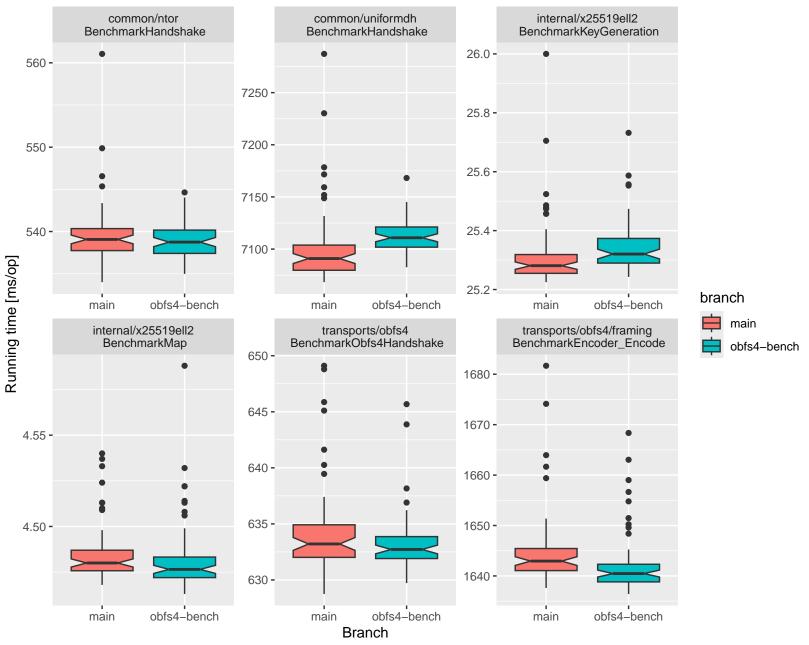
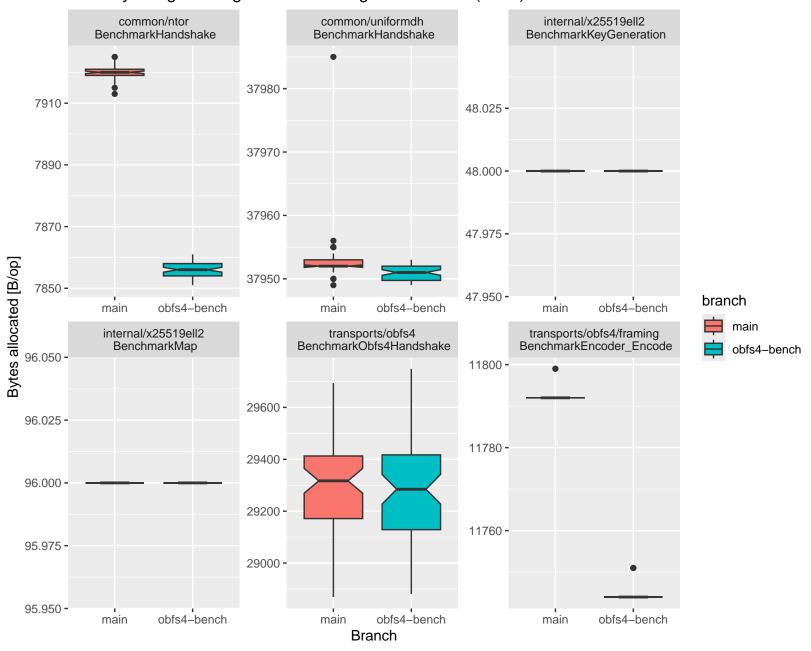
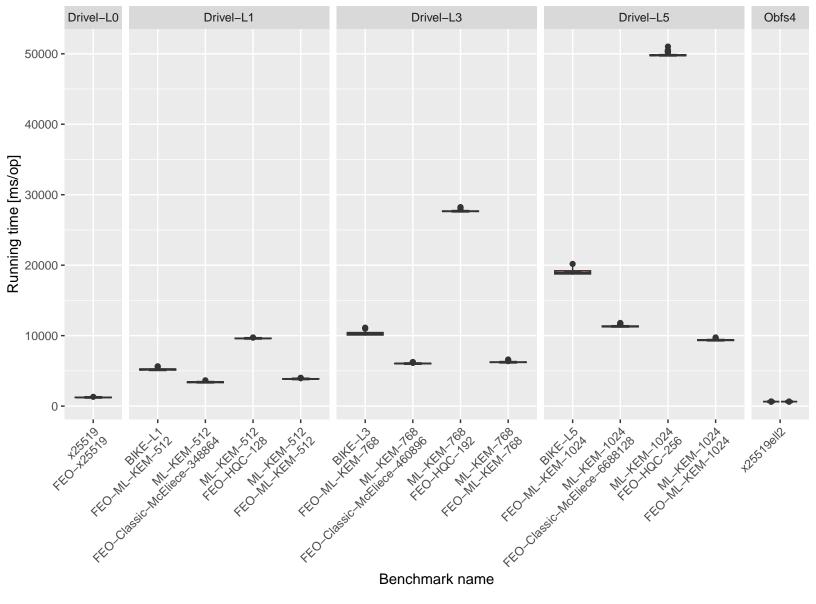
Running Time Changes in Preexisting Benchmarks (n=64)



Memory Usage Changes in Preexisting Benchmarks (n=64)



Simulated Handshake Running Time (n=64)

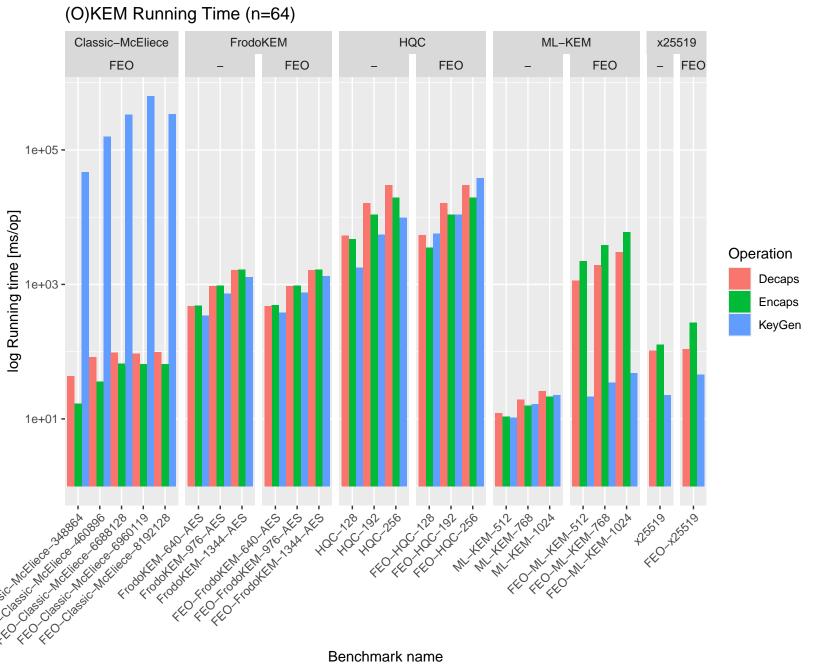


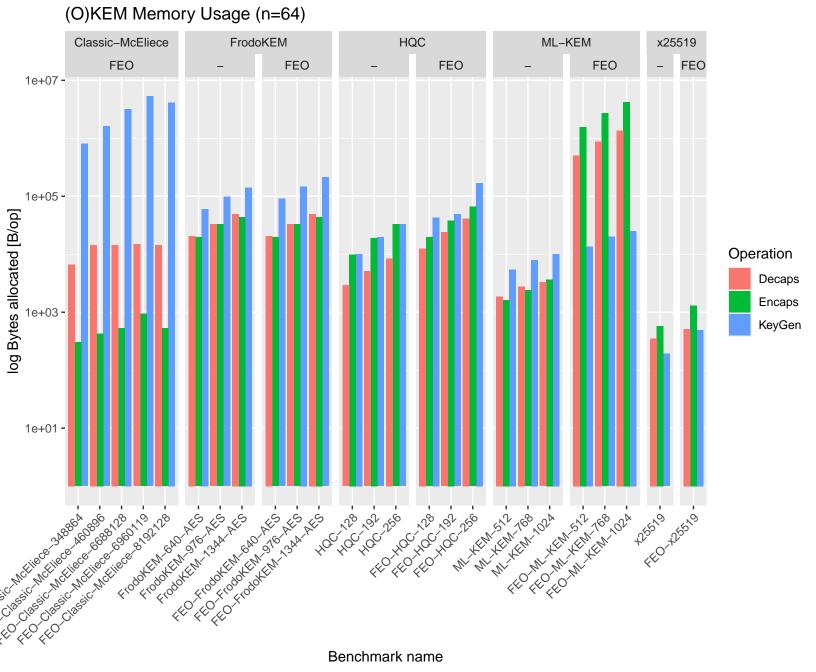
branch imain obfs4-bench

Handshake Memory Usage (n=64) Drivel-L0 Drivel-L1 Drivel-L3 Drivel-L5 Obfs4 6e+06 -Bytes allocated [B/ob] FEO M. KEM ST. KEM Stop Stop of the Control of the LEO MI KENTOS EN 168 SE NELIGIO DE LEO MILIERO MELIBRO EEC.M. AEIM. 1024 M. 1 0e+00 -EEO MILKEM ST. S. EFO MILKEM 1024 W. K. W. C. S. THEOTH CLES THE HOUSE

Benchmark name

branch imain imain obfs4-bench





Network Traffic over Time (TCP payloads, n=8) drivel (L0) **■300 I** drivel (L1a) _+50 ≡ drivel (L1b) _50 ≡ drivel (L1c) _+50 ≡ drivel (L1d) _50= drivel (L3a) Network traffic [kbps] drivel (L3b) drivel (L3c) drivel (L3d) drivel (L5a) _59 ≡ drivel (L5b) _480 ■ drivel (L5c) _480 ■ drivel (L5d) _+50 ≡ obfs4 =200 = 2 3 9 10 11 8 Time since client Tor startup [s]

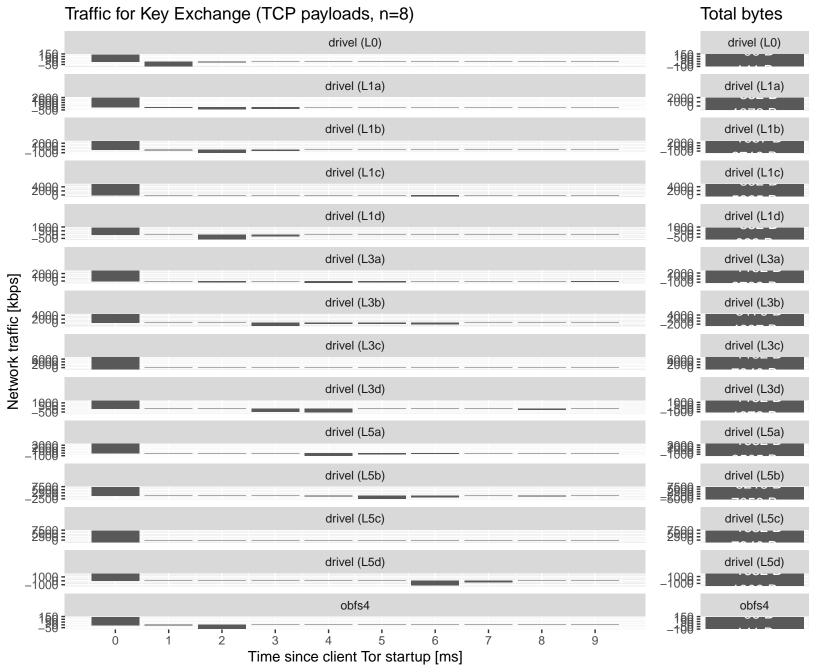
data (bridge)

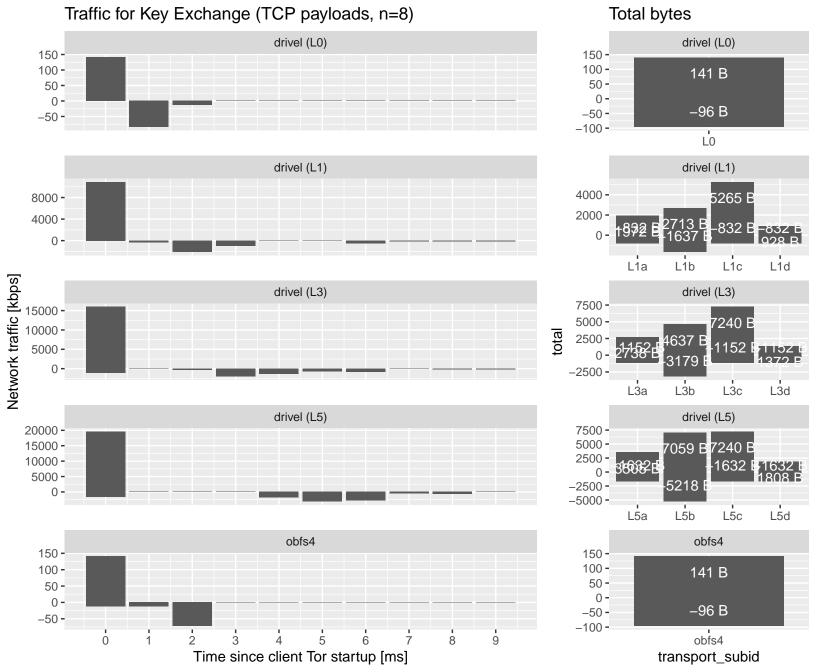
data (extIP)

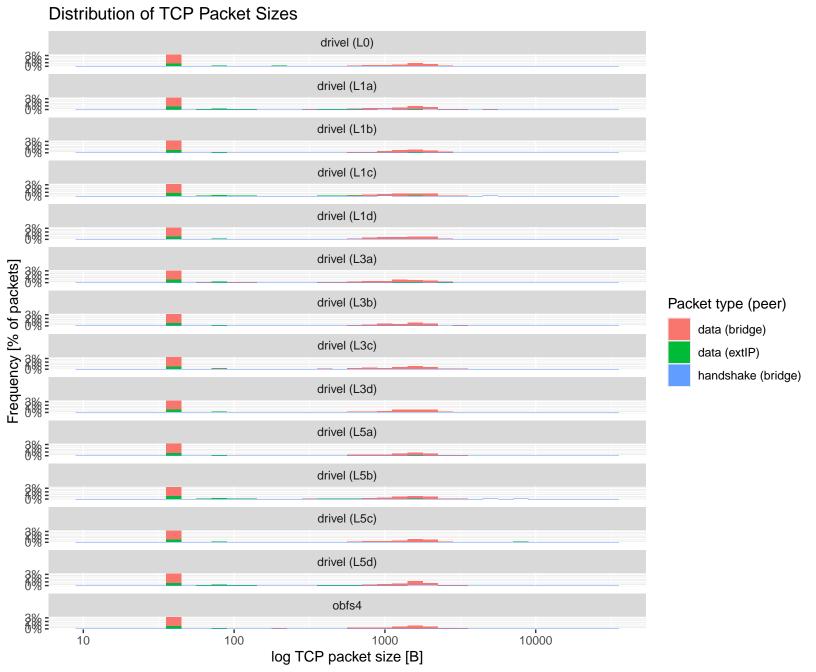
handshake (bridge)

Packet type (peer)

Network Traffic over Time (TCP payloads, n=8) drivel 1000 -0 --1000 **-**Network traffic [kbps] obfs4 0 --100 **-**-200 **-**2 3 10 0 9 11 Time since client Tor startup [s] Packet type (peer) data (bridge) data (extIP) handshake (bridge)

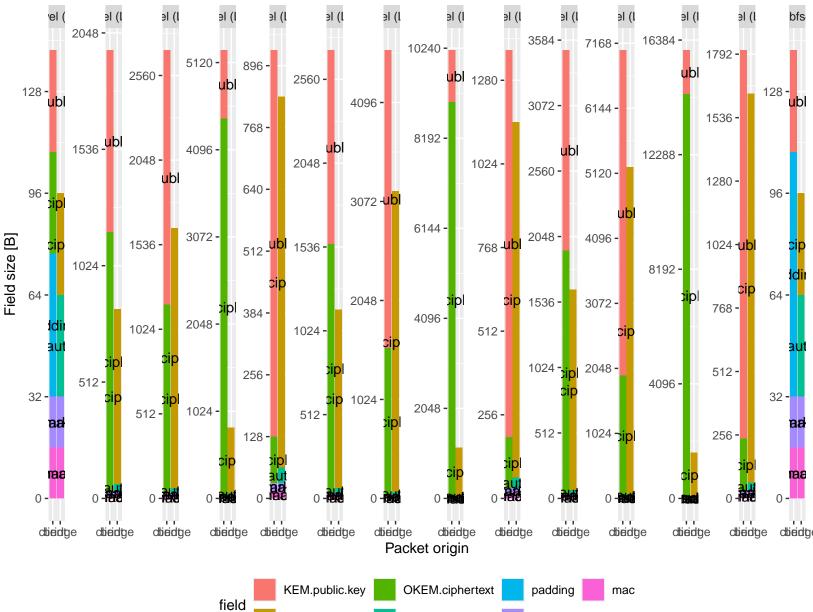






Distribution of TCP Packet Sizes drivel (L0) 3% -2% -1%-0%drivel (L1) 10% -5% -0% -Frequency [% of packets] drivel (L3) Packet type (peer) 10% data (bridge) 5% data (extIP) handshake (bridge) 0% drivel (L5) 10% -5% -0%obfs4 3% -2% -1%-0%-10 100 1000 10000 log TCP packet size [B]

Composition of Handshake Packets el (l el (L el (l el (al (L

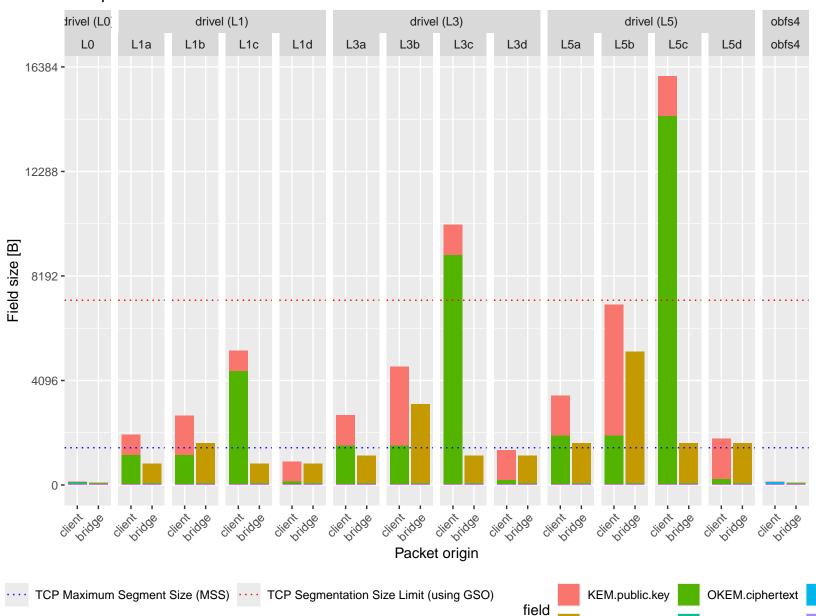


auth

mark

KEM.ciphertext

Composition of Handshake Packets



KEM.ciphertext

auth