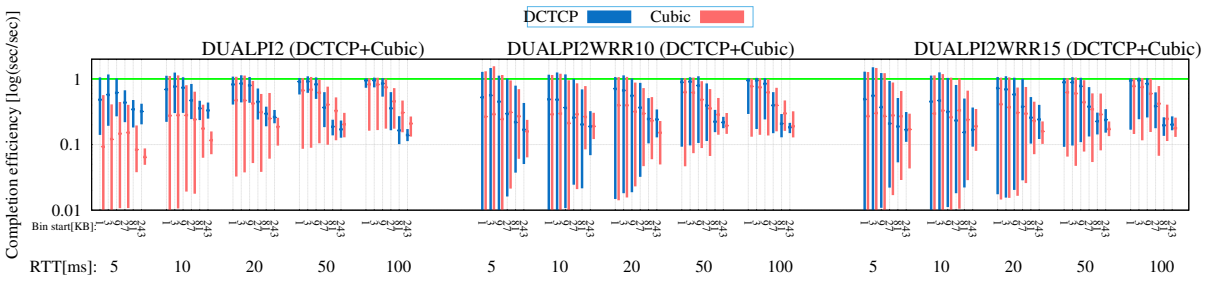
Comparing DualPI2 with WRR ratio 10 and 15, with overload enabled (now by default), where l_drop is set to 100. ECN threshold was set to 6ms for 4 Mbps link, 2ms for 12 Mbps link, and 1ms in all other cases. The rest of the parameters were default values, except for dc_ecn and dc_dualq. These experiments were done with DCTCP from 3.19 kernel, which does not respond to drops. First column (DUALPI2) shows baseline results (results obtained from the last stable version of DualPI2, from 21-02-19. Baseline results are with tsfifo t_shift 40ms, target 20 ms and overload disabled.

Conclusion: Initial window of 10 results in high drops for small link speeds. Enabling overload results to losses and timeouts, is why flow completion efficiency for DCTCP is bad (Figure A1, worse results in the last two columns are because L4S packets are dropped.)

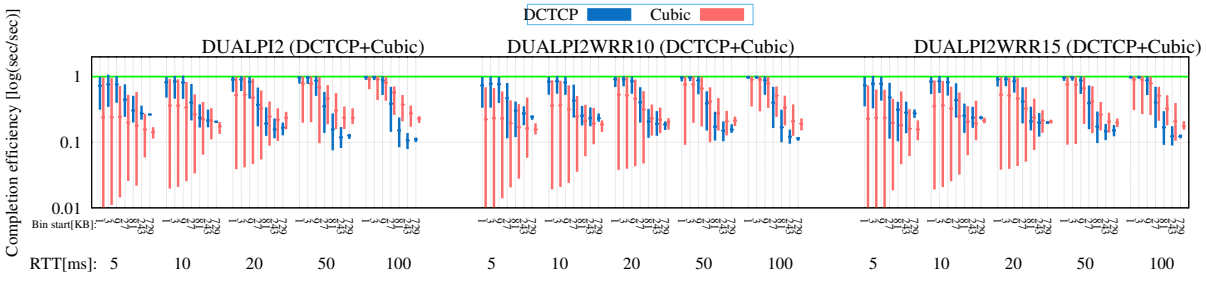
Figure A2, A3 - queue delay is bigger for classic queue when WRR is used, but utilisation is better.

Appendix A

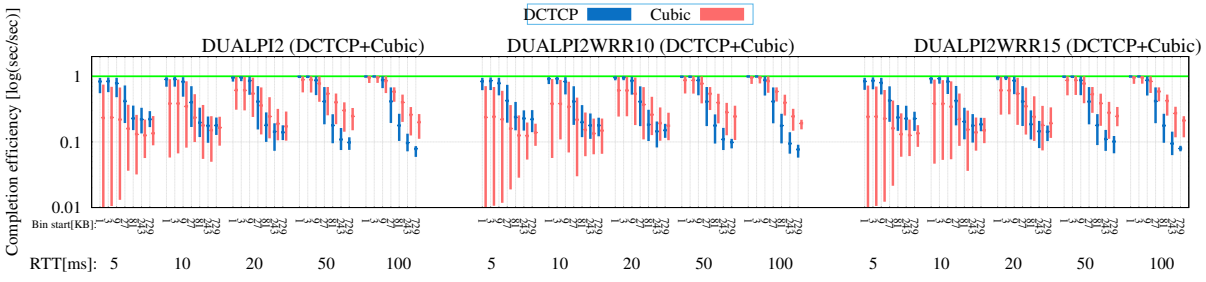
Equal RTT experiments



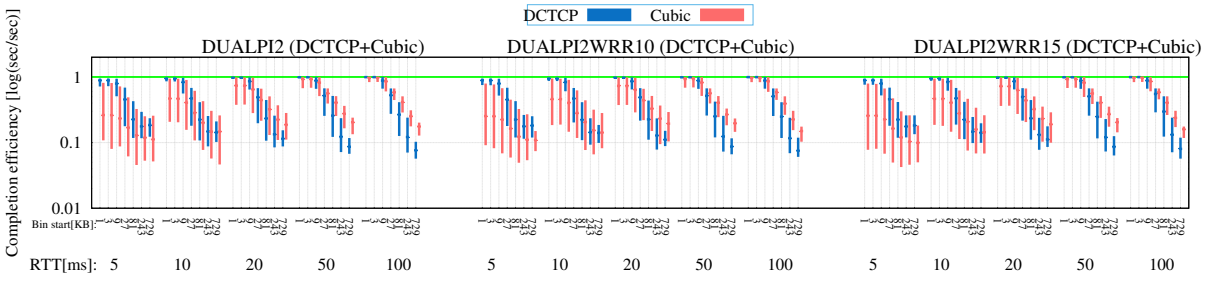
(a) 4Mbps link capacity



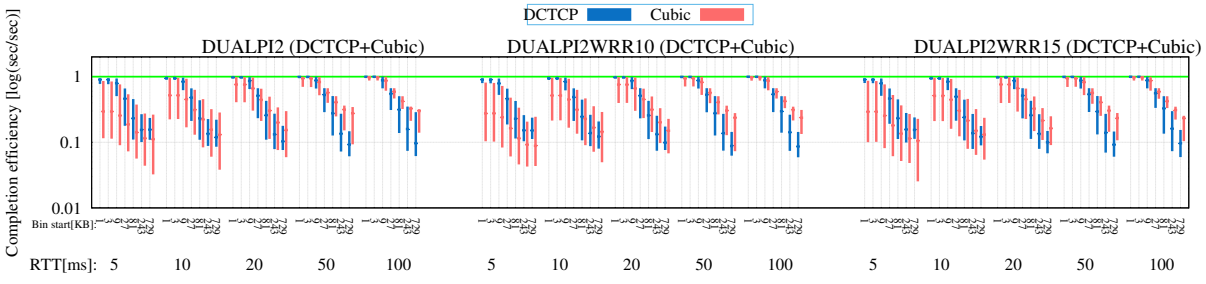
(b) 12Mbps link capacity



(c) 40Mbps link capacity



(d) 120 Mbps link capacity



(e) 200 Mbps link capacity

Figure A.1: Equal RTT (1h-1h)

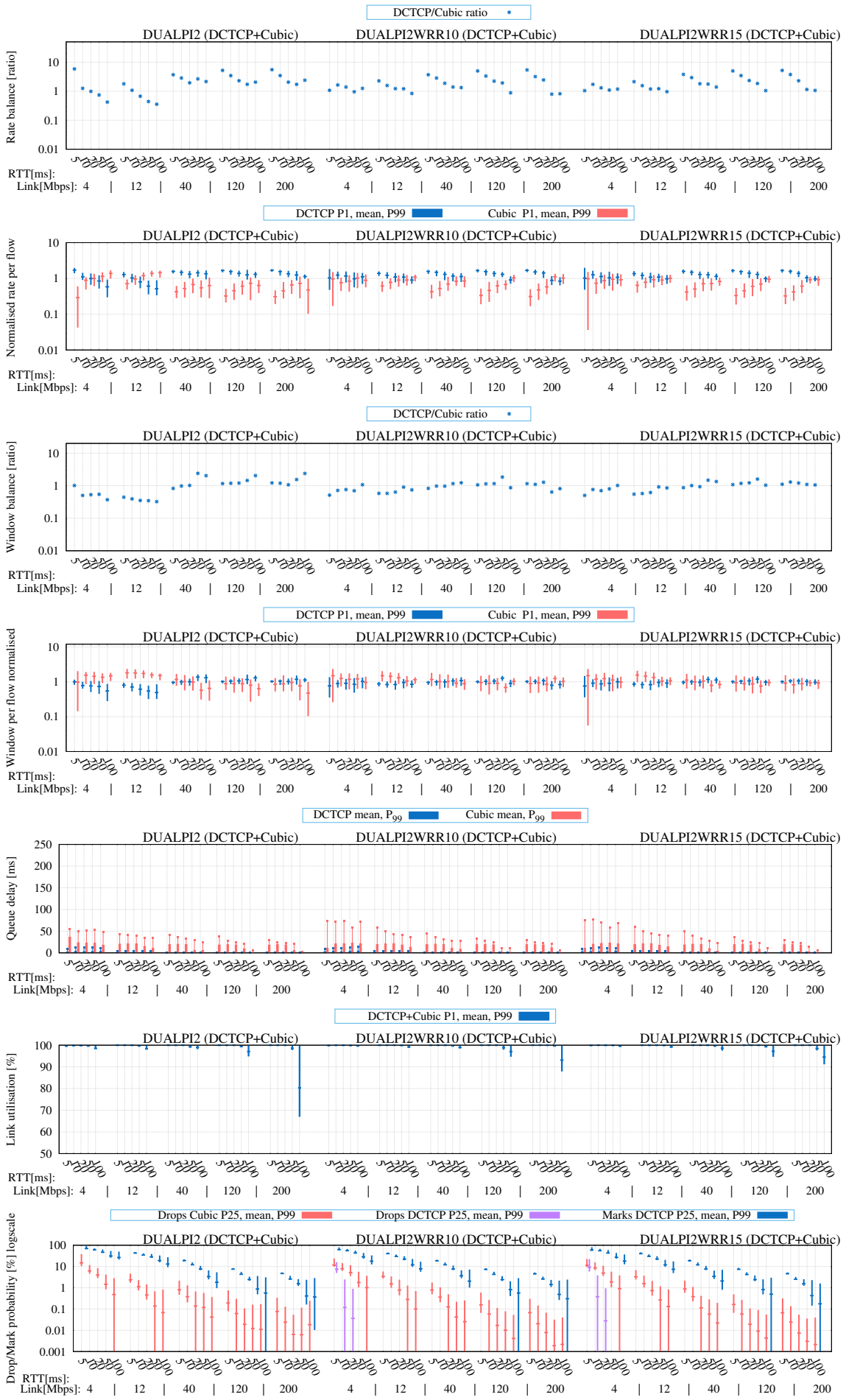


Figure A.2: Equal RTT (1-1)

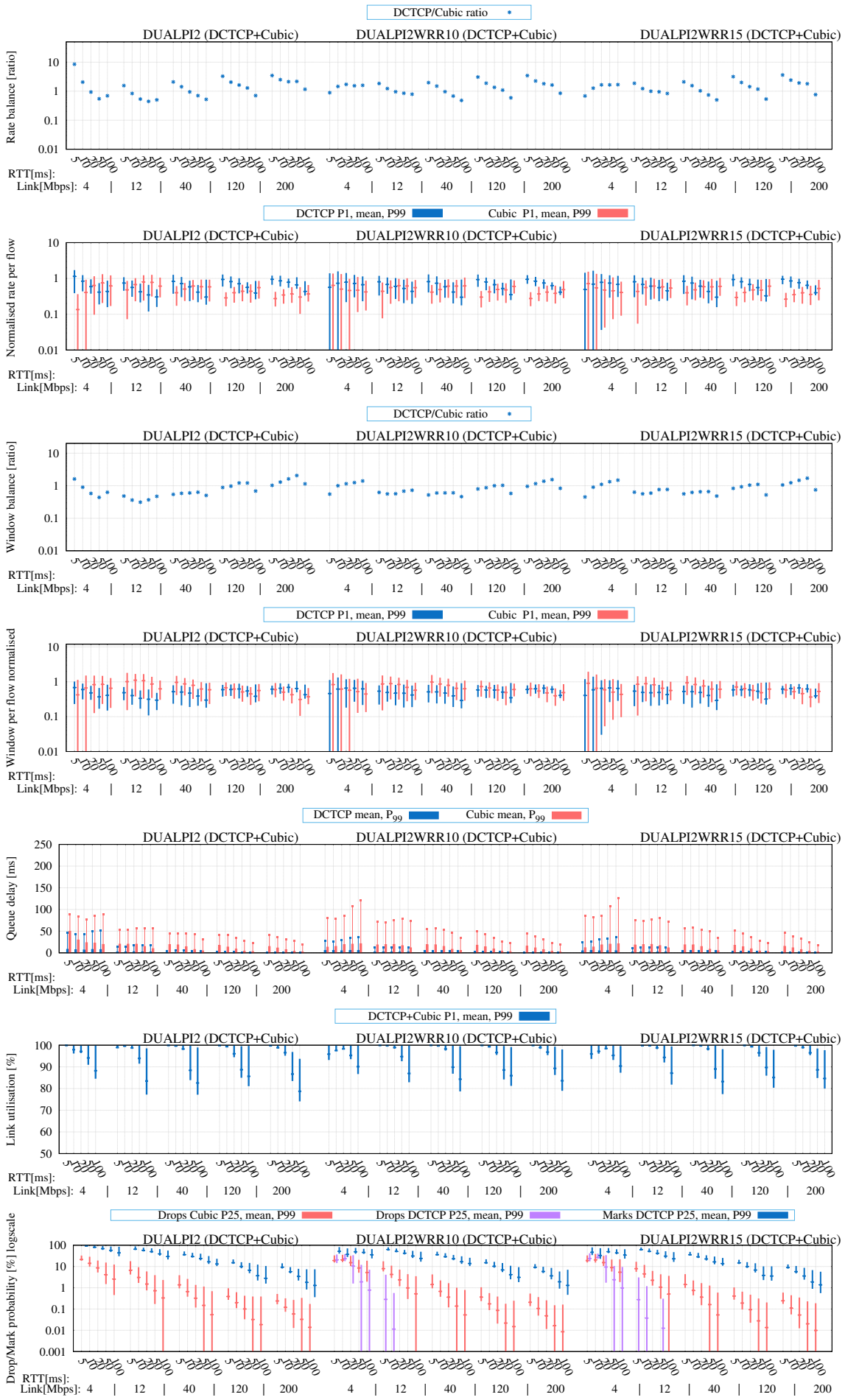


Figure A.3: Equal RTT (1h-1h)

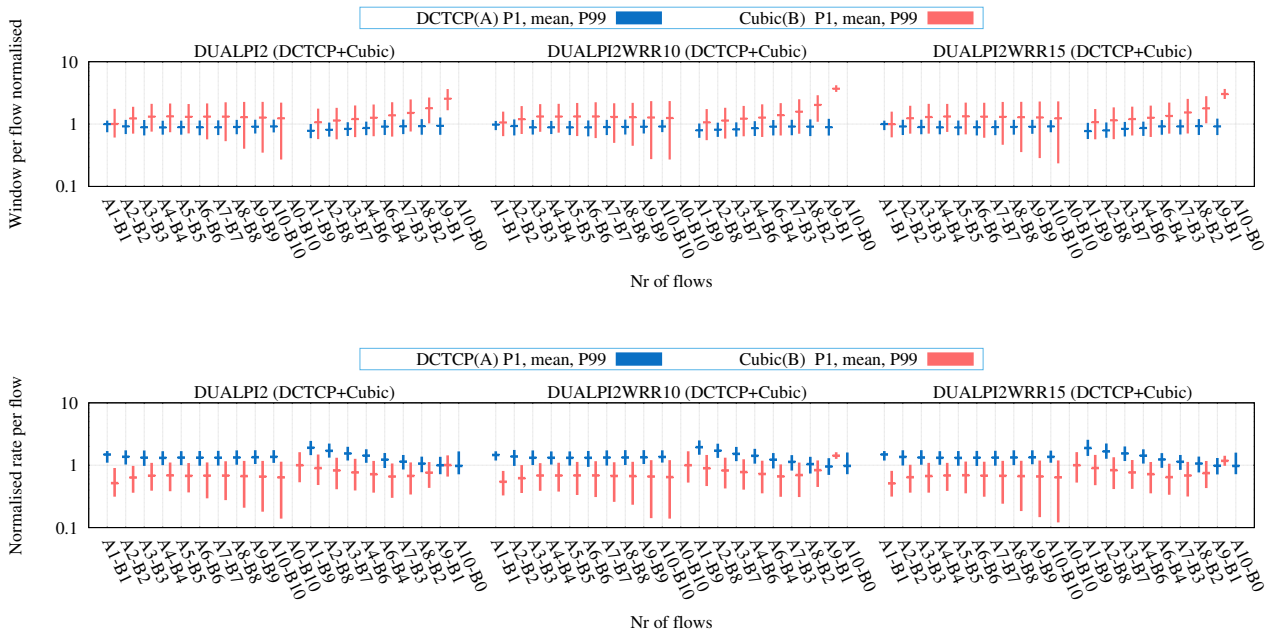


Figure A.4: Normalised rate and window size per flow. 40Mbps link capacity, 10ms RTT. Equal RTT

Appendix B

Mixed RTT experiments

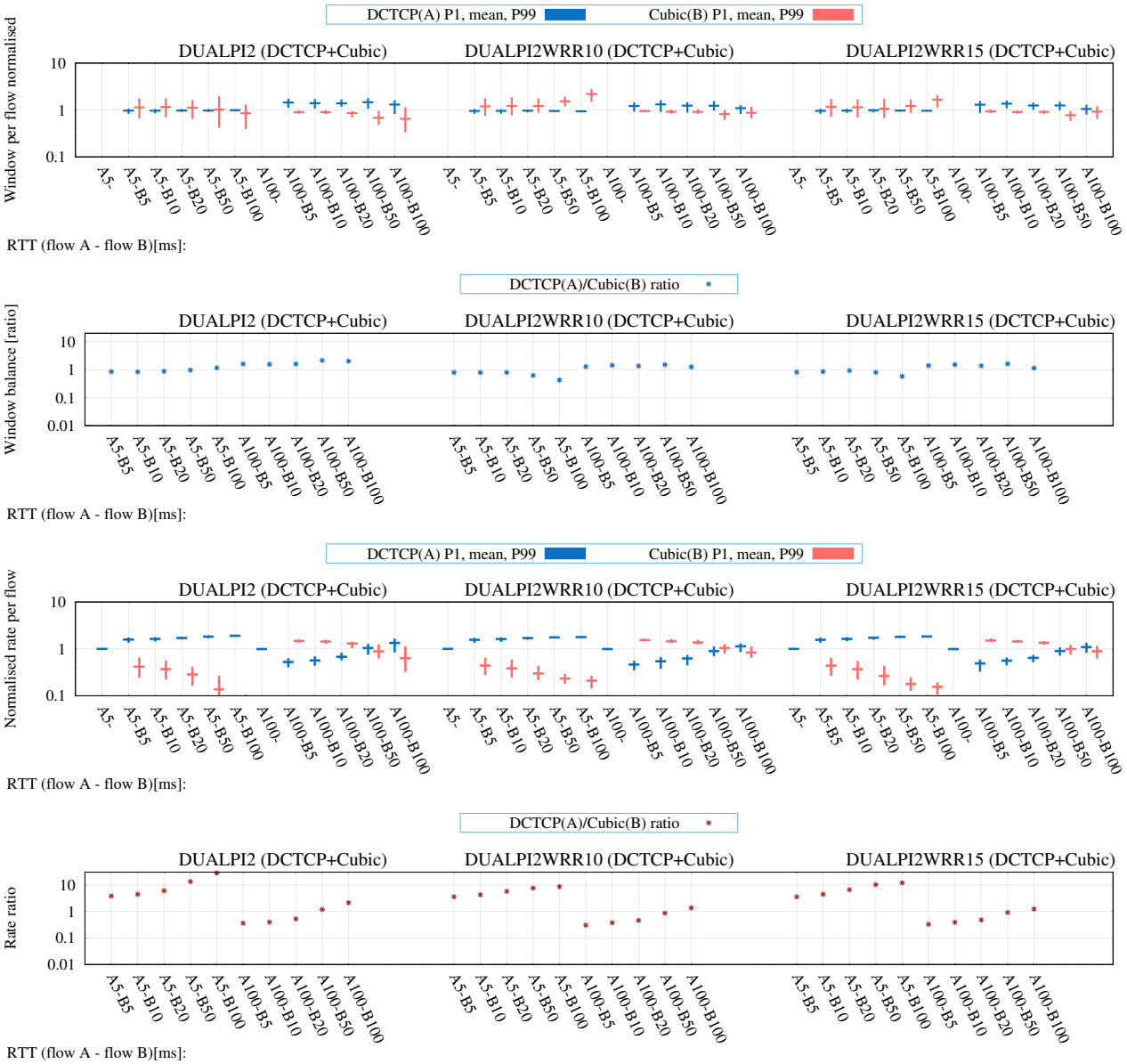


Figure B.1: 1 flow for each CC. Mixed RTT (mrtt2˙link40)

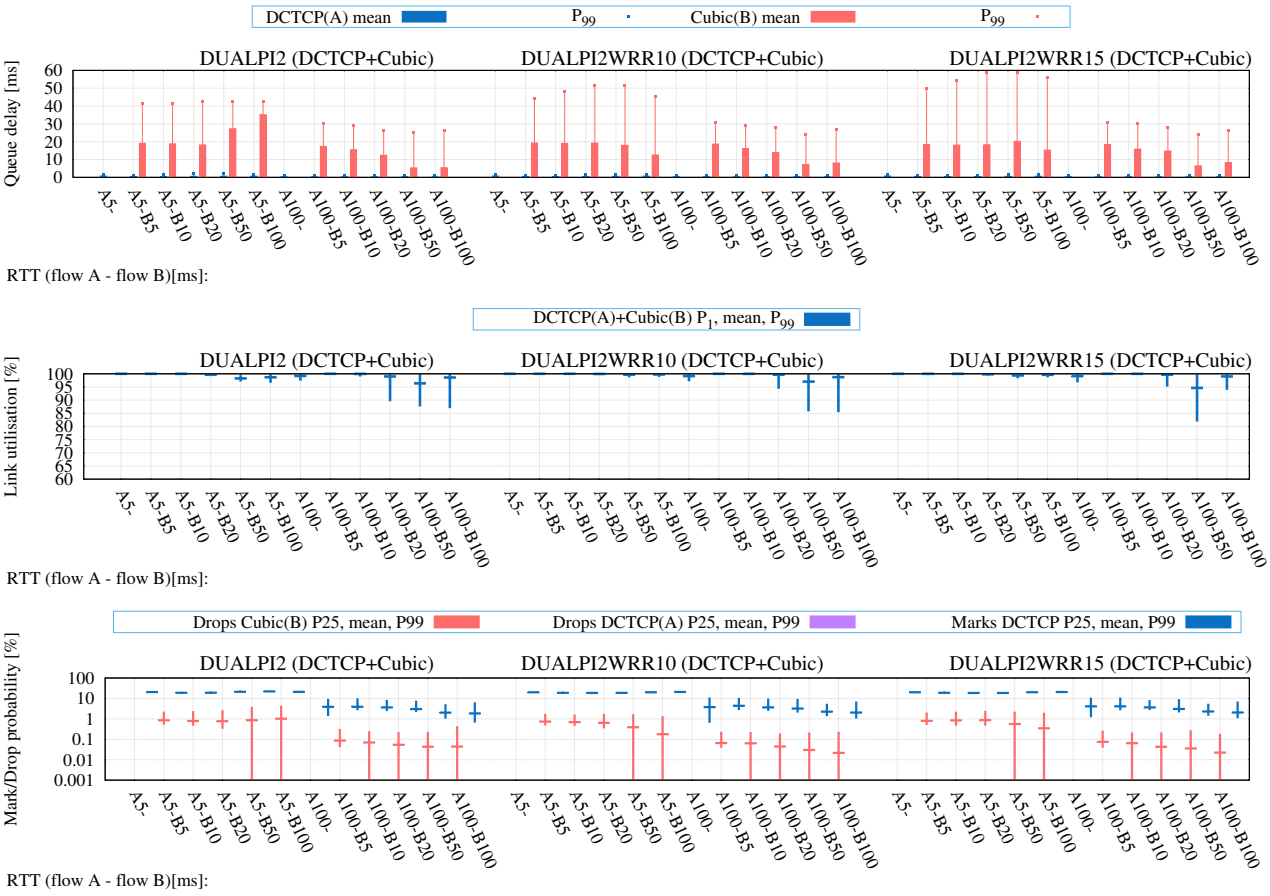


Figure B.2: 1 flow for each CC. Mixed RTT (mrtt2˙link40)

Appendix C

Overload experiments

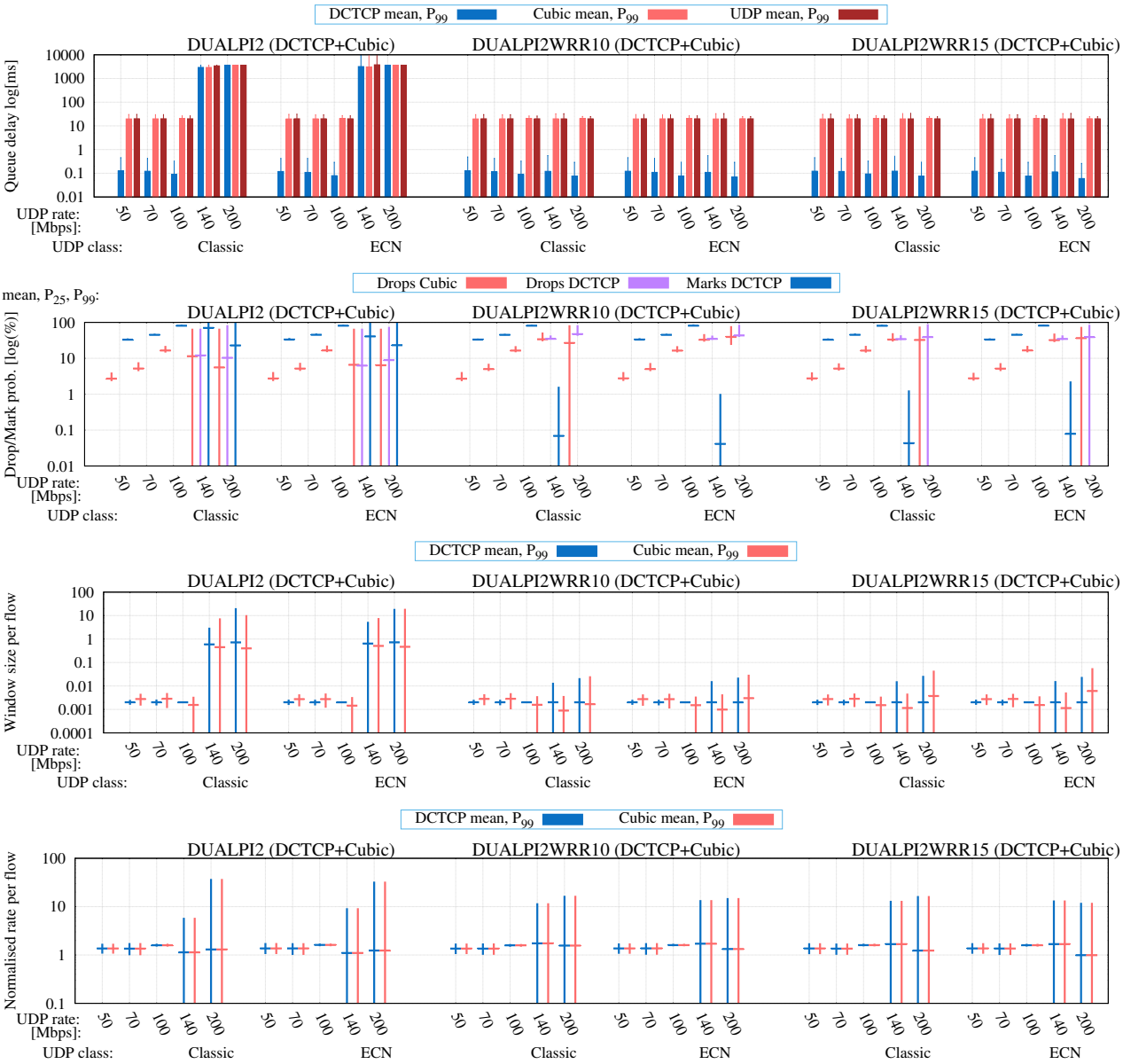


Figure C.1: Overload experiments. 1 flow for each CC