

Disabling ECT0 marking with L4S

| All ECT0                             |      | 95% ECT0 |      | 5% ECT1 |       | Bottleneck queue behaviour            |   |   |   |   |   |    |  |  |    |  |
|--------------------------------------|------|----------|------|---------|-------|---------------------------------------|---|---|---|---|---|----|--|--|----|--|
| drop                                 | mark | drop     | mark | drop    | mark  |                                       |   |   |   |   |   |    |  |  |    |  |
| >0                                   | 0    | >0       | 0    | >0      | 0     | Tail-drop or Non-ECN AQM (FQ or FIFO) | 1 | 2 |   |   |   |    |  |  |    |  |
|                                      | >0   |          | >0   |         | >0    | Classic ECN AQM (FQ or FIFO)          |   | 2 |   |   |   |    |  |  |    |  |
|                                      | >0   |          | >0   |         | ~100% | FQ-L4S AQM without A2                 |   | 3 |   |   |   |    |  |  |    |  |
|                                      | >0   | >0       | 0    |         | >0    | FQ-L4S AQM with A2                    |   |   | 4 |   |   |    |  |  |    |  |
| >0                                   | 0    | >0       | 0    |         | >0    | DualQ L4S AQM                         |   |   |   | 5 |   |    |  |  |    |  |
| All possible invalid experiment runs |      |          |      |         |       |                                       |   |   |   |   |   |    |  |  |    |  |
| 0                                    | 0    |          |      |         |       | Uncongested                           |   |   |   | 6 |   |    |  |  |    |  |
|                                      |      | 0        | 0    |         |       | Uncongested                           |   |   |   | 7 |   |    |  |  |    |  |
|                                      |      |          |      | 0       | 0     | Uncongested                           |   |   |   |   | 8 |    |  |  |    |  |
|                                      | >0   |          |      |         | 0     | ECT0 but no ECT1 marking yet          |   |   |   |   | 9 |    |  |  |    |  |
|                                      |      |          | >0   |         | 0     | ECT0 but no ECT1 marking yet          |   |   |   |   |   | 10 |  |  |    |  |
|                                      | 0    |          | >0   |         |       | No ECT0 marking until ECT1 starts     |   |   |   |   |   |    |  |  | 11 |  |
| 0                                    | 0    | 0        | 0    | 0       | 0     |                                       |   |   |   |   |   |    |  |  |    |  |
| 0                                    | 0    | 0        | 0    | 0       | 1     |                                       |   |   |   |   |   |    |  |  |    |  |
| 0                                    | 0    | 0        | 0    | 1       | 0     |                                       |   |   |   |   |   |    |  |  |    |  |
| 0                                    | 0    | 0        | 0    | 1       | 1     |                                       |   |   |   |   |   |    |  |  |    |  |
| 0                                    | 0    | 0        | 1    | 0       | 0     |                                       |   |   |   |   |   |    |  |  |    |  |
| 0                                    | 0    | 0        | 1    | 0       | 1     |                                       |   |   |   |   |   |    |  |  |    |  |
| 0                                    | 0    | 0        | 1    | 1       | 0     |                                       |   |   |   |   |   |    |  |  |    |  |
| 0                                    | 0    | 0        | 1    | 1       | 1     |                                       |   |   |   |   |   |    |  |  |    |  |
| 0                                    | 0    | 1        | 0    | 0       | 0     |                                       |   |   |   |   |   |    |  |  |    |  |
| 0                                    | 0    | 1        | 0    | 0       | 1     |                                       |   |   |   |   |   |    |  |  |    |  |
| 0                                    | 0    | 1        | 0    | 1       | 0     |                                       |   |   |   |   |   |    |  |  |    |  |
| 0                                    | 0    | 1        | 0    | 1       | 1     |                                       |   |   |   |   |   |    |  |  |    |  |
| 0                                    | 0    | 1        | 1    | 0       | 0     |                                       |   |   |   |   |   |    |  |  |    |  |
| 0                                    | 0    | 1        | 1    | 1       | 0     |                                       |   |   |   |   |   |    |  |  |    |  |
| 0                                    | 0    | 1        | 1    | 1       | 1     |                                       |   |   |   |   |   |    |  |  |    |  |
| 0                                    | 1    | 0        | 0    | 0       | 0     |                                       |   |   |   |   |   |    |  |  |    |  |
| 0                                    | 1    | 0        | 0    | 0       | 1     |                                       |   |   |   |   |   |    |  |  |    |  |
| 0                                    | 1    | 0        | 0    | 1       | 0     |                                       |   |   |   |   |   |    |  |  |    |  |
| 0                                    | 1    | 0        | 0    | 1       | 1     |                                       |   |   |   |   |   |    |  |  |    |  |
| 0                                    | 1    | 0        | 1    | 0       | 0     |                                       |   |   |   |   |   |    |  |  |    |  |
| 0                                    | 1    | 0        | 1    | 1       | 0     |                                       |   |   |   |   |   |    |  |  |    |  |
| 0                                    | 1    | 0        | 1    | 1       | 1     |                                       |   |   |   |   |   |    |  |  |    |  |
| 0                                    | 1    | 1        | 0    | 0       | 0     |                                       |   |   |   |   |   |    |  |  |    |  |
| 0                                    | 1    | 1        | 0    | 0       | 1     |                                       |   |   |   |   |   |    |  |  |    |  |
| 0                                    | 1    | 1        | 1    | 0       | 0     |                                       |   |   |   |   |   |    |  |  |    |  |
| 0                                    | 1    | 1        | 1    | 1       | 0     |                                       |   |   |   |   |   |    |  |  |    |  |
| 0                                    | 1    | 1        | 1    | 1       | 1     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 0    | 0        | 0    | 0       | 0     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 0    | 0        | 0    | 0       | 1     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 0    | 0        | 0    | 1       | 0     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 0    | 0        | 0    | 1       | 1     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 0    | 0        | 1    | 0       | 0     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 0    | 0        | 1    | 0       | 1     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 0    | 0        | 1    | 1       | 0     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 0    | 0        | 1    | 1       | 1     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 0    | 1        | 0    | 0       | 0     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 0    | 1        | 0    | 0       | 1     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 0    | 1        | 1    | 0       | 0     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 0    | 1        | 1    | 0       | 1     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 0    | 1        | 1    | 1       | 0     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 0    | 1        | 1    | 1       | 1     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 1    | 0        | 0    | 0       | 0     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 1    | 0        | 0    | 0       | 1     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 1    | 0        | 0    | 1       | 0     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 1    | 0        | 0    | 1       | 1     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 1    | 0        | 1    | 0       | 0     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 1    | 0        | 1    | 0       | 1     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 1    | 0        | 1    | 1       | 0     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 1    | 0        | 1    | 1       | 1     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 1    | 1        | 0    | 0       | 0     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 1    | 1        | 0    | 0       | 1     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 1    | 1        | 0    | 0       | 1     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 1    | 1        | 0    | 1       | 0     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 1    | 1        | 0    | 1       | 1     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 1    | 1        | 1    | 0       | 0     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 1    | 1        | 1    | 0       | 1     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 1    | 1        | 1    | 1       | 0     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 1    | 1        | 1    | 1       | 1     |                                       |   |   |   |   |   |    |  |  |    |  |
| 1                                    | 1    | 1        | 1    | 1       | 1     |                                       |   |   |   |   |   |    |  |  |    |  |