

Pantheon Report

Generated at 2018-10-26 16:58:50 (UTC).

Data path: GCE London on **ens4** (*remote*) → GCE Sydney on **ens4** (*local*).

Repeated the test of 18 congestion control schemes 5 times.

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

NTP offsets were measured against `time.google.com` and have been applied to correct the timestamps in logs.

System info:

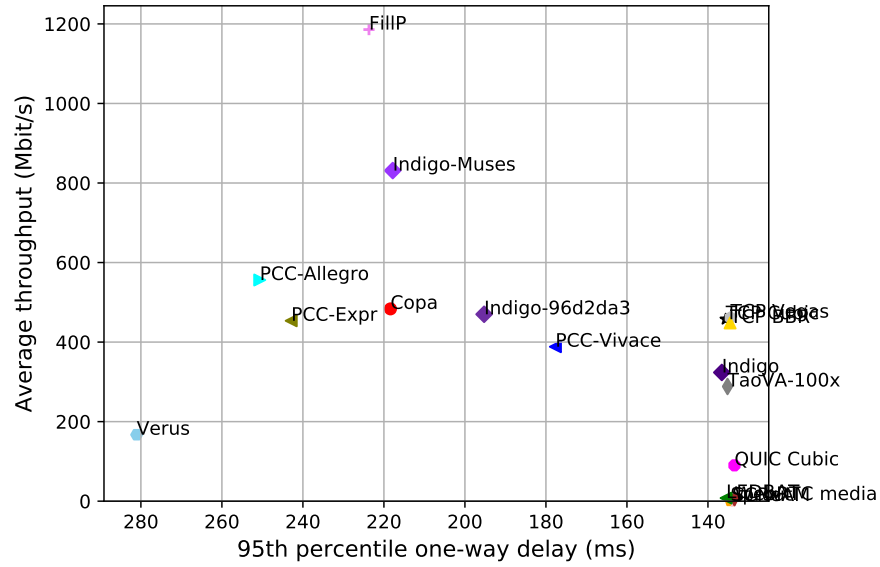
```
Linux 4.15.0-1021-gcp
net.core.default_qdisc = fq
net.core.rmem_default = 16777216
net.core.rmem_max = 536870912
net.core.wmem_default = 16777216
net.core.wmem_max = 536870912
net.ipv4.tcp_rmem = 4096 16777216 536870912
net.ipv4.tcp_wmem = 4096 16777216 536870912
```

Git summary:

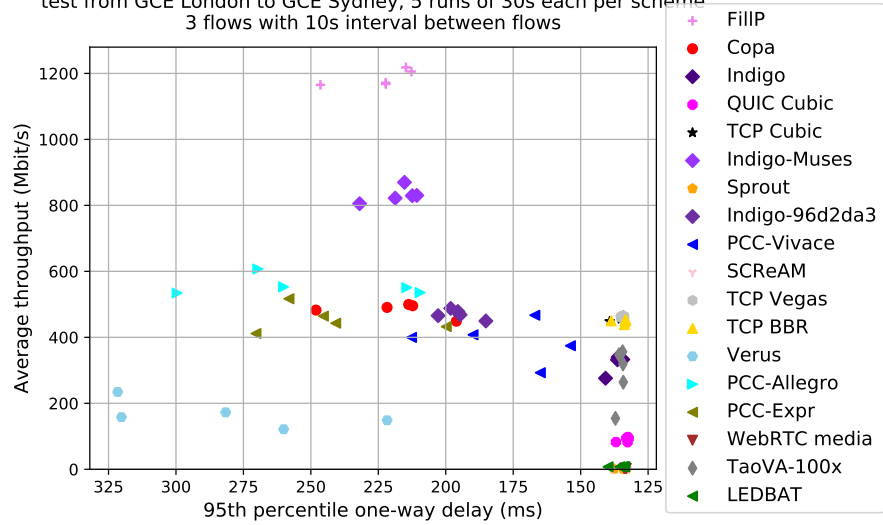
```
branch: muses @ 2e19c0464530faa92c63f8217c9971438a26a3be
third_party/fillp @ 5332fc9127c63565e13f4933b336c02d1aabdac6
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdf58e562f4
third_party/indigo @ 2601c92e4aa9d58d38dc4dfe0ecd90c077e64d
third_party/indigo-96d2da3 @ 8413272d46f8aa0bcb967ed7048b6a8f994abb95
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
third_party/muses @ 65ac1b19bbefed0c6349ae986009b4fa8643c40a
third_party/pantheon-tunnel @ f866d3f58d27afd942717625ee3a354cc2e802bd
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1
M receiver/src/buffer.h
M receiver/src/core.cpp
M sender/src/buffer.h
M sender/src/core.cpp
third_party/pcc-experimental @ cd43e34e3f5f5613e8acd08fab92c4eb24f974ab
third_party/proto-quick @ 77961f1a82733a86b42f1bc8143ebc978f3cff42
third_party/scream-reproduce @ f099118d1421aa3131bf11ff1964974e1da3bdb2
M src/ScreamClient
M src/ScreamServer
third_party/sprout @ 366e35c6178b01e31d4a46ad18c74f9415f19a26
M src/examples/cellsim.cc
M src/examples/sproutbt2.cc
M src/network/sproutconn.cc
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494
M src/verus.hpp
M tools/plot.py
```

third_party/vivace @ 2baf86211435ae071a32f96b7d8c504587f5d7f4
third_party/webrtc @ 3f0cc2a9061a41b6f9dde4735770d143a1fa2851

test from GCE London to GCE Sydney, 5 runs of 30s each per scheme
 3 flows with 10s interval between flows (mean of all runs by scheme)



test from GCE London to GCE Sydney, 5 runs of 30s each per scheme
 3 flows with 10s interval between flows



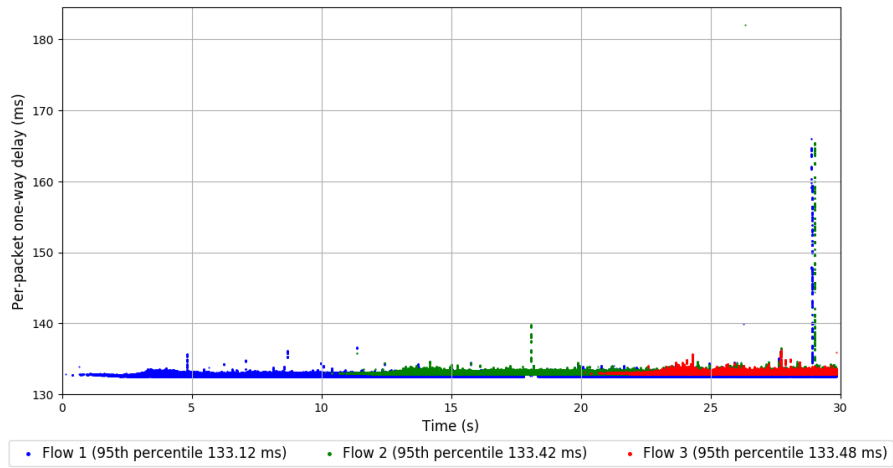
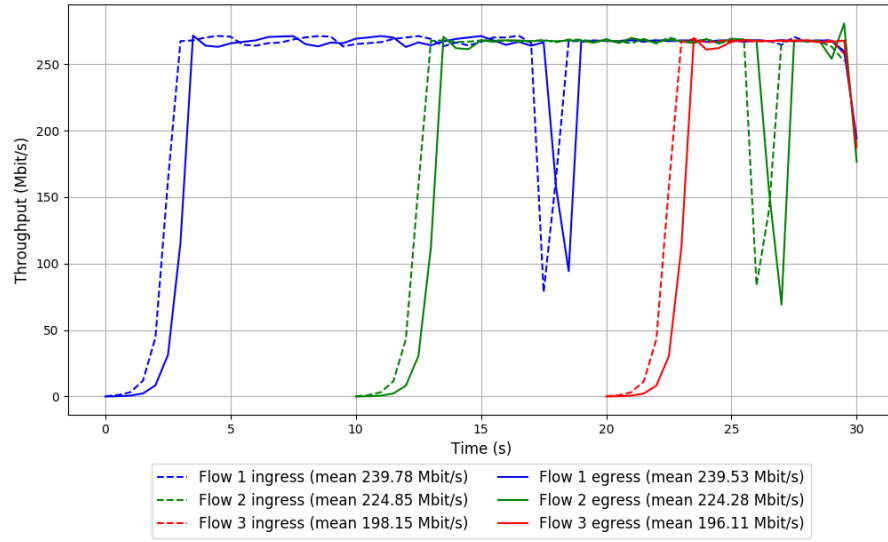
scheme	# runs	mean avg tput (Mbit/s)			mean 95th-%ile delay (ms)			mean loss rate (%)		
		flow 1	flow 2	flow 3	flow 1	flow 2	flow 3	flow 1	flow 2	flow 3
TCP BBR	5	236.30	225.84	191.37	134.36	133.54	134.68	0.80	1.57	3.69
Copa	5	263.81	240.06	185.40	204.95	208.98	229.18	0.94	1.49	3.44
TCP Cubic	5	240.23	230.99	196.70	135.43	135.77	135.86	0.98	1.54	3.59
FillP	5	674.52	549.89	451.61	211.21	228.84	230.29	4.38	6.32	7.47
Indigo	5	170.78	160.78	143.79	135.26	136.16	140.47	0.86	1.35	3.49
Indigo-96d2da3	5	259.33	228.23	186.61	191.80	193.14	195.57	1.62	1.30	5.69
LEDBAT	5	5.04	3.38	1.62	135.48	134.45	134.19	1.82	2.72	5.49
Indigo-Muses	5	480.86	399.44	266.76	206.13	223.47	222.45	1.02	2.23	5.49
PCC-Allegro	5	314.05	261.89	212.96	244.20	227.20	277.98	4.46	3.75	9.27
PCC-Expr	5	263.54	209.07	159.42	222.78	207.68	247.26	3.38	5.46	6.78
QUIC Cubic	5	48.64	44.90	34.96	132.57	133.34	132.50	1.26	2.15	1.26
SCReAM	5	0.16	0.21	0.18	133.02	132.66	133.96	0.88	1.42	2.44
Sprout	5	0.59	0.56	0.60	134.44	133.46	133.31	0.65	1.32	2.39
TaoVA-100x	5	156.19	140.89	119.19	133.77	135.73	140.80	0.91	1.55	2.83
TCP Vegas	5	243.23	232.43	196.95	134.44	134.16	137.89	0.97	1.52	3.59
Verus	5	88.85	78.41	81.45	227.00	249.92	235.81	3.62	7.20	5.72
PCC-Vivace	5	241.51	165.58	114.95	186.58	148.64	192.18	1.82	1.65	5.36
WebRTC media	5	1.70	1.01	0.31	133.22	133.21	133.30	1.18	1.97	8.17

Run 1: Statistics of TCP BBR

Start at: 2018-10-26 12:16:24
End at: 2018-10-26 12:16:54
Local clock offset: -0.311 ms
Remote clock offset: -0.096 ms

Below is generated by plot.py at 2018-10-26 15:10:45
Datalink statistics
-- Total of 3 flows:
Average throughput: 452.26 Mbit/s
95th percentile per-packet one-way delay: 133.348 ms
Loss rate: 1.57%
-- Flow 1:
Average throughput: 239.53 Mbit/s
95th percentile per-packet one-way delay: 133.115 ms
Loss rate: 0.99%
-- Flow 2:
Average throughput: 224.28 Mbit/s
95th percentile per-packet one-way delay: 133.424 ms
Loss rate: 1.59%
-- Flow 3:
Average throughput: 196.11 Mbit/s
95th percentile per-packet one-way delay: 133.478 ms
Loss rate: 3.61%

Run 1: Report of TCP BBR — Data Link

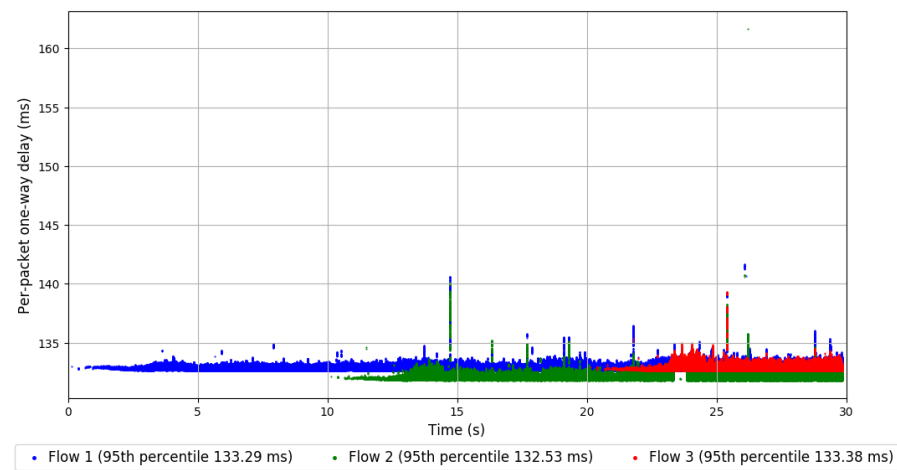
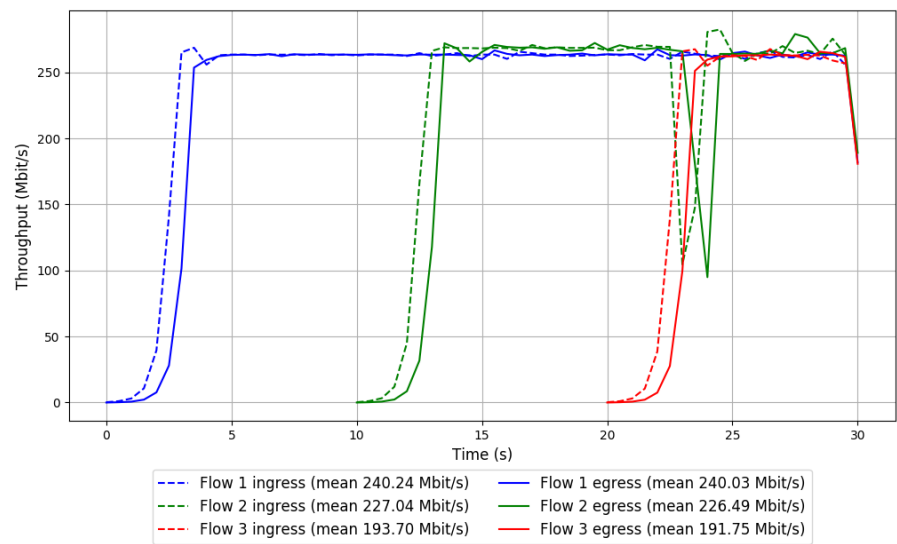


Run 2: Statistics of TCP BBR

Start at: 2018-10-26 12:49:10
End at: 2018-10-26 12:49:40
Local clock offset: -0.337 ms
Remote clock offset: -0.111 ms

Below is generated by plot.py at 2018-10-26 15:10:45
Datalink statistics
-- Total of 3 flows:
Average throughput: 452.87 Mbit/s
95th percentile per-packet one-way delay: 133.245 ms
Loss rate: 1.56%
-- Flow 1:
Average throughput: 240.03 Mbit/s
95th percentile per-packet one-way delay: 133.288 ms
Loss rate: 0.99%
-- Flow 2:
Average throughput: 226.49 Mbit/s
95th percentile per-packet one-way delay: 132.528 ms
Loss rate: 1.57%
-- Flow 3:
Average throughput: 191.75 Mbit/s
95th percentile per-packet one-way delay: 133.377 ms
Loss rate: 3.69%

Run 2: Report of TCP BBR — Data Link

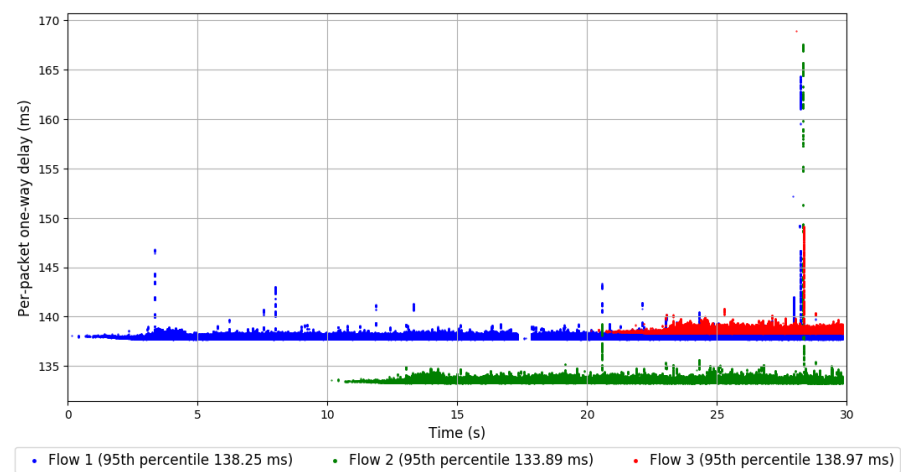
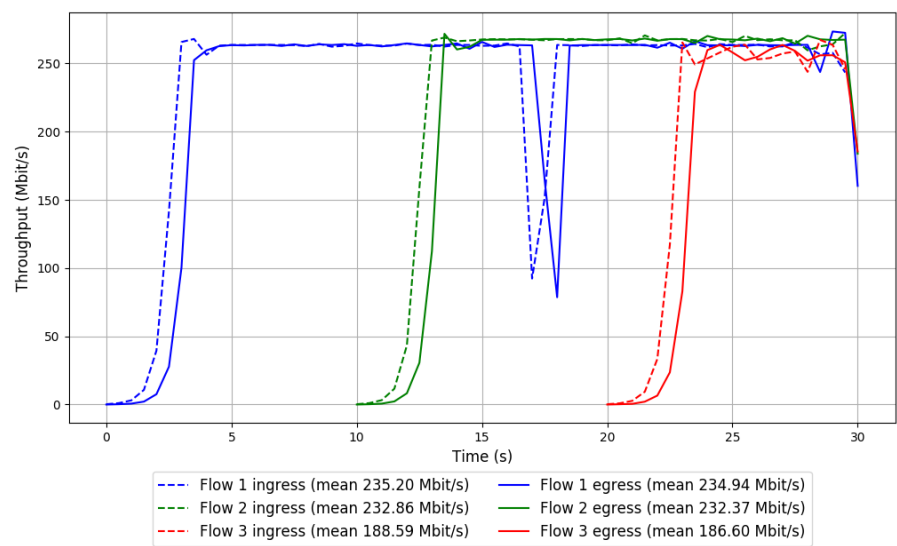


Run 3: Statistics of TCP BBR

Start at: 2018-10-26 13:21:51
End at: 2018-10-26 13:22:21
Local clock offset: -0.082 ms
Remote clock offset: -0.494 ms

Below is generated by plot.py at 2018-10-26 15:10:45
Datalink statistics
-- Total of 3 flows:
Average throughput: 449.93 Mbit/s
95th percentile per-packet one-way delay: 138.674 ms
Loss rate: 1.58%
-- Flow 1:
Average throughput: 234.94 Mbit/s
95th percentile per-packet one-way delay: 138.251 ms
Loss rate: 1.01%
-- Flow 2:
Average throughput: 232.37 Mbit/s
95th percentile per-packet one-way delay: 133.892 ms
Loss rate: 1.53%
-- Flow 3:
Average throughput: 186.60 Mbit/s
95th percentile per-packet one-way delay: 138.970 ms
Loss rate: 3.80%

Run 3: Report of TCP BBR — Data Link

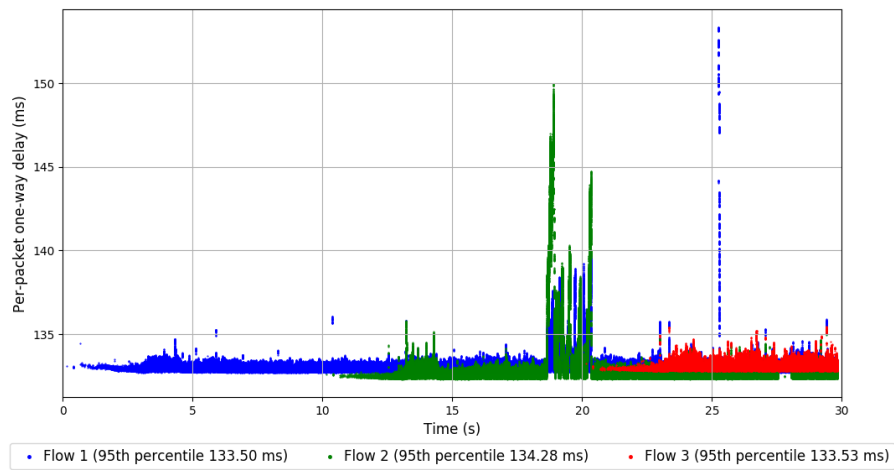
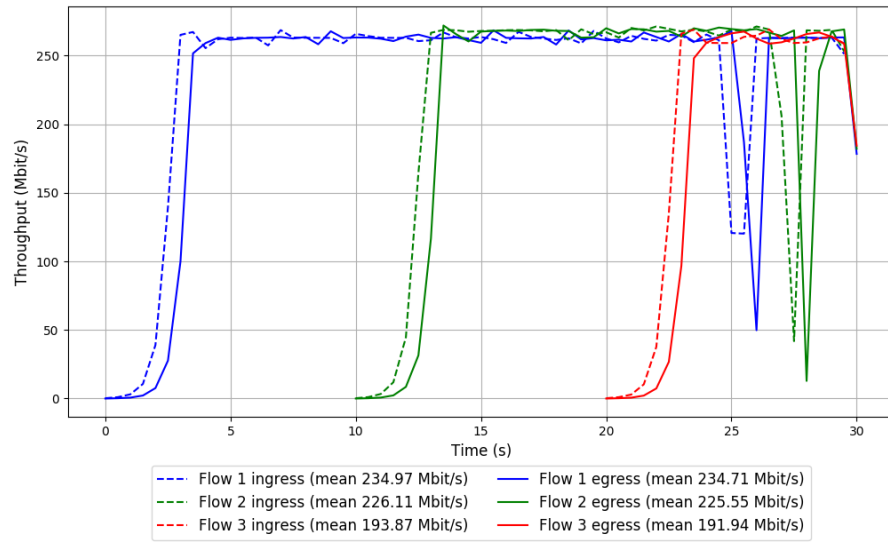


Run 4: Statistics of TCP BBR

Start at: 2018-10-26 13:54:32
End at: 2018-10-26 13:55:02
Local clock offset: -0.129 ms
Remote clock offset: -0.144 ms

Below is generated by plot.py at 2018-10-26 15:10:45
Datalink statistics
-- Total of 3 flows:
Average throughput: 446.91 Mbit/s
95th percentile per-packet one-way delay: 133.562 ms
Loss rate: 1.58%
-- Flow 1:
Average throughput: 234.71 Mbit/s
95th percentile per-packet one-way delay: 133.502 ms
Loss rate: 1.01%
-- Flow 2:
Average throughput: 225.55 Mbit/s
95th percentile per-packet one-way delay: 134.278 ms
Loss rate: 1.58%
-- Flow 3:
Average throughput: 191.94 Mbit/s
95th percentile per-packet one-way delay: 133.532 ms
Loss rate: 3.68%

Run 4: Report of TCP BBR — Data Link

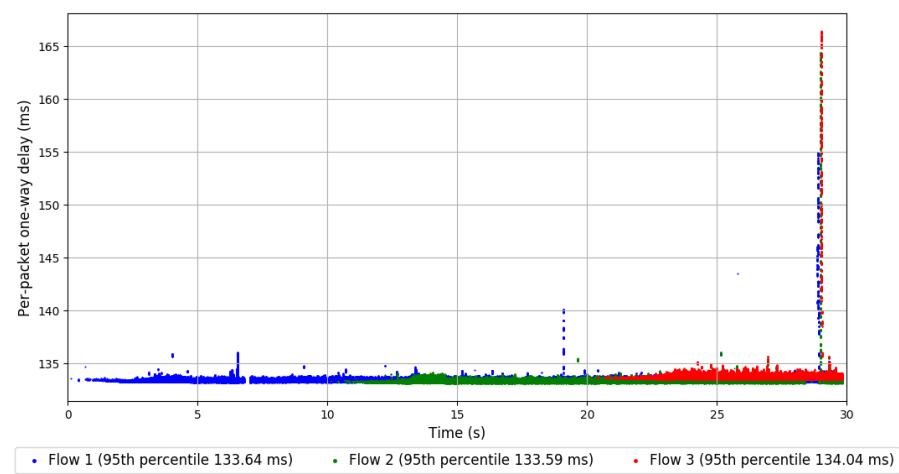
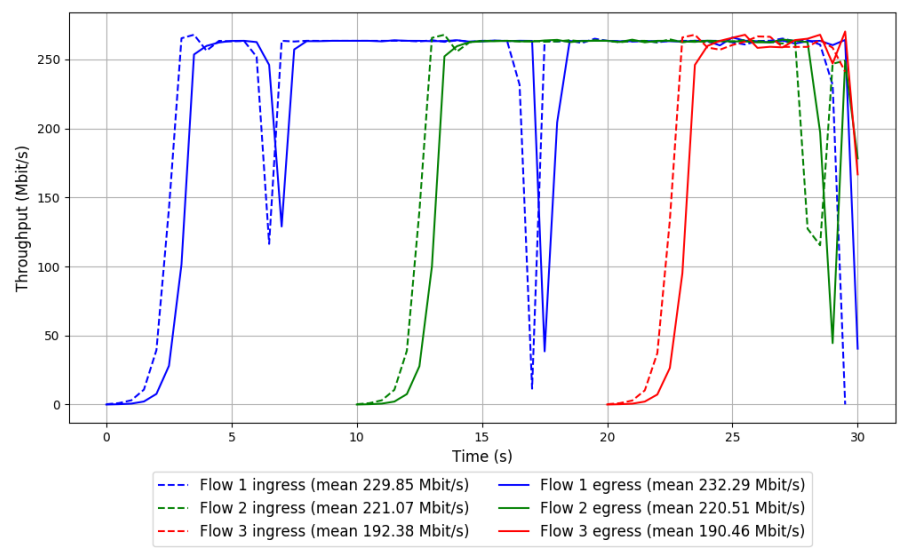


Run 5: Statistics of TCP BBR

Start at: 2018-10-26 14:26:08
End at: 2018-10-26 14:26:38
Local clock offset: -0.095 ms
Remote clock offset: -0.465 ms

Below is generated by plot.py at 2018-10-26 15:10:45
Datalink statistics
-- Total of 3 flows:
Average throughput: 438.59 Mbit/s
95th percentile per-packet one-way delay: 133.806 ms
Loss rate: 1.06%
-- Flow 1:
Average throughput: 232.29 Mbit/s
95th percentile per-packet one-way delay: 133.638 ms
Loss rate: 0.00%
-- Flow 2:
Average throughput: 220.51 Mbit/s
95th percentile per-packet one-way delay: 133.592 ms
Loss rate: 1.59%
-- Flow 3:
Average throughput: 190.46 Mbit/s
95th percentile per-packet one-way delay: 134.039 ms
Loss rate: 3.66%

Run 5: Report of TCP BBR — Data Link

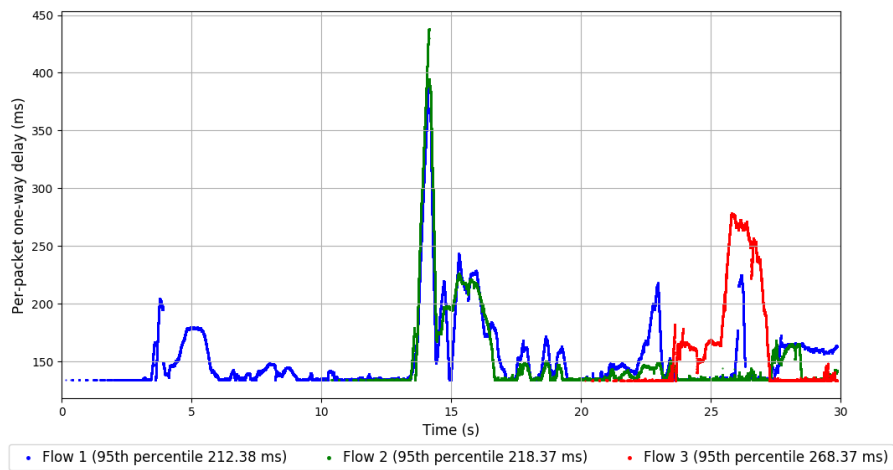
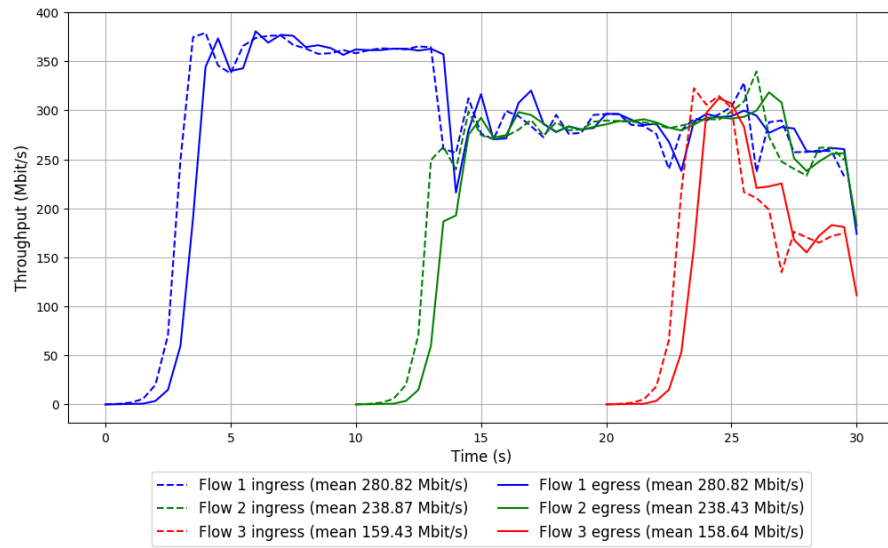


Run 1: Statistics of Copa

Start at: 2018-10-26 12:10:14
End at: 2018-10-26 12:10:44
Local clock offset: 0.521 ms
Remote clock offset: -0.026 ms

Below is generated by plot.py at 2018-10-26 15:20:16
Datalink statistics
-- Total of 3 flows:
Average throughput: 490.64 Mbit/s
95th percentile per-packet one-way delay: 221.753 ms
Loss rate: 1.33%
-- Flow 1:
Average throughput: 280.82 Mbit/s
95th percentile per-packet one-way delay: 212.381 ms
Loss rate: 0.89%
-- Flow 2:
Average throughput: 238.43 Mbit/s
95th percentile per-packet one-way delay: 218.371 ms
Loss rate: 1.51%
-- Flow 3:
Average throughput: 158.64 Mbit/s
95th percentile per-packet one-way delay: 268.365 ms
Loss rate: 3.15%

Run 1: Report of Copa — Data Link

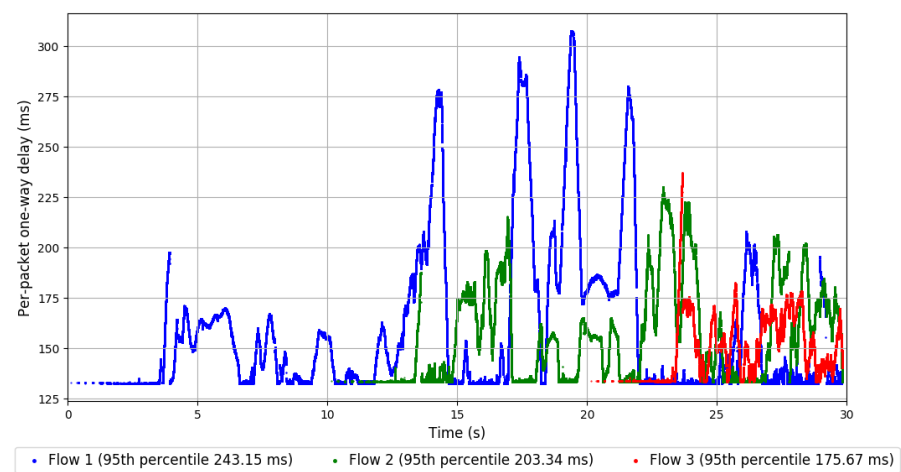
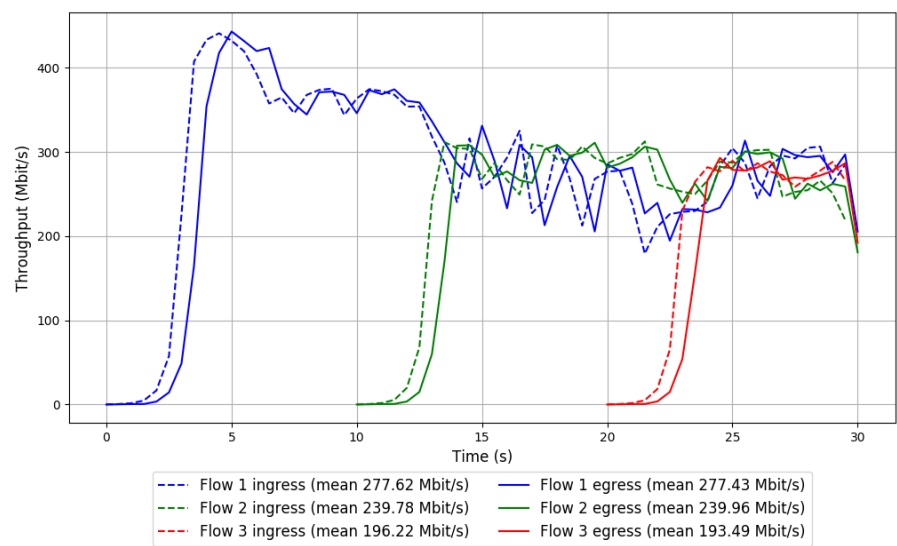


Run 2: Statistics of Copa

Start at: 2018-10-26 12:43:10
End at: 2018-10-26 12:43:40
Local clock offset: 0.092 ms
Remote clock offset: -0.486 ms

Below is generated by plot.py at 2018-10-26 15:20:39
Datalink statistics
-- Total of 3 flows:
Average throughput: 499.67 Mbit/s
95th percentile per-packet one-way delay: 213.744 ms
Loss rate: 1.46%
-- Flow 1:
Average throughput: 277.43 Mbit/s
95th percentile per-packet one-way delay: 243.151 ms
Loss rate: 0.97%
-- Flow 2:
Average throughput: 239.96 Mbit/s
95th percentile per-packet one-way delay: 203.337 ms
Loss rate: 1.25%
-- Flow 3:
Average throughput: 193.49 Mbit/s
95th percentile per-packet one-way delay: 175.673 ms
Loss rate: 4.02%

Run 2: Report of Copa — Data Link

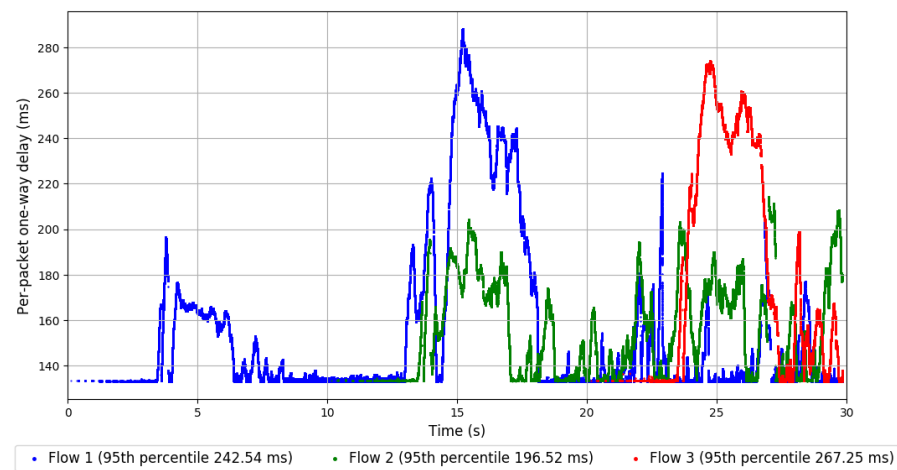
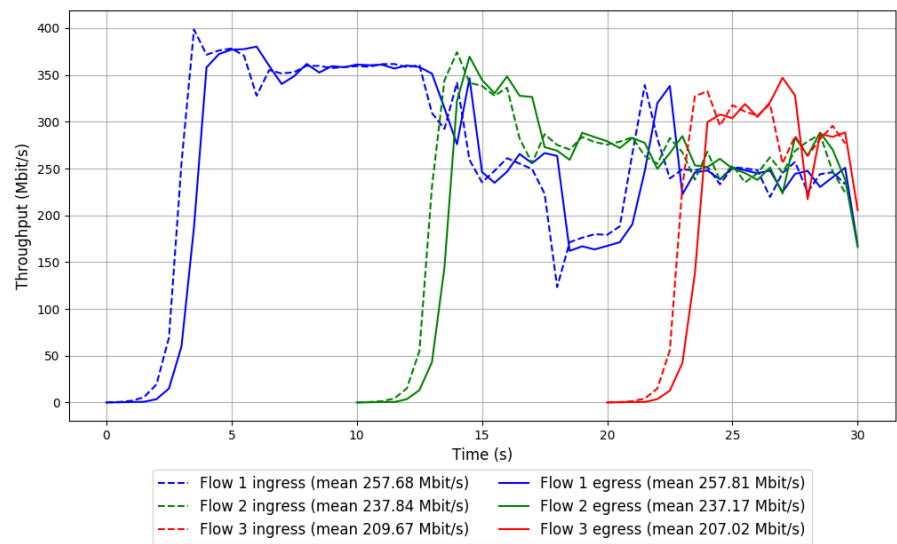


Run 3: Statistics of Copa

Start at: 2018-10-26 13:15:50
End at: 2018-10-26 13:16:20
Local clock offset: -0.066 ms
Remote clock offset: -0.133 ms

Below is generated by plot.py at 2018-10-26 15:20:39
Datalink statistics
-- Total of 3 flows:
Average throughput: 482.54 Mbit/s
95th percentile per-packet one-way delay: 248.095 ms
Loss rate: 1.55%
-- Flow 1:
Average throughput: 257.81 Mbit/s
95th percentile per-packet one-way delay: 242.538 ms
Loss rate: 0.86%
-- Flow 2:
Average throughput: 237.17 Mbit/s
95th percentile per-packet one-way delay: 196.521 ms
Loss rate: 1.64%
-- Flow 3:
Average throughput: 207.02 Mbit/s
95th percentile per-packet one-way delay: 267.246 ms
Loss rate: 3.95%

Run 3: Report of Copa — Data Link

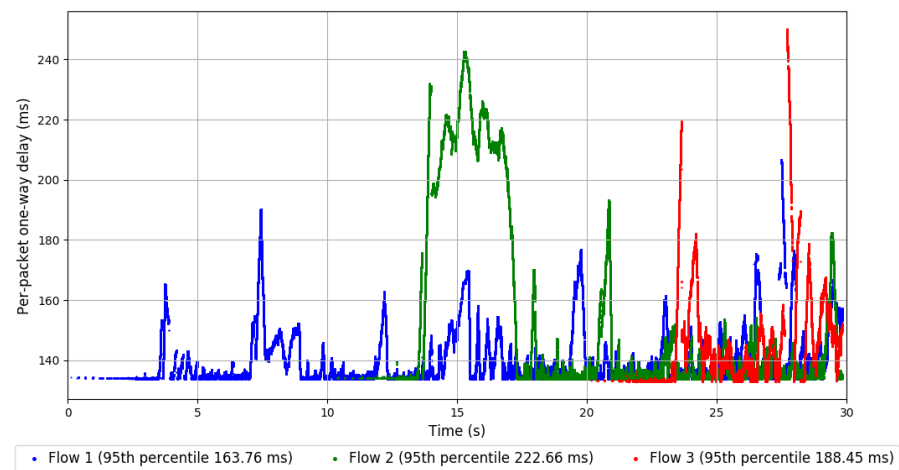
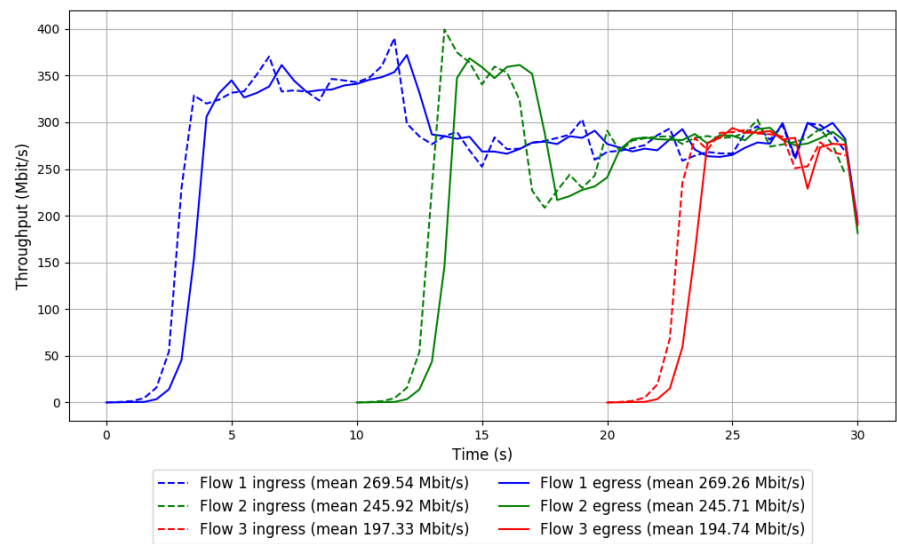


Run 4: Statistics of Copa

Start at: 2018-10-26 13:48:43
End at: 2018-10-26 13:49:13
Local clock offset: 0.191 ms
Remote clock offset: -0.502 ms

Below is generated by plot.py at 2018-10-26 15:28:55
Datalink statistics
-- Total of 3 flows:
Average throughput: 495.72 Mbit/s
95th percentile per-packet one-way delay: 212.261 ms
Loss rate: 1.54%
-- Flow 1:
Average throughput: 269.26 Mbit/s
95th percentile per-packet one-way delay: 163.757 ms
Loss rate: 1.01%
-- Flow 2:
Average throughput: 245.71 Mbit/s
95th percentile per-packet one-way delay: 222.660 ms
Loss rate: 1.44%
-- Flow 3:
Average throughput: 194.74 Mbit/s
95th percentile per-packet one-way delay: 188.447 ms
Loss rate: 3.97%

Run 4: Report of Copa — Data Link



Run 5: Statistics of Copa

Start at: 2018-10-26 14:20:24

End at: 2018-10-26 14:20:54

Local clock offset: -0.029 ms

Remote clock offset: -0.51 ms

Below is generated by plot.py at 2018-10-26 15:28:55

Datalink statistics

-- Total of 3 flows:

Average throughput: 448.79 Mbit/s

95th percentile per-packet one-way delay: 196.069 ms

Loss rate: 1.35%

-- Flow 1:

Average throughput: 233.75 Mbit/s

95th percentile per-packet one-way delay: 162.900 ms

Loss rate: 0.98%

-- Flow 2:

Average throughput: 239.04 Mbit/s

95th percentile per-packet one-way delay: 204.006 ms

Loss rate: 1.61%

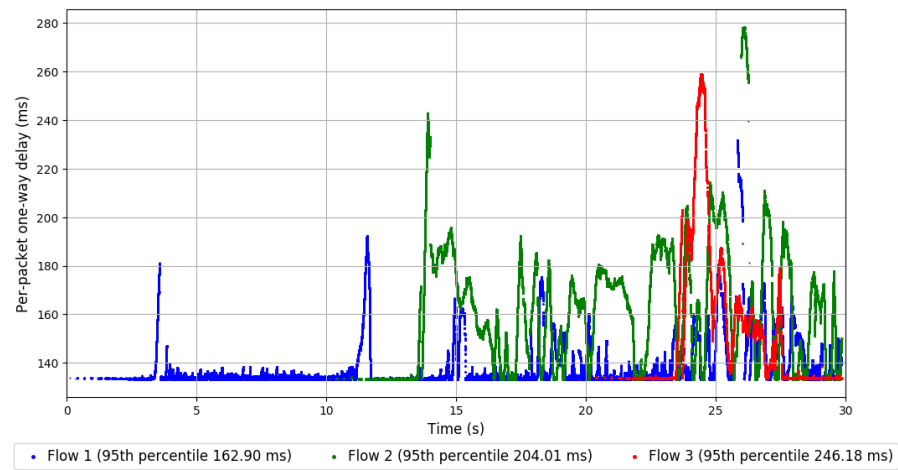
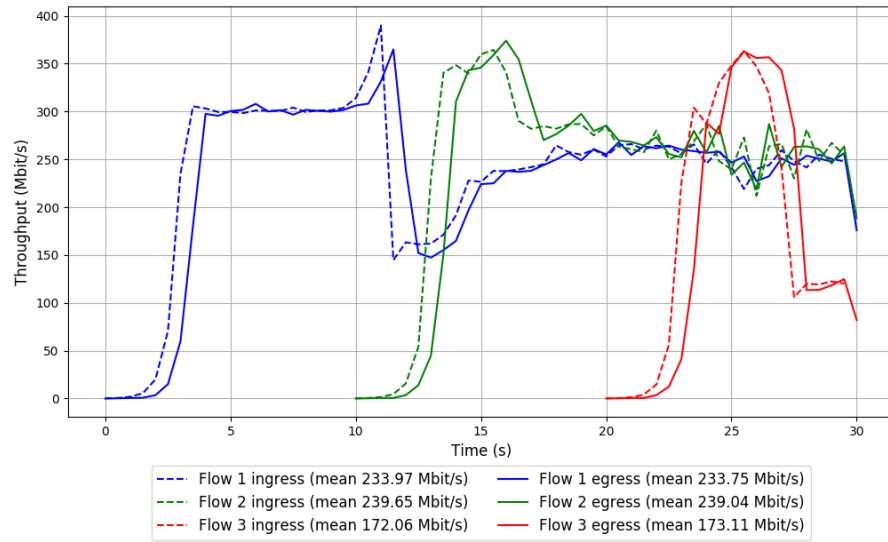
-- Flow 3:

Average throughput: 173.11 Mbit/s

95th percentile per-packet one-way delay: 246.182 ms

Loss rate: 2.13%

Run 5: Report of Copa — Data Link



Run 1: Statistics of TCP Cubic

Start at: 2018-10-26 12:12:38

End at: 2018-10-26 12:13:08

Local clock offset: -0.332 ms

Remote clock offset: -0.09 ms

Below is generated by plot.py at 2018-10-26 15:28:55

Datalink statistics

-- Total of 3 flows:

Average throughput: 465.07 Mbit/s

95th percentile per-packet one-way delay: 134.212 ms

Loss rate: 1.52%

-- Flow 1:

Average throughput: 245.30 Mbit/s

95th percentile per-packet one-way delay: 134.017 ms

Loss rate: 0.96%

-- Flow 2:

Average throughput: 233.79 Mbit/s

95th percentile per-packet one-way delay: 134.414 ms

Loss rate: 1.52%

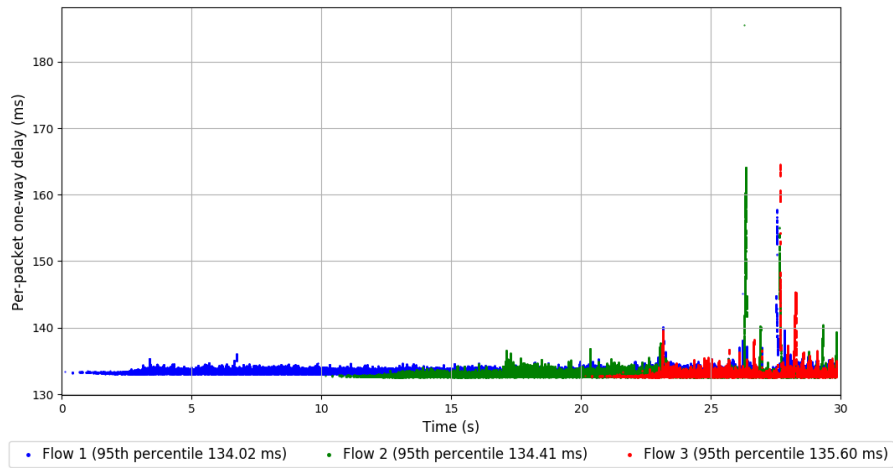
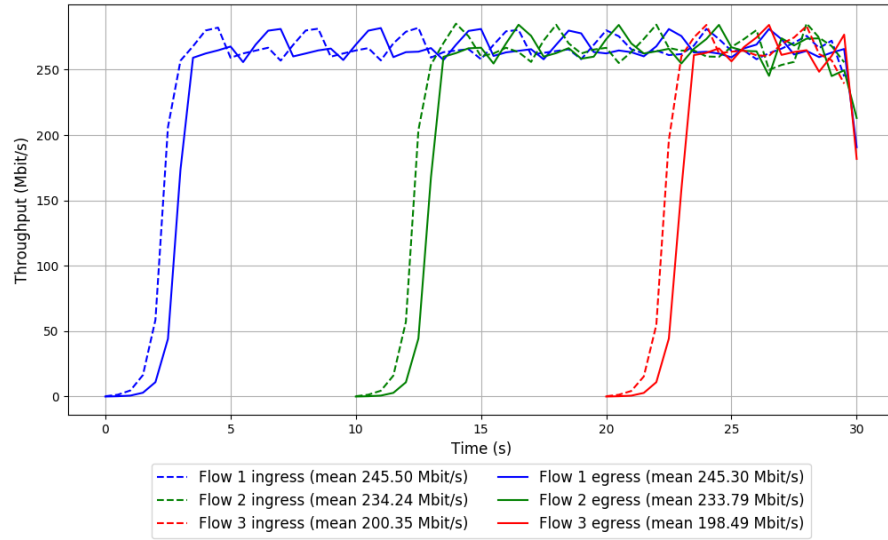
-- Flow 3:

Average throughput: 198.49 Mbit/s

95th percentile per-packet one-way delay: 135.596 ms

Loss rate: 3.56%

Run 1: Report of TCP Cubic — Data Link

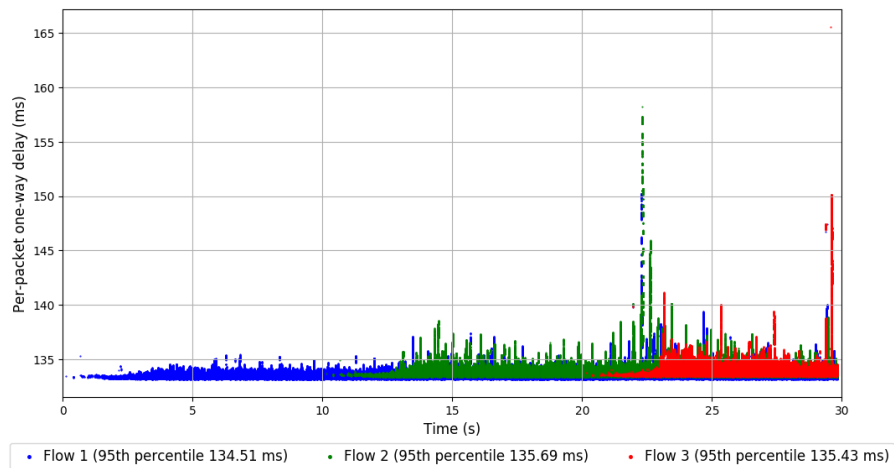
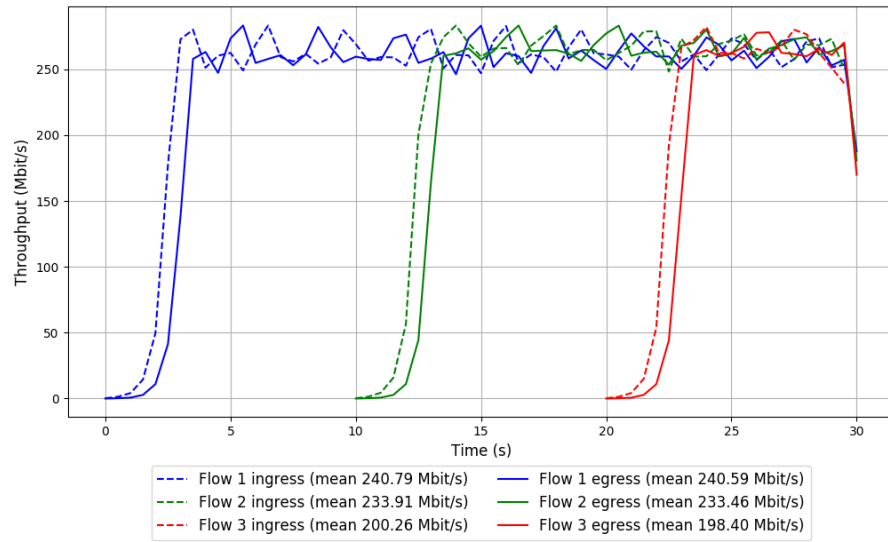


Run 2: Statistics of TCP Cubic

Start at: 2018-10-26 12:45:27
End at: 2018-10-26 12:45:57
Local clock offset: 0.245 ms
Remote clock offset: -0.104 ms

Below is generated by plot.py at 2018-10-26 15:28:55
Datalink statistics
-- Total of 3 flows:
Average throughput: 459.92 Mbit/s
95th percentile per-packet one-way delay: 135.073 ms
Loss rate: 1.54%
-- Flow 1:
Average throughput: 240.59 Mbit/s
95th percentile per-packet one-way delay: 134.515 ms
Loss rate: 0.99%
-- Flow 2:
Average throughput: 233.46 Mbit/s
95th percentile per-packet one-way delay: 135.695 ms
Loss rate: 1.53%
-- Flow 3:
Average throughput: 198.40 Mbit/s
95th percentile per-packet one-way delay: 135.434 ms
Loss rate: 3.59%

Run 2: Report of TCP Cubic — Data Link

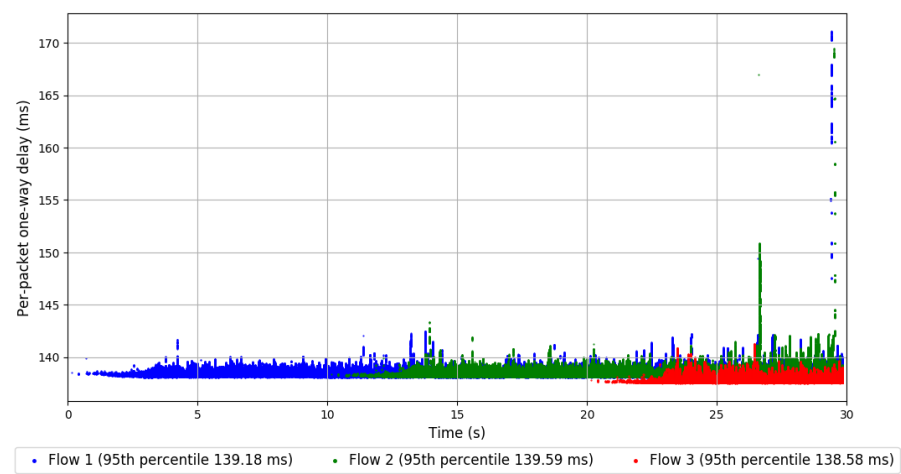
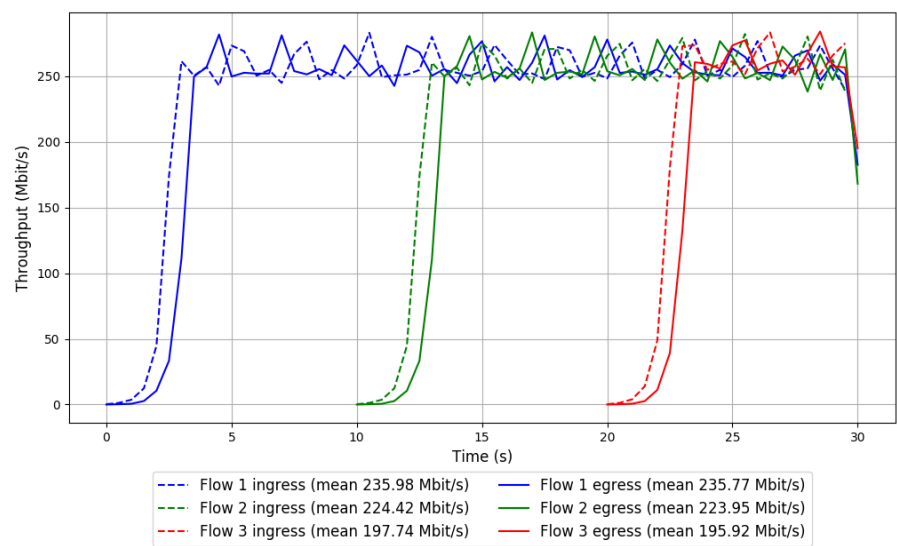


Run 3: Statistics of TCP Cubic

Start at: 2018-10-26 13:18:13
End at: 2018-10-26 13:18:43
Local clock offset: 0.082 ms
Remote clock offset: -0.112 ms

Below is generated by plot.py at 2018-10-26 15:28:55
Datalink statistics
-- Total of 3 flows:
Average throughput: 448.28 Mbit/s
95th percentile per-packet one-way delay: 139.246 ms
Loss rate: 1.58%
-- Flow 1:
Average throughput: 235.77 Mbit/s
95th percentile per-packet one-way delay: 139.183 ms
Loss rate: 1.00%
-- Flow 2:
Average throughput: 223.95 Mbit/s
95th percentile per-packet one-way delay: 139.595 ms
Loss rate: 1.59%
-- Flow 3:
Average throughput: 195.92 Mbit/s
95th percentile per-packet one-way delay: 138.576 ms
Loss rate: 3.61%

Run 3: Report of TCP Cubic — Data Link

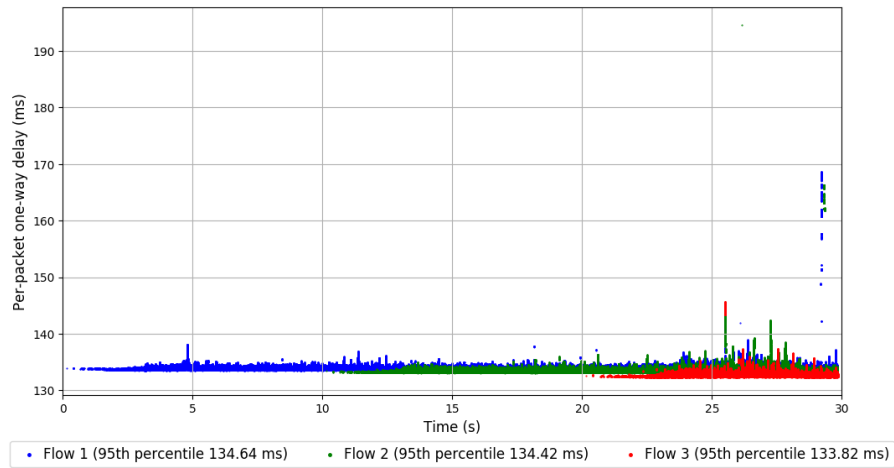
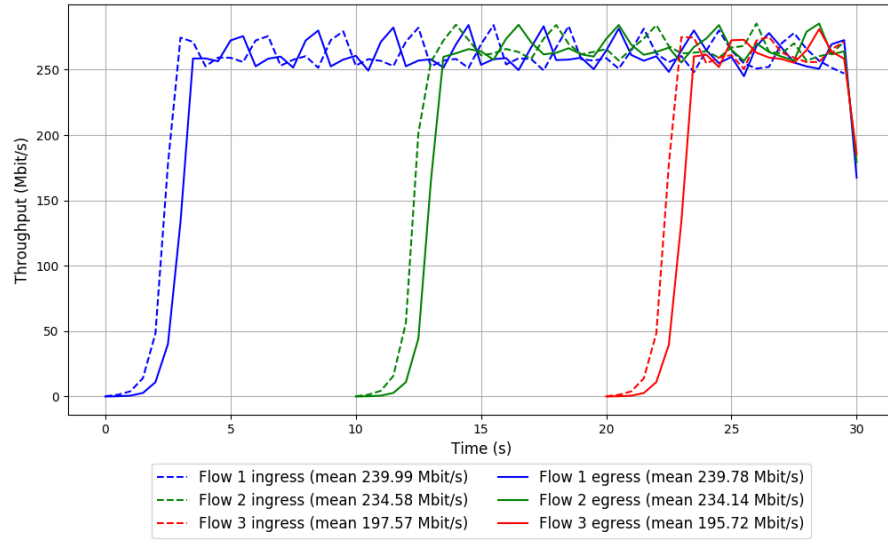


Run 4: Statistics of TCP Cubic

Start at: 2018-10-26 13:50:56
End at: 2018-10-26 13:51:26
Local clock offset: -0.14 ms
Remote clock offset: -0.508 ms

Below is generated by plot.py at 2018-10-26 15:29:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 458.69 Mbit/s
95th percentile per-packet one-way delay: 134.557 ms
Loss rate: 1.55%
-- Flow 1:
Average throughput: 239.78 Mbit/s
95th percentile per-packet one-way delay: 134.638 ms
Loss rate: 0.99%
-- Flow 2:
Average throughput: 234.14 Mbit/s
95th percentile per-packet one-way delay: 134.424 ms
Loss rate: 1.53%
-- Flow 3:
Average throughput: 195.72 Mbit/s
95th percentile per-packet one-way delay: 133.823 ms
Loss rate: 3.62%

Run 4: Report of TCP Cubic — Data Link

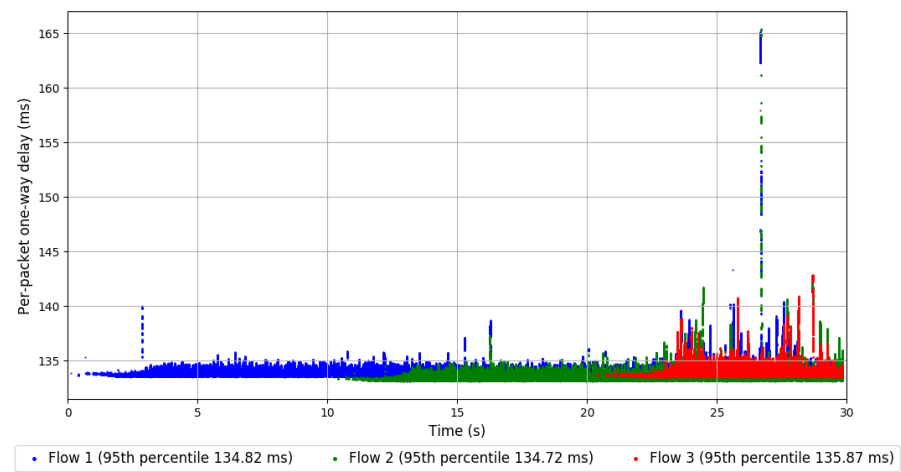
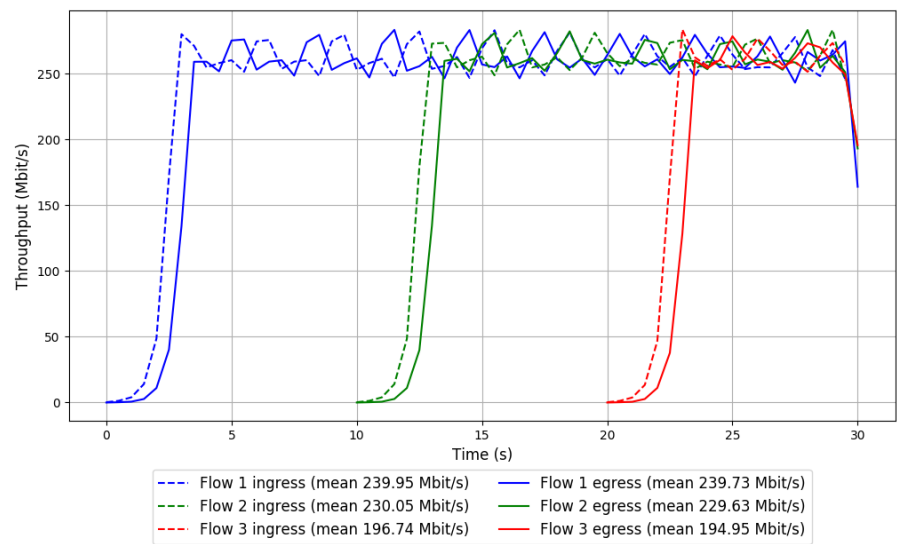


Run 5: Statistics of TCP Cubic

Start at: 2018-10-26 14:22:33
End at: 2018-10-26 14:23:03
Local clock offset: 0.195 ms
Remote clock offset: -0.147 ms

Below is generated by plot.py at 2018-10-26 15:29:02
Datalink statistics
-- Total of 3 flows:
Average throughput: 455.56 Mbit/s
95th percentile per-packet one-way delay: 134.972 ms
Loss rate: 1.53%
-- Flow 1:
Average throughput: 239.73 Mbit/s
95th percentile per-packet one-way delay: 134.818 ms
Loss rate: 0.98%
-- Flow 2:
Average throughput: 229.63 Mbit/s
95th percentile per-packet one-way delay: 134.721 ms
Loss rate: 1.52%
-- Flow 3:
Average throughput: 194.95 Mbit/s
95th percentile per-packet one-way delay: 135.871 ms
Loss rate: 3.58%

Run 5: Report of TCP Cubic — Data Link

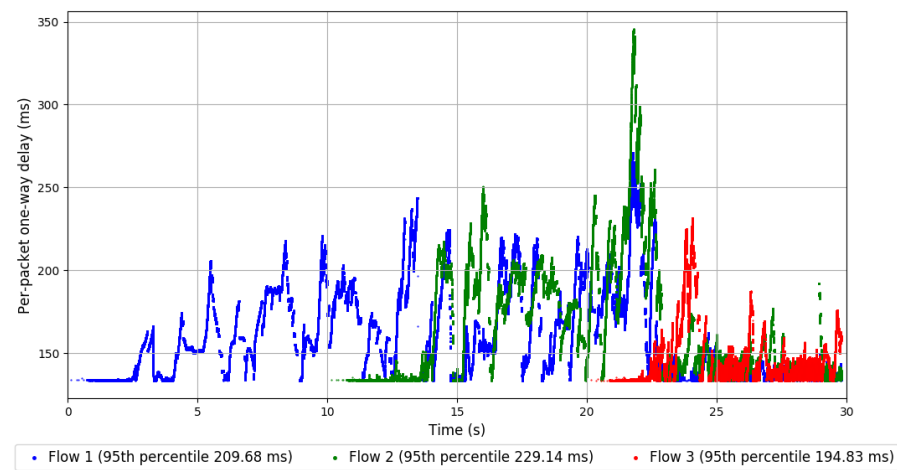
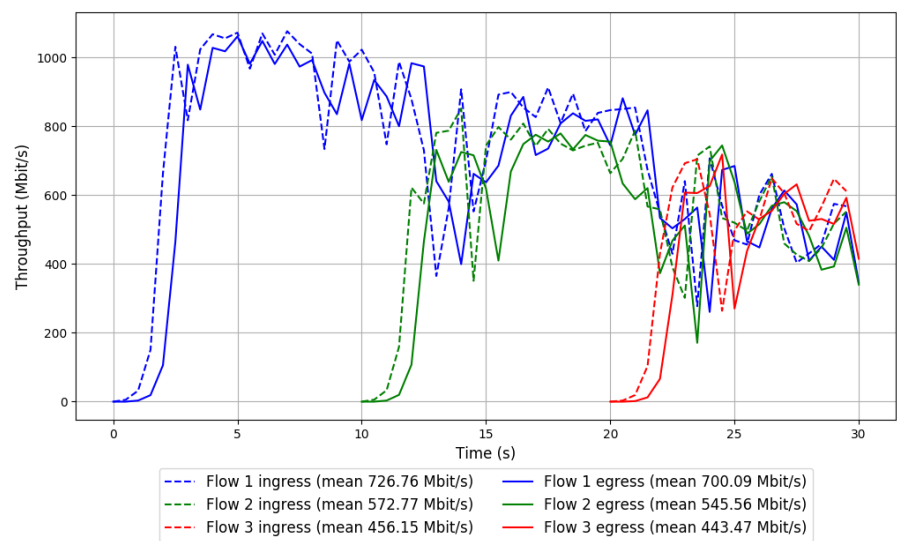


Run 1: Statistics of FillP

Start at: 2018-10-26 12:37:12
End at: 2018-10-26 12:37:42
Local clock offset: 0.108 ms
Remote clock offset: -0.467 ms

Below is generated by plot.py at 2018-10-26 15:50:30
Datalink statistics
-- Total of 3 flows:
Average throughput: 1205.59 Mbit/s
95th percentile per-packet one-way delay: 212.742 ms
Loss rate: 5.11%
-- Flow 1:
Average throughput: 700.09 Mbit/s
95th percentile per-packet one-way delay: 209.676 ms
Loss rate: 4.55%
-- Flow 2:
Average throughput: 545.56 Mbit/s
95th percentile per-packet one-way delay: 229.143 ms
Loss rate: 6.04%
-- Flow 3:
Average throughput: 443.47 Mbit/s
95th percentile per-packet one-way delay: 194.826 ms
Loss rate: 5.50%

Run 1: Report of FillP — Data Link

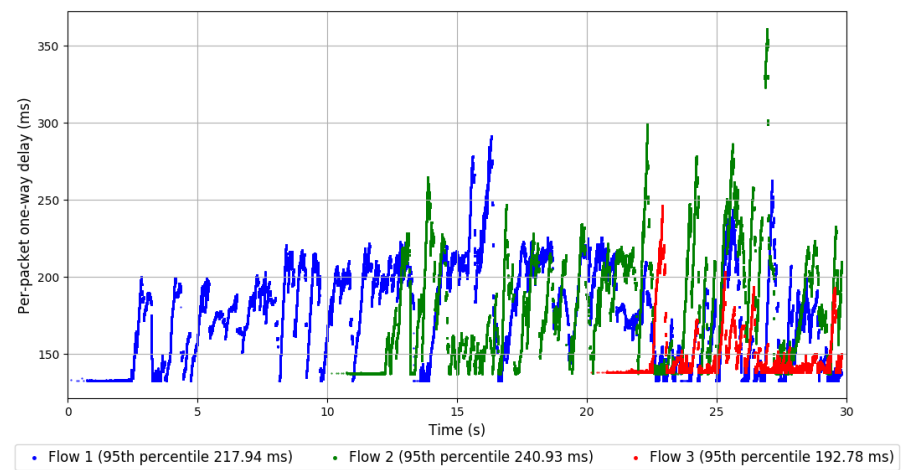
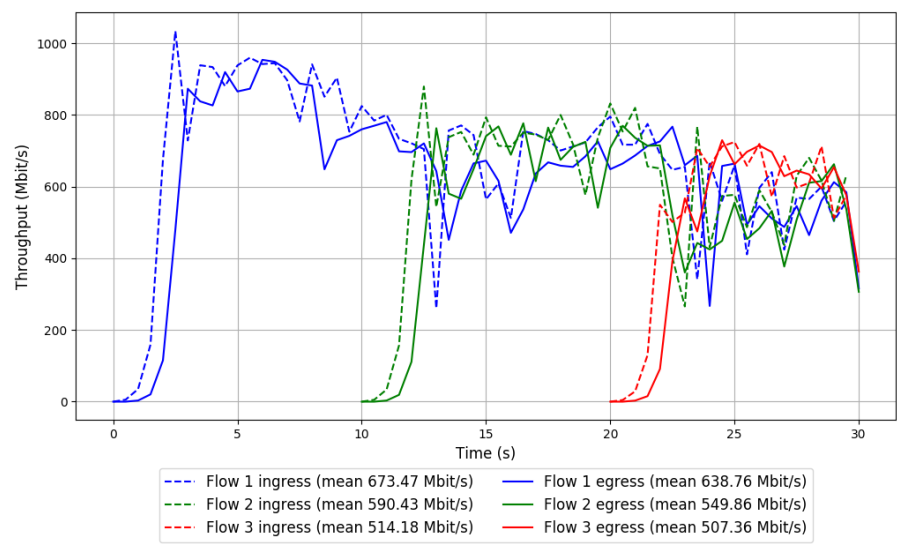


Run 2: Statistics of FillP

Start at: 2018-10-26 13:09:47
End at: 2018-10-26 13:10:17
Local clock offset: -0.084 ms
Remote clock offset: -0.132 ms

Below is generated by plot.py at 2018-10-26 15:50:30
Datalink statistics
-- Total of 3 flows:
Average throughput: 1167.79 Mbit/s
95th percentile per-packet one-way delay: 222.243 ms
Loss rate: 6.42%
-- Flow 1:
Average throughput: 638.76 Mbit/s
95th percentile per-packet one-way delay: 217.937 ms
Loss rate: 6.01%
-- Flow 2:
Average throughput: 549.86 Mbit/s
95th percentile per-packet one-way delay: 240.933 ms
Loss rate: 8.14%
-- Flow 3:
Average throughput: 507.36 Mbit/s
95th percentile per-packet one-way delay: 192.778 ms
Loss rate: 4.08%

Run 2: Report of FillP — Data Link

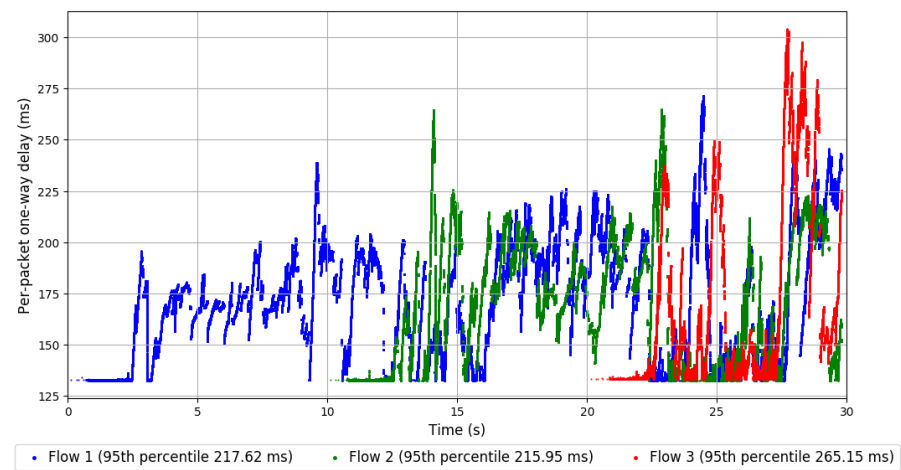
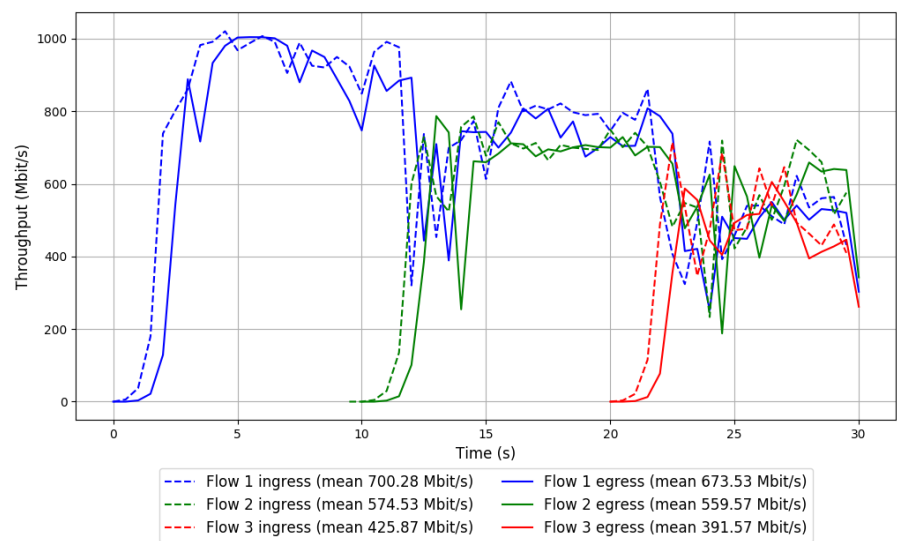


Run 3: Statistics of FillP

Start at: 2018-10-26 13:42:52
End at: 2018-10-26 13:43:22
Local clock offset: 0.085 ms
Remote clock offset: -0.161 ms

Below is generated by plot.py at 2018-10-26 15:50:30
Datalink statistics
-- Total of 3 flows:
Average throughput: 1171.86 Mbit/s
95th percentile per-packet one-way delay: 222.262 ms
Loss rate: 5.13%
-- Flow 1:
Average throughput: 673.53 Mbit/s
95th percentile per-packet one-way delay: 217.620 ms
Loss rate: 4.69%
-- Flow 2:
Average throughput: 559.57 Mbit/s
95th percentile per-packet one-way delay: 215.949 ms
Loss rate: 3.93%
-- Flow 3:
Average throughput: 391.57 Mbit/s
95th percentile per-packet one-way delay: 265.146 ms
Loss rate: 10.58%

Run 3: Report of FillP — Data Link

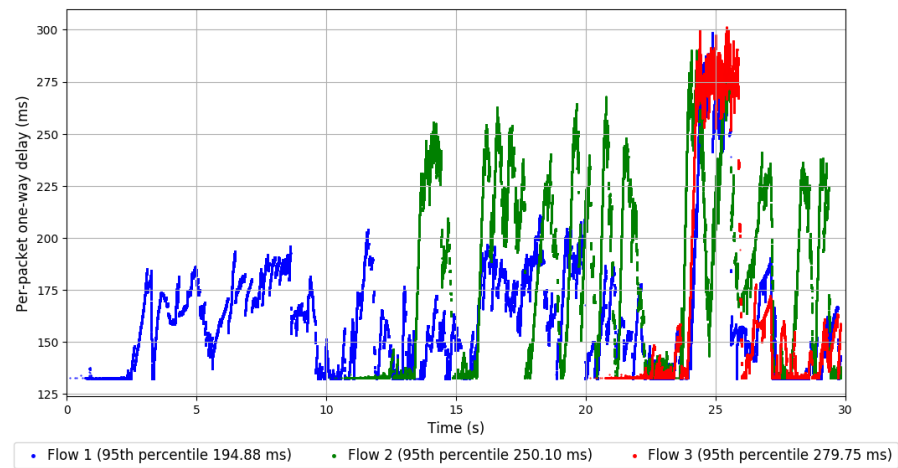
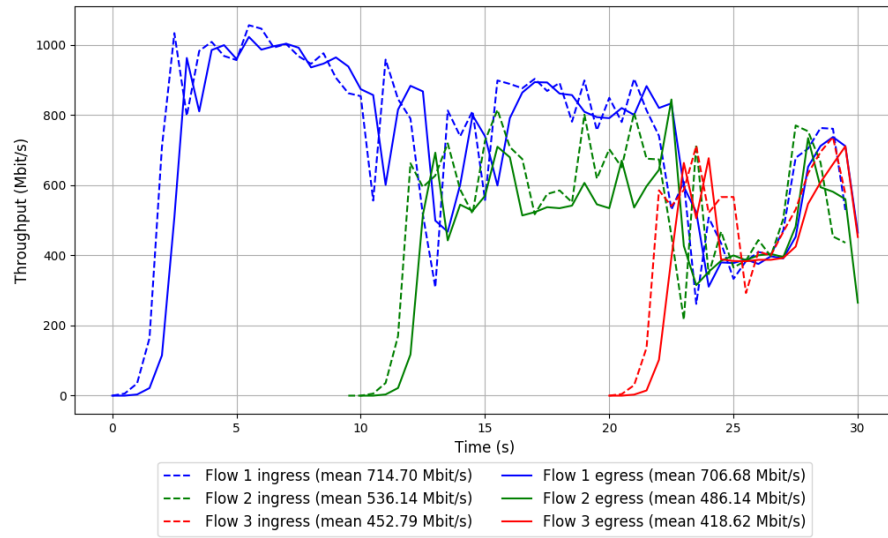


Run 4: Statistics of FillP

Start at: 2018-10-26 14:14:34
End at: 2018-10-26 14:15:04
Local clock offset: -0.226 ms
Remote clock offset: 0.236 ms

Below is generated by plot.py at 2018-10-26 15:50:30
Datalink statistics
-- Total of 3 flows:
Average throughput: 1165.29 Mbit/s
95th percentile per-packet one-way delay: 246.443 ms
Loss rate: 5.48%
-- Flow 1:
Average throughput: 706.68 Mbit/s
95th percentile per-packet one-way delay: 194.884 ms
Loss rate: 2.01%
-- Flow 2:
Average throughput: 486.14 Mbit/s
95th percentile per-packet one-way delay: 250.100 ms
Loss rate: 10.51%
-- Flow 3:
Average throughput: 418.62 Mbit/s
95th percentile per-packet one-way delay: 279.751 ms
Loss rate: 10.06%

Run 4: Report of FillP — Data Link

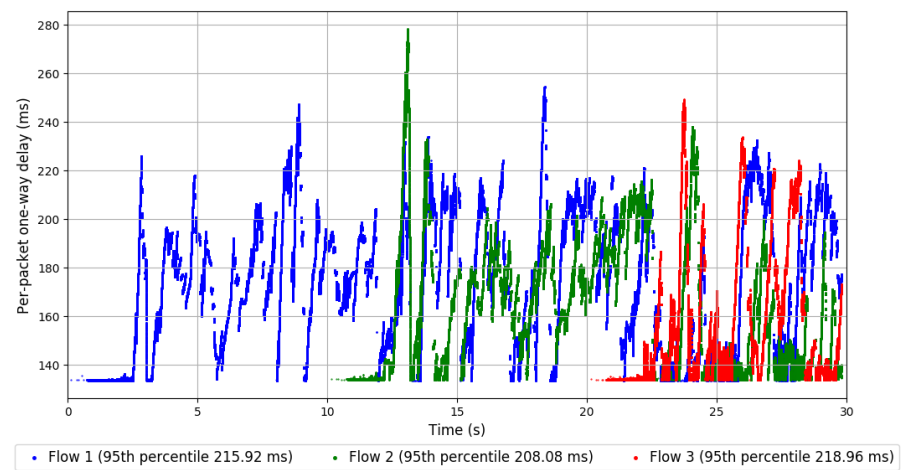
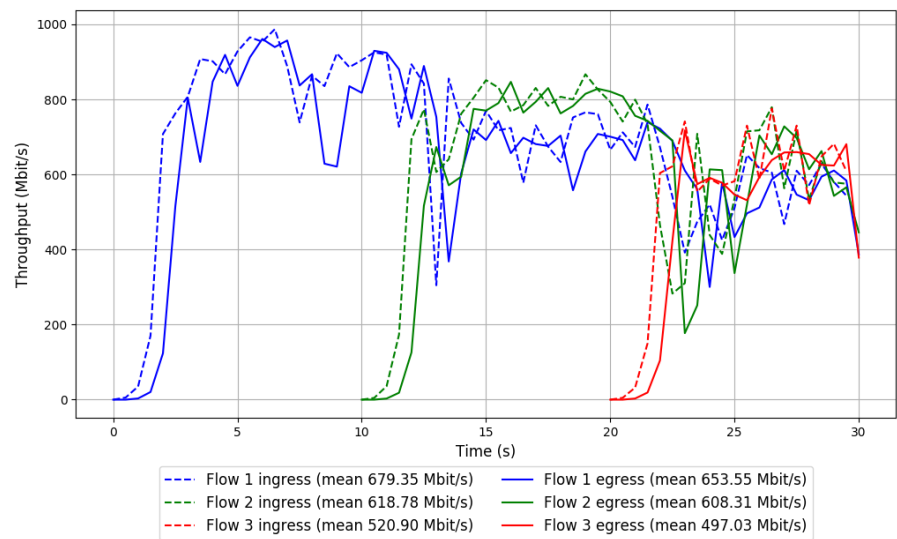


Run 5: Statistics of FillP

Start at: 2018-10-26 14:46:44
End at: 2018-10-26 14:47:14
Local clock offset: 0.926 ms
Remote clock offset: -0.159 ms

Below is generated by plot.py at 2018-10-26 15:59:05
Datalink statistics
-- Total of 3 flows:
Average throughput: 1218.21 Mbit/s
95th percentile per-packet one-way delay: 214.754 ms
Loss rate: 4.45%
-- Flow 1:
Average throughput: 653.55 Mbit/s
95th percentile per-packet one-way delay: 215.922 ms
Loss rate: 4.65%
-- Flow 2:
Average throughput: 608.31 Mbit/s
95th percentile per-packet one-way delay: 208.077 ms
Loss rate: 2.98%
-- Flow 3:
Average throughput: 497.03 Mbit/s
95th percentile per-packet one-way delay: 218.959 ms
Loss rate: 7.15%

Run 5: Report of FillP — Data Link

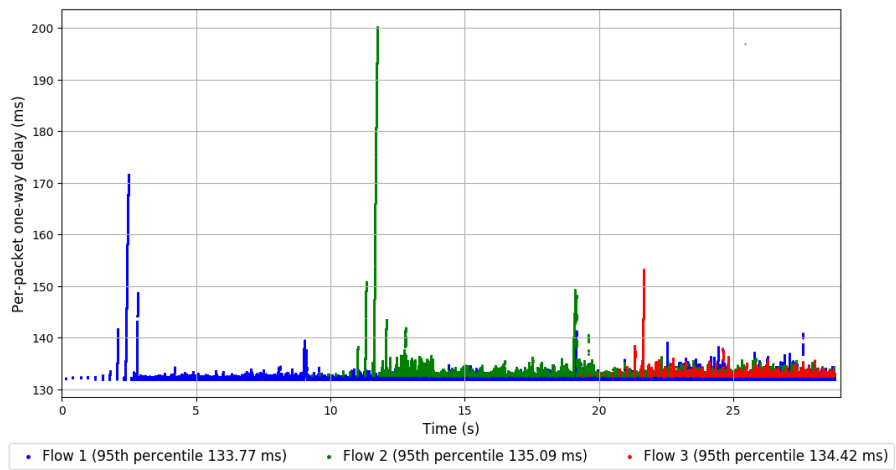
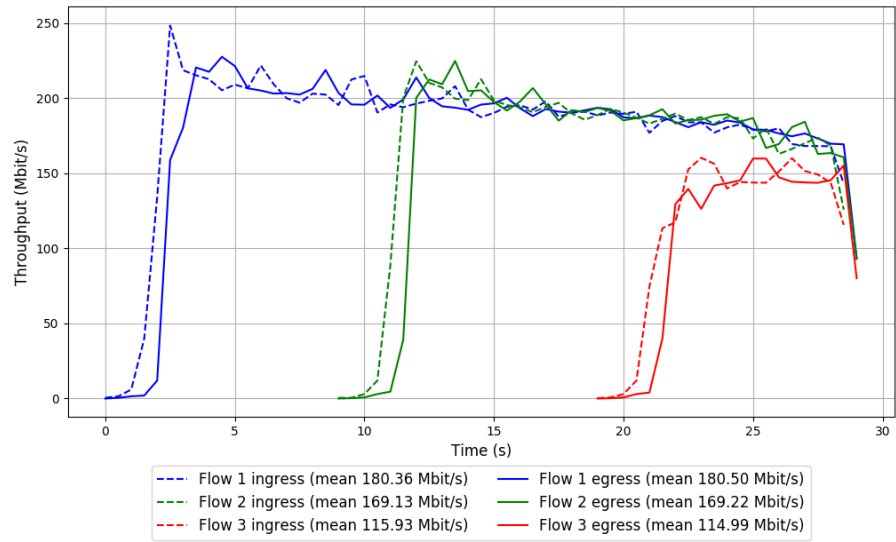



```
Run 1: Statistics of Indigo

Start at: 2018-10-26 12:27:48
End at: 2018-10-26 12:28:18
Local clock offset: -0.157 ms
Remote clock offset: -0.086 ms

# Below is generated by plot.py at 2018-10-26 15:59:05
# Datalink statistics
-- Total of 3 flows:
Average throughput: 333.03 Mbit/s
95th percentile per-packet one-way delay: 134.380 ms
Loss rate: 1.32%
-- Flow 1:
Average throughput: 180.50 Mbit/s
95th percentile per-packet one-way delay: 133.769 ms
Loss rate: 0.85%
-- Flow 2:
Average throughput: 169.22 Mbit/s
95th percentile per-packet one-way delay: 135.091 ms
Loss rate: 1.30%
-- Flow 3:
Average throughput: 114.99 Mbit/s
95th percentile per-packet one-way delay: 134.420 ms
Loss rate: 3.58%
```

Run 1: Report of Indigo — Data Link



Run 2: Statistics of Indigo

Start at: 2018-10-26 13:00:30

End at: 2018-10-26 13:01:00

Local clock offset: 0.546 ms

Remote clock offset: 0.281 ms

Below is generated by plot.py at 2018-10-26 15:59:05

Datalink statistics

-- Total of 3 flows:

Average throughput: 340.21 Mbit/s

95th percentile per-packet one-way delay: 136.073 ms

Loss rate: 1.39%

-- Flow 1:

Average throughput: 179.09 Mbit/s

95th percentile per-packet one-way delay: 135.314 ms

Loss rate: 0.81%

-- Flow 2:

Average throughput: 168.72 Mbit/s

95th percentile per-packet one-way delay: 135.630 ms

Loss rate: 1.38%

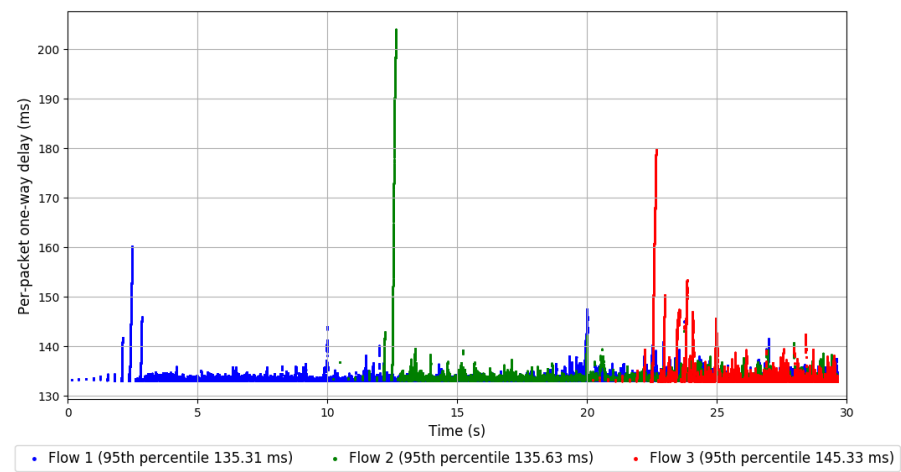
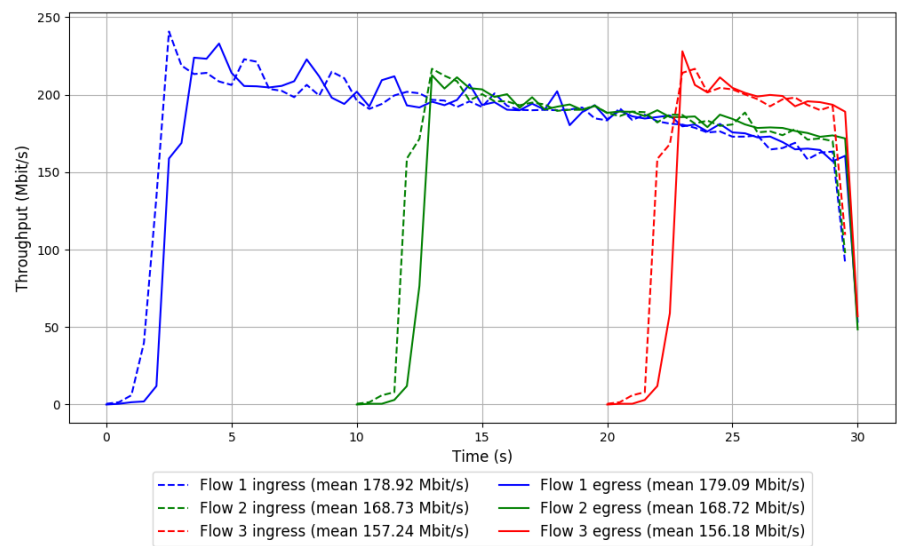
-- Flow 3:

Average throughput: 156.18 Mbit/s

95th percentile per-packet one-way delay: 145.333 ms

Loss rate: 3.44%

Run 2: Report of Indigo — Data Link

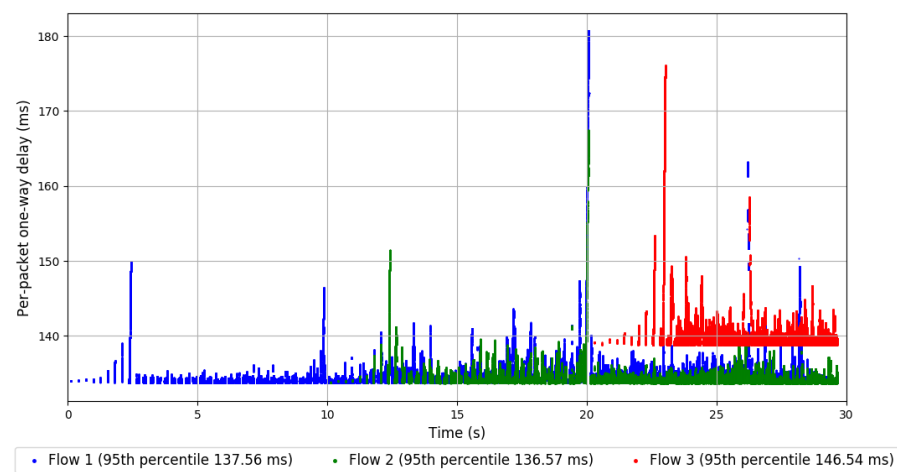
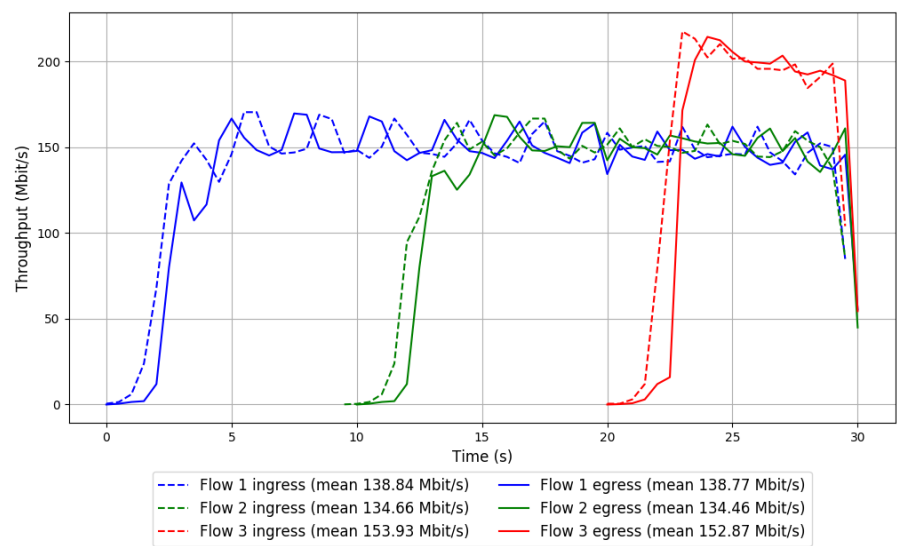


Run 3: Statistics of Indigo

Start at: 2018-10-26 13:33:27
End at: 2018-10-26 13:33:57
Local clock offset: 0.815 ms
Remote clock offset: -0.115 ms

Below is generated by plot.py at 2018-10-26 15:59:05
Datalink statistics
-- Total of 3 flows:
Average throughput: 276.06 Mbit/s
95th percentile per-packet one-way delay: 140.778 ms
Loss rate: 1.59%
-- Flow 1:
Average throughput: 138.77 Mbit/s
95th percentile per-packet one-way delay: 137.560 ms
Loss rate: 0.96%
-- Flow 2:
Average throughput: 134.46 Mbit/s
95th percentile per-packet one-way delay: 136.572 ms
Loss rate: 1.50%
-- Flow 3:
Average throughput: 152.87 Mbit/s
95th percentile per-packet one-way delay: 146.543 ms
Loss rate: 3.52%

Run 3: Report of Indigo — Data Link

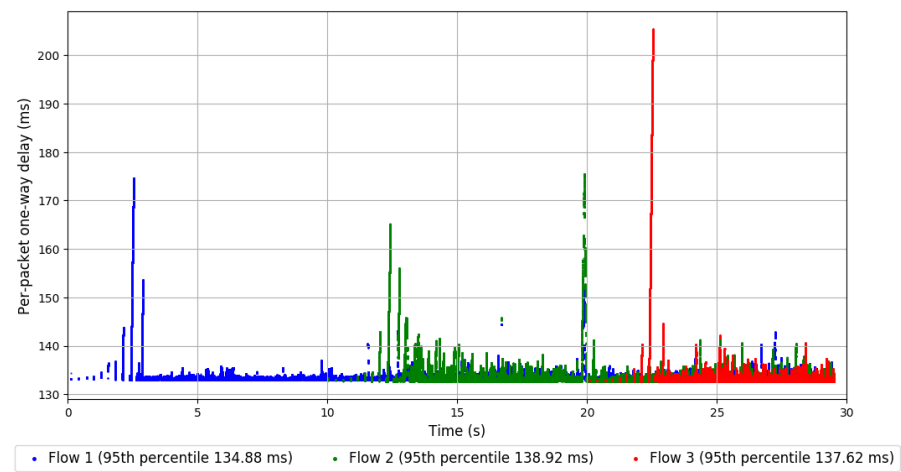
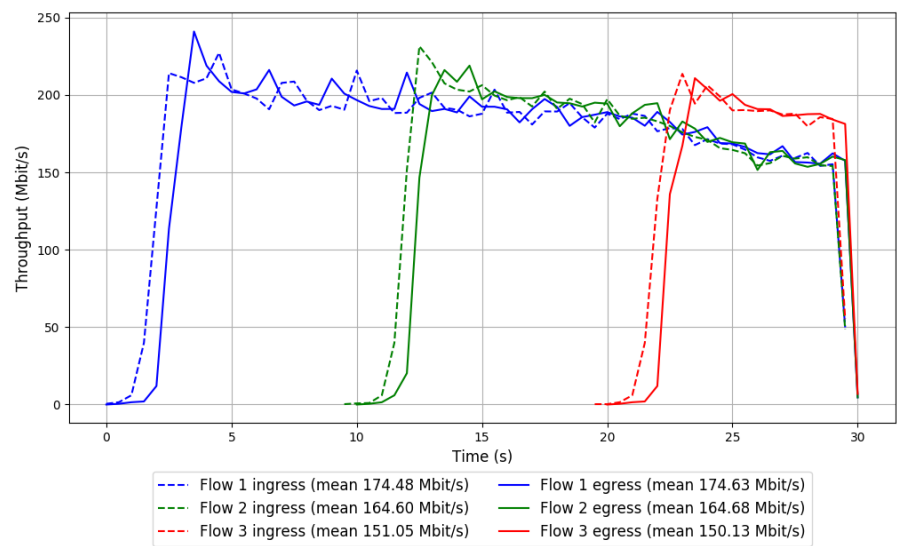


Run 4: Statistics of Indigo

Start at: 2018-10-26 14:05:22
End at: 2018-10-26 14:05:52
Local clock offset: -0.249 ms
Remote clock offset: -0.127 ms

Below is generated by plot.py at 2018-10-26 15:59:05
Datalink statistics
-- Total of 3 flows:
Average throughput: 331.95 Mbit/s
95th percentile per-packet one-way delay: 136.379 ms
Loss rate: 1.34%
-- Flow 1:
Average throughput: 174.63 Mbit/s
95th percentile per-packet one-way delay: 134.879 ms
Loss rate: 0.82%
-- Flow 2:
Average throughput: 164.68 Mbit/s
95th percentile per-packet one-way delay: 138.919 ms
Loss rate: 1.28%
-- Flow 3:
Average throughput: 150.13 Mbit/s
95th percentile per-packet one-way delay: 137.621 ms
Loss rate: 3.35%

Run 4: Report of Indigo — Data Link



Run 5: Statistics of Indigo

Start at: 2018-10-26 14:37:22

End at: 2018-10-26 14:37:52

Local clock offset: -0.086 ms

Remote clock offset: 0.191 ms

Below is generated by plot.py at 2018-10-26 15:59:05

Datalink statistics

-- Total of 3 flows:

Average throughput: 336.90 Mbit/s

95th percentile per-packet one-way delay: 135.297 ms

Loss rate: 1.36%

-- Flow 1:

Average throughput: 180.90 Mbit/s

95th percentile per-packet one-way delay: 134.759 ms

Loss rate: 0.84%

-- Flow 2:

Average throughput: 166.84 Mbit/s

95th percentile per-packet one-way delay: 134.575 ms

Loss rate: 1.27%

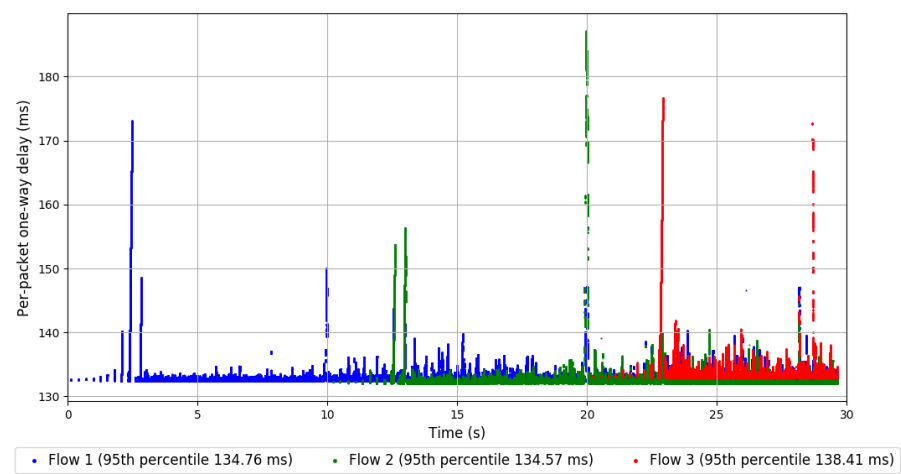
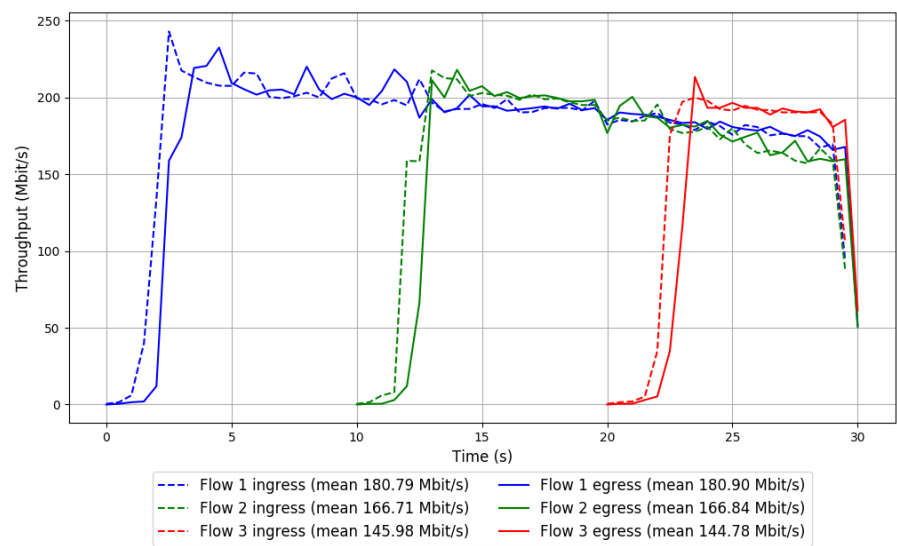
-- Flow 3:

Average throughput: 144.78 Mbit/s

95th percentile per-packet one-way delay: 138.415 ms

Loss rate: 3.56%

Run 5: Report of Indigo — Data Link

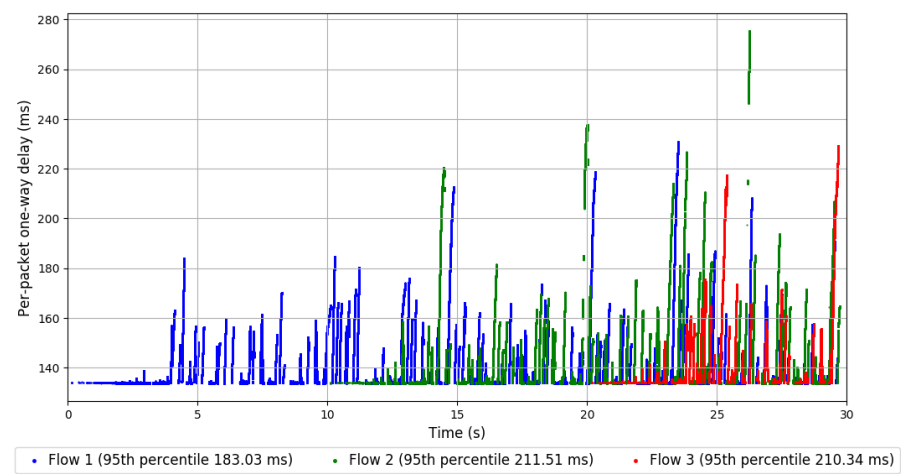
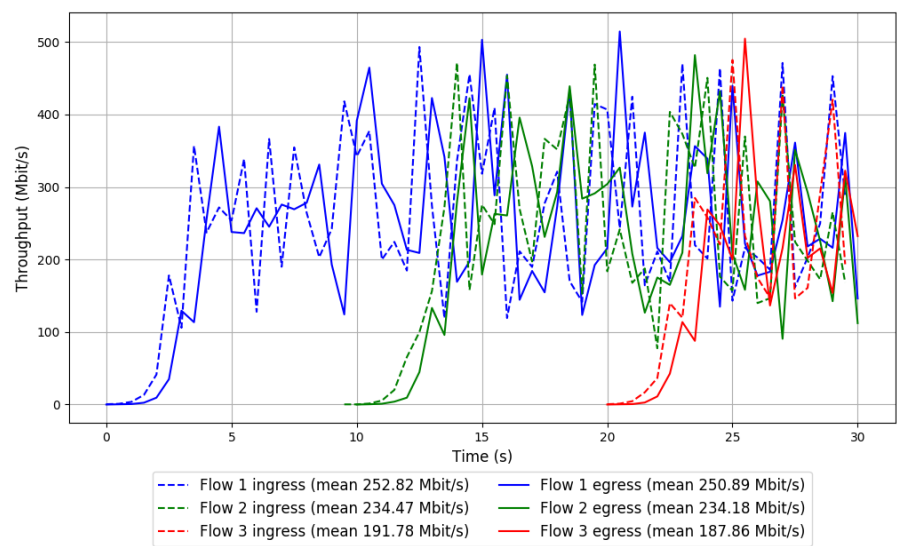


Run 1: Statistics of Indigo-96d2da3

Start at: 2018-10-26 12:14:33
End at: 2018-10-26 12:15:03
Local clock offset: 0.915 ms
Remote clock offset: -0.044 ms

Below is generated by plot.py at 2018-10-26 15:59:05
Datalink statistics
-- Total of 3 flows:
Average throughput: 465.76 Mbit/s
95th percentile per-packet one-way delay: 202.827 ms
Loss rate: 2.18%
-- Flow 1:
Average throughput: 250.89 Mbit/s
95th percentile per-packet one-way delay: 183.034 ms
Loss rate: 1.90%
-- Flow 2:
Average throughput: 234.18 Mbit/s
95th percentile per-packet one-way delay: 211.513 ms
Loss rate: 1.41%
-- Flow 3:
Average throughput: 187.86 Mbit/s
95th percentile per-packet one-way delay: 210.338 ms
Loss rate: 5.22%

Run 1: Report of Indigo-96d2da3 — Data Link

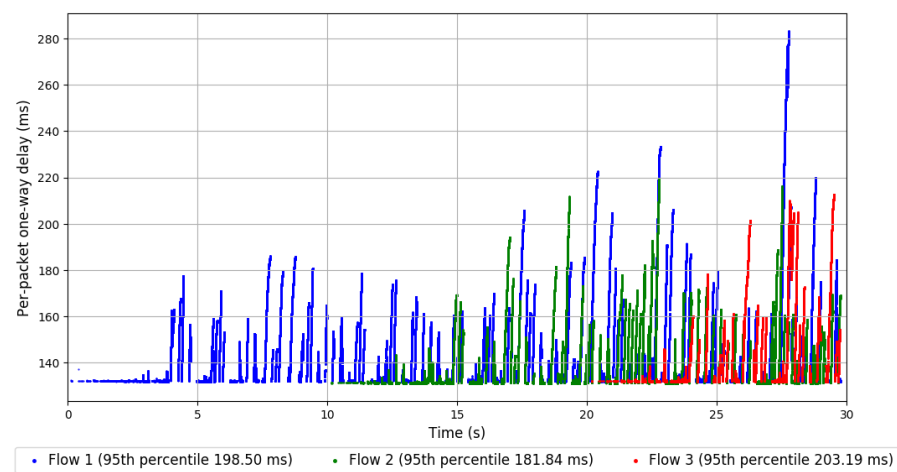
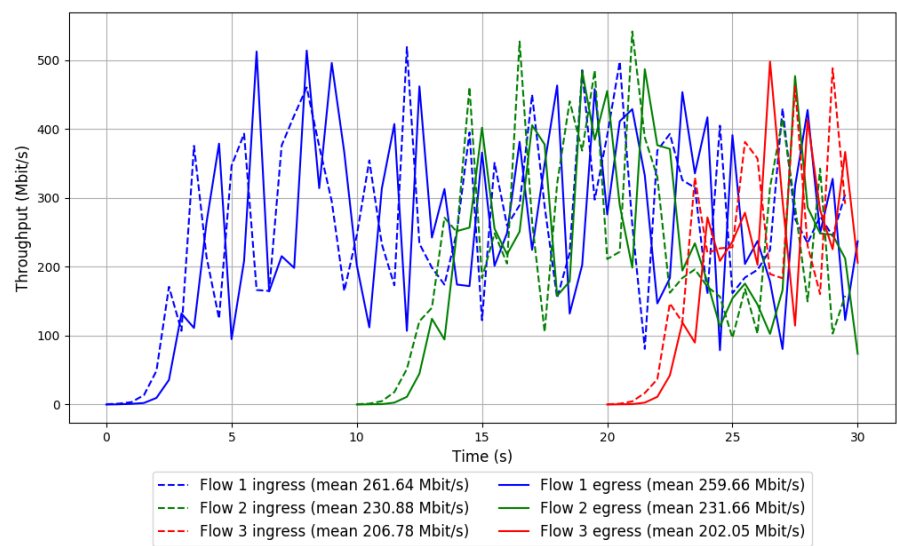


Run 2: Statistics of Indigo-96d2da3

Start at: 2018-10-26 12:47:15
End at: 2018-10-26 12:47:45
Local clock offset: -0.918 ms
Remote clock offset: -0.102 ms

Below is generated by plot.py at 2018-10-26 15:59:30
Datalink statistics
-- Total of 3 flows:
Average throughput: 478.19 Mbit/s
95th percentile per-packet one-way delay: 195.501 ms
Loss rate: 1.87%
-- Flow 1:
Average throughput: 259.66 Mbit/s
95th percentile per-packet one-way delay: 198.497 ms
Loss rate: 1.60%
-- Flow 2:
Average throughput: 231.66 Mbit/s
95th percentile per-packet one-way delay: 181.837 ms
Loss rate: 0.92%
-- Flow 3:
Average throughput: 202.05 Mbit/s
95th percentile per-packet one-way delay: 203.190 ms
Loss rate: 5.08%

Run 2: Report of Indigo-96d2da3 — Data Link

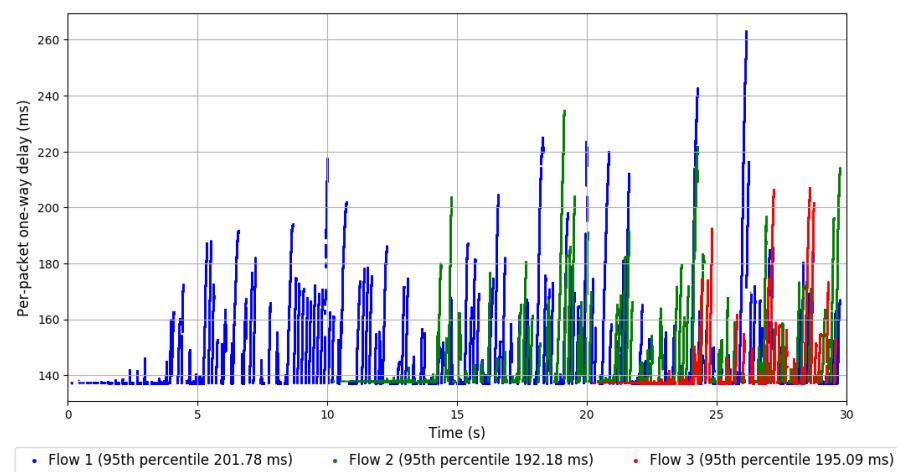
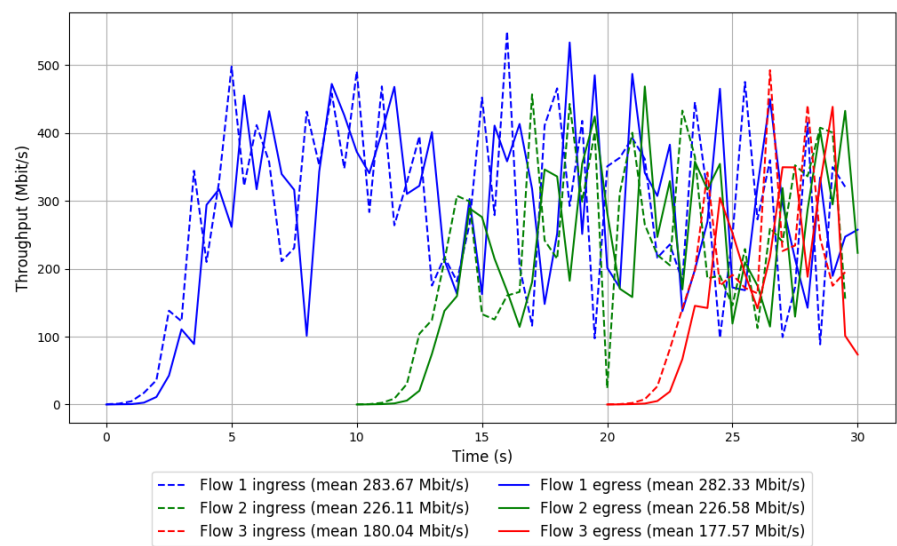


Run 3: Statistics of Indigo-96d2da3

Start at: 2018-10-26 13:20:00
End at: 2018-10-26 13:20:30
Local clock offset: -0.354 ms
Remote clock offset: -0.119 ms

Below is generated by plot.py at 2018-10-26 16:00:07
Datalink statistics
-- Total of 3 flows:
Average throughput: 487.71 Mbit/s
95th percentile per-packet one-way delay: 198.167 ms
Loss rate: 1.84%
-- Flow 1:
Average throughput: 282.33 Mbit/s
95th percentile per-packet one-way delay: 201.784 ms
Loss rate: 1.32%
-- Flow 2:
Average throughput: 226.58 Mbit/s
95th percentile per-packet one-way delay: 192.177 ms
Loss rate: 1.35%
-- Flow 3:
Average throughput: 177.57 Mbit/s
95th percentile per-packet one-way delay: 195.087 ms
Loss rate: 5.56%

Run 3: Report of Indigo-96d2da3 — Data Link

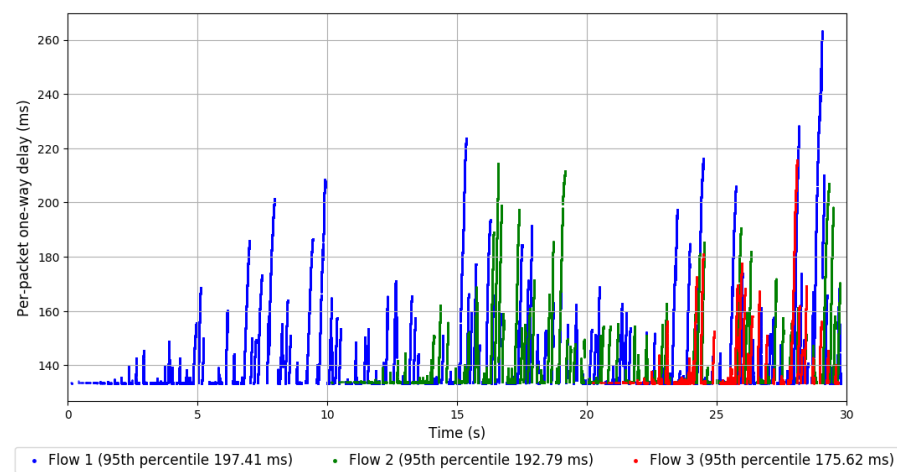
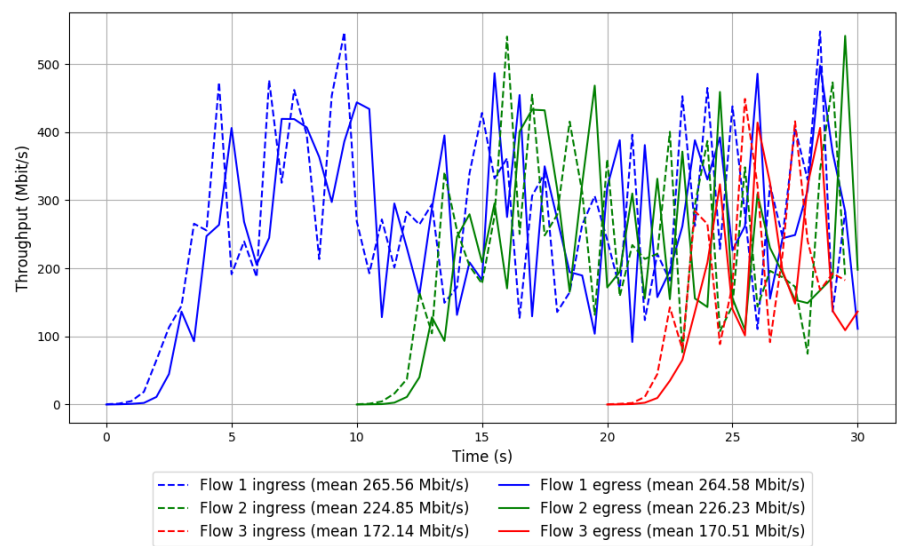


Run 4: Statistics of Indigo-96d2da3

Start at: 2018-10-26 13:52:44
End at: 2018-10-26 13:53:14
Local clock offset: 0.468 ms
Remote clock offset: -0.158 ms

Below is generated by plot.py at 2018-10-26 16:00:07
Datalink statistics
-- Total of 3 flows:
Average throughput: 468.41 Mbit/s
95th percentile per-packet one-way delay: 194.686 ms
Loss rate: 1.57%
-- Flow 1:
Average throughput: 264.58 Mbit/s
95th percentile per-packet one-way delay: 197.408 ms
Loss rate: 1.27%
-- Flow 2:
Average throughput: 226.23 Mbit/s
95th percentile per-packet one-way delay: 192.793 ms
Loss rate: 0.89%
-- Flow 3:
Average throughput: 170.51 Mbit/s
95th percentile per-packet one-way delay: 175.623 ms
Loss rate: 4.73%

Run 4: Report of Indigo-96d2da3 — Data Link

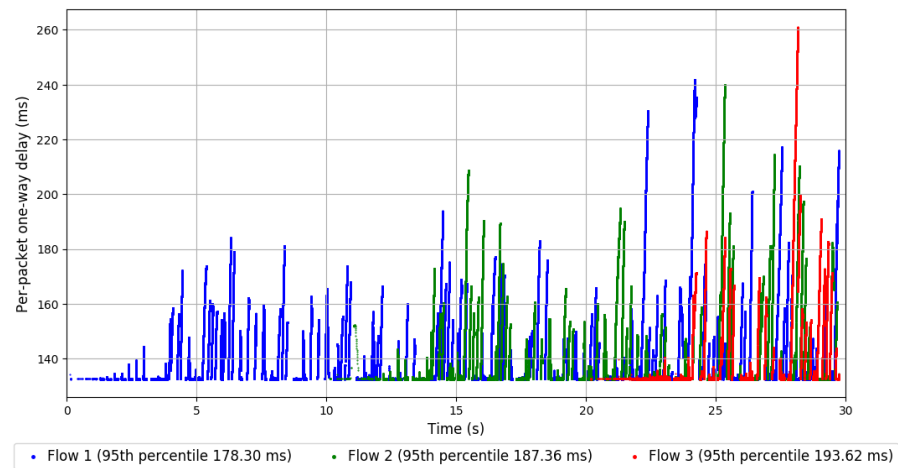
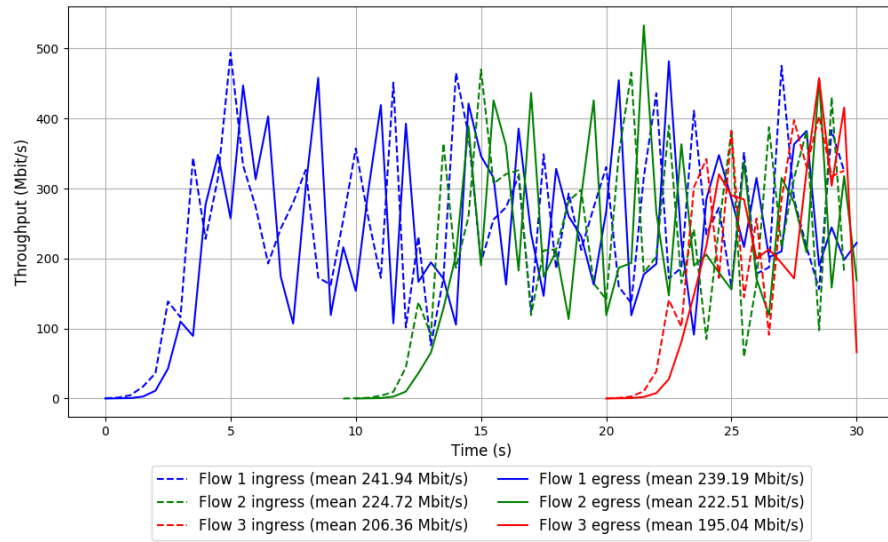


Run 5: Statistics of Indigo-96d2da3

Start at: 2018-10-26 14:24:20
End at: 2018-10-26 14:24:50
Local clock offset: -0.464 ms
Remote clock offset: -0.143 ms

Below is generated by plot.py at 2018-10-26 16:00:07
Datalink statistics
-- Total of 3 flows:
Average throughput: 449.54 Mbit/s
95th percentile per-packet one-way delay: 185.138 ms
Loss rate: 2.86%
-- Flow 1:
Average throughput: 239.19 Mbit/s
95th percentile per-packet one-way delay: 178.300 ms
Loss rate: 2.03%
-- Flow 2:
Average throughput: 222.51 Mbit/s
95th percentile per-packet one-way delay: 187.364 ms
Loss rate: 1.93%
-- Flow 3:
Average throughput: 195.04 Mbit/s
95th percentile per-packet one-way delay: 193.617 ms
Loss rate: 7.85%

Run 5: Report of Indigo-96d2da3 — Data Link

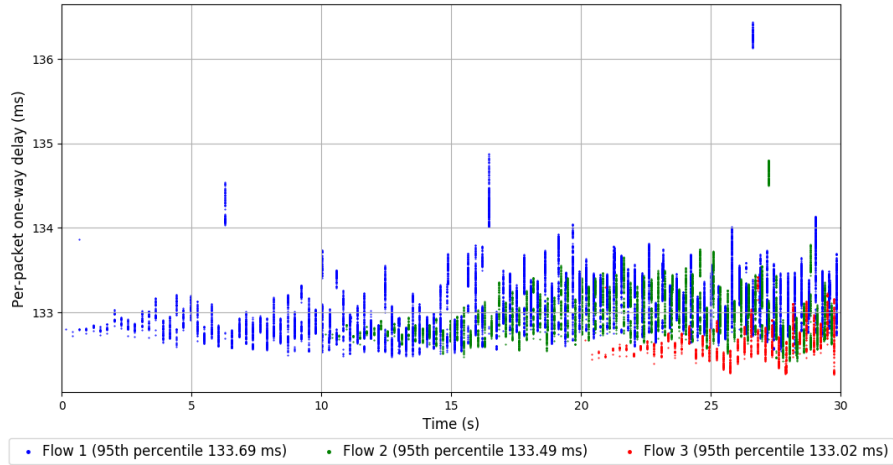
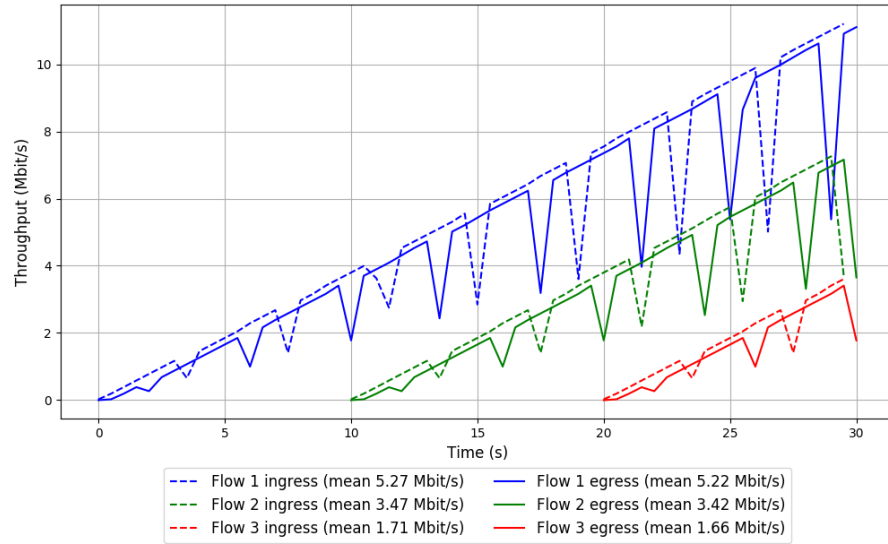


Run 1: Statistics of LEDBAT

Start at: 2018-10-26 12:19:36
End at: 2018-10-26 12:20:06
Local clock offset: -0.682 ms
Remote clock offset: -0.068 ms

Below is generated by plot.py at 2018-10-26 16:00:07
Datalink statistics
-- Total of 3 flows:
Average throughput: 8.01 Mbit/s
95th percentile per-packet one-way delay: 133.627 ms
Loss rate: 2.29%
-- Flow 1:
Average throughput: 5.22 Mbit/s
95th percentile per-packet one-way delay: 133.695 ms
Loss rate: 1.78%
-- Flow 2:
Average throughput: 3.42 Mbit/s
95th percentile per-packet one-way delay: 133.487 ms
Loss rate: 2.70%
-- Flow 3:
Average throughput: 1.66 Mbit/s
95th percentile per-packet one-way delay: 133.021 ms
Loss rate: 5.40%

Run 1: Report of LEDBAT — Data Link

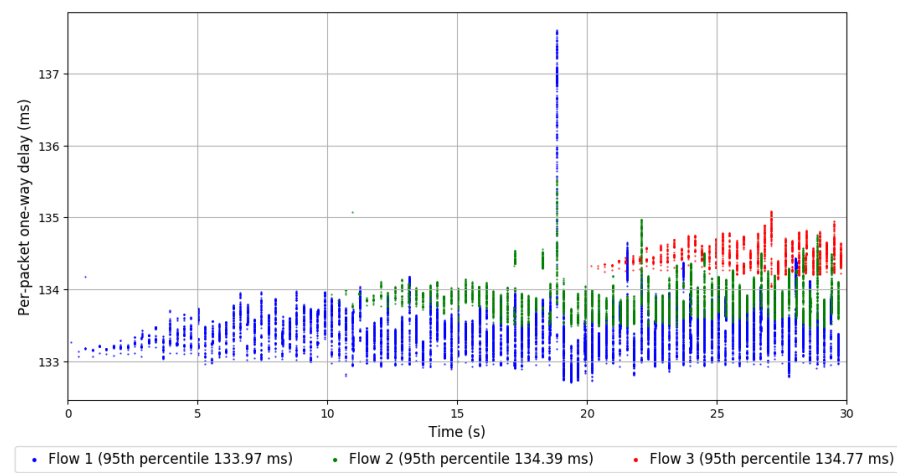
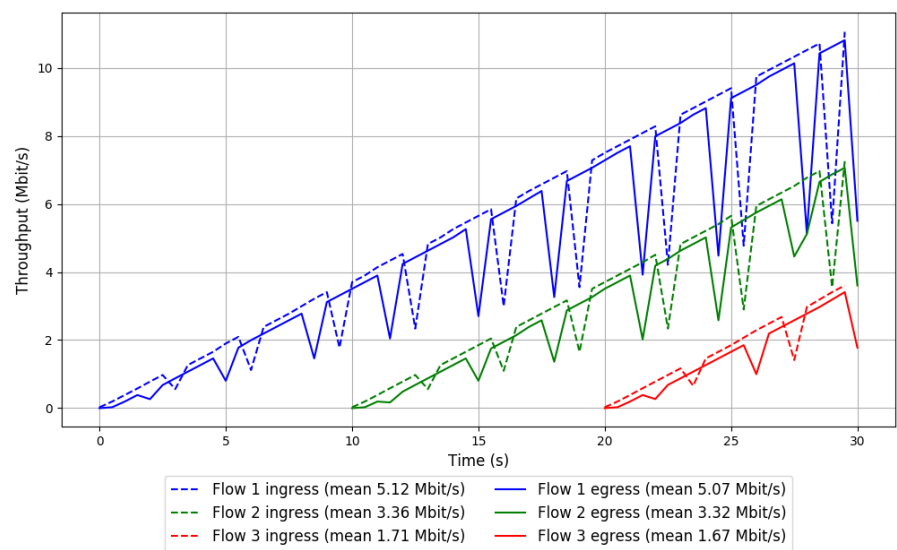


Run 2: Statistics of LEDBAT

Start at: 2018-10-26 12:52:17
End at: 2018-10-26 12:52:47
Local clock offset: 0.695 ms
Remote clock offset: -0.084 ms

Below is generated by plot.py at 2018-10-26 16:00:07
Datalink statistics
-- Total of 3 flows:
Average throughput: 7.78 Mbit/s
95th percentile per-packet one-way delay: 134.481 ms
Loss rate: 2.34%
-- Flow 1:
Average throughput: 5.07 Mbit/s
95th percentile per-packet one-way delay: 133.969 ms
Loss rate: 1.82%
-- Flow 2:
Average throughput: 3.32 Mbit/s
95th percentile per-packet one-way delay: 134.394 ms
Loss rate: 2.74%
-- Flow 3:
Average throughput: 1.67 Mbit/s
95th percentile per-packet one-way delay: 134.774 ms
Loss rate: 5.40%

Run 2: Report of LEDBAT — Data Link

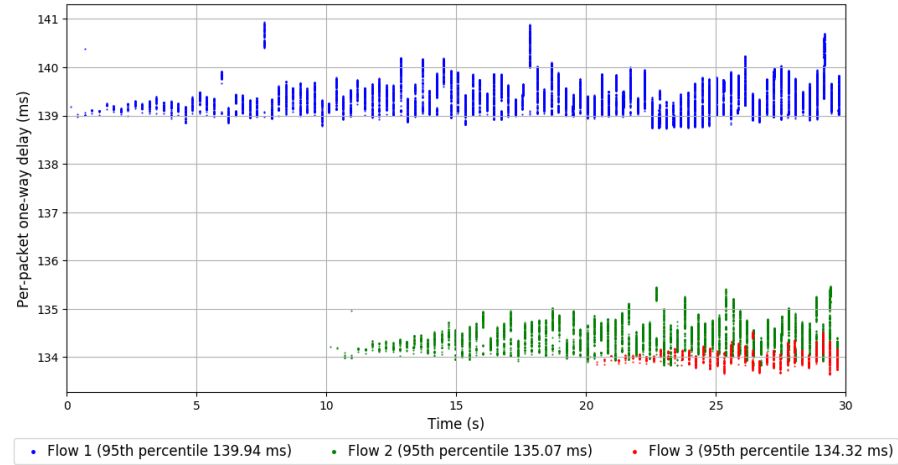
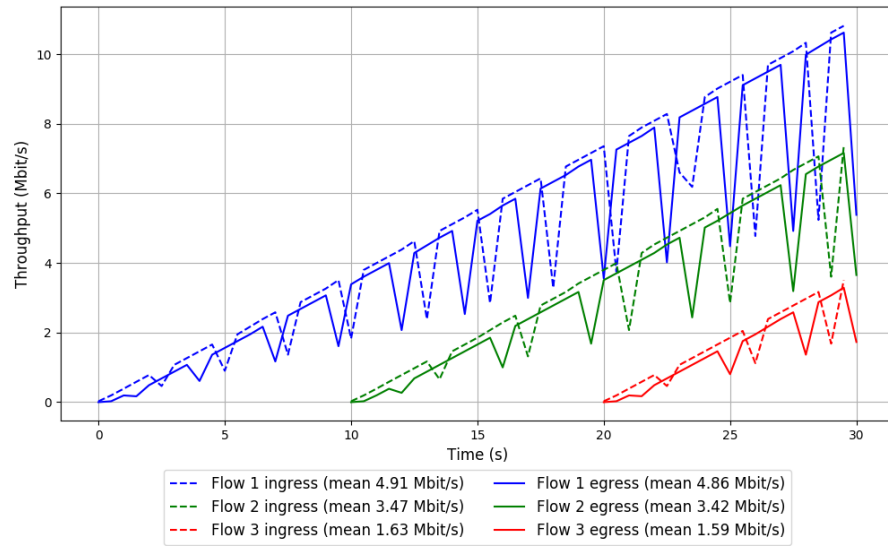


Run 3: Statistics of LEDBAT

Start at: 2018-10-26 13:24:56
End at: 2018-10-26 13:25:26
Local clock offset: 0.287 ms
Remote clock offset: -0.513 ms

Below is generated by plot.py at 2018-10-26 16:00:07
Datalink statistics
-- Total of 3 flows:
Average throughput: 7.63 Mbit/s
95th percentile per-packet one-way delay: 139.841 ms
Loss rate: 2.36%
-- Flow 1:
Average throughput: 4.86 Mbit/s
95th percentile per-packet one-way delay: 139.937 ms
Loss rate: 1.85%
-- Flow 2:
Average throughput: 3.42 Mbit/s
95th percentile per-packet one-way delay: 135.074 ms
Loss rate: 2.70%
-- Flow 3:
Average throughput: 1.59 Mbit/s
95th percentile per-packet one-way delay: 134.320 ms
Loss rate: 5.56%

Run 3: Report of LEDBAT — Data Link



Run 4: Statistics of LEDBAT

Start at: 2018-10-26 13:57:36

End at: 2018-10-26 13:58:06

Local clock offset: 0.18 ms

Remote clock offset: 0.247 ms

Below is generated by plot.py at 2018-10-26 16:00:07

Datalink statistics

-- Total of 3 flows:

Average throughput: 7.79 Mbit/s

95th percentile per-packet one-way delay: 134.113 ms

Loss rate: 2.33%

-- Flow 1:

Average throughput: 5.04 Mbit/s

95th percentile per-packet one-way delay: 134.203 ms

Loss rate: 1.82%

-- Flow 2:

Average throughput: 3.42 Mbit/s

95th percentile per-packet one-way delay: 133.900 ms

Loss rate: 2.70%

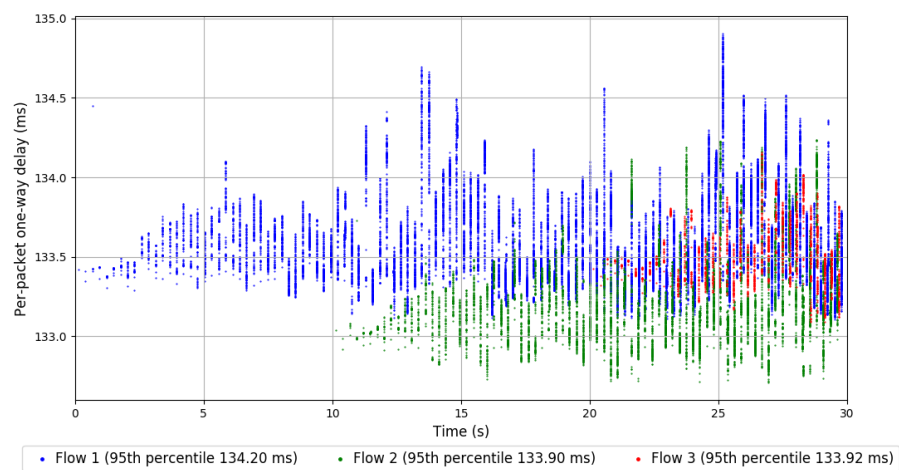
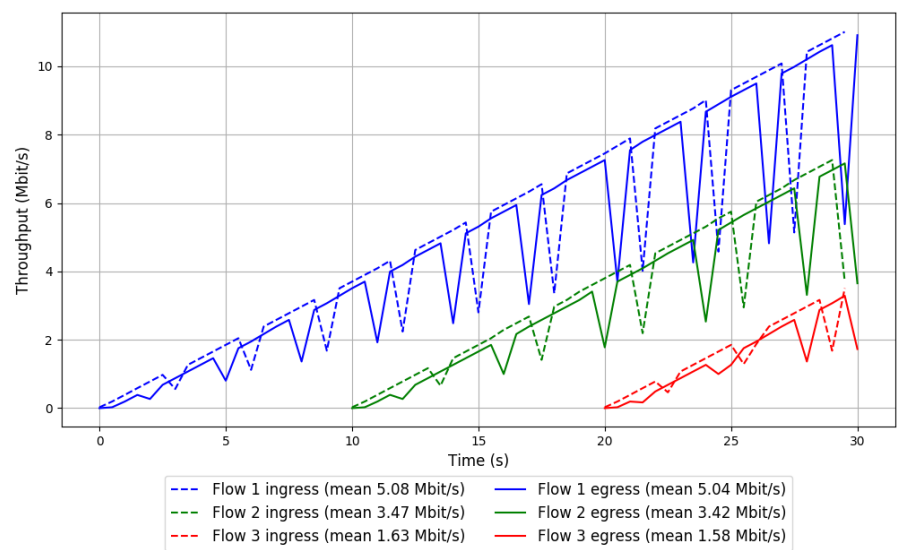
-- Flow 3:

Average throughput: 1.58 Mbit/s

95th percentile per-packet one-way delay: 133.921 ms

Loss rate: 5.56%

Run 4: Report of LEDBAT — Data Link

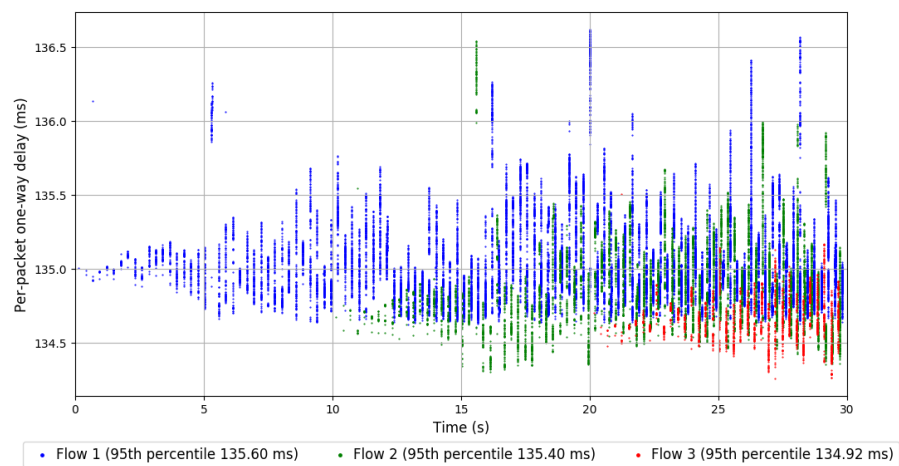
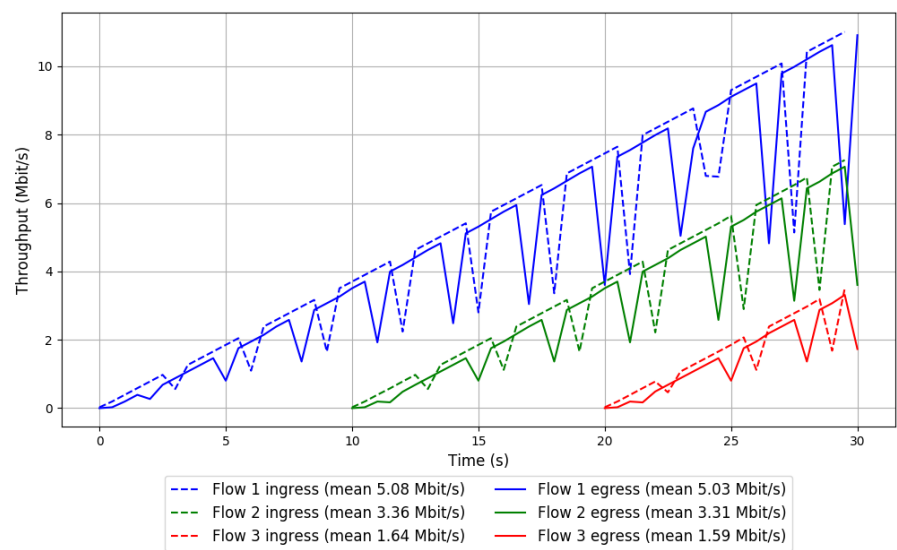


Run 5: Statistics of LEDBAT

Start at: 2018-10-26 14:29:12
End at: 2018-10-26 14:29:42
Local clock offset: 1.312 ms
Remote clock offset: -0.154 ms

Below is generated by plot.py at 2018-10-26 16:00:07
Datalink statistics
-- Total of 3 flows:
Average throughput: 7.72 Mbit/s
95th percentile per-packet one-way delay: 135.546 ms
Loss rate: 2.33%
-- Flow 1:
Average throughput: 5.03 Mbit/s
95th percentile per-packet one-way delay: 135.602 ms
Loss rate: 1.82%
-- Flow 2:
Average throughput: 3.31 Mbit/s
95th percentile per-packet one-way delay: 135.402 ms
Loss rate: 2.74%
-- Flow 3:
Average throughput: 1.59 Mbit/s
95th percentile per-packet one-way delay: 134.922 ms
Loss rate: 5.55%

Run 5: Report of LEDBAT — Data Link

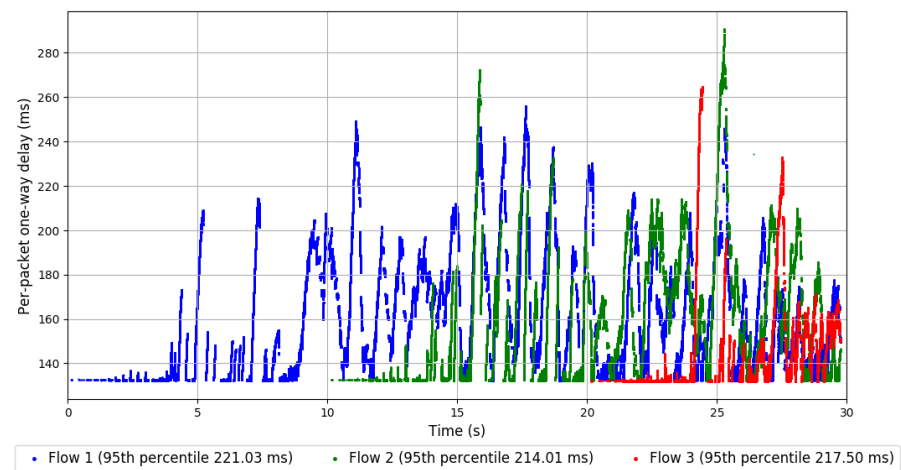
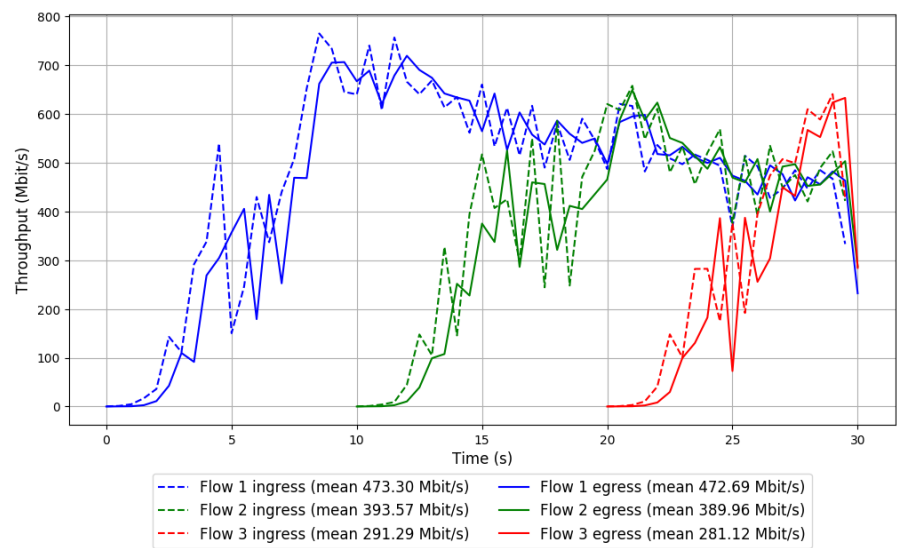


Run 1: Statistics of Indigo-Muses

Start at: 2018-10-26 12:39:31
End at: 2018-10-26 12:40:01
Local clock offset: -0.552 ms
Remote clock offset: -0.113 ms

Below is generated by plot.py at 2018-10-26 16:09:10
Datalink statistics
-- Total of 3 flows:
Average throughput: 821.91 Mbit/s
95th percentile per-packet one-way delay: 218.746 ms
Loss rate: 2.02%
-- Flow 1:
Average throughput: 472.69 Mbit/s
95th percentile per-packet one-way delay: 221.029 ms
Loss rate: 1.04%
-- Flow 2:
Average throughput: 389.96 Mbit/s
95th percentile per-packet one-way delay: 214.010 ms
Loss rate: 2.27%
-- Flow 3:
Average throughput: 281.12 Mbit/s
95th percentile per-packet one-way delay: 217.496 ms
Loss rate: 6.14%

Run 1: Report of Indigo-Muses — Data Link



Run 2: Statistics of Indigo-Muses

Start at: 2018-10-26 13:12:05

End at: 2018-10-26 13:12:35

Local clock offset: -0.563 ms

Remote clock offset: -0.12 ms

Below is generated by plot.py at 2018-10-26 16:10:25

Datalink statistics

-- Total of 3 flows:

Average throughput: 869.83 Mbit/s

95th percentile per-packet one-way delay: 215.297 ms

Loss rate: 1.73%

-- Flow 1:

Average throughput: 496.63 Mbit/s

95th percentile per-packet one-way delay: 191.532 ms

Loss rate: 1.00%

-- Flow 2:

Average throughput: 401.76 Mbit/s

95th percentile per-packet one-way delay: 227.343 ms

Loss rate: 1.64%

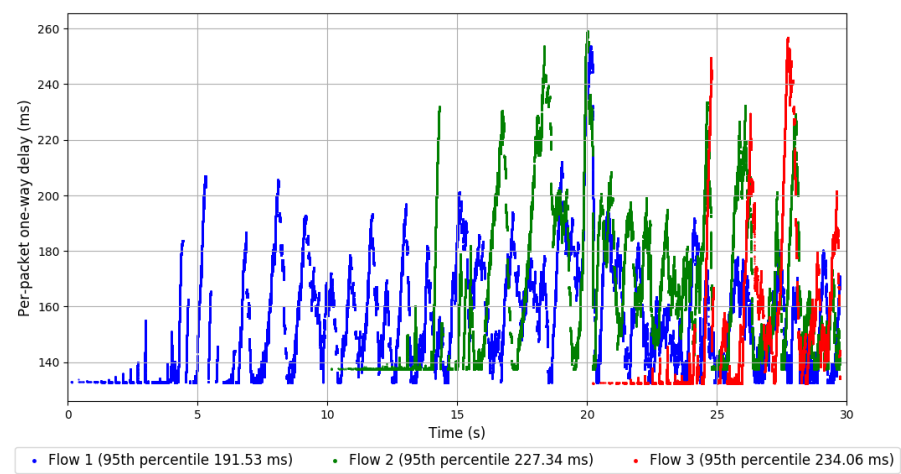
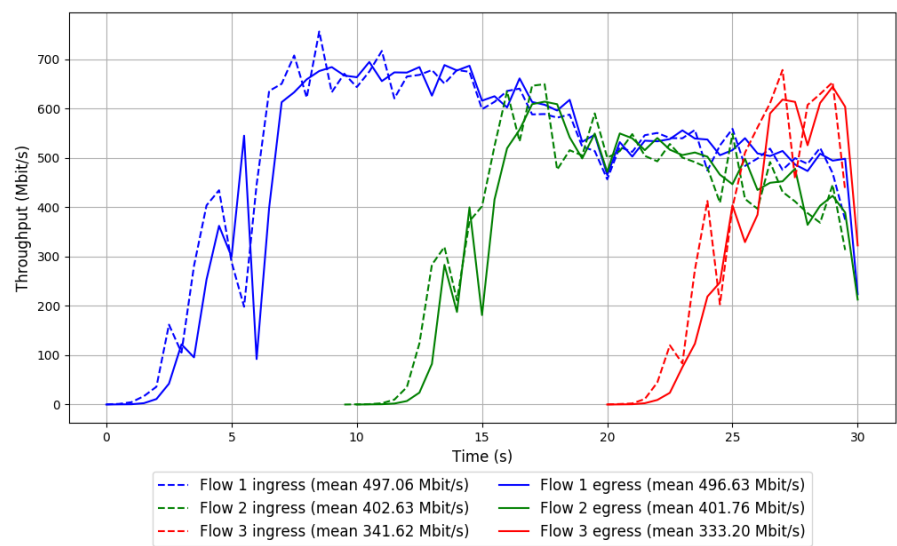
-- Flow 3:

Average throughput: 333.20 Mbit/s

95th percentile per-packet one-way delay: 234.065 ms

Loss rate: 5.17%

Run 2: Report of Indigo-Muses — Data Link

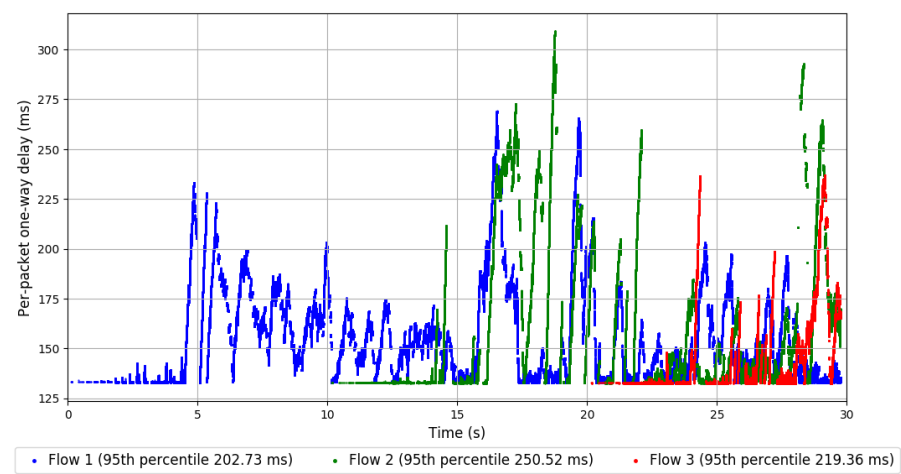
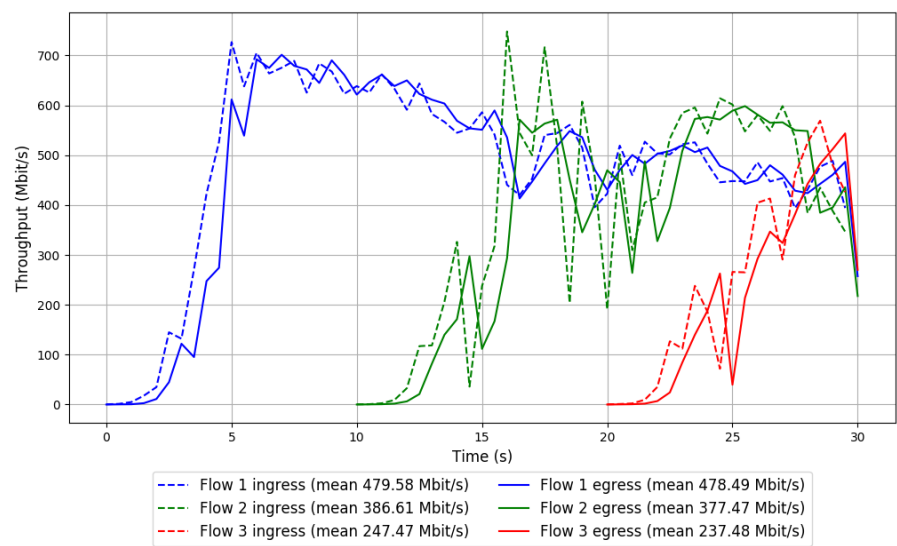


Run 3: Statistics of Indigo-Muses

Start at: 2018-10-26 13:45:10
End at: 2018-10-26 13:45:40
Local clock offset: -0.357 ms
Remote clock offset: -0.135 ms

```
# Below is generated by plot.py at 2018-10-26 16:10:25
# Datalink statistics
-- Total of 3 flows:
Average throughput: 805.01 Mbit/s
95th percentile per-packet one-way delay: 231.934 ms
Loss rate: 2.49%
-- Flow 1:
Average throughput: 478.49 Mbit/s
95th percentile per-packet one-way delay: 202.734 ms
Loss rate: 1.12%
-- Flow 2:
Average throughput: 377.47 Mbit/s
95th percentile per-packet one-way delay: 250.524 ms
Loss rate: 3.70%
-- Flow 3:
Average throughput: 237.48 Mbit/s
95th percentile per-packet one-way delay: 219.360 ms
Loss rate: 6.68%
```

Run 3: Report of Indigo-Muses — Data Link

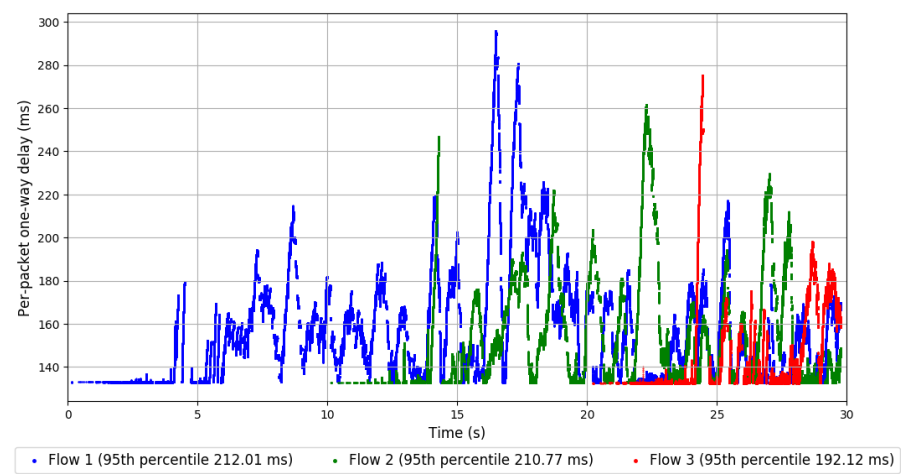
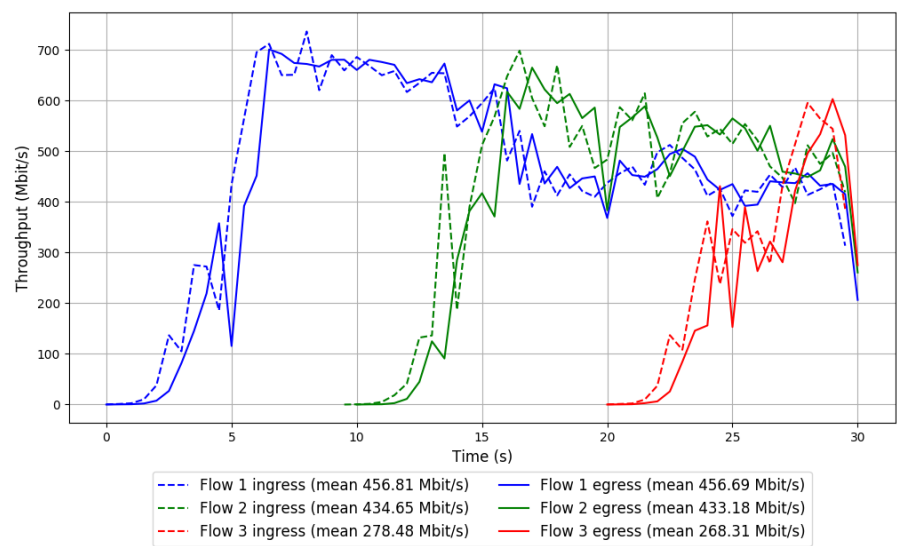


Run 4: Statistics of Indigo-Muses

Start at: 2018-10-26 14:16:51
End at: 2018-10-26 14:17:21
Local clock offset: -0.302 ms
Remote clock offset: -0.106 ms

```
# Below is generated by plot.py at 2018-10-26 16:15:56
# Datalink statistics
-- Total of 3 flows:
Average throughput: 830.16 Mbit/s
95th percentile per-packet one-way delay: 210.719 ms
Loss rate: 1.77%
-- Flow 1:
Average throughput: 456.69 Mbit/s
95th percentile per-packet one-way delay: 212.014 ms
Loss rate: 0.92%
-- Flow 2:
Average throughput: 433.18 Mbit/s
95th percentile per-packet one-way delay: 210.771 ms
Loss rate: 1.68%
-- Flow 3:
Average throughput: 268.31 Mbit/s
95th percentile per-packet one-way delay: 192.116 ms
Loss rate: 6.27%
```

Run 4: Report of Indigo-Muses — Data Link

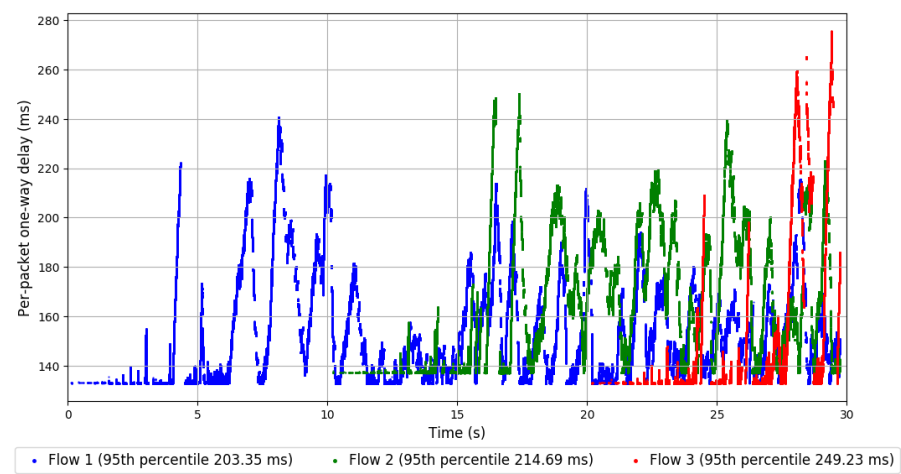
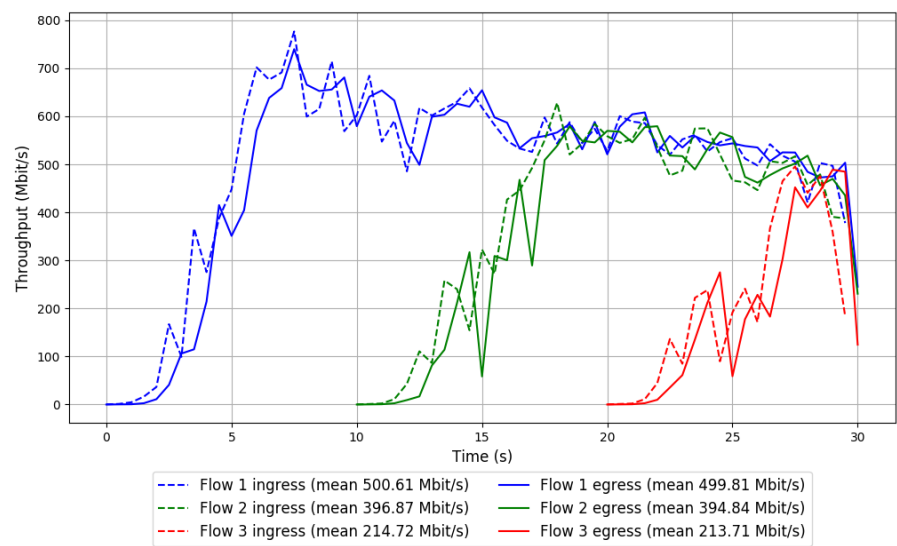


Run 5: Statistics of Indigo-Muses

Start at: 2018-10-26 14:49:03
End at: 2018-10-26 14:49:33
Local clock offset: -0.225 ms
Remote clock offset: -0.138 ms

Below is generated by plot.py at 2018-10-26 16:16:10
Datalink statistics
-- Total of 3 flows:
Average throughput: 829.39 Mbit/s
95th percentile per-packet one-way delay: 212.418 ms
Loss rate: 1.48%
-- Flow 1:
Average throughput: 499.81 Mbit/s
95th percentile per-packet one-way delay: 203.346 ms
Loss rate: 1.04%
-- Flow 2:
Average throughput: 394.84 Mbit/s
95th percentile per-packet one-way delay: 214.685 ms
Loss rate: 1.88%
-- Flow 3:
Average throughput: 213.71 Mbit/s
95th percentile per-packet one-way delay: 249.231 ms
Loss rate: 3.17%

Run 5: Report of Indigo-Muses — Data Link

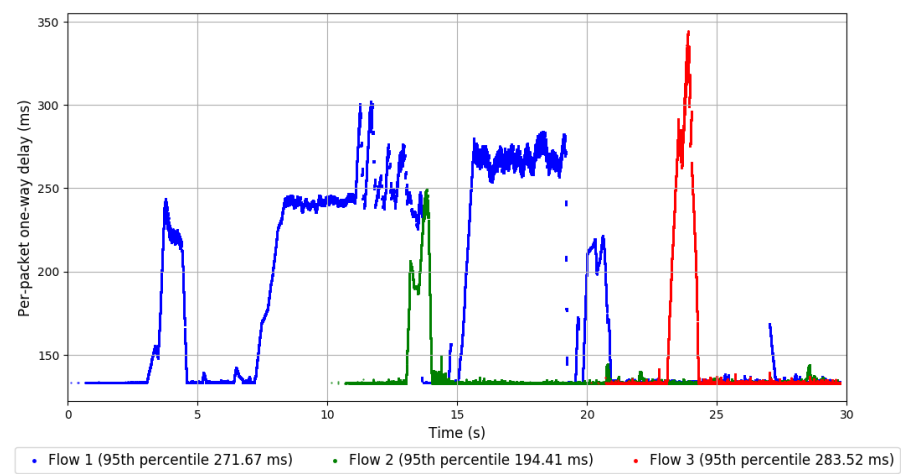
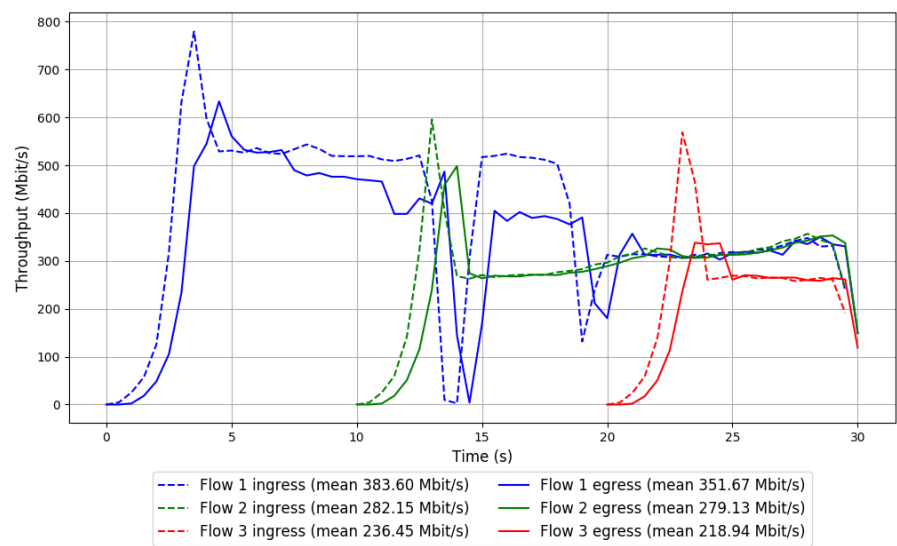



```
Run 1: Statistics of PCC-Allegro

Start at: 2018-10-26 12:35:04
End at: 2018-10-26 12:35:34
Local clock offset: -0.069 ms
Remote clock offset: -0.109 ms

# Below is generated by plot.py at 2018-10-26 16:23:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 607.04 Mbit/s
95th percentile per-packet one-way delay: 269.668 ms
Loss rate: 7.31%
-- Flow 1:
Average throughput: 351.67 Mbit/s
95th percentile per-packet one-way delay: 271.665 ms
Loss rate: 9.16%
-- Flow 2:
Average throughput: 279.13 Mbit/s
95th percentile per-packet one-way delay: 194.411 ms
Loss rate: 2.42%
-- Flow 3:
Average throughput: 218.94 Mbit/s
95th percentile per-packet one-way delay: 283.521 ms
Loss rate: 9.96%
```

Run 1: Report of PCC-Allegro — Data Link

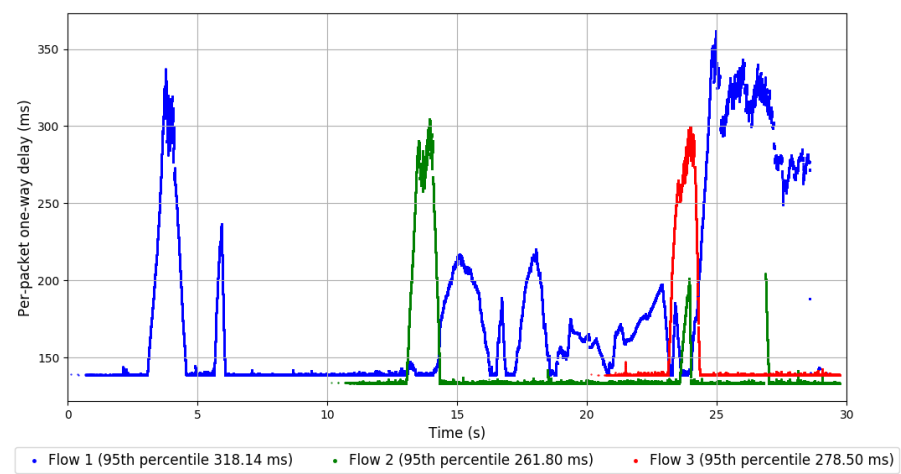
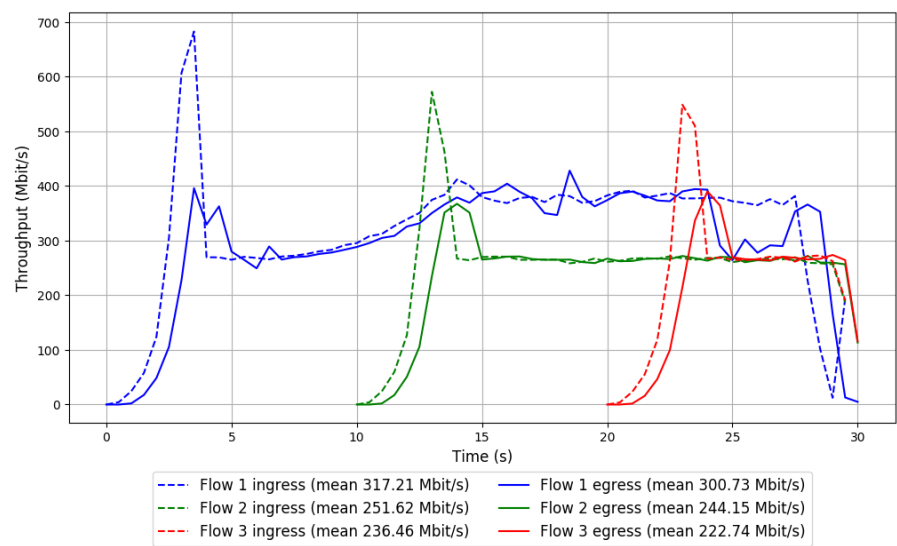


Run 2: Statistics of PCC-Allegro

Start at: 2018-10-26 13:07:42
End at: 2018-10-26 13:08:12
Local clock offset: 0.269 ms
Remote clock offset: -0.107 ms

Below is generated by plot.py at 2018-10-26 16:23:28
Datalink statistics
-- Total of 3 flows:
Average throughput: 534.21 Mbit/s
95th percentile per-packet one-way delay: 299.574 ms
Loss rate: 5.89%
-- Flow 1:
Average throughput: 300.73 Mbit/s
95th percentile per-packet one-way delay: 318.139 ms
Loss rate: 6.10%
-- Flow 2:
Average throughput: 244.15 Mbit/s
95th percentile per-packet one-way delay: 261.804 ms
Loss rate: 4.30%
-- Flow 3:
Average throughput: 222.74 Mbit/s
95th percentile per-packet one-way delay: 278.497 ms
Loss rate: 8.45%

Run 2: Report of PCC-Allegro — Data Link

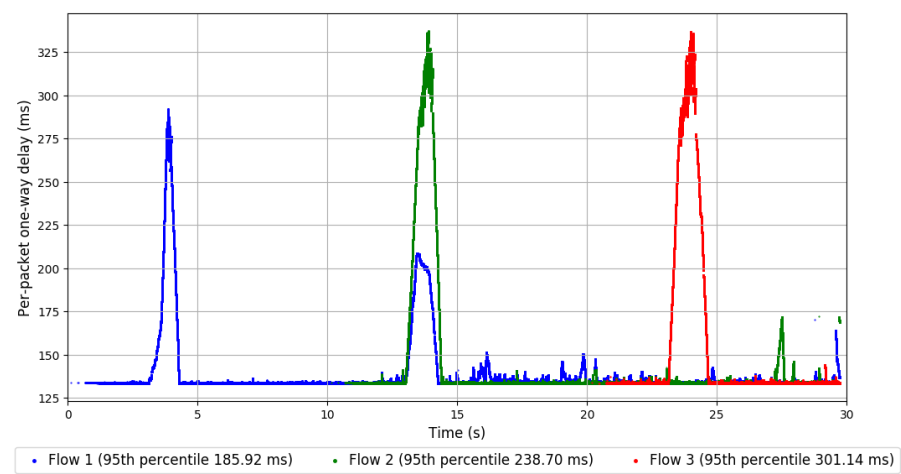
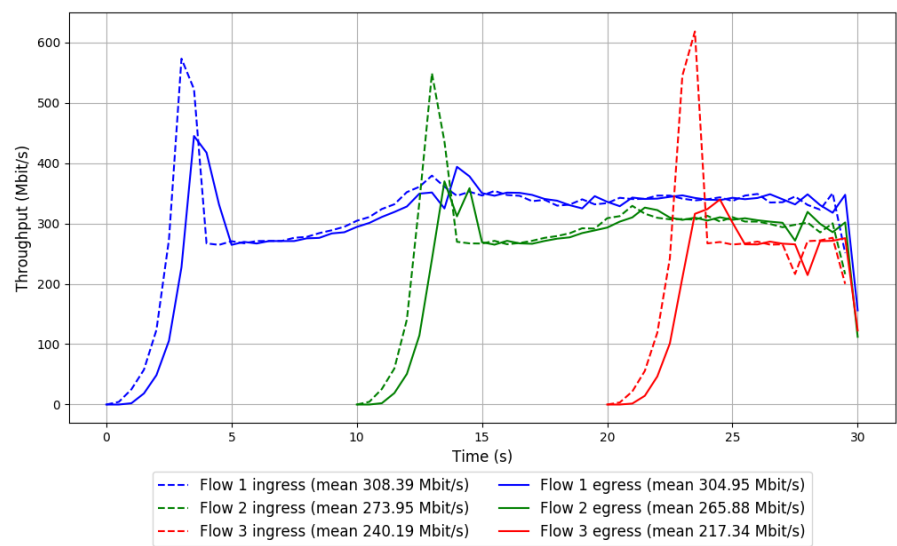


Run 3: Statistics of PCC-Allegro

Start at: 2018-10-26 13:40:47
End at: 2018-10-26 13:41:17
Local clock offset: 0.55 ms
Remote clock offset: -0.138 ms

Below is generated by plot.py at 2018-10-26 16:23:28
Datalink statistics
-- Total of 3 flows:
Average throughput: 550.81 Mbit/s
95th percentile per-packet one-way delay: 214.437 ms
Loss rate: 4.12%
-- Flow 1:
Average throughput: 304.95 Mbit/s
95th percentile per-packet one-way delay: 185.920 ms
Loss rate: 2.02%
-- Flow 2:
Average throughput: 265.88 Mbit/s
95th percentile per-packet one-way delay: 238.704 ms
Loss rate: 4.28%
-- Flow 3:
Average throughput: 217.34 Mbit/s
95th percentile per-packet one-way delay: 301.145 ms
Loss rate: 12.02%

Run 3: Report of PCC-Allegro — Data Link

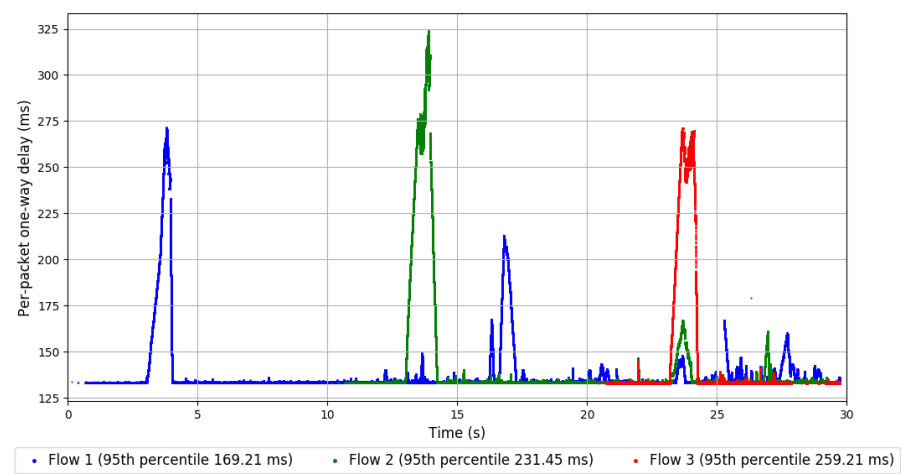
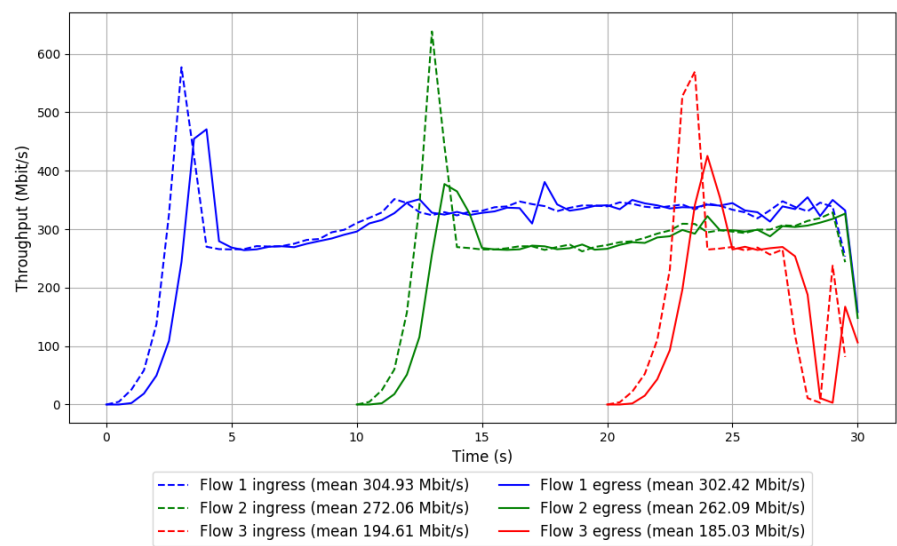


Run 4: Statistics of PCC-Allegro

Start at: 2018-10-26 14:12:32
End at: 2018-10-26 14:13:02
Local clock offset: -0.064 ms
Remote clock offset: -0.141 ms

Below is generated by plot.py at 2018-10-26 16:31:58
Datalink statistics
-- Total of 3 flows:
Average throughput: 535.65 Mbit/s
95th percentile per-packet one-way delay: 209.489 ms
Loss rate: 3.46%
-- Flow 1:
Average throughput: 302.42 Mbit/s
95th percentile per-packet one-way delay: 169.208 ms
Loss rate: 1.71%
-- Flow 2:
Average throughput: 262.09 Mbit/s
95th percentile per-packet one-way delay: 231.449 ms
Loss rate: 4.97%
-- Flow 3:
Average throughput: 185.03 Mbit/s
95th percentile per-packet one-way delay: 259.211 ms
Loss rate: 7.51%

Run 4: Report of PCC-Allegro — Data Link

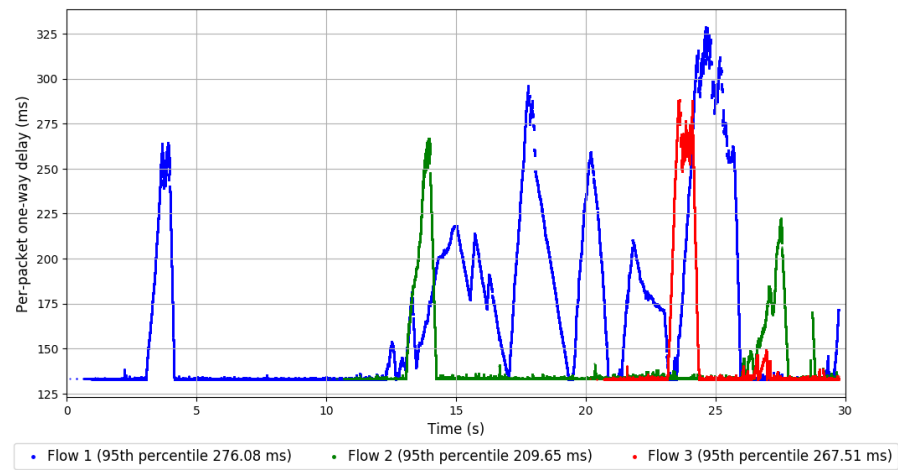
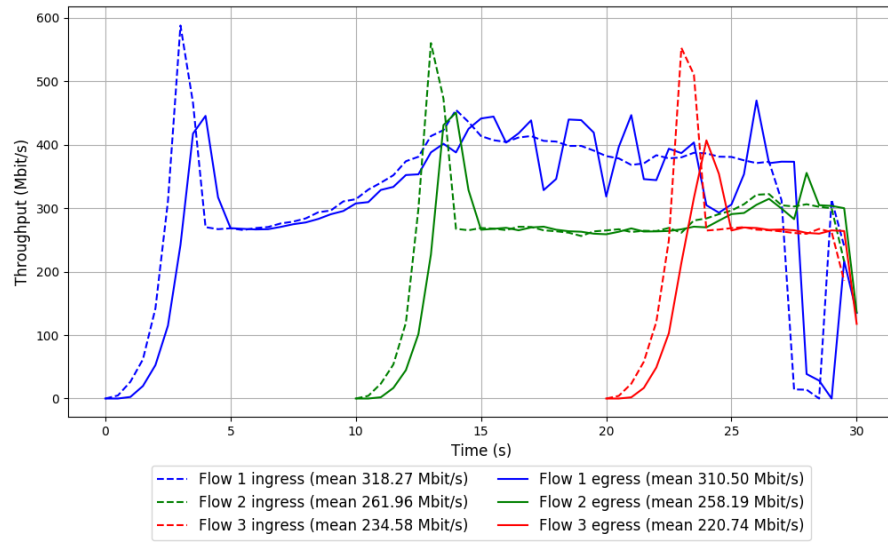


Run 5: Statistics of PCC-Allegro

Start at: 2018-10-26 14:44:41
End at: 2018-10-26 14:45:11
Local clock offset: -0.156 ms
Remote clock offset: -0.527 ms

Below is generated by plot.py at 2018-10-26 16:33:33
Datalink statistics
-- Total of 3 flows:
Average throughput: 552.87 Mbit/s
95th percentile per-packet one-way delay: 260.106 ms
Loss rate: 3.84%
-- Flow 1:
Average throughput: 310.50 Mbit/s
95th percentile per-packet one-way delay: 276.082 ms
Loss rate: 3.31%
-- Flow 2:
Average throughput: 258.19 Mbit/s
95th percentile per-packet one-way delay: 209.652 ms
Loss rate: 2.76%
-- Flow 3:
Average throughput: 220.74 Mbit/s
95th percentile per-packet one-way delay: 267.509 ms
Loss rate: 8.43%

Run 5: Report of PCC-Allegro — Data Link

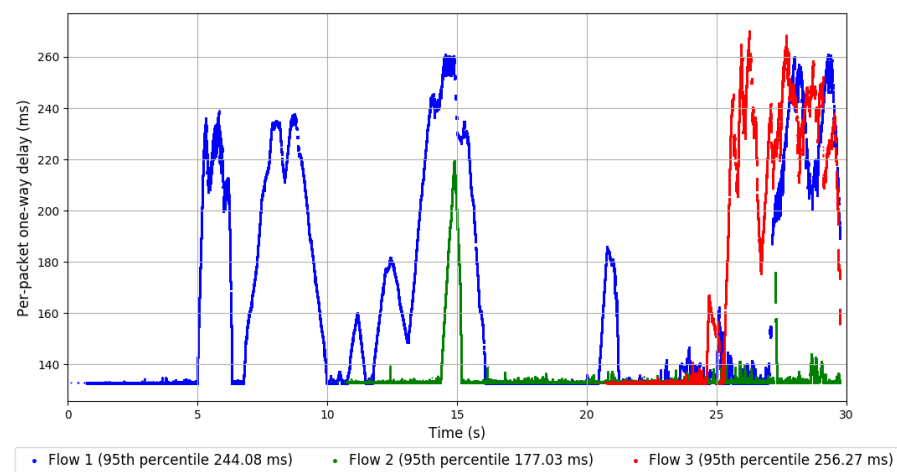
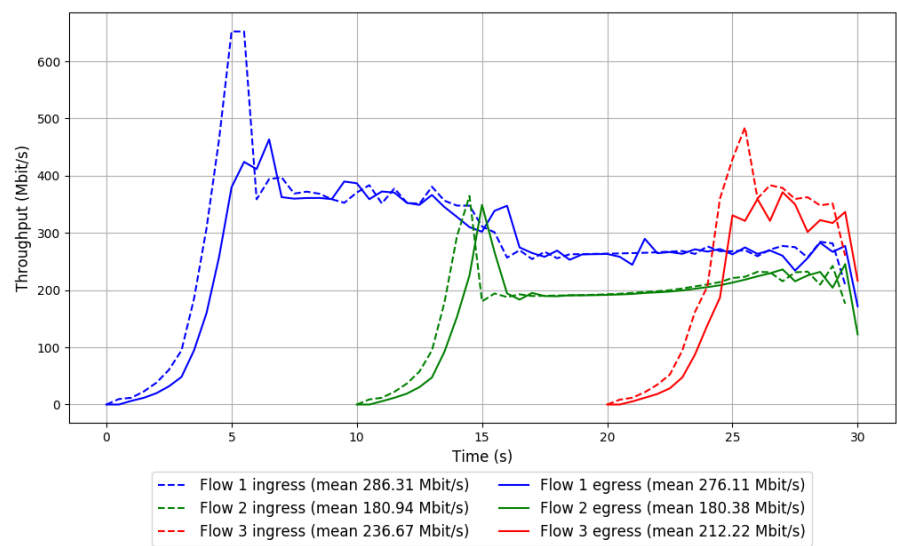


```
Run 1: Statistics of PCC-Expr

Start at: 2018-10-26 12:29:43
End at: 2018-10-26 12:30:13
Local clock offset: -0.288 ms
Remote clock offset: -0.108 ms

# Below is generated by plot.py at 2018-10-26 16:33:33
# Datalink statistics
-- Total of 3 flows:
Average throughput: 464.27 Mbit/s
95th percentile per-packet one-way delay: 245.361 ms
Loss rate: 5.08%
-- Flow 1:
Average throughput: 276.11 Mbit/s
95th percentile per-packet one-way delay: 244.078 ms
Loss rate: 4.43%
-- Flow 2:
Average throughput: 180.38 Mbit/s
95th percentile per-packet one-way delay: 177.031 ms
Loss rate: 1.66%
-- Flow 3:
Average throughput: 212.22 Mbit/s
95th percentile per-packet one-way delay: 256.269 ms
Loss rate: 12.77%
```

Run 1: Report of PCC-Expr — Data Link

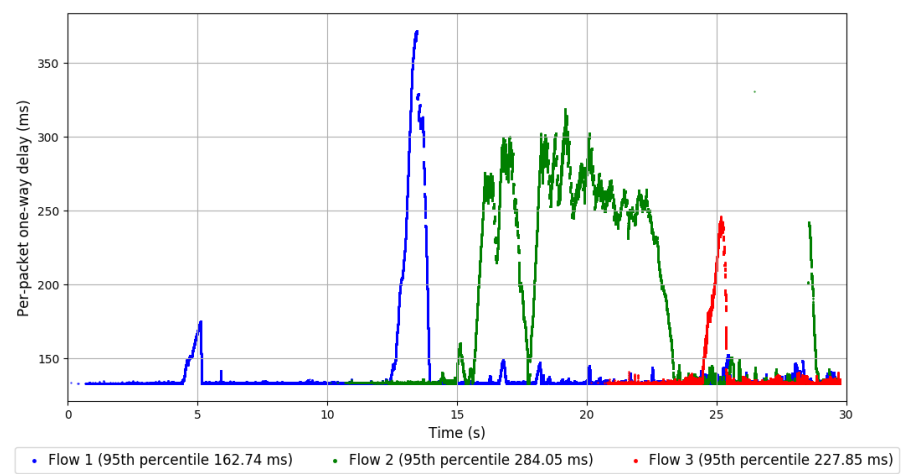
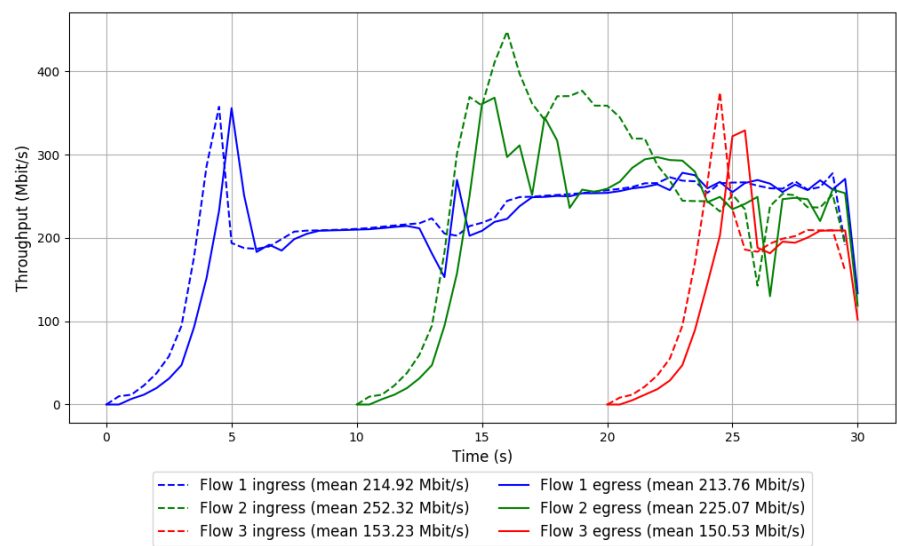


Run 2: Statistics of PCC-Expr

Start at: 2018-10-26 13:02:31
End at: 2018-10-26 13:03:01
Local clock offset: -0.043 ms
Remote clock offset: -0.121 ms

Below is generated by plot.py at 2018-10-26 16:33:33
Datalink statistics
-- Total of 3 flows:
Average throughput: 411.52 Mbit/s
95th percentile per-packet one-way delay: 270.356 ms
Loss rate: 5.91%
-- Flow 1:
Average throughput: 213.76 Mbit/s
95th percentile per-packet one-way delay: 162.738 ms
Loss rate: 1.45%
-- Flow 2:
Average throughput: 225.07 Mbit/s
95th percentile per-packet one-way delay: 284.048 ms
Loss rate: 12.05%
-- Flow 3:
Average throughput: 150.53 Mbit/s
95th percentile per-packet one-way delay: 227.854 ms
Loss rate: 4.47%

Run 2: Report of PCC-Expr — Data Link



Run 3: Statistics of PCC-Expr

Start at: 2018-10-26 13:35:19

End at: 2018-10-26 13:35:49

Local clock offset: 0.223 ms

Remote clock offset: -0.15 ms

Below is generated by plot.py at 2018-10-26 16:34:12

Datalink statistics

-- Total of 3 flows:

Average throughput: 432.40 Mbit/s

95th percentile per-packet one-way delay: 199.820 ms

Loss rate: 2.03%

-- Flow 1:

Average throughput: 264.72 Mbit/s

95th percentile per-packet one-way delay: 200.643 ms

Loss rate: 1.68%

-- Flow 2:

Average throughput: 179.55 Mbit/s

95th percentile per-packet one-way delay: 171.185 ms

Loss rate: 1.71%

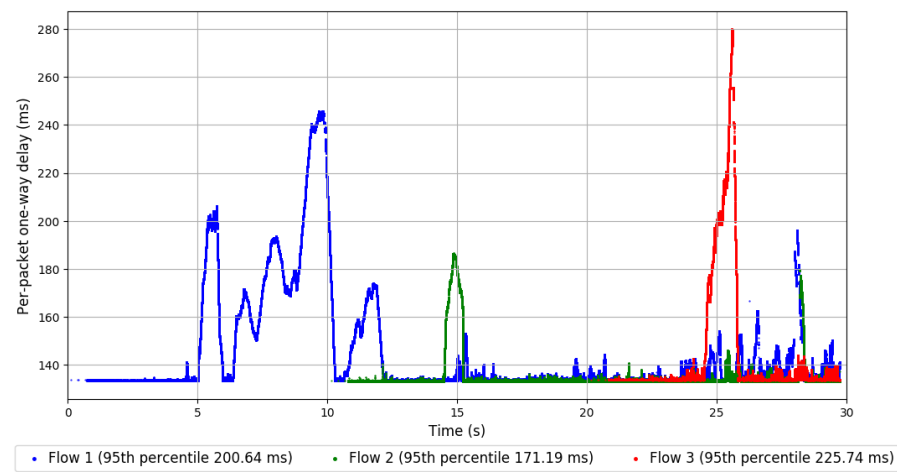
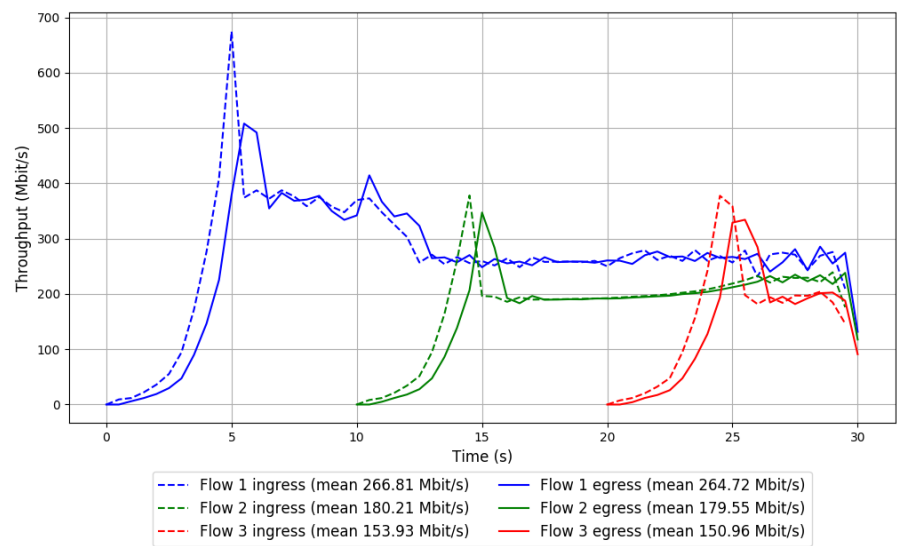
-- Flow 3:

Average throughput: 150.96 Mbit/s

95th percentile per-packet one-way delay: 225.737 ms

Loss rate: 4.63%

Run 3: Report of PCC-Expr — Data Link



Run 4: Statistics of PCC-Expr

Start at: 2018-10-26 14:07:18

End at: 2018-10-26 14:07:48

Local clock offset: -0.103 ms

Remote clock offset: -0.14 ms

Below is generated by plot.py at 2018-10-26 16:38:48

Datalink statistics

-- Total of 3 flows:

Average throughput: 442.77 Mbit/s

95th percentile per-packet one-way delay: 240.800 ms

Loss rate: 3.09%

-- Flow 1:

Average throughput: 273.81 Mbit/s

95th percentile per-packet one-way delay: 248.139 ms

Loss rate: 2.95%

-- Flow 2:

Average throughput: 184.71 Mbit/s

95th percentile per-packet one-way delay: 151.627 ms

Loss rate: 2.39%

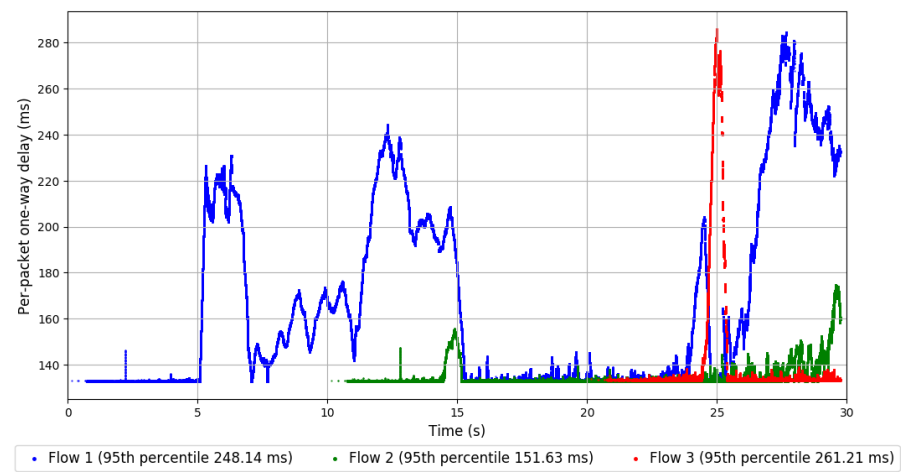
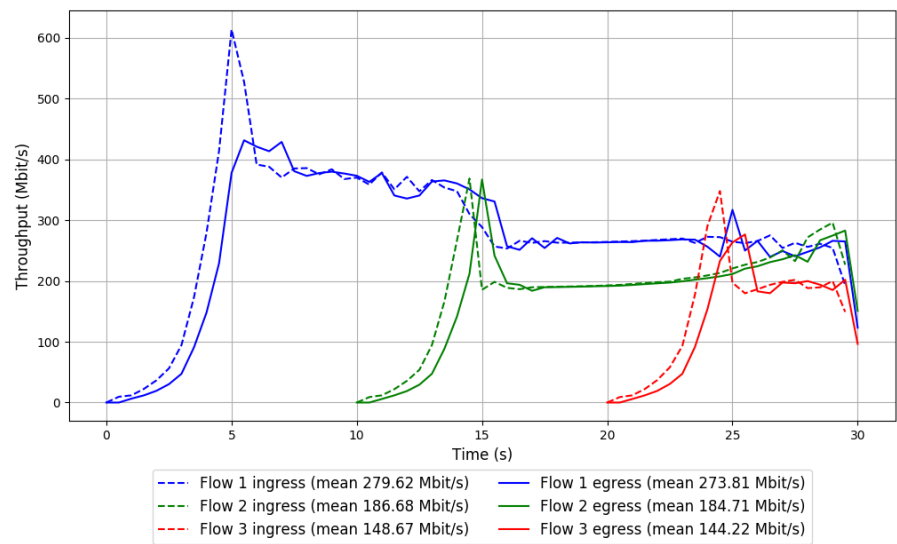
-- Flow 3:

Average throughput: 144.22 Mbit/s

95th percentile per-packet one-way delay: 261.206 ms

Loss rate: 5.63%

Run 4: Report of PCC-Expr — Data Link

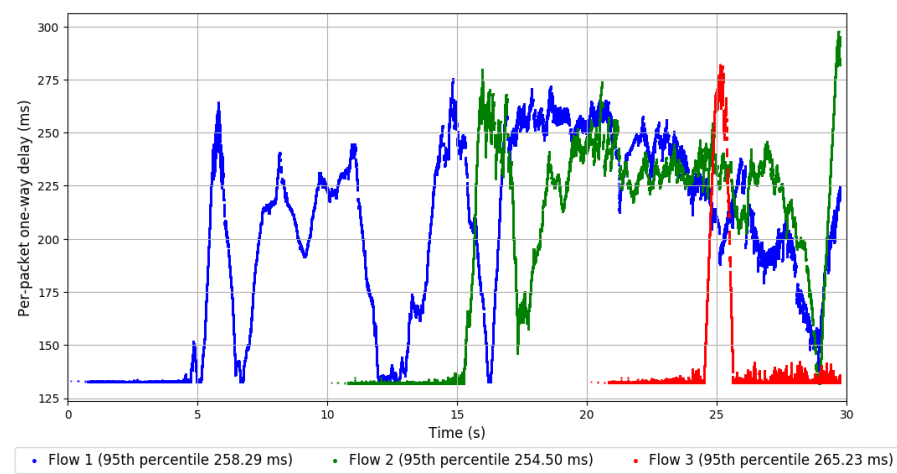
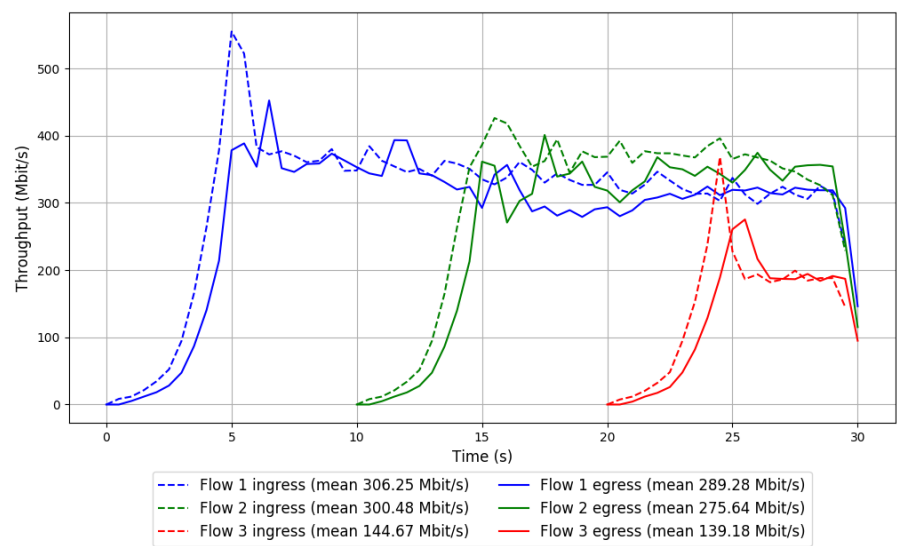


Run 5: Statistics of PCC-Expr

Start at: 2018-10-26 14:39:19
End at: 2018-10-26 14:39:49
Local clock offset: -0.065 ms
Remote clock offset: -0.167 ms

Below is generated by plot.py at 2018-10-26 16:43:03
Datalink statistics
-- Total of 3 flows:
Average throughput: 516.89 Mbit/s
95th percentile per-packet one-way delay: 258.137 ms
Loss rate: 7.51%
-- Flow 1:
Average throughput: 289.28 Mbit/s
95th percentile per-packet one-way delay: 258.286 ms
Loss rate: 6.39%
-- Flow 2:
Average throughput: 275.64 Mbit/s
95th percentile per-packet one-way delay: 254.496 ms
Loss rate: 9.49%
-- Flow 3:
Average throughput: 139.18 Mbit/s
95th percentile per-packet one-way delay: 265.228 ms
Loss rate: 6.39%

Run 5: Report of PCC-Expr — Data Link



Run 1: Statistics of QUIC Cubic

Start at: 2018-10-26 12:08:50

End at: 2018-10-26 12:09:20

Local clock offset: -0.66 ms

Remote clock offset: 0.009 ms

Below is generated by plot.py at 2018-10-26 16:43:03

Datalink statistics

-- Total of 3 flows:

Average throughput: 97.80 Mbit/s

95th percentile per-packet one-way delay: 132.494 ms

Loss rate: 1.65%

-- Flow 1:

Average throughput: 53.59 Mbit/s

95th percentile per-packet one-way delay: 132.285 ms

Loss rate: 1.42%

-- Flow 2:

Average throughput: 46.21 Mbit/s

95th percentile per-packet one-way delay: 132.569 ms

Loss rate: 2.21%

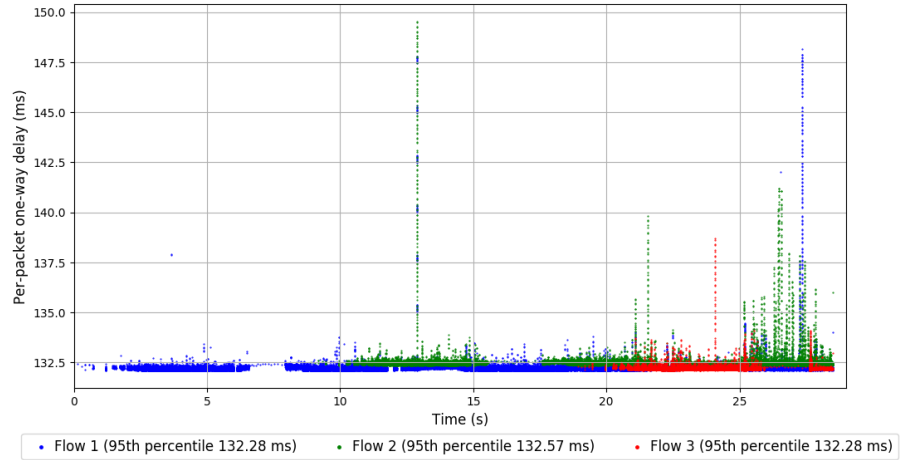
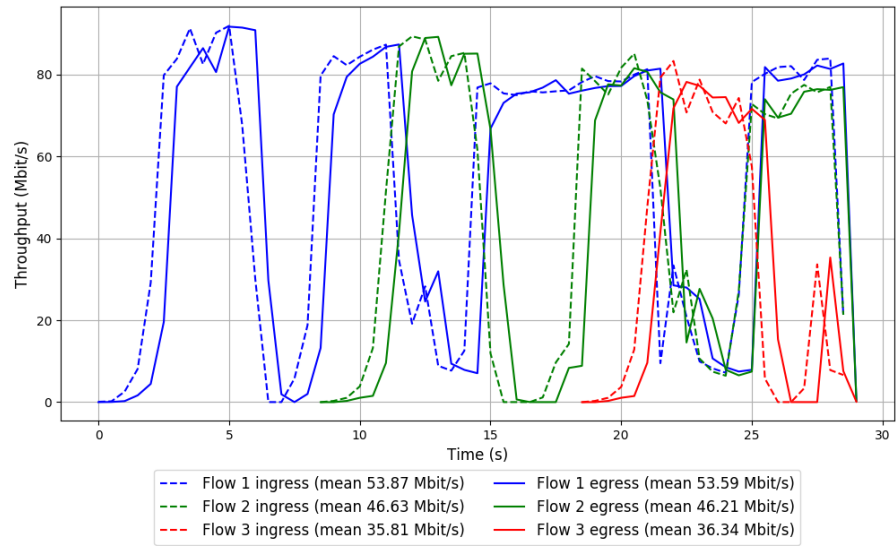
-- Flow 3:

Average throughput: 36.34 Mbit/s

95th percentile per-packet one-way delay: 132.278 ms

Loss rate: 1.20%

Run 1: Report of QUIC Cubic — Data Link



Run 2: Statistics of QUIC Cubic

Start at: 2018-10-26 12:41:44

End at: 2018-10-26 12:42:14

Local clock offset: -0.699 ms

Remote clock offset: 0.252 ms

Below is generated by plot.py at 2018-10-26 16:43:03

Datalink statistics

-- Total of 3 flows:

Average throughput: 93.50 Mbit/s

95th percentile per-packet one-way delay: 132.191 ms

Loss rate: 1.33%

-- Flow 1:

Average throughput: 49.84 Mbit/s

95th percentile per-packet one-way delay: 132.153 ms

Loss rate: 1.13%

-- Flow 2:

Average throughput: 48.01 Mbit/s

95th percentile per-packet one-way delay: 131.977 ms

Loss rate: 2.13%

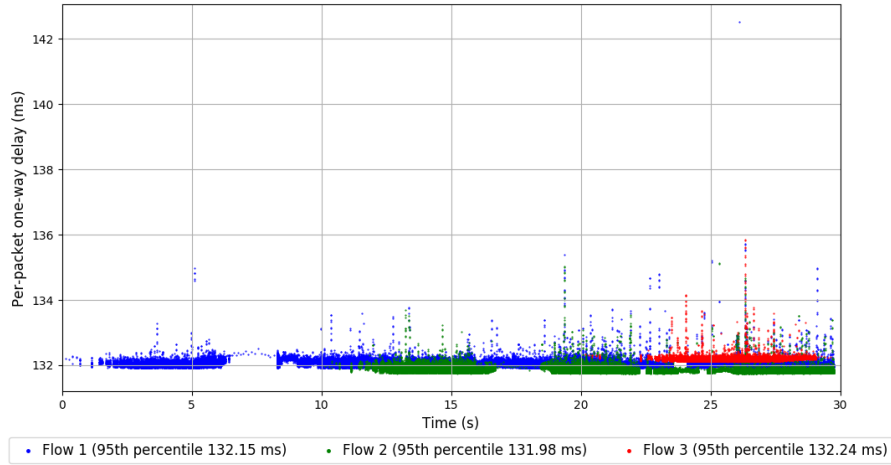
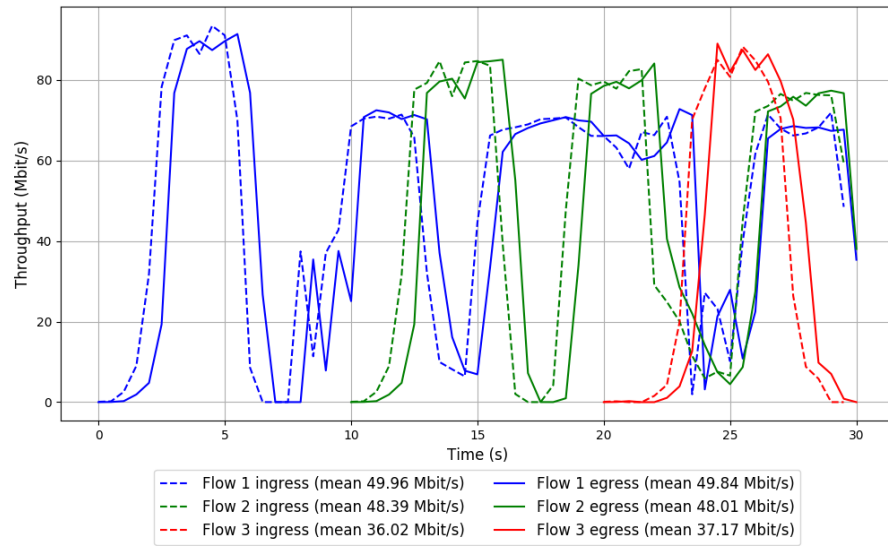
-- Flow 3:

Average throughput: 37.17 Mbit/s

95th percentile per-packet one-way delay: 132.243 ms

Loss rate: 0.00%

Run 2: Report of QUIC Cubic — Data Link

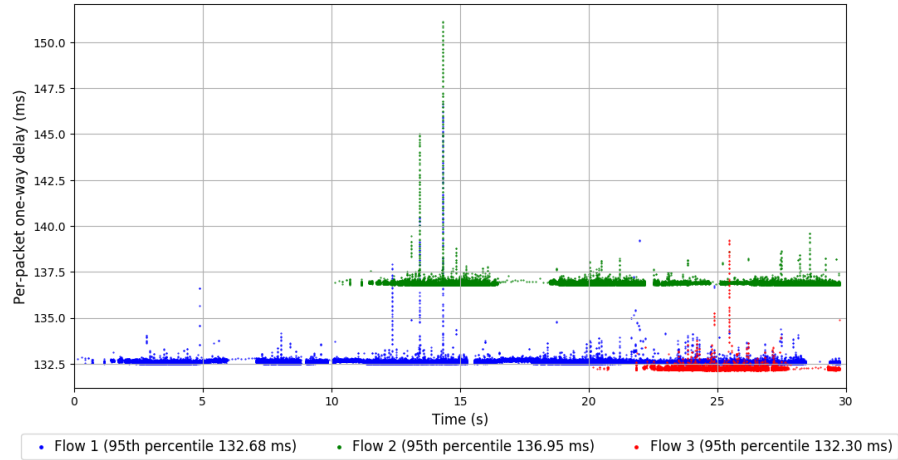
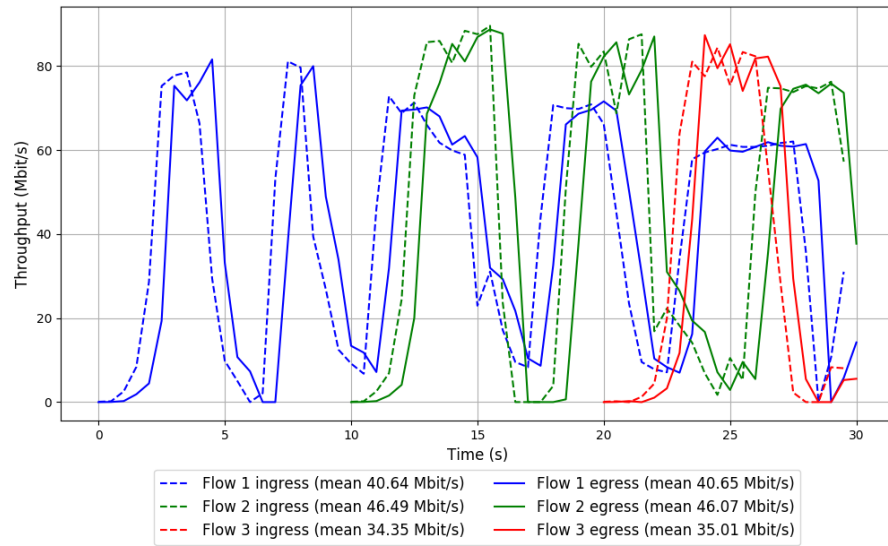


Run 3: Statistics of QUIC Cubic

Start at: 2018-10-26 13:14:24
End at: 2018-10-26 13:14:54
Local clock offset: -0.678 ms
Remote clock offset: -0.127 ms

Below is generated by plot.py at 2018-10-26 16:43:03
Datalink statistics
-- Total of 3 flows:
Average throughput: 82.47 Mbit/s
95th percentile per-packet one-way delay: 136.905 ms
Loss rate: 1.40%
-- Flow 1:
Average throughput: 40.65 Mbit/s
95th percentile per-packet one-way delay: 132.683 ms
Loss rate: 0.89%
-- Flow 2:
Average throughput: 46.07 Mbit/s
95th percentile per-packet one-way delay: 136.949 ms
Loss rate: 2.27%
-- Flow 3:
Average throughput: 35.01 Mbit/s
95th percentile per-packet one-way delay: 132.299 ms
Loss rate: 0.82%

Run 3: Report of QUIC Cubic — Data Link



Run 4: Statistics of QUIC Cubic

Start at: 2018-10-26 13:47:18

End at: 2018-10-26 13:47:48

Local clock offset: 0.013 ms

Remote clock offset: 0.228 ms

Below is generated by plot.py at 2018-10-26 16:43:03

Datalink statistics

-- Total of 3 flows:

Average throughput: 94.33 Mbit/s

95th percentile per-packet one-way delay: 133.087 ms

Loss rate: 1.41%

-- Flow 1:

Average throughput: 53.69 Mbit/s

95th percentile per-packet one-way delay: 133.111 ms

Loss rate: 1.34%

-- Flow 2:

Average throughput: 44.75 Mbit/s

95th percentile per-packet one-way delay: 132.805 ms

Loss rate: 1.92%

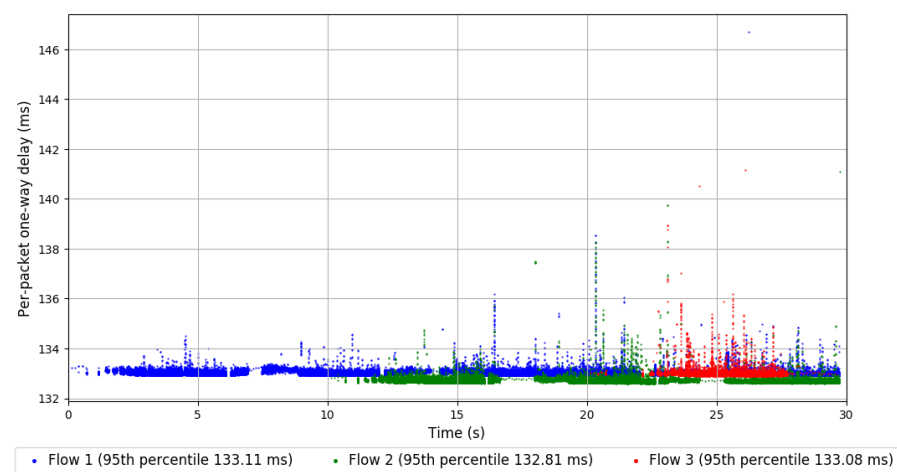
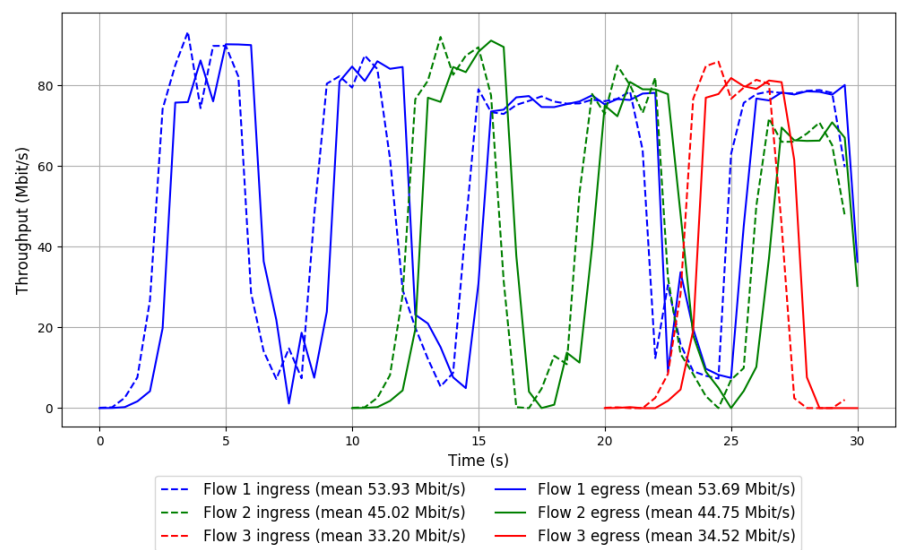
-- Flow 3:

Average throughput: 34.52 Mbit/s

95th percentile per-packet one-way delay: 133.076 ms

Loss rate: 0.32%

Run 4: Report of QUIC Cubic — Data Link



Run 5: Statistics of QUIC Cubic

Start at: 2018-10-26 14:19:00

End at: 2018-10-26 14:19:30

Local clock offset: -0.132 ms

Remote clock offset: 0.218 ms

Below is generated by plot.py at 2018-10-26 16:43:03

Datalink statistics

-- Total of 3 flows:

Average throughput: 82.27 Mbit/s

95th percentile per-packet one-way delay: 132.605 ms

Loss rate: 2.07%

-- Flow 1:

Average throughput: 45.43 Mbit/s

95th percentile per-packet one-way delay: 132.630 ms

Loss rate: 1.54%

-- Flow 2:

Average throughput: 39.48 Mbit/s

95th percentile per-packet one-way delay: 132.418 ms

Loss rate: 2.22%

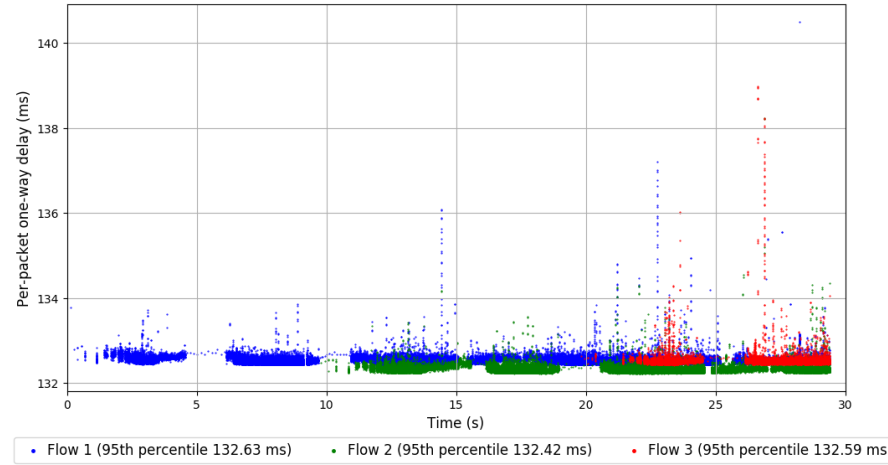
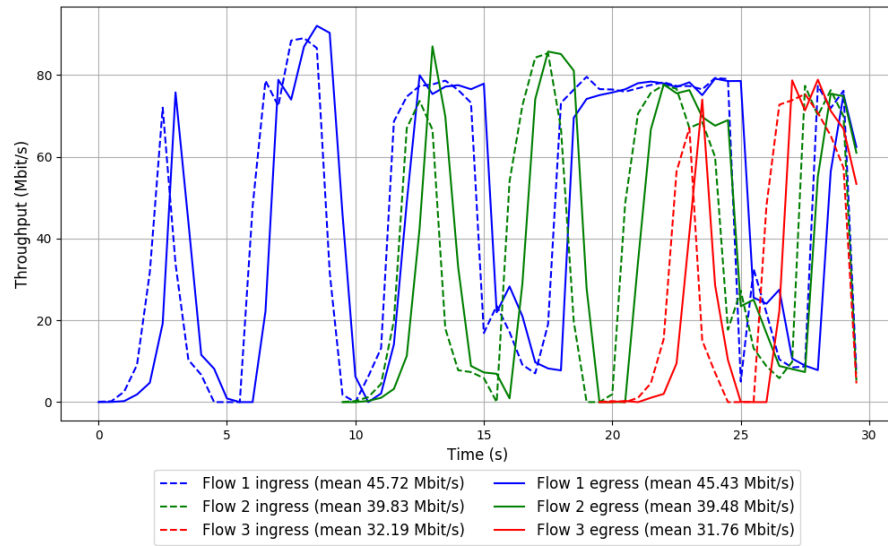
-- Flow 3:

Average throughput: 31.76 Mbit/s

95th percentile per-packet one-way delay: 132.589 ms

Loss rate: 3.98%

Run 5: Report of QUIC Cubic — Data Link

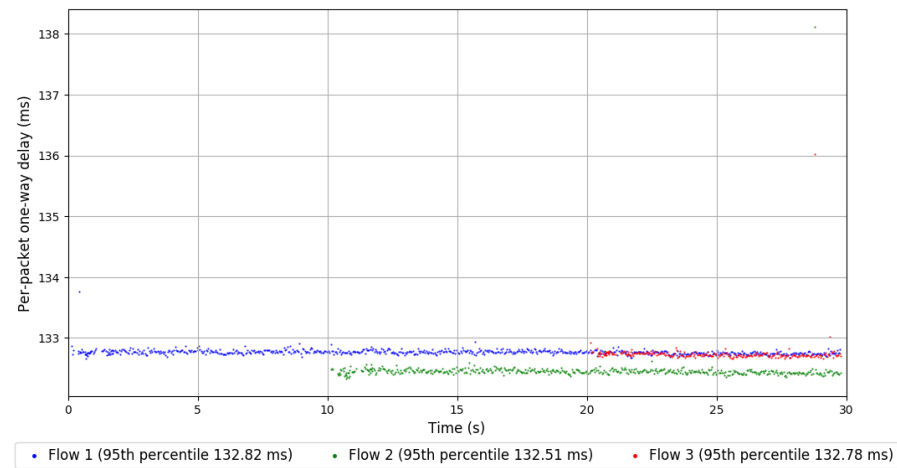
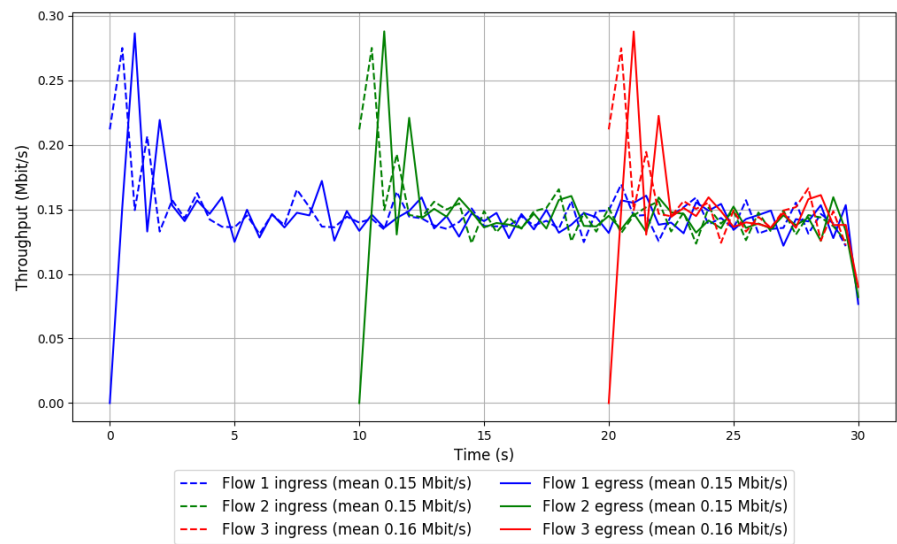


```
Run 1: Statistics of SCReAM

Start at: 2018-10-26 12:18:18
End at: 2018-10-26 12:18:48
Local clock offset: -0.288 ms
Remote clock offset: 0.264 ms

# Below is generated by plot.py at 2018-10-26 16:43:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.30 Mbit/s
95th percentile per-packet one-way delay: 132.809 ms
Loss rate: 1.32%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 132.821 ms
Loss rate: 0.88%
-- Flow 2:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 132.513 ms
Loss rate: 1.39%
-- Flow 3:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 132.783 ms
Loss rate: 2.45%
```

Run 1: Report of SReAM — Data Link

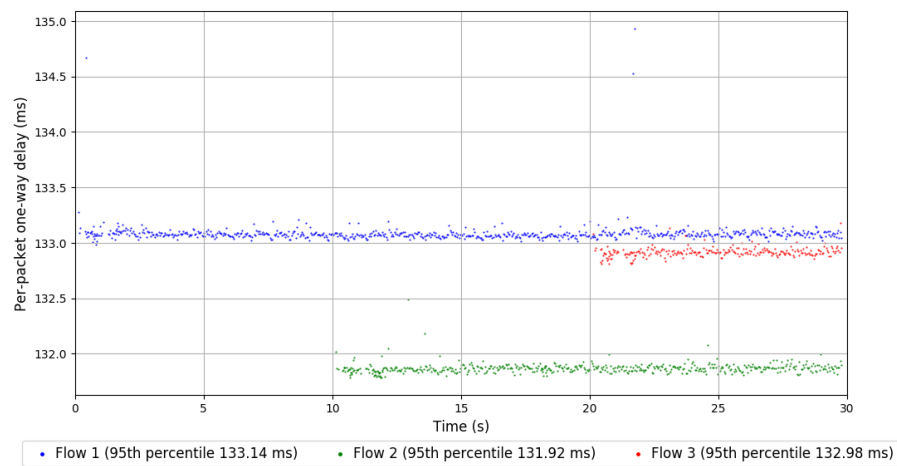
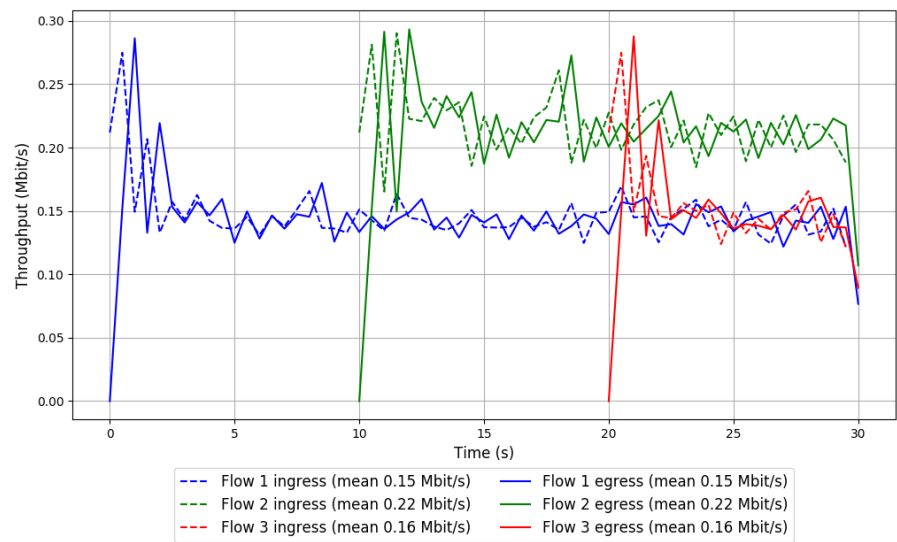


Run 2: Statistics of SReAM

Start at: 2018-10-26 12:50:59
End at: 2018-10-26 12:51:29
Local clock offset: -0.432 ms
Remote clock offset: -0.097 ms

Below is generated by plot.py at 2018-10-26 16:43:03
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.34 Mbit/s
95th percentile per-packet one-way delay: 133.113 ms
Loss rate: 1.35%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 133.140 ms
Loss rate: 0.88%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 131.924 ms
Loss rate: 1.43%
-- Flow 3:
Average throughput: 0.16 Mbit/s
95th percentile per-packet one-way delay: 132.984 ms
Loss rate: 2.45%

Run 2: Report of SReAM — Data Link

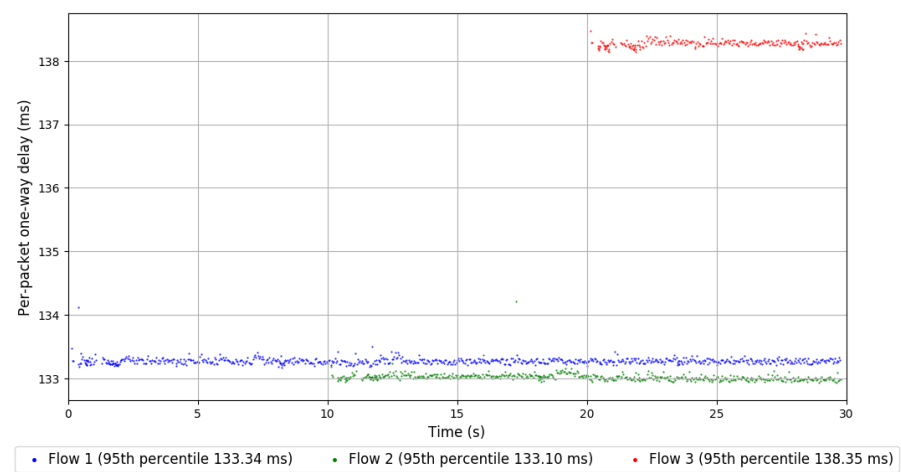
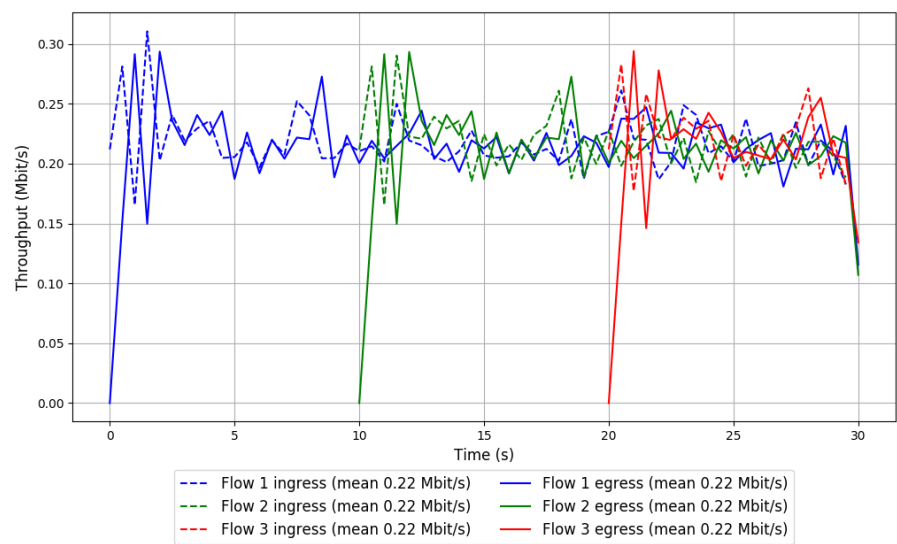


Run 3: Statistics of SReAM

Start at: 2018-10-26 13:23:38
End at: 2018-10-26 13:24:08
Local clock offset: -0.095 ms
Remote clock offset: -0.084 ms

Below is generated by plot.py at 2018-10-26 16:43:03
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 138.294 ms
Loss rate: 1.36%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 133.335 ms
Loss rate: 0.89%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 133.098 ms
Loss rate: 1.43%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 138.350 ms
Loss rate: 2.60%

Run 3: Report of SReAM — Data Link

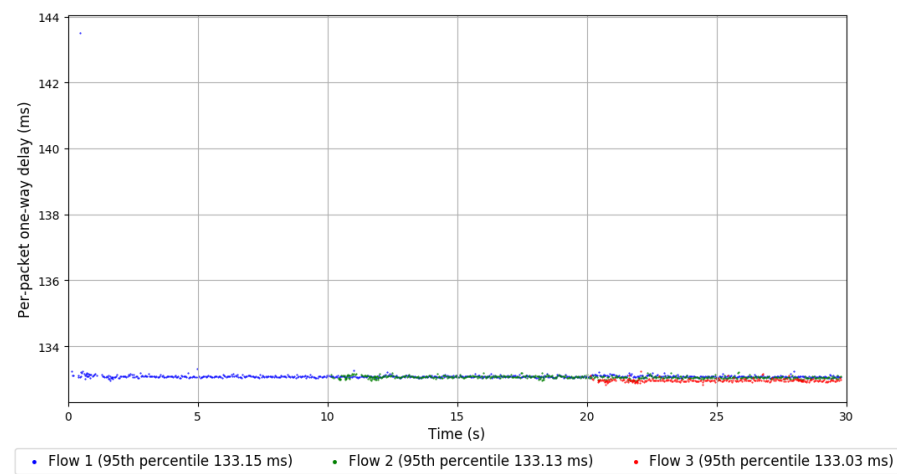
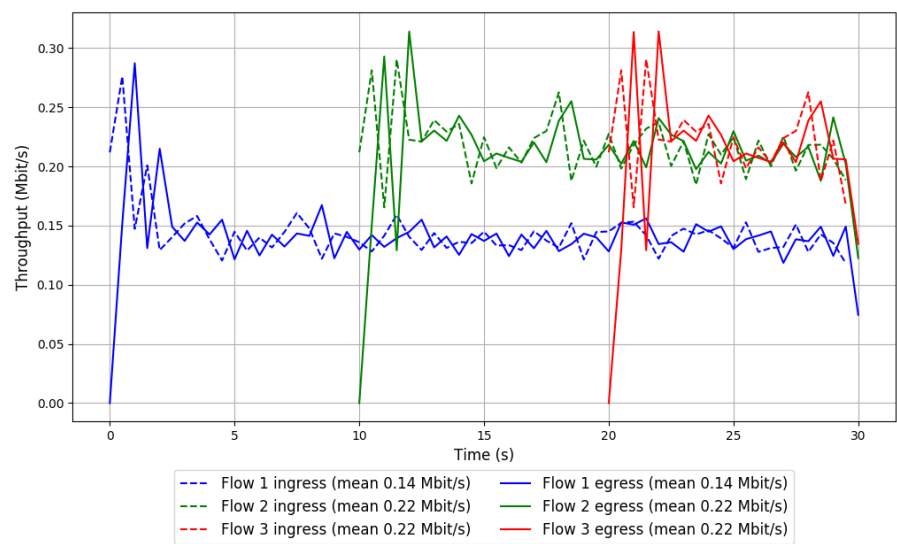


Run 4: Statistics of SReAM

Start at: 2018-10-26 13:56:18
End at: 2018-10-26 13:56:48
Local clock offset: -0.098 ms
Remote clock offset: -0.162 ms

Below is generated by plot.py at 2018-10-26 16:43:03
Datalink statistics
-- Total of 3 flows:
Average throughput: 0.36 Mbit/s
95th percentile per-packet one-way delay: 133.138 ms
Loss rate: 1.38%
-- Flow 1:
Average throughput: 0.14 Mbit/s
95th percentile per-packet one-way delay: 133.149 ms
Loss rate: 0.88%
-- Flow 2:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 133.132 ms
Loss rate: 1.43%
-- Flow 3:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 133.026 ms
Loss rate: 2.25%

Run 4: Report of SReAM — Data Link



Run 5: Statistics of SReAM

Start at: 2018-10-26 14:27:55

End at: 2018-10-26 14:28:25

Local clock offset: -0.244 ms

Remote clock offset: 0.232 ms

Below is generated by plot.py at 2018-10-26 16:43:03

Datalink statistics

-- Total of 3 flows:

Average throughput: 0.34 Mbit/s

95th percentile per-packet one-way delay: 132.647 ms

Loss rate: 1.35%

-- Flow 1:

Average throughput: 0.14 Mbit/s

95th percentile per-packet one-way delay: 132.665 ms

Loss rate: 0.88%

-- Flow 2:

Average throughput: 0.22 Mbit/s

95th percentile per-packet one-way delay: 132.609 ms

Loss rate: 1.43%

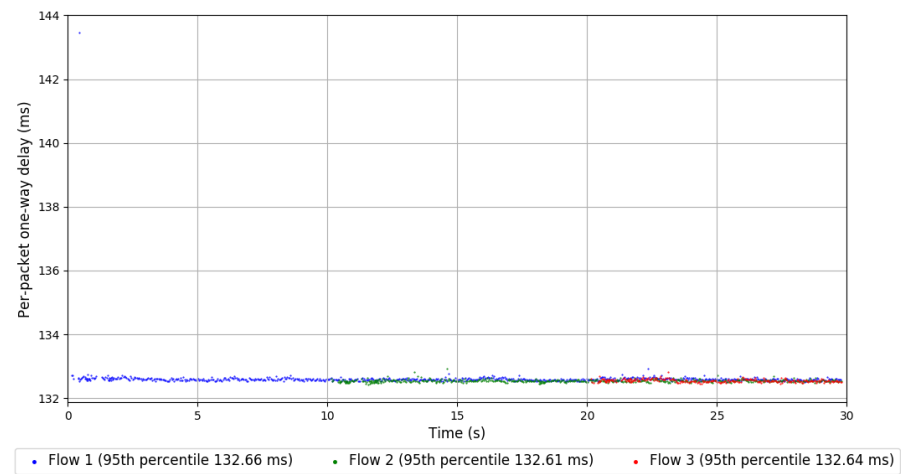
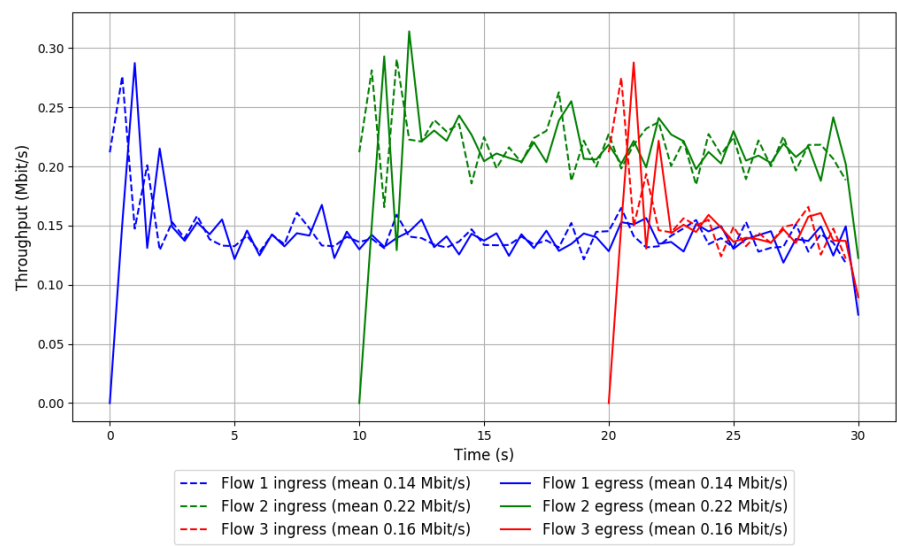
-- Flow 3:

Average throughput: 0.16 Mbit/s

95th percentile per-packet one-way delay: 132.637 ms

Loss rate: 2.45%

Run 5: Report of SReAM — Data Link

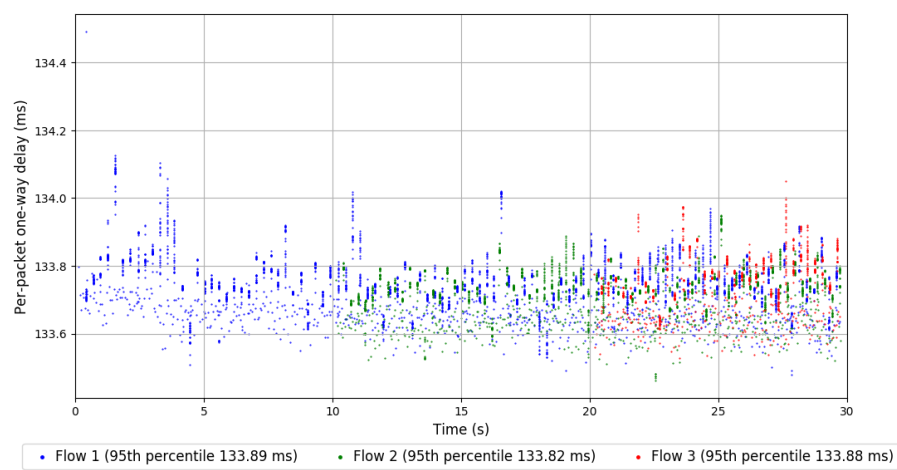
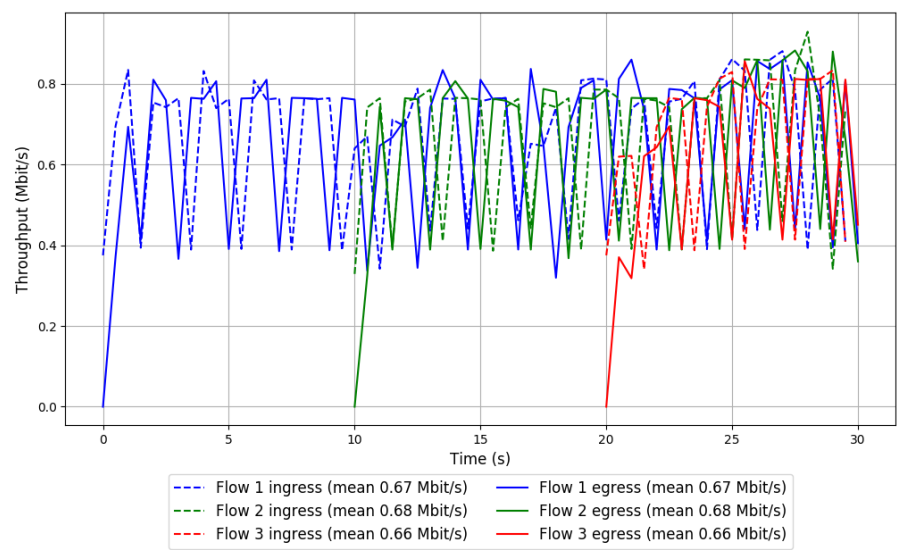


Run 1: Statistics of Sprout

Start at: 2018-10-26 12:26:30
End at: 2018-10-26 12:27:00
Local clock offset: 0.229 ms
Remote clock offset: -0.448 ms

Below is generated by plot.py at 2018-10-26 16:43:03
Datalink statistics
-- Total of 3 flows:
Average throughput: 1.33 Mbit/s
95th percentile per-packet one-way delay: 133.866 ms
Loss rate: 1.47%
-- Flow 1:
Average throughput: 0.67 Mbit/s
95th percentile per-packet one-way delay: 133.891 ms
Loss rate: 1.02%
-- Flow 2:
Average throughput: 0.68 Mbit/s
95th percentile per-packet one-way delay: 133.822 ms
Loss rate: 1.42%
-- Flow 3:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 133.879 ms
Loss rate: 2.95%

Run 1: Report of Sprout — Data Link



Run 2: Statistics of Sprout

Start at: 2018-10-26 12:59:12

End at: 2018-10-26 12:59:42

Local clock offset: 0.895 ms

Remote clock offset: 0.252 ms

Below is generated by plot.py at 2018-10-26 16:43:03

Datalink statistics

-- Total of 3 flows:

Average throughput: 1.18 Mbit/s

95th percentile per-packet one-way delay: 134.254 ms

Loss rate: 1.61%

-- Flow 1:

Average throughput: 0.61 Mbit/s

95th percentile per-packet one-way delay: 134.286 ms

Loss rate: 1.22%

-- Flow 2:

Average throughput: 0.59 Mbit/s

95th percentile per-packet one-way delay: 133.821 ms

Loss rate: 2.11%

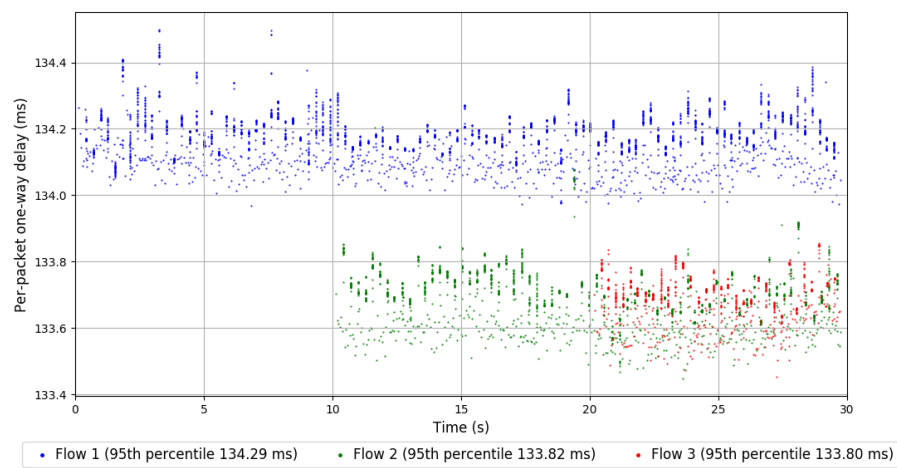
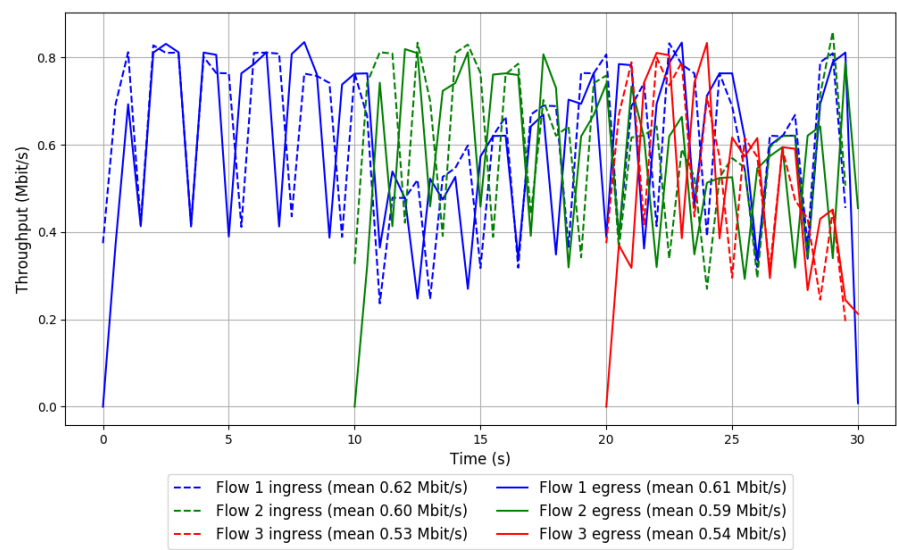
-- Flow 3:

Average throughput: 0.54 Mbit/s

95th percentile per-packet one-way delay: 133.796 ms

Loss rate: 1.84%

Run 2: Report of Sprout — Data Link

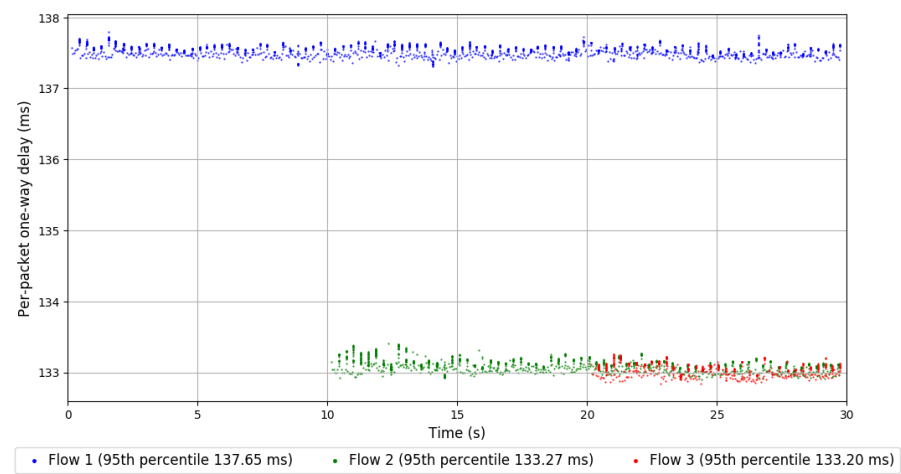
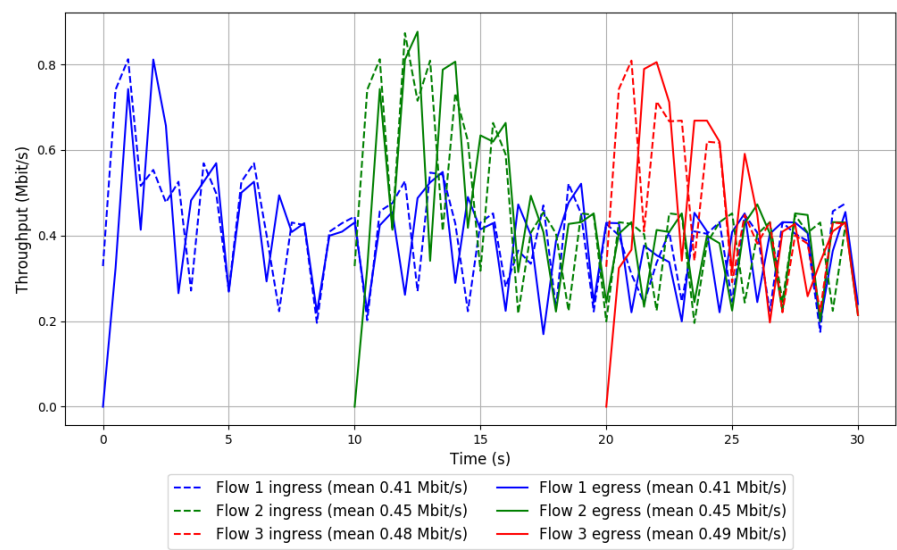


Run 3: Statistics of Sprout

Start at: 2018-10-26 13:32:09
End at: 2018-10-26 13:32:39
Local clock offset: -0.499 ms
Remote clock offset: -0.469 ms

```
# Below is generated by plot.py at 2018-10-26 16:43:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 0.86 Mbit/s
95th percentile per-packet one-way delay: 137.626 ms
Loss rate: 1.29%
-- Flow 1:
Average throughput: 0.41 Mbit/s
95th percentile per-packet one-way delay: 137.648 ms
Loss rate: 0.99%
-- Flow 2:
Average throughput: 0.45 Mbit/s
95th percentile per-packet one-way delay: 133.269 ms
Loss rate: 1.19%
-- Flow 3:
Average throughput: 0.49 Mbit/s
95th percentile per-packet one-way delay: 133.203 ms
Loss rate: 2.26%
```

Run 3: Report of Sprout — Data Link

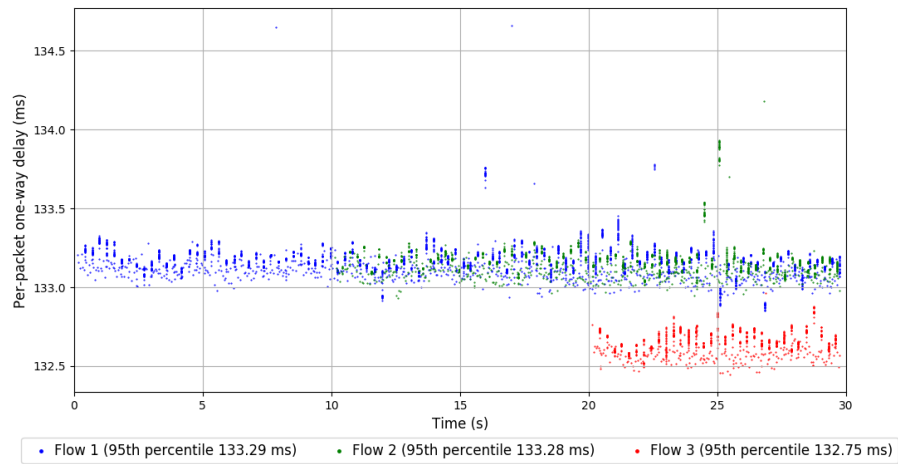
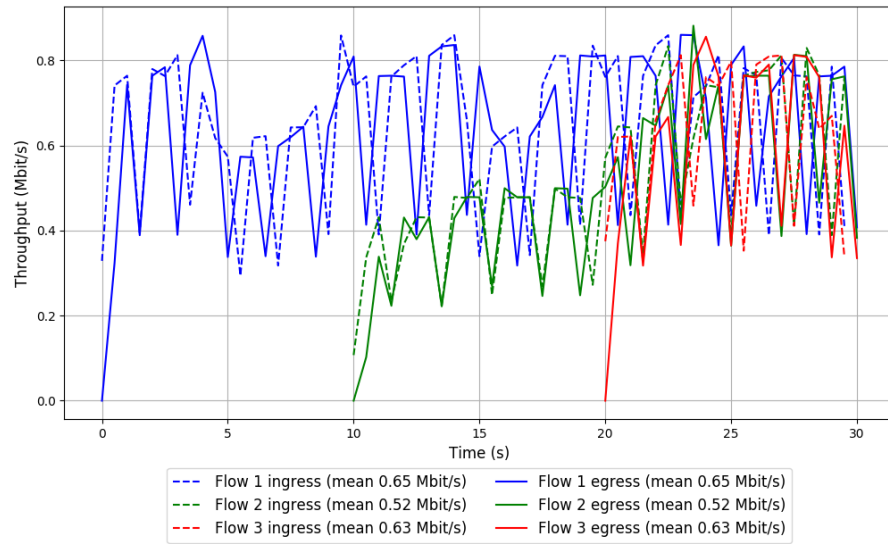


Run 4: Statistics of Sprout

Start at: 2018-10-26 14:04:03
End at: 2018-10-26 14:04:33
Local clock offset: -0.11 ms
Remote clock offset: -0.127 ms

```
# Below is generated by plot.py at 2018-10-26 16:43:03
# Datalink statistics
-- Total of 3 flows:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 133.278 ms
Loss rate: 1.01%
-- Flow 1:
Average throughput: 0.65 Mbit/s
95th percentile per-packet one-way delay: 133.290 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 0.52 Mbit/s
95th percentile per-packet one-way delay: 133.278 ms
Loss rate: 1.85%
-- Flow 3:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 132.754 ms
Loss rate: 2.67%
```

Run 4: Report of Sprout — Data Link

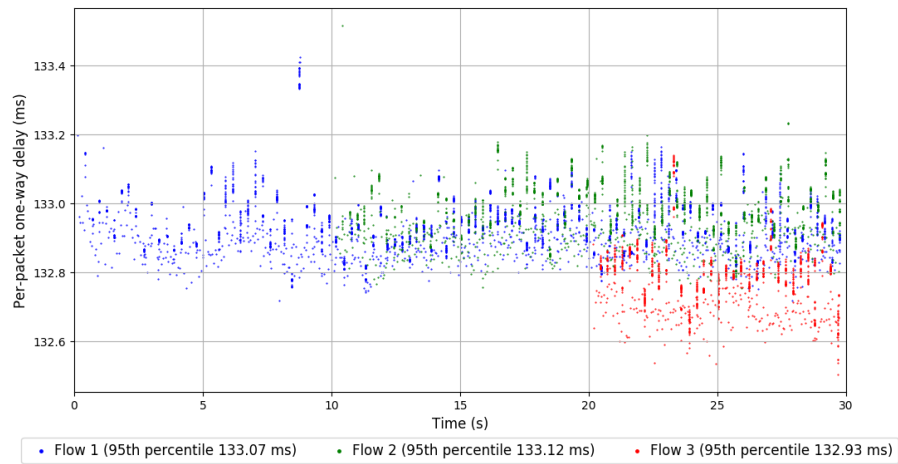
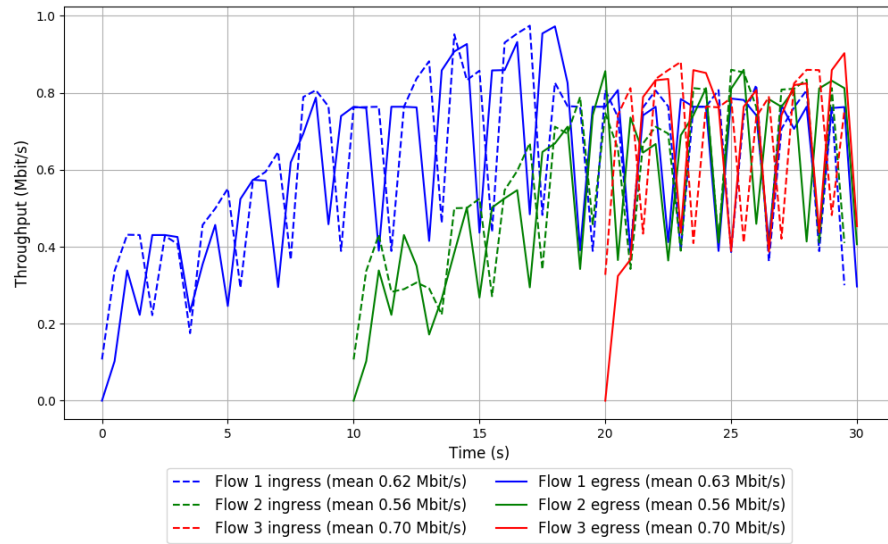


Run 5: Statistics of Sprout

Start at: 2018-10-26 14:36:03
End at: 2018-10-26 14:36:33
Local clock offset: -0.287 ms
Remote clock offset: -0.14 ms

Below is generated by plot.py at 2018-10-26 16:43:03
Datalink statistics
-- Total of 3 flows:
Average throughput: 1.23 Mbit/s
95th percentile per-packet one-way delay: 133.086 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 0.63 Mbit/s
95th percentile per-packet one-way delay: 133.075 ms
Loss rate: 0.02%
-- Flow 2:
Average throughput: 0.56 Mbit/s
95th percentile per-packet one-way delay: 133.117 ms
Loss rate: 0.04%
-- Flow 3:
Average throughput: 0.70 Mbit/s
95th percentile per-packet one-way delay: 132.934 ms
Loss rate: 2.22%

Run 5: Report of Sprout — Data Link

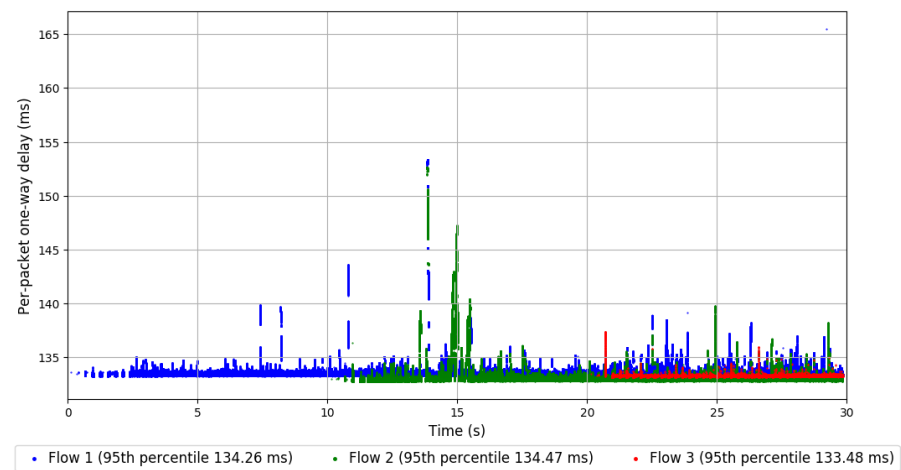
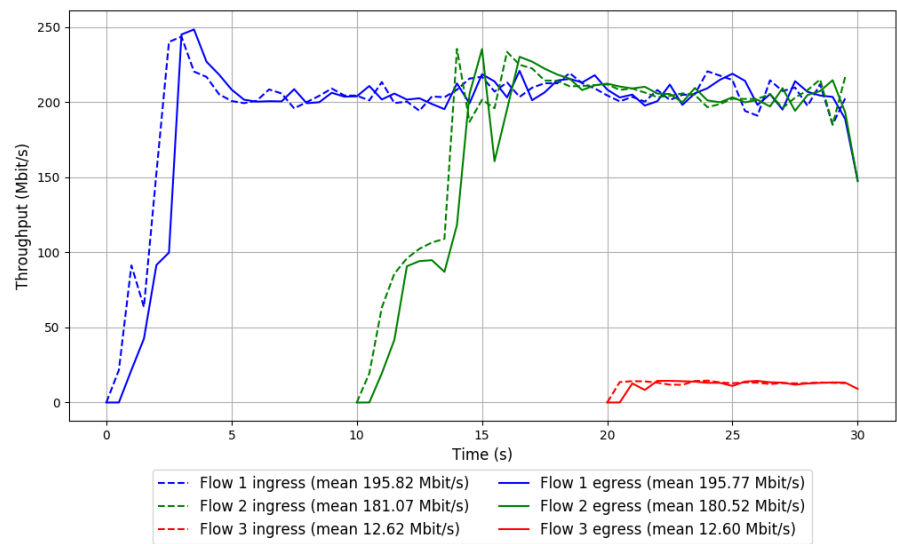


```
Run 1: Statistics of TaoVA-100x

Start at: 2018-10-26 12:24:30
End at: 2018-10-26 12:25:00
Local clock offset: -0.015 ms
Remote clock offset: -0.472 ms

# Below is generated by plot.py at 2018-10-26 16:45:28
# Datalink statistics
-- Total of 3 flows:
Average throughput: 319.56 Mbit/s
95th percentile per-packet one-way delay: 134.304 ms
Loss rate: 1.21%
-- Flow 1:
Average throughput: 195.77 Mbit/s
95th percentile per-packet one-way delay: 134.264 ms
Loss rate: 0.92%
-- Flow 2:
Average throughput: 180.52 Mbit/s
95th percentile per-packet one-way delay: 134.470 ms
Loss rate: 1.62%
-- Flow 3:
Average throughput: 12.60 Mbit/s
95th percentile per-packet one-way delay: 133.484 ms
Loss rate: 2.82%
```

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

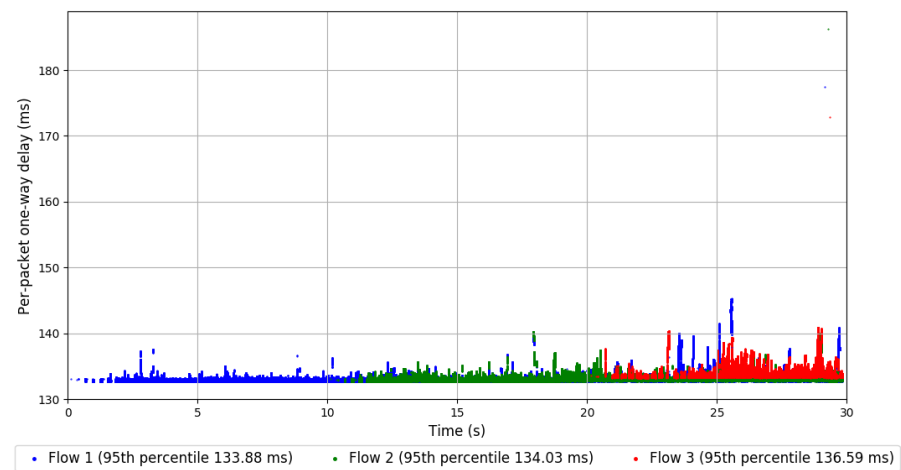
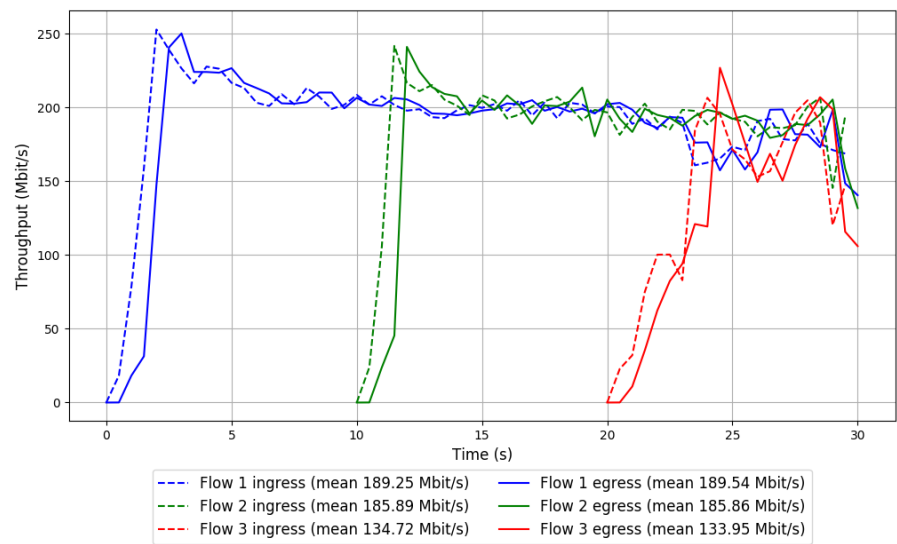


Run 2: Statistics of TaoVA-100x

Start at: 2018-10-26 12:57:04
End at: 2018-10-26 12:57:34
Local clock offset: 0.266 ms
Remote clock offset: -0.105 ms

Below is generated by plot.py at 2018-10-26 16:47:16
Datalink statistics
-- Total of 3 flows:
Average throughput: 356.41 Mbit/s
95th percentile per-packet one-way delay: 134.466 ms
Loss rate: 1.30%
-- Flow 1:
Average throughput: 189.54 Mbit/s
95th percentile per-packet one-way delay: 133.875 ms
Loss rate: 0.75%
-- Flow 2:
Average throughput: 185.86 Mbit/s
95th percentile per-packet one-way delay: 134.028 ms
Loss rate: 1.43%
-- Flow 3:
Average throughput: 133.95 Mbit/s
95th percentile per-packet one-way delay: 136.591 ms
Loss rate: 3.27%

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

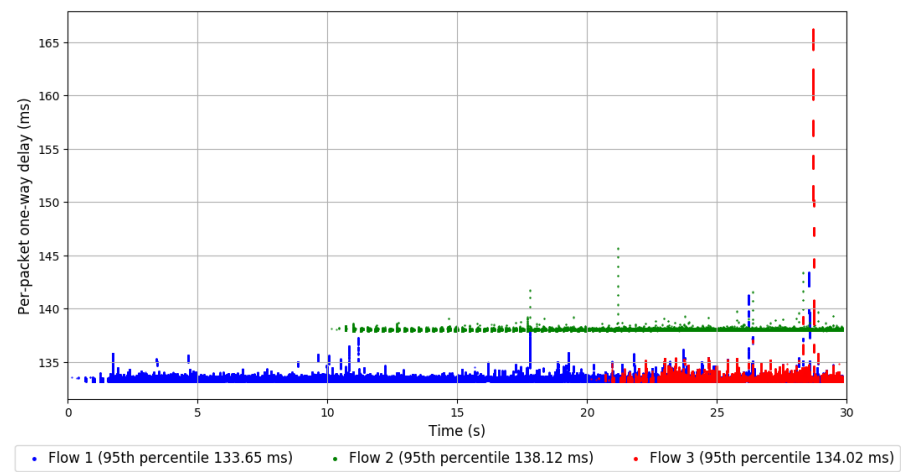
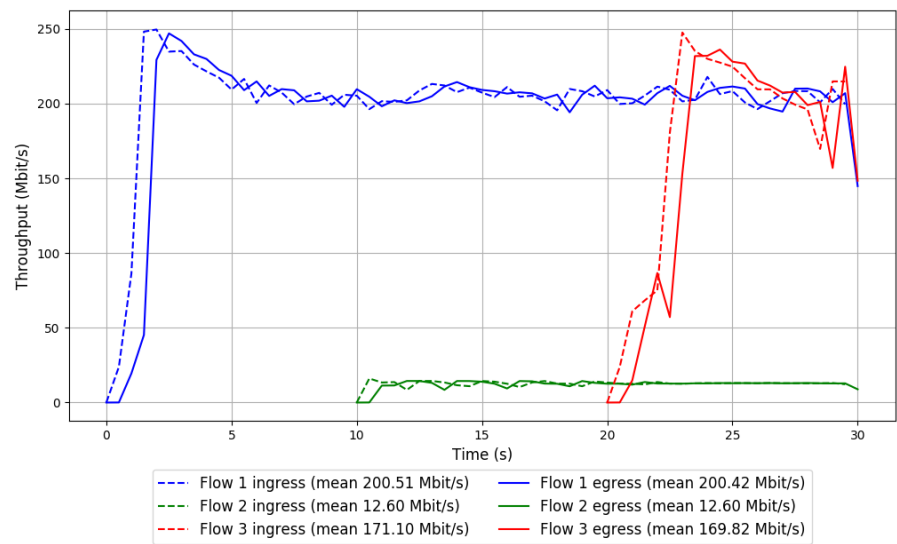


Run 3: Statistics of TaoVA-100x

Start at: 2018-10-26 13:30:15
End at: 2018-10-26 13:30:45
Local clock offset: -0.146 ms
Remote clock offset: -0.544 ms

Below is generated by plot.py at 2018-10-26 16:47:16
Datalink statistics
-- Total of 3 flows:
Average throughput: 264.15 Mbit/s
95th percentile per-packet one-way delay: 134.191 ms
Loss rate: 1.49%
-- Flow 1:
Average throughput: 200.42 Mbit/s
95th percentile per-packet one-way delay: 133.647 ms
Loss rate: 0.94%
-- Flow 2:
Average throughput: 12.60 Mbit/s
95th percentile per-packet one-way delay: 138.115 ms
Loss rate: 1.42%
-- Flow 3:
Average throughput: 169.82 Mbit/s
95th percentile per-packet one-way delay: 134.019 ms
Loss rate: 3.45%

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



Run 4: Statistics of TaoVA-100x

Start at: 2018-10-26 14:02:26

End at: 2018-10-26 14:02:56

Local clock offset: -0.653 ms

Remote clock offset: 0.195 ms

Below is generated by plot.py at 2018-10-26 16:47:16

Datalink statistics

-- Total of 3 flows:

Average throughput: 154.50 Mbit/s

95th percentile per-packet one-way delay: 137.104 ms

Loss rate: 1.88%

-- Flow 1:

Average throughput: 13.18 Mbit/s

95th percentile per-packet one-way delay: 131.644 ms

Loss rate: 0.91%

-- Flow 2:

Average throughput: 164.79 Mbit/s

95th percentile per-packet one-way delay: 134.821 ms

Loss rate: 1.78%

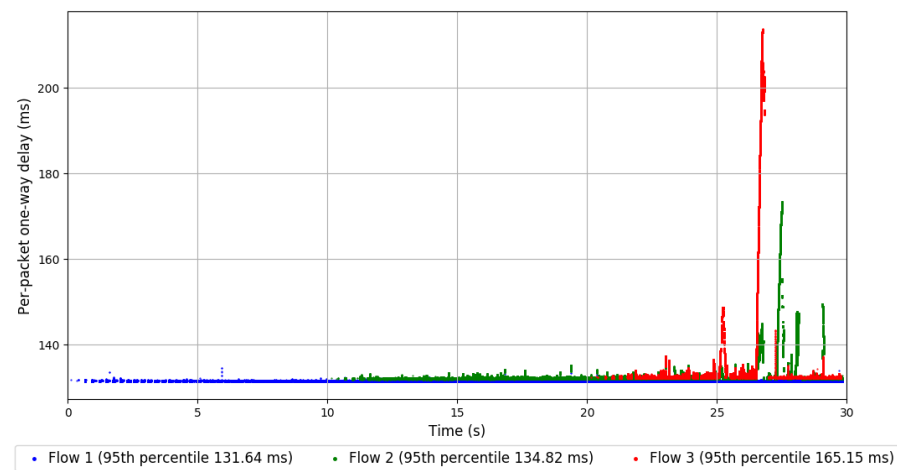
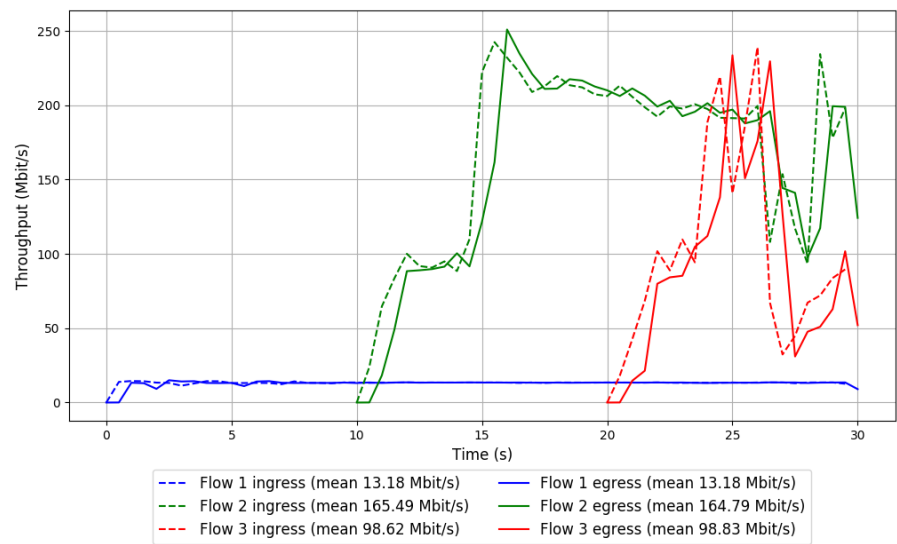
-- Flow 3:

Average throughput: 98.83 Mbit/s

95th percentile per-packet one-way delay: 165.147 ms

Loss rate: 2.62%

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



Run 5: Statistics of TaoVA-100x

Start at: 2018-10-26 14:34:05

End at: 2018-10-26 14:34:35

Local clock offset: 0.274 ms

Remote clock offset: 0.245 ms

Below is generated by plot.py at 2018-10-26 16:47:43

Datalink statistics

-- Total of 3 flows:

Average throughput: 347.15 Mbit/s

95th percentile per-packet one-way delay: 135.791 ms

Loss rate: 1.33%

-- Flow 1:

Average throughput: 182.04 Mbit/s

95th percentile per-packet one-way delay: 135.398 ms

Loss rate: 1.01%

-- Flow 2:

Average throughput: 160.68 Mbit/s

95th percentile per-packet one-way delay: 137.206 ms

Loss rate: 1.50%

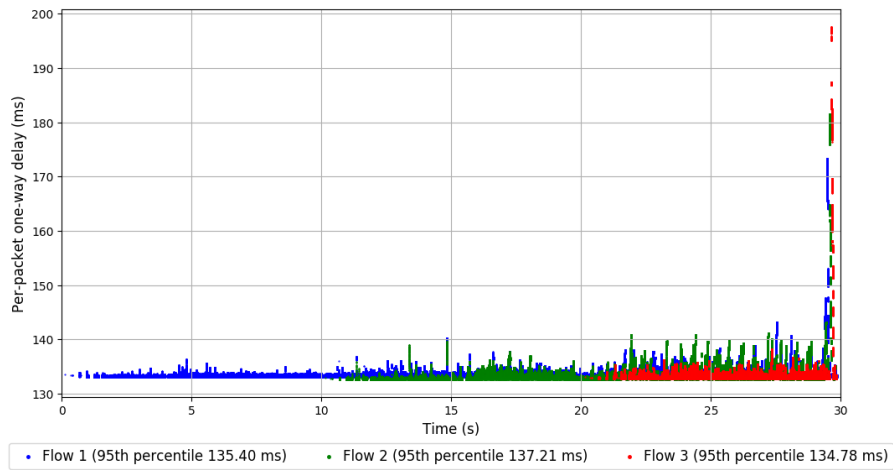
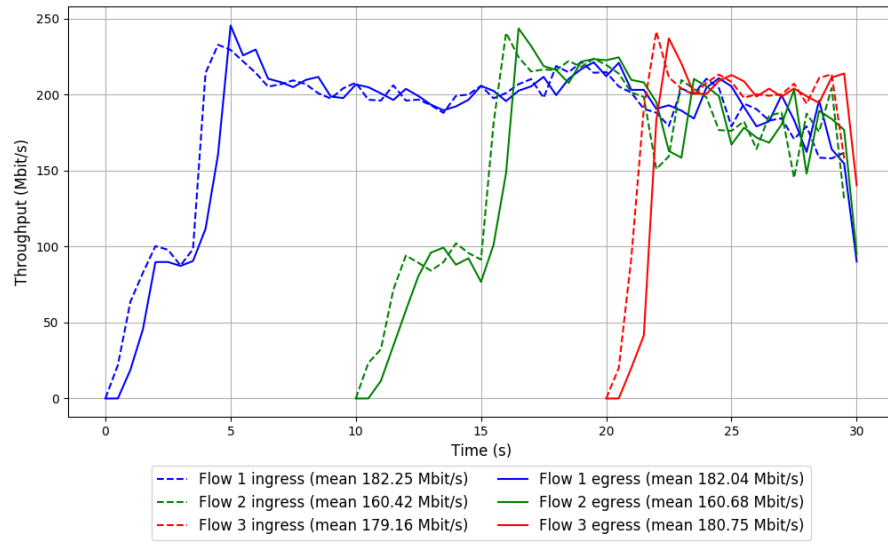
-- Flow 3:

Average throughput: 180.75 Mbit/s

95th percentile per-packet one-way delay: 134.782 ms

Loss rate: 2.01%

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

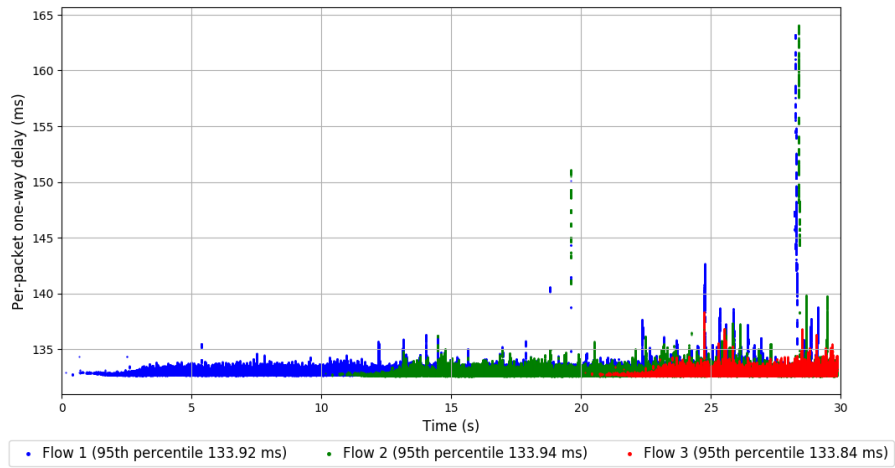
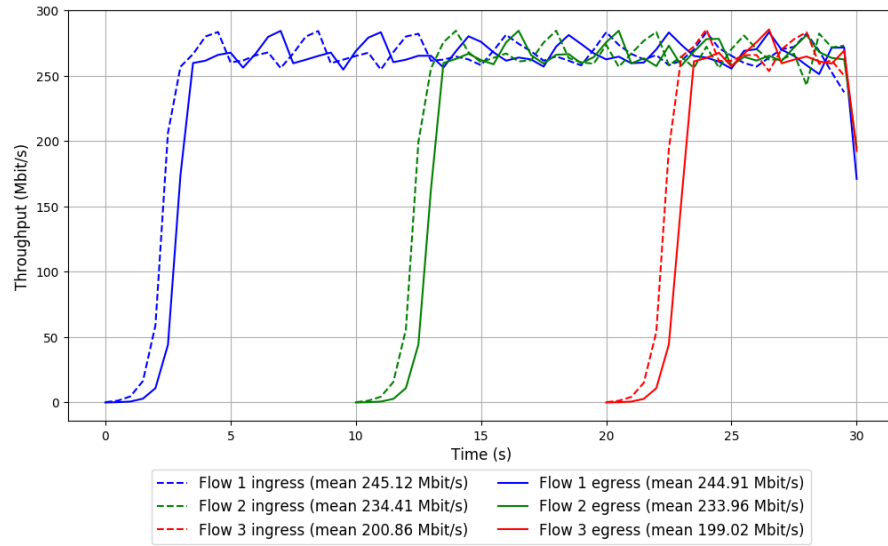


Run 1: Statistics of TCP Vegas

Start at: 2018-10-26 12:31:57
End at: 2018-10-26 12:32:27
Local clock offset: -0.286 ms
Remote clock offset: -0.077 ms

Below is generated by plot.py at 2018-10-26 16:47:43
Datalink statistics
-- Total of 3 flows:
Average throughput: 464.96 Mbit/s
95th percentile per-packet one-way delay: 133.914 ms
Loss rate: 1.53%
-- Flow 1:
Average throughput: 244.91 Mbit/s
95th percentile per-packet one-way delay: 133.921 ms
Loss rate: 0.97%
-- Flow 2:
Average throughput: 233.96 Mbit/s
95th percentile per-packet one-way delay: 133.941 ms
Loss rate: 1.52%
-- Flow 3:
Average throughput: 199.02 Mbit/s
95th percentile per-packet one-way delay: 133.841 ms
Loss rate: 3.56%

Run 1: Report of TCP Vegas — Data Link

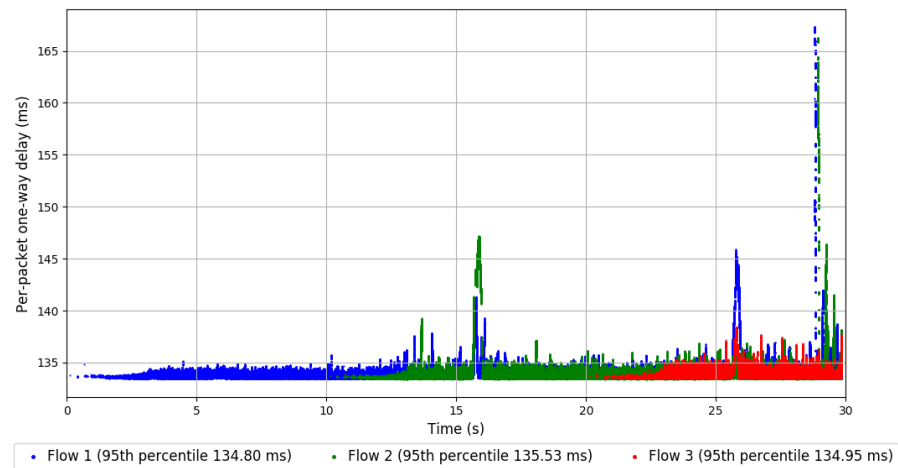
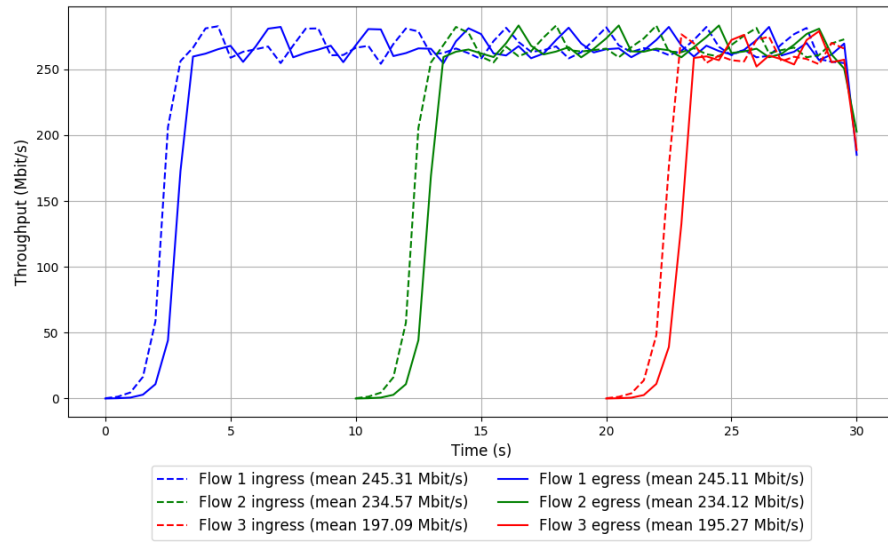


Run 2: Statistics of TCP Vegas

Start at: 2018-10-26 13:04:35
End at: 2018-10-26 13:05:05
Local clock offset: 0.477 ms
Remote clock offset: -0.089 ms

Below is generated by plot.py at 2018-10-26 16:49:29
Datalink statistics
-- Total of 3 flows:
Average throughput: 464.08 Mbit/s
95th percentile per-packet one-way delay: 135.031 ms
Loss rate: 1.52%
-- Flow 1:
Average throughput: 245.11 Mbit/s
95th percentile per-packet one-way delay: 134.801 ms
Loss rate: 0.97%
-- Flow 2:
Average throughput: 234.12 Mbit/s
95th percentile per-packet one-way delay: 135.527 ms
Loss rate: 1.52%
-- Flow 3:
Average throughput: 195.27 Mbit/s
95th percentile per-packet one-way delay: 134.950 ms
Loss rate: 3.61%

Run 2: Report of TCP Vegas — Data Link

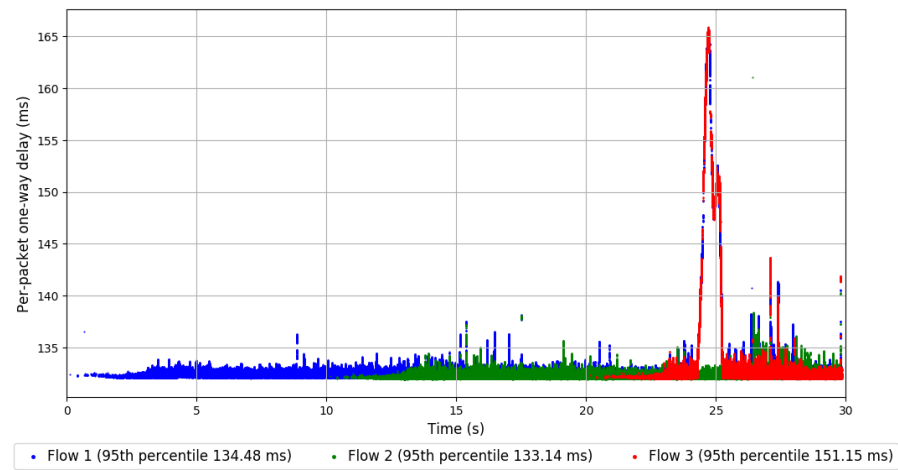
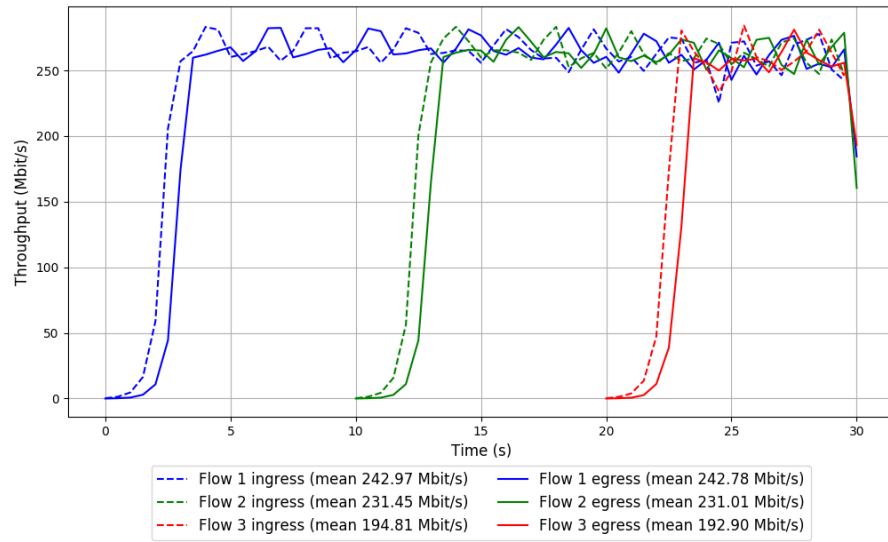


Run 3: Statistics of TCP Vegas

Start at: 2018-10-26 13:37:36
End at: 2018-10-26 13:38:06
Local clock offset: -0.958 ms
Remote clock offset: -0.144 ms

Below is generated by plot.py at 2018-10-26 16:49:29
Datalink statistics
-- Total of 3 flows:
Average throughput: 458.89 Mbit/s
95th percentile per-packet one-way delay: 134.401 ms
Loss rate: 1.54%
-- Flow 1:
Average throughput: 242.78 Mbit/s
95th percentile per-packet one-way delay: 134.484 ms
Loss rate: 0.98%
-- Flow 2:
Average throughput: 231.01 Mbit/s
95th percentile per-packet one-way delay: 133.138 ms
Loss rate: 1.54%
-- Flow 3:
Average throughput: 192.90 Mbit/s
95th percentile per-packet one-way delay: 151.145 ms
Loss rate: 3.66%

Run 3: Report of TCP Vegas — Data Link

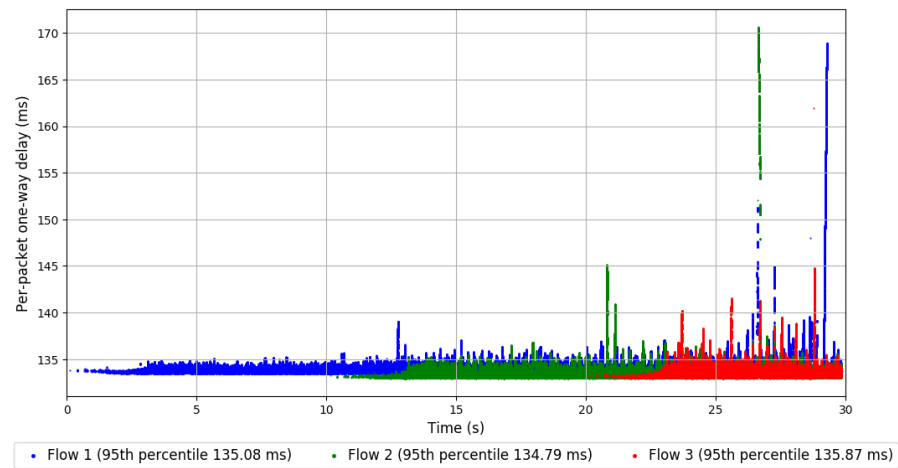
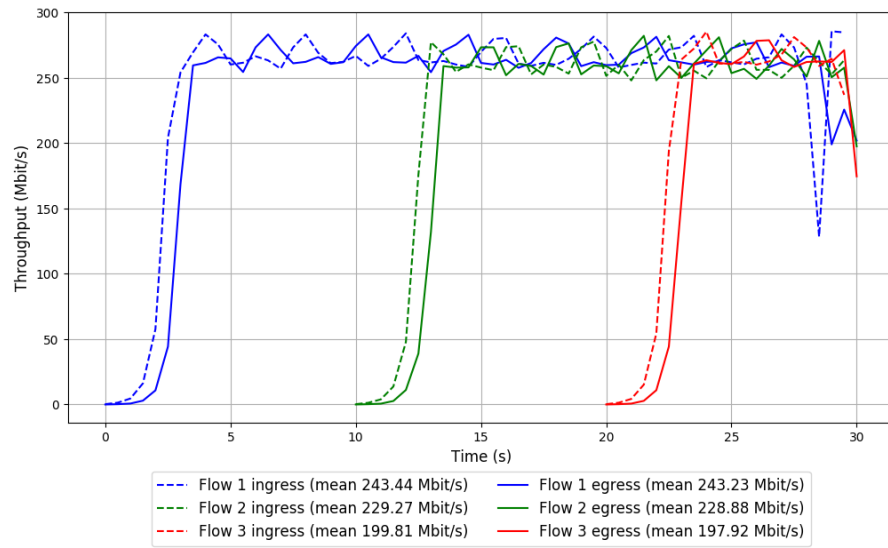


Run 4: Statistics of TCP Vegas

Start at: 2018-10-26 14:09:26
End at: 2018-10-26 14:09:56
Local clock offset: 0.11 ms
Remote clock offset: -0.148 ms

Below is generated by plot.py at 2018-10-26 16:52:52
Datalink statistics
-- Total of 3 flows:
Average throughput: 459.38 Mbit/s
95th percentile per-packet one-way delay: 135.063 ms
Loss rate: 1.53%
-- Flow 1:
Average throughput: 243.23 Mbit/s
95th percentile per-packet one-way delay: 135.080 ms
Loss rate: 0.98%
-- Flow 2:
Average throughput: 228.88 Mbit/s
95th percentile per-packet one-way delay: 134.794 ms
Loss rate: 1.50%
-- Flow 3:
Average throughput: 197.92 Mbit/s
95th percentile per-packet one-way delay: 135.873 ms
Loss rate: 3.58%

Run 4: Report of TCP Vegas — Data Link



Run 5: Statistics of TCP Vegas

Start at: 2018-10-26 14:41:35

End at: 2018-10-26 14:42:05

Local clock offset: -0.341 ms

Remote clock offset: 0.216 ms

Below is generated by plot.py at 2018-10-26 16:53:22

Datalink statistics

-- Total of 3 flows:

Average throughput: 460.58 Mbit/s

95th percentile per-packet one-way delay: 133.783 ms

Loss rate: 1.52%

-- Flow 1:

Average throughput: 240.13 Mbit/s

95th percentile per-packet one-way delay: 133.921 ms

Loss rate: 0.96%

-- Flow 2:

Average throughput: 234.17 Mbit/s

95th percentile per-packet one-way delay: 133.413 ms

Loss rate: 1.52%

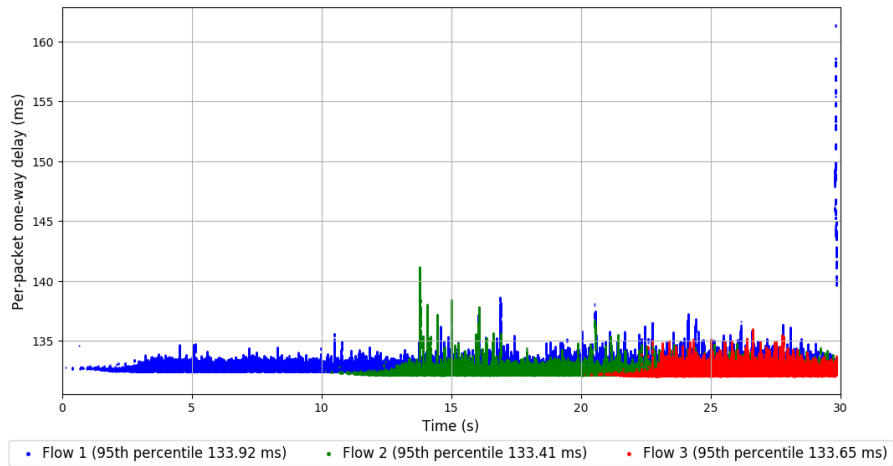
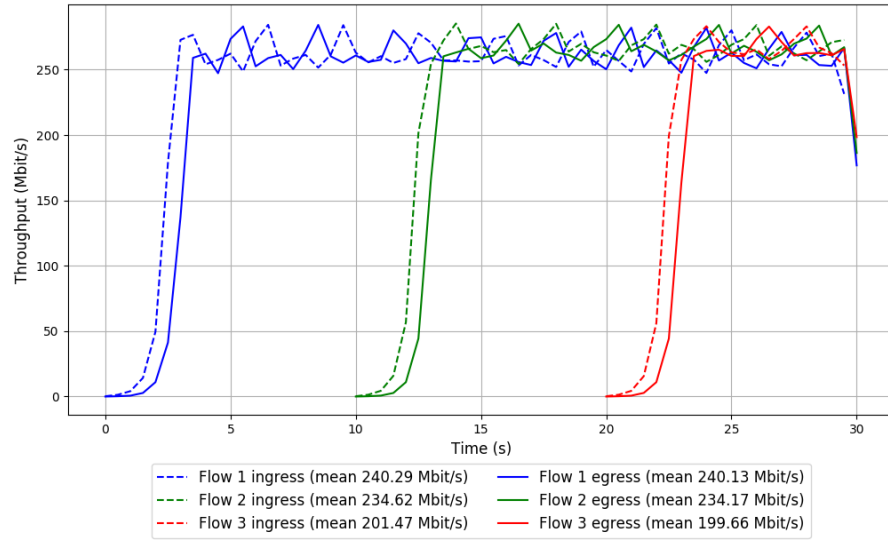
-- Flow 3:

Average throughput: 199.66 Mbit/s

95th percentile per-packet one-way delay: 133.647 ms

Loss rate: 3.54%

Run 5: Report of TCP Vegas — Data Link



Run 1: Statistics of Verus

Start at: 2018-10-26 12:22:50

End at: 2018-10-26 12:23:20

Local clock offset: -0.193 ms

Remote clock offset: -0.11 ms

Below is generated by plot.py at 2018-10-26 16:53:22

Datalink statistics

-- Total of 3 flows:

Average throughput: 148.61 Mbit/s

95th percentile per-packet one-way delay: 221.751 ms

Loss rate: 1.04%

-- Flow 1:

Average throughput: 90.15 Mbit/s

95th percentile per-packet one-way delay: 238.977 ms

Loss rate: 0.34%

-- Flow 2:

Average throughput: 73.83 Mbit/s

95th percentile per-packet one-way delay: 161.281 ms

Loss rate: 1.50%

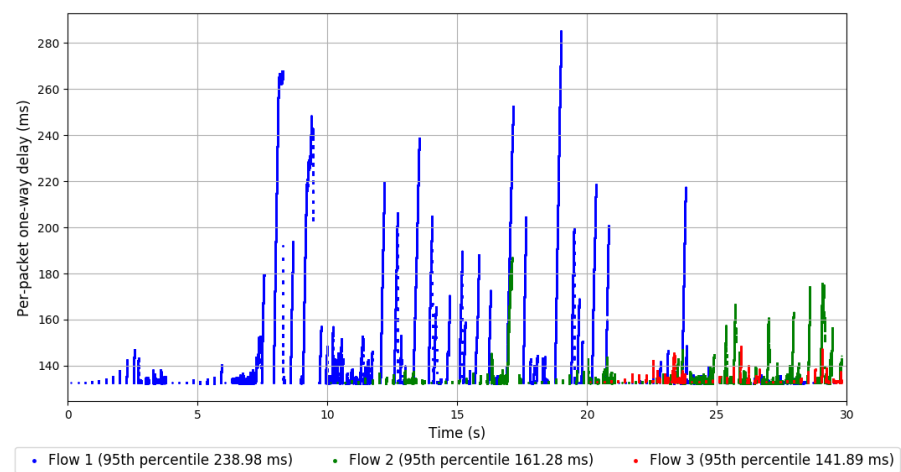
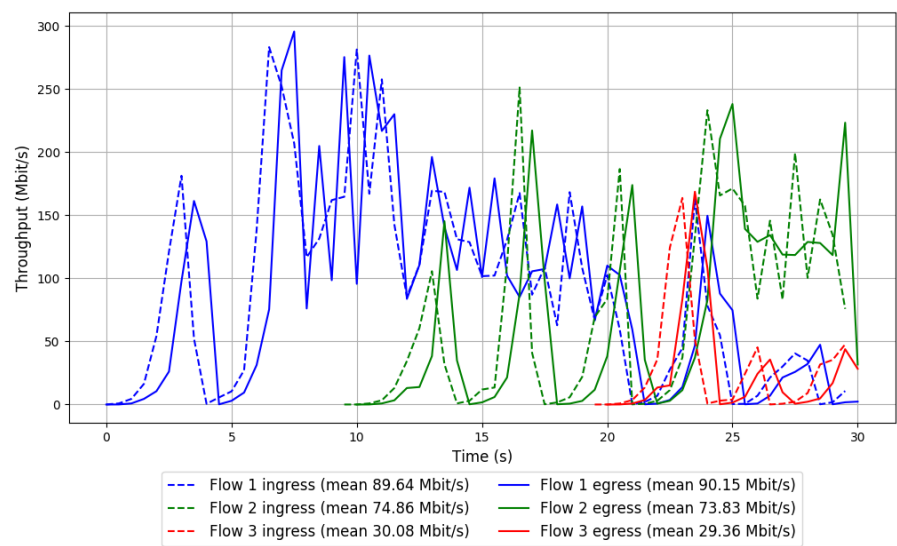
-- Flow 3:

Average throughput: 29.36 Mbit/s

95th percentile per-packet one-way delay: 141.892 ms

Loss rate: 5.00%

Run 1: Report of Verus — Data Link

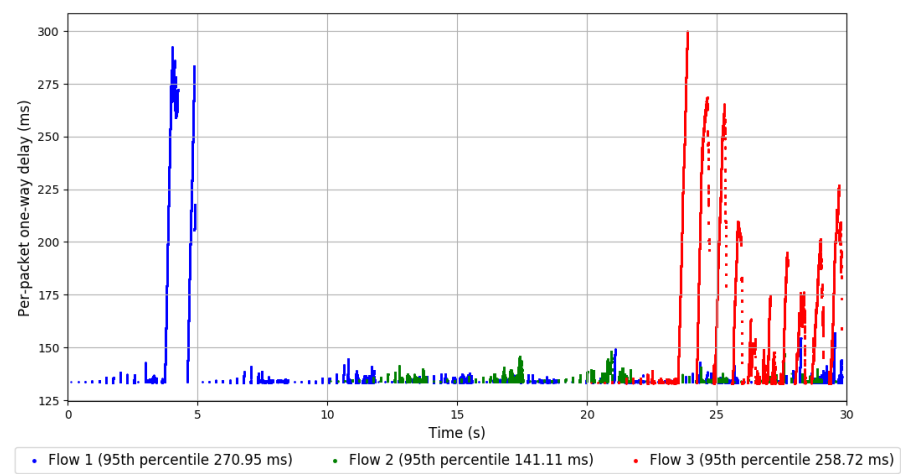
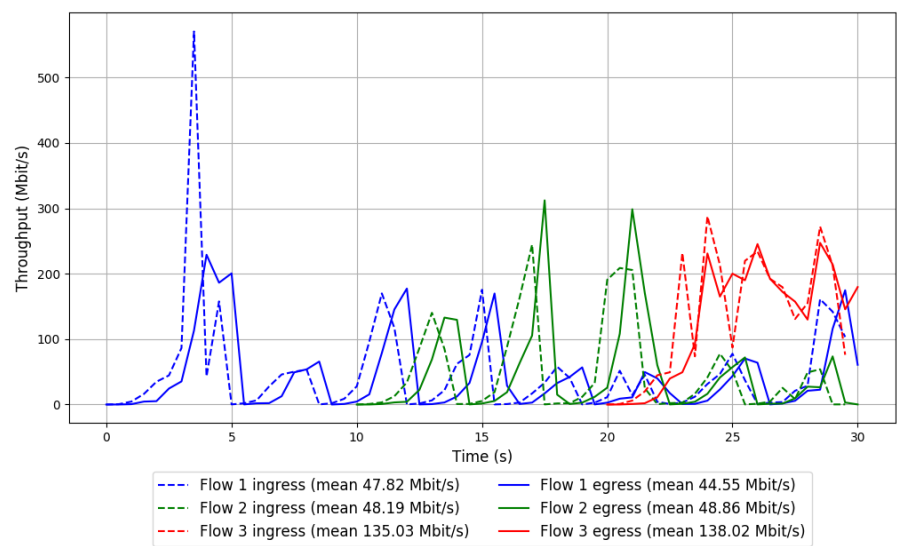


Run 2: Statistics of Verus

Start at: 2018-10-26 12:55:24
End at: 2018-10-26 12:55:54
Local clock offset: 0.322 ms
Remote clock offset: -0.468 ms

Below is generated by plot.py at 2018-10-26 16:53:22
Datalink statistics
-- Total of 3 flows:
Average throughput: 121.43 Mbit/s
95th percentile per-packet one-way delay: 260.083 ms
Loss rate: 3.24%
-- Flow 1:
Average throughput: 44.55 Mbit/s
95th percentile per-packet one-way delay: 270.952 ms
Loss rate: 7.68%
-- Flow 2:
Average throughput: 48.86 Mbit/s
95th percentile per-packet one-way delay: 141.107 ms
Loss rate: 0.01%
-- Flow 3:
Average throughput: 138.02 Mbit/s
95th percentile per-packet one-way delay: 258.721 ms
Loss rate: 0.78%

Run 2: Report of Verus — Data Link

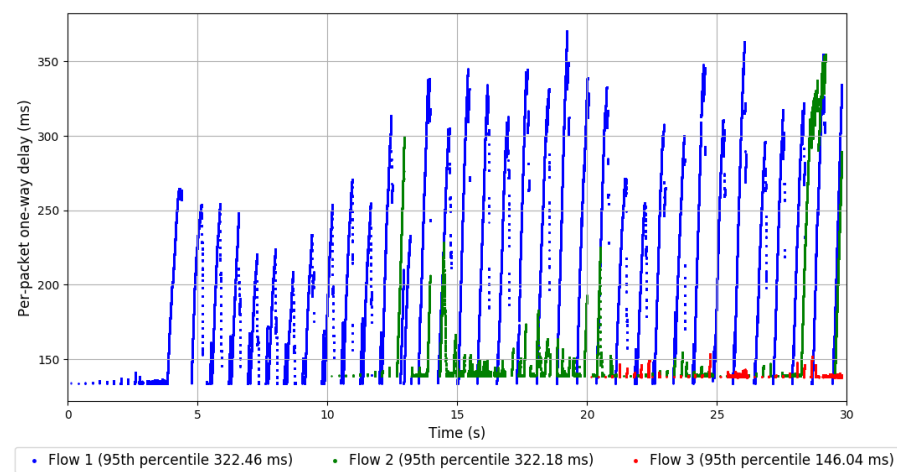
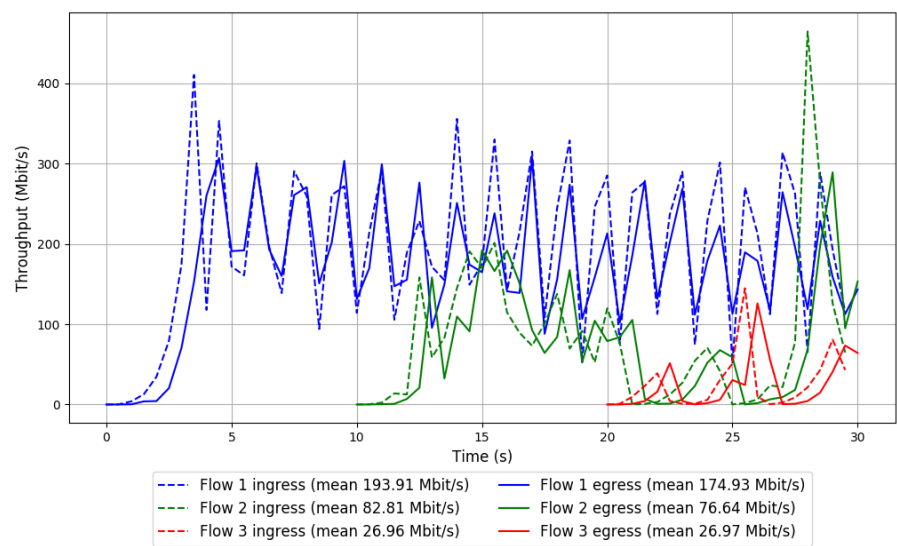


Run 3: Statistics of Verus

Start at: 2018-10-26 13:28:18
End at: 2018-10-26 13:28:48
Local clock offset: -0.058 ms
Remote clock offset: -0.464 ms

Below is generated by plot.py at 2018-10-26 16:56:55
Datalink statistics
-- Total of 3 flows:
Average throughput: 234.47 Mbit/s
95th percentile per-packet one-way delay: 321.615 ms
Loss rate: 8.81%
-- Flow 1:
Average throughput: 174.93 Mbit/s
95th percentile per-packet one-way delay: 322.464 ms
Loss rate: 9.74%
-- Flow 2:
Average throughput: 76.64 Mbit/s
95th percentile per-packet one-way delay: 322.180 ms
Loss rate: 6.88%
-- Flow 3:
Average throughput: 26.97 Mbit/s
95th percentile per-packet one-way delay: 146.043 ms
Loss rate: 0.14%

Run 3: Report of Verus — Data Link

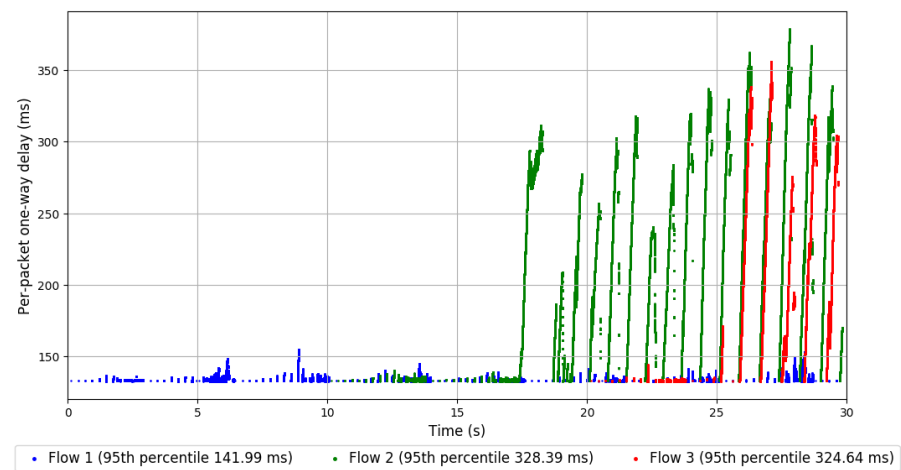
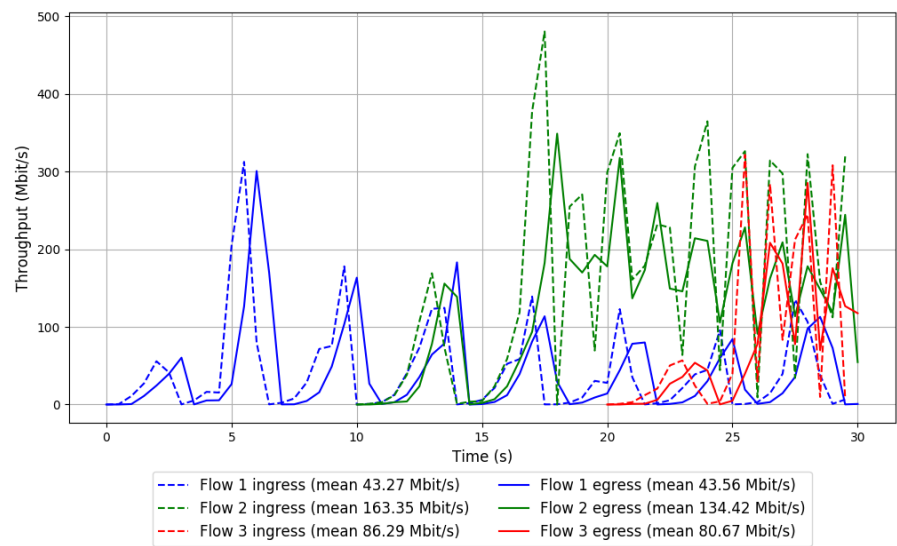


Run 4: Statistics of Verus

Start at: 2018-10-26 14:00:47
End at: 2018-10-26 14:01:17
Local clock offset: -0.307 ms
Remote clock offset: -0.164 ms

Below is generated by plot.py at 2018-10-26 16:56:55
Datalink statistics
-- Total of 3 flows:
Average throughput: 158.16 Mbit/s
95th percentile per-packet one-way delay: 320.208 ms
Loss rate: 12.91%
-- Flow 1:
Average throughput: 43.56 Mbit/s
95th percentile per-packet one-way delay: 141.985 ms
Loss rate: 0.25%
-- Flow 2:
Average throughput: 134.42 Mbit/s
95th percentile per-packet one-way delay: 328.391 ms
Loss rate: 18.56%
-- Flow 3:
Average throughput: 80.67 Mbit/s
95th percentile per-packet one-way delay: 324.636 ms
Loss rate: 10.53%

Run 4: Report of Verus — Data Link



Run 5: Statistics of Verus

Start at: 2018-10-26 14:32:25

End at: 2018-10-26 14:32:55

Local clock offset: -1.078 ms

Remote clock offset: 0.268 ms

Below is generated by plot.py at 2018-10-26 16:56:55

Datalink statistics

-- Total of 3 flows:

Average throughput: 172.68 Mbit/s

95th percentile per-packet one-way delay: 281.580 ms

Loss rate: 5.41%

-- Flow 1:

Average throughput: 91.06 Mbit/s

95th percentile per-packet one-way delay: 160.623 ms

Loss rate: 0.07%

-- Flow 2:

Average throughput: 58.29 Mbit/s

95th percentile per-packet one-way delay: 296.617 ms

Loss rate: 9.06%

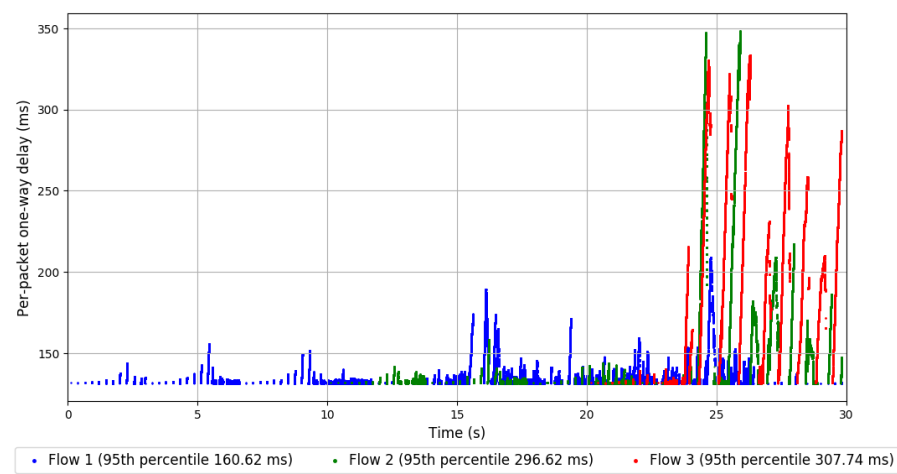
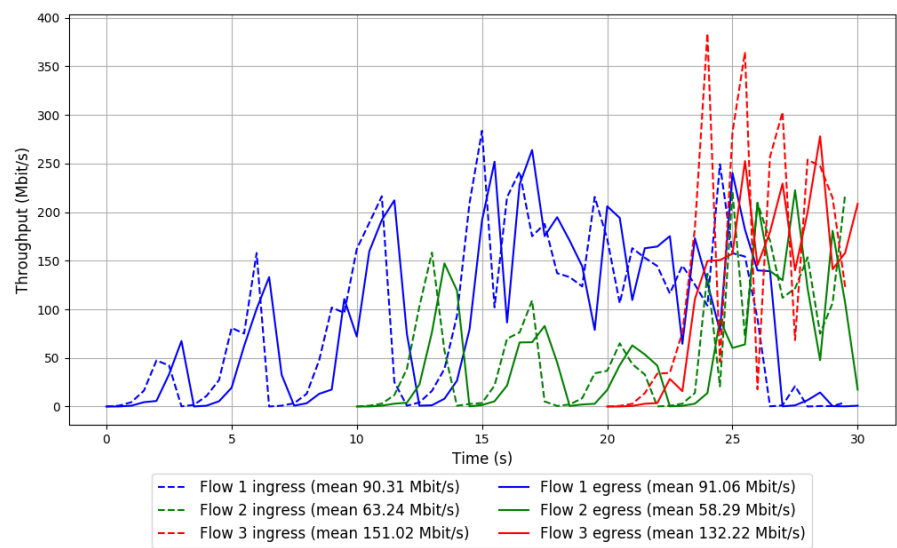
-- Flow 3:

Average throughput: 132.22 Mbit/s

95th percentile per-packet one-way delay: 307.739 ms

Loss rate: 12.17%

Run 5: Report of Verus — Data Link

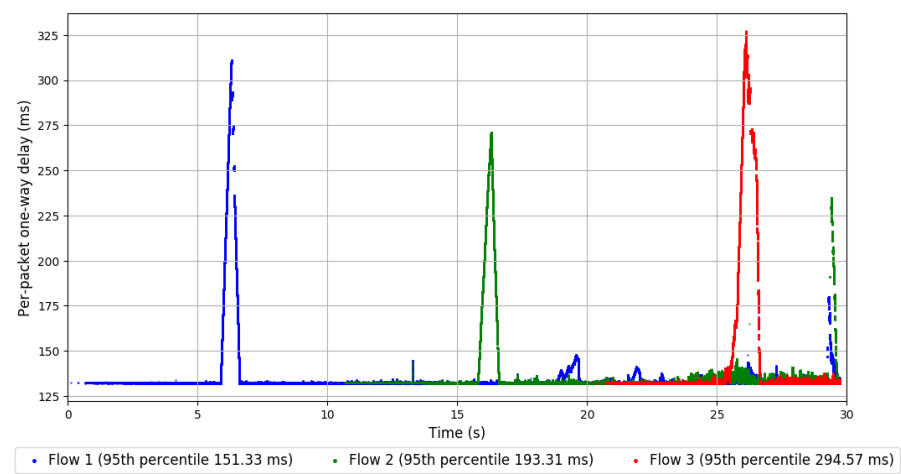
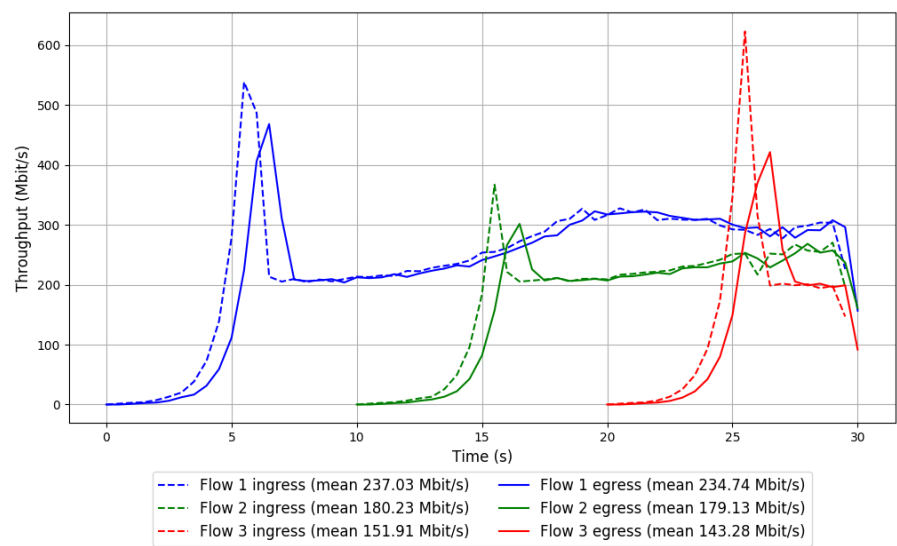


Run 1: Statistics of PCC-Vivace

Start at: 2018-10-26 12:20:55
End at: 2018-10-26 12:21:25
Local clock offset: -0.666 ms
Remote clock offset: -0.085 ms

Below is generated by plot.py at 2018-10-26 16:57:44
Datalink statistics
-- Total of 3 flows:
Average throughput: 399.67 Mbit/s
95th percentile per-packet one-way delay: 212.685 ms
Loss rate: 2.66%
-- Flow 1:
Average throughput: 234.74 Mbit/s
95th percentile per-packet one-way delay: 151.332 ms
Loss rate: 1.85%
-- Flow 2:
Average throughput: 179.13 Mbit/s
95th percentile per-packet one-way delay: 193.309 ms
Loss rate: 1.94%
-- Flow 3:
Average throughput: 143.28 Mbit/s
95th percentile per-packet one-way delay: 294.570 ms
Loss rate: 8.25%

Run 1: Report of PCC-Vivace — Data Link

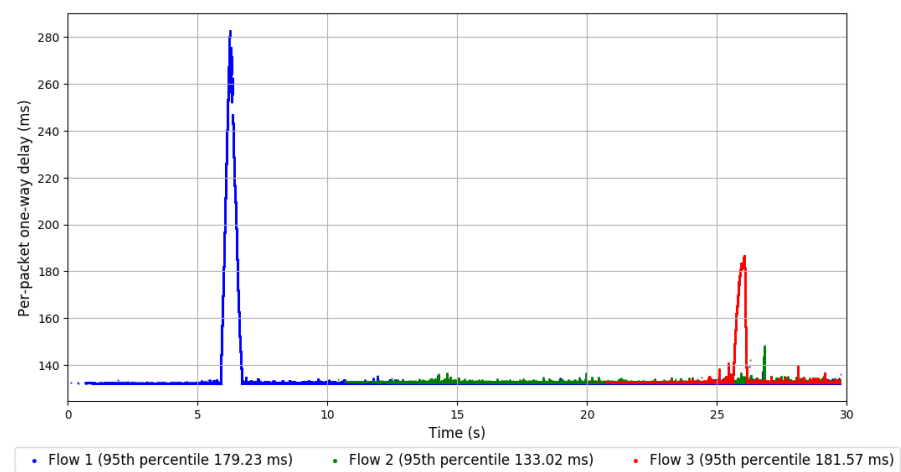
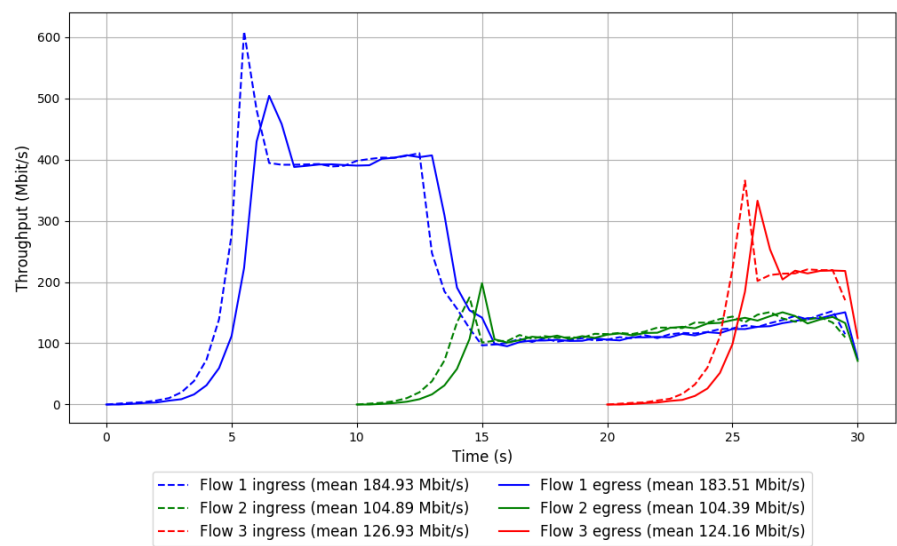


Run 2: Statistics of PCC-Vivace

Start at: 2018-10-26 12:53:36
End at: 2018-10-26 12:54:06
Local clock offset: -0.415 ms
Remote clock offset: -0.127 ms

Below is generated by plot.py at 2018-10-26 16:57:44
Datalink statistics
-- Total of 3 flows:
Average throughput: 292.78 Mbit/s
95th percentile per-packet one-way delay: 164.959 ms
Loss rate: 2.15%
-- Flow 1:
Average throughput: 183.51 Mbit/s
95th percentile per-packet one-way delay: 179.233 ms
Loss rate: 1.66%
-- Flow 2:
Average throughput: 104.39 Mbit/s
95th percentile per-packet one-way delay: 133.024 ms
Loss rate: 1.83%
-- Flow 3:
Average throughput: 124.16 Mbit/s
95th percentile per-packet one-way delay: 181.573 ms
Loss rate: 4.85%

Run 2: Report of PCC-Vivace — Data Link

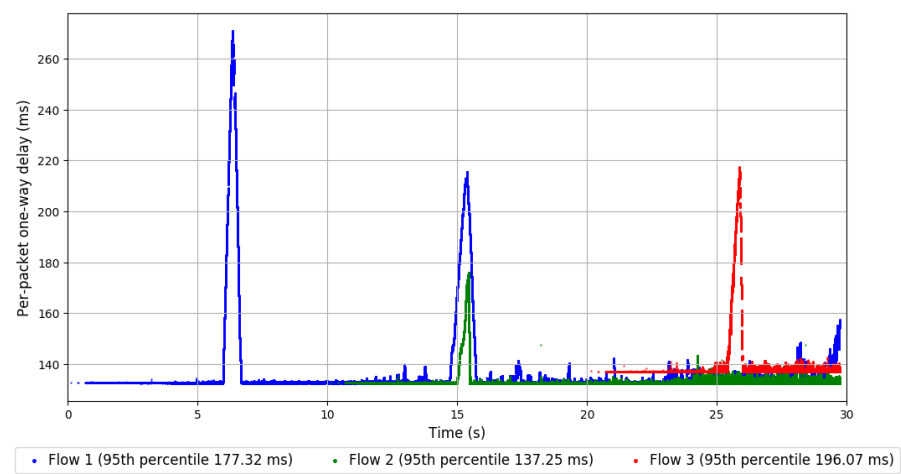
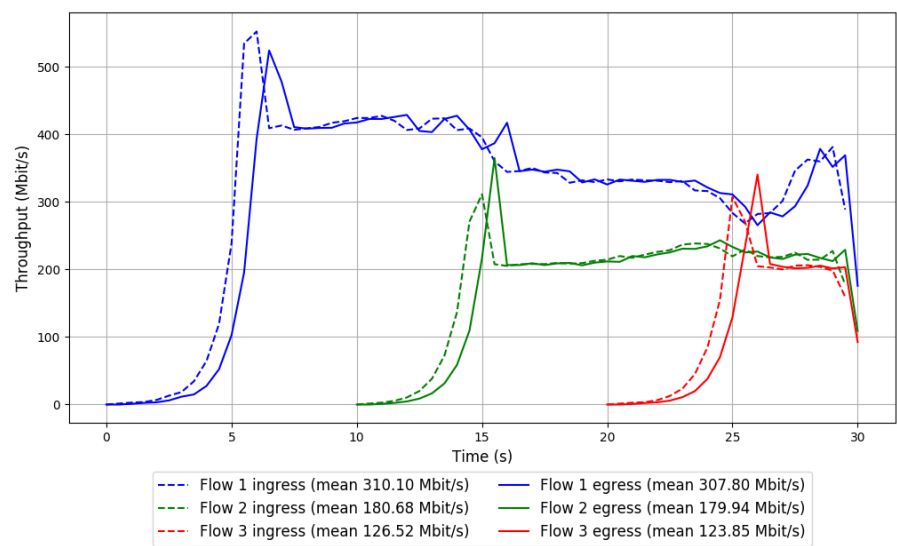


Run 3: Statistics of PCC-Vivace

Start at: 2018-10-26 13:26:15
End at: 2018-10-26 13:26:45
Local clock offset: -0.74 ms
Remote clock offset: -0.516 ms

Below is generated by plot.py at 2018-10-26 16:58:40
Datalink statistics
-- Total of 3 flows:
Average throughput: 466.97 Mbit/s
95th percentile per-packet one-way delay: 166.983 ms
Loss rate: 1.96%
-- Flow 1:
Average throughput: 307.80 Mbit/s
95th percentile per-packet one-way delay: 177.325 ms
Loss rate: 1.65%
-- Flow 2:
Average throughput: 179.94 Mbit/s
95th percentile per-packet one-way delay: 137.247 ms
Loss rate: 1.77%
-- Flow 3:
Average throughput: 123.85 Mbit/s
95th percentile per-packet one-way delay: 196.067 ms
Loss rate: 4.85%

Run 3: Report of PCC-Vivace — Data Link

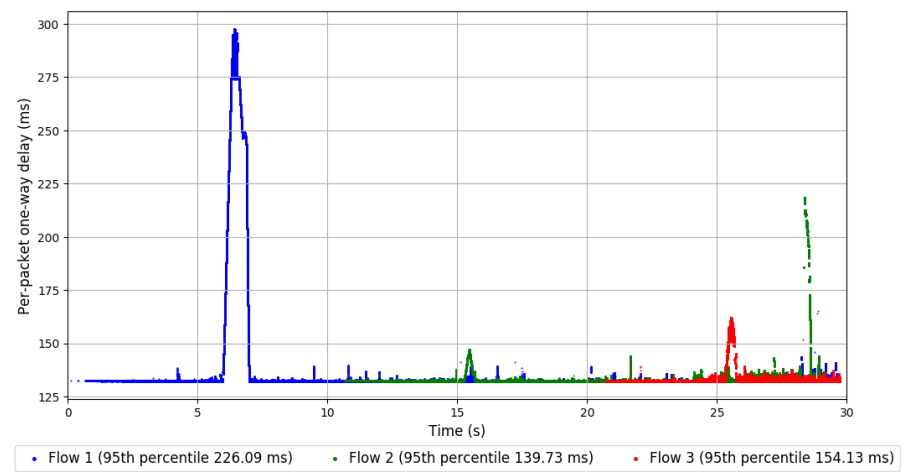
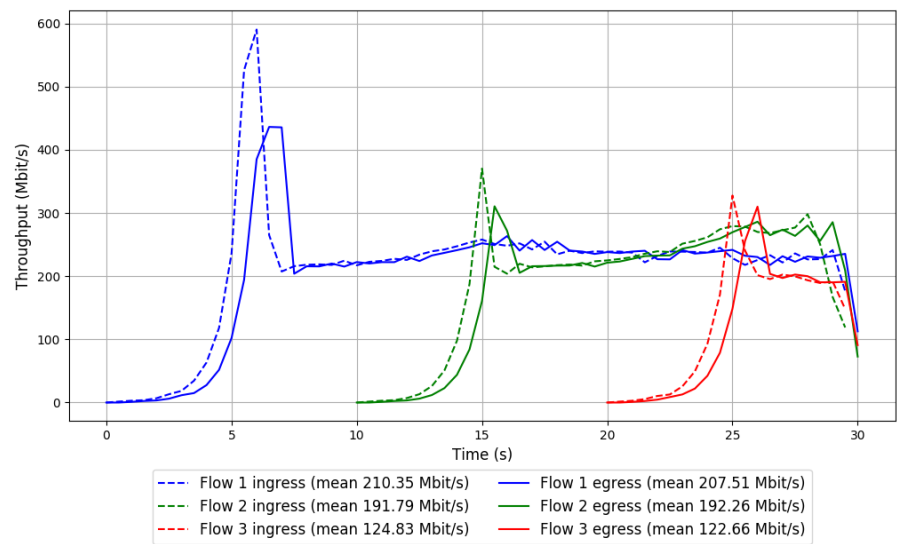


Run 4: Statistics of PCC-Vivace

Start at: 2018-10-26 13:58:55
End at: 2018-10-26 13:59:25
Local clock offset: -0.7 ms
Remote clock offset: -0.156 ms

Below is generated by plot.py at 2018-10-26 16:58:42
Datalink statistics
-- Total of 3 flows:
Average throughput: 374.50 Mbit/s
95th percentile per-packet one-way delay: 153.804 ms
Loss rate: 2.11%
-- Flow 1:
Average throughput: 207.51 Mbit/s
95th percentile per-packet one-way delay: 226.095 ms
Loss rate: 2.25%
-- Flow 2:
Average throughput: 192.26 Mbit/s
95th percentile per-packet one-way delay: 139.732 ms
Loss rate: 1.12%
-- Flow 3:
Average throughput: 122.66 Mbit/s
95th percentile per-packet one-way delay: 154.129 ms
Loss rate: 4.44%

Run 4: Report of PCC-Vivace — Data Link

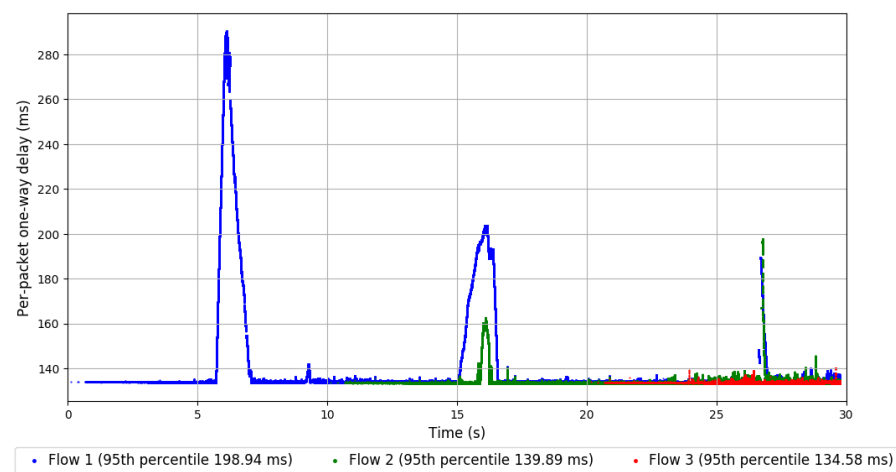
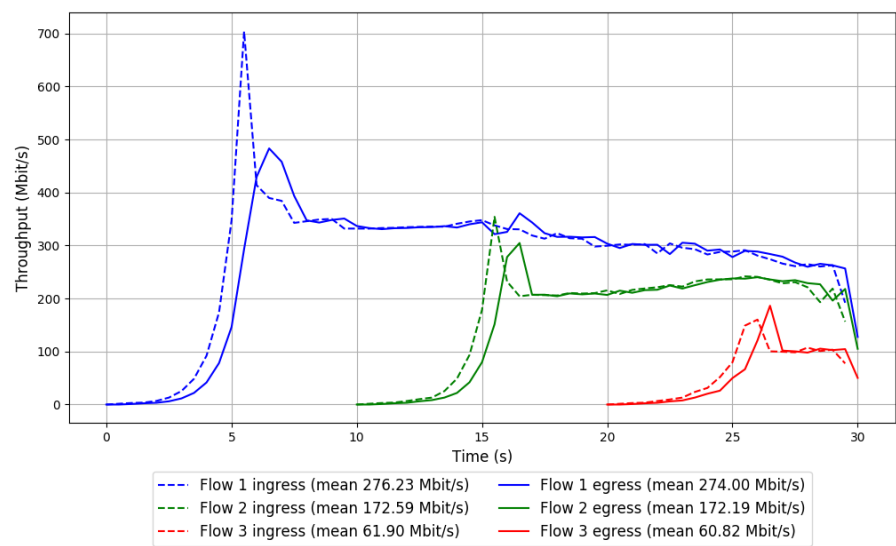


Run 5: Statistics of PCC-Vivace

Start at: 2018-10-26 14:30:32
End at: 2018-10-26 14:31:02
Local clock offset: 0.483 ms
Remote clock offset: -0.169 ms

Below is generated by plot.py at 2018-10-26 16:58:47
Datalink statistics
-- Total of 3 flows:
Average throughput: 407.70 Mbit/s
95th percentile per-packet one-way delay: 189.899 ms
Loss rate: 1.80%
-- Flow 1:
Average throughput: 274.00 Mbit/s
95th percentile per-packet one-way delay: 198.938 ms
Loss rate: 1.70%
-- Flow 2:
Average throughput: 172.19 Mbit/s
95th percentile per-packet one-way delay: 139.890 ms
Loss rate: 1.57%
-- Flow 3:
Average throughput: 60.82 Mbit/s
95th percentile per-packet one-way delay: 134.577 ms
Loss rate: 4.40%

Run 5: Report of PCC-Vivace — Data Link

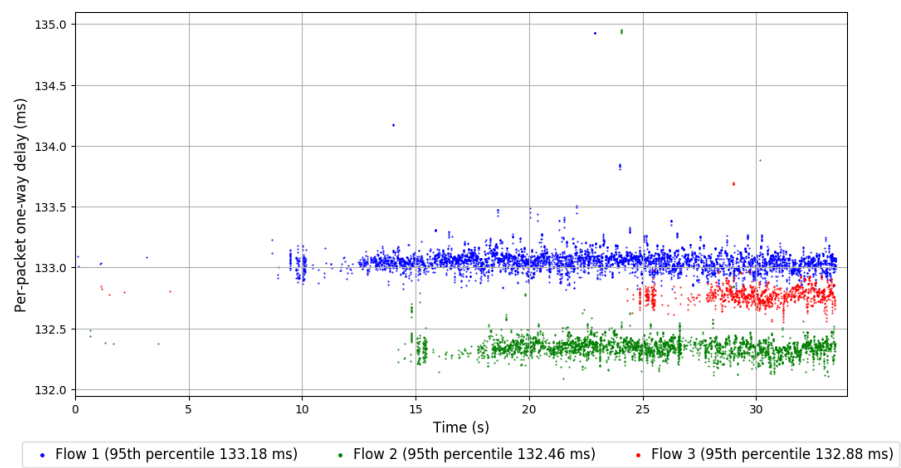
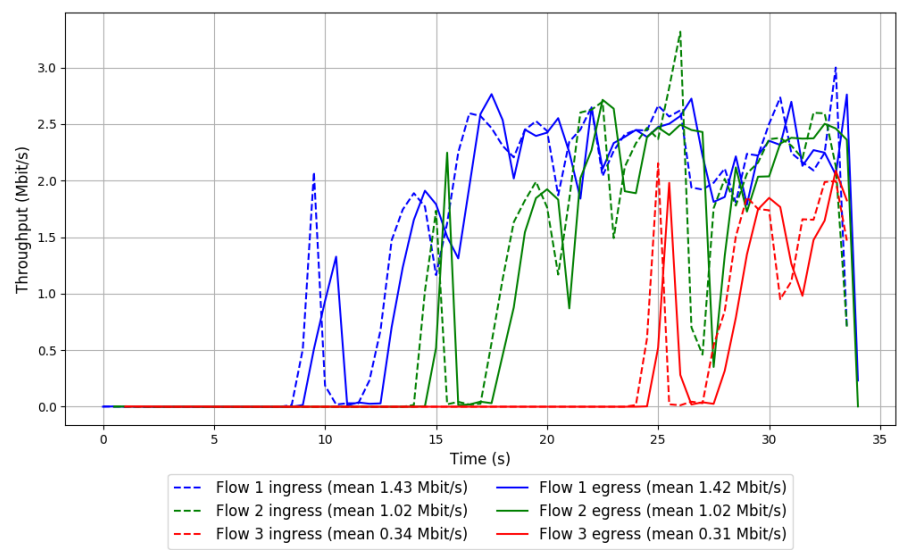


Run 1: Statistics of WebRTC media

Start at: 2018-10-26 12:33:45
End at: 2018-10-26 12:34:15
Local clock offset: -0.408 ms
Remote clock offset: -0.154 ms

Below is generated by plot.py at 2018-10-26 16:58:47
Datalink statistics
-- Total of 3 flows:
Average throughput: 2.71 Mbit/s
95th percentile per-packet one-way delay: 133.139 ms
Loss rate: 2.45%
-- Flow 1:
Average throughput: 1.42 Mbit/s
95th percentile per-packet one-way delay: 133.178 ms
Loss rate: 1.45%
-- Flow 2:
Average throughput: 1.02 Mbit/s
95th percentile per-packet one-way delay: 132.457 ms
Loss rate: 1.74%
-- Flow 3:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 132.880 ms
Loss rate: 9.01%

Run 1: Report of WebRTC media — Data Link

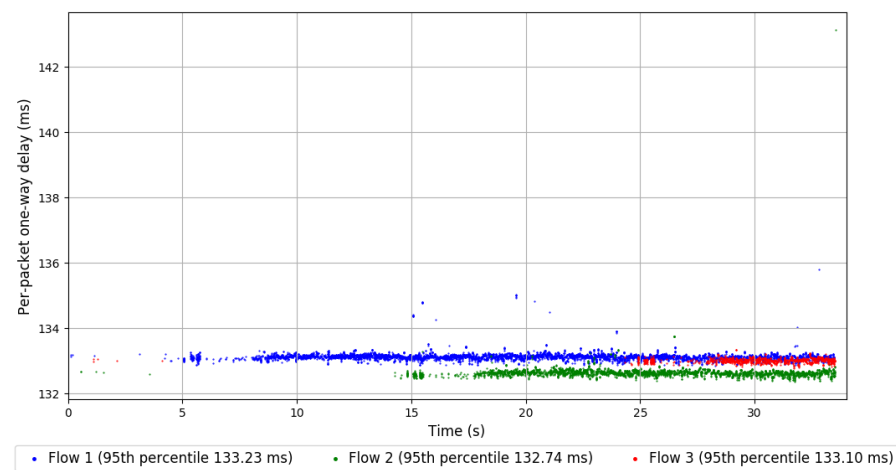
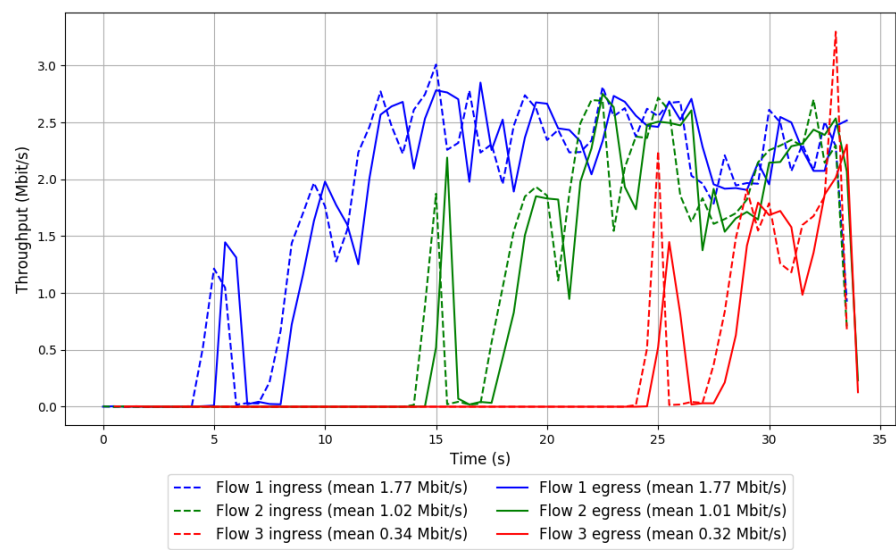


Run 2: Statistics of WebRTC media

Start at: 2018-10-26 13:06:24
End at: 2018-10-26 13:06:54
Local clock offset: -0.085 ms
Remote clock offset: -0.096 ms

Below is generated by plot.py at 2018-10-26 16:58:47
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.07 Mbit/s
95th percentile per-packet one-way delay: 133.202 ms
Loss rate: 2.07%
-- Flow 1:
Average throughput: 1.77 Mbit/s
95th percentile per-packet one-way delay: 133.230 ms
Loss rate: 1.16%
-- Flow 2:
Average throughput: 1.01 Mbit/s
95th percentile per-packet one-way delay: 132.738 ms
Loss rate: 1.70%
-- Flow 3:
Average throughput: 0.32 Mbit/s
95th percentile per-packet one-way delay: 133.102 ms
Loss rate: 8.04%

Run 2: Report of WebRTC media — Data Link

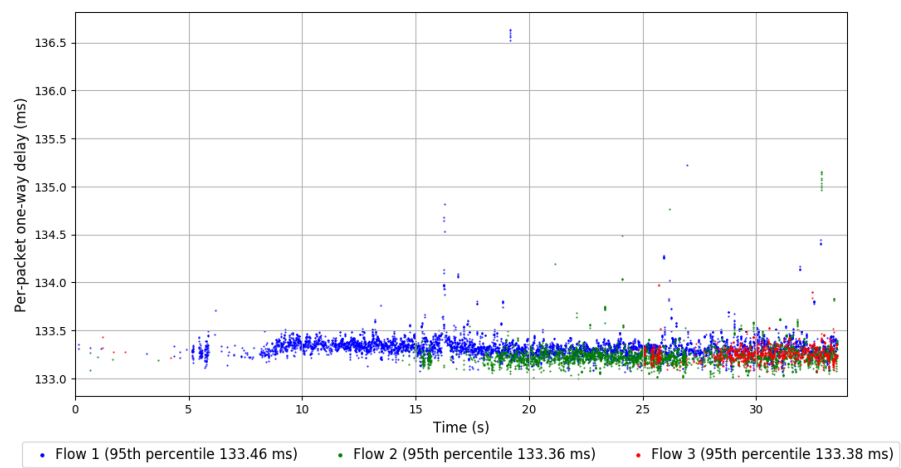
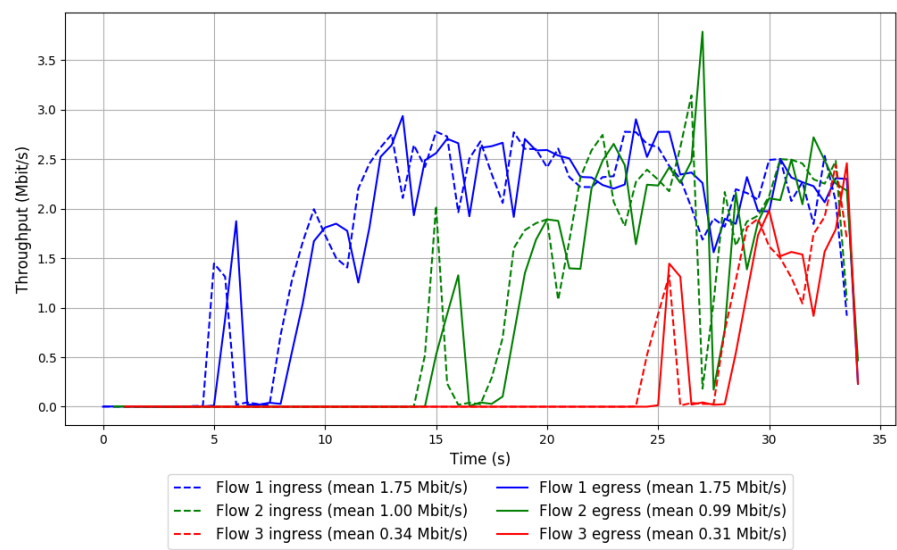


Run 3: Statistics of WebRTC media

Start at: 2018-10-26 13:39:28
End at: 2018-10-26 13:39:58
Local clock offset: 0.134 ms
Remote clock offset: -0.129 ms

Below is generated by plot.py at 2018-10-26 16:58:47
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.02 Mbit/s
95th percentile per-packet one-way delay: 133.438 ms
Loss rate: 2.20%
-- Flow 1:
Average throughput: 1.75 Mbit/s
95th percentile per-packet one-way delay: 133.457 ms
Loss rate: 0.97%
-- Flow 2:
Average throughput: 0.99 Mbit/s
95th percentile per-packet one-way delay: 133.358 ms
Loss rate: 2.03%
-- Flow 3:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 133.385 ms
Loss rate: 9.35%

Run 3: Report of WebRTC media — Data Link

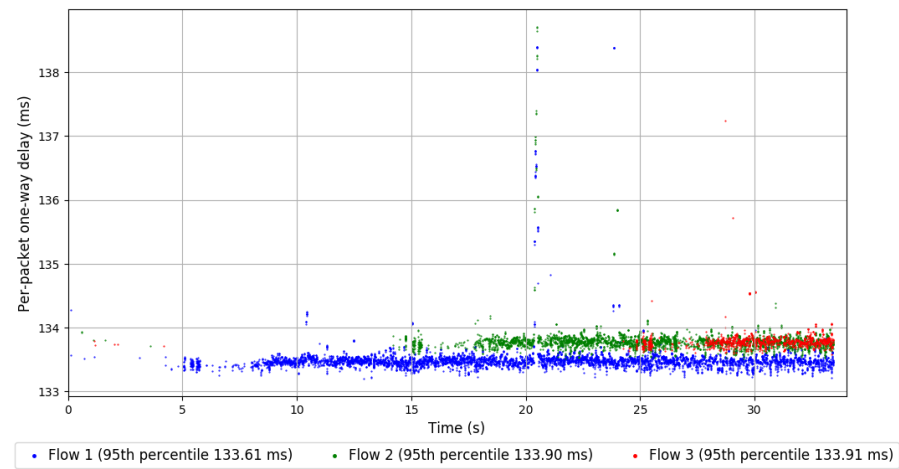
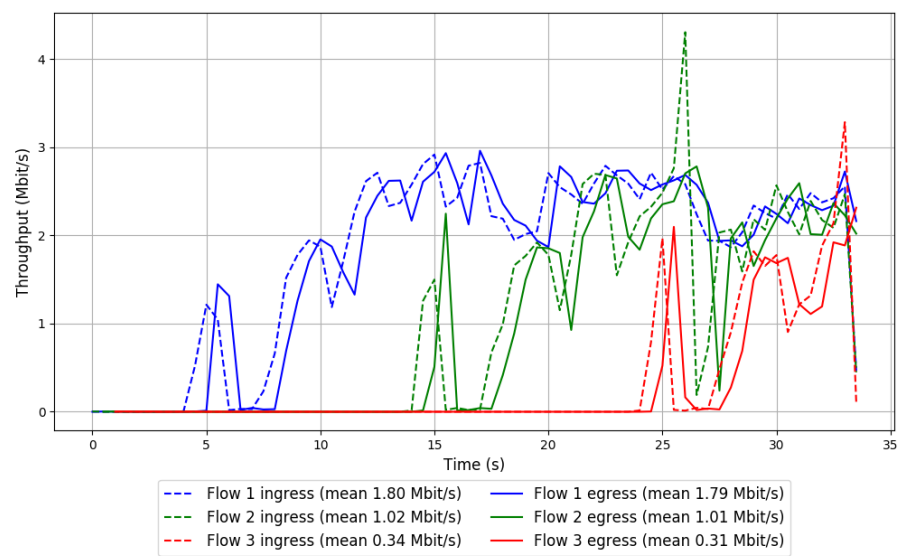


Run 4: Statistics of WebRTC media

Start at: 2018-10-26 14:11:14
End at: 2018-10-26 14:11:44
Local clock offset: -0.161 ms
Remote clock offset: -0.506 ms

Below is generated by plot.py at 2018-10-26 16:58:47
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.08 Mbit/s
95th percentile per-packet one-way delay: 133.863 ms
Loss rate: 2.10%
-- Flow 1:
Average throughput: 1.79 Mbit/s
95th percentile per-packet one-way delay: 133.606 ms
Loss rate: 1.16%
-- Flow 2:
Average throughput: 1.01 Mbit/s
95th percentile per-packet one-way delay: 133.898 ms
Loss rate: 1.99%
-- Flow 3:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 133.913 ms
Loss rate: 7.68%

Run 4: Report of WebRTC media — Data Link



Run 5: Statistics of WebRTC media

Start at: 2018-10-26 14:43:23
End at: 2018-10-26 14:43:53
Local clock offset: 0.115 ms
Remote clock offset: -0.164 ms

Below is generated by plot.py at 2018-10-26 16:58:47
Datalink statistics
-- Total of 3 flows:
Average throughput: 3.07 Mbit/s
95th percentile per-packet one-way delay: 133.538 ms
Loss rate: 2.13%
-- Flow 1:
Average throughput: 1.79 Mbit/s
95th percentile per-packet one-way delay: 132.624 ms
Loss rate: 1.16%
-- Flow 2:
Average throughput: 1.00 Mbit/s
95th percentile per-packet one-way delay: 133.604 ms
Loss rate: 2.37%
-- Flow 3:
Average throughput: 0.31 Mbit/s
95th percentile per-packet one-way delay: 133.210 ms
Loss rate: 6.77%

Run 5: Report of WebRTC media — Data Link

