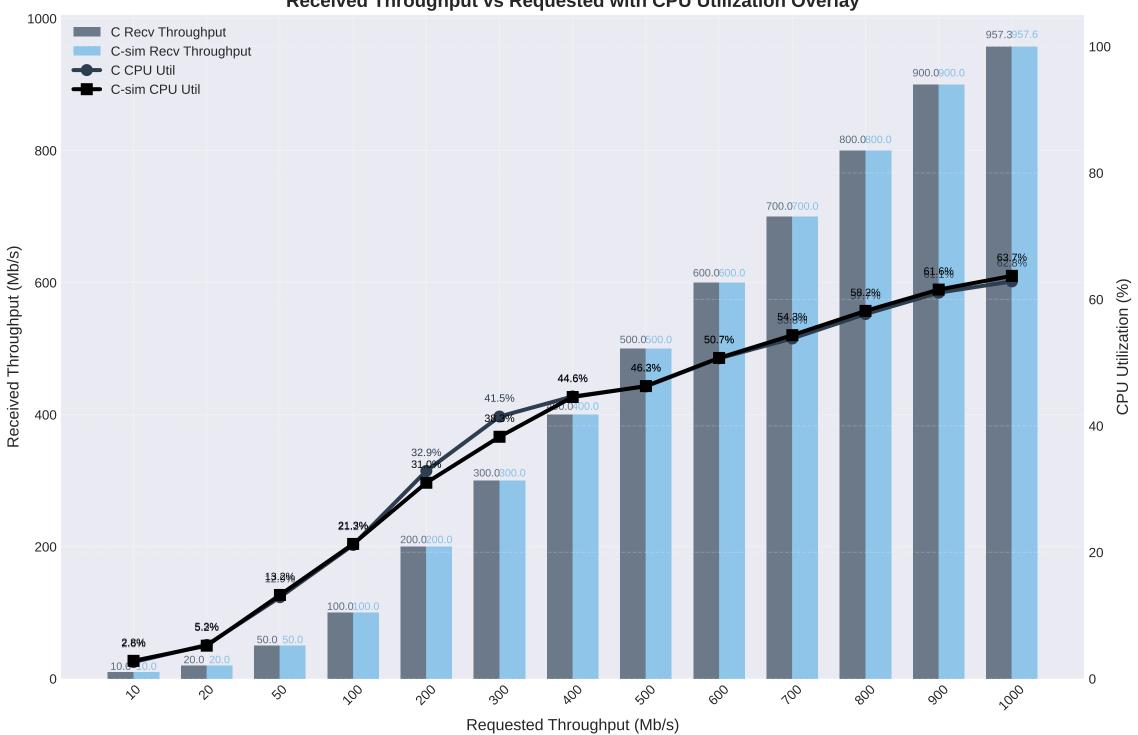
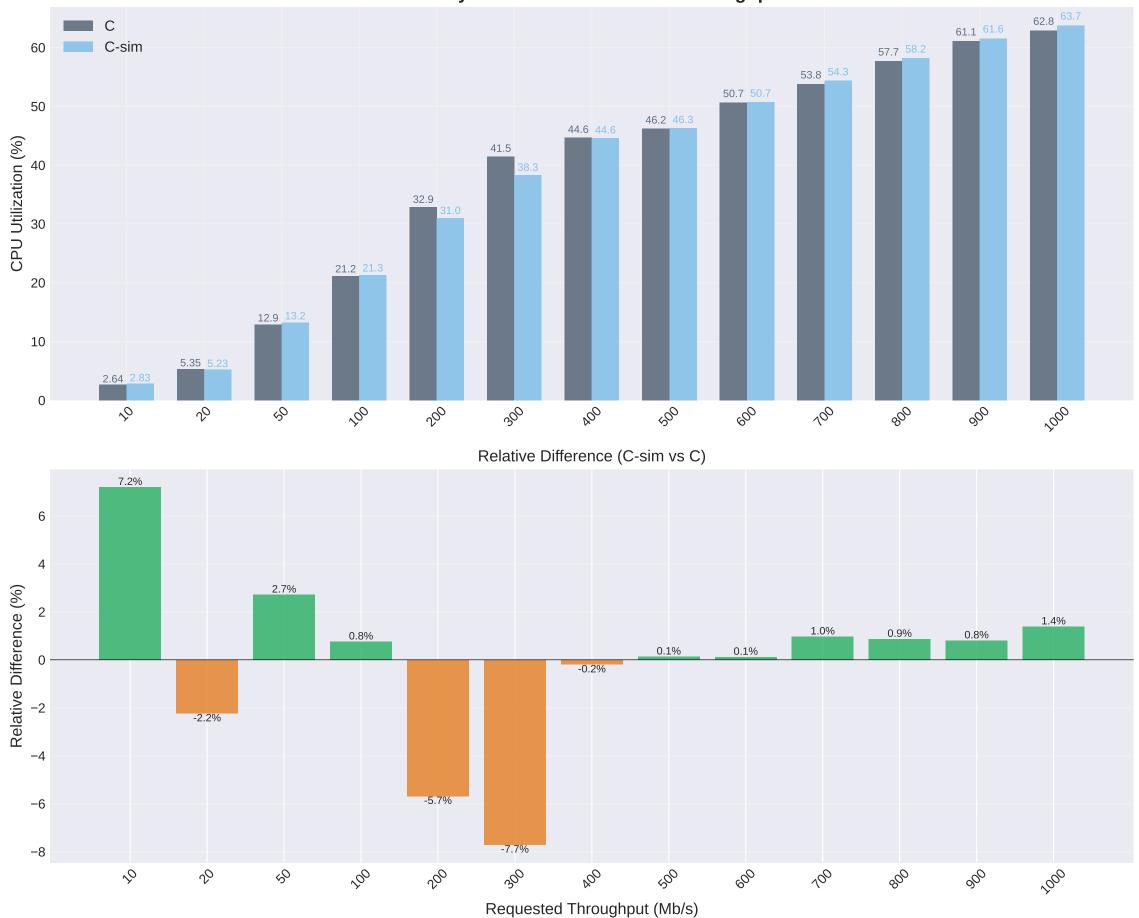
Instructions per Second vs Throughput 0.69 0.69 0.7 С 0.66 C-sim 0.6 0.56 0.56 Instructions per Second (Billions) 0.51 0.51 0.50 0.51 0.51 0.50 0.50 0.50 0.50 0.50 0.50 0.50 0.49 0.49 0.40 0.35 0.34 0.34 0.1 0.0 200 700 300 NOO 400 600 700 900 900 2000 20 20 SO Relative Difference (C-sim vs C) 50.3% 50 40 36.7% Relative Difference (%) 0.8% 0.3% 0.1% 0.2% -0.1% -0.2% -0.4% -0.4% -0.4% -1.5% -4.2% \$0 20 60 200 200 300 NOO 400 600 700 900 900 Requested Throughput (Mb/s)

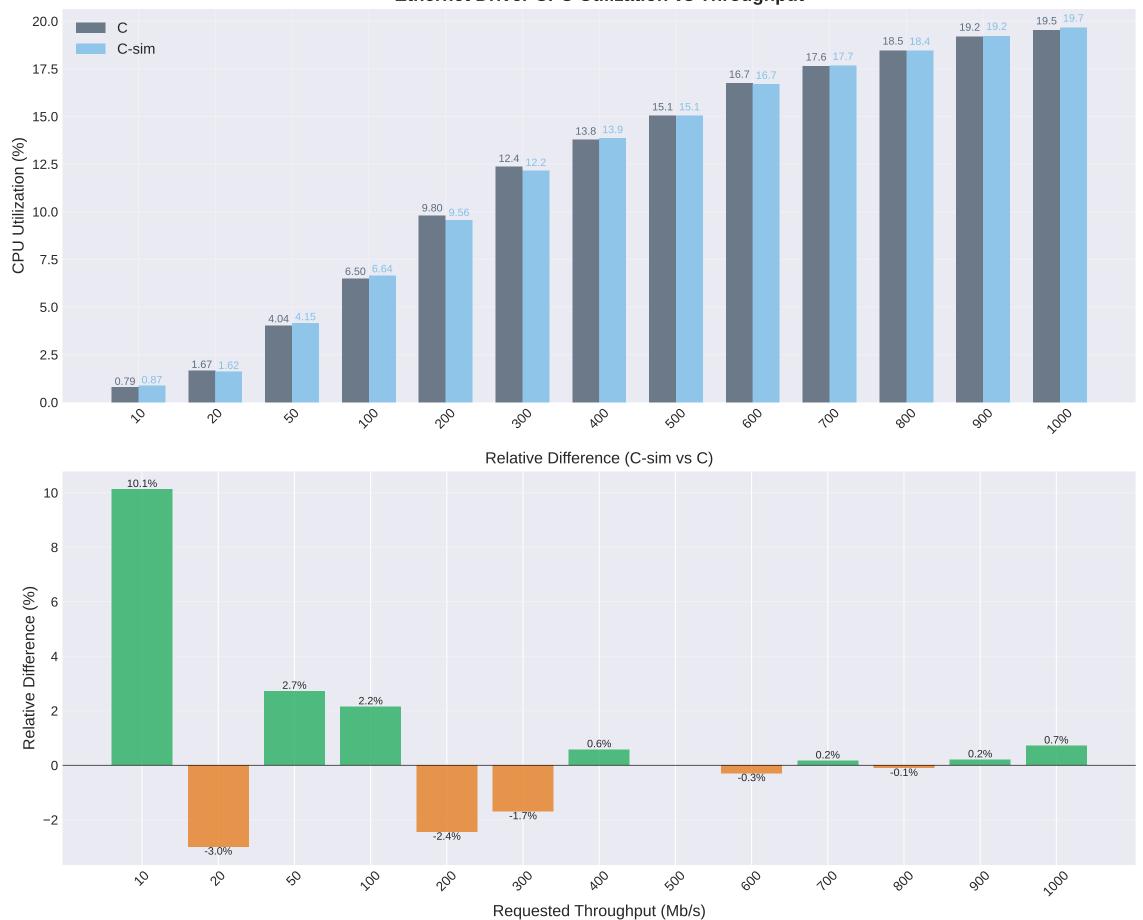
Received Throughput vs Requested with CPU Utilization Overlay



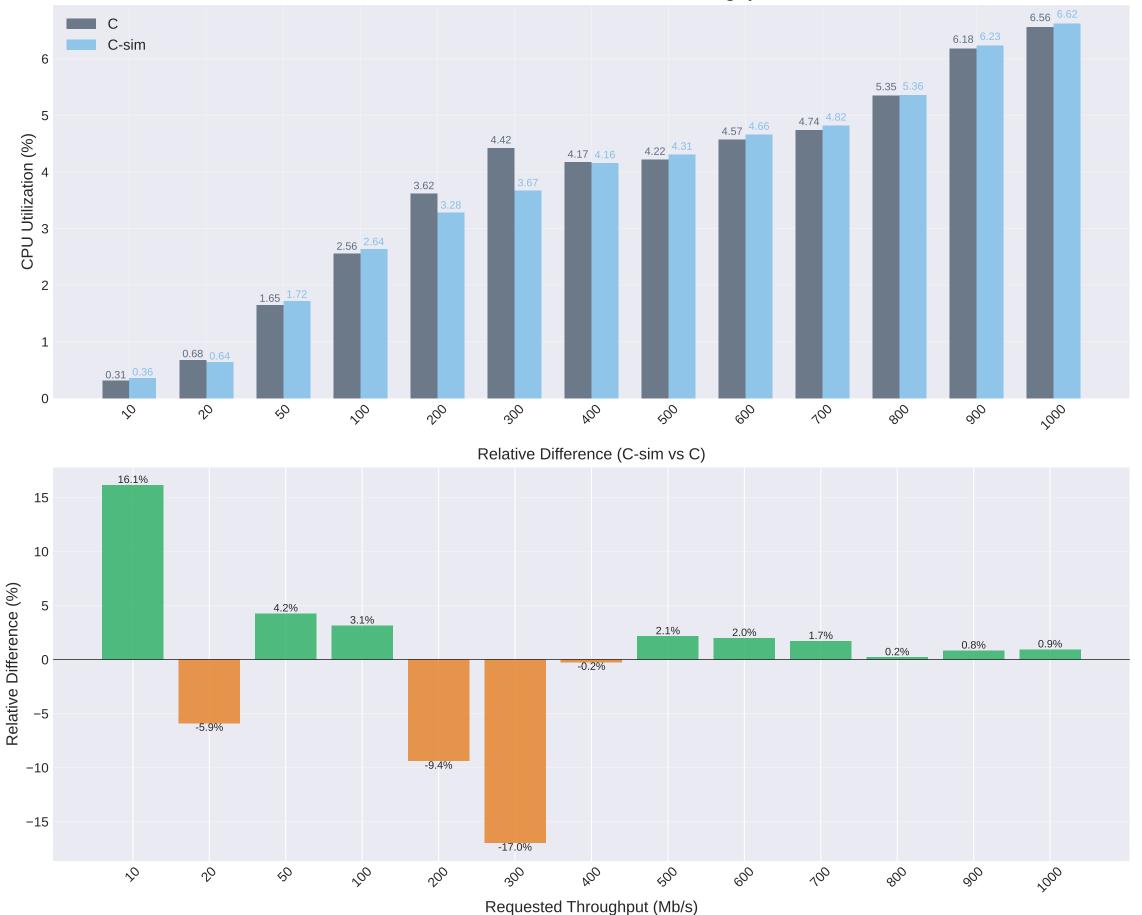
Total System CPU Utilization vs Throughput



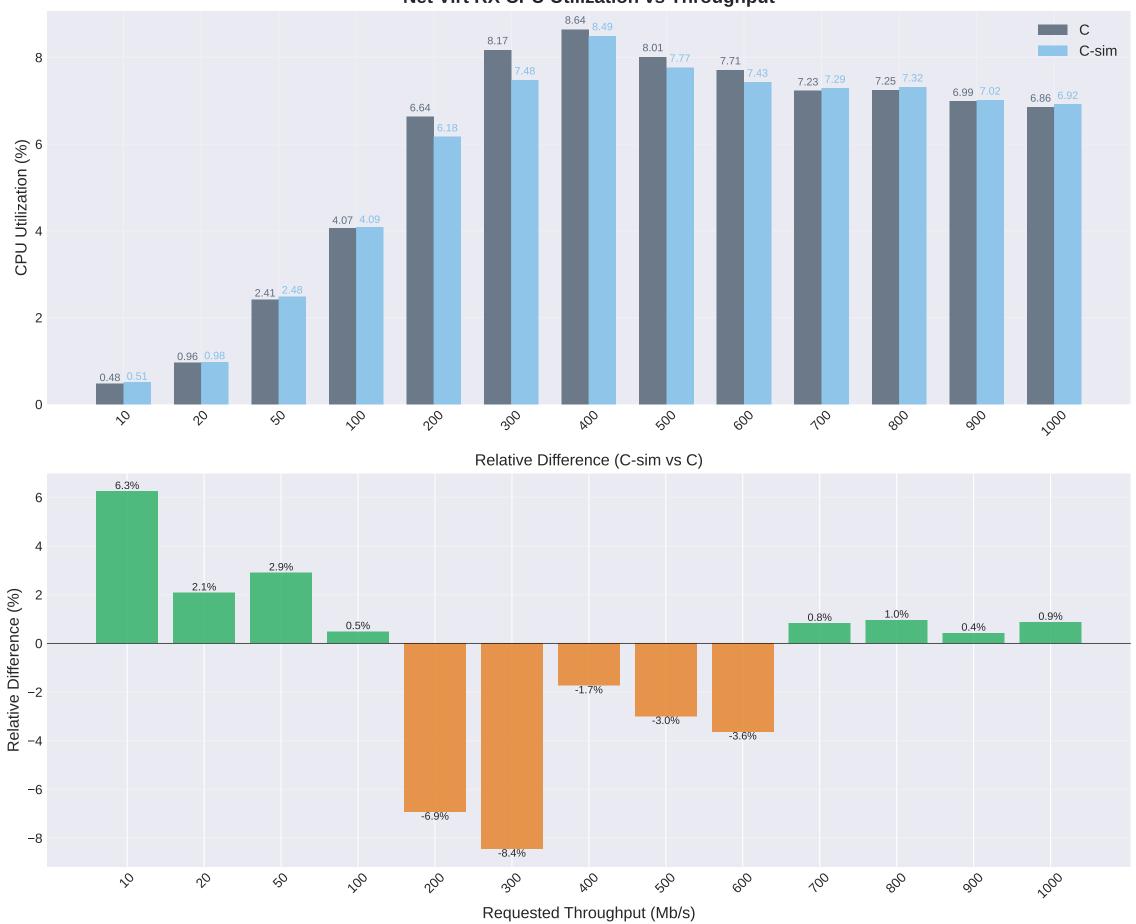
Ethernet Driver CPU Utilization vs Throughput



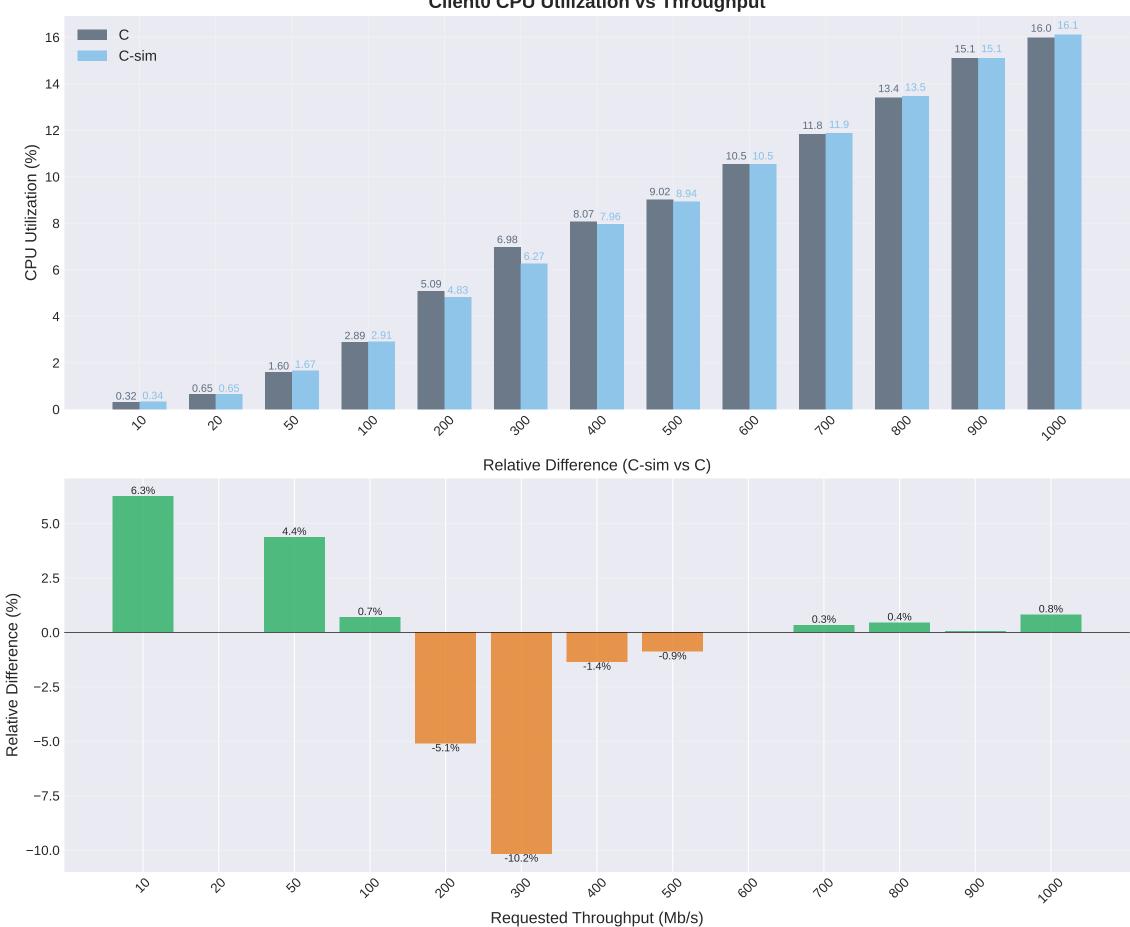
Net Virt TX CPU Utilization vs Throughput



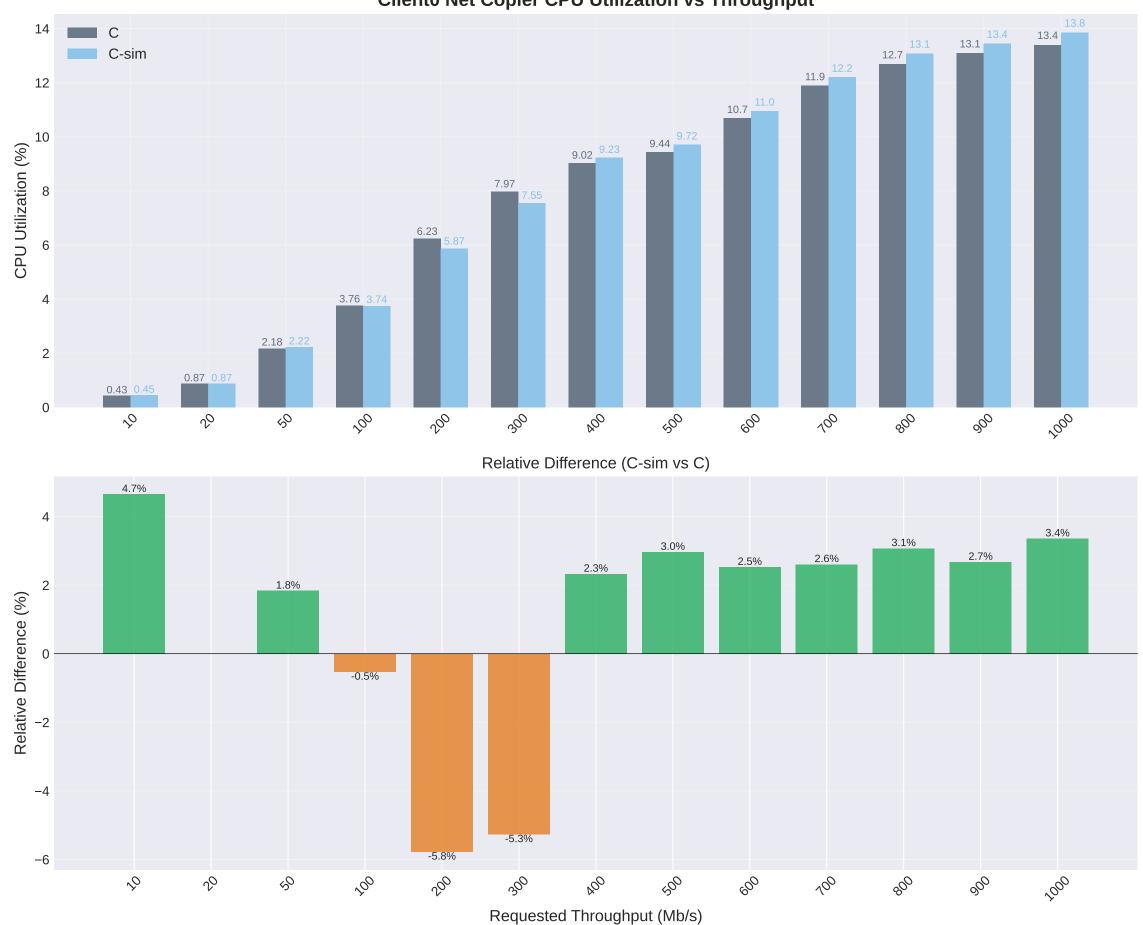
Net Virt RX CPU Utilization vs Throughput



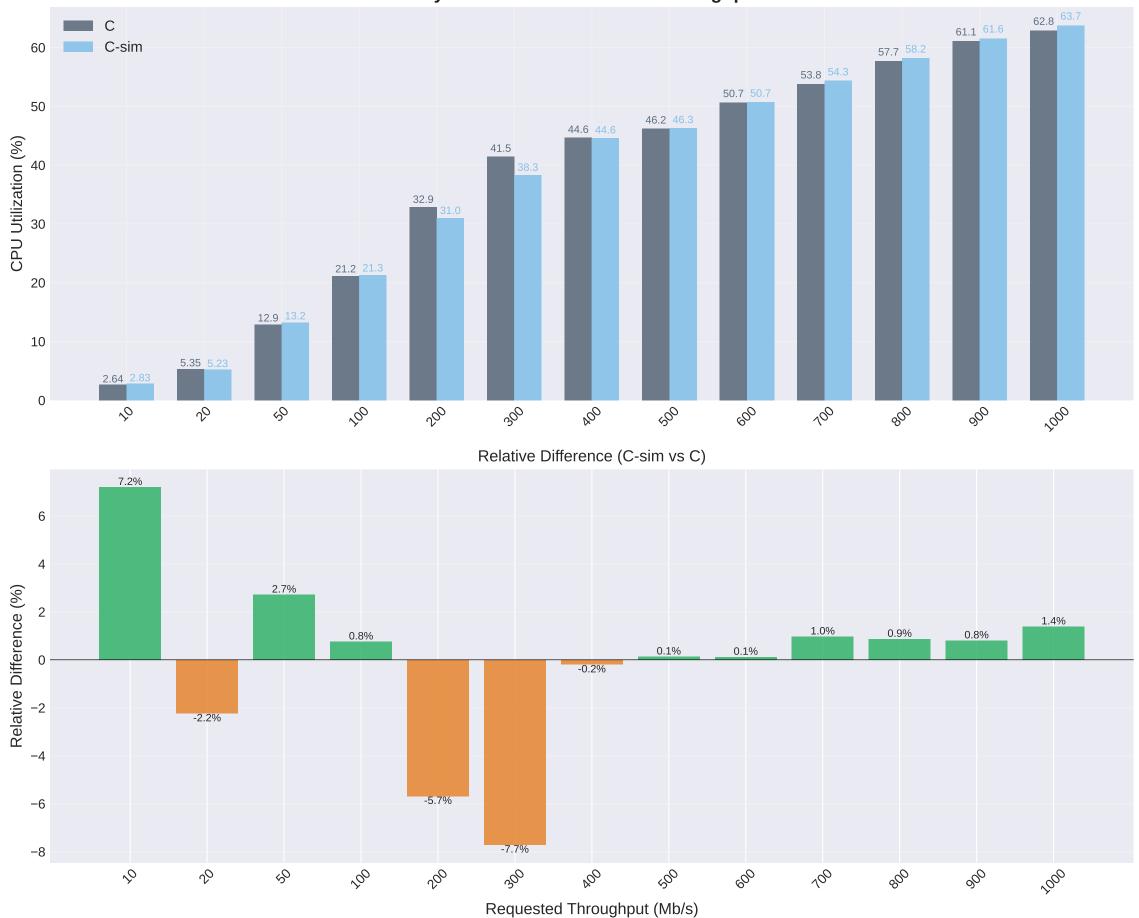
Client0 CPU Utilization vs Throughput

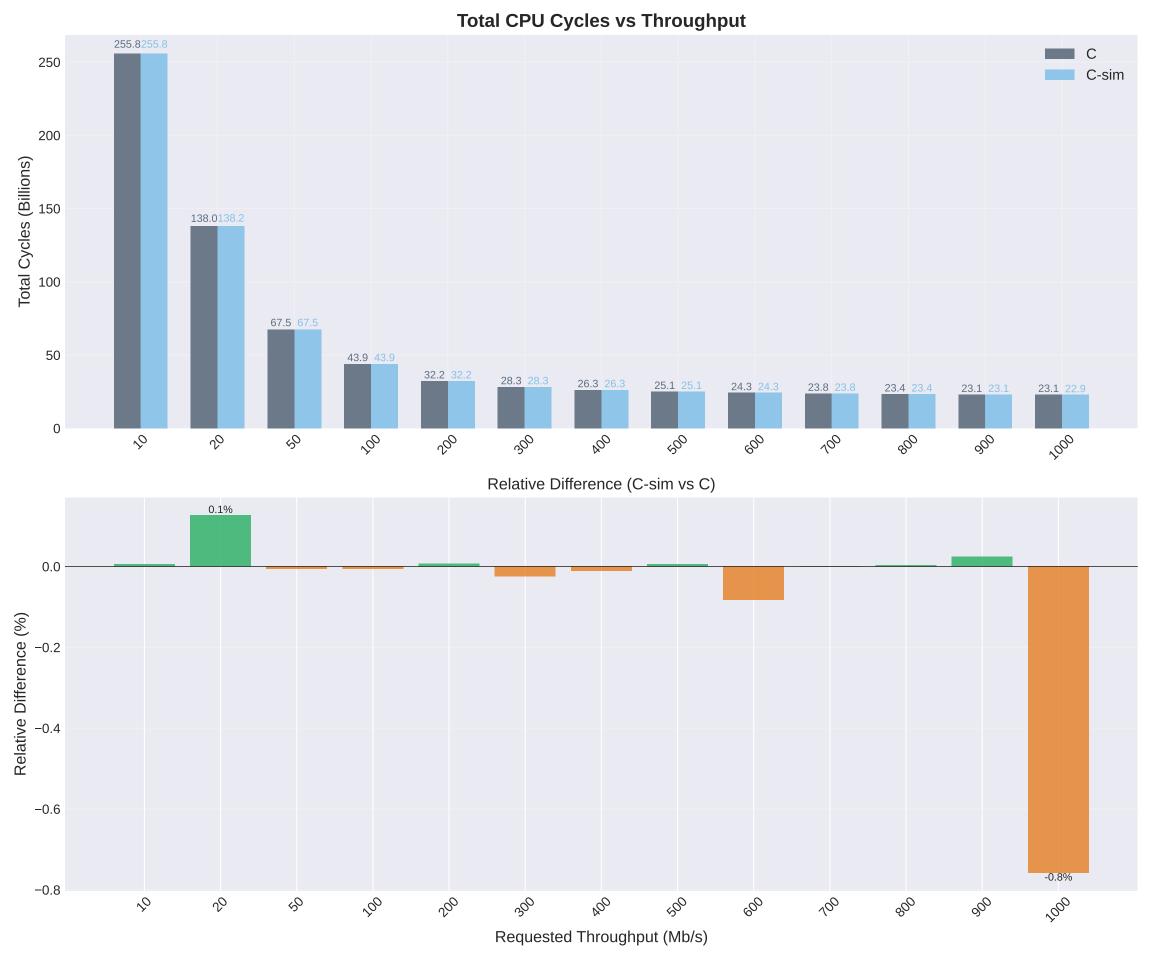


Client0 Net Copier CPU Utilization vs Throughput

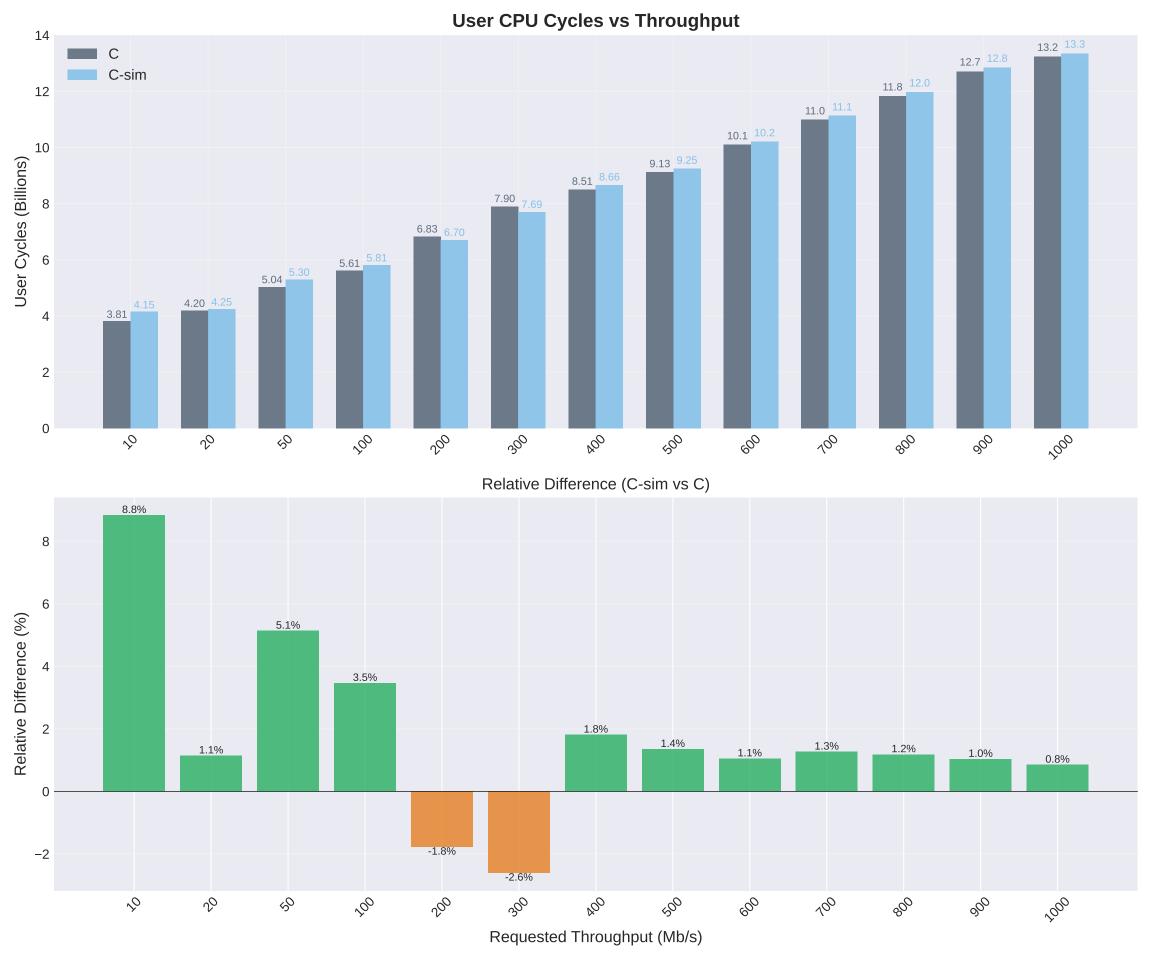


System CPU Utilization vs Throughput





Kernel CPU Cycles vs Throughput 3.5 С 3.30 C-sim 3.10 3.02 3.00 2.99 3.0 2.52 Kernel Cycles (Billions) 1.5 1.0 2.36 2.26 2.10 1.73 1.71 1.55 1.53 1.27 1.25 1.15 1.13 0.5 0.0 200 200 300 400 400 600 700 800 900 2000 \$0 20 60 Relative Difference (C-sim vs C) 5.6% 5 0 -0.5% Relative Difference (%) -0.9% -1.2% -1.4% -1.8% -2.7% -4.5% -4.9% -5.0% -5.5% -12.5% -15 -17.1% 30 SO 200 200 300 500 600 100 900 20 NO Requested Throughput (Mb/s)

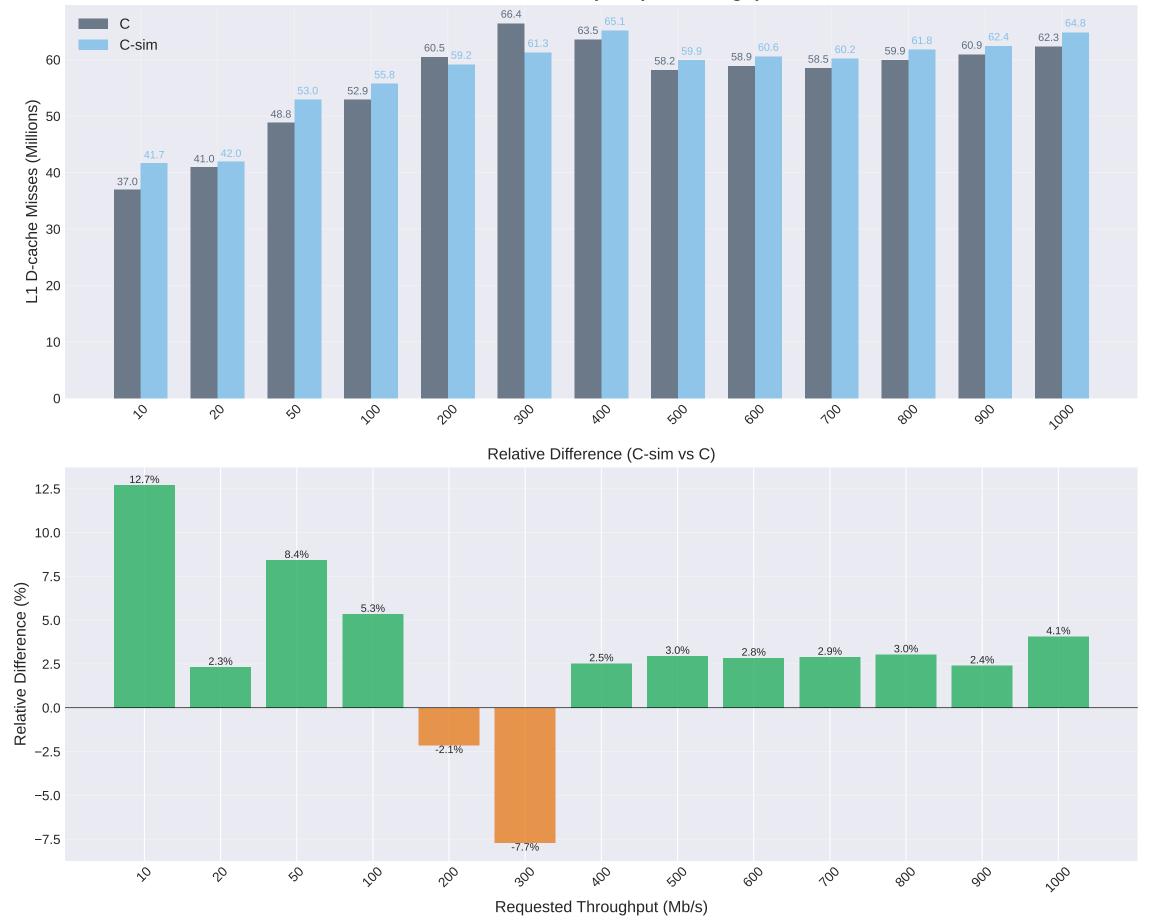


Idle CPU Cycles vs Throughput 249.0248.5 250 C C-sim 200 Idle Cycles (Billions) 130.6131.0 58.8 58.6 50 34.6 34.5 21.6 22.2 16.6 17.5 14.5 14.6 13.5 13.5 12.0 12.0 11.0 10.9 9.90 9.78 8.57 8.30 8.98 8.87 0 \$ 200 200 300 NOO 400 600 100 800 900 2000 20 50 Relative Difference (C-sim vs C) 5.4% 4 Relative Difference (%) 2.8% 0.3% 0.2% -0.1% -0.2% -0.2% -0.4% -1.1% -1.2% -1.2% -2 -3.1% 30 20 SO 200 200 300 NOO 400 600 700 900

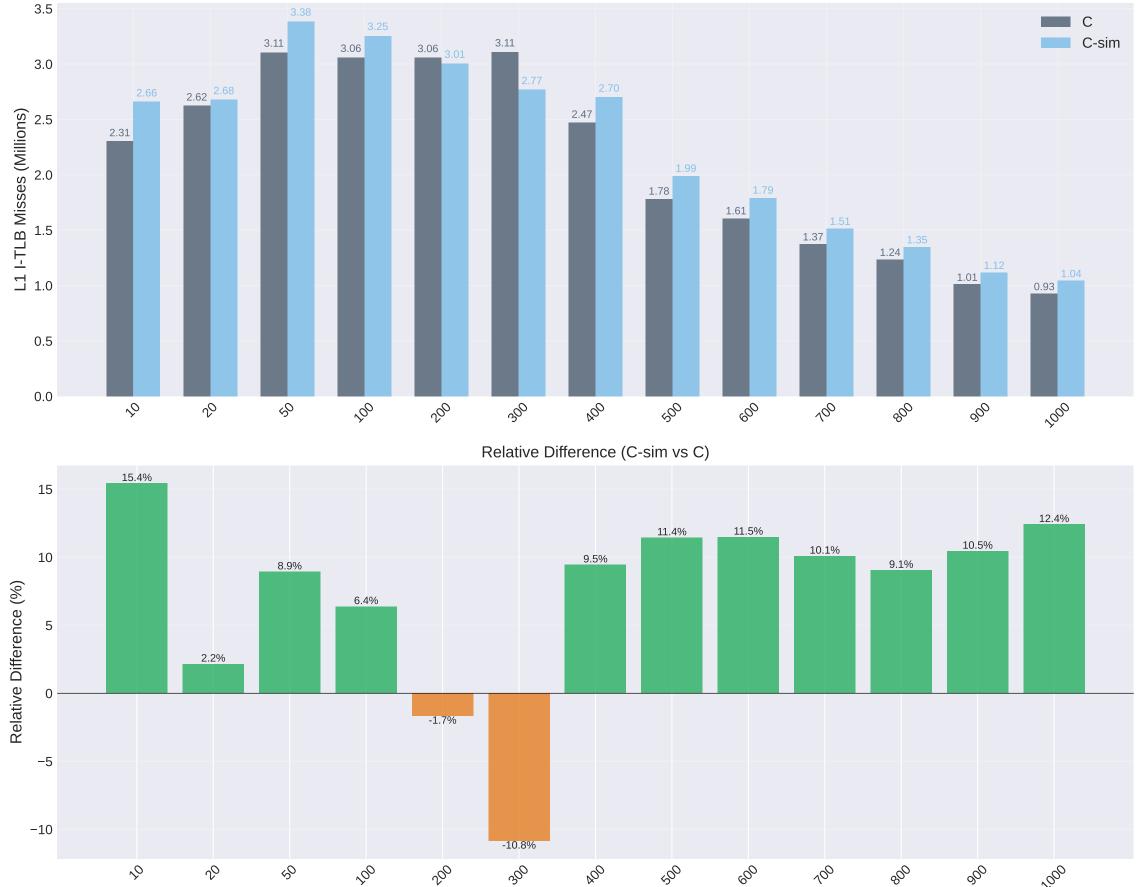
L1 I-cache Misses (Total) vs Throughput



L1 D-cache Misses (Total) vs Throughput



L1 I-TLB Misses (Total) vs Throughput 3.5 3.11 3.06 3.01 3.11 3.06 3.0



L1 D-TLB Misses (Total) vs Throughput



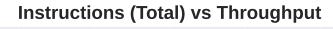
Requested Throughput (Mb/s)

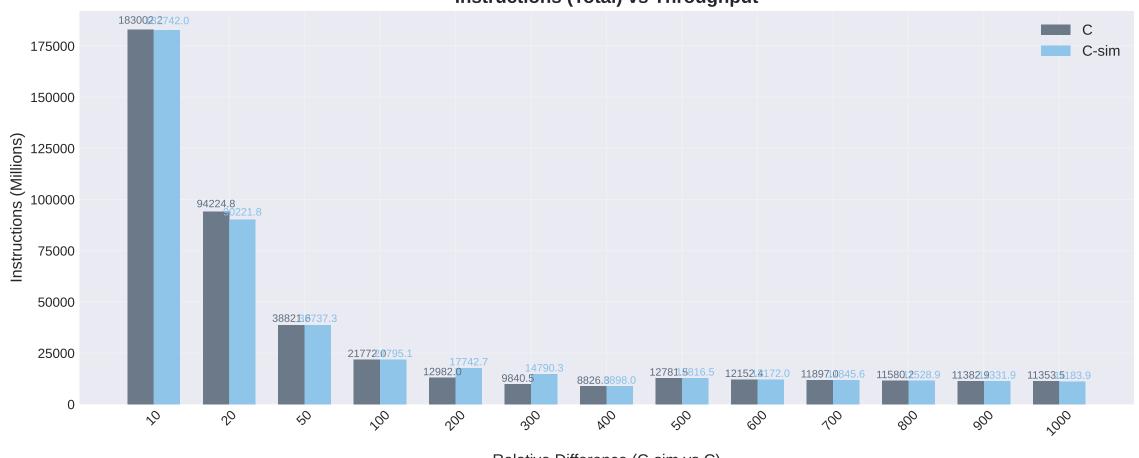
-5.1%

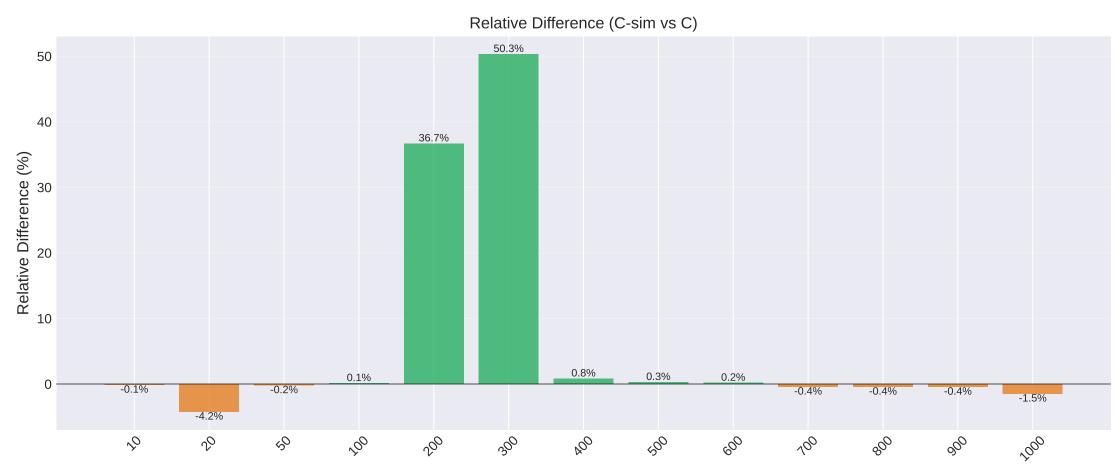
1.2%

-5

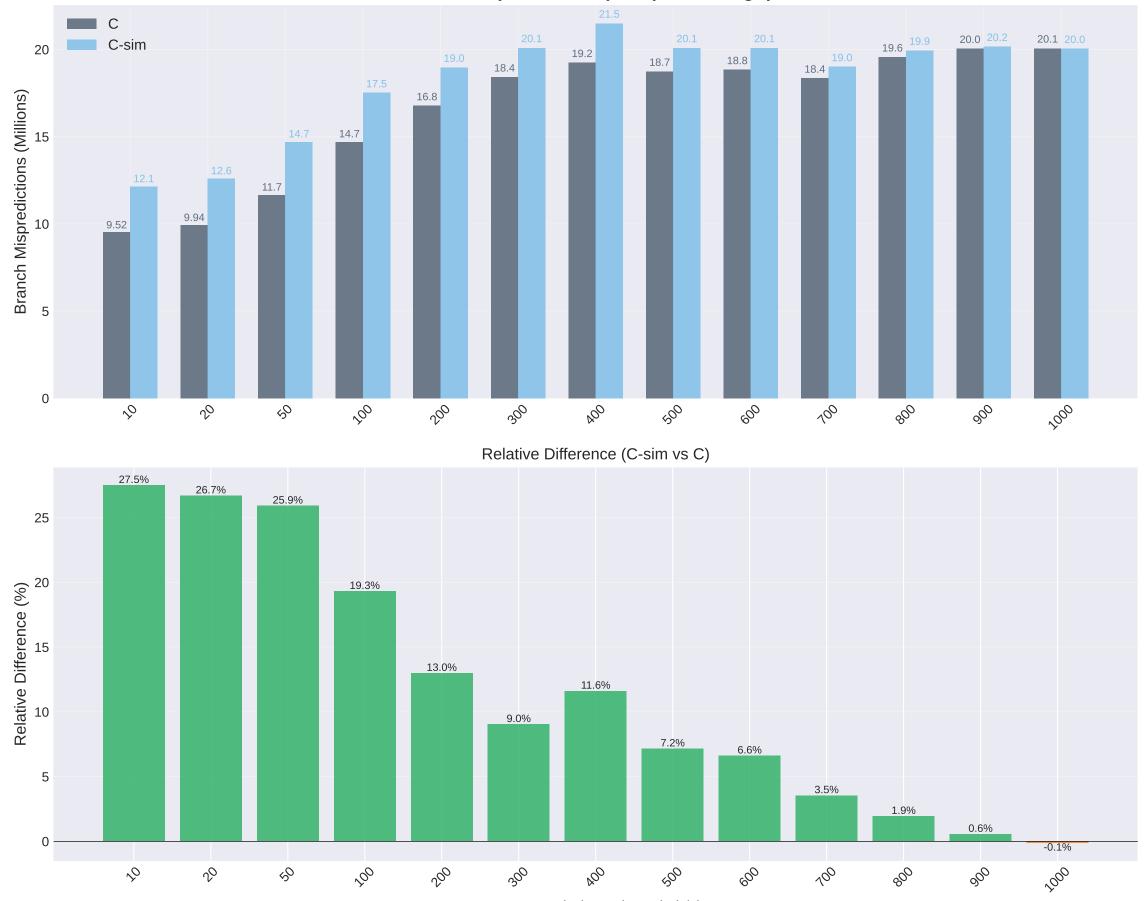
\$0







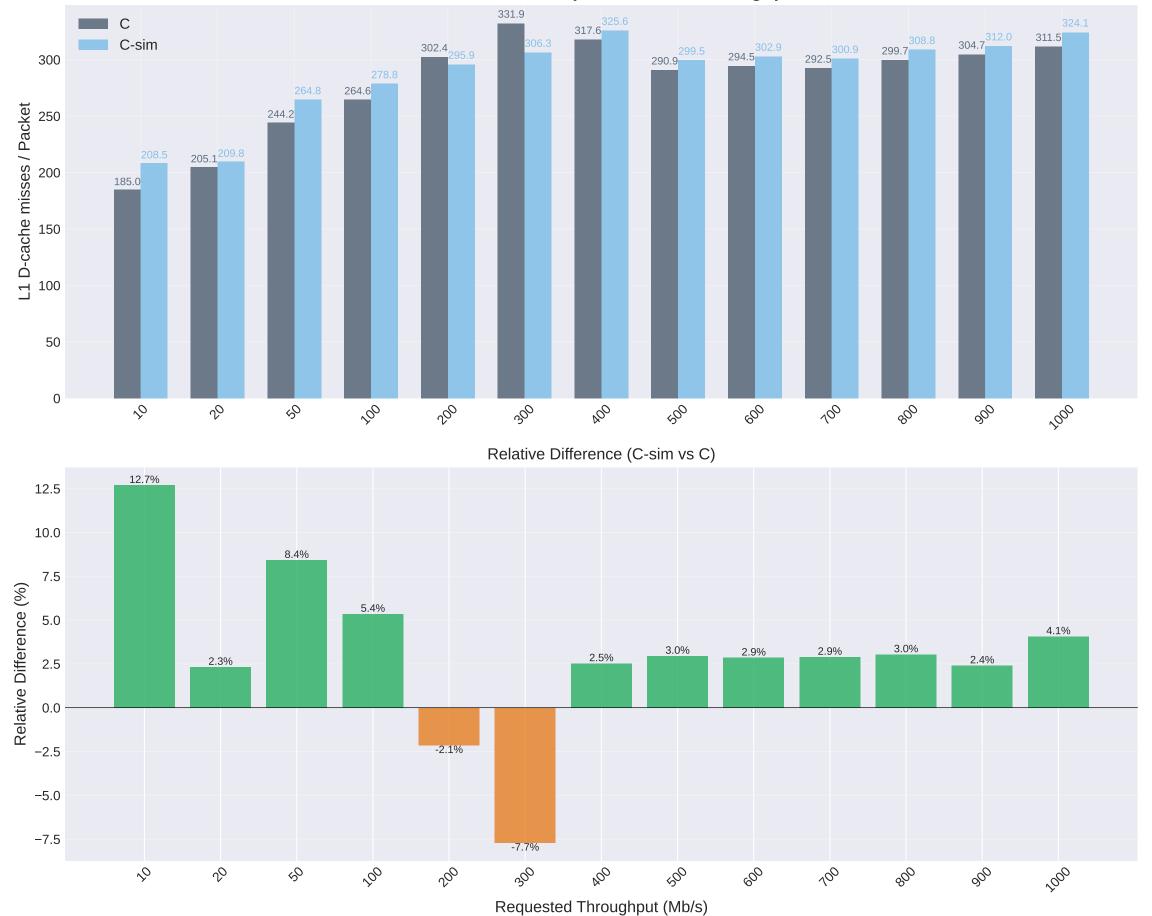
Branch Mispredictions (Total) vs Throughput



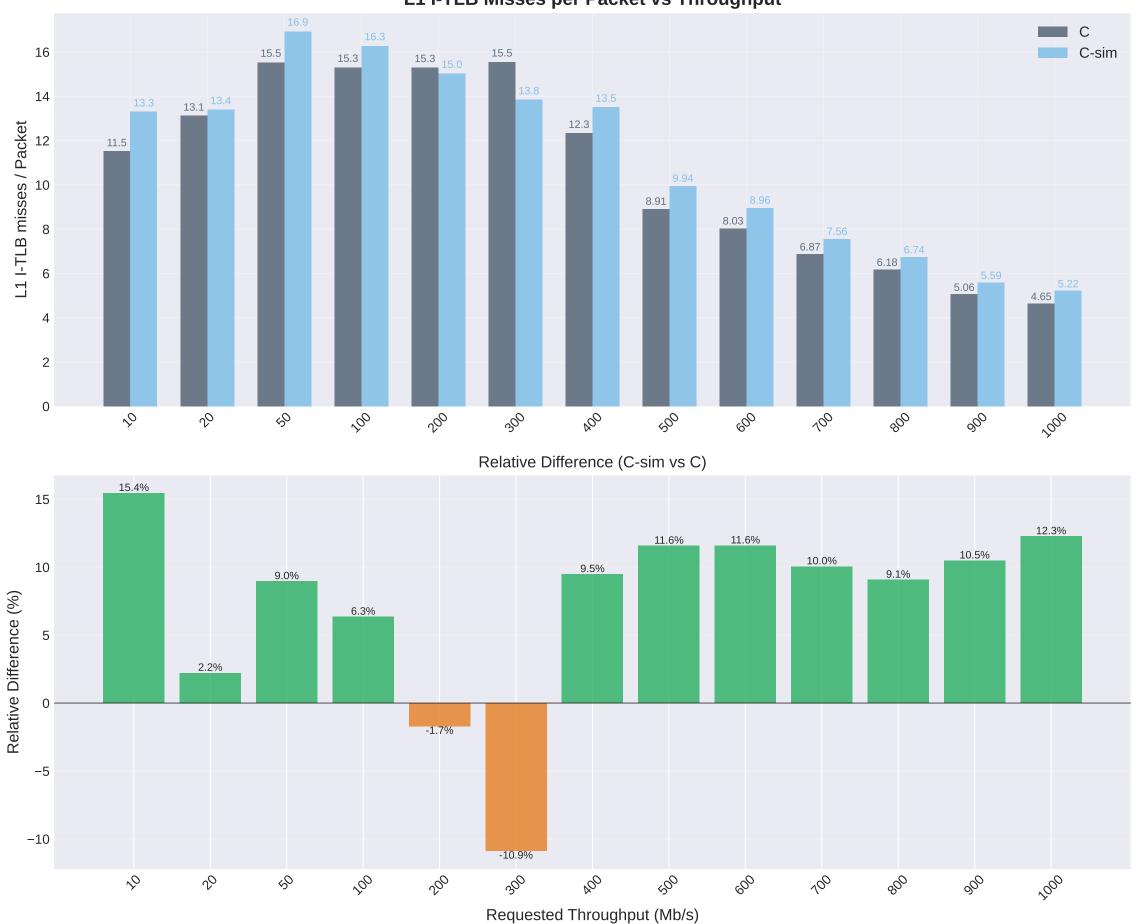
L1 I-cache Misses per Packet vs Throughput



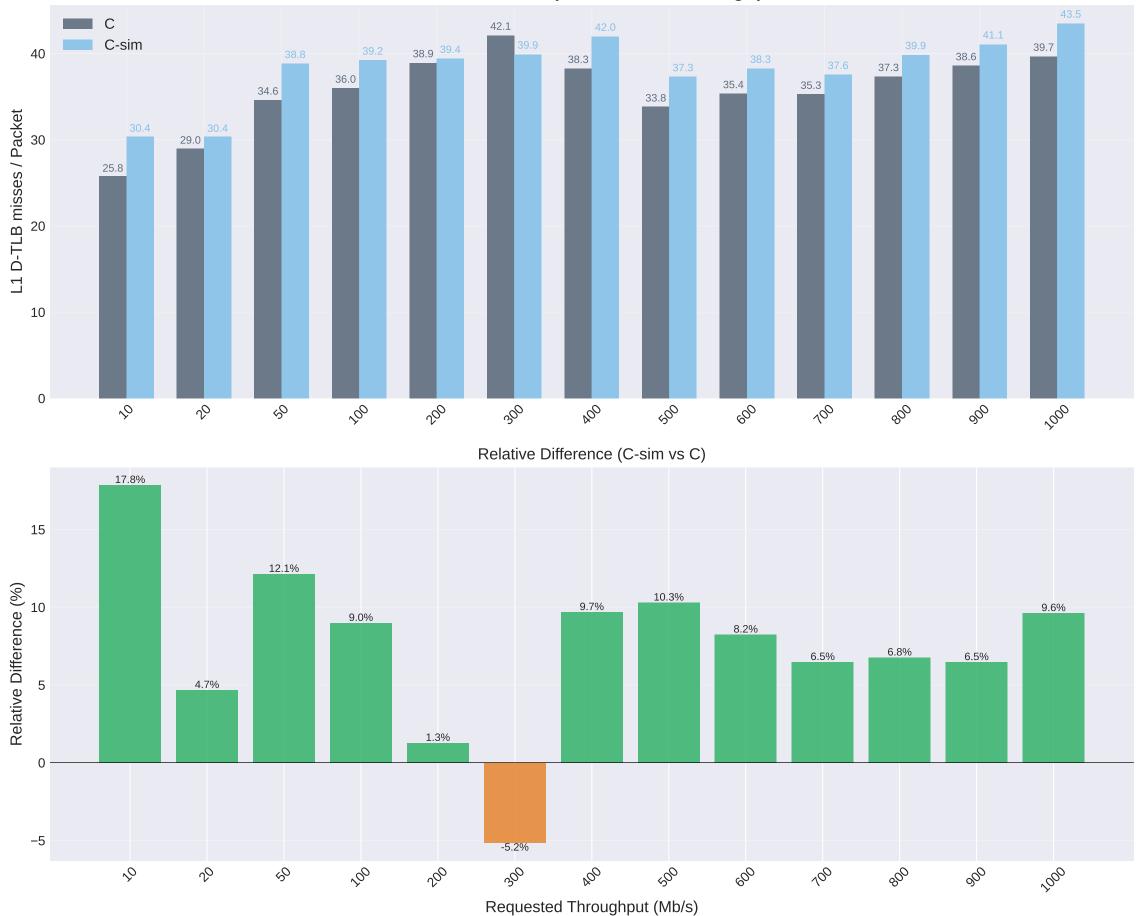
L1 D-cache Misses per Packet vs Throughput



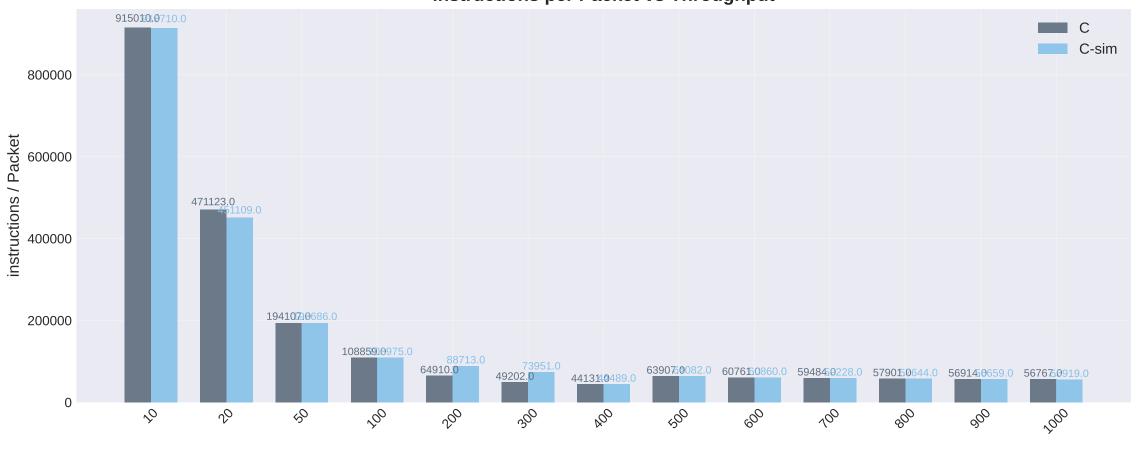
L1 I-TLB Misses per Packet vs Throughput

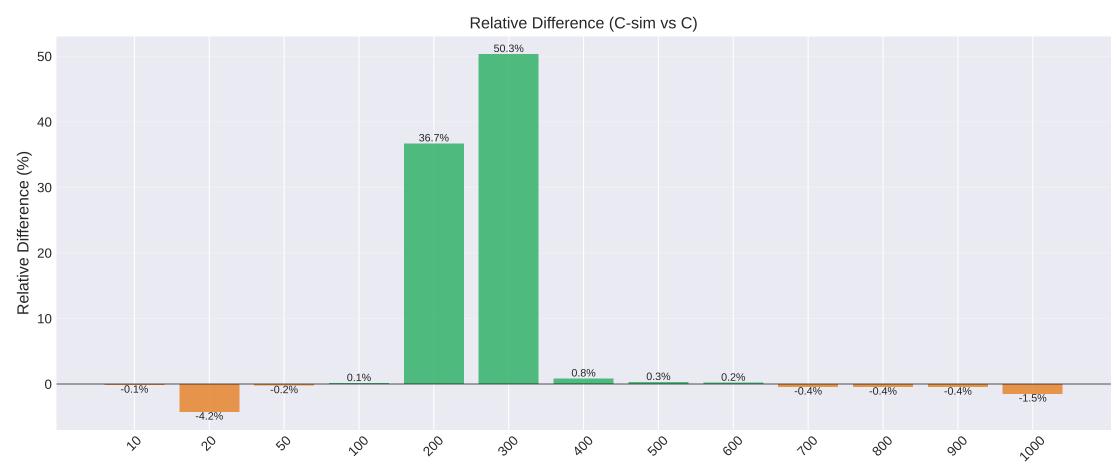


L1 D-TLB Misses per Packet vs Throughput

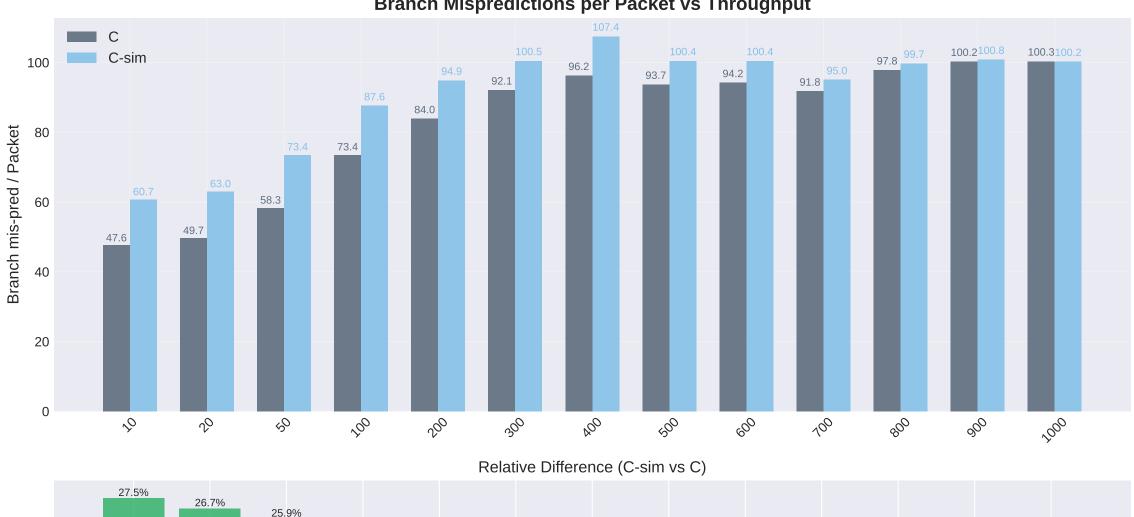


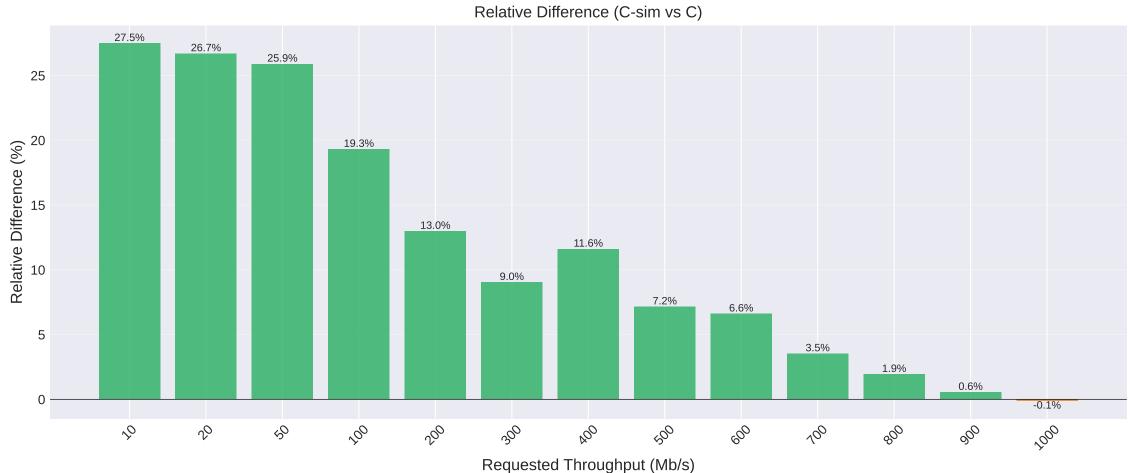


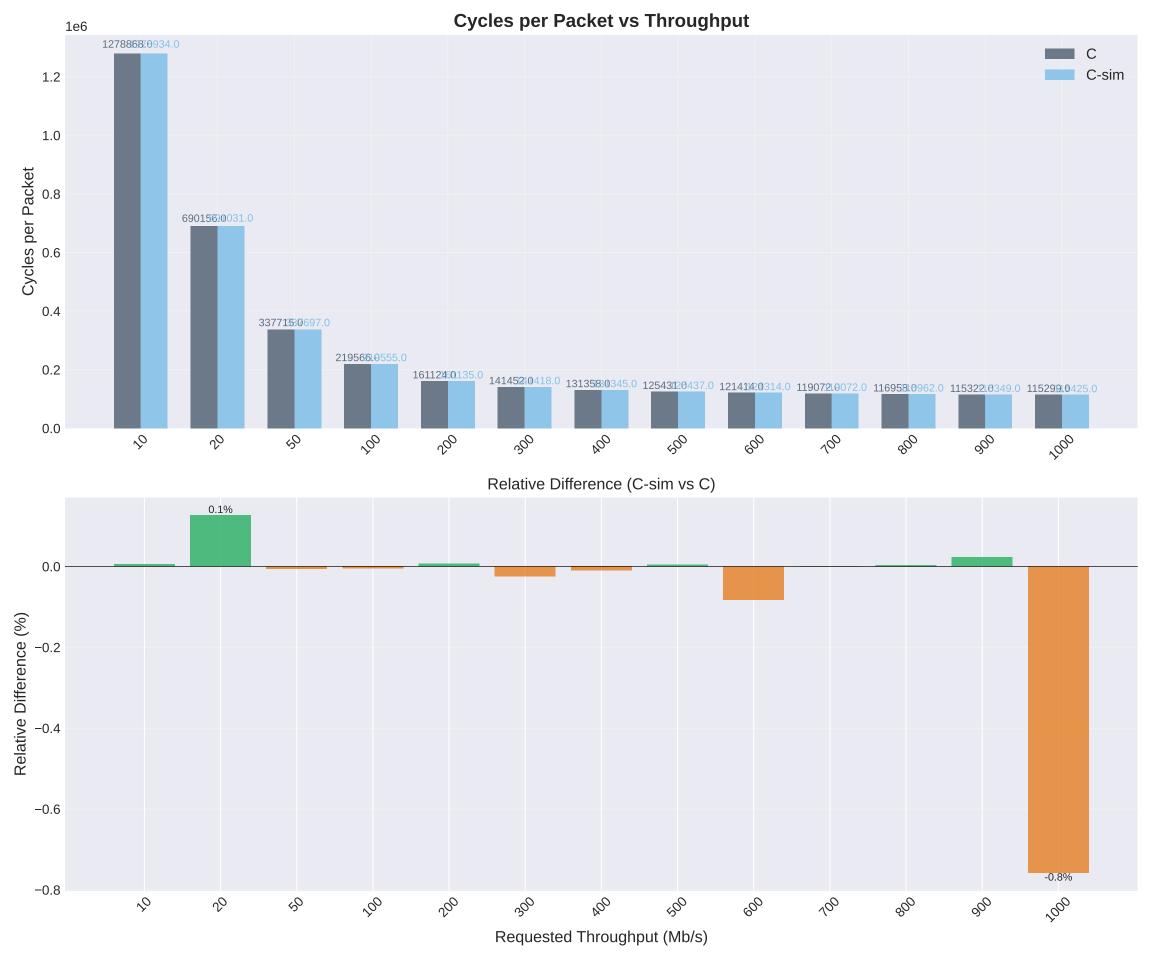




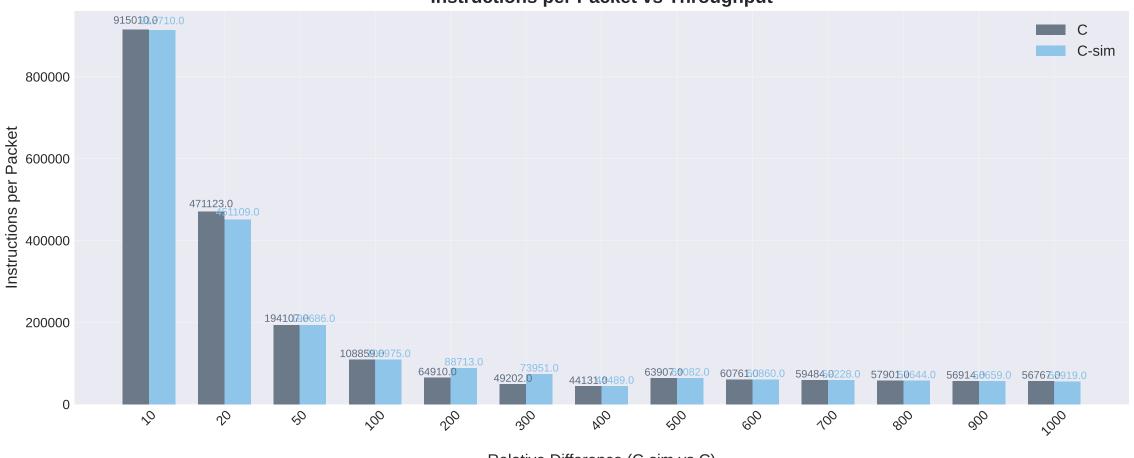
Branch Mispredictions per Packet vs Throughput

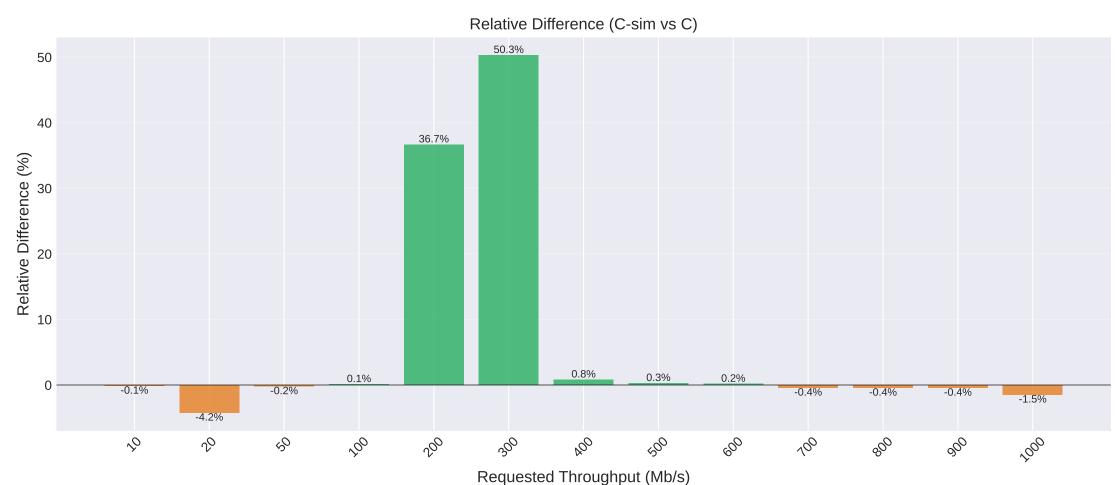




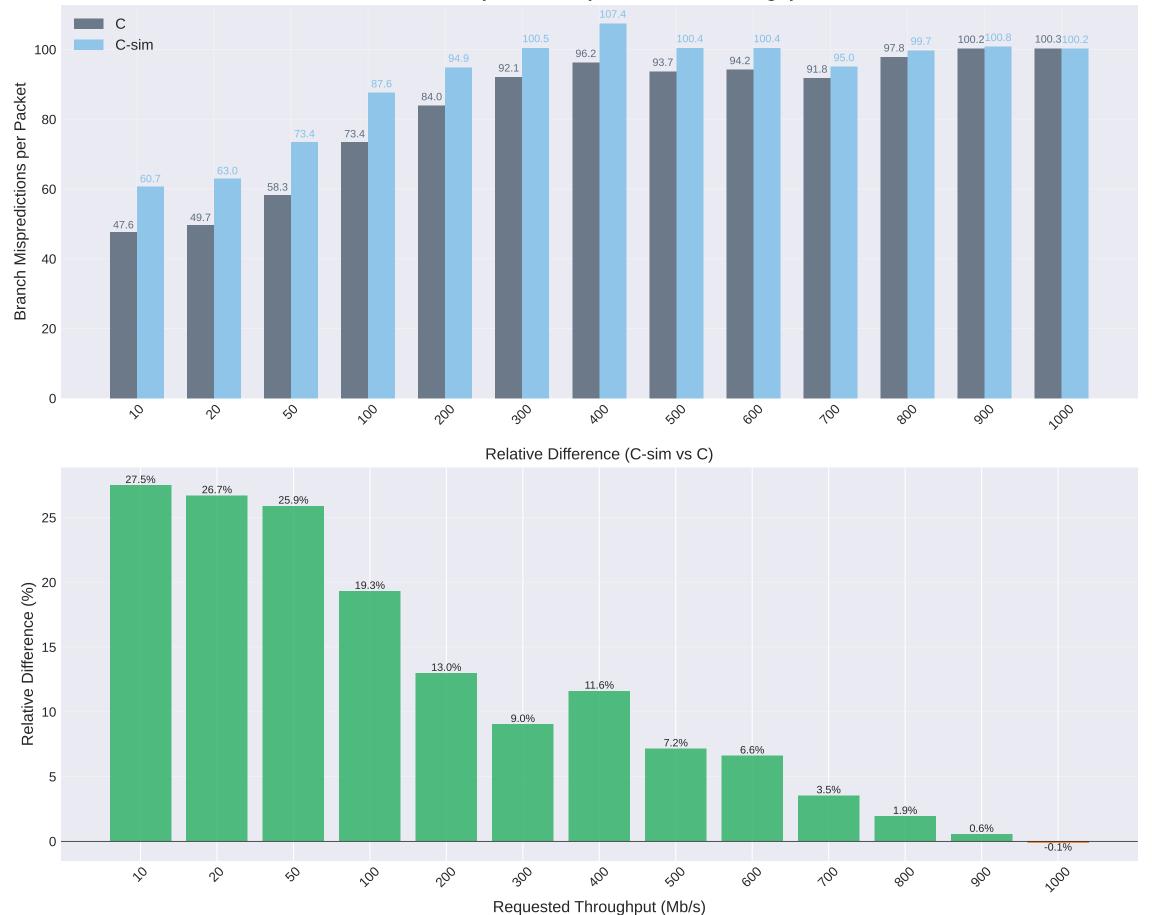


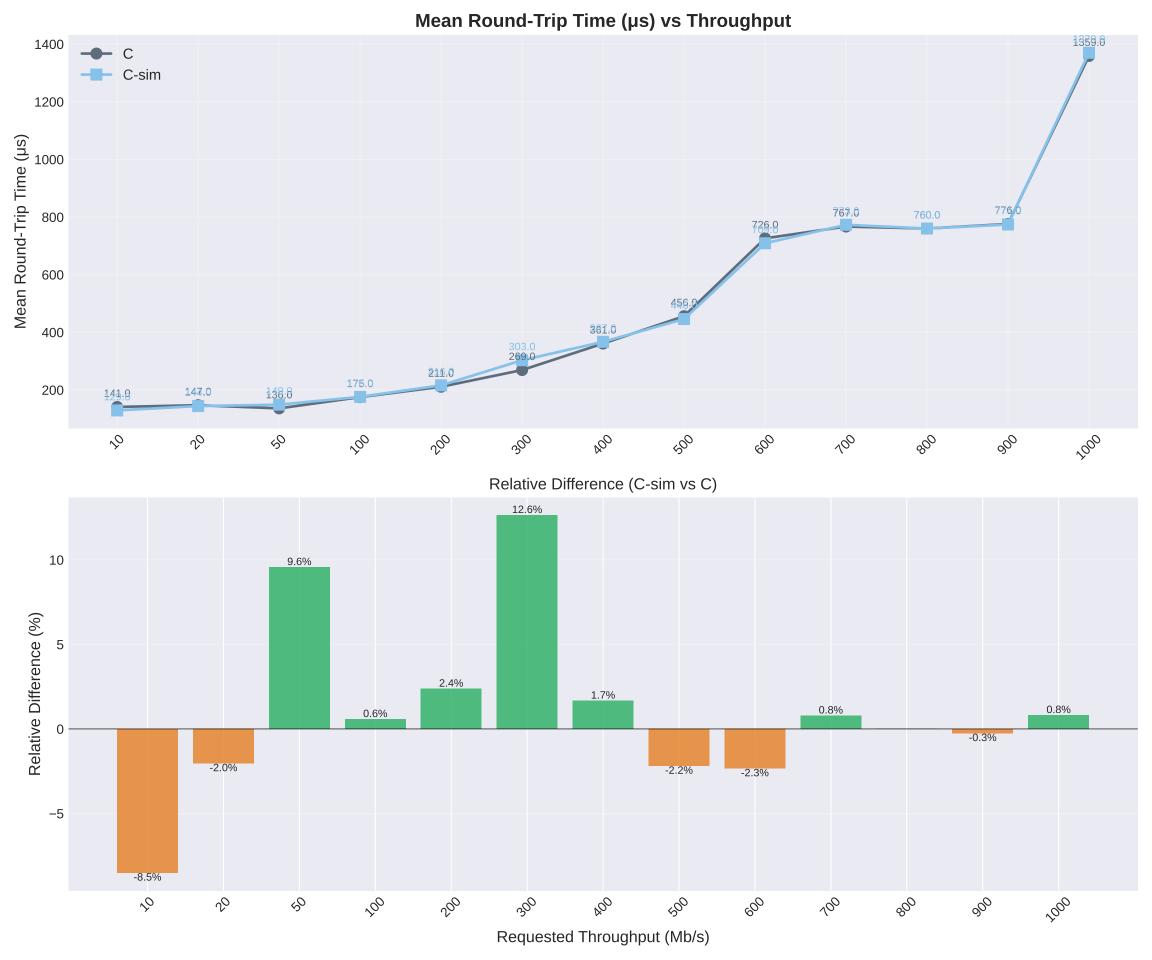




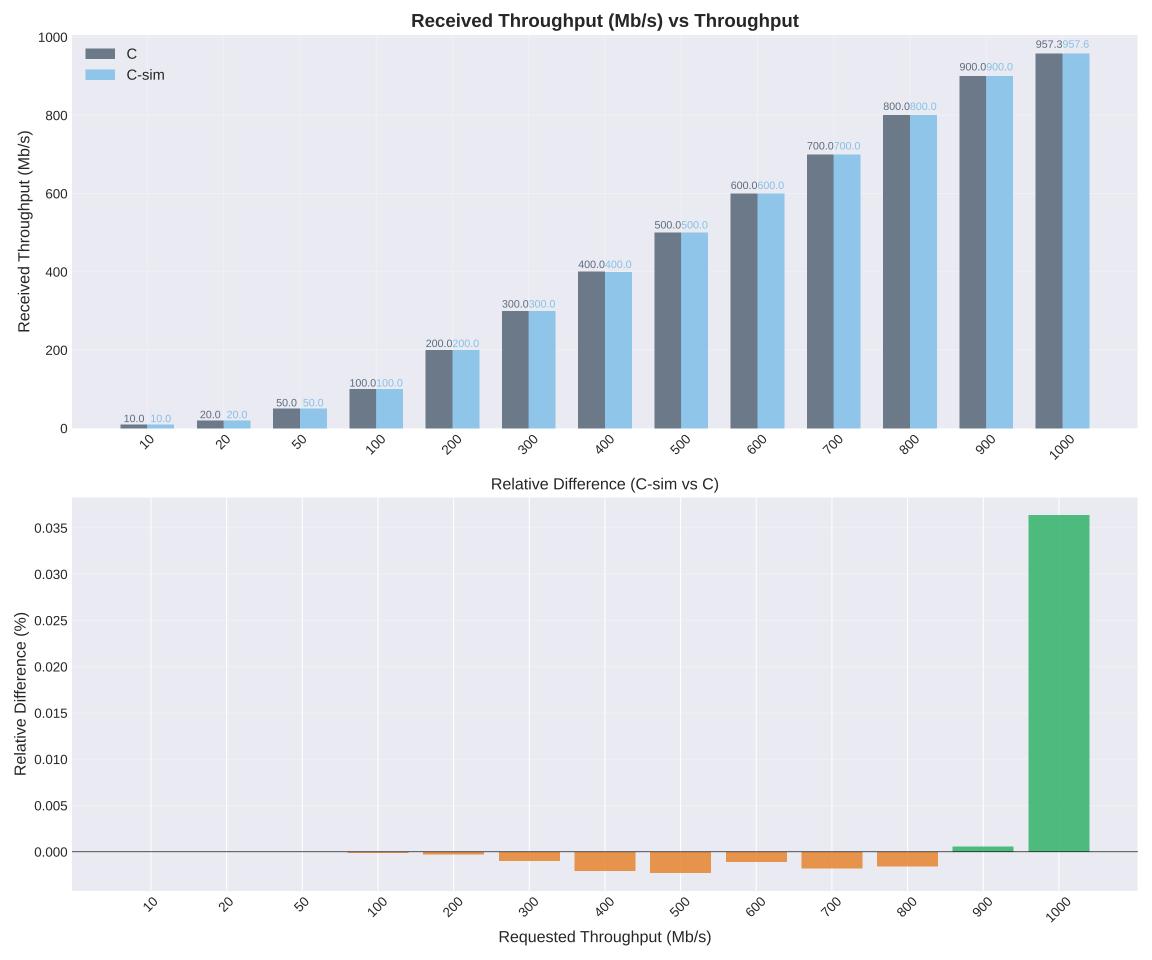


Branch Mispredictions per Packet vs Throughput





Packet Rate (packets/s) vs Throughput 78.3 78.3 80 С 73.6 73.6 C-sim 70 65.4 65.4 60 57.3 57.3 Packet Rate (Kpps) 8 8 9 49.1 49.1 40.9 40.9 32.7 32.7 24.5 24.5 20 16.4 16.4 10 8.18 8.18 4.09 4.09 1.64 1.64 0.82 0.82 0 300 NOO 400 200 200 600 700 900 900 2000 \$ 20 S Relative Difference (C-sim vs C) 0.035 0.030 Relative Difference (%) 0.000 0.005 0.000 NOO 900 30 20 60 200 200 300 400 600 700 900



Sent Throughput (Mb/s) vs Throughput 1000.0000.0 С 1000 C-sim 900.0900.0 800.0800.0 800 Sent Throughput (Mb/s) 700.0700.0 600.0600.0 600 500.0500.0 400.0400.0 400 300.0300.0 200.0200.0 200 100.0100.0 50.0 50.0 20.0 20.0 10.0 10.0 0 2000 900 \$ 200 200 300 NOO 400 600 700 900 20 50 Relative Difference (C-sim vs C) 0.0004 0.0002 Relative Difference (%) 0.0000 -0.0002 -0.0004 -0.0006 -0.0008 -0.0010 \$ 20 200 200 300 NOO 400 600 100 900 80 Requested Throughput (Mb/s)