

Performance of TCP/IP with MEDF Scheduling

Ruediger Martin, Michael Menth, and Vu Phan-Gia

Department of Distributed Systems, Institute of Computer Science
University of Würzburg, Am Hubland, D-97074 Würzburg, Germany
{martin|menth|phan}@informatik.uni-wuerzburg.de

Abstract To achieve Quality of Service (QoS) in Next Generation Networks (NGNs), the Differentiated Services architecture implements appropriate Per Hop Behavior (PHB) for service differentiation. Common recommendations to enforce appropriate PHB include Weighted Round Robin (WRR), Deficit Round-Robin (DRR) and similar algorithms. They assign a fixed bandwidth share to Transport Service Classes (TSCs) of different priority. This is a viable approach if the ratio of high priority traffic TSC_{high} over low priority traffic TSC_{low} is known in advance. If TSC_{high} holds more and TSC_{low} less users than expected, the QoS for TSC_{high} can be worse than for TSC_{low} . As shown in preceding work, the Modified Earliest Deadline First (MEDF) algorithm heals this problem on the packet level. Therefore, we investigate its impact in congested TCP/IP networks by simulations and show its attractiveness as a powerful service differentiation mechanism.