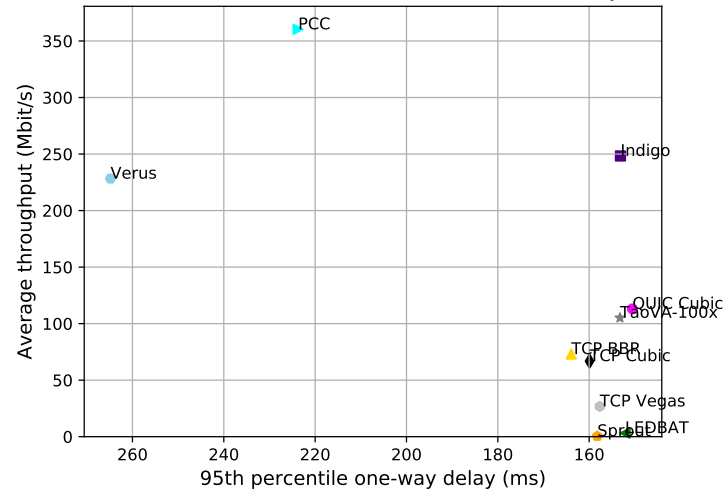
Increased UDP receive buffer to 16 MB (default) and 32 MB (max).

Tested BBR with qdisc of Fair Queuing (**fq**), and other schemes with the default Linux qdisc (**pfifo_fast**).

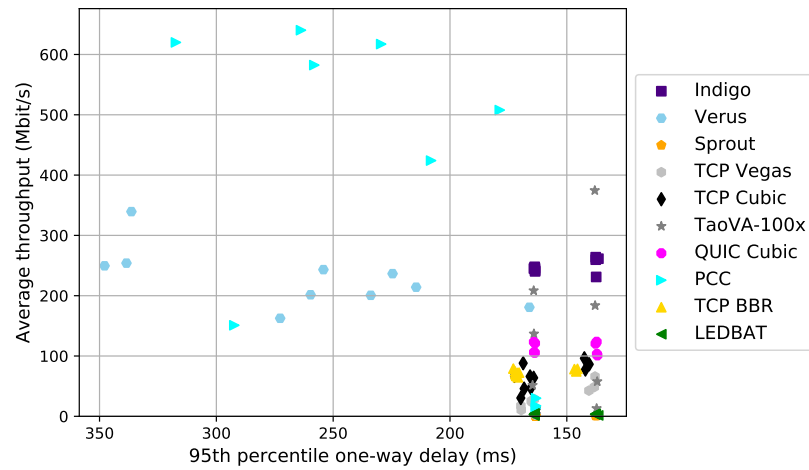
Git summary:

```
branch: master @ 57453dc11f8da93a2e03eea75289fea01b816298
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50
  M datagrump/sender.cc
third_party/genericCC @ f7ca42f251bf49b432bb71de6d13fa903515c366
third_party/indigo @ b19f3730105f9aa95452552af924e3719b03cc55
third_party/koho_cc @ f0f2e693303aee82ea808e6928eac4f1083a6681
  M datagrump/sender.cc
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/pantheon-tunnel @ baf443516dea3eeddeccaf9b916cc313273ca4f4
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/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream @ c3370fd7bd17265a79aeb34e4016ad23f5965885
third_party/sourdough @ f1a14bffe749737437f61b1eaaeb30b267cde681
third_party/sprout @ 6f2efe6e088d91066a9f023df375eee2665089ce
  M src/examples/cellsim.cc
  M src/examples/sproutbt2.cc
  M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
  M src/verus.hpp
  M tools/plot.py
third_party/webrtc @ a488197ddd041ace68a42849b2540ad834825f42
```

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



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



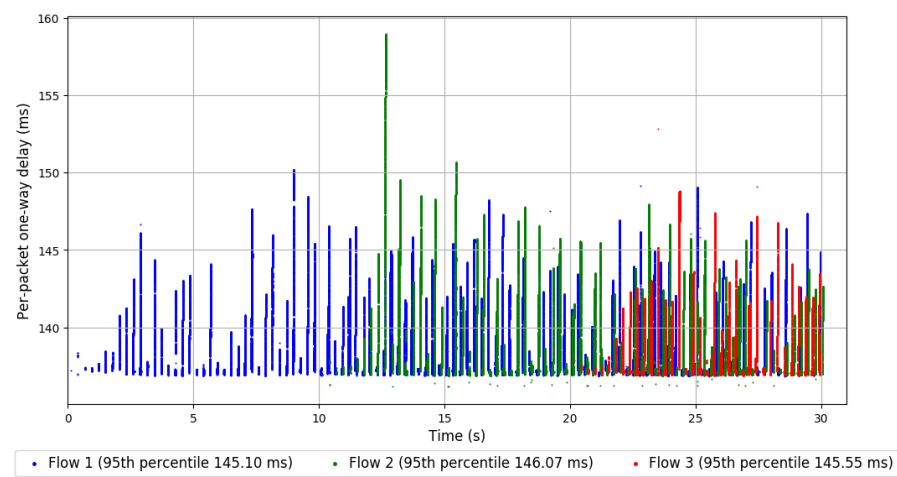
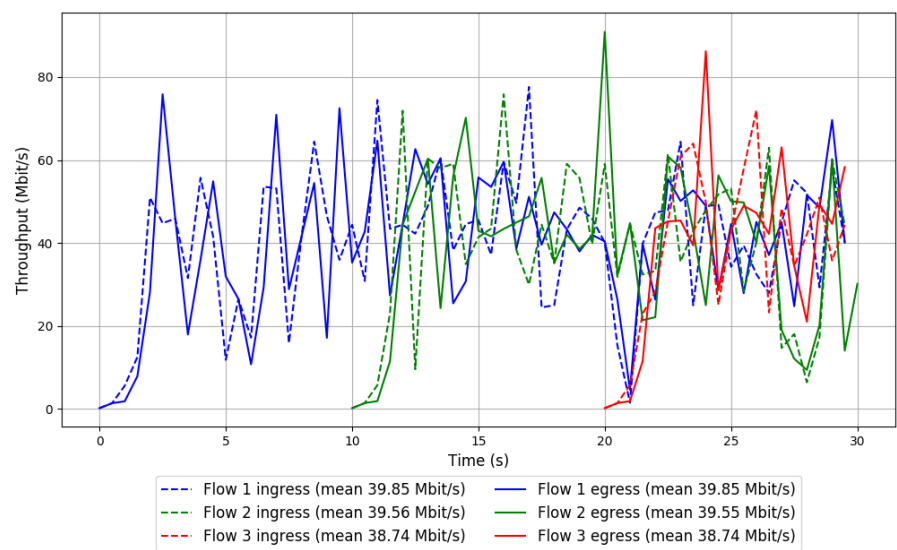
scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	10	37.05	35.96	37.26	164.00	163.51	164.36	0.02	0.04	0.08
TCP Cubic	10	38.27	38.42	9.19	160.05	158.70	158.44	0.07	0.14	0.11
Indigo	10	131.41	125.33	104.13	152.95	153.33	154.50	0.04	0.07	0.16
LEDBAT	9	1.83	2.71	0.97	152.22	1090.88	152.00	0.26	0.02	0.70
PCC	10	299.38	54.14	76.26	214.69	195.19	208.73	1.63	1.16	2.46
QUIC Cubic	8	58.28	58.75	49.53	137.01	146.95	140.22	0.00	0.02	0.04
Sprout	10	0.21	0.27	0.31	158.19	155.62	155.59	0.00	0.00	0.00
TaoVA-100x	10	46.00	63.92	67.56	155.49	153.07	153.32	0.00	0.02	0.07
TCP Vegas	10	14.36	15.05	7.32	156.75	156.71	156.91	0.10	0.03	0.30
Verus	10	151.05	90.25	56.30	236.95	251.78	283.36	2.50	4.53	5.04

```
Run 1: Statistics of TCP BBR

Start at: 2017-09-19 05:47:41
End at: 2017-09-19 05:48:11

# Below is generated by plot.py at 2017-09-19 08:17:06
# Datalink statistics
-- Total of 3 flows:
Average throughput: 78.71 Mbit/s
95th percentile per-packet one-way delay: 145.434 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 39.85 Mbit/s
95th percentile per-packet one-way delay: 145.105 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 39.55 Mbit/s
95th percentile per-packet one-way delay: 146.075 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 38.74 Mbit/s
95th percentile per-packet one-way delay: 145.552 ms
Loss rate: 0.00%
```

Run 1: Report of TCP BBR — Data Link



Run 2: Statistics of TCP BBR

Start at: 2017-09-19 05:57:52

End at: 2017-09-19 05:58:22

Below is generated by plot.py at 2017-09-19 08:17:06

Datalink statistics

-- Total of 3 flows:

Average throughput: 78.27 Mbit/s

95th percentile per-packet one-way delay: 146.734 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 34.51 Mbit/s

95th percentile per-packet one-way delay: 146.600 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 45.74 Mbit/s

95th percentile per-packet one-way delay: 146.746 ms

Loss rate: 0.00%

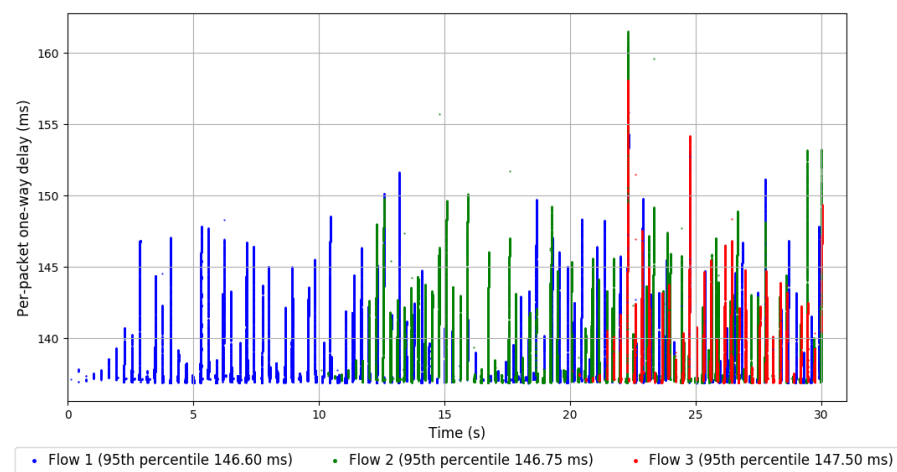
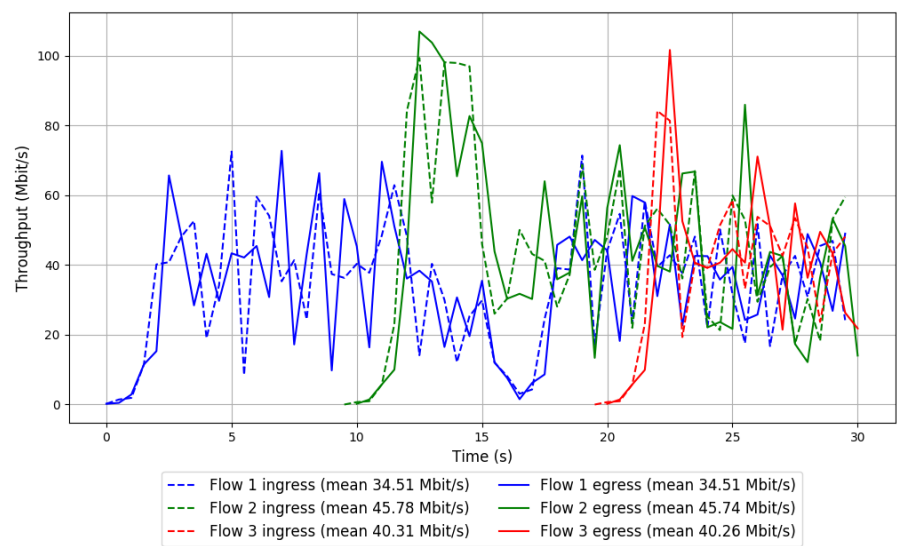
-- Flow 3:

Average throughput: 40.26 Mbit/s

95th percentile per-packet one-way delay: 147.505 ms

Loss rate: 0.00%

Run 2: Report of TCP BBR — Data Link



Run 3: Statistics of TCP BBR

Start at: 2017-09-19 06:08:40

End at: 2017-09-19 06:09:10

Below is generated by plot.py at 2017-09-19 08:17:06

Datalink statistics

-- Total of 3 flows:

Average throughput: 74.47 Mbit/s

95th percentile per-packet one-way delay: 145.939 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 38.67 Mbit/s

95th percentile per-packet one-way delay: 145.788 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 35.22 Mbit/s

95th percentile per-packet one-way delay: 145.667 ms

Loss rate: 0.00%

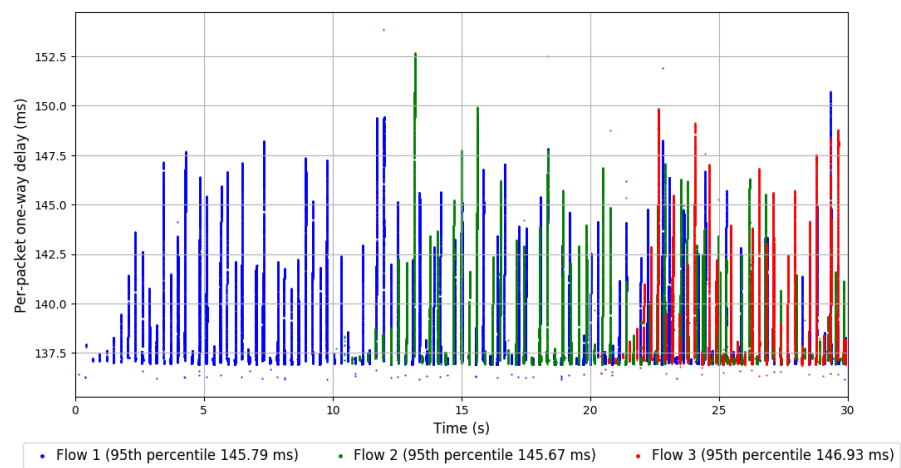
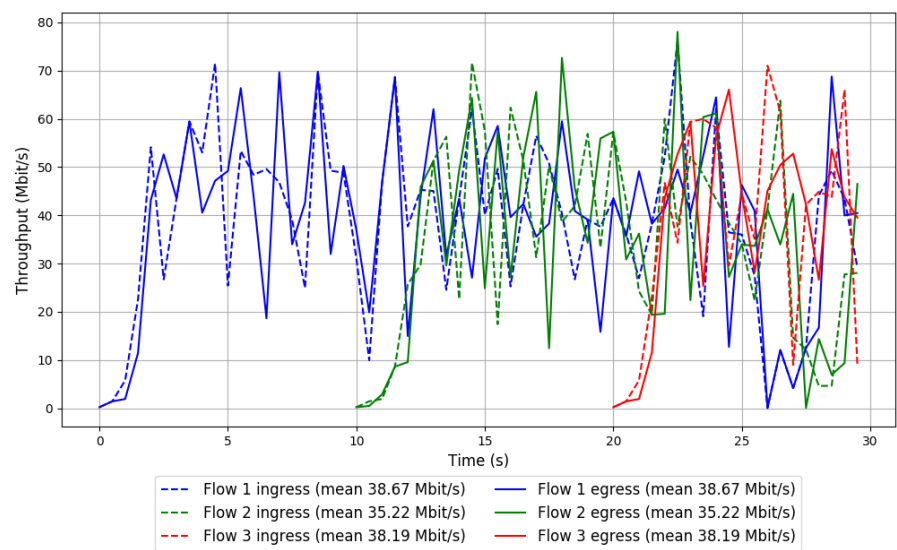
-- Flow 3:

Average throughput: 38.19 Mbit/s

95th percentile per-packet one-way delay: 146.928 ms

Loss rate: 0.00%

Run 3: Report of TCP BBR — Data Link



Run 4: Statistics of TCP BBR

Start at: 2017-09-19 06:19:46

End at: 2017-09-19 06:20:16

Below is generated by plot.py at 2017-09-19 08:17:07

Datalink statistics

-- Total of 3 flows:

Average throughput: 79.12 Mbit/s

95th percentile per-packet one-way delay: 172.880 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 37.32 Mbit/s

95th percentile per-packet one-way delay: 171.387 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 31.49 Mbit/s

95th percentile per-packet one-way delay: 171.854 ms

Loss rate: 0.00%

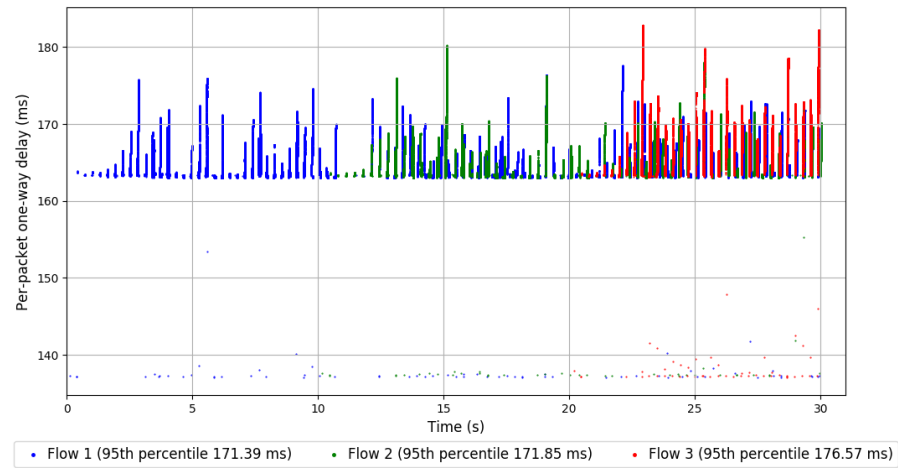
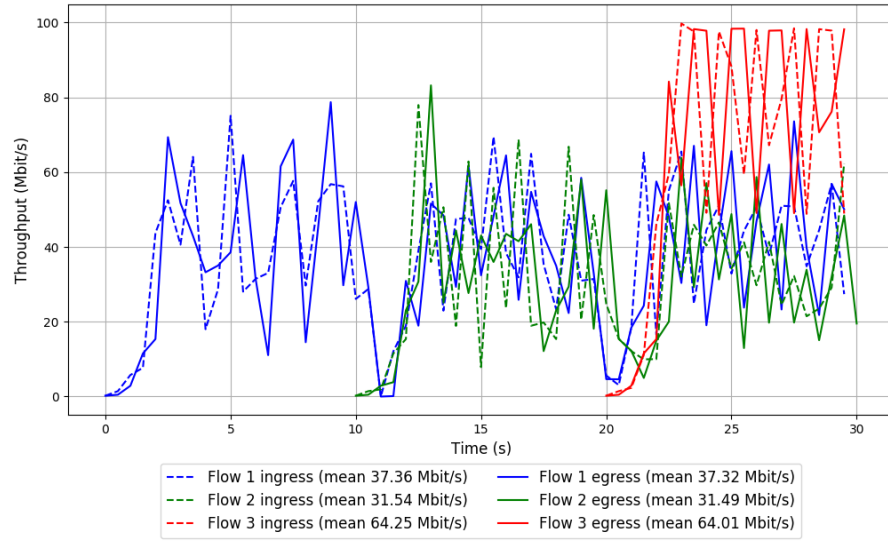
-- Flow 3:

Average throughput: 64.01 Mbit/s

95th percentile per-packet one-way delay: 176.568 ms

Loss rate: 0.00%

Run 4: Report of TCP BBR — Data Link



Run 5: Statistics of TCP BBR

Start at: 2017-09-19 06:30:17

End at: 2017-09-19 06:30:47

Below is generated by plot.py at 2017-09-19 08:17:07

Datalink statistics

-- Total of 3 flows:

Average throughput: 72.01 Mbit/s

95th percentile per-packet one-way delay: 171.091 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 39.61 Mbit/s

95th percentile per-packet one-way delay: 170.837 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 33.21 Mbit/s

95th percentile per-packet one-way delay: 170.171 ms

Loss rate: 0.00%

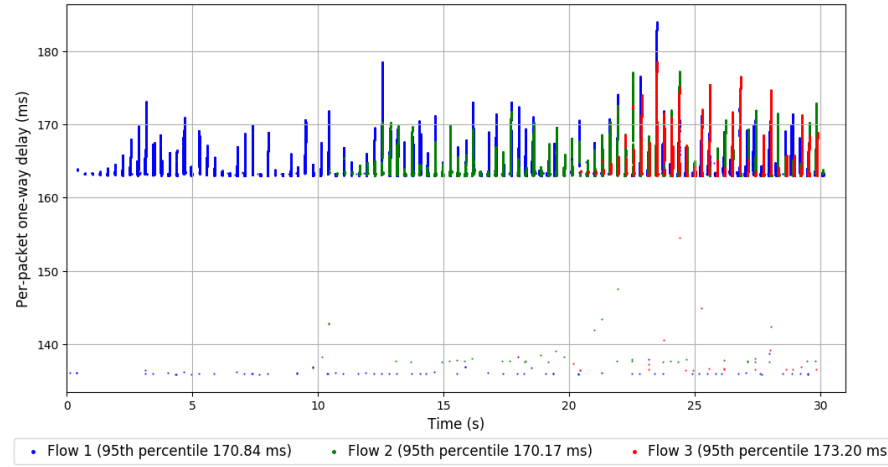
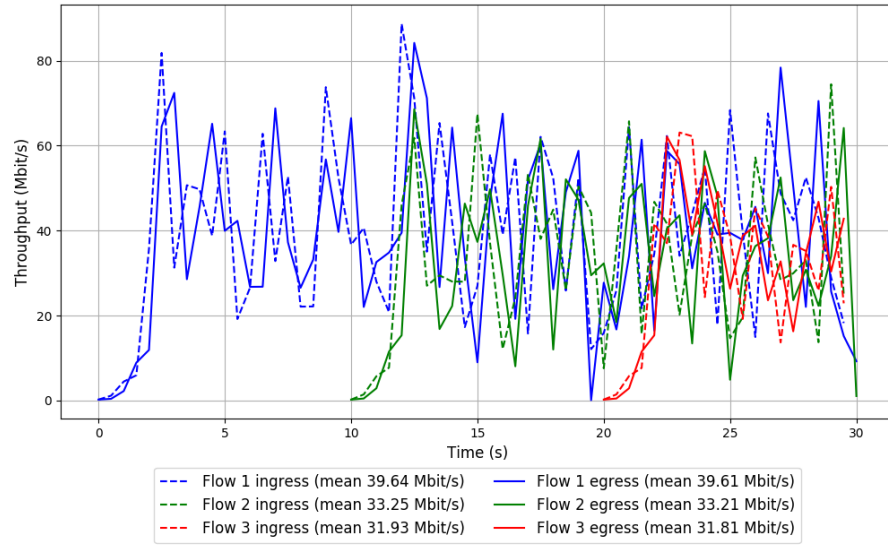
-- Flow 3:

Average throughput: 31.81 Mbit/s

95th percentile per-packet one-way delay: 173.199 ms

Loss rate: 0.07%

Run 5: Report of TCP BBR — Data Link



Run 6: Statistics of TCP BBR

Start at: 2017-09-19 06:40:21

End at: 2017-09-19 06:40:51

Below is generated by plot.py at 2017-09-19 08:17:07

Datalink statistics

-- Total of 3 flows:

Average throughput: 69.79 Mbit/s

95th percentile per-packet one-way delay: 172.020 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 37.14 Mbit/s

95th percentile per-packet one-way delay: 173.010 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 35.48 Mbit/s

95th percentile per-packet one-way delay: 170.963 ms

Loss rate: 0.00%

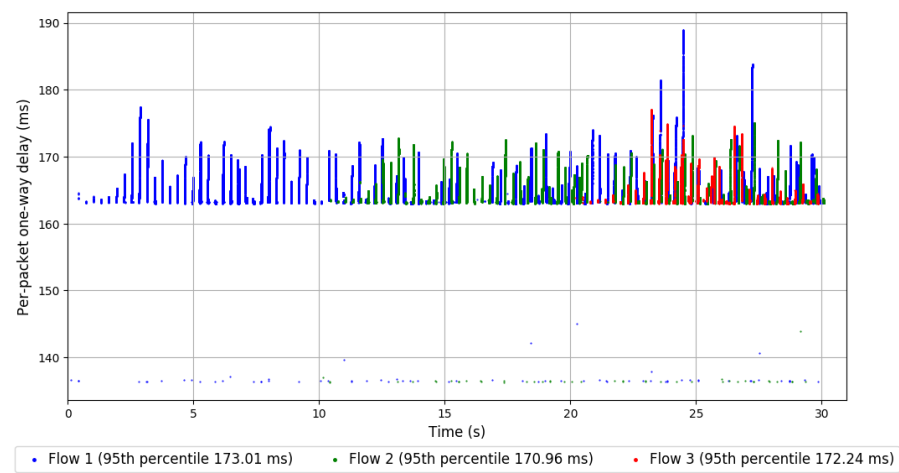
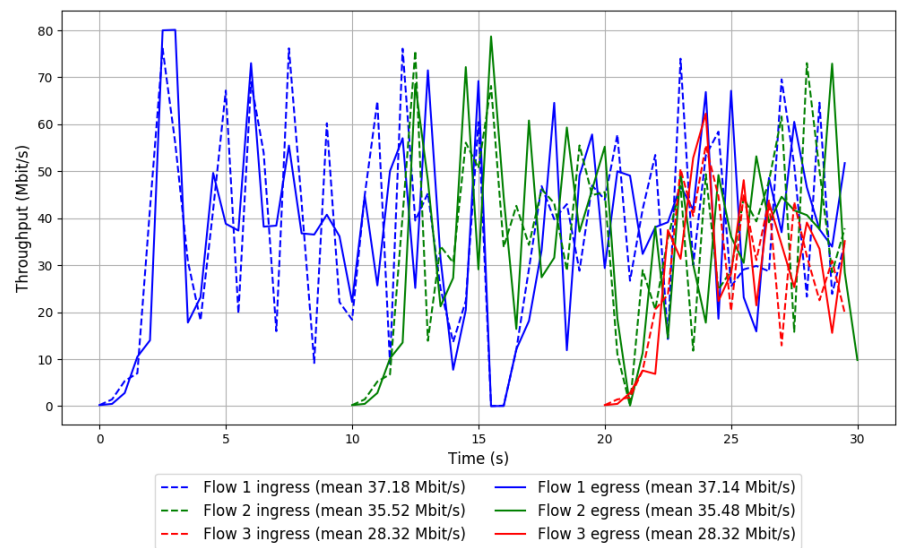
-- Flow 3:

Average throughput: 28.32 Mbit/s

95th percentile per-packet one-way delay: 172.244 ms

Loss rate: 0.00%

Run 6: Report of TCP BBR — Data Link



Run 7: Statistics of TCP BBR

Start at: 2017-09-19 06:49:56

End at: 2017-09-19 06:50:26

Below is generated by plot.py at 2017-09-19 08:17:07

Datalink statistics

-- Total of 3 flows:

Average throughput: 64.64 Mbit/s

95th percentile per-packet one-way delay: 170.937 ms

Loss rate: 0.15%

-- Flow 1:

Average throughput: 35.76 Mbit/s

95th percentile per-packet one-way delay: 171.534 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 28.65 Mbit/s

95th percentile per-packet one-way delay: 170.084 ms

Loss rate: 0.42%

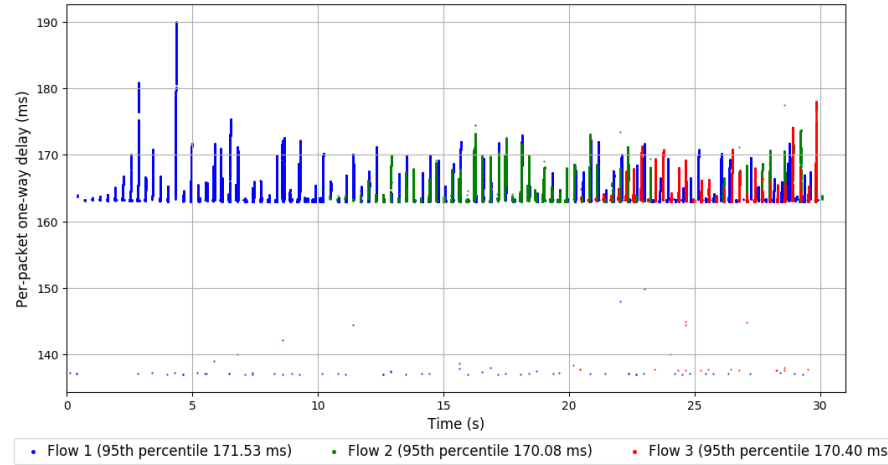
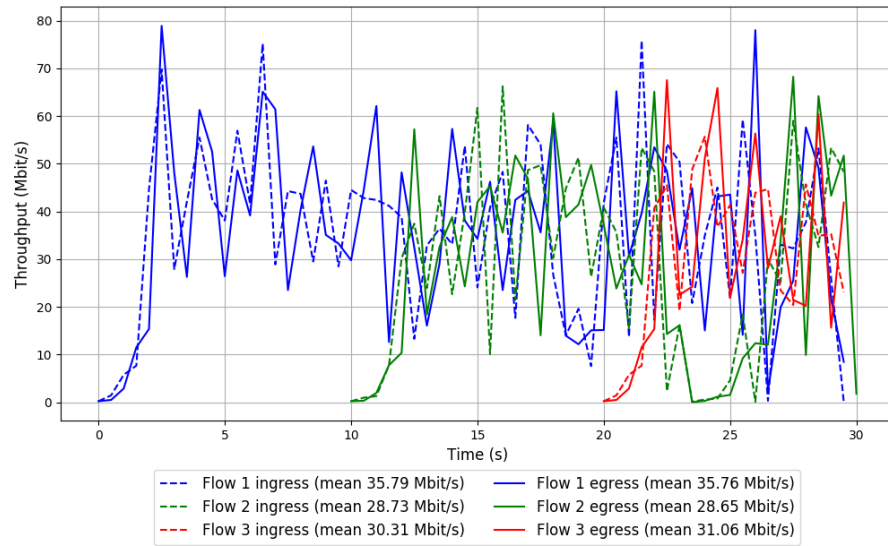
-- Flow 3:

Average throughput: 31.06 Mbit/s

95th percentile per-packet one-way delay: 170.402 ms

Loss rate: 0.14%

Run 7: Report of TCP BBR — Data Link



Run 8: Statistics of TCP BBR

Start at: 2017-09-19 06:59:33

End at: 2017-09-19 07:00:03

Below is generated by plot.py at 2017-09-19 08:17:07

Datalink statistics

-- Total of 3 flows:

Average throughput: 74.21 Mbit/s

95th percentile per-packet one-way delay: 172.101 ms

Loss rate: 0.09%

-- Flow 1:

Average throughput: 37.38 Mbit/s

95th percentile per-packet one-way delay: 172.751 ms

Loss rate: 0.19%

-- Flow 2:

Average throughput: 40.18 Mbit/s

95th percentile per-packet one-way delay: 171.780 ms

Loss rate: 0.00%

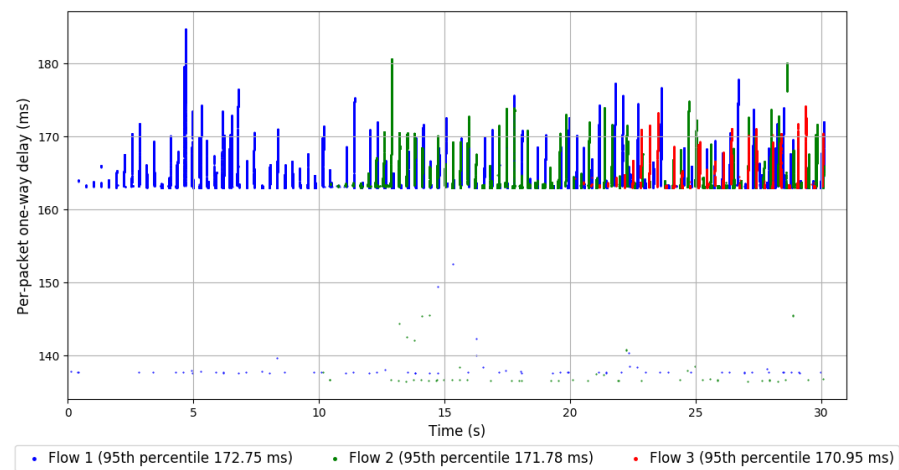
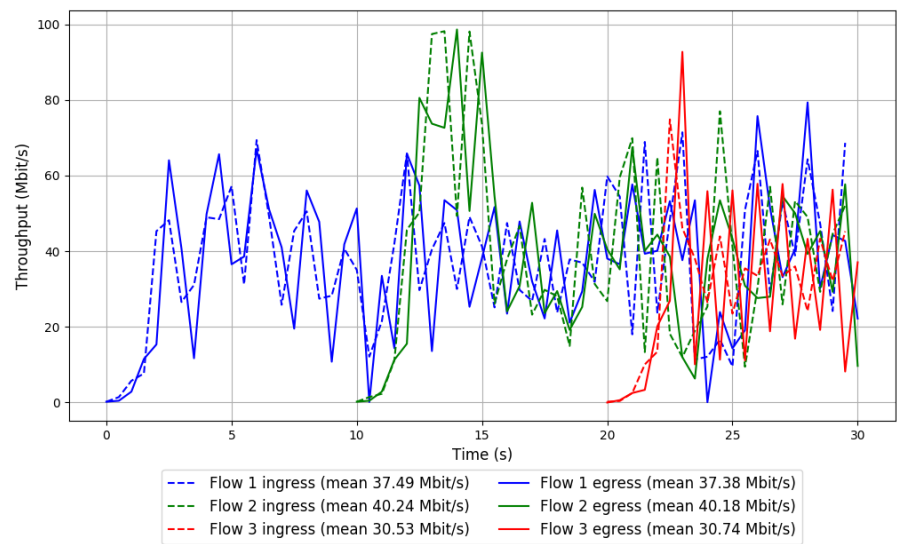
-- Flow 3:

Average throughput: 30.74 Mbit/s

95th percentile per-packet one-way delay: 170.947 ms

Loss rate: 0.00%

Run 8: Report of TCP BBR — Data Link



Run 9: Statistics of TCP BBR

Start at: 2017-09-19 07:08:57

End at: 2017-09-19 07:09:27

Below is generated by plot.py at 2017-09-19 08:18:15

Datalink statistics

-- Total of 3 flows:

Average throughput: 72.41 Mbit/s

95th percentile per-packet one-way delay: 170.440 ms

Loss rate: 0.10%

-- Flow 1:

Average throughput: 34.73 Mbit/s

95th percentile per-packet one-way delay: 170.809 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 39.10 Mbit/s

95th percentile per-packet one-way delay: 170.680 ms

Loss rate: 0.00%

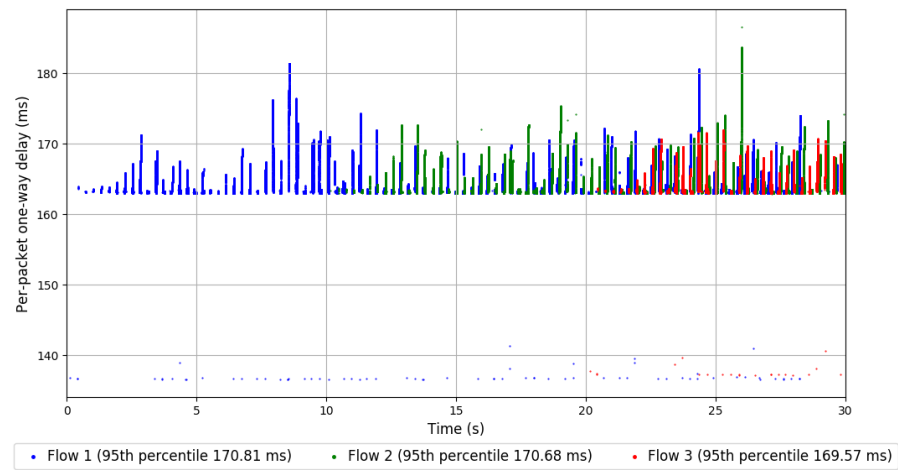
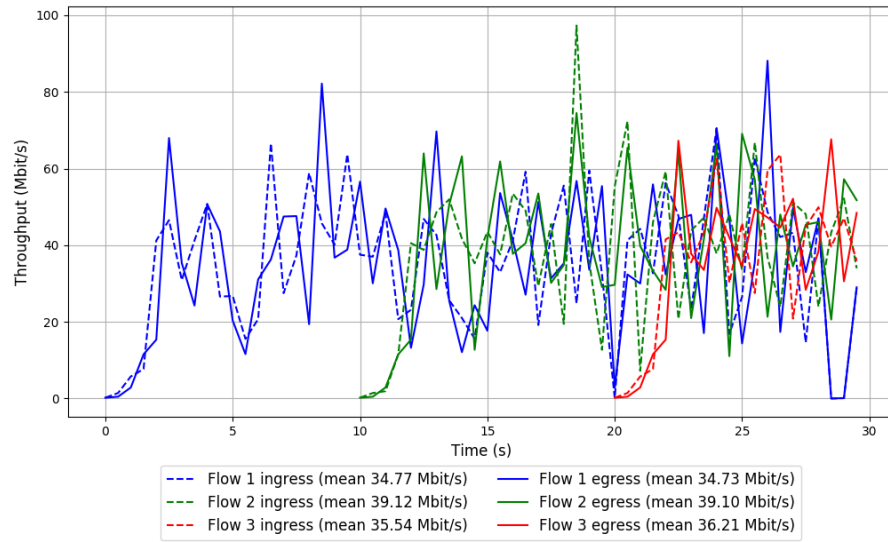
-- Flow 3:

Average throughput: 36.21 Mbit/s

95th percentile per-packet one-way delay: 169.570 ms

Loss rate: 0.56%

Run 9: Report of TCP BBR — Data Link



Run 10: Statistics of TCP BBR

Start at: 2017-09-19 07:18:37

End at: 2017-09-19 07:19:07

Below is generated by plot.py at 2017-09-19 08:18:15

Datalink statistics

-- Total of 3 flows:

Average throughput: 67.04 Mbit/s

95th percentile per-packet one-way delay: 171.629 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 35.50 Mbit/s

95th percentile per-packet one-way delay: 172.165 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 31.01 Mbit/s

95th percentile per-packet one-way delay: 171.046 ms

Loss rate: 0.00%

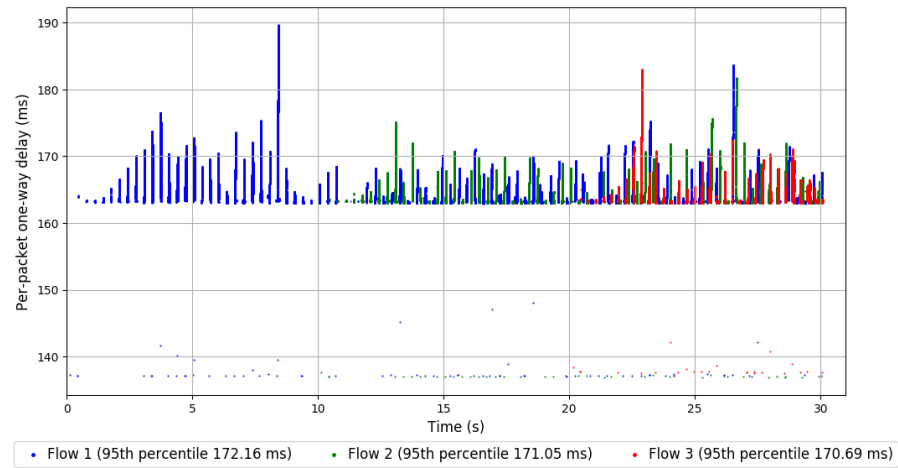
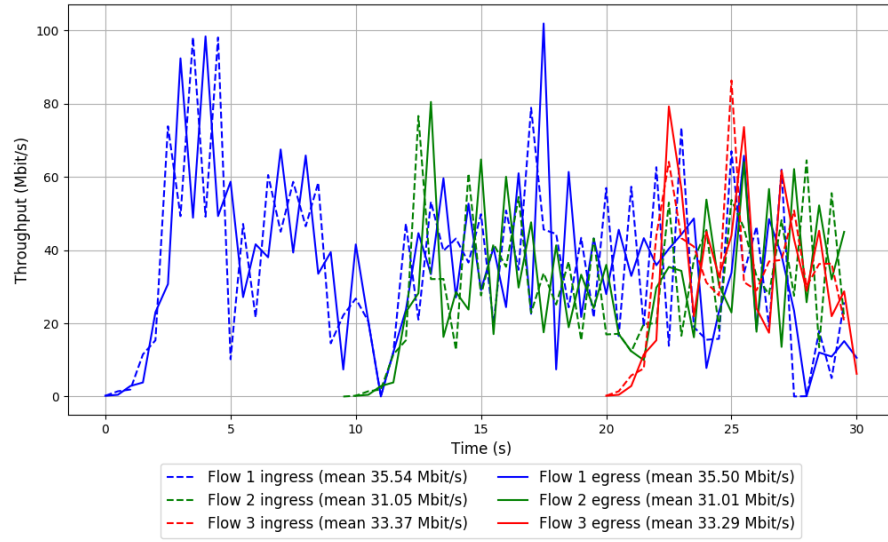
-- Flow 3:

Average throughput: 33.29 Mbit/s

95th percentile per-packet one-way delay: 170.686 ms

Loss rate: 0.00%

Run 10: Report of TCP BBR — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2017-09-19 05:45:37

End at: 2017-09-19 05:46:07

Below is generated by plot.py at 2017-09-19 08:18:48

Datalink statistics

-- Total of 3 flows:

Average throughput: 96.18 Mbit/s

95th percentile per-packet one-way delay: 142.483 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 47.54 Mbit/s

95th percentile per-packet one-way delay: 142.610 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 58.17 Mbit/s

95th percentile per-packet one-way delay: 141.827 ms

Loss rate: 0.00%

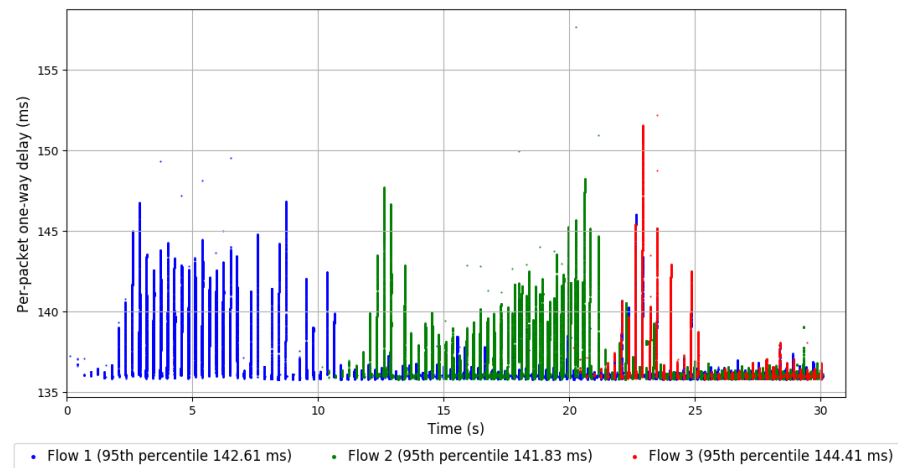
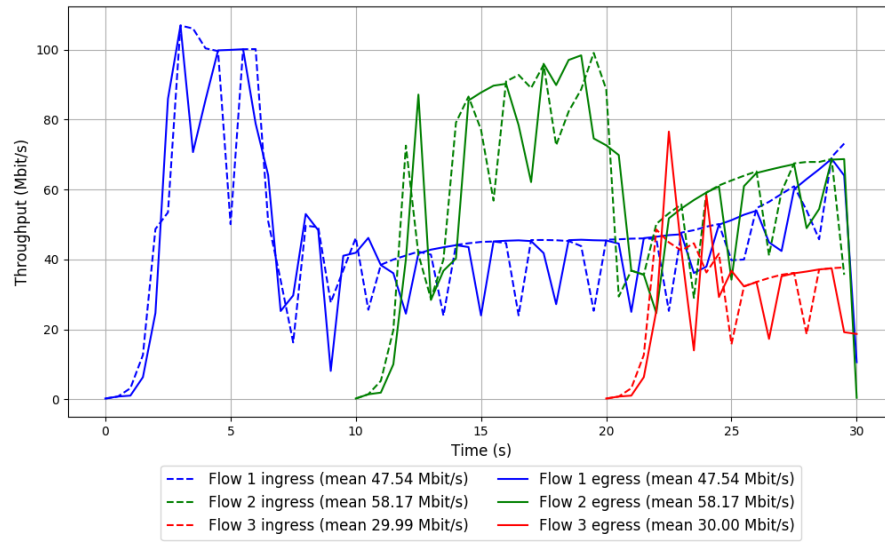
-- Flow 3:

Average throughput: 30.00 Mbit/s

95th percentile per-packet one-way delay: 144.406 ms

Loss rate: 0.00%

Run 1: Report of TCP Cubic — Data Link



Run 2: Statistics of TCP Cubic

Start at: 2017-09-19 05:55:46

End at: 2017-09-19 05:56:16

Below is generated by plot.py at 2017-09-19 08:18:48

Datalink statistics

-- Total of 3 flows:

Average throughput: 86.25 Mbit/s

95th percentile per-packet one-way delay: 140.398 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 47.14 Mbit/s

95th percentile per-packet one-way delay: 138.382 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 41.44 Mbit/s

95th percentile per-packet one-way delay: 140.107 ms

Loss rate: 0.00%

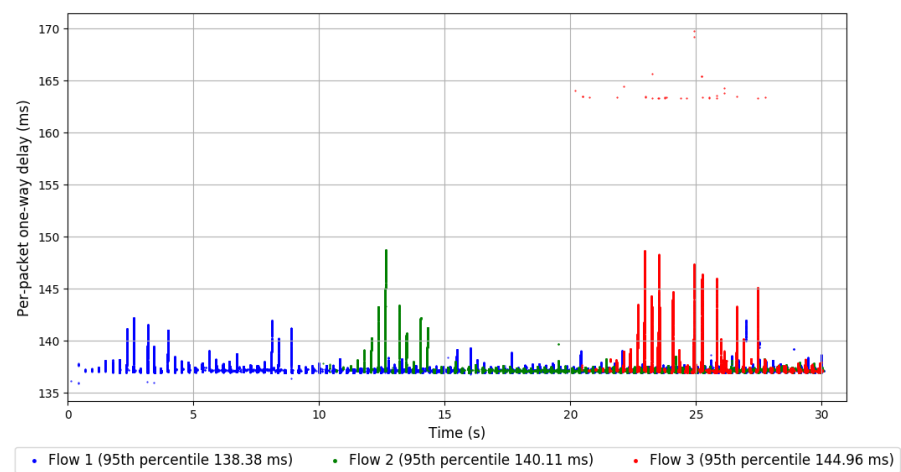
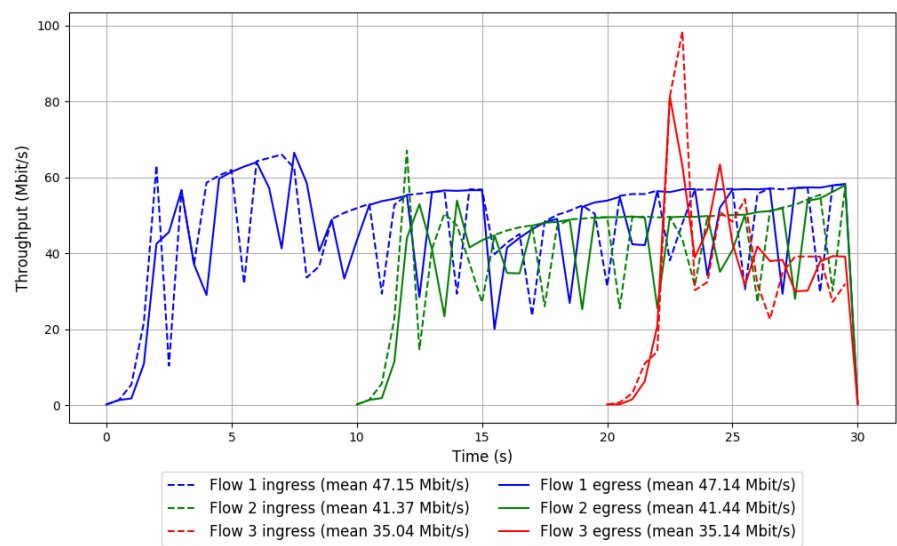
-- Flow 3:

Average throughput: 35.14 Mbit/s

95th percentile per-packet one-way delay: 144.956 ms

Loss rate: 0.00%

Run 2: Report of TCP Cubic — Data Link



Run 3: Statistics of TCP Cubic

Start at: 2017-09-19 06:06:35

End at: 2017-09-19 06:07:05

Below is generated by plot.py at 2017-09-19 08:18:48

Datalink statistics

-- Total of 3 flows:

Average throughput: 77.58 Mbit/s

95th percentile per-packet one-way delay: 142.037 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 49.64 Mbit/s

95th percentile per-packet one-way delay: 142.366 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 41.20 Mbit/s

95th percentile per-packet one-way delay: 141.465 ms

Loss rate: 0.00%

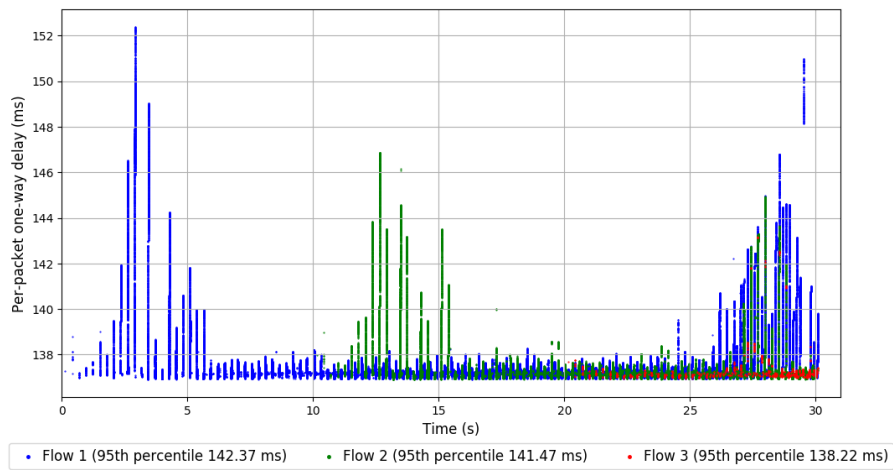
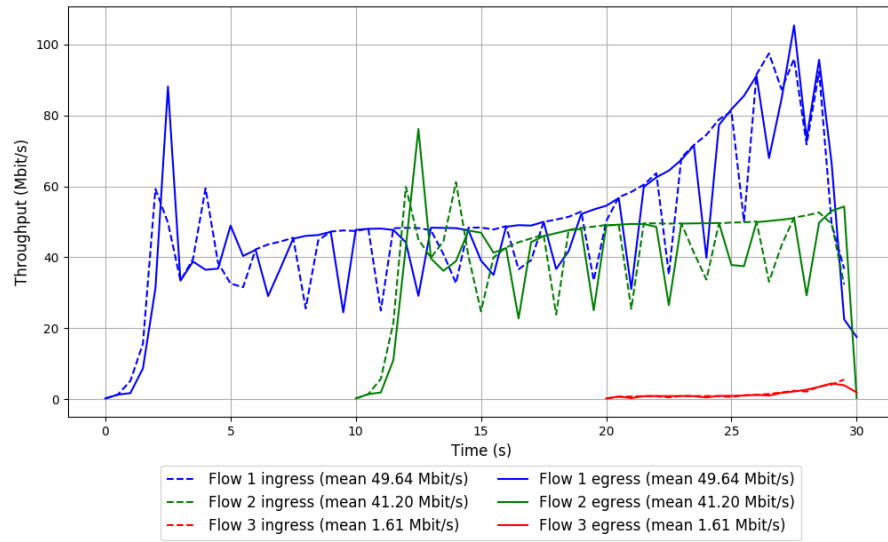
-- Flow 3:

Average throughput: 1.61 Mbit/s

95th percentile per-packet one-way delay: 138.221 ms

Loss rate: 0.08%

Run 3: Report of TCP Cubic — Data Link



Run 4: Statistics of TCP Cubic

Start at: 2017-09-19 06:17:33

End at: 2017-09-19 06:18:03

Below is generated by plot.py at 2017-09-19 08:18:48

Datalink statistics

-- Total of 3 flows:

Average throughput: 88.08 Mbit/s

95th percentile per-packet one-way delay: 168.665 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 47.07 Mbit/s

95th percentile per-packet one-way delay: 168.713 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 59.63 Mbit/s

95th percentile per-packet one-way delay: 168.572 ms

Loss rate: 0.00%

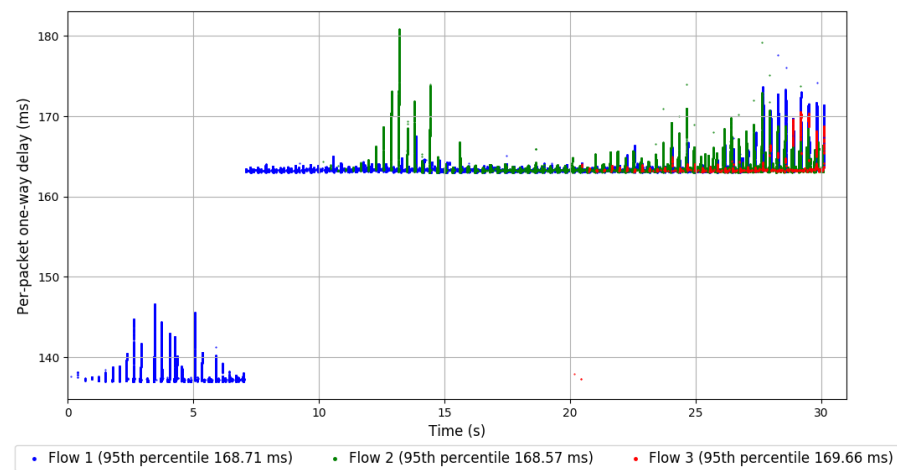
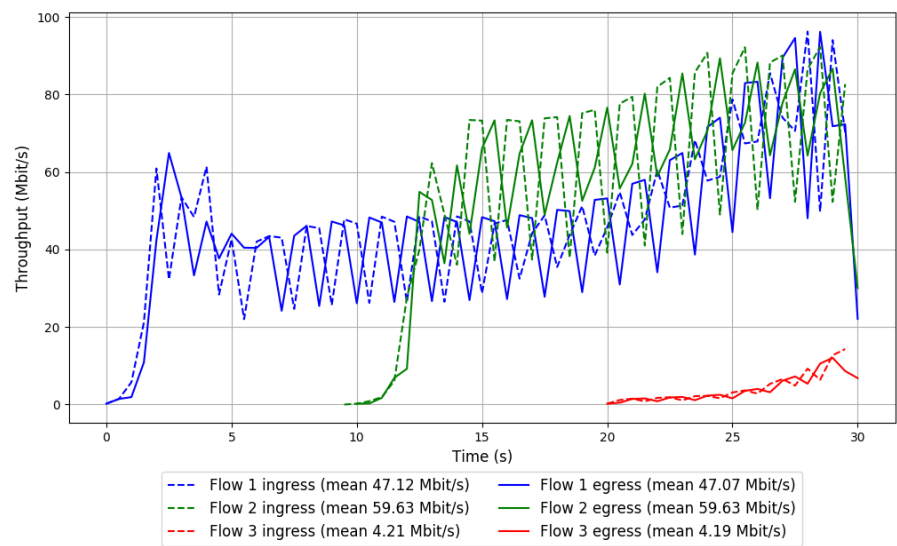
-- Flow 3:

Average throughput: 4.19 Mbit/s

95th percentile per-packet one-way delay: 169.656 ms

Loss rate: 0.00%

Run 4: Report of TCP Cubic — Data Link



Run 5: Statistics of TCP Cubic

Start at: 2017-09-19 06:28:06

End at: 2017-09-19 06:28:36

Below is generated by plot.py at 2017-09-19 08:18:48

Datalink statistics

-- Total of 3 flows:

Average throughput: 66.07 Mbit/s

95th percentile per-packet one-way delay: 165.712 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 38.26 Mbit/s

95th percentile per-packet one-way delay: 165.639 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 39.84 Mbit/s

95th percentile per-packet one-way delay: 166.154 ms

Loss rate: 0.00%

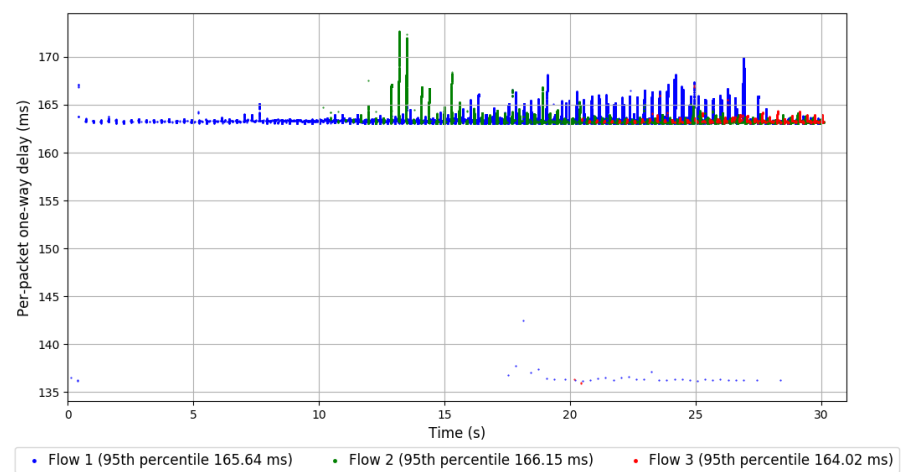
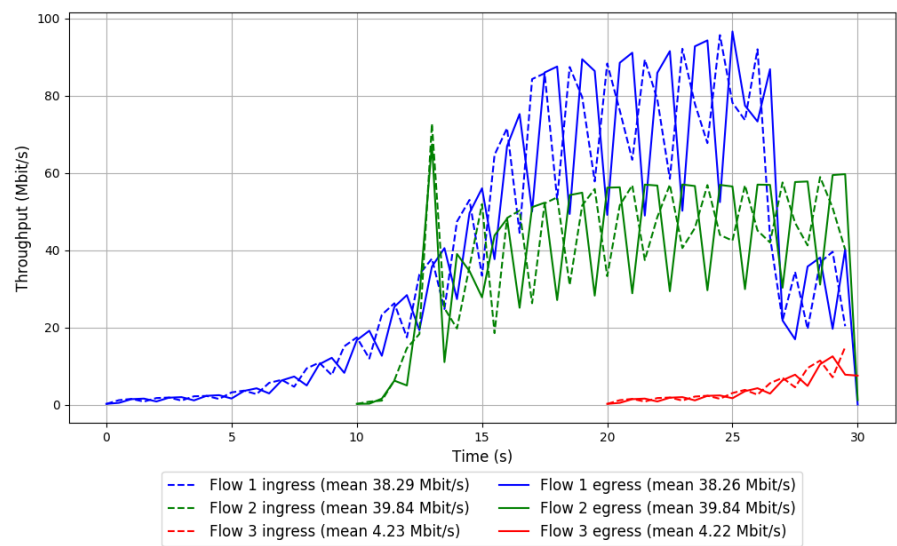
-- Flow 3:

Average throughput: 4.22 Mbit/s

95th percentile per-packet one-way delay: 164.016 ms

Loss rate: 0.00%

Run 5: Report of TCP Cubic — Data Link



Run 6: Statistics of TCP Cubic

Start at: 2017-09-19 06:38:10

End at: 2017-09-19 06:38:40

Below is generated by plot.py at 2017-09-19 08:18:48

Datalink statistics

-- Total of 3 flows:

Average throughput: 30.35 Mbit/s

95th percentile per-packet one-way delay: 169.687 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 19.58 Mbit/s

95th percentile per-packet one-way delay: 170.881 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 14.92 Mbit/s

95th percentile per-packet one-way delay: 165.302 ms

Loss rate: 0.00%

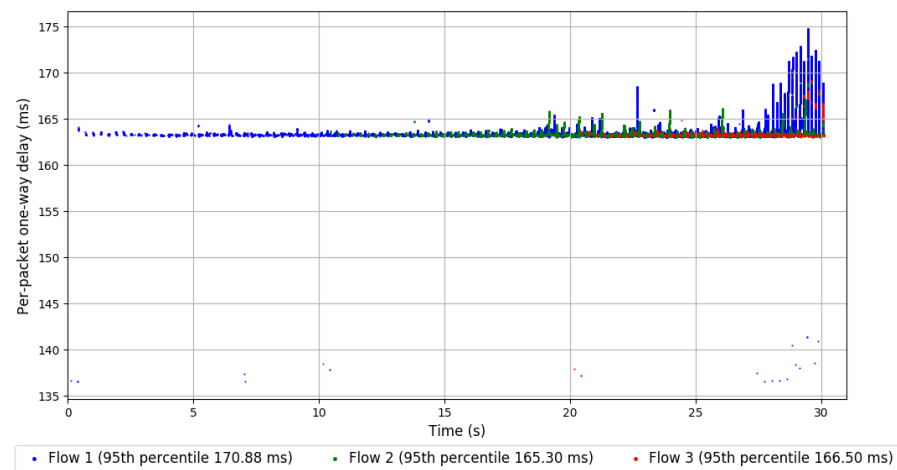
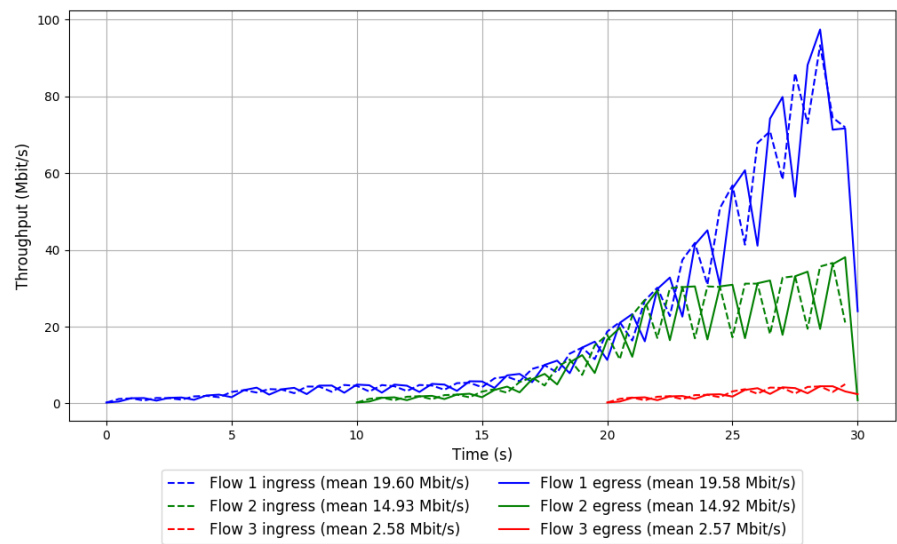
-- Flow 3:

Average throughput: 2.57 Mbit/s

95th percentile per-packet one-way delay: 166.505 ms

Loss rate: 0.00%

Run 6: Report of TCP Cubic — Data Link



Run 7: Statistics of TCP Cubic

Start at: 2017-09-19 06:47:44

End at: 2017-09-19 06:48:14

Below is generated by plot.py at 2017-09-19 08:18:48

Datalink statistics

-- Total of 3 flows:

Average throughput: 46.95 Mbit/s

95th percentile per-packet one-way delay: 165.377 ms

Loss rate: 0.05%

-- Flow 1:

Average throughput: 31.72 Mbit/s

95th percentile per-packet one-way delay: 165.924 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 20.94 Mbit/s

95th percentile per-packet one-way delay: 165.097 ms

Loss rate: 0.13%

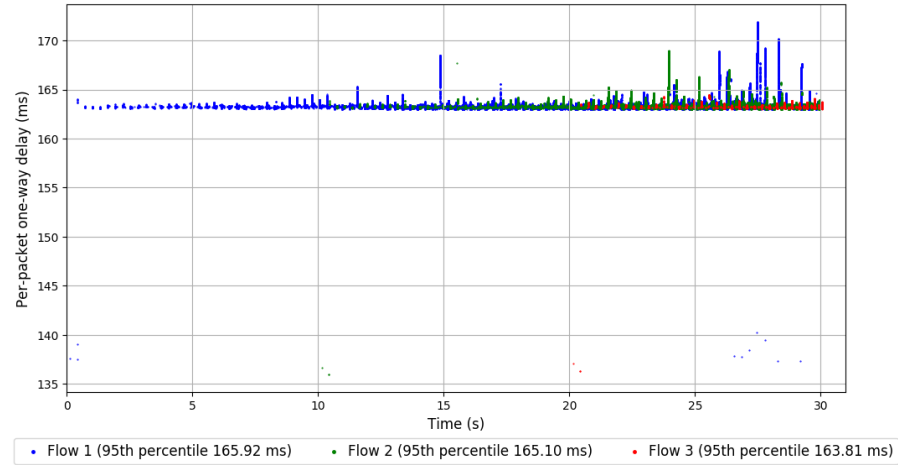
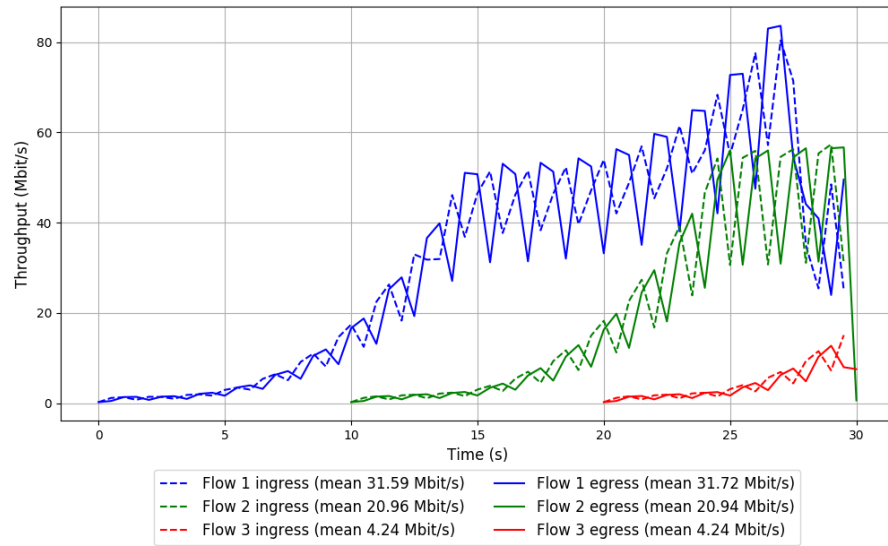
-- Flow 3:

Average throughput: 4.24 Mbit/s

95th percentile per-packet one-way delay: 163.809 ms

Loss rate: 0.11%

Run 7: Report of TCP Cubic — Data Link



Run 8: Statistics of TCP Cubic

Start at: 2017-09-19 06:57:17

End at: 2017-09-19 06:57:47

Below is generated by plot.py at 2017-09-19 08:19:20

Datalink statistics

-- Total of 3 flows:

Average throughput: 63.84 Mbit/s

95th percentile per-packet one-way delay: 164.191 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 29.04 Mbit/s

95th percentile per-packet one-way delay: 164.158 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 50.28 Mbit/s

95th percentile per-packet one-way delay: 164.241 ms

Loss rate: 0.00%

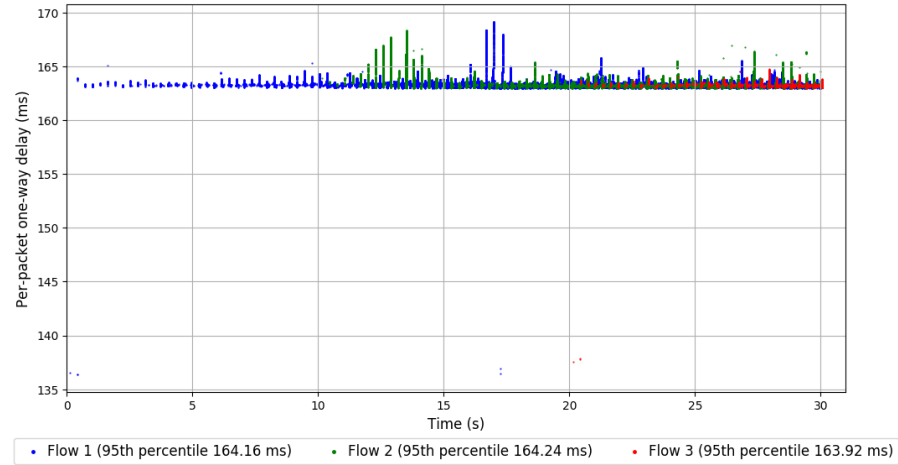
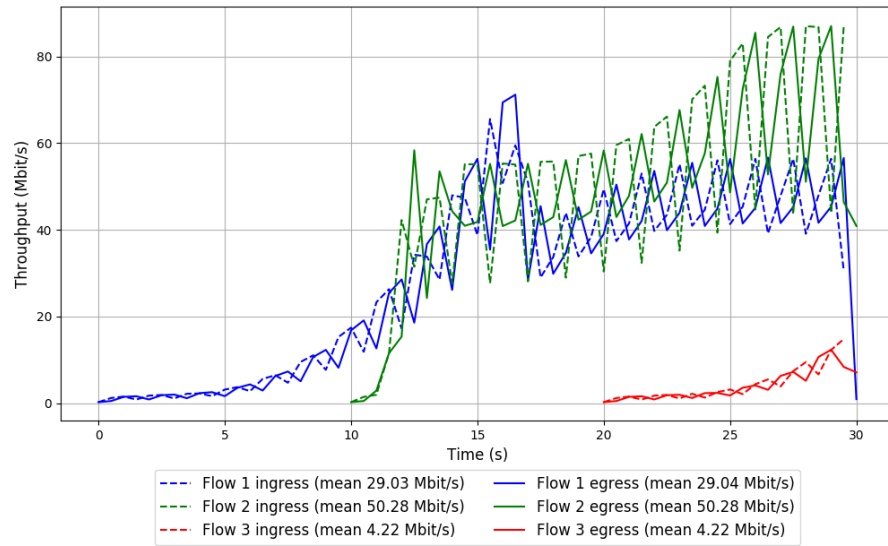
-- Flow 3:

Average throughput: 4.22 Mbit/s

95th percentile per-packet one-way delay: 163.917 ms

Loss rate: 0.17%

Run 8: Report of TCP Cubic — Data Link



Run 9: Statistics of TCP Cubic

Start at: 2017-09-19 07:06:54

End at: 2017-09-19 07:07:24

Below is generated by plot.py at 2017-09-19 08:19:26

Datalink statistics

-- Total of 3 flows:

Average throughput: 67.05 Mbit/s

95th percentile per-packet one-way delay: 172.404 ms

Loss rate: 0.82%

-- Flow 1:

Average throughput: 44.68 Mbit/s

95th percentile per-packet one-way delay: 172.899 ms

Loss rate: 0.63%

-- Flow 2:

Average throughput: 32.89 Mbit/s

95th percentile per-packet one-way delay: 168.066 ms

Loss rate: 1.19%

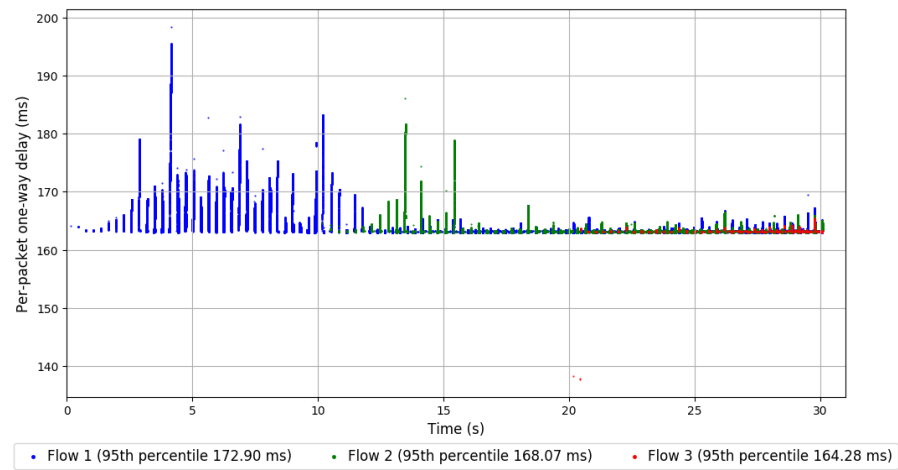
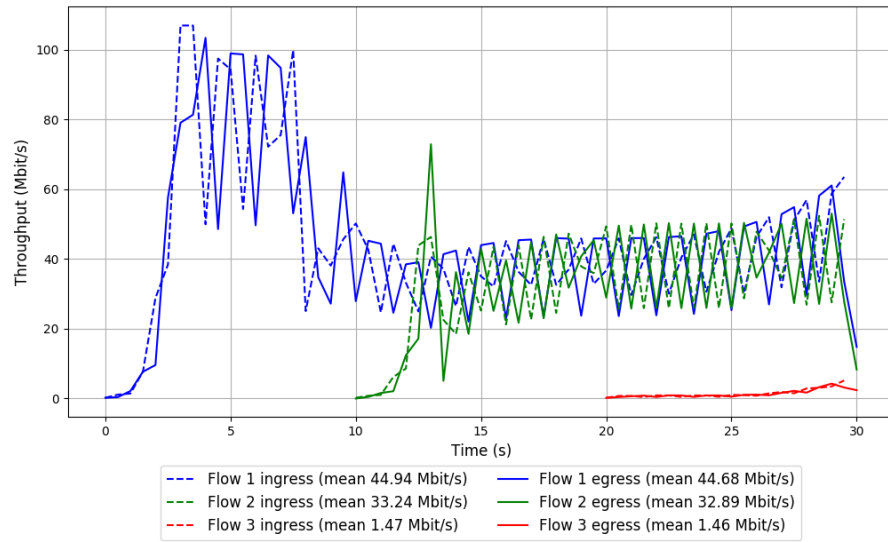
-- Flow 3:

Average throughput: 1.46 Mbit/s

95th percentile per-packet one-way delay: 164.276 ms

Loss rate: 0.41%

Run 9: Report of TCP Cubic — Data Link



Run 10: Statistics of TCP Cubic

Start at: 2017-09-19 07:16:30

End at: 2017-09-19 07:17:00

Below is generated by plot.py at 2017-09-19 08:19:26

Datalink statistics

-- Total of 3 flows:

Average throughput: 45.88 Mbit/s

95th percentile per-packet one-way delay: 168.263 ms

Loss rate: 0.03%

-- Flow 1:

Average throughput: 28.06 Mbit/s

95th percentile per-packet one-way delay: 168.957 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 24.92 Mbit/s

95th percentile per-packet one-way delay: 166.182 ms

Loss rate: 0.05%

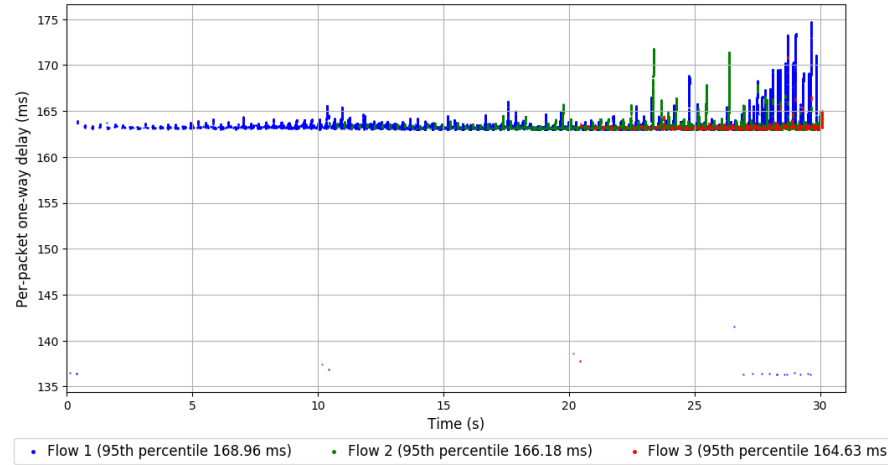
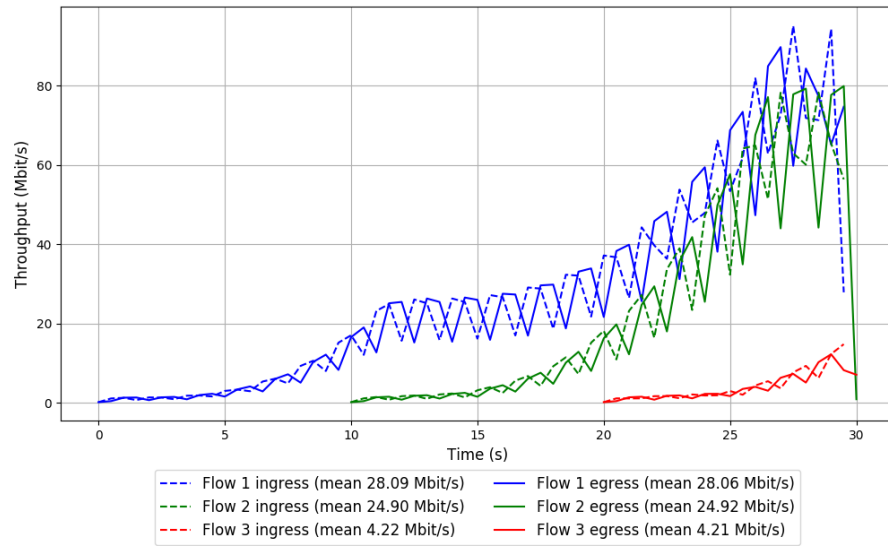
-- Flow 3:

Average throughput: 4.21 Mbit/s

95th percentile per-packet one-way delay: 164.627 ms

Loss rate: 0.34%

Run 10: Report of TCP Cubic — Data Link

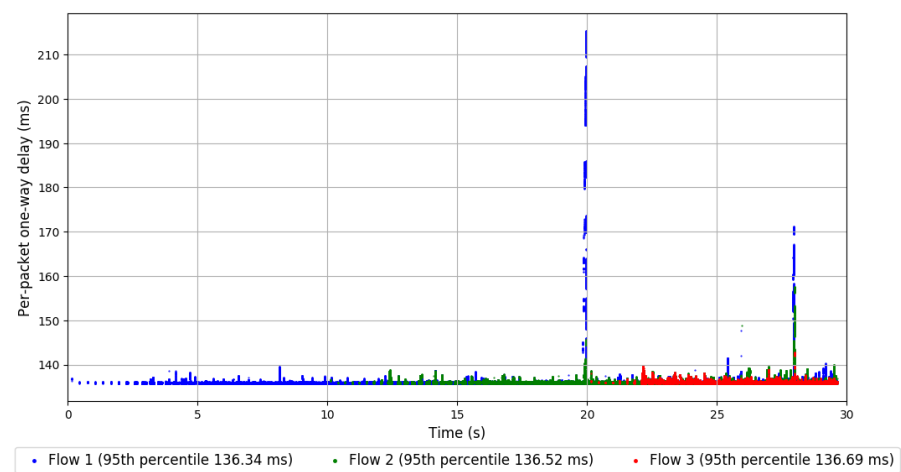
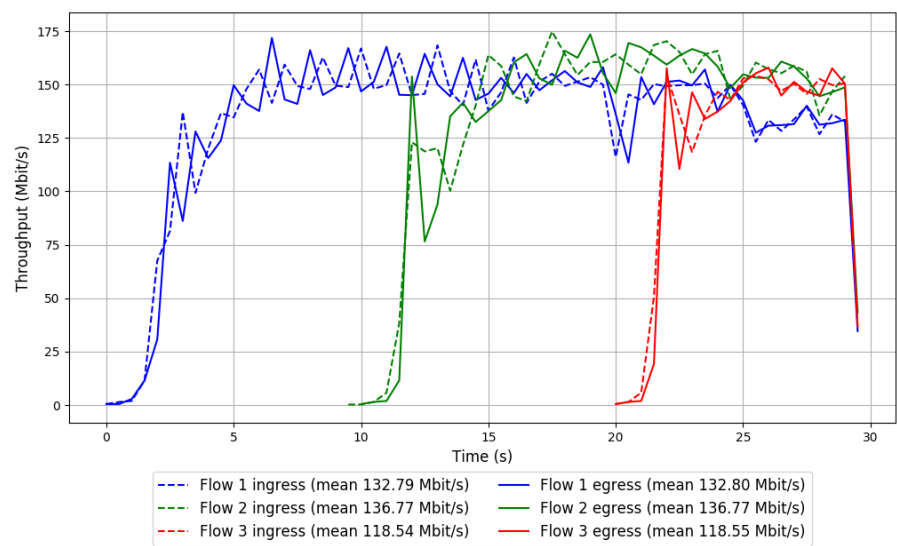


```
Run 1: Statistics of Indigo

Start at: 2017-09-19 05:44:23
End at: 2017-09-19 05:44:53

# Below is generated by plot.py at 2017-09-19 08:23:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 261.36 Mbit/s
95th percentile per-packet one-way delay: 136.470 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 132.80 Mbit/s
95th percentile per-packet one-way delay: 136.340 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 136.77 Mbit/s
95th percentile per-packet one-way delay: 136.522 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 118.55 Mbit/s
95th percentile per-packet one-way delay: 136.689 ms
Loss rate: 0.00%
```

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2017-09-19 05:54:22

End at: 2017-09-19 05:54:52

Below is generated by plot.py at 2017-09-19 08:23:22

Datalink statistics

-- Total of 3 flows:

Average throughput: 263.88 Mbit/s

95th percentile per-packet one-way delay: 137.630 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 136.65 Mbit/s

95th percentile per-packet one-way delay: 137.388 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 138.25 Mbit/s

95th percentile per-packet one-way delay: 137.830 ms

Loss rate: 0.00%

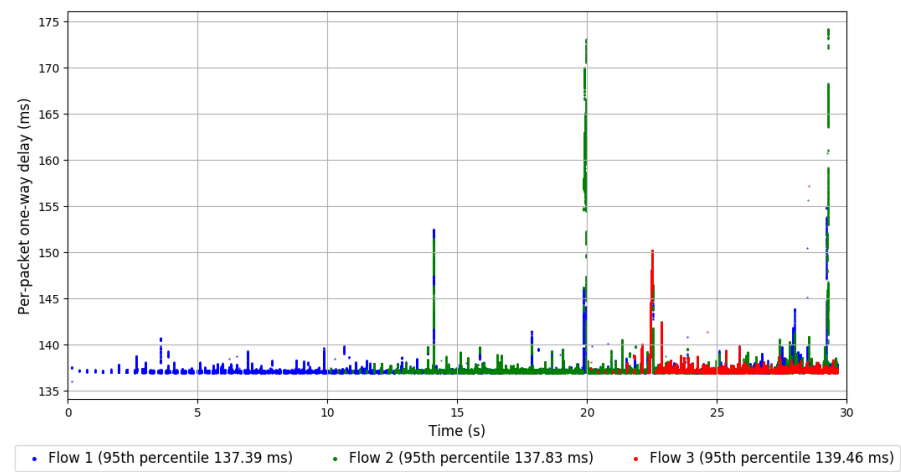
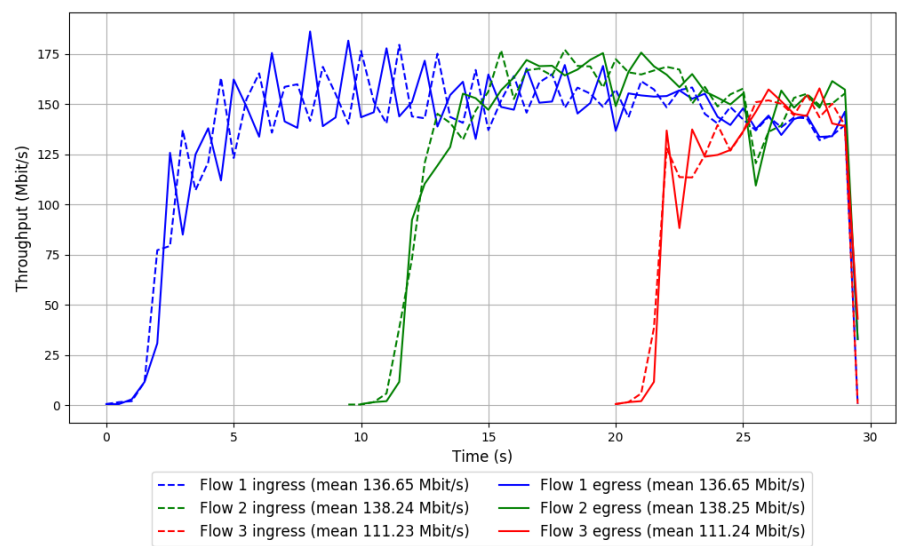
-- Flow 3:

Average throughput: 111.24 Mbit/s

95th percentile per-packet one-way delay: 139.461 ms

Loss rate: 0.00%

Run 2: Report of Indigo — Data Link



Run 3: Statistics of Indigo

Start at: 2017-09-19 06:05:22

End at: 2017-09-19 06:05:52

Below is generated by plot.py at 2017-09-19 08:23:22

Datalink statistics

-- Total of 3 flows:

Average throughput: 231.11 Mbit/s

95th percentile per-packet one-way delay: 137.431 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 114.54 Mbit/s

95th percentile per-packet one-way delay: 137.324 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 124.97 Mbit/s

95th percentile per-packet one-way delay: 137.509 ms

Loss rate: 0.00%

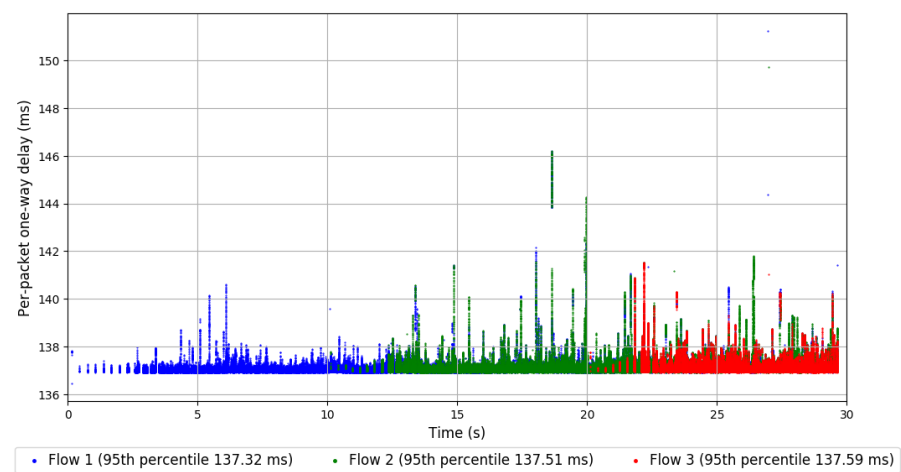
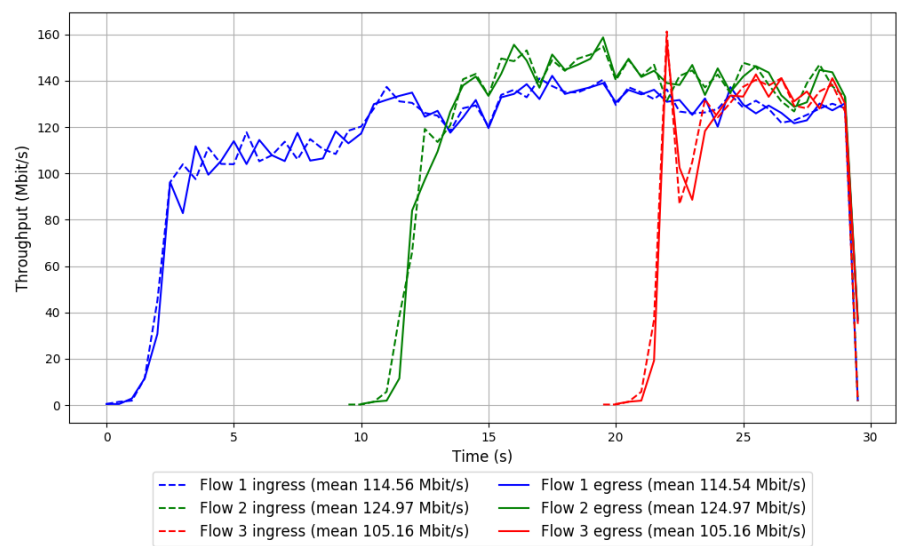
-- Flow 3:

Average throughput: 105.16 Mbit/s

95th percentile per-packet one-way delay: 137.595 ms

Loss rate: 0.00%

Run 3: Report of Indigo — Data Link



Run 4: Statistics of Indigo

Start at: 2017-09-19 06:16:09

End at: 2017-09-19 06:16:39

Below is generated by plot.py at 2017-09-19 08:23:22

Datalink statistics

-- Total of 3 flows:

Average throughput: 259.74 Mbit/s

95th percentile per-packet one-way delay: 137.616 ms

Loss rate: 0.02%

-- Flow 1:

Average throughput: 141.30 Mbit/s

95th percentile per-packet one-way delay: 137.368 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 123.44 Mbit/s

95th percentile per-packet one-way delay: 137.645 ms

Loss rate: 0.02%

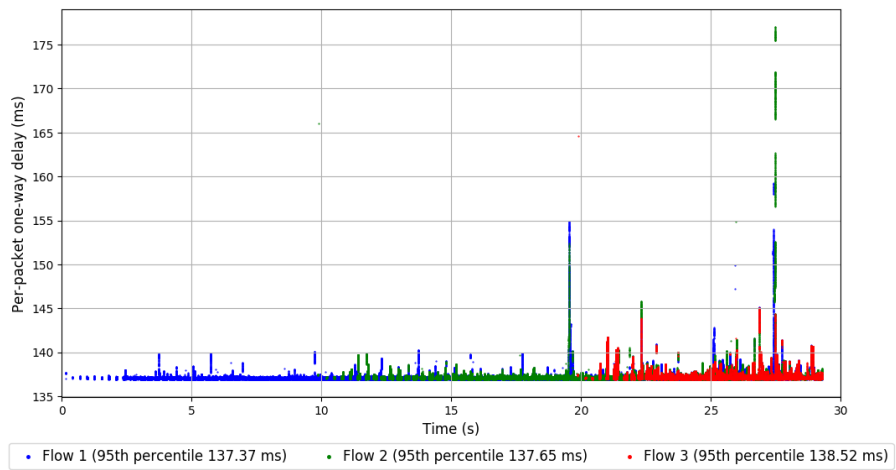
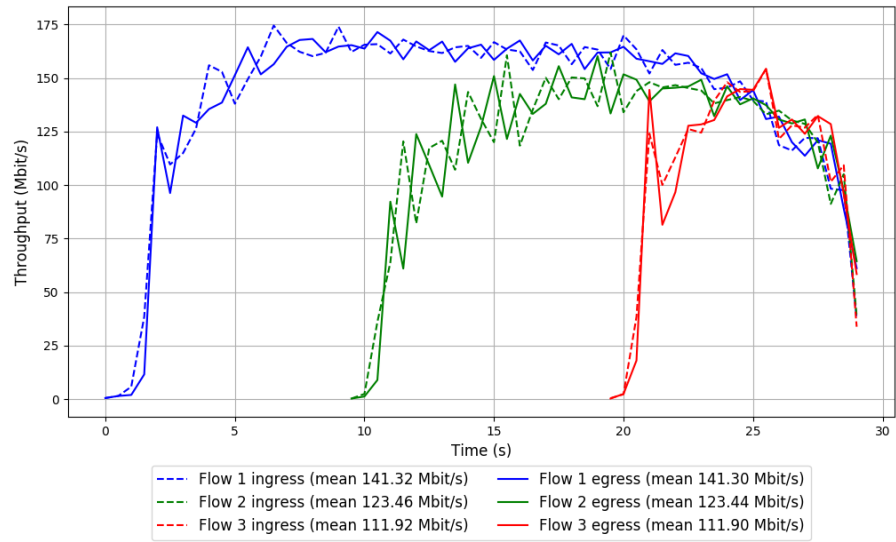
-- Flow 3:

Average throughput: 111.90 Mbit/s

95th percentile per-packet one-way delay: 138.516 ms

Loss rate: 0.03%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2017-09-19 06:26:52

End at: 2017-09-19 06:27:22

Below is generated by plot.py at 2017-09-19 08:23:22

Datalink statistics

-- Total of 3 flows:

Average throughput: 241.69 Mbit/s

95th percentile per-packet one-way delay: 163.569 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 130.08 Mbit/s

95th percentile per-packet one-way delay: 163.410 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 121.13 Mbit/s

95th percentile per-packet one-way delay: 163.624 ms

Loss rate: 0.00%

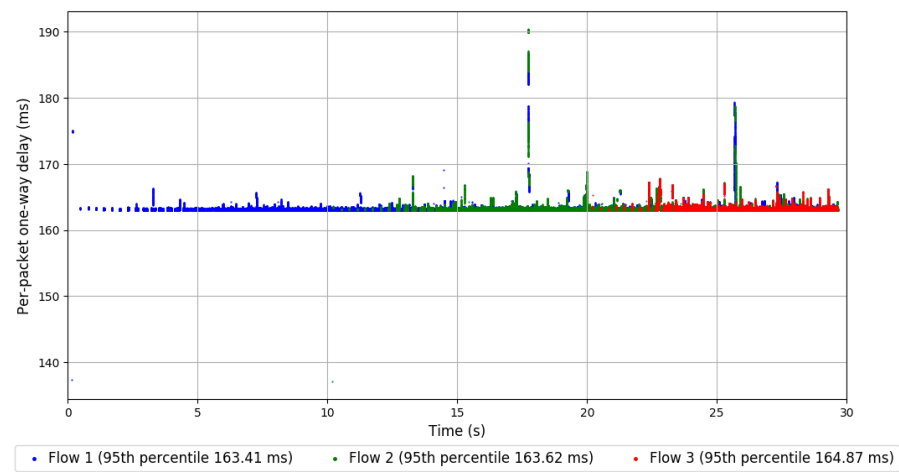
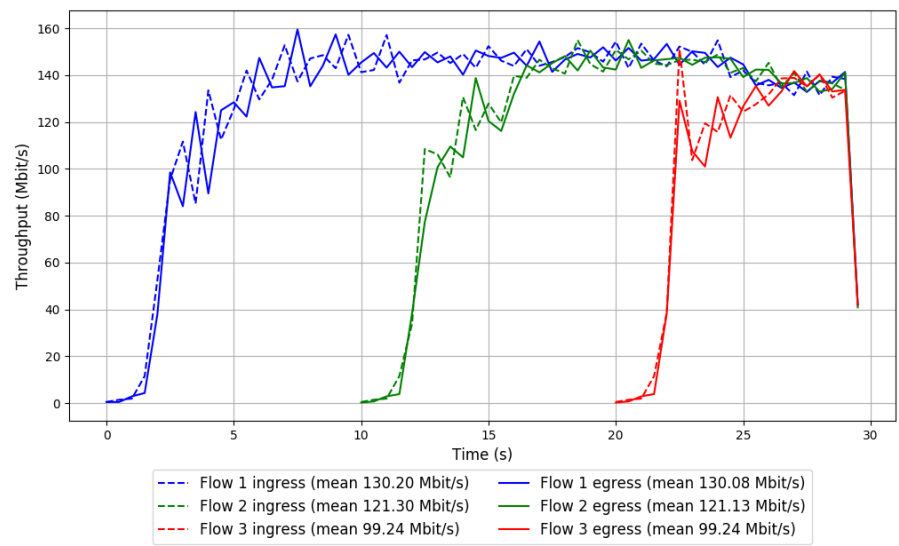
-- Flow 3:

Average throughput: 99.24 Mbit/s

95th percentile per-packet one-way delay: 164.873 ms

Loss rate: 0.00%

Run 5: Report of Indigo — Data Link



Run 6: Statistics of Indigo

Start at: 2017-09-19 06:36:56

End at: 2017-09-19 06:37:26

Below is generated by plot.py at 2017-09-19 08:23:40

Datalink statistics

-- Total of 3 flows:

Average throughput: 245.04 Mbit/s

95th percentile per-packet one-way delay: 164.084 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 131.65 Mbit/s

95th percentile per-packet one-way delay: 163.529 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 121.45 Mbit/s

95th percentile per-packet one-way delay: 165.351 ms

Loss rate: 0.00%

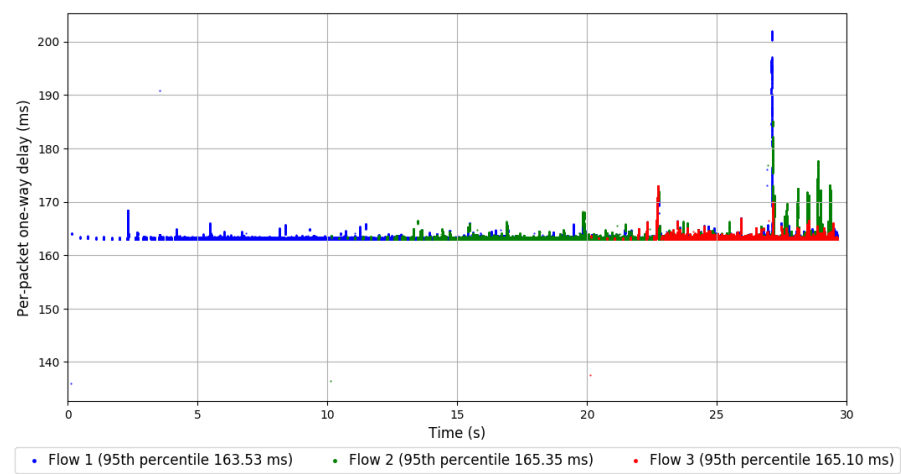
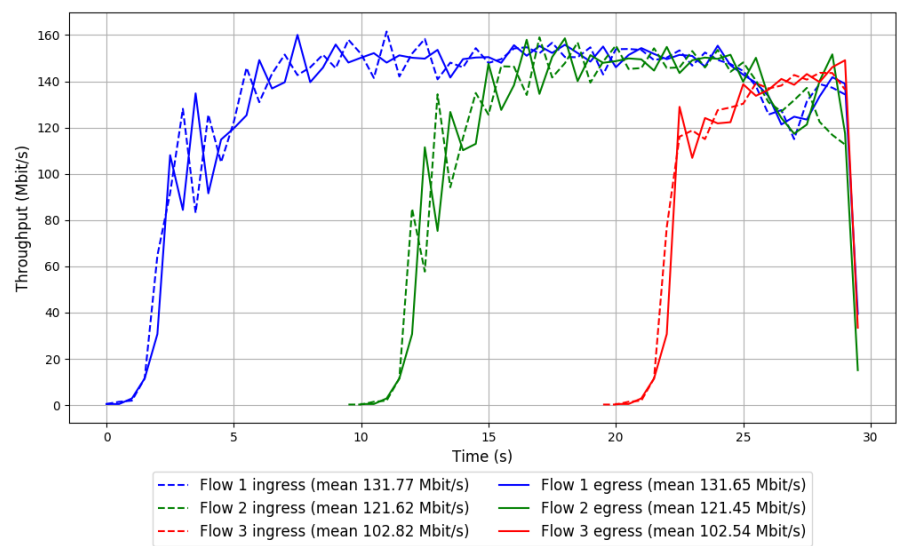
-- Flow 3:

Average throughput: 102.54 Mbit/s

95th percentile per-packet one-way delay: 165.100 ms

Loss rate: 0.00%

Run 6: Report of Indigo — Data Link



Run 7: Statistics of Indigo

Start at: 2017-09-19 06:46:31

End at: 2017-09-19 06:47:01

Below is generated by plot.py at 2017-09-19 08:23:53

Datalink statistics

-- Total of 3 flows:

Average throughput: 247.86 Mbit/s

95th percentile per-packet one-way delay: 163.742 ms

Loss rate: 0.16%

-- Flow 1:

Average throughput: 134.61 Mbit/s

95th percentile per-packet one-way delay: 163.543 ms

Loss rate: 0.08%

-- Flow 2:

Average throughput: 126.62 Mbit/s

95th percentile per-packet one-way delay: 163.727 ms

Loss rate: 0.18%

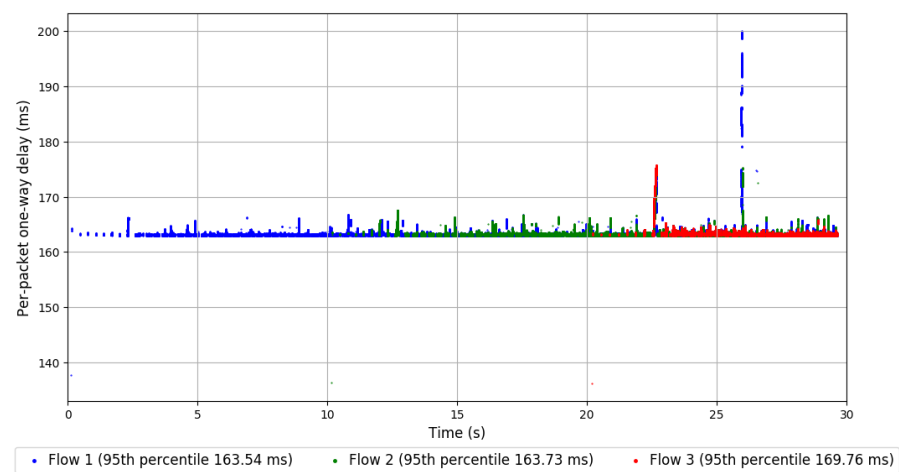
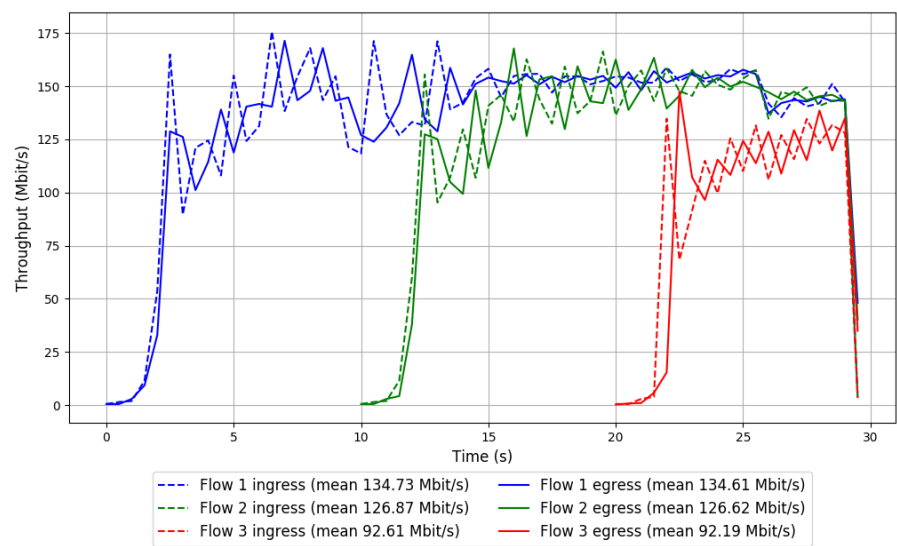
-- Flow 3:

Average throughput: 92.19 Mbit/s

95th percentile per-packet one-way delay: 169.756 ms

Loss rate: 0.42%

Run 7: Report of Indigo — Data Link



Run 8: Statistics of Indigo

Start at: 2017-09-19 06:56:03

End at: 2017-09-19 06:56:33

Below is generated by plot.py at 2017-09-19 08:24:01

Datalink statistics

-- Total of 3 flows:

Average throughput: 246.59 Mbit/s

95th percentile per-packet one-way delay: 163.799 ms

Loss rate: 0.22%

-- Flow 1:

Average throughput: 132.88 Mbit/s

95th percentile per-packet one-way delay: 163.599 ms

Loss rate: 0.19%

-- Flow 2:

Average throughput: 122.95 Mbit/s

95th percentile per-packet one-way delay: 163.829 ms

Loss rate: 0.17%

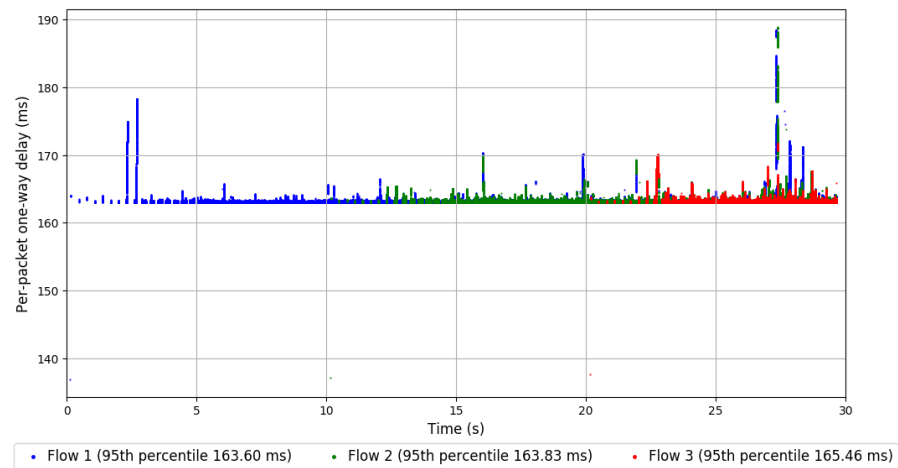
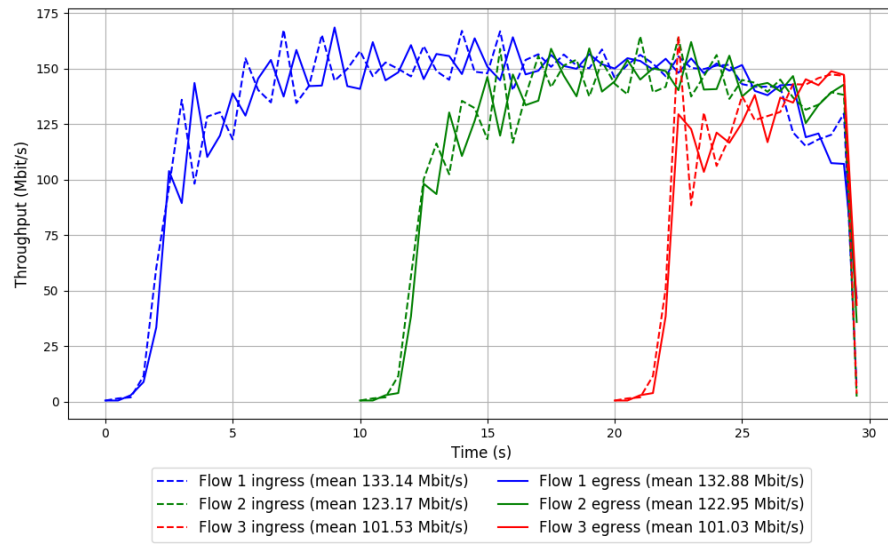
-- Flow 3:

Average throughput: 101.03 Mbit/s

95th percentile per-packet one-way delay: 165.457 ms

Loss rate: 0.43%

Run 8: Report of Indigo — Data Link



Run 9: Statistics of Indigo

Start at: 2017-09-19 07:05:42

End at: 2017-09-19 07:06:12

Below is generated by plot.py at 2017-09-19 08:26:36

Datalink statistics

-- Total of 3 flows:

Average throughput: 240.33 Mbit/s

95th percentile per-packet one-way delay: 163.568 ms

Loss rate: 0.16%

-- Flow 1:

Average throughput: 121.99 Mbit/s

95th percentile per-packet one-way delay: 163.447 ms

Loss rate: 0.08%

-- Flow 2:

Average throughput: 123.15 Mbit/s

95th percentile per-packet one-way delay: 163.581 ms

Loss rate: 0.18%

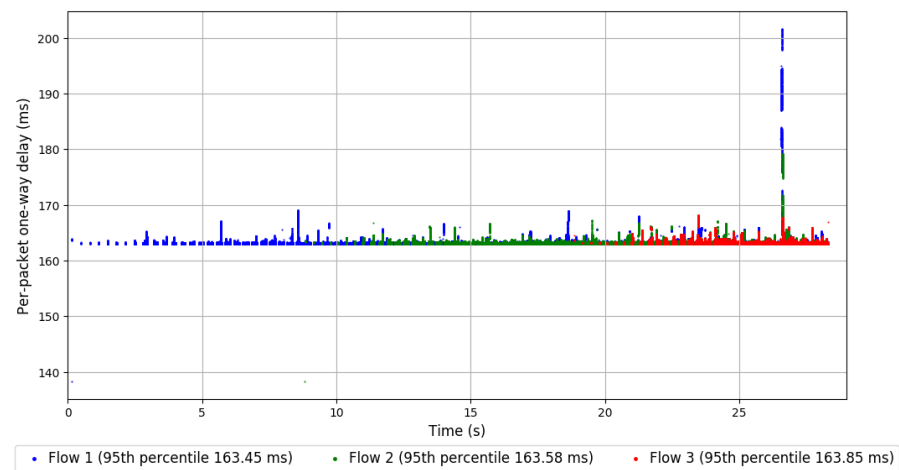
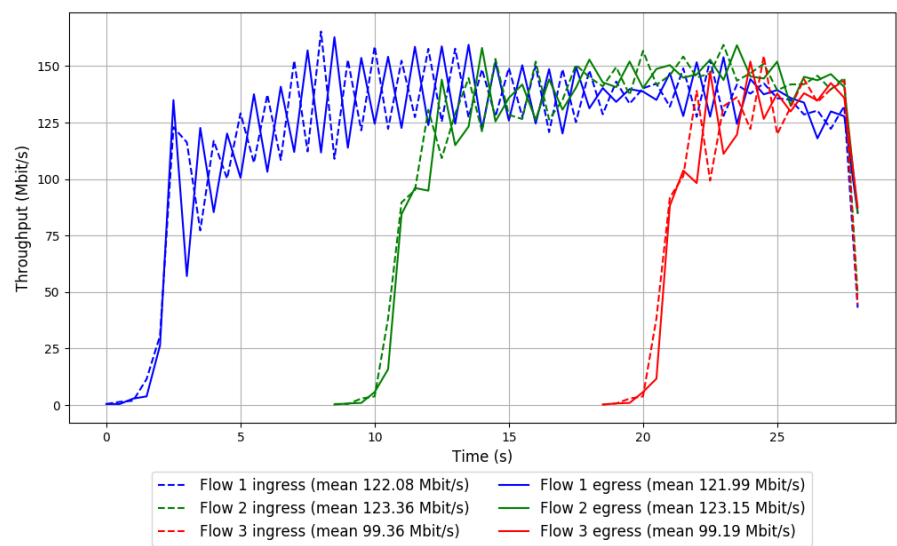
-- Flow 3:

Average throughput: 99.19 Mbit/s

95th percentile per-packet one-way delay: 163.854 ms

Loss rate: 0.40%

Run 9: Report of Indigo — Data Link



Run 10: Statistics of Indigo

Start at: 2017-09-19 07:15:18

End at: 2017-09-19 07:15:48

Below is generated by plot.py at 2017-09-19 08:27:07

Datalink statistics

-- Total of 3 flows:

Average throughput: 245.37 Mbit/s

95th percentile per-packet one-way delay: 163.606 ms

Loss rate: 0.13%

-- Flow 1:

Average throughput: 137.64 Mbit/s

95th percentile per-packet one-way delay: 163.505 ms

Loss rate: 0.08%

-- Flow 2:

Average throughput: 114.54 Mbit/s

95th percentile per-packet one-way delay: 163.725 ms

Loss rate: 0.13%

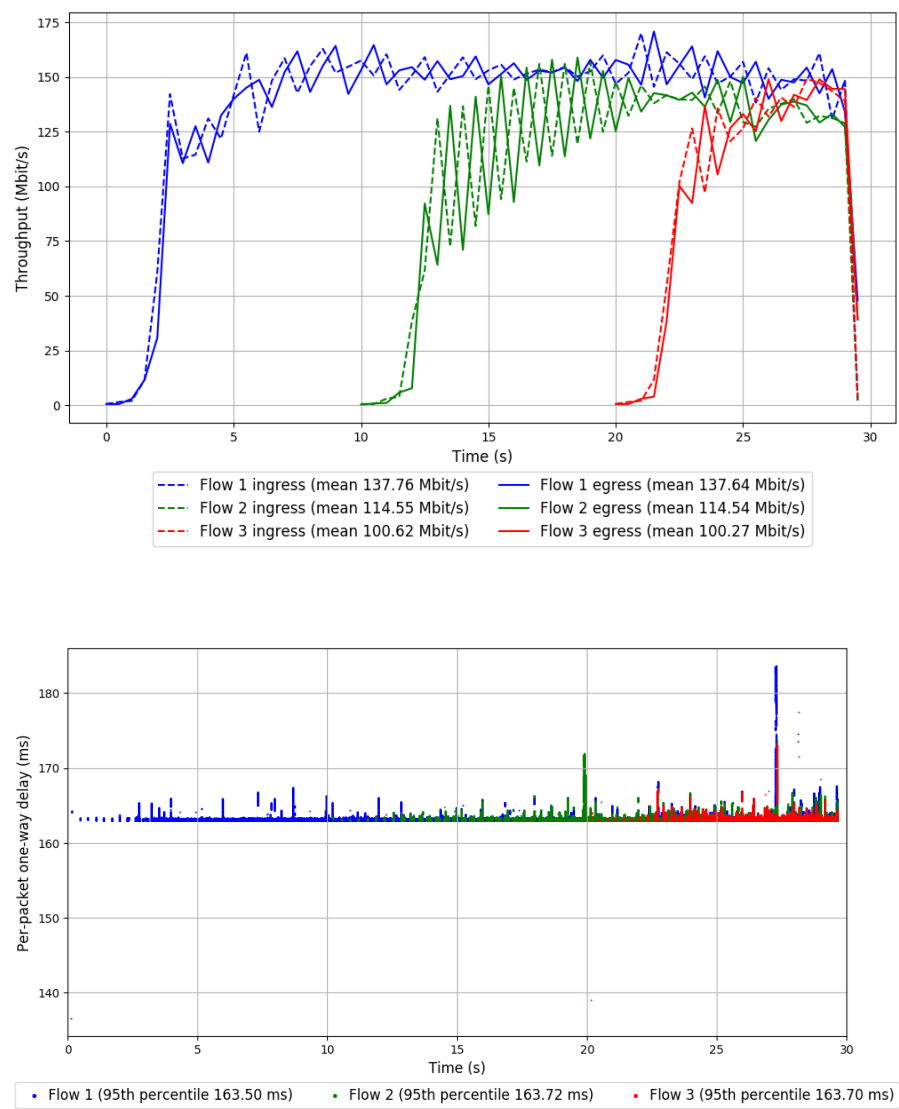
-- Flow 3:

Average throughput: 100.27 Mbit/s

95th percentile per-packet one-way delay: 163.700 ms

Loss rate: 0.36%

Run 10: Report of Indigo — Data Link

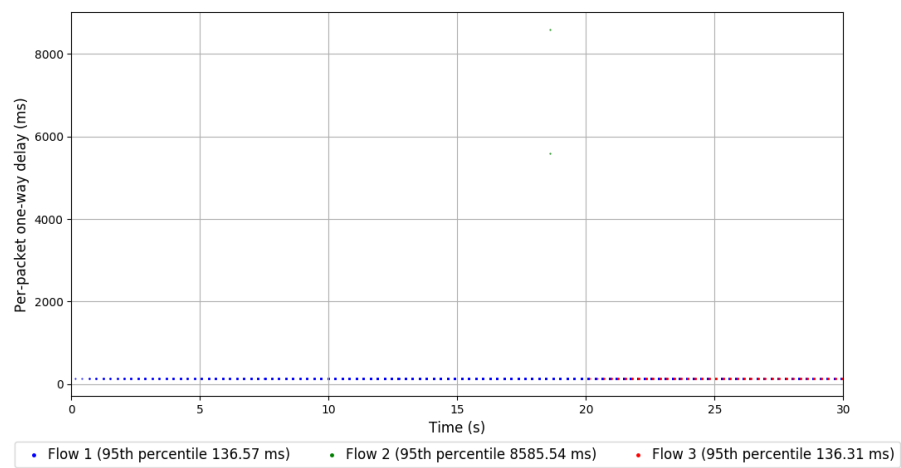
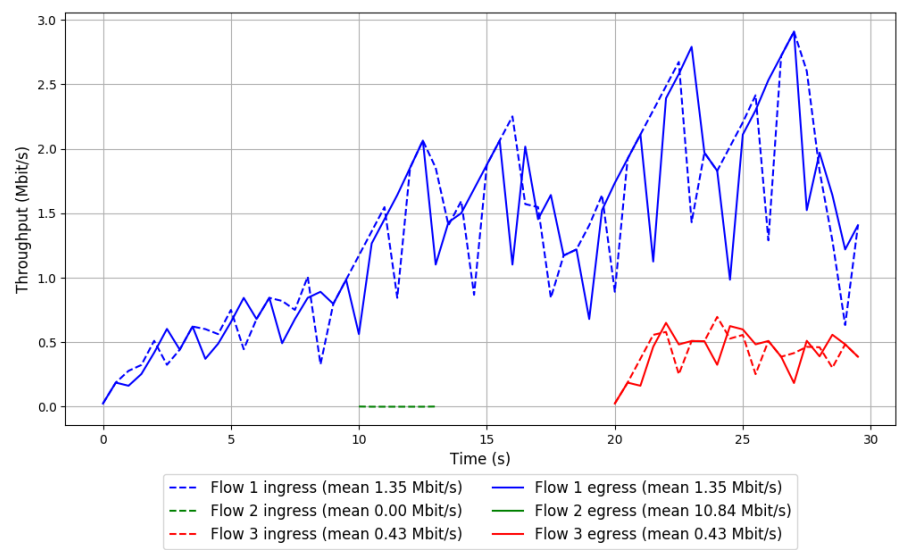


```
Run 1: Statistics of LEDBAT

Start at: 2017-09-19 05:43:34
End at: 2017-09-19 05:44:04

# Below is generated by plot.py at 2017-09-19 08:27:07
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.49 Mbit/s
95th percentile per-packet one-way delay: 136.555 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 1.35 Mbit/s
95th percentile per-packet one-way delay: 136.572 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 10.84 Mbit/s
95th percentile per-packet one-way delay: 8585.544 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 136.315 ms
Loss rate: 0.00%
```

Run 1: Report of LEDBAT — Data Link



Run 2: Statistics of LEDBAT

Start at: 2017-09-19 05:53:31

End at: 2017-09-19 05:54:01

Below is generated by plot.py at 2017-09-19 08:27:07

Datalink statistics

-- Total of 3 flows:

Average throughput: 3.72 Mbit/s

95th percentile per-packet one-way delay: 137.787 ms

Loss rate: 0.05%

-- Flow 1:

Average throughput: 1.89 Mbit/s

95th percentile per-packet one-way delay: 137.646 ms

Loss rate: 0.04%

-- Flow 2:

Average throughput: 2.13 Mbit/s

95th percentile per-packet one-way delay: 137.866 ms

Loss rate: 0.08%

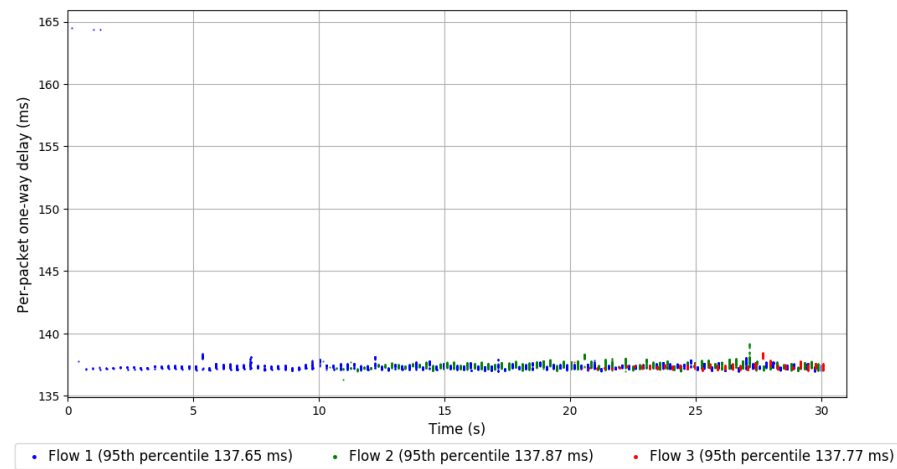
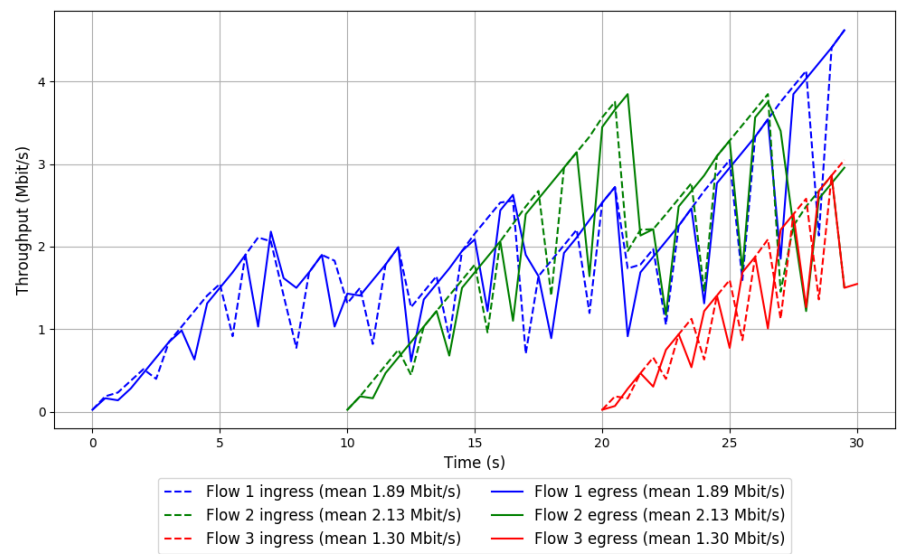
-- Flow 3:

Average throughput: 1.30 Mbit/s

95th percentile per-packet one-way delay: 137.773 ms

Loss rate: 0.00%

Run 2: Report of LEDBAT — Data Link



Run 3: Statistics of LEDBAT

Start at: 2017-09-19 06:04:31

End at: 2017-09-19 06:05:01

Below is generated by plot.py at 2017-09-19 08:27:07

Datalink statistics

-- Total of 3 flows:

Average throughput: 4.05 Mbit/s

95th percentile per-packet one-way delay: 137.626 ms

Loss rate: 0.05%

-- Flow 1:

Average throughput: 2.08 Mbit/s

95th percentile per-packet one-way delay: 137.748 ms

Loss rate: 0.09%

-- Flow 2:

Average throughput: 2.21 Mbit/s

95th percentile per-packet one-way delay: 137.514 ms

Loss rate: 0.00%

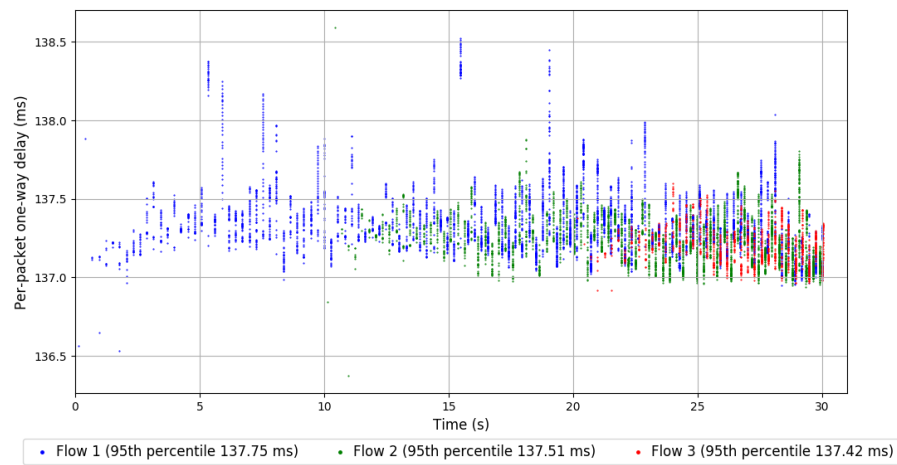
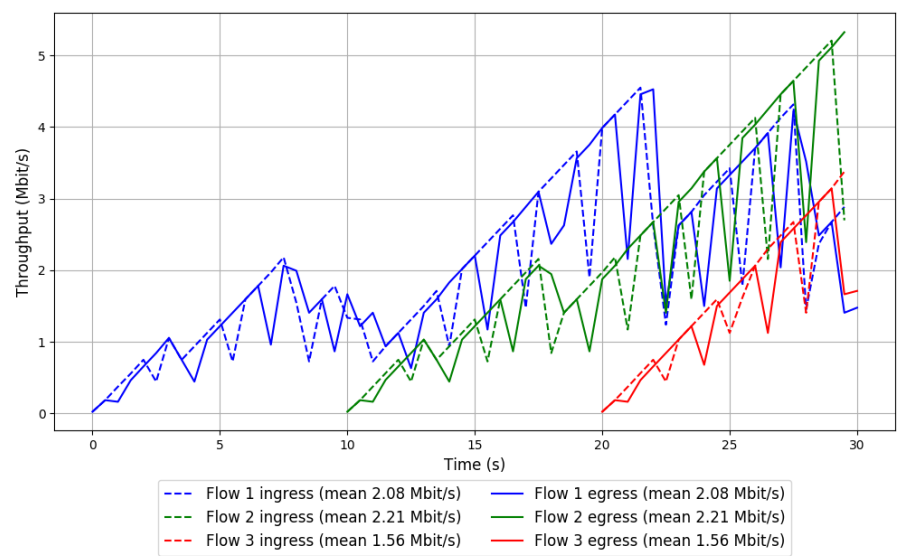
-- Flow 3:

Average throughput: 1.56 Mbit/s

95th percentile per-packet one-way delay: 137.424 ms

Loss rate: 0.00%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

Start at: 2017-09-19 06:15:17

End at: 2017-09-19 06:15:47

Below is generated by plot.py at 2017-09-19 08:27:07

Datalink statistics

-- Total of 3 flows:

Average throughput: 3.11 Mbit/s

95th percentile per-packet one-way delay: 137.883 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 1.97 Mbit/s

95th percentile per-packet one-way delay: 137.891 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 1.43 Mbit/s

95th percentile per-packet one-way delay: 137.906 ms

Loss rate: 0.00%

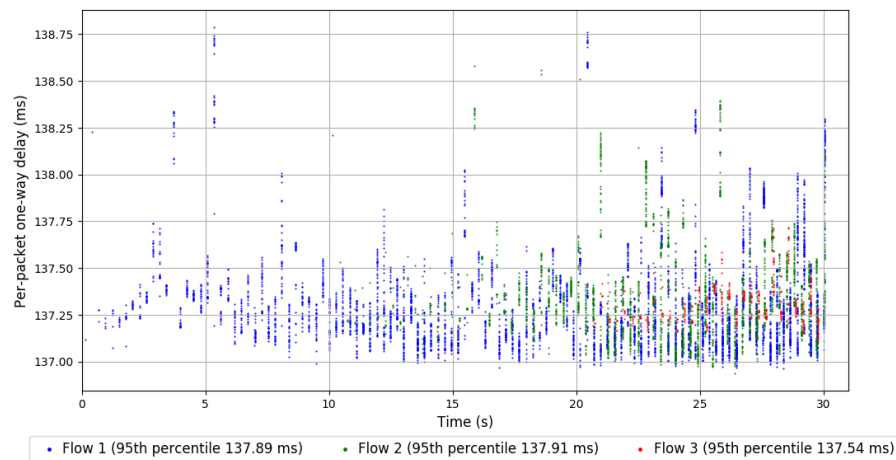
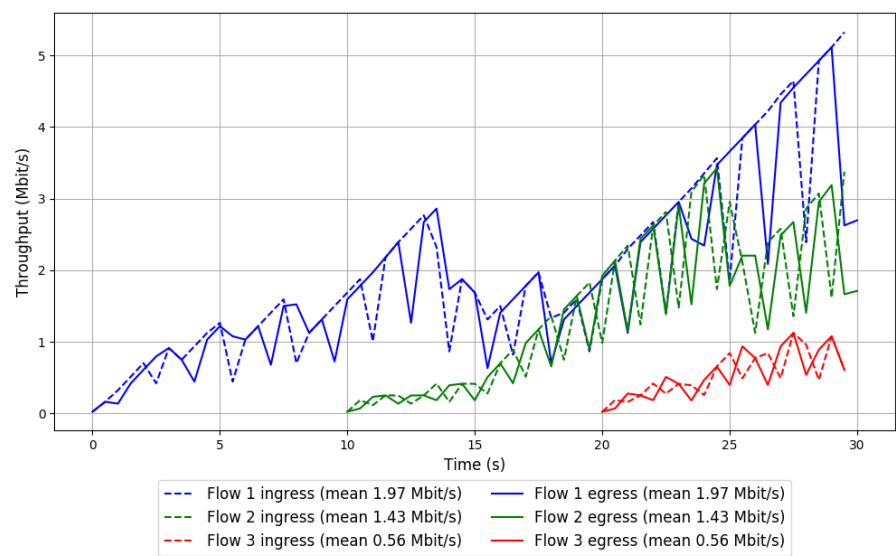
-- Flow 3:

Average throughput: 0.56 Mbit/s

95th percentile per-packet one-way delay: 137.542 ms

Loss rate: 0.00%

Run 4: Report of LEDBAT — Data Link

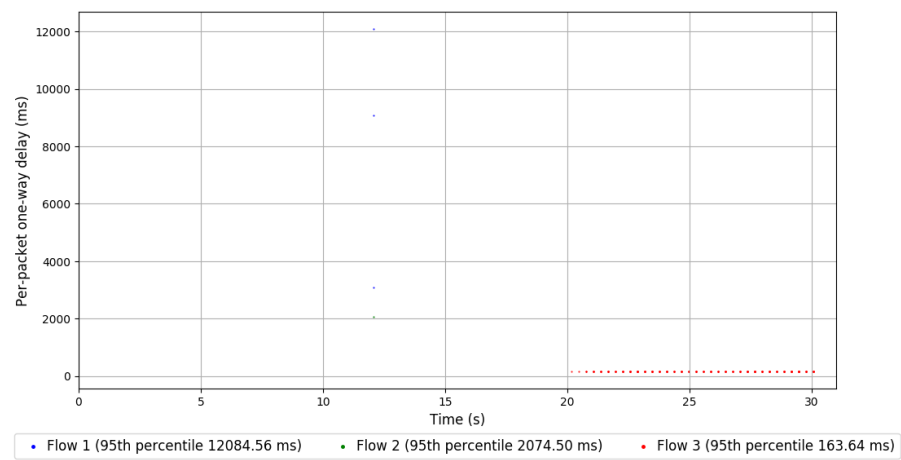
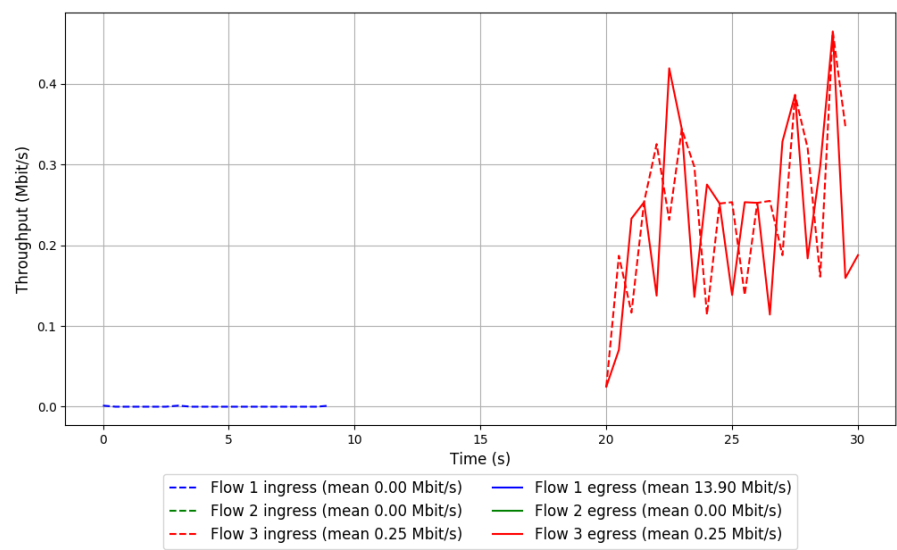


Run 5: Statistics of LEDBAT

Start at: 2017-09-19 06:26:02

End at: 2017-09-19 06:26:32

Run 5: Report of LEDBAT — Data Link



Run 6: Statistics of LEDBAT

Start at: 2017-09-19 06:36:06

End at: 2017-09-19 06:36:36

Below is generated by plot.py at 2017-09-19 08:27:07

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.17 Mbit/s

95th percentile per-packet one-way delay: 163.806 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.47 Mbit/s

95th percentile per-packet one-way delay: 164.028 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.54 Mbit/s

95th percentile per-packet one-way delay: 163.756 ms

Loss rate: 0.00%

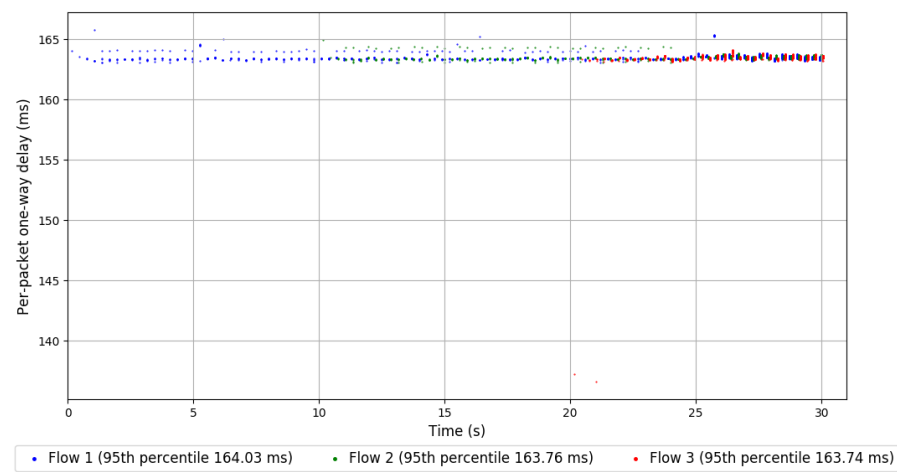
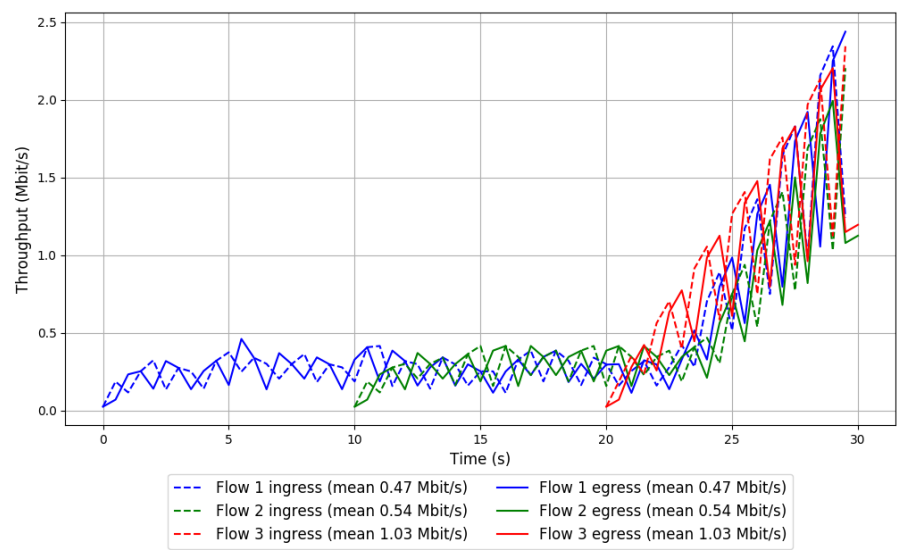
-- Flow 3:

Average throughput: 1.03 Mbit/s

95th percentile per-packet one-way delay: 163.742 ms

Loss rate: 0.00%

Run 6: Report of LEDBAT — Data Link



Run 7: Statistics of LEDBAT

Start at: 2017-09-19 06:45:41

End at: 2017-09-19 06:46:11

Below is generated by plot.py at 2017-09-19 08:27:07

Datalink statistics

-- Total of 3 flows:

Average throughput: 4.19 Mbit/s

95th percentile per-packet one-way delay: 163.907 ms

Loss rate: 1.25%

-- Flow 1:

Average throughput: 2.50 Mbit/s

95th percentile per-packet one-way delay: 163.976 ms

Loss rate: 2.07%

-- Flow 2:

Average throughput: 2.03 Mbit/s

95th percentile per-packet one-way delay: 163.739 ms

Loss rate: 0.00%

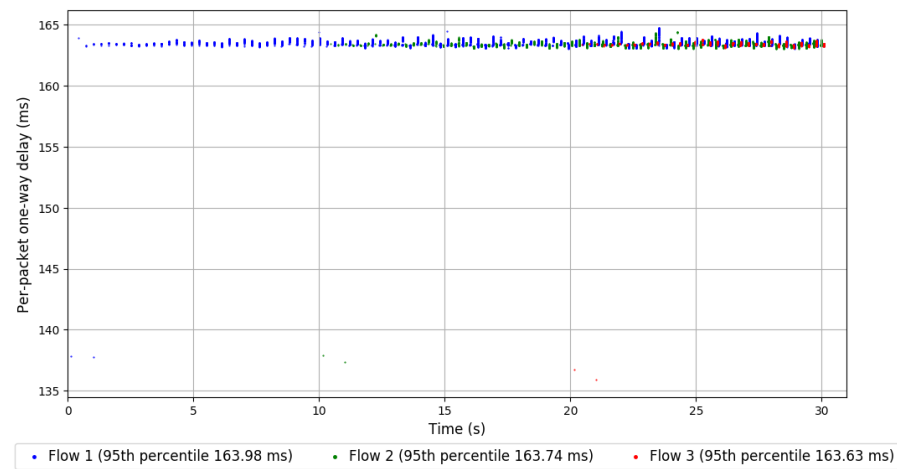
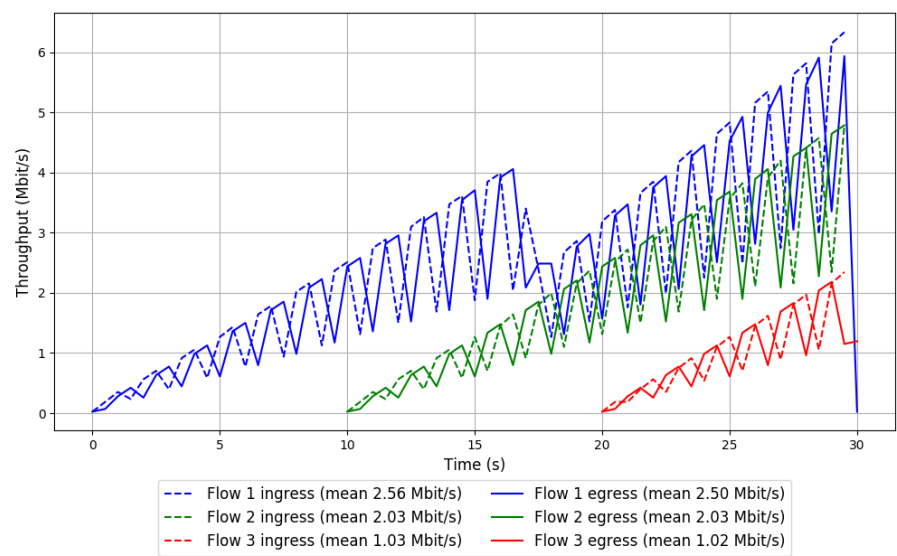
-- Flow 3:

Average throughput: 1.02 Mbit/s

95th percentile per-packet one-way delay: 163.629 ms

Loss rate: 0.00%

Run 7: Report of LEDBAT — Data Link



Run 8: Statistics of LEDBAT

Start at: 2017-09-19 06:55:14

End at: 2017-09-19 06:55:44

Below is generated by plot.py at 2017-09-19 08:27:07

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.88 Mbit/s

95th percentile per-packet one-way delay: 163.965 ms

Loss rate: 0.11%

-- Flow 1:

Average throughput: 1.61 Mbit/s

95th percentile per-packet one-way delay: 164.074 ms

Loss rate: 0.15%

-- Flow 2:

Average throughput: 1.49 Mbit/s

95th percentile per-packet one-way delay: 163.826 ms

Loss rate: 0.08%

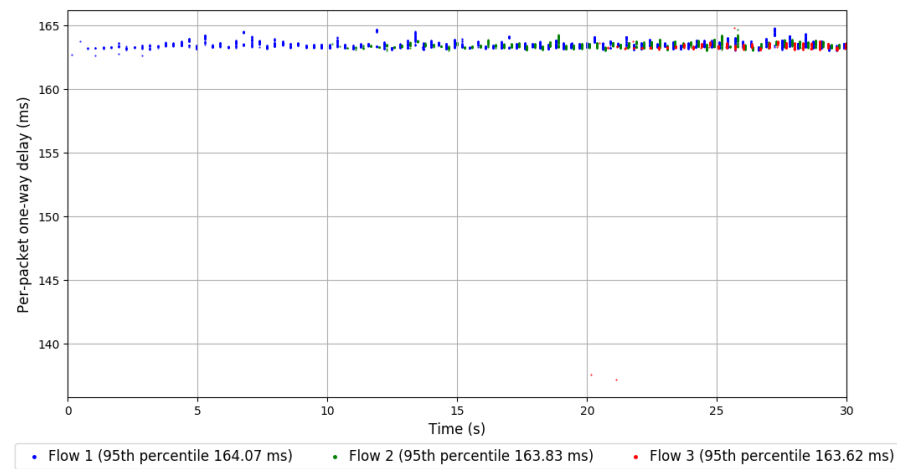
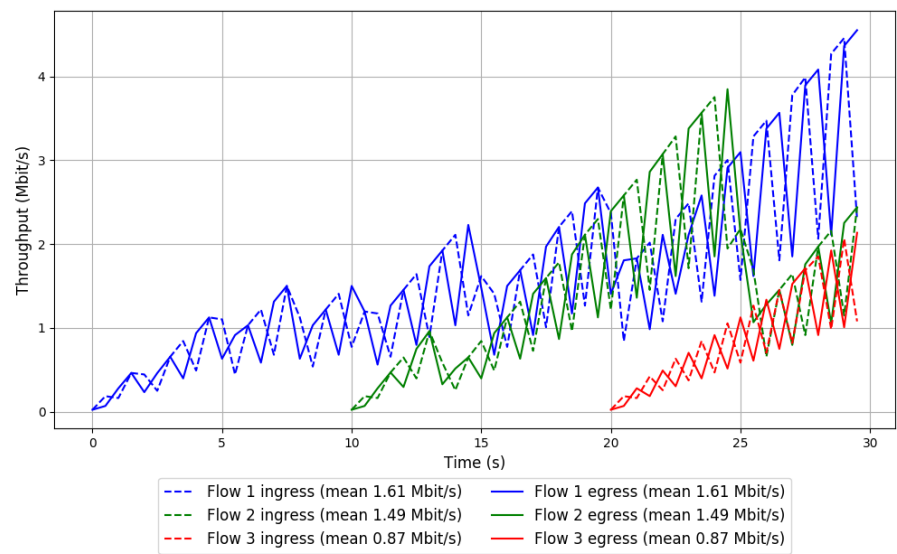
-- Flow 3:

Average throughput: 0.87 Mbit/s

95th percentile per-packet one-way delay: 163.623 ms

Loss rate: 0.00%

Run 8: Report of LEDBAT — Data Link



Run 9: Statistics of LEDBAT

Start at: 2017-09-19 07:04:53

End at: 2017-09-19 07:05:23

Below is generated by plot.py at 2017-09-19 08:27:07

Datalink statistics

-- Total of 3 flows:

Average throughput: 4.65 Mbit/s

95th percentile per-packet one-way delay: 163.773 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 3.03 Mbit/s

95th percentile per-packet one-way delay: 163.817 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 2.02 Mbit/s

95th percentile per-packet one-way delay: 163.645 ms

Loss rate: 0.00%

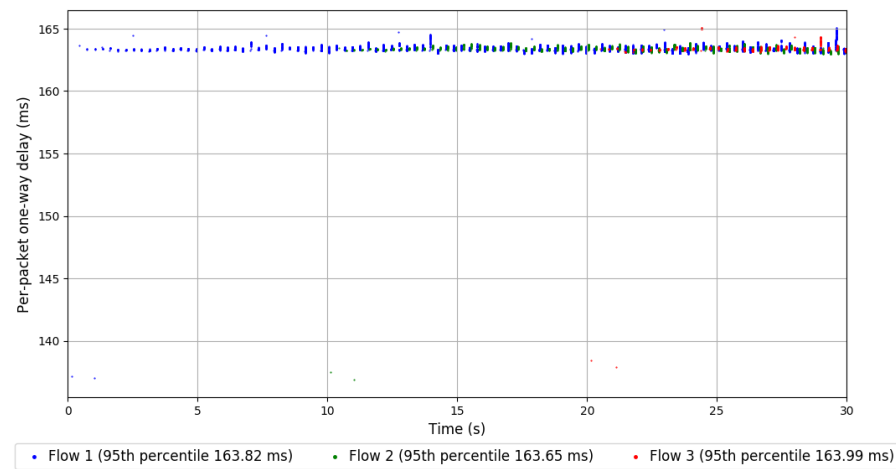
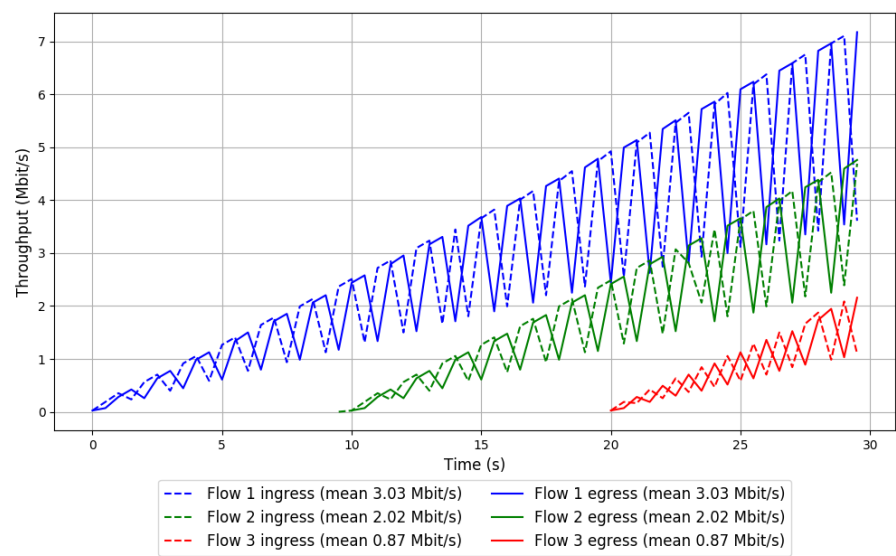
-- Flow 3:

Average throughput: 0.87 Mbit/s

95th percentile per-packet one-way delay: 163.994 ms

Loss rate: 0.00%

Run 9: Report of LEDBAT — Data Link



Run 10: Statistics of LEDBAT

Start at: 2017-09-19 07:14:28

End at: 2017-09-19 07:14:58

Below is generated by plot.py at 2017-09-19 08:27:07

Datalink statistics

-- Total of 3 flows:

Average throughput: 3.04 Mbit/s

95th percentile per-packet one-way delay: 164.142 ms

Loss rate: 0.79%

-- Flow 1:

Average throughput: 1.57 Mbit/s

95th percentile per-packet one-way delay: 164.224 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 1.68 Mbit/s

95th percentile per-packet one-way delay: 164.123 ms

Loss rate: 0.00%

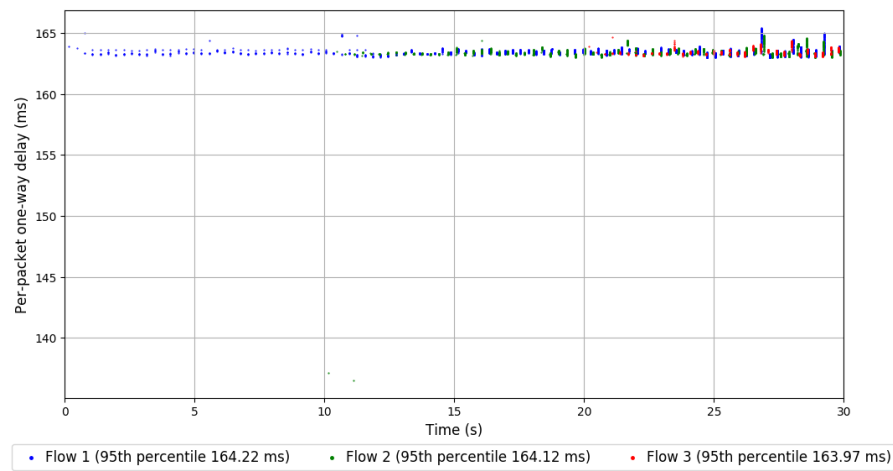
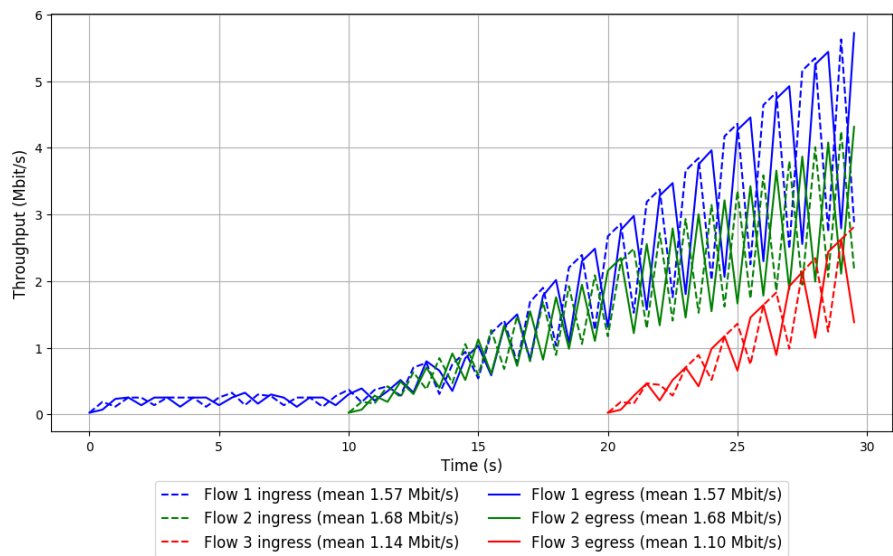
-- Flow 3:

Average throughput: 1.10 Mbit/s

95th percentile per-packet one-way delay: 163.971 ms

Loss rate: 6.34%

Run 10: Report of LEDBAT — Data Link

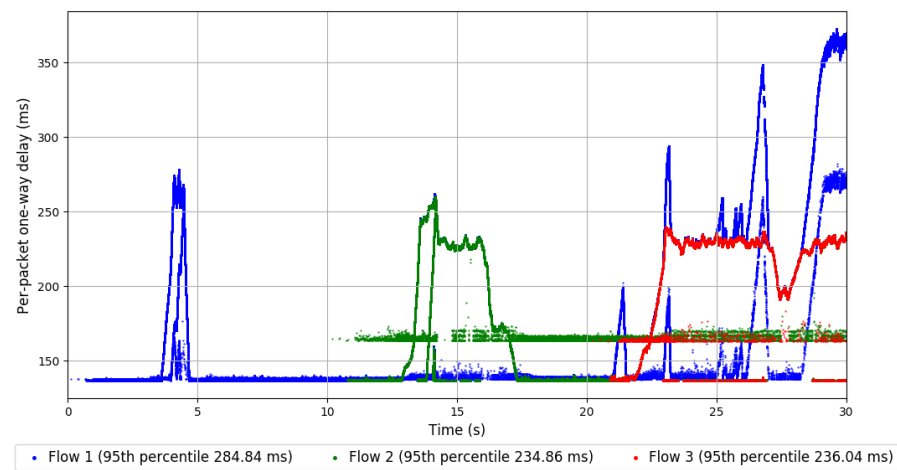
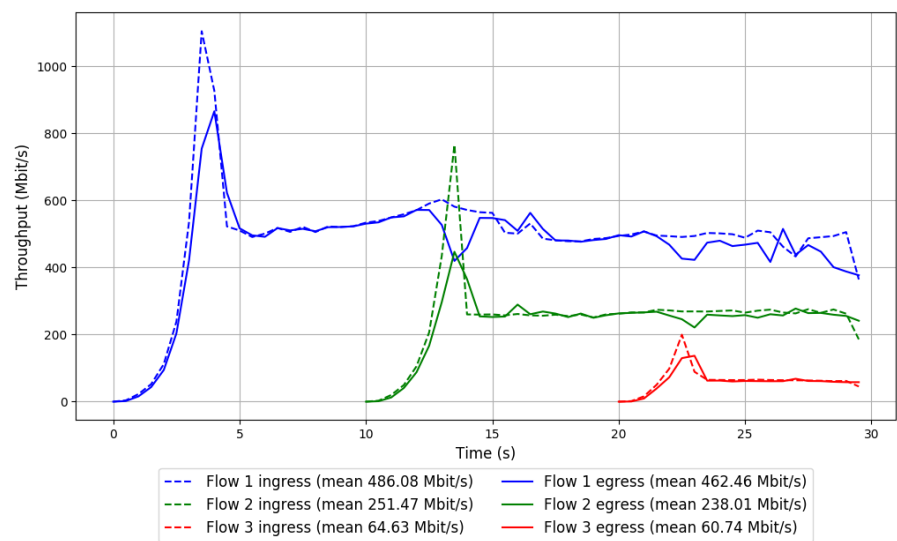


```
Run 1: Statistics of PCC

Start at: 2017-09-19 05:50:18
End at: 2017-09-19 05:50:48

# Below is generated by plot.py at 2017-09-19 08:35:29
# Datalink statistics
-- Total of 3 flows:
Average throughput: 640.25 Mbit/s
95th percentile per-packet one-way delay: 263.773 ms
Loss rate: 5.06%
-- Flow 1:
Average throughput: 462.46 Mbit/s
95th percentile per-packet one-way delay: 284.844 ms
Loss rate: 4.86%
-- Flow 2:
Average throughput: 238.01 Mbit/s
95th percentile per-packet one-way delay: 234.861 ms
Loss rate: 5.49%
-- Flow 3:
Average throughput: 60.74 Mbit/s
95th percentile per-packet one-way delay: 236.039 ms
Loss rate: 6.27%
```

Run 1: Report of PCC — Data Link



Run 2: Statistics of PCC

Start at: 2017-09-19 06:00:34

End at: 2017-09-19 06:01:04

Below is generated by plot.py at 2017-09-19 08:35:29

Datalink statistics

-- Total of 3 flows:

Average throughput: 620.00 Mbit/s

95th percentile per-packet one-way delay: 317.291 ms

Loss rate: 4.19%

-- Flow 1:

Average throughput: 516.72 Mbit/s

95th percentile per-packet one-way delay: 331.160 ms

Loss rate: 4.51%

-- Flow 2:

Average throughput: 124.45 Mbit/s

95th percentile per-packet one-way delay: 232.465 ms

Loss rate: 2.37%

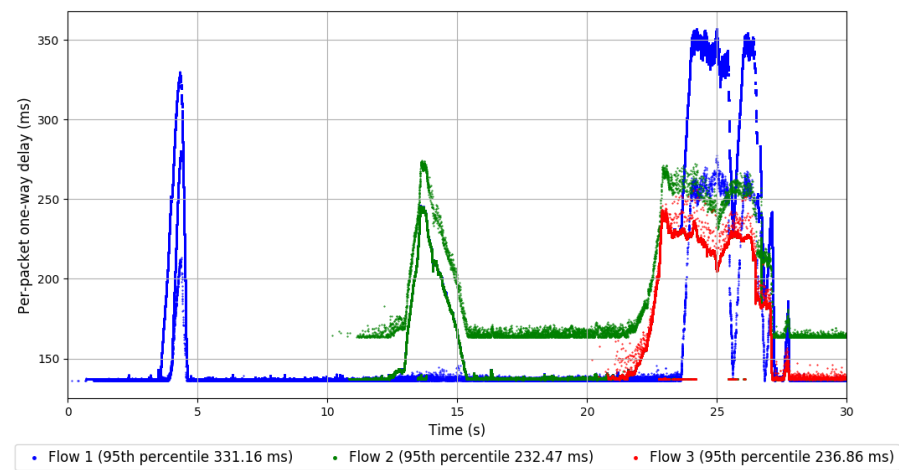
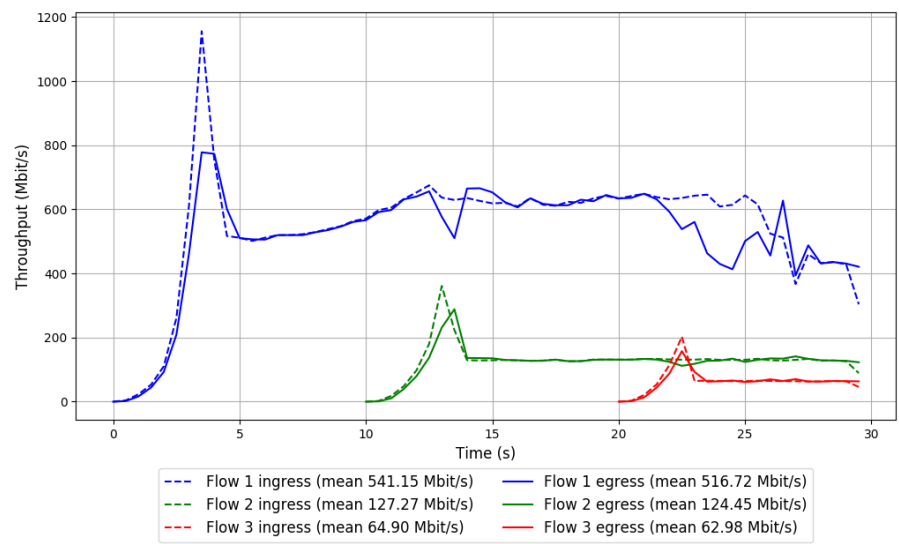
-- Flow 3:

Average throughput: 62.98 Mbit/s

95th percentile per-packet one-way delay: 236.856 ms

Loss rate: 3.08%

Run 2: Report of PCC — Data Link



Run 3: Statistics of PCC

Start at: 2017-09-19 06:11:24

End at: 2017-09-19 06:11:55

Below is generated by plot.py at 2017-09-19 08:35:29

Datalink statistics

-- Total of 3 flows:

Average throughput: 617.23 Mbit/s

95th percentile per-packet one-way delay: 229.450 ms

Loss rate: 1.38%

-- Flow 1:

Average throughput: 510.30 Mbit/s

95th percentile per-packet one-way delay: 229.297 ms

Loss rate: 1.50%

-- Flow 2:

Average throughput: 128.85 Mbit/s

95th percentile per-packet one-way delay: 229.474 ms

Loss rate: 0.74%

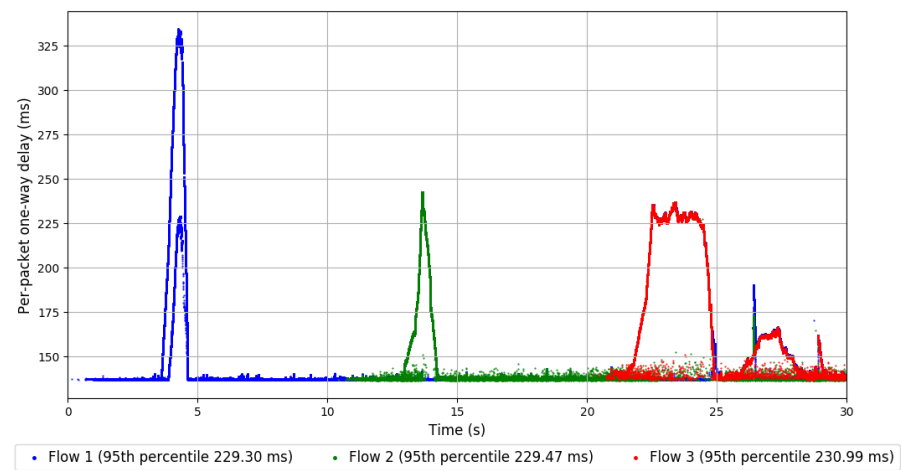
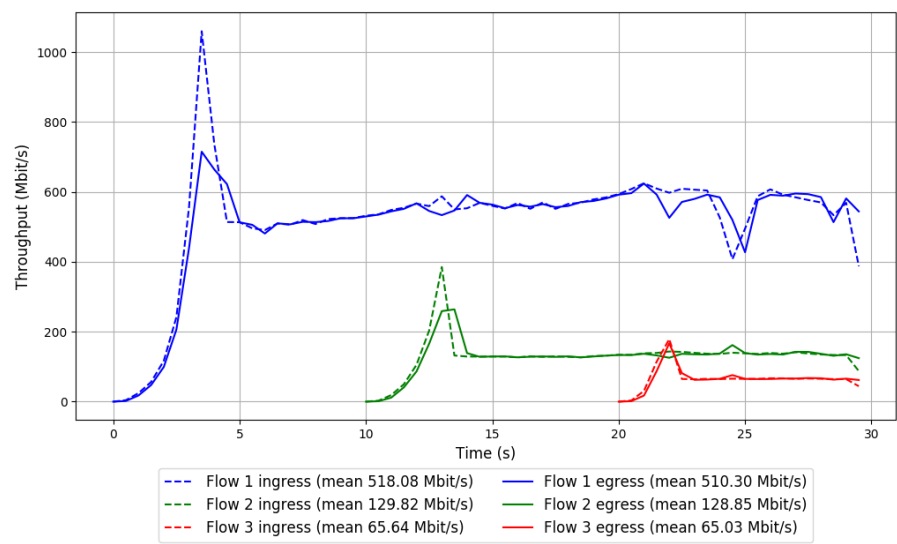
-- Flow 3:

Average throughput: 65.03 Mbit/s

95th percentile per-packet one-way delay: 230.988 ms

Loss rate: 0.95%

Run 3: Report of PCC — Data Link



Run 4: Statistics of PCC

Start at: 2017-09-19 06:22:30

End at: 2017-09-19 06:23:00

Below is generated by plot.py at 2017-09-19 08:35:29

Datalink statistics

-- Total of 3 flows:

Average throughput: 507.81 Mbit/s

95th percentile per-packet one-way delay: 178.683 ms

Loss rate: 0.59%

-- Flow 1:

Average throughput: 493.87 Mbit/s

95th percentile per-packet one-way delay: 181.645 ms

Loss rate: 0.60%

-- Flow 2:

Average throughput: 4.40 Mbit/s

95th percentile per-packet one-way delay: 163.401 ms

Loss rate: 0.01%

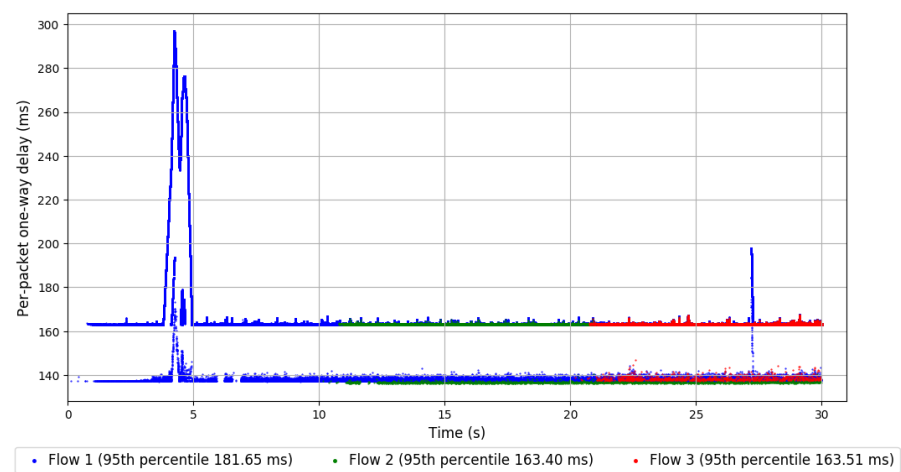
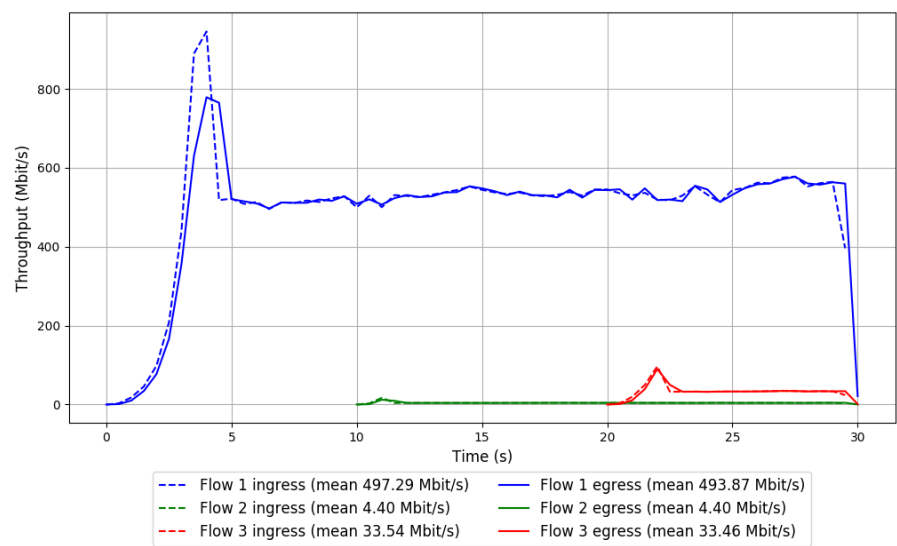
-- Flow 3:

Average throughput: 33.46 Mbit/s

95th percentile per-packet one-way delay: 163.507 ms

Loss rate: 0.00%

Run 4: Report of PCC — Data Link



Run 5: Statistics of PCC

Start at: 2017-09-19 06:32:57

End at: 2017-09-19 06:33:27

Below is generated by plot.py at 2017-09-19 08:35:29

Datalink statistics

-- Total of 3 flows:

Average throughput: 582.39 Mbit/s

95th percentile per-packet one-way delay: 258.073 ms

Loss rate: 2.84%

-- Flow 1:

Average throughput: 538.83 Mbit/s

95th percentile per-packet one-way delay: 257.685 ms

Loss rate: 2.59%

-- Flow 2:

Average throughput: 8.36 Mbit/s

95th percentile per-packet one-way delay: 257.123 ms

Loss rate: 1.49%

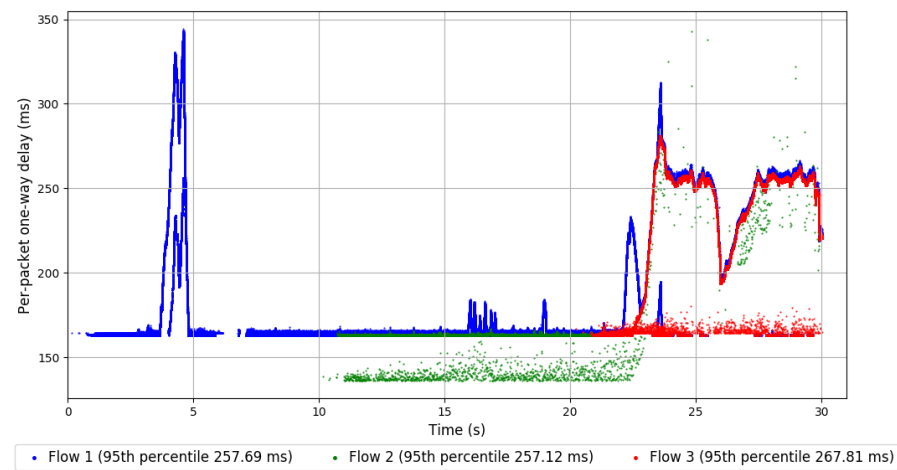
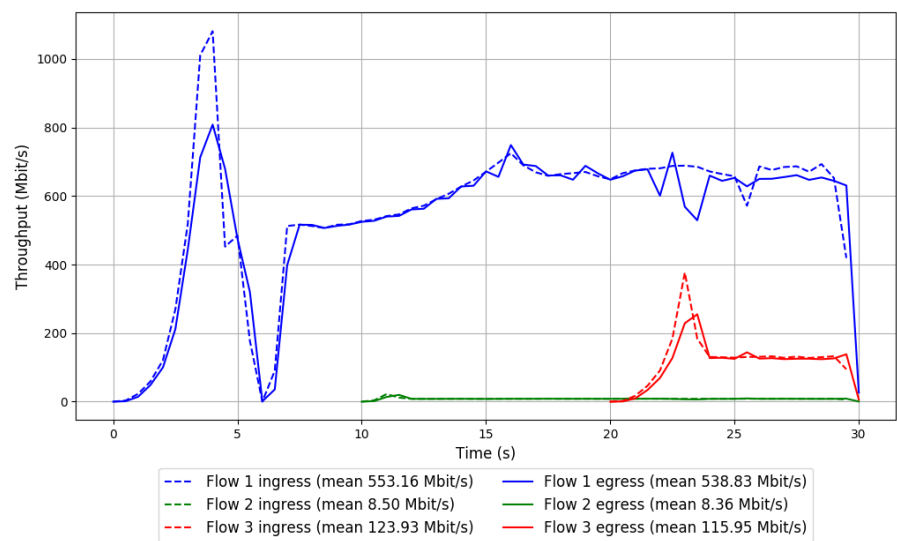
-- Flow 3:

Average throughput: 115.95 Mbit/s

95th percentile per-packet one-way delay: 267.811 ms

Loss rate: 6.46%

Run 5: Report of PCC — Data Link



Run 6: Statistics of PCC

Start at: 2017-09-19 06:42:55

End at: 2017-09-19 06:43:25

Below is generated by plot.py at 2017-09-19 08:35:29

Datalink statistics

-- Total of 3 flows:

Average throughput: 150.94 Mbit/s

95th percentile per-packet one-way delay: 292.307 ms

Loss rate: 6.09%

-- Flow 1:

Average throughput: 16.64 Mbit/s

95th percentile per-packet one-way delay: 163.359 ms

Loss rate: 0.51%

-- Flow 2:

Average throughput: 5.67 Mbit/s

95th percentile per-packet one-way delay: 181.641 ms

Loss rate: 0.91%

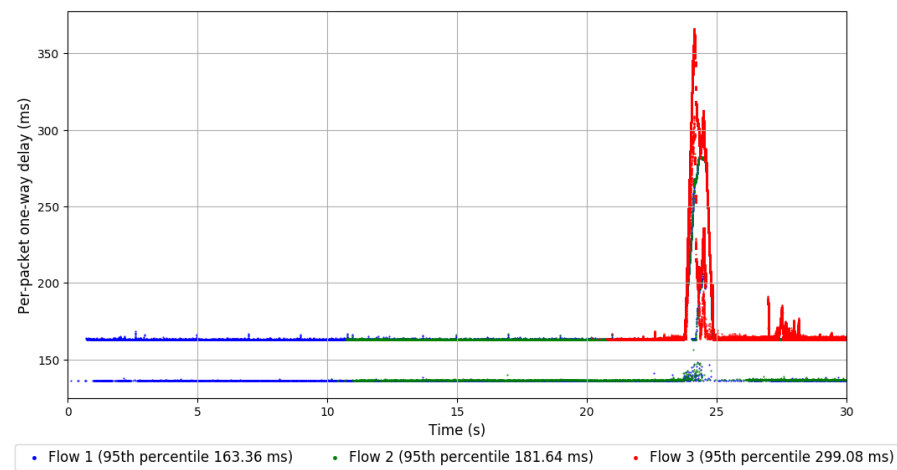
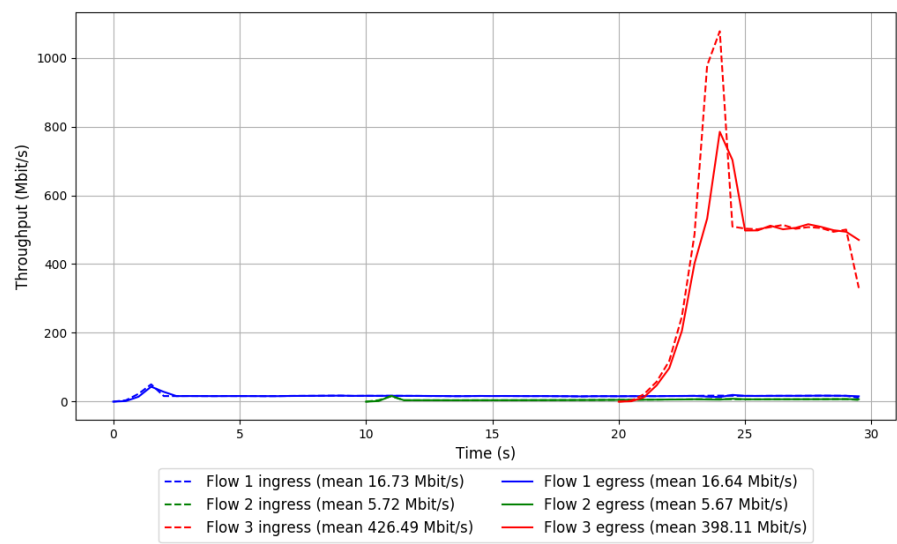
-- Flow 3:

Average throughput: 398.11 Mbit/s

95th percentile per-packet one-way delay: 299.080 ms

Loss rate: 6.90%

Run 6: Report of PCC — Data Link



Run 7: Statistics of PCC

Start at: 2017-09-19 06:52:32

End at: 2017-09-19 06:53:02

Below is generated by plot.py at 2017-09-19 08:35:29

Datalink statistics

-- Total of 3 flows:

Average throughput: 13.28 Mbit/s

95th percentile per-packet one-way delay: 163.286 ms

Loss rate: 0.11%

-- Flow 1:

Average throughput: 8.55 Mbit/s

95th percentile per-packet one-way delay: 163.276 ms

Loss rate: 0.08%

-- Flow 2:

Average throughput: 4.88 Mbit/s

95th percentile per-packet one-way delay: 163.299 ms

Loss rate: 0.15%

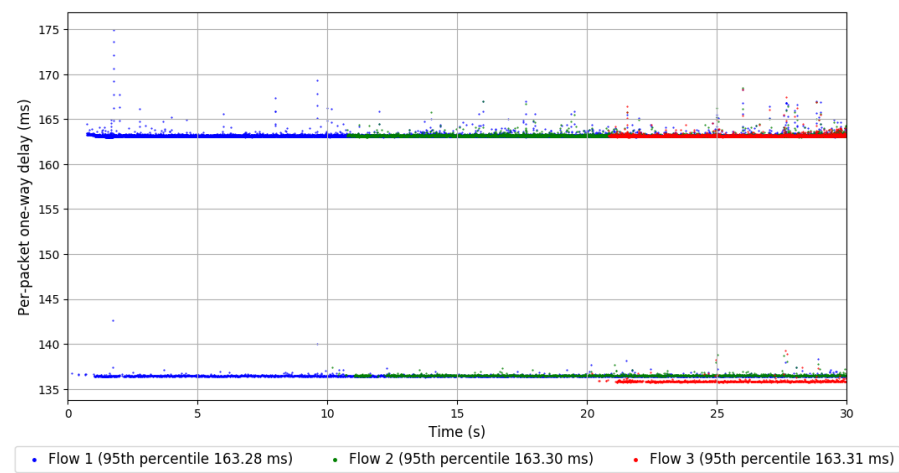
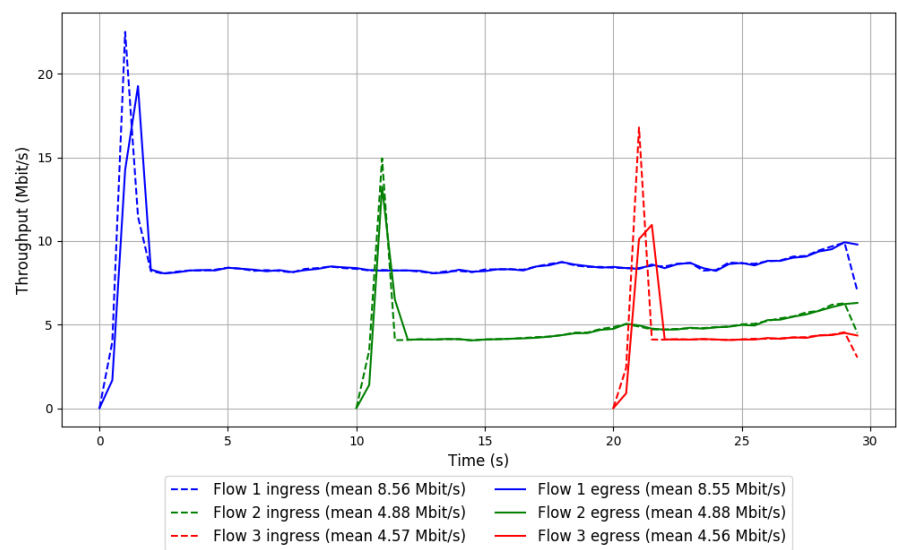
-- Flow 3:

Average throughput: 4.56 Mbit/s

95th percentile per-packet one-way delay: 163.310 ms

Loss rate: 0.19%

Run 7: Report of PCC — Data Link



Run 8: Statistics of PCC

Start at: 2017-09-19 07:02:08

End at: 2017-09-19 07:02:38

Below is generated by plot.py at 2017-09-19 08:35:29

Datalink statistics

-- Total of 3 flows:

Average throughput: 29.94 Mbit/s

95th percentile per-packet one-way delay: 163.141 ms

Loss rate: 0.11%

-- Flow 1:

Average throughput: 16.72 Mbit/s

95th percentile per-packet one-way delay: 163.137 ms

Loss rate: 0.08%

-- Flow 2:

Average throughput: 17.65 Mbit/s

95th percentile per-packet one-way delay: 163.143 ms

Loss rate: 0.14%

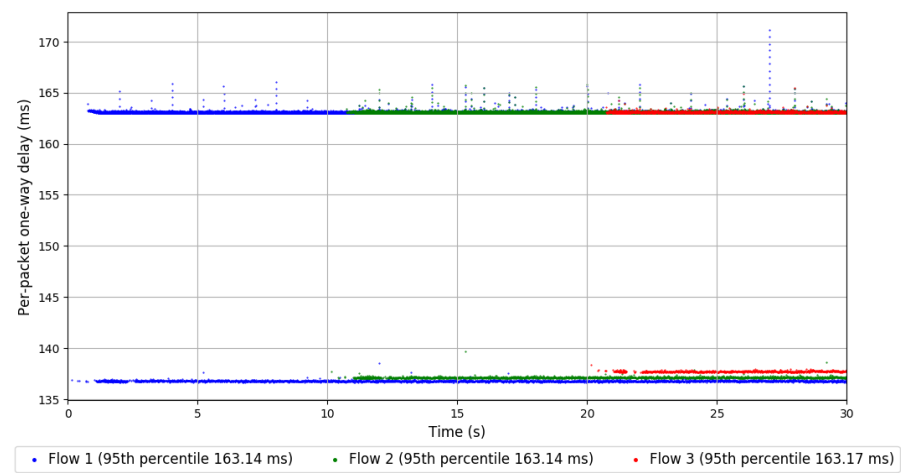
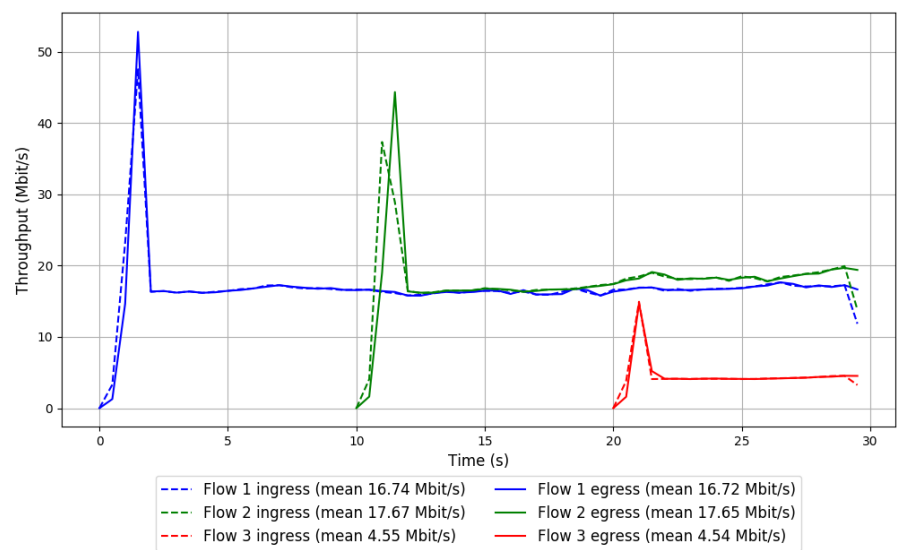
-- Flow 3:

Average throughput: 4.54 Mbit/s

95th percentile per-packet one-way delay: 163.171 ms

Loss rate: 0.24%

Run 8: Report of PCC — Data Link



Run 9: Statistics of PCC

Start at: 2017-09-19 07:11:33

End at: 2017-09-19 07:12:03

Below is generated by plot.py at 2017-09-19 08:35:29

Datalink statistics

-- Total of 3 flows:

Average throughput: 17.36 Mbit/s

95th percentile per-packet one-way delay: 163.147 ms

Loss rate: 0.14%

-- Flow 1:

Average throughput: 11.55 Mbit/s

95th percentile per-packet one-way delay: 163.143 ms

Loss rate: 0.10%

-- Flow 2:

Average throughput: 4.57 Mbit/s

95th percentile per-packet one-way delay: 163.162 ms

Loss rate: 0.16%

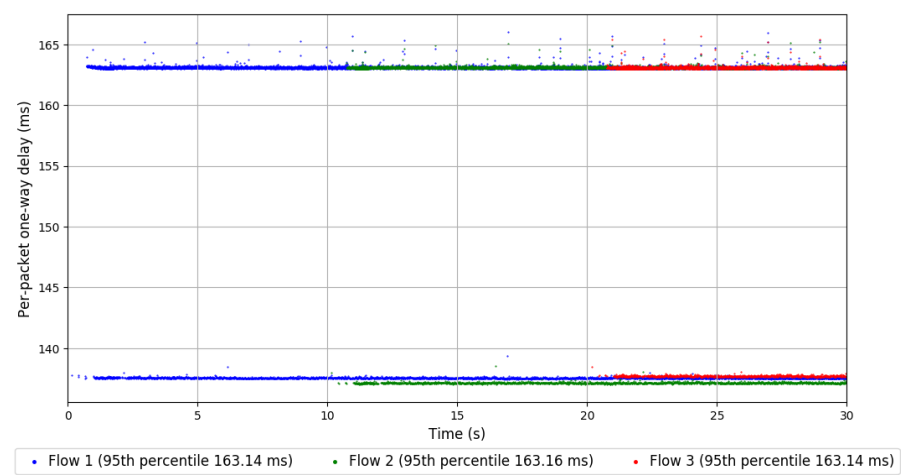
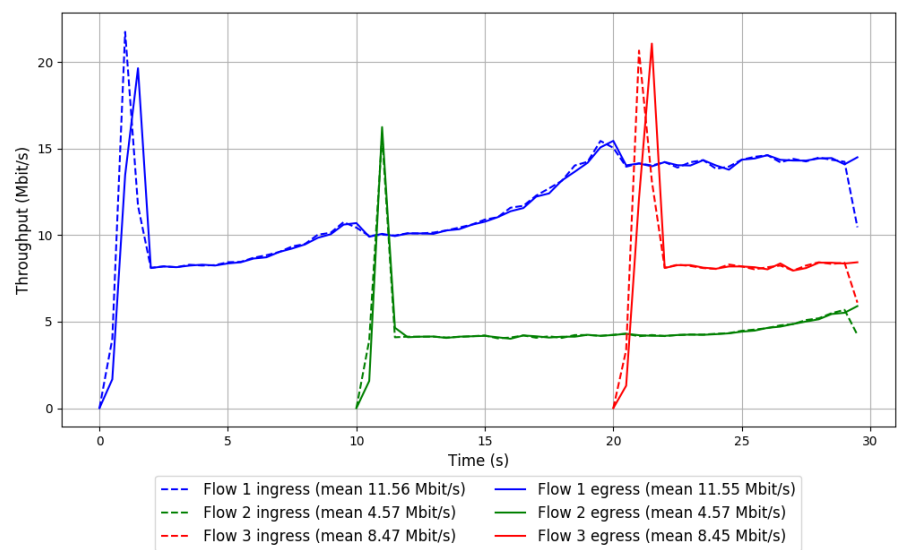
-- Flow 3:

Average throughput: 8.45 Mbit/s

95th percentile per-packet one-way delay: 163.140 ms

Loss rate: 0.25%

Run 9: Report of PCC — Data Link

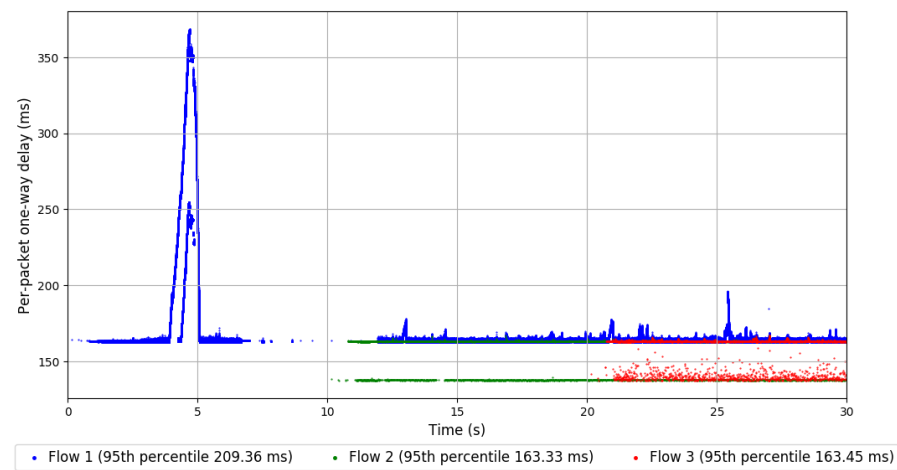
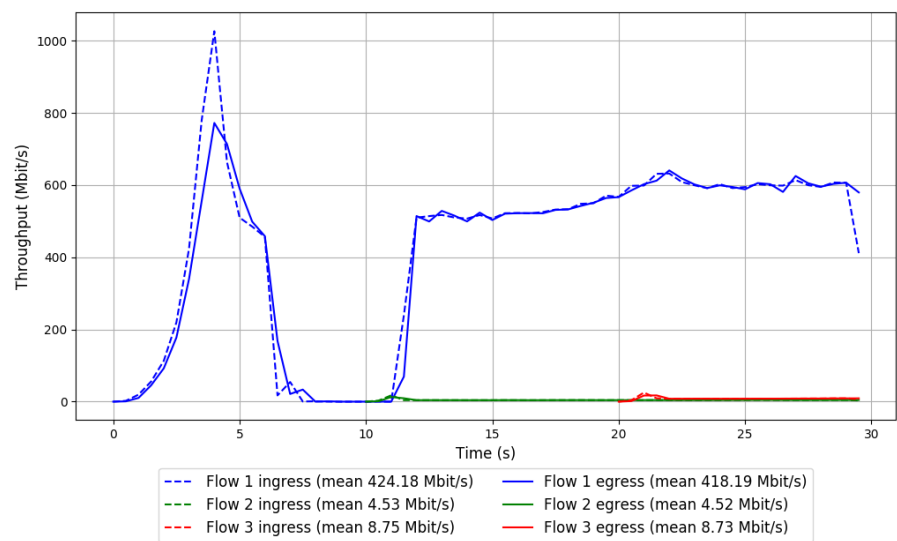


```
Run 10: Statistics of PCC

Start at: 2017-09-19 07:21:13
End at: 2017-09-19 07:21:43

# Below is generated by plot.py at 2017-09-19 08:35:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 424.07 Mbit/s
95th percentile per-packet one-way delay: 208.086 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 418.19 Mbit/s
95th percentile per-packet one-way delay: 209.361 ms
Loss rate: 1.50%
-- Flow 2:
Average throughput: 4.52 Mbit/s
95th percentile per-packet one-way delay: 163.327 ms
Loss rate: 0.13%
-- Flow 3:
Average throughput: 8.73 Mbit/s
95th percentile per-packet one-way delay: 163.446 ms
Loss rate: 0.28%
```

Run 10: Report of PCC — Data Link

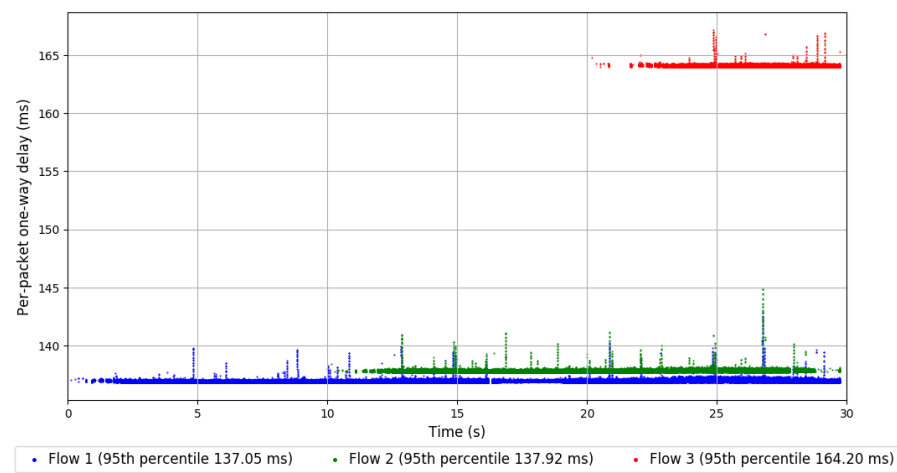
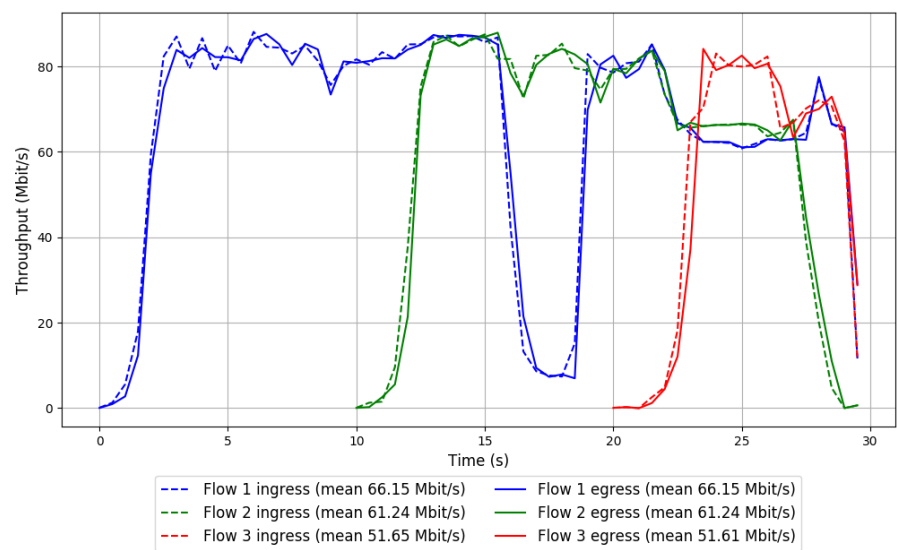


```
Run 1: Statistics of QUIC Cubic

Start at: 2017-09-19 05:41:41
End at: 2017-09-19 05:42:11

# Below is generated by plot.py at 2017-09-19 08:35:43
# Datalink statistics
-- Total of 3 flows:
Average throughput: 123.31 Mbit/s
95th percentile per-packet one-way delay: 164.092 ms
Loss rate: 0.04%
-- Flow 1:
Average throughput: 66.15 Mbit/s
95th percentile per-packet one-way delay: 137.052 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 61.24 Mbit/s
95th percentile per-packet one-way delay: 137.920 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 51.61 Mbit/s
95th percentile per-packet one-way delay: 164.196 ms
Loss rate: 0.33%
```

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2017-09-19 05:51:41

End at: 2017-09-19 05:52:11

Below is generated by plot.py at 2017-09-19 08:35:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 123.66 Mbit/s

95th percentile per-packet one-way delay: 137.222 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 66.31 Mbit/s

95th percentile per-packet one-way delay: 137.253 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 61.52 Mbit/s

95th percentile per-packet one-way delay: 135.185 ms

Loss rate: 0.00%

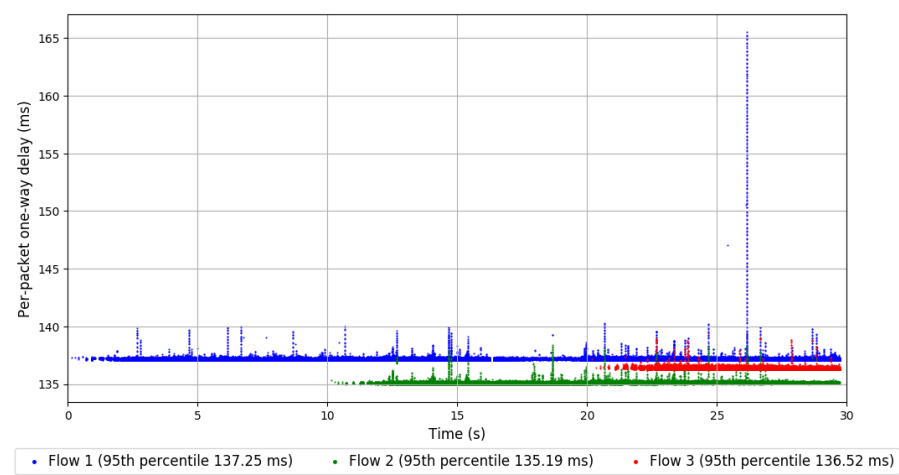
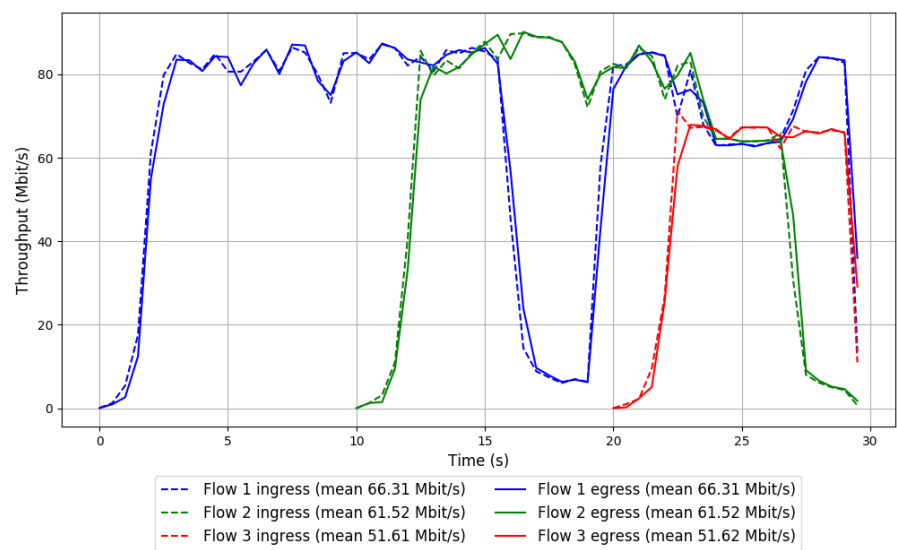
-- Flow 3:

Average throughput: 51.62 Mbit/s

95th percentile per-packet one-way delay: 136.523 ms

Loss rate: 0.00%

Run 2: Report of QUIC Cubic — Data Link

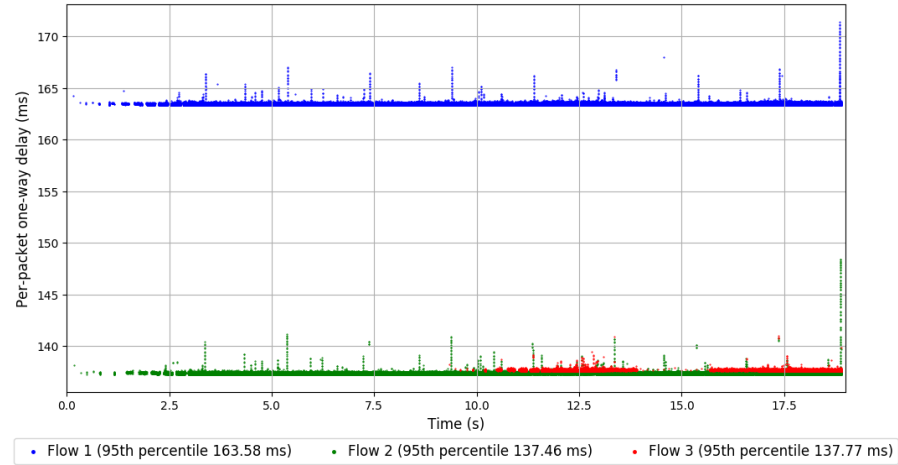
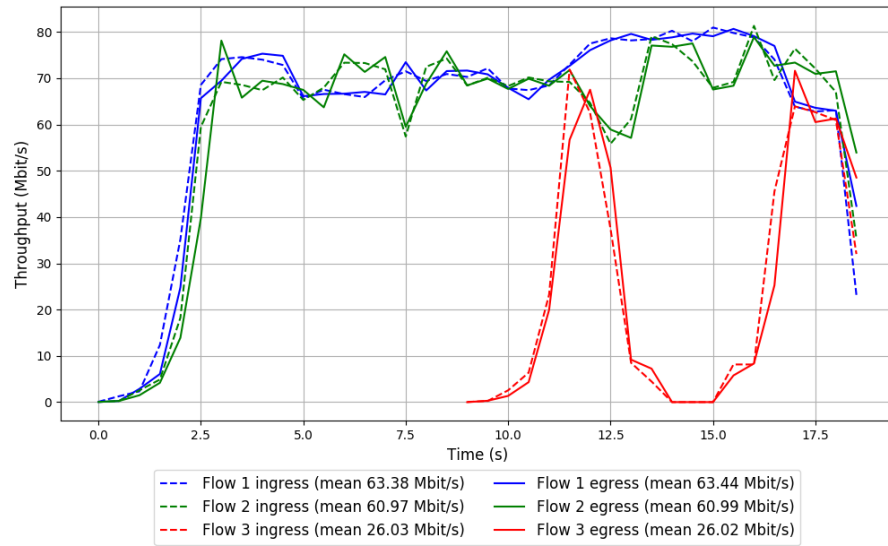


Run 3: Statistics of QUIC Cubic

Start at: 2017-09-19 06:01:57

End at: 2017-09-19 06:02:27

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2017-09-19 06:12:57

End at: 2017-09-19 06:13:27

Below is generated by plot.py at 2017-09-19 08:35:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 103.38 Mbit/s

95th percentile per-packet one-way delay: 137.115 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 55.88 Mbit/s

95th percentile per-packet one-way delay: 136.547 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 47.79 Mbit/s

95th percentile per-packet one-way delay: 137.192 ms

Loss rate: 0.00%

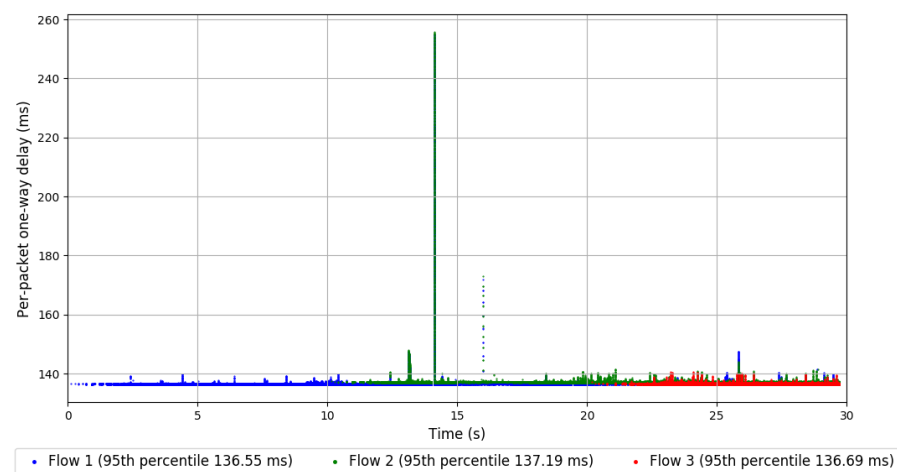
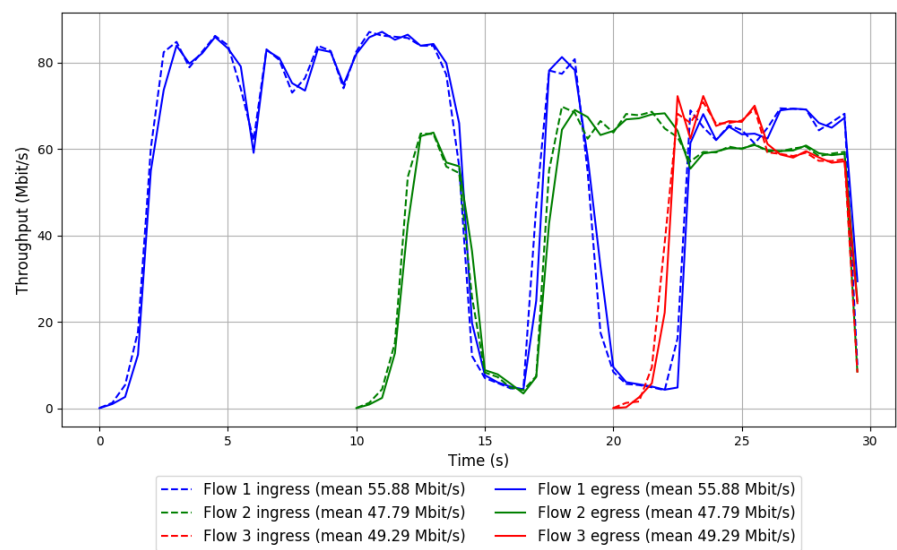
-- Flow 3:

Average throughput: 49.29 Mbit/s

95th percentile per-packet one-way delay: 136.686 ms

Loss rate: 0.00%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2017-09-19 06:23:48

End at: 2017-09-19 06:24:18

Below is generated by plot.py at 2017-09-19 08:35:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 106.21 Mbit/s

95th percentile per-packet one-way delay: 164.045 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 54.54 Mbit/s

95th percentile per-packet one-way delay: 135.921 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 61.29 Mbit/s

95th percentile per-packet one-way delay: 164.119 ms

Loss rate: 0.00%

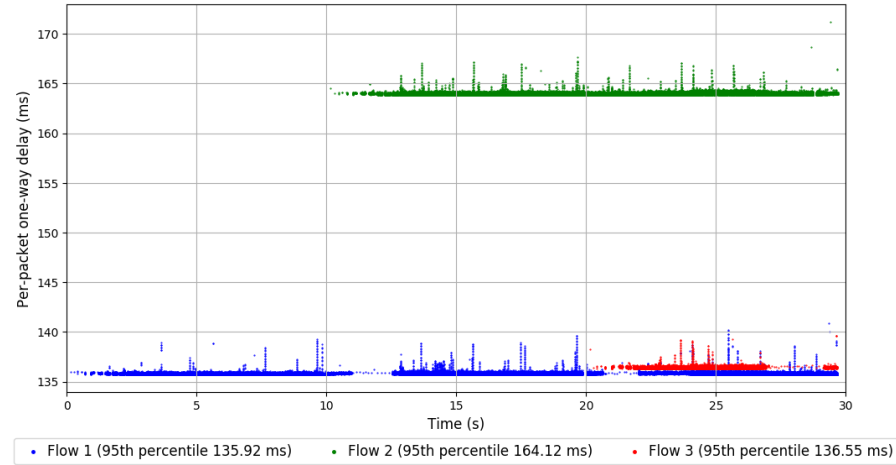
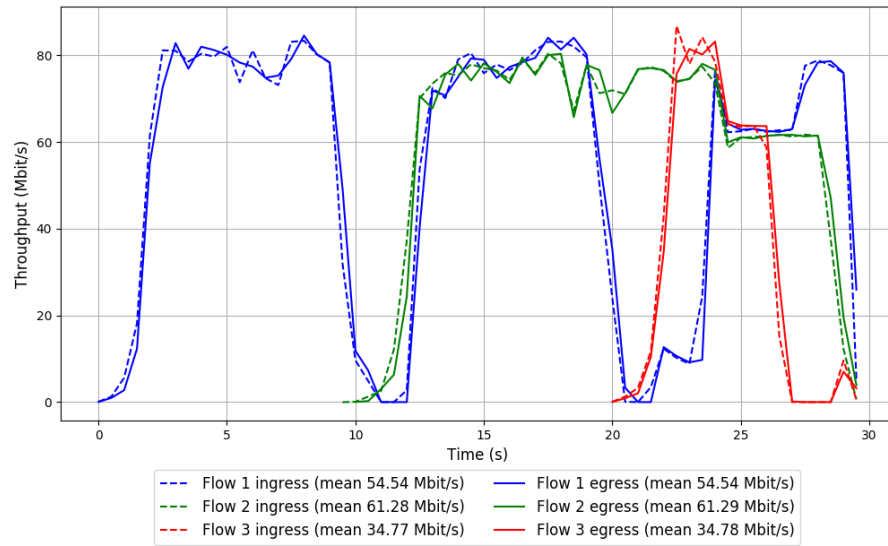
-- Flow 3:

Average throughput: 34.78 Mbit/s

95th percentile per-packet one-way delay: 136.546 ms

Loss rate: 0.00%

Run 5: Report of QUIC Cubic — Data Link

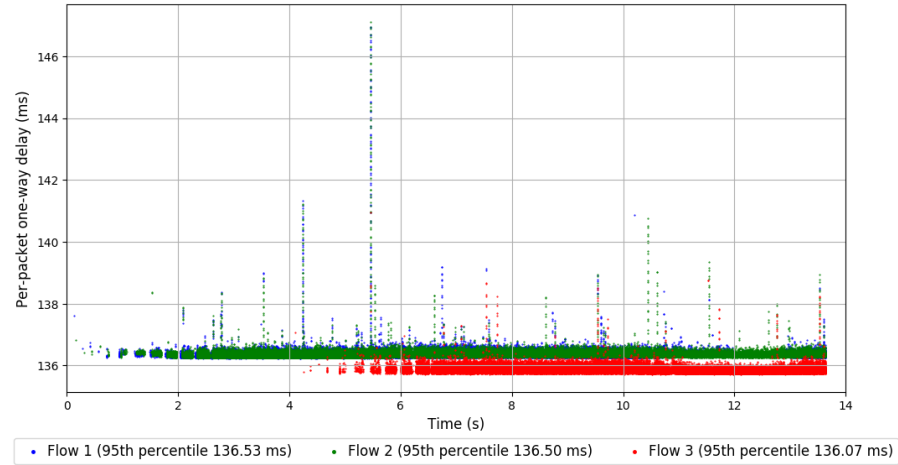
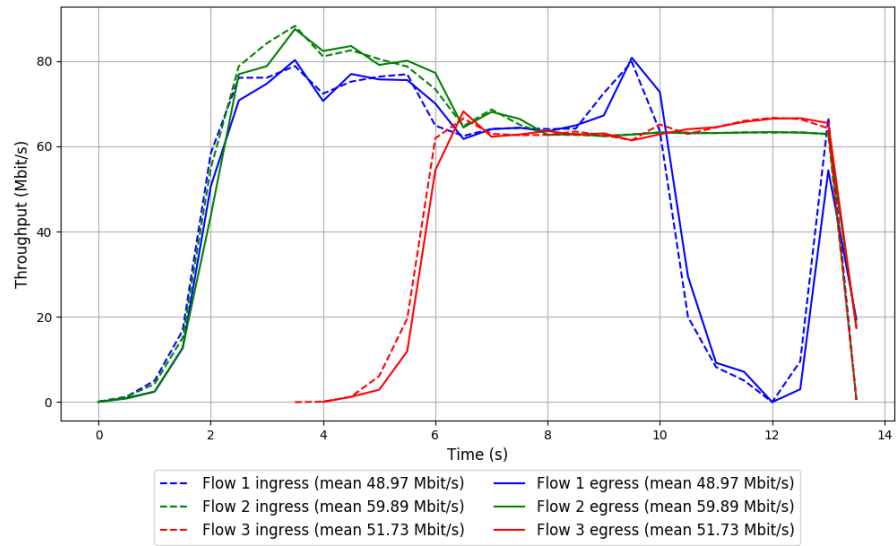


Run 6: Statistics of QUIC Cubic

Start at: 2017-09-19 06:34:18

End at: 2017-09-19 06:34:48

Run 6: Report of QUIC Cubic — Data Link



Run 7: Statistics of QUIC Cubic

Start at: 2017-09-19 06:43:53

End at: 2017-09-19 06:44:23

Below is generated by plot.py at 2017-09-19 08:35:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 100.98 Mbit/s

95th percentile per-packet one-way delay: 136.899 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 40.91 Mbit/s

95th percentile per-packet one-way delay: 135.960 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 61.28 Mbit/s

95th percentile per-packet one-way delay: 136.384 ms

Loss rate: 0.00%

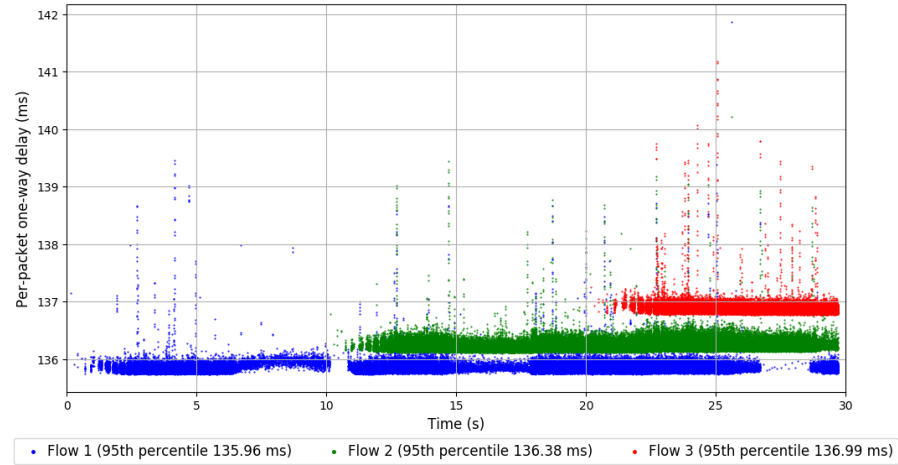
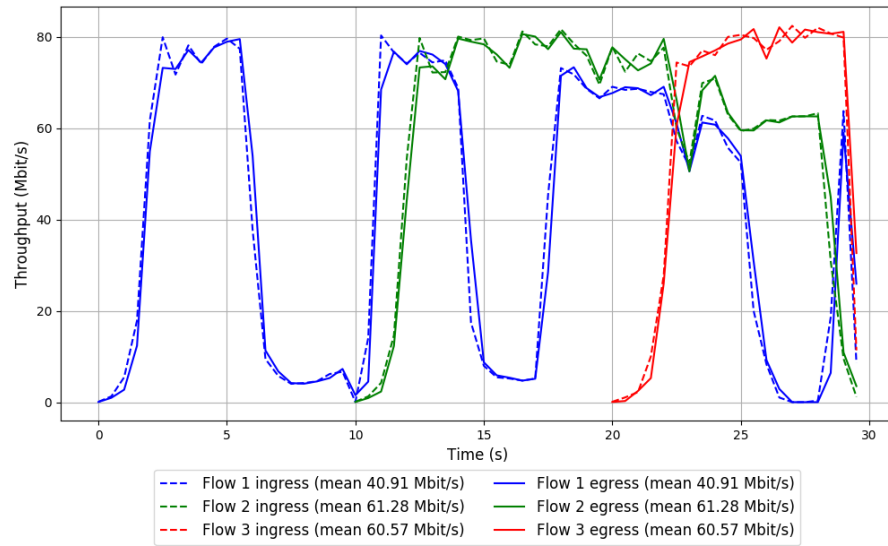
-- Flow 3:

Average throughput: 60.57 Mbit/s

95th percentile per-packet one-way delay: 136.985 ms

Loss rate: 0.00%

Run 7: Report of QUIC Cubic — Data Link



Run 8: Statistics of QUIC Cubic

Start at: 2017-09-19 06:53:24

End at: 2017-09-19 06:53:54

Below is generated by plot.py at 2017-09-19 08:35:48

Datalink statistics

-- Total of 3 flows:

Average throughput: 121.21 Mbit/s

95th percentile per-packet one-way delay: 163.604 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 61.98 Mbit/s

95th percentile per-packet one-way delay: 137.880 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 61.17 Mbit/s

95th percentile per-packet one-way delay: 163.672 ms

Loss rate: 0.01%

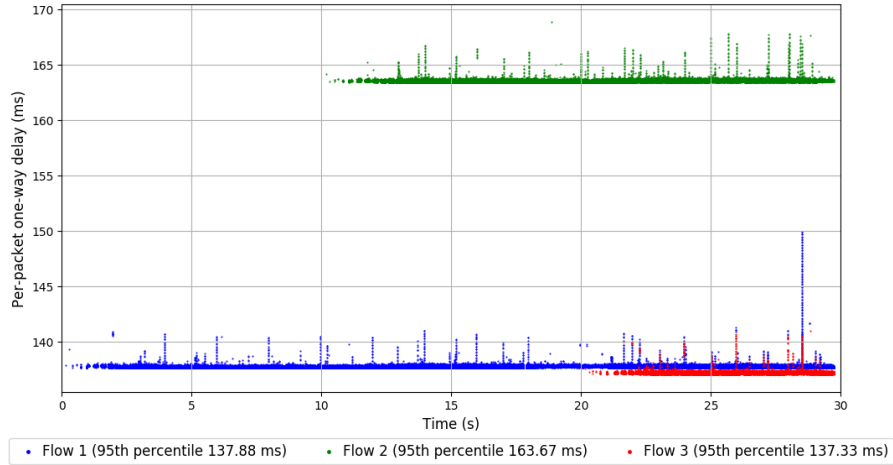
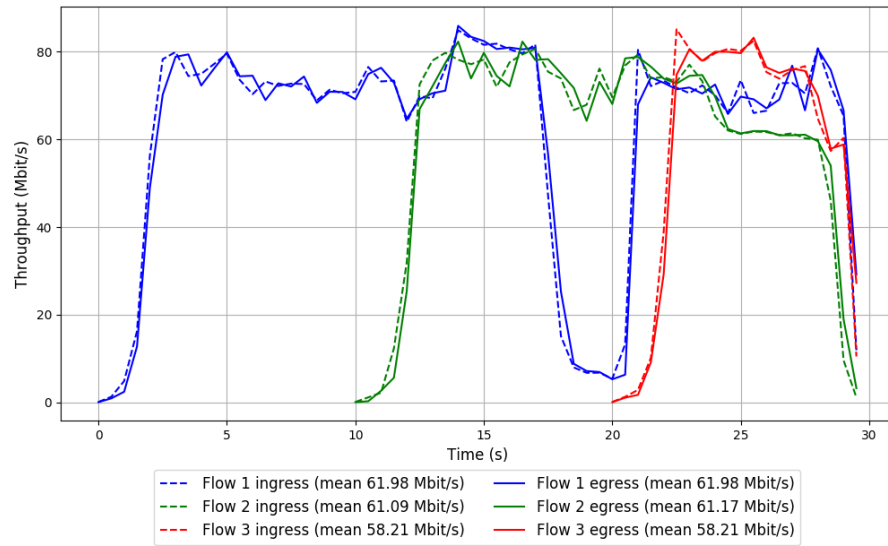
-- Flow 3:

Average throughput: 58.21 Mbit/s

95th percentile per-packet one-way delay: 137.334 ms

Loss rate: 0.00%

Run 8: Report of QUIC Cubic — Data Link



Run 9: Statistics of QUIC Cubic

Start at: 2017-09-19 07:03:00

End at: 2017-09-19 07:03:30

Below is generated by plot.py at 2017-09-19 08:36:07

Datalink statistics

-- Total of 3 flows:

Average throughput: 105.46 Mbit/s

95th percentile per-packet one-way delay: 163.681 ms

Loss rate: 0.04%

-- Flow 1:

Average throughput: 54.27 Mbit/s

95th percentile per-packet one-way delay: 137.725 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 60.62 Mbit/s

95th percentile per-packet one-way delay: 163.740 ms

Loss rate: 0.12%

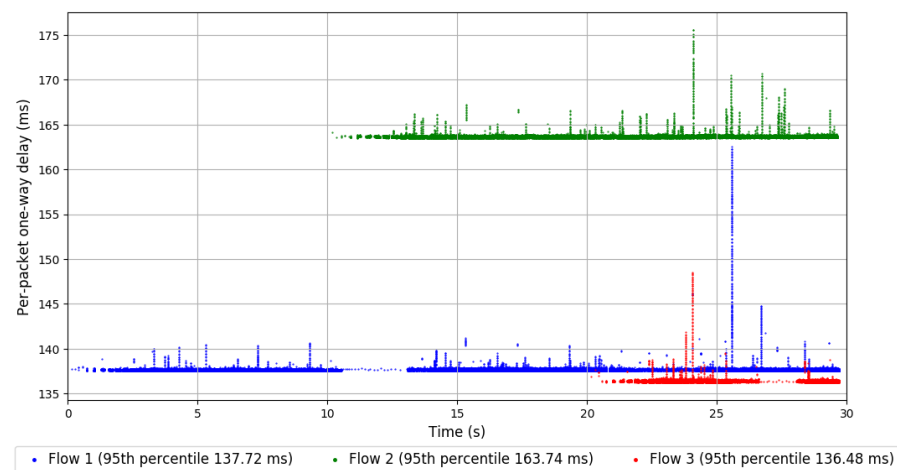
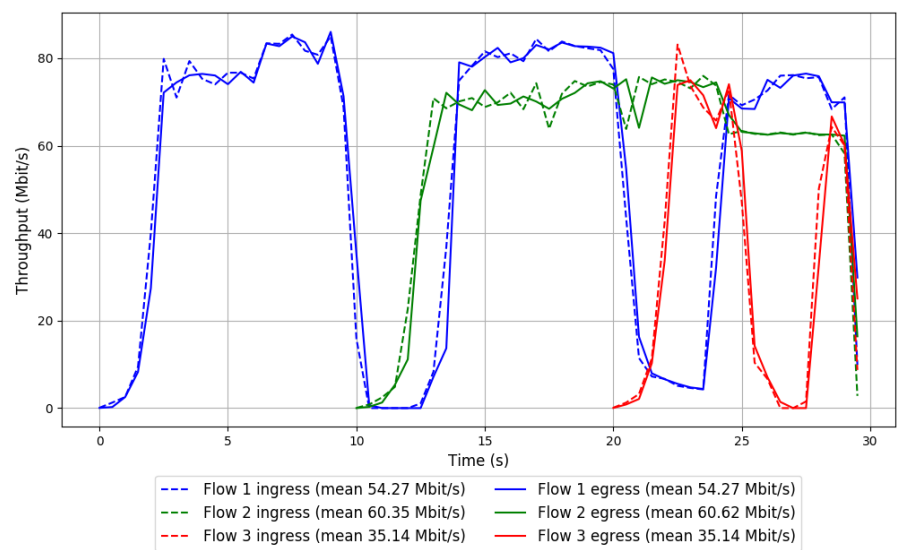
-- Flow 3:

Average throughput: 35.14 Mbit/s

95th percentile per-packet one-way delay: 136.483 ms

Loss rate: 0.00%

Run 9: Report of QUIC Cubic — Data Link

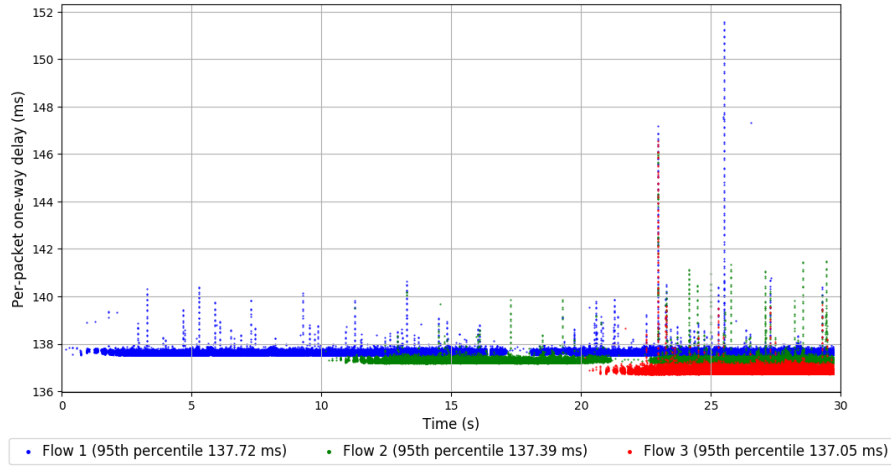
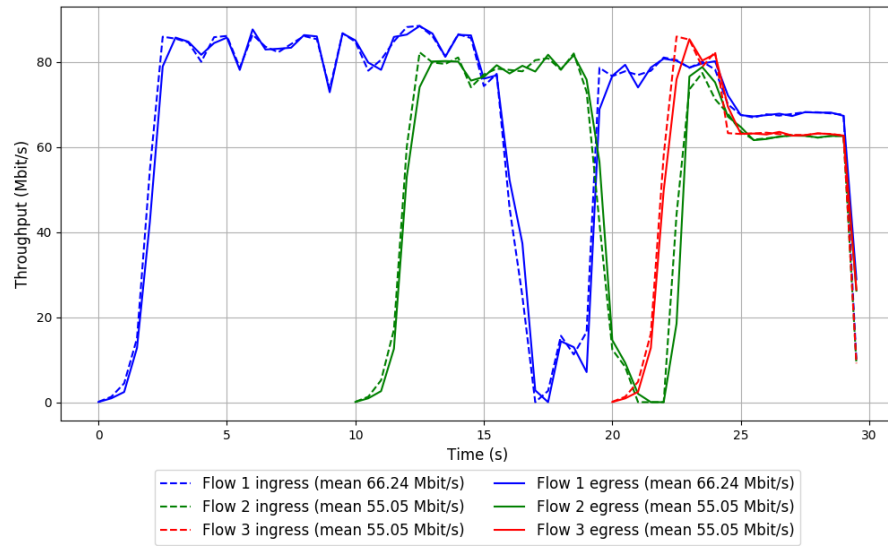


```
Run 10: Statistics of QUIC Cubic

Start at: 2017-09-19 07:12:24
End at: 2017-09-19 07:12:54

# Below is generated by plot.py at 2017-09-19 08:37:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 120.46 Mbit/s
95th percentile per-packet one-way delay: 137.692 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 66.24 Mbit/s
95th percentile per-packet one-way delay: 137.719 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 55.05 Mbit/s
95th percentile per-packet one-way delay: 137.394 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 55.05 Mbit/s
95th percentile per-packet one-way delay: 137.046 ms
Loss rate: 0.00%
```

Run 10: Report of QUIC Cubic — Data Link

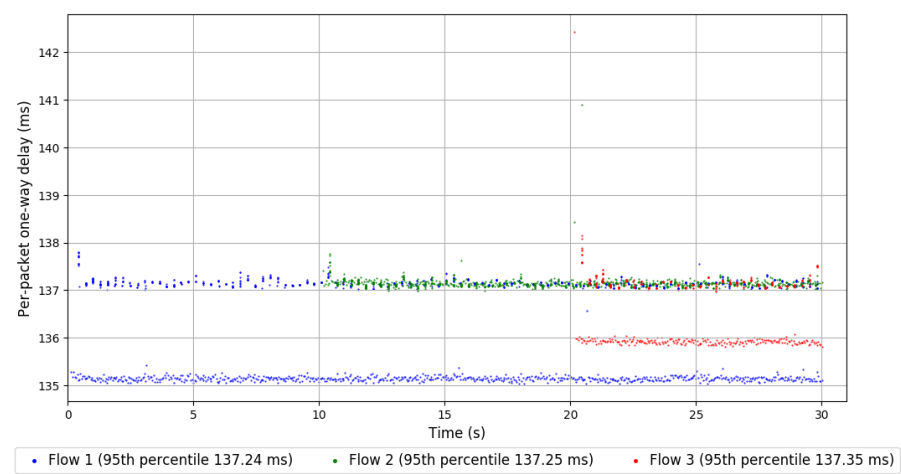
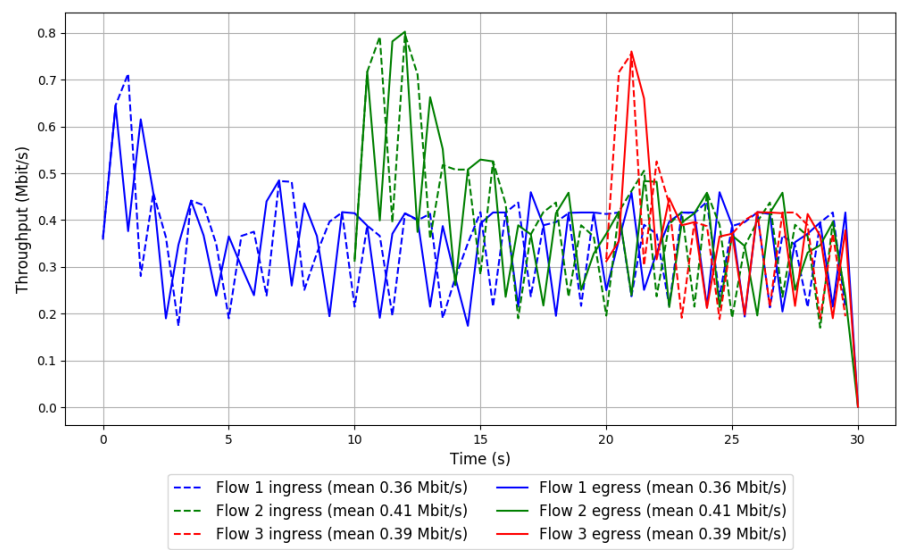


```
Run 1: Statistics of Sprout

Start at: 2017-09-19 05:48:37
End at: 2017-09-19 05:49:07

# Below is generated by plot.py at 2017-09-19 08:37:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.76 Mbit/s
95th percentile per-packet one-way delay: 137.257 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 137.238 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 137.252 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 0.39 Mbit/s
95th percentile per-packet one-way delay: 137.346 ms
Loss rate: 0.00%
```

Run 1: Report of Sprout — Data Link



Run 2: Statistics of Sprout

Start at: 2017-09-19 05:58:49

End at: 2017-09-19 05:59:19

Below is generated by plot.py at 2017-09-19 08:37:05

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.83 Mbit/s

95th percentile per-packet one-way delay: 137.731 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.39 Mbit/s

95th percentile per-packet one-way delay: 137.503 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.40 Mbit/s

95th percentile per-packet one-way delay: 137.767 ms

Loss rate: 0.00%

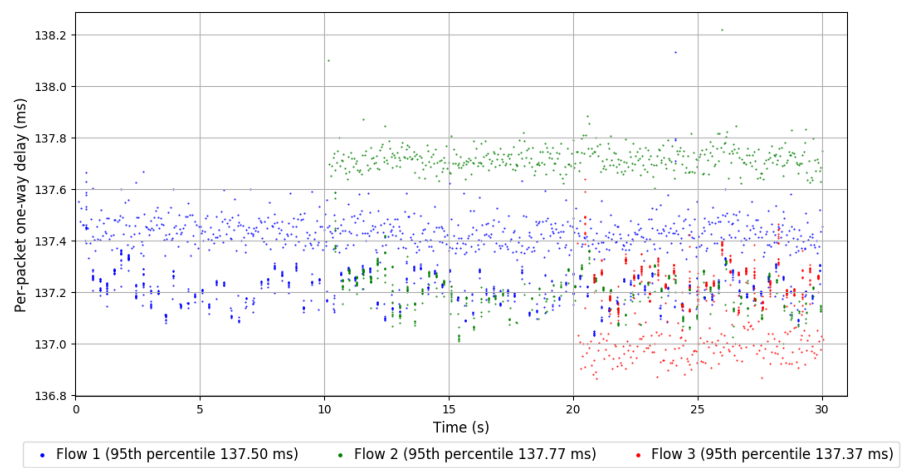
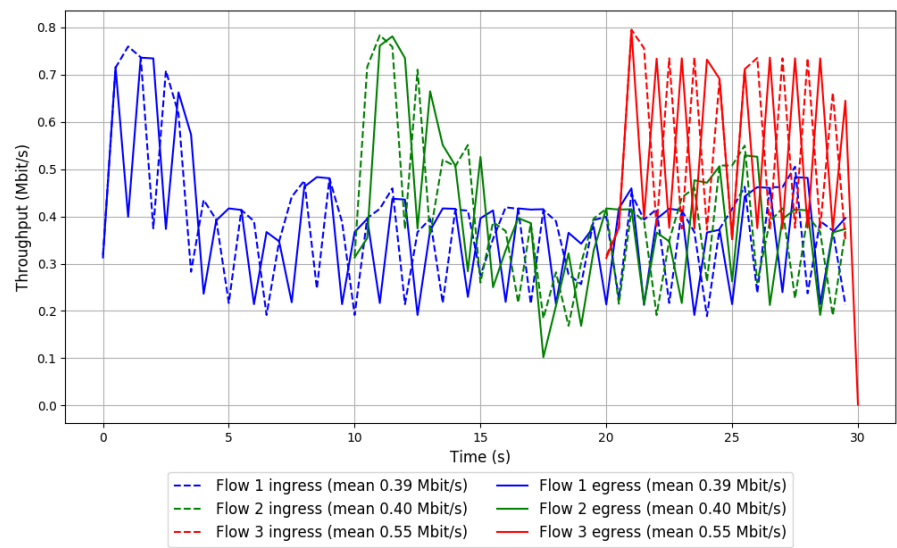
-- Flow 3:

Average throughput: 0.55 Mbit/s

95th percentile per-packet one-way delay: 137.367 ms

Loss rate: 0.00%

Run 2: Report of Sprout — Data Link



Run 3: Statistics of Sprout

Start at: 2017-09-19 06:09:37

End at: 2017-09-19 06:10:07

Below is generated by plot.py at 2017-09-19 08:37:05

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.74 Mbit/s

95th percentile per-packet one-way delay: 163.450 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.29 Mbit/s

95th percentile per-packet one-way delay: 163.482 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.47 Mbit/s

95th percentile per-packet one-way delay: 137.369 ms

Loss rate: 0.00%

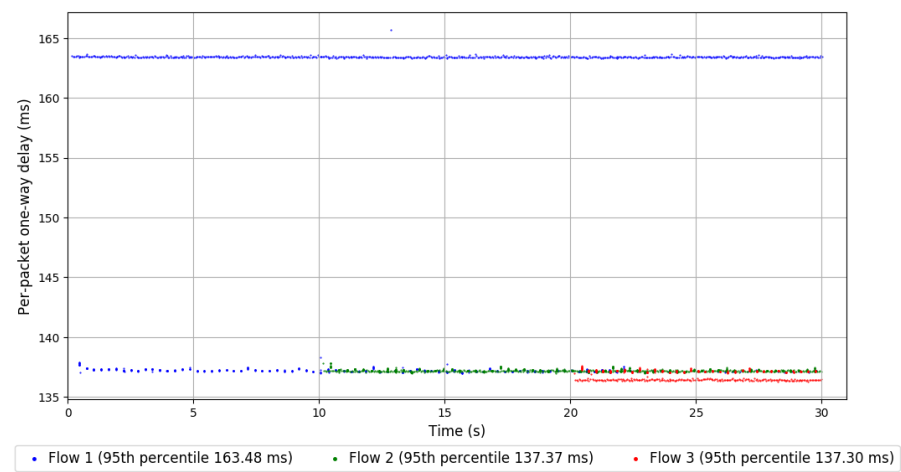
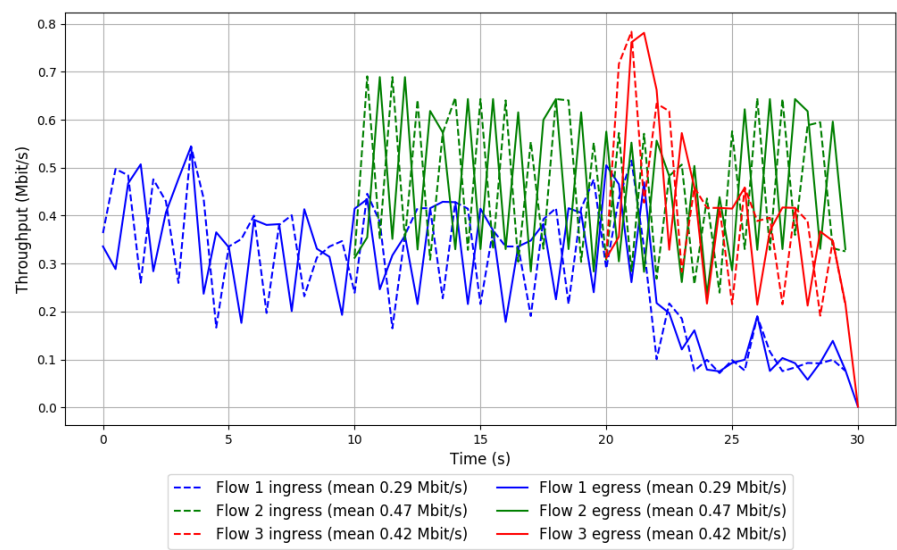
-- Flow 3:

Average throughput: 0.42 Mbit/s

95th percentile per-packet one-way delay: 137.296 ms

Loss rate: 0.00%

Run 3: Report of Sprout — Data Link



Run 4: Statistics of Sprout

Start at: 2017-09-19 06:20:45

End at: 2017-09-19 06:21:15

Below is generated by plot.py at 2017-09-19 08:37:05

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.35 Mbit/s

95th percentile per-packet one-way delay: 163.383 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.12 Mbit/s

95th percentile per-packet one-way delay: 163.355 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.27 Mbit/s

95th percentile per-packet one-way delay: 163.407 ms

Loss rate: 0.00%

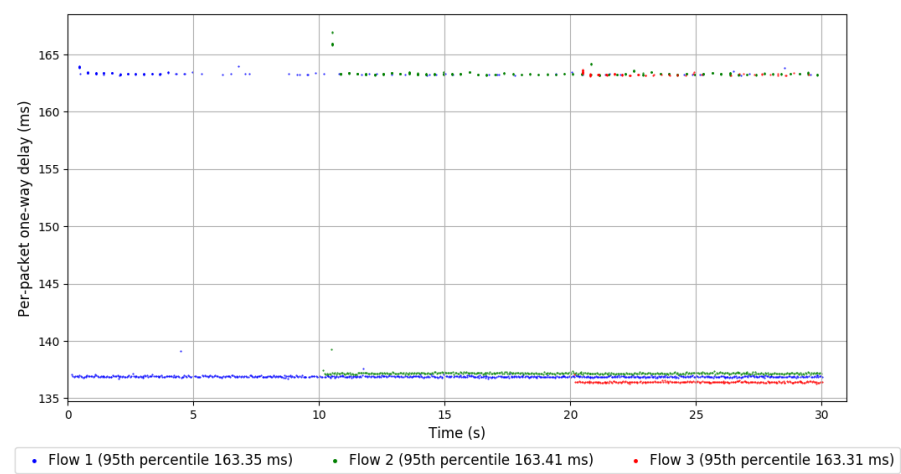
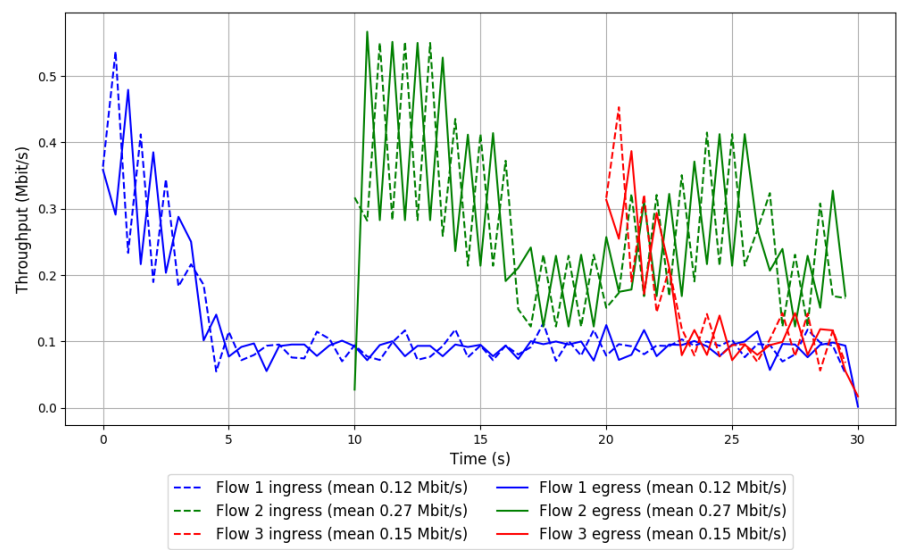
-- Flow 3:

Average throughput: 0.15 Mbit/s

95th percentile per-packet one-way delay: 163.308 ms

Loss rate: 0.00%

Run 4: Report of Sprout — Data Link



Run 5: Statistics of Sprout

Start at: 2017-09-19 06:31:14

End at: 2017-09-19 06:31:44

Below is generated by plot.py at 2017-09-19 08:37:05

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.30 Mbit/s

95th percentile per-packet one-way delay: 163.349 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.10 Mbit/s

95th percentile per-packet one-way delay: 163.281 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.16 Mbit/s

95th percentile per-packet one-way delay: 163.351 ms

Loss rate: 0.00%

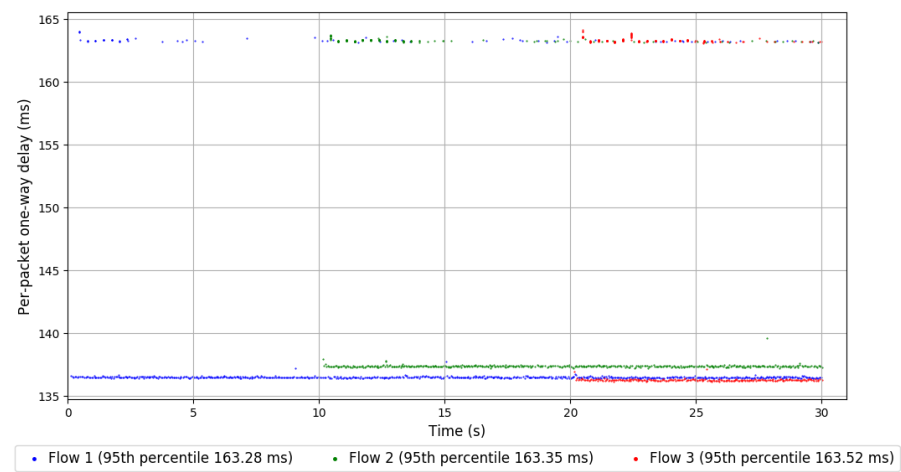
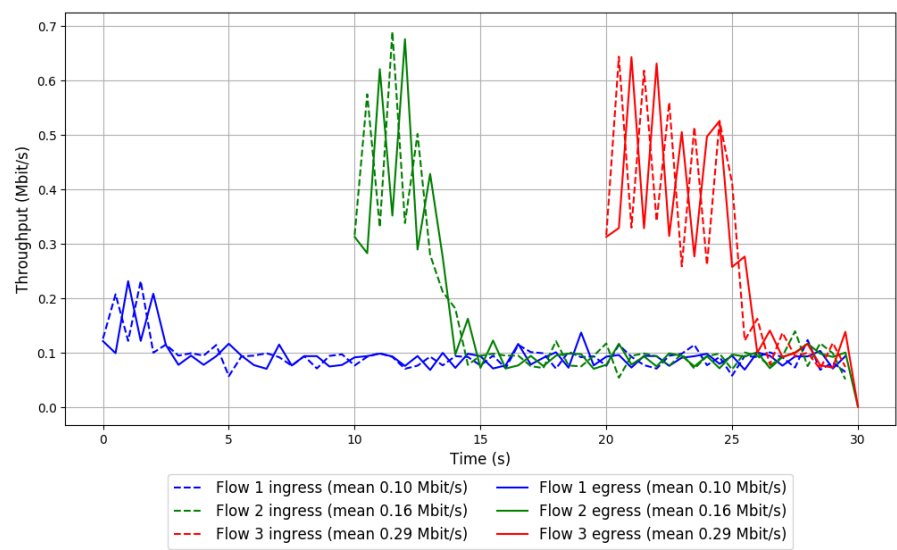
-- Flow 3:

Average throughput: 0.29 Mbit/s

95th percentile per-packet one-way delay: 163.518 ms

Loss rate: 0.00%

Run 5: Report of Sprout — Data Link



Run 6: Statistics of Sprout

Start at: 2017-09-19 06:41:16

End at: 2017-09-19 06:41:46

Below is generated by plot.py at 2017-09-19 08:37:05

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.47 Mbit/s

95th percentile per-packet one-way delay: 163.458 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.24 Mbit/s

95th percentile per-packet one-way delay: 163.554 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.23 Mbit/s

95th percentile per-packet one-way delay: 163.399 ms

Loss rate: 0.00%

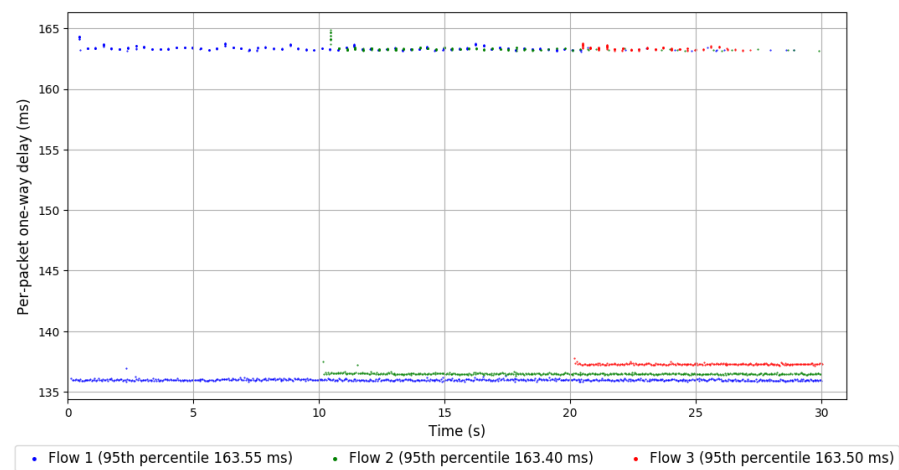
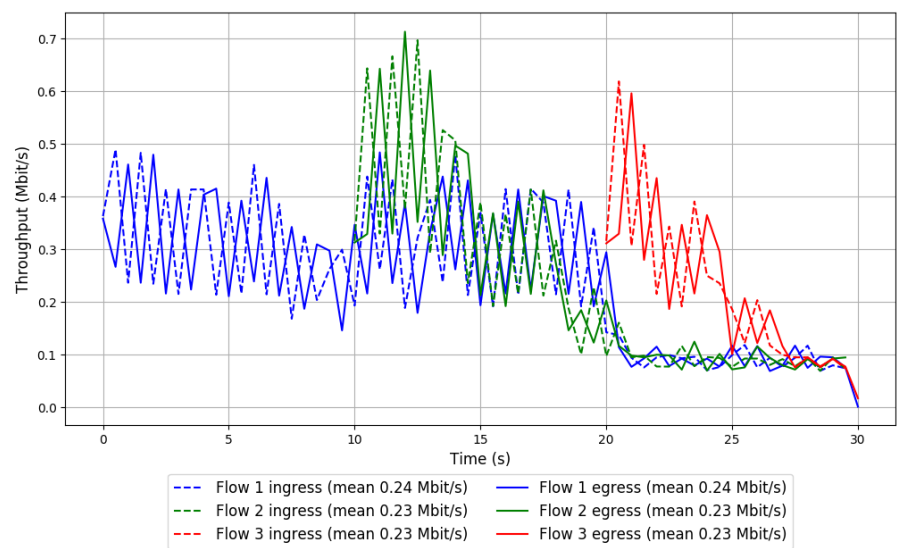
-- Flow 3:

Average throughput: 0.23 Mbit/s

95th percentile per-packet one-way delay: 163.498 ms

Loss rate: 0.00%

Run 6: Report of Sprout — Data Link



Run 7: Statistics of Sprout

Start at: 2017-09-19 06:50:52

End at: 2017-09-19 06:51:22

Below is generated by plot.py at 2017-09-19 08:37:05

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.39 Mbit/s

95th percentile per-packet one-way delay: 163.444 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.17 Mbit/s

95th percentile per-packet one-way delay: 163.381 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.18 Mbit/s

95th percentile per-packet one-way delay: 163.465 ms

Loss rate: 0.00%

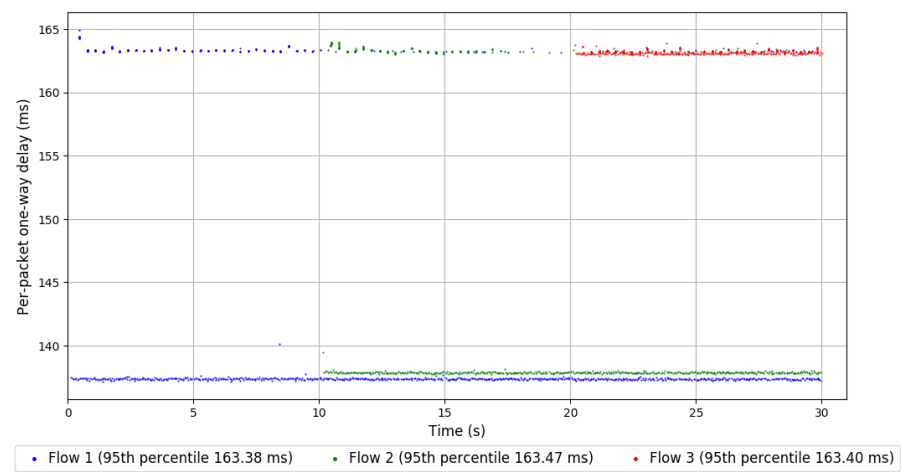
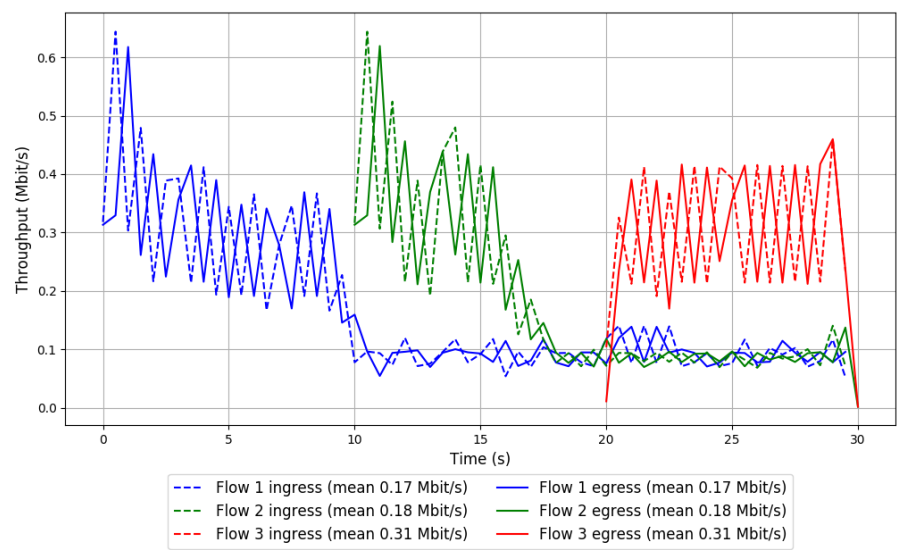
-- Flow 3:

Average throughput: 0.31 Mbit/s

95th percentile per-packet one-way delay: 163.404 ms

Loss rate: 0.00%

Run 7: Report of Sprout — Data Link



Run 8: Statistics of Sprout

Start at: 2017-09-19 07:00:28

End at: 2017-09-19 07:00:58

Below is generated by plot.py at 2017-09-19 08:37:05

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.44 Mbit/s

95th percentile per-packet one-way delay: 163.428 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 163.432 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.19 Mbit/s

95th percentile per-packet one-way delay: 163.353 ms

Loss rate: 0.00%

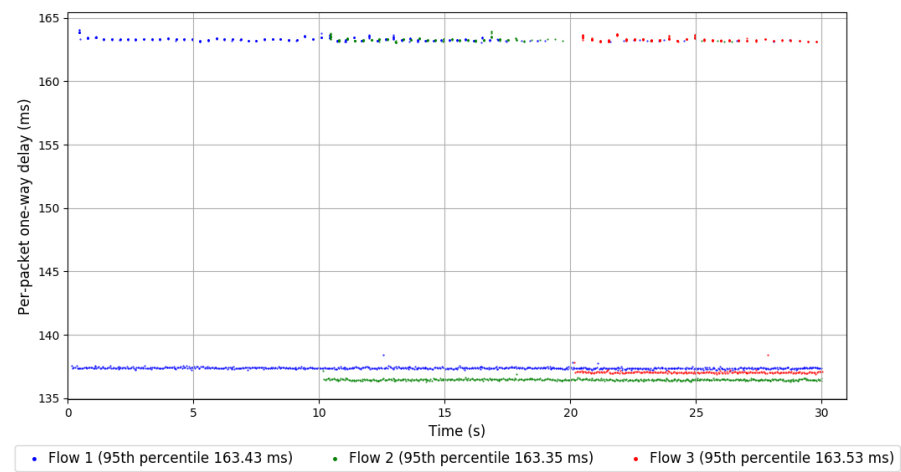
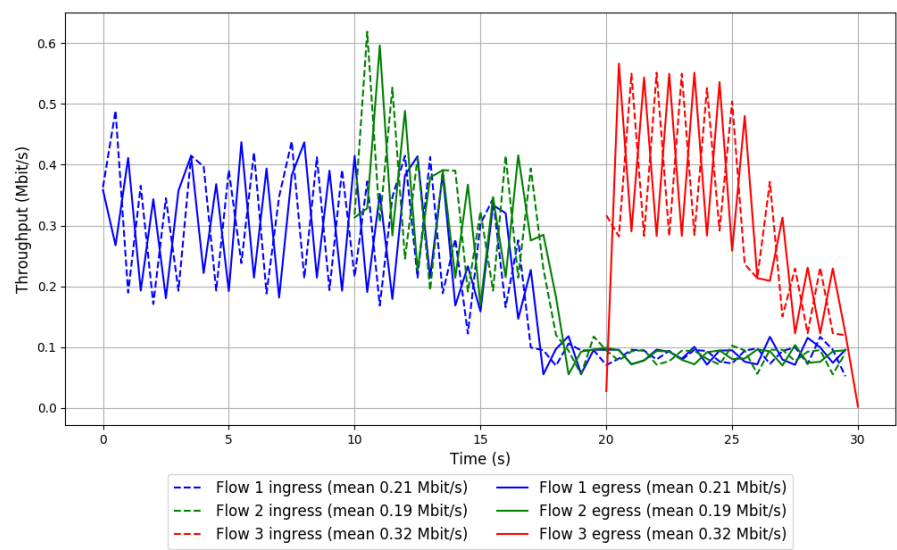
-- Flow 3:

Average throughput: 0.32 Mbit/s

95th percentile per-packet one-way delay: 163.532 ms

Loss rate: 0.00%

Run 8: Report of Sprout — Data Link



Run 9: Statistics of Sprout

Start at: 2017-09-19 07:09:52

End at: 2017-09-19 07:10:22

Below is generated by plot.py at 2017-09-19 08:37:05

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.36 Mbit/s

95th percentile per-packet one-way delay: 163.403 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.12 Mbit/s

95th percentile per-packet one-way delay: 163.353 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.25 Mbit/s

95th percentile per-packet one-way delay: 163.471 ms

Loss rate: 0.00%

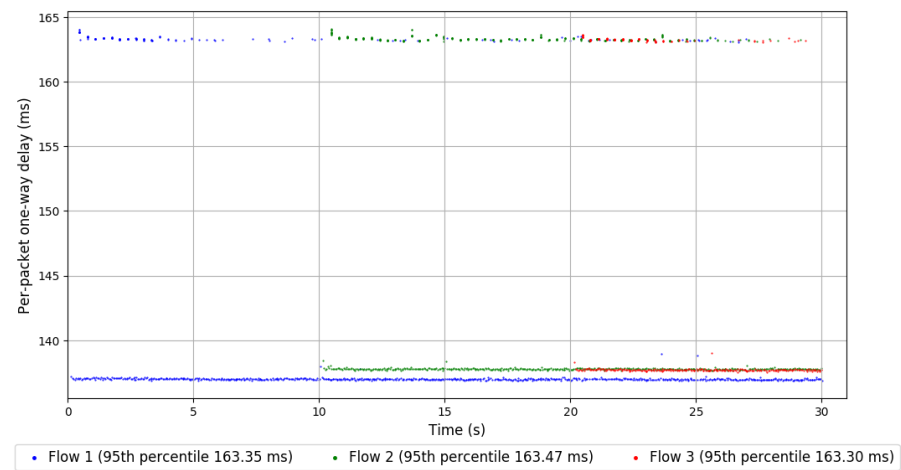
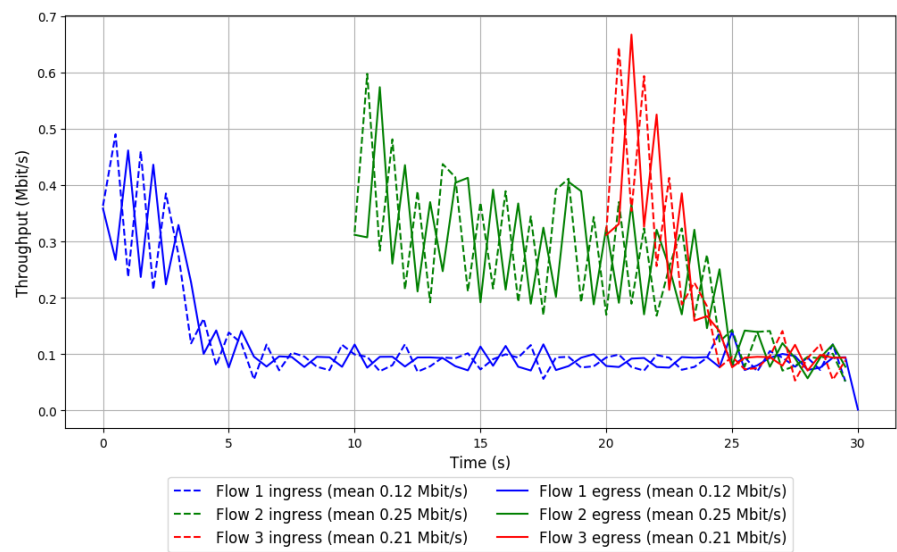
-- Flow 3:

Average throughput: 0.21 Mbit/s

95th percentile per-packet one-way delay: 163.299 ms

Loss rate: 0.00%

Run 9: Report of Sprout — Data Link



Run 10: Statistics of Sprout

Start at: 2017-09-19 07:19:33

End at: 2017-09-19 07:20:03

Below is generated by plot.py at 2017-09-19 08:37:05

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.33 Mbit/s

95th percentile per-packet one-way delay: 163.345 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 0.14 Mbit/s

95th percentile per-packet one-way delay: 163.333 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 0.15 Mbit/s

95th percentile per-packet one-way delay: 163.374 ms

Loss rate: 0.00%

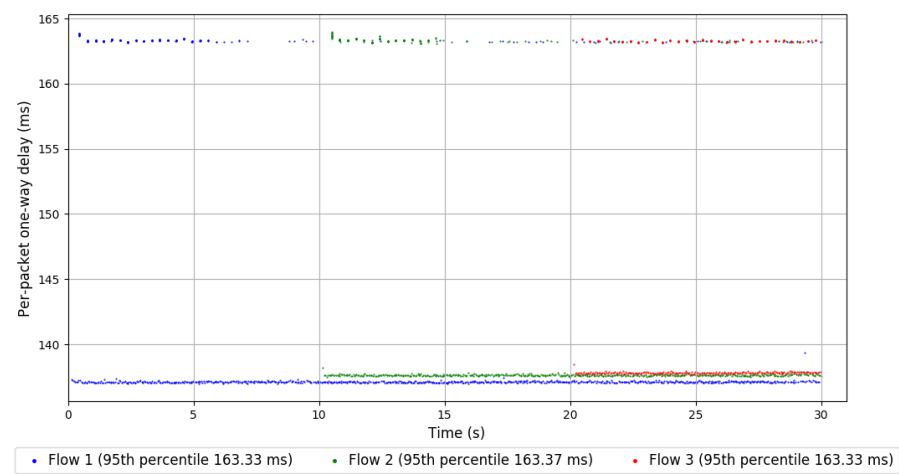
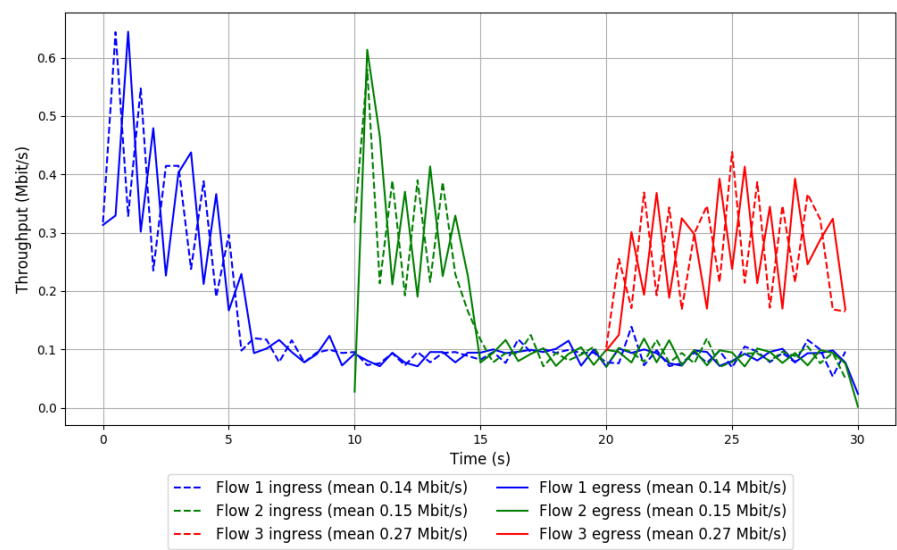
-- Flow 3:

Average throughput: 0.27 Mbit/s

95th percentile per-packet one-way delay: 163.334 ms

Loss rate: 0.00%

Run 10: Report of Sprout — Data Link

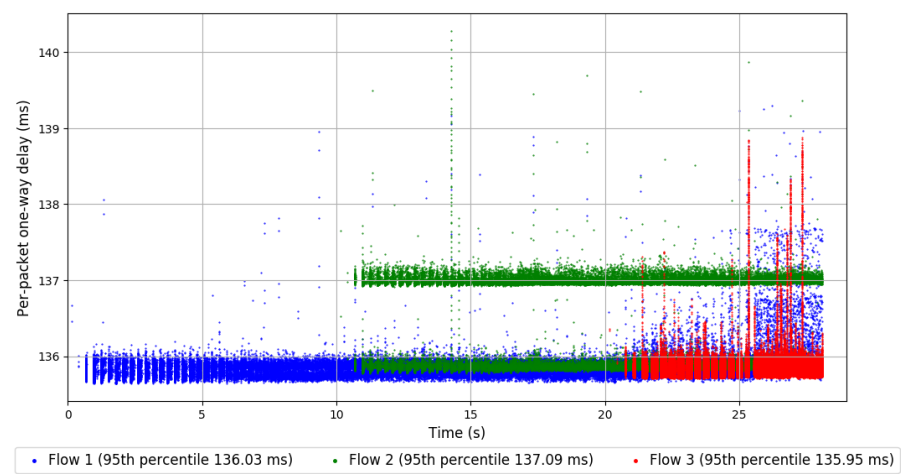
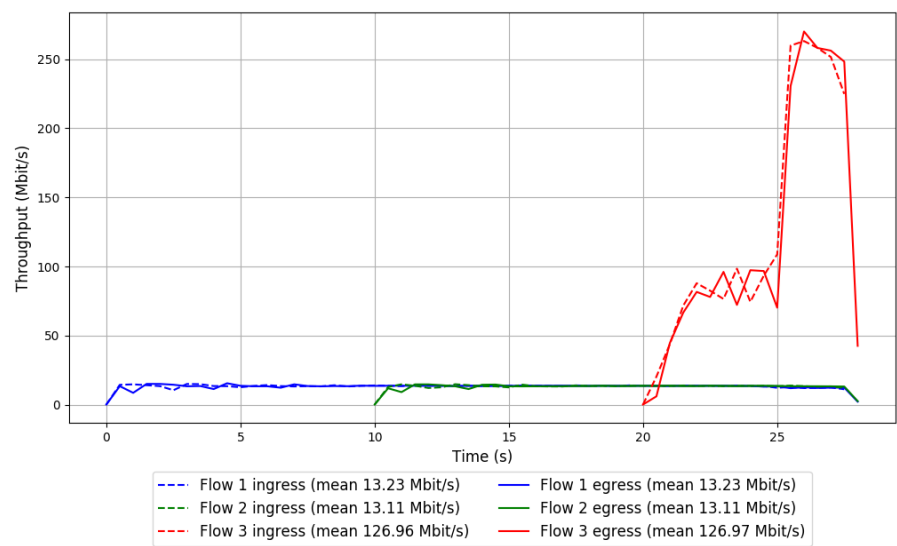


```
Run 1: Statistics of TaoVA-100x

Start at: 2017-09-19 05:42:39
End at: 2017-09-19 05:43:09

# Below is generated by plot.py at 2017-09-19 08:37:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 57.68 Mbit/s
95th percentile per-packet one-way delay: 136.981 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 13.23 Mbit/s
95th percentile per-packet one-way delay: 136.030 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 13.11 Mbit/s
95th percentile per-packet one-way delay: 137.095 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 126.97 Mbit/s
95th percentile per-packet one-way delay: 135.954 ms
Loss rate: 0.00%
```

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

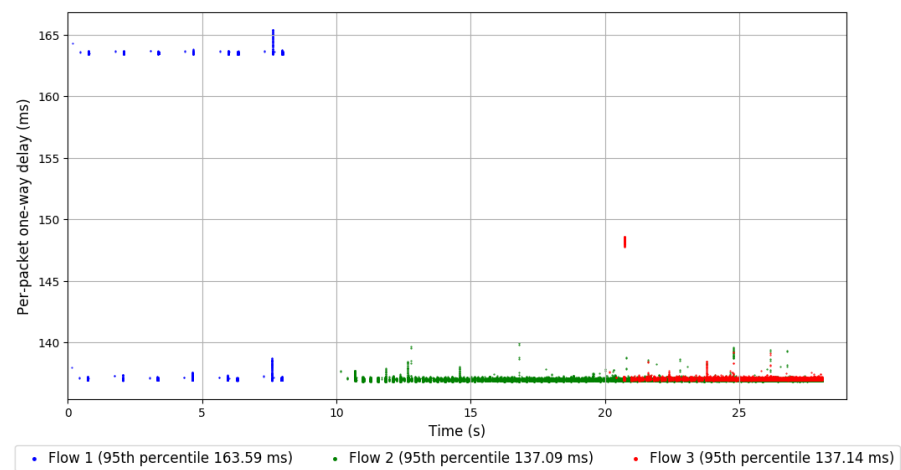
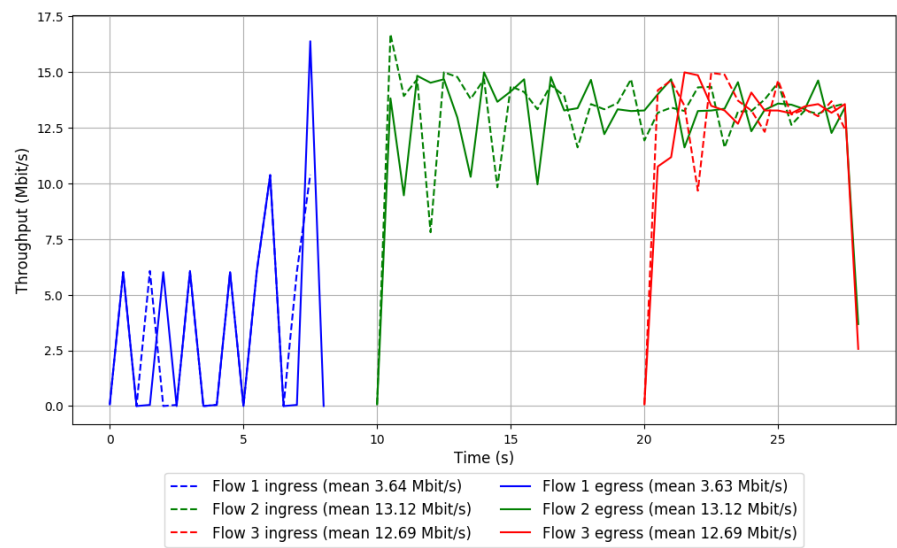


```
Run 2: Statistics of TaoVA-100x

Start at: 2017-09-19 05:52:39
End at: 2017-09-19 05:53:09

# Below is generated by plot.py at 2017-09-19 08:37:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.05 Mbit/s
95th percentile per-packet one-way delay: 137.246 ms
Loss rate: 0.00%
-- Flow 1:
Average throughput: 3.63 Mbit/s
95th percentile per-packet one-way delay: 163.585 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 13.12 Mbit/s
95th percentile per-packet one-way delay: 137.087 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 12.69 Mbit/s
95th percentile per-packet one-way delay: 137.141 ms
Loss rate: 0.00%
```

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



Run 3: Statistics of TaoVA-100x

Start at: 2017-09-19 06:02:55

End at: 2017-09-19 06:03:25

Below is generated by plot.py at 2017-09-19 08:45:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 374.53 Mbit/s

95th percentile per-packet one-way delay: 138.020 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 200.15 Mbit/s

95th percentile per-packet one-way delay: 137.606 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 194.41 Mbit/s

95th percentile per-packet one-way delay: 137.904 ms

Loss rate: 0.00%

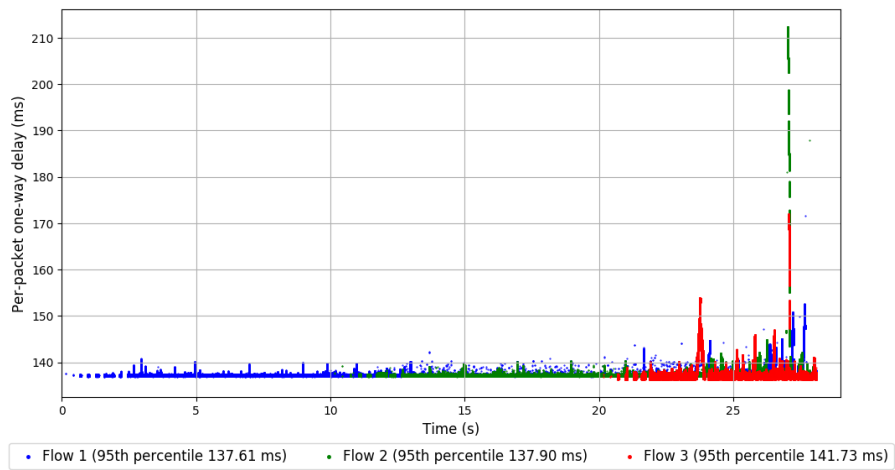
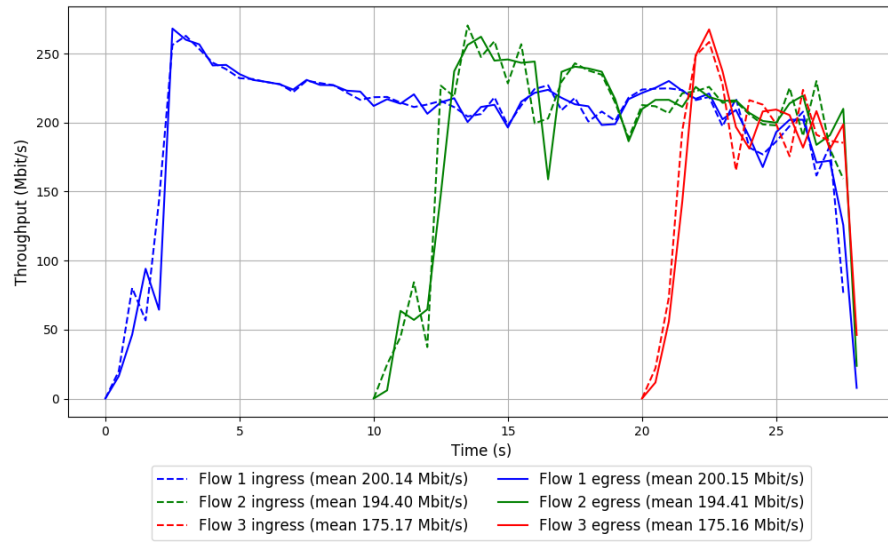
-- Flow 3:

Average throughput: 175.16 Mbit/s

95th percentile per-packet one-way delay: 141.732 ms

Loss rate: 0.00%

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



Run 4: Statistics of TaoVA-100x

Start at: 2017-09-19 06:13:59

End at: 2017-09-19 06:14:29

Below is generated by plot.py at 2017-09-19 08:45:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 183.75 Mbit/s

95th percentile per-packet one-way delay: 137.876 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 11.35 Mbit/s

95th percentile per-packet one-way delay: 137.474 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 195.05 Mbit/s

95th percentile per-packet one-way delay: 138.032 ms

Loss rate: 0.00%

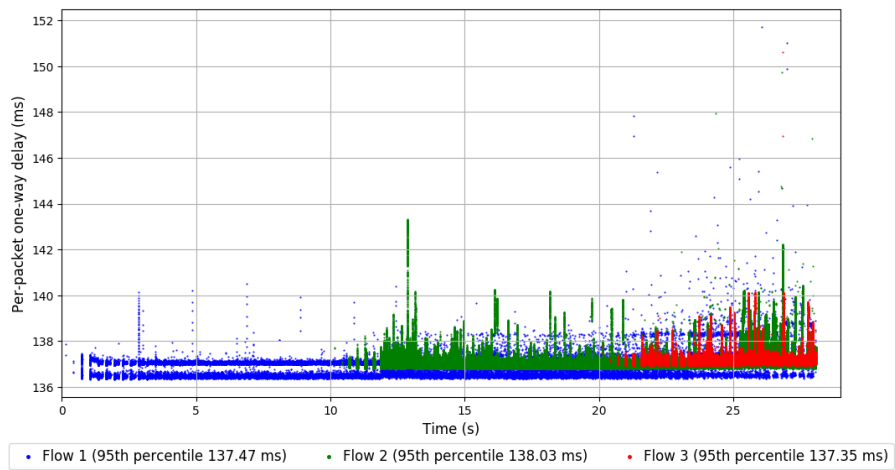
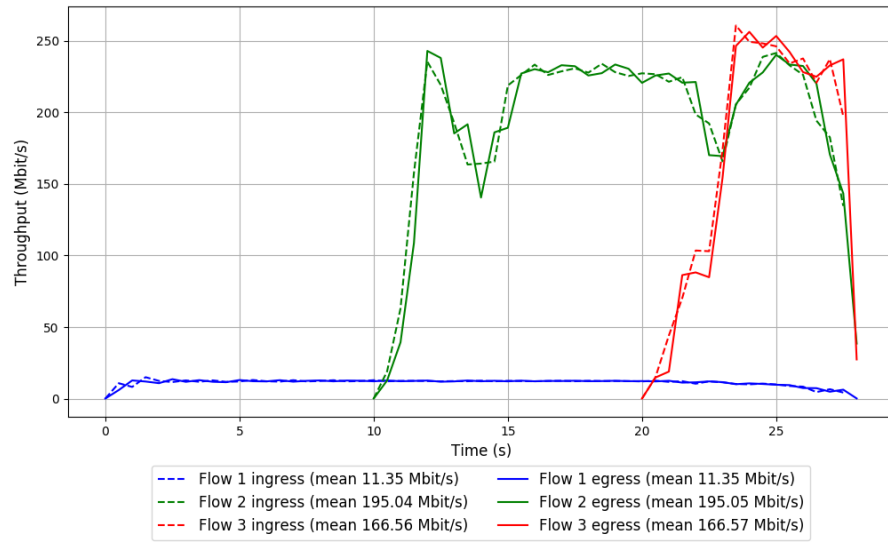
-- Flow 3:

Average throughput: 166.57 Mbit/s

95th percentile per-packet one-way delay: 137.348 ms

Loss rate: 0.00%

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



Run 5: Statistics of TaoVA-100x

Start at: 2017-09-19 06:24:47

End at: 2017-09-19 06:25:17

Below is generated by plot.py at 2017-09-19 08:45:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 208.42 Mbit/s

95th percentile per-packet one-way delay: 164.187 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 203.37 Mbit/s

95th percentile per-packet one-way delay: 164.194 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 6.67 Mbit/s

95th percentile per-packet one-way delay: 163.543 ms

Loss rate: 0.00%

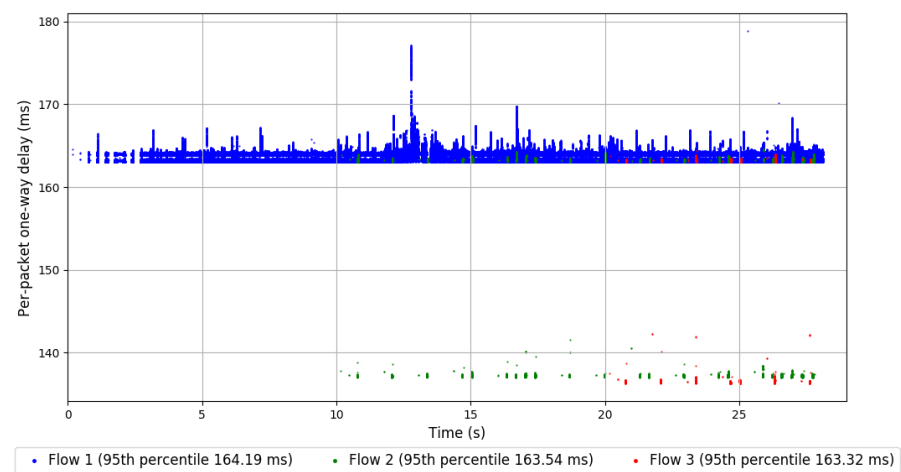
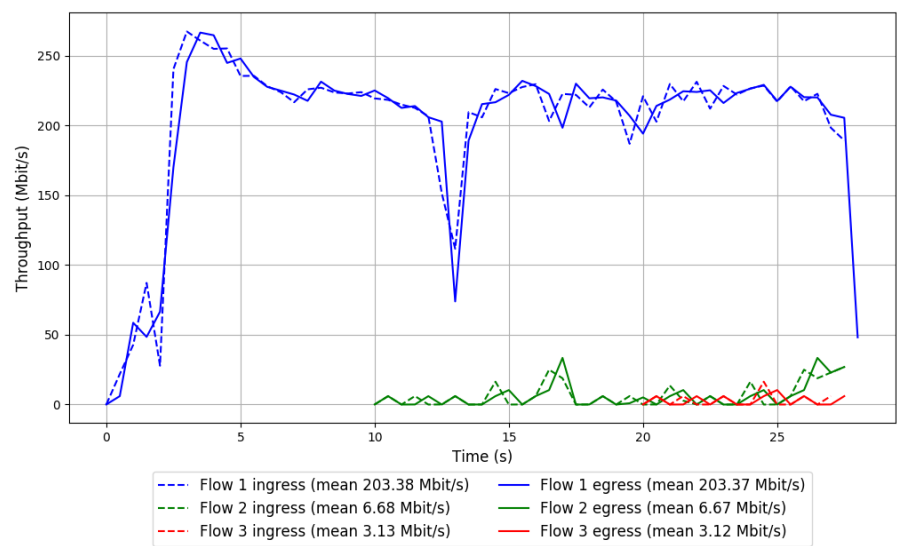
-- Flow 3:

Average throughput: 3.12 Mbit/s

95th percentile per-packet one-way delay: 163.323 ms

Loss rate: 0.00%

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



Run 6: Statistics of TaoVA-100x

Start at: 2017-09-19 06:35:14

End at: 2017-09-19 06:35:44

Below is generated by plot.py at 2017-09-19 08:45:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 9.43 Mbit/s

95th percentile per-packet one-way delay: 163.202 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 6.39 Mbit/s

95th percentile per-packet one-way delay: 163.199 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 3.98 Mbit/s

95th percentile per-packet one-way delay: 163.209 ms

Loss rate: 0.00%

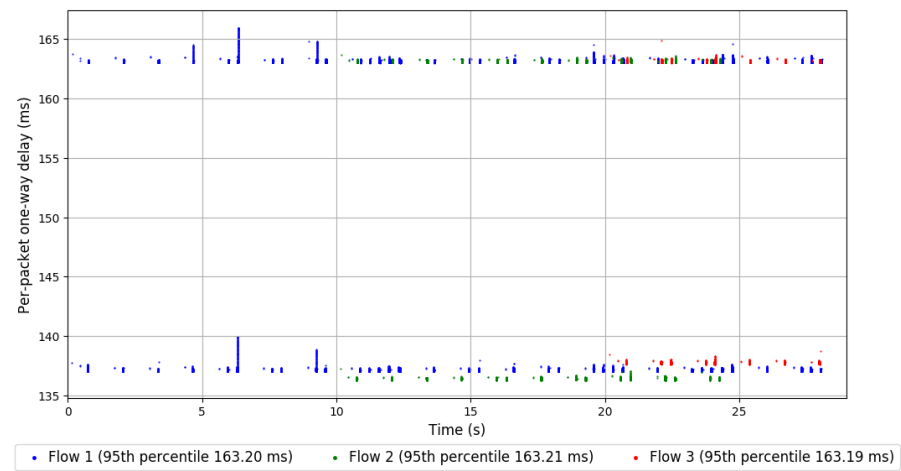
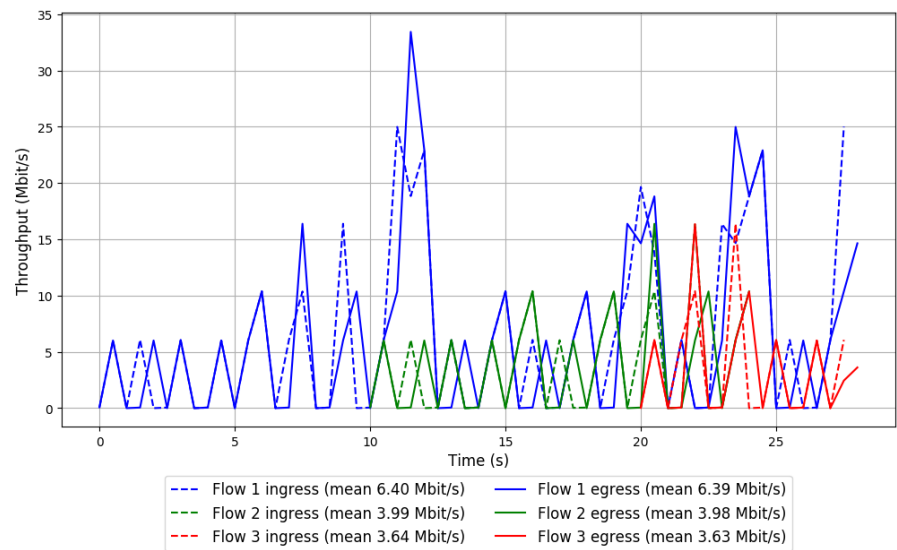
-- Flow 3:

Average throughput: 3.63 Mbit/s

95th percentile per-packet one-way delay: 163.193 ms

Loss rate: 0.00%

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

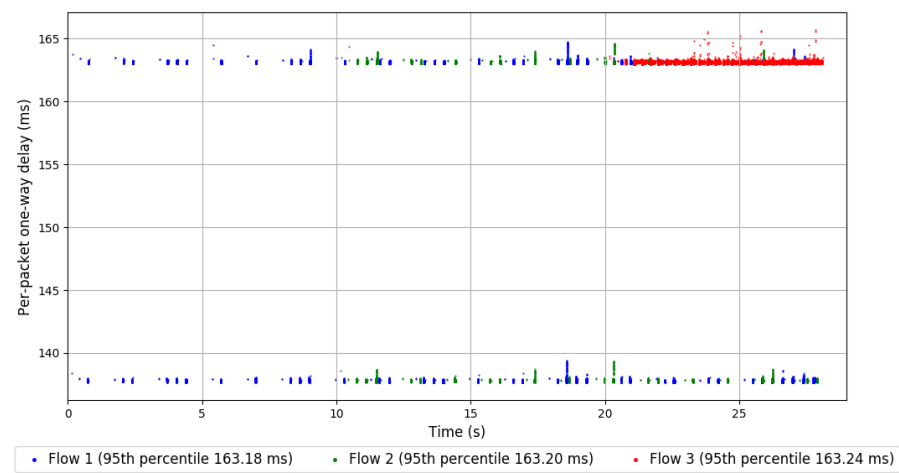
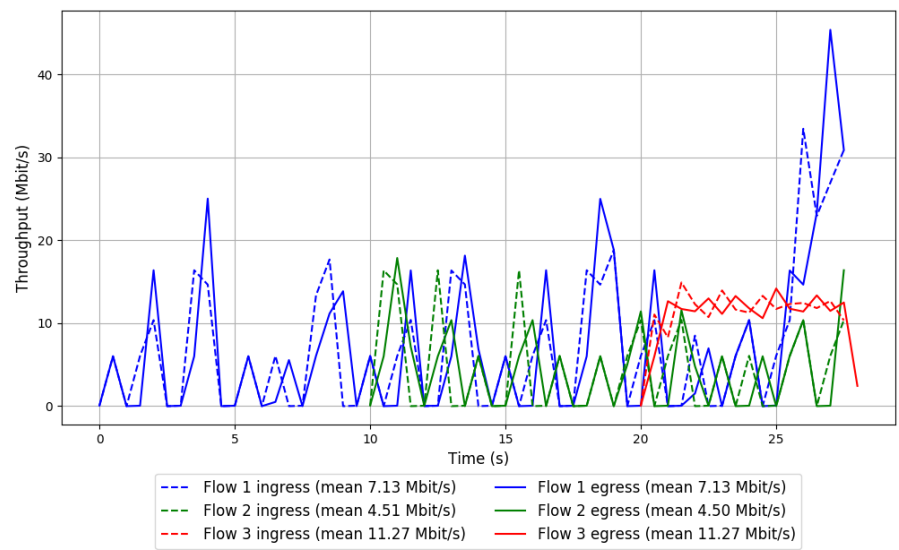


```
Run 7: Statistics of TaoVA-100x

Start at: 2017-09-19 06:44:50
End at: 2017-09-19 06:45:20

# Below is generated by plot.py at 2017-09-19 08:45:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 13.12 Mbit/s
95th percentile per-packet one-way delay: 163.202 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 7.13 Mbit/s
95th percentile per-packet one-way delay: 163.181 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 4.50 Mbit/s
95th percentile per-packet one-way delay: 163.197 ms
Loss rate: 0.00%
-- Flow 3:
Average throughput: 11.27 Mbit/s
95th percentile per-packet one-way delay: 163.236 ms
Loss rate: 0.03%
```

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



Run 8: Statistics of TaoVA-100x

Start at: 2017-09-19 06:54:24

End at: 2017-09-19 06:54:54

Below is generated by plot.py at 2017-09-19 08:45:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 3.37 Mbit/s

95th percentile per-packet one-way delay: 163.219 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 4.73 Mbit/s

95th percentile per-packet one-way delay: 163.153 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 3.41 Mbit/s

95th percentile per-packet one-way delay: 163.223 ms

Loss rate: 0.00%

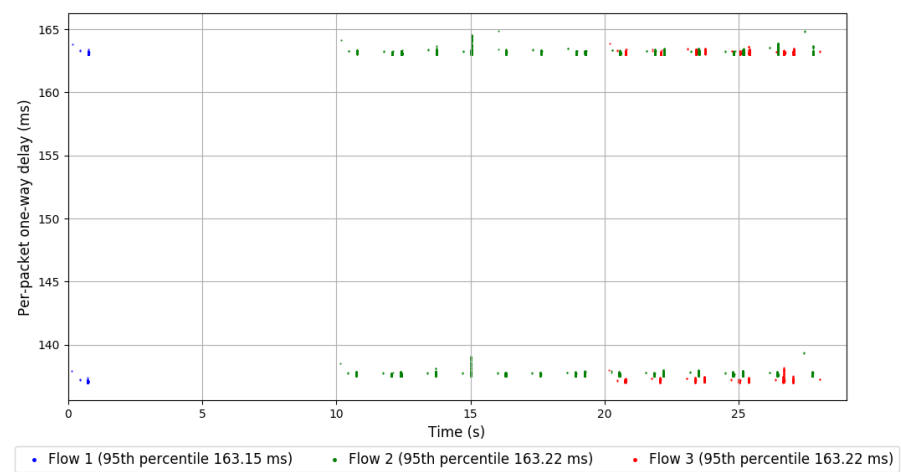
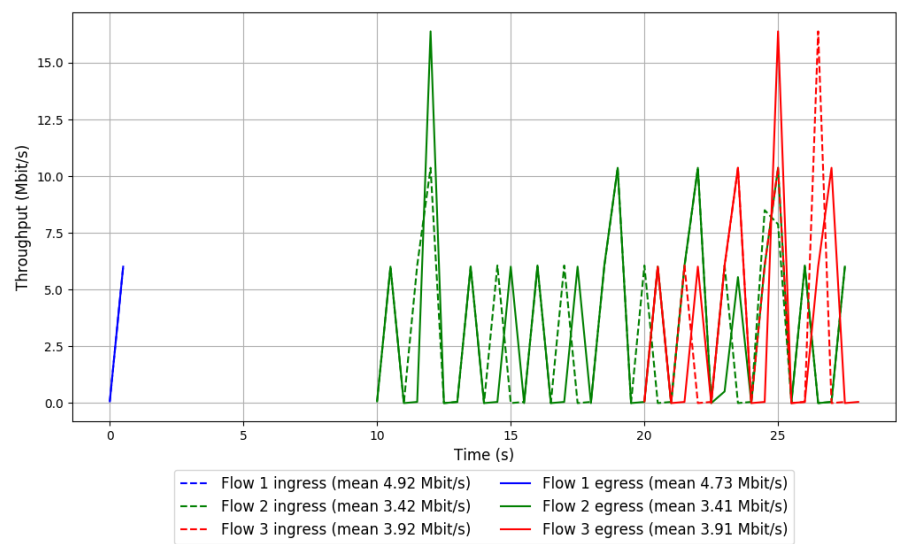
-- Flow 3:

Average throughput: 3.91 Mbit/s

95th percentile per-packet one-way delay: 163.216 ms

Loss rate: 0.00%

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



Run 9: Statistics of TaoVA-100x

Start at: 2017-09-19 07:03:58

End at: 2017-09-19 07:04:28

Below is generated by plot.py at 2017-09-19 08:45:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 51.53 Mbit/s

95th percentile per-packet one-way delay: 164.653 ms

Loss rate: 0.39%

-- Flow 1:

Average throughput: 4.46 Mbit/s

95th percentile per-packet one-way delay: 163.244 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 4.45 Mbit/s

95th percentile per-packet one-way delay: 163.264 ms

Loss rate: 0.00%

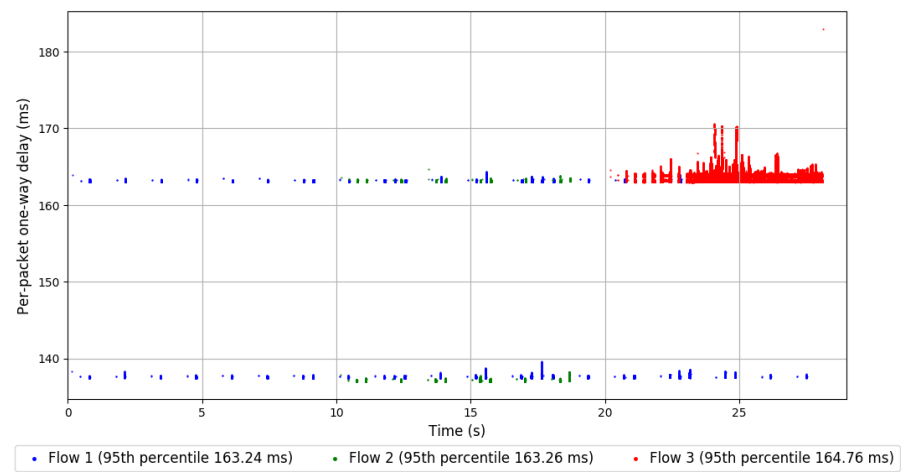
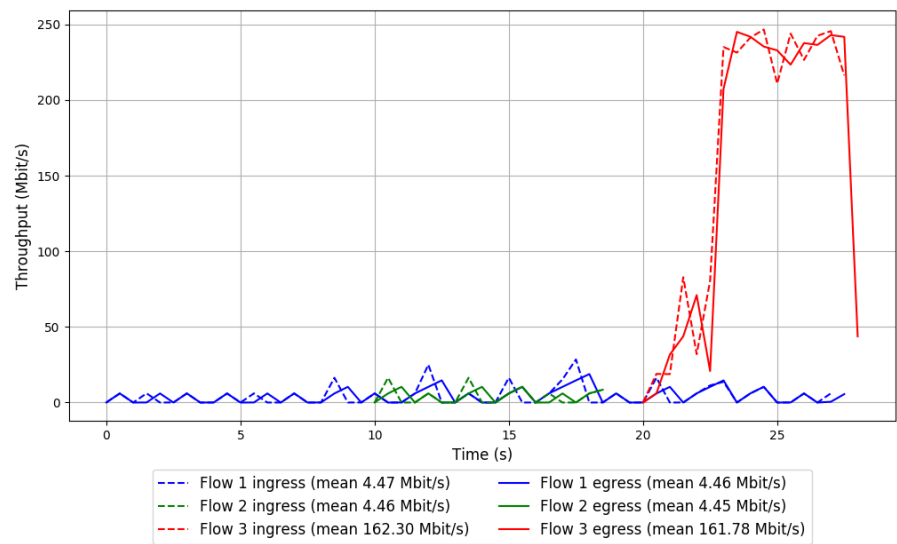
-- Flow 3:

Average throughput: 161.78 Mbit/s

95th percentile per-packet one-way delay: 164.764 ms

Loss rate: 0.44%

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

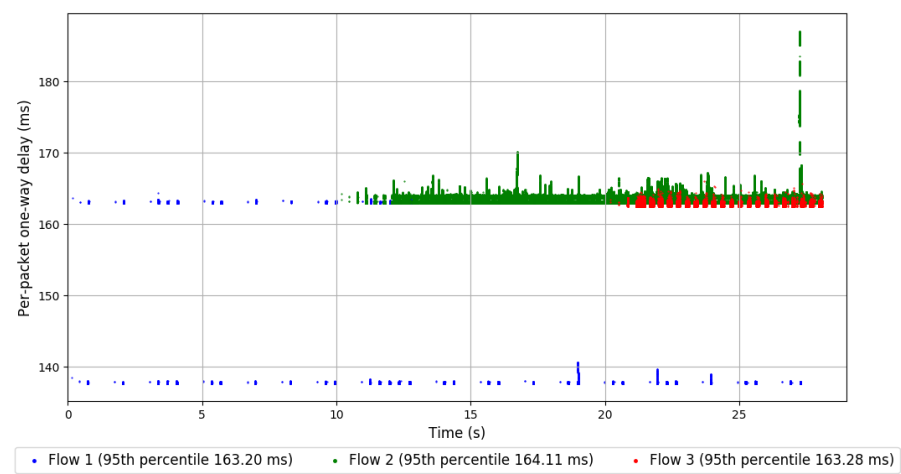
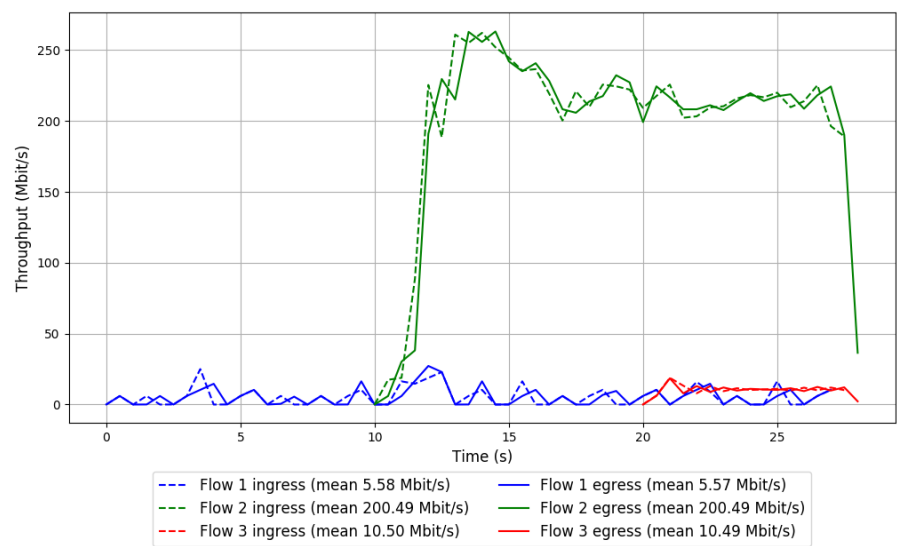


```
Run 10: Statistics of TaoVA-100x

Start at: 2017-09-19 07:13:22
End at: 2017-09-19 07:13:52

# Below is generated by plot.py at 2017-09-19 08:45:39
# Datalink statistics
-- Total of 3 flows:
Average throughput: 136.84 Mbit/s
95th percentile per-packet one-way delay: 164.080 ms
Loss rate: 0.16%
-- Flow 1:
Average throughput: 5.57 Mbit/s
95th percentile per-packet one-way delay: 163.196 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 200.49 Mbit/s
95th percentile per-packet one-way delay: 164.112 ms
Loss rate: 0.16%
-- Flow 3:
Average throughput: 10.49 Mbit/s
95th percentile per-packet one-way delay: 163.280 ms
Loss rate: 0.26%
```

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



Run 1: Statistics of TCP Vegas

Start at: 2017-09-19 05:49:26

End at: 2017-09-19 05:49:56

Below is generated by plot.py at 2017-09-19 08:45:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 48.52 Mbit/s

95th percentile per-packet one-way delay: 138.232 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 31.17 Mbit/s

95th percentile per-packet one-way delay: 139.832 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 24.30 Mbit/s

95th percentile per-packet one-way delay: 137.473 ms

Loss rate: 0.00%

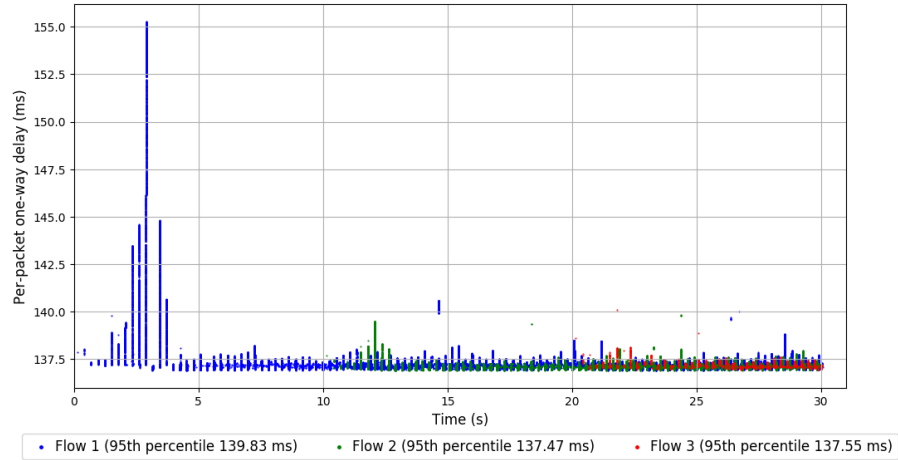
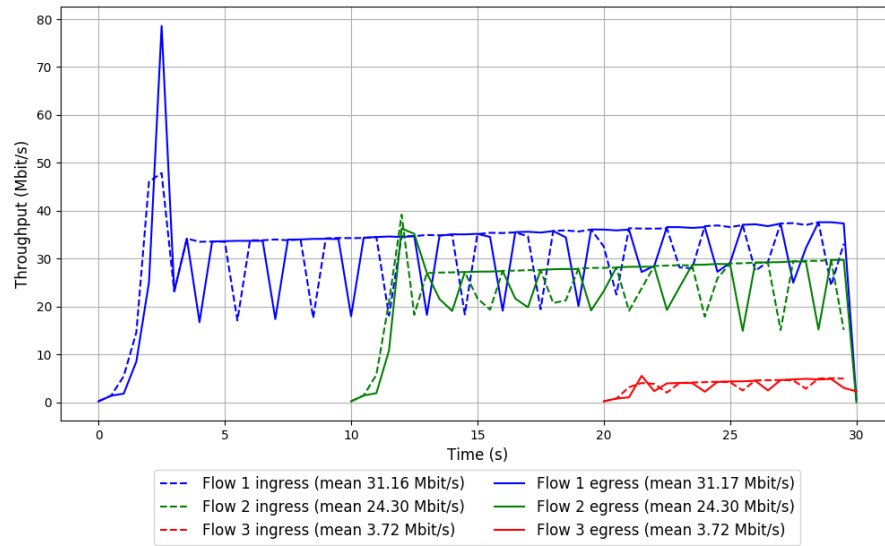
-- Flow 3:

Average throughput: 3.72 Mbit/s

95th percentile per-packet one-way delay: 137.548 ms

Loss rate: 0.32%

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

Start at: 2017-09-19 05:59:39

End at: 2017-09-19 06:00:09

Below is generated by plot.py at 2017-09-19 08:45:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 42.60 Mbit/s

95th percentile per-packet one-way delay: 140.533 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 21.55 Mbit/s

95th percentile per-packet one-way delay: 141.953 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 24.41 Mbit/s

95th percentile per-packet one-way delay: 139.622 ms

Loss rate: 0.00%

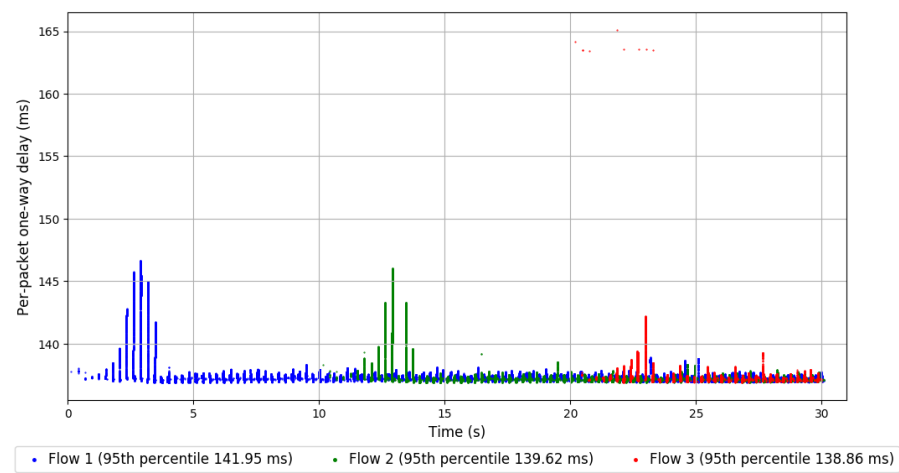
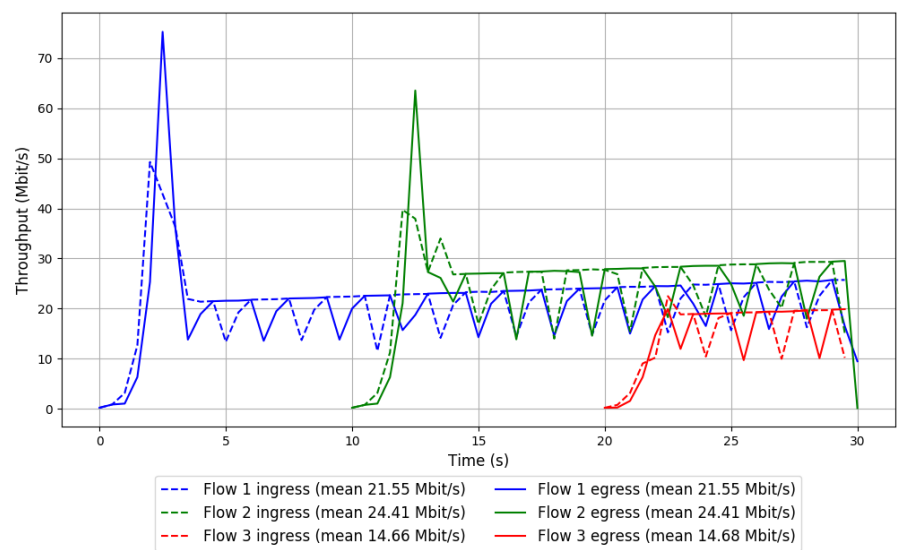
-- Flow 3:

Average throughput: 14.68 Mbit/s

95th percentile per-packet one-way delay: 138.864 ms

Loss rate: 0.12%

Run 2: Report of TCP Vegas — Data Link



Run 3: Statistics of TCP Vegas

Start at: 2017-09-19 06:10:27

End at: 2017-09-19 06:10:57

Below is generated by plot.py at 2017-09-19 08:45:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 66.00 Mbit/s

95th percentile per-packet one-way delay: 137.922 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 48.53 Mbit/s

95th percentile per-packet one-way delay: 137.874 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 25.89 Mbit/s

95th percentile per-packet one-way delay: 138.119 ms

Loss rate: 0.00%

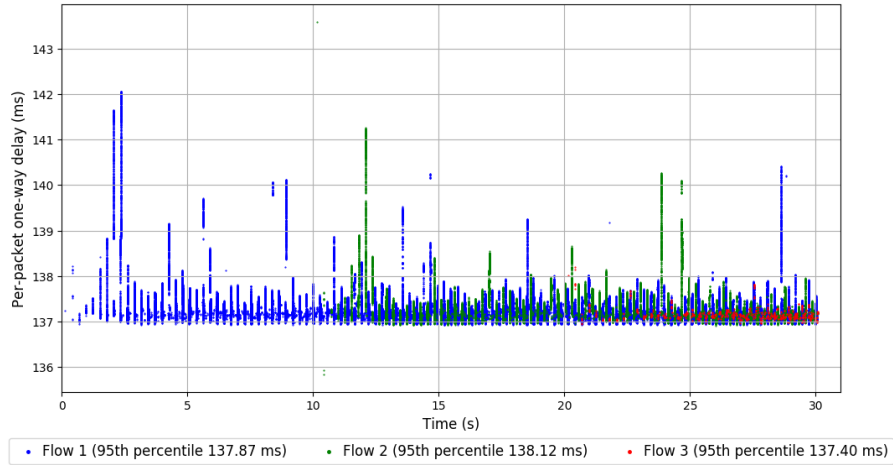
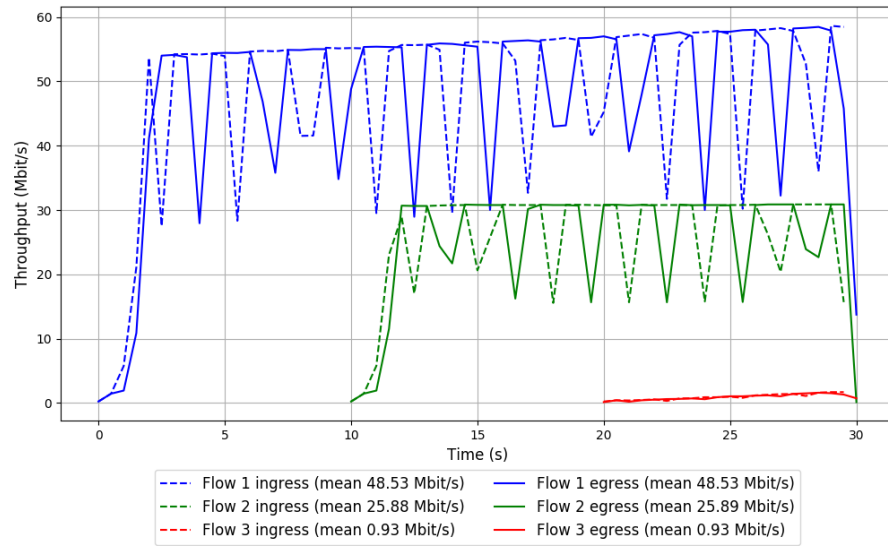
-- Flow 3:

Average throughput: 0.93 Mbit/s

95th percentile per-packet one-way delay: 137.397 ms

Loss rate: 0.52%

Run 3: Report of TCP Vegas — Data Link



Run 4: Statistics of TCP Vegas

Start at: 2017-09-19 06:21:37

End at: 2017-09-19 06:22:07

Below is generated by plot.py at 2017-09-19 08:45:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.63 Mbit/s

95th percentile per-packet one-way delay: 163.500 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 1.41 Mbit/s

95th percentile per-packet one-way delay: 163.522 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 1.43 Mbit/s

95th percentile per-packet one-way delay: 163.461 ms

Loss rate: 0.00%

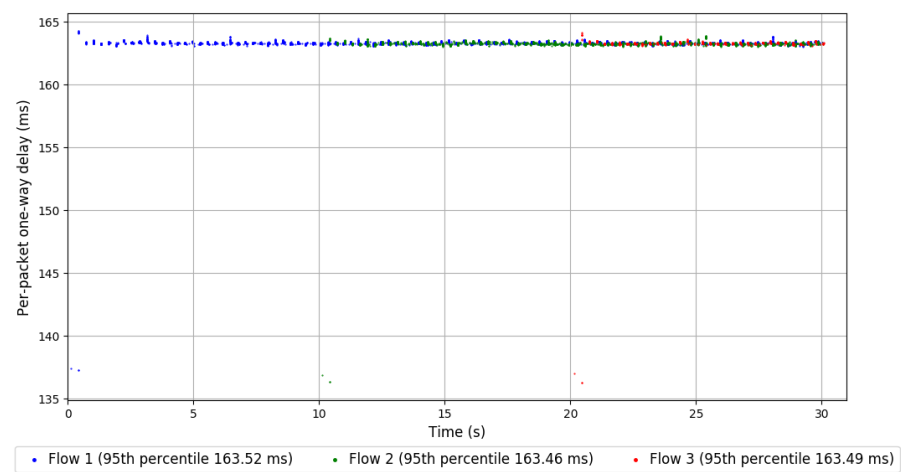
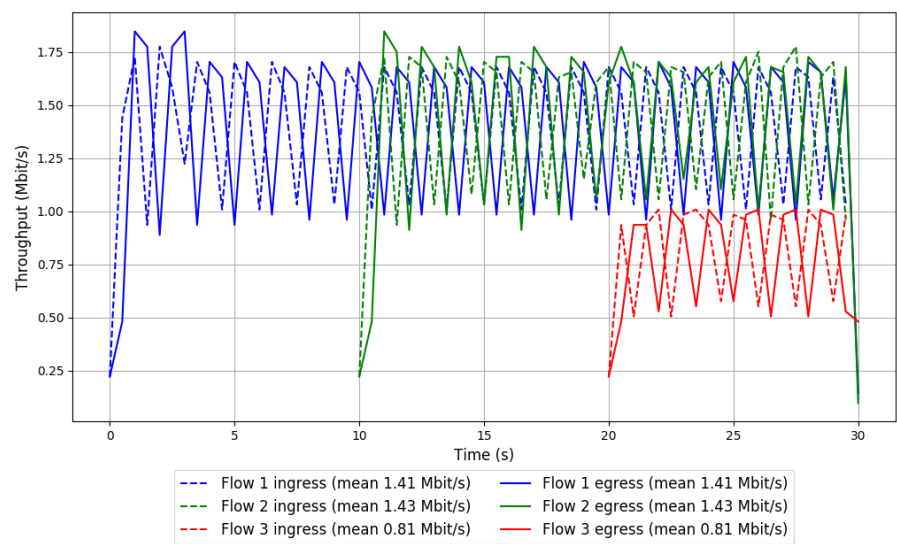
-- Flow 3:

Average throughput: 0.81 Mbit/s

95th percentile per-packet one-way delay: 163.490 ms

Loss rate: 0.00%

Run 4: Report of TCP Vegas — Data Link



Run 5: Statistics of TCP Vegas

Start at: 2017-09-19 06:32:04

End at: 2017-09-19 06:32:34

Below is generated by plot.py at 2017-09-19 08:45:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 23.27 Mbit/s

95th percentile per-packet one-way delay: 164.834 ms

Loss rate: 0.02%

-- Flow 1:

Average throughput: 18.86 Mbit/s

95th percentile per-packet one-way delay: 165.266 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 6.27 Mbit/s

95th percentile per-packet one-way delay: 163.868 ms

Loss rate: 0.05%

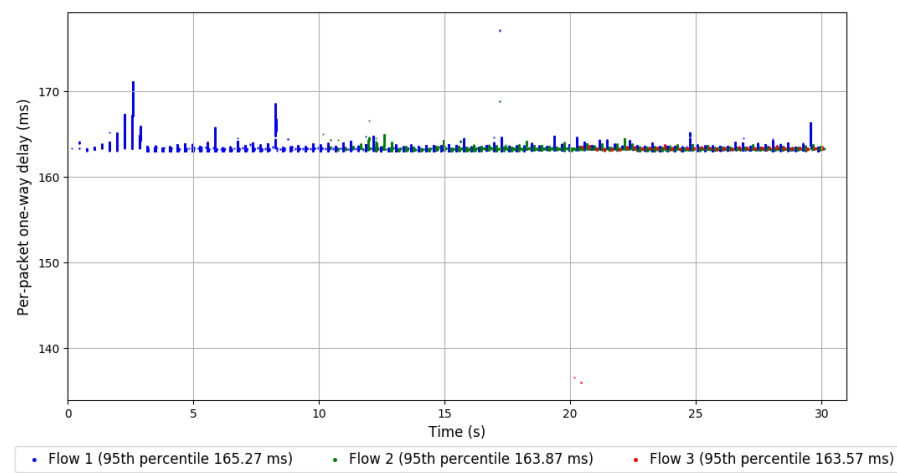
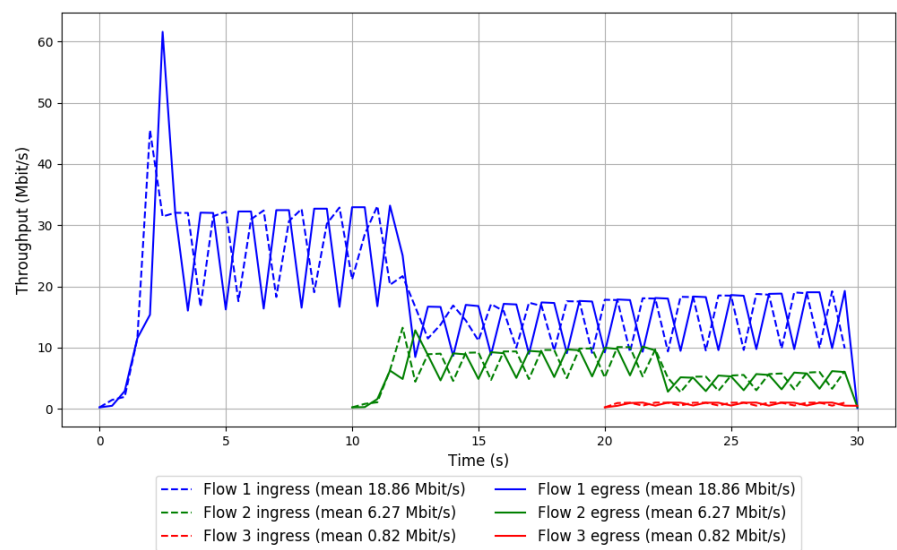
-- Flow 3:

Average throughput: 0.82 Mbit/s

95th percentile per-packet one-way delay: 163.569 ms

Loss rate: 0.00%

Run 5: Report of TCP Vegas — Data Link



Run 6: Statistics of TCP Vegas

Start at: 2017-09-19 06:42:05

End at: 2017-09-19 06:42:35

Below is generated by plot.py at 2017-09-19 08:45:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 2.81 Mbit/s

95th percentile per-packet one-way delay: 163.488 ms

Loss rate: 0.07%

-- Flow 1:

Average throughput: 1.44 Mbit/s

95th percentile per-packet one-way delay: 163.502 ms

Loss rate: 0.08%

-- Flow 2:

Average throughput: 1.43 Mbit/s

95th percentile per-packet one-way delay: 163.471 ms

Loss rate: 0.08%

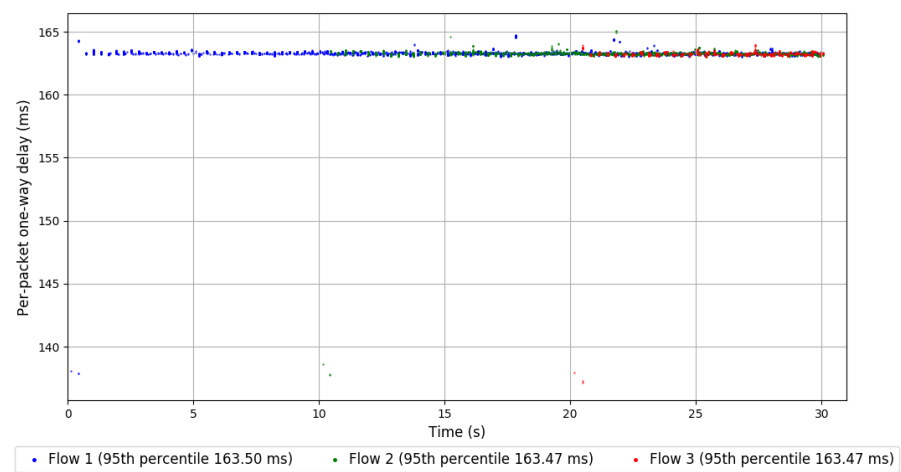
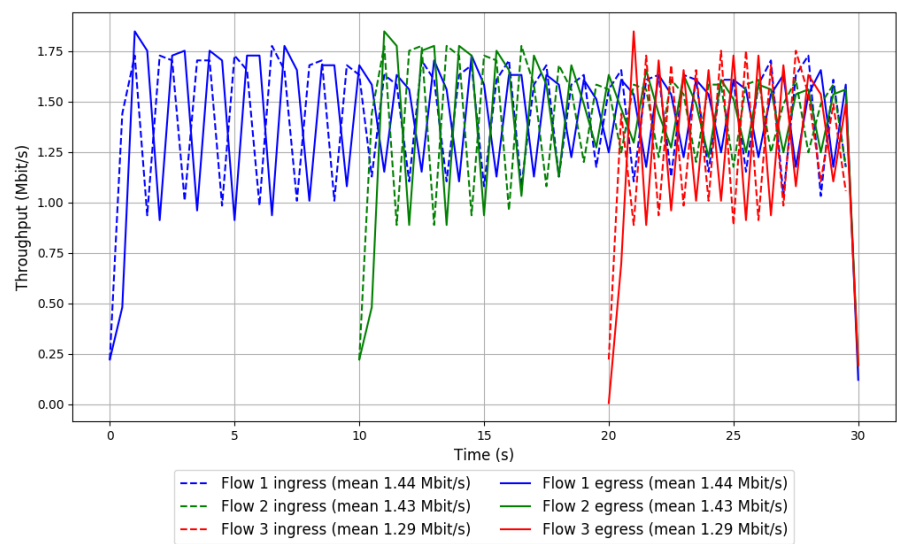
-- Flow 3:

Average throughput: 1.29 Mbit/s

95th percentile per-packet one-way delay: 163.465 ms

Loss rate: 0.00%

Run 6: Report of TCP Vegas — Data Link



Run 7: Statistics of TCP Vegas

Start at: 2017-09-19 06:51:41

End at: 2017-09-19 06:52:11

Below is generated by plot.py at 2017-09-19 08:45:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 10.42 Mbit/s

95th percentile per-packet one-way delay: 169.507 ms

Loss rate: 1.39%

-- Flow 1:

Average throughput: 1.18 Mbit/s

95th percentile per-packet one-way delay: 163.535 ms

Loss rate: 0.03%

-- Flow 2:

Average throughput: 1.44 Mbit/s

95th percentile per-packet one-way delay: 163.503 ms

Loss rate: 0.08%

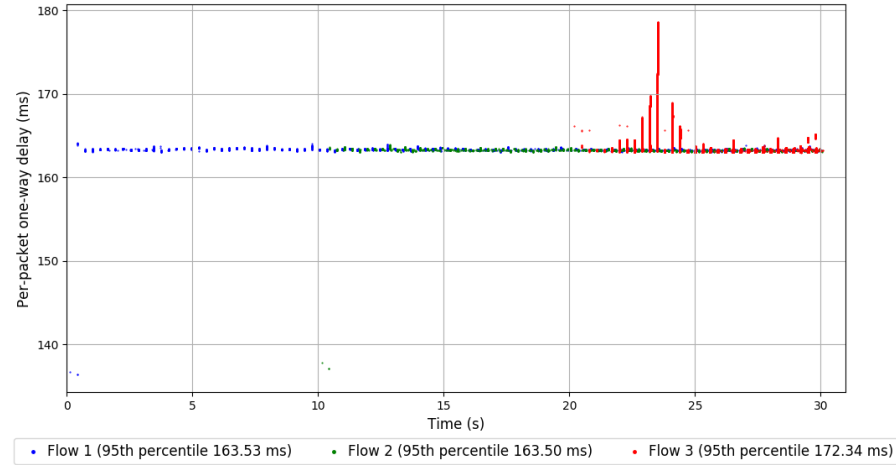
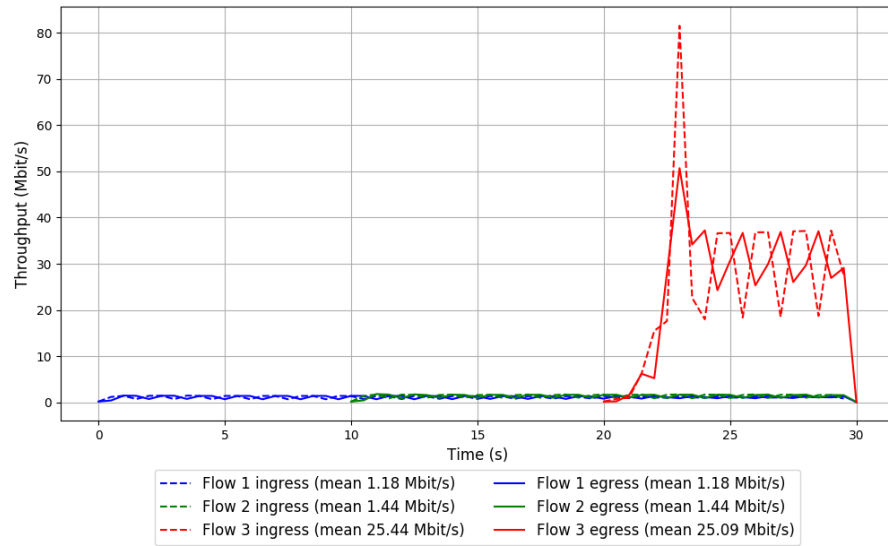
-- Flow 3:

Average throughput: 25.09 Mbit/s

95th percentile per-packet one-way delay: 172.341 ms

Loss rate: 1.72%

Run 7: Report of TCP Vegas — Data Link



Run 8: Statistics of TCP Vegas

Start at: 2017-09-19 07:01:17

End at: 2017-09-19 07:01:47

Below is generated by plot.py at 2017-09-19 08:45:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 17.44 Mbit/s

95th percentile per-packet one-way delay: 169.657 ms

Loss rate: 0.07%

-- Flow 1:

Average throughput: 1.16 Mbit/s

95th percentile per-packet one-way delay: 163.494 ms

Loss rate: 0.69%

-- Flow 2:

Average throughput: 23.81 Mbit/s

95th percentile per-packet one-way delay: 170.147 ms

Loss rate: 0.02%

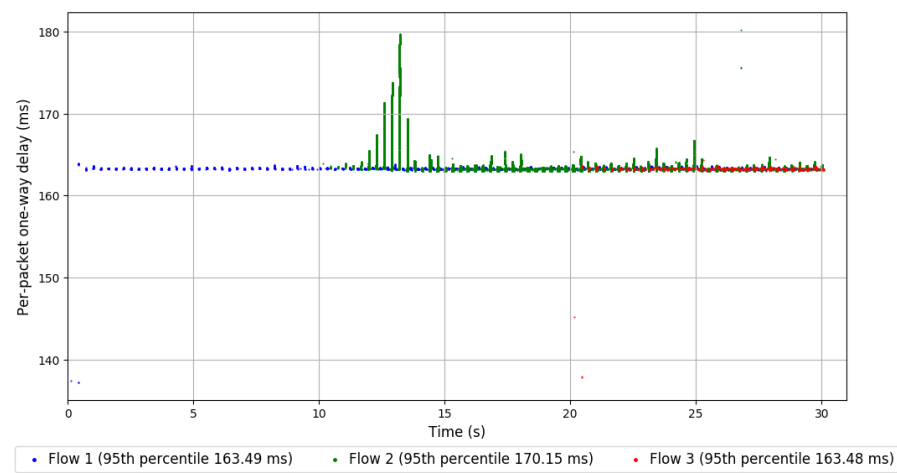
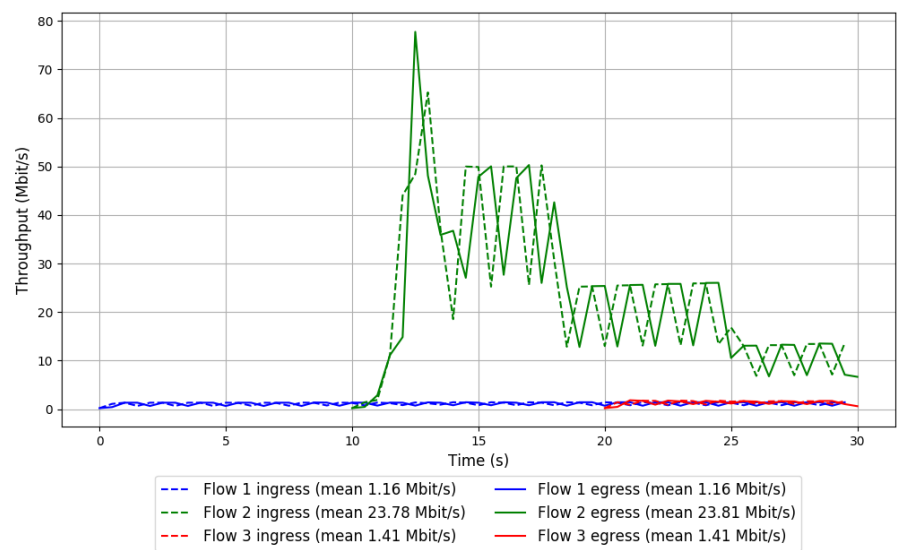
-- Flow 3:

Average throughput: 1.41 Mbit/s

95th percentile per-packet one-way delay: 163.477 ms

Loss rate: 0.26%

Run 8: Report of TCP Vegas — Data Link



Run 9: Statistics of TCP Vegas

Start at: 2017-09-19 07:10:42

End at: 2017-09-19 07:11:12

Below is generated by plot.py at 2017-09-19 08:45:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 25.49 Mbit/s

95th percentile per-packet one-way delay: 165.234 ms

Loss rate: 0.03%

-- Flow 1:

Average throughput: 16.99 Mbit/s

95th percentile per-packet one-way delay: 165.020 ms

Loss rate: 0.02%

-- Flow 2:

Average throughput: 1.32 Mbit/s

95th percentile per-packet one-way delay: 163.462 ms

Loss rate: 0.09%

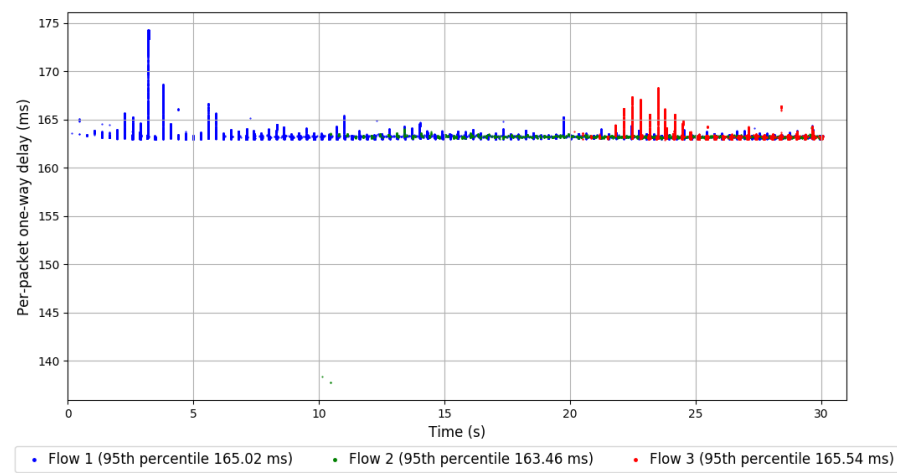
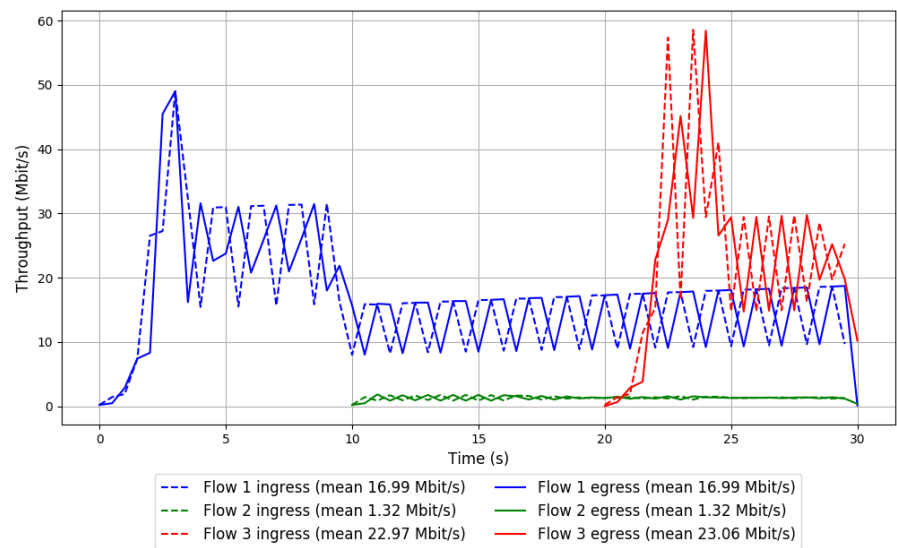
-- Flow 3:

Average throughput: 23.06 Mbit/s

95th percentile per-packet one-way delay: 165.536 ms

Loss rate: 0.03%

Run 9: Report of TCP Vegas — Data Link



Run 10: Statistics of TCP Vegas

Start at: 2017-09-19 07:20:22

End at: 2017-09-19 07:20:52

Below is generated by plot.py at 2017-09-19 08:45:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 28.49 Mbit/s

95th percentile per-packet one-way delay: 163.926 ms

Loss rate: 0.01%

-- Flow 1:

Average throughput: 1.28 Mbit/s

95th percentile per-packet one-way delay: 163.456 ms

Loss rate: 0.16%

-- Flow 2:

Average throughput: 40.24 Mbit/s

95th percentile per-packet one-way delay: 163.982 ms

Loss rate: 0.00%

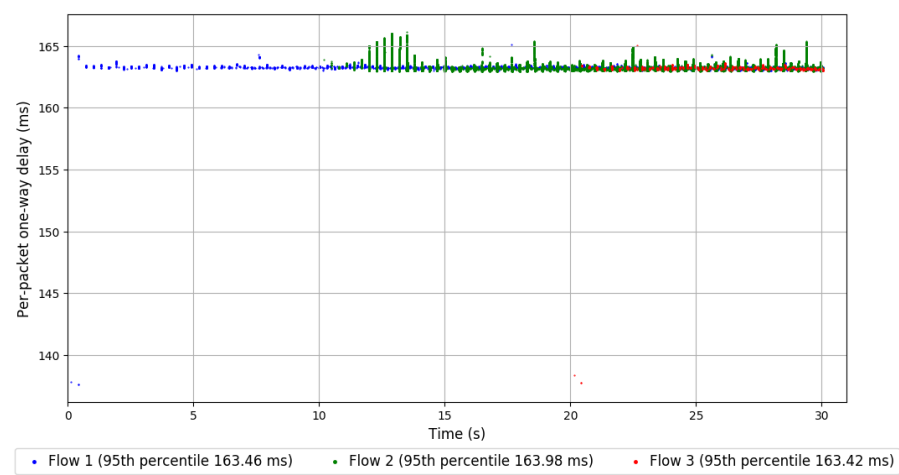
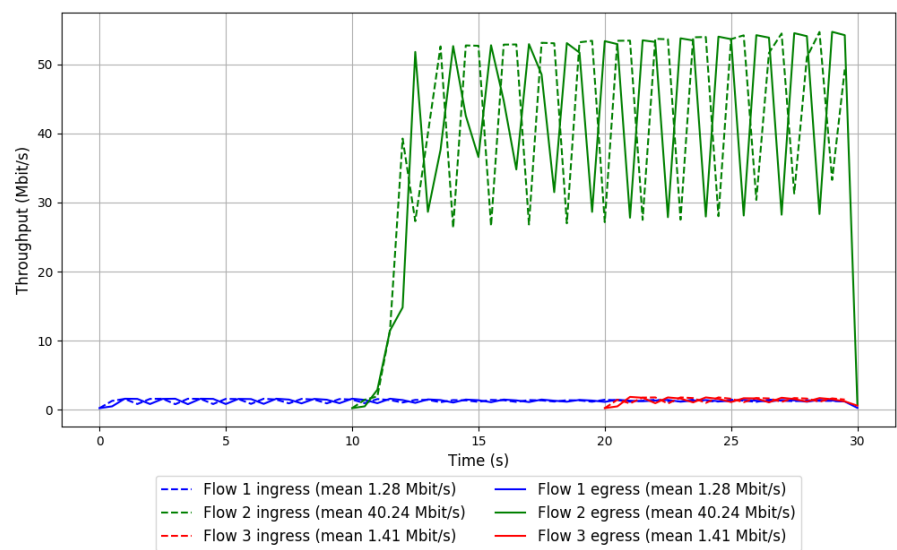
-- Flow 3:

Average throughput: 1.41 Mbit/s

95th percentile per-packet one-way delay: 163.424 ms

Loss rate: 0.00%

Run 10: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2017-09-19 05:46:33

End at: 2017-09-19 05:47:03

Below is generated by plot.py at 2017-09-19 08:45:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 201.54 Mbit/s

95th percentile per-packet one-way delay: 259.666 ms

Loss rate: 1.98%

-- Flow 1:

Average throughput: 66.45 Mbit/s

95th percentile per-packet one-way delay: 153.422 ms

Loss rate: 0.00%

-- Flow 2:

Average throughput: 196.96 Mbit/s

95th percentile per-packet one-way delay: 269.551 ms

Loss rate: 3.03%

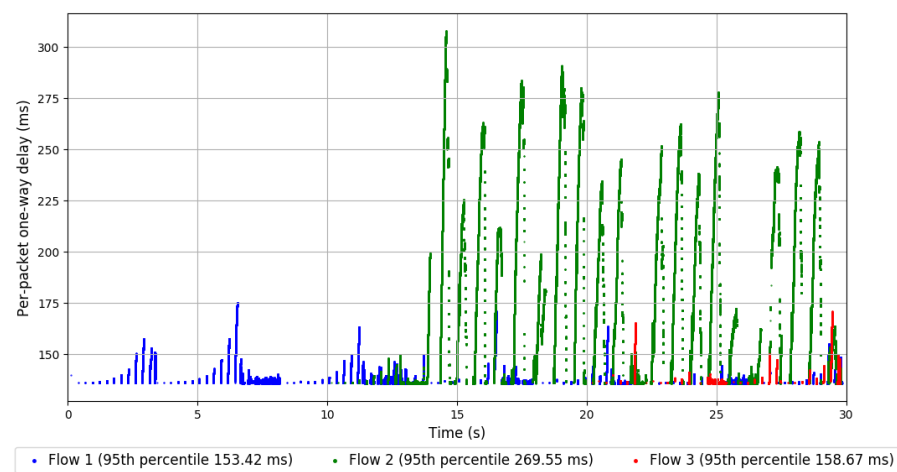
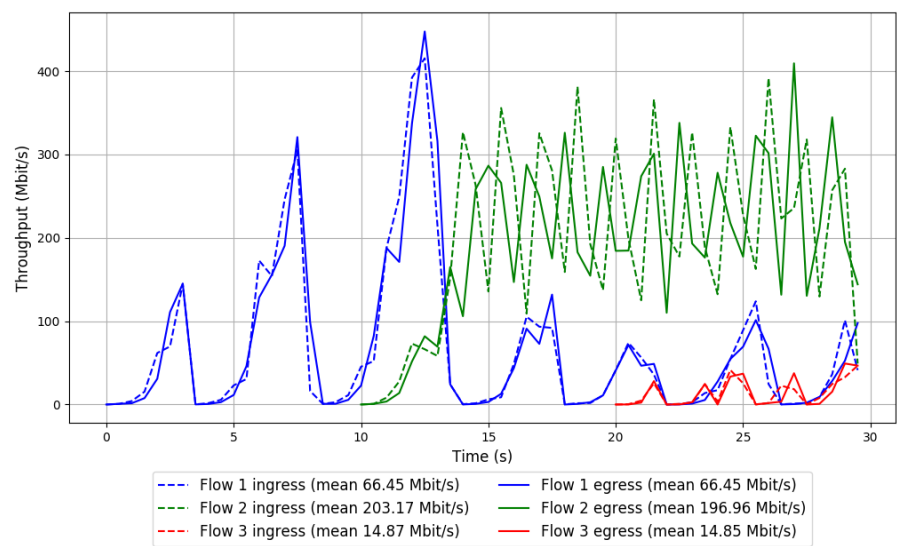
-- Flow 3:

Average throughput: 14.85 Mbit/s

95th percentile per-packet one-way delay: 158.668 ms

Loss rate: 0.00%

Run 1: Report of Verus — Data Link



Run 2: Statistics of Verus

Start at: 2017-09-19 05:56:44

End at: 2017-09-19 05:57:14

Below is generated by plot.py at 2017-09-19 08:45:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 162.55 Mbit/s

95th percentile per-packet one-way delay: 272.683 ms

Loss rate: 7.78%

-- Flow 1:

Average throughput: 109.85 Mbit/s

95th percentile per-packet one-way delay: 192.616 ms

Loss rate: 0.54%

-- Flow 2:

Average throughput: 45.97 Mbit/s

95th percentile per-packet one-way delay: 430.334 ms

Loss rate: 26.01%

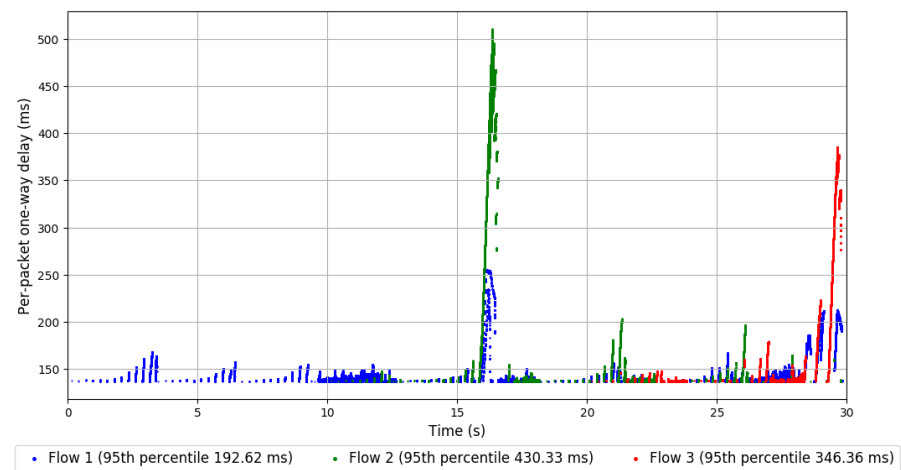
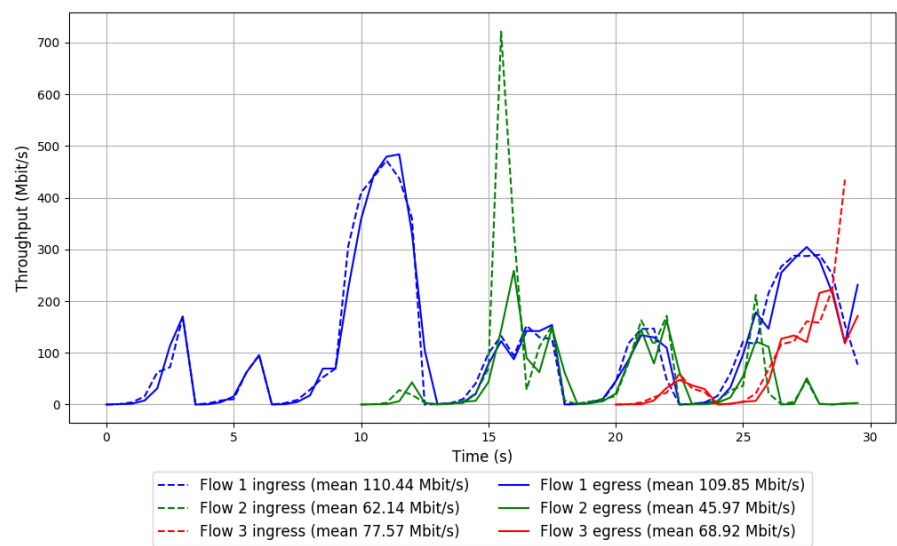
-- Flow 3:

Average throughput: 68.92 Mbit/s

95th percentile per-packet one-way delay: 346.364 ms

Loss rate: 9.85%

Run 2: Report of Verus — Data Link



Run 3: Statistics of Verus

Start at: 2017-09-19 06:07:31

End at: 2017-09-19 06:08:01

Below is generated by plot.py at 2017-09-19 08:45:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 180.80 Mbit/s

95th percentile per-packet one-way delay: 166.009 ms

Loss rate: 0.00%

-- Flow 1:

Average throughput: 107.25 Mbit/s

95th percentile per-packet one-way delay: 166.460 ms

Loss rate: 0.01%

-- Flow 2:

Average throughput: 94.56 Mbit/s

95th percentile per-packet one-way delay: 169.211 ms

Loss rate: 0.00%

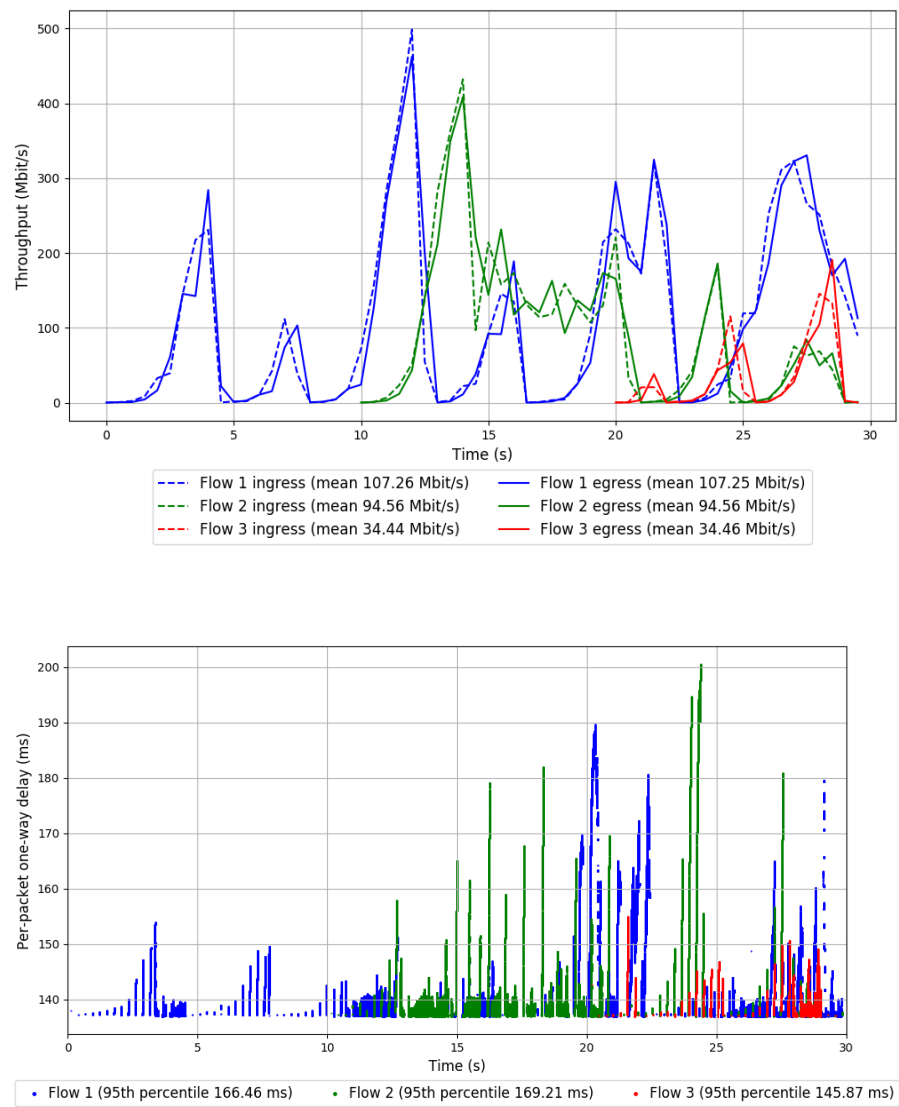
-- Flow 3:

Average throughput: 34.46 Mbit/s

95th percentile per-packet one-way delay: 145.865 ms

Loss rate: 0.00%

Run 3: Report of Verus — Data Link



Run 4: Statistics of Verus

Start at: 2017-09-19 06:18:32

End at: 2017-09-19 06:19:02

Below is generated by plot.py at 2017-09-19 08:45:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 214.09 Mbit/s

95th percentile per-packet one-way delay: 214.481 ms

Loss rate: 2.53%

-- Flow 1:

Average throughput: 124.10 Mbit/s

95th percentile per-packet one-way delay: 193.199 ms

Loss rate: 2.18%

-- Flow 2:

Average throughput: 117.84 Mbit/s

95th percentile per-packet one-way delay: 177.336 ms

Loss rate: 0.42%

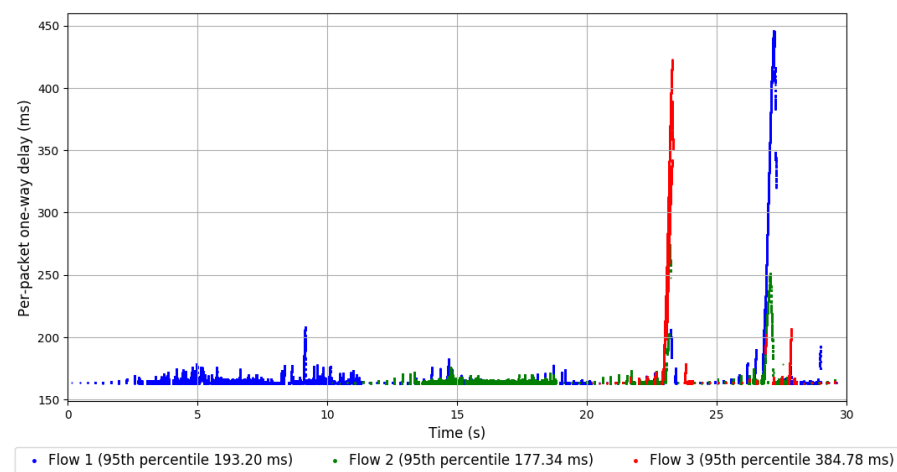
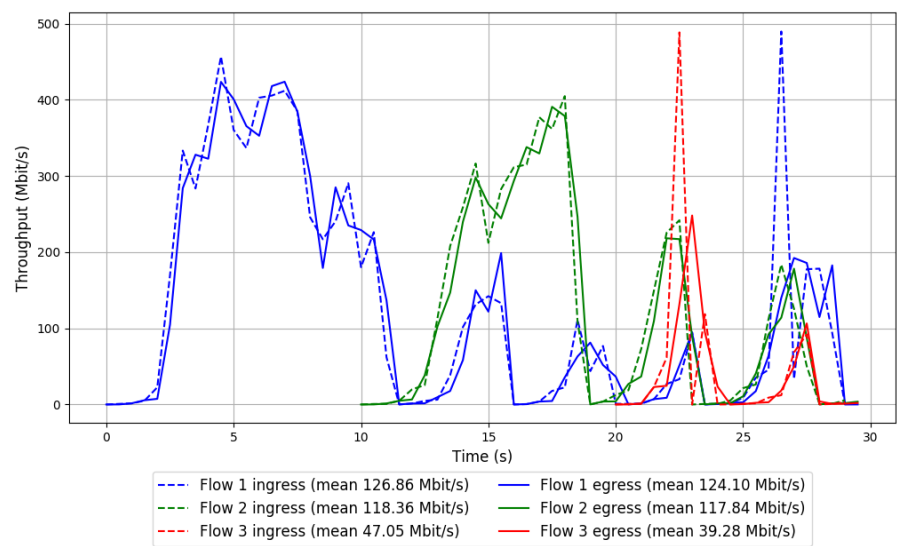
-- Flow 3:

Average throughput: 39.28 Mbit/s

95th percentile per-packet one-way delay: 384.779 ms

Loss rate: 16.51%

Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2017-09-19 06:29:02

End at: 2017-09-19 06:29:32

Below is generated by plot.py at 2017-09-19 08:45:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 243.25 Mbit/s

95th percentile per-packet one-way delay: 254.165 ms

Loss rate: 0.21%

-- Flow 1:

Average throughput: 174.34 Mbit/s

95th percentile per-packet one-way delay: 258.703 ms

Loss rate: 0.29%

-- Flow 2:

Average throughput: 93.58 Mbit/s

95th percentile per-packet one-way delay: 187.780 ms

Loss rate: 0.00%

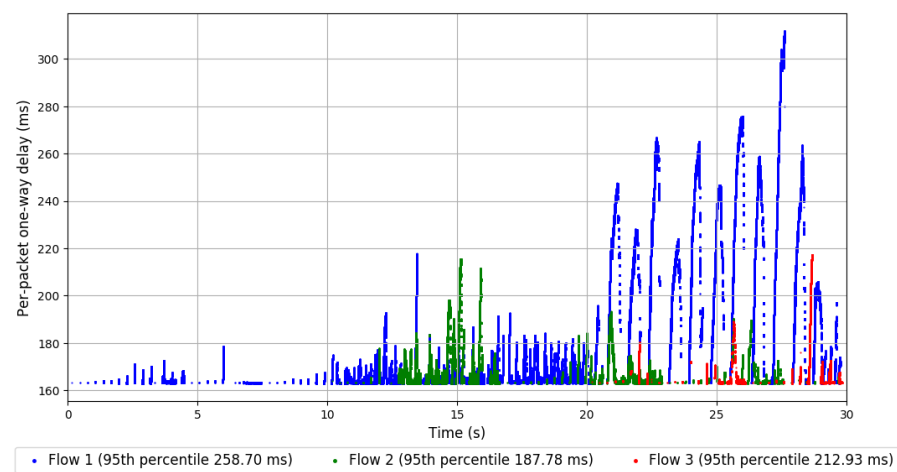
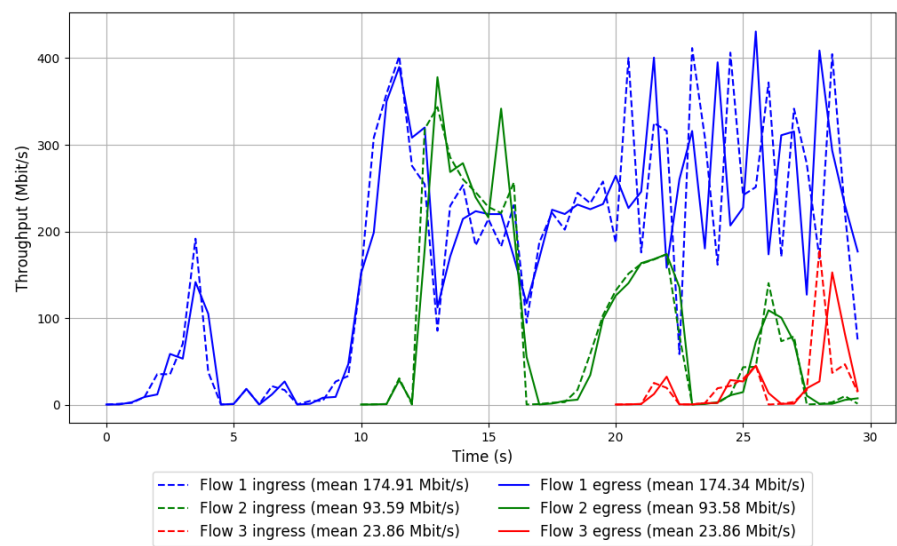
-- Flow 3:

Average throughput: 23.86 Mbit/s

95th percentile per-packet one-way delay: 212.928 ms

Loss rate: 0.00%

Run 5: Report of Verus — Data Link



Run 6: Statistics of Verus

Start at: 2017-09-19 06:39:03

End at: 2017-09-19 06:39:33

Below is generated by plot.py at 2017-09-19 08:45:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 249.57 Mbit/s

95th percentile per-packet one-way delay: 347.846 ms

Loss rate: 5.36%

-- Flow 1:

Average throughput: 134.54 Mbit/s

95th percentile per-packet one-way delay: 286.777 ms

Loss rate: 1.26%

-- Flow 2:

Average throughput: 107.53 Mbit/s

95th percentile per-packet one-way delay: 370.597 ms

Loss rate: 13.41%

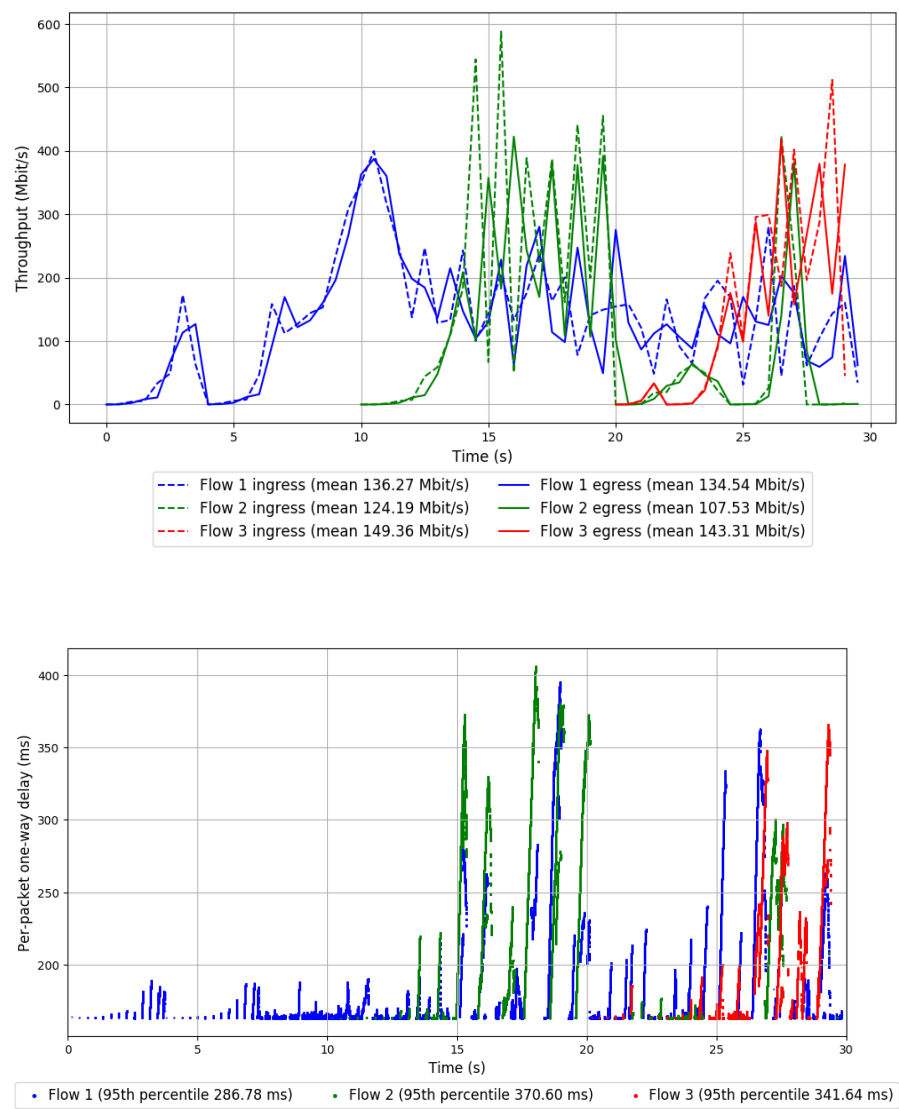
-- Flow 3:

Average throughput: 143.31 Mbit/s

95th percentile per-packet one-way delay: 341.640 ms

Loss rate: 3.23%

Run 6: Report of Verus — Data Link



Run 7: Statistics of Verus

Start at: 2017-09-19 06:48:36

End at: 2017-09-19 06:49:06

Below is generated by plot.py at 2017-09-19 08:45:39

Datalink statistics

-- Total of 3 flows:

Average throughput: 236.58 Mbit/s

95th percentile per-packet one-way delay: 224.571 ms

Loss rate: 0.10%

-- Flow 1:

Average throughput: 176.78 Mbit/s

95th percentile per-packet one-way delay: 213.023 ms

Loss rate: 0.02%

-- Flow 2:

Average throughput: 73.42 Mbit/s

95th percentile per-packet one-way delay: 236.488 ms

Loss rate: 0.16%

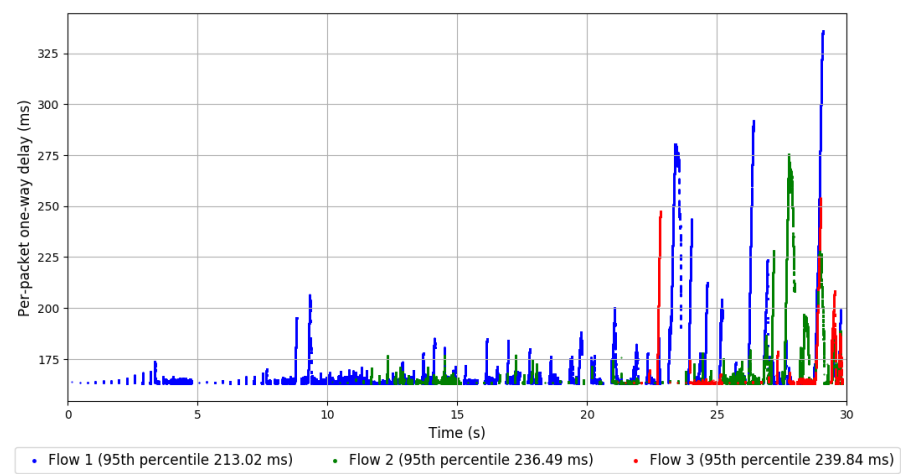
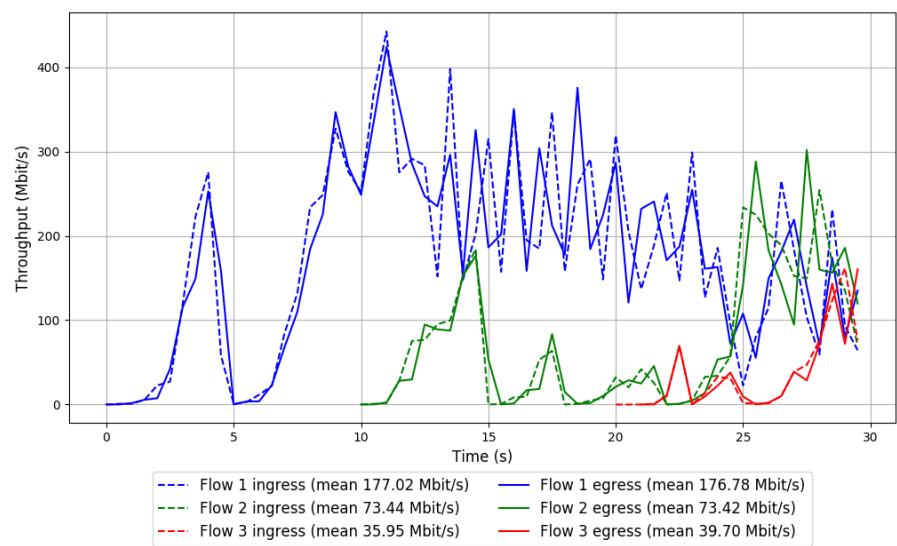
-- Flow 3:

Average throughput: 39.70 Mbit/s

95th percentile per-packet one-way delay: 239.843 ms

Loss rate: 1.17%

Run 7: Report of Verus — Data Link



Run 8: Statistics of Verus

Start at: 2017-09-19 06:58:11

End at: 2017-09-19 06:58:41

Below is generated by plot.py at 2017-09-19 08:45:41

Datalink statistics

-- Total of 3 flows:

Average throughput: 339.45 Mbit/s

95th percentile per-packet one-way delay: 336.357 ms

Loss rate: 8.38%

-- Flow 1:

Average throughput: 302.42 Mbit/s

95th percentile per-packet one-way delay: 337.033 ms

Loss rate: 8.85%

-- Flow 2:

Average throughput: 29.38 Mbit/s

95th percentile per-packet one-way delay: 251.723 ms

Loss rate: 1.33%

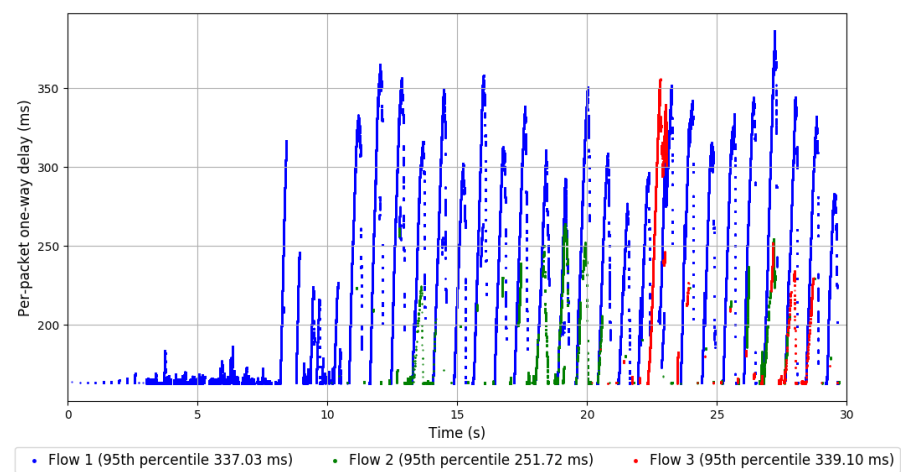
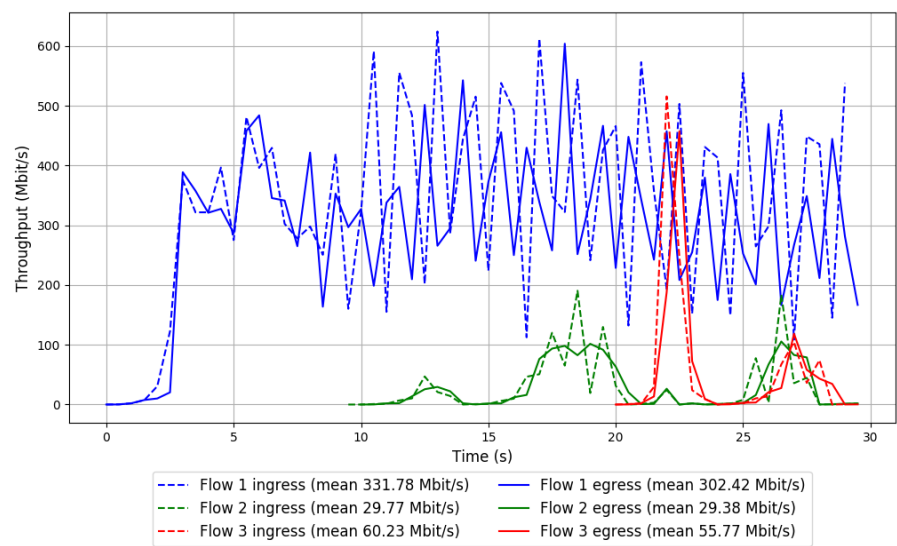
-- Flow 3:

Average throughput: 55.77 Mbit/s

95th percentile per-packet one-way delay: 339.100 ms

Loss rate: 7.41%

Run 8: Report of Verus — Data Link



Run 9: Statistics of Verus

Start at: 2017-09-19 07:07:48

End at: 2017-09-19 07:08:18

Below is generated by plot.py at 2017-09-19 08:45:41

Datalink statistics

-- Total of 3 flows:

Average throughput: 200.65 Mbit/s

95th percentile per-packet one-way delay: 233.900 ms

Loss rate: 1.08%

-- Flow 1:

Average throughput: 146.59 Mbit/s

95th percentile per-packet one-way delay: 211.164 ms

Loss rate: 0.18%

-- Flow 2:

Average throughput: 50.42 Mbit/s

95th percentile per-packet one-way delay: 178.526 ms

Loss rate: 0.01%

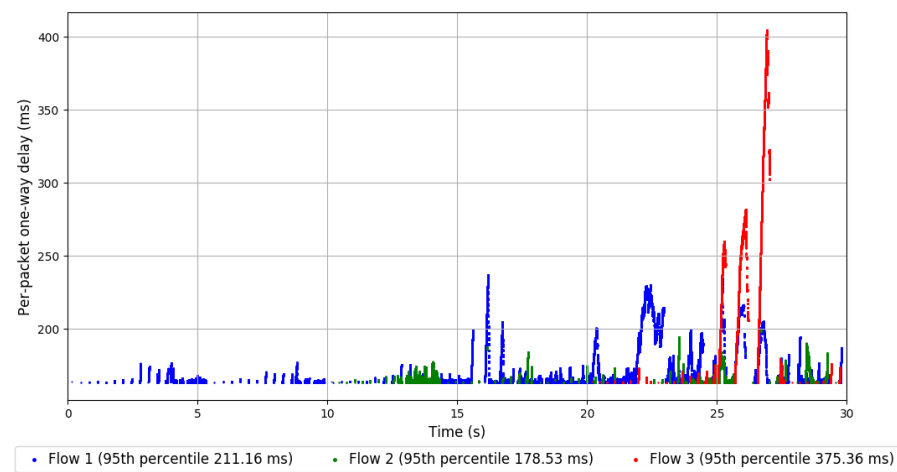
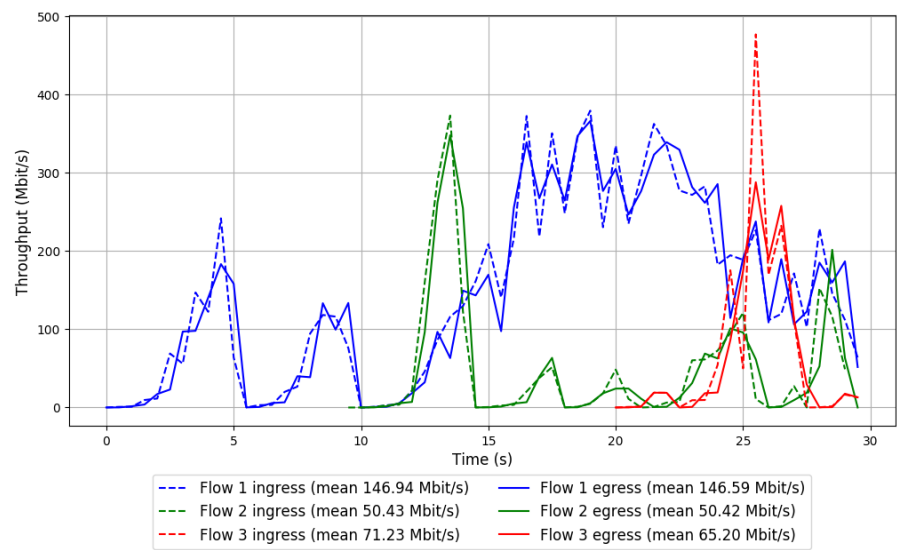
-- Flow 3:

Average throughput: 65.20 Mbit/s

95th percentile per-packet one-way delay: 375.356 ms

Loss rate: 8.36%

Run 9: Report of Verus — Data Link



Run 10: Statistics of Verus

Start at: 2017-09-19 07:17:23

End at: 2017-09-19 07:17:53

Below is generated by plot.py at 2017-09-19 08:45:41

Datalink statistics

-- Total of 3 flows:

Average throughput: 254.00 Mbit/s

95th percentile per-packet one-way delay: 338.470 ms

Loss rate: 8.57%

-- Flow 1:

Average throughput: 168.15 Mbit/s

95th percentile per-packet one-way delay: 357.097 ms

Loss rate: 11.67%

-- Flow 2:

Average throughput: 92.82 Mbit/s

95th percentile per-packet one-way delay: 246.245 ms

Loss rate: 0.94%

-- Flow 3:

Average throughput: 77.63 Mbit/s

95th percentile per-packet one-way delay: 289.087 ms

Loss rate: 3.92%

Run 10: Report of Verus — Data Link

