and $\bar{W}_\text{m} = 500$ ms for BE users. As it can be observed, cross-layer scheduling and resource allocation strategies are able to fairly allocate resources among traffic classes, according to the assigned priorities $\chi_\text{m}(t)$, obtained from the QoS requirements. Obviously, RT users, which exhibit stringent absolute delay requirements, tend to be allocated more resources than nRT and BE users as the arrival data rates increase. For the same reasons, nRT users are allocated more resources than BE users. The result is that, although for light traffic arrivals the three classes of service can achieve good performance figures, for moderate traffic arrivals, RT and nRT users can only maintain acceptable performance at the cost of a decrease in the performance of BE users. Furthermore, for heavy traffic arrivals, the performance of RT users can only be maintained by sacrificing that of nRT and BE users.

In this particular scenario, except for very heavy traffic arrivals, the MLWDF scheduling rule provides the best performance results in terms of average throughput per flow and service coverage at the cost of a worse behavior of the delay Jain’s fairness index.