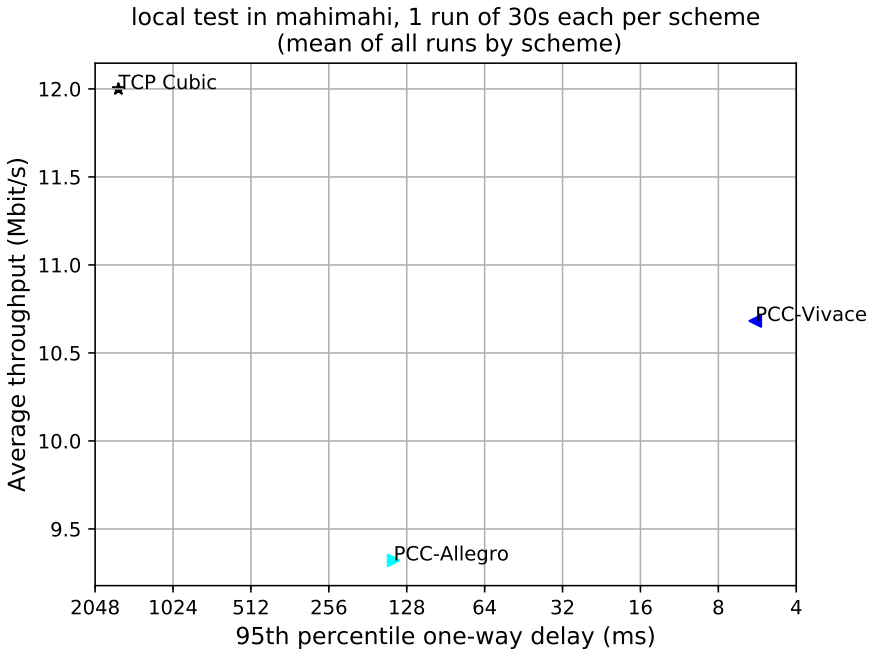
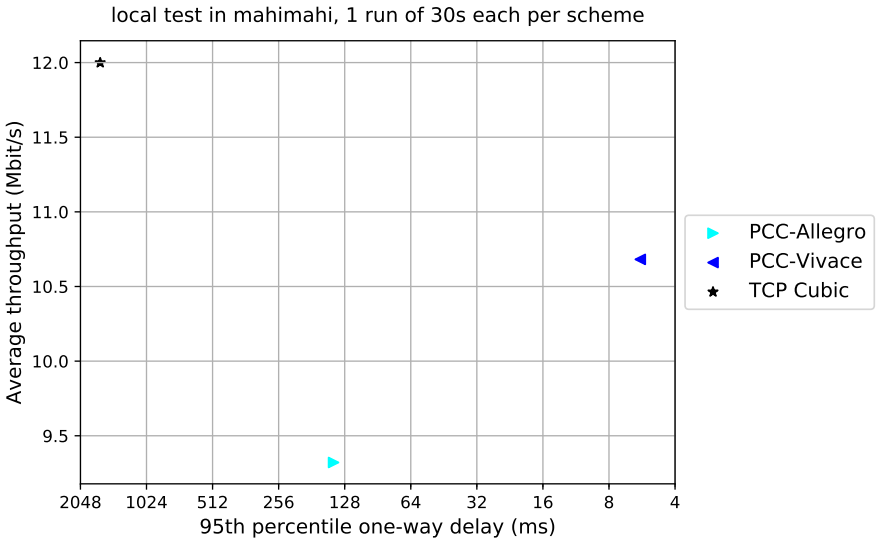
Pantheon Report

Generated at 2022-04-13 06:05:54 (UTC).
Tested in mahimahi: `mm-link 12mbps.trace 12mbps.trace`
Repeated the test of 5 congestion control schemes once.
Each test lasted for 30 seconds running 1 flow.

```
System info:
Linux 4.15.0-175-generic
net.core.default_qdisc = fq_codel
net.core.rmem_default = 212992
net.core.rmem_max = 212992
net.core.wmem_default = 212992
net.core.wmem_max = 212992
net.ipv4.tcp_rmem = 4096 131072 6291456
net.ipv4.tcp_wmem = 4096 16384 4194304

Git summary:
branch: master @ 99ce503a4b7f0c69e0a7c7e25dfa3753c361252a
third_party/fillp @ d6da1459332fcee56963885d7eba17e6a32d4519
third_party/fillp-sheep @ 0e5bb722943babcd2b090d2c64fcd45e12e923f9
third_party/genericCC @ d0153f8e594aa89e93b032143cedbdfe58e562f4
third_party/indigo @ 463d89b09699a57bfdfbae351646df6a60040b90
third_party/libutp @ b3465b942e2826f2b179eaab4a906ce6bb7cf3cf
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-quic @ 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
```


local test in mahimahi, 1 run of 30s each per scheme
(mean of all runs by scheme)
TCP Cubic
PCC-Vivace
PCC-Allegro
Average throughput (Mbit/s)
12.0
11.5
11.0
10.5
10.0
9.5
2048
1024
512
256
128
64
32
16
8
4
95th percentile one-way delay (ms)


local test in mahimahi, 1 run of 30s each per scheme
Average throughput (Mbit/s)
12.0
11.5
11.0
10.5
10.0
9.5
2048
1024
512
256
128
64
32
16
8
4
95th percentile one-way delay (ms)
PCC-Allegro
PCC-Vivace
TCP Cubic

scheme	# runs	mean avg tput (Mbit/s) flow 1	mean 95th-%ile delay (ms) flow 1	mean loss rate (%) flow 1
TCP BBR	0	N/A	N/A	N/A
TCP Cubic	1	12.00	1664.63	2.96
PCC-Allegro	1	9.32	143.87	1.18
TCP Vegas	0	N/A	N/A	N/A
PCC-Vivace	1	10.68	5.76	0.01

```
Run 1: Statistics of TCP BBR

Start at: 2022-04-13 06:03:05
End at: 2022-04-13 06:03:35
```

Run 1: Report of TCP BBR — Data Link

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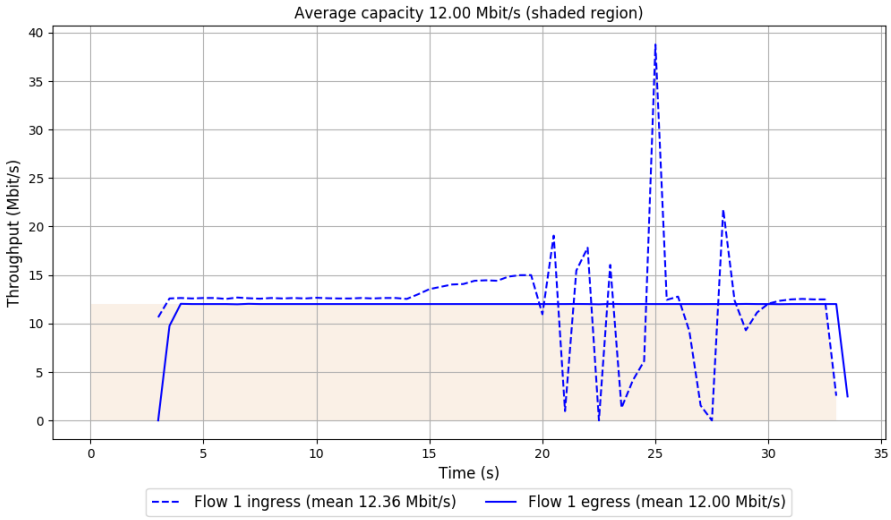
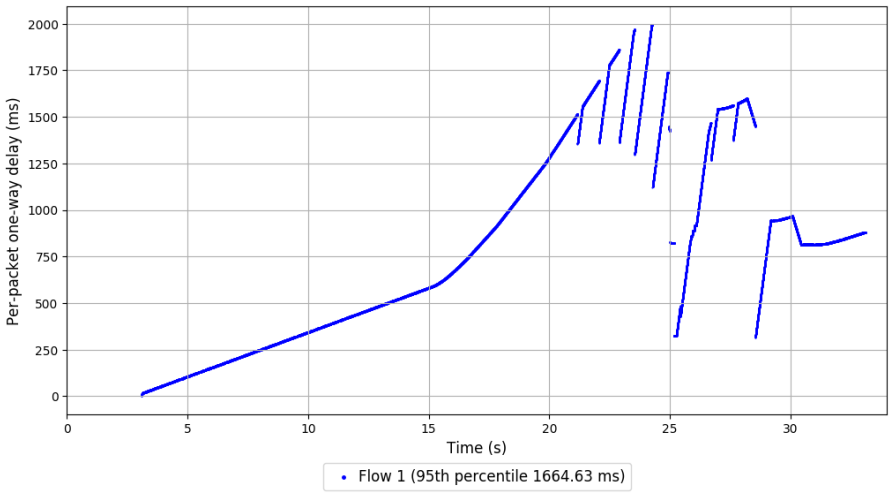
```
Run 1: Statistics of TCP Cubic

Start at: 2022-04-13 06:04:12
End at: 2022-04-13 06:04:42

# Below is generated by plot.py at 2022-04-13 06:05:53
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 12.00 Mbit/s (100.0% utilization)
95th percentile per-packet one-way delay: 1664.635 ms
Loss rate: 2.96%
-- Flow 1:
Average throughput: 12.00 Mbit/s
95th percentile per-packet one-way delay: 1664.635 ms
Loss rate: 2.96%
```

Run 1: Report of TCP Cubic — Data Link



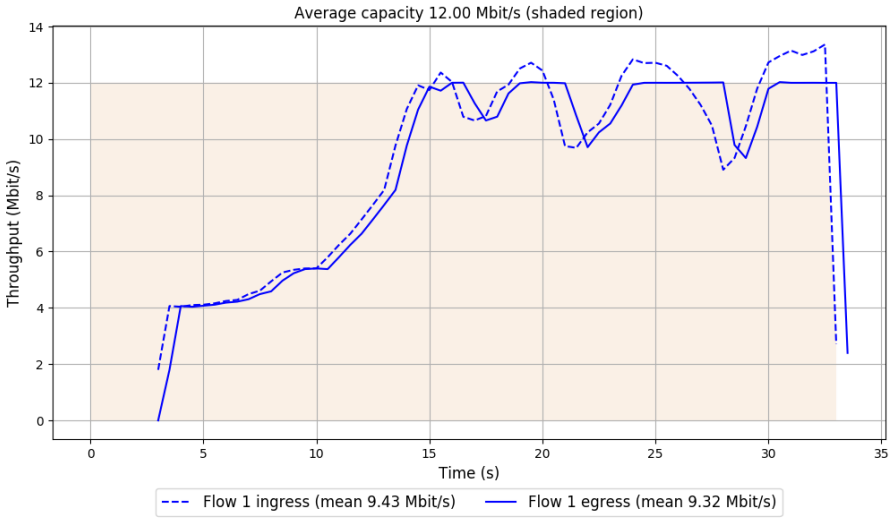


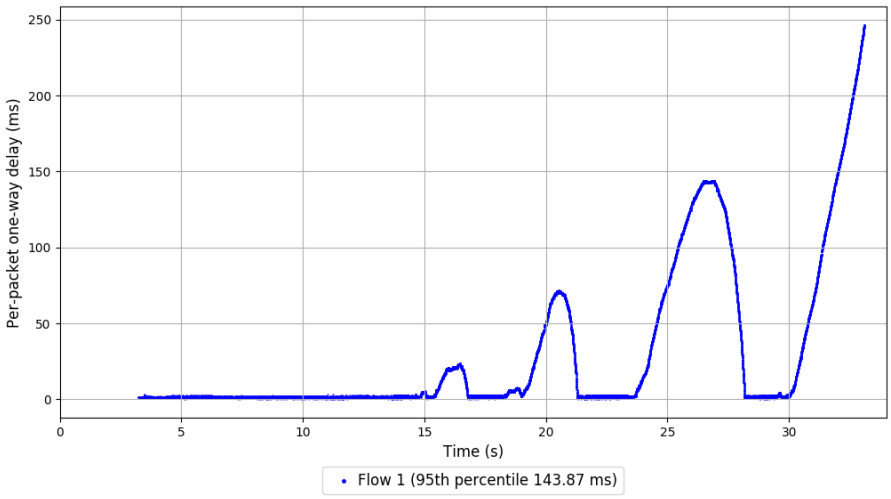
```
Run 1: Statistics of PCC-Allegro

Start at: 2022-04-13 06:01:58
End at: 2022-04-13 06:02:28

# Below is generated by plot.py at 2022-04-13 06:05:53
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 9.32 Mbit/s (77.7% utilization)
95th percentile per-packet one-way delay: 143.866 ms
Loss rate: 1.18%
-- Flow 1:
Average throughput: 9.32 Mbit/s
95th percentile per-packet one-way delay: 143.866 ms
Loss rate: 1.18%
```

Run 1: Report of PCC-Allegro — Data Link





```
Run 1: Statistics of TCP Vegas

Start at: 2022-04-13 06:02:31
End at: 2022-04-13 06:03:01
```

Run 1: Report of TCP Vegas — Data Link

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Figure is missing

```
Run 1: Statistics of PCC-Vivace

Start at: 2022-04-13 06:03:38
End at: 2022-04-13 06:04:08

# Below is generated by plot.py at 2022-04-13 06:05:53
# Datalink statistics
-- Total of 1 flow:
Average capacity: 12.00 Mbit/s
Average throughput: 10.68 Mbit/s (89.0% utilization)
95th percentile per-packet one-way delay: 5.761 ms
Loss rate: 0.01%
-- Flow 1:
Average throughput: 10.68 Mbit/s
95th percentile per-packet one-way delay: 5.761 ms
Loss rate: 0.01%
```

Run 1: Report of PCC-Vivace — Data Link