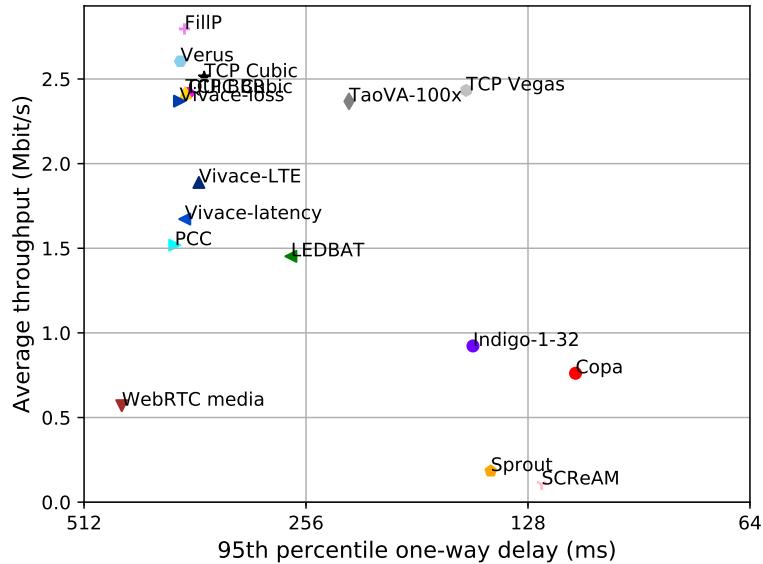


Pantheon Report

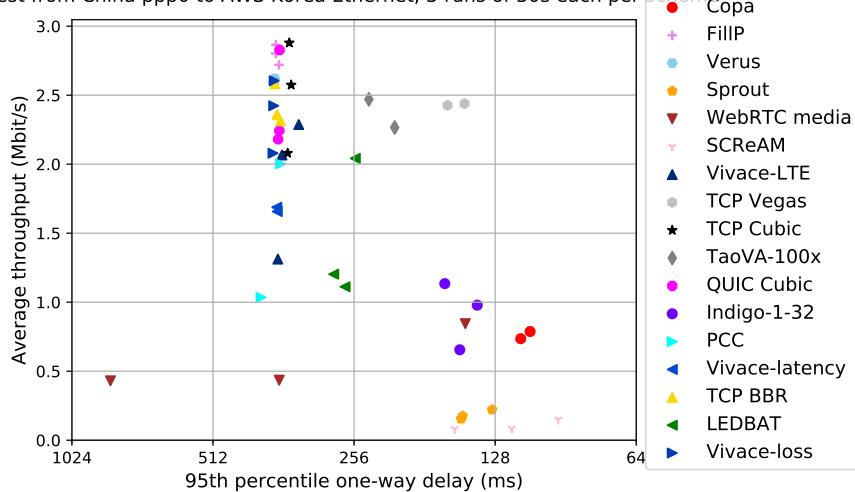
Generated at 2018-01-31 09:32:22 (UTC).
Data path: China ppp0 (*remote*) → AWS Korea Ethernet (*local*).
Repeated the test of 17 congestion control schemes 3 times.
Each test lasted for 30 seconds running 1 flow.
Increased UDP receive buffer to 16 MB (default) and 32 MB (max).
Tested BBR with qdisc of Fair Queuing (**fq**), and other schemes with the default Linux qdisc (**pfifo_fast**).
NTP offsets were measured against `ntp.nict.jp` and have been applied to correct the timestamps in logs.

```
Git summary:  
branch: master @ 70217998b3c9a7166a95460a70c0854d1326e100  
third_party/calibrated_koho @ 3cb73c0d1c0322cdfae446ea37a522e53227db50  
  M datagrump/sender.cc  
third_party/fillp @ fb9c9ab842e5614ad52911a76fb9bd1c1b0dca86  
third_party/genericCC @ 80b516c448f795fd6e9675f7177b69c622f07da8  
third_party/indigo @ a9b2060d39e4da2e8987e893e3eca2a6c7cd0ab9  
third_party/indigo-1-layer-128-unit @ 3ae9e4ef4230db7484501f82ce8b377695f2f66d  
third_party/indigo-1-layer-32-unit @ 2601c92e4aa9d58d38dc4dfe0ecdbf90c077e64d  
third_party/indigo-1-layer-32-unit-no-calib @ 1f3a7f75b41135ed5b540c0fd3505939528e2a5f  
third_party/indigo-no-calib @ 7224f2202e8a044d8306fa0b983ad84360c53d89  
third_party/koho_cc @ f0f2e693303aee82ea808e6928eac4f1083a6681  
  M datagrump/sender.cc  
third_party/libutp @ b3465b942e2826f2b179aab4a906ce6bb7cf3cf  
third_party/pantheon-tunnel @ fb1053193c2861da659ba9013db26744ccfcf993  
third_party/pcc @ 1afc958fa0d66d18b623c091a55fec872b4981e1  
  M receiver/src/buffer.h  
  M receiver/src/core.cpp  
  M sender/src/buffer.h  
  M sender/src/core.cpp  
third_party/proto-quic @ 77961f1a82733a86b42f1bc8143ebc978f3cff42  
third_party/scream @ c3370fd7bd17265a79aeb34e4016ad23f5965885  
third_party/sourdough @ f1a14bffe749737437f61b1eaeeb30b267cde681  
third_party/sprout @ 6f2efe6e088d91066a9f023df375eee2665089ce  
  M src/examples/cellsim.cc  
  M src/examples/sproutbt2.cc  
  M src/network/sproutconn.cc  
third_party/verus @ d4b447ea74c6c60a261149af2629562939f9a494  
  M src/verus.hpp  
  M tools/plot.py  
third_party/vivace @ 7a4ba531e75b4a6f66f5c4580192120401784ce3  
third_party/webrtc @ a488197ddd041ace68a42849b2540ad834825f42
```

test from China ppp0 to AWS Korea Ethernet, 3 runs of 30s each per scheme
(mean of all runs by scheme)



test from China ppp0 to AWS Korea Ethernet, 3 runs of 30s each per scheme



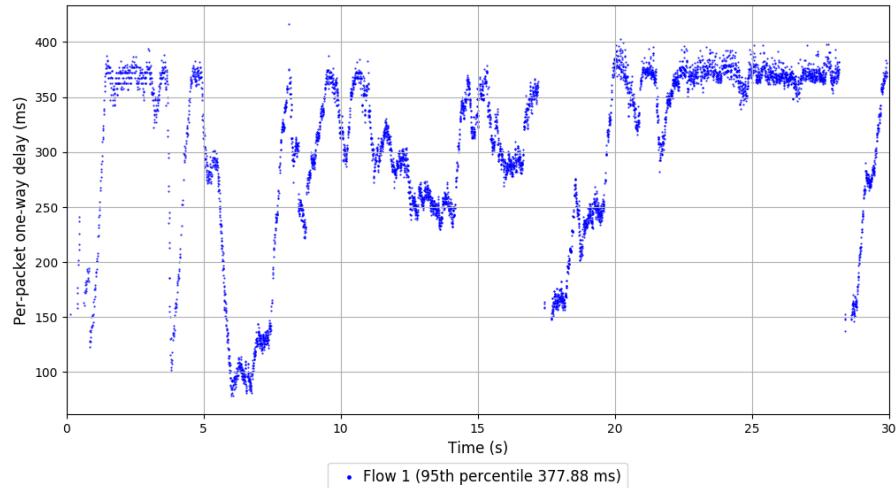
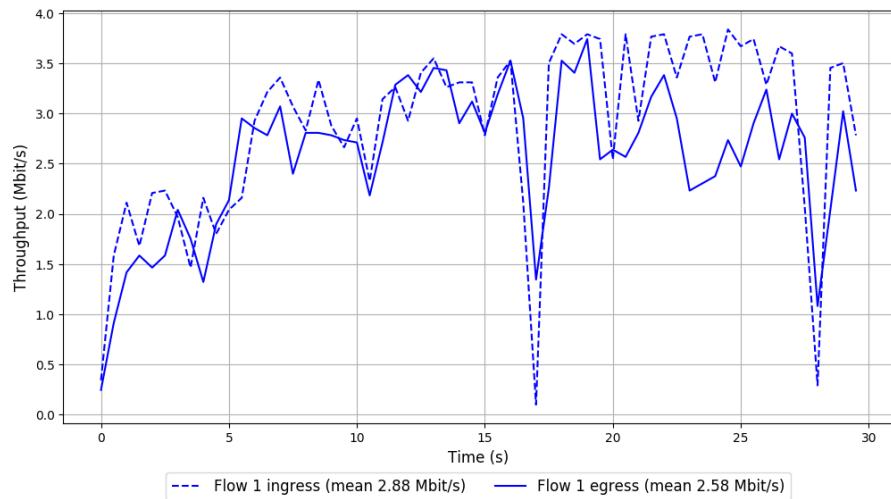
scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	3	2.42	373.08	7.88
TCP Cubic	3	2.51	351.83	2.47
LEDBAT	3	1.45	268.40	1.60
PCC	2	1.52	385.72	55.62
QUIC Cubic	3	2.42	370.18	4.81
SCReAM	3	0.10	122.69	1.24
WebRTC media	3	0.57	455.12	9.60
Sprout	3	0.18	143.78	0.67
TaoVA-100x	2	2.37	223.84	2.92
TCP Vegas	2	2.44	155.27	0.52
Verus	2	2.60	378.95	22.00
Copa	2	0.77	110.34	1.06
FillP	3	2.80	374.15	15.91
Indigo-1-32	3	0.92	152.00	1.94
Vivace-latency	2	1.67	373.87	11.54
Vivace-loss	3	2.37	380.04	20.46
Vivace-LTE	3	1.89	357.72	7.76

Run 1: Statistics of TCP BBR

```
Start at: 2018-01-31 07:03:46
End at: 2018-01-31 07:04:16
Local clock offset: -0.909 ms
Remote clock offset: 2.792 ms

# Below is generated by plot.py at 2018-01-31 09:31:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.58 Mbit/s
95th percentile per-packet one-way delay: 377.882 ms
Loss rate: 11.08%
-- Flow 1:
Average throughput: 2.58 Mbit/s
95th percentile per-packet one-way delay: 377.882 ms
Loss rate: 11.08%
```

Run 1: Report of TCP BBR — Data Link

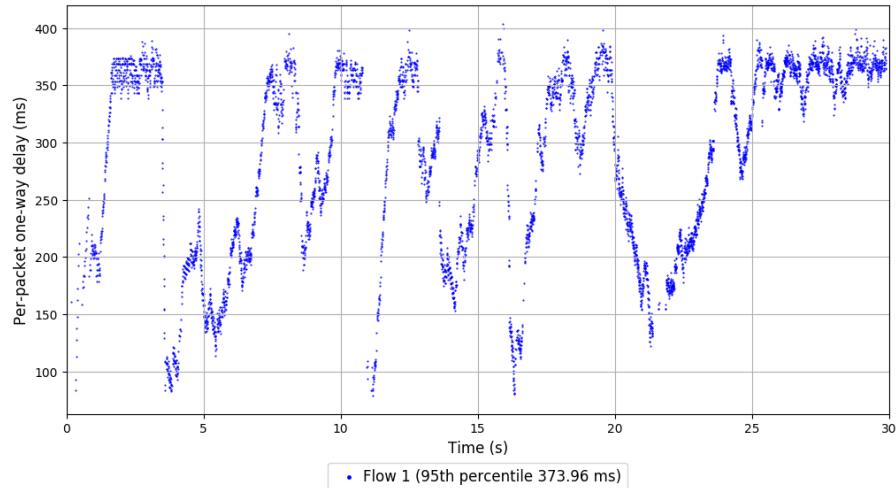
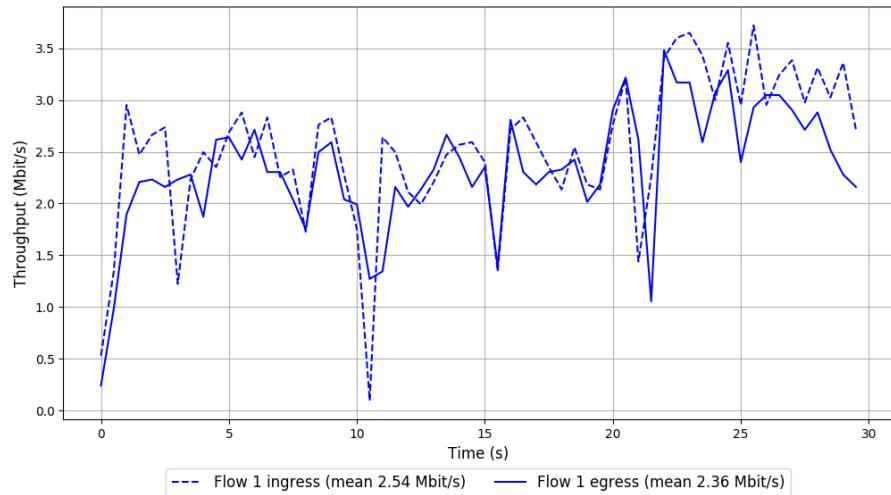


Run 2: Statistics of TCP BBR

```
Start at: 2018-01-31 07:30:34
End at: 2018-01-31 07:31:04
Local clock offset: -1.077 ms
Remote clock offset: 2.018 ms

# Below is generated by plot.py at 2018-01-31 09:31:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.36 Mbit/s
95th percentile per-packet one-way delay: 373.964 ms
Loss rate: 7.82%
-- Flow 1:
Average throughput: 2.36 Mbit/s
95th percentile per-packet one-way delay: 373.964 ms
Loss rate: 7.82%
```

Run 2: Report of TCP BBR — Data Link

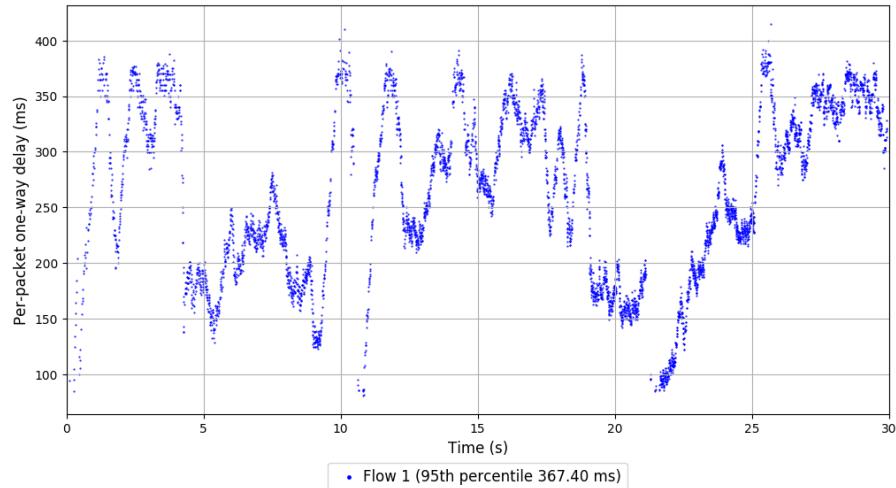
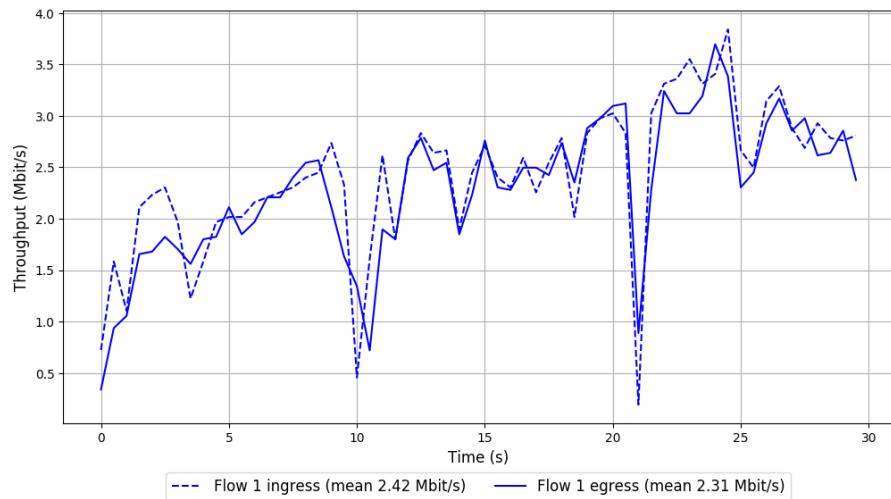


Run 3: Statistics of TCP BBR

```
Start at: 2018-01-31 07:58:02
End at: 2018-01-31 07:58:32
Local clock offset: -1.119 ms
Remote clock offset: 3.837 ms

# Below is generated by plot.py at 2018-01-31 09:31:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.31 Mbit/s
95th percentile per-packet one-way delay: 367.398 ms
Loss rate: 4.75%
-- Flow 1:
Average throughput: 2.31 Mbit/s
95th percentile per-packet one-way delay: 367.398 ms
Loss rate: 4.75%
```

Run 3: Report of TCP BBR — Data Link

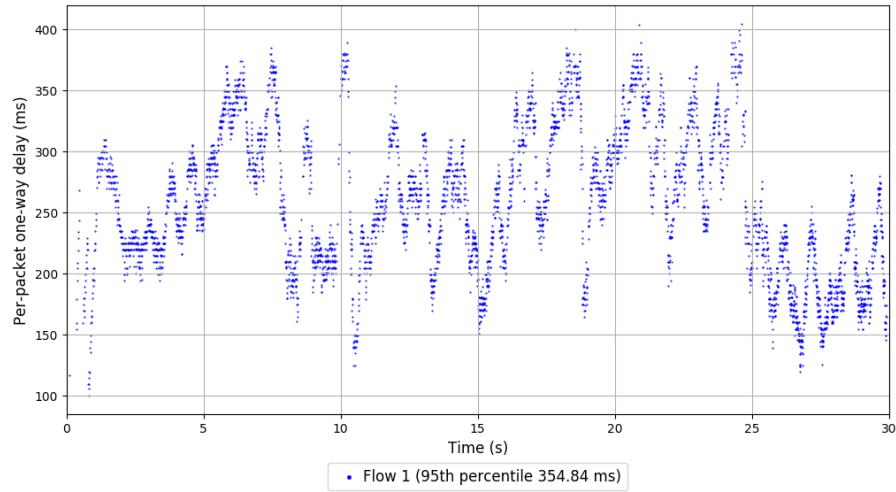
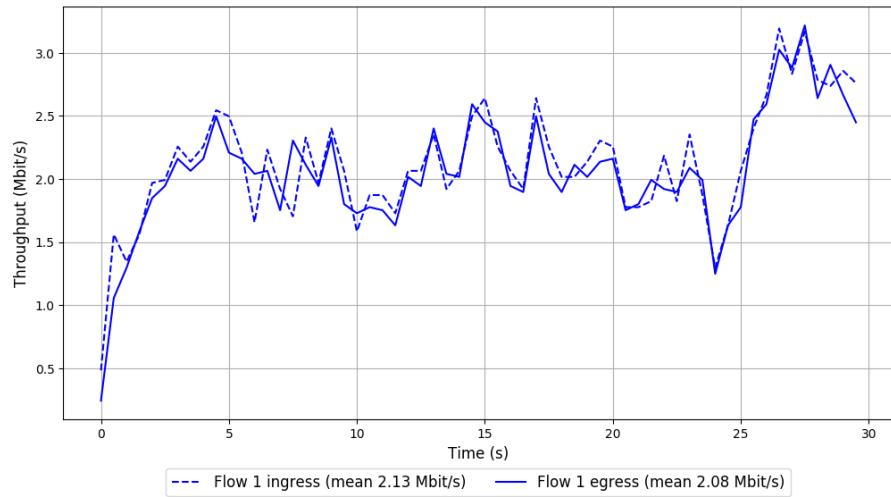


Run 1: Statistics of TCP Cubic

```
Start at: 2018-01-31 07:09:01
End at: 2018-01-31 07:09:31
Local clock offset: -0.598 ms
Remote clock offset: 1.925 ms

# Below is generated by plot.py at 2018-01-31 09:31:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.08 Mbit/s
95th percentile per-packet one-way delay: 354.841 ms
Loss rate: 2.88%
-- Flow 1:
Average throughput: 2.08 Mbit/s
95th percentile per-packet one-way delay: 354.841 ms
Loss rate: 2.88%
```

Run 1: Report of TCP Cubic — Data Link

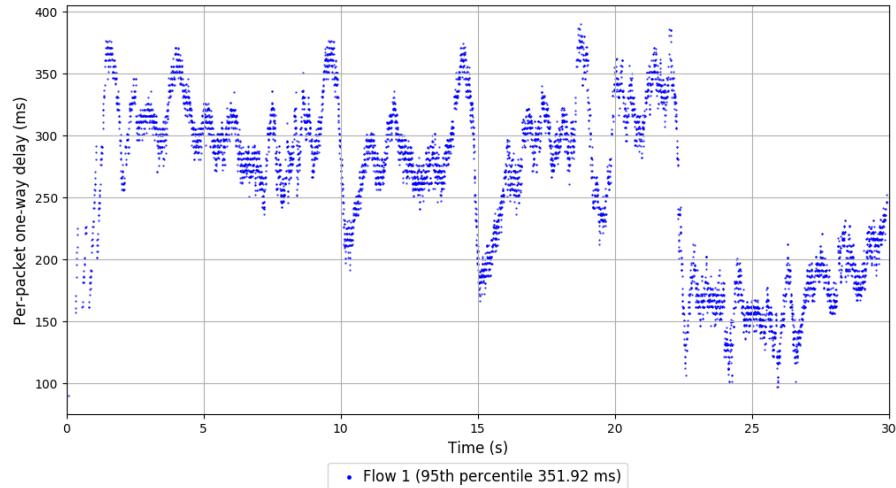
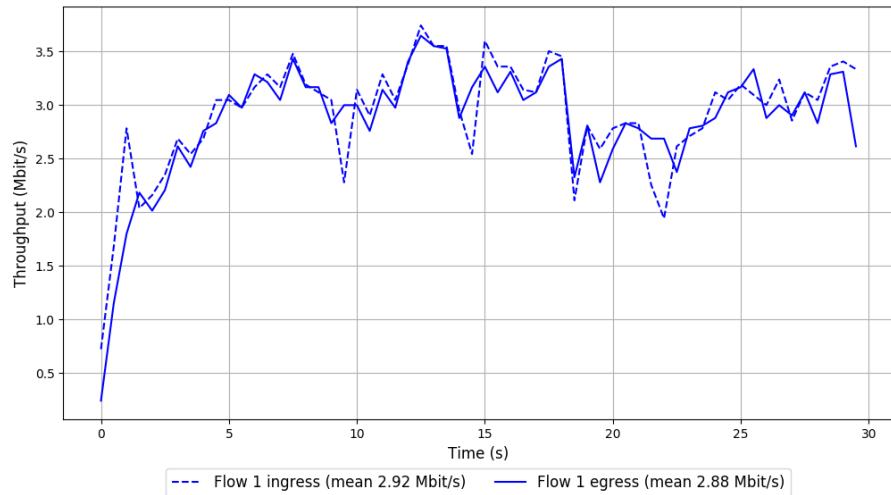


Run 2: Statistics of TCP Cubic

```
Start at: 2018-01-31 07:36:43
End at: 2018-01-31 07:37:13
Local clock offset: -0.806 ms
Remote clock offset: 2.543 ms

# Below is generated by plot.py at 2018-01-31 09:31:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.88 Mbit/s
95th percentile per-packet one-way delay: 351.918 ms
Loss rate: 2.01%
-- Flow 1:
Average throughput: 2.88 Mbit/s
95th percentile per-packet one-way delay: 351.918 ms
Loss rate: 2.01%
```

Run 2: Report of TCP Cubic — Data Link

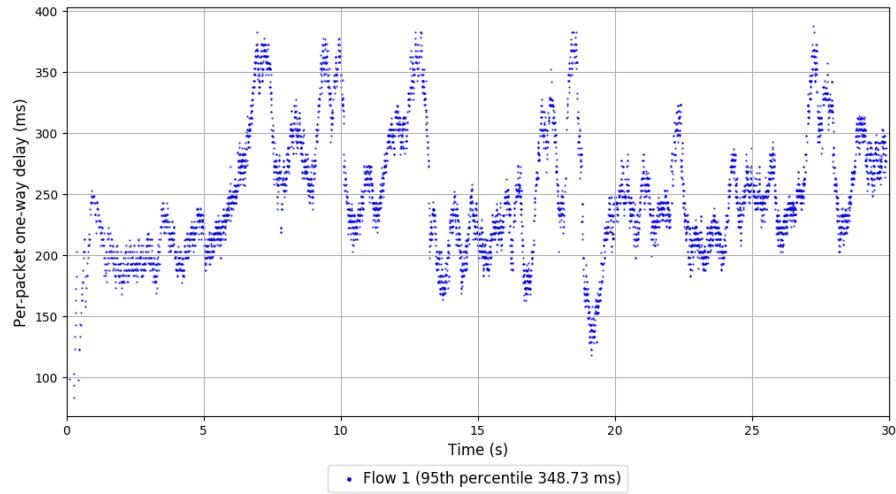
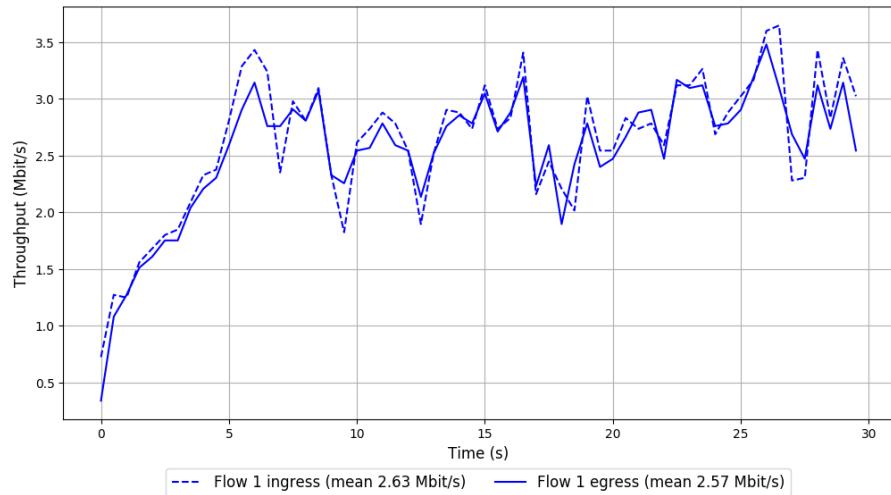


Run 3: Statistics of TCP Cubic

```
Start at: 2018-01-31 08:03:29
End at: 2018-01-31 08:03:59
Local clock offset: -0.343 ms
Remote clock offset: 4.502 ms

# Below is generated by plot.py at 2018-01-31 09:31:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.57 Mbit/s
95th percentile per-packet one-way delay: 348.725 ms
Loss rate: 2.52%
-- Flow 1:
Average throughput: 2.57 Mbit/s
95th percentile per-packet one-way delay: 348.725 ms
Loss rate: 2.52%
```

Run 3: Report of TCP Cubic — Data Link

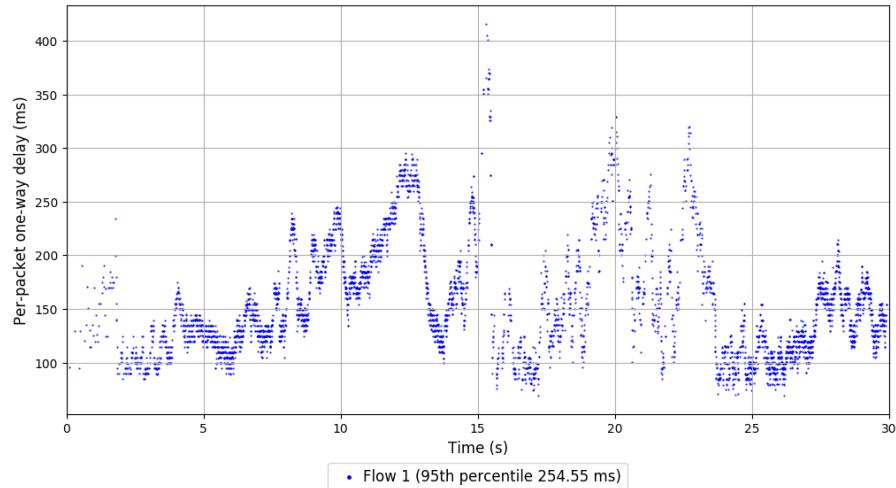
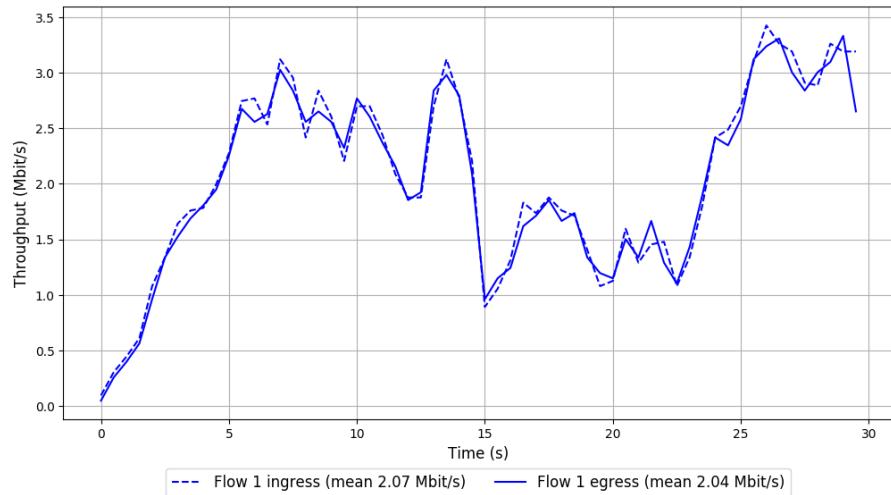


```
Run 1: Statistics of LEDBAT
```

```
Start at: 2018-01-31 06:53:15
End at: 2018-01-31 06:53:45
Local clock offset: -0.309 ms
Remote clock offset: 1.549 ms

# Below is generated by plot.py at 2018-01-31 09:31:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.04 Mbit/s
95th percentile per-packet one-way delay: 254.554 ms
Loss rate: 1.67%
-- Flow 1:
Average throughput: 2.04 Mbit/s
95th percentile per-packet one-way delay: 254.554 ms
Loss rate: 1.67%
```

Run 1: Report of LEDBAT — Data Link

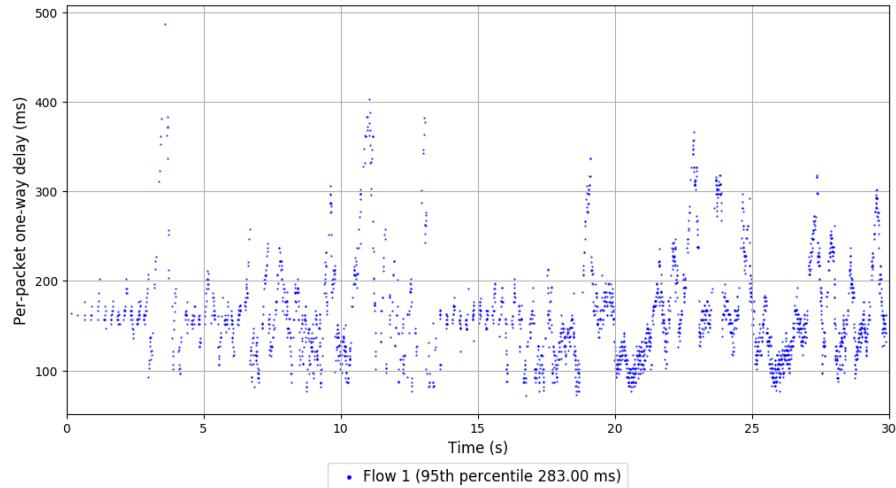
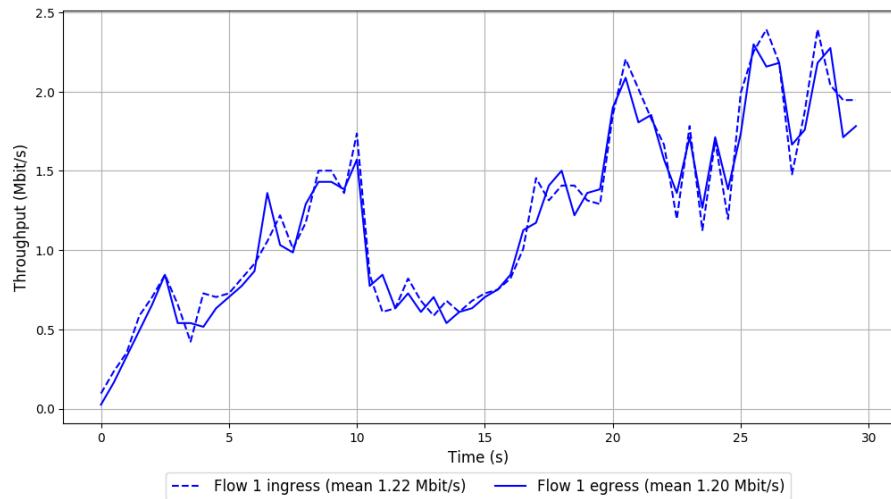


Run 2: Statistics of LEDBAT

```
Start at: 2018-01-31 07:16:53
End at: 2018-01-31 07:17:23
Local clock offset: -0.714 ms
Remote clock offset: 1.619 ms

# Below is generated by plot.py at 2018-01-31 09:31:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 282.995 ms
Loss rate: 2.09%
-- Flow 1:
Average throughput: 1.20 Mbit/s
95th percentile per-packet one-way delay: 282.995 ms
Loss rate: 2.09%
```

Run 2: Report of LEDBAT — Data Link

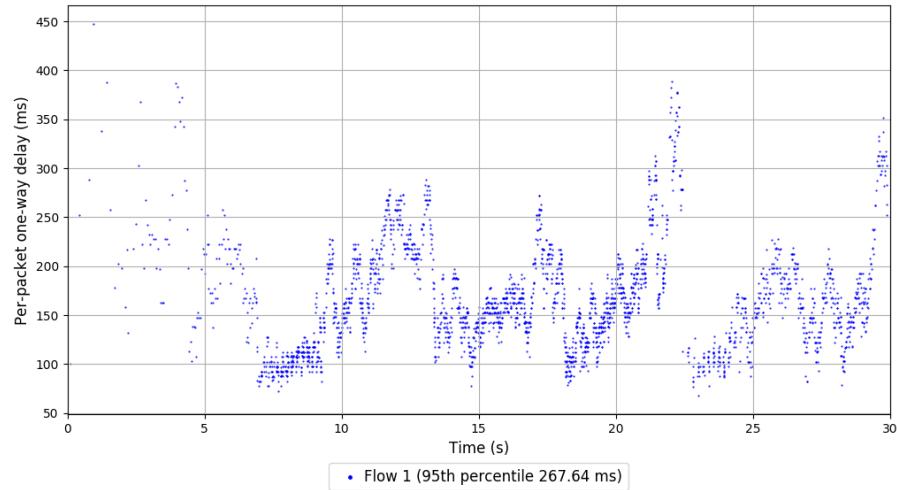
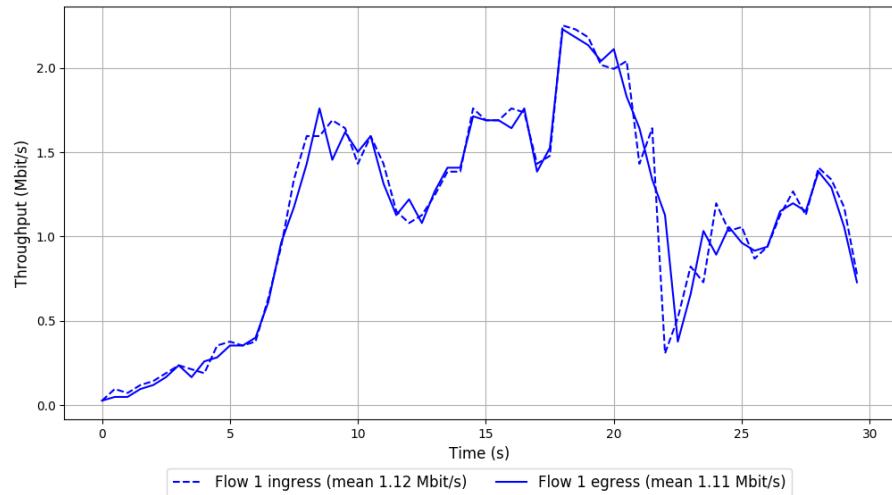


Run 3: Statistics of LEDBAT

```
Start at: 2018-01-31 07:47:06
End at: 2018-01-31 07:47:36
Local clock offset: -0.801 ms
Remote clock offset: 2.93 ms

# Below is generated by plot.py at 2018-01-31 09:31:49
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.11 Mbit/s
95th percentile per-packet one-way delay: 267.638 ms
Loss rate: 1.05%
-- Flow 1:
Average throughput: 1.11 Mbit/s
95th percentile per-packet one-way delay: 267.638 ms
Loss rate: 1.05%
```

Run 3: Report of LEDBAT — Data Link

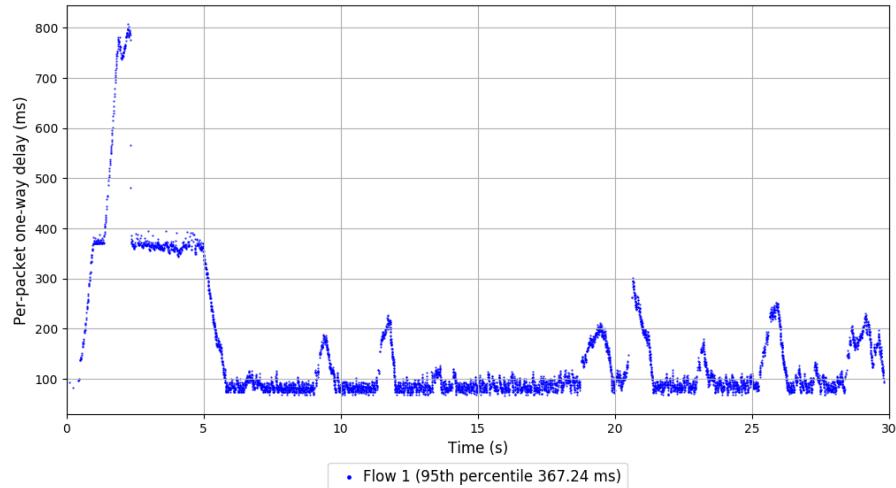
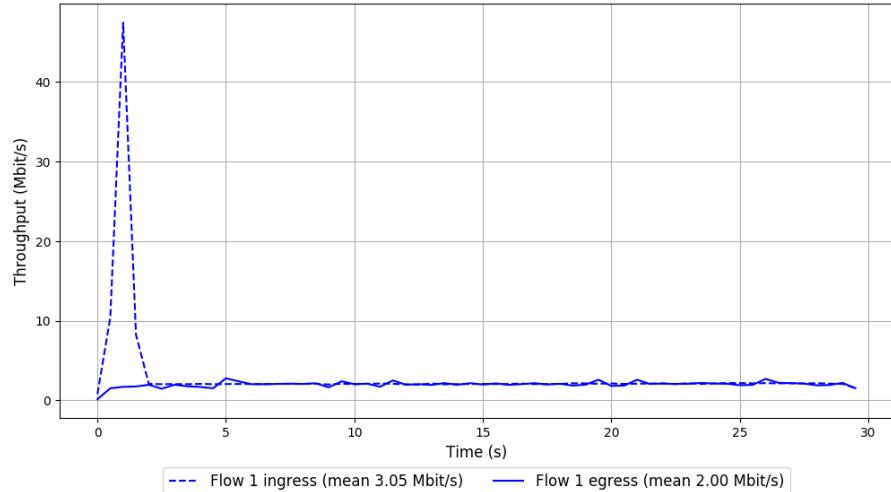


Run 1: Statistics of PCC

```
Start at: 2018-01-31 06:50:38
End at: 2018-01-31 06:51:08
Local clock offset: -3.494 ms
Remote clock offset: 1.545 ms

# Below is generated by plot.py at 2018-01-31 09:31:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.00 Mbit/s
95th percentile per-packet one-way delay: 367.242 ms
Loss rate: 34.64%
-- Flow 1:
Average throughput: 2.00 Mbit/s
95th percentile per-packet one-way delay: 367.242 ms
Loss rate: 34.64%
```

Run 1: Report of PCC — Data Link

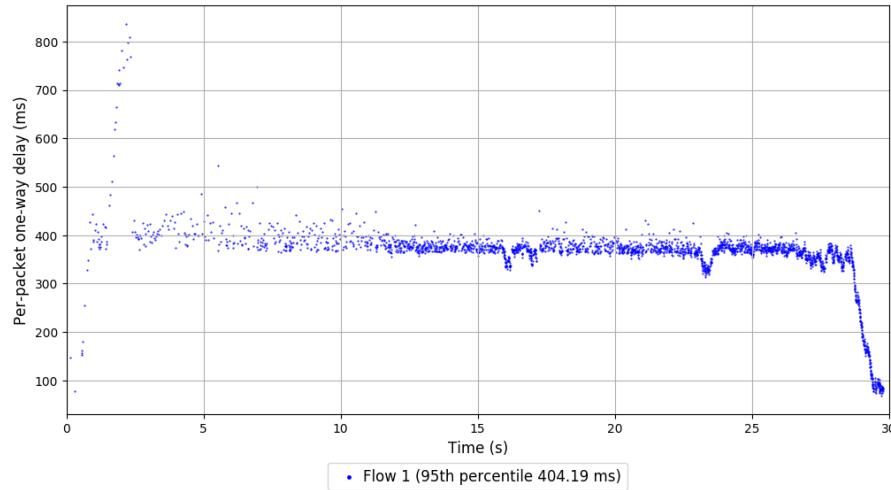
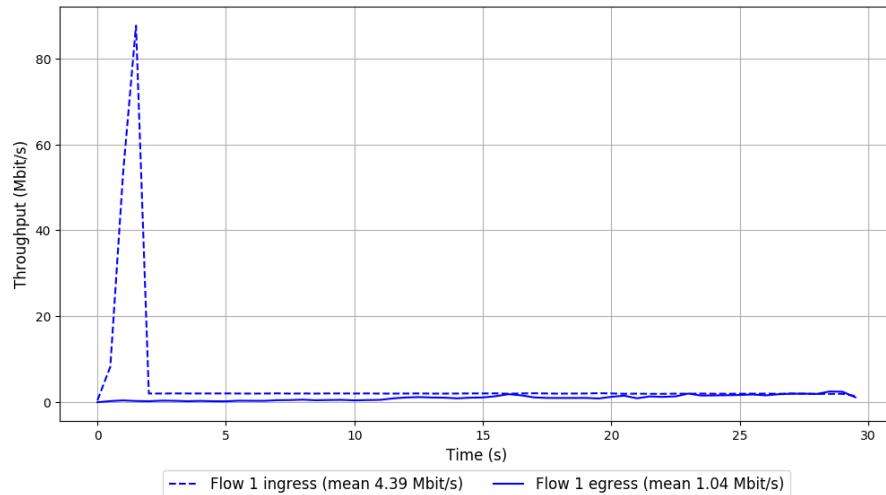


Run 2: Statistics of PCC

```
Start at: 2018-01-31 07:14:16
End at: 2018-01-31 07:14:46
Local clock offset: -0.582 ms
Remote clock offset: 1.653 ms

# Below is generated by plot.py at 2018-01-31 09:31:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.04 Mbit/s
95th percentile per-packet one-way delay: 404.192 ms
Loss rate: 76.61%
-- Flow 1:
Average throughput: 1.04 Mbit/s
95th percentile per-packet one-way delay: 404.192 ms
Loss rate: 76.61%
```

Run 2: Report of PCC — Data Link



Run 3: Statistics of PCC

/home/ubuntu/pantheon_data/2018-01-31T06-47-China-ppp0-to-AWS-Korea-3-runs/pcc_stats_run3.l

Run 3: Report of PCC — Data Link

Figure is missing

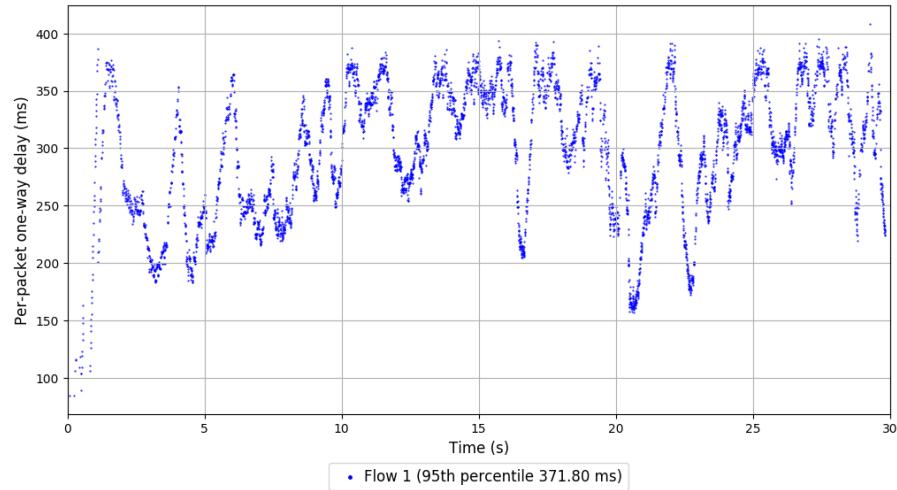
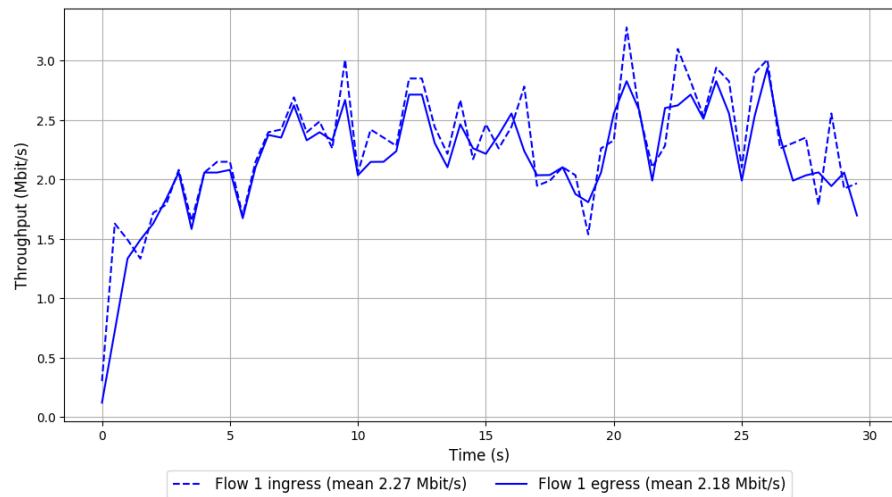
Figure is missing

```
Run 1: Statistics of QUIC Cubic
```

```
Start at: 2018-01-31 07:06:23
End at: 2018-01-31 07:06:53
Local clock offset: -0.679 ms
Remote clock offset: 2.394 ms

# Below is generated by plot.py at 2018-01-31 09:31:57
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.18 Mbit/s
95th percentile per-packet one-way delay: 371.797 ms
Loss rate: 4.63%
-- Flow 1:
Average throughput: 2.18 Mbit/s
95th percentile per-packet one-way delay: 371.797 ms
Loss rate: 4.63%
```

Run 1: Report of QUIC Cubic — Data Link

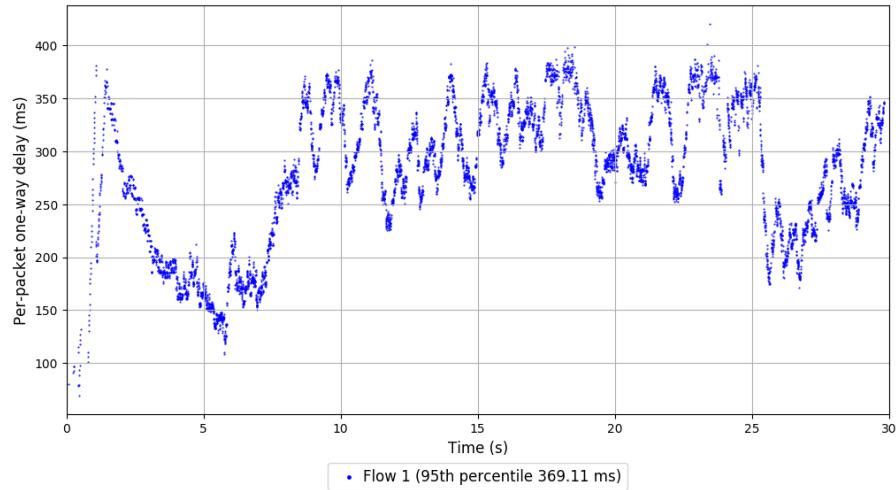
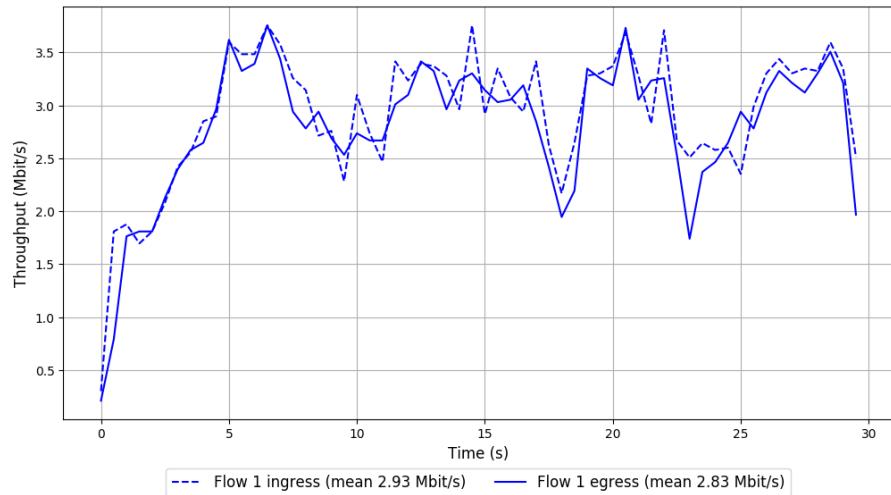


Run 2: Statistics of QUIC Cubic

```
Start at: 2018-01-31 07:33:43
End at: 2018-01-31 07:34:13
Local clock offset: -0.76 ms
Remote clock offset: 2.371 ms

# Below is generated by plot.py at 2018-01-31 09:31:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.83 Mbit/s
95th percentile per-packet one-way delay: 369.111 ms
Loss rate: 4.04%
-- Flow 1:
Average throughput: 2.83 Mbit/s
95th percentile per-packet one-way delay: 369.111 ms
Loss rate: 4.04%
```

Run 2: Report of QUIC Cubic — Data Link

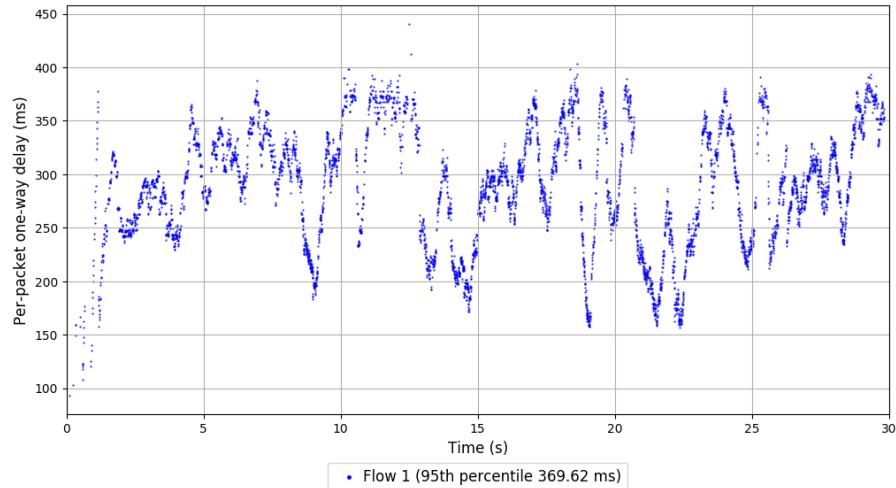
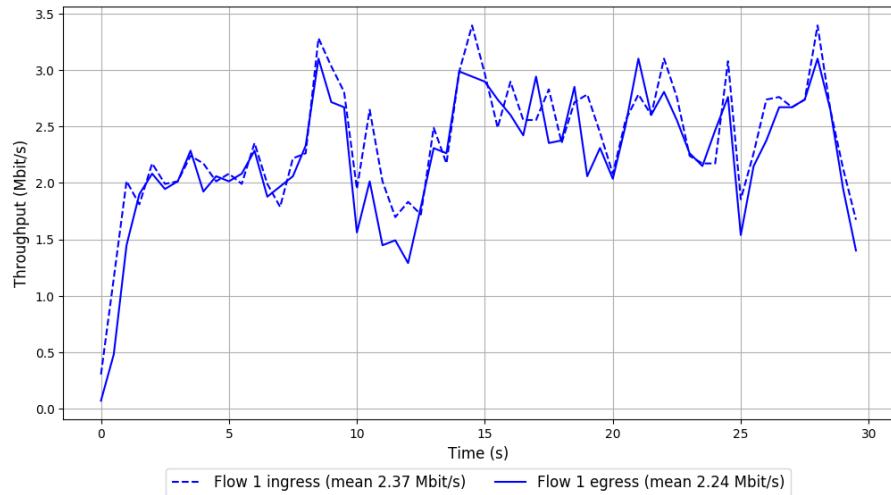


Run 3: Statistics of QUIC Cubic

```
Start at: 2018-01-31 08:00:46
End at: 2018-01-31 08:01:16
Local clock offset: -0.15 ms
Remote clock offset: 4.159 ms

# Below is generated by plot.py at 2018-01-31 09:31:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.24 Mbit/s
95th percentile per-packet one-way delay: 369.625 ms
Loss rate: 5.75%
-- Flow 1:
Average throughput: 2.24 Mbit/s
95th percentile per-packet one-way delay: 369.625 ms
Loss rate: 5.75%
```

Run 3: Report of QUIC Cubic — Data Link

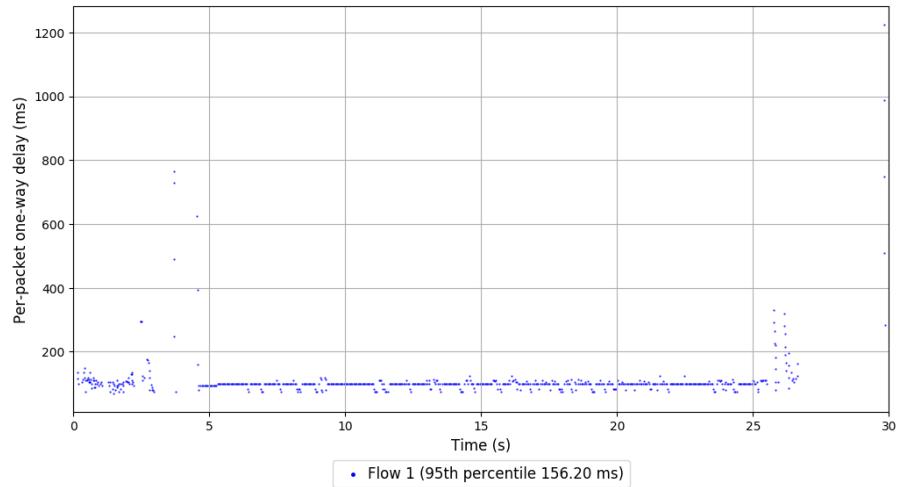
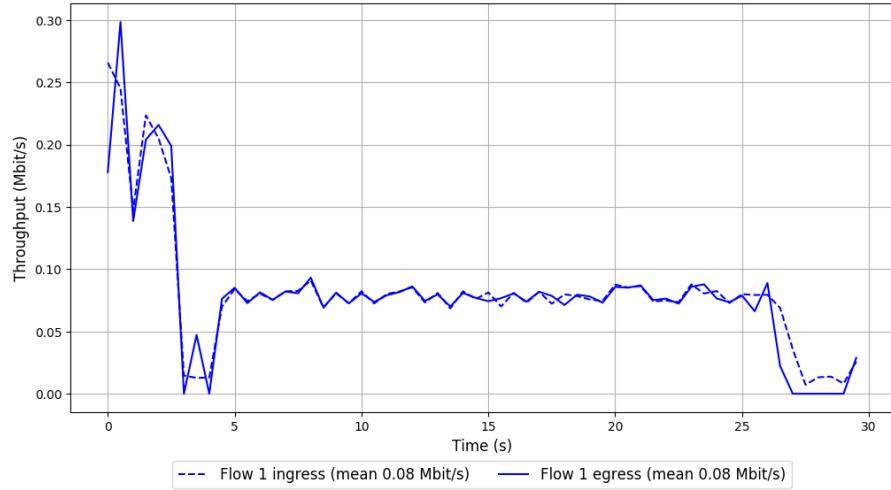


```
Run 1: Statistics of SCReAM
```

```
Start at: 2018-01-31 07:07:43
End at: 2018-01-31 07:08:13
Local clock offset: -0.803 ms
Remote clock offset: 2.107 ms

# Below is generated by plot.py at 2018-01-31 09:31:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 156.204 ms
Loss rate: 2.81%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 156.204 ms
Loss rate: 2.81%
```

Run 1: Report of SCReAM — Data Link

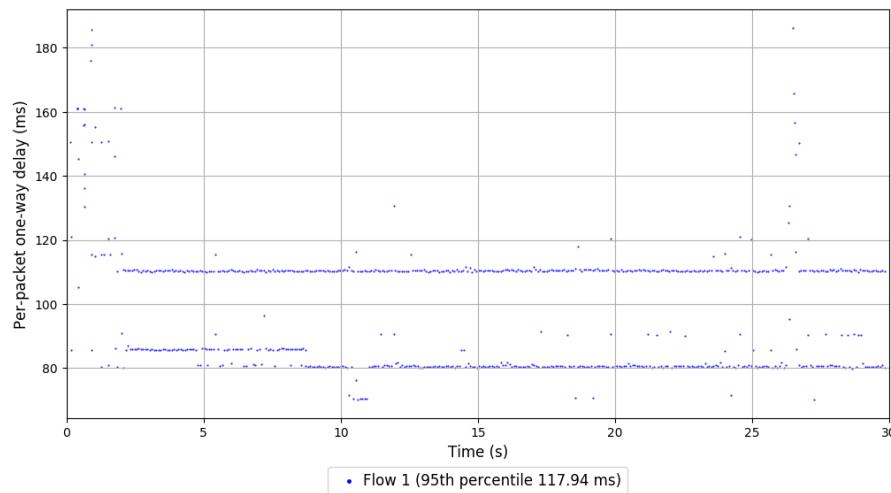
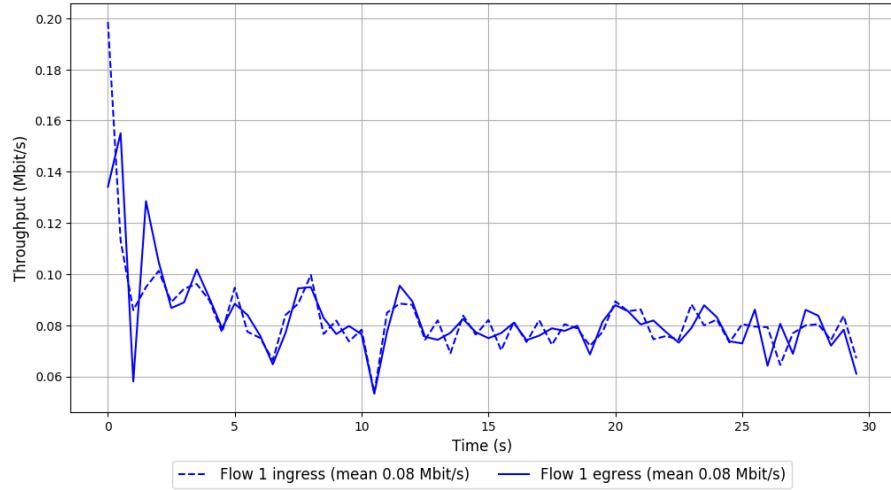


Run 2: Statistics of SCReAM

```
Start at: 2018-01-31 07:35:13
End at: 2018-01-31 07:35:43
Local clock offset: -0.852 ms
Remote clock offset: 2.442 ms

# Below is generated by plot.py at 2018-01-31 09:31:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 117.943 ms
Loss rate: 0.49%
-- Flow 1:
Average throughput: 0.08 Mbit/s
95th percentile per-packet one-way delay: 117.943 ms
Loss rate: 0.49%
```

Run 2: Report of SCReAM — Data Link

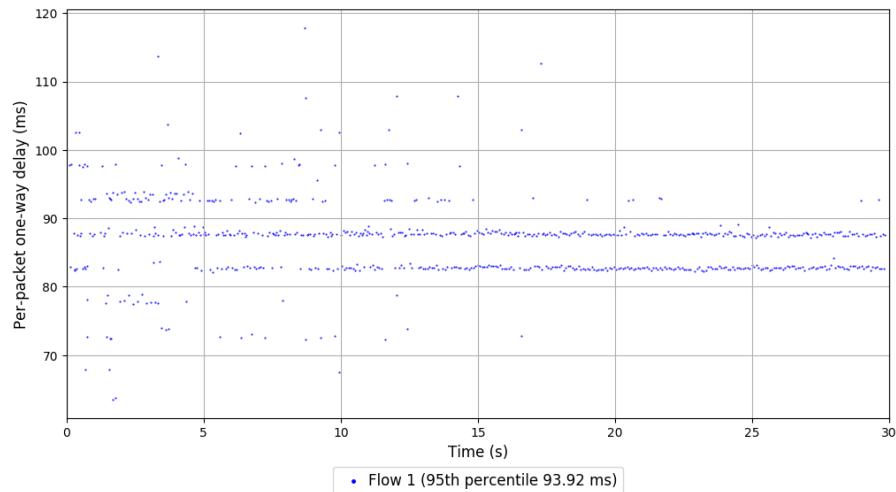
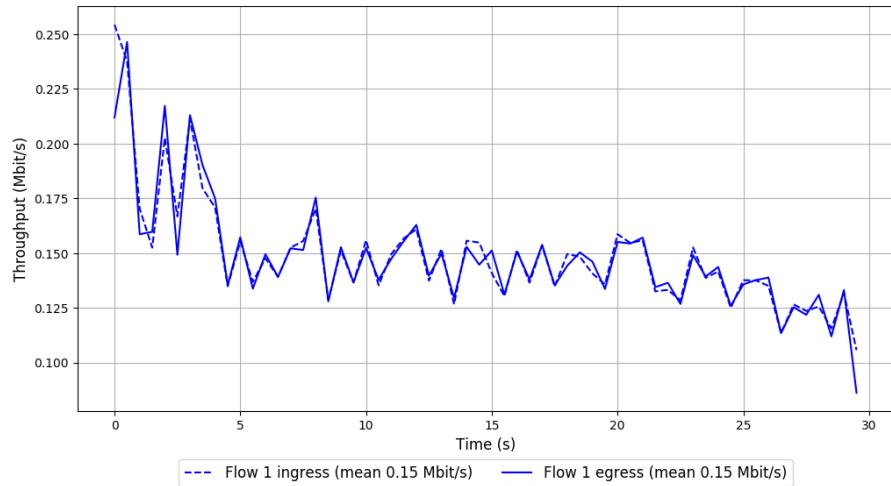


Run 3: Statistics of SCReAM

```
Start at: 2018-01-31 08:02:09
End at: 2018-01-31 08:02:39
Local clock offset: -0.236 ms
Remote clock offset: 4.386 ms

# Below is generated by plot.py at 2018-01-31 09:31:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 93.916 ms
Loss rate: 0.43%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 93.916 ms
Loss rate: 0.43%
```

Run 3: Report of SCReAM — Data Link

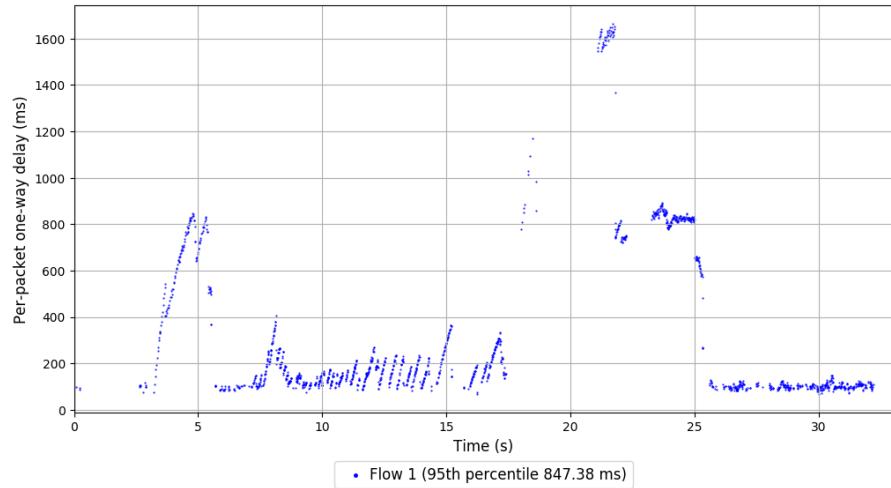
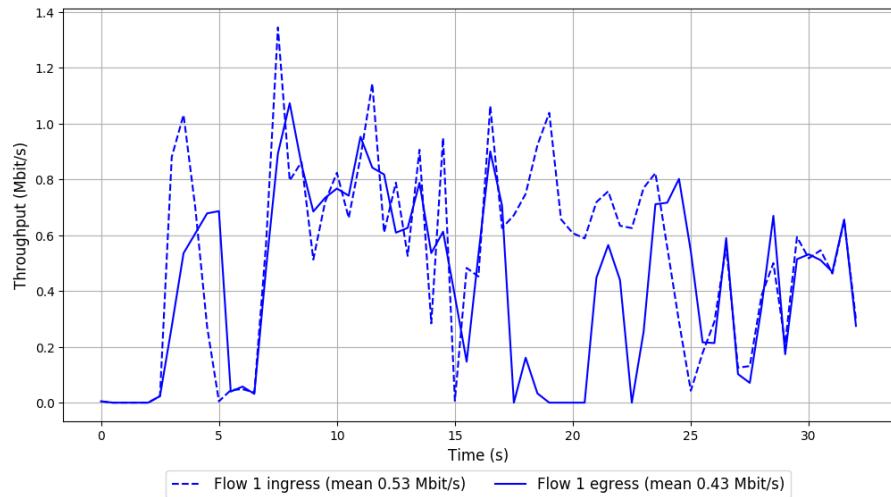


```
Run 1: Statistics of WebRTC media
```

```
Start at: 2018-01-31 07:05:04
End at: 2018-01-31 07:05:34
Local clock offset: -0.631 ms
Remote clock offset: 2.61 ms

# Below is generated by plot.py at 2018-01-31 09:31:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 847.376 ms
Loss rate: 18.63%
-- Flow 1:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 847.376 ms
Loss rate: 18.63%
```

Run 1: Report of WebRTC media — Data Link

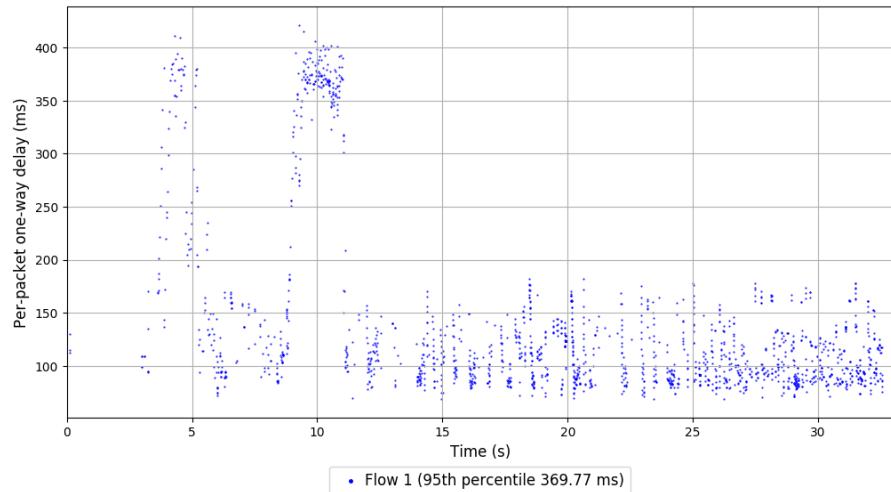
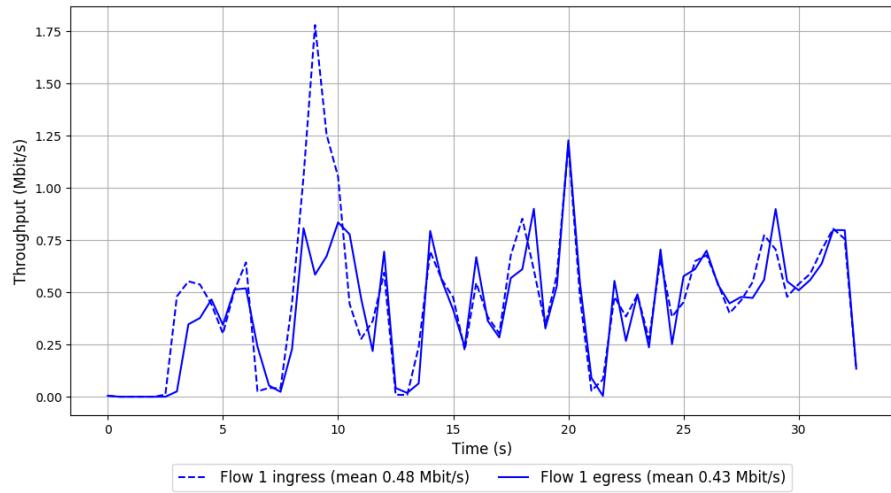


Run 2: Statistics of WebRTC media

```
Start at: 2018-01-31 07:32:09
End at: 2018-01-31 07:32:39
Local clock offset: -0.336 ms
Remote clock offset: 2.162 ms

# Below is generated by plot.py at 2018-01-31 09:31:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 369.768 ms
Loss rate: 9.07%
-- Flow 1:
Average throughput: 0.43 Mbit/s
95th percentile per-packet one-way delay: 369.768 ms
Loss rate: 9.07%
```

Run 2: Report of WebRTC media — Data Link

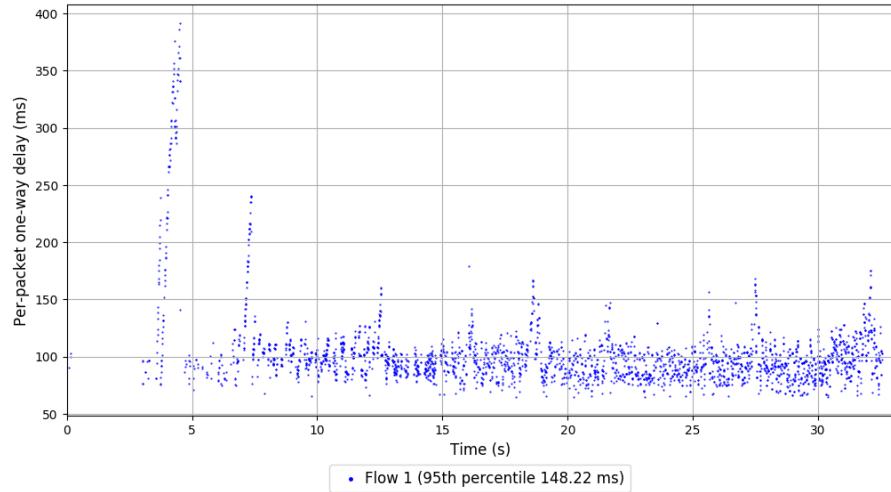
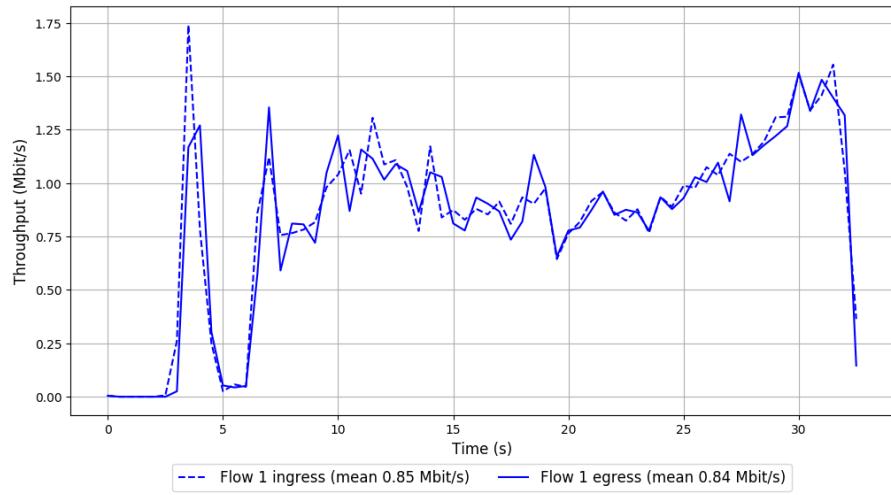


```
Run 3: Statistics of WebRTC media
```

```
Start at: 2018-01-31 07:59:25
End at: 2018-01-31 07:59:55
Local clock offset: -3.216 ms
Remote clock offset: 3.994 ms

# Below is generated by plot.py at 2018-01-31 09:31:58
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.84 Mbit/s
95th percentile per-packet one-way delay: 148.221 ms
Loss rate: 1.11%
-- Flow 1:
Average throughput: 0.84 Mbit/s
95th percentile per-packet one-way delay: 148.221 ms
Loss rate: 1.11%
```

Run 3: Report of WebRTC media — Data Link

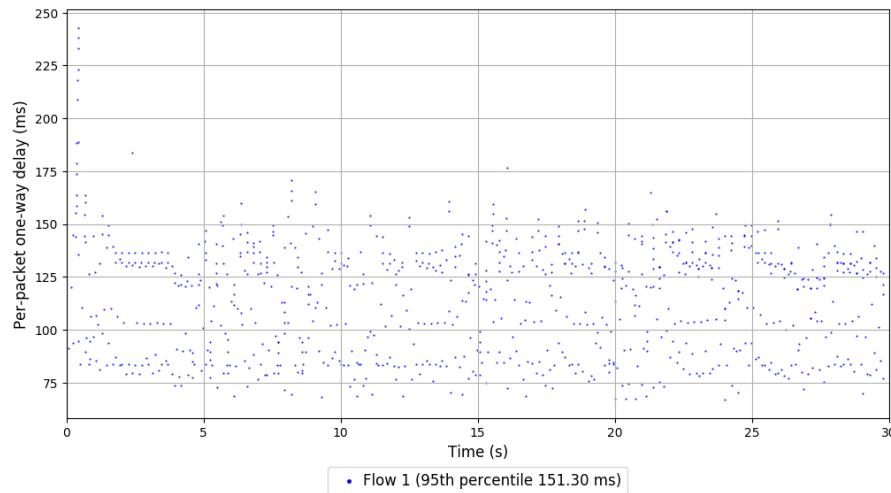
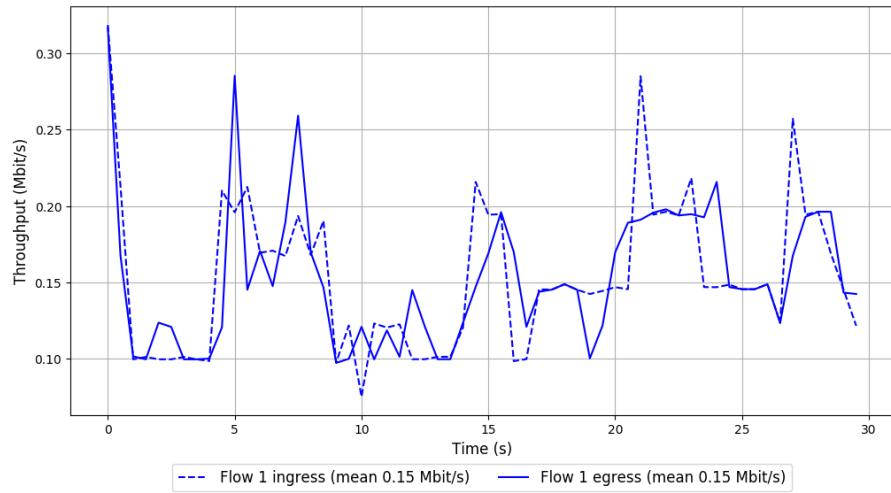


Run 1: Statistics of Sprout

```
Start at: 2018-01-31 06:51:57
End at: 2018-01-31 06:52:27
Local clock offset: -0.71 ms
Remote clock offset: 1.514 ms

# Below is generated by plot.py at 2018-01-31 09:31:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 151.298 ms
Loss rate: 0.52%
-- Flow 1:
Average throughput: 0.15 Mbit/s
95th percentile per-packet one-way delay: 151.298 ms
Loss rate: 0.52%
```

Run 1: Report of Sprout — Data Link

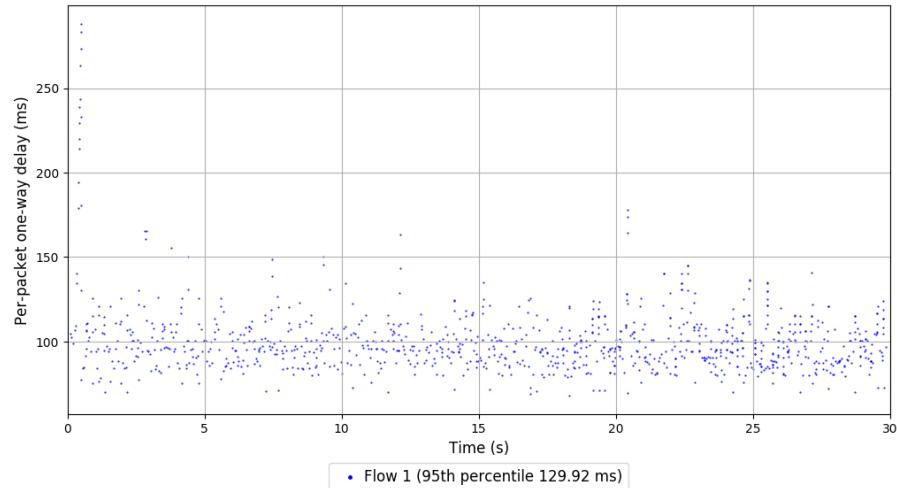
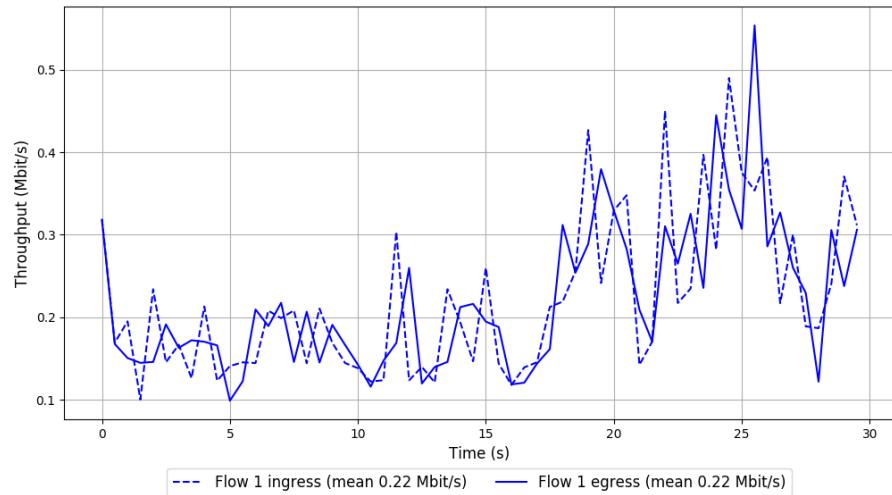


Run 2: Statistics of Sprout

```
Start at: 2018-01-31 07:15:35
End at: 2018-01-31 07:16:05
Local clock offset: -0.554 ms
Remote clock offset: 1.611 ms

# Below is generated by plot.py at 2018-01-31 09:31:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 129.917 ms
Loss rate: 1.06%
-- Flow 1:
Average throughput: 0.22 Mbit/s
95th percentile per-packet one-way delay: 129.917 ms
Loss rate: 1.06%
```

Run 2: Report of Sprout — Data Link

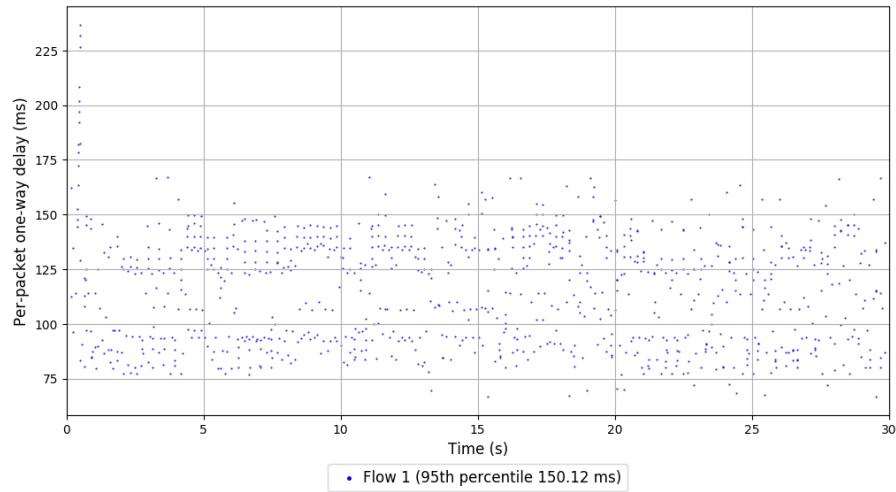
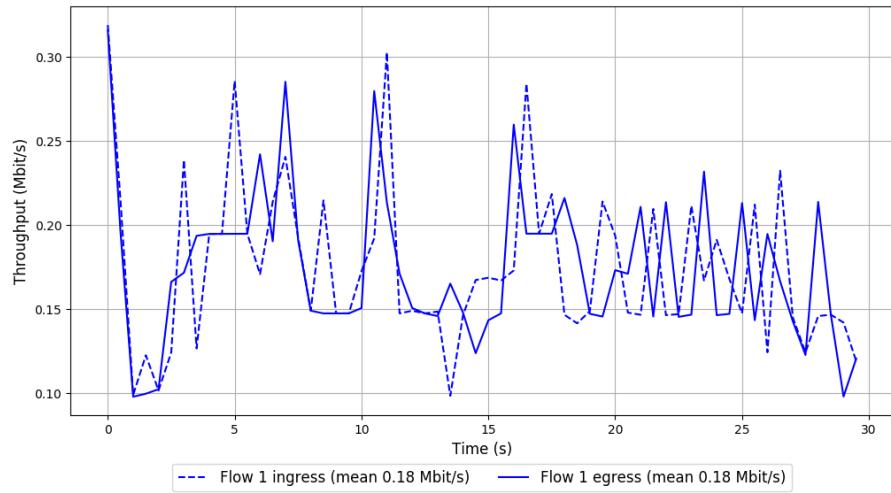


Run 3: Statistics of Sprout

```
Start at: 2018-01-31 07:45:45
End at: 2018-01-31 07:46:15
Local clock offset: -0.436 ms
Remote clock offset: 2.866 ms

# Below is generated by plot.py at 2018-01-31 09:31:59
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 150.116 ms
Loss rate: 0.44%
-- Flow 1:
Average throughput: 0.18 Mbit/s
95th percentile per-packet one-way delay: 150.116 ms
Loss rate: 0.44%
```

Run 3: Report of Sprout — Data Link

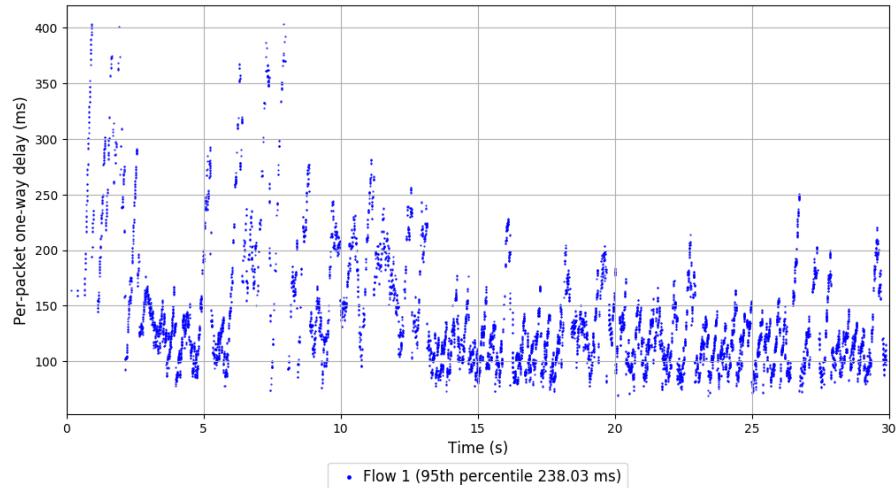
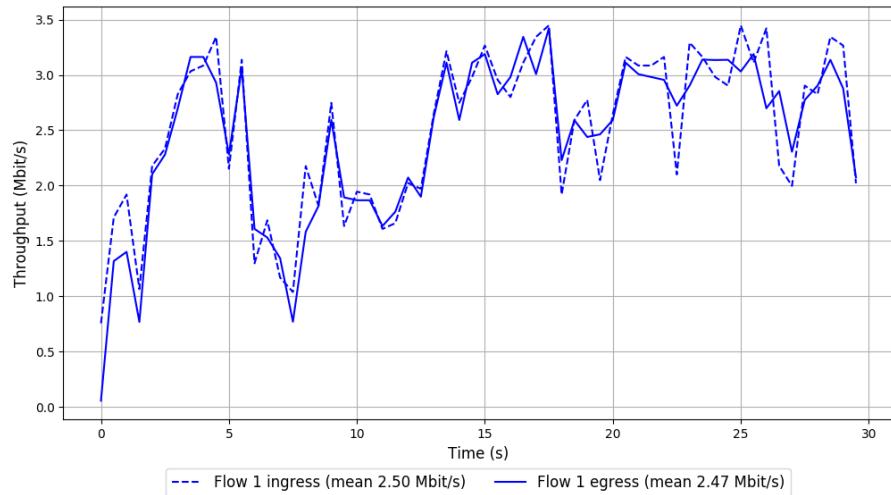


Run 1: Statistics of TaoVA-100x

```
Start at: 2018-01-31 06:55:52
End at: 2018-01-31 06:56:22
Local clock offset: -0.688 ms
Remote clock offset: 1.693 ms

# Below is generated by plot.py at 2018-01-31 09:32:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.47 Mbit/s
95th percentile per-packet one-way delay: 238.031 ms
Loss rate: 2.18%
-- Flow 1:
Average throughput: 2.47 Mbit/s
95th percentile per-packet one-way delay: 238.031 ms
Loss rate: 2.18%
```

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



Run 2: Statistics of TaoVA-100x

/home/ubuntu/pantheon_data/2018-01-31T06-47-China-ppp0-to-AWS-Korea-3-runs/taova_stats_run2

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

Figure is missing

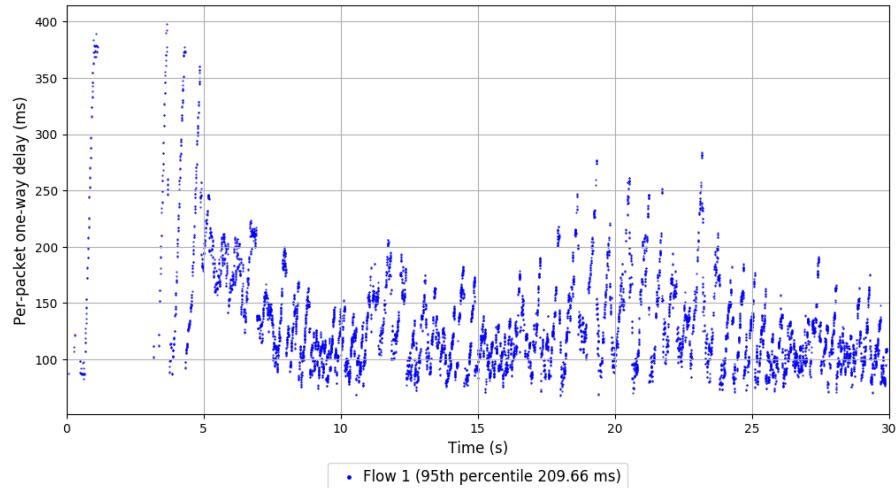
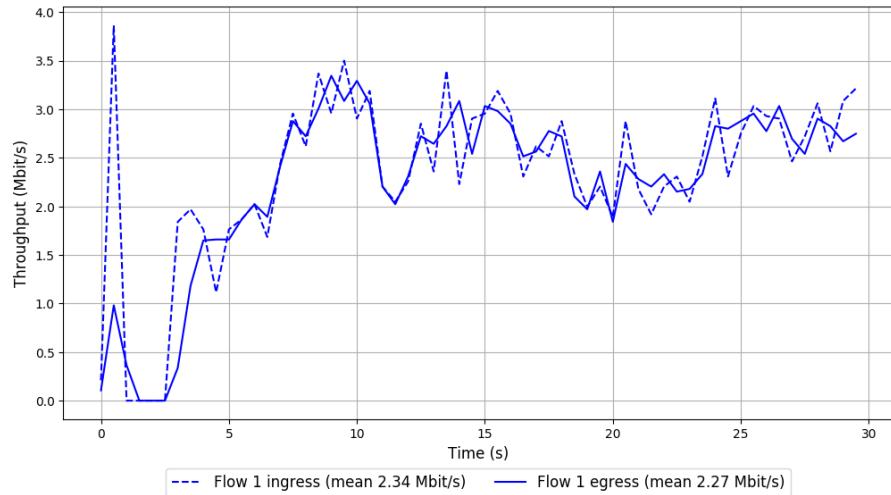
Figure is missing

Run 3: Statistics of TaoVA-100x

```
Start at: 2018-01-31 07:49:48
End at: 2018-01-31 07:50:18
Local clock offset: -0.545 ms
Remote clock offset: 3.085 ms

# Below is generated by plot.py at 2018-01-31 09:32:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.27 Mbit/s
95th percentile per-packet one-way delay: 209.659 ms
Loss rate: 3.67%
-- Flow 1:
Average throughput: 2.27 Mbit/s
95th percentile per-packet one-way delay: 209.659 ms
Loss rate: 3.67%
```

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

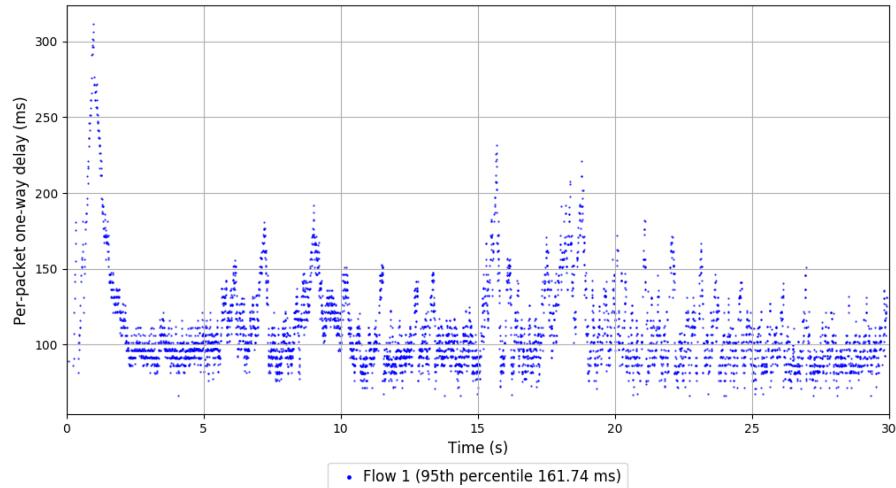
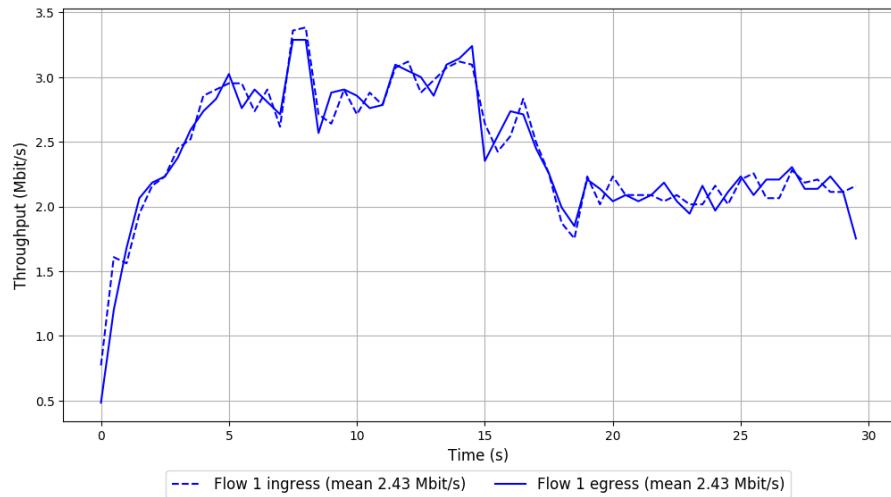


Run 1: Statistics of TCP Vegas

```
Start at: 2018-01-31 06:58:30
End at: 2018-01-31 06:59:00
Local clock offset: -3.379 ms
Remote clock offset: 1.977 ms

# Below is generated by plot.py at 2018-01-31 09:32:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.43 Mbit/s
95th percentile per-packet one-way delay: 161.744 ms
Loss rate: 0.50%
-- Flow 1:
Average throughput: 2.43 Mbit/s
95th percentile per-packet one-way delay: 161.744 ms
Loss rate: 0.50%
```

Run 1: Report of TCP Vegas — Data Link



Run 2: Statistics of TCP Vegas

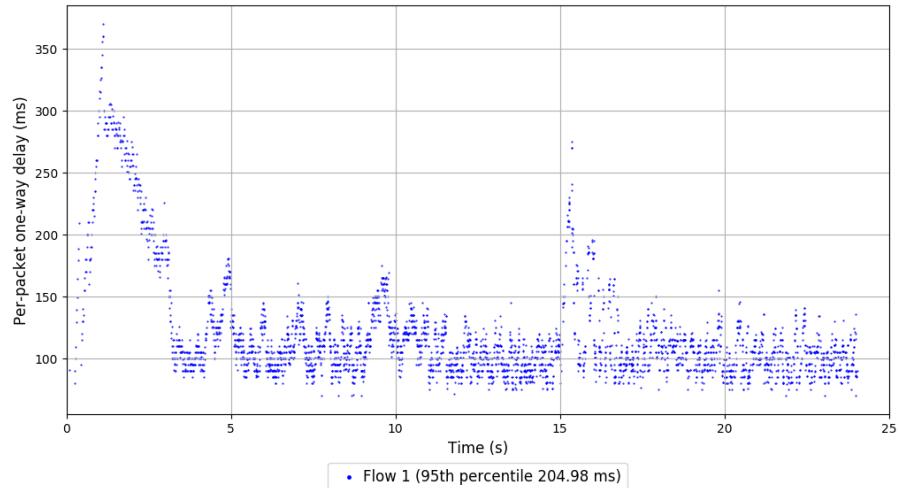
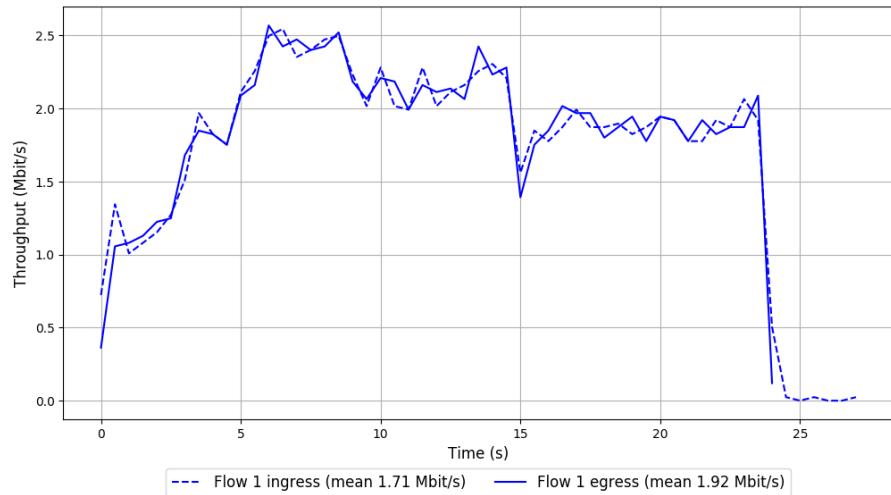
Start at: 2018-01-31 07:23:27

End at: 2018-01-31 07:23:57

Local clock offset: -0.778 ms

Remote clock offset: 1.705 ms

Run 2: Report of TCP Vegas — Data Link

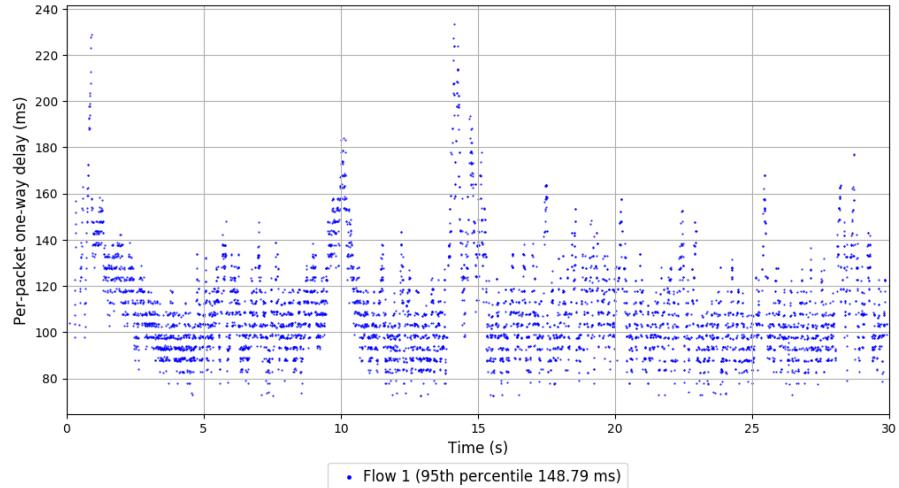
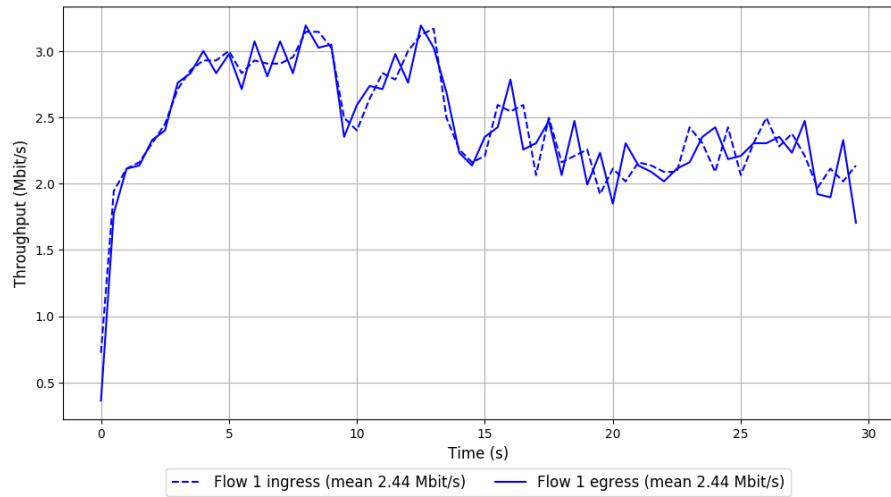


Run 3: Statistics of TCP Vegas

```
Start at: 2018-01-31 07:52:34
End at: 2018-01-31 07:53:04
Local clock offset: -0.4 ms
Remote clock offset: 3.247 ms

# Below is generated by plot.py at 2018-01-31 09:32:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.44 Mbit/s
95th percentile per-packet one-way delay: 148.790 ms
Loss rate: 0.53%
-- Flow 1:
Average throughput: 2.44 Mbit/s
95th percentile per-packet one-way delay: 148.790 ms
Loss rate: 0.53%
```

Run 3: Report of TCP Vegas — Data Link

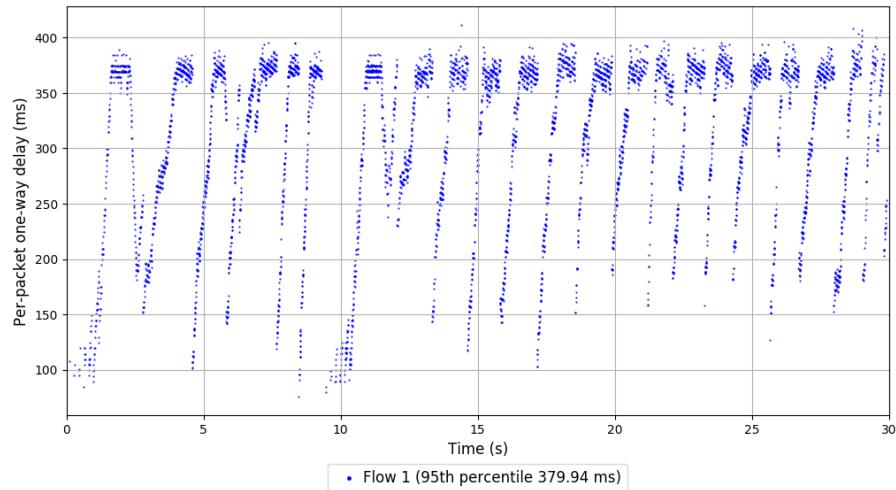
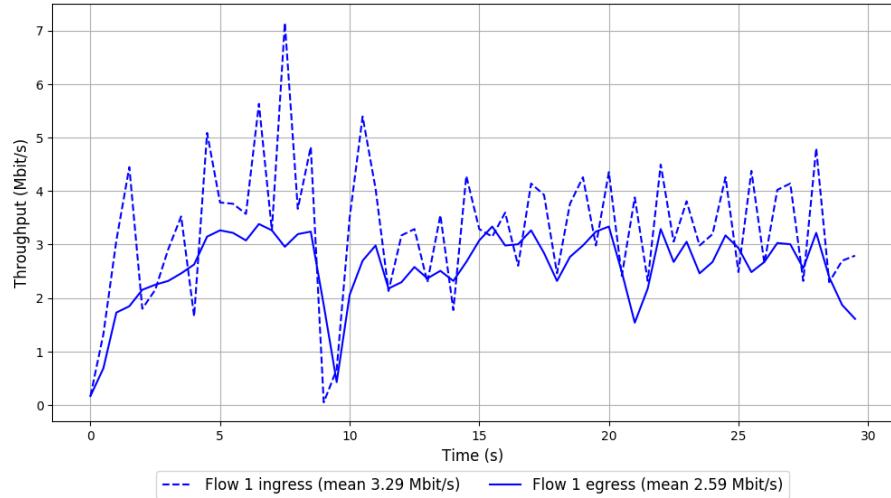


Run 1: Statistics of Verus

```
Start at: 2018-01-31 06:59:49
End at: 2018-01-31 07:00:19
Local clock offset: -0.848 ms
Remote clock offset: 2.135 ms

# Below is generated by plot.py at 2018-01-31 09:32:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.59 Mbit/s
95th percentile per-packet one-way delay: 379.940 ms
Loss rate: 21.82%
-- Flow 1:
Average throughput: 2.59 Mbit/s
95th percentile per-packet one-way delay: 379.940 ms
Loss rate: 21.82%
```

Run 1: Report of Verus — Data Link



Run 2: Statistics of Verus

/home/ubuntu/pantheon_data/2018-01-31T06-47-China-ppp0-to-AWS-Korea-3-runs/verus_stats_run2

Run 2: Report of Verus — Data Link

Figure is missing

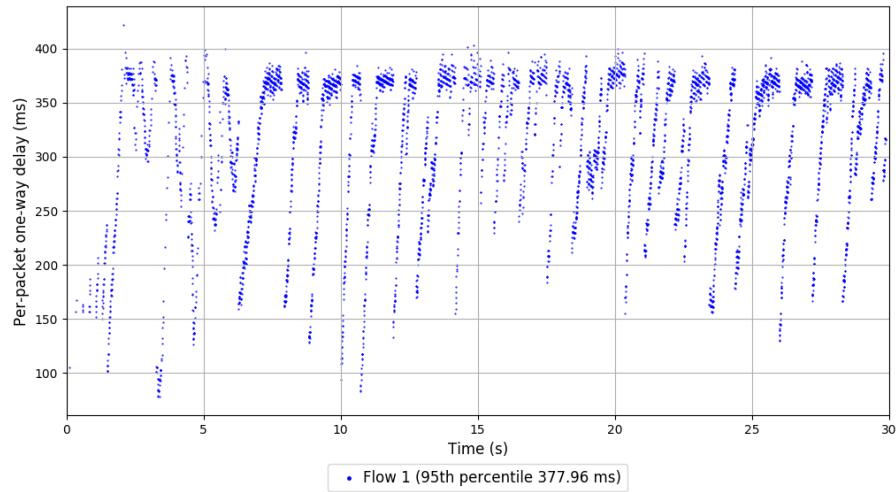
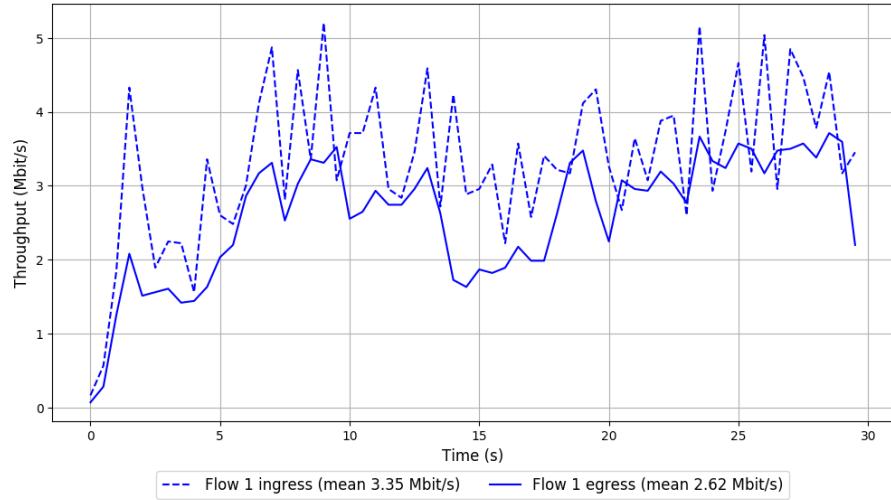
Figure is missing

Run 3: Statistics of Verus

```
Start at: 2018-01-31 07:53:56
End at: 2018-01-31 07:54:26
Local clock offset: -0.18 ms
Remote clock offset: 3.336 ms

# Below is generated by plot.py at 2018-01-31 09:32:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.62 Mbit/s
95th percentile per-packet one-way delay: 377.964 ms
Loss rate: 22.18%
-- Flow 1:
Average throughput: 2.62 Mbit/s
95th percentile per-packet one-way delay: 377.964 ms
Loss rate: 22.18%
```

Run 3: Report of Verus — Data Link

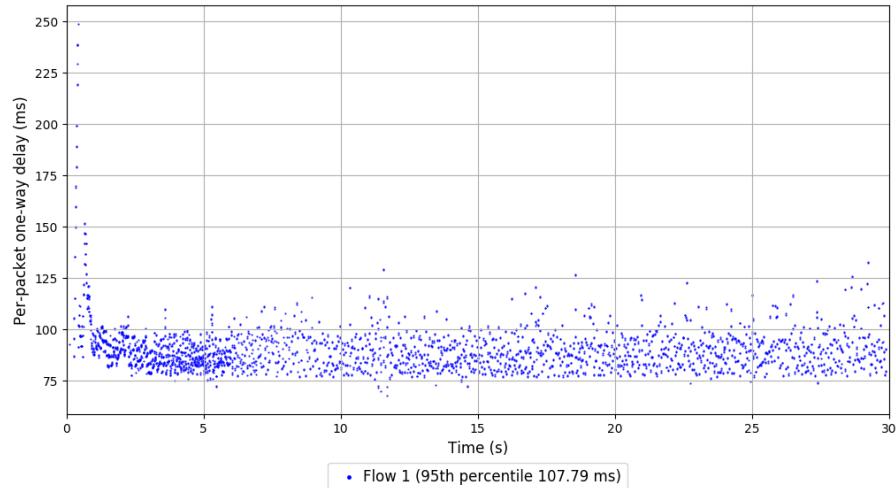
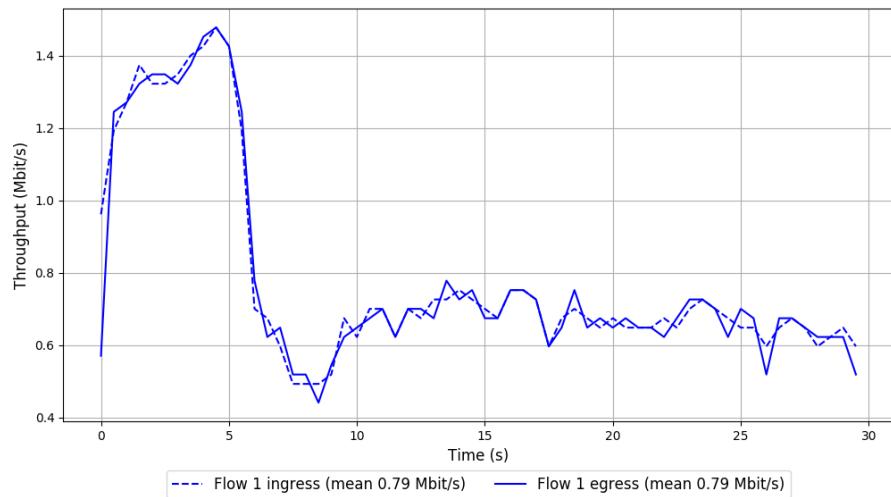


Run 1: Statistics of Copa

```
Start at: 2018-01-31 07:02:27
End at: 2018-01-31 07:02:57
Local clock offset: -0.906 ms
Remote clock offset: 2.535 ms

# Below is generated by plot.py at 2018-01-31 09:32:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.79 Mbit/s
95th percentile per-packet one-way delay: 107.792 ms
Loss rate: 0.72%
-- Flow 1:
Average throughput: 0.79 Mbit/s
95th percentile per-packet one-way delay: 107.792 ms
Loss rate: 0.72%
```

Run 1: Report of Copa — Data Link



Run 2: Statistics of Copa

/home/ubuntu/pantheon_data/2018-01-31T06-47-China-ppp0-to-AWS-Korea-3-runs/copa_stats_run2.1

Run 2: Report of Copa — Data Link

Figure is missing

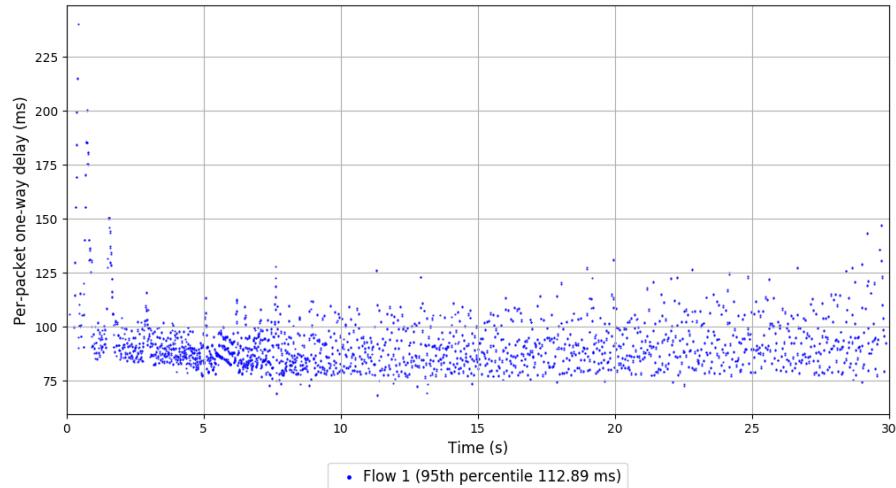
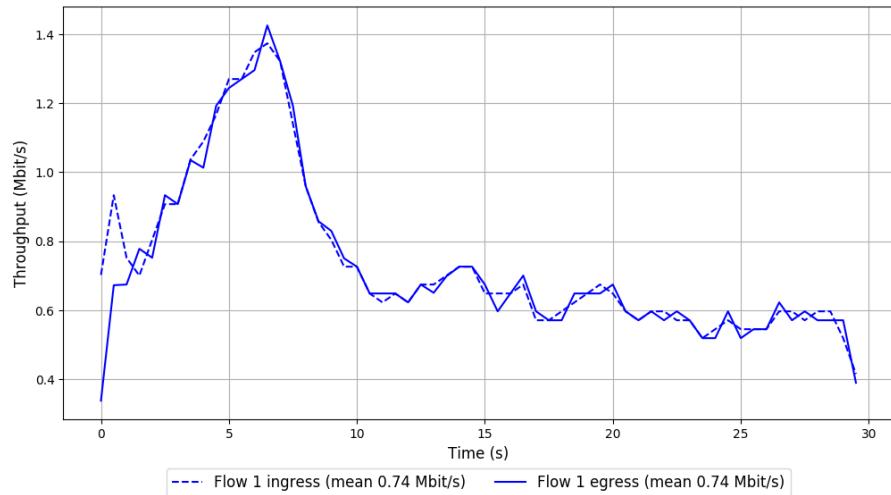
Figure is missing

Run 3: Statistics of Copa

```
Start at: 2018-01-31 07:56:40
End at: 2018-01-31 07:57:10
Local clock offset: -0.377 ms
Remote clock offset: 3.716 ms

# Below is generated by plot.py at 2018-01-31 09:32:08
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.74 Mbit/s
95th percentile per-packet one-way delay: 112.888 ms
Loss rate: 1.41%
-- Flow 1:
Average throughput: 0.74 Mbit/s
95th percentile per-packet one-way delay: 112.888 ms
Loss rate: 1.41%
```

Run 3: Report of Copa — Data Link

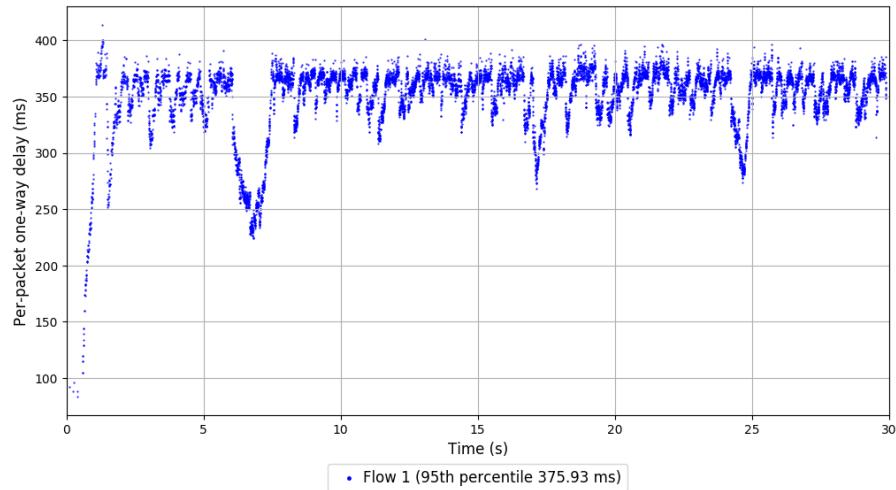
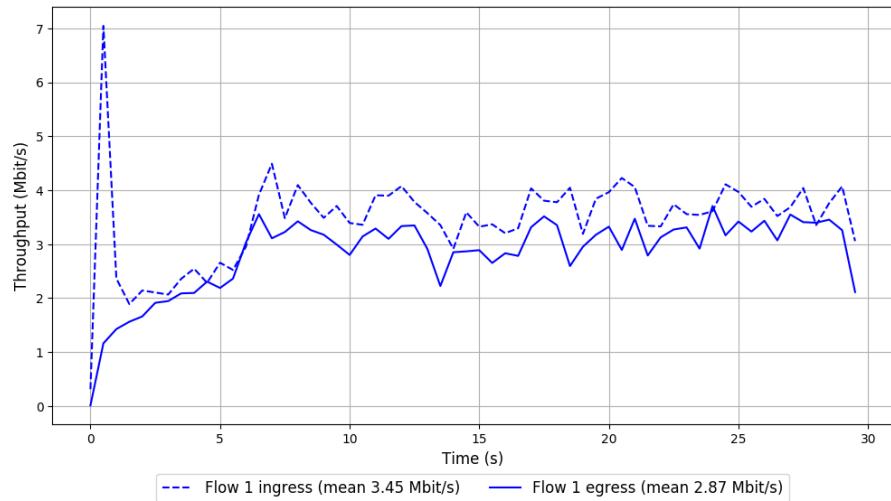


Run 1: Statistics of FillP

```
Start at: 2018-01-31 07:10:20
End at: 2018-01-31 07:10:50
Local clock offset: -0.761 ms
Remote clock offset: 1.844 ms

# Below is generated by plot.py at 2018-01-31 09:32:16
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.87 Mbit/s
95th percentile per-packet one-way delay: 375.928 ms
Loss rate: 17.28%
-- Flow 1:
Average throughput: 2.87 Mbit/s
95th percentile per-packet one-way delay: 375.928 ms
Loss rate: 17.28%
```

Run 1: Report of FillP — Data Link

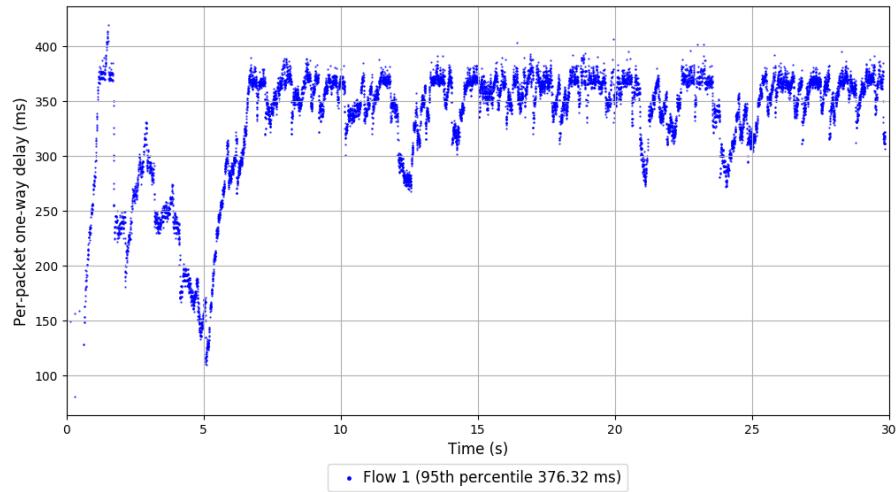
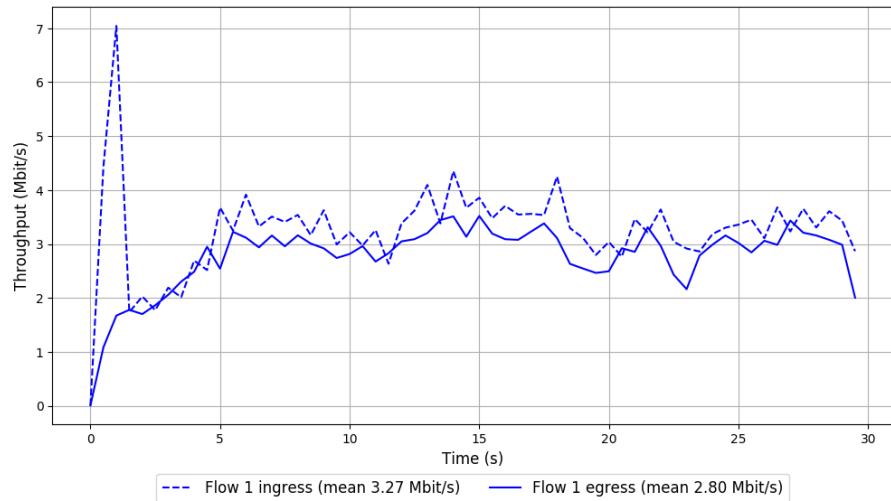


Run 2: Statistics of FillP

```
Start at: 2018-01-31 07:38:28
End at: 2018-01-31 07:38:58
Local clock offset: -0.729 ms
Remote clock offset: 2.79 ms

# Below is generated by plot.py at 2018-01-31 09:32:17
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.80 Mbit/s
95th percentile per-packet one-way delay: 376.324 ms
Loss rate: 14.92%
-- Flow 1:
Average throughput: 2.80 Mbit/s
95th percentile per-packet one-way delay: 376.324 ms
Loss rate: 14.92%
```

Run 2: Report of FillP — Data Link

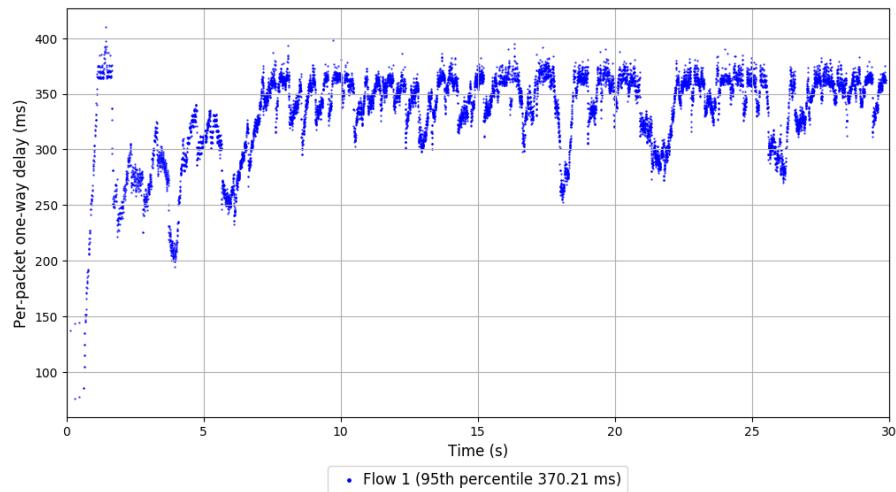
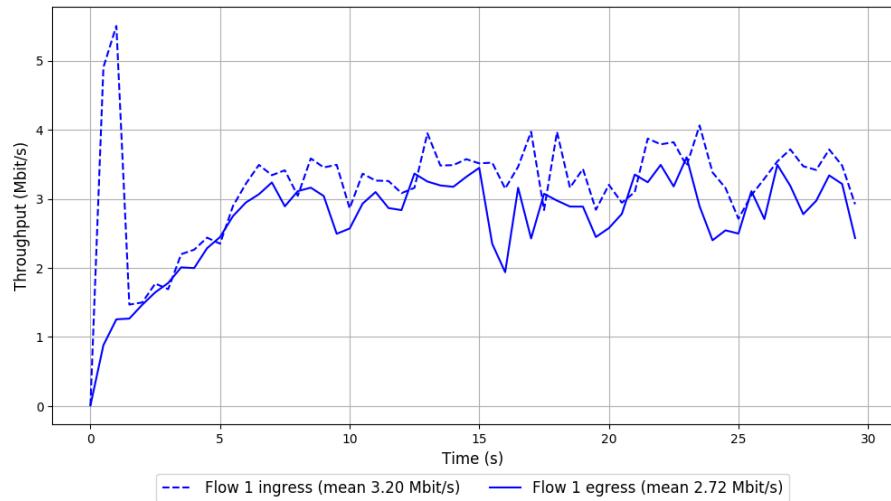


Run 3: Statistics of FillP

```
Start at: 2018-01-31 08:04:53
End at: 2018-01-31 08:05:23
Local clock offset: -0.396 ms
Remote clock offset: 4.715 ms

# Below is generated by plot.py at 2018-01-31 09:32:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.72 Mbit/s
95th percentile per-packet one-way delay: 370.212 ms
Loss rate: 15.54%
-- Flow 1:
Average throughput: 2.72 Mbit/s
95th percentile per-packet one-way delay: 370.212 ms
Loss rate: 15.54%
```

Run 3: Report of FillP — Data Link

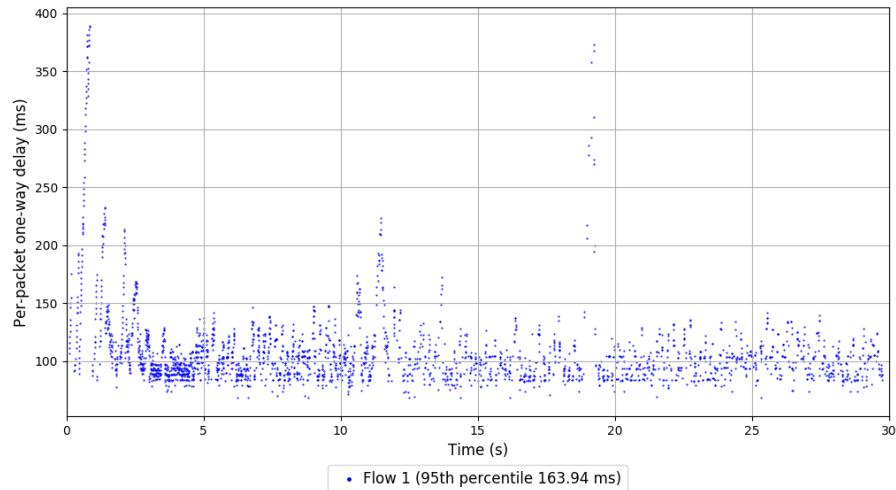
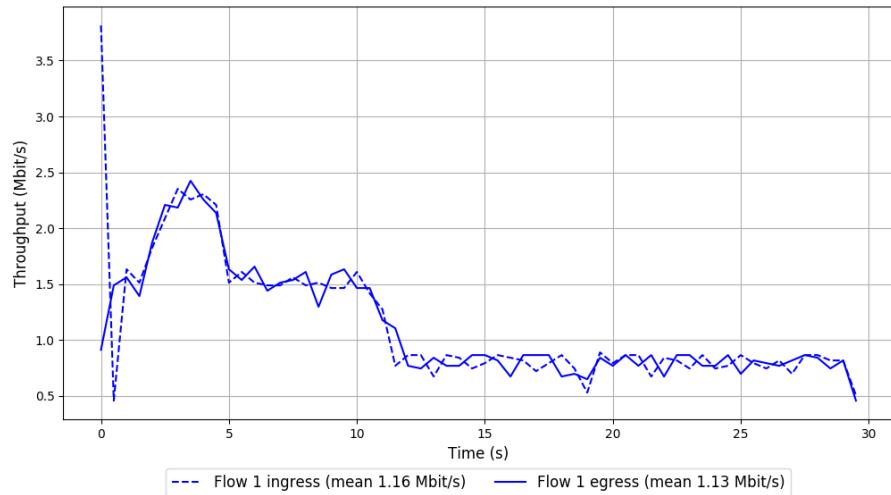


Run 1: Statistics of Indigo-1-32

```
Start at: 2018-01-31 06:48:00
End at: 2018-01-31 06:48:30
Local clock offset: -0.599 ms
Remote clock offset: 1.192 ms

# Below is generated by plot.py at 2018-01-31 09:32:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 163.941 ms
Loss rate: 2.54%
-- Flow 1:
Average throughput: 1.13 Mbit/s
95th percentile per-packet one-way delay: 163.941 ms
Loss rate: 2.54%
```

Run 1: Report of Indigo-1-32 — Data Link

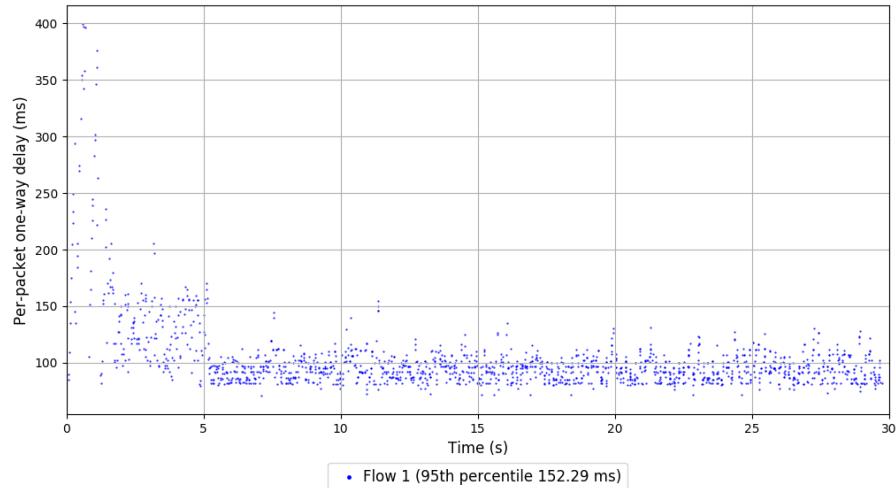
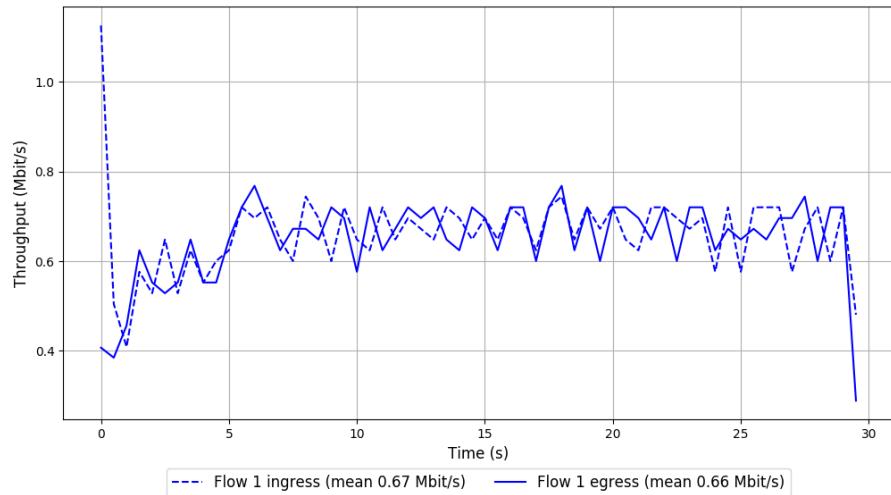


Run 2: Statistics of Indigo-1-32

```
Start at: 2018-01-31 07:11:39
End at: 2018-01-31 07:12:09
Local clock offset: -0.602 ms
Remote clock offset: 1.725 ms

# Below is generated by plot.py at 2018-01-31 09:32:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 152.291 ms
Loss rate: 2.17%
-- Flow 1:
Average throughput: 0.66 Mbit/s
95th percentile per-packet one-way delay: 152.291 ms
Loss rate: 2.17%
```

Run 2: Report of Indigo-1-32 — Data Link

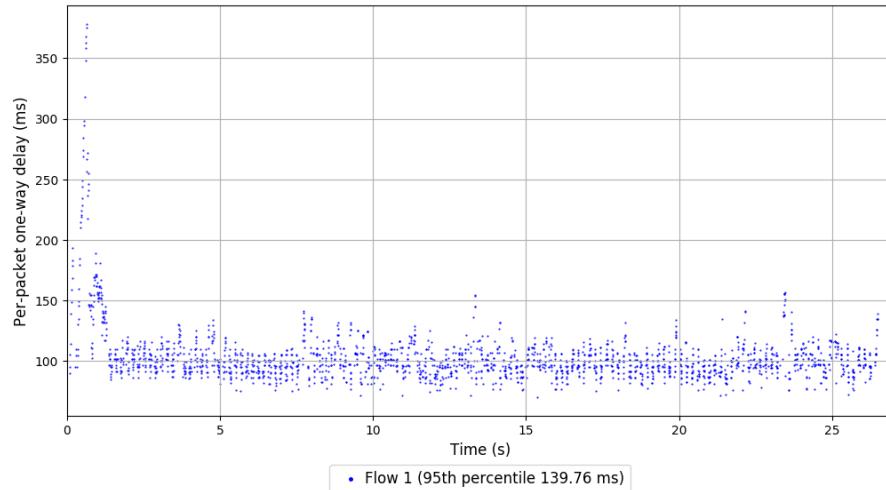
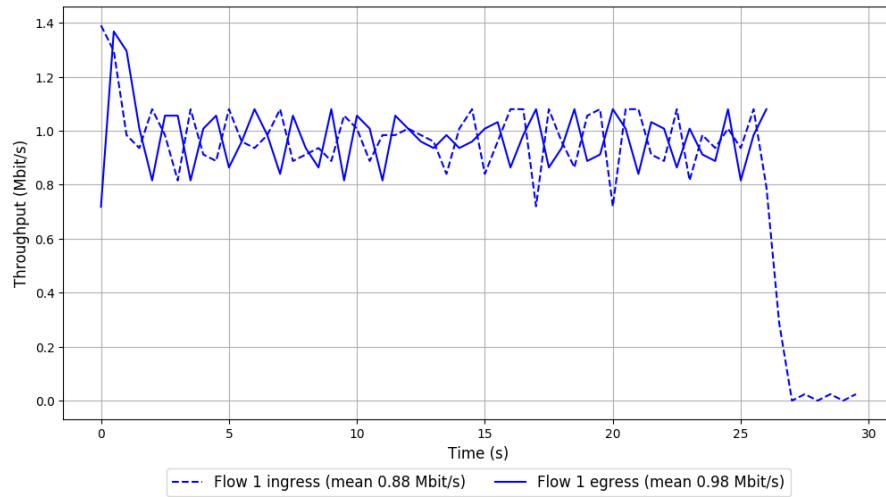


Run 3: Statistics of Indigo-1-32

```
Start at: 2018-01-31 07:40:11
End at: 2018-01-31 07:40:41
Local clock offset: -0.666 ms
Remote clock offset: 2.795 ms

# Below is generated by plot.py at 2018-01-31 09:32:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 139.762 ms
Loss rate: 1.10%
-- Flow 1:
Average throughput: 0.98 Mbit/s
95th percentile per-packet one-way delay: 139.762 ms
Loss rate: 1.10%
```

Run 3: Report of Indigo-1-32 — Data Link

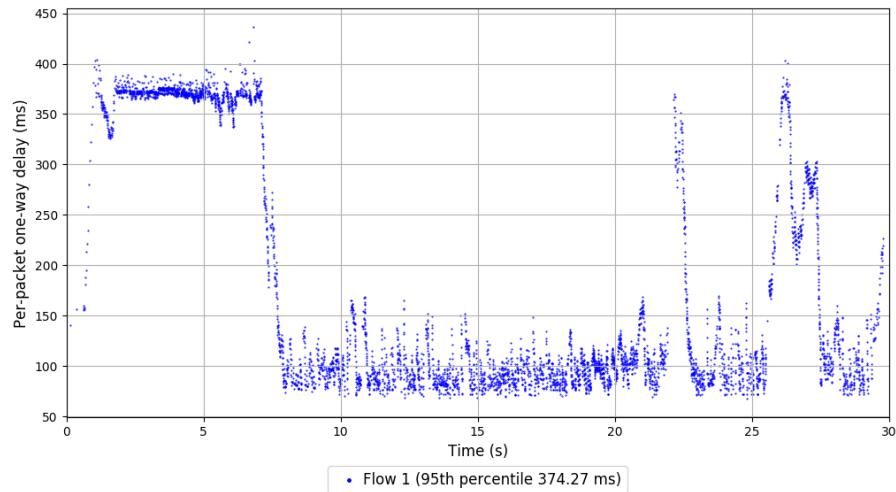
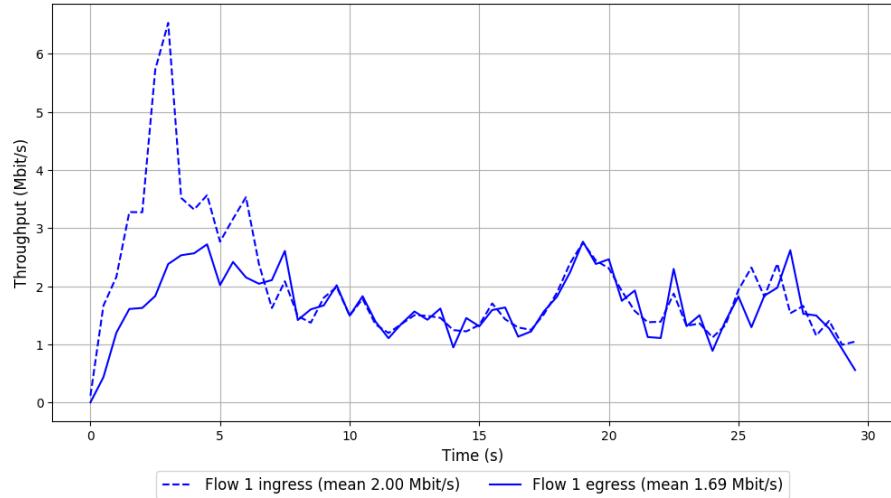


Run 1: Statistics of Vivace-latency

```
Start at: 2018-01-31 06:49:19
End at: 2018-01-31 06:49:49
Local clock offset: -0.451 ms
Remote clock offset: 1.341 ms

# Below is generated by plot.py at 2018-01-31 09:32:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.69 Mbit/s
95th percentile per-packet one-way delay: 374.270 ms
Loss rate: 16.22%
-- Flow 1:
Average throughput: 1.69 Mbit/s
95th percentile per-packet one-way delay: 374.270 ms
Loss rate: 16.22%
```

Run 1: Report of Vivace-latency — Data Link

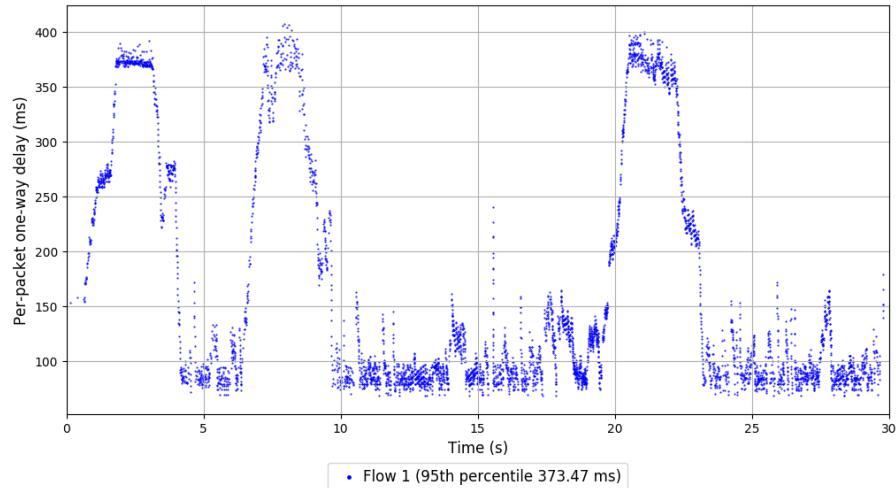
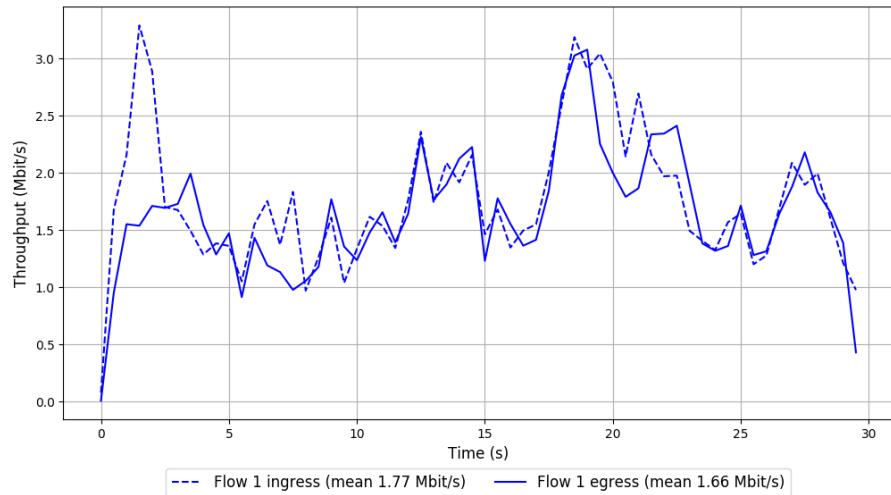


Run 2: Statistics of Vivace-latency

```
Start at: 2018-01-31 07:12:58
End at: 2018-01-31 07:13:28
Local clock offset: -0.614 ms
Remote clock offset: 1.72 ms

# Below is generated by plot.py at 2018-01-31 09:32:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.66 Mbit/s
95th percentile per-packet one-way delay: 373.471 ms
Loss rate: 6.85%
-- Flow 1:
Average throughput: 1.66 Mbit/s
95th percentile per-packet one-way delay: 373.471 ms
Loss rate: 6.85%
```

Run 2: Report of Vivace-latency — Data Link



Run 3: Statistics of Vivace-latency

/home/ubuntu/pantheon_data/2018-01-31T06-47-China-ppp0-to-AWS-Korea-3-runs/vivace_latency_st

Run 3: Report of Vivace-latency — Data Link

Figure is missing

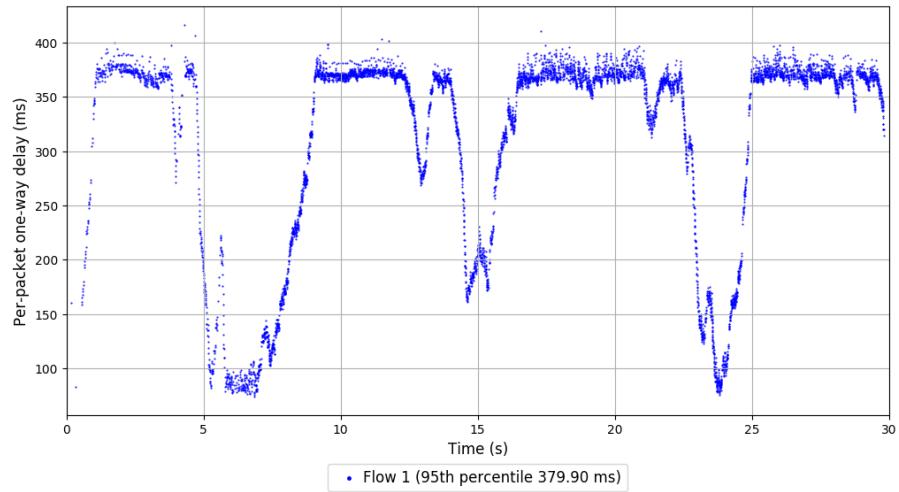
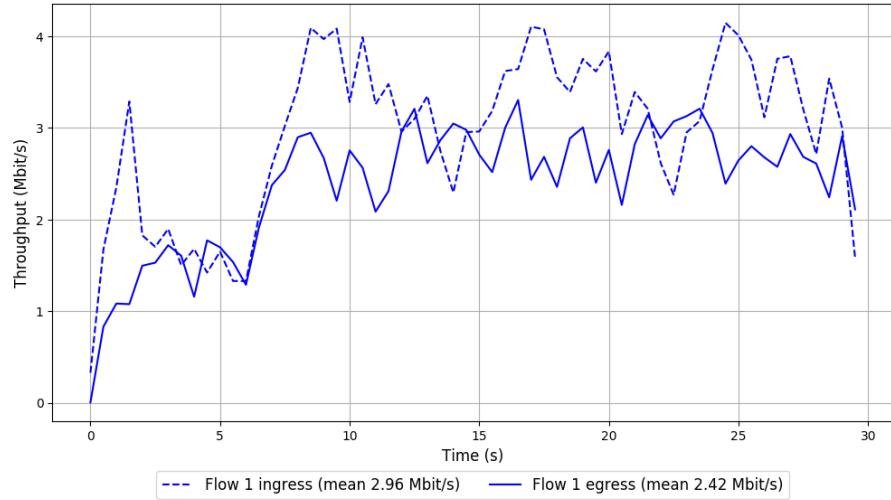
Figure is missing

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

```
Start at: 2018-01-31 06:57:11
End at: 2018-01-31 06:57:41
Local clock offset: -0.712 ms
Remote clock offset: 1.767 ms

# Below is generated by plot.py at 2018-01-31 09:32:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.42 Mbit/s
95th percentile per-packet one-way delay: 379.902 ms
Loss rate: 18.81%
-- Flow 1:
Average throughput: 2.42 Mbit/s
95th percentile per-packet one-way delay: 379.902 ms
Loss rate: 18.81%
```

Run 1: Report of Vivace-loss — Data Link

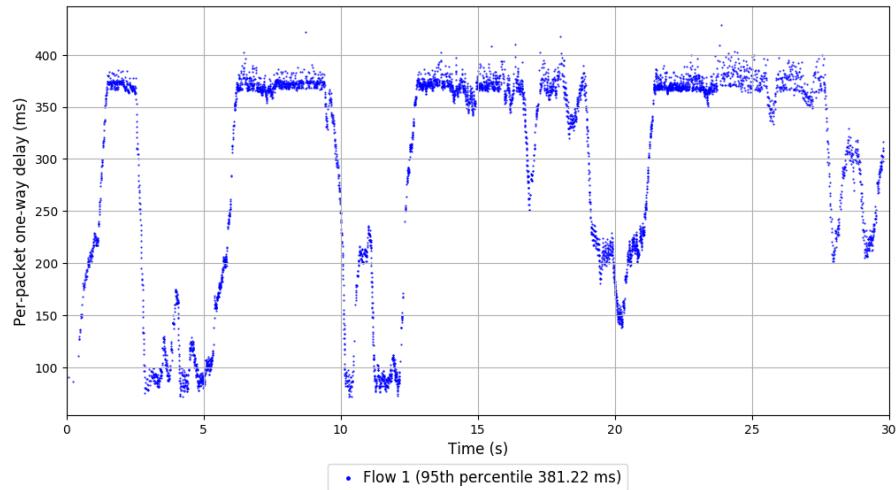
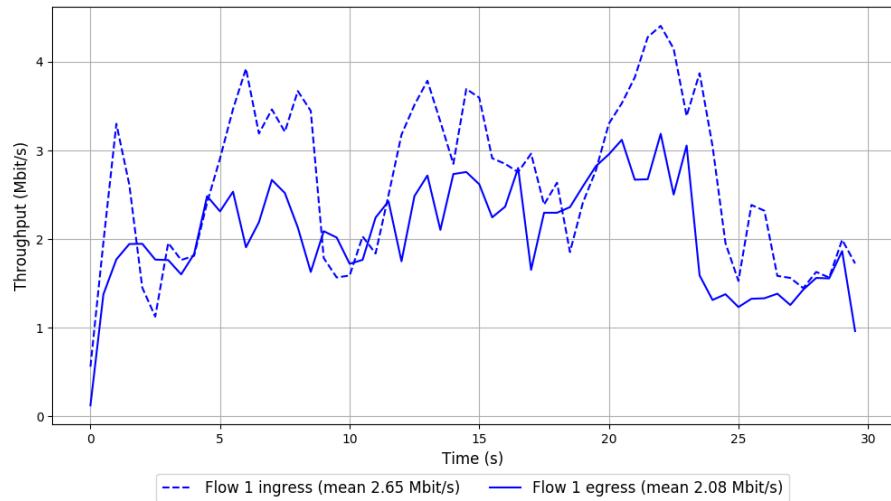


Run 2: Statistics of Vivace-loss

```
Start at: 2018-01-31 07:21:56
End at: 2018-01-31 07:22:26
Local clock offset: -0.715 ms
Remote clock offset: 1.694 ms

# Below is generated by plot.py at 2018-01-31 09:32:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.08 Mbit/s
95th percentile per-packet one-way delay: 381.216 ms
Loss rate: 21.98%
-- Flow 1:
Average throughput: 2.08 Mbit/s
95th percentile per-packet one-way delay: 381.216 ms
Loss rate: 21.98%
```

Run 2: Report of Vivace-loss — Data Link

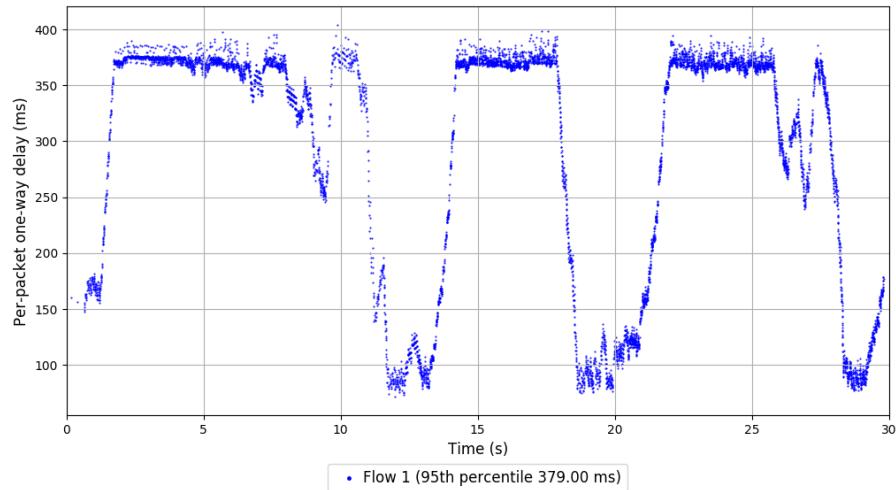
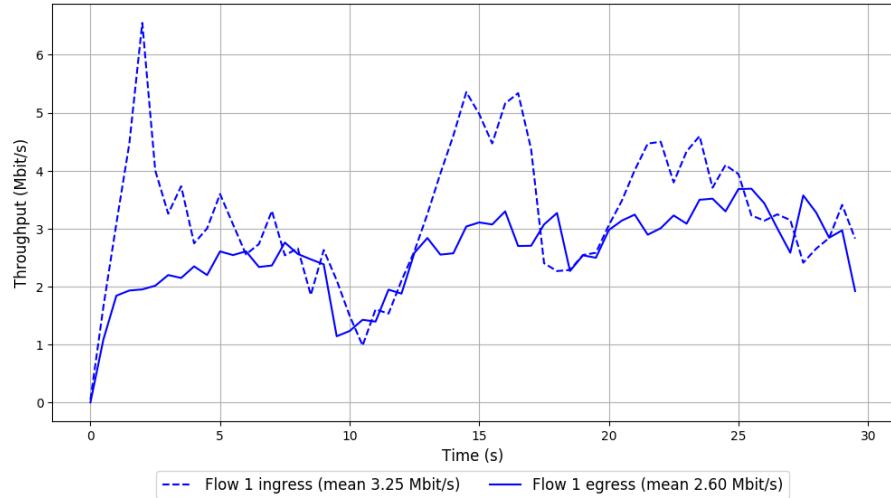


Run 3: Statistics of Vivace-loss

```
Start at: 2018-01-31 07:51:11
End at: 2018-01-31 07:51:41
Local clock offset: -0.351 ms
Remote clock offset: 3.184 ms

# Below is generated by plot.py at 2018-01-31 09:32:18
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.60 Mbit/s
95th percentile per-packet one-way delay: 379.003 ms
Loss rate: 20.58%
-- Flow 1:
Average throughput: 2.60 Mbit/s
95th percentile per-packet one-way delay: 379.003 ms
Loss rate: 20.58%
```

Run 3: Report of Vivace-loss — Data Link

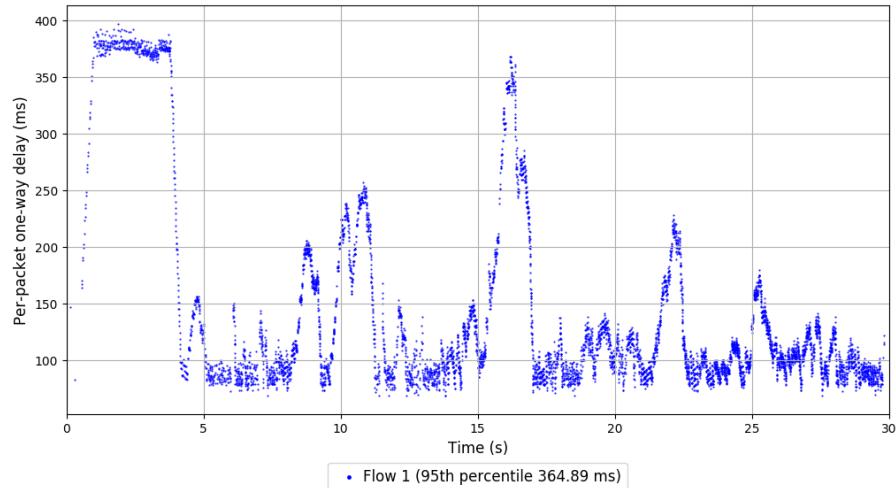
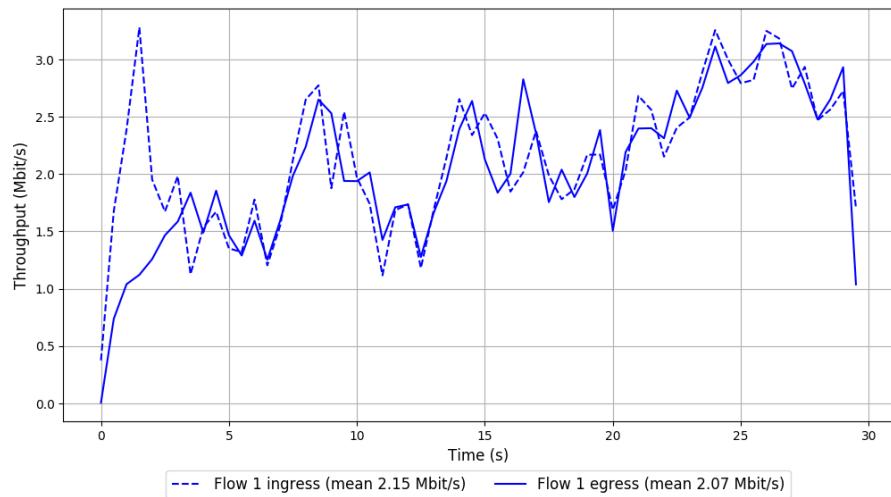


Run 1: Statistics of Vivace-LTE

```
Start at: 2018-01-31 07:01:08
End at: 2018-01-31 07:01:38
Local clock offset: -0.475 ms
Remote clock offset: 2.353 ms

# Below is generated by plot.py at 2018-01-31 09:32:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.07 Mbit/s
95th percentile per-packet one-way delay: 364.889 ms
Loss rate: 4.61%
-- Flow 1:
Average throughput: 2.07 Mbit/s
95th percentile per-packet one-way delay: 364.889 ms
Loss rate: 4.61%
```

Run 1: Report of Vivace-LTE — Data Link

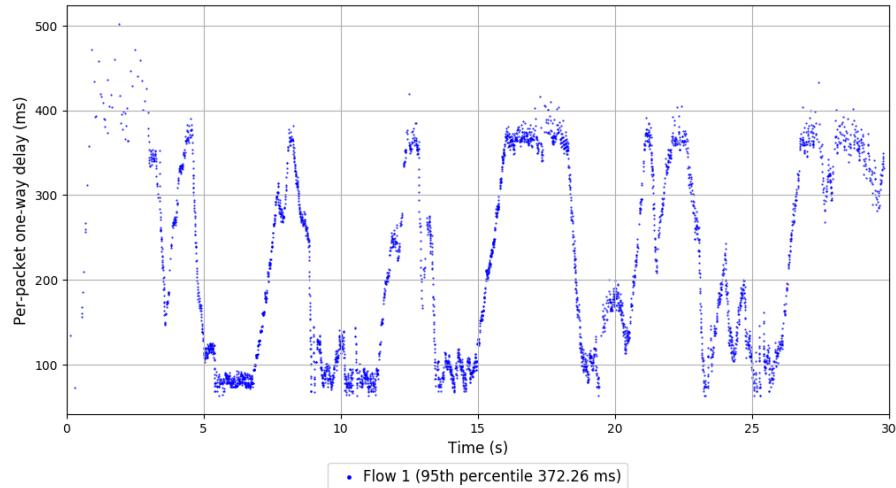
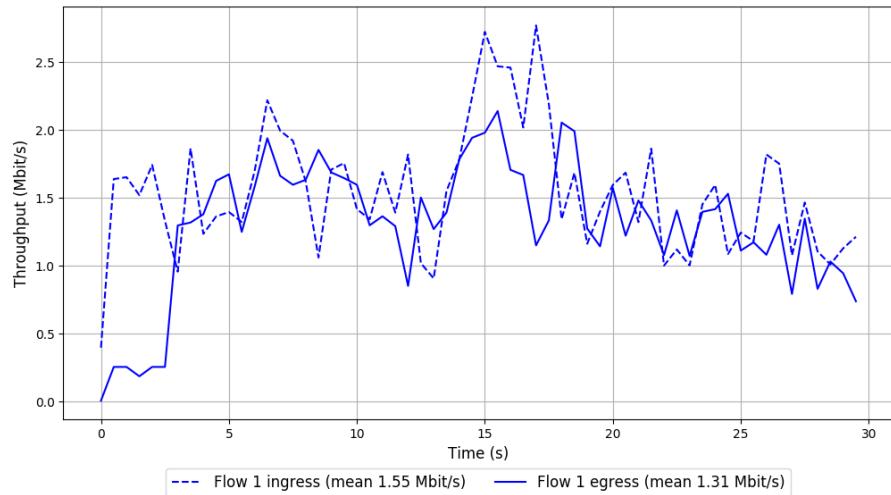


Run 2: Statistics of Vivace-LTE

```
Start at: 2018-01-31 07:26:54
End at: 2018-01-31 07:27:24
Local clock offset: -0.887 ms
Remote clock offset: 1.829 ms

# Below is generated by plot.py at 2018-01-31 09:32:19
# Datalink statistics
-- Total of 1 flow:
Average throughput: 1.31 Mbit/s
95th percentile per-packet one-way delay: 372.263 ms
Loss rate: 15.75%
-- Flow 1:
Average throughput: 1.31 Mbit/s
95th percentile per-packet one-way delay: 372.263 ms
Loss rate: 15.75%
```

Run 2: Report of Vivace-LTE — Data Link



Run 3: Statistics of Vivace-LTE

```
Start at: 2018-01-31 07:55:18
End at: 2018-01-31 07:55:48
Local clock offset: -0.898 ms
Remote clock offset: 3.552 ms

# Below is generated by plot.py at 2018-01-31 09:32:20
# Datalink statistics
-- Total of 1 flow:
Average throughput: 2.29 Mbit/s
95th percentile per-packet one-way delay: 336.004 ms
Loss rate: 2.92%
-- Flow 1:
Average throughput: 2.29 Mbit/s
95th percentile per-packet one-way delay: 336.004 ms
Loss rate: 2.92%
```

Run 3: Report of Vivace-LTE — Data Link

